

CITY OF WESLACO

A REGULAR MEETING OF THE PLANNING & ZONING COMMISSION

AUGUST 3, 2022, 5:30P.M.

PCE CONFERENCE ROOM

255 S. KANSAS AVENUE

David Hernandez, Chairman

Lonnie Berry, Vice-Chairman

Miles Bullion, PZ Commissioner

Randy Summers, PZ Commissioner

Adrian Torres, PZ Commissioner

Jose Treviño, PZ Commissioner

Jim Forward, PZ Commissioner

**CITY OF WESLACO
PLANNING & ZONING COMMISSION
REGULAR MEETING
JULY 6, 2022**

On Wednesday, July 6, 2022, at 5:30 pm., the Planning and Zoning Commission of the City of Weslaco, Texas, convened in regular session in person

The following commissioners were present:

Lonnie Berry	Vice-Chairman
Randy Summers	Commissioner
Jim Forward	Commissioner
Adrian Torres	Commissioner
Miles Bullion	Commissioner
Jose Treviño	Commissioner
Rebekah de la Fuente	Planning Director
Kayla Arevalo	Secretary

Also, present were Johanna Maldonado, City Planner; Mike Swinnea, Assistant Fire Marshall; Salvador Ayar, Engineering Assistant, and citizens.

I. CALL TO ORDER:

Vice-Chairman Berry called the meeting to order and welcomed everyone in the audience.

A. Roll Call/Establish a Quorum

Mrs. Maldonado called the roll call noting that, Commissioner Bullion and Chairman Hernandez were absent at the time of roll, a quorum was established.

II. PUBLIC COMMENTS

There were no comments received.

III. APPROVAL OF MINUTES

A. June 1, 2022, Regular Meeting

Commissioner Summers made a motion to approve the minutes of June 1, 2022, with the noted corrections seconded by Commissioner Torres. Motion carried.

IV. PUBLIC HEARING

A. Discussion and consideration to approve rezone 3402 S Westgate Drive being a 5.00-acre tract of land out of Farm Tract 790, West Tract Subdivision, Hidalgo County, Texas from R-1 One-family dwelling district to R-2 Duplex and Apartment District.
Possible Action

Commission Bullion arrived at the dais @ 5:34pm.

Mrs. Maldonado stated that notice appeared in the Monitor on June 20, 2022, there were Eighteen (18) property owners notified within the 200-foot radius, two letters against the item were received. Staff recommended approval based on 2040 land use map.

Commissioner Bullion made a motion to close the Public Hearing, seconded by Commissioner Forward. Motion carried.

Commissioner Forward made a motion to approve the rezone request, seconded by Commissioner Treviño. Motion carried.

B. Discussion and consideration to approve rezone 3570 Moreland Drive. Also being Lot 4, Davis Business Park, Hidalgo County, Texas from R-1 One-family dwelling district to R-2 Duplex and Apartment District.

Mrs. Maldonado stated that notice appeared in the Monitor on June 20, 2022, there were Twenty-nine (29) property owners notified within the 200-foot radius, no letters for or against the item were received. Staff recommended approval based on 2040 land use map and surrounding land use.

Commissioner Bullion made a motion to close the Public Hearing, seconded by Commissioner Treviño. Motion carried.

Commissioner Torres made a motion to approve the rezone request, seconded by Commissioner Bullion. Motion carried.

C. Discussion and consideration to approve rezone 2737 E Mile 6 N. Also being Lots 1-44, Mid Valley Estates Subdivision, Hidalgo County, Texas from R-1 One-family dwelling district to R-2 Duplex and Apartment District

Mrs. Maldonado stated that notice appeared in the Monitor on June 20, 2022, there were three (3) property owners notified within the 200-foot radius, no letters for or against the item were received. Staff recommended approval based on 2040 land use map.

Commissioner Forward made a motion to close the Public Hearing, seconded by Commissioner Summers. Motion carried.

Commissioner Summers made a motion to approve the rezone request, seconded by Commissioner Torres. Motion carried.

D. Discussion and consideration to approve rezone 812 E Pike Blvd. Also being Blk 14, Lot 4 & 5, Colonia San Juan, Hidalgo County, Texas from R-1 One-family dwelling district to R-2 Duplex and Apartment District

Mrs. Maldonado stated that notice appeared in the Monitor on June 20, 2022, there were Twenty-eight (28) property owners notified within the 200-foot radius, no letters for or against the item were received. Staff recommended approval based on 2040 land use map.

Commissioner Summers made a motion to close the Public Hearing, seconded by Commissioner Bullion. Motion carried.

Commissioner Summers made a motion to approve the rezone request, seconded by Commissioner Forward. Motion carried.

E. Discussion and consideration to approve Conditional Use Permit to obtain a Wine and Malt Beverage retail Dealer's on Premise Permit at 1015 S International Blvd., also being Lot 1 & 2, Ranch House Subdivision Weslaco, Hidalgo County, Texas

Mrs. Maldonado stated that notice appeared in the Monitor on June 20, 2022, there were Six (6) property owners notified within the 200-foot radius, one letter against the item was received and three-fourths vote is required. Staff recommended approval.

Commissioner Bullion made a motion to close the Public Hearing, seconded by Commissioner Treviño. Motion carried.

Commissioner Treviño made a motion to approve the Conditional Use Permit request, seconded by Commissioner Torres. Motion carried.

V. DISCUSSION AND CONSIDERATION

A. Discussion and consideration for the Preliminary Plat for Plaza de Paz being a 3.00-acre out of Lot 13, Block 137, West Tract Subdivision, Weslaco, Hidalgo County, Texas Located at 1406 W. Pike Blvd. Possible Action.

Mrs. Maldonado stated that this item is a one (1) lot subdivision and is located inside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through a 6" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B". Staff recommended approval of the Preliminary Plat.

Commissioner Summers made the motion to approve the Preliminary plat, seconded by Commissioner Bullion. Motion carried

B. Discussion and consideration for the Preliminary for Moreland Heights- being 12.83-acre out of lot 4, Davis Business Park, Weslaco, Hidalgo County, Texas Located on the south side of Moreland Drive 585 f east of FM 1015. Possible Action.

Mrs. Maldonado stated that this item is a Thirty-two (32) lot subdivision is located inside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through an 8" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B". Applicant is requesting a variance for rear setbacks of 10 ft. and lot width along cul-de-sac. Staff recommended approval of the Preliminary Plat and compliance with the ordinance on the variance.

Commissioner Bullion made the motion to approve the Preliminary plat and variance for the rear setback of 10' for lots 30, 31 and 32, the variance for minimum lot width for lots 15 and 16 with the stipulation that shared driveway for be added, and to add a plat note that HOA will maintain the detention area, and by laws for HOA be provided, seconded by Commissioner Forward. Motion carried

C. Discussion and consideration for the Preliminary Plat for Milanos Estates Ph II being a 27.65-acre out of Farm tract 720& 721, West Tract Subdivision, Weslaco, Hidalgo

County, Texas Located approximately 240 feet North from the intersection of Mile 5 ½ West Road and Mile 6 ½ West Road. Possible Action.

Mrs. Maldonado stated that this item is a one hundred twenty-seven (127) lot subdivision and is located outside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through an 8" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B". Applicant is requesting a variance for front setback of 20 ft. and rear setbacks 10 ft. and off-site drainage. Applicants has submitted his letter of support from the irrigation district. Staff recommended approval of the Preliminary Plat and compliance with the ordinance on the variance.

Commissioner Summers made the motion to approve the Preliminary plat and variance for the front setback of 20 ft, with the stipulation that plat note 17 be updated to the corrected lots, seconded by Commissioner Bullion. Motion carried

D. Discussion and consideration for the Preliminary Plat for Pablo Pena Jr No. 2 – being 5.57 acres out of Farm Tract 145, block 179, The West and Adams Tracts, Weslaco, Hidalgo County, Texas Located on the Northwest corner of n Westgate dr. & Canyon Rd. Possible Action.

Mrs. Maldonado stated that this item is a seven (7) lot subdivision is located inside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through an 8" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B". Staff recommended approval of the Preliminary Plat.

Commissioner Bullion made the motion to approve the Preliminary plat, seconded by Commissioner Treviño. Motion carried

E. Discussion and re-consideration for the Final Plat for South Point Subdivision – being 12.34 acres being all of lot 2 VBMH Subdivision, Hidalgo County, Texas. Approximately 2,957 ft. West of the Intersection of F.M. 88 and US Expy 83. Possible Action

Mrs. Maldonado stated that this item is a seven (7) lot subdivision previously approved by Commission August 17, 2021. The developer is requesting to change from public to a private subdivision. The proposed street will be maintained by the surrounding property owners and will remain ungated. Staff recommended approval.

Commissioner Forward made the motion to approve the Preliminary plat, seconded by Commissioner Bullion. Motion carried

F. Discussion and re-consideration for the Final Plat for Mid Valley Industrial Park – being a 146.09-acre tract of land out of acre tract of land out of farm tract 1056, 1057and 1058, Block 116, West Tract Subdivision, Weslaco, Hidalgo County, Texas Located on the Northeast corner of intersection Mile 9 & FM 1015. Possible Action.

Mrs. Maldonado stated that this item is a twenty (20) lot subdivision previously approved by Commission December 14, 2021. The developer is requesting to change the South portion of Development Drive from Economic Ave. to Mile 9 to a private street. The proposed conversion will allow the developer to install a gate at the intersection of Development Drive and Mile 9 North, in order to control traffic flows on Mile 9. Staff recommended approval.

Commissioner Summers made the motion to approve the Preliminary plat, seconded by Commissioner Forward. Motion carried

G. Discussion and re-consideration for the Final Plat for San Gabriel Ph I Subdivision–being a 9.98-acre tract of Farm Tr act 795, The West and Adams Tracts Subdivision, Weslaco, Hidalgo County, Texas Located approximately on ¼ mile South of Mile 5 North on the east side of Westgate Dr. Possible Action.

Mrs. Maldonado stated that this item is a thirty-one (31) lot subdivision previously approved by Commission April 19, 2022. The developer is requesting to change from public to a private subdivision. Staff recommended approval.

Commissioner Forward made the motion to approve the Preliminary plat, seconded by Commissioner Treviño. Motion carried

H. Discussion and consideration for the Final Plat for San Gabriel Subdivision Ph II–being a 10.01-acre tract of Farm Tract 795, The West and Adams Tracts Subdivision, Weslaco, Hidalgo County, Texas Located approximately 600ft east of Mile 6 West on the south side of Mile 5 Rd. Possible Action.

Mrs. Maldonado stated that this item is a sixty-nine (69) lot subdivision is located inside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through an 8” waterline and sewer by the City of Weslaco through an 8” sewer line. The property is within a Flood Zone “B”. Applicant has submitted his letters of support from the drainage and irrigation district. The developer has adjusted the lots along Mile 5 North to accommodate the 40 ft throat to the gate. Staff recommended approval.

Commissioner Bullion made the motion to approve the Preliminary plat, seconded by Commissioner Summers. Motion carried

I. Discussion and consideration for the Voluntary Annexation of Sunset Valley Estates–being a 15.32-acre tract of land out of Farm Tract 745, West and Adams Tract Subdivision, Hidalgo County, Texas located approximately 0.36 miles North of E Mile 5 North, on the West side of Texas Road. Possible Action

Mrs. Maldonado stated that the proposed development is currently located outside the City of Weslaco city limits. This subdivision is being serviced with water and sewer by the City of Weslaco. The proposed development will be one-family residential lots. The development is contiguous to the existing city limits line. Staff recommended approval.

Commissioner Treviño made the motion to approve the Voluntary Annexation request, seconded by Commissioner Summers. Motion carried

VI. ADJOURNMENT

There being no further business to come before the Planning and Zoning Commission, Vice-Chairman Berry adjourned the meeting at 7:00 p.m.

Planning and Zoning Commission

Absent

David Hernandez, Chairman

Lonnie Berry, Vice-Chairman

Randy Summers, Commissioner

Miles Bullion, Commissioner

Jose Treviño, Commissioner

Adrian Torres, Commissioner

Jim Forward, Commissioner

ATTEST:

Kayla A. Arevalo, Secretary



Planning & Zoning Commission Standardized Agenda Request Form

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): IV.A.
From: Rebekah de la Fuente, Planning Director, on behalf of Jose Candanoza	
Subject/Agenda Item: Discussion and consideration to approve rezone 510 W 4th. Also being Lot 3, Block 8A, Canal Subdivision, Hidalgo County, Texas from R-1 One-family dwelling district to R-2 Duplex and Apartment District.	
Discussion/Overview: The applicant is requesting to rezone property from R-1 One Family Dwelling District to R-2 Duplex and Apartment District. Notice of the application and the Public Hearing for the Planning and Zoning Commission appeared in The Monitor on July 18, 2022. Seventeen (17) property owners within 200 feet of the applicant's property were notified by letter on July 22, 2022.	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval based on 2040 land use map.	
Additional Action Prompted: ☒ Mayor's Signature ☒ Public Hearing ☐ Budget Amendment ☐ Resolution ☒ Ordinance – First Reading ☒ Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Request letter.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



APPLICATION FOR REZONING

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. RzNE:000264-2022

PROPOSED PROJECT

Legal Description of Property to be rezoned:

Lot _____ Block 8.

Subdivision Name Canal subdivision. 510 W 4th

Street Address _____

Existing Zoning R-1 Existing Land Use _____

Proposed Zoning R-2 Proposed Land Use Duplex

_____ \$305.00 non-refundable filing fee.

_____ Detailed dimensioned site plan/map must be submitted with this request.

_____ Survey and metes and bounds if the legal description is a portion of a lot.

_____ City and school tax receipts attached.

_____ I have received a copy of "The Intent of Zoning Application Instructions".

APPLICANT

Name Jose Candano Phone 956 355 8832

Address 301 Ranchitos St Fax: _____

City Weslaco State TX Zip Code 78596 E-Mail: Candano.jose@gmail.com

OWNER

Name Daniel Castillo Phone 956. 391-9537

Address 2005 Resingale Dr. Fax: _____

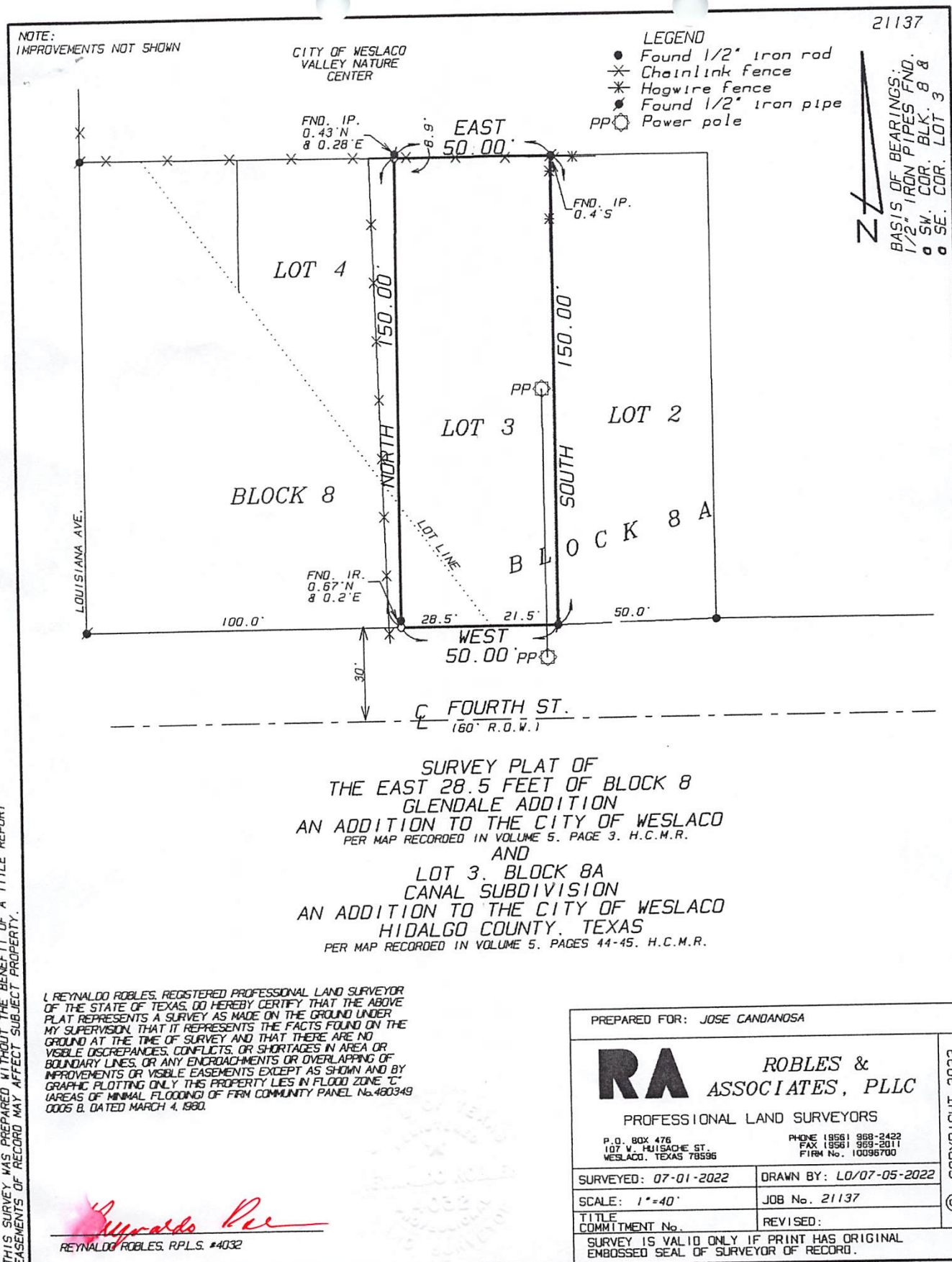
City Weslaco State TX Zip Code 78596 E-Mail: _____

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); or I am authorized by the actual owner to submit this application and have attached written evidence of such authorization.

Signature Daniel Castillo Date _____
Owner

Signature Jose Candano Date _____
Applicant

Signature _____ Date _____
Authorized Agent



City of Weslaco

"The City on the Grow"



David Suarez, Mayor
Josh Pedraza, Mayor Pro-Tem, District 1
Leo Muñoz, Commissioner, At-Large
Greg Kerr, Commissioner, At-Large
Letty Lopez, Commissioner, District 2
Jose "JP" Rodriguez, Commissioner, District 3
Adrian Farias, Commissioner, District 4

Martin Garza, Interim City Manager

PLANNING DEPARTMENT

July 22, 2022

Legal Notice

Dear Occupant:

The Weslaco Planning and Zoning Commission will hold a public hearing on Wednesday, August 3, 2022, and the City Commission will hold a public hearing on August 16, 2022, at 5:30 p.m. at the City Hall Legislative Chambers located at 255 South Kansas Avenue

Members of the public who wish to participate in Public Hearing on an agenda item must send their name, address and phone number via email to karevalo@weslacotx.gov by 12:00 pm on August 3, 2022. A staff member will contact you with instructions via phone call to address your public comment.

REZONE REQUEST:

Jose Candanoza is requesting to rezone 510 W 4th. Also being Lot 3, Block 8A, Canal Subdivision, Hidalgo County, Texas from R-1 One-family dwelling district to R-2 Duplex and Apartment District.

The public is hereby invited to attend and express their support or opposition to the request. You may also file a written notice supporting or protesting this action. For more information please call the Planning Department at (956) 447-3403.

Si desea información en español, por favor llame al departamento de Planeación de la ciudad de Weslaco, (956) 447-3403.

Sincerely,

Rebekah de la Fuente, CFM
Planning Director



City of Weslaco Code Enforcement Dept.

JUL 20, 2022

CITY OF WESLACO 255 S KANSAS AVE WESLACO TX 78596	G4100-00-001-0008-00 GLENDALE ADDITION LOTS 8-12 BLK 1	L: 234442 B: 312880
GATTON WILLIAM R JR & REBECCA 603 W 4TH ST WESLACO TX 78596	G4100-00-006-0001-00 GLENDALE ADDITION LOTS 1 & 2 BLK 6 601 W 4TH ST	L: 56718 B: 102442
TAYLOR BILLY MACK PO BOX 1189 WESLACO TX 78599	G4100-00-007-0032-00 GLENDALE ADDITION LOT 32 BLK 7 600 W 4TH ST	L: 32722 B: 44601
SILVA ISRAEL JR 1418 SHAY LANE EDINBURG TX 78539	G4100-00-008-0002-00 GLENDALE ADDITION LOT 2 BLK 8A 508 W 4TH ST	L: 24850 B: 20402
RANGEL GUADALUPE & MARIA DE 510 W 4TH ST WESLACO TX 78596	G4100-00-008-0003-00 GLENDALE ADDITION E28 1/2' LOT 3 BLK 8 510 W 4TH ST	L: 29990 B: 11607
GAMES ROMANA TORRES HECTOR QUINTANILLA & MARK A 512 W 4TH ST WESLACO TX 78596	G4100-00-008-0004-00 GLENDALE ADDITION W100' BLK 8 & LOTS A 512 W 4TH ST	L: 53250 B: 70459
WESLACO ISD 312 W 5TH ST WESLACO TX 78596	W2300-00-037-0001-00 WESLACO ORIGINAL TOWNSITE LOT 1 312 W 5TH ST	L: 548100 B: 827375
SAENZ MAXIMO 105 E KIWI ST MCALLEN TX 78504	W3800-00-000-1507-01 WEST TRACT:FT 1507 THE SOUTH 358AC OF LOT 8 2.544AC NET 505 W BUS HWY 83	L: 525550 B: 2836344
OLIVAREZ L C PO BOX 22 WESLACO TX 78599	W3800-00-000-1507-08 WEST TRACT S 46.4'-TR 8 LT 10 & N73.6' 84.09'-S 115.9'-N189.5 TR1-LT 15 FT 1507 222 S OKLAHOMA	L: 154200 B: 359894
GONZALEZ IRMA & RENE MARTINEZ HORACIO MARTINEZ 302 S OKLAHOMA ET AL WESLACO TX 78596	W3800-00-000-1507-10 WEST TRACT FT 1507 E 147.11'-S 50'-N 302 S OKLAHOMA	L: 22216 B: 46830
ROMO MARY E 304 S OKLAHOMA AVE WESLACO TX 78596	W3800-00-000-1507-11 WEST TRACT FT 1507 E 147.11'-S 50'-N 304 S OKLAHOMA	L: 22216 B: 94947
ITURBE MARIAMNE 306 S OKLAHOMA AVE WESLACO TX 78596	W3800-00-000-1507-12 WEST TRACT FT 1507 E 147.11'-S 50'-N 1-LOT 1 BLK CANAL 306 S OKLAHOMA	L: 22216 B: 39744

City of Weslaco Code Enforcement Dept.

JUL 20, 2022

PENA ELIDA C	W3800-00-000-1507-13	L: 14375
308 S OKLAHOMA AVE	WEST TRACT FT 1507 E 97.11'-S 50'-N	B: 31848
WESLACO TX 78596	UT OF LT 1 BLK 8A CANAL	
	308 OKLAHOMA AVE	
AYALA MARICRUZ & MARIA	W3800-00-000-1507-14	L: 15682
322 S OKLAHOMA	WEST TRACT BLK FT 1507 56.4X97.11 TR	B: 63921
WESLACO TX 78596	322 S OKLAHOMA	
MEDRANO PETE	W3800-00-000-1507-15	L: 16988
506 W 4TH ST	WEST TRACT FT 1507 W 50X106.4 AND	B: 41860
WESLACO TX 78596	E PART	
	506 W 4TH ST	
SAENZ MAXIMO	W3800-00-000-1507-17	L: 414641
105 E KIWI ST	WEST TRACT:FT 1507 THE NORTH	B: 1251734
MCALLEN TX 78504	56.48'-W61.64' 0.36AC OF LOT 8 1.674AC	
	505 W BUS HWY 83	
CITY OF WESLACO	G4100-00-007-0001-00	L: 1908495
255 S KANSAS AVE	GLENDALE ADDITION LOTS 1-4 LOT 5	B: 745773
WESLACO TX 78596	LOT 6 EXC S105' LOTS 7-24 BLK 7 & ALL	



**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V. A.
From: Rebekah de la Fuente, Planning Director, on behalf of Dustin Moore.	
Subject/Agenda Item: Discussion and consideration for the Preliminary Plat for Rock Ridge – being 15.092 acres out of Farm Tract 631 & 633, West and Adams Tract Subdivision, Weslaco, Hidalgo County, Texas located approximately 500 ft west of Bus. 83 and Westgate on the south side of Bus. 83. Possible Action.	
Discussion/Overview: The proposed one (2) lot subdivision is inside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through an 8" waterline and sewer by the City of Weslaco through a 12" sewer line. The property is within a Flood Zone "X".	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval of Preliminary Plat	
Additional Action Prompted: ☒ Mayor's Signature ☐ Public Hearing ☐ Budget Amendment ☐ Resolution ☐ Ordinance – First Reading ☐ Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



SUBDIVISION PLATTING APPLICATION

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. PIAT-000272-2022

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

STAFF USE ONLY

☐ Single Lot Variance ☐ Minor Plat ☐ Planned Unit Development ☐ Standard Subdivision

GENERAL INFORMATION

Name of Subdivision: ROCK RIDGE ESTATES

Location: 500' WEST OF BUS 83 + WESTGATE ON S SIDE OF BUS 83

Legal Description: 15.092 AC. OUT OF FT 631 + 633 WEST ADD
ADAMS SUBDIVISION

Is subdivision inside city limits? ☒ YES ☐ NO

If subdivision is in the ETJ, indicate? ☐ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: _____

Existing Land Use: MF Proposed Land Use: MF

Number of Lots Proposed: 2 Gross Acreage: 15.092

Title Report Submitted: ☐ YES ☐ NO

OWNER INFORMATION

Owner's Name: FOUR RIGHT INVES. PARTNERS Telephone: 956-561-9587

Address: 3255 WILSHIRE BLVD Fax: _____

City: LOS ANGELES State: CA Zip: 90010 E-mail: _____

ENGINEER INFORMATION

Name: DUSTIN MOORE Telephone: 956-245-4651

Address: 14792 PALIS DR Fax: _____

City: LA FERIA State: TX Zip: 76559 E-mail: D.MOORE1420SURVEY124@gmail.com

UTILITY PROVISIONS

Will proposed subdivision connect to:

☒ YES ☐ NO Water Provision: WESLACO

☒ YES ☐ NO Wastewater Provision: WESLACO

☒ YES ☐ NO Electric Company: AT&T

☐ YES ☒ NO Phone Utility _____	☐ YES ☒ NO Gas Utility _____	☒ YES ☐ NO Cable Utility _____
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Proposed subdivision is in the following districts:

☒ YES ☐ NO Drainage District <u>HCD 1</u>	☒ YES ☐ NO Irrigation District <u>HCD #9</u>
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Has the property been assessed as flat rate irrigable property: ☐ YES ☒ NO

Have Water Rights been conveyed to City/Water Supplier? ☒ YES ☒ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If YES, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR MINOR PLAT REVIEW

Two (2) sets of plats **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

\$355.00 Planning Review fee

One 11" X 17" reduced copy of plat

Plat Layout

Existing & Proposed Easements

Existing & Proposed ROW

Existing & Proposed Drainage Easements

Contours

Flood Zones

Adjoiners

Existing street names

Drainage plans and calculations with engineer's seal

Elevations

Flood directional arrows

Detention areas

Street names

Proof of ownership of the property

If septic tank system required, submit soil evaluation report

Water Rights associated with the property

Tax Receipt for all taxing entities showing that taxes are paid in full

SUBMITTALS REQUIRED FOR PRELIMINARY (P & Z)

☒ Twelve (12) sets of preliminary plat **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

☒ \$350.00 (one time fee for preliminary and final plat)

☒ One 11" X 17" reduced copy of plat

☒ Plat Layout

☒ Existing & Proposed Easements

☒ Existing & Proposed ROW

☒ Existing & Proposed Drainage Easements

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

- ☒ Contours
- ☒ Flood Zones
- ☒ Adjoiners
- ☒ Existing & Proposed street names
- ☒ Utility Layout
- ☒ Existing & Proposed Utilities
- ☒ Proposed Fire Hydrants
- ☒ Adjoiners
- ☒ Street names
- ☒ Drainage plans and calculations with engineer's seal
- ☒ Elevations
- ☒ Flood directional arrows
- ☒ Detention areas
- ☒ Street names
- ☒ Proof of ownership of the property
- ☒ If septic tank system required, submit soil evaluation report
- ☐ Water Rights associated with the property
- ☐ Tax Receipt for all taxing entities showing that taxes are paid in full
- ☐ Number of fire hydrants proposed for subdivision
- ☐ Trip Generation Worksheet

SUBMITTALS REQUIRED FOR FINAL (P & Z) **Will not apply to Single Lot Variance**

- ☐ Twelve (12) sets of plans **FOLDED & STAPLED** (24 x 36) & PDF copy **with all corrections**
- ☐ Plats to be sealed by Professional Engineer
- ☐ Approved Drainage Report
- ☐ Traffic Impact Analysis (If required)

SUBMITTALS REQUIRED FOR FINAL (City Commission)

- ☐ One set of 8 ½ x 11 of plat and utilities with all corrections done

SUBMITTALS REQUIRED FOR PRE-CONSTRUCTION MEETING

- ☐ Seven (7) full sets of construction plans 24 x 36 and one (1) 11 x 17 with plan & profile.
- ☐ Engineering cost estimates for 3% geotechnical testing fees and 2% inspection fees
- ☐ Notice of Intent
- ☐ SW3P

SUBMITTALS REQUIRED FOR RECORDING OR HIDALGO COUNTY PLANNING

- ☐ Electronic file of final plat and as-builds
- ☐ Reproducible plat to be recorded with all required signatures
- ☐ 3% geotechnical testing fees or negotiated Material Testing fee by City, whichever is higher
- ☐ 2% inspection fee
- ☐ Park Fees
- ☐ Checks or Receipts: HCCID #9; HCDD #1; County Clerk
- ☐ Tax certificates
- ☐ Memo from engineering inspector releasing subdivision
- ☐ Water Rights associated with the property dedicated and assigned to City of Weslaco or payment of fees sufficient to meet the needs necessitated and attributable to development
- ☐ 30 Year Water and 30 Year Sewer Service Agreements
- ☐ Park dedication/Fees in lieu of

SUBMITTALS REQUIRED FOR RECORDING BY SECURITY

- ☐ Sealed engineering cost estimates
- ☐ Letter of Credit/Performance Bond/Escrow

** Any revisions requested would require resubmission of plats and reduced copy reflecting changes.

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: _____

Owner Signature: _____ Date: _____

_____ is the authorized agent

Authorized Agent Signature: *[Signature]* Date: 22 July 22

Authorized Agent Printed Name: Dustin Moore

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid: _____

P & Z Commission Approval on Preliminary Plat: _____

P & Z Commission Approval on Final Plat: _____

City Commission Approval on Final Plat: _____

Preconstruction Meeting Date: _____

Date Recorded: _____ Instrument No. _____

General Comments: _____

DRAINAGE STATEMENT
FOR
ROCK RIDGE ESTATES

APRIL 2022
(REV* 18MAY22)



Prepared by:

Moore Land Surveying, LLC

14216 Palis Drive,
La Feria, TX 78559

(956)245-0988

TBPLS Firm No. 10194186
TBPE Firm No. 19190

DRAINAGE STATEMENT ROCK RIDGE ESTATES

REV* 18 MAY 2022

ROCK RIDGE ESTATES is a 15.092 ac. tract of land inside the city limits of the City of Weslaco. The property is located 425' west of the intersection of US Business 83 and Westgate Drive. The property is being developed into three (3) lots, one being 0.67 Ac. and two approximately 7.00 Ac. lots. The property is currently undeveloped and is in heavy brush. The proposed use of the property shall be for Apartment Units. The time of concentration was calculated using the "C" value for unimproved areas. The subdivision lies in Zone "X-Shaded" as per the National Flood Insurance Rate Map of Community No. 480334 panel number 0450, suffix "C", revised January 2, 1981, per the National Flood Insurance Rate Map of Community No. 480334 panel number 0450 suffix "C", revised June 6, 2000 (revised by the following LOMR's: 02-06-715p-480334 dated 5/30/2002; 15-06-2601p-480334 dated 12/24/2015; and 18-06-0700p-480334 dated 10/05/2018) Zone "X-Shaded" is an "area inside the 500-year flood plain". The plat will call for any new structure's finished floor elevation to be at elevation 82.50 ft. or 30" above natural ground whichever is higher in order to ensure the finished floor elevation is above the 100-year flood plain in order to mitigate flood damage.

The soils are 17% Sandy Loam (25), 1% Sandy Loam (26), and 82% Sandy Clay Loam (28) which are in hydrologic soil group "B" with moderate infiltration. (See excerpts from "Soil Survey of Hidalgo County, Texas")

Existing runoff of the land is by surface flow in a southwesterly direction into the City of Weslaco storm drains inside the property, where it flows through a 30" storm drain 2238' north and west to the HCDD No. 1 Drain north of Tesoro Drive, ultimately out-falling into the Arroyo Colorado, then Laguna Madre.

The proposed drainage for ROCK RIDGE ESTATES shall consist of allowing runoff to continue to surface flow in a southwesterly direction into the City of Weslaco storm drains inside the property, where it flows through an 30" storm drain 2238' north and west to the HCDD No. 1 Drain north of Tesoro Drive, ultimately out-falling into the Arroyo Colorado, then Laguna Madre. Per the City of Weslaco Drainage Policy, detention large enough to detain the post development 50-year event runoff for each lot site plan while discharging the pre-developed 10-year event for each lot is required to be installed at the time the permitting and site development before each lot is completed in order to have no negative impact on the Weslaco Storm sewer system. Until the site is changed from existing conditions no detention will be installed. For this site the pre-developed run-off is 6.23 CFS with an 80 min. pre-developed Tc, and 34 min. post-developed Tc. Based on the Modified Rational Method the largest detention volume produced was for a 5 min duration and produced 7,246 CF released at the 10-year existing conditions, had 166,009 CF inflow at 50-year proposed conditions, and resulted in a required final total storage volume of 158,763 CF. Run-off and detention were calculated assuming each lot would be apartment dwellings.



By: T. Moore 6-6-22
Dustin Moore, PE Date

☐ REJECTED	
☒ APPROVED FOR SUBMITTAL	
☐ TO H.C. PLANNING DEPT.	
☒ TO CITY	
☒ DISCHARGE PERMIT REQUIRED	
☐ DISTRICT FACILITY	
☒ CITY FACILITY	
☐ OTHER _____	
<u>6-6-22</u> H.C.D.D. NO. 1 DATE	

INDEX TO EXHIBITS

HYDRAULIC CALCULATIONS:	4
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RATIONAL METHOD “C” VALUES:	6
PROPOSED LAYOUT AND WEIGHTED “C” VALUE:	7
RAINFALL INTENSITY – DURATION CURVES:	8
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ROCK RIDGE ESTATES
Drainage Calculations
REV* 18MAY22

Pre-developed Conditions

Area = 15.09 AC
"C" = 0.15 (10) YR
Tc = 80 MIN
Q10pre = 2.75 (10)=IN/HR
6.23 CFS

Developed Conditions

C FACTOR	STORM		DRAINAGE	INFLOW RATE		RELEASE VOL.		INFLOW VOL.		STORAGE REQ'D
	DURATION T (HR)	L (IN/HR)		AREA A (AC)	Q1=CIA (CFS)	Vo=(.5*(T+Tc Dev))*Q10 Pre*60 (CF)	V1=(.5*(T+Tc Dev))*Q1*60 (CF)	V1-Vo (CF)		
0.70	0.08	13.50	15.09	142.62	7,246	166,009	158,763			
0.70	0.17	11.00	15.09	116.21	8,255	154,092	145,837			
0.70	0.25	9.00	15.09	95.08	9,151	139,767	130,616			
0.70	0.33	8.00	15.09	84.52	10,048	136,408	126,360			
0.70	0.50	6.50	15.09	68.67	11,953	131,844	119,891			
0.70	0.67	5.25	15.09	55.46	13,858	123,461	109,603			
0.70	0.83	4.75	15.09	50.18	15,651	126,155	110,504			
0.70	1.00	4.25	15.09	44.90	17,556	126,614	109,059			
0.70	1.50	3.25	15.09	34.33	23,159	127,724	104,565			
0.70	2.00	2.75	15.09	29.05	28,762	134,221	105,459			
0.70	3.00	1.90	15.09	20.07	39,967	128,865	88,897			
0.70	4.00	1.50	15.09	15.85	51,173	130,259	79,086			
Detention required =			158,763 CF	3,645 AC-FT						

***Run-off and detention were calculated assuming each lot would be apartment dwellings.



Handwritten signature and date: 8/3/22

TABLE 1
TIME OF CONCENTRATION DETERMINATION
WESLACO, TX

			OVERLAND FLOW				CHANNEL, PIPE, STREET, ETC. FLOW					
COMPUTATION POINT	DESCRIPTION OF RUN-OFF MEDIUM	C	LENGTH (FT)	GRADE (%)	TIME (MIN)	WIDTH/DIA (FT)	GRADE (%)	LENGTH (FT)	VELOCITY (FPS)	TIME (MIN)	TOTAL TIME (MIN)	
WESLACO APARTMENTS-PRE DEVELOPED												
GRATE INLET IN MIDDLE OF THE PROPERTY	UNIMPROVED	0.30	890	0.45	56						56	
STORM DRAIN							0.15	1763	1.75	17	17	
											73	
WESLACO APARTMENTS - POST DEVELOPED												
GRATE INLET IN MIDDLE OF THE PROPERTY	LAWN	0.30	80	0.50	16						16	
GUTTER							0.20	150	1	3	3	
STORM DRAIN							0.15	1650	1.75	16	16	
											34	

TIME OF CONCENTRATION

A) FOR OVERLAND FLOW: TIME= $\frac{1.8*(1.1 - C)*SQRT(L)}{CUBEROOT(S)}$

B) FOR STORM SEWERS, STREETS, CHANNELS, ETC. USE MANNING'S EQUATION.

C) $T_c = \frac{L}{V \times 60} = \text{MIN}$ $L = \text{LENGTH}$
 $V = \text{VELOCITY}$

RATIONAL METHOD RUNOFF COEFFICIENTS

Description of Area Runoff Coefficients

Business:

Downtown areas	0.70 to 0.95
Neighborhood areas	0.50 to 0.70

Residential:

Single-family areas	0.35 to 0.50
Multi units, detached	0.40 to 0.60
Multi units, attached	0.60 to 0.75

Residential (1/2 acre lots or more)	0.30 to 0.45
-------------------------------------	--------------

Apartment dwelling areas	0.50 to 0.70	0.70
--------------------------	--------------	------

Industrial:

Light areas	0.50 to 0.80
Heavy areas	0.60 to 0.90

Parks, cemeteries	0.10 to 0.25
-------------------	--------------

Playgrounds	0.20 to 0.35
-------------	--------------

Railroad yard areas	0.20 to 0.40
---------------------	--------------

Unimproved areas	0.10 to 0.30	0.15
------------------	--------------	------

Character of surface Runoff Coefficients

Streets:

Asphaltic	0.70 to 0.95
Concrete	0.80 to 0.95

Drives and Walks	0.75 to 0.85
------------------	--------------

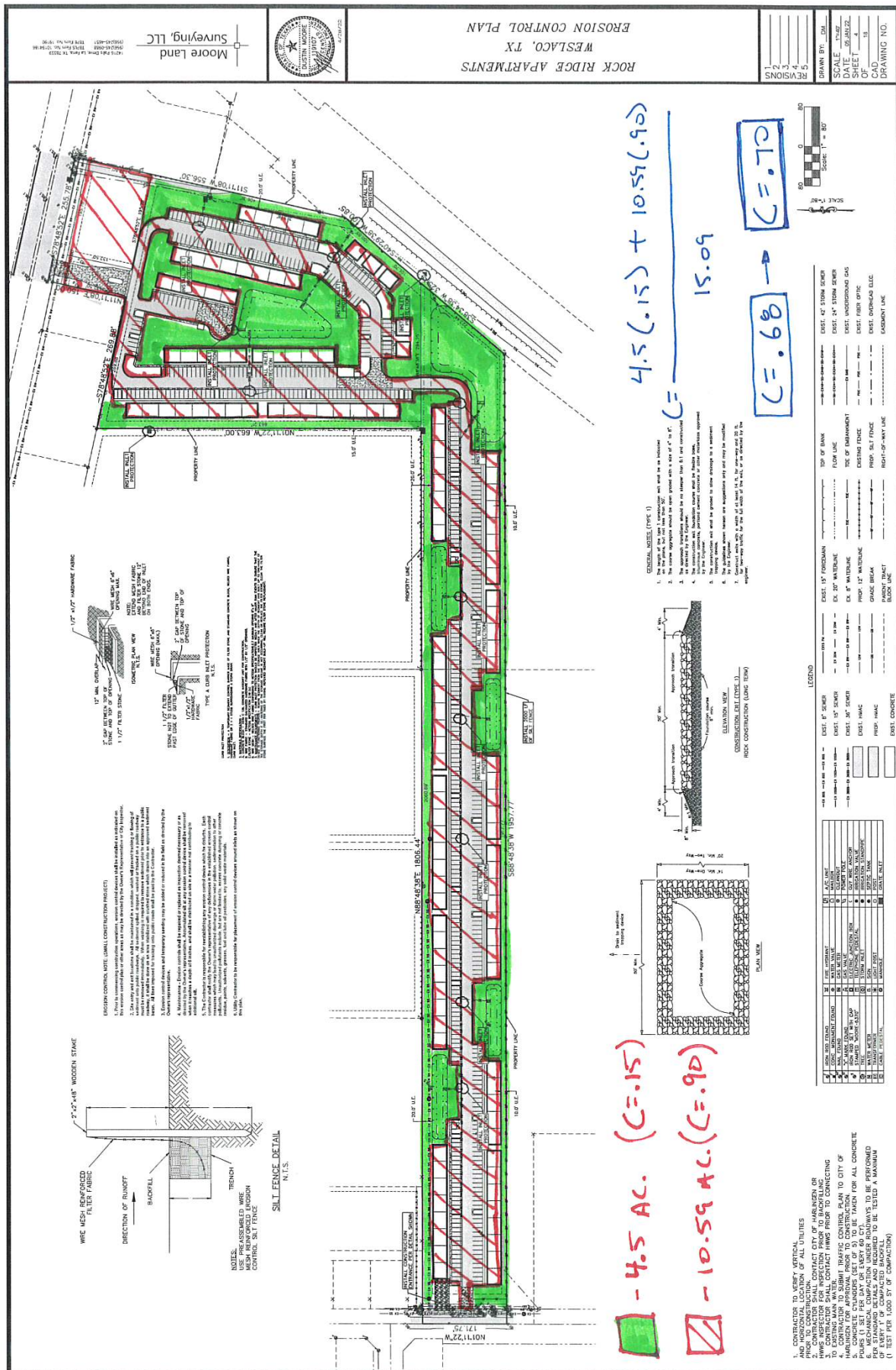
Roofs	0.75 to 0.95
-------	--------------

Lawns, Sandy Soil:

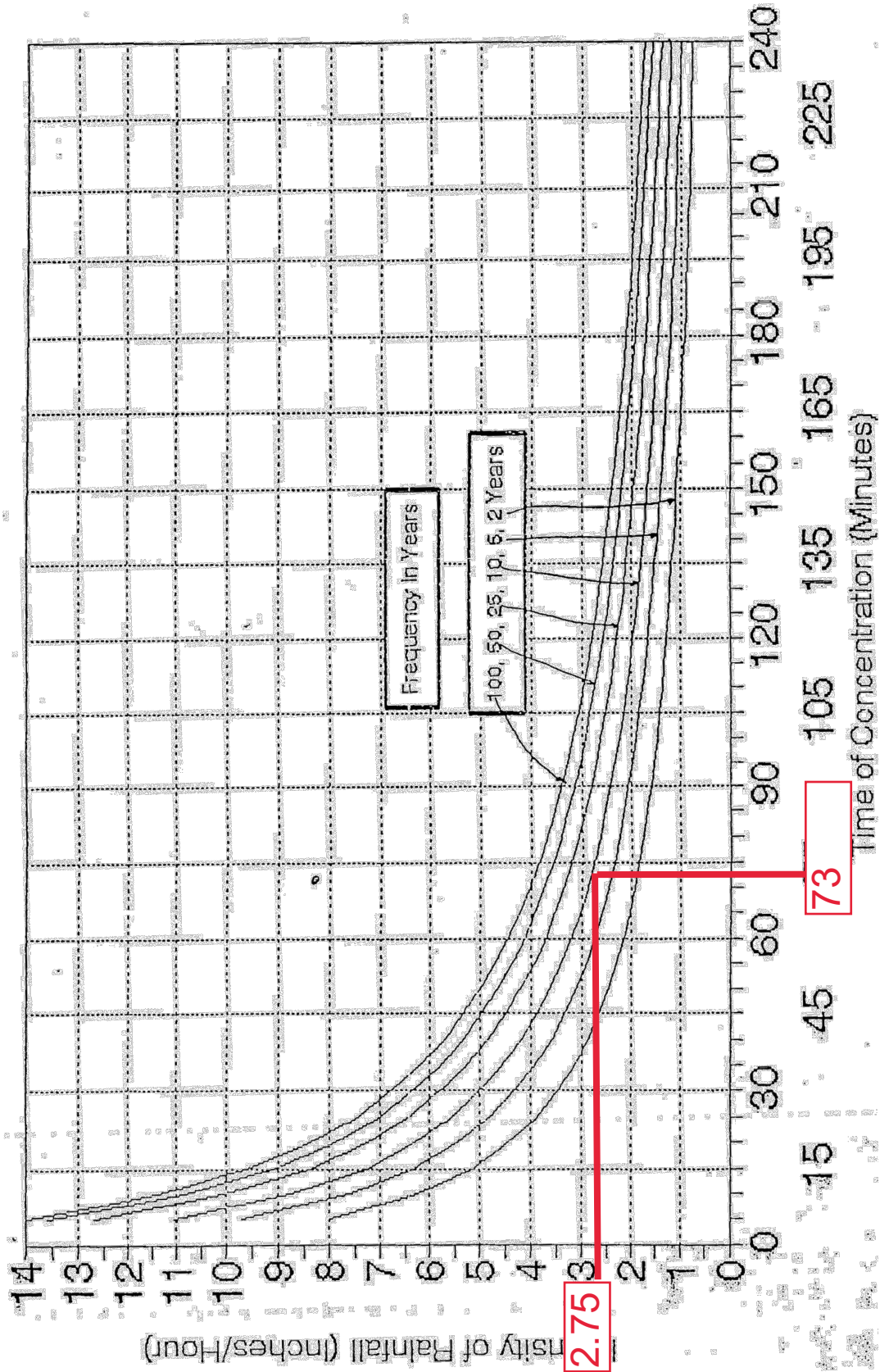
Flat, 2%	0.05 to 0.10
Average, 2 to 7%	0.10 to 0.15
Steep, 7%	0.15 to 0.20

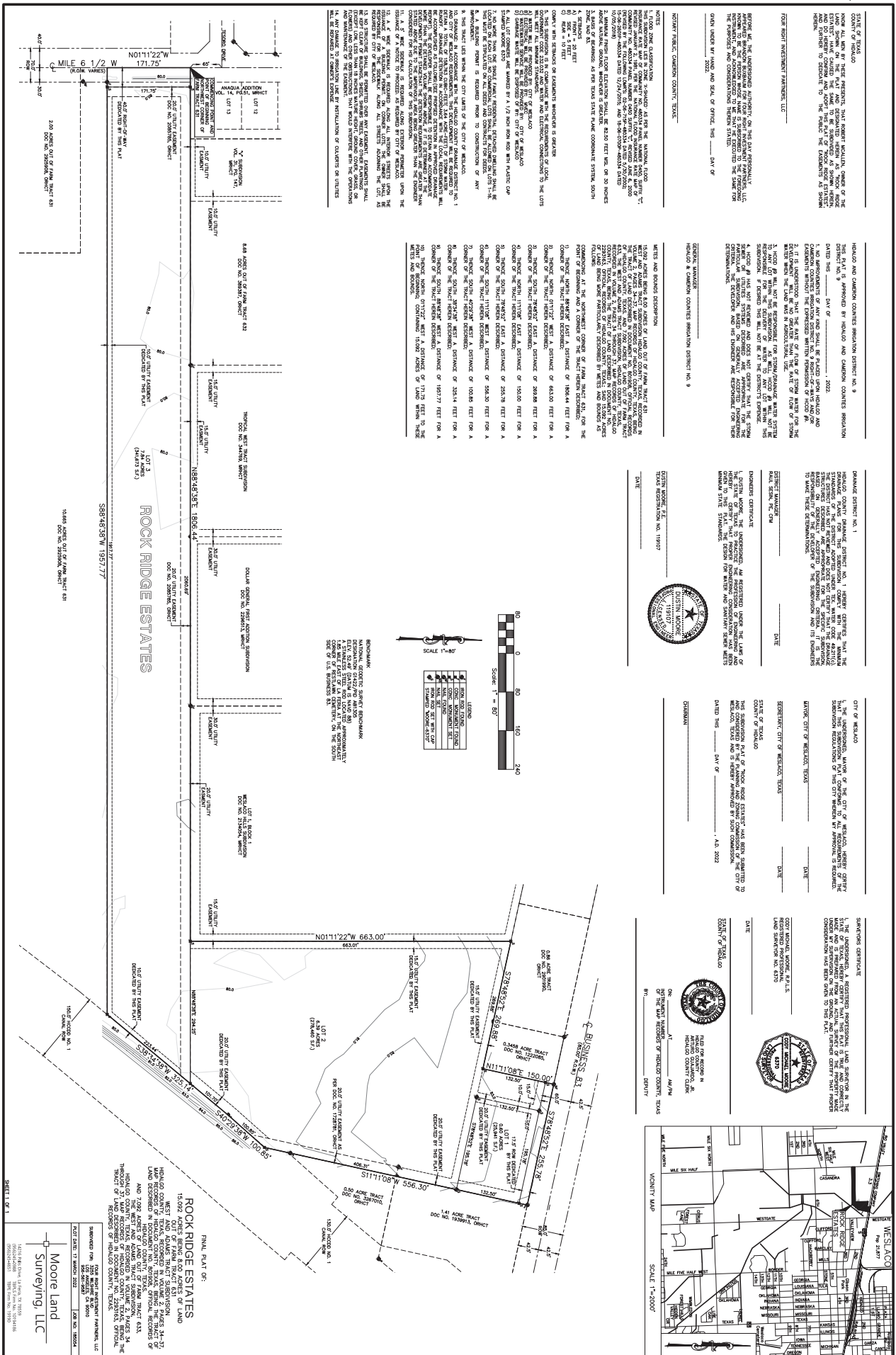
Lawns, Heavy Soil:

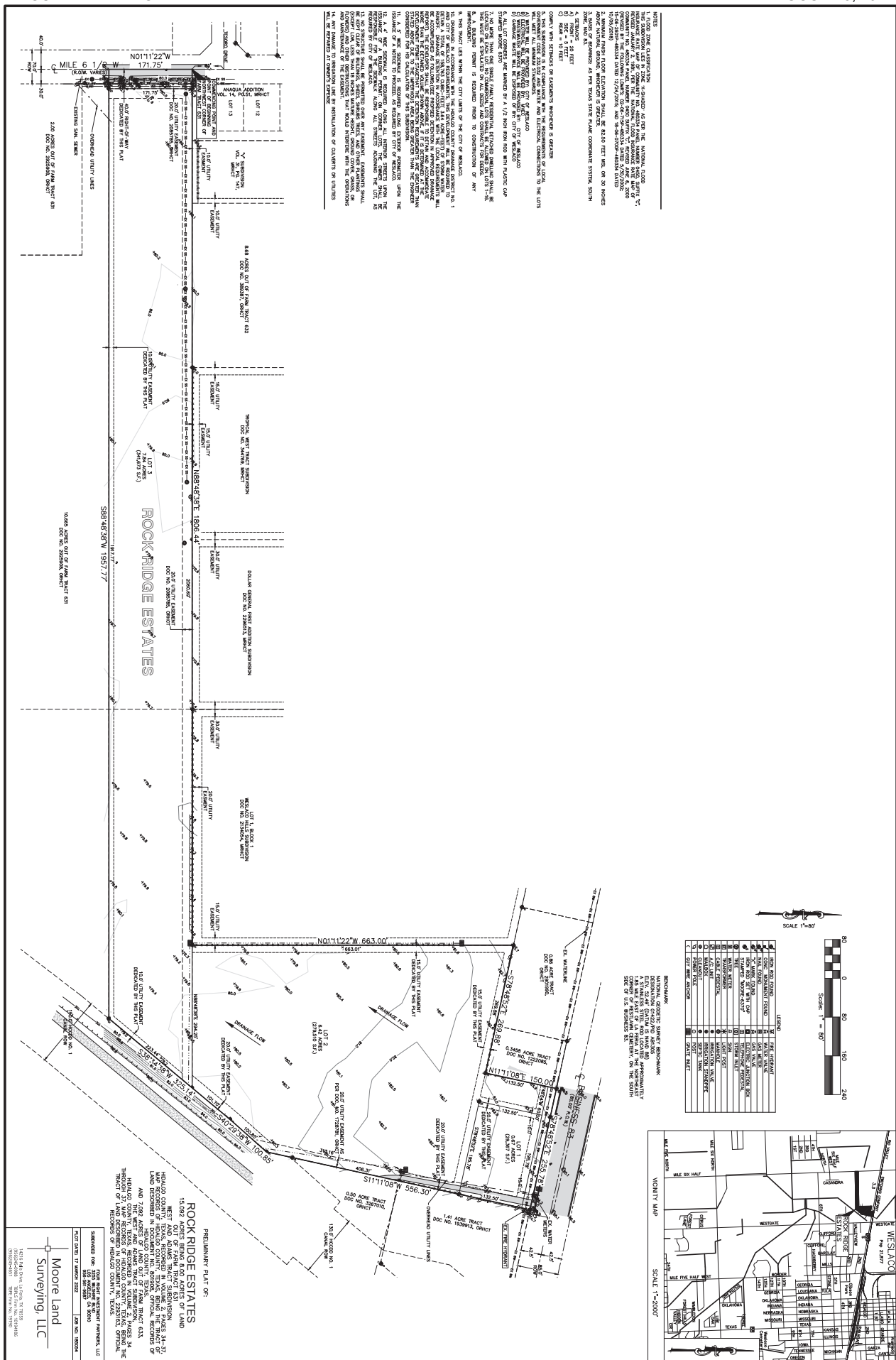
Flat, 2%	0.15 to 0.20
Average, 2 to 7%	0.20 to 0.25
Steep, 7%	0.25 to 0.35

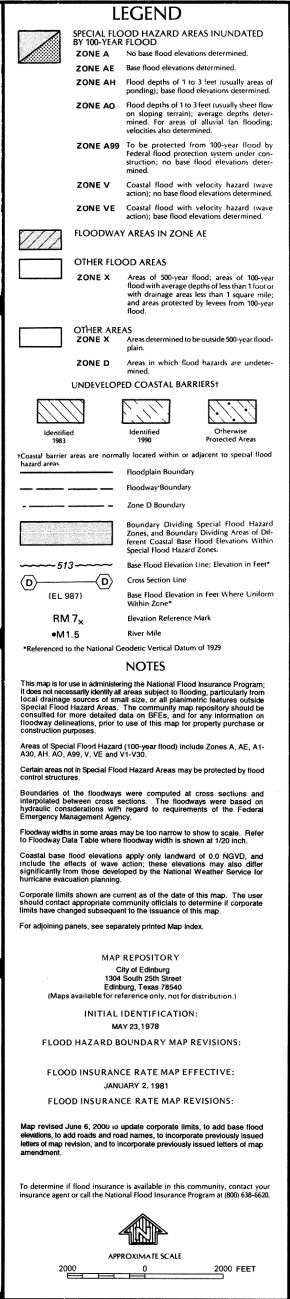
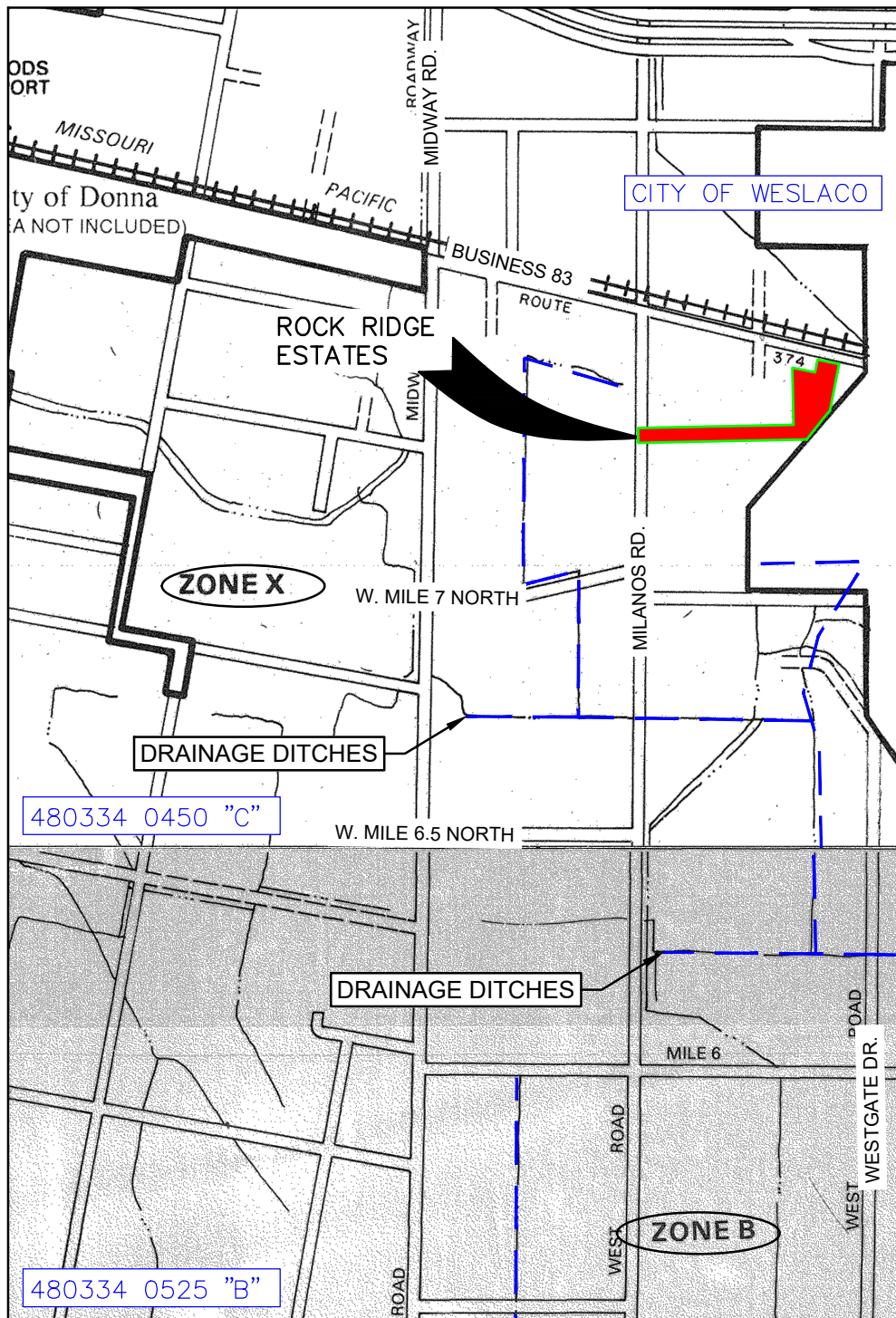


Rainfall Intensity for Multnomah County Based on NWS Tech Paper No. 40









NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

HIDALGO COUNTY, TEXAS
(UNINCORPORATED AREAS)

(SEE MAP INDEX FOR PANELS NOT PRINTED)

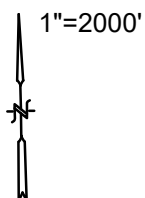
COMMUNITY-PANEL NUMBER

480334 0450 C

MAP REVISED:

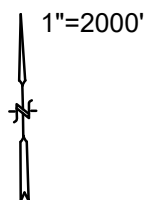
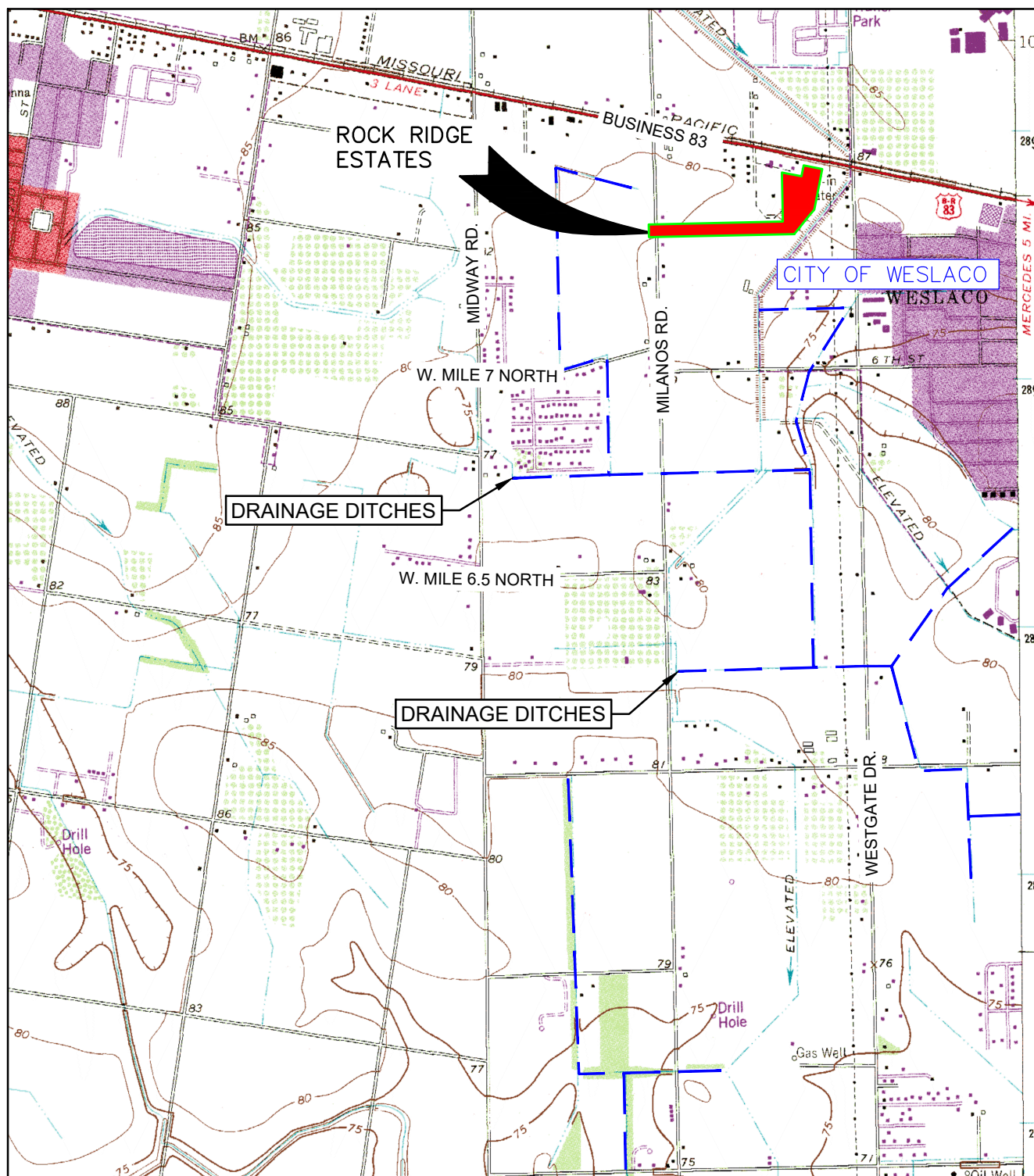
JUNE 6, 2000

Federal Emergency Management Agency



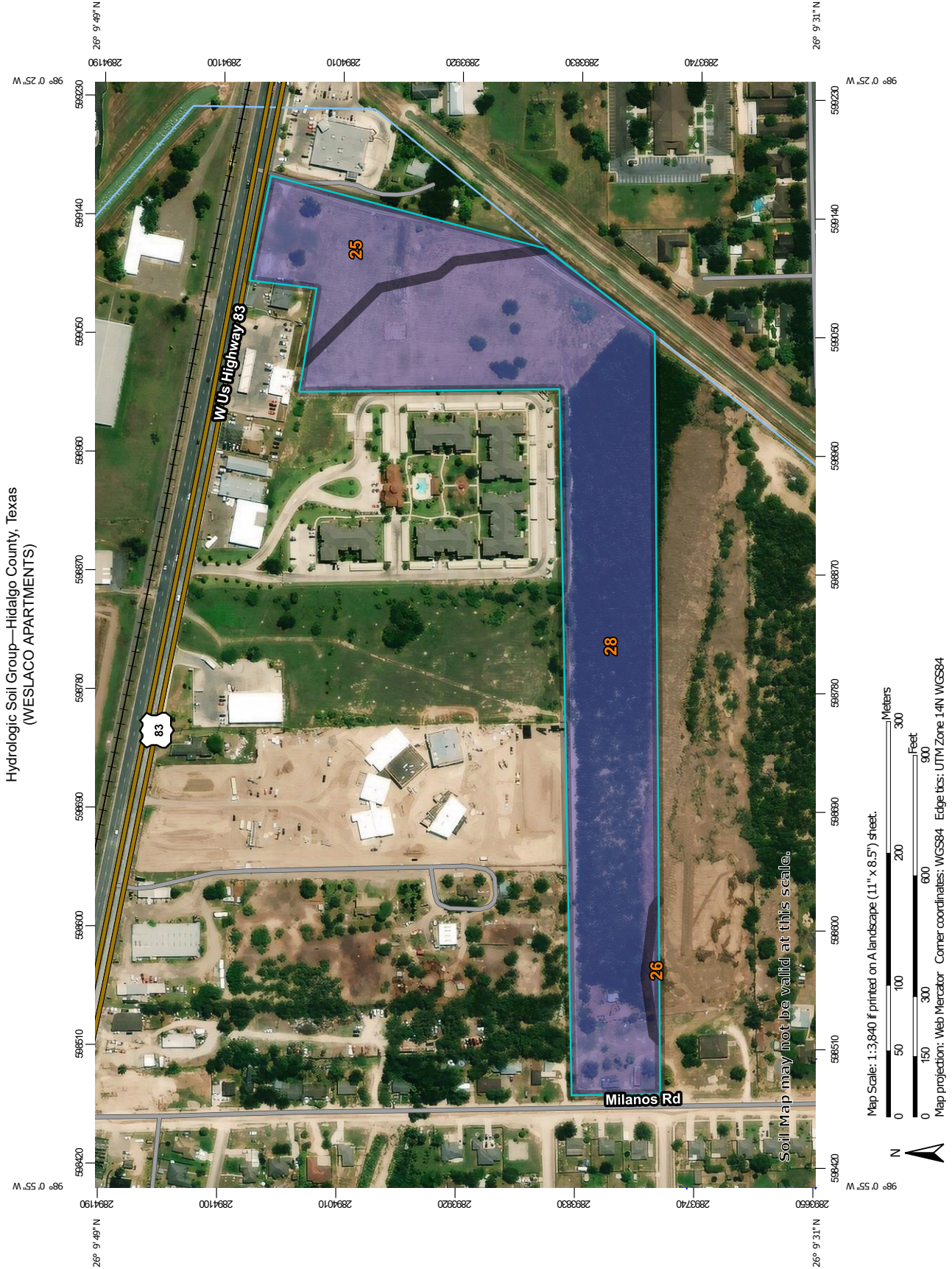
**Moore Land
Surveying, LLC**

14216 Palis Drive, La Feria, TX 78559
(956)245-0988 TBPLS Firm No. 10194186
(956)245-4651 TBPE Firm No. 19190



Moore Land Surveying, LLC

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MAP LEGEND

MAP INFORMATION

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

Soil Rating Lines

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

Soil Rating Points

A
A/D
B
B/D

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

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

Date(s) aerial images were photographed: Sep 20, 2015—Nov 5, 2017

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
25	Hidalgo fine sandy loam, 0 to 1 percent slopes	B	2.9	16.9%
26	Hidalgo fine sandy loam, 1 to 3 percent slopes	B	0.2	1.0%
28	Hidalgo sandy clay loam, 0 to 1 percent slopes	B	14.2	82.1%
Totals for Area of Interest			17.3	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

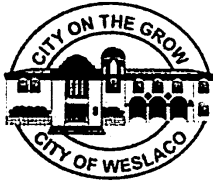
Component Percent Cutoff: None Specified

Tie-break Rule: Higher



**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V.B.
From: Rebekah de la Fuente, Planning Director, on behalf of Javier Hinojosa.	
Subject/Agenda Item: Discussion and consideration for the Preliminary Plat for Mi Linda Phase I being a 23.05-acre out of farm tracts 648 & 649, West Tract Subdivision, Weslaco, Hidalgo County, Texas Located approximately 340 ft south of mile 6 ½ north along the west side of Milano Road. Possible Action.	
Discussion/Overview: The proposed fifty-four (54) lot subdivision is located outside the City of Weslaco. This subdivision is being serviced with water by North Alamo Water Supply Company through an 8" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B". Applicant is requesting a variance for off-site drainage.	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval of Preliminary Plat and compliance with the ordinance on the variance.	
Additional Action Prompted: [X] Mayor's Signature [] Public Hearing [] Budget Amendment [] Resolution [] Ordinance – First Reading [] Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



SUBDIVISION PLATTING APPLICATION

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. PIAT-000268-2022

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

STAFF USE ONLY

☐ Single Lot Variance ☐ Minor Plat ☐ Planned Unit Development ☐ Standard Subdivision

GENERAL INFORMATION

Name of Subdivision: Mi Linda Subdivision Phase I

Location: 340 feet south of Mile 6 1/2 North along the west side of S. Milano Road

Legal Description: 23.05 Acres of land more or less out of Farm Tracts 648 and 649, West Tract

Subdivision as recorded in Volume 2, Pages 34-37, Map Records of Hidalgo County, Texas

Is subdivision inside city limits? ☐ YES ☒ NO

If subdivision is in the ETJ, indicate? ☒ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: Open

Existing Land Use: Agriculture Proposed Land Use: R-2 (Duplexes & Apartments)

Number of Lots Proposed: 54 Gross Acreage: 23.05 Ac.

Title Report Submitted: ☒ YES ☐ NO

OWNER INFORMATION

Owner's Name: Reyna Family Development, LTD. Telephone: (956) 497-3962

Address: 702 W. Expressway 83 Fax: _____

City: Weslaco State: TX Zip: 78596 E-mail: dominicareyna@gmail.com

ENGINEER INFORMATION

Name: Javier Hinojosa Engineering Telephone: (956) 668-1588

Address: 416 E. Dove Ave. Fax: _____

City: McAllen State: TX Zip: 78552 E-mail: javier@javierhinojosaeng.com

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

UTILITY PROVISIONS

Will proposed subdivision connect to:

☒ YES ☐ NO Water Provision: North Alamo Water Supply Corp.

☒ YES ☐ NO Wastewater Provision: City of Weslaco

☒ YES ☐ NO Electric Company: Magic Valley Electric Co-op

☒ YES ☐ NO Phone Utility <u>AT&T</u>	☐ YES ☒ NO Gas Utility	☒ YES ☐ NO Cable Utility
---	---	---

Proposed subdivision is in the following districts:

☒ YES ☐ NO Drainage District <u>H.C.D.D. #1</u>	☒ YES ☐ NO Irrigation District <u>H.C.C.I.D. #9</u>
--	--

Has the property been assessed as flat rate irrigable property: ☐ YES ☐ NO

Have Water Rights been conveyed to City/Water Supplier? ☐ YES ☐ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If **YES**, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR MINOR PLAT REVIEW

Two (2) sets of plats folded and stapled (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

\$355.00 Planning Review fee

One 11" X 17" reduced copy of plat

Plat Layout

Existing & Proposed Easements

Existing & Proposed ROW

Existing & Proposed Drainage Easements

Contours

Flood Zones

Adjoiners

Existing street names

Drainage plans and calculations with engineer's seal

Elevations

Flood directional arrows

Detention areas

Street names

Proof of ownership of the property

If septic tank system required, submit soil evaluation report

Water Rights associated with the property

Tax Receipt for all taxing entities showing that taxes are paid in full

SUBMITTALS REQUIRED FOR PRELIMINARY (P & Z)

Twelve (12) sets of preliminary plat folded and stapled (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

\$350.00 (one time fee for preliminary and final plat)

One 11" X 17" reduced copy of plat

Plat Layout

Existing & Proposed Easements

Existing & Proposed ROW

Existing & Proposed Drainage Easements

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

- _____Contours
- _____Flood Zones
- _____Adjoiners
- _____Existing & Proposed street names
- _____Utility Layout
- _____Existing & Proposed Utilities
- _____Proposed Fire Hydrants
- _____Adjoiners
- _____Street names
- _____Drainage plans and calculations with engineer's seal
- _____Elevations
- _____Flood directional arrows
- _____Detention areas
- _____Street names
- _____Proof of ownership of the property
- _____If septic tank system required, submit soil evaluation report
- _____Water Rights associated with the property
- _____Tax Receipt for all taxing entities showing that taxes are paid in full
- _____Number of fire hydrants proposed for subdivision
- _____Trip Generation Worksheet

SUBMITTALS REQUIRED FOR FINAL (P & Z) **Will not apply to Single Lot Variance**

- _____Twelve (12) sets of plans **FOLDED & STAPLED** (24 x 36) & PDF copy with all corrections
- _____Plats to be sealed by Professional Engineer
- _____Approved Drainage Report
- _____Traffic Impact Analysis (If required)

SUBMITTALS REQUIRED FOR FINAL (City Commission)

- _____One set of 8 ½ x 11 of plat and utilities with all corrections done

SUBMITTALS REQUIRED FOR PRE-CONSTRUCTION MEETING

- _____Seven (7) full sets of construction plans 24 x 36 and one (1) 11 x 17 with plan & profile.
- _____Engineering cost estimates for 3% geotechnical testing fees and 2% inspection fees
- _____Notice of Intent
- _____SW3P

SUBMITTALS REQUIRED FOR RECORDING OR HIDALGO COUNTY PLANNING

- _____Electronic file of final plat and as-builds
- _____Reproducible plat to be recorded with all required signatures
- _____3% geotechnical testing fees or negotiated Material Testing fee by City, whichever is higher
- _____2% inspection fee
- _____Park Fees
- _____Checks or Receipts: HCCID #9; HCDD #1; County Clerk
- _____Tax certificates
- _____Memo from engineering inspector releasing subdivision
- _____Water Rights associated with the property dedicated and assigned to City of Weslaco or payment of fees sufficient to meet the needs necessitated and attributable to development
- _____30 Year Water and 30 Year Sewer Service Agreements
- _____Park dedication/Fees in lieu of

SUBMITTALS REQUIRED FOR RECORDING BY SECURITY

- _____Sealed engineering cost estimates
- _____Letter of Credit/Performance Bond/Escrow

** Any revisions requested would require resubmission of plats and reduced copy reflecting changes.

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: Ezequiel Reyna, Jr.

X Owner Signature: [Signature] Date: 07/20/22

[Signature] is the authorized agent

Authorized Agent Signature: [Signature] Date: 7/20/22

Authorized Agent Printed Name: Javier Hernandez, P.E.

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid _____

P & Z Commission Approval on Preliminary Plat: _____

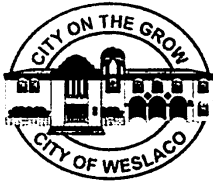
P & Z Commission Approval on Final Plat: _____

City Commission Approval on Final Plat: _____

Preconstruction Meeting Date: _____

Date Recorded: _____ Instrument No. _____

General Comments: _____



APPLICATION FOR SUBDIVISION VARIANCE

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. VAR-000270-2022

GENERAL INFORMATION

Name of Subdivision: Mi Linda Subdivision Phase I and II

Location: 340' south of Mile 6 1/2 North along the west side of Milanos Road

Legal Description: 37.24 acres of land more or less out of Farm Tracts 648 and 649, West Tract Subdivision as recorded in Volume 3, Pages 34-37, Map Records of Hidalgo County, Texas.

VARIANCE TYPE:

☐ Streetlights ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Sanitary Sewer ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Fire Hydrants ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Setbacks ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☒ Drainage ☐ YES ☐ NO

Describe in detail the reason for the variance request:

Detention to be placed within a 150' Drain Ditch R.O.W. dedicated to the City of Weslaco straddling the lot line of Farm Tracts 648 and 649. Outfall to flow east and south through H.C.C.I.D. #9 existing canal system.

☐ Minimum Lot Size ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Sidewalks ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Easement Requirements ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Other _____ ☐ YES ☐ NO

Describe in detail the reason for the variance request:

OWNER INFORMATION

Owner's Name: Reyna Family Development, Ezequiel Reyna Telephone: (956) 477-3962

Address: 702 W. Expressway 83 Fax: _____

City: Weslaco State: TX Zip: 78596 E-mail: dominicareyna@gmail.com

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: Ezequiel Reyna Jr

Owner Signature: _____ Date: 7/22/2022

_____ is the authorized agent

Authorized Agent Signature: [Signature] Date: 7/22/22

Authorized Agent Printed Name: Javier Hinojosa, P.E.

Proposed
Mi Linda Subdivision Phase I and II
Weslaco, Texas

DRAINAGE REPORT

Prepared For:

City of Weslaco
255 S. Kansas Ave.
Weslaco, Texas 78596

Prepared By:

JAVIER HINOJOSA ENGINEERING
CONSULTING ENGINEERS

TBPELS FIRM NO. F-1295
416 E. Dove Avenue
McAllen, Texas 78504
(956) 668-1588
e-mail: javier@javierhinojosa.eng.com

June 16, 2022

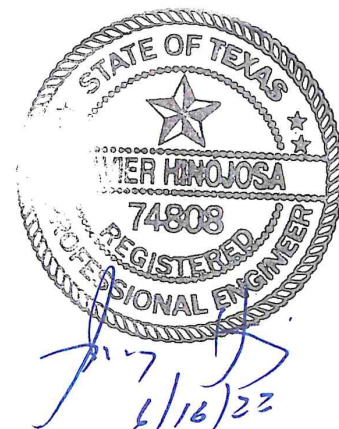


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Drainage Statement
Mi Linda Subdivision Phase I and II
Weslaco, Texas

Introduction

Mi Linda Subdivision is a 37.23-acre tract of land out of Farm Tracts 648 and 649, The West and Adams Tract Subdivision as recorded in Volume 2, Page 34-37, Hidalgo County Map Records. This subdivision is located along the south side of Mile 6 ½ North and the west side of S. Milano Road (Mile 6 ½ West) and is within the E.T.J. of Weslaco, Texas. The developer plans to voluntarily ask to be annexed by the City of Weslaco.

Flood Plain

The vast majority of the subject tract of land is located within Zone "B" on a Flood Insurance Rate Map, Community Panel No. 480334 0525B, effective date January 2, 1981. Zone "B" is defined as "areas between the limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood (medium shading)". The most northern fringe of the subdivision is located in Zone "X" on a Flood Insurance Rate Map, Community Panel No. 480334 0450C, map revised June 6, 2000. Zone "X" is defined as "areas of 500-year flood; areas of 100-year flood with average depths less than one foot or with drainage areas less than one square mile; and areas protected by levees from the 100-year flood." The minimum finish floor elevation shall be 18" above the top of curb as measured at the center of the lot or elevation 77.0, whichever is higher.

Soil Conditions

According to the soil survey report prepared for Hidalgo County by the USDA Natural Resources Conservation Service; the soils in this subdivision are found to be Hidalgo Fine Sandy Loam (25 and 26), Hidalgo Sandy Clay Loam (28), and Raymondville Clay Loam (52). Soils group 25, 26, and 28 are in hydrologic group "B" and are moderately pervious with a relatively low plasticity index. Soils group 52 is in hydrologic group "D" and are not very pervious with a relatively high plasticity index. Soils group "B" make up 88.5% of this subdivision.

Pre-developed Conditions

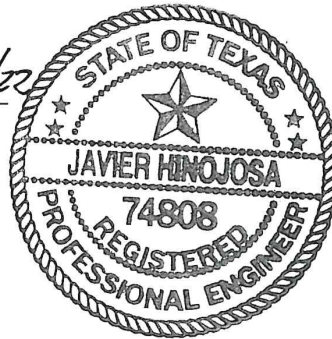
The current land use for this property has been used for agricultural purposes and has an existing runoff generally in a northeasterly direction. Based on an existing 10-year storm, a total storm runoff of 16.87 cubic feet per second is being generated by this subdivision.

