

## **EWSU Policy**

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### **Green Infrastructure (GI) Participation**

#### **Policy Statement**

The GI Cost Participation Policy provides supplemental monetary incentives to include green infrastructure storm water redirection techniques into redevelopment or rehabilitation projects. These projects are located in targeted sewer sub basins to strategically reduce combined sewer overflow volumes.

#### **Background**

The City of Evansville Water and Sewer Utility (EWSU) entered into a Federal Consent Decree in 2011. The purpose of the consent decree was to eliminate sanitary sewer overflows and significantly reduce combined sewer overflows to achieve improved receiving stream water quality and at a financial level affordable to the Sewer Utility rate payers.

Several solution sets of projects were analyzed for the highly urbanized combined sewer areas of downtown. The downtown area is served primarily by three different combined sewer sheds that overflow into the Ohio River at Dress Plaza. Two solutions emerged for these sewer sheds. Either the Utility could store, convey, and treat these overflows, or the Utility could redirect the storm water from the existing combined sewer system. From the concept of the second option, this policy was created.

The downtown area is comprised roughly of 65% private and 35% municipal owned property or public right-of-way. In addition, statistics show that 30% of the downtown privately held property will be rehabilitated or repurposed every 20 years. This policy sets forth a cost participation program for other municipal entities and possibly private organizations to consider when redeveloping or rehabilitating their property. If storm water could be redirected, reused, or removed from the combined sewer during CSO events, more costly storage requirements could be reduced or eliminated.

The ultimate goal of a GI participation policy is to provide enough storm water redirection to eliminate all large storage tank components and significantly reduce the conveyance needs for residual flow of combination sewage to the plant.

#### **Applicability of the Policy**

This policy applies to all construction, redevelopment, or rehabilitation opportunities located within the two of the three sewer basins serving the downtown area, namely E-1 and E-2.

## Policy Elaboration

With the agreement of a signed Consent Decree, Evansville started creating solution sets to reduce or eliminate combined sewer overflows. A component of the solution sets evaluation included exploring green infrastructure redirection concepts. Regionally and nationally, green infrastructure has been included as part of municipal consent decrees. Cities such as Washington D.C., Philadelphia, Cincinnati, and Louisville, have integrated green infrastructure into their consent decree plans. The EPA published their own Guide to Green infrastructure in the fall of 2012.

The Engineers completing the evaluation in Evansville gleaned knowledge from the lessons learned in these larger communities. They also looked at local conditions and quickly realized potential advantages to green infrastructure as a significant component in the Evansville plan. Studies such as the Relative Infiltration Potential Rating (RIPR) identified areas of geology favorable to green infrastructure concepts. Evansville is situated on a bend of the Ohio River. Underneath the two top layers of soil is glacial till wash and river sand deposits. This type of geology conducts water virtually unrestrained. Green infrastructure implementation that was able to tap into the lower levels of geology offer high potential for redirection effectiveness.

In 2012, the Evansville Water and Sewer Utility (EWSU) participated in a project in the rear parking lot of the Civic Center, the area known as Back 40. Under that project, EWSU paid for the installation of two underground infiltration beds, rock rain gardens, and pervious concrete. The total costs of these additions was \$1.1 M. Post construction monitoring of the improvements revealed that the areas that had rain gardens only diverted approximately 50% of rainfall runoff while the areas that had rain gardens and underground infiltration beds diverted approximately 90% of rainfall runoff. The area of 90% storm water redirection proved that high level of green infrastructure redirection could be created in the downtown area by utilizing the river sand geology that exists underneath the downtown area. Further, runoff analysis of the Back 40 project estimated six (6) million gallons per year would be diverted. The cost to divert this amount of runoff was calculated at \$0.18/annual gallon.

With the results from the pilot project underneath the Back 40, a cost participation draft was created to mathematically define the participation procedure. See Attachments 1-4 for the sample calculations and participation guidance documents.

## Abbreviations

CSO	Combined Sewer Overflow
EPA	Environmental Protection Agency
EWSU	Evansville Water & Sewer Utility
GI	Green Infrastructure
RIPR	Relative Infiltration Potential Rating
ToC	Time of Concentration

## Definitions

Combined sewer	Collects rainwater runoff, domestic sewage, and industrial wastewater into one pipe. Under normal conditions, it transports all of the wastewater it collects to a sewage treatment plant for treatment, then discharges to a water body. The volume of wastewater can sometimes exceed the capacity of the combined sewer or treatment plant (e.g., during heavy rainfall events or snowmelt). When this occurs, untreated stormwater and wastewater, discharges directly to nearby streams, rivers, and other water bodies.
Green Infrastructure	The range of stormwater Control Measures that use plant/soil systems, permeable pavement, stormwater harvest and reuse, or native landscaping to store, infiltrate, and/or evapotranspire stormwater and reduce flows to sewer systems or to surface waters. Green Infrastructure may include, but is not limited to, bioretention, extended detention wetland areas, green roofs and permeable pavement. Green Infrastructure also includes Control Measures to harvest and reuse stormwater, such as rain barrels and cisterns.
Redirection	The act of removing storm water from a collection sewer during a combined sewer overflow event. This removal (or redirection) can be temporary or permanent.

## Suggested Project Types

A variety of green infrastructure projects are available for funding under Evansville's program. Some examples of eligible project types or combinations of project types are listed below.

**Green Complete Streets:** streets that include access for vehicular, pedestrian, and bicycle traffic that includes storm water storage and/or infiltration practices such as rain gardens or permeable pavers.

**Underground Infiltration/Storage Basins:** Subsurface basins, typically constructed of stone and pipes, used to store and/or infiltrate storm water runoff from surrounding impervious area.

**Infiltration Trenches:** Linear, subsurface stone beds (or other materials) used to capture, store, and infiltrate storm water runoff from adjacent impervious surfaces.

**Rain Gardens:** Shallow, subsurface depression garden areas with amended soils, rock, and vegetation designed to collect and infiltrate storm water runoff from adjacent impervious surfaces.

**Permeable Pavers:** Specially designed pavement system that allows water to infiltrate through rather than running off. This system can provide the structural support of conventional pavement but is made up of a porous surface (e.g. porous asphalt, porous concrete, permeable pavers, etc.) and an underground stone infiltration or storage bed.

**Vegetated Extended Detention Basins:** Engineered basins that provide temporary storage of storm water runoff with a controlled release back into the sewer system at a prescribed rate. Compared to rain gardens, vegetated extended detention basins typically manage larger areas of impervious surface.

**Rainwater Harvesting:** the capture and use of storm water for applications where potable water is not strictly necessary. Harvesting applications must prove a consistent use at all times of the year to be considered.

## Eligibility

In order to be eligible for participation in Evansville's GI program, applicants must satisfy the following criteria:

- The proposed storm water management infrastructure must manage runoff from properties located within basins E-1 and E-2 in Evansville, see the attached participation area map.
- Applicants must own the parcel where the storm water infrastructure will be built or have written permission from the owner of the parcel (applicants must provide agreements or contracts with each participating property owner);
- Any EWSU bills associated with the properties where the proposed project will be constructed must be current, and both the applicant and property owner must be current and in good standing with all City of Evansville taxes and fees. An applicant or owner who is on a payment plan will be considered in good standing as long as it is current on the payment plan;
- The applicant must submit a complete application. The applicant must provide information requested by EWSU in a timely manner;
- Infrastructure must be designed to capture at least the first half inch (0.5") of runoff from the impervious areas. The goal of EWSU is to capture a full two inch (2") rain event. Runoff managed can be handled solely through storage or through storage and infiltration.
- Applicants who are required to perform storm water management due to a development project must also comply with all storm water management requirements from other agencies.
- The project size must impact a minimum of 1,000,000 annual gallons of storm water;
- The project must reduce the volume of storm water entering the combined sewer system. The system can redirect flow and infiltrate into the ground, allow water to be captured and reused, or allow water to be captured and released back into the combined sewer at a later time.
- Approved applicants must grant EWSU permanent easements for the subsurface aspects of the GI system as well as storm sewers that capture runoff from street inlets. Applicants are responsible for drafting the legal description and plat of the easement. In addition, the applicant is responsible for having the easement recorded. These easements are pertinent for EWSU to maintain and test the system;
- All GI systems must be designed such that they are capable of storing and/or infiltrating runoff from the next storm event within 48 hours of the end of the first storm event.



## Evaluation Criteria

Eligible projects will be evaluated based on the below criteria. The EWSU retains the sole discretion to evaluate proposals, make recommendations and provide participation funding. See below for a breakdown on evaluation criteria and Table 1 for a scoring matrix.

<b>Total Acres and Volume Managed</b>	- Projects will be evaluated based upon the total number of acres managed by the proposed GI project. Projects will be evaluated based on their ability to manage storm water runoff to the maximum participation available (2" of rainfall). Projects will be considered that manage a minimum of 0.5" of runoff, with the most competitive applications managing 2" of runoff. Higher scores will be given to projects that have a higher single volume installation vs. multiple smaller volume installations.
<b>Innovation</b>	- Projects will be evaluated based upon the type of proposed storm water management practice. The EWSU encourages applicants to submit innovative projects.
<b>Visibility within the wider community</b>	- Projects will be evaluated based upon their visibility and accessibility to the public, as well as potential educational benefits.
<b>Aesthetics</b>	- Projects will be evaluated based on their level of aesthetics. The EWSU encourages projects which are aesthetically pleasing.
<b>Feasibility, Maintainability &amp; Durability</b>	- Projects will be evaluated based upon the feasibility of construction and/or implementation as demonstrated by the concept design, maps, and storm water calculations. Monitoring and maintenance plan feasibility will also be taken into account. Applicants must demonstrate their intention and identify the resources to maintain the surface improvements of the GI infrastructure. Projects will be evaluated based on their durability. Projects should be durable to provide a safe and operational site.
<b>Application Quality</b>	- Projects that provide detailed and accurate information about project scope and concept design will be rated higher than those with inadequate or less detailed information. The package should also be clear, legible, and timely.

Table 1. Green Infrastructure Project Scoring Matrix

	<b>Weight Factor</b>	<b>Score (0-10 with 10 being the best)</b>	<b>Extended Score (weight factor X Score)</b>
<b>Total Acres and Volume Managed</b>	3		
<b>Innovation</b>	1		
<b>Visibility within the wider community</b>	1		
<b>Aesthetics</b>	1		
<b>Feasibility, Maintainability &amp; Durability</b>	3.5		
<b>Application Quality</b>	0.5		
<b>Total Score</b>			<b>/100</b>

## Application Procedure

The procedures apply to have a project cost supplemented by this Utility policy are as follows:

1. The Utility will publish a “Call for Green Infrastructure Projects” applications on a recurring interval and as funding is available.
2. The applicant will identify the Green Infrastructure opportunity within a project.
3. The applicant will use the attached participation calculations guidelines to create a business case for the Utility participation.
4. The applicant will submit a Green Infrastructure Business Case to the Water Planning department including the following:
  - a. A plan view of the proposed GI system;
  - b. A plan view of the drainage area with basins delineated;
  - c. The total drainage area proposed for Green Infrastructure component(s);
  - d. The number of gallons of storm water that will be managed.
5. The Water Planning Department will review the Green Infrastructure Business Case, its associated claim to storm water redirection quantities, construction components, and other opportunities’ and constraints.
6. The Water Planning department will prioritize EWSU’s recommended participation in project(s) at the current participation level to the Utility Board for each call for applications based on funding availability, project effectiveness, project location, and/or any other criteria considered critical to increased effectiveness of the overall program. Any applicants who did not receive funding are encouraged to resubmit their application at the next “Call for Green Infrastructure Projects”.

The Utility reserves the right to suspend this policy or any specific project participation due to regulatory restrictions, non-conformance with long term goals, or funding sources.

## Proposal Requirements

Project submittals shall include the following:

- General Project Description: The description should include the location description, volume of storage, and storage type.
- Estimated Project Area: The estimated project area should include a dimensioned map showing an outline of the project area.
- Depth of Storm to be addressed: The depth of storm addressed must be clearly stated.
- Estimated Drainage Area Map to be Impacted: Estimated drainage area must be delineated and provided.
- Aesthetic Value to Community Long Term Public or Private: If any potential aesthetic value exists, it should be clearly described.
- Estimated Participation Amount: Calculations showing the estimated participation amount using the equations provided in this Policy should be included in the proposal.
- Commitment to provide a Phase I Environmental \*
- Commitment to provide Design Plans in 90 days \*
- Commitment to provide Easements in 90 days \*
- Commitment to sign Grant Agreements in 90 days \*
- Commitment to start Construction within 180 days \*

*\* Commitments should be stated in writing with a signature and date*

## Application Submission

Proposals shall not exceed ten (10) single-sided pages, including appendices. A one page cover letter and divider sheets will not be counted within the ten pages. Additional information that is beneficial to the selection committee is allowed so long as it is included within the ten pages.

Please submit five bound copies and one electronic version of your proposal to:

Michael D. Labitzke, P.E.

Deputy Director of Utilities – Program Management Office

1 SE 9<sup>th</sup> Street

Suite 200

Evansville, IN 47708

## Black-Out Period

The EWSU selection process will be used to select the successful Green Infrastructure Projects. All applicants that submit a proposal are expected to honor a “black-out” period of selection committee contact once proposals are submitted. All applicants that submit a proposal will receive notification of the results upon completion of the selection process.

## Approved Applicants Submittal Requirements

- All projects must submit a Phase I Environmental Site Assessment to investigate the potential environmental impacts caused by the GI system.
- If a Phase I Environmental Site Assessment indicates potential contamination at the project site and an infiltration is desired a Phase II Site Assessment should be conducted to determine contamination levels in the soil and groundwater at the proposed GI project locations.
- GI systems that are located in contaminated soil areas may still be considered, provided that an impermeable liner is used to ensure that the system remains water tight. The liner material used must be selected by its resistance to the contaminants present at the site and ability to withstand construction activities.
- All projects shall provide the EWSU with both the topo and control points of the site.
- All GI systems must have an emergency overflow pipe with a backflow preventer on the downstream most point of the system that connects to the combined sewer system.
- All GI systems must have a low level drain with a remote operated control valve to allow for drainage of the GI system. In the case of infiltration systems the low level drain may be above the bottom of the infiltration system, placed at the lowest possible elevation to drain a minimum of 50% of the GI system by gravity to the adjacent combined sewer.
- Any system valve that is not actuated and/or is not inside a manhole must have a lid specifying 'Drain'.
- Infiltration may be taken into account for the sizing of GI systems. Infiltration is limited to a rate of 4 in/hr OR one-half (1/2) the field tested infiltration rate, whichever is smaller. Infiltration shall also be limited to the volume of storm water infiltrated during the time frame of four (4) hours minus the largest Time of Concentration (ToC) of the drainage basins for the project.
- Connections to the public sewer must be either made at an existing manhole or connected to a newly constructed manhole if the discharge pipe is greater than 8-inches.
- Technical Submittal for approval must include the following items:
  - 1) Existing Site Plan
  - 2) Proposed Site Plan
  - 3) Drainage Basins Plan
  - 4) Green Infrastructure Plan
  - 5) Green Infrastructure Details
  - 6) Storm Water Details
  - 7) Geotechnical Report – to include infiltration tests if infiltration is proposed
  - 8) Green Infrastructure Sizing Calculations
  - 9) Storm Water Sizing Calculations
  - 10) Green Infrastructure Participation Calculations
- Approved applicants must provide a fully executed permanent easement before funding may be approved.
- Approved applicants must provide a copy of the Site Location and Improvement Permit upon receipt. Site improvements permit shall state that the projects includes a green

infrastructure component. Note – Site Application requirements may refine the approved Green Infrastructure Plan.

- Approved applicants must sign a Green Infrastructure Grant Agreement.
- Approved applicants shall have a preliminary meeting with the owner, engineer, and the EWSU present. This meeting must take place prior to construction.
- Approved applicants must provide as-builts to the City upon completion of construction. Guidelines for these are in Attachment 9 – Record Drawing Requirements.

