# DEVELOPMENT PLANS
# FOR
# EMERSON FARMS
## CITY OF ROCKWALL, TEXAS

NOTES FOR CONSTRUCTION WITH THE NORTH TEXAS MUNICIPAL WATER DISTRICT EASEMENT

A. North Texas Municipal Water District (NTMWD's) 54-inch water transmission pipeline is located within the limits of construction.

B. Operation of heavy earthmoving equipment, compaction equipment or heavy construction equipment, such as concrete trucks, shall be restricted to specific crossing points across NTMWD easements, as approved by the NTMWD. The crossing shall be designated and verified to provide a minimum of five-feet of cover.

C. To assure that placing of significant loads over the NTMWD pipeline does not damage the existing pipeline, no materials shall be stockpiled on the NTMWD easement, without authorization from the NTMWD. If the contractor desires to use NTMWD's easement for stockpile of materials, contact NTMWD's Engineering Department at (972) 442-5405 so your plans for use of NTMWD's easement can be reviewed.

D. A minimum of four and one half (4.5) feet separation between the bottom of the pavement and top of NTMWD pipeline is required. In addition, if separation between the bottom of the pavement and the top of the pipeline is less than 4.0 feet, a thickened pavement section is required.

E. Crossing of the NTMWD easement with other utilities, such as TV cable, phone, gas and electric, shall be coordinated with the NTMWD to avoid damage to the NTMWD facilities.

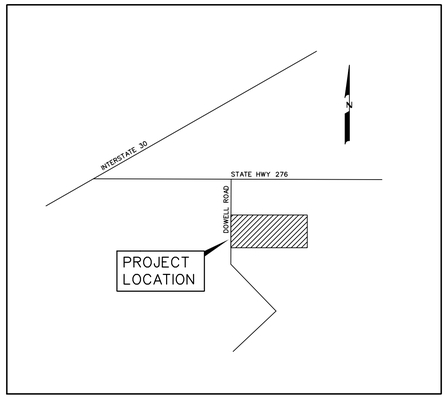
F. Outdoor lighting, landscaping, screening walls or other facilities shall not be installed in NTMWD easements without written approval of the NTMWD.

G. Water and Sewer crossings of NTMWD 54" water shall maintain a minimum of two-foot clearance, storm water crossings shall maintain a minimum one-foot clearance, and all other utilities shall maintain a minimum two-foot clearance.

H. The contractor shall contact NTMWD line locates at (469) 626-4569 at least 72 hours prior to working in easement in order to schedule a representative to be on site.

I. For open cut where crossing under the NTMWD pipeline, within ten feet either side of centerline of pipeline, the trench width to be cut shall be limited to four-foot vertical walls, no sloping bank with the appropriate trench safety. The entire excavation within the limits noted above shall be backfilled with gravel to one-foot above top of NTMWD pipeline. One-foot minimum vertical clearance is required between NTMWD pipeline and proposed utilities.

J. Limits of bore shall be a minimum of the NTMWD easement width centered on NTMWD's pipeline.




VICINITY MAP
NOT TO SCALE

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PREPARED FOR
HARLAN PROPERTIES, INC.
2404 TEXAS DRIVE, SUITE 103 IRVING, TEXAS 75062


CORWIN ENGINEERING, INC. — CONSULTING ENGINEERS
200 W. BELMONT, SUITE E — TBPE FIRM #5951 — ALLEN, TEXAS 75013


STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

ASBUILTS DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

NOTE:

CITY OF ROCKWALL STANDARDS AND NCTCOG 5th ADDITION STANDARDS SHALL BE USED FOR REFERENCE.

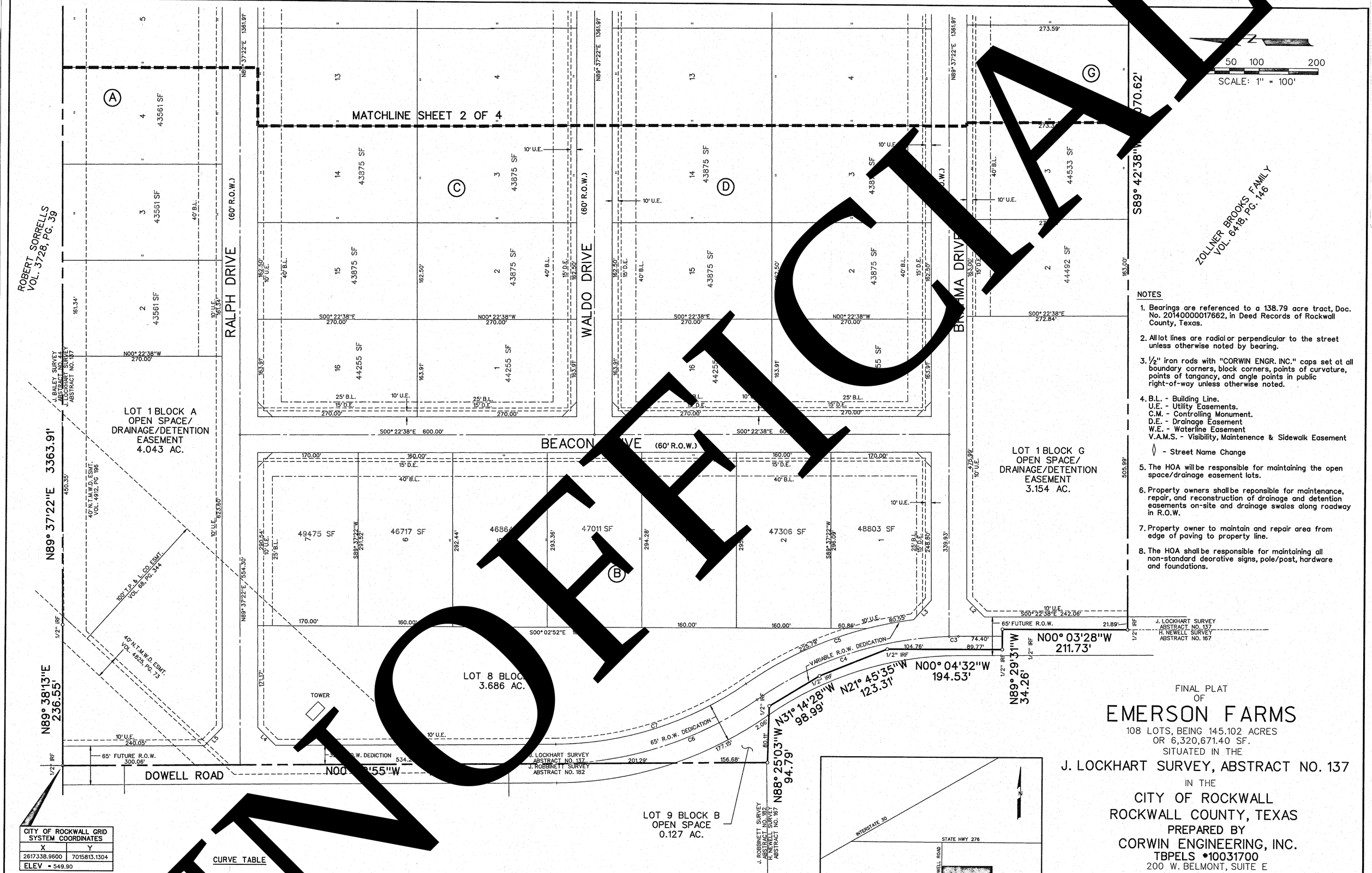
| NO. | REVISIONS | DATE |
|---|---|---|
| 3 | CITY COMMENTS | 06-22-2020 |
| 2 | CITY COMMENTS | 05-08-2020 |
| 1 | CITY COMMENTS | 2-11-2020 |

MAY 2020

EMERSON FARMS
18016

UNOFFICIAL

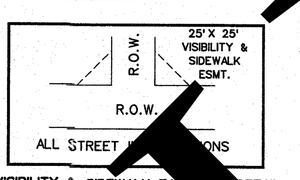
2023000008824 1/4 PLAT 06/01/2023 08:49:58 AM




NOTES

1. Bearings are referenced to a 138.79 acre tract, Doc. No. 20140000017662, in Deed Records of Rockwall County, Texas.
2. All lot lines are radial or perpendicular to the street unless otherwise noted by bearing.
3. ½" iron rods with "CORWIN ENGR. INC." caps set at all boundary corners, block corners, points of curvature, points of tangancy, and angle points in public right-of-way unless otherwise noted.
4. B.L. - Building Line.
   U.E. - Utility Easements.
   C.M. - Controlling Monument.
   D.E. - Drainage Easement
   W.E. - Waterline Easement
   V.A.M.S. - Visibility, Maintenence & Sidewalk Easement
   ◊ - Street Name Change
5. The HOA will be responsible for maintaining the open space/drainage easement lots.
6. Property owners shall be reponsible for maintenance, repair, and reconstruction of drainage and detention easements on-site and drainage swales along roadway in R.O.W.
7. Property owner to maintain and repair area from edge of paving to property line.
8. The HOA shall be responsible for maintaining all non-standard decorative signs, pole/post, hardware and foundations.

| CITY OF ROCKWALL GRID SYSTEM COORDINATES | |
|---|---|
| X | Y |
| 2617338.9600 | 7015813.1304 |
| ELEV = 549.90 | |



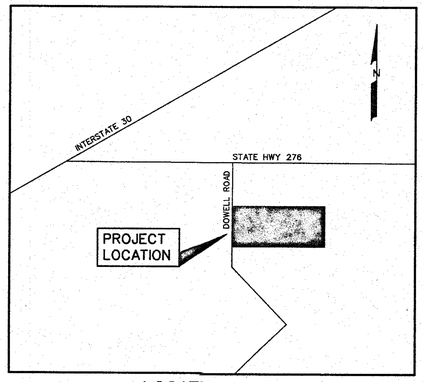

VISIBILITY & SIDEWALK EASEMENT DETAIL
N.T.S.

CURVE TABLE

| CURVE NO. | DELTA | RADIUS | LENGTH | CHORD | BEARING |
|---|---|---|---|---|---|
| 1. | 172°49'09" | 0.00' | 180.98' | 119.76' | N44°37'22"E |
| 2. | 90°00'00" | 00' | 31.42' | 28.28' | N44°37'22"E |
| 3. | 01°30'03" | 600 | 15.72' | 15.72' | N01°07'40"W |
| 4. | 33°07'29" | 600 | 346.88' | 342.07' | N18°26'26"W |
| 5. | °45'01" | 63 50' | 306.34' | 303.36' | N21°07'40"W |
| 6. | 27'15" | 602.50' | 362.31' | 356.87' | N17°46'33"W |
| 7. | 3 7'15" | 570.00' | 342.76' | 337.62' | N17°46'33"W |

LINE TABLE

| LINE NO. | BEARING | DISTANCE |
|---|---|---|
| 1. | N 45°22'38" W | 21.21' |
| 2. | N 44°37'22" E | 42.43' |
| 3. | N 48°04'36" W | 44.58' |
| 4. | N 44°32'14" E | 42.36' |
| 5. | N 45°27'46" W | 42.49' |




LOCATION MAP
N.T.S.

FINAL PLAT
OF
# EMERSON FARMS
108 LOTS, BEING 145.102 ACRES
OR 6,320,671.40 SF.
SITUATED IN THE
J. LOCKHART SURVEY, ABSTRACT NO. 137
IN THE
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

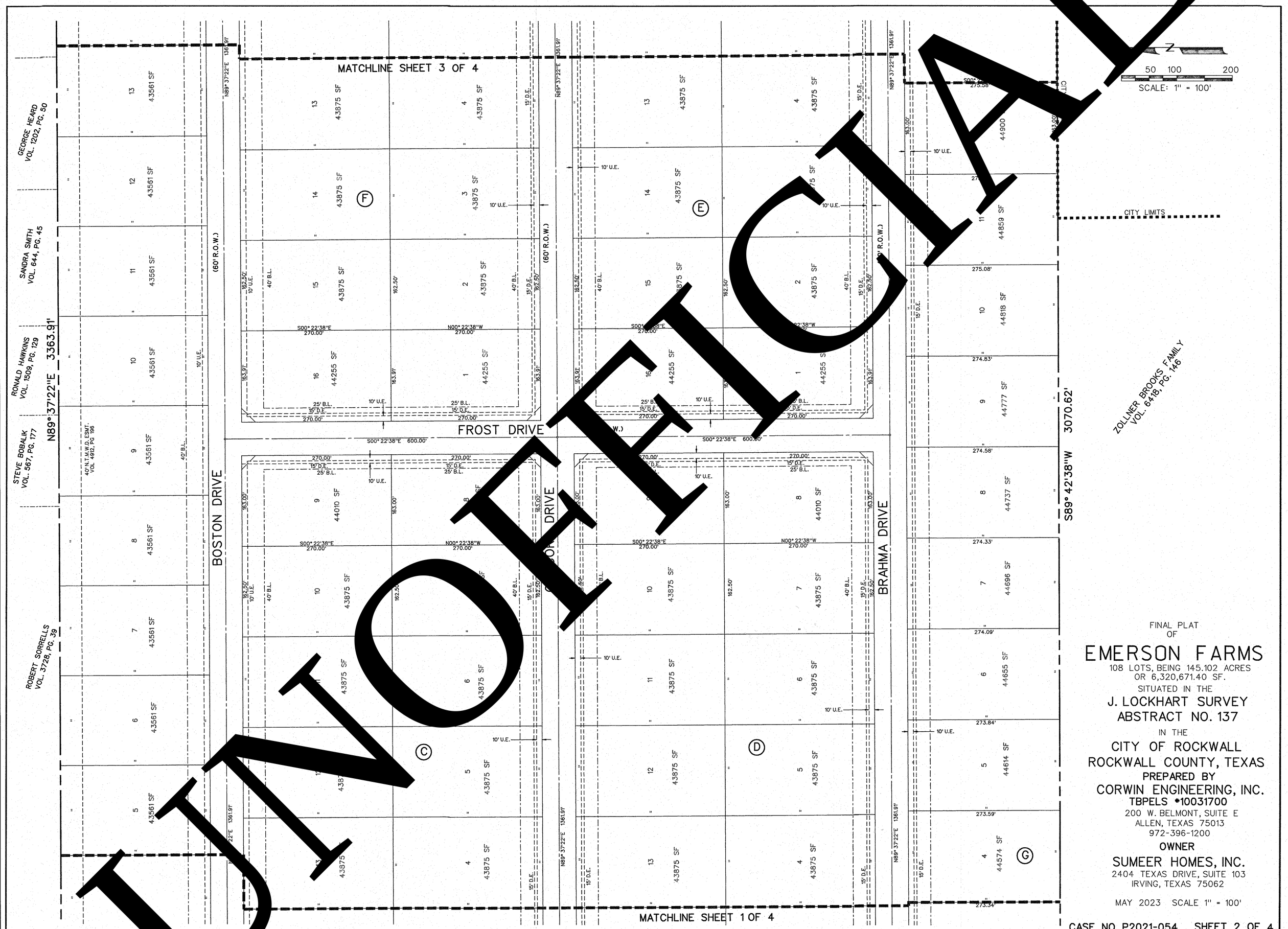
PREPARED BY
CORWIN ENGINEERING, INC.
TBPELS #10031700
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013
972-396-1200

OWNER
SUMEER HOMES, INC.
2404 TEXAS DRIVE, SUITE 103
IRVING, TEXAS 75062

MAY 2023 SCALE 1" = 100'

CASE NO. P2021-054

SHEET 1 OF 4


MATCHLINE SHEET 3 OF 4
MATCHLINE SHEET 1 OF 4
FROST DRIVE
BOSTON DRIVE
BRAHMA DRIVE
(60' R.O.W.)
N89° 37'22"E 3363.91'
S89° 42'38"W 3070.62'
CITY LIMITS
SCALE: 1" = 100'
50 100 200
GEORGE HEARD VOL. 1202, PG. 50
SANDRA SMITH VOL. 644, PG. 45
RONALD HAWKINS VOL. 1509, PG. 129
STEVE BOBALIK VOL. 567, PG. 177
ROBERT SORRELLS VOL. 3728, PG. 39
ZOLLNER BROOKS FAMILY VOL. 6418, PG. 146
40' N.T.M.W.D. ESMT. VOL. 1812, PG. 198
S00° 22'38"E 600.00'
S00° 22'38"E 270.00'
N00° 22'38"W 270.00'
N89° 37'22"E 1361.91'
43875 SF
44255 SF
44010 SF
44900
44859 SF
44818 SF
44777 SF
44737 SF
44696 SF
44655 SF
44614 SF
44574 SF
43561 SF
10' U.E.
15' D.E.
25' B.L.
40' B.L.
162.50'
163.91'
163.00'
275.08'
274.83'
274.58'
274.33'
274.09'
273.84'
273.59'
273.34'
275.58'
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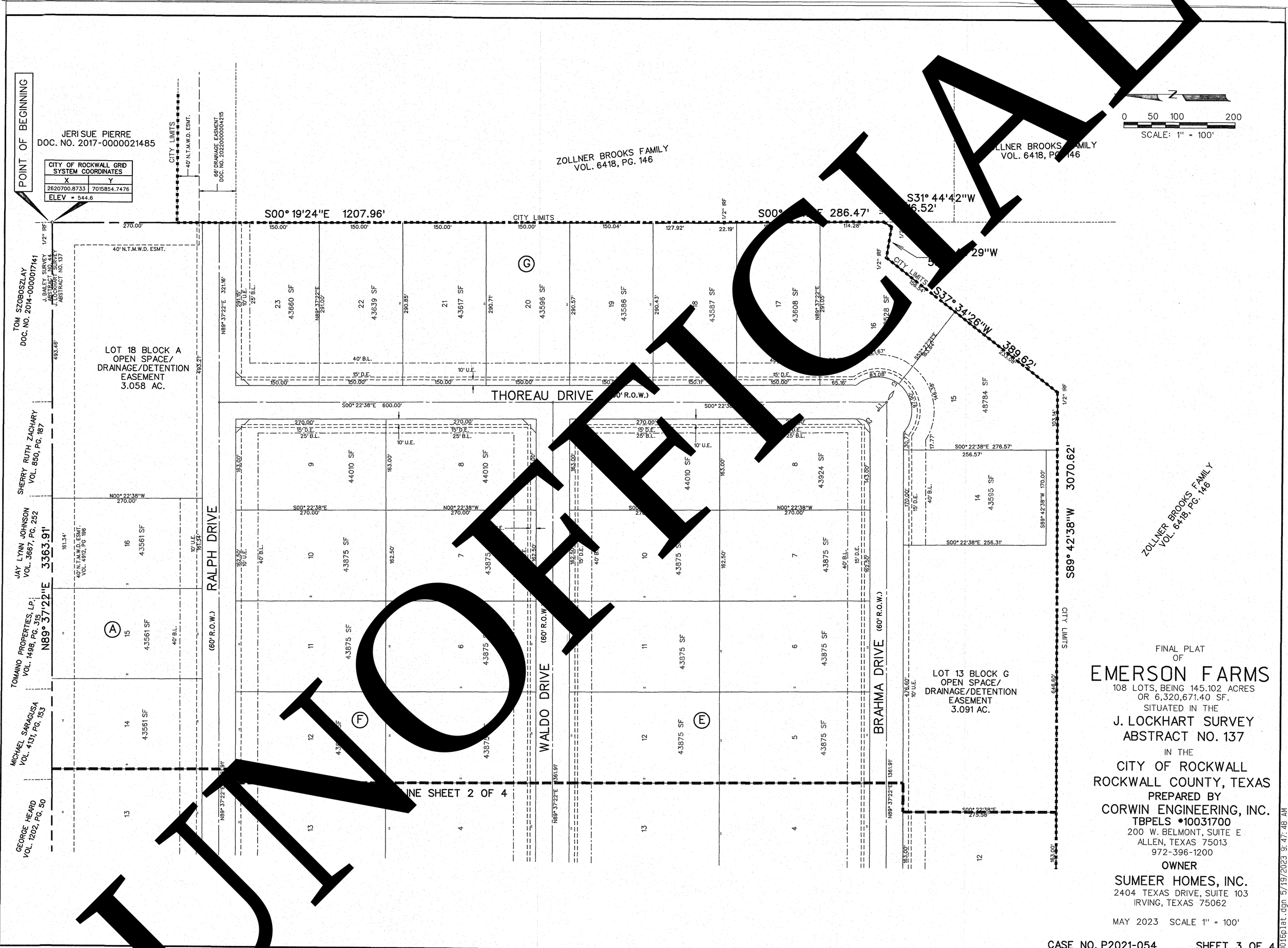
CASE NO. P2021-054 SHEET 2 OF 4

UNOFFICIAL

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CASE NO. P2021-054 SHEET 3 OF 4

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OWNER'S CERTIFICATE

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:
STATE OF TEXAS
COUNTY OF ROCKWALL
We the undersigned owners of the land shown on this plat, and designated herein as the EMERSON FARMS, subdivision to the City of Rockwall, Texas, and whose name is subscribed hereto, hereby dedicate to the use of the public forever all streets, alleys, parks, water courses, drains, easements and public places thereon shown for the purpose and consideration therein expressed. We further certify that all other parties who have a mortgage or lien interest in the EMERSON FARMS, subdivision have been notified and signed this plat.

We understand and do hereby reserve the easement strips shown on this plat for the purposes stated and for the mutual use and accommodation of all utilities desiring to use or using same. We also understand the following:

1. No buildings shall be constructed or placed upon, over, or across the utility easements as described herein.

2. Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs, or other growths or improvements which in any way endanger or interfere with construction, maintenance or efficiency of their respective system on any of these easement strips; and any public utility shall at all times have the right of ingress or egress to, from and upon the said easement strips for purpose of construction, reconstruction, inspecting, patrolling, maintaining, and either adding to or removing all or part of their respective system without the necessity of, at any time, procuring the permission of anyone.

3. The City of Rockwall will not be responsible for any claims of any nature resulting from or occasioned by the establishment of grade of streets in the subdivision.

4. The developer and subdivision engineer shall bear total responsibility for storm drain improvements.

5. The developer shall be responsible for the necessary facilities to provide drainage patterns and drainage controls such that properties within the drainage area are not adversely affected by storm drainage from the development.

6. The detention drainage system is to be maintained, repaired and owned by the subdivision.

7. No house dwelling unit, or other structure shall be constructed on any lot in this addition by the owner or any other person until the developer and/or owner has complied with all requirements of the Subdivision Regulations of the City of Rockwall regarding improvements with respect to the entire block on the street or streets on which property abuts, including the actual installation of streets with the required base and paving, curb and gutter, water and sewer, drainage structures, storm structures, storm sewers, and alleys, all according to the specifications of the City of Rockwall; or

Until an escrow deposit, sufficient to pay for the cost of such improvements, as determined by the city's engineer and/or city administrator, computed on a private commercial rate basis, has been made with the city secretary, accompanied by an agreement signed by the developer and/or owner, authorizing the city to make such improvements at prevailing private commercial rates, or have the same made by a contractor and pay for the same out of the escrow deposit, should the developer and/or owner fail or refuse to install the required improvements within the time stated in such written agreement, but in no case shall the City be obligated to make such improvements itself. Such deposit may be used by the owner and/or developer as progress payments as the work progresses in making such improvements by making certified requisitions to the city secretary, supported by evidence of work done; or

Until the developer and/or owner files a corporate surety bond with the city secretary in a sum equal to the cost of such improvements for the designated area, guaranteeing the installation thereof within the time stated in the bond, which time shall be fixed by the city council of the City of Rockwall.

We further acknowledge that the dedications and/or exaction's made herein are proportional to the impact of the Subdivision upon the public services required in order that the development will comport with the present and future growth needs of the City; we, our successors and assigns hereby waive any claim, damage, or cause of action that we may have as a result of the dedication of exactions made herein.

SUMEER HOMES, INC.

Suresh Shridharani
President

STATE OF TEXAS
COUNTY OF DALLAS
Before me, the undersigned authority, on this day personally appeared SURESH SHR[illegible]ARANI, known to me to be the person whose name is subscribed to the foregoing instru[illegible] and acknowledged to me that he executed the same for the purpose and consideration [illegible]rein stated.
Given upon my hand and seal of office this 19th day of May, 2023.

Notary Public in and for the State of Texas My Commission Expires: [illegible]

GIRISH SAMAR[illegible]
My Notary ID # 1322[illegible]
Expires October 15, [illegible]

NOTE: It shall be the policy of the City of Rockwall to withhold issuin[illegible]ding permits [illegible] streets, water, and storm drainage systems have been accepted [illegible] City. The appr[illegible] a plat by the City does not constitute any representation, assur[illegible]ce o[illegible]rantee that a[illegible]g within such plat shall be approved, authorized or permit therefore issued, n[illegible]hall such appr[illegible] constitute any representation, assurance or guarantee by the City of the a[illegible]acy and avai[illegible] for water for personal use and fire protection within such plat, as required un[illegible] Ordinance 83-[illegible]

Planning & Zoning Commission Date 5.30.2[illegible]

APPROVED

I hereby certify that the above a[illegible]ing plat of an addi[illegible] to the City of Rockwall, Texas, was approved by the City Council of the City of Rockw[illegible]on th[illegible]5th day of Nov[illegible]ber, 2021.

This approval shall be invalid unless the appr[illegible] plat for such addi[illegible]is recorded in the office of the Counrt Clerk of Rockwall, County, Texas, within one hundred eig[illegible](180) days from s[illegible]ate of final approval.

WITNESS OUR HANDS this 30th day of May, 2023.

Mayor, City of Rockwall

Kristy [illegible]gene
City Secretary

Amy Williams, P.E.
City Engineer

CITY OF ROCKWALL TEXAS

LEGAL DESCRIPTION

WHEREAS, SUMEER HOMES, INC., is the owner of a tract of land situated in the J. Lockhart Survey, Abstract No. 137, in the City of Rockwall, Rockwall County, Texas, being all of a 138.79 acre tract, as recorded in Doc. No. 20140000017662 in the Official Public Records of Rockwall County, Texas, and being all of a 6.3456 acre tract, as described in 20160000021096 in said Deed Records being more particularly described as follows:

BEGINNING, at a 1/2 inch iron rod found at the northeast corner of said 138.79 a[illegible] tract;

THENCE, South 00° 19'24" East, along the east line of said 138.79 acre tract[illegible]tance of 1207.96 feet, to a 1/2 inch iron rod found;

THENCE, South 00° 37'17" East, continuing along said east line, for a distance of 286.[illegible] to a 1/2 inch iron rod found;

THENCE, South 31° 44'42" West, continuing along said east lin[illegible]ce of 16.52 feet, to a 1/2 inch iron rod found;

THENCE, North 80° 40'29" West, continuing along said [illegible]t line, for a distance of 55.86 feet, to a 1/2 inch iron rod found;

THENCE, South 37° 34'26" West, continuing along [illegible] east line, for a distance of 389.62 feet, to a 1/2 inch iron rod found at the most south[illegible]southeast corner of said 138.79 acre [illegible]ct;

THENCE, South 89° 42'38" West, along the south [illegible]f said 138.79 acre tract, for a distanc[illegible] of 3070.62 feet, to a 1/2 inch iron rod found a[illegible]ost southerly southwest corner of sai[illegible] 138.79 acre tract;

THENCE, North 00° 03'28" W[illegible]g the west line [illegible]8.79 acre tract, for a dista[illegible] of 211.73 feet, to a 1/2 i[illegible] found;

THENCE, North 89° 29'31" West, con[illegible]ong said west lin[illegible]6 feet, to a 1/2 iron[illegible] found;

THENCE, Nort[illegible]° 04'3[illegible] West, continuing [illegible]id west line, for a distance of 194.53 feet, to a 1/2 i[illegible] iron rod found;

THENC[illegible] North 21° 45'35" West, continuing along s[illegible]line, for a distance of 123.31 feet, to [illegible]2 inch iron rod fou[illegible]

[illegible]th 31° 14'28" We[illegible]tinuing along said west[illegible], for a distance of 98.99 feet, to a [illegible] iron rod fo[illegible]at t[illegible]most westerly sout[illegible]st corner of said 138.79 acre tract, and bei[illegible] south l[illegible]of said 6.3456 acre tract;

THENCE, Nor[illegible]3" West, along the south line of said 6.3456 acre tract, for a distance of 94.79 feet, [illegible] inch iron rod found at the southwest corner of said 6.3456 acre tract;

THENCE, North 00° 3[illegible]st, along the west line of said 6.3456 acre tract, for a distance of 1192.27 feet, to a [illegible]on rod found at the northwest corner of said 6.3456 acre tract;

T[illegible]E, North 89° 38'13" Ea[illegible] the north line of said 6.3456 acre tract, for a distance o[illegible]5 feet, to a 1/2 inch[illegible] rod found at the northeast corner of said 6.3456 acre tract [illegible] being the northwest cor[illegible] of said 138.79 acre tract;

THENCE, North 89° 37'22" East, along the north line of said 138.79 acre tract, for a distance of 3363.91 feet, to the POINT OF BEGINNING and containing 145.102 acres of land.

S[illegible]VEYOR CERTIFICATE

I, WARREN L. CORWIN, do hereby certify that the plat shown hereon accurately represents the results of an on-the-ground survey made under my direction and supervision and all corners are as shown thereon and there are no encroachments, conflicts, protrusions or visible utilities on the ground except as shown and said plat has been prepared in accordance with the platting rules and regulations of the City Plan Commission of the City of Rockwall, Texas.

DATED the this 19th day of May, 2023.

WARREN L. CORWIN
R.P.L.S. No. 4621

STATE OF TEXAS
REGISTERED
WARREN L. CORWIN
4621
PROFESSIONAL
LAND SURVEYOR

THE STATE OF TEXAS
COUNTY OF COLLIN

Before me, the undersigned, a Notary Public in and for the State of Texas, on this day personally appeared WARREN L. CORWIN, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed same for the purpose and consideration therein expressed and in the capacity therein stated.

Given under my hand and seal of office, this 19th day of May, 2023.

MARIA HALLFORD
My Notary ID # 126048221
Expires February 26, 2024

Maria Hallford
NOTARY PUBLIC, STATE OF TEXAS

Filed and Recorded
Official Public Records
Jennifer Fogg, County Clerk
Rockwall County, Texas
06/01/2023 08:49:58 AM
$200.00
202300000008824

COUNTY CLERK ROCKWALL COUNTY, TEXAS

Jennifer Fogg

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MAY 2023

CASE NO. P2021-054 SHEET 4 OF 4

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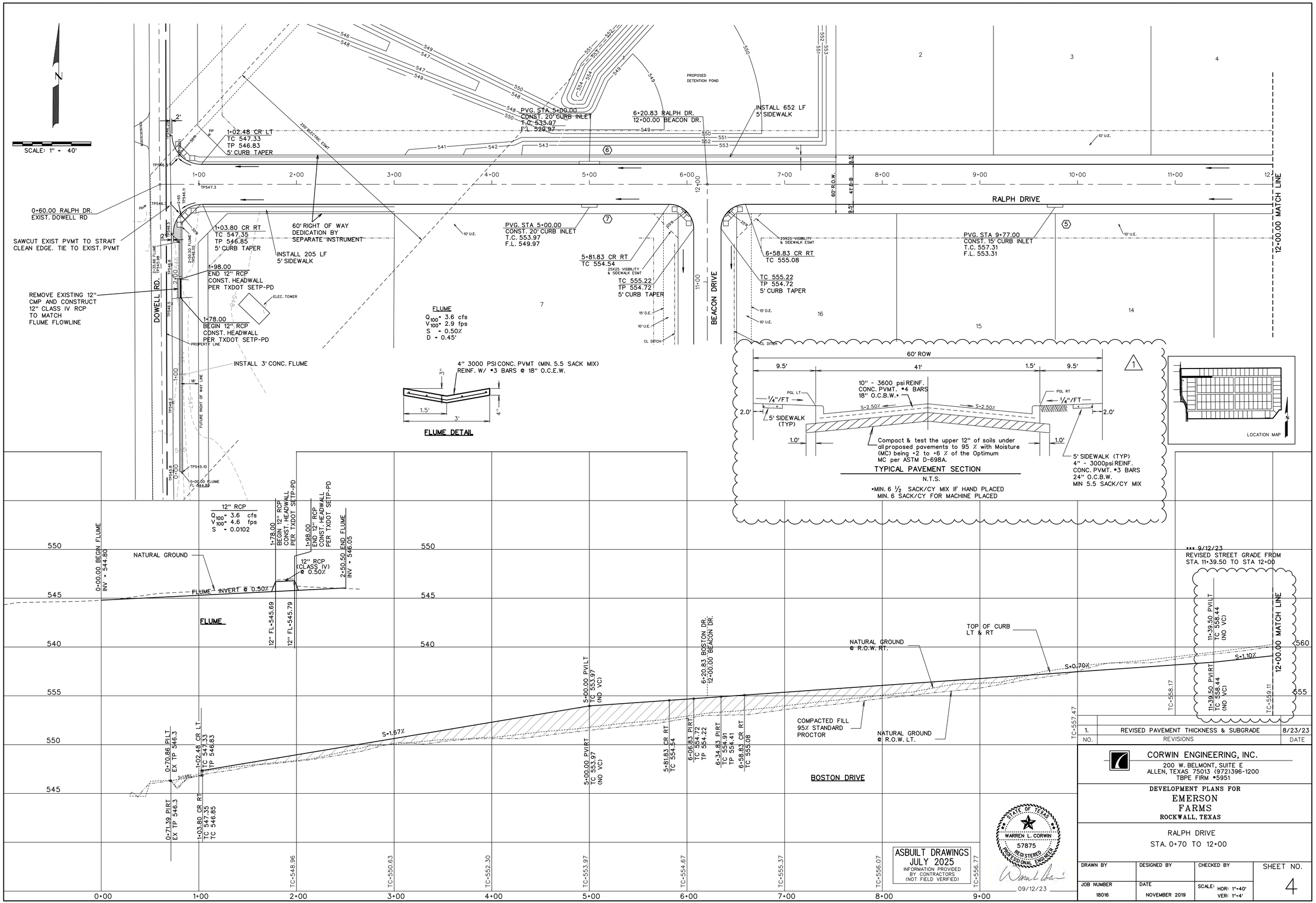
UNOFFICIAL




| NO. | REVISIONS | DATE |
|---|---|---|
| 1. | REVISED PAVEMENT THICKNESS & SUBGRADE | 8/23/23 |


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON
FARMS
ROCKWALL, TEXAS

RALPH DRIVE
STA. 0+70 TO 12+00

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 4 |

SCALE: 1" = 40'

PVG. STA 12+36.00
CONST. 15' CURB INLET
T.C. 559.51
F.L. 555.51

PVG. STA 15+60.00
CONST. 15' CURB INLET
T.C. 562.67
F.L. 558.67

19+82.74 RALPH DR.
12+00.00 FROST DR.

12+00.00 MATCH LINE

24+00.00 MATCH LINE

RALPH DRIVE

60' R.O.W.

9.5' 41' B-B 9.5'

PVG. STA 13+02.00
CONST. 15' CURB INLET
T.C. 560.22
F.L. 556.22

PVG. STA 16+27.00
CONST. 15' CURB INLET
T.C. 563.30
F.L. 559.30

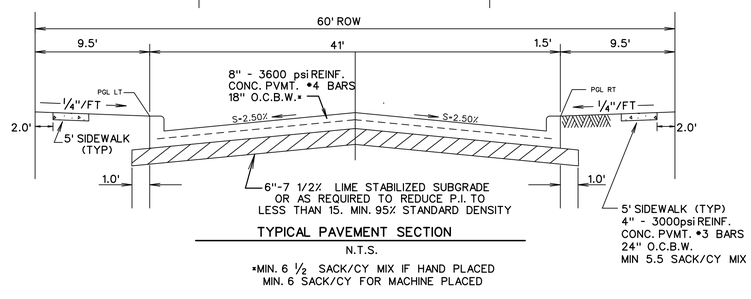
25X25 VISIBILITY & SIDEWALK ESMT

19+43.74 CR RT
TC 567.08

20+22.24 CR RT
TC 566.89

FROST DRIVE

19+82.74 BOSTON DR.
12+00.00 FROST DR.

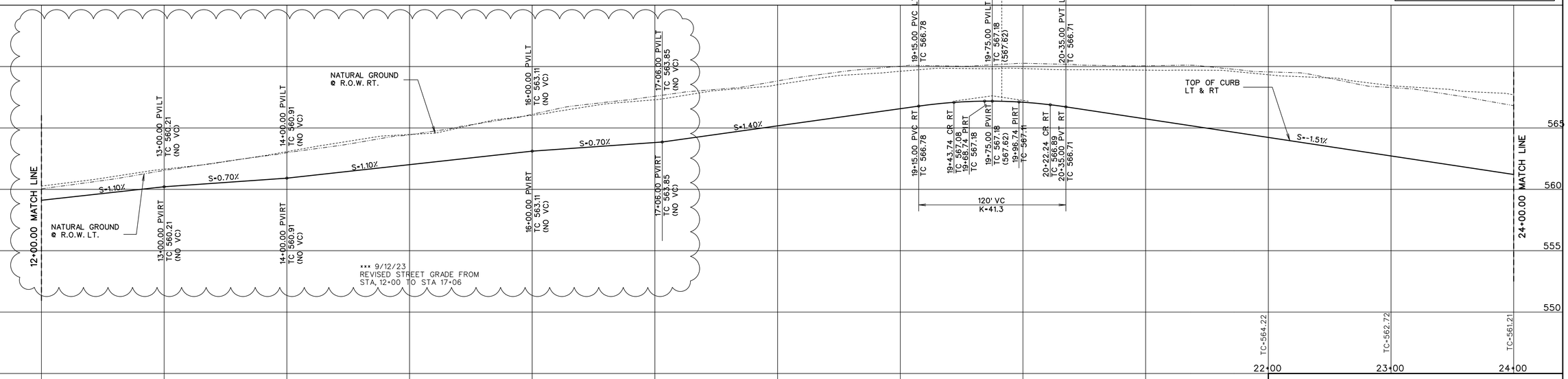



TYPICAL PAVEMENT SECTION

N.T.S.

*MIN. 6 1/2 SACK/CY MIX IF HAND PLACED
MIN. 6 SACK/CY FOR MACHINE PLACED

LOCATION MAP




*** 9/12/23
REVISED STREET GRADE FROM
STA. 12+00 TO STA 17+06

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER

09/12/23


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

RALPH DRIVE
STA 12+00 TO 24+00

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 5 |

SCALE: 1" = 40'

N

24+00.00 MATCH LINE

PVG. STA 25+27.00
CONST. 20' CURB INLET
T.C.
F.L.

PVG. STA 30+11.00
CONST. 20' CURB INLET
T.C. 551.99
F.L. 547.99

INSTALL 478 LF
5' SIDEWALK

33+44.65 RALPH DR.
12+00.00 THOREAU DR.

PVG. STA 35+00.00
CONST. 15' CURB INLET
T.C. 546.14
F.L. 542.14

36+50.00 END PVMT LT
TC 544.64

INSTALL BARRICADE
UNTIL FUTURE STREET
EXTENSION

10' U.E.

RALPH DRIVE

60' R.O.W.
41' B-B
9.5'
9.5'

PVG. STA 25+00.00
CONST. 20' CURB INLET
T.C. 559.70
F.L. 555.70

PVG. STA 29+89.00
CONST. 20' CURB INLET
T.C. 552.33
F.L. 548.33

33+05.65 CR RT
TC 548.09

25X25 VISIBILITY
& SIDEWALK ESMT

TC 548.09
TP 547.59
5' CURB TAPER

33+83.65 CR RT
TC 547.31

PVG. STA 35+00.00
CONST. 15' CURB INLET
T.C. 546.14
F.L. 542.14

36+50.00 END PVMT RT
TC 544.64

CONST. STREET HEADER
INSTALL STD. BARRICADE
(40 LF)

THOREAU DRIVE

15' D.E.
10' U.E.
CL DITCH

LOCATION MAP

24+00.00 MATCH LINE

NATURAL GROUND
@ R.O.W. RT.

NATURAL GROUND
@ R.O.W. LT.

S=-1.51%

S=-1.00%

32+00.00 PVILT
TC 549.14
(NO VC)

32+00.00 PVIRT
TC 549.14
(NO VC)

33+44.65 BOSTON DR.
12+00.00 THOREAU DR.

