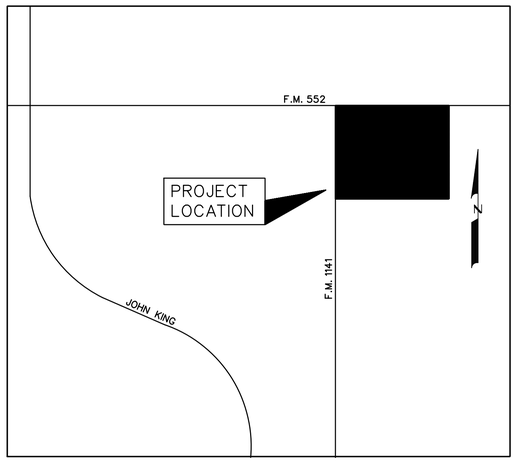
21012

NELSON LAKES

DEVELOPMENT PLANS
FOR
NELSON LAKES
CITY OF ROCKWALL, TEXAS



LOCATION MAP

PREPARED FOR

QUALICO DEVELOPMENTS (U.S.), INC.

6950 TPC DRIVE, SUITE 350, McKINNEY, TEXAS 75070

CORWIN ENGINEERING, INC. — CONSULTING ENGINEERS

200 W. BELMONT, SUITE E — TBPE FIRM *5951 — ALLEN, TEXAS 75013

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STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER

11/02/2021

AS-BUILT JUNE 2023
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

JUNE 2021

CITY OF ROCKWALL GRID SYSTEM COORDINATES	
X	Y
2602343.262	7040467.443
ELEV = 539.0	

POINT OF BEGINNING

N44° 13' 32"E 70.07'

TXDOT TYPE II MON. FND.

F.M. 552 (80' R.O.W.)

N89° 24'17"E 1689.33'

15' FARMERS ELEC. ESMT. VOL. 5070, PG. 320

20' FARMERS ELEC. LANDSCAPE ESMT. VOL. 5070, PG. 320

20' R.O.W. DEDICATION

N89° 24'17"E 565.91'

N89° 24'17"E 830.01'

LOT 17 BLOCK A
OPEN SPACE/DRAINAGE/DETENTION EASEMENT
2.444 AC.

LOT 19 BLOCK B - OPEN SPACE - 0.592 AC.

HAYGOOD ROAD (90' R.O.W.)

TILLEY COURT (50' R.O.W.)

ELLERSLIE COURT (50' R.O.W.)

MORRIS STREET (50' R.O.W.)

CHATSWORTH ROAD (50' R.O.W.)

STRATFORD ROAD (50' R.O.W.)

N89° 06'02"E 1240.63'

F.M. 1141 (90' R.O.W.)

DALTON RANCH PHASE 2 VOL. G, PG. 201

10' R.O.W. DEDICATION

FUTURE 100' R.O.W.

EX. 90' R.O.W.

NOTTINGHAM ROAD (50' R.O.W.)

LIMESTONE WAY

N00° 54'08"W 1939.20'

LOT 21 BLOCK F - OPEN SPACE - 0.679 AC.

DALTON RANCH VOL. G, PG. 59

EUCLID DRIVE (50' R.O.W.)

N89° 06'02"E 830.08'

N89° 06'02"E 570.92'

HUNTWICK WAY (50' R.O.W.)

N89° 06'02"E 505.23'

MACBETH LANE (50' R.O.W.)

GLENWOOD LANE (50' R.O.W.)

N89° 06'02"E 135.47'

BRYNE LANE (50' R.O.W.)

LOT 44 BLOCK J
OPEN SPACE/AMENITY CENTER
1.403 AC.

LOT 43 BLOCK J
OPEN SPACE/DRAINAGE EASEMENT
45.340 AC.

NRCS EASEMENT (530 ELEVATION)

NRCS ESMT.

LOCATION OF 100 YR. FEMA FLOODPLAIN

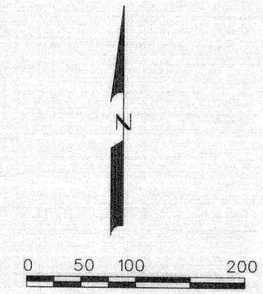
MATCHLINE (SHEET 3 OF 4)

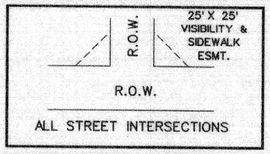
MATCHLINE (SHEET 2 OF 4)

LOT 11 BLOCK E OPEN SPACE 0.662 AC.

LOT 28 BLOCK C - OPEN SPACE - 0.138 AC.

LOT 29 BLOCK D - OPEN SPACE - 0.127 AC.





VISIBILITY & SIDEWALK EASEMENT DETAIL
N.T.S.

FINAL PLAT
OF

NELSON LAKE ESTATES

LOTS 1-17, BLOCK A
LOTS 1-19, BLOCK B
LOTS 1-41, BLOCK C
LOTS 1-40, BLOCK D
LOTS 1-21, BLOCK E
LOTS 1-22, BLOCK F
LOTS 1-12, BLOCK G
LOTS 1-16, BLOCK H
LOTS 1-36, BLOCK I
LOTS 1-44, BLOCK J
TOTAL ACRES 120.900
TOTAL RESIDENTIAL LOTS 260
TOTAL OPEN SPACE LOTS 8

OUT OF THE

J.M. GASS SURVEY, ABSTRACT NO. 88

IN THE

CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

OWNER

QUALICO DEVELOPMENT(U.S.), INC.
6950 TPC DRIVE, STE. 350
McKINNEY, TEXAS 75070

PREPARED BY

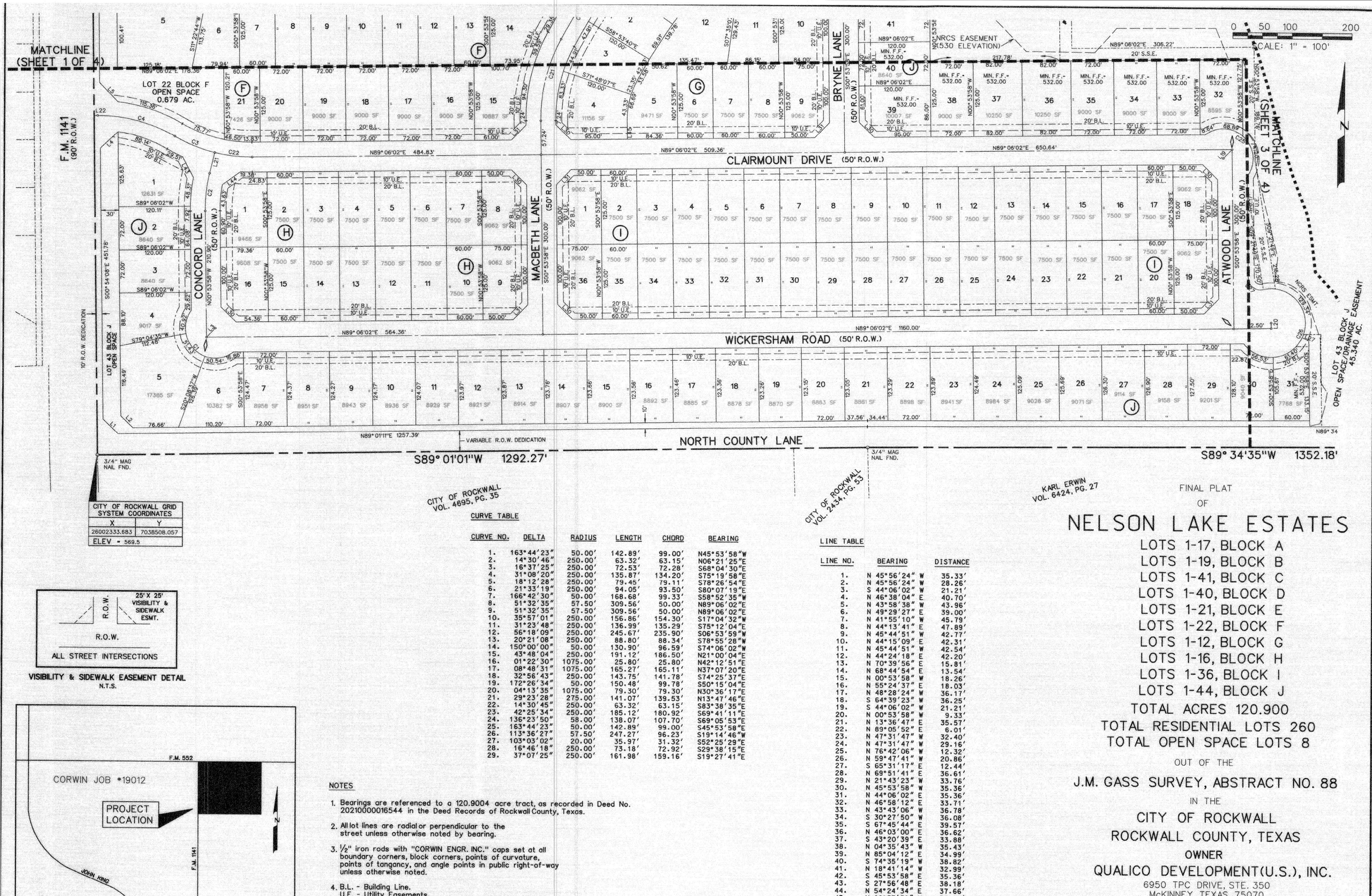
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013
972-396-1200

JANUARY 2023 SCALE 1"=100'

CASE NO. P2022-003 SHEET 1 OF 4

CORWIN JOB #21012

20230000003029 1/4 PLAT 02/28/2023 12:39:37 PM



CITY OF ROCKWALL GRID SYSTEM COORDINATES	
X	Y
26002333.683	7038508.057
ELEV = 569.5	

VISIBILITY & SIDEWALK EASEMENT DETAIL
N.T.S.

LOCATION MAP
N.T.S.

CURVE TABLE

CURVE NO.	DELTA	RADIUS	LENGTH	CHORD	BEARING
1.	163°44'23"	50.00'	142.89'	99.00'	N45°53'58"W
2.	14°30'46"	250.00'	63.32'	63.15'	N06°21'25"E
3.	16°37'25"	250.00'	72.53'	72.28'	S68°04'30"E
4.	31°08'20"	250.00'	135.87'	134.20'	S75°19'58"E
5.	18°12'28"	250.00'	79.45'	79.11'	S78°26'54"E
6.	21°33'19"	250.00'	94.05'	93.50'	S80°07'19"E
7.	166°42'30"	50.00'	168.68'	99.33'	S58°52'35"W
8.	51°32'35"	57.50'	309.56'	50.00'	N89°06'02"E
9.	51°32'35"	57.50'	309.56'	50.00'	N89°06'02"E
10.	35°57'01"	250.00'	156.86'	154.30'	S17°04'32"W
11.	31°23'48"	250.00'	136.99'	135.29'	S75°12'04"E
12.	56°18'09"	250.00'	245.67'	235.90'	S06°53'59"W
13.	20°21'08"	250.00'	88.80'	88.34'	S78°55'28"W
14.	150°00'00"	50.00'	130.90'	96.59'	S74°06'02"W
15.	43°48'04"	250.00'	191.12'	186.50'	N21°00'04"E
16.	01°22'30"	1075.00'	25.80'	25.80'	N42°12'51"E
17.	08°48'31"	1075.00'	165.27'	165.11'	N37°07'20"E
18.	32°56'43"	250.00'	143.75'	141.78'	S74°25'37"E
19.	172°26'34"	50.00'	150.48'	99.78'	S50°15'04"E
20.	04°13'35"	1075.00'	79.30'	79.30'	N30°36'17"E
21.	29°23'28"	275.00'	141.07'	139.53'	N13°47'46"E
22.	14°30'45"	250.00'	63.32'	63.15'	S83°38'35"E
23.	42°25'34"	250.00'	185.12'	180.92'	S69°41'11"E
24.	136°23'50"	58.00'	138.07'	107.70'	S69°05'53"E
25.	163°44'23"	50.00'	142.89'	99.00'	S45°53'58"E
26.	113°36'27"	57.50'	247.27'	96.23'	S19°14'46"W
27.	103°03'02"	20.00'	35.97'	31.32'	S52°25'29"E
28.	16°46'18"	250.00'	73.18'	72.92'	S29°38'15"E
29.	37°07'25"	250.00'	161.98'	159.16'	S19°27'41"E

LINE TABLE

LINE NO.	BEARING	DISTANCE
1.	N 45°56'24" W	35.33'
2.	N 45°56'24" W	28.26'
3.	S 44°06'02" W	21.21'
4.	N 46°38'04" E	40.70'
5.	N 43°58'38" W	43.96'
6.	N 49°29'27" E	39.00'
7.	N 41°55'10" W	45.79'
8.	N 44°13'41" E	47.89'
9.	N 45°44'51" W	42.77'
10.	N 44°15'09" E	42.31'
11.	N 45°44'51" W	42.54'
12.	N 44°24'18" E	42.20'
13.	N 70°39'56" E	15.81'
14.	N 68°44'54" E	13.54'
15.	N 00°53'58" W	18.26'
16.	N 55°24'37" E	18.03'
17.	N 48°28'24" W	36.17'
18.	S 64°39'23" W	36.25'
19.	S 44°06'02" W	21.21'
20.	N 00°53'58" W	9.33'
21.	N 13°36'47" E	35.57'
22.	N 89°05'52" E	6.01'
23.	N 47°31'47" W	32.40'
24.	N 47°31'47" W	29.16'
25.	N 76°42'06" W	12.32'
26.	N 59°47'41" W	20.86'
27.	S 65°31'17" E	12.44'
28.	N 69°51'41" E	36.61'
29.	N 21°43'23" W	33.76'
30.	N 45°53'58" W	35.36'
31.	N 44°06'02" E	35.36'
32.	N 46°58'12" E	33.71'
33.	N 43°43'06" W	36.78'
34.	S 30°27'50" W	36.08'
35.	S 67°45'44" E	39.57'
36.	N 46°03'00" E	36.62'
37.	S 43°20'39" E	33.88'
38.	N 04°35'43" W	35.43'
39.	N 85°04'12" E	34.99'
40.	S 74°35'19" W	38.82'
41.	N 18°41'14" W	32.99'
42.	S 45°53'58" E	35.36'
43.	S 27°56'48" E	38.18'
44.	N 54°24'34" E	37.66'
45.	N 00°53'58" W	32.24'
46.	S 20°42'13" W	33.35'

NOTES

1. Bearings are referenced to a 120.9004 acre tract, as recorded in Deed No. 20210000016544 in the 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
   V.A.M.S. - Visibility, Maintenence & Sidewalk Easement
5. The HOA will be responsible for maintaining the open space/drainage easement lots.
6. All non-standard decorative street signs, light poles/post, hardware, attachments, foundations, etc. shall be owned, maintained, repaired and replaced by the HOA.
7. All landscape easements are to be owned, maintained, repaired and replaced by the Homeowners Association.

TOTAL OPEN SPACE ACRES 50.589 AC.
TOTAL OPEN SPACE ACRES IN FLOODPLAIN 30.324 AC.

FINAL PLAT
OF

NELSON LAKE ESTATES

LOTS 1-17, BLOCK A
LOTS 1-19, BLOCK B
LOTS 1-41, BLOCK C
LOTS 1-40, BLOCK D
LOTS 1-21, BLOCK E
LOTS 1-22, BLOCK F
LOTS 1-12, BLOCK G
LOTS 1-16, BLOCK H
LOTS 1-36, BLOCK I
LOTS 1-44, BLOCK J
TOTAL ACRES 120.900
TOTAL RESIDENTIAL LOTS 260
TOTAL OPEN SPACE LOTS 8

OUT OF THE

J.M. GASS SURVEY, ABSTRACT NO. 88

IN THE

CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

OWNER

QUALICO DEVELOPMENT(U.S.), INC.
6950 TPC DRIVE, STE. 350
McKINNEY, TEXAS 75070

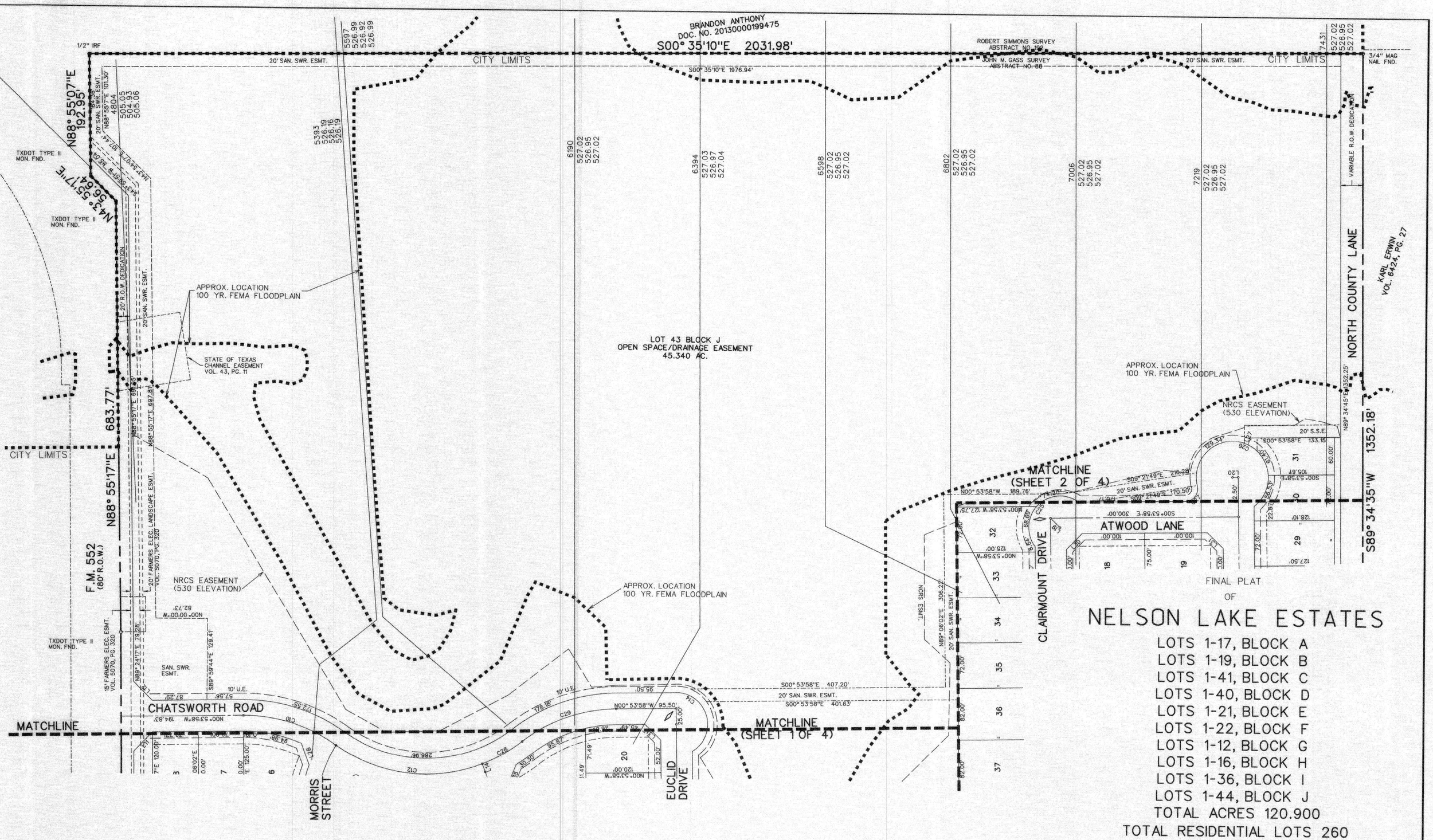
PREPARED BY

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013
972-396-1200

JANUARY 2023 SCALE 1"-100'

CASE NO. P2022-003 SHEET 2 OF 4

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

FINAL PLAT
OF

NELSON LAKE ESTATES

LOTS 1-17, BLOCK A
LOTS 1-19, BLOCK B
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LOTS 1-40, BLOCK D
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TOTAL ACRES 120.900
TOTAL RESIDENTIAL LOTS 260
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OUT OF THE

J.M. GASS SURVEY, ABSTRACT NO. 88

IN THE

CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

OWNER

QUALICO DEVELOPMENT(U.S.), INC.
6950 TPC DRIVE, STE. 350
McKINNEY, TEXAS 75070

JANUARY 2023 SCALE 1"=100'

CASE NO. P2022-003 SHEET 3 OF 4

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 NELSON LAKES ESTATES, 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 NELSON LAKES ESTATES, 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 and drainage systems are to be maintained, repaired and owned by the HOA/subdivision. Property owner shall be responsible for maintaining, repairing, and replacing all systems within the drainage and detention easements.

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.

QUALICO DEVELOPMENT (U.S.), INC.
a Delaware Corporation

John Vick
Assistant Secretary

STATE OF TEXAS
COUNTY OF DALLAS
Before me, the undersigned authority, on this day personally appeared JOHN VICK, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purpose and consideration therein stated. Given upon my hand and seal of office this 7 day of February, 2023.

Madison McCabe
Notary Public in and for the State of Texas

My Commission Expires: 01-08-2024

MADISON MCCABE
Notary Public, State of Texas
Comm. Expires 01-08-2024
Notary ID 130489997

NOTE: It shall be the policy of the City of Rockwall to withhold issuing building permits until all streets, water, sewer and storm drainage systems have been accepted by the City. The approval of a plat by the City does not constitute any representation, assurance or guarantee that any building within such plat shall be approved, authorized or permit therefore issued, nor shall such approval constitute any representation, assurance or guarantee by the City of the adequacy and availability for water for personal use and fire protection within such plat, as required under Ordinance 83-54.

LEGAL DESCRIPTION

WHEREAS, QUALICO DEVELOPMENT (U.S.), INC., is the owner of a tract of land situated in the J.M. Glass Survey, Abstract No. 88 in the City of Rockwall, Rockwall County, Texas, being all of a 120.9004 acre tract, as described in Clerks File No. 20210000016544 in the Deed Records of Rockwall County, Texas being more particularly described as follows:

BEGINNING, at a "TXDOT" Type II Mon. found at the most westerly northwest corner of said 120.9004 acre tract and being in the south line of F.M. 552 (Variable R.O.W.);

THENCE, North 89° 24'17" East, along the north line of said 120.9004 acre tract and being in the south line of said F.M. 552, for a distance of 1,689.33 feet, to a "TXDOT" Type II Mon. found;

THENCE, North 88° 55'17" East, continuing along said lines, for a distance of 683.77 feet, to a "TXDOT" Type II Mon. found;

THENCE, North 43° 55'17" East, continuing along said lines, for a distance of 56.64 feet, to a "TXDOT" Type II Mon. found;

THENCE, North 88° 55'07" East, departing the south line of said F.M. 552 and continuing along the north line of said 120.9004 acre tract, for a distance of 192.95 feet, to a 1/2 inch iron rod found with a red cap stamped "PJB Surveying" at the northeast corner of said 120.9004 acre tract;

THENCE, South 00° 35'10" East, along the east line of said 120.9004 acre tract, for a distance of 2,031.98 feet, to a 3/4 inch mag nail found at the southeast corner of said 120.9004 acre tract, being in North County Lane (Variable R.O.W.);

THENCE, South 89° 34'35" West, along the south line of said 120.9004 acre tract and with said North County Lane, for a distance of 1,352.18 feet, to a 3/4 inch mag nail found;

THENCE, South 89° 01'01" West, continuing along said lines, for a distance of 1,292.27 feet, to a 3/4 inch mag nail found at the southwest corner of said 120.9004 acre tract being in the east line of F.M. 1411 (90' R.O.W.);

THENCE, North 00° 54'08" West, along the west line of said 120.9004 acre tract and the east line of said F.M. 1141, for a distance of 1,939.20 feet, to a "TXDOT" Type II Mon. found;

THENCE, North 44° 13'32" East, continuing along said east and west lines, for a distance of 70.07 feet, to the POINT OF BEGINNING and containing 120.900 acres of land.

SURVEYOR 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 6th day of FEB, 2023.

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

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

Planning & Zoning Commission — 2-14-2023 Date

APPROVED

I hereby certify that the above and foregoing plat of an addition to the City of Rockwall, Texas, was approved by the City Council of the City of Rockwall on the 14 day of February, 2023.

This approval shall be invalid unless the approved plat for such addition is recorded in the office of the Counrt Clerk of Rockwall, County, Texas, within one hundred eighty (180) days from said date of final approval.

WITNESS OUR HANDS, this 21st day of February, 2023.

Mayor, City of Rockwall — Kristy Teague, City Secretary — Amy Williams, P.E., City Engineer

CITY OF ROCKWALL TEXAS

Filed and Recorded
Official Public Records
Jennifer Fogg, County Clerk
Rockwall County, Texas
02/28/2023 12:39:37 PM
$200.00
20230000003029

COPY

ROCKWALL COUNTY, TEXAS COUNTY CLERK

FINAL PLAT
OF
NELSON LAKE ESTATES

LOTS 1-17, BLOCK A
LOTS 1-19, BLOCK B
LOTS 1-41, BLOCK C
LOTS 1-40, BLOCK D
LOTS 1-21, BLOCK E
LOTS 1-22, BLOCK F
LOTS 1-12, BLOCK G
LOTS 1-16, BLOCK H
LOTS 1-36, BLOCK I
LOTS 1-44, BLOCK J
TOTAL ACRES 120.900
TOTAL RESIDENTIAL LOTS 260
TOTAL OPEN SPACE LOTS 8

OUT OF THE

J.M. GASS SURVEY, ABSTRACT NO. 88

IN THE

CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

OWNER

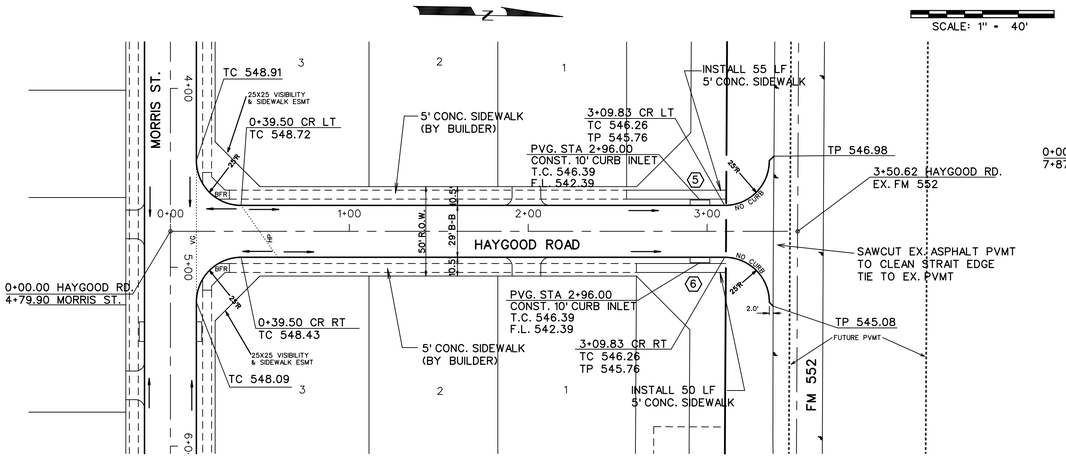
QUALICO DEVELOPMENT(U.S.), INC.
6950 TPC DRIVE, STE. 350
McKINNEY, TEXAS 75070

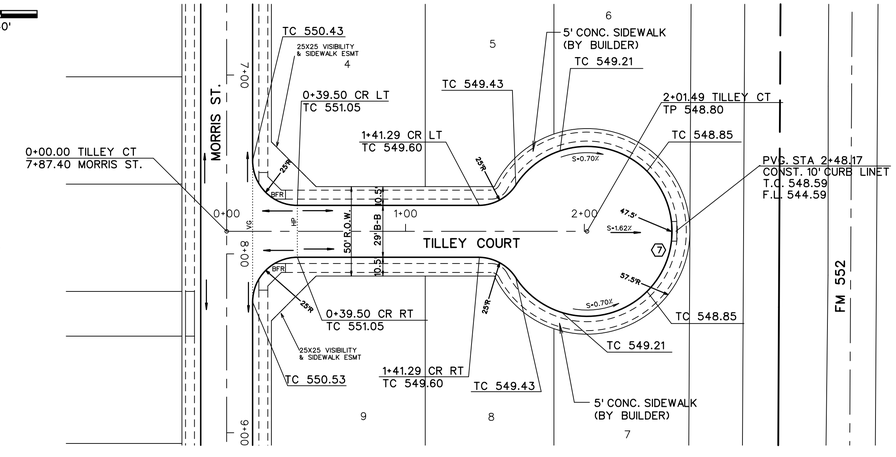
PREPARED BY

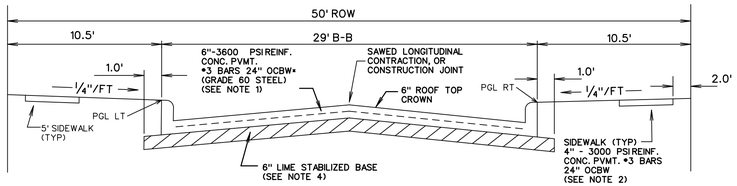
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013
972-396-1200

JANUARY 2023

CASE NO. P2022-003 SHEET 4 OF 4







TYPICAL PAVEMENT SECTION (29' B-B)

N.T.S.

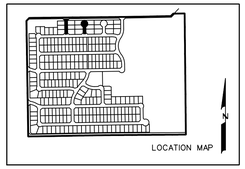
* MIN. 6½ SACK/CY MIX IF HAND PLACED
MIN. 6 SACK/CY FOR MACHINE PLACED

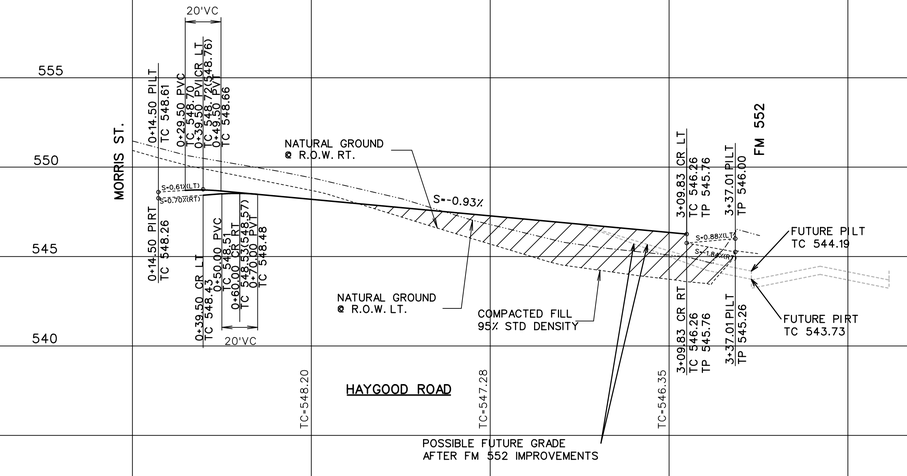
PAVING NOTES:

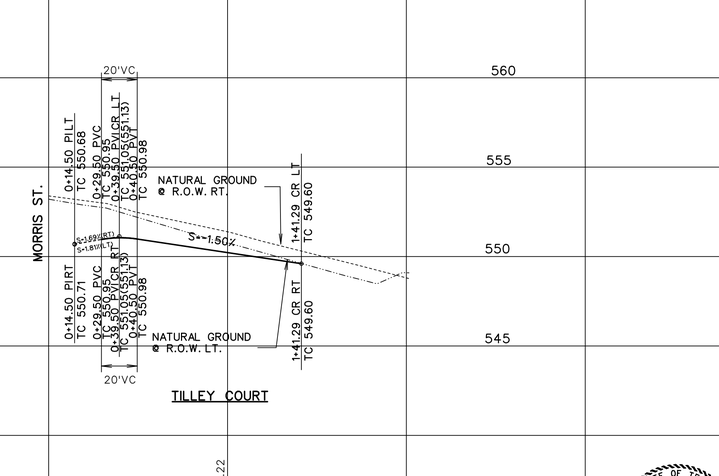
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NOTE:
ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.

- SIDEWALK BY HOMEBUILDER
- SIDEWALK BY DEVELOPER







AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

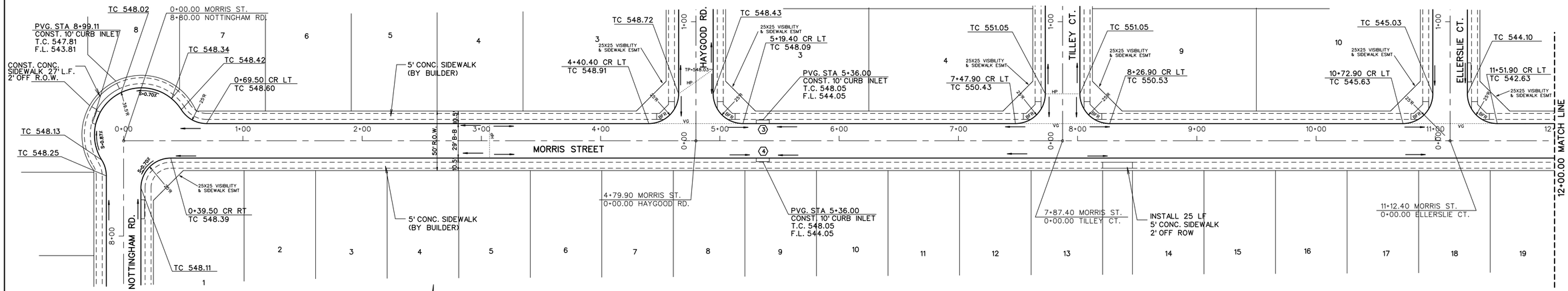
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

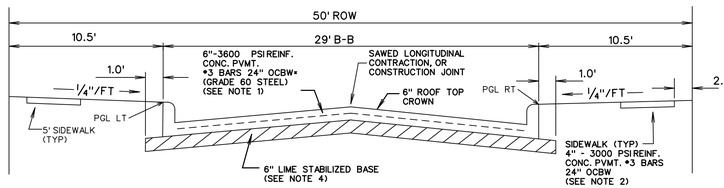
HAYGOOD ROAD
TILLEY COURT

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	4



N

SCALE: 1" = 40'



TYPICAL PAVEMENT SECTION (29' B-B)

N.T.S.

* MIN. 6½ SACK/CY MIX IF HAND PLACED
MIN. 6 SACK/CY FOR MACHINE PLACED

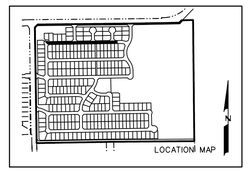
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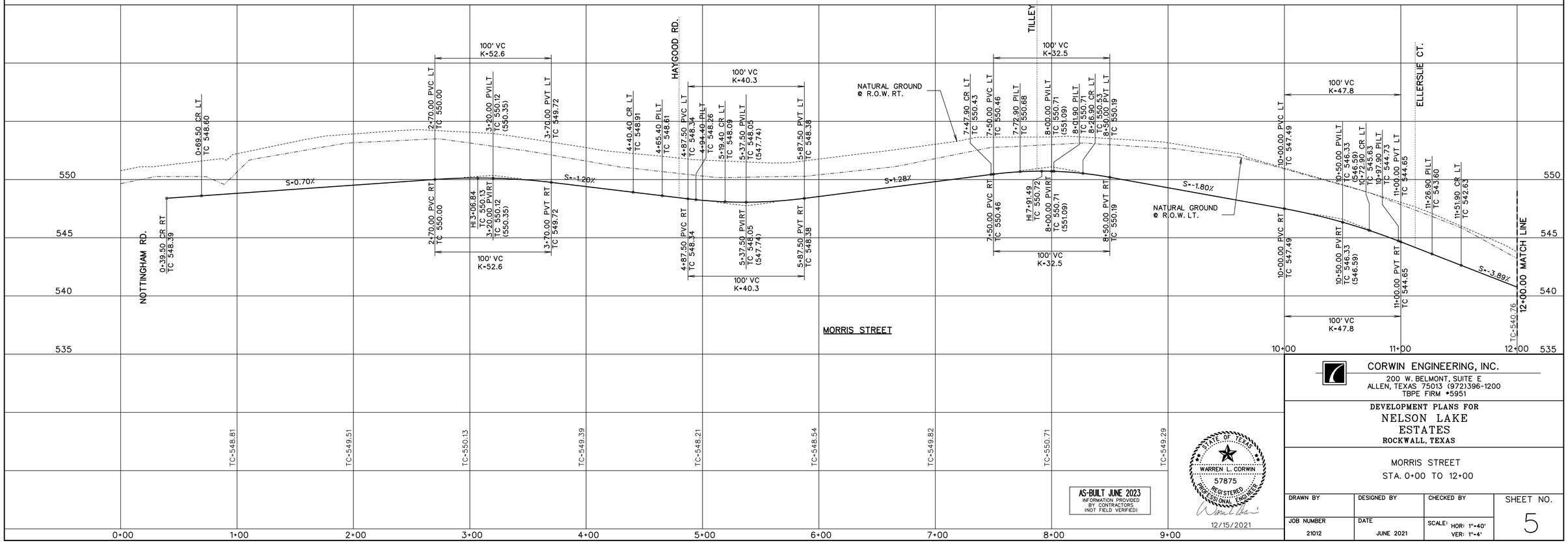
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——— SIDEWALK BY DEVELOPER

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AS-BUILT JUNE 2023
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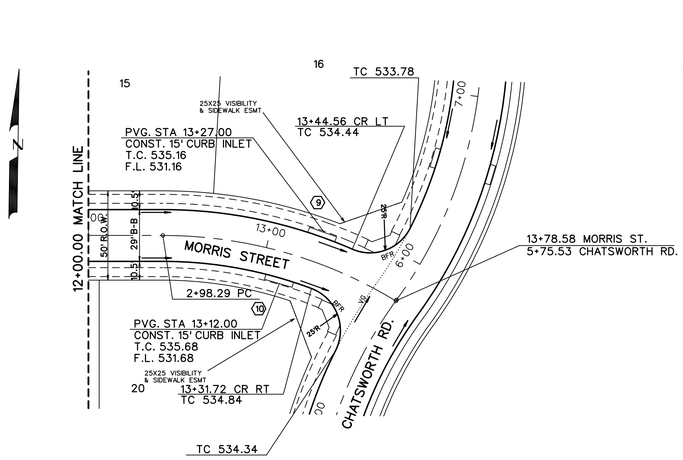
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

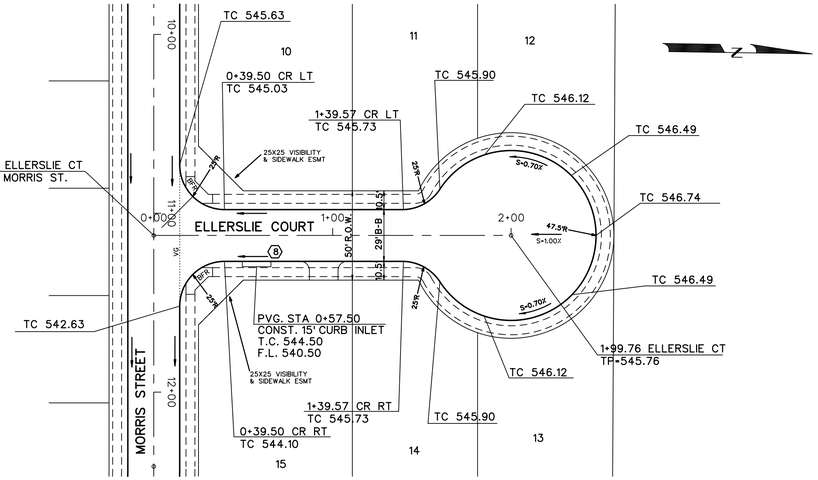
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

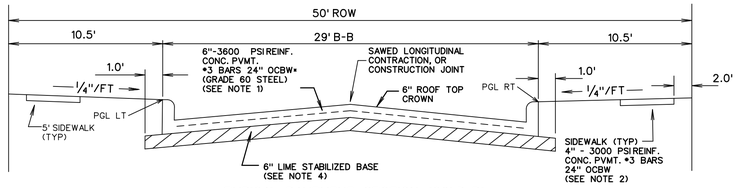
MORRIS STREET
STA. 0+00 TO 12+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	5



SCALE: 1" = 40'





TYPICAL PAVEMENT SECTION (29'B-B)

N.T.S.

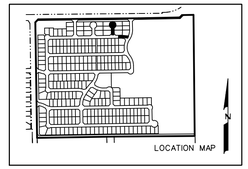
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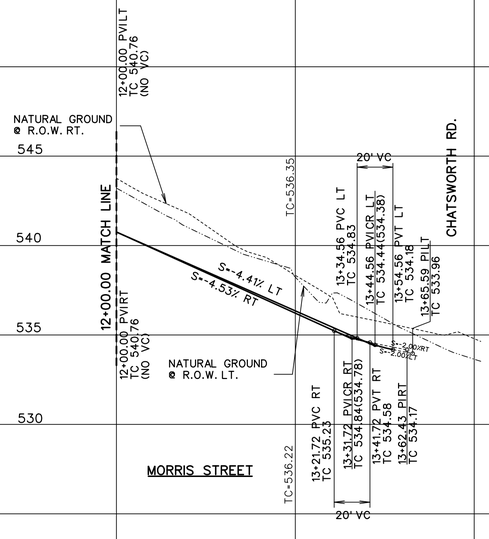
PAVING NOTES:

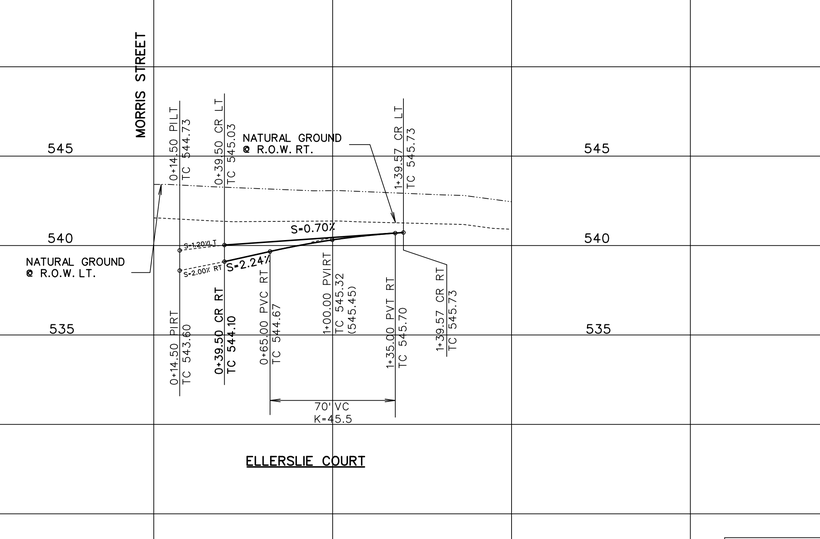
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- - - - - SIDEWALK BY HOMEBUILDER
——— SIDEWALK BY DEVELOPER







AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

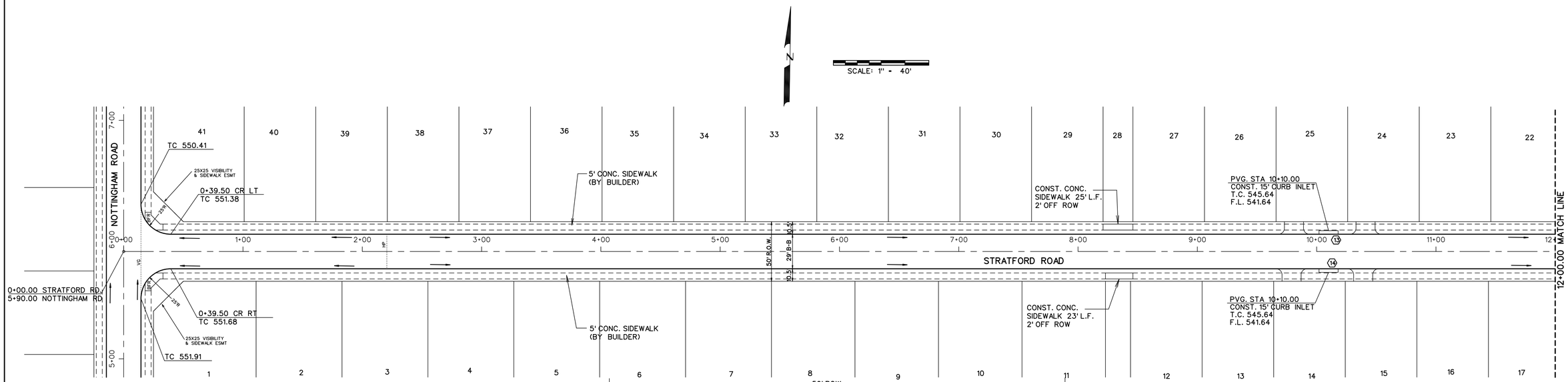
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

MORRIS STREET
STA. 12+00 TO END
ELLERSLIE COURT

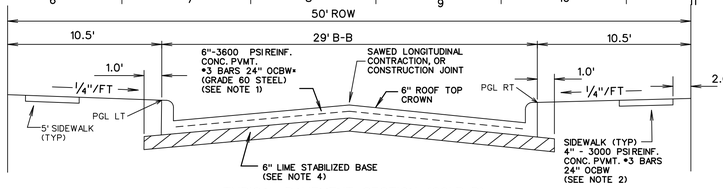
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	6



NOTE:
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- - - - - - SIDEWALK BY HOMEBUILDER

——— SIDEWALK BY DEVELOPER



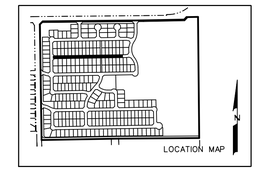
TYPICAL PAVEMENT SECTION (29' B-B)

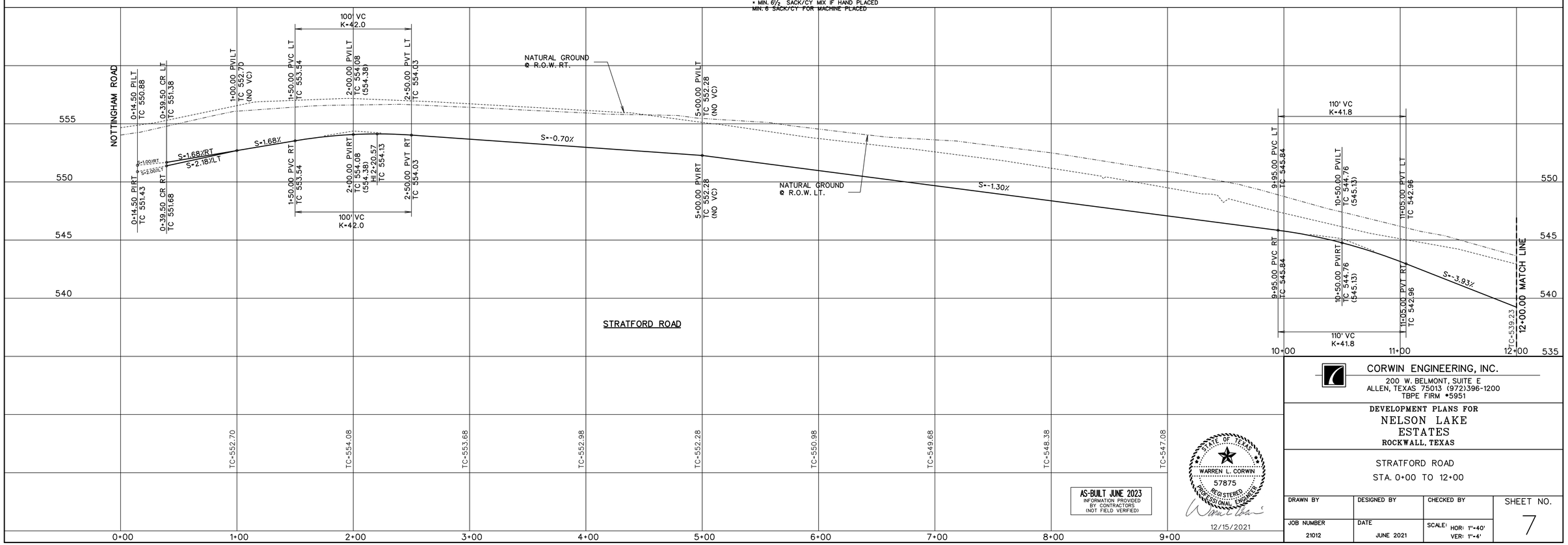
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AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

STRATFORD ROAD
STA. 0+00 TO 12+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	7

SCALE: 1" = 40'

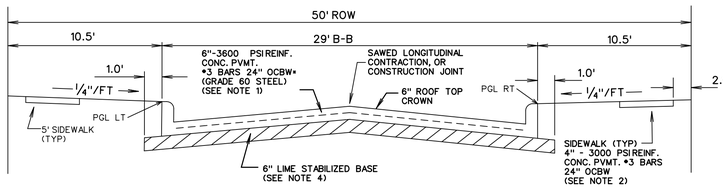
N

TP 555.59
0+25.39 PC
0+37.46 CR LT
TC 556.86
TP 556.36
CONST. CONC. SIDEWALK 40' L.F.
SAWCUT EX. ASPHALT PVMT TO CLEAN STRAIT EDGE TIE TO EX. PVMT
3+00.00 EUCLID DR
2+29.46 NOTTINGHAM RD
TC 555.82
25X25 VISIBILITY & SIDEWALK ESMT
1+85.48 CR LT
TC 553.83
2+68.96 CR LT
TC 555.24
0+00.00 EUCLID DR
EX FM 1141
TP 557.29
CONST. CONC. SIDEWALK 41' L.F.
0+42.04 CR RT
TC 556.83
TP 556.33
1+93.15 CR RT
TC 555.77
2+13.51 PT
1+19.45 PRC
TC 555.91
TC 555.92
FM 1141
NOTTINGHAM ROAD
EUCLID DRIVE
5' CONC. SIDEWALK (BY BUILDER)
PVG. STA 9+63.00
CONST. 15' CURB INLET
T.C. 542.72
F.L. 538.72
PVG. STA 9+97.50
CONST. 20' CURB INLET
T.C. 542.17
F.L. 538.17
10+59.54 EURCLID DR
9+78.06 MACBETH LN
CONST. CONC. SIDEWALK 25' L.F. 2' OFF ROW
10+18.97 CR RT
TC 541.83
TC 541.82
10+98.26 CR RT
TC 540.56
TC 541.37
CONST. 5' CONC. SIDEWALK 1180 L.F.
MACBETH LN.
50' R.O.W.
29' B-B
10.5'
12+00.00 MATCH LINE

NOTE:
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- - - - - - - SIDEWALK BY HOMEBUILDER

——————— SIDEWALK BY DEVELOPER



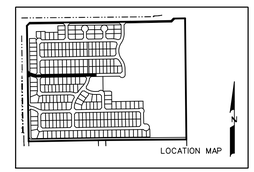
TYPICAL PAVEMENT SECTION (29' B-B)

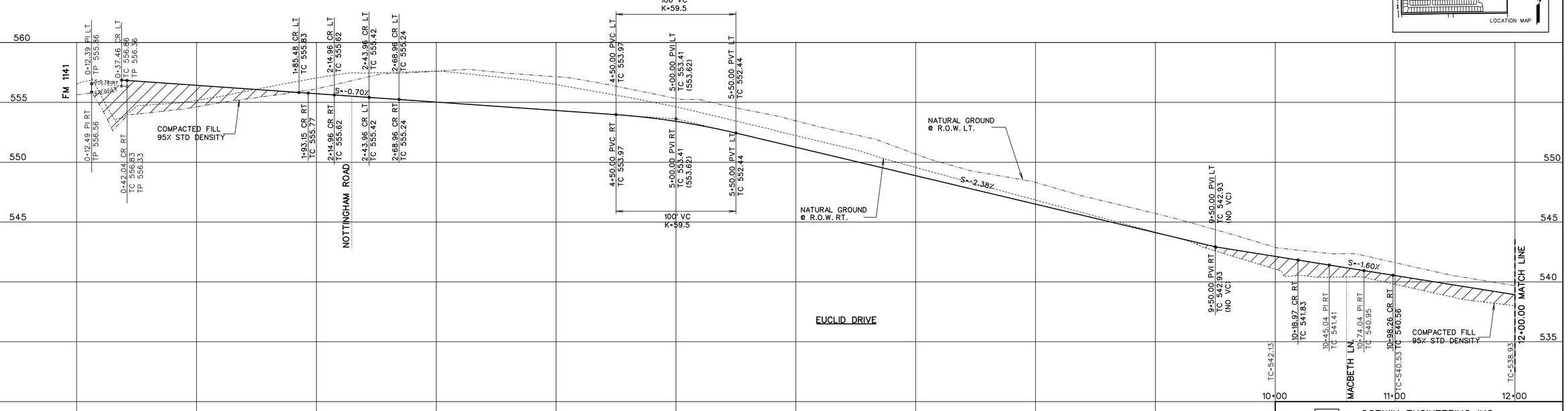
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AS-BUILT JUNE 2023
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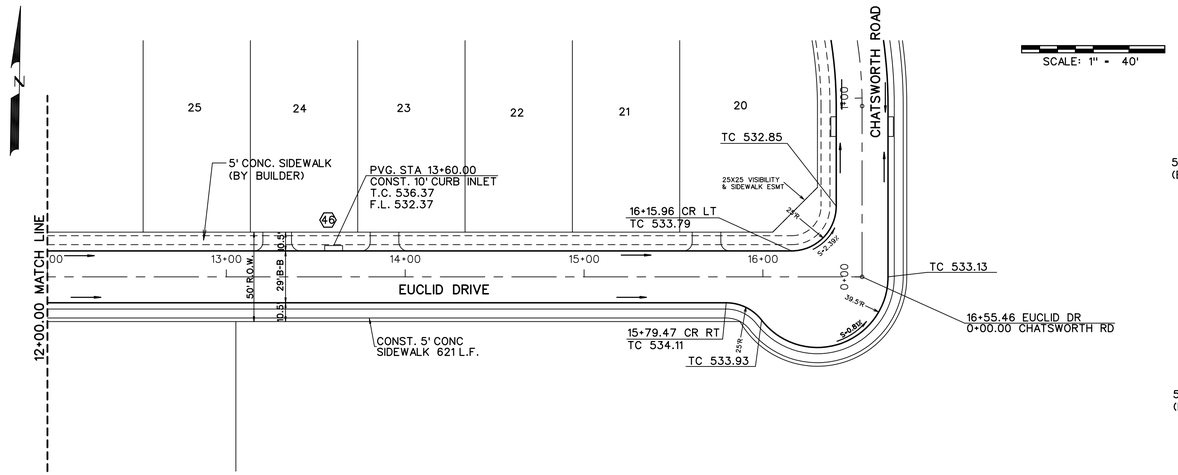
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

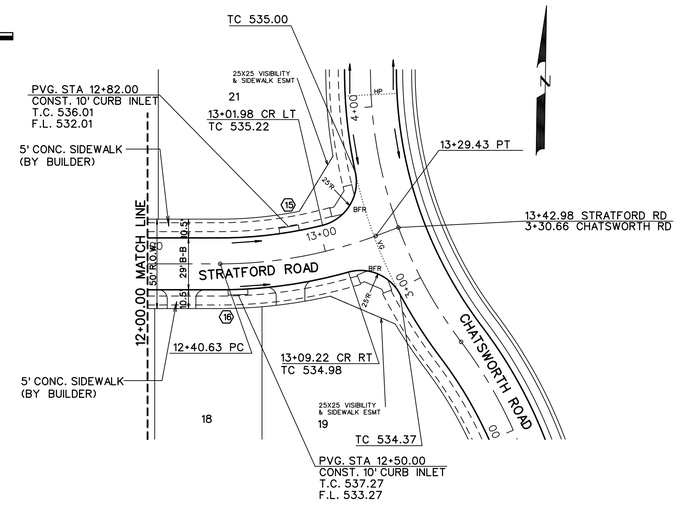
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

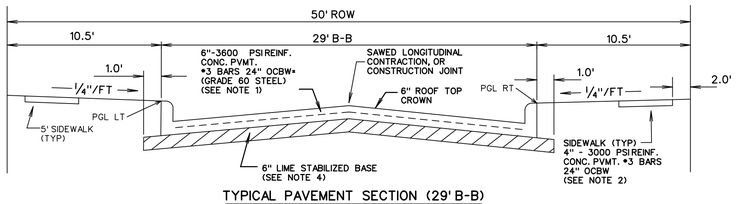
EUCLID DRIVE
STA 0+00 TO 12+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	08



SCALE: 1" = 40'





TYPICAL PAVEMENT SECTION (29' B-B)

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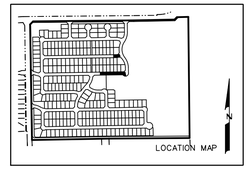
PAVING NOTES:

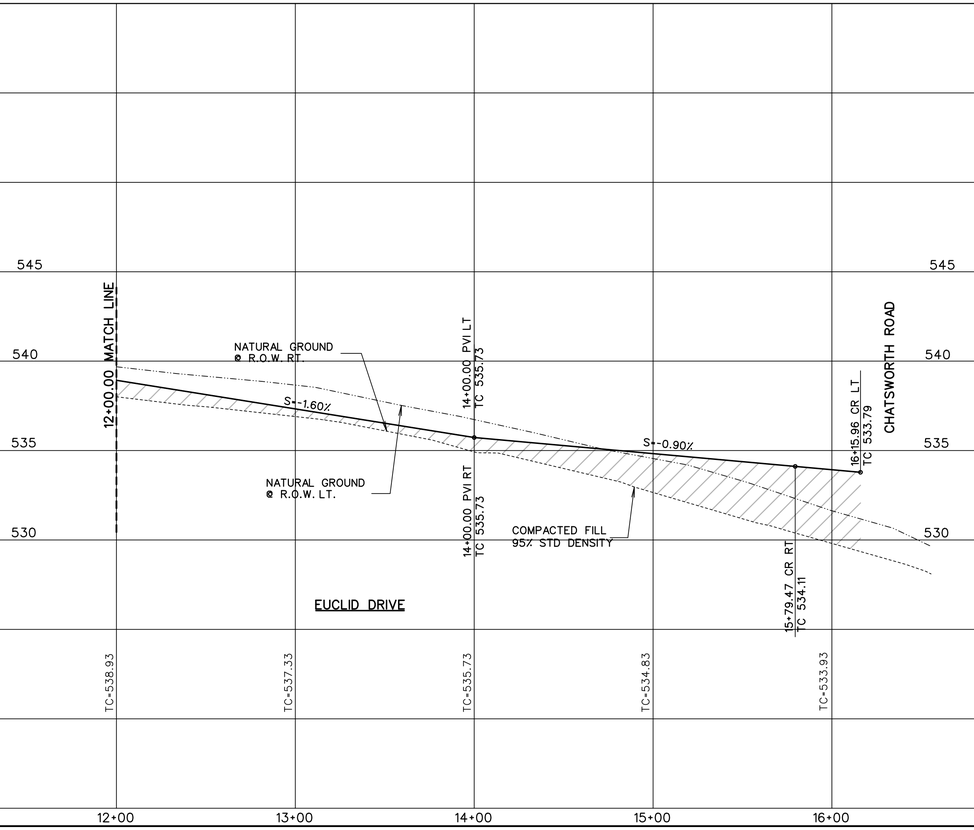
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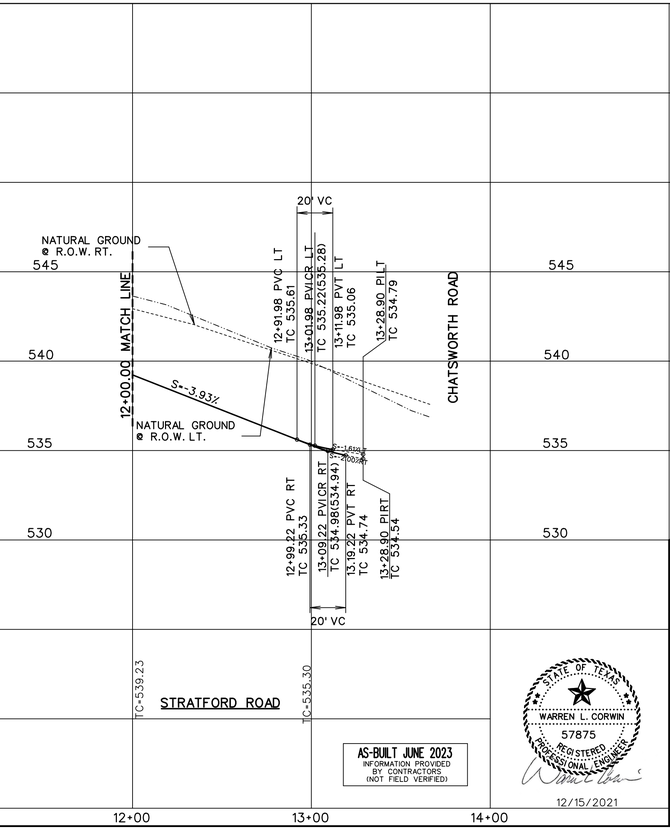
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- - - - - - SIDEWALK BY HOMEBUILDER

——— SIDEWALK BY DEVELOPER







AS-BUILT JUNE 2023
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STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER

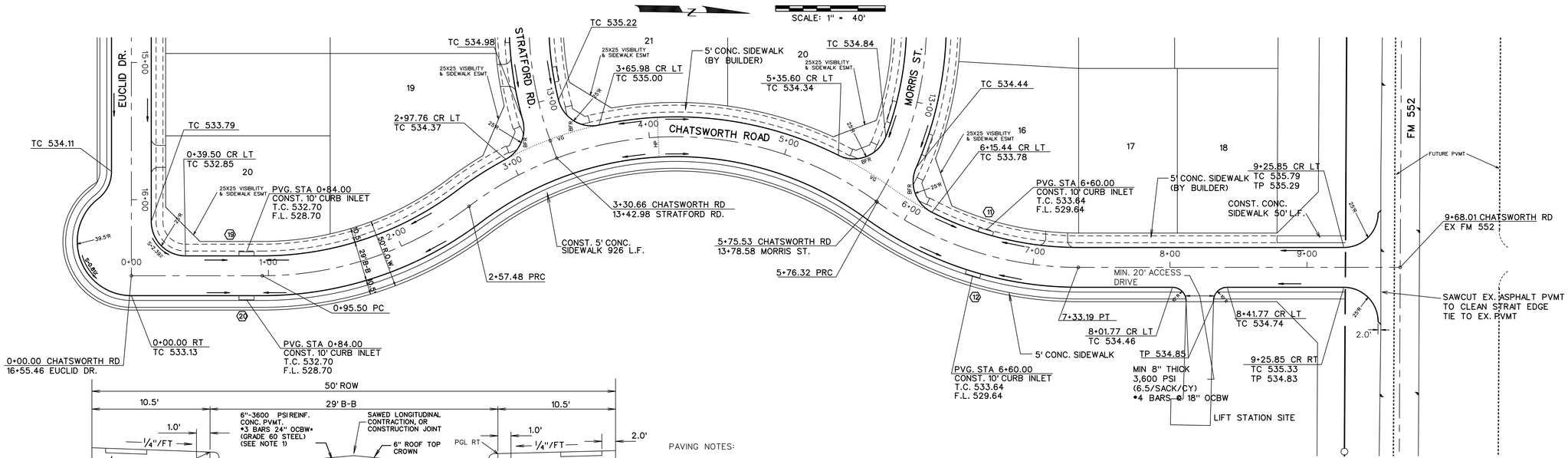
12/15/2021

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

EUCLID DRIVE (STA 12+00 TO END)
STRATFORD ROAD (STA 12+00 TO END)

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	9



TYPICAL PAVEMENT SECTION (29' B-D)

N.T.S.

