



Lift Station 33- Crystal Estates

Enclosure-	Wooden Fence
Type of Pumps:	Submersible
# of Pumps-	2-Pumps
Pump Hp:	5-Hp
Model-	4-inch ABS
Wet Well:	6-ft Diameter (Circular); FRP Wet Well
Wet well Depth:	24-ft
Age:	30-year Plus
Suction Piping:	PVC
Discharge Piping:	DIP; low profile valve vault
Discharge Gate Valve:	Yes
Discharge Check Valve:	Yes
Air Release:	No
Light:	Yes
Water:	Yes; with backflow preventer.
Accessibility:	Station is awkwardly located at the intersection of Eldora and Sugar Rd. No problem with accessibility but very little room to work/park.
Alarm (Visual):	Yes
Alarm (Audio):	Yes
Fall Protection:	None
General Notes:	Single submersible pump operational. The second pump is not operational due to missing rails. Rails and pump base will need to be replaced. Station currently receives too much flow for a single pump. Control panel is in acceptable conditions. Influent manhole is located fence outside
Deficiencies:	Pump station is in decent conditions. The second pump issue needs to be resolved and low-profile valve vault piping painted, etc. Station targeted to be abandoned as part of Northwest Interceptor Project.





Lift Station 34- West Hi-Line

Enclosure-	Old CMU Block Building + Chain Link Fence
Type of Pumps:	Self Priming
# of Pumps-	2-Pumps
Pump Hp:	7.5-Hp
Model-	4-inch Crown (obsolete Pumps)
Wet well:	Circular (6-ft Diameter)
Wet well Depth:	16-ft
Age:	30-year Plus
Suction Piping:	DIP; decent shape.
Discharge Piping:	DIP; decent shape. Needs to be painted.
Discharge Gate Valve:	Yes
Discharge Check Valve:	Yes
Air Release:	No
Light:	No
Water:	No
Accessibility:	Good access
Alarm (Visual):	No
Alarm (Audio):	No
Fall Protection:	Not applicable
General Notes:	Large footprint. Bypass piping provided outside CMU Block Building. Similar design to LS 30 W. 3072 (Dicker). Roof was recently added. Station has a history of flooding. Station needs to be replaced.
Deficiencies:	Old station with multiple deficiencies. Station floods. Considering replacing or eliminating. <u>Target to eliminate as part of South Interceptor Project.</u>



Lift Station 36- Los Ebanos

Enclosure-	Chain link fence; large footprint.
Type of Pumps:	Self Priming
# of Pumps-	2-Pumps
Pump Hp:	7.5-Hp
Model-	4-inch Crown (obsolete pumps)
Wet well:	Circular (6-ft Diameter)
Wet well Depth:	17-ft
Age:	30 plus years
Suction Piping:	DIP; decent shape
Discharge Piping:	Good conditions
Discharge Gate Valve:	Yes
Discharge Check Valve:	Yes
Air Release:	No
Light:	Yes, but insufficient
Water:	No
Accessibility:	Decent access
Alarm (Visual):	Yes
Alarm (Audio):	Yes
Fall Protection:	Not applicable
General Notes:	Station is not a great shape but is decent. This station is targeted for elimination based on the pending South Interceptor Project. Large site footprint.
Deficiencies:	Major openings at suction pipe that result in major inflow during wet-weather conditions. Station always stays flow. Pumps and/or force main is undersized. <u>Station targeted to be abandoned pending South Interceptor Project.</u>



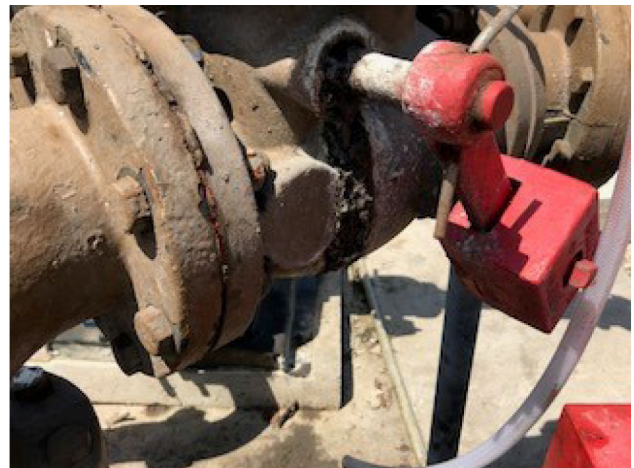
Lift Station 38- West Hi-Line

Enclosure-	Chain link fence
Type of Pumps:	Submersible
# of Pumps-	2-Pumps
Pump Hp:	5-Hp
Model-	4-inch Ebarra
Wet well:	Circular (6-ft Diameter)
Wet well Depth:	13-ft
Age:	28-year Plus
Suction Piping:	PVC; decent shape.
Discharge Piping:	DIP; decent shape. Needs to be painted.
Discharge Gate Valve:	Yes
Discharge Check Valve:	Yes
Air Release:	No
Light:	No
Water:	No
Accessibility:	Good access
Alarm (Visual):	Yes
Alarm (Audio):	Yes
Fall Protection:	None
General Notes:	Station serves only the school. It does collect a lot of flow during wet-weather conditions. Wet well is small.
Deficiencies:	Address flooding issues. <u>Target to eliminate as part of South Interceptor Project.</u>



Lift Station 40- Hall Acres

Enclosure-	Chain Link Fence (good condition)
Type of Pumps:	Self-Priming
# of Pumps-	2-Pumps
Pump Hp:	15-Hp
Model-	4-inch Crown (This pump manufacture is not in business)
Wet well:	Circular (6-ft Diameter); FRP good condition.
Wet well Depth:	25-ft
Age:	15-Years
Piping Condition:	Suction Piping is PVC. Appears to be in good shape.
Discharge Piping:	Needs to be maintained; painted.
Discharge Gate Valve:	Yes
Discharge Check Valve:	Yes
Air Release:	Yes
Light:	No
Water:	No
Accessibility:	Located directly off Hall Acres Rd; Access is not via an asphalt driveway, but access is manageable.
Alarm (Visual):	Yes
Alarm (Audio):	Yes
Fall Protection:	Not provided
General Notes:	Station utilizes one pump that is obsolete and no longer supported by manufacture. The station was converted from a submersible to a self-priming Suction pipe is PVC. Wet well is in great shape (FRP Wet Well).
Deficiencies:	Inlet pipe is not sealed allowing inflow during wet-weather conditions. Station has structural damage due to drainage deficiencies. Erosion was identified in and around the wet well. Discharge Pipe is susceptible to crack due to settlement.



Lift Station 42- East Hi Line

Enclosure-	Chain link fence; large footprint.
Type of Pumps:	Self Priming
# of Pumps-	1-Pumps
Pump Hp:	7.5-Hp
Model:	4-inch Gorman Rupp
Wet well:	Circular (6-ft Diameter)
Wet well Depth:	25-ft
Age:	Unknown
Suction Piping:	DIP; decent shape. Needs to be coated/painted. Portion of pipe is a flexible hose.
Discharge Piping:	Poor conditions; needs to be painted.
Discharge Gate Valve:	No
Discharge Check Valve:	No
Air Release:	No
Light:	No
Water:	No
Accessibility:	Decent access
Alarm (Visual):	Yes
Alarm (Audio):	Yes
Fall Protection:	Not applicable
General Notes:	Large footprint. Station was modified by the City approximately 5-years ago as a temporary fix. Converted from submersible to self-priming with a single pump. This was done on a temporary basis, but station is still operational as modified.
Deficiencies:	This station has major problems and needs to be either abandoned or replaced. At a minimum, a second pump should be added. <u>Station targeted to be abandoned, pending South Interceptor Project.</u>



Lift Station 44- Encanto Ridge

Enclosure-	Chain link fence
Type of Pumps:	Submersible
# of Pumps-	2 Pumps
Pump Hp:	5-Hp
Model-	4-inch Flygt
Wet well:	Concrete Circular (6-ft Diameter)
Wet well Depth:	20-ft
Wet Well Condition:	Acceptable; consider epoxy coating.
Age:	Unknown
Piping Condition:	Good
Discharge Gate Valve:	Yes
Discharge Check Valve:	Yes
Air Release:	Yes
Light:	No
Water:	Yes
Accessibility:	Difficult to access
Alarm (Visual):	Yes
Alarm (Audio):	Yes
Fall Protection:	Yes
General Notes:	This station does not receive much flow.
Deficiencies:	<p>Station appears to be in good conditions. Accessibility is an issue; an all-weather access road is not available which makes it difficult during wet-weather conditions. Consider providing access through the adjacent subdivision.</p> <p>Long drive along dirt road to access station. Again, consider providing access off subdivision.</p> <p>Address drainage issues. Station has major drainage erosion around the perimeter of the station slab.</p>



Lift Station 46- Las Palmas

Enclosure-	Chain link fence
Type of Pumps:	Submersible
# of Pumps-	2-Pumps
Pump Hp:	3-Hp
Model-	4-inch Ebarra
Wet well:	Circular (6-ft Diameter)
Wet well Depth:	18-ft
Age:	Unknown
Suction Piping:	PVC; decent shape.
Discharge Piping:	DIP; buried in low profile valve vault. Very poor conditions. Needs to be painted.
Discharge Gate Valve:	Yes
Discharge Check Valve:	Yes
Air Release:	No
Light:	No
Water:	Yes
Accessibility:	Good access
Alarm (Visual):	Yes
Alarm (Audio):	Yes
Fall Protection:	None
General Notes:	Very small pumps; guide rails vibrate and are loose. Difficult to remove pumps.
Deficiencies:	Fix guide rails and removal of pump difficulties. <u>Target to eliminate as part of South Interceptor Project.</u>



Lift Station 48- San Gabriel

Enclosure-	Chain link fence w/ plenty of land
Type of Pumps:	Self Priming
# of Pumps-	2-Pumps
Pump Hp:	20-Hp (Pumps seem too large for this facility)
Model-	6-inch Gorman Rupp
Wet well:	Circular (6-ft Diameter); good shape
Wet well Depth:	22-ft (FRP Wet Well)
Age:	18-Years
Suction Piping:	Suction Piping is PVC and in good conditions.
Discharge Piping:	Good shape.
Discharge Gate Valve:	Yes
Discharge Check Valve:	Yes
Air Release:	No
Light:	Yes (present but no working)
Water:	No
Accessibility:	All weather concrete driveway.
Alarm (Visual):	Yes
Alarm (Audio):	Yes
Fall Protection:	None; add fall protection.
General Notes:	Station is in good conditions. No problems noted by staff.
Deficiencies:	Fix light.



Lift Station 50- I Road Lift Station

Enclosure-	Chain link fence- Good conditions
Type of Pumps:	Submersible
# of Pumps-	3-Pumps
Pump Hp:	85-Hp
Model-	8-inch Flygt
Wet Well:	Dual Rectangular Wet well and Splitter Box. Each well is 16-ft X 16-ft. Splitter Box is 14-ft X 5-ft.
Wet well Depth:	47-ft
Age:	6-Year
Suction Piping:	Yellow Mine (PVC); Recently installed. Great shape.
Discharge Piping:	DIP
Discharge Gate Valve:	Yes
Discharge Check Valve:	Yes
Air Release:	No; port available but Air Release/Vacuum Valves Removed.
Light:	Yes, but not adequate. Light insufficient.
Water:	Yes
Accessibility:	Good access
Alarm (Visual):	Yes
Alarm (Audio):	Yes
Fall Protection:	Yes
General Notes:	This station provides tremendous flexibility given the flow splitter box. It allows Staff to isolate one chamber for maintenance purposes and access to the wet well bottom if necessary without taking the station out of service. This should be included as a standard on larger lift stations. The second well is not currently being used and allocated for future flows. Flow is collected from Las Milpas (South Pharr) at this facility.
Deficiencies:	Air release/vacuum valves removed. Air release valves protect the pipeline system and maintain its efficiency. They also allow air back into the pipeline during emptying. This is important because some pipe materials can collapse

under negative pressure. Air Release/Vacuum Valves need to be replaced. According to staff once an air release valve fails, they remove it and it never gets replaced.

Electrical repairs desperately required at this station. The electrical conduit seals appear to have failed, been removed or never installed. Hydrogen sulfide gases have corroded the electrical boxes. Wires are connected using black electrical tape. It is my understanding that there was a minor flash/explosion of the electrical box several years ago. Electrical repairs are needed ASAP. This is a major lift station.

Odor Control system was operational. Important to maintain unit operational since it provides both odor and corrosion protection. Exposed aggregate noted on the wet well slab. This needs to be sealed.

Insufficient space between the wet well and fence to set temporary pump. Suction line is dropped into the wet well and blind flange used to access force main.

AC recently installed. Needs to be set and anchored on a concrete pad.

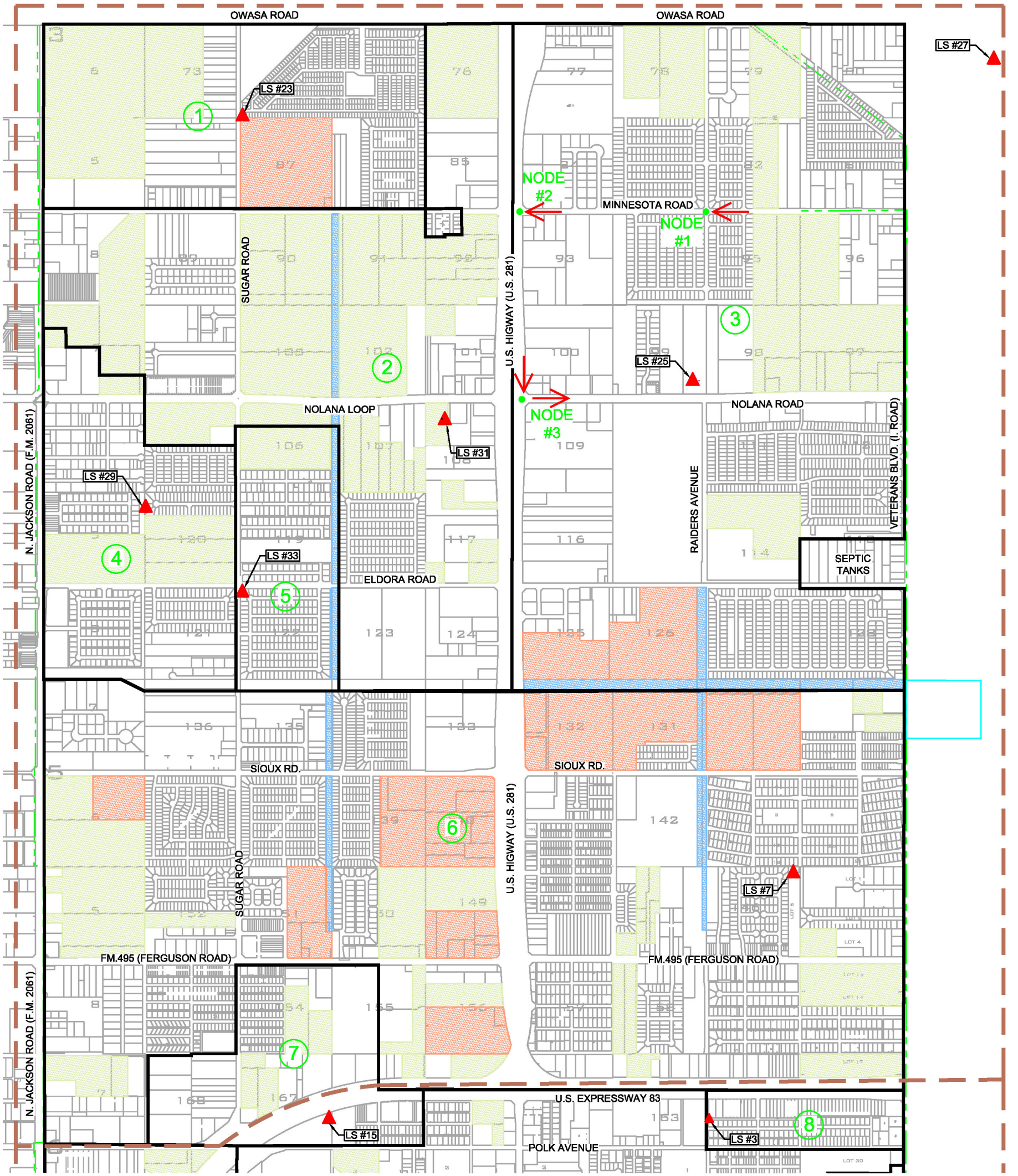
Auto dialer not working



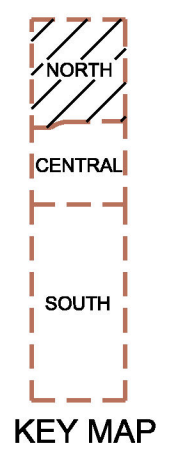


Appendix G

Hydraulic Analysis



- LEGEND**
- CATCHMENT BOUNDARY SUB-AREA
 - ▲ LIFT STATION
 - - - CITY LIMITS
 - - - REGION LIMITS
 - LAND (UNDEVELOPED)
 - LAND (DEVELOPED)
 - HIDALGO COUNTY DRAINAGE DISTRICT
 - 1 SEWERSHED

