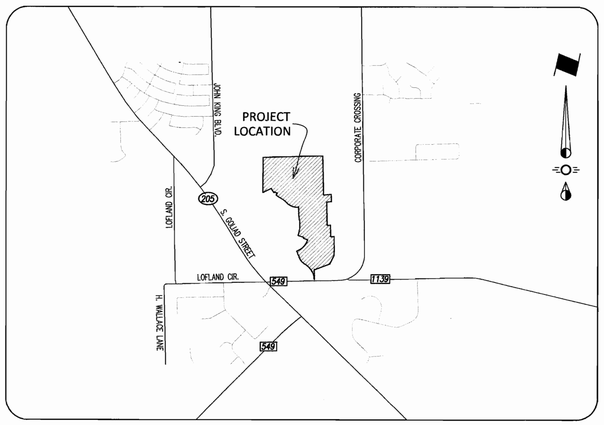
CONSTRUCTION PLANS
FOR
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS



Vicinity Map
N.T.S.

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SCP-6	TxDOT SCP-6 Box Culverts		
SCP-7	TxDOT SCP-7 Box Culverts		
CH-FW-0	TxDOT CH-FW-0 Headwall		

PREPARED FOR:

Arcadia Lakes of Somerset Holdings, LLC
3500 Maple Avenue, Suite 1165
Dallas, Texas 75219
Telephone (214) 642-1135
Contact: Christopher Orr

SPIARS ENGINEERING & SURVEYING
765 Custer Road, Suite 100 • Plano, TX 75075 • 972.422.0077
TBPE No F-2121 • TBLPS No. F-10043100 • www.spiarseng.com
Greg Helsel • greg.helsel@spiarsengineering.com

AS-BUILT DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Greg T. Helsel, P.E.

12/18/23
DATE

STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
12/18/23

20-112 SOMERSET PARK PHASE 2

Plotted by: dstewart Plot Date: 9/28/2023 3:32 PM
Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112 - CAD.dwg Saved By: dstewart Save Time: 9/28/2023 3:32:13 PM

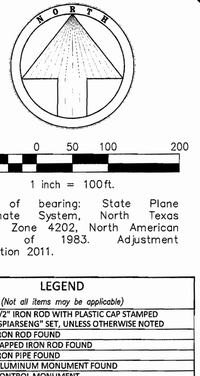
20230000014285 1/6 PLAT 08/28/2023 09:35:02 AM

LOCATION MAP
1" = 2000'

NOTES:

1. Selling a portion of this addition by metes and bounds is a violation of city ordinance and state law and is subject to fines and withholding of utilities and building permits.
2. According to Flood Insurance Rate Map (FIRM) 48397C0045L dated September 26, 2008, prepared by the Federal Emergency Management Agency (FEMA) for Rockwall County, Texas, a portion of this property is within Zone AE.
3. All corners are 1/2 inch iron pins with yellow plastic caps stamped "SPIARSENG" unless otherwise noted.
4. All open space/common areas, Lot 1, Block 11, Lot 1, Block 12, Lot 1, Block 13, Lot 7, Block 14, Lot 13 Block 18, Lot 17, Block 18 are to be owned and maintained by the H.O.A.
5. H.O.A. and Property owners shall maintain all Lot to Lot drainage.
6. All sidewalk trails not adjacent to houses to be maintained, repaired, and replaced by H.O.A.
7. All drainage and detention easements to be maintained, repaired, and replaced by property owner.
8. All decorative street signs, poles, foundations and appurtenances shall be owned and maintained by the H.O.A.
9. No building permits will be issued until all public improvements are accepted by the city.

City Benchmark #11:
NAD 1983 (2011) Texas North Central Zone (4202)
Brass disc stamped "City of Rockwall Survey Monument" on the Northeast side of Mims Road at the southerly end of a concrete headwall at the intersection of the Northeast line of Mims Road with the Southeast line of Interstate 30.
N: 7016792.505
E: 2595405.639
Elevation: 565.98



Basis of bearing: State Plane Coordinate System, North Texas Central Zone 4202, North American Datum of 1983. Adjustment Realization 2011.

LEGEND (Not all items may be applicable)	
○	1/2" IRON ROD WITH PLASTIC CAP STAMPED "SPIARSENG" SET, UNLESS OTHERWISE NOTED
IRF	IRON ROD FOUND
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AMF	ALUMINUM MONUMENT FOUND
CM	CONTROL MONUMENT
Esmt.	EASEMENT
Util.	UTILITY
AC	ACCESS EASEMENT
DE	DRAINAGE EASEMENT
DUE	DRAINAGE AND UTILITY EASEMENT
UE	UTILITY EASEMENT
WE	WATER EASEMENT
SSE	SANITARY SEWER EASEMENT
SE	SIDEWALK EASEMENT
STE	STREET EASEMENT
FAUE	FIRELANE, ACCESS, & UTILITY EASEMENT
WW	WASTE WATER EASEMENT
WME	WALL MAINTENANCE EASEMENT
HBE	HIKE & BIKE TRAIL EASEMENT
VAM	VISIBILITY, ACCESS & MAINTENANCE EASEMENT
(BTP)	BY THIS PLAT
R.O.W.	RIGHT-OF-WAY
BL	BUILDING LINE
	STREET NAME CHANGE
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(DRDCT)	DEED RECORDS, ROCKWALL COUNTY, TEXAS
(PRDCT)	PLAT RECORDS, ROCKWALL COUNTY, TEXAS
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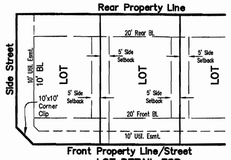
PLAT AMENDMENT PURPOSE:

1. Removed Floodplain per Effective LOMR.

LAND USE SUMMARY	
RESIDENTIAL LOTS	165
H.O.A. LOTS (OPEN SPACE	6
RIGHT-OF-WAY	14.58 AC
TOTAL	7 LOTS

Boundary Curve Table					
Curve #	Radius	Delta	Length	Chord Bearing	Chord
BC1	960.00'	2°27'29"	41.19'	S 33°44'27" W	41.18'
BC2	1040.00'	1°26'00"	26.02'	S 34°15'07" W	26.02'
BC3	574.00'	13°40'50"	137.05'	S 32°28'31" E	136.73'



LOT DETAIL FOR 165 LOTS TO PD STANDARDS

CASE NO. P2023-019
FINAL PLAT

SOMERSET PARK PHASE II

Being A Replat of
Somerset Park Phase II
Being
165 Residential Lots and 6 Open Space Lots
82.809-Acres or 3,607,167 SF
Situated in the
A. JOHNSON SURVEY, ABSTRACT NO. 123
CITY OF ROCKWALL,
ROCKWALL COUNTY, TEXAS

OWNER
Arcadia Lakes Of Somerset Holdings, LLC
3500 Maple Avenue, Suite 1165
Dallas, Texas 75219
Telephone (214) 642-1135
Contact: Katherine Hamilton

ENGINEER / SURVEYOR
Spiars Engineering, Inc.
765 Custer Road, Suite 100
Plano, TX 75075
Telephone: (972) 422-0077
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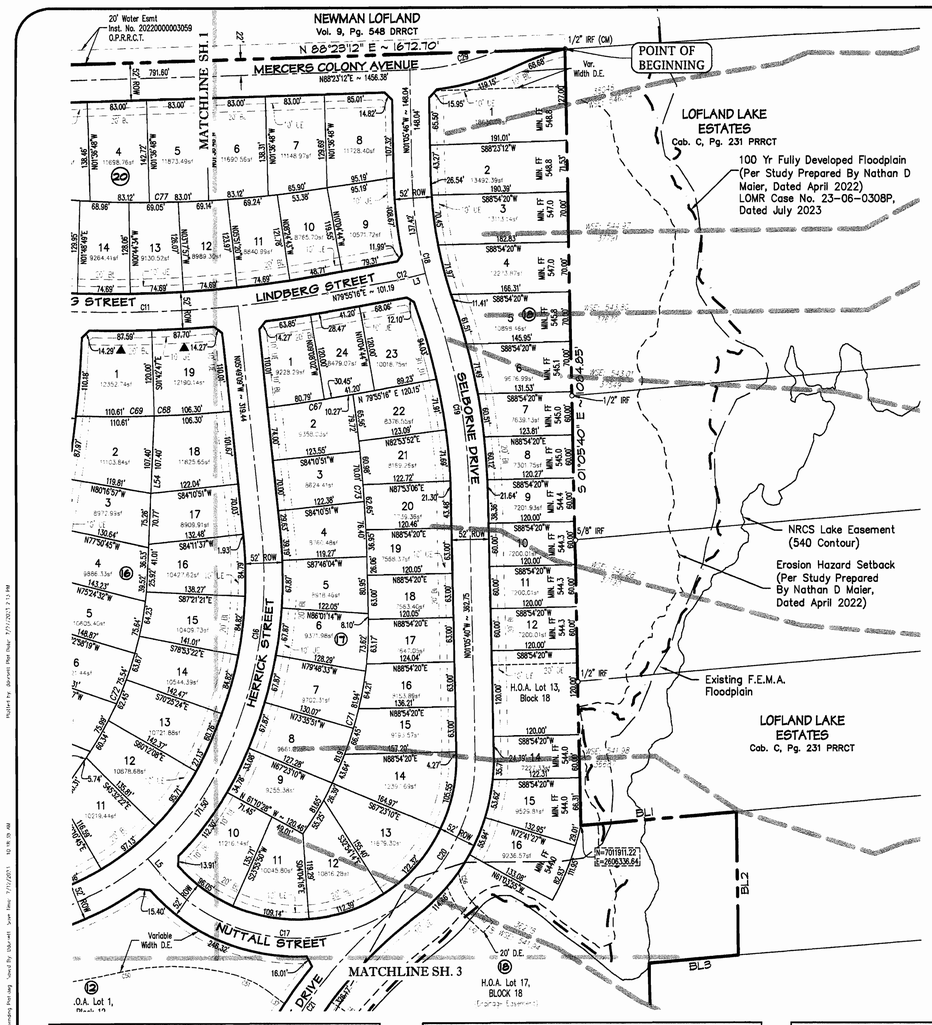
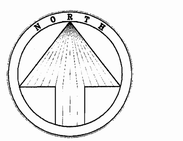
Scale: 1"=100' June, 2023 SEI Job No. 20-112



Easement Line Table		
Line #	Length	Direction
L26	90.40'	N 00°08'16" E
L27	34.79'	N 87°41'33" E
L28	21.76'	N 87°41'33" E
L29	22.17'	N 51°09'21" W
L30	16.52'	S 38°50'39" W
L31	16.86'	N 38°50'39" E
L32	7.58'	N 08°34'14" E
L33	83.49'	S 35°31'48" E
L34	83.64'	S 35°31'48" E
L36	10.05'	S 55°32'41" E
L37	27.71'	N 52°33'37" W
L38	77.46'	N 52°33'30" W
L40	32.49'	S 46°23'53" E

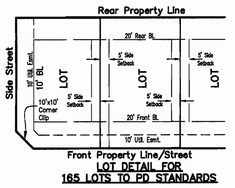
Easement Line Table		
Line #	Length	Direction
L41	20.00'	S 43°36'07" W
L42	32.48'	N 46°23'53" W
L43	20.00'	N 22°30'23" E
L44	53.83'	N 89°36'56" E
L45	2.89'	N 00°59'52" E
L46	16.47'	N 90°00'00" E
L47	18.25'	S 00°00'00" E
L48	240.00'	S 84°20'20" E
L49	240.00'	S 84°20'20" E
L50	35.64'	S 84°20'20" E
L51	20.00'	S 05°39'40" W
L52	35.64'	N 84°20'20" W
L56	10.05'	S 55°32'41" E

Lot Curve Table					
Curve #	Radius	Delta	Length	Chord Bearing	Chord
C67	1846.00'	002°30'27"	80.79'	S 82°07'12" W	80.78'
C68	1846.00'	003°17'58"	106.30'	N 86°38'15" E	106.29'
C69	1846.00'	003°25'59"	110.61'	S 89°59'47" E	110.59'
C70	1160.00'	001°05'07"	21.97'	N 21°29'23" E	21.97'
C71	499.37'	003°14'01"	28.18'	N 15°08'14" E	28.18'
C72	500.00'	004°12'14"	36.68'	S 22°24'59" W	36.68'
C73	1694.21'	000°47'04"	23.20'	N 04°04'14" W	23.20'
C74	204.00'	016°51'06"	60.00'	N 37°13'15" W	59.78'
C75	1596.01'	002°20'42"	65.32'	N 09°44'12" E	65.32'
C76	526.00'	048°44'05"	447.41'	N 44°09'09" E	434.04'
C77	1600.00'	001°26'32"	40.27'	N 89°07'04" E	40.27'
C78	1500.00'	004°59'13"	130.56'	N 03°21'57" E	130.51'
C79	2763.08'	002°29'18"	120.00'	N 00°56'21" W	119.99'



100 0 50 100 200

1 inch = 100ft.



LOT DETAIL FOR
165 LOTS TO PD STANDARDS

Easement Curve Table					
Curve #	Length	Radius	Chord	Chord Bearing	Delta
C34	186.74'	476.00'	185.54'	N 11°22'35" E	22°28'39"
C36	46.83'	575.98'	46.81'	N 02°11'29" W	4°39'29"
C37	297.20'	990.00'	296.09'	N 24°03'10" E	17°12'02"
C38	37.21'	109.57'	37.03'	S 46°24'25" E	19°27'31"
C39	18.57'	94.57'	18.54'	S 42°23'27" E	11°15'04"
C42	25.33'	72.50'	25.20'	S 45°32'15" E	20°00'52"

Easement Curve Table					
Curve #	Length	Radius	Chord	Chord Bearing	Delta
C43	30.57'	87.50'	30.41'	S 45°32'15" E	20°00'52"
C46	146.65'	571.40'	146.24'	N 55°51'24" W	14°42'16"
C47	142.97'	618.74'	142.65'	N 56°35'22" W	13°14'21"
C48	228.59'	311.25'	223.49'	N 71°00'35" W	42°04'47"
C49	226.59'	1246.58'	226.27'	S 82°44'36" W	10°24'52"
C50	162.01'	336.37'	160.45'	N 88°39'58" W	27°35'45"

Easement Curve Table					
Curve #	Length	Radius	Chord	Chord Bearing	Delta
C51	53.34'	150.74'	53.06'	N 63°00'58" W	20°16'25"
C56	55.13'	79.57'	54.04'	S 26°35'00" E	39°42'01"
C60	50.19'	99.57'	49.66'	N 31°59'30" W	28°53'01"
C61	78.88'	335.00'	78.70'	S 60°44'52" E	13°29'30"
C62	83.73'	355.00'	83.53'	S 60°44'13" E	13°30'49"

PLAT AMENDMENT PURPOSE:

1. Removed Floodplain per Effective LOMR.

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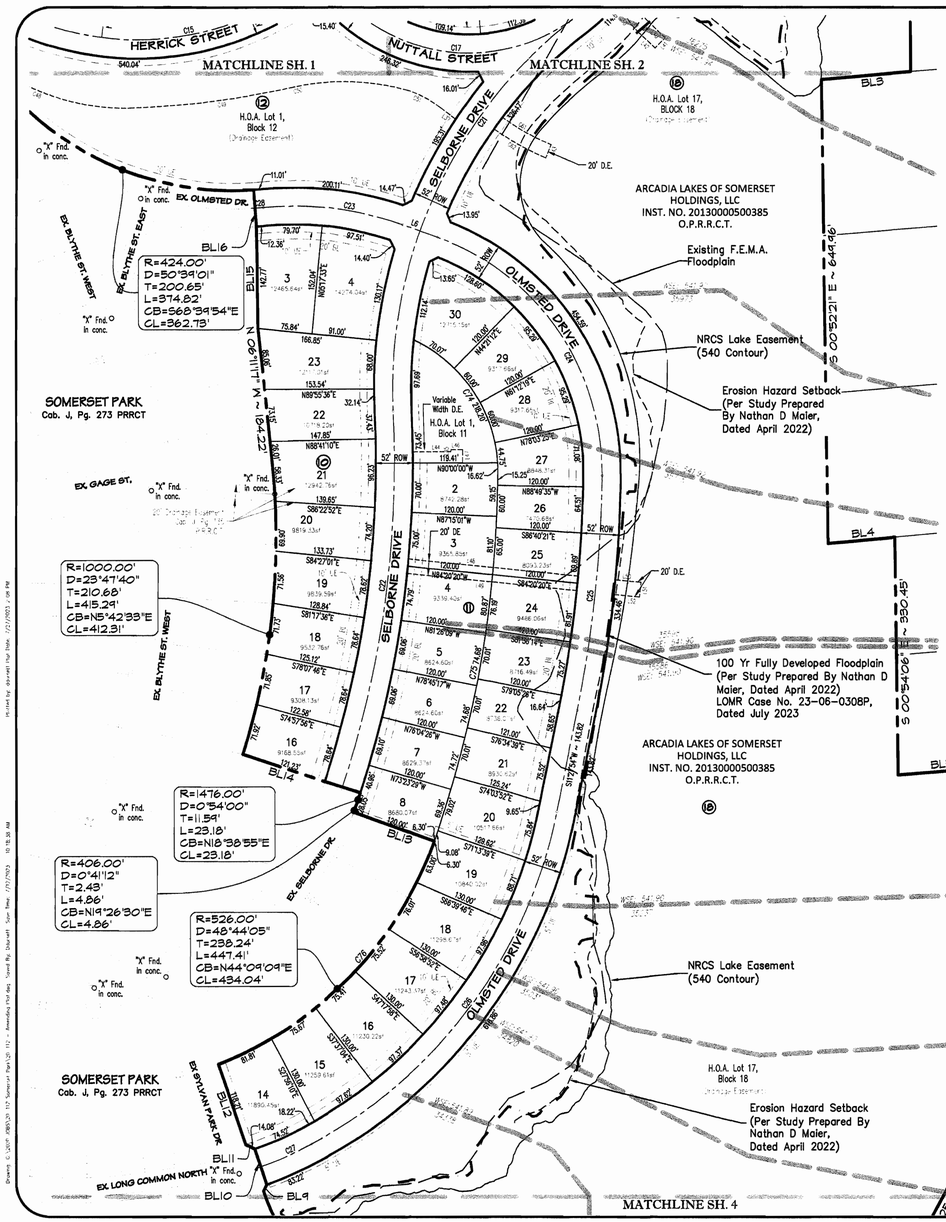
Scale: 1"=100' June, 2023 SEI Job No. 20-112

Drawing: L:\2020 JOBS\20-112 Somerset Park\20-112 Recording Plat.dwg Saved By: Gbarrett Save Time: 7/11/2023 10:19:39 AM
Plotted by: Gbarrett Plot Date: 7/11/2023 9:13 PM



Boundary Curve Table

Curve #	Radius	Delta	Length	Chord Bearing	Chord
BC1	960.00'	2°27'29"	41.19'	S 33°44'27" W	41.18'
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BC3	574.00'	13°40'50"	137.05'	S 32°28'31" E	136.73'

Boundary Line Table

Line #	Length	Direction
BL1	218.65'	N 85°04'06" E
BL2	199.86'	S 00°39'37" E
BL3	125.70'	S 84°51'02" W
BL4	93.68'	N 84°29'46" E
BL5	100.25'	N 85°06'41" E
BL6	24.04'	N 46°14'45" W
BL7	61.12'	N 49°52'36" W
BL8	26.18'	N 59°29'38" W
BL9	9.95'	N 26°04'37" E
BL10	52.01'	N 18°38'49" W

Boundary Line Table

Line #	Length	Direction
BL11	14.08'	N 63°53'15" W
BL12	118.21'	N 18°38'49" W
BL13	120.00'	N 70°12'54" W
BL14	173.23'	N 71°48'05" W
BL15	142.77'	N 00°58'02" W
BL16	52.00'	N 03°59'25" W
BL17	15.18'	N 08°24'11" W
BL18	80.00'	N 55°02'47" W
BL19	11.91'	S 86°43'21" W

NORTH

100 0 50 100 200

1 inch = 100 ft.

Basis of bearing: State Plane Coordinate System, North Texas Central Zone 4202, North American Datum of 1983. Adjustment Realization 2011.

LEGEND

(Not all items may be applicable)

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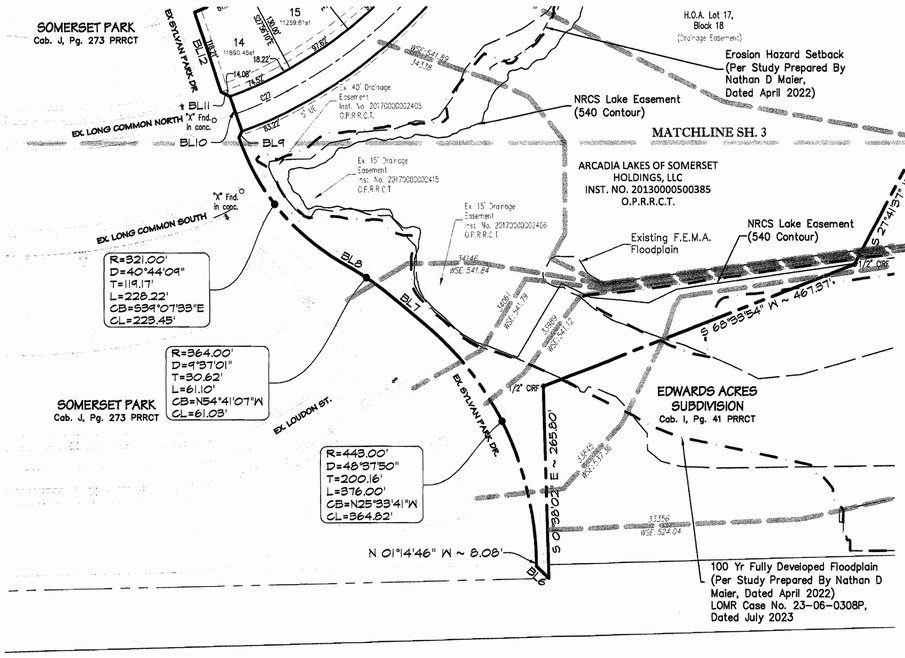

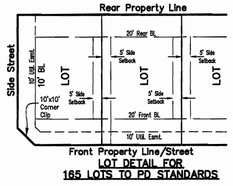

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BL7	61.12'	N 49°52'36" W
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BL14	173.23'	N 71°48'05" W
BL15	142.77'	N 00°58'02" W
BL16	52.00'	N 03°59'25" W
BL17	15.18'	N 08°24'11" W
BL18	80.00'	N 55°02'47" W
BL19	11.91'	S 86°43'21" W

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Centerline Curve Table					
Curve #	Length	Radius	Chord	Chord Bearing	Delta
C1	188.52'	500.00'	187.41'	N09°11'17"E	21°36'10"
C2	173.24'	500.00'	172.37'	N10°03'49"E	19°51'06"
C3	269.61'	599.99'	267.34'	N12°44'06"W	25°44'45"
C4	425.49'	1014.00'	422.38'	N24°12'13"E	24°02'32"
C5	305.51'	391.35'	297.81'	N87°37'31"E	44°43'42"
C6	305.51'	391.35'	297.81'	N87°37'31"E	44°43'42"
C7	137.84'	250.00'	136.10'	N81°03'24"E	31°35'29"
C8	196.51'	1330.00'	196.34'	N02°37'11"E	8°27'57"
C9	717.10'	1330.00'	708.45'	N22°17'55"E	30°53'33"
C10	66.61'	1000.00'	66.60'	N35°50'12"E	3°49'00"
C11	502.37'	1700.00'	500.54'	N88°23'12"E	16°55'53"
C12	14.45'	200.00'	14.44'	N77°51'06"E	4°08'19"
C13	622.82'	1600.00'	618.90'	N13°32'29"E	22°18'12"
C14	106.99'	350.00'	106.57'	N15°56'08"E	17°30'52"
C15	712.81'	400.00'	622.17'	N76°41'36"E	102°06'11"

Centerline Curve Table					
Curve #	Length	Radius	Chord	Chord Bearing	Delta
C16	329.46'	600.00'	325.34'	N09°54'41"E	31°27'40"
C17	381.10'	250.00'	345.26'	S83°27'47"E	87°20'32"
C18	188.54'	600.00'	187.76'	N10°05'47"W	18°00'15"
C19	267.10'	850.00'	266.00'	N10°05'47"W	18°00'15"
C20	235.47'	249.73'	226.84'	N25°53'08"E	54°01'25"
C21	633.32'	652.00'	608.71'	N25°02'20"E	55°39'14"
C22	532.80'	1450.00'	529.81'	N07°42'24"E	21°03'12"
C23	198.17'	450.00'	196.57'	S82°51'45"E	25°13'53"
C24	432.94'	350.00'	405.86'	S34°48'37"E	70°52'24"
C25	329.54'	1742.00'	329.05'	S06°02'44"W	10°50'19"
C26	596.03'	679.00'	577.08'	S36°36'45"W	50°17'41"
C27	85.56'	529.56'	85.47'	S66°24'12"W	9°15'28"
C28	16.66'	450.00'	16.66'	N85°34'57"E	2°07'17"
C29	143.42'	350.00'	142.41'	N76°36'53"E	23°28'39"

Centerline Line Table		
Line #	Length	Direction
L1	25.43	S70° 00' 37.66"E
L2	10.25	S83° 08' 51.05"E
L3	25.28	N75° 46' 56.89"E
L4	26.00	N2° 23' 22.75"E
L5	27.76	S39° 47' 30.79"E
L6	26.02	S70° 14' 49.34"E

PLAT AMENDMENT PURPOSE:

1. Removed Floodplain per Effective LOMR.

CASE NO. P2023-019
FINAL PLAT

SOMERSET PARK PHASE II

Being A Replat of
Somerset Park Phase II
Being
165 Residential Lots and 6 Open Space Lots
82.809-Acres or 3,607,167 SF
Situated in the
A. JOHNSON SURVEY, ABSTRACT NO. 123
CITY OF ROCKWALL,
ROCKWALL COUNTY, TEXAS

OWNER
Arcadia Lakes Of Somerset Holdings, LLC
3500 Maple Avenue, Suite 1165
Dallas, Texas 75219
Telephone (214) 642-1135
Contact: Katherine Hamilton

ENGINEER / SURVEYOR
Spiars Engineering, Inc.
765 Custer Road, Suite 100
Plano, TX 75075
Telephone: (972) 422-0077
TBPELS No. F-2121 and No. F-10043100
Contact: Greg T. Helsel

Scale: 1"=100' June, 2023 SEI Job No. 20-112

Plotted by: aboswell Plot Date: 7/7/2023 2:20 PM
Drawing: G:\JOBS\2020\20-112 Somerset Park\SH-112 Amending Plat.dwg Saved By: aboswell Save Time: 7/7/2023 10:18:28 AM

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
1	6	12,882	0.296
2	6	11,985	0.275
3	6	11,609	0.267
4	6	10,769	0.247
5	6	9,534	0.219
6	6	8,362	0.192
7	6	7,603	0.175
8	6	7,270	0.167
9	6	7,235	0.166
10	6	7,254	0.167
11	6	8,802	0.202
12	6	9,174	0.211
13	6	10,631	0.244
14	6	12,799	0.294

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
3	10	12,466	0.286
4	10	14,274	0.328
16	10	9,169	0.210
17	10	9,308	0.214
18	10	9,533	0.219
19	10	9,840	0.226
20	10	9,819	0.225
21	10	12,943	0.297
22	10	10,718	0.246
23	10	12,117	0.278

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
2	11	8,742	0.201
3	11	9,366	0.215
4	11	9,339	0.214
5	11	8,625	0.198
6	11	8,625	0.198
7	11	8,629	0.198
8	11	8,680	0.199
14	11	11,890	0.273
15	11	11,260	0.258
16	11	11,230	0.258
17	11	11,243	0.258
18	11	11,299	0.259
19	11	10,840	0.249
20	11	10,518	0.241
21	11	8,931	0.205

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
22	11	8,736	0.201
23	11	8,716	0.200
24	11	9,486	0.218
25	11	8,093	0.186
26	11	7,471	0.172
27	11	8,848	0.203
28	11	9,318	0.214
29	11	9,318	0.214
30	11	12,715	0.292

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
1	14	11,178	0.257
2	14	8,716	0.200
3	14	8,716	0.200
4	14	8,716	0.200
5	14	8,716	0.200
6	14	11,170	0.256
8	14	10,707	0.246
9	14	10,707	0.246
10	14	10,707	0.246
11	14	10,707	0.246
12	14	10,707	0.246
13	14	10,707	0.246
14	14	14,117	0.324

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
1	15	11,602	0.266
2	15	11,122	0.255
3	15	11,394	0.262
4	15	11,768	0.270
5	15	12,245	0.281
6	15	12,825	0.294
7	15	13,508	0.310
8	15	9,796	0.225
9	15	8,074	0.185
10	15	8,546	0.196
11	15	9,609	0.221
12	15	12,513	0.287
13	15	10,755	0.247
14	15	10,250	0.235
15	15	10,228	0.235

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
16	15	10,148	0.233
17	15	10,011	0.230
18	15	9,817	0.225
19	15	9,564	0.220
20	15	9,252	0.212
21	15	9,425	0.216

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
1	16	12,353	0.284
2	16	11,104	0.255
3	16	8,973	0.206
4	16	9,886	0.227
5	16	10,605	0.243
6	16	10,721	0.246
7	16	10,219	0.235
8	16	9,169	0.210
9	16	15,434	0.354
10	16	12,383	0.284
11	16	10,219	0.235
12	16	10,879	0.250
13	16	10,722	0.246
14	16	10,544	0.242
15	16	10,410	0.239

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
16	16	10,428	0.239
17	16	8,910	0.205
18	16	11,826	0.271
19	16	12,190	0.280

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
1	17	9,228	0.212
2	17	9,358	0.215
3	17	8,624	0.198
4	17	8,760	0.201
5	17	8,918	0.205
6	17	9,372	0.215
7	17	9,702	0.223
8	17	9,661	0.222
9	17	9,255	0.212
10	17	11,216	0.257
11	17	10,046	0.231
12	17	10,816	0.248
13	17	11,879	0.273
14	17	12,398	0.285
15	17	9,194	0.211
16	17	8,154	0.187
17	17	7,647	0.176
18	17	7,563	0.174
19	17	7,568	0.174
20	17	7,739	0.178

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
21	17	8,169	0.188
22	17	8,377	0.192
23	17	10,019	0.230
24	17	8,479	0.195

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
1	19	11,082	0.254
2	19	10,400	0.239
3	19	10,400	0.239
4	19	14,341	0.329
5	19	14,548	0.334
6	19	12,184	0.280
7	19	11,673	0.268
8	19	11,074	0.254

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
1	18	18,631	0.428
2	18	13,492	0.310
3	18	13,113	0.301
4	18	12,274	0.282
5	18	10,898	0.250
6	18	9,677	0.222
7	18	7,639	0.175
8	18	7,302	0.168
9	18	7,202	0.165
10	18	7,200	0.165
11	18	7,200	0.165
12	18	7,200	0.165
14	18	7,227	0.166
15	18	9,530	0.219
16	18	9,237	0.212

Lot Area Table			
Lot #	Block #	Square Feet	Acreage
1	20	15,182	0.349
2	20	10,607	0.244
3	20	11,166	0.256
4	20	11,699	0.269
5	20	11,873	0.273
6	20	11,691	0.268
7	20	11,149	0.256
8	20	11,728	0.269
9	20	10,572	0.243
10	20	8,766	0.201
11	20	8,841	0.203
12	20	8,989	0.206
13	20	9,131	0.210
14	20	9,264	0.213
15	20	9,386	0.215
16	20	11,089	0.255
17	20	16,040	0.368

Open Space Area Table		
Lot #	Block #	Acres
1	13	0.736
1	12	3.072
1	11	0.333
7	14	0.261
13	18	0.331
17	18	24.664

Boundary Line Table		
Line #	Length	Direction
BL1	218.65'	N 85°04'06" E
BL2	199.86'	S 00°39'37" E
BL3	125.70'	S 84°51'02" W
BL4	93.68'	N 84°29'46" E
BL5	100.25'	N 85°06'41" E
BL6	24.04'	N 46°14'45" W
BL7	61.12'	N 49°52'36" W
BL8	26.18'	N 59°29'38" W
BL9	9.95'	N 26°04'37" E
BL10	52.01'	N 18°38'49" W

Boundary Line Table		
Line #	Length	Direction
BL11	14.08'	N 63°53'15" W
BL12	118.21'	N 18°38'49" W
BL13	120.00'	N 70°12'54" W
BL14	173.23'	N 71°48'05" W
BL15	142.77'	N 00°58'02" W
BL16	52.00'	N 03°59'25" W
BL17	15.18'	N 08°24'11" W
BL18	80.00'	N 55°02'47" W
BL19	11.91'	S 86°43'21" W

Boundary Curve Table					
Curve #	Radius	Delta	Length	Chord Bearing	Chord
BC1	960.00'	2°27'29"	41.19'	S 33°44'27" W	41.18'
BC2	1040.00'	1°26'00"	26.02'	S 34°15'07" W	26.02'
BC3	574.00'	13°40'50"	137.05'	S 32°28'31" E	136.73'

PLAT AMENDMENT PURPOSE:

1. Removed Floodplain per Effective LOMR.

CASE NO. P2023-019
FINAL PLAT

SOMERSET PARK PHASE II

Being A Replat of
Somerset Park Phase II
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165 Residential Lots and 6 Open Space Lots
82.809-Acres or 3,607,167 SF
Situated in the
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ROCKWALL COUNTY, TEXAS

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3500 Maple Avenue, Suite 1165
Dallas, Texas 75219
Telephone (214) 642-1135
Contact: Katherine Hamilton

ENGINEER / SURVEYOR
Spiars Engineering, Inc.
765 Custer Road, Suite 100
Plano, TX 75075
Telephone: (972) 422-0077
TBPELS No. F-2121 and No. F-10043100
Contact: Greg T. Helsel

Scale: 1"=100' June, 2023 SEI Job No. 20-112

OWNER'S CERTIFICATE

STATE OF TEXAS §
COUNTY OF ROCKWALL §

WHEREAS ARCADIA LAKES OF SOMERSET HOLDINGS, LLC, is the owner of a tract of land situated in the A. Johnson Survey, Abstract No. 123, City of Rockwall, Rockwall County, Texas, being part of a tract conveyed by deed recorded in Document No. 2013-00005003B5, Deed Records, Rockwall County, Texas (DRRCT), with the subject tract being more particularly described as follows:

BEGINNING at a 1/2" iron rod found on a south line of a tract conveyed to N.L. Lofland and Annie Lofland, recorded in Volume 28, Page 487 DRRCT, for the northwest corner of Lofland Lake Estates, an addition recorded in Cabinet C, Page 231, Plat Records, Rockwall County, Texas (PRRCT);

THENCE along the west line of Lofland Lake Estates, the following:

S 01°05'40" E, 1084.85 feet;

N 85°04'06" E, 218.65 feet;

S 00°39'37" E, 199.86 feet;

S 84°51'02" W, 125.70 feet;

S 00°52'21" E, 649.96 feet;

And N 84°29'46" E, 93.68 feet to the northwest corner of Lofland Lake Estates No. 2, an addition recorded in Cabinet C, Page 251 PRRCT;

THENCE along the west line of Lofland Lake Estates No. 2, the following:

S 00°54'06" E, 330.45 feet;

N 85°06'41" E, 100.25 feet;

And S 00°40'59" W, 537.41 feet to a northerly corner of Lot 2, Block A, Edwards Acres Subdivision, an addition recorded in Cabinet I, Page 41 PRRCT;

THENCE along the common line thereof, the following:

S 27°41'37" W, 259.68 feet to a 1/2" iron rod with plastic cap found;

S 68°33'54" W, 467.37 feet to a 1/2" iron rod with plastic cap found;

And S 01°38'02" E, 265.80 feet to a point in the north line of Farm to Market Road 549, a public right-of-way, for the most southerly southeast corner of Somerset Park, an addition recorded in Cabinet J, Page 273 PRRCT to a 1/2" iron rod with a yellow cap stamped "SPIARSENG" set;

THENCE along the easterly lines thereof, the following:

N 46°14'45" W, 24.04 feet to a 1/2" iron rod with a yellow cap stamped "SPIARSENG" set;

N 01°14'46" W, 8.08 feet;

A tangent curve to the left having a central angle of 48°37'50", a radius of 443.00 feet, a chord of N 25°33'41" W – 364.82 feet, an arc length of 376.00 feet;

N 49°52'36" W, 61.12 feet;

A tangent curve to the left having a central angle of 09°37'01", a radius of 364.00 feet, a chord of N 54°41'07" W – 61.03 feet, an arc length of 61.10 feet;

N 59°29'38" W, 26.18 feet;

A tangent curve to the right having a central angle of 40°44'09", a radius of 321.00 feet, a chord of N 39°07'33" W – 223.45 feet, an arc length of 228.22 feet;

N 26°04'37" E, 9.95 feet;

N 18°38'49" W, 52.01 feet;

N 63°53'15" W, 14.08 feet;

N 18°38'49" W, 118.21 feet to a 1/2" iron rod with a yellow cap stamped "SPIARSENG" set;

A non-tangent curve to the left having a central angle of 48°44'05", a radius of 526.00 feet, a chord of N 44°09'09" E – 434.04 feet, an arc length of 447.41 feet to a 1/2" iron rod with a yellow cap stamped "SPIARSENG" set;

N 70°12'54" W, 120.00 feet to a 1/2" iron rod with a yellow cap stamped "SPIARSENG" set;

A non-tangent curve to the left having a central angle of 00°41'12", a radius of 406.00 feet, a chord of N 19°26'30" E – 4.86 feet, an arc length of 4.86 feet;

A compound curve to the left having a central angle of 00°54'00", a radius of 1476.00 feet, a chord of N 18°38'55" E – 23.18 feet, an arc length of 23.18 feet;

N 71°48'05" W, 173.23 feet to a 1/2" iron rod with a yellow cap stamped "SPIARSENG" set;

A non-tangent curve to the left having a central angle of 23°47'40", a radius of 1000.00 feet, a chord of N 05°42'33" E – 412.31 feet, passing at an arc length of 376.03 feet an "X" found in concrete, continuing a total arc length of 415.29 feet;

N 06°11'17" W, 184.22 feet to a 1/2" iron rod with a yellow cap stamped "SPIARSENG" set;

N 00°58'02" W, 142.77 feet;

N 03°59'25" W, 52.00 feet;

A non-tangent curve to the right having a central angle of 50°39'01", a radius of 424.00 feet, a chord of N 68°39'54" W – 362.73 feet, an arc length of 374.82 feet;

A reverse curve having a central angle of 19°54'48", a radius of 606.00 feet, a chord of N 53°17'48" W – 209.56 feet, an arc length of 210.62 feet;

A reverse curve having a central angle of 13°44'06", a radius of 574.00 feet, a chord of N 56°23'09" W – 137.27 feet, an arc length of 137.60 feet;

N 08°24'11" W, 15.18 feet;

A non-tangent curve to the right having a central angle of 02°27'29", a radius of 960.00 feet, a chord of N 33°44'27" E – 41.18 feet, an arc length of 41.19 feet;

N 55°02'47" W, 80.00 feet;

A non-tangent curve to the left having a central angle of 01°26'00", a radius of 1040.00 feet, a chord of S 34°15'07" W – 26.02 feet, an arc length of 26.02 feet;

S 86°43'21" W, 11.91 feet;

A non-tangent curve to the right having a central angle of 13°40'50", a radius of 574.00 feet, a chord of N 32°28'31" W – 136.73 feet, an arc length of 137.05 feet;

And S 64°21'54" W, 255.05 feet to a 5/8" iron rod with plastic cap found on an east line of said Lofland tract;

THENCE N 00°08'16" E, 973.07 feet along the east line thereof to a 1/2" iron rod found

THENCE N 88°23'12" E, 1672.70 feet to the POINT OF BEGINNING with the subject tract containing 3,607,167 square feet or 82.809 acres of land.

NOW THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That We, **ARCADIA LAKES OF SOMERSET HOLDINGS, LLC**, do hereby adopt this plat designating the hereinabove described property as **SOMERSET PARK PHASE II**, an Addition to the City of Rockwall, and do hereby dedicate to the public use forever the streets and alleys shown thereon and do hereby reserve the easement strips shown on this plat for the mutual use and accommodation of garbage collection agencies and all public utilities desiring to use or using same. Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs, or other improvements or growths which in any way endanger or interfere with the construction, maintenance or efficiency of its respective systems on any of these easement strips and any public utility shall at all times have the right of ingress and egress to and from and upon the said easement strip for the purpose of constructing, reconstructing, inspecting, and patrolling, without the necessity at any time of procuring the permission of anyone. This plat approved subject to all platting ordinances, rules, regulations and resolutions of the City of Rockwall, Texas.

We Further understand and acknowledge the following:

1. No building 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 easements 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/property owner and subdivision engineer shall bear total responsibility for storm drain improvements.
5. The developer/property owner shall be responsible for the necessary facilities and maintenance 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. No house, dwelling, unit, or other structure shall be constructed on any lot in the 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 required base and paving, curb and gutter, water and sewer, drainage structures, storm structures, and storm sewers, all according to the specifications of the City of Rockwall.

Witness our hands at Rockwall County, Texas, this 17th day of July, 2023.

ARCADIA LAKES OF SOMERSET HOLDINGS, LLC

By: _____
Katherine Hamilton, Manager

STATE OF TEXAS §
COUNTY OF DALLAS §

BEFORE ME, the undersigned, a Notary Public in and for The State of Texas, on this day personally appeared Katherine Hamilton, known to me to be the person and officer whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 17th day of July, 2023.

_____
Notary Public, State of Texas

RACHEL RIMA
Notary ID #129048500
My Commission Expires
February 1, 2027

RECOMMENDED FOR FINAL APPROVAL

APPROVED

I hereby certify that the above and foregoing subdivision plat -- being an addition to the City of Rockwall, Texas -- was approved by City Council of the City of Rockwall, Texas on the 21st day of August, 2023.

_____ _____
Mayor Of The City of Rockwall — Planning And Zoning Commission Chairman

_____ _____
Director Of Planning & Zoning — City Engineer

CITY OF ROCKWALL TEXAS

Kristy Teague
CITY SECRETARY

Public Improvement Statement:

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

Drainage and Detention Easements:

The property owner shall be responsible for maintaining, repairing, and replacing and shall bear sole liability of all systems within the drainage and detention easements.

SURVEYOR'S CERTIFICATE

That I, Darren K. Brown, of Spiars Engineering, Inc., do hereby certify that I prepared this plat and the field notes made a part thereof from an actual and accurate survey of the land and that the corner monuments shown thereon were properly placed under my personal supervision, in accordance with the Subdivision Regulations of the City of Rockwall, Texas.

Dated this the 12 day of JULY, 2023.

_____
DARREN K. BROWN, RPLS No. 5252

STATE OF TEXAS
REGISTERED
DARREN K. BROWN
5252
PROFESSIONAL
LAND SURVEYOR

darren.brown@spiarsengineering.com

Filed and Recorded
Official Public Records
Jennifer Fogg County Clerk
Rockwall County, Texas
08/29/2023 09:35:02 AM
$300.00
20230000014285

COPY

PLAT AMENDMENT PURPOSE:

1. Removed Floodplain per Effective LOMR.

CASE NO. P2023-019
FINAL PLAT

SOMERSET PARK PHASE II

Being A Replat of
Somerset Park Phase II
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165 Residential Lots and 6 Open Space Lots
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Situated in the
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Spiars Engineering, Inc.
765 Custer Road, Suite 100
Plano, TX 75075
Telephone: (972) 422-0077
TBPELS No. F-2121 and No. F-10043100
Contact: Greg T. Heisel

SHEET 6 OF 6

June, 2023 SEI Job No. 20-112

GENERAL ITEMS

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

EROSION CONTROL & VEGETATION

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

TRAFFIC CONTROL

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

UTILITY LINE LOCATES

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

WATER LINE NOTES

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

WASTEWATER LINE NOTES

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

GENERAL CONSTRUCTION NOTES
Sheet 1 of 2
October 2020

CITY OF ROCKWALL
ENGINEERING DEPARTMENT

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SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
GENERAL NOTES

Date

Revisions

Scale: N/A
Drawn By: BJ
Checked By: GTH

Sheet 7

SEI No. 20-112

Plotted by: bjohnson Plot Date: 10/1/2021 7:00 AM
Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112-ZON.dwg Saved By: BJohnson Save Time: 9/27/2021 2:01:05 PM

DEMOLITION, REMOVAL, DISPOSAL AND EXCAVATION NOTES

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

PAVING AND GRADING

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

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

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

DRAINAGE / STORM SEWER NOTES

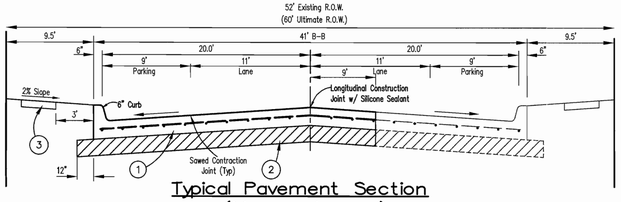
1. The CONTRACTOR shall maintain drainage at all times during construction. Ponding of water in streets, drives, trenches, etc. will not be allowed. Existing drainage ways shall not be blocked or removed unless explicitly stated in the plans or written approval is given by the City.
2. All structural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

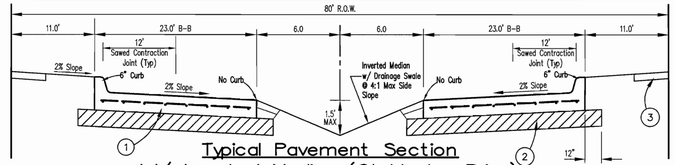


Typical Pavement Section
(Mercer Avenue)

Not To Scale

1. 8” Thk.~3600 P.S.I. Reinforced Portland Cement Pavement w/No.4 Bars On 18” Centers Both Ways.
2. 6” Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41lbs Per S.Y. Hydrated Lime)
3. 5’ Sidewalk To Be Built By Homebuilder. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24” Centers Both Ways.

NOTE:
Cement content shall be 6 sacks per Cubic Yard for machine pour concrete and 6.5 sacks per Cubic Yard for hand pour.

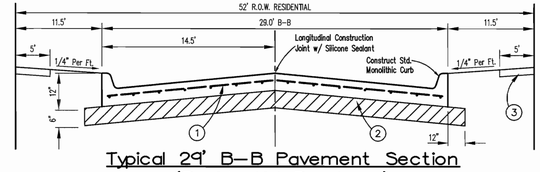


Typical Pavement Section
W/ Inverted Median (Stableglen Drive)

Not To Scale

1. 8” Thk.~3600 P.S.I. Reinforced Portland Cement Pavement w/No.4 Bars On 18” Centers Both Ways. (28 Days)
2. 8” Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (54lbs Per S.Y. Hydrated Lime)
3. 5’ Sidewalk To Be Built By Homebuilder. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24” Centers Both Ways.

NOTE:
Cement content shall be 6 sacks per Cubic Yard for machine pour concrete and 6.5 sacks per Cubic Yard for hand pour.

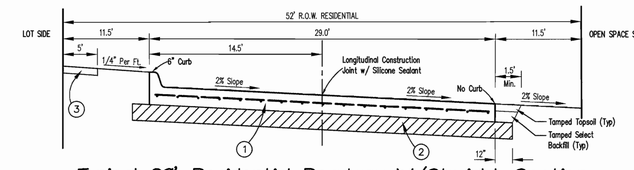


Typical 29’ B–B Pavement Section
(Residential Roadways)

Not To Scale

1. 6” Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24” Centers Both Ways.
2. 6” Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41lbs Per S.Y. Hydrated Lime)
3. 5’ Sidewalk To Be Built By Homebuilder or As Shown On Plans. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24” Centers Both Ways.

NOTE:
Cement content shall be 6 sacks per Cubic Yard for machine pour concrete and 6.5 sacks per Cubic Yard for hand pour.

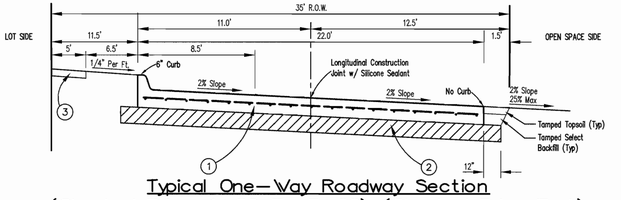


Typical 29’ Residential Roadway W/Straight Section
(Herrick Street–0+48 To 7+74) (Olmsted Drive–0+00 To 18+50)
(Nuttal Street)

Not To Scale

1. 6” Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24” Centers Both Ways.
2. 6” Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41lbs Per S.Y. Hydrated Lime)
3. 5’ Sidewalk To Be Built By Homebuilder or As Shown On Plans. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24” Centers Both Ways.

NOTE:
Cement content shall be 6 sacks per Cubic Yard for machine pour concrete and 6.5 sacks per Cubic Yard for hand pour.



Typical One–Way Roadway Section
(Olmsted Drive–1+82 To 5+66) (Olmsted Drive East)

Not To Scale

1. 6” Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24” Centers Both Ways.
2. 6” Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41lbs Per S.Y. Hydrated Lime)
3. 5’ Sidewalk To Be Built By Homebuilder or As Shown On Plans. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24” Centers Both Ways.

NOTE:
Cement content shall be 6 sacks per Cubic Yard for machine pour concrete and 6.5 sacks per Cubic Yard for hand pour.