Proposed Conditions

Mi Linda Subdivision is a proposed mixed-use subdivision with 54 multi-family lots (4-plexes) (Phase I) and 68 single-family lots (Phase II). Drainage shall be accomplished within this development with the placement of curb inlets to intercept drainage runoff generated by this subdivision. Pipe sizes shall range from a 24" to 30" throughout this development and shall discharge into a Hidalgo and Cameron County Irrigation District No. 9 drain ditch (maintained

by Hidalgo County Drainage District No. 1) that will be dedicated to the City of Weslaco by this development. Detention shall be accomplished by widening this drainage ditch. An existing 18" pipe crosses the street to a grate inlet between the HCCID No. 9 elevated canal and Mid Point Manor Estates, thence flows south via a 30" pipe into a HCCID No. 9 drainage ditch that flows east adjacent to the south side of Mid Point Manor Estates. The overall discharge continues through HCCID No. 9 drainage ditches to the east and south to the Main Floodway. This development will increase runoff to a maximum of 158.01 cubic feet per second based on the 50-year storm frequency for an increase Q of 141.14 cubic feet per second. Required detention for this subdivision is 313,189 cubic feet (7.190 Ac.Ft.) (NOTE: Required detention for a 100-year storm = 355,761 cubic feet (8.167 Ac.Ft.)). The existing drain ditch expansion will increase detention by 507,362 cubic feet (11.647 Ac.Ft.) at an average water depth of 6.55 feet.

 6/14/22
Javier Hinojosa, P.E.



DRAINAGE ANALYSIS

PROJECT NAME: **Mi Linda Subdivision Phase I & II**

DATE: June 16, 2022

I. Existing Condition-10 year

Ex. Area:	1,621,883 sf	Int. Coeff. "k	0.213 Table 3-2
	37.233 ac	K μ	3.28
Imp. Area:	- sf	Length	1320
% Imp. :	0.00	Velocity	0.220929 ft/sec
Slope :	0.1 %		
tc :	99.58 min		
Rainfall Intensity (10yr)			2.265 in/hr
c factor			0.200
Q peak existing condition:			16.87 cfs

II. Future Condition-50 year

Future area: 1,621,883.00 sf
37.23 ac

Estimated Imp. Area: 900,590 sf

% Imp. : 55.53 %

Slope : 0.25%

tc : 18.94 min

Rainfall Intensity (50yr) 8.130 in/hr

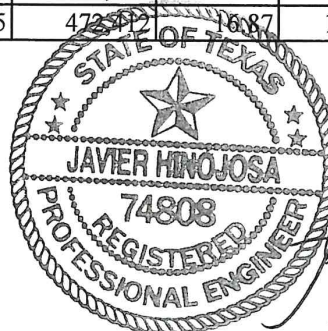
c factor 0.522

Q future cond. = $Aci = i * = 158.01 * 0.52$
19.435788 i

time min.	time hour	iso in/hr	Q50 in cfs	Vin cf	Q10 out cfs	Vout cf	REQ'D V cf
210	3.50	1.747	33.96	427,876	16.87	115,849	312,028
220	3.67	1.690	32.84	433,521	16.87	120,909	312,613
230	3.83	1.637	31.81	438,959	16.87	125,969	312,990
240	4.00	1.587	30.85	444,207	16.87	131,029	313,178
250	4.17	1.541	29.95	449,279	16.87	136,089	313,189
260	4.33	1.498	29.11	454,188	16.87	141,150	313,038
270	4.50	1.458	28.33	458,946	16.87	146,210	312,736
280	4.67	1.420	27.59	463,563	16.87	151,270	312,293
290	4.83	1.384	26.90	468,049	16.87	156,330	311,719
300	5.00	1.350	26.25	472,512	16.87	161,391	311,021

MAX.

Storage Required: 313,189 cf
Storage Required: 7.190 Ac.-Ft.
w/ release rate of: 16.87 cfs



Handwritten signature and date:
6/16/22

TABLE I
TIME OF CONCENTRATION DETERMINATION
Mi Linda Subdivision

TABLE I											
TIME OF CONCENTRATION DETERMINATION											
Mi Linda Subdivision											
COMPUTATION POINT	DESCRIPTION OF RUNOFF MEDIUM	OVERLAND FLOW				CHANNEL, PIPE, STREET, ETC. FLOW					
		C	LENGTH (FT.)	GRADE (%)	TIME (MIN)	WIDTH/ID. (FT)	GRADE (%)	LENGTH (FT)	VELOCITY (FPS)	TIME (MIN)	TOTAL TIME (MIN)
Existing	Overland	0.200	1320		99.58						99.58
D.A. #1	Overland & Gutter	0.522	120		5.00			180	1.0	3.00	8.00
D.A. #1-D.A.#2	Pipe Flow	0.522						32	3.0	0.18	8.18
D.A. #2	Overland & Gutter	0.522	120		5.00			180	1.0	3.00	8.00
D.A.#2-D.A.#4	Pipe Flow	0.522						368	3.0	2.04	10.22
D.A.#3	Overland & Gutter	0.522	120		5.00			230	1.0	3.83	8.83
D.A.#3-D.A.#4	Pipe Flow	0.522						32	3.0	0.18	9.01
D.A.#4	Overland & Gutter	0.522	120		5.00			230	1.0	3.83	8.83
D.A.#4-D.A.#6	Pipe Flow	0.522						380	3.0	2.11	12.33
D.A.#5	Overland & Gutter	0.522	150		6.25			250	1.0	4.17	10.42
D.A.#5-D.A.#6	Pipe Flow	0.522						32	3.0	0.18	12.51
D.A.#6	Overland & Gutter	0.522	120		5.00			320	1.0	5.33	10.33
D.A.#6-OUTFALL A	Pipe Flow	0.522						35	3.0	0.19	12.71
D.A.#7	Overland & Gutter	0.522	115		4.79			530	1.0	8.83	13.63
D.A.#7-D.A.#8	Pipe Flow	0.522						32	3.0	0.18	13.80
D.A.#8	Overland & Gutter	0.522	115		4.79			530	1.0	8.83	13.63
D.A.#8-OUTFALL B	Pipe Flow	0.522						160	3.0	0.89	14.69
D.A.#9	Overland & Gutter	0.522	115		4.79			258	1.0	4.30	9.09
D.A.#9-D.A.#10	Pipe Flow	0.522						32	3.0	0.18	9.27

FORMULA FOR TIME OF CONCENTRATION
USING THE RATIONAL METHOD, AS PER
"TXDOT BRIDGE HYDRAULIC MANUAL"

$$T_c = \frac{L}{(V \times 60)}$$

TABLE IA FLOWRATE DETERMINATION Mi Linda Subdivision									
COMPUTATION POINT	TOTAL DRAINAGE AREA CONTRIBUTING TO POINT (acres)	C	TIME (SEE TABLE 1) (minutes)	RETURN FREQUENCY (years)	INTENSITY (in./hr.)	FLOWRATE (c.f.s.)	PIPE SIZE (inches)	MIN. SLOPE (FT./FT.)	
Existing	37.233	0.200	99.58	10	2.265	16.87			
D.A. #1	1.017	0.522	8.00	10	9.512	5.05			
D.A. #1-D.A.#2	1.017	0.522	8.18	10	9.436	5.01	24	0.049%	
D.A. #2	1.017	0.522	8.00	10	9.512	5.05			
D.A.#2-D.A.#4	2.034	0.522	10.22	10	8.654	9.19	24	0.165%	
D.A.#3	0.915	0.522	8.83	10	9.168	4.38			
D.A.#3-D.A.#4	0.915	0.522	9.01	10	9.099	4.35	24	0.037%	
D.A.#4	0.915	0.522	8.83	10	9.168	7.16			
D.A.#4-D.A.#6	3.864	0.522	12.33	10	7.987	16.11	30	0.154%	
D.A.#5	1.481	0.522	10.42	10	8.587	7.16			
D.A.#5-D.A.#6	1.481	0.522	12.51	10	7.936	6.13	24	0.074%	
D.A.#6	0.975	0.522	10.33	10	8.616	7.16			
D.A.#6-OUTFALL A	6.320	0.522	12.71	10	7.881	26.00	30	0.402%	
D.A.#7	2.288	0.522	13.63	10	7.633	7.16			
D.A.#7-D.A.#8	2.288	0.522	13.80	10	7.587	9.06	24	0.161%	
D.A.#8	1.976	0.522	13.63	10	7.633	7.16			
D.A.#8-OUTFALL B	4.264	0.522	14.69	10	7.366	16.40	24	0.526%	
D.A.#9	1.400	0.522	9.09	10	9.067	7.16			
D.A.#9-D.A.#10	1.400	0.522	9.27	10	8.999	6.58	24	0.085%	

FORMULA FOR INTENSITY
USING THE RATIONAL METHOD, AS PER
"TXDOT BRIDGE HYDRAULIC MANUAL"

$$I = \frac{b}{(T_c + d)^e}$$

TABLE I
TIME OF CONCENTRATION DETERMINATION
Mi Linda Subdivision

COMPUTATION POINT	DESCRIPTION OF RUNOFF MEDIUM	OVERLAND FLOW			TIME (MIN)	CHANNEL, PIPE, STREET, ETC. FLOW					TOTAL TIME (MIN)
		C	LENGTH (FT.)	GRADE (%)		WIDTH (FT)	GRADE (%)	LENGTH (FT)	VELOCITY (FPS)	TIME (MIN)	
D.A.#10	Overland & Gutter	0.522	115		4.79			258	1.0	4.30	9.09
D.A.#10-OUTFALL C	Pipe Flow	0.522						160	3.0	0.89	10.16
D.A.#11	Overland & Gutter	0.522	198		8.25			225	1.0	3.75	12.00
D.A.#11-D.A.#12	Pipe Flow	0.522						32	3.0	0.18	12.18
D.A.#12	Overland & Gutter	0.522	150		6.25			80	1.0	1.33	7.58
D.A.#12-D.A.#14	Pipe Flow	0.522						300	3.0	1.67	9.25
D.A.#13	Overland & Gutter	0.522	150		6.25			240	1.0	4.00	10.25
D.A.#13-D.A.#14	Pipe Flow	0.522						50	3.0	0.28	12.46
D.A.#14	Overland & Gutter	0.522	150		6.25			240	1.0	4.00	10.25
D.A.#14-D.A.#15	Pipe Flow	0.522						80	3.0	0.44	12.90
D.A.#15	Overland & Gutter	0.522	200		8.33			40	1.0	0.67	9.00
D.A.#15-OUTFALL D	Pipe Flow	0.522						175	3.0	0.97	13.87
D.A.#16	Overland & Gutter	0.522	175		7.29			155	1.0	2.58	9.88
D.A.#16-M.H.#17	Pipe Flow	0.522						37	3.0	0.21	10.08
D.A.#17	Overland & Gutter	0.522	200		8.33			375	1.0	6.25	14.58
D.A.#17-M.H.#17	Pipe Flow	0.522						30	3.0	0.17	14.75
M.H.#17-D.A.#18	Pipe Flow	0.522						45	3.0	0.25	15.00
D.A.#18	Overland & Gutter	0.522	90		3.75			155	1.0	2.58	6.33
D.A.#18-D.A.#20	Pipe Flow	0.522						450	3.0	2.50	17.50

FORMULA FOR TIME OF CONCENTRATION
USING THE RATIONAL METHOD, AS PER
"TXDOT BRIDGE HYDRAULIC MANUAL"

$$T_c = \frac{L}{(V \times 60)}$$

TABLE 1A
FLOWRATE DETERMINATION
Mi Linda Subdivision

COMPUTATION POINT	TOTAL DRAINAGE AREA CONTRIBUTING TO POINT (acres)	C	TIME (SEE TABLE 1) (minutes)	RETURN FREQUENCY (years)	INTENSITY (in./hr.)	FLOWRATE (c.f.s.)	PIPE SIZE (inches)	MIN. SLOPE (FT./FT.)
D.A.#10	1.400	0.522	9.09	10	9.067	6.63		
D.A.#10-OUTFALL C	2.800	0.522	10.16	10	8.676	12.68	24	0.315%
D.A.#11	1.292	0.522	12.00	10	8.084	5.45		
D.A.#11-D.A.#12	1.292	0.522	12.18	10	8.032	5.42	24	0.057%
D.A.#12	0.698	0.522	7.58	10	9.695	3.53		
D.A.#12-D.A.#14	1.990	0.522	9.25	10	9.007	9.36	24	0.171%
D.A.#13	0.944	0.522	10.25	10	8.644	7.16		
D.A.#13-D.A.#14	0.944	0.522	12.46	10	7.951	3.92	24	0.030%
D.A.#14	1.099	0.522	10.25	10	8.644	7.16		
D.A.#14-D.A.#15	4.033	0.522	12.90	10	7.827	16.48	30	0.162%
D.A.#15	1.465	0.522	9.00	10	9.103	7.16		
D.A.#15-OUTFALL D	5.498	0.522	13.87	10	7.569	21.72	30	0.281%
D.A.#16	1.218	0.522	9.88	10	8.776	5.58		
D.A.#16-M.H.#17	1.218	0.522	10.08	10	8.704	5.53	24	0.060%
D.A.#17	1.639	0.522	14.58	10	7.392	6.32		
D.A.#17-M.H.#17	1.639	0.522	14.75	10	7.352	6.29	24	0.077%
M.H.#17-D.A.#18	2.857	0.522	15.00	10	7.293	10.88	24	0.232%
D.A.#18	0.683	0.522	6.33	10	10.297	3.67		
D.A.#18-D.A.#20	3.540	0.522	17.50	10	6.756	12.48	24	0.305%

FORMULA FOR INTENSITY
USING THE RATIONAL METHOD, AS PER
"TXDOT BRIDGE HYDRAULIC MANUAL"

$$I = \frac{b}{(Tc + d)^{0.6}}$$

TABLE I

[illegible]

FORMULA FOR TIME OF CONCENTRATION
USING THE RATIONAL METHOD, AS PER
"TXDOT BRIDGE HYDRAULIC MANUAL"

$$T_c = \frac{L}{(V \times 60)}$$

[illegible]

FORMULA FOR INTENSITY
USING THE RATIONAL METHOD, AS PER
"TXDOT BRIDGE HYDRAULIC MANUAL"

$$I = \frac{b}{(\tau_c + d)^e}$$

TABLE 3-2: Intercept Coefficients	
Land Cover/ Flow Regime	"k"
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Weighted "c" value (POST DEVELOPMENT CONDITIONS)				
Type of Drainage Area	"c" value:	Square Footage	Acreage	partial "c"
Residential				
Single Family (Lots less than 1/4 acre)	0.35	0	0.000	0.000
Single Family (Lots 1/4 to 1/2 acre)	0.3	0	0.000	0.000
Single Family (Lots greater than 1/2 acre)	0.25	0	0.000	0.000
Multi-Family (Less than 20 DU / AC)	0.45	0	0.000	0.000
Multi-Family (Greater than 20 DU / AC)	0.55	0	0.000	0.000
Business Districts:	0.7	0	0.000	0.000
Industrial				
Light areas	0.5	0	0.000	0.000
Heavy areas	0.6	0	0.000	0.000
Railroad yard areas	0.2	0	0.000	0.000
Parks, cemeteries	0.1	0	0.000	0.000
Unimproved Areas				
Bare Surface	0.3	0	0.000	0.000
Grassland	0.25	536793	12.323	3.081
Cultivated	0.2	0	0.000	0.000
Woodlands	0.15	0	0.000	0.000
Detention/Ditch	0.25	184500	4.236	1.059
Streets				
Asphalt	0.7	185190	4.251	2.976
Concrete	0.75	0	0.000	0.000
Driveways	0.75	47600	1.093	0.820
Parking	0.75	195500	4.488	3.366
Sidewalks	0.75	30300	0.696	0.522
Buildings	0.75	442000	10.147	7.610
Total:		1,621,883	37.233	19.433
Weighted "c":			0.522	

$$C_w = (C_1A_1 + C_2A_2 + C_3A_3 + \dots + C_nA_n) / A_{total}$$

C_w = Weighted Runoff Coefficient (Composite Coefficient)

C_n = Runoff Coefficient n-th term

A_n = Area of n-th term

A_{total} = Total Area (acres)

A_{total} = Total Area (acres)

HIDALGO COUNTY RAINFALL INTENSITY TABLES

based on Weather Bureau (NWS) Technical Paper No. 40 "Rainfall Frequency Atlas of the United States"

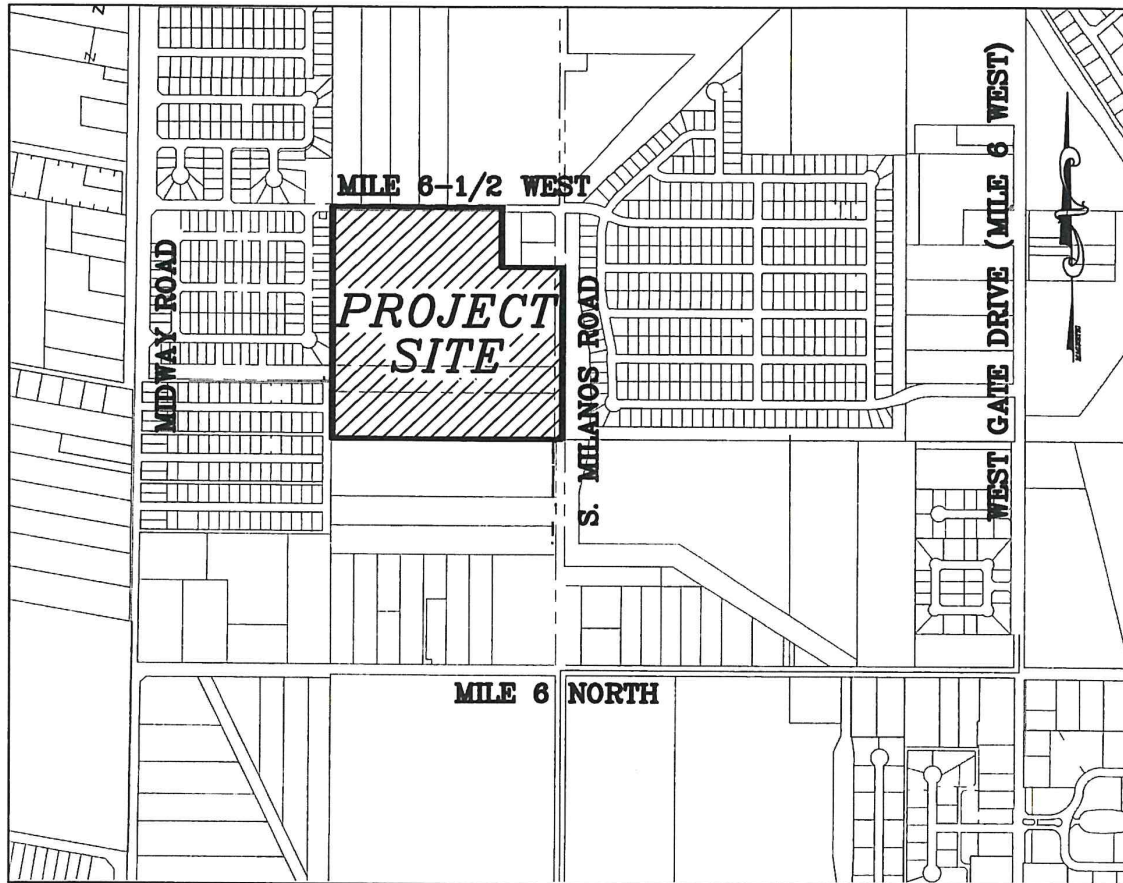
$$\text{formula } I = b/(t_c + d)^e$$

TIME	2 yr.	5 yr.	10 yr.	25 yr.	50 yr.	100 yr.
1	10.404	12.626	14.283	16.353	17.386	17.952
2	9.653	11.721	13.281	15.215	16.210	16.793
3	9.012	10.950	12.426	14.244	15.204	15.797
4	8.458	10.286	11.687	13.405	14.333	14.929
5	7.974	9.706	11.042	12.671	13.570	14.165
6	7.546	9.194	10.472	12.023	12.895	13.487
7	7.167	8.740	9.966	11.447	12.294	12.881
8	6.827	8.334	9.512	10.930	11.755	12.336
9	6.520	7.968	9.103	10.464	11.268	11.841
10	6.243	7.636	8.732	10.042	10.825	11.391
11	5.990	7.334	8.394	9.656	10.421	10.979
12	5.758	7.058	8.084	9.303	10.051	10.601
13	5.546	6.804	7.799	8.978	9.710	10.252
14	5.350	6.569	7.536	8.678	9.395	9.928
15	5.169	6.353	7.293	8.400	9.102	9.628
16	5.000	6.151	7.067	8.142	8.831	9.348
17	4.843	5.964	6.856	7.902	8.577	9.087
18	4.697	5.789	6.659	7.677	8.340	8.842
19	4.560	5.625	6.475	7.466	8.117	8.612
20	4.432	5.472	6.302	7.268	7.908	8.396
21	4.311	5.327	6.139	7.082	7.711	8.192
22	4.198	5.191	5.985	6.906	7.525	8.000
23	4.090	5.062	5.840	6.740	7.349	7.817
24	3.989	4.941	5.703	6.583	7.183	7.644
25	3.893	4.825	5.572	6.434	7.025	7.480
26	3.802	4.716	5.449	6.293	6.875	7.324
27	3.715	4.612	5.331	6.158	6.732	7.176
28	3.633	4.513	5.220	6.030	6.596	7.034
29	3.554	4.419	5.113	5.908	6.467	6.899
30	3.480	4.329	5.011	5.792	6.343	6.769
31	3.408	4.244	4.914	5.680	6.224	6.646
32	3.340	4.161	4.821	5.574	6.111	6.527
33	3.275	4.083	4.732	5.472	6.002	6.413
34	3.212	4.008	4.646	5.374	5.897	6.304
35	3.152	3.935	4.564	5.280	5.797	6.199

TIME	2 yr.	5 yr.	10 yr.	25 yr.	50 yr.	100 yr.
36	3.095	3.866	4.486	5.189	5.701	6.098
37	3.040	3.799	4.410	5.103	5.608	6.001
38	2.986	3.735	4.337	5.019	5.519	5.908
39	2.935	3.673	4.267	4.939	5.433	5.817
40	2.886	3.614	4.199	4.861	5.350	5.730
41	2.838	3.557	4.134	4.786	5.270	5.646
42	2.793	3.501	4.071	4.714	5.193	5.565
43	2.748	3.448	4.010	4.644	5.118	5.487
44	2.706	3.396	3.951	4.577	5.046	5.411
45	2.665	3.346	3.895	4.511	4.976	5.337
46	2.625	3.298	3.840	4.448	4.908	5.266
47	2.586	3.251	3.786	4.387	4.843	5.197
48	2.549	3.206	3.735	4.328	4.779	5.130
49	2.513	3.162	3.685	4.270	4.717	5.065
50	2.477	3.120	3.636	4.215	4.658	5.002
51	2.443	3.078	3.589	4.161	4.600	4.941
52	2.410	3.038	3.543	4.108	4.543	4.881
53	2.378	2.999	3.499	4.057	4.488	4.824
54	2.347	2.962	3.456	4.007	4.435	4.767
55	2.317	2.925	3.414	3.959	4.383	4.713
56	2.288	2.889	3.373	3.912	4.333	4.659
57	2.259	2.854	3.333	3.867	4.284	4.608
58	2.231	2.821	3.295	3.822	4.236	4.557
59	2.204	2.788	3.257	3.779	4.189	4.508
60	2.178	2.756	3.220	3.737	4.144	4.460
65	2.056	2.607	3.050	3.541	3.933	4.237
70	1.948	2.475	2.899	3.368	3.745	4.038
75	1.852	2.358	2.765	3.212	3.577	3.860
80	1.765	2.252	2.643	3.073	3.426	3.699
85	1.688	2.156	2.533	2.946	3.289	3.554
90	1.617	2.069	2.434	2.831	3.164	3.421
95	1.552	1.990	2.342	2.726	3.050	3.299
100	1.493	1.917	2.258	2.629	2.944	3.187
105	1.439	1.850	2.181	2.540	2.847	3.083
110	1.389	1.788	2.109	2.457	2.757	2.988

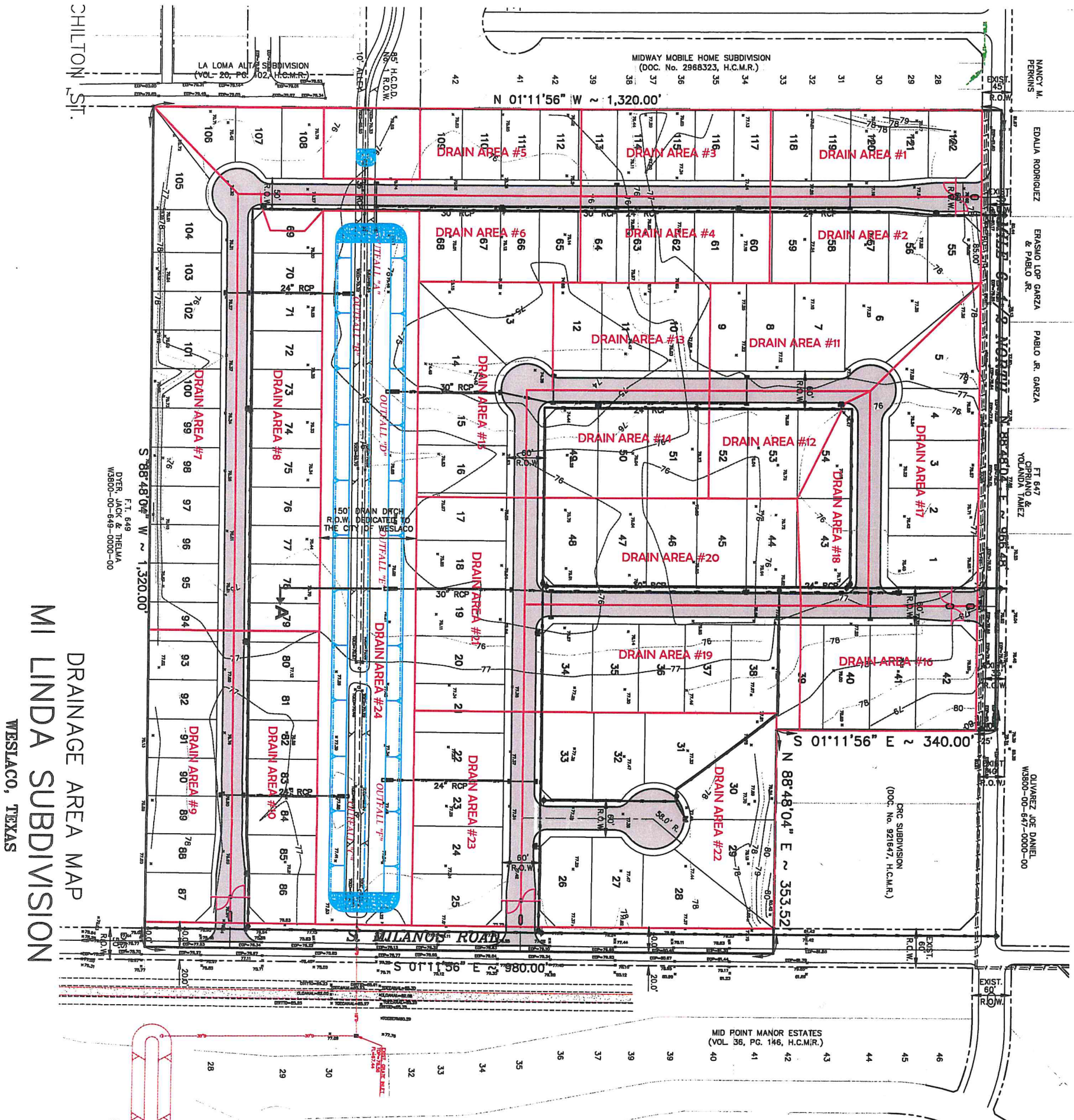
where:	2yr	5yr	10yr
e=	0.831	0.795	0.778
b=	74	80	87
d=	9.6	9.2	9.2

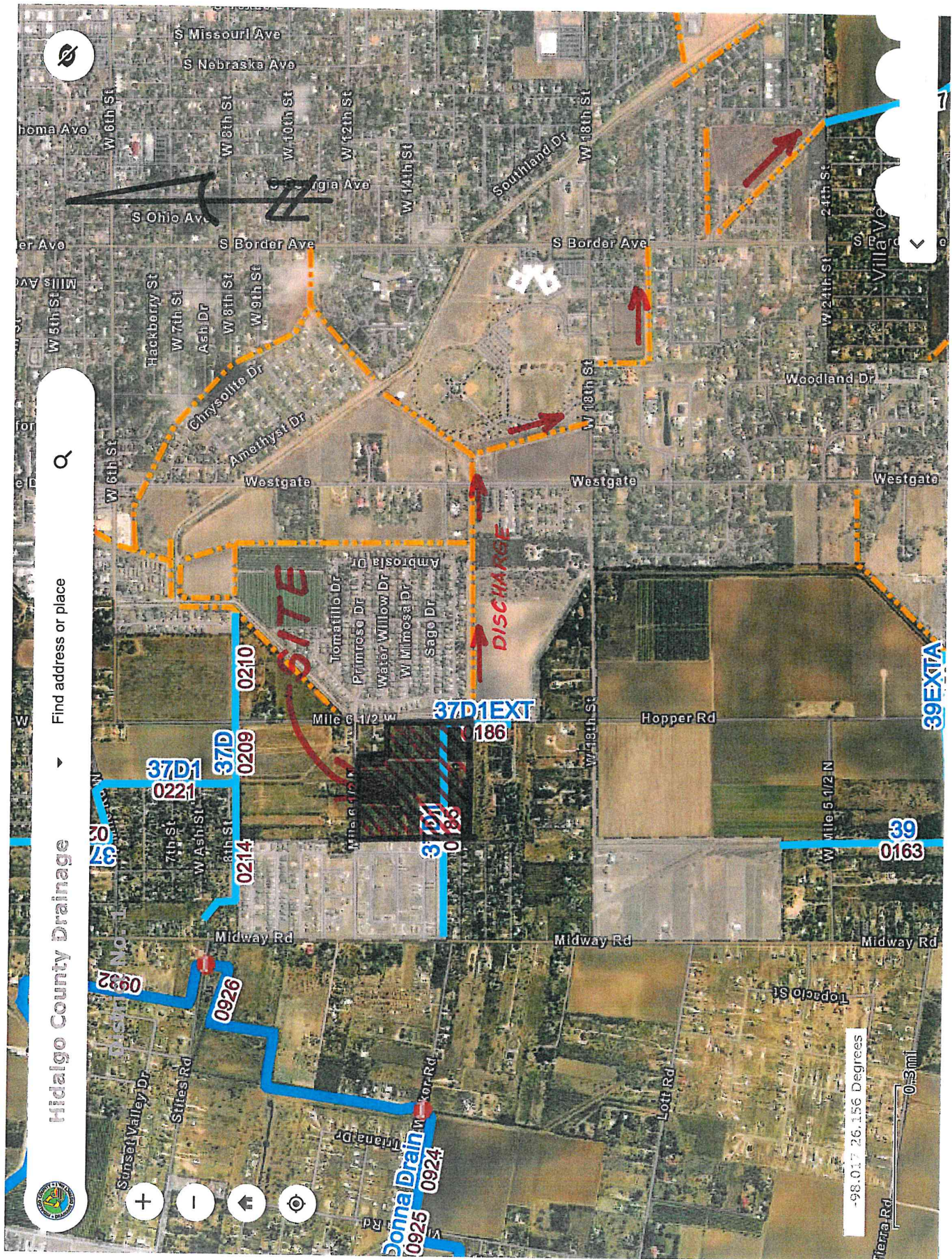
	25yr	50yr	100yr
	0.771	0.749	0.740
	98	99	103
	9.2	9.2	9.6



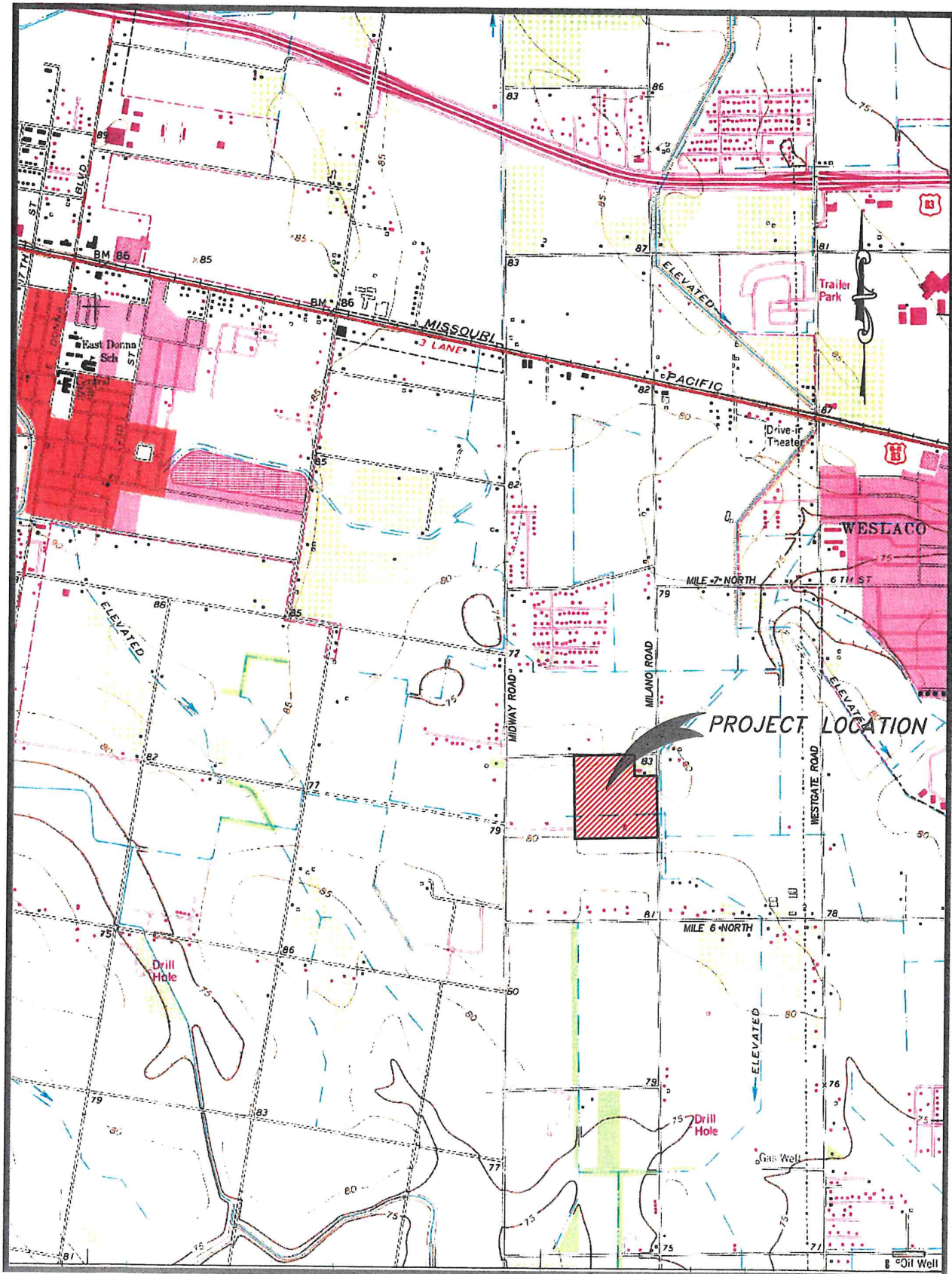
LOCATION MAP

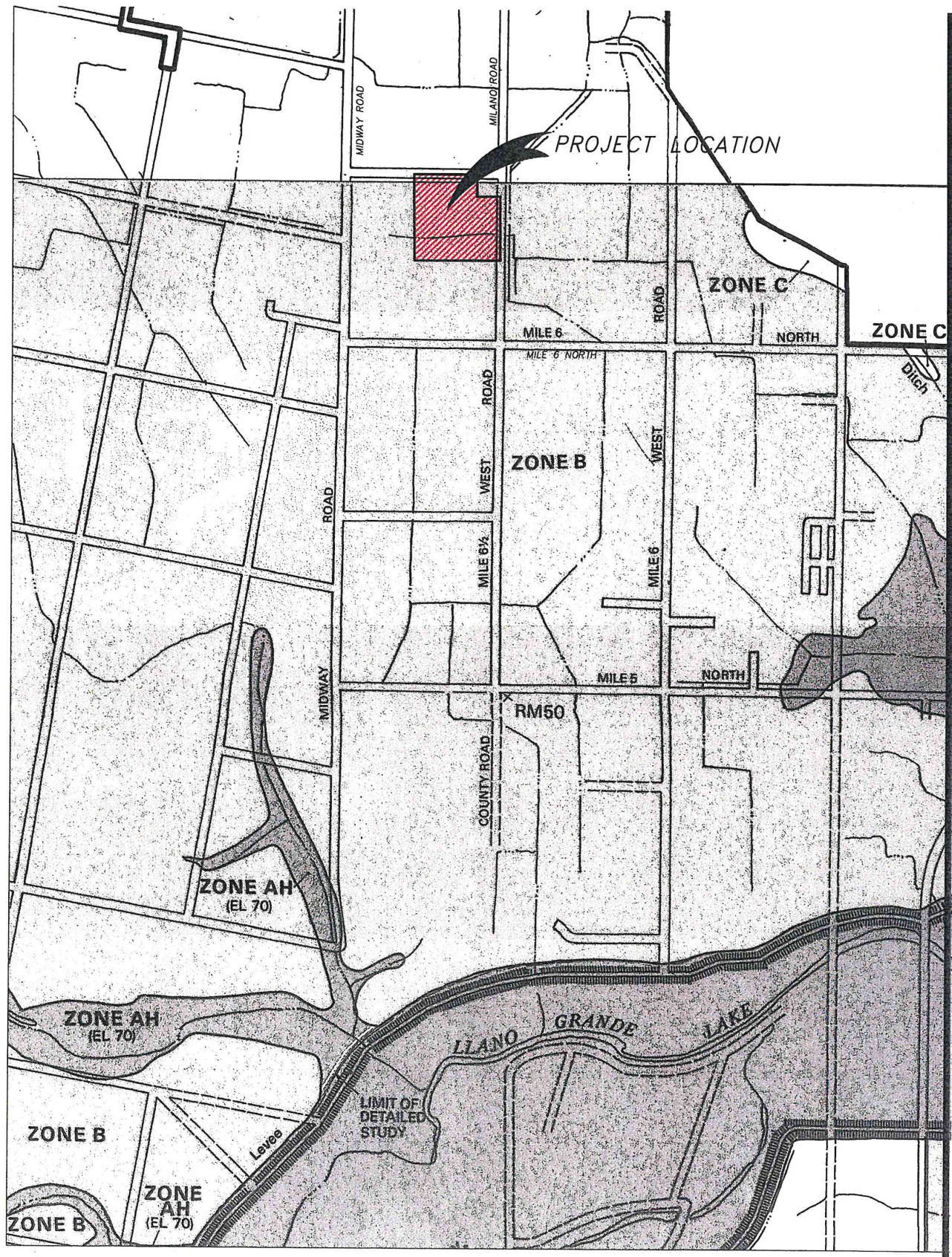
SCALE: 1" = 1,000'







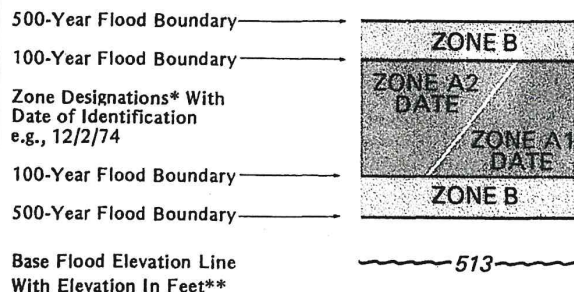




NATIONAL FLOOD INSURANCE PROGRAM	
	FIRM FLOOD INSURANCE RATE MAP
	HIDALGO COUNTY, TEXAS (UNINCORPORATED AREAS)
	PANEL 525 OF 525
	COMMUNITY-PANEL NUMBER 480334 0525 B EFFECTIVE DATE: JANUARY 2, 1981
federal emergency management agency federal insurance administration	

NATIONAL FLOOD INSURANCE PROGRAM	
	FIRM FLOOD INSURANCE RATE MAP
	HIDALGO COUNTY, TEXAS (UNINCORPORATED AREAS)
	(SEE MAP INDEX FOR PANELS NOT PRINTED)
	COMMUNITY-PANEL NUMBER 480334 0450 C MAP REVISED: JUNE 6, 2000
Federal Emergency Management Agency	

KEY TO MAP



Base Flood Elevation in Feet (EL 987)

Elevation Reference Mark RM 7_x

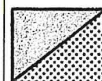
River Mile • M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

LEGEND



SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A** No base flood elevations determined.
- ZONE AE** Base flood elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding; velocities also determined.
- ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
- ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.

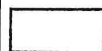


FLOODWAY AREAS IN ZONE AE



OTHER FLOOD AREAS

- ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.



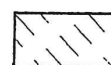
OTHER AREAS

- ZONE X** Areas determined to be outside 500-year floodplain.
- ZONE D** Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS†



Identified
1983



Identified
1990



Otherwise
Protected Areas

†Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

— Floodplain Boundary

- - - Floodway Boundary

- - - Zone D Boundary



Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

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Base Flood Elevation Line; Elevation in Feet*



Cross Section Line

(EL 987)

Base Flood Elevation in Feet Where Uniform Within Zone*

RM 7_x

Elevation Reference Mark

• M1.5

River Mile

*Referenced to the National Geodetic Vertical Datum of 1929



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

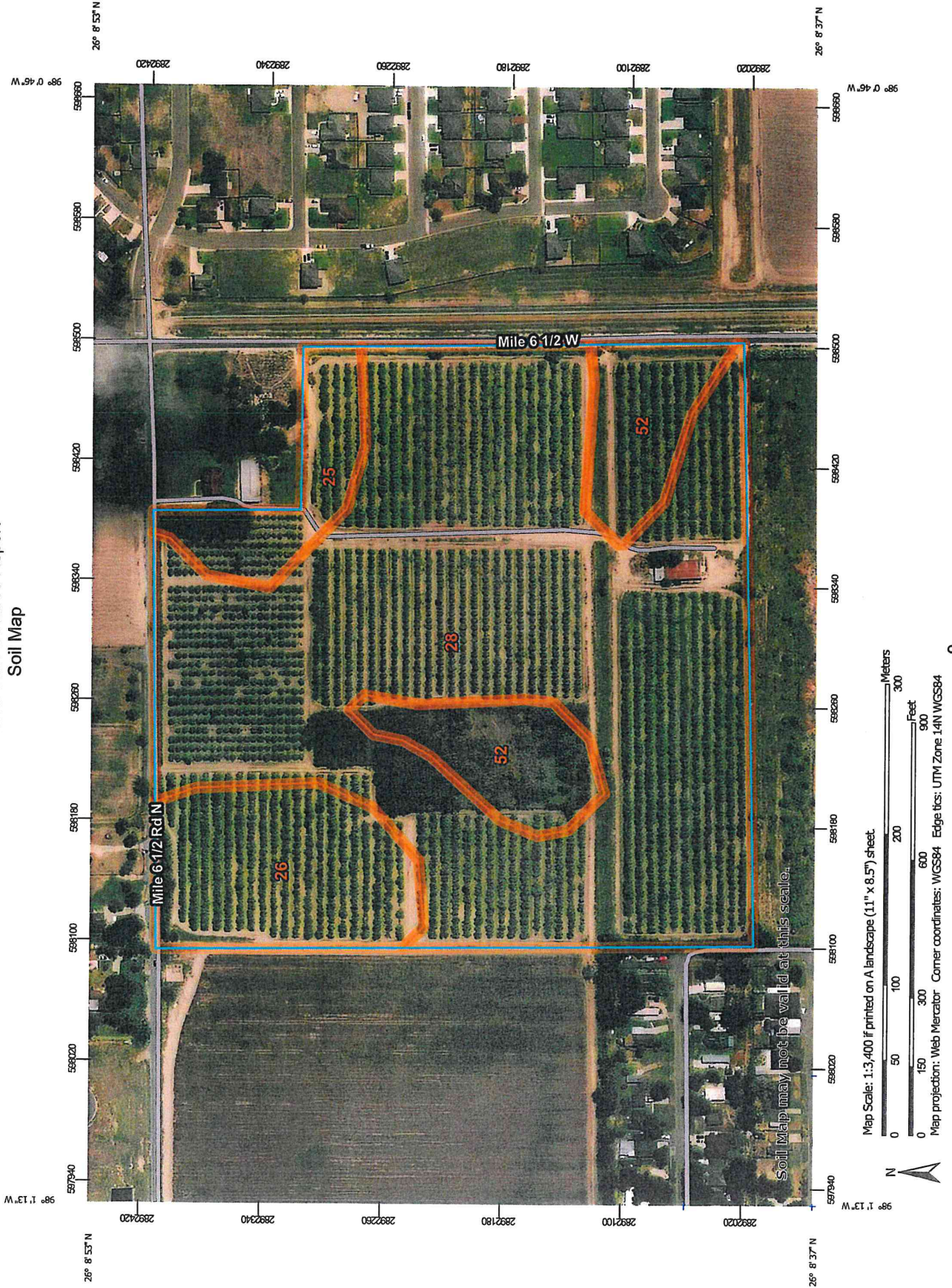
Custom Soil Resource Report for Hidalgo County, Texas

Mi Linda Subdivision



April 15, 2022

Custom Soil Resource Report
Soil Map



Custom Soil Resource Report



Custom Soil Resource Report

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
25	Hidalgo fine sandy loam, 0 to 1 percent slopes	2.1	5.8%
26	Hidalgo fine sandy loam, 1 to 3 percent slopes	4.4	11.9%
28	Hidalgo sandy clay loam, 0 to 1 percent slopes	26.0	70.8%
52	Raymondville clay loam, 0 to 1 percent slopes	4.2	11.5%
Totals for Area of Interest		36.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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TABLE 16. -- ENGINEERING INDEX PROPERTIES--CONTINUED

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
13:*										
Randado----	0-9	Fine sandy loam	SM, SM-SC	A-2-4	75-100	70-100	70-100	20-35	<25	NP-7
	9-16	Fine sandy loam, sand clay loam.	SC, SM-SC, GC	A-2-4 A-2-6 A-4, A-6	65-100	60-100	60-100	25-50	25-34	7-14
	16-60	Cemented-----	---	---	---	---	---	---	---	---
14-----	0-80	Fine sand-----	SP-SM, SM	A-2-4, A-3	100	100	75-100	5-25	<25	NP-3
Falfurrias										
15-----	0-7	Clay-----	CL, CH	A-7-6	100	100	100	90-100	41-55	20-30
Grulla	7-65	Silty clay, clay	CH	A-7-6	100	100	100	90-100	52-66	28-39
16, 17, 18---	0-18	Fine sandy loam	SC, SM-SC, SM	A-2-4	100	95-100	95-100	17-35	<30	NP-8
Hargill	18-63	Sand clay loam	SC, CL	A-6	100	95-100	95-100	40-55	30-40	11-20
	63-80	Sand clay loam	SC	A-2-4 A-2-6 A-4, A-6	85-100	80-100	75-100	34-50	28-39	9-18
19, 20-----	0-8	Clay-----	CH	A-7-6	100	100	100	90-100	51-85	32-60
Harlingen	8-35	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
	35-72	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
21:*										
Harlingen---	0-8	Clay-----	CH	A-7-6	100	100	100	90-100	51-85	32-60
	8-35	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
	35-72	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
Urban land.										
22, 23, 24---	0-17	Sandy loam-----	SM	A-2-4	100	100	75-100	13-24	<25	NP-4
Hebbronville	17-58	Fine sandy loam, loam.	SM, SM-SC	A-2-4	100	100	90-100	20-30	<30	NP-7
	58-65	Fine sandy loam, loam.	SM-SC, SC	A-2-4 A-4 A-2-6 A-6	95-100	95-100	90-100	20-40	20-30	4-13
25, 26, 27---	0-17	Fine sandy loam,	SC, SM-SC	A-4, A-6	100	95-100	90-100	36-50	20-30	4-11
Hidalgo	17-28	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	90-100	36-80	30-40	11-20
	28-80	Clay loam, sandy clay loam.	CL, SC	A-6, A-7-6	90-100	80-100	75-99	44-80	30-44	11-23
28, 29, 30---	0-17	Sandy clay loam	SC, CL	A-6	100	95-100	90-100	36-55	29-40	11-20
Hidalgo	17-28	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	90-100	36-80	30-40	11-20
	28-80	Clay loam, sandy clay loam.	CL, SC	A-6, A-7-6	90-100	80-100	75-99	44-80	40-44	11-23
31*										
Hidalgo-----	0-17	Sandy clay loam	SC, CL	A-6	100	95-100	90-100	36-50	29-40	11-20
	17-28	Sandy clay loam clay loam.	SC, CL	A-6	100	95-100	90-100	36-80	30-40	11-20
	28-80	Clay loam, sandy clay loam.	CL, SC	A-6, A-7-6	90-100	80-100	75-99	44-80	30-44	11-23

SOILS LEGEND

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TABLE 16. -- ENGINEERING INDEX PROPERTIES--CONTINUED

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number				Liquid limit	Plast. index
			Unified	AASHTO						
					4	10	40	200		
	In								Pct	
45,* 46,* 47.- Pits										
48, 49----- Ramadero	0-13 13-49 49-72	Sandy clay loam Sandy clay loam, clay loam. Sandy clay loam, clay loam.	CL, SC CL, SC CL, SC	A-4, A-6 A-6, A-7 A-6	100 100 90-100	100 95-100 80-100	95-100 90-100 80-95	45-65 45-65 40-65	27-35 34-43 30-40	8-15 15-22 22-20
50----- Ramadero	0-21 21-65	Sandy clay loam Sandy clay loam, clay loam.	CL, SC CL, SC	A-6, A-4 A-6, A-7	100 100	100 95-100	95-100 90-100	45-65 46-65	27-39 32-42	9-18 13-21
51*----- Ramadero	0-9 9-16 16-60	Fine sandy loam Fine sandy loam, sandy caly loam. Cemented-----	SM, SM-SC SC, SM-SC, GC ---	A-2-4 A-2-4, A-2-6, A-4, A-6 ---	75-100 65-100 ---	70-100 60-100 ---	70-100 60-100 ---	20-35 25-50 ---	<25 25-34 ---	NP-7 7-14 ---
Cuevitas-----	0-8 8-60	Fine sandy loam Cemented-----	SM, SM-SC, SC- ---	A-2-4 ---	80-100 ---	80-100 ---	80-100 ---	20-35 ---	<28 ---	NP-9 ---
52, 53----- Raymondville	0-15 15-43 43-65	Clay loam----- Clay, clay loam Clay, clay loam	CL CL, CH CL, CH	A-6, A-7-6 A-6, A-7-6 A-7-6	100 100 100	100 95-100 85-100	95-100 95-100 80-100	51-85 75-95 75-95	37-50 38-55 40-53	18-30 19-35 20-30
54:*----- Raymondville	0-15 15-43 43-65	Clay loam----- Clay, clay loam Clay, clay loam	CL CL, CH CL, CH	A-6, A-7-6 A-6, A-7-6 A-7-6	100 100 100	100 95-100 85-100	95-100 95-100 80-100	51-85 75-95 75-95	37-50 38-55 40-53	18-30 19-35 20-30
55,56----- Reynosa	0-15 15-48 48-65	Silty clay loam Sandy clay loam, silt loam. Stratified silty clay loam to silt loam.	CL, CL-ML CL CL, CL-ML	A-6, A-4, A-7-6 A-6, A-4, A-7-6 A-6, A-4, A-7-6	100 100 100	100 100 100	95-100 95-100 90-100	80-100 80-100 70-100	25-45 28-44 20-49	7-25 9-23 4-29
57:*----- Reynosa	0-15 15-48 48-65	Silty clay loam Silty clay loam, silt loam. Stratified silty clay loam to silt loam.	CL, CL-ML CL CL, CL-ML	A-6, A-4, A-7-6 A-6, A-4, A-7-6 A-6, A-4, A-7-6	100 100 100	100 100 100	95-100 95-100 90-100	80-100 80-100 70-100	25-45 28-44 20-49	7-25 9-23 4-29
Urban land.										
58, 59----- Rio	0-12 12-38 38-63	Fine sandy loam Clay loam, clay Clay loam, snady clay sandy clay loam.	SC, SM-SC CL, CH CL	A-2-4, A-4 A-7-6 A-7-6	95-100 95-100 95-100	95-100 95-100 95-100	95-100 95-100 85-95	30-48 75-95 55-80	<30 43-57 41-50	5-10 21-32 20-27

SOILS LEGEND

TABLE 18. -- SOIL AND WATER FEATURES
("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text.
The symbol > means more than. Absence of an entry indicates that the feature is not a concern)

Map symbol and soil name	Hydrologic group	Flooding			High water table			Cemented pan		Risk of corrol	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Conc. steel
1.* Arents					Ht			In			
2----- Benito	D	Occasional	Long-----	Sep-May	4.0-6.0	Apparent	Sep-May	---	---	High-----	Low.
3,4----- Brennan	B	None-----	---	---	M	---	---	---	---	Moderate	Low
5,6----- Camargo	B	Rare-----	Brief-----	Sep-May	>6.0	---	---	---	---	Moderate	Low
7----- Cameron	D	None-----	---	---	5.0-6.0	Apparent	Sep-May	---	---	High-----	Low
8----- Comitas	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low
9, 10, 11----- Delfina	B	None-----	---	---	2.5-5.0	Apparent	Sep-May	---	---	High-----	Low
12----- Delmita	C	None-----	---	---	>6.0	---	---	20-40	Thin	Moderate	Low
13:* Delmita-----	C	None-----	---	---	>6.0	---	---	20-40	Thin	Moderate	Low
Randado-----	C	None-----	---	---	>6.0	---	---	8-20	Thin	Low-----	Low
14----- Falfurrias	A	None-----	---	---	>6.0	---	---	---	---	High-----	Low
15**----- Grulla	D	Frequent-----	Very long	Sep-May	+2-6.0	Apparent	Sep-May	---	---	High-----	Low
16, 17, 18----- Hargill	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low
19----- Harlingen	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low
20----- Harlingen	D	None-----	---	---	5.0-6.0	---	---	---	---	High-----	Moderate
21:* Harlingen-----	D	None to rare	---	---	>6.0	---	---	---	---	High-----	Low
Urban land.											
22, 23, 24----- Hebbronville	B	None-----	---	---	>6.0	---	---	---	---	Low-----	Low
25, 26, 27, 28 29 Hidalgo	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low
30----- Hidalgo	B	None-----	---	---	2.5-5.0	Apparent	Sep-May	---	---	High-----	Low
31:* Hidalgo-----	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low

HYDROLOGIC LEGEND

TABLE 18. -- SOIL AND WATER FEATURES
("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text.
The symbol > means more than. Absence of an entry indicates that the feature is not a concern)

Map symbol and soil name	Hydrologic group	Flooding		High water table		Cemented pan		Risk of corrol			
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Conc.
					Ft			In			
Urban land.											
32:* Jimenez-----	C	None-----	---	---	>6.0	---	---	7-20	---	High-----	Low
32:* Quemado-----	C	None-----	---	---	>6.0	---	---	10-20	Thin	Moderate	Low.
33----- Benito	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
34----- Matanoros	C	Occasional	Long-----	Sep-May	>6.0	---	---	---	---	High-----	Low.
35, 36, 37, 38- McAllen	C	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
39, 40, 41----- Mercedes	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
42----- Nueces	C	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
43:* Nueces-----	C	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
Sarita	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
44, 44----- Olmito	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
45,* 46,* 47.* Pits											
48----- Racombes	B	Rare-----	---	---	>6.0	---	---	---	---	High-----	Low.
49----- Racombes	B	Rare-----	---	---	1.5-4.5	Apparent	Sep-May	---	---	High-----	Low.
50----- Racombes	B	Common---	Brief-----	Sep-May	>6.0	---	---	---	---	High-----	Low.
51:* Randado-----	C	None-----	---	---	>6.0	---	---	8-20	Thin	Moderate	Low.
Cuevitas-----	D	None-----	---	---	>6.0	---	---	8-14	Thin	Moderate	Low.
52----- Raymondville	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
53----- Raymondville	D	None-----	---	---	2.5-4.5	Apparent	Sep-May	---	---	High-----	Low.
54:* Raymondville---	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
55----- Reynosa	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.

HYDROLOGIC LEGEND

DRAINAGE ANALYSIS

PROJECT NAME: **Mi Linda Subdivision**

DATE: June 16, 2022

I. Existing Condition-10 year

Ex. Area:	1,621,883 sf	Int. Coeff. "k	0.213 Table 3-2
	37.233 ac	K μ	3.28
Imp. Area:	- sf	Length	1320
% Imp. :	0.00	Velocity	0.220929 ft/sec
Slope :	0.1 %		
tc :	99.58 min		
Rainfall Intensity (10yr)			2.265 in/hr
c factor			0.200
Q peak existing condition:			16.87 cfs

II. Future Condition-100 year

Future area:	1,621,883.00 sf		
	37.23 ac		
Estimated Imp. Area:	900,590 sf		
% Imp. :	55.53 %		
Slope :	0.25%		
tc :	18.94 min		
Rainfall Intensity (100yr)			8.626 in/hr
c factor			0.522
Q future cond. = Aci = i *	=	167.65 *	0.52
		19.435788 i	

time min.	time hour	i100 in/hr	Q100 in cfs	Vin cf	Q10 out cfs	Vout cf	REQ'D V cf
210	3.50	1.906	37.04	466,662	16.87	115,849	350,813
220	3.67	1.844	35.84	473,036	16.87	120,909	352,127
230	3.83	1.787	34.72	479,179	16.87	125,969	353,210
240	4.00	1.733	33.69	485,111	16.87	131,029	354,081
250	4.17	1.684	32.72	490,846	16.87	136,089	354,756
260	4.33	1.637	31.82	496,399	16.87	141,150	355,250
270	4.50	1.594	30.97	501,784	16.87	146,210	355,574
280	4.67	1.553	30.18	507,011	16.87	151,270	355,741
290	4.83	1.514	29.43	512,092	16.87	156,330	355,761
300	5.00	1.478	28.72	517,034	16.87	161,391	355,644

MAX.

Storage Required: 355,761 cf
 Storage Required: 8.167 Ac.-Ft.
 w/ release rate of: 16.87 cfs



**City of Weslaco
Engineering Division**

255 S. Kansas ♦ Weslaco, TX 78570 ♦ (956)

TRIP GENERATION WORKSHEET

Complete parts A and B as an aid to determine if your project requires a Traffic Impact Analysis (TIA).

A. Subdivision Information

Subdivision Name: Mi Linda Subdivision Phase 1 and Phase 2
 Location: 340' south of Mile 6 1/2 North along the west side of S. Milano Road.
 Applicant: Javier Hinojosa, P.E. ☐ Owner ☒ Agent
 Address: 416 E. Dove Ave, McAllen, Tx. 78504 Phone Number: (956) 668-1588

B. Trip Generation Calculation

The texts needed to complete this table are available at the Planning Department. See back of sheet for more information.

Ph.	ITE Code	Anticipated Land Use	Project Size			AM Peak Hour Trips	PM Peak Hour Trips	Weekday Trips
			Acres	GFA	# of Units			
1	220	Multi-Family Housing	23.05	N.A.	216	117	144	1592
2	210	Single-Family Detached	14.10	N.A.	68	57	74	

Comments: This subdivision will be developed in two phases

Prepared by: Javier Hinojosa Engineering Date: _____
 Address: 416 E. Dove Ave, McAllen, Tx. 78504 Phone Number: (956) 668-1588

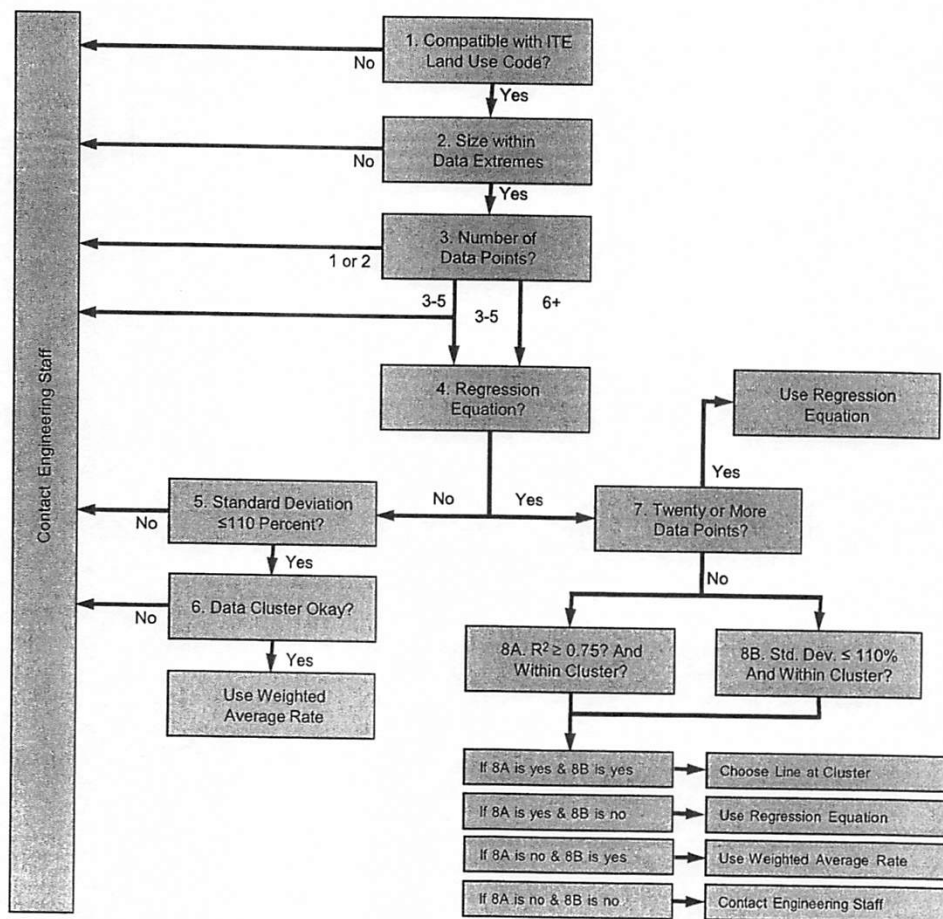
(For Official Use Only, Do Not Write In This Box)

- ☐ A traffic impact analysis is required. The agent preparing the study must meet with City staff to discuss the scope and requirements of the study before beginning the study.
- ☐ A traffic impact analysis is not required. The traffic generated by the proposed development does not exceed the threshold requirements.

Comments: _____

Reviewed by: _____ Date: _____ STID#: _____

Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations



From ITE Trip Generation Handbook

City of Weslaco
Engineering Division
255 S. Kansas Ave
Weslaco, TX 78596
(956)
(956) 973-3128 (fax)

Subdivision Name: Mi Linda Subdivision Ph. 1

Location: 340 feet South of Mile 6 ½ North along the west side of S. Milano Road

Applicant: Javier Hinojosa, P.E. (Agent)

Address: 416 E. Dove Ave., McAllen, Texas 78504 Ph. (956) 668-1588

Number of Lots: 54 Number of Dwellings: 216

ITE Code: 220 Multifamily Housing (Low-Rise)

TRIP GENERATION CALCULATIONS:

Weekday, Peak Hour of Adjacent Street Traffic between 7 and 9 am

Avg. Rate: 0.46

$$0.46 \times 216 \text{ Dwellings} = 99.4 \text{ trips}$$

$$\begin{aligned} \text{Fitted Curve: } \ln(T) &= 0.95 \ln(x) - 0.51 \\ &= 0.95 \ln(216) - 0.51 \end{aligned}$$

$$\ln(T) = 4.5965$$

$$T = e^{4.5965}$$

$$= 99.1 \text{ trips}$$

use 99 trips

Weekday, Peak Hour of Adjacent Street Traffic between 4 and 6 pm

Avg. Rate: 0.56

$$0.56 \times 216 \text{ Lots} = 121.0 \text{ trips}$$

$$\begin{aligned} \text{Fitted Curve: } \ln(T) &= 0.89 \ln(x) - 0.02 \\ &= 0.89 \ln(216) - 0.02 \end{aligned}$$

$$\ln(T) = 4.7640$$

$$T = e^{4.7640}$$

$$= 117.2 \text{ trips}$$

use 121 trips



[Handwritten signature]
6/27/22

Weekday, AM Peak Hour of Generator

Avg. Rate: 0.56

$$0.56 \times 216 \text{ Lots} = 121.0 \text{ trips}$$

$$\begin{aligned} \text{Fitted Curve: } \ln(T) &= 0.94 \ln(x) - 0.29 \\ &= 0.94 \ln(216) - 0.29 \\ \ln(T) &= 4.7628 \\ T &= e^{4.7628} \\ &= 117.1 \text{ trips} \end{aligned}$$

use 121 trips

Weekday, PM Peak Hour of Generator

Avg. Rate: 0.67

$$0.67 \times 216 \text{ Lots} = 144.7 \text{ trips}$$

$$\begin{aligned} \text{Fitted Curve: } T &= 0.66(x) + 1.41 \\ &= 0.66(216) + 1.41 \\ &= 144.0 \text{ trips} \end{aligned}$$

use 145 trips

Weekday Trips

Avg. Rate: 7.32

$$7.32 \times 216 \text{ Lots} = 937.0 \text{ trips}$$

$$\begin{aligned} \text{Fitted Curve: } T &= 7.56(x) - 40.86 \\ &= 7.56(216) - 40.86 \\ &= 1592.1 \text{ trips} \end{aligned}$$

use 1592 trips

Subdivision Name: Mi Linda Subdivision Ph. 2

Location: 1055 feet south of Mile 6 ½ North along the west side of S. Milano Road

Applicant: Javier Hinojosa, P.E. (Agent)

Address: 416 E. Dove Ave., McAllen, Texas 78504 Ph. (956) 668-1588

Number of Lots: 68 Number of Dwellings: 68

ITE Code: 210 Single-Family Detached Housing

TRIP GENERATION CALCULATIONS:

Weekday, Peak Hour of Adjacent Street Traffic between 7 and 9 am

Avg. Rate: 0.74

$$0.74 \times 68 \text{ Dwellings} = 50.3 \text{ trips}$$

$$\begin{aligned} \text{Fitted Curve: } T &= 0.71(x) + 4.80 \\ &= 0.71(68) + 4.8 \end{aligned}$$

$$= 53.1 \text{ trips}$$

use 53 trips

Weekday, Peak Hour of Adjacent Street Traffic between 4 and 6 pm

Avg. Rate: 0.99

$$0.99 \times 68 \text{ Dwellings} = 67.3 \text{ trips}$$

$$\begin{aligned} \text{Fitted Curve: } \ln(T) &= 0.96 \ln(x) + 0.20 \\ &= 0.96 \ln(68) + 0.20 \end{aligned}$$

$$\ln(T) = 4.2507$$

$$T = e^{4.2507}$$

$$= 70.2 \text{ trips}$$

use 70 trips

Weekday, AM Peak Hour of Generator

Avg. Rate: 0.76

$$0.76 \times 68 \text{ Dwellings} = 51.7 \text{ trips}$$

$$\begin{aligned}\text{Fitted Curve: } \ln(T) &= 0.91 \ln(x) + 0.20 \\ &= 0.91 \ln(68) + 0.20 \\ \ln(T) &= 4.0398 \\ T &= e^{4.0398} \\ &= 56.8 \text{ trips}\end{aligned}$$

use 57 trips

Weekday, PM Peak Hour of Generator

Avg. Rate: 1.00

$$1.00 \times 68 \text{ Dwellings} = 68.0 \text{ trips}$$

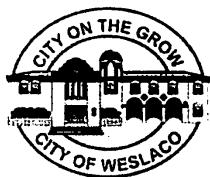
$$\begin{aligned}\text{Fitted Curve: } \ln(T) &= 0.94 \ln(x) + 0.34 \\ &= 0.94 \ln(68) + 0.34 \\ \ln(T) &= 4.3063 \\ T &= e^{4.3063} \\ &= 74.2 \text{ trips}\end{aligned}$$

use 74 trips



**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V.C.
From: Rebekah de la Fuente, Planning Director, on behalf of Javier Hinojosa.	
Subject/Agenda Item: Discussion and consideration for the Preliminary Plat for Mi Linda Phase II being a 14.19-acre out of farm tracts 648 & 649, West Tract Subdivision, Weslaco, Hidalgo County, Texas Located approximately 340 ft south of mile 6 ½ north along the west side of Milano Road. Possible Action	
Discussion/Overview: The proposed sixty-eight (68) lot subdivision is located outside the City of Weslaco. This subdivision is being serviced with water by North Alamo Water Supply Company through an 8" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B". Applicant is requesting a variance for off-site drainage.	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval of Preliminary Plat and compliance with the ordinance on the variance.	
Additional Action Prompted: [X] Mayor's Signature [] Public Hearing [] Budget Amendment [] Resolution [] Ordinance – First Reading [] Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



SUBDIVISION PLATTING APPLICATION

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. PIAT-003269-2022

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

STAFF USE ONLY

☐ Single Lot Variance ☐ Minor Plat ☐ Planned Unit Development ☐ Standard Subdivision

GENERAL INFORMATION

Name of Subdivision: Mi Linda Subdivision Phase II

Location: 1055 feet south of Mile 6 1/2 North along the west side of S. Milano Road

Legal Description: 14.19 Acres of land more or less out of Farm Tracts 648 and 649, West Tract

Subdivision as recorded in Volume 2, Pages 34-37, Map Records of Hidalgo County, Texas

Is subdivision inside city limits? ☐ YES ☒ NO

If subdivision is in the ETJ, indicate? ☒ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: Open

Existing Land Use: Agriculture Proposed Land Use: R-1 One Family Dwelling District

Number of Lots Proposed: 68 Gross Acreage: 14.19 Ac.

Title Report Submitted: ☒ YES ☐ NO

OWNER INFORMATION

Owner's Name: Reyna Family Development, LTD. Telephone: (956) 497-3962

Address: 702 W. Expressway 83 Fax: _____

City: Weslaco State: TX Zip: 78596 E-mail: dominicareyna@gmail.com

ENGINEER INFORMATION

Name: Javier Hinojosa Engineering Telephone: (956) 668-1588

Address: 416 E. Dove Ave. Fax: _____

City: McAllen State: TX Zip: 78552 E-mail: javier@javierhinojosaeng.com

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

UTILITY PROVISIONS

Will proposed subdivision connect to:

☒ YES ☐ NO Water Provision: North Alamo Water Supply Corp.

☒ YES ☐ NO Wastewater Provision: City of Weslaco

☒ YES ☐ NO Electric Company: Magic Valley Electric Co-op

☒ YES ☐ NO Phone Utility <u>AT&T</u>	☐ YES ☒ NO Gas Utility	☒ YES ☐ NO Cable Utility
---	---	---

Proposed subdivision is in the following districts:

☒ YES ☐ NO Drainage District <u>H.C.D.D. #1</u>	☒ YES ☐ NO Irrigation District <u>H.C.C.I.D. #9</u>
--	--

Has the property been assessed as flat rate irrigable property: ☐ YES ☐ NO

Have Water Rights been conveyed to City/Water Supplier? ☐ YES ☐ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If YES, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR MINOR PLAT REVIEW

Two (2) sets of plats folded and stapled (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

\$355.00 Planning Review fee

One 11" X 17" reduced copy of plat

Plat Layout

Existing & Proposed Easements

Existing & Proposed ROW

Existing & Proposed Drainage Easements

Contours

Flood Zones

Adjoiners

Existing street names

Drainage plans and calculations with engineer's seal

Elevations

Flood directional arrows

Detention areas

Street names

Proof of ownership of the property

If septic tank system required, submit soil evaluation report

Water Rights associated with the property

Tax Receipt for all taxing entities showing that taxes are paid in full

SUBMITTALS REQUIRED FOR PRELIMINARY (P & Z)

Twelve (12) sets of preliminary plat folded and stapled (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

\$350.00 (one time fee for preliminary and final plat)

One 11" X 17" reduced copy of plat

Plat Layout

Existing & Proposed Easements

Existing & Proposed ROW

Existing & Proposed Drainage Easements

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

- _____ Contours
- _____ Flood Zones
- _____ Adjoiners
- _____ Existing & Proposed street names
- _____ Utility Layout
- _____ Existing & Proposed Utilities
- _____ Proposed Fire Hydrants
- _____ Adjoiners
- _____ Street names
- _____ Drainage plans and calculations with engineer's seal
- _____ Elevations
- _____ Flood directional arrows
- _____ Detention areas
- _____ Street names
- _____ Proof of ownership of the property
- _____ If septic tank system required, submit soil evaluation report
- _____ Water Rights associated with the property
- _____ Tax Receipt for all taxing entities showing that taxes are paid in full
- _____ Number of fire hydrants proposed for subdivision
- _____ Trip Generation Worksheet

SUBMITTALS REQUIRED FOR FINAL (P & Z) **Will not apply to Single Lot Variance**

- _____ Twelve (12) sets of plans **FOLDED & STAPLED** (24 x 36) & PDF copy with all corrections
- _____ Plats to be sealed by Professional Engineer
- _____ Approved Drainage Report
- _____ Traffic Impact Analysis (If required)

SUBMITTALS REQUIRED FOR FINAL (City Commission)

- _____ One set of 8 ½ x 11 of plat and utilities with all corrections done

SUBMITTALS REQUIRED FOR PRE-CONSTRUCTION MEETING

- _____ Seven (7) full sets of construction plans 24 x 36 and one (1) 11 x 17 with plan & profile.
- _____ Engineering cost estimates for 3% geotechnical testing fees and 2% inspection fees
- _____ Notice of Intent
- _____ SW3P

SUBMITTALS REQUIRED FOR RECORDING OR HIDALGO COUNTY PLANNING

- _____ Electronic file of final plat and as-builds
- _____ Reproducible plat to be recorded with all required signatures
- _____ 3% geotechnical testing fees or negotiated Material Testing fee by City, whichever is higher
- _____ 2% inspection fee
- _____ Park Fees
- _____ Checks or Receipts: HCCID #9; HCDD #1; County Clerk
- _____ Tax certificates
- _____ Memo from engineering inspector releasing subdivision
- _____ Water Rights associated with the property dedicated and assigned to City of Weslaco or payment of fees sufficient to meet the needs necessitated and attributable to development
- _____ 30 Year Water and 30 Year Sewer Service Agreements
- _____ Park dedication/Fees in lieu of

SUBMITTALS REQUIRED FOR RECORDING BY SECURITY

- _____ Sealed engineering cost estimates
- _____ Letter of Credit/Performance Bond/Escrow

** Any revisions requested would require resubmission of plats and reduced copy reflecting changes.

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: Ezequiel Reyna, Jr.

Owner Signature: _____ Date: 07/20/22

_____ is the authorized agent

Authorized Agent Signature: [Signature] Date: 7/20/22

Authorized Agent Printed Name: Javier Hinojosa, P.E.

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid: _____

P & Z Commission Approval on Preliminary Plat: _____

P & Z Commission Approval on Final Plat: _____

City Commission Approval on Final Plat: _____

Preconstruction Meeting Date: _____

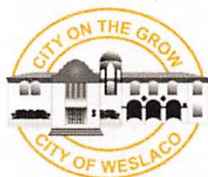
Date Recorded: _____ Instrument No. _____

General Comments: _____



**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V.D.
From: Rebekah de la Fuente, Planning Director, on behalf of SWG Engineering	
Subject/Agenda Item: Discussion and consideration for the Preliminary Plat for Pike Terrace - being a 36.092-acre out of farm tract 163, block 178, The West and Adams Tract Subdivision, Weslaco, Hidalgo County, Texas Located on the southeast Corner of w. pike Blvd. and Milanos Rd. Possible Action.	
Discussion/Overview: The proposed one hundred and five (105) lot subdivision is located inside the City of Weslaco. This subdivision is being serviced with water by North Alamo Water Supply Company through an 8" waterline and sewer by the City of Weslaco through a 12" sewer line. The property is within a Flood Zone "B".	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval of Preliminary Plat.	
Additional Action Prompted: [X] Mayor's Signature [] Public Hearing [] Budget Amendment [] Resolution [] Ordinance – First Reading [] Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



SUBDIVISION PLATTING APPLICATION

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. PIAT-000273-2022

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

STAFF USE ONLY

☐ Single Lot Variance ☐ Minor Plat ☐ Planned Unit Development ☐ Standard Subdivision

GENERAL INFORMATION

Name of Subdivision: Pike Terrace Subdivision

Location: Southeast Corner of W. Pike Blvd. (Mile 8 North) and Milanos Rd. (Mile 6 1/2 West Rd)

Legal Description: A Tract of land containing 36.092 Acres situated in the City of Weslaco, Hidalgo County, Texas being a part or portion of Farm Tract 163, Block 178, The West and Adams Tract.

Is subdivision inside city limits? ☒ YES ☐ NO

If subdivision is in the ETJ, indicate? ☐ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: R-1

Existing Land Use: Vacant Proposed Land Use: R-2 Duplex & Apts

Number of Lots Proposed: 105 Gross Acreage: 36.092

Title Report Submitted: ☐ YES ☐ NO

OWNER INFORMATION

Owner's Name: Shavi Mahtani Telephone: (956) 661-8888

Address: 100 E. Nolana Fax: _____

City: McAllen State: Tx Zip: 78501 E-mail: shavi@aurielinvestments.com

ENGINEER INFORMATION

Name: SWG Engineering LLC Telephone: (956)968-2194

Address: 611 Bill Summers Intl. Blvd. Fax: (956) 968-8300

City: Weslaco State: Tx Zip: 78596 E-mail: jreyes@siglerwinstongreenwood.com

UTILITY PROVISIONS

Will proposed subdivision connect to:

☒ YES ☐ NO Water Provision: NAWSC
☒ YES ☐ NO Wastewater Provision: City of Weslaco
☒ YES ☐ NO Electric Company: AEP

☒ YES ☐ NO Phone Utility _____	☒ YES ☐ NO Gas Utility _____	☒ YES ☐ NO Cable Utility _____
---	---	---

Proposed subdivision is in the following districts:

☒ YES ☐ NO Drainage District <u>HCDD#1</u>	☒ YES ☐ NO Irrigation District <u>HCCID#9</u>
---	--

Has the property been assessed as flat rate irrigable property: ☐ YES ☐ NO

Have Water Rights been conveyed to City/Water Supplier? ☐ YES ☐ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If **YES**, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR MINOR PLAT REVIEW

- _____ **Two (2)** sets of plats **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov
- _____ **\$355.00** Planning Review fee
- _____ One 11" X 17" reduced copy of plat
- _____ Plat Layout
 - _____ Existing & Proposed Easements
 - _____ Existing & Proposed ROW
 - _____ Existing & Proposed Drainage Easements
 - _____ Contours
 - _____ Flood Zones
 - _____ Adjoiners
 - _____ Existing street names
- _____ Drainage plans and calculations with engineer's seal
 - _____ Elevations
 - _____ Flood directional arrows
 - _____ Detention areas
 - _____ Street names
- _____ Proof of ownership of the property
- _____ If septic tank system required, submit soil evaluation report
- _____ Water Rights associated with the property
- _____ Tax Receipt for all taxing entities showing that taxes are paid in full

SUBMITTALS REQUIRED FOR PRELIMINARY (P & Z)

- ☒ **Twelve (12)** sets of preliminary plat **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov
- ☒ **\$350.00** (one time fee for preliminary and final plat)
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- _____ Plat Layout
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 - _____ Existing & Proposed ROW
 - _____ Existing & Proposed Drainage Easements

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

- _____ Contours
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- _____ Number of fire hydrants proposed for subdivision
- _____ Trip Generation Worksheet

SUBMITTALS REQUIRED FOR FINAL (P & Z) **Will not apply to Single Lot Variance**

- _____ **Twelve (12) sets of plans FOLDED & STAPLED (24 x 36) & PDF copy with all corrections**
- _____ Plats to be sealed by Professional Engineer
- _____ Approved Drainage Report
- _____ Traffic Impact Analysis (If required)

SUBMITTALS REQUIRED FOR FINAL (City Commission)

- _____ One set of 8 ½ x 11 of plat and utilities with all corrections done

SUBMITTALS REQUIRED FOR PRE-CONSTRUCTION MEETING

- _____ Seven (7) full sets of construction plans 24 x 36 and one (1) 11 x 17 with plan & profile.
- _____ Engineering cost estimates for 3% geotechnical testing fees and 2% inspection fees
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- _____ SW3P

SUBMITTALS REQUIRED FOR RECORDING OR HIDALGO COUNTY PLANNING

- _____ Electronic file of final plat and as-builds
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- _____ 30 Year Water and 30 Year Sewer Service Agreements
- _____ Park dedication/Fees in lieu of

SUBMITTALS REQUIRED FOR RECORDING BY SECURITY

- _____ Sealed engineering cost estimates
- _____ Letter of Credit/Performance Bond/Escrow

** Any revisions requested would require resubmission of plats and reduced copy reflecting changes.

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: _____

Owner Signature: _____ Date: _____

_____ is the authorized agent

Authorized Agent Signature: SWG Engineering LLC Date: July 27, 2022

Authorized Agent Printed Name: [Signature], P.E.

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid: _____

P & Z Commission Approval on Preliminary Plat: _____

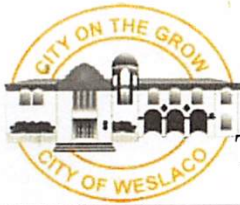
P & Z Commission Approval on Final Plat: _____

City Commission Approval on Final Plat: _____

Preconstruction Meeting Date: _____

Date Recorded: _____ Instrument No. _____

General Comments: _____



**City of Weslaco
Engineering Division**

255 S. Kansas ♦ Weslaco, TX 78570 ♦ (956)

TRIP GENERATION WORKSHEET

Complete parts A and B as an aid to determine if your project requires a Traffic Impact Analysis (TIA).