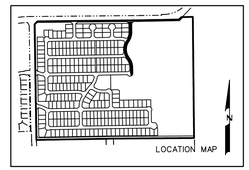
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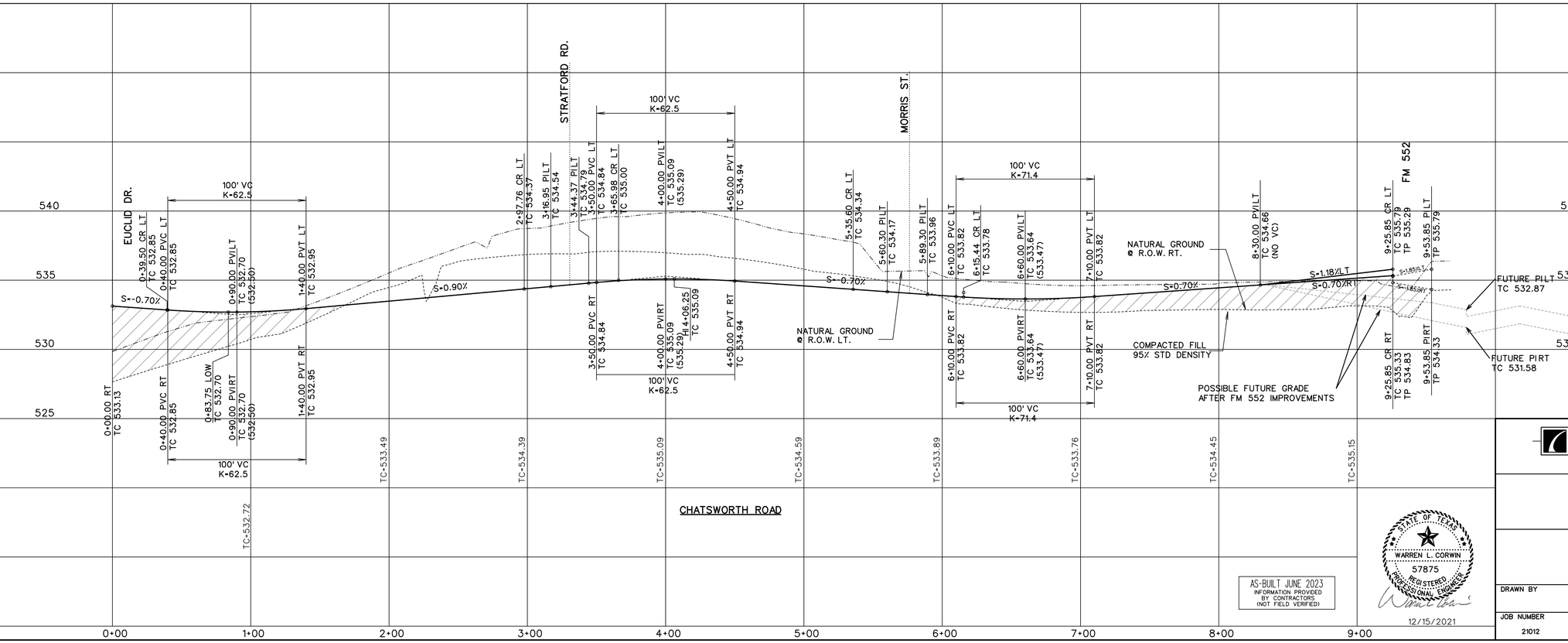
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- - - - - - - SIDEWALK BY HOMEBUILDER
——————— SIDEWALK BY DEVELOPER





AS-BUILT JUNE 2023
INFORMATION PROVIDED
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STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED
PROFESSIONAL ENGINEER

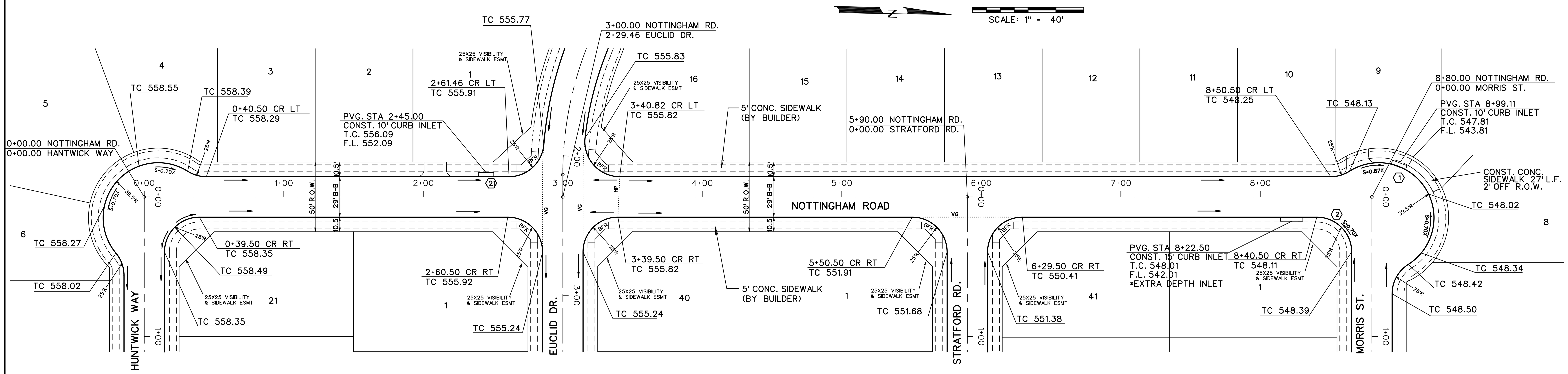
12/15/2021

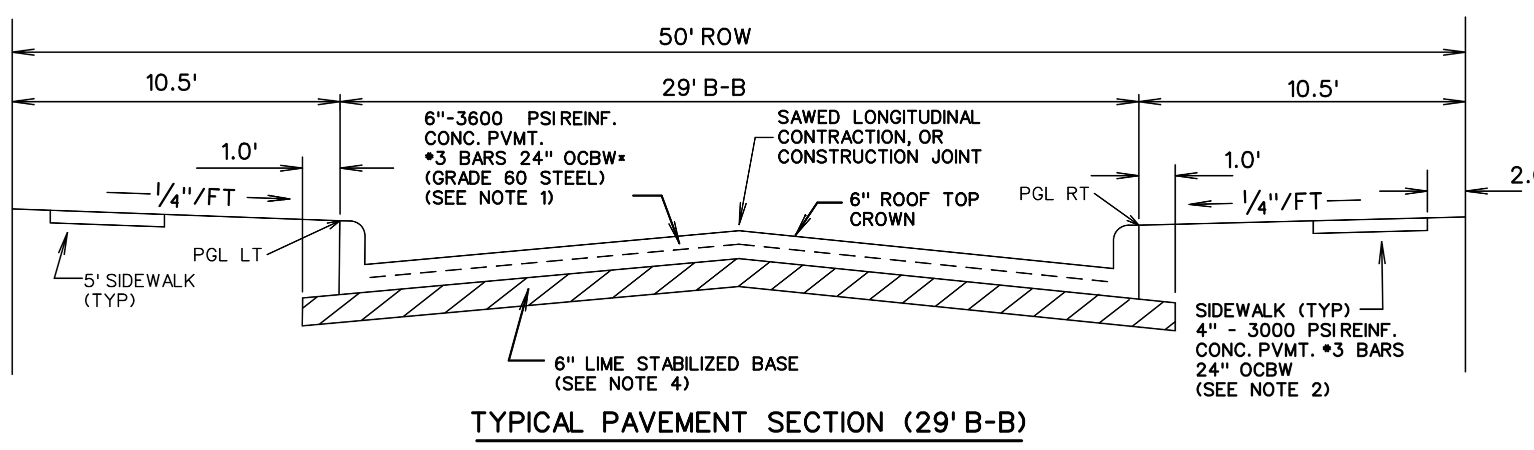
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE
ESTATES
ROCKWALL, TEXAS

CHATSWORTH ROAD

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	10





TYPICAL PAVEMENT SECTION (29' B-B)

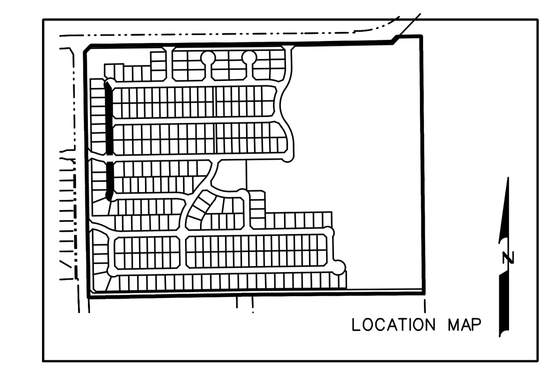
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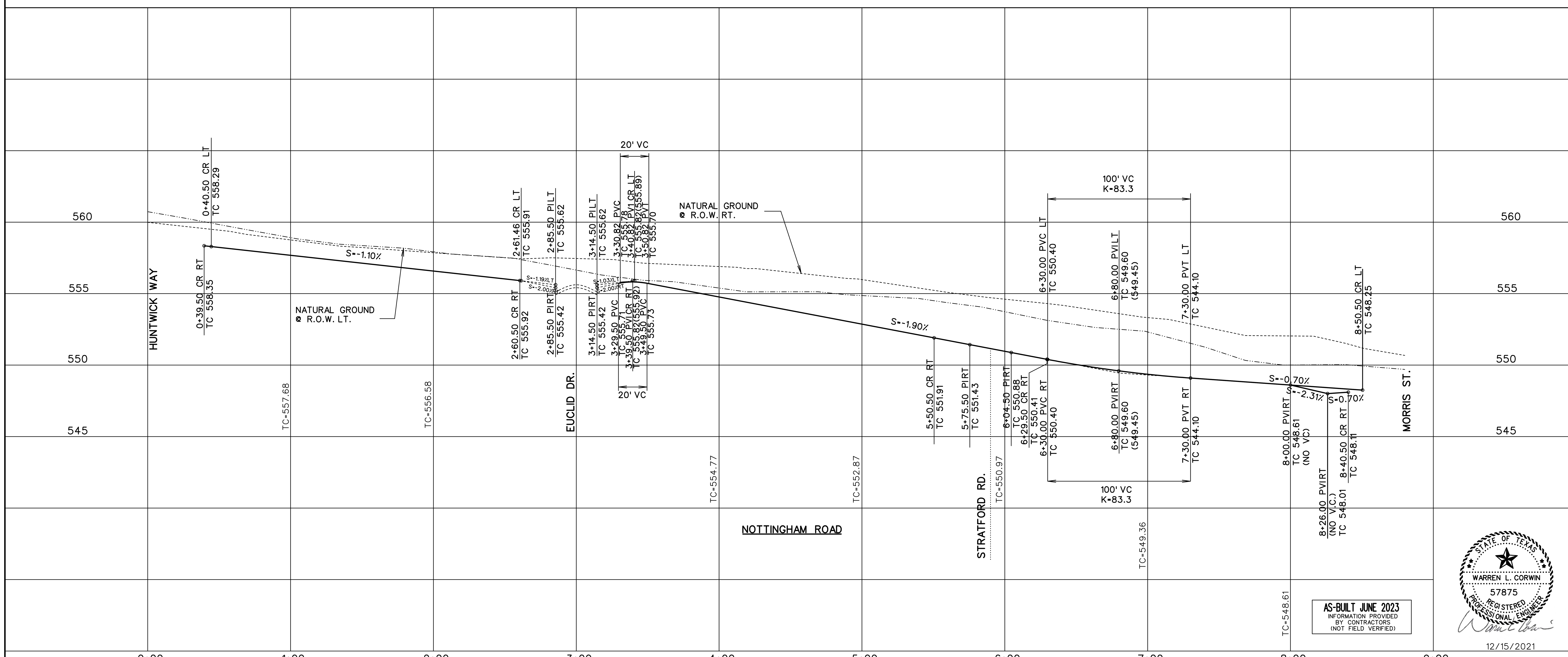
* MIN. 6½ SACK/CY MIX IF HAND PLACED
MIN. 6 SACK/CY FOR MACHINE PLACED

PAVING NOTES:

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3. No sand allowed under pavement or sidewalks.
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NOTE:
ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
- SIDEWALK BY HOMEBUILDER
- SIDEWALK BY DEVELOPER





AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

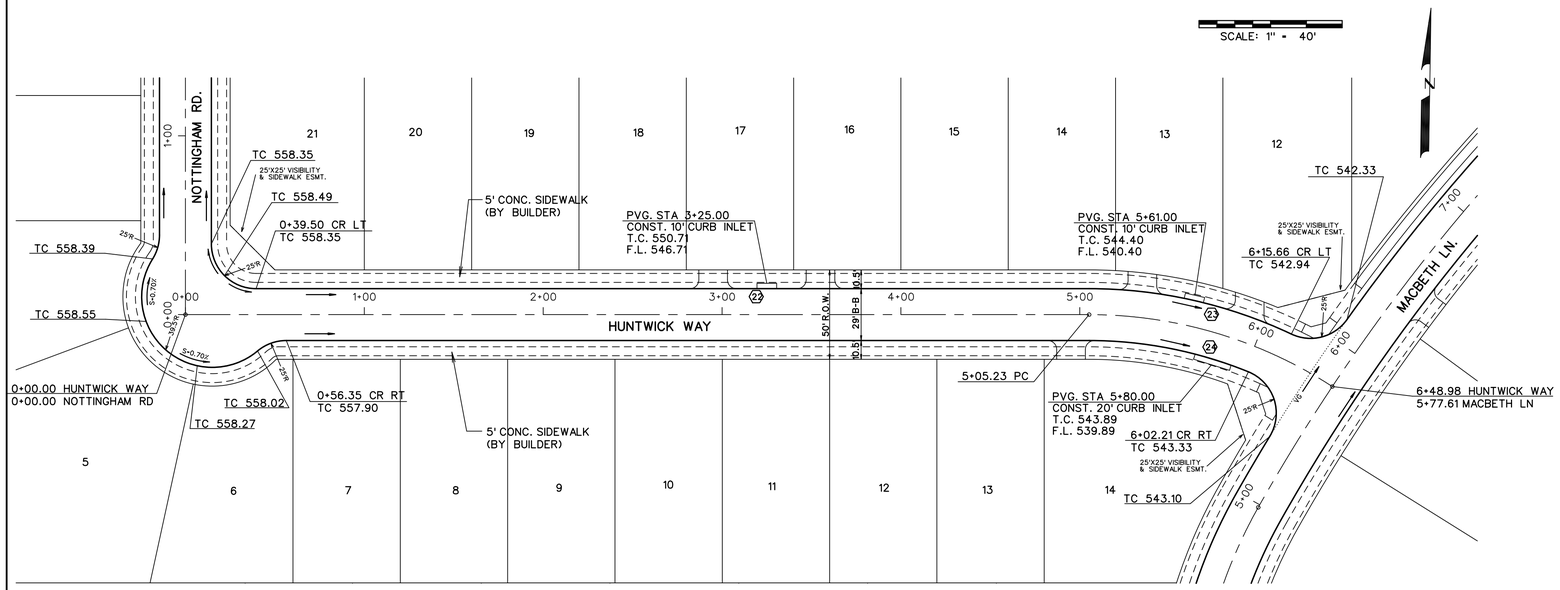
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

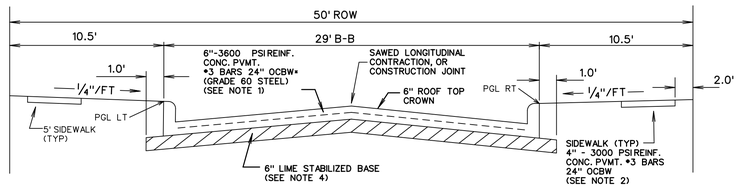
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

NOTTINGHAM ROAD

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	11





TYPICAL PAVEMENT SECTION (29' B-B)

N.T.S.

* MIN. 6½ SACK/CY MIX IF HAND PLACED
MIN. 6 SACK/CY FOR MACHINE PLACED

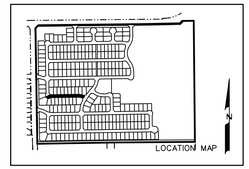
PAVING NOTES:

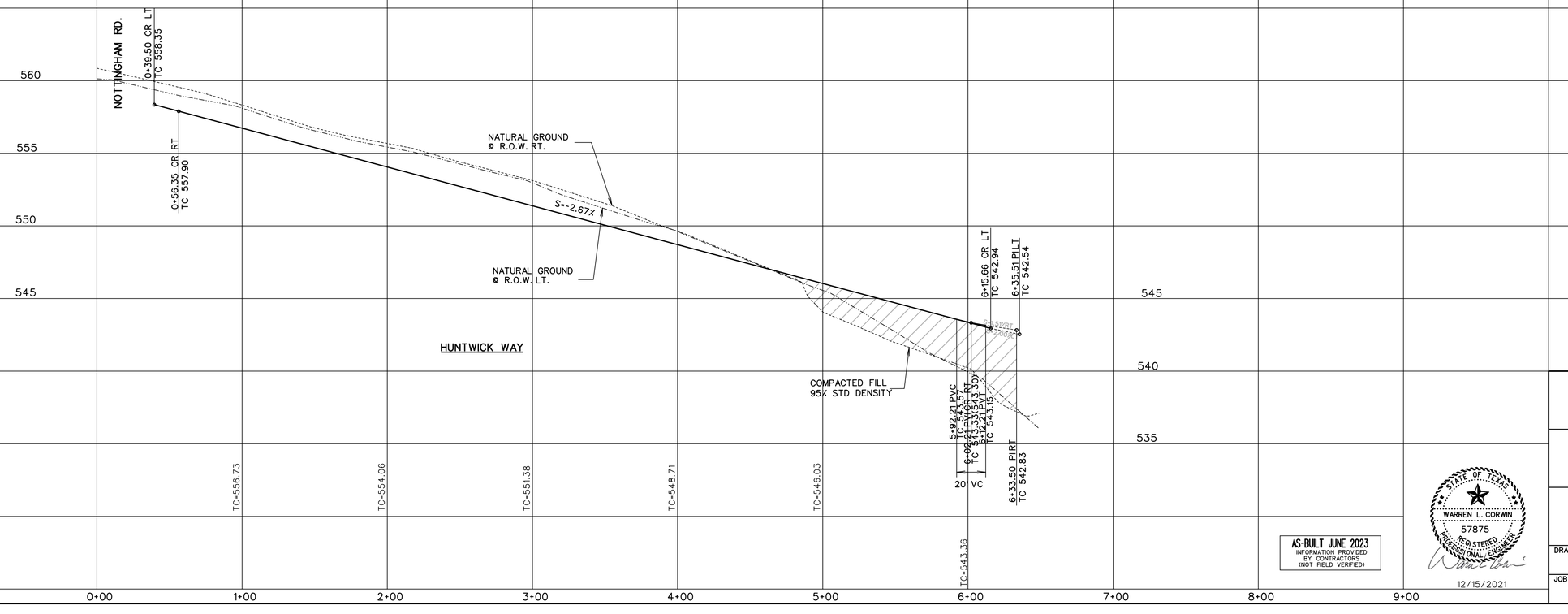
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- - - - - - SIDEWALK BY HOMEBUILDER

——— SIDEWALK BY DEVELOPER





AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

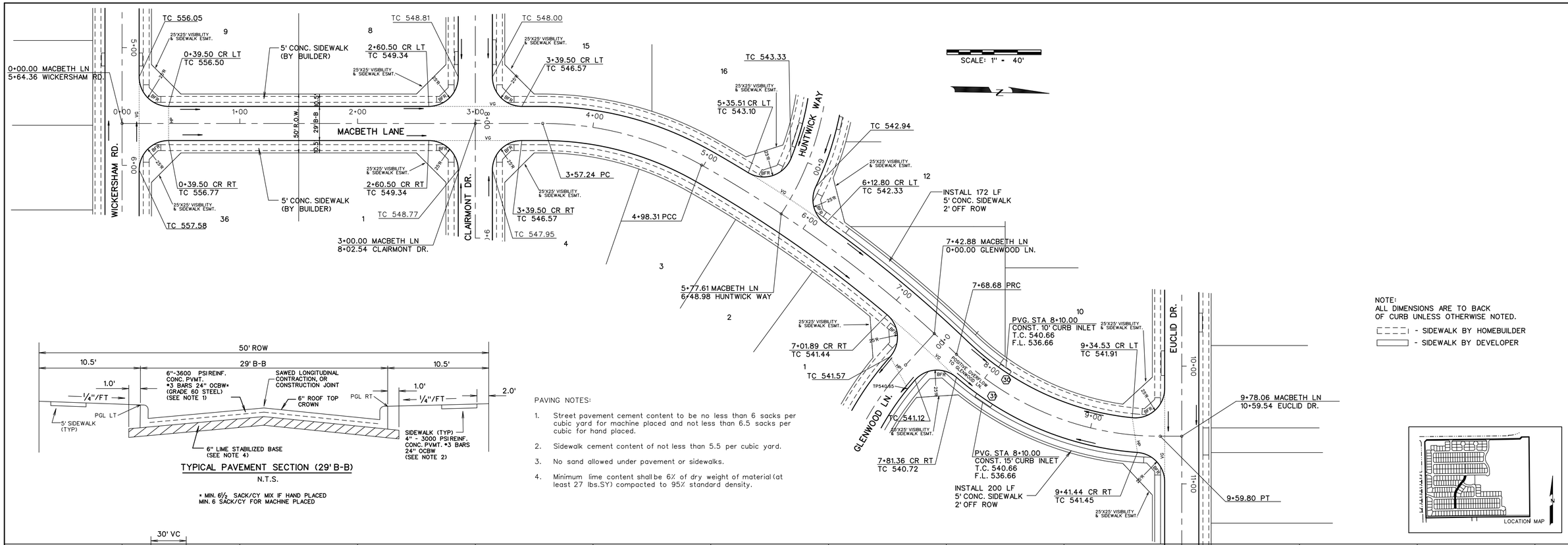
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

HUNTWICK WAY

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	12



NOTE:
ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.

- - - - - SIDEWALK BY HOMEBUILDER

——— SIDEWALK BY DEVELOPER

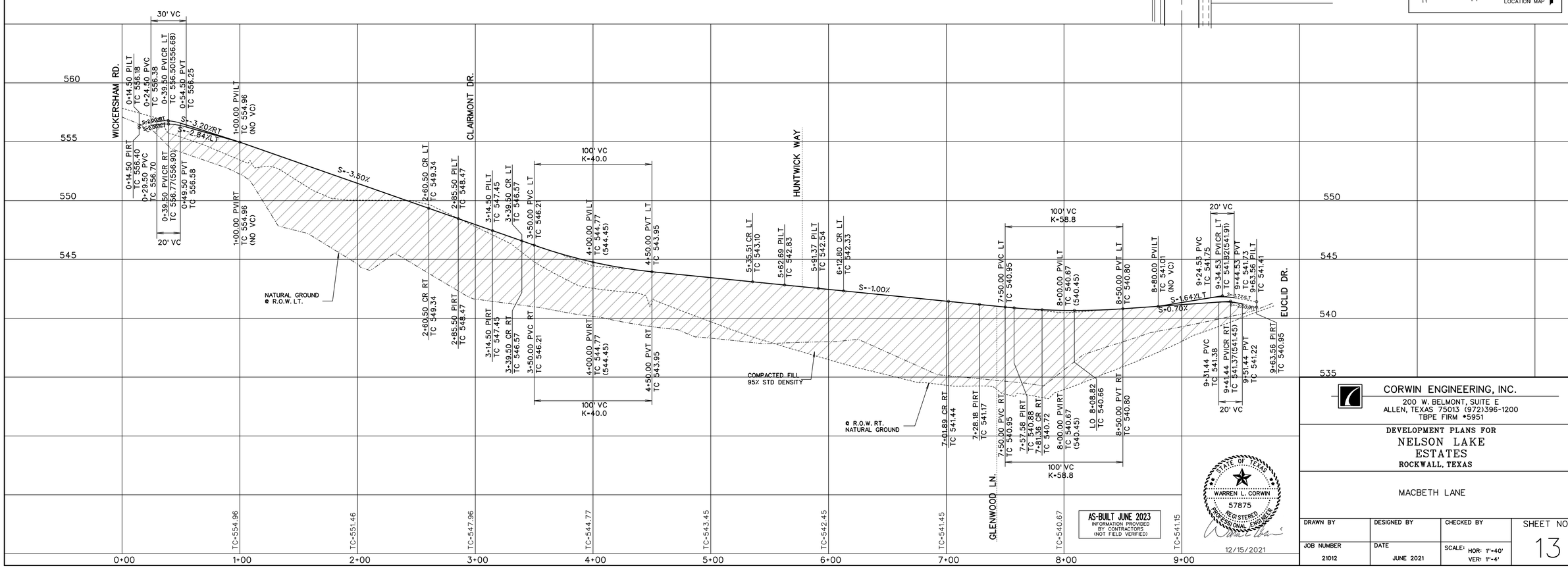
TYPICAL PAVEMENT SECTION (29' B-B)

N.T.S.

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MIN. 6 SACK/CY FOR MACHINE PLACED

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AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

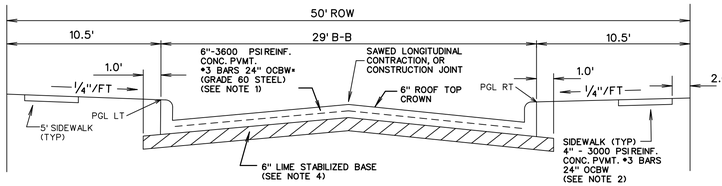
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

MACBETH LANE

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	13



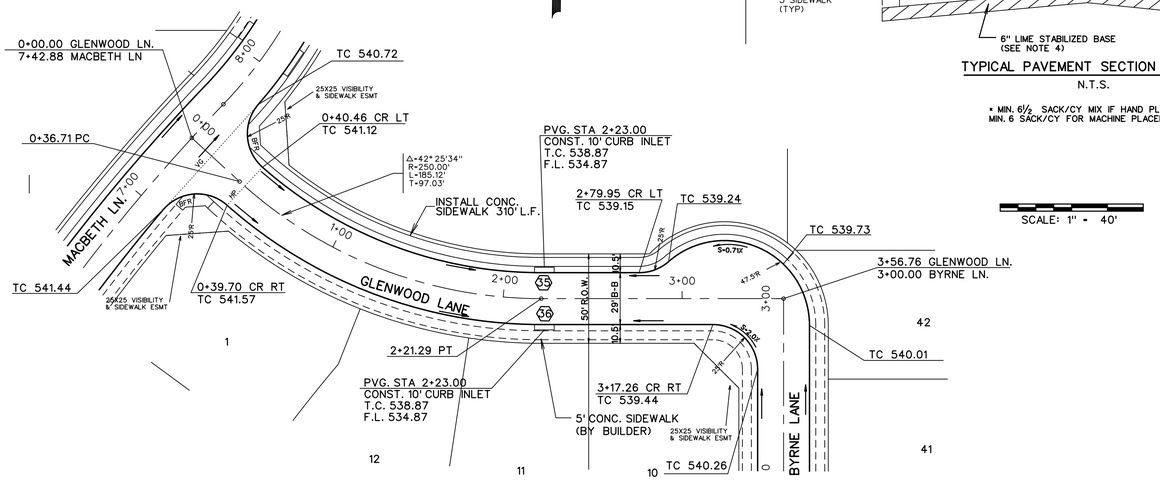
TYPICAL PAVEMENT SECTION (29' B-B)

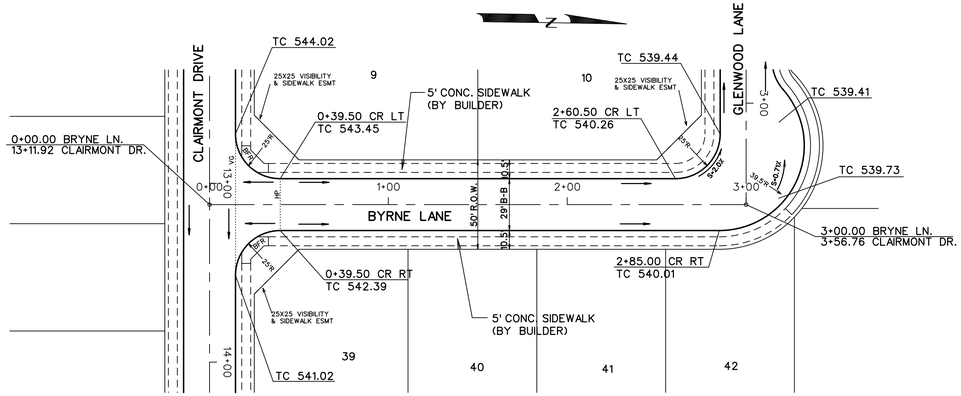
N.T.S.

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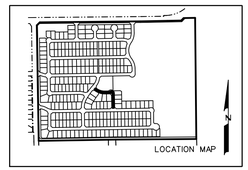


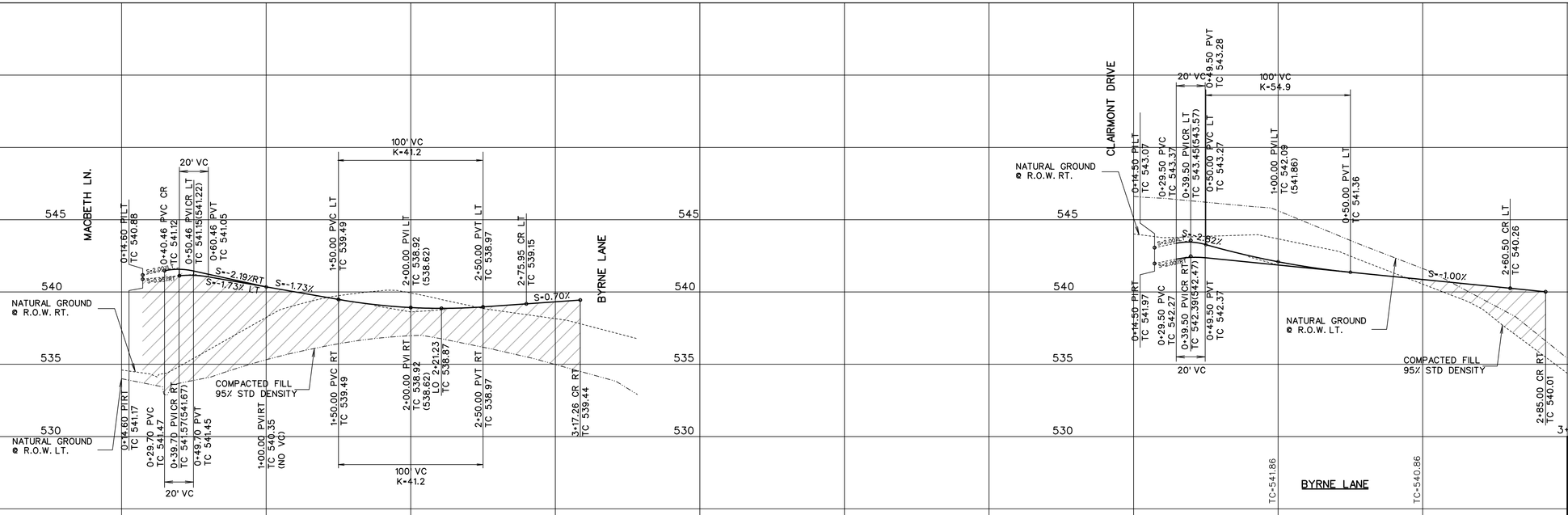
SCALE: 1" = 40'

NOTE:
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- - - - - - SIDEWALK BY HOMEBUILDER

——— SIDEWALK BY DEVELOPER





AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

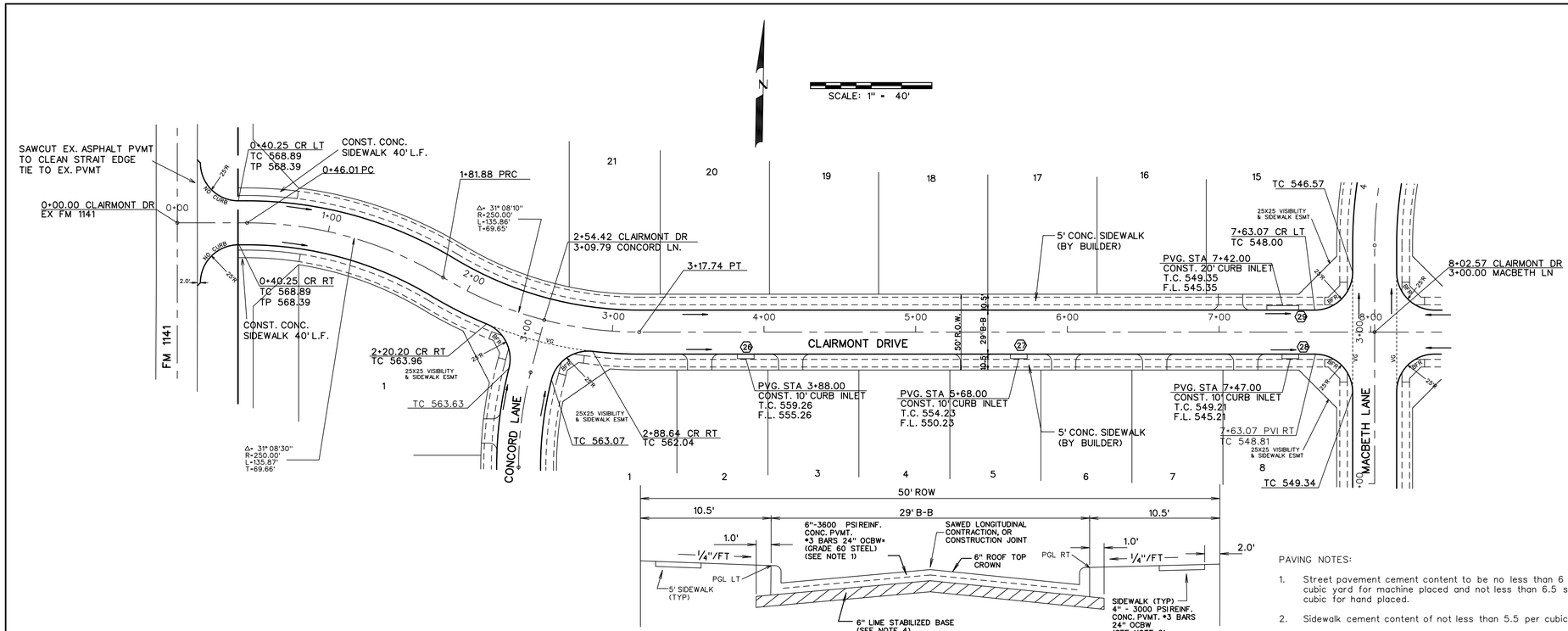
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

GLENWOOD LANE
BYRNE LANE

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	14



TYPICAL PAVEMENT SECTION (29' B-B)

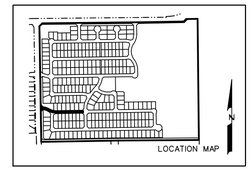
N.T.S.

* MIN. 6½ SACK/CY MIX IF HAND PLACED
MIN. 6 SACK/CY FOR MACHINE PLACED

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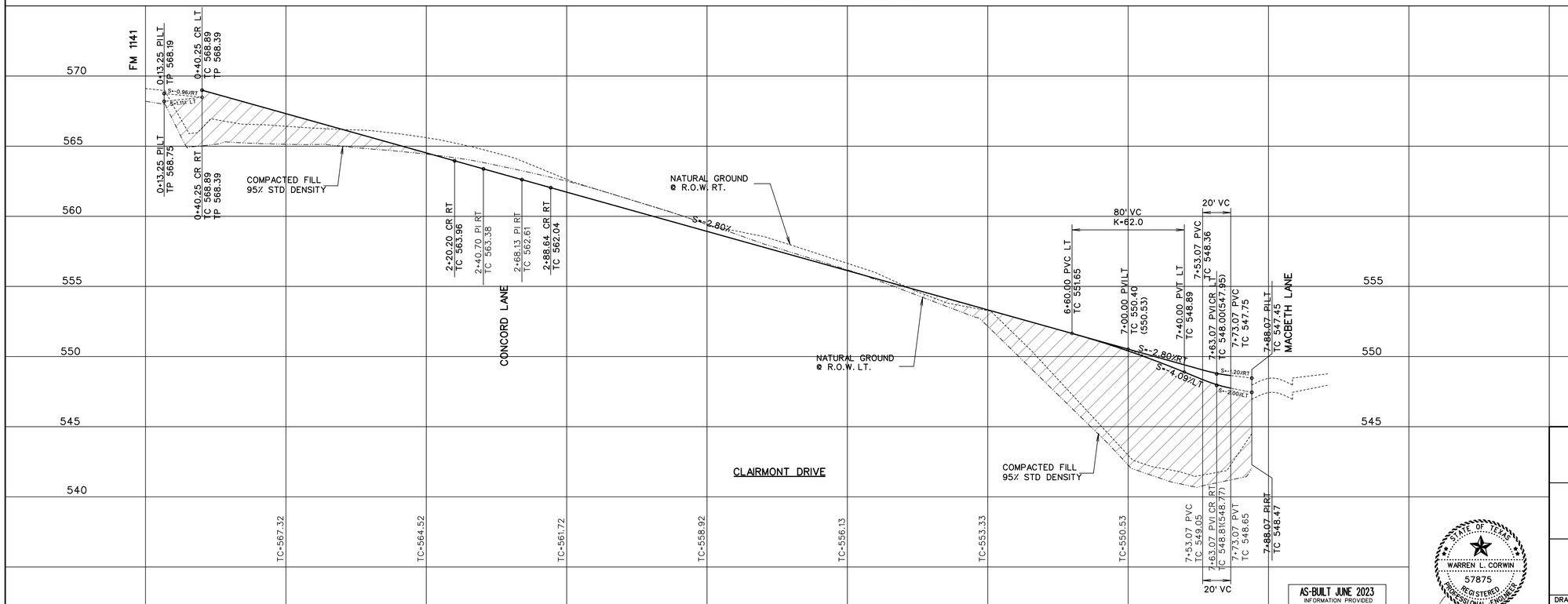
- - - - - - SIDEWALK BY HOMEBUILDER

——— SIDEWALK BY DEVELOPER



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AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER

12/15/2021

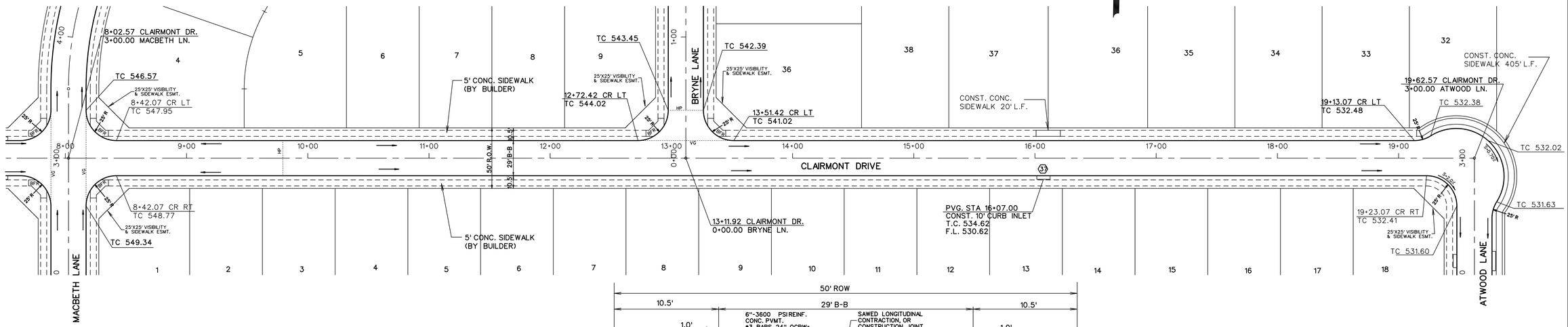
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM *5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

CLAIRMONT DRIVE
STA 0+00 TO 8+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	15

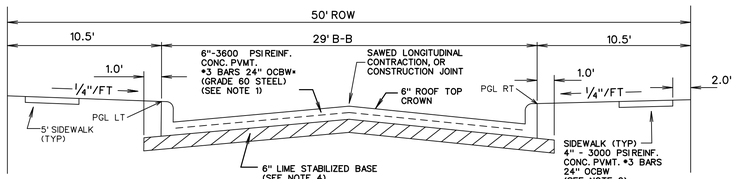
SCALE: 1" = 40'



NOTE:
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- - - - - - SIDEWALK BY HOMEBUILDER

——— SIDEWALK BY DEVELOPER



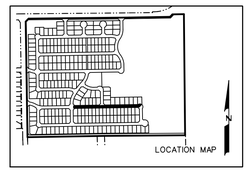
TYPICAL PAVEMENT SECTION (29' B-B)

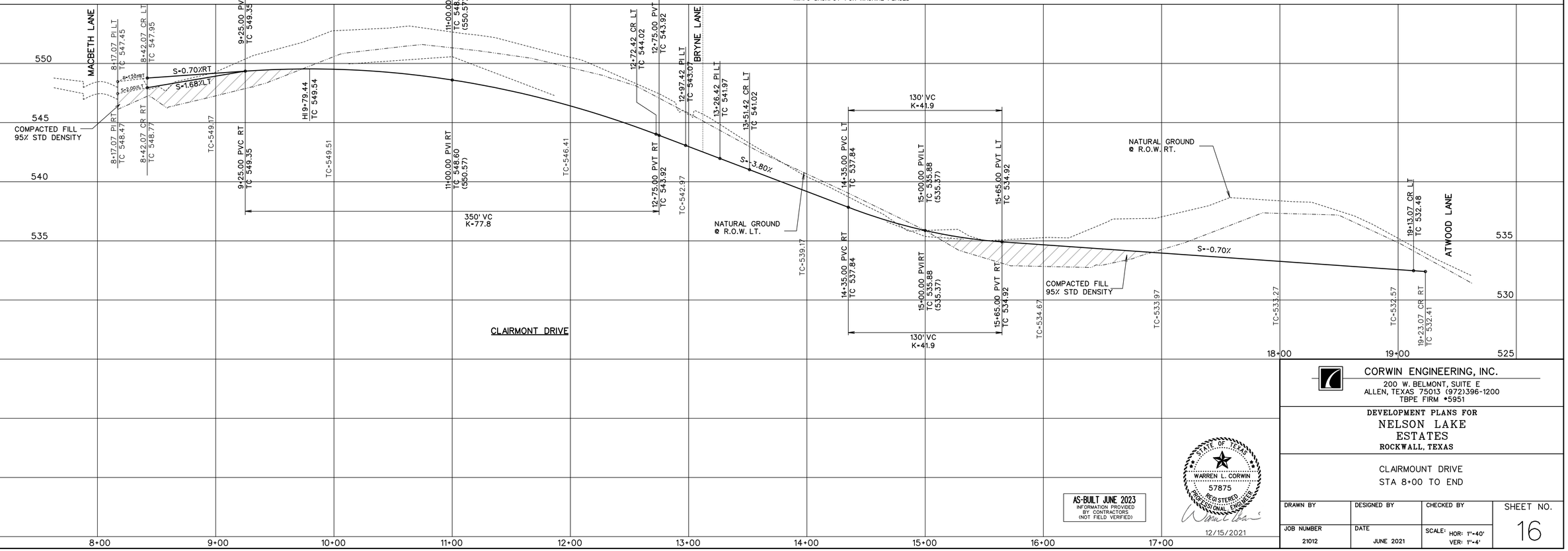
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AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER

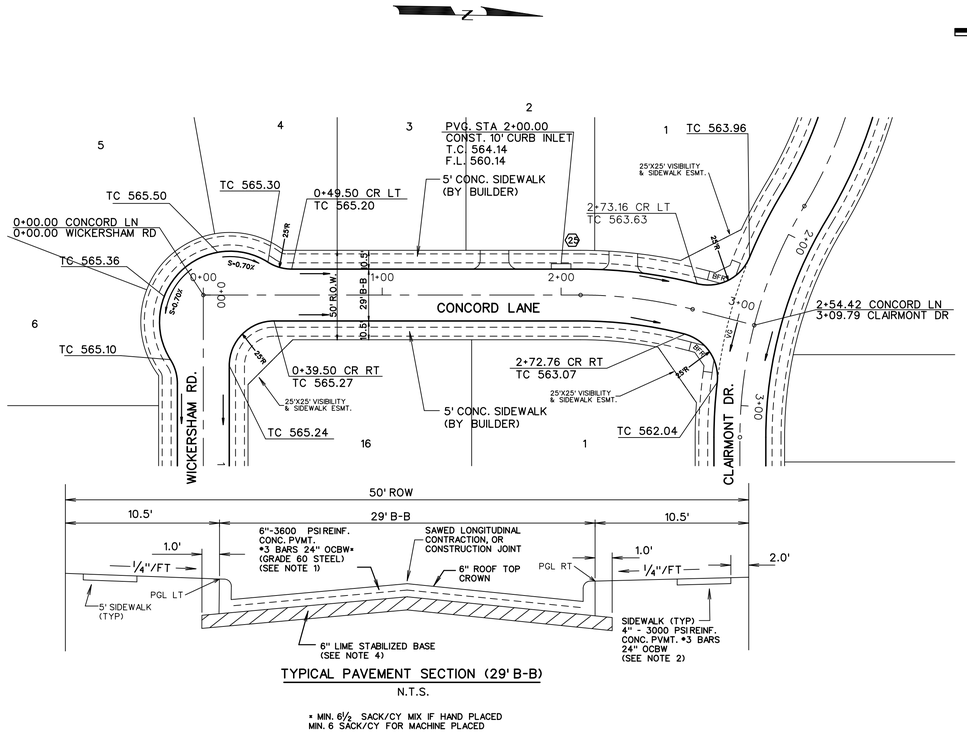
12/15/2021

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

CLAIRMOUNT DRIVE
STA 8+00 TO END

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	16

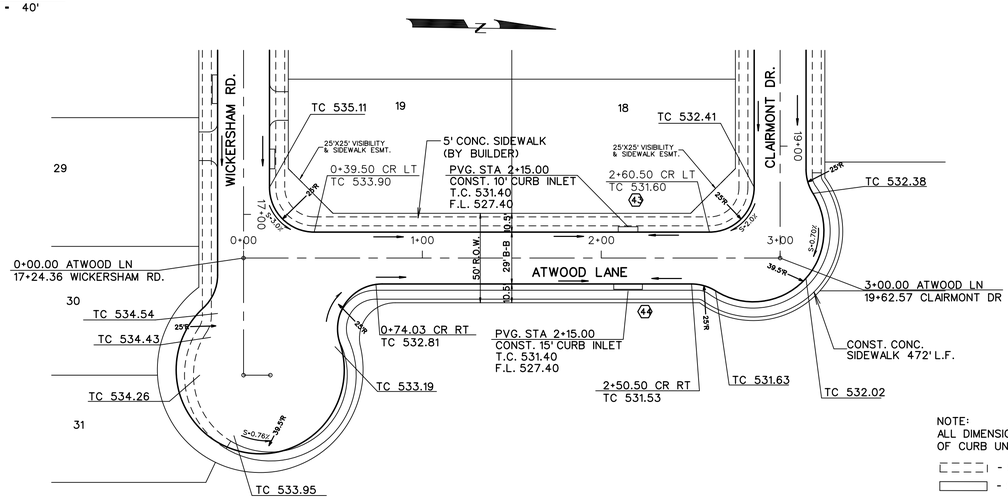


TYPICAL PAVEMENT SECTION (29' B-B)

N.T.S.

• MIN. 6½ SACK/CY MIX IF HAND PLACED
MIN. 6 SACK/CY FOR MACHINE PLACED

SCALE: 1" = 40'



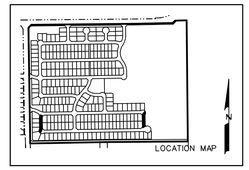
NOTE:
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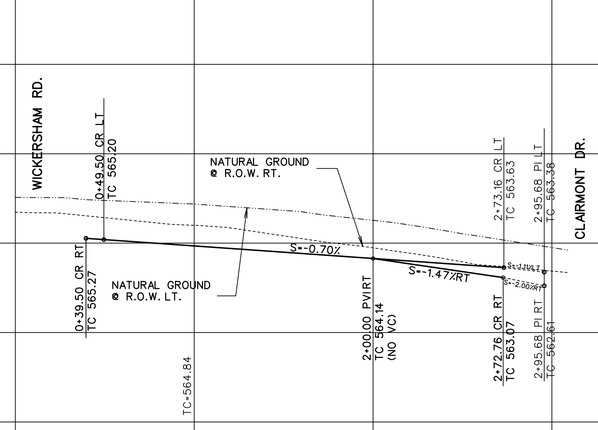
- - - - - - SIDEWALK BY HOMEBUILDER

——————— SIDEWALK BY DEVELOPER

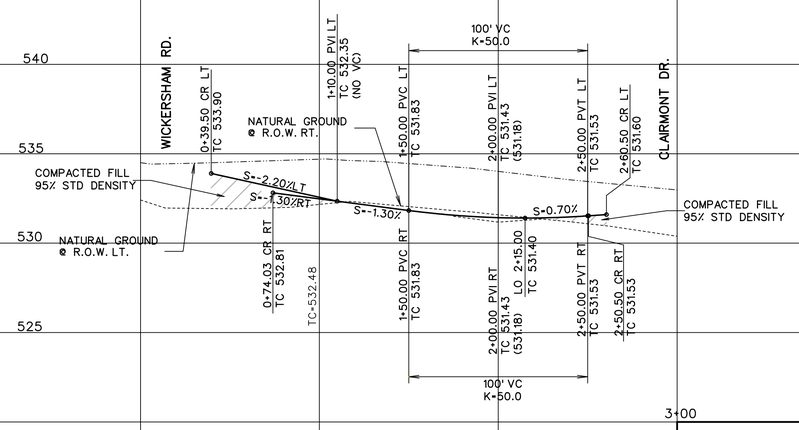
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CONCORD LANE



ATWOOD LANE

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

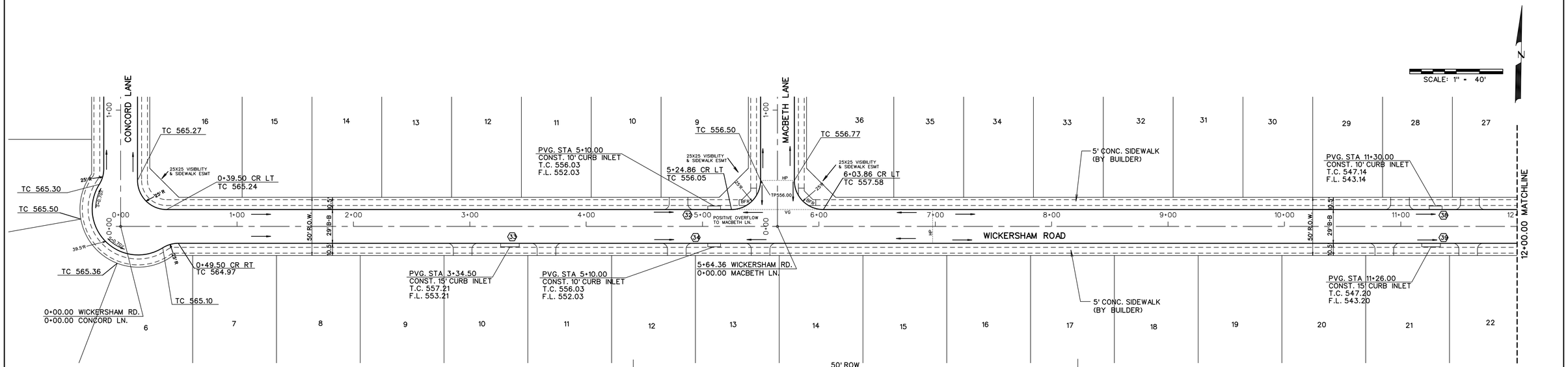
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

CONCORD LANE
ATWOOD LANE

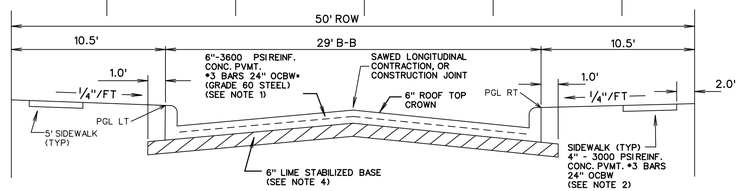
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	17



NOTE:
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- - - - - - SIDEWALK BY HOMEBUILDER

——————— SIDEWALK BY DEVELOPER



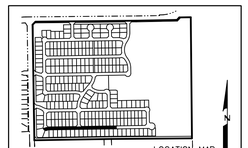
TYPICAL PAVEMENT SECTION (29' B-B)

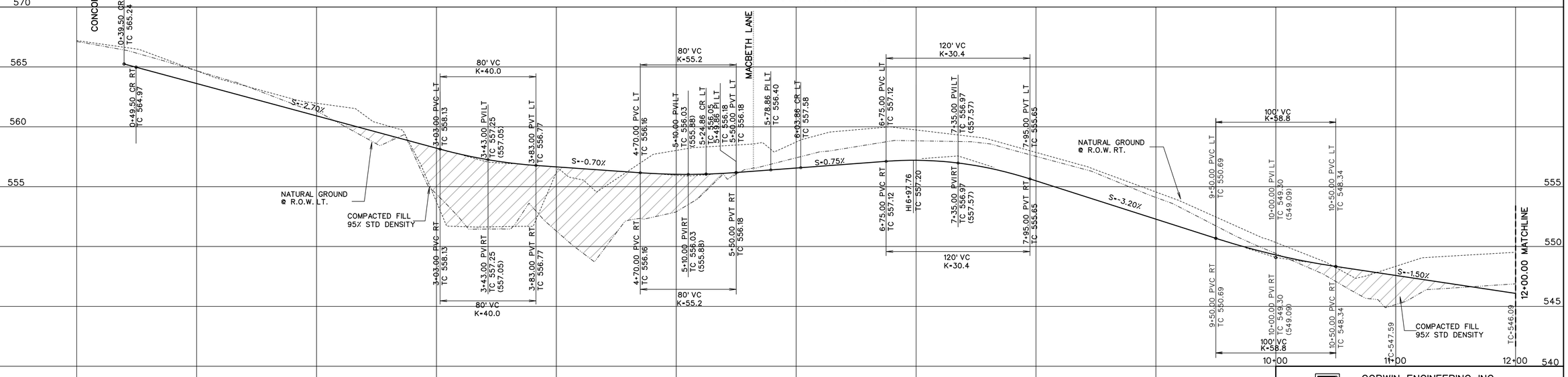
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WICKERSHAM ROAD

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

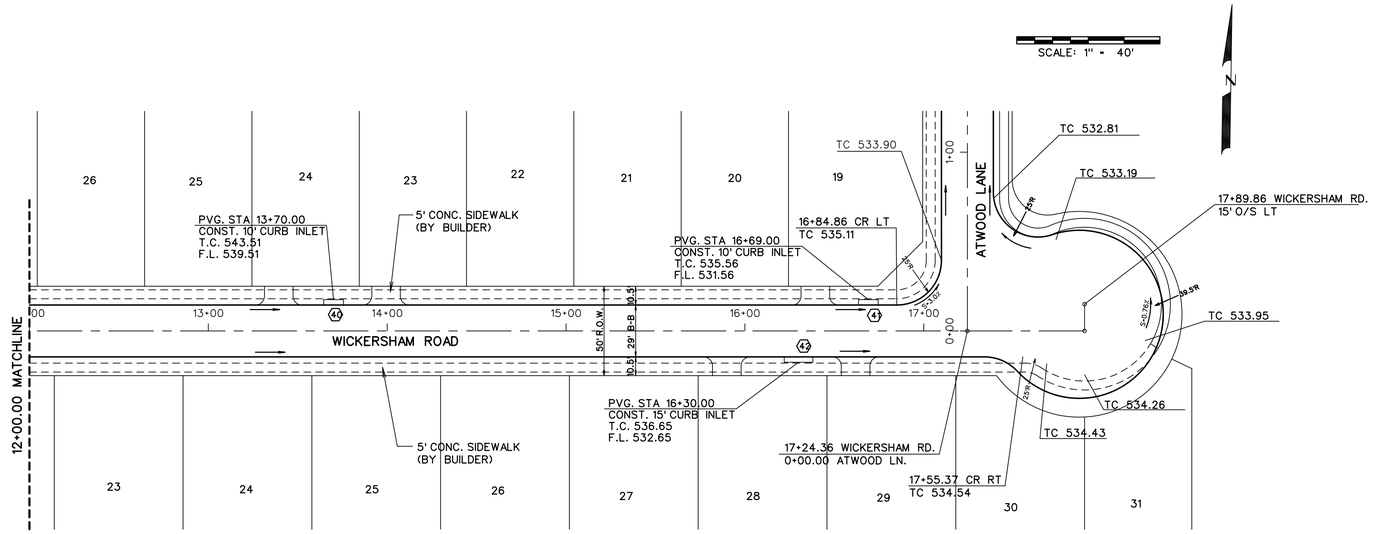
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

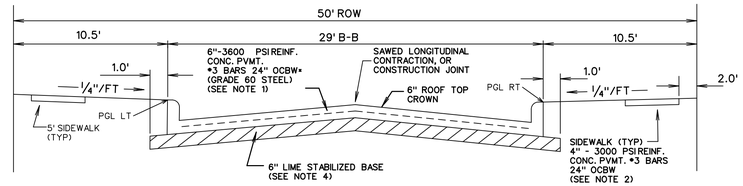
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

WICKERSHAM ROAD
(STA. 0+00 TO 12+00)

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	18





TYPICAL PAVEMENT SECTION (29' B-B)

N.T.S.