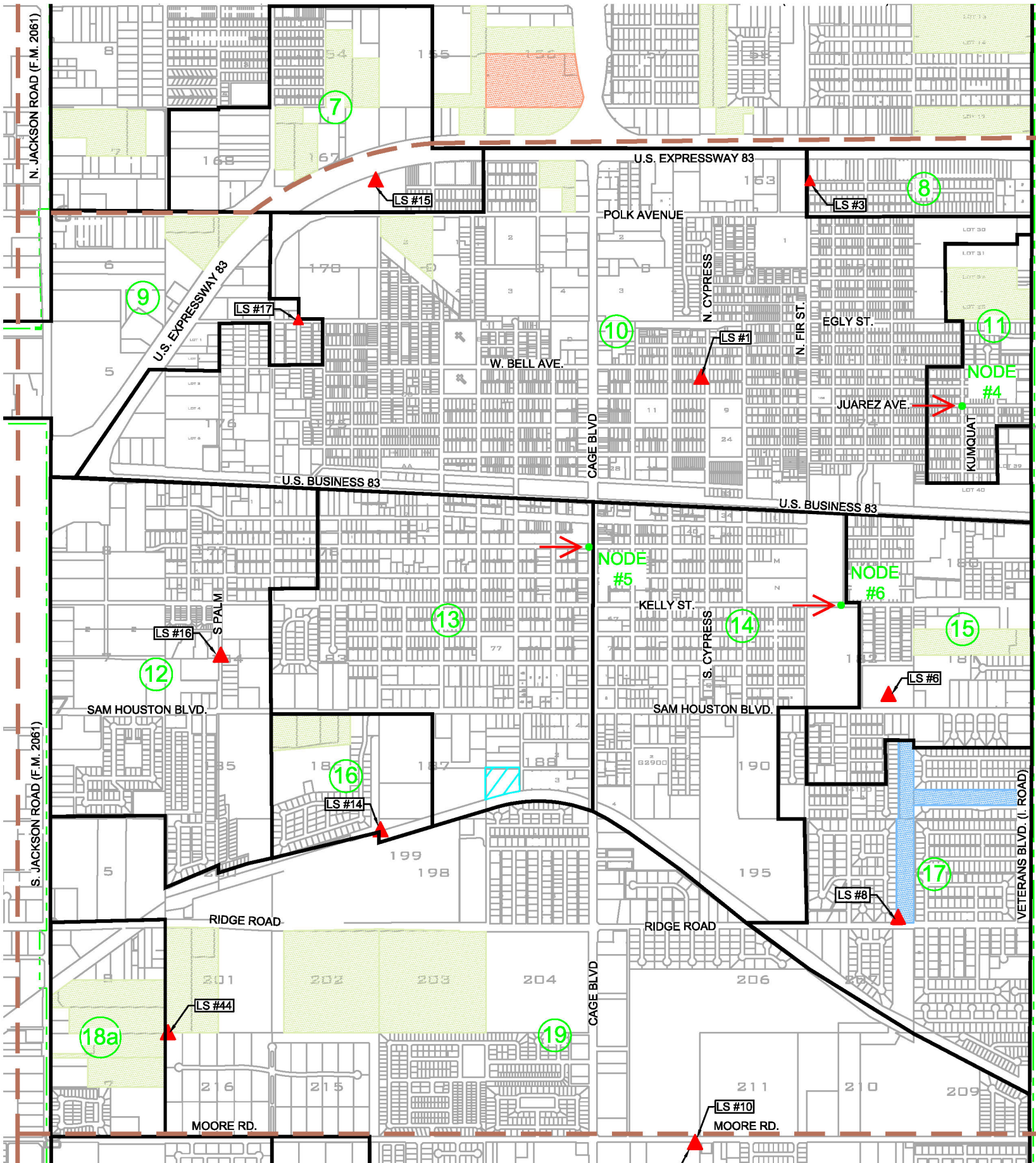


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CITY OF PHARR
 NORTH REGION
 SEWERSHED MAP

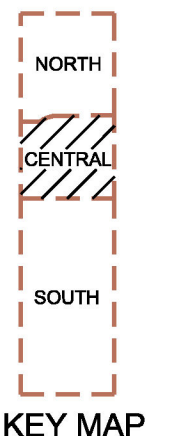


SCALE: 1"=1500'

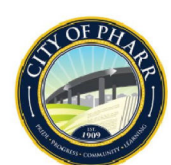


LEGEND

- CATCHMENT BOUNDARY SUB-AREA
- LIFT STATION
- CITY LIMITS
- REGION LIMITS
- LAND (UNDEVELOPED)
- LAND (DEVELOPED)
- HIDALGO COUNTY DRAINAGE DISTRICT
- SEWERSHED

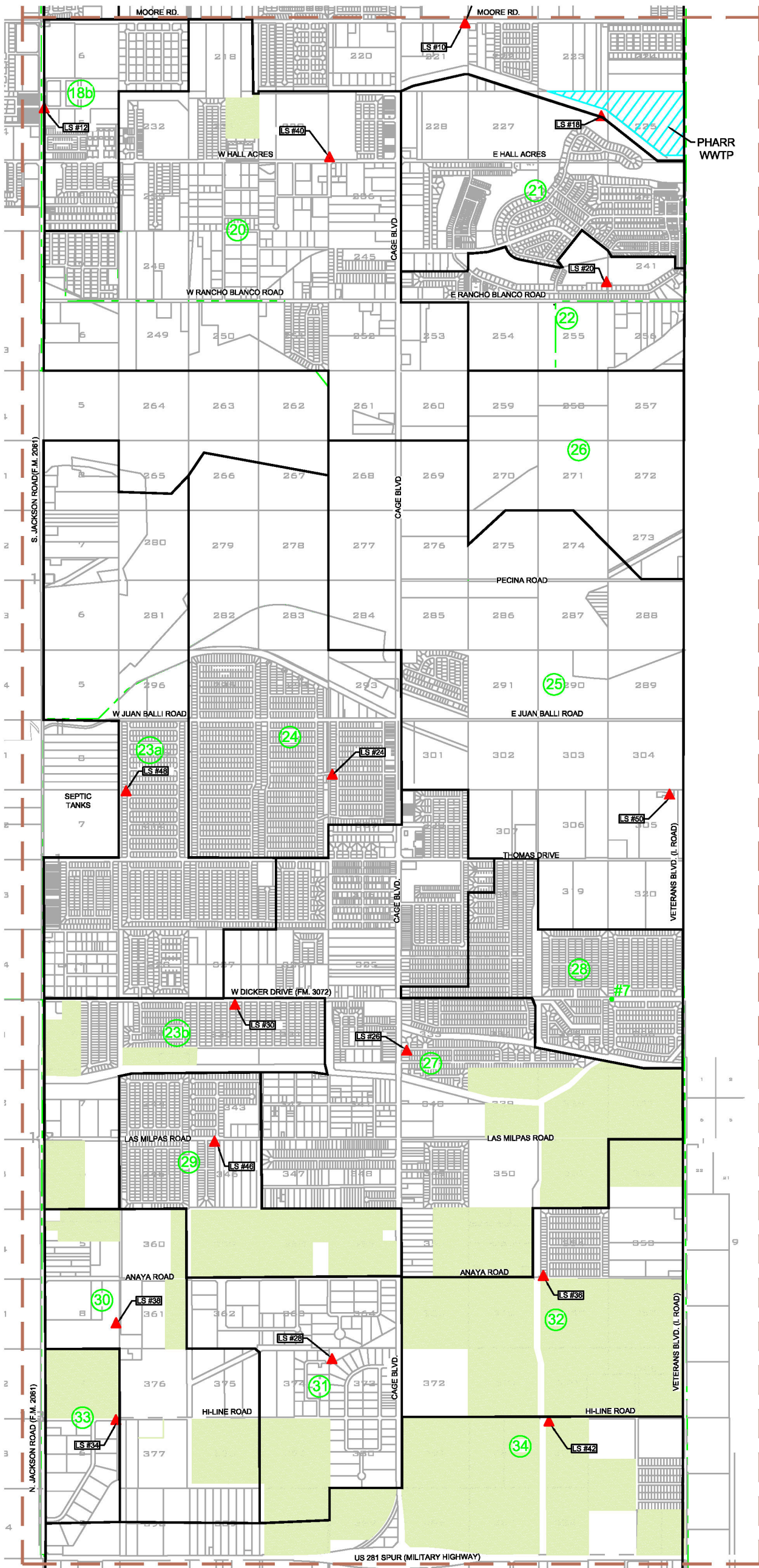


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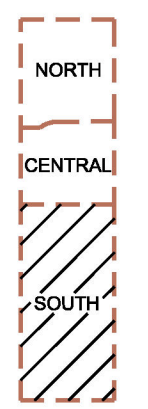


CITY OF PHARR
CENTRAL REGION
SEWERSHED MAP





SCALE: 1"=2200'



KEY MAP

LEGEND

- CATCHMENT BOUNDARY SUB-AREA
- LIFT STATION
- CITY LIMITS
- REGION LIMITS
- LAND (UNDEVELOPED)
- LAND (DEVELOPED)
- HIDALGO COUNTY DRAINAGE DISTRICT
- SEWERSHED

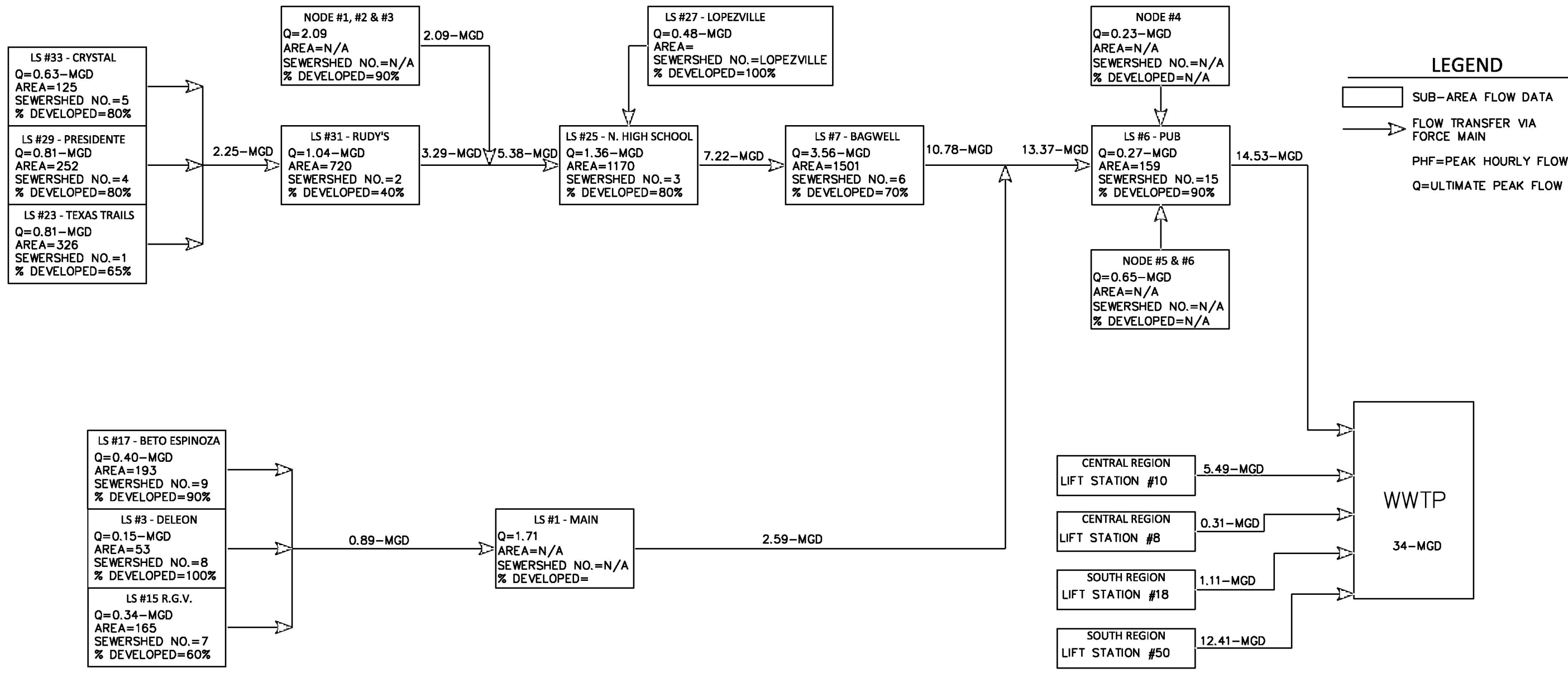


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CITY OF PHARR
SOUTH REGION
SEWERSHED MAP





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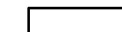
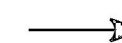


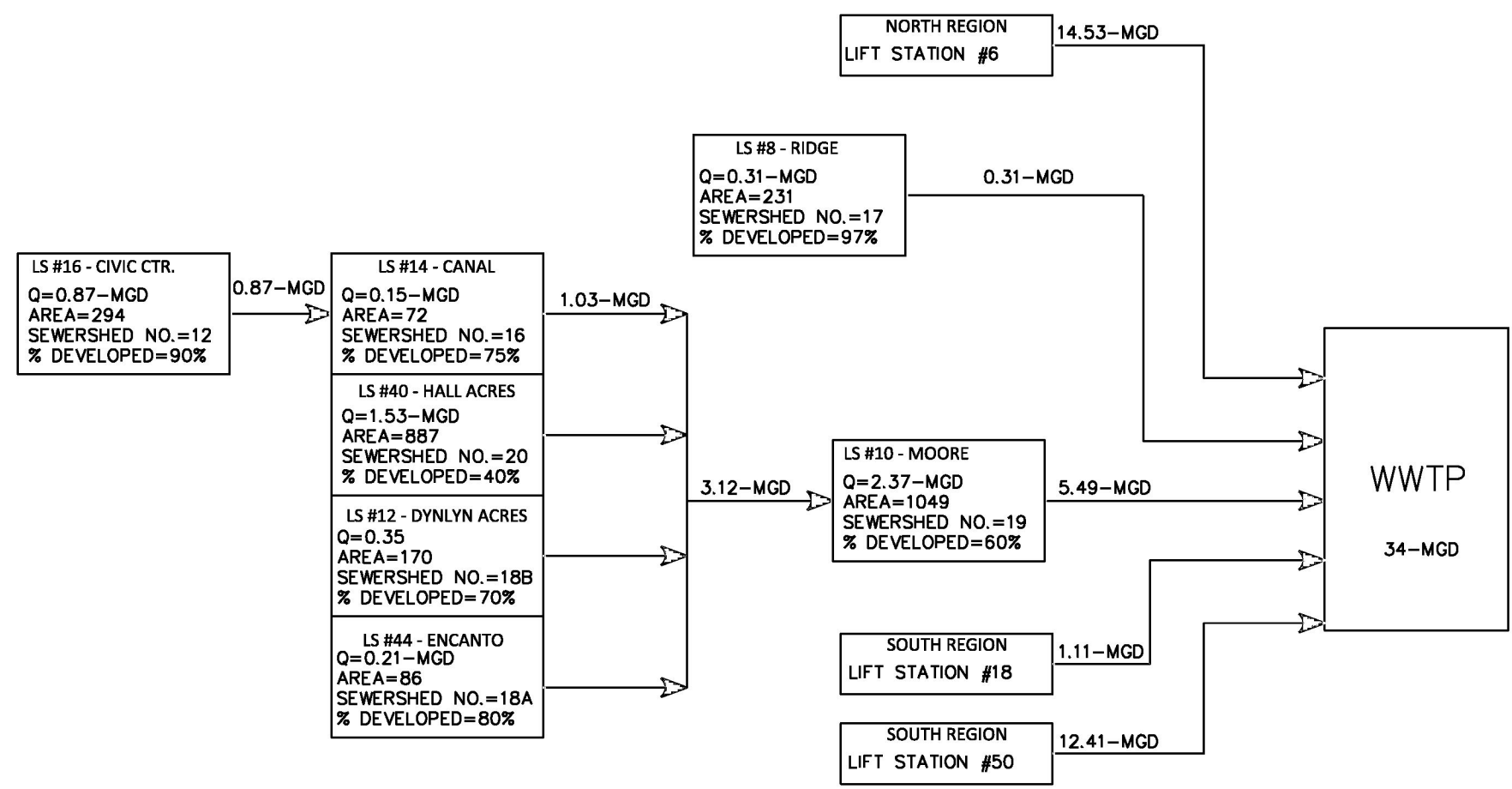
CITY OF PHARR
MASTER PLAN



CITY OF PHARR
NORTH REGION
WASTEWATER COLLECTION
LIFT STATION FLOW PATH

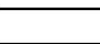
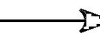
LEGEND