GENERAL CONSTRUCTION NOTES
Sheet 2 of 2
October 2020

CITY OF ROCKWALL
ENGINEERING DEPARTMENT

385 S. Goliad
Rockwall, Texas 75087

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

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SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
GENERAL NOTES/ PAVING SECTIONS

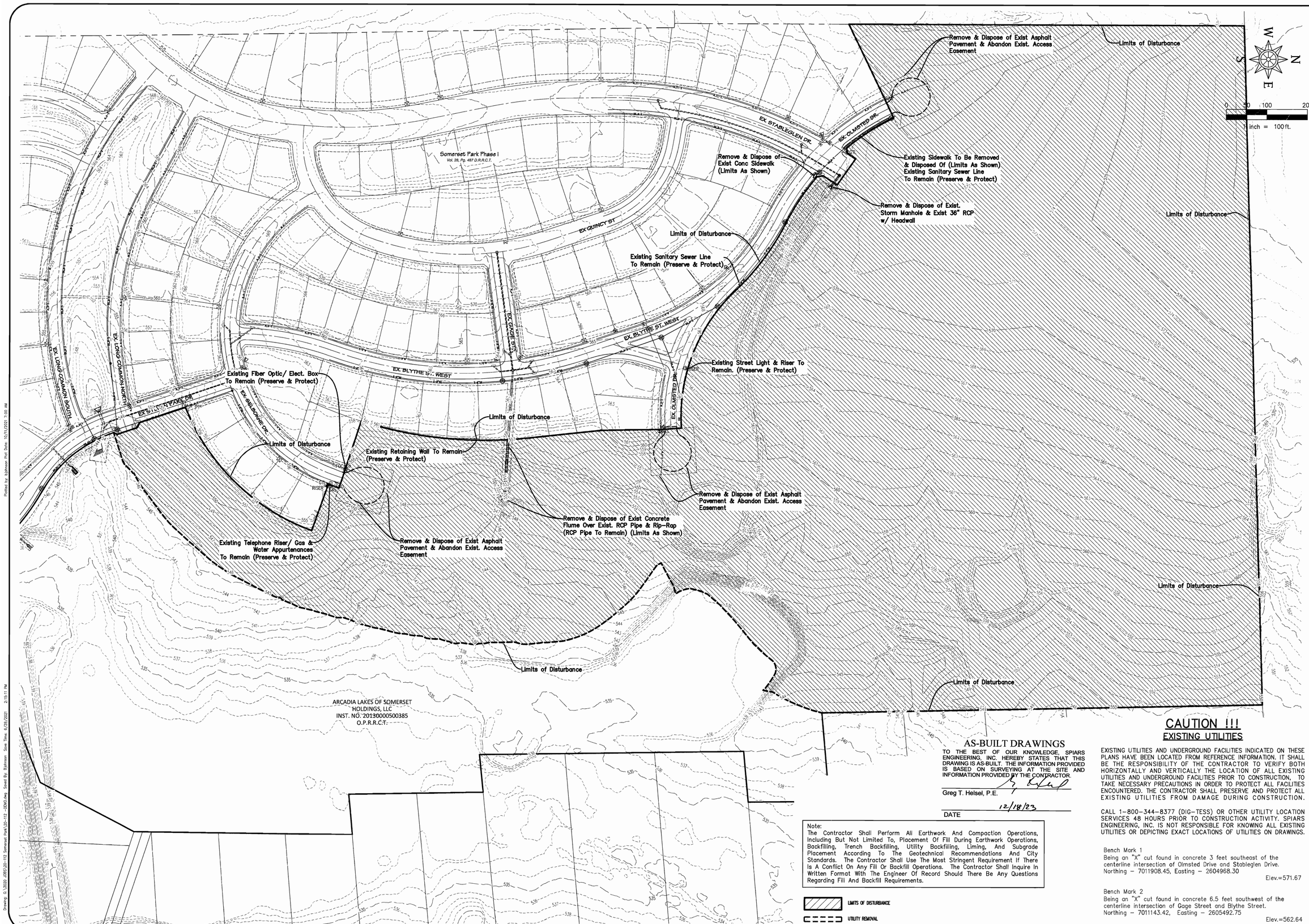
Date
Revisions

Scale: N/A
Drawn By: BJ
Checked By: GTH

Sheet 8

SEI No. 20–112

Plotted by: kschora Plot Date: 10/12/2021 5:38 PM
Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112-GEN.dwg Saved By: kschora Save Time: 10/12/2021 5:38:30 PM



AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Greg T. Helsel, P.E.

12/18/23
DATE

Note:
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LIMITS OF DISTURBANCE

UTILITY REMOVAL

CAUTION !!!
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Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing = 7011908.45, Easting = 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing = 7011143.42, Easting = 2605492.75
Elev.=562.64

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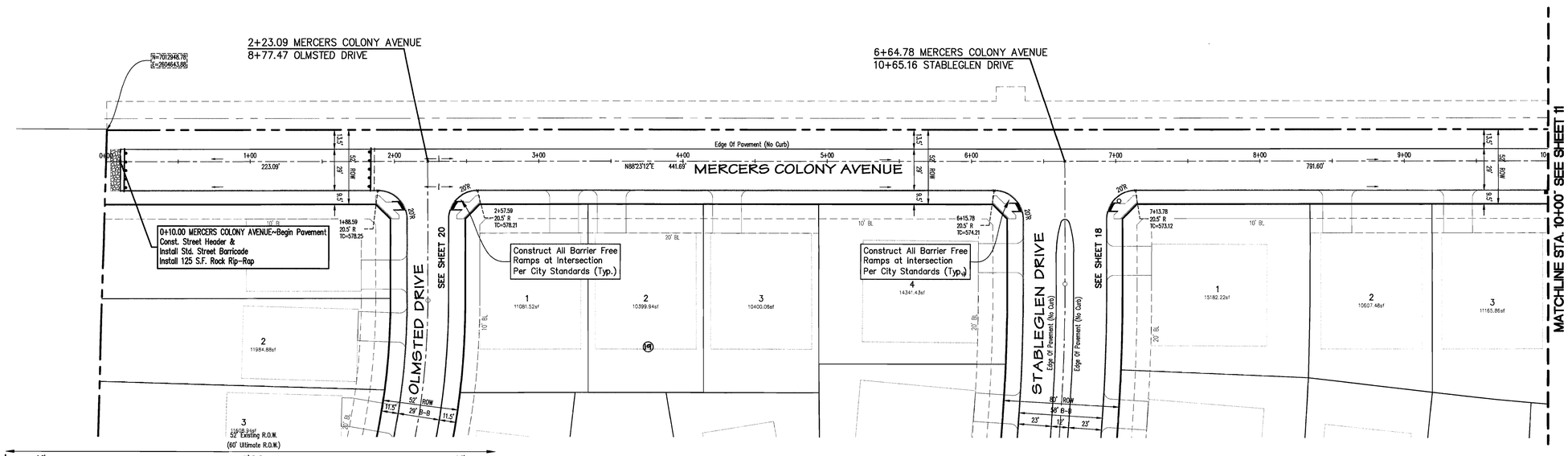
STATE OF TEXAS
GREG T. HELSEL
120339
PROFESSIONAL ENGINEER
LICENSED
10/12/21

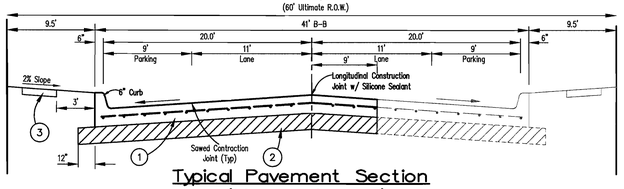
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
DEMOLITION PLAN

Date	Revisions

Scale: 1"=100'
Drawn By: BJ
Checked By: GTH
Sheet 9
SEI No. 20-112

Plotted by: BJohnson Plot Date: 10/11/2021 7:55 AM
Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112 -3DOD.dwg Saved By: BJohnson Save Time: 8/25/2021 2:15:11 PM





Typical Pavement Section (Mercer Avenue)

Not To Scale

1. 8" Thk.~3600 P.S.I. Reinforced Portland Cement Pavement w/No.4 Bars On 18" Centers Both Ways.
2. 6" Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41 lbs Per S.Y. Hydrated Lime)
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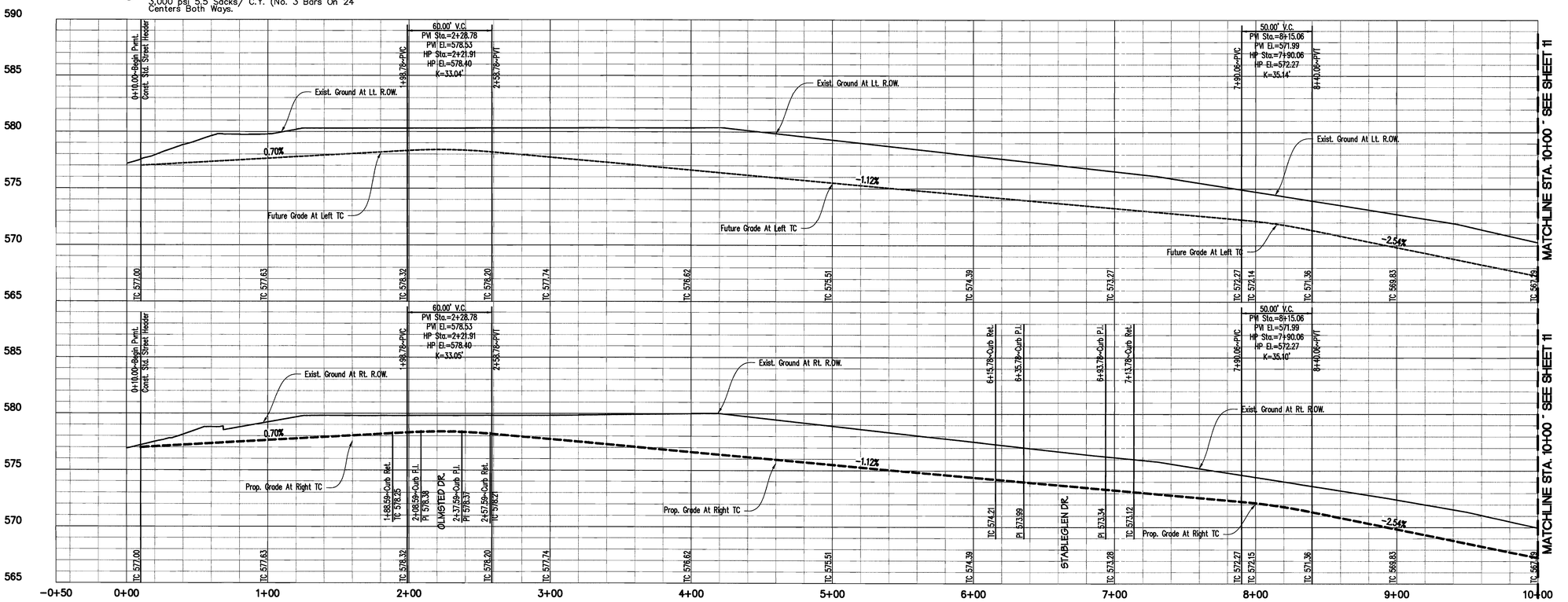

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N W E S

0 20 40 80
1 inch = 40 ft.

AS-BUILT DRAWINGS

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GREG T. HELSEL, P.E. 4/3/24
DATE

STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/3/24

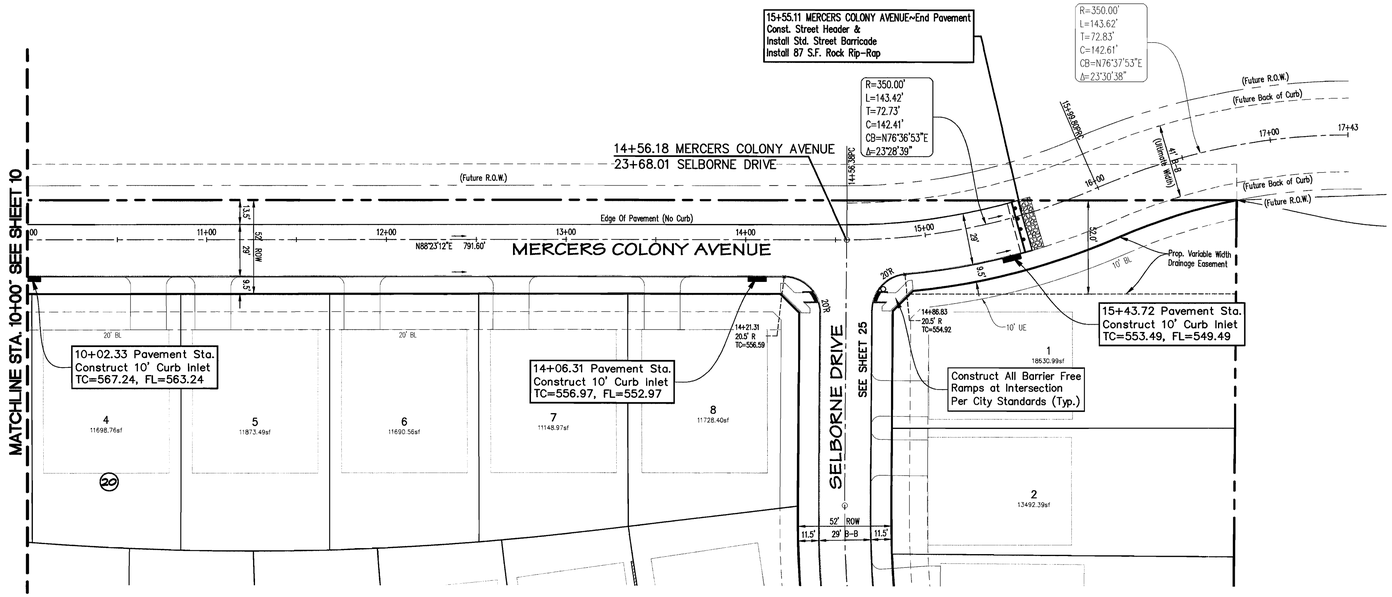
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

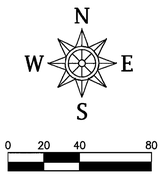
MERCER AVENUE

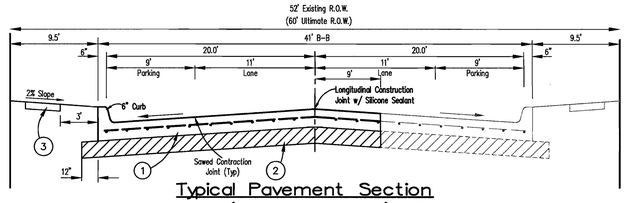
Revisions	Date

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 10
SEI No. 20-112

Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112-PAVE.dwg Saved By: Maqsood Save Time: 4/3/2024 3:08:41 PM Plotted by: Maqsood Plot Date: 4/3/2024 3:26 PM







Typical Pavement Section
(Mercer Avenue)

Not To Scale

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NOTE:
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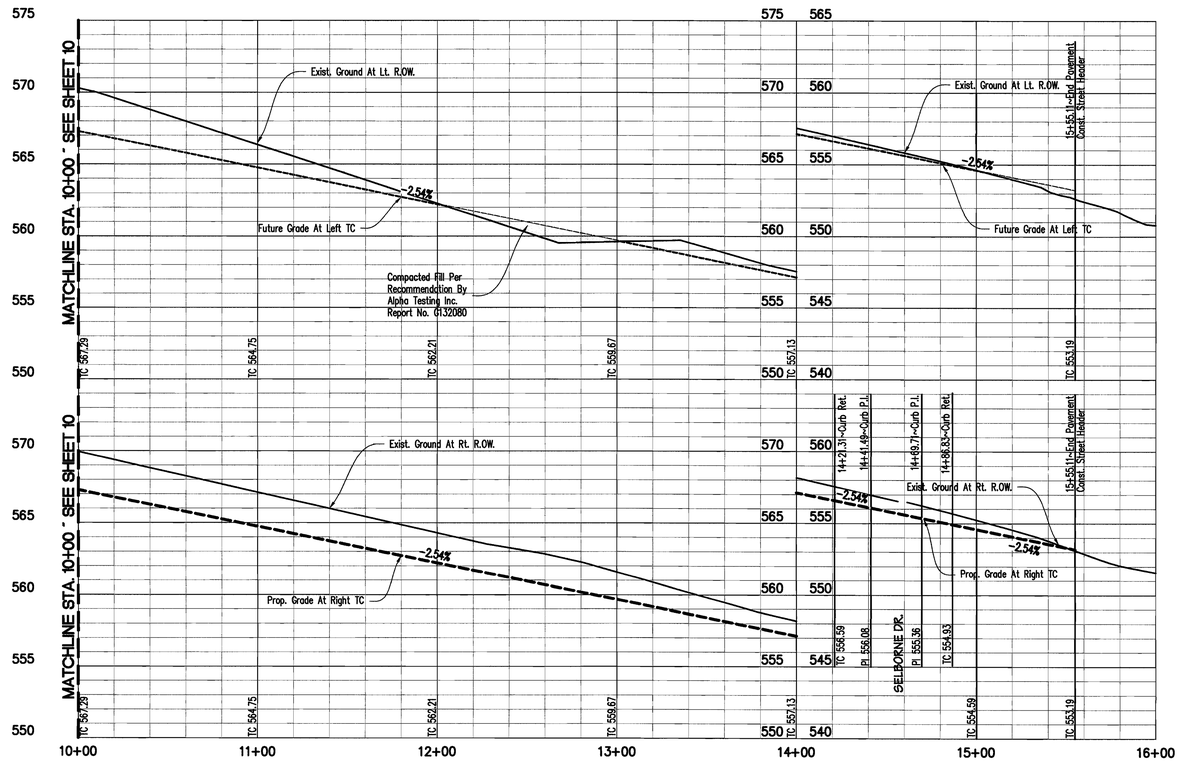

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AS-BUILT DRAWINGS

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GREG T. HELSEL, P.E. — DATE 4/3/24

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

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Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

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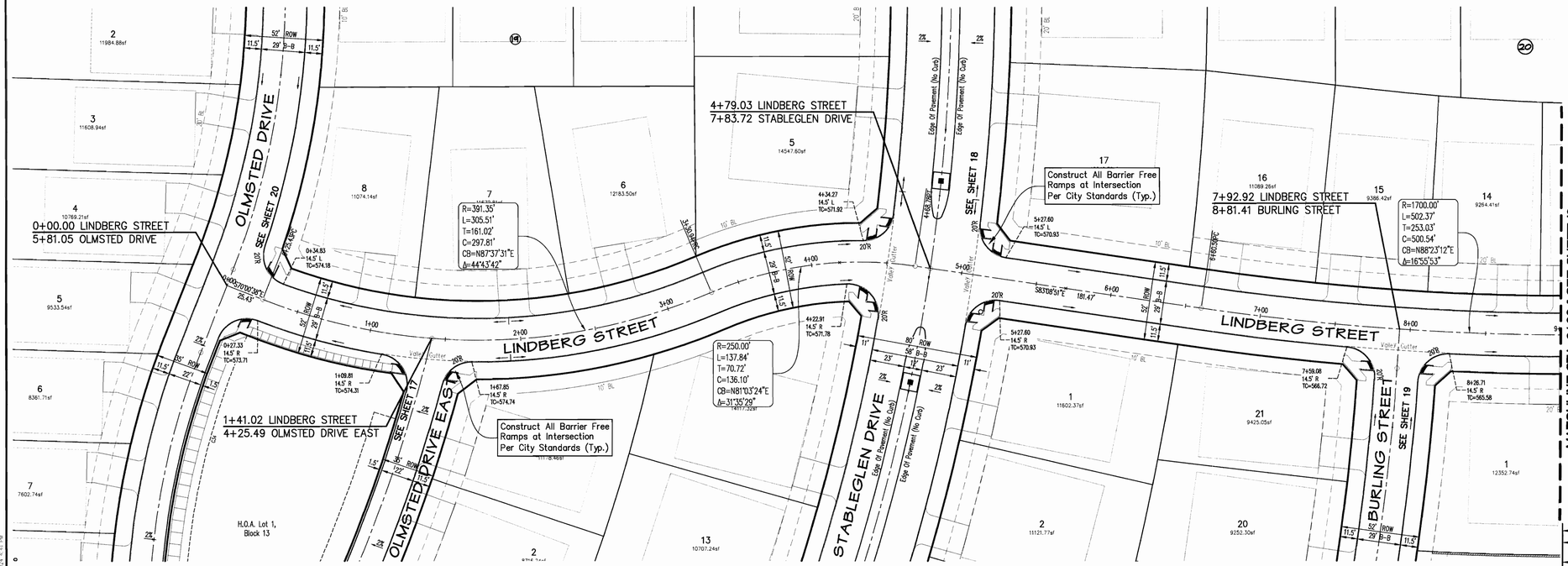
STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
4/3/24

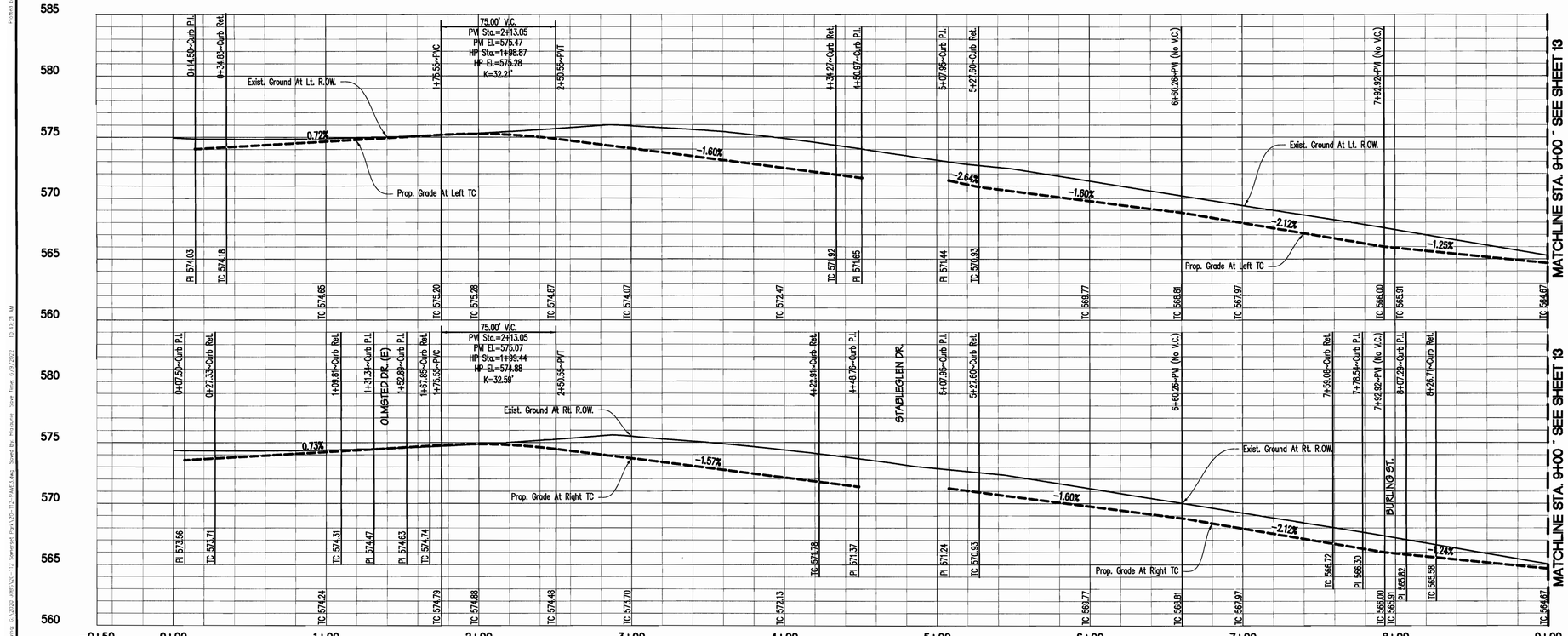
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE
MERCER AVENUE

Revisions	Date

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 11
SEI No. 20-112

Plotted By: Natasha Plot Date: 4/3/2024 1:59 PM
Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112 PLANS.dwg Saved By: Natasha Save Time: 4/3/2024 1:48:22 PM





0 20 40 80
1 inch = 40 ft.

N W E S

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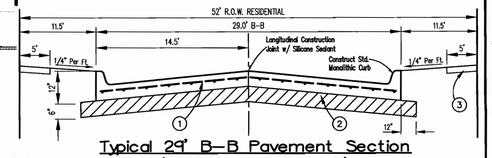
STATE OF TEXAS — GREG T. HELSEL — 120339 — LICENSED PROFESSIONAL ENGINEER — 4/3/24



Typical 29' B-B Pavement Section (Residential Roadways)

Not To Scale

1. 6" Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24" Centers Both Ways.
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Bench Mark 1
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Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
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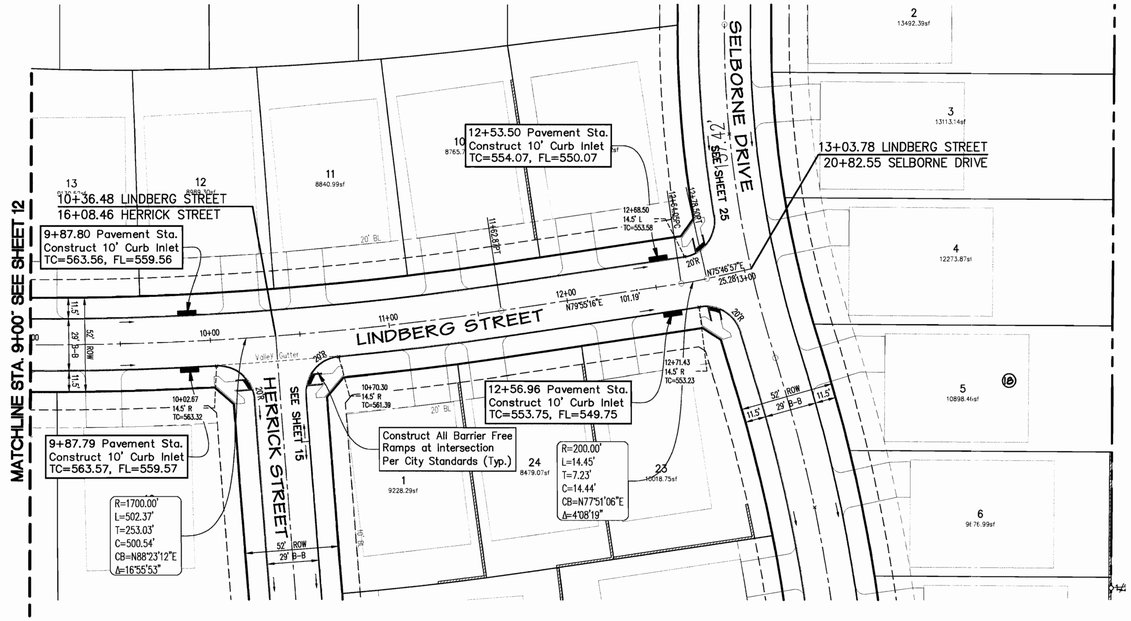
Elev.=562.64

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE
LINDBERG STREET

Date	Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 12
SEI No. 20-112

Printed by: Mobjove Print Date: 4/1/2024 4:41 PM
Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112-PAVE.dwg Saved By: mbjuarez Save Time: 6/9/2022 10:47:31 AM



0 20 40 80

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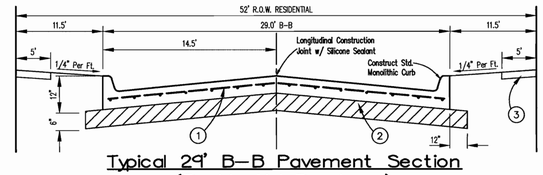

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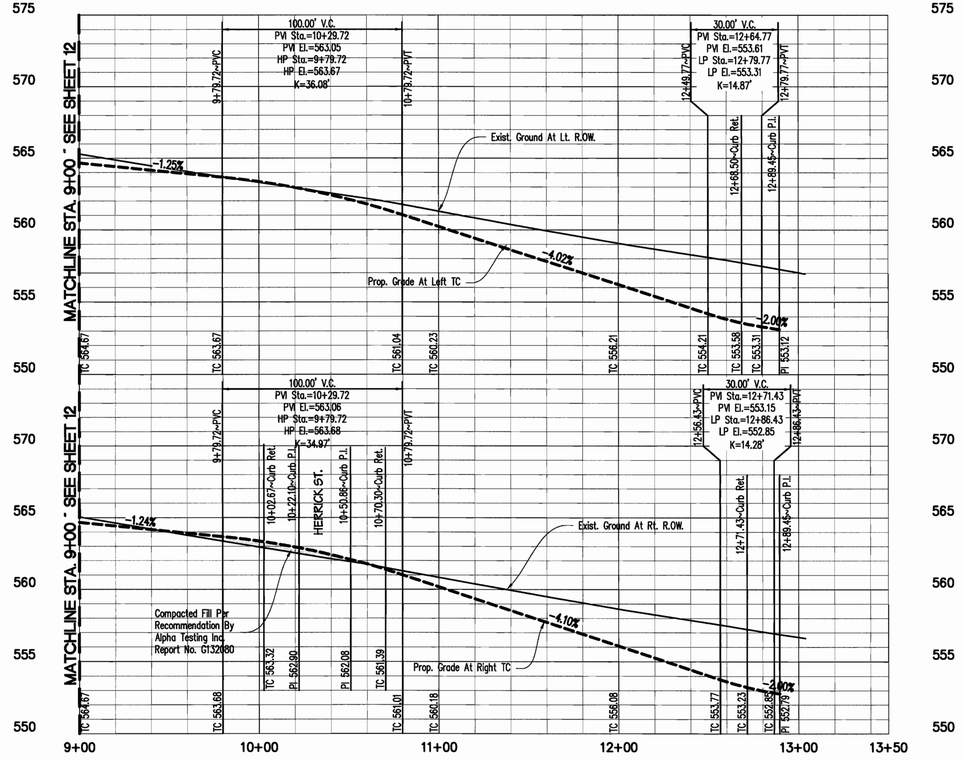

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GREG T. HELSEL, P.E. — DATE 4/3/24

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
4/3/24

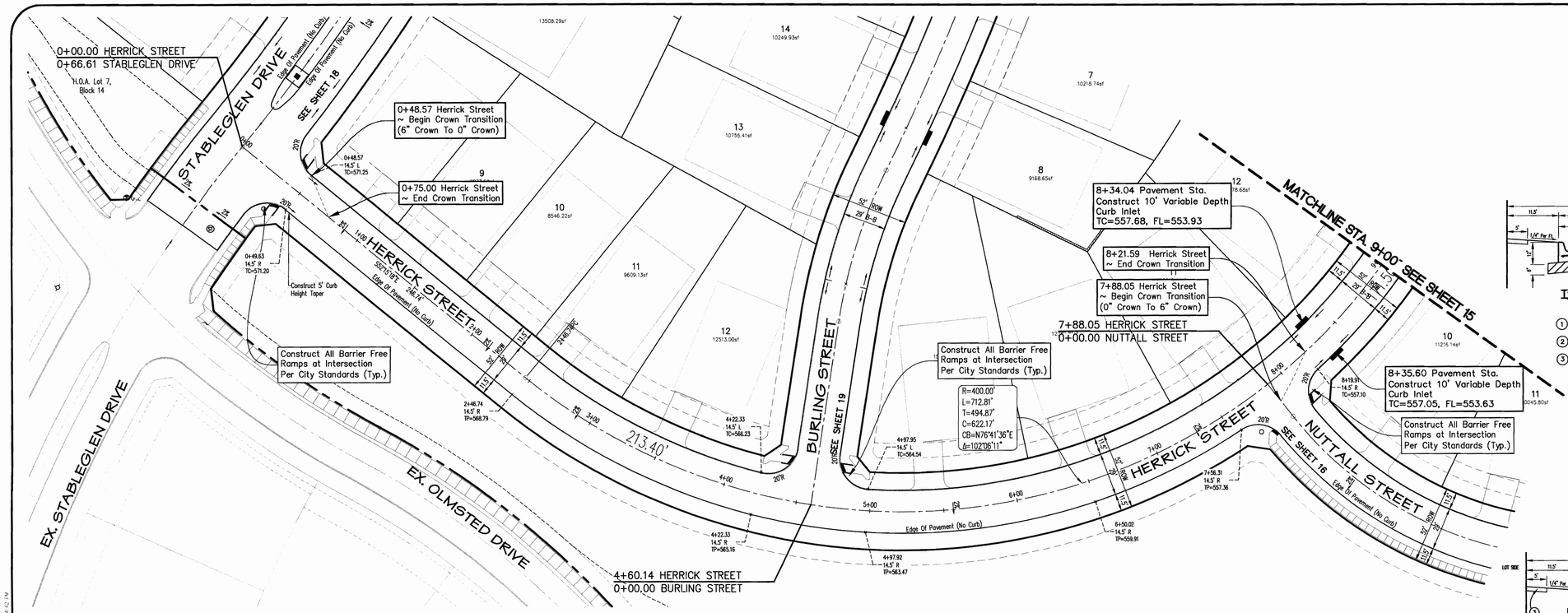
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

LINDBERG STREET

Revisions	Date

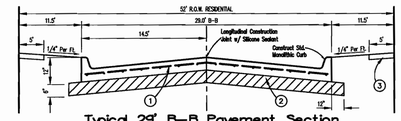
Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 13
SEI No. 20–112

Plotted by: bjaquez Plot Date: 4/1/2024 4:43 PM
Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112 PLAT.dwg Saved By: bjaquez Save Time: 6/3/2022 10:47:08 AM



0 20 40 80
1 inch = 40ft.

N
W E
S



Typical 29' B-B Pavement Section
(Residential Roadways)
Not To Scale

1. 6" Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24" Centers Both Ways.
2. 6" Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41 lbs Per S.Y. Hydrated Lime)
3. 5' Sidewalk To Be Built By Homebuilder or As Shown On Plans. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24" Centers Both Ways.

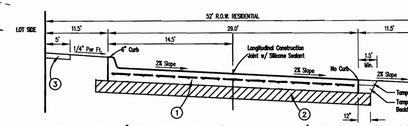
NOTE:
Cement content shall be 6 sacks per Cubic Yard for machine pour concrete and 6.5 sacks per Cubic Yard for hand pour.

AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE SPIARS ENGINEERING, INC HEREBY STATES THAT THIS DRAWING IS AS-BUILT THE INFORMATION PROVIDED IS BASED ON SURVEING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

GREG T. HELSEL, P.E. 4/3/24

DATE



Typical 29' Residential Roadway W/Straight Section
(Herrick Street-0+48 To 7+74) (Olmsted Drive-0+00 To 18+50)
(Nuttal Street)
Not To Scale

1. 6" Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24" Centers Both Ways.
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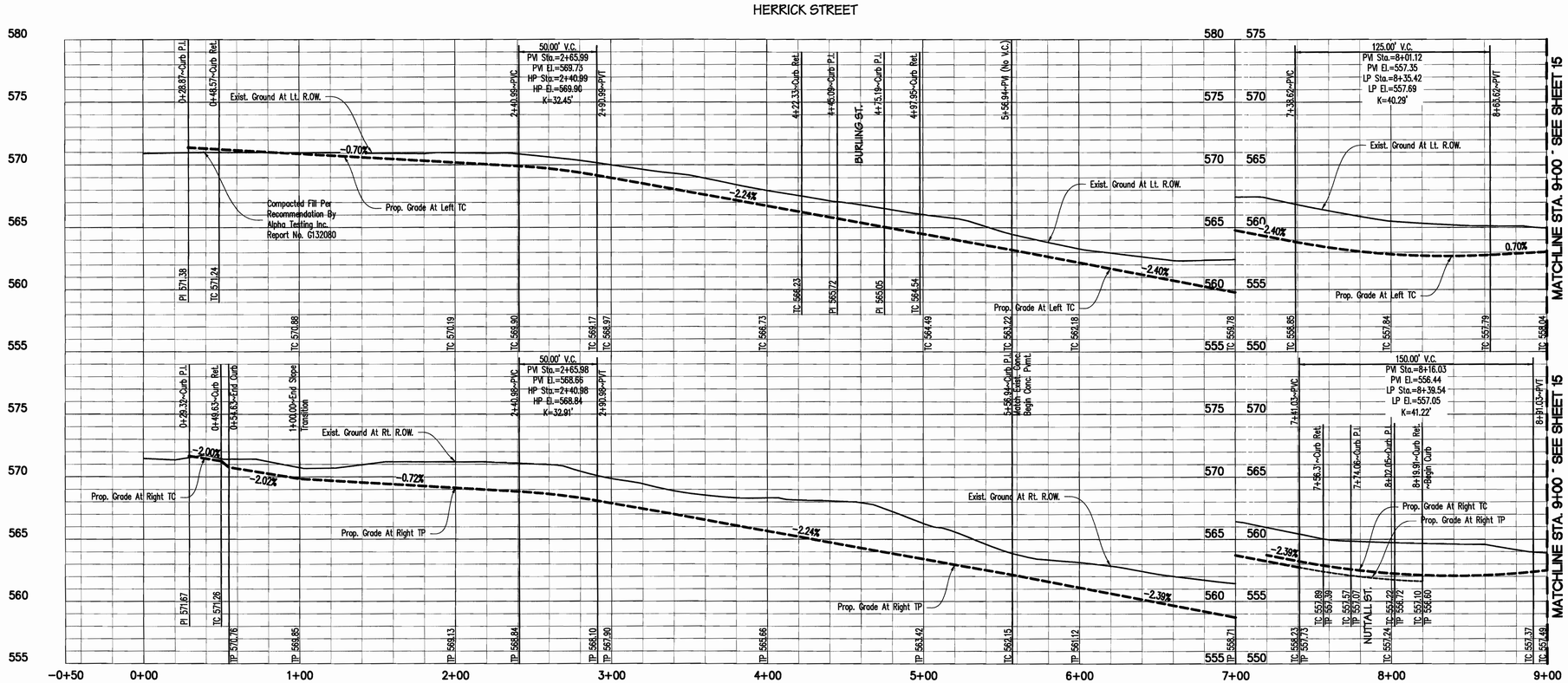

Note:
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CAUTION !!!
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CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATION SERVICES 48 HOURS PRIOR TO CONSTRUCTION ACTIVITY. SPIARS ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing - 7011908.45, Easting - 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing - 7011143.42, Easting - 2605492.75
Elev.=562.64

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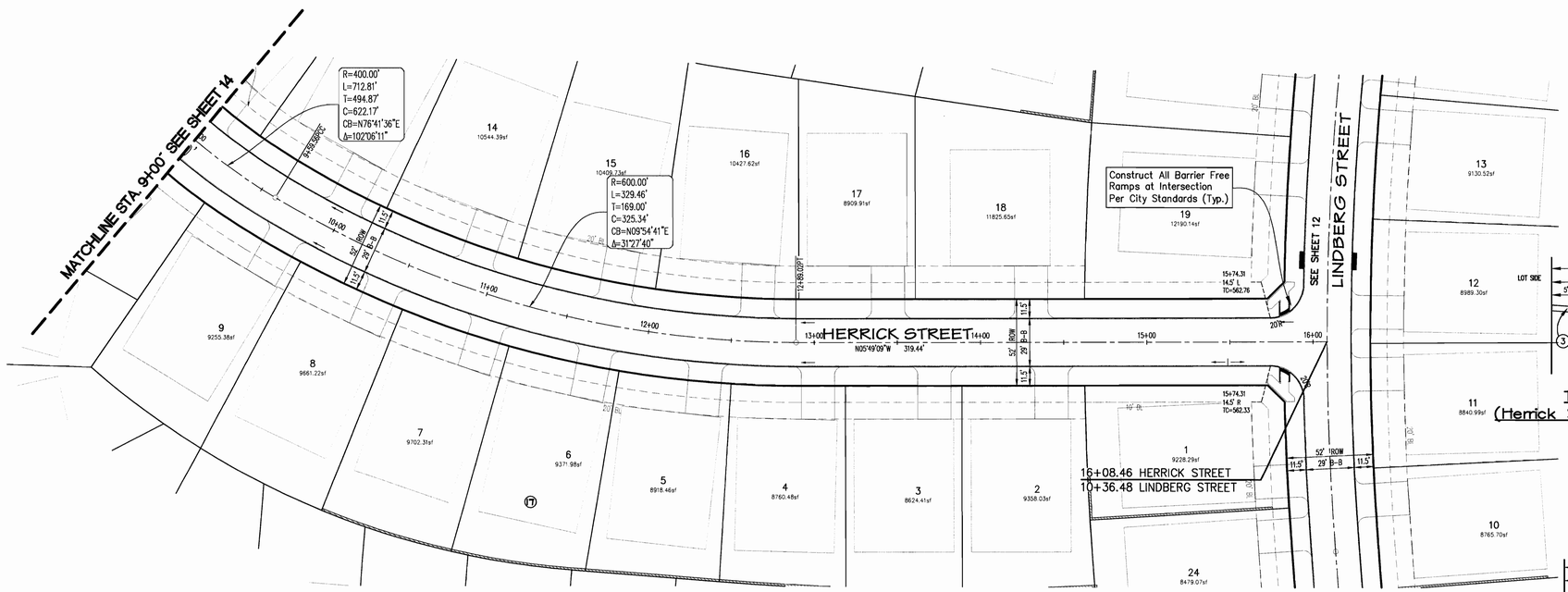
STATE OF TEXAS
GREG T. HELSEL
R. 120339
LICENSED PROFESSIONAL ENGINEER
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE
HERRICK STREET

Date	Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 14
SEI No. 20-112

Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112-PAVE.dwg Layout By: stephanie Save Time: 4/3/2024 10:48:31 AM Plotted by: Stephanie Plot Date: 4/3/2024 4:43 PM



0 20 40 80

1 inch = 40 ft.

AS-BUILT DRAWINGS

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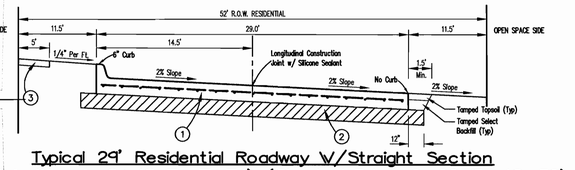
GREG T. HELSEL, P.E. — DATE 4/3/24

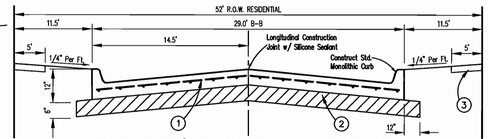


Typical 29' Residential Roadway W/Straight Section (Herrick Street–0+48 To 7+74) (Olmsted Drive–0+00 To 18+50) (Nuttal Street)

Not To Scale

1. 6" Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24" Centers Both Ways.
2. 6" Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41 lbs Per S.Y. Hydrated Lime)
3. 5' Sidewalk To Be Built By Homebuilder or As Shown On Plans. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24" Centers Both Ways.

NOTE:
Cement content shall be 6 sacks per Cubic Yard for machine pour concrete and 6.5 sacks per Cubic Yard for hand pour.



Typical 29' B–B Pavement Section (Residential Roadways)

Not To Scale

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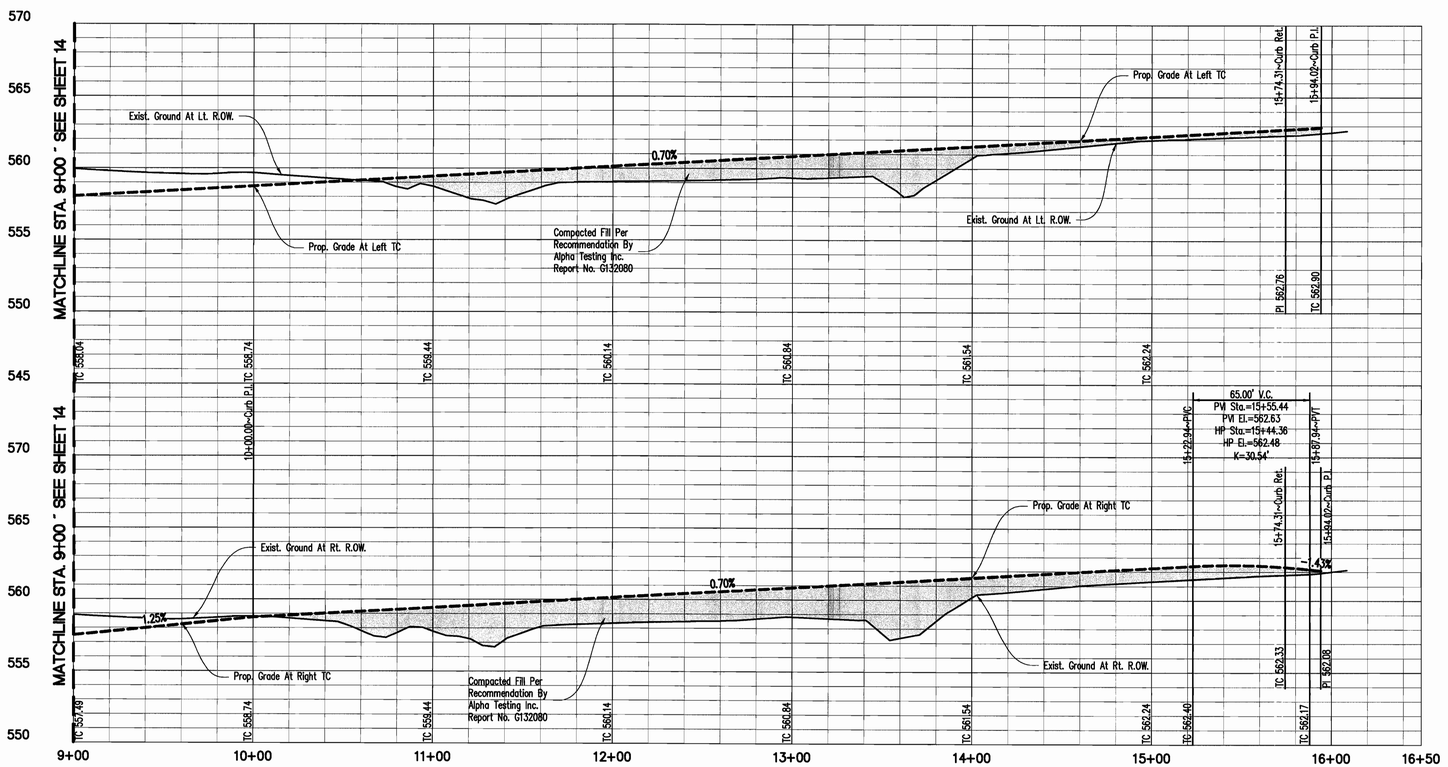

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Elev.=571.67

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Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

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STATE OF TEXAS
GREG T. HELSEL
LICENSED
PROFESSIONAL ENGINEER
No. 120339
4/3/24

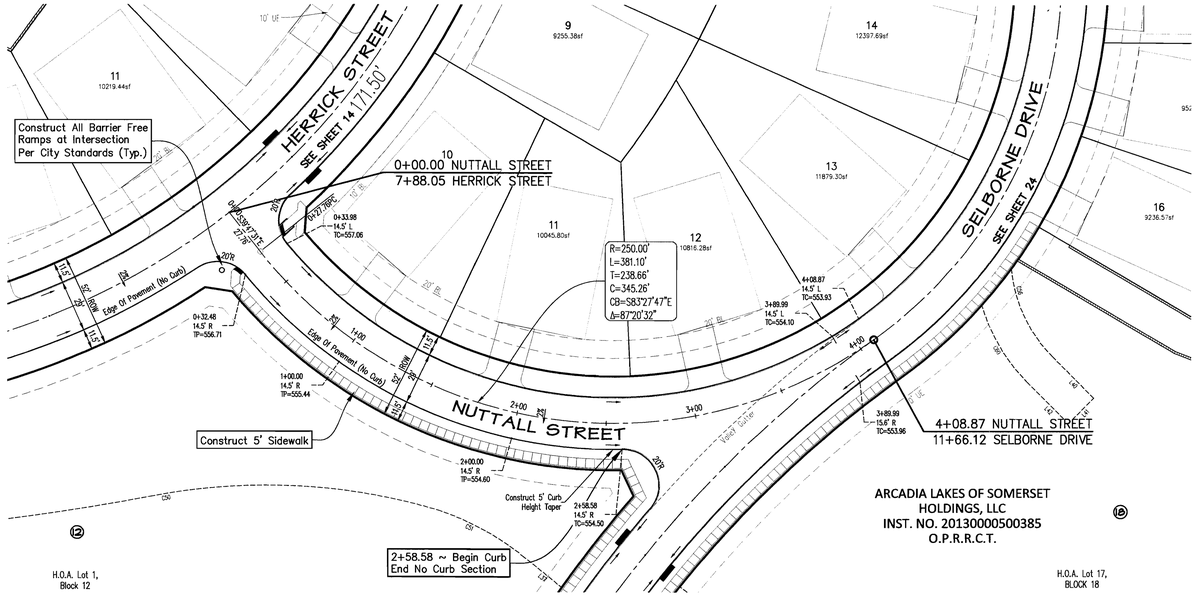
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

Date	Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 15
SEI No. 20–112

HERRICK STREET

Plotted By: Brandon Jones Plot Date: 4/1/2024 4:43 PM
Drawing: C:\2020 JOBS\20-112 Somerset Park\20-112 PAVE.dwg Saved By: Brandon Jones Date: 4/1/2024 4:43 PM

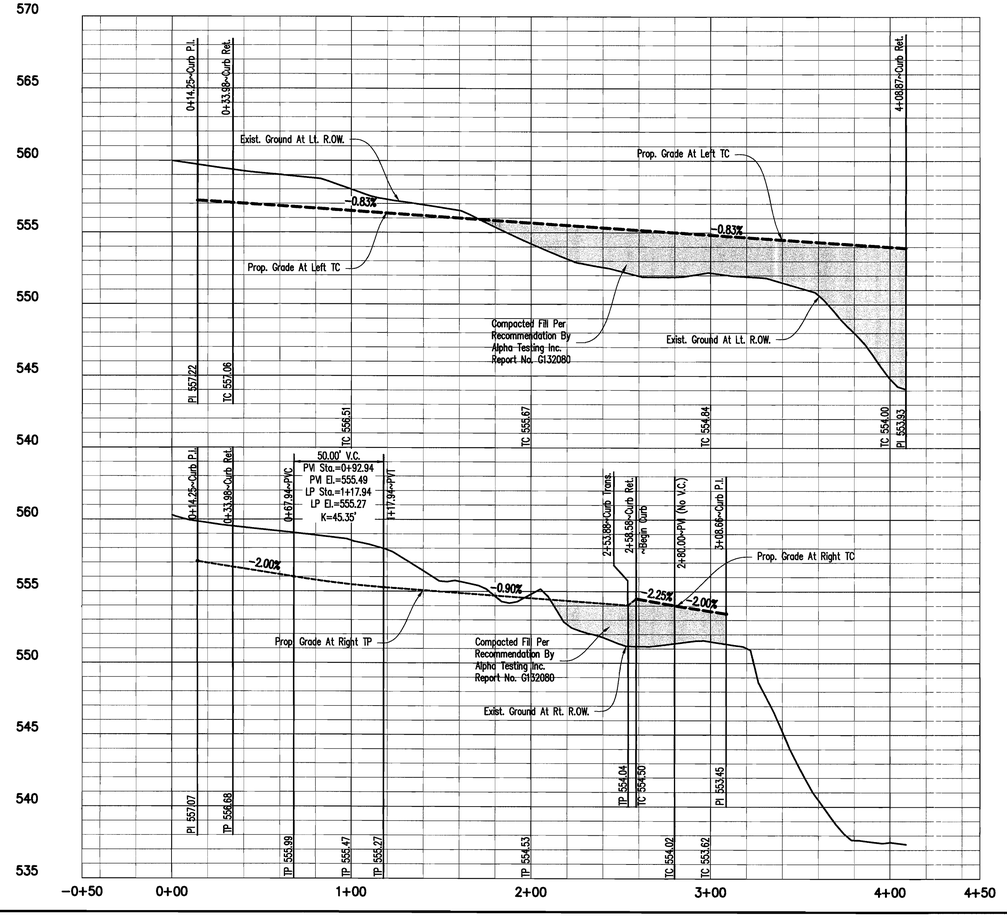


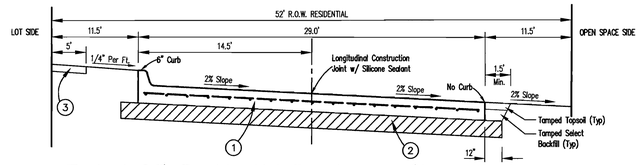
0 20 40 80

1 inch = 40ft.