## Concept Plan Guidelines

The application requires that each applicant submit a concept plan for a green infrastructure project. Concept plans must contain the following information:

- Engineer name, date, and project title
- Name of owner
- North arrow, legend (clearly identify all line types, hatch types and symbols used) and graphical scale (1"=10' , 20', 30', 40', 50', 60', or 100')
- Site address
- Property lines, all meters, bounds, boundaries, dimensions, building lines and set-backs
- Existing and proposed rights-of-way, easements, widths for all streets and private roads, and drainage rights-of-way
- Location and dimensions of all driveways, curb cuts, and off-street parking lots, with distances from lot lines
- Vicinity Map including watershed(s) and sub watershed(s)
- Clear identification of all existing and proposed site improvements
- Location of all existing utilities (water, sewer, and storm water)
- An indication of the drainage area where storm water will be managed and show safe overflow connections. All drainage area must lie within the property owner's property and/or the right-of-way. Drainage area from private property owners will not be included.
- All infiltration areas must be located at least one (1) horizontal feet for one (1) vertical feet of depth of the infiltration bed from all property lines.
- All roof and yard drains and their connections to the GI system or sewers – roof drains outside the control of the applicant may not be used in the water capture calculations.
- Extent of floodplain in relation to the project
- Any vegetation identified for preservation and planned landscape areas
- Existing site contours and proposed, if any
- Drainage area, foot print and storage volume for each GI system should be calculated and identified

## Construction Requirements

The applicant must agree to and meet the following pre-backfill construction inspection milestones:

- Laying of Filter Fabric
- Storage Component Installation (chamber, pipe, tank, other)
- Rain Garden Overflow Structures
- Inspection Ports
- Other elements as directed by EWSU.

EWSU must be contacted regarding the construction inspection at least 24-hours prior to the backfilling.

## Post Construction Requirements

The applicant must agree to and meet the following post construction requirements.

- The EWSU will perform annual Performance Testing per each project's Performance Testing Plan to ensure adequate performance.
- Unless otherwise agreed to in a Memo of Performance Understanding, the EWSU will perform maintenance of the subsurface aspects of the GI project as required.
- The Owner will maintain all above ground aspects of the GI project.
- For GI projects whose capture volume exceeds 180,000 gallons of storm water in a single storm event, an initial payment of participation funds of up to 50% of the total participation will be made on a case by case basis until the ability to performance test the project presents itself. The Owner and the EWSU is to agree to this requirement prior to participation in the program.
- EWSU shall perform a final inspection of the site prior to payout. Any items of concern must be addressed prior to payout.
- EWSU shall perform an initial Performance Test to confirm each project's performance prior to payment. A project that does not test successfully as designed will be re-tested again. Final payment shall be made based upon an average of the two testing results.

## Ownership

- The EWSU owns, operates and maintains the sanitary sewer collection system which includes; sanitary and combined sewers, manholes, lift stations, force mains, and various other sanitary sewer facilities. Upon project completion, EWSU will assume ownership and maintain all subsurface entities including site piping connected to public street inlets and underground storage of projects where permanent easement has been granted to the EWSU. The EWSU will conduct annual testing and maintenance as required of all GI projects.

- At the location where the EWSU ownership ends and Property Owner ownership begins a public manhole must be installed.
- Property owners own and maintain all surface appurtenances located on their property unless otherwise agreed upon. Examples to include, permeable pavers, surface inlet grates, and inlets. Property owners will also own all subsurface site drainage piping not connected to a public inlet.

## **Variance**

Variance from these Standards may be granted under unusual and/or specific conditions. Only EWSU has the right to grant a variance.

## **Contacts**

Questions related to the daily operational interpretation of this policy should be directed to:

Mike Labitzke, Deputy Director Utilities— Program Management Office

812.421.2120 x2228

[mlabitzke@ewsu.com](mailto:mlabitzke@ewsu.com)

The Director of the Evansville Water and Sewer Utility is the official responsible for the interpretation and administration of this policy.

## **Effective Date**

This policy was voted effective XX XX, 2019 by the Evansville Water and Sewer Utility.

## **Attachments**

1. Green Infrastructure (GI) Participation Calculation Guidelines
2. Green Infrastructure (GI) Runoff Coefficient Values
3. % Rainfall Capture Depth (based on Evansville)
4. Green Infrastructure Participation Area Map
5. Standard Control Panel Plan Set
6. Standard Control Valve Detail
7. Standard GI Type Details
8. Easement Agreement
9. Participation Funding Grant Agreement
10. Record Drawing Requirements
11. GIS Layer Definitions

# Attachment 1

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## EVANSVILLE WATER & SEWER UTILITY

ALLEN R. MOUNTS  
UTILITY DIRECTOR

The following requirements must be satisfied by any GI proposed feature:

1. All infiltration proposals must include a penetrometer test at the actual feature site and depth.
2. All reuse proposals must include a consistently available reuse need through all seasons.
3. All store and release proposals must have actuated control valving and emergency overflow that allows precise control by the Utility.
4. All proposals must provide for cleaning and maintenance of the GI feature.
5. All proposals shall be able to provide an empty condition within 48 hours of the rain event.

### Example GI Participation Proposal No. 1

A parking garage with a drainage area of 20,000 sft will be drained through top level inlets and routed vertically to a 10,000 gallon holding tank located in the lowest level of the garage. The tank will be operated with a valve which can be closed prior to a rain event to catch the full 40,000 gallons before an emergency overflow would allow excess storm water runoff to drain to the combination sewer trunk line. After the combination sewer overflow has ceased activation after the rainfall event, the valve can be opened allowing the tank to drain to the combination sewer trunk line and directed to the wastewater treatment plant for treatment.

The Utility will participate in this GI feature in the following amount:

Direct Drainage Area: 20,000 sft

C Value: 0.9

$$\text{Rain event size to be captured} = \frac{\frac{\text{Storage Volume}}{\text{Drainage Area}} * \left(12 \frac{\text{in}}{\text{ft}}\right)}{C} = \frac{\frac{\frac{10,000 \text{ gal}}{7.48 \frac{\text{gal}}{\text{cft}}}}{20,000 \text{ sft}} * \left(12 \frac{\text{in}}{\text{ft}}\right)}{0.9} = 3.57 \text{ in}$$

% Annual Rainfall Captured 77% (straight line measured at 0.89")

$$\text{Participation} = 0.0565 \times 0.9 \times 77 \times 20,000 = \$78,309.00$$

$$\text{Annual Gallons Captured} = \text{Participation Funds} \times 5 = 78,309.00 \times 5 = 391,545$$

This project does not capture 1,000,000 annual gallons of stormwater and therefore is not eligible for participation. The parking garage owner should look at increasing the size of the drainage area captured in order to meet the participation requirements.

EVANSVILLE WATER &  
SEWER UTILITYALLEN R. MOUNTS  
UTILITY DIRECTOR**Example GI Participation Proposal No. 2**

A convenience store is having its parking lot resurfaced and has decided to install a rock storage bed with storage chamber under the parking lot. The Phase I Environmental Site Assessment has indicated that contamination is present on site, preventing the use of infiltration. The rock storage bed and storage chambers will have an impermeable liner surrounding them to prevent infiltration. The rock storage bed will be connected to the combined sewer system through a low level drain (controlled with an actuated control valve) and a high level overflow. The storage system is being designed to capture runoff from the adjacent store area as well as parking lot, resulting in a composite C value of 0.757. The drainage area for this parking lot is 50,000 sft. The Owner would like to maximize EWSU participation and capture 2 in of rainfall depth for each storm event.

The Utility will participate in this GI feature in the following amount:

$$\begin{aligned} \text{Direct Drainage Area:} & \quad 50,000 \text{ sft} \\ \text{C Value:} & \quad 0.757 \\ \text{Rainfall Depth:} & \quad 2 \text{ in} \\ \text{Required Storage Volume:} & \\ \text{Required Storage Volume} & = \frac{(\text{Rainfall Depth}) * C}{\frac{\text{in}}{12 \frac{\text{ft}}{\text{ft}}}} * (\text{Drainage Area}) = \frac{(2.00 \text{ in}) * (0.757)}{\frac{\text{in}}{12 \frac{\text{ft}}{\text{ft}}}} * (50,000 \text{ sq ft}) = \\ & 6,308.33 \text{ cft} * \left(7.48 \frac{\text{gal}}{\text{cft}}\right) = 47,186.33 \text{ gal} \end{aligned}$$

$$\text{Participation} = 0.0565 \times 0.757 \times 94 \times 50,000 = \$201,021.35$$

$$\text{Annual Gallons Captured} = \text{Participation Funds} * 5 = 201,021.35 * 5 = 1,005,106$$

EVANSVILLE WATER &  
SEWER UTILITYALLEN R. MOUNTS  
UTILITY DIRECTOR**Example GI Participation Proposal No. 3**

A new housing development is intended to be constructed in the GI Participation Area. The developer has applied to the GI Participation Program with a drainage area that includes the new development building, development site, and surrounding street drainage. The drainage area to be captured covers 97,500 sft with a weighted C factor of 0.73. The developer would like to maximize the EWSU Participation and is planning to capture a 2 inch rainfall event. Based upon both Phase I and Phase II Environmental Site Assessments the site has no contamination present in the soil and groundwater that prevents the use of infiltration. Geotechnical investigation performed on the site indicate an infiltration rate of 11.0 in/hr at 7 feet deep (the location of the sand layer) at the location of the proposed rock storage bed. The longest Time of Concentration for the drainage area is 5 minutes. The initial size assumption of the rock storage bed is 100 feet long, 50 feet wide, and 8 feet deep.

$$\begin{aligned}\text{Direct Drainage Area:} & 97,500 \text{ sft} \\ \text{C Value:} & 0.73 \\ \text{Rainfall Depth:} & 2 \text{ in} \\ \text{Infiltration Rate:} & \frac{11.0 \frac{\text{in}}{\text{hr}}}{2} = 5.5 \frac{\text{in}}{\text{hr}} > 4.0 \frac{\text{in}}{\text{hr}} = 4.0 \frac{\text{in}}{\text{hr}}\end{aligned}$$

The allowable Infiltration Rate is set to the lower of 1/2 the tested rate of 4.0 in/hr.

$$\begin{aligned}\text{Infiltration Volume:} & (\text{Infiltration Rate}) * (\text{Permissible Infiltration Time}) * (\text{Bed Surface Area}) \\ & = \frac{4.0 \frac{\text{in}}{\text{hr}}}{12 \frac{\text{in}}{\text{ft}}} * \left( 4.0 \text{ hr} - \left( \frac{5 \text{ min}}{60 \frac{\text{min}}{\text{hr}}} \right) \right) * (100 \text{ ft} * 50 \text{ ft}) = 6,527.78 \text{ cft}\end{aligned}$$

$$\begin{aligned}\text{Runoff Volume} = & \frac{(\text{Rainfall Depth}) * C}{12 \frac{\text{in}}{\text{ft}}} * (\text{Drainage Area}) = \frac{2.0 \text{ in} * 0.73}{12} * (97,500 \text{ sft}) = 11,862.50 \text{ cft}\end{aligned}$$

$$\begin{aligned}\text{Required Storage Volume} = & \text{Runoff Volume} - \text{Infiltration Volume} = 11,862.50 \text{ cft} - 6,527.78 \text{ cft} = 5,334.72 \text{ cft} \\ & 5,334.72 \text{ cubic feet of storage is required to capture the full 2 inches of rainfall depth.}\end{aligned}$$

$$\begin{aligned}\text{Volume in Storage} = & \text{Bed Width} * \text{Bed Length} * \text{Bed Depth} * \text{Void Factor} = (50 \text{ ft}) * (100 \text{ ft}) * (8 \text{ ft}) * 0.4 = 16,000 \text{ cft} \\ & \text{The volume in the storage bed is greater than the required storage volume, therefore this design is sufficient to capture the 2 inch rainfall depth.}\end{aligned}$$



## EVANSVILLE WATER & SEWER UTILITY

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UTILITY DIRECTOR

EWSU Participation Funds =

$$0.0565 * C * \text{Percent Capture} * \text{Drainage Area} = 0.0565 * 0.73 * 94 * 97,500 = \$378,010.43$$

Annual Gallons Captured = *Participation Funds* \* 5 = 378,010.43 \* 5 = 1,890,052.13

This design is sufficient to capture the 2 inch rainfall event for the drainage area and satisfies the requirement of capturing at least 1,000,000 annual gallons of stormwater. This project is eligible for full participation by the EWSU.

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# EVANSVILLE WATER & SEWER UTILITY

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UTILITY DIRECTOR

## Example GI Participation Proposal No. 4

A developer is interested in installing a rock storage bed with infiltration under a parking lot that would capture runoff from 63,500 sft. The composite C for this drainage area was calculated to be 0.84. The Phase I and Phase II Environmental Site Assessments for the site indicate no contamination that would prevent the use of infiltration. The geotechnical investigation for the proposed storage bed show an infiltration rate of 1.2 in/hr in the sand layer found 5 feet below grade. The longest time of concentration for this drainage area was calculated to be 5 minutes. The developer knows that the maximum dimensions of the rock storage bed based upon site constraints are 100 feet long and 20 feet wide. Based upon this information the participation amount can be calculated.

Direct Drainage Area: 63,500 sft  
C Value: 0.84  
Infiltration Rate:

$$\frac{\text{Field Measured Rate}}{2} = \frac{1.2 \frac{\text{in}}{\text{hr}}}{2} = 0.6 \frac{\text{in}}{\text{hr}} < 4.0 \frac{\text{in}}{\text{hr}}$$

The allowable infiltration rate for this project is 0.6 in/hr as it is the lesser of 1/2 the field measured rate and 4.0 in/hr.

Infiltration Volume:

*(Infiltration Rate) \* (Permissible Infiltration Time) \* (Bed Surface Area)*

$$= \frac{0.6 \frac{\text{in}}{\text{hr}}}{12 \frac{\text{in}}{\text{ft}}} * \left( 4.0 \text{ hr} - \left( \frac{5 \text{ min}}{60 \frac{\text{min}}{\text{hr}}} \right) \right) * (100 \text{ ft} * 20 \text{ ft}) = 391.67 \text{ cft}$$

The bed design was decided to be 3 feet tall, starting 3 feet below grade.

Storage Volume:

$$(\text{Length}) * (\text{Width}) * (\text{Depth}) * 0.4 = 100 \text{ ft} * 20 \text{ ft} * 3 \text{ ft} * 0.4 = 2,400 \text{ cft}$$

Total System Volume:

$$\text{Storage Volume} + \text{Infiltration Volume} = 2,400.00 \text{ cft} + 391.67 \text{ cft} = 2,791.67 \text{ cft}$$

Rainfall Capture Depth:

$$\frac{\frac{\text{Storage Volume}}{\text{Drainage Area}} * 12 \frac{\text{in}}{\text{ft}}}{C} = \frac{\left( \frac{2,799.67 \text{ cft}}{63,500 \text{ sft}} \right) * 12 \frac{\text{in}}{\text{ft}}}{0.84} = 0.63 \text{ in}$$

Based upon a straight line estimate using the Rainfall Capture chart this results in a 64% capture during the typical year.

EWSU Participation Funds:

$$0.0565 * C * \text{Percent Capture} * \text{Drainage Area} = 0.0565 * 0.84 * 64 * 63,500 = \$192,877.44$$

EVANSVILLE WATER &  
SEWER UTILITYALLEN R. MOUNTS  
UTILITY DIRECTOR

## Annual Gallons Captured:

$$EWSU \text{ Participation Funds} * 5 = 192,877.44 * 5 = 964,387.20$$

This design does not capture 1,000,000 annual gallons, so the depth of the rock storage bed was increased from 3 to 5 feet.

## Storage Volume:

$$(Length) * (Width) * (Depth) * 0.4 = 100ft * 20ft * 5ft * 0.4 = 4,000cft$$

## Total System Volume:

$$Storage \text{ Volume} + Infiltration \text{ Volume} = 4,000.00cft + 391.67cft = 4,391.67cft$$

## Rainfall Capture Depth:

$$\frac{\frac{Storage \text{ Volume}}{C} * 12 \frac{in}{ft}}{\frac{Drainage \text{ Area}}{C}} = \frac{\left( \frac{4,391.67cft}{63,500sft} \right) * 12 \frac{in}{ft}}{0.84} = 0.99in$$

Based upon a straight line estimate using the Rainfall Capture chart this results in a 78% capture during the typical year.