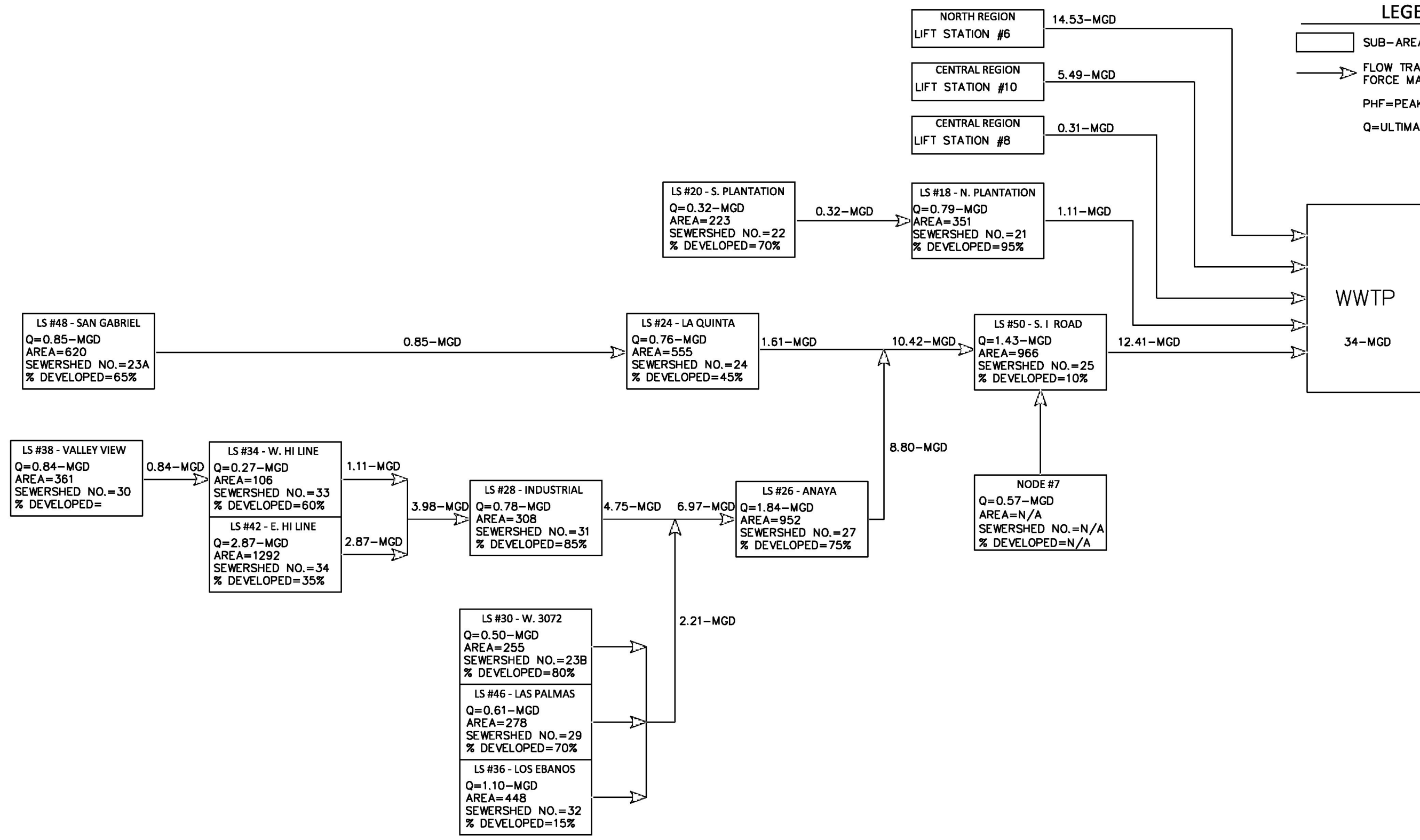
-  SUB-AREA FLOW DATA
-  FLOW TRANSFER VIA FORCE MAIN
- PHF=PEAK HOURLY FLOW
- Q=ULTIMATE PEAK FLOW



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LEGEND

-  SUB-AREA FLOW DATA
-  FLOW TRANSFER VIA FORCE MAIN
- PHF=PEAK HOURLY FLOW
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Appendix H

Sanitary Sewer Collection System Projects

Northwest Interceptor

Northeast Interceptor

Central Interceptor



City of Pharr- Northwest Interceptor

PREPARED BY: Garcia Infrastructure Consultants, LLC (GIC)
PREPARED FOR: City of Pharr
SUBJECT: Sewer System Master Plan (Northwest Region)
DATE: May 1, 2018

This memo presents a concept to correct deficiencies identified in the City's North Region, roughly south of Nolana, west of US 281, north of Sioux Rd., and east of Jackson Rd. The lift stations in the area include the following:

1. Lift Station 29: El President Lift Station (LS)
2. Lift Station 31: Rudy's LS
3. Lift Station 33: Eldora LS

LS 31 collects flow from LS 23, 29, and 33. LS 21 was recently decommissioned. Refer to **Exhibit 1** which depicts the location of the lift stations in this area and flow direction. If any of these lift stations are eliminated and redirected to a gravity system; it would immediately reduce flow volume at LS 31 and subsequently Lift Station 25. Lift Station 25 is located east of US 281.

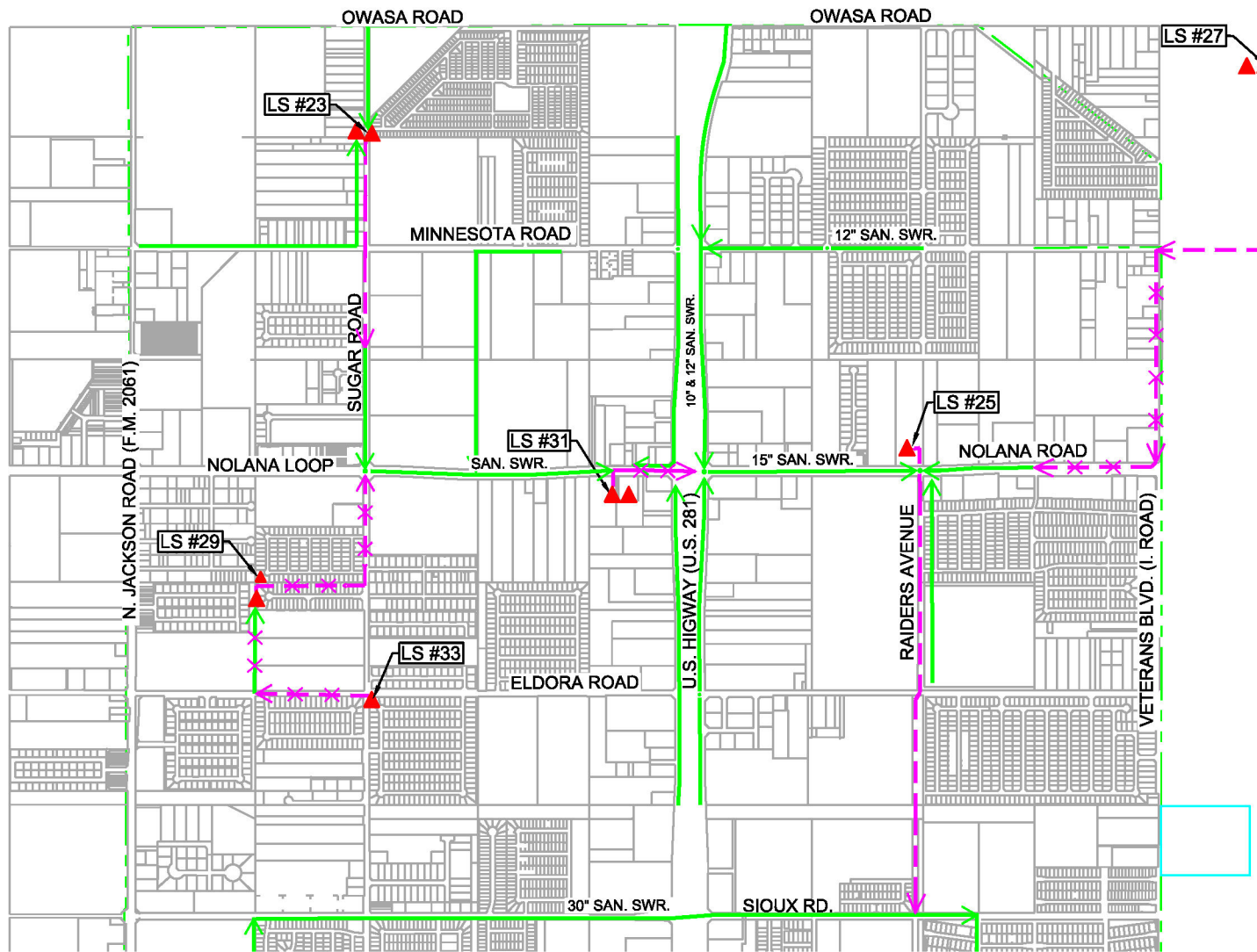
The capacity of each lift station is summarized below:

- Lift Station 29- 1.25-mgd
- Lift Station 31- 1.72-mgd
- Lift Station 33- 0.10-mgd

DEFICIENCIES

LS 29 represent a concern that requires immediate attention. This facility is located behind a residential neighborhood and has accessibility constraints. No access easements exist for maintenance purposes. Furthermore, the associated force main is within multiple residential lots and directly under homes. Refer to **Exhibit 2**. If this force main were to fail it could cause serious damage to the residential homes fronting W. Oak Ln. Eliminating this lift station is a high priority.

LS 31 Pumps have failed on multiple occasions. This station collects most of the flow in the City's Northwest Quadrant (roughly bounded by Owassa Rd, Jackson Rd, US 281, and Sioux Rd). Redirecting flow from LS 31 to the existing 30-inch Sanitary Sewer on Sioux Rd. would relieve the sewer system east of US 281. Specifically, the 15-inch Sewer Main on Nolana, which is currently undersized and LS 25. Flow from LS 31 ultimately terminates at LS 7. Since the 30-inch on Sioux Rd also terminates at LS 7, the diversion proposed would have the same terminus point, LS 7. LS 33 is also conveniently located downstream of LS 29 and can be eliminated as part of this project.



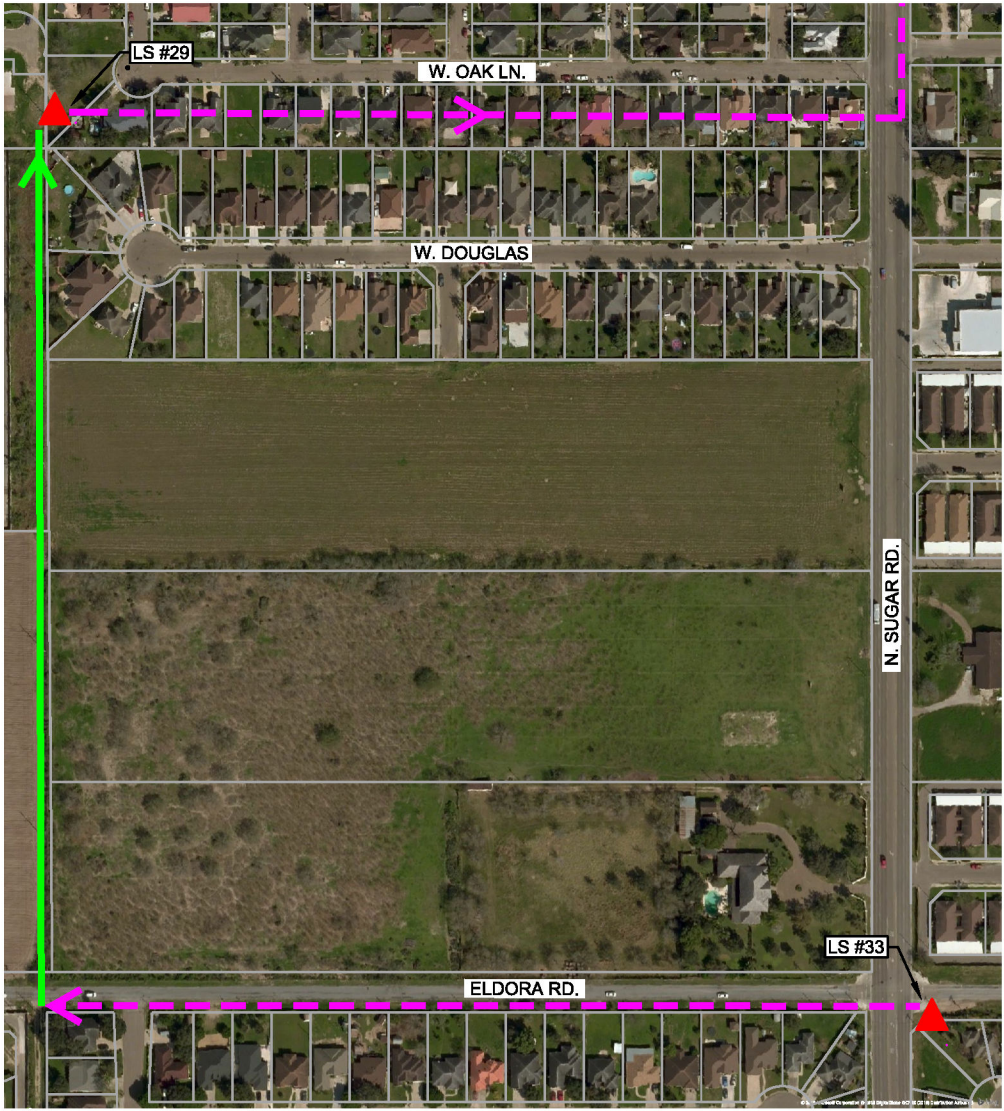
SCALE: N.T.S

- LEGEND**
- SANITARY SEWER
 - FORCE MAIN
 - LIFT STATION

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CITY OF PHARR
EXHIBIT NO. 1
LS 25 CATCHMENT
COLLECTION SYSTEM

TO SAN. SWR.
(NOLANA)



SCALE: N.T.S

LEGEND

-  SANITARY SEWER
-  FORCE MAIN
-  LIFT STATION

File:Exh-02A_LS29



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CITY OF PHARR

EXHIBIT NO. 2
NORTHWEST INTERCEPTOR



PROPOSED IMPROVEMENTS

GiC has developed a project, Northwest Interceptor that can be implemented in phases depending on budget constraints. This project allows the City to eliminate LS 29 & 33 and alleviates LS 31. It also relieves the 15-inch Sewer Main east of US 83 along Nolan and LS 25. It consists of diverting flow from LS 29 & 33 south to the W. Sioux Rd. 30-inch Sanitary Sewer via gravity and redirecting LS 31, west to ultimately also discharge at the same W. Sioux Rd Sewer Main. The alignment is summarized as follows:

- Segment No. 1- 15-inch Sanitary Sewer from LS 29 south to W. Eldora along new 15-ft Easement. This allows City to abandoned LS 29.
- Segment No. 2- 15-inch Sanitary Sewer from the Intersection of 15-ft Easement and W. Eldora east along W. Eldora to LS 33. This allows the City to abandoned LS 33.
- Segment No. 3- 15-inch Sanitary Sewer from LS 33 to the Intersection of W. Eldora to Hidalgo County Drainage Channel easement near N. Robin Ave.
- Segment No. 4- 24-inch Sanitary Sewer from the Intersection of W. Eldora and Hidalgo Drainage Channel Easement south along same Drainage Channel Easement to W. Sioux Road (30-inch Sanitary Sewer).
- Segment No. 5-LS 31 8-inch Force Main, west along W. Nolan Loop to Hidalgo Drainage Channel.
- Segment No. 6- 15-inch Sanitary Sewer from the Intersection of W. Nolana and Hidalgo County Drainage Channel south along the same Drainage Channel easement to W. Eldora. Connect Segment 6 to Segment 3.

