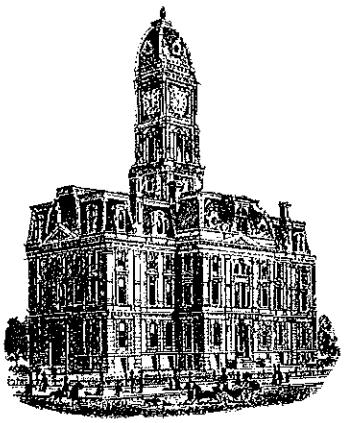


SURVEYOR'S OFFICE

Hamilton County

Kenton C. Ward, CFM
Surveyor of Hamilton County
Phone (317) 776-8495
Fax (317) 776-9628

Suite 188
One Hamilton County Square
Noblesville, Indiana 46060-2230

July 10, 2020

TO: Hamilton County Drainage Board

RE: Intracoastal At Geist Drain

Attached is the hydraulic study prepared by Clark Dietz for the Intracoastal at Geist Drain. This was presented to the Board at it's June 22, 2020 meeting. On June 30, 2020 a conference call was held with this office, the City of Fishers and Clark Dietz represented. Those minutes are attached.

As a result of that call it was agreed that Alternate 1 – Increase storm sewer capacity and improve overland flow outlet was the most cost efficient alternative. The cost estimate for that alternative is as follows:

Construction Costs (From study)	$ 76,252.00
15% Contingency	11,437.80
Total Construction	$ 87,689.80
Study Costs	28,000.00
Engineering (Design & construction services)	33,000.00
Total Cost	$148,689.80

At this time the drain fund brings in $11,832.10 annually. The current balance in the fund is $48,119.09. The fund collects on a four (4) year period. Discussions with Fishers has resulted in a 75%/25% split of the costs. With this, Fishers would pay $37,172.45. The county portion would be $111,517.35. Using the funds available in the drain fund at $48,119.09 the remaining $63,398.26 would be paid using 75% of the annual assessment of $11,832.10 which would be $8,874.08 per year over seven (7) years.

I recommend the Board set this for hearing for August 24, 2020.

Sincerely,

Kenton C. Ward, CFM
Hamilton County Surveyor

KCW/pll

Clark Dietz
Engineering Quality of Life®

Meeting Minutes

Project: Intracoastal at Geist Drainage Improvement Meeting (held via Conference Call)
Date: June 30, 2020, 9:00 a.m.
Attendees: Kent Ward (Hamilton County), Gary Duncan (Hamilton County), Jason Armour (City of Fishers), Brian Powers (Clark Dietz), Hans Peterson (Clark Dietz)
Copies:

Minutes of this meeting were prepared by Brian Powers, P.E., CFM of Clark Dietz, Inc. Please inform him of corrections or modifications.

The purpose of the meeting was to discuss the design and construction phase of the Intracoastal at Geist Stormwater Improvement Project.

We began the meeting with a review of the recommended improvements. This includes upgrading a portion of the drain from 12" and 15" pipe to 18" and 21" concrete pipe. New larger inlet casting will be constructed. A swale will be graded for an overland flow route. The trail north of the subdivision will be raised to provide 100 year protection.

Hamilton County currently has about $48,000 in the drainage fund to construct the project. The City of Fishers is in favor of this project and willing to assist financially to help get it done. Fishers would like to contribute by raising the pedestrian trail to add an extra level of flood protection.

There are utilities located in the drainage easement near Keel Road that will need to be moved or relocated to construct the project. Clark Dietz will provide Hamilton County with a plan view and cross section with approximate inverts near the sidewalk to be used for utility coordination. Hamilton County will send a letter to the utilities to let them know about the project.

The swale between the residences will result in tree removal within the drainage easement. The swale will be designed to terminate at the sidewalk and therefore it is not anticipated that the sidewalk will need to be reconstructed with a dip to accommodate the swale. Replacement of the landscaping, removed for the drain and swale construction, will not be replaced as a part of this project. A shallow swale in the back of the property will also be investigated with the design.

The cost of the project will be divided between Hamilton County and the City of Fishers at approximately a 75%/25% split.

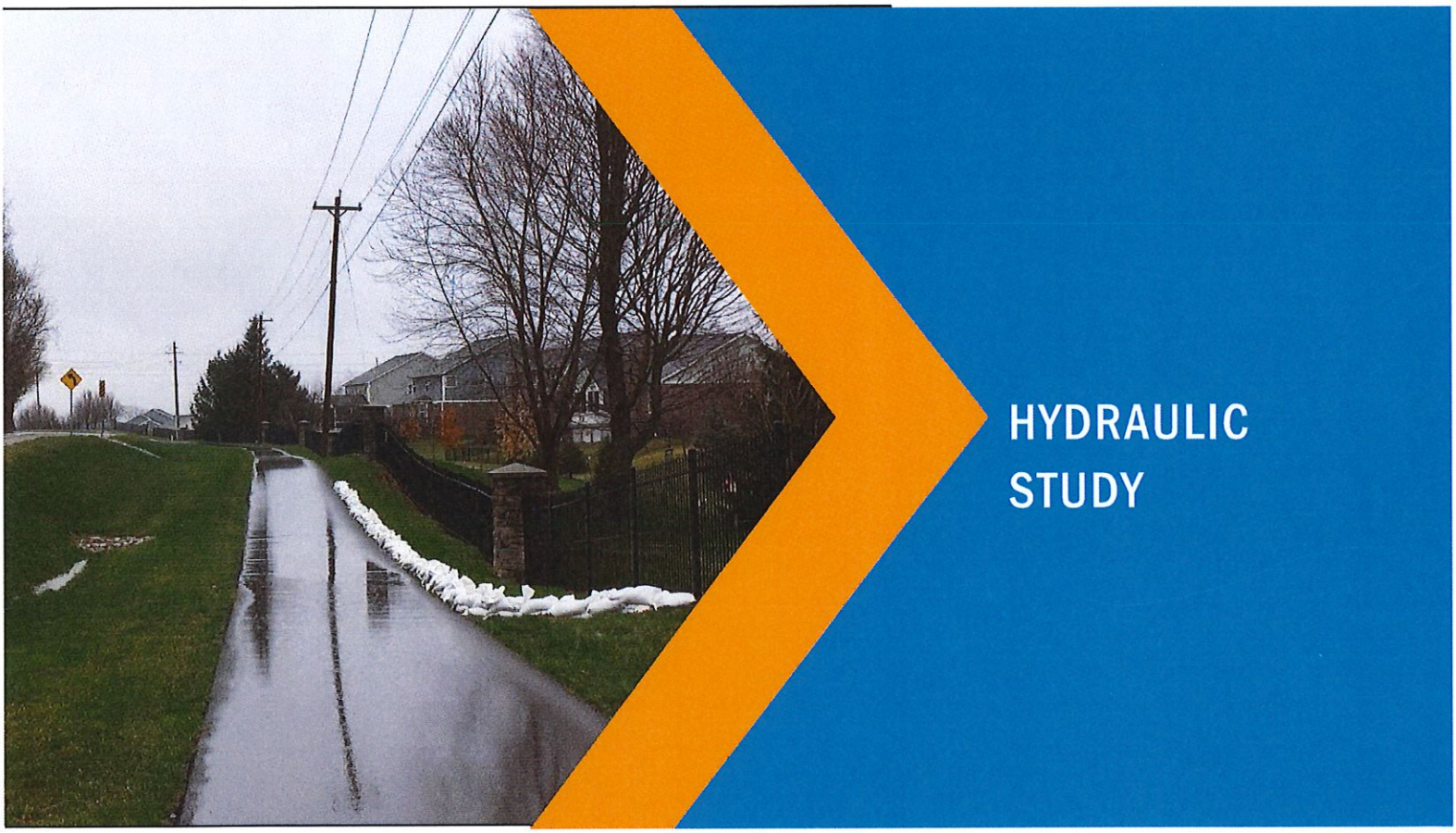
Schedule of Events

- Clark Dietz will prepare a Task Order to complete the design – Send to Hamilton County 7/2/2020
- Clark Dietz will send a plan view and cross section to Hamilton County to begin utility coordination
- At the next Drainage Board meeting (July 13th), Kent will make a request for a Hearing for the project to be held at one of the August Drainage Board meetings.
- Clark Dietz goal is to create design plans (as far along as possible) and make a presentation at the hearing.

RLW

Clark Dietz

Engineering Quality of Life™



HYDRAULIC STUDY

Intracoastal at Geist Drainage Evaluation

Prepared for: Hamilton County Drainage Board

Prepared by: Clark Dietz, Inc.

Date: June 2020

TABLE OF CONTENTS

FIGURES

ATTACHMENTS

Intracoastal at Geist Drainage Evaluation

1.0 Executive Summary

This study evaluated the storm sewer in the Intracoastal at Geist subdivision. The project area is located south of 113th Street and west of Florida Road. The eastern half of the subdivision experiences flooding problems during heavy rainfall events.

The existing storm sewer ranges in size from 12" to 21" diameter. A hydraulic analysis of the system identified 12" and 15" diameter pipe segments with insufficient capacity to convey a 10-year frequency (Q10) storm event by gravity. The pipe segments are located along the north and east property line of the residence at 15088 Keel Road. The existing 12" pipe segment has a flow capacity of 10.3 cfs. The existing 15" pipe segment has a flow capacity of 12.7 cfs. The peak discharge at this location is 15.2 cfs for the Q10 event and 40.5 cfs for the Q100 event. This location is also lacking a defined overland flow spillway to route the Q100 storm downstream. As a result, during large storm events stormwater ponds at this location and floods the basement of the residence at 15088 Keel Road. Downstream of this location the storm sewer increases to a 21" diameter pipe. The 21" diameter pipes have capacity to convey the Q10 event by gravity and no overland flow obstructions are apparent that would cause flooding in larger than Q10 events.

This study investigated four main alternatives to solve the flooding problem. The alternatives included increasing storm sewer capacity, adding an emergency overflow flow spillway at the problem location, incorporating upstream detention, and rerouting upstream flow to the east. The goal of the alternatives is for the system to have the capacity to convey the Q10 storm by gravity within the storm sewer and route the Q100 storm overland without causing damage to the residences in the neighborhood.

The recommendation of this study is to replace the 12" and 15" diameter pipe segments with 18" and 21" diameter pipes and regrade the overland flow spillway between the residences where the flooding occurs. Two inlets connected to the 12" and 15" sewer will be replaced with larger capacity inlets. The low point of the trail, over the existing drain, also needs to be reconstructed a foot higher to an elevation of 816.0 feet. This will involve reconstructing 100 feet of the trail. The raised trail will provide an extra level of protection against stormwater overflowing into the subdivision and provide a small amount of additional storage between the road and the trail. This solution will allow the storm sewer to convey the Q10 event by gravity and reduce the flooding risk to residences for larger storm events. This option will have the least disruption to the neighborhood and was the lowest cost alternative.

2.0 Introduction

Clark Dietz was retained by the Hamilton County Drainage Board to prepare a drainage evaluation of the storm sewer system for the Intracoastal at Geist subdivision. The project area is located south of 113th Street and west of Florida Road. The eastern half of the subdivision east of Coupler Drive (the entrance into the subdivision) experiences flooding problems during heavy rainfall events.

The area north of 113th Street, including portions of the Indiana Gun Club and a Duke Energy's Geist 230 kv Substation, drains into the subdivision via three culverts under 113th Street. The drainage area north of 113th Street contributes 22.6 acres of runoff to the flooding area. An additional 4.2 acres of drainage area within the subdivision combines with the off-sight drainage at the problem area. Figure 1 shows the watershed subbasins that were analyzed for this study.