A. Subdivision Information

Subdivision Name: Pike Terrace Subdivision
 Location: West Pike Blvd. (Mile 8 North Rd.) and Milanos Road
 Applicant: SWG Engineering LLC ☐ Owner ☒ Agent
 Address: 611 Bill Summers Intl. Blvd. Weslaco, TX 78596 Phone Number: (956)968-2194

B. Trip Generation Calculation

The texts needed to complete this table are available at the Planning Department. See back of sheet for more information.

ITE Code	Anticipated Land Use	Project Size			AM Peak Hour Trips	PM Peak Hour Trips	Weekday Trips
		Acres	GFA	# of Units			
220	Multi-Family	36.092		105	280	298	578

Comments: _____
 Prepared by: SWG Engineering LLC Date: _____
 Address: 611 Bill Summer Intl. Blvd. Weslaco, TX 78596 Phone Number: (956)789-2194

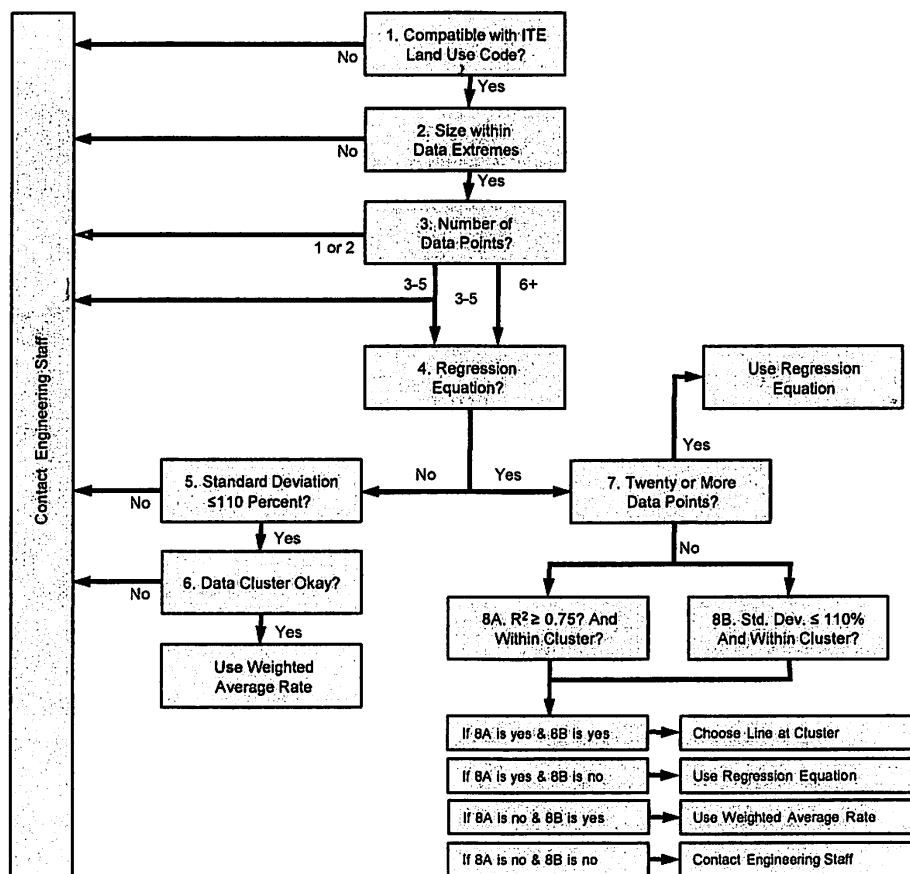
(For Official Use Only, Do Not Write In This Box)

- _____ A traffic impact analysis is required. The agent preparing the study must meet with City staff to discuss the scope and requirements of the study before beginning the study.
- _____ A traffic impact analysis is not required. The traffic generated by the proposed development does not exceed the threshold requirements.

Comments: _____

Reviewed by: _____ Date: _____ STID#: _____

Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations



From ITE Trip Generation Handbook

City of Weslaco
Engineering Division
255 S. Kansas Ave
Weslaco, TX 78596
(956)
(956) 973-3128 (fax)

Rebekah M. De La Fuente

PIKE Terrace.

From: Steve Valdez <SValdez@weslacoedc.com>
Sent: Tuesday, July 26, 2022 8:50 AM
To: Martin Garza; Molly Vallejo; Norma Cantu
Cc: Rebekah M. De La Fuente
Subject: Oversized Piping

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open/download any attachments unless you recognize the sender and know the content is safe.

Mr. Garza,

The EDC Board approved at yesterday's meeting to pay for the increased cost for "upsizing" the pipes for the subdivision along Milano Rd. Please let me know who we should write the check out to and when.

As part of our back up documentation, we would like to see the invoice that would have paid for the entire purchase of 12 inch sewer pipes.

Thank you,

Steve,



EDC
WESLACO
STEVEN M. VALDEZ
EXECUTIVE DIRECTOR

☎ O: (956) 969-0838 / C: (956) 279-9368
✉ svaldez@weslacoedc.com
🌐 www.weslacoedc.com
📍 275 S. Kansas Avenue, Suite A
Weslaco, TX 78596



SWG Engineering

Hidalgo County Drainage District No. 1

Drainage Report

Weslaco – Pike Terrace Subdivision

Hidalgo County, Texas

Prepared By:

SWG Engineering, LLC

611 Bill Summers Intl. Blvd.

Weslaco, Texas 78596

Tel: 956-968-2194

Fax: 956-968-8300

jreyes@siglerwinstongreenwood.com

6/22/2022



Handwritten signature in blue ink over the seal.
P.E.
Jun. 22. 2022

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**DRAINAGE REPORT
For
PIKE TERRACE SUBDIVISION**

I. Project Location

This project involves the development of a 36.092 acre tract of land for residential use. The site is located in the city of Weslaco, Hidalgo County and lies on the southwest intersection of W Pike Blvd. (Mile 8 North Rd.) and N Milano Rd. (Mile 6 1/2 West Rd.) The proposed subdivision is comprised of 105 lots for a total of a 34.03 acre tract out of West tract, Hidalgo County, Texas.

II. Flood Plain

The area is considered to be under an unincorporated area determined by FEMA Flood Insurance Rate Map, Community Panel No. 480334 0450 C, and Map Revised June 6, 2000. The project area is under Zone "X", which is described as "Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile and areas protected by levees from 100-year flood".

III. Soil Conditions

According to the Soil Survey Report prepared for Hidalgo County by the U.S.D.A. Soil Conservation Service, the area is composed of three types of soil: Hidalgo fine sandy loam (0 to 1 percent slopes), Hidalgo fine sandy loam (1 to 3 percent slopes), and Hidalgo sandy clay loam (0 to 1 percent slopes). The predominant soil type being Hidalgo clay loam, is listed in Hydrological Group B. See attached Soil Survey of Hidalgo County, Texas.

IV. Existing Conditions

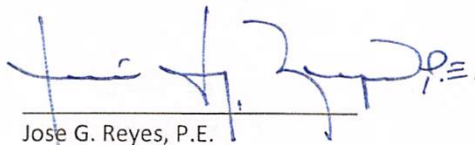
Existing runoff is by surface flow in a southwestern direction and has a runoff of **23.44 cfs** during the **10-yr** storm frequency as per attached calculations. The total impermeable area is approximately 0 square feet and the total permeable area is **1,482,347 sf²**. Due to no existing development, an existing weighted runoff coefficient of **C = 0.2** was calculated.

V. Proposed Conditions

Subject tract of land will be developed into 105 lots that will serve as a multi-family subdivision. One of the lots will be dedicated for a detention pond. Proposed runoff after development is **111.32 cfs**, during the **50-year** storm frequency, which is an increase of **87.88 cfs**. The proposed drainage for Pike terrace Subdivision consists of surface runoff from future development into the street and green areas. The total impermeable area is approximately **1,408,295 sf²** and the total permeable area is **74,052 ft²**. A weighted runoff coefficient of **C = 0.59** was calculated. For a **50-year storm frequency**, a peak detention

volume is approximately 246,207 ft³ or 5.65 Acre-ft. Please refer to attached drainage calculations. At time of improvements the storm water runoff from the improved area shall be discharged in a southwestern direction where it will be discharged into a proposed detention pond on the southeast corner of subdivision. The runoff shall be directed into an existing manhole along Milano's Rd. (Mile 6 ½ West Rd.), via 24" RCP, connected to an existing storm system, that will carry the storm water via 42" RCP to drain ditch 37D1, owned by HCCID#9. The detention pond is designed in order to detain a volume of 253,095 ft³ or 5.81 Acre-ft, which will be able to hold a 50 year frequency.

The drainage calculations are attached.



Jose G. Reyes, P.E.
June 22, 2022



Weslaco – Pike Terrace Subdivision

Hidalgo County Drainage District No. 1 "C" Values for Rational Method

Type of Drainage Area	Runoff Coefficient
Residential Districts:	
Single Family (Lots less than ¼ acre)	0.30 – 0.50
Multi - Family (Less than 20 DU/AC)	0.40 – 0.60
Multi - Family (Greater than 20 DU/AC)	0.60 – 0.75
Business District:	
Downtown areas	0.70 – 0.95
Neighborhood areas	0.30 – 0.70
Industrial Districts:	
Light Areas	0.30 – 0.80
Heavy Areas	0.60 – 0.90
Railroad Yard Areas:	0.30 – 0.40
Park:	0.10 – 0.25
Unimproved Areas:	
Sand or sandy loam soil, 0-3%	0.15 – 0.20
Sand or sandy loam soil, 3-5%	0.20 – 0.25
Black or loessial soil, 0-3%	0.18 – 0.25
Black or loessial soil, 3-5%	0.25 – 0.30
Black or loessial soil, >5%	0.70 – 0.80
Deep sand area	0.05 – 0.15
Steep grassed slopes	0.70
Street:	
Asphalt	0.85 – 0.95
Concrete	0.90 – 0.95
Drives & Walks:	
Concrete	0.75 – 0.95

Last Updated: 6/22/2022

Detention Calculator

10-yr release
e= 0.8599
b= 116.24
d= 14.33

50 yr Storm
Title: SWGH# 22-122
34.03 Ac Mitigation Area
City of Weslaco, TX

Required Volume:
Req'd Volume 5.65 ac.ft

EXISTING DATA

Total Area 34.03 acre
Overland Flow Length - "L" 1100.00 LF
Existing Time of Concentration - "Tov" (grass) 45.55 % composition? 100%
Existing Time of Concentration - "Tov" (pavmt) 0.00 % composition? 0%
Total Existing Time of Concentration - "Tov" 45.55 minutes
Existing Runoff Coefficient - "C" 0.20
Intensity of Rainfall - "I" 3.44 in/hr
Existing - "Q" 23.44 cfs

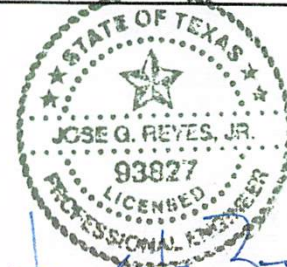
e= 0.8613
b= 170.66
d= 16.71

PROPOSED IMPROVEMENTS

Total Area 34.03 acre
Overland Flow Length - "L" 1100.00 LF
Proposed Time of Concentration - "Tov" (grass) 33.71 % composition? 74%
Proposed Time of Concentration - "Tov" (pavmt) 2.92 % composition? 26%
Total Proposed Time of Concentration - "Tov" 36.63 minutes
Proposed Runoff Coefficient - "C" 0.59
Intensity of Rainfall - "I" 5.55 in/hr
Proposed - "Q" 111.32 cfs

Time		I	Q in	V in	Q out	V out	Req'd V	Req'd V
min	hr	in/hr	ft ³ /s	ft ³	ft ³ /s	ft ³	ft ³	ac-ft
36.63	0.61	5.55	111.32	244683	23.44	51519	193164	4.43
46.63	0.78	4.79	96.01	268629	23.44	58551	210078	4.82
56.63	0.94	4.22	84.62	287540	23.44	65583	221957	5.10
66.63	1.11	3.78	75.80	303044	23.44	72614	230430	5.29
76.63	1.28	3.43	68.75	316115	23.44	79646	236470	5.43
86.63	1.44	3.14	62.98	327374	23.44	86678	240697	5.53
96.63	1.61	2.90	58.16	337238	23.44	93709	243529	5.59
106.63	1.78	2.70	54.08	346000	23.44	100741	245259	5.63
116.63	1.94	2.52	50.57	353871	23.44	107773	246099	5.65
126.63	2.11	2.37	47.51	361011	23.44	114804	246207	5.65
136.63	2.28	2.24	44.83	367539	23.44	121836	245704	5.64
146.63	2.44	2.12	42.46	373550	23.44	128868	244683	5.62
156.63	2.61	2.01	40.34	379118	23.44	135899	243218	5.58
166.63	2.78	1.92	38.44	384301	23.44	142931	241371	5.54
176.63	2.94	1.83	36.72	389151	23.44	149963	239188	5.49
186.63	3.11	1.75	35.16	393705	23.44	156994	236711	5.43
196.63	3.28	1.68	33.73	397999	23.44	164026	233973	5.37
206.63	3.44	1.62	32.43	402059	23.44	171058	231002	5.30

High Point



JUN. 22. 2022

Convert acre to sf below:	
acre:	sf:
1	43560
2.3E-05	1

Existing Runoff Coef. Calculation:

		Weighted C
Total Area =	34.03 acres	<u>0.20</u>
Impermeable Area =	0% 0.0 acres	0.9
Pavement Area =	0% 0.0 acres	0.95
Permeable Area =	100% 34.03 acres	0.2

Future Runoff Coef. Calculation:

		Weighted C
Total Area =	34.03 acres	<u>0.59</u>
Impermeable Area =	26% 8.85 acres	0.9
Permeable Area =	5% 1.70 acres	0.2
Multi-Family Area =	69% 23.48 acres	0.5

Elevations:

High =	88.68 ft
Low =	81.5 ft

Average Slope (Adjusted) = 0.00703

K= 0.828 *std coefficient*

N grass= 0.4 *unitless*

N pavement= 0.02 *unitless*

Rainfall Intensity-Duration-Frequency Coefficients for Texas

Based on United States Geological Survey (USGS) Scientific Investigations Report 2004-5041

"Atlas of Depth-Duration Frequency of Precipitation Annual Maxima for Texas"

1. Select English or SI Units

English

2. Select or Enter a County

Hidalgo

3. Enter a Time of Conc. Select Units

36.33 min

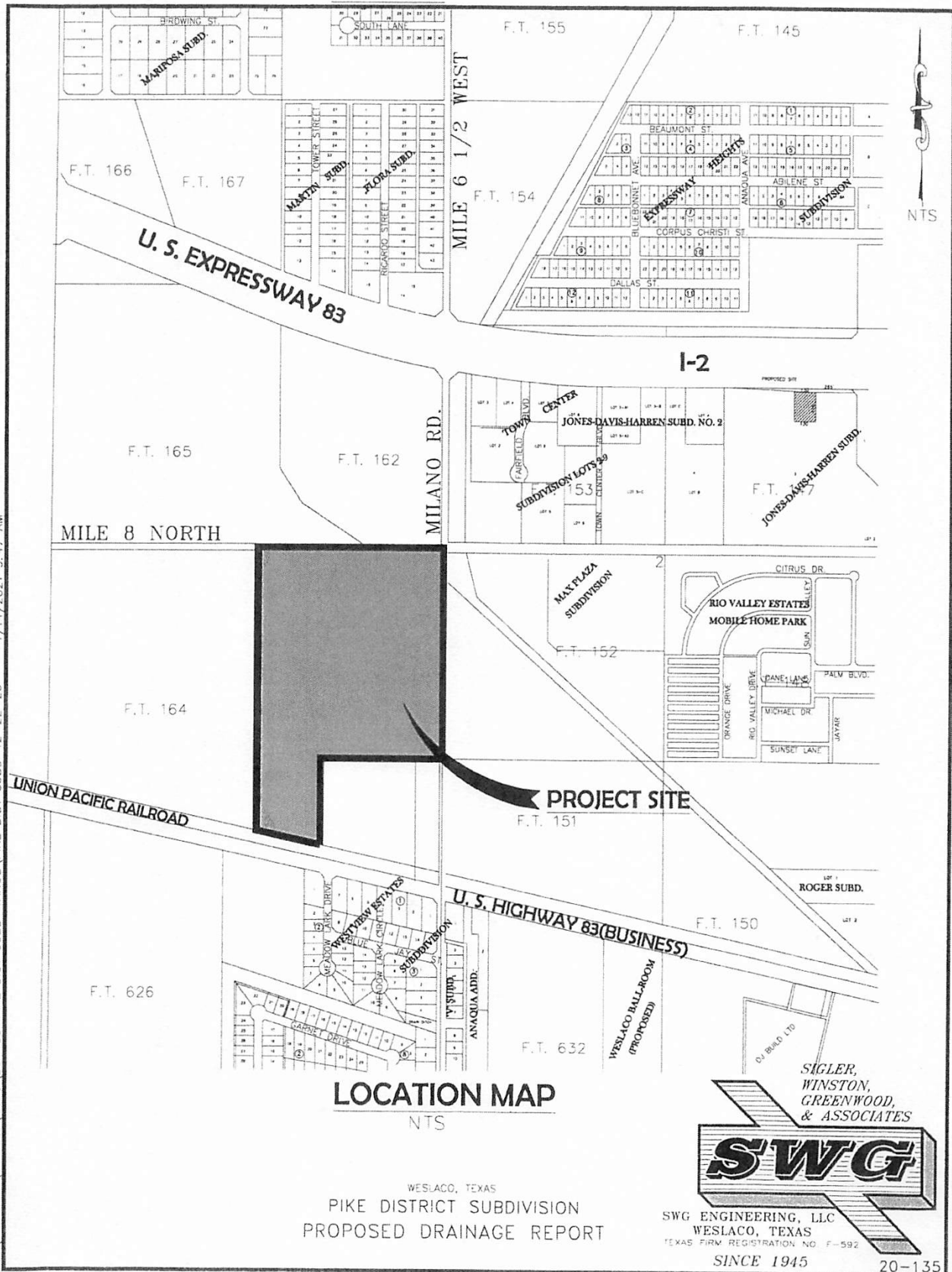
Coefficient	50% (2-year)	20% (5-year)	10% (10-year)	4% (25-year)	2% (50-year)	1% (100-year)
e	0.8645	0.8647	0.8599	0.8572	0.8613	0.8619
b (in.)	72.40	100.21	116.24	140.47	170.66	201.07
d (min)	12.92	13.90	14.33	15.32	16.71	18.00

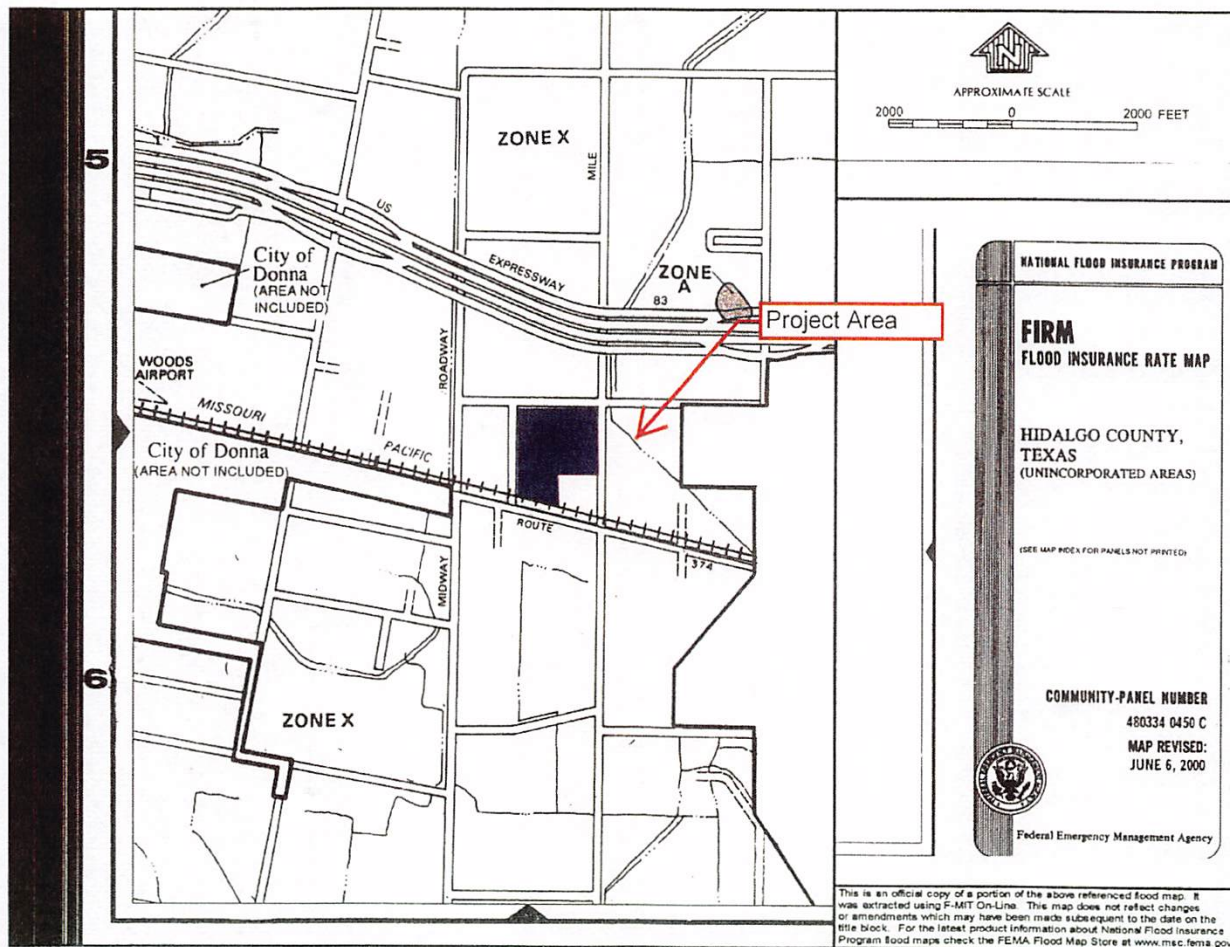
Intensity (in./hr) 2.49 3.39 3.98 4.78 5.58 6.43

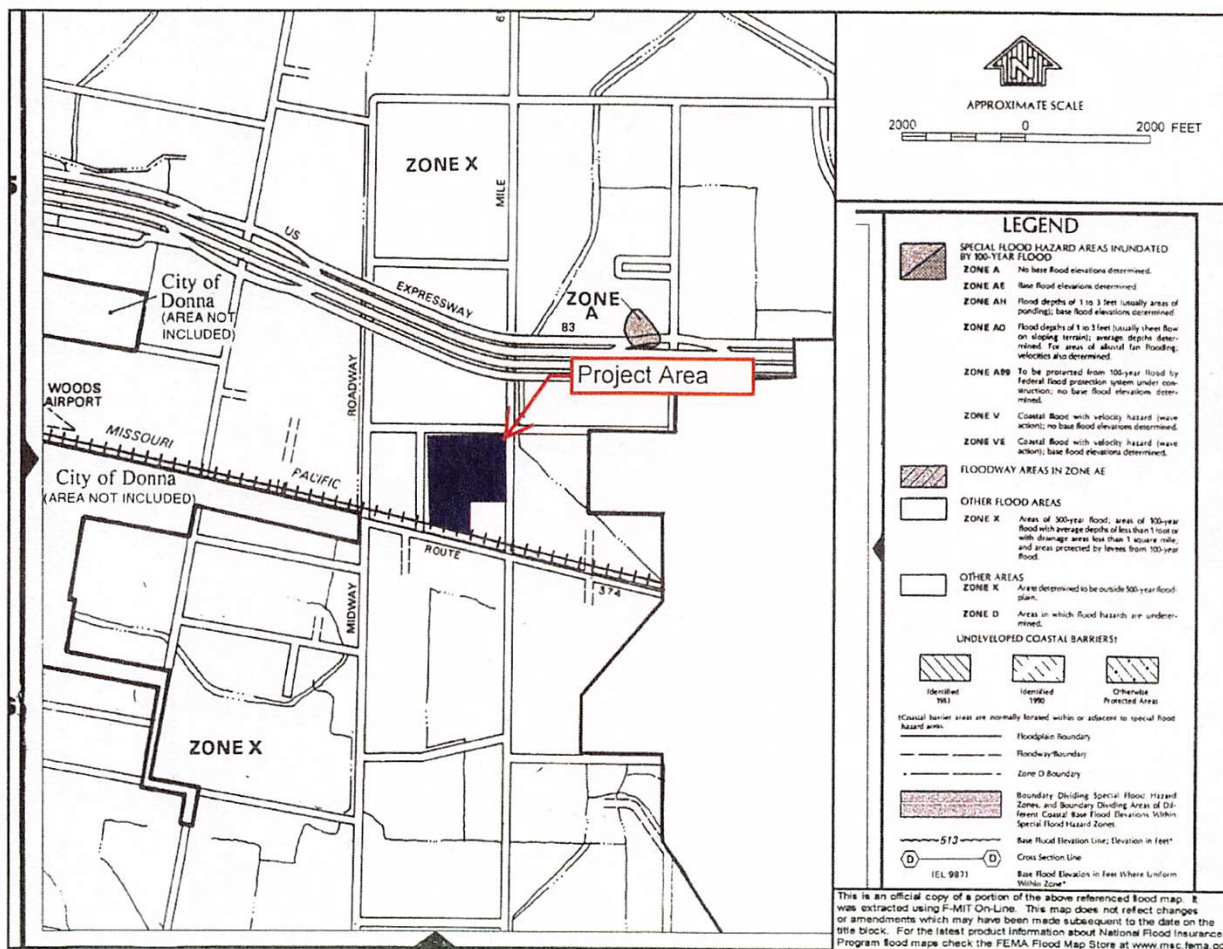
(Spreadsheet Release Date: August 31, 2015; data table reshuffle by Asquith July 14, 2016)

Attachments

Z:\DRAFTING\MANUEL\ACAD\20-135-PIKE DIST SUBD-12-22-20 1/14/2021 9:47 AM







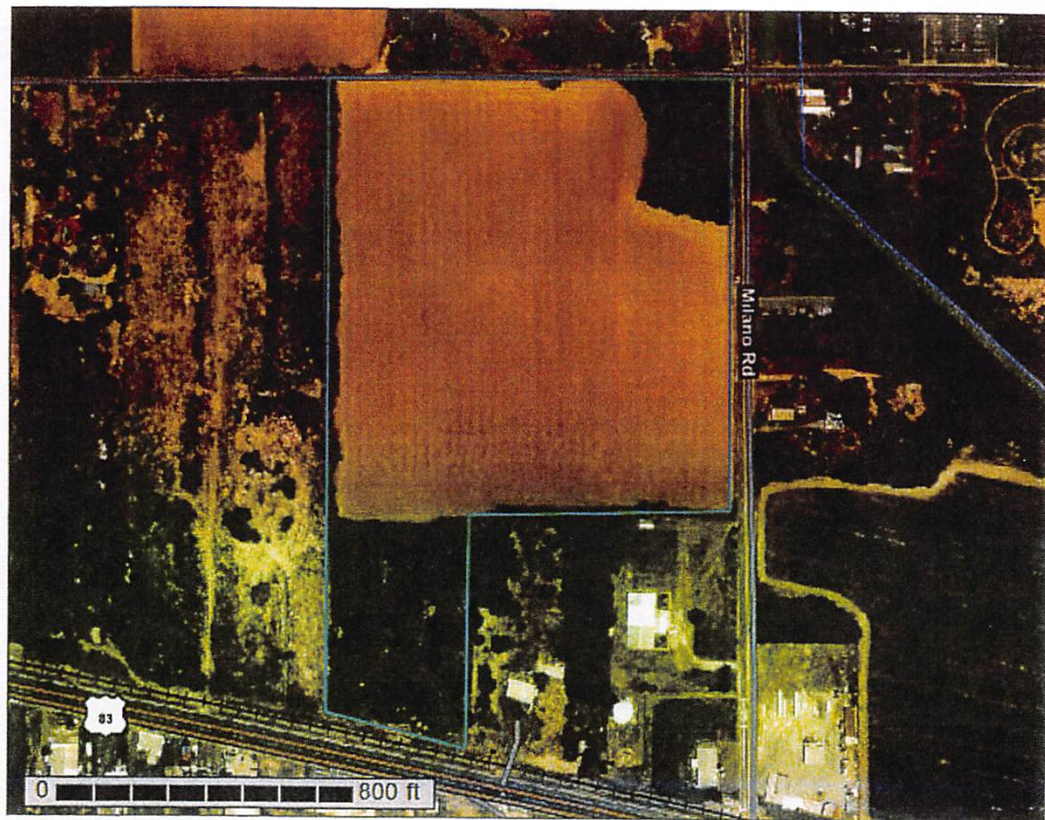




A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Hidalgo County, Texas

Pike District Subdivision



December 28, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

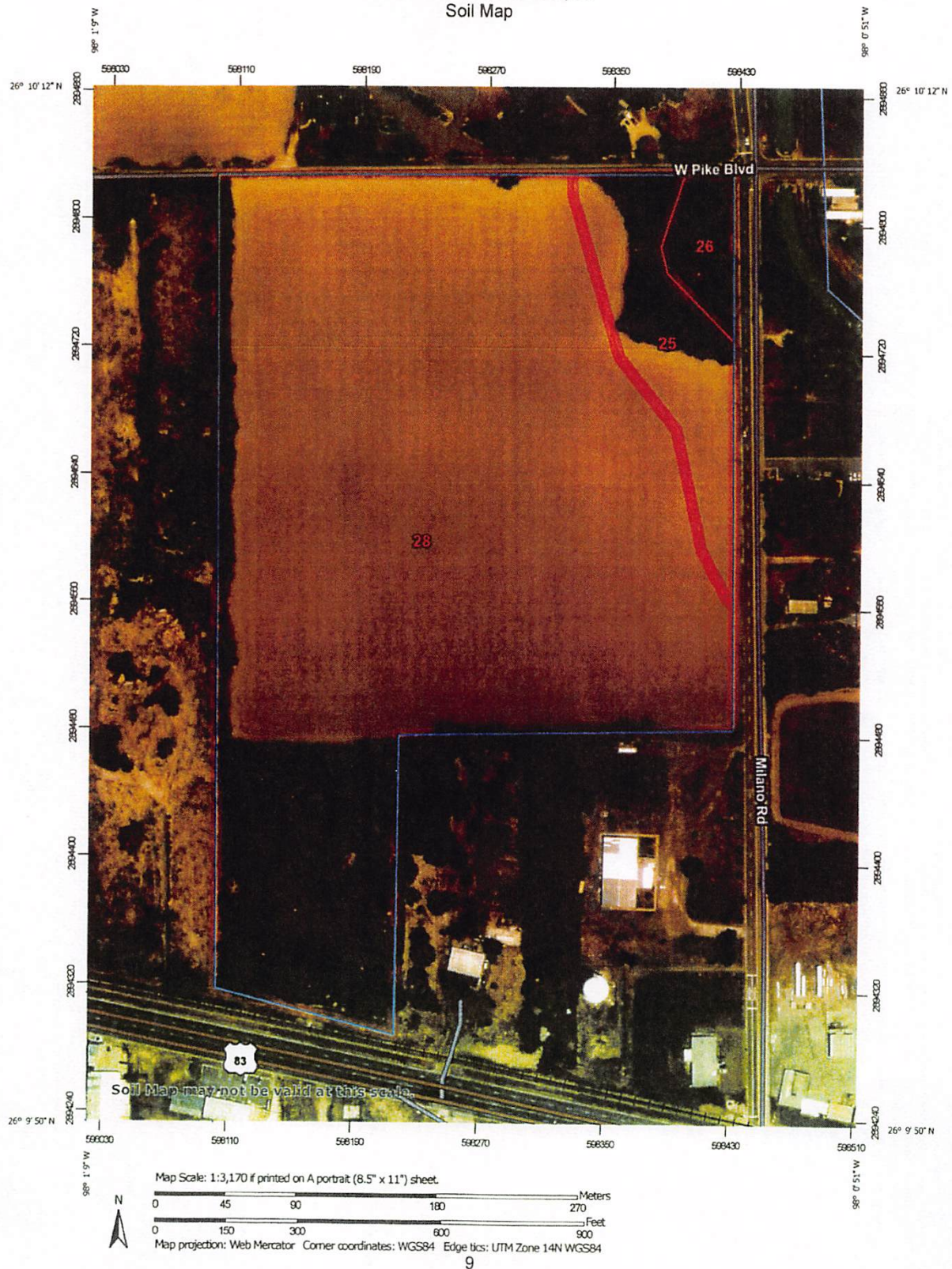
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

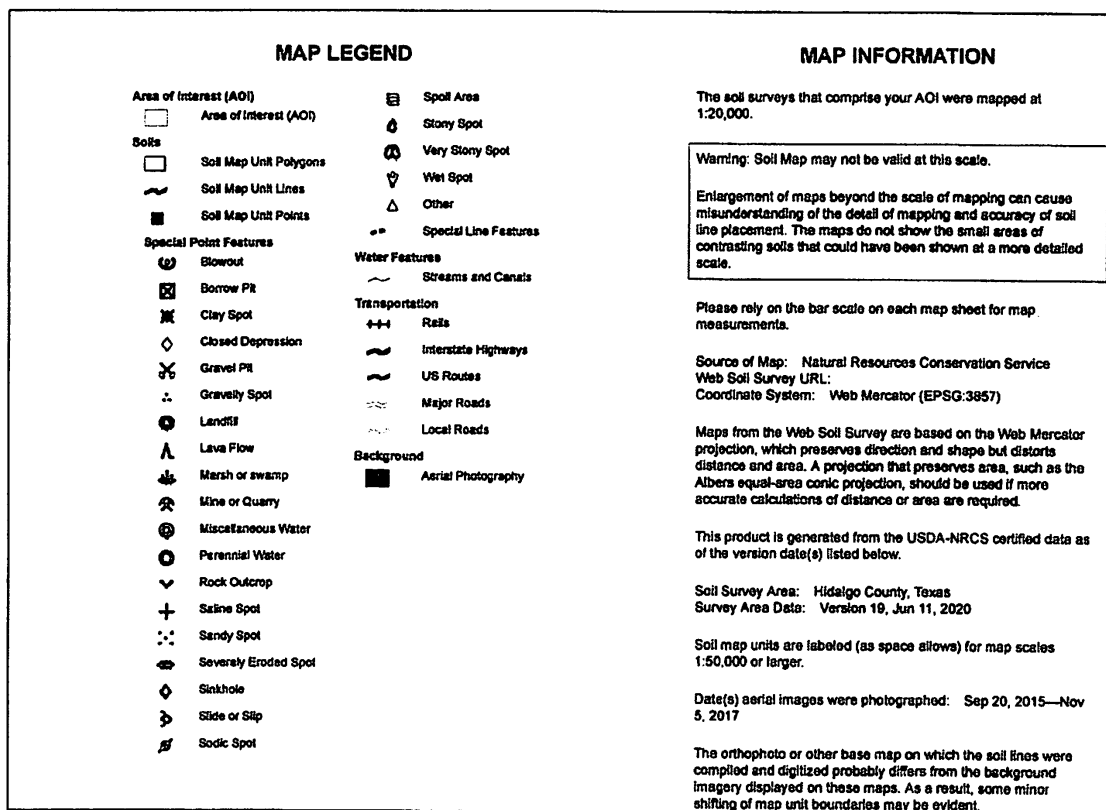
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Custom Soil Resource Report



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Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
25	Hidalgo fine sandy loam, 0 to 1 percent slopes	2.9	8.8%
26	Hidalgo fine sandy loam, 1 to 3 percent slopes	0.8	2.5%
28	Hidalgo sandy clay loam, 0 to 1 percent slopes	29.8	88.7%
Totals for Area of Interest		33.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

Custom Soil Resource Report

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

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Hidalgo County, Texas

25—Hidalgo fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sxn
Elevation: 20 to 500 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hidalgo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: fine sandy loam
Bk1 - 17 to 28 inches: sandy clay loam
Bk2 - 28 to 38 inches: clay loam
Ck - 38 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: R083DY019TX - Gray Sandy Loam
Hydric soil rating: No

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Minor Components

Willacy

Percent of map unit: 10 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Brennan

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083EY023TX - Sandy Loam
Hydric soil rating: No

26—Hidalgo fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2sxvp
Elevation: 20 to 500 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hidalgo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: fine sandy loam
Bk1 - 17 to 28 inches: sandy clay loam
Bk2 - 28 to 38 inches: clay loam
Ck - 38 to 80 inches: clay loam

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Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: R083DY019TX - Gray Sandy Loam
Hydric soil rating: No

Minor Components

Willacy

Percent of map unit: 10 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Brennan

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R083EY023TX - Sandy Loam
Hydric soil rating: No

28—Hidalgo sandy clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sxvl
Elevation: 20 to 500 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: All areas are prime farmland

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Map Unit Composition

Hidalgo and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: sandy clay loam

Bk1 - 17 to 28 inches: sandy clay loam

Bk2 - 28 to 38 inches: clay loam

Ck - 38 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Negligible

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0

Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 2c

Hydrologic Soil Group: B

Ecological site: R083DY019TX - Gray Sandy Loam

Hydric soil rating: No

Minor Components

Raymondville

Percent of map unit: 7 percent

Landform: Terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R083DY025TX - Clay Loam

Hydric soil rating: No

Racombes

Percent of map unit: 6 percent

Landform: Terraces

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Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Willacy

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

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TABLE 16.--ENGINEERING INDEX PROPERTIES
[Absence of an entry indicates that data were not estimated]

Map symbol and soil name	Depth <u>In</u>	USDA texture	Classification		Percentage passing sieve number--				Liquid limit <u>Pct</u>	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
1.* Arenta										
2----- Benito	0-7 7-65	Clay----- Clay-----	CH CH	A-7-6 A-7-6	100 100	100 100	100 100	95-100 95-100	75-94 75-94	48-64 48-64
3, 4----- Brennan	0-13 13-65	Fine sandy loam Sandy clay loam, loam.	SM, SM-SC, SC, CL	A-2-4, A-4 A-2-6, A-4, A-6	100 95-100	98-100 90-100	70-100 60-100	20-45 30-59	<30 22-39	NP-9 8-22
5----- Camargo	0-8 8-65	Silt loam----- Stratified silty clay loam to very fine sandy loam.	CL, CL-ML CL	A-6, A-4 A-6, A-7-6	100 100	100 100	95-100 95-100	70-100 70-100	20-35 30-45	4-16 11-25
6----- Camargo	0-8 8-65	Silty clay loam Stratified silty clay loam to very fine sandy loam.	CL CL	A-6, A-7-6 A-6, A-7-6	100 100	100 100	95-100 95-100	70-100 70-100	30-45 30-45	11-25 11-25
7----- Cameron	0-30 30-65	Silty clay----- Silt loam, loam	CH, CL CL	A-7-6 A-4, A-6	100 100	100 95-100	100 90-100	90-100 70-95	48-68 25-35	25-41 8-15
8----- Comitas	0-28 28-80	Loamy fine sand Fine sandy loam, sandy clay loam.	SM, SM-SC SM, SC, SM-SC	A-2-4 A-2-4, A-2-6, A-4, A-6	95-100 95-100	95-100 90-100	85-100 80-100	15-25 23-50	<25 <34	NP-4 NP-14
9----- Delfina	0-13 13-34 34-72	Loamy fine sand Sandy clay loam, clay loam. Sandy clay loam, fine sandy loam.	SM, SM-SC SC, CL SC	A-2-4, A-4 A-6, A-7-6 A-6, A-7-6	100 100 90-100	100 95-100 75-98	85-100 90-100 70-97	20-45 40-55 36-50	<25 31-48 30-46	NP-7 18-35 16-31
10, 11----- Delfina	0-13 13-34 34-72	Fine sandy loam Sandy clay loam, clay loam. Sandy clay loam, fine sandy loam.	SM-SC, SC, SM SC, CL SC	A-2-4, A-4 A-6, A-7-6 A-6, A-7-6	100 100 90-100	100 95-100 75-98	90-100 90-100 70-97	25-50 40-55 36-50	19-30 31-48 30-46	3-10 18-35 16-31
12----- Delmita	0-13 13-34 34-60	Loamy fine sand Sandy clay loam, fine sandy loam. Indurated-----	SM, SM-SC, SP-SM SC ---	A-2-4 A-2-4, A-2-6, A-4, A-6 ---	100 100 ---	95-100 100 ---	85-100 90-100 ---	11-25 30-50 ---	<25 27-39 ---	NP-7 8-18 ---
13.* Delmita-----	0-13 13-34 34-60	Fine sandy loam Sandy clay loam, fine sandy loam. Indurated-----	SM, SM-SC SC ---	A-2-4 A-2-4, A-2-6, A-4, A-6 ---	100 100 ---	100 100 ---	90-100 90-100 ---	20-35 30-50 ---	<27 27-39 ---	NP-7 8-18 ---

See footnote at end of table.

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TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth <u>In</u>	USDA texture	Classification		Percentage passing sieve number--				Liquid limit <u>Pct</u>	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
13:*										
Randado-----	0-9	Fine sandy loam	SM, SM-SC	A-2-4	75-100	70-100	70-100	20-35	<25	NP-7
	9-16	Fine sandy loam, sandy clay loam.	SC, SM-SC, GC	A-2-4, A-2-6, A-4, A-6	65-100	60-100	60-100	25-50	25-34	7-14
	16-60	Cemented-----	---	---	---	---	---	---	---	---
14-----	0-80	Fine sand-----	SP-SM, SM	A-2-4, A-3	100	100	75-100	5-25	<25	NP-3
Falfurrias										
15-----	0-7	Clay-----	CL, CH	A-7-6	100	100	100	90-100	41-55	20-30
Grulla	7-65	Silty clay, clay	CH	A-7-6	100	100	100	90-100	52-66	28-39
16, 17, 18-----	0-18	Fine sandy loam	SC, SM-SC, SM	A-2-4	100	95-100	95-100	17-35	<30	NP-8
Hargill	18-63	Sandy clay loam	SC, CL	A-6	100	95-100	95-100	40-55	30-40	11-20
	63-80	Sandy clay loam	SC	A-2-4, A-2-6, A-4, A-6	85-100	80-100	75-100	34-50	28-39	9-18
19, 20-----	0-8	Clay-----	CH	A-7-6	100	100	100	90-100	51-85	32-60
Harlingen	8-35	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
	35-72	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
21:*										
Harlingen-----	0-8	Clay-----	CH	A-7-6	100	100	100	90-100	51-85	32-60
	8-35	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
	35-72	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
Urban land.										
22, 23, 24-----	0-17	Sandy loam-----	SM	A-2-4	100	100	75-100	13-24	<25	NP-4
Hebbronville	17-58	Fine sandy loam, loam.	SM, SM-SC	A-2-4	100	100	90-100	20-30	<30	NP-7
	58-65	Fine sandy loam, loam.	SM-SC, SC	A-2-4, A-4, A-2-6, A-6	95-100	90-100	90-100	20-40	20-30	4-13
25, 26, 27-----	0-17	Fine sandy loam	SC, SM-SC	A-4, A-6	100	95-100	90-100	36-50	20-30	4-11
Hidalgo	17-28	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	90-100	36-80	30-40	11-20
	28-80	Clay loam, sandy clay loam.	CL, SC	A-6, A-7-6	90-100	80-100	75-99	44-80	30-44	11-23
28, 29, 30-----	0-17	Sandy clay loam	SC, CL	A-6	100	95-100	90-100	36-55	29-40	11-20
Hidalgo	17-28	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	90-100	36-80	30-40	11-20
	28-80	Clay loam, sandy clay loam.	CL, SC	A-6, A-7-6	90-100	80-100	75-99	44-80	30-44	11-23
31:*										
Hidalgo-----	0-17	Sandy clay loam	SC, CL	A-6	100	95-100	90-100	36-50	29-40	11-20
	17-28	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	90-100	36-80	30-40	11-20
	28-80	Clay loam, sandy clay loam.	CL, SC	A-6, A-7-6	90-100	80-100	75-99	44-80	30-44	11-23
Urban land.										

See footnote at end of table.

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TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	<u>In</u>								<u>Pct</u>	
32:*										
Jimenez-----	0-8	Very gravelly loam.	GC, GM-GC	A-1, A-2-4, A-2-6	30-58	15-40	15-35	15-30	22-35	5-15
	8-10	Cemented-----	---	---	---	---	---	---	---	---
	10-60	Variable-----	---	---	---	---	---	---	---	---
Quemado-----	0-6	Very gravelly sandy loam.	GM, GC, GM-GC	A-1, A-2	30-50	20-50	15-35	15-30	<25	NP-10
	6-12	Very gravelly sandy loam, very gravelly loam, very gravelly sandy clay loam.	GM, GC, GM-GC	A-1, A-2	30-50	20-50	15-35	15-30	18-28	2-10
	12-18	Cemented-----	---	---	---	---	---	---	---	---
	18-60	Variable-----	---	---	---	---	---	---	---	---
33-----										
Laredo	0-14	Silty clay loam	CL	A-6, A-7-6, A-4	100	100	90-100	85-100	28-44	9-22
	14-65	Silty clay loam, silt loam, very fine sandy loam.	CL	A-6, A-7-6, A-4	100	95-100	90-100	70-95	28-43	9-21
34-----										
Matamoros	0-65	Silty clay, stratified silt loam to clay.	CH	A-7-6	100	100	100	95-100	51-65	30-41
35, 36, 37-----										
McAllen	0-14	Fine sandy loam	CL, SC, CL-HL, SM-SC	A-4, A-6	100	100	95-100	36-55	21-30	4-11
	14-72	Sandy clay loam, clay loam, fine sandy loam.	CL, SC	A-6	95-100	90-100	85-100	45-70	28-40	11-20
38-----										
McAllen	0-14	Sandy clay loam	CL, SC	A-6	100	100	95-100	36-55	29-40	11-20
	14-72	Sandy clay loam, clay loam, fine sandy loam.	CL, SC	A-6	95-100	90-100	85-100	45-70	28-40	11-20
39, 40, 41-----										
Mercedes	0-19	Clay-----	CH	A-7-6	85-100	80-100	80-100	75-95	55-76	32-49
	19-57	Clay-----	CH, CL-CH	A-7-6	85-100	80-100	80-100	75-95	50-76	32-49
	57-65	Clay-----	CH, CL	A-7-6	85-100	80-100	80-100	75-95	48-76	32-49
42-----										
Nueces	0-29	Fine sand-----	SP-SM, SM, SM-SC	A-2-4, A-3	100	95-100	90-100	8-35	<25	NP-6
	29-72	Sandy clay loam, sandy loam.	SC	A-2-6, A-6	90-100	90-100	80-100	20-50	25-40	11-20
43:*										
Nueces-----	0-29	Fine sand-----	SP-SM, SM, SM-SC	A-2-4, A-3	100	95-100	90-100	8-35	<25	NP-6
	29-72	Sandy clay loam, sandy loam.	SC	A-2-6, A-6	90-100	90-100	80-100	20-50	25-40	11-20
Sarita-----										
	0-48	Fine sand-----	SM-SC, SP-SM, SM	A-2-4, A-3	100	100	65-100	9-35	<25	NP-7
	48-80	Sandy clay loam, fine sandy loam.	SC	A-2-6, A-6	100	100	80-100	30-50	28-40	11-22
44-----										
Olmito	0-47	Silty clay-----	CH	A-7-6	100	100	100	90-100	51-70	28-44
	47-65	Silty clay, silty clay loam.	CH	A-7-6	95-100	90-100	85-100	85-100	51-70	28-44

See footnote at end of table.

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TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	<u>In</u>								<u>Pct</u>	
45,* 46,* 47.* Pits										
48, 49----- Racombe	0-13 13-49 49-72	Sandy clay loam Sandy clay loam, clay loam. Sandy clay loam, clay loam.	CL, SC CL, SC CL, SC	A-4, A-6 A-6, A-7 A-6	100 100 90-100	100 95-100 80-100	95-100 90-100 80-95	45-65 45-65 40-65	27-35 34-43 30-40	8-15 15-22 11-20
50----- Ramadero	0-21 21-65	Sandy clay loam Sandy clay loam, clay loam.	CL, SC CL, SC	A-6, A-4 A-6, A-7	100 100	100 95-100	95-100 90-100	45-65 45-65	27-39 32-42	9-18 13-21
51: * Randado-----	0-9 9-16 16-60	Fine sandy loam Fine sandy loam, sandy clay loam. Cemented-----	SM, SM-SC SC, SM-SC, GC ---	A-2-4 A-2-4, A-2-6, A-4, A-6 ---	75-100 65-100 ---	70-100 60-100 ---	70-100 60-100 ---	20-35 25-50 ---	<25 25-34 ---	NP-7 7-14 ---
Cuevitas-----	0-8 8-60	Fine sandy loam Cemented-----	SM, SM-SC, SC ---	A-2-4 ---	80-100 ---	80-100 ---	80-100 ---	20-35 ---	<28 ---	NP-9 ---
52, 53----- Raymondville	0-15 15-43 43-65	Clay loam----- Clay, clay loam Clay, clay loam	CL CL, CH CL, CH	A-6, A-7-6 A-6, A-7-6 A-7-6	100 100 100	100 95-100 85-100	95-100 95-100 80-100	51-85 75-95 75-95	37-50 38-55 40-53	18-30 19-35 20-30
54: * Raymondville----	0-15 15-43 43-65	Clay loam----- Clay, clay loam Clay, clay loam	CL CL, CH CL, CH	A-6, A-7-6 A-6, A-7-6 A-7-6	100 100 100	100 95-100 85-100	95-100 95-100 80-100	51-85 75-95 75-95	37-50 38-55 40-53	18-30 19-35 20-30
Urban land.										
55, 56----- Reynosa	0-15 15-48 48-65	Silty clay loam Silty clay loam, silt loam. Stratified silty clay loam to silt loam.	CL, CL-ML CL CL, CL-ML	A-6, A-4, A-7-6 A-6, A-4, A-7-6 A-6, A-4, A-7-6	100 100 100	100 100 100	95-100 95-100 90-100	80-100 80-100 70-100	25-45 28-44 20-49	7-25 9-23 4-29
57: * Reynosa-----	0-15 15-48 48-65	Silty clay loam Silty clay loam, silt loam. Stratified silty clay loam to silt loam.	CL, CL-ML CL CL, CL-ML	A-6, A-4, A-7-6 A-6, A-4, A-7-6 A-6, A-4, A-7-6	100 100 100	100 100 100	95-100 95-100 90-100	80-100 80-100 70-100	25-45 28-44 20-49	7-25 9-23 4-29
Urban land.										
58, 59----- Rio	0-12 12-38 38-63	Fine sandy loam Clay loam, clay Clay loam, sandy clay, sandy clay loam.	SC, SM-SC CL, CH CL	A-2-4, A-4 A-7-6 A-7-6	95-100 95-100 95-100	95-100 95-100 95-100	95-100 95-100 85-95	30-48 75-95 55-80	<30 43-57 41-50	5-10 21-32 20-27

See footnote at end of table.

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TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Percentage passing sieve number--				Liquid limit Pot	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
60, 61----- Rio	0-12 12-38 38-63	Clay loam----- Clay loam, clay Clay loam, sandy clay, sandy clay loam.	CL CL, CH CL	A-6, A-7 A-7-6 A-7-6	95-100 95-100 95-100	95-100 95-100 95-100	95-100 95-100 85-95	70-80 75-95 55-80	35-45 43-57 41-50	15-22 21-32 20-27
62----- Rio Grande	0-8 8-65	Silt loam----- Stratified silt loam to loamy very fine sand.	CL, CL-ML CL, CL-ML	A-4, A-6 A-4, A-6	100 100	100 100	95-100 95-100	70-95 70-100	20-30 20-33	4-12 4-12
63----- Rio Grande	0-8 8-65	Silty clay loam Stratified silt loam to loamy very fine sand.	CL CL, CL-ML	A-6, A-7 A-4, A-6	100 100	100 100	95-100 95-100	80-100 70-100	30-43 20-33	11-18 4-12
64, 65----- Runn	0-55 55-65	Silty clay----- Silty clay, silty clay loam, silt loam.	CH, CL CH, CL CL-ML	A-7-6 A-6 A-7-6, A-4	100 100	100 95-100	95-100 90-100	85-98 70-98	43-62 21-62	21-36 4-36
66----- Serita	0-48 48-80	Fine sand----- Sandy clay loam, fine sandy loam.	SM-SC, SP-SM, SM SC	A-2-4, A-3 A-2-6, A-6	100 100	100 100	65-100 80-100	9-35 30-50	<25 28-40	NP-7 11-22
67----- Tiocono	0-65	Clay-----	CH	A-7-6	100	100	95-100	85-100	56-76	33-49
68.* Urban land										
69.* Ustorthents										
70, 71----- Willacy	0-14 14-80	Fine sandy loam Sandy clay loam, fine sandy loam.	SC, SM-SC SC, CL	A-2-4, A-4 A-4, A-6	100 95-100	100 90-100	95-100 90-100	30-45 36-65	20-30 28-40	5-10 9-20
72.* Willacy-----	0-14 14-80	Fine sandy loam Sandy clay loam, fine sandy loam.	SC, SM-SC SC, CL	A-2-4, A-4 A-4, A-6	100 95-100	100 90-100	95-100 90-100	30-45 36-65	20-30 28-40	5-10 9-20
Urban land.										
73----- Zalla	0-9 9-65	Loamy fine sand Loamy fine sand, fine sand, sand.	SP-SM, SM SM-SC SP-SM, SM, SM-SC	A-2-4 A-2-4	95-100 95-100	95-100 95-100	70-85 70-85	10-25 10-25	<25 <25	NP-7 NP-7
74----- Zalla	0-9 9-65	Silt loam----- Loamy fine sand, fine sand, sand.	CL, CL-ML, ML SP-SM, SM, SM-SC	A-4, A-6 A-2-4	100 95-100	100 95-100	90-100 70-85	70-80 10-25	<30 <25	NP-11 NP-7

* See description of the map unit for composition and behavior characteristics of the map unit.

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TABLE 18.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol > means more than. Absence of an entry indicates that the feature is not a concern]

Map symbol and soil name	Hydro-logic group	Flooding			High water table			Cemented pan		Risk of corrosion	
		Frequency	Duration	Months	Depth Ft	Kind	Months	Depth In	Hard-ness	Uncoated steel	Concrete
1.* Arents											
2----- Benito	D	Occasional	Long-----	Sep-May	4.0-6.0	Apparent	Sep-May	---	---	High-----	Low.
3, 4----- Brennan	B	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
5, 6----- Camargo	B	Rare-----	Brief-----	Sep-May	>6.0	---	---	---	---	Moderate	Low.
7----- Cameron	D	None-----	---	---	5.0-6.0	Apparent	Sep-May	---	---	High-----	Low.
8----- Comitas	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
9, 10, 11----- Delfina	B	None-----	---	---	2.5-5.0	Apparent	Sep-May	---	---	High-----	Low.
12----- Delmita	C	None-----	---	---	>6.0	---	---	20-40	Thin	Moderate	Low.
13.* Delmita-----	C	None-----	---	---	>6.0	---	---	20-40	Thin	Moderate	Low.
Randado-----	C	None-----	---	---	>6.0	---	---	8-20	Thin	Moderate	Low.
14----- Falfurrias	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
15** Grulla	D	Frequent-----	Very long	Sep-May	+2-6.0	Apparent	Sep-May	---	---	High-----	Low.
16, 17, 18----- Hargill	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
19----- Harlingen	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
20----- Harlingen	D	None-----	---	---	5.0-6.0	---	---	---	---	High-----	Moderate.
21.* Harlingen----- Urban land.	D	None to rare	---	---	>6.0	---	---	---	---	High-----	Low.
22, 23, 24----- Hebbronville	B	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
25, 26, 27, 28, 29----- Hidalgo	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
30----- Hidalgo	B	None-----	---	---	2.5-5.0	Apparent	Sep-May	---	---	High-----	Low.
31.* Hidalgo----- Urban land.	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
32.* Jimenez-----	C	None-----	---	---	>6.0	---	---	7-20	Thin	High-----	Low.

See footnotes at end of table.

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TABLE 18.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table			Cemented pan		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hard- ness	Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>			
32:*											
Quemado-----	C	None-----	---	---	>6.0	---	---	10-20	Thin	Moderate	Low.
33-----	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
Laredo-----											
34-----	C	Occasional	Long-----	Sep-May	>6.0	---	---	---	---	High-----	Low.
Matamoros-----											
35, 36, 37, 38----	C	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
McAllen-----											
39, 40, 41-----	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
Mercedes-----											
42-----	C	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
Nueces-----											
43:*											
Nueces-----	C	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
Sarita-----	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
44, 44-----	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
Olmito-----											
45,* 46,* 47.*											
Pits-----											
48-----	B	Rare-----	---	---	>6.0	---	---	---	---	High-----	Low.
Racombe-----											
49-----	B	Rare-----	---	---	1.5-4.5	Apparent	Sep-May	---	---	High-----	Low.
Racombe-----											
50-----	B	Common-----	Brief-----	Sep-May	>6.0	---	---	---	---	High-----	Low.
Ramadero-----											
51:*											
Randado-----	C	None-----	---	---	>6.0	---	---	8-20	Thin	Moderate	Low.
Cuevitas-----	D	None-----	---	---	>6.0	---	---	8-14	Thin	Moderate	Low.
52-----	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
Raymondville-----											
53-----	D	None-----	---	---	2.5-4.5	Apparent	Sep-May	---	---	High-----	Low.
Raymondville-----											
54:*											
Raymondville-----	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
Urban land.											
55-----	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
Reynosa-----											
56-----	B	None-----	---	---	1.5-4.5	Apparent	Sep-May	---	---	High-----	Low.
Reynosa-----											
57:*											
Reynosa-----	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
Urban land.											
58**-----	D	Frequent-----	Long-----	Sep-May	+2-6.0	Apparent	Sep-May	---	---	High-----	Low.
Rio-----											
59**-----	D	Frequent-----	Long-----	Sep-May	+2-4.5	Apparent	Sep-May	---	---	High-----	Low.
Rio-----											

See footnotes at end of table.

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TABLE 18.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table			Cemented pan		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hard- ness	Uncoated steel	Concrete
60**----- Rio	D	Frequent----	Long-----	Sep-May	+2-6.0	Apparent	Sep-May	---	---	High-----	Low.
61**----- Rio	D	Frequent----	Long-----	Sep-May	+2-4.5	Apparent	Sep-May	---	---	High-----	Low.
62, 63----- Rio Grande	B	Rare-----	Brief-----	Sep-May	>6.0	---	---	---	---	High-----	Low.
64----- Runn	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
65----- Runn	D	None-----	---	---	2.5-5.0	Apparent	Sep-May	---	---	High-----	Low.
66----- Sarita	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
67**----- Tiocano	D	Frequent----	Long-----	Sep-May	+3-6.0	Perched	Sep-May	---	---	High-----	Low.
68.* Urban land											
69.* Ustorthents											
70, 71----- Willacy	B	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
72:* Willacy----- Urban land.	B	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
73----- Zalla	A	Occasional	Brief-----	Sep-May	>6.0	---	---	---	---	High-----	Low.
74----- Zalla	A	Rare-----	Brief-----	Sep-May	>6.0	---	---	---	---	High-----	Low.

* See description of the map unit for composition and behavior characteristics of the map unit.
** In the "High water table--Depth" column, a plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

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TABLE 15.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated]

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1: # Arents						
2----- Benito	Moderate: seepage.	Moderate: hard to pack, excess salt.	Peres slowly, excess salt.	Slow intake, peres slowly, excess salt.	Peres slowly---	Excess salt, peres slowly.
3, 4----- Brennan	Moderate: seepage.	Moderate: piping.	Favorable-----	Favorable-----	Favorable-----	Favorable.
5, 6----- Camargo	Moderate: seepage.	Moderate: piping.	Floods-----	Erodes easily	Erodes easily	Erodes easily.
7----- Cameron	Severe: seepage.	Moderate: piping.	Favorable-----	Slow intake---	Favorable-----	Favorable.
8----- Comitas	Severe: seepage.	Moderate: seepage, piping.	Cutbanks cave	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
9----- Delfina	Moderate: seepage.	Moderate: wetness.	Favorable-----	Wetness, droughty, fast intake.	Soil blowing---	Favorable.
10, 11----- Delfina	Moderate: seepage.	Moderate: wetness.	Favorable-----	Wetness-----	Favorable-----	Favorable.
12----- Delmita	Severe: seepage.	Moderate: thin layer.	Cemented pan---	Soil blowing, cemented pan.	Cemented pan, soil blowing.	Cemented pan.
13: # Delmita-----	Severe: seepage.	Moderate: thin layer.	Cemented pan---	Soil blowing, cemented pan.	Cemented pan, soil blowing.	Cemented pan.
Randado-----	Severe: cemented pan, seepage.	Severe: thin layer.	Cemented pan---	Cemented pan---	Cemented pan---	Cemented pan.
14----- Falfurrias	Severe: seepage.	Severe: seepage, piping.	Cutbanks cave	Droughty, fast intake.	Too sandy-----	Droughty.
15----- Grulla	Slight-----	Severe: hard to pack, ponding.	Ponding, peres slowly, floods.	Ponding, slow intake, peres slowly.	Ponding, peres slowly.	Wetness, peres slowly.
16, 17----- Hargill	Moderate: seepage.	Moderate: piping.	Favorable-----	Favorable-----	Favorable-----	Favorable.
18----- Hargill	Moderate: seepage, slope.	Moderate: piping.	Slope-----	Slope-----	Favorable-----	Favorable.
19----- Harlingen	Slight-----	Severe: hard to pack.	Peres slowly---	Slow intake, peres slowly.	Peres slowly---	Excess salt, peres slowly.
20----- Harlingen	Slight-----	Moderate: hard to pack, excess salt.	Peres slowly, excess salt.	Droughty, slow intake, peres slowly.	Peres slowly---	Excess salt, droughty, peres slowly.
21: # Harlingen-----	Slight-----	Severe: hard to pack.	Peres slowly---	Slow intake, peres slowly.	Peres slowly---	Excess salt, peres slowly.
Urban land.						

See footnote at end of table.

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TABLE 15.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
22, 23, 24----- Hebbronville	Severe: seepage.	Moderate: piping.	Favorable-----	Favorable-----	Soil blowing---	Favorable.
25, 26----- Hidalgo	Moderate: seepage.	Moderate: piping.	Favorable-----	Favorable-----	Favorable-----	Favorable.
27----- Hidalgo	Moderate: seepage, slope.	Moderate: piping.	Slope-----	Slope-----	Favorable-----	Favorable.
28, 29----- Hidalgo	Moderate: seepage.	Moderate: piping.	Favorable-----	Favorable-----	Favorable-----	Favorable.
30----- Hidalgo	Moderate: seepage.	Moderate: piping, wetness, excess salt.	Excess salt----	Wetness, excess salt.	Wetness-----	Excess salt, droughty.
31: * Hidalgo----- Urban land.	Moderate: seepage.	Moderate: piping.	Favorable-----	Favorable-----	Favorable-----	Favorable.
32: * Jimenez-----	Severe: cemented pan.	Severe: thin layer.	Cemented pan---	Droughty, cemented pan, slope.	Large stones, cemented pan.	Large stones, droughty.
Quemado-----	Severe: cemented pan.	Severe: seepage.	Cemented pan---	Droughty, cemented pan, slope.	Large stones, cemented pan.	Large stones, droughty, cemented pan.
33----- Laredo	Severe: seepage.	Moderate: piping.	Favorable-----	Erodes easily	Erodes easily	Erodes easily.
34----- Matamoros	Slight-----	Moderate: hard to pack.	Peres slowly, floods.	Slow intake, peres slowly, floods.	Peres slowly---	Peres slowly.
35, 36, 37, 38--- McAllen	Moderate: seepage.	Moderate: piping.	Favorable-----	Favorable-----	Favorable-----	Favorable.
39----- Mercedes	Slight-----	Severe: hard to pack.	Peres slowly---	Slow intake, peres slowly.	Peres slowly---	Peres slowly.
40----- Mercedes	Slight-----	Severe: hard to pack.	Peres slowly---	Slow intake, peres slowly, excess salt.	Peres slowly---	Excess salt, droughty, peres slowly.
41----- Mercedes	Slight-----	Severe: hard to pack.	Peres slowly---	Slow intake, peres slowly.	Peres slowly---	Peres slowly.
42----- Nueces	Moderate: seepage.	Severe: seepage, piping.	Cutbanks cave	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
43: * Nueces-----	Moderate: seepage.	Severe: seepage, piping.	Cutbanks cave	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
Sarita-----	Severe: seepage.	Severe: seepage, seepage.	Cutbanks cave	Droughty, fast intake.	Too sandy-----	Droughty.
44----- Olmito	Slight-----	Moderate: hard to pack.	Peres slowly---	Slow intake, peres slowly.	Peres slowly---	Peres slowly.

See footnote at end of table.

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TABLE 15.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
45,* 46,* 47.* Pits						
48----- Racombes	Moderate: seepage.	Slight-----	Favorable-----	Favorable-----	Favorable-----	Favorable.
49----- Racombes	Moderate: seepage.	Severe: wetness, excess salt.	Excess salt----	Wetness, droughty, excess salt.	Wetness-----	Excess salt, droughty.
50----- Ramadero	Moderate: seepage.	Moderate: piping.	Floods-----	Floods-----	Favorable-----	Favorable.
51:* Randado-----	Severe: cemented pan, seepage.	Severe: thin layer.	Cemented pan---	Cemented pan---	Cemented pan---	Cemented pan.
Cuevitas-----	Severe: cemented pan, seepage.	Severe: thin layer.	Cemented pan---	Cemented pan---	Cemented pan---	Cemented pan.
52----- Raymondville	Slight-----	Moderate: hard to pack.	Percs slowly---	Slow intake, percs slowly.	Percs slowly---	Percs slowly.
53----- Raymondville	Slight-----	Severe: excess salt.	Percs slowly, excess salt.	Wetness, droughty, excess salt.	Wetness, percs slowly.	Excess salt, droughty, percs slowly.
54:* Raymondville-----	Slight-----	Moderate: hard to pack.	Percs slowly---	Slow intake, percs slowly.	Percs slowly---	Percs slowly.
Urban land.						
55----- Reynosa	Severe: seepage.	Moderate: thin layer, piping.	Favorable-----	Erodes easily	Erodes easily	Erodes easily.
56----- Reynosa	Severe: seepage.	Moderate: piping, wetness, excess salt.	Excess salt----	Wetness, excess salt, erodes easily.	Erodes easily, wetness.	Excess salt, erodes easily, droughty.
57:* Reynosa-----	Severe: seepage.	Moderate: thin layer, piping.	Favorable-----	Erodes easily	Erodes easily	Erodes easily.
Urban land.						
58----- Rio	Slight-----	Severe: ponding.	Ponding, percs slowly, floods.	Ponding, percs slowly, floods.	Ponding, percs slowly.	Wetness, percs slowly.
59----- Rio	Slight-----	Severe: ponding, excess salt.	Ponding, percs slowly, floods.	Ponding, droughty, percs slowly.	Ponding, percs slowly.	Wetness, excess salt, droughty.
60----- Rio	Slight-----	Severe: ponding.	Ponding, percs slowly, floods.	Ponding, percs slowly, floods.	Ponding, percs slowly.	Wetness, percs slowly.
61----- Rio	Slight-----	Severe: ponding, excess salt.	Ponding, percs slowly, floods.	Ponding, droughty, percs slowly.	Ponding, percs slowly.	Wetness, excess salt, droughty.
62, 63----- Rio Grande	Severe: seepage.	Severe: piping.	Floods-----	Erodes easily, floods.	Erodes easily	Erodes easily.

See footnote at end of table.

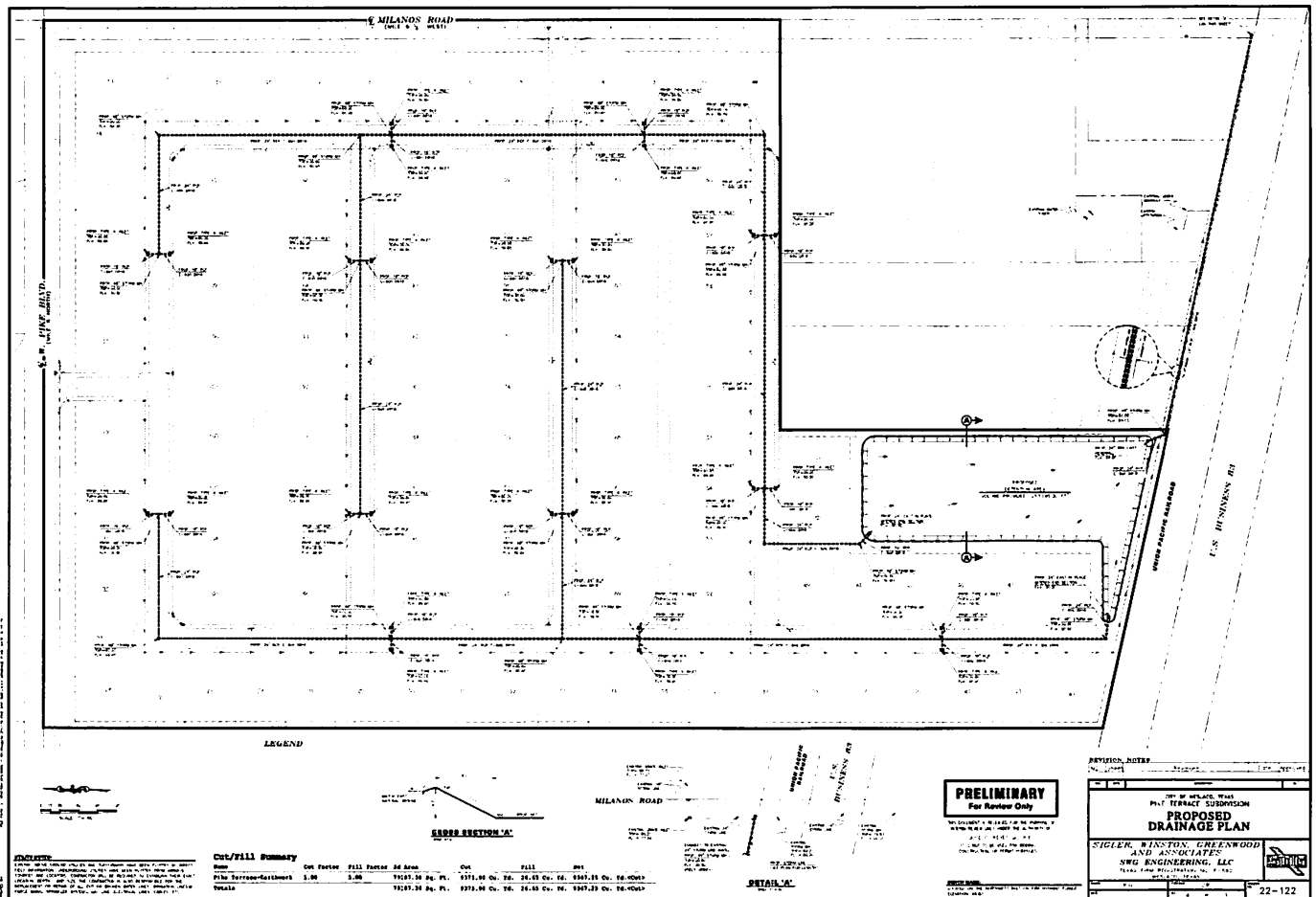
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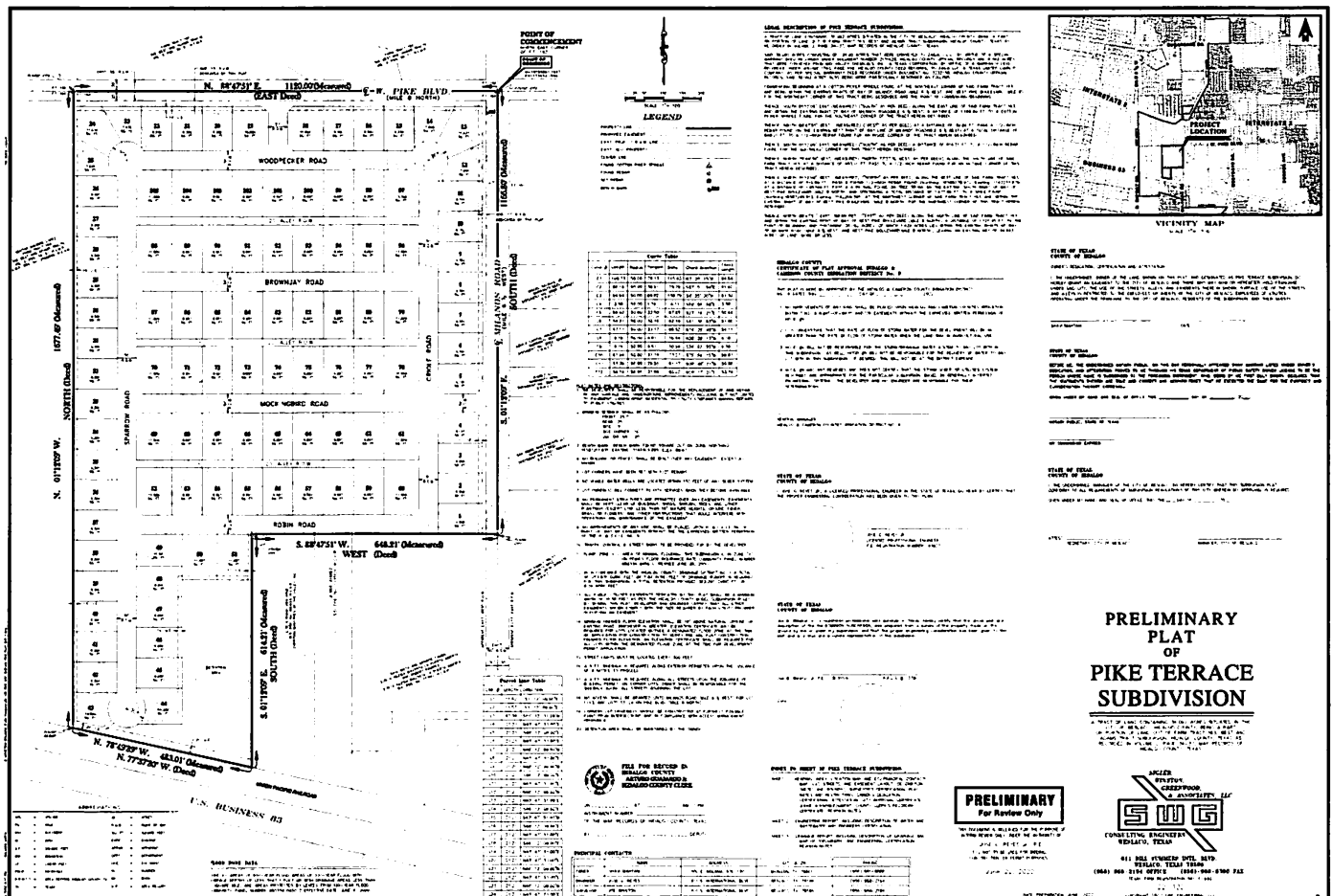
Soil survey

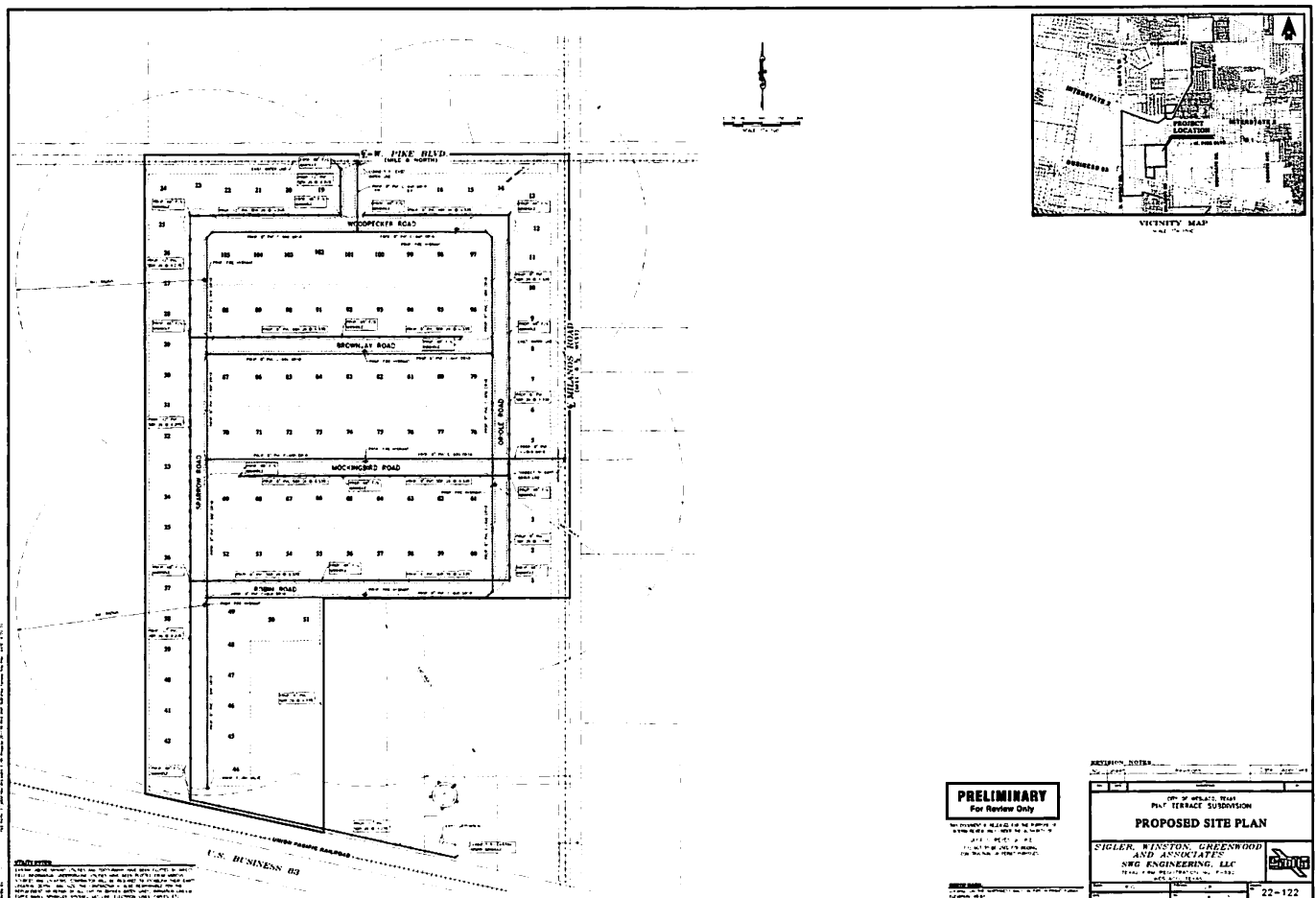
TABLE 15.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
64----- Runn	Moderate: seepage.	Moderate: hard to pack.	Peres slowly---	Slow intake, peres slowly, excess salt.	Peres slowly---	Peres slowly.
65----- Runn	Moderate: seepage.	Moderate: hard to pack, wetness, excess salt.	Peres slowly, excess salt.	Slow intake, peres slowly, excess salt.	Wetness, peres slowly.	Excess salt, erodes easily, peres slowly.
66----- Sarita	Severe: seepage.	Severe: seepage, seepage.	Cutbanks cave	Droughty, fast intake.	Too sandy-----	Droughty.
67----- Tiocano	Slight-----	Severe: hard to pack, ponding.	Ponding, peres slowly, floods.	Ponding, slow intake, peres slowly.	Ponding, peres slowly.	Wetness, peres slowly.
68.* Urban land						
69.* Ustorthents						
70, 71----- Willacy	Moderate: seepage.	Slight-----	Favorable-----	Favorable-----	Favorable-----	Favorable.
72.* Willacy----- Urban land.	Moderate: seepage.	Slight-----	Favorable-----	Favorable-----	Favorable-----	Favorable.
73, 74----- Zalla	Severe: seepage.	Severe: seepage, piping.	Floods-----	Droughty, fast intake.	Too sandy-----	Droughty.

* See description of the map unit for composition and behavior characteristics of the map unit.









**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V. E.
From: Rebekah de la Fuente, Planning Director, on behalf of Carlos Garza.	
Subject/Agenda Item: Discussion and consideration for the Preliminary Plat for The Coves – being 18.48 acres out of Farm Tract 1030, West and Adams Tract Subdivision, Weslaco, Hidalgo County, Texas located on the Southside of mile 8 N. Rd. approximately 710' East of International blvd. Possible Action.	
Discussion/Overview: The proposed sixty-four (64) lot subdivision is inside the City of Weslaco. This subdivision is being serviced with water by the North Alamo Water Supply Co. through an 8" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "X". Applicant is requesting a variance for off-site drainage.	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval of Preliminary Plat and compliance with the ordinance on the variance.	
Additional Action Prompted: [X] Mayor's Signature [] Public Hearing [] Budget Amendment [] Resolution [] Ordinance – First Reading [] Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



SUBDIVISION PLATTING APPLICATION

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. _____

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

STAFF USE ONLY

☐ Single Lot Variance ☐ Minor Plat ☐ Planned Unit Development ☐ Standard Subdivision

GENERAL INFORMATION

Name of Subdivision: The Coves

Location: South side of Mi 8 N (E. Pike Blvd), approx 710' east of FM 1015

Legal Description: 18.48 acres, more or less, out of Farm Tract 1030, West And Adams Tract Subdivision, according to the Map or Plat recorded in Vol. 2, Pages 34-37, H.C.M.R.