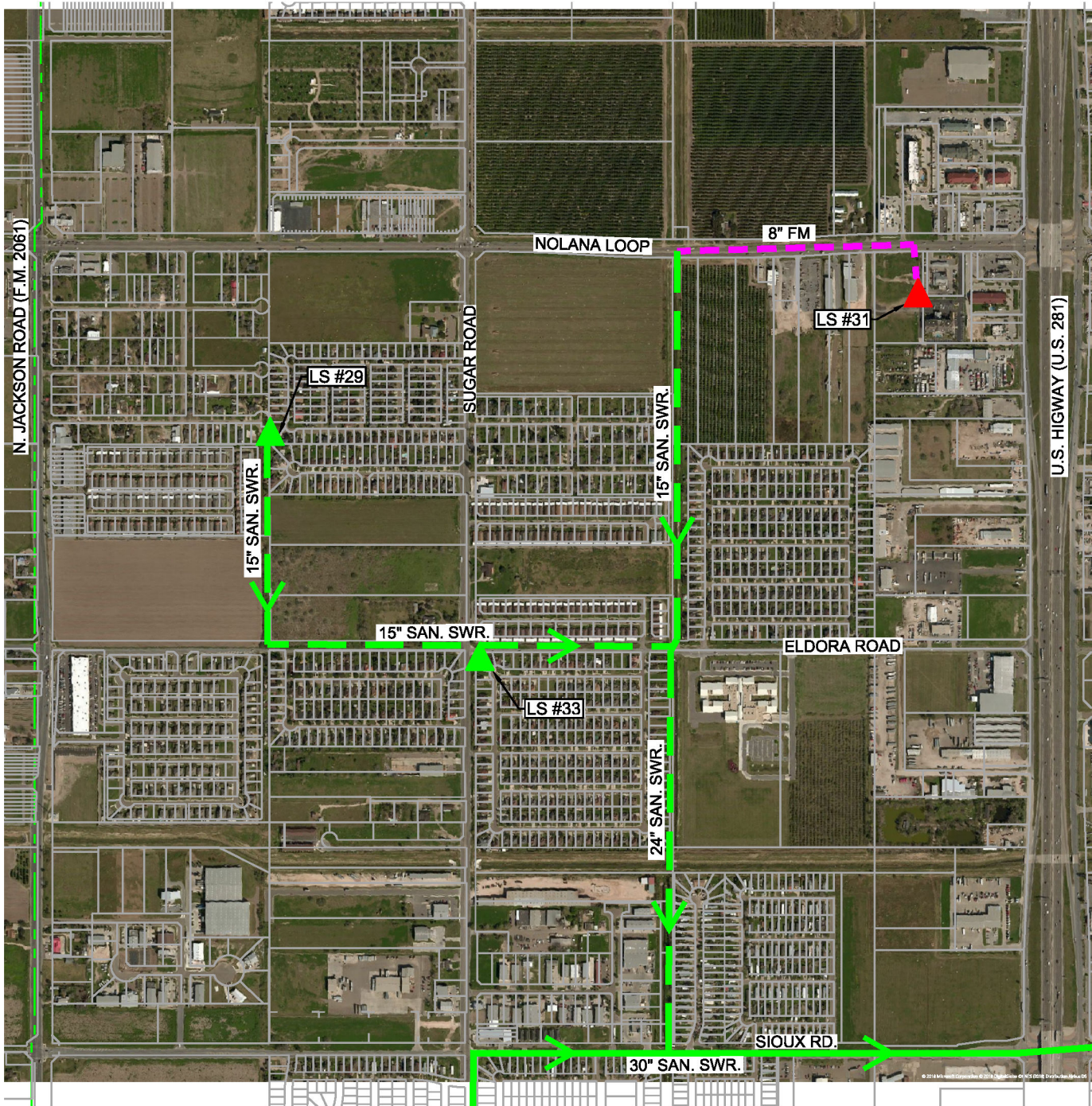
Refer to **Exhibit No. 3**.

Redirecting flow from LS 29 and 33 away from LS 31 reduces flow to this same lift station by approximately 1.35-mgd.

LS 31 would need to be rehabilitated, pumps replaced due to changes in hydraulic conditions.

ANALYSIS

Refer to **Table 1** below which shows the proposed lines sizes and flows and capacities of the Northwest Interceptor. The alignment is presented for master planning purpose and would need to be better defined as part of a preliminary engineering design phase.








TO LS #7



SCALE: N.T.S

LEGEND

-  PROP. SANITARY SEWER
-  PROP. FORCE MAIN
-  EXIST. SANITARY SEWER
-  LIFT STATION (TO REMAIN)
-  LIFT STATION (TO BE ELIMINATED)



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CITY OF PHARR

**EXHIBIT NO. 3
NORTHWEST INTERCEPTOR**



Table 1
Sewer Main Alignment
City of Pharr Northwest Interceptor

Segment	Pipe Material	Start	End	Pipe Size (in)	Slope (%)	Length (ft)	Depth (ft)	V (Ft/Sec)	Q (MGD)	Capacity Required (mgd)	Excess Capacity (mgd)
1	PVC	LS 29	W. Eldora & Esmt	15	0.15	1340	12.26	2.0	1.6	1.25	0.4
2	PVC	W. Eldora & Esmt	LS 33	15	0.15	1400	14.36	2.0	1.6	1.25	0.4
3	PVC	LS 33	Drain Ch & Eldora	15	0.15	1300	16.31	2.0	1.6	1.35	0.3
4	PVC	Drain Ch & Eldora	Sioux Rd	24	0.08	2650	18.43	2.0	4.1	2.07	2.1
5	PVC FM	LS 31	Drain Ch & Nolana	8	-	1830	6.00	3.2	1.1	0.72	0.4
6	PVC	Drain Ch & Nolana	Drain Ch & Eldora	15	0.15	2540	9.81	2.0	1.6	0.72	0.9



COST ESTIMATE

Table 1
Construction Cost Estimate
Northwest Interceptor

Item No.	Item Description	QTY	Unit	Unit Price	Cost
1	Hot Mix Asphaltic Pavement (2")	3,000	SY	\$ 50.00	\$ 150,000.00
2	Mill Street	3,000	SY	\$ 35.00	\$ 105,000.00
3	Trench Safety Protection	11,060	LF	\$ 25.00	\$ 276,500.00
4	8-inch Force Main (DIP)	1,830	LF	\$ 55.00	\$ 100,650.00
5	15-inch PVC Gravity (0' to 6")	1,645	LF	\$ 100.00	\$ 164,500.00
6	15-inch PVC Gravity (6' to 14')	4,935	LF	\$ 110.00	\$ 542,850.00
7	24-inch PVC Gravity Sewer (14' to 22')	2,650	LF	\$ 165.00	\$ 437,250.00
8	Sanitary Sewer Manholes	18	EA	\$ 6,200.00	\$ 114,452.00
9	Extra Depth Manholes (6-ft)	180	VF	\$ 265.00	\$ 47,700.00
10	36-inch Tunneling (Sugar Rd)	150	LF	\$ 552.00	\$ 82,800.00
11	Abandoned 8-inch Force Main	1,600	LF	\$ 35.00	\$ 56,000.00
12	Abandoned Lift Station # 29	1	LS	\$ 60,000.00	\$ 60,000.00
13	Abandoned Lift Station # 33	1	LS	\$ 60,000.00	\$ 60,000.00
14	Post Sewer TV Inspection	9,230	LF	\$ 3.25	\$ 29,997.50
					\$ 2,227,699.50



City of Pharr- Northeast Interceptor

PREPARED BY: Garcia Infrastructure Consultants, LLC (GIC)
PREPARED FOR: City of Pharr
SUBJECT: Sewer System Master Plan (Northeast Region)
DATE: September 19, 2018

This memo presents a potential solution to correct deficiencies identified in the City's North Region, roughly south of Nolana, east of US 83 and north of Sioux Rd.

Currently flow is collected in a 10 and 12-inch sewer main on Minnesota Road. It then discharges to a 15-inch Sewer that flow south along the US 281 Frontage Road, then east on Nolana, and ultimately discharging into LS 25. Flow from LS 31 discharges at the intersection of US 281 Frontage Rd. and Nolana Intersection as well combining with the sewer main flowing south on the US 281 Frontage Rd.

DEFICIENCIES

The 15-inch sewer segment between US 281 and Nolana is unable to carry future flow projections. The segment needs to be replaced with a larger main (24-inch). Furthermore, these sewer segments on Minnesota, US 281 Frontage Road, and Nolan are often clogged and require constant cleaning. A section of this sewer near Nolan previously failed/collapsed during a heavy rain event. Refer to **Exhibit No. 5-2** which shows a map that depicts the existing collection system in the area.

These deficiencies will require the replacement of this segments for condition purposes and section on Nolan for capacity constraints. Several alternatives were evaluated and are summarized in this memorandum.

The Northwest Interceptor which consists of diverting flow currently collected at LS 31 to the existing trunk sewer on Sioux Rd would eliminated the need to upsize the sewer main on Nolana. However, the City would still need to address the condition constraints identified.

PROPOSED IMPROVEMENTS

The Northeast Interceptor Project was developed to address the condition constraints and deficiencies identified. This proposed project allows the City to reduce flow to the sewer segment on Nolana. It also has the added benefit of redirecting flow from LS 27 Force Main, which currently discharges directly to LS 25 to the proposed sewer main on Minnesota. This reduces the LS 27 Force Main by approximately 1-mile. As previously mentioned, if the Northwest Interceptor Project is constructed, it is not necessary to upsize the sewers on Nolana. The improvements recommended in this memorandum are based on the assumption that work at the Northwest Interceptor will be addressed as recommended in this master plan report.

A brief summary of the proposed alignment of the Northeast Interceptor is summarized as follows:

- Segment No. 1- 12-inch Sanitary Sewer from Veterans Road to Raiders Ave along Minnesota Rd.
- Segment No. 2 – 12-inch Sewer from US 281 Frontage Road to Raiders Ave. Flow in this segment is reversed and away from the US 281 Frontage Road. It would now flow west to east.
- Segment No. 2- 15-inch Sanitary Sewer from Minnesota Rd. to Nolana Road/LS 25 along Raiders Ave.
- Divert LS 27 Force Main to intersection of Fir Rd. and Minnesota Rd.

The existing sewer on US 281 and Nolana would remain in services as is. Given the sewer condition constraints noted, the City should consider rehabbing using a trenchless technology. Open cut constructions methods along US 281 Frontage Road should be avoided to eliminate the need to disrupt traffic or coordination with TXDOT. If a trenchless option is selected, the existing sewers would need to be inspected (video) to determine if this segment is a viable candidate for CIPP.

It may also be possible to avoid construction of the new sewers and simply rehab the existing sewers. This is especially true if again the Northwest Interceptor is constructed. These various options would need to be evaluated further as part of the final design project. A conservative approach was preferred to ensure that a budget is establish to address this situation.

The proposed alignment is included in **Exhibit No. 5-6**.

ANALYSIS

Refer to **Table 1** below which shows the proposed lines sizes and flows and capacities of the Northeast Interceptor. The alignment is presented for master planning purpose and would need to be better defined as part of a preliminary engineering design phase. An opinion of probable construction cost is also included in **Table 2**.

Table 1
Sewer Main Alignment
City of Pharr Northeast Interceptor

Segment	Pipe Material	Start	End	Pipe Size (in)	Length (ft)	Pipe Capacity Q ⁽¹⁾ (cfs)	Q ⁽²⁾ (MGD)	Capacity Req'd (mgd)
1	PVC	Veterans Road	Raider Dr.	12	1450	2.5	1.6	1.25
2	PVC	US 281 Frontage	Raider Dr.	12	1450	2.5	1.6	1.25
3	PVC	Minnesota Rd.	LS 25/Nolana Rd.	15	2622	2.5	1.6	1.25

COST ESTIMATE

Table 1
Sewer Main Alignment
City of Pharr Northeast Interceptor

Item No.	Item Description	QTY	Unit	Unit Price	Cost
1	Hot Mix Asphaltic Pavement (2")	9,000	SY	\$ 50.00	\$ 450,000.00
2	Mill Street	9,000	SY	\$ 35.00	\$ 315,000.00
3	Trench Safety Protection	7,900	LF	\$ 25.00	\$ 197,500.00
4	8-inch Force Main (DIP)	100	LF	\$ 55.00	\$ 5,500.00
5	12-inch PVC Gravity (0' to 6')	800	LF	\$ 80.00	\$ 64,000.00
6	12-inch PVC Gravity (6' to 14')	4,600	LF	\$ 90.00	\$ 414,000.00
7	15-inch PVC Gravity Sewer (15' to 22')	2,400	LF	\$ 125.00	\$ 300,000.00
8	Sanitary Sewer Manholes	18	EA	\$ 6,200.00	\$ 111,600.00
9	Extra Depth Manholes (6-ft)	180	VF	\$ 265.00	\$ 47,700.00
10	36-inch Tunneling (Under HCDD #1)	150	LF	\$ 552.00	\$ 82,800.00
11	Abandoned Sanitary Sewer	1	LS	\$ 10,000.00	\$ 10,000.00
12	Interconnection	10	EA	\$ 15,000.00	\$ 150,000.00

\$ 2,148,100.00



City of Pharr- Central Interceptor

PREPARED BY: Garcia Infrastructure Consultants, LLC (GiC)
PREPARED FOR: City of Pharr
SUBJECT: Sewer System Master Plan (Central Region)
DATE: September 20, 2018

This memo presents a potential solution to correct deficiencies identified in the City's Central Region and eliminate LS No. 1.

Flow to LS No. 1 was reduced as part of the City's Collection System and Improvement Projected. However, this facility is still the main collection point for most of the Central Region. Currently, flow from LS 3, 15 and 17 terminates at LS No. 1.

DEFICIENCIES

According to City Staff, flow from LS 1 is stored in the wet well during wet weather conditions. During major storms, only one pump can operate. Staff must switch out pump pulley to reduce flow. The station will run full during these conditions at the exact time all pumps are most needed. If flow from this station is not reduced during these conditions; overflows occur at the Intersection of Veterans and Ridge Road. The 12-inch Force Main from LS 1 currently discharges immediately upstream of the HCDD No. 1 Channel into a 21-inch Sanitary Sewer.

The City is currently in the process of diverting flow from LS 1 to the 36-inch Sanitary Sewer on Kumquat as part of separate project (Hike and Bike Lift Station). This should alleviate the overflows documented by staff. However, it is still recommended that the City consider eliminating LS 1 by constructing a new sewer from LS 1 to this same 36-inch sewer. The existing conditions Central Region Map included in the Master Plan Report (Exhibit 5-3) depicts the alignment after improvements planned as part of the Hike and Bike LS Project are completed. At this this report was completed. The LS 1 Force Main discharged into the 21-inch Sewer on Veterans Road just upstream of the HCDD No. 1

PROPOSED IMPROVEMENTS

The Central Interceptor Project was developed to address overflows identified at Ridge and Veterans Rd. as well as decommissioning LS 1. Recommended improvements consist of intercepting flow to LS 1 and conveying it to the existing 36-inch Sewer at the intersection of Juarez and Kumquat.