## EWSU Participation Funds:

$$0.0565 * C * Percent \text{ Capture} * Drainage \text{ Area} = 0.0565 * 0.84 * 78 * 63,500 = \$235,069.38$$

## Annual Gallons Captured:

$$EWSU \text{ Participation Funds} * 5 = 235,069.38 * 5 = 1,175,346.90$$

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# Attachment 2

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## EVANSVILLE WATER & SEWER UTILITY

ALLEN R. MOUNTS  
UTILITY DIRECTOR

### Green Infrastructure (GI) Cost Participation Program

Runoff Coefficients for use in Design

<u>Character of Surface</u>	<u>Runoff Coefficient</u>
Pavement	
Asphalt and Concrete	0.90
Brick	0.80
Roofs	0.90
Stone Areas	0.65
Lawns, sandy soil	
Flat, 2 percent slope	0.08
Average, 2 to 7 percent slope	0.13
Steep, 7 percent slope	0.18
Lawns, heavy soil	
Flat, 2 percent slope	0.15
Average, 2 to 7 percent slope	0.20
Steep, 7 percent slope	0.30
Water Impoundment	1.00

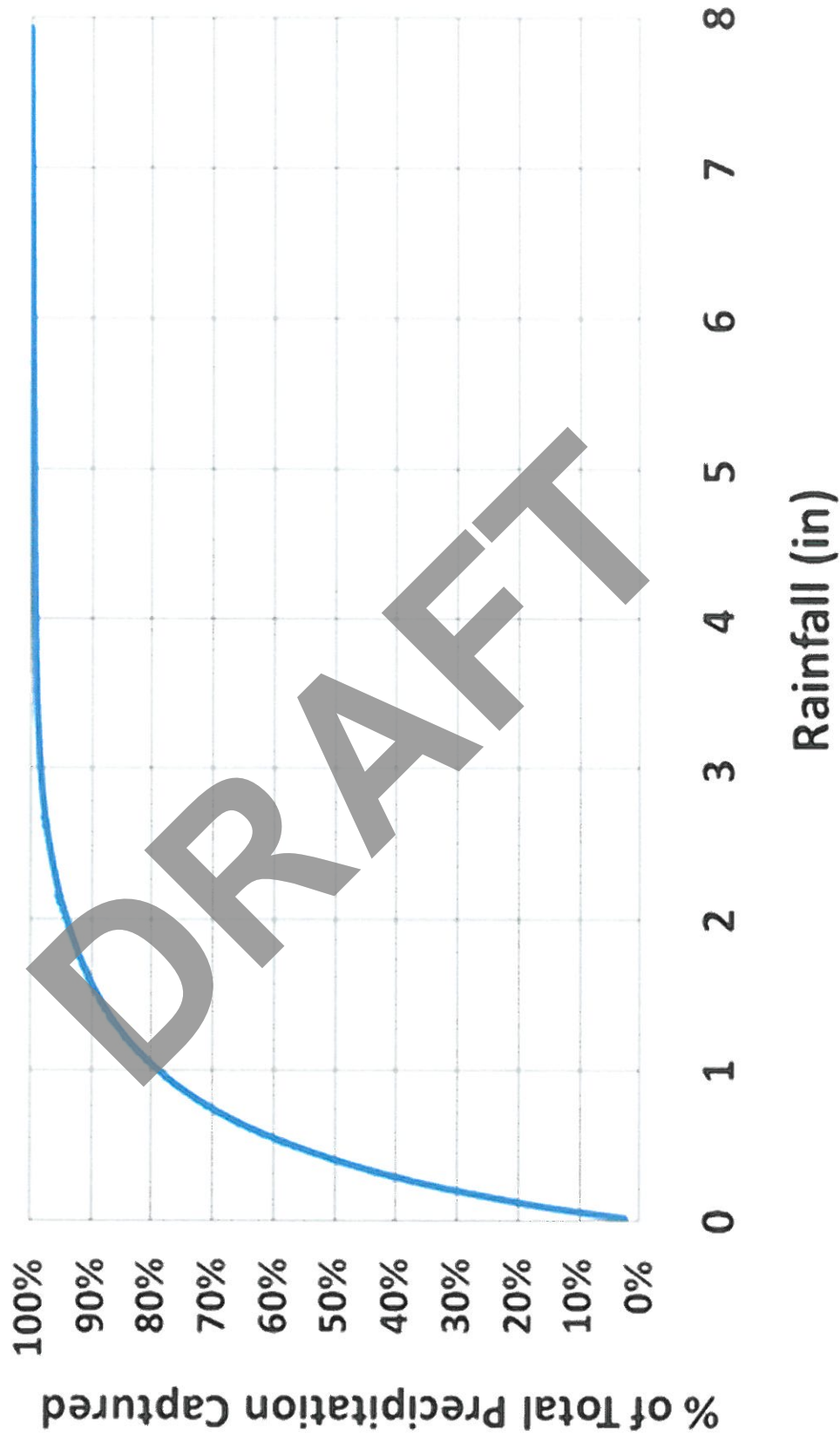
Surface area of GI features should be calculated as if the GI feature did not exist when calculating the Composite Runoff Coefficient.



# Attachment 3

DRAFT

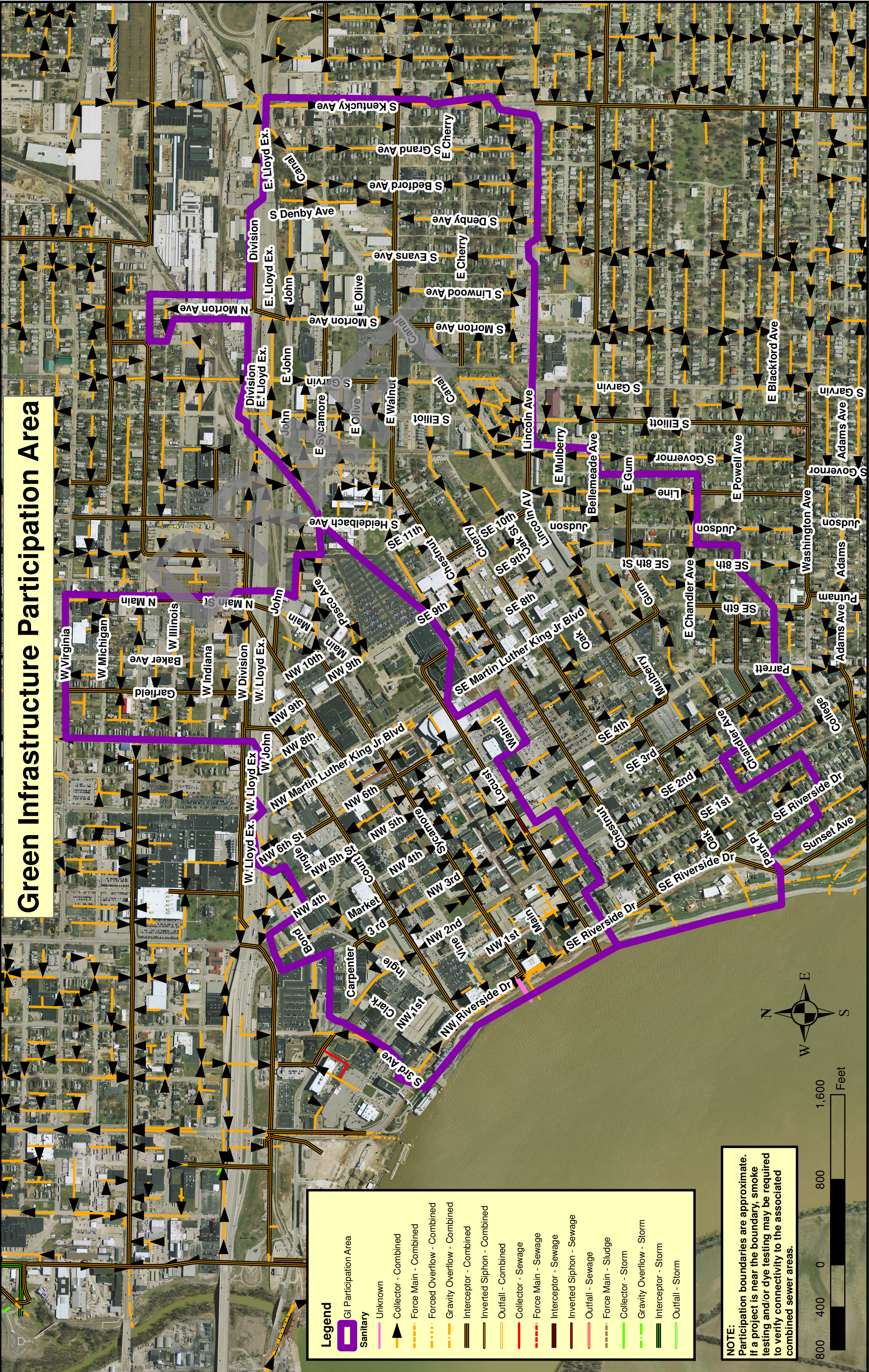
**% of Rainfall Capture by Rainfall Depth based on Evansville  
Regional Airport (EVV) data from 1/1/1989-12/31/2009**



# Attachment 4

DRAFT







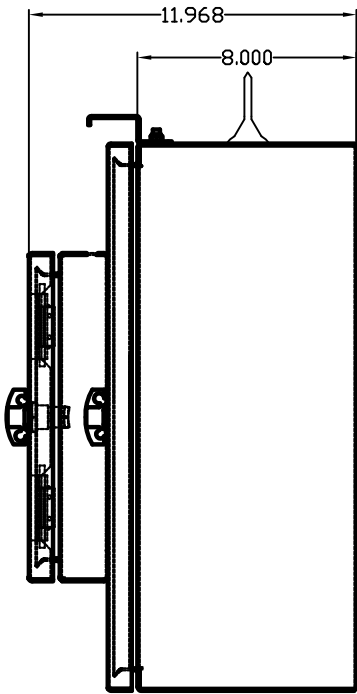
# Attachment 5

DRAFT

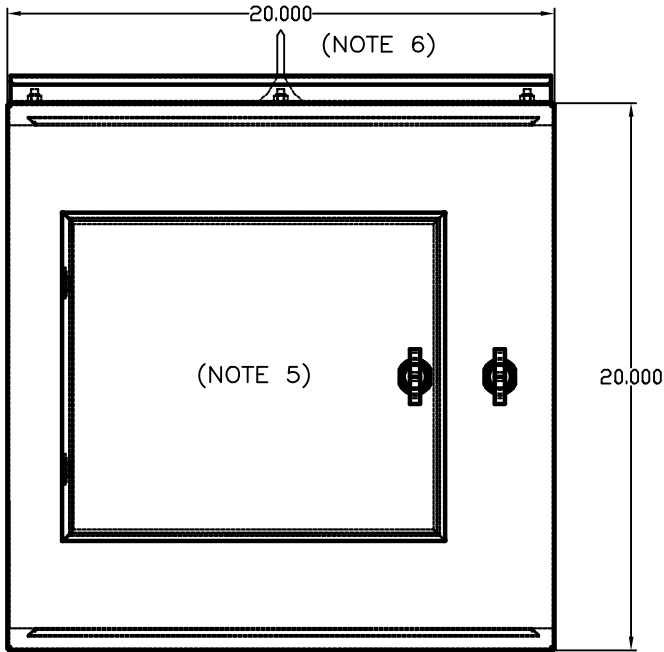
CITY OF EVANSVILLE IN.  
WATER AND SEWER UTILITY  
CONTROLS FOR GREEN INFRASTRUCTURE SYSTEMS  
WITH GE MDS RADIO  
FOR THE CONTROL OF 1 VALVE

DRAWING NO.	DESCRIPTION
E00	TITLE PAGE
E01	CONTROL PANEL CONSTRUCTION AND INSTALLATION
E02	MAIN POWER AND CONTROL POWER SCHEMATIC
E03	ANALOG I/O, TELEMETRY AND RADIO
E04	BILL OF MATERIAL

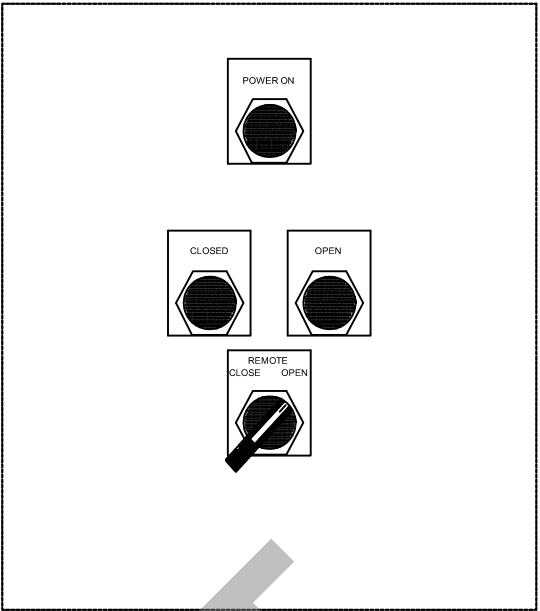
VOLTAGE: 120 VAC		PHASE: 1 Ø		HERTZ: 60 HZ.		TOTAL F.L.A.: 10 FLA		ENCLOSURE TYPE: NEMA 4X		REV.	DESCRIPTION							
LARGEST MOTOR; HP: N/A HP				F.L.A.: N/A FLA		SHORT CIRCUIT CURRENT: 5 kA RMS				SYMMETRICAL, 120 V MAX.			DRAWING INDEX					
<div>ALTEK INC.</div> <div>P.O BOX 262 1603 EAST BROADWAY PRINCETON, IN 47670 (812) 385-2561</div>											EVANSVILLE WATER AND SEWER UTILITY GREEN INFRASTRUCTURE PROJECT CONTROLLER FOR 1 VALVE		DRWN.	DATE		SHEET 0 OF 4		
													KGK	9/15/2019		DRWG. NO.		
													JOB#	C1910166		DC1910166E00		



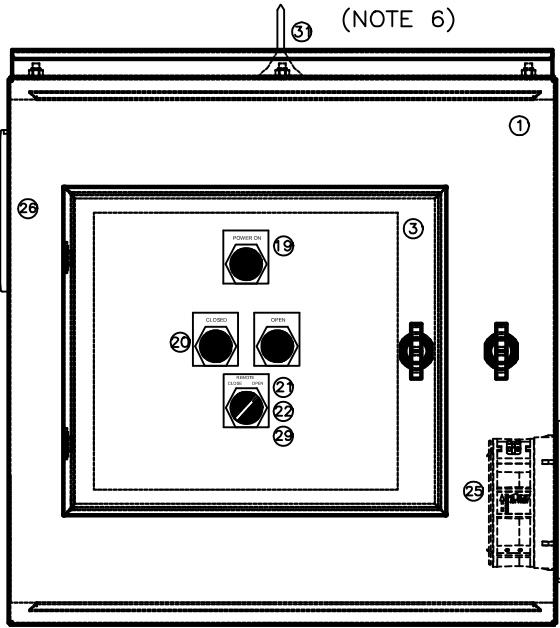
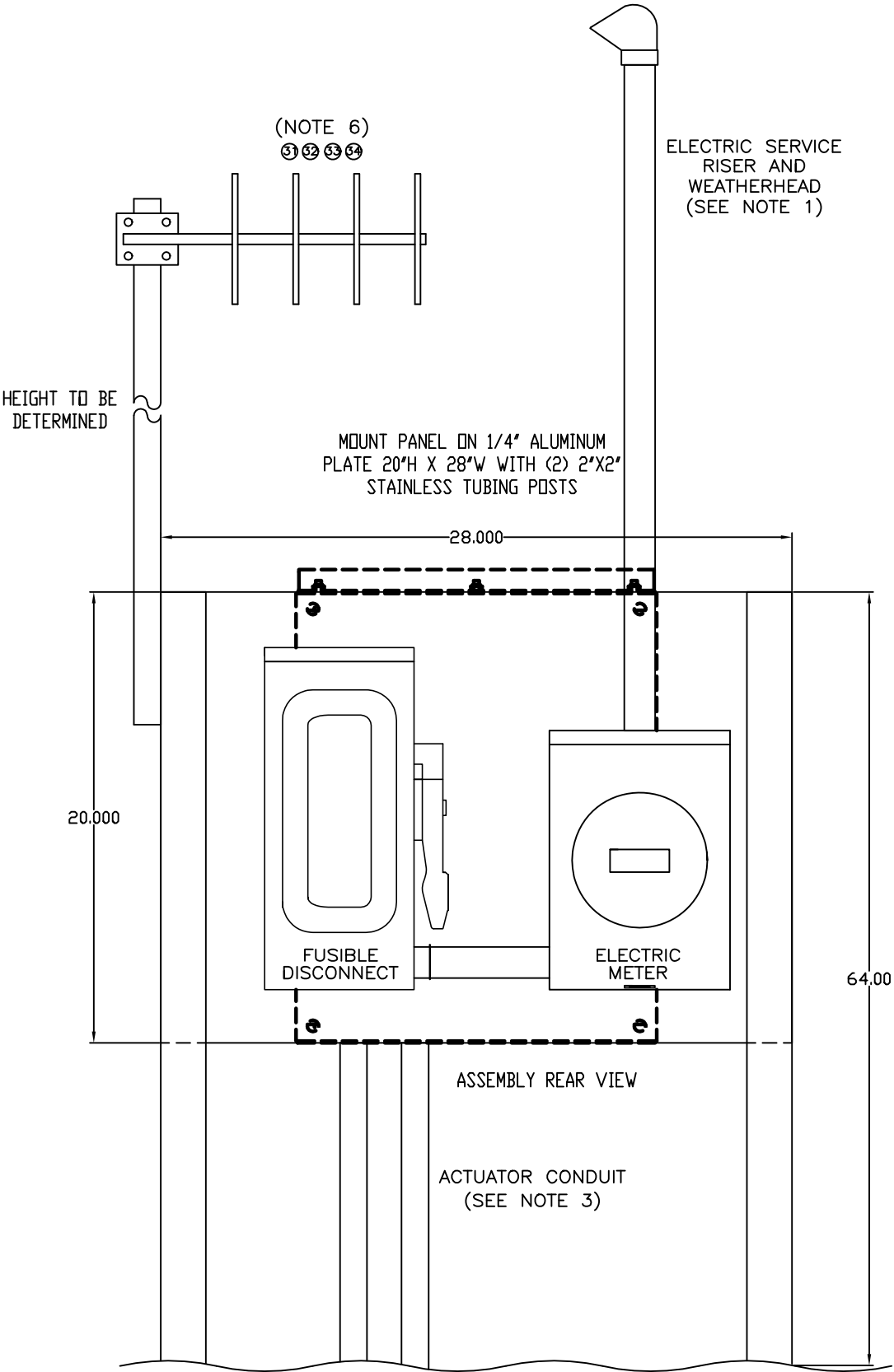
CONTROL PANEL SIDE VIEW