Is subdivision inside city limits? ☒ YES ☐ NO

If subdivision is in the ETJ, indicate? ☐ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: R2

Existing Land Use: VACANT Proposed Land Use: multifamily

Number of Lots Proposed: 64 Gross Acreage: 18.48

Title Report Submitted: ☐ YES ☒ NO

OWNER INFORMATION

Owner's Name: Miguel Brito Telephone: 956-540-5557

Address: 2015 N. Shary Rd- Ste 2 Fax: _____

City: Mission State: TX Zip: 78572 E-mail: info@britoconstruction.com

ENGINEER INFORMATION

Name: AEC Engineering, LL. Telephone: 956-380-6558

Address: PO BOX 480 Fax: 956-380-6110

City: Edinburg State: TX Zip: 78540 E-mail: carlos@aecengineering.net

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

UTILITY PROVISIONS

Will proposed subdivision connect to:

☒ YES ☐ NO Water Provision: _____

☒ YES ☐ NO Wastewater Provision: _____

☒ YES ☐ NO Electric Company: _____

☒ YES ☐ NO Phone Utility _____	☐ YES ☒ NO Gas Utility	☒ YES ☐ NO Cable Utility
---	---	---

Proposed subdivision is in the following districts:

☒ YES ☐ NO Drainage District <u>1</u>	☒ YES ☐ NO Irrigation District <u>9</u>
--	--

Has the property been assessed as flat rate irrigable property: ☒ YES ☐ NO

Have Water Rights been conveyed to City/Water Supplier? ☐ YES ☒ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If **YES**, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR MINOR PLAT REVIEW

_____ **Two (2)** sets of plats **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

_____ **\$355.00** Planning Review fee

_____ One 11" X 17" reduced copy of plat

_____ Plat Layout

_____ Existing & Proposed Easements

_____ Existing & Proposed ROW

_____ Existing & Proposed Drainage Easements

_____ Contours

_____ Flood Zones

_____ Adjoiners

_____ Existing street names

_____ Drainage plans and calculations with engineer's seal

_____ Elevations

_____ Flood directional arrows

_____ Detention areas

_____ Street names

_____ Proof of ownership of the property

_____ If septic tank system required, submit soil evaluation report

_____ Water Rights associated with the property

_____ Tax Receipt for all taxing entities showing that taxes are paid in full

SUBMITTALS REQUIRED FOR PRELIMINARY (P & Z)

_____ **Twelve (12)** sets of preliminary plat **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

_____ **\$350.00** (one time fee for preliminary and final plat)

_____ One 11" X 17" reduced copy of plat

_____ Plat Layout

_____ Existing & Proposed Easements

_____ Existing & Proposed ROW

_____ Existing & Proposed Drainage Easements

- _____ Contours
- _____ Flood Zones
- _____ Adjoiners
- _____ Existing & Proposed street names
- _____ Utility Layout
 - _____ Existing & Proposed Utilities
 - _____ Proposed Fire Hydrants
 - _____ Adjoiners
 - _____ Street names
- _____ Drainage plans and calculations with engineer's seal
 - _____ Elevations
 - _____ Flood directional arrows
 - _____ Detention areas
 - _____ Street names
- _____ Proof of ownership of the property
- _____ If septic tank system required, submit soil evaluation report
- _____ Water Rights associated with the property
- _____ Tax Receipt for all taxing entities showing that taxes are paid in full
- _____ Number of fire hydrants proposed for subdivision
- _____ Trip Generation Worksheet

SUBMITTALS REQUIRED FOR FINAL (P & Z) **Will not apply to Single Lot Variance**

- _____ **Twelve (12) sets of plans FOLDED & STAPLED (24 x 36) & PDF copy with all corrections**
- _____ Plats to be sealed by Professional Engineer
- _____ Approved Drainage Report
- _____ Traffic Impact Analysis (If required)

SUBMITTALS REQUIRED FOR FINAL (City Commission)

- _____ One set of 8 ½ x 11 of plat and utilities with all corrections done

SUBMITTALS REQUIRED FOR PRE-CONSTRUCTION MEETING

- _____ Seven (7) full sets of construction plans 24 x 36 and one (1) 11 x 17 with plan & profile.
- _____ Engineering cost estimates for 3% geotechnical testing fees and 2% inspection fees
- _____ Notice of Intent
- _____ SW3P

SUBMITTALS REQUIRED FOR RECORDING OR HIDALGO COUNTY PLANNING

- _____ Electronic file of final plat and as-builds
- _____ Reproducible plat to be recorded with all required signatures
- _____ 3% geotechnical testing fees or negotiated Material Testing fee by City, whichever is higher
- _____ 2% inspection fee
- _____ Park Fees
- _____ Checks or Receipts: HCCID #9; HCDD #1; County Clerk
- _____ Tax certificates
- _____ Memo from engineering inspector releasing subdivision
- _____ Water Rights associated with the property dedicated and assigned to City of Weslaco or payment of fees sufficient to meet the needs necessitated and attributable to development
- _____ 30 Year Water and 30 Year Sewer Service Agreements
- _____ Park dedication/Fees in lieu of

SUBMITTALS REQUIRED FOR RECORDING BY SECURITY

- _____ Sealed engineering cost estimates
- _____ Letter of Credit/Performance Bond/Escrow

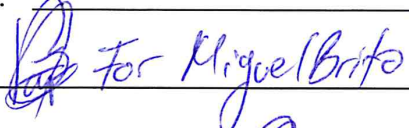
** Any revisions requested would require resubmission of plats and reduced copy reflecting changes.

AUTHORIZATION AND ACKNOWLEDGEMENTS

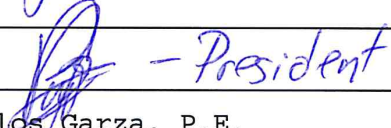
I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: Miguel Brito

Owner Signature:  Date: 07-28-22

_____ is the authorized agent

Authorized Agent Signature:  - President Date: 07-28-22

Authorized Agent Printed Name: Carlos Garza, P.E.

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid: _____

P & Z Commission Approval on Preliminary Plat: _____

P & Z Commission Approval on Final Plat: _____

City Commission Approval on Final Plat: _____

Preconstruction Meeting Date: _____

Date Recorded: _____ Instrument No. _____

General Comments: _____



APPLICATION FOR SUBDIVISION VARIANCE

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. _____

GENERAL INFORMATION

Name of Subdivision: THE COVES

Location: SOUTH SIDE OF MILE 8, APPROX. 710' E. OF FM 1015

Legal Description: 18.48 ACRES OUT OF FARM TRACT 1030, WEST AND ADAMS TRACT SUBD. (VOL. 2, PG 34-37, HCMR)

VARIANCE TYPE:

☐ Streetlights ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Sanitary Sewer ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Setbacks ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Drainage ☒ YES ☐ NO

Describe in detail the reason for the variance request:

77' DEDICATED AT THE SOUTH SIDE OF PROP. SUBD. FOR STORM RUNOFF DISCHARGE. (OFF-SIDE DETENTION)

☐ Minimum Lot Size ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Sidewalks ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Easement Requirements ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Other _____ ☐ YES ☐ NO

Describe in detail the reason for the variance request:

OWNER INFORMATION

Owner's Name: RANCHO BRITO LLC Telephone: (956) 540-5557
Address: 2015 N. SHARY RD. SUITE 2 Fax: _____
City: MISSION State: TX Zip: 78572 E-mail: britoconstruction.com

Application fees

\$50.00 Application fee per variance, plus a \$5.00 processing fee

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: MIGUEL BRITO

Owner Signature: FOR MIGUEL BRITO de Zenea Date: 7/28/22

_____ is the authorized agent

Authorized Agent Signature: de Zenea Date: 7/28/22

Authorized Agent Printed Name: JORGE G. de ZENEA

THE COVES

**DRAINAGE REPORT FOR A 18.48-ACRE (16.85 ACRES NET) TRACT OF LAND OUT
OF FARM TRACT 1030, WEST AND ADAMS TRACT SUBDIVISION, ACCORDING
TO THE MAP OR PLAT RECORDED IN VOLUME 2, PAGES 34-37, H.C.M.R.**

**Located on the south side of Mile 8 North Road (E. Pike Blvd.), approximately
710 feet east of International Blvd. (F.M. 1015), in the City of Weslaco, Texas.**

Prepared By



On: March 24, 2022

PROJECT # 1281.004



Carlos Garza, P.E., P.G., SIT, CAPM, CFM, CESSWI

**Texas Registered Engineering Firm: F-9688
Texas Board of Professional Geoscientists # 50190
Texas Asbestos Consulting Agency # 100517**

**P.O. Box 480
Edinburg, Texas 78540
Phone: (956) 380-6558
www.aecengineering.net**

Table of Contents

- I. Drainage Statement and Report with Hydraulic Calculations
- II. Project Location Map
- III. Flood Insurance Rate Map (FIRM) and Legend
- IV. USGS Map with Project Location
- V. Soil Survey Resource Report
- VI. Set of Plans (Half and Full Size Folded)

SECTION I
Drainage Statement and Report
with Hydraulic Calculations



Drainage Statement for:

THE COVES

A 18.48-acre (16.85 acres net) tract of land out of Farm Tract 1030, West And Adams Tract Subdivision, according to the Map or Plat recorded in Volume 2, Pages 34-37, H.C.M.R., situated in the City of Weslaco, County of Hidalgo, Texas.

March 24, 2022

Project Location and Description

The proposed 18.48-acre (16.85 acres net) is situated in the City of Weslaco, Hidalgo County, Texas; and is coming out of Farm Tract 1030, West And Adams Tract Subdivision, according to the map or plat thereof recorded in Volume 2, Pages 34-37, Map Records of Hidalgo County, Texas. This development is located on the south side of Mile 8 North Road (E. Pike Blvd.), approximately 710 feet east of International Blvd. (F.M. 1015), in the City of Weslaco, Texas.

Floodplain (FEMA Information)

This tract of land is currently vacant, and its future use is residential. The proposed development is situated in Flood Zone X (no shading), as per FEMA FIRM Panel 480334 0450 C, map revised June 6, 2000. Zone X (no shading) is defined as areas determined to be outside of the 500-year floodplain.

Soils Information

According to the USDA NRCS Soils Survey of Hidalgo County, Texas, the soils in this site are classified as 28 (61.5%) and 52 (38.5%). Map Unit Names: "Hidalgo Sandy Clay Loam" and "Raymondville Clay Loam" which belong to Hydrologic Groups B and C, respectively. Group B soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained, or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission. Group C soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Drainage Pattern Determination

The topography in this site indicates that runoff flows relatively in a northerly direction. Post development runoff shall be discharged into an existing H.C.C.I.D. No. 9 drain ditch located at the south side of this development. Said drain ditch will be widened within an area 77 feet deep by 610 feet wide that will be dedicated to H.C.C.I.D. No. 9 by this development. Side slopes for excavated area shall not exceed 3:1 (see detail). The excavation will add an additional runoff storage capacity of 301,990 cubic feet, of which 166,549 (3.82 ac-ft) are required to be detained for this development as per engineered calculations.

Runoff will be conveyed via ten (10) proposed type CC inlets, approximately 716 linear feet of 24" RCP, 268 linear feet of 30" RCP, 984 linear feet of 36" RCP, and 295 linear feet of 48" RCP. There will be two points of discharge at the excavated area (see plans). H.C. C.I.D. No. 9 drain ditch connects with a series of ditches south of this site, and ultimately discharge into the South Mercedes Lateral.

As indicated on the **Drainage Pattern Determination** paragraph, the amount of storm runoff required for this proposed 18.48-acre tract of land (16.45 acres net), is **166,549** cubic feet. The excavation/widening of the existing H.C.C.I.D. No. 9 drain ditch will add a runoff storage capacity of 301,990 cubic feet, which represents an additional 81% of the storage capacity required.

Necessary Detention Quantification

As per City of Weslaco drainage policy, the site will retain the difference in volume between pre-development and post-development conditions, based on a 50-year storm event with a pre-development release rate as indicated below.

As per attached Engineered Calculations, this residential subdivision shall detain 166,549 c.f. cumulatively for the 18.48-acre (16.45-acre net) tract of land and is further broken down below:

Pre-Development Quantifications

Site is currently Nearly bare and untilled soils

Q = 7.15 cfs
I = 4.24 in/hr
Tc = 39.37 min

Post Development Quantifications

Upon site development, will be a 27-lot residential subdivision

Q = 63.14 cfs
I = 6.25 in/hr
Tc = 30.81

The pre-development flow rate averages 7.15 cfs while the post develop flow rate averages 63.14 cfs; creating an incremental average flow rate of 55.99 cfs. The incremental flow rate will be handled by storm sewer improvements as previously described. Site drainage and detention improvements for the proposed development will conform to current **City of Weslaco** and Hidalgo County Drainage District No. 1 ordinances and or policies and approved by the **City of Weslaco** at the time of issuance of building permit.

The information provided on this Drainage Report is information prepared under the direction and supervision of Carlos Garza, P.E., P.G.

Prepared by: AEC Engineering, LLC
Authorized by: Carlos Garza, P.E., P.G.
Contact: 956-380-6558
carlos@aecenineering.net



AEC ENGINEERING, LLC. DRAINAGE REPORT/STATEMENT

PROJECT NAME: The Coves
PROJECT NUMBER: 1281.004
DATE: March 24, 2022
PREPARED BY: Carlos Garza
PHONE NUMBER: (956) 380-6558

COUNTY: Hidalgo
CITY: Weslaco
Number of Lots: 60 + Common Areas
Analysis Method: Rational Method

I. Pre Development (Existing) Conditions

Storm Frequency: 10-year
Existing Area: 733,830.00 ft²
Existing Area: 16.85 ac

Existing Surface Conditions: Unpaved
Intercept Coefficient "k": 0.491 ft/sec
Ku=3.28 (constant)
Hydraulic Length (L): 1,203.00 ft
Ruoff Velocity "v": 0.51 ft/sec

Existing Slope : 0.10 %

Time of Concentration: 39.37 min
Rainfall Intensity: 4.24 in/hr based on frequency of 10-year
Type of Drainage Area: Unimproved Areas
Runoff Coeff (c factor): 0.10
Q peak existing condition: 7.15 cfs

$$v = K_u k S_p^{0.5}$$

II. Post Development (Future) Conditions

Storm Frequency: 50-year
Future development area: 733,830.00 ft²
Future development area: 16.85 ac

Proposed Slope (s) : 1.00 %
Time of Concentration: 30.81 min
Rainfall Intensity (i)= 6.25 in/hr based on frequency of 50-year
Type of Drainage Area: Muulti units, detached
Runoff Coeff (c factor): 0.60
Q future conditon (ciA)= 63.14 cfs

Time (min)	Time (sec)	I (in/hr)	Post Development		Pre Development		Required Storage Volume ft ³
			Flow (Q) ft ³ /sec	Volume (V) ft ³	Flow (Q) ft ³ /sec	Volume (V) ft ³	
30.81	1,848.47	6.25	63.14	116,708	7.15	13,208	103,499
40.81	2,448.47	5.29	53.42	130,801	7.15	15,352	115,448
50.81	3,048.47	4.61	46.60	142,069	7.15	17,496	124,573
60.81	3,648.47	4.11	41.52	151,492	7.15	19,639	131,853
70.81	4,248.47	3.72	37.57	159,617	7.15	21,783	137,834
80.81	4,848.47	3.40	34.40	166,780	7.15	23,927	142,853
90.81	5,448.47	3.14	31.79	173,198	7.15	26,070	147,128
100.81	6,048.47	2.93	29.60	179,025	7.15	28,214	150,811
110.81	6,648.47	2.74	27.73	184,369	7.15	30,358	154,011
120.81	7,248.47	2.58	26.12	189,312	7.15	32,501	156,810
130.81	7,848.47	2.44	24.71	193,915	7.15	34,645	159,270
140.81	8,448.47	2.32	23.46	198,227	7.15	36,789	161,438
150.81	9,048.47	2.21	22.36	202,287	7.15	38,932	163,354
160.81	9,648.47	2.11	21.36	206,125	7.15	41,076	165,049
170.81	10,248.47	2.02	20.47	209,768	7.15	43,220	166,549

Storage Required:
w/ release rate of:
Storage Required for Development:
Storage Required per Lot:

166,549 ft³
7.15 ft³/sec
3.82 Ac.Ft.
0.06 Ac.Ft.

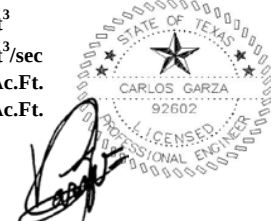
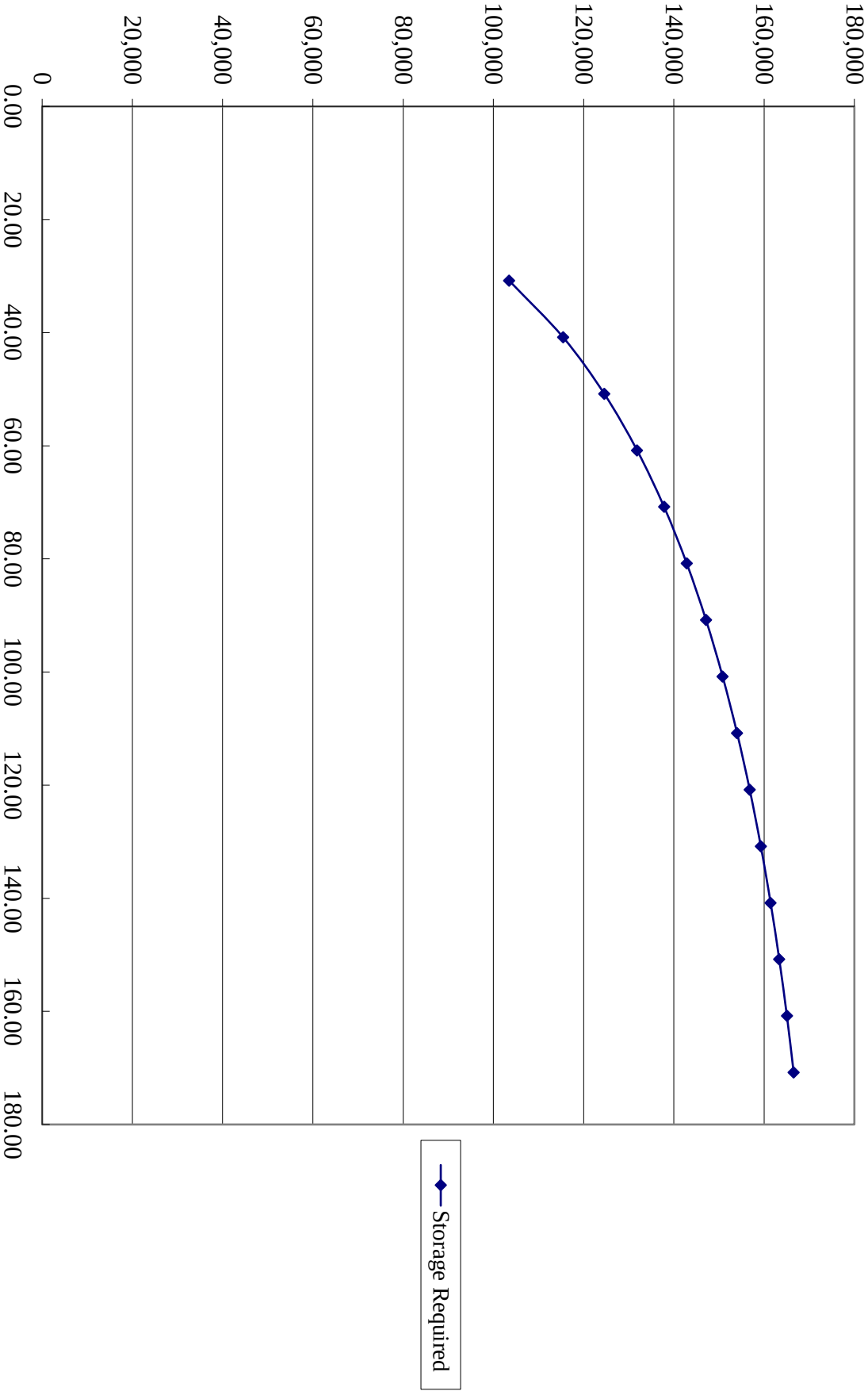


Table 3.24 (pg 84-85 Design Hydrology and Sedimentology for Small Catchments)
Values of Runoff Coefficient (C) for Rational Formula
(Used in $Q=ciA$)

Land Use	C
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi units, detached	0.40 - 0.60
Munti units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.35
Railroad yard areas	0.20 - 0.40
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, avg., 2-7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, avg., 2-7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Agricultural land:	
<i>Bare packed soil</i>	
*Smooth	0.30 - 0.60
*Rough	0.20 - 0.50
<i>Cultivated rows</i>	
*Heavy soil, no crop	0.30 - 0.60
*Heavy soil, with crop	0.20 - 0.50
*Sandy soil, no crop	0.20 - 0.40
*Sandy soil, with crop	0.10 - 0.25
<i>Pasture</i>	
*Heavy soil	0.15 - 0.45
*Sandy soil	0.05 - 0.25
Woodlands	0.05 - 0.25
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Unimproved areas	0.10 - 0.30
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95

	Development Area	Calculated C Factor
Enter the Pre-Development C factor:	Unimproved Areas	0.10
Enter the Post-Development C factor:	Muilti units, detached	0.60

Storage Volume Required as Varied by Time of Concentration



Pre-Development Conditions						
Name of Segment	Ku constant	Intercept coeff k	Avg Slope %	Velocity fps	Segment Length ft	Tc min
1	3.28	0.491	0.1000	0.51	1,203.00	39.37
Total Results					1,203.00	39.37

$$v = K_u k S_p^{0.5}$$

$$t_c = \frac{L}{v}$$

Land Cover / Flow Regime	k
Forrest w/ heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved Area (shallow concentrated flow); small upland gullies	0.619

Post-Development Conditions

Name of Segment	Ku constant	Intercept coeff k	Avg Slope %	Velocity fps	Segment Length ft	Tc min
1	3.28	0.491	0.500	1.14	86.00	1.26
2	3.28	0.619	1.000	2.03	216.50	1.78
3	3.28	0.619	0.174	0.85	246.00	4.84
4	3.28	0.619	0.129	0.73	246.00	5.62
5	3.28	0.619	0.101	0.65	246.00	6.35
6	3.28	0.619	0.101	0.65	246.00	6.35
7	3.28	0.619	0.069	0.53	147.20	4.60
Total Results					548.50	30.81

Rainfall Intensity-Duration-Frequency Coefficients for Texas Counties- Pre Development

1. Select your county. 2. Enter the time of concentration

County	Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
Hidalgo	e (in)	0.831	0.795	0.778	0.771	0.749	0.740
	b	74	80	87	98	99	103
	d (mins)	9.6	9.2	9.2	9.2	9.2	9.6
	Intensity (in/hr)*	2.92	3.65	4.24	4.91	5.40	5.78
Harrison							
Hartley							
Haskell							
Hays							
Hemphill							
Henderson							
Hidalgo							

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (mm)	0.831	0.795	0.778	0.771	0.749	0.740
b	1880	2032	2210	2489	2515	2616
d (mins)	9.6	9.2	9.2	9.2	9.2	9.6
Intensity (mm/hr)*	74.09	92.74	107.74	124.70	137.21	146.94

* for time of Concentration = **39.37** mins

Hidalgo

Rainfall Intensity-Duration-Frequency Coefficients for Texas Counties- Post Development

1. Select your county. 2. Enter the time of concentration

County	Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
Hidalgo	e (in)	0.831	0.795	0.778	0.771	0.749	0.740
	b	74	80	87	98	99	103
	d (mins)	9.6	9.2	9.2	9.2	9.2	9.6
	Intensity (in/hr)*	3.42	4.26	4.93	5.70	6.25	6.67
Cameron							
Camp							
Carson							
Cass							
Castro							
Chambers							
Cherokee							

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (mm)	0.831	0.795	0.778	0.771	0.749	0.740
b	1880	2032	2210	2489	2515	2616
d (mins)	9.6	9.2	9.2	9.2	9.2	9.6
Intensity (mm/hr)*	86.91	108.20	125.28	144.81	158.66	169.39

* for time of Concentration = **30.81** mins

SECTION II

Project Location Map

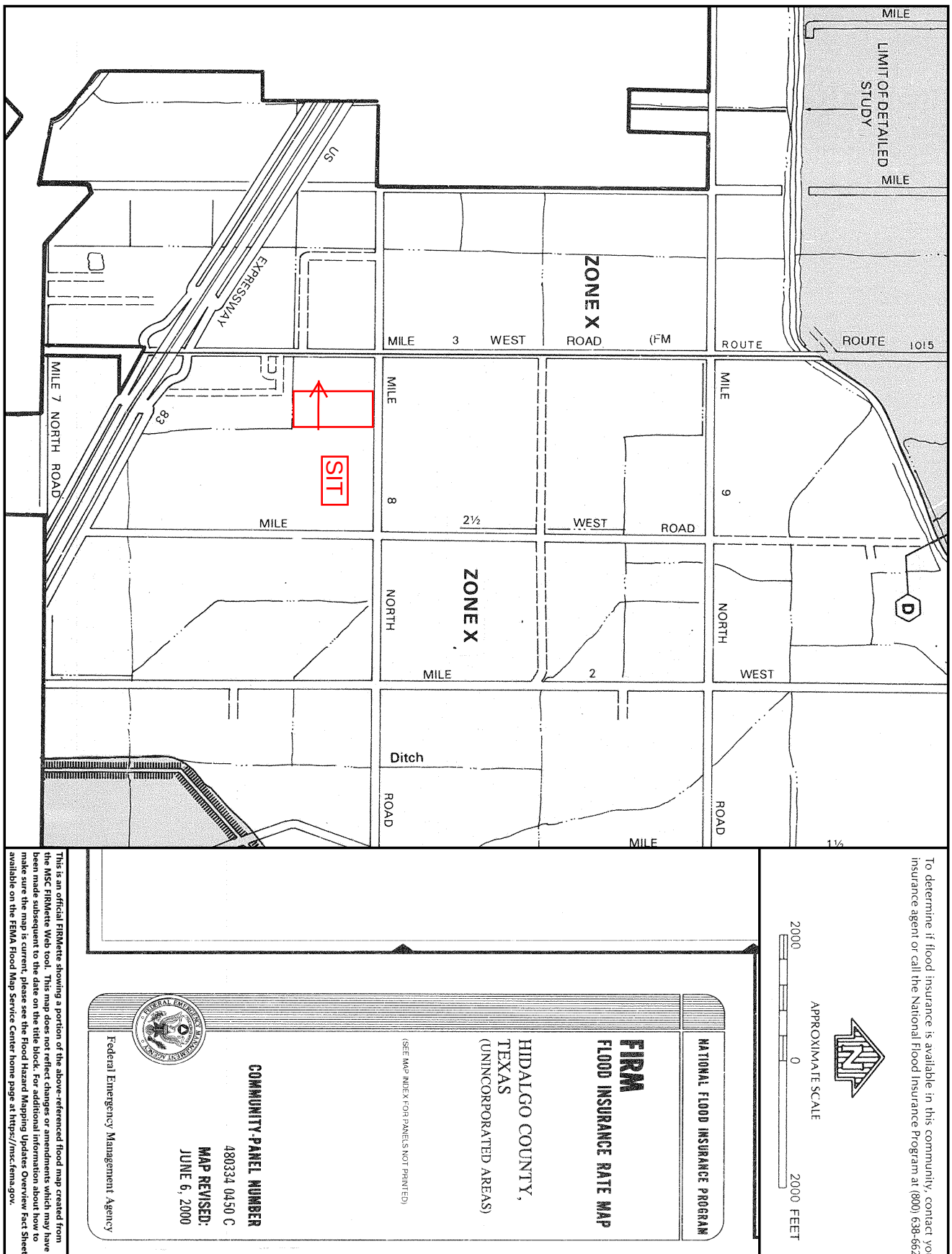
LOCATION MAP N.T.S.



THE COVES

BEING A RESUBDIVISION OF 18.48 ACRES OF LAND, MORE OR LESS, SITUATED IN THE CITY OF WESLACO, HIDALGO COUNTY, TEXAS, OUT OF FARM TRACT 1030, WEST AND ADAMS TRACT SUBDIVISION, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED IN VOLUME 2, PAGES 34-37, MAP RECORDS OF HIDALGO COUNTY, TEXAS

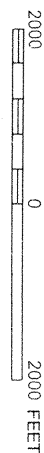
SECTION III
Flood Insurance Rate Map (FIRM)
and Legend



To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6622.



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

HIDALGO COUNTY,
TEXAS
(UNINCORPORATED AREAS)

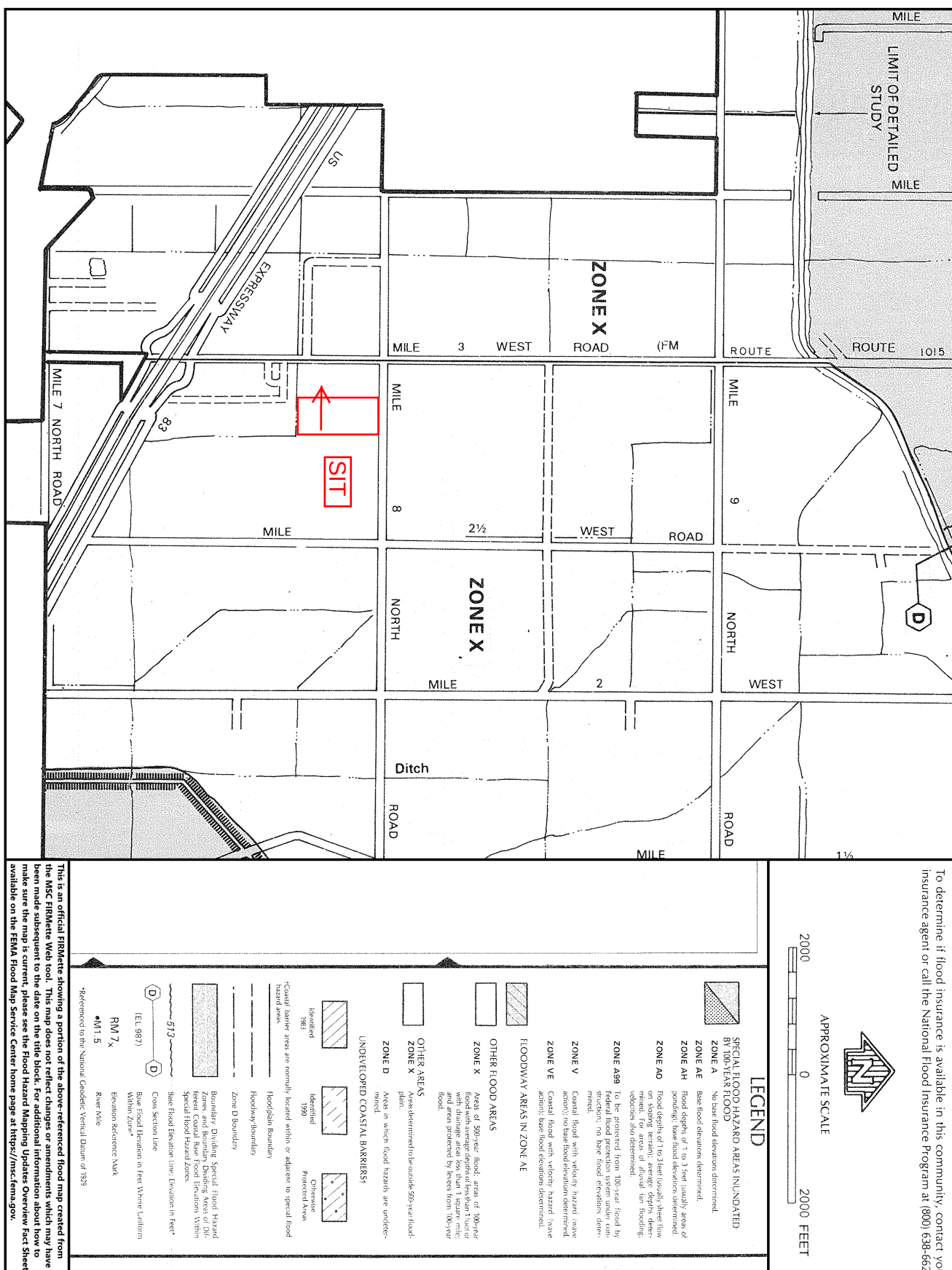
(SEE MAP INDEX FOR PANELS NOT PRINTED)



Federal Emergency Management Agency

COMMUNITY-PANEL NUMBER
480334 0450 C
MAP REVISED:
JUNE 6, 2000

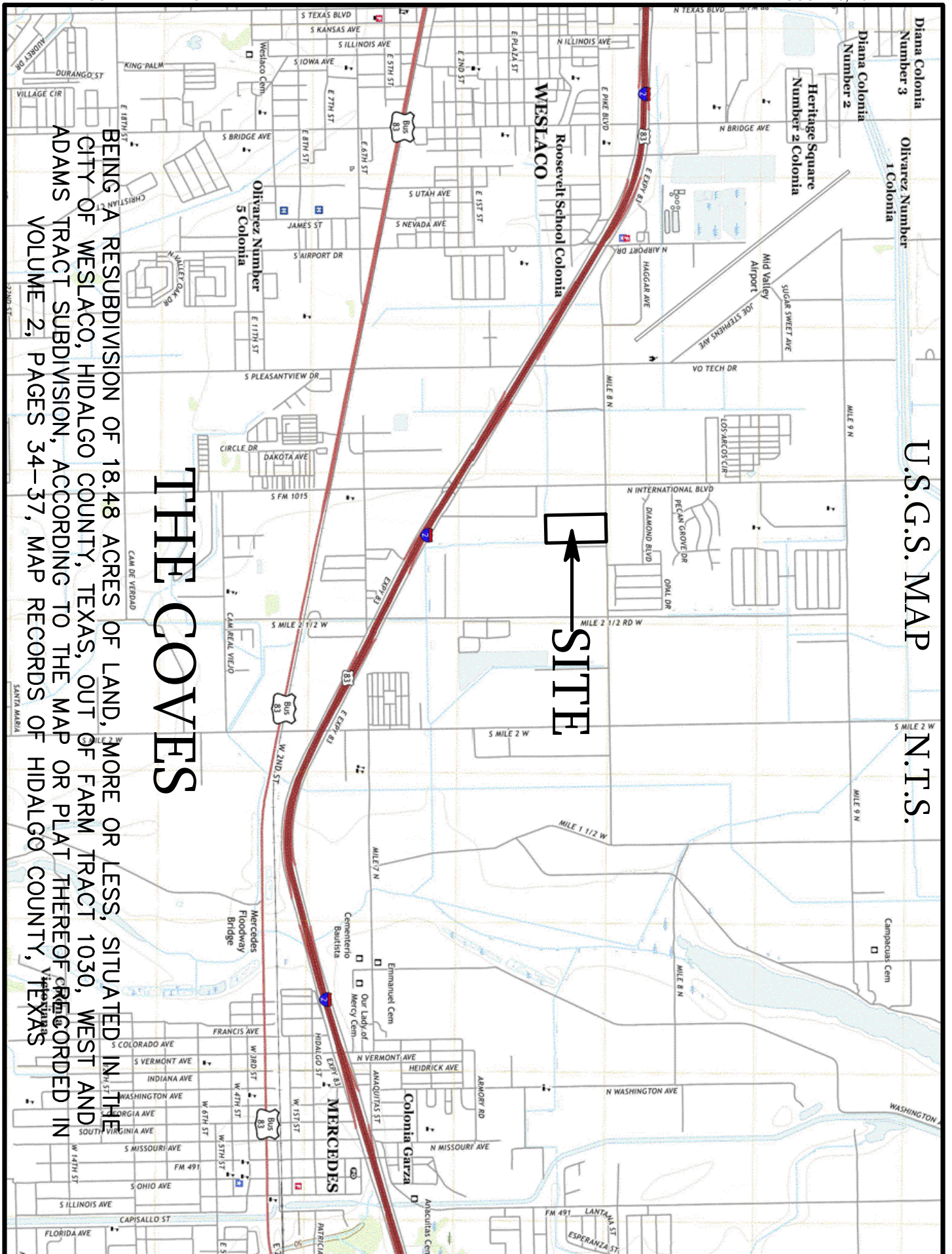
This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://nrc.fema.gov>.



SECTION IV

USGS Map with Project Location

U.S.G.S. MAP
N.T.S.



THE
COVES

BEING A RESUBDIVISION OF 18.48 ACRES OF LAND, MORE OR LESS, SITUATED IN THE
CITY OF WESLACO, HIDALGO COUNTY, TEXAS, OUT OF FARM TRACT 1030, WEST AND
ADAMS TRACT SUBDIVISION, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED IN
VOLUME 2, PAGES 34-37, MAP RECORDS OF HIDALGO COUNTY, TEXAS

SECTION V

Soil Survey Resource Report



United States
Department of
Agriculture

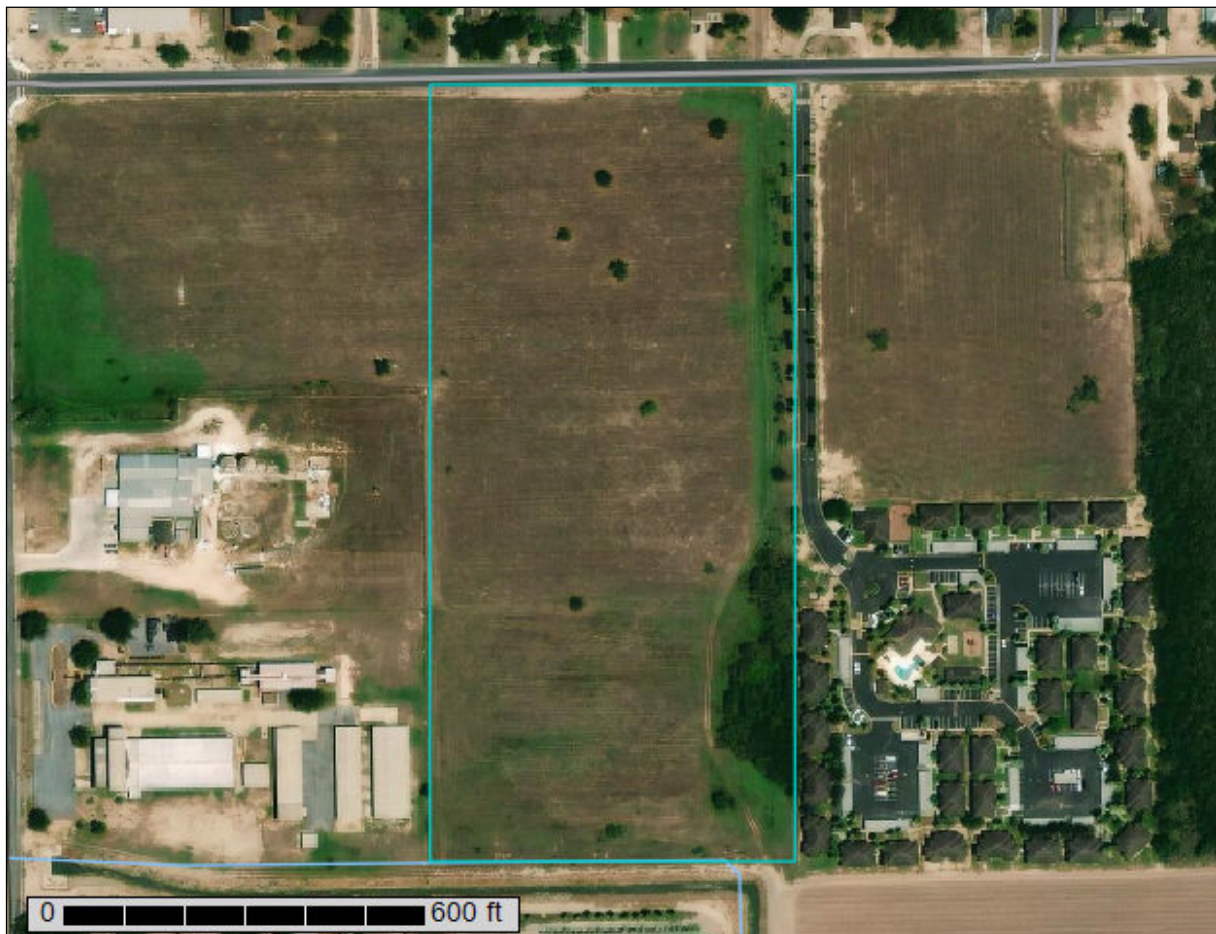
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Hidalgo County, Texas

The Coves



March 24, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Soil Map.....	6
Legend.....	7
Map Unit Legend.....	8
Map Unit Descriptions.....	8
Hidalgo County, Texas.....	10
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52—Raymondville clay loam, 0 to 1 percent slopes.....	11

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP INFORMATION

Warning: Soil Map may not be valid at this scale

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

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

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

Date(s) aerial images were photographed: Sep 20, 2015–Nov 5, 2017

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

	Area of Interest (AOI)		Streams and Canals
	Area of Interest (AOI)		Special Line Features
	Soil Map Unit Polygons		Transportation
	Soil Map Unit Lines		Interstate Highways
	Soil Map Unit Points		US Routes
	Special Point Features		Major Roads
	Blowout		Local Roads
	Borrow Pit		Background
	Clay Spot		Aerial Photography
	Closed Depression		
	Gravel Pit		
	Gravelly Spot		
	Landfill		
	Lava Flow		
	Marsh or swamp		
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

Custom Soil Resource Report

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
28	Hidalgo sandy clay loam, 0 to 1 percent slopes	11.0	61.5%
52	Raymondville clay loam, 0 to 1 percent slopes	6.8	38.5%
Totals for Area of Interest		17.8	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Custom Soil Resource Report

Hidalgo County, Texas

28—Hidalgo sandy clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sxxl
Elevation: 20 to 500 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hidalgo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: sandy clay loam
Bk1 - 17 to 28 inches: sandy clay loam
Bk2 - 28 to 38 inches: clay loam
Ck - 38 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R083DY019TX - Gray Sandy Loam
Hydric soil rating: No

Custom Soil Resource Report

Minor Components

Raymondville

Percent of map unit: 7 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Racombes

Percent of map unit: 6 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Willacy

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

52—Raymondville clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: dbm1
Elevation: 20 to 200 feet
Mean annual precipitation: 23 to 33 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 300 to 340 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Raymondville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raymondville

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Custom Soil Resource Report

Typical profile

H1 - 0 to 15 inches: clay loam
H2 - 15 to 43 inches: clay loam
H3 - 43 to 65 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 8.0
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

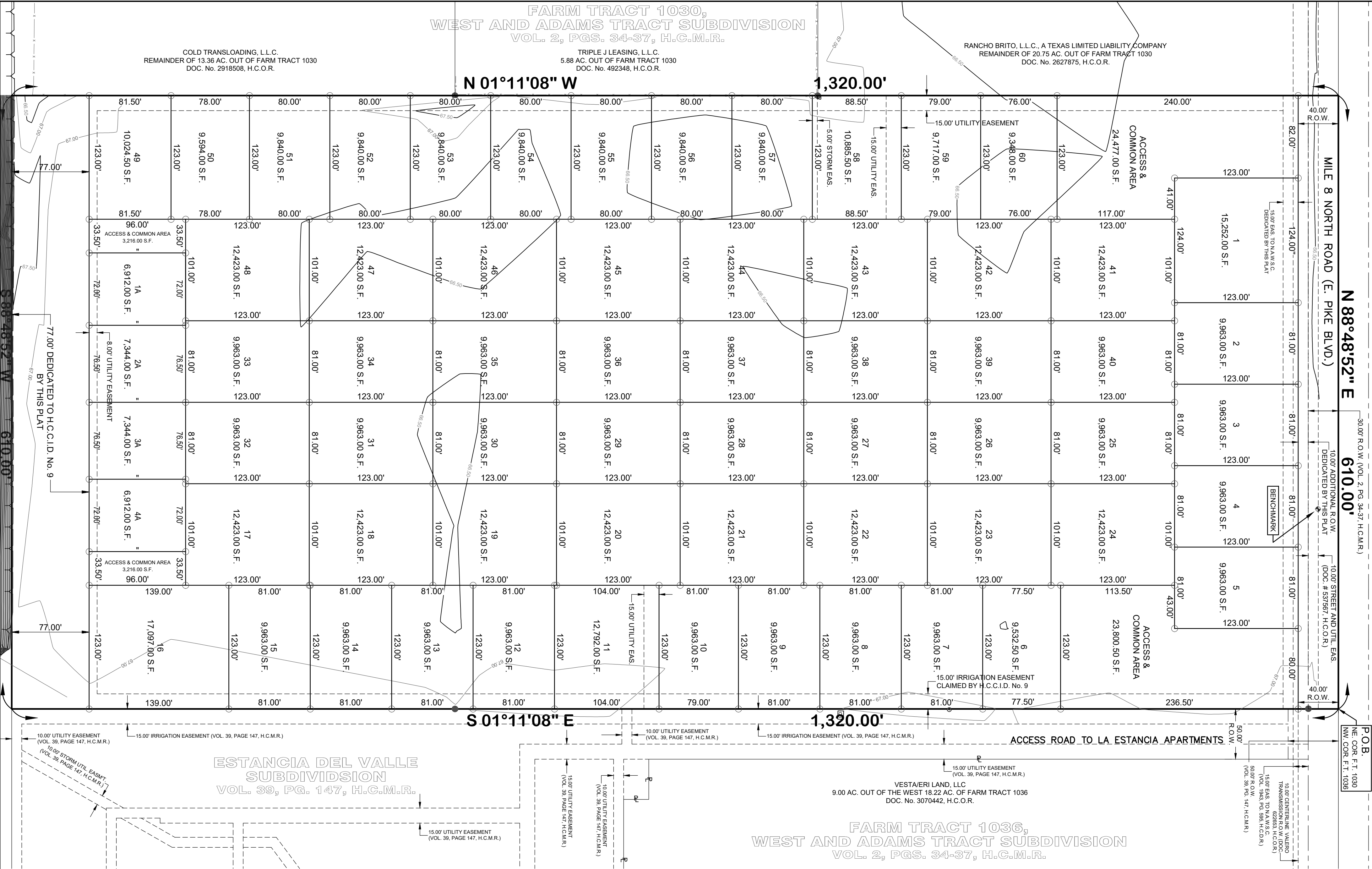
Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

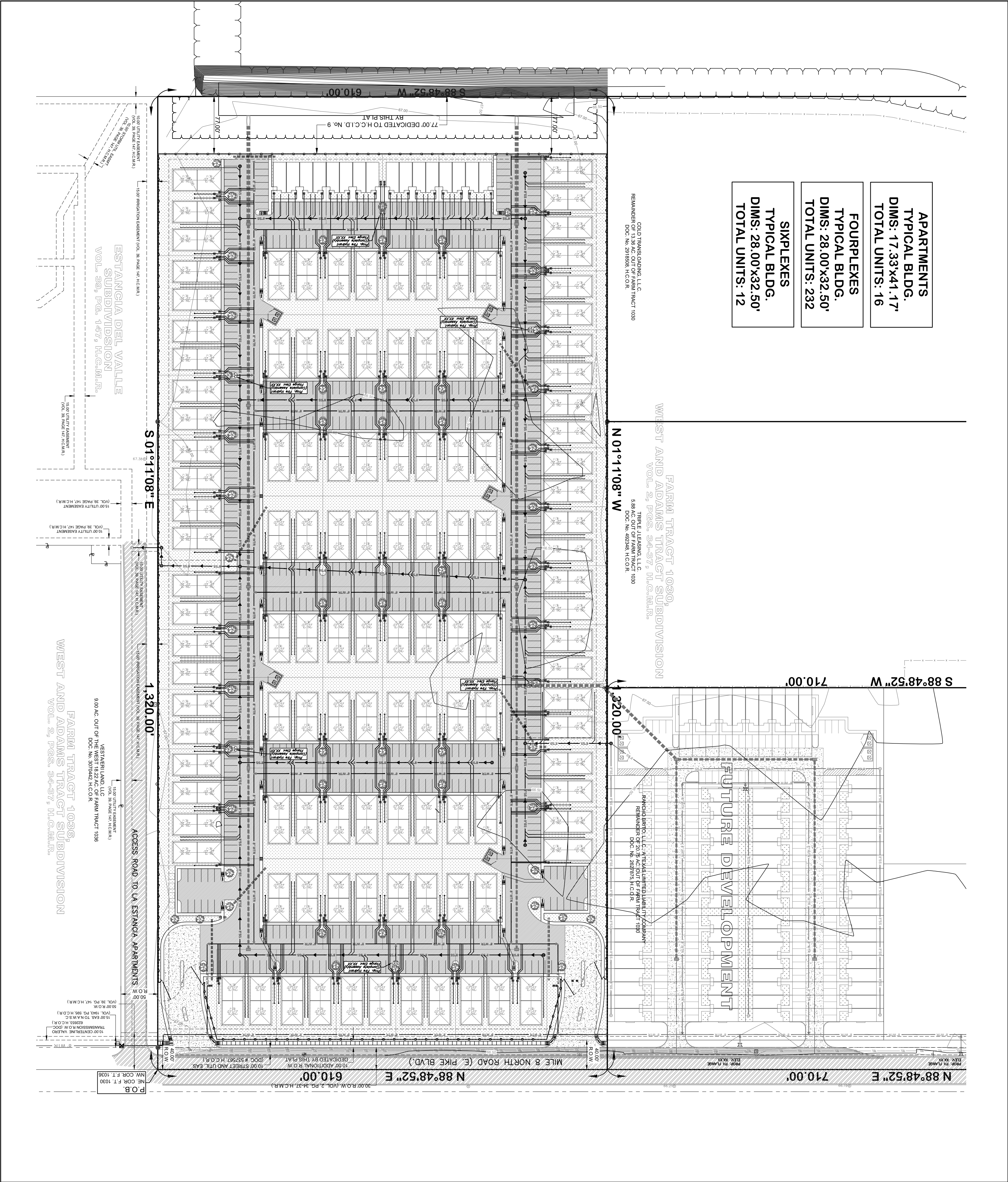
Minor Components

Unnamed

Percent of map unit: 15 percent
Hydric soil rating: No

SECTION VI
Set of Plans
(Half and Full Size Folded)





APARTMENTS
TYPICAL BLDG.
DIMS: 17.33'x41.17'
TOTAL UNITS: 16

FOURPLEXES
TYPICAL BLDG.
DIMS: 28.00'x32.50'
TOTAL UNITS: 232

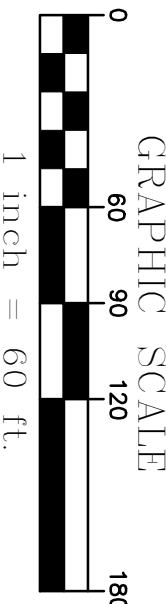
SIXPLEXES
TYPICAL BLDG.
DIMS: 28.00'x32.50'
TOTAL UNITS: 12

COLD TRANSLADING, LLC
REMAINDER OF 13.39 AC. OUT OF FARM TRACT 1030
DOC. NO. 2918508 H.C.O.R.

FARM TRACT 1030,
WEST AND ADAMS TRACT SUBDIVISION
VOL. 2, PGS. 34-37, H.G.M.R.
TRIPLE JEANING, LLC
5.88 AC. OUT OF FARM TRACT 1030
DOC. NO. 482348 H.C.O.R.

ENCINO BRITO, L.L.C., A TEXAS LIMITED LIABILITY COMPANY
REMAINDER OF 13.39 AC. OUT OF FARM TRACT 1030
DOC. NO. 2027975 H.C.O.R.

NE COR. F.T. 1030
10.00' CENTRAL LINE W. (DOC. 62683 H.C.O.R.)
15.00' EAS. TO N.A.W.S.C. TRANSMISSION R.O.W. (DOC. 62683 H.C.O.R.)
50.00' R.O.W. (VOL. 39, PG. 147, H.G.M.R.)

PROJECT INFORMATION:			
THE COVES			
WESLACO, TEXAS			
BEARING BASIS: NAD83 Texas State Planes, Central Zone, US Foot			
		DESCRIPTION	
			
CALL BEFORE YOU DIG!			
PARTICIPANTS REQUEST 48 HOURS NOTICE BEFORE YOU DIG, STOP - AND CALL CONSTRUCTION 811		DATE	
Know what's below. Call before you dig.			
THE LONE STAR NOTIFICATION COMPANY AT 1-800-669-8344		REV	
SHEET HIGHLIGHTS/RESTRICTIONS			

		THIS PLAN, APPEARING ON THIS DATE, WAS PREPARED BY BY CAIUS GARCIA, P.E. ON: 03-24-2022	
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PREPARED BY:

DESIGN INFORMATION

JOB TYPE: CIVIL

JOB NO.: 1281004

PREP. DATE: MARCH 24, 2022

DESIGNED/DRAWN: J. D. Z.

CHECKED: CARLOS GARZA, P.E.

APPROVED: CARLOS GARZA, P.E.

PLAN SCALE: AS SHOWN

PROJECT ADDRESS OR NEAREST INTERSECTION: SOUTH SIDE OF MILE 8 NORTH ROAD (E. PIKE BLVD.) APPROXIMATELY 710 FEET EAST OF INTERNATIONAL BLVD. (FM 1015)

CITY: WESLACO

STATE: TEXAS

COUNTY: HIDALGO

SHEET DESIGNATION: OVERALL WATER DISTRIBUTION SYSTEM & SANITARY SEWER COLLECTION SYSTEM

SHEET NUMBER: C6 of 24

AEC ENGINEERING, LLC.
Agricultural * Environmental * Civil

A TEXAS REGISTERED ENGINEERING FIRM F-9668

P.O. BOX 480 EDINBURG, TEXAS 78540

PHONE: 956 - 380 - 6558

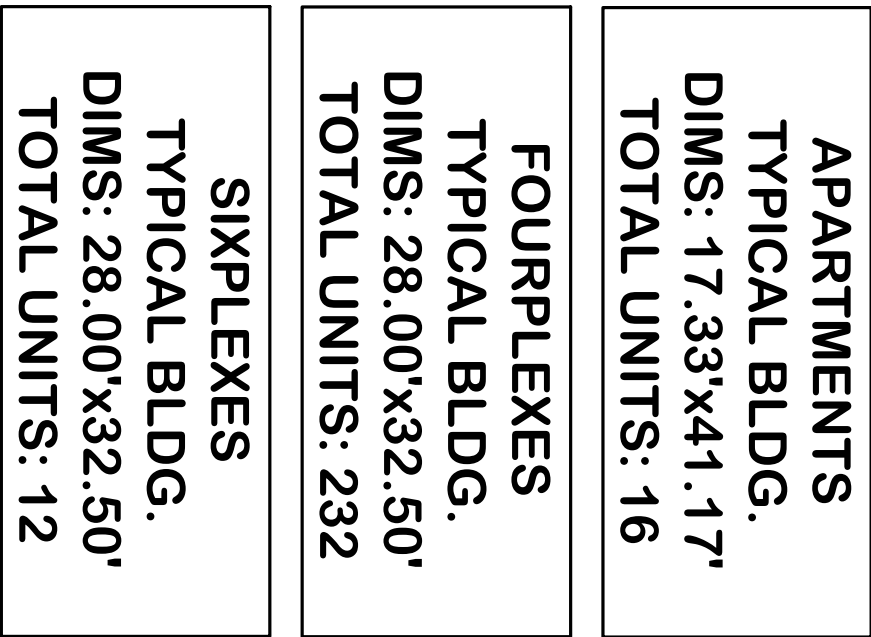
FAX: 956 - 380 - 6110

WEB: www.aecengineering.net

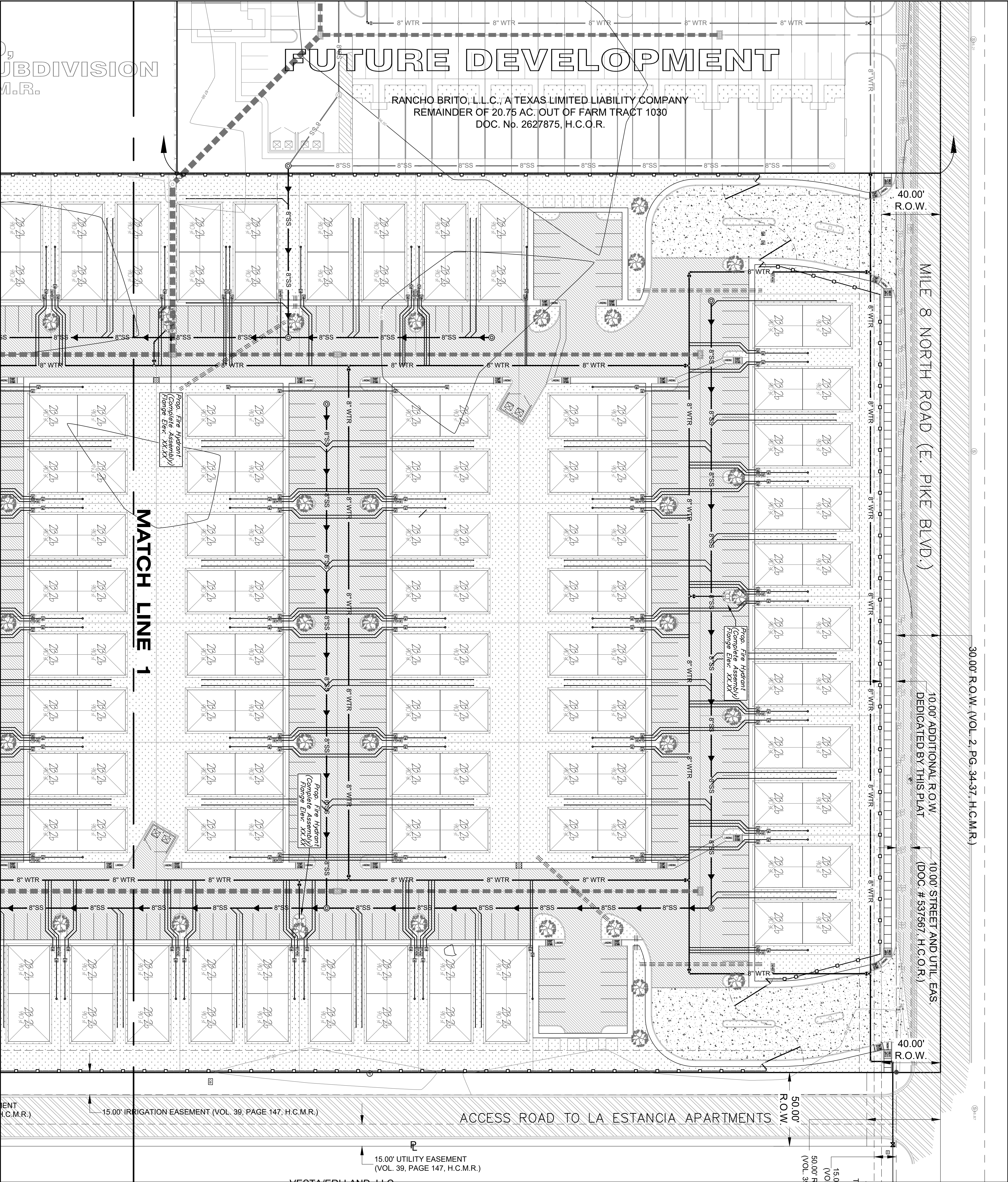
FOR REVIEW

THE SEAL, PLACING ON THIS DOCUMENT, I, CARLOS GARZA, P.E., DO HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, AND I AM AUTHORIZED TO SEAL AND SIGN THIS DOCUMENT FOR THE PROJECT AND FOR THE ENGINEERING PRACTICE LAW.

CARLOS GARZA, P.E.
92602
PROFESSIONAL ENGINEER

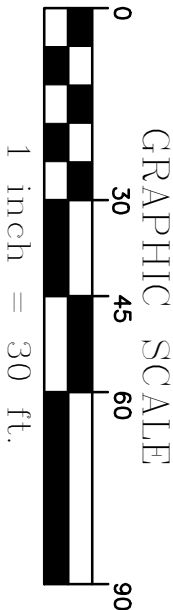
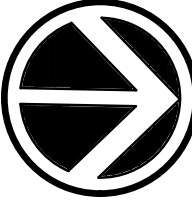
[illegible]

SHEET DESIGNATION: OVERALL PAVING & STORM DRAINAGE LAYOUT														
SHEET NUMBER: C10 of 24	 AEC ENGINEERING, LLC. <i>Agricultural * Environmental * Civil</i> A TEXAS REGISTERED ENGINEERING FIRM F-9688 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 30%; height: 40px; vertical-align: bottom; padding: 2px;">PREPARED BY:</td> <td style="height: 40px;"></td> </tr> <tr> <td style="height: 30px; vertical-align: bottom; padding: 2px;">ADDRESS:</td> <td style="height: 30px; padding: 2px;">P.O. BOX 480 EDINBURG, TEXAS 78540</td> </tr> <tr> <td style="height: 30px; vertical-align: bottom; padding: 2px;">PHONE:</td> <td style="height: 30px; padding: 2px;">956 - 380 - 6558</td> </tr> <tr> <td style="height: 30px; vertical-align: bottom; padding: 2px;">FAX:</td> <td style="height: 30px; padding: 2px;">956 - 380 - 6110</td> </tr> <tr> <td style="height: 30px; vertical-align: bottom; padding: 2px;">WEB:</td> <td style="height: 30px; padding: 2px;">www.aecengineering.net</td> </tr> </table>		PREPARED BY:		ADDRESS:	P.O. BOX 480 EDINBURG, TEXAS 78540	PHONE:	956 - 380 - 6558	FAX:	956 - 380 - 6110	WEB:	www.aecengineering.net		
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FAX:	956 - 380 - 6110													
WEB:	www.aecengineering.net													
CITY WESLACO STATE TEXAS COUNTY HIDALGO	 REGISTRATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE BOARD OF ENGINEERS AND SURVEYORS IS AN OFFENSE UNDER THE TEXAS PROFESSIONAL ENGINEERING PRACTICE LAW													
PROJECT ADDRESS OR NEAREST INTERSECTION SOUTH SIDE OF MILE 8 NORTH ROAD (E. PIKE BLVD.) APPROXIMATELY 710 FEET EAST OF INTERNATIONAL BLVD. (F.M. 1015)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; font-size: x-small;">Job Type</td> <td style="font-size: x-small;">CIVIL</td> </tr> <tr> <td style="font-size: x-small;">Job No.</td> <td style="font-size: x-small;">1281004</td> </tr> <tr> <td style="font-size: x-small;">Prep. Date</td> <td style="font-size: x-small;">MARCH 24, 2022</td> </tr> <tr> <td style="font-size: x-small;">Designed/Drawn</td> <td style="font-size: x-small;">J. D'Z</td> </tr> <tr> <td style="font-size: x-small;">Checked</td> <td style="font-size: x-small;">CARLOS GARZA, P.E.</td> </tr> <tr> <td style="font-size: x-small;">Approved</td> <td style="font-size: x-small;">CARLOS GARZA, P.E.</td> </tr> </table>		Job Type	CIVIL	Job No.	1281004	Prep. Date	MARCH 24, 2022	Designed/Drawn	J. D'Z	Checked	CARLOS GARZA, P.E.	Approved	CARLOS GARZA, P.E.
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Job No.	1281004													
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Designed/Drawn	J. D'Z													
Checked	CARLOS GARZA, P.E.													
Approved	CARLOS GARZA, P.E.													



PROJECT INFORMATION:

THE COVES
WESLACO, TEXAS
BEARING BASIS: NAD83 Texas State Planes,
Central Zone, US Foot

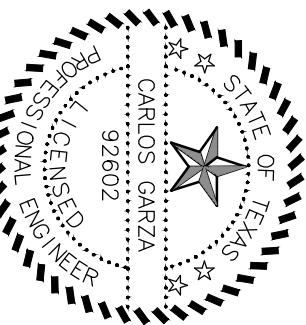


CALL BEFORE YOU DIG!
TEXAS811
PARTICIPANTS REQUEST
48 HOURS NOTICE
DRILL OR BLAST,
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CONSTRUCTION
Know what's below.
Call before you dig. **811**

THE LONE STAR NOTIFICATION COMPANY
AT 1-800-669-8344

SHEET HIGHLIGHTS/RESTRICTIONS

REV	DATE	DESCRIPTION	BY



THE ENGINEERING ON THIS
DOCUMENT WAS AUTHORIZED
BY CARLOS GARZA, P.E.
DATE: 03-24-2022
FOR REVIEW
WITHDRAWAL OF A SEALED DOCUMENT
WITHOUT PROPER NOTIFICATION TO THE
STATE OF TEXAS IS A VIOLATION OF THE
ENGINEERING PRACTICE LAW

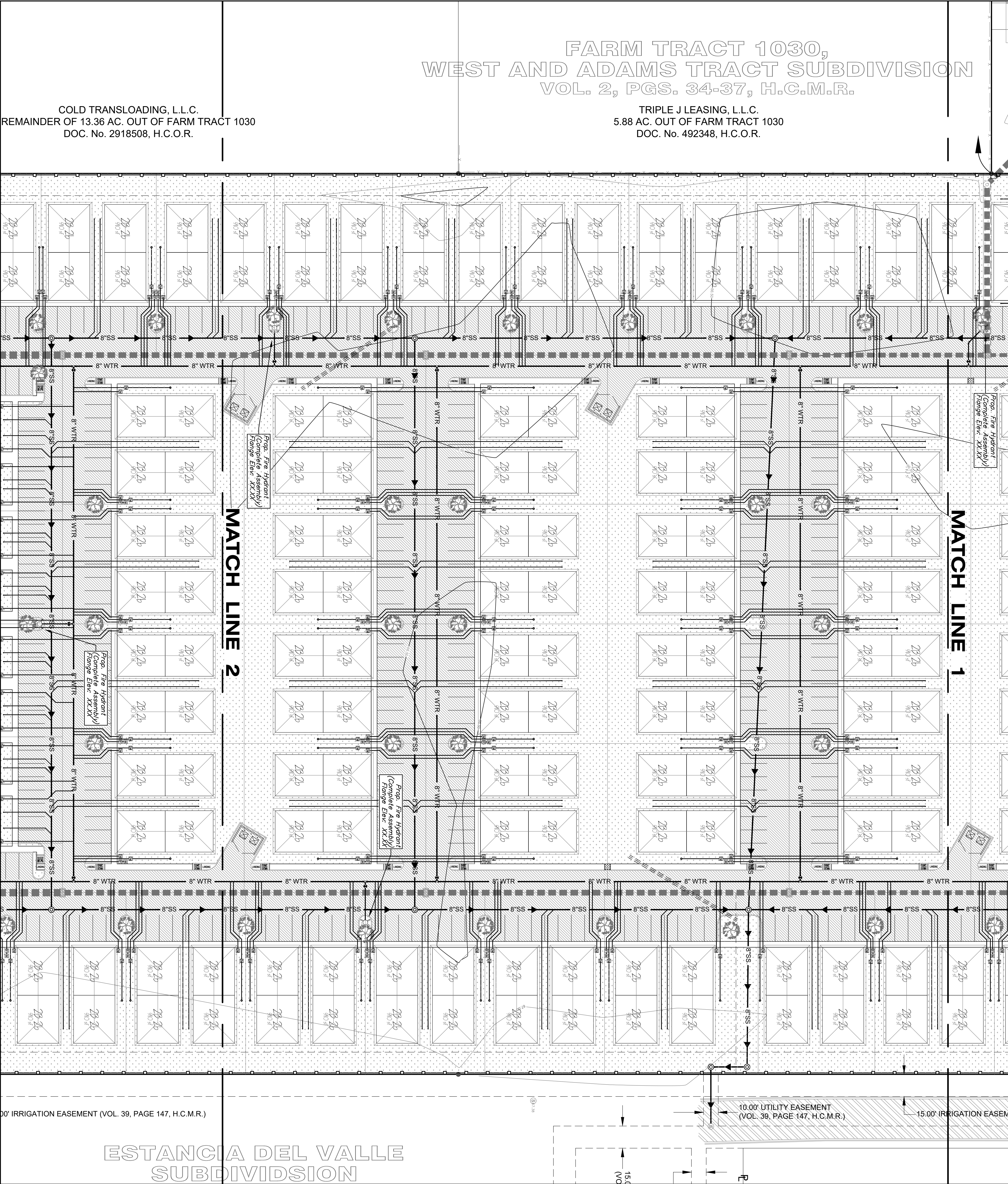
AEC ENGINEERING, LLC.
*Agricultural * Environmental * Civil*
A TEXAS REGISTERED ENGINEERING FIRM F-9688
P.O. BOX 480 EDINBURG, TEXAS 78540
PHONE: 956 - 380 - 6558
FAX: 956 - 380 - 6110
WEB: www.aecengineering.net

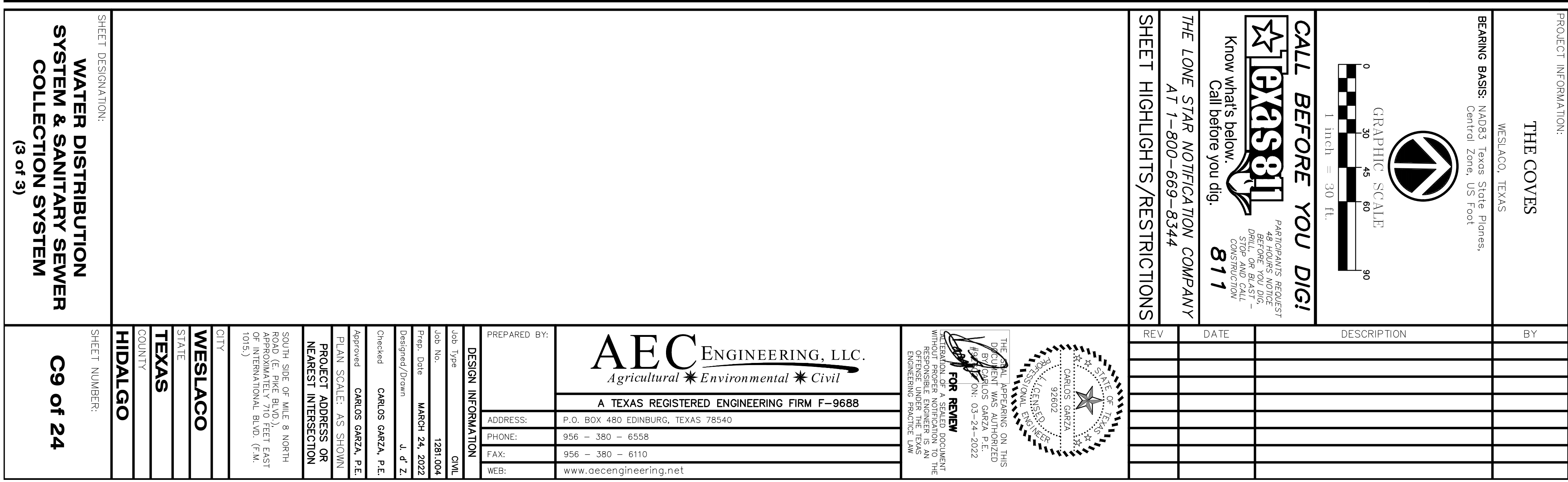
PREPARED BY:
DESIGN INFORMATION
Job Type: CIVIL
Job No.: 12810034
Prep Date: MARCH 24, 2022
Designed/Drawn: J. D. Z.
Checked: CARLOS GARZA, P.E.
Approved: CARLOS GARZA, P.E.

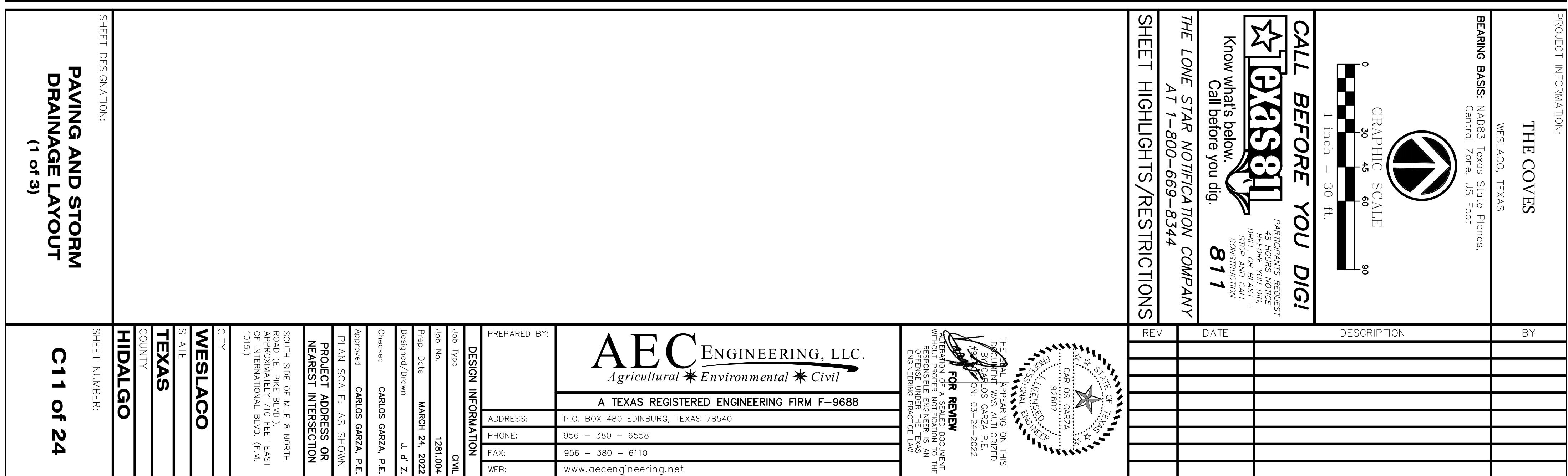
PLAN SCALE: AS SHOWN
PROJECT ADDRESS OR
NEAREST INTERSECTION
SOUTH SIDE OF MILE 8 NORTH
ROAD (E. PIKE BLVD.),
APPROXIMATELY 710 FEET EAST
OF 1515

CITY: **WESLACO**
STATE: **TEXAS**
COUNTY: **HIDALGO**

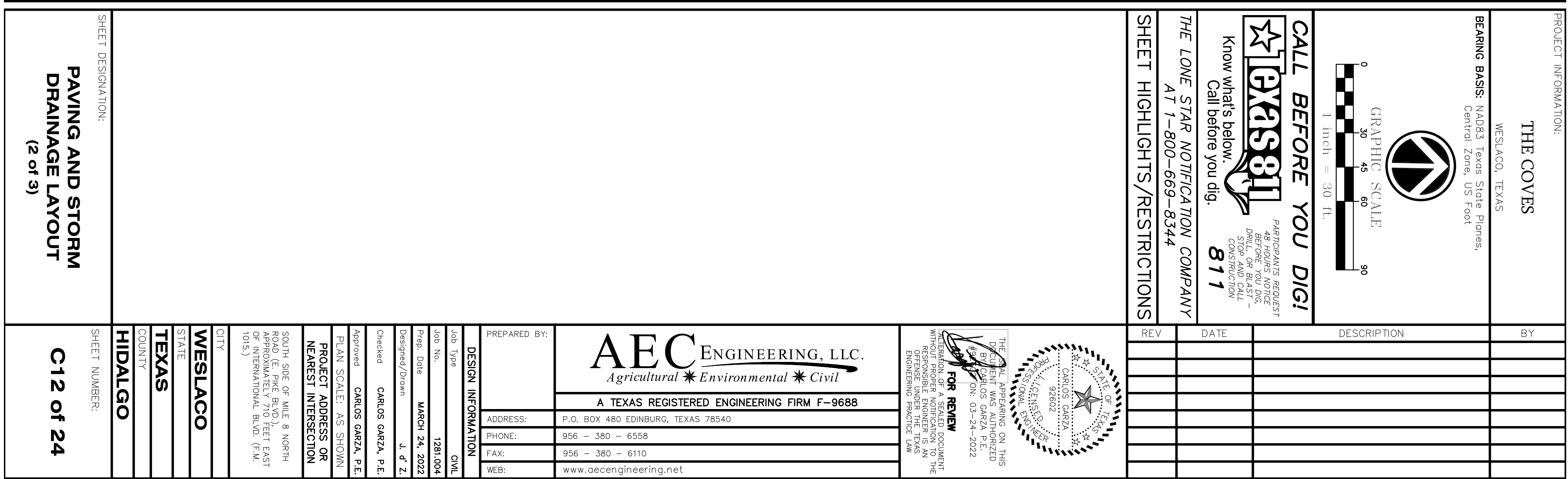
SHEET DESIGNATION:
**WATER DISTRIBUTION
SYSTEM & SANITARY SEWER
COLLECTION SYSTEM**
(1 of 3)
SHEET NUMBER:
C7 of 24

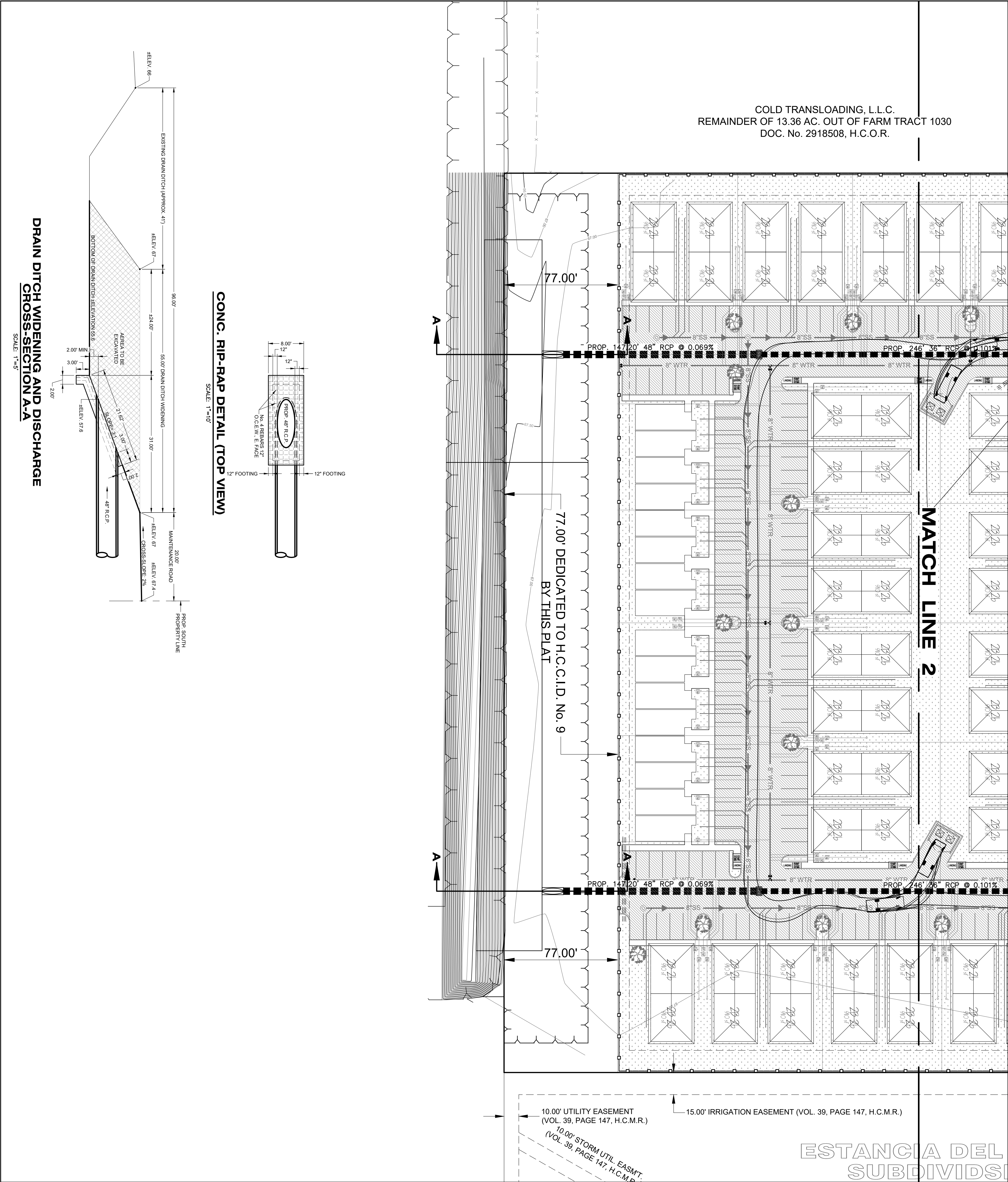






TRIPLE J LEASING, L.L.C.
5.88 AC. OUT OF FARM TRACT 1030
DOC. No. 492348, H.C.O.R.





PROJECT INFORMATION:

THE COVES

WESLACO, TEXAS

BEARING BASIS: NAD83 Texas State Planes,
Central Zone, US Foot

GRAPHIC SCALE

0 30 60 90

1 inch = 30 ft.

CALL BEFORE YOU DIG!

TEXAS811

Know what's below.
Call before you dig.

811

THE LONE STAR NOTIFICATION COMPANY
AT 1-800-669-8344

SHEET HIGHLIGHTS/RESTRICTIONS

REV

DATE

DESCRIPTION

BY

PREPARED BY:

DESIGN INFORMATION

Job Type

Job No.

Prep. Date

Designed/Drawn

Checked

Approved

AEC ENGINEERING, LLC.