N W E S

NUTTALL STREET





Typical 29' Residential Roadway W/Straight Section
(Herrick Street–0+48 To 7+74) (Olmsted Drive–0+00 To 18+50)
(Nuttal Street)

Not To Scale

1. 6" Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24" Centers Both Ways.
2. 6" Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41 lbs Per S.Y. Hydrated Lime)
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NOTE:
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AS-BUILT DRAWINGS

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GREG T. HELSEL, P.E. — DATE 4/3/24

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stablegien Drive.
Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

Bench Mark 2
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Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

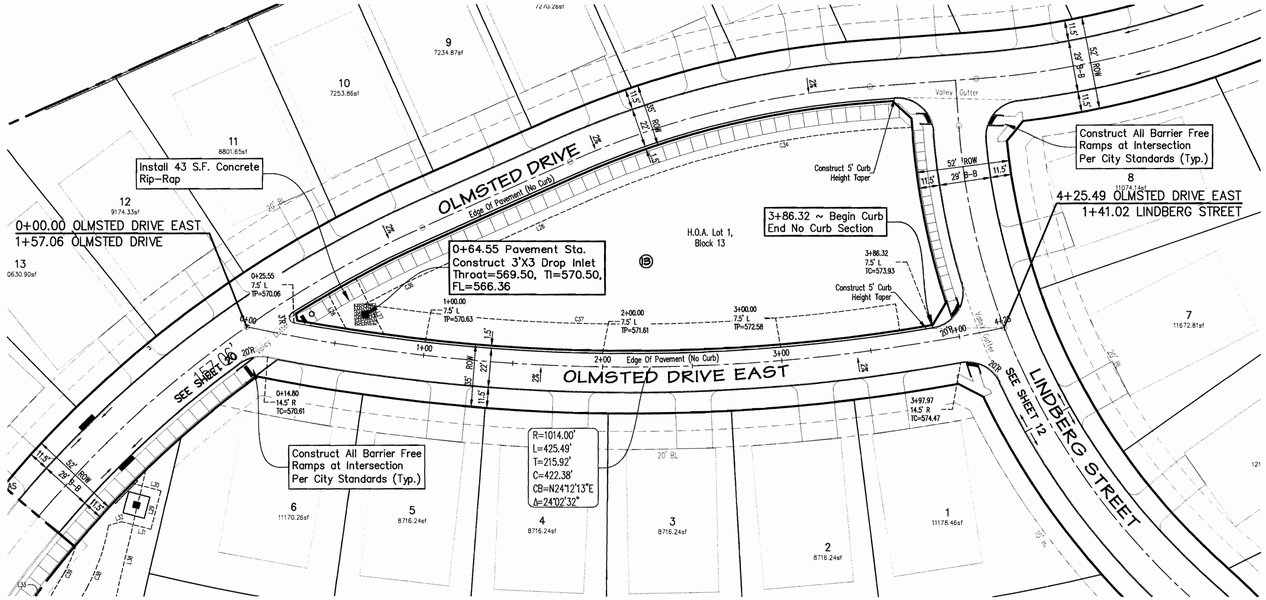
PAVING PLAN & PROFILE

NUTTAL STREET

Date | Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 16
SEI No. 20–112

Plotted By: Benjamin Pirtl Date: 4/1/2024 4:43 PM
Drawing: C:\2020 JOBS\20-112 Somerset Park\20-112 PAVEMENT.dwg Layout By: Benjamin Date Time: 4/3/2024 10:54:10 AM



0 20 40 80

1 inch = 40 ft.

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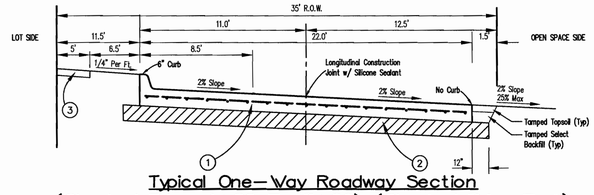
DATE 4/3/24



Typical One-Way Roadway Section
(Olmsted Drive-1+82 To 5+66) (Olmsted Drive East)

Not To Scale

1. 6" Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24" Centers Both Ways.
2. 6" Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41 lbs Per S.Y. Hydrated Lime)
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NOTE:
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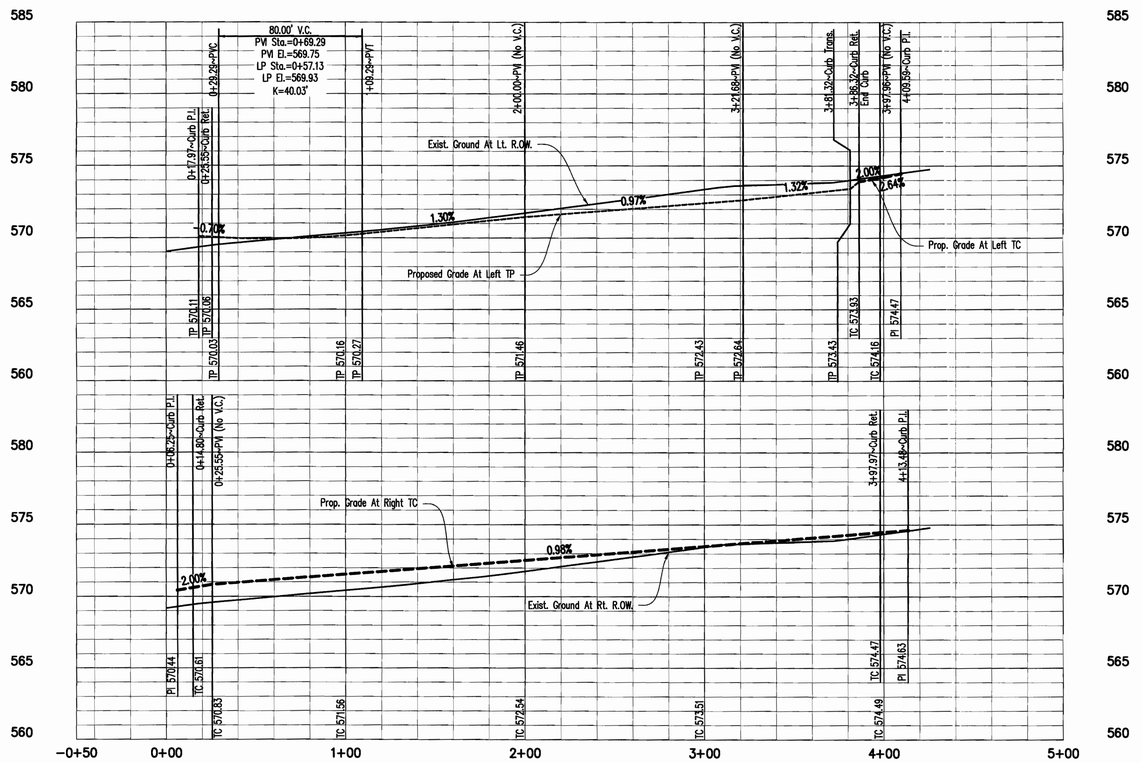
OLMSTED DRIVE EAST



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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/3/24

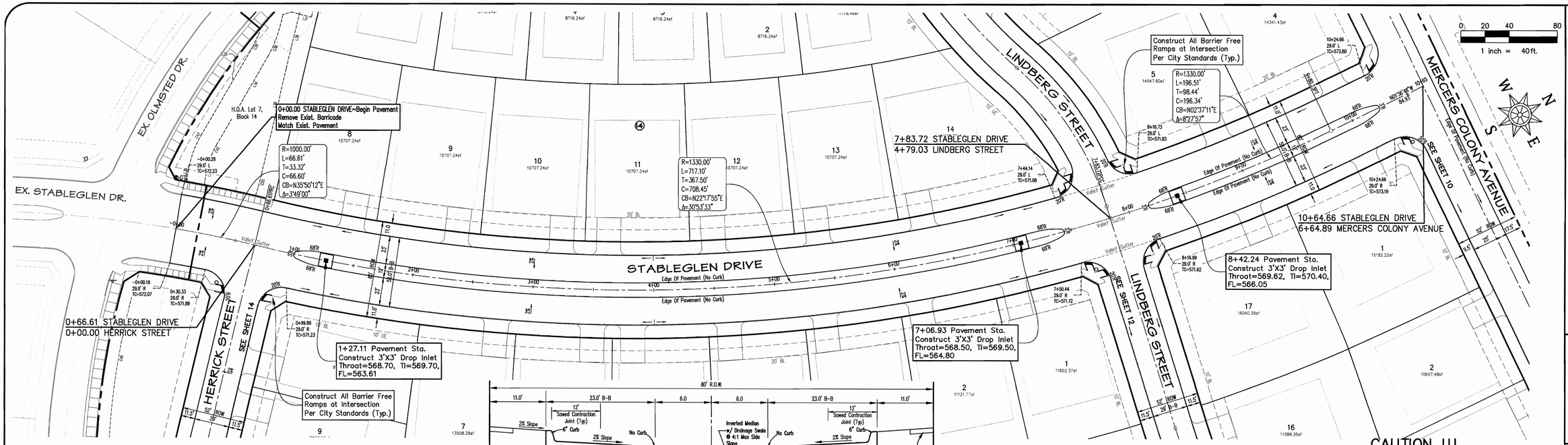
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

Date	Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 17
SEI No. 20-112

OLMSTED DRIVE EAST

Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112-PAVE.dwg Saved By: bdavenport Save Time: 12/18/2023 1:19:55 PM
Plotted by: Isabelle Post Date: 4/1/2024 4:43 PM



Typical Pavement Section
W/ Inverted Median (Stableglen Drive)
Not To Scale

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GREG T. HELSEL, P.E.

4/3/24
DATE

1. 8" Thk.~3600 P.S.I. Reinforced Portland Cement Pavement w/No.4 Bars On 18" Centers Both Ways. (28 Days)
2. 8" Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (54 lbs Per S.Y. Hydrated Lime)
3. 5' Sidewalk To Be Built By Homebuilder. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24" Centers Both Ways.

STABLEGLEN DRIVE

NOTE:
Cement content shall be 6 sacks per Cubic Yard for machine pour concrete and 6.5 sacks per Cubic Yard for hand pour.

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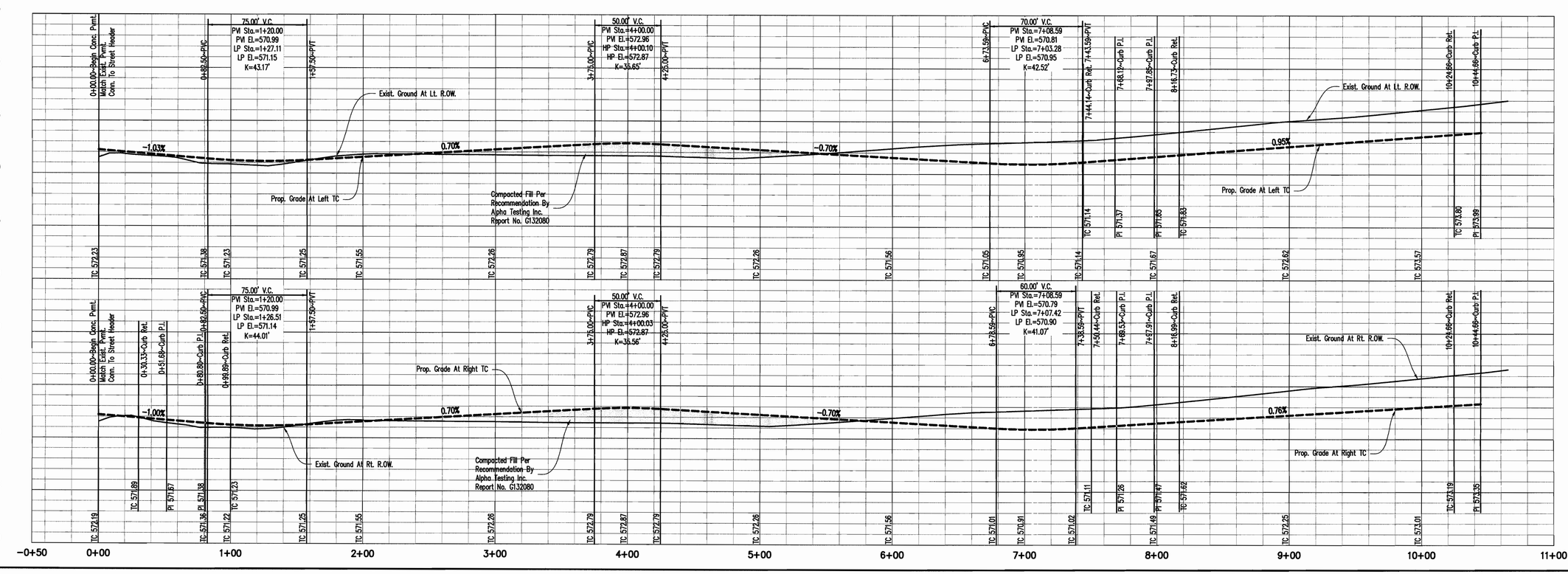

STABLEGLEN DRIVE

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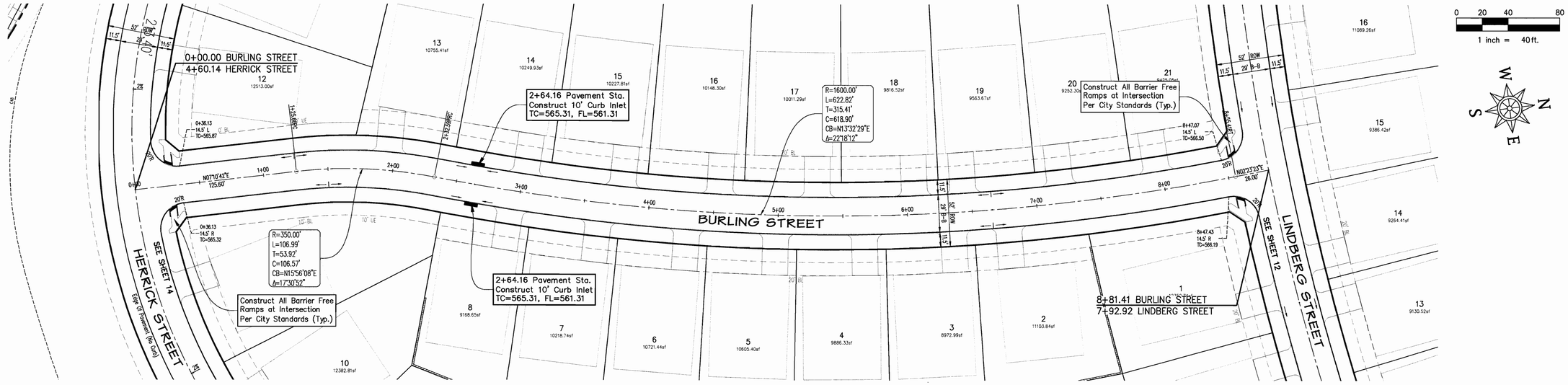
GREG T. HELSEL 120339 LICENSED PROFESSIONAL ENGINEER 4/3/24

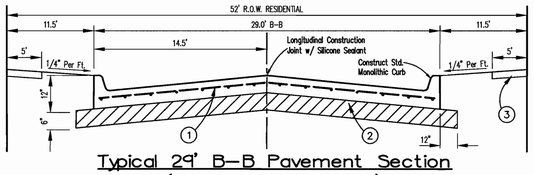
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

Revisions	Date

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 18
SEI No. 20-112

Plotted by: Barbara Plot Date: 4/2/2024 3:27 PM
Drawing: G:\2020\20-112 Somerset Park\20-112-PAVES.dwg Saved By: Barbara Save Time: 4/2/2024 3:32:42 PM





Typical 29' B-B Pavement Section (Residential Roadways)

Not To Scale

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Elev.=571.67

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Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

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AS-BUILT DRAWINGS

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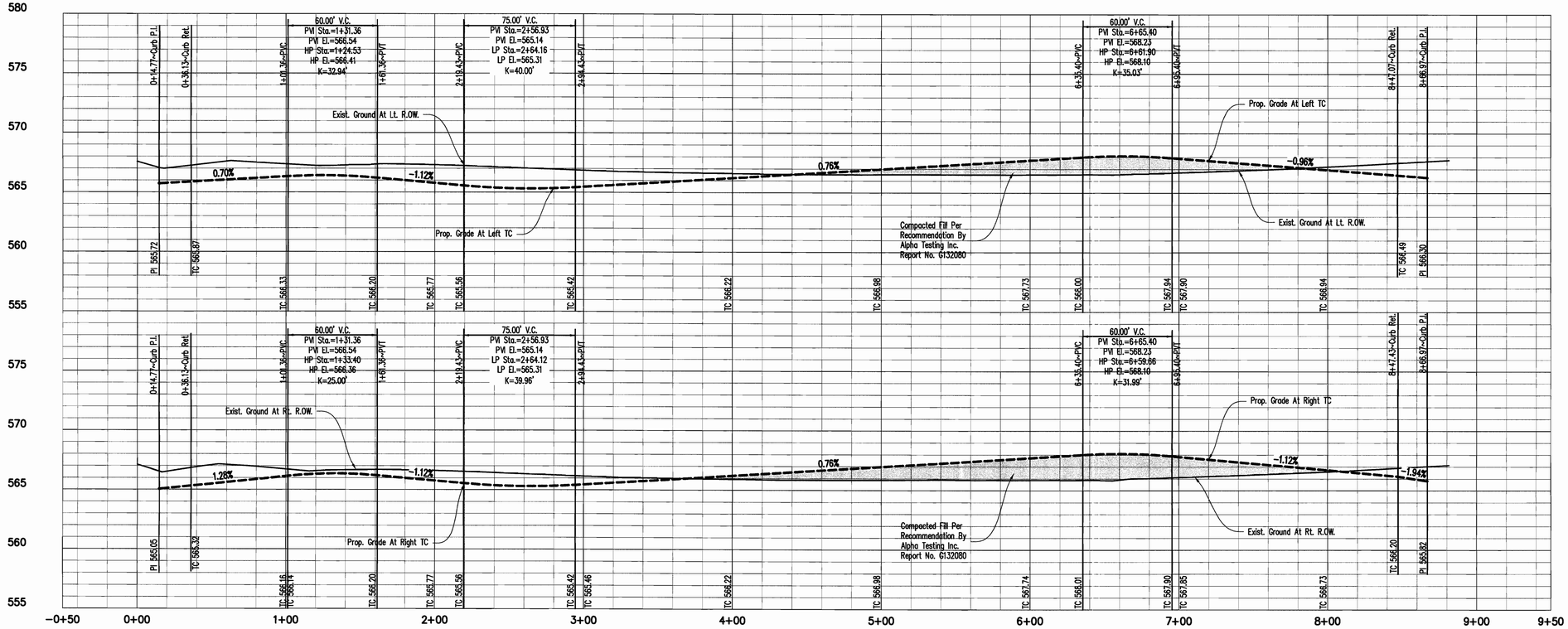
GREG T. HELSEL, P.E. 4/3/24
DATE

BURLING STREET



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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/3/24

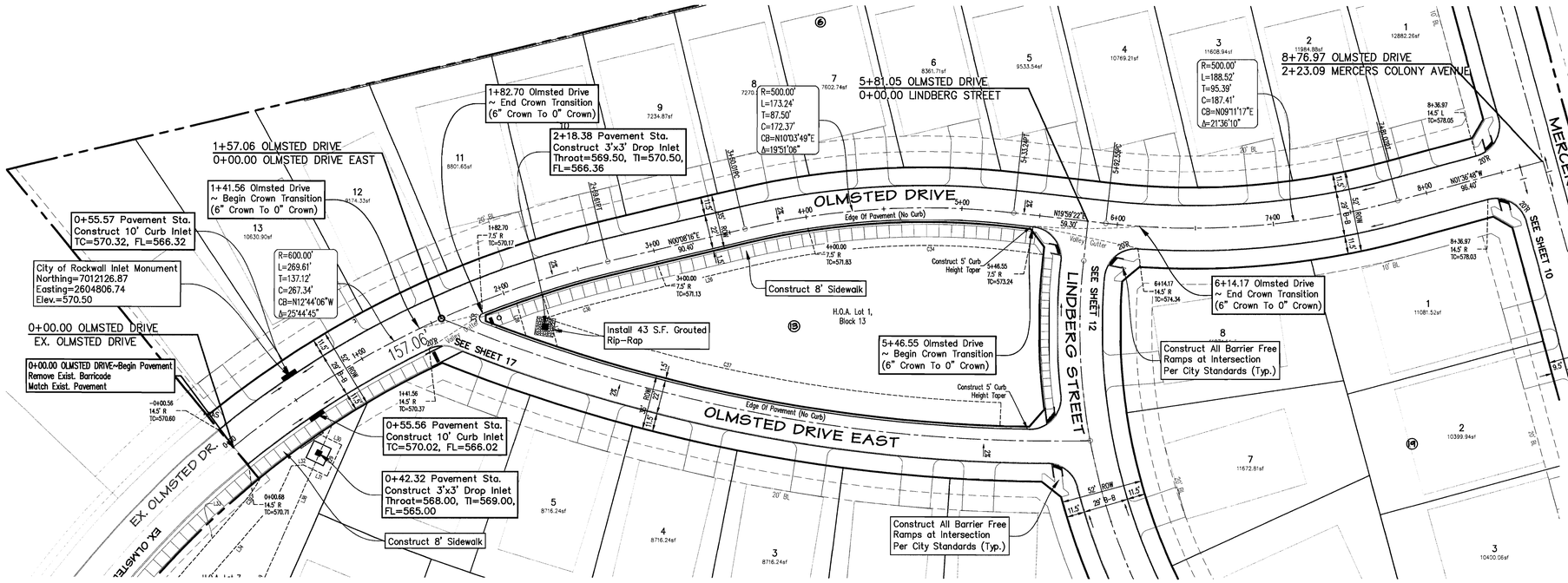
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

Revisions	Date

BURLING STREET

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 19
SEI No. 20-112

Plotted By: Andyann Plot Date: 4/1/2024 4:54 PM
Drawing: C:\2020 JOBS\20-112 Somerset Park\20-112-PAVE10.dwg Saved By: andyann Cur Save: 6/7/2022 10:59:19 AM



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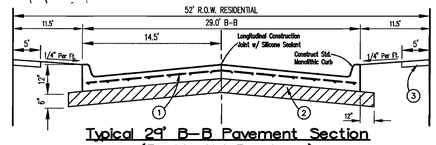
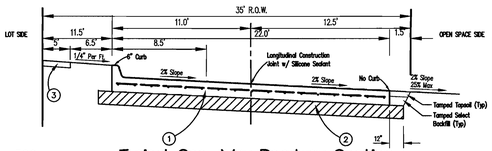


Typical 29' B-B Pavement Section (Residential Roadways)

Not To Scale

1. 6" Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24" Centers Both Ways.
2. 6" Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41 lbs Per S.Y. Hydrated Lime)
3. 5' Sidewalk To Be Built By Homebuilder or As Shown On Plans. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24" Centers Both Ways.



Typical One-Way Roadway Section (Olmsted Drive-1+82 To 5+66) (Olmsted Drive East)

Not To Scale

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Elev.=571.67

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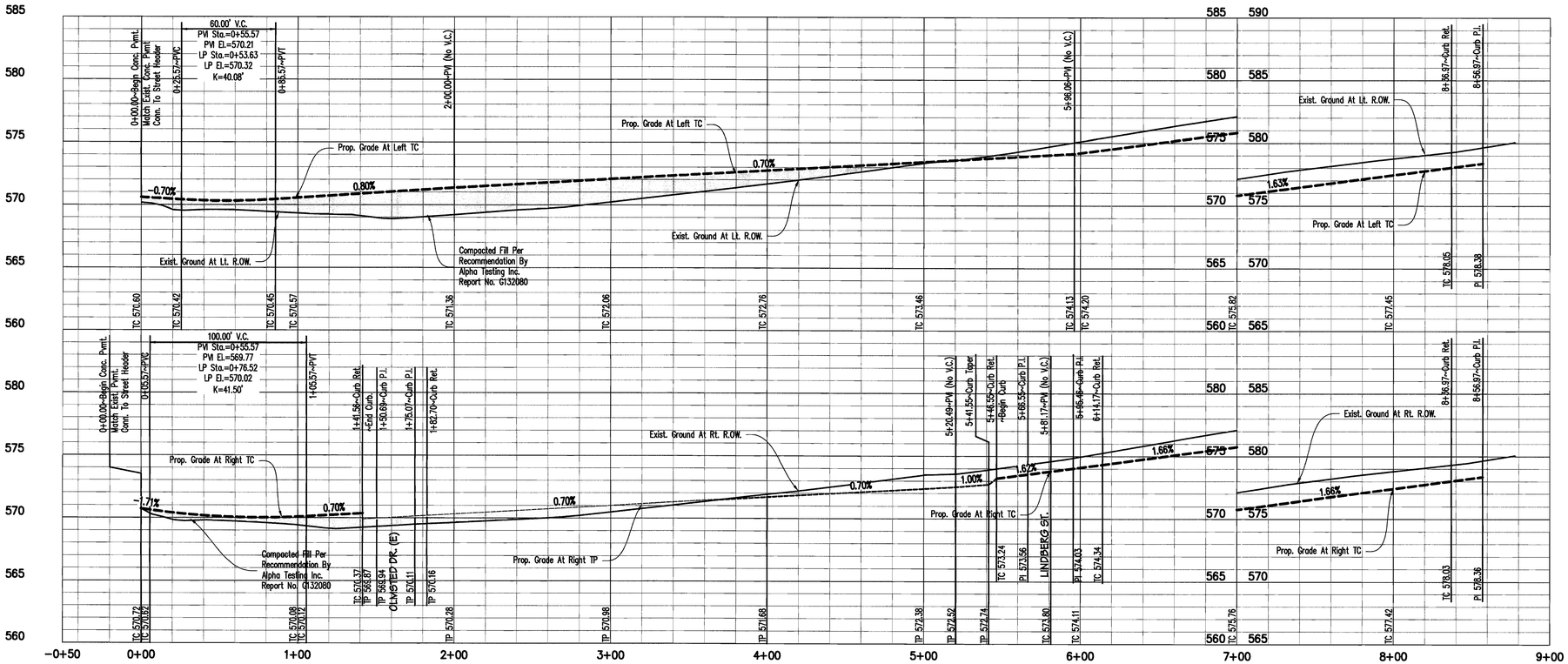
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

OLMSTED DRIVE



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GREG T. HELSEL 120339 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

Date	Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 20
SEI No. 20-112

OLMSTED DRIVE

Drawing: C:\2020 JOBS\20-112 Somerset Park\20-112 PAVE01.dwg Saved By: Mdgauna Save Time: 4/2/2024 3:13:53 PM
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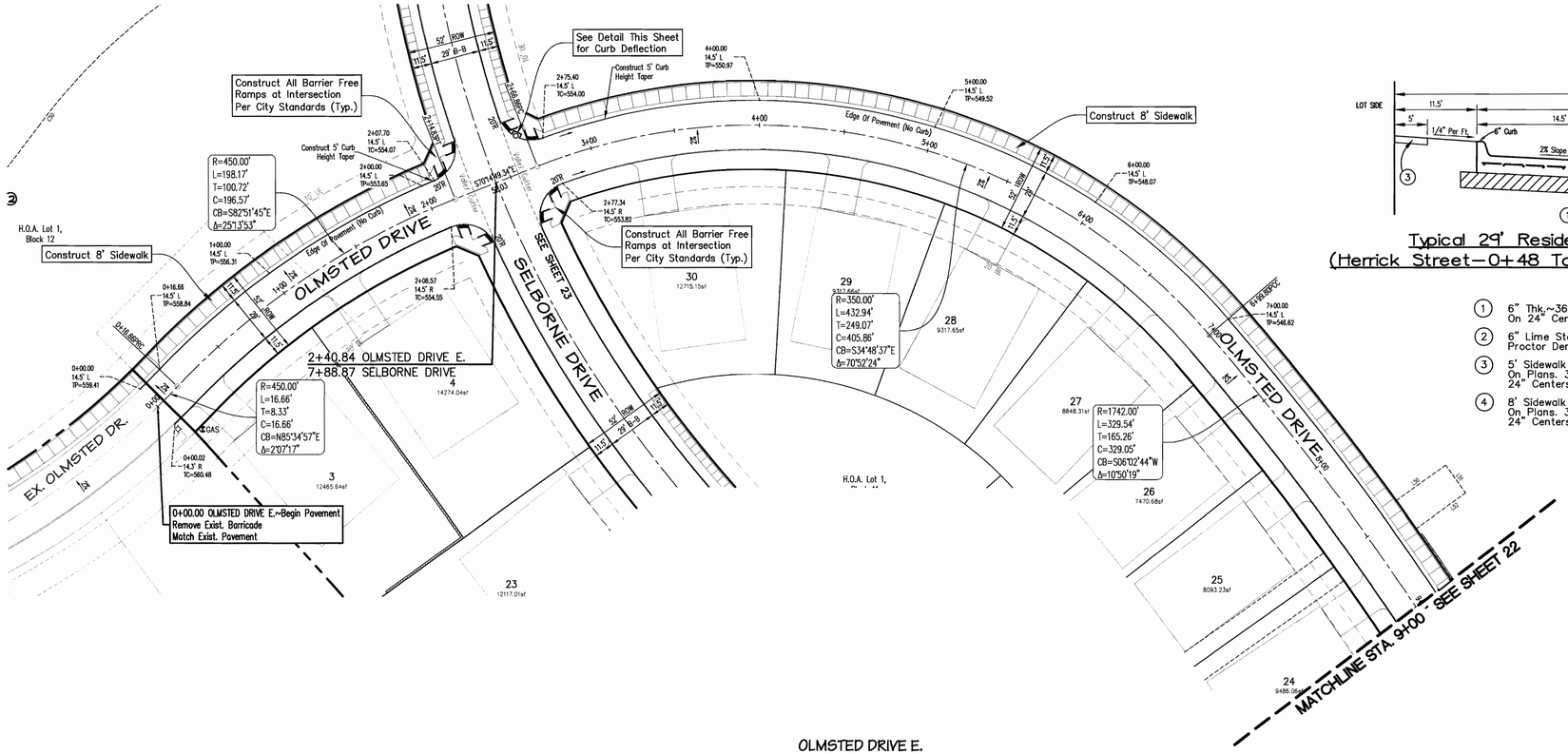
See Detail This Sheet for Curb Deflection
Construct All Barrier Free Ramps at Intersection Per City Standards (Typ.)
Construct 8' Sidewalk
Construct 5' Curb Height Taper
R=450.00'
L=198.17'
T=100.72'
C=196.57'
CB=S82°51'45"E
Δ=25°13'53"
H.O.A. Lot 1, Block 12
OLMSTED DRIVE
SELBORNE DRIVE
EX. OLMSTED DR.
2+40.84 OLMSTED DRIVE E.
7+88.87 SELBORNE DRIVE
R=450.00'
L=16.66'
T=8.33'
C=16.66'
CB=N85°34'57"E
Δ=2°07'17"
0+00.00 OLMSTED DRIVE E.~Begin Pavement
Remove Exist. Barricade
Match Exist. Pavement
R=350.00'
L=432.94'
T=249.07'
C=405.86'
CB=S34°48'37"E
Δ=70°52'24"
R=1742.00'
L=329.54'
T=165.26'
C=329.05'
CB=S06°02'44"W
Δ=10°50'19"
MATCHLINE STA. 9+00 - SEE SHEET 22
SEE SHEET 23
H.O.A. Lot 1,
Edge Of Pavement (No Curb)
Edge Of Water
Edge Of Pavement
50' ROW
29' B-B
11.5'
20R
30' R.O.W.
3:1
4:1
1.5%
2.0%
2.5%
3.0%
3.5%
4.0%
4.5%
5.0%
5.5%
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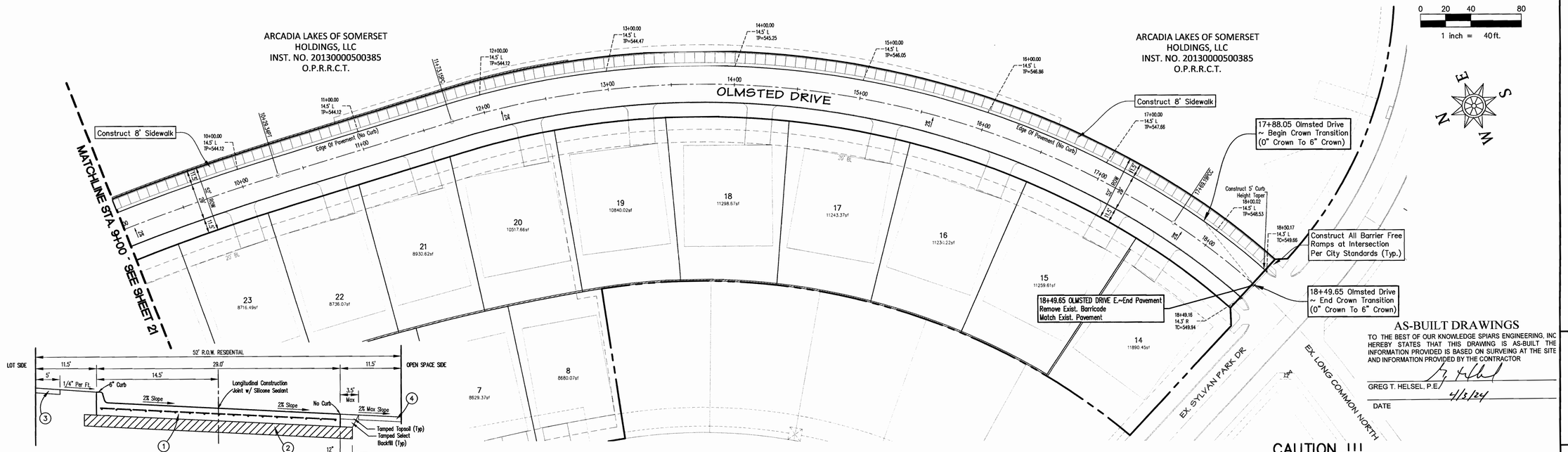

Typical 29' Residential Roadway W/Straight Section (Herrick Street–0+48 To 7+74) (Olmsted Drive–0+00 To 18+50)

Not To Scale

1. 6" Thk.~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24" Centers Both Ways.
2. 6" Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41 lbs Per S.Y. Hydrated Lime)
3. 5' Sidewalk To Be Built By Homebuilder or As Shown On Plans. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24" Centers Both Ways.)
4. 8" Sidewalk To Be Built By Developer or As Shown On Plans. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24" Centers Both Ways)

NOTE:
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GREG T. HELSEL, P.E. 4/3/24

DATE

STATE OF TEXAS
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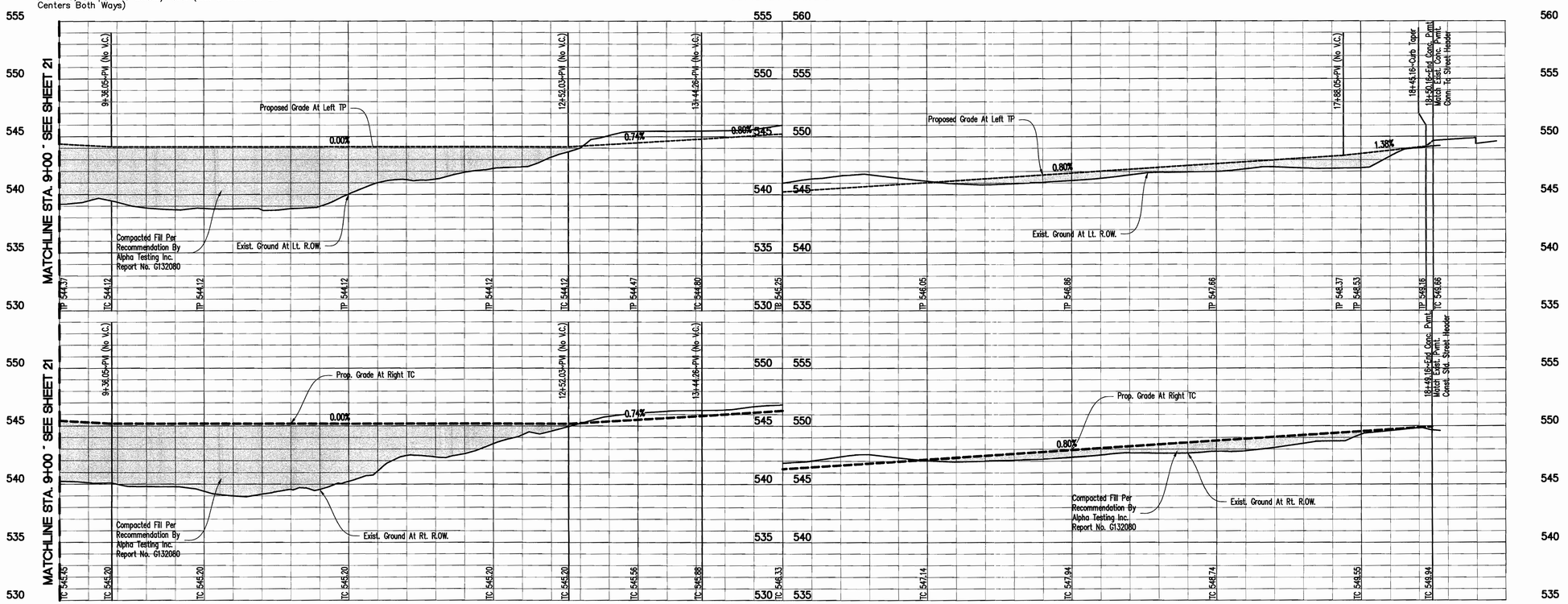
120339
LICENSED
PROFESSIONAL ENGINEER
4/3/24

OLMSTED DRIVE E.



SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

OLMSTED DRIVE

Revisions | Date

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 22
SEI No. 20–112

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Plotted By: Hidjaoui Plot Date: 4/1/2024 4:46 PM
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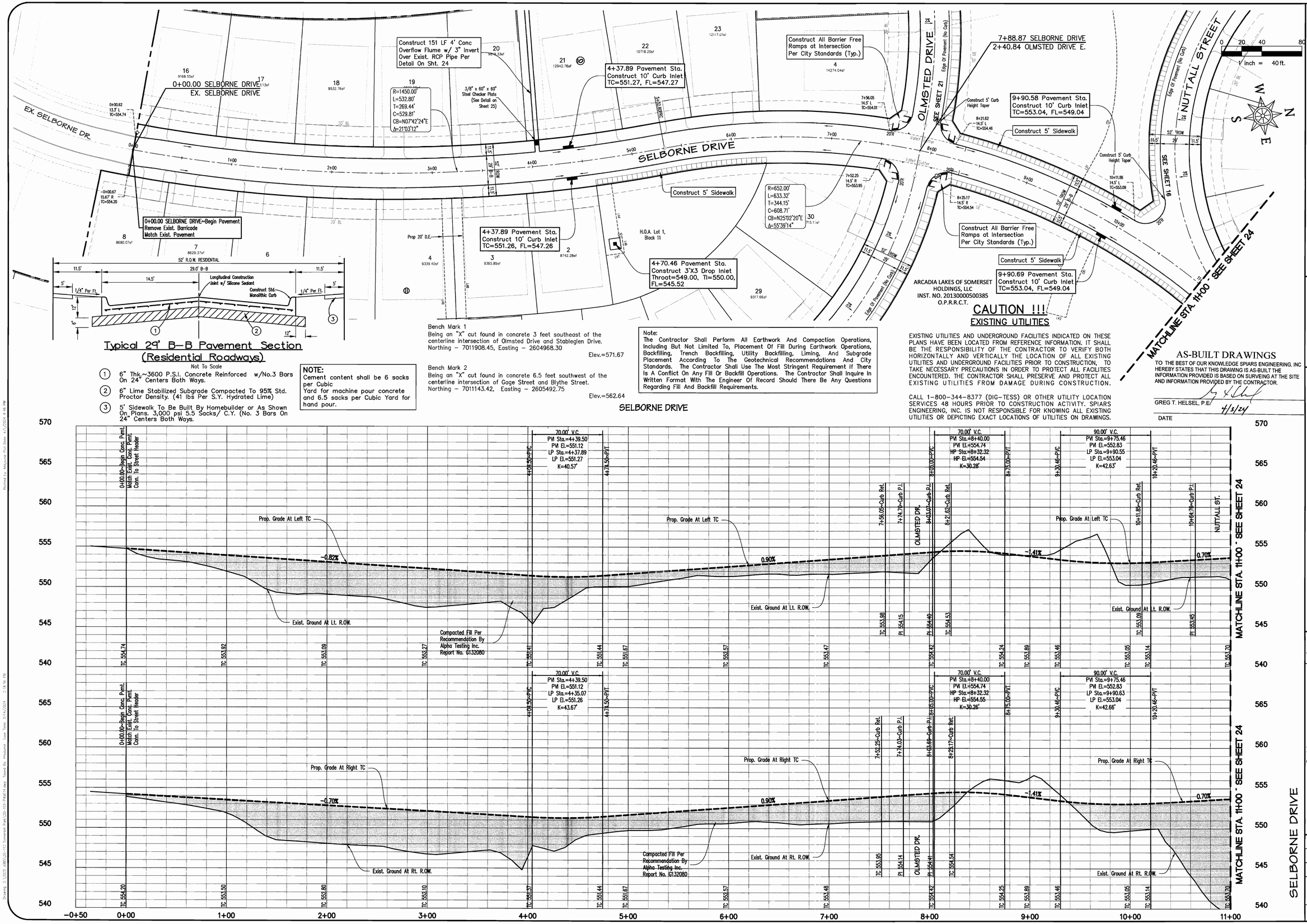

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SELBORNE DRIVE

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0 20 40 80
1 inch = 40 ft.

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4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

Revisions | Date

Scale: 1"=40'
Drawn By: BJ
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Sheet 23
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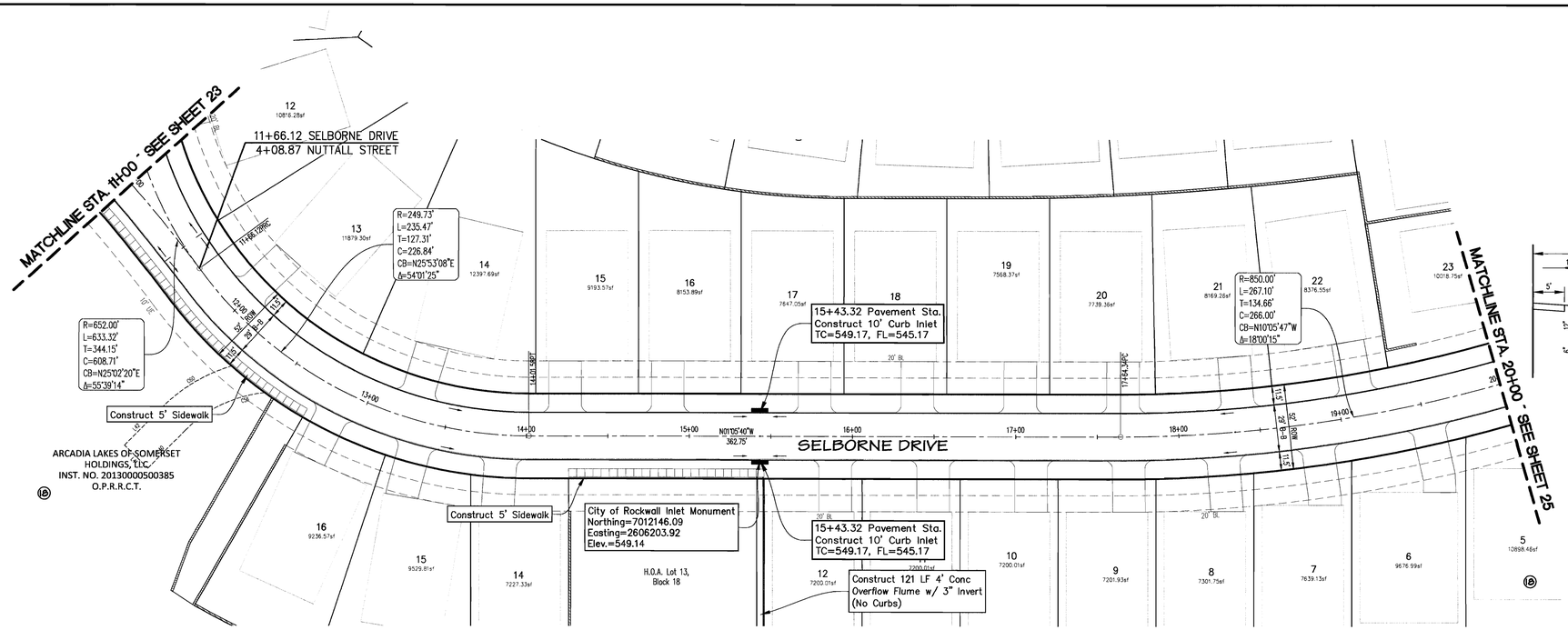

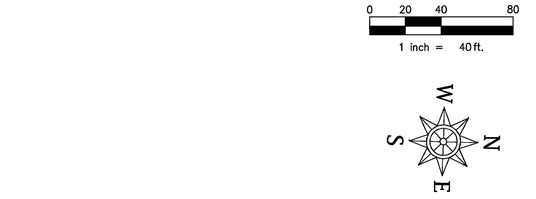

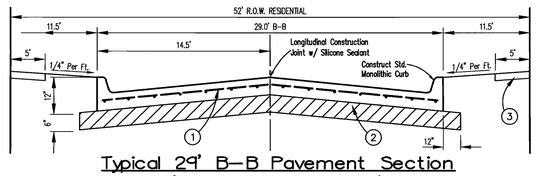

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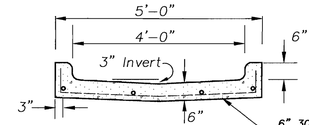
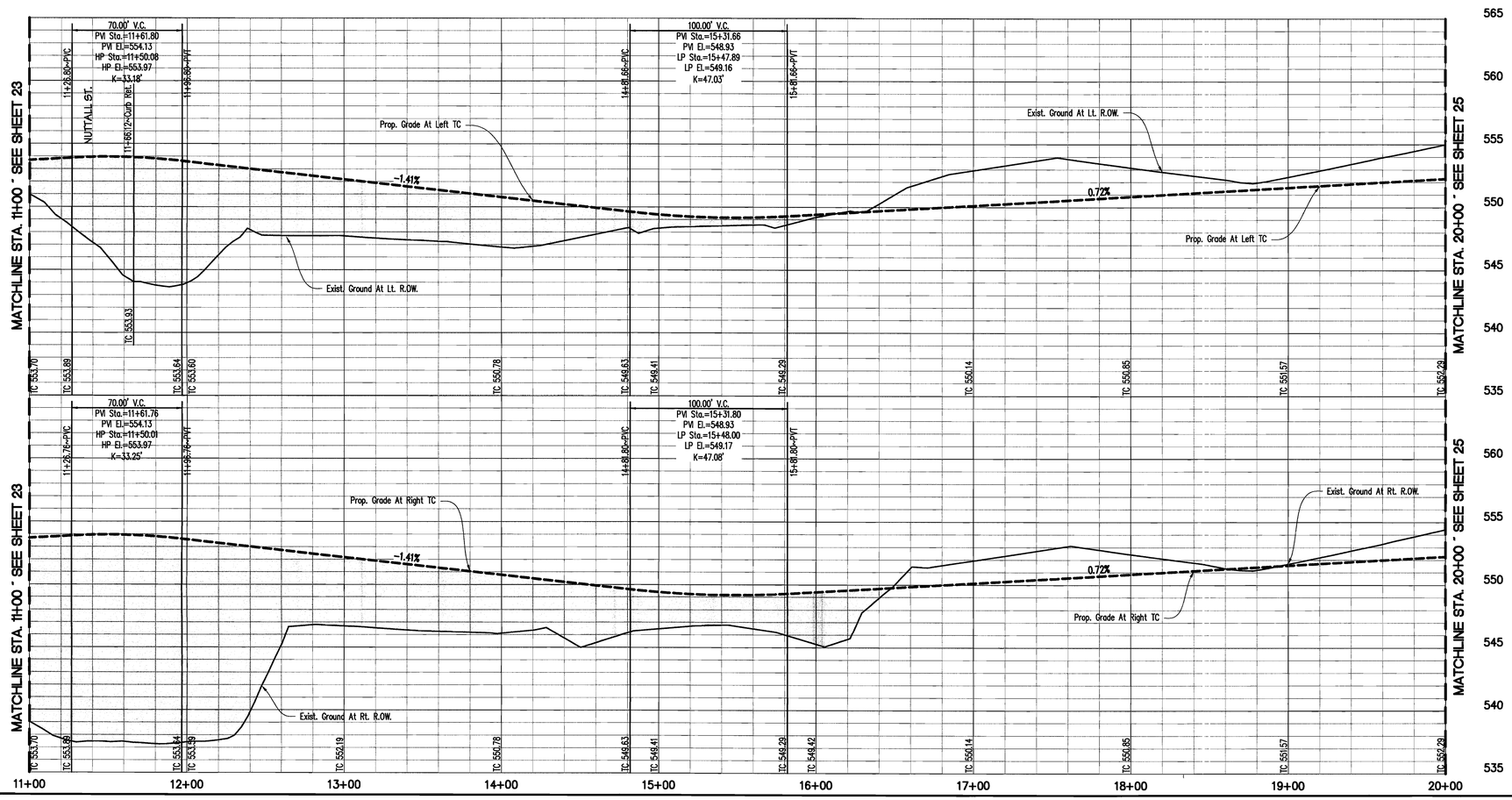


Concrete Flume Detail
nts

SELBORNE DRIVE



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DATE 12/18/23

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GREG T. HELSEL
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LICENSED PROFESSIONAL ENGINEER
12/18/23

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE
SELBORNE DRIVE

Revisions	Date

Scale: 1"=40'
Drawn By: BJ
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Sheet 24
SEI No. 20-112

Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112-PAVE.DWG Saved By: Stewart Save Time: 12/14/2023 5:30:37 PM
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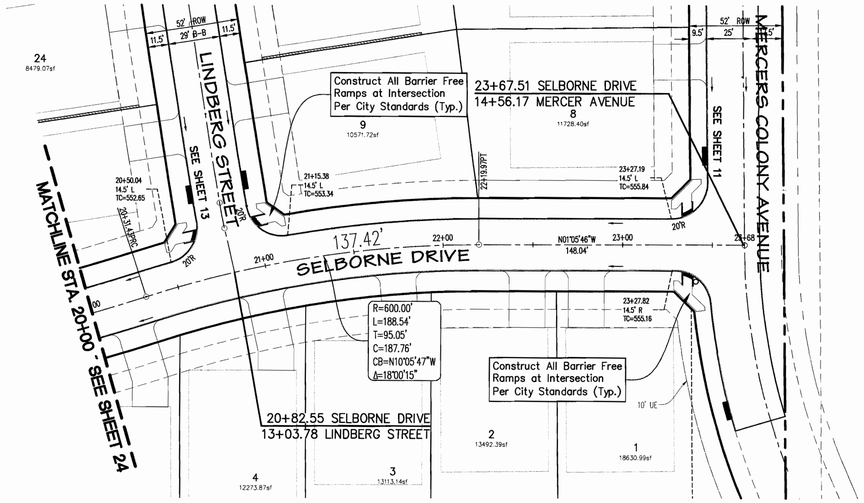

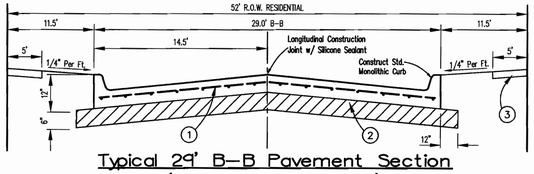

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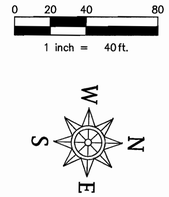
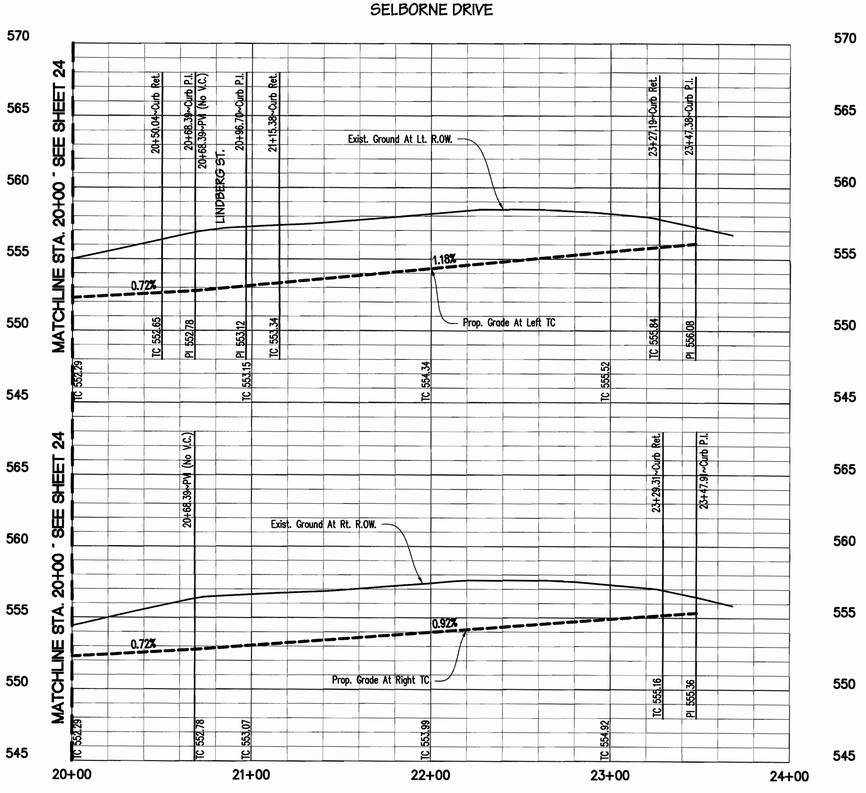
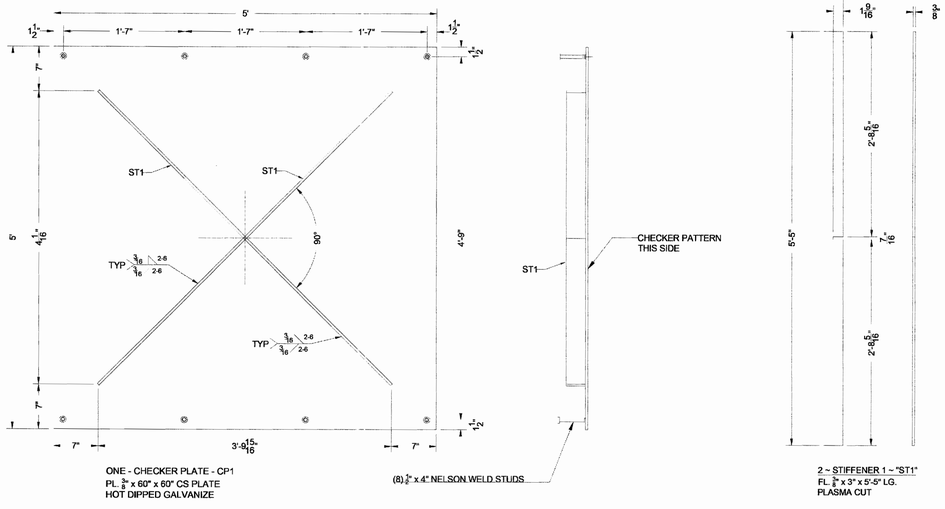
Not To Scale

1. 6" Thk, ~3600 P.S.I. Concrete Reinforced w/No.3 Bars On 24" Centers Both Ways.
2. 6" Lime Stabilized Subgrade Compacted To 95% Std. Proctor Density. (41 lbs Per S.Y. Hydrated Lime)
3. 5' Sidewalk To Be Built By Homebuilder or As Shown On Plans. 3,000 psi 5.5 Sacks/ C.Y. (No. 3 Bars On 24" Centers Both Ways.