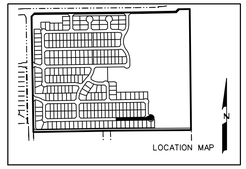
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MIN. 6 SACK/CY FOR MACHINE PLACED

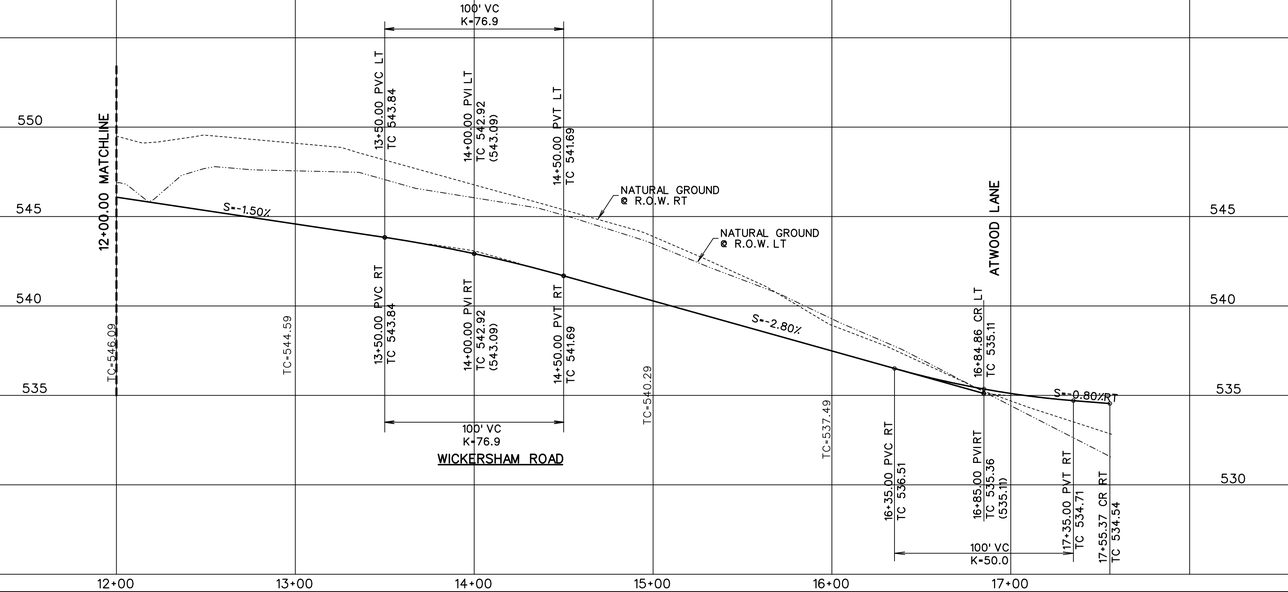
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NOTE:
ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.

- - - - - - SIDEWALK BY HOMEBUILDER
——— SIDEWALK BY DEVELOPER





AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

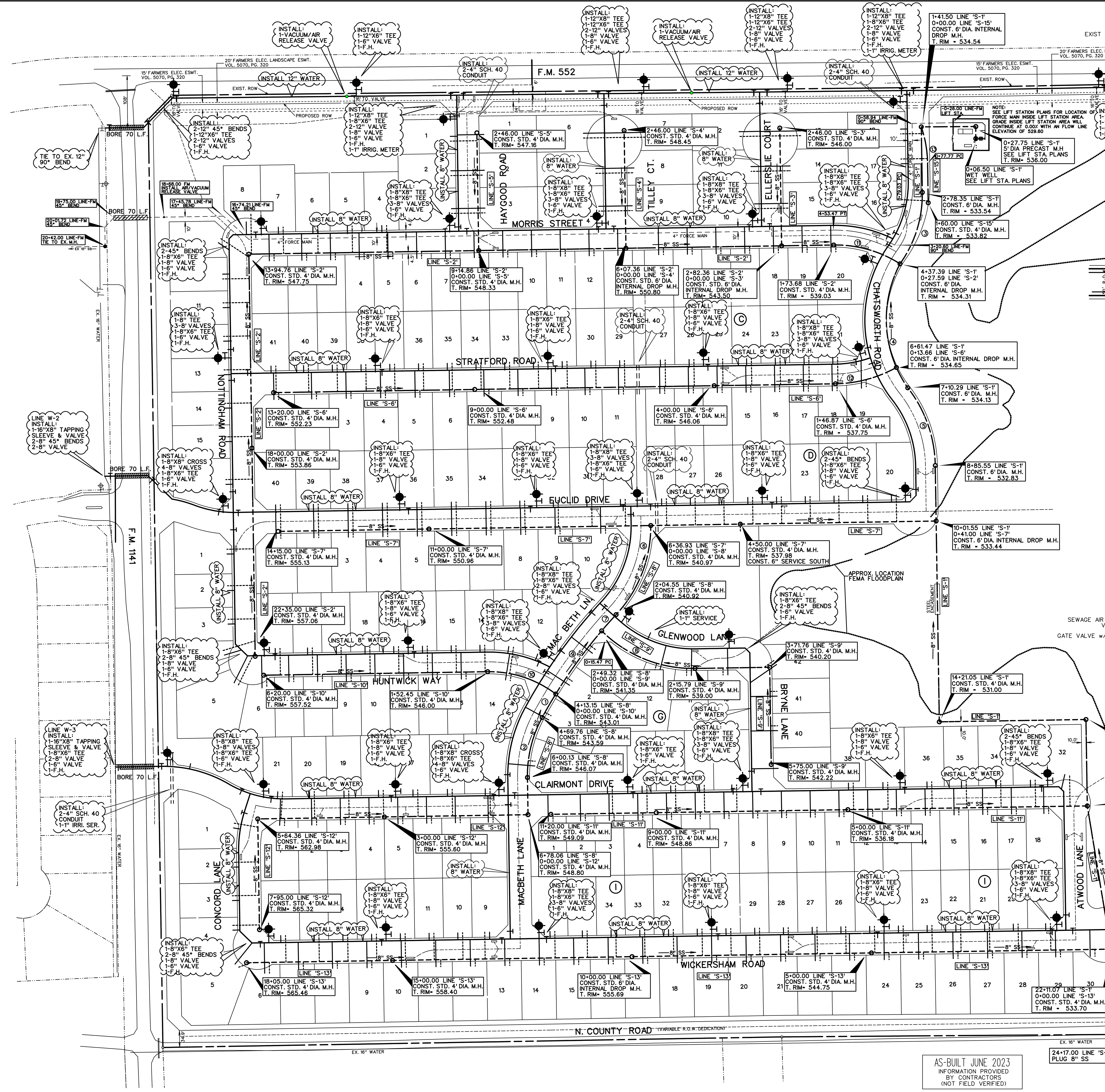
STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
12/15/2021

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

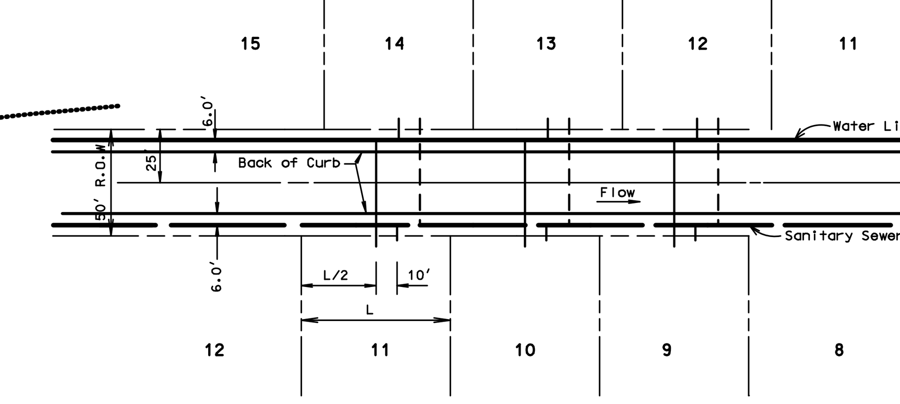
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

WICKERSHAM ROAD
(STA. 12+00 TO END)

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	19



SCALE: 1" = 100'



TYPICAL WATER & SEWER SERVICE LAYOUT

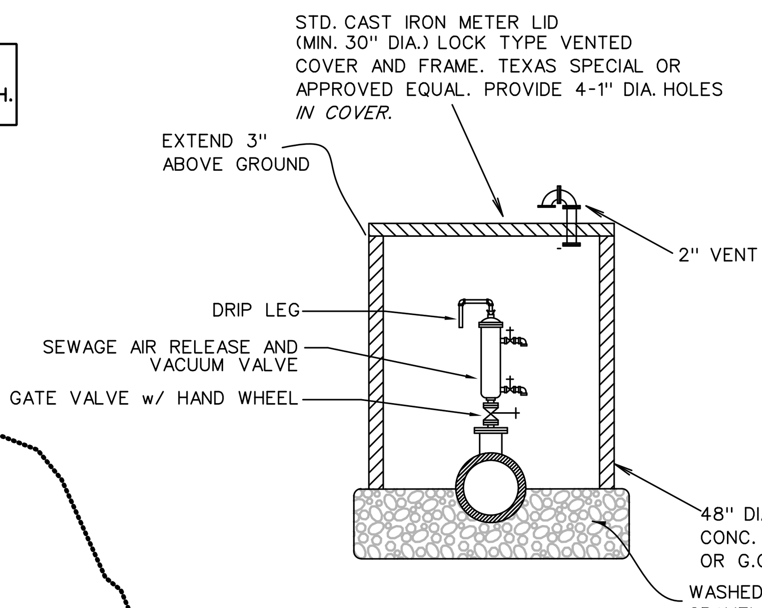
N.T.S.

LEGEND

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

SANITARY SEWER CURVE TABLE

CURVE NO.	DELTA	RADIUS	LENGTH	TANGENT
1.	03°04'33"	1054.50'	56.61'	28.31'
2.	29°23'28"	254.50'	130.55'	66.75'
3.	36°26'54"	250.00'	159.04'	82.31'
4.	62°32'36"	250.00'	272.90'	151.83'
5.	33°57'39"	270.50'	175.27'	98.14'
6.	43°19'38"	270.50'	204.55'	107.45'
7.	02°27'53"	1054.50'	45.36'	22.69'
8.	45°42'25"	270.50'	215.79'	114.01'
9.	08°52'10"	1054.50'	163.23'	81.78'
10.	32°29'55"	229.50'	130.17'	66.89'
11.	33°28'56"	250.00'	146.09'	75.20'
12.	28°12'57"	270.50'	133.21'	67.92'
13.	17°49'27"	250.00'	77.77'	39.20'



AIR AND VACUUM - AIR RELEASE VALVE INSTALLATION-SEWER

NOTE:

ALL WATER LINES TO BE CLASS 200 PIPE DR-14 C-900.

ALL SANITARY SEWER PIPE TO BE SDR 35 FOR 5-10' DEEP AND SDR 26 FOR 10' AND GREATER.

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

INSTALL GREEN "EMS" DISK ON SANITARY SEWER LINE EVERY 250' AND AT EVERY CHANGE IN DIRECTION, MANHOLE, CLEANOUT, AND SERVICE.

ALL MANHOLES TO BE RAVEN EPOXY LINED AND SEALED OR APPROVED EQUAL. TO BE SPARK AND PRESSURE TESTED.

FORCE MAIN SHALL BE AWWA (900-16 PVC PIPE DR-14) GREEN IN COLOR

SERVICE SCHEDULE			
	TYPE	SIZE	NO.
	SANITARY	4"	260
	SANITARY	6"	1
	WATER	1"	260
	IRRIGATION	1"	

BENCHMARK:

CITY OF ROCKWALL SURVEY MONUMENT ON AN INLET AT THE NORTHWEST CORNER OF FEATHERSTONE DR. AND HARVARD DR.
ELEV.= 525.31

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS
(NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
02/21/2023

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

WATER AND SANITARY SEWER PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=100'	20

0+06.50 LINE 'S-1'
WET WELL
SEE LIFT STA. PLANS

0+27.75 LINE 'S-1'
5' DIA PRECAST M.H
SEE LIFT STA. PLANS
T. RIM= 536.00

1+41.50 LINE 'S-1'
0+00.00 LINE 'S-15'
CONST. 6' DIA. INTERNAL
DROP M.H.
T. RIM = 534.54

2+78.35 LINE 'S-1'
CONST. 6' DIA. M.H.
T. RIM = 533.54

4+37.39 LINE 'S-1'
0+27.59 LINE 'S-2'
CONST. 6' DIA.
INTERNAL DROP M.H.
T. RIM = 534.31

6+61.47 LINE 'S-1'
0+13.66 LINE 'S-6'
CONST. 6' DIA. INTERNAL DROP M.H.
T. RIM = 534.65

7+10.29 LINE 'S-1'
CONST. 6' DIA. M.H.
T. RIM = 534.13

8+85.55 LINE 'S-1'
CONST. 6' DIA. M.H.
T. RIM = 532.83

10+01.55 LINE 'S-1'
0+41.00 LINE 'S-7'
CONST. 6' DIA. INTERNAL DROP M.H.
T. RIM = 533.44

PROPOSED GRADE

9+81.04
7"X 4" RISC
FL 524.99

12+00.00 MATCHLINE

11+33.00

11+78.00

12" STEEL CASING 45 LF

SDR- 26 8" S.S. @ 0.33%

SDR- 26 8" S.S. @ 0.33%

SDR- 26 8" S.S. @ 0.35%

SDR- 26 8" S.S. @ 0.35%

SDR- 26 8" S.S. @ 0.35%

SDR- 26 8" S.S. @ 0.35%

SDR- 26 8" S.S. @ 0.35%

SDR- 26 8" S.S. @ 0.35%

LINE 'S-1'

F.L. 8" IN -511.91
F.L. 8" OUT -511.98
F.L. 8" IN -512.08

F.L. 8" OUT -512.46
F.L. 8" IN -512.66
F.L. 8" IN -527.00

F.L. 8" OUT -513.14
F.L. 8" IN -513.34

F.L. 8" OUT -513.90
F.L. 8" IN -514.10
F.L. 8" IN -523.10

F.L. 8" OUT -514.88
F.L. 8" IN -515.08
F.L. 8" IN -521.81

F.L. 8" OUT -515.25
F.L. 8" IN -515.45

F.L. 8" OUT -516.07
F.L. 8" IN -516.27

F.L. 8" OUT -516.67
F.L. 8" IN -516.87
F.L. 8" IN -

FL-512.87
FL-513.42
FL-513.77
FL-514.32
FL-514.67
FL-515.22
FL-515.77
FL-516.32
FL-516.67
FL-517.22
FL-517.57

14+21.05 LINE 'S-1'
CONST. STD. 4' DIA. M.H.
T. RIM = 531.00

17+27.27 LINE 'S-1'
CONST. STD. 4' DIA. M.H.
T. RIM = 529.94

19+07.77 LINE 'S-1'
0+00.00 LINE 'S-11'
CONST. STD. 4' DIA. M.H.
T. RIM = 531.84

22+11.07 LINE 'S-1'
0+00.00 LINE 'S-13'
CONST. STD. 4' DIA. M.H.
T. RIM = 533.70

22+73.57 LINE 'S-1'
CONST. STD. 4' DIA. M.H.
T. RIM = 532.20

24+17.00 LINE 'S-1'
PLUG 8" SS

21+70
8" WATER
FL 528.50

18+70.56
42" RCP
FL 524.07

20 LF CONC. ENCASEMENT

8" S.S. @ 0.35%

8" S.S. @ 0.35%

8" S.S. @ 0.35%

8" S.S. @ 0.35%

8" S.S. @ 0.35%

12+00.00 MATCHLINE

SDR- 26 8" S.S. @ 0.35%

LINE 'S-1'

F.L. 8" OUT -518.34
F.L. 8" IN -520.04

2+46.00 LINE 'S-3'
CONST. STD. 4' DIA. M.H.
T. RIM = 546.00

F.L. 8" OUT -521.11
F.L. 8" IN -521.31

2+46.00 LINE 'S-4'
CONST. STD. 4' DIA. M.H.
T. RIM = 548.45

F.L. 8" OUT -521.95
F.L. 8" IN -522.05
F.L. 8" IN -522.05

F.L. 8" OUT -523.21
F.L. 8" IN -523.41
F.L. 8" IN -524.48

F.L. 8" OUT -523.63
F.L. 8" IN -523.83

FL-524.33

FL-517.57
FL-517.92
FL-518.27
FL-520.32
FL-520.67
FL-521.02
FL-521.57
FL-521.92
FL-522.47
FL-522.82
FL-523.17
FL-523.92
FL-524.27

0+00.00 LINE 'S-3'
2+82.36 LINE 'S-2'
CONST. STD. 6' DIA.
INTERNAL DROP M.H.
T. RIM = 543.50

℄ PAD LT

℄ PAD RT

PROPOSED GRADE

0+20.50
18" RCP
FL 538.38

0+41
8" WATER
FL 539.01

SDR-35
8" S.S. @ 1.00%

0+31
8" FM
FL 534.43

LINE 'S-3'

F.L. 8" OUT -532.98
F.L. 8" IN -536.26
F.L. 8" IN -535.17

F.L. 8" OUT -537.63

FL-536.17
FL-537.17

0+00.00 LINE 'S-4'
6+07.36 LINE 'S-2'
CONST. 6' DIA.
INTERNAL DROP M.H.
T. RIM = 550.80

℄ PAD LT

℄ PAD RT

PROPOSED GRADE

0+41
8" WATER
FL 546.31

SDR-35
8" S.S. @ 0.35%

0+31
8" FM
FL 538.20

LINE 'S-4'

F.L. 8" OUT -540.16
F.L. 8" IN -540.36
F.L. 8" IN -542.64

F.L. 8" OUT -543.50

FL-542.99
FL-543.34

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER

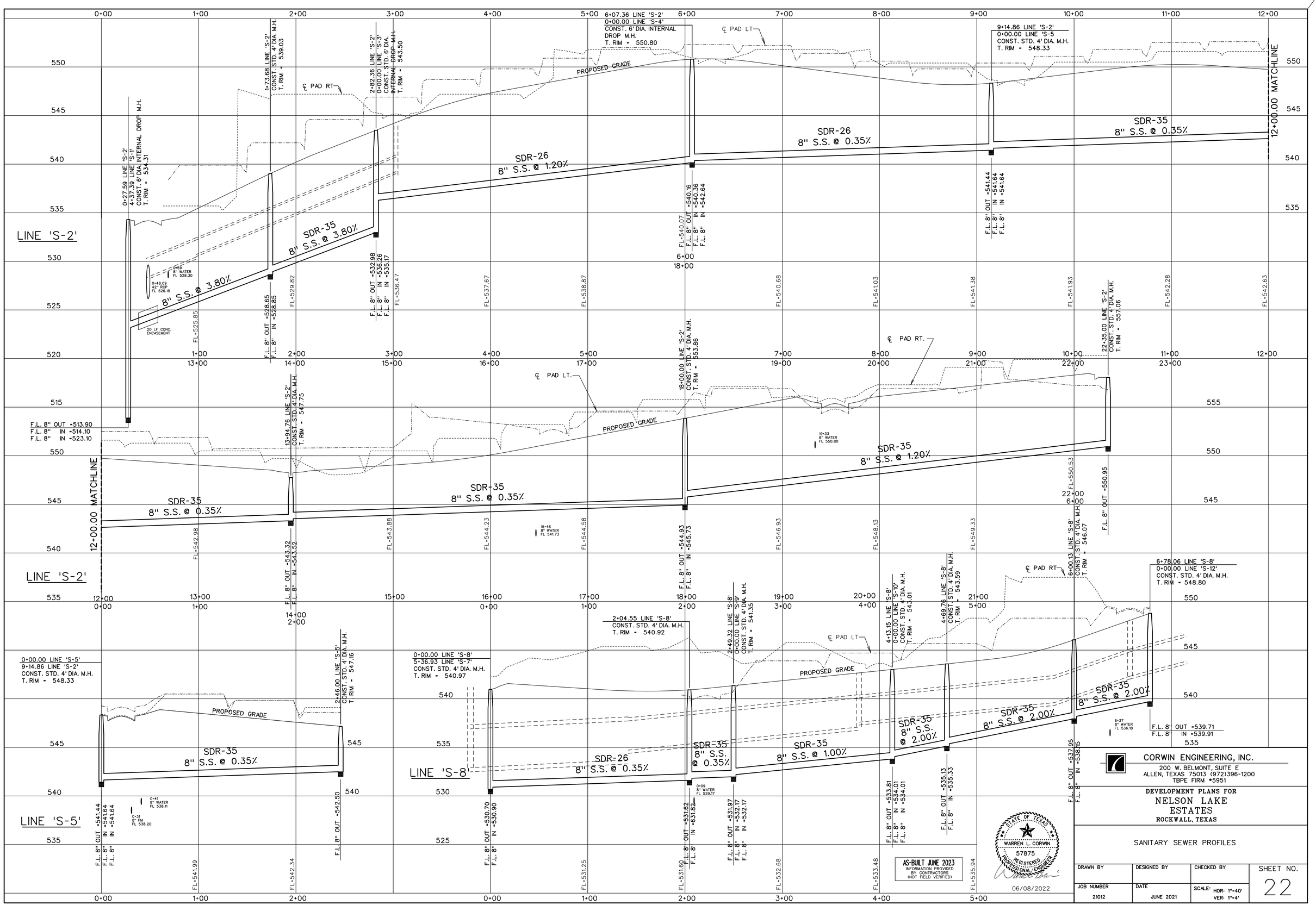
06/08/2022

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

SANITARY SEWER PROFILES

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
			21
JOB NUMBER	DATE	SCALE: HOR: 1"=40' VER: 1"=4'	
21012	JUNE 2021		



AS-BUILT JUNE 2023
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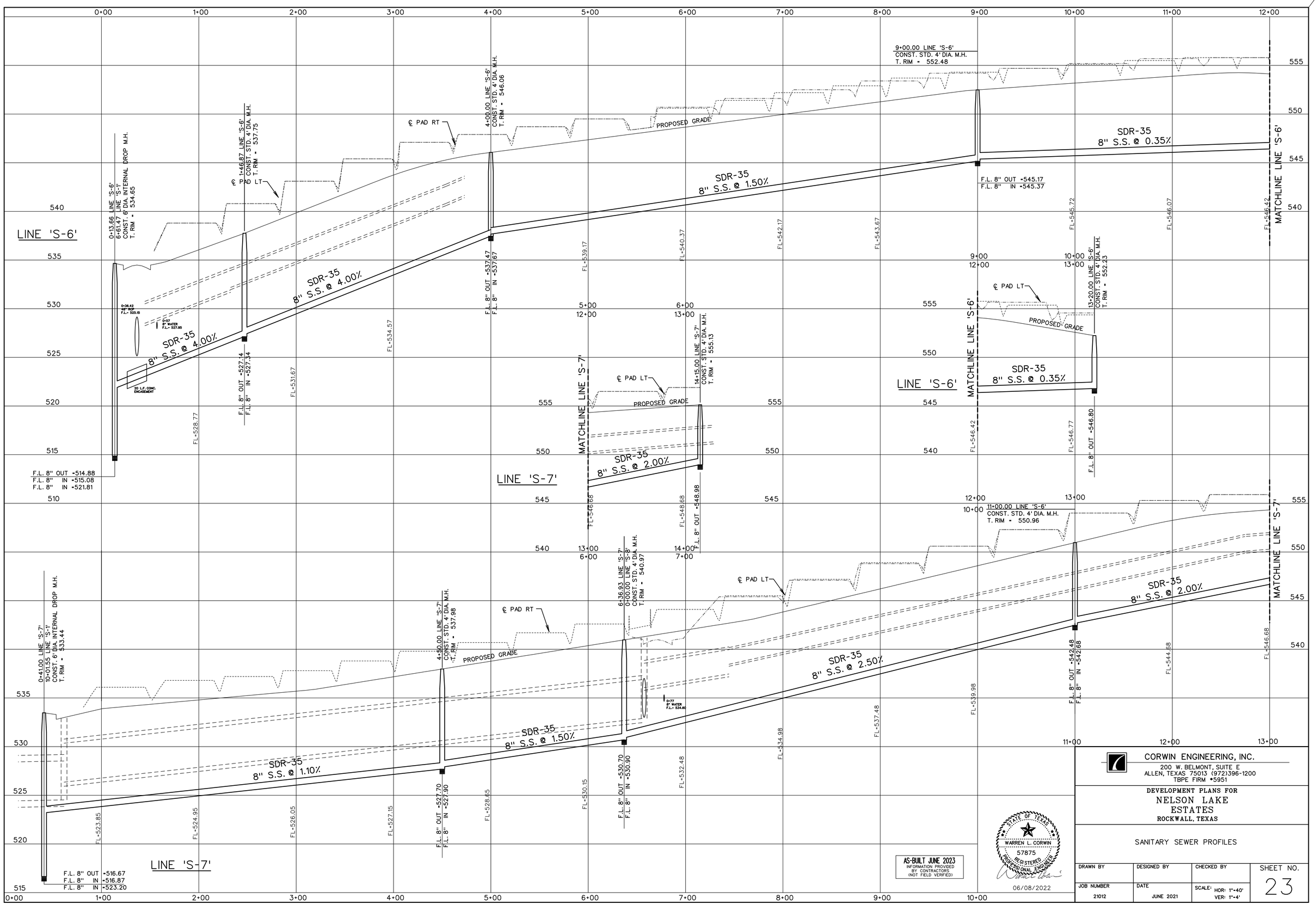
STATE OF TEXAS
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06/08/2022

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DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

SANITARY SEWER PROFILES

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	22



CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
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TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

SANITARY SEWER PROFILES

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
			23
JOB NUMBER	DATE	SCALE:	
21012	JUNE 2021	HOR: 1"=40' VER: 1"=4'	

LINE 'S-9'

2+49.32 LINE 'S-8'
0+00.00 LINE 'S-9'
CONST. STD. 4' DIA. M.H.
T. RIM = 541.35

2+15.79 LINE 'S-9'
CONST. STD. 4' DIA. M.H.
T. RIM = 539.00

3+71.76 LINE 'S-9'
CONST. STD. 4' DIA. M.H.
T. RIM = 540.20

5+75.00 LINE 'S-9'
CONST. STD. 4' DIA. M.H.
T. RIM = 542.22

℄ PAD RT.
℄ PAD LT.
PROPOSED GRADE

SDR-35
8" S.S. @ 0.35%

SDR-35
8" S.S. @ 0.35%

SDR-35
8" S.S. @ 0.35%

3+30
8" WATER
F.L.= 530.86

F.L. 8" OUT =531.97
F.L. 8" IN =532.17
F.L. 8" IN =532.17

FL=532.52

F.L. 8" OUT =532.93
F.L. 8" IN =533.13

FL=532.87

FL=533.42

F.L. 8" OUT =533.67
F.L. 8" IN =533.87

FL=533.97

FL=534.32

F.L. 8" OUT =534.58

LINE 'S-15'

1+41.50 LINE 'S-1'
0+00.00 LINE 'S-15'
CONST. 6' DIA. INTERNAL DROP M.H.
T. RIM = 534.54

1+60.00 LINE 'S-15'
CONST. STD. 4' DIA. M.H.
T. RIM = 533.82

℄ PAD RT.
PROPOSED GRADE

8" S.S. @ 0.50%

FL=527.50

F.L. 8" OUT =527.80

LINE 'S-10'

0+00.00 LINE 'S-10'
4+13.15 LINE 'S'-8'
CONST. STD. 4' DIA. M.H.
T. RIM = 543.01

1+52.45 LINE 'S-10'
CONST. STD. 4' DIA. M.H.
T. RIM = 546.00

6+20.00 LINE 'S-10'
CONST. STD. 4' DIA. M.H.
T. RIM = 557.52

℄ PAD RT.
℄ PAD LT.
PROPOSED GRADE

SDR-35
8" S.S. @ 3.00%

SDR-35
8" S.S. @ 2.40%

0+41
8" WATER
F.L.= 532.27

F.L. 8" OUT =533.81
F.L. 8" IN =534.01
F.L. 8" IN =534.01

FL=536.41

F.L. 8" OUT =537.67
F.L. 8" IN =537.87

FL=539.30

FL=542.30

FL=545.30

FL=548.30

F.L. 8" OUT =551.90

FL=551.30

F.L. 8" OUT =512.46
F.L. 8" IN =527.00
F.L. 8" IN =512.66

LINE 'S-11'

0+00.00 LINE 'S-11'
19+07.77 LINE 'S'-1'
CONST. STD. 4' DIA. M.H.
T. RIM = 531.84

5+00.00 LINE 'S-11'
CONST. STD. 4' DIA. M.H.
T. RIM = 536.18

9+00.00 LINE 'S-11'
CONST. STD. 4' DIA. M.H.
T. RIM = 548.86

11+20.00 LINE 'S-11'
CONST. STD. 4' DIA. M.H.
T. RIM = 549.09

℄ PAD RT.
℄ PAD LT.
PROPOSED GRADE

SDR-35
8" S.S. @ 3.70%

SDR-35
8" S.S. @ 0.35%

SDR-35
8" S.S. @ 1.20%

D=26.23
42" RCP
FL 524.25

D=49
8" WATER
FL 526.00

20 LF CONC. ENCASEMENT

F.L. 8" OUT =528.15
F.L. 8" IN =528.42

FL=543.77

FL=544.12

F.L. 8" OUT =544.19

F.L. 8" OUT =543.22
F.L. 8" IN =543.42

F.L. 8" OUT =521.95
F.L. 8" IN =522.05
F.L. 8" IN =522.05

FL=523.25

FL=524.45

FL=525.65

FL=526.85

FL=532.12

FL=535.82

FL=539.52

AS-BUILT JUNE 2023
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STATE OF TEXAS
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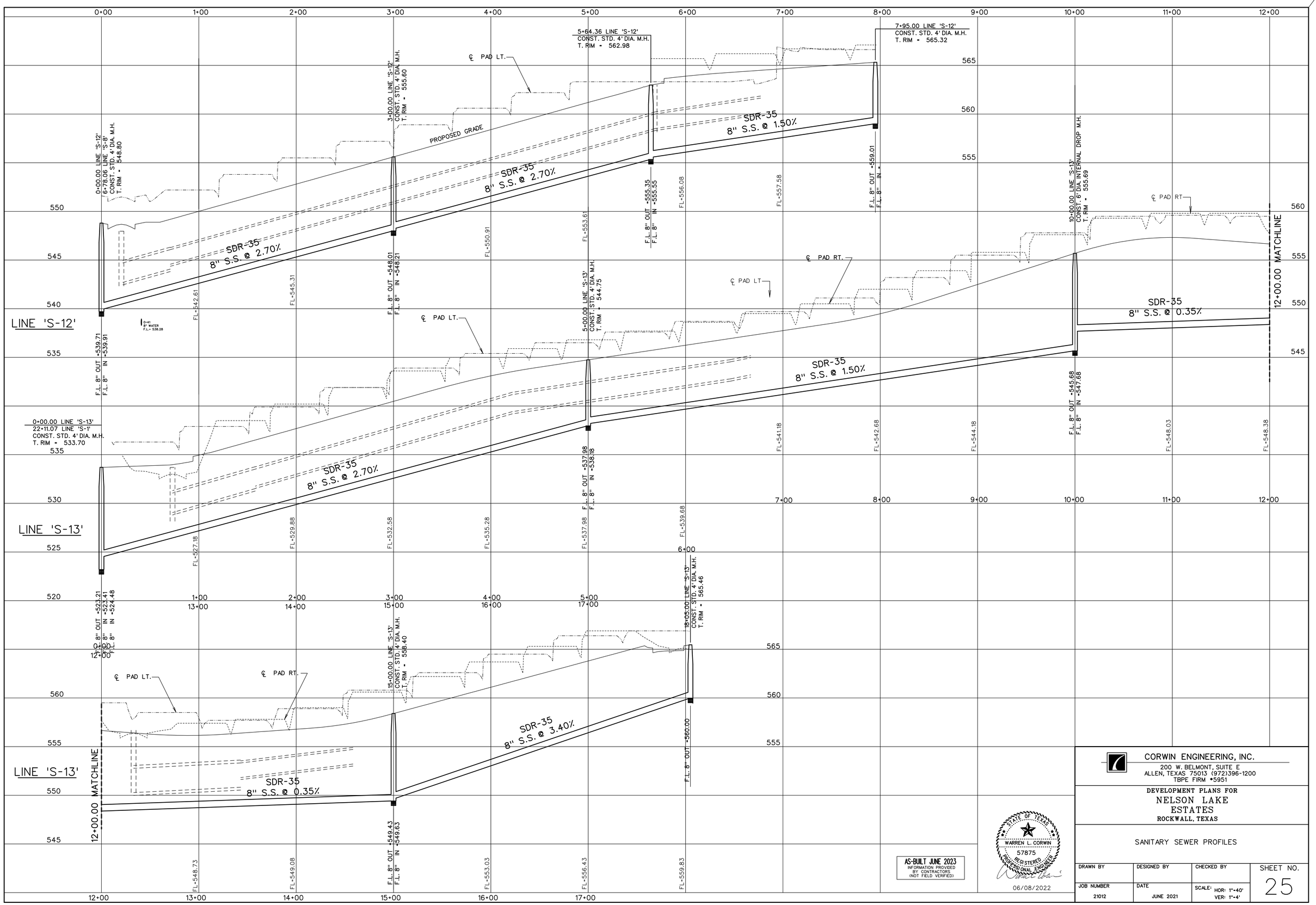
06/08/2022

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

SANITARY SEWER PROFILES

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	24



CORWIN ENGINEERING, INC.
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DEVELOPMENT PLANS FOR
NELSON LAKE
ESTATES
ROCKWALL, TEXAS

SANITARY SEWER PROFILES

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
			25
JOB NUMBER	DATE	SCALE: HOR: 1"=40' VER: 1"=4'	
21012	JUNE 2021		

NOTE:
SEE LIFT STATION PLANS FOR LOCATION OF FORCE MAIN INSIDE LIFT STATION AREA. GRADE INSIDE LIFT STATION AREA WILL CONTINUE AT 0.00% WITH AN FLOW LINE ELEVATION OF 529.60

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00

0+26.00 LINE 'FM'
LIFT STATION

0+00.00 LINE 'FM'
SEE LIFT STATION PLANS FOR CONNECTION
INSTALL AIR/VACUUM RELEASE VALVE AT VALVE VAULT

PROPOSED GRADE

4" F.M. @ 0.00%

4" F.M. @ -0.50%

4" F.M. @ -3.94%

4" F.M. @ 2.40%

4" F.M. @ 7.11%

4" F.M. @ 3.70%

4" F.M. @ 0.40%

2+00.00 FM PVI
2+55.00 FM PVI
3+00.00 FM PVI
3+60.00 FM PVI
5+35.00 FM PVI

2+63.89 18" RCP FL 529.48
3+62.31 18" RCP FL 531.45
5+82.79 18" RCP FL 539.43
3+31 8" WL
5+62.15 8" SS FL 535.48
8+87.15 8" SS FL 542.75
11+64.44 18" RCP FL 543.96
11+97.14 8" SS FL 541.74

12+00.00 MATCH LINE

NOTE:
FORCE MAIN SHALL BE AWWA (900-16 PVC PIPE DR14) GREEN IN COLOR

LINE-FM

FL-529.60 FL-529.60 FL-529.10 FL-528.60 FL-526.44 FL-527.52 FL-528.96 FL-531.80 FL-535.50 FL-536.80 FL-537.06 FL-537.46 FL-537.86 FL-538.26 FL-538.66 FL-539.06 FL-539.46

12+00.00 MATCH LINE

PROPOSED GRADE

16+81.50 FM PVI
18+68.00 FM INSTALL AIR/VACUUM RELEASE VALVE
19+00.00 FM PVI
19+75.00 FM PVI
20+42.00 FM TIE TO EX. MANHOLE

17+14 8" WL
17+47.96 30" RCP FL 538.41

4" F.M. @ 0.00%
4" F.M. @ -16.81%
4" F.M. @ 4.60%
4" F.M. @ 0.00%
BORE 70 L.F.

LINE-FM

FL-539.46 FL-539.86 FL-540.26 FL-540.66 FL-541.06 FL-541.38 FL-541.38 FL-541.38 FL-541.38 FL-536.00 FL-536.00 FL-537.15 F.M. IN -538.97 F.L. 15" OUT-538.23

550 545 540 535 530 525

AS-BUILT JUNE 2023
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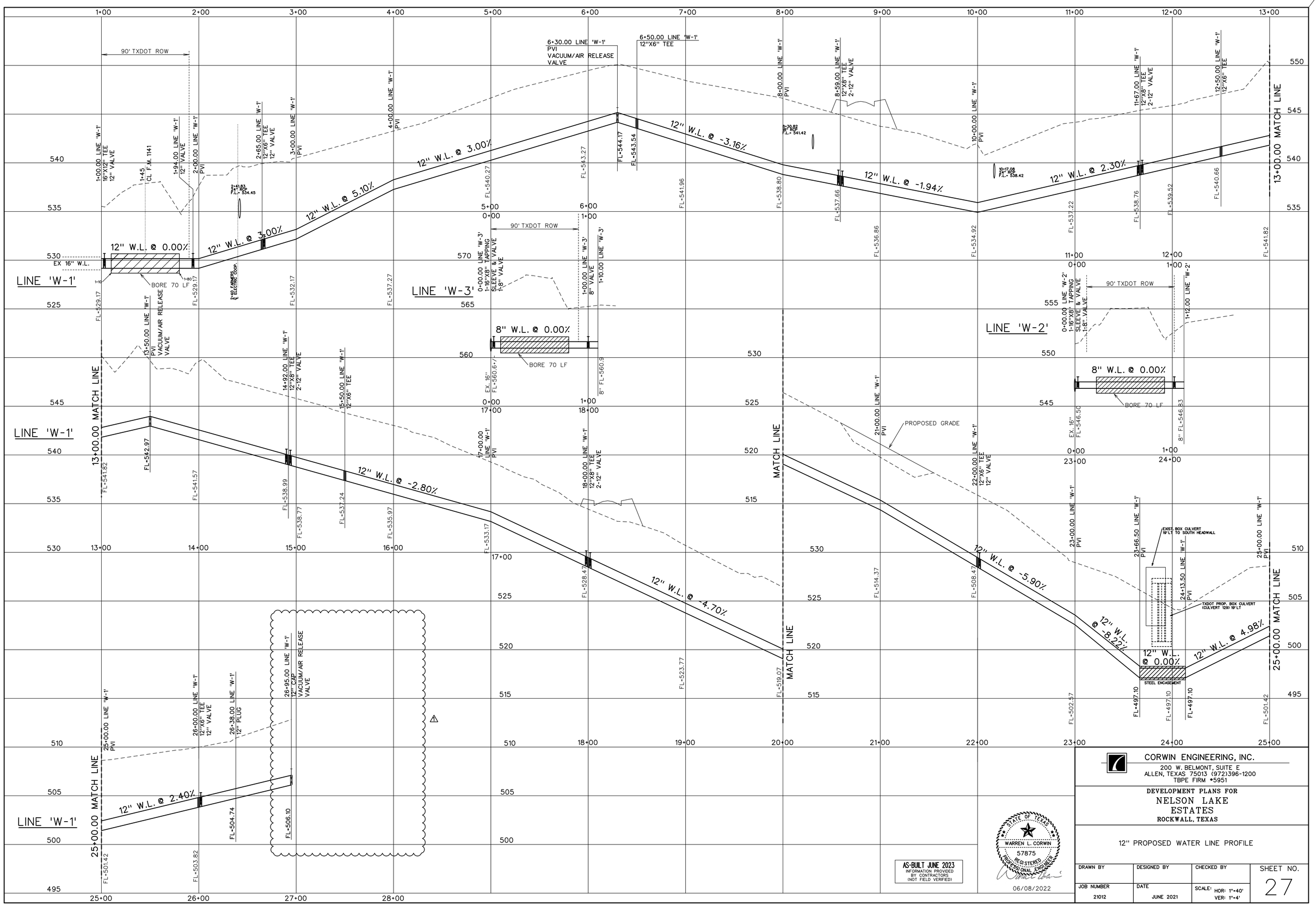
STATE OF TEXAS
WARREN L. CORWIN
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06/08/2022

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
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TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

SANITARY SEWER PROFILES
FORCE MAIN LINE FM

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	26



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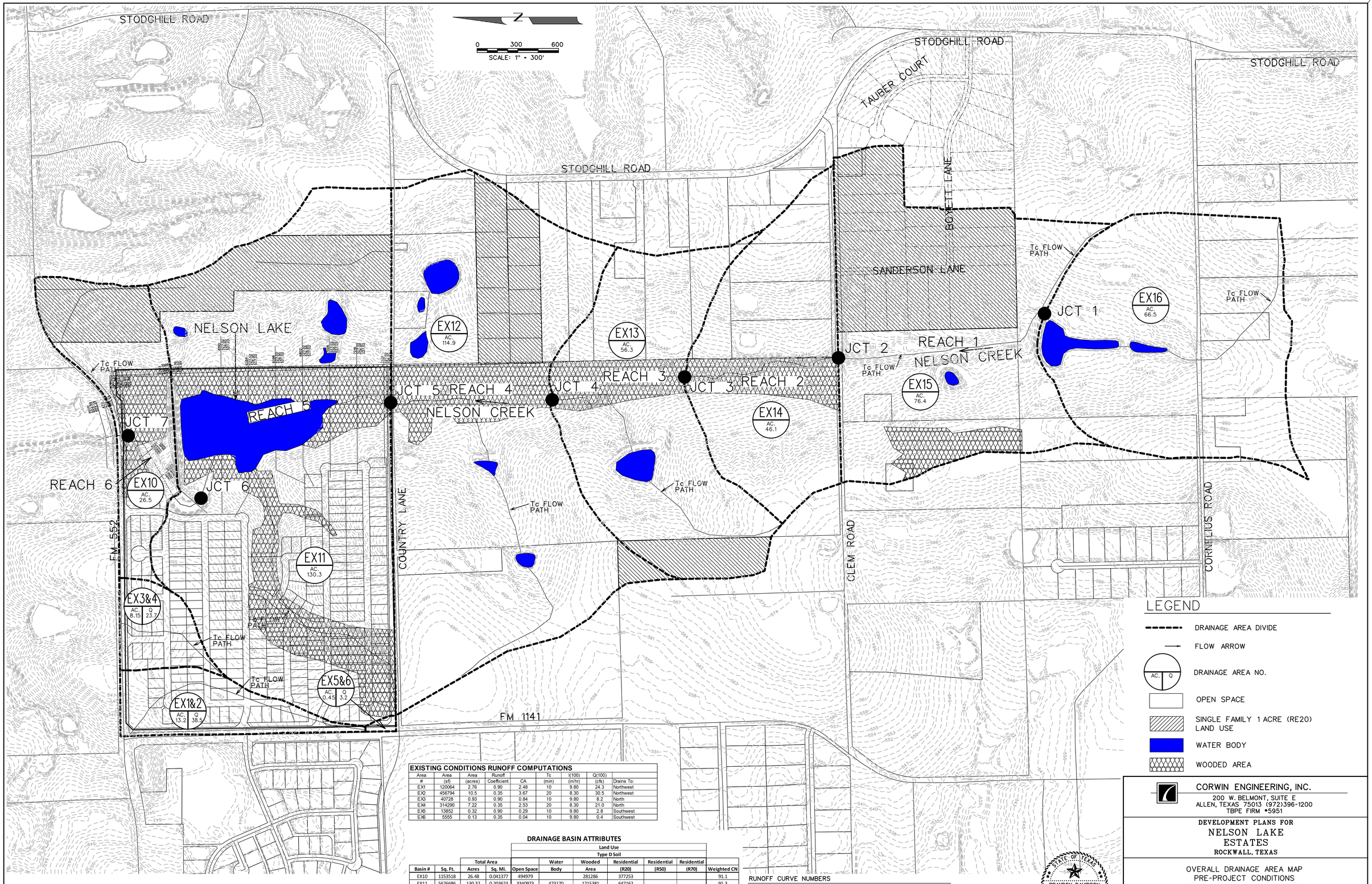
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

12" PROPOSED WATER LINE PROFILE

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
06/08/2022

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	27



EXISTING CONDITIONS RUNOFF COMPUTATIONS

Area #	Area (sf)	Area (acres)	Runoff Coefficient	CA	Tc (min)	I(100) (in/hr)	Q(100) (cfs)	Drains To:
EX1	120064	2.76	0.90	2.48	10	9.80	24.3	Northwest
EX2	456794	10.5	0.35	3.67	20	8.30	30.5	Northwest
EX3	40728	0.93	0.90	0.84	10	9.80	8.2	North
EX4	314290	7.22	0.35	2.53	20	8.30	21.0	North
EX5	13852	0.32	0.90	0.29	10	9.80	2.8	Southwest
EX6	5555	0.13	0.35	0.04	10	9.80	0.4	Southwest

DRAINAGE BASIN ATTRIBUTES

Basin #	Sq. Ft.	Total Area Acres	Total Area Sq. Mi.	Land Use / Type D Soil: Open Space	Water Body	Wooded Area	Residential (R20)	Residential (R50)	Residential (R70)	Weighted CN
EX10	1153518	26.48	0.041377	494979		281286	377253			91.1
EX11	5676686	130.32	0.203623	3340973	473170	1215381	647162			91.3
EX12	5005520	114.91	0.179548	3768709	93764	484246	658801			90.7
EX13	2451695	56.28	0.087942	1833059	51617	307475	259544			90.7
EX14	2007351	46.08	0.072004	1684107		323244				90.1
EX15	3326855	76.37	0.119335	1679185	7375	230354	1409941			91.5
EX16	2898275	66.54	0.103961	2812766	85509					90.5

RUNOFF CURVE NUMBERS

Open Space	39.00	61.00	74.00	80.00
Corrected for AMC-3	**59.52**	**78.25**	**86.75**	**90.20**
Single Family (1 Acre Lots) (Residential (R20)	59.00	74.00	82.00	86.00
Corrected for AMC-3	**76.80**	**86.75**	**91.29**	**93.39**
Water Body	100.00	100.00	100.00	100.00
Corrected for AMC-3	**100.00**	**100.00**	**100.00**	**100.00**
Wooded Area	36.00	60.00	73.00	79.00
Corrected for AMC-3	**56.40**	**77.53**	**86.15**	**89.64**

NOTES:

1. TOPOGRAPHY SHOWN HEREON WAS OBTAINED BY A TOPOGRAPHIC SURVEY OF THE SITE PERFORMED BY CORWIN ENGINEERING, INC. IN MARCH 2021 AND LIDAR TOPOGRAPHY OBTAINED FROM THE TEXAS NATURAL RESOURCE INFORMATION SYSTEM. ELEVATIONS ARE TIED TO CITY OF ROCKWALL CONTROL MONUMENTS 2 AND 12 WHICH ARE BASED ON NAVD 88

LEGEND

- DRAINAGE AREA DIVIDE
- FLOW ARROW
- AC. / Q — DRAINAGE AREA NO.
- OPEN SPACE
- SINGLE FAMILY 1 ACRE (RE20) LAND USE
- WATER BODY
- WOODED AREA

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

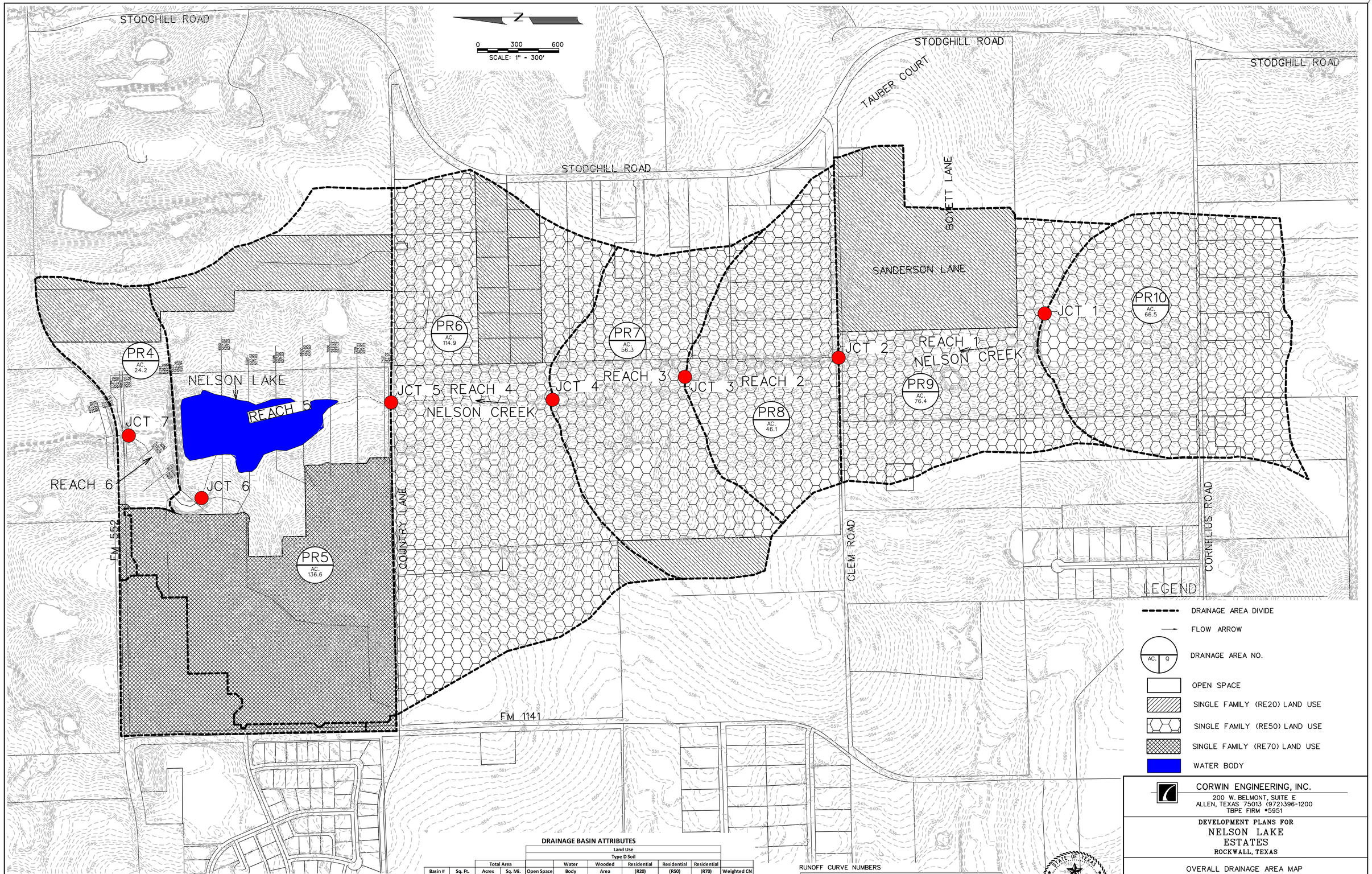
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
11/16/2022

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

OVERALL DRAINAGE AREA MAP
PRE-PROJECT CONDITIONS
NELSON CREEK DRAINAGE BASIN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=300'	28



DRAINAGE BASIN ATTRIBUTES

				Land Use / Type D Soil						
		Total Area			Water	Wooded	Residential	Residential	Residential	
Basin #	Sq. Ft.	Acres	Sq. Mi.	Open Space	Body	Area	(R20)	(R50)	(R70)	Weighted CN
PR4	1055100	24.22	0.037847	627627			377252		50221	91.7
PR5	5949351	136.58	0.213404	2229684	473170		647162		2599335	94.2
PR6	5005520	114.91	0.179548				658801	4346719		94.7
PR7	2451695	56.28	0.087942				259545	2192150		94.7
PR8	2007351	46.08	0.072004					2007351		94.9
PR9	3326855	76.37	0.119335				1409941	1916914		94.3
PR10	2898275	66.54	0.103961					2898275		94.9

RUNOFF CURVE NUMBERS

Open Space	39.00	61.00	74.00	80.00
Corrected for AMC-3	**59.52**	**78.25**	**86.75**	**90.20**
Residential (R70)	80.00	87.00	91.00	93.00
Corrected for AMC-3	**90.20**	**93.90**	**95.88**	**96.83**
Residential (R50)	69.00	80.00	86.00	89.00
Corrected for AMC-3	**83.66**	**90.20**	**93.39**	**94.90**
Single Family (1 Acre Lots) (Residential (R20)	59.00	74.00	82.00	86.00
Corrected for AMC-3	**76.80**	**86.75**	**91.29**	**93.39**
Water Body	100.00	100.00	100.00	100.00
Corrected for AMC-3	**100.00**	**100.00**	**100.00**	**100.00**

NOTES:

1. TOPOGRAPHY SHOWN HEREON WAS OBTAINED BY A TOPOGRAPHIC SURVEY OF THE SITE PERFORMED BY CORWIN ENGINEERING, INC. IN MARCH 2021 AND LIDAR TOPOGRAPHY OBTAINED FROM THE TEXAS NATURAL RESOURCE INFORMATION SYSTEM. ELEVATIONS ARE TIED TO CITY OF ROCKWALL CONTROL MONUMENTS 2 AND 12 WHICH ARE BASED ON NAVD 88

AS-BUILT JUNE 2023
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ALLEN, TEXAS 75013 (972)396-1200
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DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

OVERALL DRAINAGE AREA MAP
POST-PROJECT CONDITIONS
NELSON CREEK DRAINAGE BASIN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=300'	29

FM 552

EX. 30" RCP
Q_{100} =51.1 CFS

FM 1171

EX. 24" CMP
Q_{100} =27.9 CFS

EX3 AC. 0.93 Q 8.2

EX4 AC. 7.22 Q 21.0

EX7 AC. 1.06 Q 9.4

EX9 AC. 11.4 Q 33.1

EX. 3-6X6 BOX CULVERT
Q_{100} =285.3 CFS

FM 552

47"
503.92
503.81
503.93

4784
504.78
504.25
504.79
4804
505.05
504.93
505.06

NRCS ESMT

100 YR. FLOODPLAIN

5393
526.19
526.16
526.19

5597
526.99
526.92
526.99

EX1 AC. 2.76 Q 24.3

EX2 AC. 10.5 Q 30.5

EX8 AC. 89.9 Q 261.1

NRCS ESMT

100 YR. FLOODPLAIN

6394
527.02
526.95
527.02

NELSON LAKE

6598
527.02
526.95
527.02

6802
527.02
526.95
527.02

7006
527.02
526.95
527.02

EX5 AC. 0.32 Q 2.8

EX6 AC. 0.13 Q 0.4

EX. 18" RCP
Q_{100} =2.7 CFS

FM 1171

NORTH COUNTY LANE

NORTH COUNTY LANE

N

0 50 100 200
SCALE: 1" = 100'

LEGEND

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

EXISTING CONDITIONS RUNOFF COMPUTATIONS

Area #	Area (sf)	Area (acres)	Runoff Coefficient	CA	Tc (min)	I(100) (in/hr)	Q(100) (cfs)	Drains To:
EX1	120064	2.76	0.90	2.48	10	9.80	24.3	Northwest
EX2	456794	10.5	0.35	3.67	20	8.30	30.5	Northwest
EX3	40728	0.93	0.90	0.84	10	9.80	8.2	North
EX4	314290	7.22	0.35	2.53	20	8.30	21.0	North
EX5	13852	0.32	0.90	0.29	10	9.80	2.8	Southwest
EX6	5555	0.13	0.35	0.04	10	9.80	0.4	Southwest
EX7	46331	1.06	0.90	0.96	10	9.80	9.4	Northeast
EX8	3914965	89.9	0.35	31.46	20	8.30	261.1	Northeast
EX9	496112	11.4	0.35	3.99	20	8.30	33.1	Northeast

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TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

PRE-PROJECT CONDITIONS DRAINAGE AREA MAP
ON-SITE

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=100'	30

EXISTING RELEASE RATE=51.1 CFS
PROPOSED RELEASE RATE=41.2 CFS

EXISTING RELEASE RATE =27.9 CFS
PROPOSED RELEASE RATE=25.8 CFS

EXISTING RELEASE RATE=184.8 CFS
PROPOSED RELEASE RATE=170.6 CFS

EXISTING RELEASE RATE=3.2 CFS
PROPOSED RELEASE RATE=3.2 CFS

FM 552 · FM 1171 · LINE 'D-17' · LINE 'D-18' · LINE 'D-2' · LINE 'D-3' · LINE 'D-4' · LINE 'D-1' · LINE 'D-11' · LINE 'D-10' · LINE 'D-12' · LINE 'D-5' · LINE 'D-15' · LINE 'D-16' · LINE 'D-7' · LINE 'D-8' · LINE 'D-14' · LINE 'D-13' · LINE 'D-6'

MORRIS STREET · STRATFORD ROAD · EUCLID DRIVE · HUNTWICK WAY · CLAIRMONT DRIVE · WICKERSHAM ROAD · NORTH COUNTY LANE

NOTTINGHAM ROAD · LINGOOD STREET · TILLEY COURT · ELLERSLIE COURT · CHATSWORTH ROAD · GLENWOOD LANE · BYRNE LANE · MACBETH LANE · ATWOOD LANE

AREA	AREA	AREA	RUNOFF		Tc	I(100)	Q(100)	
#	(sf)	(acres)	Coefficient	CA	(min)	(in/hr)	(cfs)	Drains To:
1	98625	2.26	0.50	1.13	10	9.80	11.1	Inlet #1
2	114465	2.63	0.50	1.31	10	9.80	12.9	Inlet #2
3	70325	1.61	0.50	0.81	10	9.80	7.9	Inlet #3
4	30192	0.69	0.50	0.35	10	9.80	3.4	Inlet #4
5	25344	0.58	0.50	0.29	10	9.80	2.9	Inlet #5
6	25942	0.60	0.50	0.30	10	9.80	2.9	Inlet #6
7	65164	1.50	0.50	0.75	10	9.80	7.3	Inlet #7
8	66505	1.53	0.50	0.76	10	9.80	7.5	Inlet #8
9	35988	0.83	0.50	0.41	10	9.80	4.0	Inlet #9
10	68173	1.57	0.50	0.78	10	9.80	7.7	Inlet #10
11	53688	1.23	0.50	0.62	10	9.80	6.0	Inlet #11
12	12999	0.30	0.50	0.15	10	9.80	1.5	Inlet #12
13	115627	2.65	0.50	1.33	10	9.80	13.0	Inlet #13
14	115627	2.65	0.50	1.33	10	9.80	13.0	Inlet #14
15	33329	0.77	0.50	0.38	10	9.80	3.7	Inlet #15
16	34950	0.80	0.50	0.40	10	9.80	3.9	Inlet #16
17	112804	2.59	0.50	1.29	10	9.80	12.7	Inlet #17
18	132682	3.05	0.50	1.52	10	9.80	14.9	Inlet #18
19	68691	1.58	0.50	0.79	10	9.80	7.7	Inlet #19
20	37663	0.86	0.50	0.43	10	9.80	4.2	Inlet #20
21	52152	1.20	0.50	0.60	10	9.80	5.9	Inlet #21
22	42335	0.97	0.50	0.49	10	9.80	4.8	Inlet #22
23	33661	0.77	0.50	0.39	10	9.80	3.8	Inlet #23
24	90816	2.08	0.50	1.04	10	9.80	10.2	Inlet #24
25	43001	0.99	0.50	0.49	10	9.80	4.8	Inlet #25
26	54520	1.25	0.50	0.63	10	9.80	6.1	Inlet #26
27	26250	0.60	0.50	0.30	10	9.80	3.0	Inlet #27
28	25174	0.58	0.50	0.29	10	9.80	2.8	Inlet #28
29	90802	2.08	0.50	1.04	10	9.80	10.2	Inlet #29
30	74322	1.71	0.50	0.85	10	9.80	8.4	Inlet #30
31	102363	2.35	0.50	1.17	10	9.80	11.5	Inlet #31
32	82713	1.90	0.50	0.95	10	9.80	9.3	Inlet #32
33	64818	1.49	0.50	0.74	10	9.80	7.3	Inlet #33
34	52873	1.21	0.50	0.61	10	9.80	5.9	Inlet #34
35	40484	0.93	0.50	0.46	10	9.80	4.6	Inlet #35
36	56315	1.29	0.50	0.65	10	9.80	6.3	Inlet #36
37	94959	2.18	0.50	1.09	10	9.80	10.7	Inlet #37
38	65661	1.51	0.50	0.75	10	9.80	7.4	Inlet #38
39	64685	1.48	0.50	0.74	10	9.80	7.3	Inlet #39
40	36000	0.83	0.50	0.41	10	9.80	4.0	Inlet #40
41	42322	0.97	0.50	0.49	10	9.80	4.8	Inlet #41
42	75765	1.74	0.50	0.87	10	9.80	8.5	Inlet #42
43	62517	1.44	0.50	0.72	10	9.80	7.0	Inlet #43
44	119046	2.73	0.50	1.37	10	9.80	13.4	Inlet #44
45	23073	0.53	0.50	0.26	10	9.80	2.6	Inlet #45
45A	15911	0.37	0.90	0.33	10	9.80	3.2	Inlet #45
46	56405	1.29	0.50	0.65	10	9.80	6.3	Inlet #46
47	106772	2.45	0.50	1.23	10	9.80	12.0	Detention Pond
48	72687	1.67	0.90	1.50	10	9.80	14.7	Ex. 30" RCP
49	10820	0.25	0.50	0.12	10	9.80	1.2	Ex. 30" RCP
50	29301	0.67	0.90	0.61	10	9.80	5.9	Line D-15
51	7001	0.16	0.50	0.08	10	9.80	0.8	Line D-15
52	17267	0.40	0.90	0.36	10	9.80	3.5	Line D-16
53	4394	0.10	0.50	0.05	10	9.80	0.5	Line D-16
54	13979	0.32	0.90	0.29	10	9.80	2.8	Ex. 18" RCP
55	3176	0.07	0.50	0.04	10	9.80	0.4	Ex. 18" RCP
56	63287	1.45	0.90	1.31	10	9.80	12.8	County Lane
57	18973	0.44	0.50	0.22	10	9.80	2.1	County Lane
58	18234	0.42	0.90	0.38	10	9.80	3.7	County Lane
59	29665	0.68	0.90	0.61	10	9.80	6.0	Line D-18
60	6776	0.16	0.50	0.08	10	9.80	0.8	Line D-18
61	26243	0.60	0.90	0.54	10	9.80	5.3	Ex. 24" RCP
62	16187	0.37	0.50	0.19	10	9.80	1.8	Ex. 24" RCP
63	85885	1.97	0.50	0.99	10	9.80	9.7	FM 552 Culvert
64	292020	6.70	0.35	2.35	20	8.30	19.5	FM 552 Culvert
65	56026	1.29	0.50	0.64	10	9.80	6.3	Nelson Lake
66	202769	4.65	0.50	2.33	10	9.80	22.8	Nelson Lake
67	22815	0.52	0.35	0.18	20	8.30	1.5	Nelson Lake
68	1345113	30.9	0.35	10.81	20	8.30	89.7	Nelson Lake

4784
504.78
504.25
504.79
4804
505.05
504.93
505.06

5393
526.19
526.16
526.19
5397
526.99
526.92
526.99

6190
527.02
526.95
527.02

6394
527.02
526.95
527.02

6598
527.02
526.95
527.02

6802
527.02
526.95
527.02

7006
527.02
526.95
527.02

7219
527.00

7431
527.00

0 50 100 200
SCALE: 1" = 100'

LEGEND
PROP. STORM SEWER
PROP. CURB INLETS
PROP. CONC. HEADWALL
EXIST. STORM SEWER
DRAINAGE AREA DIVIDE
FLOW ARROW
DRAINAGE AREA NO.