A TEXAS REGISTERED ENGINEERING FIRM F-9688

P.O. BOX 480 EDINBURG, TEXAS 78540

956 - 380 - 6558

956 - 380 - 6110

www.aecengineering.net

FOR REVIEW

THE SEAL PLACING ON THIS
DRAWING WAS AUTHORIZED
BY CARLOS GARZA, P.E.
ON: 03-24-2022

92802

CARLOS GARZA, P.E.

PROJECT ADDRESS OR
NEAREST INTERSECTION

SOUTH SIDE OF MILE 8 NORTH
ROAD (E. PIKE BLVD.),
APPROXIMATELY 710 FEET EAST
OF INTERNATIONAL BLVD. (FM
1015)

CITY

WESLACO

STATE

TEXAS

COUNTY

HIDALGO

SHEET DESIGNATION:

PAVING AND STORM
DRAINAGE LAYOUT
(3 of 3)

SHEET NUMBER:

C13 of 24



Planning & Zoning Commission Standardized Agenda Request Form

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V. F.
From: Rebekah de la Fuente, Planning Director, on behalf of David Salinas.	
Subject/Agenda Item: Discussion and consideration for the Preliminary and/or Final Plat for The Woods Subdivision–being a 0.75 gross acre out of Farm Tract 1076, West and Adams Tract Subdivision, Weslaco, Hidalgo County, Texas located approximately 600 ft west of FM 1015 along the North side of Hernandez St. Possible Action.	
Discussion/Overview: The proposed one (1) lot subdivision is outside the City of Weslaco. This subdivision is being serviced with water by the North Alamo Water Supply Company through a 4” waterline and sewer by OSSF. The property is within a Flood Zone “X”. Applicant is requesting a variance for OSSF.	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission’s Action: Staff recommends approval of Preliminary and/or Final Plat and compliance with the ordinance on the variance.	
Additional Action Prompted: ☒ Mayor’s Signature ☐ Public Hearing ☐ Budget Amendment ☐ Resolution ☐ Ordinance – First Reading ☐ Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff’s comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission’s Action: Planning staff will advise applicant.	



SUBDIVISION PLATTING APPLICATION

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. MPIAT-000261-2022

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

STAFF USE ONLY

☐ Single Lot Variance ☐ Minor Plat ☐ Planned Unit Development ☐ Standard Subdivision

GENERAL INFORMATION

Name of Subdivision: THE WOODS SUBDIVISION

Location: 1/2 350' WEST OF F.M. 1015 ALONG NORTH SIDE OF HERNANDEZ ST.

Legal Description: A 0.75 ACRE TRACT 1/4 F.T. 1076, THE WEST & ADAMS TRACT, H.C.T.

Is subdivision inside city limits? ☐ YES ☒ NO

If subdivision is in the ETJ, indicate? ☒ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: N/A

Existing Land Use: OPEN Proposed Land Use: RESIDENTIAL

Number of Lots Proposed: 1 Gross Acreage: 0.75

Title Report Submitted: ☐ YES ☒ NO

OWNER INFORMATION

Owner's Name: NOEM BRISENO Telephone: 956-638-2363

Address: 4020 N. TEXAS BLVD. Fax: _____

City: WESLACO State: TX Zip: 78596 E-mail: M.SALDUAZ@YAHOO.COM

ENGINEER INFORMATION

Name: DAVID SALINAS (SEA) Telephone: 956-682-9081

Address: 2221 DAFFODIL AVE. Fax: _____

City: MCALLEN State: TX Zip: 78501 E-mail: DSALINAS@CALINASENGINEERING.COM

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

UTILITY PROVISIONS

Will proposed subdivision connect to:

☐ YES ☐ NO Water Provision: _____

☐ YES ☐ NO Wastewater Provision: _____

☐ YES ☐ NO Electric Company: _____

☐ YES ☐ NO Phone Utility _____

☐ YES ☐ NO Gas Utility

☐ YES ☐ NO Cable Utility

Proposed subdivision is in the following districts:

☐ YES ☐ NO Drainage District _____

☐ YES ☐ NO Irrigation District _____

Has the property been assessed as flat rate irrigable property: ☐ YES ☐ NO

Have Water Rights been conveyed to City/Water Supplier? ☐ YES ☐ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If **YES**, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR MINOR PLAT REVIEW

_____ **Two (2) sets of plats folded and stapled (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov**

_____ **\$355.00 Planning Review fee**

_____ **One 11" X 17" reduced copy of plat**

_____ **Plat Layout**

_____ Existing & Proposed Easements

_____ Existing & Proposed ROW

_____ Existing & Proposed Drainage Easements

_____ Contours

_____ Flood Zones

_____ Adjoiners

_____ Existing street names

_____ **Drainage plans and calculations with engineer's seal**

_____ Elevations

_____ Flood directional arrows

_____ Detention areas

_____ Street names

_____ **✓ Proof of ownership of the property**

_____ **N/A If septic tank system required, submit soil evaluation report**

_____ **N/A Water Rights associated with the property**

_____ **✓ Tax Receipt for all taxing entities showing that taxes are paid in full**

SUBMITTALS REQUIRED FOR PRELIMINARY (P & Z)

_____ **Twelve (12) sets of preliminary plat folded and stapled (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov**

_____ **\$350.00 (one time fee for preliminary and final plat)**

_____ **One 11" X 17" reduced copy of plat**

_____ **Plat Layout**

_____ Existing & Proposed Easements

_____ Existing & Proposed ROW

_____ Existing & Proposed Drainage Easements

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

- _____ Contours
- _____ Flood Zones
- _____ Adjoiners
- _____ Existing & Proposed street names
- _____ Utility Layout
- _____ Existing & Proposed Utilities
- _____ Proposed Fire Hydrants
- _____ Adjoiners
- _____ Street names
- _____ Drainage plans and calculations with engineer's seal
- _____ Elevations
- _____ Flood directional arrows
- _____ Detention areas
- _____ Street names
- _____ Proof of ownership of the property
- _____ If septic tank system required, submit soil evaluation report
- _____ Water Rights associated with the property
- _____ Tax Receipt for all taxing entities showing that taxes are paid in full
- _____ Number of fire hydrants proposed for subdivision
- _____ Trip Generation Worksheet

SUBMITTALS REQUIRED FOR FINAL (P & Z) **Will not apply to Single Lot Variance**

- _____ Twelve (12) sets of plans **FOLDED & STAPLED** (24 x 36) & PDF copy **with all corrections**
- _____ Plats to be sealed by Professional Engineer
- _____ Approved Drainage Report
- _____ Traffic Impact Analysis (If required)

SUBMITTALS REQUIRED FOR FINAL (City Commission)

- _____ One set of 8 1/2 x 11 of plat and utilities with all corrections done

SUBMITTALS REQUIRED FOR PRE-CONSTRUCTION MEETING

- _____ Seven (7) full sets of construction plans 24 x 36 and one (1) 11 x 17 with plan & profile.
- _____ Engineering cost estimates for 3% geotechnical testing fees and 2% inspection fees
- _____ Notice of Intent
- _____ SW3P

SUBMITTALS REQUIRED FOR RECORDING OR HIDALGO COUNTY PLANNING

- _____ Electronic file of final plat and as-builds
- _____ Reproducible plat to be recorded with all required signatures
- _____ 3% geotechnical testing fees or negotiated Material Testing fee by City, whichever is higher
- _____ 2% inspection fee
- _____ Park Fees
- _____ Checks or Receipts: HCCID #9; HCDD #1; County Clerk
- _____ Tax certificates
- _____ Memo from engineering inspector releasing subdivision
- _____ Water Rights associated with the property dedicated and assigned to City of Weslaco or payment of fees sufficient to meet the needs necessitated and attributable to development
- _____ 30 Year Water and 30 Year Sewer Service Agreements
- _____ Park dedication/Fees in lieu of

SUBMITTALS REQUIRED FOR RECORDING BY SECURITY

- _____ Sealed engineering cost estimates
- _____ Letter of Credit/Performance Bond/Escrow

** Any revisions requested would require resubmission of plats and reduced copy reflecting changes.

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: NOEMI BRISENO

Owner Signature: _____ Date: _____

_____ is the authorized agent

Authorized Agent Signature:  Date: 7/6/22

Authorized Agent Printed Name: David D Quenz Salinas

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid: _____

P & Z Commission Approval on Preliminary Plat: _____

P & Z Commission Approval on Final Plat: _____

City Commission Approval on Final Plat: _____

Preconstruction Meeting Date: _____

Date Recorded: _____ Instrument No. _____

General Comments: _____

DRAINAGE REPORT

THE WOODS SUBDIVISION

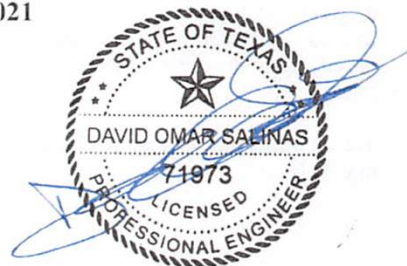
**CITY OF WESLACO ETJ,
HIDALGO COUNTY, TEXAS**

PREPARED BY:

David Omar Salinas, P.E., R.P.L.S.
Salinas Engineering & Associates
(TBE F-6675)
2221 Daffodil Ave.
McAllen, Texas, 78501
(956) 682-9081
(956) 686-1489 Facsimile
(956) 648-8899 Cell
dsalinas@salinasengineering.com

Revised: FEBRUARY 26, 2021

SEA



INDEX

Drainage Report Narrative: Page 2.-3.

- A. Hydrograph: Dated 07/21/20 Attached
- B. Plat reduction of The Woods Subdivision, H.C.T., and, other exhibits
- C. Copy of FIRM – CPN 480334 0450 C; Dated: LOMR 05/30/2002 – Zone “X”

DRAINAGE REPORT NARRATIVE

Proposed The Woods Subdivision is a one lot residential plat containing 0.75 Gross (0.68 Net) Acres of land out of F.T. 1076, The West and Adams Tract Subdivision, Hidalgo County, Texas, as per the map or plat thereof recorded in Volume 02, Pages 34-37, Deed records of Hidalgo County, Texas, and, located along the north side of Hernandez Street across from Luna Street and approximately 500 feet west of F.M. 1015 in the City of Weslaco ETJ. The proposed residential plat is located in Zone “X” (Unshaded) as per the FIRM Community Panel No. 480343 0450 C, LOMR dated 05/30/2002. Zone “X” areas are defined as “areas outside the 500-year plan.” The site is currently vacant and the proposed use is one residential mobile home (on blocks). Hernandez Street is a public recently paved county roadway with a bar ditch in front of this tract complete with a concrete culvert.

There are two different soil types located on this plat: the first soil type is a Hidalgo sandy clay loam soil (28) with slopes between 0 and 1 percent. These soils are well drained, slow surface runoff and moderate permeabilities with medium potential for urban uses and high for recreational uses. These soils are in Capability subclass IIc, non-irrigated and in class I irrigated and in the Gray Sandy Loam range; the second soil (soil majority) is a Raymondville clay loam (52) with slopes between 0 to 1 percent. These soils are moderately well drained, with slow surface runoff and permeabilities are slow with high available water capacities. These soils are in a Capability subclass IIs, non-irrigated and irrigated and in the Clay Loam range – all as per the Soil Survey of Hidalgo County, Texas, pages 33 and 46, respectively.

Drainage waters within this property essentially flow in a due easterly direction generally parallel to Hernandez Street at an average slope of 0.21% over an average drainage run of 145.0 feet. The current site condition is open and vacant with no previous impervious improvements at this location. Hernandez Street is public dedicated / caliche roadway with a newly paved county section type of pavement improvements to this roadway. There is one existing culvert entrance to this tract from Hernandez Street centered on the existing bar ditch.

In accordance with the drainage policies of the City of Weslaco and the County of Hidalgo, this subdivision shall be required to retain on-site the total volume of water CREATED by the post-development of this 0.68 Net acre property. Using the Rational Method (*For Reference: TxDOT Intensity-Frequency-Duration Coefficients for Texas Counties HDM (2004)*) over a 10-year storm event, and, existing drainage coefficient of 0.20 and a future computed drainage coefficient of 0.35 (estimated)(mobile home on blocks) – *For Reference: FHWA, Urban Drainage Design Manual HEC -22 (2001)*, an average drainage run of 145.0 feet and an average slope of 0.21%, it was computed that the improved condition would produce an additional total volume of 1,410.0 Cubic Feet, or, 0.03 Acre-Feet. This volume of water is equivalent to a layer of water 0.52 inches deep if spread out evenly over the entire 0.68 Net acre site. The Q will increase from 1.32 CFS to 1.54 CFS – an increase of 0.22 CFS.

The subdivider agrees to provide for the cleaning of the existing bar ditch located direction in front of this proposed one lot plat. The existing bar ditch is approximately 3 feet deep along the north side of the paved roadway. The finished floor elevation is determined to be not less than 18 inches above the top of the paved road at the center of this lot, or, 18 inches above natural ground at the center of this lot, whichever is greater.

The lot owner may be required to submit a grading plan to insure positive drainage away from the proposed mobile home.

At this time, the subdivider agrees to clean the bar ditch and be sure that there are no obstructions to flow within said bar ditch. The bar ditch shall be cleaned and widened (if needed) to county standards. No other roadway or drainage improvements are being proposed.

Revised Date: February 26, 2021
xc: n:\subdivision\plats\thewoods.sub\drainagereport.022621

☐ REJECTED	
☒ APPROVED FOR SUBMITTAL	
☒ TO H.C. PLANNING DEPT.	
☒ TO CITY	
☒ DISCHARGE PERMIT REQUIRED	
☐ DISTRICT FACILITY	
☐ CITY FACILITY	
☒ OTHER <u>HC</u>	
<u>Hector Garcia</u>	<u>3/4/21</u>
H.C.D.D. NO. 1	DATE



The Woods Subdivision 50-Year Storm Event

21-Jul-20

EXISTING DATA

Total Area	0.680 Ac.
Intercept Coefficient - "k"	0.213 Table 3-2 *
"K _u "	3.28
Overland Flow Length - "L"	145.00 ft
Overland Slope - "S _p "	0.2100 %
Velocity - "V"	0.32
Existing Time of Concentration - "T"	8 min.
Existing Runoff Coefficient - "C"	0.20
Intensity of Rainfall - "I"	9.71 in/hr (10 year event)
Existing - "Q _{10yr} "	1.32 ft ³ /s

PROPOSED IMPROVEMENTS

Proposed Runoff Coefficient - "C"	0.350 Calculated (Mobile Home)
Proposed Time of Concentration - "T"	3 min.
Proposed Intensity - "I"	4.60 in/hr (50 year event)
Proposed - "Q _{50yr} "	1.09 ft ³ /s

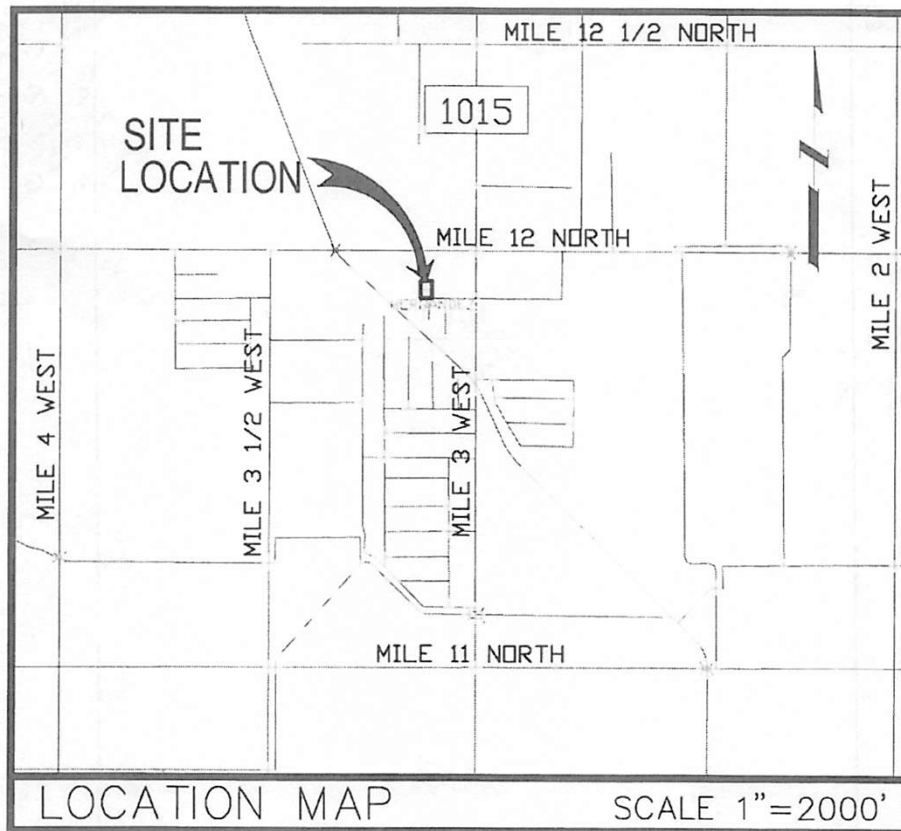
Time		I _{50yr}	Q _{50yr} in	V in	Q _{10yr} out	V out	Req'd V	Req'd V
min	hr	in/hr	ft ³ /s	ft ³	ft ³ /s	ft ³	ft ³	ac-ft
32.00	0.53	6.11	1.45	2792	1.32	1387	1406	0.03
31.00	0.52	6.22	1.48	2755	1.32	1347	1408	0.03
30.00	0.50	6.34	1.51	2717	1.32	1308	1410	0.03
29.00	0.48	6.47	1.54	2678	1.32	1268	1410	0.03
28.00	0.47	6.60	1.57	2637	1.32	1228	1409	0.03
27.00	0.45	6.73	1.60	2596	1.32	1189	1407	0.03
26.00	0.43	6.88	1.64	2553	1.32	1149	1404	0.03
25.00	0.42	7.03	1.67	2508	1.32	1109	1399	0.03
24.00	0.40	7.18	1.71	2462	1.32	1070	1392	0.03
23.00	0.38	7.35	1.75	2414	1.32	1030	1384	0.03

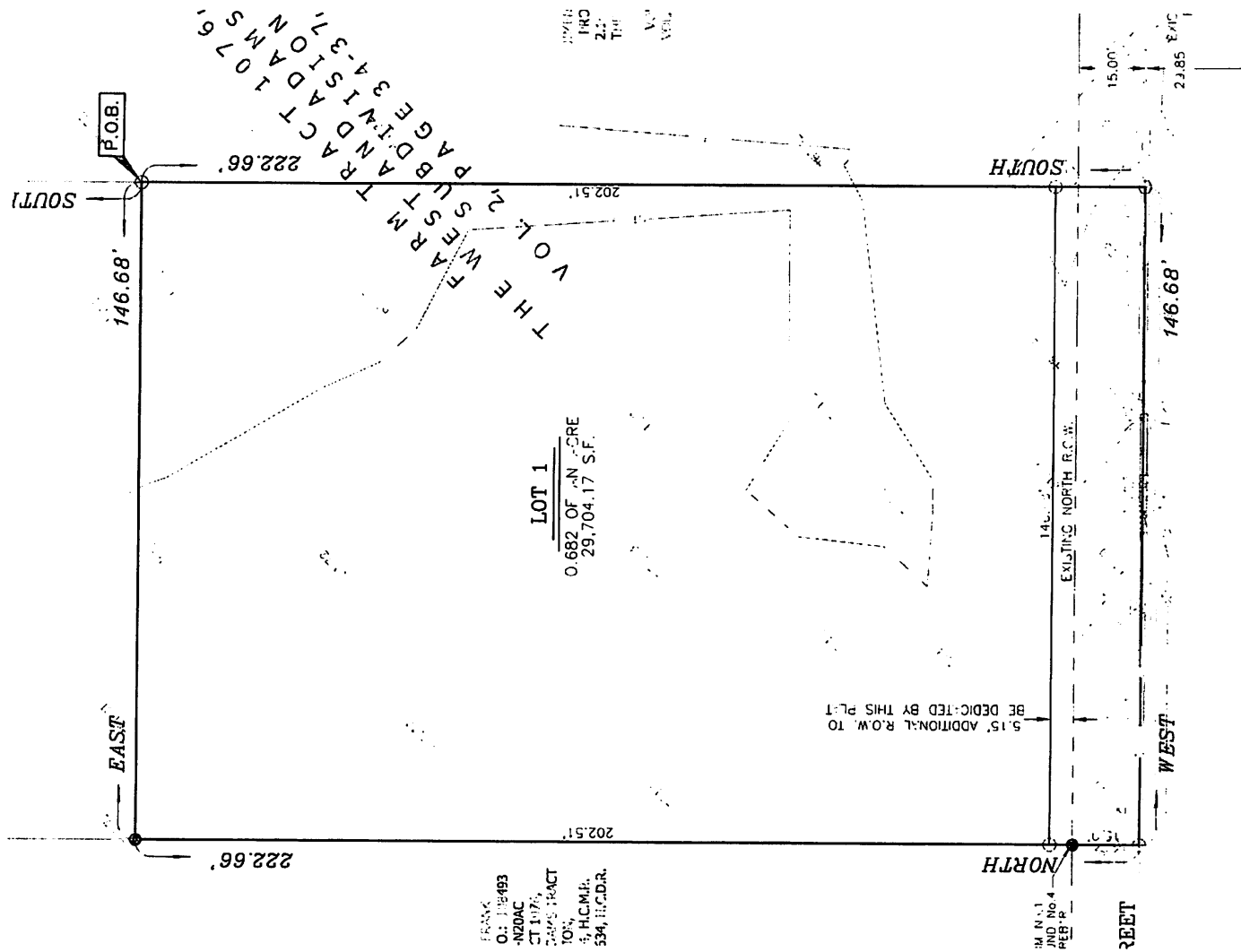
High Point

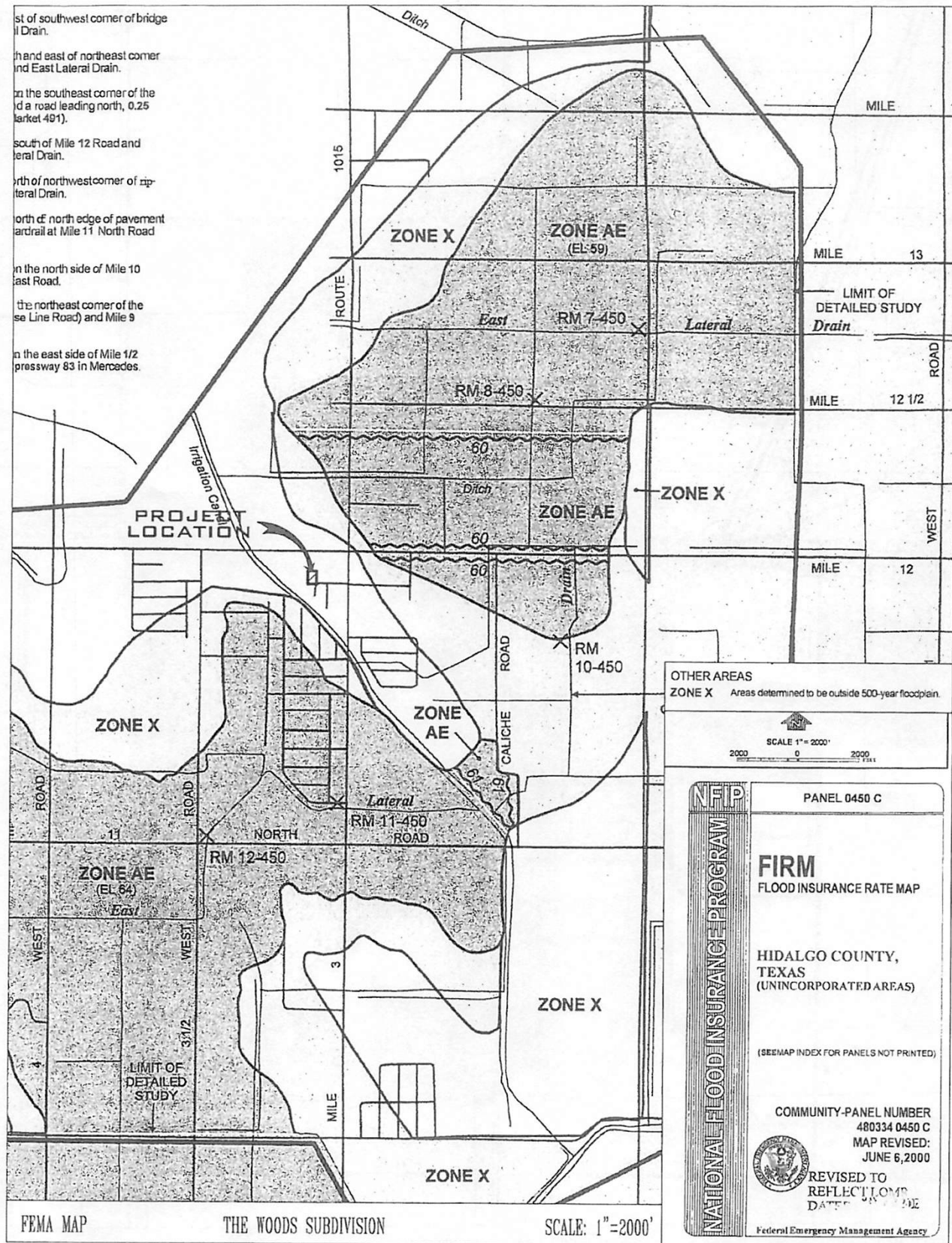
* "City of McAllen, Texas - Drainage Policy 2006"; Standard Design Guide for Subdivision Improvements & Capital Improvements; October 2006

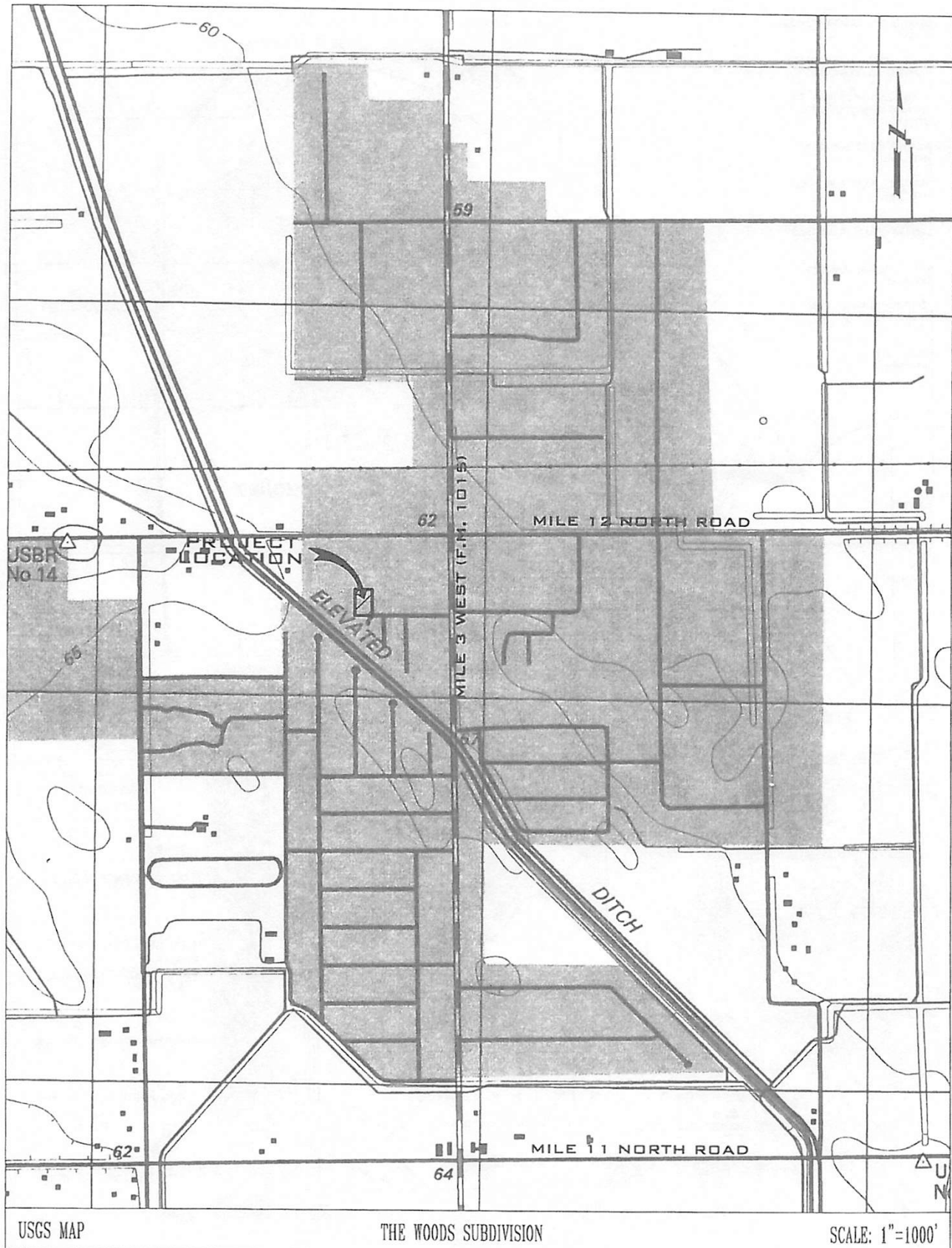
MINIMUM STORAGE FOR THIS LOT: 1,410.0 CU. FT., OR, 0.03 AC. FT.



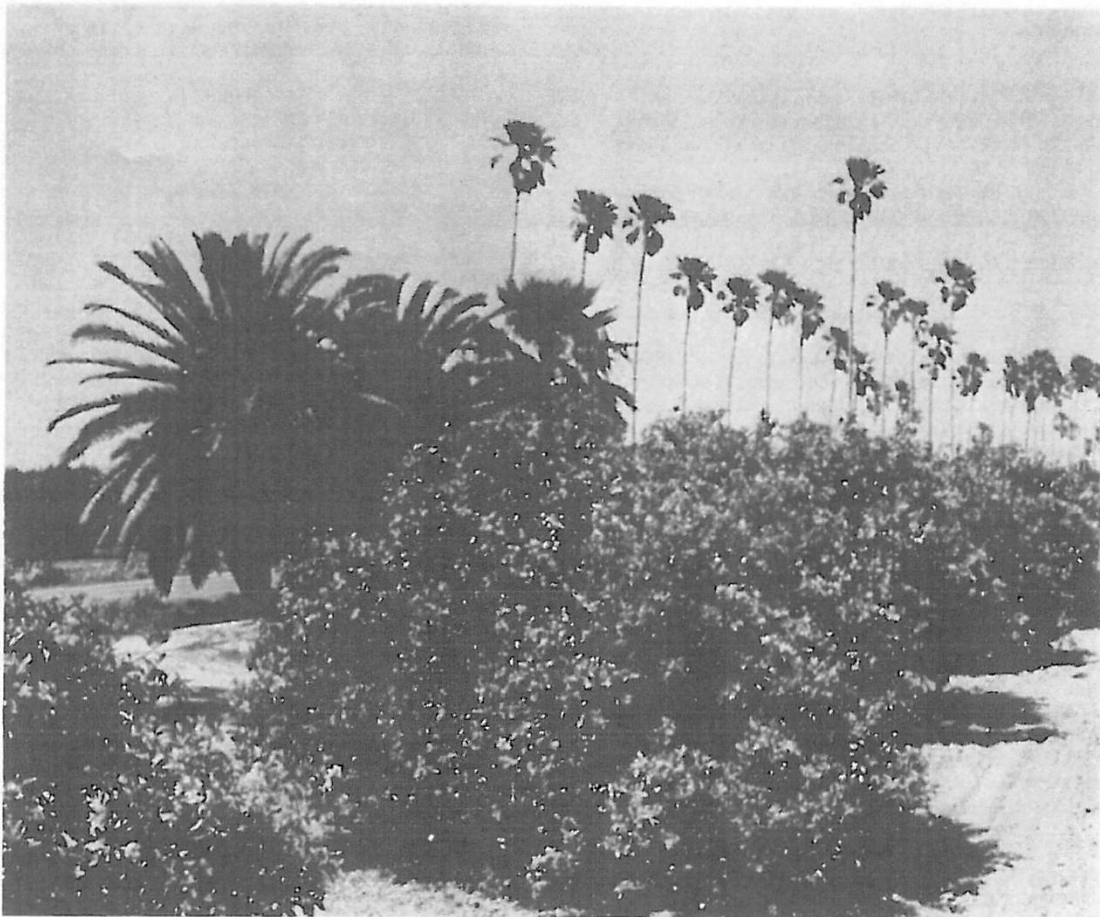








SOIL SURVEY OF HIDALGO COUNTY, TEXAS



United States Department of Agriculture, Soil Conservation Service
in cooperation with the Texas Agricultural Experiment Station

Hidalgo County, Texas

33

pink pappusgrass, and lovegrass tridens. If heavy grazing continues for many years, whitebrush, lime pricklyash, mesquite, pricklypear, and other woody plants form a dense canopy that has an understory of tumblegrass, threeawn, ragweed, and sandburs. Brush encroachment on this soil is a major range management problem.

Potential is high for habitat for deer, javelina, and coyote. Nesting areas are plentiful for quail, doves, and songbirds.

Potential is medium for urban uses and high for recreation uses. The main limitation for urban uses is the high corrosivity for uncoated steel. Low strength is a limitation for local roads and streets.

This Hidalgo soil is in capability subclass IIe, nonirrigated and irrigated; it is in the Gray Sandy Loam range site.

27—Hidalgo fine sandy loam, 3 to 5 percent slopes. This deep, gently sloping soil is on convex uplands. Areas are small and irregular in shape and range from 5 to 175 acres.

Typically, the surface layer is dark grayish brown fine sandy loam about 16 inches thick. The upper part of the subsoil, from 16 to 27 inches, is grayish brown sandy clay loam. The lower part, from 27 to 37 inches, is brown sandy clay loam. The layer extending from 37 to 65 inches is pale brown sandy clay loam. The soil is calcareous throughout.

This soil is well drained. Surface runoff is medium. Permeability is moderate, and the available water capacity is medium. A few areas of this soil have been altered by land leveling for irrigation. In these areas the soil has a thin surface layer because of cutting, and in a few areas all of the surface layer has been removed. The root zone is deep and is easily penetrated by plant roots. The hazard of water erosion is severe, and the hazard of soil blowing is moderate.

Included with this soil in mapping are small areas of Brennan, Delfina, and Willacy soils. The included soils make up less than 15 percent of this map unit.

This Hidalgo soil is used mostly as nonirrigated cropland, pastureland, or rangeland. A few areas are irrigated.

This soil has medium potential for nonirrigated and irrigated crops. Suitable nonirrigated crops are cotton and grain sorghum. Suitable irrigated crops are cotton, grain sorghum, sugarcane, and cool and warm season vegetables. When the soil is bench leveled, it has medium potential for citrus.

If this soil is used as cropland, maintaining or improving soil tilth, managing irrigation water, controlling erosion, and conserving soil moisture are necessary. Cropping systems that include high residue crops help to maintain or improve soil tilth, reduce evaporation, control soil blowing, and provide organic matter. Land leveling reduces erosion and runoff and permits a better distribution of irrigation water. Bench leveling reduces

the depth of required land leveling cuts. Subsurface tile drainage lowers the high water table that can develop from irrigation if the soil is bench leveled. If the soil has not been leveled, a properly designed sprinkler system helps to conserve water. When this soil is not irrigated, contour farming helps reduce soil losses from erosion. Stripcropping helps control soil blowing. The high lime content of this soil can cause chlorosis of some plants, especially in areas where the surface layer has been removed by land leveling. Applying mulch or manure helps to offset the loss of organic matter from land leveling.

Potential is medium for nonirrigated and irrigated pasture grasses. Proper stocking, fertilizing, rotation grazing, and controlling weeds are needed to maintain vigorous plants. Coastal bermudagrass, African stargrass, introduced bluestems, and similar grasses are suited to this soil.

Potential is high for rangeland. In open grassland, the dominant grasses in the potential plant community consist of twoflower trichloris, fourflower trichloris, and plains bristleggrass; woody plants include spiny hackberry and kidneywood; and forbs include bundleflower and bushsunflower.

With continuous heavy grazing by livestock, twoflower trichloris, fourflower trichloris, and plains bristleggrass decrease in the plant community. These plants are replaced by less desirable hooded windmillgrass, pink pappusgrass, and lovegrass tridens. If heavy grazing continues for many years, whitebrush, lime pricklyash, mesquite, pricklypear, and other woody plants form a dense canopy that has an understory of threeawn, tumblegrass, and sandburs. Brush encroachment on this soil is a major range management problem.

Potential is high for habitat for deer, javelina, and coyote. Nesting areas are plentiful for doves, quail, and songbirds.

Potential is medium for urban uses and high for recreation uses. The main limitations are high corrosivity to uncoated steel and low strength for local roads and streets.

This Hidalgo soil is in capability subclass IIIe, nonirrigated and irrigated; it is in the Gray Sandy Loam range site.

28—Hidalgo sandy clay loam, 0 to 1 percent slopes. This deep, nearly level soil is on convex uplands. Areas are mostly broad and irregular in shape and range from 25 to more than 900 acres.

Typically, the surface layer is dark grayish brown sandy clay loam about 17 inches thick. The next layer, from 17 to 28 inches, is brown sandy clay loam. The next layer, from 28 to 38 inches, is pale brown clay loam. The layer extending from 38 to 80 inches is very pale brown sandy clay loam. The soil is calcareous throughout.

This soil is well drained. Surface runoff is slow. Permeability is moderate, and the available water

capacity is high. A few areas of this soil have been altered by land leveling for irrigation. In these areas the soil has a thin surface layer because of cutting, in a few areas it has a thick surface layer because of filling; and in a few areas all of the surface layer has been removed. The root zone is deep and is easily penetrated by plant roots. The hazards of water erosion and soil blowing are slight.

Included with this soil in mapping are small areas of Raymondville and Willacy soils and Hidalgo soils that have a fine sandy loam surface layer. The included soils make up less than 20 percent of this map unit.

This Hidalgo soil is used mostly as irrigated and nonirrigated cropland and for citrus.

This soil has high potential for nonirrigated and irrigated crops. Suitable nonirrigated crops are cotton and grain sorghum. Suitable irrigated crops are cotton, grain sorghum, sugarcane, and cool and warm season vegetables. This soil has high potential for citrus.

If this soil is used as cropland, maintaining or improving soil tilth, managing irrigation water, and providing adequate surface drainage are necessary. Cropping systems that include high residue crops help to maintain or improve soil tilth and provide organic matter. Land leveling reduces runoff and permits a better distribution of irrigation water. Surface drainage is useful

in removing excess water after heavy rainfall. Subsurface tile drainage lowers the high water table that can develop from irrigation. The high lime content of this soil can cause chlorosis of some plants, especially in areas where the surface layer has been removed by land leveling. Applying mulch or manure helps offset the loss of organic matter from land leveling.

Potential is high for nonirrigated and irrigated pasture grasses (fig. 8). Proper stocking, fertilizing, rotation grazing, and controlling weeds are needed to maintain vigorous plants. Coastal bermudagrass, African stargrass, introduced bluestems, and similar grasses are suited to this soil.

Potential is high for rangeland. In open grassland, the dominant grasses in the potential plant community consist of twoflower trichloris, fourflower trichloris, and plains bristlegrass; woody plants include spiny hackberry and kidneywood; and forbs include bundleflower and bushsunflower.

With continuous heavy grazing by livestock, twoflower trichloris, fourflower trichloris, and plains bristlegrass decrease in the plant community. These plants are replaced by the less desirable hooded windmillgrass, pink pappusgrass, and lovegrass tridens. If heavy grazing continues for many years, whitebrush, lime pricklyash,



Figure 8.—Irrigated Coastal bermudagrass on Hidalgo sandy clay loam, 0 to 1 percent slopes.

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pricklypear, and other woody plants form a dense canopy that has an understory of threeawn, tumblegrass, and sandburs. Brush encroachment on this soil is a major range management problem.

Potential is high for habitat for deer, javelina, and coyote. Nesting areas are plentiful for doves, quail, and songbirds.

Potential is medium for urban uses and high for recreation uses. The main limitations are shrinking and swelling of the soil and high corrosivity to uncoated steel.

This Hidalgo soil is in capability subclass IIc, nonirrigated and in class I, irrigated; it is in the Gray Sandy Loam range site.

29—Hidalgo sandy clay loam, 1 to 3 percent slopes. This deep, gently sloping soil is on convex uplands. Areas are small and irregular in shape and range from 5 to 150 acres.

Typically, the surface layer is dark brown sandy clay loam about 14 inches thick. The next layer, from 14 to 36 inches, is brown sandy clay loam. The layer extending from 36 to 72 inches is pale brown sandy clay loam. The soil is calcareous throughout.

This soil is well drained. Surface runoff is slow. Permeability is moderate, and the available water capacity is high. A few areas of this soil have been altered by land leveling for irrigation. In these areas the soil has a thin surface layer because of cutting, and in a few areas all of the surface layer has been removed. The root zone is deep and is easily penetrated by plant roots. The hazard of water erosion is moderate, and the hazard of soil blowing is slight.

Included with this soil in mapping are small areas of Willacy soils and Hidalgo soils that have a fine sandy loam surface layer. The included soils make up less than 15 percent of this map unit.

This soil is used mostly as irrigated and nonirrigated cropland and for citrus.

This soil has high potential for nonirrigated and irrigated crops. Suitable nonirrigated crops are cotton and grain sorghum. Suitable irrigated crops are cotton, grain sorghum, sugarcane, and cool and warm season vegetables. This soil has high potential for citrus.

If this soil is used as cropland, maintaining or improving soil tilth, managing irrigation water, and controlling erosion are necessary. Cropping systems that include high residue crops help maintain or improve soil tilth, reduce evaporation, and provide organic matter. Land leveling reduces erosion and runoff and permits a better distribution of irrigation water. Bench leveling reduces the depth of required land-leveling cuts. Subsurface tile drainage lowers the high water tables that can develop from irrigation when the soil is leveled. When this soil is not irrigated, contour farming helps reduce soil erosion. The high lime content of this soil can cause chlorosis of some plants, especially in areas where the surface layer has been removed by land

leveling. Applying mulch or manure helps offset the loss of organic matter from land leveling.

Potential is high for nonirrigated and irrigated pasture grasses. Proper stocking, fertilizing, rotation grazing, and controlling weeds are needed to maintain vigorous plants. Coastal bermudagrass, African stargrass, introduced bluestems, and similar grasses are suited to this soil.

Potential is high for rangeland. In open grassland, the dominant grasses in the potential plant community consist of twoflower trichloris, fourflower trichloris, and plains bristleggrass; woody plants include spiny hackberry and kidneywood; and forbs include bundleflower and bushsunflower.

With continuous heavy grazing by livestock, twoflower trichloris, fourflower trichloris, and plains bristleggrass decrease in the plant community. These plants are replaced by the less desirable hooded windmillgrass, pink pappusgrass, and lovegrass tridens. If heavy grazing continues for many years, whitebrush, lime pricklyash, pricklypear, and other woody plants form a dense canopy that has an understory of threeawn, tumblegrass, and sandburs. Brush encroachment on this soil is a major range management problem.

Potential is high for habitat for deer, javelina, and coyote. Nesting areas are plentiful for doves, quail, and songbirds.

Potential is medium for urban uses and high for recreation uses. The main limitations are shrinking and swelling of the soil and high corrosivity to uncoated steel.

This Hidalgo soil is in capability subclass IIe, nonirrigated and irrigated; it is in the Gray Sandy Loam range site.

30—Hidalgo sandy clay loam, saline, 0 to 1 percent slopes. This deep, nearly level saline soil is on convex uplands. Areas are small and irregular in shape and range from 25 to 100 acres.

Typically, the surface layer is saline, dark grayish brown sandy clay loam about 15 inches thick. The next layer, from 15 to 25 inches, is saline, brown sandy clay loam. The next layer, from 25 to 36 inches, is saline, pale brown clay loam. The layer extending from 36 to 65 inches is saline, very pale brown sandy clay loam. The soil is calcareous throughout.

This soil is well drained. Surface runoff is slow, and permeability is moderate. The available water capacity is low. This soil is moderately saline to strongly saline as a result of overirrigation and evaporation of slightly saline water. A high water table that is saline occurs at depths from 1 1/2 to 4 1/2 feet below the surface. A few areas of this soil have been altered by land leveling for irrigation. In these areas, the soil has a thin surface layer because of cutting; in a few areas, it has a thick surface layer because of filling; and in a few areas all of the surface layer has been removed. The root zone is deep and is easily penetrated by plant roots. The hazards of water erosion and soil blowing are slight.

crops help maintain soil tilth, reduce evaporation, and provide organic matter.

Potential is high for nonirrigated and irrigated pasture grasses. Proper stocking, fertilizing, rotation grazing, and controlling weeds are needed to maintain plant vigor. Coastal bermudagrass, African stargrass, introduced bluestems, and similar grasses are suited to this soil.

Potential is high for rangeland. In open grassland, the dominant grasses in the potential plant community consist of fourflower trichloris, Arizona cottontop, and sideoats grama; woody plants include vine ephedra and spiny hackberry; and forbs include Engelmann-daisy and bushsunflower.

With continuous heavy grazing by livestock, fourflower trichloris, Arizona cottontop, and sideoats grama decrease in the plant community. These plants are replaced by the less desirable hooded windmillgrass, vine-mesquite, and buffalograss. If heavy grazing continues for many years, mesquite, hulsache, pricklypear, and other woody plants form a dense canopy that has an understory of whorled dropseed, tumblegrass, and threeawn. Brush encroachment on this soil is a major range management problem.

Potential is high for wildlife habitat including habitat for deer, javelina, and coyote. Nesting areas are plentiful for white-winged doves, quail, and songbirds.

Potential is low for urban and recreation uses because of the hazard of flooding.

This Ramadero soil is in capability subclass IIw, nonirrigated and irrigated; it is in the Ramadero range site.

51—Randado-Cuevitas complex, 0 to 3 percent slopes. This map unit consists of shallow to very shallow, nearly level or gently sloping soils that are so intricately mixed that separating them was not practical because of the scale selected for mapping. These soils are on convex uplands. Areas are small and irregular in shape and range from 10 to 45 acres.

Randado fine sandy loam makes up about 55 percent of the unit, and Cuevitas fine sandy loam makes up about 25 percent. Other soils make up the rest.

Typically, Randado soil has a surface layer of reddish brown fine sandy loam about 9 inches thick. The subsoil, between depths of 9 and 16 inches, is reddish brown sandy clay loam. Below this layer there is indurated caliche. The soil is noncalcareous above the caliche.

This soil is well drained. Runoff is slow, and permeability is moderate. The available water capacity is very low. When this soil is dry, the surface is hard and crusty. The root zone is shallow. The hazards of water erosion and soil blowing are moderate.

Cuevitas soil has a surface layer of reddish brown fine sandy loam about 8 inches thick. Below the surface layer there is indurated caliche. The soil is noncalcareous down to the caliche.

This soil is well drained. Runoff is medium, and permeability is moderate. The available water capacity is

very low. When the soil is dry, the surface is hard and crusty. The root zone is very shallow. The hazards of water erosion and soil blowing are moderate.

Included with this unit in mapping are small areas of Delmita soils and areas of rock outcrop. The included areas make up 20 percent or less of this map unit.

These Randado and Cuevitas soils are used as rangeland. A few areas are idle. The soils are not suited to use as cropland.

Potential for rangeland is low. In rangeland, the dominant grasses in the potential plant community for both Randado and Cuevitas soils are silver bluestem, tanglehead, and Arizona cottontop in open grassland; woody plants include guajillo and kidneywood; and forbs include orange zexmenia and bushsunflower.

With continuous heavy grazing by livestock, silver bluestem, tanglehead, and Arizona cottontop decrease in the plant community. These plants are replaced by the less desirable hooded windmillgrass, fall witchgrass, and slim tridens. If heavy grazing continues for many years, Texas tridens, red grama, threeawn, blackbrush, leatherstem, and other woody plants dominate the site.

Potential is low for wildlife habitat including habitat for deer, javelina, doves, and quail because of insufficient plant cover.

Potential for urban and recreation uses is low because of rock outcrops and the shallow depth to indurated caliche.

These Randado and Cuevitas soils are in capability subclass VI, nonirrigated; they are in the Shallow Sandy Loam range site.

52—Raymondville clay loam. This deep, nearly level soil is on plane to slightly concave uplands. Slopes are mainly less than 0.5 percent but range from 0 to 1 percent. Areas are irregular in shape and range from 50 to 950 acres.

Typically, the surface layer is clay loam about 15 inches thick. It is gray in the upper 8 inches and dark gray in the lower 7 inches. The next layer, to a depth of 25 inches, is grayish brown clay loam. The layer below that, to a depth of 43 inches, is grayish brown clay. The next layer, to a depth of 51 inches, is light brownish gray clay. The underlying layer extending to a depth of 65 inches is pale brown clay. The soil is calcareous throughout.

This soil is moderately well drained. Surface runoff is slow. Permeability is slow, and the available water capacity is high. A few areas of this soil have been altered by land leveling for irrigation. In these areas the soil has a thick surface layer as a result of filling, and in a few areas it has a thin surface layer as a result of cutting. The root zone is deep but is not easily penetrated by plant roots. The hazards of water erosion and soil blowing are slight.

Included with this soil in mapping are small areas of Hidalgo, Mercedes, Racombes, and saline Raymondville soils. These soils make up less than 15 percent of any mapped area.

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This Raymondville soil is used mostly as irrigated and nonirrigated cropland.

This soil has medium potential for nonirrigated crops and high potential for irrigated crops. Suitable nonirrigated crops are cotton and grain sorghum. Suitable irrigated crops are cotton, grain sorghum, and cool and warm season vegetables (fig. 9). Potential is medium for sugarcane. Potential is low for citrus.

If this soil is used as cropland, maintaining or improving soil tilth, managing irrigation water, and providing surface drainage are necessary. Cropping systems that include high residue crops help to improve or maintain soil tilth. Land leveling increases the efficiency of irrigation and permits better distribution of irrigation water. Surface drainage is useful in removing excess water after a heavy rainfall. Subsurface tile drainage lowers the high water table that can develop from irrigation.

Potential is medium for nonirrigated pasture grasses and high for irrigated pasture grasses. Proper stocking, fertilizing, rotation grazing, and controlling weeds are needed to maintain plant vigor. Coastal bermudagrass, African stargrass, introduced bluestems, and other grasses are suited to this soil.

Potential is medium for rangeland, although no

acreage is used as such. Most of this soil has been cleared and is continuously cropped; however, a few areas remain undisturbed. Potential is medium in these areas for wildlife habitat including habitat for white-winged doves, quail, songbirds, and furbearing animals such as coyote and weasel.

Potential is low for urban and recreation uses. Shrinking and swelling of the soil and the clayey surface layer are the main limitations.

This Raymondville soil is in capability subclass IIs, nonirrigated and irrigated; it is in the Clay Loam range site.

53—Raymondville clay loam, saline. This deep, nearly level, saline soil is on plane to slightly concave uplands. Slopes are mainly less than 0.5 percent but range from 0 to 1 percent. Areas are irregular in shape and range from 10 to 100 acres in size.

Typically, the surface layer is saline, dark gray clay loam about 16 inches thick. The next layer, from 16 to 29 inches, is saline, gray clay loam. The next layer, from 29 to 39 inches, is saline, grayish brown clay. The underlying layer from 39 to 65 inches is saline, very pale brown clay with many soft bodies of calcium carbonate. The soil is calcareous throughout.



Figure 9.—Irrigated carrots on Raymondville clay loam.

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TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	<u>In</u>								<u>Pct</u>	
13:*										
Randado-----	0-9	Fine sandy loam	SM, SM-SC	A-2-4	75-100	70-100	70-100	20-35	<25	NP-7
	9-16	Fine sandy loam, sandy clay loam.	SC, SM-SC, GC	A-2-4, A-2-6, A-4, A-6	65-100	60-100	60-100	25-50	25-34	7-14
	16-60	Cemented-----	---	---	---	---	---	---	---	---
14-----	0-80	Fine sand-----	SP-SM, SM	A-2-4, A-3	100	100	75-100	5-25	<25	NP-3
Falfurrias										
15-----	0-7	Clay-----	CL, CH	A-7-6	100	100	100	90-100	41-55	20-30
Grulla	7-65	Silty clay, clay	CH	A-7-6	100	100	100	90-100	52-66	28-39
16, 17, 18-----	0-18	Fine sandy loam	SC, SM-SC, SM	A-2-4	100	95-100	95-100	17-35	<30	NP-8
Hargill	18-63	Sandy clay loam	SC, CL	A-6	100	95-100	95-100	40-55	30-40	11-20
	63-80	Sandy clay loam	SC	A-2-4, A-2-6, A-4, A-6	85-100	80-100	75-100	34-50	28-39	9-18
19, 20-----	0-8	Clay-----	CH	A-7-6	100	100	100	90-100	51-85	32-60
Harlingen	8-35	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
	35-72	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
21:*										
Harlingen-----	0-8	Clay-----	CH	A-7-6	100	100	100	90-100	51-85	32-60
	8-35	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
	35-72	Clay-----	CH	A-7-6	100	100	100	95-100	65-85	50-65
Urban land.										
22, 23, 24-----	0-17	Sandy loam-----	SM	A-2-4	100	100	75-100	13-24	<25	NP-4
Hebbronville	17-58	Fine sandy loam, loam.	SM, SM-SC	A-2-4	100	100	90-100	20-30	<30	NP-7
	58-65	Fine sandy loam, loam.	SM-SC, SC	A-2-4, A-4, A-2-6, A-6	95-100	90-100	90-100	20-40	20-30	4-13
25, 26, 27-----	0-17	Fine sandy loam	SC, SM-SC	A-4, A-6	100	95-100	90-100	36-50	20-30	4-11
Hidalgo	17-28	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	90-100	36-80	30-40	11-20
	28-80	Clay loam, sandy clay loam.	CL, SC	A-6, A-7-6	90-100	80-100	75-99	44-80	30-44	11-23
28, 29, 30-----	0-17	Sandy clay loam	SC, CL	A-6	100	95-100	90-100	36-55	29-40	11-20
Hidalgo	17-28	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	90-100	36-80	30-40	11-20
	28-80	Clay loam, sandy clay loam.	CL, SC	A-6, A-7-6	90-100	80-100	75-99	44-80	30-44	11-23
31:*										
Hidalgo-----	0-17	Sandy clay loam	SC, CL	A-6	100	95-100	90-100	36-50	29-40	11-20
	17-28	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	90-100	36-80	30-40	11-20
	28-80	Clay loam, sandy clay loam.	CL, SC	A-6, A-7-6	90-100	80-100	75-99	44-80	30-44	11-23
Urban land.										

See footnote at end of table.

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TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	<u>In</u>								<u>Pct</u>	
45,* 46,* 47,* Pits										
48, 49----- Racombes	0-13 13-49 49-72	Sandy clay loam Sandy clay loam, clay loam. Sandy clay loam, clay loam.	CL, SC CL, SC CL, SC	A-4, A-6 A-6, A-7 A-6	100 100 90-100	100 95-100 80-100	95-100 90-100 80-95	45-65 45-65 40-65	27-35 34-43 30-40	8-15 15-22 11-20
50----- Ramadero	0-21 21-65	Sandy clay loam Sandy clay loam, clay loam.	CL, SC CL, SC	A-6, A-4 A-6, A-7	100 100	100 95-100	95-100 90-100	45-65 45-65	27-39 32-42	9-18 13-21
51:* Randado-----	0-9 9-16 16-60	Fine sandy loam Fine sandy loam, sandy clay loam. Cemented-----	SM, SM-SC SC, SM-SC, GC ---	A-2-4 A-2-4, A-4, A-6 ---	75-100 65-100 ---	70-100 60-100 ---	70-100 60-100 ---	20-35 25-50 ---	<25 25-34 ---	NP-7 7-14 ---
Cuevitas-----	0-8 8-60	Fine sandy loam Cemented-----	SM, SM-SC, SC ---	A-2-4 ---	80-100 ---	80-100 ---	80-100 ---	20-35 ---	<28 ---	NP-9 ---
52, 53----- Raymondville	0-15 15-43 43-65	Clay loam----- Clay, clay loam Clay, clay loam	CL CL, CH CL, CH	A-6, A-7-6 A-6, A-7-6 A-7-6	100 100 100	100 95-100 85-100	95-100 95-100 80-100	51-85 75-95 75-95	37-50 38-55 40-53	18-30 19-35 20-30
54:* Raymondville----	0-15 15-43 43-65	Clay loam----- Clay, clay loam Clay, clay loam	CL CL, CH CL, CH	A-6, A-7-6 A-6, A-7-6 A-7-6	100 100 100	100 95-100 85-100	95-100 95-100 80-100	51-85 75-95 75-95	37-50 38-55 40-53	18-30 19-35 20-30
Urban land.										
55, 56----- Reynosa	0-15 15-48 48-65	Silty clay loam Silty clay loam, silt loam. Stratified silty clay loam to silt loam.	CL, CL-ML CL CL, CL-ML	A-6, A-4, A-7-6 A-6, A-4, A-7-6 A-6, A-4, A-7-6	100 100 100	100 100 100	95-100 95-100 90-100	80-100 80-100 70-100	25-45 28-44 20-49	7-25 9-23 4-29
57:* Reynosa-----	0-15 15-48 48-65	Silty clay loam Silty clay loam, silt loam. Stratified silty clay loam to silt loam.	CL, CL-ML CL CL, CL-ML	A-6, A-4, A-7-6 A-6, A-4, A-7-6 A-6, A-4, A-7-6	100 100 100	100 100 100	95-100 95-100 90-100	80-100 80-100 70-100	25-45 28-44 20-49	7-25 9-23 4-29
Urban land.										
58, 59----- Rio	0-12 12-38 38-63	Fine sandy loam Clay loam, clay Clay loam, sandy clay, sandy clay loam.	SC, SM-SC CL, CH CL	A-2-4, A-4 A-7-6 A-7-6	95-100 95-100 95-100	95-100 95-100 95-100	95-100 95-100 85-95	30-48 75-95 55-80	<30 43-57 41-50	5-10 21-32 20-27

See footnote at end of table.

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TABLE 18.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol > means more than. Absence of an entry indicates that the feature is not a concern]

Map symbol and soil name	Hydro-logic group	Flooding			High water table			Cemented pan		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hard-ness	Uncoated steel	Concrete
					Ft			In			
1: # Arents											
2:----- Benito	D	Occasional	Long-----	Sep-May	4.0-6.0	Apparent	Sep-May	---	---	High-----	Low.
3, 4:----- Brennan	B	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
5, 6:----- Camargo	B	Rare-----	Brief-----	Sep-May	>6.0	---	---	---	---	Moderate	Low.
7:----- Cameron	D	None-----	---	---	5.0-6.0	Apparent	Sep-May	---	---	High-----	Low.
8:----- Comitas	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
9, 10, 11:----- Delfina	B	None-----	---	---	2.5-5.0	Apparent	Sep-May	---	---	High-----	Low.
12:----- Delmita	C	None-----	---	---	>6.0	---	---	20-40	Thin	Moderate	Low.
13: # Delmita-----	C	None-----	---	---	>6.0	---	---	20-40	Thin	Moderate	Low.
Randado-----	C	None-----	---	---	>6.0	---	---	8-20	Thin	Moderate	Low.
14:----- Falfurrias	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
15: # Grulla-----	D	Frequent-----	Very long	Sep-May	+2-6.0	Apparent	Sep-May	---	---	High-----	Low.
16, 17, 18:----- Hargill	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
19:----- Harlingen	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
20:----- Harlingen	D	None-----	---	---	5.0-6.0	---	---	---	---	High-----	Moderate.
21: # Harlingen----- Urban land.	D	None to rare	---	---	>6.0	---	---	---	---	High-----	Low.
22, 23, 24:----- Hebbronville	B	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
25, 26, 27, 28, 29:----- Hidalgo	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
30:----- Hidalgo	B	None-----	---	---	2.5-5.0	Apparent	Sep-May	---	---	High-----	Low.
31: # Hidalgo----- Urban land.	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
32: # Jimenez-----	C	None-----	---	---	>6.0	---	---	7-20	Thin	High-----	Low.

See footnotes at end of table.

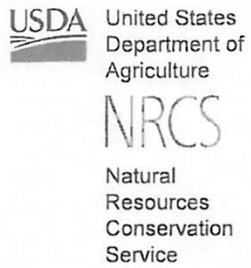
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TABLE 18.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydro-logic group	Flooding			High water table			Cemented pan		Risk of corrosion	
		Frequency	Duration	Months	Depth Ft	Kind	Months	Depth In	Hard-ness	Uncoated steel	Concrete
32: # Quemado-----	C	None-----	---	---	>6.0	---	---	10-20	Thin	Moderate	Low.
33----- Laredo	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
34----- Matamoros	C	Occasional	Long-----	Sep-May	>6.0	---	---	---	---	High-----	Low.
35, 36, 37, 38---- McAllen	C	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
39, 40, 41----- Mercedes	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
42----- Nueces	C	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
43: # Nueces-----	C	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
Sarita-----	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
44, 44----- Olmite	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
45, * 46, * 47.* Pits											
48----- Racombe	B	Rare-----	---	---	>6.0	---	---	---	---	High-----	Low.
49----- Racombe	B	Rare-----	---	---	1.5-4.5	Apparent	Sep-May	---	---	High-----	Low.
50----- Ramadero	B	Common-----	Brief-----	Sep-May	>6.0	---	---	---	---	High-----	Low.
51: # Randado-----	C	None-----	---	---	>6.0	---	---	8-20	Thin	Moderate	Low.
Cuevitas-----	D	None-----	---	---	>6.0	---	---	8-14	Thin	Moderate	Low.
52----- Raymondville	C	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
53----- Raymondville	D	None-----	---	---	2.5-4.5	Apparent	Sep-May	---	---	High-----	Low.
54: # Raymondville-----	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
Urban land.											
55----- Reynosa	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
56----- Reynosa	B	None-----	---	---	1.5-4.5	Apparent	Sep-May	---	---	High-----	Low.
57: # Reynosa-----	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
Urban land.											
58*#----- Rio	D	Frequent-----	Long-----	Sep-May	+2-6.0	Apparent	Sep-May	---	---	High-----	Low.
59*#----- Rio	D	Frequent-----	Long-----	Sep-May	+2-4.5	Apparent	Sep-May	---	---	High-----	Low.

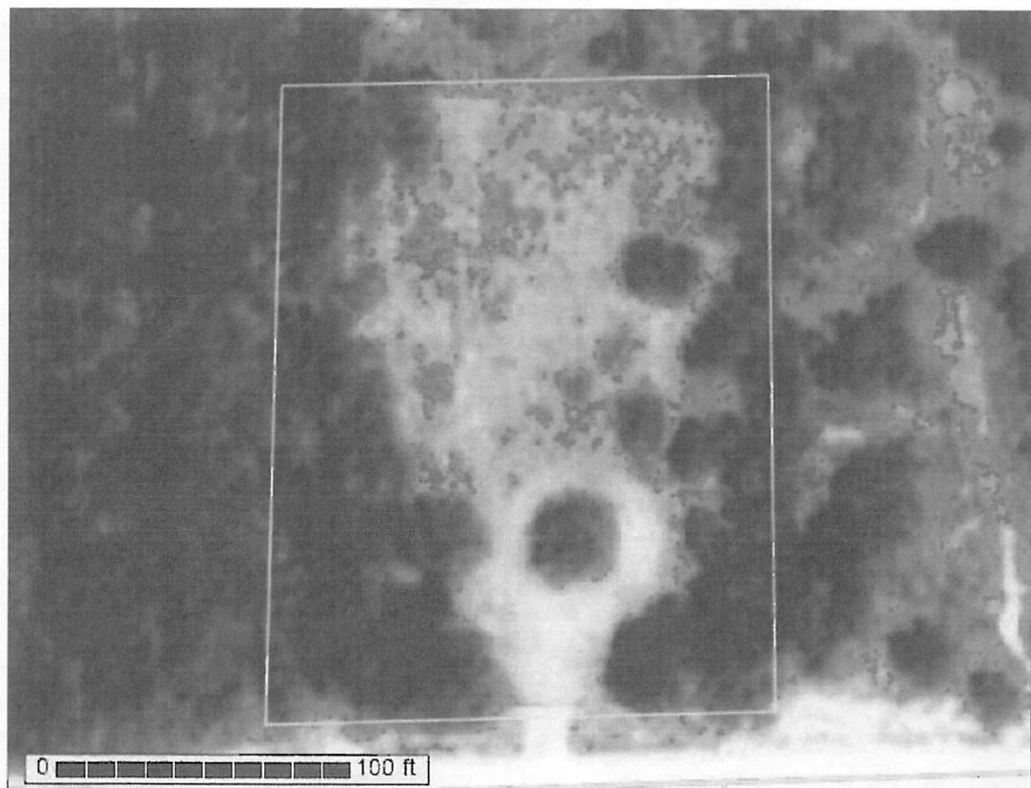
See footnotes at end of table.



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Hidalgo County, Texas

THE WOODS SUBDIVISION



July 16, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

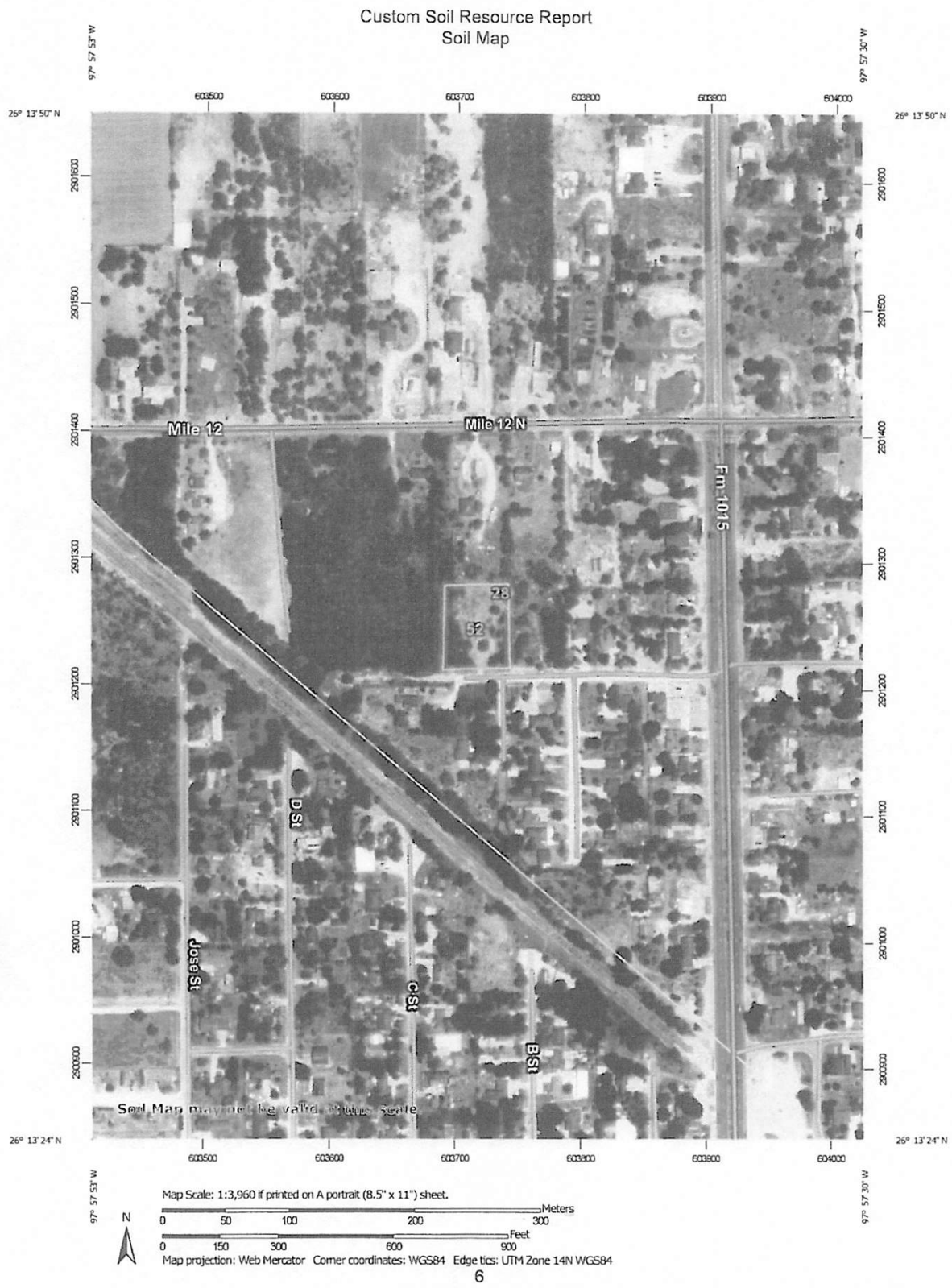
alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



MAP LEGEND

MAP INFORMATION

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

Sodic Spot

Streams and Canals

Local Roads

Aerial Photography

Custom Soil Resource Report

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
28	Hidalgo sandy clay loam, 0 to 1 percent slopes	0.0	5.7%
52	Raymondville clay loam, 0 to 1 percent slopes	0.8	94.3%
Totals for Area of Interest		0.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Custom Soil Resource Report

Hidalgo County, Texas

28—Hidalgo sandy clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sxxv
Elevation: 20 to 500 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hidalgo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: sandy clay loam
Bk1 - 17 to 28 inches: sandy clay loam
Bk2 - 28 to 38 inches: clay loam
Ck - 38 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: Gray Sandy Loam (R083DY019TX)
Hydric soil rating: No

Custom Soil Resource Report

Minor Components

Raymondville

Percent of map unit: 7 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

Racombes

Percent of map unit: 6 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

Willacy

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

52—Raymondville clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: dbm1
Elevation: 20 to 200 feet
Mean annual precipitation: 23 to 33 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 300 to 340 days
Farmland classification: Prime farmland if irrigated

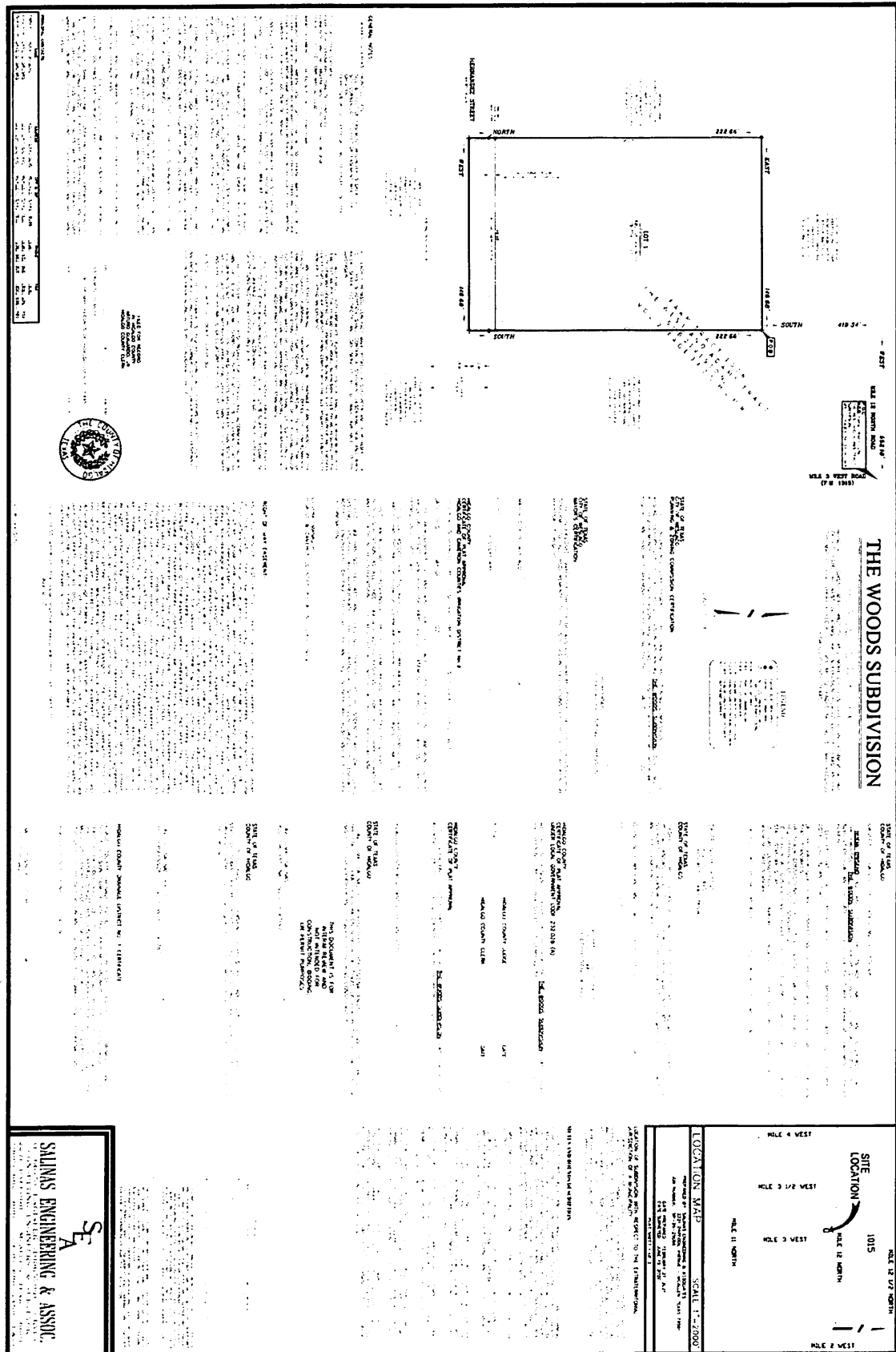
Map Unit Composition

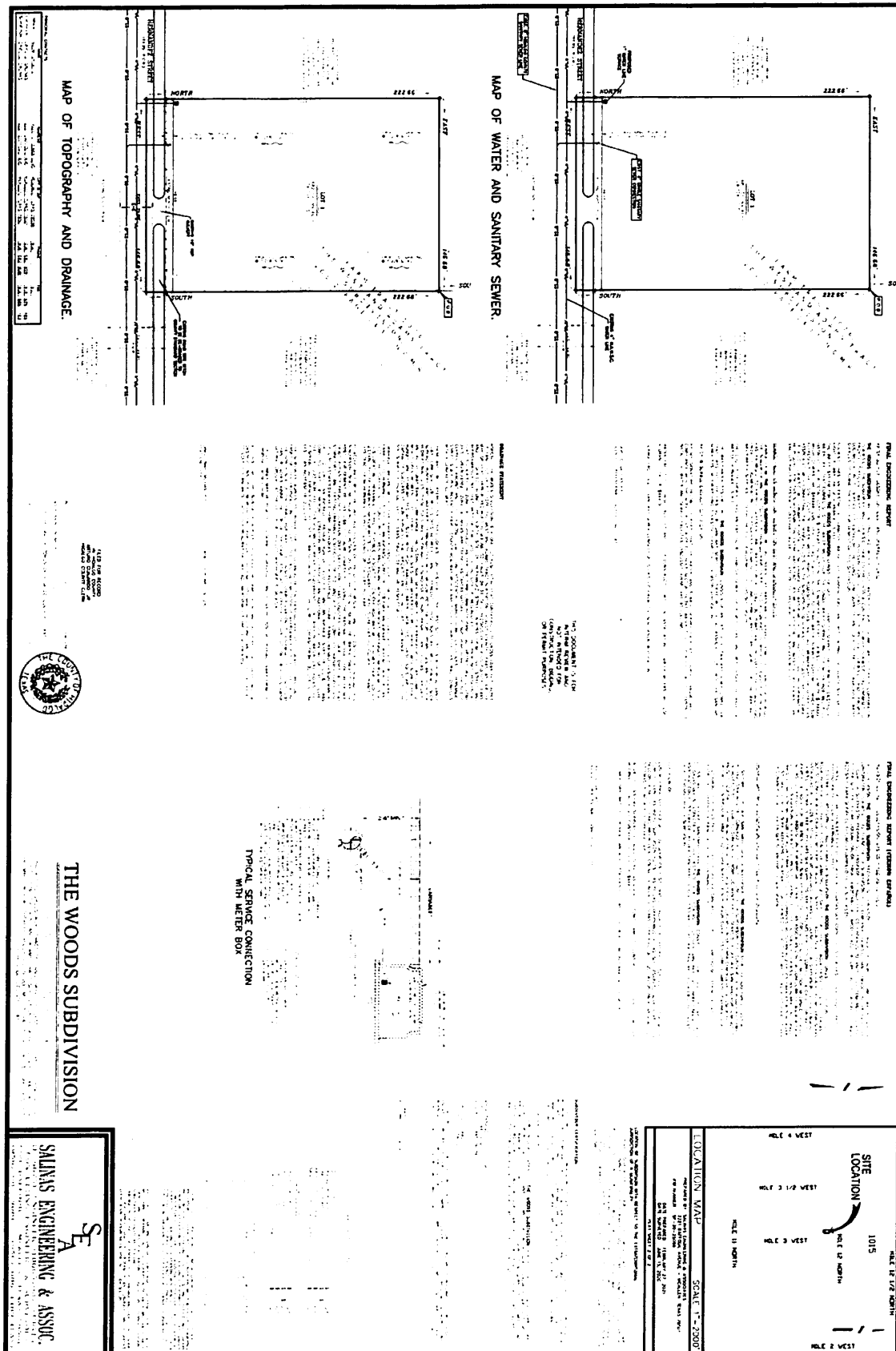
Raymondville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raymondville

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium







**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V.G.
From: Rebekah de la Fuente, Planning Director, on behalf of Rio Delta Engineering	
Subject/Agenda Item: Discussion and consideration for the Final Plat for Plaza de Paz being a 3.00-acre out of Lot 13, Block 137, West Tract Subdivision, Weslaco, Hidalgo County, Texas Located at 1406 W. Pike Blvd. Possible Action.	
Discussion/Overview: The proposed one (1) lot subdivision is located inside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through a 6" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B".	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval of Final Plat	
Additional Action Prompted: [X] Mayor's Signature [] Public Hearing [] Budget Amendment [] Resolution [] Ordinance – First Reading [] Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



SUBDIVISION PLATTING APPLICATION

PIAT-000252-2022

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. _____

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

STAFF USE ONLY

☐ Single Lot Variance ☐ Minor Plat ☐ Planned Unit Development ☐ Standard Subdivision

GENERAL INFORMATION

Name of Subdivision: plaza de paz

Location: 1406 W PIKE BLVD, WESLACO, TEXAS

Legal Description: 3.00 ACRES OUT OF LOT 13, BLOCK 137, WEST TRACT SUBDIVISION, VOLUME 2, PAGE 36, MAP RECORDS OF HIDALGO COUNTY

Is subdivision inside city limits? ☒ YES ☐ NO

If subdivision is in the ETJ, indicate? ☐ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: I - INDUSTRIAL DISTRICT

Existing Land Use: SINGLE-FAMILY RESIDENTIAL Proposed Land Use: COMMERCIAL/RETAIL

Number of Lots Proposed: 1 Gross Acreage: 3.00 AC

Title Report Submitted: ☐ YES ☒ NO

OWNER INFORMATION

Owner's Name: Melinda CHAVEZ Muniz Telephone: _____

Address: 1406 W PIKE BLVD Fax: _____

City: WESLACO State: TX Zip: 78596 E-mail: ayyyits1979@gmail.com

ENGINEER INFORMATION

Name: IVAN GARCIA, P.E., R.P.L.S. Telephone: (956) 380-5152

Address: 921 S. 10TH AVENUE Fax: _____

City: EDINBURG State: TX Zip: 78539 E-mail: riodelta2004@yahoo.com

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

UTILITY PROVISIONS

Will proposed subdivision connect to:

☒ YES ☐ NO Water Provision: CITY OF WESLACO

☒ YES ☐ NO Wastewater Provision: CITY OF WESLACO

☒ YES ☐ NO Electric Company: AEP

☐ YES ☐ NO Phone Utility _____	☐ YES ☐ NO Gas Utility _____	☐ YES ☐ NO Cable Utility _____
--	--	--

Proposed subdivision is in the following districts:

☒ YES ☐ NO Drainage District <u>NO.1</u>	☒ YES ☐ NO Irrigation District <u>HCCID NO.9</u>
---	---

Has the property been assessed as flat rate irrigable property: ☐ YES ☒ NO

Have Water Rights been conveyed to City/Water Supplier? ☐ YES ☒ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If YES, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR MINOR PLAT REVIEW

Two (2) sets of plats folded and stapled (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

\$355.00 Planning Review fee

One 11" X 17" reduced copy of plat

Plat Layout

Existing & Proposed Easements

Existing & Proposed ROW

Existing & Proposed Drainage Easements

Contours

Flood Zones

Adjoiners

Existing street names

Drainage plans and calculations with engineer's seal

Elevations

Flood directional arrows

Detention areas

Street names

Proof of ownership of the property

If septic tank system required, submit soil evaluation report

Water Rights associated with the property

Tax Receipt for all taxing entities showing that taxes are paid in full

SUBMITTALS REQUIRED FOR PRELIMINARY (P & Z)

Twelve (12) sets of preliminary plat folded and stapled (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

\$350.00 (one time fee for preliminary and final plat)

One 11" X 17" reduced copy of plat

Plat Layout

Existing & Proposed Easements

Existing & Proposed ROW

Existing & Proposed Drainage Easements

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

- _____ Contours
- _____ Flood Zones
- _____ Adjoiners
- _____ Existing & Proposed street names
- _____ Utility Layout
- _____ Existing & Proposed Utilities
- _____ Proposed Fire Hydrants
- _____ Adjoiners
- _____ Street names
- _____ Drainage plans and calculations with engineer's seal
- _____ Elevations
- _____ Flood directional arrows
- _____ Detention areas
- _____ Street names
- _____ Proof of ownership of the property
- _____ If septic tank system required, submit soil evaluation report
- _____ Water Rights associated with the property
- _____ Tax Receipt for all taxing entities showing that taxes are paid in full
- _____ Number of fire hydrants proposed for subdivision
- _____ Trip Generation Worksheet

SUBMITTALS REQUIRED FOR FINAL (P & Z) **Will not apply to Single Lot Variance**

- _____ **Twelve (12)** sets of plans **FOLDED & STAPLED** (24 x 36) & PDF copy **with all corrections**
- _____ Plats to be sealed by Professional Engineer
- _____ Approved Drainage Report
- _____ Traffic Impact Analysis (If required)

SUBMITTALS REQUIRED FOR FINAL (City Commission)

- _____ One set of 8 ½ x 11 of plat and utilities with all corrections done

SUBMITTALS REQUIRED FOR PRE-CONSTRUCTION MEETING

- _____ Seven (7) full sets of construction plans 24 x 36 and one (1) 11 x 17 with plan & profile.
- _____ Engineering cost estimates for 3% geotechnical testing fees and 2% inspection fees
- _____ Notice of Intent
- _____ SW3P

SUBMITTALS REQUIRED FOR RECORDING OR HIDALGO COUNTY PLANNING

- _____ Electronic file of final plat and as-builds
- _____ Reproducible plat to be recorded with all required signatures
- _____ 3% geotechnical testing fees or negotiated Material Testing fee by City, whichever is higher
- _____ 2% inspection fee
- _____ Park Fees
- _____ Checks or Receipts: HCCID #9; HCDD #1; County Clerk
- _____ Tax certificates
- _____ Memo from engineering inspector releasing subdivision
- _____ Water Rights associated with the property dedicated and assigned to City of Weslaco or payment of fees sufficient to meet the needs necessitated and attributable to development
- _____ 30 Year Water and 30 Year Sewer Service Agreements
- _____ Park dedication/Fees in lieu of

SUBMITTALS REQUIRED FOR RECORDING BY SECURITY

- _____ Sealed engineering cost estimates
- _____ Letter of Credit/Performance Bond/Escrow

** Any revisions requested would require resubmission of plats and reduced copy reflecting changes.

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: melinda chavez muniz

Owner Signature: Melinda Chavez Muniz Date: 1-14-2022

IVAN GARCIA, P.E., R.P.L.S. - RIO DELTA ENGINEERING is the authorized agent

Authorized Agent Signature: [Signature] Date: 1/24/22

Authorized Agent Printed Name: Ivan Garcia, P.E., R.P.L.S.