NOTE:
Cement content shall be 6 sacks per Cubic Yard for machine pour concrete and 6.5 sacks per Cubic Yard for hand pour.







ONE - CHECKER PLATE - CP1
PL ¾" x 60" x 60" CS PLATE
HOT DIPPED GALVANIZE

(8) ¾" x 4" NELSON WELD STUDS

2 - STIFFENER 1 - "ST1"
FL ¾" x 3" x 5'-5" LG.
PLASMA CUT

NOTES:
1.) ALL DIMENSION ARE TO BE VERIFIED BEFORE FABRICATION

SHEET 1 OF 1

DRAWING: CHECKER PLATE
DATE: 8/24/23
SCALE: NTS
DRAWN BY: AA
CHECKED BY: CP
FILE NAME: 23FERG-262.DWG
JOB: 23FERG-262

FABHAR
524 E. HAZELWOOD
PRINCETON, TX 75407
214-802-9400

Note:
The Contractor Shall Perform All Earthwork And Compaction Operations, Including But Not Limited To, Placement Of Fill During Earthwork Operations, Backfilling, Trench Backfilling, Utility Backfilling, Liming, And Subgrade Placement According To The Geotechnical Recommendations And City Standards. The Contractor Shall Use The Most Stringent Requirement If There Is A Conflict On Any Fill Or Backfill Operations. The Contractor Shall Inquire In Written Format With The Engineer Of Record Should There Be Any Questions Regarding Fill And Backfill Requirements.

CAUTION !!!
EXISTING UTILITIES

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AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Greg T. Helsel, P.E.

4/3/24
DATE

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

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765 Custer Road, Suite 100 • Plano, TX 75075 • 972.422.0077
TBPE No F-2121 • TBLPS No. F-10043100 • www.spiarseng.com

STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
4/3/24

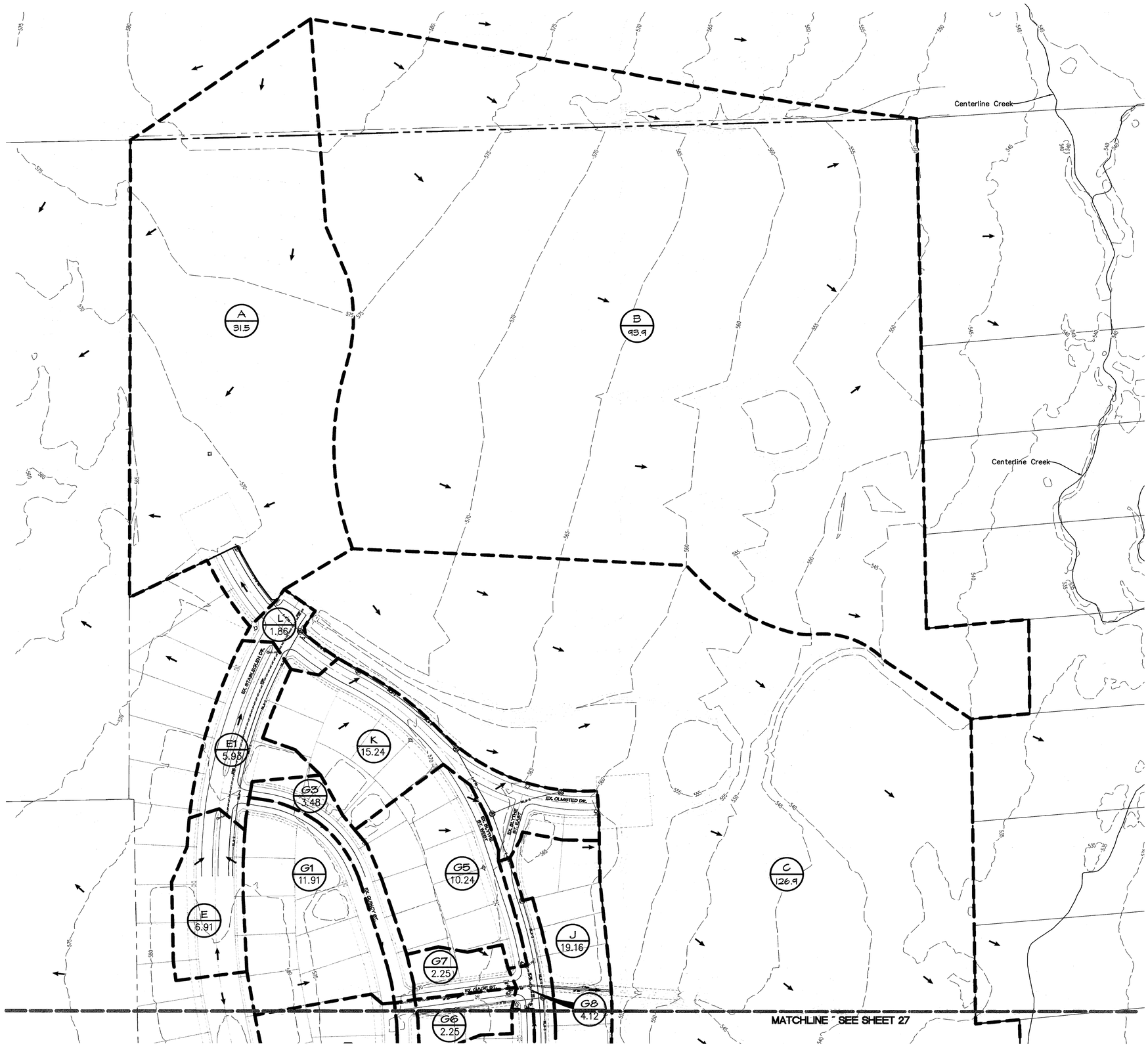
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
PAVING PLAN & PROFILE

SELBORNE DRIVE

Date	Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 25
SEI No. 20-112

Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112-PAVE16.dwg Saved By: Hajdenek Save Time: 4/4/2024 3:03:09 PM Plotted by: Hajdenek Plot Date: 4/4/2024 3:11 PM



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Greg T. Helsel, P.E.

12/18/23
DATE

N W E S

0 50 100 200
1 inch = 100 ft.

Drainage Area Table

Drainage Basin	Area (Acres) "A"	Runoff Coefficient "C"	Intensity (In./Hr.) "I"	Storm Design Frequency (Yr)	Time Conc. (Min.) "Tc"	Discharge (C.F.S.) "Q"
A	10.85	0.35	8.30	100	20	31.5
B	32.31	0.35	8.30	100	20	93.9
C	43.68	0.35	8.30	100	20	126.9

Legend

- A / 10.69 = Area
- = Q_{100}
- = Drainage Area Divide
- 560 = Existing Contours
- = Direction Of Flow

Undeveloped

C = 0.35 I_{100} = 8.30 Tc = 20 min.

Developed

C = 0.50 I_{100} = 9.80 Tc = 10 min.

Drainage Areas Are Calculated Using The "Rational Method" Formula: Q = CxIxA

Drainage Area Table (Phase 1)

Drainage Basin	Area (Acres) "A"	Time Conc. (Min.) "Tc"	Runoff Coefficient "C"	Intensity (In/Hr.) "I"	Discharge (C.F.S.) "Q"
E	1.41	10	0.50	9.80	6.91
E1	1.21	10	0.50	9.80	5.93
L	0.38	10	0.50	9.80	1.86
G	2.48	10	0.50	9.80	12.15
G1	2.43	10	0.50	9.80	11.91
G2	0.61	10	0.50	9.80	2.99
G3	0.71	10	0.50	9.80	3.48
G4	1.97	10	0.50	9.80	9.65
G5	2.09	10	0.50	9.80	10.24
G6	0.46	10	0.50	9.80	2.25
G7	0.46	10	0.50	9.80	2.25
G8	0.84	10	0.50	9.80	4.12
J	3.91	10	0.50	9.80	19.16
K	3.11	10	0.50	9.80	15.24

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Elev.=571.67

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Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

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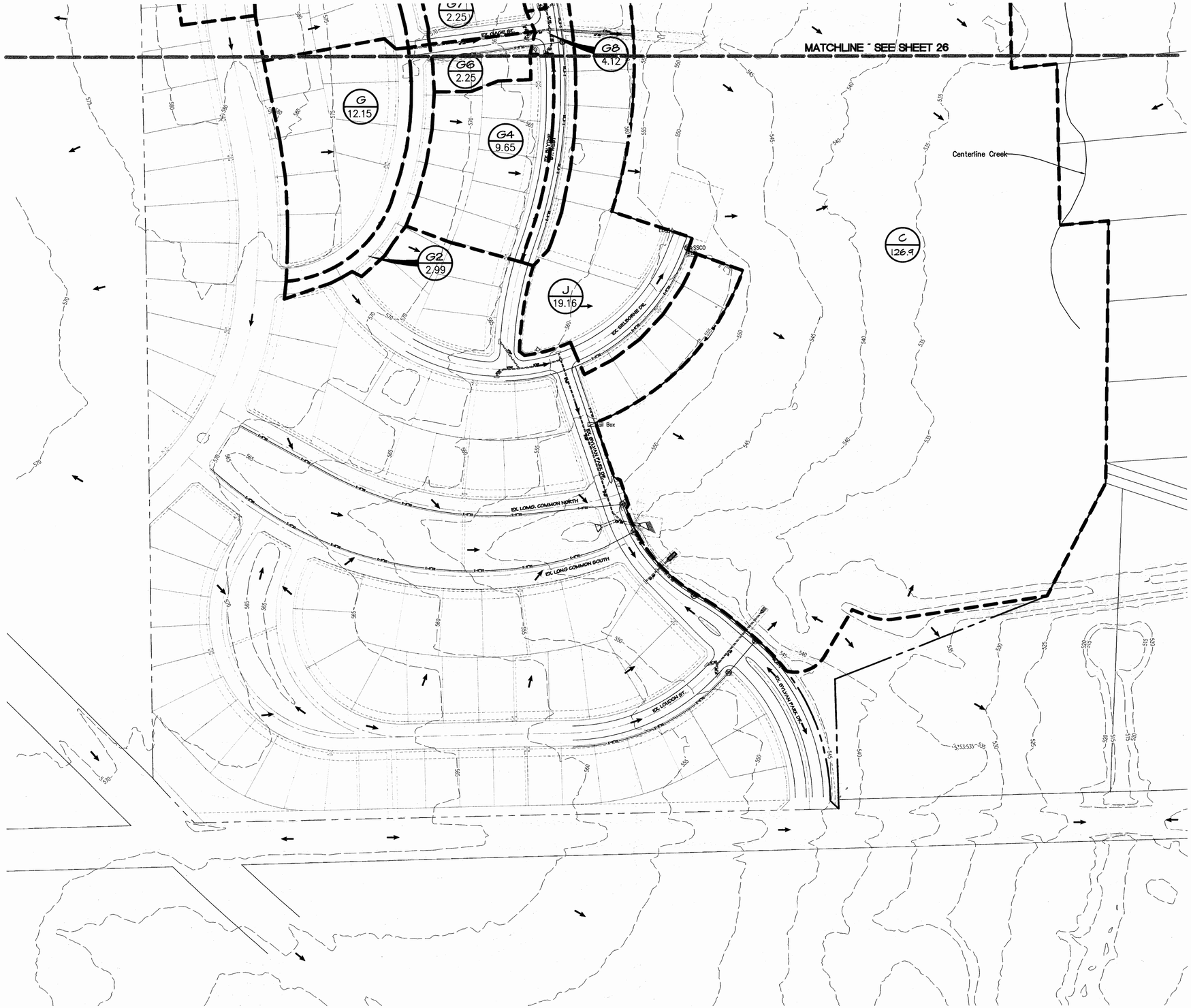
STATE OF TEXAS
GREG T. HELSEL
120339
PROFESSIONAL ENGINEER
4/13/22

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
EXISTING DRAINAGE AREA MAP

Date
Revisions

Scale: 1"=100'
Drawn By: BJ
Checked By: GTH
Sheet 26
SEI No. 20-112

Drawing: C:\2020 JOBS\20-112 Somerset Park\20-112-Ex DAM-2.dwg Saved By: BJohnson Save Time: 4/13/2022 - 1:20:04 PM
Plotted by: BJohnson Plot Date: 4/13/2022 - 1:40 PM



AS-BUILT DRAWINGS

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Greg T. Helsel, P.E.

12/12/23
DATE

N
W E
S

0 50 100 200
1 inch = 100 ft.

Drainage Area Table

Drainage Basin	Area (Acres) "A"	Runoff Coefficient "C"	Intensity (In./Hr.) "I"	Storm Design Frequency (Yr)	Time Conc. (Min.) "Tc"	Discharge (C.F.S.) "Q"
A	10.85	0.35	8.30	100	20	31.5
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C	43.68	0.35	8.30	100	20	126.9

Legend

- A / 10.69 = Area
- = Q_{100}
- = Drainage Area Divide
- 560 = Existing Contours
- = Direction Of Flow

Undeveloped

C = 0.35 I_{100} = 8.30 Tc = 20 min.

Developed

C = 0.50 I_{100} = 9.80 Tc = 10 min.

Drainage Areas Are Calculated Using The "Rational Method" Formula: Q = CxIxA

Drainage Area Table (Phase 1)

Drainage Basin	Area (Acres) "A"	Time Conc. (Min) "Tc"	Runoff Coefficient "C"	Intensity (In/Hr.) "I"	Discharge (C.F.S.) "Q"
E	1.41	10	0.50	9.80	6.91
E1	1.21	10	0.50	9.80	5.93
L	0.38	10	0.50	9.80	1.86
G	2.48	10	0.50	9.80	12.15
G1	2.43	10	0.50	9.80	11.91
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G3	0.71	10	0.50	9.80	3.48
G4	1.97	10	0.50	9.80	9.65
G5	2.09	10	0.50	9.80	10.24
G6	0.46	10	0.50	9.80	2.25
G7	0.46	10	0.50	9.80	2.25
G8	0.84	10	0.50	9.80	4.12
J	3.91	10	0.50	9.80	19.16
K	3.11	10	0.50	9.80	15.24

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Elev.=571.67

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Northing - 7011143.42, Easting - 2605492.75
Elev.=562.64

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STATE OF TEXAS
GREG T. HELSEL
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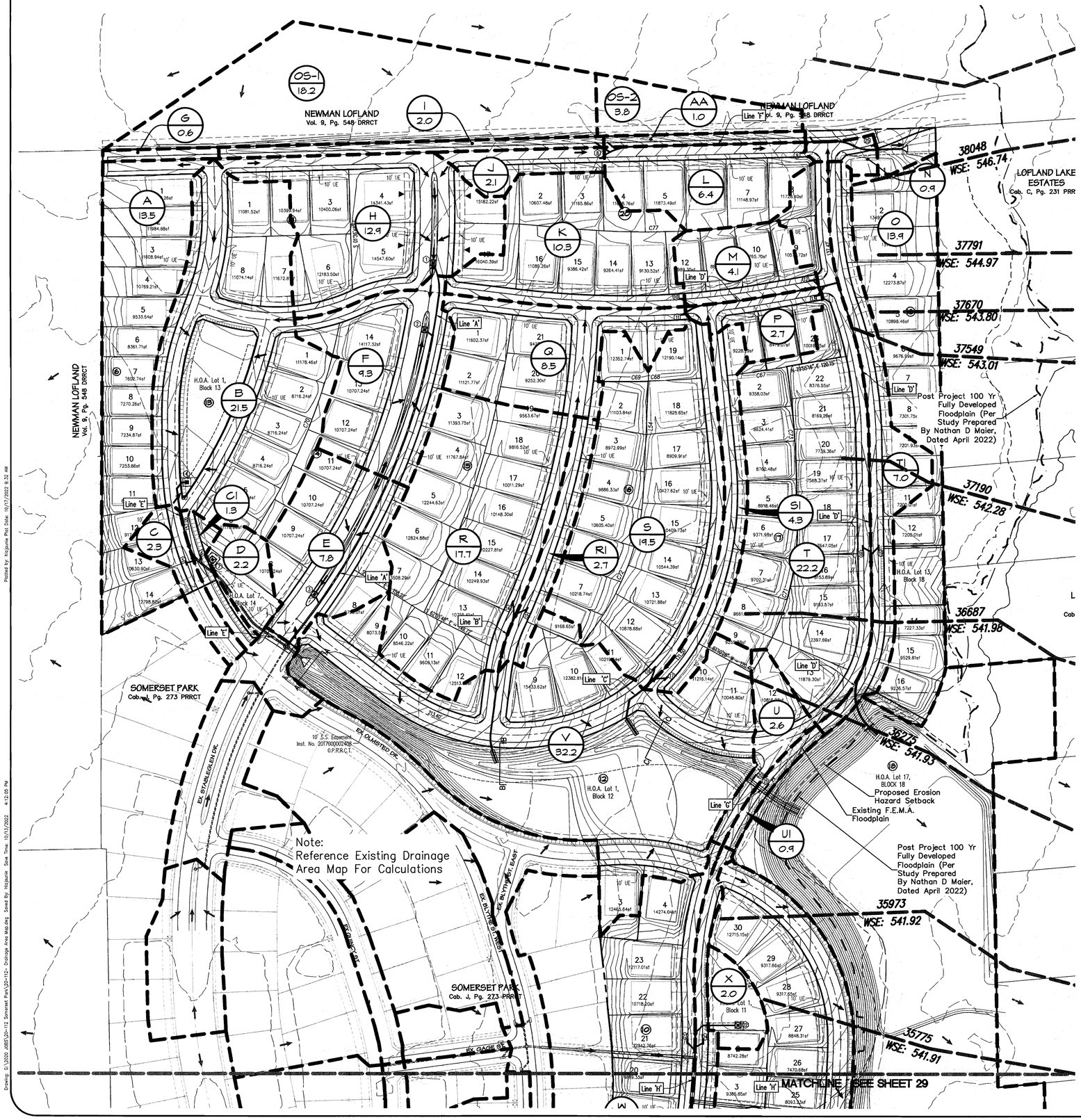
LICENSED PROFESSIONAL ENGINEER
4/13/22

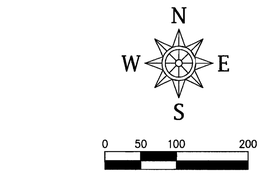
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
EXISTING DRAINAGE AREA MAP

Date
Revisions

Scale: 1"=100'
Drawn By: BJ
Checked By: GTH
Sheet 27
SEI No. 20-112

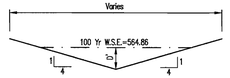
Drawing G:\2020 JOBS\20-112 Somerset Park\20-112-Ex DAM-2.dwg Saved By: Bjohnson Save Time: 4/13/2022 1:25:04 PM
Plotted by: Nojoke Plot date: 4/13/2022 1:40 PM





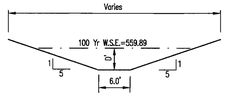
NRCS Notes:

1. Pre-Construction Stage/Storage Volume = 457,993 CYs / 284 Ac-Ft
   Post-Construction Stage/Storage Volume = 461,574 CYs / 286 Ac-Ft
2. Area of compensatory cut shall be graded at minimal slope to avoid erosion issues.
3. Detailed lot grading plans (Sheets 57-62) show all modifications made within the 540 contour (flood pool) of UEFL 6A.



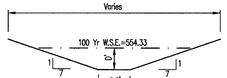
Q100 = 115.60cfs
S = 1.00%
N = 0.035
V = 4.78fps
D = 2.46ft.
Cap = 1246.22cfs

Typical Swale 'A~A'
Swales To Be Stabilized With Curlex & Seed



Q100 = 136.00cfs
S = 1.00%
N = 0.035
V = 4.67fps
D = 1.89ft.
Cap = 751.97cfs

Typical Swale 'B~B'
Swales To Be Stabilized With Curlex & Seed



Q100 = 159.8cfs
S = 1.00%
N = 0.035
V = 4.51fps
D = 1.86ft.
Cap = 484.56cfs

Typical Swale 'C~C'
Swales To Be Stabilized With Curlex & Seed

NOTE:
Reference Flood Study Prepared By Nathan D. Maier, Report No. 20-047, Dated April, 2022 For Drainage Details..

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Greg T. Helsel, P.E.

12/18/23
DATE

Drainage Area Table						
Drainage Basin	Area (Acres) "A"	Runoff Coefficient "C"	Intensity (In./Hr.) "I"	Storm Design Frequency (Yr)	Time Conc. (Min.) "Tc"	Discharge (C.F.S.) "Q"
A	2.75	0.50	9.80	100	10	13.5
AA	0.21	0.50	9.80	100	10	1.0
B	4.38	0.50	9.80	100	10	21.5
C	0.47	0.50	9.80	100	10	2.3
C1	0.26	0.50	9.80	100	10	1.3
D	0.44	0.50	9.80	100	10	2.2
E	1.60	0.50	9.80	100	10	7.8
F	1.90	0.50	9.80	100	10	9.3
G	0.12	0.50	9.80	100	10	0.6
H	2.63	0.50	9.80	100	10	12.9
I	0.40	0.50	9.80	100	10	2.0
J	0.43	0.50	9.80	100	10	2.1
K	2.09	0.50	9.80	100	10	10.3
L	1.31	0.50	9.80	100	10	6.4
M	0.83	0.50	9.80	100	10	4.1
N	0.18	0.50	9.80	100	10	0.9
O	2.84	0.50	9.80	100	10	13.9
P	0.55	0.50	9.80	100	10	2.7
Q	1.74	0.50	9.80	100	10	8.5
R	3.61	0.50	9.80	100	10	17.7
R1	0.55	0.50	9.80	100	10	2.7
S	3.98	0.50	9.80	100	10	19.5
S1	0.87	0.50	9.80	100	10	4.3
T	4.53	0.50	9.80	100	10	22.2
T1	1.43	0.50	9.80	100	10	7.0
U	0.52	0.50	9.80	100	10	2.6
U1	0.18	0.50	9.80	100	10	0.9
V	6.58	0.50	9.80	100	10	32.2
W	6.46	0.50	9.80	100	10	31.7
W1	1.09	0.50	9.80	100	10	5.3
X	0.41	0.50	9.80	100	10	2.0
Y	7.82	0.50	9.80	100	10	38.3
Z	23.76	0.35	8.30	100	20	69.0

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OS-1	3.71	0.50	9.80	100	10	18.2
OS-2	0.78	0.50	9.80	100	10	3.8

Legend

- A / 10.69 = Area / Q_{100}
- = Drainage Area Divide
- 560 = Existing Contours
- = Direction Of Flow

Subdivision

C = 0.50 I_{100} = 9.80 Tc = 10 min.

Park Area

C = 0.35 I_{100} = 8.30 Tc = 20 min.

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① Denotes Inlet Numbers

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
10/17/22

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
DRAINAGE AREA MAP

Revisions	Date

Scale: 1"=100'
Drawn By: BJ
Checked By: GTH
Sheet 28
SEI No. 20-112

Plotted by: bjbjune Plot Date: 10/17/2022 8:32 AM
Drawing: G:\2020\2020-112 Somerset Park\20-112- Drawings\Area Map.dwg Saved By: bjbjune Save Time: 10/17/2022 4:12:05 PM

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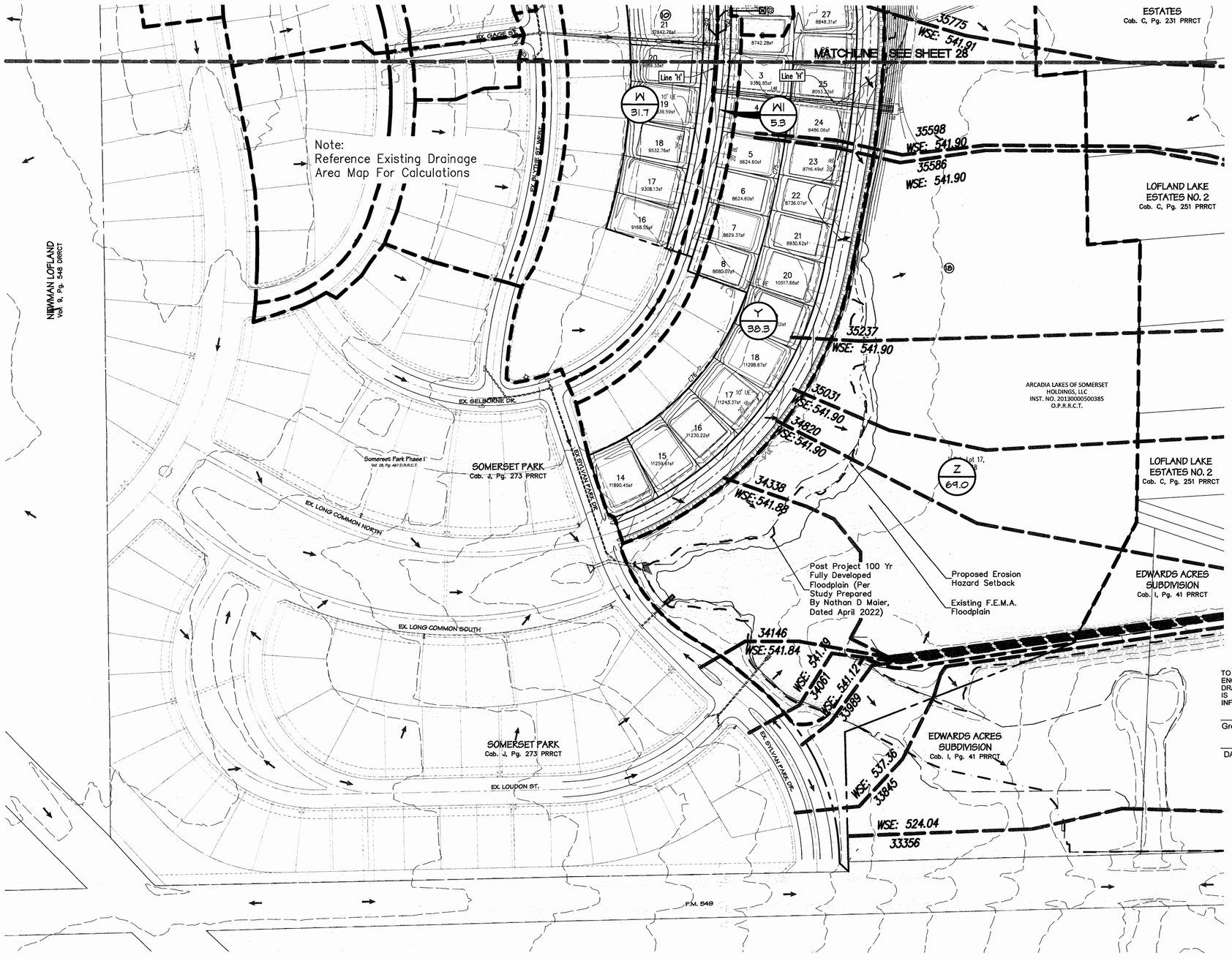
1 inch = 100 ft.



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AA	0.21	0.50	9.80	100	10	1.0
B	4.38	0.50	9.80	100	10	21.5
C	0.47	0.50	9.80	100	10	2.3
C1	0.26	0.50	9.80	100	10	1.3
D	0.44	0.50	9.80	100	10	2.2
E	1.60	0.50	9.80	100	10	7.8
F	1.90	0.50	9.80	100	10	9.3
G	0.12	0.50	9.80	100	10	0.6
H	2.63	0.50	9.80	100	10	12.9
I	0.40	0.50	9.80	100	10	2.0
J	0.43	0.50	9.80	100	10	2.1
K	2.09	0.50	9.80	100	10	10.3
L	1.31	0.50	9.80	100	10	6.4
M	0.83	0.50	9.80	100	10	4.1
N	0.18	0.50	9.80	100	10	0.9
O	2.84	0.50	9.80	100	10	13.9
P	0.55	0.50	9.80	100	10	2.7
Q	1.74	0.50	9.80	100	10	8.5
R	3.61	0.50	9.80	100	10	17.7
R1	0.55	0.50	9.80	100	10	2.7
S	3.98	0.50	9.80	100	10	19.5
S1	0.87	0.50	9.80	100	10	4.3
T	4.53	0.50	9.80	100	10	22.2
T1	1.43	0.50	9.80	100	10	7.0
U	0.52	0.50	9.80	100	10	2.6
U1	0.18	0.50	9.80	100	10	0.9
V	6.58	0.50	9.80	100	10	32.2
W	6.46	0.50	9.80	100	10	31.7
W1	1.09	0.50	9.80	100	10	5.3
X	0.41	0.50	9.80	100	10	2.0
Y	7.82	0.50	9.80	100	10	38.3
Z	23.76	0.35	8.30	100	20	69.0

Drainage Area Table						
Drainage Basin	Area (Acres) "A"	Runoff Coefficient "C"	Intensity (In./Hr.) "I"	Storm Design Frequency (Yr)	Time Conc. (Min.) "Tc"	Discharge (C.F.S.) "Q"
OS-1	3.71	0.50	9.80	100	10	18.2
OS-2	0.78	0.50	9.80	100	10	3.8

Legend

A 10.69 = Area
= Q_{100}
= Drainage Area Divide
560 = Existing Contours
= Direction Of Flow

Undeveloped

C = 0.35 I_{100} = 8.30 Tc = 20 min.

Drainage Areas Are Calculated Using The "Rational Method" Formula: Q = CxIxA

AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Greg T. Helsel, P.E.

12/18/23
DATE

CAUTION !!!
EXISTING UTILITIES

EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATION SERVICES 48 HOURS PRIOR TO CONSTRUCTION ACTIVITY. SPIARS ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stablegien Drive.
Northing = 7011908.45, Easting = 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing = 7011143.42, Easting = 2605492.75
Elev.=562.64

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
10/17/22

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
DRAINAGE AREA MAP

Date
Revisions

Scale: 1"=100'
Drawn By: BJ
Checked By: GTH

Sheet 29

SEI No. 20-112

Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112- Drainage Area Map.dwg Saved By: bkjauk Save Time: 10/13/2022 4:12:52 PM Plotted by: bkjauk Plot Date: 10/17/2022 9:32 AM

INLET LOCATION		Design Storm Frequency	AREA RUNOFF - Q=CIA				Area Number	Runoff (CFS)	Carry Over From Upstream Inlet	Total Gutter Flow	Gutter Slope	Gutter Capacity To Crown	Pavement Capacity To TC	Crown Type	SELECTED INLETS			Inter-cepted Flow	Carry Over To Downstream Inlet	Downstream Inlet No.
			Time Of "C"	Intensity (In/Hr)	Runoff Coefficient	Area In Acres									Length "L"	Type	Inlet Capacity			
No.	STREET NAME	(YEARS)	(MIN)	"I"	"C"	"A"		"Q"	(CFS)	(CFS)	(CFS)	(CFS)	(CFS)		(FEET)		(CFS)	(CFS)	(CFS)	No.
1	8+42.24 Stableglen Drive	100	10	9.8	0.5	2.63	H	12.89	0.00	12.89	Sag	N/A	N/A	N/A	3'x3'	Drop	25.12	12.89	0.00	
2	7+06.93 Stableglen Drive	100	10	9.8	0.5	1.90	F	9.31	0.00	9.31	Sag	N/A	N/A	N/A	3'x3'	Drop	25.12	9.31	0.00	
3	1+27.11 Stableglen Drive	100	10	9.8	0.5	1.60	E	7.84	0.00	7.84	Sag	N/A	N/A	N/A	3'x3'	Drop	25.12	7.84	0.00	
4	Lot 1, Blcok 13	100	10	9.8	0.5	4.38	B	21.46	0.00	21.46	Sag	N/A	N/A	N/A	3'x3'	Drop	25.12	21.46	0.00	
5	0+55.57 Olmsted Drive	100	10	9.8	0.5	0.47	C	2.30	0.00	2.30	Sag	N/A	N/A	6" Par.	10	Curb	22.00	2.30	0.00	
6	0+55.57 Olmsted Drive	100	10	9.8	0.5	0.26	C1	1.27	0.00	1.27	Sag	N/A	N/A	6" Par.	10	Curb	22.00	1.27	0.00	
7	Lot 7, Block 14	100	10	9.8	0.5	0.44	D	2.16	0.00	2.16	Sag	N/A	N/A	N/A	3'x3'	Drop	25.12	2.16	0.00	
8	10+02.33 Mercer Avenue	100	10	9.8	0.5	0.43	J	2.11	0.00	2.11	2.79	16.51	33.02	6" Par.	10	Curb	4.40	2.11	0.00	
9	14+06.31 Mercer Avenue	100	10	9.8	0.5	1.31	L	6.42	0.00	6.42	2.79	16.51	33.02	6" Par.	10	Curb	4.40	4.40	2.02	25
10	9+87.80 Lindberg Street	100	10	9.8	0.5	2.09	K	10.24	0.00	10.24	1.32	8.16	16.32	6" Par.	10	Curb	6.39	6.39	3.85	12
11	9+87.79 Lindberg Street	100	10	9.8	0.5	1.74	Q	8.53	0.00	8.53	1.32	8.16	16.32	6" Par.	10	Curb	6.39	6.39	2.14	13
12	12+58.21 Lindberg Street	100	10	9.8	0.5	0.83	M	4.07	3.85	7.92	3.73	13.72	27.44	6" Par.	10	Curb	3.75	3.75	4.17	18
13	12+61.96 Lindberg Street	100	10	9.8	0.5	0.55	P	2.70	2.14	4.84	3.74	13.74	27.48	6" Par.	10	Curb	3.74	3.74	1.10	18
14	2+64.16 Burling Street	100	10	9.8	0.5	3.61	R	17.69	0.00	17.69	Sag	N/A	N/A	6" Par.	10	Curb	22.00	17.69	0.00	
15	2+64.16 Burling Street	100	10	9.8	0.5	0.55	R1	2.70	0.00	2.70	Sag	N/A	N/A	6" Par.	10	Curb	22.00	2.70	0.00	
16	8+34.03 Herrick Street	100	10	9.8	0.5	3.98	S	19.50	0.00	19.50	Sag	N/A	N/A	6" Par.	10	Curb	22.00	19.50	0.00	
17	8+35.59 Herrick Street	100	10	9.8	0.5	0.87	S1	4.26	0.00	4.26	Sag	N/A	N/A	6" Par.	10	Curb	22.00	4.26	0.00	
18	15+43.32 Selborne Drive	100	10	9.8	0.5	4.53	T	22.20	5.27	27.47	Sag	N/A	N/A	6" Par.	10	Curb	22.00	22.00	5.47	19
19	15+43.32 Selborne Drive	100	10	9.8	0.5	1.43	T1	7.01	5.47	12.48	Sag	N/A	N/A	6" Par.	10'	Curb	22.00	12.48	0.00	
20	9+90.58 Selborne Drive	100	10	9.8	0.5	0.52	U	2.55	0.00	2.55	Sag	N/A	N/A	6" Par.	10'	Curb	22.00	2.55	0.00	
21	9+90.69 Selborne Drive	100	10	9.8	0.5	0.18	U1	0.88	0.00	0.88	Sag	N/A	N/A	6" Par.	10	Curb	22.00	0.88	0.00	
22	Lot 1, Block 11	100	10	9.8	0.5	0.41	X	2.01	0.00	2.01	Sag	N/A	N/A	N/A	3'x3'	Drop	25.12	2.01	0.00	
23	4+37.89 Selborne Drive	100	10	9.8	0.5	6.46	W	31.65	0.00	31.65	Sag	N/A	N/A	6" Par.	10	Curb	22.00	22.00	9.65	24
24	4+37.89 Selborne Drive	100	10	9.8	0.5	1.09	W1	5.34	9.65	14.99	Sag	N/A	N/A	6" Par.	10	Curb	22.00	14.99	0.00	
25	15+43.72 Mercer Avenue	100	10	9.8	0.5	0.18	N	0.88	2.02	2.90	2.54	13.44	26.89	6" Par.	10	Curb	7.98	2.90	0.00	
*	DENOTES 1/2 THE DRAINAGE AREA																			

RUNOFF COLLECTION POINTS		DISTANCE BETWEEN COLLECT-ION POINT	INCREMENTAL DRAINAGE AREA												TOTAL ACCUM-ULATED 'CA'	ACCUM-ULATED 'CA' IN SYSTEM	BY PASS 'CA'	TIME AT UPSTREAM STATION (MIN)	DESIGN STORM (YRS.)	INTESITY 'I' (IN/HR)	STORM WATER RUNOFF 'Q' (CFS)	SLOPE OF HYDRAULIC GRADIENT 'S' (FT/FT)	STORM SEWER SIZE (IN)	VELOCITY IN SEWER BETWEEN POINTS 'V' (FPS)	VELOCITY HEAD LOSS (FEET)	FLOW TIME IN SEWER (MIN)	TIME AT DOWN-STREAM STATION (MIN)	HYD GRAD UP-STREAM (FT)	HYD GRAD DOWN-STREAM (FT)
UPSTREAM STATION	DOWNSTREAM STATION		AREA NO.	AREA 'A' (ACRES)	AREA PICKED UP (ACRES)	RUNOFF COEFF-ICIENT 'C'	TOTAL INCREMENT 'CA'	BY PASS FROM UPSTREAM 'CA'	TOTAL TO COLLECT 'CA'	INCREMENT 'CA' PICKED UP																		
LINE A																												
8 + 44.29	6 + 95.91	148.38	H	2.63	2.63	0.50	1.32	0.00	1.32	1.32	1.32	1.32	0.00	10.00	100	9.8	12.94	0.0067	21	5.40	0.45	0.46	10.46	568.09	567.10
6 + 95.91	5 + 0.00	195.91	F	1.90	1.90	0.50	0.95	0.00	0.95	0.95	2.27	2.27	0.00	10.46	100	9.69	22.00	0.0017	33	3.70	0.21	0.88	11.34	567.05	566.71
5 + 0.00	1 + 8.24	391.76	MH	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.27	2.27	0.00	11.34	100	9.47	21.50	0.0017	33	3.60	0.2	1.81	13.15	566.52	565.88
1 + 8.24	0 + 0.00	108.24	E	1.60	1.60	0.50	0.80	0.00	0.80	0.80	3.07	3.07	0.00	11.34	100	9.47	29.07	0.0019	36	4.10	0.26	0.44	11.78	565.69	565.48
																				5.50	0.47				
LINE B																									
3 + 28.60	3 + 5.19	23.41	R	3.61	3.61	0.50	1.81	0.00	1.81	1.81	1.81	1.81	0.00	10.00	100	9.8	17.74	0.0125	21	7.40	0.85	0.05	10.05	562.63	562.37
3 + 5.19	1 + 0.00	205.19	Vert. Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	1.81	1.81	0.00	10.05	100	9.79	17.72	0.0061	24	5.60	0.49	0.61	10.66	562.25	561.16
1 + 0.00	0 + 1.22	98.78	R1	0.55	0.55	0.50	0.28	0.00	0.28	0.28	2.09	2.09	0.00	10.05	100	9.79	20.46	0.0082	24	6.50	0.66	0.25	10.30	560.88	560.07
LINE C																									
1 + 59.73	1 + 38.25	21.48	S	3.98	3.98	0.50	1.99	0.00	1.99	1.99	1.99	1.99	0.00	10.00	100	9.8	19.50	0.0151	21	8.10	1.02	0.04	10.04	555.02	554.93
1 + 38.25	0 + 77.30	60.95	S1	0.87	0.87	0.50	0.44	0.00	0.44	0.44	2.43	2.43	0.00	10.04	100	9.79	23.79	0.0034	30	4.80	0.36	0.21	10.25	554.93	555.43
0 + 77.30	0 + 39.71	37.59	45° Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.43	2.43	0.00	10.25	100	9.74	23.67	0.0033	30	4.80	0.36	0.13	10.38	554.72	554.59
0 + 39.71	0 + 0.00	39.71	45° Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.43	2.43	0.00	10.38	100	9.71	23.60	0.0033	30	4.80	0.36	0.14	10.52	554.46	554.33
LINE D																									
12 + 53.22	12 + 29.52	23.70	Q	1.74	1.30	0.50	0.87	0.00	0.87	0.65	0.87	0.65	0.22	10.00	100	9.8	6.37	0.0016	21	2.60	0.10	0.15	10.15	560.07	559.79
12 + 29.52	9 + 71.30	258.22	K	2.09	1.30	0.50	1.05	0.00	1.05	0.65	1.92	1.30	0.40	10.15	100	9.76	12.69	0.0064	21	5.30	0.44	0.81	10.96	559.45	550.82
9 + 71.30	9 + 62.93	8.37	M	0.83	0.77	0.50	0.42	0.40	0.82	0.38	2.34	1.68	0.44	10.96	100	9.57	16.08	0.0051	24	5.10	0.4	0.03	10.99	550.84	550.98
9 + 62.93	9 + 34.36	28.57	P	0.55	0.76	0.50	0.28	0.22	0.50	0.38	2.62	2.06	0.12	10.99	100	9.56	19.69	0.0076	24	6.30	0.62	0.08	11.07	550.76	550.54
9 + 34.36	5 + 1.03	433.33	MH	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.62	2.06	0.00	11.07	100	9.54	19.65	0.0075	24	6.30	0.62	1.15	12.22	550.54	547.11
5 + 1.03	3 + 86.76	114.27	MH	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.62	2.06	0.00	12.22	100	9.26	19.08	0.0071	24	6.10	0.58	0.31	12.53	547.13	545.37
3 + 86.76	3 + 80.63	6.13	T	4.53	4.49	0.50	2.27	0.28	2.55	2.25	4.89	4.31	0.00	12.53	100	9.18	39.57	0.0035	36	5.60	0.49	0.02	12.55	545.41	543.22
3 + 80.63	1 + 35.66	244.97	T1	1.43	2.01	0.50	0.72	0.28	1.00	1.01	5.61	5.32	0.00	12.55	100	9.18	48.84	0.0054	36	6.90	0.74	0.59	13.14	545.84	543.40
1 + 35.66	0 + 89.11	46.55	Vert Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	5.61	5.32	0.00	13.14	100	9.03	48.04	0.0052	36	6.80	0.72	0.11	13.25	543.06	539.93
0 + 89.11	0 + 0.00	89.11	Vert Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	5.61	5.32	0.00	13.25	100	9.01	47.93	0.0052	36	6.80	0.72	0.22	13.47	542.66	542.20
LINE E																									
4 + 66.11	4 + 57.18	8.93	B	4.38	4.38	0.50	2.19	0.00	2.19	2.19	2.19	2.19	0.00	10.00	100	9.8	21.46	0.0048	27	5.40	0.45	0.03	10.03	567.50	567.46
4 + 57.18	4 + 42.00	15.18	45° Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.19	2.19	0.00	10.03	100	9.79	21.44	0.0048	27	5.40	0.45	0.05	10.08	567.29	567.22
4 + 42.00	2 + 90.97	151.03	45° Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.19	2.19	0.00	10.08	100	9.78	21.42	0.0048	27	5.40	0.45	0.47	10.55	567.05	565.49
2 + 90.97	2 + 85.65	5.32	C	0.47	0.47	0.50	0.24	0.00	0.24	0.24	2.43	2.43	0.00	10.55	100	9.67	23.50	0.0008	39	2.80	0.12	0.03	10.58	565.39	565.57
2 + 85.65	2 + 56.98	28.67	C1	0.26	0.26	0.50	0.13	0.00	0.13	0.13	2.56	2.56	0.00	10.58	100	9.66	24.73	0.0009	39	3.00	0.14	0.16	10.74	565.47	565.65
2 + 56.98	0 + 39.11	217.87	D	0.44	0.44	0.50	0.22	0.00	0.22	0.22	2.78	2.78	0.00	10.74	100	9.62	26.74	0.0010	39	3.20	0.16	1.13	11.87	565.54	565.74
0 + 39.11	0 + 0.00	39.11	Line A / Ph. 1	9.11	9.11	0.50	4.56	0.00	4.56	4.56	7.34	7.34	0.00	11.87	100	9.34	68.56	0.0023	48	5.50	0.47	0.12	11.99	565.31	564.86
LINE F																									
5 + 8.02	4 + 88.62	19.40	J	0.43	0.43	0.50	0.22	0.00	0.22	0.22	0.22	0.22	0.00	10.00	100	9.8	2.16	0.0002	21	0.90	0.01	0.36	10.36	563.58	563.95
4 + 88.62	4 + 75.27	13.35	OS-1	3.71	3.71	0.50	1.86	0.00	1.86	1.86	2.08	2.08	0.00	10.36	100	9.71	20.20	0.0080	24	6.40	0.64	0.03	10.39	563.31	563.58
4 + 75.27	0 + 92.14	383.13	I	0.40	0.40	0.50	0.20	0.00	0.20	0.20	2.28	2.28	0.00	10.39	100	9.7	22.12	0.0096	24	7.00	0.76	0.91	11.30	563.04	554.01
0 + 92.14	0 + 88.14	4.00	OS-2	0.78	0.78	0.50	0.39	0.00	0.39	0.39	2.67	2.67	0.00	11.30	100	9.48	25.31	0.0067	27	6.40	0.64	0.01	11.31	553.64	554.32
0 + 88.14	0 + 78.69	9.45	L	1.31	1.31	0.50	0.66	0.00	0.66	0.66	3.33	3.33	0.00	11.31	100	9.48	31.57	0.0104	27	7.90	0.97	0.02	11.33	553.57	554.03
0 + 78.69	0 + -53.66	132.35	AA	0.21	0.21	0.50	0.11	0.00	0.11	0.11	3.44	3.44	0.00	11.33	100	9.48	32.61	0.0111	27	8.20	1.04	0.27	11.60	553.33	551.82
0 + -53.66	-1 + 3.93	50.27	N	0.18	0.18	0.50	0.09	0.00	0.09	0.09	3.53	3.53	0.00	11.60	100	9.41	33.22	0.0115	27	8.40	1.1	0.10	11.70	551.08	549.74

Denotes Partial Flow

AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Greg T. Helsel, P.E.