33+05.65 CR RT
TC 548.09

33+30.65 PIRT
TC 547.84

33+58.65 PIRT
TC 547.56

33+83.65 CR RT
TC 547.31

COMPACTED FILL
95% STD. DENSITY

36+50.00 END PVMT LT
TC 544.64

4' WIDE BENCH
BEFORE SLOPE

4:1

36+50.00 END
PVMT RT
TC 544.64

TC-546.14

TC-545.14

TC-547.14

TC-561.21 TC-559.70 TC-558.19 TC-556.68 TC-555.18 TC-553.67 TC-552.16 TC-550.65 TC-549.14 TC-548.14

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00

ASBUILT DRAWINGS
JULY 2025
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BY CONTRACTORS
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STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED
PROFESSIONAL ENGINEER

08/23/23

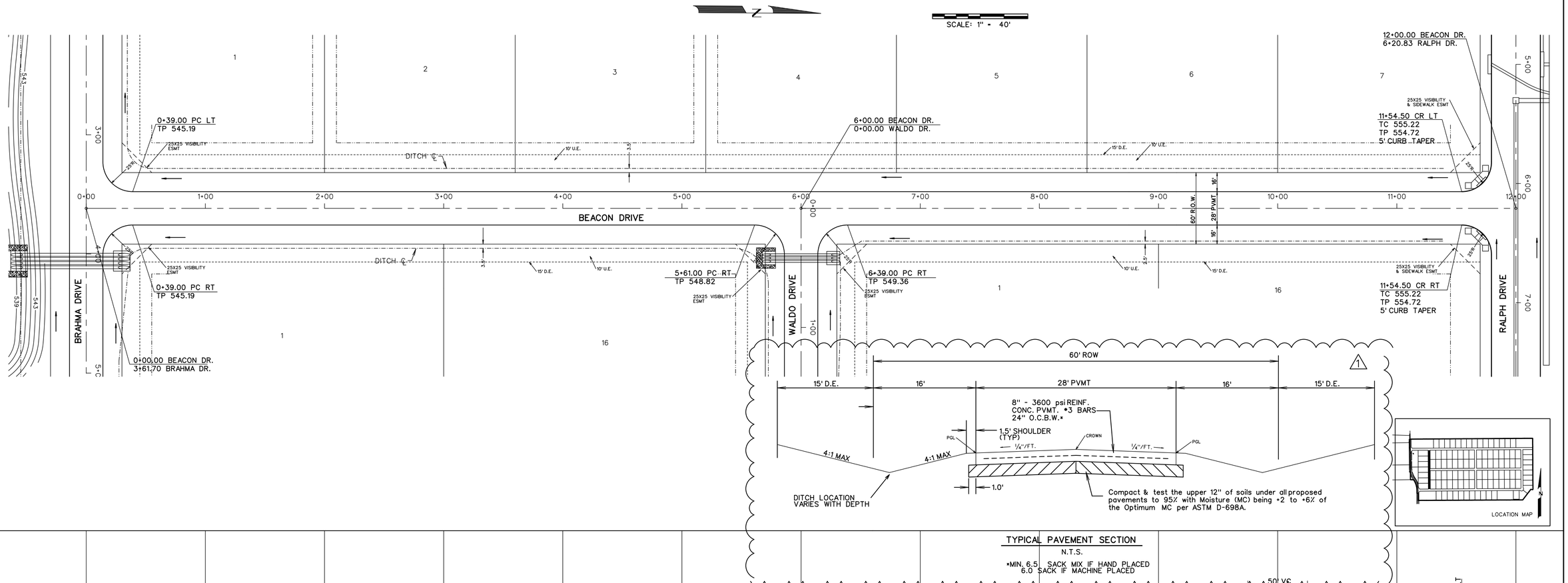

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON
FARMS
ROCKWALL, TEXAS

RALPH DRIVE

STA 24+00 TO END

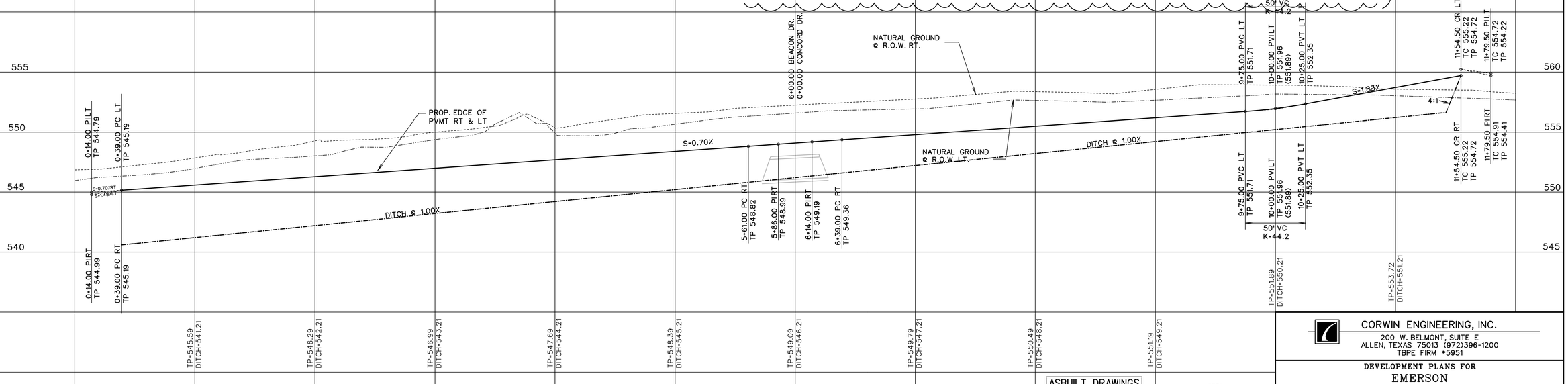
| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 6 |




TYPICAL PAVEMENT SECTION

N.T.S.

*MIN. 6.5 SACK MIX IF HAND PLACED
6.0 SACK IF MACHINE PLACED




ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
08/23/23

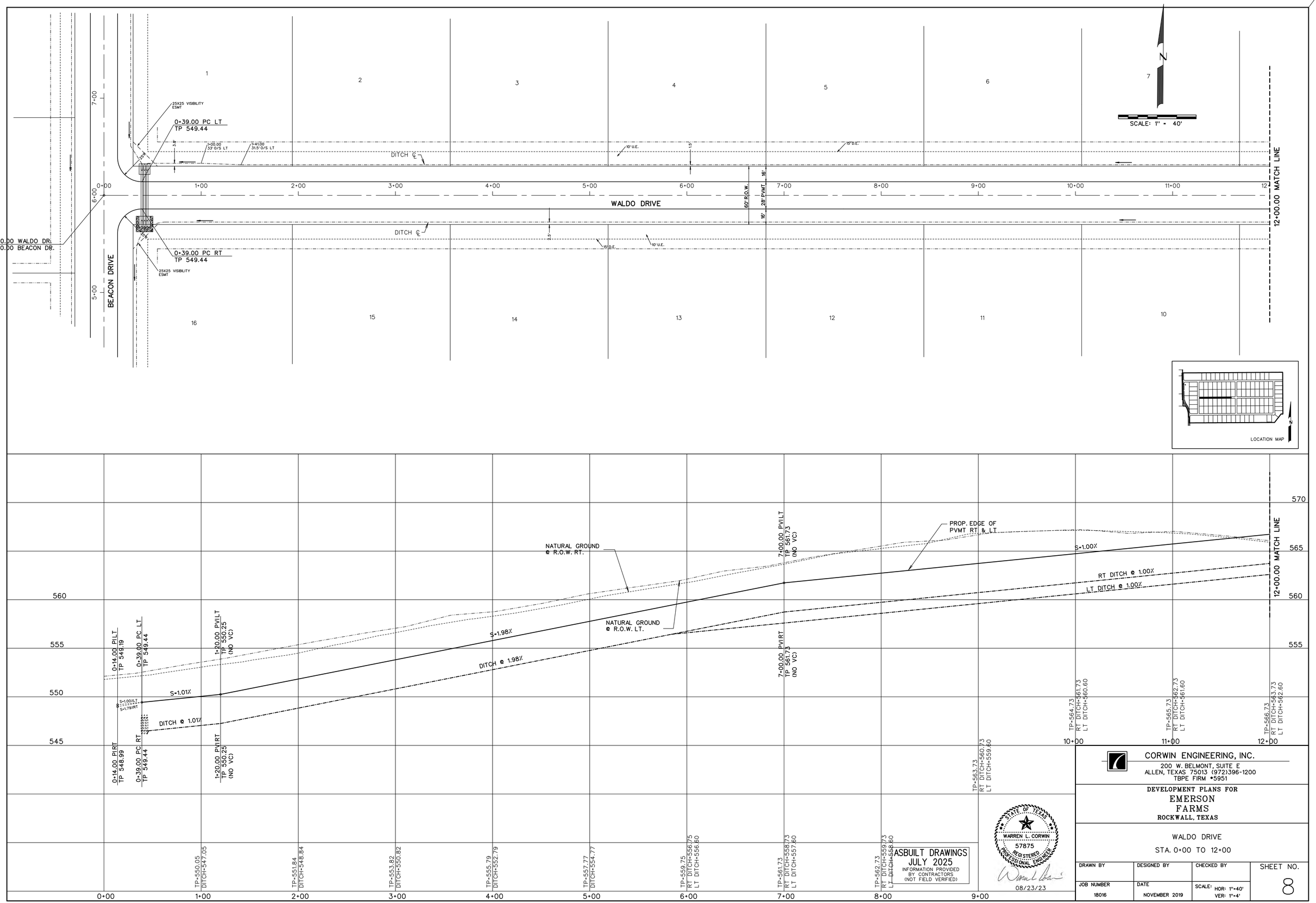
| NO. | REVISIONS | BY | DATE |
|---|---|---|---|
| 1. | REVISED PAVEMENT THICHNESS & SUBGRAGE | | 8/23/23 |

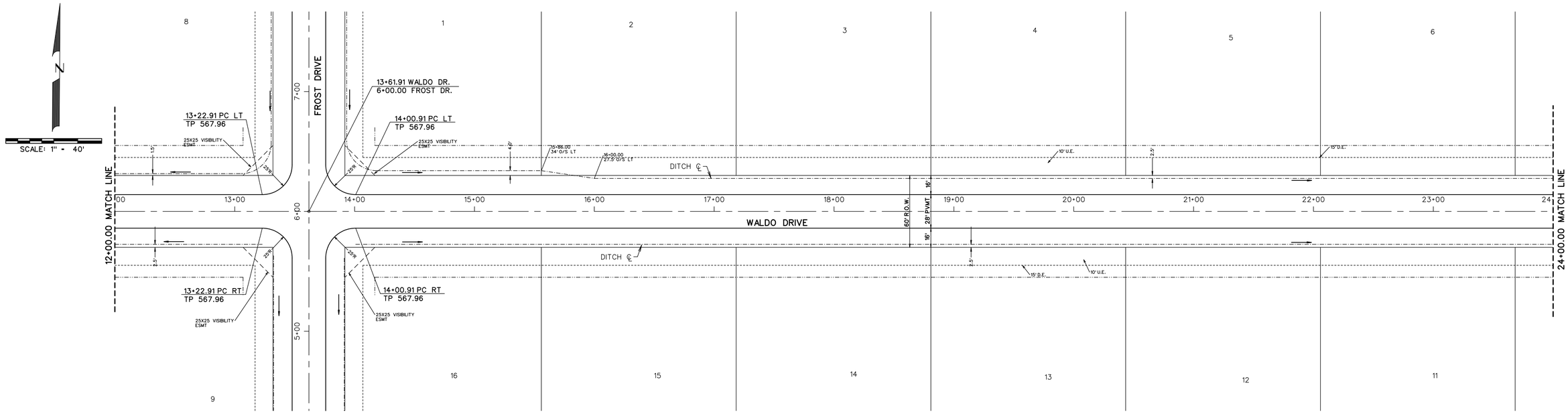

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

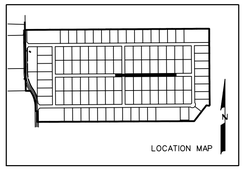

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

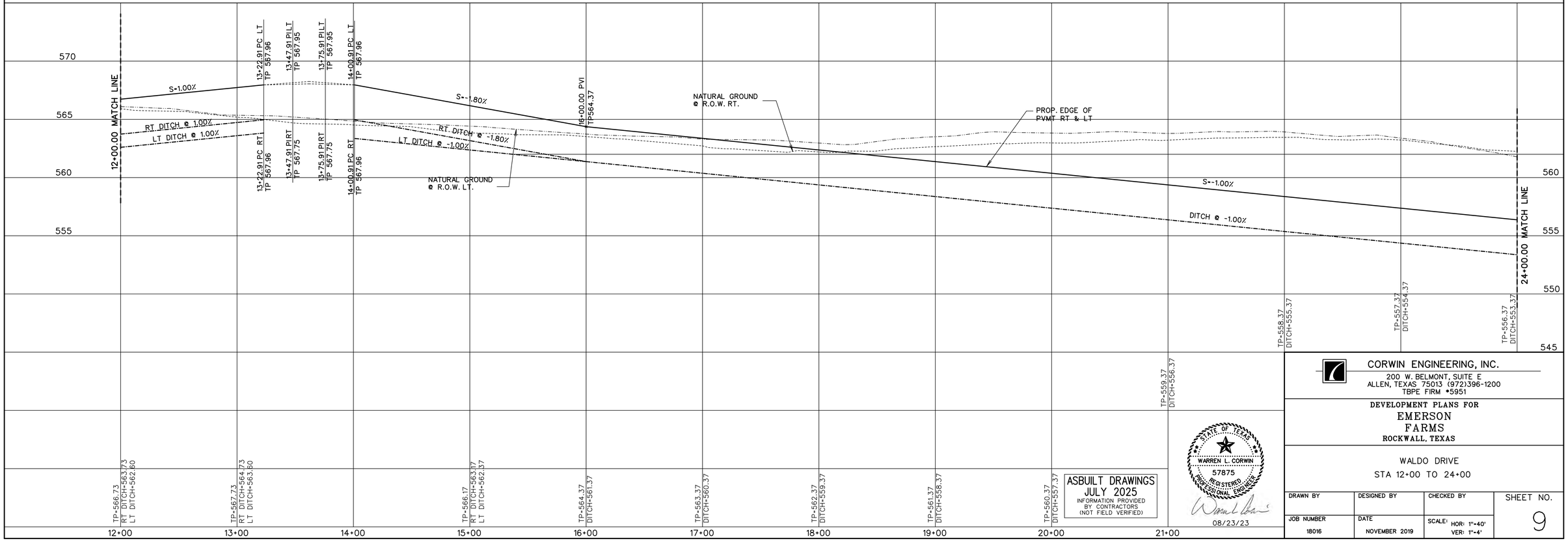
BEACON DRIVE

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 7 |


SCALE: 1" = 40'
N
WALDO DRIVE
BEACON DRIVE
DITCH ℄
0+00.00 WALDO DR.
6+00.00 BEACON DR.
0+39.00 PC LT
TP 549.44
0+39.00 PC RT
TP 549.44
25X25 VISIBILITY ESMT
1+00.00
33.0'/S LT
1+41.00
31.5'/S LT
10' U.E.
15' D.E.
60' R.O.W.
28' PVMT.
16'
12+00.00 MATCH LINE
LOCATION MAP
0+14.00 PI LT
TP 549.19
0+39.00 PC LT
TP 549.44
1+20.00 PVI LT
TP 550.25
(NO VC)
0+14.00 PI RT
TP 548.99
0+39.00 PC RT
TP 549.44
1+20.00 PVI RT
TP 550.25
(NO VC)
NATURAL GROUND @ R.O.W. RT.
NATURAL GROUND @ R.O.W. LT.
PROP. EDGE OF PVMT RT & LT
7+00.00 PVI LT
TP 561.73
(NO VC)
7+00.00 PVI RT
TP 561.73
(NO VC)
S=1.01%
S=1.98%
S=1.00%
DITCH @ 1.01%
DITCH @ 1.98%
RT DITCH @ 1.00%
LT DITCH @ 1.00%
S=1.00% LT
S=1.79% RT
TP-550.05
DITCH-547.05
TP-551.84
DITCH-548.84
TP-553.82
DITCH-550.82
TP-555.79
DITCH-552.79
TP-557.77
DITCH-554.77
TP-559.75
RT DITCH-556.75
LT DITCH-556.60
TP-561.73
RT DITCH-558.73
LT DITCH-557.60
TP-562.73
RT DITCH-559.73
LT DITCH-558.60
TP-563.73
RT DITCH-560.73
LT DITCH-559.60
TP-564.73
RT DITCH-561.73
LT DITCH-560.60
TP-565.73
RT DITCH-562.73
LT DITCH-561.60
TP-566.73
RT DITCH-563.73
LT DITCH-562.60
AS-BUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
08/23/23
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951
DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS
WALDO DRIVE
STA. 0+00 TO 12+00
DRAWN BY
DESIGNED BY
CHECKED BY
SHEET NO.
8
JOB NUMBER
18016
DATE
NOVEMBER 2019
SCALE: HOR: 1"=40' VER: 1"=4'




ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
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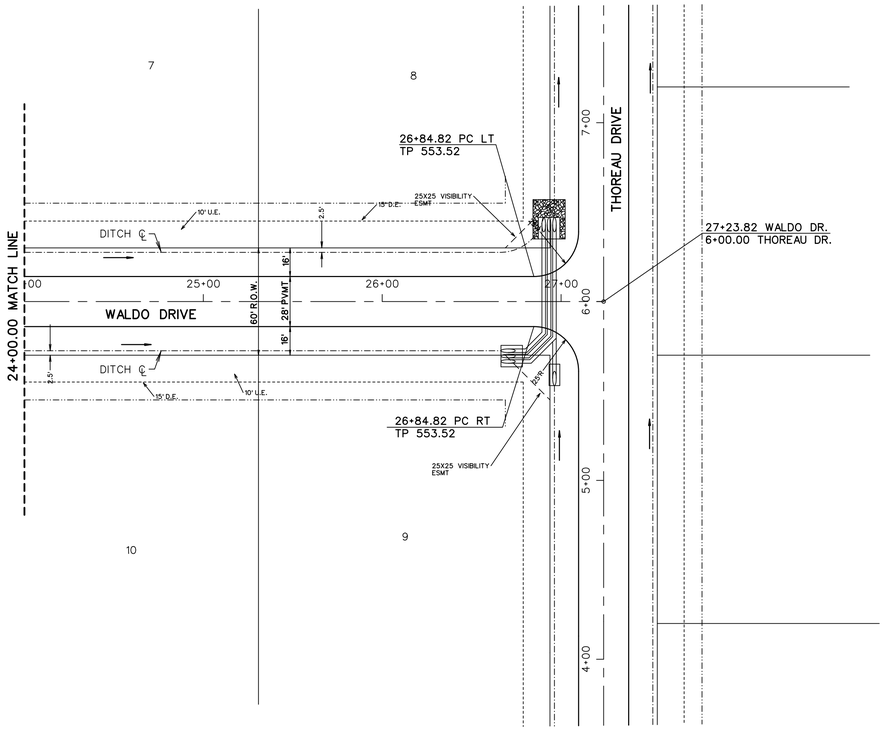
REGISTERED PROFESSIONAL ENGINEER
08/23/23

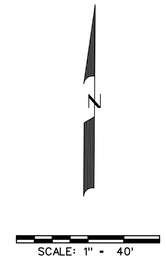

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

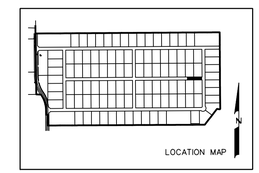

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

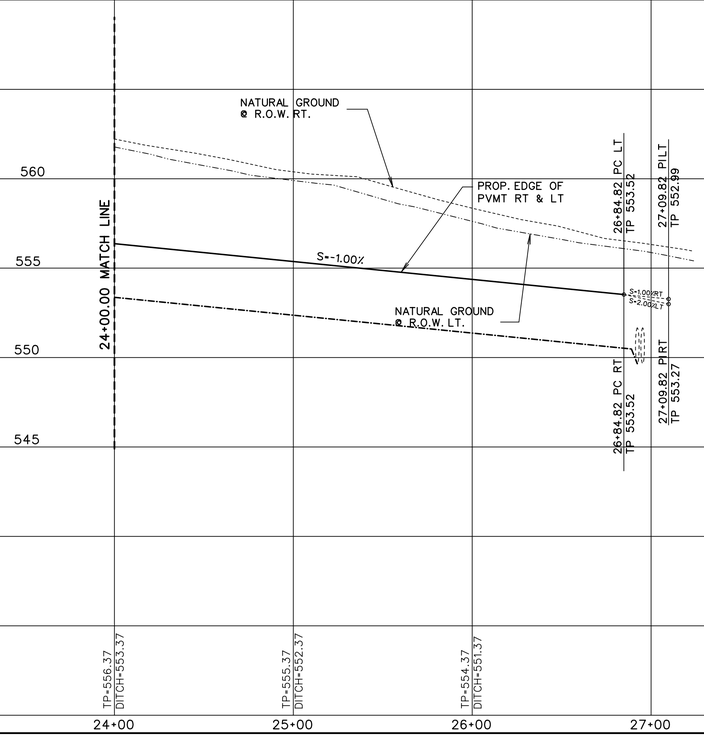
WALDO DRIVE
STA 12+00 TO 24+00

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 9 |




ASBUILT DRAWINGS
JULY 2025
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STATE OF TEXAS
WARREN L. CORWIN
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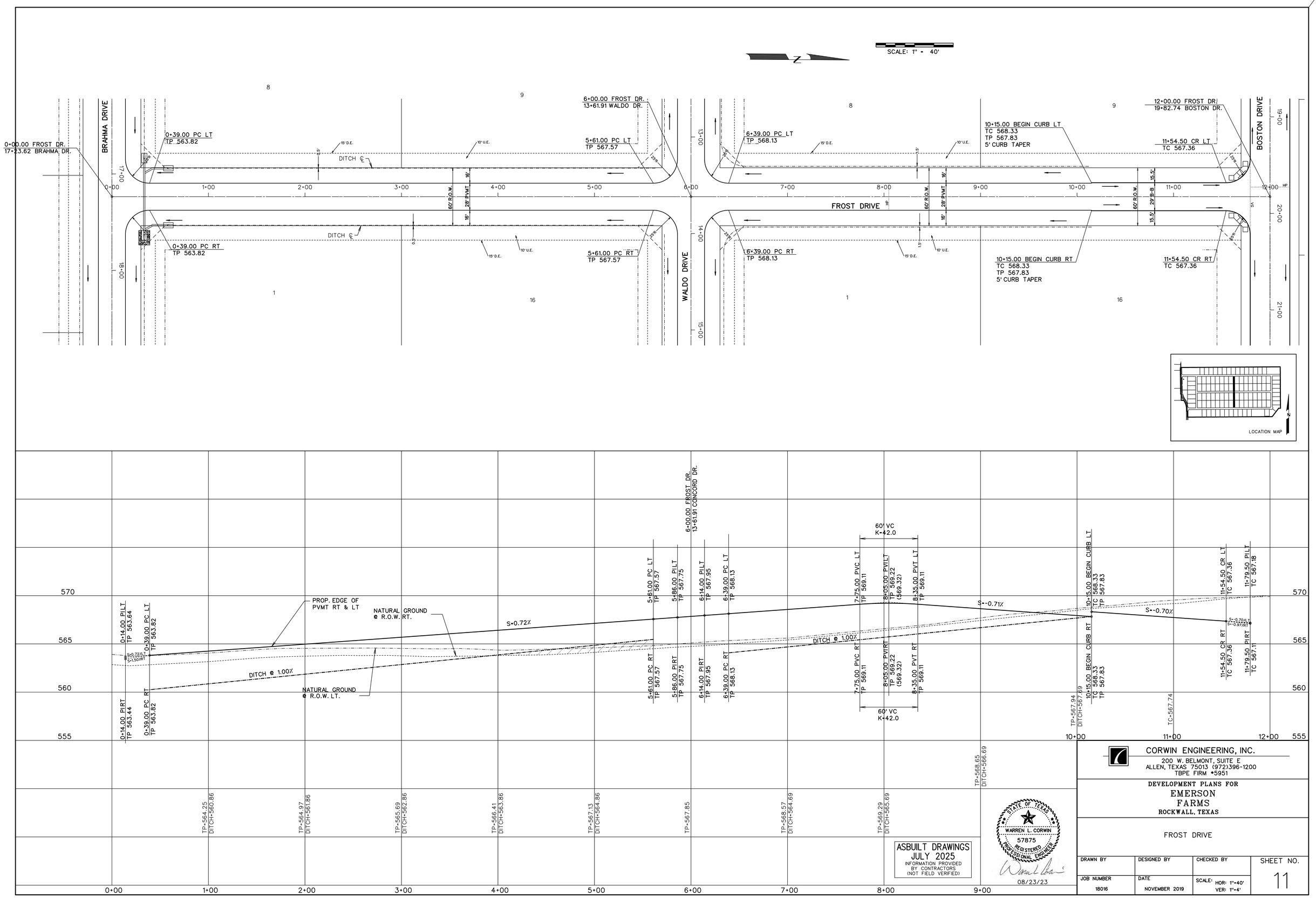
REGISTERED PROFESSIONAL ENGINEER
08/23/23


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

WALDO DRIVE
STA 24+00 TO END

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 10 |


SCALE: 1" = 40'
BRAHMA DRIVE
WALDO DRIVE
FROST DRIVE
BOSTON DRIVE
0+00.00 FROST DR.
17+23.62 BRAHMA DR.
6+00.00 FROST DR.
13+61.91 WALDO DR.
12+00.00 FROST DR.
19+82.74 BOSTON DR.
0+39.00 PC LT
TP 563.82
5+61.00 PC LT
TP 567.57
6+39.00 PC LT
TP 568.13
10+15.00 BEGIN CURB LT
TC 568.33
TP 567.83
5' CURB TAPER
11+54.50 CR LT
TC 567.36
0+39.00 PC RT
TP 563.82
5+61.00 PC RT
TP 567.57
6+39.00 PC RT
TP 568.13
10+15.00 BEGIN CURB RT
TC 568.33
TP 567.83
5' CURB TAPER
11+54.50 CR RT
TC 567.36
DITCH ℄
60' R.O.W.
28' PVMT
29' B-B
15' D.E.
10' U.E.
LOCATION MAP
PROP. EDGE OF PVMT RT & LT
NATURAL GROUND @ R.O.W. RT.
NATURAL GROUND @ R.O.W. LT.
S=0.72%
S=-0.71%
S=-0.70%
DITCH @ 1.00%
0+14.00 PI LT
TP 563.64
0+39.00 PC LT
TP 563.82
0+14.00 PI RT
TP 563.44
0+39.00 PC RT
TP 563.82
5+61.00 PC LT
TP 567.57
5+86.00 PI LT
TP 567.75
6+14.00 PI LT
TP 567.95
6+39.00 PC LT
TP 568.13
6+00.00 FROST DR.
13+61.91 CONCORD DR.
7+75.00 PVC LT
TP 569.11
8+05.00 PVI LT
TP 569.22
(569.32)
8+35.00 PVT LT
TP 569.11
60' VC
K=42.0
10+15.00 BEGIN CURB LT
TC 568.33
TP 567.83
11+54.50 CR LT
TC 567.36
11+79.50 PI LT
TC 567.18
5+61.00 PC RT
TP 567.57
5+86.00 PI RT
TP 567.75
6+14.00 PI RT
TP 567.95
6+39.00 PC RT
TP 568.13
7+75.00 PVC RT
TP 569.11
8+05.00 PVI RT
TP 569.22
(569.32)
8+35.00 PVT RT
TP 569.11
10+15.00 BEGIN CURB RT
TC 568.33
TP 567.83
11+54.50 CR RT
TC 567.36
11+79.50 PI RT
TC 567.11
TP-567.94
DITCH-567.69
TC-567.74
TP-568.65
DITCH-566.69
TP-564.25
DITCH-560.86
TP-564.97
DITCH-561.86
TP-565.69
DITCH-562.86
TP-566.41
DITCH-563.86
TP-567.13
DITCH-564.86
TP-567.85
TP-568.57
DITCH-564.69
TP-569.29
DITCH-565.69
ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
08/23/23
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951
DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS
FROST DRIVE
DRAWN BY
DESIGNED BY
CHECKED BY
SHEET NO.
11
JOB NUMBER
18016
DATE
NOVEMBER 2019
SCALE: HOR: 1"=40' VER: 1"=4'

SCALE: 1" = 40'

BRAHMA DRIVE

TP 560.40

TP 560.57

TP 560.53

0+00.00 THOREAU DR.
30+85.53 BRAHMA DR.

0+39.00 PC LT
TP 560.53

0+57.95 PC RT
TP 560.13

TP 561.30

TP 560.30

WALDO DRIVE

5+61.00 PC LT
TP 553.52

6+39.00 PC LT
TP 552.74

6+00.00 THOREAU DR.
27+23.82 CONCORD DR.

12+00.00 THOREAU DR.
33+44.65 BOSTON DR.

11+54.50 CR LT
TC 548.09
TP 547.59

11+54.50 CR RT
TC 548.09
TP 547.59

RALPH DRIVE

THOREAU DRIVE

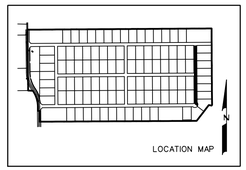
DITCH ℄

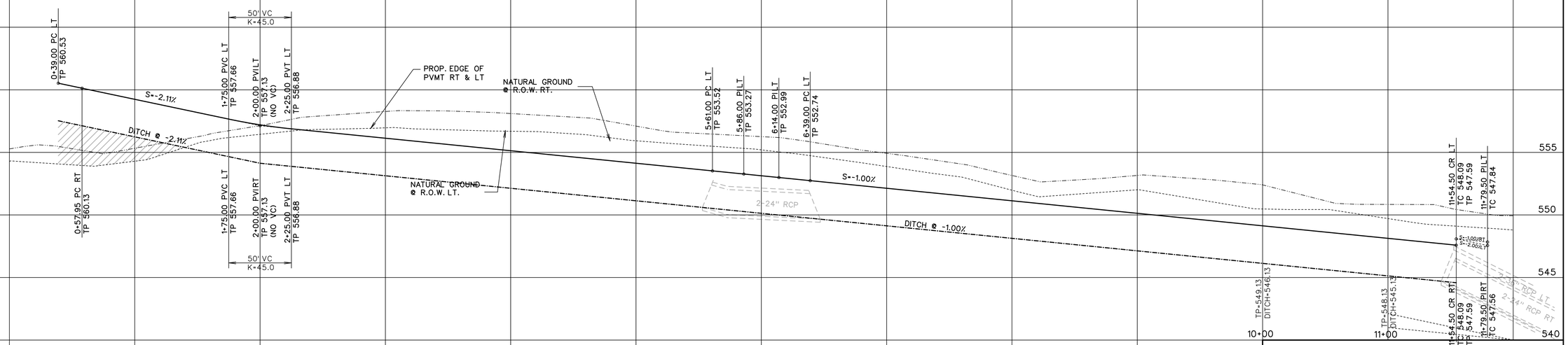
15' D.E.

10' U.E.

60' R.O.W.

28' PVMT





CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON
FARMS
ROCKWALL, TEXAS

THOREAU DRIVE

ASBUILT DRAWINGS
JULY 2025
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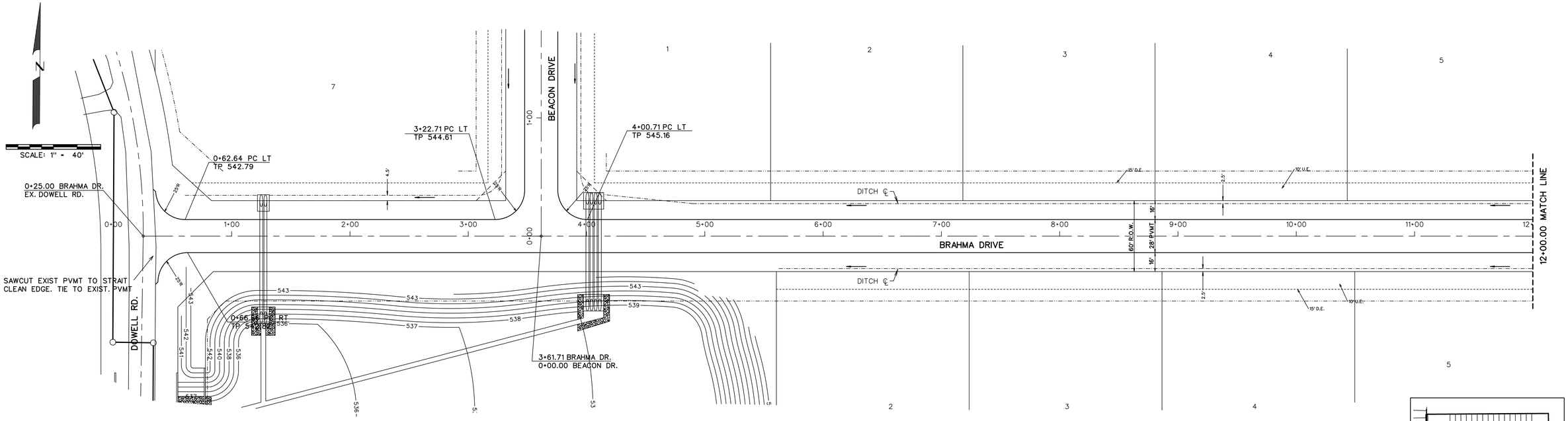
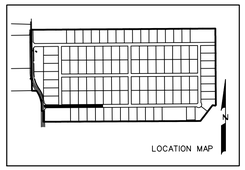
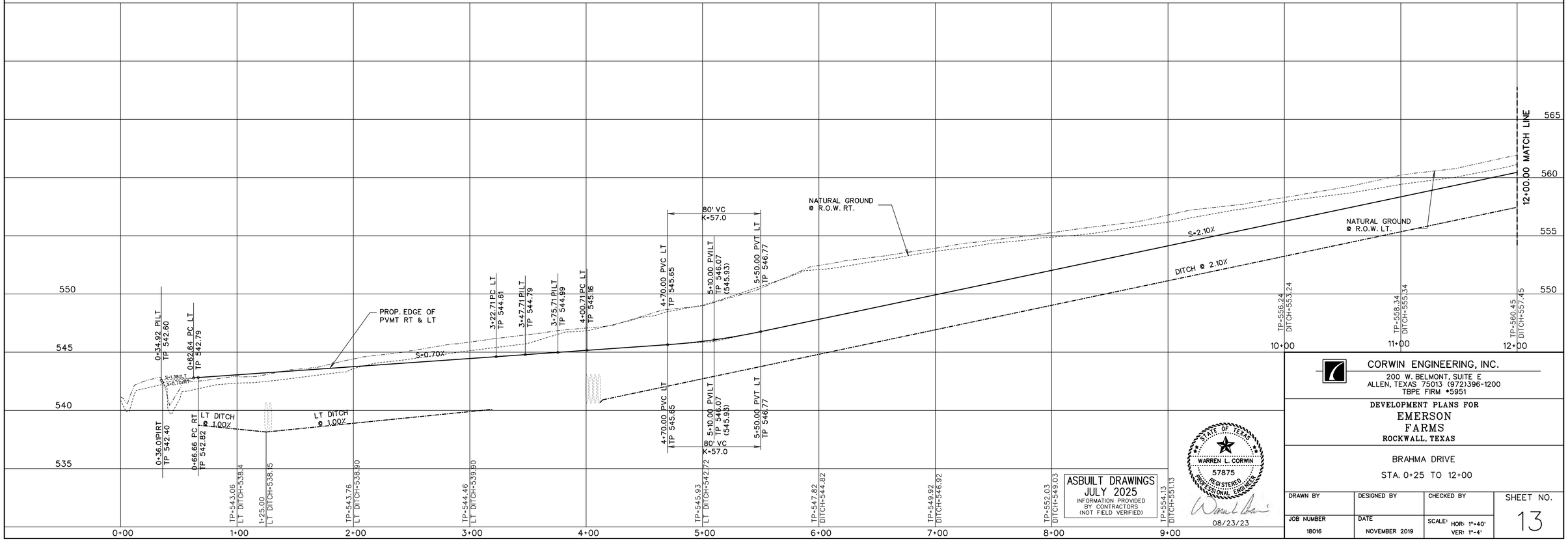
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED
PROFESSIONAL ENGINEER

08/23/23

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 12 |




ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED
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STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED
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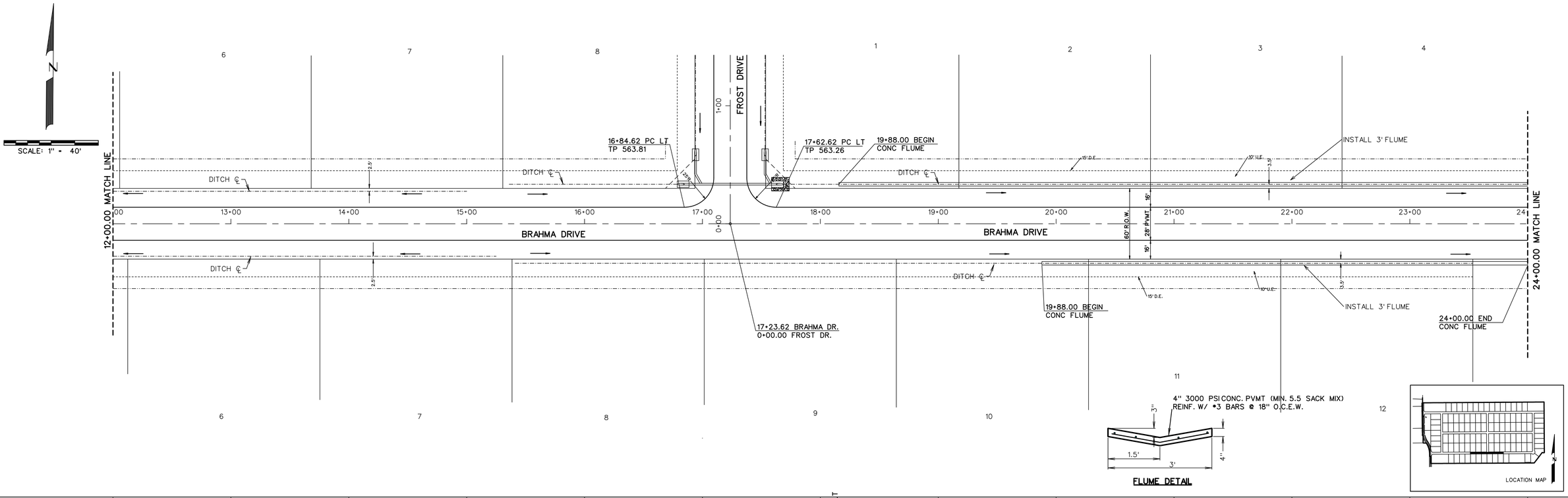
08/23/23

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON
FARMS
ROCKWALL, TEXAS

BRAHMA DRIVE
STA. 0+25 TO 12+00

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 13 |

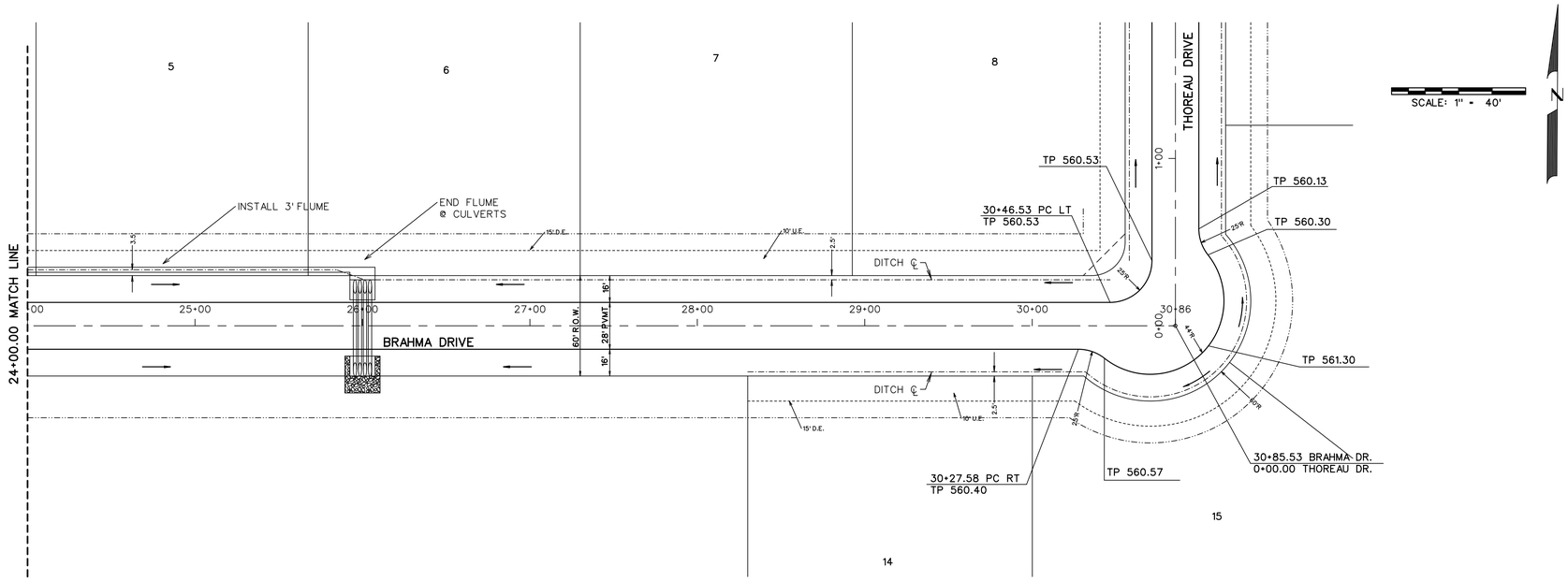


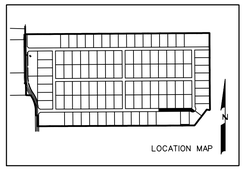

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

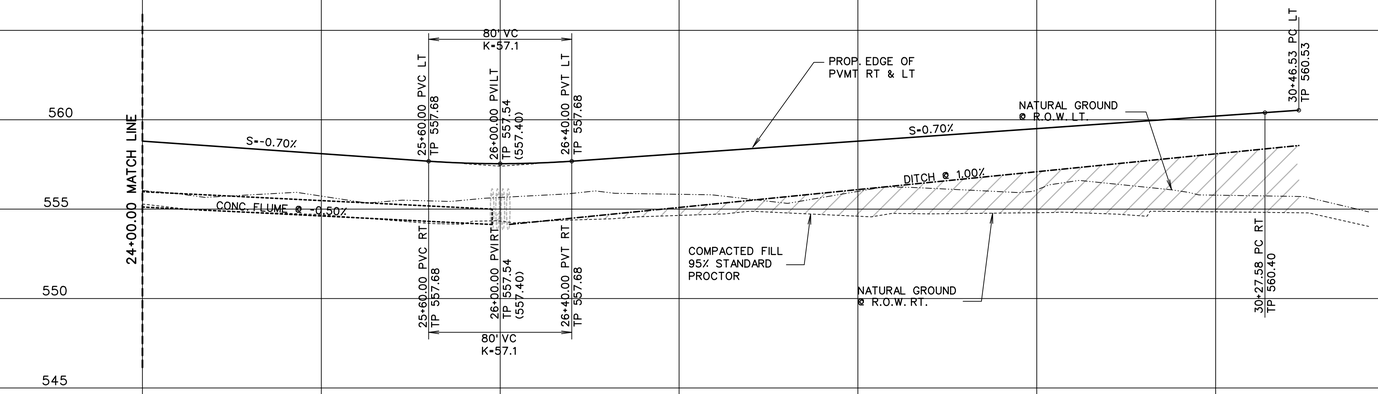
DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

BRAHMA DRIVE
STA 12+00 TO 24+00

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 14 |




ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

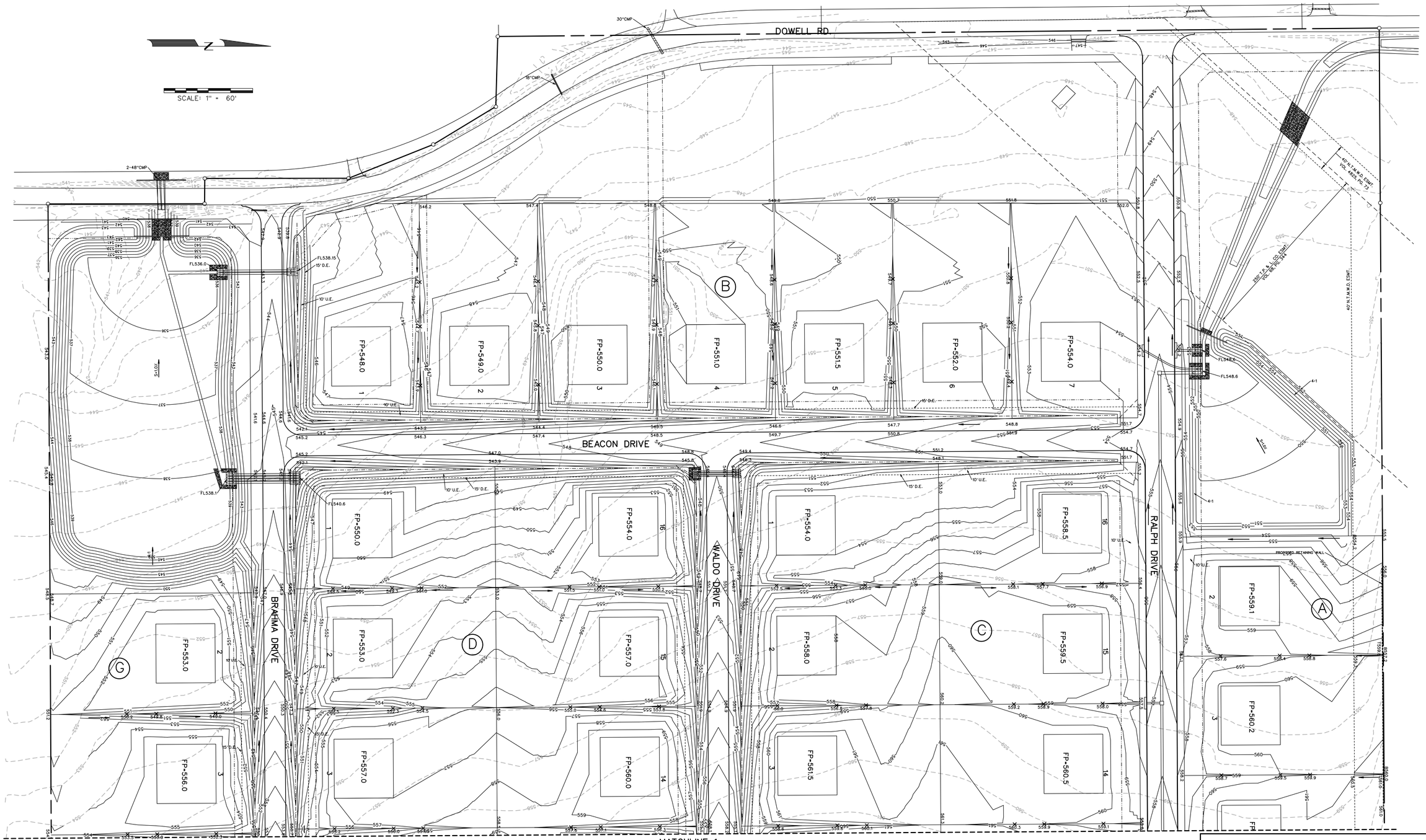
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
08/23/23

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

BRAHMA DRIVE
STA 24+00 TO END

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 15 |




NOTE:

CONTRACTOR SHALL CONTACT NTMWD LINE LOCATES AT 469-626-4569 AT LEAST 72 HOURS PRIOR TO WORKING IN NTMWD EASEMENT.