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid: _____

P & Z Commission Approval on Preliminary Plat: _____

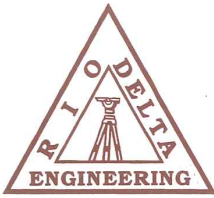
P & Z Commission Approval on Final Plat: _____

City Commission Approval on Final Plat: _____

Preconstruction Meeting Date: _____

Date Recorded: _____ Instrument No. _____

General Comments: _____



RIO DELTA ENGINEERING

CIVIL ENGINEERING • PROJECT MANAGEMENT • LAND DEVELOPMENT
TEXAS REGISTERED ENGINEERING FIRM F-7628
TEXAS LICENSED SURVEYING FIRM #10194027

PLAZA DE PAZ SUBDIVISION DRAINAGE REPORT

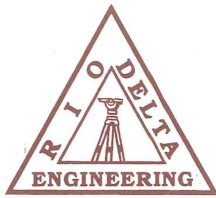
Prepared By:
Ivan Garcia P.E., R.P.L.S.

Date:
May 26, 2022



[Handwritten signature] 5/26/22

1. COVER SHEET
2. INDEX SHEET
3. DRAINAGE REPORT
4. FEMA DETERMINATION
5. PROJECT LOCATION MAP
6. HYDRAULIC CALCULATIONS
7. "C" VALUES FOR METHOD
8. RAINFALL INTENSITY FOR HIDALGO COUNTY
9. FLOOD PLAIN
10. SOIL SURVEY
11. PRELIMINARY PLAT, UTILITY LAYOUT, PAVING & DRAINAGE LAYOUT



RIO DELTA ENGINEERING

CIVIL ENGINEERING • PROJECT MANAGEMENT • LAND DEVELOPMENT
TEXAS REGISTERED ENGINEERING FIRM F-7628
TEXAS LICENSED SURVEYING FIRM #10194027

DRAINAGE REPORT PLAZA DE PAZ SUBDIVISION, Weslaco, Texas

Plaza De Paz Subdivision is a proposed 2 lot commercial subdivision, located within the City of Weslaco city limits, same being a 3.08 acres tract of land out of and forming a part or portion of Lot 13, Farm Tract 137, Block 162, West Tract Subdivision, recorded in Volume 2, Page 34-37, Map Records of Hidalgo County, Texas. The lot will be used for the construction of a commercial development.

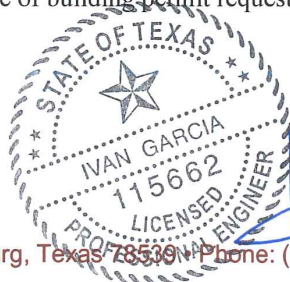
The subdivision is in zone "B", areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood (medium shading), according to the FEMA's Flood Insurance Rate Map Community Panel No.: 480349 0005 B map revised: March 4, 1980.

According to the Soil Survey Report prepared for Hidalgo County by the U.S.D.A. Soil Conservation Service, the site consists of 65.6% of Willacy fine sandy loam (70), with 0 to 1% slopes, the soil is well drained and surface runoff is negligible, permeability is moderately high to high and the water capacity is high. 29.4% of Willacy fine sandy loam (71), with 1 to 3% slopes, the soil is well drained and surface runoff is low, permeability is moderately high to high and the water capacity is high. 4.9% of Hidalgo sandy clay loam (28), with 0 to 1% slopes, the soil is well drained and surface runoff is negligible, permeability is moderately high to high and the water capacity is moderate. These soils are classified as Group (B). Please see the attached tables for the engineering, physical and chemical properties of these soils.

Existing runoff sheet flows overland in a northerly direction into an existing TxDOT grated inlet (as part of Expressway 83's storm drainage improvements) located along the east-bound frontage road on Expressway 83, with outfall to the City of Weslaco drain ditch 18B, then northwest to the Weslaco North Lateral, and subsequently with final outfall to the Laguna Madre.

Using the Rational Method, we have determined that a 10-yr rainfall event will generate approximately 5.24 CFS of storm runoff. We have also used the Rational Method to determine that the improved site will generate an estimated 37.08 CFS of runoff for a 50-yr rainfall event. The improved site will have an approximate increase of 31.84 CFS of storm runoff for a 50-yr rainfall event.

In accordance with the City's drainage requirements, we have calculated that approximately a total of 27,882 CF or 0.640 AC-FT, will need to be detained onsite for the complete development of the subdivision for a 50-yr rainfall event. Current runoff will be detained in a designated detention area within the lot along the west side of the site, which will be routed offsite into a proposed 18-inch drain line to be extended north within an existing 15-ft utility easement along the west side of Lot 2, Harbor Freight Subdivision, as per map or plat thereof recorded in document # 3108226, Map Records of Hidalgo County, which will bleed off into an existing detention area located along the east side of Lot 1, Harbor Freight Subdivision, with outfall into the existing TxDOT grated inlet (as part of Expressway 83's storm drainage improvements) located along the east-bound frontage road on Expressway 83, then to the City of Weslaco drain ditch 18B, then northwest to the Weslaco North Lateral, and subsequently with final outfall to the Laguna Madre. Engineered site grading and detention plans will be required at the time of building permit request. Tables, and calculations are attached.



PLAZA DE PAZ - OUTFALL - 8"

$$Q = 1.49/n \cdot A \cdot R^{2/3} \cdot S^{1/2}$$

Q= flow(cfs)

Given:

$$\begin{aligned} Q &= 5.24 \text{ cfs} \\ Q &= 2351.34 \text{ gpm} \\ D &= 8.00 \text{ in.} \\ S &= 0.050000 \text{ ft/ft} \\ n &= 0.009 \\ V &= 3.00 \text{ ft/sec} \end{aligned}$$

A=area(SF)

R=hydraulic radius(ft)

S=% slope(ft/ft)

n=Manning's coeff. of friction

V=velocity (ft/sec)

(Input known data above)

Calculations

$$Q = 5.24 \text{ cfs}$$

$$A = (3.14 \cdot D^2)/4 = 0.35 \text{ SF}$$

$$A = 0.35 \text{ SF}$$

$$R = (A/P) \text{ (assume full flow)} = 0.17 \text{ ft}$$

$$R = 0.17 \text{ ft}$$

$$S = 0.050000 \text{ ft/ft}$$

$$n = 0.009$$

$$V = 3.00 \text{ ft/sec}$$

Solve for Q

$$Q = V \cdot A = \left(\frac{1.49}{n} \right) A \cdot R^{2/3} \sqrt{S} = 3.89 \text{ cfs}$$

Solve for V

$$V = \frac{Q}{A} = \frac{1.49 \cdot R^{2/3} \cdot S^{1/2}}{n} = 11.224837 \text{ ft/sec}$$

Solve for S

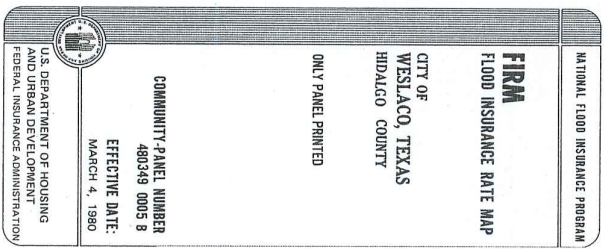
$$S = \left(\frac{V \cdot n}{1.49 \cdot R^{2/3}} \right)^2 = \frac{0.3572}{0.003572} \%$$

Solve for D

$$D = \sqrt{\frac{\left(\frac{Q}{V} \right) \cdot 4}{\pi}} = 17.893951 \text{ in}$$

Solve for R

$$R = \frac{A}{P} = \left(\frac{V \cdot n}{1.49 \cdot S^{1/2}} \right)^{3/2} = 0.0231$$





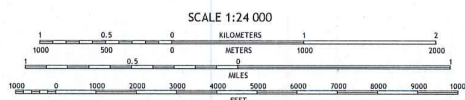
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



DONNA QUADRANGLE
TEXAS - HIDALGO COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84), Projection and
1000-meter grid Universal Transverse Mercator, Zone 14R
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.
Imagery:.....NIP, October 2016 - January 2017
Base:.....U.S. Census Bureau, 2015
Names:.....CHS, 1979 - 2018
Hydrography:.....National Hydrography Dataset, 2003 - 2018
Contours:.....National Elevation Dataset, 2003 - 2008
Boundaries:.....Multiple sources; use metadata file 2016 - 2017
Wetlands:.....FWS National Wetlands Inventory 1983 - 1994



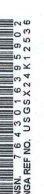
CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.10

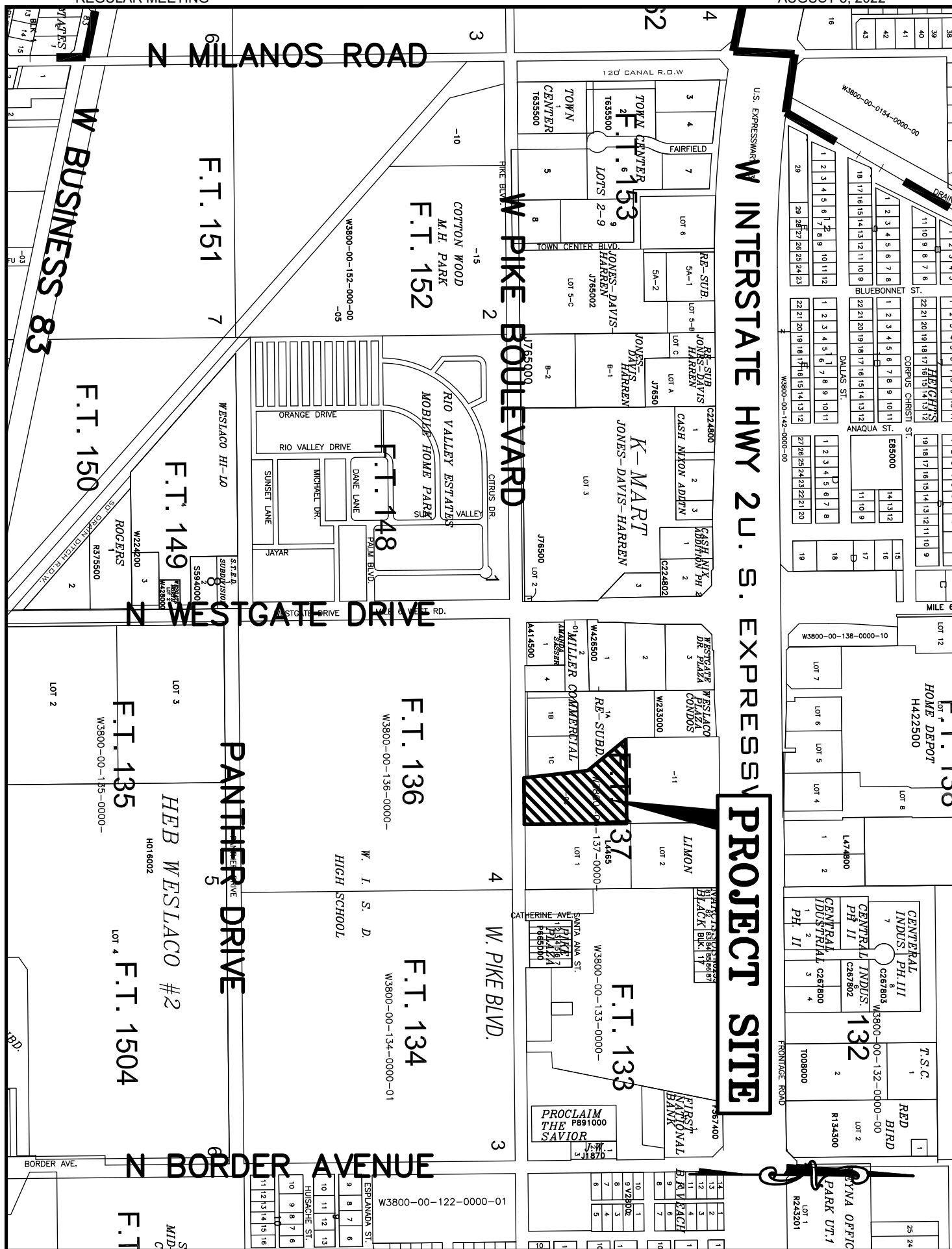


1	2	3	1 Edinburg
4	5	6	2 La Blanca
7	8	9	3 Edcouch
			4 Plant
			5 Mercedes
			6 Las Milpas
			7 San Juan SE
			8 Progress

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Interstate Route
Local Connector
Local Road
4WD
US Route
State Route

DONNA, TX
2019





STORM WATER DETENTION CALCULATIONS

SUMMARY SHEET

Project Name: **PLAZA DE PAZ SUBDIVISION**

City:	WESLACO	
State:	TEXAS	
County:	HIDALGO	
Total Area:	3.00	Acres Gross
Total Net Area:	3	Acres Net
Total lots:	2	*Commercial

Area already developed:	0.00	*Commercial Acres
Area unimproved:	3.00	Acres Net

Existing Run off:	5.24	cfs	*Pre-developed condition
Future Run off:	34.72	cfs	*10 year storm
Future Run off:	37.08	cfs	*25 year storm
			*50 year storm

Total on site detention required:	27,882	cft	*50 year storm
	0.640	Ac-ft	

*References for calculations and procedure: **1) TxDOT Hydraulic Design Manual
Revised March 2009**

**2) FHWA, Urban Drainage Design Manual HEC-22
Revised September 2009**



[Handwritten signature] 5/16/22

I. EXISTING RUN OFF (10 YEAR STORM)

***Rational Method**

***COMMERCIAL**

Project Name: **PLAZA DE PAZ SUBDIVISION**

City: **WESLACO**

State: **TEXAS**

County: **HIDALGO**

3 Acres Net

Highest elevation= **85.00** ft

Lowest elevation= **77.00** ft

Watercourse length, L= **510.00** ft

Slope, S_p = **1.57** %

Average flow velocity, V= **0.88** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$
k= **0.213**

*From Table 3-2 - Intercept Coefficients

Time of concentration, t_c = **9.71** min (calculated)

$$t_c = L / 60V$$

10.00 min (used)

Intensity, i = **8.73** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration
*Coefficients for HIDALGO, County, Texas
*For a recurrence interval of 10 years

e= **0.778**
b= **87**
d= **9.2**

Area already developed= **0.00** SQFT
(buildings and driveway) **0.00** ACRES

*Pre-developed condition

Existing Run off Coefficient: **0.83** *Avg for asphalt streets and roofs
*From Table 3-3 - Run off Coefficients

Area unimproved= **130,680** SQFT
3.00 ACRES

Existing Run off Coefficient: **0.2** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.20**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **5.24** CFS

$$Q = C i A$$

II. FUTURE RUN OFF (25 YEAR STORM)

***Rational Method**

***COMMERCIAL**

Project Name: **PLAZA DE PAZ SUBDIVISION**

City: **WESLACO**
State: **TEXAS**
County: **HIDALGO**
3 Acres Net
Highest elevation= **85.00** ft
Lowest elevation= **77.00** ft
Watercourse length, L= **510.00** ft
Slope, S_p = **1.57** %
Average flow velocity, V= **2.54** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$
 $k = 0.619$

*From Table 3-2 - Intercept Coefficients
*For paved areas.

Time of concentration, t_c = **3.34** min (calculated)
3.34 min (used)

$$t_c = L / 60V$$

Intensity, i = **13.94** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration
*Coefficients for HIDALGO, County, Texas
*For a recurrence interval of 25 years

$e = 0.771$
 $b = 98$
 $d = 9.2$

Area already developed= **0.0** SQFT
0.00 ACRES *Pre-developed condition
Future Run off Coefficient: **0.9** *Avg for roof areas
*From Table 3-3 - Run off Coefficients

Area to be developed= **117,612** SQFT *90% of net area for
2.70 ACRES Commercial building, drives and walks
Future Run off Coefficient: **0.9** *Avg for asphalt streets and roofs
*From Table 3-3 - Run off Coefficients

Area left unimproved= **13,068** SQFT *Remaining area
Total area left unimproved= **0.30** ACRES
Existing Run off Coefficient: **0.2** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.83**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **34.72** CFS

$$Q = C i A$$

III. STORAGE CALCULATIONS (50 YEAR STORM)

***Rational Method**

Project Name: **PLAZA DE PAZ SUBDIVISION**

City:	WESLACO	
State:	TEXAS	
County:	HIDALGO	
	3	Acres Net
Highest elevation=	85.00	ft
Lowest elevation=	77.00	ft
Watercourse length, L=	510.00	ft
Slope, S_p =	1.57	%
Average flow velocity, V=	2.54	ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$
 $k = 0.619$

*From Table 3-2 - Intercept Coefficients
*For paved areas.

Time of concentration, t_c = **3.34** min (calculated)
3.34 min (used)

$$t_c = L / 60V$$

Intensity, i = **14.89** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration
*Coefficients for HIDALGO, County, Texas
*For a recurrence interval of 50 years

$e = 0.749$
 $b = 99$
 $d = 9.2$

Area already developed= **0.0** SQFT
0.00 ACRES *Pre-developed condition
Future Run off Coefficient: **0.9** *Avg for roof areas
*From Table 3-3 - Run off Coefficients

Area to be developed= **117,612** SQFT *90% of net area for
2.70 ACRES commercial business drives and walks
Future Run off Coefficient: **0.9** *Avg for asphalt streets and roofs
*From Table 3-3 - Run off Coefficients

Area left unimproved= **13,068** SQFT *Remaining area
Total area left unimproved= **0.30** ACRES
Existing Run off Coefficient: **0.2** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.83**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **37.08** CFS

$$Q = C_i A$$

IV. STORM WATER DETENTION CALCULATIONS

*Modified Rational Method

Duration (min)	Intensity (in/hr)	Q in (cfs)	Vol in (cft)	Q out (cfs)	V out (cft)	Storage (cft)
5	13.57	33.79	10,137	5.24	1,311	8,825
10	10.83	26.96	16,173	5.24	2,097	14,076
15	9.10	22.67	20,399	5.24	2,883	17,516
20	7.91	19.69	23,629	5.24	3,669	19,960
25	7.03	17.49	26,239	5.24	4,455	21,784
30	6.34	15.79	28,427	5.24	5,241	23,187
35	5.80	14.43	30,313	5.24	6,027	24,287
40	5.35	13.32	31,972	5.24	6,812	25,159
45	4.98	12.39	33,453	5.24	7,598	25,855
50	4.66	11.60	34,793	5.24	8,384	26,408
55	4.38	10.91	36,017	5.24	9,170	26,847
60	4.14	10.32	37,145	5.24	9,956	27,189
65	3.93	9.79	38,191	5.24	10,742	27,450
70	3.75	9.33	39,169	5.24	11,528	27,641
75	3.58	8.91	40,086	5.24	12,314	27,772
80	3.43	8.53	40,950	5.24	13,099	27,850
85	3.29	8.19	41,768	5.24	13,885	27,882
90	3.16	7.88	42,544	5.24	14,671	27,873
95	3.05	7.59	43,284	5.24	15,457	27,827
100	2.94	7.33	43,990	5.24	16,243	27,747
105	2.85	7.09	44,667	5.24	17,029	27,638
110	2.76	6.87	45,316	5.24	17,815	27,501
115	2.67	6.66	45,940	5.24	18,601	27,339
120	2.60	6.46	46,541	5.24	19,386	27,154
125	2.52	6.28	47,120	5.24	20,172	26,948
130	2.45	6.11	47,681	5.24	20,958	26,723
135	2.39	5.95	48,223	5.24	21,744	26,479
140	2.33	5.80	48,748	5.24	22,530	26,219
145	2.27	5.66	49,258	5.24	23,316	25,942
150	2.22	5.53	49,753	5.24	24,102	25,652
155	2.17	5.40	50,235	5.24	24,888	25,347
160	2.12	5.28	50,703	5.24	25,673	25,030
165	2.08	5.17	51,159	5.24	26,459	24,700
170	2.03	5.06	51,604	5.24	27,245	24,359
175	1.99	4.96	52,038	5.24	28,031	24,007
180	1.95	4.86	52,462	5.24	28,817	23,645
185	1.91	4.76	52,876	5.24	29,603	23,273

Total on site detention required=

27,882
0.640

 cft
acres-ft

Duration: Duration in minutes
Intensity: Intensity for respective duration (50-year event)
Q in: Developed conditions peak discharge ($C_{dev} \times i_{50} \times \text{Area}$)
Vol in: Developed conditions run off volume ($Q_{in} \times \text{Duration} \times 60$)
Q out: Pre-developed peak discharge ($C_{pre} \times i_{10} \times \text{Area}$)
V out: $(0.5 \times [\text{duration} + t_c] \times Q_{out} \times 60)$
Storage: Required storage ($V_{in} - V_{out}$)

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.795	0.778	0.771	0.749	0.740
b	74	80	87	98	99	103
d (mins)	9.6	9.2	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Soil Map—Hidalgo County, Texas



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

1/25/2022
Page 1 of 3

MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <https://websoilsurvey.sc.egov.usda.gov/>

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Hidalgo County, Texas

Survey Area Data: Version 20, Sep 13, 2021

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

Date(s) aerial images were photographed: Sep 20, 2015—Nov 5, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
28	Hidalgo sandy clay loam, 0 to 1 percent slopes	0.2	4.9%
70	Willacy fine sandy loam, 0 to 1 percent slopes	2.1	65.6%
71	Willacy fine sandy loam, 1 to 3 percent slopes	0.9	29.4%
Totals for Area of Interest		3.2	100.0%

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Hidalgo County, Texas

28—Hidalgo sandy clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sxxv

Elevation: 20 to 500 feet

Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hidalgo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: sandy clay loam
Bk1 - 17 to 28 inches: sandy clay loam
Bk2 - 28 to 38 inches: clay loam
Ck - 38 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R083DY019TX - Gray Sandy Loam
Hydric soil rating: No

Minor Components

Raymondville

Percent of map unit: 7 percent

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Racombes

Percent of map unit: 6 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Willacy

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

70—Willacy fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: dbmp
Elevation: 30 to 750 feet
Mean annual precipitation: 26 to 34 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 270 to 365 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Willacy and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Willacy

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

H1 - 0 to 14 inches: fine sandy loam
H2 - 14 to 72 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water
(Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0
mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R083DY023TX - Sandy Loam
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 15 percent
Hydric soil rating: No

71—Willacy fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: dbmq
Elevation: 30 to 750 feet
Mean annual precipitation: 26 to 34 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 270 to 365 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Willacy and similar soils: 85 percent
Minor components: 15 percent
*Estimates are based on observations, descriptions, and transects of
the mapunit.*

Description of Willacy

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy alluvium

Typical profile

H1 - 0 to 14 inches: fine sandy loam
H2 - 14 to 72 inches: sandy clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water
(Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0
mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: R083DY023TX - Sandy Loam
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 15 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

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

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

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

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

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Hidalgo County, Texas														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H
28—Hidalgo sandy clay loam, 0 to 1 percent slopes														
Hidalgo	85	B	0-17	Sandy clay loam	CL, SC	A-6	0-0-0	0-0-0	100-100-100	95-98-100	86-96-100	44-54-63	25-30-39	11-15-18
			17-28	Sandy clay loam, clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	100-100-100	94-98-100	85-96-100	50-60-75	30-35-44	11-17-22
			28-38	Clay loam, sandy clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	95-97-100	91-94-100	81-93-100	54-68-81	30-38-44	11-17-22
			38-80	Sandy clay loam, clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	96-97-100	91-95-100	82-94-100	57-72-84	30-38-44	11-17-22
70—Willacy fine sandy loam, 0 to 1 percent slopes														
Willacy	85	B	0-14	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	30-38-45	20-25-30	3-7-10
			14-72	Sandy clay loam, fine sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-0-0	0-0-0	95-98-100	90-95-100	90-95-100	36-51-65	25-33-40	6-13-20

Engineering Properties—Hidalgo County, Texas															
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—					Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	
71—Willacy fine sandy loam, 1 to 3 percent slopes															
Willacy	85	B	0-14	Fine sandy loam	SM, SC- SM, SC	A-2-4, A-4	0-0-0	0-0-0	100-100 -100	100-100 -100	95-98-1 00	30-38- 45	20-25 -30	3-7 -10	
			14-72	Sandy clay loam, fine sandy loam	CL, CL- ML, SC, SC-SM	A-4, A-6	0-0-0	0-0-0	95-98-1 00	90-95-1 00	90-95-1 00	36-51- 65	25-33 -40	6-13-20	

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021



Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties—Hidalgo County, Texas														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
28—Hidalgo sandy clay loam, 0 to 1 percent slopes														
Hidalgo	0-17	45-55- 70	5-18- 28	20-27- 30	1.35-1.50 -1.65	4.00-9.00-14.00	0.10-0.13-0.18	1.5- 2.7- 5.0	1.0- 1.5- 2.0	.17	.17	5	5	56
	17-28	25-48- 70	10-25- 50	23-27- 35	1.20-1.40 -1.50	4.00-9.00-14.00	0.10-0.13-0.18	1.2- 2.1- 5.0	0.3- 0.6- 1.0	.28	.28			
	28-38	25-35- 70	10-35- 50	23-30- 35	1.20-1.40 -1.60	4.00-9.00-14.00	0.10-0.13-0.18	1.2- 2.3- 5.9	0.1- 0.3- 0.5	.32	.32			
	38-80	25-30- 70	10-40- 50	23-30- 35	1.40-1.50 -1.80	4.00-9.00-14.00	0.10-0.13-0.18	1.0- 2.2- 5.0	0.1- 0.2- 0.3	.32	.32			
70—Willacy fine sandy loam, 0 to 1 percent slopes														
Willacy	0-14	-65-	-20-	10-15- 20	1.40-1.55 -1.70	14.00-28.00-42.00	0.14-0.16-0.18	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.28	.28	5	3	86
	14-72	-57-	-18-	18-26- 33	1.35-1.50 -1.65	4.00-9.00-14.00	0.14-0.16-0.18	0.0- 1.5- 2.9	0.5- 1.3- 2.0	.20	.20			

Physical Soil Properties--Hidalgo County, Texas														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
71—Willacy fine sandy loam, 1 to 3 percent slopes														
Willacy	0-14	-65-	-20-	10-15- 20	1.40-1.55 -1.70	14.00-28.00-42.00	0.14-0.16-0.18	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.28	.28	5	3	86
	14-72	-57-	-18-	18-26- 33	1.35-1.50 -1.65	4.00-9.00-14.00	0.14-0.16-0.18	0.0- 1.5- 2.9	0.5- 1.3- 2.0	.20	.20			

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

Report—Chemical Soil Properties

Chemical Soil Properties—Hidalgo County, Texas								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
28—Hidalgo sandy clay loam, 0 to 1 percent slopes	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
Hidalgo	0-17	10-18	—	7.9-8.4	1-5	0	0.0-2.0	0-4
	17-28	10-20	—	7.9-8.4	2-15	0	0.0-3.0	2-5
	28-38	10-20	—	7.9-8.4	10-35	0	0.0-4.0	2-6
	38-80	10-20	—	7.9-8.4	10-35	0	0.0-4.0	4-10
70—Willacy fine sandy loam, 0 to 1 percent slopes								
Willacy	0-14	7.0-15	—	6.6-7.8	0-2	0	0.0-4.0	0-2
	14-72	15-25	—	6.6-8.4	2-10	0	0.0-4.0	0-4
71—Willacy fine sandy loam, 1 to 3 percent slopes								
Willacy	0-14	7.0-15	—	6.6-7.8	0-2	0	0.0-4.0	0-2
	14-72	15-25	—	6.6-8.4	2-10	0	0.0-4.0	0-4

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021



Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend—Hidalgo County, Texas							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
28—Hidalgo sandy clay loam, 0 to 1 percent slopes	133,968						
		85	Hidalgo	Series	0.0	0.5	1.0
70—Willacy fine sandy loam, 0 to 1 percent slopes	31,560						
		85	Willacy	Series	0.0	0.5	1.0
71—Willacy fine sandy loam, 1 to 3 percent slopes	9,892						
		85	Willacy	Series	1.0	2.0	3.0

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

DATE OF PREPARATION: MAY 26, 2022

PLAZA DE PAZ SUBDIVISION

BEING A 3.69 ACRES TRACT OF LAND OUT OF AND FORMING A PART OF PORTION OF LOT 13 FARM TRACT 137 BLOCK 162, WEST TRACT SUBDIVISION,
RECORDED IN VOLUME 2, PAGE 3437, MAP RECORDS OF HIDALGO COUNTY, TEXAS

39.00' SHALE EASEMENT
AS PER VOL.36, PG.186-A, M.R.H.C.

HARBOR FREIGHT SUBDIVISION,
DOC # 3108226, M.R.H.C.

LOT 1
CITY OF WESLACO
UTILITY EASEMENT
AS PER DOC# 3108226,
M.R.H.C.

LOT 2

LOT 1
CITY OF WESLACO
UTILITY EASEMENT
AS PER DOC# 3108226,
M.R.H.C.

LOT 2

LOT 1-A

LOT 2

LOT 3

LOT 4

LOT 5

LOT 6

LOT 7

LOT 8

LOT 9

LOT 10

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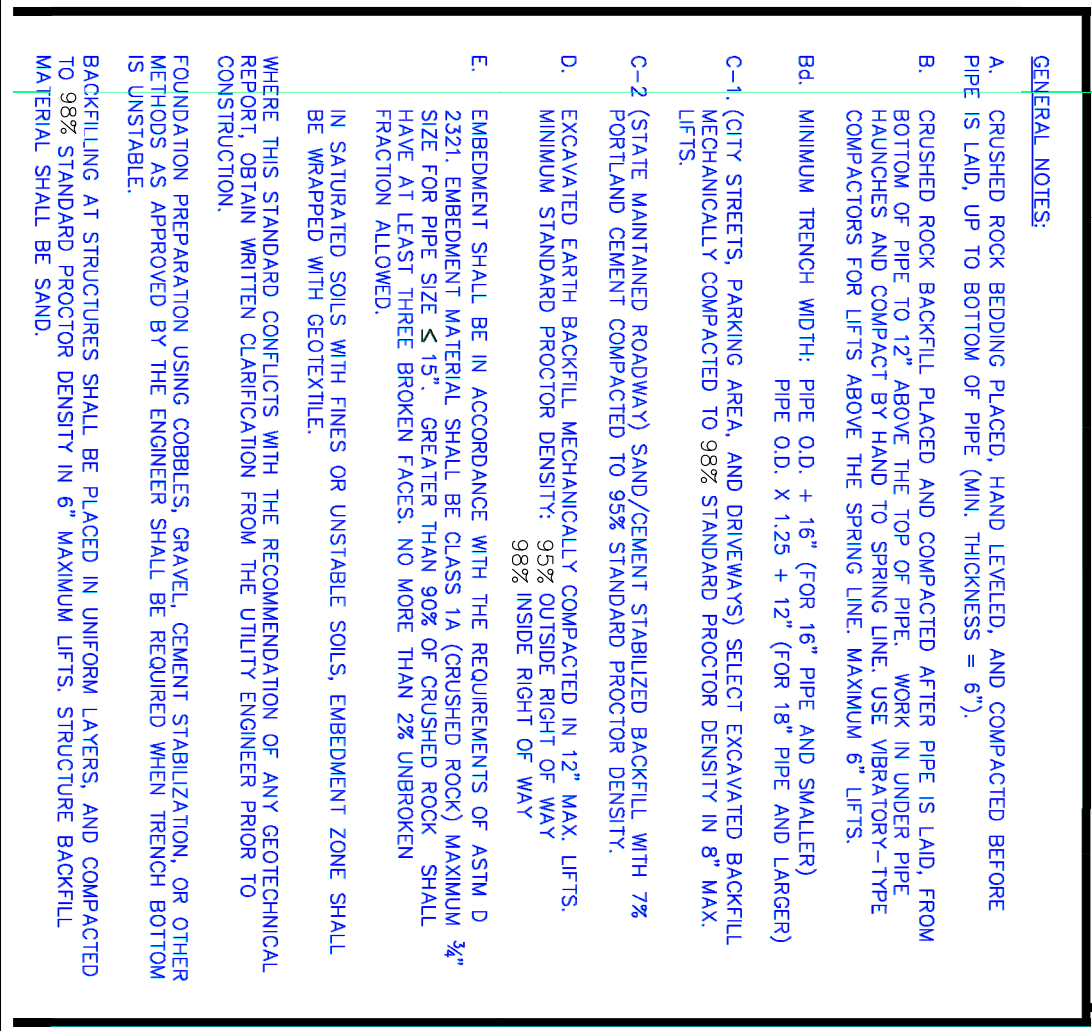
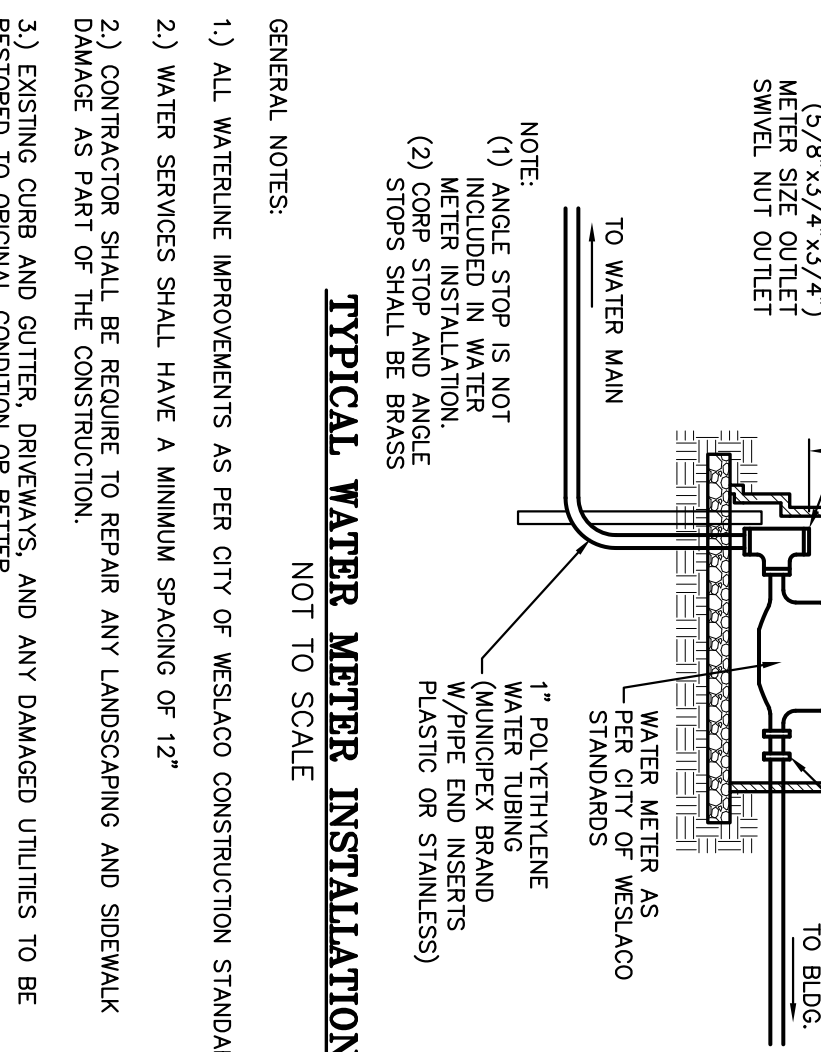
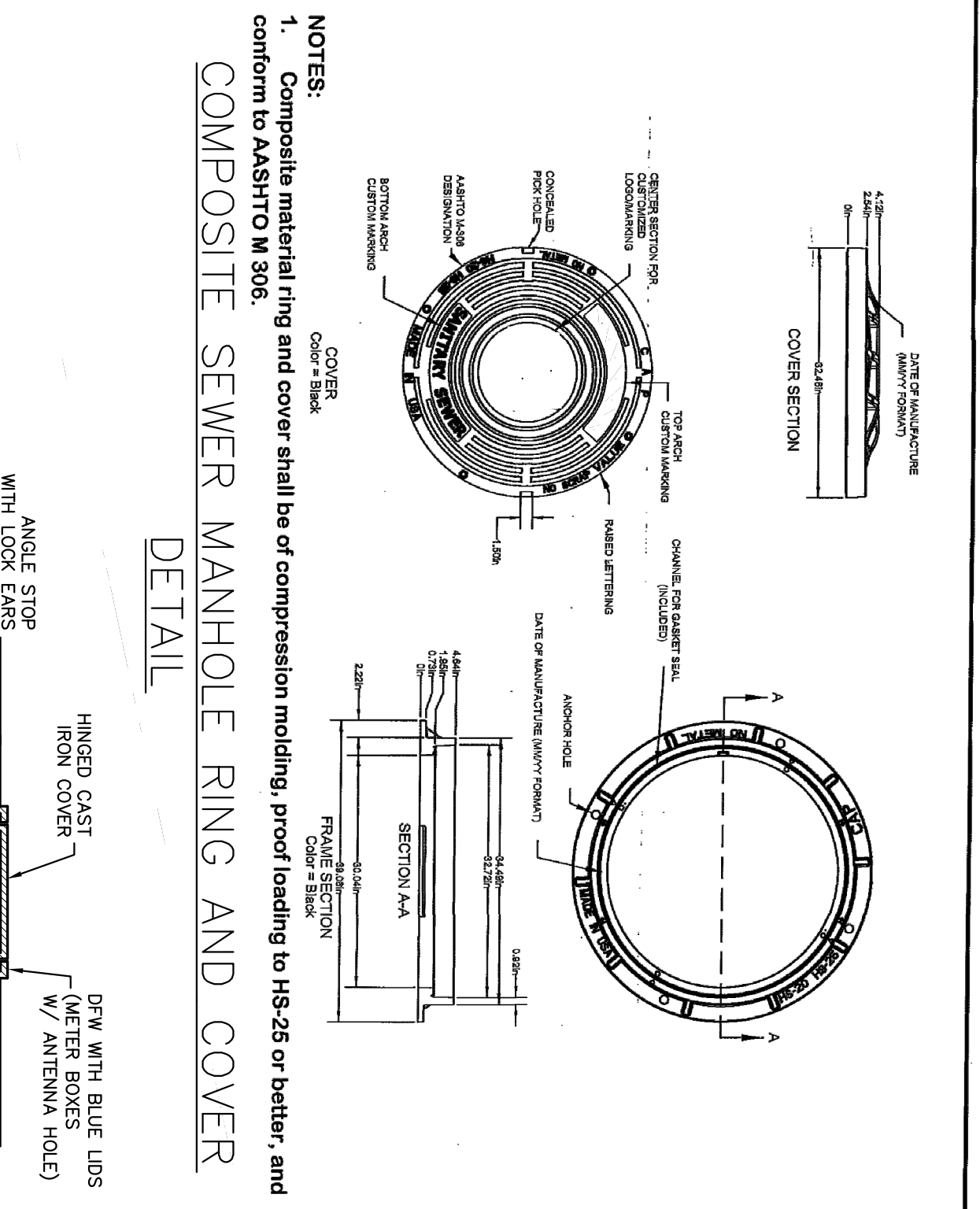
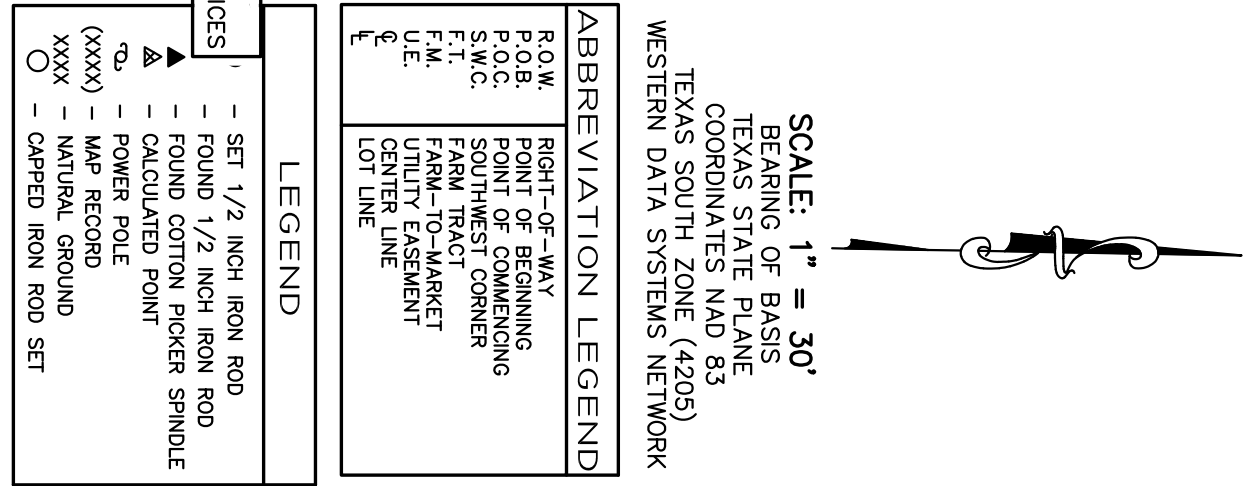
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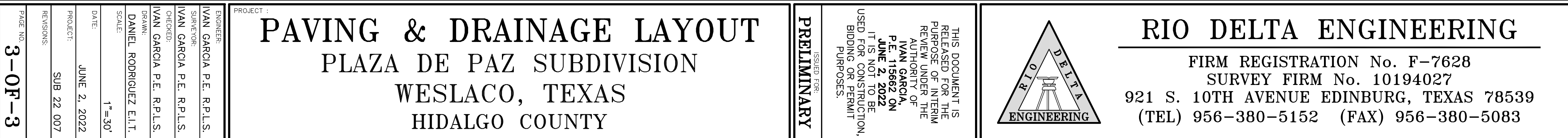
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**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V.H.
From: Rebekah de la Fuente, Planning Director, on behalf of Willie Arratia.	
Subject/Agenda Item: Discussion and consideration for the Final Plat for Moreland Heights– being 12.83-acre out of lot 4, Davis Business Park, Weslaco, Hidalgo County, Texas Located on the south side of Moreland Drive 585 f east of FM 1015. Possible Action.	
Discussion/Overview: The proposed Thirty-two (32) lot subdivision is located inside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through an 8" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B". Applicant was granted a variance for rear setbacks of 10 ft. (lots 31-32) and lot width for lots 15 & 16 with the stipulation that a shared driveway be added.	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval of Final Plat.	
Additional Action Prompted: [X] Mayor's Signature [] Public Hearing [] Budget Amendment [] Resolution [] Ordinance – First Reading [] Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



SUBDIVISION PLATTING APPLICATION

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. PIAT-000257-2022

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

STAFF USE ONLY

☐ Single Lot Variance ☐ Minor Plat ☐ Planned Unit Development ☐ Standard Subdivision

GENERAL INFORMATION

Name of Subdivision: MORELAND HEIGHTS

Location: SOUTH SIDE OF MORELAND DRIVE, 585 FEET EAST OF FM 1615

Legal Description: ALL OF LOT 4, DAVIS BUSINESS PARK, VOL. 35, PAGE 199, MAP RECORDS, HIDALGO COUNTY, TEXAS.

Is subdivision inside city limits? ☒ YES ☐ NO

If subdivision is in the ETJ, indicate? ☐ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: R2

Existing Land Use: VACANT Proposed Land Use: APARTMENTS

Number of Lots Proposed: 32 Gross Acreage: 12.83

Title Report Submitted: ☐ YES ☒ NO

OWNER INFORMATION

Owner's Name: EZEQUIEL MOJA JR. Telephone: 956-408-0267

Address: 7716 N. 5th St. Fax: _____

City: McALLEN State: Tx Zip: 78504 E-mail: zake.moya@gmail.com

ENGINEER INFORMATION

Name: WILLIE ARRAPIA Telephone: 956-784-6218

Address: 526 N. 5th St. Fax: _____

City: Dallas State: Tx Zip: 75357 E-mail: nginengineering@yahoo.com

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

UTILITY PROVISIONS

Will proposed subdivision connect to:

☒ YES ☐ NO Water Provision: CITY OF WESLACO
☒ YES ☐ NO Wastewater Provision: CITY OF WESLACO
☒ YES ☐ NO Electric Company: AEP

☐ YES ☒ NO Phone Utility _____	☐ YES ☒ NO Gas Utility _____	☐ YES ☒ NO Cable Utility _____
---	---	---

Proposed subdivision is in the following districts:

☒ YES ☐ NO Drainage District <u># 1</u>	☐ YES ☐ NO Irrigation District <u># 7</u>
--	---

Has the property been assessed as flat rate irrigable property: ☐ YES ☐ NO

Have Water Rights been conveyed to City/Water Supplier? ☐ YES ☐ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If **YES**, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR MINOR PLAT REVIEW

_____ **Two (2)** sets of plats **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov
_____ **\$350.00** Planning Review fee
_____ One 11" X 17" reduced copy of plat
_____ Plat Layout
_____ Existing & Proposed Easements
_____ Existing & Proposed ROW
_____ Existing & Proposed Drainage Easements
_____ Contours
_____ Flood Zones
_____ Adjoiners
_____ Existing street names
_____ Drainage plans and calculations with engineer's seal
_____ Elevations
_____ Flood directional arrows
_____ Detention areas
_____ Street names
_____ Proof of ownership of the property
_____ If septic tank system required, submit soil evaluation report
_____ Water Rights associated with the property
_____ Tax Receipt for all taxing entities showing that taxes are paid in full

SUBMITTALS REQUIRED FOR PRELIMINARY (P & Z)

_____ **Twelve (12)** sets of preliminary plat **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov
_____ **\$350.00** (one time fee for preliminary and final plat)
_____ One 11" X 17" reduced copy of plat
_____ Plat Layout
_____ Existing & Proposed Easements
_____ Existing & Proposed ROW
_____ Existing & Proposed Drainage Easements

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV



APPLICATION FOR VARIANCE

VAR-000242-2022

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. _____

GENERAL INFORMATION

Name of Subdivision: MORELAND HEIGHTS

Location: SOUTH SIDE OF MORELAND DRIVE, 700 FEET EAST OF FM 1015

Legal Description: ALL OF LOT 4, DAVIS BUSINESS PARK, ACCORDING TO VOLUME 33, PAGE 199, MAP RECORDS, HINDACO COUNTY, TEXAS

VARIANCE TYPE:

☐ Streetlights ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Sanitary Sewer ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Fire Hydrants ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☒ Setbacks ☒ YES ☐ NO

Describe in detail the reason for the variance request:

FOR 10.0' REAR SET BACK WHERE APPLY

☐ Drainage ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Minimum Lot Size ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Sidewalks ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Easement Requirements ☐ YES ☐ NO

Describe in detail the reason for the variance request:

OWNER INFORMATION

Owner's Name: Moreland Heights a R.S. OF MOAR Ventures, LLC Telephone: 956-408-0207

Address: 7714 N. 5th St. Fax: _____

City: McAllen State: TX Zip: 78504 E-mail: zeke.maya@gmail.com

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: Moreland Heights a R.S. OF MOAR Ventures, LLC

Owner Signature: [Signature] Date: 6/6/22

_____ is the authorized agent

Authorized Agent Signature: [Signature] Date: 6/7/22

Authorized Agent Printed Name: Willie Anwar



APPLICATION FOR VARIANCE

VAR-000243-2022

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. _____

GENERAL INFORMATION

Name of Subdivision: HOPELAND HEIGHTS

Location: SOUTH SIDE OF HOBBLAND DR. 700' EAST OF FM 1015

Legal Description: LOT 4, DAVIS BUSINESS PARK, ACCORDING TO VOLUME 33, PAGE 199, MAP RECORDS, HIDALGO COUNTY, TEXAS

VARIANCE TYPE:

☐ Streetlights ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Sanitary Sewer ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Fire Hydrants ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Subbacks ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Drainage ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☒ Minimum Lot Size ☐ YES ☐ NO

Describe in detail the reason for the variance request:

VARIANCE FOR LOT WIDTH FOR LOTS 15 AND 16 AT
CUL DE SAC.

☐ Sidewalks ☐ YES ☐ NO

Describe in detail the reason for the variance request:

☐ Easement Requirements ☐ YES ☐ NO

Describe in detail the reason for the variance request:

OWNER INFORMATION

Owner's Name: EEQUIL MORA JR Telephone: 956-468-0267
Address: 7700 N. 5th St. Fax: _____
City: MCALLISTER State: TX Zip: 75504 E-mail: eeke.morales@gmail.com

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: Moreland Heights a.k.a. of MOAK ventures, LLC

Owner Signature: [Signature] Date: 6/8/22

_____ is the authorized agent

Authorized Agent Signature: [Signature] Date: 6/7/22

Authorized Agent Printed Name: Willie Davis

- _____ Contours
- _____ Flood Zones
- _____ Adjoiners
- _____ Existing & Proposed street names
- _____ Utility Layout
- _____ Existing & Proposed Utilities
- _____ Proposed Fire Hydrants
- _____ Adjoiners
- _____ Street names
- _____ Drainage plans and calculations with engineer's seal
- _____ Elevations
- _____ Flood directional arrows
- _____ Detention areas
- _____ Street names
- _____ Proof of ownership of the property
- _____ If septic tank system required, submit soil evaluation report
- _____ Water Rights associated with the property
- _____ Tax Receipt for all taxing entities showing that taxes are paid in full
- _____ Number of fire hydrants proposed for subdivision
- _____ Trip Generation Worksheet

SUBMITTALS REQUIRED FOR FINAL (P & Z) **Will not apply to Single Lot Variance**

- _____ **Twelve (12) sets of plans FOLDED & STAPLED (24 x 36) & PDF copy with all corrections**
- _____ Plats to be sealed by Professional Engineer
- _____ Approved Drainage Report
- _____ Traffic Impact Analysis (If required)

SUBMITTALS REQUIRED FOR FINAL (City Commission)

- _____ One set of 8 ½ x 11 of plat and utilities with all corrections done

SUBMITTALS REQUIRED FOR PRE-CONSTRUCTION MEETING

- _____ Seven (7) full sets of construction plans 24 x 36 and one (1) 11 x 17 with plan & profile.
- _____ Engineering cost estimates for 3% geotechnical testing fees and 2% inspection fees
- _____ Notice of Intent
- _____ SW3P

SUBMITTALS REQUIRED FOR RECORDING OR HIDALGO COUNTY PLANNING

- _____ Electronic file of final plat and as-builds
- _____ Reproducible plat to be recorded with all required signatures
- _____ 3% geotechnical testing fees or negotiated Material Testing fee by City, whichever is higher
- _____ 2% inspection fee
- _____ Park Fees
- _____ Checks or Receipts: HCCID #9; HCDD #1; County Clerk
- _____ Tax certificates
- _____ Memo from engineering inspector releasing subdivision
- _____ Water Rights associated with the property dedicated and assigned to City of Weslaco or payment of fees sufficient to meet the needs necessitated and attributable to development
- _____ 30 Year Water and 30 Year Sewer Service Agreements
- _____ Park dedication/Fees in lieu of

SUBMITTALS REQUIRED FOR RECORDING BY SECURITY

- _____ Sealed engineering cost estimates
- _____ Letter of Credit/Performance Bond/Escrow

** Any revisions requested would require resubmission of plats and reduced copy reflecting changes.

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: Ezequiel Moya, Jr

Owner Signature: *E Moya* Date: 6-27-22

_____ is the authorized agent

Authorized Agent Signature: *Julia A. P.E.* Date: 6/24/22

Authorized Agent Printed Name: Julie Bratic

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid _____

P & Z Commission Approval on Preliminary Plat: _____

P & Z Commission Approval on Final Plat: _____

City Commission Approval on Final Plat: _____

Preconstruction Meeting Date: _____

Date Recorded: _____ Instrument No. _____

General Comments: _____



Rio Grande Valley Emergency Communication District

Sheriff J. E. "Eddie" Guerra, Hidalgo County Sheriff..... President
Mayor Gilbert Gonzales, Raymondville Vice President
Mayor David Suarez, Weslaco.....Secretary
City Commissioner District 2 Joaquin "J.J." Zamora, McAllen..... Treasurer

June 24, 2022

RGV9-1-1 BOARD OF MANAGERS

Arturo Galvan Jr.
Mayor Pro Tem, Alton

Ramiro Garza Jr.
Mayor, Edinburg

Alonzo "AL" Perez Jr
Mayor, Elsa

Yvette Cabrera
Mayor, Granjeno

Oscar D. Montoya
Mayor, Mercedes

Rodrigo "Rigo" Lopez
Mayor, Penitas

Alma D. Salinas
Mayor, Sullivan City

Judge Aurelio "Keeter"
Guerra
Willacy County

Guillermo Arratia/ Project Engineer
Nain Engineering, LLC
526 N 5th St
Donna, TX 78537

The LRGVDC E-Comms/9-1-1 Department acknowledges the notification on the following **PROPOSED NAMES**:

**ARBE DR
MOAR DR
BELLE DR
DAENNE DR
E MORELAND DR**

CONTINUATION

to be part of **MORELAND HEIGHTS** in the Weslaco community.

A query was done on the state 9-1-1 database and found no conflict for the proposed names to be used.

ACKNOWLEDGED ON: June 24, 2022
RESEARCHED BY: Jose Hernandez
TITLE: Program Specialist

STAFF:

EXECUTIVE DIRECTOR
Manuel "Manny" Cruz

RGV9-1-1 DISTRICT OFFICE: 1912 Joe Stephens Ave. *Weslaco, TX 78599 TEL: (956) 682-3481 Ext. 174

ADMINISTRATIVE AGENT: LRGVDC MAIN OFFICE * 301 W. Railroad ST.* Weslaco, TX * 78596 * TEL: (956) 682-3481
TTY FOR HEARING IMPAIRED: 1-800-735-2989 WEBSITE: www.lrgvdc911.org

NAIN ENGINEERING, L.L.C.
CONSULTING ENGINEER
526 N. 5TH STREET, DONNA, TEXAS. 78537 PH. (956) 784-0218
FIRM No. F-9050

DRAINAGE REPORT
For
MORELAND HEIGHTS

Prepared by : Guillermo A. Arratia, P.E.



Guillermo A. Arratia, P.E.
5/22/22

INDEX OF SHEETS

- 1. Cover Sheet**
- 2. Index of Sheets**
- 3. Drainage Report**
- 4. Drainage Calculations – Exhibit “A”**
- 5. Rainfall Intensity Table**
- 6. Runoff Coefficient Table**
- 7. Location Map – Exhibit “B”**
- 8-9 FEMA Map Location “Exhibit “C”**
- 10-11 Soil Map – Exhibit “D”**

NAIN ENGINEERING, L.L.C.
CONSULTING ENGINEER
526 N. 5TH STREET, DONNA, TEXAS. 78537 PH. (956) 784-0218
FIRM No. F-9050

DRAINAGE REPORT
For
MORELAND HEIGHTS

I. PROJECT LOCATION

A 12.83 acre tract of land being all of Lot 4, Davis Business Park, according to the map recorded in volume 33, page 199, map records, Hidalgo County, Texas, and is located on the south side of Moreland Drive (Mile 7 North), 585 feet east of FM 1015 and is located within the city of limits of Weslaco. (Refer to Exhibit B).

II. FLOOD PLAIN

Zone "X" (medium shading)

Areas of 500 year flood; areas of 100 year flood with average depths less than 1 foot or with drainage areas less than one square mile; areas protected by levees from 100-year base flood F.E.M.A.-F.I.R.M. Map No. 480349 0005 B, Map Effective Date: March 4, 1980. (Refer to Exhibit C).

III. SOIL CONDITIONS

A review of the Soil Survey of Hidalgo County indicates the subject tract lies in an area of predominantly Hidalgo (25) sandy clay loam soil that has a pour low shrink-swell potential and is listed in Hydrological Group B. (Refer to Exhibit D)

IV. EXISTING CONDITIONS

The subject tract is currently undeveloped. The existing terrain has a grade of approximately (0.1%). Existing runoff (6.13 cfs) from the site is by form of sheet flow runs towards the north side of this tract.

V. PROPOSED CONDITIONS

The proposed conditions for this subject tract is for 31 lots for Multi Family use. The storm runoff after development will be increase 22.37 cfs for a total 28.5 cfs, I have calculated that 87,934 cf of storm runoff for a 50 year design frequency, and will be out falling into a proposed storm sewer system pipes ranging from 18" to 30" RCP with curb inlets and out falling into a Proposed detention area on the north side of this subdivision, and ultimately out falling into and existing curb inlet located 342 feet east of the northeast corner of this subdivision, on the south side of Moreland Drive (Mile 7 North) and own by the city of Weslaco,



DRAINAGE CALCULATIONS EXHIBIT "A"

AREA= 12.83 Ac.

TxDOT Intensity Constants for $I = b / (T_c + d)^e$

Existing Conditions

Length= 700 ft.
Slope= 0.1 %
Cexist.= 0.2
Time of Concentration= 92 min.
Texist. = 92 min.
Iexist.= 2.39 in/hr
Qexist.= 6.13 cfs.

10 year storm

b= 87
e= 0.778
d= 9.2

Proposed Conditions

Length= 700 ft.
Slope= 0.15 %
Cfut.= 0.5
Time of Con= 54 min.
Tfut.= 54 min.
Ifut.= 4.45 in/hr
Qfut.= 28.5 cfs.
Qin= 6.42 i

50 year storm

b= 99
e= 0.749
d= 9.2

tp (Min.)	I50 (in/hr)	Qin (cfs)	Vin (cubic ft.)	Qout (cfs)	Vout (cubic ft.)	Ev (cubic ft.)
10	10.83	69.44	41667	6.13	11733	29,934
20	7.91	50.73	60875	6.13	13572	47,303
30	6.34	40.69	73237	6.13	15412	57,825
40	5.35	34.32	82369	6.13	17252	65,117
50	4.66	29.88	89636	6.13	19091	70,545
60	4.14	26.58	95696	6.13	20931	74,765
70	3.75	24.03	100910	6.13	22771	78,140
80	3.43	21.98	105499	6.13	24610	80,889
90	3.16	20.30	109607	6.13	26450	83,157
110	2.76	17.69	116747	6.13	30129	86,618
120	2.60	16.65	119903	6.13	31969	87,934

Storage Requires= 87,934 cubic feet = 2.02 ac-ft



*Full At. p.e.
5/22/22*

TABLE 3-3: Runoff Coefficients	
Type of Drainage Area	Runoff Coefficient "c"
Business	
Downtown Areas	0.70-0.95
Neighborhood Areas	0.50-0.70
Residential	
Single-family areas	0.30-0.50
Multi-units, detached	0.40-0.60
Multi-units, attached	0.60-0.75
Suburban	0.25-0.40
Apartment dwelling areas	0.50-0.70
Industrial	
Light areas	0.50-0.80
Heavy areas	0.60-0.90
Parks, cemeteries	0.10-0.25
Playgrounds	0.20-0.40
Railroad yard areas	0.20-0.40
Unimproved Areas	0.10-0.30
Lawns	
Sandy soil, flat, 2%	0.05-0.10
Sandy soil, average, 2% - 7%	0.10-0.15
Sandy soil, steep, 7%	0.15-0.20
Heavy soil, flat, 2%	0.13-0.17
Heavy soil, average, 2% - 7%	0.18-0.22
Heavy soil, steep, 7%	0.25-0.35
Streets	
Asphaltic	0.70-0.95
Concrete	0.80-0.95
Brick	0.70-0.85
Drives and walks	0.75-0.85
Roofs	0.75-0.95

$$C_w = (C_1A_1 + C_2A_2 + C_3A_3 + \dots + C_nA_n) / A_{total}$$

C_w = Weighted Runoff Coefficient (Composite Coefficient)

C_n = Runoff Coefficient n-th term

A_n = Area of n-th term

A_{total} = Total Area (acres)

12-85

BRIDGE DIVISION HYDRAULIC MANUAL
2 - 19

TABLE 6. CONSTANTS FOR USE IN FORMULA 1 = $b/(t_c + d)^e$ (Continued)

COUNTY	2 year			5 year			10 year			25 year			50 year			100 year		
	a	b	d	e	b	d	e	b	d	e	b	d	e	b	d	e	b	d
Hempfling	0.845	56	10.6	0.851	76	10.7	0.842	87	10.7	0.843	103	10.7	0.840	115	10.7	0.847	132	10.6
Henderson	0.800	60	8.7	0.796	77	9.0	0.770	79	9.0	0.773	93	9.0	0.752	93	9.0	0.749	102	8.7
Hidalgo	0.831	74	9.6	0.795	80	9.2	0.778	87	9.2	0.771	98	9.2	0.749	99	9.2	0.740	103	9.6
Hill	0.799	57	8.2	0.790	72	8.8	0.777	78	8.8	0.773	91	8.8	0.764	98	8.8	0.759	105	8.2
Hockley	0.832	46	9.9	0.832	60	10.0	0.807	64	10.0	0.812	78	10.0	0.810	87	10.0	0.817	101	9.9
Hood	0.782	48	7.7	0.773	63	8.3	0.773	75	8.3	0.782	90	8.3	0.773	98	8.3	0.766	105	7.7
Hopkins	0.788	54	8.3	0.783	70	9.1	0.775	77	9.1	0.767	88	9.1	0.754	93	9.1	0.750	100	8.3
Houston	0.797	63	8.2	0.780	73	8.3	0.757	78	8.3	0.748	86	8.3	0.740	93	8.3	0.727	94	8.2
Howard	0.805	42	9.2	0.800	56	10.1	0.802	65	10.0	0.796	76	10.1	0.791	86	10.1	0.788	95	9.2
Hudspeth	0.800	27	9.4	0.840	44	11.4	0.827	50	11.4	0.819	60	11.4	0.856	78	11.4	0.833	77	7.4
Hunt	0.793	55	8.4	0.785	69	9.2	0.783	80	9.2	0.776	93	9.2	0.764	99	9.2	0.758	104	8.4
Hutchinson	0.860	56	10.4	0.844	70	11.0	0.837	80	11.0	0.851	100	11.0	0.863	121	11.0	0.837	115	10.4
Irion	0.780	37	8.1	0.789	55	9.6	0.778	61	9.6	0.783	77	9.6	0.759	81	9.6	0.770	90	8.1
Jack	0.789	48	8.5	0.779	63	8.5	0.786	75	8.5	0.782	88	8.5	0.782	98	8.5	0.775	109	8.5
Jackson	0.809	68	8.8	0.769	73	8.5	0.757	80	8.5	0.746	89	8.5	0.737	95	8.5	0.720	97	8.8
Jasper	0.782	66	8.1	0.743	65	7.4	0.736	73	7.4	0.719	78	7.4	0.715	84	7.4	0.700	87	8.1
Jeff Davis	0.821	35	9.6	0.865	63	10.8	0.853	69	10.8	0.802	65	10.8	0.818	77	10.8	0.832	93	9.6
Jefferson	0.799	74	9.2	0.733	66	7.5	0.727	74	7.5	0.730	86	7.5	0.710	87	7.5	0.687	84	9.2
Jim Hogg	0.831	73	9.4	0.813	82	9.4	0.786	87	9.4	0.780	98	9.4	0.756	99	9.4	0.750	104	9.4
Jim Wells	0.825	71	9.4	0.797	79	8.9	0.765	80	8.9	0.768	94	8.9	0.748	98	8.9	0.740	102	9.4
Johnson	0.789	52	8.1	0.779	67	8.6	0.773	77	8.6	0.776	90	8.6	0.771	99	8.6	0.763	106	8.1
Jones	0.780	41	8.5	0.771	55	9.0	0.794	73	9.0	0.780	82	9.0	0.803	102	9.0	0.784	104	8.5
Karnes	0.800	60	8.8	0.791	75	8.9	0.766	77	8.9	0.767	91	8.9	0.751	95	8.9	0.749	106	8.8
Kaufman	0.797	57	8.6	0.790	72	9.0	0.776	80	9.0	0.777	93	9.0	0.763	98	9.0	0.757	104	8.6
Kendall	0.791	53	8.6	0.771	64	8.3	0.773	74	8.3	0.764	84	8.3	0.762	94	8.3	0.763	104	8.6
Kenedy	0.826	73	9.2	0.793	79	8.7	0.771	84	8.7	0.763	94	8.7	0.735	96	8.7	0.731	100	9.2
Kerr	0.801	43	9.0	0.801	60	10.0	0.796	70	10.0	0.806	85	10.0	0.798	93	10.0	0.798	104	9.0
Kerr	0.789	49	8.4	0.765	58	8.0	0.764	69	8.0	0.763	80	8.0	0.768	91	8.0	0.768	104	8.4
Kimble	0.775	42	8.2	0.758	53	7.6	0.763	66	7.6	0.757	75	7.6	0.772	88	7.6	0.768	100	8.2
King	0.804	45	9.4	0.794	59	9.6	0.804	74	9.6	0.802	87	9.6	0.811	103	9.6	0.802	111	9.4
Kintley	0.812	53	8.8	0.780	62	8.0	0.773	70	8.0	0.777	82	8.0	0.790	97	8.0	0.781	108	8.8
Kleberg	0.826	72	9.4	0.794	79	8.7	0.764	81	8.7	0.761	93	8.7	0.739	96	8.7	0.739	99	9.4
Knox	0.800	46	9.4	0.788	58	9.3	0.801	76	9.3	0.798	88	9.3	0.809	104	9.3	0.798	111	9.4
Lamar	0.783	53	8.2	0.777	66	8.9	0.770	74	8.9	0.769	87	8.9	0.759	93	8.9	0.752	98	8.2
Lamb	0.837	47	10.1	0.828	60	9.6	0.800	63	9.6	0.821	80	9.6	0.818	88	9.6	0.820	103	10.1

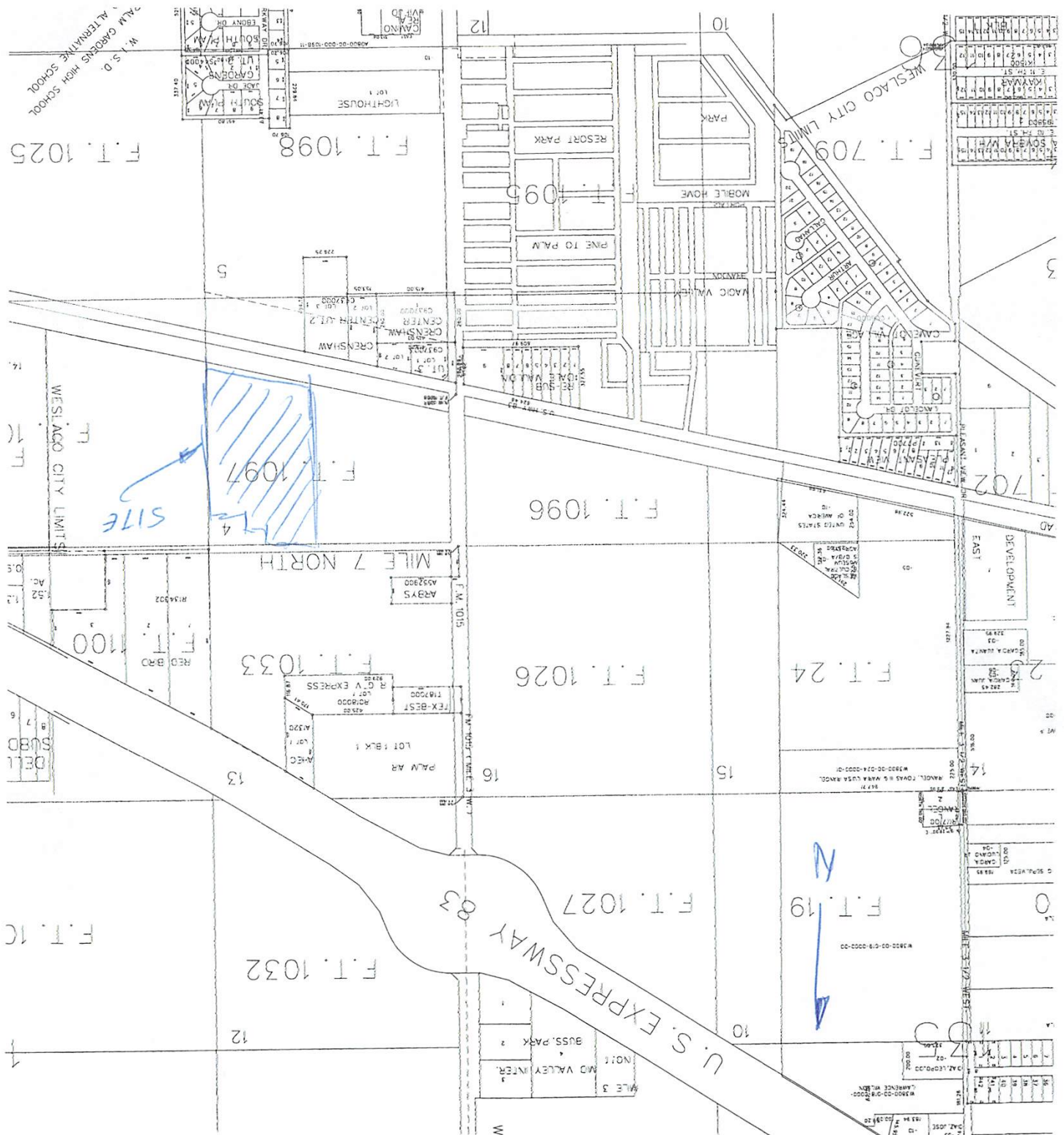
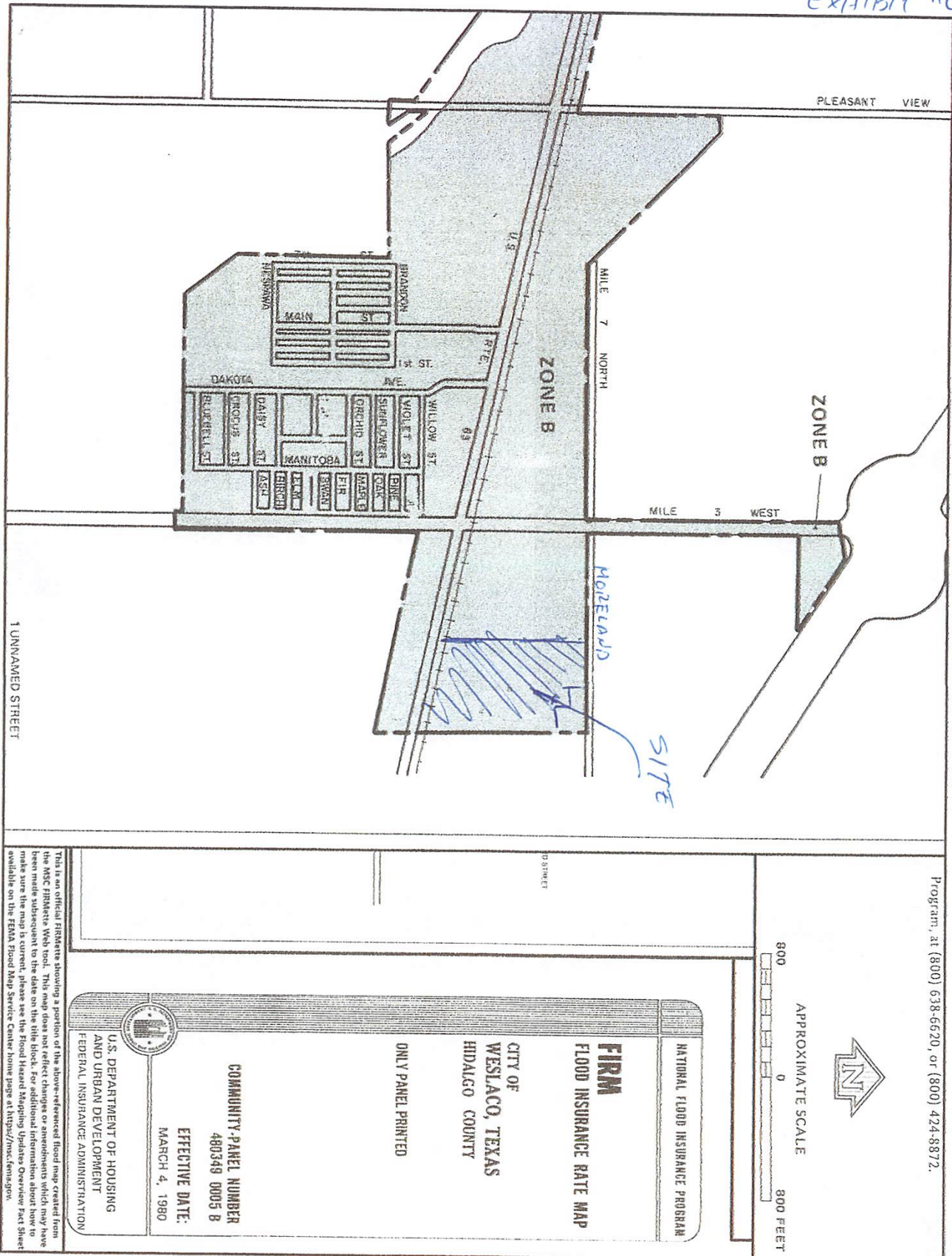
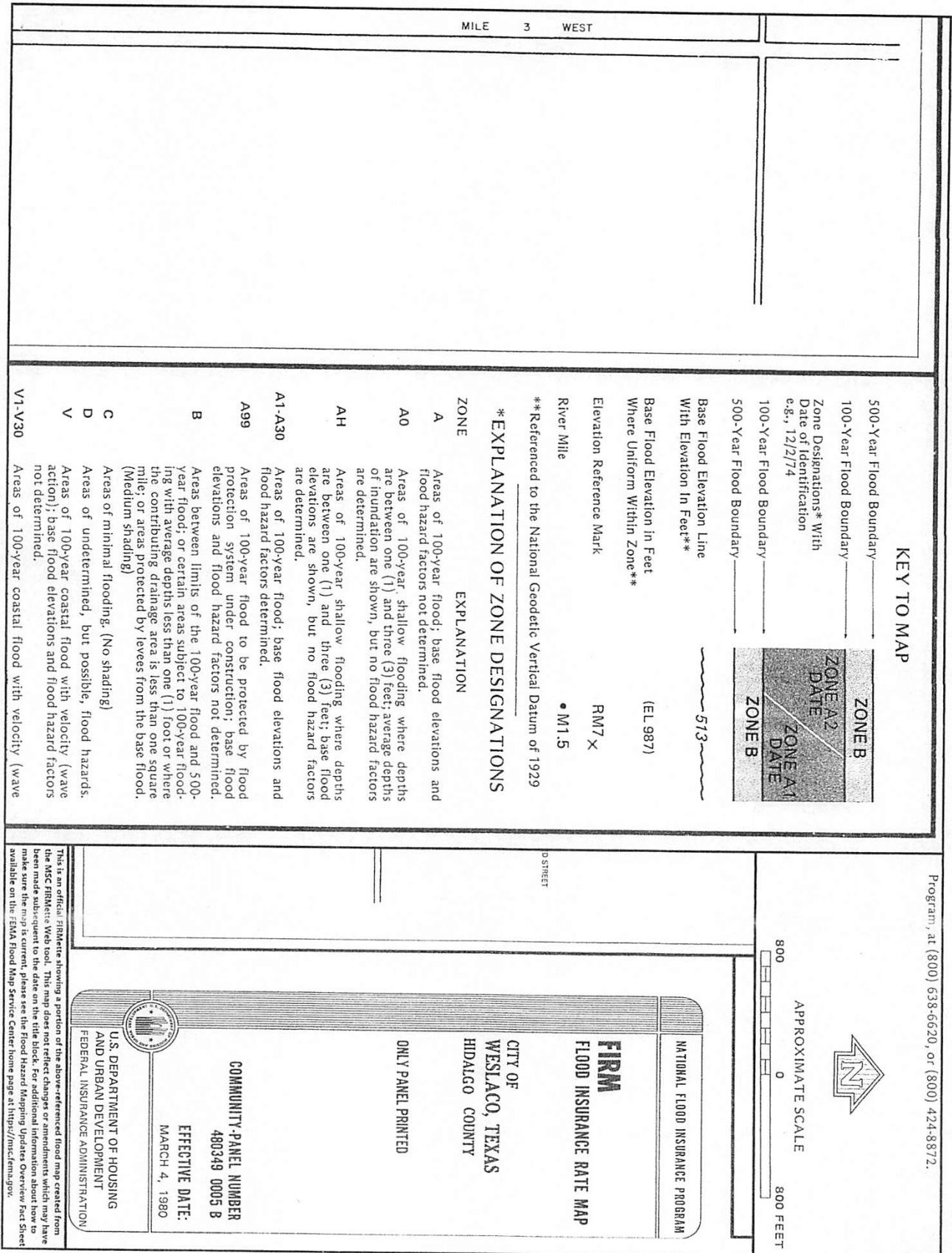
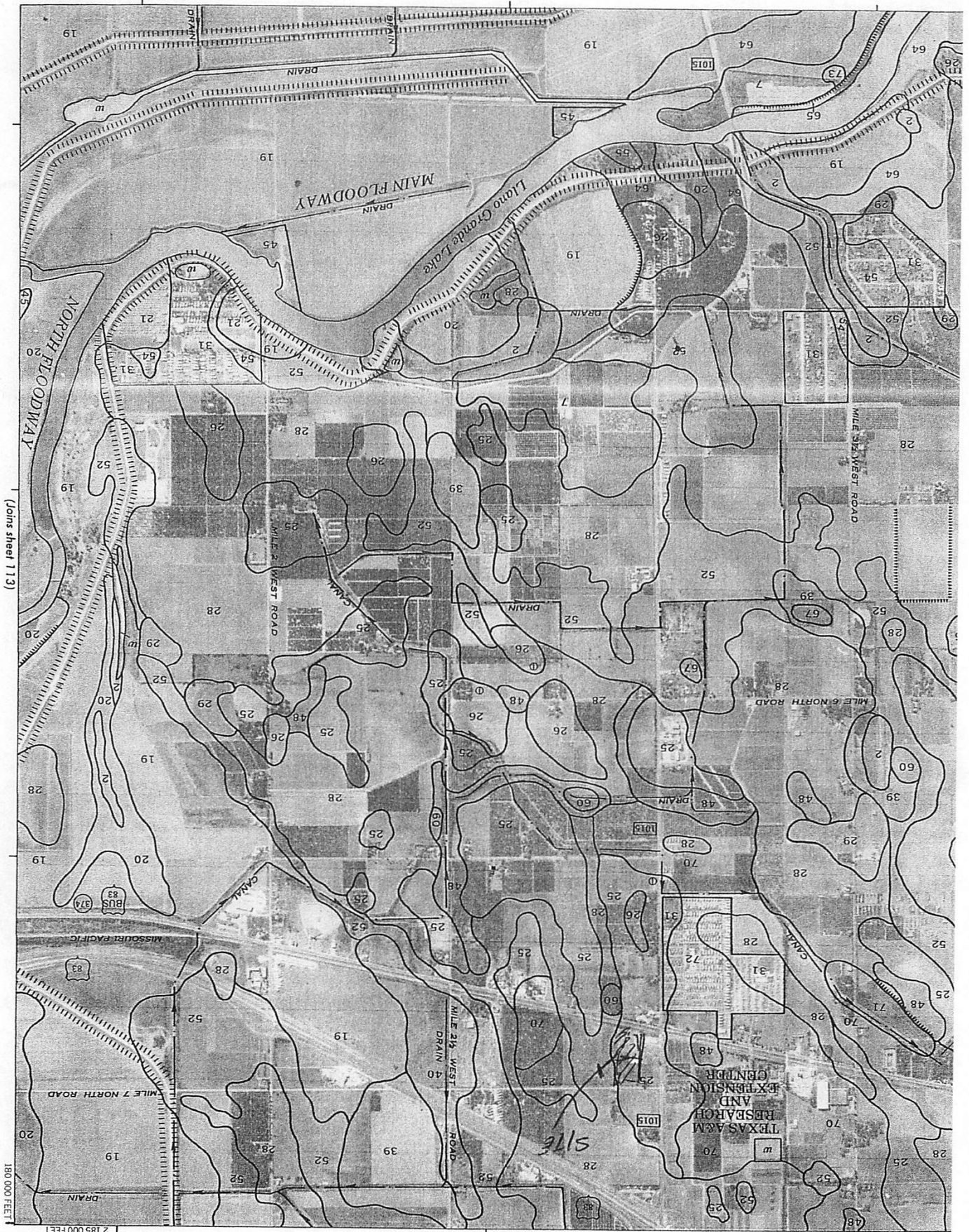


EXHIBIT 184

EXHIBIT "C"







This map is compiled on 1975 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.