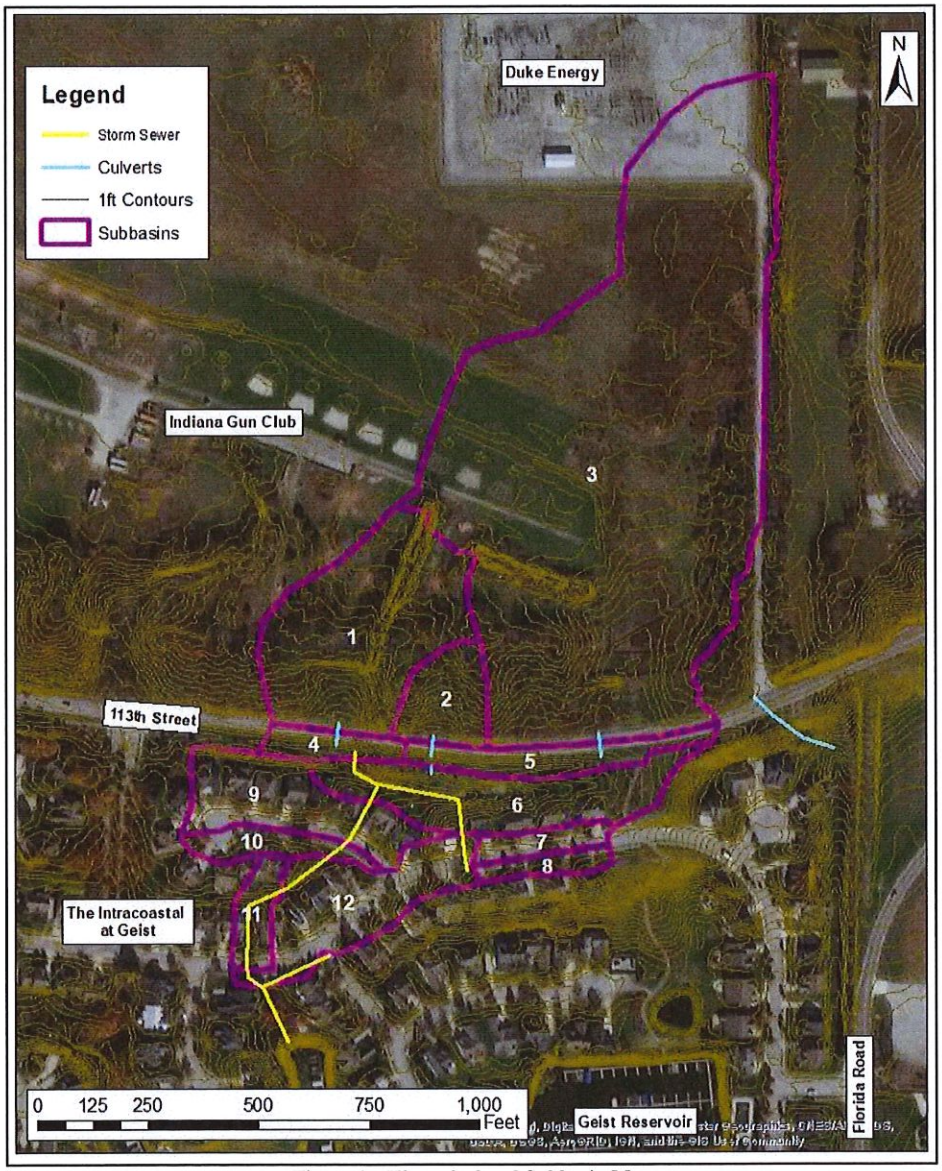


Figure 1 – Watershed and Subbasin Map

The flow from subbains 1 through 6 combine and are routed through a 15" diameter storm sewer. This storm system becomes a 21" diameter storm sewer which outlets into a boat docking channel connected to Geist Reservoir.

3.0 Hydrologic Analysis

3.1 Site Visit / Field Verification

Site visits were conducted on 2/11/2020 and 3/19/2020 to examine and confirm the drainage patterns of the contributing watershed. The first visit occurred on a dry day, the second during a rain event. The drainage patterns established with the Hamilton County 1-foot contours were confirmed with site observation.

3.2 Watershed Delineation

The 2016 Hamilton County 1-foot contours were used to delineate the watershed for the storm sewer and the subbasins. Three subbasins were identified north of 113th Street (subbasins 1 - 3) and another five subbasins within the subdivision contribute flow to the problem area (subbasins 4 - 8). Four additional subbasins were delineated that contribute runoff to the storm sewer downstream of the problem area before outletting to Geist Reservoir (subbasin 9 – 12).

3.3 Hydrologic Calculations

For each subbasin a Time of Concentration and a Travel Path were established. Aerial photography was used to establish land use. The USDA web soil survey was used to establish the soil types through the project area. The soil type and land use were used to establish the runoff curve numbers (CN). Hydrologic calculations for each subbasin are included in Attachment A.

3.4 Hydrologic Model

The Innovyze program XPSWMM 2019.1 was used to calculate the hydrologic flow inputs by using the SCS Method. Per the Hamilton County Stormwater Management Technical Standards Manual, hydrographs were established based on the 24-hour NRCS Type 2 Rainfall Distribution for the Q10 and Q100 design storms. Attachment B includes rainfall depth and distribution data used in the study.

4.0 Existing Storm Sewer Hydraulic Analysis

4.1 Existing System

A hydraulic model was created in XPSWMM with the hydrologic flow inputs described above and hydraulic routing geometry. Overland flow paths were established using the Hamilton County 1-foot contours. The size and elevation of the storm sewer were established using information from the Hamilton County GIS and as-built drawings. The size and elevation of the culverts under 113th Street were established using as-built drawings from the Roadway Resurfacing Plans for 113th Street, created in 2016. The three culverts under 113th Street, from west to east, are 24" CMP, 18" CMP, and 24" CMP.

On Newburyport Drive, two street inlets collect flow and route it north through a 12" RCP, connecting to an inlet structure, then continuing west (in a 12" RCP), joining another inlet structure, then flowing south in a 12" RCP to another inlet where the sewer is upsized to a 15" RCP between the houses at 15088 and 15098 Keel Road. At this location the storm sewers and overland flow from all of the contributing watershed from the north are collected and routed south through this 15" RCP storm sewer. The storm sewer becomes a 21" RCP at Keel

Road, then flows through the neighborhood (as shown on Figure 1), and discharges into the boat dock channel that connects to Geist Reservoir.

4.2 System Deficiencies

The 12" RCP located at the back 15088 Keel Road property line has a flow capacity of 10.3 cfs. The 15" RCP downstream of the 12" RCP has a flow capacity of 12.7 cfs. The peak discharge at this location is 15.2 cfs for the Q10 event and 40.5 cfs for the Q100 event. The 12" and 15" pipes are undersized to convey the Q10 event by gravity. When the storm sewer reaches its full capacity water from the northwest can overtop the trail and flow overland into the yard at 15088 Keel Road. Stormwater collects along the north side of the residence sometimes resulting in entry of water into a window well at the northwest corner of the house. Stormwater that collects in this area will eventually surface flow between the homes at 15088 and 15098 Keel Road out to Keel Road, then along Newburyport Drive to the storm sewer easement that discharges into Geist Reservoir. Approximately 30 cfs would would flow overland during a 100-year storm event, while the remaining flow (approximately 10 cfs) would discharge through the storm sewer.

5.0 Alternative Analysis

This study investigated four alternatives to solve the flooding problems in the Intracoastal at Geist subdivsion. The alternatives included increasing storm sewer capacity, improving the overland flow outlet at the problem location, incorporating upstream detention, and rerouting flow to the east. The performance goal of each alternative is to convey the Q10 storm by gravity within the storm sewer system and safely routing flows in excess of the Q10 event (up to the Q100 storm) overland through the neighborhood.

5.1 Alternative 1 –Increase Storm Sewer Capacity and Improve Overland Flow Outlet

Alternative 1 investigated the benefit of increasing the size of the storm sewer and overland flow route to increase capacity. The bottleneck point in the existing system is in the rear/side yard at 15088 Keel Road. At this location two 12" pipes join at an inlet structure, then are routed south through 26 feet of 12" diameter pipe, followed by 117 feet of 15" diameter pipe. The XPSWMM model shows both of these pipes need to be upsized to 21" diameter to convey the Q10 storm event by gravity. The pipes are located on the property line between 15088 and 15098 Keel Road. All of the pipes downstream of the 15" link are 21" in diameter and have sufficient capacity. Upstream of the junction the 12" diameter pipes to the northwest need to be replaced with 18" diameter pipes. In addition, inlet capacity needs to be improved by replacing existing inlets with larger structures capable of collecting (with minimal ponding) approximately 12 cfs. The inlets should be capable of passing flow with some debris clogging (larger behive or similar inlets). The proposed improvements are all located within the existing drainage easement. The location of the proposed storm pipes are shown in Figure 2.

The capacity of the storm sewer downstream of the project area was evaluated to verify it has enough capacity to receive the additional flow from the proposed improvements. The strom sewer was evaluated all the way to the discharge point at Geist Reservoir in the hydraulic model. The storm sewer downstream of the project area is appropriately sized for existing flows and has enough capacity to take the additional flow from the proposed improvements.

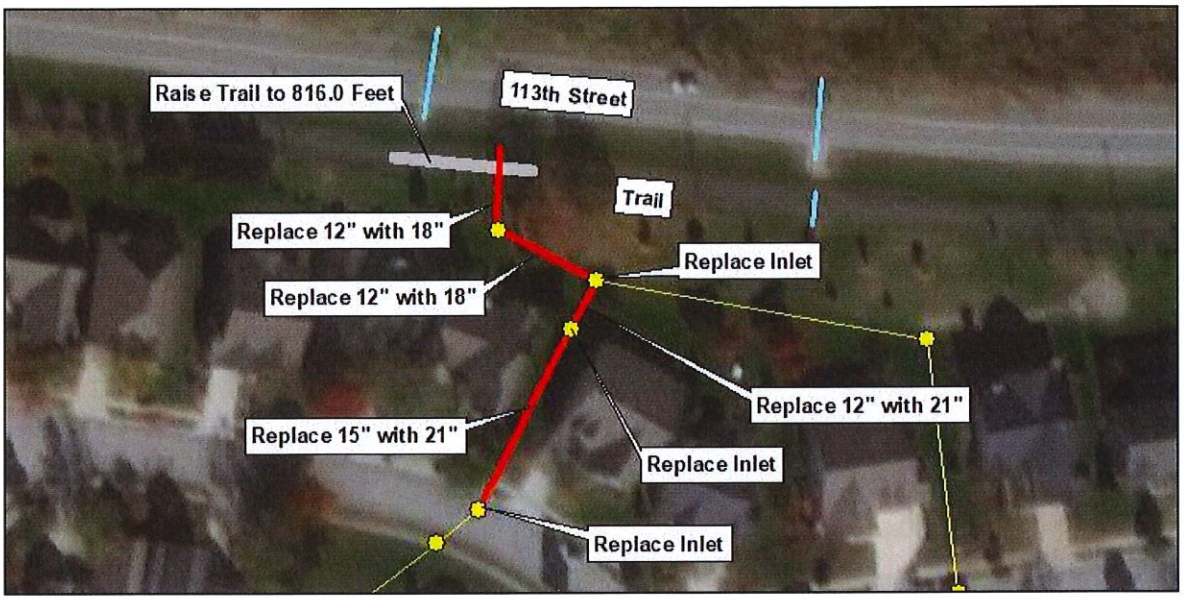


Figure 2 – Alternative 1 – Location of Storm Pipes

The storm sewer pipe replacements alone will not eliminate flooding issues at the problem location for storm events greater than a Q10. An improved overland flow route is also needed to provide protection up to the Q100 event.

An improved overland flow swale would be constructed between the residences at 15088 and 15098 Keel Road. The swale would begin between the back corner of the neighboring houses at a depth of 1.5 feet below the existing ground. The swale would be graded to meet existing ground at the sidewalk at the front of the property. Decorative landscaping and utility boxes are located in the drainage easement that would need to be relocated to accommodate the swale path, though it may be possible to construct the swale around the utility boxes. The conflicts are shown in Figure 3. A preliminary grading plan and typical cross section between the homes are shown in Figures 4 and 5, respectively.

The low point of the trail, over the existing drain, needs to be reconstructed a foot higher to an elevation of 816.0 feet. This will involve reconstructing 100 feet of the trail. The raised trail will provide an extra level of protection against stormwater overflowing into the subdivision and provide a small amount of additional storage between the road and the trail.

This alternative would increase flow in the storm system and decrease the amount of flow discharging overfland. Overland flow would be reduced from approximately 30 cfs to 15 cfs during a 100-year event. The combination of the overland swale and the upgraded storm pipe will allow storm events up to the Q10 year event to be conveyed via the storm sewer system, while larger flows (up to the Q100 event) will flow overland in the improved swale between the homes. The risk of basement flooding at 15088 Keel Road will be significantly reduced.

The construction cost for the overland swale is incidental to the storm sewer replacement and would only involve final grading and sodding. The total cost for this alternative is estimated to be $109,000.