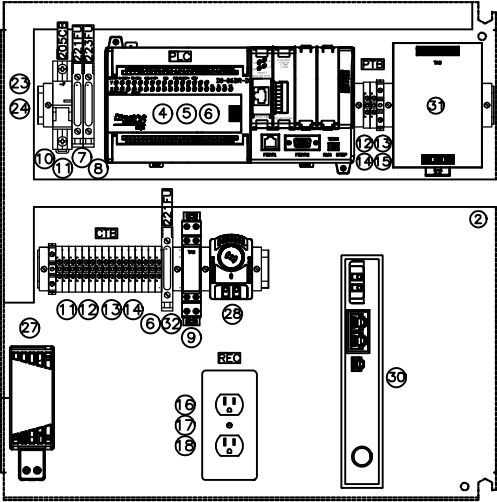
CONTROL PANEL FRONT VIEW



CONTROL DOOR INTERIOR DETAIL



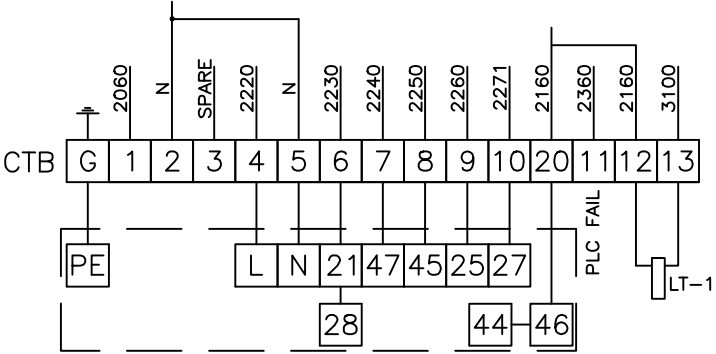
CONTROL DOOR INTERIOR



INTERIOR SUB PANEL

- NOTES
1. COORDINATE WITH VECTREN TO DETERMINE WHETHER SERVICE IS TO BE OVERHEAD OR UNDERGROUND.
  2. COORDINATE WITH VECTREN TO DETERMINE AVAILABLE POWER, METER SIZE AND INCOMING WIRE SIZING.
  3. WIRING BETWEEN CONTROL PANEL AND ACTUATOR SHALL BE INSTALLED IN (2) 1" GRC OR SCH. 80 #1 - 120 VAC WIRING, #2 - 24VDC WIRING
  4. WIRE TYPE SHALL BE THHN AND SHALL BE SIZED AS FOLLOWS:  
0-200 FT. - #14 GAUGE  
201-400 FT. - #12 GAUGE
  5. ENCLOSURE TO HAVE (2) PADLOCKING HASPS
  6. THE LOCATION OF THE PANEL WILL DETERMINE THE TYPE OF ANTENNA TO BE INSTALLED. CONTACT PROVIDER FOR A SITE VISIT

CONTROL TERMINAL DETAIL



ACTUATOR TERMINALS

VOLTAGE: 120 VAC	PHASE: 1 Ø	HERTZ: 60 HZ.	TOTAL F.L.A.: 10 FLA	ENCLOSURE TYPE: NEMA 4X	REV.	DESCRIPTION			
LARGEST MOTOR; HP: N/A HP	F.L.A.: N/A FLA	SHORT CIRCUIT CURRENT: 5 kA RMS		SYMMETRICAL, 120 V MAX.		CONTROL PANEL CONSTRUCTION AND INSTALLATION			
<div>ALTEK INC.</div> <div>P.O. BOX 262 1603 EAST BROADWAY PRINCETON, IN 47670 (812) 385-2561</div>						EVANSVILLE WATER AND SEWER UTILITY GREEN INFRASTRUCTURE PROJECT CONTROLLER FOR 1 VALVE	DRWN.	DATE	SHEET 1 OF 4
							KGK	9/15/2019	DRWG. NO.
							JOB#	C1910166	DC1910166E01

EVANSVILLE WATER AND SEWER UTILITY  
GREEN INFRASTRUCTURE PROJECT  
CONTROLLER FOR 1 VALVE





VOLTAGE: 120 VAC	PHASE: 1 Ø	HERTZ: 60 HZ.	TOTAL F.L.A.: 10 FLA	ENCLOSURE TYPE: NEMA 4X	REV.	DESCRIPTION		
LARGEST MOTOR; HP: N/A HP F.L.A.: N/A FLA				SHORT CIRCUIT CURRENT: 5 kA RMS		ANALOG I/O, RADIO AND TELEMETRY		
<p style="text-align: center;"><b>ALTEK INC.</b></p> <p style="text-align: center;">P.O. BOX 262 1603 EAST BROADWAY PRINCETON, IN 47670 (812) 385-2561</p>					EVANSVILLE WATER AND SEWER UTILITY GREEN INFRASTRUCTURE PROJECT CONTROLLER FOR 1 VALVE	DRWN.	DATE	SHEET 3 OF 4
						KGK	9/15/2019	DRWG. NO.  DC1910166E03
						JOB#	C1910166	

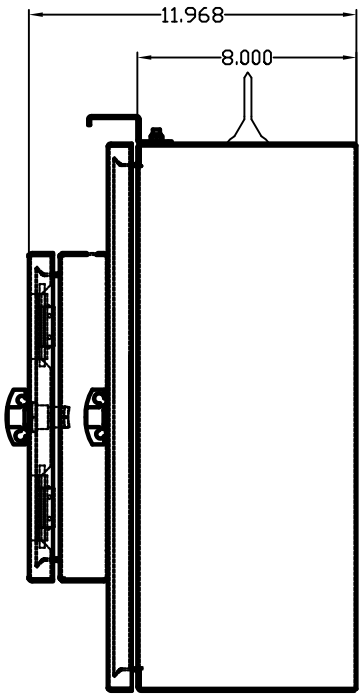
BILL OF MATERIAL				
ITEM	QTY	PART NO.	DESCRIPTION	MANUFACTURER
1	1	ESSS-20208	NEMA 4X ENCLOSURE 20"x20"x8" W/RAIN SHIELD	SCHAEFFER'S
2	1	ES-P2020	PAINTED CARBON STEEL SUB PANEL	SCHAEFFER'S
3	1	SPHWKSS-1420	14"x20" STAINLESS STEEL WINDOW KIT/SOLID FRONT	SCHAEFFER'S
4	1	DO-06DR-D	PLC (12-24VDC IN, RELAY OUT)	AUTOMATION DIRECT
5	1	HO-ECOM100	ETHERNET MODULE	AUTOMATION DIRECT
6	1	FO-4AD2DA-1	ANALOG COMBINATION MODULE, 4-20 ma In, 4-20 ma Out	AUTOMATION DIRECT
7	3	57.904.6555.0	MINIATURE FUSE BLOCK	WEILAND
8	3	MDL 5	5 AMP FUSE, TIME DELAY	BUSSMAN
9	1	TMP	TIME DELAY RELAY	LOVATO
10	1	P1X 18 10	CIRCUIT BREAKER PAD LOCKING HASP	LOVATO
11	1	P1 MB 1P B10	CIRCUIT BREAKER, 10 AMP	LOVATO
12	8	25.522.8533.0	TERMINAL BLOCK END CLAMP	WEILAND
13	14	58.506.0055.0	TERMINAL BLOCK	WEILAND
14	2	07.313.2555.0	TERMINAL BLOCK END PLATE	WEILAND
15	2	57.504.5055.0	GROUNDING TERMINAL BLOCK	WEILAND
16	1		DUPLEX RECEPTACLE, 15 AMP	GENERIC COMPONENT
17	1		2"X 4" HANDY BOX	GENERIC COMPONENT
18	1		METAL DUPLEX RECEPTACLE COVER	GENERIC COMPONENT
19	1	9001 KP1LRR31	RED LED PILOT LIGHT, 120VAC	SQUARE D
20	2	9001 KP35LGG31	GREEN LED PILOT LIGHT, 24VDC	SQUARE D
21	1	9001 KS46B	3 POSITION SELECTOR SWITCH	SQUARE D
22	2	9001 KA1	CONTACT BLOCK, 1 N.O.-1 N.C.	SQUARE D
23	REQD.	G1X3WH6	1"X 3" WIREWAY	PANDUIT
24	REQD.	C1WH6	1" WIREWAY COVER	PANDUIT
25	1	SCE-N3RFA44	NEMA 3R ENCLOSURE FAN	SAGINAW
26	1	SCE-N3RFGA44	NEMA 3R ENCLOSURE EXHAUST GRILL	SAGINAW
27	1	SCE-TSH25	ENCLOSURE HEATER	SAGINAW
28	1	SCE-TEMD	THERMOSTAT	SAGINAW
29	1	9001 KA3	CONTACT BLOCK, 1 N.C.	SQUARE D
30	1	MXNTL4ENW52NNS1F5DUNN	MDS ORBIT UHF RADIO FSK MODEM	GE
* 31	1	BMOY 4405	HEAVY DUTY UHF YAGI ANTENNA	JS
* 32	REQD.	LMR 400U	LOW LOSS COAX WITH CONNECTORS	JS
* 33	1	IS-50NX-C2	LIGHTNING ARRESTOR	JS
* 34	1	JS-WXP	WEATHERPROOFING KITS FOR ANTENNAS	JS
33	1	PSL 124024	POWER SUPPLY, 24 VDC, 10 AMP	LOVATO

\* SEE NOTE 6 ON SHEET E01

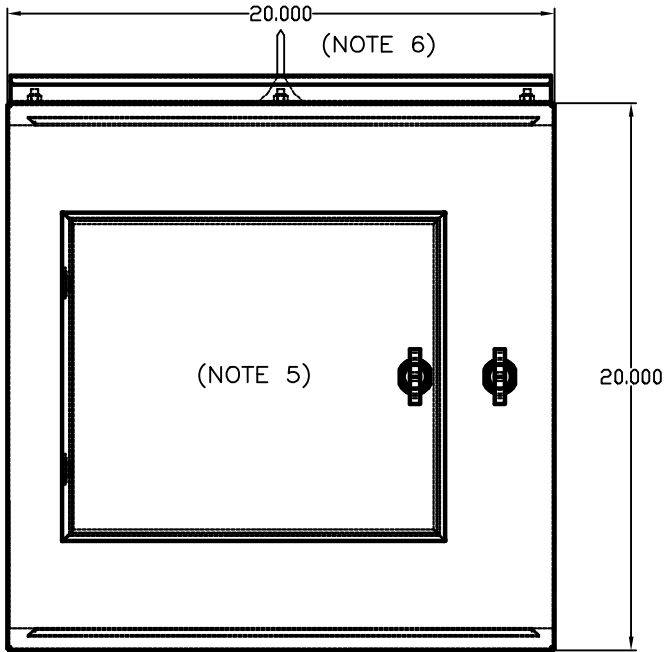
CITY OF EVANSVILLE IN.  
WATER AND SEWER UTILITY  
CONTROLS FOR GREEN INFRASTRUCTURE SYSTEMS  
WITH GE MDS RADIO  
FOR THE CONTROL OF 2 VALVES

DRAWING NO.	DESCRIPTION
E00	TITLE PAGE
E01	CONTROL PANEL CONSTRUCTION AND INSTALLATION
E02	MAIN POWER AND CONTROL POWER SCHEMATIC
E03	ANALOG I/O, TELEMETRY AND RADIO
E04	BILL OF MATERIAL

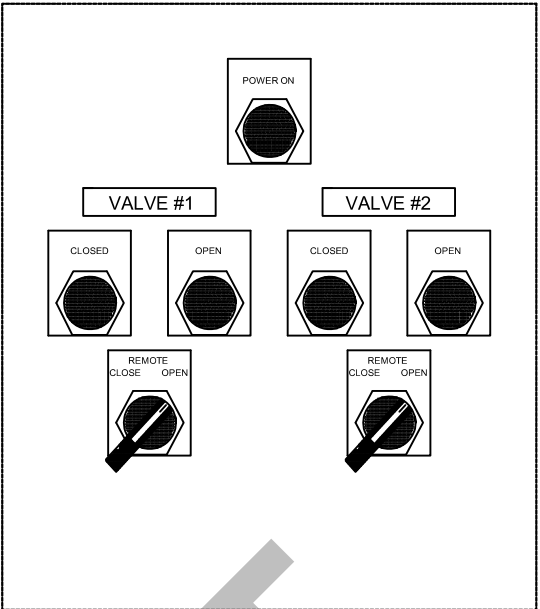
VOLTAGE: 120 VAC	PHASE: 1 Ø	HERTZ: 60 HZ.	TOTAL F.L.A.: 10 FLA	ENCLOSURE TYPE: NEMA 4X	REV.	DESCRIPTION		
LARGEST MOTOR; HP: N/A HP	F.L.A.: N/A FLA	SHORT CIRCUIT CURRENT: 5 kA RMS		SYMMETRICAL, 120 V MAX.		DRAWING INDEX		
<div>ALTEK INC.</div> <div>P.O BOX 262 1603 EAST BROADWAY PRINCETON, IN 47670 (812) 385-2561</div>					EVANSVILLE WATER AND SEWER UTILITY GREEN INFRASTRUCTURE PROJECT CONTROLLER FOR 2 VALVES	DRWN.	DATE	SHEET 0 OF 4
						KGK	9/15/2019	DRWG. NO. DC1910166E00
						JOB#	C1910166	