(Join sheet 113)

180 000 FEET

1 2 185 000 FEET

EXHIBIT "D"

XAS - SHEET NUMBER 112

5

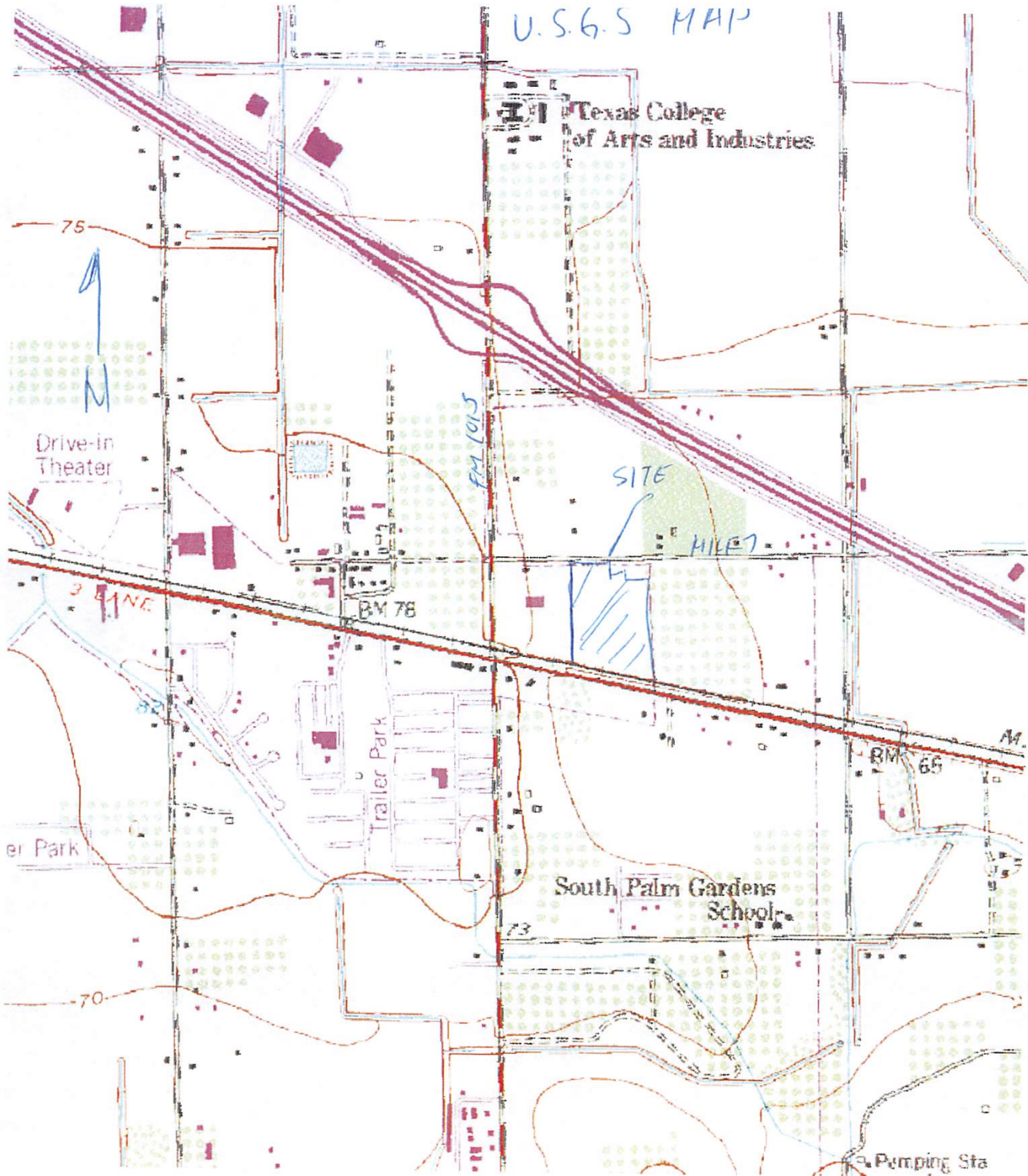
Soil survey

TABLE 18.--SOIL AND WATER FEATURES

"Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol > means more than. Absence of an entry indicates that the feature is not a concern]

Map symbol and soil name	Hydro-logic group	Flooding			High water table			Cemented pan		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hard-ness	Uncoated steel	Concrete
1.* Arents					<u>Ft</u>			<u>In</u>			
2----- Benito	D	Occasional	Long-----	Sep-May	4.0-6.0	Apparent	Sep-May	---	---	High-----	Low.
3, 4----- Brennan	B	None-----	---	---	>6.0	---	---	---	---	Moderate	Low.
5, 6----- Camargo	B	Rare-----	Brief-----	Sep-May	>6.0	---	---	---	---	Moderate	Low.
7----- Cameron	D	None-----	---	---	5.0-6.0	Apparent	Sep-May	---	---	High-----	Low.
8----- Comitas	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
9, 10, 11----- Delfina	B	None-----	---	---	2.5-5.0	Apparent	Sep-May	---	---	High-----	Low.
12----- Delmita	C	None-----	---	---	>6.0	---	---	20-40	Thin	Moderate	Low.
13:* Delmita-----	C	None-----	---	---	>6.0	---	---	20-40	Thin	Moderate	Low.
----- Randado	C	None-----	---	---	>6.0	---	---	8-20	Thin	Moderate	Low.
14----- Falfurrias	A	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
15**----- Grulla	D	Frequent----	Very long	Sep-May	+2-6.0	Apparent	Sep-May	---	---	High-----	Low.
16, 17, 18----- Hargill	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
19----- Harlingen	D	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
20----- Harlingen	D	None-----	---	---	5.0-6.0	---	---	---	---	High-----	Moderate.
21:* Harlingen----- Urban land.	D	None to rare	---	---	>6.0	---	---	---	---	High-----	Low.
22, 23, 24----- Hebbronville	B	None-----	---	---	>6.0	---	---	---	---	Low-----	Low.
25, 26, 27, 28, 29----- Hidalgo	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
30----- Hidalgo	B	None-----	---	---	2.5-5.0	Apparent	Sep-May	---	---	High-----	Low.
31:* Hidalgo----- Urban land.	B	None-----	---	---	>6.0	---	---	---	---	High-----	Low.
32:* Jimenez-----	C	None-----	---	---	>6.0	---	---	7-20	Thin	High-----	Low.

See footnotes at end of table.





**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August, 2022	Agenda Item No. (to be assigned by PCE): V.I.
From: Rebekah de la Fuente, Planning Director, on behalf of Rio Delta Engineering	
Subject/Agenda Item: Discussion and consideration for the Final Plat for Milanos Estates Ph II being a 27.65-acre out of Farm tract 720& 721, West Tract Subdivision, Weslaco, Hidalgo County, Texas Located approximately 240 feet North from the intersection of Mile 5 ½ West Road and Mile 6 ½ West Road. Possible Action.	
Discussion/Overview: The proposed one hundred twenty-seven (127) lot subdivision is located outside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through an 8" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B". Applicant was granted a variance for front setback of 20 ft. Applicant is requesting a variance for off-site drainage. Applicants has submitted his letter of support from the Irrigation district.	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends denial of Final Plat and compliance with the ordinance on the variance because letter of support has not been provided for Drainage District.	
Additional Action Prompted: ☒ Mayor's Signature ☐ Public Hearing ☐ Budget Amendment ☐ Resolution ☐ Ordinance – First Reading ☐ Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



SUBDIVISION PLATTING APPLICATION

PIAT-000254-2022

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. _____

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

STAFF USE ONLY

☐ Single Lot Variance ☐ Minor Plat ☐ Planned Unit Development ☐ Standard Subdivision

GENERAL INFORMATION

Name of Subdivision: MILANOS ESTATES PHASE II SUBDIVISION

Location: APPROX. 240 FEET NORTH FROM THE INTERSECTION OF MILE 5 1/2 WEST ROAD AND MILE 6 1/2 WEST ROAD

Legal Description: BEING A 27.65 ACRES TRACT OF LAND LYING AND SITUATED IN HIDALGO COUNTY, TEXAS, SAID 27.65 ACRES TRACT BEING OUT OF AND FORMING A PART PORTION OF FARM TRACTS 720 AND 721, WEST TRACT SUBDIVISION, HIDALGO COUNTY, TEXAS, AS PER MAP OR PLAT RECORDED IN VOLUME 2, PAGE 34-37, MAP RECORDED OF HIDALGO COUNTY, TEXAS.

Is subdivision inside city limits? ☐ YES ☒ NO

If subdivision is in the ETJ, indicate? ☒ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: N/A

Existing Land Use: AGRICULTURE Proposed Land Use: RESIDENTIAL

Number of Lots Proposed: 127 Gross Acreage: 27.65

Title Report Submitted: ☐ YES ☒ NO

OWNER INFORMATION

Owner's Name: GARVIC PROPERTIES, LP Telephone: _____

Address: P.O. BOX 2604 Fax: _____

City: EDINBURG State: TX Zip: 78536 E-mail: _____

ENGINEER INFORMATION

Name: IVAN GARCIA P.E. R.P.L.S. Telephone: (956) 380-5152

Address: 921 S. 10TH AVE. Fax: (956) 380-5083

City: EDINBURG State: TX Zip: 78539 E-mail: RIODELTA2004@YAHOO.COM

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

UTILITY PROVISIONS

Will proposed subdivision connect to:

- ☒ YES ☐ NO Water Provision: CITY OF WESLACO
- ☒ YES ☐ NO Wastewater Provision: CITY OF WESLACO
- ☒ YES ☐ NO Electric Company: MAGIC VALLEY ELECTRIC COOP.

☒ YES ☐ NO Phone Utility <u>AT&T</u>	☐ YES ☒ NO Gas Utility	☒ YES ☐ NO Cable Utility
---	---	---

Proposed subdivision is in the following districts:

☒ YES ☐ NO Drainage District <u>#1</u>	☒ YES ☐ NO Irrigation District <u>#9</u>
---	---

Has the property been assessed as flat rate irrigable property: ☐ YES ☒ NO

Have Water Rights been conveyed to City/Water Supplier? ☐ YES ☒ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If YES, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR MINOR PLAT REVIEW

- Two (2) sets of plats **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov
- \$355.00 Planning Review fee
- One 11" X 17" reduced copy of plat
- Plat Layout
- Existing & Proposed Easements
- Existing & Proposed ROW
- Existing & Proposed Drainage Easements
- Contours
- Flood Zones
- Adjoiners
- Existing street names
- Drainage plans and calculations with engineer's seal
- Elevations
- Flood directional arrows
- Detention areas
- Street names
- Proof of ownership of the property
- If septic tank system required, submit soil evaluation report
- Water Rights associated with the property
- Tax Receipt for all taxing entities showing that taxes are paid in full

SUBMITTALS REQUIRED FOR PRELIMINARY (P & Z)

- Twelve (12) sets of preliminary plat **folded and stapled** (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov
- \$350.00 (one time fee for preliminary and final plat)
- One 11" X 17" reduced copy of plat
- Plat Layout
- Existing & Proposed Easements
- Existing & Proposed ROW
- Existing & Proposed Drainage Easements

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

- _____ Contours
- _____ Flood Zones
- _____ Adjoiners
- _____ Existing & Proposed street names
- _____ Utility Layout
- _____ Existing & Proposed Utilities
- _____ Proposed Fire Hydrants
- _____ Adjoiners
- _____ Street names
- _____ Drainage plans and calculations with engineer's seal
- _____ Elevations
- _____ Flood directional arrows
- _____ Detention areas
- _____ Street names
- _____ Proof of ownership of the property
- _____ If septic tank system required, submit soil evaluation report
- _____ Water Rights associated with the property
- _____ Tax Receipt for all taxing entities showing that taxes are paid in full
- _____ Number of fire hydrants proposed for subdivision
- _____ Trip Generation Worksheet

SUBMITTALS REQUIRED FOR FINAL (P & Z) **Will not apply to Single Lot Variance**

- _____ **Twelve (12) sets of plans FOLDED & STAPLED (24 x 36) & PDF copy with all corrections**
- _____ Plats to be sealed by Professional Engineer
- _____ Approved Drainage Report
- _____ Traffic Impact Analysis (If required)

SUBMITTALS REQUIRED FOR FINAL (City Commission)

- _____ One set of 8 ½ x 11 of plat and utilities with all corrections done

SUBMITTALS REQUIRED FOR PRE-CONSTRUCTION MEETING

- _____ Seven (7) full sets of construction plans 24 x 36 and one (1) 11 x 17 with plan & profile.
- _____ Engineering cost estimates for 3% geotechnical testing fees and 2% inspection fees
- _____ Notice of Intent
- _____ SW3P

SUBMITTALS REQUIRED FOR RECORDING OR HIDALGO COUNTY PLANNING

- _____ Electronic file of final plat and as-builds
- _____ Reproducible plat to be recorded with all required signatures
- _____ 3% geotechnical testing fees or negotiated Material Testing fee by City, whichever is higher
- _____ 2% inspection fee
- _____ Park Fees
- _____ Checks or Receipts: HCCID #9; HCDD #1; County Clerk
- _____ Tax certificates
- _____ Memo from engineering inspector releasing subdivision
- _____ Water Rights associated with the property dedicated and assigned to City of Weslaco or payment of fees sufficient to meet the needs necessitated and attributable to development
- _____ 30 Year Water and 30 Year Sewer Service Agreements
- _____ Park dedication/Fees in lieu of

SUBMITTALS REQUIRED FOR RECORDING BY SECURITY

- _____ Sealed engineering cost estimates
- _____ Letter of Credit/Performance Bond/Escrow

** Any revisions requested would require resubmission of plats and reduced copy reflecting changes.

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: GARVIC Properties, L.P.

Owner Signature: By: [Signature] VP GARVIC Mgmt, INC Date: 6/24/22
its sole general partner

is the authorized agent

Authorized Agent Signature: [Signature] Date: 6/24/22

Authorized Agent Printed Name: Ivan Garcia

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid: _____

P & Z Commission Approval on Preliminary Plat: _____

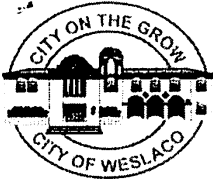
P & Z Commission Approval on Final Plat: _____

City Commission Approval on Final Plat: _____

Preconstruction Meeting Date: _____

Date Recorded: _____ Instrument No. _____

General Comments: _____



APPLICATION FOR SUBDIVISION VARIANCE

VAR-000255-2022

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. _____

GENERAL INFORMATION

Name of Subdivision: MILANOS ESTATES PHASES 2

Location: APPROX. 15080 FEET SOUTH FROM THE INTERSECTION OF MILE 6 AND HOPPER ROAD

Legal Description: BEING A 28.27 ACRES TRACT OF OUT OF FARM TRACT 720 AND 721, WEST TRACT SUBDIVISION

HIDALGO COUNTY, TEXAS, AS PER MAP OR PLAT RECORDED IN VOLUME 2, PAGE 34-37, MAP RECORDS OF HIDALGO COUNTY, TEXAS.

VARIANCE TYPE:

☐ Streetlights ☐ YES ☒ NO

Describe in detail the reason for the variance request:

☐ Sanitary Sewer ☐ YES ☒ NO

Describe in detail the reason for the variance request:

☐ Fire Hydrants ☐ YES ☒ NO

Describe in detail the reason for the variance request:

☐ Setbacks ☒ YES ☐ NO

Describe in detail the reason for the variance request:

Would like to reduce setbacks to the following: front to 20' or easement (whichever is greater) and rear to 10' or easement (whichever is greater)
so that the biggest mobile home available 76 feet long can fit within the lots, which is in compliance with Hidalgo County requirements.

☐ Drainage ☒ YES ☐ NO

Describe in detail the reason for the variance request:

Off-site drainage

☐ Minimum Lot Size ☐ YES ☒ NO

Describe in detail the reason for the variance request:

☐ Sidewalks ☐ YES ☒ NO

Describe in detail the reason for the variance request:

☐ Easement Requirements ☐ YES ☒ NO

Describe in detail the reason for the variance request:

☐ Other _____ ☐ YES ☒ NO

Describe in detail the reason for the variance request:

OWNER INFORMATION

Owner's Name: VICTOR J. DANIEC GARVIC Properties, L.P. Telephone: _____
Address: P.O. BOX 2604 Fax: _____
City: EDINBURG State: TX Zip: 78536 E-mail: _____

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

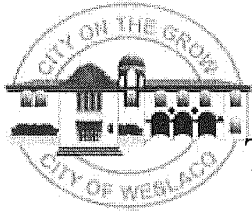
Owner Printed Name: VICTOR J. DANIEC GARVIC Properties, L.P.

Owner Signature: By: J. S. UP GARVIC Mgmt, Inc Date: 6/8/22
its sole general partner

_____ is the authorized agent

Authorized Agent Signature: _____ Date: _____

Authorized Agent Printed Name: _____



**City of Weslaco
Engineering Division**
255 S. Kansas ♦ Weslaco, TX 78570 ♦ (956)

TRIP GENERATION WORKSHEET

Complete parts A and B as an aid to determine if your project requires a Traffic Impact Analysis (TIA).

A. Subdivision Information

Subdivision Name: MILANOS ESTATES PHASE II SUBDIVISION
 Location: APPROX. 240 FEET NORTH FROM THE INTERSECTION OF MILE 5 1/2 WEST ROAD AND MILE 6 1/2 WEST ROAD
 Applicant: VICTOR J. DANIEC ☒ Owner ☐ Agent
 Address: P.O. BOX 2604 Phone Number: _____

B. Trip Generation Calculation

The texts needed to complete this table are available at the Planning Department. See back of sheet for more information.

ITE Code	Anticipated Land Use	Project Size			AM Peak Hour Trips	PM Peak Hour Trips	Weekday Trips
		Acres	GFA	# of Units			
210	SINGLE-FAMILY DETACHED HOUSING	27.65	N/A	132	104.77	136.56	241.33

Comments: _____
 Prepared by: IVAN GARCIA P.E., R.P.L.S. 4-8-2022 Date:
 Address: 921 S. 10TH AVE EDINBURG TX. 778539 Phone Number: 956 - 380 - 5152

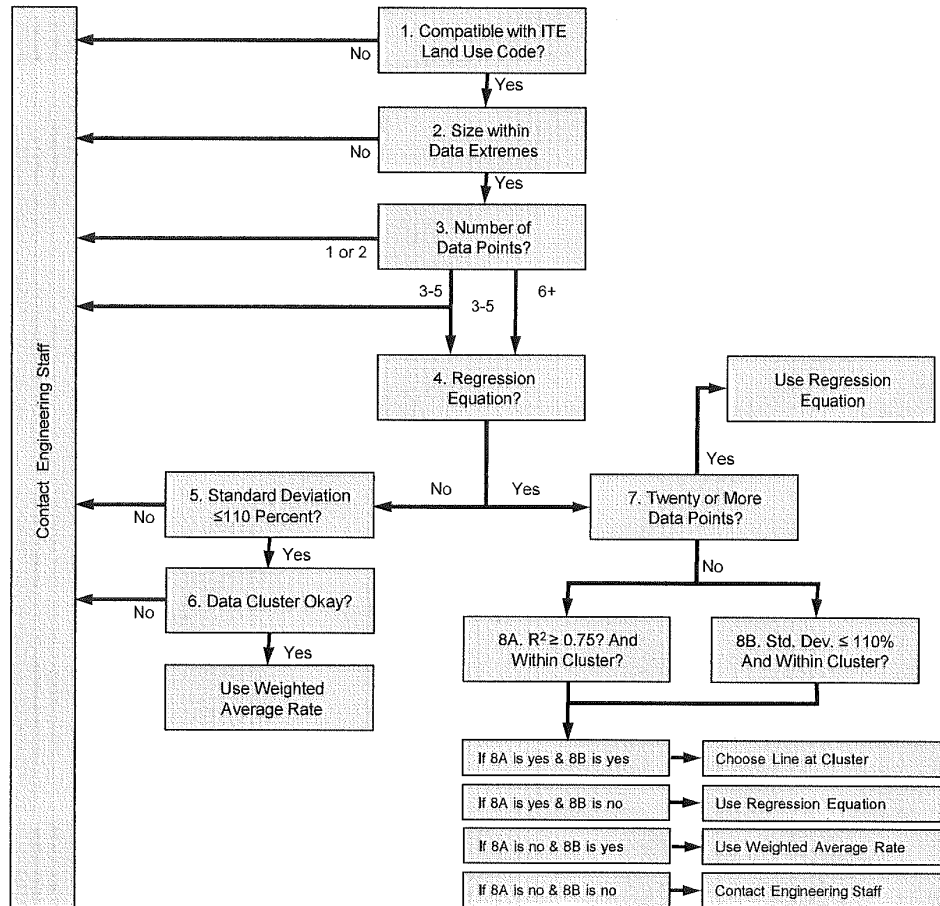
(For Official Use Only, Do Not Write In This Box)

_____ A traffic impact analysis is required. The agent preparing the study must meet with City staff to discuss the scope and requirements of the study before beginning the study.
 _____ A traffic impact analysis is not required. The traffic generated by the proposed development does not exceed the threshold requirements.

Comments: _____

Reviewed by: _____ Date: _____ STID#: _____

Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations



From ITE Trip Generation Handbook

City of Weslaco
Engineering Division
255 S. Kansas Ave
Weslaco, TX 78596
(956)
(956) 973-3128 (fax)

Single-Family Detached Housing (210)

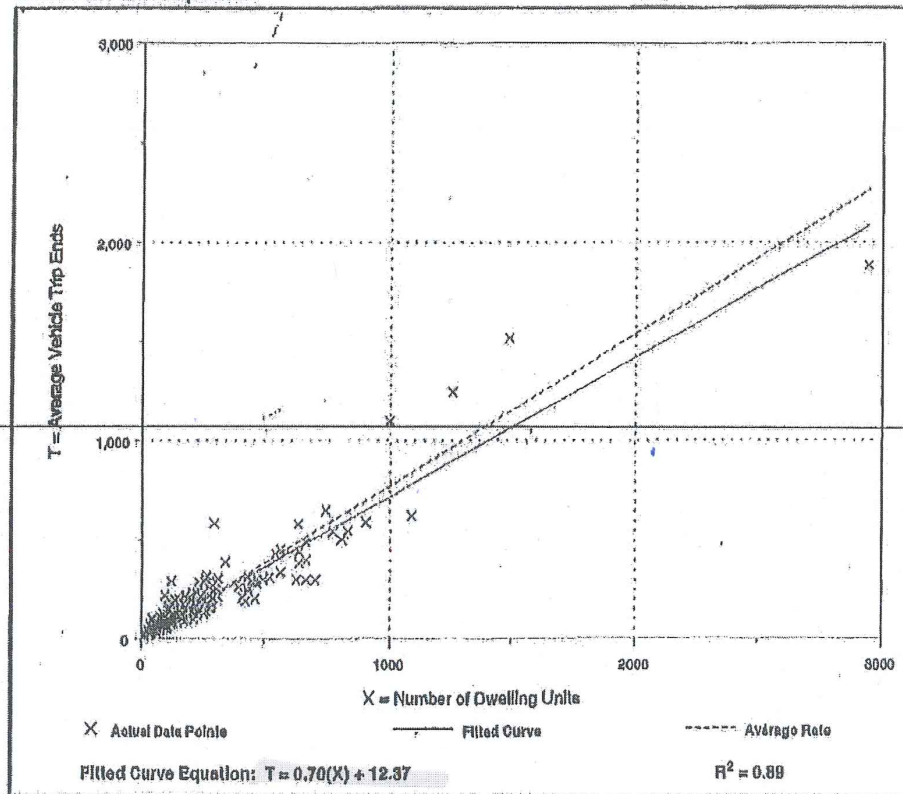
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
A.M. Peak Hour of Generator

Number of Studies: 341
Avg. Number of Dwelling Units: 181
Directional Distribution: 26% entering, 74% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.77	0.38 - 2.27	0.91

Data Plot and Equation



Trip Generation, 8th Edition

203

Institute of Transportation Engineers

$$T = 0.70(x) + 12.37$$

$$T = 0.70(139) + 12.37$$

$$T = 104.77$$

Single-Family Detached Housing (210)

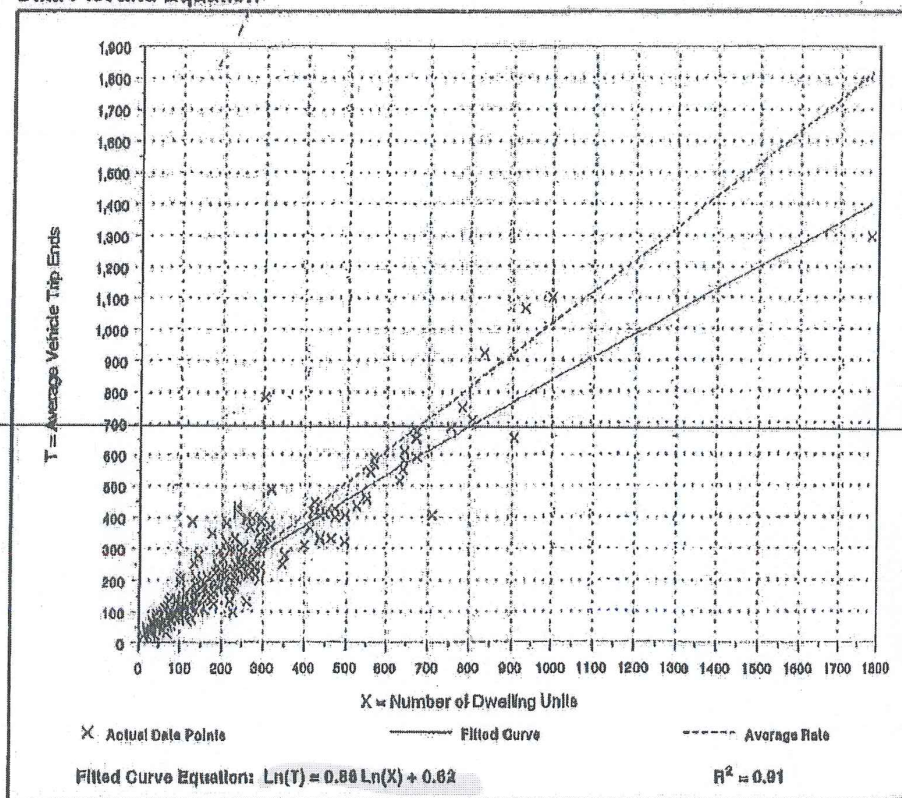
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
P.M. Peak Hour of Generator

Number of Studies: 360
Avg. Number of Dwelling Units: 174
Directional Distribution: 64% entering, 36% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
1.02	0.42 - 2.98	1.08

Data Plot and Equation



Trip Generation, 8th Edition

204

Institute of Transportation Engineers

$$\ln(T) = 0.88 \ln(x) + 0.62$$

$$\ln(T) = 0.88 \ln(132) + 0.62$$

$$\ln(T) = 4.9168$$

$$T = e^{4.9168} = 136.569$$

Hidalgo and Cameron Counties Irrigation District No. 9

General Office

(956) 565-2411
(956) 565-0521 Fax

E-Mail
hccid9@hotmail.com



Randy Winston
General Manager

Judy Beall
Tax Assessor-Collector

P O Box 237 Mercedes, Texas 78570

Date: 06/28/2022

IVAN GARCIA
RIO DELTA ENGINEERING
921 SOUTH 10TH AVE
EDINBURG, TEXAS, 78539

RE: MILANOS ESTATES PH 2 Subd. Drainage and Detention

Good Morning Mr. Garcia:

I have received your revised cross section and calculations dated 04/18/2021 for the **MILANOS ESTATES PH2** Subdivision modified to include the 50 year detention volume in the proposed drain ditch as shown on your provided cross sections.

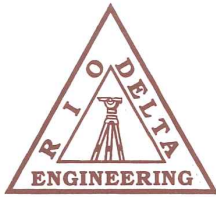
HCCID #9 does not object to storing the mandated 50 year detention with the proposed ditch as shown on the cross sections. This Subdivision will require the following:

1. The Proposed Ditch widening, and Detention Area will require outlet controls going into existing ditch.
2. The outfall control structure (currently being a culvert at Milanos Road) will not be changed and added as a Plat note so it can control and limit the flow from this development
3. Discharge Permit will be required.
4. Canal R.O.W. will not include any form of detention and be noted on the Plat.

The maintenance of this section is within the City Limits of Weslaco and will be completed by their personnel. Please verify final designs with Mr. Albert Adana, P.E. City Engineer with the City of Weslaco.


Randall Winston
General Manager

HCCID #9
Mercedes, Texas
956-565-2411



RIO DELTA ENGINEERING

CIVIL ENGINEERING • PROJECT MANAGEMENT • LAND DEVELOPMENT
TEXAS REGISTERED ENGINEERING FIRM F-7628
TEXAS LICENSED SURVEYING FIRM #10194027

MILANOS ESTATES PHASE II SUBDIVISION DRAINAGE REPORT

Prepared By:
Ivan Garcia P.E., R.P.L.S.

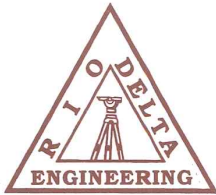
Date:
April 11, 2022



[Signature] 4/11/22

INDEX SHEET

1. COVER SHEET
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3. DRAINAGE REPORT
4. MASTER PLAN DRAINAGE REPORT & CALCULATIONS
5. DRAINAGE AREA MAP
6. PROJECT LOCATION MAP
7. HYDRAULIC CALCULATIONS
8. "C" VALUES FOR METHOD
9. RAINFALL INTENSITY FOR HIDALGO COUNTY
10. FLOOD PLAIN
11. SOIL SURVEY
12. PRELIMINARY PLAT AND UTILITY & DRAINAGE LAYOUT



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TEXAS REGISTERED ENGINEERING FIRM F-7628
TEXAS LICENSED SURVEYING FIRM #10194027

DRAINAGE REPORT
Milanos Estates Phase II Subdivision
Master Plan
City of Weslaco ETJ
Hidalgo County, TEXAS

Milanos Estates Phase II Subdivision is proposed 127 lot Residential Subdivision, same being a 27.64 acres tract of land out of Farm Tracts 720 and 721, West Tract Subdivision, Hidalgo County, Texas, as per map or plat thereof recorded in Volume 2, Page 34-37, Map Records of Hidalgo County, Texas. These lots will be used for single-family homes.

The subdivision is in zone "B" of the flood insurance rate, areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood, according to the FEMA's Flood Insurance Rate Map Community Panels No.: 480334 0525 B dated: January 2, 1981.

According to the Soil Survey Report prepared for Hidalgo County by the U.S.D.A. Soil Conservation Service, the site consists of 7.1% of Hidalgo sandy clay loam (28), with 0 to 1% slopes, the soil is well drained and surface runoff is negligible, permeability is moderately high to high and the water capacity is moderate. This soil is classified as Group (B). Additionally, it consists of 1.4% of Mercedes Clay (39), with 0 to 1% slopes, the soil is moderately well drained and surface runoff is high, permeability is very low to moderately low and the water capacity is moderate. This soil is classified as Group (D). Additionally, it consists of 91.5% of Raymondville clay loam (52), with 0 to 1% slopes, the soil is moderately well drained and surface runoff is medium, permeability is moderately low to moderately high and the water capacity is moderate. This soil is classified as Group (C). Please see the attached tables for the engineering, physical and chemical properties of these soils.

This area has been identified by Hidalgo County as having flooding issues, that will need to be addressed in order to allow this site to be developed. After careful evaluation of the existing topography and features of the site, it was determined that the existing ponding issues within the southern area of the property are caused because of the lack of an outfall or connection to the existing ditch. It is assumed that this was done on purpose with the intent of capturing as much water as possible for irrigation of the lands which are used for farming. The average existing natural ground elevation of the site along the south side of the property is 74.50, which is only 1 foot below the existing average top of ditch elevation of 75.50. The average existing centerline elevation of Mile 6 ½ West Road (Milanos/Hopper Road) at the intersection between the said drain ditch and Mile 6 ½ West Road (Milanos/Hopper Road) is also 75.50, which is the lowest point along the profile of Mile 6 ½ West Road (Milanos/Hopper Road) for this specific area between E Mile 5 North Road and W 18th Street. This small difference in elevation and the lack of an outfall/connection into the existing drain ditch along the south side of the site is enough for water to potentially pond as shown on the pictures provided to us by Hidalgo County. There are not any low areas within the site and all runoff naturally sheet flows overland in a southwesterly direction.

In addition, the site appears to be at the farthest upstream end of the existing drainage system. A connection will be made as part of this development to allow the water to drain into the existing ditch, and the potential ponding issue will most likely be completely eliminated without any risk of water backing up into the site. The existing ditch flows from east to west, and the terrain elevation also drops naturally to the west.

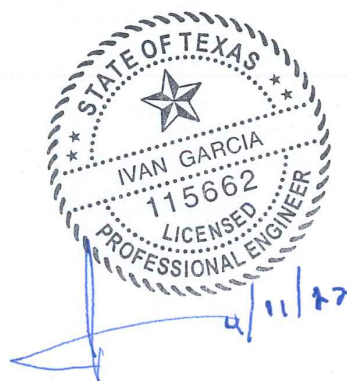
Finally, and in order to mitigate any potential risk of flooding for any future structures within the lots, the following general note will be added to the subdivision plat: minimum finished floor elevation shall be 6" above the center line of Mile 6 ½ West Road or 18" above top of curb in front of the center-point of the lot, whichever is greater.

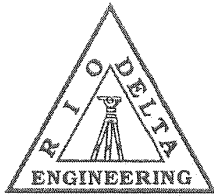
Existing runoff sheet flows overland in a southerly direction to follow the existing drainage patterns of the area in an southerly direction with outfall to the existing 39EXTA drain ditch (which belongs to Hidalgo and Cameron Counties Irrigation District 9, and maintained by Hidalgo County Drianage District 1) south of this subdivision, then conveyed to the 39 drain ditch (which belongs to Hidalgo and Cameron Counties Irrigation District 9, and maintained by Hidalgo County Drainage District 1), then conveyed to the I.B.W.C. Floodway, and final outfall to the Laguna Madre.

Using the Rational Method, we have determined that a 10-yr rainfall event will generate approximately 23.42 CFS of storm runoff. We have also used the Rational Method to determine that the improved site will generate an estimated 70.73 CFS of runoff 50-yr rainfall events respectively. The improved site will have an approximate increase of 47.31 cfs of storm runoff.

All runoff and detention for this subdivision were already accounted for in the approved Milanos Estates Subdivision Phases I, II, III, and IV Master Plan drainage report approved August 12, 2020 (attached). The required detention volume for Phase II is 104,544 CF or 2.40 AC-FT as per the approved Milanos Estates Subdivision Phases I, II, III, and IV Master Plan drainage report.

Linear detention will be provided for Phases I, II, II, and IV by improving the existing 39EXTA drain ditch section as required during the construction of Phase I as per the approved Milanos Estates Subdivision Phases I, II, III, and IV Master Plan drainage report. Storm waters will be collected by an on-site collection system and routed to the existing 39EXTA drain ditch (which belongs to Hidalgo and Cameron Counties Irrigation District 9, and maintained by Hidalgo County Drainage District 1) south of this subdivision, then conveyed to the 39 drain ditch (which belongs to Hidalgo and Cameron Counties Irrigation District 9, and maintained by Hidalgo County Drianage District 1), then conveyed to the I.B.W.C. Floodway, and final outfall to the Laguna Madre.





RIO DELTA ENGINEERING

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TEXAS REGISTERED ENGINEERING FIRM F-7628
TEXAS LICENSED SURVEYING FIRM #10194027

DRAINAGE REPORT

Milanos Estates Subdivision Phases I, II, III, and IV

Master Plan

City of Weslaco ETJ

Hidalgo County, TEXAS

Milanos Estates Phase I, II, III, and IV Master Plan is proposed 379 lot Residential Subdivision, same being a total of 96.95 Acres comprised of the following:

- 1) Phases I, II, and III - 76.95 Acres Tract (328 proposed lots), being all of the south 38.49 acres, more or less, of Farm Tract 721, and all of Farm Tract 720 containing 38.47 Acres, more or less, West Tract Subdivision, Hidalgo County, Texas, as per map or plat thereof recorded in Volume 2, Page 34-37, Map Records of Hidalgo County, Texas.
- 2) Phase IV - 20.00 Acres Tract (51 proposed lots), being the east 20.00 acres of Farm Tract 717, West Tract Subdivision, Hidalgo County, Texas, as per map or plat thereof recorded in Volume 2, Page 34-37, Map Records of Hidalgo County, Texas.

These lots will be used for single-family homes.

The subdivision is in zone "B" of the flood insurance rate, areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood, according to the FEMA's Flood Insurance Rate Map Community Panels No.: 480334 0525 B dated: January 2, 1981.

According to the Soil Survey Report prepared for Hidalgo County by the U.S.D.A. Soil Conservation Service, the site consists of 16.2 % of Hidalgo fine sandy loam (28), with 0 to 1% slopes, the soil is well drained and surface runoff is negligible, permeability is moderately high to high and the water capacity is moderate. This soil is classified as Group (B). Additionally, it consists of 17.9% of Mercedes Clay (39), with 0 to 1% slopes, the soil is moderately well drained and surface runoff is high, permeability is very low to moderately low and the water capacity is moderate. This soil is classified as Group (D). Additionally, it consists of 64.4% of Raymondville clay loam (52), with 0 to 1% slopes, the soil is moderately well drained and surface runoff is medium, permeability is moderately low to moderately high and the water capacity is moderate. This soil is classified as Group (C). Please see the attached tables for the engineering, physical and chemical properties of these soils.

This area has been identified by Hidalgo County as having flooding issues, that will need to be addressed in order to allow this site to be developed. After careful evaluation of the existing topography and features of the site, it was determined that the existing ponding issues within the southern area of the property are caused because of the lack of an outfall or connection to the existing ditch. It is assumed that this was done on purpose with the intent of capturing as much water as possible for irrigation of the lands which are used for farming. The average existing natural ground elevation of the site along the south side of the property is 74.50, which is only 1 foot below the existing average top of ditch elevation of 75.50. The average existing centerline elevation of Mile 6 ½ West Road (Milanos/Hopper Road) at the intersection between the said drain ditch and Mile 6 ½ West Road (Milanos/Hopper Road) is also 75.50, which is the lowest point along the profile of Mile 6 ½ West Road (Milanos/Hopper Road) for this specific area between E Mile 5 North Road and W 18th Street. This small difference in elevation and the lack of an outfall/connection into the existing drain ditch along the south side of the site is enough for water to potentially pond as shown on the pictures provided to us by Hidalgo

County. There are not any low areas within the site and all runoff naturally sheet flows overland in a southwesterly direction.

In addition, the site appears to be at the farthest upstream end of the existing drainage system. A connection will be made as part of this development to allow the water to drain into the existing ditch, and the potential ponding issue will most likely be completely eliminated without any risk of water backing up into the site. The existing ditch flows from east to west, and the terrain elevation also drops naturally to the west to an elevation below 74.00 by the time it gets to the southwest corner of the proposed Phase IV which will ensure that no ponding will occur above that elevation.

Finally, and in order to mitigate any potential risk of flooding for any future structures within the lots, the following general note will be added to the subdivision plat: minimum finished floor elevation shall be 6" above the center line of Mile 6 ½ West Road or 18" above top of curb in front of the center-point of the lot, whichever is greater.

Existing runoff sheet flows overland in a southerly direction to follow the existing drainage patterns of the area in a southerly direction with outfall to the existing 39EXTA drain ditch (which belongs to Hidalgo and Cameron Counties Irrigation District 9, and maintained by Hidalgo County Drainage District 1) along the south boundary of this subdivision, then conveyed to the 39 drain ditch (which belongs to Hidalgo and Cameron Counties Irrigation District 9, and maintained by Hidalgo County Drainage District 1), then conveyed to the I.B.W.C. Floodway, and final outfall to the Laguna Madre. Using the Rational Method, we have determined that a 10-yr rainfall event will generate approximately 20.95 CFS of storm runoff for all 4 phases of this development. We have also used the Rational Method to determine that the improved site will generate an estimated 84.34 CFS of runoff 50-yr rainfall event for all 4 phases of this development. The improved site will have an approximate increase of 63.39 cfs of storm runoff.

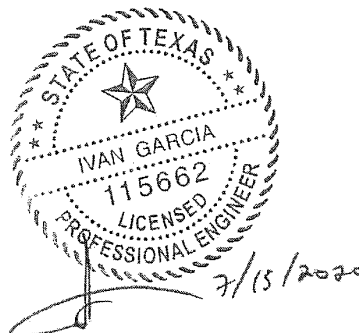
In accordance with the City of Weslaco and County's drainage requirements, we have calculated that approximately a total of 330,712 CF or 7.59 AC-FT, will need to be detained for the complete development of Phases I, II, III, and IV of the subdivision for a 50-yr rainfall event. The pro-rated detention volume required for phases I, II, and III is 3,778 CF or 0.087 AC-FT per acre developed as per the following table:

Phase	Area	Detention Required (AC-FT)
I	26.43	2.29
II	27.64	2.40
III	22.88	1.98

The required detention volume for phase IV is 39,994 CF or 0.92 AC-FT.

Linear detention will be provided for Phases I, II, II, and IV by improving the existing 39EXTA drain ditch section as required during the construction of Phase I. Storm waters will be collected by an on-site collection system and routed to the existing 39EXTA drain ditch (which belongs to Hidalgo and Cameron Counties Irrigation District 9, and maintained by Hidalgo County Drainage District 1) along the south boundary of this subdivision, then conveyed to the 39 drain ditch (which belongs to Hidalgo and Cameron Counties Irrigation District 9, and maintained by Hidalgo County Drainage District 1), then conveyed to the I.B.W.C. Floodway, and final outfall to the Laguna Madre. Tables and calculations, are attached.

☐ REJECTED	
☒ APPROVED FOR SUBMITTAL	
☒ TO H.C. PLANNING DEPT.	
☒ TO CITY	
☒ DISCHARGE PERMIT REQUIRED	
☒ DISTRICT FACILITY	
☐ CITY FACILITY	
☐ OTHER	
<u>Hector Garcia</u>	<u>4/15/21</u>
H.C.D.D. NO. 1	DATE



STORM WATER DETENTION CALCULATIONS

SUMMARY SHEET

Project Name: **MILANO ESTATES PHASES 1, 2 AND 3**

City: **WESLACO ETJ**

State: **TEXAS**

County: **HIDALGO**

Total Area: **76.95** GROSS Acres

Total lots: **328**

Area already developed: **0.00** Acres

Area unimproved: **68.83** NET Acres

Existing Run off: **23.42** cfs *10 year storm

Future Run off: **62.91** cfs *25 year storm

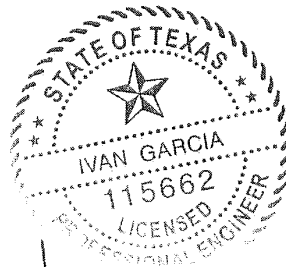
Future Run off: **70.73** cfs *50 year storm

Total on site detention required: **290,718** cft *50 year storm

6.674 Ac-ft

*References for calculations and procedure: 1) **TxDOT Hydraulic Design Manual**
Revised March 2009

2) **FHWA, Urban Drainage Design Manual HEC-22**
Revised September 2009



[Handwritten Signature] 7/18/2020

I. EXISTING RUN OFF (10 YEAR STORM)

***Rational Method**

Project Name: **MILANO ESTATES PHASES 1, 2 AND 3**

City: **WESLACO ETJ**

State: **TEXAS**

68.83

Acres Net

Highest elevation= **78.00** ft

Lowest elevation= **75.00** ft

Watercourse length, L= **2500.00** ft

Slope, S_p = **0.12** %

Average flow velocity, V = **0.24** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$

$k = 0.213$

*From Table 3-2 - Intercept Coefficients

*For short grass pasture

Time of concentration, t_c = **172.16** min (calculated)

$$t_c = L / 60V$$

172.16 min (used)

Intensity, i = **1.52** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

$e =$	0.778
$b =$	87
$d =$	9.2

Area already developed= **0.00** SQFT
0.00 ACRES

*No area developed

Existing Run off Coefficient: **0**

Area unimproved= **2,998,235** SQFT
68.83 NET ACRES

Existing Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.20**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **23.42** CFS

$$Q = C i A$$

II. FUTURE RUN OFF (25 YEAR STORM)

*Rational Method

Project Name: **MILANO ESTATES PHASES 1, 2 AND 3**

City: **WESLACO ETJ**
State: **TEXAS**
68.83 Acres Net
Highest elevation= **78.00** ft
Lowest elevation= **75.00** ft
Watercourse length, L= **2500.00** ft
Slope, S_p = **0.12** %

Average flow velocity, V = **0.35** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u = 3.28

k = 0.305

*From Table 3-2 - Intercept Coefficients

*For nearly bare and untilled (overland flow)

Time of concentration, t_c = **120.23** min (calculated)

$$t_c = L / 60V$$

120.23 min (used)

Intensity, i = **2.31** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 25 years

e = 0.771

b = 98.00

d = 9.20

Area to be developed = **492,000** SQFT *1500 SF avg homes

11.29 ACRES

Future Run off Coefficient: **0.75** *MIN FOR ROOFS

*From Table 3-3 - Run off Coefficients

Area to be developed = **246,000** SQFT * 750 SF avg driveway and sidewalks area

5.65 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE

*From Table 3-3 - Run off Coefficients

Area to be developed = **1,869,835** SQFT *Remaining green areas

42.93 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas

*From Table 3-3 - Run off Coefficients

Area to be developed = **390,400** SQFT 32' B-B STREET SECTION

8.96 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE

*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.35**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **62.91** CFS

$$Q = C i A$$

III. STORAGE CALCULATIONS (50 YEAR STORM)

*Rational Method

Project Name: **MILANO ESTATES PHASES 1, 2 AND 3**

City: **WESLACO ETJ**
State: **TEXAS**
Highest elevation= **68.83** Acres Net
Lowest elevation= **78.00** ft
Watercourse length, L= **75.00** ft
Slope, S_p = **2500.00** %
0.12

Average flow velocity, V = **0.35** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u = 3.28

k = 0.305

*From Table 3-2 - Intercept Coefficients

*For nearly bare and untilled (overland flow)

Time of concentration, t_c = **120.23** min (calculated)

$$t_c = L / 60V$$

120.23 min (used)

Intensity, i = **2.59** min

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 50 years

e = 0.749
 b = 99.0
 d = 9.2

Area to be developed = **492,000** SQFT *1500 SF avg homes

11.29 ACRES

Future Run off Coefficient: **0.75** *MIN FOR ROOFS

*From Table 3-3 - Run off Coefficients

Area to be developed = **246,000** SQFT * 750 SF avg driveway and sidewalks area

5.65 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE

*From Table 3-3 - Run off Coefficients

Area to be developed = **1,869,835** SQFT *Remaining green areas

42.93 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas

*From Table 3-3 - Run off Coefficients

Area to be developed = **390,400** SQFT 32' B-B STREET SECTION

8.96 ACRES

Future Run off Coefficient: **0.7** *MIN FOR ASPHALTIC/CONCRETE SURFACE

*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.35**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **70.73** CFS

$$Q = CiA$$

IV. STORM WATER DETENTION CALCULATIONS

*Rational Method

Duration (min)	Intensity (in/hr)	Q in (cfs)	Vol in (cft)	Q out (cfs)	V out (cft)	Storage (cft)
5	13.57	331.16	99,347	23.42	7,026	92,320
10	10.83	264.18	158,509	23.42	14,053	144,457
15	9.10	222.14	199,922	23.42	21,079	178,843
20	7.91	192.99	231,583	23.42	28,105	203,477
25	7.03	171.44	257,159	23.42	35,131	222,028
30	6.34	154.78	278,611	23.42	42,158	236,453
35	5.80	141.47	297,094	23.42	49,184	247,910
40	5.35	130.56	313,347	23.42	56,210	257,137
45	4.98	121.43	327,865	23.42	63,236	264,628
50	4.66	113.67	340,995	23.42	70,263	270,733
55	4.38	106.97	352,993	23.42	77,289	275,704
60	4.14	101.12	364,049	23.42	84,315	279,733
65	3.93	95.98	374,307	23.42	91,341	282,966
70	3.75	91.40	383,884	23.42	98,368	285,517
75	3.58	87.30	392,871	23.42	105,394	287,477
80	3.43	83.61	401,342	23.42	112,420	288,921
85	3.29	80.27	409,357	23.42	119,447	289,911
90	3.16	77.22	416,968	23.42	126,473	290,495
95	3.05	74.42	424,217	23.42	133,499	290,718
100	2.94	71.86	431,140	23.42	140,525	290,615
105	2.85	69.49	437,769	23.42	147,552	290,217
110	2.76	67.29	444,129	23.42	154,578	289,551
115	2.67	65.25	450,244	23.42	161,604	288,640
120	2.60	63.35	456,135	23.42	168,630	287,504
125	2.52	61.58	461,818	23.42	175,657	286,161
130	2.45	59.91	467,310	23.42	182,683	284,627
135	2.39	58.35	472,625	23.42	189,709	282,915
140	2.33	56.88	477,774	23.42	196,735	281,039
145	2.27	55.49	482,770	23.42	203,762	279,008
150	2.22	54.18	487,622	23.42	210,788	276,834
155	2.17	52.94	492,340	23.42	217,814	274,525

Total on site detention required= **290,718** cft
6.674 acres-ft

Duration: Duration in minutes

Intensity: Intensity for respective duration (10-year event)

Q in: Developed conditions peak discharge ($C_{dev} \times i_{50} \times \text{Area}$)

Vol in: Developed conditions run off volume ($Q_{in} \times \text{Duration} \times 60$)

Q out: Pre-developed peak discharge ($C_{pre} \times i_{10} \times \text{Area}$)

V out: (duration $\times$ Qout $\times$ 60)

Storage: Required storage ($V_{in} - V_{out}$)

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

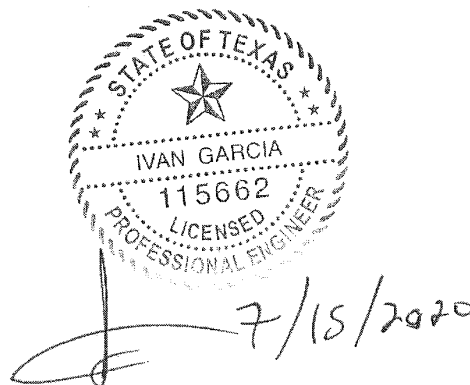
STORM WATER DETENTION CALCULATIONS

SUMMARY SHEET

Project Name: MILANO ESTATES PHASES 4			
City:	WESLACO ETJ		
State:	TEXAS		
County:	HIDALGO		
Total Area:	20.00	GROSS Acres	
Total lots:	51		
Area already developed:	0.00	Acres	
Area unimproved:	16.25	NET Acres	
Existing Run off:	13.51	cfs	*10 year storm
Future Run off:	34.11	cfs	*25 year storm
Future Run off:	37.52	cfs	*50 year storm
Total on site detention required:	39,994	cft	*50 year storm
	0.918	Ac-ft	

*References for calculations and procedure: **1) TxDOT Hydraulic Design Manual**
Revised March 2009

2) FHWA, Urban Drainage Design Manual HEC-22
Revised September 2009



I. EXISTING RUN OFF (10 YEAR STORM)

*Rational Method

Project Name: **MILANO ESTATES PHASES 4**
City: **WESLACO ETJ**
State: **TEXAS**
Highest elevation= **16.25** Acres Net
Lowest elevation= **78.00** ft
Watercourse length, L= **74.00** ft
Slope, S_p = **1300.00** %
0.31

Average flow velocity, V = **0.39** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u = 3.28

k = 0.213

*From Table 3-2 - Intercept Coefficients

*For short grass pasture

Time of concentration, t_c = **55.91** min (calculated)

$$t_c = L / 60V$$

55.91 min (used)

Intensity, i = **3.38** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

e = 0.778

b = 87

d = 9.2

Area already developed = **0.00** SQFT
0.00 ACRES *No area developed

Existing Run off Coefficient: **0**

Area unimproved = **707,850** SQFT
16.25 NET ACRES

Existing Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.20**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **13.51** CFS

$$Q = C i A$$

II. FUTURE RUN OFF (25 YEAR STORM)

*Rational Method

Project Name: **MILANO ESTATES PHASES 4**
City: **WESLACO ETJ**
State: **TEXAS**
16.25 Acres Net
Highest elevation= **78.00** ft
Lowest elevation= **74.00** ft
Watercourse length, L= **1300.00** ft
Slope, S_o = **0.31** %

Average flow velocity, V = **0.55** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u = 3.28

k = 0.305

*From Table 3-2 - Intercept Coefficients

*For nearly bare and untilled (overland flow)

Time of concentration, t_c = **39.04** min (calculated)

$$t_c = L / 60V$$

39.04 min (used)

Intensity, i = **4.94** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 25 years

e = 0.771

b = 98.00

d = 9.20

Area to be developed = **127,500** SQFT *2500 SF avg homes

2.93 ACRES

Future Run off Coefficient: **0.75** *MIN FOR ROOFS

*From Table 3-3 - Run off Coefficients

Area to be developed = **127,500** SQFT * 2500 SF avg driveway and sidewalks area

2.93 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE

*From Table 3-3 - Run off Coefficients

Area to be developed = **401,650** SQFT *Remaining green areas

9.22 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas

*From Table 3-3 - Run off Coefficients

Area to be developed = **51,200** SQFT 32' B-B STREET SECTION

1.18 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE

*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.35**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **34.11** CFS

$$Q = C i A$$

III. STORAGE CALCULATIONS (50 YEAR STORM)

*Rational Method

Project Name: **MILANO ESTATES PHASES 4**

City: **WESLACO ETJ**
State: **TEXAS**
Highest elevation= **16.25** Acres Net
Lowest elevation= **78.00** ft
Watercourse length, L= **74.00** ft
Slope, S_p = **1300.00** ft
0.31 %

Average flow velocity, V= **0.55** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28

k= 0.305

*From Table 3-2 - Intercept Coefficients

*For nearly bare and untilled (overland flow)

Time of concentration, t_c= **39.04** min (calculated)

$$t_c = L / 60V$$

39.04 min (used)

Intensity, i= **5.43** min

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 50 years

e= **0.749**
b= **99.0**
d= **9.2**

Area to be developed= **127,500** SQFT *2500 SF avg homes

2.93 ACRES

Future Run off Coefficient: **0.75** *MIN FOR ROOFS

*From Table 3-3 - Run off Coefficients

Area to be developed= **127,500** SQFT * 2500 SF avg driveway and sidewalks area

2.93 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE

*From Table 3-3 - Run off Coefficients

Area to be developed= **401,650** SQFT *Remaining green areas

9.22 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas

*From Table 3-3 - Run off Coefficients

Area to be developed= **51,200** SQFT 32' B-B STREET SECTION

1.18 ACRES

Future Run off Coefficient: **0.7** *MIN FOR ASPHALTIC/CONCRETE SURFACE

*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w= **0.35**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **37.52** CFS

$$Q = C i A$$

IV. STORM WATER DETENTION CALCULATIONS

*Rational Method

Duration (min)	Intensity (in/hr)	Q in (cfs)	Vol in (cft)	Q out (cfs)	V out (cft)	Storage (cft)
5	13.57	76.20	22,859	13.51	4,052	18,807
10	10.83	60.79	36,472	13.51	8,104	28,368
15	9.10	51.11	46,001	13.51	12,157	33,844
20	7.91	44.40	53,286	13.51	16,209	37,077
25	7.03	39.45	59,171	13.51	20,261	38,910
30	6.34	35.61	64,107	13.51	24,313	39,794
35	5.80	32.55	68,360	13.51	28,365	39,994
40	5.35	30.04	72,099	13.51	32,417	39,682
45	4.98	27.94	75,440	13.51	36,470	38,970
50	4.66	26.15	78,461	13.51	40,522	37,939
55	4.38	24.61	81,222	13.51	44,574	36,648
60	4.14	23.27	83,765	13.51	48,626	35,139
65	3.93	22.08	86,126	13.51	52,678	33,448
70	3.75	21.03	88,330	13.51	56,731	31,599
75	3.58	20.09	90,397	13.51	60,783	29,615
80	3.43	19.24	92,346	13.51	64,835	27,512
85	3.29	18.47	94,191	13.51	68,887	25,304
90	3.16	17.77	95,942	13.51	72,939	23,003
95	3.05	17.12	97,610	13.51	76,991	20,619
100	2.94	16.53	99,203	13.51	81,044	18,159
105	2.85	15.99	100,728	13.51	85,096	15,632
110	2.76	15.48	102,192	13.51	89,148	13,044
115	2.67	15.01	103,599	13.51	93,200	10,399
120	2.60	14.58	104,954	13.51	97,252	7,702
125	2.52	14.17	106,262	13.51	101,304	4,957
130	2.45	13.79	107,525	13.51	105,357	2,169
135	2.39	13.43	108,748	13.51	109,409	-661

Total on site detention required= **39,994** cft
0.918 acres-ft

Duration: Duration in minutes
Intensity: Intensity for respective duration (10-year event)
Q in: Developed conditions peak discharge ($C_{dev} \times i_{50} \times \text{Area}$)
Vol in: Developed conditions run off volume ($Q_{in} \times \text{Duration} \times 60$)
Q out: Pre-developed peak discharge ($C_{pre} \times i_{10} \times \text{Area}$)
V out: (duration $\times$ Qout $\times$ 60)
Storage: Required storage (Vin - Vout)

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

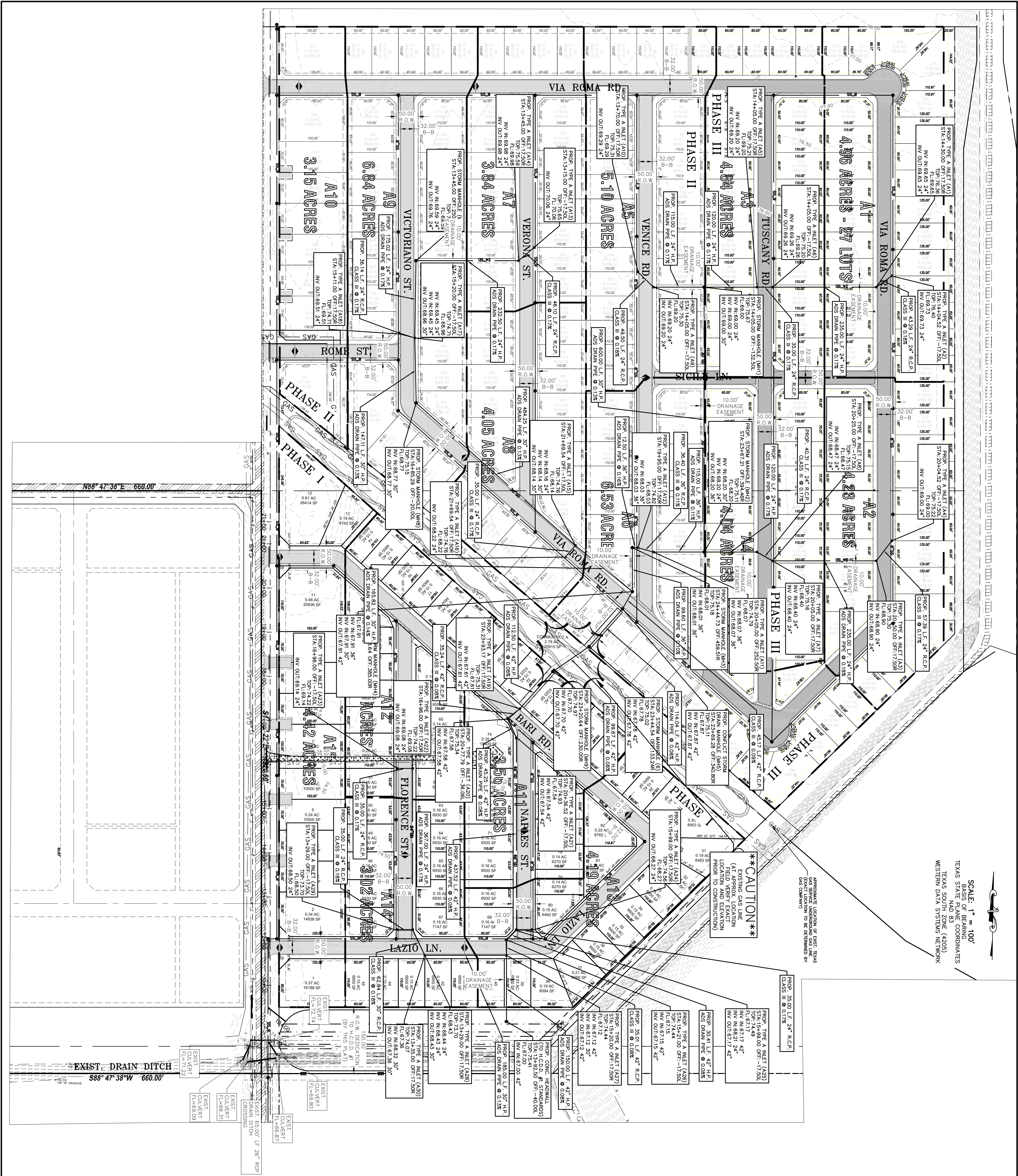
Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)



I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A1

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **4.96** ACRES
NUMBER OF LOTS: **27** LOTS

Highest elevation= **77.10** ft
Lowest elevation= **75.90** ft
Watercourse length, L= **450.00** ft
Slope, S_p = **0.27** %

Average flow velocity, V= **1.05** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28

k= 0.619

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c= **7.15** min (calculated)
7.15 min (used)

$$t_c = L / 60V$$

Intensity, i= **9.89** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDoT IDF Coefficients

*For a recurrence interval of 10 years

e= 0.778

b= 87.0

d= 9.20

Area to be developed= **40,500** SQFT *1500 SF avg homes
0.93 ACRES 27 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **20,250** SQFT * 750 SF avg driveway and sidewalks area
0.46 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **127,468** SQFT *Remaining green areas
2.93 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

Area to be developed= **27,840** SQFT
0.64 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

width	32	FT crown-to-back
length	870	FT

Weighted Run off Coefficient, C_w= **0.41**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **20.33** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A2

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **4.23** ACRES
NUMBER OF LOTS: **23** LOTS

Highest elevation= **75.75** ft
Lowest elevation= **75.25** ft
Watercourse length, L= **360.00** ft
Slope, S_p = **0.14** %

Average flow velocity, V= **0.76** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28

k= 0.619

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c= **7.93** min (calculated)
7.93 min (used)

$$t_c = L / 60V$$

Intensity, i= **10.96** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

e= 0.771

b= 98.0

d= 9.20

Area to be developed= **34,500** SQFT *1500 SF avg homes
0.79 ACRES 23 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **17,250** SQFT * 750 SF avg driveway and sidewalks area
0.40 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **110,109** SQFT *Remaining green areas
2.53 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

Area to be developed= **22,400** SQFT
0.51 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

width	32	FT crown-to-back
length	700.00	FT

Weighted Run off Coefficient, C_w= **0.41**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **19.04** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A3

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **4.84** ACRES
NUMBER OF LOTS: **26** LOTS

Highest elevation= **76.50** ft
Lowest elevation= **74.25** ft
Watercourse length, L= **580.00** ft
Slope, S_p = **0.39** %

Average flow velocity, V= **1.26** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28

k= 0.619

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c= **7.64** min (calculated)
7.64 min (used)

$$t_c = L / 60V$$

Intensity, i= **11.11** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

e= 0.771

b= 98.0

d= 9.20

Area to be developed= **39,000** SQFT *1500 SF avg homes
0.90 ACRES 26 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **19,500** SQFT * 750 SF avg driveway and sidewalks area
0.45 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **126,730** SQFT *Remaining green areas
2.91 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

Area to be developed= **25,600** SQFT
0.59 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

width	32	FT crown-to-back
length	800.00	FT

Weighted Run off Coefficient, C_w= **0.41**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **21.97** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A4

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **4.04** ACRES
NUMBER OF LOTS: **22** LOTS

Highest elevation= **75.50** ft
Lowest elevation= **74.60** ft
Watercourse length, L= **335.00** ft
Slope, S_p = **0.27** %

Average flow velocity, V= **1.05** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28

k= 0.619

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c= **5.31** min (calculated)
5.31 min (used)

$$t_c = L / 60V$$

Intensity, i= **12.46** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

e= 0.771

b= 98.0

d= 9.20

Area to be developed= **33,000** SQFT *1500 SF avg homes
0.76 ACRES 22 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **16,500** SQFT * 750 SF avg driveway and sidewalks area
0.38 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **105,042** SQFT *Remaining green areas
2.41 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

Area to be developed= **21,440** SQFT
0.49 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

width	32	FT crown-to-back
length	670.00	FT

Weighted Run off Coefficient, C_w= **0.41**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **20.69** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A5

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **5.1** ACRES
NUMBER OF LOTS: **28** LOTS

Highest elevation= **76.50** ft
Lowest elevation= **74.60** ft
Watercourse length, L= **530.00** ft
Slope, S_p = **0.36** %

Average flow velocity, V= **1.22** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28

k= 0.619

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c= **7.27** min (calculated)
7.27 min (used)

$$t_c = L / 60V$$

Intensity, i= **11.30** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

e= 0.771

b= 98.0

d= 9.20

Area to be developed= **42,000** SQFT *1500 SF avg homes
0.96 ACRES 28 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **21,000** SQFT * 750 SF avg driveway and sidewalks area
0.48 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **138,996** SQFT *Remaining green areas
3.19 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

Area to be developed= **20,160** SQFT
0.46 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

width	32	FT crown-to-back
length	630.00	FT

Weighted Run off Coefficient, C_w= **0.40**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **22.86** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A6

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **6.53** ACRES
NUMBER OF LOTS: **32** LOTS

Highest elevation= **75.60** ft
Lowest elevation= **74.00** ft
Watercourse length, L= **450.00** ft
Slope, S_p = **0.36** %

Average flow velocity, V= **1.21** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$

$k = 0.619$

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c = **6.20** min (calculated)
6.20 min (used)

$$t_c = L / 60V$$

Intensity, i = **11.91** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

$e = 0.771$
 $b = 98.0$
 $d = 9.20$

Area to be developed= **48,000** SQFT *1500 SF avg homes
1.10 ACRES 32 lots
Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **24,000** SQFT * 750 SF avg driveway and sidewalks area
0.55 ACRES
Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **171,487** SQFT *Remaining green areas
3.94 ACRES
Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

Area to be developed= **40,960** SQFT
0.94 ACRES
Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

width	32	FT crown-to-back
length	1280.00	FT

Weighted Run off Coefficient, C_w = **0.41**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **31.64** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A7

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **3.84** ACRES
NUMBER OF LOTS: **21** LOTS

Highest elevation= **76.50** ft
Lowest elevation= **75.10** ft
Watercourse length, L= **530.00** ft
Slope, S_p = **0.26** %

Average flow velocity, V= **1.04** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$

$k = 0.619$

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c = **8.47** min (calculated)
8.47 min (used)

$$t_c = L / 60V$$

Intensity, i = **10.71** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

$e = 0.771$

$b = 98.0$

$d = 9.20$

Area to be developed= **31,500** SQFT *1500 SF avg homes
0.72 ACRES 21 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **15,750** SQFT * 750 SF avg driveway and sidewalks area
0.36 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **99,860** SQFT *Remaining green areas
2.29 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

width	32	FT crown-to-back
length	630.00	FT

Area to be developed= **20,160** SQFT
0.46 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.41**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **16.90** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A8

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **4.05** ACRES
NUMBER OF LOTS: **21** LOTS

Highest elevation= **75.25** ft
Lowest elevation= **74.70** ft
Watercourse length, L= **430.00** ft
Slope, S_p = **0.13** %

Average flow velocity, V= **0.73** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$

$k = 0.619$

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c = **9.87** min (calculated)
9.87 min (used)

$$t_c = L / 60V$$

Intensity, i = **10.09** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDoT IDF Coefficients

*For a recurrence interval of 10 years

$e = 0.771$

$b = 98.0$

$d = 9.20$

Area to be developed= **31,500** SQFT *1500 SF avg homes
0.72 ACRES 21 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **15,750** SQFT * 750 SF avg driveway and sidewalks area
0.36 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **104,208** SQFT *Remaining green areas
2.39 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

width	32	FT crown-to-back
length	780.00	FT

Area to be developed= **24,960** SQFT
0.57 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.41**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **16.91** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A9

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **6.84** ACRES
NUMBER OF LOTS: **31** LOTS

Highest elevation= **76.50** ft
Lowest elevation= **74.30** ft
Watercourse length, L= **680.00** ft
Slope, S_p = **0.32** %

Average flow velocity, V= **1.15** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28

k= 0.619

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c= **9.81** min (calculated)
9.81 min (used)

$$t_c = L / 60V$$

Intensity, i= **10.12** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

e= 0.771

b= 98.0

d= 9.20

Area to be developed= **46,500** SQFT *1500 SF avg homes
1.07 ACRES 31 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **23,250** SQFT * 750 SF avg driveway and sidewalks area
0.53 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **192,360** SQFT *Remaining green areas
4.42 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

Area to be developed= **35,840** SQFT
0.82 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

width	32	FT crown-to-back
length	1120.00	FT

Weighted Run off Coefficient, C_w= **0.38**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **26.64** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A10

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **6.84** ACRES
NUMBER OF LOTS: **31** LOTS

Highest elevation= **76.50** ft
Lowest elevation= **74.30** ft
Watercourse length, L= **680.00** ft
Slope, S_p = **0.32** %

Average flow velocity, V= **1.15** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$

$k = 0.619$

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c = **9.81** min (calculated)
9.81 min (used)

$$t_c = L / 60V$$

Intensity, i = **10.12** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

$e = 0.771$

$b = 98.0$

$d = 9.20$

Area to be developed= **46,500** SQFT *1500 SF avg homes
1.07 ACRES 31 lots

Future Run off Coefficient: **0.75**
*MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **23,250** SQFT * 750 SF avg driveway and sidewalks area
0.53 ACRES

Future Run off Coefficient: **0.70**
*MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **192,360** SQFT *Remaining green areas
4.42 ACRES

Future Run off Coefficient: **0.20**
*For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

width	32	FT crown-to-back
length	1120.00	FT

Area to be developed= **35,840** SQFT
0.82 ACRES

Future Run off Coefficient: **0.70**
*MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.38**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **26.64** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A11

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **3.56** ACRES
NUMBER OF LOTS: **19** LOTS

Highest elevation= **75.25** ft
Lowest elevation= **74.25** ft
Watercourse length, L= **360.00** ft
Slope, S_p = **0.28** %

Average flow velocity, V= **1.07** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$

$k = 0.619$

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c = **5.61** min (calculated)
5.61 min (used)

$$t_c = L / 60V$$

Intensity, i = **12.27** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

$e = 0.771$

$b = 98.0$

$d = 9.20$

Area to be developed= **28,500** SQFT *1500 SF avg homes
0.65 ACRES 19 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **14,250** SQFT * 750 SF avg driveway and sidewalks area
0.33 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **89,284** SQFT *Remaining green areas
2.05 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

width	32	FT crown-to-back
length	720.00	FT

Area to be developed= **23,040** SQFT
0.53 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.42**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **18.40** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A12

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **3.66** ACRES
NUMBER OF LOTS: **19** LOTS

Highest elevation= **75.25** ft
Lowest elevation= **73.70** ft
Watercourse length, L= **500.00** ft
Slope, S_p = **0.31** %

Average flow velocity, V = **1.13** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u =3.28

k = 0.619

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c = **7.37** min (calculated)
7.37 min (used)

$$t_c = L / 60V$$

Intensity, i = **11.25** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

e = 0.771

b = 98.0

d = 9.20

Area to be developed= **28,500** SQFT *1500 SF avg homes
0.65 ACRES 19 lots

Future Run off Coefficient: **0.75** *MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **14,250** SQFT * 750 SF avg driveway and sidewalks area
0.33 ACRES

Future Run off Coefficient: **0.70** *MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **91,720** SQFT *Remaining green areas
2.11 ACRES

Future Run off Coefficient: **0.20** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

width	32	FT crown-to-back
length	780.00	FT

Area to be developed= **24,960** SQFT
0.57 ACRES

Future Run off Coefficient: **0.70** *MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.42**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **17.34** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A13

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **4.19** ACRES
NUMBER OF LOTS: **20** LOTS

Highest elevation= **75.25** ft
Lowest elevation= **74.35** ft
Watercourse length, L= **600.00** ft
Slope, S_p = **0.15** %

Average flow velocity, V= **0.79** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$

$k = 0.619$

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c = **12.72** min (calculated)
12.72 min (used)

$$t_c = L / 60V$$

Intensity, i = **9.07** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

$e = 0.771$

$b = 98.0$

$d = 9.20$

Area to be developed= **30,000** SQFT *1500 SF avg homes
0.69 ACRES 20 lots

Future Run off Coefficient: **0.75**
*MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **15,000** SQFT * 750 SF avg driveway and sidewalks area
0.34 ACRES

Future Run off Coefficient: **0.70**
*MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **111,916** SQFT *Remaining green areas
2.57 ACRES

Future Run off Coefficient: **0.20**
*For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

width	32	FT crown-to-back
length	800.00	FT

Area to be developed= **25,600** SQFT
0.59 ACRES

Future Run off Coefficient: **0.70**
*MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.40**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **15.26** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A14

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **3.02** ACRES
NUMBER OF LOTS: **17** LOTS

Highest elevation= **74.50** ft
Lowest elevation= **73.20** ft
Watercourse length, L= **300.00** ft
Slope, S_p = **0.43** %

Average flow velocity, V= **1.34** ft/sec

$$V = K_u k S_p^{0.5}$$

K_u = 3.28

k = 0.619

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c = **3.74** min (calculated)
3.74 min (used)

$$t_c = L / 60V$$

Intensity, i = **13.61** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

e = 0.771

b = 98.0

d = 9.20

Area to be developed = **25,500** SQFT *1500 SF avg homes
0.59 ACRES 17 lots

Future Run off Coefficient: **0.75**
*MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed = **12,750** SQFT * 750 SF avg driveway and sidewalks area
0.29 ACRES

Future Run off Coefficient: **0.70**
*MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed = **72,981** SQFT *Remaining green areas
1.68 ACRES

Future Run off Coefficient: **0.20**
*For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

width	32	FT crown-to-back
length	635.00	FT

Area to be developed = **20,320** SQFT
0.47 ACRES

Future Run off Coefficient: **0.70**
*MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.43**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q = **17.77** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

I. FUTURE RUN OFF (10 YEAR STORM) FOR AREA A14

***Rational Method**

Project Name: **MILANO ESTATES**
City: **WESLACO ETJ**
County: **HIDALGO**
State: **TEXAS**

AREA: **4.42** ACRES
NUMBER OF LOTS: **17** LOTS

Highest elevation= **74.50** ft
Lowest elevation= **73.20** ft
Watercourse length, L= **300.00** ft
Slope, S_p = **0.43** %

Average flow velocity, V= **1.34** ft/sec

$$V = K_u k S_p^{0.5}$$

$K_u = 3.28$

$k = 0.619$

*From Table 3-2 - Intercept Coefficients
*for paved areas

Time of concentration, t_c = **3.74** min (calculated)
3.74 min (used)

$$t_c = L / 60V$$

Intensity, i = **13.61** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration

*Coefficients for HIDALGO, County, Texas from TXDOT IDF Coefficients

*For a recurrence interval of 10 years

$e = 0.771$

$b = 98.0$

$d = 9.20$

Area to be developed= **25,500** SQFT *1500 SF avg homes
0.59 ACRES 17 lots

Future Run off Coefficient: **0.75**
*MIN FOR ROOFS
*From Table 3-3 - Run off Coefficients

Area to be developed= **12,750** SQFT * 750 SF avg driveway and sidewalks area
0.29 ACRES

Future Run off Coefficient: **0.70**
*MIN FOR CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Area to be developed= **133,965** SQFT *Remaining green areas
3.08 ACRES

Future Run off Coefficient: **0.20**
*For Unimproved areas
*From Table 3-3 - Run off Coefficients

HALF OF 32' B-B STREET SECTION

width	32	FT crown-to-back
length	635.00	FT

Area to be developed= **20,320** SQFT
0.47 ACRES

Future Run off Coefficient: **0.70**
*MIN FOR ASPHALTIC/CONCRETE SURFACE
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w = **0.36**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **21.58** CFS

$$Q = C i A$$

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.797	0.778	0.771	0.749	0.740
b	74	79	87	98	99	103
d (mins)	9.6	8.9	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Table 3-2. Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

$$Q = 1.49/n \cdot A \cdot R^{.67} \cdot S^{.50}$$

Given:

Q =	314.00	cfs
Q =	140921.09	gpm
D =	36.00	in.
S =	0.001000	ft/ft
n =	0.013	
V =	3.00	ft/sec

(Input known data above)

Q= flow(cfs)

A=area(SF)

R=hydraulic radius(ft)

S=% slope(ft/ft)

n=Manning's coeff. of friction

V=velocity (ft/sec)

Calculations

Q =	314.00	cfs
A =	7.07	SF
R =	0.75	ft
S =	0.001000	ft/ft
n =	0.013	
V =	3.00	ft/sec

$$A = (3.14 \cdot D^2) / 4$$

$$= 7.07 \text{ SF}$$

$$R = (A/P) \quad (\text{assume full flow})$$

$$= 0.75 \text{ ft}$$

Solve for Q

$$Q = V \cdot A = \left(\frac{1.49}{n} \right) A \cdot R^{2/3} \sqrt{S}$$

$$= 21.12 \text{ cfs}$$

Solve for V

$$V = \frac{Q}{A} = \frac{1.49 \cdot R^{2/3} \cdot S^{1/2}}{n}$$

$$= 2.992497 \text{ ft/sec}$$

Solve for S

$$S = \left(\frac{V \cdot n}{1.49 \cdot R^{2/3}} \right)^2$$

$$= \frac{0.1005}{0.001005} \%$$

Solve for D

$$D = \sqrt{\frac{\left(\frac{Q}{V} \right) \cdot 4}{\pi}}$$

$$= 138.52774 \text{ in}$$

Solve for R

$$R = \frac{A}{P} = \left(\frac{V \cdot n}{1.49 \cdot S^{1/2}} \right)^{3/2}$$

$$= 0.7530$$

**MILANOS ESTATES PHASES I, II, AND III SUBDIVISION
HYDRAULIC GRADE LINE CALCULATIONS**

symbol	description	units
d	pipe diameter	in
s	pipe slope	ft/ft
n	Manning's coefficient	0.009
C	Hazen Williams coefficient	140
L	Length of pipe	ft
A	cross-sectional pipe area	ft^2
P	pipe perimeter	ft
R	hydraulic radius	ft
Q	discharge flow	ft^3/s
V	velocity	ft/s
Hf	Major head loss	
Kq	coefficient	0.46
mh	manhole	
HGL	hydraulic grade line	

$$Hf = Sf \cdot L \quad \text{Major Losses} \quad \text{ft}$$

$$Sf = (ZQ^n / KqD^{2.67})^2 \quad \text{Friction Slope} \quad \text{ft}$$

$$L \quad \text{Length of Conduit} \quad \text{ft}$$

MAJOR AND MINOR HEAD LOSSES

AREAS	ACREAGE	FLOWS
AREA 1	216,058 SF	4.96 AC
AREA 2	184,259 SF	4.23 AC
AREA 3	210,830 SF	4.84 AC
AREA 4	175,982 SF	4.04 AC
AREA 5	222,156 SF	5.1 AC
AREA 6	284,447 SF	6.53 AC
AREA 7	167,270 SF	3.84 AC
AREA 8	176,418 SF	4.05 AC
AREA 9	297,950 SF	6.84 AC
AREA 10	137,214 SF	3.15 AC
AREA 11	155,074 SF	3.56 AC
AREA 12	159,430 SF	3.66 AC
AREA 13	182,516 SF	4.19 AC
AREA 14	131,551 SF	3.02 AC
AREA 15	192,535 SF	4.42 AC