Figure 3 – Overland Swale

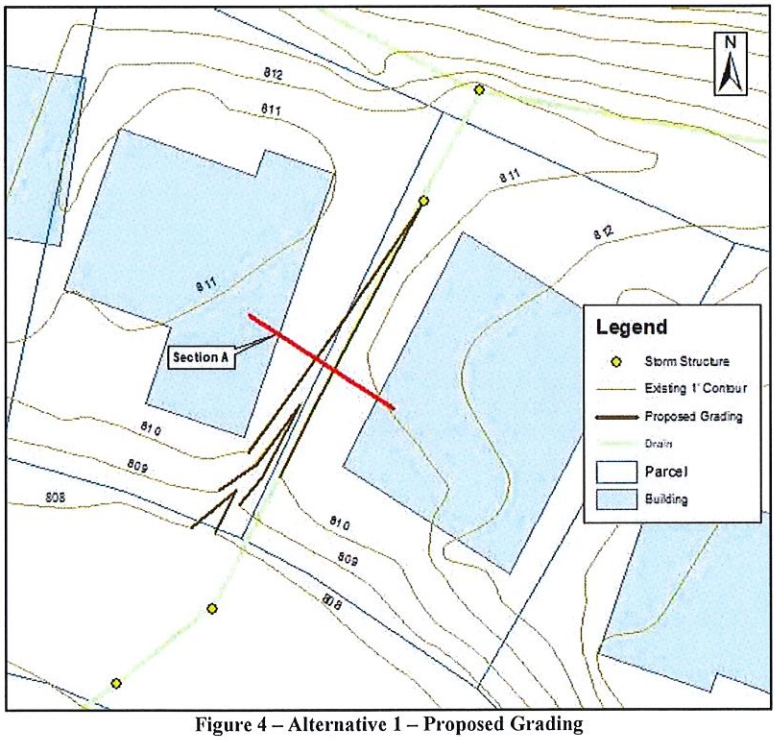


Figure 4 – Alternative 1 – Proposed Grading

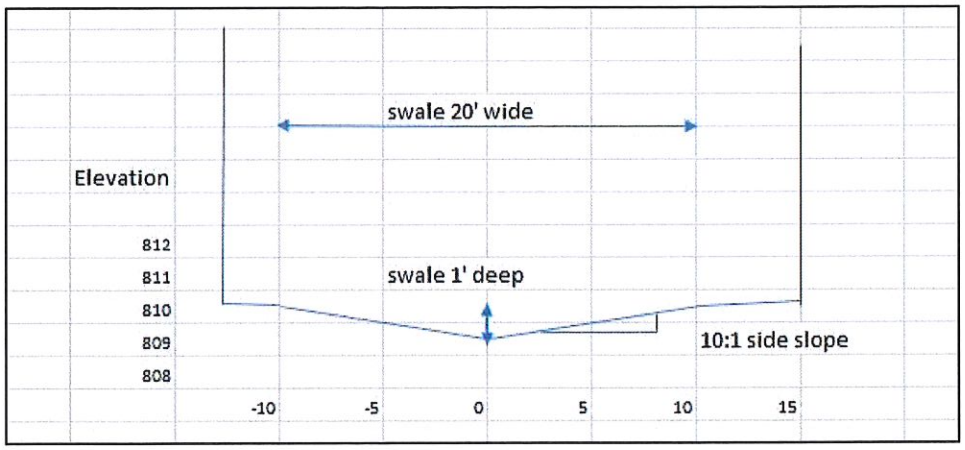


Figure 5 – Swale Cross Section A

5.2 Alternative 2 – Upstream Detention

Alternative 2 investigated the benefit of incorporating detention in the watershed to reduce the peak discharge to the existing storm sewer. Potential detention locations were investigated north of 113th Street and in the area between 113th Street and the trail that runs along the south side of 113th Street.

Detention North of 113th Street

A detention pond could be constructed north of 113th Street upstream of the eastern most culvert that contributes most of the flow to the storm system (see Figure 6). Approximately two thirds of the watershed (17.9 acres), drains through this culvert. This location is not part of the existing drainage easement and is owned by the Indiana Trapshooter's Association. Construction of a detention pond at this location would involve removal of trees from a heavily wooded area and soil removal from the hillside north of 113th Street. A detention facility at this location would reduce the peak discharge to the existing storm sewer and allow it to convey the Q10 event by gravity. The detention pond alone would not eliminate pressure flow from occurring in the northwest segment of the storm sewer up to the Q100 event. Eliminating trail overflow at this location is a priority. The northwest segment of the sewer needs to be upgraded to 18" diameter pipe to prevent pressure flow. The 12" and 15" pipes downstream of the junction also need to be upgraded to 18" pipes. These upgrades will require the replacement of 3 inlet structures. Figure 6 shows the location of the detention pond and storm sewer improvements.

The low point of the trail, over the existing drain, needs to be reconstructed a foot higher to an elevation of 816.0 feet. This will involve reconstructing 100 feet of the trail. The raised trail will provide an extra level of protection against stormwater overflowing into the development and provide a small amount of additional storage between the road and the trail.

The overland swale improvements (described in Alternative 1) would still be required to reduce the flooding risk for residents for storm events up to the Q100 event. The total cost for the detention pond alternative north of 113th Street is estimated to be $346,000.

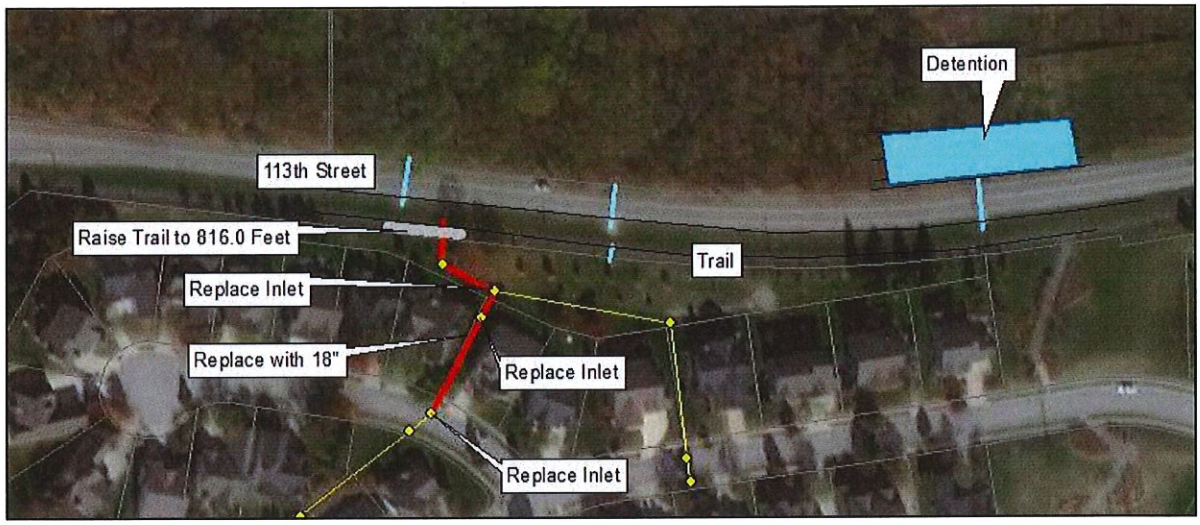


Figure 6 – Detention Pond – North of 113th Street

Detention between 113th Street and the Trail

A detention pond located between 113th Street and the Trail was investigated, see Figure 7. The topography of 113th street decreases by 5 feet from the east side of the investigation area to the west. This location is not ideal for a detention pond. This location would create a potential safety hazard. A raised pond outlet structure and ponded water next to the road may require a guard rail to prevent vehicles from accidently veering off the road and entering the detention area. To create an area suitable for detention, the trail would need to be raised adjacent to the proposed detention. Between the road and the trail there is not enough room to use 3:1 side slopes to reach the required detention depth so a retaining wall would need to be constructed. A pond at this location would not eliminate pressure flow in the northwest section of the stormsewer, and pipe capacity upgrades would still be necessary. A pond is not recommended at this location because of its physical constraints, complexity, and overall cost.

Figure 7 – Detention Pond – Between 113th Street and Trail

Detention between the Trail and Subdivision

A detention pond located in a common area between the trail and the subdivision was investigated (see Figure 8). The topography of this area slopes down from the east to west. Placing a detention pond at this location would require excavation of existing ground to the east and building up a new embankement to the west. The detention pond would outlet to the existing storm sewer. The proposed detention site is not located in an existing drainage easement so the property would need to be acquired from the Homeowners Association for the Intracoastal at Geist. Construction of a detention pond at this location would include regrading, and installation of a pipe and outlet structure. Special care would need to be taken to ensure the grading work would not direct offsite flows toward residences and create additional flooding problems. Proposed detention at this site would reduce the peak discharge to the existing storm sewer and would allow it to convey the Q10 event by gravity. The detention pond alone would not eliminate pressure flow from occurring in the northwest segment of the storm sewer up to the Q100 event. Eliminating trail overflow at this location is a priority. The northwest segment of the sewer needs to be upgraded to 18" diameter pipe to prevent pressure flow. The 12" and 15" pipes downstream of the junction also need to be upgraded to 18" pipes. These upgrades will require the replacement of 3 inlet structures. Figure 8 shows the location of the detention pond and storm sewer improvements.

The low point of the trail, over the existing drain, needs to be reconstructed a foot higher to an elevation of 816.0 feet. This will involve reconstructing 100 feet of the trail. The raised trail will provide an extra level of protection against stormwater overflowing into the development and provide a small amount of additional storage between the road and the trail.

The overland swale improvements described in Alternative 1 would still be required to reduce the flooding risk for residents for storm events up to the Q100 event. The total cost for this detention pond alternative is estimated to be $286,000. A pond is not recommented at this location because of its cost and complexity. In addition, it's likely residents adjacent to the detention area would not view this as a desirable "improvement".

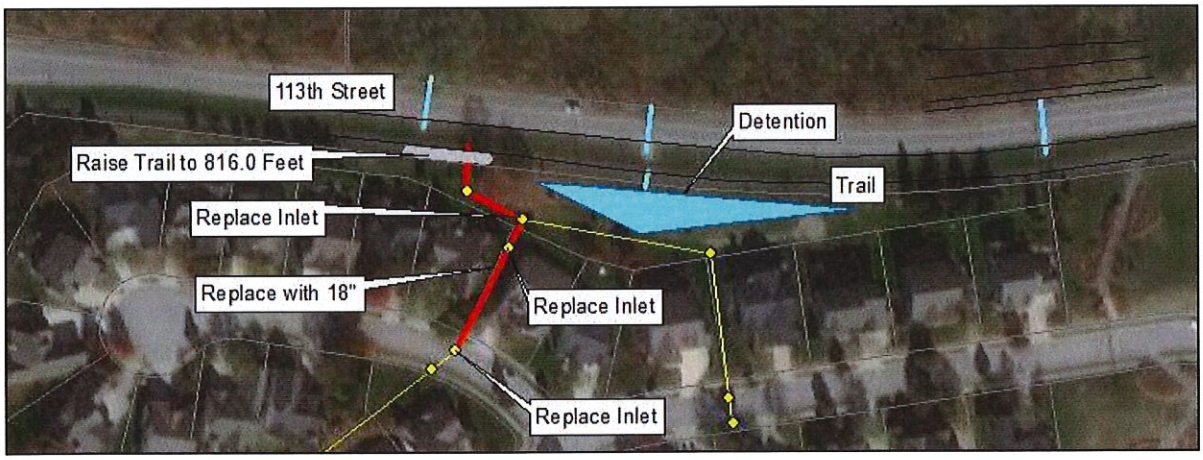


Figure 8 – Detention Pond – Between Trail and Subdivision

5.3 Alternative 3 – Reroute Flow to the East

Alternative 3 investigated the benefit of diverting flow from the watershed subbasin northeast of the subdivision. This subbasin includes a drainage area of 17.9 acres, shown in Figure 9.

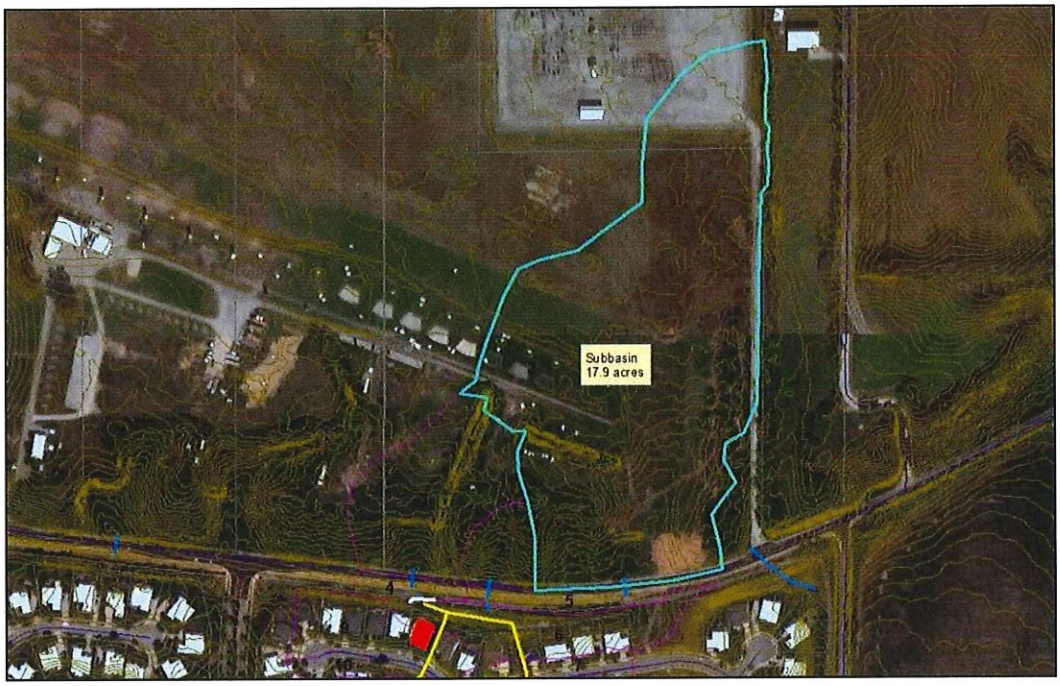


Figure 9 – Northeast Watershed Subbasin

Flow from this area currently is routed through a 24" culvert under 113th Street and then travels overland to the storm sewer to the west. The culvert could be replaced with a 700 foot long storm pipe, 24 inches in diameter, that redirects the flow directly to Geist Reservoir. The proposed route is shown in Figure 10.