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS · BRANDON DAVIDSON · 87682 · REGISTERED PROFESSIONAL ENGINEER
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CORWIN ENGINEERING, INC.
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ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

POST-PROJECT DRAINAGE AREA MAP
ON-SITE

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=100'	31

STORM SEWER CALCULATIONS

SYSTEM ID	Conduit Properties: Collection Point Station Up-stream	Collection Point Station Down-stream	Length	# of Barrels	Pipe Size	Box Span	Box Rise	Type	Area	Wetted Perimeter P_W	Hydraulic Radius	Manning's n	Flowline Elevation Up-stream	Flowline Elevation Down-stream	Slope	Incremental Drainage Area: Inlet ID	Area	Runoff Coeff. C	Incre-mental C*A	Accum-ulated C*A	Up-stream T_C	Design Storm Freq.	Intensity I	Runoff Q	Conduit Capacity Q_C	Partial Flow	Velocity V	Time in Conduit	Friction Slope S_f	Friction Headloss	HGL Up-stream	HGL Down-stream	V1/2g (U/S)	V2/2g	Junctions Type	Coeff. K_J	Velocity Headloss	Design HGL	Top of Curb Elevation	HGL Depth Below T/C
			(ft)		(inches)	(ft)	(ft)		(ft^2)	(ft)	(ft)				(ft/ft)		(acres)				(min)	(yr)	(in/hr)	(cfs)	(cfs)	(Yes/No)	(ft/s)	(min)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(ft)			(ft)	(ft)		(ft)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
Line D1	1+82.70	0+90.55	92.15	1	18			RCP	1.7672	4.7124	0.375	0.013	542.01	539.25	0.0300	2	2.63	0.50	1.31	1.31	10.00	100	9.80	12.9	18.2	Yes	11.2	0.14	0.0149	1.38	542.95	540.61	0.00	1.95	Inlet	1.25	2.43	545.38	548.11	2.73
	0+90.55	0+00.00	90.55	1	30			RCP	4.9088	7.854	0.625	0.013	538.25	537.80	0.0050	D1A	2.26	0.50	1.13	2.44	10.14	100	9.78	23.9	28.9	Yes	6.7	0.23	0.0034	0.31	540.61	540.30	1.95	0.70	MH	1.00	0.00	540.61	547.81	7.20
Lat D1A	0+08.57	0+00.00	8.57	1	24			RCP	3.1416	6.2832	0.500	0.013	543.81	543.38	0.0500	1	2.26	0.50	1.13	1.13	10.00	100	9.80	11.1	50.6	Yes	3.5	0.04	0.0024	0.02	545.40	545.38	0.00	0.19	Inlet	1.00	0.19	545.59	547.81	2.22
																											6.7				540.61	540.61	0.19	0.70	MH	0.55	0.59	545.22		
Line D2	3+87.54	3+44.63	42.91	1	18			RCP	1.7672	4.7124	0.375	0.013	542.39	541.50	0.0207	6	0.60	0.50	0.30	0.30	10.00	100	9.80	2.9	15.1	Yes	6.6	0.11	0.0008	0.03	542.85	542.16	0.00	0.68	Inlet	1.25	0.68	543.53	546.41	2.88
	3+44.63	2+91.66	52.97	1	18			RCP	1.7672	4.7124	0.375	0.013	541.50	540.40	0.0207	D2A	0.58	0.50	0.29	0.59	10.11	100	9.78	5.8	15.1	Yes	8.0	0.11	0.0030	0.16	542.16	541.13	0.68	0.99	60° Wye	0.35	0.76	542.16	546.41	4.25
	2+91.66	0+00.00	291.66	1	24			RCP	3.1416	6.2832	0.500	0.013	539.96	538.50	0.0050	D2B	#DIV/0!	0.50	#DIV/0!	#DIV/0!	10.22	100	9.77	#DIV/0!	16.0	Yes	5.4	0.90	#DIV/0!	#DIV/0!	541.11	539.65	0.99	0.45	60° Wye	0.35	0.10	541.13	545.00	3.87
Lat D2A	0+20.06	0+00.00	20.06	1	18			RCP	1.7672	4.7124	0.375	0.013	542.41	541.50	0.0454	5	0.58	0.50	0.29	0.29	10.00	100	9.80	2.9	22.4	Yes	8.7	0.04	0.0007	0.01	542.78	542.16	0.00	1.18	Inlet	1.00	1.18	543.96	546.41	2.45
																											8.0				542.16	542.16	1.18	0.99	60° Wye	1.00	0.00	542.16		
Lat D2B	0+68.03	0+00.00	68.03	1	18			RCP	1.7672	4.7124	0.375	0.013	542.00	540.21	0.0263	45,45A	#DIV/0!	0.00	#DIV/0!	#DIV/0!	10.00	100	9.80	#DIV/0!	17.0	Yes	8.8	0.13	#DIV/0!	#DIV/0!	542.61	541.13	0.00	1.20	Inlet	1.00	1.20	543.81	546.41	2.60
																											5.4				541.13	541.13	1.20	0.45	60° Wye	1.00	0.00	541.13		
Line D3	5+02.56	4+63.03	39.53	1	24			RCP	3.1416	6.2832	0.500	0.013	544.09	543.89	0.0050	3	1.61	0.50	0.81	0.81	10.00	100	9.80	7.9	16.0	Yes	2.5	0.26	0.0012	0.05	545.82	545.78	0.10	0.10	Inlet	1.25	0.12	545.95	548.05	2.10
	4+63.03	4+00.00	63.03	1	24			RCP	3.1416	6.2832	0.500	0.013	543.89	543.57	0.0050	D3A	0.69	0.50	0.35	1.15	10.26	100	9.76	11.3	16.0	Yes	3.6	0.29	0.0025	0.16	545.74	545.58	0.45	0.20	60° Wye	0.35	0.04	545.78	548.05	2.27
	4+00.00	1+94.54	205.46	1	24			RCP	3.1416	6.2832	0.500	0.013	543.58	539.96	0.0517	PVI	0.00	0.00	0.00	1.15	10.55	100	9.72	11.2	51.4	No	3.6	0.96	0.0024	0.50	541.99	541.48	0.10	0.20	PVI	1.00	0.10	545.58	548.05	2.47
	1+94.54	0+57.58	136.96	1	24			RCP	3.1416	6.2832	0.500	0.013	539.28	538.60	0.0050	MH	0.00	0.50	0.00	1.15	11.51	100	9.57	11.0	16.0	No	3.5	0.65	0.0024	0.32	541.48	541.05	0.20	0.19	MH	0.55	0.11	541.48	546.65	5.17
	0+57.58	0+00.00	57.58	1	24			RCP	3.1416	6.2832	0.500	0.013	538.60	538.31	0.0050	D4	1.50	0.50	0.75	1.90	12.16	100	9.48	18.0	16.0	No	5.7	0.17	0.0063	0.36	540.77	540.41	0.19	0.51	MH	0.55	0.28	541.05	547.20	6.15
Lat D3A	0+29.74	0+00.00	29.74	1	24			RCP	3.1416	6.2832	0.500	0.013	544.09	543.89	0.0067	4	0.69	0.50	0.35	0.35	10.00	100	9.80	3.4	18.5	Yes	1.1	0.46	0.0002	0.01	545.93	545.93	0.00	0.02	Inlet	1.25	0.02	545.96	548.05	2.09
																											3.6				545.74	545.74	0.02	0.20	60° Wye	0.35	0.19	545.93		
Line D4	1+74.26	0+00.00	174.26	1	18			RCP	1.7672	4.7124	0.375	0.013	544.59	539.10	0.0315	7	1.50	0.50	0.75	0.75	10.00	100	9.80	7.3	18.6	No	4.1	0.70	0.0048	0.84	545.07	541.05	0.00	0.27	Inlet	1.25	0.27	545.34	548.59	3.25
																											5.7				540.77	540.77	0.27	0.51	MH	0.55	0.28	541.05		
Line D5	17+50.61	15+00.00	250.61	1	18			RCP	1.7672	4.7124	0.375	0.013	552.09	550.09	0.0080	21	1.20	0.50	0.60	0.60	10.00	100	9.80	5.9	9.4	Yes	5.6	0.75	0.0031	0.78	552.95	550.95	0.00	0.49	Inlet	1.25	0.61	553.56	556.09	2.53
	15+00.00	13+00.00	200.00	1	18			RCP	1.7672	4.7124	0.375	0.013	550.09	545.71	0.0219	PVI	0.00	0.50	0.00	0.60	10.75	100	9.69	5.8	15.5	Yes	8.2	0.41	0.0030	0.61	550.73	546.34	0.49	1.04	PVI	1.00	0.56	550.95	554.03	3.08
	13+00.00	9+67.10	332.90	1	18			RCP	1.7672	4.7124	0.375	0.013	545.71	538.42	0.0219	MH	0.00	0.50	0.00	0.60	11.15	100	9.63	5.8	15.5	Yes	8.2	0.68	0.0030	1.00	546.34	539.11	1.04	1.04	MH	0.05	0.05	546.34	550.24	3.90
	9+67.10	9+31.35	35.75	1	30			RCP	4.9088	7.854	0.625	0.013	537.42	536.85	0.0160	D5A	2.37	0.50	1.19	1.79	11.83	100	9.53	17.0	51.9	Yes	9.5	0.06	0.0017	0.06	538.45	538.26	1.04	1.40	60° Wye	0.35	1.04	539.11	542.72	3.61
	9+31.35	8+82.94	48.41	1	30			RCP	4.9088	7.854	0.625	0.013	536.84	536.07	0.0160	D5B	3.05	0.50	1.52	3.31	11.89	100	9.52	31.5	51.9	Yes	11.1	0.07	0.0059	0.28	538.26	537.48	1.40	1.91	60° Wye	0.35	1.42	538.26	542.17	3.91
	8+82.94	5+82.47	300.47	1	48			RCP	12.5664	12.5664	1.000	0.013	532.91	529.60	0.0110	D6	17.99	0.50	9.00	12.30	11.96	100	9.51	116.9	150.7	Yes	13.2	0.38	0.0066	1.98	535.56	532.35	1.91	2.71	MH	0.55	1.49	537.48	541.18	3.70
	5+82.47	2+87.02	295.45	1	48			RCP	12.5664	12.5664	1.000	0.013	529.60	526.35	0.0110	D5C	1.48	0.50	0.74	13.05	12.34	100	9.45	123.3	150.7	Yes	13.4	0.37	0.0073	2.16	532.35	529.04	2.71	2.79	MH	0.05	0.14	532.35	535.85	3.50
	2+87.02	2+40.00	47.02	1		7	4	BOX	27.1100	0	1.330	0.013	524.53	524.44	0.0020	D10	13.97	0.50	6.98	20.03	12.71	100	9.39	188.1	167.6	No	6.9	0.11	0.0025	0.12	528.56	528.44	2.79	0.75	MH	0.55	0.41	529.04	533.97	4.93
Lat D5A	0+16.74	0+00.00	16.74	1	21			RCP	2.4053	5.4978	0.438	0.013	538.72	537.79	0.0556	17	2.37	0.50	1.19	1.19	10.00	100	9.80	11.6	37.4	Yes	4.8	0.06	0.0054	0.09	539.41	538.48	0.00	0.36	Inlet	1.25	0.45	539.86	542.72	2.86
																											9.5				538.45	538.45	0.36	1.40	60° Wye	0.35	1.27	538.48		
Lat D5B	0+16.74	0+00.00	16.74	1	21			RCP	2.4053	5.4978	0.438	0.013	538.17	537.22	0.0568	18	3.05	0.50	1.52	1.52	10.00	100	9.80	14.9	37.8	Yes	6.2	0.04	0.0088	0.15	538.93	538.26	0.00	0.60	Inlet	1.25	0.75	539.68	542.17	2.49
																											11.1				538.26	538.26	0.60	1.91	60° Wye	0.35	1.70	538.26		
Lat D5C	0+14.50	0+00.00	14.50	1	18			RCP	1.7672	4.7124	0.375	0.013	532.37	531.00	0.0945	46	1.48	0.50	0.74	0.74	10.00	100	9.80	7.3	32.3	Yes	4.1	0.06	0.0048	0.07	532.86	531.89	0.00	0.26	Inlet	1.25	0.33	533.19	536.37	3.18
																											6.9				532.35	532.35	0.26	0.75	60° Wye	0.35	0.66	531.89		
Line D6	12+03.41	10+24.05	179.36	1	18			RCP	1.7672	4.7124	0.375	0.013	553.21	551.49	0.0096	33	1.49	0.50	0.74	0.74	10.00	100	9.80	7.3	10.3	Yes	7.3	0.41	0.0048	0.86	554.26	552.88	0.00	0.83	Inlet	1.25	0.94	555.20	557.21	2.01
	10+24.05	9+78.06	45.99	1	30			RCP	4.9088	7.854	0.625	0.013	550.51	550.28	0.0050	D6A,D6B	3.11	0.50	1.56	2.30	10.41	100	9.74	22.4	29.0	Yes	6.5	0.12	0.0030	0.14	552.65	552.10	0.83	0.66	60° Wye	0.35	0.37	552.88	556.03	3.15
	9+78.06	6+78.06	300.00	1	30			RCP	4.9088	7.854	0.625	0.013	550.28	542.33	0.0265	MH	0.00	0.50	0.00	2.30	10.53	100	9.72	22.4	66.8	Yes	12.3	0.41	0.0030	0.89	551.35	544.28	0.66	2.35	MH	0.55	1.29	552.10	556.29	4.19
	6+78.06	6+00.00	78.06	1	30			RCP	4.9088	7.854	0.625	0.013	542.33	539.60	0.0350	D7	5.50	0.50	2.75	5.05	10.93	100	9.66	48.8	76.7	No	9.9	0.13	0.0141	1.10	543.43	542.33	2.35	1.53	MH	0.55	0.84	544.28	547.96	3.68
	6+00.00	4+00.45	199.55	1	30			RCP	4.9088	7.854	0.625	0.013	539.60	537.60	0.0100	PVI	0.00	0.50	0.00	5.05	11.06	100	9.64	48.7	41.0	No	9.9	0.34	0.0140	2.80	542.33	539.54	1.53	1.53	PVI	1.00	0.00	542.33	545.48	3.15
	4+00.45	1+59.08	241.37	1	42			RCP	9.6212	10.9956	0.875	0.013	536.60	534.19	0.0100	D8	3.83	0.50	1.91	6.97	11.40	100	9.59	66.8	100.6	No	6.9	0.58	0.0044	1.06	539.12	538.06	1.53	0.75	MH	0.55	0.41	539.54	542.68	3.14
	1+59.08	0+00.00	159.08	1	48			RCP	12.5664	12.5664	1.000	0.013	533.71	532.91	0.0050	D6C,D6D	4.06	0.50	2.03	9.00	11.98	100	9.50	85.5	101.6	No	6.8	0.39	0.0035	0.56	537.61	537.05	0.75	0.72	60° Wye	0.35	0.46	538.06	540.66	2.60
																											13.2				535.56	535.56	0.72	2.71	MH	0.55	1.49	537.05		
Lat D6A	0+16.74	0+00.00	16.74	1	18			RCP	1.7672	4.7124	0.375	0.013	552.03	551.01	0.0609	32	1.90	0.50	0.95	0.95	10.00	100	9.80	9.3	25.9	Yes	13.5	0.02	0.0078	0.13	552.78	552.65	0.00	2.83	Inlet	1.25	0.96	553.74	556.03	2.29
																											6.5				552.65	552.65	2.83	0.66	60° Wye	0.35	0.00	552.65		
Lat D6B	0+16.74	0+00.00	16.74	1	18			RCP	1.7672	4.7124	0.375	0.013	552.03	551.01	0.0609	34	1.21	0.50	0.61	0.61	10.00	100	9.80	5.9	25.9	Yes	11.9	0.02	0.0032	0.05	552.70	552.65	0.00	2.20	Inlet	1.25	0.47	553.17	556.03	2.86
																											6.5				552.65	552.65	2.20	0.66	60° Wye	0.35	0.00	552.65		
Lat D6C	0+16.92	0+00.00	16.92	1	21			RCP	2.4053	5.4978	0.438	0.013	536.66	534.83	0.1082	30	1.71	0.50	0.85	0.85	10.00	100	9.80	8.4	52.1	No	3.5	0.08	0.0028	0.05	538.31	538.26	0.00	0.19	Inlet	1.25	0.23	538.54	540.66	2.12
																											6.8				537.61	537.61	0.19	0.72	60° Wye	0.35	0.65	538.26		
Lat D6D	0+16.59	0+00.00	16.59	1	21			RCP	2.4053	5.4978	0.438	0.013	536.66	534.83	0.1103	31	2.35	0.50	1.17	1.17	10.00	100	9.80	11.5	52.6	No	4.8	0.06	0.0053	0.09	538.29	538.20	0.00	0.36	Inlet	1.25	0.44	538.73	540.66	1.93
																											6.8				537.61	537.61	0.36	0.72	60° Wye	0.35	0.59	538.20		
Line D7	6+56.65	5+48.15	108.50	1	18			RCP	1.7672	4.7124	0.375	0.013	560.14	558.51	0.0150	25	0.99	0.50	0.49	0.49	10.00	100	9.80	4.8	12.9	Yes	6.8	0.27	0.0021	0.23	560.78	559.15	0.00	0.72	Inlet	1.25	0.90	561.68	564.14	2.46
	5+48.15	4+06.19	141.96	1	18			RCP	1.7672	4.7124	0.375	0.013	558.51	554.54	0.0280	MH	0.00	0.50	0.00	0.49	10.27	100	9.76	4.8	17.6	Yes	8.5	0.28	0.0021	0.30	559.05	555.29	0.72	1.12	MH	0.55	0.62	559.15	563.00	3.85
	4+06.19	2+34.57	171.62	1	18			RCP	1.7672	4.7124	0.375	0.013	554.54	549.73	0.0280	D7A	0.82	0.50	0.41	0.90	10.54	100	9.72	8.8	17.6	Yes	10.0	0.29	0.0069	1.19	555.29	550.72	1.12	1.55	60° Wye	0.35	1.16	555.29	559.26	3.97
	2+34.57	0+47.19	187.38	1	18			RCP	1.7672	4.7124	0.375	0.013	549.73	544.48	0.0280	D7B	0.86	0.50	0.43	1.33	10.83	100	9.68	12.9	17.6	Yes	10.9	0.29	0.0150	2.80	550.72	545.48	1.55	1.84	MH	0.55	1.01	550.72	554.23	3.51
	0+47.19	0+00.00	47.19	1	24			RCP	3.1416	6.2832	0.500	0.013	543.99	542.67	0.0280	D7C,D7D	2.84	0.50	1.42	2.75	11.12	100	9.63	26.5	37.9	Yes	13.0	0.06	0.0137	0.64	545.22	544.28	1.84	2.62	60° Wye	0.35	1.98	545.48	549.21	3.73
																											9.9				543.43	543.43	2.62	1.53	MH	0.55	0.84	544.28		
Lat D7A	0+16.74	0+00.00	16.74	1	18			RCP	1.7672	4.7124	0.375	0.013	555.26	554.54	0.0430	26	0.82	0.50	0.41	0.41	10.00	100	9.80	4.0	21.8	Yes	9.4	0.03	0.0015	0.02	555.70	555.29	0.00	1.37	Inlet	1.25	0.49	556.19	559.26	3.07
																											10.0				555.29	555.29	1.37	1.55	60° Wye	0.35	1.07	555.29		
Lat D7B	0+14.50	0+00.00	14.50	1	18			RCP	1.7672	4.7124	0.375	0.013	550.23	549.73	0.0345	27	0.86	0.50	0.43	0.43	10.00	100	9.80	4.2	19.5	Yes	8.8	0.03	0.0016	0.02	550.70	550.49	0.00	1.20	Inlet	1.25	1.50	552.20	554.23	2.03
																											10.9				550.49	550.72	1.20	1.84	MH	0.55	1.01	550.49		
Lat D7C	0+16.74	0+00.00	16.74	1	18			RCP	1.7672	4.7124	0.375	0.013	545.21	544.24	0.0579	28	0.76	0.50	0.38	0.38	10.00	100	9.80	3.7	25.3	Yes	10.3	0.03	0.0012	0.02	545.71	545.22	0.00	1.65	Inlet	1.25	0.40	546.11	549.21	3.10
																											13.0				545.22	545.22	1.65	2.62	60° Wye	0.35	2.05	545.22		
Lat D7D	0+16.74	0+00.00	16.74	1	24			RCP	3.1416	6.2832	0.500	0.013	545.35	543.99	0.0812	29	2.08	0.50	1.04	1.04	10.00	100	9.80	10.2	64.5	Yes	15.0	0.02	0.0020	0.03	545.89	545.22	0.00	3.49	Inlet	1.25	0.82	546.71	549.35	2.64
																											13.0				545.22	545.22	3.49	2.62	60° Wye	0.35	1.40	545.22		
Line D8	3+21.97	0+80.14	241.83	1	18			RCP	1.7672	4.7124	0.375	0.013	546.71	540.18	0.0270	22	0.89	0.50	0.45	0.45	10.00	100	9.80	4.4	17.3	Yes	8.2	0.49	0.0017	0.42	547.23	540.92	0.00	1.04	Inlet	1.25	1.31	548.54	550.71	2.17
	0+80.14	0+54.42	25.72	1	18			RCP	1.7672	4.7124	0.375	0.013	540.18	539.49	0.0270	D8A	0.85	0.50	0.43	0.87	10.49	100	9.73	8.5	17.3	Yes	9.7	0.04	0.0065	0.17	540.92	540.34	1.04	1.46	60° Wye	0.35	1.10	540.92	544.40	3.48
	0+54.42	0+00.00	54.42	1	21			RCP	2.4053	5.4978	0.438	0.013	539.24	537.77	0.0270	D8B	2.08	0.50	1.04	1.91	10.54	100	9.72	18.6	26.0	Yes	11.8	0.08	0.0137	0.75	540.34	539.54	1.46	2.16	60° Wye	0.35	1.65	540.34	543.89	3.55
																											6.9				539.12	539.12	2.16	0.75	MH	0.55	0.41	539.54		
Lat D8A	0+16.59	0+00.00	16.59	1	18			RCP	1.7672	4.7124	0.375	0.013	540.40	540.18	0.0133	23	0.85	0.50	0.43	0.43	10.00	100	9.80	4.2	12.1	Yes	6.2	0.04	0.0016	0.03	541.01	540.92	0.00	0.60	Inlet	1.25	0.75	541.76	544.40	2.64
																											8.2				540.92	540.92	0.60	1.04	60° Wye	0.35	0.84	540.92		
Lat D8B	0+17.13	0+00.00	17.13	1	21			RCP	2.4053	5.4978	0.438	0.013	539.86	539.36	0.0292	24	2.08	0.50	1.04	1.04	10.00	100	9.80	10.2	27.1	Yes	10.5	0.03	0.0041	0.07	540.60	541.90	0.00	1.71	Inlet	1.25	0.76	541.36	543.86	2.50
																											11.8				540.34	540.34	1.71	2.16	60° Wye	0.35	1.56	541.90		
Line D9	2+40.72	2+17.81	22.91	1	18			RCP	1.7672	4.7124	0.375	0.013	534.87	533.95	0.0400	36	1.29	0.50	0.65	0.65	10.00	100	9.80	6.3	21.0	Yes	10.4	0.04	0.0036	0.08	535.43	534.72	0.00	1.68	Inlet	1.25	0.63	536.06	538.87	2.81
	2+17.81	0+45.00	172.81	1	18			RCP	1.7672	4.7124	0.375	0.013	533.95	532.22	0.0100	D9A	0.93	0.50	0.46	1.11	10.04	100	9.79	10.9	10.5	Yes	6.2	0.47	0.0107	1.84	534.72	528.78	1.68	0.59	60° Wye	0.35	0.00	534.72	538.87	4.15
Lat D9A	0+32.18	0+00.00	32.18	1	18			RCP	1.7672	4.7124	0.375	0.013	534.87	533.95	0.0286	35	0.93	0.50	0.46	0.46	10.00	100	9.80	4.6	17.8	Yes	8.5	0.06	0.0019	0.06	535.39	534.72	0.00	1.12	Inlet	1.25	1.40	536.79	538.87	2.08
																											6.2				534.72	534.72	1.12	0.59	60° Wye	0.35	0.20	534.72		
Line D10	6+56.31	6+36.40	19.91	1	21			RCP	2.4053	5.4978	0.438	0.013	529.64	529.22	0.0212	11	1.27	0.50	0.63	0.63	10.00	100	9.80	6.2	23.1	No	2.6	0.13	0.0015	0.03	530.27	530.24	0.00	0.10	Inlet	1.25	0.13	530.40	533.67	3.27
	6+36.40	5+75.53	60.87	1	24			RCP	3.1416	6.2832	0.500	0.013	528.97	527.68	0.0212	D10A	0.30	0.50	0.15	0.78	10.13	100	9.78	7.6	32.9	No	2.4	0.42	0.0011	0.07	530.19	530.12	0.10	0.09	60° Wye	0.35	0.06	530.24	533.67	3.43
	5+75.53	3+30.66	244.87	1	42			RCP	9.6212	10.9956	0.875	0.013	526.18	525.69	0.0020	D11	3.06	0.50	1.53	2.31	10.55	100	9.72	22.5	45.0	No	2.3	1.75	0.0005	0.12	530.07	529.95	0.09	0.08	MH	0.55	0.05	530.12	533.95	3.83
	3+30.66	0+75.63	255.03	1	48			RCP	12.5664	12.5664	1.000	0.013	525.19	524.68	0.0020	D12	6.72	0.50	3.36	5.67	12.29	100	9.46	53.6	64.2	No	4.3	1.00	0.0014	0.35	529.79	529.44	0.08	0.28	MH	0.55	0.16	529.95	535.86	5.91
	0+75.63	0+00.00	75.63	1	48			RCP	12.5664	12.5664	1.000	0.013	524.68	524.53	0.0020	D10B,D10C	2.63	0.50	1.31	6.98	13.29	100	9.31	65.0	64.2	No	5.2	0.24	0.0020	0.15	529.12	528.97	0.28	0.42	60° Wye	0.35	0.32	529.44	533.74	4.30
																											6.9				528.56	528.56	0.42	0.75	MH	0.55	0.41	528.97		
Lat D10A	0+32.27	0+00.00	32.27	1	18			RCP	1.7672	4.7124	0.375	0.013	529.64	529.22	0.0130	12	0.30	0.50	0.15	0.15	10.00	100	9.80	1.5	12.0	No	0.8	0.65	0.0002	0.01	530.28	530.27	0.00	0.01	Inlet	1.25	0.01	530.29	533.67	3.38
																											2.4				530.19	530.19	0.01	0.09	60° Wye	0.35	0.09	530.27		
Lat D10B	0+16.74	0+00.00	16.74	1	18			RCP	1.7672	4.7124	0.375	0.013	528.70	525.93	0.1655	19	1.76	0.50	0.88	0.88	10.00	100	9.80	8.6	42.7	No	4.9	0.06	0.0067	0.11	529.52	529.41	0.00	0.37	Inlet	1.25	0.46	529.98	533.74	3.76
																											5.2				529.12	529.12	0.37	0.42	60° Wye	0.35	0.29	529.41		
Lat D10C	0+16.74	0+00.00	16.74	1	18			RCP	1.7672	4.7124	0.375	0.013	528.70	525.93	0.1655	20	0.86	0.50	0.43	0.43	10.00	100	9.80	4.2	42.7	No	2.4	0.12	0.0016	0.03	529.53	529.51	0.00	0.09	Inlet	1.25	0.11	529.65	533.74	4.09
																											5.2				529.12	529.12	0.09	0.42	60° Wye	0.35	0.38	529.51		
Line D11	3+29.68	3+09.17	20.51	1	18			RCP	1.7672	4.7124	0.375	0.013	540.50	540.09	0.0200	8	1.53	0.50	0.76	0.76	10.00	100	9.80	7.5	14.9	Yes	8.4	0.04	0.0050	0.10	541.25	540.84	0.00	1.10	Inlet	1.25	1.37	541.87	544.50	2.63
	3+09.17	2+66.17	43.00	1	18			RCP	1.7672	4.7124	0.375	0.013	540.09	539.23	0.0200	Bend	0.00	0.50	0.00	0.76	10.04	100	9.79	7.5	14.9	Yes	8.4	0.09	0.0050	0.22	540.84	539.98	1.10	1.10	45° Bend	0.37	0.41	540.84	545.05	4.21
	2+66.17	0+57.63	208.54	1	18			RCP	1.7672	4.7124	0.375	0.013	539.23	530.58	0.0415	MH	0.00	0.50	0.00	0.76	10.13	100	9.78	7.5	21.4	Yes	11.1	0.31	0.0050	1.05	539.88	531.19	1.10	1.91	MH	0.55	1.05	539.98	544.17	4.19
	0+57.63	0+43.73	13.90	1	21			RCP	2.4053	5.4978	0.438	0.013	530.32	529.74	0.0415	D11B	1.53	0.50	0.77	1.53	10.44	100	9.73	14.9	32.3	Yes	13.2	0.02	0.0088	0.12	531.16	530.12	1.91	2.71	60° Wye	0.35	2.04	531.19	535.54	4.35
	0+43.73	0+00.00	43.73	1	21			RCP	2.4053	5.4978	0.438	0.013	529.74	527.93	0.0415	D11A	0.83	0.50	0.41	1.94	10.46	100	9.73	18.9	32.3	No	7.9	0.09	0.0142	0.62	530.74	530.12	2.71	0.96	60° Wye	0.35	0.01	530.74	535.54	4.80
																											2.3				530.07	530.07	2.71	0.08	MH	0.55	0.05	530.12		
Lat D11A	0+16.59	0+00.00	16.59	1	18			RCP	1.7672	4.7124	0.375	0.013	531.16	529.87	0.0778	9	0.83	0.50	0.41	0.41	10.00	100	9.80	4.0	29.3	Yes	11.6	0.02	0.0015	0.02	531.54	532.71	0.00	2.09	Inlet	1.25	2.61	532.09	535.16	3.07

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
11/16/2022

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

DRAINAGE CALCULATIONS

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER: 21012	DATE: JUNE 2021	SCALE:	32

STORM SEWER CALCULATIONS (CONT.)

SYSTEM ID	Collection Point Station Up-stream	Collection Point Station Down-stream	Length	# of Barrels	Pipe Size	Box Span	Box Rise	Type	Area	Wetted Perimeter P_W	Hydraulic Radius	Manning's n	Flowline Elevation Up-stream	Flowline Elevation Down-stream	Slope	Inlet ID	Area	Runoff Coeff. C	Incre-mental C*A	Accum-ulated C*A	Up-stream T_C	Design Storm Freq.	Intensity I	Runoff Q	Conduit Capacity Q_C	Partial Flow	Velocity V	Time in Conduit	Friction Slope S_f	Friction Headloss	HGL Up-stream	HGL Down-stream	V1/2g (U/S)	V2/2g	Junctions Type	Coeff. K_J	Velocity Headloss	Design HGL	Top of Curb Elevation	HGL Depth Below T/C
			(ft)		(inches)	(ft)	(ft)		(ft²)	(ft)	(ft)				(ft/ft)		(acres)				(min)	(yr)	(in/hr)	(cfs)	(cfs)	(Yes/No)	(ft/s)	(min)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(ft)			(ft)	(ft)		(ft)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
Line D12	3+28.46	3+06.65	21.81	1	21			RCP	2.4053	5.4978	0.438	0.013	541.64	540.70	0.0430	14	2.63	0.50	1.32	1.32	10.00	100	9.80	12.9	32.9	Yes	12.9	0.03	0.0066	0.14	542.40	541.93	0.00	2.58	Inlet	1.25	3.23	543.51	545.64	2.13
	3+06.65	0+85.13	221.52	1	21			RCP	2.4053	5.4978	0.438	0.013	540.71	532.07	0.0390	D12A	2.63	0.50	1.32	2.63	10.03	100	9.80	25.8	31.3	Yes	14.5	0.25	0.0263	5.83	541.93	533.40	2.58	3.26	60° Wye	0.35	2.36	541.93	545.61	3.68
	0+85.13	0+51.99	33.14	1	24			RCP	3.1416	6.2832	0.500	0.013	531.82	530.53	0.0390	D12B	0.73	0.50	0.36	2.99	10.28	100	9.76	29.2	44.7	Yes	14.0	0.04	0.0166	0.55	533.00	531.80	3.26	3.04	60° Wye	0.35	1.90	533.40	536.77	3.37
	0+51.99	0+00.00	51.99	1	24			RCP	3.1416	6.2832	0.500	0.013	530.53	528.50	0.0390	D12C	0.73	0.50	0.37	3.36	10.32	100	9.75	32.8	44.7	Yes	14.0	0.06	0.0209	1.08	531.80	529.79	3.04	3.04	60° Wye	0.35	1.98	531.80	536.77	4.97
																											4.3				529.79	529.79	3.04	0.28	MH	0.55	0.16	529.79		
Lat D12A	0+33.63	0+00.00	33.63	1	21			RCP	2.4053	5.4978	0.438	0.013	541.61	540.71	0.0268	13	2.63	0.50	1.32	1.32	10.00	100	9.80	12.9	25.9	Yes	10.6	0.05	0.0066	0.22	542.49	541.93	0.00	1.74	Inlet	1.25	0.99	543.48	545.64	2.16
																											14.5				541.93	541.93	1.74	3.26	60° Wye	0.35	2.65	541.93		
Lat D12B	0+16.59	0+00.00	16.59	1	18			RCP	1.7672	4.7124	0.375	0.013	533.27	532.07	0.0723	16	0.73	0.50	0.36	0.36	10.00	100	9.80	3.6	28.2	Yes	2.0	0.14	0.0011	0.02	533.64	533.00	0.00	0.06	Inlet	1.25	0.08	533.72	536.77	3.05
																											14.0				533.00	533.00	0.06	3.04	60° Wye	0.35	3.02	533.00		
Lat D12C	0+16.92	0+00.00	16.92	1	18			RCP	1.7672	4.7124	0.375	0.013	532.01	530.78	0.0727	15	0.73	0.50	0.37	0.37	10.00	100	9.80	3.6	28.3	Yes	2.0	0.14	0.0012	0.02	532.37	531.80	0.00	0.06	Inlet	1.25	0.08	532.45	536.77	4.32
																											14.0				531.80	531.80	0.06	3.04	60° Wye	0.35	3.02	531.80		
Line D13	11+26.33	11+02.74	23.59	1	21			RCP	2.4053	5.4978	0.438	0.013	543.20	542.73	0.0200	39	1.48	0.50	0.74	0.74	10.00	100	9.80	7.3	22.4	Yes	8.4	0.05	0.0021	0.05	543.89	543.77	0.00	1.10	Inlet	1.25	0.50	544.39	547.20	2.81
	11+02.74	8+86.84	215.90	1	21			RCP	2.4053	5.4978	0.438	0.013	542.74	539.50	0.0150	D13A	1.12	0.50	0.56	1.30	10.05	100	9.79	12.7	19.4	Yes	8.6	0.42	0.0064	1.39	543.77	540.56	1.10	1.15	60° Wye	0.35	0.76	543.77	547.14	3.37
	8+86.84	6+14.47	272.37	1	21			RCP	2.4053	5.4978	0.438	0.013	539.50	531.60	0.0290	D13B	1.19	0.50	0.59	1.90	10.47	100	9.73	18.4	27.0	Yes	12.0	0.38	0.0135	3.67	540.56	532.74	1.15	2.24	MH	0.55	1.23	540.56	543.51	2.95
	6+14.47	5+79.47	35.00	1	24			RCP	3.1416	6.2832	0.500	0.013	531.43	530.42	0.0290	D13C	1.74	0.50	0.87	2.76	10.84	100	9.67	26.7	38.5	Yes	13.2	0.04	0.0139	0.49	532.65	531.77	2.24	2.71	60° Wye	0.35	1.92	532.74	536.65	3.91
	5+79.47	5+32.48	46.99	1	24			RCP	3.1416	6.2832	0.500	0.013	530.42	529.06	0.0290	D13D	0.86	0.50	0.43	3.20	10.89	100	9.67	30.9	38.5	Yes	13.6	0.06	0.0186	0.87	531.77	530.41	2.71	2.87	60° Wye	0.35	1.93	531.77	535.56	3.79
	5+32.48	3+09.10	223.38	1	30			RCP	4.9088	7.854	0.625	0.013	528.55	525.45	0.0139	MH	0.00	0.50	0.00	3.20	10.95	100	9.66	30.9	48.4	No	6.3	0.59	0.0056	1.26	529.77	528.51	2.87	0.61	MH	0.55	0.34	530.41	533.69	3.28
	3+09.10	2+30.12	78.98	1	42			RCP	9.6212	10.9956	0.875	0.013	524.48	524.16	0.0040	D13E,D13F	4.99	0.50	2.49	5.69	11.54	100	9.57	54.5	63.6	No	5.7	0.23	0.0029	0.23	528.23	528.00	0.61	0.50	60° Wye	0.35	0.28	528.51	531.40	2.89
	2+30.12	1+90.00	40.12	1	42			RCP	9.6212	10.9956	0.875	0.013	524.16	524.00	0.0040	D14	1.50	0.50	0.75	6.44	11.77	100	9.53	61.4	63.6	No	6.4	0.10	0.0037	0.15	527.65	527.50	0.50	0.63	MH	0.55	0.35	528.00	531.40	3.40
Lat D13A	0+31.33	0+00.00	31.33	1	18			RCP	1.7672	4.7124	0.375	0.013	544.04	542.87	0.0373	38	1.12	0.50	0.56	0.56	10.00	100	9.80	5.5	20.3	Yes	9.8	0.05	0.0027	0.08	544.57	543.77	0.00	1.49	Inlet	1.25	0.56	545.13	547.14	2.01
																											8.6				543.77	543.77	1.49	1.15	60° Wye	0.35	0.63	543.77		
Lat D13B	0+14.50	0+00.00	14.50	1	18			RCP	1.7672	4.7124	0.375	0.013	539.51	539.41	0.0069	40	1.19	0.50	0.59	0.59	10.00	100	9.80	5.8	8.7	Yes	5.3	0.05	0.0031	0.04	540.56	540.56	0.00	0.44	Inlet	1.25	0.07	540.63	543.51	2.88
																											12.0				540.56	540.56	0.44	2.24	MH	0.55	1.23	540.56		
Lat D13C	0+16.74	0+00.00	16.74	1	18			RCP	1.7672	4.7124	0.375	0.013	532.65	531.68	0.0579	42	1.74	0.50	0.87	0.87	10.00	100	9.80	8.5	25.3	Yes	12.9	0.02	0.0065	0.11	533.25	532.65	0.00	2.58	Inlet	1.25	0.95	534.20	536.65	2.45
																											13.2				532.65	532.65	2.58	2.71	60° Wye	0.35	1.80	532.65		
Lat D13D	0+16.74	0+00.00	16.74	1	18			RCP	1.7672	4.7124	0.375	0.013	531.56	530.67	0.0532	41	0.86	0.50	0.43	0.43	10.00	100	9.80	4.2	24.2	Yes	10.3	0.03	0.0016	0.03	532.28	532.28	0.00	1.65	Inlet	1.25	0.22	532.50	535.56	3.06
																											13.6				531.77	531.77	1.65	2.87	60° Wye	0.35	2.30	532.28		
Lat D13E	0+16.74	0+00.00	16.74	1	24			RCP	3.1416	6.2832	0.500	0.013	527.40	525.23	0.1296	43	2.26	0.50	1.13	1.13	10.00	100	9.80	11.1	81.4	No	3.5	0.08	0.0024	0.04	528.70	528.66	0.00	0.19	Inlet	1.25	0.20	528.90	531.40	2.50
																											5.7				528.23	528.23	0.19	0.50	60° Wye	0.35	0.43	528.66		
Lat D13F	0+16.74	0+00.00	16.74	1	24			RCP	3.1416	6.2832	0.500	0.013	527.40	525.23	0.1296	44	2.73	0.50	1.37	1.37	10.00	100	9.80	13.4	81.4	No	4.3	0.07	0.0035	0.06	528.68	528.63	0.00	0.28	Inlet	1.25	0.20	528.88	531.40	2.52
																											5.7				528.23	528.23	0.28	0.50	60° Wye	0.35	0.40	528.63		
Line D14	3+65.09	0+00.00	365.09	1	18			RCP	1.7672	4.7124	0.375	0.013	530.62	526.97	0.0100	37	1.50	0.50	0.75	0.75	10.00	100	9.80	7.3	10.5	Yes	4.1	1.47	0.0048	1.77	531.54	528.00	0.00	0.27	Inlet	1.25	0.33	531.87	534.62	2.75
																											6.4				527.65	527.65	0.27	0.63	MH	0.55	0.35	528.00		
Line D15	1+34.23	0+24.63	109.60	1	18			RCP	1.7672	4.7124	0.375	0.013	554.00	552.01	0.0182	D16,49,50	1.33	0.82	1.09	1.09	10.00	100	9.80	10.7	14.2	Yes	6.1	0.30	0.0103	1.13	553.85	552.72	0.00	0.57	Headwall	0.50	0.29	554.59		
Line D16	1+54.82	0+45.44	109.38	1	18			RCP	1.7672	4.7124	0.375	0.013	566.26	564.27	0.0182	51,52	0.50	0.82	0.41	0.41	10.00	100	9.80	4.0	14.2	Yes	2.3	0.81	0.0014	0.16	564.98	564.82	0.00	0.08	Headwall	0.50	0.08	556.81		
Line D17	0+99.33	0+64.67	34.66	1	24			RCP	3.1416	6.2832	0.500	0.013	533.92	533.60	0.0093	Pond Outfall		0.50	0.00	0.00	10.00	100	9.80	21.3	21.8	No	6.8	0.09	0.0089	0.31	537.41	537.10	0.00	0.72	Inlet	1.25	0.90	538.30		
	0+64.67	0+37.23	27.44	1	24			RCP	3.1416	6.2832	0.500	0.013	533.60	533.35	0.0093	0	0.00	0.50	0.00	0.00	10.09	100	9.79	21.3	21.8	No	6.8	0.07	0.0089	0.24	536.84	536.59	0.72	0.72	45° Bend	0.37	0.27	537.10		
	0+37.23	0+00.00	37.23	1	24			RCP	3.1416	6.2832	0.500	0.013	533.34	533.00	0.0093	0	0.00	0.50	0.00	0.00	10.15	100	9.78	21.3	21.8	No	6.8	0.09	0.0089	0.33	536.33	536.00	0.72	0.72	45° Bend	0.37	0.27	536.59		
Line D18	1+34.18	0+25.17	109.01	1	18			RCP	1.7672	4.7124	0.375	0.013	533.67	530.84	0.0260	58,59	0.84	0.83	0.69	0.69	10.00	100	9.80	6.8	16.9	Yes	6.7	0.27	0.0041	0.45	531.95	531.50	0.00	0.70	Headwall	0.50	0.70	534.36		
Line D19	1+89.82	0+84.64	105.18	1	18			RCP	1.7672	4.7124	0.375	0.013	543.63	542.04	0.0200	45,45A	0.89	0.66	0.59	0.59	10.00	100	9.80	5.8	14.9	Yes	7.9	0.22	0.0031	0.32	542.48	0.00	0.00	0.97	Headwall	1.00	0.97	544.58		

INLET CALCULATIONS

Inlet ID	Location Street	Location Station	Location Offset		Design Freq	C	Area ID	Time of Concentration Tc	Intensity I	Area A	Runoff Q	Upstream Bypass C*A	Total Gutter Flow Q_a	Thoroughfare Type	On-Grade/ Sag	Manning's n	Long Slope S	Crown Type	Cross Slope S_X	Depression Depth a	Depression Width W	Depth of Gutter Flow (allow) y_{allow}	Depth of Gutter Flow (actual) y_{actual}	Ponding Width/ Spread (allow) T_{allow}	Ponding Width/ Spread (actual) T_{actual}	Max Allow Flow based on Ponding $Q_{max\ Gutter}$	Depressed Gutter Section Area A_W	Depressed Gutter Section Wetted Perimeter P_W	Section Beyond Depression Area A_0	Section Beyond Depression Wetted Perimeter P_0	Conveyance Depression Section Kw	Conveyance Section Beyond Depression K_0	Ratio of Depression flow to Total Flow E_0	Equivelent Cross-slope, S_e	Inlet Length Required $L_{Req'd}$	Inlet Length Actual L_{actual}	Inlet Capacity Q_C	Inlet By-pass Flow $Q_{by\ pass}$	C*A	To Inlet ID	Remarks
					(yr)			(min)	(in/hr)	(acres)	(cfs)	(cfs)	(cfs)				(ft/ft)		(ft/ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(ft²)	(ft)	(ft²)	(ft)	(cfs)	(cfs)		(ft/ft)	(ft)	(ft)	(cfs)	(cfs)			
(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
1	Nottingham	9+00.81	4.66	LT	100	0.5	1	10	9.8	2.26	11.1		11.1	Local	Sag	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.49	14	13.6	11.8	1.40	2.08	2.42	11.65	91.66	72.18	0.56	0.18	10.04	10	11.1	0.0	0.00		
2	Nottingham	8+22.50	14.50	RT	100	0.5	2	10	9.8	2.63	12.9		12.9	Local	Sag	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.44	14	12.5	11.8	1.32	2.08	1.95	10.46	82.60	54.16	0.60	0.19	12.23	15	15.1	0.0	0.00		
3	Morris	5+36.00	14.50	RT	100	0.5	3	10	9.8	1.61	7.9		7.9	Local	Sag	0.0175	1.20%	6" Rooftop	3.57%	0.5	2	0.5	0.39	14	10.9	15.5	1.20	2.08	1.40	8.86	71.07	34.87	0.67	0.20	6.13	10	11.1	0.0	0.00		
4	Morris	5+36.00	14.50	LT	100	0.5	4	10	9.8	0.69	3.4		3.4	Local	Sag	0.0175	1.20%	6" Rooftop	3.57%	0.5	2	0.5	0.28	14	7.9	15.5	0.99	2.08	0.62	5.91	51.57	11.84	0.81	0.24	0.58	10	11.1	0.0	0.00		
5	Haygood	2+96.00	14.50	LT	100	0.5	5	10	9.8	0.58	2.9		2.9	Local	On Grade	0.0175	0.93%	6" Rooftop	3.57%	0.5	2	0.5	0.28	14	7.77	13.6	0.98	2.08	0.60	5.77	50.71	11.11	0.82	0.24	6.10	10	9.3	0.0	0.00		
6	Haygood	2+96.00	14.50	RT	100	0.5	6	10	9.8	0.60	2.9		2.9	Local	On Grade	0.0175	0.93%	6" Rooftop	3.57%	0.5	2	0.5	0.28	14	7.84	13.6	0.99	2.08	0.61	5.84	51.13	11.46	0.82	0.24	6.17	10	9.2	0.0	0.00		
7	Tilley	2+48.17	N/A	N/A	100	0.5	7	10	9.8	1.50	7.3		7.3	Local	Sag	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.42	14	11.7	11.8	1.26	2.08	1.67	9.68	76.90	44.11	0.64	0.19	5.41	10	11.1	0.0	0.00		
8	Ellerslie	0+55.00	14.50	RT	100	0.5	8	10	9.8	1.53	7.5		7.5	Local	On Grade	0.0175	2.24%	6" Rooftop	3.57%	0.5	2	0.5	0.34	14	9.46	21.1	1.10	2.08	0.99	7.46	61.51	22.05	0.74	0.22	12.57	15	11.4	0.0	0.00		
9	Morris	13+27.00	14.50	LT	100	0.5	9	10	9.8	0.83	4.0		4.0	Local	On Grade	0.0175	4.41%	6" Rooftop	3.57%	0.5	2	0.5	0.24	14	6.62	29.6	0.90	2.08	0.38	4.62	43.84	6.14	0.88	0.26	10.88	15	8.7	0.0	0.00		
10	Morris	13+12.00	14.50	RT	100	0.5	10	10	9.8	1.57	7.7		7.7	Local	On Grade	0.0175	4.53%	6" Rooftop	3.57%	0.5	2	0.5	0.30	14	8.37	30.0	1.03	2.08	0.72	6.37	54.43	14.45	0.79	0.23	15.14	15	7.5	0.2	0.02	11	
11	Chatsworth	6+30.00	14.50	LT	100	0.5	11	10	9.8	1.23	6.0	0.02	6.2	Local	On Grade	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.39	14	10.97	11.8	1.21	2.08	1.44	8.97	71.83	36.01	0.67	0.20	8.61	10	8.8	0.0	0.00		
12	Chatsworth	6+30.00	14.50	RT	100	0.5	12	10	9.8	0.30	1.5		1.5	Local	On Grade	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.23	14	6.38	11.8	0.88	2.08	0.34	4.38	42.47	5.33	0.89	0.26	4.06	10	12.5	0.0	0.00		
13	Stratford	10+10.00	14.50	LT	100	0.5	13	10	9.8	2.65	13.0		13.0	Local	On Grade	0.0175	1.30%	6" Rooftop	3.57%	0.5	2	0.5	0.46	14	12.90	16.1	1.35	2.08	2.12	10.90	85.91	60.46	0.59	0.18	15.06	15	12.9	0.1	0.01	15	
14	Stratford	10+10.00	14.50	RT	100	0.5	14	10	9.8	2.65	13.0		13.0	Local	On Grade	0.0175	1.30%	6" Rooftop	3.57%	0.5	2	0.5	0.46	14	12.90	16.1	1.35	2.08	2.12	10.90	85.91	60.46	0.59	0.18	15.06	15	12.9	0.1	0.01	16	
15	Stratford	12+82.00	14.50	LT	100	0.5	15	10	9.8	0.77	3.7	0.01	3.9	Local	On Grade	0.0175	3.93%	6" Rooftop	3.57%	0.5	2	0.5	0.24	14	6.65	28.0	0.90	2.08	0.39	4.65	44.02	6.24	0.88	0.25	10.32	10	3.6	0.3	0.03	19	
16	Stratford	12+50.00	14.50	RT	100	0.5	16	10	9.8	0.80	3.9	0.01	4.1	Local	On Grade	0.0175	3.93%	6" Rooftop	3.57%	0.5	2	0.5	0.24	14	6.77	28.0	0.91	2.08	0.41	4.77	44.69	6.67	0.87	0.25	10.56	10	3.6	0.5	0.05	19	
17	Euclid	9+63.00	14.50	LT	100	0.5	17	10	9.8	2.59	12.7		12.7	Local	On Grade	0.0175	1.60%	6" Rooftop	3.57%	0.5	2	0.5	0.44	14	12.29	17.8	1.31	2.08	1.89	10.29	81.36	51.89	0.61	0.19	15.56	15	11.6	1.1	0.11	19	
18	Euclid	9+97.50	14.50	RT	100	0.5	18	10	9.8	3.05	14.9		14.9	Local	On Grade	0.0175	1.60%	6" Rooftop	3.57%	0.5	2	0.5	0.47	14	13.06	17.8	1.36	2.08	2.18	11.06	87.16	62.92	0.58	0.18	17.07	20	21.8	0.0	0.00		
19	Chatsworth	0+84.00	14.50	LT	100	0.5	19	10	9.8	1.58	7.7	0.09	8.6	Local	Sag	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.44	14	12.42	11.8	1.32	2.08	1.94	10.42	82.34	53.69	0.61	0.19	7.02	10	11.1	0.0	0.00		
20	Chatsworth	0+84.00	14.50	RT	100	0.5	20	10	9.8	0.86	4.2		4.2	Local	Sag	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.34	14	9.51	11.8	1.11	2.08	1.01	7.51	61.82	22.41	0.73	0.22	1.61	10	11.1	0.0	0.00		
21	Nottingham	2+45.00	14.50	LT	100	0.5	21	10	9.8	1.20	5.9		5.9	Local	On Grade	0.0175	1.10%	6" Rooftop	3.57%	0.5	2	0.5	0.35	14	9.87	14.8	1.13	2.08	1.11	7.87	64.24	25.41	0.72	0.21	9.29	10	7.0	0.0	0.00		
22	Huntwick	3+25.00	14.50	LT	100	0.5	22	10	9.8	0.97	4.8		4.8	Local	On Grade	0.0175	2.67%	6" Rooftop	3.57%	0.5	2	0.5	0.28	14	7.73	23.1	0.98	2.08	0.59	5.73	50.45	10.90	0.82	0.24	10.36	10	4.4	0.4	0.04	23	
23	Huntwick	5+61.00	14.50	LT	100	0.5	23	10	9.8	0.77	3.8	0.04	4.2	Local	On Grade	0.0175	2.67%	6" Rooftop	3.57%	0.5	2	0.5	0.26	14	7.36	23.1	0.95	2.08	0.51	5.36	48.18	9.10	0.84	0.25	9.69	10	4.5	0.0	0.00		
24	Huntwick	5+80.00	14.50	RT	100	0.5	24	10	9.8	2.08	10.2		10.2	Local	On Grade	0.0175	2.67%	6" Rooftop	3.57%	0.5	2	0.5	0.37	14	10.29	23.1	1.16	2.08	1.23	8.29	67.10	29.19	0.70	0.21	15.52	20	18.7	0.0	0.00		
25	Concord	2+00.00	14.50	LT	100	0.5	25	10	9.8	0.99	4.8		4.8	Local	On Grade	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.36	14	10.00	11.8	1.14	2.08	1.14	8.00	65.07	26.48	0.71	0.21	7.51	10	9.6	0.0	0.00		
26	Clairmont	3+88.00	14.50	RT	100	0.5	26	10	9.8	1.25	6.1		6.1	Local	On Grade	0.0175	2.80%	6" Rooftop	3.57%	0.5	2	0.5	0.30	14	8.42	23.6	1.03	2.08	0.74	6.42	54.77	14.78	0.79	0.23	11.95	10	4.0	2.1	0.22	27	
27	Clairmont	5+68.00	14.50	RT	100	0.5	27	10	9.8	0.60	3.0	0.22	5.1	Local	On Grade	0.0175	2.80%	6" Rooftop	3.57%	0.5	2	0.5	0.28	14	7.85	23.6	0.99	2.08	0.61	5.85	51.16	11.49	0.82	0.24	10.83	10	4.2	0.9	0.09	28	
28	Clairmont	7+47.00	14.50	RT	100	0.5	28	10	9.8	0.58	2.8	0.09	3.7	Local	On Grade	0.0175	2.80%	6" Rooftop	3.57%	0.5	2	0.5	0.25	14	6.98	23.6	0.93	2.08	0.44	4.98	45.92	7.48	0.86	0.25	9.25	10	4.5	0.0	0.00		
29	Clairmont	7+42.00	14.50	LT	100	0.5	29	10	9.8	2.08	10.2		10.2	Local	On Grade	0.0175	4.00%	6" Rooftop	3.57%	0.5	2	0.5	0.34	14	9.54	28.2	1.11	2.08	1.02	7.54	62.02	22.66	0.73	0.22	17.09	20	14.9	0.0	0.00		
30	Macbeth	8+10.00	14.50	LT	100	0.5	30	10	9.8	1.71	8.4		8.4	Local	Sag	0.0175	1.00%	6" Rooftop	3.57%	0.5	2	0.5	0.41	14	11.48	14.1	1.25	2.08	1.60	9.48	75.43	41.68	0.64	0.20	6.68	10	11.1	0.0	0.00		
31	Macbeth	8+10.00	14.50	RT	100	0.5	31	10	9.8	2.35	11.5		11.5	Local	Sag	0.0175	1.00%	6" Rooftop	3.57%	0.5	2	0.5	0.46	14	12.94	14.1	1.35	2.08	2.14	10.94	86.25	61.13	0.59	0.18	10.56	15	15.1	0.0	0.00		
32	Wickersham	5+10.00	14.50	LT	100	0.5	32	10	9.8	1.90	9.3		9.3	Local	On Grade	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.46	14	12.77	11.8	1.34	2.08	2.07	10.77	84.98	58.66	0.59	0.18	7.84	10	11.1	0.0	0.00		
33	Wickersham	3+34.50	14.50	RT	100	0.5	33	10	9.8	1.49	7.3		7.3	Local	On Grade	0.0175	2.70%	6" Rooftop	3.57%	0.5	2	0.5	0.32	14	9.05	23.2	1.08	2.08	0.89	7.05	58.79	18.94	0.76	0.22	12.97	15	10.3	0.0	0.00		
34	Wickersham	5+10.00	14.50	RT	100	0.5	34	10	9.8	1.21	5.9		5.9	Local	Sag	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.39	14	10.80	11.8	1.20	2.08	1.38	8.80	70.62	34.20	0.67	0.20	3.71	10	11.1	0.0	0.00		
35	Glenwood	2+23.00	14.50	LT	100	0.5	35	10	9.8	0.93	4.6		4.6	Local	Sag	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.35	14	9.77	11.8	1.13	2.08	1.08	7.77	63.56	24.55	0.72	0.22	2.00	10	11.1	0.0	0.00		
36	Glenwood	2+23.00	14.50	RT	100	0.5	36	10	9.8	1.29	6.3		6.3	Local	Sag	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.39	14	11.06	11.8	1.22	2.08	1.47	9.06	72.44	36.95	0.66	0.20	4.19	10	11.1	0.0	0.00		
37	Clairmont	16+07.00	14.50	RT	100	0.5	37	10	9.8	2.18	10.7		10.7	Local	On Grade	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.48	14	13.45	11.8	1.39	2.08	2.34	11.45	90.16	69.04	0.57	0.18	11.71	10	7.3	3.4	0.34	43	
38	Wickersham	11+30.00	14.50	LT	100	0.5	38	10	9.8	1.51	7.4		7.4	Local	On Grade	0.0175	1.50%	6" Rooftop	3.57%	0.5	2	0.5	0.36	14	10.15	17.3	1.15	2.08	1.19	8.15	66.15	27.91	0.70	0.21	11.34	10	5.5	1.9	0.20	40	
39	Wickersham	11+30.00	14.50	RT	100	0.5	39	10	9.8	1.48	7.3		7.3	Local	On Grade	0.0175	1.50%	6" Rooftop	3.57%	0.5	2	0.5	0.36	14	10.10	17.3	1.15	2.08	1.17	8.10	65.77	27.40	0.71	0.21	11.25	15	14.4	0.0	0.00		
40	Wickersham	13+70.00	14.50	LT	100	0.5	40	10	9.8	0.83	4.0	0.20	6.0	Local	On Grade	0.0175	1.50%	6" Rooftop	3.57%	0.5	2	0.5	0.33	14	9.37	17.3	1.10	2.08	0.97	7.37	60.89	21.32	0.74	0.22	10.10	10	5.8	0.1	0.01	41	
41	Wickersham	16+69.00	14.50	LT	100	0.5	41	10	9.8	0.97	4.8	0.01	4.9	Local	On Grade	0.0175	2.80%	6" Rooftop	3.57%	0.5	2	0.5	0.28	14	7.74	23.6	0.98	2.08	0.59	5.74	50.54	10.97	0.82	0.24	10.64	10	4.2	0.7	0.07	43	
42	Wickersham	16+30.00	14.50	RT	100	0.5	42	10	9.8	1.74	8.5		8.5	Local	On Grade	0.0175	2.80%	6" Rooftop	3.57%	0.5	2	0.5	0.34	14	9.53	23.6	1.11	2.08	1.01	7.53	61.95	22.58	0.73	0.22	14.23	15	9.7	0.0	0.00	44	
43	Atwood	2+15.00	14.50	LT	100	0.5	43	10	9.8	1.44	7.0	0.41	11.1	Local	On Grade	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.49	14	13.63	11.8	1.40	2.08	2.41	11.63	91.52	71.90	0.56	0.18	10.00	10	11.1	0.0	0.00		
44	Atwood	2+15.00	14.50	RT	100	0.5	44	10	9.8	2.73	13.4		13.4	Local	On Grade	0.0175	0.70%	6" Rooftop	3.57%	0.5	2	0.5	0.52	14	14.64	11.8	1.47	2.08	2.85	12.64	99.54	89.87	0.53	0.17	12.87	15	15.1	0.0	0.00		
45	Not Used																																								
46	Euclid	13+60.00	14.50	LT	100	0.5	46	10	9.8	1.29	6.3	0.11	7.4	Local	On Grade	0.0175	0.90%	6" Rooftop	3.57%	0.5	2	0.5	0.40	14	11.19	13.4	1.23	2.08	1.51	9.19	73.34	38.35	0.66	0.20	10.08	10	7.3	0.1	0.01		