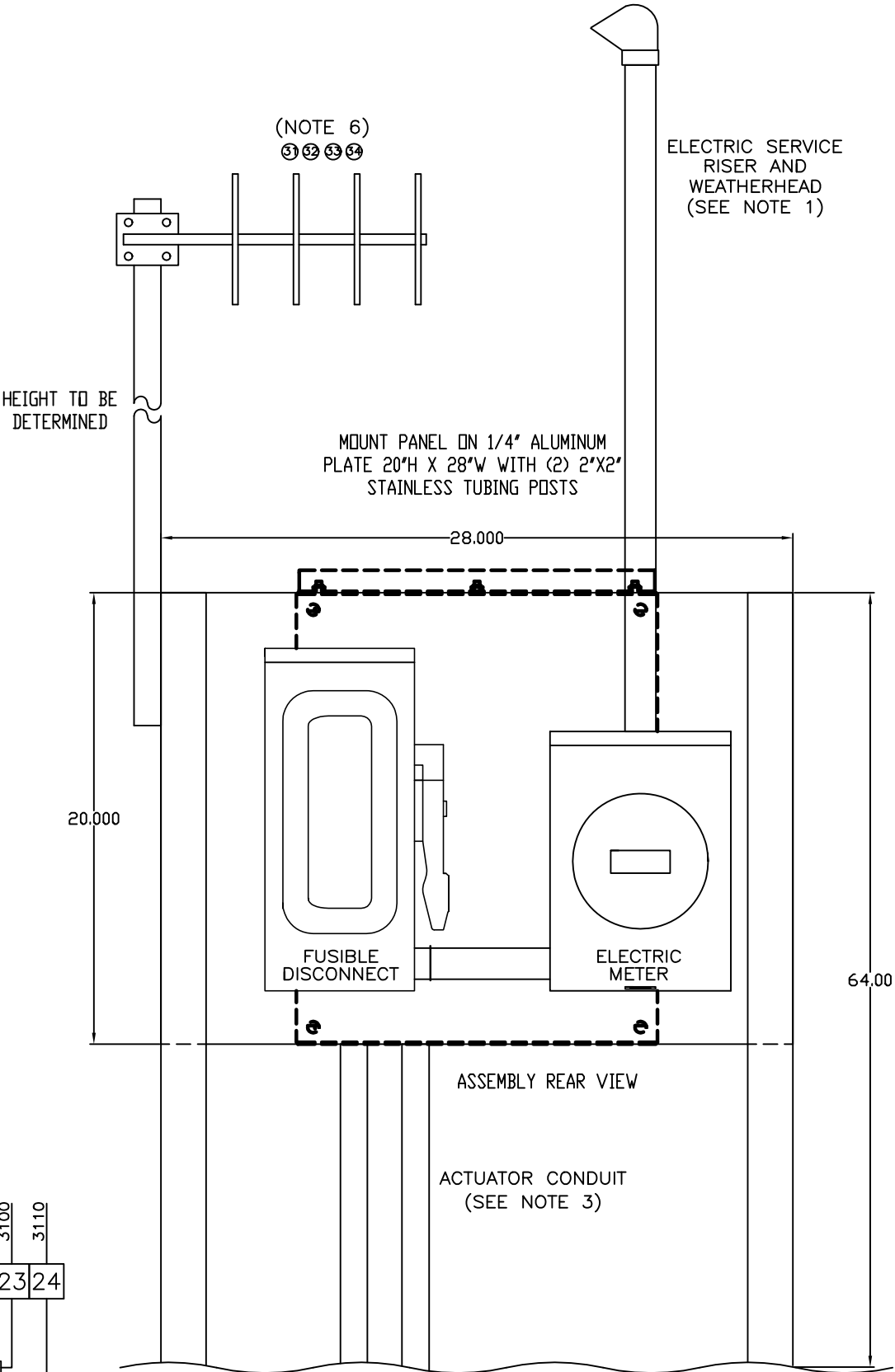
CONTROL PANEL SIDE VIEW



CONTROL PANEL FRONT VIEW

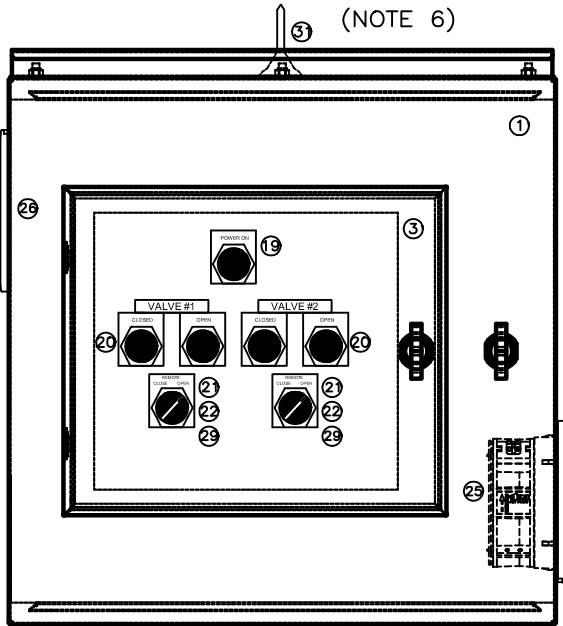


CONTROL DOOR INTERIOR DETAIL

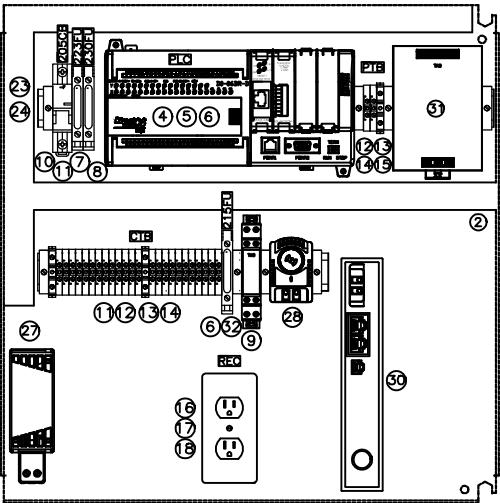


ASSEMBLY REAR VIEW

ACTUATOR CONDUIT  
(SEE NOTE 3)



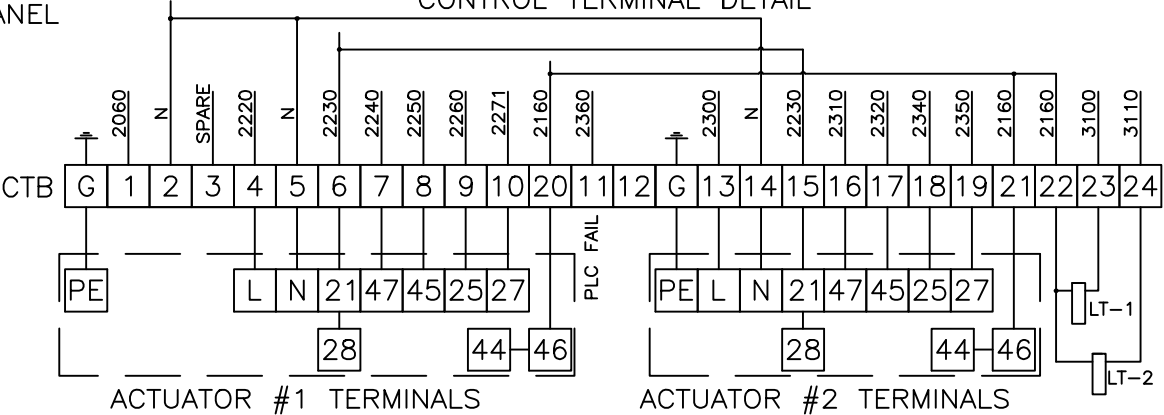
CONTROL DOOR INTERIOR



INTERIOR SUB PANEL

- NOTES
1. COORDINATE WITH VECTREN TO DETERMINE WHETHER SERVICE IS TO BE OVERHEAD OR UNDERGROUND.
  2. COORDINATE WITH VECTREN TO DETERMINE AVAILABLE POWER, METER SIZE AND INCOMING WIRE SIZING.
  3. WIRING BETWEEN CONTROL PANEL AND ACTUATOR SHALL BE INSTALLED IN (2) 1" GRC OR SCH. 80 #1 - 120 VAC WIRING, #2 - 24VDC WIRING
  4. WIRE TYPE SHALL BE THHN AND SHALL BE SIZED AS FOLLOWS:  
0-200 FT. - #14 GAUGE  
201-400 FT. - #12 GAUGE
  5. ENCLOSURE TO HAVE (2) PADLOCKING HASPS
  6. THE LOCATION OF THE PANEL WILL DETERMINE THE TYPE OF ANTENNA TO BE INSTALLED. CONTACT PROVIDER FOR A SITE VISIT

CONTROL TERMINAL DETAIL




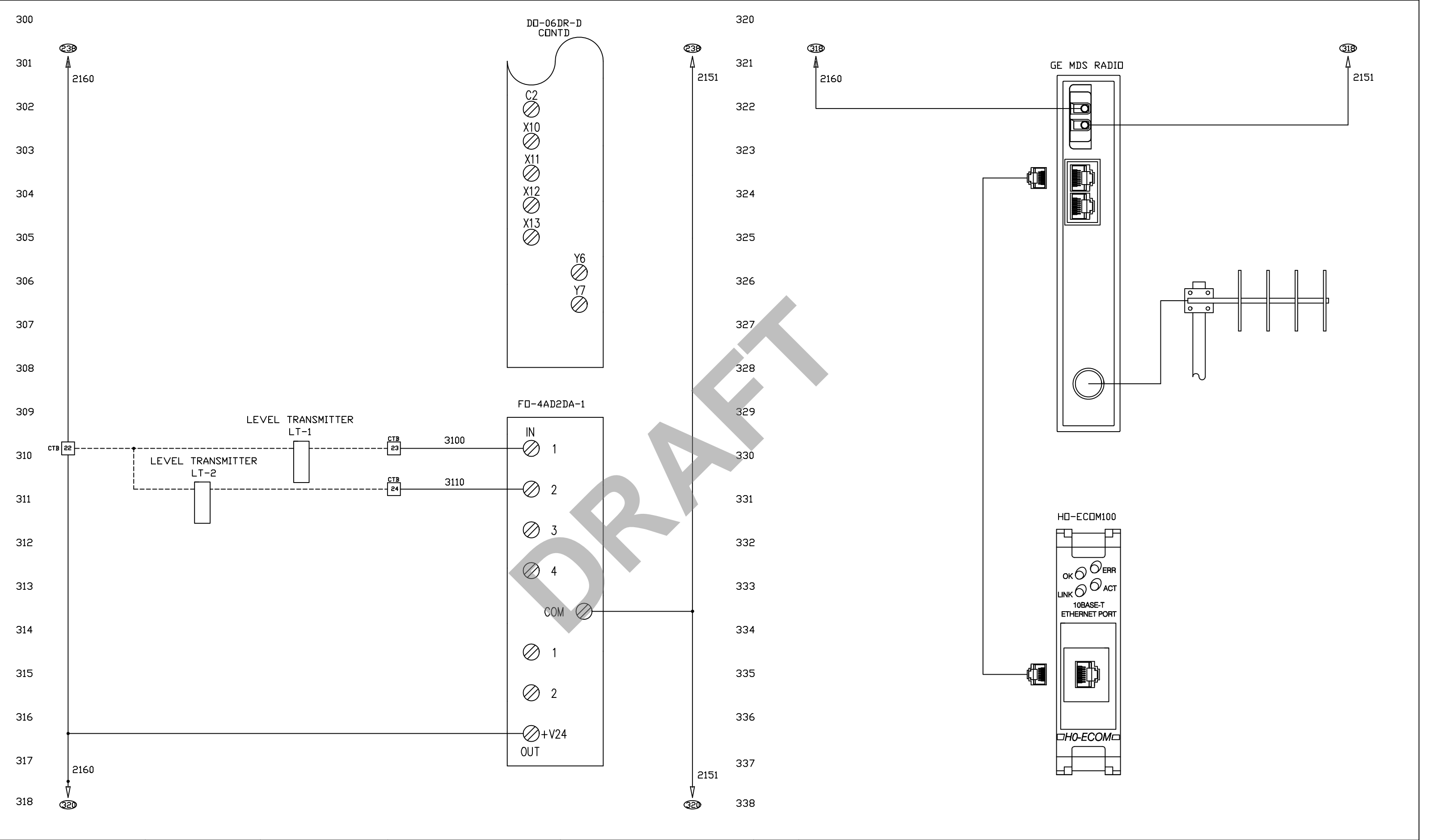
ACTUATOR #1 TERMINALS

ACTUATOR #2 TERMINALS

VOLTAGE: 120 VAC	PHASE: 1 Ø	HERTZ: 60 HZ.	TOTAL F.L.A.: 10 FLA	ENCLOSURE TYPE: NEMA 4X	REV.	DESCRIPTION			
LARGEST MOTOR; HP: N/A HP	F.L.A.: N/A FLA	SHORT CIRCUIT CURRENT: 5 kA RMS		SYMMETRICAL, 120 V MAX.		CONTROL PANEL CONSTRUCTION AND INSTALLATION			
<div>ALTEK INC.</div> <div>P.O. BOX 262 1603 EAST BROADWAY PRINCETON, IN 47670 (812) 385-2561</div>						EVANSVILLE WATER AND SEWER UTILITY GREEN INFRASTRUCTURE PROJECT CONTROLLER FOR 2 VALVES	DRWN.	DATE	SHEET 1 OF 4
							KGK	9/15/2019	DRWG. NO. DC1910166E01
							JOB#	C1910166	

EVANSVILLE WATER AND SEWER UTILITY  
GREEN INFRASTRUCTURE PROJECT  
CONTROLLER FOR 2 VALVES

VOLTAGE: 120 VAC	PHASE: 1 Ø	HERTZ: 60 HZ.	TOTAL F.L.A.: 10 FLA	ENCLOSURE TYPE: NEMA 4X	REV.	DESCRIPTION		
LARGEST MOTOR, HP: N/A HP		F.L.A.: N/A FLA	SHORT CIRCUIT CURRENT: 5 kA RMS	SYMMETRICAL, 120 V MAX.		MAIN POWER AND CONTROL POWER SCHEMATIC		
<div style="text-align: center;">  <p><b>ALTEK INC.</b></p> <p>P.O. BOX 262 1603 EAST BROADWAY PRINCETON, IN 47670 (812) 385-2561</p> </div>					EVANSVILLE WATER AND SEWER UTILITY GREEN INFRASTRUCTURE PROJECT CONTROLLER FOR 2 VALVES	DRWN.	DATE	SHEET 2 OF 4
						KGK	9/15/2019	DRWG. NO.
						JOB#	C1910166	DC1910166E02



VOLTAGE: 120 VAC		PHASE: 1 Ø		HERTZ: 60 HZ.		TOTAL F.L.A.: 10 FLA		ENCLOSURE TYPE: NEMA 4X		REV.	DESCRIPTION				
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<div>ALTEK INC.</div> <div>P.O BOX 262 1603 EAST BROADWAY PRINCETON, IN 47670 (812) 385-2561</div>									EVANSVILLE WATER AND SEWER UTILITY GREEN INFRASTRUCTURE PROJECT CONTROLLER FOR 2 VALVES		DRWN.	DATE		SHEET 3 OF 4	
											KGK	9/15/2019		DRWG. NO.  DC1910166E03	
											JOB#	C1910166			