Figure 10 – Storm Sewer Reroute

By diverting flow from the northeast directly to the reservoir, the peak discharge to the existing storm sewer would be reduced allowing the Q10 event to be conveyed by gravity. The detention pond alone would not eliminate pressure flow from occurring in the northwest segment of the storm sewer up to the Q100 event. Eliminating trail overflow at this location is a priority. The northwest segment of the sewer needs to be upgraded to 18" diameter pipe to prevent pressure flow. The 12" and 15" pipes downstream of the junction also need to be upgraded to 18" pipes. These upgrades will require the replacement of 3 inlet structures.

The low point of the trail, over the existing drain, needs to be reconstructed a foot higher to an elevation of 816.0 feet. This will involve reconstructing 100 feet of the trail. The raised trail will provide an extra level of protection against stormwater overflowing into the development and provide a small amount of additional storage between the road and the trail.

The proposed route to the east is not part of the existing drainage easement. The property is currently owned by the homeowners association for the Intracoastal at Geist. This land would need to be purchased or donated to become a permanent drainage easement. High voltage electric lines run along this parcel from north to south that a contractor would have to work around. The total cost for constructing Alternative 3 is estimated to be $325,000.

6.0 Recommendations

The recommendation of this study is to construct Alternative 1, which includes replacing existing 12" and 15" diameter pipe segments with 18" and 21" diameter pipes and improving the overland flow outlet between the residences at 15088 and 15098 Keel Road. The three inlets connected to the proposed pipe will be replaced with higher capacity inlets. The low point of the trail, over the existing drain, also needs to be reconstructed a foot higher to an elevation of 816.0 feet. This will involve reconstructing 100 feet of the trail. The raised trail will provide an extra level of protection against stormwater overflowing into the subdivision and provide a small amount of additional storage between the road and the trail. This solution will allow the storm sewer to convey the Q10 event by gravity and reduce the flooding risk to residences for larger storm events. This option will have the lowest disruption impact to the neighborhood and was the lowest cost alternative that was investigated.

The estimated cost of the recommended improvements is $109,000. A detailed breakdown of the cost estimate for each of the alternatives is included in Attachment 3. Project cost sharing and implementation steps will need to be considered by the Hamilton County Drainage Board, City of Fishers and Intracoastal at Geist Homeowners Association.

It is also recommended that future development north of 113th Street be required to route their stormwater discharge directly to Geist Reservoir rather than into the regulated drain. This will ensure that the regulated drain has the necessary capacity into the future.

ATTACHMENT 1:

Hydrologic Calculations

ClarkDietz

Project// Intercoastal at Geist — Subbasin 1
Project No.// H0210350
Subject// Discharge Calculation — Page// ____ of ____
Prepared By// BEP — Date// 3/18/2020
Checked By// HP — Date// 5/15/2020

Watershed 1 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98		0.00	0.00
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65	93400	2.14	139.37
Grass/Pasture	B	69	16500	0.38	26.14
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65		0.00	0.00
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70	19500	0.45	31.34
Grass/Pasture	C	79	34500	0.79	62.57
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	163,900	3.76	259.41
		Area Sq. Mi. =	0.0059		
				Weighted C =	68.9

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds,* Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

ClarkDietz

Project// Intercoastal at Geist — Subbasin 1
Project No.// H0210350
Subject// Discharge Calculation — Page// ____ of ____
Prepared By// BEP — Date// 3/18/2020
Checked By// HP — Date// 5/15/2020

Time of Concentration: Watershed 1

Sheet Flow (Applicable to Tc only)

1	*Surface Description .....*	*S Grass*	
2	*Manning's Roughness Coeff.,...n (See Figure 202-2B)*	*0.150*	
	Max. Flow Elev.(ft)=	*839.2*	
	Min. Flow Elev. (ft)=	*838.8*	
3	*Flow length, L .....ft.*	*93.0*	
4	*Two-yr 24hr Rainfall*[1]*, P2...in.*	*2.90*	
5	*Land Slope (ft/ft)=*	*0.0043*	
6	*Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.*	*0.299 hr*	

Shallow Concentration Flow

7	*Surface description (paved or unpaved).....*	*unpaved*	*unpaved*
	Max. Elevation, ...ft	*838.80*	*832.00*
	Min Elevation, ...ft	*832.00*	*818.70*
8	*Flow length, L.....ft.*	*249.0*	*166.0*
9	*Watercourse slope, s.....ft/ft*	*0.0273*	*0.0801*
10	*Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)*	*2.67*	*4.57*
11	*Tt = L/(3600 V).....Computed Tt..hr.*	*0.026 hr*	*0.010 hr*

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	2
b =		
d =		
SS =		
Angle =	*0*	*0*

		1	2
12	*Cross sectional flow area, a.....ft^2*		
13	*Wetted perimeter, Pw.....ft*		
14	*Hydraulic radius, r=a/Pw Compute r....ft*		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	*Channel slope length,s.....ft/ft*		
16	*Manning's roughness coeff.,n .Based on stream type*		
17	*V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s*		
18	*Flow length from shallow to Structure, L .....ft.*		
19	*Tt = L/(3600 V).....Computed Tt..hr.*		
20	*Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)*	***0.335 hr***	

or

20.1 min

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

Clark Dietz

Project// Intercoastal at Geist
Project No.// H0210350
Subject// Discharge Calculation
Prepared By// BEP
Checked By// HP

Subbasin 2

Page// ____ of ____
Date// 3/18/2020
Date// 5/15/2020

Watershed 2 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98		0.00	0.00
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65	40000	0.92	59.69
Grass/Pasture	B	69		0.00	0.00
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65		0.00	0.00
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70		0.00	0.00
Grass/Pasture	C	79		0.00	0.00
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	40,000	0.92	59.69
		Area Sq. Mi. =	0.0014		
				Weighted C =	65.0

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds,* Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

Clark Dietz

Project//	Intercoastal at Geist		Subbasin 2
Project No.//	H0210350		
Subject//	Discharge Calculation	Page//	of
Prepared By//	BEP	Date//	3/18/2020
Checked By//	HP	Date//	5/15/2020

Time of Concentration: Watershed 2

Sheet Flow (Applicable to Tc only)

1	Surface Description	D Woods	
2	Manning's Roughness Coeff.,...n (See Figure 202-2B)	0.800	
	Max. Flow Elev.(ft)=	840.2	
	Min. Flow Elev. (ft)=	837.0	
3	Flow length, L .....ft.	70.0	
4	Two-yr 24hr Rainfall[1], P2...in.	2.90	
5	Land Slope (ft/ft)=	0.0457	
6	Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.	0.354 hr	

Shallow Concentration Flow

7	Surface description (paved or unpaved).....	unpaved	
	Max. Elevation, ...ft	837.00	
	Min Elevation, ...ft	824.50	
8	Flow length, L.....ft.	165.0	
9	Watercourse slope, s.....ft/ft	0.0758	
10	Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)	4.44	
11	Tt = L/(3600 V).....Computed Tt..hr.	0.010 hr	

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	2
b =		
d =		
SS =		
Angle =	0	0

		1	2
12	Cross sectional flow area, a.....ft^2		
13	Wetted perimeter, Pw.....ft		
14	Hydraulic radius, r=a/Pw Compute r....ft		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	Channel slope length,s.....ft/ft		
16	Manning's roughness coeff.,n .Based on stream type		
17	V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s		
18	Flow length from shallow to Structure, L .....ft.		
19	Tt = L/(3600 V).....Computed Tt..hr.		
20	Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)	**0.364 hr**	

or

21.8 min

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

Clark Dietz

Project// Intercoastal at Geist — Subbasin 3
Project No.// H0210350
Subject// Discharge Calculation — Page// of
Prepared By// BEP — Date// 3/18/2020
Checked By// HP — Date// 5/15/2020

Watershed 3 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98		0.00	0.00
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65	88000	2.02	131.31
Grass/Pasture	B	69	400500	9.19	634.40
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65		0.00	0.00
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70		0.00	0.00
Grass/Pasture	C	79	287000	6.59	520.50
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	775,500	17.80	1286.21
		Area Sq. Mi. =	0.0278		
				Weighted C =	72.2

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds,* Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

Clark Dietz

Project//	Intercoastal at Geist		Subbasin 3
Project No.//	H0210350		
Subject//	Discharge Calculation	Page//	of
Prepared By//	BEP	Date//	3/18/2020
Checked By//	HP	Date//	5/15/2020

Time of Concentration: Watershed 3

Sheet Flow (Applicable to Tc only)

1	Surface Description	S Grass	
2	Manning's Roughness Coeff.,...n (See Figure 202-2B)	0.150	
	Max. Flow Elev.(ft)=	845.2	
	Min. Flow Elev. (ft)=	843.0	
3	Flow length, L .....ft.	85.0	
4	Two-yr 24hr Rainfall[1], P2...in.	2.90	
5	Land Slope (ft/ft)=	0.0259	
6	Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.	0.136 hr	

Shallow Concentration Flow

7	Surface description (paved or unpaved).....	unpaved	unpaved
	Max. Elevation, ...ft	843.00	836.50
	Min Elevation, ...ft	836.50	826.40
8	Flow length, L.....ft.	940.0	658.0
9	Watercourse slope, s.....ft/ft	0.0069	0.0153
10	Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)	1.34	2.00
11	Tt = L/(3600 V).....Computed Tt..hr.	0.195 hr	0.091 hr

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	2
b =		
d =		
SS =		
Angle =	0	0

		1	2
12	Cross sectional flow area, a.....ft^2		
13	Wetted perimeter, Pw.....ft		
14	Hydraulic radius, r=a/Pw Compute r....ft		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	Channel slope length,s.....ft/ft		
16	Manning's roughness coeff.,n .Based on stream type		
17	V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s		
18	Flow length from shallow to Structure, L .....ft.		
19	Tt = L/(3600 V).....Computed Tt..hr.		
20	Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)	**0.422 hr**	

or

25.3 min

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

Clark Dietz

Project// Intercoastal at Geist
Project No.// H0210350
Subject// Discharge Calculation
Prepared By// BEP
Checked By// HP

Subbasin 4

Page// ____ of ____
Date// 3/19/2020
Date// 5/15/2020

Watershed 4 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98	10730	0.25	24.14
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65		0.00	0.00
Grass/Pasture	B	69	9000	0.21	14.26
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65		0.00	0.00
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70		0.00	0.00
Grass/Pasture	C	79		0.00	0.00
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	19,730	0.45	38.40
		Area Sq. Mi. =	0.0007		

Weighted C = 84.8

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds,* Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

ClarkDietz

Project// Intercoastal at Geist — Subbasin 4
Project No.// H0210350
Subject// Discharge Calculation — Page// ____ of ____
Prepared By// BEP — Date// 3/19/2020
Checked By// HP — Date// 5/15/2020

Time of Concentration: Watershed 4

Sheet Flow (Applicable to Tc only)

1	*Surface Description .....*	*Smooth*	
2	*Manning's Roughness Coeff.,...n (See Figure 202-2B)*	*0.011*	
	Max. Flow Elev.(ft)=	*817.8*	
	Min. Flow Elev. (ft)=	*816.8*	
3	*Flow length, L .....ft.*	*33.0*	
4	*Two-yr 24hr Rainfall*[1]*, P2...in.*	*2.90*	
5	*Land Slope (ft/ft)=*	*0.0303*	
6	*Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.*	*0.007 hr*	

Shallow Concentration Flow

7	*Surface description (paved or unpaved).....*	*unpaved*	
	Max. Elevation, ...ft	*816.80*	
	Min Elevation, ...ft	*814.50*	
8	*Flow length, L.....ft.*	*177.0*	
9	*Watercourse slope, s.....ft/ft*	*0.0130*	
10	*Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)*	*1.84*	
11	*Tt = L/(3600 V).....Computed Tt..hr.*	*0.027 hr*	

