



June 18, 2019

Ratna Pottumuthu, Engineer IV  
City of Corpus Christi Utilities Department  
2726 Holly Rd.  
Corpus Christi, Tx 78408

**Re: Master Plan Amendment Request  
Oso WRP Service Area Sub Basin Spa 30  
Airline Lift Station**

Dear Ms. Pottumuthu:

This letter is to serve as notice that Al Development Inc. (ADI) intends to pursue a Master Plan Amendment to the Wastewater Collection System for Oso WRP Service Area Sub Basin Spa 30. The specific basin is Airline Lift Station as depicted in Exhibit 2.

The approved Master Plan shows a service line to continue southeast along the southern edge of the drainage easement of Lipes Boulevard and continues to Airlines. The collection line is shown to have 2900 LF of 12" PVC pipe starting at the northwest corner of the lot west of Airline crossing

Al Development Inc. has an approved final plat for Airline Crossing with a street layout as shown on Exhibit 4. ADI is proposing to route the collection line within the existing public street right-of-ways as shown in Exhibit 2-3. The Collection line from Lipes Blvd. will connect with the 12" PVC pipe continuing along Bronx Ave. This 12" PVC located on the Bronx Ave. continues through Manhattan Estates and empties out to the Airline Lift Station as shown in Exhibit 2. This will save time and effort by avoiding installation of 704 linear feet of 12" PVC on the collector road Lipes Ave. The Wastewater Collection will start at its original proposed position and travel 360 linear feet southeast along Lipes Ave. to a manhole. From this manhole, 20 linear feet will connect to the existing 12" PVC just northwest of the manhole.

Calculations were made to see if the new system can handle the new proposed route. Manhattan Estates and the two properties located west of ADI's property were taken into consideration. These two properties were calculated as multifamily homes (RM-1) with 22 acres. The calculations as shown on Exhibit 1 proves that the 12" PVC running through Manhattan Estates to the Airline Lift Station can handle the additional two properties if developed. Additionally this new route has a FL=8.618 at the end of the of the Master Plan on Lipes Blvd. This puts the pipe 1.34 feet deeper than the original proposed plan from the City of Corpus Christi.

Sincerely,

Hanson Professional Services Inc.

A handwritten signature in blue ink, appearing to read "Craig B. Thompson".

Craig B. Thompson, P.E.



Attachments: Exhibit 1-Calculations for Sanitary Pipe in Manhattan Estates and two RM-1 properties  
Exhibit 2-Wastewater Collection System Master Plan- Oso WRP Service Area Sub Basin Spa 30  
Exhibit 3- Wastewater Master Plan Proposed Amendment  
Exhibit 4-Aproved Final plat for Airline Crossing Subdivision

June 18, 2019

Existing Area (Manhattan Estates)	Acres:	69	Units:	338	Type:	Single Family Residential
	Acres:	0	Units:	0	Type:	Commercial
Future Area (Two RM-1)	Acres:	22	Units:	500	Type:	Multi Family Apartments

Variable Used (Subdivision/Multi Family)	
Gallons/(person*day) (GPD):	100
Infiltration/Inflow (I/I) (Gallons/(day*Acre)):	400

Persons/unit:	3.5	Type:	Single Family Residential
Persons/unit:	8	Type:	Commercial
Persons/unit:	2	Type:	Multi Family Apartments

#### Future Area & Existing Area (Two potential RM-1 Properties, Manhattan Estates)

People:	2183		
$\frac{5}{\left(\frac{Pop.}{1000}\right)^2}$	→	Peaking Factor Calculated:	4.277197
		Peaking Factor Used:	4

#### Runoff produced by Two RM-1 Properties and Manhattan Estates

$$Q_{in} \text{ Equation} \rightarrow \frac{\left( \text{units} * GPD * \left( \frac{person}{unit} \right) * \text{peaking factor} \right) + (\text{Acres} * \text{Infiltration})}{1000000}$$

Single Family Residential:	0.5008
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$$\rightarrow \frac{(338 * 100 * 3.5 * 4) + (69 * 400)}{1000000} = 0.5008 (\text{Million Gallons/Day})$$

Multifamily Apartments:	0.4088
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$$\rightarrow \frac{(338 * 100 * 3.5 * 4) + (69 * 400)}{1000000} = .0.4088 (\text{Million Gallons/Day})$$

<b>TOTAL MGD (Million Gallons/day):</b>	<b>0.9096</b>
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#### Sanitary Pipe Check

Diameter (inches):	12	Material:	PVC	Slope %:	0.2	k:	1.486	n:	0.013
Area (square feet):	0.785398	Perimeter (feet):	3.141593	Hydraulic Radius (feet):	0.25				

$$\text{Mannings Equation} \rightarrow V = \left( \frac{k}{n} \right) * \left( \frac{A}{P} \right)^{\frac{2}{3}} * (S^{.5}) \rightarrow \left( \frac{1.486}{0.013} \right) * \left( \frac{.785398}{3.141593} \right) * (.2^{.5}) \rightarrow V = 2.0286987 \left( \frac{feet}{sec.} \right)$$

Flow rate (cubic feet/second):	1.593335
Flow rate MGD (millions gallons/day):	1.029728

$$\rightarrow Q = VA \rightarrow 2.0286987 * 0.785398 \rightarrow Q = 1.593335 \left( \frac{ft^3}{sec.} \right)$$

1.029728	>	0.9096
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- The 12" pipe leading to the Airline lift station can have a flow up to 1,029,728 (Million Gallons/day)
- The additional RM-1 properties and Manhattan Estates will only produce 909,600 (Million Gallons/day)

- Proposed Master Plan Pipe  
 Existing 12" Pipe (Manhattan Estates)  
 Existing Master Plan 12" Pipe (Lipes Blvd)  
 Proposed Pipe to be Removed  
 Proposed Pipe to be Constructed



0 250 500  
GRAPHIC SCALE IN FEET  
SCALE: 1" = 500'

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## EXISTING OSO WRD SERVICE AREA SPA30

SERVICE AREA  
AIRLINE CROSSING UNIT 3  
Corpus Christi, Nueces County, TX

Job Number: 16L0230

Exhibit 2

[+][Top][2D Wireframe]



THIS PLAN / TITLE IS A DESIGN  
YOUR PROJECT / TITLE PLAN

- Proposed Pipe
- Proposed Pipe to be Removed
- Existing 12" Pipe
- Property Boundary



0 60 120  
 GRAPHIC SCALE IN FEET  
 SCALE: 1" = 120'

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**EXISTING OSO WRP SERVICE AREA SPA30**

AIRLINE CROSSING UNIT 3  
 Corpus Christi, Nueces County, TX

Job Number: 16L0230

Exhibit 3



Hanson Professional Services, Inc.

THIS PLAN IS THE PROPERTY OF HANSON PROFESSIONAL SERVICES, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND LOCATION SPECIFICALLY IDENTIFIED HEREON.