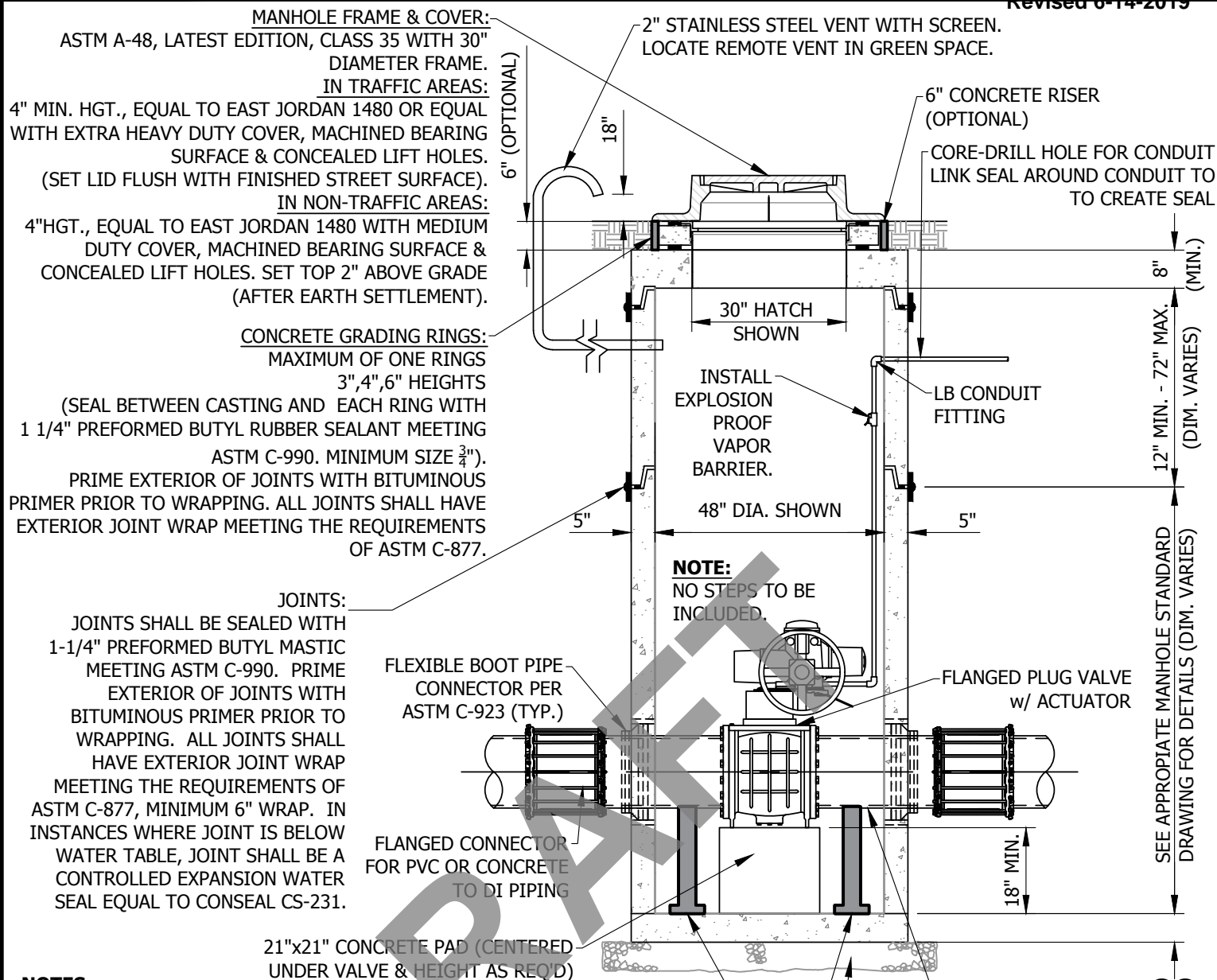
BILL OF MATERIAL				
ITEM	QTY	PART NO.	DESCRIPTION	MANUFACTURER
1	1	ESSS-20208	NEMA 4X ENCLOSURE 20"x20"x8" W/RAIN SHIELD	SCHAEFFER'S
2	1	ES-P2020	PAINTED CARBON STEEL SUB PANEL	SCHAEFFER'S
3	1	SPHWKSS-1420	14"x20" STAINLESS STEEL WINDOW KIT/SOLID FRONT	SCHAEFFER'S
4	1	DO-06DR-D	PLC (12-24VDC IN, RELAY OUT)	AUTOMATION DIRECT
5	1	HO-ECOM100	ETHERNET MODULE	AUTOMATION DIRECT
6	1	FO-4AD2DA-1	ANALOG COMBINATION MODULE, 4-20 ma In, 4-20 ma Out	AUTOMATION DIRECT
7	4	57.904.6555.0	MINIATURE FUSE BLOCK	WEILAND
8	3	MDL 5	5 AMP FUSE, TIME DELAY	BUSSMAN
9	1	TMP	TIME DELAY RELAY	LOVATO
10	1	P1X 18 10	CIRCUIT BREAKER PAD LOCKING HASP	LOVATO
11	1	P1 MB 1P B10	CIRCUIT BREAKER, 10 AMP	LOVATO
12	8	25.522.8533.0	TERMINAL BLOCK END CLAMP	WEILAND
13	24	58.506.0055.0	TERMINAL BLOCK	WEILAND
14	2	07.313.2555.0	TERMINAL BLOCK END PLATE	WEILAND
15	2	57.504.5055.0	GROUNDING TERMINAL BLOCK	WEILAND
16	1		DUPLEX RECEPTACLE, 15 AMP	GENERIC COMPONENT
17	1		2"X 4" HANDY BOX	GENERIC COMPONENT
18	1		METAL DUPLEX RECEPTACLE COVER	GENERIC COMPONENT
19	1	9001 KP1LRR31	RED LED PILOT LIGHT, 120VAC	SQUARE D
20	4	9001 KP35LGG31	GREEN LED PILOT LIGHT, 24VDC	SQUARE D
21	2	9001 KS46B	3 POSITION SELECTOR SWITCH	SQUARE D
22	4	9001 KA1	CONTACT BLOCK, 1 N.O.-1 N.C.	SQUARE D
23	REQD.	G1X3WH6	1"X 3" WIREWAY	PANDUIT
24	REQD.	C1WH6	1" WIREWAY COVER	PANDUIT
25	1	SCE-N3RFA44	NEMA 3R ENCLOSURE FAN	SAGINAW
26	1	SCE-N3RFGA44	NEMA 3R ENCLOSURE EXHAUST GRILL	SAGINAW
27	1	SCE-TSH25	ENCLOSURE HEATER	SAGINAW
28	1	SCE-TEMD	THERMOSTAT	SAGINAW
29	1	9001 KA3	CONTACT BLOCK, 1 N.C.	SQUARE D
30	1	MXNTL4ENW52NNS1F5DUNN	MDS ORBIT UHF RADIO FSK MODEM	GE
* 31	1	BMOY 4405	HEAVY DUTY UHF YAGI ANTENNA	JS
* 32	REQD.	LMR 400U	LOW LOSS COAX WITH CONNECTORS	JS
* 33	1	IS-50NX-C2	LIGHTNING ARRESTOR	JS
* 34	1	JS-WXP	WEATHERPROOFING KITS FOR ANTENNAS	JS
33	1	PSL 124024	POWER SUPPLY, 24 VDC, 10 AMP	LOVATO

\* SEE NOTE 6 ON SHEET E01

# Attachment 6

DRAFT



ENGINEER  
STAMP

## G.I. CONTROL VALVE w/ ACTUATOR

Approved: \_\_\_/\_\_\_/\_\_\_

Adopted: \_\_\_/\_\_\_/\_\_\_

Figure

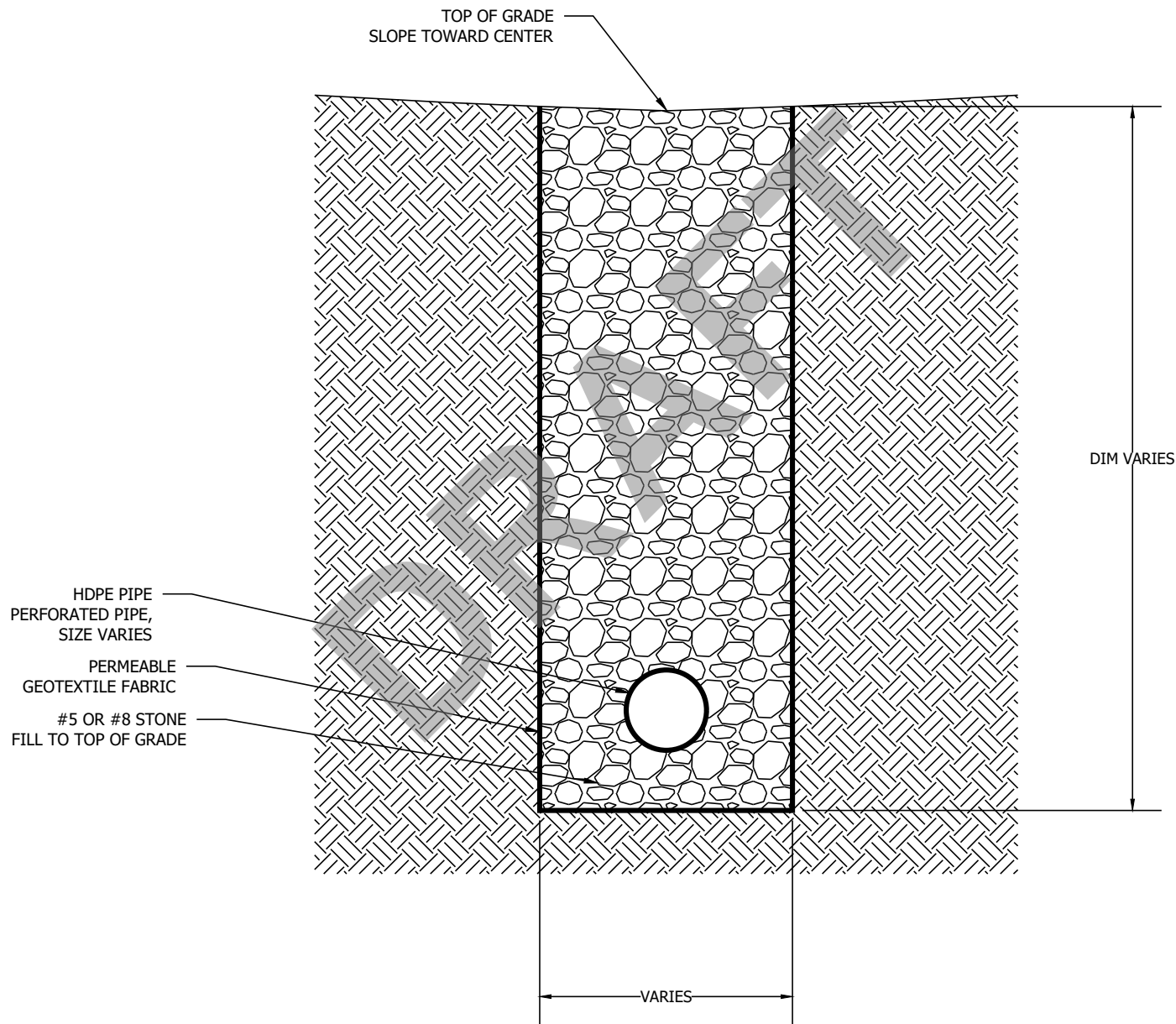
Approved By: \_\_\_\_\_

Scale: N.T.S.

GI-001

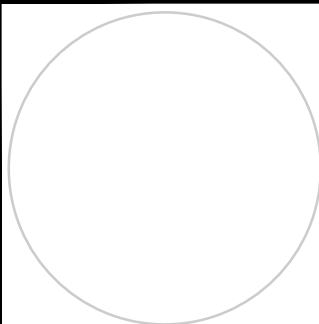
# Attachment 7

DRAFT



**NOTE:**

1. PERMAEABLE GEOTEXTILE FABRIC SHALL BE INSTALLED ON BOTH SIDES OF THE TRENCH.



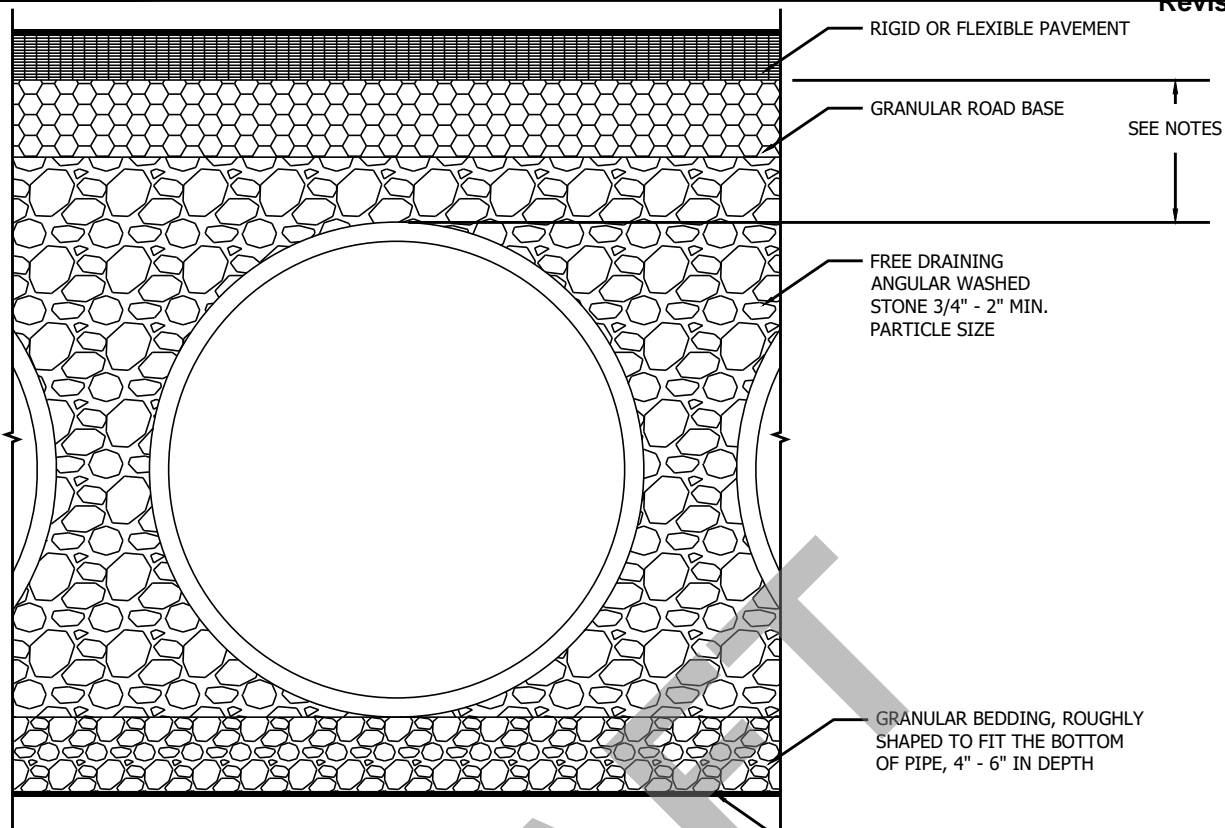
# INFILTRATION TRENCH DETAIL

Approved: \_\_\_/\_\_\_/\_\_\_

Adopted: 

Approved By:

Scale: N.T.S.

**FOUNDATION/BEDDING PREPARATION**

PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE 4 INCHES OF WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

**BACKFILL**

THE BACKFILL MATERIAL SHALL BE FREE-DRAINING ANGULAR WASHED STONE 3/4: - 2" PARTICLE SIZE. MATERIAL SHALL BE PLACED IN 8-10" MAXIMUM LIFTS. MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR-TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS COMPACTION IS CONSIDERED ADEQUATE WHEN NO OTHER MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE PROJECT ENGINEER OR HIS REPRESENTATIVE IS SATISFIED WITH THE LEVEL OF COMPACTION. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY PIPE IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE PIPE. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT, AND MAINTAINING BALANCED LOADING ON ALL PIPES IN THE SYSTEM, DURING ALL OPERATIONS.

OTHER ALTERNATIVE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON THE SITE SPECIFIC CONDITIONS. REFER TO TYPICAL BACKFILL DETAIL FOR MATERIAL REQUIRED.

NON GEOTEXTILE RQ'D FOR INFILTRATION PROJECTS. WOVEN GEOTEXTILE RQ'D FOR STORAGE ONLY

**NOTES:**

1. 12" MIN. FOR DIAMETERS THROUGH 96"
2. 18" MIN. FOR DIAMETERS FROM 102" AND LARGER MEASURED TO TOP OF RIGID OR BOTTOM OF FLEXIBLE PAVEMENT.