NOTE:

RETAINING WALLS 3' IN HEIGHT AND OVER NEED A ENGINEERED SEALED PLAN. (PLANS TO BE SUBMITTED PRIOR TO ENGINEERING APPROVAL)

ALL RETAINING WALL SHALL BE ROCK OR STONE FACED.

LEGEND

| | |
|---|---|
| SPOT ELEVATION | 706.2 |
| EXIST. CONTOUR | -700- |
| PROP. CONTOUR | —704— |
| RETAINING WALL | |
| HIGH POINT | HP |
| TOP OF WALL GRADE | T706.2 |
| BOTTOM OF WALL GRADE | B706.2 |

NOTES:

1. Finish Floor Elevation to be 0.70 Feet above Finished Pad.(FP)
2. Additional Erosion Control to be installed in Parkways as determined by the City Inspector.
3. Finished Pad Elevations are within ± 0.3 Feet.
4. All fill compacted to min 95% std. density using sheeps foot roller.
5. All portions of the wall to be on one lot. Do not install on property line or in easements or right of way.
6. All R.O.W. to be 1/4" per foot.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

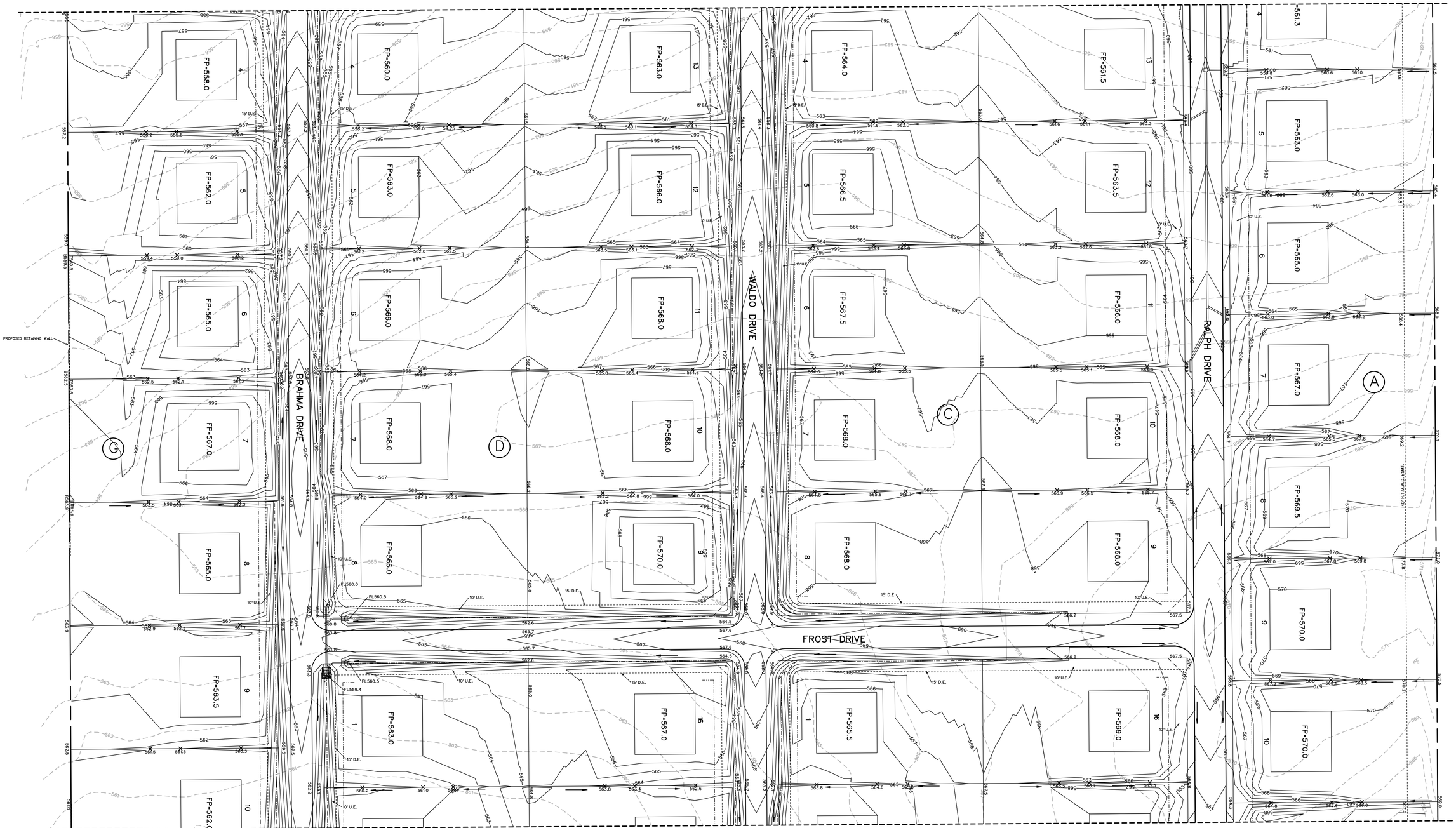
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

GRADING PLAN

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=60' | 16 |

MATCHLINE 1




MATCHLINE 2

NOTE:

CONTRACTOR SHALL CONTACT NTMWD LINE LOCATES AT 469-626-4569 AT LEAST 72 HOURS PRIOR TO WORKING IN NTMWD EASEMENT.

NOTE:

RETAINING WALLS 3' IN HEIGHT AND OVER NEED A ENGINEERED SEALED PLAN. (PLANS TO BE SUBMITTED PRIOR TO ENGINEERING APPROVAL)

ALL RETAINING WALL SHALL BE ROCK OR STONE FACED.

SCALE: 1" = 60'

N

LEGEND

| | |
|---|---|
| SPOT ELEVATION | 706.2 |
| EXIST. CONTOUR | —700— |
| PROP. CONTOUR | —704— |
| RETAINING WALL | |
| HIGH POINT | HP |
| TOP OF WALL GRADE | T706.2 |
| BOTTOM OF WALL GRADE | B706.2 |

NOTES:

1. Finish Floor Elevation to be 0.70 Feet above Finished Pad.(FP)
2. Additional Erosion Control to be installed in Parkways as determined by the City Inspector.
3. Finished Pad Elevations are within ± 0.3 Feet.
4. All fill compacted to min 95% std. density using sheeps foot roller.
5. All portions of the wall to be on one lot. Do not install on property line or in easements or right of way.
6. All R.O.W. to be 1/4" per foot.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

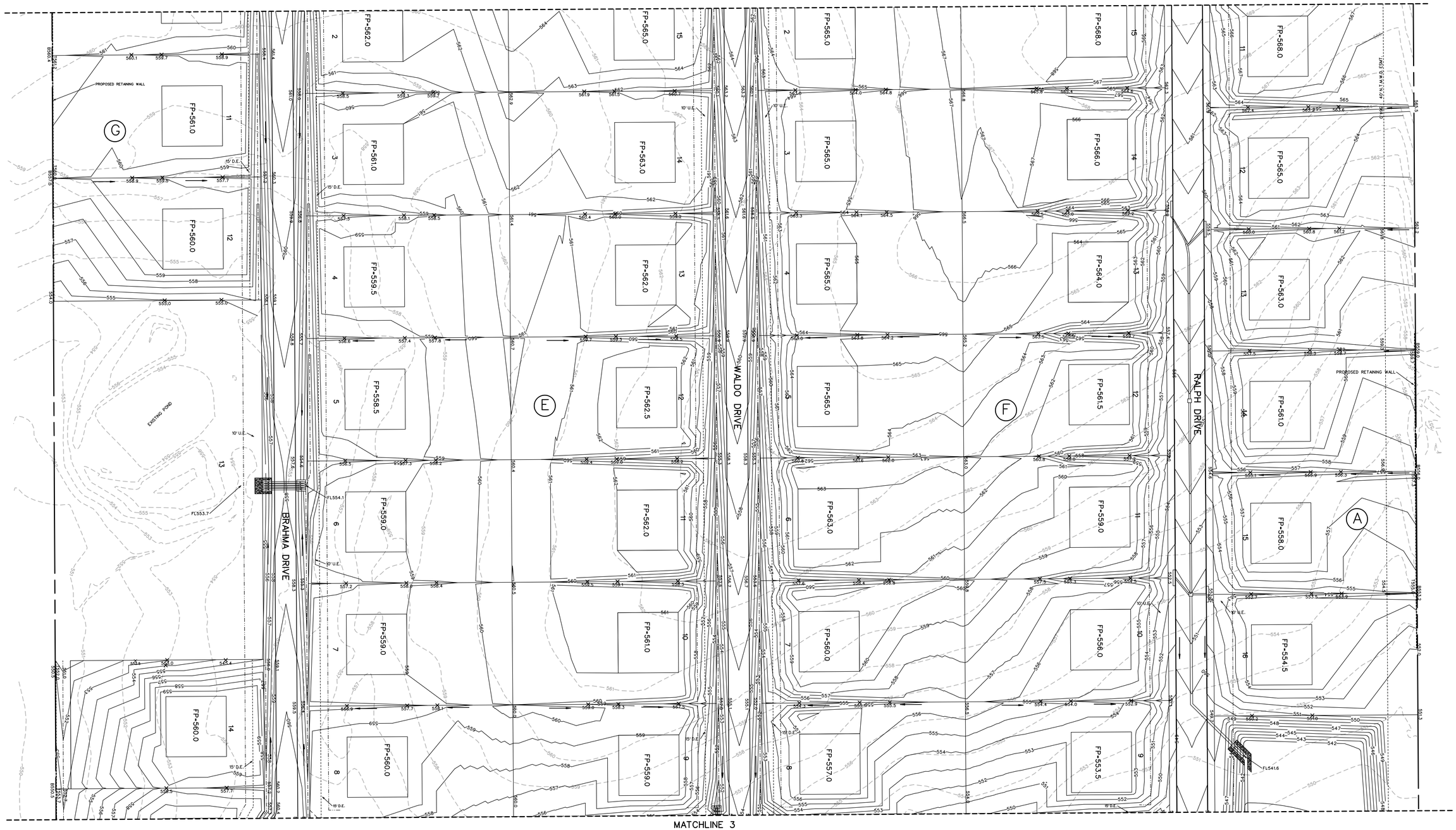

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

GRADING PLAN

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=60' | 17 |

MATCHLINE 2




MATCHLINE 3

NOTE:

CONTRACTOR SHALL CONTACT NTMWD LINE LOCATES AT 469-626-4569 AT LEAST 72 HOURS PRIOR TO WORKING IN NTMWD EASEMENT.

NOTE:

RETAINING WALLS 3' IN HEIGHT AND OVER NEED A ENGINEERED SEALED PLAN. (PLANS TO BE SUBMITTED PRIOR TO ENGINEERING APPROVAL)

ALL RETAINING WALL SHALL BE ROCK OR STONE FACED.

SCALE: 1" = 60'

N

LEGEND

| | |
|---|---|
| SPOT ELEVATION | 706.2 |
| EXIST. CONTOUR | -700- |
| PROP. CONTOUR | 704 |
| RETAINING WALL | |
| HIGH POINT | HP |
| TOP OF WALL GRADE | T706.2 |
| BOTTOM OF WALL GRADE | B706.2 |

NOTES:

1. Finish Floor Elevation to be 0.70 Feet above Finished Pad.(FP)
2. Additional Erosion Control to be installed in Parkways as determined by the City Inspector.
3. Finished Pad Elevations are within ± 0.3 Feet.
4. All fill compacted to min 95% std. density using sheeps foot roller.
5. All portions of the wall to be on one lot. Do not install on property line or in easements or right of way.
6. All R.O.W. to be ¼" per foot.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

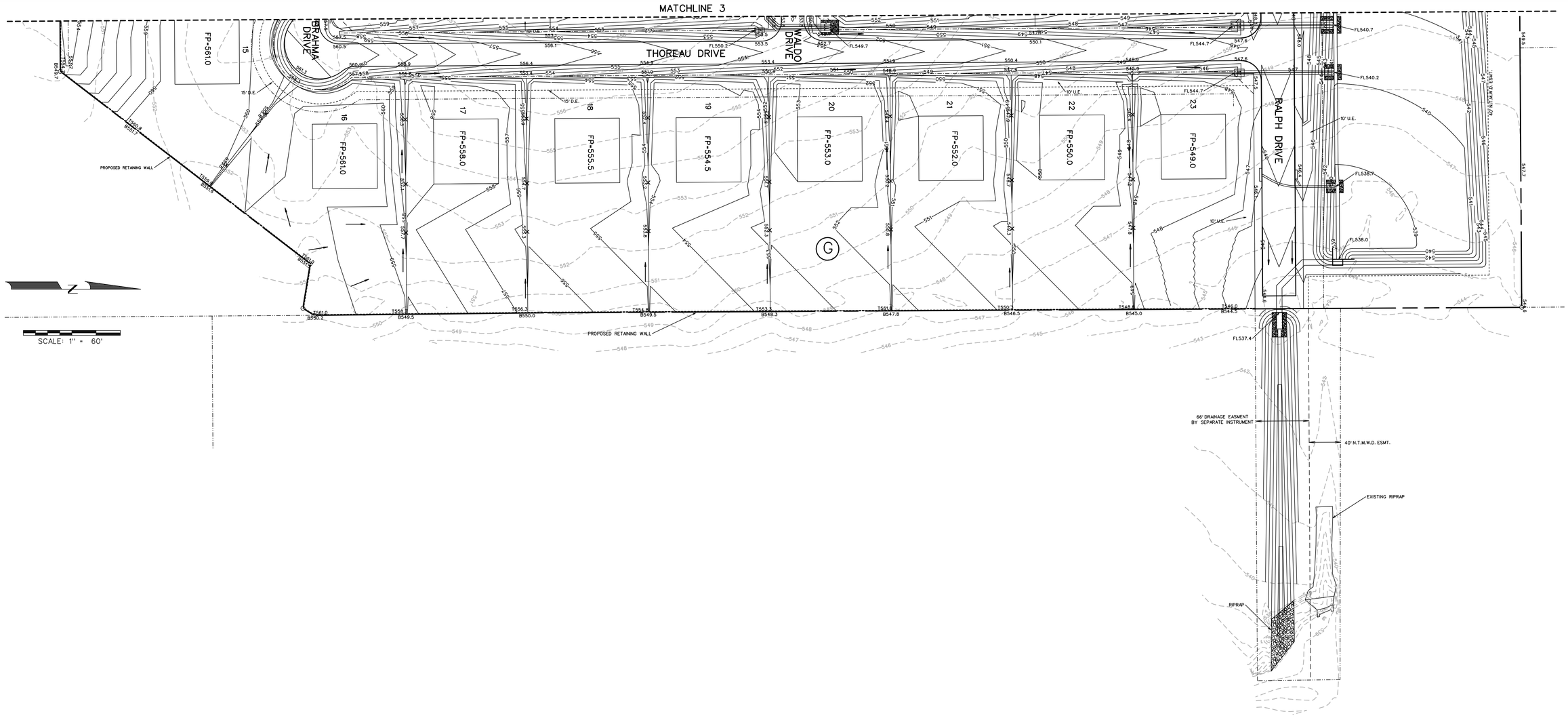
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

GRADING PLAN

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=60' | 18 |




NOTE:

CONTRACTOR SHALL CONTACT NTMWD LINE LOCATES AT 469-626-4569 AT LEAST 72 HOURS PRIOR TO WORKING IN NTMWD EASEMENT.

NOTE:

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ALL RETAINING WALL SHALL BE ROCK OR STONE FACED.

LEGEND

| | |
|---|---|
| SPOT ELEVATION | 706.2 |
| EXIST. CONTOUR | -700- |
| PROP. CONTOUR | 704 |
| RETAINING WALL | |
| HIGH POINT | HP |
| TOP OF WALL GRADE | T706.2 |
| BOTTOM OF WALL GRADE | B706.2 |

NOTES:

1. Finish Floor Elevation to be 0.70 Feet above Finished Pad.(FP)
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4. All fill compacted to min 95% std. density using sheeps foot roller.
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6. All R.O.W. to be ¼" per foot.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

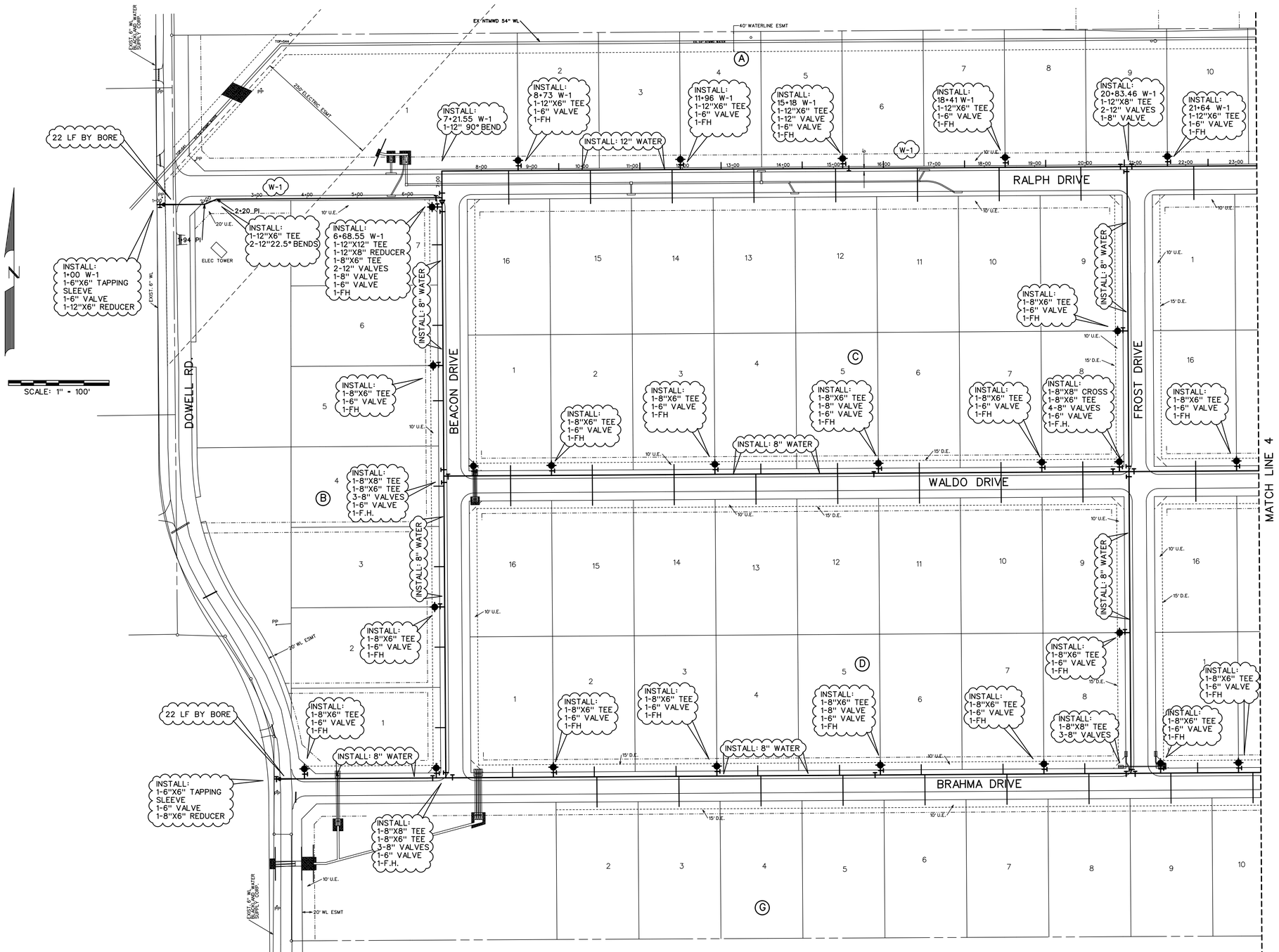
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

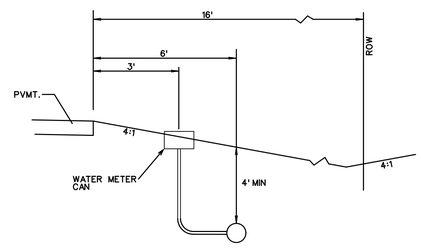
GRADING PLAN

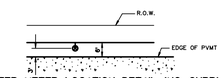
| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=60' | 19 |



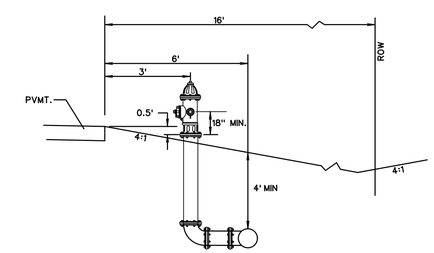

## LEGEND

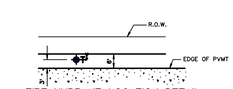
- PROP. WATER LINE
- PROP. FIRE HYDRANT AND VALVE
- PROP. GATE VALVE
- PROP. FLUSH VALVE
- EXIST. WATER LINE
- EXIST. FIRE HYDRANT AND VALVE
- PROP. STORM SEWER
- PROP. CURB INLETS
- PROP. CONC. HEADWALL




WATER METER LOCATION DETAIL (NO CURB)
N.T.S.




FIRE HYDRANT LOCATION DETAIL
N.T.S.

NOTE:

ALL WATER FACILITIES WILL BE OWNED AND OPERATED BY BLACKLAND WATER SUPPLY CORPORATION 972-771-6375.

ALL WATER LINES TO BE AWWA 900-16 PVC DR 14 (PC 235).

INSTALL BLUE "EMS" DISK ON WATER LINE AT EVERY 250' AND CHANGE IN DIRECTION, VALVE, AND SERVICE.

NOTE:

ALL PROPERTIES MUST BE ON SEPTIC SYSTEMS.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES FOR LOCATION AND ELEVATION PRIOR TO CONSTRUCTION. ALL UNDERGROUND UTILITIES SHOWN ARE FROM AS-BUILT PLANS AND NOT FIELD VERIFIED.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

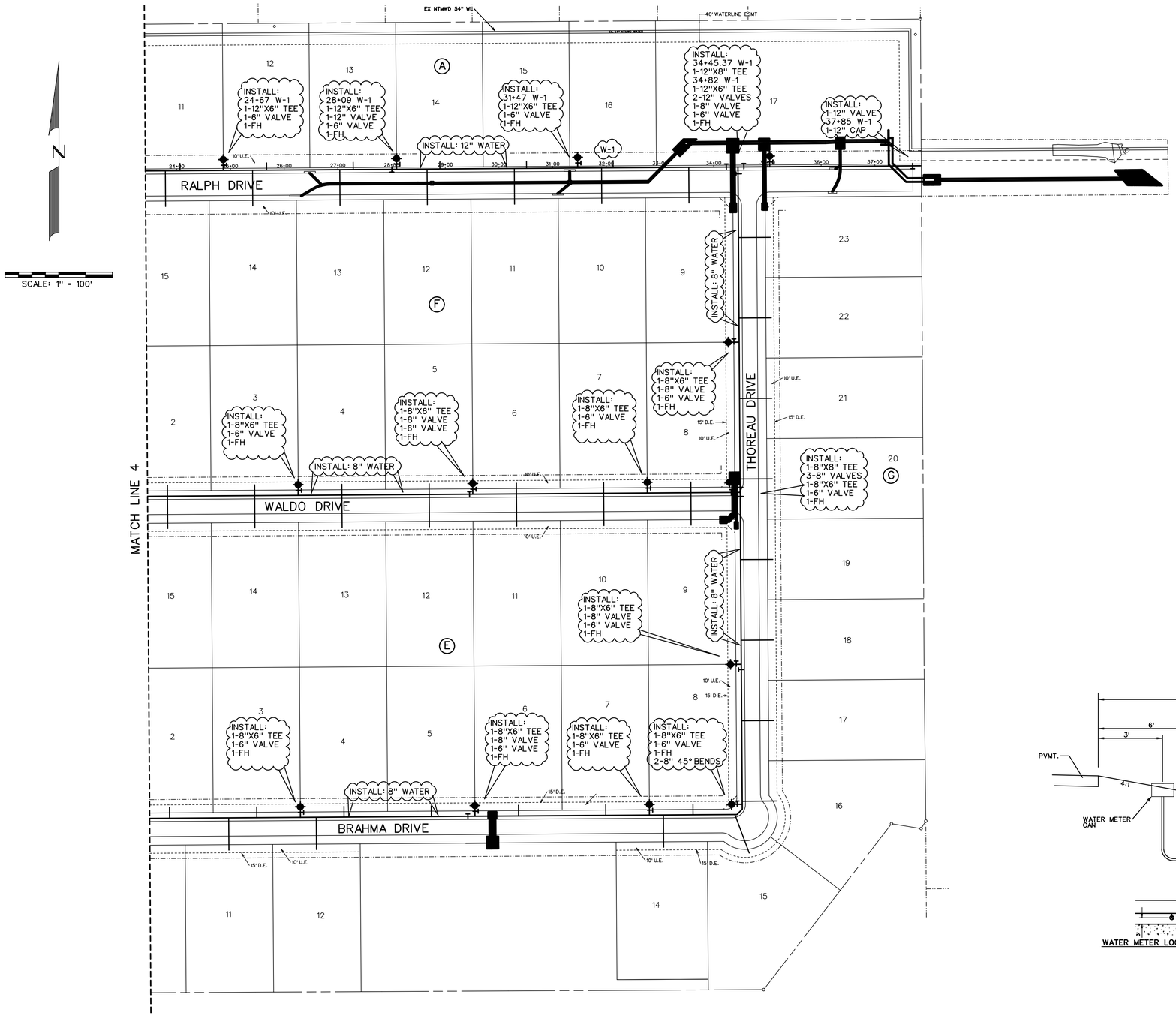
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

WATER PLAN

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=100' | 20 |




## LEGEND

- PROP. WATER LINE
- PROP. FIRE HYDRANT AND VALVE
- PROP. GATE VALVE
- PROP. FLUSH VALVE
- EXIST. WATER LINE
- EXIST. FIRE HYDRANT AND VALVE
- PROP. STORM SEWER
- PROP. CURB INLETS
- PROP. CONC. HEADWALL

NOTE:

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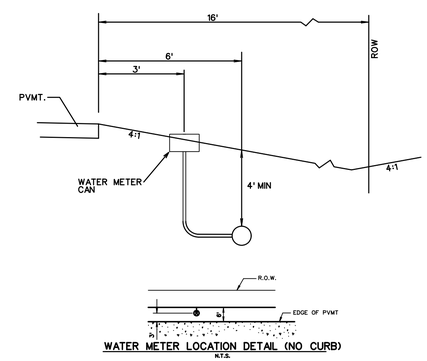
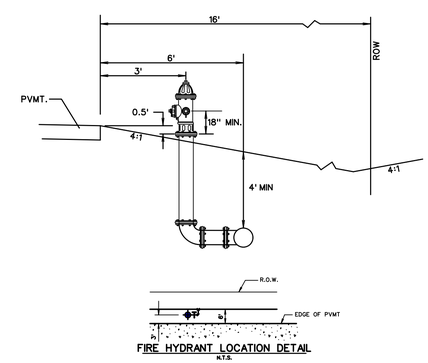



WATER METER LOCATION DETAIL (NO CURB)
N.T.S.




FIRE HYDRANT LOCATION DETAIL
N.T.S.

NOTE:

ALL PROPERTIES MUST BE ON SEPTIC SYSTEMS.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES FOR LOCATION AND ELEVATION PRIOR TO CONSTRUCTION. ALL UNDERGROUND UTILITIES SHOWN ARE FROM AS-BUILT PLANS AND NOT FIELD VERIFIED.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

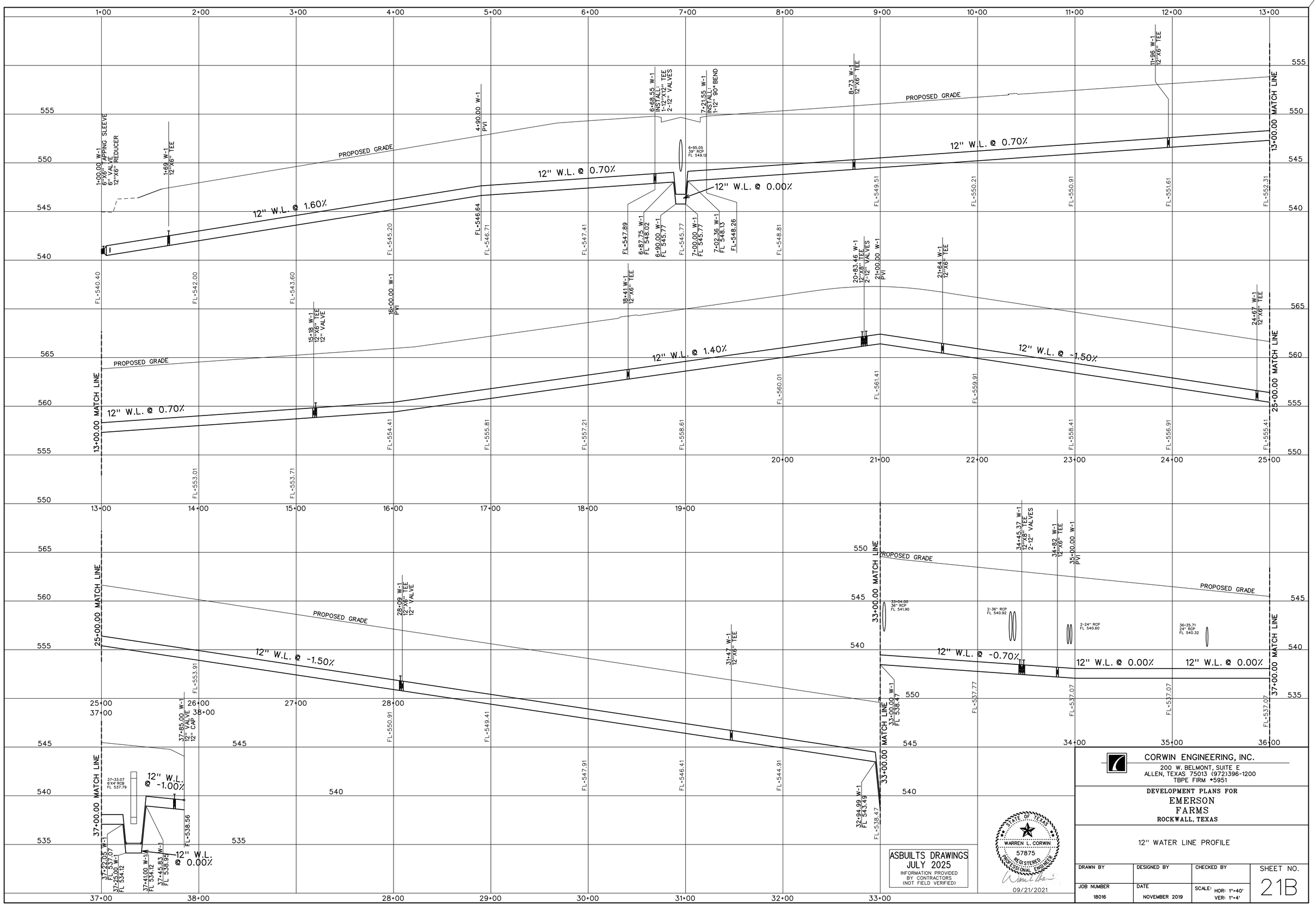
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

WATER PLAN

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| | | | 21 |
| JOB NUMBER | DATE | SCALE: | |
| 18016 | NOVEMBER 2019 | 1"=100' | |




ASBUILTS DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

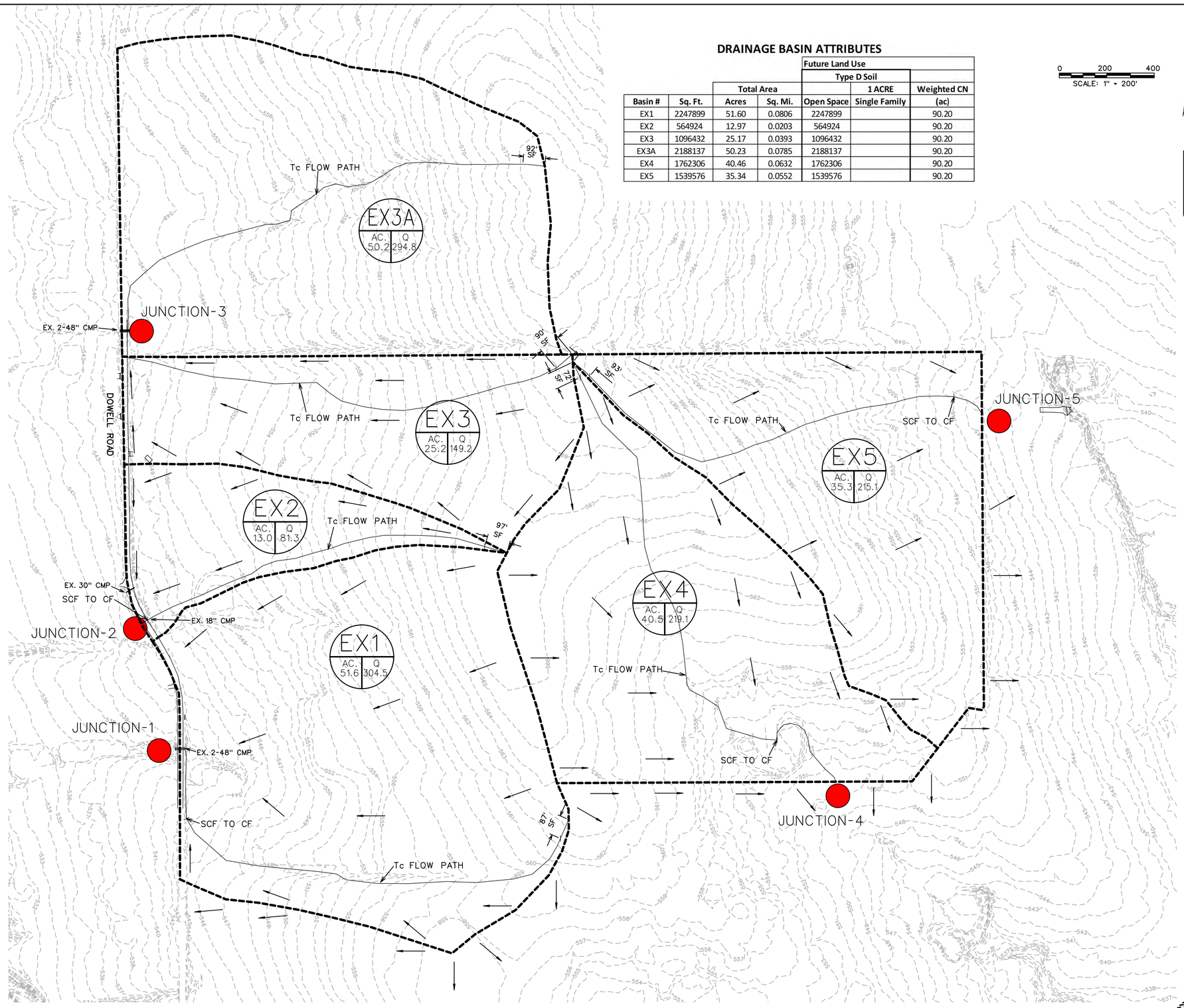
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

12" WATER LINE PROFILE

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 21B |




## DRAINAGE BASIN ATTRIBUTES

| | | Total Area | | Future Land Use | | |
|---|---|---|---|---|---|---|
| | | | | Type D Soil | | |
| Basin # | Sq. Ft. | Acres | Sq. Mi. | Open Space | 1 ACRE Single Family | Weighted CN (ac) |
| EX1 | 2247899 | 51.60 | 0.0806 | 2247899 | | 90.20 |
| EX2 | 564924 | 12.97 | 0.0203 | 564924 | | 90.20 |
| EX3 | 1096432 | 25.17 | 0.0393 | 1096432 | | 90.20 |
| EX3A | 2188137 | 50.23 | 0.0785 | 2188137 | | 90.20 |
| EX4 | 1762306 | 40.46 | 0.0632 | 1762306 | | 90.20 |
| EX5 | 1539576 | 35.34 | 0.0552 | 1539576 | | 90.20 |

## HEC-HMS OUTPUT - PRE-PROJECT CONDITIONS
### 100 Year

| Hydrologic Element | Drainage Area (sq. mi.) | Peak Discharge (cfs) | Time of Peak |
|---|---|---|---|
| EX1 | 0.0805 | 304.5 | 27Jun2018, 12:16 |
| EX2 | 0.0199 | 81.3 | 27Jun2018, 12:14 |
| EX3 | 0.0393 | 149.2 | 27Jun2018, 12:16 |
| EX3A | 0.0785 | 294.8 | 27Jun2018, 12:17 |
| EX4 | 0.0632 | 219.1 | 27Jun2018, 12:20 |
| EX5 | 0.0552 | 215.1 | 27Jun2018, 12:15 |
| Junction-1 | 0.0805 | 304.5 | 27Jun2018, 12:16 |
| Junction-2 | 0.0199 | 81.3 | 27Jun2018, 12:14 |
| Junction-3 | 0.1178 | 443.8 | 27Jun2018, 12:17 |
| Junction-4 | 0.0632 | 219.1 | 27Jun2018, 12:20 |
| Junction-5 | 0.0552 | 215.1 | 27Jun2018, 12:15 |

## HEC-HMS OUTPUT - PRE-PROJECT CONDITIONS
### 25 Year

| Hydrologic Element | Drainage Area (sq. mi.) | Peak Discharge (cfs) | Time of Peak |
|---|---|---|---|
| EX1 | 0.0805 | 234.8 | 27Jun2018, 12:16 |
| EX2 | 0.0199 | 62.7 | 27Jun2018, 12:14 |
| EX3 | 0.0393 | 115.1 | 27Jun2018, 12:16 |
| EX3A | 0.0785 | 227.4 | 27Jun2018, 12:17 |
| EX4 | 0.0632 | 169 | 27Jun2018, 12:20 |
| EX5 | 0.0552 | 165.9 | 27Jun2018, 12:15 |
| Junction-1 | 0.0805 | 234.8 | 27Jun2018, 12:16 |
| Junction-2 | 0.0199 | 62.7 | 27Jun2018, 12:14 |
| Junction-3 | 0.1178 | 342.3 | 27Jun2018, 12:17 |
| Junction-4 | 0.0632 | 169 | 27Jun2018, 12:20 |
| Junction-5 | 0.0552 | 165.9 | 27Jun2018, 12:15 |

## HEC-HMS OUTPUT - PRE-PROJECT CONDITIONS
### 10 Year

| Hydrologic Element | Drainage Area (sq. mi.) | Peak Discharge (cfs) | Time of Peak |
|---|---|---|---|
| EX1 | 0.0805 | 197.7 | 27Jun2018, 12:16 |
| EX2 | 0.0199 | 52.8 | 27Jun2018, 12:14 |
| EX3 | 0.0393 | 96.9 | 27Jun2018, 12:16 |
| EX3A | 0.0785 | 191.5 | 27Jun2018, 12:17 |
| EX4 | 0.0632 | 142.3 | 27Jun2018, 12:20 |
| EX5 | 0.0552 | 139.7 | 27Jun2018, 12:15 |
| Junction-1 | 0.0805 | 197.7 | 27Jun2018, 12:16 |
| Junction-2 | 0.0199 | 52.8 | 27Jun2018, 12:14 |
| Junction-3 | 0.1178 | 288.3 | 27Jun2018, 12:17 |
| Junction-4 | 0.0632 | 142.3 | 27Jun2018, 12:20 |
| Junction-5 | 0.0552 | 139.7 | 27Jun2018, 12:15 |

## HEC-HMS OUTPUT - PRE-PROJECT CONDITIONS
### 5 Year

| Hydrologic Element | Drainage Area (sq. mi.) | Peak Discharge (cfs) | Time of Peak |
|---|---|---|---|
| EX1 | 0.0805 | 160.8 | 27Jun2018, 12:17 |
| EX2 | 0.0199 | 43 | 27Jun2018, 12:14 |
| EX3 | 0.0393 | 78.8 | 27Jun2018, 12:16 |
| EX3A | 0.0785 | 155.7 | 27Jun2018, 12:17 |
| EX4 | 0.0632 | 115.6 | 27Jun2018, 12:20 |
| EX5 | 0.0552 | 113.6 | 27Jun2018, 12:15 |
| Junction-1 | 0.0805 | 160.8 | 27Jun2018, 12:17 |
| Junction-2 | 0.0199 | 43 | 27Jun2018, 12:14 |
| Junction-3 | 0.1178 | 234.5 | 27Jun2018, 12:17 |
| Junction-4 | 0.0632 | 115.6 | 27Jun2018, 12:20 |
| Junction-5 | 0.0552 | 113.6 | 27Jun2018, 12:15 |