AREA 1

INLETS A1 AND A2 top: 76.38 flowline: 70.23 HGL: 70.23

link	d	s	L	Q	Sf	Hf
A1 to A6	24	0.0017	235	>>>>	20.33	0.004

AREA 2

INLETS A3 AND A4 top: 75.29 flowline: 69.19 HGL: 69.19

link	d	s	L	Q	Sf	Hf
A3 to A8	24	0.0017	235	>>>>	19.04	0.003

AREAS 1, 3 AND 5

MANHOLE 1 top: 75.67 flowline: 69.55 HGL: 72.84

link	d	s	L	Q	Sf	Hf
MH 1 to MH 2	30	0.0017	270	>>>>	65.17	0.012

AREAS 1,2,3,4 AND 5

MANHOLE 2 top: 75.30 flowline: 67.84 HGL: 71.06

link	d	s	L	Q	Sf	Hf
MH 2 to MH 3	36	0.013	270	>>>>	104.91	0.012

AREAS 1,2,3,4,5,6,7,8,9

MANHOLE 4 top: 75.13 flowline: 68.1 HGL: 74.94

link	d	s	L	Q	Sf	Hf
MH 4 to A19	42	0.001	370	>>>>	197.00	0.018

AREAS 1,2,3,4,5,6,7,8,9,11

INLET A21 top: 74.93 flowline: 67.64 HGL: 72.38

link	d	s	L	Q	Sf	Hf
A21 to A25	48	0.01	438	>>>>	215.40	0.011

AREAS 1,2,3,4,5,6,7,8,9,11,13

INLET A25 top: 74.49 flowline: 67.21 HGL: 68.03

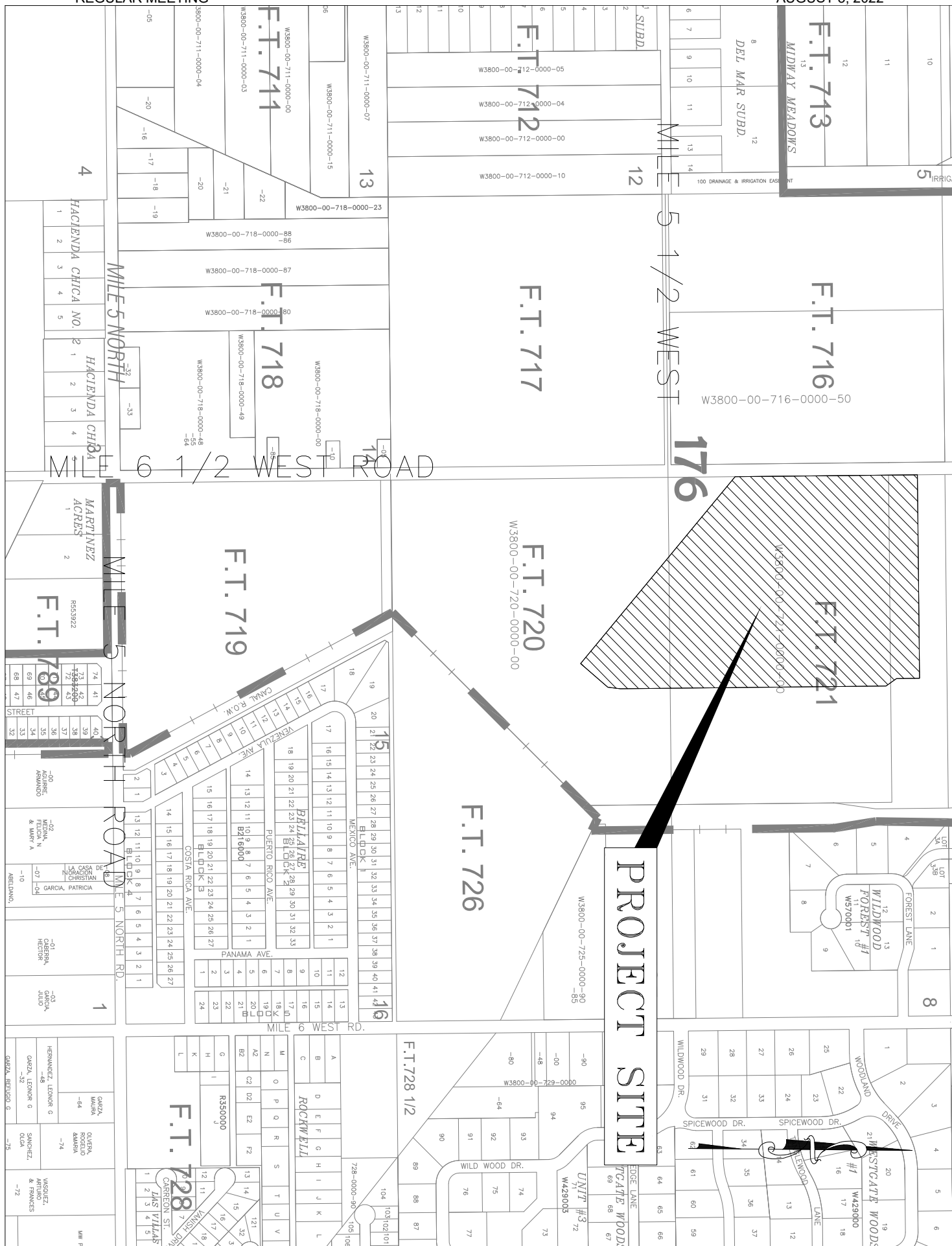
link	d	s	L	Q	Sf	Hf
A25 to A27	48	0.01	66	>>>>	230.66	0.012

AREAS 1,2,3,4,5,6,7,8,9,11,13,12 AND 14

INLET A27 top: 74.44 flowline: 67.15 HGL: 69.62

link	d	s	L	Q	Sf	Hf
A27 to HEADWALL	48	0.01	150	>>>>	265.77	0.016

66.43 314.00





MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Area of Interest (AOI)		Stony Spot
Soils			Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
Special Point Features		Water Features	
	Blowout		Streams and Canals
	Borrow Pit	Transportation	
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow	Background	
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

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

Date(s) aerial images were photographed: Sep 20, 2015—Nov 5, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
28	Hidalgo sandy clay loam, 0 to 1 percent slopes	2.1	7.1%
39	Mercedes clay, 0 to 1 percent slopes	0.4	1.4%
52	Raymondville clay loam, 0 to 1 percent slopes	27.3	91.5%
Totals for Area of Interest		29.9	100.0%

Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend—Hidalgo County, Texas							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
28—Hidalgo sandy clay loam, 0 to 1 percent slopes	133,968						
		85	Hidalgo	Series	0.0	0.5	1.0
39—Mercedes clay, 0 to 1 percent slopes	9,471						
		85	Mercedes	Series	0.0	0.5	1.0
52—Raymondville clay loam, 0 to 1 percent slopes	37,287						
		85	Raymondville	Series	0.0	0.5	1.0

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Hidalgo County, Texas

28—Hidalgo sandy clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sxxv

Elevation: 20 to 500 feet

Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hidalgo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: sandy clay loam
Bk1 - 17 to 28 inches: sandy clay loam
Bk2 - 28 to 38 inches: clay loam
Ck - 38 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R083DY019TX - Gray Sandy Loam
Hydric soil rating: No

Minor Components

Raymondville

Percent of map unit: 7 percent

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Racombes

Percent of map unit: 6 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Willacy

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

39—Mercedes clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: dblk
Elevation: 10 to 150 feet
Mean annual precipitation: 24 to 34 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mercedes and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mercedes

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 19 inches: clay
H2 - 19 to 57 inches: clay
H3 - 57 to 65 inches: clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low
to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Gypsum, maximum content: 10 percent

Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0
mmhos/cm)

Sodium adsorption ratio, maximum: 12.0

Available water supply, 0 to 60 inches: Moderate (about 7.8
inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: D

Ecological site: R083DY015TX - Saline Clay

Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 15 percent

Hydric soil rating: No

52—Raymondville clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: dbm1

Elevation: 20 to 200 feet

Mean annual precipitation: 23 to 33 inches

Mean annual air temperature: 72 to 73 degrees F

Frost-free period: 300 to 340 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Raymondville and similar soils: 85 percent

Minor components: 15 percent

*Estimates are based on observations, descriptions, and transects of
the mapunit.*

Description of Raymondville

Setting

Landform: Delta plains

Down-slope shape: Linear

Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 15 inches: clay loam
H2 - 15 to 43 inches: clay loam
H3 - 43 to 65 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water
(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 8.0
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 15 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

Report—Chemical Soil Properties

Chemical Soil Properties—Hidalgo County, Texas								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
28—Hidalgo sandy clay loam, 0 to 1 percent slopes	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
Hidalgo	0-17	10-18	—	7.9-8.4	1-5	0	0.0-2.0	0-4
	17-28	10-20	—	7.9-8.4	2-15	0	0.0-3.0	2-5
	28-38	10-20	—	7.9-8.4	10-35	0	0.0-4.0	2-6
	38-80	10-20	—	7.9-8.4	10-35	0	0.0-4.0	4-10
39—Mercedes clay, 0 to 1 percent slopes								
Mercedes	0-19	35-55	—	7.9-8.4	2-5	0-5	0.0-4.0	2-4
	19-57	40-55	—	7.9-8.4	2-5	0-5	4.0-8.0	4-8
	57-65	35-55	—	7.9-8.4	2-5	0-10	4.0-16.0	5-12
52—Raymondville clay loam, 0 to 1 percent slopes								
Raymondville	0-15	25-40	—	7.9-8.4	1-5	0	0.0-4.0	0-2
	15-43	25-40	—	7.9-8.4	5-10	0	0.0-4.0	0-2
	43-65	25-40	—	7.9-8.4	5-10	0	0.0-4.0	0-8

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021



Natural Resources
Conservation Service

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National Cooperative Soil Survey

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Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

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

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

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

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

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Hidalgo County, Texas														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H
28—Hidalgo sandy clay loam, 0 to 1 percent slopes														
Hidalgo	85	B	0-17	Sandy clay loam	CL, SC	A-6	0-0-0	0-0-0	100-100 -100	95-98-1 00	86-96-1 00	44-54- 63	25-30 -39	11-15-1 8
			17-28	Sandy clay loam, clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	100-100 -100	94-98-1 00	85-96-1 00	50-60- 75	30-35 -44	11-17-2 2
			28-38	Clay loam, sandy clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	95-97-1 00	91-94-1 00	81-93-1 00	54-68- 81	30-38 -44	11-17-2 2
			38-80	Sandy clay loam, clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	96-97-1 00	91-95-1 00	82-94-1 00	57-72- 84	30-38 -44	11-17-2 2
39—Mercedes clay, 0 to 1 percent slopes														
Mercedes	85	D	0-19	Clay	CH	A-7-6	0-0-0	0-1-2	85-93-1 00	80-90-1 00	80-90-1 00	75-85- 95	55-66 -76	32-41-4 9
			19-57	Clay	CH	A-7-6	0-0-0	0-1-2	85-93-1 00	80-90-1 00	80-90-1 00	75-85- 95	50-63 -76	32-41-4 9
			57-65	Clay	CH, CL	A-7-6	0-0-0	0-1-2	85-93-1 00	80-90-1 00	80-90-1 00	75-85- 95	48-62 -76	32-41-4 9



Engineering Properties—Hidalgo County, Texas														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
52—Raymondville clay loam, 0 to 1 percent slopes														
Raymondville	85	C	0-15	Clay loam	CL	A-6, A-7-6	0-0-0	0-0-0	100-100 -100	100-100 -100	95-98-1 00	51-68- 85	37-44 -50	18-24-3 0
			15-43	Clay, clay loam	CH, CL	A-6, A-7-6	0-0-0	0-0-0	100-100 -100	95-98-1 00	95-98-1 00	75-85- 95	38-47 -55	19-27-3 5
			43-65	Clay, clay loam	CH, CL	A-7-6	0-0-0	0-0-0	100-100 -100	85-93-1 00	80-90-1 00	75-85- 95	40-47 -53	20-25-3 0

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties—Hidalgo County, Texas														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
28—Hidalgo sandy clay loam, 0 to 1 percent slopes	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
	0-17	45-55- 70	5-18- 28	20-27- 30	1.35-1.50 -1.65	4.00-9.00-14.00	0.10-0.13-0.18	1.5- 2.7- 5.0	1.0- 1.5- 2.0	.17	.17	5	5	56
	17-28	25-48- 70	10-25- 50	23-27- 35	1.20-1.40 -1.50	4.00-9.00-14.00	0.10-0.13-0.18	1.2- 2.1- 5.0	0.3- 0.6- 1.0	.28	.28			
	28-38	25-35- 70	10-35- 50	23-30- 35	1.20-1.40 -1.60	4.00-9.00-14.00	0.10-0.13-0.18	1.2- 2.3- 5.9	0.1- 0.3- 0.5	.32	.32			
	38-80	25-30- 70	10-40- 50	23-30- 35	1.40-1.50 -1.80	4.00-9.00-14.00	0.10-0.13-0.18	1.0- 2.2- 5.0	0.1- 0.2- 0.3	.32	.32			
39—Mercedes clay, 0 to 1 percent slopes														
Mercedes	0-19	-22-	-28-	40-50- 60	1.35-1.45 -1.55	0.01-0.21-0.42	0.12-0.15-0.18	9.0-17.0-25.0	1.0- 2.0- 3.0	.17	.17	5	4	86
	19-57	-18-	-29-	45-53- 60	1.35-1.48 -1.60	0.01-0.21-0.42	0.09-0.12-0.15	9.0-17.0-25.0	0.1- 0.6- 1.0	.24	.24			
	57-65	-22-	-28-	40-50- 60	1.40-1.55 -1.70	0.01-0.21-0.42	0.06-0.13-0.20	9.0-17.0-25.0	0.1- 0.6- 1.0	.24	.24			

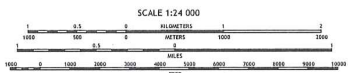
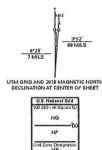
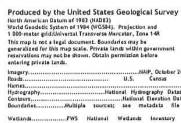


Physical Soil Properties--Hidalgo County, Texas														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
52— Raymondville clay loam, 0 to 1 percent slopes														
Raymondville	0-15	-31-	-33-	32-37- 42	1.20-1.33 -1.45	1.40-2.70-4.00	0.12-0.15-0.18	6.0- 7.5- 8.9	1.0- 2.0- 3.0	.28	.28	5	4	86
	15-43	-30-	-32-	35-38- 50	1.25-1.35 -1.45	0.42-1.00-1.40	0.12-0.15-0.18	6.0- 7.5- 8.9	0.5- 0.8- 1.0	.28	.28			
	43-65	-30-	-30-	35-40- 45	1.25-1.35 -1.45	0.42-1.00-1.40	0.12-0.15-0.18	6.0- 7.5- 8.9	0.1- 0.3- 0.5	.28	.28			

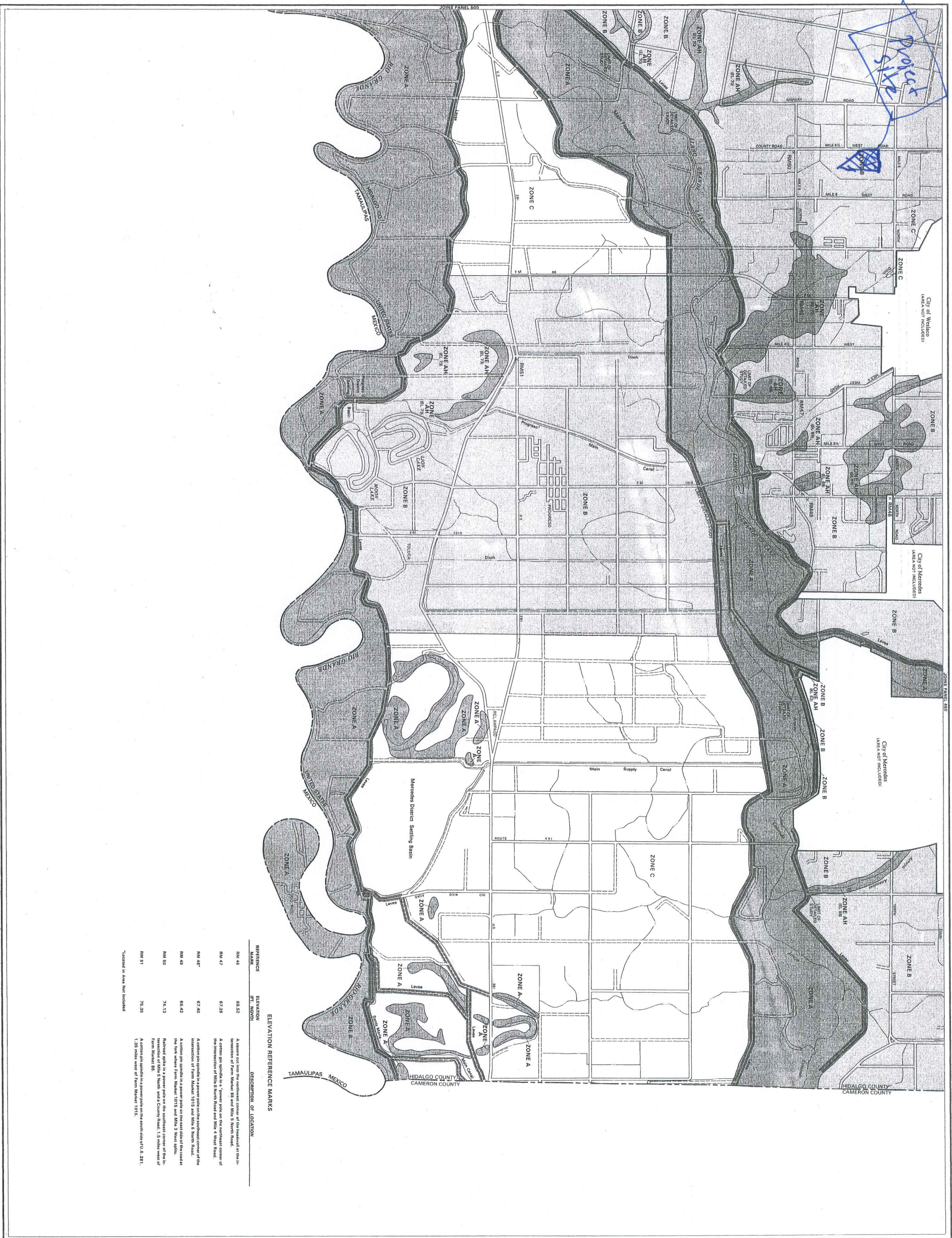
Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021





DONNA, TX



REFERENCE MARK	ELEVATION FT. (NGVD)	DESCRIPTION OF LOCATION
RM 46	68.52	A square cut into the northeast corner of the railroad at the intersection of Farm Marker 18 and Mile 5 North Road.
RM 47	67.26	A corner pin spigole in a power pole on the northeast corner of the intersection of Mile 5 North Road and Mile 4 West Road.
RM 48*	67.40	A corner pin spigole in a power pole on the southeast corner of the intersection of Farm Marker 1015 and Mile 5 North Road.
RM 49	69.42	A corner pin spigole in a power pole on the east side of the road at the turn where Farm Marker 1015 and Mile 5 West Road.
RM 50	74.13	Railroad spike in a power pole on the southeast corner of the intersection of Mile 5 North Road and County Road 1, 1.5 miles west of Farm Marker 18.
RM 51	75.35	A corner pin spigole in a power pole on the south side of U.S. 281, 1.5 miles west of Farm Marker 18.

* Located in Area Not Included

KEY TO MAP

100-year Flood Boundary
Zone Designation
Zone A
Zone B
Zone C
Zone AH
Zone X
Zone V
Zone D
Zone E
Zone F
Zone G
Zone H
Zone I
Zone J
Zone K
Zone L
Zone M
Zone N
Zone O
Zone P
Zone Q
Zone R
Zone S
Zone T
Zone U
Zone V
Zone W
Zone X
Zone Y
Zone Z

Zone A: 100-year Flood Boundary
Zone B: 100-year Flood Boundary
Zone C: 100-year Flood Boundary
Zone AH: 100-year Flood Boundary
Zone X: 100-year Flood Boundary
Zone V: 100-year Flood Boundary
Zone D: 100-year Flood Boundary
Zone E: 100-year Flood Boundary
Zone F: 100-year Flood Boundary
Zone G: 100-year Flood Boundary
Zone H: 100-year Flood Boundary
Zone I: 100-year Flood Boundary
Zone J: 100-year Flood Boundary
Zone K: 100-year Flood Boundary
Zone L: 100-year Flood Boundary
Zone M: 100-year Flood Boundary
Zone N: 100-year Flood Boundary
Zone O: 100-year Flood Boundary
Zone P: 100-year Flood Boundary
Zone Q: 100-year Flood Boundary
Zone R: 100-year Flood Boundary
Zone S: 100-year Flood Boundary
Zone T: 100-year Flood Boundary
Zone U: 100-year Flood Boundary
Zone V: 100-year Flood Boundary
Zone W: 100-year Flood Boundary
Zone X: 100-year Flood Boundary
Zone Y: 100-year Flood Boundary
Zone Z: 100-year Flood Boundary

EXPLANATION OF ZONE DESIGNATIONS

ZONE A
Area of 100-year flood; low flood elevation and low velocity. Flood damage is expected to be minimal. Flood insurance rates are low.

ZONE B
Area of 100-year flood; moderate flood elevation and moderate velocity. Flood damage is expected to be moderate. Flood insurance rates are moderate.

ZONE C
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE AH
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE X
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE V
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE D
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE E
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE F
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE G
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE H
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE I
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE J
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE K
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE L
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE M
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE N
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE O
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE P
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE Q
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE R
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE S
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE T
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE U
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE W
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE Y
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

ZONE Z
Area of 100-year flood; high flood elevation and high velocity. Flood damage is expected to be high. Flood insurance rates are high.

NOTES TO USER

1. Certain areas not in the special flood hazard zone (Zone A and V) may be protected by flood control structures. In these areas, flood insurance rates are low.

2. Flood insurance rates are based on the Flood Insurance Rate Map (FIRM) and the Flood Insurance Study (FIS). Flood insurance rates are based on the Flood Insurance Rate Map (FIRM) and the Flood Insurance Study (FIS).

3. Flood insurance rates are based on the Flood Insurance Rate Map (FIRM) and the Flood Insurance Study (FIS). Flood insurance rates are based on the Flood Insurance Rate Map (FIRM) and the Flood Insurance Study (FIS).

4. Flood insurance rates are based on the Flood Insurance Rate Map (FIRM) and the Flood Insurance Study (FIS). Flood insurance rates are based on the Flood Insurance Rate Map (FIRM) and the Flood Insurance Study (FIS).

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10. Flood insurance rates are based on the Flood Insurance Rate Map (FIRM) and the Flood Insurance Study (FIS). Flood insurance rates are based on the Flood Insurance Rate Map (FIRM) and the Flood Insurance Study (FIS).

**FIRM**
FLOOD INSURANCE RATE MAP

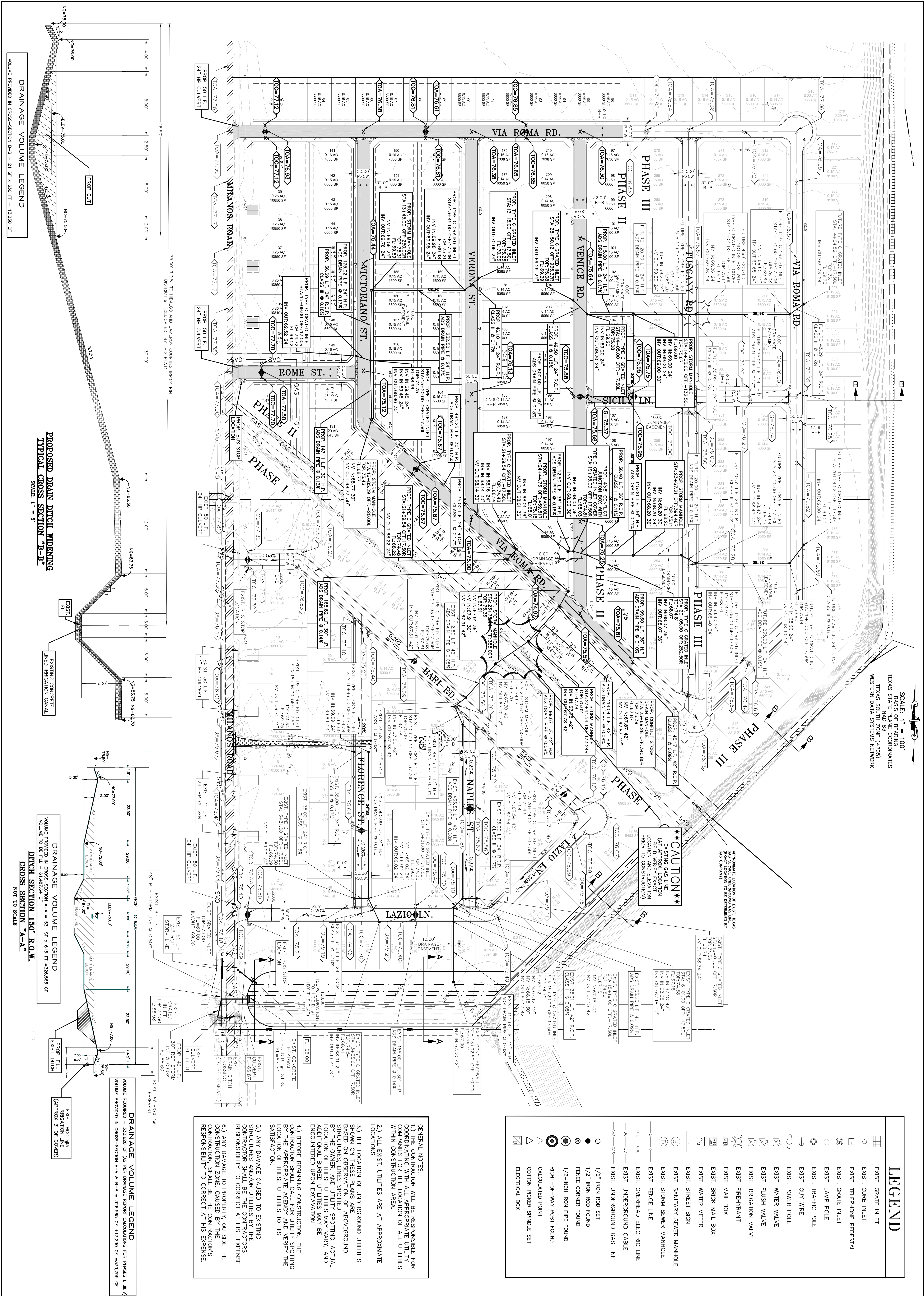
**HIDALGO COUNTY,
TEXAS**
(UNINCORPORATED AREAS)

PANEL 525 OF 525

COMMUNITY PANEL NUMBER
480334 0525 8

EFFECTIVE DATE:
JANUARY 2, 1981

**FEDERAL EMERGENCY MANAGEMENT AGENCY
FEDERAL INSURANCE ADMINISTRATION**



LEGEND	
	EXIST. GRATE INLET
	EXIST. CURB INLET
	EXIST. TELEPHONE PEDESTAL
	EXIST. GRATE INLET
	EXIST. LAMP POLE
	EXIST. TRAFFIC POLE
	EXIST. GUY WIRE
	EXIST. POWER POLE
	EXIST. WATER VALVE
	EXIST. FLUSH VALVE
	EXIST. IRRIGATION VALVE
	EXIST. FIREHYDRANT
	EXIST. MAIL BOX
	EXIST. BRICK MAIL BOX
	EXIST. WATER METER
	EXIST. STREET SIGN
	EXIST. SANITARY SEWER MANHOLE
	EXIST. STORM SEWER MANHOLE
	EXIST. FENCE LINE
	EXIST. OVERHEAD ELECTRIC LINE
	EXIST. UNDERGROUND CABLE
	EXIST. UNDERGROUND GAS LINE
	1/2" IRON ROD SET
	1/2" IRON ROD FOUND
	FENCE CORNER FOUND
	1/2-INCH IRON PIPE FOUND
	RIGHT-OF-WAY POST FOUND
	CALCULATED POINT
	COTTON PICKER SPINDLE SET
	ELECTRICAL BOX

- 1) GENERAL NOTES:
THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH ALL APPROPRIATE UTILITY COMPANIES FOR THE LOCATION OF ALL UTILITIES WITHIN CONSTRUCTION AREA.
- 2) ALL EXIST' UTILITIES ARE AT APPROXIMATE LOCATIONS.
- 3) THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE BASED ON OBSERVATION OF ABOVEGROUND STRUCTURES, LINES SPOTTED BY THE OWNER, AND UTILITY SPOTTING. ACTUAL LOCATION OF THESE UTILITIES MAY VARY, AND ADDITIONAL BURIED UTILITIES MAY BE ENCOUNTERED UPON EXCAVATION.
- 4) BEFORE BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CALL FOR UTILITY SPOTTING BY THE APPROPRIATE AGENCY AND VERIFY THE LOCATION OF THESE UTILITIES TO HIS SATISFACTION.
- 5) ANY DAMAGE CAUSED TO EXISTING STRUCTURES AND/OR UTILITIES BY THE CONTRACTOR SHALL BE THE CONTRACTORS RESPONSIBILITY TO CORRECT AT HIS EXPENSE.
- 6) ANY DAMAGE TO PROPERTY, OUTSIDE THE CONSTRUCTION ZONE, CAUSED BY THE CONTRACTOR, SHALL BE THE CONTRACTORS RESPONSIBILITY TO CORRECT AT HIS EXPENSE.

DRAINAGE VOLUME LEGEND
 D = 330,620 CF (AS PER DRAINAGE REPORT CALCULATION)
 IN CROSS-SECTION A-A & B-B = 326,565 CF + 13,210 CF

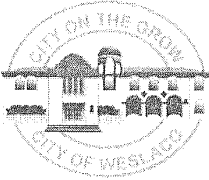
ST. HCCID#3
IGATION LINE
OX 3' OF COVER

PROJECT: OVERALL PAVING AND DRAINAGE LAYOUT MILANOS ESTATES PHASE II SUBDIVISION HIDALGO COUNTY		THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE IOWA GARÇA, P.E. 115682 ON APRIL 8, 2022. IT IS NOT TO BE USED FOR BIDDING OR PERMIT PURPOSES.		RIO DELTA ENGINEERING FIRM REGISTRATION No. F-7628 SURVEY FIRM No. 10194027 921 S. 10TH AVENUE EDINBURG, TEXAS 78539 (TEL) 956-380-5152 (FAX) 956-380-5083	
DESIGNER: IOWA GARÇA P.E. R.P.L.S. SURVEYOR: IOWA GARÇA P.E. R.P.L.S. CHECKED: IOWA GARÇA P.E. R.P.L.S. DRAWN: IOWA GARÇA P.E. R.P.L.S. SCALE: OSCAR ALARCON, JR. DATE: APRIL 8, 2022 PROJECT: SUB 19 028 REVISIONS: SHEET NO. SHT 6		PRELIMINARY REVISIONS FOR			



**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V.J.
From: Rebekah de la Fuente, Planning Director, on behalf of Rio Delta Engineering	
Subject/Agenda Item: Discussion and consideration for the Final Plat of Pablo Pena Jr No. 2 – being 5.57 acres out of Farm Tract 145, block 179, The West and Adams Tracts, Weslaco, Hidalgo County, Texas Located on the Northwest corner of n Westgate dr. & Canyon Rd. Possible Action.	
Discussion/Overview: The proposed seven (7) lot subdivision is located inside the City of Weslaco. This subdivision is being serviced with water by the City of Weslaco through an 8" waterline and sewer by the City of Weslaco through an 8" sewer line. The property is within a Flood Zone "B".	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval of Final Plat	
Additional Action Prompted: [X] Mayor's Signature [] Public Hearing [] Budget Amendment [] Resolution [] Ordinance – First Reading [] Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



SUBDIVISION REVIEW APPLICATION

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. _____

This form shall be completed by the Property Owner or Applicant and submitted to the Planning Department along with the required number of copies of the respective plat, review fee and all other required information listed below and in the Subdivision Ordinance. The submittal of an application does not constitute acceptance for processing until the staff reviews and determines the application is complete.

GENERAL INFORMATION

Name of Subdivision: Pablo Peña Jr No. 2

Location: NW CORNER OF N WESTGATE DR. & CANYON RD.

Legal Description: 5.57 ACRES OUT OF FARM TRACT 145, BLOCK 179, THE WEST & ADAMS TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 2, PAGES 34-37, MAP RECORDS OF HIDALGO COUNTY.

Is subdivision inside city limits? ☒ YES ☐ NO

If subdivision is in the ETJ, indicate? ☐ 3.5 Mile ☐ 5 Mile

If no submit letter of Annexation (Contiguous or Consensual)

Existing Zoning: B-2 SECONDARY & HIGHWAY DISTRICT

Existing Land Use: VACANT Proposed Land Use: COMMERCIAL/RETAIL

Number of Lots Proposed: 7 Gross Acreage: 5.57 ACRES

Title Report Submitted: ☐ YES ☒ NO

OWNER INFORMATION

Owner's Name: WESTGATE COMMERCIAL HOLDINGS LLC & FALARS-V INC Telephone: (956) 778-8689

Address: 326 W MILE 11 N Fax: _____

City: WESLACO State: TX Zip: 78599 E-mail: felizataylor@falarsv.com

ENGINEER INFORMATION

Name: IVAN GARCIA, P.E., R.P.L.S. - RIO DELTA ENGINEERING Telephone: (956) 380-5152

Address: 921 S. 10TH AVENUE Fax: _____

City: EDINBURG State: TX Zip: 78539 E-mail: riodelta2004@yahoo.com

255 S. KANSAS AVE ■ WESLACO, TEXAS 78596-6285 ■ 956-447-3401 ■ (Fax) 956-973-3128 ■ WWW.WESLACOTX.GOV

UTILITY PROVISIONS

Will proposed subdivision connect to:

☒ YES ☐ NO Water Provision: CITY OF WESLACO

☒ YES ☐ NO Wastewater Provision: CITY OF WESLACO

☒ YES ☐ NO Electric Company: MVEC

☒ YES ☐ NO Phone Utility _____	☐ YES ☐ NO Gas Utility _____	☒ YES ☐ NO Cable Utility _____
---	--	---

Proposed subdivision is in the following districts:

☒ YES ☐ NO Drainage District <u>No.1</u>	☒ YES ☐ NO Irrigation District <u>H.C.C.I.D. No.9</u>
---	--

Has the property been assessed as flat rate irrigable property: ☐ YES ☒ NO

Have Water Rights been conveyed to City/Water Supplier? ☐ YES ☒ NO

(Attach written proof of such assessment or that it has never been assessed as such a property) If **YES**, attach an estimate from the irrigation district of the proportional water rights for the subdivision as calculated under Texas Water Code § 49.505.

SUBMITTALS REQUIRED FOR SUBDIVISION REVIEW

_____ Seven (7) sets of preliminary plat folded and stapled (24 x 36) and forward a copy in PDF format to mhinojosa@weslacotx.gov & rdelafuente@weslacotx.gov

_____ \$55.00 Subdivision Review fee

_____ One 11" X 17" reduced copy of plat

_____ Plat Layout

_____ Existing & Proposed Easements

_____ Existing & Proposed ROW

_____ Existing & Proposed Drainage Easements

_____ Contours

_____ Flood Zones

_____ Adjoiners

_____ Existing & Proposed street names

_____ Utility Layout

_____ Existing & Proposed Utilities

_____ Proposed Fire Hydrants

_____ Adjoiners

_____ Street names

_____ Drainage plans and calculations with engineer's seal

_____ Elevations

_____ Flood directional arrows

_____ Detention areas

_____ Street names

_____ Proof of ownership of the property

_____ If septic tank system required, submit soil evaluation report

_____ Water Rights associated with the property

_____ Tax Receipt for all taxing entities showing that taxes are paid in full

_____ Number of fire hydrants proposed for subdivision

_____ Trip Generation Worksheet

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: Feliza Taylor

Owner Signature: [Signature] Date: 5/11/2022

IVAN GARCIA, P.E., R.P.L.S. - RIO DELTA ENGINEERING is the authorized agent

Authorized Agent Signature: [Signature] Date: 5/13/22

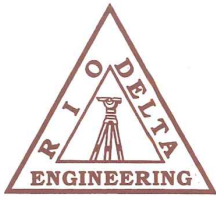
Authorized Agent Printed Name: Ivan Garcia. P.E., R.P.L.S.

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____ Date Paid: _____

Preliminary Subdivision Review Date: _____

General Comments: _____



RIO DELTA ENGINEERING

CIVIL ENGINEERING • PROJECT MANAGEMENT • LAND DEVELOPMENT
TEXAS REGISTERED ENGINEERING FIRM F-7628
TEXAS LICENSED SURVEYING FIRM #10194027

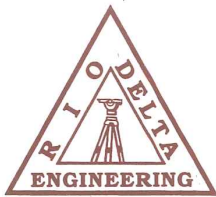
PABLO PEÑA JR. SUBDIVISION No.2 DRAINAGE REPORT

Prepared By:
Ivan Garcia P.E., R.P.L.S.

Date:
MAY 19, 2022



1. COVER SHEET
2. INDEX SHEET
3. DRAINAGE REPORT
4. FEMA DETERMINATION
5. PROJECT LOCATION MAP
6. HYDRAULIC CALCULATIONS
7. "C" VALUES FOR METHOD
8. RAINFALL INTENSITY FOR HIDALGO COUNTY
9. FLOOD PLAIN
10. SOIL SURVEY
11. PRELIMINARY PLAT



RIO DELTA ENGINEERING

CIVIL ENGINEERING • PROJECT MANAGEMENT • LAND DEVELOPMENT
TEXAS REGISTERED ENGINEERING FIRM F-7628
TEXAS LICENSED SURVEYING FIRM #10194027

DRAINAGE REPORT PABLO PENA JR SUBDIVISION NO. 2, Weslaco, Texas

Pablo Pena Jr Subdivision No. 2 is a proposed 7 lot commercial subdivision, located within the City of Weslaco city limits, same being a 5.57 acres tract of land out of and forming a part or portion of Farm Tract 145, Block 179, West and Adams Tract Subdivision, recorded in Volume 2, Page 34-37, Map Records of Hidalgo County, Texas. The lot will be used for the construction of a residential subdivision.

The subdivision is in zone "X", areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood (medium shading), according to the FEMA's Flood Insurance Rate Map Community Panel No.: 480334 0450 B map revised: June 6, 2000.

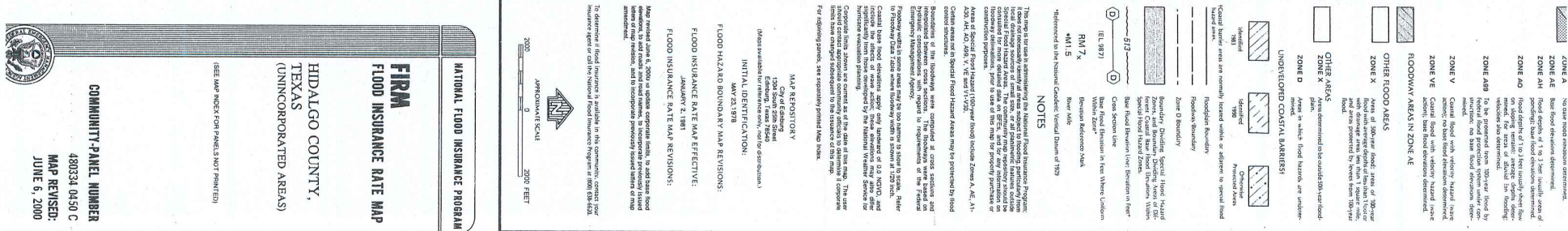
According to the Soil Survey Report prepared for Hidalgo County by the U.S.D.A. Soil Conservation Service, the site consists of 100% of Hidalgo sandy clay loam (28), with 0 to 1% slopes, the soil is well drained and surface runoff is negligible, permeability is moderately high to high and the water capacity is moderate. These soils are classified as Group (B). Please see the attached tables for the engineering, physical and chemical properties of these soils.

Existing runoff sheet flows overland in a easterly direction into a series of existing City of Weslaco drainage inlets (as part of Westgate Drive's storm drainage improvements) located along the west side of Westgate Drive, with outfall to the Hidalgo Cameron Counties Irrigation District No. 9 ditch 350, and subsequently with final outfall to the Laguna Madre.

Using the Rational Method, we have determined that a 10-yr rainfall event will generate approximately 3.75 CFS of storm runoff. We have also used the Rational Method to determine that the improved site will generate an estimated 37.18 CFS of runoff for a 50-yr rainfall event. The improved site will have an approximate increase of 33.43 CFS of storm runoff for a 50-yr rainfall event.

In accordance with the City's drainage requirements, we have calculated that approximately a total of 76,638 CF or 1.759 AC-FT, will need to be detained onsite for the complete development of the subdivision for a 50-yr rainfall event. Current runoff will be detained in designated detention areas within the lots along the east side of the site, with overflow via a 24" drain pipe into the existing City of Weslaco drainage inlets (as part of Westgate Drive's storm drainage improvements) located along the west side of Westgate Drive, with outfall to the Hidalgo Cameron Counties Irrigation District No. 9 ditch 350, and subsequently with final outfall to the Laguna Madre. Engineered site grading and detention plans will be required at the time of building permit request. Tables, and calculations are attached.





Project Site

City of Westlaco
(AREA NOT INCLUDED)

CITY OF MERCED
AREA NOT INCLUDED

HIDALGO COUNTY
CAMERON COUNTY

COMMUNITY-PANEL NUMBER

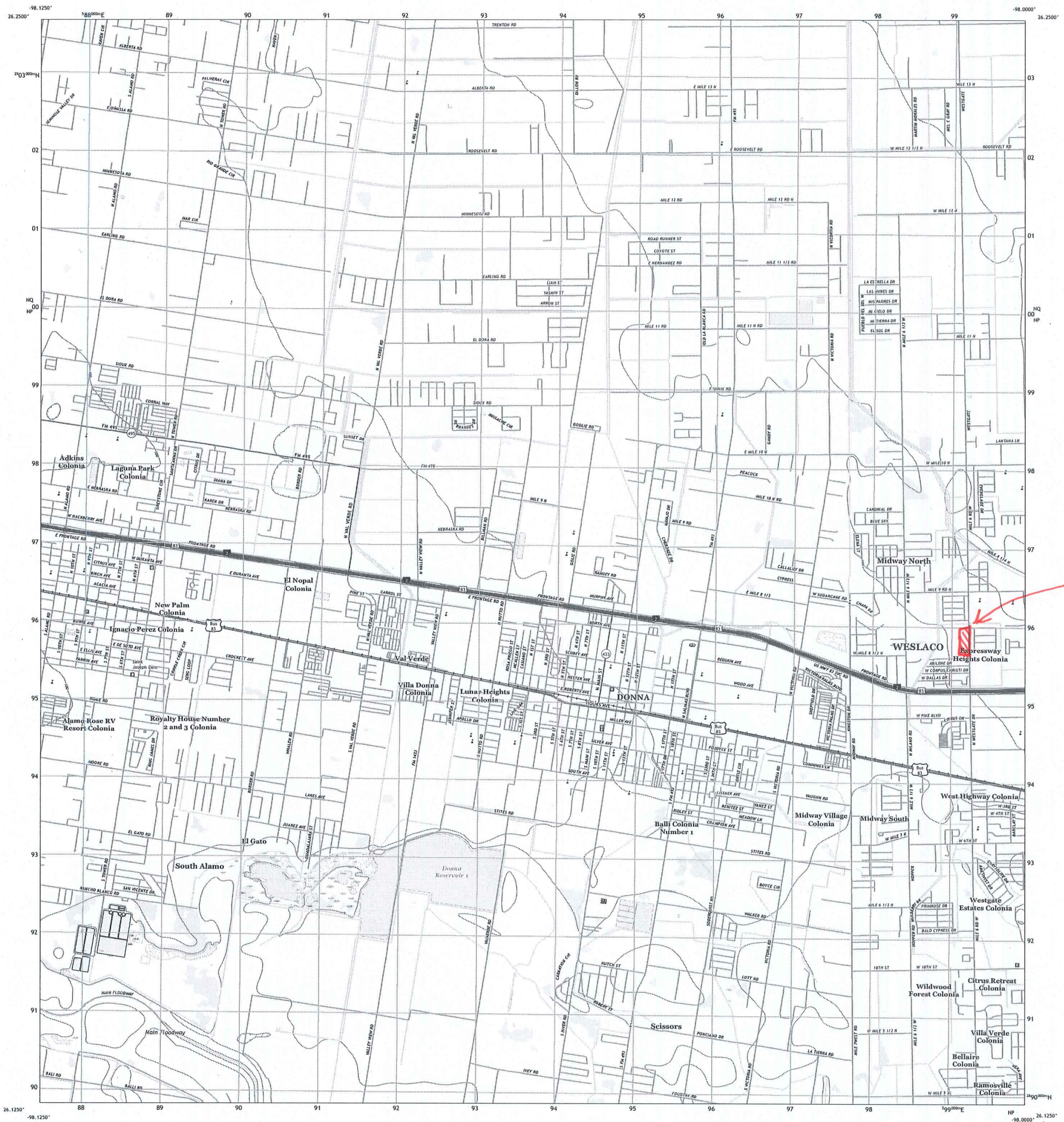
MAP REVISED:
JUNE 6, 2000



U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



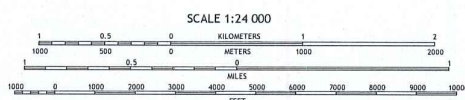
DONNA QUADRANGLE
TEXAS - HIDALGO COUNTY
7.5-MINUTE SERIES



Project Site

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1000-meter grid Universal Transverse Mercator, Zone 14R.
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Clearly permission before
entering private lands.

Imagery.....NIP, October 2016 - January 2017
Road.....U.S. Census Bureau, 2015
Name.....CHS, 1979 - 2018
Hydrography.....National Hydrography Dataset, 2003 - 2018
Contours.....National Elevation Dataset, 2003 - 2008
Boundaries.....Multiple sources; see metadata file 2016 - 2017
Wetlands.....FWS National Wetlands Inventory 1983 - 1994



1	2	3
4	5	6
7	8	9

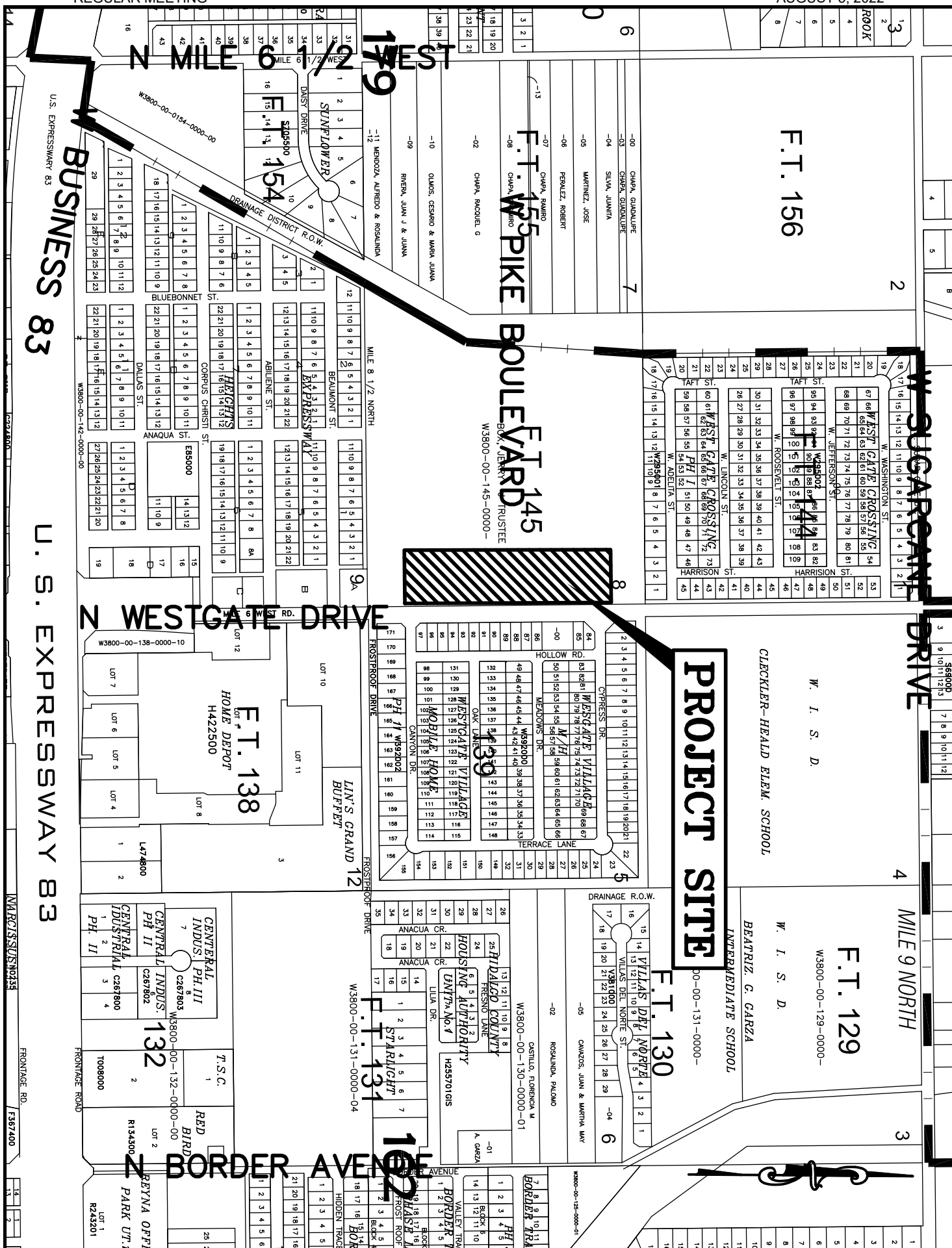
ADJOINING QUADRANGLES

- 1 Edinburg
- 2 La Bamba
- 3 Edcouch
- 4 Pharr
- 5 Mercedes
- 6 San Juan SE
- 7 San Juan SE
- 8 Progress

ROAD CLASSIFICATION	
Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	400
Interstate Route	US Route
	State Route

DONNA, TX
2019





STORM WATER DETENTION CALCULATIONS

SUMMARY SHEET

Project Name:	PABLO PENA JR NO.2		
City:	WESLACO		
State:	TEXAS		
County:	HIDALGO		
Total Area:	5.57	Acres Gross	
Total Net Area:	5.57	Acres Net	
Total lots:	7	*Commercial	
			*Commercial
Area already developed:	0.00	Acres	
Area unimproved:	5.57	Acres Net	
Existing Run off:	3.75	cfs	*Pre-developed condition
Future Run off:	34.19	cfs	*10 year storm
Future Run off:	37.18	cfs	*25 year storm
			*50 year storm
Total on site detention required:	76,638	cft	*50 year storm
	1.759	Ac-ft	

*References for calculations and procedure: **1) TxDOT Hydraulic Design Manual
Revised March 2009**

**2) FHWA, Urban Drainage Design Manual HEC-22
Revised September 2009**

**3) City of McAllen
Standard Design Guide for
Public Infrastructure Improvements
October, 2009**



I. EXISTING RUN OFF (10 YEAR STORM)

***Rational Method**

***COMMERCIAL**

Project Name: **PABLO PENA JR NO.2**

City:	WESLACO	
State:	TEXAS	
County:	HIDALGO	
	5.57	Acres Net
Highest elevation=	76.10	ft
Lowest elevation=	74.30	ft
Watercourse length, L=	1000.00	ft
Slope, S _p =	0.18	%
Average flow velocity, V=	0.30	ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28
k= 0.213 *From Table 3-2 - Intercept Coefficients

Time of concentration, t_c= **56.23** min (calculated)
56.23 min (used)

$$t_c = L/60V$$

Intensity, i= **3.36** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration
*Coefficients for HIDALGO, County, Texas
*For a recurrence interval of 10 years

e=	0.778
b=	87
d=	9.2

Area already developed=	0.00	SQFT	
(buildings and driveway)	0.00	ACRES	*Pre-developed condition

Existing Run off Coefficient: **0.83** *Avg for asphalt streets and roofs
*From Table 3-3 - Run off Coefficients

Area unimproved=	242,629	SQFT
	5.57	ACRES

Existing Run off Coefficient: **0.2** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w= **0.20**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **3.75** CFS

$$Q = CiA$$

II. FUTURE RUN OFF (25 YEAR STORM)

*Rational Method

*COMMERCIAL

Project Name: **PABLO PENA JR NO.2**

City:	WESLACO	
State:	TEXAS	
County:	HIDALGO	
	5.57	Acres Net
Highest elevation=	76.10	ft
Lowest elevation=	74.30	ft
Watercourse length, L=	1000.00	ft
Slope, S _p =	0.18	%
Average flow velocity, V=	0.86	ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28
k= 0.619

*From Table 3-2 - Intercept Coefficients
*For paved areas.

Time of concentration, t_c= **19.35** min (calculated)

$$t_c = L / 60V$$

19.35 min (used)

Intensity, i= **7.40** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration
*Coefficients for HIDALGO, County, Texas
*For a recurrence interval of 25 years

e=	0.771
b=	98
d=	9.2

Area already developed=	0.0	SQFT	
	0.00	ACRES	*Pre-developed condition
Future Run off Coefficient:	0.9		*Avg for roof areas *From Table 3-3 - Run off Coefficients

Area to be developed=	218,366	SQFT	*90% of net area for
	5.01	ACRES	Commercial building, drives and walks
Future Run off Coefficient:	0.9		*Avg for asphalt streets and roofs *From Table 3-3 - Run off Coefficients

Area left unimproved=	24,263	SQFT	*Remaining area
Total area left unimproved=	0.56	ACRES	
Existing Run off Coefficient:	0.2		*For Unimproved areas *From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w= **0.83**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **34.19** CFS

$$Q = CiA$$

III. STORAGE CALCULATIONS (50 YEAR STORM)

*Rational Method

Project Name: **PABLO PENA JR NO.2**

City:	WESLACO
State:	TEXAS
County:	HIDALGO
	5.57 Acres Net
Highest elevation=	76.10 ft
Lowest elevation=	74.30 ft
Watercourse length, L=	1000.00 ft
Slope, S _p =	0.18 %
Average flow velocity, V=	0.86 ft/sec

$$V = K_u k S_p^{0.5}$$

K_u=3.28
k= 0.619

*From Table 3-2 - Intercept Coefficients
*For paved areas.

Time of concentration, t_c= **19.35** min (calculated)
19.35 min (used)

$$t_c = L / 60V$$

Intensity, i= **8.04** in/hr

$$i = \frac{b}{(t_c + d)^e}$$

*From table 3-1- Intensity-Frequency-Duration
*Coefficients for HIDALGO, County, Texas
*For a recurrence interval of 50 years

e= 0.749
b= 99
d= 9.2

Area already developed= **0.0** SQFT
0.00 ACRES *Pre-developed condition
Future Run off Coefficient: **0.9** *Avg for roof areas
*From Table 3-3 - Run off Coefficients

Area to be developed= **218,366** SQFT *90% of net area for
5.01 ACRES commercial business drives and walks
Future Run off Coefficient: **0.9** *Avg for asphalt streets and roofs
*From Table 3-3 - Run off Coefficients

Area left unimproved= **24,263** SQFT *Remaining area
Total area left unimproved= **0.56** ACRES
Existing Run off Coefficient: **0.2** *For Unimproved areas
*From Table 3-3 - Run off Coefficients

Weighted Run off Coefficient, C_w= **0.83**

$$C_w = (C_1 A_1 + C_2 A_2) / A_{Total}$$

Peak flow, Q= **37.18** CFS

$$Q = CiA$$

IV. STORM WATER DETENTION CALCULATIONS

***Modified Rational Method**

Duration (min)	Intensity (in/hr)	Q in (cfs)	Vol in (cft)	Q out (cfs)	V out (cft)	Storage (cft)
5	13.57	62.73	18,820	3.75	2,737	16,083
10	10.83	50.05	30,028	3.75	3,299	26,729
15	9.10	42.08	37,873	3.75	3,862	34,012
20	7.91	36.56	43,871	3.75	4,424	39,447
25	7.03	32.48	48,716	3.75	4,986	43,730
30	6.34	29.32	52,780	3.75	5,548	47,232
35	5.80	26.80	56,282	3.75	6,110	50,172
40	5.35	24.73	59,361	3.75	6,672	52,688
45	4.98	23.00	62,111	3.75	7,234	54,876
50	4.66	21.53	64,598	3.75	7,796	56,802
55	4.38	20.26	66,871	3.75	8,359	58,513
60	4.14	19.16	68,965	3.75	8,921	60,045
65	3.93	18.18	70,909	3.75	9,483	61,426
70	3.75	17.32	72,723	3.75	10,045	62,678
75	3.58	16.54	74,426	3.75	10,607	63,819
80	3.43	15.84	76,030	3.75	11,169	64,861
85	3.29	15.21	77,549	3.75	11,731	65,817
90	3.16	14.63	78,991	3.75	12,293	66,697
95	3.05	14.10	80,364	3.75	12,855	67,508
100	2.94	13.61	81,675	3.75	13,418	68,258
105	2.85	13.16	82,931	3.75	13,980	68,951
110	2.76	12.75	84,136	3.75	14,542	69,594
115	2.67	12.36	85,294	3.75	15,104	70,190
120	2.60	12.00	86,410	3.75	15,666	70,744
130	2.45	11.35	88,527	3.75	16,790	71,737
140	2.33	10.77	90,510	3.75	17,915	72,595
150	2.22	10.26	92,375	3.75	19,039	73,336
160	2.12	9.81	94,139	3.75	20,163	73,976
170	2.03	9.39	95,812	3.75	21,287	74,524
180	1.95	9.02	97,404	3.75	22,411	74,993
190	1.88	8.68	98,925	3.75	23,536	75,389
200	1.81	8.37	100,380	3.75	24,660	75,720
210	1.75	8.08	101,777	3.75	25,784	75,993
220	1.69	7.81	103,120	3.75	26,908	76,211
230	1.64	7.57	104,413	3.75	28,033	76,381
240	1.59	7.34	105,661	3.75	29,157	76,505
250	1.54	7.12	106,868	3.75	30,281	76,587
260	1.50	6.93	108,036	3.75	31,405	76,630
265	1.48	6.83	108,606	3.75	31,967	76,638
270	1.46	6.74	109,167	3.75	32,530	76,638
275	1.44	6.65	109,721	3.75	33,092	76,629
280	1.42	6.56	110,266	3.75	33,654	76,612

Total on site detention required= **76,638** cft
1.759 acres-ft

Duration: Duration in minutes
Intensity: Intensity for respective duration (50-year event)
Q in: Developed conditions peak discharge ($C_{dev} \times i_{50} \times \text{Area}$)
Vol in: Developed conditions run off volume ($Q_{in} \times \text{Duration} \times 60$)
Q out: Pre-developed peak discharge ($C_{pre} \times i_{10} \times \text{Area}$)
V out: $(0.5 \times [\text{duration} + t_{c \text{ dev}}] \times Q_{out} \times 60)$
Storage: Required storage ($V_{in} - V_{out}$)

Table 3-1. Rainfall Intensity-Duration-Frequency Coefficients for Hidalgo County

Coefficient	2-year	5-year	10-year	25-year	50-year	100-year
e (in)	0.831	0.795	0.778	0.771	0.749	0.740
b	74	80	87	98	99	103
d (mins)	9.6	9.2	9.2	9.2	9.2	9.6

Reference: TxDOT Hydraulic Design Manual, (2009)

Intercept Coefficients for Velocity vs. Slope Relationship

Land Cover/Flow Regime	k
Forest with heavy ground litter; hay meadow (overland flow)	0.076
Trash fallow or minimum tillage cultivation; contour or strip cropped; woodland (overland flow)	0.152
Short grass pasture (overland flow)	0.213
Cultivated straight row (overland flow)	0.274
Nearly bare and untilled (overland flow); alluvial fans in western mountain regions	0.305
Grassed waterway (shallow concentrated flow)	0.457
Unpaved (shallow concentrated flow)	0.491
Paved area (shallow concentrated flow); small upland gullies	0.619

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Table 3-3. Runoff Coefficients for Rational Formula

Type of Drainage Area	Runoff Coefficient, C*
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries	0.10 - 0.25
Playgrounds	0.20 - 0.40
Railroad yard areas	0.20 - 0.40
Unimproved areas	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2 - 7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2 - 7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs	0.75 - 0.95
*Higher values are usually appropriate for steeply sloped areas and longer return periods because infiltration and other losses have a proportionally smaller effect on runoff in these cases.	

Reference: FHWA, Urban drainage Design Manual HEC-22, (2009)

Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

Report—Chemical Soil Properties

Chemical Soil Properties—Hidalgo County, Texas								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
28—Hidalgo sandy clay loam, 0 to 1 percent slopes	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
Hidalgo	0-17	10-18	—	7.9-8.4	1-5	0	0.0-2.0	0-4
	17-28	10-20	—	7.9-8.4	2-15	0	0.0-3.0	2-5
	28-38	10-20	—	7.9-8.4	10-35	0	0.0-4.0	2-6
	38-80	10-20	—	7.9-8.4	10-35	0	0.0-4.0	4-10

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021



Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

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

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

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

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

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Hidalgo County, Texas														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H
28—Hidalgo sandy clay loam, 0 to 1 percent slopes														
Hidalgo	85	B	0-17	Sandy clay loam	CL, SC	A-6	0-0-0	0-0-0	100-100 -100	95-98-1 00	86-96-1 00	44-54- 63	25-30 -39	11-15-1 8
			17-28	Sandy clay loam, clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	100-100 -100	94-98-1 00	85-96-1 00	50-60- 75	30-35 -44	11-17-2 2
			28-38	Clay loam, sandy clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	95-97-1 00	91-94-1 00	81-93-1 00	54-68- 81	30-38 -44	11-17-2 2
			38-80	Sandy clay loam, clay loam	CL, SC	A-6, A-7-6	0-0-0	0-0-0	96-97-1 00	91-95-1 00	82-94-1 00	57-72- 84	30-38 -44	11-17-2 2

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021



Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties—Hidalgo County, Texas														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
28—Hidalgo sandy clay loam, 0 to 1 percent slopes	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
Hidalgo	0-17	45-55- 70	5-18- 28	20-27- 30	1.35-1.50 -1.65	4.00-9.00-14.00	0.10-0.13-0.18	1.5-2.7-5.0	1.0-1.5-2.0	.17	.17	5	5	56
	17-28	25-48- 70	10-25- 50	23-27- 35	1.20-1.40 -1.50	4.00-9.00-14.00	0.10-0.13-0.18	1.2-2.1-5.0	0.3-0.6-1.0	.28	.28			
	28-38	25-35- 70	10-35- 50	23-30- 35	1.20-1.40 -1.60	4.00-9.00-14.00	0.10-0.13-0.18	1.2-2.3-5.9	0.1-0.3-0.5	.32	.32			
	38-80	25-30- 70	10-40- 50	23-30- 35	1.40-1.50 -1.80	4.00-9.00-14.00	0.10-0.13-0.18	1.0-2.2-5.0	0.1-0.2-0.3	.32	.32			

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend—Hidalgo County, Texas							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
28—Hidalgo sandy clay loam, 0 to 1 percent slopes	133,968						
		85	Hidalgo	Series	0.0	0.5	1.0

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Hidalgo County, Texas

28—Hidalgo sandy clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sxxv

Elevation: 20 to 500 feet

Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hidalgo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: sandy clay loam
Bk1 - 17 to 28 inches: sandy clay loam
Bk2 - 28 to 38 inches: clay loam
Ck - 38 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R083DY019TX - Gray Sandy Loam
Hydric soil rating: No

Minor Components

Raymondville

Percent of map unit: 7 percent

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Racombes

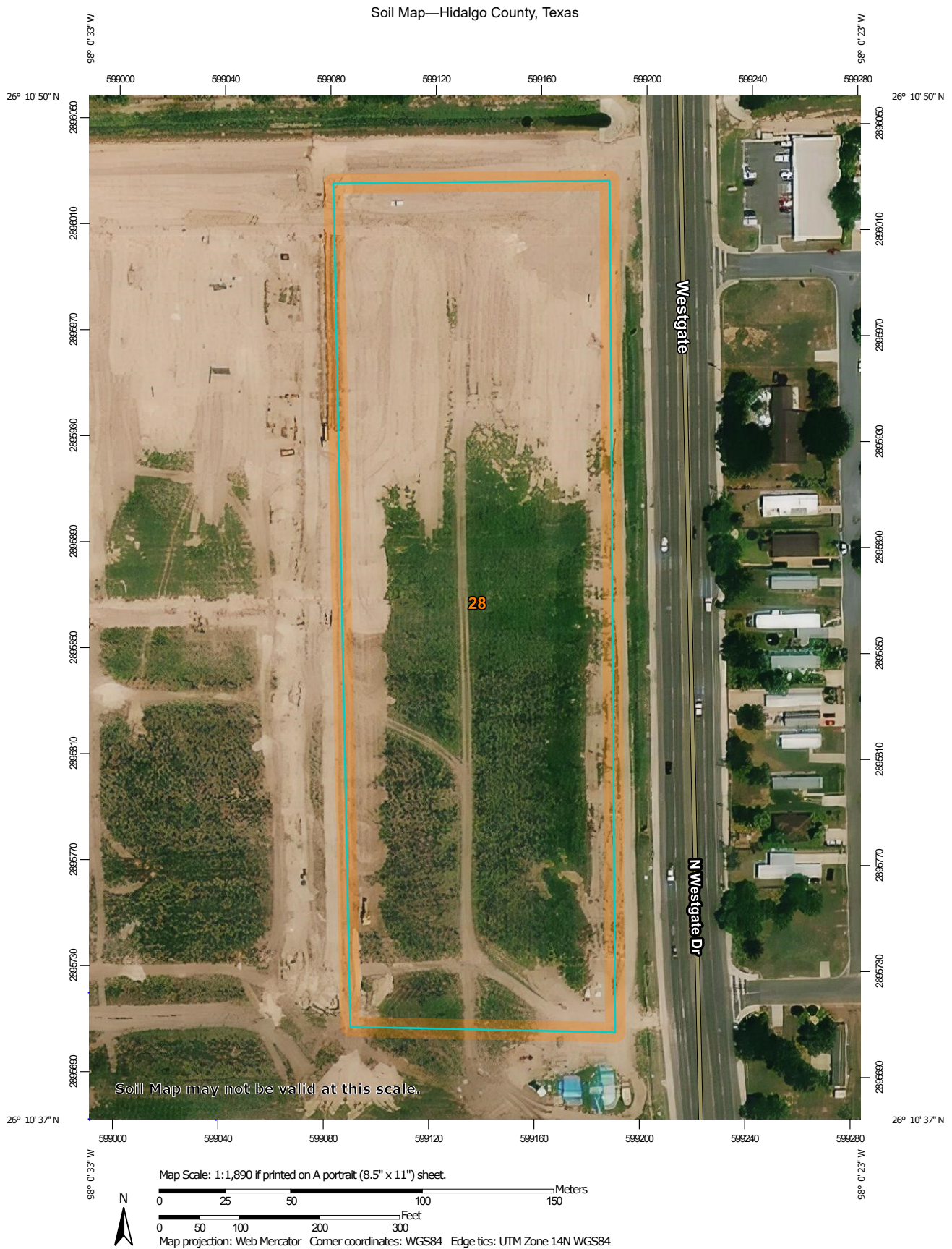
Percent of map unit: 6 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Willacy

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021



MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Hidalgo County, Texas
Survey Area Data: Version 20, Sep 13, 2021

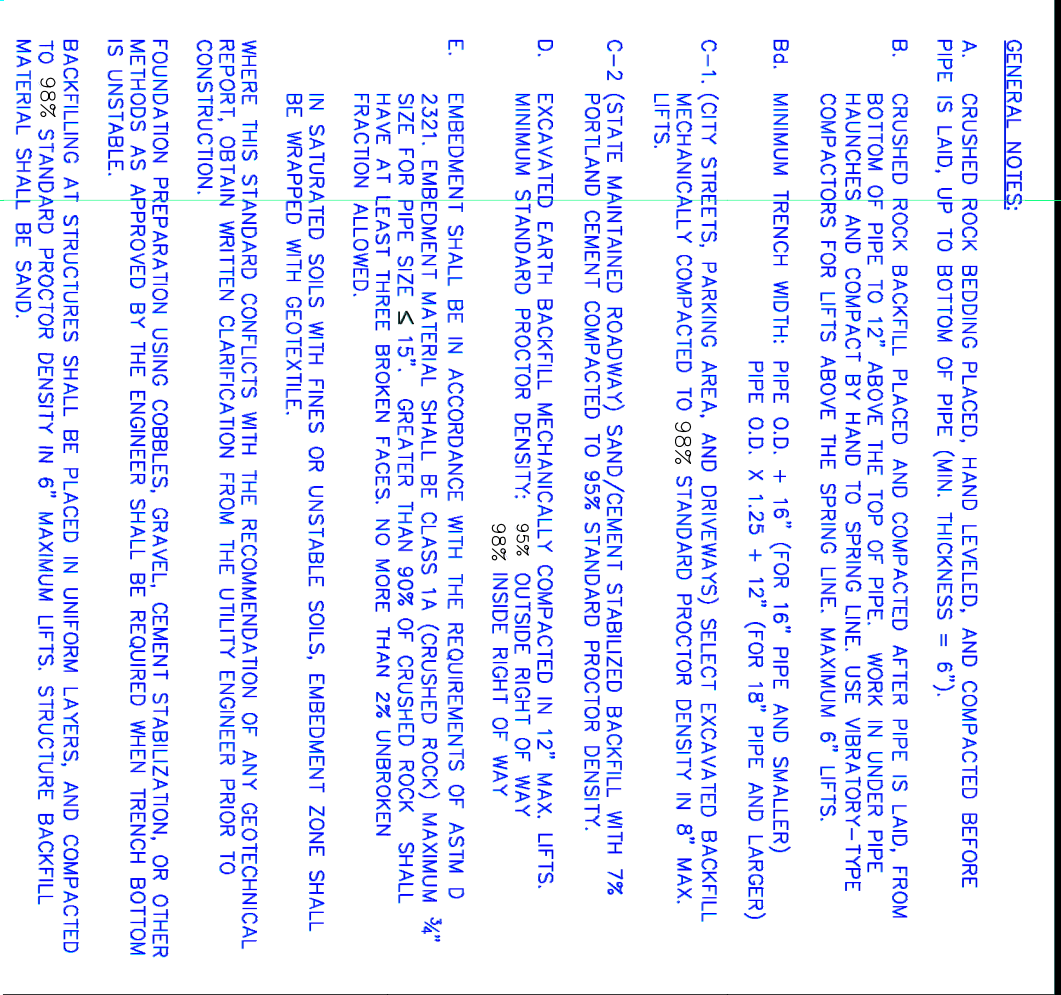
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 20, 2015—Nov 5, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
28	Hidalgo sandy clay loam, 0 to 1 percent slopes	8.2	100.0%
Totals for Area of Interest		8.2	100.0%



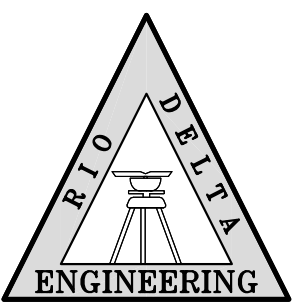
ABBREVIATION LEGEND	
R.O.M.	RIGHT OF WAY
P.O.C.	POINT OF COMMING
S.W.C.	SOUTH WEST CORNER
F.M.	FARM-TO-MARKET
U.E.	UTILITY EASEMENT
L	LOT LINE

LEGEND	
○	SET 1/2 INCH IRON ROD
●	FOUND 1/2 INCH IRON ROD
▲	FOUND COITION PICKER SPINDLE
△	FOUND IRON POINT
⊙	POWER POLE
(xxxx)	MAP RECORD
xxxx	NATURAL GROUND
○	CAPPED IRON ROD SET

SCALE: 1" = 40'
BEARING OF BASIS
TEXAS STATE PLANE
COORDINATES NAD 83
TEXAS SOUTH ZONE (4205)
WESTERN DATA SYSTEMS NETWORK



FIRM REGISTRATION No. F-7628
SURVEY FIRM No. 10194027
921 S. 10TH AVENUE EDINBURG, TEXAS 78539
(TEL) 956-380-5152 (FAX) 956-380-5083

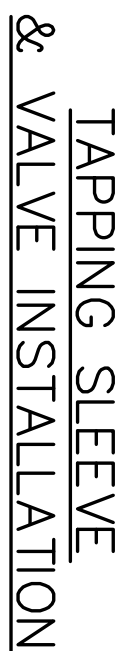


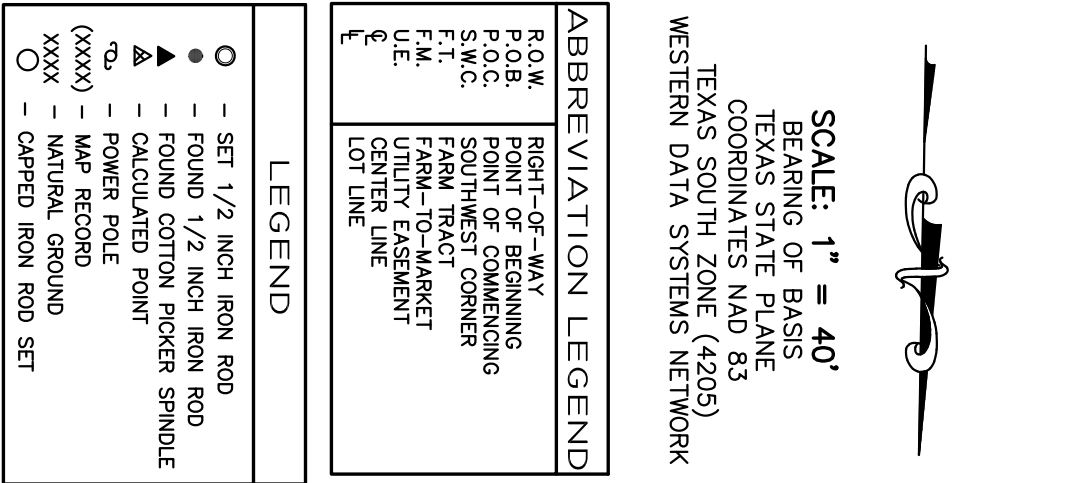
THIS DOCUMENT IS
RELEASED FOR THE
PURPOSE OF INTERIM
REVIEW UNDER THE
AUTHORITY OF
IVAN GARCIA,
P.E. 115662 ON
MAY 16, 2022
IT IS NOT TO BE
USED FOR CONSTRUCTION,
BIDDING OR PERMIT
PURPOSES.

ISSUED FOR:
PRELIMINARY

UTILITY LAYOUT
PABLO PENA JR. SUBDIVISION NO.2
WESLACO, TEXAS
HIDALGO COUNTY

IVAN GARCIA P.E. R.P.L.S.	
SURVYOR:	
IVAN GARCIA P.E. R.P.L.S.	
CHECKED:	
IVAN GARCIA P.E. R.P.L.S.	
DRAWN:	
OSCAR ALARCON JR.	
SCALE:	1"=40
DATE:	MAY 16, 2022
PROJECT:	SUB 22 029
REVISIONS:	
PAGE NO:	2-OF-2





PROJECT : **STREET LIGHT LAYOUT**
PABLO PENA JR. SUBDIVISION NO.2
WESLACO, TEXAS
HIDALGO COUNTY

RIO DELTA ENGINEERING
FIRM REGISTRATION No. F-7628
SURVEY FIRM No. 10194027
921 S. 10TH AVENUE EDINBURG, TEXAS 78539
(TEL) 956-380-5152 (FAX) 956-380-5083



**Planning & Zoning Commission
Standardized Agenda Request Form**

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V. K.
From: Rebekah de la Fuente, Planning Director, on behalf of Javier Hinojosa	
Subject/Agenda Item: Discussion and consideration for the Voluntary Annexation of Mi Linda Subdivision Ph I & II – being a 37.24-acre tract of land out of Farm Tract 648 & 649, West Tract Subdivision, Hidalgo County, Texas located approximately 340 ft south of mile 6 ½ north along the west side of Milano Road. Possible Action	
Discussion/Overview: The proposed development is currently located outside the City of Weslaco city limits. This subdivision is being serviced with water by north Alamo Water Supply Co. and sewer by the City of Weslaco. The proposed development will be one-family residential lots and apartments & duplexes. The development is contiguous to the existing city limits line.	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval.	
Additional Action Prompted: ☒ Mayor's Signature ☐ Public Hearing ☐ Budget Amendment ☐ Resolution ☐ Ordinance – First Reading ☐ Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Request letter.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



APPLICATION FOR VOLUNTARY ANNEXATION

The Planning & Zoning Commission meets every 1st Wednesday of each month at 5:30 pm.

The City Commission meets every 1st and 3rd Tuesday of each month at 5:30 pm

FILE NO. ANNX-000271-2022

GENERAL INFORMATION

Name of Subdivision: Mi Linda Subdivision Phase I & II

Location: 340 feet south of Mile 6 1/2 North along the west side of Milano Road

Legal Description: 37.24 acres of land more or less out of Farm Tracts 648 and 649, West Tract Subdivision, as recorded in Volume 2, Pages 34-37, Map Records of Hidalgo County, Texas.

- ☐ Petition for annexation signed and notarized by property owners.
- ☐ Detailed dimensioned site plan/map must be submitted with this request.
- ☐ Survey and metes and bounds.
- ☐ City and school tax receipts attached.

OWNER INFORMATION

Owner's Name: Reyna Family Development, LTD (Ezequiel Reyna, Jr.) Telephone: 956-497-3962
Address: 702 W. Expressway 83, Ste. 100 Fax: _____
City: Weslaco State: TX Zip: 78596 E-mail: dominicareyna@gmail.com

ENGINEER INFORMATION

Name: Javier Hinojosa Engineering Telephone: (956) 668-1588
Address: 416 E. Dove Avenue Fax: _____
City: McAllen State: TX Zip: 78504 E-mail: javier@javierhinojosaeng.com

AUTHORIZATION AND ACKNOWLEDGEMENTS

I certify that I am the actual owner of the property described above and this application is being submitted with my consent (include corporate name if applicable); and the following person listed below is my authorized agent to act on my behalf.

I certify that the above information is correct and complete to the best of my knowledge. I understand that I must comply with all applicable local, state, and federal regulations.

Owner Printed Name: Reyna Family Development, LTD By: Ezequiel Reyna, Jr.

Owner Signature: _____ Date: 7/20/22

Javier Hinojosa, P.E. is the authorized agent

Authorized Agent Signature: _____ Date: 7/20/22

Authorized Agent Printed Name: Javier Hinojosa, P.E.

THIS PAGE FOR STAFF USE ONLY

Date Received: _____ Received By: _____

Staff Review Date: _____

P & Z Commission Approval: _____

City Commission Approval on First Reading: _____

City Commission Approval on Final Reading: _____



Planning & Zoning Commission Standardized Agenda Request Form

Date of Meeting: August 3, 2022	Agenda Item No. (to be assigned by PCE): V.L.
From: Rebekah de la Fuente, Planning Director, on behalf of Melden & Hunt, Inc.	
Subject/Agenda Item: Discussion and consideration for six-month extension of the Final Plat for Domain Subdivision—being a 1 acre out of farm tract 686, West and Adams Tract Subdivision, Weslaco, Hidalgo County, Texas located approximately 701 E. 6 th St. Possible action.	
Discussion/Overview: The proposed fifty (50) lot subdivision is inside the City of Weslaco city limits. Six-month extension of Final Plat approval is set to expire on August 17, 2022.	
If item requires Publication Notice, provide date and periodical of publication; indicate if comments received from letters mailed to property owners: N/A	
Staff recommendation for Commission's Action: Staff recommends approval of the six-month extension.	
Additional Action Prompted: [X] Mayor's Signature [] Public Hearing [] Budget Amendment [] Resolution [] Ordinance – First Reading [] Ordinance – Final Reading	
Advisory Review, (if any): (name of board/committee, date of action, recommendation): N/A	
If item previously considered, provide date and action by Commission: N/A	
Attachments,(if any): Application for Subdivision platting, Staff's comments, Drainage Report, Subdivision plat and Utility layout.	
Responsibilities upon Commission's Action: Planning staff will advise applicant.	



TBPELS Firm # F-1435
TBPELS # 10096900

MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS

MARIO A. REYNA • ALLAN F. BOOE • KELLEY A. HELLER-VELA • ROBERTO N. TAMEZ • RUBEN JAMES DE JESUS • MICHAEL HERNANDEZ

July 25, 2022

Rebekah De La Fuente, Planning Director
CITY OF WESLACO PLANNING DEPT.
255 South Kansas Ave.
Weslaco, TX 78596

Re: South Point – REQUEST FOR EXTENSION

Dear Ms. De La Fuente:

On behalf of the owner, Domain Development we are requesting a six-month extension on the above referenced subdivision plat. According to our records, the last approval was in June 2022. The owners are requesting an additional six-month time frame.

Your consideration on this request at your next board meeting is appreciated. If you have any questions and/or require additional information, please do not hesitate to contact me.

Respectfully,

Mario A. Reyna, P.E.
President

Cc: Domain Development