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	*2*
b =		
d =		
SS =		
Angle =	*0*	*0*

		1	2
12	*Cross sectional flow area, a.....ft^2*		
13	*Wetted perimeter, Pw.....ft*		
14	*Hydraulic radius, r=a/Pw Compute r....ft*		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	*Channel slope length,s.....ft/ft*		
16	*Manning's roughness coeff.,n .Based on stream type*		
17	*V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s*		
18	*Flow length from shallow to Structure, L .....ft.*		
19	*Tt = L/(3600 V).....Computed Tt..hr.*		
20	*Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)*	***0.034 hr***	

or

Use

2.0 min
5 Min

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

ClarkDietz

Project// Intercoastal at Geist — Subbasin 5
Project No.// H0210350
Subject// Discharge Calculation — Page// ____ of ____
Prepared By// BEP — Date// 3/19/2020
Checked By// HP — Date// 5/15/2020

Watershed 5 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98	15950	0.37	35.88
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65		0.00	0.00
Grass/Pasture	B	69	22500	0.52	35.64
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65		0.00	0.00
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70		0.00	0.00
Grass/Pasture	C	79		0.00	0.00
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	38,450	0.88	71.52
		Area Sq. Mi. =	0.0014		

Weighted C = 81.0

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds,* Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

ClarkDietz

Project//	Intercoastal at Geist	Subbasin 5	
Project No.//	H0210350		
Subject//	Discharge Calculation	Page//	of
Prepared By//	BEP	Date//	3/19/2020
Checked By//	HP	Date//	5/15/2020

Time of Concentration: Watershed 5

Sheet Flow (Applicable to Tc only)

1	Surface Description	Smooth	
2	Manning's Roughness Coeff.,...n (See Figure 202-2B)	0.011	
	Max. Flow Elev.(ft)=	832.2	
	Min. Flow Elev. (ft)=	830.5	
3	Flow length, L .....ft.	32.0	
4	Two-yr 24hr Rainfall[1], P2...in.	2.90	
5	Land Slope (ft/ft)=	0.0531	
6	Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.	0.006 hr	

Shallow Concentration Flow

7	Surface description (paved or unpaved).....	unpaved	
	Max. Elevation, ...ft	830.50	
	Min Elevation, ...ft	817.50	
8	Flow length, L.....ft.	636.0	
9	Watercourse slope, s.....ft/ft	0.0204	
10	Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)	2.31	
11	Tt = L/(3600 V).....Computed Tt..hr.	0.077 hr	

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	2
b =		
d =		
SS =		
Angle =	0	0

		1	2
12	Cross sectional flow area, a.....ft^2		
13	Wetted perimeter, Pw.....ft		
14	Hydraulic radius, r=a/Pw Compute r....ft		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	Channel slope length,s.....ft/ft		
16	Manning's roughness coeff.,n .Based on stream type		
17	V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s		
18	Flow length from shallow to Structure, L .....ft.		
19	Tt = L/(3600 V).....Computed Tt..hr.		
20	Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)	**0.082 hr**	

or

4.9 min	
5 Min	

Use

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

ClarkDietz

Project// Intercoastal at Geist
Project No.// H0210350
Subject// Discharge Calculation
Prepared By// BEP
Checked By// HP

Subbasin 6
Page// _____ of _____
Date// 3/19/2020
Date// 5/15/2020

Watershed 6 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98		0.00	0.00
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65		0.00	0.00
Grass/Pasture	B	69		0.00	0.00
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65	95396	2.19	142.35
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70		0.00	0.00
Grass/Pasture	C	79		0.00	0.00
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	95,396	2.19	142.35
		Area Sq. Mi. =	0.0034		

Weighted C = 65.0

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds,* Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

ClarkDietz

Project// Intercoastal at Geist
Project No.// H0210350
Subject// Discharge Calculation
Prepared By// BEP
Checked By// HP

Subbasin 6

Page// _____ of _____
Date// 3/19/2020
Date// 5/15/2020

Time of Concentration: Watershed 6

Sheet Flow (Applicable to Tc only)

1	Surface Description	S Grass	
2	Manning's Roughness Coeff.,...n (See Figure 202-2B)	0.150	
	Max. Flow Elev.(ft)=	832.2	
	Min. Flow Elev. (ft)=	830.4	
3	Flow length, L .....ft.	79.0	
4	Two-yr 24hr Rainfall[1], P2...in.	2.90	
5	Land Slope (ft/ft)=	0.0228	
6	Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.	0.135 hr	

Shallow Concentration Flow

7	Surface description (paved or unpaved).....	unpaved	
	Max. Elevation, ...ft	830.40	
	Min Elevation, ...ft	810.90	
8	Flow length, L.....ft.	704.0	
9	Watercourse slope, s.....ft/ft	0.0277	
10	Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)	2.69	
11	Tt = L/(3600 V).....Computed Tt..hr.	0.073 hr	

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	2
b =		
d =		
SS =		
Angle =	0	0

		1	2
12	Cross sectional flow area, a.....ft^2		
13	Wetted perimeter, Pw.....ft		
14	Hydraulic radius, r=a/Pw Compute r....ft		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	Channel slope length,s.....ft/ft		
16	Manning's roughness coeff.,n .Based on stream type		
17	V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s		
18	Flow length from shallow to Structure, L .....ft.		
19	Tt = L/(3600 V).....Computed Tt..hr.		
20	Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)	**0.208 hr**	

or

12.5 min

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

ClarkDietz

Project// Intercoastal at Geist
Project No.// H0210350
Subject// Discharge Calculation
Prepared By// BEP
Checked By// HP

Subbasin 7

Page// ____ of ____
Date// 3/19/2020
Date// 5/15/2020

Watershed 7 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98	3600	0.08	8.10
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65		0.00	0.00
Grass/Pasture	B	69		0.00	0.00
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65	14000	0.32	20.89
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70		0.00	0.00
Grass/Pasture	C	79		0.00	0.00
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	17,600	0.40	28.99
		Area Sq. Mi. =	0.0006		
				Weighted C =	71.8

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds*, Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

ClarkDietz

Project// Intercoastal at Geist
Project No.// H0210350
Subject// Discharge Calculation
Prepared By// BEP
Checked By// HP

Subbasin 7

Page// ____ of ____
Date// 3/19/2020
Date// 5/15/2020

Time of Concentration: Watershed 7

Sheet Flow (Applicable to Tc only)

1	Surface Description	S Grass	
2	Manning's Roughness Coeff.,...n (See Figure 202-2B)	0.150	
	Max. Flow Elev.(ft)=	826.3	
	Min. Flow Elev. (ft)=	824.5	
3	Flow length, L .....ft.	43.0	
4	Two-yr 24hr Rainfall[1], P2...in.	2.90	
5	Land Slope (ft/ft)=	0.0419	
6	Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.	0.065 hr	

Shallow Concentration Flow

7	Surface description (paved or unpaved).....	unpaved	
	Max. Elevation, ...ft	824.50	
	Min Elevation, ...ft	821.00	
8	Flow length, L.....ft.	278.0	
9	Watercourse slope, s.....ft/ft	0.0126	
10	Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)	1.81	
11	Tt = L/(3600 V).....Computed Tt..hr.	0.043 hr	

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	2
b =		
d =		
SS =		
Angle =	0	0

		1	2
12	Cross sectional flow area, a.....ft^2		
13	Wetted perimeter, Pw.....ft		
14	Hydraulic radius, r=a/Pw Compute r....ft		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	Channel slope length,s.....ft/ft		
16	Manning's roughness coeff.,n .Based on stream type		
17	V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s		
18	Flow length from shallow to Structure, L .....ft.		
19	Tt = L/(3600 V).....Computed Tt..hr.		
20	Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)	**0.108 hr**	

or

6.5 min

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

Clark Dietz

Project// Intercoastal at Geist — Subbasin 8
Project No.// H0210350
Subject// Discharge Calculation — Page// ____ of ____
Prepared By// BEP — Date// 3/19/2020
Checked By// HP — Date// 5/15/2020

Watershed 8 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98	3600	0.08	8.10
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65		0.00	0.00
Grass/Pasture	B	69		0.00	0.00
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65	14000	0.32	20.89
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70		0.00	0.00
Grass/Pasture	C	79		0.00	0.00
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	17,600	0.40	28.99
		Area Sq. Mi. =	0.0006		
				Weighted C =	71.8

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds,* Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

ClarkDietz

Project//	Intercoastal at Geist		Subbasin 8
Project No.//	H0210350		
Subject//	Discharge Calculation	Page//	of
Prepared By//	BEP	Date//	3/19/2020
Checked By//	HP	Date//	5/15/2020

Time of Concentration: Watershed 8

Sheet Flow (Applicable to Tc only)

1	Surface Description	S Grass	
2	Manning's Roughness Coeff.,...n (See Figure 202-2B)	0.150	
	Max. Flow Elev.(ft)=	825.3	
	Min. Flow Elev. (ft)=	824.0	
3	Flow length, L .....ft.	31.0	
4	Two-yr 24hr Rainfall[1], P2...in.	2.90	
5	Land Slope (ft/ft)=	0.0419	
6	Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.	0.050 hr	

Shallow Concentration Flow

7	Surface description (paved or unpaved).....	unpaved	
	Max. Elevation, ...ft	824.00	
	Min Elevation, ...ft	819.50	
8	Flow length, L.....ft.	284.0	
9	Watercourse slope, s.....ft/ft	0.0158	
10	Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)	2.03	
11	Tt = L/(3600 V).....Computed Tt..hr.	0.039 hr	

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	2
b =		
d =		
SS =		
Angle =	0	0

		1	2
12	Cross sectional flow area, a.....ft^2		
13	Wetted perimeter, Pw.....ft		
14	Hydraulic radius, r=a/Pw Compute r....ft		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	Channel slope length,s.....ft/ft		
16	Manning's roughness coeff.,n .Based on stream type		
17	V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s		
18	Flow length from shallow to Structure, L .....ft.		
19	Tt = L/(3600 V).....Computed Tt..hr.		
20	Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)	**0.089 hr**	

or

5.3 min

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

Clark Dietz

Project// Intercoastal at Geist
Project No.// H0210350
Subject// Discharge Calculation
Prepared By// BEP
Checked By// HP

Subbasin 9 and 10

Page// ____ of ____
Date// 4/8/2020
Date// 5/15/2020

Watershed 9 and 10 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98	16000	0.37	36.00
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65		0.00	0.00
Grass/Pasture	B	69		0.00	0.00
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65	83500	1.92	124.60
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70		0.00	0.00
Grass/Pasture	C	79		0.00	0.00
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	99,500	2.28	160.59
		Area Sq. Mi. =	0.0036		
				Weighted C =	70.3

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds,* Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

Clark Dietz

Project//	Intercoastal at Geist		Subbasin 9 and 10
Project No.//	H0210350		
Subject//	Discharge Calculation	Page//	of
Prepared By//	BEP	Date//	4/8/2020
Checked By//	HP	Date//	5/15/2020

Time of Concentration: Watershed 9 and 10

Sheet Flow (Applicable to Tc only)

1	*Surface Description .....*	*S Grass*	
2	*Manning's Roughness Coeff.,...n (See Figure 202-2B)*	*0.150*	
	Max. Flow Elev.(ft)=	*816.5*	
	Min. Flow Elev. (ft)=	*813.7*	
3	*Flow length, L .....ft.*	*26.1*	
4	*Two-yr 24hr Rainfall*[1]*, P2...in.*	*2.90*	
5	*Land Slope (ft/ft)=*	*0.1072*	
6	*Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.*	*0.030 hr*	

Shallow Concentration Flow

7	*Surface description (paved or unpaved).....*	*paved*	
	Max. Elevation, ...ft	*813.70*	
	Min Elevation, ...ft	*807.90*	
8	*Flow length, L.....ft.*	*457.5*	
9	*Watercourse slope, s.....ft/ft*	*0.0127*	
10	*Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)*	*2.29*	
11	*Tt = L/(3600 V).....Computed Tt..hr.*	*0.056 hr*	

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	*2*
b =		
d =		
SS =		
Angle =	*0*	*0*

		1	*2*
12	*Cross sectional flow area, a.....ft^2*		
13	*Wetted perimeter, Pw.....ft*		
14	*Hydraulic radius, r=a/Pw Compute r....ft*		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	*Channel slope length,s.....ft/ft*		
16	*Manning's roughness coeff.,n .Based on stream type*		
17	*V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s*		
18	*Flow length from shallow to Structure, L .....ft.*		
19	*Tt = L/(3600 V).....Computed Tt..hr.*		
20	*Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)*	***0.085 hr***	

or

5.1 min

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

Clark Dietz

Project// Intercoastal at Geist
Project No.// H0210350
Subject// Discharge Calculation
Prepared By// BEP
Checked By// HP