SF - SHEET FLOW
SCF - SHALLOW CONCENTRATED FLOW
CF - CHANNEL FLOW

NOTE:

1. RUNOFF CALCULATIONS ARE TAKEN FROM DRAINAGE STUDY PREPARED BY CORWIN ENGINEERING, INC. DATED JUNE 2020 FOR EMERSON FARMS

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

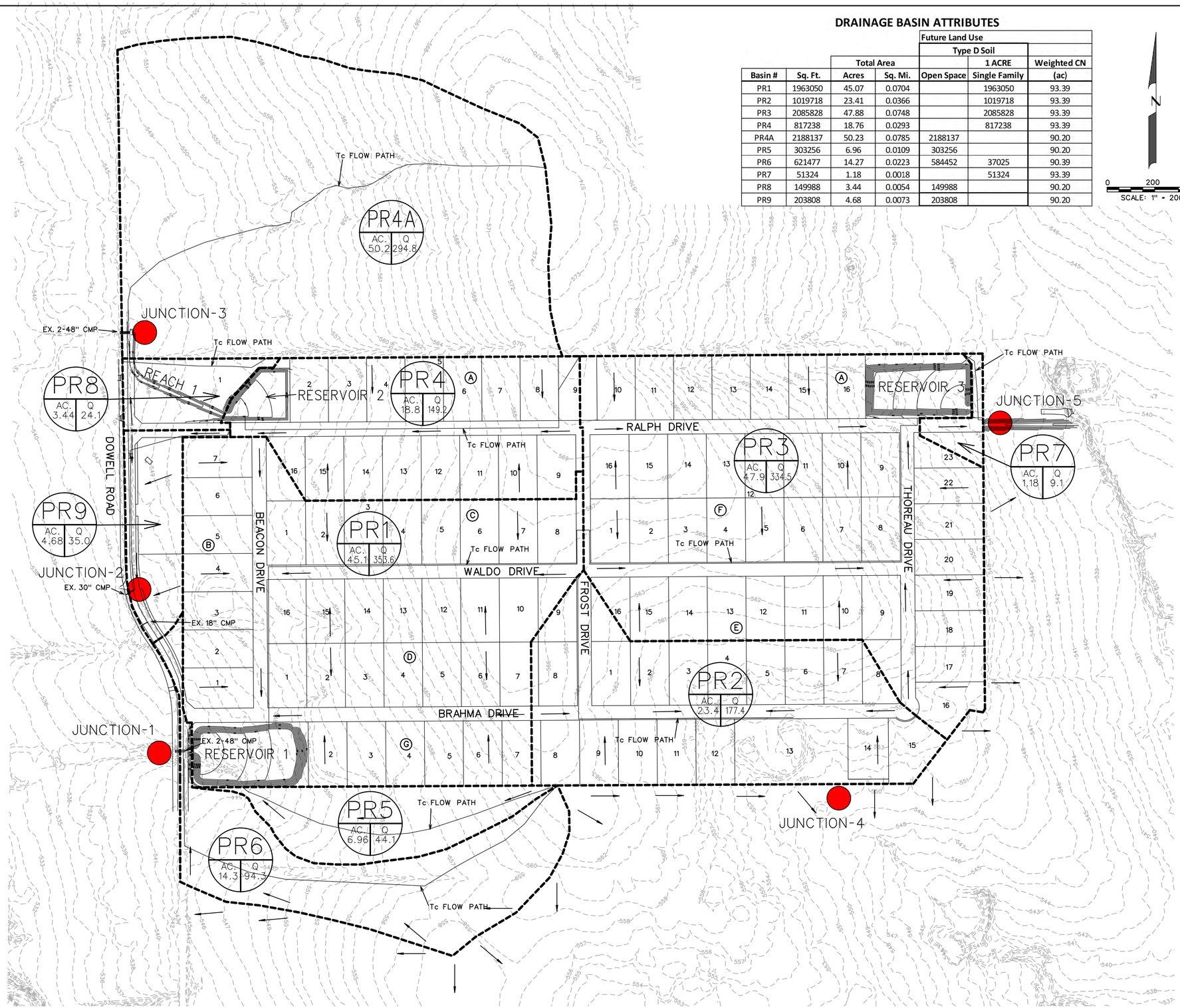
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

EXISTING CONDITIONS
DRAINAGE AREA MAP

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=200' | 22 |




## DRAINAGE BASIN ATTRIBUTES

| Basin # | Sq. Ft. | Total Area Acres | Total Area Sq. Mi. | Future Land Use, Type D Soil: Open Space | 1 ACRE Single Family | Weighted CN (ac) |
|---|---|---|---|---|---|---|
| PR1 | 1963050 | 45.07 | 0.0704 | | 1963050 | 93.39 |
| PR2 | 1019718 | 23.41 | 0.0366 | | 1019718 | 93.39 |
| PR3 | 2085828 | 47.88 | 0.0748 | | 2085828 | 93.39 |
| PR4 | 817238 | 18.76 | 0.0293 | | 817238 | 93.39 |
| PR4A | 2188137 | 50.23 | 0.0785 | 2188137 | | 90.20 |
| PR5 | 303256 | 6.96 | 0.0109 | 303256 | | 90.20 |
| PR6 | 621477 | 14.27 | 0.0223 | 584452 | 37025 | 90.39 |
| PR7 | 51324 | 1.18 | 0.0018 | | 51324 | 93.39 |
| PR8 | 149988 | 3.44 | 0.0054 | 149988 | | 90.20 |
| PR9 | 203808 | 4.68 | 0.0073 | 203808 | | 90.20 |

N

0 200 400
SCALE: 1" = 200'

### HEC-HMS OUTPUT - POST-PROJECT CONDITIONS
100 Year

| Hydrologic Element | Drainage Area (sq. mi.) | Peak Discharge (cfs) | Time of Peak |
|---|---|---|---|
| Junction-1 | 0.1036 | 262.0 | 27Jun2018, 12:17 |
| Junction-2 | 0.0073 | 35.0 | 27Jun2018, 12:08 |
| Junction-3 | 0.1132 | 416.7 | 27Jun2018, 12:16 |
| Junction-4 | 0.0366 | 177.6 | 27Jun2018, 12:09 |
| Junction-5 | 0.0766 | 213.4 | 27Jun2018, 12:23 |
| PR1 | 0.0704 | 354.0 | 27Jun2018, 12:08 |
| PR2 | 0.0366 | 177.6 | 27Jun2018, 12:09 |
| PR3 | 0.0748 | 334.9 | 27Jun2018, 12:11 |
| PR4 | 0.0293 | 150.1 | 27Jun2018, 12:07 |
| PR4A | 0.0785 | 294.8 | 27Jun2018, 12:17 |
| PR5 | 0.0109 | 44.1 | 27Jun2018, 12:14 |
| PR6 | 0.0223 | 94.4 | 27Jun2018, 12:12 |
| PR7 | 0.0018 | 9.2 | 27Jun2018, 12:07 |
| PR8 | 0.0054 | 24.1 | 27Jun2018, 12:11 |
| PR9 | 0.0073 | 35.0 | 27Jun2018, 12:08 |
| Reach-1 | 0.0293 | 101.5 | 27Jun2018, 12:16 |
| Reservoir-1 | 0.0813 | 185.5 | 27Jun2018, 12:24 |
| Reservoir-2 | 0.0293 | 101.6 | 27Jun2018, 12:14 |
| Reservoir-3 | 0.0748 | 209.5 | 27Jun2018, 12:23 |

### HEC-HMS OUTPUT - POST-PROJECT CONDITIONS
25 Year

| Hydrologic Element | Drainage Area (sq. mi.) | Peak Discharge (cfs) | Time of Peak |
|---|---|---|---|
| Junction-1 | 0.1036 | 201.5 | 27Jun2018, 12:15 |
| Junction-2 | 0.0073 | 27.0 | 27Jun2018, 12:09 |
| Junction-3 | 0.1132 | 320.2 | 27Jun2018, 12:16 |
| Junction-4 | 0.0366 | 138.4 | 27Jun2018, 12:09 |
| Junction-5 | 0.0766 | 160.5 | 27Jun2018, 12:24 |
| PR1 | 0.0704 | 275.9 | 27Jun2018, 12:08 |
| PR2 | 0.0366 | 138.4 | 27Jun2018, 12:09 |
| PR3 | 0.0748 | 260.9 | 27Jun2018, 12:11 |
| PR4 | 0.0293 | 117.0 | 27Jun2018, 12:07 |
| PR4A | 0.0785 | 227.4 | 27Jun2018, 12:17 |
| PR5 | 0.0109 | 34.0 | 27Jun2018, 12:14 |
| PR6 | 0.0223 | 72.9 | 27Jun2018, 12:12 |
| PR7 | 0.0018 | 7.1 | 27Jun2018, 12:07 |
| PR8 | 0.0054 | 18.6 | 27Jun2018, 12:11 |
| PR9 | 0.0073 | 27.0 | 27Jun2018, 12:09 |
| Reach-1 | 0.0293 | 77.1 | 27Jun2018, 12:17 |
| Reservoir-1 | 0.0813 | 136.4 | 27Jun2018, 12:25 |
| Reservoir-2 | 0.0293 | 77.3 | 27Jun2018, 12:15 |
| Reservoir-3 | 0.0748 | 157.6 | 27Jun2018, 12:24 |

### HEC-HMS OUTPUT - POST-PROJECT CONDITIONS
10 Year

| Hydrologic Element | Drainage Area (sq. mi.) | Peak Discharge (cfs) | Time of Peak |
|---|---|---|---|
| Junction-1 | 0.1036 | 180.2 | 27Jun2018, 12:15 |
| Junction-2 | 0.0073 | 22.7 | 27Jun2018, 12:09 |
| Junction-3 | 0.1132 | 273.4 | 27Jun2018, 12:16 |
| Junction-4 | 0.0366 | 117.5 | 27Jun2018, 12:09 |
| Junction-5 | 0.0766 | 134.7 | 27Jun2018, 12:24 |
| PR1 | 0.0704 | 234.4 | 27Jun2018, 12:08 |
| PR2 | 0.0366 | 117.5 | 27Jun2018, 12:09 |
| PR3 | 0.0748 | 221.6 | 27Jun2018, 12:11 |
| PR4 | 0.0293 | 99.4 | 27Jun2018, 12:07 |
| PR4A | 0.0785 | 191.5 | 27Jun2018, 12:17 |
| PR5 | 0.0109 | 28.7 | 27Jun2018, 12:14 |
| PR6 | 0.0223 | 61.4 | 27Jun2018, 12:12 |
| PR7 | 0.0018 | 6.1 | 27Jun2018, 12:07 |
| PR8 | 0.0054 | 15.6 | 27Jun2018, 12:11 |
| PR9 | 0.0073 | 22.7 | 27Jun2018, 12:09 |
| Reach-1 | 0.0293 | 68.7 | 27Jun2018, 12:16 |
| Reservoir-1 | 0.0813 | 124.1 | 27Jun2018, 12:24 |
| Reservoir-2 | 0.0293 | 68.8 | 27Jun2018, 12:14 |
| Reservoir-3 | 0.0748 | 132.2 | 27Jun2018, 12:24 |

### HEC-HMS OUTPUT - POST-PROJECT CONDITIONS
5 Year

| Hydrologic Element | Drainage Area (sq. mi.) | Peak Discharge (cfs) | Time of Peak |
|---|---|---|---|
| Junction-1 | 0.1036 | 158.2 | 27Jun2018, 12:14 |
| Junction-2 | 0.0073 | 18.5 | 27Jun2018, 12:09 |
| Junction-3 | 0.1132 | 227.7 | 27Jun2018, 12:16 |
| Junction-4 | 0.0366 | 96.8 | 27Jun2018, 12:09 |
| Junction-5 | 0.0766 | 113.1 | 27Jun2018, 12:23 |
| PR1 | 0.0704 | 193.0 | 27Jun2018, 12:08 |
| PR2 | 0.0366 | 96.8 | 27Jun2018, 12:09 |
| PR3 | 0.0748 | 182.4 | 27Jun2018, 12:11 |
| PR4 | 0.0293 | 81.8 | 27Jun2018, 12:07 |
| PR4A | 0.0785 | 155.7 | 27Jun2018, 12:17 |
| PR5 | 0.0109 | 23.3 | 27Jun2018, 12:14 |
| PR6 | 0.0223 | 50.0 | 27Jun2018, 12:13 |
| PR7 | 0.0018 | 5.0 | 27Jun2018, 12:07 |
| PR8 | 0.0054 | 12.7 | 27Jun2018, 12:11 |
| PR9 | 0.0073 | 18.5 | 27Jun2018, 12:09 |
| Reach-1 | 0.0293 | 61.4 | 27Jun2018, 12:15 |
| Reservoir-1 | 0.0813 | 111.7 | 27Jun2018, 12:22 |
| Reservoir-2 | 0.0293 | 61.4 | 27Jun2018, 12:13 |
| Reservoir-3 | 0.0748 | 111.0 | 27Jun2018, 12:24 |

NOTE:

1. RUNOFF CALCULATIONS ARE TAKEN FROM DRAINAGE STUDY PREPARED BY CORWIN ENGINEERING, INC. DATED JUNE 2020 FOR EMERSON FARMS

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

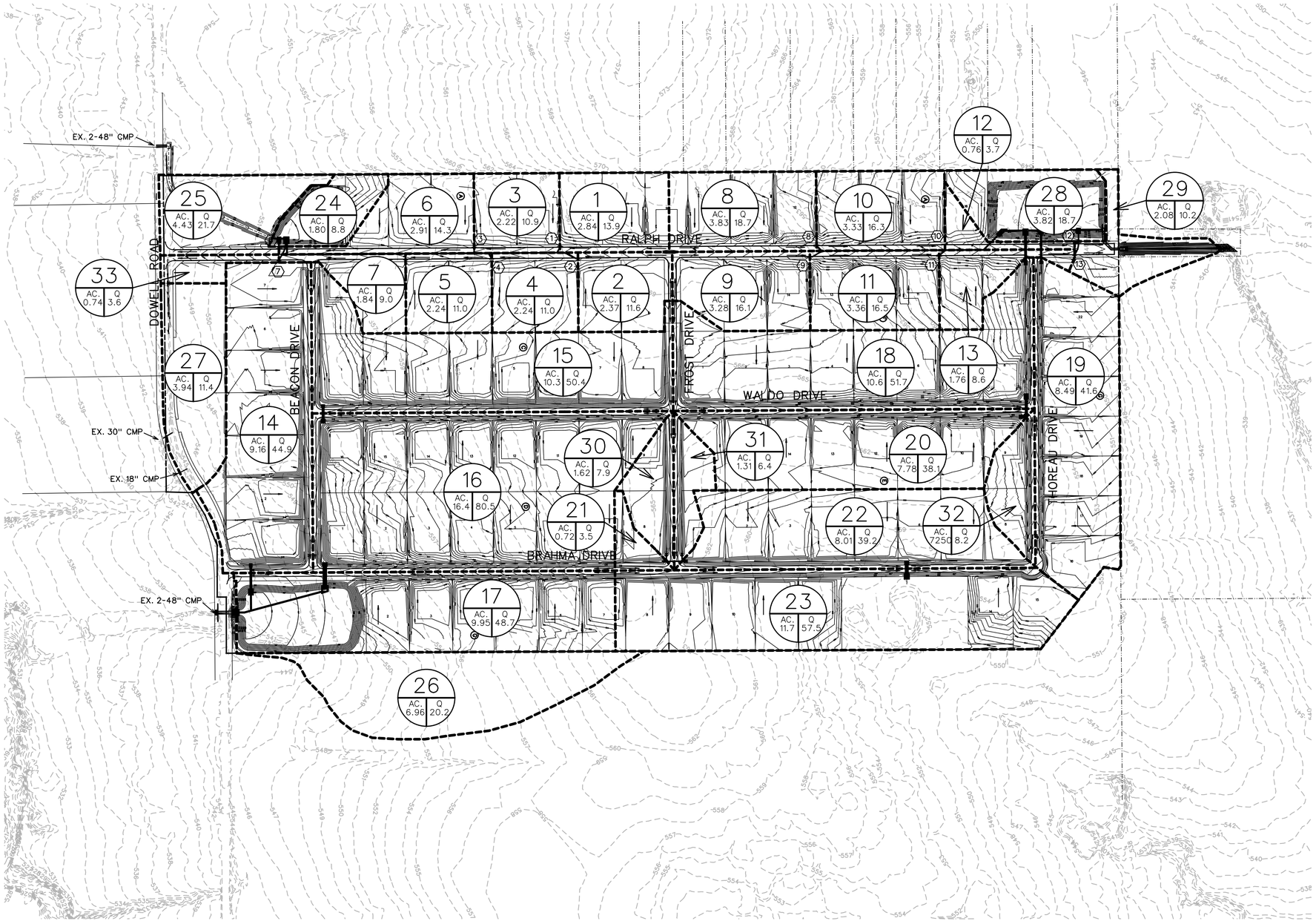
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
09/21/2021


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

FULLY DEVELOPED CONDITIONS DRAINAGE AREA MAP

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=200' | 23 |




N

0 200 400

SCALE: 1" = 200'

NOTE:
POND CALCULATIONS ARE IN DRAINAGE STUDY PREPARED BY CORWIN ENGINEERING, INC. DATED JUNE 2020 FOR EMERSON FARMS

RUNOFF CALCULATIONS ON THIS SHEET ARE USED ONLY FOR STORM SEWER SYSTEM AND CULVERT DESIGNS AND NOT DETENTION POND DESIGNS.

## RUNOFF COMPUTATIONS

| Area # | Area (sf) | Area (acres) | Runoff Coefficient | CA | Tc (min) | I(100) (in/hr) | Q(100) (cfs) | Drains To: |
|---|---|---|---|---|---|---|---|---|
| 1 | 123757 | 2.84 | 0.50 | 1.42 | 10 | 9.80 | 13.9 | NW Pond |
| 2 | 103200 | 2.37 | 0.50 | 1.18 | 10 | 9.80 | 11.6 | NW Pond |
| 3 | 96804 | 2.22 | 0.50 | 1.11 | 10 | 9.80 | 10.9 | NW Pond |
| 4 | 97500 | 2.24 | 0.50 | 1.12 | 10 | 9.80 | 11.0 | NW Pond |
| 5 | 97500 | 2.24 | 0.50 | 1.12 | 10 | 9.80 | 11.0 | NW Pond |
| 6 | 126734 | 2.91 | 0.50 | 1.45 | 10 | 9.80 | 14.3 | NW Pond |
| 7 | 80320 | 1.84 | 0.50 | 0.92 | 10 | 9.80 | 9.0 | NE Pond |
| 8 | 166654 | 3.83 | 0.50 | 1.91 | 10 | 9.80 | 18.7 | NE Pond |
| 9 | 142798 | 3.28 | 0.50 | 1.64 | 10 | 9.80 | 16.1 | NE Pond |
| 10 | 145205 | 3.33 | 0.50 | 1.67 | 10 | 9.80 | 16.3 | NE Pond |
| 11 | 146250 | 3.36 | 0.50 | 1.68 | 10 | 9.80 | 16.5 | NE Pond |
| 12 | 33175 | 0.76 | 0.50 | 0.38 | 10 | 9.80 | 3.7 | NE Pond |
| 13 | 76694 | 1.76 | 0.50 | 0.88 | 10 | 9.80 | 8.6 | SW Pond |
| 14 | 398841 | 9.16 | 0.50 | 4.58 | 10 | 9.80 | 44.9 | SW Pond |
| 15 | 447730 | 10.28 | 0.50 | 5.14 | 10 | 9.80 | 50.4 | SW Pond |
| 16 | 715371 | 16.42 | 0.50 | 8.21 | 10 | 9.80 | 80.5 | SW Pond |
| 17 | 433364 | 9.95 | 0.50 | 4.97 | 10 | 9.80 | 48.7 | SW Pond |
| 18 | 459404 | 10.55 | 0.50 | 5.27 | 10 | 9.80 | 51.7 | NE Pond |
| 19 | 369906 | 8.49 | 0.50 | 4.25 | 10 | 9.80 | 41.6 | NE Pond |
| 20 | 338757 | 7.78 | 0.50 | 3.89 | 10 | 9.80 | 38.1 | NE Pond |
| 21 | 31221 | 0.72 | 0.50 | 0.36 | 10 | 9.80 | 3.5 | NE Pond |
| 22 | 348833 | 8.01 | 0.50 | 4.00 | 10 | 9.80 | 39.2 | Southeast PL |
| 23 | 511053 | 11.73 | 0.50 | 5.87 | 10 | 9.80 | 57.5 | Southeast PL |
| 24 | 78501 | 1.80 | 0.50 | 0.90 | 10 | 9.80 | 8.8 | NW Pond |
| 25 | 192927 | 4.43 | 0.50 | 2.21 | 10 | 9.80 | 21.7 | Nw Pond Bypass |
| 26 | 303256 | 6.96 | 0.35 | 2.44 | 20 | 8.30 | 20.2 | SW Pond |
| 27 | 171488 | 3.94 | 0.35 | 1.38 | 20 | 8.30 | 11.4 | Dowell Road Culvert |
| 28 | 166528 | 3.82 | 0.50 | 1.91 | 10 | 9.80 | 18.7 | NE Pond |
| 29 | 90424 | 2.08 | 0.50 | 1.04 | 10 | 9.80 | 10.2 | NE Pond Bypass |
| 30 | 70554 | 1.62 | 0.50 | 0.81 | 10 | 9.80 | 7.9 | Southeast PL |
| 31 | 57047 | 1.31 | 0.50 | 0.65 | 10 | 9.80 | 6.4 | Southeast PL |
| 32 | 72509 | 1.66 | 0.50 | 0.83 | 10 | 9.80 | 8.2 | NE Pond |
| 33 | 32317 | 0.74 | 0.50 | 0.37 | 10 | 9.80 | 3.6 | Dowell Road Culvert |

## LEGEND

- PROP. STORM SEWER
- PROP. CURB INLETS
- PROP. CONC. HEADWALL
- EXIST. STORM SEWER
- DRAINAGE AREA DIVIDE
- FLOW ARROW
- AC. / Q — DRAINAGE AREA NO.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

DRAINAGE AREA MAP

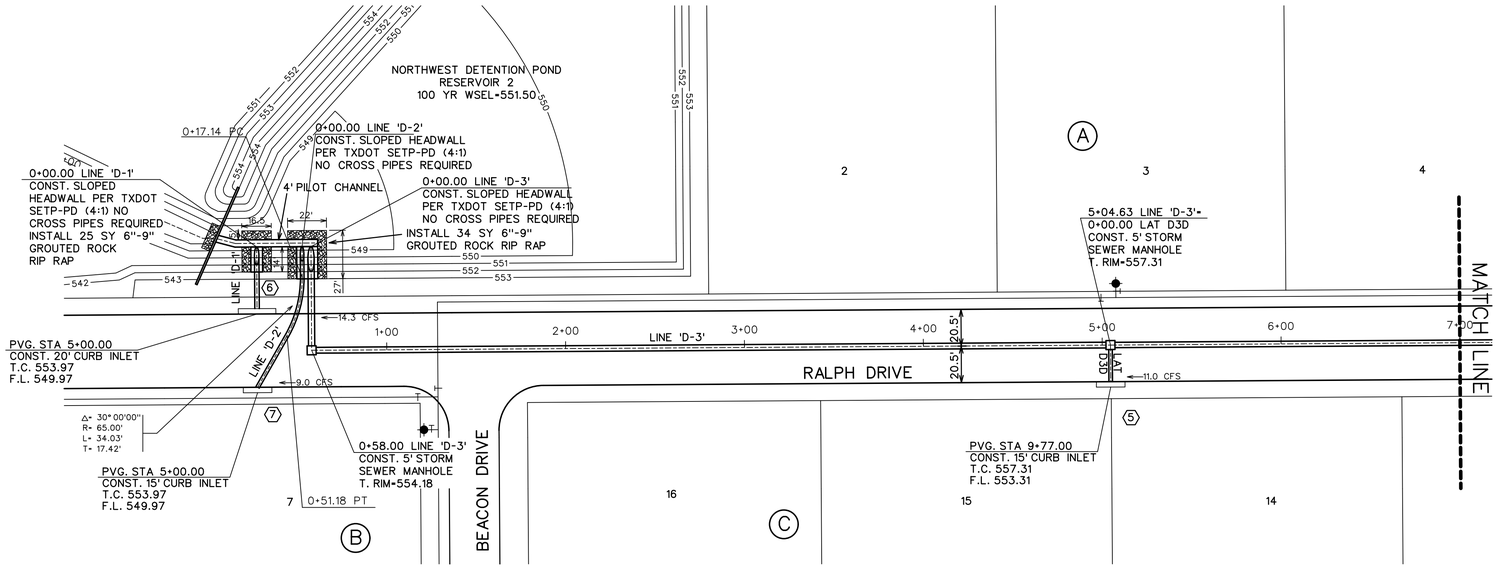
| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=200' | 24 |

| Upstream Station | Downstream Station | Distance (ft) | AREA NO. | Total Area (Acres) | Picked Up (Acres) | C | CA | Accumulated CA | Tc (Min) | Design Storm (Years) | I (in/hr) | Q (CFS) | Hydraulic Slope (ft/ft) | Pipe Size (in) | "n" | Physical Slope (ft/ft) | Flowline (ft) | Partial Flow? | Velocity (fps) | Flow Time (Min) | Velocity Head (ft) | Junction Type | K | Time at D/S (Min) | Minor Losses (ft) | Hydraulic Grade Upstream | Hydraulic Grade Downstream | Proposed Grade | Difference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Line D1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+34.50 | 0+00.00 | 34.50 | 6 | 2.91 | 2.91 | 0.50 | 1.45 | 1.45 | 10.00 | 100 | 9.80 | 14.3 | 0.0012 | 30 | 0.013 | 3.97% | 549.97 | No | 2.9 | 0.20 | 0.13 | Inlet | 1.25 | 10.20 | 0.16 | 551.71 | 551.54 | 553.97 | 2.26 |
| 0+00.00 | | | | | | | | | | | | | | | | | 548.60 | | | | | | | | | 551.50 | | | |
| Line D2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+84.50 | 0+00.00 | 84.50 | 7 | 1.84 | 1.84 | 0.50 | 0.92 | 0.92 | 10.00 | 100 | 9.80 | 9.0 | 0.0014 | 24 | 0.013 | 1.62% | 549.97 | No | 2.9 | 0.49 | 0.13 | Inlet | 1.25 | 10.49 | 0.13 | 551.76 | 551.63 | 553.97 | 2.21 |
| 0+00.00 | | | | | | | | | | | | | | | | | 548.60 | | | | | | | | | 551.50 | | | |
| Line D3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11+51.71 | 10+75.79 | 75.94 | 2 | 2.37 | 2.20 | 0.50 | 1.10 | 1.10 | 10.00 | 100 | 9.80 | 10.8 | 0.0023 | 24 | 0.013 | 3.66% | 558.75 | No | 3.4 | 0.37 | 0.18 | Inlet | 1.25 | 10.37 | 0.23 | 559.90 | 558.68 | 562.75 | 3.85 |
| 10+75.79 | 8+17.33 | 258.46 | D1A | 2.84 | 2.84 | 0.50 | 1.42 | 2.52 | 10.37 | 100 | 9.74 | 24.6 | 0.0063 | 27 | 0.013 | 0.70% | 555.81 | No | 6.2 | 0.70 | 0.59 | 60° Wye | 0.35 | 11.06 | 0.53 | 558.50 | 557.97 | 561.81 | 3.04 |
| 8+17.33 | 7+63.63 | 53.70 | D1B | 2.24 | 2.40 | 0.50 | 1.20 | 3.72 | 11.06 | 100 | 9.44 | 35.9 | 0.0046 | 33 | 0.013 | 0.70% | 553.50 | No | 6.0 | 0.15 | 0.57 | 60° Wye | 0.35 | 11.21 | 0.40 | 556.34 | 556.34 | 559.58 | 3.24 |
| 7+63.63 | 5+04.63 | 259.00 | D3C | 2.22 | 2.22 | 0.50 | 1.11 | 4.84 | 11.21 | 100 | 9.62 | 46.5 | 0.0049 | 36 | 0.013 | 0.40% | 552.88 | No | 6.6 | 0.66 | 0.67 | MH | 0.55 | 11.87 | 0.37 | 555.73 | 555.73 | 559.12 | 3.39 |
| 5+04.63 | 0+58.00 | 446.63 | D3D | 2.24 | 2.24 | 0.50 | 1.12 | 5.95 | 11.87 | 100 | 9.52 | 56.7 | 0.0047 | 39 | 0.013 | 0.50% | 551.61 | No | 6.8 | 1.09 | 0.72 | MH | 0.55 | 12.96 | 0.40 | 554.47 | 554.07 | 557.31 | 3.24 |
| 0+58.00 | 0+00.00 | 58.00 | 0 | 0.00 | 0.00 | 0.50 | 0.00 | 5.95 | 12.96 | 100 | 9.34 | 55.7 | 0.0031 | 42 | 0.013 | 0.30% | 548.77 | No | 5.8 | 0.17 | 0.52 | MH | 0.55 | 13.13 | 0.29 | 551.96 | 551.68 | 554.18 | 2.50 |
| 0+00.00 | | | | | | | | | | | | | | | | | 548.60 | | | | | | | | | 551.50 | | | |
| Lat D3A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+23.67 | 0+00.00 | 23.67 | 1 | 2.84 | 2.84 | 0.50 | 1.42 | 1.42 | 10.00 | 100 | 9.80 | 13.9 | 0.0038 | 24 | 0.013 | 7.90% | 557.81 | No | 4.4 | 0.09 | 0.30 | Inlet | 1.25 | 10.09 | 0.38 | 558.93 | 558.55 | 561.81 | 2.88 |
| 0+00.00 | | | | | | | | | | | | | | | | | 555.94 | | 6.2 | 0.00 | 0.59 | 60° Wye | 0.35 | 0.00 | 0.49 | 558.46 | 557.97 | | |
| Lat D3B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+23.67 | 0+00.00 | 23.67 | 4 | 2.24 | 2.40 | 0.50 | 1.20 | 1.20 | 10.00 | 100 | 9.80 | 11.8 | 0.0027 | 24 | 0.013 | 7.18% | 555.58 | No | 3.7 | 0.11 | 0.22 | Inlet | 1.25 | 10.11 | 0.27 | 557.17 | 556.90 | 559.58 | 2.41 |
| 0+00.00 | | | | | | | | | | | | | | | | | 553.88 | | 5.6 | 0.00 | 0.57 | 60° Wye | 0.35 | 0.00 | 0.49 | 556.84 | 556.34 | | |
| Lat D3C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+20.50 | 0+00.00 | 20.50 | 3 | 2.22 | 2.22 | 0.50 | 1.11 | 1.11 | 10.00 | 100 | 9.80 | 10.9 | 0.0023 | 24 | 0.013 | 8.29% | 555.58 | No | 3.5 | 0.10 | 0.19 | Inlet | 1.25 | 10.10 | 0.23 | 556.61 | 556.38 | 559.12 | 2.51 |
| 0+00.00 | | | | | | | | | | | | | | | | | 553.88 | | 6.6 | 0.00 | 0.67 | 60° Wye | 0.35 | 0.00 | 0.61 | 556.33 | 555.73 | | |
| Lat D3D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+23.67 | 0+00.00 | 23.67 | 5 | 2.24 | 2.24 | 0.50 | 1.12 | 1.12 | 10.00 | 100 | 9.80 | 11.0 | 0.0024 | 24 | 0.013 | 5.61% | 553.31 | No | 3.5 | 0.11 | 0.19 | Inlet | 1.25 | 10.11 | 0.24 | 555.02 | 554.78 | 557.31 | 2.29 |
| 0+00.00 | | | | | | | | | | | | | | | | | 552.16 | | 6.0 | 0.00 | 0.73 | 60° Wye | 0.35 | 0.00 | 0.66 | 554.73 | 554.07 | | |
| Line D4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7+49.06 | 7+05.19 | 43.87 | 9 | 3.28 | 3.28 | 0.50 | 1.64 | 1.64 | 10.00 | 100 | 9.80 | 16.1 | 0.0234 | 18 | 0.013 | 5.97% | 555.70 | No | 9.1 | 0.08 | 1.28 | Inlet | 1.25 | 10.08 | 1.60 | 558.11 | 556.51 | 559.70 | 1.59 |
| 7+05.19 | 5+00.00 | 205.19 | D4A | 3.83 | 3.49 | 0.50 | 1.74 | 3.38 | 10.08 | 100 | 9.79 | 33.1 | 0.0114 | 27 | 0.013 | 1.10% | 552.48 | No | 8.3 | 0.41 | 1.08 | 60° Wye | 0.35 | 10.49 | 0.00 | 555.48 | 555.48 | 559.29 | 3.81 |
| 5+00.00 | 2+43.46 | 256.54 | MH | 0.00 | 0.00 | 0.50 | 0.00 | 3.38 | 10.49 | 100 | 9.73 | 32.9 | 0.0113 | 27 | 0.013 | 1.10% | 550.22 | No | 8.3 | 0.52 | 1.06 | MH | 0.55 | 11.01 | 0.59 | 553.13 | 552.55 | 555.86 | 3.31 |
| 2+43.46 | 0+97.68 | 145.78 | D4B;D4C | 6.69 | 6.85 | 0.50 | 3.42 | 6.81 | 11.49 | 100 | 9.73 | 66.2 | 0.0095 | 36 | 0.013 | 1.90% | 544.86 | No | 9.4 | 0.26 | 1.36 | MH | 0.55 | 10.75 | 0.75 | 549.45 | 546.12 | 553.99 | 5.87 |
| 0+97.68 | 0+50.00 | 47.68 | Bend | 0.00 | 0.00 | 0.50 | 0.00 | 6.81 | 10.75 | 100 | 9.69 | 65.9 | 0.0098 | 36 | 0.013 | 0.50% | 542.09 | No | 9.3 | 0.09 | 1.35 | 45° Bend | 0.37 | 10.84 | 0.50 | 544.68 | 544.18 | 547.70 | 3.52 |
| 0+50.00 | 0+00.00 | 50.00 | Bend | 0.00 | 0.00 | 0.50 | 0.00 | 6.81 | 10.84 | 100 | 9.67 | 65.9 | 0.0043 | 42 | 0.013 | 0.50% | 541.85 | No | 6.8 | 0.12 | 0.73 | Size Change | 1.00 | 10.96 | 0.00 | 543.71 | 543.71 | 547.70 | 3.99 |
| 0+00.00 | | | | | | | | | | | | | | | | | 541.60 | | | | | | | | | 543.50 | | | |
| Lat D4A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+31.89 | 0+00.00 | 31.89 | 8 | 3.83 | 3.49 | 0.50 | 1.74 | 1.74 | 10.00 | 100 | 9.80 | 17.1 | 0.0116 | 21 | 0.013 | 8.44% | 555.29 | No | 7.1 | 0.07 | 0.78 | Inlet | 1.25 | 10.07 | 0.98 | 557.64 | 556.65 | 559.29 | 1.65 |
| 0+00.00 | | | | | | | | | | | | | | | | | 552.60 | | 8.3 | 0.00 | 1.08 | 60° Wye | 0.35 | 0.00 | 0.80 | 556.28 | 555.48 | | |
| Lat D4B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+28.43 | 0+00.00 | 28.43 | 11 | 3.36 | 3.36 | 0.50 | 1.68 | 1.68 | 10.00 | 100 | 9.80 | 16.5 | 0.0108 | 21 | 0.013 | 7.75% | 548.33 | No | 6.8 | 0.07 | 0.73 | Inlet | 1.25 | 10.07 | 0.91 | 548.08 | 547.17 | 552.33 | 4.25 |
| 0+00.00 | | | | | | | | | | | | | | | | | 544.86 | | 9.4 | 0.00 | 1.36 | MH | 0.55 | 0.00 | 0.75 | 546.87 | 546.12 | | |
| Lat D4C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+20.50 | 0+00.00 | 20.50 | 10 | 3.33 | 3.49 | 0.50 | 1.74 | 1.74 | 10.00 | 100 | 9.80 | 17.1 | 0.0116 | 21 | 0.013 | 9.71% | 547.99 | No | 7.1 | 0.05 | 0.78 | Inlet | 1.25 | 10.05 | 0.98 | 548.09 | 547.11 | 551.99 | 3.90 |
| 0+00.00 | | | | | | | | | | | | | | | | | 546.00 | | 9.4 | 0.00 | 1.36 | MH | 0.55 | 0.00 | 0.75 | 546.87 | 546.12 | | |
| Line D5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1+27.20 | 0+00.00 | 127.20 | 18,20 | 18.32 | 18.32 | 0.50 | 9.16 | 9.16 | 10.00 | 100 | 9.80 | 89.8 | 0.0045 | 2-36 | 0.013 | 0.50% | 544.70 | No | 6.4 | 0.33 | 0.63 | Headwal; | 1.25 | 10.33 | 0.78 | 544.86 | 544.08 | 548.10 | 4.02 |
| 0+00.00 | | | | | | | | | | | | | | | | | 540.70 | | | | | | | | | 543.50 | | | |
| Line D6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1+23.26 | 0+00.00 | 123.26 | 19 | 8.49 | 8.49 | 0.50 | 4.25 | 4.25 | 10.00 | 100 | 9.80 | 41.6 | 0.0085 | 2-24 | 0.013 | 0.50% | 544.70 | No | 6.6 | 0.31 | 0.68 | Headwal; | 1.25 | 10.31 | 0.85 | 545.39 | 544.54 | 548.10 | 3.56 |
| 0+00.00 | | | | | | | | | | | | | | | | | 540.20 | | | | | | | | | 543.50 | | | |
| Line D7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+74.88 | 0+43.67 | 51.21 | 13 | 1.76 | 1.76 | 0.50 | 0.88 | 0.88 | 10.00 | 100 | 9.80 | 8.6 | 0.0015 | 24 | 0.013 | 3.63% | 542.14 | No | 2.7 | 0.31 | 0.12 | Inlet | 1.25 | 10.31 | 0.15 | 544.10 | 543.95 | 546.14 | 2.04 |
| 0+43.67 | 0+00.00 | 43.67 | D5A | 0.76 | 0.94 | 0.50 | 0.47 | 1.35 | 10.31 | 100 | 9.75 | 13.2 | 0.0034 | 24 | 0.013 | 3.63% | 540.28 | No | 4.2 | 0.17 | 0.27 | 60° Wye | 0.35 | 10.48 | 0.23 | 543.88 | 543.65 | 546.14 | 2.49 |
| 0+00.00 | | | | | | | | | | | | | | | | | 538.70 | | | | | | | | | 543.50 | | | |
| Lat D7A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+10.97 | 0+00.00 | 10.97 | 12 | 0.76 | 0.94 | 0.50 | 0.47 | 0.47 | 10.00 | 100 | 9.80 | 4.6 | 0.0019 | 18 | 0.013 | 14.68% | 542.14 | No | 2.6 | 0.07 | 0.11 | Inlet | 1.25 | 10.07 | 0.13 | 544.04 | 543.91 | 546.14 | 2.10 |
| 0+00.00 | | | | | | | | | | | | | | | | | 540.53 | | 4.2 | 0.00 | 0.27 | 60° Wye | 0.35 | 0.00 | 0.24 | 543.88 | 543.65 | | |
| Line D8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+98.85 | 0+79.95 | 18.90 | 20 | 7.78 | 7.78 | 0.50 | 3.89 | 3.89 | 10.00 | 100 | 9.80 | 38.1 | 0.0032 | 2-24 | 0.013 | 0.50% | 550.15 | No | 4.0 | 0.08 | 0.25 | Headwal; | 0.75 | 10.08 | 0.19 | 552.60 | 552.41 | 554.00 | 1.40 |
| 0+79.95 | 0+66.46 | 13.49 | Bend | 0.00 | 0.00 | 0.50 | 0.00 | 3.89 | 10.08 | 100 | 9.79 | 38.1 | 0.0031 | 2-24 | 0.013 | 0.50% | 550.06 | No | 4.0 | 0.06 | 0.25 | 45° Bend | 0.37 | 10.13 | 0.09 | 552.35 | 552.26 | 554.00 | 1.74 |
| 0+66.46 | 0+00.00 | 66.46 | D8A | 1.46 | 1.46 | 0.50 | 0.83 | 4.72 | 10.13 | 100 | 9.78 | 46.2 | 0.0046 | 2-24 | 0.013 | 0.50% | 549.99 | No | 4.9 | 0.23 | 0.37 | 45° Wye | 0.50 | 10.36 | 0.25 | 552.21 | 551.97 | 553.80 | 1.83 |
| 0+00.00 | | | | | | | | | | | | | | | | | 549.66 | | | | | | | | | 551.66 | | | |
| Lat D8A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+26.92 | 0+00.00 | 26.92 | 32 | 1.46 | 1.46 | 0.50 | 0.83 | 0.83 | 10.00 | 100 | 9.80 | 8.2 | 0.0013 | 24 | 0.013 | 2.64% | 550.70 | No | 2.6 | 0.17 | 0.10 | Inlet | 1.25 | 10.17 | 0.13 | 552.45 | 552.32 | 553.50 | 1.05 |
| 0+00.00 | | | | | | | | | | | | | | | | | 549.99 | | 4.9 | 0.00 | 0.37 | 45° Wye | 0.50 | 0.00 | 0.32 | 552.29 | 551.97 | | |
| Line D9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+90.00 | 0+69.50 | 20.50 | 21 | 0.72 | 0.72 | 0.50 | 0.36 | 0.36 | 10.00 | 100 | 11.30 | 4.0 | 0.0003 | 24 | 0.013 | 0.70% | 560.00 | No | 1.3 | 0.27 | 0.03 | Headwal; | 1.00 | 0.27 | 0.03 | 562.51 | 562.49 | 564.00 | 1.51 |
| 0+69.50 | 0+10.50 | 59.00 | D9A | 1.62 | 1.62 | 0.50 | 0.81 | 1.17 | 0.27 | 100 | 11.26 | 13.2 | 0.0034 | 24 | 0.013 | 0.70% | 559.86 | No | 4.2 | 0.23 | 0.27 | 60° Wye | 0.35 | 0.50 | 0.26 | 562.48 | 562.22 | 563.80 | 1.58 |
| 0+10.50 | 0+00.00 | 10.50 | D9B | 1.31 | 1.31 | 0.50 | 0.65 | 1.82 | 0.50 | 100 | 11.23 | 20.5 | 0.0082 | 24 | 0.013 | 0.70% | 559.44 | No | 6.5 | 0.03 | 0.66 | 60° Wye | 0.35 | 0.53 | 0.56 | 562.02 | 561.46 | 563.80 | 2.34 |
| 0+00.00 | | | | | | | | | | | | | | | | | 559.37 | | | | | | | | | 561.37 | | | |
| Lat D9A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+31.34 | 0+10.00 | 21.34 | 30 | 1.62 | 1.62 | 0.50 | 0.81 | 0.81 | 0.00 | 100 | 11.30 | 9.2 | 0.0016 | 24 | 0.013 | 2.04% | 560.50 | No | 2.9 | 0.12 | 0.13 | Headwal; | 1.00 | 0.12 | 0.13 | 562.58 | 562.44 | 564.00 | 1.56 |
| 0+10.00 | 0+00.00 | 10.00 | Bend | 0.00 | 0.00 | 0.50 | 0.00 | 0.81 | 0.12 | 100 | 11.28 | 9.1 | 0.0016 | 24 | 0.013 | 2.04% | 560.06 | No | 2.9 | 0.06 | 0.13 | 30° Bend | 0.25 | 0.18 | 0.03 | 562.41 | 562.38 | 563.80 | 1.42 |
| 0+00.00 | | | | | | | | | | | | | | | | | 559.86 | | 4.2 | 0.00 | 0.27 | 60° Wye | 1.00 | 0.00 | 0.14 | 562.36 | 562.22 | 563.80 | 1.58 |
| Lat D9B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+31.34 | 0+10.00 | 21.34 | 31 | 1.31 | 1.31 | 0.50 | 0.65 | 0.65 | 0.00 | 100 | 11.30 | 7.4 | 0.0011 | 24 | 0.013 | 3.38% | 560.50 | No | 2.4 | 0.15 | 0.09 | Headwal; | 1.00 | 0.15 | 0.09 | 562.93 | 562.85 | 564.00 | 1.15 |
| 0+10.00 | 0+00.00 | 10.00 | Bend | 0.00 | 0.00 | 0.50 | 0.00 | 0.65 | 0.15 | 100 | 11.28 | 7.4 | 0.0011 | 24 | 0.013 | 3.38% | 559.78 | No | 2.4 | 0.07 | 0.09 | 30° Bend | 0.25 | 0.22 | 0.02 | 562.82 | 562.80 | 563.80 | 1.00 |
| 0+00.00 | | | | | | | | | | | | | | | | | 559.44 | | 4.5 | 0.00 | 0.66 | 60° Wye | 1.00 | 0.00 | 0.57 | 562.79 | 562.22 | 563.80 | 1.58 |
| Line D10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+87.50 | 0+28.38 | 59.12 | D9.22 | 11.65 | 11.65 | 0.50 | 5.83 | 5.83 | 10.00 | 100 | 9.80 | 57.1 | 0.0040 | 4-24 | 0.013 | 0.50% | 554.14 | No | 4.5 | 0.22 | 0.32 | Headwal; | 0.75 | 10.22 | 0.24 | 555.32 | 556.08 | 557.54 | 1.22 |
| 0+28.38 | | | | | | | | | | | | | | | | | 553.70 | | | | | | | | | 555.84 | | | |
| Line D11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1+00.18 | 0+00.00 | 100.18 | 15,16 | 26.70 | 26.70 | 0.50 | 13.35 | 13.35 | 10.00 | 100 | 9.80 | 130.8 | 0.0064 | 4-30 | 0.013 | 0.50% | 540.63 | No | 6.7 | 0.25 | 0.69 | Headwal; | 0.75 | 10.25 | 0.52 | 541.75 | 541.24 | 545.20 | 3.45 |
| 0+00.00 | | | | | | | | | | | | | | | | | 540.20 | | | | | | | | | 543.60 | | | |
| Line D12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1+09.00 | 0+00.00 | 109.00 | 14 | 9.16 | 9.16 | 0.50 | 4.58 | 4.58 | 10.00 | 100 | 9.80 | 44.9 | 0.0030 | 2-30 | 0.013 | 0.50% | 538.43 | No | 4.6 | 0.40 | 0.32 | Headwal; | 0.75 | 10.40 | 0.24 | 541.27 | 541.03 | 543.06 | 1.79 |
| 0+00.00 | | | | | | | | | | | | | | | | | 538.00 | | | | | | | | | 543.70 | | | |
| Line D13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+53.44 | 0+00.00 | 53.44 | Jct 1 | 66.30 | 66.30 | | | From Flood Study | | | | 262.0 | 0.0002 | 10x4 | 0.013 | 0.20% | 534.20 | Yes | 6.8 | 0.13 | 0.72 | Headwal; | 0.75 | 0.13 | 0.54 | 538.55 | 538.01 | 549.40 | 11.39 |
| 0+00.00 | | | | | | | | | | | | | | | | | 534.00 | | | | | | | | | 538.00 | | | |
| Line D15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5+66.06 | 5+29.40 | 36.64 | Pond | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 | 10.00 | 100 | 9.80 | 101.6 | 0.0007 | 7X4 | 0.013 | 0.50% | 538.00 | No | 3.7 | 0.16 | 0.22 | Headwal; | 0.75 | 10.16 | 0.16 | 541.85 | 541.68 | 544.00 | 2.32 |
| 5+29.40 | 4+86.97 | 42.43 | Bend | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 | 10.16 | 100 | 9.78 | 101.6 | 0.0007 | 7X4 | 0.013 | 0.50% | 537.82 | No | 3.7 | 0.19 | 0.22 | 45° Bend | 0.37 | 10.35 | 0.08 | 541.66 | 541.58 | 545.24 | 3.66 |
| 4+86.97 | 4+55.00 | 31.97 | Bend | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 | 10.35 | 100 | 9.76 | 101.6 | 0.0007 | 7X4 | 0.013 | 0.50% | 537.60 | No | 3.7 | 0.14 | 0.22 | 45° Bend | 0.37 | 10.49 | 0.08 | 541.54 | 541.46 | 544.75 | 3.29 |
| 4+55.00 | | | | | | | | | | | | | | | | | 537.44 | | | | | | | | | 541.44 | | | |
| Line D16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0+65.00 | 0+00.00 | 65.00 | 15 | 10.28 | 10.28 | 0.50 | 5.14 | 5.14 | 10.00 | 100 | 9.80 | 50.4 | 0.0055 | 3-24 | 0.013 | 0.50% | 546.23 | No | 5.3 | 0.20 | 0.44 | Headwal; | 0.75 | 10.20 | 0.33 | 548.34 | 548.01 | 549.40 | 1.39 |
| 0+00.00 | | | | | | | | | | | | | | | | | 545.90 | | | | | | | | | 547.65 | | | |