A brief summary of the proposed alignment of the Northeast Interceptor is summarized as follows:

- Segment No. 1- 24-inch Sanitary Sewer from LS 1 (intersection of N. Cypress and Bell) to Juniper Street along E. Bell Ave.
- Segment No. 2 – 24-inch Sewer from E. Bell to Juarez Ave. along Juniper Street.
- Segment No. 3- 24-inch Sewer from Juniper to Kumquat along Juarez.

The proposed alignment is included in **Exhibit No. 5-7**.

ANALYSIS

Refer to **Table 1** below which shows the proposed lines sizes and flows and capacities of the Northcentral Interceptor. The alignment is presented for master planning purpose and would need to be better defined as part of a preliminary engineering design phase. An opinion of probable construction cost is also included in **Table 2**.

Table 1
Sewer Main Alignment
City of Pharr Northeast Interceptor

Segment	Pipe Material	Start	End	Pipe Size (in)	Length (ft)	Pipe Capacity Q (MGD)	Capacity Req'd (mgd)
1	PVC	LS 1	Juniper	24	2850	4.1	1.25
2	PVC	Bell	Juarez	24	420	4.1	1.25
3	PVC	Juniper	Kumquat	24	530	4.1	1.25

COST ESTIMATE

Table 1
Sewer Main Alignment
City of Pharr Central Interceptor

Item No.	Item Description	QTY	Unit	Unit Price	Cost
1	Hot Mix Asphaltic Pavement (2")	11,500	SY	\$ 50.00	\$ 575,000.00
2	Mill Street	11,500	SY	\$ 35.00	\$ 402,500.00
3	Trench Safety Protection	3,800	LF	\$ 25.00	\$ 95,000.00
4	24-inch PVC Gravity Sewer (14' to 22')	1,800	LF	\$ 165.00	\$ 297,000.00
5	24-inch PVC Gravity Sewer (23' to 28')	2,000	LF	\$ 180.00	\$ 360,000.00
6	Sanitary Sewer Manholes	10	EA	\$ 6,200.00	\$ 62,000.00
7	Extra Depth Manholes (6-ft)	220	VF	\$ 265.00	\$ 58,300.00
8	Abandoned 12-inch Force Main	3,800	LF	\$ 40.00	\$ 152,000.00
9	Interconnection	1	EA	\$ 15,000.00	\$ 15,000.00

\$ 2,016,800.00



Appendix I

Wastewater Collection System-
Capital Improvement Plan (CIP) Table

**Appendix I Table
Sanitary Sewer Collection System
City of Pharr 2018 Master Plan**



Item No.	Description Summary	Lift Station Eliminated	Critical Rating	Timeframe		Land Acquisition	Expenditures		
			(1 to 10)*	Design	Construction	Required	Construction Cost	Engr/SDC/Admin	Total
Sanitary Sewer Replacement/Improvements									
1	Northwest Interceptor	LS 29, LS33, Improve LS 31	10	2019	2021	Not Expected	\$ 2,227,700.00	\$ 334,155.00	\$ 2,561,855.00
2	Northeast Interceptor	Not Applicable	8	2021	2022	Not Expected	\$ 2,148,100.00	\$ 322,215.00	\$ 2,470,315.00
3	Citrus Bay Sewer Replacement	Not Applicable	8	2022	2023	No	\$ 6,262,300.00	\$ 939,345.00	\$ 7,201,645.00
4	Central Region Interceptor	LS 1	7	2019	2020	No	\$ 2,016,800.00	\$ 302,520.00	\$ 2,319,320.00
5	South Region Interceptor	LS 26	10	2019	2020	No	\$ 4,460,430.00	\$ 669,064.50	\$ 5,129,494.50
6	Far South Region Interceptor	LS 28, 34, 36, 38, 42, & 46	6	2019	2020	No	\$ 20,000,000.00	\$ 3,000,000.00	\$ 23,000,000.00
7	Septic Tank Elimination Program	Not Applicable	6	2022	2023	No	\$ 426,000.00	\$ 63,900.00	\$ 489,900.00
8	Rehab 24-inch Sewer Main (Veterans Rd.)	Not Applicable	8	2020	2020	No	\$ 625,000.00	\$ 93,750.00	\$ 718,750.00
9	Rehab 15-inch Sewer Main (Minn & 281 Frontage Rd.)	Not Applicable	8	2020	2020	No	\$ 780,000.00	\$ 117,000.00	\$ 897,000.00
10	Manhole Replacement	Not Applicable	8	2020	2020	No	\$ 100,000.00	\$ 15,000.00	\$ 115,000.00
North Region LS									
11	LS 7 (Bagwell) (Electrical Repairs)	Not Applicable	10	2019	2019	No	\$ 175,000.00	\$ 26,250.00	\$ 201,250.00
12	LS 8 -Ridge Rd (Repair LS Slab)	Not Applicable	6	2022	2023	No	\$ 23,500.00	\$ 3,525.00	\$ 27,025.00
13	Remove and Replace LS 23 Texas Trails	Not Applicable	5	2025	2026	No	\$ 1,500,000.00	\$ 225,000.00	\$ 1,725,000.00
14	LS 25 High School (Odor Control System)	Not Applicable	7	2022	2023	No	\$ 136,000.00	\$ 20,400.00	\$ 156,400.00
15	Remove and Replace LS 27 (Lopezville)	Not Applicable	7	2022	2023	No	\$ 625,000.00	\$ 93,750.00	\$ 718,750.00
16	Remove and Replace LS 31 (Rudy's)	Not Applicable	6	2022	2023	Not Expected	\$ 825,000.00	\$ 123,750.00	\$ 948,750.00
Central Region LS									
17	Remove and Replace LS 3- Deleon	Not Applicable	6	2022	2023	Yes	\$ 650,000.00	\$ 97,500.00	\$ 747,500.00
18	LS 12 Dunlyn(Structural Repairs & Replace Pumps)	Not Applicable	6	2022	2023	No	\$ 65,000.00	\$ 9,750.00	\$ 74,750.00
19	Remove and Replace LS 14 (Canal)	Not Applicable	6	2021	2022	No	\$ 600,000.00	\$ 90,000.00	\$ 690,000.00
20	LS 15 RGV (Replace Pumps)	Not Applicable	5	2024	2025	No	\$ 45,700.00	\$ 6,855.00	\$ 52,555.00
21	LS 16 Civic (Rehab Wet Well)	Not Applicable	6	2023	2023	No	\$ 23,000.00	\$ 3,450.00	\$ 26,450.00
22	LS 17 Beto Espinoza (Rehab)	Not Applicable	6	2023	2024	No	\$ 45,000.00	\$ 6,750.00	\$ 51,750.00
23	LS 40 Hall Acres (Structural Repairs, Drainage, & Replace Pumps)	Not Applicable	6	2021	2021	No	\$ 76,850.00	\$ 11,527.50	\$ 88,377.50
24	LS 44 Encanto (Accessibilty & Drainage)	Not Applicable	5	2022	2022	No	\$ 128,300.00	\$ 19,245.00	\$ 147,545.00
South Region LS									
25	Remove and Replace LS 10 - Moore	Not Applicable	8	2020	2021	Yes	\$ 1,352,000.00	\$ 202,800.00	\$ 1,554,800.00
26	Repair LS 20 S. Plantation (Suction Piping)	Not Applicable	10	2019	2019	No	\$ 89,000.00	\$ 13,350.00	\$ 102,350.00
27	LS 24 La Quinta (Replace Pumps)	Not Applicable	6	2023	2023	No	\$ 45,250.00	\$ 6,787.50	\$ 52,037.50
28	LS 48 San Gabriel (Fix Lighting)	Not Applicable	4	2021	2021	No	\$ 6,200.00	\$ 930.00	\$ 7,130.00
29	Repair LS 50 (Veterans) (Electrical)	Not Applicable	10	2019	2019	No	\$ 256,000.00	\$ 38,400.00	\$ 294,400.00

*Critical rating is based on a scale of 1 to 10. Ten (10) being the most critical/urgent.

Attachment 7

ORDINANCE NO. O-2019-37

AN ORDINANCE AMENDING ORDINANCE NO. O-2015-39, O-2007-56, O-2005-43, O-2004-57, AND O-99-45, PROVIDING THEREIN FOR THE REVISION OF RATES CHARGED FOR SEWER SYSTEM SERVICES; PROVIDING THAT THE PROCEDURE FOR THE PAYMENT OF THE SPECIAL RATES PROVIDED THEREIN SHALL BE OUT IN SECTION 3 OF THE ORIGINAL UNNUMBERED ORDINANCE; PROVIDING SEVERABILITY AND REPEALING CLAUSES; AND PROVIDING FOR AN EFFECTIVE DATE

BE IT ORDAINED BY THE BOARD OF CITY COMMISSIONERS OF THE CITY OF PHARR, TEXAS, THAT:

SECTION 1. The monthly rates or charges for services furnished by the sewer system to be as follows:

SCHEDULE 2

Single-Family and Multi-Family, Institutional applies to residential detached units and single-metered duplexes,

- A. For each regular meter connection \$17.17 per month base charge will be assessed; plus
- B. \$1.16 per 1000 gallons of water purchased will be charged if City meter is the only service for water used by the user.
- C. For each senior citizen meter connection \$7.45 per month base charge will be Assessed; plus
- D. \$0.72 per 1,000 gallons of water purchased will be charged provided that City Meter is the only service of water used by the user and further provided that no additional charge be assessed for purchase in excess of 18,000 gallons.

SCHEDULE 3

COMMERCIAL\INDUSTRIAL: Applies to business establishments, hotels, motels, cafes, service stations, mobile homes\recreational vehicle parks or subdivisions, laundries, ice plants, bottling works, milk plants, packing sheds, canning plants, carwash, brick plants, schools, churches and public buildings.

- A. For each connection a \$ 27.10 per month base charge will be assessed; plus
- B. \$1.53 per 1,000 gallons of water purchased will be charged provided that the City meter is the only service for water used by the user.

SECTION 2: CUMULATIVE CLAUSE; REPEALING CLAUSE

That all conflicting ordinances or parts thereof are hereby repealed, and that if any section, subsection, phrase, sentence, clause or provision of this ordinance shall be declared invalid for any reason, such invalidity shall not affect the remaining provisions of this Ordinance or their applications to other persons or sets of circumstances, and to this end all provision of this Ordinance are declared to be severable and all ordinances or parts of ordinances in conflict herewith are hereby repealed.

SECTION 3: PUBLICATION AND EFFECTIVE DATE

The Ordinance shall take effect and be in force from and after its passage and approval on two (2) separate readings in accordance with Section 8, Article 3 of the Charter of the City of Pharr, Texas. Publication, if necessary, may also be in caption form as allowed under Section 9 of the Pharr City Charter.

SECTION 4: PROPER NOTICE AND MEETING

It is hereby officially found and determined that the meeting at which this Ordinance was passed was open to the public and that public notice of the time, place and purpose of said meeting was given as required by the Open Meetings Act, Chapter 551 of the Texas Government Code.

PASSED AND APPROVED ON FIRST READING BY THE BOARD OF CITY COMMISSIONERS OF THE CITY OF PHARR, TEXAS, on this the 3rd day of September, 2019.

CITY OF PHARR



AMBROSIO HERNANDEZ
MAYOR

ATTEST:



HILDA PEDRAZA, CITY CLERK

PASSED AND APPROVED ON SECOND AND FINAL READING BY THE BOARD OF CITY COMMISSIONERS OF THE CITY OF PHARR, TEXAS, on this the 9th day of September, 2019.

CITY OF PHARR



AMBROSIO HERNANDEZ
MAYOR

ATTEST:



HILDA PEDRAZA, CITY CLERK

Attachment 8

33. Complete the following using verifiable man-made and/or natural landmarks such as roads, rivers, or railroads to describe the requested area (to be stated in the notice documents). Measurements should be approximated from the outermost boundary of the requested area: For the Southern Requested Area:

The total acreage of the requested area is approximately: 168.93 acres

Number of customer connections in the requested area: 0

The closest city or town: City of Pharr

Approximate mileage to closest city or town center: 8.2 miles

Direction to closest city or town: West and North

The requested area is generally bounded

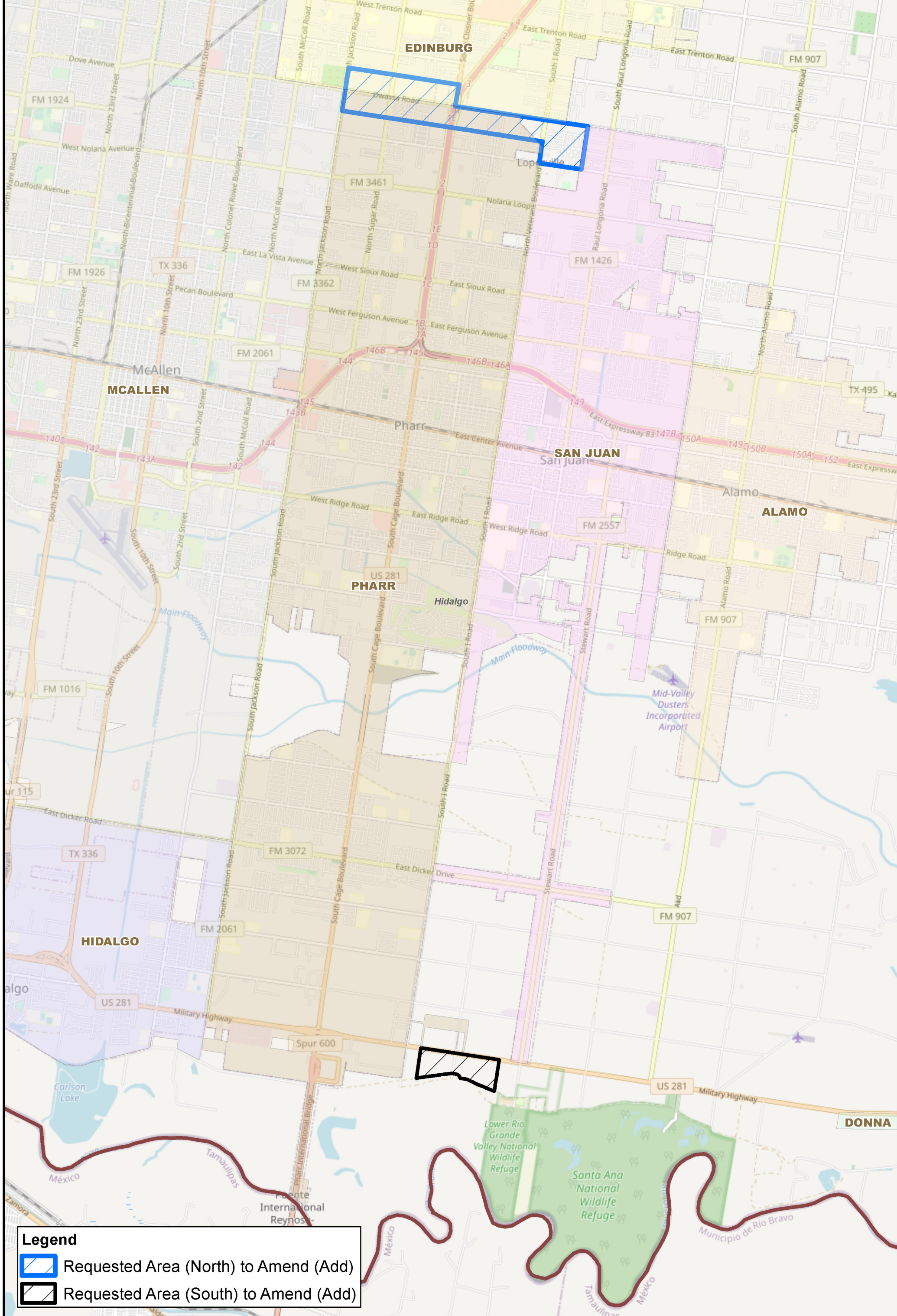
on the North by: W. Military Highway

on the East by: S. Stewart Road

on the South by: W. Doffing Road

on the West by: S. Veterans Boulevard

Attachment 9



Legend

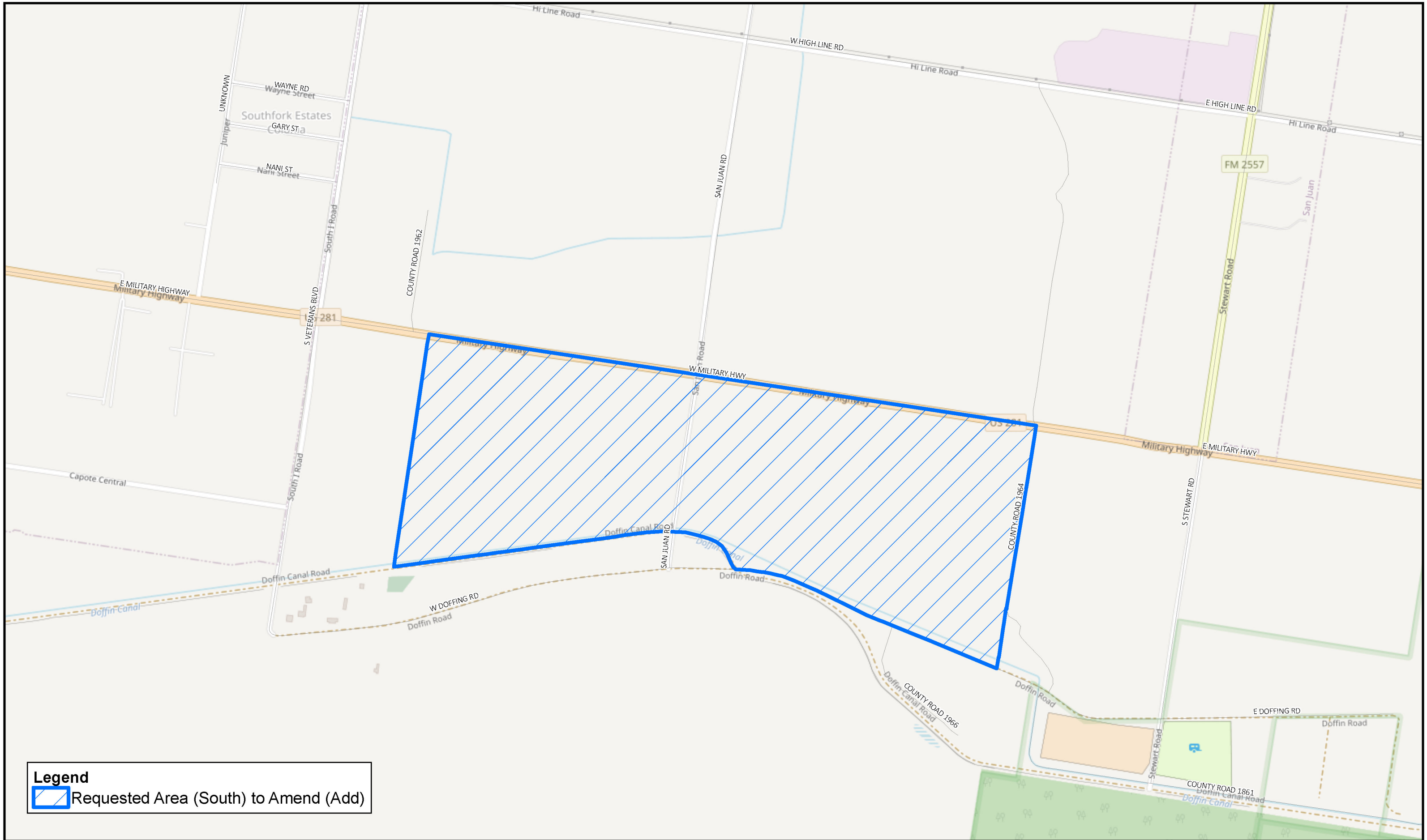
- Requested Area (North) to Amend (Add)
- Requested Area (South) to Amend (Add)

Created by: McCall - BHDA
 Date Created: 4/25/2023

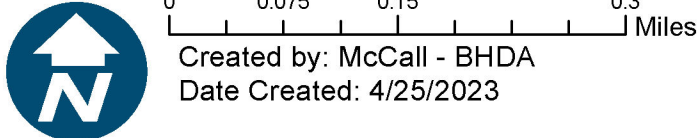
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Amend City of Pharr (CCN No. 20643) in Hidalgo County
GENERAL LOCATION MAP
Overview with Both Requested Areas

© 2023 Bickerstaff Heath Delgado Acosta LLP
 Data Source:
 Requested Area(s) to Amend obtained from City of Pharr GIS Department;
 Roads obtained from Hidalgo County;
 Background Image: ESRI Open Street Map
 Request for Service area (in black hatch)

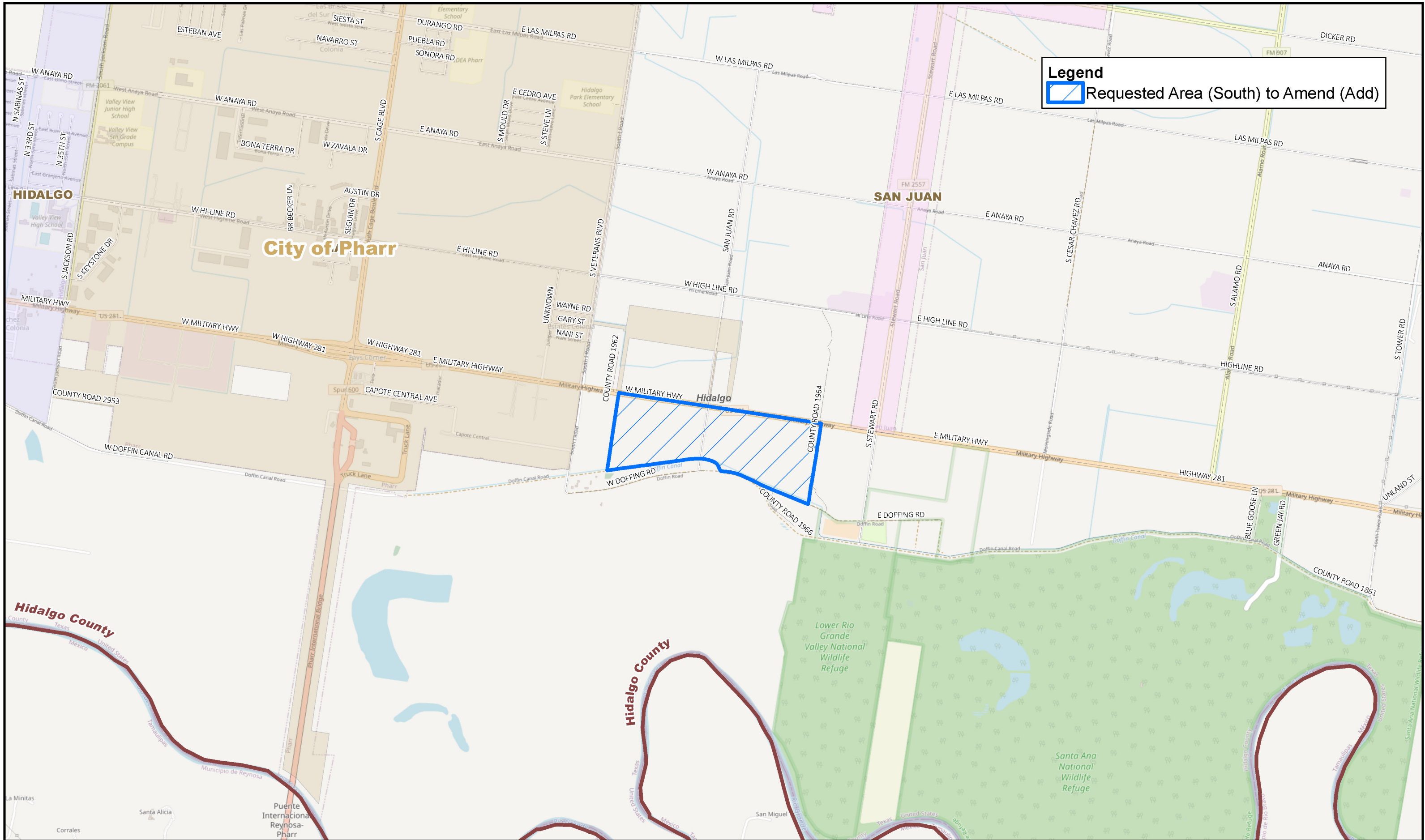


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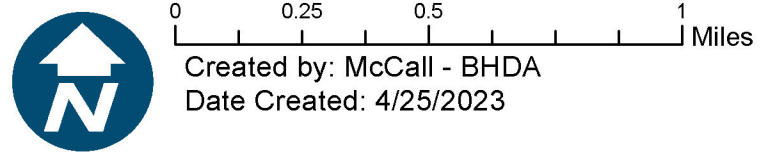


Amend City of Pharr (CCN No. 20643) in Hidalgo County
DETAILED MAP 2 OF 2
(SOUTHERN PORTION)

© 2023 Bickerstaff Heath Delgado Acosta LLP
 Data Source: Requested Area(s) to Amend obtained from City of Pharr GIS Department; Roads obtained from Hidalgo County; Background Image: ESRI Open Street Map
 Request for Service area 

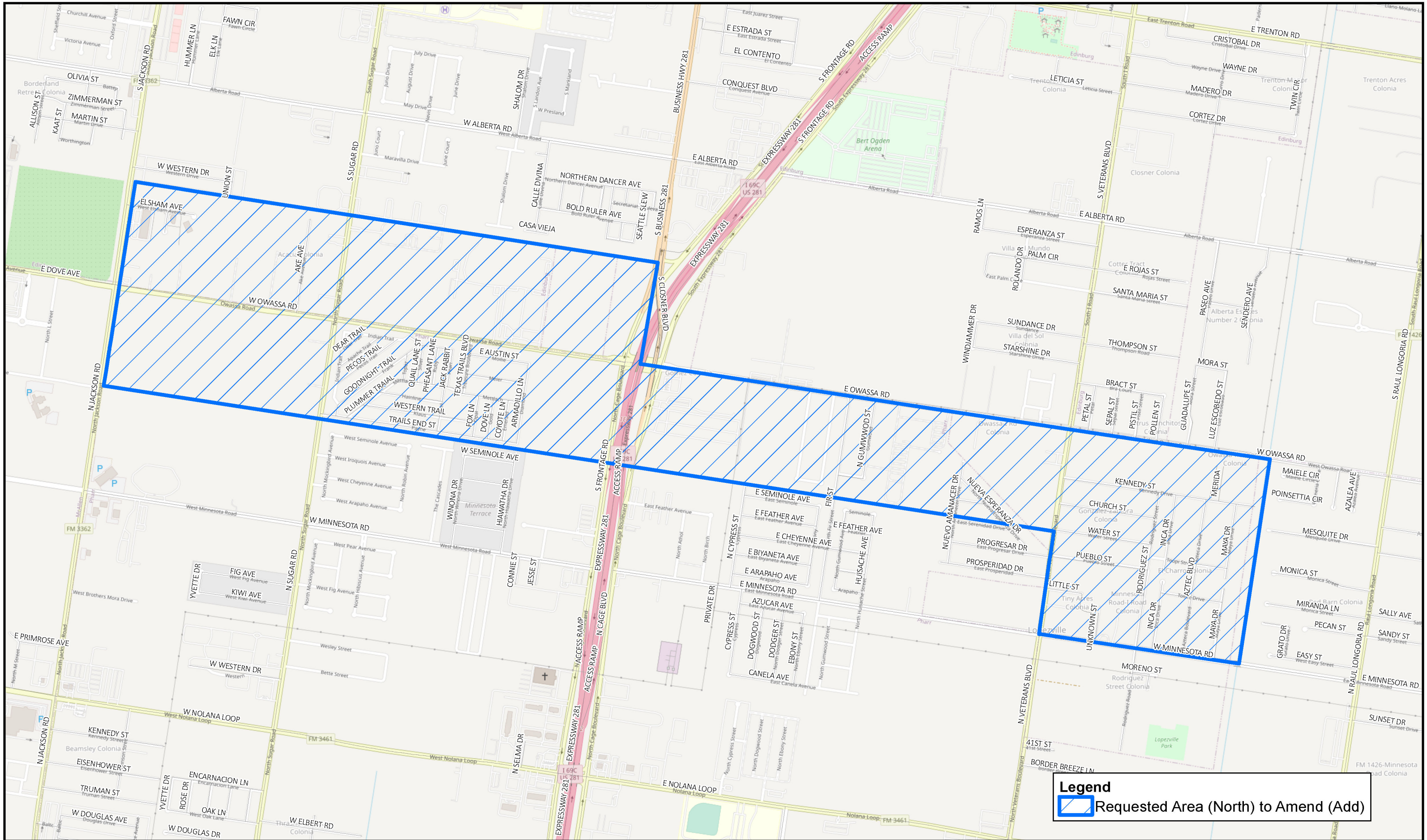


Legend
 Requested Area (South) to Amend (Add)



Amend City of Pharr (CCN No. 20643) in Hidalgo County
GENERAL LOCATION MAP 2 OF 2
(SOUTHERN PORTION)

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 Data Source: Requested Area(s) to Amend obtained from City of Pharr GIS Department; Roads obtained from Hidalgo County; Background Image: ESRI Open Street Map
 Request for Service area 



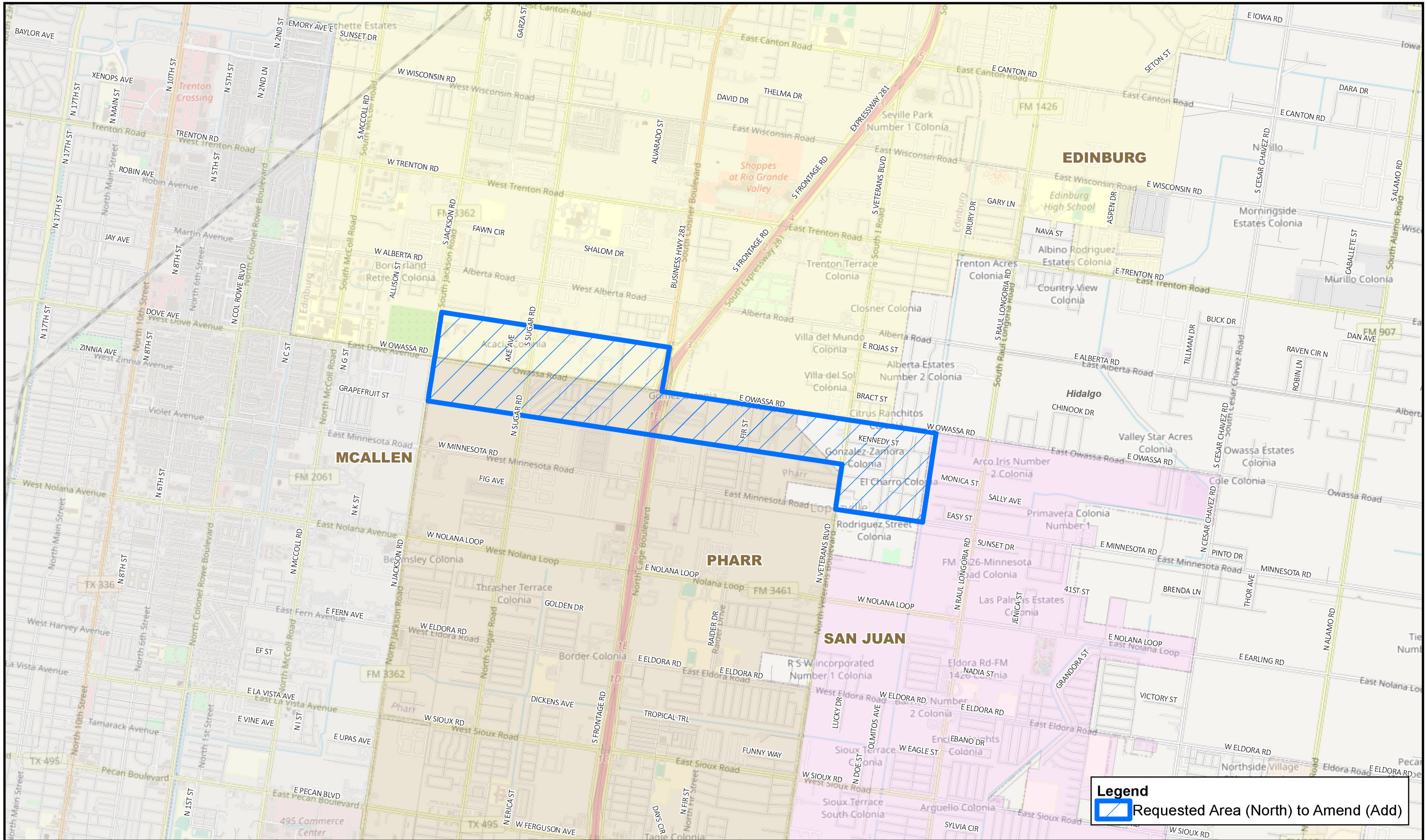
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Created by: McCall - BHDA
Date Created: 4/25/2023