DATE 12/18/23

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TBPE No F-2121 • TBLPS No. F-10043100 • www.spiarseng.com

STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/13/22

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
INLET & DRAINAGE CALCULATIONS

Revisions | Date

Scale: N/A
Drawn By: BJ
Checked By: GTH

Sheet 30

SEI No. 20-112

Drawing: C:\2020 JOBS\20-112 Somerset Park\20-112- Drainage Area Map.dwg Saved By: bbjaunk Save Time: 4/13/2022 4:32:28 PM
Plotted by: bbjaunk Plot Date: 4/13/2022 4:33 PM

RUNOFF COLLECTION POINTS		DISTANCE BETWEEN COLLECT-ION POINT	INCREMENTAL DRAINAGE AREA																					
UPSTREAM STATION	DOWNSTREAM STATION		AREA NO.	TOTAL AREA 'A' (ACRES)	AREA PICKED UP (ACRES)	RUNOFF COEFF-ICIENT 'C'	TOTAL INCREMENT 'CA'	BYPASS FROM UPSTREAM 'CA'	TOTAL TO COLLECT 'CA'	INCREMENT 'CA' PICKED UP	TOTAL ACCUM-ULATED 'CA'	ACCUM-ULATED 'CA' IN SYSTEM	BYPASS 'CA'	TIME AT UPSTREAM STATION (MIN)	DESIGN STORM (YRS.)	INTESITY 'I' (INHR)	STORM WATER RUNOFF 'Q' (CFS)	SLOPE OF HYDRAULIC GRADIENT 'S' (FT/FT)	STORM SEWER SIZE (IN)	VELOCITY IN SEWER BETWEEN POINTS 'V' (FPS)	VELOCITY HEAD LOSS (FEET)	FLOW TIME IN SEWER (MIN)	TIME AT DOWN-STREAM STATION (MIN)	HYD GRAD UP-STREAM (FT)	HYD GRAD DOWN-STREAM (FT)
LINE G																								
1 + 24.91	1 + 13.40	11.51	OS,V,Ln,E,B,C	32.59	32.59	0.50	16.30	0.00	16.30	16.30	16.30	16.30	0.00	10.00	100	9.8	159.74	0.0018	7'x4'	5.90	0.54	0.03	10.03		
1 + 13.40	0 + 81.90	31.50	U	0.52	0.52	0.50	0.26	0.00	0.26	0.26	16.56	16.56	0.00	10.03	100	9.79	162.12	0.0019	7'x4'	6.00	0.56	0.09	10.12		
0 + 81.90	0 + 73.90	8.00	U1	0.18	0.18	0.50	0.09	0.00	0.09	0.09	16.65	16.65	0.00	10.12	100	9.77	162.67	0.0019	7'x4'	6.00	0.56	0.02	10.14		
0 + 73.90	0 + 32.00	41.90	Vert Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	16.65	16.65	0.00	10.14	100	9.77	162.67	0.0019	7'x4'	6.00	0.56	0.12	10.26		
0 + 32.00	0 + 0.00	32.00	Vert Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	16.65	16.65	0.00	10.26	100	9.74	162.17	0.0019	7'x4'	6.00	0.56	0.09	10.35	542.26	542.20
LINE H																								
5 + 71.48	5 + 2.37	69.11	X	0.41	0.41	0.50	0.21	0.00	0.21	0.21	0.21	0.21	0.01	10.00	100	9.8	2.01	0.0004	18	1.10	0.02	1.05	11.05	548.27	548.25
5 + 2.37	4 + 80.85	21.52	45° Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.21	0.21	0.00	11.05	100	9.54	1.96	0.0003	18	1.10	0.02	0.33	11.38	548.24	548.23
4 + 80.85	4 + 52.12	28.73	45° Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.21	0.21	0.00	11.38	100	9.46	1.94	0.0003	18	1.10	0.02	0.44	11.82	548.23	548.22
4 + 52.12	4 + 45.79	6.33	W1	0.73	3.06	0.50	0.37	0.00	0.37	1.53	0.58	1.74	-1.16	11.82	100	9.36	16.24	0.0052	24	5.20	0.42	0.02	11.84	547.80	547.77
4 + 45.79	4 + 31.60	14.19	W	6.82	4.89	0.50	3.41	0.00	3.41	2.45	3.99	4.19	0.96	11.84	100	9.35	39.13	0.0299	24	12.50	2.43	0.02	11.86	545.55	545.13
4 + 31.60	3 + 43.61	87.99	Line I	12.37	12.37	0.50	6.19	0.00	6.19	6.19	10.18	10.38	0.00	11.86	100	9.35	97.01	0.0023	6'x3'	5.60	0.49	0.26	12.12	545.19	544.99
3 + 43.61	0 + 30.61	313.00	MH	0.00	0.00	0.50	0.00	0.00	0.00	0.00	10.18	10.38	0.00	12.12	100	9.28	96.28	0.0061	6'x3'	5.60	0.49	0.93	13.05	544.72	542.81
0 + 30.61	0 + 0.00	30.61	Vert Bend	0.00	0.00	0.50	0.00	0.00	0.00	0.00	10.18	10.38	0.00	13.05	100	9.06	94.00	0.0061	6'x3'	5.40	0.45	0.09	13.14	542.36	542.17
LINE I																								
0 + 24.87	0 + 0.00	24.87	Exist	11.76	11.76	0.50	5.88	0.00	5.88	5.88	5.88	5.88	0.00	10.00	100	9.8	57.62	0.0016	48	4.60	0.33	0.09	10.09	545.00	544.85

AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Greg T. Helsel, P.E.

12/18/23
DATE

Denotes Partial Flow

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/13/22

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

INLET & DRAINAGE CALCULATIONS

Date

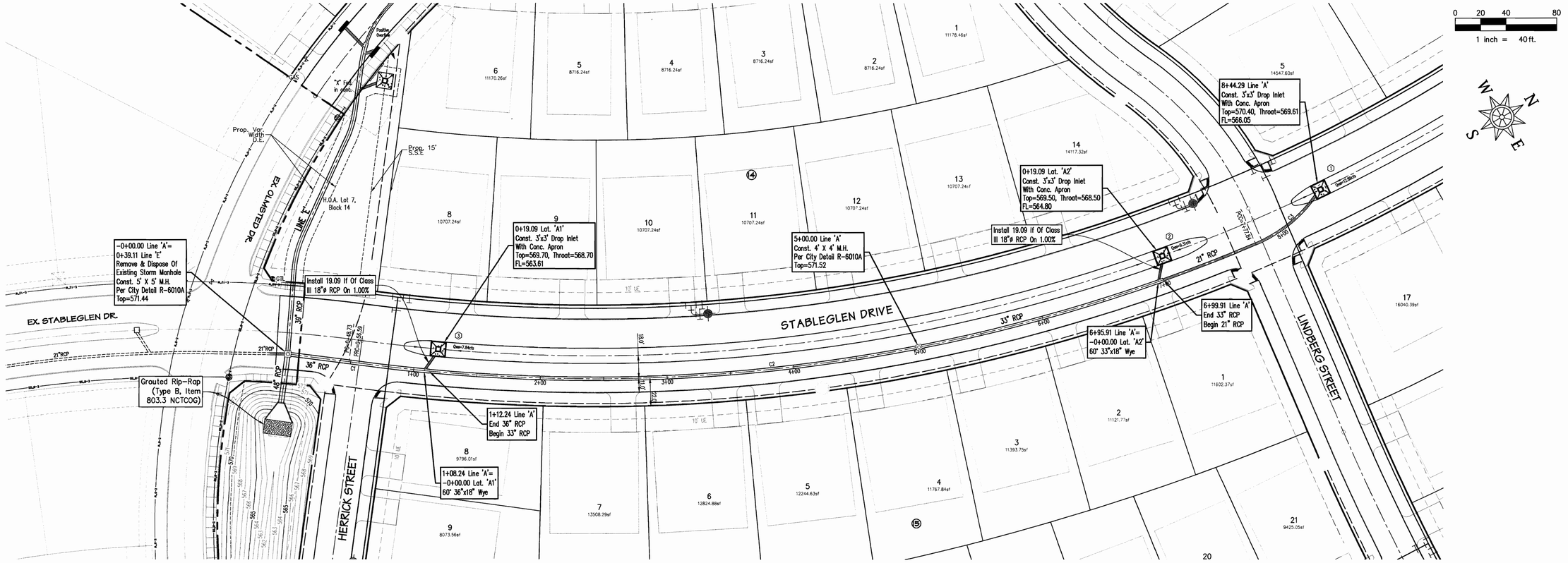
Revisions

Scale: N/A
Drawn By: BJ
Checked By: GTH

Sheet 31

SEI No. 20-112

Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112- Drainage Area Map.dwg Saved By: Kathara Save Time: 4/13/2023 5:11:39 PM Plotted by: Kathara Plot Date: 4/13/2023 5:12 PM



Note:
Any City Utility Installed Deeper Than 10' Will Require 100% Compaction.

Note:
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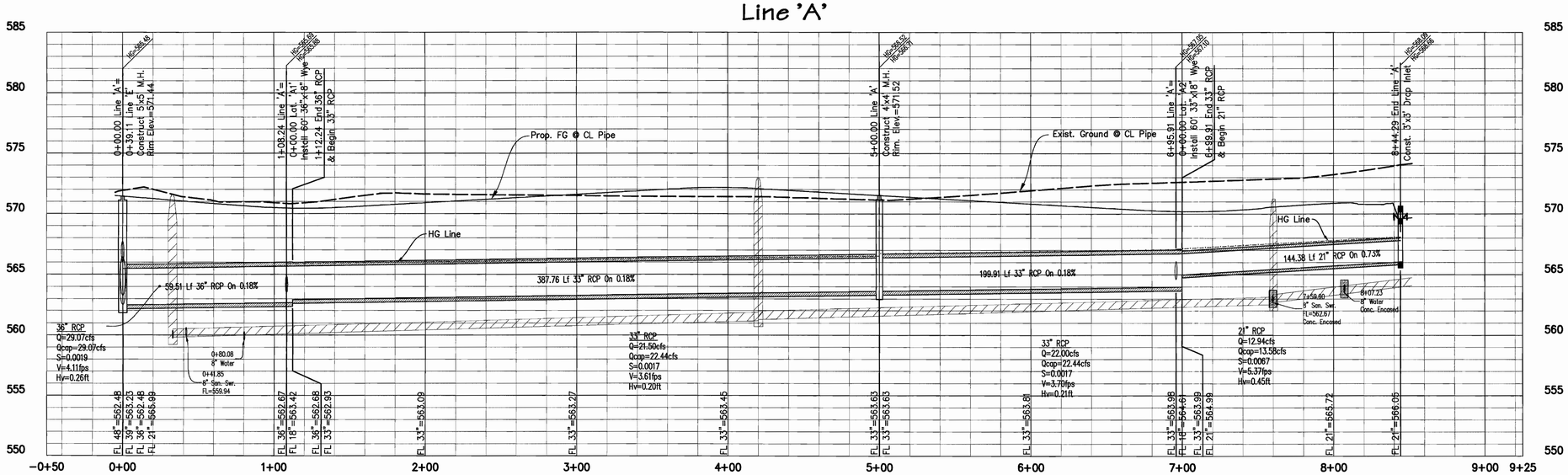
Line 'A'



Storm Sewer Centerline Table				
Curve #	Radius	Delta	Tangent	Length
C1	982.000	0°27'30"	3.93'	7.86'
C2	1348.000	30°39'23"	369.48'	721.25'
C3	110.000	34°36'42"	34.27'	66.45'

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

AS-BUILT DRAWINGS

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GREG T. HELSEL, P.E. — DATE 4/3/24

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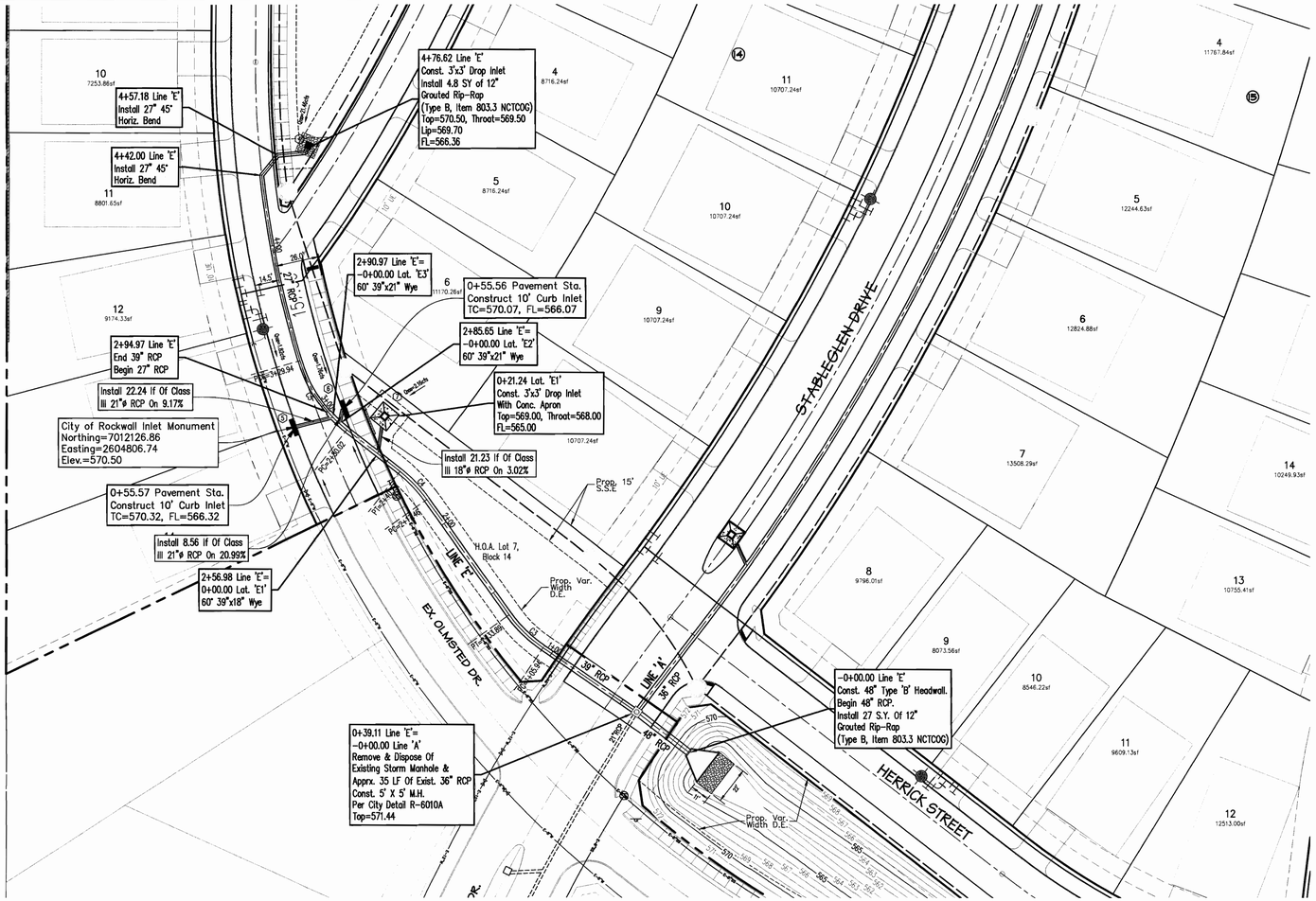
STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/3/24

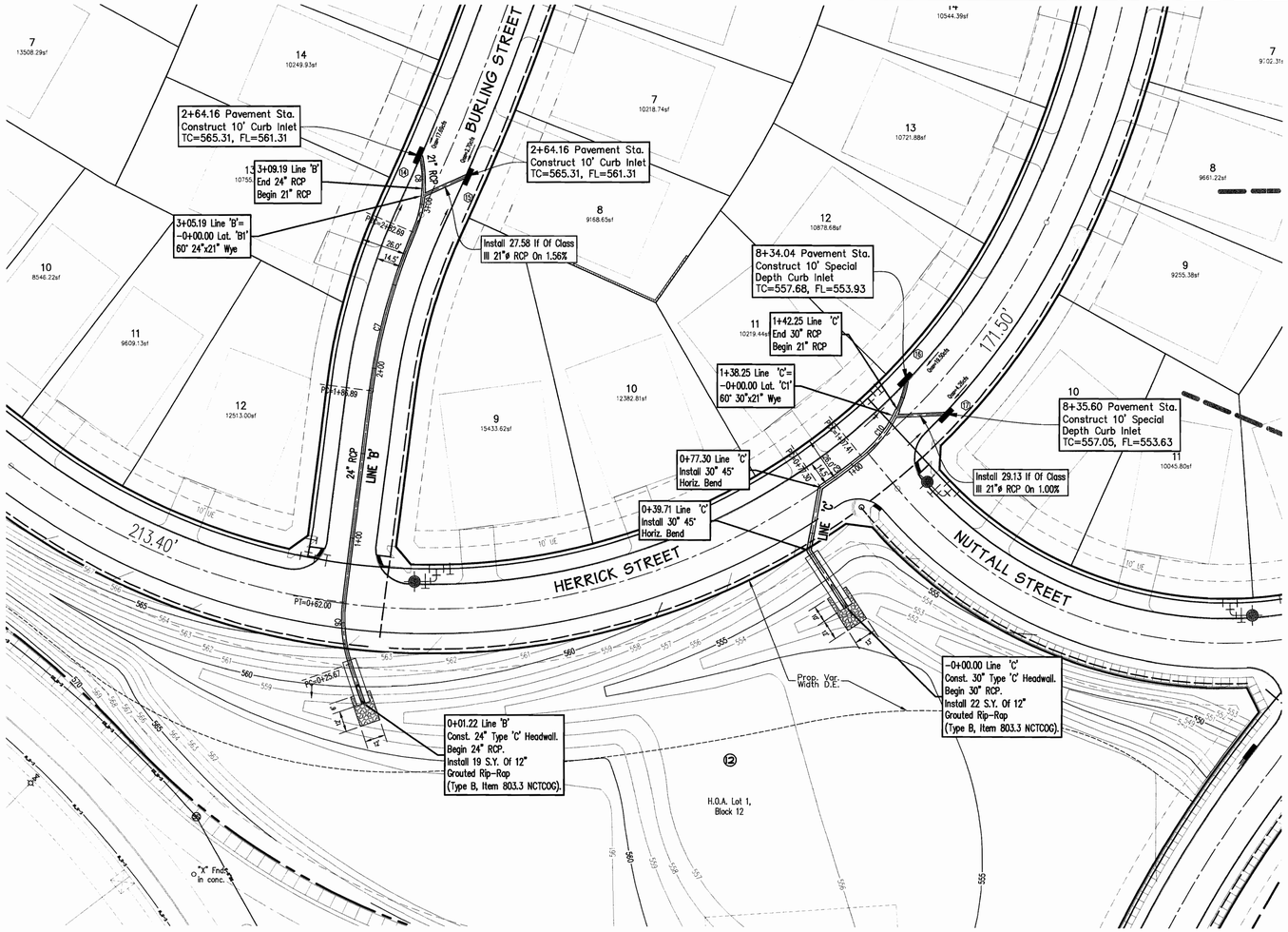
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
STORM SEWER PLAN & PROFILE
LINE A

Date
Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 32
SEI No. 20-112

Drawing: G:\2020_JOBS\20-112 Somerset Park\CAD\12 STORM SEWER\ Sheet By: Bridgette Sheet Plotted: 4/3/2024 5:16:45 PM Plotted By: Bridgette


4+76.62 Line 'E'
Const. 3'x3' Drop Inlet
Install 4.8 SY of 12"
Grouted Rip-Rap
(Type B, Item 803.3 NCTCOG)
Top=570.50, Throat=569.50
Lip=569.70
FL=566.36
4+57.18 Line 'E'
Install 27" 45°
Horiz. Bend
4+42.00 Line 'E'
Install 27" 45°
Horiz. Bend
2+90.97 Line 'E'=
-0+00.00 Lat. 'E3'
60° 39"x21" Wye
0+55.56 Pavement Sta.
Construct 10' Curb Inlet
TC=570.07, FL=566.07
2+85.65 Line 'E'=
-0+00.00 Lat. 'E2'
60° 39"x21" Wye
2+94.97 Line 'E'
End 39" RCP
Begin 27" RCP
0+21.24 Lat. 'E1'
Const. 3'x3' Drop Inlet
With Conc. Apron
Top=569.00, Throat=568.00
FL=565.00
Install 22.24 lf Of Class
III 21"ø RCP On 9.17%
Install 21.23 lf Of Class
III 18"ø RCP On 3.02%
City of Rockwall Inlet Monument
Northing=7012126.86
Easting=2604806.74
Elev.=570.50
0+55.57 Pavement Sta.
Construct 10' Curb Inlet
TC=570.32, FL=566.32
Install 8.56 lf Of Class
III 21"ø RCP On 20.99%
2+56.98 Line 'E'=
0+00.00 Lat. 'E1'
60° 39"x18" Wye
0+39.11 Line 'E'=
-0+00.00 Line 'A'
Remove & Dispose Of
Existing Storm Manhole &
Approx. 35 LF Of Exist. 36" RCP
Const. 5' X 5' M.H.
Per City Detail R-6010A
Top=571.44
-0+00.00 Line 'E'
Const. 48" Type 'B' Headwall.
Begin 48" RCP.
Install 27 S.Y. Of 12"
Grouted Rip-Rap
(Type B, Item 803.3 NCTCOG)
STABLEGLEN DRIVE
EX. OLMSTED DR.
HERRICK STREET
LINE 'E'
LINE 'A'
H.O.A. Lot 7, Block 14
Prop. 15' S.S.E.
Prop. Var. Width D.E.
Prop. Var. Width D.E.
39" RCP
27" RCP
10' HL
24.5'
26.0'
10' HL
10' HL
10' HL



0 20 40 80

1 inch = 40 ft.

Storm Sewer Centerline Table				
Curve #	Radius	Delta	Tangent	Length
C6	80.000	26°01'00"	18.48'	36.33'
C7	350.000	15°40'54"	48.20'	95.79'
C8	75.000	35°04'28"	23.70'	45.91'
C9	400.000	4°18'48"	15.06'	30.11'
C10	75.000	39°58'17"	27.28'	52.32'

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GREG T. HELSEL, P.E.

4/3/24

DATE

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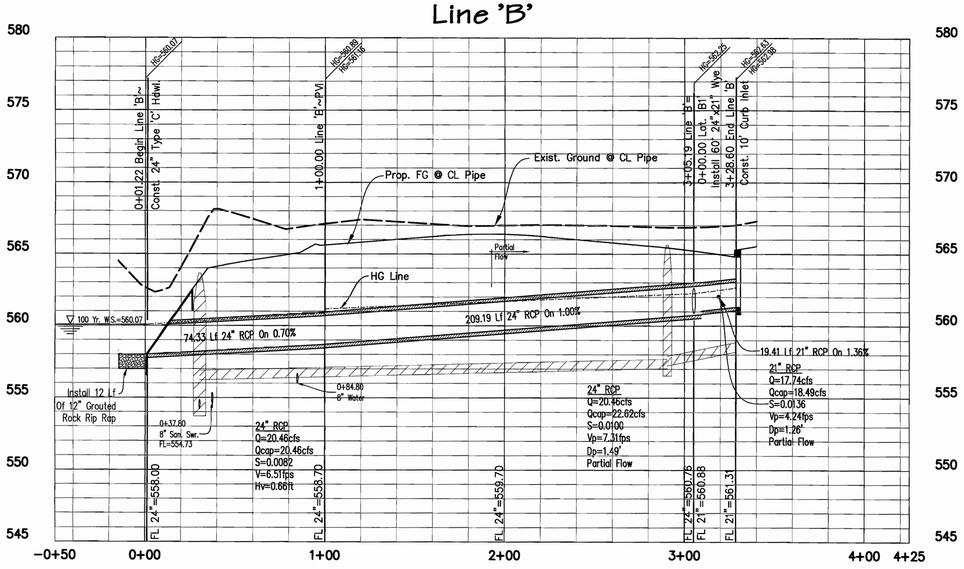
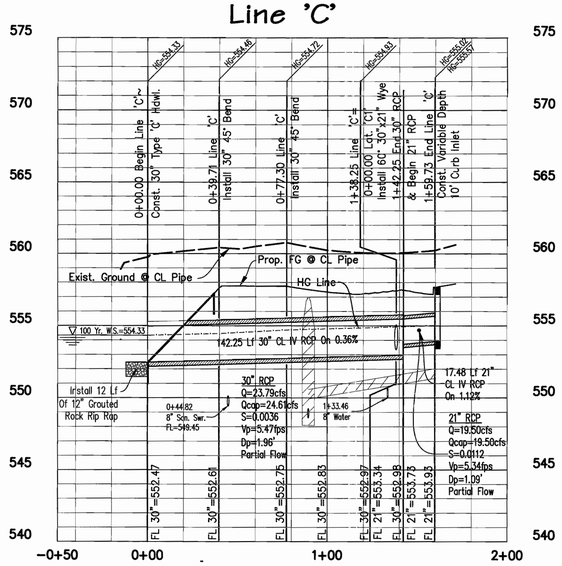
Line 'B'



Line 'C'



Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

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STATE OF TEXAS
GREG T. HELSEL
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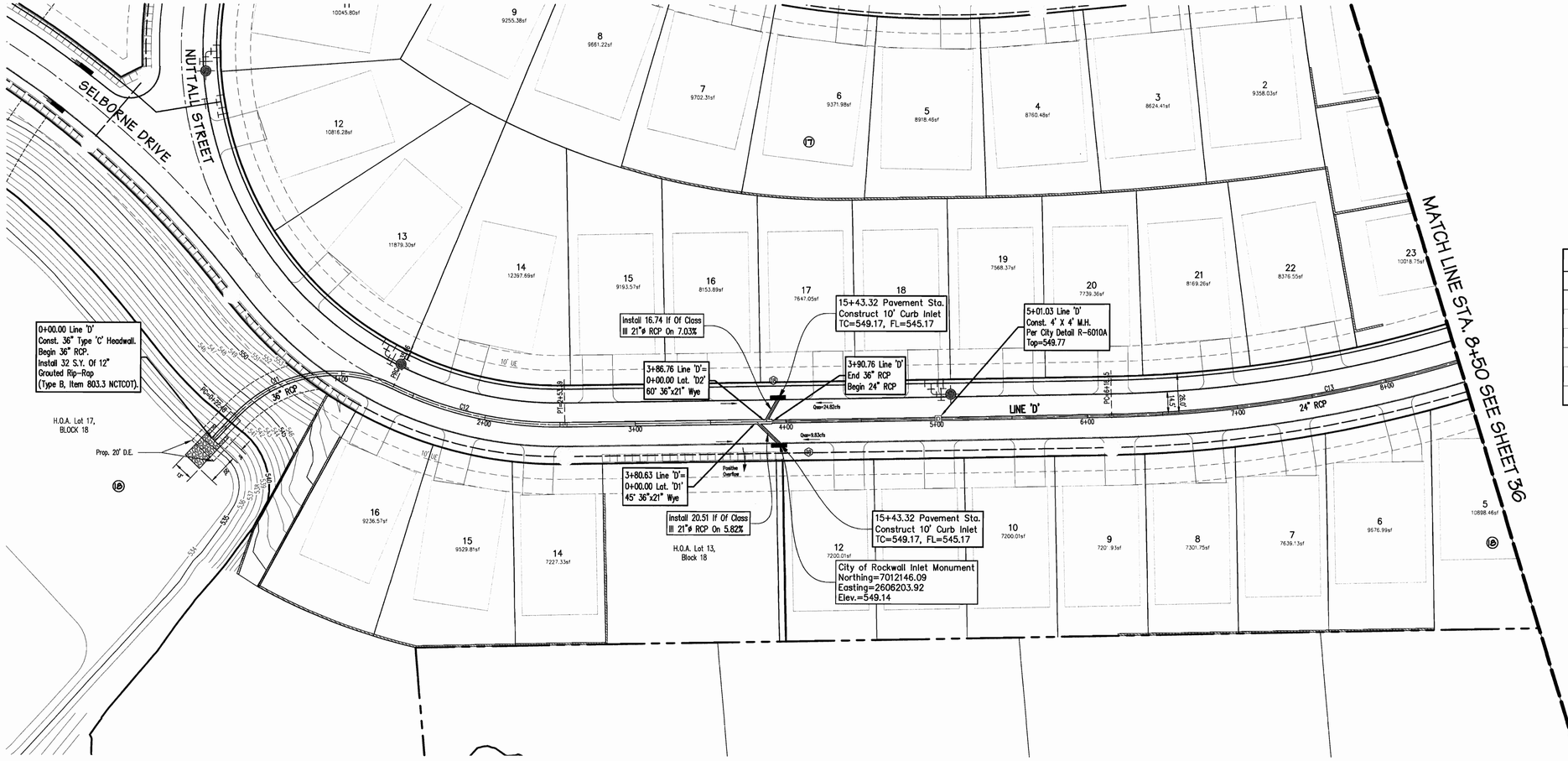
LICENSED
PROFESSIONAL ENGINEER
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
STORM SEWER PLAN & PROFILE
LINE B & LINE C

Revisions	Date

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 34
SEI No. 20-112

Plotted by: bradjones Plot Date: 4/1/2024 4:41 PM
Drawing: C:\2020\20-112 Somerset Park\20-112-STRM2.dwg Saved By: bradjones Save Time: 3/15/2024 3:42:58 PM



0 20 40 80
1 inch = 40 ft.

Storm Sewer Centerline Table				
Curve #	Radius	Delta	Tangent	Length
C11	89.709	72°17'02"	65.52'	113.18'
C12	249.729	27°00'42"	59.98'	117.73'
C13	850.000	18°00'15"	134.66'	267.10'
C14	200.000	4°08'19"	7.23'	14.45'
C15	1700.000	4°10'39"	62.00'	123.95'
C16	100.000	30°56'35"	27.68'	54.01'

AS-BUILT DRAWINGS

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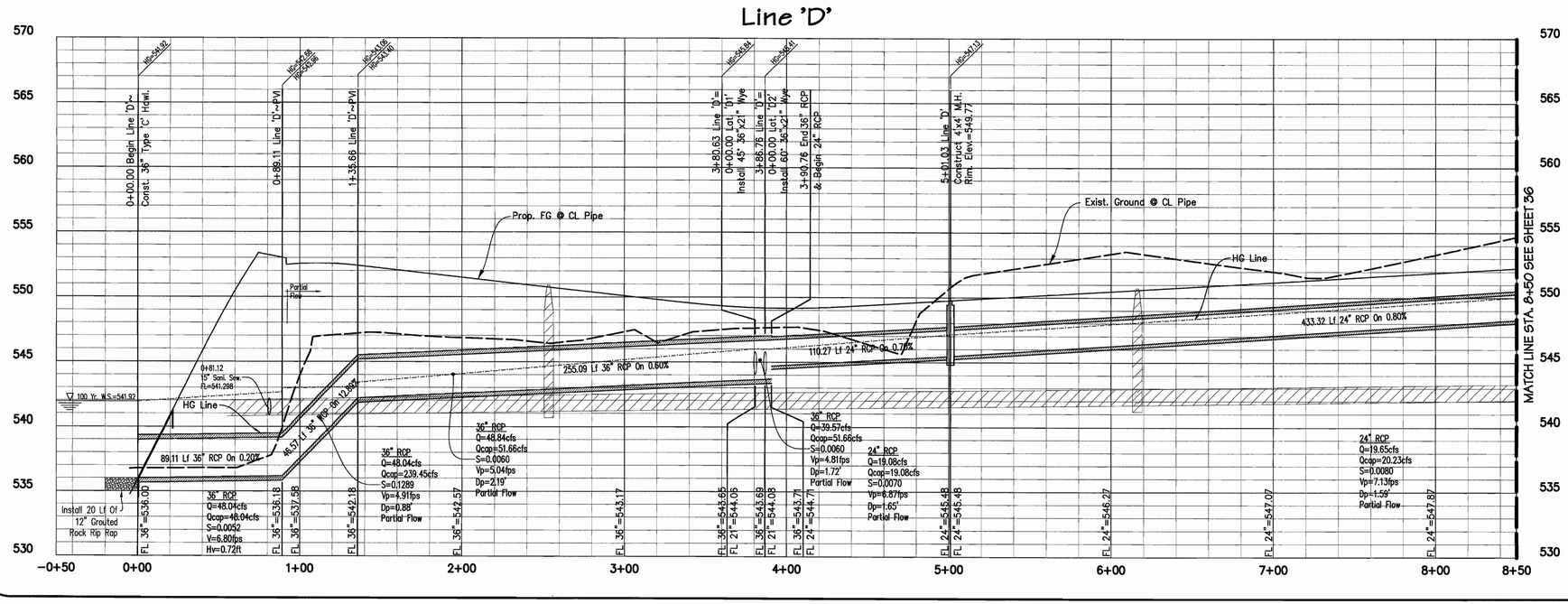
GREG T. HELSEL, P.E. 4/3/24

DATE



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Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

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4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

STORM SEWER PLAN & PROFILE

LINE D

Revisions	Date

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 35
SEI No. 20-112

Drawing: G:\2020\20-112 Somerset Park\20-112-STRM4.dwg Saved By: MsSpurk Save Time: 4/3/2024 2:49:02 PM
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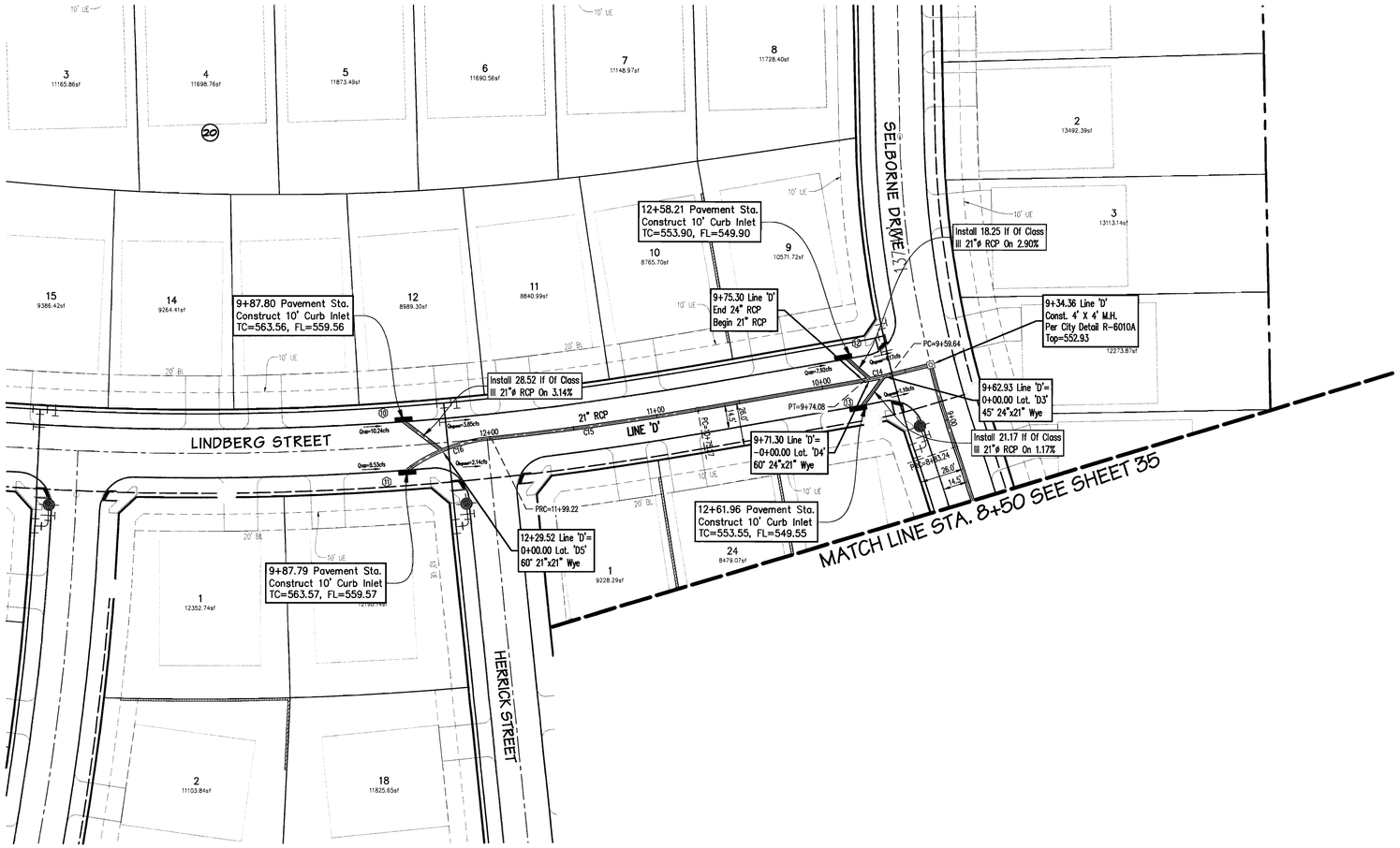

0 20 40 80

1 inch = 40 ft.

N

W E

S

Storm Sewer Centerline Table				
Curve #	Radius	Delta	Tangent	Length
C11	89.709	72°17'02"	65.52'	113.18'
C12	249.729	27°00'42"	59.98'	117.73'
C13	850.000	18°00'15"	134.66'	267.10'
C14	200.000	4°08'19"	7.23'	14.45'
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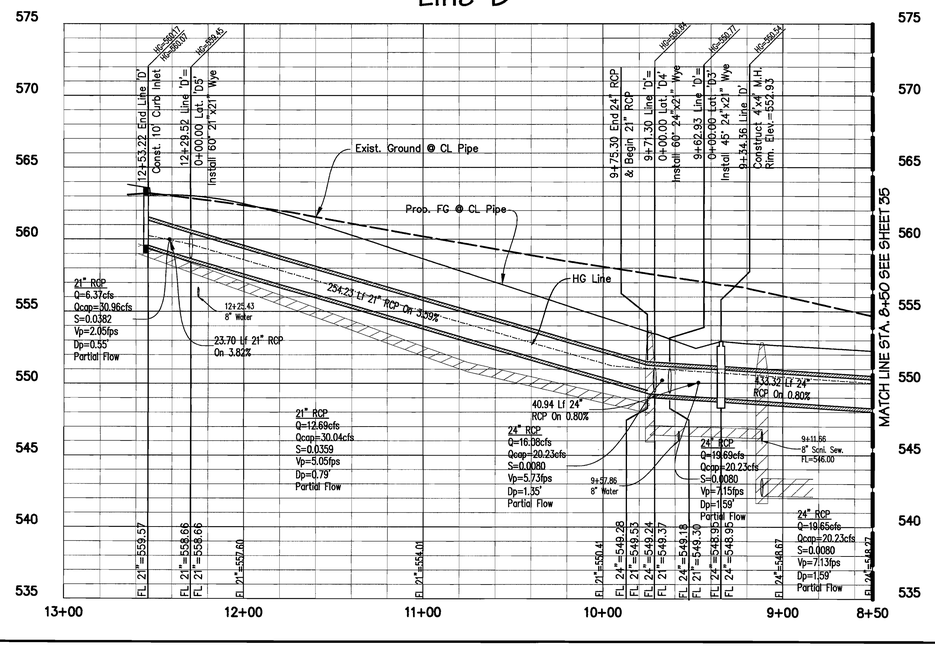

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GREG T. HELSEL, P.E. — DATE 4/3/24

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TBPE No F-2121 • TBLPS No. F-10043100 • www.spiarseng.com

STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
STORM SEWER PLAN & PROFILE

Date

Revisions

LINE D

Scale: 1"=40'

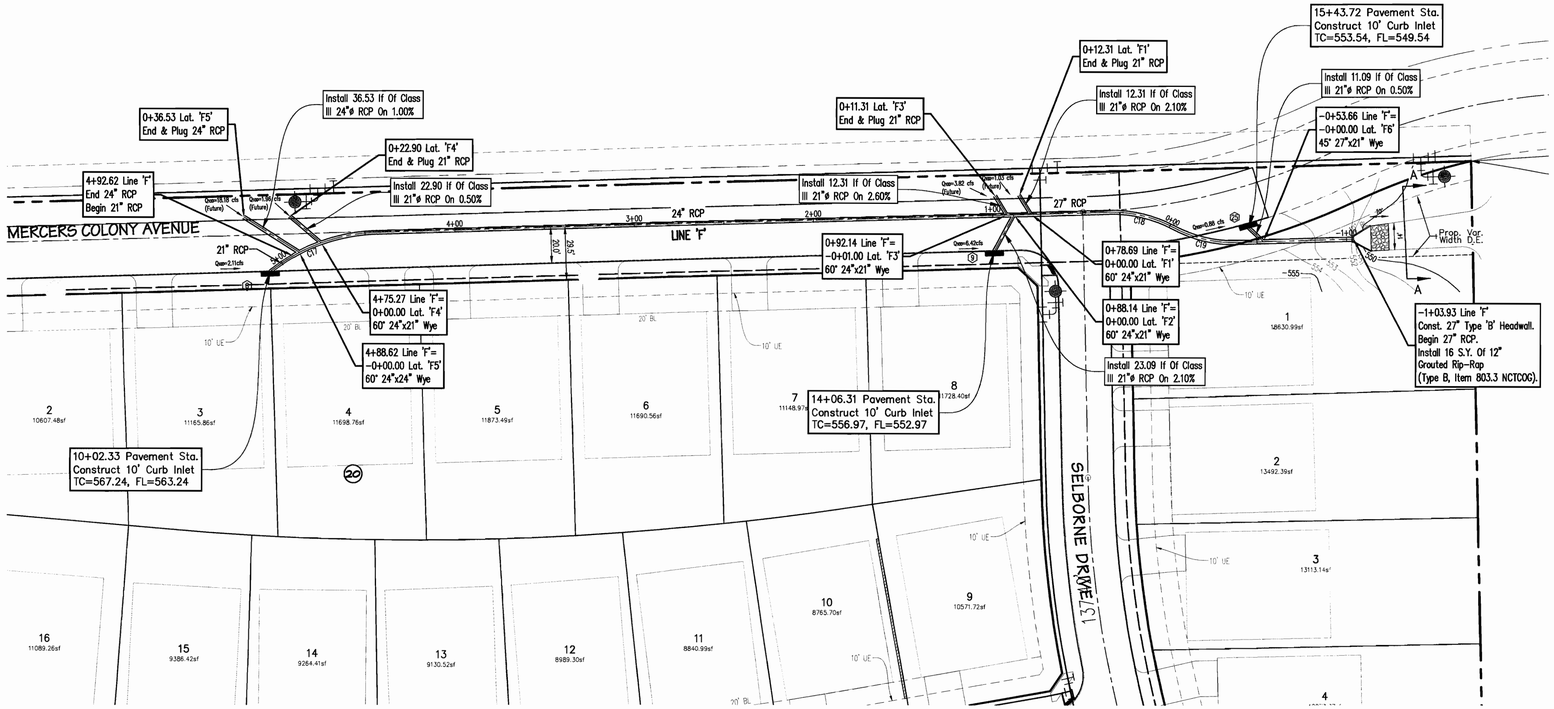
Drawn By: BJ

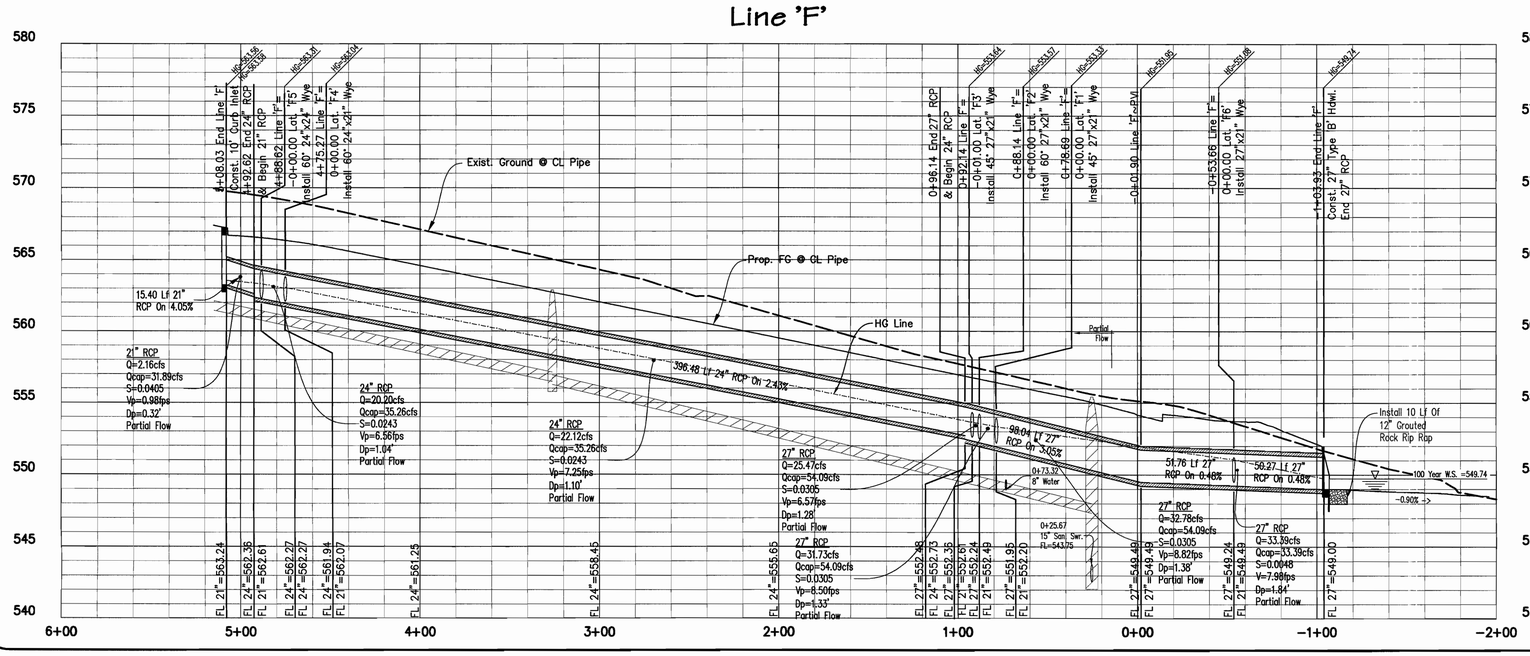
Checked By: GTH

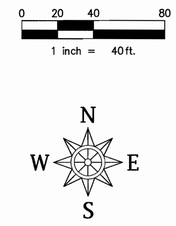
Sheet 36

SEI No. 20-112

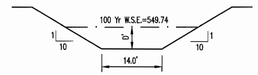
Drawing: C:\2020 JOBS\20-112 Somerset Park\20-112-STORM.dwg Layout: Sheet 36 Plotted By: BrijSolanki Plot Date: 4/1/2024 4:52:39 PM







Storm Sewer Centerline Table				
Curve #	Radius	Delta	Tangent	Length
C17	100.000	37°07'30"	33.58'	64.80'
C18	70.000	30°01'29"	18.77'	36.68'
C19	70.000	30°01'29"	18.77'	36.68'



Q100 = 33.39cfs
S = 0.009 ft/ft
N = 0.035
V = 2.59 fps
D = 0.74ft.
Cap = 61.34cfs

Section 'A~A'

N.T.S.

Swales To Be Stabilized With Curlex & Seed

Note:
The Contractor Shall Perform All Earthwork And Compaction Operations, Including But Not Limited To, Placement Of Fill During Earthwork Operations, Backfilling, Trench Backfilling, Utility Backfilling, Liming, And Subgrade Placement According To The Geotechnical Recommendations And City Standards. The Contractor Shall Use The Most Stringent Requirement If There Is A Conflict On Any Fill Or Backfill Operations. The Contractor Shall Inquire In Written Format With The Engineer Of Record Should There Be Any Questions Regarding Fill And Backfill Requirements.

AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE SPIARS ENGINEERING, INC HEREBY STATES THAT THIS DRAWING IS AS-BUILT THE INFORMATION PROVIDED IS BASED ON SURVEING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR

GREG T. HELSEL, P.E. 4/3/24

DATE

CAUTION !!!
EXISTING UTILITIES

EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION

CALL TEXAS ONE-CALL 811 OR OTHER UTILITY LOCATION SERVICES 48 HOURS PRIOR TO CONSTRUCTION ACTIVITY. SPIARS ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

LINE F

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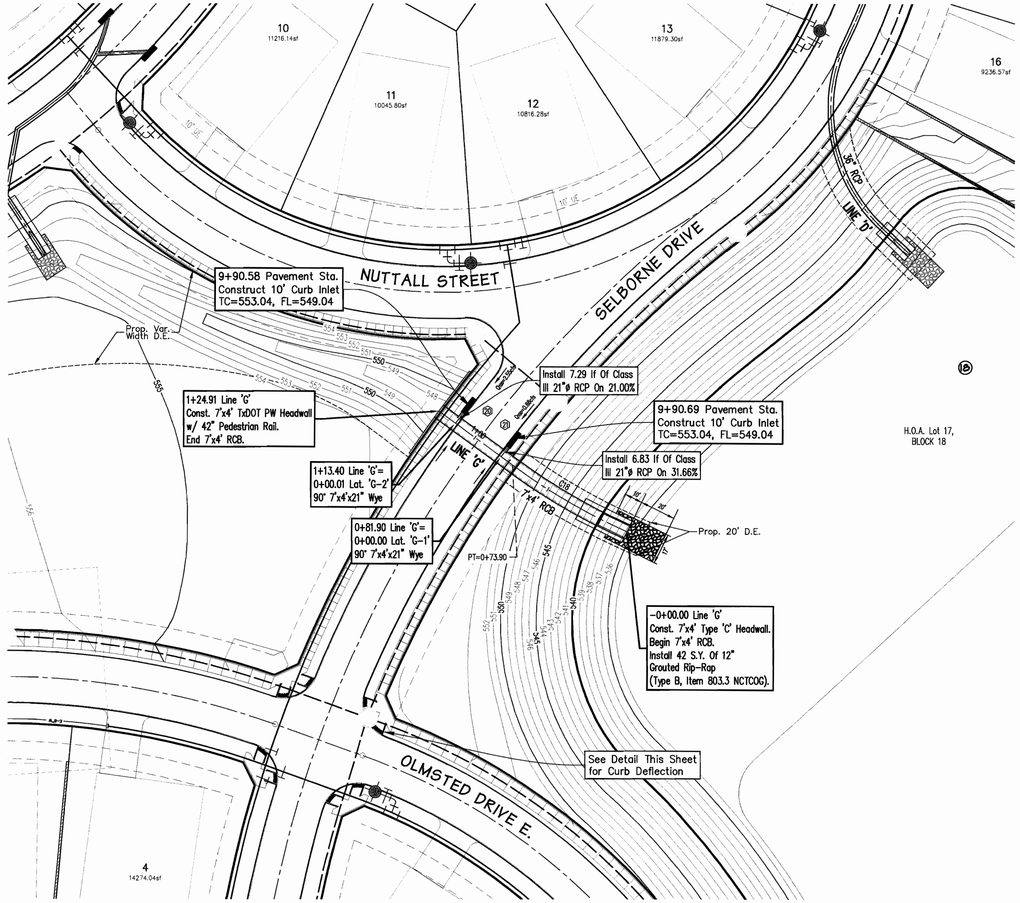
4/3/24

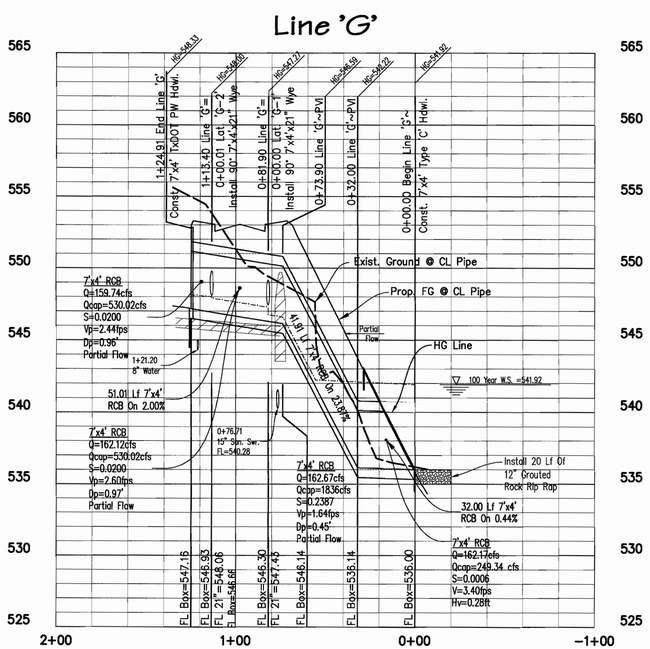
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
STORM SEWER PLAN & PROFILE

Date
Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 37
SEI No. 20-112

Drawing: G:\2020 JOBS\120-112 Somerset Park\120-112-STORM.dwg Saved By: MrJaburg Save Time: 3/15/2024 4:04:59 PM
Plotted by: MrJaburg Plot Date: 4/1/2024 4:53 PM





0 20 40 80
1 inch = 40 ft.

N
W E
S

Storm Sewer Centerline Table				
Curve #	Radius	Delta	Tangent	Length
C18	345.000	13°24'15"	40.54'	80.71'

Note:
Any City Utility Installed Deeper Than 10'
Will Require 100% Compaction.

Note:
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AS-BUILT DRAWINGS

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GREG T. HELSEL, P.E. — DATE 4/3/24

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Elev.=571.67

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Elev.=562.64

LINE G

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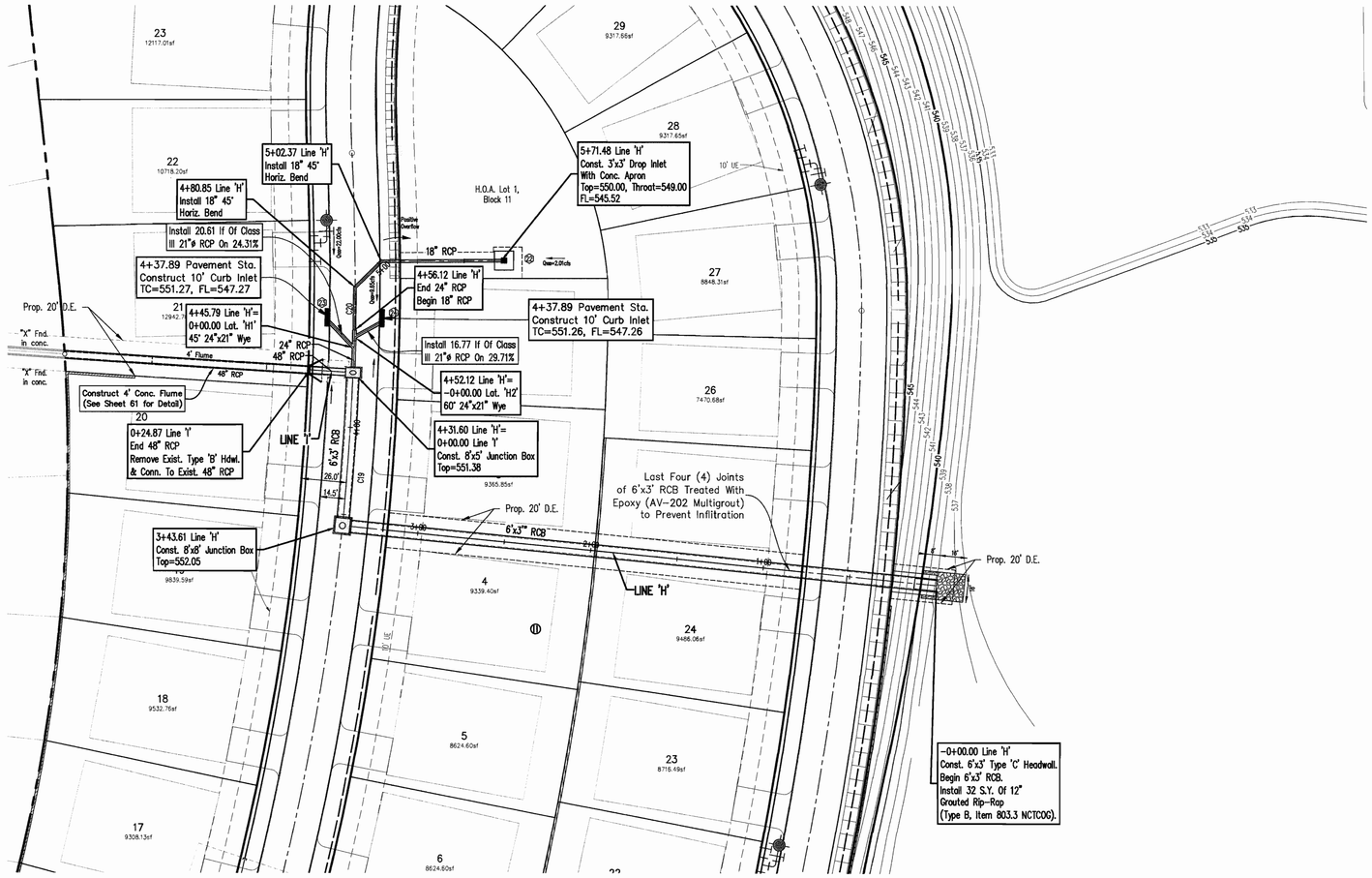
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
STORM SEWER PLAN & PROFILE

Date
Revisions

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 38
SEI No. 20-112

Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112-STM07.dwg Saved By: Hisjourie Save Time: 4/1/2024 4:26:45 PM
Printed By: hisjourie Plot Date: 4/1/2024 4:53 PM



Storm Sewer Centerline Table				
Curve #	Radius	Delta	Tangent	Length
C19	1450.000	5°25'23"	68.67'	137.24'
C20	1450.000	5°25'23"	68.67'	137.24'

0 20 40 80
1 inch = 40ft.

N W E S

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The Contractor Shall Perform All Earthwork And Compaction Operations, Including But Not Limited To, Placement Of Fill During Earthwork Operations, Backfilling, Trench Backfilling, Utility Backfilling, Liming, And Subgrade Placement According To The Geotechnical Recommendations And City Standards. The Contractor Shall Use The Most Stringent Requirement If There Is A Conflict On Any Fill Or Backfill Operations. The Contractor Shall Inquire In Written Format With The Engineer Of Record Should There Be Any Questions Regarding Fill And Backfill Requirements.

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Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

AS-BUILT DRAWINGS
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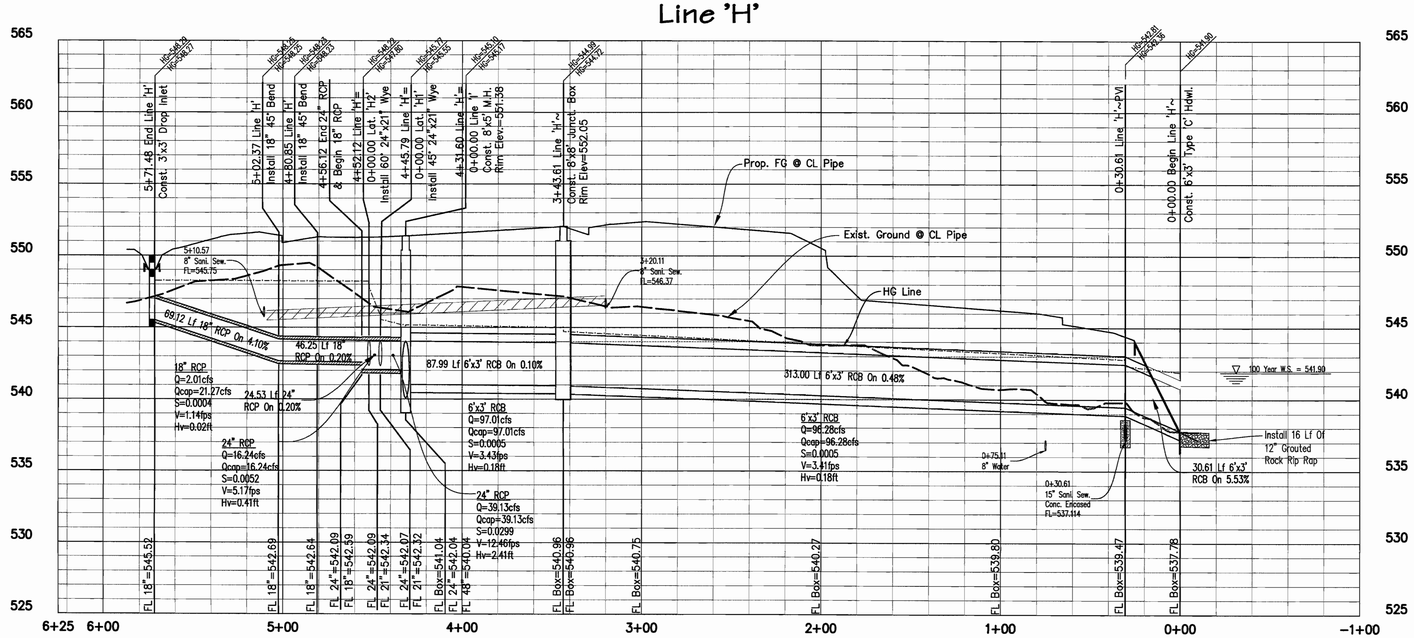
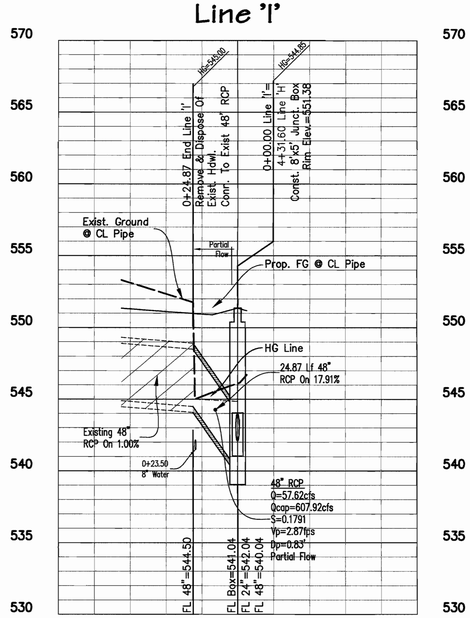
GREG T. HELSEL, P.E. 4/3/24
DATE

Line 'H'



Line 'I'



LINE H & LINE I

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STATE OF TEXAS
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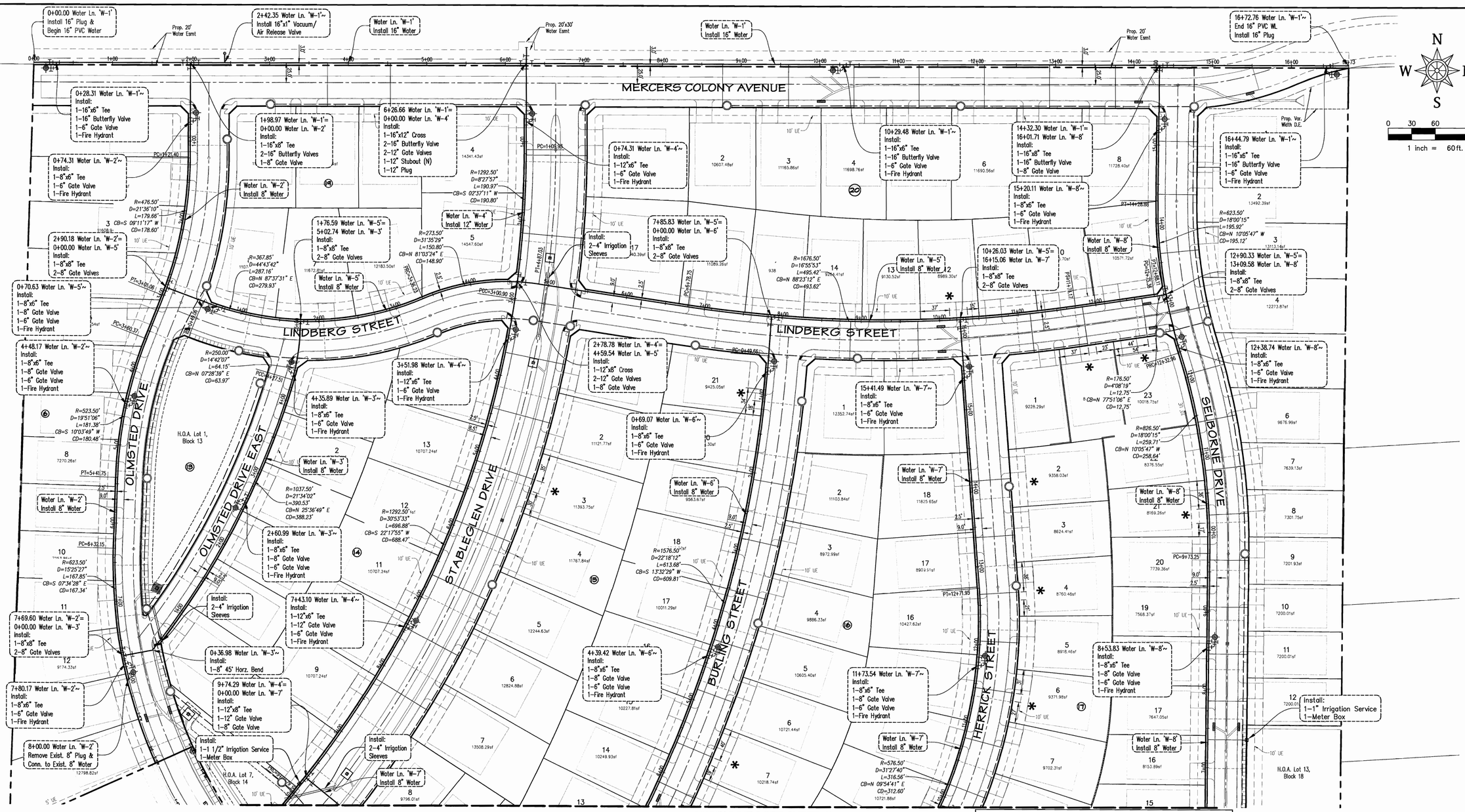
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
STORM SEWER PLAN & PROFILE

Revisions	Date

Scale: 1"=40'
Drawn By: BJ
Checked By: GTH
Sheet 39
SEI No. 20-112

Plotted by: Nishank Plot Date: 4/3/2024 2:59 PM
Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112-STRMS.dwg Saved By: Nishank Save Time: 4/3/2024 2:57:43 PM


MERCERS COLONY AVENUE
LINDBERG STREET
LINDBERG STREET
OLMSTED DRIVE
OLMSTED DRIVE EAST
STABLEGLEN DRIVE
BURLING STREET
HERRICK STREET
SELBORNE DRIVE
0+00.00 Water Ln. 'W-1' Install 16" Plug & Begin 16" PVC Water
2+42.35 Water Ln. 'W-1'~ Install 16"x1" Vacuum/ Air Release Valve
Water Ln. 'W-1' Install 16" Water
Water Ln. 'W-1' Install 16" Water
16+72.76 Water Ln. 'W-1'~ End 16" PVC WL Install 16" Plug
Prop. 20' Water Esmt
Prop. 20'x30' Water Esmt
Prop. 20' Water Esmt
Prop. Var. Width D.E.
0+28.31 Water Ln. 'W-1'~ Install: 1-16"x6" Tee 1-16" Butterfly Valve 1-6" Gate Valve 1-Fire Hydrant
1+98.97 Water Ln. 'W-1'= 0+00.00 Water Ln. 'W-2' Install: 1-16"x6" Tee 2-16" Butterfly Valves 1-8" Gate Valve
6+26.66 Water Ln. 'W-1'= 0+00.00 Water Ln. 'W-4' Install: 1-16"x12" Cross 2-16" Butterfly Valve 2-12" Gate Valves 1-12" Stubout (N) 1-12" Plug
0+74.31 Water Ln. 'W-4'~ Install: 1-12"x6" Tee 1-6" Gate Valve 1-Fire Hydrant
10+29.48 Water Ln. 'W-1'~ Install: 1-16"x6" Tee 1-16" Butterfly Valve 1-6" Gate Valve 1-Fire Hydrant
14+32.30 Water Ln. 'W-1'= 16+01.71 Water Ln. 'W-8' Install: 1-16"x8" Tee 1-16" Butterfly Valve 1-8" Gate Valve
16+44.79 Water Ln. 'W-1'~ Install: 1-16"x6" Tee 1-16" Butterfly Valve 1-6" Gate Valve 1-Fire Hydrant
0+74.31 Water Ln. 'W-2'~ Install: 1-8"x6" Tee 1-6" Gate Valve 1-Fire Hydrant
Water Ln. 'W-2' Install 8" Water
Water Ln. 'W-4' Install 12" Water
15+20.11 Water Ln. 'W-8'~ Install: 1-8"x6" Tee 1-6" Gate Valve 1-Fire Hydrant
2+90.18 Water Ln. 'W-2'= 0+00.00 Water Ln. 'W-5' Install: 1-8"x8" Tee 2-8" Gate Valves
1+76.59 Water Ln. 'W-5'= 5+02.74 Water Ln. 'W-3' Install: 1-8"x8" Tee 2-8" Gate Valves
7+85.83 Water Ln. 'W-5'= 0+00.00 Water Ln. 'W-6' Install: 1-8"x8" Tee 2-8" Gate Valves
Install: 2-4" Irrigation Sleeves
Water Ln. 'W-5' Install 8" Water
Water Ln. 'W-8' Install 8" Water
10+26.03 Water Ln. 'W-5'~ 16+15.06 Water Ln. 'W-7' Install: 1-8"x8" Tee 2-8" Gate Valves
12+90.33 Water Ln. 'W-5'= 13+09.58 Water Ln. 'W-8' Install: 1-8"x8" Tee 2-8" Gate Valves
0+70.63 Water Ln. 'W-5'~ Install: 1-8"x6" Tee 1-8" Gate Valve 1-6" Gate Valve 1-Fire Hydrant
4+48.17 Water Ln. 'W-2'~ Install: 1-8"x6" Tee 1-8" Gate Valve 1-6" Gate Valve 1-Fire Hydrant
3+51.98 Water Ln. 'W-4'~ Install: 1-12"x6" Tee 1-6" Gate Valve 1-Fire Hydrant
2+78.78 Water Ln. 'W-4'= 4+59.54 Water Ln. 'W-5' Install: 1-12"x8" Cross 2-12" Gate Valves 1-8" Gate Valve
15+41.49 Water Ln. 'W-7'~ Install: 1-8"x6" Tee 1-6" Gate Valve 1-Fire Hydrant
12+38.74 Water Ln. 'W-8'~ Install: 1-8"x6" Tee 1-6" Gate Valve 1-Fire Hydrant
4+35.89 Water Ln. 'W-3'~ Install: 1-8"x6" Tee 1-6" Gate Valve 1-Fire Hydrant
0+69.07 Water Ln. 'W-6'~ Install: 1-8"x6" Tee 1-6" Gate Valve 1-Fire Hydrant
Water Ln. 'W-3' Install 8" Water
Water Ln. 'W-6' Install 8" Water
Water Ln. 'W-7' Install 8" Water
Water Ln. 'W-2' Install 8" Water
Water Ln. 'W-8' Install 8" Water
2+60.99 Water Ln. 'W-3'~ Install: 1-8"x6" Tee 1-8" Gate Valve 1-6" Gate Valve 1-Fire Hydrant
7+43.10 Water Ln. 'W-4'~ Install: 1-12"x6" Tee 1-12" Gate Valve 1-6" Gate Valve 1-Fire Hydrant
Install: 2-4" Irrigation Sleeves
0+36.98 Water Ln. 'W-3'~ Install: 1-8" 45° Horz. Bend
4+39.42 Water Ln. 'W-6'~ Install: 1-8"x6" Tee 1-8" Gate Valve 1-6" Gate Valve 1-Fire Hydrant
11+73.54 Water Ln. 'W-7'~ Install: 1-8"x6" Tee 1-8" Gate Valve 1-6" Gate Valve 1-Fire Hydrant
8+53.83 Water Ln. 'W-8'~ Install: 1-8"x6" Tee 1-8" Gate Valve 1-6" Gate Valve 1-Fire Hydrant
7+69.60 Water Ln. 'W-2'= 0+00.00 Water Ln. 'W-3' Install: 1-8"x8" Tee 2-8" Gate Valves
9+74.29 Water Ln. 'W-4'= 0+00.00 Water Ln. 'W-7' Install: 1-12"x8" Tee 1-12" Gate Valve 1-8" Gate Valve
Install: 1-1 1/2" Irrigation Service 1-Meter Box
Install: 2-4" Irrigation Sleeves
Install: 1-1" Irrigation Service 1-Meter Box
7+80.17 Water Ln. 'W-2'~ Install: 1-8"x6" Tee 1-6" Gate Valve 1-Fire Hydrant
8+00.00 Water Ln. 'W-2' Remove Exist. 8" Plug & Conn. to Exist. 8" Water
Water Ln. 'W-7' Install 8" Water
H.O.A. Lot 1, Block 13
H.O.A. Lot 7, Block 14
H.O.A. Lot 13, Block 18
R=1292.50' D=8°27'57" L=190.97' CB=S 02°37'11" W CD=190.80'
R=476.50' D=21°36'10" L=179.66' CB=S 09°11'17" W CD=178.60'
R=367.85' D=44°43'42" L=287.16' CB=N 87°37'31" E CD=279.93'
R=273.50' D=31°35'29" L=150.80' CB=N 81°03'24" E CD=148.90'
R=1676.50' D=16°55'53" L=495.42' CB=N 88°23'12" E CD=493.62'
R=250.00' D=14°42'07" L=64.15' CB=N 07°28'39" E CD=63.97'
R=523.50' D=19°51'06" L=181.38' CB=S 10°03'49" W CD=180.48'
R=1037.50' D=21°34'02" L=390.53' CB=N 25°36'49" E CD=388.23'
R=1292.50' D=30°53'33" L=696.88' CB=S 22°17'55" W CD=688.47'
R=1576.50' D=22°18'12" L=613.68' CB=S 13°32'29" W CD=609.81'
R=623.50' D=6°00'15" L=195.92' CB=N 10°05'47" W CD=195.12'
R=176.50' D=4°08'19" L=12.75' CB=N 77°51'06" E CD=12.75'
R=826.50' D=18°00'15" L=259.71' CB=N 10°05'47" W CD=258.64'
R=576.50' D=31°27'40" L=316.56' CB=N 09°54'41" E CD=312.60'
PC=1+09.95
PT=1+87.03
PC=3+00.90
PT=3+01.06
PC=3+60.37
PT=3+76.06
PC=4+17.51
PT=4+41.75
PC=6+32.15
PT=6+54.54
PC=6+78.70
PT=7+01.03
PC=9+49.65
PT=9+73.25
PC=10+14.88
PT=10+38.82
PC=11+14.71
PT=11+38.54
PC=12+32.96
PT=12+56.78
PC=13+57.93
PT=14+81.75
PC=14+82.58
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PT=19+80.54
PC=20+80.54
PT=21+05.37
PC=21+30.20
PT=21+55.03
PC=22+54.69
PT=22+79.52
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PT=24+54.01
PC=25+53.67
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PT=27+03.33
PC=27+28.16
PT=27+52.99
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PT=28+77.48
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PT=744+84.16
PC=745+83.82
PT=746+08.65
PC=747+08.31
PT=747+33.14
PC=748+32.80
PT=748+57.63
PC=749+57.63
PT=750+82.46
PC=751+82.12
PT=752+06.95
PC=753+06.61
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PC=754+31.44
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PT=757+05.76
PC=758+05.42
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PT=820+06.89
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PT=821+31.38
PC=822+31.04
PT=823+55.87
PC=824+55.87
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PT=827+05.19
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PT=840+30.43
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PC=1016+81.16
PT=1017+05.99
PC=1018+05.65
PT=1018+30.48
PC=1019+30.14

MATCHLINE " SEE SHEET 40

10+42.31 Water Ln. 'W-4'~
Install:
2-12" 45° Vert. Bends

10+73.61 Water Ln. 'W-4'~
Remove Exist. 12" Plug & 12 L.F.
Exist. 12" Water Ln.
Connect To Exist 12" PVC Water Ln.
End 12" PVC Water Ln.

10+61.86 Water Ln. 'W-4'~
Install:
2-12" 45° Vert. Bends

Install:
2-4" Irrigation
Sleeves

2+24.68 Water Ln. 'W-7'~
Install:
1-8"x6" Tee
1-8" Gate Valve
1-6" Gate Valve
1-Fire Hydrant

Water Ln. 'W-6'
Install 8" Water

8+14.34 Water Ln. 'W-7'=
0+00.00 Water Ln. 'W-8'
Install:
1-8"x8" Tee
2-8" Gate Valves

Water Ln. 'W-7'
Install 8" Water

0+72.23 Water Ln. 'W-8'~
Install:
1-8"x6" Tee
1-6" Gate Valve
1-Fire Hydrant

2+52.82 Water Ln. 'W-8'~
Install:
1-8"x6" Tee
1-6" Gate Valve
1-Fire Hydrant

4+89.33 Water Ln. 'W-8'~
Install:
1-8"x6" Tee
1-8" Gate Valve
1-6" Gate Valve
1-Fire Hydrant

Water Ln. 'W-8'
Install 8" Water

8+78.84 Water Ln. 'W-6'=
4+60.60 Water Ln. 'W-7'
Install:
1-8"x8" Tee
2-8 Gate Valves

10' S.S. Easement
Inst. No. 20170000024085
O.P.R.R.C.T.

5+36.58 Water Ln. 'W-7'~
Install:
1-8"x6" Tee
1-8" Gate Valve
1-6" Gate Valve
1-Fire Hydrant

2+86.36 Water Ln. 'W-8'=
9+80.28 Water Ln. 'W-9'
Install:
1-8"x8" Tee
2-8" Gate Valves

9+36.57 Water Ln. 'W-9'~
Install:
1-8" 45° Horz. Bend

H.O.A. Lot 1,
Block 12

H.O.A. Lot 17,
BLOCK 18

Existing 1 1/2"
Irrigation Service
And Meter Box

Install:
1-1 1/2" Service (Domestic)
1-Meter Box

Water Ln. 'W-9'
Install 8" Water

Install:
2-4" Irrigation
Sleeves

6+49.98 Water Ln. 'W-9'=
0+90.41 Water Ln. 'W-10'
Install:
1-8"x8" Cross
3-8" Gate Valves

Somerset Park Phase I
Vol. 28, Pg. 487 D.R.R.C.T.

Install:
1-1 1/2" Irrigation Service
1-Meter Box

1+65.53 Water Ln. 'W-10'~
Install:
1-8"x6" Tee
1-6" Gate Valve
1-Fire Hydrant

0+00.00 Water Ln. 'W-10'
Remove Exist. 8" Plug &
Conn. to Exist. 8" Water

Water Ln. 'W-10'
Install 8" Water

Water Ln. 'W-10'
Install 8" Water

4+58.72 Water Ln. 'W-10'~
Install:
1-8"x6" Tee
1-8" Gate Valve
1-6" Gate Valve
1-Fire Hydrant

Water Ln. 'W-9'
Install 8" Water

3+57.63 Water Ln. 'W-9'~
Install:
1-8"x6" Tee
1-8" Gate Valve
1-6" Gate Valve
1-Fire Hydrant

Install:
1-1" Irrigation Service
1-Meter Box

Water Ln. 'W-10'
Install 8" Water

HERRICK STREET
NUTTALL STREET
BURLING STREET
SELBORNE DRIVE
OLMSTEAD DRIVE
EX. OLMSTED DR.
EX. BLYTHE ST. EAST
EX. BLYTHE ST. WEST
EX. GAGE ST.
EX. QUINCY ST.

AS-BUILT DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Greg T. Helsel, P.E.

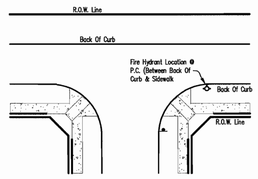
12/18/23
DATE

ARCADIA LAKES OF SOMERSET
HOLDINGS, LLC
INST. NO. 20130000500385
O.P.R.R.C.T.

MATCHLINE " SEE SHEET 42

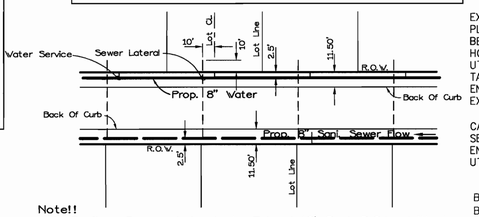
Note:
1. All materials and workmanship shall conform to the City of Rockwall Standards.
2. The locations of all utilities located on these plans are taken from existing public records. The exact location and elevation of all public utilities must be determined by the Contractor. It shall be the duty of the Contractor to ascertain whether any additional facilities other than those shown on the plans may be present.
3. It will be the responsibility of the Contractor to protect all public utilities in the construction of this project.
4. Lots with adjusted service due to conflicts (Manholes, Inlets, etc.) are marked with "*".
5. Water appurtenances (Fire Hydrants, Valves, Fittings, etc.) shown as graphical representation only.

Note:
The Contractor Shall Perform All Earthwork And Compaction Operations, Including But Not Limited To, Placement Of Fill During Earthwork Operations, Backfilling, Trench Backfilling, Utility Backfilling, Liming, And Subgrade Placement According To The Geotechnical Recommendations And City Standards. The Contractor Shall Use The Most Stringent Requirement If There Is A Conflict On Any Fill Or Backfill Operations. The Contractor Shall Inquire In Written Format With The Engineer Of Record Should There Be Any Questions Regarding Fill And Backfill Requirements.



Typical Detail Fire Hydrant Location

Note:
Lots with adjusted services due to conflicts (i.e. Mhs, inlets, ect.) are marked with " * "



Note!!
1. Sanitary Sewer Laterals to Extend 10' Past R.O.W. With A Clean Out In The R.O.W. And Within 1.0' Of The Property Line.
2. All Sanitary Sewer Services Shall Be Made Of The Same Material As The Main To Which It Connects.
3. Street Trees Will Be Planted In The Parkway Between The Back Of Curb And The Edge Of A Public Sidewalk.
4. Landscaping Allowed Within Utility Easements.
5. Adjust Ex. Valve Stacks/Lids to proposed grade, as needed.

Typical Lot Service Detail

CAUTION !!!
EXISTING UTILITIES

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CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATION SERVICES 48 HOURS PRIOR TO CONSTRUCTION ACTIVITY. SPIARS ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing = 7011908.45, Easting = 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing = 7011143.42, Easting = 2605492.75
Elev.=562.64

SPIARS
ENGINEERING & SURVEYING
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TBPE No F-2121 • TBLPS No. F-10043100 • www.spiarseng.com

STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
12/18/23

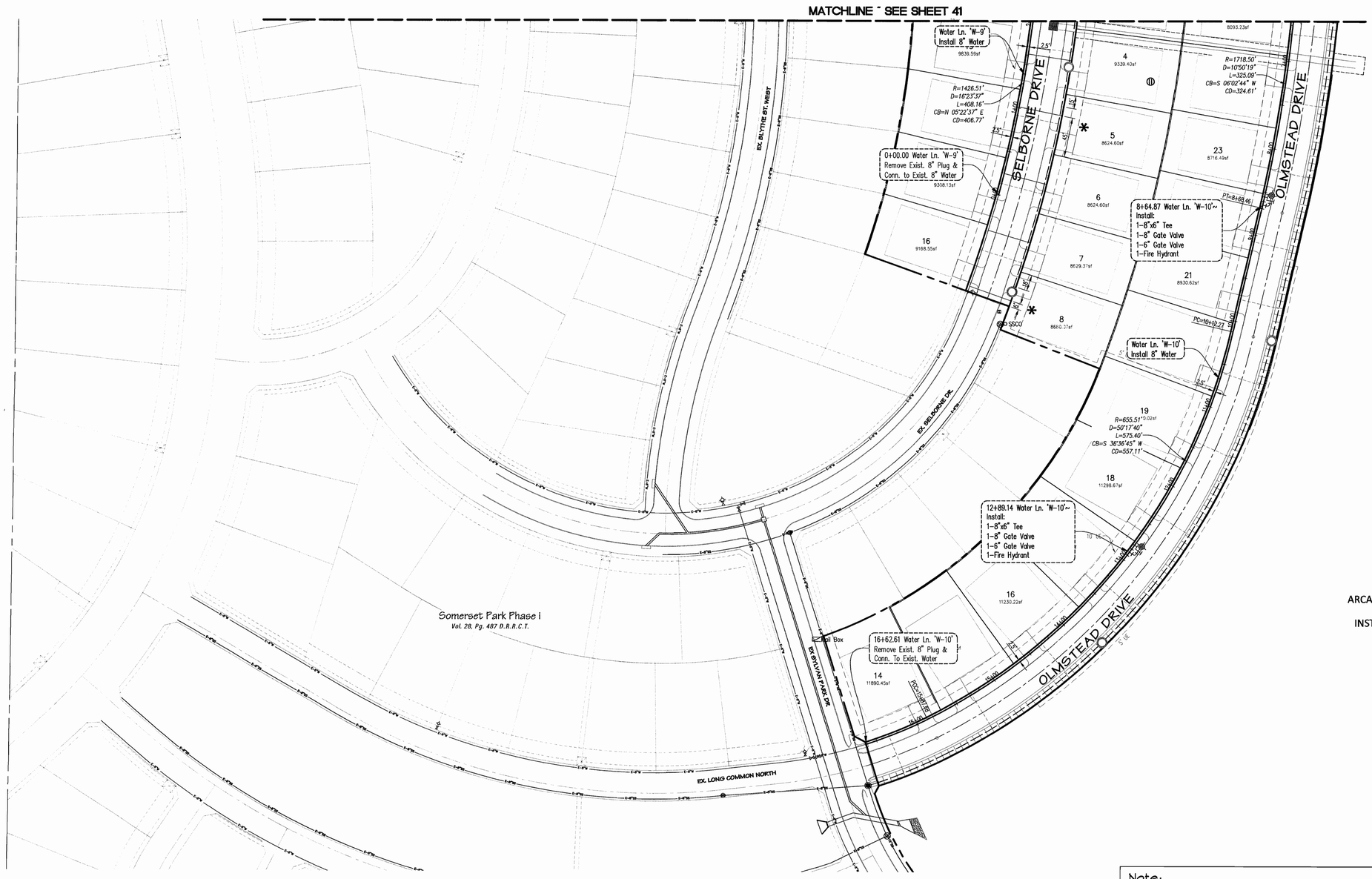
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

WATER PLAN

Date
Revisions

Scale: 1"=60'
Drawn By: BJ
Checked By: GTH
Sheet 41
SEI No. 20-112

Plotted by: ddorsett Plot Date: 12/18/2023 8:54 AM
Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112 - WS.dwg Saved By: ddorsett Save Time: 12/18/2023 8:44:27 AM



N
W E
S

0 30 60 120

1 inch = 60 ft.

AS-BUILT DRAWINGS

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Greg T. Helsel, P.E.

DATE 1/10/24

Note:

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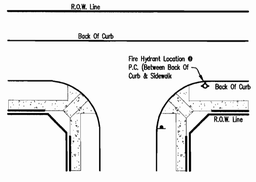

Typical Detail Fire Hydrant Location

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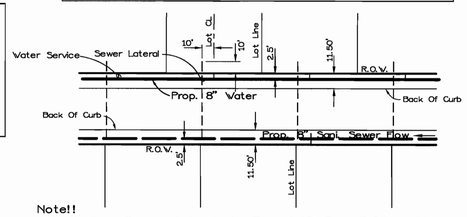

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
1/10/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

WATER PLAN

Date

Revisions

Scale: 1"=60'

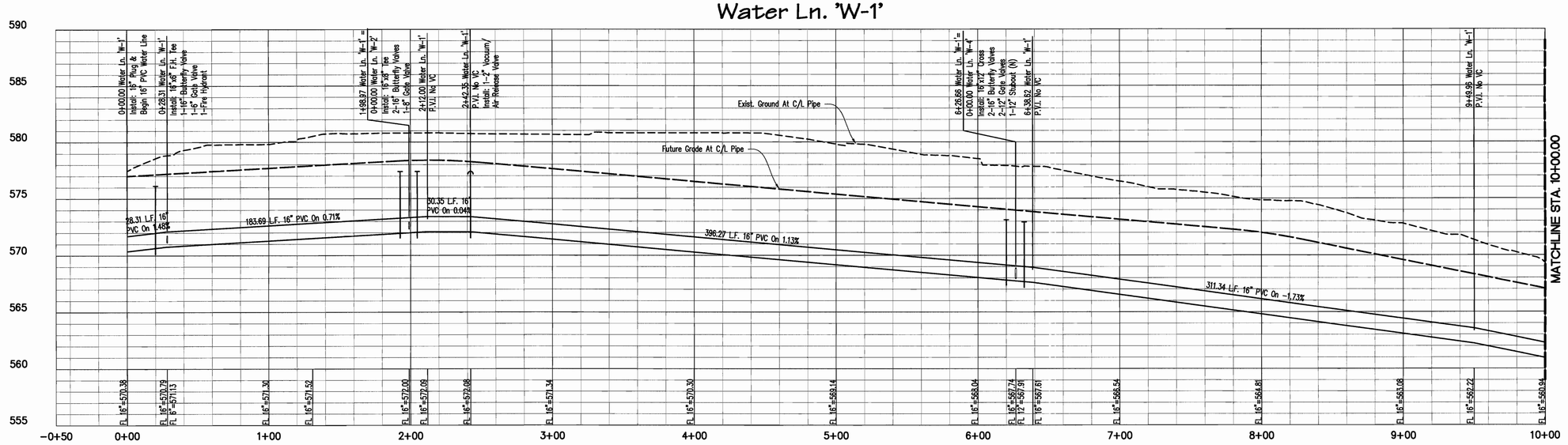
Drawn By: BJ

Checked By: GTH

Sheet 42

SEI No. 20-112

Plotted By: dbennett Plot Date: 1/10/2024 12:33 PM
Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112 - WS.dwg Saved By: bbennett Save Time: 12/8/2023 1:20:03 PM



AS-BUILT DRAWINGS

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Greg T. Helsel, P.E.

12/18/23

DATE

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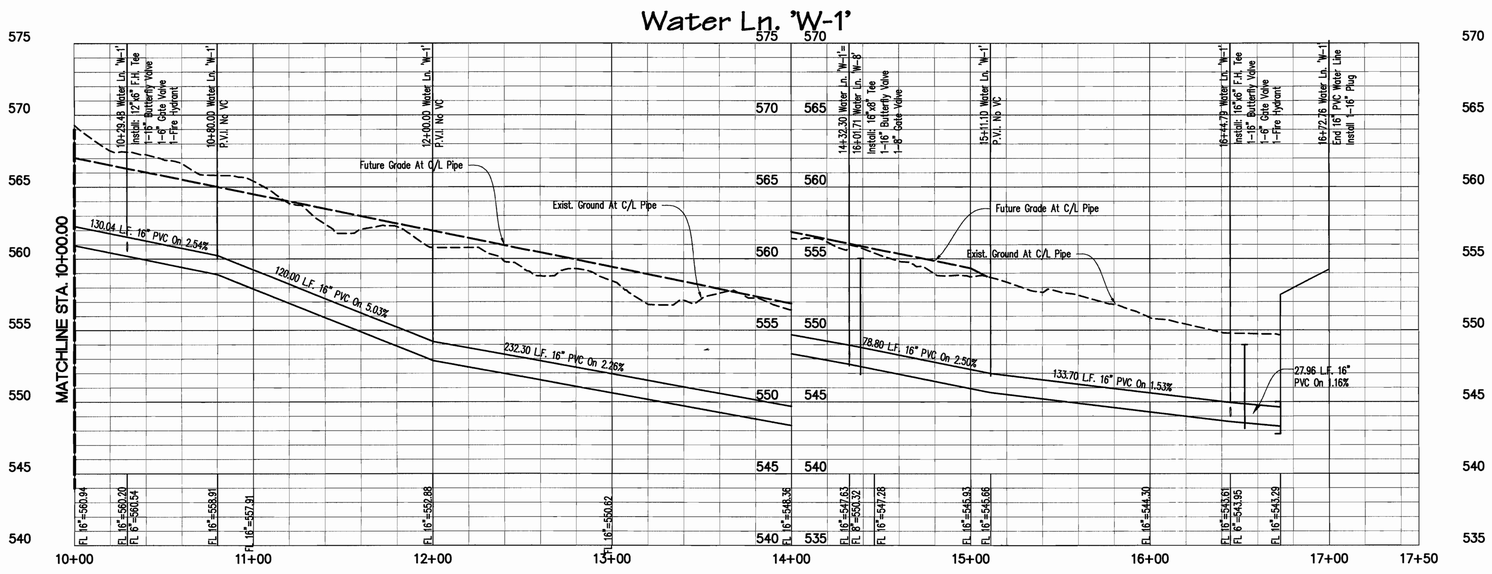

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Typical Lot Service Detail

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Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing – 7011143.42, Easting – 2605492.75
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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
12/18/23

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
16" WATER LINE PROFILES

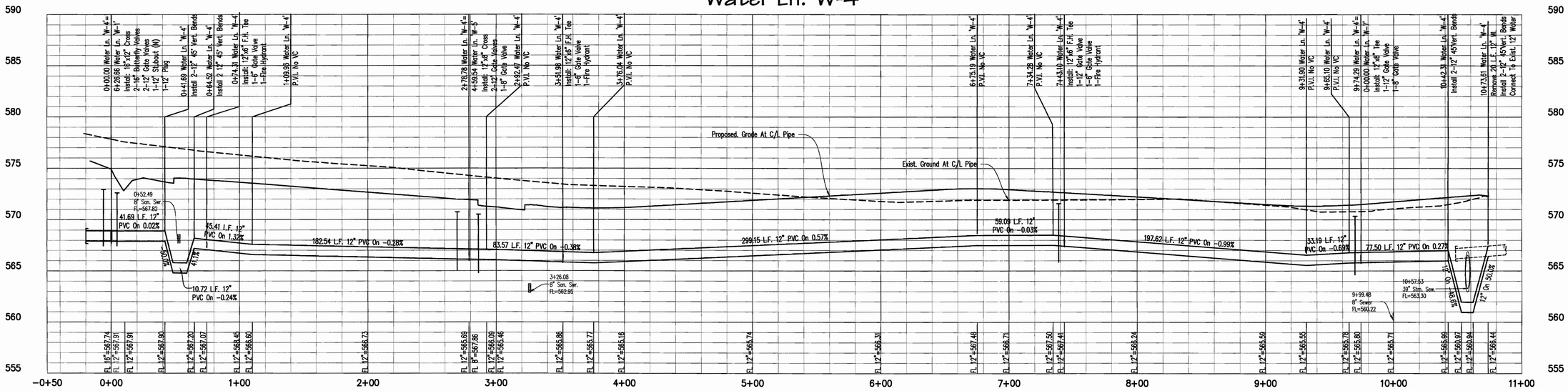
Date
Revisions

Scale: 1"=40'H 1"=5V
Drawn By: BJ
Checked By: GTH
Sheet 43
SEI No. 20-112

Drawing: C:\2020 JOBS\20-112 Somerset Park\20-112 - WS.dwg Saved By: ddorsett Save Time: 8/4/2023 1:55:46 PM
Plotted by: ddorsett Plot Date: 8/8/2023 2:47 PM

Plotted by: dbissett Plot Date: 8/8/2023 2:47 PM
Drawing: G:\2020_JOBS\20-112 - Somerset Park\20-112 - WS.dwg Saved By: bissett Save Time: 8/4/2023 1:55:48 PM

Water Ln. 'W-4'



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12/18/23
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STATE OF TEXAS
GREG T. HELSEL
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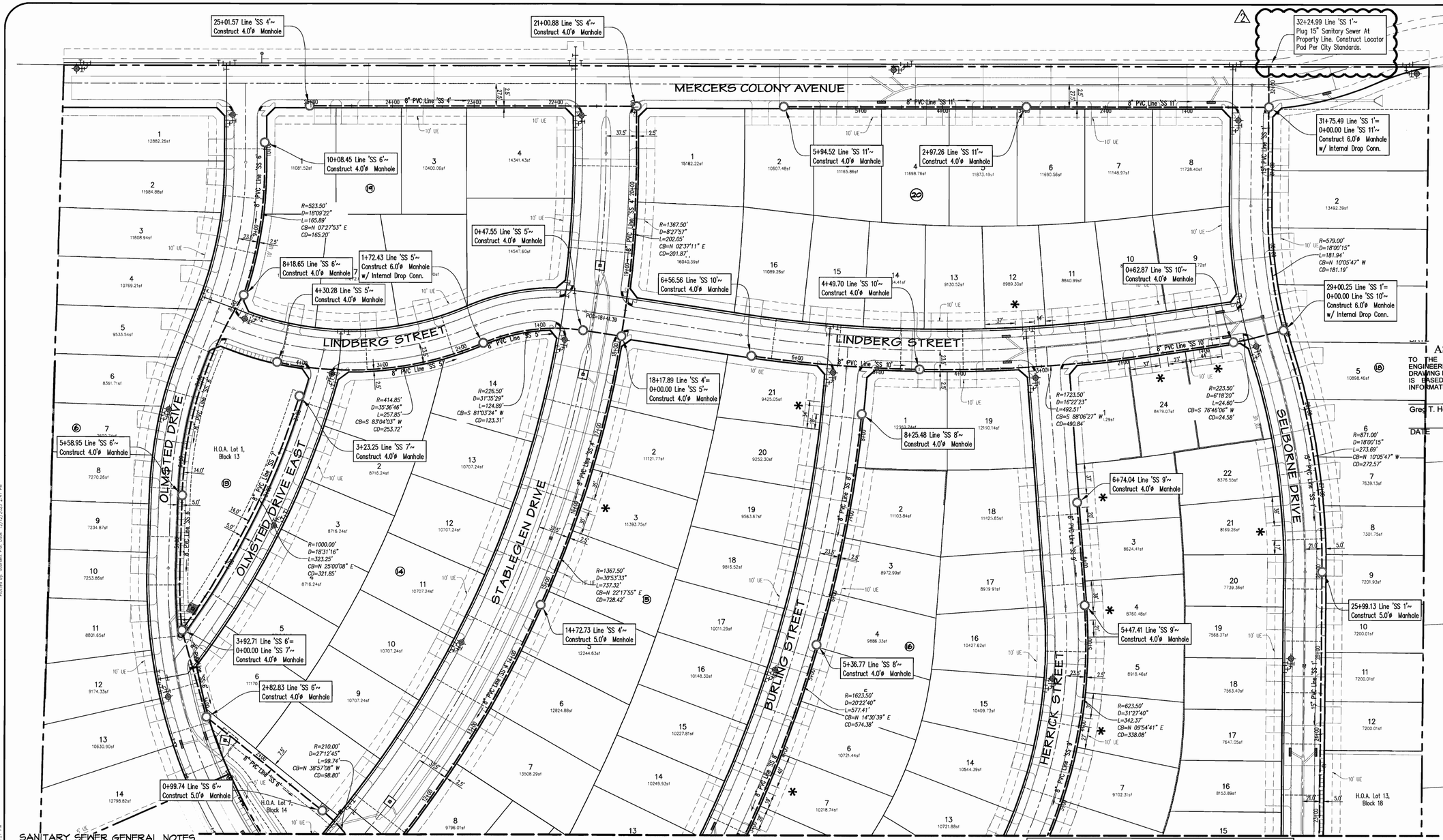
12/18/23

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
12" WATER LINE PROFILES

Date	Revisions

Scale: 1"=40'H 1"=5V
Drawn By: BJ
Checked By: GTH
Sheet 44
SEI No. 20-112



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7. The General Crossing Locations For Storm Drain Pipes Are Shown & Denoted Hereon. The Contractor Shall Be Responsible For Locating The Storm Drain Crossing From The Plan Information Provided Hereon & Elsewhere In These Plans. The Vertical Clearances Between Water, Sanitary Sewer, & Storm Drain Pipe Lines Shown On These Plans Shall Be Adhered To.
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9. Sanitary Sewer Lines Shall Have Green EMS Locator Pads At Every Manhole, Cleanout, & Service.
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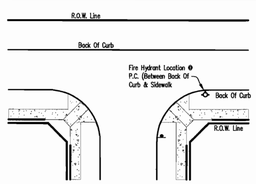

Typical Detail Fire Hydrant Location

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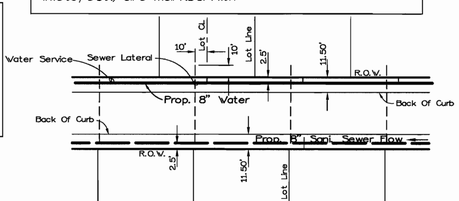

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DATE 12/18/23

STATE OF TEXAS · GREG T. HELSEL · 120339 · LICENSED PROFESSIONAL ENGINEER · 12/14/23

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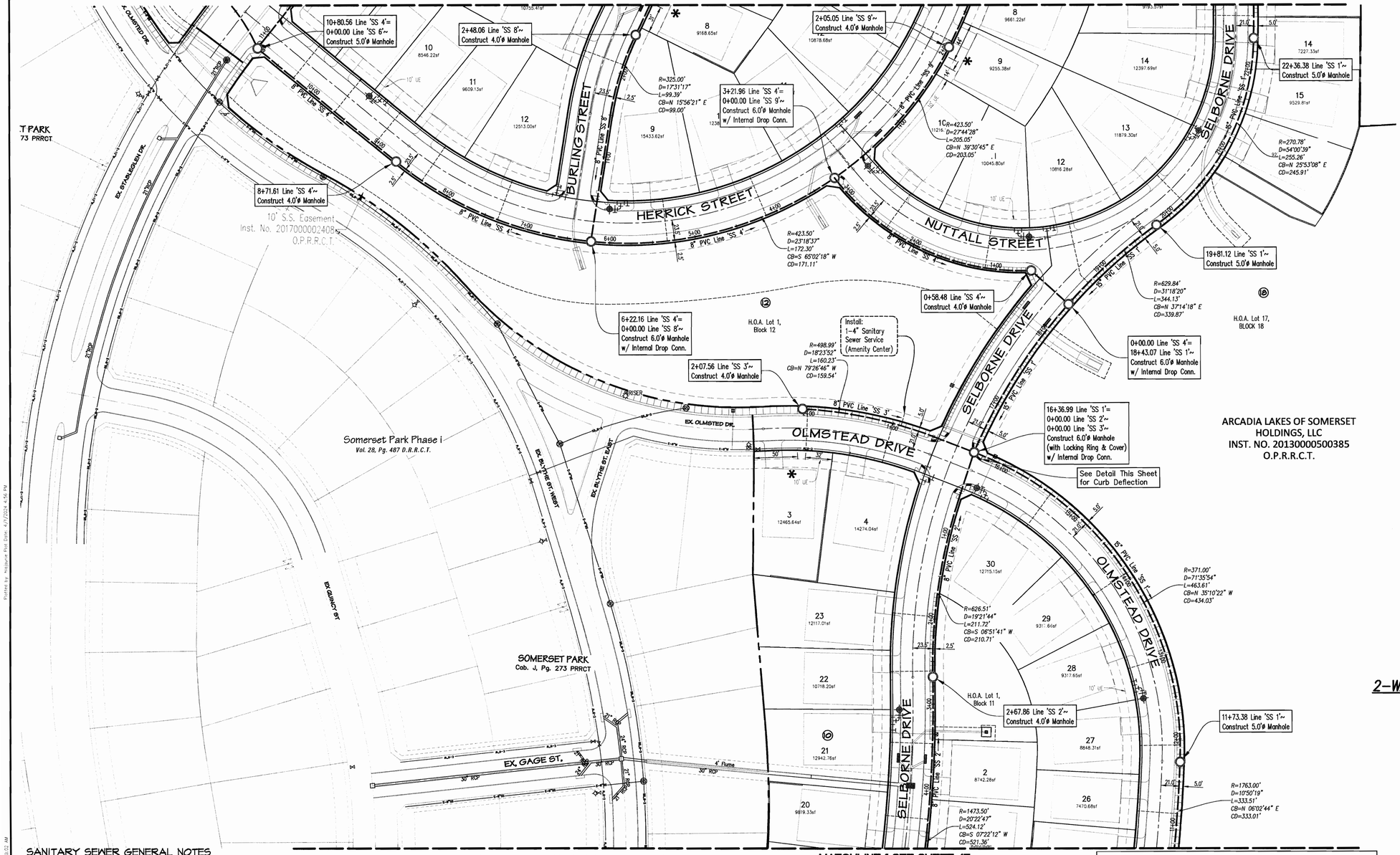
0 30 60 120
1 inch = 60 ft.