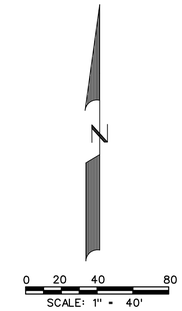
## DRIVEWAY CULVERT CALCULATIONS

OUTLET CONTROL | OUTLET CONTROL | INLET CONTROL

| Block | Lot | Drainage Area (sf) | Flow (cfs) | Ditch Slope (ft/ft) | Ditch Capacity (cfs) | Ditch Side Slope (ft/ft) | Pipe Size (in) | No. of Barrels | Area (per barrel) (sf) | Full Flow Velocity (fps) | Velocity Head (ft) | Hydraulic Slope (ft/ft) | Outlet Flowline (ft) | Ditch Flow Depth (ft) | Starting Tailwater (ft) | Length @ Flowline (ft) | Headwater Elevation (ft) | Headwater Depth (ft) | Headwater Soffit Elev. (ft) | Upstream Headwater Required (ft) | Inlet Flowline (ft) | Headwater Elevation (ft) | Headwater Depth (ft) | Inlet Control? or Outlet Control? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | 1 | 398841 | 44.9 | 1.00% | 98 | 4:1 | 30 | 2 | 4.9087 | 4.6 | 0.32 | 0.0030 | 0.00 | 0.60 | 2.50 | 36 | 2.77 | 2.41 | 2.86 | 0.90 | 0.36 | 2.51 | 2.15 | Outlet Control |
| B | 2 | 313687 | 35.3 | 1.00% | 98 | 4:1 | 30 | 2 | 4.9087 | 3.6 | 0.20 | 0.0019 | 0.00 | 1.77 | 2.50 | 36 | 2.67 | 2.31 | 2.86 | 0.56 | 0.36 | 2.17 | 1.81 | Outlet Control |
| B | 3 | 261576 | 29.4 | 1.00% | 98 | 4:1 | 24 | 2 | 3.1416 | 4.7 | 0.34 | 0.0042 | 0.00 | 1.70 | 2.00 | 40 | 2.34 | 1.94 | 2.40 | 0.95 | 0.40 | 2.35 | 1.95 | Outlet Control |
| B | 4 | 209604 | 23.6 | 1.00% | 98 | 4:1 | 24 | 2 | 3.1416 | 3.8 | 0.22 | 0.0027 | 0.00 | 1.64 | 2.00 | 40 | 2.22 | 1.82 | 2.40 | 0.61 | 0.40 | 2.01 | 1.61 | Outlet Control |
| B | 5 | 157777 | 17.7 | 1.00% | 98 | 4:1 | 24 | 1 | 3.1416 | 5.6 | 0.50 | 0.0062 | 0.00 | 1.07 | 2.00 | 40 | 2.49 | 2.09 | 2.40 | 1.38 | 0.40 | 2.78 | 2.38 | Inlet Control |
| B | 6 | 106102 | 11.9 | 1.00% | 98 | 4:1 | 24 | 1 | 3.1416 | 3.8 | 0.22 | 0.0028 | 0.00 | 1.03 | 2.00 | 40 | 2.22 | 1.82 | 2.40 | 0.62 | 0.40 | 2.02 | 1.62 | Outlet Control |
| B | 7 | 34579 | 6.1 | 1.83% | 258 | 4:1 | 18 | 1 | 1.7671 | 3.5 | 0.19 | 0.0034 | 0.00 | 1.23 | 1.50 | 36 | 1.72 | 1.06 | 2.16 | 0.52 | 0.66 | 1.93 | 1.27 | Outlet Control |
| C | 1 | 442250 | 49.7 | 1.01% | 192 | 4:1 | 30 | 2 | 4.9087 | 5.1 | 0.40 | 0.0037 | 0.00 | 1.17 | 2.50 | 40 | 2.85 | 2.44 | 2.90 | 1.11 | 0.40 | 2.76 | 2.36 | Outlet Control |
| C | 2 | 353850 | 39.8 | 1.98% | 269 | 4:1 | 30 | 2 | 4.9087 | 4.1 | 0.26 | 0.0024 | 0.00 | 0.81 | 2.50 | 40 | 2.72 | 1.93 | 3.29 | 0.71 | 0.79 | 2.75 | 1.96 | Outlet Control |
| C | 3 | 305100 | 34.3 | 1.98% | 269 | 4:1 | 24 | 2 | 3.1416 | 5.5 | 0.46 | 0.0058 | 0.00 | 0.72 | 2.00 | 40 | 2.46 | 1.67 | 2.79 | 1.29 | 0.79 | 3.08 | 2.29 | Inlet Control |
| C | 4 | 256350 | 28.8 | 1.98% | 269 | 4:1 | 24 | 2 | 3.1416 | 4.6 | 0.33 | 0.0041 | 0.00 | 0.76 | 2.00 | 40 | 2.33 | 1.53 | 2.79 | 0.91 | 0.79 | 2.70 | 1.91 | Outlet Control |
| C | 5 | 207600 | 23.4 | 1.00% | 191 | 4:1 | 24 | 2 | 3.1416 | 3.7 | 0.21 | 0.0027 | 0.00 | 0.82 | 2.00 | 40 | 2.21 | 1.81 | 2.40 | 0.60 | 0.40 | 2.00 | 1.60 | Outlet Control |
| C | 6 | 158850 | 17.9 | 1.00% | 191 | 4:1 | 24 | 2 | 3.1416 | 2.8 | 0.13 | 0.0016 | 0.00 | 1.27 | 2.00 | 40 | 2.13 | 1.73 | 2.40 | 0.35 | 0.40 | 1.75 | 1.35 | Outlet Control |
| C | 7 | 110100 | 12.4 | 1.00% | 191 | 4:1 | 24 | 1 | 3.1416 | 3.9 | 0.24 | 0.0030 | 0.00 | 1.33 | 2.00 | 40 | 2.24 | 1.84 | 2.40 | 0.67 | 0.40 | 2.07 | 1.67 | Outlet Control |
| C | 8 | 61350 | 6.9 | 1.00% | 191 | 4:1 | 18 | 1 | 1.7671 | 3.9 | 0.24 | 0.0043 | 0.00 | 1.39 | 1.50 | 36 | 1.77 | 1.41 | 1.86 | 0.66 | 0.36 | 1.77 | 1.41 | Outlet Control |
| D | 1 | 341487 | 38.4 | 2.10% | 160 | 4:1 | 30 | 2 | 4.9087 | 3.9 | 0.24 | 0.0022 | 0.00 | 1.44 | 2.50 | 40 | 2.71 | 1.87 | 3.34 | 0.66 | 0.84 | 2.75 | 1.91 | Outlet Control |
| D | 2 | 283314 | 31.9 | 2.10% | 277 | 4:1 | 24 | 2 | 3.1416 | 5.1 | 0.40 | 0.0050 | 0.00 | 1.46 | 2.00 | 40 | 2.40 | 1.56 | 2.84 | 1.11 | 0.84 | 2.95 | 2.11 | Inlet Control |
| D | 3 | 234564 | 26.4 | 2.10% | 277 | 4:1 | 24 | 2 | 3.1416 | 4.2 | 0.27 | 0.0034 | 0.00 | 1.59 | 2.00 | 40 | 2.27 | 1.43 | 2.84 | 0.76 | 0.84 | 2.60 | 1.76 | Outlet Control |
| D | 4 | 185813 | 20.9 | 2.10% | 277 | 4:1 | 24 | 2 | 3.1416 | 3.3 | 0.17 | 0.0021 | 0.00 | 0.81 | 2.00 | 40 | 2.17 | 1.33 | 2.84 | 0.48 | 0.84 | 2.32 | 1.48 | Outlet Control |
| D | 5 | 137064 | 15.4 | 2.10% | 277 | 4:1 | 24 | 1 | 3.1416 | 4.9 | 0.37 | 0.0046 | 0.00 | 0.81 | 2.00 | 40 | 2.37 | 1.53 | 2.84 | 1.04 | 0.84 | 2.88 | 2.04 | Inlet Control |
| D | 6 | 88313 | 9.9 | 2.10% | 277 | 4:1 | 24 | 1 | 3.1416 | 3.2 | 0.16 | 0.0019 | 0.00 | 0.70 | 2.00 | 40 | 2.15 | 1.31 | 2.84 | 0.43 | 0.84 | 2.27 | 1.43 | Outlet Control |
| D | 7 | 39563 | 4.5 | 2.10% | 277 | 4:1 | 18 | 1 | 1.7671 | 2.5 | 0.10 | 0.0018 | 0.00 | 0.52 | 1.50 | 36 | 1.61 | 0.86 | 2.26 | 0.27 | 0.76 | 1.78 | 1.02 | Outlet Control |
| D | 8 | 101775 | 11.4 | 1.00% | 98 | 4:1 | 24 | 1 | 3.1416 | 3.6 | 0.21 | 0.0026 | 0.00 | 0.52 | 2.00 | 40 | 2.21 | 1.81 | 2.40 | 0.57 | 0.40 | 1.97 | 1.57 | Outlet Control |
| D | 9 | 23865 | 2.7 | 1.00% | 191 | 4:1 | 18 | 1 | 1.7671 | 1.5 | 0.04 | 0.0007 | 0.00 | 0.52 | 1.50 | 36 | 1.54 | 1.18 | 1.86 | 0.10 | 0.36 | 1.21 | 0.85 | Outlet Control |
| D | 10 | 71961 | 8.1 | 1.00% | 191 | 4:1 | 18 | 1 | 1.7671 | 4.6 | 0.33 | 0.0059 | 0.00 | 0.52 | 1.50 | 36 | 1.88 | 1.52 | 1.86 | 0.91 | 0.36 | 2.02 | 1.66 | Inlet Control |
| D | 11 | 120711 | 13.6 | 1.00% | 191 | 4:1 | 24 | 1 | 3.1416 | 4.3 | 0.29 | 0.0036 | 0.00 | 0.52 | 2.00 | 40 | 2.29 | 1.89 | 2.40 | 0.81 | 0.40 | 2.21 | 1.81 | Outlet Control |
| D | 12 | 169461 | 19.1 | 1.00% | 191 | 4:1 | 24 | 2 | 3.1416 | 3.0 | 0.14 | 0.0018 | 0.00 | 0.52 | 2.00 | 40 | 2.14 | 1.74 | 2.40 | 0.40 | 0.40 | 1.80 | 1.40 | Outlet Control |
| D | 13 | 218211 | 24.5 | 1.98% | 269 | 4:1 | 24 | 2 | 3.1416 | 3.9 | 0.24 | 0.0029 | 0.00 | 0.52 | 2.00 | 40 | 2.24 | 1.44 | 2.79 | 0.66 | 0.79 | 2.45 | 1.66 | Outlet Control |
| D | 14 | 266961 | 30.0 | 1.98% | 269 | 4:1 | 24 | 2 | 3.1416 | 4.8 | 0.35 | 0.0044 | 0.00 | 0.52 | 2.00 | 40 | 2.35 | 1.56 | 2.79 | 0.99 | 0.79 | 2.78 | 1.99 | Outlet Control |
| D | 15 | 315711 | 35.5 | 1.98% | 269 | 4:1 | 30 | 2 | 4.9087 | 3.6 | 0.20 | 0.0019 | 0.00 | 0.52 | 2.50 | 40 | 2.68 | 1.88 | 3.29 | 0.56 | 0.79 | 2.61 | 1.81 | Outlet Control |
| D | 16 | 373884 | 42.1 | 1.01% | 192 | 4:1 | 30 | 2 | 4.9087 | 4.3 | 0.28 | 0.0026 | 0.00 | 0.52 | 2.50 | 40 | 2.75 | 2.34 | 2.90 | 0.79 | 0.40 | 2.45 | 2.04 | Outlet Control |
| E | 1 | 37259 | 9.8 | 1.00% | 98 | 4:1 | 24 | 1 | 3.1416 | 3.1 | 0.15 | 0.0019 | 0.00 | 0.52 | 2.00 | 40 | 2.15 | 1.75 | 2.40 | 0.42 | 0.40 | 1.82 | 1.42 | Outlet Control |
| E | 2 | 136009 | 15.3 | 0.50% | 98 | 4:1 | 24 | 2 | 3.1416 | 2.4 | 0.09 | 0.0011 | 0.00 | 0.52 | 2.00 | 40 | 2.09 | 1.89 |

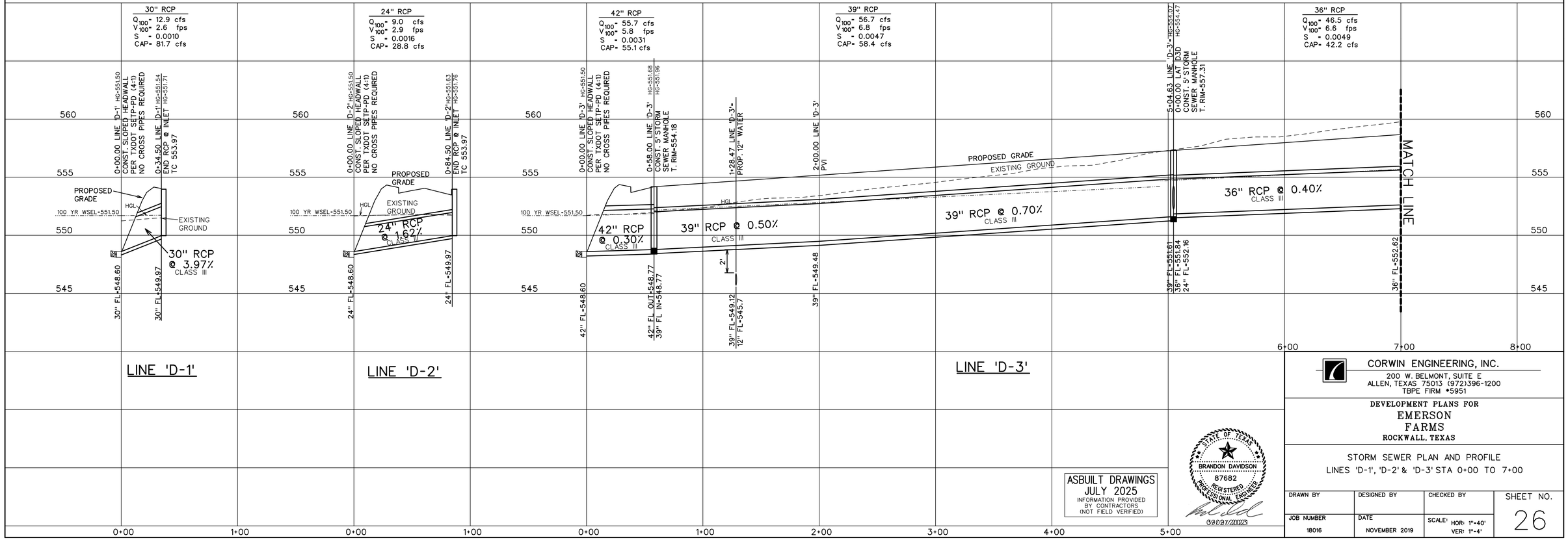



## LINES 'D-1', 'D-2', & 'D-3'




## LEGEND

- (B) - BLOCK LABEL
- (19) - INLET NUMBER
- (1) - CURVE NUMBER
- SANITARY SEWER
- WATER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER




ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED
BY CONTRACTORS
(NOT FIELD VERIFIED)

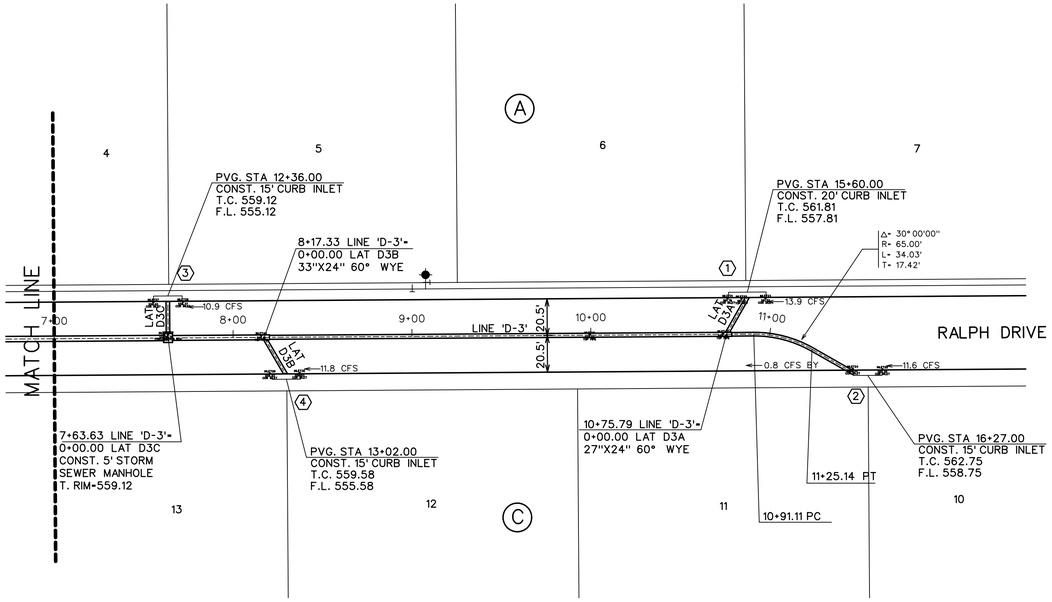
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED
PROFESSIONAL ENGINEER
09/09/2025


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

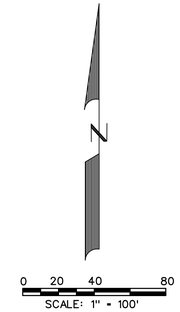

DEVELOPMENT PLANS FOR
EMERSON
FARMS
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINES 'D-1', 'D-2' & 'D-3' STA 0+00 TO 7+00

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 26 |

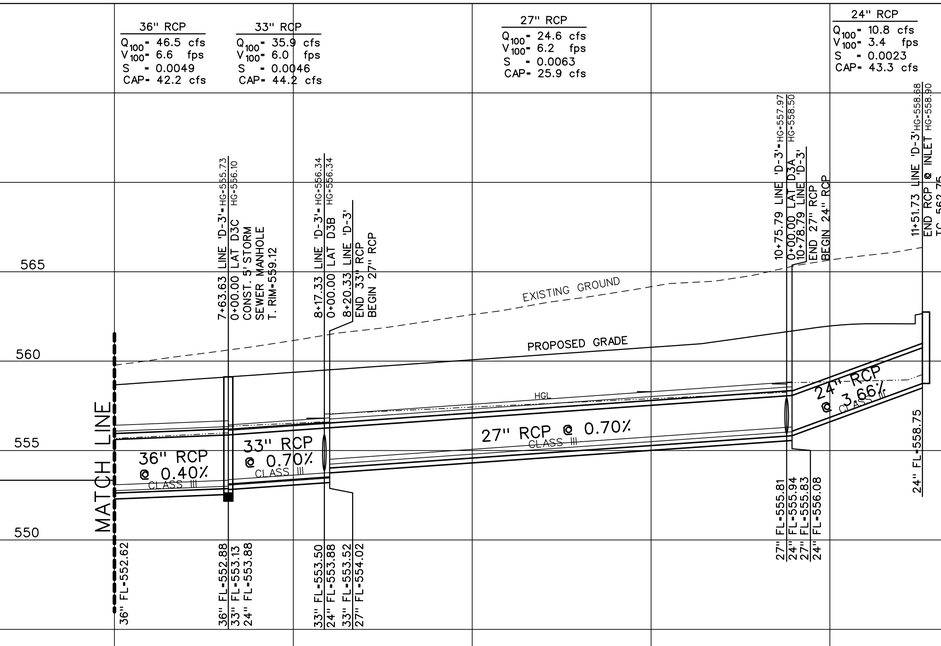



LINE 'D-3'




## LEGEND

- (B) - BLOCK LABEL
- (19) - INLET NUMBER
- (1) - CURVE NUMBER
- —○— - SANITARY SEWER
- - WATER
- - PROPOSED STORM SEWER
- - EXISTING STORM SEWER




LINE 'D-3'

ASBUILT DRAWINGS
JULY 2025
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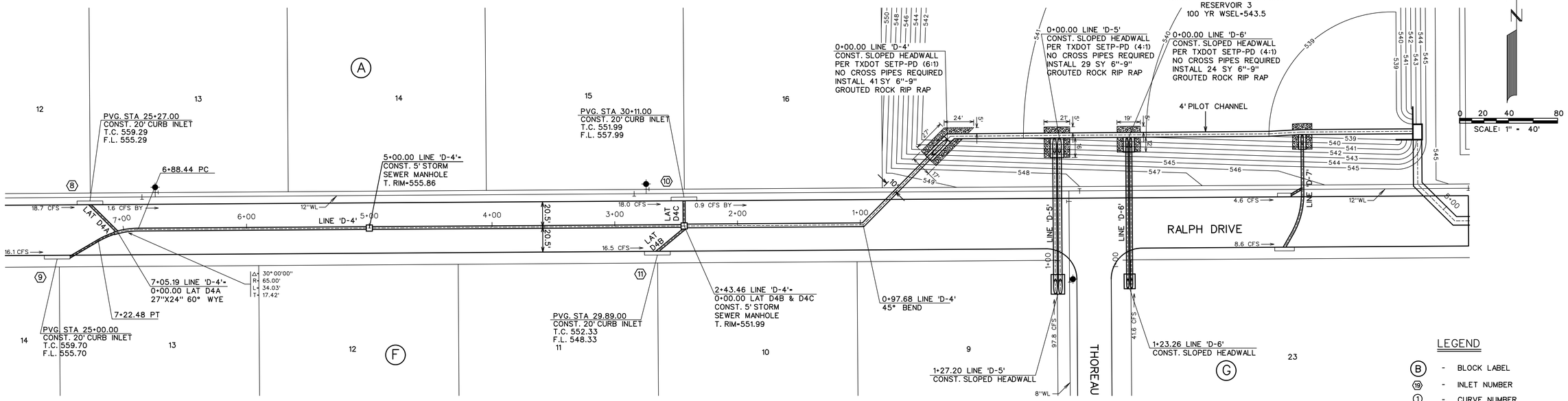
DEVELOPMENT PLANS FOR
EMERSON
FARMS
ROCKWALL, TEXAS

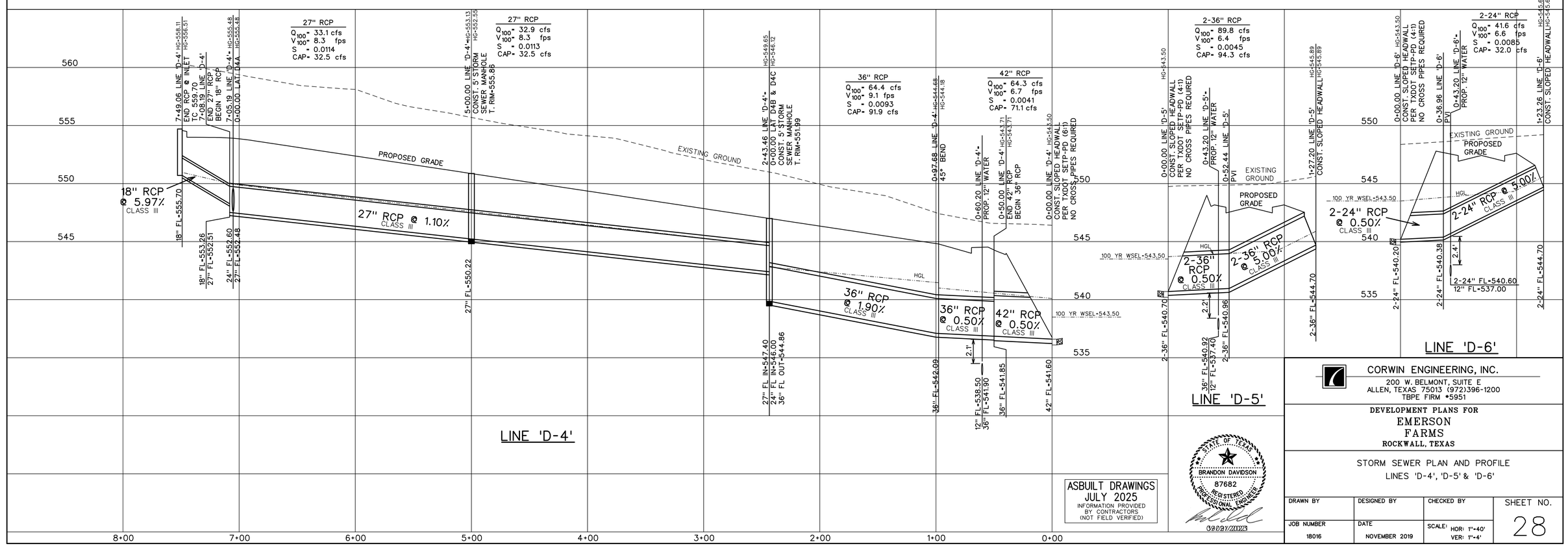
STORM SEWER PLAN AND PROFILE
LINE 'D-3' STA 7+00 TO END

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 27 |




LINES 'D-4', 'D-5', & 'D-6'

18" RCP
$Q_{100}$= 16.1 cfs
$V_{100}$= 9.1 fps
S = 0.0234
CAP= 25.7 cfs




ASBUILT DRAWINGS
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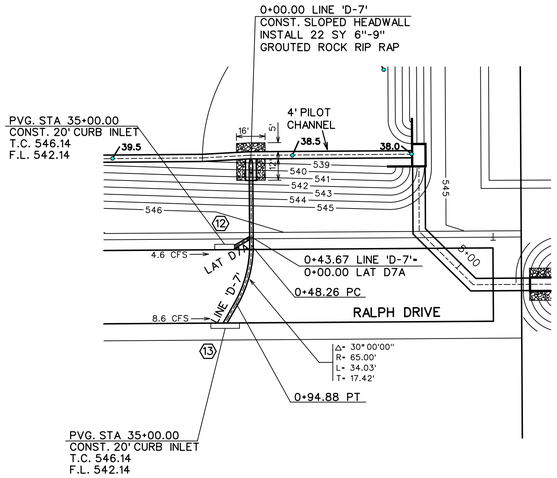
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON
FARMS
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINES 'D-4', 'D-5' & 'D-6'

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 28 |

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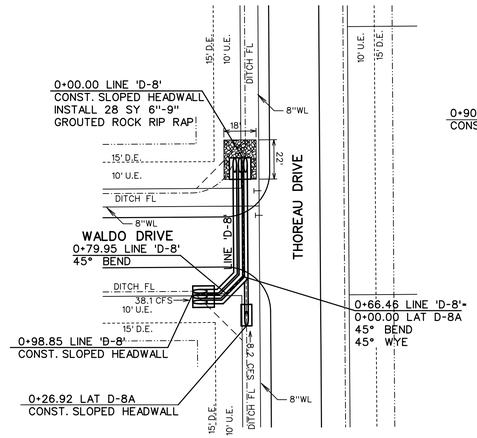
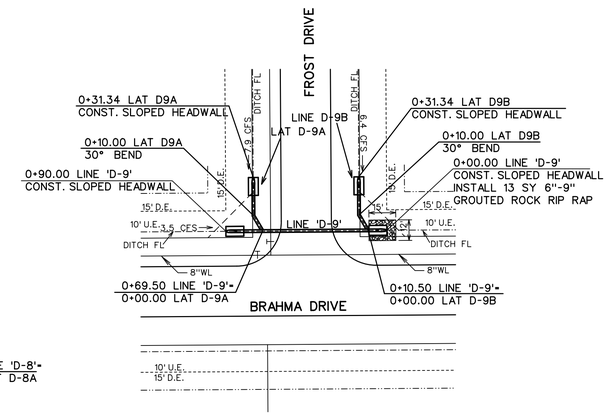
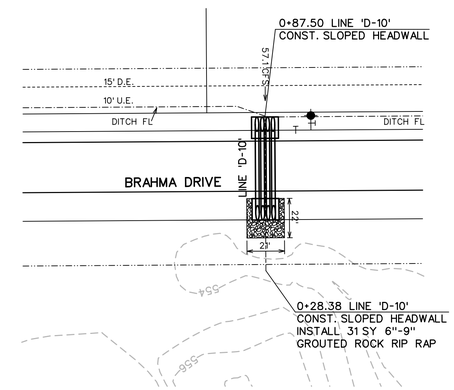


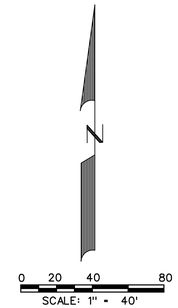

LINE 'D-8'




LINE 'D-9'

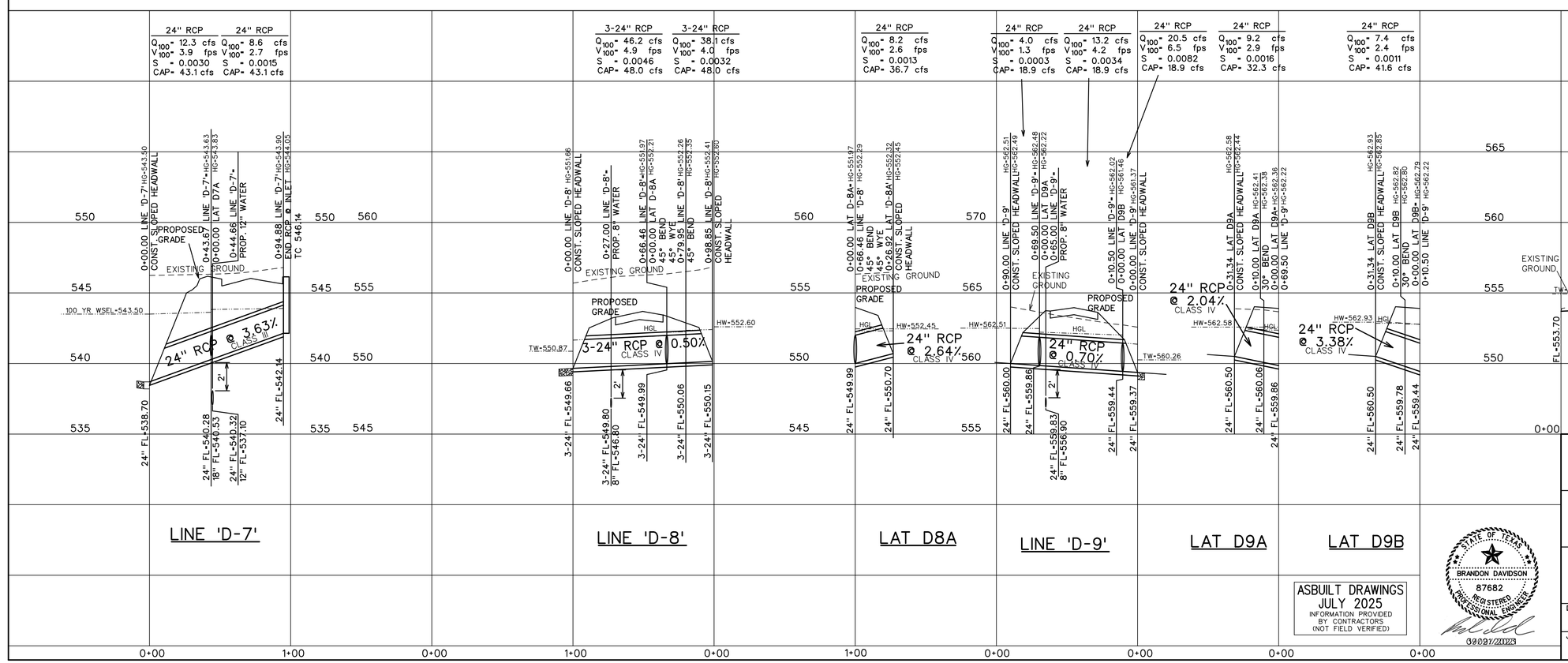



LINE 'D-10'




## LEGEND

- (B) - BLOCK LABEL
- (19) - INLET NUMBER
- (1) - CURVE NUMBER
- SANITARY SEWER
- WATER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER

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09/09/2025


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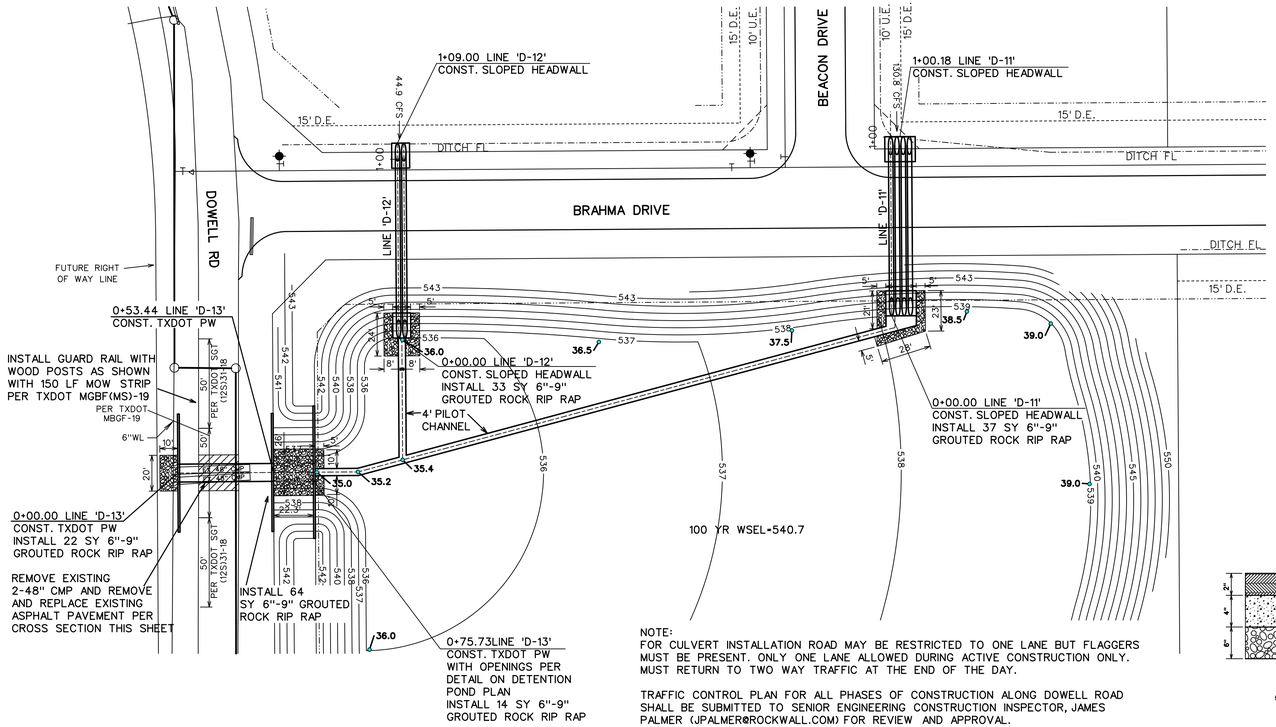
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

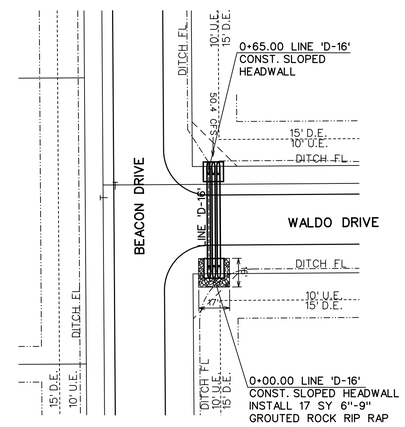
STORM SEWER PLAN AND PROFILE
LINES 'D-7, 'D-8', 'D-9', & 'D-10'

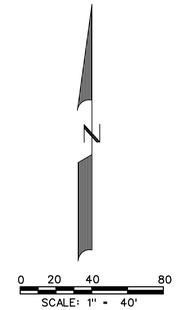
| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 29 |

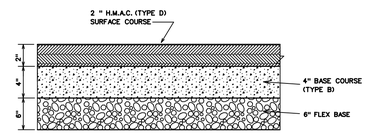



NOTE:
FOR CULVERT INSTALLATION ROAD MAY BE RESTRICTED TO ONE LANE BUT FLAGGERS MUST BE PRESENT. ONLY ONE LANE ALLOWED DURING ACTIVE CONSTRUCTION ONLY. MUST RETURN TO TWO WAY TRAFFIC AT THE END OF THE DAY.

TRAFFIC CONTROL PLAN FOR ALL PHASES OF CONSTRUCTION ALONG DOWELL ROAD SHALL BE SUBMITTED TO SENIOR ENGINEERING CONSTRUCTION INSPECTOR, JAMES PALMER (JPALMER@ROCKWALL.COM) FOR REVIEW AND APPROVAL.