Amend City of Pharr (CCN No. 20643) in Hidalgo County
DETAILED MAP 1 OF 2
(NORTHERN PORTION)

© 2023 Bickerstaff Heath Delgado Acosta LLP
 Data Source: Requested Area(s) to Amend obtained from City of Pharr GIS Department; Roads obtained from Hidalgo County; Background Image: ESRI Open Street Map





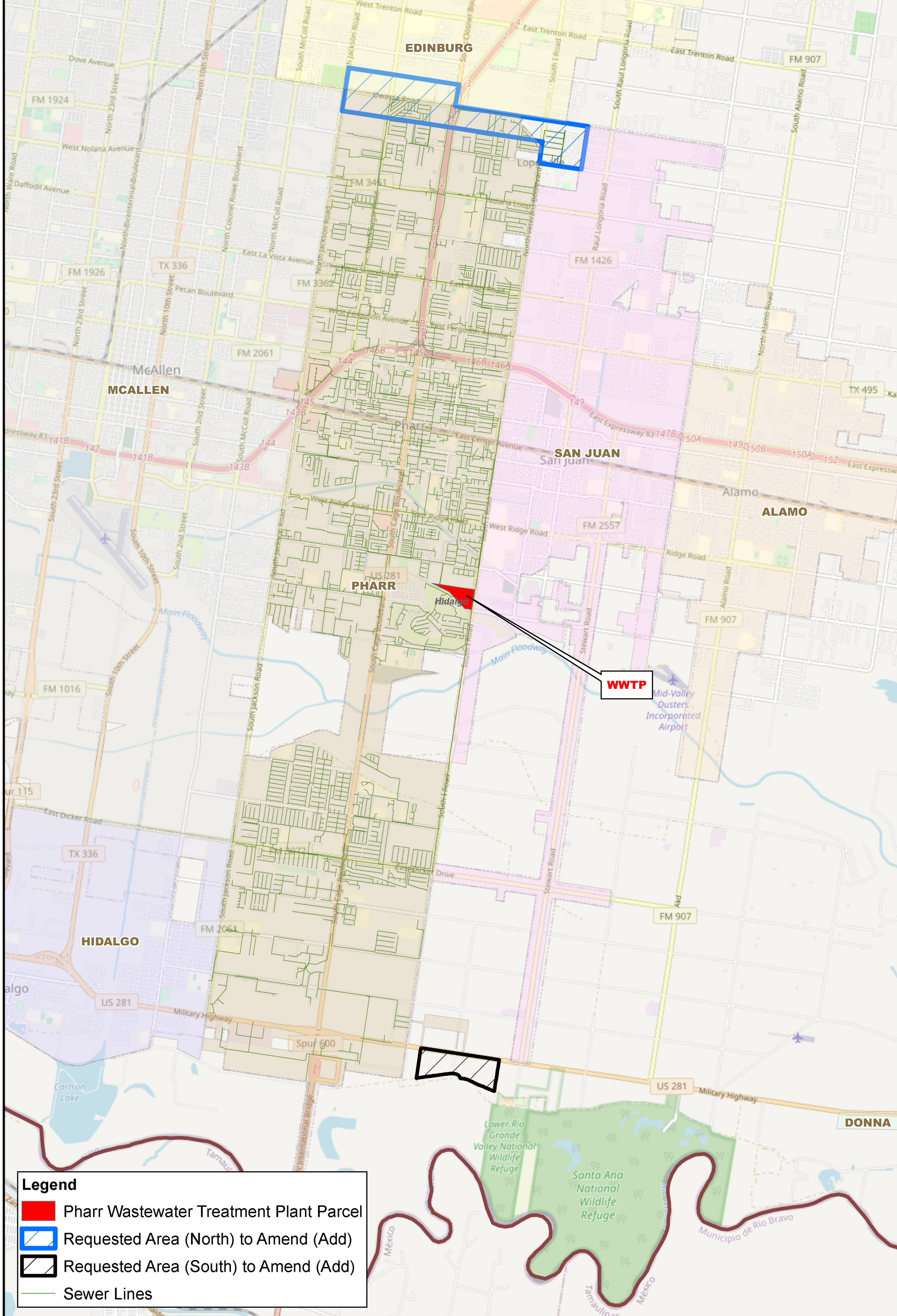
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Created by: McCall - BHDA
Date Created: 4/25/2023

Amend City of Pharr (CCN No. 20643) in Hidalgo County
GENERAL LOCATION MAP 1 OF 2
(NORTHERN PORTION)

© 2023 Bickerstaff Heath Delgado Acosta LLP
 Data Source: Requested Area(s) to Amend obtained from City of Pharr GIS Department; Roads obtained from Hidalgo County; Background Image: ESRI Open Street Map


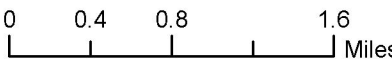




Legend


- Pharr Wastewater Treatment Plant Parcel
- Requested Area (North) to Amend (Add)
- Requested Area (South) to Amend (Add)
- Sewer Lines

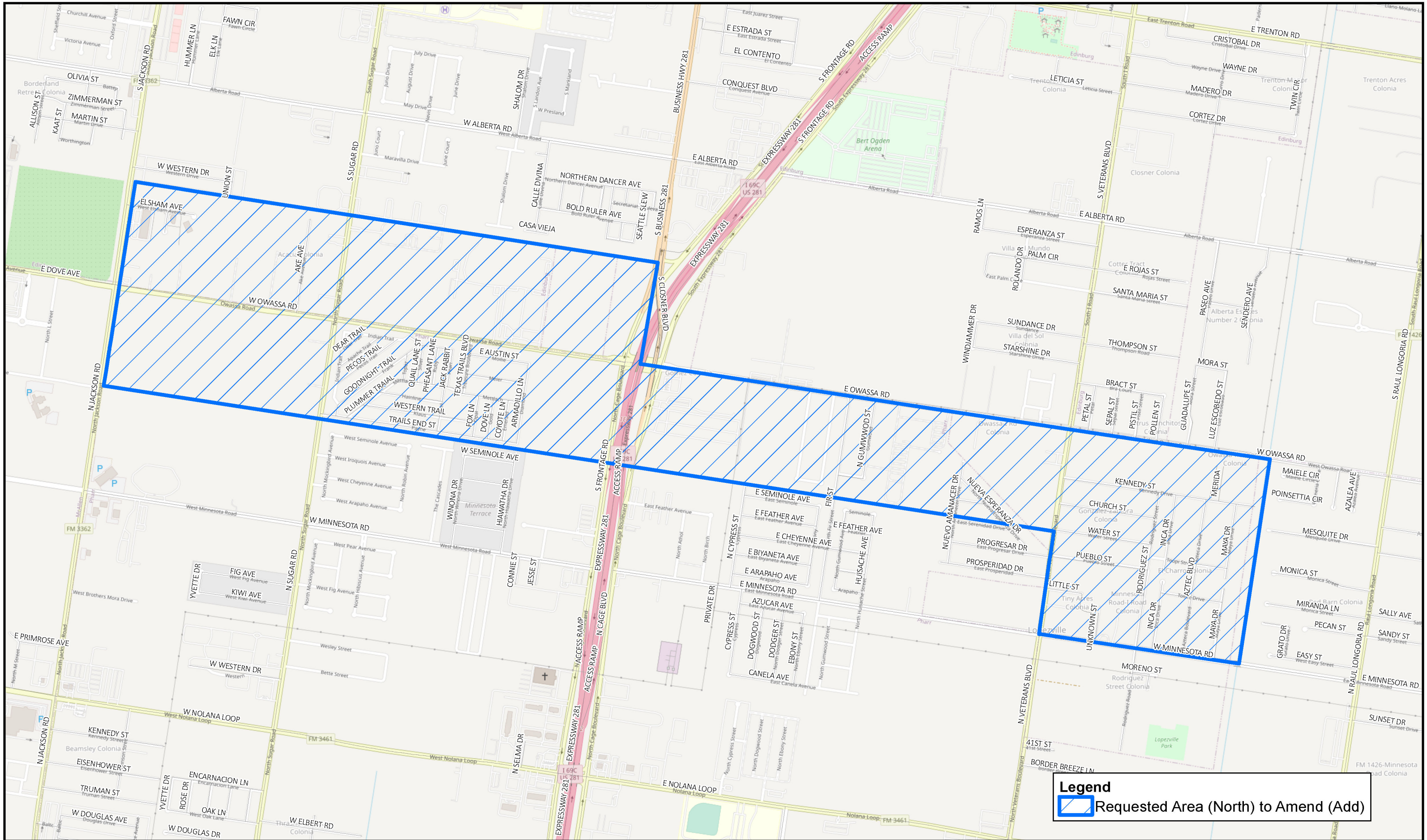
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 Date Created: 5/30/2023

**Amend City of Pharr (CCN No. 20643) in Hidalgo County
 FACILITIES MAP
 Overview with Both Requested Areas and Facilities**

© 2023 Bickerstaff Heath Delgado Acosta LLP
 Data Source:
 Requested Area(s) to Amend and Facilities obtained
 from City of Pharr GIS Department;
 Roads obtained from Hidalgo County;
 Background Image: ESRI Open Street Map
 Request for Service areas (in hatched mark areas)





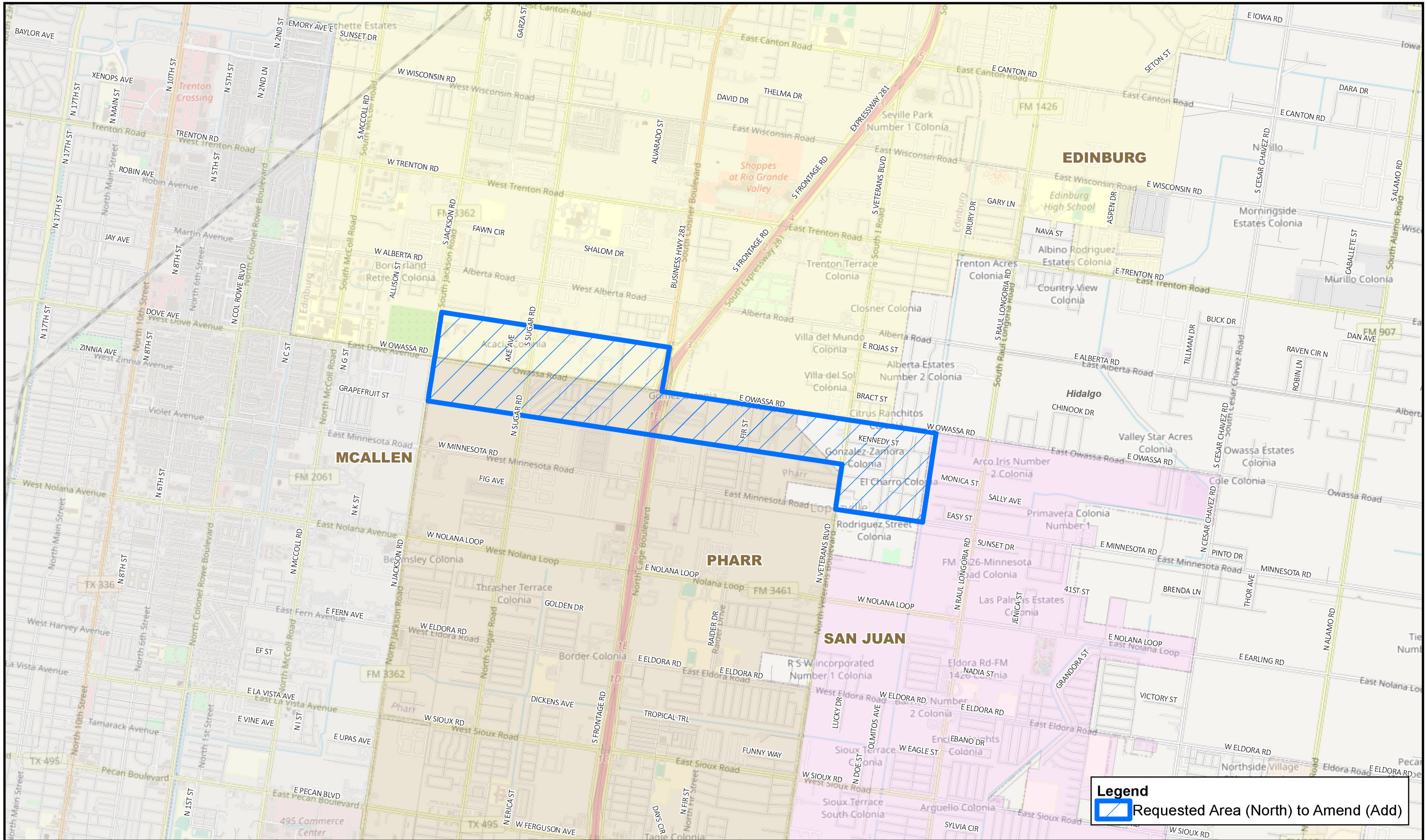
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Created by: McCall - BHDA
Date Created: 4/25/2023

Amend City of Pharr (CCN No. 20643) in Hidalgo County
DETAILED MAP 1 OF 2
(NORTHERN PORTION)

© 2023 Bickerstaff Heath Delgado Acosta LLP
Data Source: Requested Area(s) to Amend obtained from City of Pharr GIS Department; Roads obtained from Hidalgo County; Background Image: ESRI Open Street Map





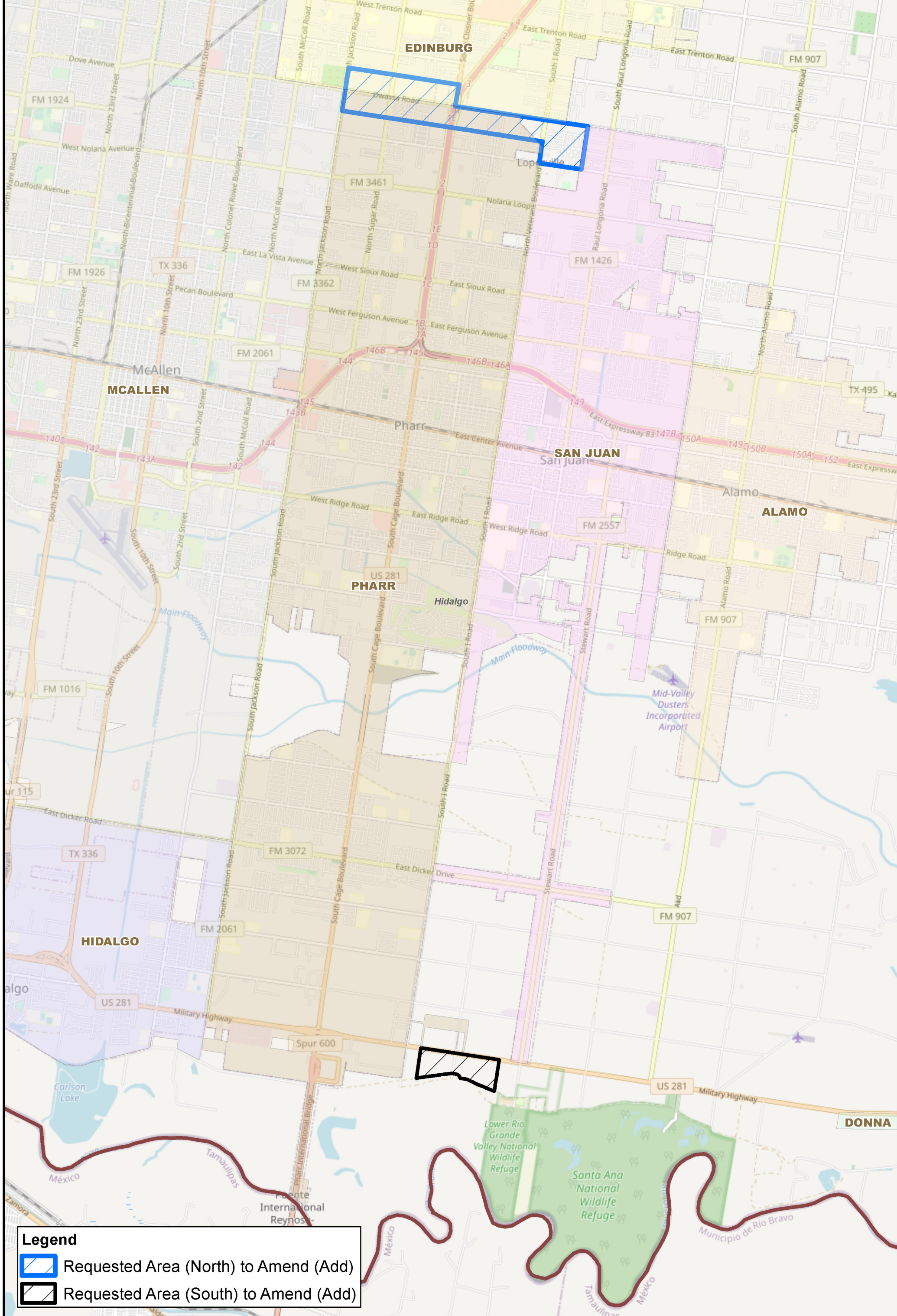
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Created by: McCall - BHDA
Date Created: 4/25/2023