Subbasin 11 and 12

Page// of
Date// 4/8/2020
Date// 5/15/2020

Watershed 11 and 12 Site Data:

Geographic Area Descriptions	Soil Type	Runoff Curve (C)	Area (Sq. Ft.)	Area (acres) (A)	CxA
Road	N/A	98	18000	0.41	40.50
Agriculture	A	67		0.00	0.00
Forest	A	36		0.00	0.00
HD-Residential	A	54		0.00	0.00
LD-Residential	A	46		0.00	0.00
Agriculture	B	76		0.00	0.00
Commercial	B	92		0.00	0.00
Forest	B	65		0.00	0.00
Grass/Pasture	B	69		0.00	0.00
HD-Residential	B	70		0.00	0.00
LD-Residential	B	65	86000	1.97	128.33
Agriculture	C	83		0.00	0.00
Commercial	C	94		0.00	0.00
Forest	C	70		0.00	0.00
Grass/Pasture	C	79		0.00	0.00
HD-Residential	C	80		0.00	0.00
LD-Residential	C	77		0.00	0.00
Commercial	D	95		0.00	0.00
Forest	D	79		0.00	0.00
Grass/Pasture	D	84		0.00	0.00
LD-Residential	D	82		0.00	0.00
		Totals =	104,000	2.39	168.82
		Area Sq. Mi. =	0.0037		
				Weighted C =	70.7

Note - Curve Numbers taken from *Urban Hydrology for Small Watersheds,* Technical Release TR 55, United States of Agriculture, Natural Resources Conservation Service, Table 2-2a, 1986

ClarkDietz

Project// Intercoastal at Geist
Project No.// H0210350
Subject// Discharge Calculation
Prepared By// BEP
Checked By// HP

Subbasin 11 and 12

Page// ____ of ____
Date// 4/8/2020
Date// 5/15/2020

Time of Concentration: Watershed 11 and 12

Sheet Flow (Applicable to Tc only)

1	Surface Description	S Grass	
2	Manning's Roughness Coeff.,...n (See Figure 202-2B)	0.150	
	Max. Flow Elev.(ft)=	823.2	
	Min. Flow Elev. (ft)=	821.0	
3	Flow length, L .....ft.	40.0	
4	Two-yr 24hr Rainfall[1], P2...in.	2.90	
5	Land Slope (ft/ft)=	0.0550	
6	Tt = 0.007 (nL)^0.8/P2^0.5 * S^0.4 Computed Tt....hr.	0.055 hr	

Shallow Concentration Flow

7	Surface description (paved or unpaved).....	paved	
	Max. Elevation, ...ft	821.00	
	Min Elevation, ...ft	801.50	
8	Flow length, L.....ft.	x	
9	Watercourse slope, s.....ft/ft	#VALUE!	
10	Average velocity, V ..ft/s(INDOT eq 29-7.7 or7.8)	#VALUE!	
11	Tt = L/(3600 V).....Computed Tt..hr.	0.000 hr	

Channel Flow

Trapezoidal Channel Geometry (Estimated from Survey/Quad maps)

	1	2
b =		
d =		
SS =		
Angle =	0	0

		1	2
12	Cross sectional flow area, a.....ft^2		
13	Wetted perimeter, Pw.....ft		
14	Hydraulic radius, r=a/Pw Compute r....ft		
	Max. Elev of channel, ...(ft) =		
	Min. Elev of channel, ...(ft) =		
15	Channel slope length,s.....ft/ft		
16	Manning's roughness coeff.,n .Based on stream type		
17	V =(1.49 r^2/3 s^1/2)/n Computed V...ft/s		
18	Flow length from shallow to Structure, L .....ft.		
19	Tt = L/(3600 V).....Computed Tt..hr.		
20	Watershed or Subarea Tc or Tt (add Tt in steps 6, 11, and 19)	**0.055 hr**	

or

3.3 min

Notes

1) - 2-year 24 hour rainfall was taken from NOAA Atlas 14, Volume 2

ATTACHMENT 2:

Rainfall Distribution

NRCS Type-2 Rainfall Distribution

% Time	% Storm
0	0.000
5	0.010
10	0.025
15	0.040
20	0.060
25	0.080
30	0.100
35	0.130
40	0.165
45	0.220
50	0.640
55	0.780
60	0.835
65	0.870
70	0.895
75	0.920
80	0.940
85	0.960
90	0.980
95	0.990
100	1.000

10-year 24-hour = 3.83 inches

100-year 24-hour = 6.46 inches

ATTACHMENT 3:

Cost Estimate

HAMILTON COUNTY DRAINAGE BOARD
INTRACOASTAL AT GEIST

ENGINEER'S ESTIMATE

5/22/2020

ALTERNATIVE 1 - UPGRAGE STORM SEWER/OVERLAND SWALE

Contract Item No.	Description	Estimated Quantity	Prices In Figures	
			Unit Price	Total Price for Item
1	CONSTRUCTION ENGINEERING	1 LS	$ 2,500.00	$ 2,500
1	MOBILIZATION AND DEMOBILIZATION	1 LS	$ 5,000.00	$ 5,000
2	CLEARING/RESTORING LANDSCAPE IN DRAINAGE EASEMENT	1 LS	$ 4,000.00	$ 4,000
3	MAINTAINING TRAFFIC	1 LS	$ 1,000.00	$ 1,000
4	COMMON EXCAVATION	21 CYS	$ 40.00	$ 840
5	FINE GRADING	116 CYS	$ 50.00	$ 5,800
6	SODDING	308 SYS	$ 30.00	$ 9,240
7	CURB CONCRETE, A	6 LFT	$ 25.00	$ 150
8	SIDEWALK CONCRETE	4 SYS	$ 200.00	$ 800
9	HMA, TRAIL	9 TON	$ 250.00	$ 2,250
10	PIPE, RCP, CIRCULAR, 18 IN.	101 LFT	$ 75.00	$ 7,575
11	PIPE, RCP, CIRCULAR, 21 IN.	140 LFT	$ 100.00	$ 14,000
12	INLET STRUCTURE	3 EA	$ 2,000.00	$ 6,000
13	PIPE END SECTION, 18" DIA.	1 EA	$ 1,000.00	$ 1,000
14	DEMOLITION, REMOVAL AND DISPOSAL OF EX. STORM PIPE	241 LFT	$ 17.00	$ 4,097
15	EROSION CONTROL	1 LS	$ 500.00	$ 500
16	CONTINGENCY (20%)	1 LS	$ 11,500.00	$ 11,500

Construction Subtotal =	**$**	**76,252**
Legal Costs =	$	2,500
Design and Bidding Services =	$	25,000
Construction Engineering and Observation Services =	$	5,000
Total Project Cost =	**$**	**108,752**

HAMILTON COUNTY DRAINAGE BOARD
INTRACOASTAL AT GEIST

ENGINEER'S ESTIMATE

5/22/2020

ALTERNATIVE 2 - POND 1

Contract Item No.	Description	Estimated Quantity	Prices In Figures	
			Unit Price	Total Price for Item
1	CONSTRUCTION ENGINEERING	1 LS	$ 2,500.00	$ 2,500
2	MOBILIZATION AND DEMOBILIZATION	1 LS	$ 5,000.00	$ 5,000
3	CLEARING/RESTORING LANDSCAPE IN DRAINAGE EASEMENT	1 LS	$ 20,000.00	$ 20,000
4	MAINTAINING TRAFFIC	1 LS	$ 4,000.00	$ 4,000
5	COMMON EXCAVATION	1750 CYS	$ 40.00	$ 70,000
6	FINE GRADING	1120 SYS	$ 50.00	$ 56,000
7	SODDING	308 SYS	$ 30.00	$ 9,240
8	SEEDING	1300 SYS	$ 1.50	$ 1,950
9	HMA, TRAIL	9 TON	$ 250.00	$ 2,250
10	PIPE, RCP, CIRCULAR, 18 IN.	241 LFT	$ 75.00	$ 18,075
11	INLET STRUCTURE	3 EA	$ 2,000.00	$ 6,000
12	PIPE END SECTION, 18" DIA.	1 EA	$ 1,000.00	$ 1,000
13	POND OUTLET CONTROL STRUCTURE	1 EA	$ 10,000.00	$ 10,000
14	DEMOLITION, REMOVAL AND DISPOSAL OF EX. STORM PIPE	241 LFT	$ 17.00	$ 4,097
15	EROSION CONTROL	1 LS	$ 2,000.00	$ 2,000
16	PROPERTY ACQUISITION	1 LS	$ 50,000.00	$ 50,000
17	CONTINGENCY (20%)	1 LS	$ 50,900.00	$ 50,900

Construction Subtotal =	**$**	**313,012**
Legal Costs =	$	2,500
Design and Bidding Services =	$	25,000
Construction Engineering and Observation Services =	$	5,000
Total Project Cost =	**$**	**345,512**

HAMILTON COUNTY DRAINAGE BOARD
INTRACOASTAL AT GEIST

ENGINEER'S ESTIMATE

5/22/2020

ALTERNATIVE 2 - POND 3

Contract Item No.	Description	Estimated Quantity	Prices In Figures	
			Unit Price	Total Price for Item
1	CONSTRUCTION ENGINEERING	1 LS	$ 2,500.00	$ 2,500
2	MOBILIZATION AND DEMOBILIZATION	1 LS	$ 5,000.00	$ 5,000
3	CLEARING/RESTORING LANDSCAPE IN DRAINAGE EASEMENT	1 LS	$ 4,000.00	$ 4,000
4	MAINTAINING TRAFFIC	1 LS	$ 1,000.00	$ 1,000
5	COMMON EXCAVATION	700 CYS	$ 40.00	$ 28,000
6	FINE GRADING	1500 SYS	$ 50.00	$ 75,000
7	SODDING	308 SYS	$ 30.00	$ 9,240
8	SEEDING	1300 SYS	$ 1.50	$ 1,950
9	HMA, TRAIL	9 TON	$ 250.00	$ 2,250
10	PIPE, RCP, CIRCULAR, 12 IN.	20 FT	$ 42.00	$ 840
11	PIPE, RCP, CIRCULAR, 18 IN.	241 LFT	$ 75.00	$ 18,075
12	INLET STRUCTURE	3 EA	$ 2,000.00	$ 6,000
13	PIPE END SECTION, 18" DIA.	1 EA	$ 1,000.00	$ 1,000
14	POND OUTLET CONTROL STRUCTURE	1 EA	$ 10,000.00	$ 10,000
15	DEMOLITION, REMOVAL AND DISPOSAL OF EX. STORM PIPE	241 LFT	$ 17.00	$ 4,097
16	EROSION CONTROL	1 LS	$ 2,000.00	$ 2,000
17	PROPERTY ACQUISITION	1 LS	$ 50,000.00	$ 50,000
18	CONTINGENCY (20%)	1 LS	$ 32,700.00	$ 32,700

Construction Subtotal =	$	**253,652**
Legal Costs =	$	2,500
Design and Bidding Services =	$	25,000
Construction Engineering and Observation Services =	$	5,000
Total Project Cost =	$	**286,152**

HAMILTON COUNTY DRAINAGE BOARD
INTRACOASTAL AT GEIST

ENGINEER'S ESTIMATE
5/22/2020
ALTERNATIVE 3 - STORM SEWER REROUTE

Contract Item No.	Description	Estimated Quantity	Prices In Figures	
			Unit Price	Total Price for Item
1	CONSTRUCTION ENGINEERING	1 LS	$ 2,500.00	$ 2,500
2	MOBILIZATION AND DEMOBILIZATION	1 LS	$ 5,000.00	$ 5,000
3	CLEARING/RESTORING LANDSCAPE IN DRAINAGE EASEMENT	1 LS	$ 15,000.00	$ 15,000
4	MAINTAINING TRAFFIC	1 LS	$ 5,000.00	$ 5,000
5	COMMON EXCAVATION	21 CYS	$ 40.00	$ 840
	FINE GRADING	466 SYS	$ 50.00	$ 23,300
6	SODDING	308 SYS	$ 30.00	$ 9,240
7	RESTORE EAST LANDSCAPING	1 LS	$ 25,000.00	$ 25,000
8	HMA ROAD PATCH	22 TON	$ 250.00	$ 5,500
9	HMA, TRAIL	9 TON	$ 250.00	$ 2,250
9	RECONSTRUCT EAST PATH	1 LS	$ 2,000.00	$ 2,000
10	SIDEWALK CONCRETE	8 SYS	$ 200.00	$ 1,600
11	CURB CONCRETE, A	12 LFT	$ 25.00	$ 300
11	PIPE, RCP, CIRCULAR, 18 IN.	140 LFT	$ 75.00	$ 10,500
12	PIPE, RCP, CIRCULAR, 24 IN.	700 LFT	$ 100.00	$ 70,000
13	INLET STRUCTURE	3 EA	$ 2,000.00	$ 6,000
14	PIPE END SECTION, 18" DIA.	1 EA	$ 1,000.00	$ 1,000
15	DEMOLITION, REMOVAL AND DISPOSAL OF EX. STORM PIPE	241 LFT	$ 17.00	$ 4,097
13	EROSION CONTROL	1 LS	$ 5,000.00	$ 5,000
14	PROPERTY ACQUISITION	1 LS	$ 50,000.00	$ 50,000
15	CONTINGENCY (20%)	1 LS	$ 48,300.00	$ 48,300