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

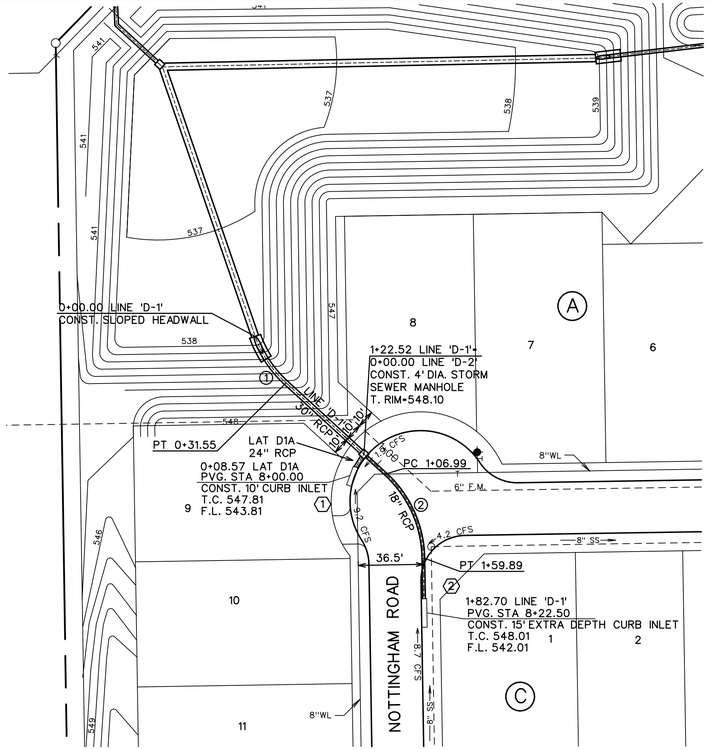
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
11/16/2022

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

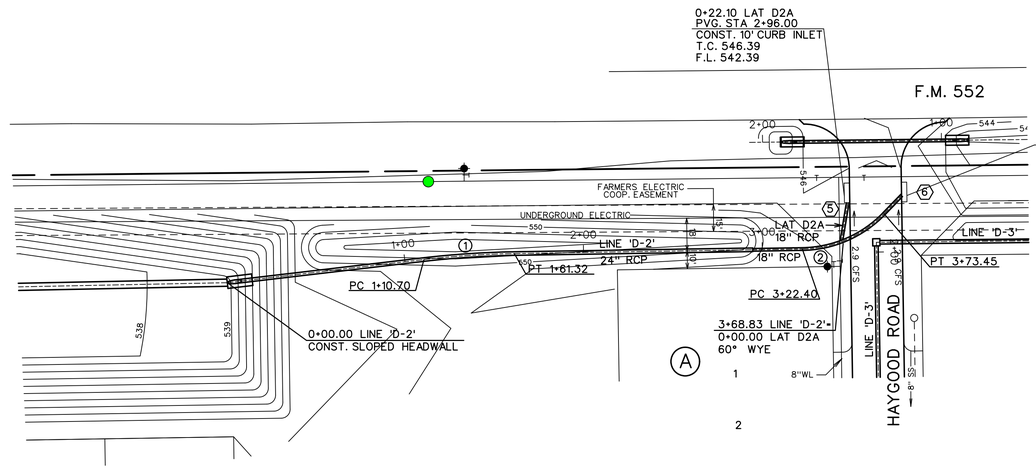
DRAINAGE CALCULATIONS

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE:	33

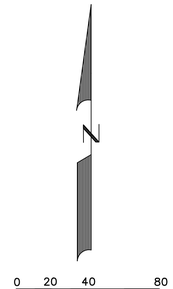


LINE 'D-1'

	STORM SEWER CURVE DATA		
CURVE NO.	①	②	③
Δ	27° 48'32"	46° 37'49"	05° 48'01"
R	65.00'	65.00'	500.00'
T	16.09'	28.01'	25.33'
L	31.55'	52.90'	50.62'

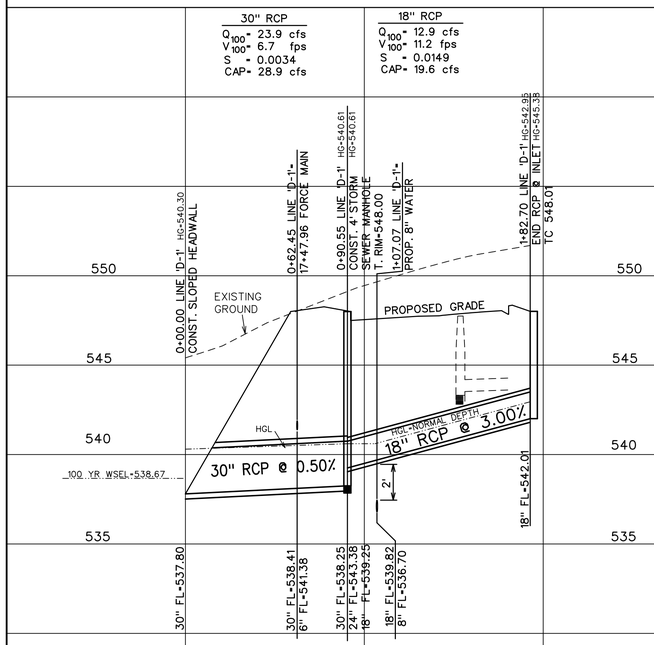


LINE 'D-2'

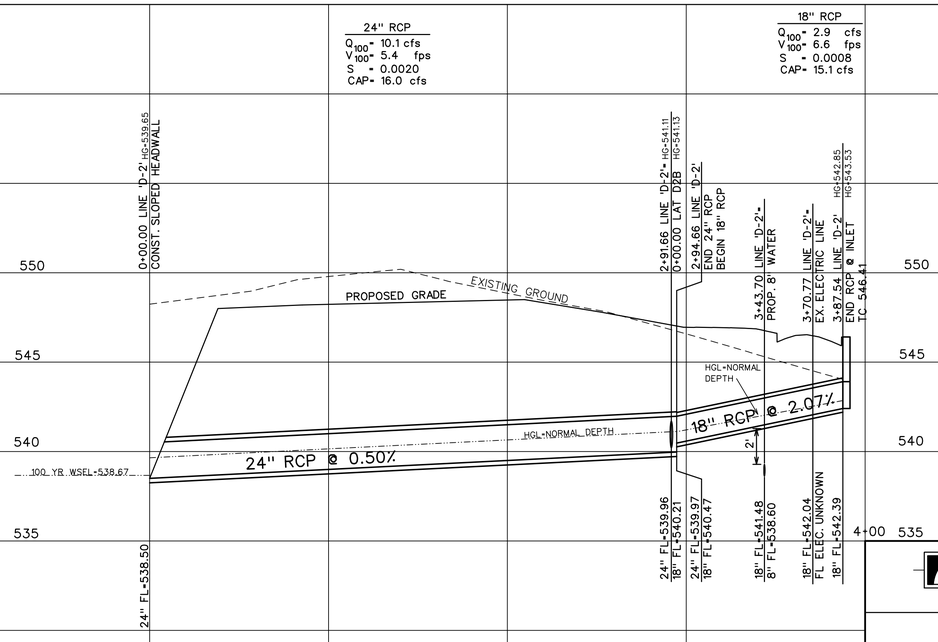


LEGEND

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



LINE 'D-1'



LINE 'D-2'

AS-BUILT JUNE 2023
INFORMATION PROVIDED
BY CONTRACTORS
(NOT FIELD VERIFIED)

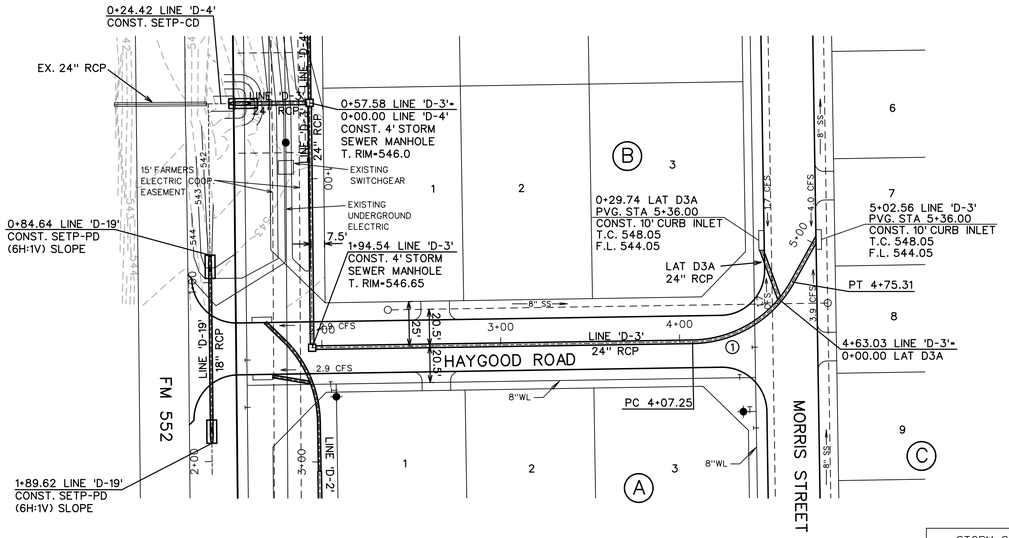
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED
PROFESSIONAL ENGINEER
02/15/2022

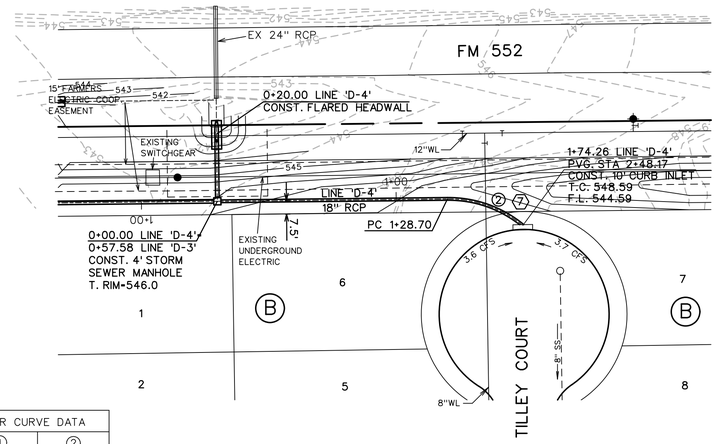
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE
ESTATES
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINES 'D-1' AND 'D-2'

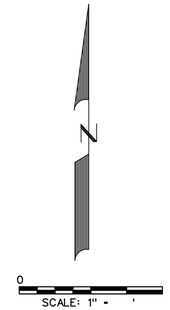
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	34





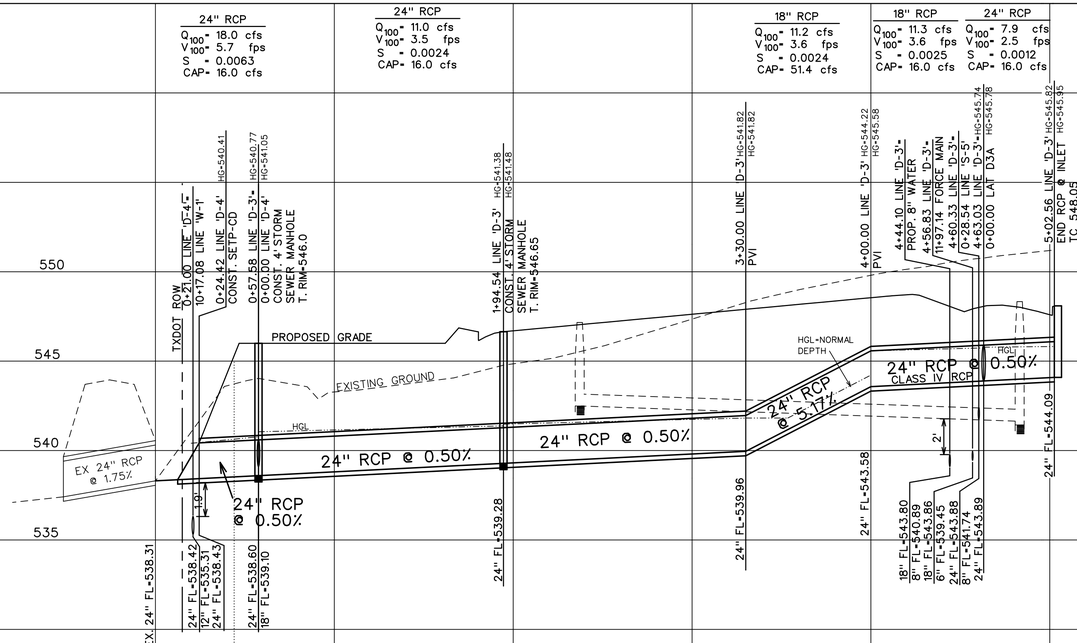
LINE 'D-4'

STORM SEWER CURVE DATA		
CURVE NO.	①	②
Δ	60° 00'00"	40° 09'01"
R	65.00'	65.00'
T	25.33'	37.53'
L	68.07'	45.55'

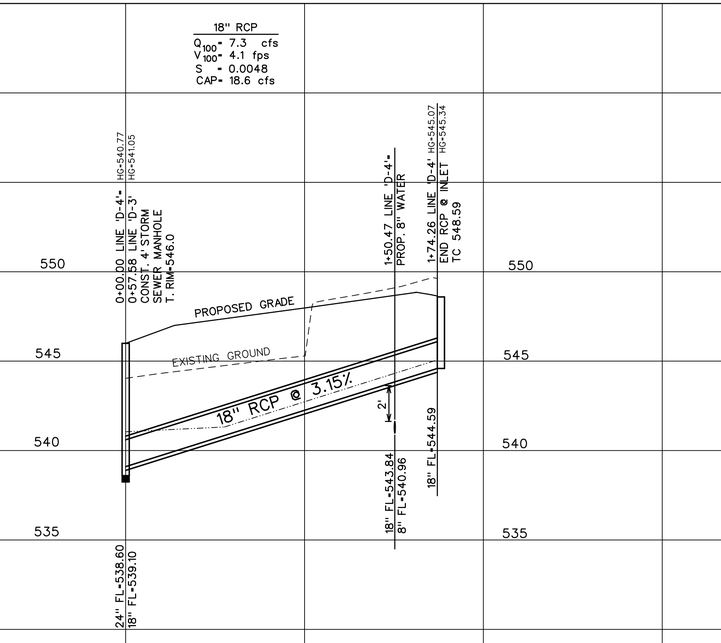


LEGEND

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



LINE 'D-3'



LINE 'D-4'



LINE 'D-19'

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

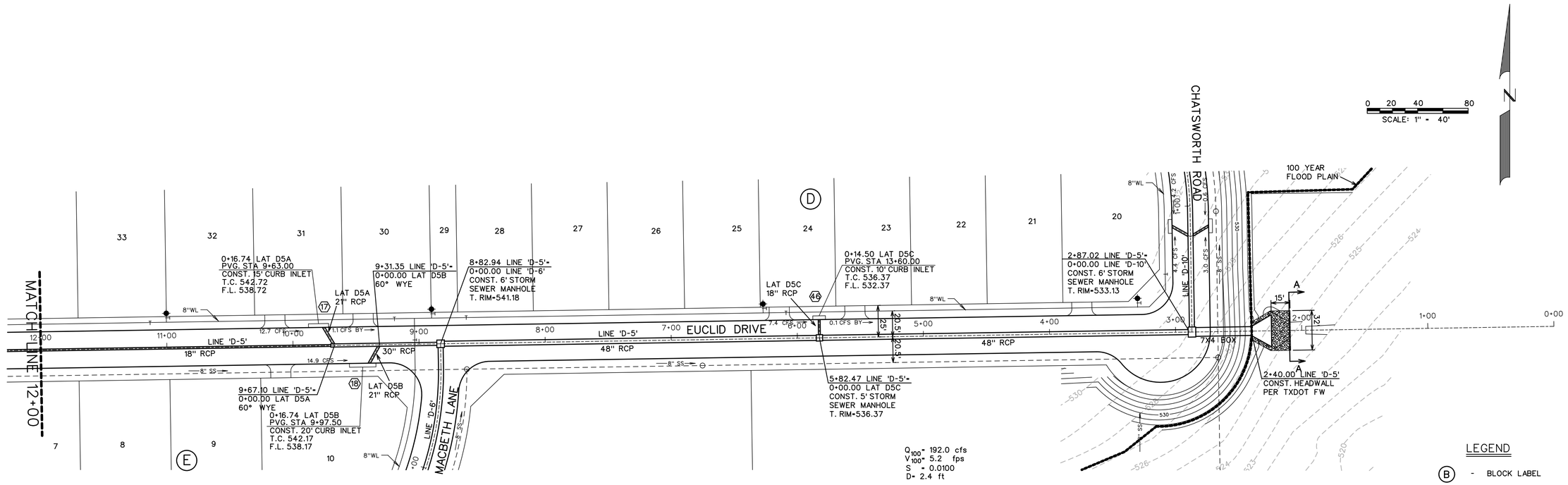
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED
PROFESSIONAL ENGINEER
02/15/2022

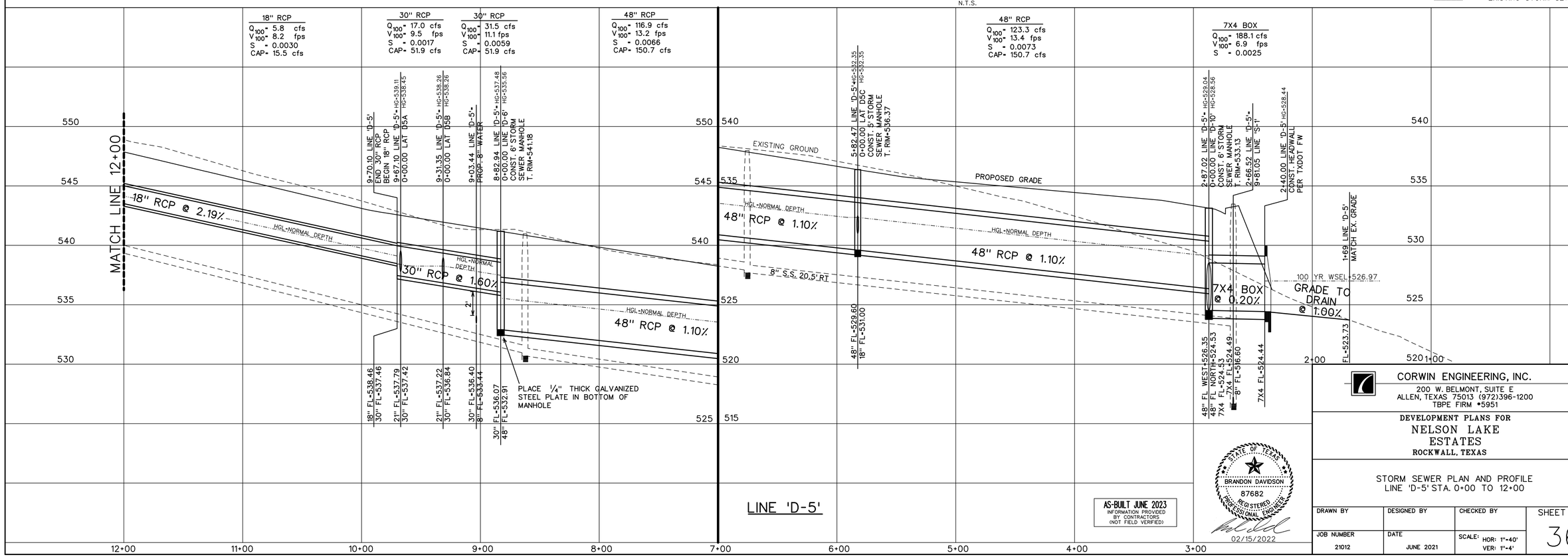
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE
ESTATES
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINES 'D-3', 'D-4' AND 'D-19'

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	35



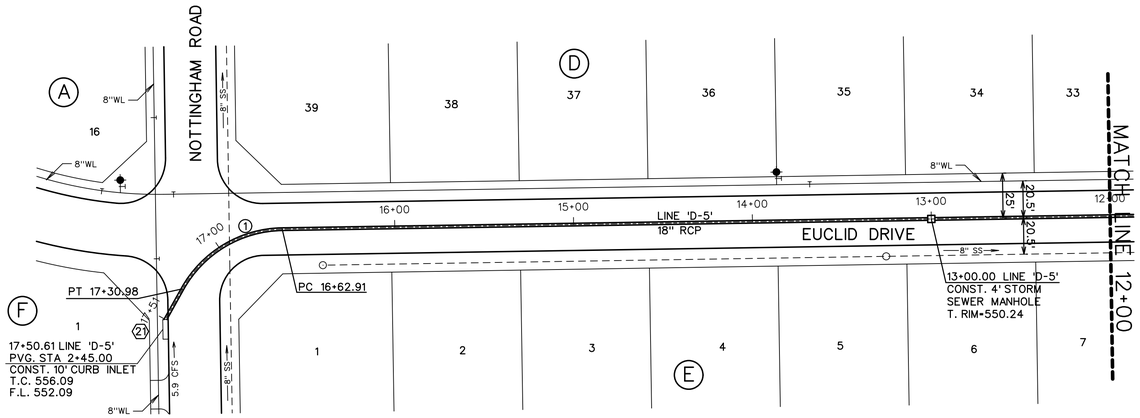


CORWIN ENGINEERING, INC.
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ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

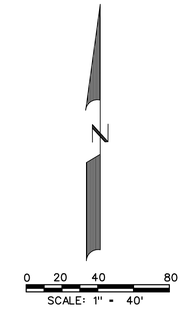
STORM SEWER PLAN AND PROFILE
LINE 'D-5' STA. 0+00 TO 12+00

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	36



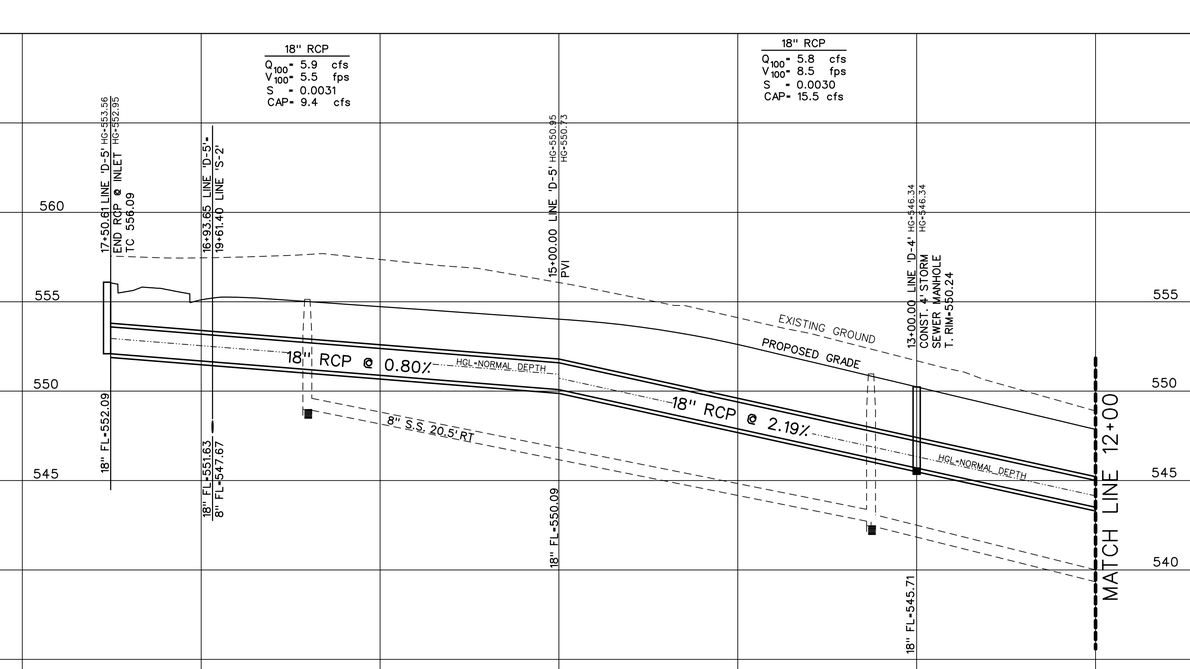
LINE 'D-5'

STORM SEWER CURVE DATA	
CURVE NO.	①
Δ	60° 00'00"
R	65.00'
T	37.53'
L	68.07'



LEGEND

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



LINE 'D-5'

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

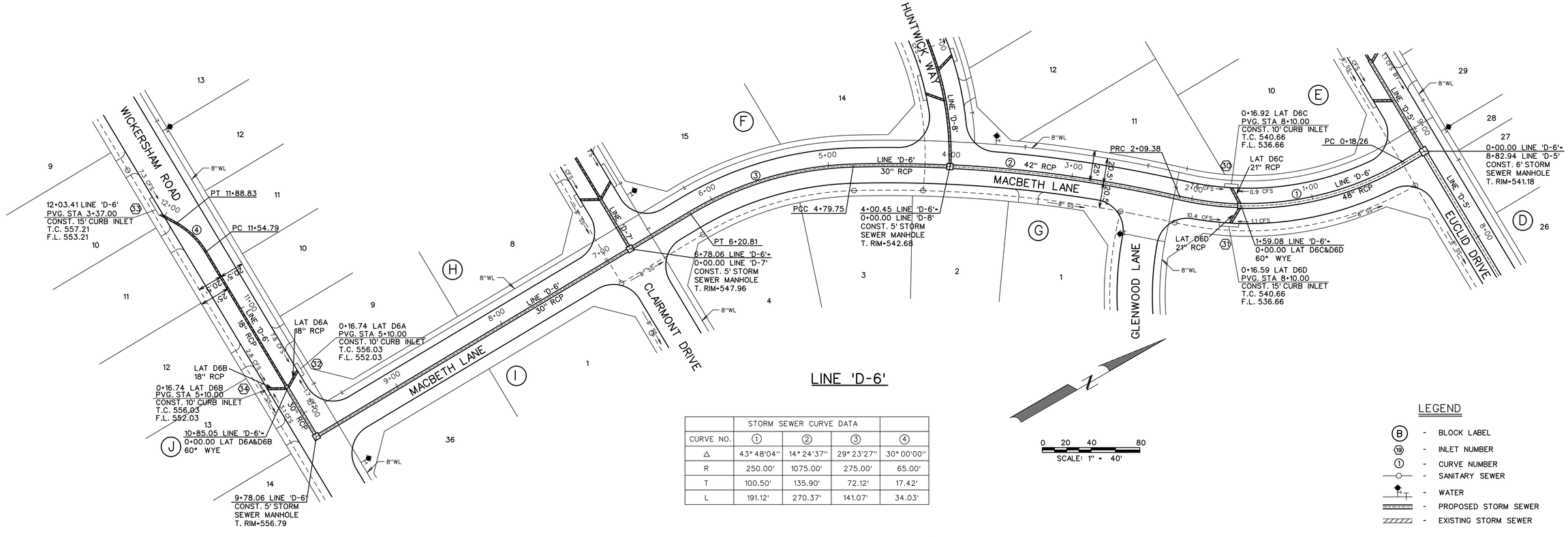
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
02/15/2022

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINE 'D-5' STA. 12+00 TO END

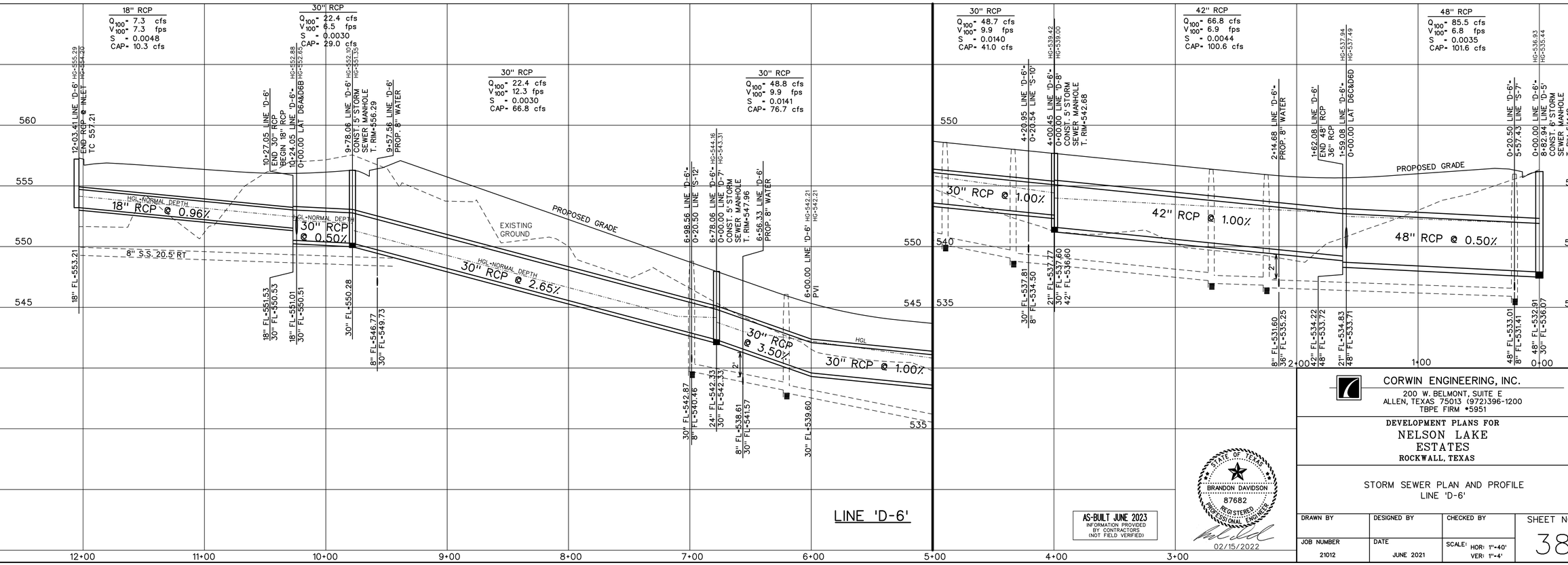
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	37



	STORM SEWER CURVE DATA			
CURVE NO.	①	②	③	④
Δ	43° 48'04"	14° 24'37"	29° 23'27"	30° 00'00"
R	250.00'	1075.00'	275.00'	65.00'
T	100.50'	135.90'	72.12'	17.42'
L	191.12'	270.37'	141.07'	34.03'

LEGEND

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



LINE 'D-6'

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

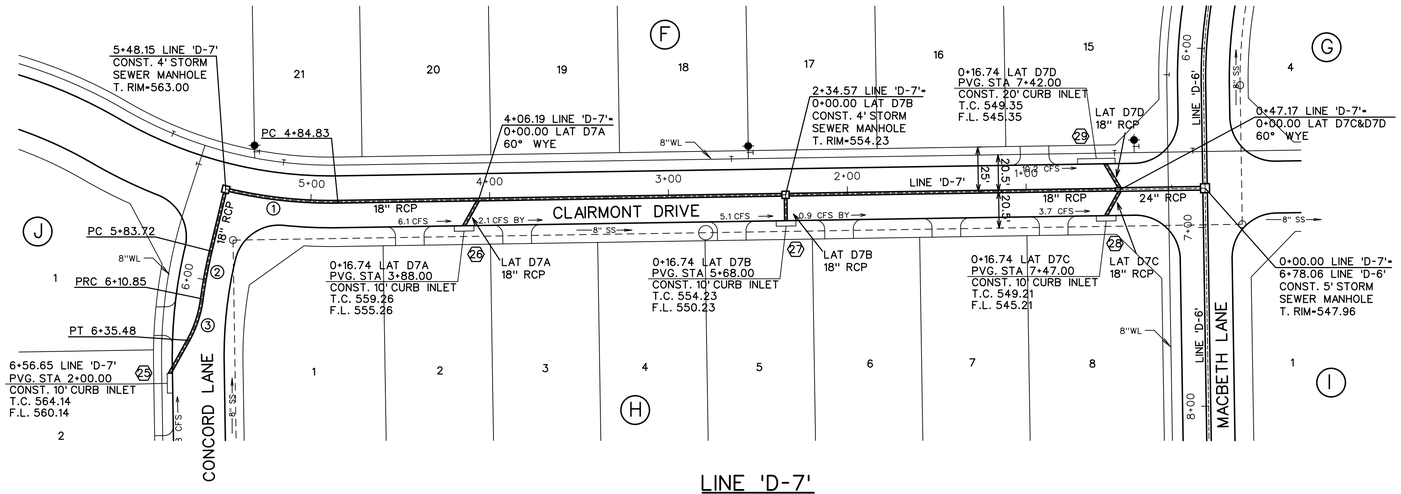
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
02/15/2022

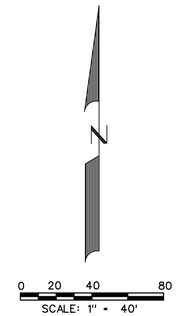
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINE 'D-6'

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	38

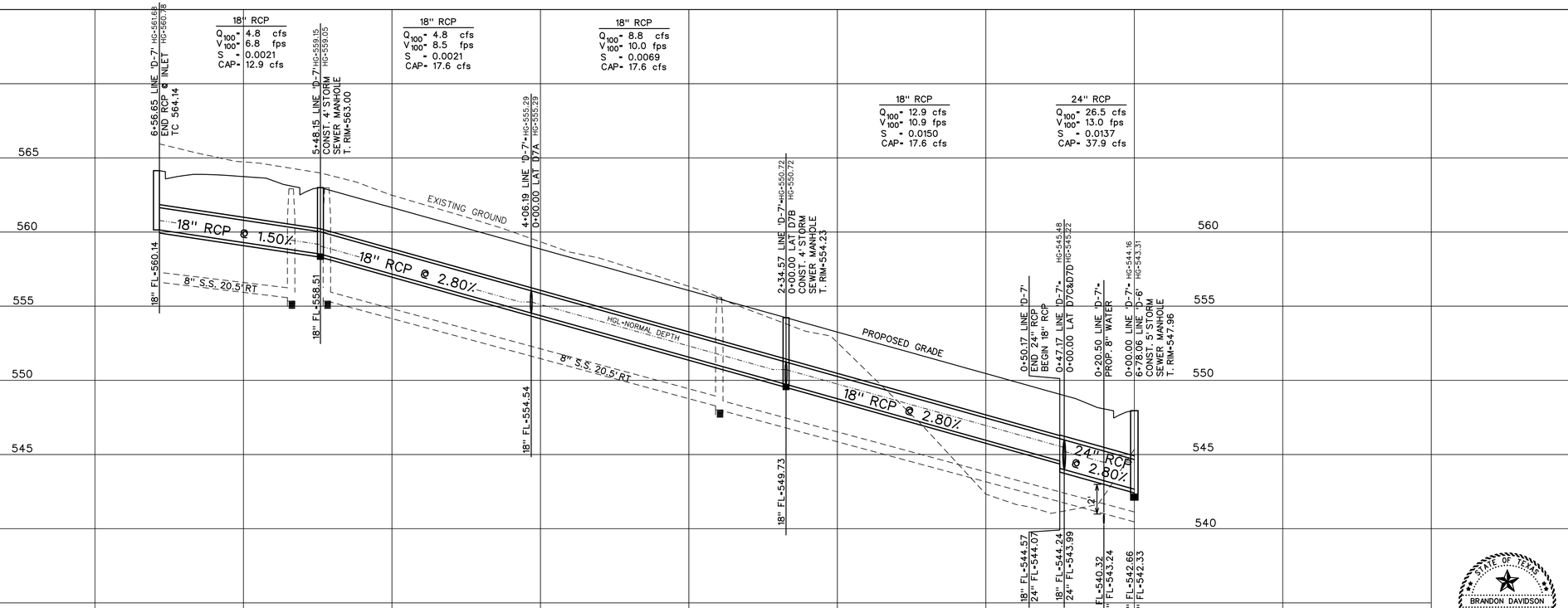




	STORM SEWER CURVE DATA		
CURVE NO.	①	②	③
Δ	14° 30'46"	06° 13'09"	21° 42'23"
R	250.00'	250.00'	65.00'
T	31.83'	13.58'	12.46'
L	63.32'	27.14'	24.63'

LEGEND

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



AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
02/15/2022

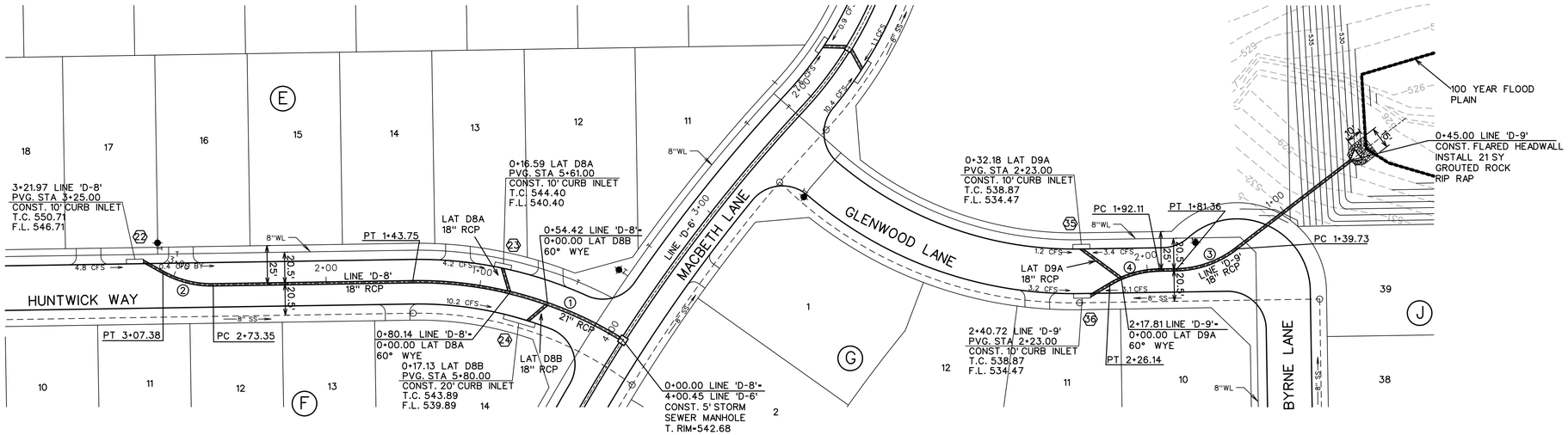
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINE 'D-7'

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	39

	STORM SEWER CURVE DATA			
CURVE NO.	①	②	③	④
Δ	30° 00'00"	32° 56'43"	36° 41'39"	30° 00'00"
R	65.00'	250.00'	65.00'	65.00'
T	17.42'	73.92'	21.56'	17.42'
L	34.03'	143.75'	41.63'	34.03'



LINE 'D-8'

LINE 'D-9'

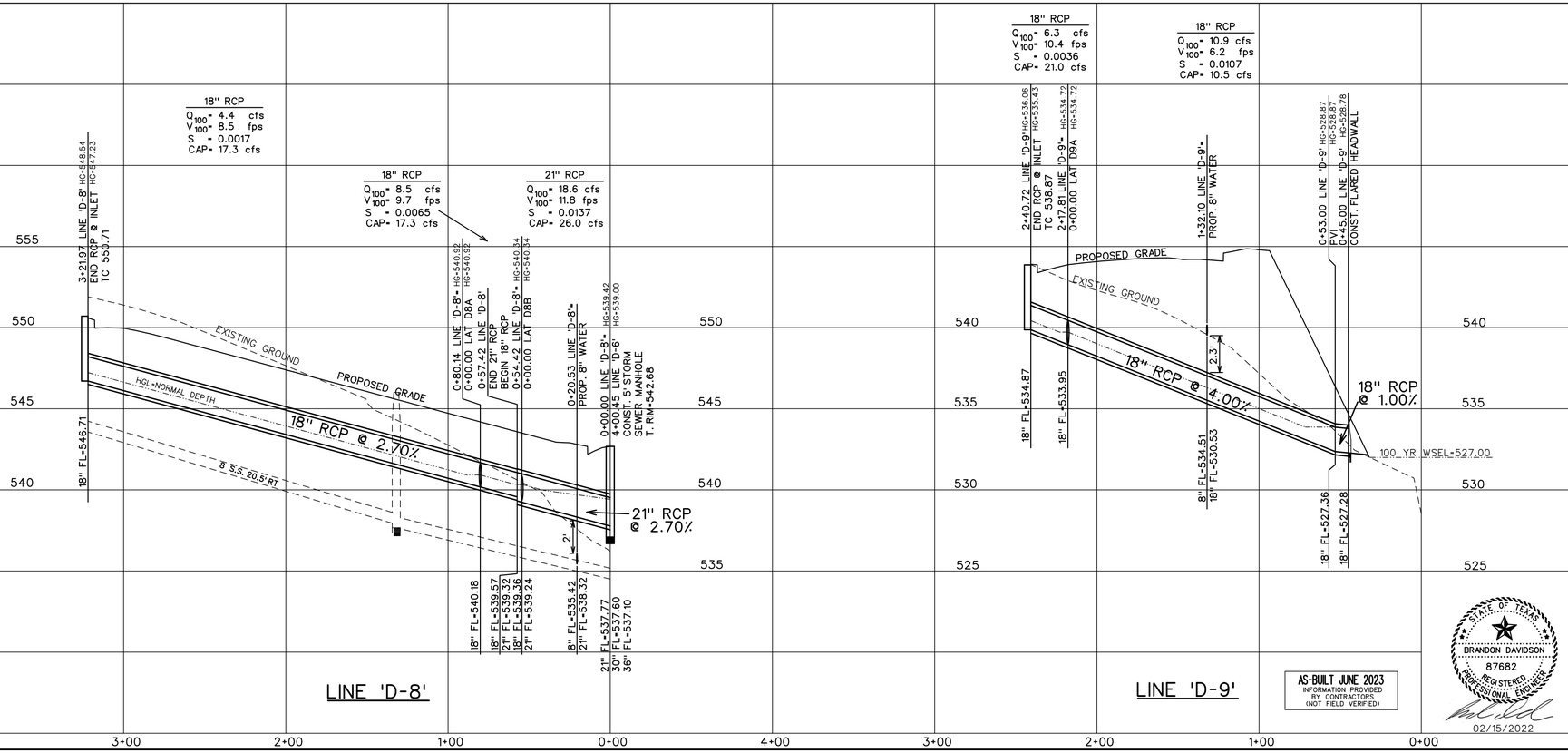
N

0 20 40 80

SCALE: 1" = 40'

LEGEND

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



LINE 'D-8'

LINE 'D-9'

AS-BUILT JUNE 2023
INFORMATION PROVIDED
BY CONTRACTORS
(NOT FIELD VERIFIED)

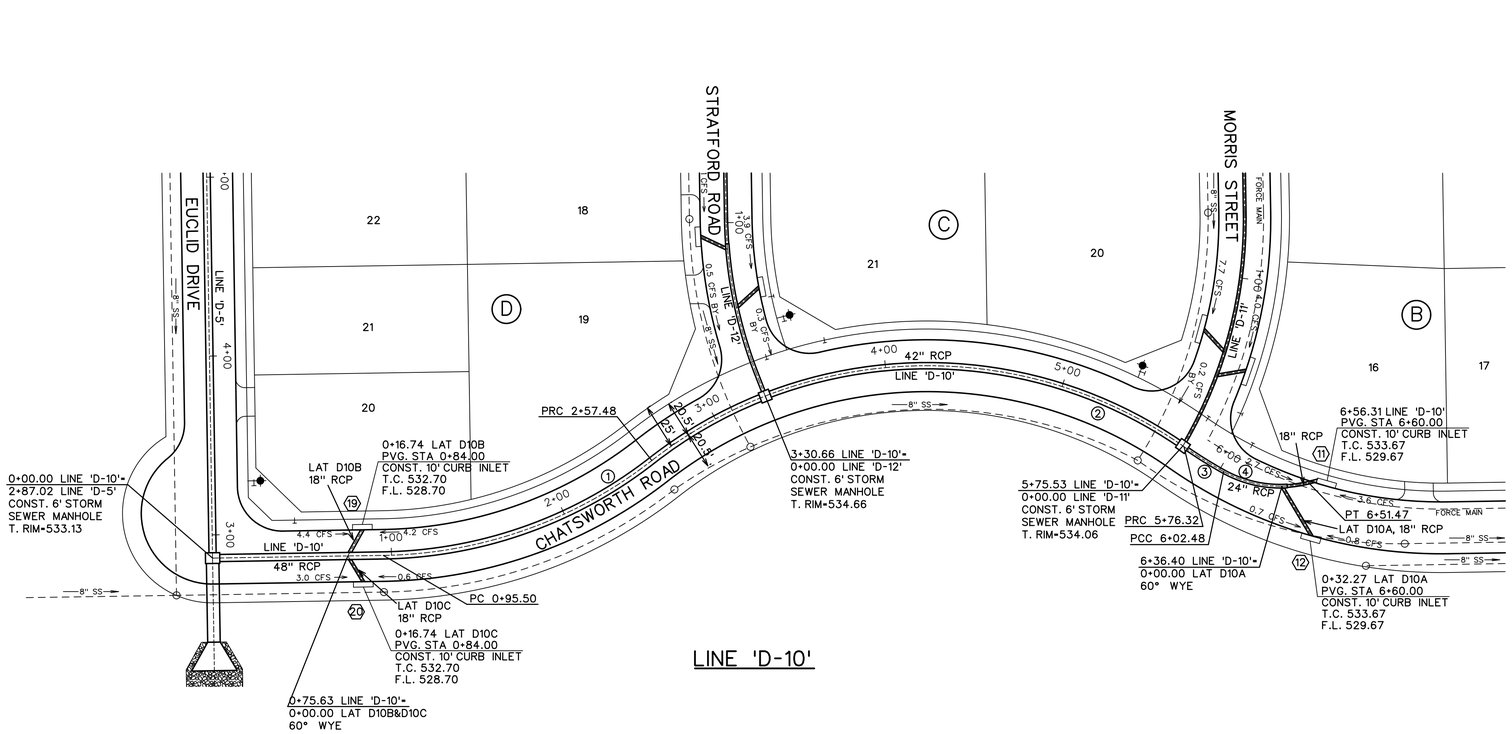
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED
PROFESSIONAL ENGINEER
02/15/2022

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

DEVELOPMENT PLANS FOR
NELSON LAKE
ESTATES
ROCKWALL, TEXAS

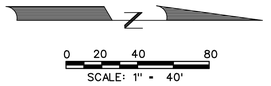
STORM SEWER PLAN AND PROFILE
LINES 'D-8' AND 'D-9'

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	40



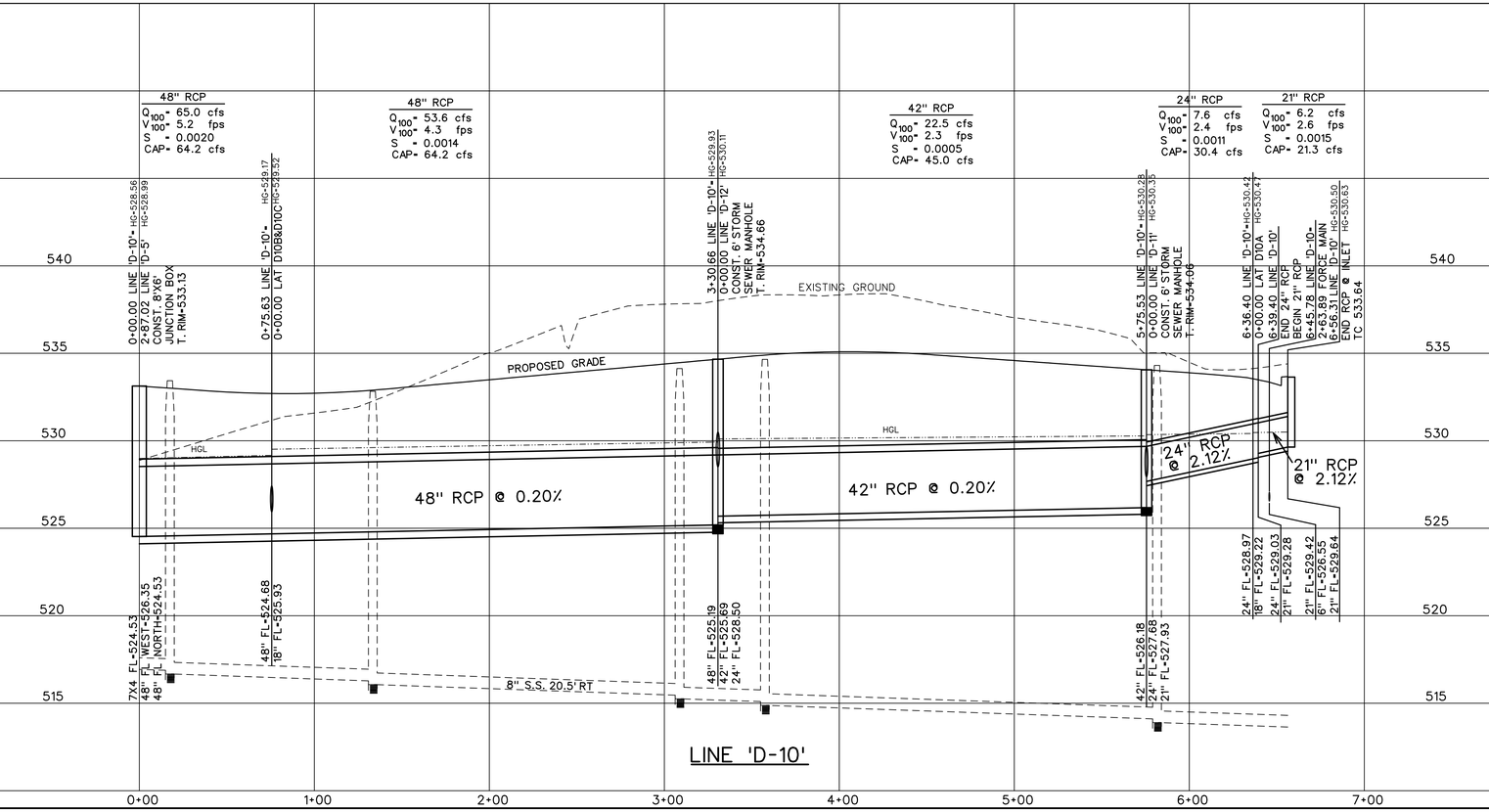
LINE 'D-10'

	STORM SEWER CURVE DATA			
CURVE NO.	①	②	③	④
Δ	37° 07'25"	73° 04'26"	05° 59'45"	43° 10'54"
R	250.00'	250.00'	250.00'	65.00'
T	83.95'	185.24'	13.09'	25.72'
L	161.98'	318.85'	26.16'	48.99'



LEGEND

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



LINE 'D-10'

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
02/15/2022

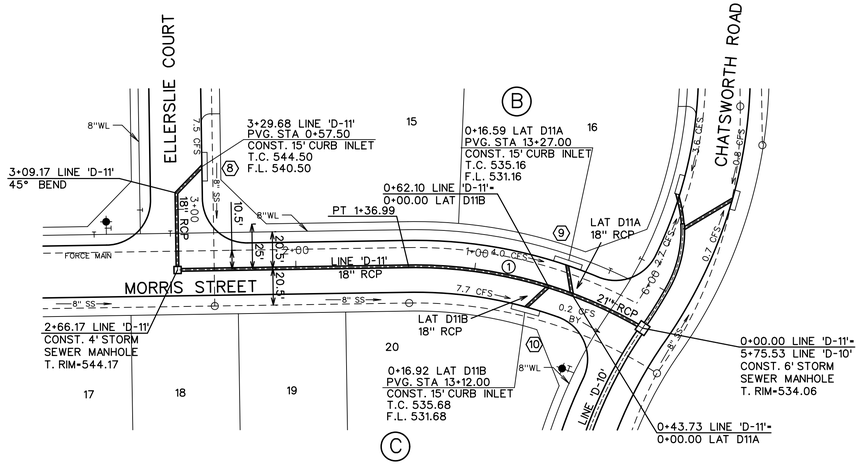
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

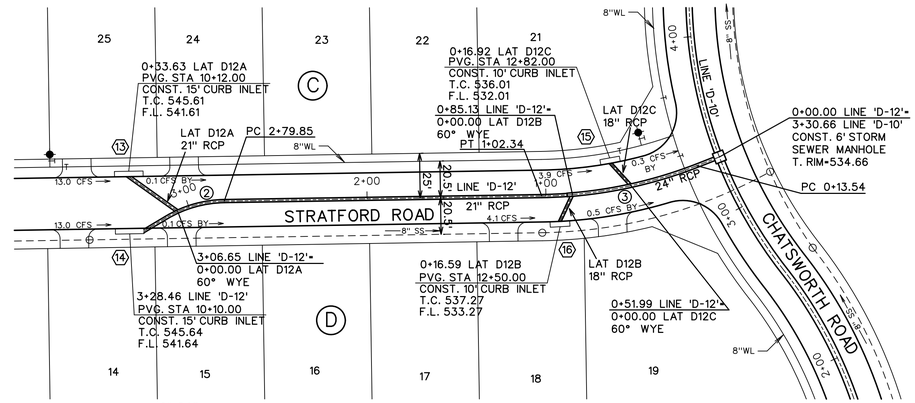
STORM SEWER PLAN AND PROFILE
LINE 'D-10'

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	41

	STORM SEWER CURVE DATA		
CURVE NO.	①	②	③
Δ	31° 23'48"	30° 00'00"	20° 21'07"
R	250.00'	65.00'	250.00'
T	70.26'	17.42'	58.42'
L	136.99'	34.03'	102.34'



LINE 'D-11'



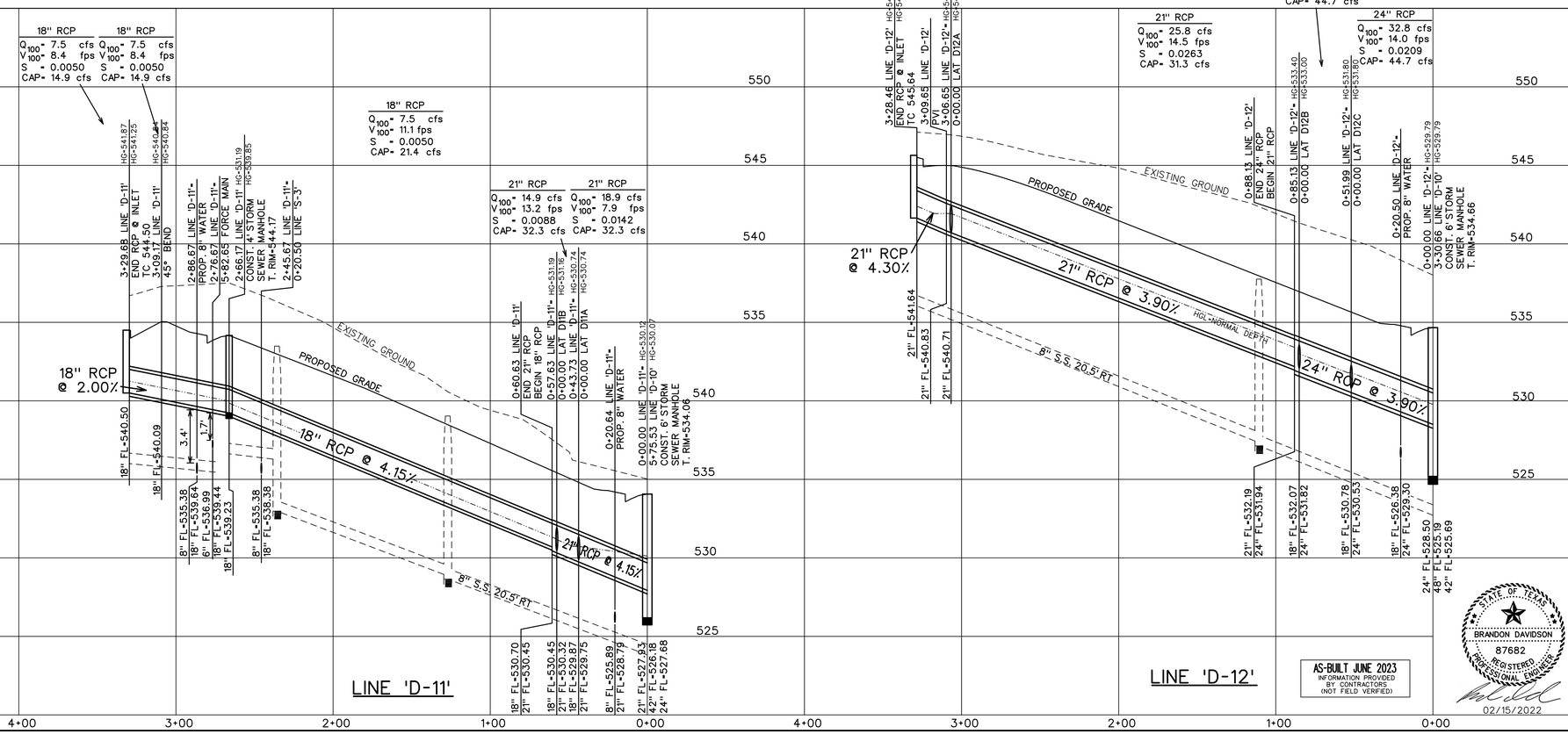
LINE 'D-12'

0 20 40 80
SCALE: 1" = 40'

N

LEGEND

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



LINE 'D-11'

LINE 'D-12'

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

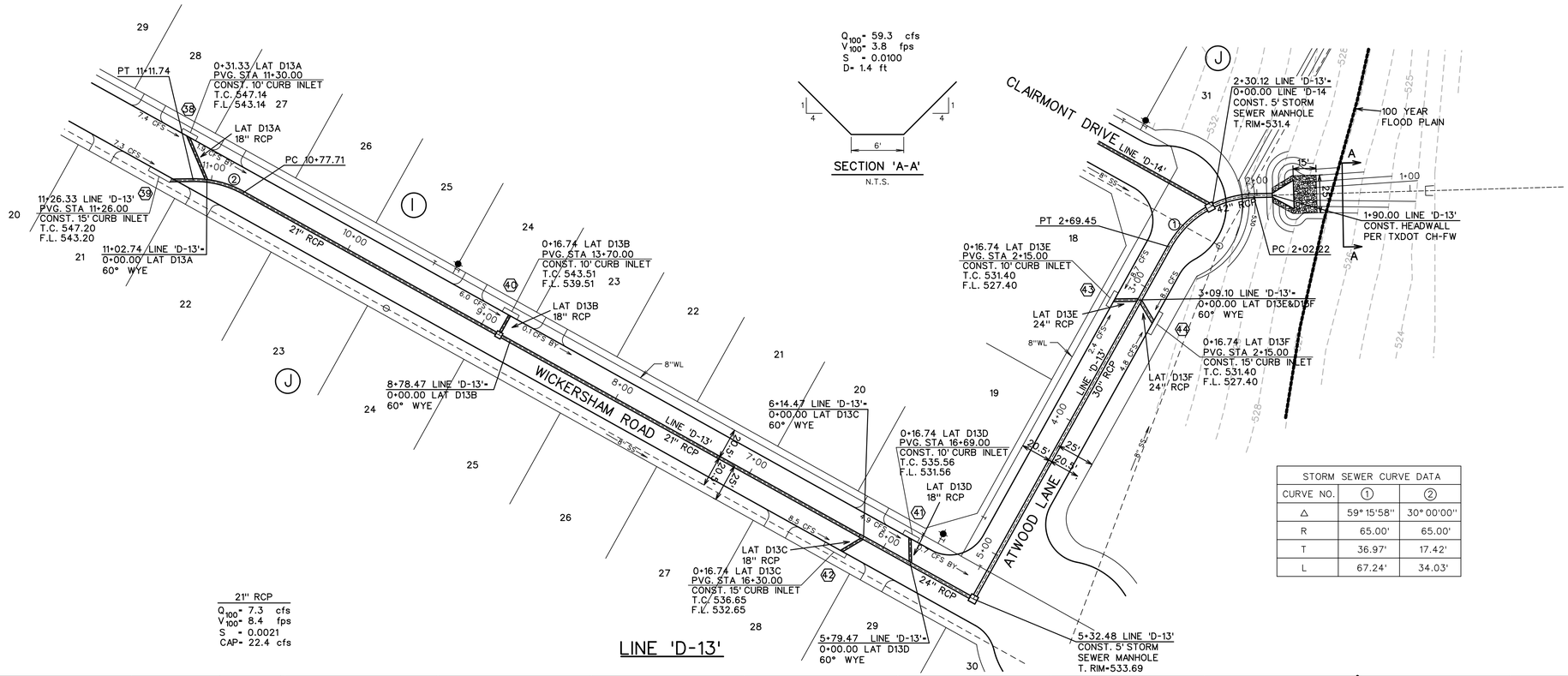
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
02/15/2022

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
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DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINES 'D-11' AND 'D-12'