Amend City of Pharr (CCN No. 20643) in Hidalgo County
GENERAL LOCATION MAP 1 OF 2
(NORTHERN PORTION)

© 2023 Bickerstaff Heath Delgado Acosta LLP
 Data Source: Requested Area(s) to Amend obtained from City of Pharr GIS Department; Roads obtained from Hidalgo County; Background Image: ESRI Open Street Map





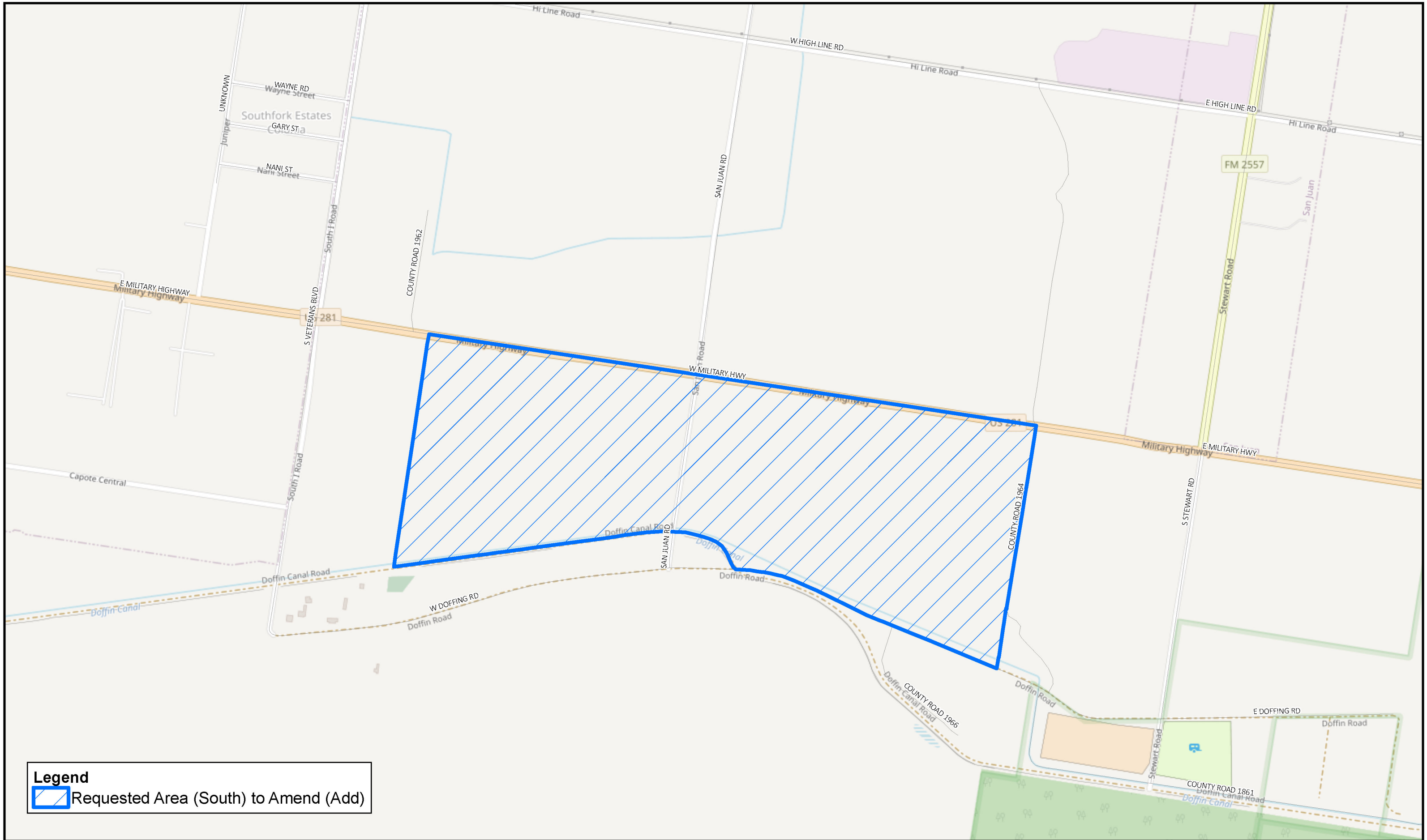
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- Requested Area (North) to Amend (Add)
- Requested Area (South) to Amend (Add)

Created by: McCall - BHDA
 Date Created: 4/25/2023

Amend City of Pharr (CCN No. 20643) in Hidalgo County
GENERAL LOCATION MAP
Overview with Both Requested Areas

© 2023 Bickerstaff Heath Delgado Acosta LLP
 Data Source:
 Requested Area(s) to Amend obtained from City of Pharr GIS Department;
 Roads obtained from Hidalgo County;
 Background Image: ESRI Open Street Map
 Request for Service area (in black hatch)



Legend
 Requested Area (South) to Amend (Add)



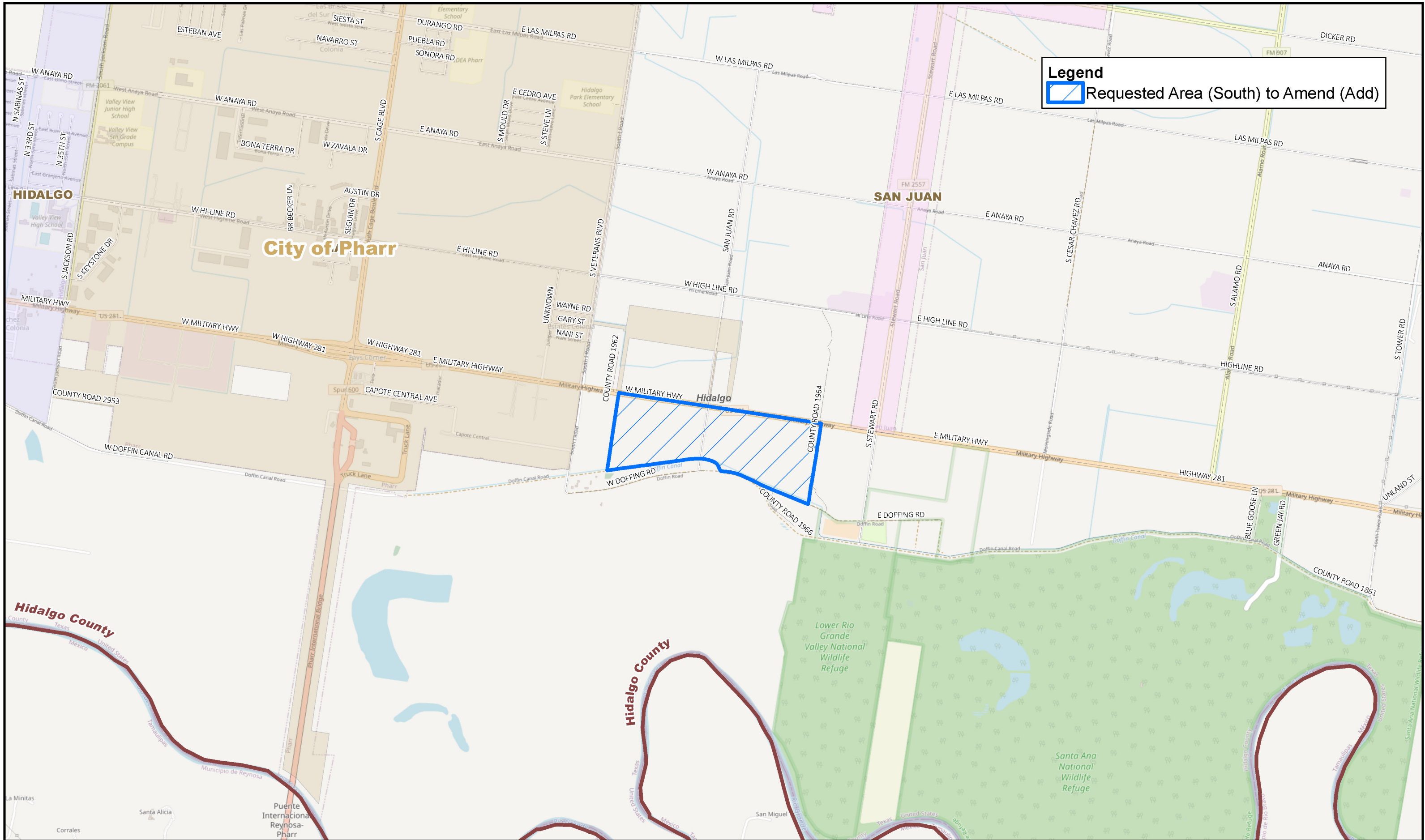
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 Date Created: 4/25/2023

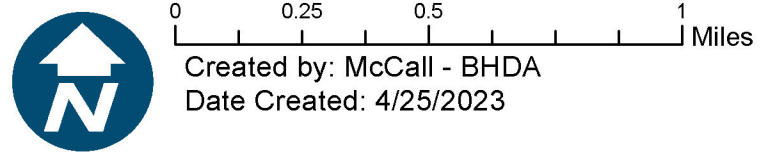
**Amend City of Pharr (CCN No. 20643) in Hidalgo County
 DETAILED MAP 2 OF 2
 (SOUTHERN PORTION)**

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 Data Source: Requested Area(s) to Amend obtained from City of Pharr GIS Department; Roads obtained from Hidalgo County; Background Image: ESRI Open Street Map
 Request for Service area






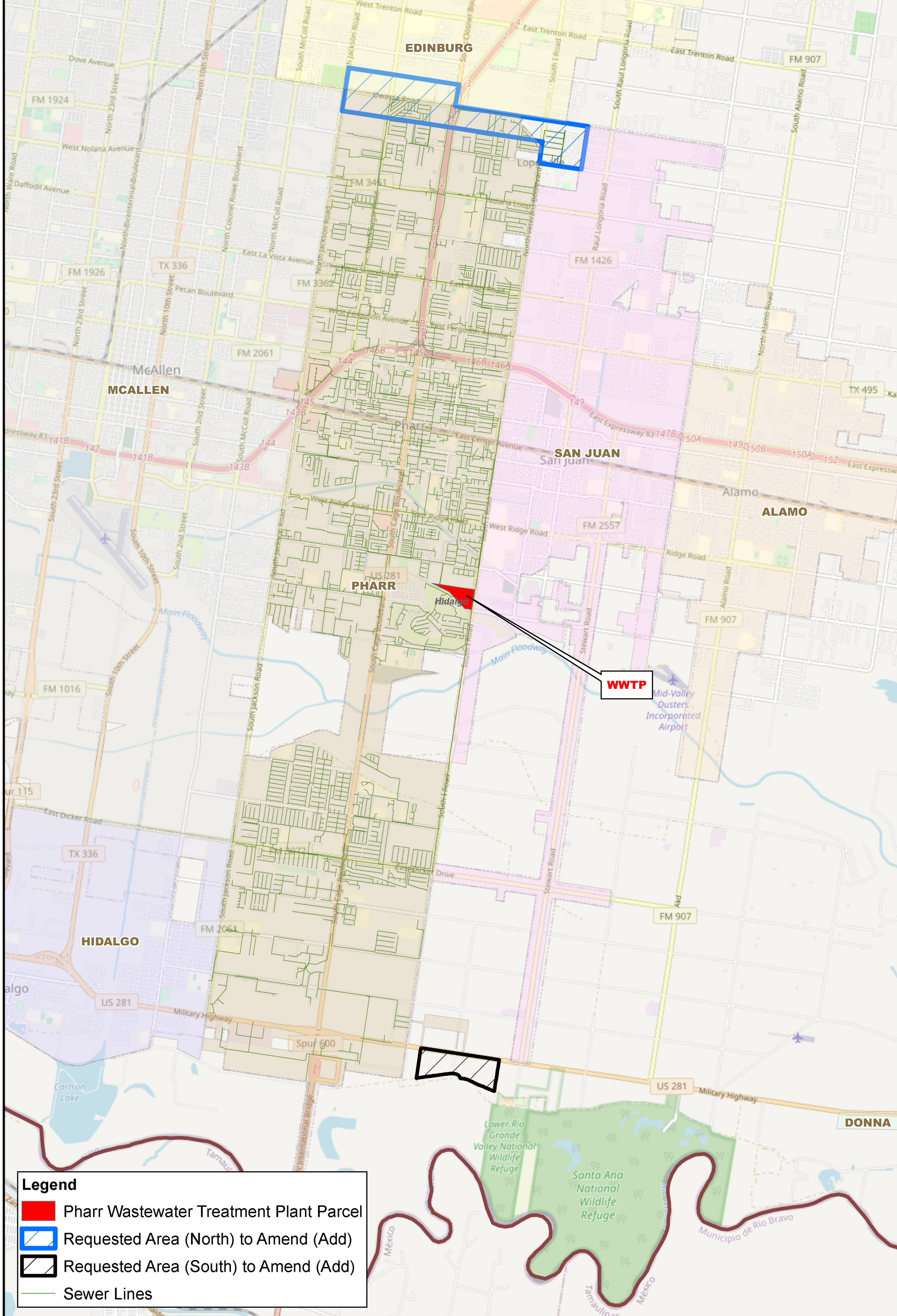
Legend
 Requested Area (South) to Amend (Add)



Created by: McCall - BHDA
 Date Created: 4/25/2023

Amend City of Pharr (CCN No. 20643) in Hidalgo County
GENERAL LOCATION MAP 2 OF 2
(SOUTHERN PORTION)


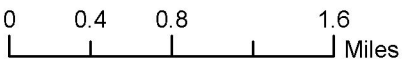
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 Data Source: Requested Area(s) to Amend obtained from City of Pharr GIS Department; Roads obtained from Hidalgo County; Background Image: ESRI Open Street Map
 Request for Service area 



Legend


- Pharr Wastewater Treatment Plant Parcel
- Requested Area (North) to Amend (Add)
- Requested Area (South) to Amend (Add)
- Sewer Lines

Created by: McCall - BHDA
Date Created: 5/30/2023

**Amend City of Pharr (CCN No. 20643) in Hidalgo County
FACILITIES MAP
Overview with Both Requested Areas and Facilities**

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Data Source:
Requested Area(s) to Amend and Facilities obtained
from City of Pharr GIS Department;
Roads obtained from Hidalgo County;
Background Image: ESRI Open Street Map
Request for Service areas (in hatched mark areas)



The following files are not convertible:

Pharr_RequestedArea_Amend_Sewer_NORTH.cpg
Pharr_RequestedArea_Amend_Sewer_NORTH.dbf
Pharr_RequestedArea_Amend_Sewer_NORTH.prj
Pharr_RequestedArea_Amend_Sewer_NORTH.sbn
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Pharr_RequestedArea_Amend_Sewer_SOUTH.shx

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