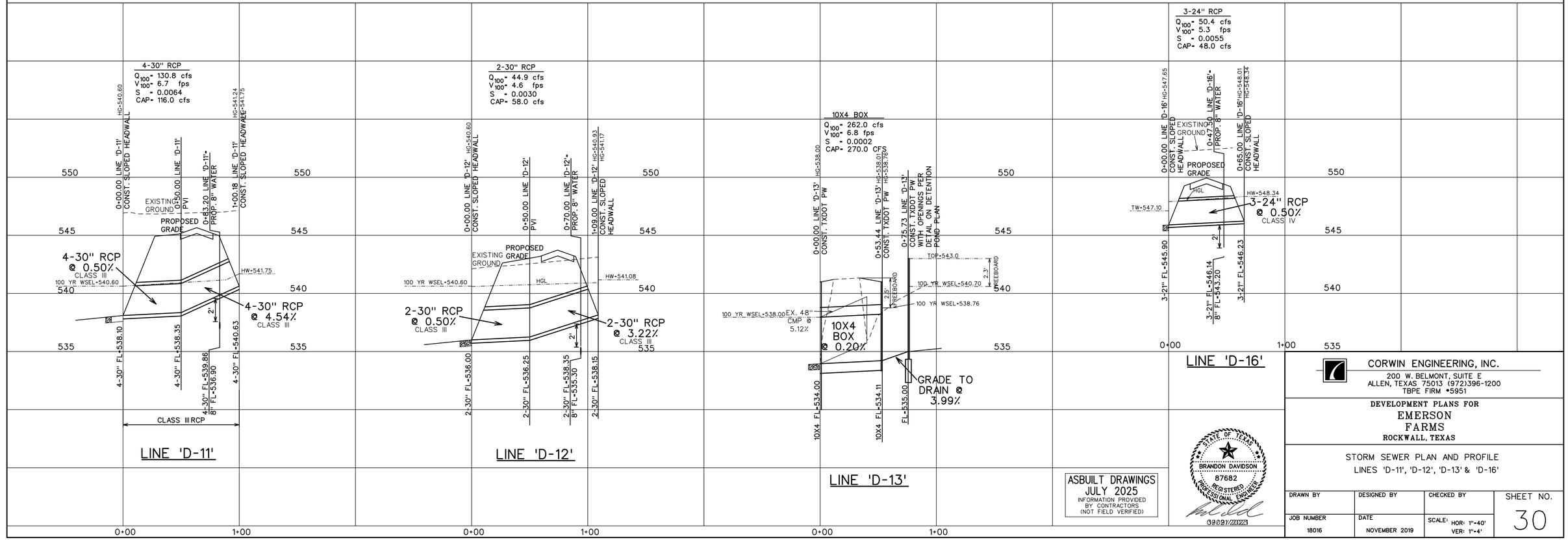




**ASPHALT PAVEMENT - DOWELL ROAD**
N.T.S.

## LEGEND

- (B) - BLOCK LABEL
- (19) - INLET NUMBER
- (1) - CURVE NUMBER
- SANITARY SEWER
- WATER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER




ASBUILT DRAWINGS
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09/09/2025


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200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINES 'D-11', 'D-12', 'D-13' & 'D-16'

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 30 |

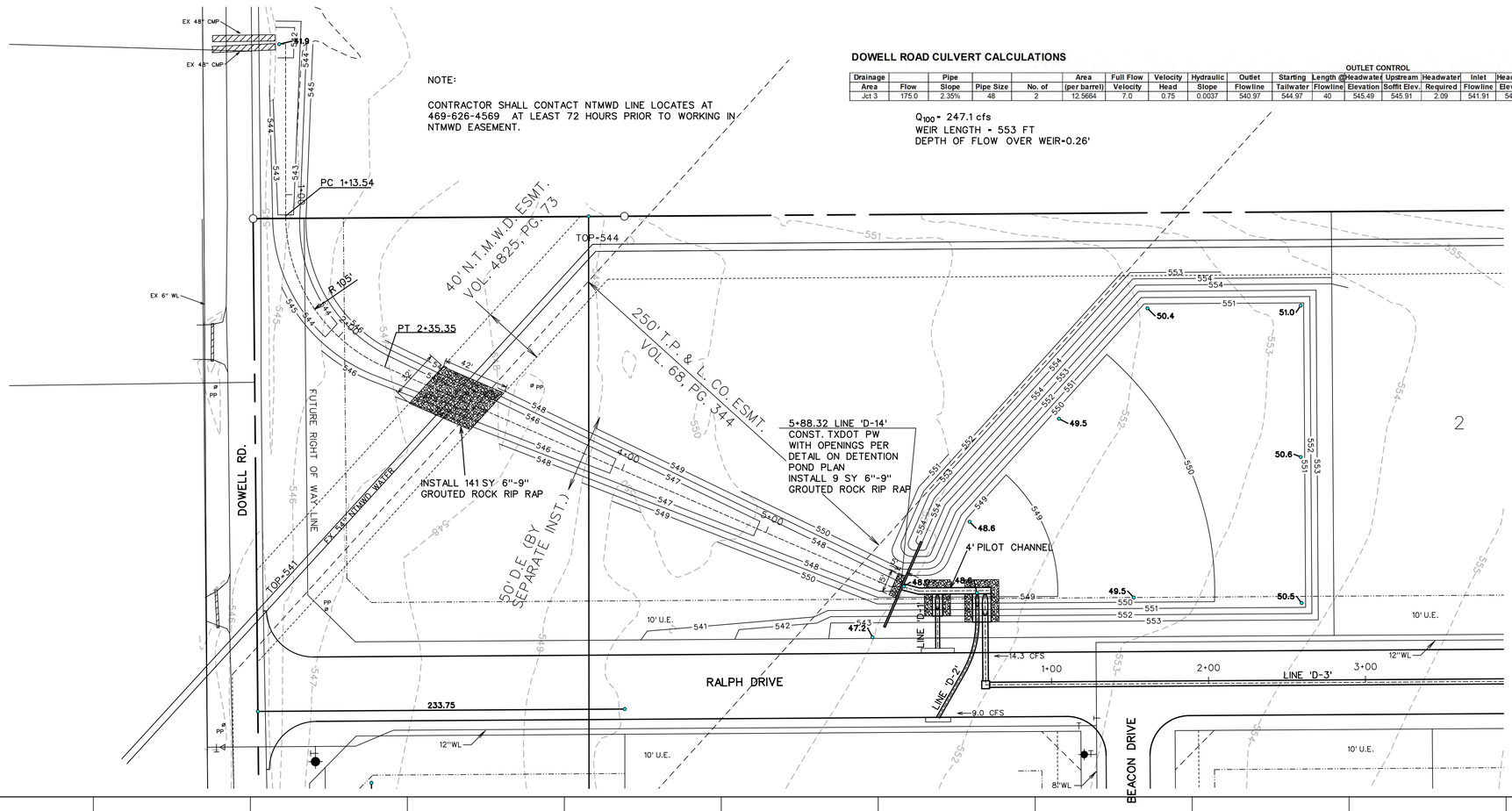
## DOWELL ROAD CULVERT CALCULATIONS

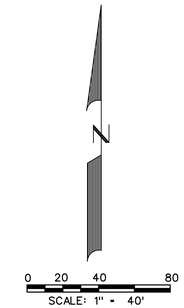
| Drainage Area | Flow | Pipe Slope | Pipe Size | No. of | Area (per barrel) | Full Flow Velocity | Velocity Head | Hydraulic Slope | Outlet Flowline | Starting Tailwater | OUTLET CONTROL Length @ Flowline | Headwater Elevation | Upstream Soffit Elev. | Headwater Required | INLET CONTROL Inlet Flowline | Headwater Elevation | Headwater Depth | Inlet or Outlet | U/S | U/S Elev. vs. Soffit | Road Elevation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jct 3 | 175.0 | 2.35% | 48 | 2 | 12.5664 | 7.0 | 0.75 | 0.0037 | 540.97 | 544.97 | 40 | 545.49 | 545.91 | 2.09 | 541.91 | 546.00 | 545.06 | Inlet Control | 546.00 | 0.09 | 546.00 |

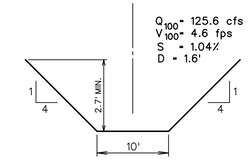
$Q_{100}$ = 247.1 cfs
WEIR LENGTH = 553 FT
DEPTH OF FLOW OVER WEIR=0.26'

NOTE:

CONTRACTOR SHALL CONTACT NTMWD LINE LOCATES AT 469-626-4569 AT LEAST 72 HOURS PRIOR TO WORKING IN NTMWD EASEMENT.



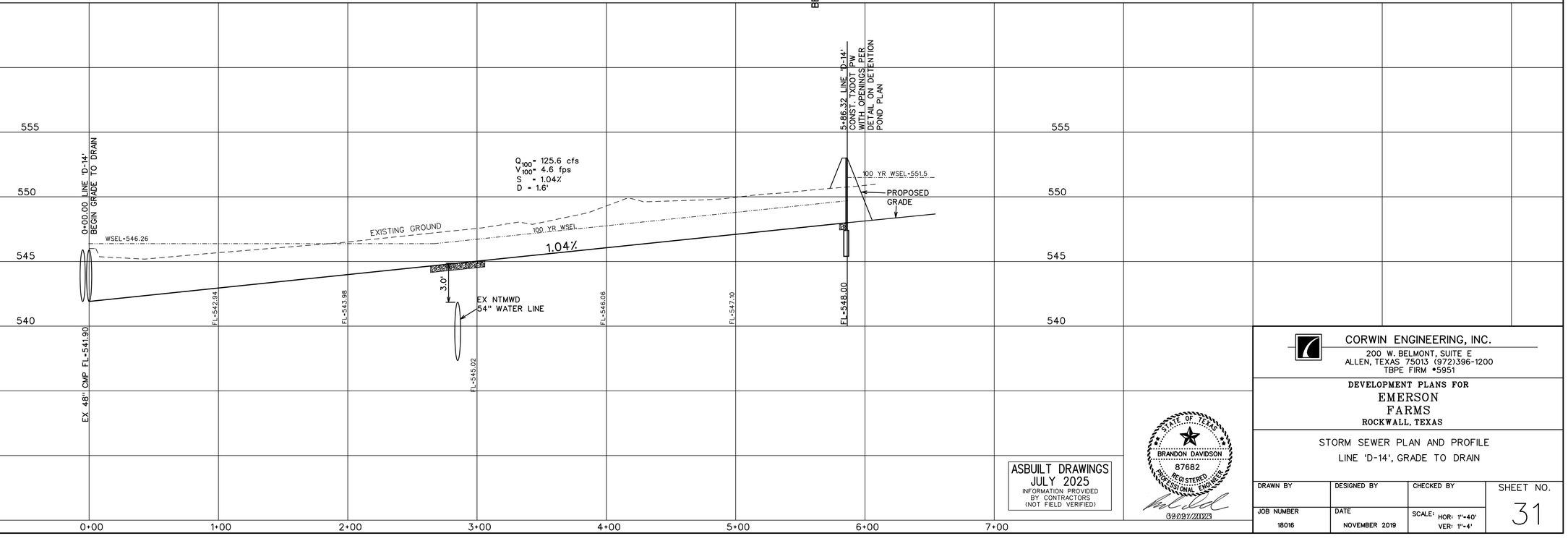




TYPICAL GRADE TO DRAIN SECTION
N.T.S.

## LEGEND

- (B) - BLOCK LABEL
- (19) - INLET NUMBER
- (1) - CURVE NUMBER
- SANITARY SEWER
- WATER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER

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09/09/2025


CORWIN ENGINEERING, INC.
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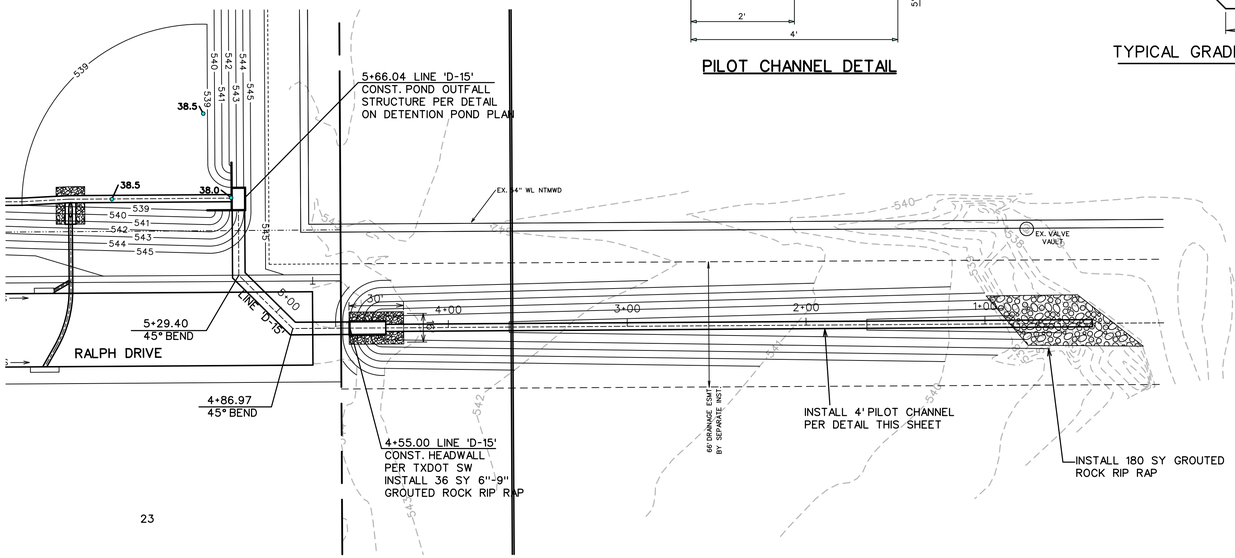
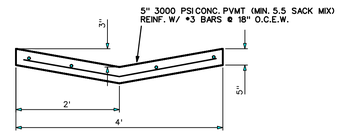
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

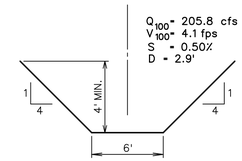
STORM SEWER PLAN AND PROFILE
LINE 'D-14', GRADE TO DRAIN

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 31 |



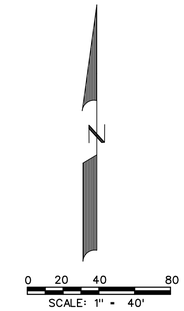




PILOT CHANNEL DETAIL



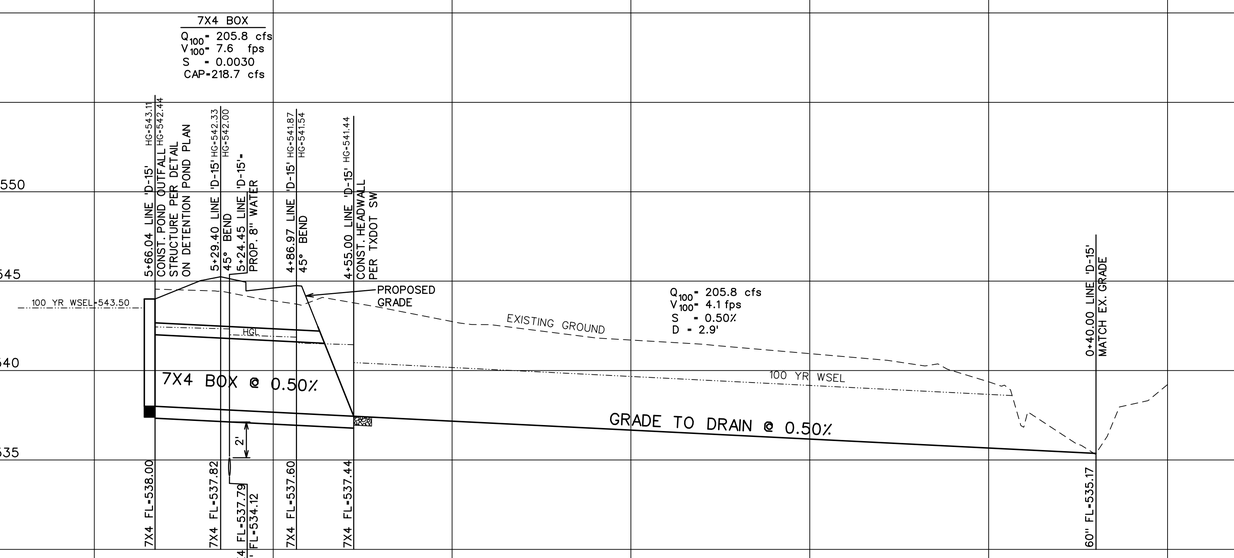

TYPICAL GRADE TO DRAIN SECTION

N.T.S.




## LEGEND

- (B) - BLOCK LABEL
- (19) - INLET NUMBER
- (1) - CURVE NUMBER
- SANITARY SEWER
- WATER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER

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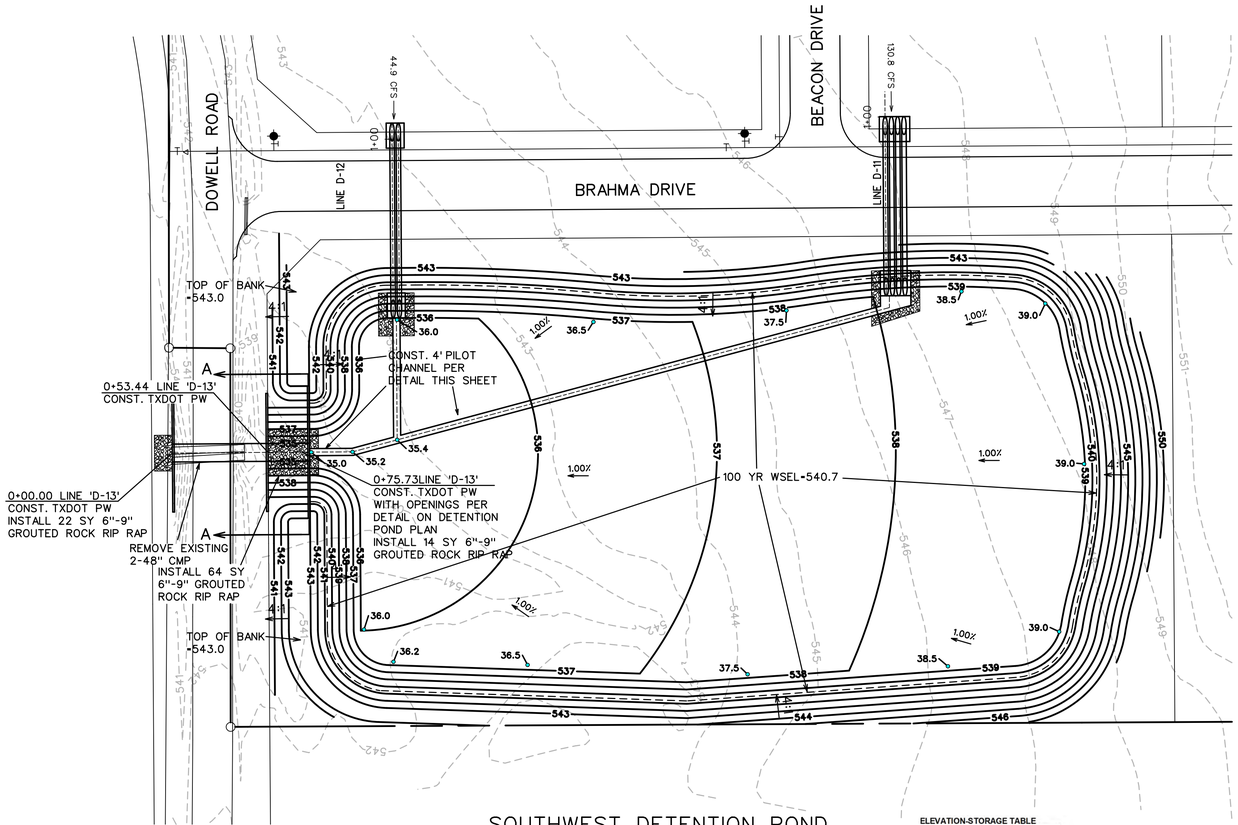
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

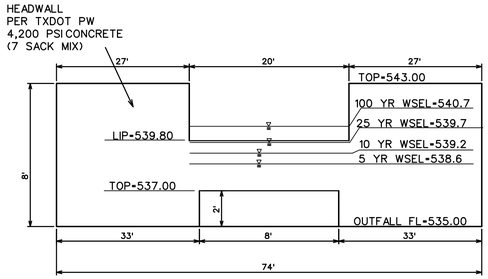

DEVELOPMENT PLANS FOR
EMERSON
FARMS
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINE 'D-15', GRADE TO DRAIN

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 32 |




## SOUTHWEST DETENTION POND (RESERVOIR 1)




## OUTFALL STRUCTURE SECTION 'A-A'

N.T.S.

CONTRACTOR SHALL INSTALL A TRASH RACK OVER THE LOW OUTFALL PER CONTECH STORMRAX OR APPROVED EQUAL.

**Stage-Discharge Table** Orifice 1 -8.5' w x 2' h opening Weir - 20' wide @ 539.8

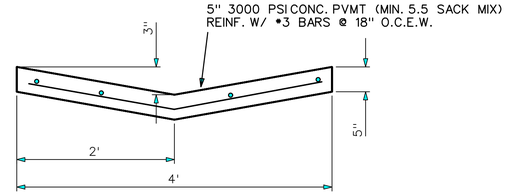
| | | Orifice 1 | | Orifice | Weir | Depth of Flow | Weir | Total | |
|---|---|---|---|---|---|---|---|---|---|
| Stage | Tw | H | Area | Discharge | Length | Over Weir | Discharge | Discharge | |
| 535.00 | 535.00 | 0 | 0 | 0 | | | | | |
| 536.00 | 535.46 | 0.54 | 8.5 | 30.1 | | | 0.0 | 30.1 | |
| 537.00 | 536.14 | 0.87 | 17 | 76.1 | | | 0.0 | 76.1 | |
| 538.00 | 536.50 | 1.50 | 17 | 100.3 | | | 0.0 | 100.3 | |
| **538.60** | 536.70 | 1.90 | 17 | 112.7 | | | 0.0 | 111.7 | 5 yr |
| 539.00 | 536.83 | 2.17 | 17 | 120.6 | | | 0.0 | 120.6 | |
| **539.20** | 536.83 | 2.37 | 17 | 126.0 | | | 0.0 | 124.1 | 10 yr |
| **539.70** | 537.04 | 2.66 | 17 | 133.5 | | | 0.0 | 136.4 | 25 yr |
| 540.00 | 537.19 | 2.81 | 17 | 137.2 | 20.0 | 0.2 | 4.7 | 141.9 | |
| **540.70** | 537.82 | 2.88 | 17 | 138.9 | 20.0 | 0.9 | 44.9 | 185.5 | 100 yr |
| 541.00 | 538.12 | 2.88 | 17 | 139.0 | 20.0 | 1.2 | 69.1 | 208.2 | |
| 542.00 | 539.57 | 2.43 | 17 | 127.6 | 20.0 | 2.4 | 199.2 | 326.8 | |
| 543.00 | 540.17 | 2.83 | 17 | 137.7 | 20.0 | 2.8 | 250.4 | 388.1 | |

EMERGENCY OVERFLOW SPILLWAY ASSUMING LOWER OUTLET IS COMPLETELY CLOGGED

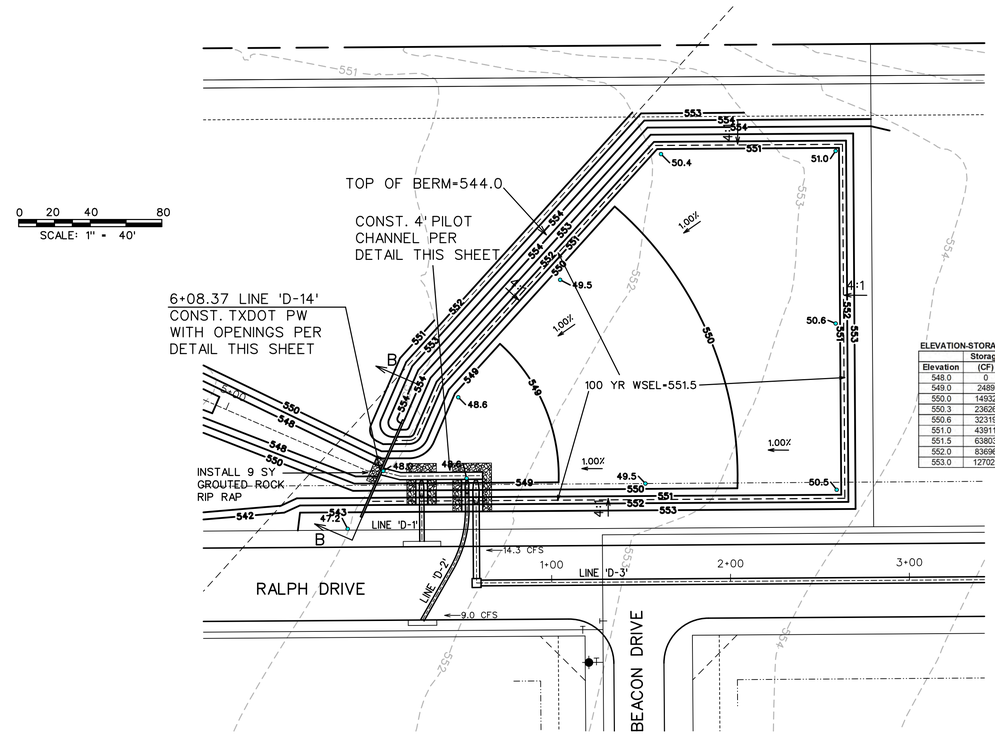
$Q_{100}$ = 188.1 cfs
DEPTH OF FLOW OVER WEIR=2.0'
WSEL=541.8'
FREEBOARD=1.3'

**ELEVATION-STORAGE TABLE**

| | Storage | Storage | |
|---|---|---|---|
| Elevation | (CF) | (AC-FT) | |
| 535.0 | 0 | 0.00 | |
| 536.0 | 7596 | 0.17 | |
| 537.0 | 34687 | 0.80 | |
| 538.0 | 85525 | 1.96 | |
| 538.6 | 130752 | 3.00 | 5 yr |
| 539.0 | 160904 | 3.69 | |
| 539.2 | 179002 | 4.11 | 10 year |
| 539.7 | 224248 | 5.15 | 25 year |
| 540.0 | 251395 | 5.77 | |
| 540.7 | 318163 | 7.30 | 100 year |
| 541.0 | 346778 | 7.96 | |
| 542.0 | 447152 | 10.27 | |
| 543.0 | 552619 | 12.69 | |



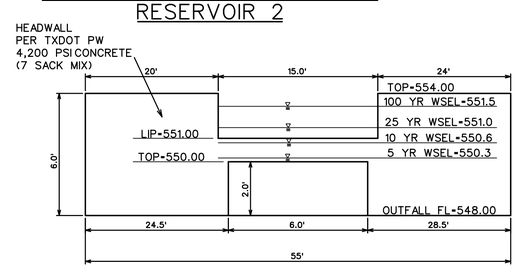

## PILOT CHANNEL DETAIL




**ELEVATION-STORAGE TABLE**

| | Storage | Storage | |
|---|---|---|---|
| Elevation | (CF) | (AC-FT) | |
| 548.0 | 0 | 0.00 | |
| 549.0 | 2489 | 0.06 | |
| 550.0 | 14932 | 0.34 | |
| 550.3 | 23626 | 0.54 | 5 yr |
| 550.6 | 32319 | 0.74 | 10 yr |
| 551.0 | 43911 | 1.01 | 25 yr |
| 551.5 | 63803 | 1.46 | 100 yr |
| 552.0 | 63696 | 1.92 | |
| 553.0 | 127029 | 2.92 | |

## NORTHWEST DETENTION POND RESERVOIR 2




## OUTFALL STRUCTURE SECTION 'B-B'

N.T.S.

CONTRACTOR SHALL INSTALL A TRASH RACK OVER THE LOW OUTFALL PER CONTECH STORMRAX OR APPROVED EQUAL.

**Stage-Discharge Table** Orifice 1 -6' w x 2' h opening Weir - 15' wide @ 551.0

| | | Orifice 1 | | Orifice | Weir | Depth of Flow | Weir | Total | |
|---|---|---|---|---|---|---|---|---|---|
| Stage | Tw | H | Area | Discharge | Length | Over Weir | Discharge | Discharge | |
| 548.00 | 548.00 | 0 | 0 | 0 | | | 0.0 | 0.0 | |
| 549.00 | 548.54 | 0.47 | 6.00 | 19.7 | | | 0.0 | 19.7 | |
| 550.00 | 549.08 | 0.92 | 12.00 | 55.4 | | | 0.0 | 55.4 | |
| **550.30** | 549.15 | 1.15 | 12.00 | 62.0 | | | 0.0 | 62.0 | 5 yr |
| **550.60** | 549.22 | 1.38 | 12.00 | 67.9 | | | 0.0 | 67.9 | 10 yr |
| **551.00** | 549.27 | 1.73 | 12.00 | 76.0 | 15.0 | 0.0 | 0.0 | 76.0 | 25 yr |
| **551.50** | 549.35 | 2.15 | 12.00 | 84.7 | 15.0 | 0.0 | 0.0 | 84.7 | 100 yr |
| 552.00 | 549.67 | 2.33 | 12.00 | 88.2 | 15.0 | 1.0 | 39.5 | 127.6 | |
| 553.00 | 550.15 | 2.85 | 12.00 | 97.5 | 15.0 | 2.0 | 111.6 | 209.1 | |

EMERGENCY OVERFLOW SPILLWAY ASSUMING LOWER OUTLET IS COMPLETELY CLOGGED

$Q_{100}$=101.6 cfs
DEPTH OF FLOW OVER WEIR=1.6'
WSEL=552.6'
FREEBOARD=1.4'

NOTE:
1. POND CALCULATIONS ARE IN DRAINAGE STUDY PREPARED BY CORWIN ENGINEERING, INC. DATED FEBRUARY 2020 FOR EMERSON FARMS

2. ALL DETENTION SHALL BE INSTALLED AND FUNCTIONING PER APPROVED PLANS PRIOR TO INSTALLATION OF CONCRETE. SIDES AND BOTTOMS OF ALL PONDS TO BE SODDED OR HAVE ANCHORED SEEDED CURLEX PRIOR TO INSTALLATION OF CONCRETE.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

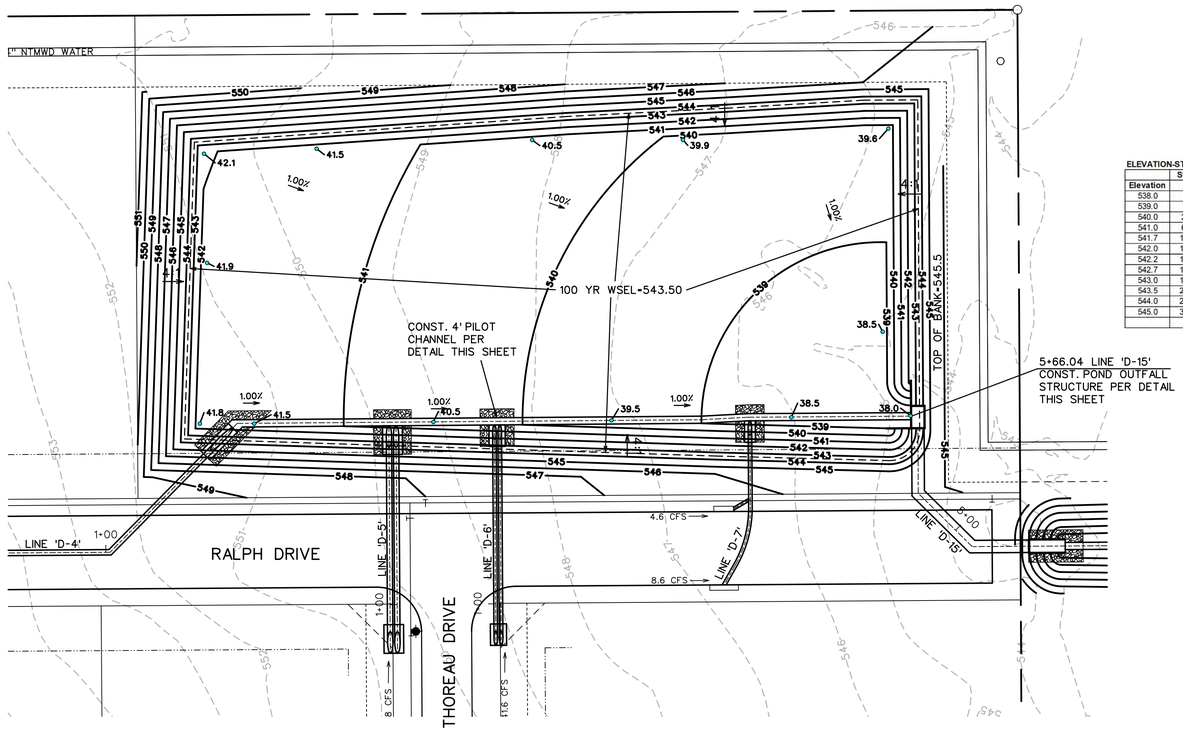
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

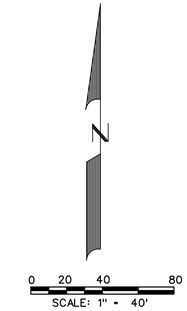

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

SOUTHWEST AND NORTHWEST DETENTION POND PLANS

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 33 |



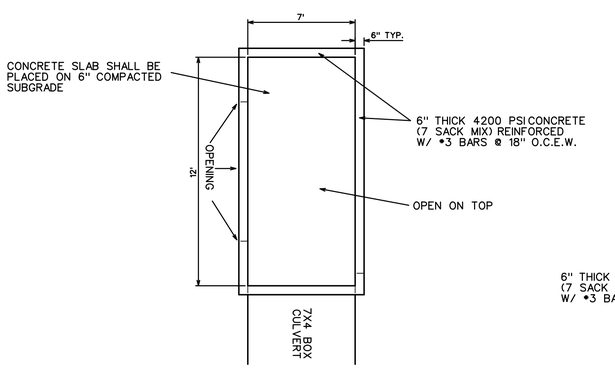




**ELEVATION-STORAGE TABLE**

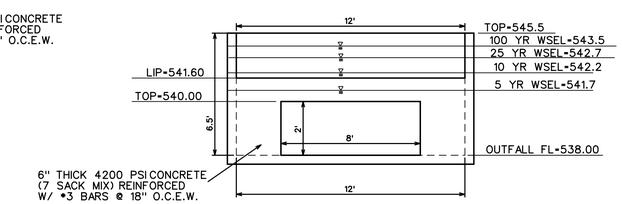
| Elevation | Storage (CF) | Storage (AC-FT) | |
|---|---|---|---|
| 538.0 | 0 | 0.00 | |
| 539.0 | 4255 | 0.10 | |
| 540.0 | 23901 | 0.55 | |
| 541.0 | 64627 | 1.48 | |
| 541.7 | 106390 | 2.44 | 5 yr |
| 542.0 | 124289 | 2.85 | |
| 542.2 | 138488 | 3.18 | 10 yr |
| 542.7 | 173986 | 3.99 | 25 yr |
| 543.0 | 195286 | 4.48 | |
| 543.5 | 233140 | 5.35 | 100 yr |
| 544.0 | 270994 | 6.22 | |
| 545.0 | 351445 | 8.07 | |

**Stage-Discharge Table** Orifice 1 -8' w x 2' h opening Weir - 12' wide @ 541.6

| Stage | Orifice 1 Tw | Orifice 1 H | Orifice 1 Area | Orifice Discharge | Weir Length | Depth of Flow Over Weir | Weir Discharge | Total Discharge | |
|---|---|---|---|---|---|---|---|---|---|
| 538.00 | 538.00 | 0.00 | 0 | 0 | | | 0.0 | 0.0 | |
| 539.00 | 538.56 | 0.44 | 8.00 | 25.6 | | | 0.0 | 25.6 | |
| 540.00 | 539.24 | 0.76 | 16.00 | 67.2 | | | 0.0 | 67.2 | |
| 541.00 | 539.55 | 1.45 | 16.00 | 92.8 | | | 0.0 | 92.8 | |
| **541.70** | 539.73 | 1.97 | 16.00 | 108.1 | | | 0.0 | 108.1 | 5 yr |
| 542.00 | 539.86 | 2.14 | 16.00 | 112.7 | 12.0 | 0.4 | 8.0 | 120.7 | |
| **542.20** | 539.96 | 2.24 | 16.00 | 115.3 | 12.0 | 0.6 | 14.7 | 130.0 | 10 yr |
| **542.70** | 540.25 | 2.45 | 16.00 | 120.6 | 12.0 | 1.1 | 36.4 | 157.0 | 25 yr |
| 543.00 | 540.44 | 2.56 | 16.00 | 123.3 | 12.0 | 1.4 | 52.3 | 175.5 | |
| **543.50** | 540.77 | 2.73 | 16.00 | 127.2 | 12.0 | 1.9 | 82.7 | 209.9 | 100 yr |
| 544.00 | 541.14 | 2.86 | 16.00 | 130.3 | 12.0 | 2.4 | 117.3 | 247.6 | |
| 545.00 | 541.92 | 3.08 | 16.00 | 135.1 | 12.0 | 3.1 | 170.3 | 305.5 | |




OUTFALL STRUCTURE PLAN VIEW



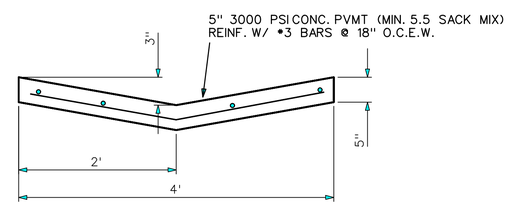

OUTFALL STRUCTURE SECTION LOOKING EAST

N.T.S.

CONTRACTOR SHALL INSTALL A TRASH RACK OVER THE LOW OUTFALL PER CONTECH STORMRAX OR APPROVED EQUAL.