Construction Subtotal =	**$ 292,427**
Legal Costs =	$ 2,500
Design and Bidding Services =	$ 25,000
Construction Engineering and Observation Services =	$ 5,000
Total Project Cost =	**$ 324,927**

Clark Dietz, Inc.
8900 Keystone Crossing
Suite 475
Indianapolis, IN 46220

p 317.844.8900

clarkdietz.com

Clark Dietz

Engineering Quality of Life

Intracoastal at Geist #334

Reconstruction to increase storm sewer capacity & improve overland flow outlet.
Fishers to pay 25%, Maintenance Fund to pay 75%
Use existing maintenance funds & 75% of annuals assessment for next 7 years for balance.
*No reconstruction cost to landowners & no change in current maintenance assessment.
Reconstruction hearing: August 24, 2020

Construction Costs	$87,689.80
Study Costs	$28,000.00
Engineering	$33,000.00
Reconstruction Total:	**$148,689.80**

Funding Proposal

Fisher pays 25%:	-$37,172.45
Use existing maintenance funds:	-$28,409.68
Balance:	$83,107.67
Paid to date on study:	-$25,200.00
75% of annual asmt=$11,832.10=$8,874.08*6 years	-$53,244.48
Year 7	-$4,663.19
Balance:	$0.00

Parcel	Owner	Desc	Rate	Ben	Rec Cost	Mnt Asmt	% of Current Mnt Asmt
13-16-06-00-10-001.000	Allen, Jeffrey & Michelle	S6 T17 R6 Intracoastal At Geist 5th Lot 66	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-036.000	Allen, Robert B II & Margaret M	S6 T17 R6 Intracoastal At Geist 1st Lot 126	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-013.000	Andert, Joseph & Ashley h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 24	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-002.000	Bangert, Jeremy T & Hiedy N	S6 T17 R6 Intracoastal At Geist 5th Lot 67	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-021.000	Bauer, Juli	S6 T17 R6 Intracoastal At Geist 1st Lot 32	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-019.000	Beal, Floyd W & Carolyn N	S6 T17 R6 Intracoastal At Geist 5th Lot 112	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-010.000	Beaudry, Jaritza E Trustee of Jaritza E Beaudry Rev Lvg Trust	S6 T17 R6 Intracoastal At Geist 2B Lot 170	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-006.000	Bieberich, Stacy A	S6 T17 R6 Intracoastal At Geist 2B Lot 166	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-006.000	Blackbourne, Jamie L	S6 T17 R6 Intracoastal At Geist 3A Lot 54	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-017.000	Blom, Timothy L & Lindsey C h&w	S6 T17 R6 Intracoastal At Geist 5th Lot 110	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-028.000	Bohan, Sara & Scott	S6 T17 R6 Intracoastal At Geist 1st Lot 39	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-016.000	Bond, Justin A & Melissa M h&w	S6 T17 R6 Intracoastal At Geist 5th Lot 109	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-008.000	Bonwell, Gregory S & Bernice A	S6 T17 R6 Intracoastal At Geist 3B Lot 151	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-07-007.000	Borek, Chad R & Kelly L h&w	S6 T17 R6 Intracoastal At Geist 2C Lot 85	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-026.000	Bottorff, Michael S & Ashley A Dawson Bottorff	S6 T17 R6 Intracoastal At Geist 5th Lot 119	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-010.000	Bowen, Ronald Jr	S6 T17 R6 Intracoastal At Geist 5th Lot 75	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-005.000	Bowser, Mary L	S6 T17 R6 Intracoastal At Geist 5th Lot 70	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-003.000	Brace, Dwight E & Maria A Romaine	S1 T17 R5 Intracoastal At Geist 4A Lot 88	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-07-003.000	Bruce, Ian Richard & Megan h&w	S6 T17 R6 Intracoastal At Geist 2C Lot 81	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-006.000	Brunic, Trent & Ashley	S6 T17 R6 Intracoastal At Geist 5th Lot 71	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-010.000	Bryan, Galinton C & Andrea R Halpern Bryan h&w te	S1 T17 R5 Intracoastal At Geist 4A Lot 95	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-017.000	Bryant, Eric & Julie St James jtrs	S6 T17 R6 Intracoastal At Geist 2A Lot 64	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-018.000	Buente, Wesley C & Erin L	S1 T17 R5 Intracoastal At Geist 4A Lot 103	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-015.000	Carrasquillo, Brenda Sue	S6 T17 R6 Intracoastal At Geist 2B Lot 175	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-011.000	Cheatham, Sean Christian	S1 T17 R5 Intracoastal At Geist 4A Lot 96	Regulated Subd	1 Lot	*	*	0.55%
99-99-99-99-99-999.007	City of Fishers	S1 T17 R5 & S6 T17 R6, Intracoastal at Geist Roads	Road	39.21	*	*	3.31%
13-16-06-00-04-006.000	Clifford, James R	S6 T17 R6 Intracoastal At Geist 1st Lot 17	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-001.000	Cole, Larry O & Cathy D	S6 T17 R6 Intracoastal At Geist 2A Lot 4	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-006.000	Collins, Kevin & Karyn h&w	S6 T17 R6 Intracoastal At Geist 3B Lot 149	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-016.000	Cozzi, Bruce R & Muriel A h&w	S6 T17 R6 Intracoastal At Geist 2B Lot 176	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-022.000	Cummings, Angel Renee & Jeffrey D	S6 T17 R6 Intracoastal At Geist 5th Lot 115	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-007.000	Day, Darrell S Trustee of Darrell Day Trust	S6 T17 R6 Intracoastal At Geist 2B Lot 167	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-004.000	Desserich, Kurt R	S6 T17 R6 Intracoastal At Geist 3B Lot 147	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-015.000	Dhami, Harkeerat	S1 T17 R5 Intracoastal At Geist 4A Lot 100	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-011.000	Dolan, Aaron M	S6 T17 R6 Intracoastal At Geist 3A Lot 59	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-023.000	Dombrowski, Scott & Ashley	S6 T17 R6 Intracoastal At Geist 5th Lot 116	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-002.000	Dunn, Penny L	S6 T17 R6 Intracoastal At Geist 3A Lot 50	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-041.000	Ehrmann, Michael	S6 T17 R6 Intracoastal At Geist 1st Lot 131	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-007.000	Eppstein, Andrew C	S6 T17 R6 Intracoastal At Geist 5th Lot 72	Regulated Subd	1 Lot	*	*	0.55%

Parcel	Owner	Desc	Rate	Ben	Rec Cost	Mnt Asmt	Current Mnt Asmt
13-16-06-00-05-008.000	Fadness, Scott A & Aunna N Huber h&w	S6 T17 R6 Intracoastal At Geist 2A Lot 11	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-003.000	Farrell, Matthew D & Michelle C	S6 T17 R6 Intracoastal At Geist 3B Lot 146	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-003.000	Fink, Eric E & Christina L	S6 T17 R6 Intracoastal At Geist 3A Lot 51	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-016.000	Foellinger, David M & Kathy S	S1 T17 R5 Intracoastal At Geist 4A Lot 101	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-001.000	Fowler, Michael W & Lori E jtrs	S6 T17 R6 Intracoastal At Geist 3A Lot 49	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-011.000	Franco, Miguel A & Selva	S6 T17 R6 Intracoastal At Geist 2A Lot 14	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-013.000	Fuller, Joshua N & Stephanie C	S6 T17 R6 Intracoastal At Geist 2A Lot 48	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-024.000	Galaviz, Ronald & Kimberly h&w	S6 T17 R6 Intracoastal At Geist 5th Lot 117	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-012.000	Garden, James A & Melanie J	S6 T17 R6 Intracoastal At Geist 1st Lot 23	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-010.000	Gerig, Todd A & Rebecca L	S6 T17 R6 Intracoastal At Geist 3B Lot 153	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-025.000	Gettelfinger, Bart & Kay Anne h&w	S6 T17 R6 Intracoastal At Geist 5th Lot 118	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-012.000	Girt, Aaron M & Shehanai B	S6 T17 R6 Intracoastal At Geist 2B Lot 172	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-003.000	Giunta, Kevin J & Tricia L	S6 T17 R6 Intracoastal At Geist 2B Lot 163	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-034.000	Greene, Joshua B & Christina M h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 45	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-017.000	Guajardo, Enrique & Anna M	S6 T17 R6 Intracoastal At Geist 2B Lot 177	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-009.000	Guinnup Nicholson, Lisa	S6 T17 R6 Intracoastal At Geist 2B Lot 169	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-07-005.000	Gurchiek, William G & Margaret Keating Gurchiek	S6 T17 R6 Intracoastal At Geist 2C Lot 83	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-006.000	Hackett, Amy R	S6 T17 R6 Intracoastal At Geist 2A Lot 9	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-012.001	Hamilton Southeastern Utilities Inc	S6 T17 R6 Intracoastal At Geist 3B CA Pt 7	Regulated Subd	0.21	*	*	0.55%
13-16-06-00-04-046.000	Hannigan, Matthew & Paula M	S6 T17 R6 Intracoastal At Geist 1st Lot 136	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-048.000	Harre, Arthur F Jr Trustee of Arthur F Harre Jr Rev Trust	S6 T17 R6 Intracoastal At Geist 1st Lot 138	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-009.000	Hatcher, David M & Karla A	S6 T17 R6 Intracoastal At Geist 1st Lot 20	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-013.000	Heller, David L & Stacy A h&w	S6 T17 R6 Intracoastal At Geist 5th Lot 106	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-021.000	Henry, Mitchell J & Mindy S	S6 T17 R6 Intracoastal At Geist 5th Lot 114	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-014.000	Hughes, Scott D & Rachel A h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 25	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-010.000	Humphrey, John R & Laura L Clark	S6 T17 R6 Intracoastal At Geist 1st Lot 21	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-001.000	Hurry, Roger J & Adrain L	S6 T17 R6 Intracoastal At Geist 1st Lot 1	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-004.000	Imel, Angela Kaye & Michael Aaron Wessler jtrs	S6 T17 R6 Intracoastal At Geist 3A Lot 52	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-054.000	Inks, Patrick & Teresa	S6 T17 R6 Intracoastal At Geist 1st Lot 157	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-07-008.000	Intercoastal at Geist Homeowners Association Inc	S6 T17 R6 Intracoastal At Geist 2C Blk A	Regulated Subd	0.87	*	*	0.55%
13-16-06-00-04-056.000	Intracoastal at Geist Homeowners Assocation Inc	S6 T17 R6 Intracoastal At Geist 1st CA 1 1.34Ac	Regulated Subd	1.34	*	*	0.55%
13-16-06-00-04-057.000	Intracoastal at Geist Homeowners Assocation Inc	S6 T17 R6 Intracoastal At Geist 1st CA 2 1.28Ac	Regulated Subd	1.28	*	*	0.55%
13-16-06-00-04-058.000	Intracoastal at Geist Homeowners Assocation Inc	S6 T17 R6 Intracoastal At Geist 1st CA 3	Regulated Subd	0.33	*	*	0.55%
13-16-06-00-04-059.000	Intracoastal at Geist Homeowners Assocation Inc	S6 T17 R6 Intracoastal At Geist 1st CA 4	Regulated Subd	0.17	*	*	0.55%
13-16-06-00-04-060.000	Intracoastal at Geist Homeowners Assocation Inc	S6 T17 R6 Intracoastal At Geist 1st CA 5	Regulated Subd	0.87	*	*	0.55%
13-16-06-00-09-012.000	Intracoastal at Geist Homeowners Assocation Inc	S6 T17 R6 Intracoastal At Geist 3B CA Pt 7 1.46Ac	Regulated Subd	1.46	*	*	0.55%
13-16-06-00-10-028.000	Intracoastal at Geist Homeowners Assocation Inc	S6 T17 R6 Intracoastal At Geist 5th CA 7	Regulated Subd	0.95	*	*	0.55%
13-16-06-00-10-029.000	Intracoastal at Geist Homeowners Assocation Inc	S6 T17 R6 Intracoastal At Geist 5th CA 8	Regulated Subd	0.60	*	*	0.55%
13-16-06-00-06-012.000	Janes, Carol L & Michael A	S6 T17 R6 Intracoastal At Geist 3A Lot 60	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-007.000	Jimenez, Louise Chaperon	S6 T17 R6 Intracoastal At Geist 2A Lot 10	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-001.000	Johnson, W Margaret Trustee W Margaret Johnson Rev Trust	S6 T17 R6 Intracoastal At Geist 2B Lot 159	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-027.000	Jones, Matthew J & Billie M h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 38	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-007.000	Jordan, Christina A	S1 T17 R5 Intracoastal At Geist 4A Lot 92	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-010.000	Kenyon, Ross & Michelle	S6 T17 R6 Intracoastal At Geist 2A Lot 13	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-002.000	Kertin, Kristin M & Brian J	S6 T17 R6 Intracoastal At Geist 2A Lot 5	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-011.000	Kim, John & Jennifer	S6 T17 R6 Intracoastal At Geist 3B Lot 154	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-007.000	Kimmel, Sara K & Donald E	S6 T17 R6 Intracoastal At Geist 3A Lot 55	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-031.000	Knapke, Justin M & Kristin A te	S6 T17 R6 Intracoastal At Geist 1st Lot 42	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-002.000	Koch, Howard Jay & Ann Marie Young Koch h&w	S1 T17 R5 Intracoastal At Geist 4A Lot 87	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-055.000	Kocken, Patricia Ann	S6 T17 R6 Intracoastal At Geist 1st Lot 158	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-015.000	Korapatti, Balaji	S6 T17 R6 Intracoastal At Geist 5th Lot 108	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-009.000	Kossler, Michael Eric & Sharon Elaine h&w	S1 T17 R5 Intracoastal At Geist 4A Lot 94	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-07-006.000	Lantzer, Erin & Jason	S6 T17 R6 Intracoastal At Geist 2C Lot 84	Regulated Subd	1 Lot	*	*	0.55%