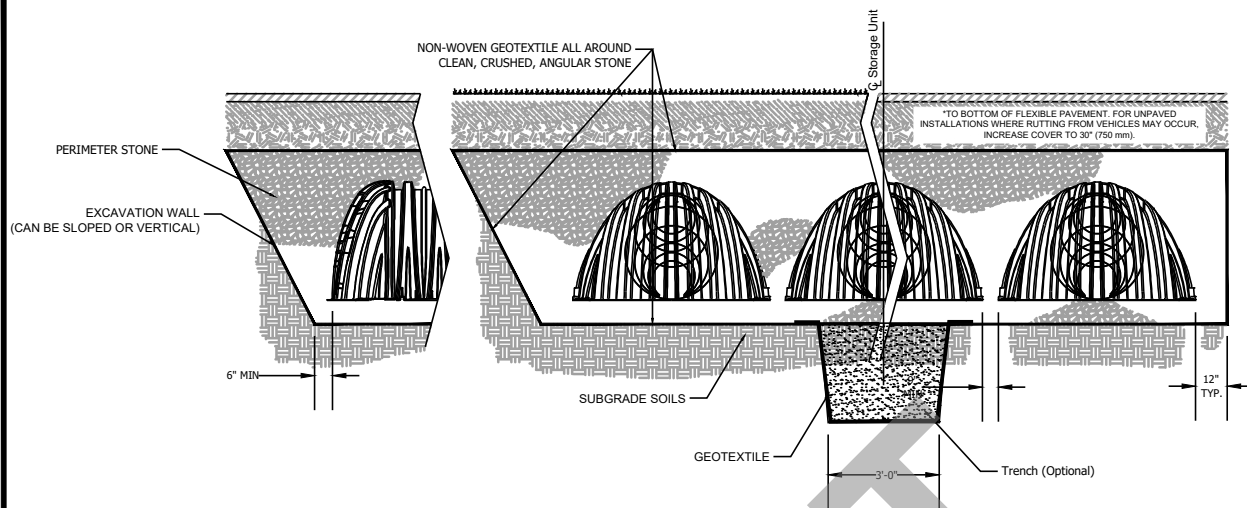
## INFILTRATION/STORAGE BASIN

Approved: \_\_\_/\_\_\_/\_\_\_

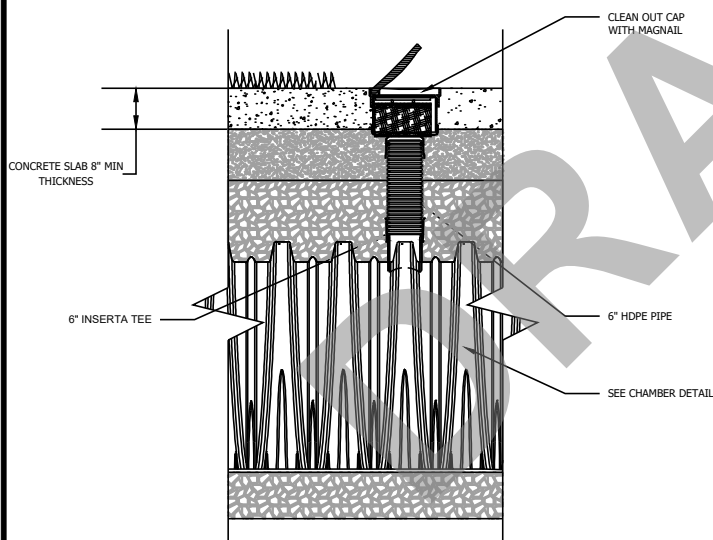
Adopted: \_\_\_/\_\_\_/\_\_\_

Approved By: \_\_\_\_\_

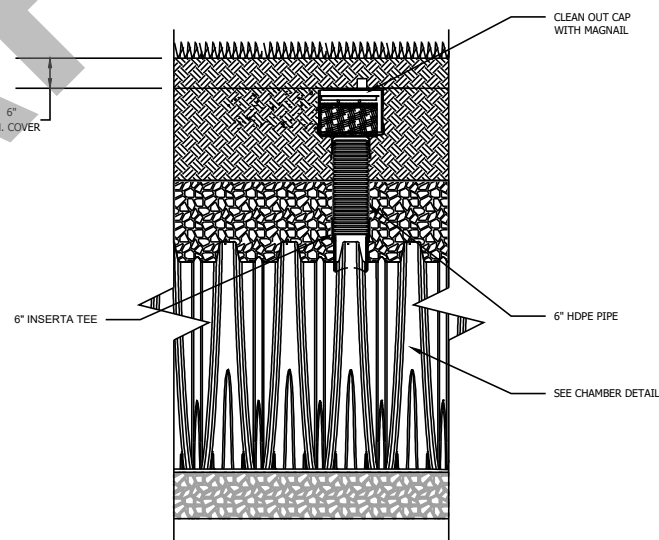
Scale: N.T.S.



**CHAMBER DETAIL**



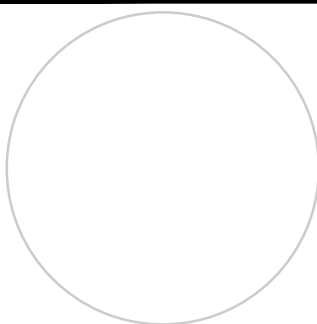
**INSPECTION PORT IN PAVEMENT  
OR ON ISOLATION ROW**



**INSPECTION PORT IN VEGETATION  
(NOT ON ISOLATION ROW)**

**NOTES:**

1. CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD SPECIFICATION FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. ALL STONE INSIDE LINER SHALL BE CLEAN, CRUSHED ANGULAR STONE.
4. ANY SYSTEM ON PLANS SHOWING DEPTH EXCEEDING MAX ALLOWABLE OR OTHER CONDITIONS THAT MIGHT NOT ALLOW THE UNIT TO PERFORM ADEQUATELY SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO INSTALLING THE PRODUCT



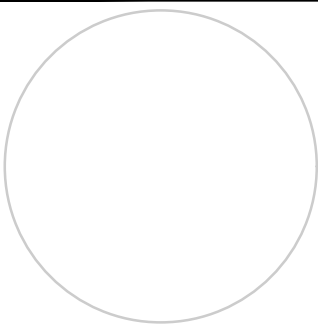
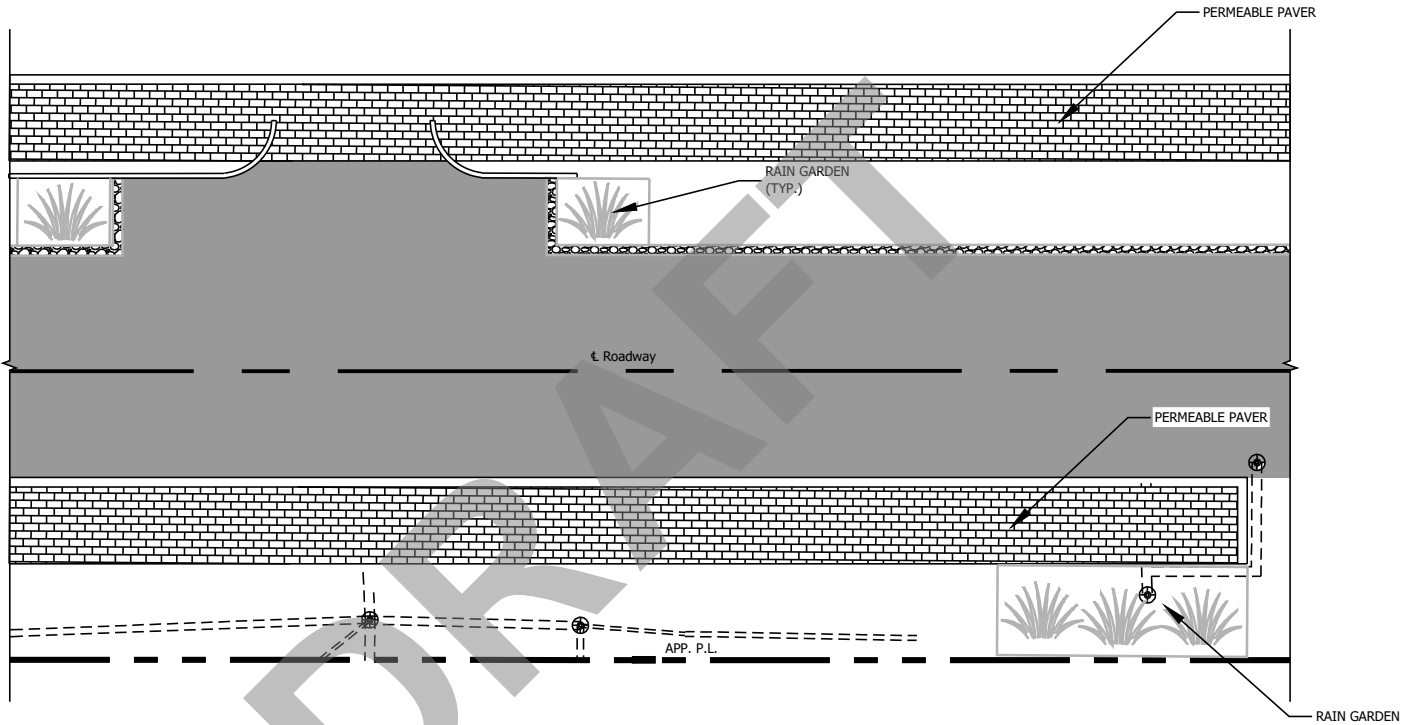
**CHAMBER DETAIL**

Approved:     /    /    

Approved By:

Adopted:     /    /    

Scale: N.T.S.



## Complete Street Detail

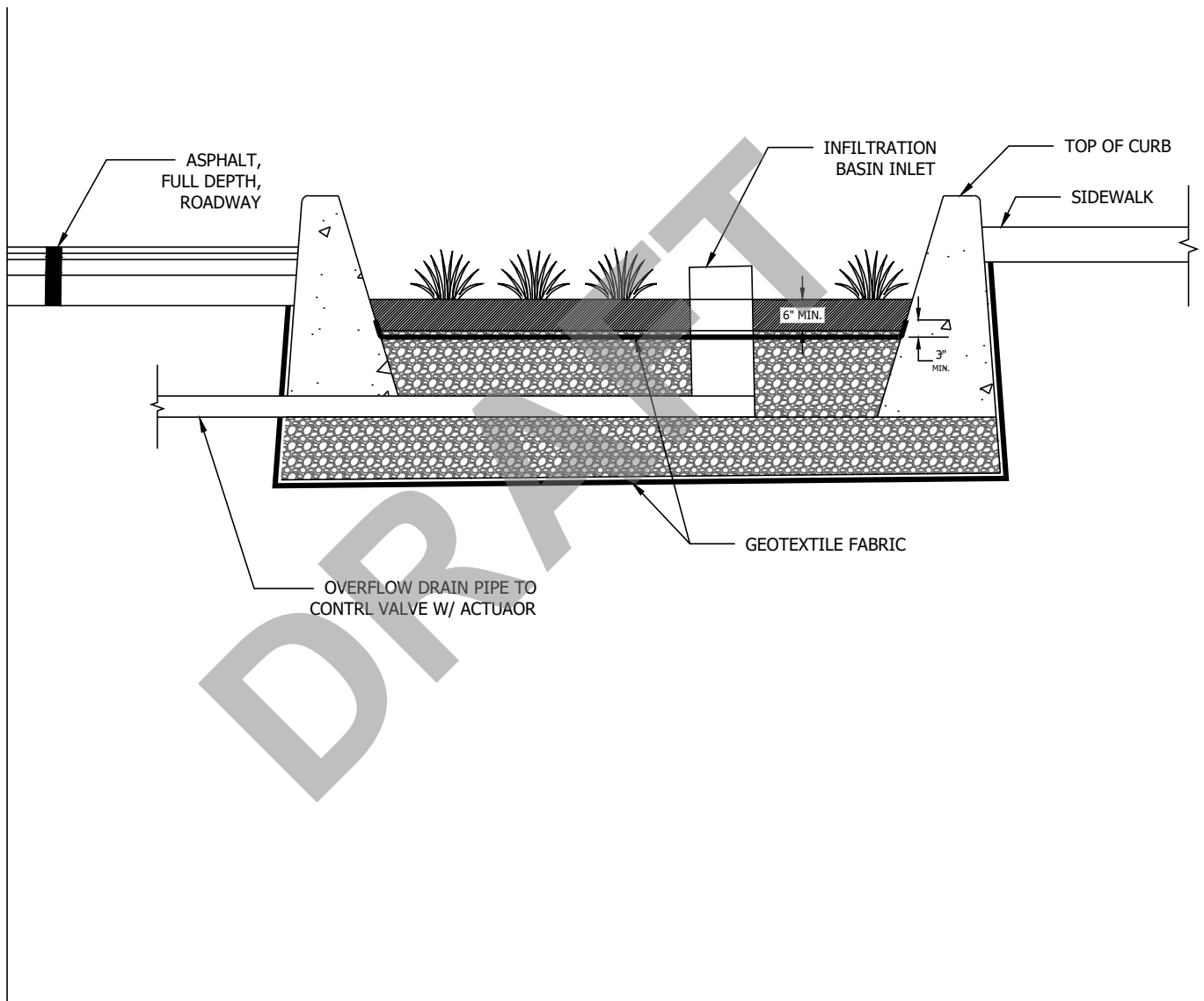
Approved: \_\_\_/\_\_\_/\_\_\_

Adopted: 

Approved By:

Scale: N.T.S.





## RAIN GARDEN DETAIL

Approved: \_\_\_/\_\_\_/\_\_\_

Adopted:  \_\_\_

Approved By: \_\_\_\_\_

Scale: N.T.S.



# Attachment 8

DRAFT

**WATER & SEWER  
UTILITY EASEMENT  
(PERMANENT)**

Deed Record:

Owner:

**THIS INDENTURE WITNESSETH**, that [Click or tap here to enter text.](#), an Indiana limited partnership (“Grantor”), having an address at [Click or tap here to enter text.](#) for and in consideration of the sum of one dollar, and other valuable consideration, the receipt of which is hereby acknowledged, DOES HEREBY GRANT AND CONVEY unto THE CITY OF EVANSVILLE, INDIANA WATER AND SEWER UTILITY DEPARTMENT (“Grantee”), whose principal place of business is 1 N.W. Martin Luther King Jr. Boulevard, Evansville, Indiana 47708, its successors, assigns and lessees, a permanent water and sewer utility easement and right-of-way over the Permanent Easement Real Estate described herein, for the purpose of granting and facilitating the right to lay, construct, inspect, maintain, operate, repair, alter, relocate, enlarge, rebuild and remove one or more pipelines, transmission media, and all appurtenant and necessary structures including stormwater detention vaults (the “Facilities”), all below the surface, as are convenient or necessary to transport and otherwise handle water and sewage, and perform and facilitate such utility services over, along, across, within and upon the Permanent Easement Real Estate, together with the right of ingress and egress over the existing roads and entrances to the lands of Grantor to and from said Permanent Easement Real Estate in the exercise of the rights herein granted; provided that in the exercise of such rights, the Grantee will, whenever practicable to do so, use regularly established highways or roadways.

The real estate of Grantor upon, over and across which said easement and right-of-way shall be laid out and located, is situated as part of Grantor’s real estate located at [Click or tap here to enter text.](#), and is more particularly described in the attached **Exhibit “A”** (the “Permanent Easement Real Estate”) and depicted upon the Right of Way Parcel Plat attached hereto as **Exhibit “B”**, which depicts the Permanent Easement Real Estate and the real estate over which it runs (the “Real Estate”), both of which exhibits are made a part hereof.

Grantor, for the same consideration, further grants to the Grantee the right to trim or remove any trees, brush, undergrowth or other obstructions from said Permanent Easement Real Estate, if necessary, in the exercise of the rights and privileges herein granted, but only to the extent the same materially interfere with the exercise of such rights. The Grantee shall repair, replace, or reimburse the Grantor for the current value of all improvements and plantings (including without limitation, all trees and bushes) damaged or removed as a result of exercising said easement rights, shall otherwise restore Grantor’s property to substantially the same condition as existed prior to the exercise of Grantee’s rights herein, shall maintain, repair, and replace the Facilities as necessary to keep the Facilities in good and fully-functional condition at Grantee’s sole expense, and shall exercise all rights granted herein, in a clean and workmanlike manner; in accordance with all applicable laws, rules, regulations, and reasonable requests of Grantor. No reimbursements shall be granted unless otherwise approved by the EWSU. Grantee shall, in exercising its rights, minimize to the greatest extent practicable the duration and degree of any interference with Grantor’s use and enjoyment of the Permanent Easement Real Estate. Grantee shall indemnify, defend, and hold harmless Grantor and its owners, officers, employees, contractors, licensees, tenants, successors, and assigns from and against any and all claims, actions, damages, liability, and expense in connection with loss, damage, or injury to persons or property occurring in, on, or about the Real Estate arising out of: (a) a breach by Grantee of any covenant or other agreement set forth herein; (b) the direct or indirect exercise of Grantee’s rights herein; or (c) the conduct by or operations of Grantee or its agents, employees, contractors, licensees, tenants, successors, and assigns on or about the Real Estate and the Permanent Easement Real Estate.

Subject to the rights herein granted to the Grantee, the Grantor reserves the right to use and enjoy the Permanent Easement Real Estate, for all purposes that are not inconsistent with the rights granted to Grantee herein, but no buildings or structures, either of a permanent or temporary nature, shall be located or maintained over, on or within the Permanent Easement Real Estate, no improvements requiring excavating or grading shall be done over, on or within the Permanent Easement Real Estate which would reduce the coverage of soil over said Facilities or increase the coverage by more than three (3) feet, and no lake or pond shall be constructed within fifteen (15) feet of either side of the Permanent Easement Real Estate measured from the top edge of the bank of any such lake or pond, exclusive of any water detention areas or ponds to be constructed on the Real Estate by Grantor.

The covenants and agreements herein contained and set forth as pertains to this easement as granted herein shall for all purposes be construed and considered as covenants and agreements running with and in favor of the title to said Real Estate and running with the title to said Real Estate, and shall be binding upon the parties hereto and their respective successors and assigns. Grantor and Grantee acknowledge that the Real Estate and Permanent Easement Real Estate are private property and that nothing contained herein shall be deemed to be a gift or dedication of any portion of the Real Estate and Permanent Easement Real Estate to the general public or for any public use or purpose whatsoever, it being the intention of the parties hereto that the easement created herein be for the exclusive benefit of the Grantee.