EMERGENCY OVERFLOW SPILLWAY ASSUMING LOWER OUTLET IS COMPLETELY CLOGGED

$Q_{100}$=209.5 cfs
DEPTH OF FLOW OVER WEIR-3.0'
WSEL-544.6'
FREEBOARD-0.9'




PILOT CHANNEL DETAIL

NOTE:
1. POND CALCULATIONS ARE IN DRAINAGE STUDY PREPARED BY CORWIN ENGINEERING, INC. DATED FEBRUARY 2020 FOR EMERSON FARMS

2. ALL DETENTION SHALL BE INSTALLED AND FUNCTIONING PER APPROVED PLANS PRIOR TO INSTALLATION OF CONCRETE. SIDES AND BOTTOMS OF ALL PONDS TO BE SODDED OR HAVE ANCHORED SEEDED CURLEX PRIOR TO INSTALLATION OF CONCRETE.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

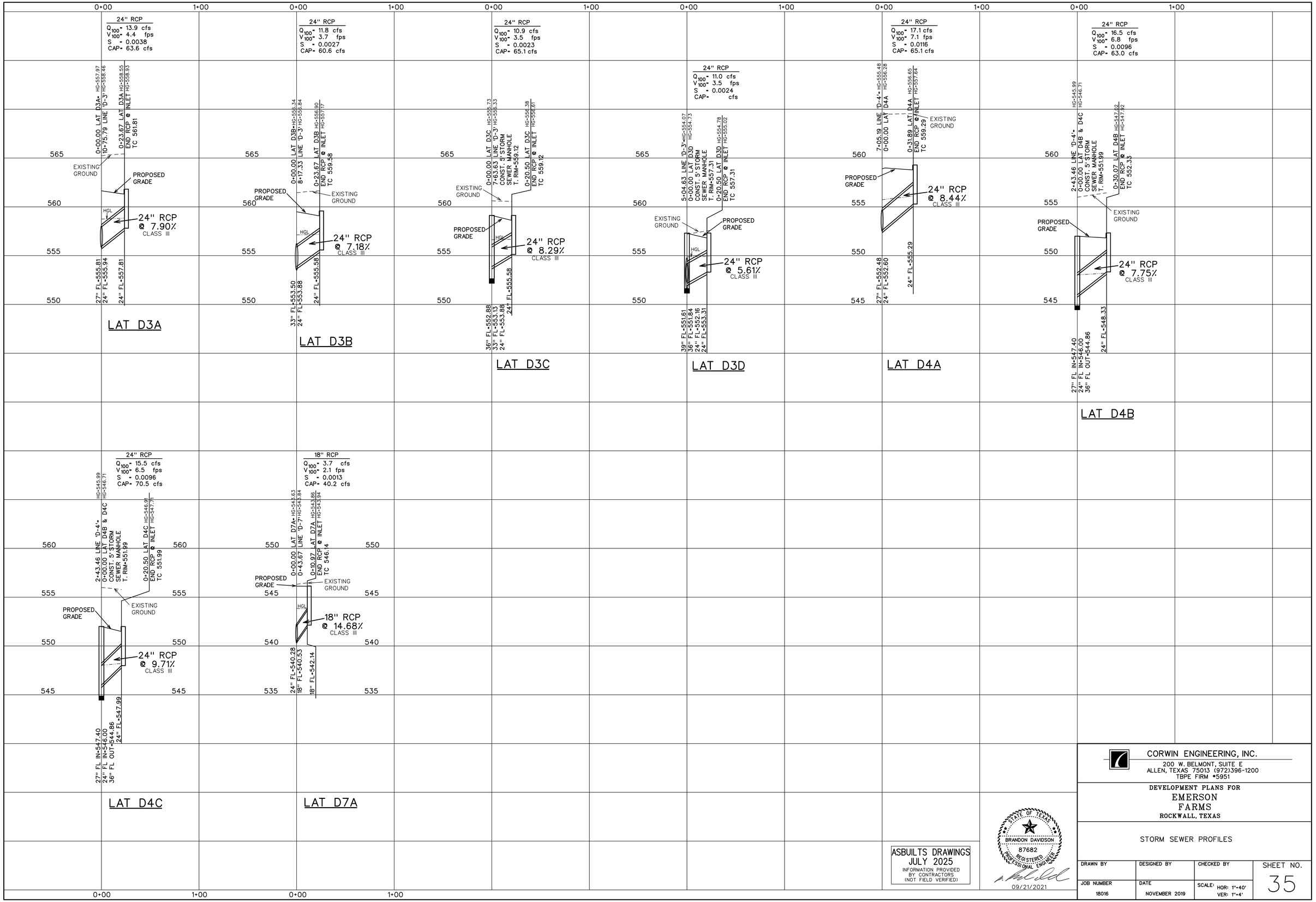
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

NORTHEAST DETENTION POND PLAN
(RESERVOIR 3)

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 34 |




ASBUILTS DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

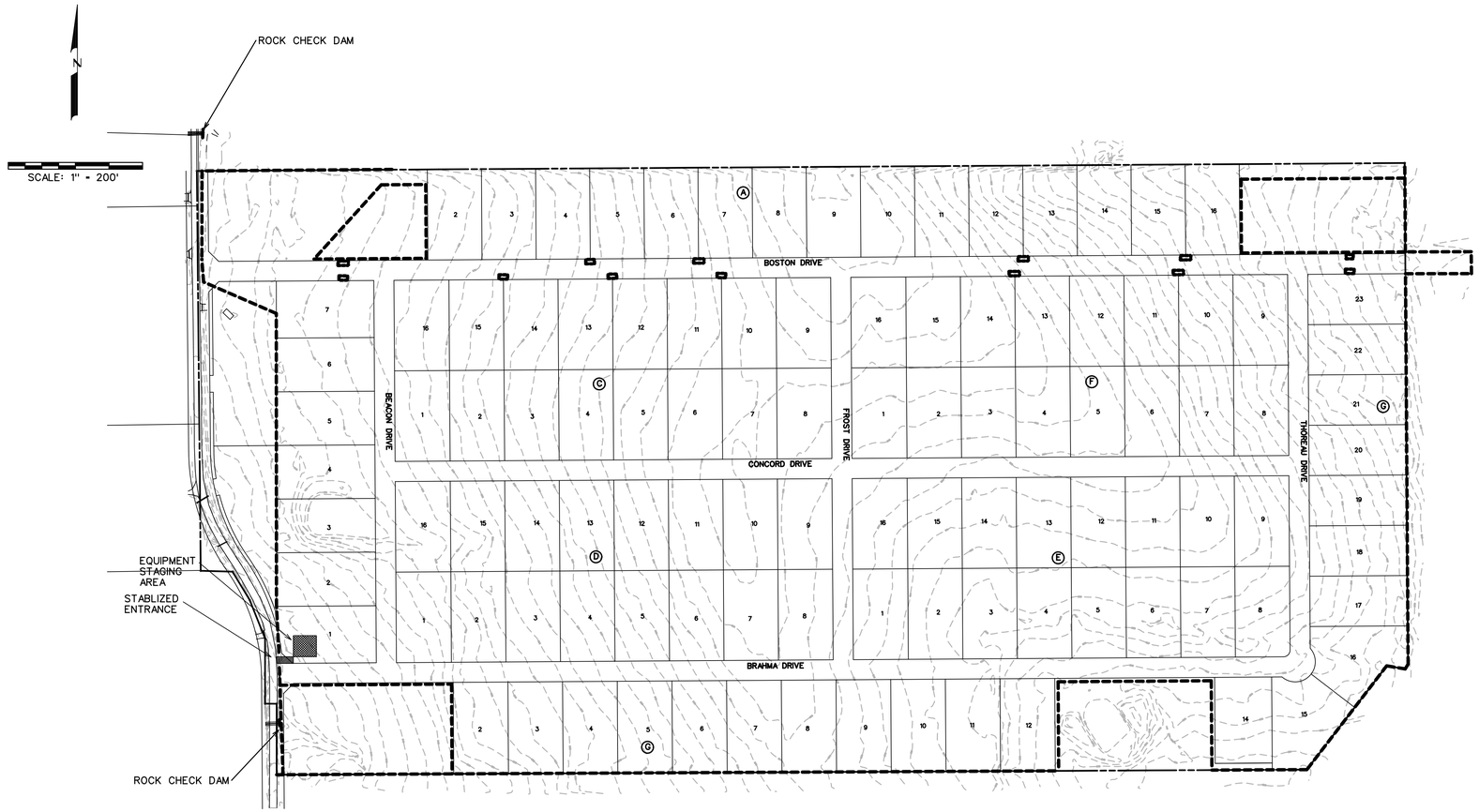
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

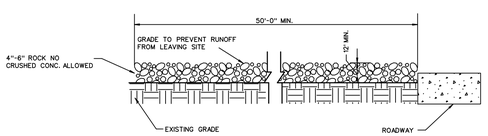
STORM SEWER PROFILES

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: HOR: 1"=40' VER: 1"=4' | 35 |

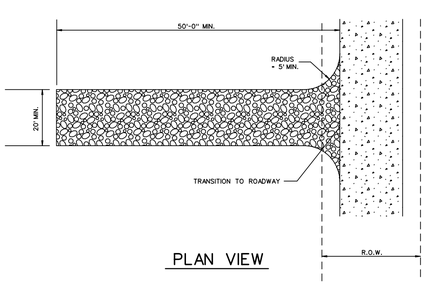



## CONSTRUCTION SEQUENCE

1. GRADING CONTRACTOR TO INSTALL TEMPORARY STABILIZED ENTRANCE.
2. INSTALL SILT FENCE AS SHOWN, (TS-600 POLY FELT) PER C.O.G. SPECIFICATIONS.
3. CONSTRUCT SEDIMENT BASIN
4. PERFORM GRADING AND UTILITY CONSTRUCTION.
5. AFTER THE INLET BOTTOMS ARE CONSTRUCTED, THE INLETS SHALL BE FILLED WITH STONE AND COVERED WITH A FILTER FABRIC (TS-600 POLY FELT OR EQUIVALENT) BY UTILITY CONTRACTOR.
6. PRIOR TO CITY RELEASING PAVING, SOD OR SEEDED CURLEX SHALL BE INSTALLED ON SIDES AND BOTTOM OF ALL DETENTION PONDS AND ALL DETENTION PONDS MUST BE FUNCTIONING.
7. AFTER PAVING AND COMPLETION OF INLETS, INLET FILTERS SHALL BE INSTALLED IN ALL INLETS AND MAINTAINED UNTIL RE-VEGETATION HAS BEEN COMPLETED BY PAVING CONTRACTOR.
8. SILT FENCE SHALL REMAIN IN PLACE UNTIL RE-VEGETATION HAS BEEN COMPLETED.
9. PAVING CONTRACTOR SHALL REMOVE TEMPORARY STABILIZED ENTRANCE.
10. PRIOR TO CITY ACCEPTANCE THE PAVING CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY MUD OR SILT WHICH COLLECTS ON THE EXISTING AND NEW PAVEMENT AND DRAINAGE DITCHES AND INSTALLING SILT FENCE AT BACK OF CURB THROUGHOUT THE ENTIRE SITE.
11. ALL STREET DITCHES SHALL BE SEEDED AND ANCHORED WITH A CURLEX EROSION CONTROL BLANKET.
12. 75%-80% OF ALL DISTURBED AREA TO HAVE A MINIMUM 1" STAND OF GRASS PRIOR TO ENGINEERING ACCEPTANCE.
13. ALL DETENTION TO BE INSTALLED AN FUNCTIONING PER APPROVED PLANS PRIOR TO INSTALLATION OF CONCRETE. SIDES AND BOTTOMS OF ALL PONDS TO BE SODDED OR HAVE ANCHORED SEEDED CULEX PRIOR TO INSTALLATION OF CONCRETE.

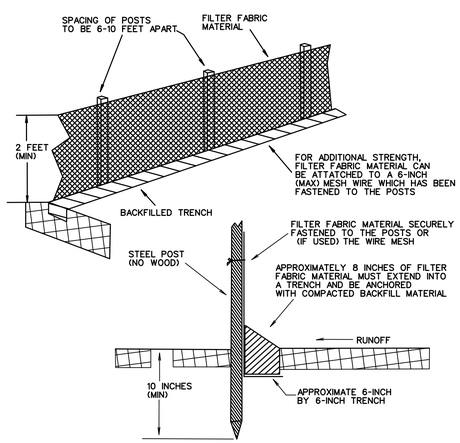



PROFILE




PLAN VIEW

STABILIZED ENTRANCE DETAIL




FILTER FABRIC FENCE DETAIL

LEGEND

SILT FENCE (BEFORE CONSTRUCTION)

INLET PROTECTION

ROCK CHECK DAM

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

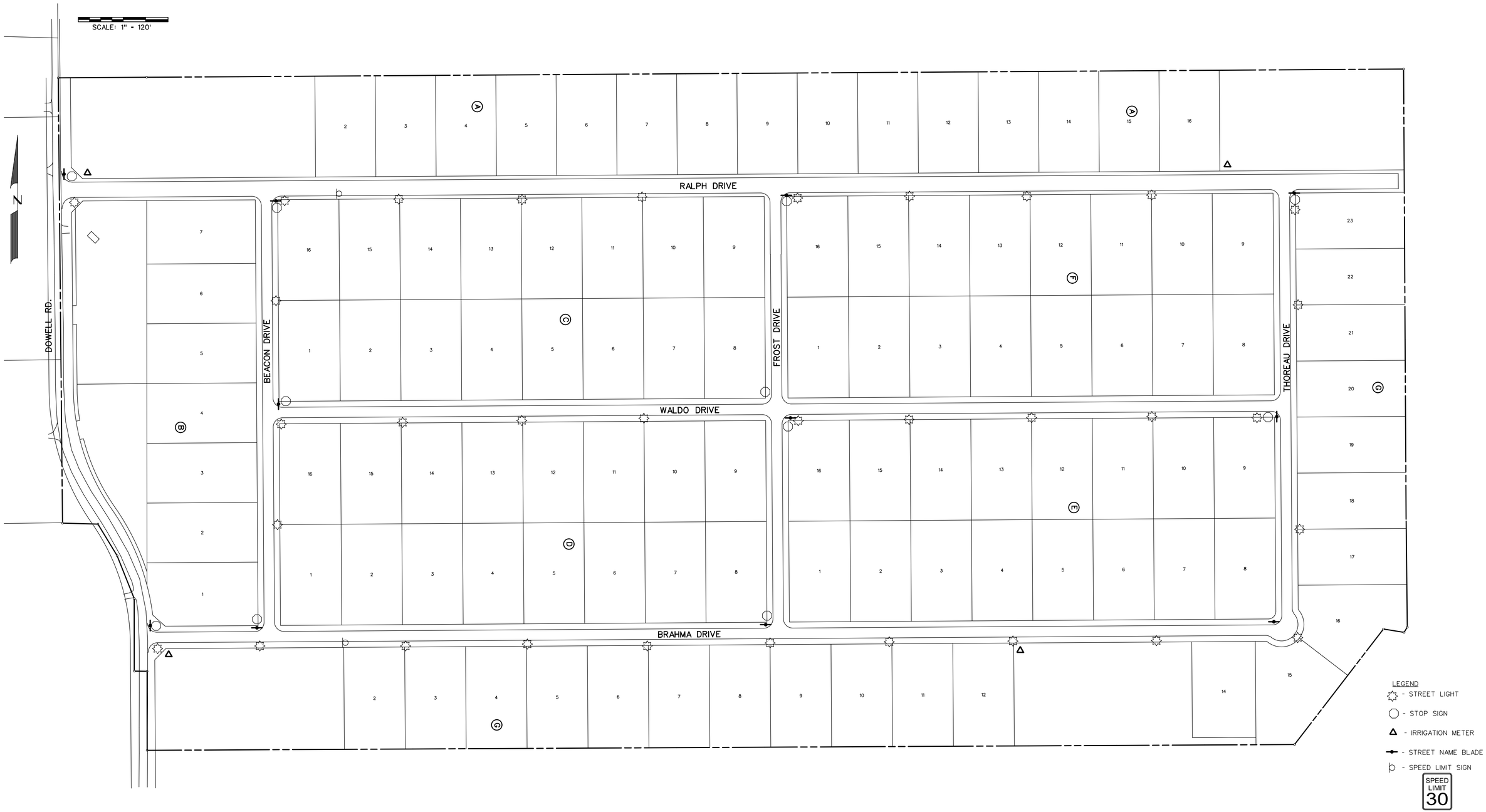
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

EROSION CONTROL PLAN

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=200' | 36 |




ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
09/21/2021

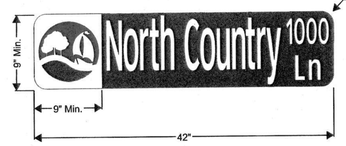
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

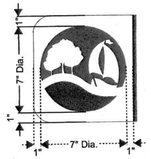
DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

SIGN AND LIGHT PLAN

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=120' | 37 |

**Street Name Blades**




*Rockwall Logo Detail*

*NOT TO SCALE*

Notes:
1. Street name blades shall consist of white SCOTCHLITE 3930 High Intensity Prismatic Material, digitally printed using HP Latex 360 or higher.
   Green: Pantone 335C with overlay CMYK 100-0-20-0 set to darken.
   Blue: Pantone 287C.
2. Lettering to be composed of a combination of upper and lowercase letters, with initial uppercase letters. Font to be Clearview TCAD-1w with uppercase to be 6" Min. height and lowercase to be 4.5" Min. height. The N, S, E, and W designations, if required, shall be uppercase 4.5" Min. height preceding the street name. No more than 65% compression on font width.
3. Lettering for street designations and block numbers to be composed of initial uppercase letters at least 3" Min. height and lower-case letters at least 2.25" Min. height. Street designations shall consist of St, Ln, Dr, Blvd, Way, Ct, Cir, Trace, Trl, Ave, Rd, Pkwy, and Pl.
4. Sign post to be 2 3/8" O.D. galvanized steel tube sign pole.
5. All street signs shall be approved by Rockwall Streets Division prior to manufacture.
6. Any variation from this Street Sign detail must be approved by Rockwall Streets Division prior to manufacture.

*STREET SIGN DETAIL*

*NOT TO SCALE*

| | | | |
|---|---|---|---|
| STREET REGULATORY SIGNAGE | CITY OF ROCKWALL | | |
| TYPICAL STREET SIGN DETAIL | | DATE May 2018 | DRAWING NO. R-2300 |

Street Department — City of Rockwall *The Near Heaven* — Public Works

## Street and Regulatory Signage

The developer shall arrange for the installation of all pavement striping, regulatory, warning and guide signs, including posts, as shown on the plans or as directed by the City. Street name signs shall be installed at each intersection. Examples of regulatory, warning, information and guide signs are as follows:

- Regulatory signs shall include, but are not limited to, STOP, ALL-WAY, YIELD, KEEP RIGHT and speed limit signs.
- Warning signs shall include, but are not limited to, DEAD END, NO OUTLET, DIVIDED ROAD, DIP, and PAVEMENT ENDS.
- Guide signals shall include, but are not limited to, street name signs, DETOUR, direction arrow and advance arrow.

Regulatory signs should be used only where justified by engineering judgment or study. All signage plans shall be reviewed and approved by the City of Rockwall Engineering Department and be designed in accordance with the principles described in the current TMUTCD.

- A detailed street and regulatory signage plan is to be submitted to the City of Rockwall Engineering Department. All signs shall be shown in the engineering plans for review and approval. The plan shall identify the specific sign designation, size and location for each sign. The plans shall also identify the type of post/poles and assemblies to be used. Sign standards shall also be includec in the engineering plans.
- All signage installed shall comply with the current "*Texas Manual on Uniform Traffic Control Devices*" and the "*Standard Highway Sign Designs for Texas.*" The sign layout drawings shall show the color and dimensions of all sign face legend components including background color, legend color, borders, symbols, letter size and style.
- For a street with a cul-de-sac end, a standard W 14-2a shall be mounted over the street name blade, if the cul-de-sac is not clearly visible from the adjoining roadway, or is located in excess of 400 linear feet from the adjoining roadway.
- Sign posts shall be 2 3/8 O.D. galvanized steel tube sign post with a galvanized finish.
- Sign clamps and brackets shall be high strength aluminum.

Decorative Sign Poles and Fixtures – The City of Rockwall maintains Standard Street and regulatory sign post installed on public streets within its designated right-of-ways. These standard poles are 2 3/8 O.D. galvanized steel tube sign post with a galvanized finish. In such cases where the developer elects to install non standard decorative sign poles, the ownership and maintenance of all such poles, fixtures and associated hardware become the maintenance responsibility of the Homeowners Association and shall be so stated on the subdivision plat. The decorative pole, assemblies, base and anchoring details are to be submitted to and approved by the City of Rockwall prior to installation.

**Street Name Blades**

- Street name sign blaces shall be double-sided with rounded corners.
- Street Name Blades shall be nine-inch (9") tall flat aluminum. The blades shall be 0.080 inches thick and be a minimum of 36" long.
- The lettering for the street signs shall be 3M Scotchlite Series 3930 high Intensity prismatic material sheeting shall be used for street, regulatory, warning signs and shall be high intensity diamond grade type III prismatic. The street sign background shall be green and the legend and logo background shall be white.
- The street sign blade must incorporate the current City of Rockwall logo. The logo shall consist of white 3M Scotchlite Series 3930 high intensity prismatic material (product code 3930).
- Block Numbers are required on all street name blades and shall be located on the top right corner of the street blade.
- The lettering for the street blades shall be composed of a combination of lower-case letters with initial upper-case letters. The Clearview TCAD-1W font shall be used. The lettering shall be composed of initial upper-case letters of at least 6 inches in height and lower case letters of at least 4.5 inches in height. For supplementary lettering to indicate the type of street (such as Street, Avenue or Road) shall be composed of initial upper-case letters at least 3-inches in height and lower-case letters at least 2.25 inches in height. Abbreviations may be used (for example St., Ave., or Rd) except the street name itself. The supplementary lettering shall be located at the lower right corner of the street blade, under the block number.
- The street blade sign shall consist of green 3M Scotchlite Series 3930 high intensity prismatic material background – (product code 3937). The lettering shall consist of white 3M Scotchlite Series 3930 high intensity prismatic material (product code – 3930). The background sheeting shall be white 3M 3990 high intensity prismatic material. The background material shall be applied to the full width and height of the sign blank leaving no metal exposed. The background material shall be one continuous piece of material. Patching of background material is not allowed and any sign with patching material of any type will be rejected by the City.

- Alternative Option:

As an alternative, the foreground color may be green transparent Scotchlite ElectroCut1177 film (E.C. film). Lettering shall be cut out and removed producing a single continuous piece of green transparent film material.

The developer shall be responsible for furnishing and installing all regulatory signage, warning signage and street name signage along with all the necessary sign mounts in accordance with the approved engineering plans. A sample production sign shall be submitted to the Traffic Signs & Pavement Markings Supervisor for review and approval. The sample shall be directed to the City of Rockwall Service Center located at 1600 Airport Road, Rockwall Texas 75087. The sample sign must be submitted at least 10 days prior to the scheduled installation date.

All street and regulatory signage shall be installed, inspected and approved, prior to final acceptance of the project. This inspection typically takes place as part of the engineering department's final walkover. Any sign related issue/issues will be noted on the projects final punch list.

The HOA Maintenance - Decorative Sign/Pole Responsibilities and Provisions:

The Homeowners Association is responsible for maintaining all non-standard decorative signs, poles/post, hardware, attachments or other approved non-standard items under this agreement. The City of Rockwall has no maintenance or other responsibility to these items. The City of Rockwall and the Homeowners Association agree the Association will bear any and all maintenance cost related to the said improvements. The City has the statutory authority to install and maintain Traffic Control Devices for vehicular traffic on public streets/roads within the (ETJ) Extra Territorial Jurisdiction/City limits of the City of Rockwall, Texas. This agreement in no way constitutes a change in that authority and does not constitute any delegation of this authority to the Association.

The City of Rockwall reserves the right to install temporary replacement signs using standard sign post mounting or alternate temporary mounting when decorative sign posts and signs are damaged. Routine maintenance/replacement of damaged signs, posts and any sign mounting backboard/trim/hardware or other fixtures is the sole responsibility of the Homeowners Association and must be repaired within 4 weeks of reporting to the Homeowners Association.

The City of Rockwall will not handle, store or be responsible for any decorative non-standard sign, post or associated fixtures installed under this agreement.

All signs (regulatory and warning) should be in conformance with the "*Texas Manual on Uniform Traffic Control Devices*" (Texas MUTCD) and the "*Standard Highway Sign Designs for Texas.*"

Sign posts must be of sufficient height to mount the sign in conformance with the current (Texas MUTCD) requirements. Most typical installations require a vertical clearance of 7 feet from the bottom edge of the sign to the ground surface. Overhead signs must conform to all required standards.

Signs/posts must be installed in locations as provided in the approved engineering/construction plans or as otherwise approved by the City of Rockwall. On occasion it may be necessary to re-locate signage/poles based engineering judgment, study or when otherwise deemed necessary by the City.

The City of Rockwall reserves the right to approve or disapprove any sign/pole design and/or location. The City of Rockwall must approve the color of signposts and any requested sign mounting/trim.

ASBUILT DRAWINGS
JULY 2025
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951


DEVELOPMENT PLANS FOR
EMERSON FARMS
ROCKWALL, TEXAS

STREET SIGN DETAILS

| DRAWN BY | DESIGNED BY | CHECKED BY | SHEET NO. |
|---|---|---|---|
| JOB NUMBER 18016 | DATE NOVEMBER 2019 | SCALE: 1"=100' | 38 |

## GENERAL ITEMS

1. All construction shall conform to the requirements set forth in the City of Rockwall's Engineering Department's "Standards of Design and Construction" and the "Standard Specifications for Public Works Construction" by the North Texas Central Council of Governments, 5th edition amended by the City of Rockwall. The CONTRACTOR shall reference the latest City of Rockwall standard details provided in the Rockwall Engineering Departments "Standards of Design and Construction" manual for details not provided in these plans. The CONTRACTOR shall possess one set of the NCTCOG Standard Specifications and Details and the City of Rockwall's "Standards of Design and Construction" manual on the project site at all times
2. Where any conflicting notes, details or specifications occur in the plans the City of Rockwall General Construction Notes, Standards, Details and Specifications shall govern unless detail or specification is more strict.
3. The City of Rockwall Engineering Departments "Standards of Design and Construction" can be found online at: http://www.rockwall.com/engr.asp
4. All communication between the City and the CONTRACTOR shall be through the Engineering Construction Inspector and City Engineer or designated representative only. It is the responsibility of the CONTRACTOR to contact the appropriate department for inspections that do not fall under this approved engineering plan set.
5. Prior to construction, CONTRACTOR shall have in their possession all necessary permits, plans, licenses, etc.
6. The CONTRACTOR shall have at least one original stamped and signed set of approved engineering plans and specifications on-site and in their possession at all times. A stop work order will be issued if items are not on-site. Copies of the approved plans will not be substituted for the required original "approved plans to be on-site".
7. All material submittals, concrete batch designs and shop drawings required for City review and approval shall be submitted by the CONTRACTOR to the City sufficiently in advance of scheduled construction to allow no less than 10 business days for review and response by the City.
8. All site dimensions are referenced to the face of curb or edge of pavement unless otherwise noted.
9. The City requires ten (10%) percent-two (2) year maintenance bond for paving, paving improvements, water systems, wastewater systems, storm sewer systems including detention systems, and associated fixtures and structures which are located within the right-of-ways or defined easements. The two (2) year maintenance bond is to state "from date of City acceptance" as the starting time.
10. A review of the site shall be conducted at twenty (20) months into the two (2) year maintenance period. The design engineer or their designated representative and the CONTRACTOR shall be present to walk the site with the City of Rockwall Engineering Inspection personnel.

## EROSION CONTROL & VEGETATION

1. The CONTRACTOR or developer shall be responsible, as the entity exercising operational control, for all permitting as required by the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). This includes, but is not limited to, preparation of the Storm Water Pollution Prevention Plan (SWPPP), the Construction Site Notice (CSN), the Notice of Intent (NOI), the Notice of Termination (NOT) and any Notice of Change (NOC) and is required to pay all associated fees
2. Erosion control devices as shown on the erosion control plan for the project shall be installed prior to the start of land disturbing activities.
3. All erosion control devices are to be installed in accordance with the approved plans, specifications and Storm Water Pollution Prevention Plan (SWPPP) for the project. Erosion control devices shall be placed and in working order prior to start of construction. Changes are to be reviewed and approved by the design engineer and the City of Rockwall prior to implementation.
4. If the Erosion Control Plans and Storm Water Pollution Prevention Plan (SWPPP) as approved cannot appropriately control erosion and off-site sedimentation from the project, the erosion control plan and/or the SWPPP is required to be revised and any changes reported to the Texas Commission on Environmental Quality (TCEQ), when applicable.
5. All erosion control devices shall be inspected weekly by the CONTRACTOR and after all major rain events, or more frequently as dictated in the project Storm Water Pollution Prevention Plan (SWPPP). CONTRACTOR shall provide copies of inspection's reports to the engineering inspection after each inspection.
6. The CONTRACTOR shall not dispose of waste and any materials into streams, waterways or floodplains. The CONTRACTOR shall secure all excavation at the end of each day and dispose of all excess materials.
7. CONTRACTOR shall take all available precautions to control dust. CONTRACTOR shall control dust by sprinkling water or other means as approved by the City Engineer.
8. CONTRACTOR shall establish grass and maintain the seeded area, including watering, until a "Permanent Stand of Grass" is obtained at which time the project will be accepted by the City. A "Stand of Grass" (not winter rye or weeds) shall consist of 75% to 80% coverage of all disturbed areas and a minimum of one-inch (1") in height as determined by the City. No bare spots will be allowed. Re-seeding will be required in all washed areas and areas that don't grow.
9. All City right-of-ways shall be sodded if disturbed. No artificial grass is allowed in any City right-of-way and/or easements.
10. All adjacent streets/alleys shall be kept clean at all times
11. CONTRACTOR shall keep construction site clean at all times, immediately contain all debris and trash, all debris and trash shall be removed at the end of each work day, and all vegetation on the construction site 10-inches or taller in height must be cut immediately.
12. Suspension of all construction activities for the project will be enforced by the City if any erosion control requirements are not meet. Work may commence after deficiency has been rectified.
13. During construction of the project, all soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. The CONTRACTOR is responsible for the temporary protection and permanent stabilization of all soil stockpiles on-site as well as borrow areas and soil intentionally transported from the project site.
14. Where construction vehicles access routes intersect paved or public roads/alleys, construction entrances shall be installed to minimize the transport of sediment by vehicular tracking onto paved surfaces. Where sediment is transferred onto paved or public surfaces, the surface shall be immediately cleaned. Sediment shall be removed from the surface by shoveling or sweeping and transported to a sediment disposal area. Pavement washing shall be allowed only after sediment is removed in this manner.
15. All drainage inlets shall be protected from siltation, ineffective or unmaintained protection devices shall be immediately replaced and the inlet and storm system cleaned. Flushing is not an acceptable method of cleaning.
16. During all dewatering operations, water shall be pumped into an approved filtering device prior to discharge into a receiving outlet.

## TRAFFIC CONTROL

1. All new Detouring or Traffic Control Plans are required to be submitted to the City for review and approval a minimum of 21 calendar days prior to planned day of implementation.
2. When the normal function of the roadway is suspended through closure of any portion of the right-of-way, temporary construction work zone traffic control devices shall be installed to effectively guide the motoring public through the area. Consideration for road user safety, worker safety, and the efficiency of road user flow is an integral element of every traffic control zone.
3. All traffic control plans shall be prepared and submitted to the Engineering Department in accordance with the standards identified in Part VI of the most recent edition of the TMUTCD. Lane closures will not occur on roadways without an approval from the Rockwall Engineering Department and an approved traffic control plan. Traffic control plans shall be required on all roadways as determined by the City Engineer or the designated representative.
4. All traffic control plans must be prepared, signed, and sealed by an individual that is licensed as a professional engineer in the State of Texas. All traffic control plans and copies of work zone certification must be submitted for review and approval a minimum of three (3) weeks prior to the anticipated temporary traffic control.
5. The CONTRACTOR executing the traffic control plan shall notify all affected property owners two (2) weeks prior to any the closures in writing and verbally.
6. Any deviation from an approved traffic control plan must be reviewed by the City Engineer or the designated representative. If an approved traffic control plan is not adhered to, the CONTRACTOR will first receive a verbal warning and be required to correct the problem immediately. If the deviation is not corrected, all construction work will be suspended, the lane closure will be removed, and the roadway opened to traffic.
7. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time at the end of the workday, all temporary traffic control devices that are no longer appropriate shall be removed or covered. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48 hours. All contractors working on City funded projects will be charged one working day for each 24 hour closure.
8. Lane closures on any major or minor arterial will not be permitted between the hours of 6:00 am to 9:00 am and 3:30 pm to 7:00 pm. Where lane closures are needed in a school area, they will not be permitted during peak hours of 7:00 am – 9:00 am and 3:00 pm to 5:00 pm. Closures may be adjusted according to the actual start-finish times of the actual school with approval by the City Engineer. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48 hours. All contractors working on City funded projects will be charged one working day for each 24 hour closure of a roadway whether they are working or not.
9. No traffic signs shall be taken down without permission from the City.
10. No street/roadway will be allowed to be fully closed.

## UTILITY LINE LOCATES

1. It is the CONTRACTOR's responsibility to notify utility companies to arrange for utility locates at least 48 hours prior to beginning construction. The completeness and accuracy of the utility data shown on the plans is not guaranteed by the design engineer or the City. The CONTRACTOR is responsible for verifying the depth and location of existing underground utilities proper to excavating, trenching, or drilling and shall be required to take any precautionary measures to protect all lines shown and .or any other underground utilities not on record or not shown on the plans.
2. The CONTRACTOR shall be responsible for damages to utilities
3. CONTRACTOR shall adjust all City of Rockwall utilities to the final grades.
4. All utilities shall be placed underground.
5. CONTRACTOR shall be responsible for the protection of all existing main lines and service lines crossed or exposed by construction operations. Where existing mains or service lines are cut, broken or damaged, the CONTRACTOR shall immediately make repairs to or replace the entire service line with same type of original construction or better. The City of Rockwall can and will intervene to restore service if deemed necessary and charge the CONTRACTOR for labor, equipment, material and loss of water if repairs aren't made in a timely manner by the CONTRACTOR.
6. The City of Rockwall (City utilities) is not part of the Dig Tess or Texas one Call – 811 – line locate system. All City of Rockwall utility line locates are to be scheduled with the City of Rockwall Service Center. 972-771-7730. A 48-hour advance notice is required for all non-emergency line locates.
7. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
   a. No more than 500 linear feet of trench may be opened at one time.
   b. Material used for backfilling trenches shall be properly compacted to 95% standard density in order to minimize erosion, settlement, and promote stabilization that the geotechnical engineer recommends.
   c. Applicable safety regulations shall be complied with.
11. This plan details pipes up to 5 feet from the building. Refer to the building plans for building connections. CONTRACTOR shall supply and install pipe adapters as necessary.
12. All underground lines shall be installed, inspected, and approved prior to backfilling.
13. All concrete encasement shall have a minimum of 28 days compressive strength at 3,000 psi (min. 5.5 sack mix).

## WATER LINE NOTES

1. The CONTRACTOR shall maintain existing water service at all times during construction.
2. Proposed water lines shall be AWWA C900-16 PVC Pipe (blue in color) for all sizes, DR 14 (PC 305) for pipeline sizes 12-inch and smaller, and DR 18 (PC 235) for 14-inch and larger water pipelines unless otherwise shown on water plan and profiles sheets. Proposed water lines shall be constructed with minimum cover of 4 feet for 6-inch through 8-inch, 5 feet for 12-inch through 18-inch and 6 feet for 20-inch and larger.
3. Proposed water line embedment shall be NCTCOG Class 'B-3' as amended by the City of Rockwall's engineering standards of design and construction manual.
4. CONTRACTOR shall coordinate the shutting down of all water lines with the City of Rockwall Engineering Inspector and Water Department. The City shall operate all water valves. Allow 5 business days from the date of notice to allow City personnel time to schedule a shut down. Two additional days are required for the CONTRACTOR to notify residents in writing of the shut down after the impacted area has been identified. Water shut downs impacting businesses during their normal operation hours is not allowed. CONTRACTOR is required to coordinate with the Rockwall Fire Department regarding any fire watch requirements as well as any costs incurred when the loss of fire protection to a structure occurs.
5. CONTRACTOR shall furnish and install gaskets on water lines between all dissimilar metals and at valves (both existing and proposed).
6. All fire hydrants and valves removed and salvaged shall be returned to the City of Rockwall Municipal Service Center.
7. Blue EMS pads shall be installed at every change in direction, valve, curb stop and service tap on the proposed water line and every 250'.
8. All water valve hardware and valve extensions, bolts, nuts and washers shall be 316 stainless steel.
9. All fire hydrants bolts, nuts and washers that are buried shall be 316 stainless steel.
10. Abandoned water lines to remain in place shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill or an expandable permanent foam product. Valves to be abandoned in place shall have any extensions and the valve box removed and shall be capped in concrete.
11. All fire hydrants will have a minimum of 5 feet of clearance around the appurtenance including but not limited to parking spaces and landscaping.
12. All joints are to be megalug joints with thrust blocking.
13. Water and sewer mains shall be kept 10 feet apart (parallel) or when crossing 2 feet vertical clearance.
14. CONTRACTOR shall maintain a minimum of 4 feet of cover on all water lines.
15. All domestic and irrigation services are required to have a testable backflow device with a double check valve installed per the City of Rockwall regulations at the property line and shown on plans.

## WASTEWATER LINE NOTES

1. The CONTRACTOR shall maintain existing wastewater service at all times during construction.
2. Wastewater line for 4-inch through 15-inch shall be Green PVC – SDR 35 (ASTM D3034) [less 10 ft cover] and SDR 26 (ASTM D3034) [10 ft or more cover]. For 18-inch and lager wastewater line shall be Green PVC – PS 46 (ASTM F679) [less 10 ft cover] and PS 115 (ASTM F679) [10 ft or more cover]. No services will be allowed on a sanitary sewer line deeper than 10 feet.
3. Proposed wastewater line embedment shall be NCTCOG Class 'H' as amended by the City of Rockwall's public works standard design and construction manual.
4. Green EMS pads shall be installed at every 250', manhole, clean out and service lateral on proposed wastewater lines.
5. CONTRACTOR shall CCTV all existing wastewater lines that are to be abandoned to ensure that all laterals are accounted for and transferred to proposed wastewater lines prior to abandonment.
6. All abandoned wastewater and force main lines shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill or an expandable permanent foam product.
7. Existing manholes and cleanouts not specifically called to be relocated shall be adjusted to match final grades.
8. All wastewater pipes and public services shall be inspected by photographic means (television and DVD) prior to final acceptance and after franchise utilities are installed. The CONTRACTOR shall furnish a DVD to the Engineering Construction Inspector for review. Pipes shall be cleaned prior to TV inspection of the pipes. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the CONTRACTOR at the CONTRACTOR's expense. A television survey will be performed as part of the final testing in the twentieth ($20^{th}$) month of the maintenance period.
9. All manholes (public or private) shall be fitted with inflow prevention. The inflow prevention shall conform to the measures called out in standard detail R-5031.
10. All new or existing manholes being modified shall have corrosion protection being Raven Liner 405 epoxy coating, ConShield, or approved equal.. Consheild must have terracotta color dye mixed in the precast and cast-in-place concrete. Where connections to existing manholes are made the CONTRACTOR shall rehab manhole as necessary and install a 125 mil thick coating of Raven Liner 405 or approved equal.
11. All new or existing manholes that are to be placed in pavement shall be fitted with a sealed (gasketed) rim and cover to prevent inflow.
12. If an existing wastewater main or trunk line is called out to be replaced in place a wastewater bypassing pump plan shall be required and submitted to the Engineering Construction Inspector and City Engineer for approval prior to implementation. Bypass pump shall be fitted with an auto dialer and conform to the City's Noise Ordinance. Plan shall be to the City sufficiently in advance of scheduled construction to allow no less than 10 business days for review and response by the City.
13. CONTRACTOR shall maintain a minimum of 4 feet of cover on all wastewater lines.

**GENERAL CONSTRUCTION NOTES**
**Sheet 1 of 2**
October 2020

**CITY OF ROCKWALL**
**ENGINEERING DEPARTMENT**

385 S. Goliad
Rockwall, Texas 75087

P (972) 771-7746
F (972) 771-7748

## DEMOLITION, REMOVAL, DISPOSAL AND EXCAVATION NOTES

1. All pavements to be removed and replaced shall be saw cut to full depth along neat squared lines shown in the plans.
2. Proposed concrete pavement shall be constructed with longitudinal butt construction joints at all connections to existing concrete pavement.
3. All public concrete pavement to be removed and replaced shall be full panel replacement, 1-inch thicker and on top of 6-inch thick compacted flexbase.
4. No excess excavated material shall be deposited in low areas or along natural drainage ways without written permission from the affected property owner and the City of Rockwall. No excess excavation shall be deposited in the City Limits without a permit from the City of Rockwall. If the CONTRACTOR places excess materials in these areas without written permission, the CONTRACTOR will be responsible for all damages resulting from such fill and shall remove the material at their own cost.

## PAVING AND GRADING

1. All detention systems are to be installed and verified for design compliance along with the associated storm sewer and outflow structures, prior to the start of any paving operations (including building foundations). Erosion protection shall be placed at the pond outflow structures, silt fence along the perimeter of the pond along with any of the associated erosion BMPs noted on the erosion control plan, and the sides and bottom of the detention system shall have either sod or anchored seeded curlex installed prior to any concrete placement.
2. All paving roadway, driveways, fire lanes, drive-isles, parking, dumpster pads, etc. sections shall have a minimum thickness, strength, reinforcement, joint type, joint spacing and subgrade treatment shall at a minimum conform to the City standards of Design and Construction and table below.

| Street/Pavement Type | Minimum Thickness (inches) | Strength 28-Day (psi) | Minimum Cement (sacks / CY) | | Steel Reinforcement | |
|---|---|---|---|---|---|---|
| | | | Machine placed | Hand Placed | Bar # | Spacing (O.C.E.W.) |
| Arterial | 10” | 3,600 | 6.0 | 6.5 | #4 bars | 18” |
| Collector | 8” | 3,600 | 6.0 | 6.5 | #4 bars | 18” |
| Residential | 6” | 3,600 | 6.0 | 6.5 | #3 bars | 24” |
| Alley | 7”-5”-7” | 3,600 | 6.0 | 6.5 | #3 bars | 24” |
| Fire Lane | 6” | 3,600 | 6.0 | 6.5 | #3 bars | 24” |
| Driveways | 6” | 3,600 | 6.0 | 6.5 | #3 bars | 24” |
| Barrier Free Ramps | 6” | 3,600 | N/A | 6.5 | #3 bars | 24” |
| Sidewalks | 4” | 3,000 | N/A | 5.5 | #3 bars | 24” |
| Parking Lot/Drive Aisles | 5” | 3,000 | 5.0 | 5.5 | #3 bars | 24” |
| Dumpster Pads | 7” | 3,600 | 6.0 | 6.5 | #3 bars | 24” |

3. Reinforcing steel shall be tied (100%). Reinforcing steel shall be set on plastic chairs. Bar laps shall be minimum 30 diameters. Sawed transverse dummy joints shall be spaced every 15 feet or 1.25 time longitudinal butt joint spacing whichever is less. Sawing shall occur within 5 to 12 hours after the pour, including sealing. Otherwise, the section shall be removed and longitudinal butt joint constructed.
4. No sand shall be allowed under any paving.
5. All concrete mix design shall be submitted to the City for review and approval prior to placement.
6. Fly ash may be used in concrete pavement locations provided that the maximum cement reduction does not exceed 20% by weight per C.Y. of concrete. The fly ash replacement shall be 1.25 lbs. per 1.0 lb. cement reduction.
7. All curb and gutter shall be integral (monolithic) with the pavement.
8. All fill shall be compacted by sheep's foot roller to a minimum 95% standard proctor. Maximum loose lift for compaction shall be 8 inches. All lifts shall be tested for density by an independent laboratory. All laboratory compaction reports shall be submitted to the City Engineering Construction Inspector once results are received. All reports will be required prior to final acceptance.
9. All concrete compression tests and soil compaction/density tests are required to be submitted to the City’s Engineering Inspector immediately upon results.
10. All proposed sidewalks shall include barrier free ramps at intersecting streets, alleys, etc. Barrier free ramps (truncated dome plate in Colonial or brick red color) shall meet current City and ADA requirements and be approved by the Texas Department of Licensing and Regulation (TDLR).
11. All public sidewalks shall be doweled into pavement where it abuts curbs and driveways. Expansion joint material shall be used at these locations.
12. All connection of proposed concrete pavement to existing concrete pavement shall include a longitudinal butt joint as the load transfer device. All longitudinal butt joints shall be clean, straight and smooth (not jagged in appearance)
13. Cracks formed in concrete pavement shall be repaired or removed by the CONTRACTOR at the City's discretion. CONTRACTOR shall replace existing concrete curbs, sidewalk, paving, a gutters as indicated on the plans and as necessary to connect to the existing infrastructure, including any damage caused by the CONTRACTOR.
14. All residential lots will require individual grading plans submitted during the building permit process that correspond with the engineered grading and drainage area plans.
15. Approval of this plan is not an authorization to grade adjacent properties when the plans or field conditions warrant off-site grading. Written permission must be obtained and signed from the affected property owner(s) and temporary construction easements may be required. The written permission shall be provided to the City as verification of approval by the adjacent property owner(s). Violation of this requirement will result in suspension of all work at the job site until issue has been rectified.
16. All cut or fill slopes of non-paved areas shall be a maximum of 4:1 and minimum of 1%.
17. CONTRACTOR agrees to repair any damage to property and the public right-of-way in accordance with the City Standards of Design and Construction.
18. CONTRACTOR shall protect all monuments, iron pins/rods, and property corners during construction.
19. CONTRACTOR shall ensure positive drainage so that runoff will drain by gravity flow to new or existing drainage inlets or sheet flow per these approved plans.

## DRAINAGE / STORM SEWER NOTES

1. The CONTRACTOR shall maintain drainage at all times during construction. Ponding of water in streets, drives, trenches, etc. will not be allowed. Existing drainage ways shall not be blocked or removed unless explicitly stated in the plans or written approval is given by the City.
2. All structural concrete shall be 4200 psi compressive strength at 28 days minimum 7.0 sack mix, air entrained, unless noted otherwise. Fly ash shall not be allowed in any structural concrete.
3. Proposed storm sewer embedment shall be NCTCOG Class 'B' as amended by the City of Rockwall's Engineering Department Standards of Design and Construction Manual.
4. All public storm pipe shall be a minimum of 18-inch reinforced concrete pipe (RCP), Class III, unless otherwise noted.
5. All storm pipe entering structures shall be grouted to assure connection at the structure is watertight.
6. All storm structures shall have a smooth uniform poured mortar invert from invert in to invert out.
7. All storm sewer manholes in paved areas shall be flush with the paving grade, and shall have traffic bearing ring and covers.
8. All storm sewer pipes and laterals shall be inspected by photographic means (television and DVD) prior to final acceptance and after franchise utilities are installed. The CONTRACTOR shall furnish a DVD to the Engineering Construction Inspector for review. Pipes shall be cleaned prior to TV inspection of the pipes. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the CONTRACTOR at the CONTRACTOR’s expense. A television survey will be performed as part of the final testing in the twentieth ($20^{th}$) month of the maintenance period.