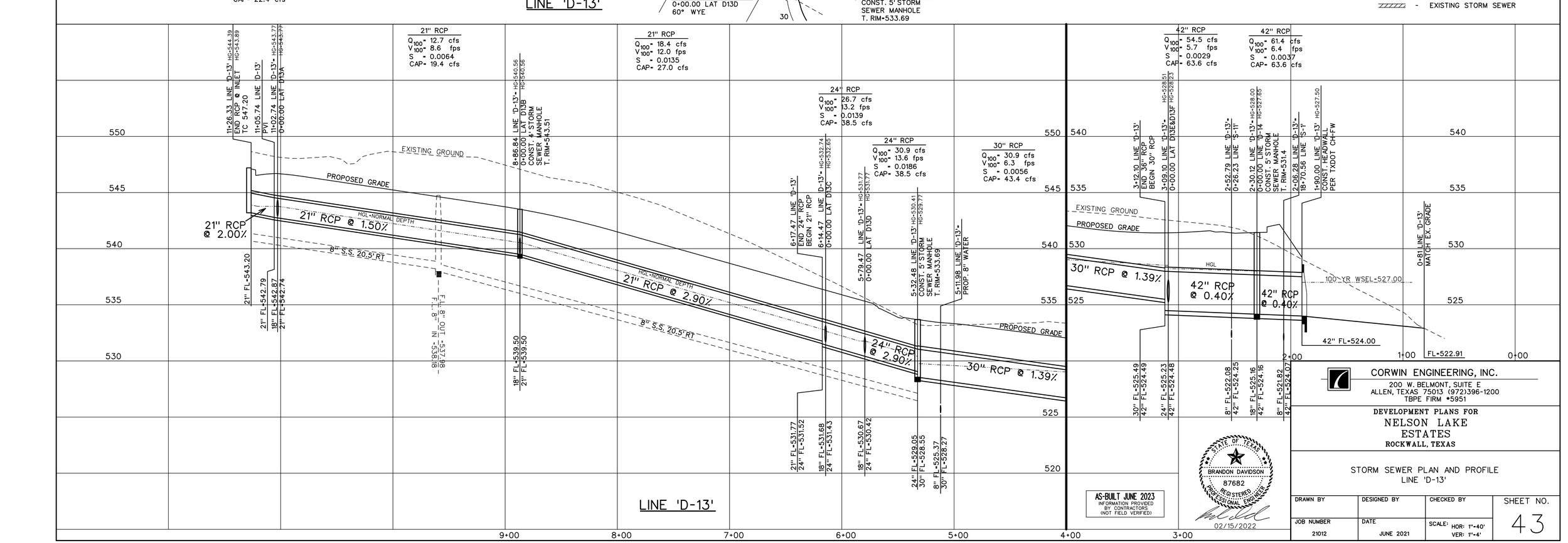
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	42



STORM SEWER CURVE DATA		
CURVE NO.	①	②
Δ	59° 15'58"	30° 00'00"
R	65.00'	65.00'
T	36.97'	17.42'
L	67.24'	34.03'

LEGEND

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

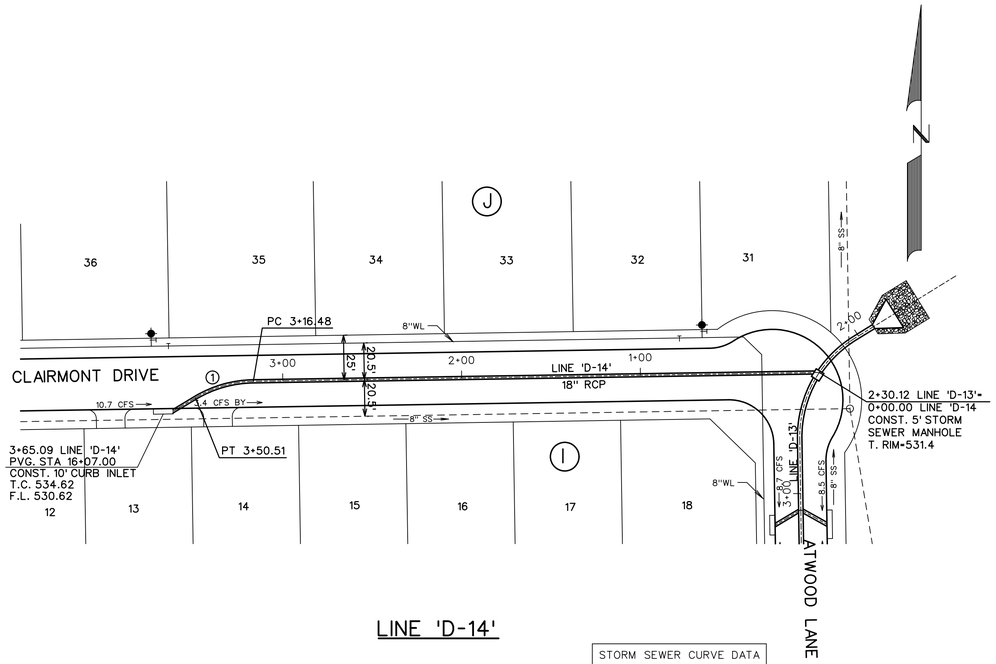


CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
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DEVELOPMENT PLANS FOR
NELSON LAKE
ESTATES
ROCKWALL, TEXAS

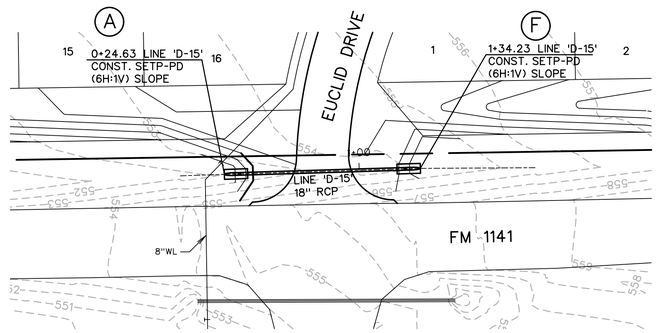
STORM SEWER PLAN AND PROFILE
LINE 'D-13'

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	43

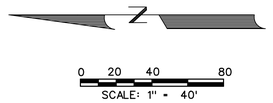


LINE 'D-14'

STORM SEWER CURVE DATA	
CURVE NO.	①
Δ	30° 00'00"
R	65.00'
T	17.42'
L	34.03'

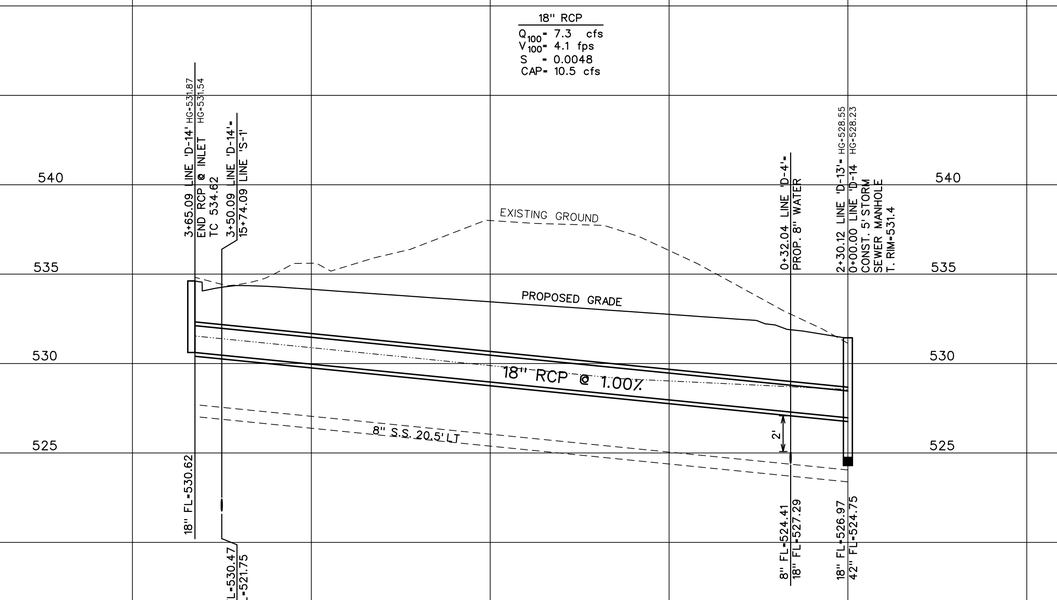


LINE 'D-15'

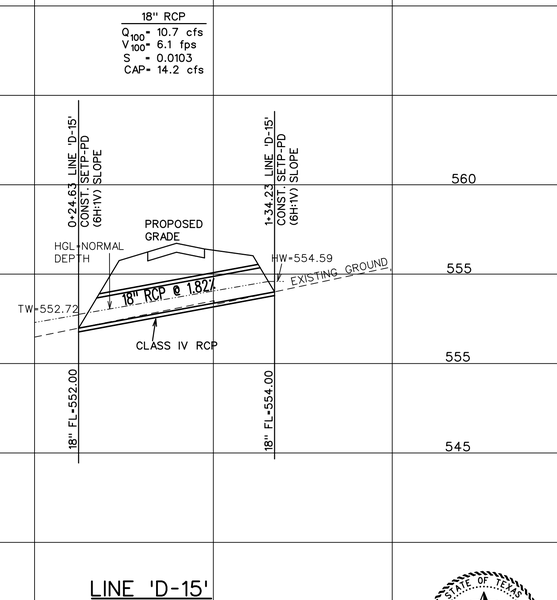


LEGEND

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



LINE 'D-14'



LINE 'D-15'

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

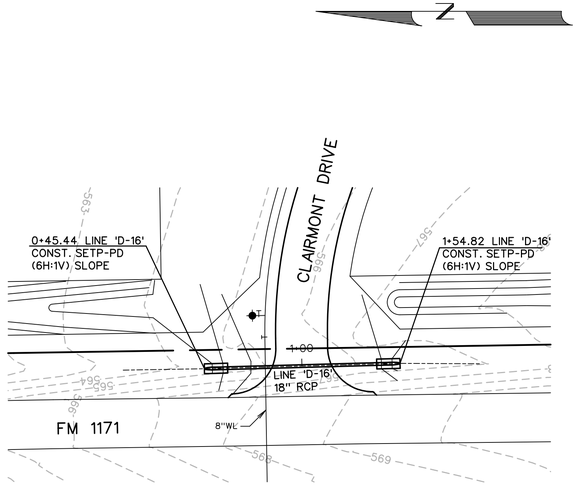
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
02/15/2022

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

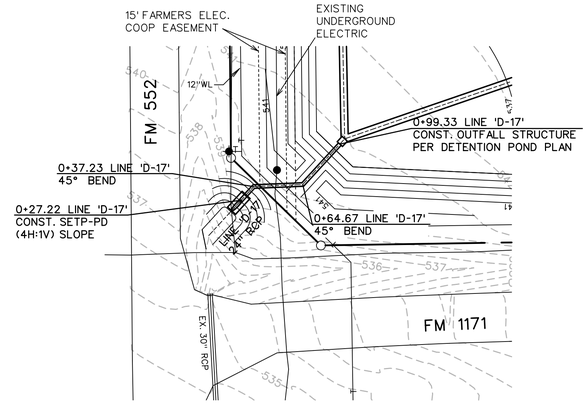
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

STORM SEWER PLAN AND PROFILE
LINES 'D-14' AND 'D-15'

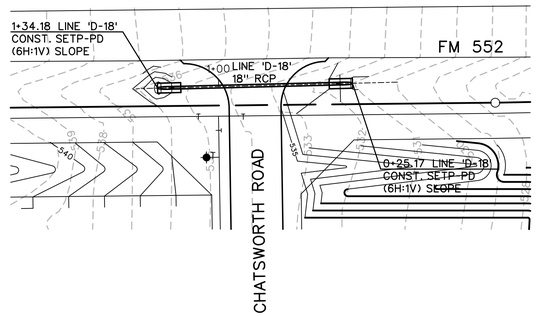
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	44



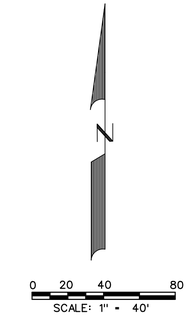
LINE 'D-16'



LINE 'D-17'

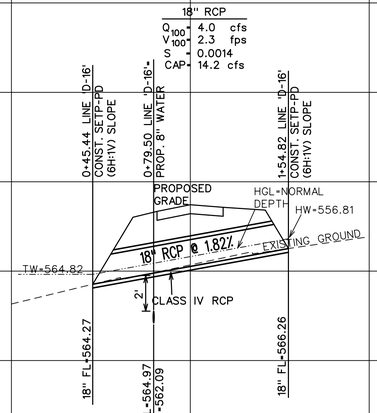


LINE 'D-18'

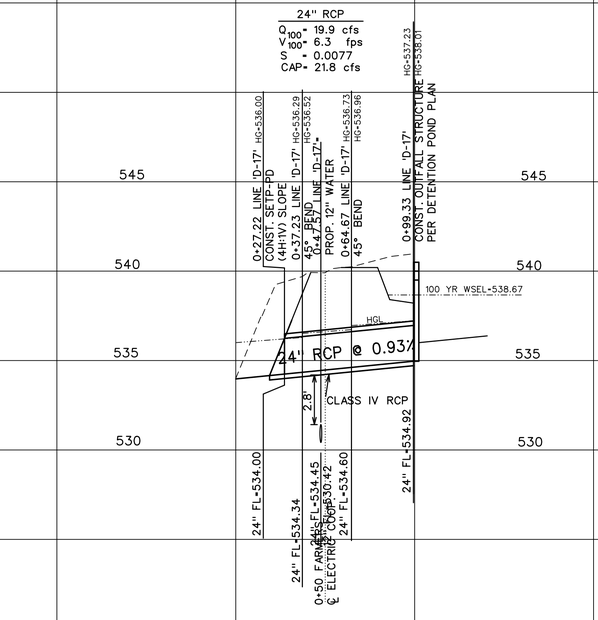


LEGEND

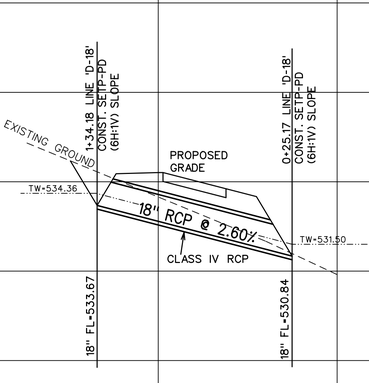
- (B) - BLOCK LABEL
- (19) - INLET NUMBER
- (1) - CURVE NUMBER
- SANITARY SEWER
- WATER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER



LINE 'D-16'



LINE 'D-17'



LINE 'D-18'

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

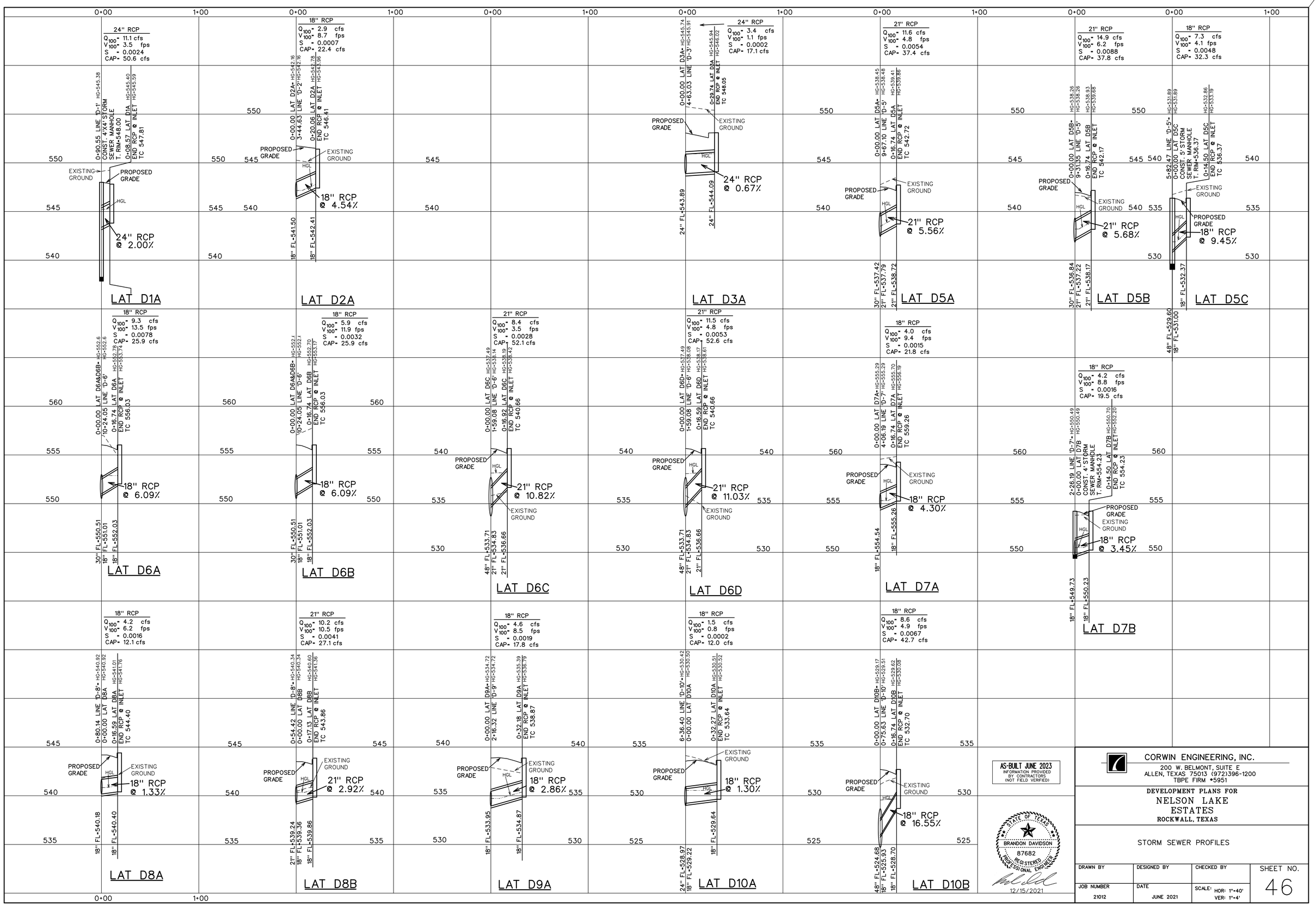
STATE OF TEXAS
BRANDON DAVIDSON
87682
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02/15/2022

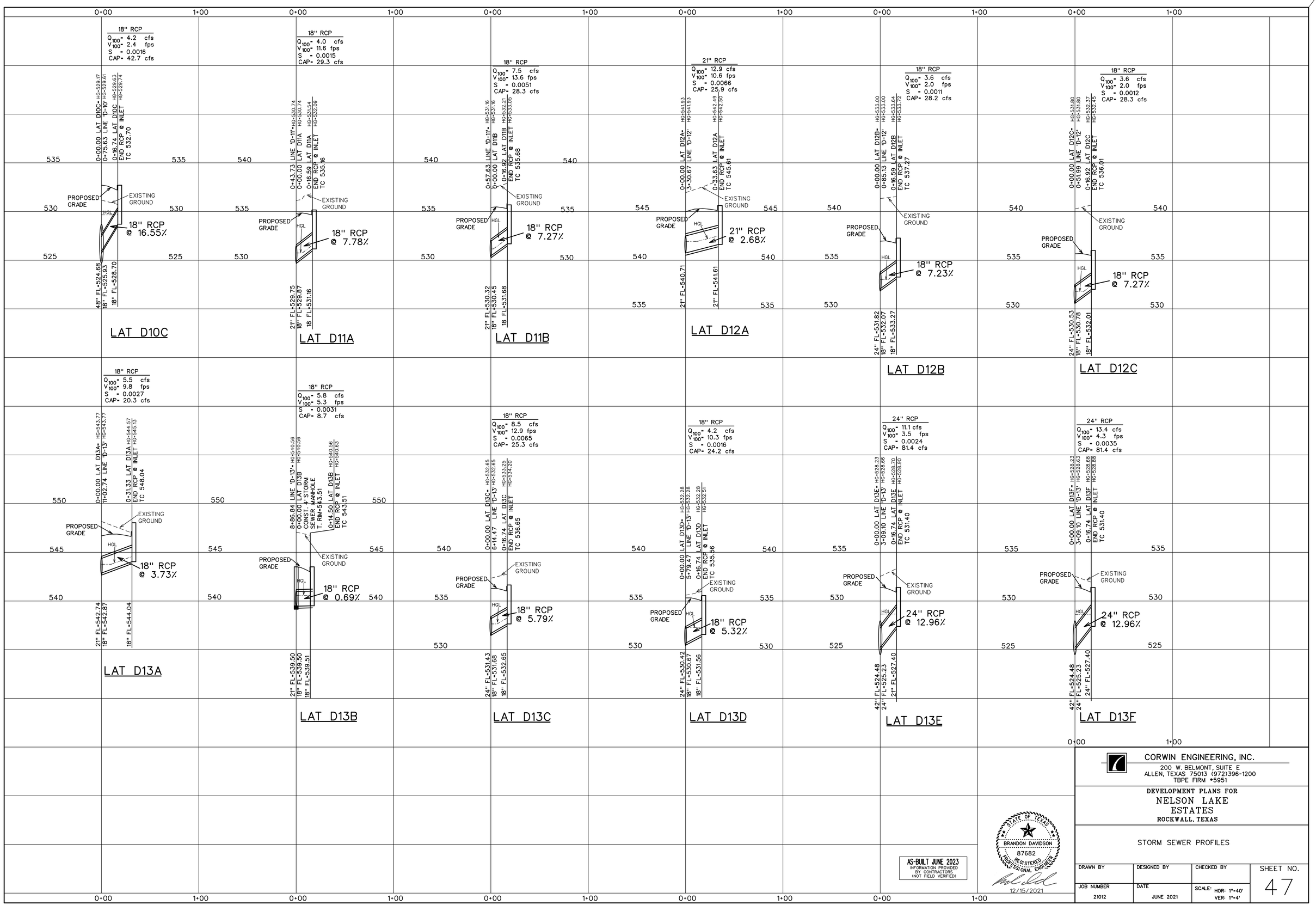
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

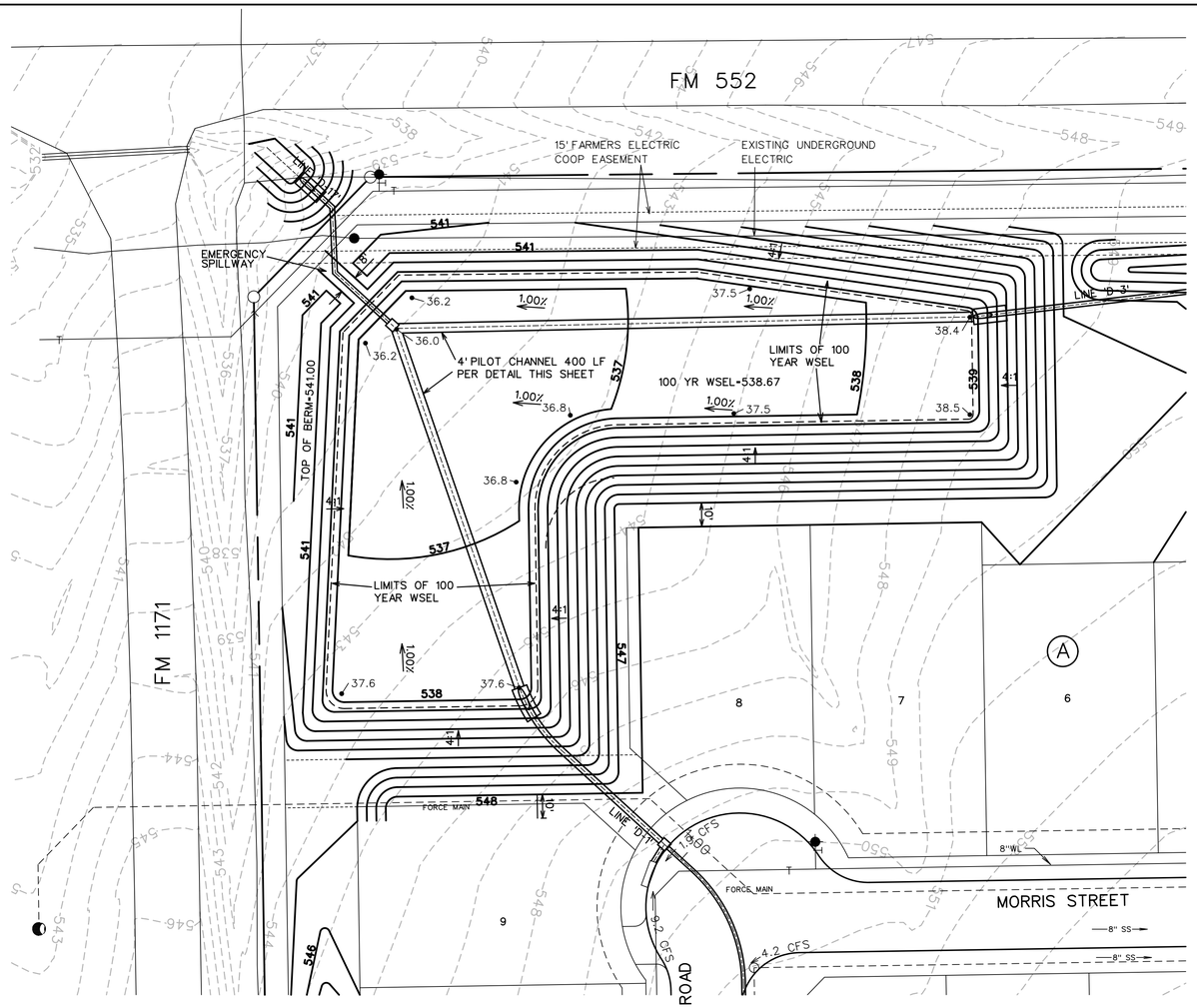
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

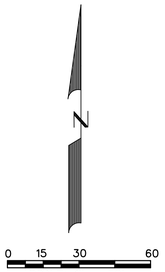
STORM SEWER PLAN AND PROFILE
LINES 'D-16', 'D-17' AND 'D-18'

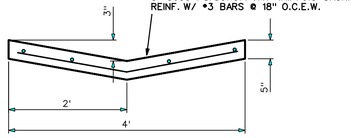
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: HOR: 1"=40' VER: 1"=4'	45


24" RCP
Q100= 11.1 cfs
V100= 3.5 fps
S = 0.0024
CAP= 50.6 cfs
0+90.55 LINE 'D-1' HG-545.38
CONST. 4'X4' STORM SEWER MANHOLE
T. RIM=548.00
0+08.57 LAT D1A HG-545.59
END RCP @ INLET
TC 547.81
EXISTING GROUND
PROPOSED GRADE
HGL
24" RCP @ 2.00%
LAT D1A
18" RCP
Q100= 2.9 cfs
V100= 8.7 fps
S = 0.0007
CAP= 22.4 cfs
0+00.00 LAT D2A HG-542.18
3+44.63 LINE 'D-2' HG-542.78
0+20.06 LAT D2A HG-543.96
END RCP @ INLET
TC 546.41
18" RCP @ 4.54%
18" FL-541.50
18" FL-542.41
LAT D2A
24" RCP
Q100= 3.4 cfs
V100= 1.1 fps
S = 0.0002
CAP= 17.1 cfs
0+00.00 LAT D3A HG-545.74
4+63.03 LINE 'D-3' HG-545.91
0+29.76 LAT D3A HG-545.94
END RCP @ INLET
TC 546.02
24" RCP @ 0.67%
24" FL-543.89
24" FL-544.09
LAT D3A
21" RCP
Q100= 11.6 cfs
V100= 4.8 fps
S = 0.0054
CAP= 37.4 cfs
0+00.00 LAT D5A HG-538.45
9+67.10 LINE 'D-5' HG-538.48
0+16.74 LAT D5A HG-539.41
END RCP @ INLET
TC 542.72
21" RCP @ 5.56%
30" FL-537.42
21" FL-537.79
21" FL-538.72
LAT D5A
21" RCP
Q100= 14.9 cfs
V100= 6.2 fps
S = 0.0088
CAP= 37.8 cfs
0+00.00 LAT D5B HG-538.26
9+31.35 LINE 'D-5' HG-538.26
0+16.74 LAT D5B HG-538.93
END RCP @ INLET
TC 542.17
21" RCP @ 5.68%
30" FL-536.84
21" FL-537.22
21" FL-538.17
LAT D5B
18" RCP
Q100= 7.3 cfs
V100= 4.1 fps
S = 0.0048
CAP= 32.3 cfs
5+82.47 LINE 'D-5' HG-531.89
0+00.00 LAT D5C HG-531.89
CONST. 5' STORM SEWER MANHOLE
T. RIM=536.37
0+14.50 LAT D5C HG-532.86
END RCP @ INLET
TC 536.37
18" RCP @ 9.45%
48" FL-529.60
18" FL-531.00
LAT D5C
18" RCP
Q100= 9.3 cfs
V100= 13.5 fps
S = 0.0078
CAP= 25.9 cfs
0+00.00 LAT D6A&D6B HG-552.6
10+24.05 LINE 'D-6' HG-552.6
0+16.74 LAT D6A HG-552.78
END RCP @ INLET HG-553.74
TC 556.03
18" RCP @ 6.09%
30" FL-550.51
18" FL-551.01
18" FL-552.03
LAT D6A
18" RCP
Q100= 5.9 cfs
V100= 11.9 fps
S = 0.0032
CAP= 25.9 cfs
0+00.00 LAT D6A&D6B HG-552.1
10+24.05 LINE 'D-6' HG-552.1
0+16.74 LAT D6B HG-552.70
END RCP @ INLET HG-553.17
TC 556.03
18" RCP @ 6.09%
30" FL-550.51
18" FL-551.01
18" FL-552.03
LAT D6B
21" RCP
Q100= 8.4 cfs
V100= 3.5 fps
S = 0.0028
CAP= 52.1 cfs
0+00.00 LAT D6C HG-537.49
1+59.08 LINE 'D-6' HG-538.14
0+16.92 LAT D6C HG-538.19
END RCP @ INLET HG-538.42
TC 540.66
18" RCP @ 10.82%
48" FL-533.71
21" FL-534.83
21" FL-536.66
LAT D6C
21" RCP
Q100= 11.5 cfs
V100= 4.8 fps
S = 0.0053
CAP= 52.6 cfs
0+00.00 LAT D6D HG-537.49
1+59.08 LINE 'D-6' HG-538.08
0+16.59 LAT D6D HG-538.17
END RCP @ INLET HG-538.61
TC 540.66
18" RCP @ 11.03%
48" FL-533.71
21" FL-534.83
21" FL-536.66
LAT D6D
18" RCP
Q100= 4.0 cfs
V100= 9.4 fps
S = 0.0015
CAP= 21.8 cfs
0+00.00 LAT D7A HG-555.29
4+06.19 LINE 'D-7' HG-555.29
0+16.74 LAT D7A HG-555.70
END RCP @ INLET
TC 559.26
18" RCP @ 4.30%
18" FL-554.54
LAT D7A
18" RCP
Q100= 4.2 cfs
V100= 8.8 fps
S = 0.0016
CAP= 19.5 cfs
2+26.19 LINE 'D-7' HG-550.49
0+00.00 LAT D7B HG-550.49
CONST. 4' STORM SEWER MANHOLE
T. RIM=554.23
0+14.50 LAT D7B HG-550.70
END RCP @ INLET HG-552.20
TC 554.23
18" RCP @ 3.45%
18" FL-549.73
18" FL-550.23
LAT D7B
18" RCP
Q100= 4.2 cfs
V100= 6.2 fps
S = 0.0016
CAP= 12.1 cfs
0+80.14 LINE 'D-8' HG-540.92
0+00.00 LAT D8A HG-540.92
0+16.59 LAT D8A HG-541.01
END RCP @ INLET HG-541.76
TC 544.40
18" RCP @ 1.33%
18" FL-540.18
18" FL-540.40
LAT D8A
21" RCP
Q100= 10.2 cfs
V100= 10.5 fps
S = 0.0041
CAP= 27.1 cfs
0+54.42 LINE 'D-8' HG-540.34
0+00.00 LAT D8B HG-540.34
0+17.13 LAT D8B HG-540.60
END RCP @ INLET HG-541.36
TC 543.86
21" RCP @ 2.92%
21" FL-539.24
18" FL-539.36
18" FL-539.86
LAT D8B
18" RCP
Q100= 4.6 cfs
V100= 8.5 fps
S = 0.0019
CAP= 17.8 cfs
0+00.00 LAT D9A HG-534.72
2+16.32 LINE 'D-9' HG-534.72
0+32.18 LAT D9A HG-535.39
END RCP @ INLET HG-536.79
TC 538.87
18" RCP @ 2.86%
18" FL-533.95
18" FL-534.87
LAT D9A
18" RCP
Q100= 1.5 cfs
V100= 0.8 fps
S = 0.0002
CAP= 12.0 cfs
6+36.40 LINE 'D-10' HG-530.42
0+00.00 LAT D10A HG-530.50
0+32.27 LAT D10A HG-530.51
END RCP @ INLET HG-530.52
TC 533.64
18" RCP @ 1.30%
24" FL-528.97
18" FL-529.22
18" FL-529.64
LAT D10A
18" RCP
Q100= 8.6 cfs
V100= 4.9 fps
S = 0.0067
CAP= 42.7 cfs
0+00.00 LAT D10B HG-529.17
0+75.63 LINE 'D-10' HG-528.51
0+16.74 LAT D10B HG-529.62
END RCP @ INLET HG-530.08
TC 532.70
18" RCP @ 16.55%
48" FL-524.68
18" FL-525.93
18" FL-528.70
LAT D10B
AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
12/15/2021
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS
STORM SEWER PROFILES
DRAWN BY
DESIGNED BY
CHECKED BY
SHEET NO. 46
JOB NUMBER 21012
DATE JUNE 2021
SCALE: HOR: 1"=40' VER: 1"=4'


18" RCP
Q100= 4.2 cfs
V100= 2.4 fps
S = 0.0016
CAP= 42.7 cfs
0+00.00 LAT D10C- HG-529.17
0+75.63 LINE "D-10" HG-529.61
0+16.74 LAT D10C HG-529.63
END RCP @ INLET HG-529.74
TC 532.70
PROPOSED GRADE
EXISTING GROUND
HGL
18" RCP @ 16.55%
48" FL-524.68
18" FL-525.93
18" FL-528.70
LAT D10C
18" RCP
Q100= 4.0 cfs
V100= 11.6 fps
S = 0.0015
CAP= 29.3 cfs
0+43.73 LINE "D-11"- HG-530.74
0+00.00 LAT D11A HG-530.74
0+16.59 LAT D11A HG-531.54
END RCP @ INLET HG-532.09
TC 535.16
PROPOSED GRADE
EXISTING GROUND
HGL
18" RCP @ 7.78%
21" FL-529.75
18" FL-529.87
18 FL-531.16
LAT D11A
18" RCP
Q100= 7.5 cfs
V100= 13.6 fps
S = 0.0051
CAP= 28.3 cfs
0+57.63 LINE "D-11"- HG-531.16
0+00.00 LAT D11B HG-531.16
0+16.92 LAT D11B HG-532.21
END RCP @ INLET HG-533.05
TC 535.68
PROPOSED GRADE
EXISTING GROUND
HGL
18" RCP @ 7.27%
21" FL-530.32
18" FL-530.45
18 FL-531.68
LAT D11B
21" RCP
Q100= 12.9 cfs
V100= 10.6 fps
S = 0.0066
CAP= 25.9 cfs
0+00.00 LAT D12A- HG-541.93
3+30.67 LINE "D-12" HG-541.93
0+33.63 LAT D12A HG-542.49
END RCP @ INLET HG-542.50
TC 545.61
PROPOSED GRADE
EXISTING GROUND
HGL
21" RCP @ 2.68%
21" FL-540.71
21" FL-541.61
LAT D12A
18" RCP
Q100= 3.6 cfs
V100= 2.0 fps
S = 0.0011
CAP= 28.2 cfs
0+00.00 LAT D12B- HG-533.00
0+85.13 LINE "D-12" HG-533.00
0+16.58 LAT D12B HG-533.64
END RCP @ INLET HG-533.72
TC 537.27
PROPOSED GRADE
EXISTING GROUND
HGL
18" RCP @ 7.23%
24" FL-531.82
18" FL-532.07
18" FL-533.27
LAT D12B
18" RCP
Q100= 3.6 cfs
V100= 2.0 fps
S = 0.0012
CAP= 28.3 cfs
0+00.00 LAT D12C- HG-531.80
0+51.99 LINE "D-12" HG-531.80
0+16.92 LAT D12C HG-532.37
END RCP @ INLET HG-532.45
TC 536.01
PROPOSED GRADE
EXISTING GROUND
HGL
18" RCP @ 7.27%
24" FL-530.53
18" FL-530.78
18" FL-532.01
LAT D12C
18" RCP
Q100= 5.5 cfs
V100= 9.8 fps
S = 0.0027
CAP= 20.3 cfs
0+00.00 LAT D13A- HG-543.77
11+02.74 LINE "D-13" HG-543.77
0+31.33 LAT D13A HG-544.57
END RCP @ INLET HG-545.13
TC 548.04
PROPOSED GRADE
EXISTING GROUND
HGL
18" RCP @ 3.73%
21" FL-542.74
18" FL-542.87
18" FL-544.04
LAT D13A
18" RCP
Q100= 5.8 cfs
V100= 5.3 fps
S = 0.0031
CAP= 8.7 cfs
8+86.84 LINE "D-13"- HG-540.56
0+00.00 LAT D13B HG-540.56
SEWER MANHOLE HG-540.63
T. RIM-543.51
0+14.50 LAT D13B HG-540.56
END RCP @ INLET HG-540.63
TC 543.51
PROPOSED GRADE
EXISTING GROUND
HGL
18" RCP @ 0.69%
21" FL-539.50
18" FL-539.50
18" FL-539.51
LAT D13B
18" RCP
Q100= 8.5 cfs
V100= 12.9 fps
S = 0.0065
CAP= 25.3 cfs
0+00.00 LAT D13C- HG-532.65
6+14.47 LINE "D-13" HG-532.65
0+16.74 LAT D13C HG-533.25
END RCP @ INLET HG-534.20
TC 536.65
PROPOSED GRADE
EXISTING GROUND
HGL
18" RCP @ 5.79%
24" FL-531.43
18" FL-531.68
18" FL-532.65
LAT D13C
18" RCP
Q100= 4.2 cfs
V100= 10.3 fps
S = 0.0016
CAP= 24.2 cfs
0+00.00 LAT D13D- HG-532.28
5+79.47 LINE "D-13" HG-532.28
0+16.74 LAT D13D HG-532.28
END RCP @ INLET HG-532.51
TC 535.56
PROPOSED GRADE
EXISTING GROUND
HGL
18" RCP @ 5.32%
24" FL-530.42
18" FL-530.67
18" FL-531.56
LAT D13D
24" RCP
Q100= 11.1 cfs
V100= 3.5 fps
S = 0.0024
CAP= 81.4 cfs
0+00.00 LAT D13E- HG-528.23
3+09.10 LINE "D-13" HG-528.66
0+16.74 LAT D13E HG-528.70
END RCP @ INLET HG-528.90
TC 531.40
PROPOSED GRADE
EXISTING GROUND
HGL
24" RCP @ 12.96%
42" FL-524.48
24" FL-525.23
21" FL-527.40
LAT D13E
24" RCP
Q100= 13.4 cfs
V100= 4.3 fps
S = 0.0035
CAP= 81.4 cfs
0+00.00 LAT D13F- HG-528.23
3+09.10 LINE "D-13" HG-528.63
0+16.74 LAT D13F HG-528.68
END RCP @ INLET HG-528.88
TC 531.40
PROPOSED GRADE
EXISTING GROUND
HGL
24" RCP @ 12.96%
42" FL-524.48
24" FL-525.23
24" FL-527.40
LAT D13F
AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)
STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
12/15/2021
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS
STORM SEWER PROFILES
DRAWN BY
DESIGNED BY
CHECKED BY
SHEET NO. 47
JOB NUMBER 21012
DATE JUNE 2021
SCALE: HOR: 1"=40' VER: 1"=4'







PILOT CHANNEL DETAIL

NOTE:
NO PAVING TO BE INSTALLED UNTIL THE DETENTION SYSTEM IS CONSTRUCTED AND FULLY FUNCTIONING ALONG WITH THE BOTTOM AND SIDES OF THE DETENTION POND TO HAVE EITHER SOD OR ANCHORED SEEDED CURLEX INSTALLED.

Northwest Detention Pond
5-Year Storm
Pre-Project Runoff Calculations

	Area	Area	Existing Runoff	Tc - Existing	Rainfall Intensity	Q - Undeveloped
	Area #	(sf)	(acres)	Coefficient	(min)	(in/hr)	(cfs)
Existing Runoff	EX1,EX2	576858	13.24	0.46	20	4.9	30.1
Bypass	48-53	141470	3.25	0.84	10	6.1	16.6
						Allowed Release=	**13.6**

Post-Project Runoff Calculations

	Area	Area	Propcsed Runoff	Tc - Existing	Rainfall Intensity	Q - Post Development	Difference between Pre and
	Area #	(sf)	(acres)	Coefficient	(min)	(in/hr)	(cfs)	Post Development Conditions
1,2,5,6,45,45A,47		410132	9.42	0.50	10	6.1	28.7	
							28.7	**15.2**

10-Year Storm
Pre-Project Runoff Calculations

	Area	Area	Existing Runoff	Tc - Existing	Rainfall Intensity	Q - Undeveloped
	Area #	(sf)	(acres)	Coefficient	(min)	(in/hr)	(cfs)
Existing Runoff	EX1,EX2	576858	13.24	0.46	20	5.9	36.3
Bypass	48-53	141470	3.25	0.84	10	7.1	19.3
						Allowed Release=	**17.0**

Post-Project Runoff Calculations

	Area	Area	Existing Runoff	Tc - Existing	Rainfall Intensity	Q - Post Development	Difference between Pre and
	Area #	(sf)	(acres)	Coefficient	(min)	(in/hr)	(cfs)	Post Development Conditions
1,2,5,6,45,45A,47		410132	9.42	0.50	10	7.1	33.4	
							33.4	**16.4**

25-Year Storm
Pre-Project Runoff Calculations

	Area	Area	Existing Runoff	Tc - Existing	Rainfall Intensity	Q - Undeveloped
	Area #	(sf)	(acres)	Coefficient	(min)	(in/hr)	(cfs)
Existing Runoff	EX1,EX2	576858	13.24	0.46	20	6.6	40.6
Bypass	48-53	141470	3.25	0.84	10	8.3	22.6
						Allowed Release=	**18.0**

Post-Project Runoff Calculations

	Area	Area	Existing Runoff	Tc - Existing	Rainfall Intensity	Q - Post Development	Difference between Pre and
	Area #	(sf)	(acres)	Coefficient	(min)	(in/hr)	(cfs)	Post Development Conditions
1,2,5,6,45,45A,47		410132	9.42	0.50	10	8.3	39.1	
							39.1	**21.0**

100-Year Storm
Pre-Project Runoff Calculations

	Area	Area	Existing Runoff	Tc - Existing	Rainfall Intensity	Q - Undeveloped
	Area #	(sf)	(acres)	Coefficient	(min)	(in/hr)	(cfs)
Existing Runoff	EX1,EX2	576858	13.24	0.46	20	8.3	51.1
Bypass	48-53	141470	3.25	0.84	10	9.8	26.6
						Allowed Release=	**24.4**

Post-Project Runoff Calculations

	Area	Area	Existing Runoff	Tc - Existing	Rainfall Intensity	Q - Post Development	Difference between Pre and
	Area #	(sf)	(acres)	Coefficient	(min)	(in/hr)	(cfs)	Post Development Conditions
1,2,5,6,45,45A,47		410132	9.42	0.50	10	9.8	46.1	
							46.1	**21.7**

Elevation Calculations

Event	Maximum Release Rate	Storage Requirement	Occurs at Elevation
5-year	8.9	27893	538.29
10-year	11.6	29755	538.37
25-year	15.0	29475	538.46
100-year	21.3	33521	538.60

Elevation-Storage Table

Elevation	Volume (cf)
536	0
537	4947
538	20756
539	45144
540	73962
541	105467

Stage-Discharge Table — Opening #1 - 0.75' w x 0.5' h opening Opening #2 Weir - 12' Long @ 538

	Orifice 1			Weir	Depth of Flow	Weir	Upper opening when submerged			Total	Allowable	Above	
Stage	H	Area	Discharge	Length	Over Weir	Discharge	H	Area	Discharge	Discharge	Discharge	(Below)	
536.00	0	0	0					0	0	0.0			
537.00	0.75	0.38	1.6							1.6			
538.00	1.75	0.38	2.4							2.4			
538.29	2.04	0.38	2.6	**12.0**	**0.29**	**6.3**				**8.9**	**13.6**	**(4.6)**	**5-year**
538.37	2.12	0.38	2.6	**12.0**	**0.37**	**9.0**				**11.6**	**17.0**	**(5.4)**	**10-year**
538.46	2.21	0.38	2.7	**12.0**	**0.46**	**12.3**				**15.0**	**18.0**	**(3.0)**	**25-year**
538.60	2.35	0.38	2.8	**12.0**	**0.60**	**18.6**				**21.3**	**24.4**	**(3.1)**	**100-year**
539.00	2.75	0.38	3.0				0.50	12.00	40.9	43.9			
540.00	3.75	0.38	3.5				1.50	12.00	70.8	74.3			
541.00	4.75	0.38	3.9	**8.0**	**1.00**	**26.6**	2.50	12.00	91.4	121.9			

Orifice Equation: $C^A*(2*G*H)^{0.5}$
C-Coefficient of Discharge=0.6
A - Area of opening
G - Gravitational Acceleration=32.2 ft/s^2
H - Depth of Water to Center of Opening

Weir Equation: $C^H^{3/2}*L$
C - Weir Coefficient=3.33
H - Depth of Flow over Weir
L - Length of Weir

DETENTION STORAGE CALCULATIONS - 5 Year

Storm Duration	Outflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Volume (cubic ft.)	Volume (acre-ft.)	Outflow (cfs)
10	20	9.42	0.50	1.00	4.71	6.10	28.7	17230	5351	**11879**	**0.27**	8.9
20	30	9.42	0.50	1.00	4.71	4.90	23.1	27681	8027	**19654**	**0.45**	8.9
30	40	9.42	0.50	1.00	4.71	4.10	19.3	34743	10702	**24040**	**0.55**	8.9
40	50	9.42	0.50	1.00	4.71	3.40	16.0	38415	13378	**25037**	**0.57**	8.9
50	60	9.42	0.50	1.00	4.71	2.80	13.2	39544	16053	**23491**	**0.54**	8.9
60	70	9.42	0.50	1.00	4.71	2.60	12.2	44064	18729	**25335**	**0.58**	8.9
70	80	9.42	0.50	1.00	4.71	2.40	11.3	47453	21404	**26049**	**0.60**	8.9
80	90	9.42	0.50	1.00	4.71	2.30	10.8	51973	24080	**27893**	**0.64**	8.9
90	100	9.42	0.50	1.00	4.71	2.10	9.9	53385	26755	**26630**	**0.61**	8.9
100	110	9.42	0.50	1.00	4.71	1.90	8.9	53667	29431	**24236**	**0.56**	8.9
110	120	9.42	0.50	1.00	4.71	1.80	8.5	55927	32106	**23821**	**0.55**	8.9
120	130	9.42	0.50	1.00	4.71	1.70	8.0	57622	34782	**22840**	**0.52**	8.9
130	140	9.42	0.50	1.00	4.71	1.60	7.5	58752	37458	**21294**	**0.49**	8.9
140	150	9.42	0.50	1.00	4.71	1.50	7.1	59317	40133	**19184**	**0.44**	8.9

Maximum Storage Required= **27893** cf

DETENTION STORAGE CALCULATIONS - 10 Year

Storm Duration	Outflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Volume (cubic ft.)	Volume (acre-ft.)	Outflow (cfs)
10	20	9.42	0.50	1.00	4.71	7.10	33.4	20055	6951	**13103**	**0.30**	11.6
20	30	9.42	0.50	1.00	4.71	5.90	27.8	33330	10427	**22903**	**0.53**	11.6
30	40	9.42	0.50	1.00	4.71	4.80	22.6	40674	13903	**26772**	**0.61**	11.6
40	50	9.42	0.50	1.00	4.71	4.00	18.8	45194	17378	**27815**	**0.64**	11.6
50	60	9.42	0.50	1.00	4.71	3.50	16.5	49431	20854	**28577**	**0.66**	11.6
60	70	9.42	0.50	1.00	4.71	3.00	14.1	50843	24329	**26513**	**0.61**	11.6
70	80	9.42	0.50	1.00	4.71	2.80	13.2	55362	27805	**27557**	**0.63**	11.6
80	90	9.42	0.50	1.00	4.71	2.60	12.2	58752	31281	**27471**	**0.63**	11.6
90	100	9.42	0.50	1.00	4.71	2.50	11.8	63554	34756	**28797**	**0.66**	11.6
100	110	9.42	0.50	1.00	4.71	2.40	11.3	67790	38232	**29558**	**0.68**	11.6
110	120	9.42	0.50	1.00	4.71	2.30	10.8	71462	41708	**29755**	**0.68**	11.6
120	130	9.42	0.50	1.00	4.71	2.10	9.9	71180	45183	**25997**	**0.60**	11.6
130	140	9.42	0.50	1.00	4.71	2.00	9.4	73440	48659	**24781**	**0.57**	11.6
140	150	9.42	0.50	1.00	4.71	1.80	8.5	71180	52135	**19045**	**0.44**	11.6

Maximum Storage Required= **29755** cf

DETENTION STORAGE CALCULATIONS - 25 Year

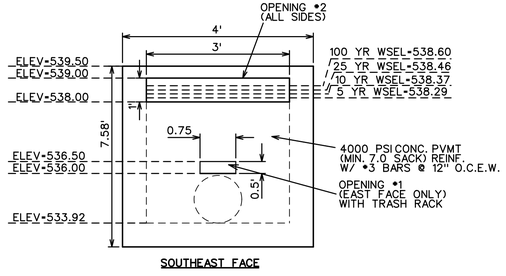
Storm Duration	Outflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Volume (cubic ft.)	Volume (acre-ft.)	Outflow (cfs)
10	20	9.42	0.50	1.00	4.71	8.30	39.1	23444	9017	**14428**	**0.33**	15.0
20	30	9.42	0.50	1.00	4.71	6.60	31.1	37285	13525	**23760**	**0.55**	15.0
30	40	9.42	0.50	1.00	4.71	5.50	25.9	46606	18033	**28573**	**0.66**	15.0
40	50	9.42	0.50	1.00	4.71	4.60	21.7	51973	22541	**29431**	**0.68**	15.0
50	60	9.42	0.50	1.00	4.71	4.00	18.8	56492	27050	**29442**	**0.68**	15.0
60	70	9.42	0.50	1.00	4.71	3.50	16.5	59317	31558	**27759**	**0.64**	15.0
70	80	9.42	0.50	1.00	4.71	3.30	15.5	65248	36066	**29182**	**0.67**	15.0
80	90	9.42	0.50	1.00	4.71	3.10	14.6	70050	40575	**29475**	**0.68**	15.0
90	100	9.42	0.50	1.00	4.71	2.90	13.7	73722	45083	**28639**	**0.66**	15.0
100	110	9.42	0.50	1.00	4.71	2.70	12.7	76264	49591	**26673**	**0.61**	15.0
110	120	9.42	0.50	1.00	4.71	2.50	11.8	77677	54100	**23577**	**0.54**	15.0
120	130	9.42	0.50	1.00	4.71	2.30	10.8	77959	58608	**19351**	**0.44**	15.0
130	140	9.42	0.50	1.00	4.71	2.10	9.9	77112	63116	**13995**	**0.32**	15.0
140	150	9.42	0.50	1.00	4.71	1.90	8.9	75134	67624	**7510**	**0.17**	15.0

Maximum Storage Required= **29475** cf

DETENTION STORAGE CALCULATIONS - 100 Year

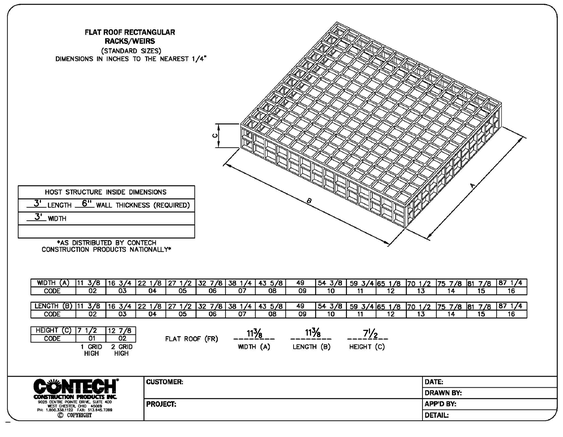
Storm Duration	Outflow Duration	Area (AC.)	Future "C"	Future "KF"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Volume (cubic ft.)	Volume (acre-ft.)	Outflow (cfs)
10	20	9.42	0.50	1.00	4.71	9.80	46.1	27681	12804	**14877**	**0.34**	21.3
20	30	9.42	0.50	1.00	4.71	8.30	39.1	46888	19206	**27683**	**0.64**	21.3
30	40	9.42	0.50	1.00	4.71	6.90	32.5	58469	25608	**32862**	**0.75**	21.3
40	50	9.42	0.50	1.00	4.71	5.80	27.3	65531	32010	**33521**	**0.77**	21.3
50	60	9.42	0.50	1.00	4.71	5.00	23.5	70615	38411	**32204**	**0.74**	21.3
60	70	9.42	0.50	1.00	4.71	4.50	21.2	76264	44813	**31451**	**0.72**	21.3
70	80	9.42	0.50	1.00	4.71	4.00	18.8	79089	51215	**27874**	**0.64**	21.3
80	90	9.42	0.50	1.00	4.71	3.70	17.4	83608	57617	**25991**	**0.60**	21.3
90	100	9.42	0.50	1.00	4.71	3.50	16.5	88975	64019	**24956**	**0.57**	21.3
100	110	9.42	0.50	1.00	4.71	3.40	16.0	96036	70421	**25615**	**0.59**	21.3
110	120	9.42	0.50	1.00	4.71	3.20	15.1	99426	76823	**22603**	**0.52**	21.3
120	130	9.42	0.50	1.00	4.71	3.00	14.1	101686	83225	**18461**	**0.42**	21.3
130	140	9.42	0.50	1.00	4.71	2.80	13.2	102815	89627	**13189**	**0.30**	21.3
140	150	9.42	0.50	1.00	4.71	2.60	12.2	102815	96029	**6787**	**0.16**	21.3

Maximum Storage Required= **33521** cf



SPECIAL INLET OPENINGS DETAIL
N.T.S.

EMERGENCY OVERFLOW SPILLWAY ASSUMING LOWER OUTLET IS COMPLETELY CLOGGED
Q_{100}= 21.3 cfs
DEPTH OF FLOW OVER WEIR=0.86'
WSEL=540.86'
FREEBOARD=0.14'



AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)



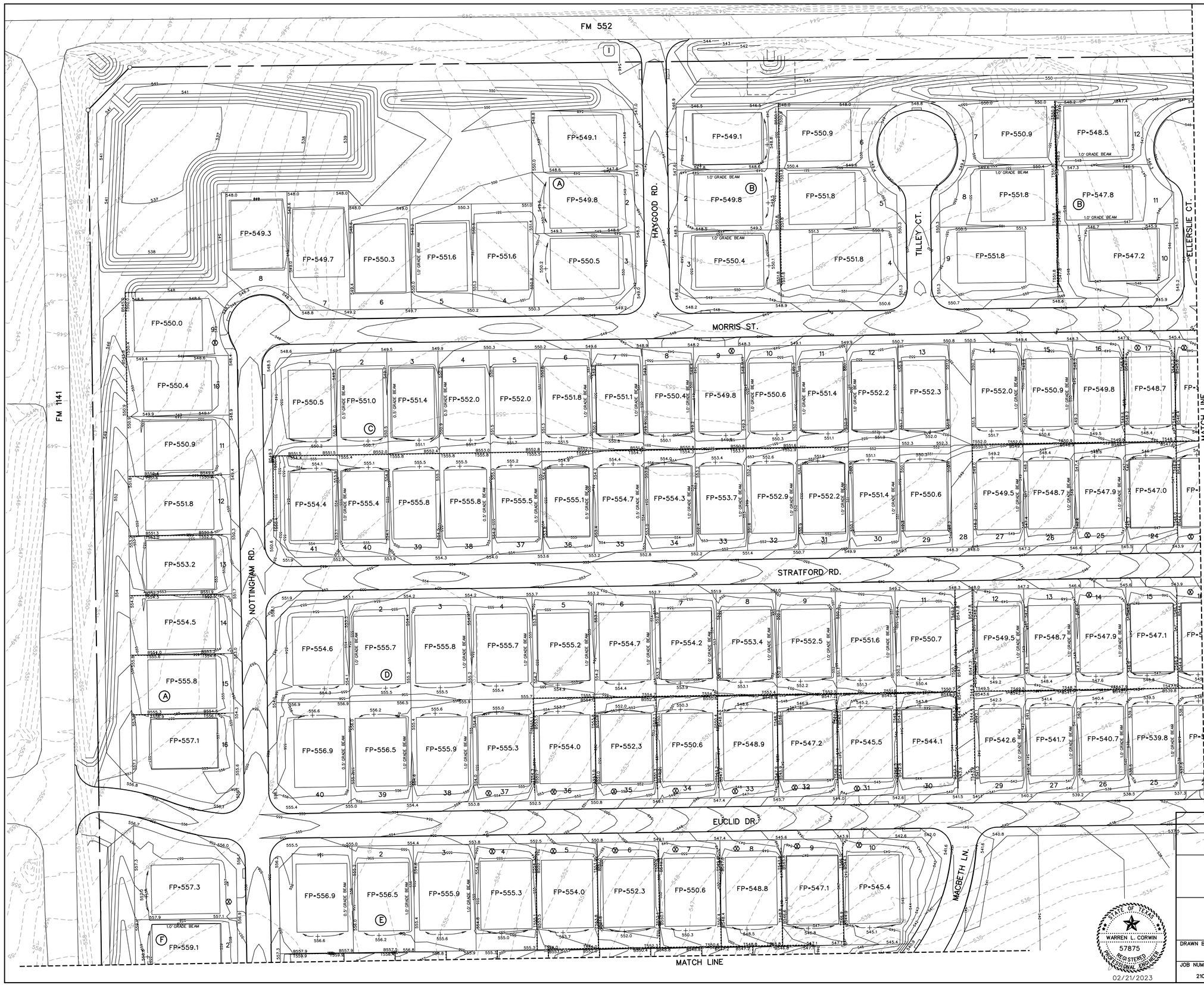
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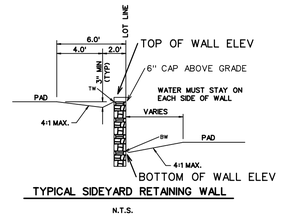
CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

DETENTION POND PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=30'	48





TYPICAL SIDEYARD RETAINING WALL

N.T.S.

NOTE:

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

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.
7. All retaining walls to be rock or stone faced
8. Walls 3' and over must be engineered.

N

SCALE: 1" = 50'

Ⓧ DRIVEWAY LOCATION SO MAXIMUM 14% SLOPE OR UNDER IS MAINTAINED, OR AS TO AVOID INLET OR MIN. DISTANCE FROM INTER-SECTION (DRIVEWAY MAY BE PLACED AT ALTERNATE LOCATION WITH USE OF A DROP GARAGE AS LONG AS MAXIMUM SLOPE IS 14% OR UNDER)

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

GRADING PLAN

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
02/21/2023

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
			49
JOB NUMBER	DATE	SCALE:	
21012	JUNE 2021	1"=50'	



SCALE: 1" = 50'

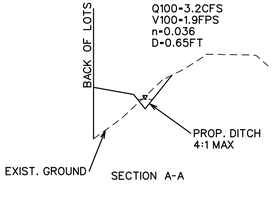
LEGEND

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

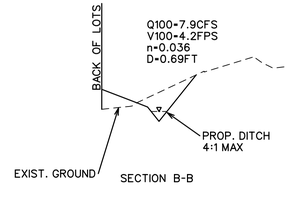
NOTES:

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.
7. All retaining walls to be rock or stone faced.
8. Walls 3' and over must be engineered.