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
SANITARY SEWER PLAN

Revisions	Date
REVISED 15" SANITARY SEWER WITH STUBOUT AT PROPERTY LINE	06/13/2022

Scale: 1"=60'
Drawn By: BJ
Checked By: GTH
Sheet 45
SEI No. 20-112

Plotted by: dorsett Plot Date: 12/12/2023 2:47 PM
Drawing: G:\2020\20E\20-112 Somerset Park\20-112 4E.dwg Saved By: Dorsett Save Time: 12/7/2023 2:23:17 PM



2-WAY DIRECTIONAL BFR TYPICAL DETAIL

N.T.S.

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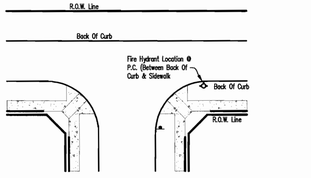

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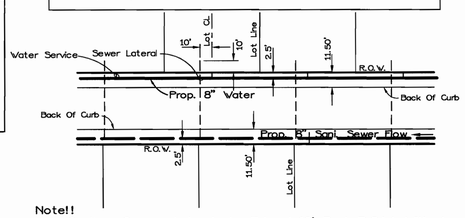

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4/3/24

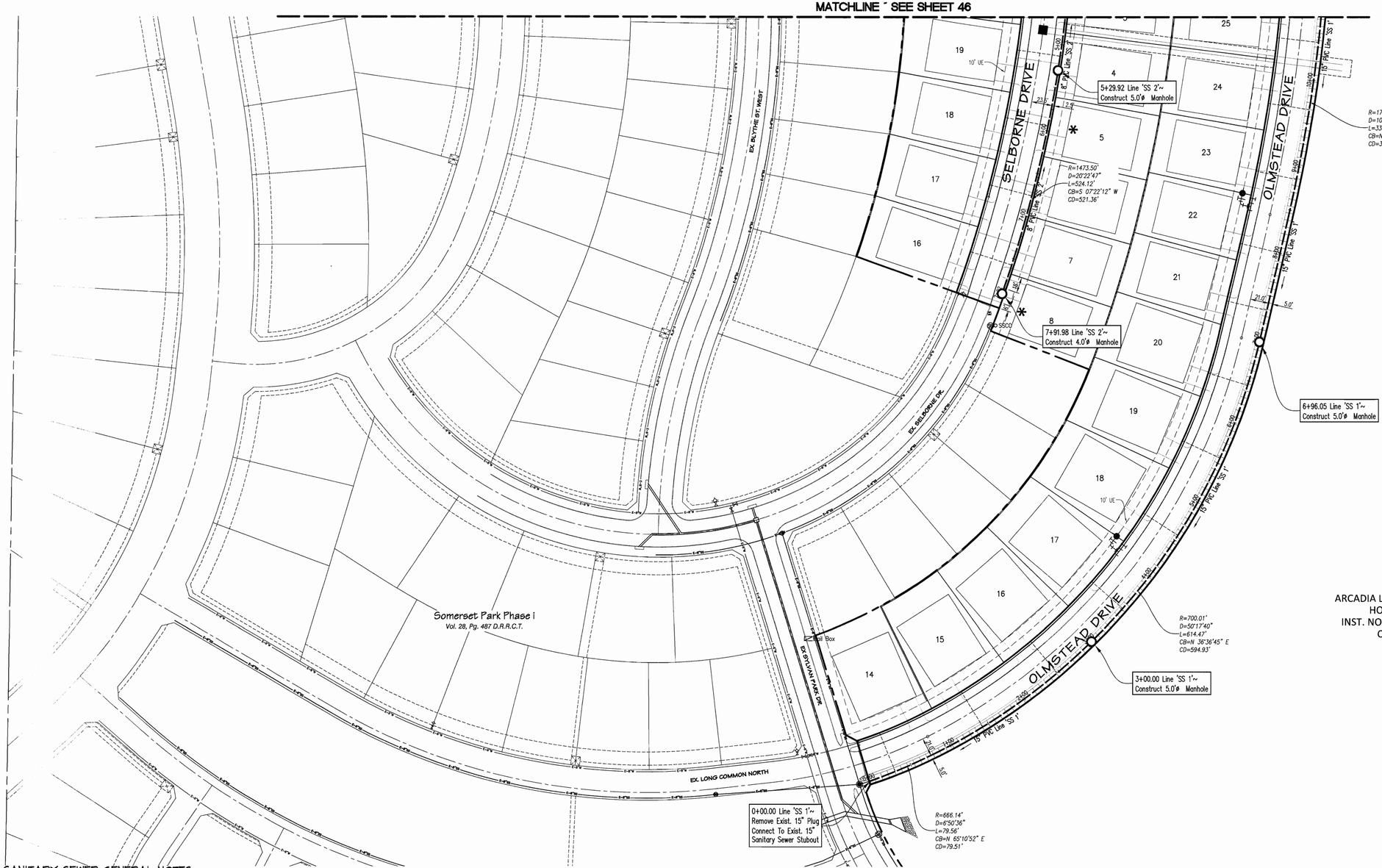
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
SANITARY SEWER PLAN

Revisions	Date

Scale: 1"=60'
Drawn By: BJ
Checked By: GTH
Sheet 46
SEI No. 20-112

Drawing: U:\2020\20-112 Somerset Park\Civil\12 - As-Buil Sanitary Sewer Plans.dwg Saved By: bhudgens Save Time: 3/4/2024 10:03:02 AM
Plotted by: bhudgens Plot Scale: 1.0000 ' / 1.0000 ' Plot Date: 4/1/2024 4:56 PM

MATCHLINE - SEE SHEET 46



ARCADIA LAKES OF SOMERSET
HOLDINGS, LLC
INST. NO. 20130000500385
O.P.R.R.C.T.

H.O.A. Lot 17, Block 18

N
W E
S

0 30 60 120
1 inch = 60 ft.

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7. The General Crossing Locations For Storm Drain Pipes Are Shown & Denoted Hereon. The Contractor Shall Be Responsible For Locating The Storm Drain Crossing From The Plan Information Provided Hereon & Elsewhere In These Plans. The Vertical Clearances Between Water, Sanitary Sewer, & Storm Drain Pipe Lines Shown On These Plans Shall Be Adhered To.
8. All Sanitary Sewer Service Laterals Shall Include 4" Tee, Bend, Pipe & Stopper Installed 10' Downstream Of The Centerline Of Lots, Unless Otherwise Shown On Plans. End Of Pipe Services Shall Be Marked With E.M.S. Locator Disk (Green).
9. Sanitary Sewer Lines Shall Have Green EMS Locator Pads At Every Manhole, Cleanout, & Service.
10. Trench Walls Shall Be Constructed In Strict Accordance With The Latest Occupational Safety & Health Administration Standards & May Be Sloped Or Vertical Above The Pipe Embedment At The Contractor's Option. In Some Locations, The Available Working Area May Be Inadequate To Allow For Fully Sloped Trench Walls. In These Areas, The Contractor Shall Provide Temporary Sheeting, Shoring Or Bracing Of Trench Walls, As Necessary, In Strict Accordance With O.S.H.A. Standards. To Prevent Slides, Cave-Ins, Settlement Or Movement Of The Banks & To Provide Safe Shoring Conditions For Workmen. Payment For Sloped Or Sheeted, Shored Or Braced Trench Walls Constructed In Accordance With O.S.H.A. Standards Shall Be Limited To The Bid Items In The Proposal For Trench Safety Systems. Trench Construction Shall Be Limited To The Street R.O.W., Permanent Easements & Areas Delineated As Limits Of Construction As Shown On The Plans.
11. Standard Manhole Frames and 30" Dia. Cover Shall Be Pamrex 30" As Manufactured By Certainteed Corporation. Type S Manhole Frame And 30" Cover Shall Be Pamtight 30" As Manufactured By Certainteed Corporation.
12. Rim Elevations Of The Proposed Sanitary Sewer Manholes In Streets Are To Be Constructed To 15" Below Final Finished Grades By Utility Contractor & Adjusted By Paving Contractor To Finished Grade At Time Of Paving. Concrete Collars To Be Supplied & Installed By Paving Contractor. Sanitary Sewer Rim Elevations To Be 0.50' Higher Than Finished Grade In Easement And Grass Area. (No Separate Pay)
13. All Manholes Will Have Concrete Collars & Watertight Inserts & Raven Lined or Approved Equal.
14. All Sewer Lines Are 8" PVC Unless Otherwise Noted.
15. All Sewer Services Crossing Water Mains Shall Be SDR 26.
16. Lots With adjusted service due to conflicts (Manholes, Inlets, etc.) are marked with "*".
17. Water appurtenances (Fire Hydrants, Valves, Fittings, etc.) shown as graphical representation only.

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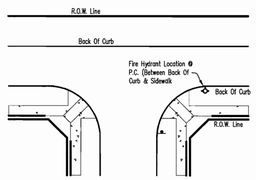
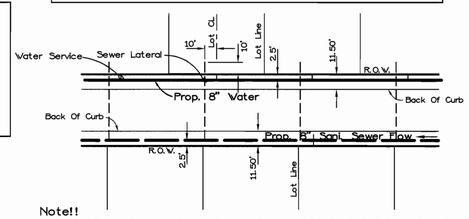


Typical Detail Fire Hydrant Location

Note:
Lots with adjusted services due to conflicts (i.e. Mhs, inlets, ect.) are marked with " * "



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Typical Detail Service Detail

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Northing = 7011908.45, Easting = 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing = 7011143.42, Easting = 2605492.75
Elev.=562.64

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
10/13/21

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SANITARY SEWER PLAN

Revisions	Date

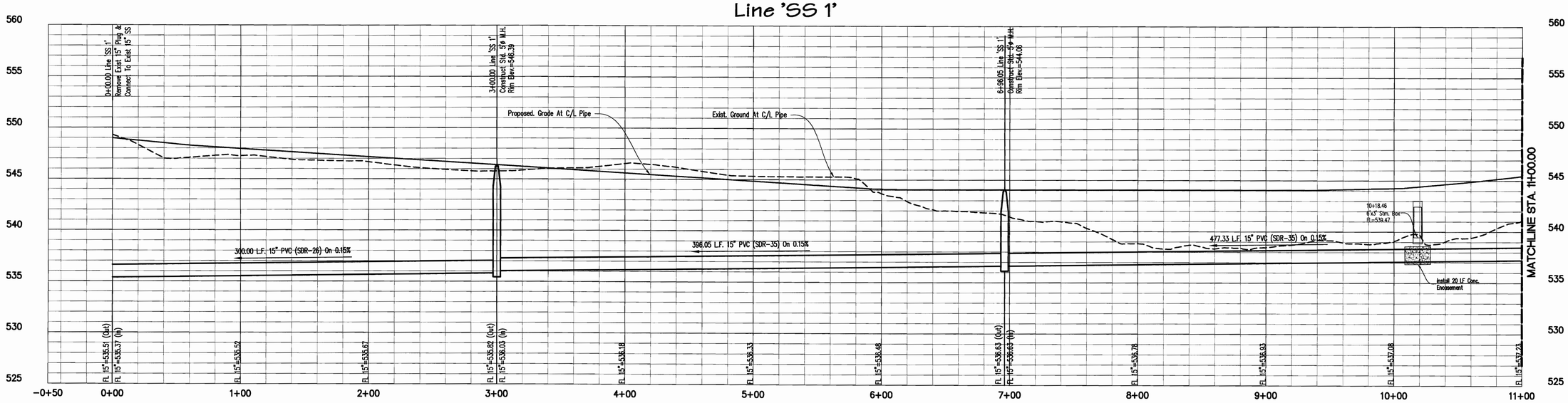
Scale: 1"=60'
Drawn By: BJ
Checked By: GTH

Sheet 47

SEI No. 20-112

Plotted by: bjohnson Plot Date: 10/13/2021 10:06 AM
Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112 - MS.dwg Saved By: bjohnson Save Time: 10/13/2021 10:03:35 AM

Line 'SS 1'



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AS-BUILT DRAWINGS

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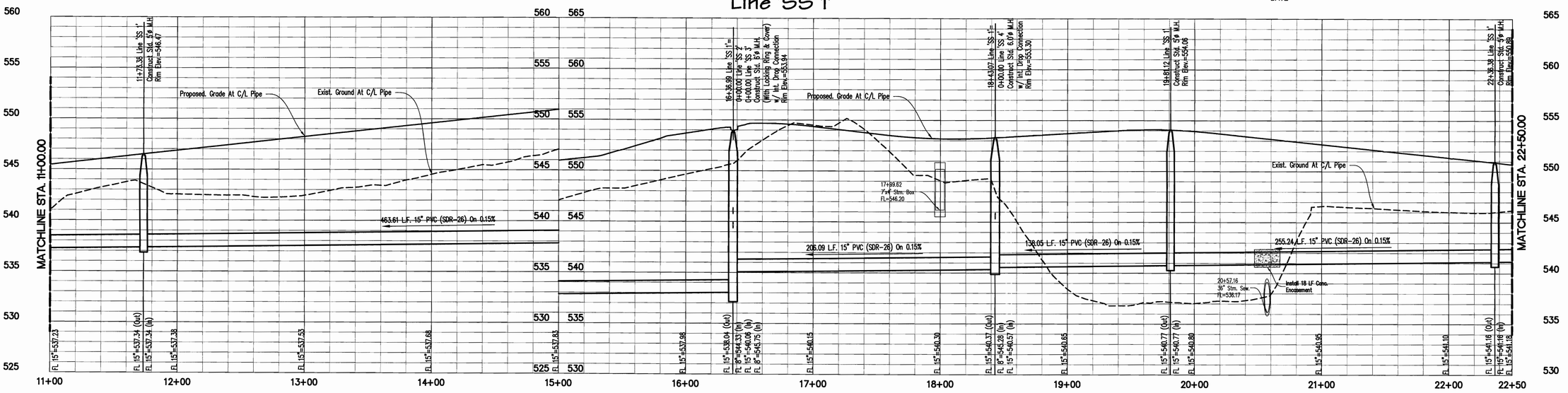
GREG T. HELSEL, P.E.

DATE 4/3/24

Line 'SS 1'



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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

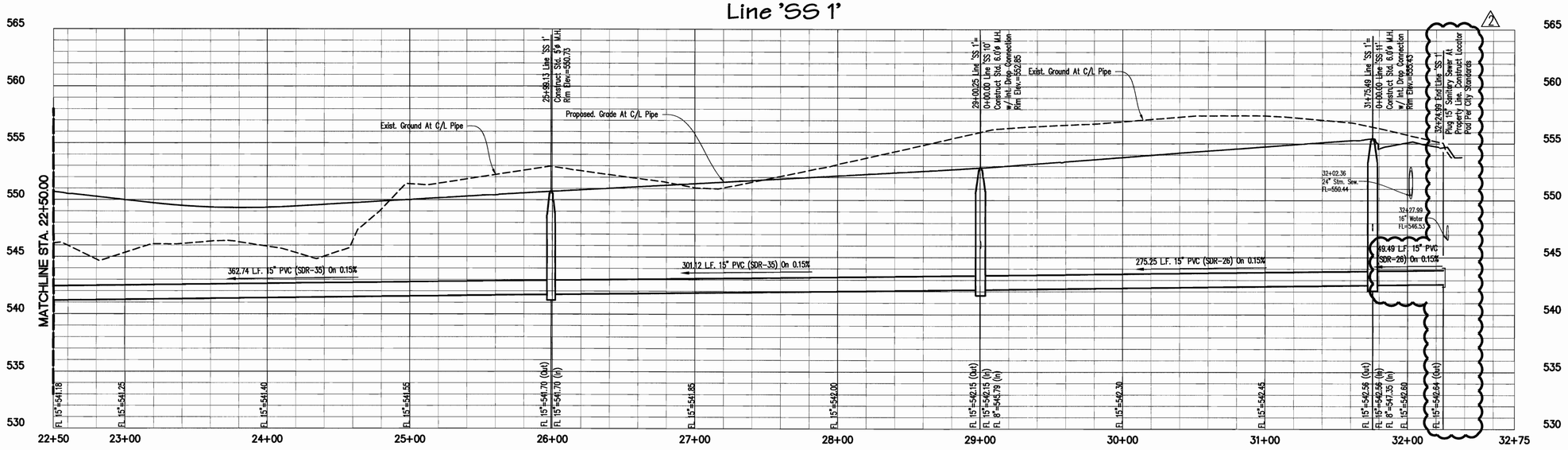
SANITARY SEWER PROFILES

Revisions	Date

Scale: 1"=40'H 1"=5V
Drawn By: BJ
Checked By: GTH
Sheet 48
SEI No. 20-112

Drawing: C:\2020 JOBS\20-112 Somerset Park\20-112 - MC.dwg Saved By: stephanie Last Time: 3/15/2024 10:00:03 AM
Plotted by: stephanie Plot Date: 4/1/2024 4:57 PM

Line 'SS 1'



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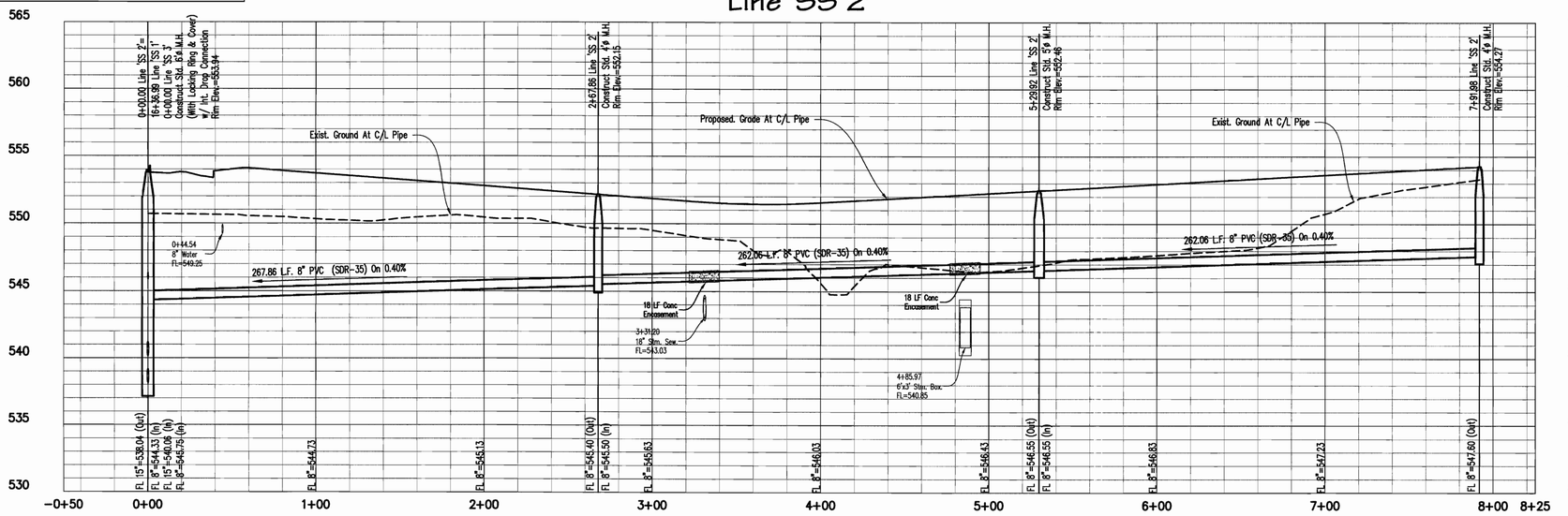
Line 'SS 2'



AS-BUILT DRAWINGS

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GREG T. HELSEL, P.E. 4/3/24

DATE

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/3/24

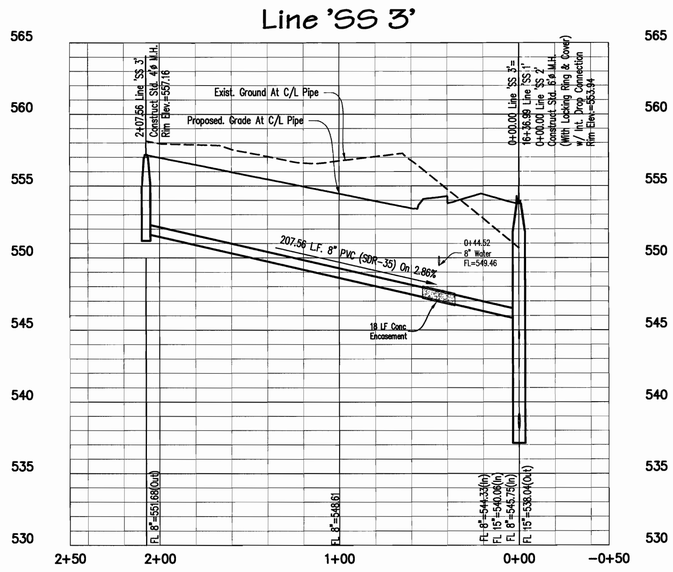
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SANITARY SEWER PROFILES

Revisions	Date
REVISED 15" SANITARY SEWER WITH STUBOUT AT PROPERTY LINE	06/13/2022

Scale: 1"=40'H 1"=5V
Drawn By: BJ
Checked By: GTH
Sheet 49
SEI No. 20-112

Plotted by: Hajduk Bill Date: 4/1/2024 4:57 PM
Drawing G:\2020_JOB\20-112 Somerset Park\20-112 WC&I Sheet By Hajduk.dgn Time: 1/13/2021 10:50:32 AM



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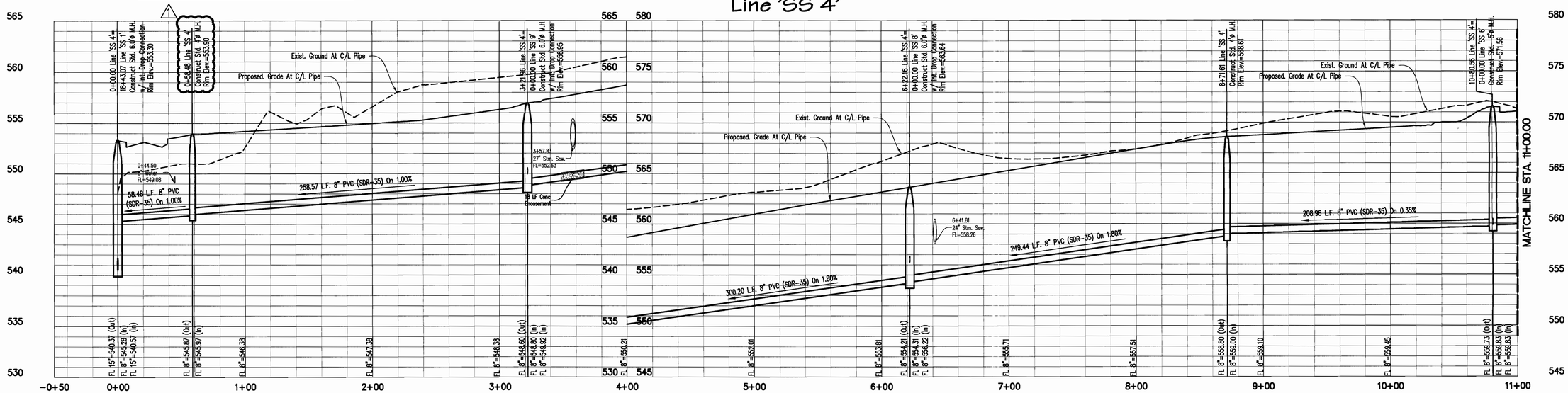

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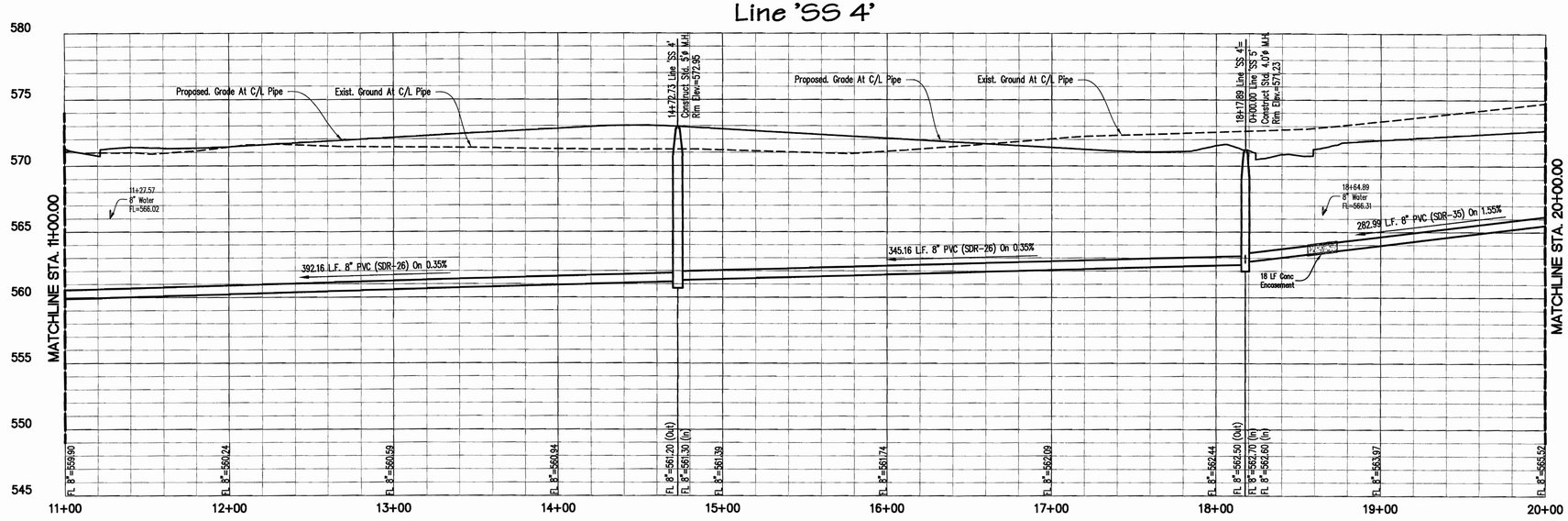
STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
SANITARY SEWER PROFILES

Revisions	Date
1 REVISED MANHOLE RIM ELEVATION	05/02/2022

Scale: 1"=40'H 1"=5V
Drawn By: BJ
Checked By: GTH
Sheet 50
SEI No. 20-112

Plotted by: Hajpure Plot Date: 4/1/2024 4:57 PM
Drawing G:\2020 JOBS\20-112 - Somerset Park\20-112 - WW.dwg Saved By: hajpure Save Time: 3/15/2024 10:00:02 AM



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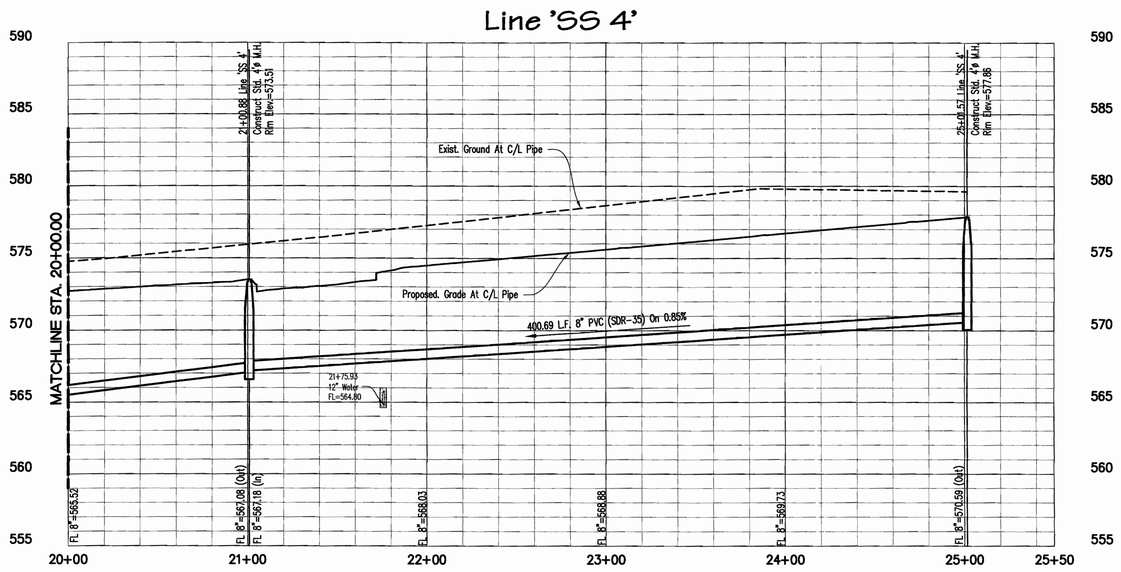

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Greg T. Helsel, P.E.

12/18/23
DATE

STATE OF TEXAS
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120339
LICENSED PROFESSIONAL ENGINEER
12/14/23

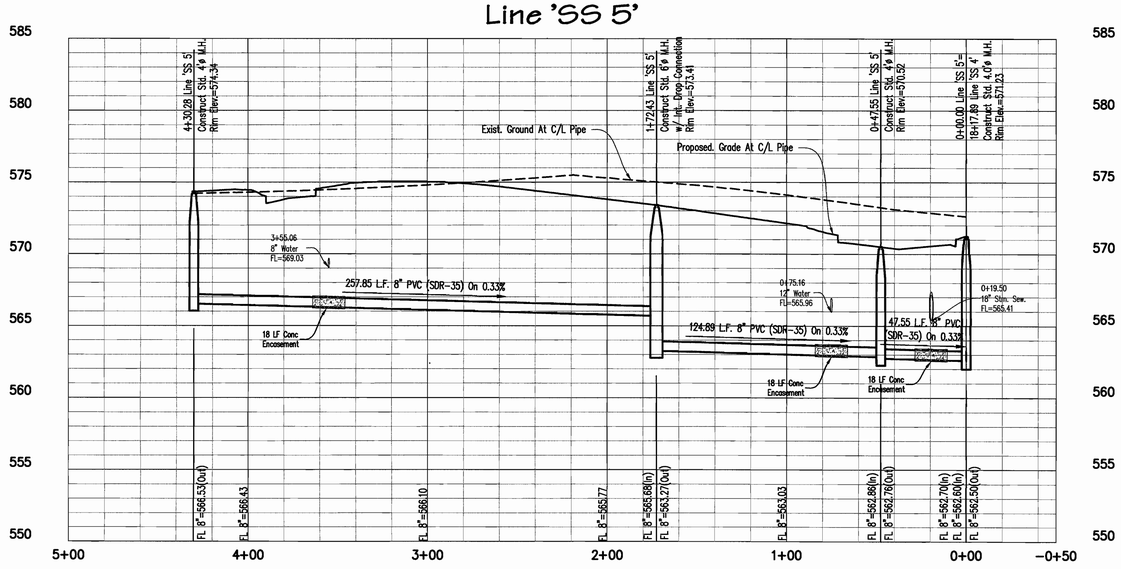
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
SANITARY SEWER PROFILES

Date
Revisions

Scale: 1"=40'H 1"=5V
Drawn By: BJ
Checked By: GTH

Sheet 51
SEI No. 20-112

Drawing: G:\2020_JOBS\20-112 - Somerset Park\20-112 - WS.dwg Saved By: bbarrett Save Time: 12/7/2023 2:23:27 PM
Plotted by: bbarrett Plot Date: 12/13/2023 2:55 PM



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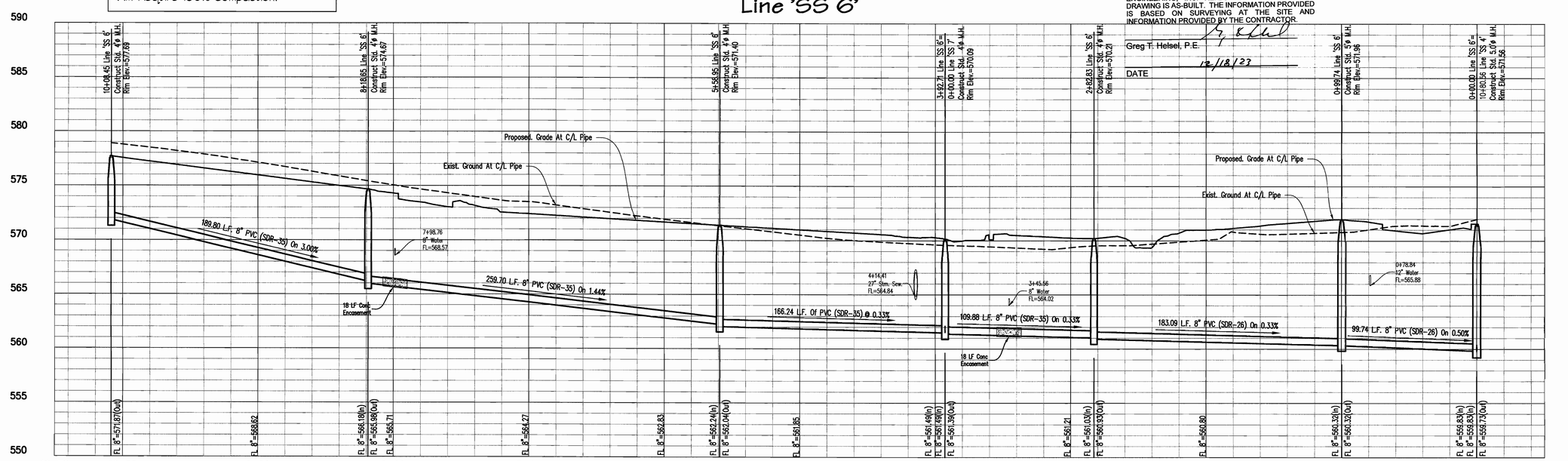
Elev.=562.64

AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Greg T. Helsel, P.E.

DATE 12/18/23



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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
12/14/23

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SANITARY SEWER PROFILES

Date
Revisions

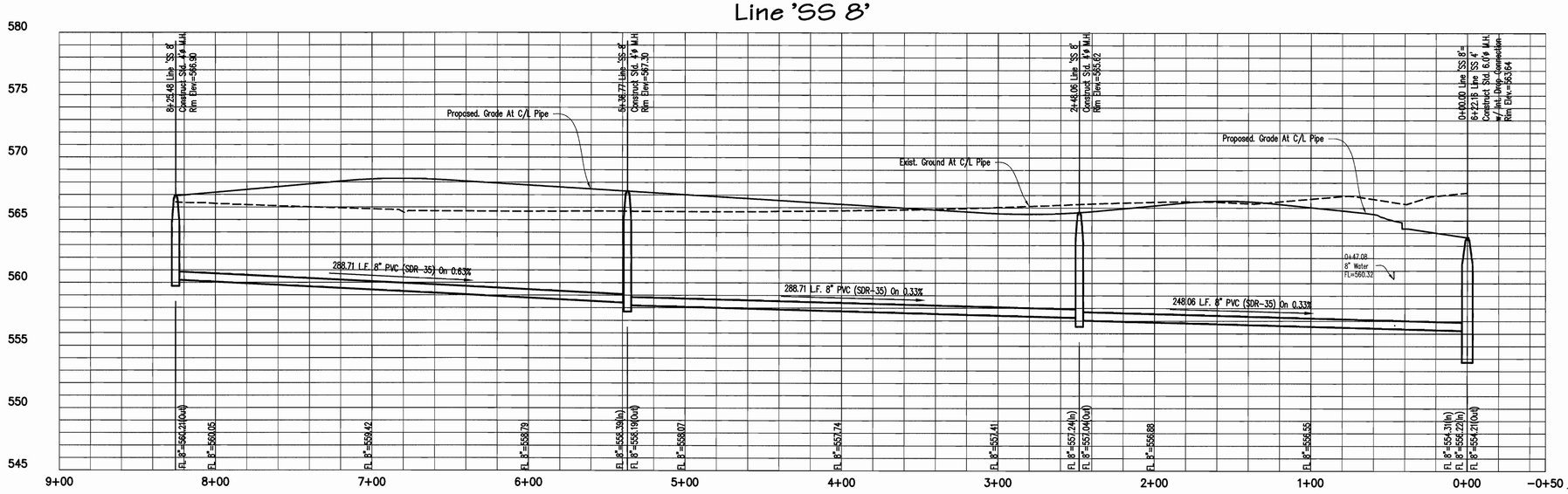
Scale: 1"=40'H 1"=5V
Drawn By: BJ
Checked By: GTH

Sheet 52

SEI No. 20-112

Drawing: G:\2020_000\20-112 Somerset Park\20-112 - WP.dwg Saved By: Dbarrett Save Time: 12/7/2023 2:53:27 PM
Plotted by: dbarrett Plot Date: 12/12/2023 2:58 PM

Line 'SS 8'



Note:
The Contractor Shall Perform All Earthwork And Compaction Operations, Including But Not Limited To, Placement Of Fill During Earthwork Operations, Backfilling, Trench Backfilling, Utility Backfilling, Liming, And Subgrade Placement According To The Geotechnical Recommendations And City Standards. The Contractor Shall Use The Most Stringent Requirement If There Is A Conflict On Any Fill Or Backfill Operations. The Contractor Shall Inquire In Written Format With The Engineer Of Record Should There Be Any Questions Regarding Fill And Backfill Requirements.

Note:
Any City Utility Installed Deeper Than 10' Will Require 100% Compaction.

Note!!
1. Sanitary Sewer Laterals to Extend 10' Past R.O.W. With A Clean Out In The R.O.W. And Within 1.0' Of The Property Line.
2. All Sanitary Sewer Services Shall Be Made Of The Same Material As The Main To Which It Connects.
3. Street Trees Will Be Planted In The Parkway Between The Back Of Curb And The Edge Of A Public Sidewalk.
4. Landscaping Allowed Within Utility Easements.
5. Adjust Ex. Valve Stacks/Lids to proposed grade, as needed.
6. For all sanitary sewer services that are over 10' deep, shall use "Deep Service Connection Detail with restrained joints.

CAUTION !!!
EXISTING UTILITIES

EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATION SERVICES 48 HOURS PRIOR TO CONSTRUCTION ACTIVITY. SPIARS ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing = 7011908.45, Easting = 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing = 7011143.42, Easting = 2605492.75
Elev.=562.64

Line 'SS 9'

AS-BUILT DRAWINGS

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Greg T. Helsel, P.E.

12/18/23
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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
10/13/21

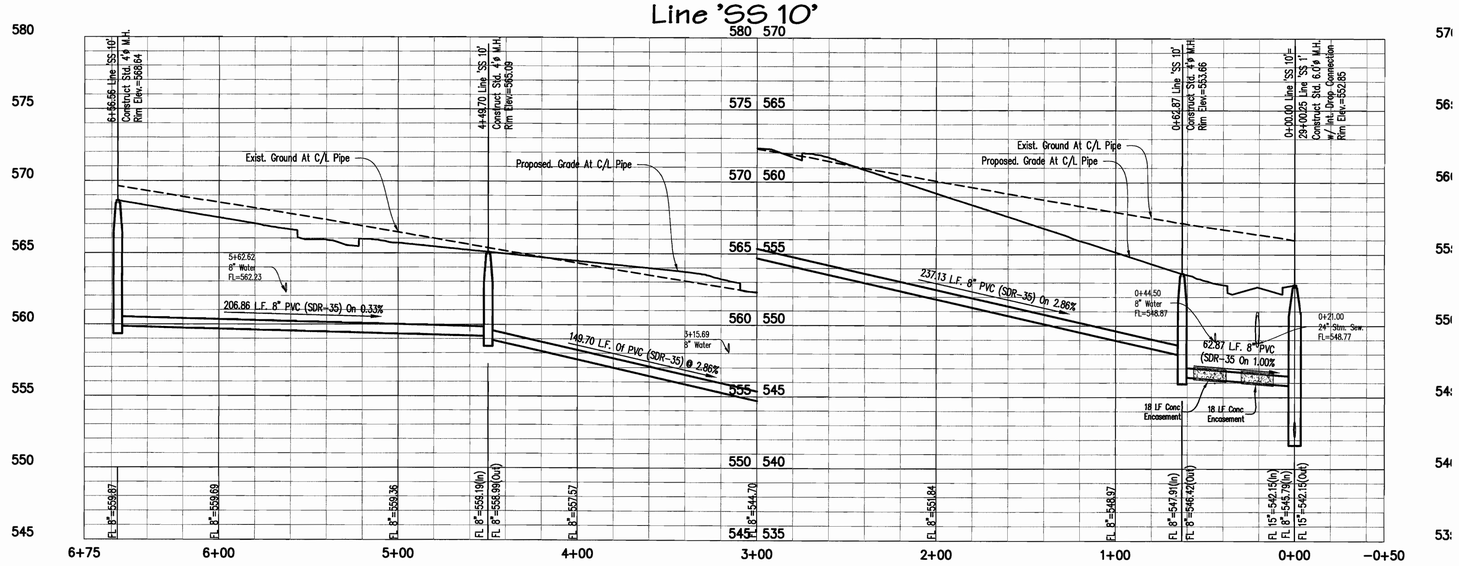
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
SANITARY SEWER PROFILES

Date	Revisions

Scale: 1"=40'H 1"=5V
Drawn By: BJ
Checked By: GTH
Sheet 53
SEI No. 20-112

Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112 - MS.dwg Saved By: Bjohnson Save Time: 10/13/2021 10:03:35 AM Plotted By: bjohnson Plot Date: 10/13/2021 10:07 AM

Line 'SS 10'



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Elev.=571.67

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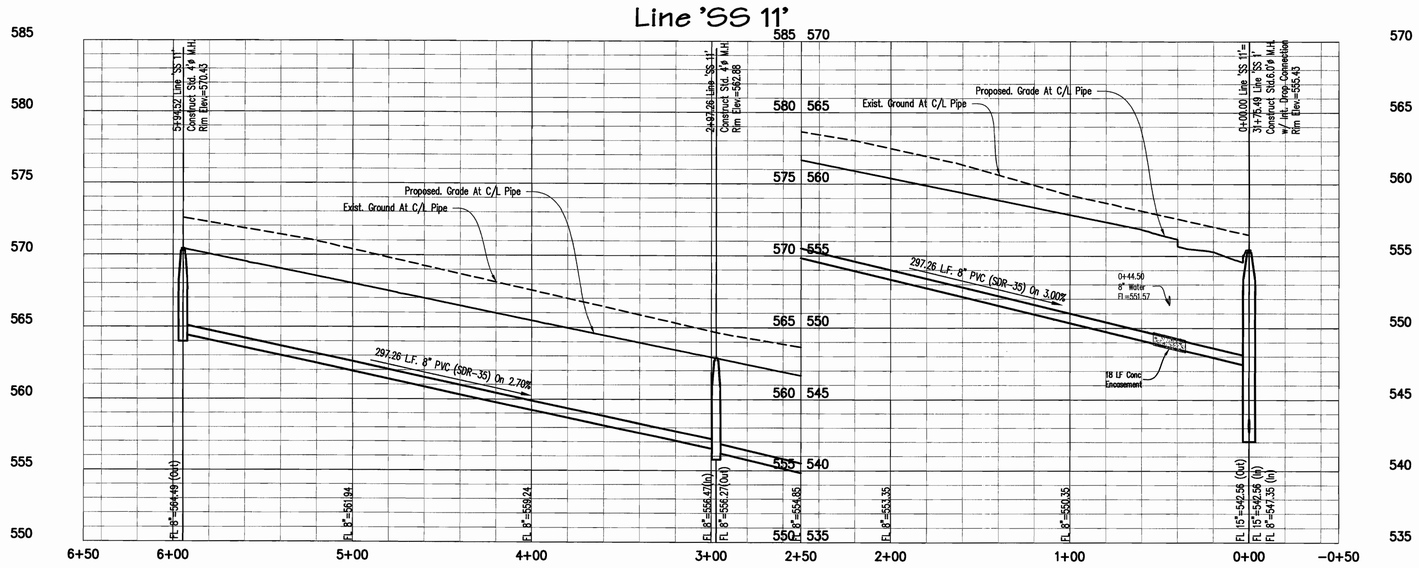
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

Line 'SS 11'



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Greg T. Helsel, P.E.

12/18/23
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STATE OF TEXAS
GREG T. HELSEL
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LICENSED
PROFESSIONAL ENGINEER
12/14/23

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SANITARY SEWER PROFILES

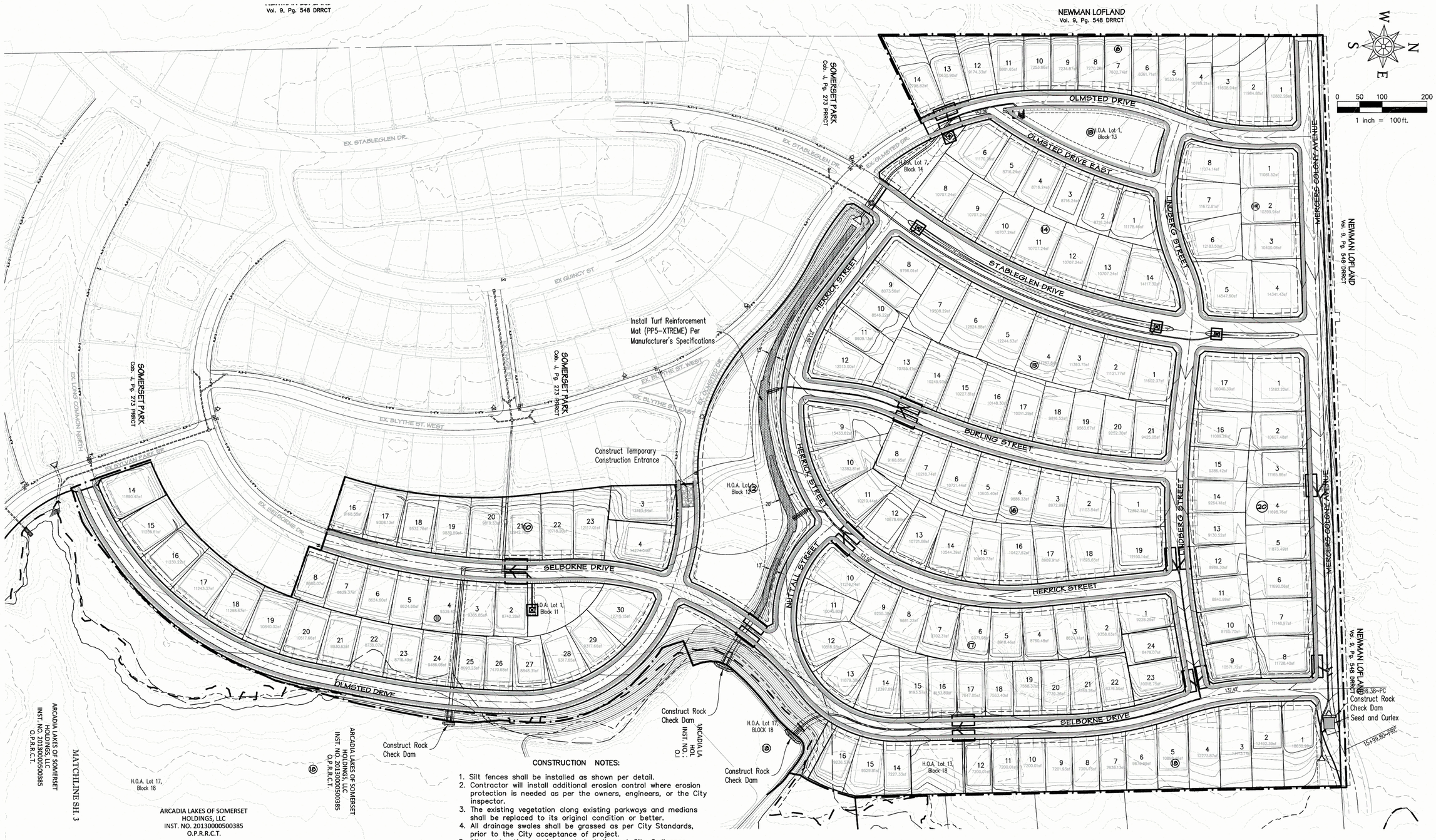
Date
Revisions

Scale: 1"=40'H 1"=5V
Drawn By: BJ
Checked By: GTH

Sheet 54

SEI No. 20-112

Drawing: C:\2020_JOBS\20-112 Somerset Park\20-112 - #Proj Saved By: Darynell Save Time: 12/7/2023 2:13:17 PM
Plotted by: darynell Plot Date: 12/20/2023 1:00 PM



CONSTRUCTION NOTES:

1. Silt fences shall be installed as shown per detail.
2. Contractor will install additional erosion control where erosion protection is needed as per the owners, engineers, or the City inspector.
3. The existing vegetation along existing parkways and medians shall be replaced to its original condition or better.
4. All drainage swales shall be grassed as per City Standards, prior to the City acceptance of project.
5. All construction erosion control shall meet City Ordinance.
6. Erosion construction shall be completed in the following PHASES:

PHASE 1 (Prior To Start Of Rough Grading)

1. Silt fence shall be placed as shown per detail.

PHASE 2 (After utility construction & prior to paving const.)