In the event that a court or other tribunal of competent jurisdiction to be unenforceable shall hold any of the provisions of this instrument, such provision shall be enforced to the fullest extent permissible and the remaining portion of this instrument shall remain in full force and effect. This instrument represents a compromise between the parties and is a product of arms-length negotiations. The parties have read this instrument completely and have had the opportunity to seek the advice and assistance of competent legal counsel. In the event that ambiguity exists or is deemed to exist in any provisions of this instrument, said ambiguity is not to be construed by reference to any doctrine calling for such ambiguity to be construed against the drafter of this instrument. This instrument shall be governed by and construed in accordance with the laws of the State of Indiana, not including the choice of law rules thereof, and each party hereto, by execution of this instrument, consents to the exercise of jurisdiction over any matter arising in connection with this instrument in the Superior Court of Vanderburgh County, State of Indiana. As used in this instrument, the plural shall be substituted for the singular, and the singular for the plural, where appropriate; and words and pronouns of any gender shall include any other gender. THIS PROVISION, AND EACH AND EVERY OTHER PROVISION OF THIS INSTRUMENT MAY NOT UNDER ANY CIRCUMSTANCES BE MODIFIED, CHANGED, AMENDED OR PROVISIONS HEREUNDER WAIVED VERBALLY, BUT MAY ONLY BE MODIFIED, CHANGED, AMENDED OR WAIVED BY AN INSTRUMENT IN WRITING EXECUTED BY ALL PARTIES HERETO.

The above-described Permanent Easement Real Estate is a part of the Grantor's Real Estate as described in the Office of the Recorder of Vanderburgh County, Indiana.

*(Signature page follows)*

**IN WITNESS WHEREOF**, the parties have executed this Easement as of the Click or tap here to enter text.  
day of Click or tap here to enter text..

By: Click or tap here to enter text.

By: Click or tap here to enter text.

By: Click or tap here to enter text.

Name: Click or tap here to enter text.

Its: Click or tap here to enter text.

STATE OF INDIANA )  
 ) ss:  
COUNTY OF VANDERBURGH )

**BEFORE ME**, a Notary Public in and for said County and State, personally appeared the above named Click or tap here to enter text., by Click or tap here to enter text., its general partner by Click or tap here to enter text., its Managing Member by Click or tap here to enter text., who acknowledged that Click or tap here to enter text. did sign the foregoing instrument and that the same is the free act and deed of said limited liability company.

**IN TESTIMONY WHEREOF**, I have hereto set my hand and official seal this Click or tap here to enter text. day of Click or tap here to enter text. .

Notary Public – signature

Notary Public – printed name

My Commission Expires: Click or tap here to enter text.  
My County of Residence: Click or tap here to enter text.

**THIS INSTRUMENT** prepared by City of Evansville Water and Sewer Utility Department, with typed insertions by Click or tap here to enter text., for the City of Evansville Water and Sewer Utility Department.

I affirm, under the penalties for perjury, that I have taken reasonable care to redact each Social Security number in the document, unless required by law.

\_\_\_\_\_  
Click or tap here to enter text.

**RETURN TO:**

The Evansville Water and Sewer Utility  
1 N.W. Martin Luther King Jr. Blvd., Room 104  
Evansville, IN 47708

**EXHIBIT A**

**LEGAL DESCRIPTION OF THE PERMANENT EASEMENT REAL ESTATE**

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**EXHIBIT B**  
**RIGHT OF WAY PARCEL PLAT**

DRAFT

# Attachment 9

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## GRANT AGREEMENT

THIS GRANT AGREEMENT (this "Agreement") is made as of the \_\_<sup>th</sup> day of \_\_\_\_\_, 201\_\_, by and between the Evansville Water and Sewer Utility Board ("EWSU"), and \_\_\_\_\_, an Indiana corporation ("\_\_\_\_\_").

WHEREAS, \_\_\_\_\_, an Indiana limited partnership (the "Partnership"), is developing a \_\_\_\_\_ and certain functionally-related improvements located at \_\_\_\_\_, Evansville, Indiana (the "Project");

WHEREAS, \_\_\_\_\_ is a member of \_\_\_\_\_ an Indiana limited liability company, the sole general partner of the Partnership;

WHEREAS, EWSU approved a maximum grant of \$\_\_\_\_\_ to \_\_\_\_\_ for the storm water detention system for the Project under the EWSU Green Information Cost Participation Policy;

WHEREAS, EWSU has determined that funds are available for that purpose;

WHEREAS, EWSU desires to document the appropriation and the mechanics for disbursement of such appropriation, all in accordance with the terms and conditions of this Agreement;

NOW, THEREFORE, in consideration of the foregoing premises and the representations, warranties, covenants, and agreements contained herein, and intending to be legally bound hereby, EWSU and \_\_\_\_\_ hereby agree as follows:

1. **Grant of Funds.** Subject to the terms and conditions of this Agreement, EWSU has agreed to make a grant (the "Grant") to \_\_\_\_\_ in the aggregate amount not to exceed \_\_\_\_\_ Dollars (\$\_\_\_\_\_) such sum to be calculated based upon Participation calculated in accordance with Exhibit A as reasonably agreed by the parties by field testing after completion of the storm water detention system and performance testing verifies the performance of the storm water system, to be paid by EWSU after completion of the storm water detention system as set forth in the Cost Participation for Proposed \_\_\_\_\_ Facility prepared by \_\_\_\_\_ a copy of which is attached hereto as Exhibit A; provided, however, that EWSU may (but shall not be required or legally obligated to) prepay any amounts specified above at any time. EWSU shall disburse the Grant within thirty (30) days of receipt of the documentation required in subparagraphs 3(a), 3(b), and 3(c) below. If project is not complete, no payment is required to be paid. Upon performance testing, if the project does not meet design criteria, then only a partial payment will be made.

2. **Use of Funds.** The Grant is made for the construction of the Project as stated in this Agreement (the "Purpose"). Notwithstanding the foregoing, EWSU acknowledges that \_\_\_\_\_ will either loan the Grant to the Project or provide the Grant as a capital contribution through the general partner to the Partnership for use by the Partnership to pay for costs of the Project.



3. **Conditions to Funding and Reporting.** \_\_\_\_\_ shall provide written reports to EWSU, signed by an appropriate officer of \_\_\_\_\_, as follows:

- a) as a condition to EWSU's obligation to make the Grant, documentation of completion of the storm water detention system to EWSU, which documentation may take the form of photographs, EPS coordinates of key assets and testing locations, or a signed certification from \_\_\_\_\_.
- b) a permanent easement granted to EWSU for the maintenance of below grade components of the site storm water drainage components and storm water detention system;
- c) record drawings of the storm water detention system in both CAD and hard copies as created by the Contractor or a Professional Land Surveyor;

EWSU may, at its expense, monitor and conduct an evaluation of operations under this grant, which may include visits by representatives of EWSU to observe the Grantee's procedures, operations and utilization of grant funds for the Project and to discuss this grant with the \_\_\_\_\_'s personnel.

- a) **Accounting Requirements:** \_\_\_\_\_ shall maintain accounting records in accordance with generally accepted accounting principles with regard to grant work or activities. Such accounting systems shall, at a minimum, provide: (1) accurate, current, and complete disclosure of \_\_\_\_\_'s activity regarding the grant; (2) a separate accounting of the receipt and expenditure of grant funds; (3) effective control over and accountability for all grant funds, property, and other assets; (4) source documentation in support of all accounting records regarding the \_\_\_\_\_'s work or activities funded by the grant.
- b) **Reporting:** At the completion of the Project or at the EWSU's request, the Grantee shall furnish to EWSU written reports on both the progress of the Project and financial management of the Grant.

4. **Term and Termination.** This Agreement shall commence on the date first set forth above and shall remain in effect until the later of (i) each party has fulfilled its obligations hereunder, and (ii) December 31, 2020. Notwithstanding the foregoing, this Agreement may also be terminated (a) in writing upon the mutual approval of EWSU and \_\_\_\_\_ prior to the start of construction; (b) \_\_\_\_\_ commences proceedings to voluntarily dissolve; or (c) \_\_\_\_\_ files a voluntary petition in bankruptcy.

5. **Indemnity.** \_\_\_\_\_ agrees to indemnify, defend, save and hold harmless the City of Evansville and EWSU and their respective officials, agents and employees from any and all claims, losses, attorney fees, demands, costs or expenses, or lawsuits arising out of the Project and \_\_\_\_\_'s performance of its obligations under this Agreement. Notwithstanding anything contained herein to the contrary, \_\_\_\_\_'s liability under

this paragraph 5 shall not exceed the amounts paid to \_\_\_\_\_ under paragraph 1 hereof.

6. **Representation by** \_\_\_\_\_. \_\_\_\_\_ represents that it is a duly organized Indiana corporation in good standing with the Indiana Secretary of State with full legal power and authority to engage in the transactions contemplated herein.

7. **Representation by EWSU**. EWSU acknowledges that \_\_\_\_\_ will plan expenditures for the Project based on the terms of this Agreement. EWSU represents that it has legal authority to enter into this Agreement with full legal power and authority to engage in the transactions contemplated herein.

8. **Waiver**. The waiver by either party of or the failure of either party to claim a breach of any term or condition of this Agreement shall not be, or held to be, a waiver of any subsequent breach or affect in any way the further effectiveness of such provision.

9. **E-Verify Compliance**. Pursuant to I.C. 22-5-1.7, \_\_\_\_\_ shall enroll in and verify the work eligibility status of all newly hired employees of Grantee through the E-Verify Program ("Program"). \_\_\_\_\_ is not required to verify the work eligibility status of all newly hired employees through the Program if the Program no longer exists. Also, pursuant to I.C. 22-5-1.7, \_\_\_\_\_ must execute an affidavit affirming that \_\_\_\_\_ does not knowingly employ an unauthorized alien and confirming \_\_\_\_\_'s enrollment in the Program, unless the Program no longer exists, which Affidavit shall be filed with EWSU prior to the execution of this Agreement.

10. **Independent Contractor**. Nothing in this Agreement shall be construed to create an agency relationship between EWSU and \_\_\_\_\_ and \_\_\_\_\_ shall remain an independent contractor operating independently of the EWSU's authority, subject only to the obligations contained in this Agreement.

11. **Non-Discrimination**. During the term of this Agreement, \_\_\_\_\_ shall not discriminate against any person in any hiring or employment practices due to race, color, religion, national origin, sex, age or physical or mental disability that does not impede that person's ability to perform any work which may be required. Any violation of this provision as determined by a court of competent jurisdiction shall be deemed a material violation of this Agreement.

12. **Other Provisions**.

(a) This Agreement shall be governed in accordance with the laws of the State of Indiana in every respect. The federal and state courts of Vanderburgh County, Indiana shall be the exclusive venue for any litigation, special proceeding or other proceeding between the parties that may arise out of, or be brought in connection with or by reason of, this Agreement.

(b) Paragraph headings and numbers have been inserted for reference purposes only. If there should be any conflict between such headings or numbers and the text of this Agreement, the text shall control.

(c) This Agreement may be executed in one or more counterparts, each of which shall be considered an original, and all of which taken together shall be considered one and the same instrument.

(d) The parties hereby acknowledge and agree that it is their mutual intention that all of the parties' obligations set forth in this Agreement be legally binding and enforceable in accordance with their terms. This Agreement shall bind and benefit the parties, their legal representatives and their successors.

(e) The parties hereby acknowledge and agree that each of \_\_\_\_\_ (or its legally recognized successor) and EWSU (or its legally recognized successor) shall have standing to enforce the obligations set forth in this Agreement.

(f) Whenever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement or the application thereof to any party or circumstance shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the minimal extent of such provision or the remaining provisions of this Agreement or the application of such provision to other parties or circumstances.

(g) This Agreement contains all of the terms agreed upon by the parties with respect to the subject matter of this Agreement and supersedes all prior agreements, arrangements and communications between the parties concerning the subject matter, whether oral or written. This Agreement may be amended or modified in whole or in part by EWSU and \_\_\_\_\_ in writing at any time.

(h) In the event of any controversy, claim or dispute between the parties hereto, arising out of or relating to this Agreement, the prevailing party shall be entitled to recover from the non-prevailing party its reasonable expenses, including attorneys' fees and costs.

(i) All notices and other communications under this Agreement shall be in writing and shall be effective (i) upon personal delivery, (ii) overnight courier, receipt requested; or (iii) registered or certified mail, return receipt requested:

If to EWSU:

Evansville Water and Sewer Utility

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

With a copy to:

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If to \_\_\_\_\_:

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With a copy to:

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---

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And to:

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And to:

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Such addresses may be changed by notice to the other parties given in the same manner provided above. Any notice, demand or request sent pursuant to either clause (i) above shall be deemed received upon such personal service. Any notice, demand or request sent pursuant to clause (ii) above shall be deemed received on the business day immediately following deposit with the overnight courier, and any notice, demand or request sent pursuant to clause (iii) above shall be deemed received two business days following deposit in the mail.

IN WITNESS WHEREOF, EWSU and \_\_\_\_\_ have each executed this Agreement as of the day and year first written above.

EVANSVILLE WATER AND SEWER  
UTILITY BOARD

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Its: \_\_\_\_\_

\_\_\_\_\_  
By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Its: \_\_\_\_\_

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# Attachment 10

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# RECORD DRAWING REQUIREMENTS

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Drawings are required to be in the NAD83(2011) / InGCS Vanderburgh (ftUS) coordinate system. Drawings must be titled as record drawings and be dated. Record drawings in the form of PDF, DWG, and SHP formats are required. **Table 1** breaks down the required DWG/SHP layers for the record drawings.

*Table 1: Record Drawing CAD Layers*

Feature Name	feature description	Entity Type (line, point, polygon)
<b>GI_Main</b>		line
<b>GI_Structure</b>	The storage component of the GI project	polygon
<b>GI_Catch Basin</b>	Any catch basins connected	point
<b>GI_Filtration_Bed</b>		polygon
<b>GI_Valve_Overflow</b>		point
<b>GI_Manholes_Ports</b>		point
<b>GI_Drainage Areas</b>	The drainage area of the GI Project	polygon
<b>Panel</b>	Any electrical panel for the GI project	point
<b>Conduit</b>	Electrical conduit for GI Panel	line
<b>Pole</b>	Electrical pole that feeds the GI Panel	point
<b>Easements</b>		polygon/line

Changes to be included in Record Drawings may include, but is not limited to:

- Any system inverts that vary from the construction plans.
- Any rerouting requirements that may have occurred.
- If any part of the system was shifted outside of the easement, new easements will need to be established and included on the record drawings.

# Attachment 11

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## Green Infrastructure Layer Definitions for GIS

- **GI\_Inlets** – An inlet or catch basin that flows to a GI system.
- **GI\_System\_Valve** – A valve that is part of a GI system. Common examples include backflow preventers and actuated gate valves.
  - *Back flow* – Backflow preventer that is in-line and does not require manual opening and closing.
  - *Gate* – Gate valve that is either manual or actuated
- **GI\_Manhole** – Any manhole structure connected to a GI system. This includes drywells for the actuated valves as well as observation manholes.
  - *Valve Manhole* – Manhole that houses the valve for draining the system. This includes dry wells with actuated valves.
  - *Observation* – Manhole where GI overflow can be observed.
  - *Standard* – Manhole that is not used for observation or housing a valve. This manhole is typically a common point for intercepting pipes.
- **GI\_Panel** – Electrical Control Panel for the actuated valve.
- **GI\_Inspection\_Port** – Ports on the GI system for visually inspecting and/or flushing. These ports may be on-grade or buried 6-inches.
- **GI\_Site\_Piping** – All piping that connects to the GI system. This includes all piping from connected inlets, connection to the sewer, as well as underdrain piping within the system.
- **GI\_Structure** – Contains the footprint of the asset to be maintained.
  - *Surface* – GI asset that is primarily maintained above ground. Examples include rain gardens and permeable pavers.
  - *Underground* – GI asset that is primarily under ground. Assets include chamber systems and storage/infiltration.
- **GI\_Settling\_Features** – The ‘first contact’ point of a system that will collect the most grit and debris. Examples include isolation rows in chambers or a catch basin.
- **GI\_Drainage** – Individual drainage areas within a single project. Projects will have a unique drainage area for any connection to the sewer.
- **GI\_Project\_Boundaries** – Includes all individual drainage areas within a project.