Ⓧ DRIVEWAY LOCATION SO MAXIMUM 14% SLOPE OR UNDER IS MAINTAINED, OR AS TO AVOID INLET OR MIN. DISTANCE FROM INTERSECTION (DRIVEWAY MAY BE PLACED AT ALTERNATE LOCATION WITH USE OF A DROP GARAGE AS LONG AS MAXIMUM SLOPE IS 14% OR UNDER)



SECTION A-A



SECTION B-B

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER

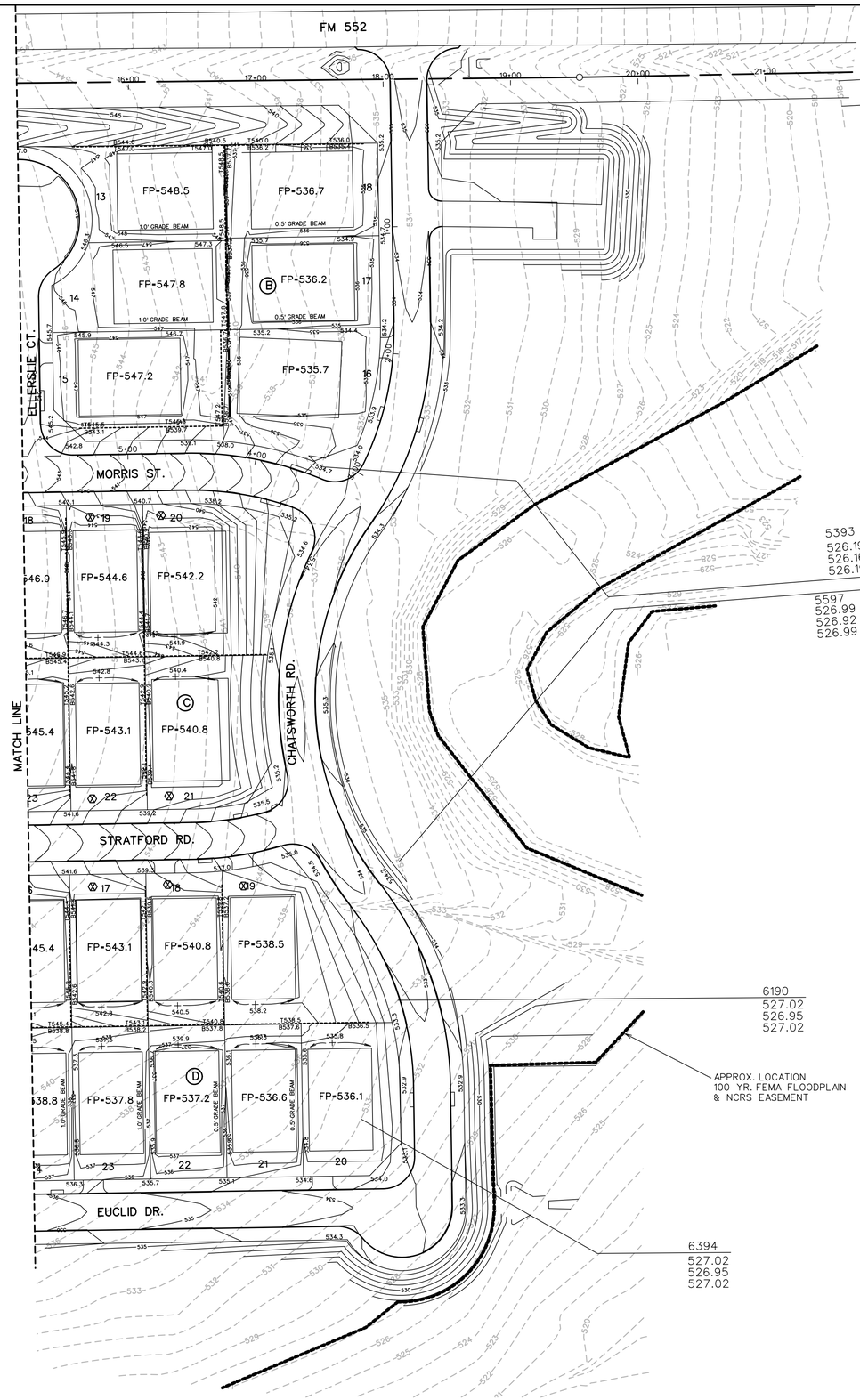
02/21/2023

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

GRADING PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=50'	50



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.
7. All retaining walls to be rock or stone faced.
8. Walls 3' and over must be engineered.

Ⓧ DRIVEWAY LOCATION SO MAXIMUM 14% SLOPE OR UNDER IS MAINTAINED, OR AS TO AVOID INLET OR MIN. DISTANCE FROM INTER-SECTION
(DRIVEWAY MAY BE PLACED AT ALTERNATE LOCATION WITH USE OF A DROP GARAGE AS LONG AS MAXIMUM SLOPE IS 14% OR UNDER)

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

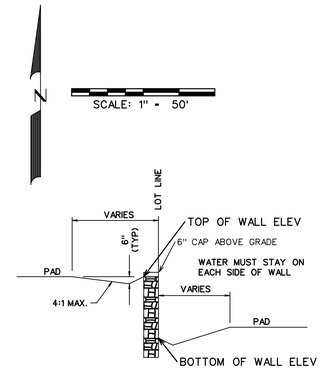
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

GRADING PLAN

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
02/21/2023

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=50'	51





TYPICAL SIDEYARD RETAINING WALL

N.T.S.

NOTE:

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

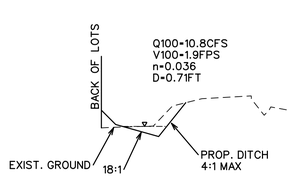
LEGEND

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

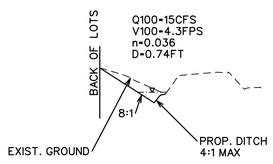
NOTES:

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.
7. All retaining walls to be rock or stone faced.
8. Walls 3' and over must be engineered.

Ⓦ DRIVEWAY LOCATION SO MAXIMUM 14% SLOPE OR UNDER IS MAINTAINED, OR AS TO AVOID INLET OR MIN. DISTANCE FROM INTER-SECTION
(DRIVEWAY MAY BE PLACED AT ALTERNATE LOCATION WITH USE OF A DROP GARAGE AS LONG AS MAXIMUM SLOPE IS 14% OR UNDER)



SECTION C-C



SECTION D-D

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

GRADING PLAN

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
02/21/2023

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
			52
JOB NUMBER	DATE	SCALE:	
21012	JUNE 2021	1"=50'	

STABILIZED ENTRANCE

N FM 552

N FM 552

STAGING AREA

ROCK CHECK DAM

CONC. WASH OUT

FM 1141

HAYGOOD RD

TILLEY CT

ELLERSLIE CT

MORRIS ST

CHATSWORTH RD

100 YR FULLY DEVELOPED FLOODPLAIN

NOTTINGHAM RD

STRATFORD RD

EUCLID DR

NELSON LAKE

ROCK CHECK DAM

ROCK CHECK DAM

HUNTWICK WAY

GLENWOOD LN

MACBETH LN

BYRNE LN

CLAIRMONT DR

CONCORD LN

ATWOOD LN

WICKERSHAM RD

ROCK CHECK DAM

100 YR FULLY DEVELOPED FLOODPLAIN

ROCK BERM

N COUNTRY LN

N COUNTRY LN

FM 1141

N

SCALE: 1" = 100'

LEGEND

SILT FENCE (BEFORE CONSTRUCTION)

INLET PROTECTION

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

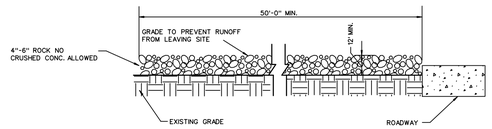
STATE OF TEXAS
WARREN L. CORWIN
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REGISTERED PROFESSIONAL ENGINEER
02/21/2023

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200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
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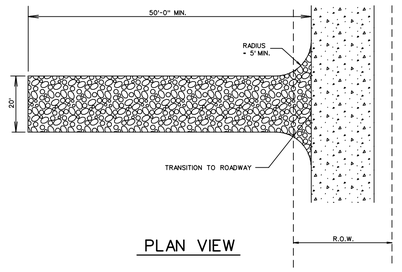
DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

EROSION CONTROL PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
			53
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=100'	



PROFILE

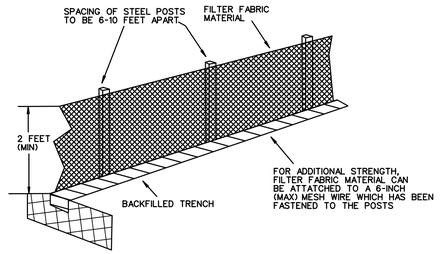


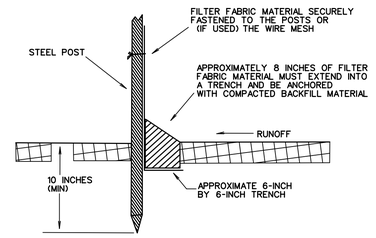
PLAN VIEW

STABILIZED ENTRANCE DETAIL

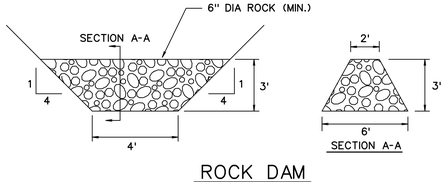
CONSTRUCTION SEQUENCE

1. GRADING CONTRACTOR TO INSTALL TEMPORARY STABILIZED ENTRANCE.
2. INSTALL SILT FENCE AS SHOWN, (TS-600 POLY FELT) PER C.O.G. SPECIFICATIONS.
3. PERFORM GRADING AND UTILITY CONSTRUCTION.
4. 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.
5. PRIOR TO CITY RELEASING PAVING, SOD OR SEEDED CURLEX SHALL BE INSTALLED ON SIDES AND BOTTOM OF ALL DETENTION PONDS.
6. 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.
7. SILT FENCE SHALL REMAIN IN PLACE UNTIL RE-VEGETATION HAS BEEN COMPLETED.
8. PAVING CONTRACTOR SHALL REMOVE TEMPORARY STABILIZED ENTRANCE.
9. PRIOR TO CITY ACCEPTANCE THE PAVING CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY MUD OR SILT WHICH COLLECTS ON THE EXISTING AND NEW PAVEMENT.
10. PRIOR TO CITY ACCEPTANCE 75-80% OF ALL DISTURBED AREA SHALL HAVE A MIN. 1" TALL GRASS ESTABLISHED
11. 75-80% OF ALL DISTURBED AREA TO HAVE 1" HIGH GRASS ESTABLISHED PRIOR TO ENGINEERING ACCEPTANCE.
12. ALL BAR DITCHES TO BE ANCHORED, SEEDED & CURLEXED PRIOR TO ACCEPTANCE OF GRASS ISN'T ESTABLISHED.

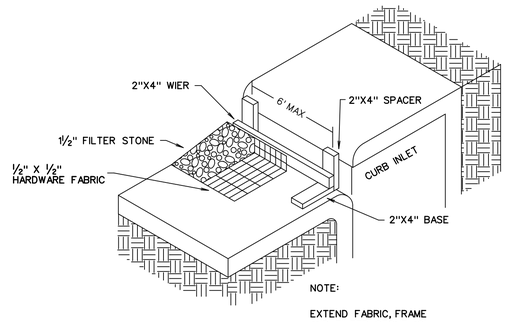




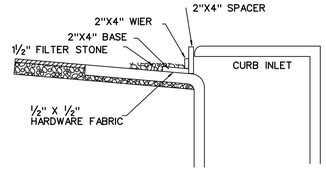
FILTER FABRIC FENCE DETAIL



ROCK DAM
N.T.S.



TYPE B CURB
INLET PROTECTION



INLET SECTION

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
02/21/2023

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

EROSION CONTROL PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 21012	DATE JUNE 2021	SCALE: 1"=100'	54



LEGEND

- STREET LIGHT
- STOP SIGN
- STREET NAME BLADE

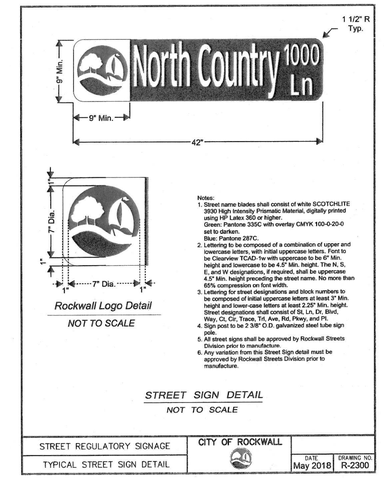
SCALE: 1" = 100'

S1-1

W16-7P

AHEAD

W16-9P



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-7e with uppercase to be 6" Min. height and lowercase to be 4.5" Min. height. The N, S, and E 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

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 signage plan shall be shown on a separate signage & pavement marking layout sheet or as a part of the plan & profile sheet. The plan shall identify the specific sign designation, size and location for each sign. Sign standards shall also be included 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.

-The developer shall be responsible for furnishing and installing all regulatory signage, warning signage and street name signage along with all 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.

-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 2⅜ O.D. galvanized steel tube sign post with a galvanized finish.

-Sign clamps and brackets shall be high strength aluminum.

-Any decorative sign poles and fixtures installed shall be maintained by the HOA.

All developments shall be provided with streetlights. In general, lights should be located at street intersections and at intervals no greater than four hundred (400) feet apart. Streetlights should be the equivalent of 175-watt mercury vapor fixtures on minor residential streets. All collector and arterial, or commercial streets shall have sodium vapor fixtures with a minimum wattage of 250 or 400 watts as directed by the City. In some instances, the City may require greater wattage.

AS-BUILT JUNE 2023
INFORMATION PROVIDED BY CONTRACTORS (NOT FIELD VERIFIED)

STATE OF TEXAS
WARREN L. CORWIN
57875
REGISTERED PROFESSIONAL ENGINEER
02/21/2023

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

DEVELOPMENT PLANS FOR
NELSON LAKE ESTATES
ROCKWALL, TEXAS

SIGN AND LIGHT PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
			55
JOB NUMBER: 21012	DATE: JUNE 2021	SCALE: 1"=100'	

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

RELEASED FOR CONSTRUCTION
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.
CITY OF ROCKWALL

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)	Streng th 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

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ENGINEERING DEPARTMENT
385 S. Goliad
Rockwall, Texas 75087
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RELEASED FOR CONSTRUCTION
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN
WITH THE DESIGN ENGINEER. THE CITY
IN REVIEWING AND RELEASING
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DESIGN.
CITY DATE

CITY OF ROCKWALL

CONSTRUCTIONS PLANS FOR

NELSON LAKES ESTATES LIFT STATION

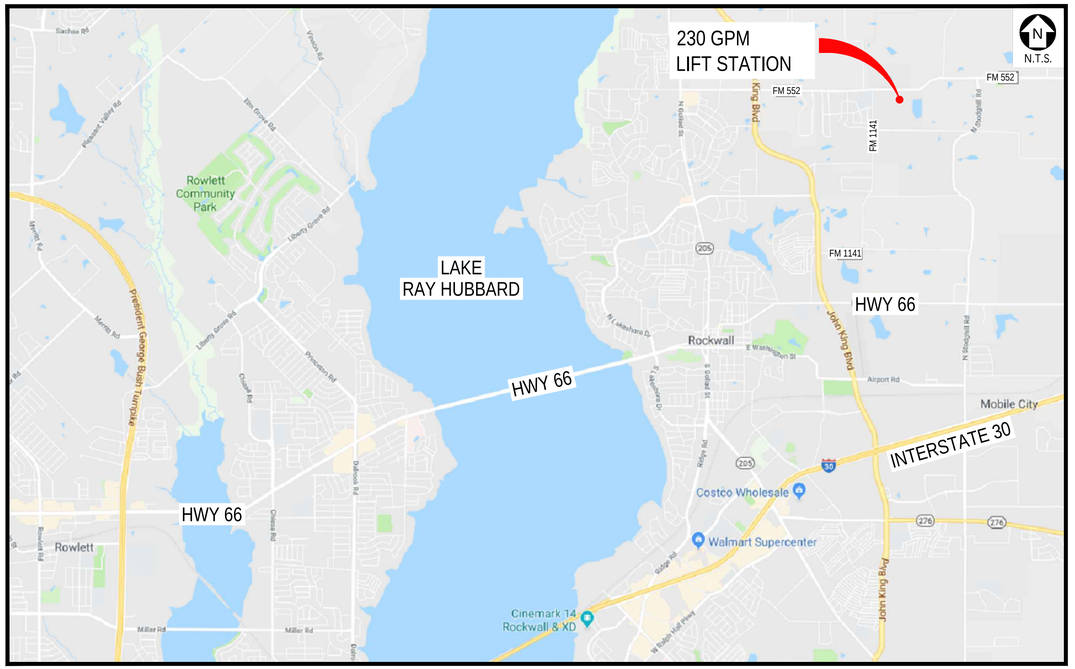
MARCH 2022

CITY OF ROCKWALL
385 S. GOLIAD ST
ROCKWALL, TEXAS 75087
CONTACT: AMY WILLIAMS, P.E.

OWNER
QUALICO DEVELOPMENTS
6950 TPC DRIVE, STE 350
McKINNEY, TEXAS 75070

ENGINEER
PERKINS ENGINEERING CONSULTANTS, INC.
A MEAD & HUNT COMPANY TPBELS FIRM NO. 9593
6001 INTERSTATE 20 W, SUITE 219
ARLINGTON, TX 76017
CONTACT: JUSTIN ANGEL, P.E.

811 Know what's below. Call before you dig



VICINITY MAP
NOT TO SCALE

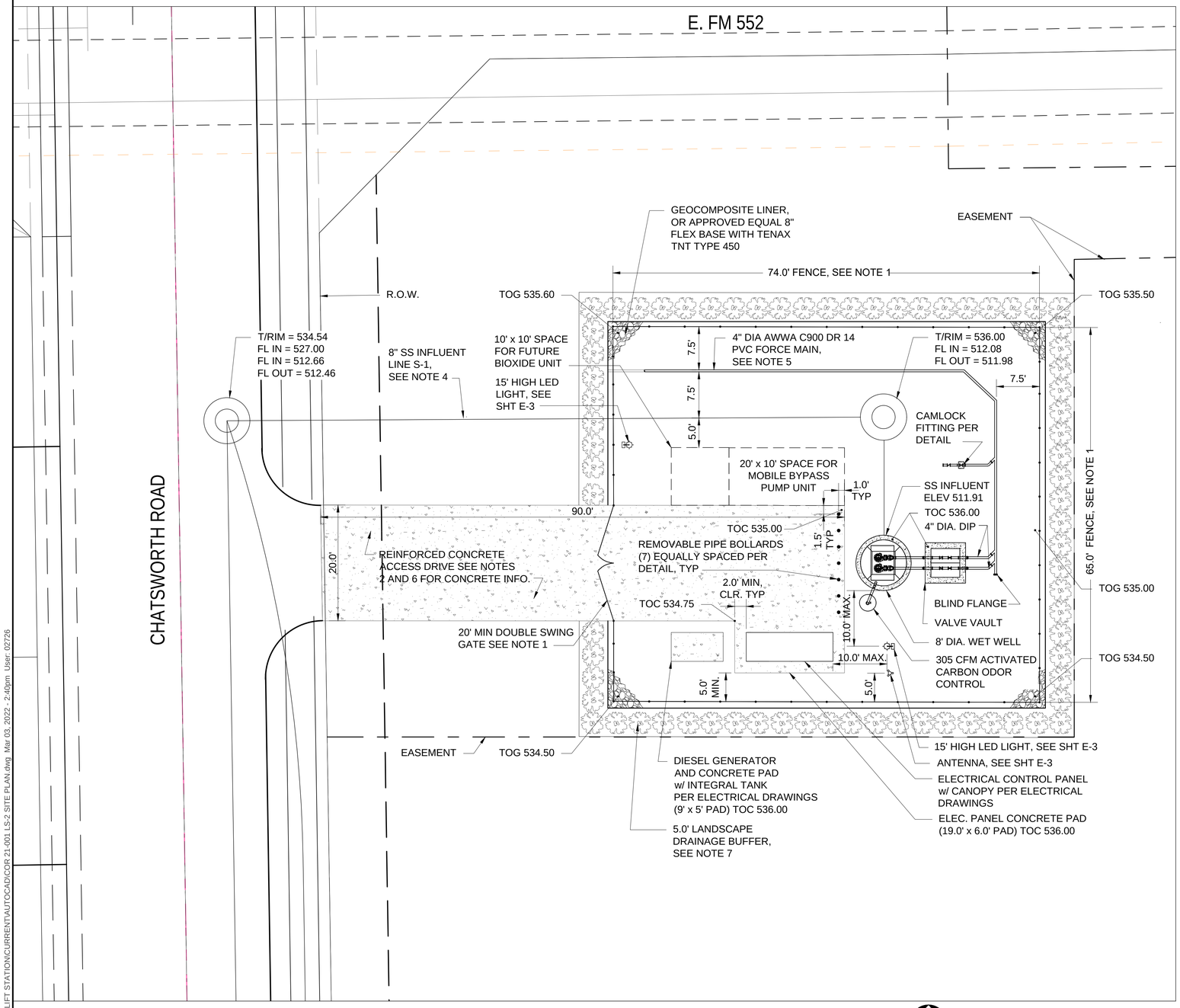
SHEET INDEX

LS-1	COVER SHEET
LS-2	LIFT STATION SITE PLAN
LS-3	LIFT STATION PLAN AND SECTIONS
LS-4	LIFT STATION DETAILS
LS-5	LIFT STATION DETAILS
E-1	ELECTRICAL LEGEND
E-2	GENERAL NOTES
E-3	LIFT STATION SITE PLAN
E-4	ONE-LINE DIAGRAM
E-5	CONTROL LOGIC
E-6	DETAILS
E-7	ELECTRICAL DETAILS

STATE OF TEXAS
JUSTIN A. ANGEL
129386
LICENSED
PROFESSIONAL ENGINEER

03.04.2022

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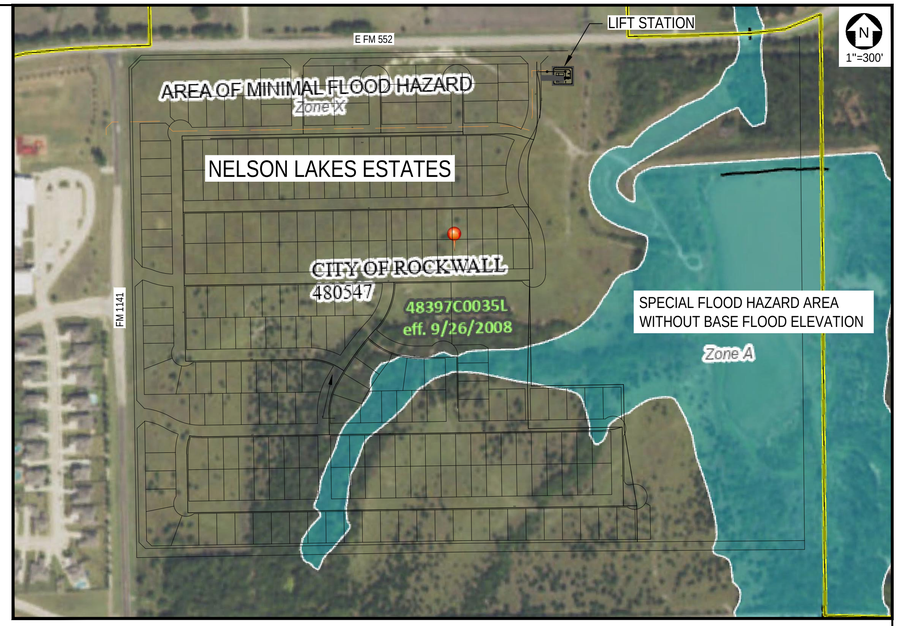


SITE PLAN

SCALE: 1"=10'

GRAPHIC SCALE 1"=10'

5 0 5 10



SITE LOCATION

SCALE: 1"=300'

LIFT STATION CHARACTERISTICS	BUILD OUT	
TYPE:	2	(1 DUTY, 1 STANDBY)
CRITERIA:	90	GAL/DAY/PERSON
DENSITY:	2.87	PERSONS/UNIT
UNITS:	260	UNITS
POPULATION:	746	PERSONS
DEVELOPMENT AREA	120.9	ACRE
AVERAGE FLOW:	47.0	GPM
PEAKING FACTOR:	4	
PEAK FLOW:	220	GPM
PUMP DESIGN FLOW:	230	GPM
PUMP DESIGN HEAD:	102	FT
PUMP HORSEPOWER (MAX.)	11	HP
FORCE MAIN DIAMETER	4	IN
FORCE MAIN VELOCITY	5.67	FT/SEC

NOTES:

1. 8' TALL POWDER COATED ALUMINUM PICKET FENCE PER CITY DESIGN STANDARDS. SEE DETAIL ON SHEET LS-4.
2. SEE CIVIL SHEETS FOR ACCESS ROAD PLAN AND PROFILE.
3. SEE SHEETS LS-3, LS-4 & LS-5 FOR PUMP AND PIPING DETAILS.
4. SEE CIVIL SHEETS FOR INFLUENT PIPE PLAN AND PROFILE.
5. SEE CIVIL SHEETS FOR FORCE MAIN PLAN & PROFILE.
6. CONCRETE DRIVEWAY SHALL BE 8" THICK, 3,600 PSI (6.5 SACK/CY) REINFORCED WITH #4 BARS AT 18" O.C.E.W.
7. RED TIP PHOTINIAS SHALL BE PLACED WITHIN THE 5 FEET BUFFER AS SHOWN AND SPACED AS ADVISED BY THE NURSERY OR PROVIDER.
8. FOR GRADING AND DRIVEWAY PLAN, SEE SUBDIVISION DEVELOPMENT PLANS.

STATE OF TEXAS
JUSTIN A. ANGEL
129386
LICENSED
PROFESSIONAL ENGINEER

03.04.2022

PERKINS ENGINEERING CONSULTANTS, INC.
A Mead & Hunt owned firm -TBPELS Registration No. 9593

DEVELOPMENT PLANS FOR

NELSON LAKE ESTATES

ROCKWALL, TEXAS

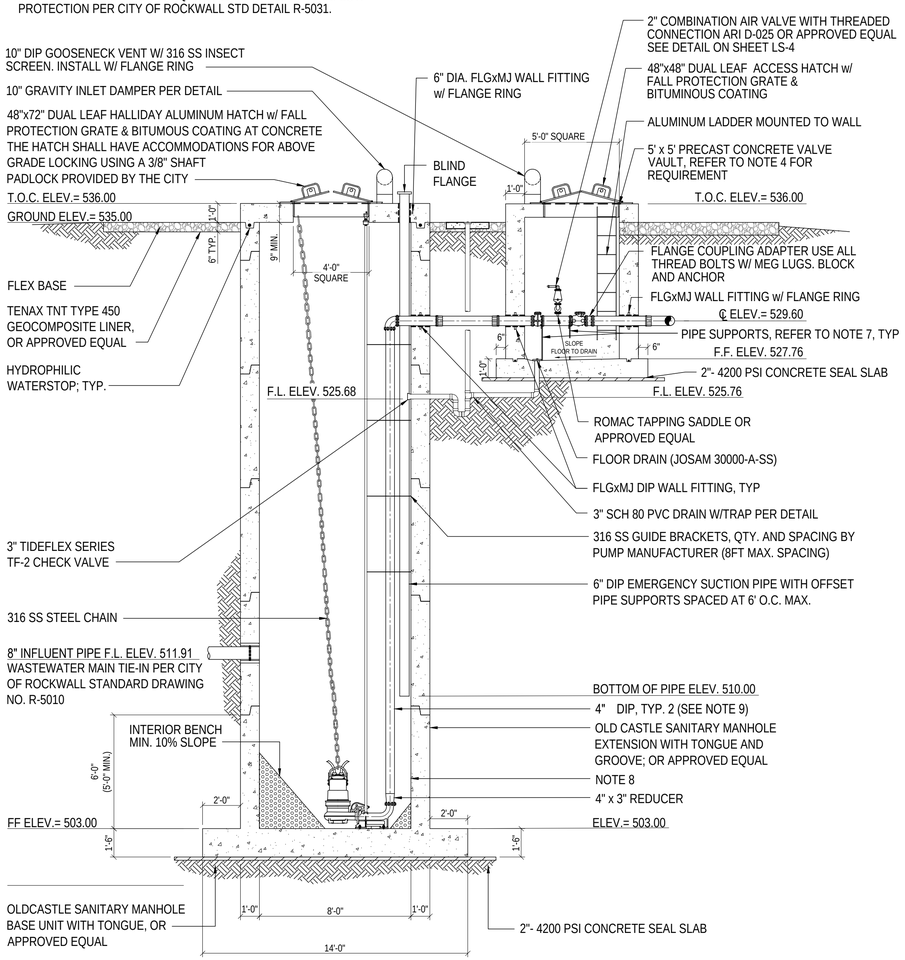
LIFT STATION SITE PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
KDF	JAA	MAP	LS-2
JOB NUMBER	DATE	SCALE	
COR 21-001	03/04/2022	AS NOTED	

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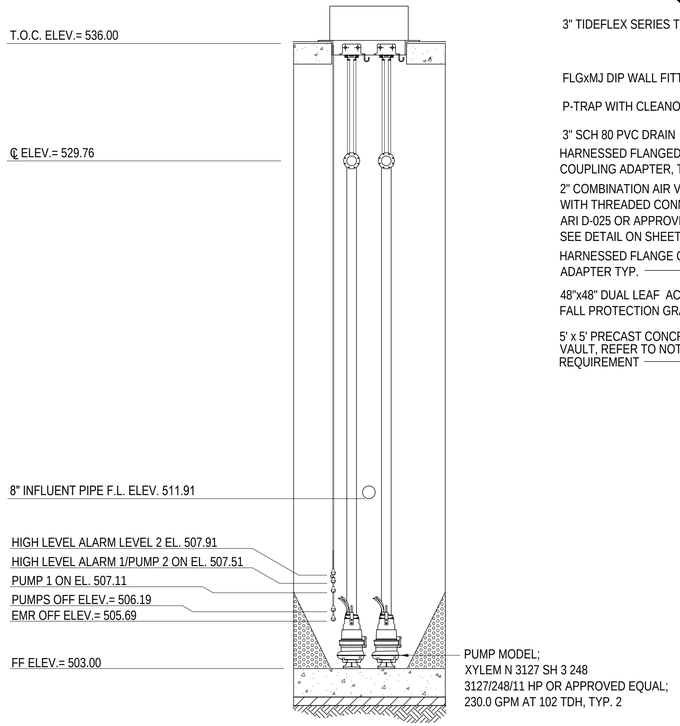
NOTES:

1. ALL ITEMS IN VALVE BOX SHALL BE BLOCKED AND SUPPORTED AS NECESSARY.
2. PUMP STATION SHALL BE MANUFACTURED FROM TYPE V PORTLAND CEMENT. ALL OTHER CONCRETE SHALL BE MANUFACTURED FROM TYPE I/II PORTLAND CEMENT.
3. STEEL REINFORCEMENT SHALL BE ASTM A615 GRADE 60 DEFORMED EXCEPT AT MANHOLE SECTIONS.
4. PRECAST CONCRETE:
   - A. PRECAST SUPPLIER SHALL DESIGN WALL THICKNESS AND REINFORCEMENT FOR THE SITE CONDITIONS.
   - B. RISER SECTION SHALL BE PER ASTM C478 (TYPE V PORTLAND CEMENT).
   - C. GASKETS AT JOINTS SHALL BE ASTM C443 O-RING. NON-SHRINK GROUT MAY BE USED IN LIEU OF GASKETS.
   - D. CONNECTIONS TO GRAVITY SEWER LINE(S) SHALL CONFORM TO ASTM C923 WITH 316SS CLAMPS.
   - E. INTERIOR BENCH (FILLET SLOPE) SHALL BE CONSTRUCTED WITH 2000 PSI CONCRETE USING TYPE V PORTLAND CEMENT.
   - F. WHERE SHOWN ON THE DRAWINGS OR NOTED HEREIN MINIMUM WALL AND SLAB THICKNESSES SHALL BE MAINTAINED FOR ANTI-FLOATATION PURPOSES
   - G. WET WELL WALLS SHALL HAVE WATERTIGHT JOINTS MEETING ASTM C478-90. ALL JOINTS AND WALL PENETRATIONS INTO THE WET WELL MUST BE GAS TIGHT PER TCEQ. WET WELL SHALL HAVE INFLOW PROTECTION PER CITY OF ROCKWALL STD DETAIL R-5031.
5. BACKFILL AND COMPACTION: BACKFILL SHALL BE CONSTRUCTED OF ON-SITE CLAY SOILS PLACED IN MAXIMUM LIFTS OF 8 INCHES AND COMPACTED TO +5 TO +7% ABOVE OPTIMUM TO 92% OF STANDARD PROCTOR DENSITY. BROWN AND TAN CLAY AND MARLY CLAY SHALL BE COMPACTED AT +5 TO +7% ABOVE OPTIMUM TO 93% ASTM D698. WEATHERED MARL SHALL BE COMPACTED AT +3 TO +6% OF OPTIMUM TO 94% ASTM D98. DEEPER FILL (OVER 8 FEET BELOW FINISHED GRADE) SHALL BE COMPACTED TO +2 TO +5% ABOVE STANDARD PROCTOR DENSITY REGARDLESS OF SOIL TYPE. IF SOIL CONDITIONS DIFFER FROM THOSE EXPECTED, CONTACT ENGINEER FOR COORDINATION.
6. SWING CHECK VALVES SHALL BE AMERICAN (ACIPCO) SERIES 600 WITH LEVER AND SPRING.
7. PIPE SUPPORTS SHALL BE STANDON MODEL S89 OR EQUAL FLANGED PIPE SUPPORT, OR SHALL BE PER FLANGED PIPE SUPPORT DETAIL.
8. WET WELL SHALL BE COATED WITH CON-SHEILD, RAVEN LINING, OR APPROVED EQUAL.
9. ALL PIPE AND FITTINGS SHALL HAVE A PRIME COAT ON THE OUTSIDE SURFACE AND SHALL HAVE AN INTERIOR LINING OF 40-MILS NOMINAL DRY FILM THICKNESS OF PROTECTO 401 CERAMIC EPOXY LINING OR APPROVED EQUAL, APPLIED IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATIONS.
10. ALL BOLTS, NUTS, WASHERS, ANCHOR BOLTS, FASTENERS, AND RELIEF STRAIN GRIPS SHALL BE 316SS. ANCHOR BOLT SYSTEMS SHALL BE EPOXY OR ADHESIVE TYPE BY HILTI, OR APPROVED EQUAL.
11. PVC PIPE SHALL BE C-900 DR-14 (12" AND SMALLER) OR APPROVED EQUAL
12. DUCTILE IRON PIPE SHALL BE CLASS 200, C-151-75, C-171-76, OR LATEST EDITION THEREOF.
13. ALL FITTINGS SHALL BE DUCTILE IRON CLASS 250, MEETING AWWA C-110-77 OR LATEST REVISION FOR SIZES 12 INCHES AND SMALLER.
14. DUCTILE IRON, FITTINGS AND VALVES SHALL BE COATED AS RECOMMENDED BY FITTING AND VALVE MANUFACTURER FOR EXPOSED PIPE, VALVES AND FITTINGS:
    - a. COATINGS SHALL BE APPLIED IN ACCORDANCE WITH THE PIPE AND VALVE MANUFACTURER'S RECOMMENDATIONS.
    - b. REMOVE ALL COATINGS (EXCEPT FOR NEW EQUIPMENT THAT HAS BEEN SHOP COATED) TO NEAR WHITE.
    - c. BLAST CONDITIONS PER SSPC-SP10.
    - d. SHOP PRIMER: TNEMEC SERIES 1 OMNITHANE, ONE-COAT, 3.0 MILS DFT OR APPROVED EQUAL.
    - e. FIELD PRIMER: TNEMEC SERIES 37H CHEMPRIME, ONE-COAT, 2.0 MILS DFT OR APPROVED EQUAL.
    - f. TOP COAT: TNEMEC SERIES 66 HIGH-BUILD EPOXOLINE, ONE-COAT, 4.0 MILS DFT OR APPROVED EQUAL.



REPRESENTATIVE SECTION A

SCALE: 1/4"=1'-0"

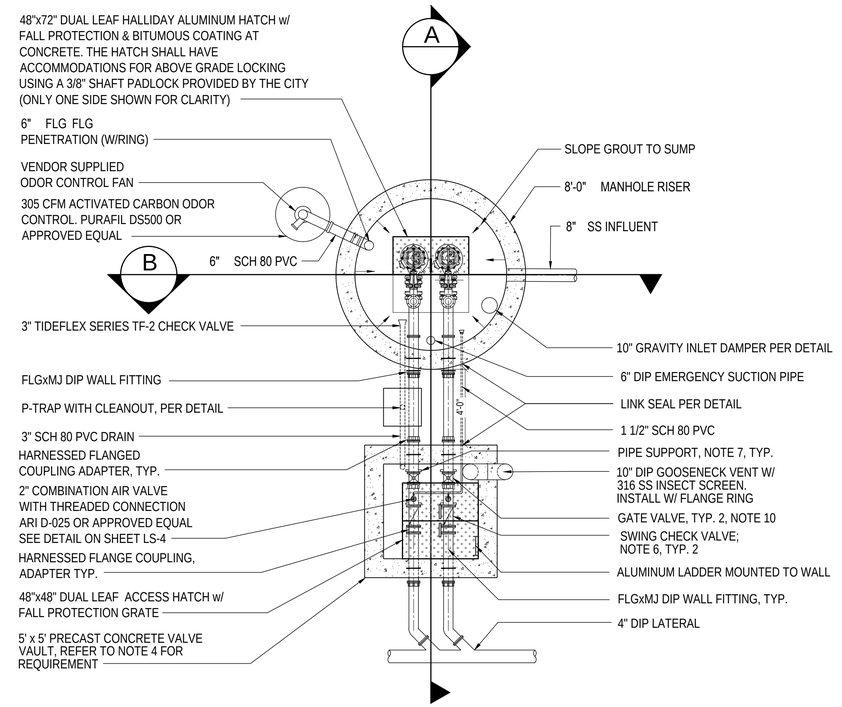


NOTES:

1. FLOATS SHALL BE FIELD ADJUSTED AS NECESSARY.
2. EMERGENCY SUCTION PIPE NOT SHOWN FOR CLARITY.

PARTIAL SECTION B

SCALE: 1/4"=1'-0"



REPRESENTATIVE PIPING PLAN

SCALE: 1/4"=1'-0"

STATE OF TEXAS
JUSTIN A. ANGEL
129386
LICENSED PROFESSIONAL ENGINEER

03.04.2022

PERKINS ENGINEERING CONSULTANTS, INC.
A Mead & Hunt owned firm -TBPELS Registration No. 9593

DEVELOPMENT PLANS FOR

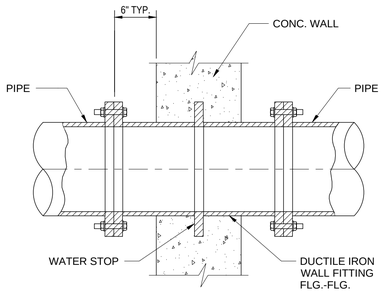
NELSON LAKE ESTATES

ROCKWALL, TEXAS

LIFT STATION PLAN AND SECTIONS

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
KDF	JAA	MAP	LS-3
JOB NUMBER	DATE	SCALE	
COR 21-001	03/04/2022	AS NOTED	

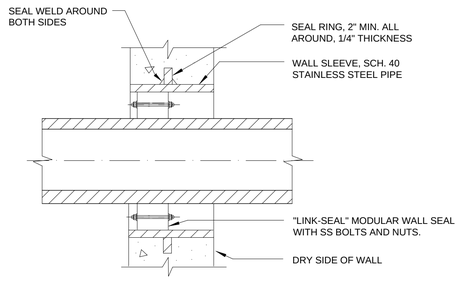
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WALL FITTINGS CAN BE FLG.-FLG. (SHOWN), FLG.-MJ FLG.-PE, MJ-MJ, MJ-PE, PE-PE.

DIP WALL FITTING

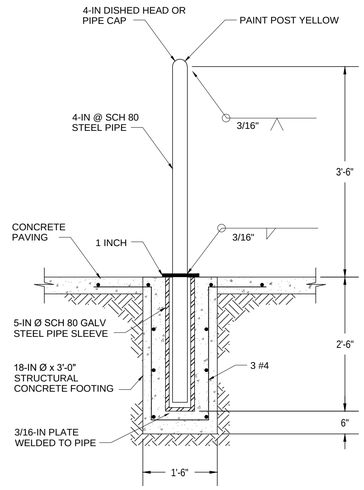
SCALE: NTS



FOR CORE DRILLED WALLS, WALL SLEEVE IS NOT REQUIRED. PLACE PIPE IN CORE DRILLED HOLE. COAT HOLE WITH EPOXY TO PROTECT REBAR.

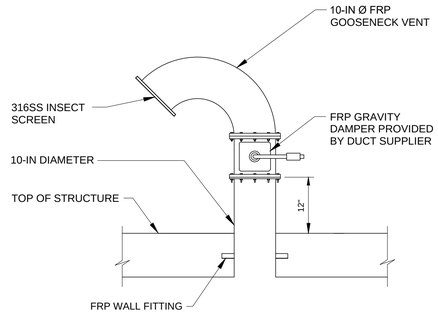
LINK SEAL WALL FITTING

SCALE: NTS



REMOVABLE BOLLARD DETAIL

SCALE: NTS

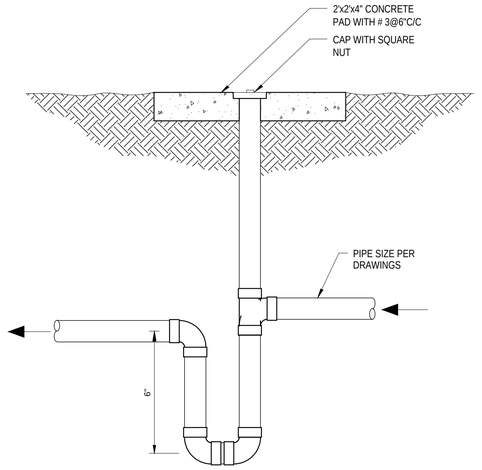


NOTES:

1. ALL HARDWARE SHALL BE 316SS.
2. BACKDRAFT SHALL OPEN WHEN VACUUM EXCEEDS 1 INCH W.C.

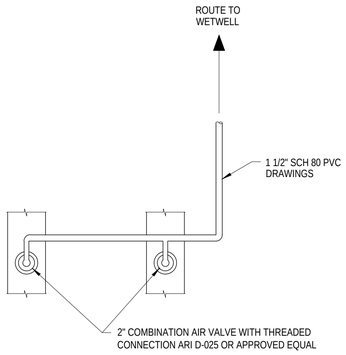
GRAVITY INLET DAMPER

SCALE: NTS



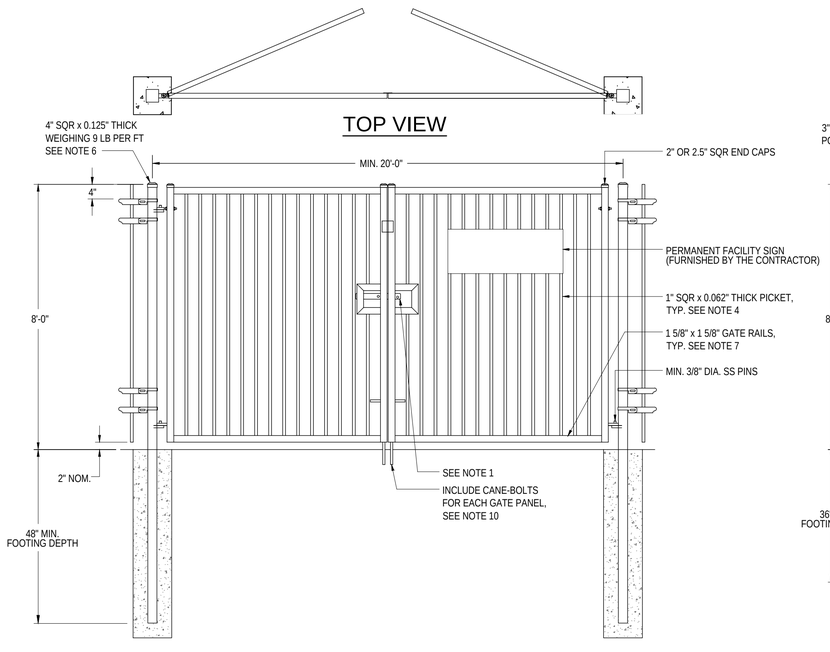
P-TRAP WITH CLEANOUT

SCALE: NTS



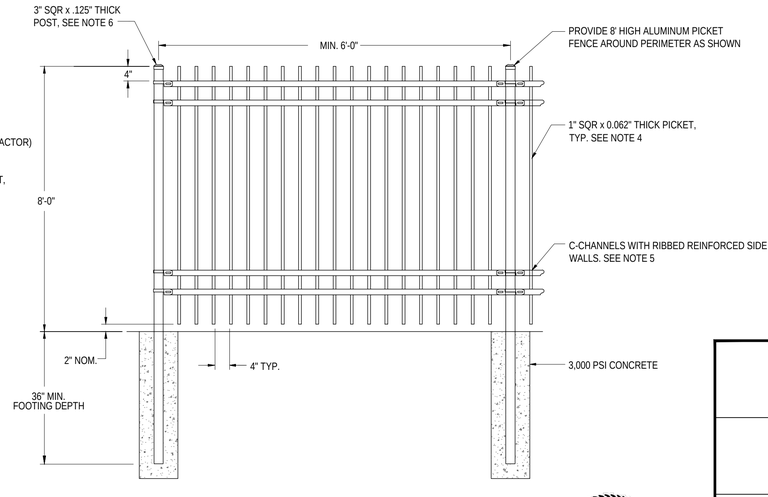
AIR VALVE PIPING

SCALE: NTS



ALUMIMUN PICKET FENCE DETAIL AT GATE

SCALE: NTS



ALUMINUM PICKET FENCE DETAIL

SCALE: NTS

NOTES:

1. PROVIDE LOCK ASSEMBLY TO SECURE GATE WITH A PADLOCK. EACH GATE SHALL HAVE A HASP FOR CHAIN LOCKING WELDED TO THE FRAME.
2. ALL COMPONENTS SHALL BE MANUFACTURED FROM ALUMINUM EXTRUSIONS HAVING A MINIMUM ULT STRENGTH OF 35,000 PSI USING 6005 T5 ALLOY.
3. FENCE, POSTS, AND GATES SHALL BE POWDER COATED BLACK WITH A MINIMUM CURE FILM THICKNESS OF 2.0 MILS.
4. THE HOLLOW PICKETS SHALL PASS THROUGH THE RAILS AND ARE TO BE ALWAYS PARALLEL TO THE TERRAIN. SCREWS SHALL BE ON ONE SIDE OF THE RAIL ONLY.
5. HEAVY INDUSTRIAL RAILS SHALL BE 1 5/8" x 1 5/8" WITH A SIDE THICKNESS OF 0.1", TOP WALL THICKNESS 0.07" AND BOTTOM WALL THICKNESS OF 0.062", WHICH SNAPS INTO THE TOP ALLOWING ALL SCREWS TO BE ENCLOSED INSIDE THE RAIL.
6. POSTS SHALL BE HOLLOW SQUARE EXTRUSION WITH HOLES PRE-PUNCHED TO ALLOW THE RAILS FROM THE FENCE SECTIONS TO SLIDE INTO THEM. ALL POSTS SHALL INCLUDE ALUMINUM POST CAPS.
7. THE GATE SHALL HAVE A DOUBLE RAIL THAT ALLOWS FOR HIDDEN FASTENERS AND NO EXPOSED CAVITIES UNDER THE RAIL.
8. THE GATE SHALL BE DESIGNED AND MANUFACTURED BY THE FENCE MANUFACTURER.
9. ASSEMBLED GATE SECTION SHALL BE ABLE TO SUPPORT 500 LB OF VERTICAL LOAD AT THE MID-POINT OF ANY HORIZONTAL FRAME RAIL.
10. CANE-BOLTS SHALL HAVE A STOP TO HOLD IT IN THE UP POSITION FOR OPERATING THE GATE.

PERKINS ENGINEERING CONSULTANTS, INC.
A Mead & Hunt owned firm -TBPELS Registration No. 9593

DEVELOPMENT PLANS FOR

NELSON LAKE ESTATES

ROCKWALL, TEXAS

LIFT STATION DETAILS

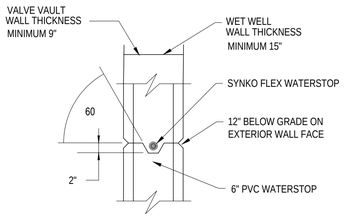
STATE OF TEXAS
JUSTIN A. ANGEL
129386
LICENSED
PROFESSIONAL ENGINEER

03.04.2022

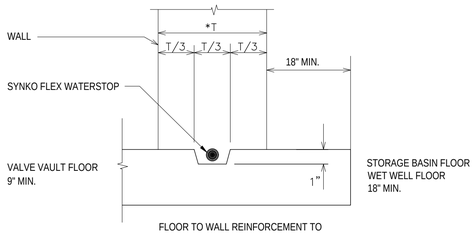
DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
KDF	JAA	MAP	LS-4
JOB NUMBER	DATE	SCALE	
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WALL SECTION



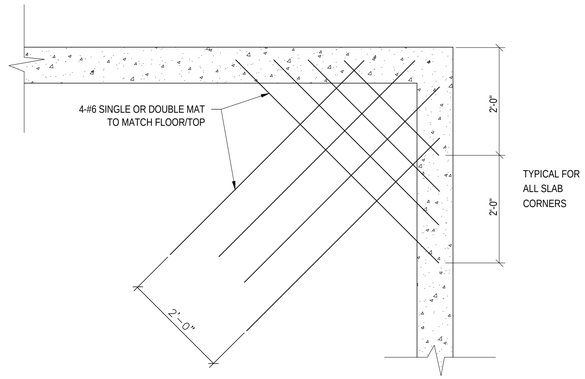
WALL - FLOOR CONNECTION



FLOOR TO WALL REINFORCEMENT TO
BE CONTINUOS FOR 36" IN FLOOR AND UP WALL
NO SPLICE WITHIN 36" OF INTERFACE

WATER-STOP CONSTRUCTION

SCALE: NTS

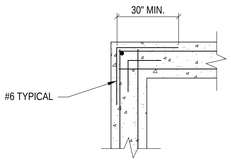


ADDITIONAL REINFORCING @ EXTERIOR CORNER

SCALE: NTS

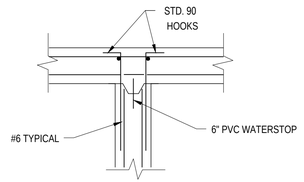
* MINIMUM LAP LENGTH

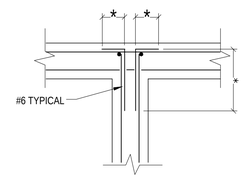
ALL 90 BENDS AS SHOWN UNLESS OTHERWISE INDICATED ON DESIGN DRAWINGS. INSTALL ADDITIONAL VERTICAL BARS AT HOOKS AS SHOWN.



TYPICAL CORNER REINFORCEMENT

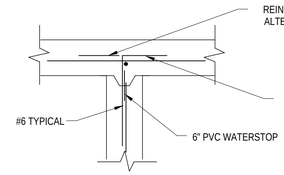
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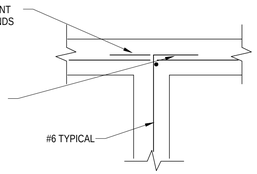




TYPICAL INTERSECTION FOR DOUBLE CURTAIN

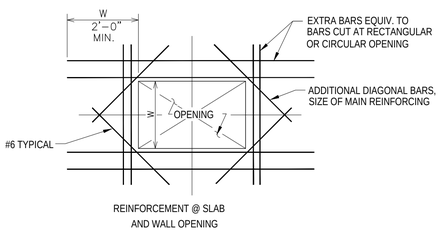
SCALE: NTS





CORNER REINFORCEMENT DETAILS

SCALE: NTS



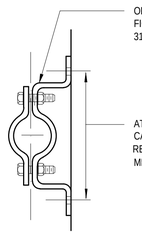
REINFORCEMENT @ SLAB
AND WALL OPENING

NOTES:

1. REINFORCING AS INDICATED ON SECTION DETAIL
2. W=DIMENSION OF OPENING
   PERPENDICULAR TO BARS CUT.

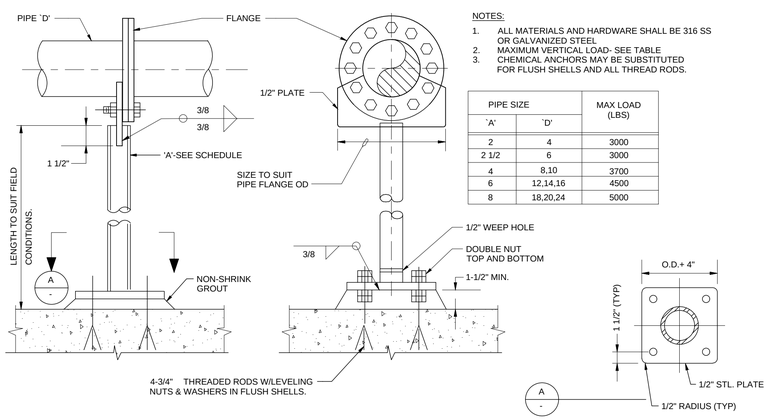
ADDITIONAL REINFORCING AROUND OPENINGS

SCALE: NTS



TYPICAL OFFSET PIPE SUPPORT

SCALE: NTS



NOTES:

1. ALL MATERIALS AND HARDWARE SHALL BE 316 SS OR GALVANIZED STEEL
2. MAXIMUM VERTICAL LOAD- SEE TABLE
3. CHEMICAL ANCHORS MAY BE SUBSTITUTED FOR FLUSH SHELLS AND ALL THREAD RODS.