## RETAINING WALLS

1. All retaining walls, regardless of height, will be reviewed and approved by the City Engineering Department
2. All retaining walls (including foundation stem walls), regardless of height, will be constructed of rock/stone/brick or rock/stone/brick faced. No smooth concrete walls are allowed. Wall materials shall be the same for all walls on the project.
3. All portions, including footings, tie-backs, and drainage backfill, of the wall shall be on-site and not encroach into any public easements or right-of-way. The entire wall shall be in one lot and shall not be installed along a lot line.
4. All walls 3 feet and taller will be designed and signed/sealed by a registered professional engineer in the State of Texas. The wall design engineer is required to inspect the wall construction and supply a signed/sealed letter of wall construction compliance to the City of Rockwall along with wall as-builts prior to City Engineering acceptance.
5. No walls are allowed in detention easements. A variance to allow retaining walls in a detention easement will require approval by the Planning and Zoning Commission with appeals being heard by the City Council.

## FINAL ACCEPTANCE AND RECORD DRWINGS/AS-BUILTS

1. Final Acceptance shall occur when all the items on the Checklist for Final Acceptance have been completed and signed-off by the City. An example of the checklist for final acceptance has been included in the Appendix of the Standards of Design and Construction. Items on the checklist for final acceptance will vary per project and additional items not shown on the check list may be required.
2. After improvements have been constructed, the developer shall be responsible for providing to the City “As Built” or “Record Drawings”. The Design Engineer shall furnish all digital files of the project formatted in Auto Cad 14, or 2000 format or newer and Adobe Acrobat (.pdf) format with a CD-ROM disk or flash drive. The disk or drive shall include a full set of plans along with any landscaping, wall plans, and details sheets.
3. Submit 1-set of printed drawings of the “Record Drawings” containing copies of all sheets to the Engineering Construction Inspector for the project. The printed sheets will be reviewed by the inspector PRIOR to producing the “Record Drawing” digital files on disk or flash drive. This will allow any revisions to be addressed prior to producing the digital files.
4. Record Drawing Disk drawings shall have the Design Engineers seal, signature and must be stamped and dated as “Record Drawings” or “As Built Drawings” on all sheets.
5. The City of Rockwall will not accept any Record Drawing disk drawings which include a disclaimer. A disclaimer shall not directly or indirectly state or indicate that the design engineer or the design engineer’s surveyor/surveyors did not verify grades after construction, or that the Record Drawings were based solely on information provided by the construction contractor/contractors. Any Record Drawings which include like or similar disclaimer verbiage will not be accepted by the City of Rockwall.
6. Example of Acceptable Disclaimer: “To the best of our knowledge ABC Engineering, Inc., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.”

**GENERAL CONSTRUCTION NOTES**
**Sheet 2 of 2**
October 2020

**CITY OF ROCKWALL**
**ENGINEERING DEPARTMENT**

385 S. Goliad
Rockwall, Texas 75087

P (972) 771-7746
F (972) 771-7748

# CONSTRUCTION PLANS

# LANDSCAPE & SCREENING

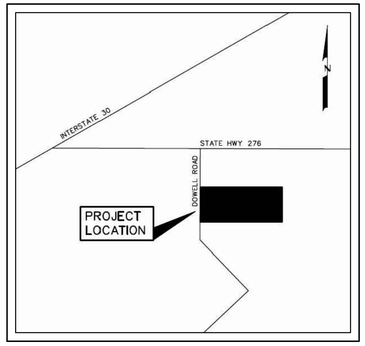
## ~Emerson Farms~

City of Rockwall

Rockwall County, Texas

## GENERAL CONSTRUCTION NOTES

1. IT IS NOT THE INTENT OF THESE CONSTRUCTION NOTES TO COVER ALL DETAILS AND/OR SPECIFICATION REQUIREMENTS OF THE **CITY OF ROCKWALL**. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE **CITY OF ROCKWALL'S** STANDARD SPECIFICATIONS, GENERAL DESIGN STANDARDS, ORDINANCES, RULES, POLICIES, REQUIREMENTS AND REGULATIONS, AS WELL AS ANY OTHER APPLICABLE STATE AND/OR FEDERAL RULES, REGULATIONS AND/OR REQUIREMENTS, AS THEY EXIST OR MAY BE AMENDED. ENGINEERING DRAWINGS SHALL GOVERN FOR CONSTRUCTION OF ALL CIVIL IMPROVEMENTS.
2. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN (MAIN LINES, NO LATERAL OR SERVICES SHOWN) ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE LANDSCAPE ARCHITECT ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO TRENCHING AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND / OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND **CITY OF ROCKWALL** UTILITIES PRIOR TO CONSTRUCTION.
3. ANY CONTRACTOR / SUBCONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM HIS OPERATIONS. SAID EXISTING IMPROVEMENTS SHALL INCLUDE BUT NOT BE LIMITED TO BERMS, DITCHES, FENCES, AND PLANTS. ANY REMOVAL OR DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE AND SHALL BE APPROVED BY THE **CITY OF ROCKWALL**.
4. ALL CONSTRUCTION, TESTING, AND MATERIALS SHALL MEET OR EXCEED ALL REQUIREMENTS OF THE **CITY OF ROCKWALL**. ALL SUBMITTALS MUST BE ORIGINALS WITH SIGNATURES WHERE APPLICABLE; FACSIMILES OR EMAILS SHALL BE FOLLONED UP WITH ORIGINALS.
5. ALL TESTING SHALL BE DONE BY AN APPROVED LABORATORY AT THE EXPENSE OF THE CONTRACTOR. THE **CITY OF ROCKWALL** WILL ONLY ACCEPT SIGNED ORIGINAL COPIES OF ALL TESTING REPORTS FOR REVIEW.
6. THE DEVELOPER OR HIS/HER DESIGNEE SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL HANDBOOK. ALL REFERENCE FOR USING TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) STANDARDS AND CONSTRUCTION DETAILS SHALL BE THE LATEST REVISIONS AND/OR AMENDMENTS THEREOF. THE **CITY OF ROCKWALL** USES RAISED PAVEMENT MARKINGS (BUTTONS) FOR STRIPING AND THERMOPLASTIC MARKINGS IN LIEU OF PAINT. THE MINIMUM SIGN SIZE SHALL BE THE STANDARD SIZE IN THE MANUAL. DETAILS ARE AVAILABLE UPON REQUEST FOR THE TYPE OF BUTTON PATTERNS AND POSTS AND CONNECTIONS REQUIRED FOR THE SIGNS.
7. THE CONTRACTOR SHALL MAKE EVERY EFFORT NOT TO IMPEDE TRAFFIC ON EXISTING STREETS, ALLEYS, OR FIRELANES OPEN TO THE PUBLIC. IN THE EVENT THE CONSTRUCTION WORK REQUIRES THE CLOSURE OF AN EXISTING STREET, ALLEY, OR FIRELANE, THE CONTRACTOR SHALL REQUEST THE ROAD CLOSURE THROUGH THE **CITY OF ROCKWALL**. IF THE CLOSURE ELIMINATES THE SECOND POINT OF ACCESS TO EXISTING BUILDINGS WITH A CERTIFICATE OF OCCUPANCY, THEN THE ACCESS MAY NOT BE CLOSED FOR MORE THAN FORTY-EIGHT (48) HOURS AND WILL REQUIRE FIRE MARSHAL APPROVAL IN EITHER CASE. UNLESS OTHERWISE SPECIFIED BY THE **CITY OF ROCKWALL**, ALL OTHER STREETS OR ALLEYS MAY NOT BE CLOSED FOR MORE THAN SEVENTY-TWO (72) HOURS.




LOCATION MAP
*NOT TO SCALE*

## SHEET INDEX


| | |
|---|---|
| L1-L4 | LANDSCAPE PLANS |
| L5 | LANDSCAPE DETAILS |



**OWNER / DEVELOPER:** **HARLAN PROPERTIES, INC**
**2404 TEXAS DRIVE**
**ST. 103**
**IRVING, TEXAS 75062**

**CIVIL ENGINEER:** **CORWIN ENGINEERING, INC**
**200 W. BELMONT DRIVE**
**ALLEN, TEXAS 75013**
**PH. (972) 396-1200**
**CONTACT: WARREN CORWIN, P.E.**

**LANDSCAPE ARCHITECT:** **STUDIO 13 DESIGN GROUP, PLLC.**
**386 WEST MAIN STREET**
**LEWISVILLE, TEXAS 75057**
**PH. (469) 635-1900**
**CONTACT: LEONARD REEVES, ASLA, LI**


## LANDSCAPE NOTES:

1. A TREE PERMIT IS REQUIRED FOR ALL REMOVAL OF ALL TREES, PROTECTED AND UNPROTECTED.
2. PLANT MATERIAL SHALL BE MEASURED AND SIZED ACCORDING TO THE LATEST EDITION OF THE TEXAS NURSERY & LANDSCAPE ASSOCIATION (TNLA) SPECIFICATIONS, GRADES AND STANDARDS.
3. ALL PLANT SUBSTITUTIONS ARE SUBJECT TO **CITY OF ROCKWALL** APPROVAL AND MUST BE SPECIFIED ON THE APPROVED LANDSCAPE PLAN.
4. GROUND COVERS USED IN LIEU OF TURF GRASS MUST PROVIDE COMPLETE COVERAGE WITHIN ONE (1) YEAR OF PLANTING AND MAINTAIN ADEQUATE COVERAGE AS APPROVED BY THE **CITY OF ROCKWALL**.
5. TREES MUST BE PLANTED FOUR FEET (4') OR GREATER FROM CURBS, SIDEWALKS, UTILITY LINES, SCREENING WALLS AND/OR OTHER STRUCTURES. THE **CITY OF ROCKWALL** HAS FINAL APPROVAL FOR ALL TREE PLACEMENTS.
6. TREE PITS SHALL HAVE ROUGHENED SIDES AND BE TWO TO THREE TIMES WIDER THAN THE ROOT BALL OF THE TREE IN ORDER TO FACILITATE HEALTHY ROOT GROWTH.
7. TREES SHALL NOT BE PLANTED DEEPER THAN THE BASE OF THE "TRUNK FLARE".
8. THE TREE PIT SHALL BE BACKFILLED WITH NATIVE TOPSOIL FREE OF ROCK AND OTHER DEBRIS.
9. BURLAP, TWINE AND WIRE BASKETS SHALL BE LOOSENED AND PULLED BACK FROM THE TRUNK OF TREE AS MUCH AS POSSIBLE.
10. TREES SHALL NOT BE WATERED TO EXCESS THAT RESULTS IN SOIL SATURATION. IF SOIL BECOMES SATURATED, THE WATERING SCHEDULE SHALL BE ADJUSTED TO ALLOW FOR DRAINAGE AND ABSORPTION OF THE EXCESS WATER.
11. A 3" LAYER OF MULCH SHALL BE PROVIDED AROUND THE BASE OF THE PLANTED TREE. THE MULCH SHALL BE PULLED BACK 4" FROM THE TRUNK OF THE TREE.
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13. ALL BEDS TO HAVE 3" OF COMPOSTED SOIL, LIVING EARTH TECHNOLOGY, OR APPROVED EQUAL TO A DEPTH OF 8" MINIMUM.
14. ALL PLANT BEDS SHALL BE TOP-DRESSED WITH A MINIMUM OF 3 INCHES OF HARDWOOD OR OTHER MULCH.
15. TREES OVERHANGING WALKS AND PARKING SHALL HAVE A MINIMUM CLEAR TRUNK HEIGHT OF 7 FEET. TREES OVERHANGING PUBLIC STREET PAVEMENT DRIVE AISLES AND FIRE LANES SHALL HAVE A MINIMUM CLEAR TRUNK HEIGHT OF 14 FEET.
16. A VISIBILITY TRIANGLE MUST BE PROVIDED AT ALL INTERSECTIONS. SHRUBS ARE NOT TO EXCEED 30 INCHES IN HEIGHT. TREES SHALL HAVE A MINIMUM CLEAR TRUNK HEIGHT OF 7 FEET AT TIME OF PLANTING.
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20. ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AS IS APPROPRIATE FOR THE SEASON OF THE YEAR. PLANT MATERIAL THAT IS DAMAGED, DESTROYED, OR REMOVED SHALL BE REPLACED WITH PLANT MATERIAL OF SIMILAR SIZE AND VARIETY WITHIN 30 DAYS UNLESS OTHERWISE APPROVED IN WRITING BY THE **CITY OF ROCKWALL.**
21. LANDSCAPE AND OPEN AREAS SHALL BE KEPT FREE OFF TRASH, LITTER AND WEEDS.
22. AN AUTOMATIC IRRIGATION SYSTEM SHALL BE PROVIDED TO IRRIGATE ALL LANDSCAPE AREAS. OVERSPRAY ON STREETS AND WALKS IS PROHIBITED. A PERMIT FROM THE BUILDING INSPECTION DEPARTMENT IS REQUIRED FOR EACH IRRIGATION SYSTEM.
23. NO PLANT MATERIAL SHALL BE ALLOWED TO ENCROACH ON RIGHT-OF-WAY, SIDEWALKS OR EASEMENTS TO THE EXTENT THAT THE VISION OR ROUTE OF TRAVEL FOR VEHICULAR, PEDESTRIAN, OR BICYCLE TRAFFIC IS IMPEDED.
24. NO PLANTING AREAS SHALL EXCEED 3:1 SLOPE. 3' HORIZONTAL TO 1' VERTICAL.
25. EARTHEN BERMS SHALL NOT INCLUDE CONSTRUCTION DEBRIS. CONTRACTOR MUST CORRECT SLIPPAGE OR DAMAGE TO THE SMOOTH FINISH GRADE OF THE BERM PRIOR TO ACCEPTANCE.
26. ALL WALKWAYS SHALL MEET A.D.A. AND T.A.S. REQUIREMENTS.
27. CONTACT **CITY OF ROCKWALL'S** PLANNING DEPARTMENT AT FOR LANDSCAPE INSPECTION. NOTE LANDSCAPE INSTALLATION MUST COMPLY WITH APPROVED LANDSCAPE PLANS PRIOR FINAL ACCEPTANCE BY THE **CITY OF ROCKWALL** AND/OR OBTAINING A CERTIFICATE OF OCCUPANCY.
28. FINAL INSPECTION AND APPROVAL OF SCREENING WALLS, IRRIGATION AND LANDSCAPE IS SUBJECT TO ALL PUBLIC UTILITIES, INCLUDING BUT NOT LIMITED TO MANHOLES, VALVES, WATER METERS, CLEANOUTS AND OTHER APPURTENANCES, TO BE ACCESSIBLE, ADJUSTED TO GRADE AND TO THE **CITY OF ROCKWALL'S** PUBLIC WORKS DEPARTMENT STANDARDS.
29. PRIOR TO CALLING FOR A LANDSCAPE INSPECTION, CONTRACTOR IS RESPONSIBLE FOR MARKING ALL MANHOLES, VALVES, WATER METERS, CLEANOUTS AND OTHER UTILITY APPURTENANCES WITH FLAGGING FOR FIELD VERIFICATION BY THE PUBLIC WORKS DEPARTMENT.

*Submittal May 8, 2020*

STUDIO 13 DESIGN GROUP


**Studio 13 Design Group, PLLC.**
386 W. Main Street
Lewisville, Texas 75057
469-635-1900

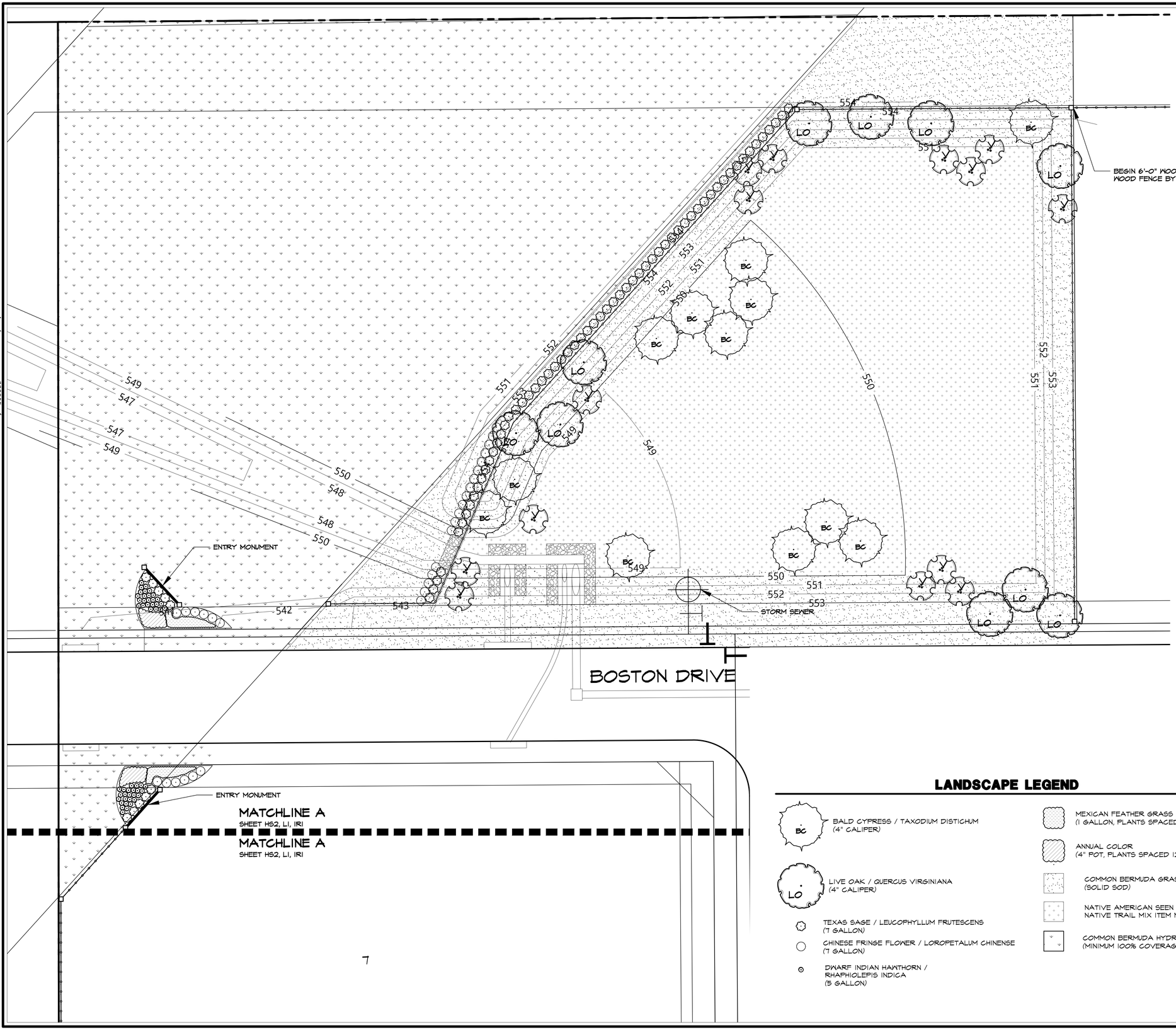
*TBAE Firm #BR643*



Drawing: W:\Shared With Me\shared\Projects\HAR002 – Emerson\DWG\HAR002-LS.dwg Saved By: Station13 Save Time: 9/22/2021 3:08 PM
Plotted by: ###### Plot Date: 9/22/2021 3:10 PM

Note: Drainage or detention areas that utilize native grasses in lieu of turf shall be exempt from the requirements stipulated by Subsection 05.03(D) (i.e. one [1] tree per every 750 SF and one [1] accent tree per 1,500 SF of detention area). Instead, a shrub or ornamental grass per every 750 SF of dry land area shall be required to be planted on the site or around the detention area.

Detention area: 27,763 sqft./750= 37 Required plantings
Provided:
72 Texas Sage
18 Loropetulum
Total: 90




## LANDSCAPE LEGEND

- BC — BALD CYPRESS / TAXODIUM DISTICHUM (4" CALIPER)
- LO — LIVE OAK / QUERCUS VIRGINIANA (4" CALIPER)
- TEXAS SAGE / LEUCOPHYLLUM FRUTESCENS (7 GALLON)
- CHINESE FRINGE FLOWER / LOROPETALUM CHINENSE (7 GALLON)
- DWARF INDIAN HAWTHORN / RHAPHIOLEPIS INDICA (5 GALLON)
- MEXICAN FEATHER GRASS / STIPA TENNUISSIMA (1 GALLON, PLANTS SPACED 12" O.C.)
- ANNUAL COLOR (4" POT, PLANTS SPACED 12" O.C.)
- COMMON BERMUDA GRASS (SOLID SOD)
- NATIVE AMERICAN SEEN NATIVE TRAIL MIX ITEM NUMBER #1811
- COMMON BERMUDA HYDROMULCH (MINIMUM 100% COVERAGE @ 70% DENSITY)


STUDIO 13 DESIGN GROUP
Studio 13 Design Group, P.L.L.C.
386 W. Main Street
Lewisville, Texas 75057
469-635-1900
TBAE Firm #BR643


REGISTERED LANDSCAPE ARCHITECT
LEONARD W. REEVES
1977
STATE OF TEXAS
May 8, 2020

NORTH

20 10 0 20
1" = 20' - 0"
Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.
One Inch

# LANDSCAPE AND SCREENING

Landscape Plans

Emerson Farms

City of Rockwall, Rockwall County, Texas

| # | PLAN REVIEW REVISIONS | BY | DATE |
|---|---|---|---|
| 1 | Revised Per Owner Comments | LWR | 9-4-2019 |

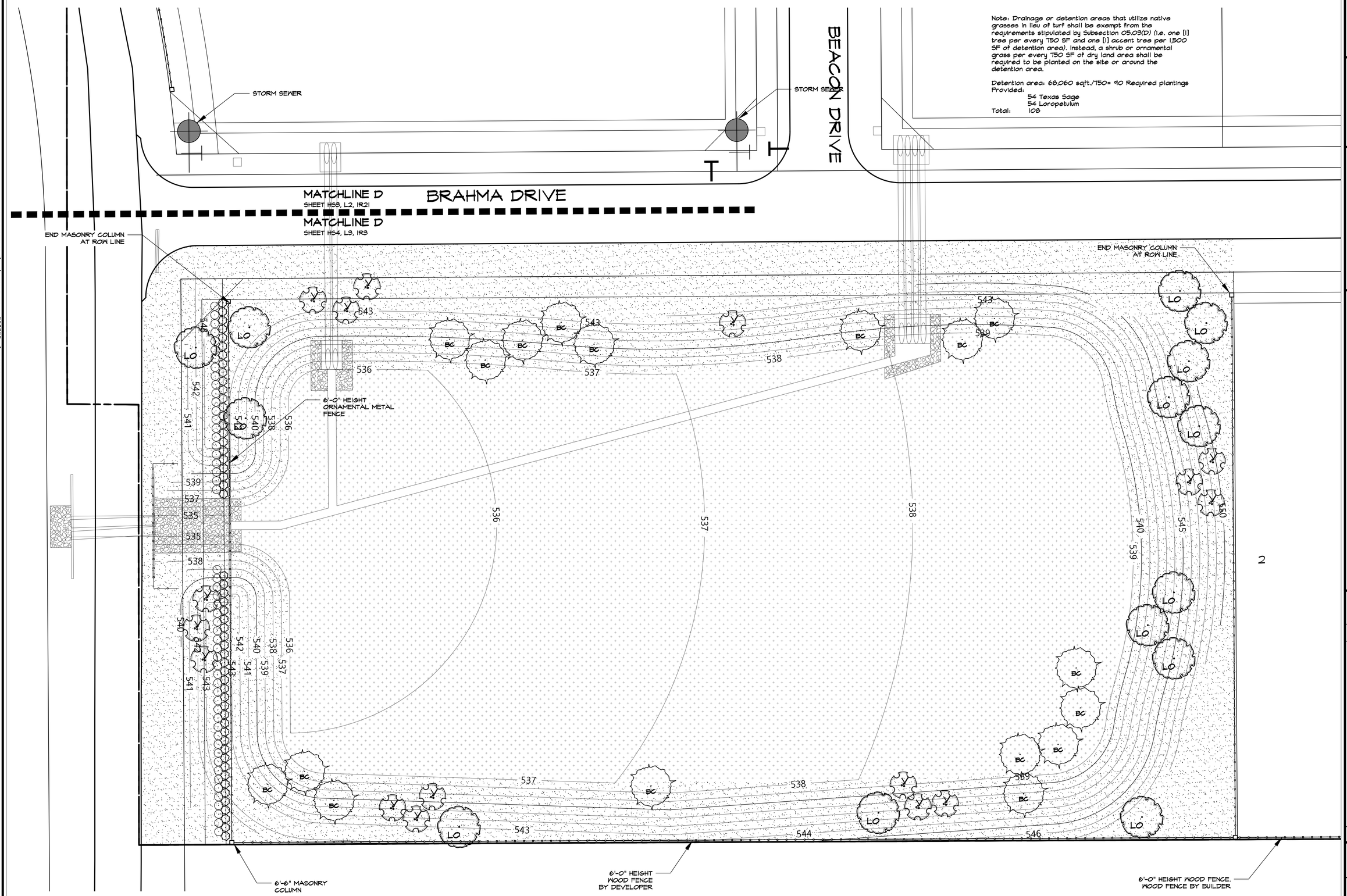
PROJECT
HAR002

SHEET
L1 of 5


Plotted by: ##### Plot Date: 9/22/2021 3:10 PM
Drawing: W:\Shared With Me\shared\Projects\HAR002 – Emerson\DWG\HAR002-LS.dwg Saved By: Station13 Save Time: 9/22/2021 3:08 PM

Note: Drainage or detention areas that utilize native grasses in lieu of turf shall be exempt from the requirements stipulated by Subsection 05.03(D) (i.e. one [1] tree per every 750 SF and one [1] accent tree per 1,500 SF of detention area). Instead, a shrub or ornamental grass per every 750 SF of dry land area shall be required to be planted on the site or around the detention area.

Detention area: 68,060 sqft./750= 90 Required plantings
Provided:
54 Texas Sage
54 Loropetulum
Total: 108





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REGISTERED LANDSCAPE ARCHITECT
LEONARD W. REEVES
1977
STATE OF TEXAS
May 8,2020

NORTH

20 10 0 20
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One Inch

# LANDSCAPE AND SCREENING

Landscape Plans

Emerson Farms

City of Rockwall, Rockwall County, Texas

| # | PLAN REVIEW REVISIONS | BY | DATE |
|---|---|---|---|
| 0 | | | |

PROJECT
HAR002

SHEET
L2 of 5

Plotted by: ##### Plot Date: 9/22/2021 3:10 PM

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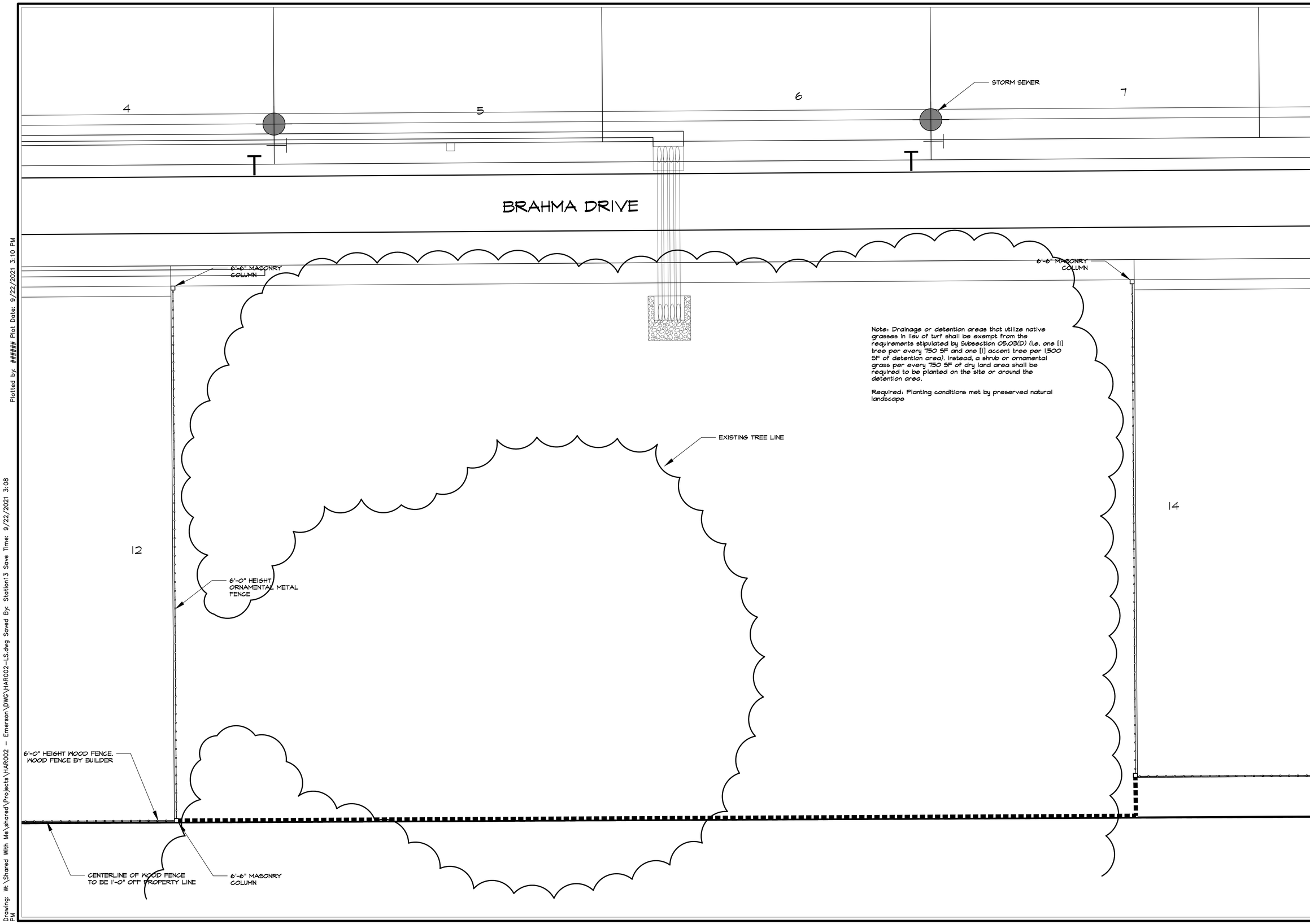



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REGISTERED LANDSCAPE ARCHITECT
LEONARD W. REEVES
1977
STATE OF TEXAS

May 8, 2020

NORTH

20 10 0 20

1" = 20' - 0"

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.

One Inch

# LANDSCAPE AND SCREENING

Landscape Plans

Emerson Farms

City of Rockwall, Rockwall County, Texas

| # | PLAN REVIEW REVISIONS | BY | DATE |
|---|---|---|---|
| 1 | Revised Per Owner Comments | LWR | 9-4-2019 |

PROJECT
HAR002

SHEET
L3 of 5

Plotted by: ##### Plot Date: 9/22/2021 3:10 PM

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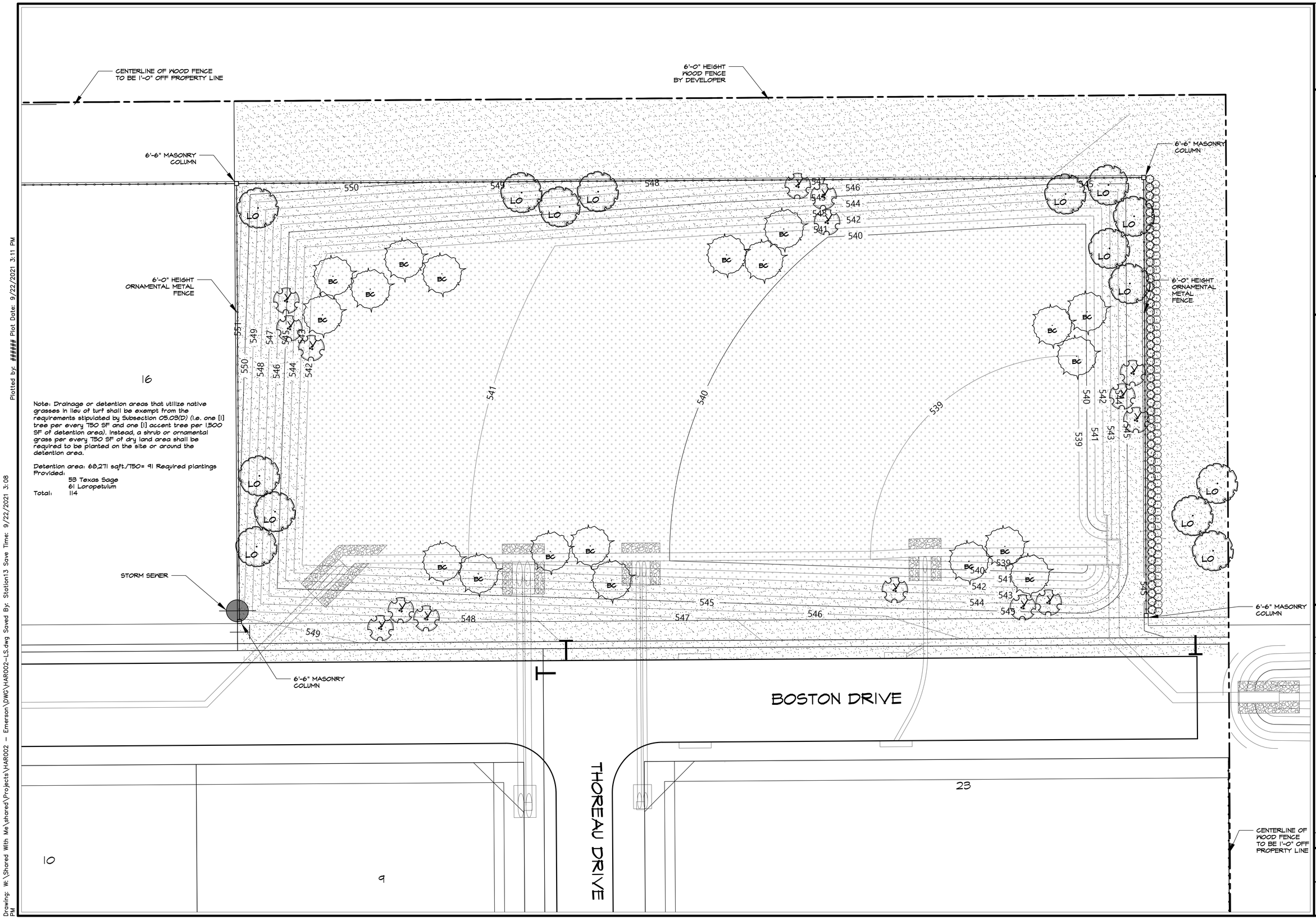


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Detention area: 68,271 sqft./750= 91 Required plantings
Provided:
53 Texas Sage
61 Loropetalum
Total: 114


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Lewisville, Texas 75057
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TBAE Firm #BR643


REGISTERED LANDSCAPE ARCHITECT
LEONARD W. REEVES
1977
STATE OF TEXAS

May 8, 2020

NORTH

20 10 0 20
1" = 20' - 0"

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.

One Inch

# LANDSCAPE AND SCREENING

Landscape Plans

Emerson Farms

City of Rockwall, Rockwall County, Texas

| # | PLAN REVIEW REVISIONS | BY | DATE |
|---|---|---|---|
| 1 | Revised Per Owner Comments | LWR | 9-4-2019 |

PROJECT
HAR002

SHEET
L4 of 5

Plotted by: ##### Plot Date: 9/22/2021 3:11 PM

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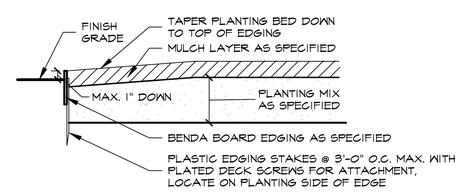
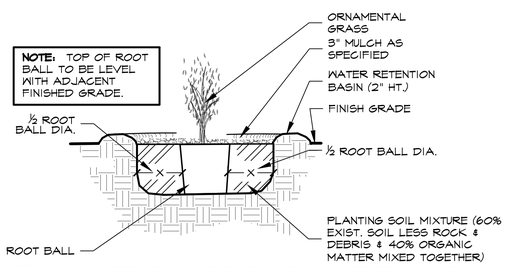
# PLANT LIST

| SYMBOL | COMMON/BOTANICAL NAME | SIZE | SPACING | QUANTITY | REMARKS |
|---|---|---|---|---|---|
| LO | LIVE OAK / QUERCUS VIRGINIANA | 4" CALIPER | AS SHOWN | 6 | 6' MINIMUM SPREAD; MINIMUM 12' HEIGHT; FULL ROUNDED HEAD 6' MINIMUM BRANCHING HEIGHT; NURSERY GROWN, |
| BC | BALD CYPRESS / TAXODIUM DISTICHUM | 4" CALIPER | AS SHOWN | 43 | 6' MINIMUM SPREAD; MINIMUM 12' HEIGHT; FULL ROUNDED HEAD 6' MINIMUM BRANCHING HEIGHT; NURSERY GROWN, |
| V | CHASTE TREE / VITEX AGNUS-CASTUS | 2" CALIPER | AS SHOWN | 43 | 5' MINIMUM SPREAD; MINIMUM 8' HEIGHT; FULL ROUNDED HEAD 3 CANE MINUMUM, NURSERY GROWN, |
| | TEXAS SAGE / LEUCOPHYLLUM FRUTESCENS | 7 GALLON | AS SHOWN | 191 | FULL PLANTS |
| | CHINESE FRINGE FLOWER / LOROPETALUM CHINENSE | 7 GALLON | AS SHOWN | 145 | FULL PLANTS |
| | DWARF INDIAN HAWTHORN / RAPHIOLEPIS INDICA | 7 GALLON | AS SHOWN | 34 | FULL PLANTS |
| | MEXICAN FEATHER GRASS / STIPA TENNUISSIMA | 1 GALLON | 12" O.C. | 184 | FULL PLANTS |
| | ANNUAL COLOR - TBD | 4" FLATS | 12" O.C. | 150 | FULL PLANTS |



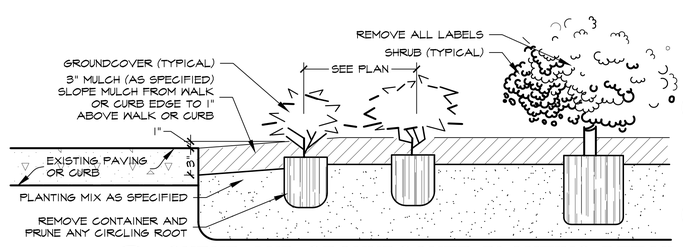

**3 / L5 TYPICAL BED EDGING DETAIL**

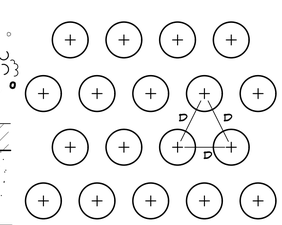
NOT TO SCALE




**1 / L5 POCKET PLANTING ORNAMENTAL GRASS DETAIL**

NOT TO SCALE

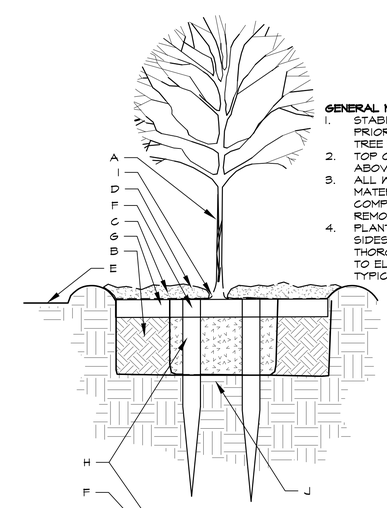


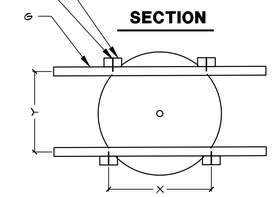

TRIANGULARLY SPACE ALL GROUND COVERS. D = GROUNDCOVER OR SHRUB SPACING AS NOTED.

**2 / L5 SHRUB AND GROUNDCOVER PLANTING DETAIL**

NOT TO SCALE




**SECTION**




**PLAN VIEW**

**GENERAL NOTES:**

1. STABILIZE SOIL BELOW ROOT BALL PRIOR TO PLANTING TO PREVENT TREE FROM SETTLING.
2. TOP OF ROOTBALL SHALL 1" TO 2" ABOVE FINISHED GRADE.
3. ALL WIRE ROPE AND SYNTHETIC MATERIALS SHALL BE REMOVED COMPLETELY FROM ROOTBALL AND REMOVE TOP 1/3 OF BURLAP
4. PLANTING PITS SHALL BE SQUARE, SIDES OF PITS SHALL BE THOROUGHLY SCARIFIED/ROUGHENED TO ELIMINATE FLARED AS SHOWN IN TYPICAL DETAIL

**CONSTRUCTION NOTES:**

A. TREE
B. LOOSEN NATIVE BACKFILL (NO SOIL AMENDMENTS IN CONTRACT)
C. WATER RETENTION BASIN
D. 3" DEPTH MULCH AS SPECIFIED
E. FINISH GRADE
F. 2 1/2 DRYWALL SCREW (UNFINISHED)
G. 2" X 2" X 4" CROSS MEMBER (UNTREATED LUMBER). **NOTE:** CROSS MEMBERS TO BE ORIENTED PARALLEL TO NORTH / SOUTH BEARING AND SHALL BE PROPORTIONAL IN LENGTH TO ROOT BALL (4' MIN).
H. 2" X 2" X 4' STAKE WITH 18" MIN. TAPER (UNTREATED LUMBER)
I. REMOVE TOP 1/3 OF BURLAP SURROUNDING ROOTBALL AFTER INSTALLATION (TO PREVENT "WICKING" OF MOISTURE) X. DIMENSION EQUAL TO "Y" Y. DIMENSION EQUAL TO "X"
J. ROOTBALL SHALL BE PLACED ON UNDISTURBED NATIVE SOIL.

**4 / L5 TREE PLANTING**

NOT TO SCALE


STUDIO 13 DESIGN GROUP

Studio 13 Design Group, P.L.L.C.
386 W. Main Street
Lewisville, Texas 75057
469-635-1900

TBAE Firm #BR643


REGISTERED LANDSCAPE ARCHITECT LEONARD W. REEVES 1977 STATE OF TEXAS

May 8, 2020

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.

One Inch

LANDSCAPE AND SCREENING

Landscape Details

Emerson Farms

City of Rockwall, Rockwall County, Texas

| # | PLAN REVIEW REVISIONS | BY | DATE |
|---|---|---|---|
| 1 | Revised Per Owner Comments | LWR | 9-4-2019 |

PROJECT HAR002

SHEET L5 of 5


Plotted by: ##### Plot Date: 9/22/2021 3:11 PM

Drawing: W:\Shared With Me\shared\Projects\HAR002 – Emerson\DWG\HAR002-L5.dwg Saved By: Station13 Save Time: 9/22/2021 3:08 PM