Parcel	Owner	Desc	Rate	Ben	Rec Cost	Mnt Asmt	Current Mnt Asmt
13-16-06-00-10-020.000	Lechleidner, Ryan & Julie	S6 T17 R6 Intracoastal At Geist 5th Lot 113	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-014.000	Lewis, Michael F & Emily E	S6 T17 R6 Intracoastal At Geist 5th Lot 107	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-007.000	Li, Shun with LE & Shun Li Trustee of Shun Li Rev Trust	S6 T17 R6 Intracoastal At Geist 3B Lot 150	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-038.000	Loehr, Timothy J & Susanne C	S6 T17 R6 Intracoastal At Geist 1st Lot 128	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-029.000	Lohman, Brian G & Andrea L	S6 T17 R6 Intracoastal At Geist 1st Lot 40	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-047.000	Long, Michael J	S6 T17 R6 Intracoastal At Geist 1st Lot 137	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-016.000	Loyd, Troy R	S6 T17 R6 Intracoastal At Geist 2A Lot 63	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-005.000	Machledt, Charles G & Terrie P	S6 T17 R6 Intracoastal At Geist 3B Lot 148	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-004.000	Madden, Denise & Lannie	S6 T17 R6 Intracoastal At Geist 1st Lot 15	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-004.000	Maddy, Heath	S6 T17 R6 Intracoastal At Geist 2B Lot 164	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-005.000	Mahrer, William J & Amy E h&w	S6 T17 R6 Intracoastal At Geist 3A Lot 53	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-001.000	Mallow, Jeremy & Tera Robinson jtrs	S1 T17 R5 Intracoastal At Geist 4A Lot 86	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-020.000	Mankin, Timothy A & Lori D	S1 T17 R5 Intracoastal At Geist 4A Lot 105	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-002.000	Manley, Patricia J & R Thomas Davidson jtrs	S6 T17 R6 Intracoastal At Geist 1st Lot 2	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-005.000	Manzoor, Shahen & Sulltana	S6 T17 R6 Intracoastal At Geist 2A Lot 8	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-004.000	Manzur, Navil & Shanzida jtrs	S6 T17 R6 Intracoastal At Geist 2A Lot 7	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-07-004.000	Marchant, Gregory J & Sharon E Paulson	S6 T17 R6 Intracoastal At Geist 2C Lot 82	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-003.000	Marshall, Barbara, Todd Alan Marshall & Beth Marshall Phillips jtrs	S6 T17 R6 Intracoastal At Geist 1st Lot 3	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-013.000	Mates, Michael G II & Melissa C	S6 T17 R6 Intracoastal At Geist 2B Lot 173	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-018.000	Mathison, Luke & Kathleen h&w	S6 T17 R6 Intracoastal At Geist 2A Lot 65	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-035.000	McKain, John P & Trisha L h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 46	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-015.000	Mikels, Dean E & Kelly F	S6 T17 R6 Intracoastal At Geist 1st Lot 26	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-008.000	Mohler, Michael David II & Elicia E	S6 T17 R6 Intracoastal At Geist 3A Lot 56	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-012.000	Moorehead, Brent R & Angela L	S6 T17 R6 Intracoastal At Geist 2A Lot 47	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-009.000	Morrison, Kathryn	S6 T17 R6 Intracoastal At Geist 3B Lot 152	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-002.000	Morrow, Mark & Rebecca	S6 T17 R6 Intracoastal At Geist 2B Lot 160	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-017.000	Mortellaro, Anthony J & Mary Jo h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 28	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-040.000	Motsay, Jeanine L	S6 T17 R6 Intracoastal At Geist 1st Lot 130	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-009.000	Myers, Andrew & Jordan h&w	S6 T17 R6 Intracoastal At Geist 2A Lot 12	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-026.000	Norwood, Connor W & Corey Anderson jtrs	S6 T17 R6 Intracoastal At Geist 1st Lot 37	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-002.000	Ochs, Philip E III & Norma L	S6 T17 R6 Intracoastal At Geist 3B Lot 145	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-020.000	Olsen, Douglas & Kathleen	S6 T17 R6 Intracoastal At Geist 1st Lot 31	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-005.000	Orr, William Samuel	S6 T17 R6 Intracoastal At Geist 2B Lot 165	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-009.000	Page, Roberta L	S6 T17 R6 Intracoastal At Geist 5th Lot 74	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-030.000	Papp, Donald S & Karen E	S6 T17 R6 Intracoastal At Geist 1st Lot 41	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-027.000	Patton, Eric J & Nickole D Rev Lvg Trust	S6 T17 R6 Intracoastal At Geist 5th Lot 120	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-017.000	Peat, Tyler J & Allison B h&w	S1 T17 R5 Intracoastal At Geist 4A Lot 102	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-014.000	Pelton, Hiram S IV & Tamyra T	S6 T17 R6 Intracoastal At Geist 2B Lot 174	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-09-001.000	Politan, Gary W & Janice L Trustees Politan Family Trust	S6 T17 R6 Intracoastal At Geist 3B Lot 144	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-011.000	Poore, Kevin W & Julie A	S6 T17 R6 Intracoastal At Geist 1st Lot 22	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-005.000	Potter, Donald W & Kelley D h&w	S1 T17 R5 Intracoastal At Geist 4A Lot 90	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-016.000	Purcell, Gregory L & Jessica C h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 27	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-033.000	Purcell, Gregory L & Jessica C h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 44	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-053.000	Raber, Kerry S & Deborah	S6 T17 R6 Intracoastal At Geist 1st Lot 143	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-051.000	Rahn, Larry A & Pamela J	S6 T17 R6 Intracoastal At Geist 1st Lot 141	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-07-001.000	Rappe, Brian J & Kristin R	S6 T17 R6 Intracoastal At Geist 2C Lot 79	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-004.000	Ricafort, Michael & Nissa	S1 T17 R5 Intracoastal At Geist 4A Lot 89	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-014.000	Richards, Brooke & Scott J w&h	S1 T17 R5 Intracoastal At Geist 4A Lot 99	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-023.000	Richwine, Richard H Jr & Caryl R	S6 T17 R6 Intracoastal At Geist 1st Lot 34	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-008.000	Robinson, Matthew	S6 T17 R6 Intracoastal At Geist 5th Lot 73	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-045.000	Rowe, Catherine Ann	S6 T17 R6 Intracoastal At Geist 1st Lot 135	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-008.000	Rowlison, Richard T & Deborah K	S6 T17 R6 Intracoastal At Geist 2B Lot 168	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-019.000	Rude, Jeffory A & Gay E	S1 T17 R5 Intracoastal At Geist 4A Lot 104	Regulated Subd	1 Lot	*	*	0.55%

Parcel	Owner	Desc	Rate	Ben	Rec Cost	Mnt Asmt	Current Mnt Asmt
13-16-06-00-04-032.000	Rufatto, Jennifer	S6 T17 R6 Intracoastal At Geist 1st Lot 43	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-024.000	Rumsey, Charles Bertrand Jr & Karissa Fails Rumsey	S6 T17 R6 Intracoastal At Geist 1st Lot 35	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-006.000	Schlueter, Benjamin D & Tiffany K	S1 T17 R5 Intracoastal At Geist 4A Lot 91	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-004.000	Shaffer, Daniel & Stephanie h&w	S6 T17 R6 Intracoastal At Geist 5th Lot 69	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-007.000	Shannahan, Edwin	S6 T17 R6 Intracoastal At Geist 1st Lot 18	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-018.000	Shaver, James N & Bonita E Family Trust	S6 T17 R6 Intracoastal At Geist 5th Lot 111	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-07-002.000	Shircliff, James David & Debra Jean Trustees of Omega Trust	S6 T17 R6 Intracoastal At Geist 2C Lot 80	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-012.000	Siddons, Bradley & Sandra h&w	S6 T17 R6 Intracoastal At Geist 5th Lot 77	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-049.000	Siffermann, Thomas C Jr	S6 T17 R6 Intracoastal At Geist 1st Lot 139	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-005.000	Siffermann, Thomas Charles	S6 T17 R6 Intracoastal At Geist 1st Lot 16	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-003.000	Skulski, James F & Jennifer K	S6 T17 R6 Intracoastal At Geist 2A Lot 6	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-037.000	Smuck, Kristopher M & Jamie L	S6 T17 R6 Intracoastal At Geist 1st Lot 127	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-011.000	Spees, Martin	S6 T17 R6 Intracoastal At Geist 5th Lot 76	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-012.000	Spencer, Bradley & Hailie	S1 T17 R5 Intracoastal At Geist 4A Lot 97	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-039.000	Talamantes, Juan E Sr & Rose	S6 T17 R6 Intracoastal At Geist 1st Lot 129	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-010.000	Vores, Allison K	S6 T17 R6 Intracoastal At Geist 3A Lot 58	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-042.000	Walker, Chad E & Fernanda B h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 132	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-025.000	Weber, Zachary A & Melissa h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 36	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-019.000	Wessler, Jonathan P	S6 T17 R6 Intracoastal At Geist 1st Lot 30	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-013.000	Westfall, John K	S1 T17 R5 Intracoastal At Geist 4A Lot 98	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-022.000	Wheeler, Kurt A & Melissa L Knafel jtrs	S6 T17 R6 Intracoastal At Geist 1st Lot 33	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-018.000	Whelan, Justin B III	S6 T17 R6 Intracoastal At Geist 1st Lot 29	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-015.000	Whitaker, Troy S & Tracy S h&w te	S6 T17 R6 Intracoastal At Geist 2A Lot 62	Regulated Subd	1 Lot	*	*	0.55%
13-15-01-00-19-008.000	Whitely, David A & Sarah L h&w	S1 T17 R5 Intracoastal At Geist 4A Lot 93	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-008.000	Wilburn, Troy & Cathy h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 19	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-06-009.000	Wilcox, John A & Elisa M h&w	S6 T17 R6 Intracoastal At Geist 3A Lot 57	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-05-014.000	Willmann, Robert K & Karyn	S6 T17 R6 Intracoastal At Geist 2A Lot 61	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-044.000	Wilson, Bryan & Sandra h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 134	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-050.000	Wise, Geoffrey & Alanna Johnson Wise	S6 T17 R6 Intracoastal At Geist 1st Lot 140	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-04-043.000	Wolf, Dean R & Christi J h&w	S6 T17 R6 Intracoastal At Geist 1st Lot 133	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-08-011.000	Wright, Jamar & Leslie	S6 T17 R6 Intracoastal At Geist 2B Lot 171	Regulated Subd	1 Lot	*	*	0.55%
13-16-06-00-10-003.000	Wyant, Christopher D & Kelly M h&w	S6 T17 R6 Intracoastal At Geist 5th Lot 68	Regulated Subd	1 Lot	*	*	0.55%
Parcels: 177					Total:	No Chg	100%