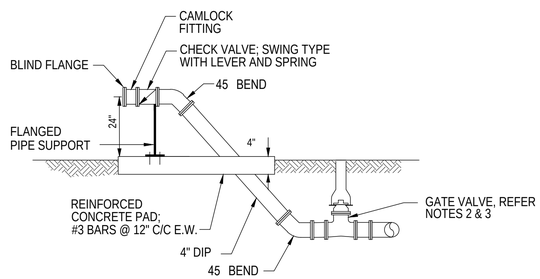
PIPE SIZE		MAX LOAD (LBS)
`A'	`D'	
2	4	3000
2 1/2	6	3000
4	8,10	3700
6	12,14,16	4500
8	18,20,24	5000

FLANGED PIPE SUPPORT DETAIL

SCALE: NTS

NOTES:

1. SWING CHECK VALVES SHALL BE AMERICAN (ACIPCO) SERIES 600 w/ LEVER AND SPRING.
2. GATE VALVES SHALL BE AMERICAN-SERIES 2500 2"-12" RESILIENT WEDGE GATE VALVES WITH FLANGED ENDS OR APPROVED EQUAL.
3. GATE VALVE BOX AND EXTENSION STEM PER CITY OF ROCKWALL STANDARD R-4050



BYPASS WITH CAMLOCK FITTING

SCALE: NTS



03.04.2022

PERKINS ENGINEERING CONSULTANTS, INC.
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DEVELOPMENT PLANS FOR

NELSON LAKE ESTATES

ROCKWALL, TEXAS

LIFT STATION DETAILS

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
KDF	JAA	MAP	LS-5
JOB NUMBER	DATE	SCALE	
COR 21-001	03/04/2022	AS NOTED	

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ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
	BRANCH CIRCUIT PANEL BOARD
	CONTROL PANEL
	TELEPHONE TERMINAL BOARD
TB	TERMINAL BOARD
2	CONDUIT WITH WIRE HOT NEUTRAL SWITCH LEG GROUND
	CONCEALED CONDUIT OR UG CONDUIT
	EXPOSED CONDUIT
	GROUND MAT
	CONDUIT - UP
	CONDUIT - DOWN
	CONDUIT - STUBBED AND CAPPED
S	SOUND SYSTEM WIRING RUN
OE	OVERHEAD ELECTRIC LINES
T	CONDUIT FOR TELEPHONE, 3/4" UNLESS OTHERWISE INDICATED
	ABANDON CONDUIT & REMOVE CONDUCTORS
LP-1,3	HOME RUN, LP INDICATES PANEL LP, 1,3 INDICATES CIRCUITS 1 & 3.
DP-1/3 DP-1/3/5	HOME RUN (208/1PH, 480V/1PH OR 3PH), DP INDICATES PANEL DP-1/3 INDICATES (2) POLE BKR, CKTS 1 & 3 DP-1/3/5 INDICATES (3) POLE BKR, CKTS 1, 3, & 5
XXX	CABLE IDENTIFICATION TAG
XXX	INST./CONTROL CABLE IDENTIFICATION TAG
XX XX	NAMEPLATE OR LEGEND PLATE, SEE SCH.
XXXXXXX	INSTRUMENT TAG NUMBER
	NOTE ON SHEET, NO. AS INDICATED
	LUMINAIRE, TYPE AS NOTED
B	LUMINAIRE, TYPE AS NOTED
A	LUMINAIRE FLUORESCENT, TYPE AS NOTED
A	LUMINAIRE AND POLE, TYPE AS NOTED
D	WALL MOUNTED LUMINAIRE, TYPE AS NOTED
	FLOODLIGHTS AIM IN DIRECTION SHOWN
E	EXIT SIGN
D	EXIT/EMERGENCY COMBO
C	EMERGENCY LIGHTING UNIT
$3	LIGHT SWITCH, '3' INDICATES 3-WAY SWITCH
$M	MOTORIZED SWITCH
MSP	MANUFACTURER SUPPLIED PACKAGE INCLUDES LOCAL COMBINATION STARTER, MOTOR AND CONTROL PANEL. NUMBER INDICATES HORSE POWER
10 M	MOTOR, SQUIRREL CAGE INDUCTION HORSEPOWER INDICATED ON ONE LINE, NUMBER INDICATES HORSEPOWER
	CONVENIENCE RECEPTACLE-DUPLEX UNLESS SPECIFIED OTHERWISE C = CLOCK HANGER CR = CORROSION RESISTANT EWC = WATER COOLER TL = TWIST LOCK WP = WEATHERPROOF GFCI = GROUND FAULT CIRCUIT INTERRUPTER
	RECEPTACLE - 240V/1PH OR 208V/1PH
	MULTI-OUTLET ASSEMBLY
	RECEPTACLE - 480V/3PH OR 208V/3PH

SYMBOL	DESCRIPTION
J	JUNCTION BOX
T	THERMOSTAT
	TELEPHONE/DATA OUTLET
	INSTRUMENT
	GROUND TEST WELL, REFER TO STANDARD DETAIL
	COPPERCLAD GROUND ROD
	GROUNDING PAD
	CIRCUIT BREAKER - THERMAL MAGNETIC 3 POLE UNLESS INDICATED OTHERWISE CONTINUOUS AMP TRIP SETTING INDICATED
100A	SWITCH - CURRENT RATING INDICATED. 3 POLE UNLESS INDICATED OTHERWISE
800AF/600AT	DRAWOUT AIR CIRCUIT BREAKER LOW VOLTAGE, FRAME SIZE AND TRIP SETTING INDICATED
1200A 52	DRAWOUT AIR OR VACUUM CIRCUIT BREAKER, (VCB) MEDIUM VOLTAGE, FRAME SIZE INDICATED
	LIGHTNING AND SURGE ARRESTOR
	FUSE, (ONE LINE DIAGRAM OR SCHEMATIC)
10	CAPACITOR - KVAR INDICATED
	GROUND, (ONE LINE DIAGRAM OR SCHEMATIC)
480V 120V	CONTROL POWER TRANSFORMER - VOLTAGES INDICATED
2000KVA	POWER DISTRIBUTION TRANSFORMER VOLTAGES AND RATING INDICATED
4160/480V	SHIELDED ISOLATED TRANSFORMER VOLTAGES AND RATING INDICATED
3	CURRENT TRANSFORMER - NUMBER INDICATES QUANTITY
1	WINDOW CURRENT TRANSFORMER ENCLOSING ALL CONDUCTORS
24" W	CABLE TRAY, LADDER TYPE, WIDTH AS INDICATED
ATS	AUTOMATIC TRANSFER SWITCH
	ELECTRICAL SERVICE METER
OR	CONTROL STATION
	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY OPEN
	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY CLOSED
	PUSHBUTTON SWITCH, MAINTAINED CONTACTS, WITH MECHANICAL INTERLOCK
OFF LOCAL REMOTE POLE 1 XOO POLE 2 OOX	SELECTOR SWITCH-MAINTAINED CONTACT. CHART DEFINES OPERATION:

POLE	POSITION		
	LOCAL	OFF	REMOTE
1	X	0	0
2	0	0	X

X = CLOSED CONTACT 0 = OPEN CONTACT

SYMBOL	DESCRIPTION
	PANELBOARD
	NON FUSED DISCONNECT
	FUSED DISCONNECT
	LOCAL COMBINATION (IN FIELD) MAGNETIC STARTER WITH THERMAL OVERLOAD

SYMBOL	DESCRIPTION
	FLOW SWITCH
	LIMIT SWITCH
	PRESSURE SWITCH
	TEMPERATURE SWITCH OR THERMOSTAT
	VACUUM SWITCH
L.O. STOP	LOCKOUT STOP PUSH-BUTTON
	NORMALLY OPEN DELAY ON MAKE
	NORMALLY CLOSE DELAY ON MAKE
	NORMALLY CLOSE DELAY ON BREAK
	NORMALLY OPEN DELAY ON BREAK
	FLOAT SWITCH
A	INDICATING LIGHT - PUSH TO TEST LETTER INDICATES COLOR.
	MEDIUM VOLTAGE VACUUM INTERRUPTER
	CONTACT - NORMALLY OPEN
	CONTACT - NORMALLY CLOSED
	THERMAL OVERLOAD RELAY
	BASIC RELAY SYMBOL * SOME RELAY FUNCTIONS: ALT = ALTERNATOR CR = CONTROL RELAY TR = TIMING RELAY M = MOTOR CONTACTOR
	TERMINALS FOR FIELD OR REMOTE WIRING CONNECTIONS. DEVICES LOCATED BETWEEN THESES SYMBOLS ARE LOCATED IN THE FIELD OR REMOTELY.
	MOTOR OR STARTER ENCLOSURE SPACE HEATER (ONE LINE DIAGRAM OR SCHEMATIC)
+ -	BATTERY
	SOLID STATE DEVICE SUCH AS RECTIFIER OR SCR DRIVE
	DEVICE LOCATED AT MOTOR OR IN FIELD
	DEVICE LOCATED AT VALVE
	DEVICE LOCATED IN MCC
	DEVICE LOCATED IN SWGR - 5KV
	DEVICE LOCATED IN CONTROL/ INSTRUMENT PANEL
	STROBE/HORN
F	MANUAL PULL STATION
	SILENCE SWITCH
	EMERGENCY STOP
M	MOTOR OPERATED

LEGEND:

- MODIFIED OR DEMOLISHED
- PROPOSED
- EXISTING

SWITCHGEAR / MCC SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
87T	TRANSFORMER DIFFERENTIAL PROTECTIVE RELAY	T	TACHOMETER (4-20ma)
AM	AMMETER	TDR	TIME DELAY RELAY
AS	SWITCH BREAKER	VAR	VAR METER
CS	CONTROL SWITCH	VM	VOLTMETER
E	ELECTRICAL INTERLOCK	VS	VOLTMETER SWITCH
ETM	ELAPSED TIME METER	W	WATTMETER
K	KEY INTERLOCK	W VAR	WATT/WATT HOUR TRANSDUCER
PF	POWER FACTOR METER	WH	WATT-HOUR METER
RPM	RPM METER	WHD WH	WATT HOUR DEMAND/WATT HOUR METER
SST	SOLID STATE TRIP		

ELECTRICAL ABBREVIATIONS

A	AMPERAGE	L, LP	LIGHTING PANEL	RVNR	REDUCED VOLTAGE NON-REVERSING
AC	ALTERNATING CURRENT	LA	LIGHTNING ARRESTOR	RVR	REDUCE VOLTAGE REVERSING
ACU	AIR CONDITIONING UNIT	LC	LIGHTING CONTACTOR	RVSS	REDUCE VOLTAGE SOLID STATE
AIT	ANALYZER INDICATING TRANSMITTER	LCP	LOCAL CONTROL PANEL	RTD	RESISTANCE TEMP DETECTORS
AJB	ANALOG JUNCTION BOX	LE	LEVEL ELEMENT	RTU	REMOTE TERMINAL UNIT
AM	AMMETER	LIT	LEVEL INDICATING TRANSMITTER		
ANN	ANNUNCIATOR	LLO	LOW LEVEL LOCKOUT		
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE	LO	LOCKOUT	S, SV	SOLENOID VALVE
ATS	AUTOMATIC TRANSFER SWITCH	LPU	LOCAL PROCESSING UNIT	SC	SHORT CIRCUIT
AUTO	AUTOMATIC	LR	LATCH RELAY	SCADA	CONTROL AND DATA ACQUISITION
AUX	AUXILIARY	LRC	LOCKED ROTOR CURRENT		
		LMS	LIMIT SWITCH	SCU	SPEED CONTROL UNIT SUPPLY
B	BELL	LS	LEVEL SWITCH	SF	FAN
BFM	BLOWER FILTER MOTOR	LSC	LIMIT SWITCH VALVE CLOSE	SPD	SURGE PROTECTIVE DEVICE
BYZ	WINDOW CURRENT TRANSFORMER	LSH	LEVEL HIGH SWITCH	SRV	SURGE RELIEF VALVE
		LSL	LEVEL LOW SWITCH	SS	STAINLESS STEEL
C,COND	CONDUIT	LSO	LIMIT SWITCH VALVE OPEN	SW	NETWORK SWITCH
CB	CIRCUIT BREAKER	LTG	LIGHTING	SWG	SWITCHGEAR
CC	CONTROL CABLE	LV	LOW VOLTAGE	SWT	SWITCH
C/C	CENTER TO CENTER				
CHH	COMMUNICATIONS HAND HOLE	MCC	MOTOR CONTROL CENTER	T	THERMOSTAT
CJB	CONTROL JUNCTION BOX	MGB	MASTER GROUND BAR	TB	TERMINAL BOX
CKT	CIRCUIT	MJB	MOTOR JUNCTION BOX	TD	TIME DELAY
CS	CONTROL SWITCH	MOV	MOTOR OPERATED VALVE	TDC	TIME DELAY CLOSING
CT	CURRENT TRANSFORMER	MRP	MOTOR RELAY PROTECTION	TDE	TIME DELAY ENERGIZED
CTRL	CONTROL	MAINT.	MAINTAINED	TDO	TIME DELAY OPENING
CU	CONDENSING UNIT	MCP	MOTOR CIRCUIT PROTECTOR	TJB	TERMINAL JUNCTION BOX
		MCB	MAIN CIRCUIT BREAKER	TP	TWISTED PAIR
DC	DIRECT CURRENT			TSP	TWISTED SHIELDED PAIR
DF	DRINKING FOUNTAIN	N	NEUTRAL GROUNDED CONDUCTOR	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
DFR	DIFFERENTIAL RELAY	NA	NON-AUTOMATIC		
DS	DISCONNECT SWITCH	NC	NORMALLY CLOSED		
DTL	DETAIL	NF	NON-FUSED	UG	UNDERGROUND
		NO	NORMALLY OPEN	UH	UNIT HEATER
EC	EMPTY CONDUIT			UPS	UNINTERRUPTIBLE POWER SUPPLY
EF	EXHAUST FAN	OB	OUTBOARD		
EHH	ELECTRIC HAND HOLE	OC	OVERCURRENT	UV	UNDERVOLTAGE
EXIST.	EXISTING	OHD	OVERHEAD DOOR		
EP	EXPLOSION PROOF	OL	OVERLOAD	V	VOLT
ETM	ELAPSED TIME METER	OPDU	OVERALL POWER DISTRIBUTION UNIT	VCR	VALVE CLOSE RELAY
E-STOP	EMERGENCY STOP	OV	OVERVOLTAGE	VFD	VARIABLE FREQUENCY DRIVE
				VM	VOLTMETER
F	FORWARD	PB	PUSHBUTTON	VP	VAPOR PROOF
FCV	FLOW CONTROL VALVE	PB	PULLBOX	VOR	VALVE OPEN RELAY
FIT	FLOW INDICATING TRANSMITTER	PBR	PUMP-BEARING RELAY		
FT	FLOW TRANSMITTER	PC	PHOTOCELL	W	WIRE
FLA	FULL LOAD AMPERE	PC	PERSONAL COMPUTER	WHD	WATT HOUR DEMAND METER
FLUO	FLUORESCENT	PH	PHASE	WP	WEATHER PROOF
FMR	FEEDER MANAGEMENT RELAY	PLC	PROGRAMMABLE LOGIC CONTROLLER		
FO	FIBER OPTIC	PMT	PAD MOUNTED TRANSFORMER	XFMR	TRANSFORMER
FQI	FLOW INTEGRATED TOTALIZER	PMGR	PAD MOUNTED SWITCHGEAR		
FU	FUSE	PP	POWER PANEL		
FVNR	FULL VOLTAGE NON-REVERSING	PR	PRESETTING RELAY (TIMER)		
FVR	FULL VOLTAGE REVERSING	PSI	POUNDS PER SQUARE INCH		
		PT	POTENTIAL TRANSFORMER		
GALV	GALVANIZED	PTT	PUSH TO TEST		
GEN	GENERATOR	PVC	POLYVINYL CHLORIDE		
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	PWR	POWER		
G,GND	GROUND				
		R	RELAY		
HH	HAND HOLE	REV	REVERSE		
HOA	HAND OFF AUTOMATIC	REQD	REQUIRED		
HS	HAND SWITCH	RGS	RIGID GALVANIZED STEEL		
HV	HIGH VOLTAGE	RLY	RELAY		
		RS	RIGID STEEL		
IC	INTERRUPTING CAPACITY				
IGV	INLET GUIDE VANE				
INCAND	INCANDESCENT				
INST	INSTANTANEOUS				
INB	INBOARD				
JB	JUNCTION BOX				
K	KEY INTERLOCK				
KS	INTERLOCK KEY SWITCH				
KVA	KILOVOLT-AMPERE				
KW	KILOWATT				

LKC-ES
ENGINEERING SERVICES
ENGINEERING SERVICE TBPE FIRM #13810

STATE OF TEXAS
TIMOTHY E. CAMPBELL
81011
LICENSED
PROFESSIONAL ENGINEER
03/04/22

PERKINS ENGINEERING CONSULTANTS, INC.
A Mead & Hunt owned firm -TBPELS Registration No. 9593

DEVELOPMENT PLANS FOR

NELSON LAKE ESTATES

ROCKWALL, TEXAS

ELECTRICAL LEGEND

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
KDF	JAA	MAP	E-1
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COR 21-001	01/10/2022	AS NOTED	

\\LKC-ES\Projects\PEC2107 Nelson Estates LS\Drawings\Electrical\E-1 ELECTRICAL LEGEND.dwg Mar 04, 2022 - 10:44am User: LKC

LIFT STATION NOTES:

GENERAL:

1. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICIAN IN THE STATE OF TEXAS.
2. ALL CONDUITS MUST BE RUN PLUMB AND SHALL NOT HAVE LOOSE CONNECTIONS.
3. ALL WIRING SHALL BE XHHW INSULATION WITH STRANDED COPPER CONDUCTORS.
4. ALL ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM.
5. ALL BELOW GRADE CONDUITS SHALL BE RIGID SCHEDULE 80 PVC WITH PVC COATED STEEL ELBOWS. ELBOWS MUST BE LONG SWEEP ELBOWS.
6. ENCLOSURES SHALL BE NEMA 4X, 316 STAINLESS STEEL UNLESS SPECIFICALLY NOTED OTHERWISE.
7. ELECTRICAL INSTALLATION MUST BE PER NATIONAL ELECTRIC CODE AS AMENDED BY THE AUTHORITY HAVING JURISDICTION.
8. PROVIDE FREE STANDING PUMP CONTROL PANEL WITH PHYSICAL SEPERATION OF POWER AND CONTROL SECTIONS.
9. CONTROL PANEL SHALL BE MANUFACTURED TO INCLUDE ALL OF THE DEVICES INDICATED AS WELL AS A METERING SECTION.
10. CONTROL PANEL SHALL INCLUDE A SURGE PROTECTIVE DEVICE AND AN ISOLATION BREAKER FOR THE SURGE PROTECTION.
11. CONTROL PANEL SHALL INCLUDE SERVICE RATED AUTOMATIC TRANSFER SWITCH RATED FOR 100A.
12. THE CONTROL SYSTEM SHALL BE DESIGNED TO OPERATE THE REQUIRED NUMBER OF PUMPS SPECIFIED ON THE DRAWING AT THE POWER CHARACTERISTICS SHOWN ON THE PLANS. THE CONTROL FUNCTION SHALL PROVIDE FOR THE OPERATION OF THE PUMPS IN HAND (MANUAL) AND AUTO (CONTROLLED BY PLC). SEE "24 VAC REGULATOR SYSTEM" FOR FURTHER INFORMATION. THE CONTROL SHALL FUNCTION AS DESCRIBED BELOW. THE EQUIPMENT LISTED BELOW IS A GUIDE AND DOES NOT RELIEVE THE SUPPLIER FROM PROVIDING A SYSTEM THAT WILL FUNCTION AS REQUIRED.
13. THE POWER PANEL DISTRIBUTION SHALL INCLUDE ALL NECESSARY COMPONENTS AND BE WIRED WITH STRANDED COPPER CONDUCTORS RATED AT A MINIMUM OF 75 DEGREES C.
14. MOTOR STARTERS SHALL BE OPEN FRAME, ACROSS THE LINE; NEMA RATED WITH INDIVIDUAL OVERLOAD PROTECTION IN EACH LEG. MOTOR STARTER CONTACT AND COIL SHALL BE REPLACEABLE FROM THE FRONT OF THE STARTER WITHOUT BEING REMOVED FROM ITS MOUNTED POSITION. OVERLOAD HEATERS SHALL BE SOLID STATE MOTOR LOGIC TYPE WITH THE FOLLOWING FEATURES: 3 TO 1 ADJUSTMENT FOR TRIP CURRENT, PHASE LOSS AND UNBALANCE PROTECTION, LED POWER INDICATION, AMBIENT INSENSITIVE AND SELF-POWERED, AND SHALL HAVE AVAILABILITY OF ELECTRICAL REMOTE RESET. OVERLOADS SHALL BE SIZED FOR THE FULL LOAD AMPERAGE DRAW OF THE PUMPS. DEFINITE PURPOSE CONTACTORS, FRACTIONAL SIZE STARTERS AND HORSEPOWER RATED CONTACTORS OR RELAYS SHALL NOT BE ACCEPTABLE.
15. FOLLOW ALL THE REQUIREMENTS FOR THE PROCESS CONTROL SYSTEMS IN TESTING & COMMISSIONING AS PER SPEC SECTION-13302.

GENERATOR:

1. GENERATOR SHALL BE MANUFACTURED BY CAT, KOHLER, CUMMINGS WEATHER PROOF LEVEL 1 SOUND ATTENUATING ENCLOSURE OF 75dBA AND SHALL MEET LATEST NOISE ORDINANCES ADOPTED BY CITY OF PRINCETON. EMERGENCY GENERATOR WITH AUTOMATIC TRANSFER SWITCH CAPABLE OF PROGRAMMABLE TEST DATES AND TIMES. INPUTS SHALL BE PROVIDED TO PLC TO INDICATE GENERATOR RUNNING, GENERATOR ALARM, AND GENERATOR LOW FUEL.
2. PROVIDE ENGINE BLOCK HEATER TO OPERATE ON 208V, SINGLE PHASE AND BATTERY CHARGER OPERATED FROM 120V SINGLE PHASE FOR THE GENERATOR.
3. GENERATOR MUST MEET EPA EMISSIONS REQUIREMENTS FOR STANDBY OPERATION.
4. GENERATOR MUST INCLUDE CIRCUIT BREAKER TO PROTECT THE ALTERNATOR. INSULATION LEVEL TO BE CLASS H.
5. ALTERNATOR SHALL HAVE COPPER WINDINGS AND PROVIDE 480/277V, WYE THREE-PHASE, FOUR-WIRE, 60 HERTZ.
6. MOUNTING FRAME SHALL BE INDEPENDENT OF CONCRETE FOUNDATION FOR SUPPORT.
7. PROVIDE VOLTAGE REGULATION FOR THE GENERATOR SET.
8. ENGINE SHALL RUN ON #2 DIESEL FUEL.
9. MUFFLER/SILENCER SHALL BE CRITICALLY RATED AND MOUNTED INSIDE THE ENCLOSURE.
10. GENERATOR SHALL INCLUDE 3YR PARTS & MAINTENANCE WARRANTY.
11. SITE SHALL BE TESTED WITH ALL LOADS POWERED BY THE GENERATOR PRIOR TO CITY ACCEPTANCE.
12. CONTRACTOR SHALL PROVIDE FULL TANK OF DIESEL FUEL AFTER START-UP. TESTING AND FINAL ACCEPTANCE BY THE CITY

SCADA:

1. CONTRACTOR TO INCLUDE COST FROM SCADA INTEGRATOR FOR THE LIFT STATION. INSTALLATION, PROGRAMING AND TESTING OF CONTROL SYSTEM.
2. PLC AND ENCLOSURE SHALL BE PROVIDED BY SCADA INTEGRATOR: RLC CONTROLS
3. RLC CONTROLS WILL BE RESPONSIBLE FOR PROGRAMMING OF THE PLC AND ADDITION OF THE SITE TO SCADA, HMI AND HISTORIAN. CONTACT: SAUL SANCHEZ, AT 972-890-7910, EMAIL: SAUL@RLCCONTRLOS.COM.
4. PLC SHALL INCLUDE LICENSE RADIO FREQUENCY TO COMMUNICATE TO CITY'S SCADA. INCLUDE PORTS FOR FUTURE COMMUNICATION TIE-INS.
5. PLC SHALL BE MODICON MODEL M340, WITH NETWORK CARD TO ALLOW FOR SYNC WITH TIME SERVER AS PER CITY STANDARD AND SPECIFICATION. PROVIDE NETWORK SWITCH FOR FUTURE CONNECTION TO FIBER OPTIC NETWORK.
6. SCADA PANEL SHALL INCLUDE RELAY LOGIC TO PROVIDE AUTOMATIC FLOAT OPERATION IN THE EVENT OF A PLC FAILURE.
7. PLC SHALL INCLUDE UPS FOR OPERATION UP TO 4 HOURS IN THE EVENT OF A POWER FAILURE. UPS WILL PROVIDE A SIGNAL TO THE PLC THAT THE UPS IS ON BATTERY POWER.
8. LEVEL TRANSMITTER TO PROVIDE 4-20 mA OUTPUT AND BE USED FOR PRIMARY OPERATION OF THE PUMPS.
9. LEVEL SWITCHES SHALL BE PROVIDED FOR BACKUP OPERATION PUMPS OFF, LEAD PUMP ON, LAG PUMP ON AND HIGH LEVEL ALARM. LEVEL SWITCHES SHALL BE SET TO INITIATE PUMP STARTS ABOVE THE NORMAL SETPOINTS FOR PUMP OPERATION BASED ON THE LEVEL TRANSMITTER.
10. THE CONTROL SYSTEM SHALL PROVIDE FOR BOTH AUTOMATIC AND MANUAL CONTROL AND ALTERNATION OF THE PUMPS TO MAINTAIN A PUMPED DOWN CONDITION OF THE WET WELL. WET WELL LEVELS SHALL BE SENSED BY A LEVEL TRANSMITTER. LEVEL SWITCHES SHALL BE INSTALLED AS BACK UP. THE TRANSMITTER SHALL SENSE THE "OFF", "LEAD", "LAG", AND "HIGH" LEVELS AS GIVEN ON THE PLANS. AS THE LEVEL IN THE WET WELL RAISES, THE LEAD PUMP, AS DETERMINED BY THE ALTERNATOR, SHALL START AND PUMP THE STATION TO THE "OFF" POSITION. IN THE EVENT THE INCOMING FLOW EXCEEDS THE CAPACITY OF THE LEAD PUMP, THE LAG PUMP SHALL START AND BOTH PUMPS SHALL RUN TO THE OFF LEVEL. IF THE WET WELL LEVEL CONTINUES TO RISE, HIGH WELL ALARM FUNCTIONS SHALL BE ACTIVATED. THE ALTERNATOR SHALL SWITCH WHEN THE OFF LEVEL IS REACHED.
11. PROVIDE ALL TESTING, AND COMMISSIONING EQUIPMENT, MATERIALS, INCIDENTALS AND LABOR NECESSARY TO PERFORM AND COORDINATE THE SYSTEM CHECK-OUT AND STARTUP AS PER CITY PROCESS CONTROLS SYSTEM TESTING AND COMMISSIONING STANDARD.
12. PROVIDE VISUAL BEACON ON TOP OF PUMP CONTROL PANEL FOR HIGH LEVEL ALARM TELEMETRY.
13. ANTENNA TOWER TO BE ROHN FREE STANDING WITH A HEIGHT TO MATCH EXISTING ANTENNA. ANTENNA TOWER SUPPLIER SHALL PROVIDE A FOUNDATION DESIGN BASED ON THEIR PROPOSED ANTENNA SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS. CITY APPROVED INTEGRATOR TO VERIFY ANTENNA HEIGHT IS ADEQUATE FOR THE RADIO SIGNAL TO REACH THE CITY'S RELAY STATION PRIOR TO ANTENNA TOWER MANUFACTURING. PATH STUDY TO BE PROVIDED BY THE CONTRACTOR.

INPUT OUTPUT LIST	
POINT	DESCRIPTION
DI-01	LEVEL SWITCH LSL-01 ALL PUMPS OFF
DI-02	LOW LEVEL SWITCH LSH-01 RUN 1 PUMP (LEAD)
DI-03	LEVEL SWITCH HIGH LSH-02 RUN 2 PUMPS (LAG)
DI-04	LEVEL SWITCH HIGH LSH-03 HIGH LEVEL ALARM
DI-05	PUMP 1 FAIL/OVER TEMP AND LEAK
DI-06	PUMP 1 RUNNING
DI-07	REMOTE ENABLED PUMP 2
DI-08	PUMP 1 FAIL/OVER TEMP AND LEAK
DI-09	PUMP 2 RUNNING
DI-10	REMOTE ENABLED PUMP 2
DI-11	GENERATOR FAIL
DI-12	GENERATOR LOW FUEL
DI-13	SOURCE UTILITY POWER
DI-14	SOURCE GENERATOR POWER
DI-15	INTRUSION SWITCH
DI-16	UPS ON BACKUP POWER (BATTERY)
DI-17	PHASE FAILURE
DO-01	PUMP 1 RUN COMMAND
DO-02	PUMP 2 RUN COMMAND
DO-03	PUMP 3 RUN
AI-01	WET WELL LEVEL LIT-01

LKC-ES
ENGINEERING SERVICES
ENGINEERING SERVICE TBPE FIRM-#13810

STATE OF TEXAS
TIMOTHY E. CAMPBELL
81011
LICENSED
PROFESSIONAL ENGINEER
03/04/22

PERKINS ENGINEERING CONSULTANTS, INC.
A Mead & Hunt owned firm -TBPELS Registration No. 9593

DEVELOPMENT PLANS FOR

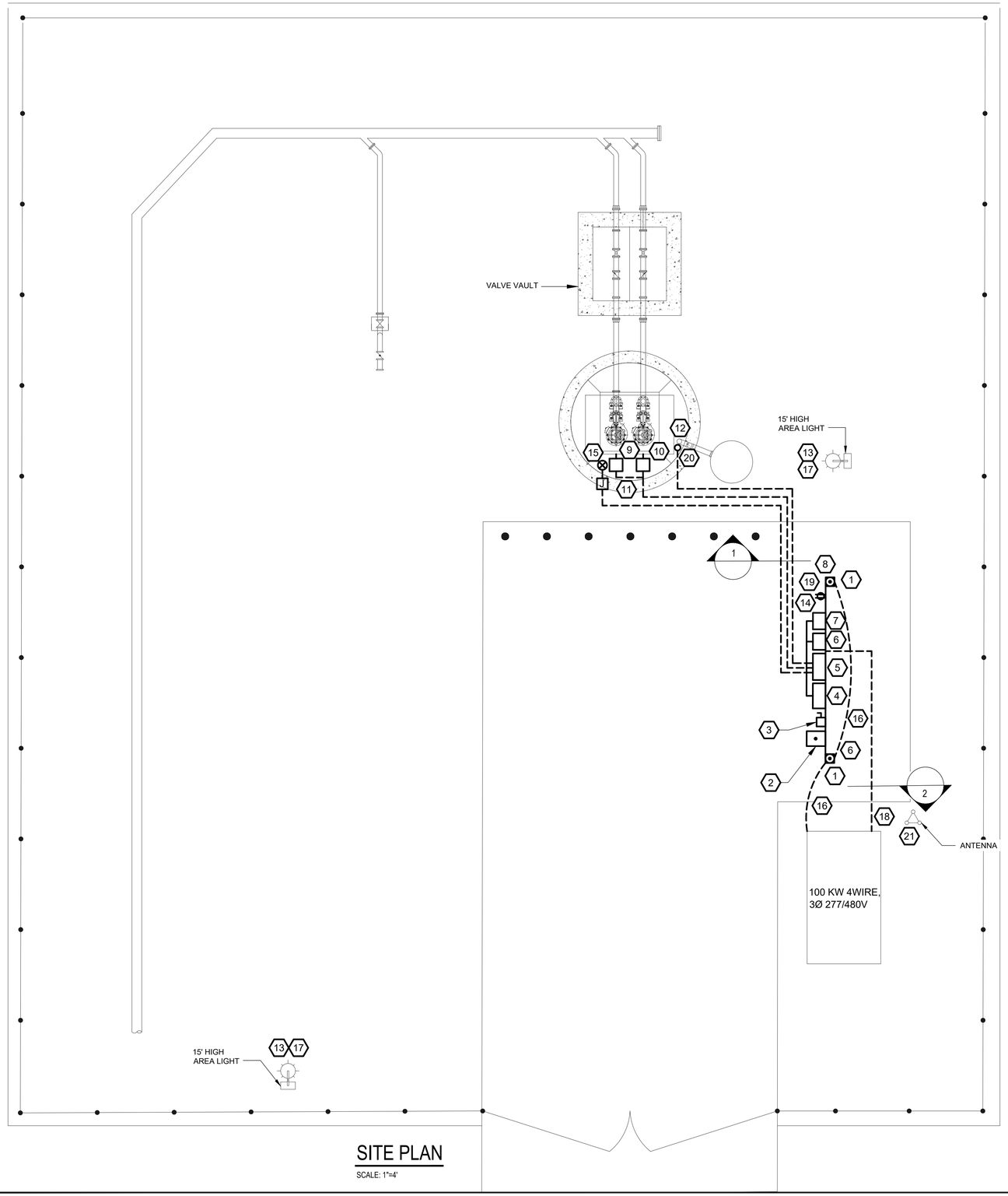
NELSON LAKE ESTATES

ROCKWALL, TEXAS

GENERAL NOTES

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
KDF	JAA	MAP	E-2
JOB NUMBER	DATE	SCALE	
COR 21-001	01/10/2022	AS NOTED	

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SITE PLAN

SCALE: 1"=4'

NOTES BY SYMBOL "⬡":

1. GROUND ROD WITH TEST WELL.
2. UTILITY PRIMARY SERVICE FROM UTILITY TRANSFORMER TO UTILITY METER. METER BASE CONTRACTOR SHALL COORDINATE WITH ELECTRIC UTILITY COMPANY (FARMERS ELECTRIC FRANK SPATARO 903-461-2452).
3. 100A, 3P SERVICE ENTRANCE RATED DISCONNECT SWITCH.
4. 100A, 3P ATS.
5. PUMP CONTROL PANEL PROVIDED BY PUMP MANUFACTURER.
6. MINI POWER ZONE (MPZ).
7. TELEMETRY PANEL.
8. RECEPTACLE MOUNT AT 42" ABOVE GRADE.
9. PROVIDE TERMINATION CABINET MOUNTED TO BE 3' MINIMUM FROM HATCH OPENING.
10. PROVIDE LEVEL SWITCHES AS BACKUP FOR:
    - PUMP OFF
    - HIGH LEVEL ALARM
    - LOW LEVEL LOCK OUT (PROVIDE BYPASS SWITCH IN PUMP CONTROL PANEL FOR LOW LEVEL).
11. MANUFACTURER SUPPLIED CABLE.
12. PROVIDE 10#14,#14G,1"C FROM PUMP CONTROL PANEL TO JUNCTION BOX FOR LEVEL SWITCHES.
13. POLE MOUNTED LIGHT WITH PHOTOCELL ON 15' POLE, PROVIDE CONCRETE FOOTING AND BASE.
14. PROVIDE 2#14 FROM INTRUSION SWITCH TO PUMP CONTROL PANEL, SCADA PANEL, AND TELEMETRY PANEL.
15. PROVIDE PRESSURE LEVEL TRANSDUCER TO HANG FREE WITH FLOATS. PROVIDE 2#12,#12G TO MPZ-4 AND 1PR#16TSP TO SCADA PANEL.
16. #1/0 BARE COPPER. BOND TO GROUND RODS, EQUIPMENT RACK, ANTENNA TOWER AND GENERATOR.
17. ROUTE CONDUCTORS THROUGH LIGHTING CONTACTOR.
18. PROVIDE 2#10,#10G,3/4"C FOR GENERATOR HEATER.
19. PROVIDE DUPLEX GFCI RECEPTACLE FOR ODOR CONTROL.
20. MOUNT CONDUITS ON STRUCTURE AS PER MANUFACTURER RECOMMENDATION.
21. FOR BIDDING PURPOSE, PROVIDE 45' MINIMUM ROHN FREE STANDING ANTENNA TOWER. THE FINAL HEIGHT AND LOCATION FOR THE ANTENNA IS TO BE COORDINATED WITH THE CONTRACTOR AND THE ANTENNA MANUFACTURER. FOUNDATION DESIGN TO BE PROVIDED BY ANTENNA SUPPLIER.



1. 3#2,#8G,1"C TO PUMP 1
2. 3#2,#8G,1"C TO PUMP 2
3. 2#12,#12G,3/4"C POWER TO LIT
4. 10#14,#14G,3/4"C TO LEVEL SWITCHES
5. 2PR,#18TSP, 2#14,#14G TO LIT
6. 2#3,#12G,1"C TO RECEPTACLE
7. 4#14 FOR PUMP 1 OVER TEMPERATURE AND LEAK DETECTION
8. 4#14 FOR PUMP 2 OVER TEMPERATURE AND LEAK DETECTION

1 DUCT BANK FROM EQUIPMENT RACK TO WETWELL



1. 4#1/0,#6G, TO ATS
2. 6#14,#14G TO ATS, AND 6#14,#14G TO RTU
3. 2#10,#12G TO GENERATOR HEATER
4. 2#12,#12G TO BATTERY CHARGER

2 DUCT BANK FROM EQUIPMENT RACK TO GENERATOR

DESCRIPTION	CAT NO.	VOLT	WATTAGE
HUBBEL OUTDOOR LIGHTING AIRO LED SERIES. MANUFACTURED 15' POLE WITH PHOTO CELL.	ASL-A-24L4K210-4-2-BL-RPA	120-277V	181W

LIGHT FIXTURE

GRAPHIC SCALE 1"=4'

4 0 4 8

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ENGINEERING SERVICES
ENGINEERING SERVICE TBPE FIRM-#13810

STATE OF TEXAS
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03/04/22

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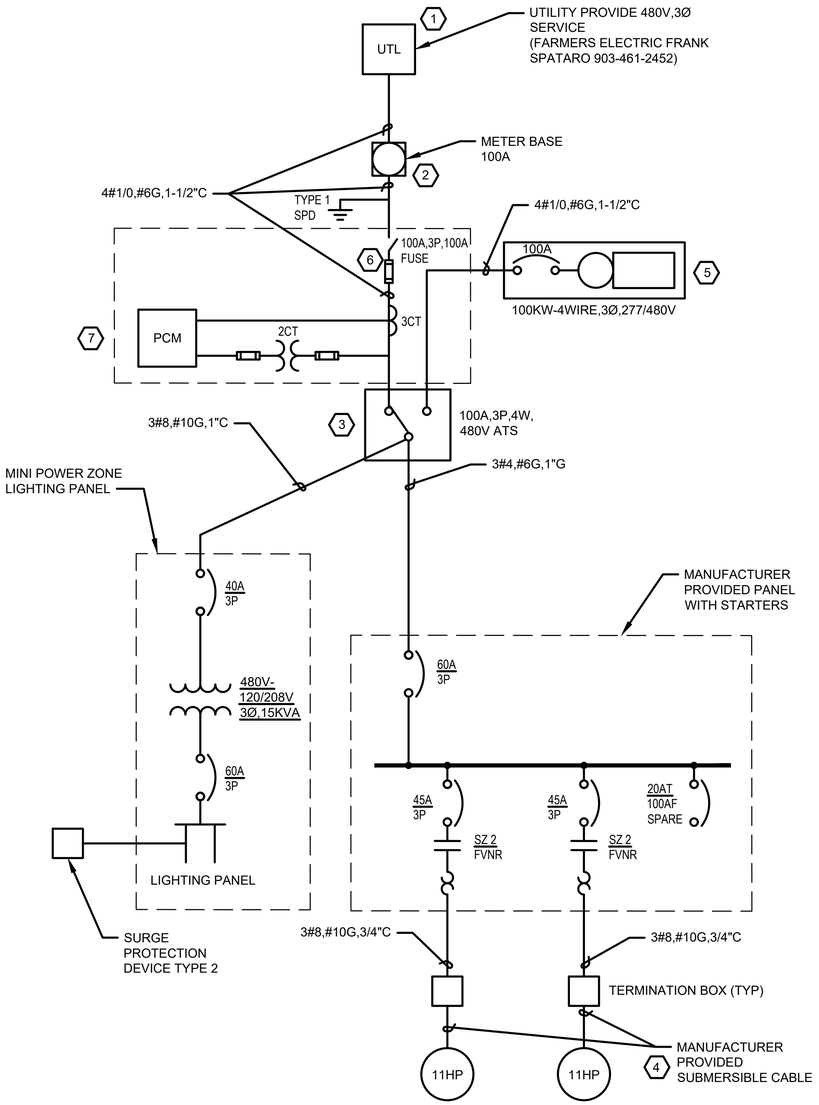
NELSON LAKE ESTATES

ROCKWALL, TEXAS

LIFT STATION
SITE PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
KDF	JAA	MAP	E-3
JOB NUMBER	DATE	SCALE	
COR 21-001	01/10/2022	AS NOTED	

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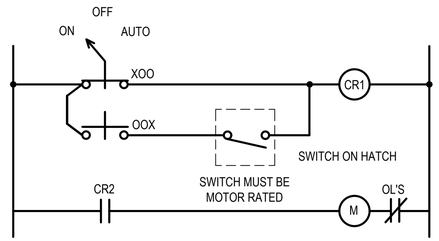


LIFT STATION ONE-LINE DIAGRAM

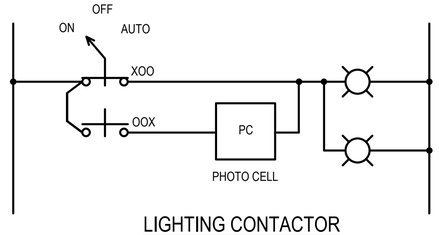
LIFT STATION NOTES:

1. PUMP CONTROL PANEL TO PROVIDE THE POINTS TO TELEMETRY PANEL.

- COMPLETE LIST OF I/O POINTS SHOULD BE OBTAINED FROM THE SCADA SYSTEM INTEGRATOR.



EXHAUST FAN



LIGHTING CONTACTOR

GENERAL NOTES:

1. LOCATIONS, DIMENSIONS AND ELEVATIONS OF EXISTING FACILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY WORK IN THIS AREA.

NOTES BY SYMBOL "⬡":

1. COORDINATE WITH UTILITY COMPANY FOR POWER DELIVERY TO THE SITE.
2. COORDINATE METER SOCKET WITH ELECTRIC UTILITY.
3. 100A, 3P AUTOMATIC TRANSFER SWITCH.
4. MANUFACTURER PROVIDED CABLES TO INCLUDE OVER TEMPERATURE AND LEAK DETECTION.
5. 125KW, 3Ø, 277/480V DIESEL GENERATOR WITH 73dBA SOUND ENCLOSURE.
6. 100A, 3P, 100A FUSE.
7. PROVIDE MULTILIN POWER QUALITY METER.

LIGHTING PANEL MPZ												(IN MCC)
LOCATION: ELECTRICAL RACK MOUNTING: RACK MOUNTED							MAIN C/B 60A					22K AIC
CKT	DESCRIPTION	POLES	LOAD			A B C	VOLT AMPS			BRKR	LOAD SERVED	CKT
			A	B	C		A	B	C			
1	RECEPTACLES	20/1	360				500			20/1	RTU TELEMETRY	2
3	LIGHTING	20/1		1000				500		20/1	LEVEL TRANSMITTER	4
5	GENERATOR HEATER	20			500				-	20/1	SPARE	6
7		2	500				-			20	SURGE PROTECTION DEVICE	8
9	GENERATOR BATTERY CHARGER	20/1		500				-		3		10
11	VALVE VAULT EXHAUST FAN	20/1			500				-			12
13	SCADA CABINET	20/1	500				-			20/1	SPARE	14
15	SPARE	20/1		-				-		20/1	SPARE	16
17	SPARE	20/1			-				-	20/1	SPARE	18

DESCRIPTION	CAT NO.	VOLT	WATTAGE
HUBBEL OUTDOOR LIGHTING AIRO LED SERIES. MANUFACTURED 15' POLE WITH PHOTO CELL.	ASL-A-24L4K210-4-2-BL-RPA	120-277V	181W

LIGHT FIXTURE

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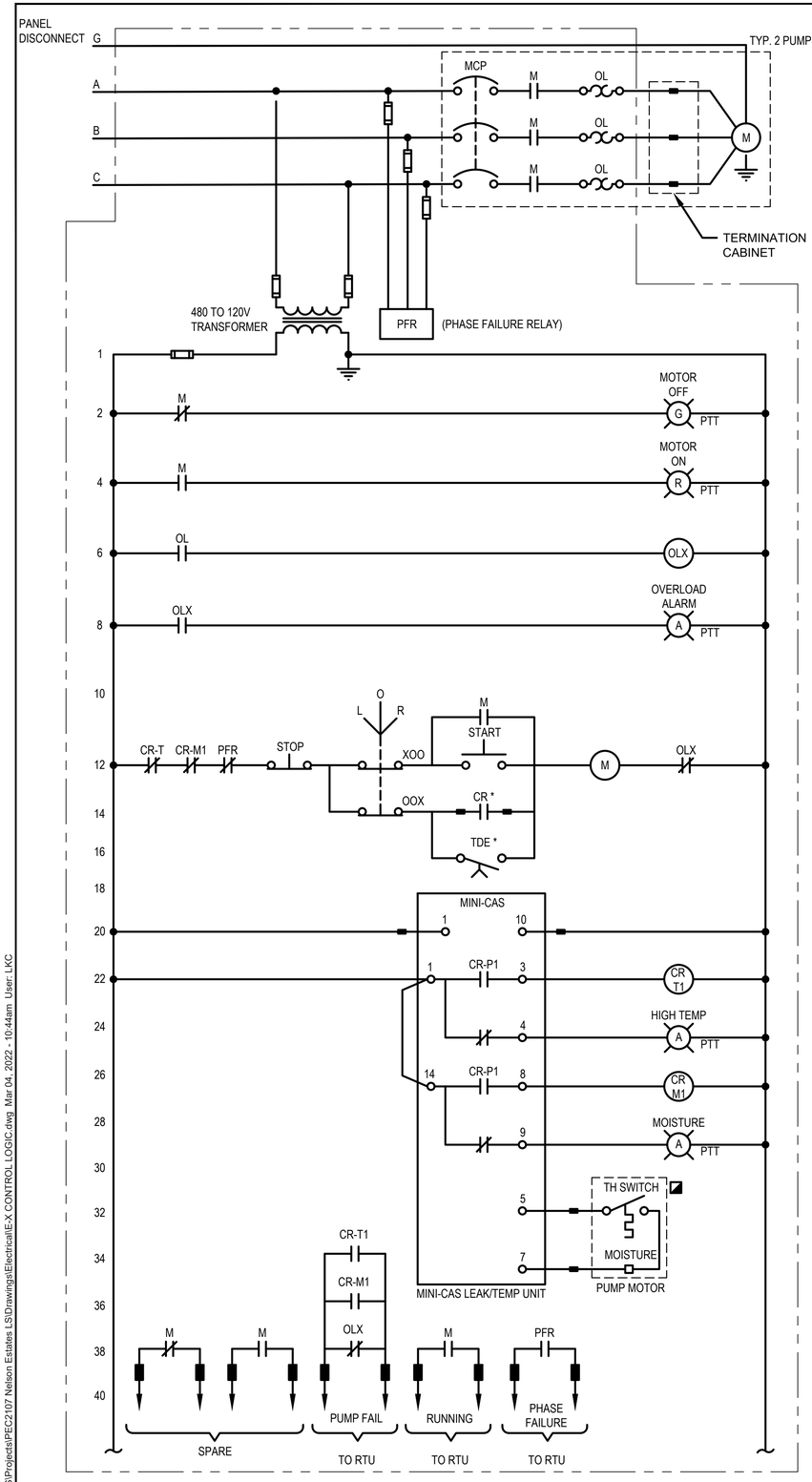
NELSON LAKE ESTATES

ROCKWALL, TEXAS

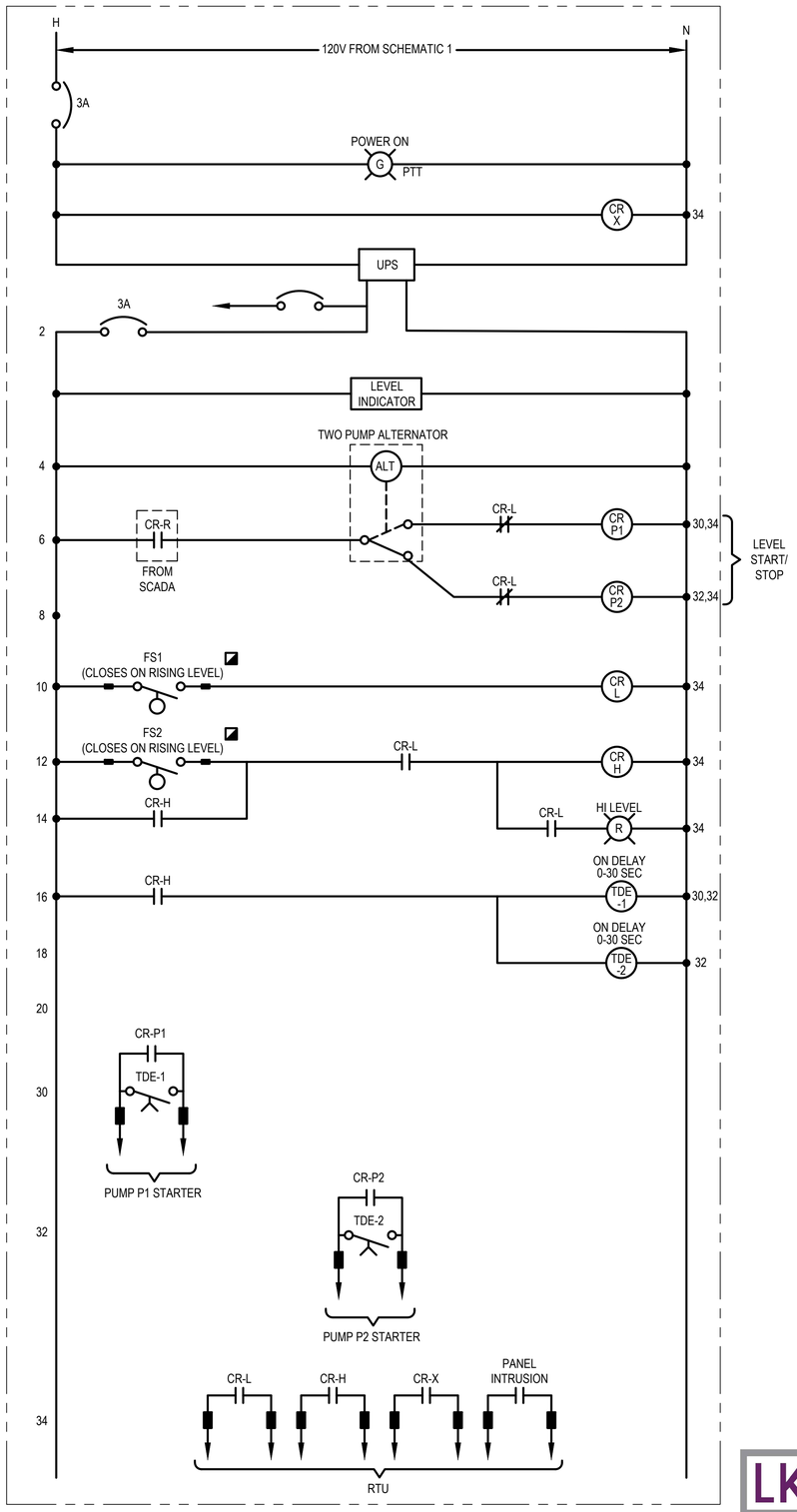
ONE-LINE DIAGRAM

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KDF	JAA	MAP	E-4
JOB NUMBER	DATE	SCALE	
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SCHEMATIC 1

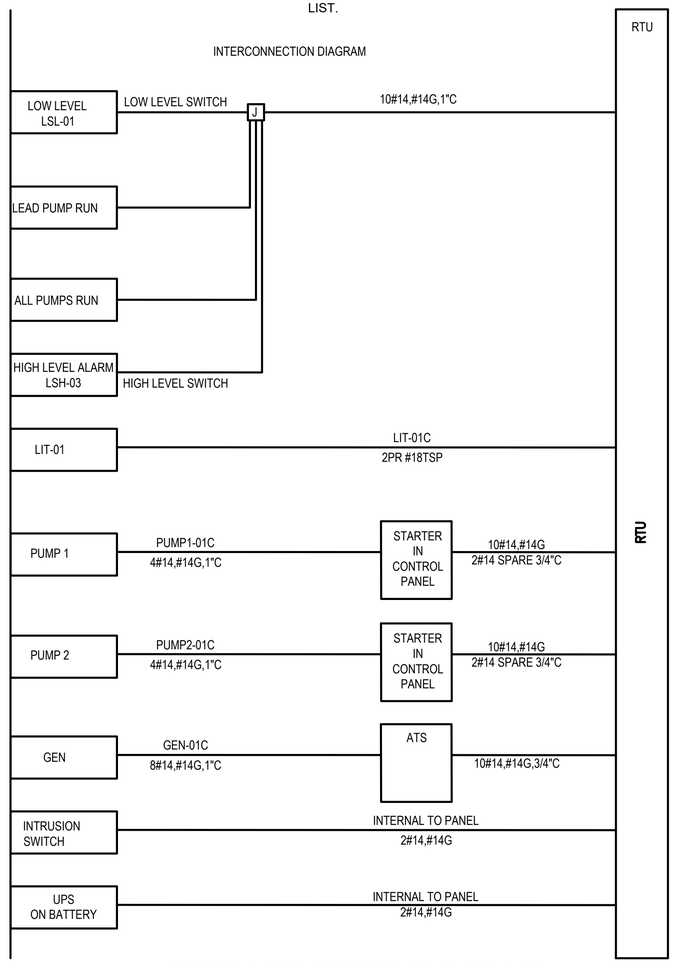


SCHEMATIC 2

* 1 FOR PUMP 1
2 FOR PUMP 2

GENERAL NOTES:

1. LOCATIONS, DIMENSIONS AND ELEVATIONS OF EXISTING FACILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY WORK IN THIS AREA.
2. SEE SHEET E-2 FOR SCADA/RTU INPUT AND OUTPUT LIST.



INTERCONNECTION DIAGRAM

NTS

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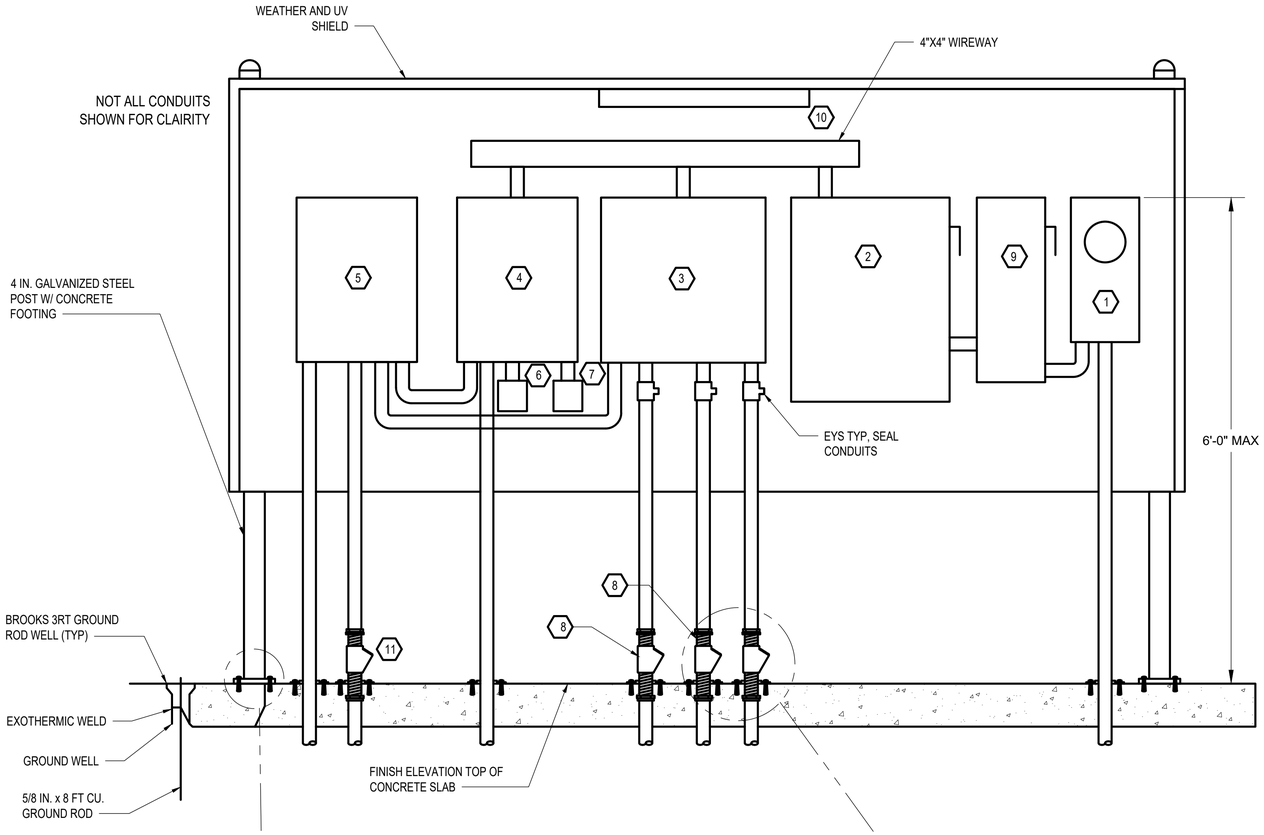
DEVELOPMENT PLANS FOR

NELSON LAKE ESTATES

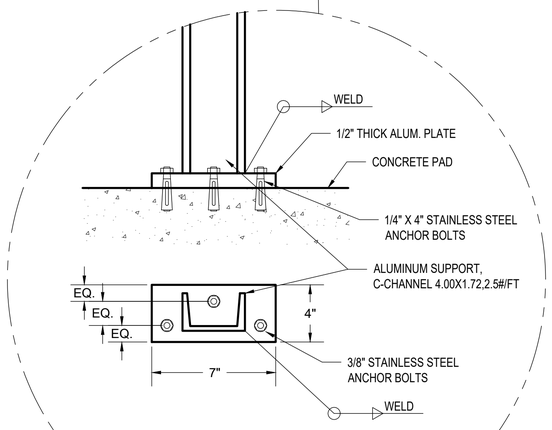
ROCKWALL, TEXAS

CONTROL LOGIC

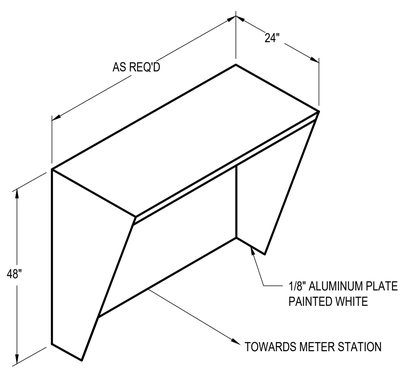
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KDF	JAA	MAP	E-5
JOB NUMBER	DATE	SCALE	
COR 21-001	01/10/2022	AS NOTED	



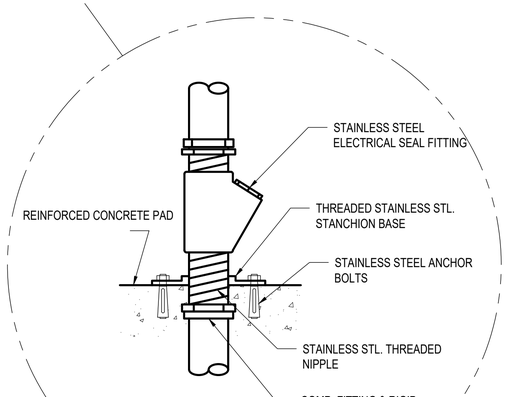
A ELECTRICAL RACK DETAIL
N.T.S

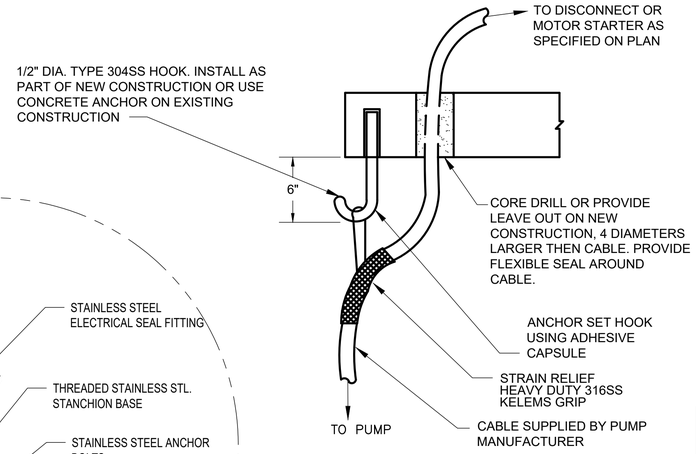


MOUNTING PLATE DETAIL



WEATHER SHIELD (TYP)
N.T.S





CABLE MOUNTING DETAIL
N.T.S.

GENERAL NOTES:

1. MANUFACTURER SUPPLIED PUMP CONTROL PANEL SHALL ALTERNATE THE PUMPS BASED ON A LEAD LEVEL TRANSDUCER. PUMP CONTROL PANEL SHALL INCLUDE HIGH LEVEL ALARM WITH BEACON. SIGNALS FROM PUMP CONTROL PANEL TO INCLUDE: HIGH LEVEL ALARM, LOSS OF POWER, PUMP FAIL (MOISTURE AND OVER TEMPERATURE) AND PHASE FAILURE.
2. ALL EXPOSED CONDUITS AND FITTINGS TO BE TAPED RIGID ALUMINUM. ALL UNDERGROUND CONDUITS AND FITTINGS SHALL BE SCHEDULE 80 PVC WITH 4" CONCRETE CAP, DYED RED THROUGHOUT.
3. ALL POWER AND/OR CONTROL CONDUCTORS SHALL BE XHHW-2 STRANDED.
4. ENCLOSURES FOR ALL INSTRUMENTATION EQUIPMENT AND ELECTRICAL LIGHTING (LED) PANEL SHALL BE NEMA-4X 316 SS W/STAINLESS FITTINGS.
5. CALIBRATION OF INSTRUMENTS FURNISHED SHALL BE ACCOMPLISHED BY A QUALIFIED REPRESENTATIVE OF THE MANUFACTURER OF THE INSTRUMENTS WITH CITY OF ROCKWALL REPRESENTATIVES PRESENT.
6. ALL CONDUITS SHALL BE SEALED AT PANEL BOARDS, JUNCTION BOXES, CONDUITS AND TERMINATION POINTS.
7. ALL CONDUIT TERMINATIONS SHALL BE MADE WITH A MEYERS HUB. FOR CONDUITS ENTERING SIDE OR TOP OF ENCLOSURE AND SEALABLE LOCK RINGS FOR CONDUITS ENTERING BOTTOM OF ENCLOSURE.
8. LOCATIONS, DIMENSIONS AND ELEVATIONS OF EXISTING FACILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY WORK IN THIS AREA.

NOTES BY SYMBOL "⬡":

1. METER SOCKET, COODINATE WITH ELECTRIC UTILITY.
2. 100A 3PH, 4 WIRE AUTOMATIC TRANSFER SWITCH.
3. MANUFACTURER PROVIDED PUMP CONTROL PANEL.
4. 15 KVA MINI POWER ZONE 3Ø, 120/208V SECONDARY.
5. SCADA/RTU PANEL WITH UPS AND A/C UNITS.
6. WP, GFCI RECEPTACLE.
7. WP LIGHT SWITCH.
8. CONDUITS TO PUMP CONTROL PANEL FROM WETWELL REQUIRE CONDUIT SEAL.
9. 100A, 3P FUSED DISCONNECT SWITCH.
10. 4' VAPOR PROOF LED FIXTURES MOUNTED BELOW ROOF.
11. CONDUITS TO RTU FROM WETWELL REQUIRE CONDUIT SEAL.

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DEVELOPMENT PLANS FOR

NELSON LAKE ESTATES

ROCKWALL, TEXAS

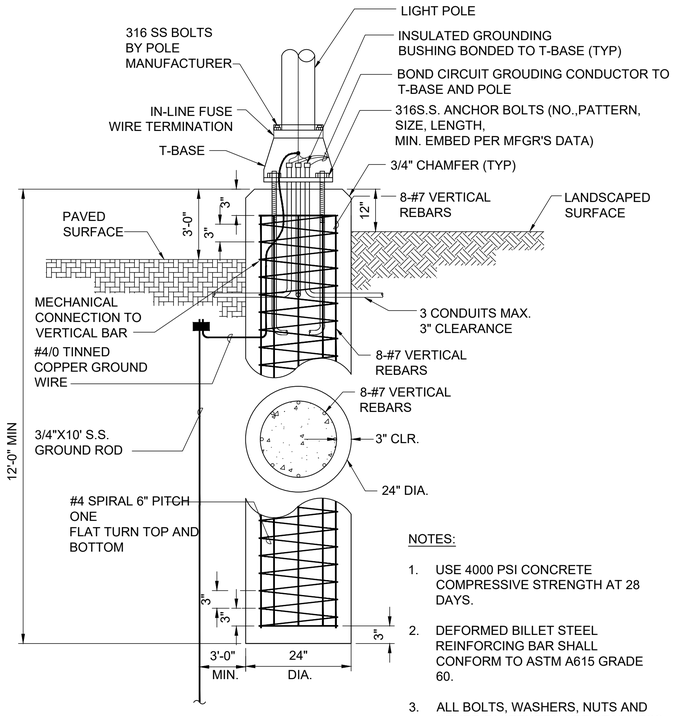
DETAILS

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JOB NUMBER	DATE	SCALE	
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ENGINEERING SERVICE TBPE FIRM-#13810

STATE OF TEXAS
TIMOTHY E. CAMPBELL
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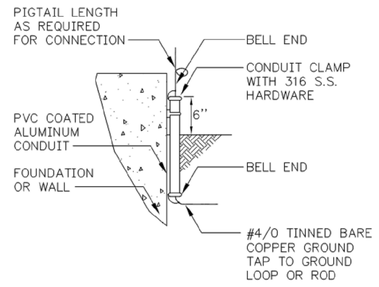
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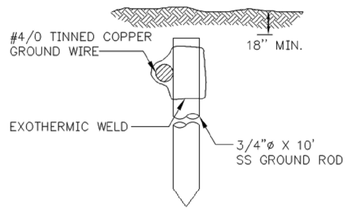
NOTES:

1. USE 4000 PSI CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS.
2. DEFORMED BILLET STEEL REINFORCING BAR SHALL CONFORM TO ASTM A615 GRADE 60.
3. ALL BOLTS, WASHERS, NUTS AND OTHER FASTENERS ARE STAINLESS STEEL 316.

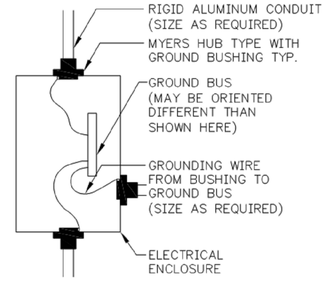
E1 DRILLED SHAFT FOR LIGHT POLE
NTS



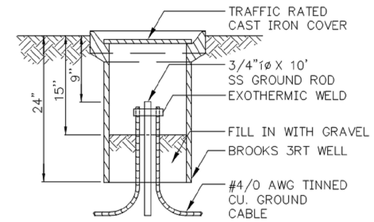
E2 GROUNDING STUB AT WALL
NTS



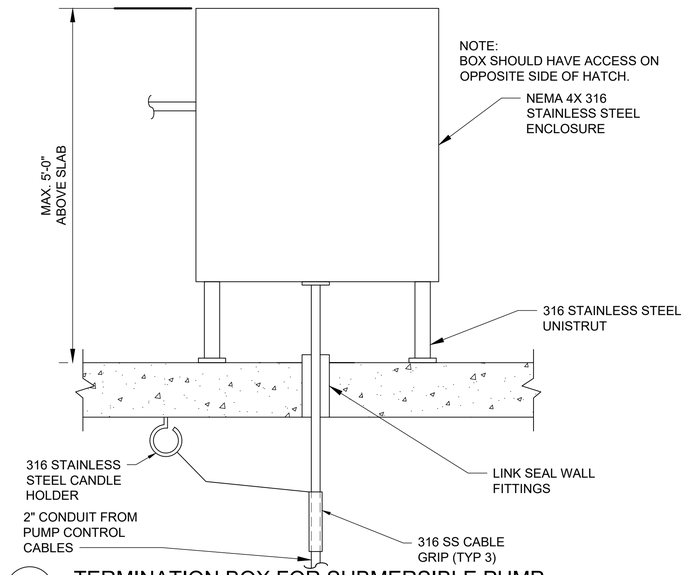
E3 GROUND ROD
NTS



E4 ENCLOSURE CONDUIT DETAIL
NTS



E5 GROUND TEST WELL
NTS



E6 TERMINATION BOX FOR SUBMERSIBLE PUMP
NTS

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DEVELOPMENT PLANS FOR

NELSON LAKE ESTATES

ROCKWALL, TEXAS

ELECTRICAL DETAILS

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
KDF	JAA	MAP	E-7
JOB NUMBER	DATE	SCALE	
COR 21-001	01/10/2022	AS NOTED	

\\LKC-ES\Projects\PEC2107 Nelson Estates LS\Drawings\Electrical\E-X ELECTRICAL DETAILS.dwg Mar 04, 2022 - 10:44am User: LKC