1. Inlet protection shall be placed at all inlets per detail to prevent erosion material from entering storm sewer system.
2. Curlex installation in drainage channel shall be completed.
3. Rock Check Dam shall be constructed to prevent erosion material from entering storm sewer system.

PHASE 3 (After paving construction)

1. All parkways and disturbed area to be seeded with grass as per city standards.
2. Vegetation to be established in all offsite disturbed areas.

Legend

- ~ Silt Fence
- ~ Inlet Protection
- ~ Phase 3 Curlex
- ~ Rock Check Dam
- ~ Turf Reinforcement Mat (PP5-XTREME)

CAUTION !!!
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AS-BUILT DRAWINGS

THIS DRAWING HAS BEEN REVISED TO CONFORM TO THE CONSTRUCTION RECORDS PROVIDED BY THE CONTRACTOR. ALIGNMENT AND GRADES SHOWN ON THIS DRAWING WERE NOT FIELD VERIFIED BY THE ENGINEER.

GREG T. HELSEL, P.E. — DATE 6/11/24

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
6/11/24

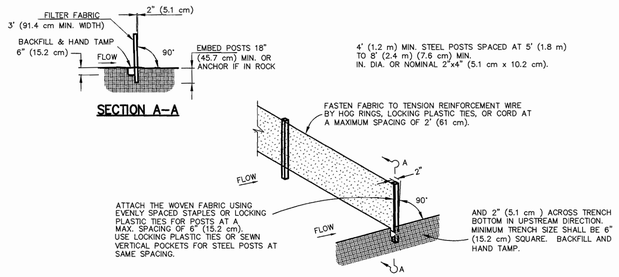
SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
EROSION CONTROL PLAN

Revisions	Date

Scale: 1"=100'
Drawn By: BJ
Checked By: GTH

Sheet 55

SEI No. 20-112



SILT FENCE DETAIL

Not to Scale

CONSTRUCTION NOTES – SILT FENCE

1. Posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source. The post must be embedded a minimum of 18 inches.
2. The toe of the silt fence shall be trenched in with a spade or mechanical trencher, so that the down slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g. pavement), weight fabric flap with washed gravel on the uphill side to prevent flow under fence.
3. The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and back filled with compacted material.
4. Silt fence shall be securely fastened to each support post or to woven wire, which is in turn attached to the support post. There shall be a 6 inch double overlap, securely fastened where ends of fabric meet.
5. Inspection shall be made weekly or after each rainfall. Repair or replacement shall be made promptly as needed.
6. Silt fence shall be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.
7. Accumulated silt shall be removed when it reaches a depth of 6 inches. The silt shall be disposed of at an approved site and in such a manner as to not contribute to additional siltation.

CONSTRUCTION NOTES:

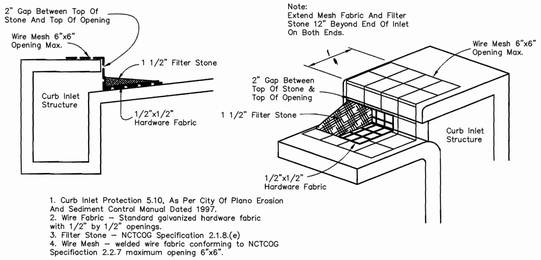
1. Silt fences shall be installed as shown per detail.
2. Contractor will install additional erosion control where erosion protection is needed as per the owners engineers, or the City inspector.
3. The existing vegetation along existing parkways and medians shall be replaced to its original condition or better.
4. All drainage swales shall be grassed as per City Standards, prior to the City acceptance of project.
5. All construction erosion control shall meet City Ordinance.
6. Erosion construction shall be completed in the following PHASES:

PHASE 1 (Prior To Start Of Rough Grading)

1. Silt fence shall be placed as shown per detail, prior to grading.
2. Inlet protection shall be placed at all inlets installed per details to prevent erosion material from entering storm sewer system.

PHASE 2 (After Rough Grading)

1. Install 8' Curlex along curb after completion of the paving. Install 4' Curlex along alley edge after completion of the paving.
2. All parkways and disturbed area in street R.O.W. to be seeded with grass as per city standards.
3. Vegetation to be established in all offsite disturbed areas.



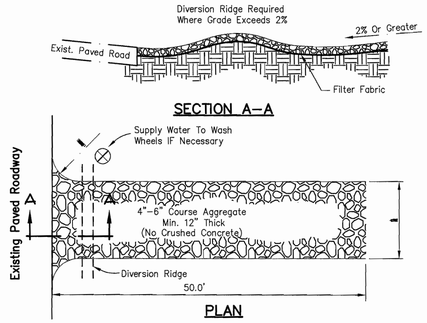
1. Curb Inlet Protection 5.10, As Per City Of Plano Erosion And Sediment Control Manual Dated 1997.
2. Wire Fabric – Standard galvanized hardware fabric with 1/2" by 1/2" openings.
3. Filter Stone – NCTCOG Specification 2.1.8.(e)
4. Wire Mesh – welded wire fabric conforming to NCTCOG Specifiaction 2.2.7 maximum opening 6"x6".

TYPE A CURB INLET PROTECTION

Not to Scale

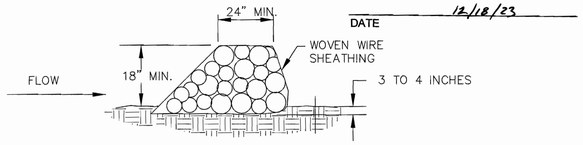
STORM WATER POLLUTION PREVENTION GENERAL NOTES

1. All operators and/or contractors shall conform to the terms and conditions of the National Pollution Discharge Elimination Systems (NPDES) General Permit as published in the Federal Register, Vol. 57, No. 175, September 9, 1992, by the Environmental Protection Agency (EPA).
2. The Notice of Intent (NOI), as required by the General Permit, must be properly displayed on site at all times by each operator.
3. All releases of reportable quantities of hazardous substances shall be reported immediately to the facility operator and EPA.
4. Qualified operator personnel must inspect the site at least once every fourteen days and within 24 hours of a 1/2 – inch or greater rainfall event. The inspector shall document the results.
5. Modifications to the Storm Water Pollution Prevention Plan shall be implemented and be in–place within a seven calendar day period.
6. If any contractor sees a violation by an operator or another contractor, he shall notify the operator and contractor in violation, as well as the facility operator.
7. Erosion control shall be installed prior to any grading.
8. Accumulated silt deposits shall be removed from silt fences and hay bale dikes when silt depth reaches six inches. Removal of silt deposits by the contractor shall be incidental to the performance of the contract and a separate bid item shall not be included.
9. The contractor shall add or delete erosion protection at the request and direction of the Operator or the City.
10. After installation of pavement, final lot benching and general cleanup, the Paving Contractor shall establish grass groundcover in all street parkways, lots and all other disturbed areas. Materials shall be as specified in Item 2.15 and seeding shall be in accordance with Item 3.10 of the N.C.T.C.O.G. Standard Specifications.
11. It shall be the contractor's responsibility to control and limit silt and sediment leaving the site. Specifically, the contractor shall protect all public streets, alleys, streams and storm drainage systems from erosion deposits.
12. It shall be the contractor's responsibility to provide a dumpster (or equal) to collect solid waste materials during construction.
13. The attached Drainage Area Map, as prepared by Spiars Engineering, Inc., specifically for this project, shall be made part of the Storm Water Pollution Prevention Plan.
14. It is anticipated that the following non–storm water discharges will be associated with this project. These discharges are authorized through the construction general permit:
    A. Fire hydrant flushings
    B. Water used to wash vehicles and to control dust
    C. Potable water sources including waterline flushings
    D. Irrigation drainage
    E. Pavement washdown
    F. Uncontaminated ground water
    G. Construction water
15. Construction waste disposal containers shall be provided on the site for disposal of all non–hazardous construction waste materials. The containers shall be hauled to landfill by the Contractor.
16. All hazardous materials shall be handled and disposed of by the Contractor in accordance with Federal, State and Local regulations.

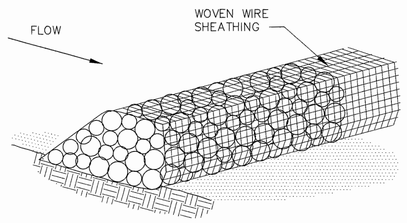


TEMPORARY STONE CONSTRUCTION ENTRANCE / EXIT

Not to Scale



SECTION VIEW



ROCK CHECK DAM

Not to Scale

AS-BUILT DRAWINGS

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Greg T. Helsel, P.E.

DATE 12/18/23

CAUTION !!!

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10/12/21

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

EROSION CONTROL DETAILS

Revisions	Date

Scale: N/A
Drawn By: BJ
Checked By: GTH

Sheet 56

SEI No. 20–112

Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112-EROS.dwg Saved By: BJohnson Save Time: 9/27/2021 8:56:59 AM Plotted by: bjohnson Plot Date: 10/11/2021 7:33 AM

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DATE 12/18/23

Legend

- FP=00.0 ≈ Prop. Finished Pad Elev.
- 00.0TC ≈ Prop. Top Of Curb Elevation
- 00.0F ≈ Prop. Finished Grade
- 00.0TW ≈ Prop. Top Of Wall
- 00.0BW ≈ Prop. Bottom Of Wall
- ≈ Direction Of Flow
- — 621 — ≈ Proposed Grading Contours
- ≈ Existing Retaining Wall
- ≈ Proposed Retaining Wall
- * ≈ Driveway Location (14% Max. Slope)

N W E S

0 20 40 80

1 inch = 40 ft.

MERCERS COLONY AVENUE

SELBORNE DRIVE

LINDBERG STREET

BURLING STREET

HERRICK STREET

MATCHLINE - SEE SHEET 58

MATCHLINE - SEE SHEET 59

38048 WSE: 546.74

37791 WSE: 544.97

37549 WSE: 543.01

37190 WSE: 542.28

Proposed Erosion Hazard Setback

Post Project 100 Yr Fully Developed Floodplain (Per Study Prepared By Nathan D Maier, Dated April 2022)

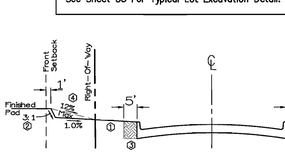
Existing F.E.M.A. Floodplain

NOTE:
All retaining walls shall be constructed completely on the "High Side" lot and not straddled the lot line.

NOTE:
Reference Flood Study Prepared By Nathan D. Maier, Report No. 20-047, Dated April, 2022 For More Information.

NOTE:
Fully developed proposed WSEL values from RAS.

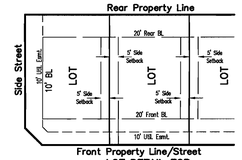
NOTE:
See Sheet 58 For Typical Lot Excavation Detail.



TYPICAL FRONT YARD GRADING DETAIL

N.T.S.

1. RIGHT OF WAY TO BE GRADED WITH 1/4" PER FOOT FALL TO BACK OF CURB.
2. FRONT YARD TO BE GRADED AT A 4:1 MAX SLOPE, 1 FOOT OFF THE FRONT SETBACK LINE AND THEN SLOPED AT 1.0% TO STREET RIGHT-OF-WAY.
3. EXCAVATION CONTRACTOR SHALL CUT 5' BEHIND BACK OF CURB UNLESS OTHERWISE NECESSARY FOR MOISTURE CONDITIONING. CURBS SHALL BE BACKFILLED WITH THE UTILITY SPOILS.
4. MAXIMUM 12% FRONT YARD SLOPE AFTER HOME CONSTRUCTION.



LOT DETAIL FOR
165 LOTS TO PD STANDARDS

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
12/18/23

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
LOT GRADING PLAN

Date	Revisions

Scale: 1"=60'

Drawn By: BJ

Checked By: GTH

Sheet 57

SEI No. 20-112

Legend

FP=00.0	~ Prop. Finished Pad Elev.
00.0TC	~ Prop. Top Of Curb Elevation
00.0F	~ Prop. Finished Grade
00.0TW	~ Prop. Top Of Wall
00.0BW	~ Prop. Bottom Of Wall
←	~ Direction Of Flow
621	~ Proposed Grading Contours
	~ Existing Retaining Wall
	~ Proposed Retaining Wall

N W E S

0 20 40 80

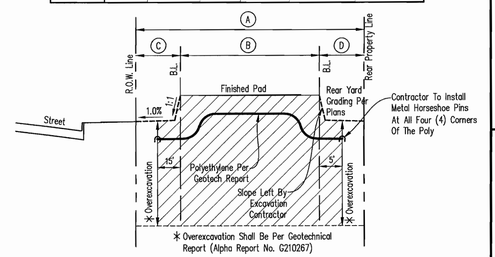
1 inch = 40 ft.

NOTE:
All retaining walls shall be constructed completely on the "High Side" lot and not straddled the lot line.

NOTE:
Reference Flood Study Prepared By Nathan D. Maier, Report No. 20-047, Dated April, 2022 For More Information.

NOTE:
Fully developed proposed WSEL values from RAS.

	Typical Lot Size		Pad Size(s)		Front Setback	Rear Setback
		A		B	C	D
	Width	Length	Width	Length		
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
60' x 120'	60'	120'	50'	80'	20'	20'
70' x 120'	70'	120'	60'	80'	20'	20'
80' x 130'	80'	130'	70'	80'	20'	20'



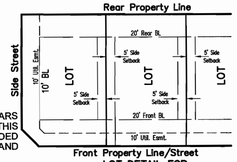
* Overexcavation Shall Be Per Geotechnical Report (Alpha Report No. G210267)

Typical Front/Rear Yard Excavation Details

TYPICAL FRONT YARD GRADING DETAIL

N.T.S.

1. RIGHT OF WAY TO BE GRADED WITH 1/4" PER FOOT FALL TO BACK OF CURB.
2. FRONT YARD TO BE GRADED AT A 4:1 MAX SLOPE, 1 FOOT OFF THE FRONT SETBACK LINE AND THEN SLOPED AT 1.0% TO STREET RIGHT-OF-WAY.
3. EXCAVATION CONTRACTOR SHALL CUT 5' BEHIND BACK OF CURB UNLESS OTHERWISE NECESSARY FOR MOISTURE CONDITIONING. CURBS SHALL BE BACKFILLED WITH THE UTILITY SPOILS.
4. MAXIMUM 12% FRONT YARD SLOPE AFTER HOME CONSTRUCTION.



LOT DETAIL FOR
165 LOTS TO PD STANDARDS

AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Craig T. Helsel, P.E.

DATE 12/18/23

CAUTION !!!
EXISTING UTILITIES

EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATION SERVICES 48 HOURS PRIOR TO CONSTRUCTION ACTIVITY. SPIARS ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stableglen Drive.
Northing = 7011908.45, Easting = 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing = 7011143.42, Easting = 2605492.75
Elev.=562.64

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED PROFESSIONAL ENGINEER
12/14/23

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
LOT GRADING PLAN

Date	Revisions

Scale: 1"=60'
Drawn By: BJ
Checked By: GTH
Sheet 58
SEI No. 20-112

Plotted By: dbryant Plot Date: 12/12/2023 3:28 PM
Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112 - GRADE.dwg Saved By: dbryant Save Time: 12/12/2023 3:23:14 PM

MATCHLINE - SEE SHEET 57

MATCHLINE - SEE SHEET 60

MATCHLINE - SEE SHEET 61

BURLING STREET

HERRICK STREET

SELBORNE DRIVE

OLMSTED DRIVE

EX. OLMSTED DR.

EX. BLYTHE ST. EAST

EX. BLYTHE ST. WEST

171.50'

Proposed Erosion Hazard Setback

Existing F.E.M.A. Floodplain

Post Project 100 Yr Fully Developed Floodplain (Per Study Prepared By Nathan D Maier, Dated April 2022)

36687
WSE: 541.98

36275
WSE: 541.93

35973
WSE: 541.92

H.O.A. Lot 13, Block 18

H.O.A. Lot 1, Block 12

H.O.A. Lot 17, BLOCK 18

ARCADIA LAKES OF SOMERSET HOLDINGS, LLC
INST. NO. 20130000500385
O.P.R.R.C.T.

Install 42" Pedestrian Rail

NOTE:
See Sheet60 for Swale Sections.

N
W E
S

0 20 40 80
1 inch = 40 ft.

Legend

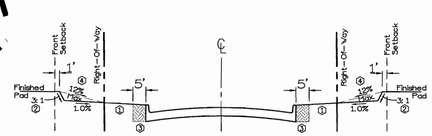
FP=00.0	~ Prop. Finished Pad Elev.
00.0TC	~ Prop. Top Of Curb Elevation
00.0F	~ Prop. Finished Grade
00.0TW	~ Prop. Top Of Wall
00.0BW	~ Prop. Bottom Of Wall
→	~ Direction Of Flow
621	~ Proposed Grading Contours
	~ Existing Retaining Wall
	~ Proposed Retaining Wall
	~ Driveway Location (14% Max. Slope)
FP	~ Floodplain Monument

NOTE:
All retaining walls shall be constructed completely on the "High Side" lot and not straddled the lot line.

NOTE:
Reference Flood Study Prepared By Nathan D. Maier, Report No. 20-047, Dated April, 2022 For More Information.

NOTE:
Fully developed proposed WSEL values from RAS.

NOTE:
See Sheet 60 For Typical Lot Excavation Detail.



TYPICAL FRONT YARD GRADING DETAIL
N.T.S.

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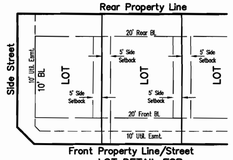
4. MAXIMUM 12% FRONT YARD SLOPE AFTER HOME CONSTRUCTION.



LOT DETAIL FOR
165 LOTS TO PD STANDARDS

AS-BUILT DRAWINGS

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Greg T. Helsel, P.E.

1/10/24
DATE

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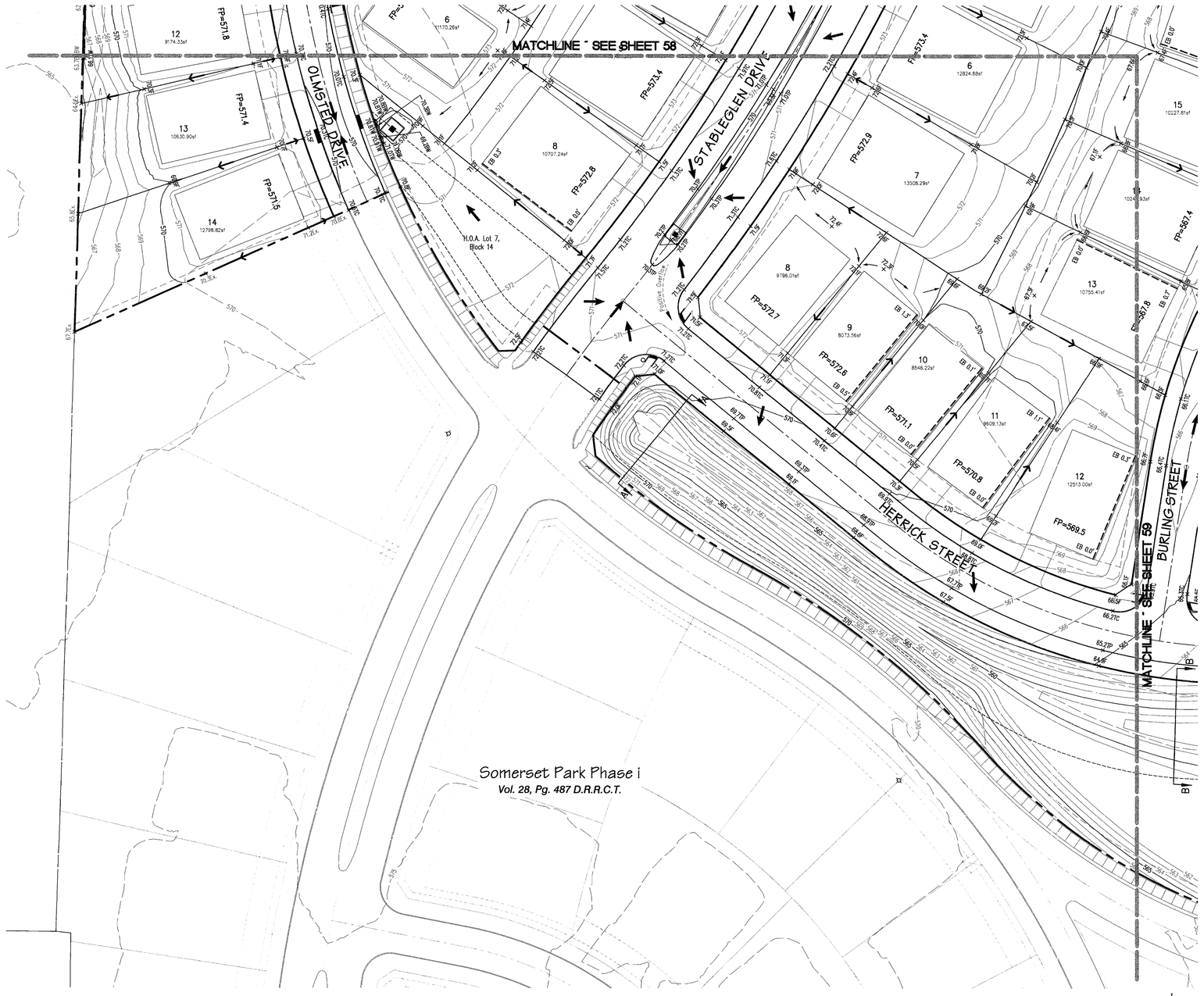
STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
1/10/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
LOT GRADING PLAN

Revisions	Date

Scale: 1"=60'
Drawn By: BJ
Checked By: GTH
Sheet 59
SEI No. 20-112

Plotted by: akarnett Plot Date: 1/10/2024 12:35 PM
Drawing: G:\2020_JOBS\20-112 - Somerset Park\20-112 - GRADING.dwg Saved By: akarnett Save Time: 12/15/2023 1:59:23 PM



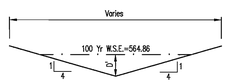
Legend

FP=00.0	~ Prop. Finished Pad Elev.
00.0TC	~ Prop. Top Of Curb Elevation
00.0F	~ Prop. Finished Grade
00.0TW	~ Prop. Top Of Wall
00.0BW	~ Prop. Bottom Of Wall
←	~ Direction Of Flow
— 621 —	~ Proposed Grading Contours
	~ Existing Retaining Wall
	~ Proposed Retaining Wall

N W E S

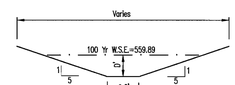
0 20 40 80

1 inch = 40 ft.



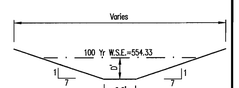
Q100 = 115.60cfs
S = 1.00%
N = 0.035
V = 4.78fps
D = 2.46ft.
Cap = 1246.22cfs

Typical Swale 'A~A'
Swales To Be Stabilized With Curlex & Seed



Q100 = 136.00cfs
S = 1.00%
N = 0.035
V = 4.67fps
D = 1.89ft.
Cap = 751.97cfs

Typical Swale 'B~B'
Swales To Be Stabilized With Curlex & Seed



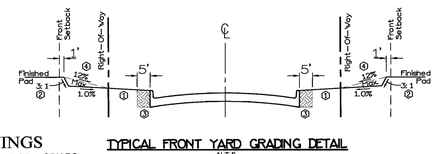
Q100 = 159.8cfs
S = 1.00%
N = 0.035
V = 4.51fps
D = 1.86ft.
Cap = 484.56cfs

Typical Swale 'C~C'
Swales To Be Stabilized With Curlex & Seed

NOTE:
All retaining walls shall be constructed completely on the "High Side" lot and not straddled the lot line.

NOTE:
Reference Flood Study Prepared By Nathan D. Maier, Report No. 20-047, Dated April, 2022 For More Information.

NOTE:
Fully developed proposed WSEL values from RAS.



TYPICAL FRONT YARD GRADING DETAIL
N.T.S.

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AS-BUILT DRAWINGS

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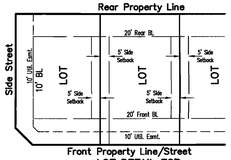
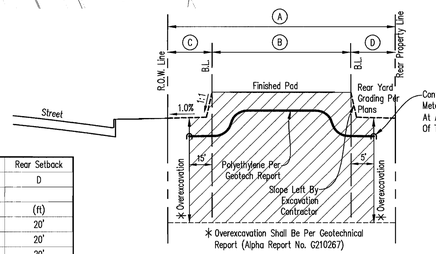
Greg T. Helsel, P.E.

12/18/23
DATE



LOT DETAIL FOR 165 LOTS TO PD STANDARDS

	Typical Lot Size		Pad Size(s)		Front Setback	Rear Setback
		A		B	C	D
	Width	Length	Width	Length		
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
60' x 120'	60'	120'	50'	80'	20'	20'
70' x 120'	70'	120'	60'	80'	20'	20'
80' x 130'	80'	130'	70'	80'	20'	20'



Typical Front/Rear Yard Excavation Details

CAUTION !!!
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STATE OF TEXAS
GREG T. HELSEL
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12/18/23

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
LOT GRADING PLAN

Date	Revisions

Scale: 1"=60'
Drawn By: BJ
Checked By: GTH
Sheet 60
SEI No. 20-112

Plotted by: Samuel Pay Date: 12/15/2023 10:51 AM
Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112 - ENG.dwg Saved By: Samuel Saw Time: 12/15/2023 3:28:46 PM

MATCHLINE - SEE SHEET 59

MATCHLINE - SEE SHEET 62

EX. BLYTHE ST. WEST

EX. SELBORNE DRIVE

SELBORNE DRIVE

OLMSTED DRIVE

H.O.A. Lot 1, Block 11

ARCADIA LAKES OF SOMERSET HOLDINGS, LLC
INST. NO. 20130000500385
O.P.R.R.C.T.

35775 WSE: 541.91

35598 WSE: 541.90

35586 WSE: 541.90

35237 WSE: 541.90

Proposed Erosion Hazard Setback

Post Project 100 Yr Fully Developed Floodplain (Per Study Prepared By Nathan D Maier, Dated April 2022)

Existing F.E.M.A. Floodplain

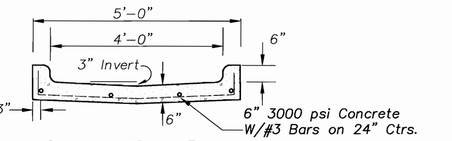
Legend

FP=00.0	~ Prop. Finished Pad Elev.
00.0TC	~ Prop. Top Of Curb Elevation
00.0F	~ Prop. Finished Grade
00.0TW	~ Prop. Top Of Wall
00.0BW	~ Prop. Bottom Of Wall
←	~ Direction Of Flow
621	~ Proposed Grading Contours
	~ Existing Retaining Wall
	~ Proposed Retaining Wall

N W E S

0 20 40 80

1 inch = 40 ft.

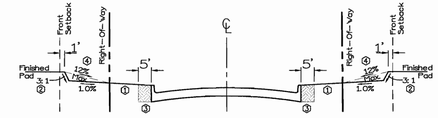


Concrete Flume Detail
nts

NOTE: All retaining walls shall be constructed completely on the "High Side" lot and not straddled the lot line.

NOTE: Reference Flood Study Prepared By Nathan D. Maier, Report No. 20-047, Dated April, 2022 For More Information.

NOTE: Fully developed proposed WSEL values from RAS.



TYPICAL FRONT YARD GRADING DETAIL
N.T.S.

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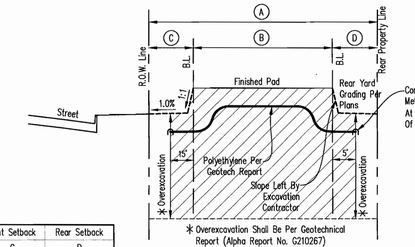

LOT DETAIL FOR
165 LOTS TO PD STANDARDS

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Typical Lot Size			Pad Size(s)		Front Setback	Rear Setback
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60' x 120'	60'	120'	50'	80'	20'	20'
70' x 120'	70'	120'	60'	80'	20'	20'
80' x 130'	80'	130'	70'	80'	20'	20'

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GREG T. HELSEL, P.E.

DATE 4/3/24

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STATE OF TEXAS
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4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
LOT GRADING PLAN

Date

Revisions

Scale: 1"=60'

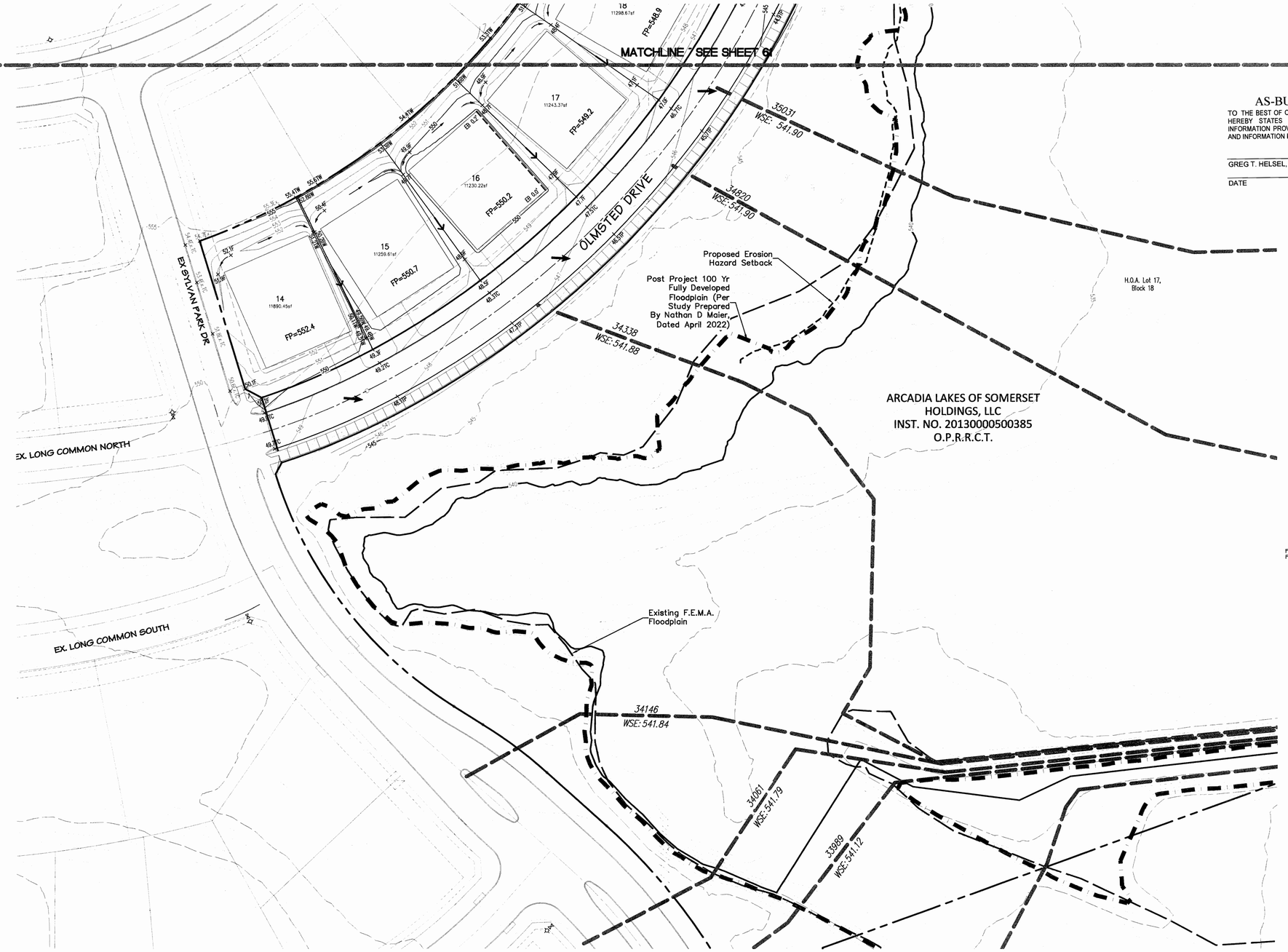
Drawn By: BJ

Checked By: GTH

Sheet 61

SEI No. 20-112

Plotted by: Brijesh Pol Date: 4/1/2024 5:01 PM
Revised by: Brijesh Pol Date: 4/1/2024 5:01 PM
Drawing: C:\2020_JOBS\20-112 Somerset Ph2\20-112 - GRAD.dwg Layout: Sheet 61 Date: 4/1/2024 1:36:42 PM



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DATE

N W E S

0 20 40 80

1 inch = 40 ft.

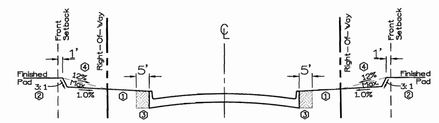
Legend

FP=00.0	~ Prop. Finished Pad Elev.
00.0TC	~ Prop. Top Of Curb Elevation
00.0F	~ Prop. Finished Grade
00.0TW	~ Prop. Top Of Wall
00.0BW	~ Prop. Bottom Of Wall
	~ Direction Of Flow
— 621 —	~ Proposed Grading Contours
	~ Existing Retaining Wall
	~ Proposed Retaining Wall

NOTE:
All retaining walls shall be constructed completely on the "High Side" lot and not straddled the lot line.

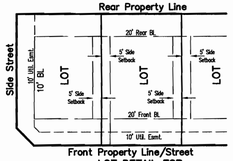
NOTE:
Reference Flood Study Prepared By Nathan D. Maier, Report No. 20-047, Dated April, 2022 For More Information.

NOTE:
Fully developed proposed WSEL values from RAS.



TYPICAL FRONT YARD GRADING DETAIL
N.T.S.

① RIGHT OF WAY TO BE GRADED WITH 1/4" PER FOOT FALL TO BACK OF CURB.
② FRONT YARD TO BE GRADED AT A 4:1 MAX SLOPE, 1 FOOT OFF THE FRONT SETBACK LINE AND THEN SLOPED AT 1.0% TO STREET RIGHT-OF-WAY.
③ EXCAVATION CONTRACTOR SHALL CUT 5' BEHIND BACK OF CURB UNLESS OTHERWISE NECESSARY FOR MOISTURE CONDITIONING. CURBS SHALL BE BACKFILLED WITH THE UTILITY SPOILS.
④ MAXIMUM 12% FRONT YARD SLOPE AFTER HOME CONSTRUCTION.



LOT DETAIL FOR
165 LOTS TO PD STANDARDS

CAUTION !!!
EXISTING UTILITIES

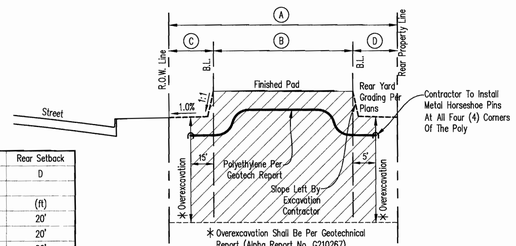
EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATION SERVICES 48 HOURS PRIOR TO CONSTRUCTION ACTIVITY. SPIARS ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

Bench Mark 1
Being an "X" cut found in concrete 3 feet southeast of the centerline intersection of Olmsted Drive and Stobleglen Drive.
Northing – 7011908.45, Easting – 2604968.30
Elev.=571.67

Bench Mark 2
Being an "X" cut found in concrete 6.5 feet southwest of the centerline intersection of Gage Street and Blythe Street.
Northing – 7011143.42, Easting – 2605492.75
Elev.=562.64

Typical Lot Size		Pad Size(s)		Front Setback	Rear Setback
	A		B	C	D
Width (ft)	Length (ft)	Width (ft)	Length (ft)	(ft)	(ft)
60' x 120'	60'	120'	50'	80'	20'	20'
70' x 120'	70'	120'	60'	80'	20'	20'
80' x 130'	80'	130'	70'	80'	20'	20'



Typical Front/Rear Yard Excavation Details

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STATE OF TEXAS
GREG T. HELSEL
120339
PROFESSIONAL ENGINEER
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
LOT GRADING PLAN

Date	Revisions

Scale: 1"=60'
Drawn By: BJ
Checked By: GTH

Sheet 62

SEI No. 20-112

Drawing: G:\2020\20-112 Somerset Park\20-112 - GRDG.dwg Layout: Key Plan Plotted By: Rebecca Plot Date: 4/1/2024 - 1:36:42 PM

Decorative Sign Poles and Fixtures

The City of Rockwall will allow the installation of decorative signs and posts or other non-standard items by Developers/Homeowners Associations on a case by-case basis provided that their installation does not result in an adverse impact to the public safety and that there is no cost to the City for installation or maintenance. Residential developer requesting such installations will be required to give the recorded documentation of an incorporated Homeowner's Association (HOA) to the City. The City of Rockwall maintains only standard street and regulatory signs/post installed on public streets within its designated right-of-ways. The City of Rockwall does not maintain decorative sign poles and fixtures installed by developers or HOA.

If the developer elects to install non-standard decorative signs, sign poles and fixtures, the designated HOA must enter into a maintenance agreement with the City covering the hold harmless provisions. These provisions shall be noted on the approved final plat for the subdivision. The platted maintenance provisions will serve as the agreement and applies to all non-standard decorative signs, poles/post, hardware, or any other attachments. The City of Rockwall has no maintenance or other responsibility to these items. The ownership and maintenance of all such signs, poles and fixtures become the maintenance responsibility of the designated HOA.

Decorative Sign Pole/Fixture Submittals:
A detail of the decorative sign poles, pole fixtures and base mounting shall be included with the submittal of the civil engineering construction plans. The submittal shall also include a street/site plan indicating the location and identification of all proposed signage and post to scale.

HOA Maintenance – Responsibilities and Provisions:

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

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

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

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

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

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

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

ARCADIA LAKES OF SOMERSET
HOLDINGS, LLC
INST. NO. 20130000500385
O.P.R.R.C.T.

Street Name Blades

1. Sign posts shall be 2 3/8 O.D. galvanized steel tube sign post with galvanized finish.
2. Sign clamps and brackets shall be high strength aluminum.
3. Street name sign blades shall be double –sided with rounded corners.
4. Street name blades shall be nine-inch (9) tall flat aluminum. The blades shall be .080 inches thick and be minimum of 36"long.
5. The lettering for the street signs shall be 3M Scotchlite Series 3930 high intensity prismatic material sheeting for street, regulatory and warning signs. And shall be high intensity diamond grade type III prismatic. The Street sign background shall be green and the legend shall be white.
6. The street sign blade must incorporate the current City of Rockwall logo. The logo shall consist of white 3M Scotchlite Series 3930 high intensity prismatic material (product code 3930).
7. Block numbers are required on all street name blades and shall be located on the top right corner of the street blade.
8. The lettering for the street blades shall be composed of a combination of lower-case letters with initial upper-case letters. The Clearview TCAD-1W font shall be used. The lettering shall be composed of initial upper-case letters if at least 6 inches in height and lower case letters of at least 4.5 inches in height. For supplementary letting to indicate the type of street (such as Street, Avenue or Road) shall be composed of initial upper-case letters at least 3-inches in height and lower-case letters at least 2.25 inches in height. Abbreviations may be used (for example St., Ave., or Rd.) except the street name itself. The supplementary lettering shall be located at the lower right corner of the street blade, under the block number.
9. The street blade sign shall consist of green 3M Scotchlite Series 3930 high intensity prismatic material background-(product code 3937). The lettering shall consist of white 3M Scotchlite Series 3930 high intensity prismatic material (product code– 3930). The background material shall be applied to the full width and height of the sign black leaving no metal exposed. The background material shall be one continuous piece of material. Patching of background material is not allowed and any sign with patching material of any type will be rejected by the city.

–Alternative Option:

As an alternative, the foreground color may be green transparent Scotchlite ElectroCut 1177 film (E.C. film). Lettering shall be cut out and removed producing a single continuous piece of green transparent film material.

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

Legend

- ~ Denotes Proposed Street Name Sign Location
- ~ Denotes Proposed Street Light Standard Location
- ~ Denotes Proposed Stop Sign As Per City Standards

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AS-BUILT DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, SPIARS ENGINEERING, INC. HEREBY STATES THAT THIS DRAWING IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

Greg T. Helsel, P.E.

4/3/24
DATE

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STATE OF TEXAS
GREG T. HELSEL
120339
LICENSED
PROFESSIONAL ENGINEER
4/3/24

SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
STREET LIGHT & SIGNAGE PLAN

Revisions	Date

Scale: 1"=100'
Drawn By: BJ
Checked By: GTH
Sheet 63
SEI No. 20-112

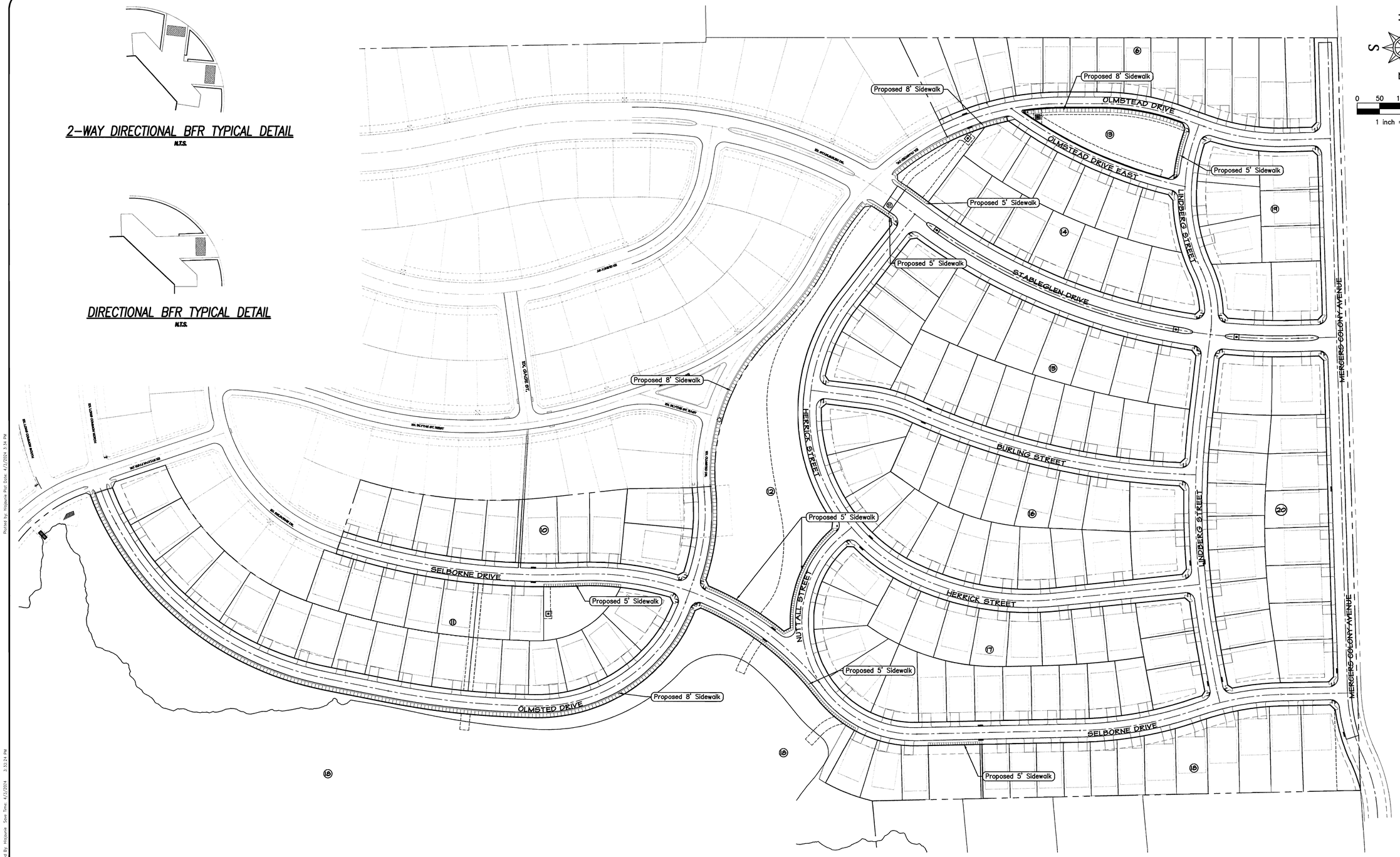
Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112-SLP.dwg Saved By: MrJournie Save Time: 4/2/2024 3:23:43 PM
Posted by: MrJournie Post Date: 4/2/2024

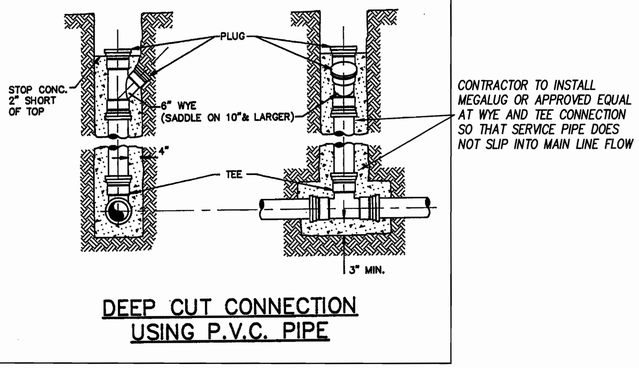
2-WAY DIRECTIONAL BFR TYPICAL DETAIL

N.T.S.

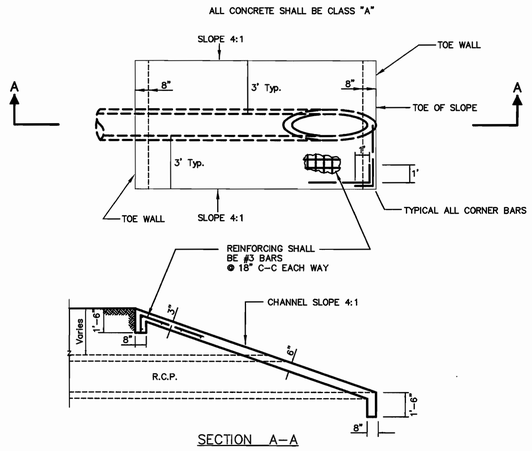
DIRECTIONAL BFR TYPICAL DETAIL

N.T.S.


Proposed 8' Sidewalk
Proposed 8' Sidewalk
Proposed 8' Sidewalk
Proposed 8' Sidewalk
Proposed 5' Sidewalk
Proposed 5' Sidewalk
Proposed 5' Sidewalk
Proposed 5' Sidewalk
Proposed 5' Sidewalk
Proposed 5' Sidewalk
Proposed 5' Sidewalk
OLMSTEAD DRIVE
OLMSTEAD DRIVE EAST
LINDBERG STREET
STABLEGLEN DRIVE
MERGERS COLONY AVENUE
HERRICK STREET
BURLING STREET
LINDBERG STREET
SELBORNE DRIVE
NUTTALL STREET
HERRICK STREET
MERGERS COLONY AVENUE
SELBORNE DRIVE
OLMSTED DRIVE
BR. GAUGE ST.
BR. WILTSHIRE WEST
BR. WILTSHIRE EAST
BR. CHAMBERS DR.
BR. HIGHLAND DR.
BR. SELBORNE DR.
BR. OLMSTED DR.
BR. GAUGE ST.
BR. WILTSHIRE WEST
BR. WILTSHIRE EAST
BR. CHAMBERS DR.
BR. HIGHLAND DR.
BR. SELBORNE DR.
BR. OLMSTED DR.
BR. CLEAR CREEK CROSSING
BR. CLEAR CREEK CROSSING
BR. CLEAR CREEK CROSSING

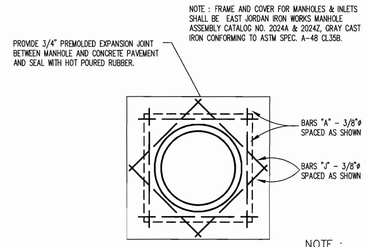


DEEP CUT CONNECTION
USING P.V.C. PIPE



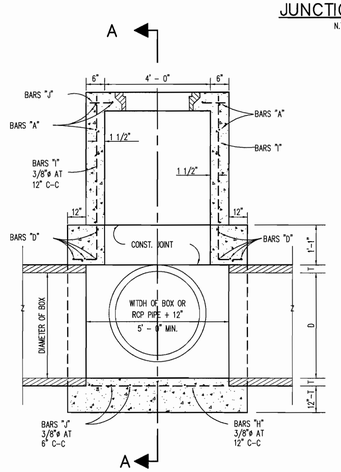
SECTION A–A

TYPE C HEADWALL
N.T.S.

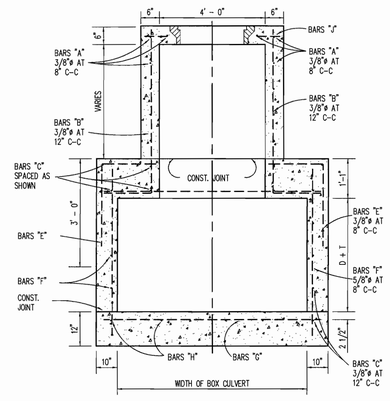


TOP PLAN
JUNCTION BOX
N.T.S.

NOTE :
All Concrete To Be 4,200 psi Compressive Strength Concrete. (Min. 7.0 Sack Mix)



ELEVATION
N.T.S.



SECTION A–A
N.T.S.

JUNCTION BOX DETAILS

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SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

DETAILS

Date

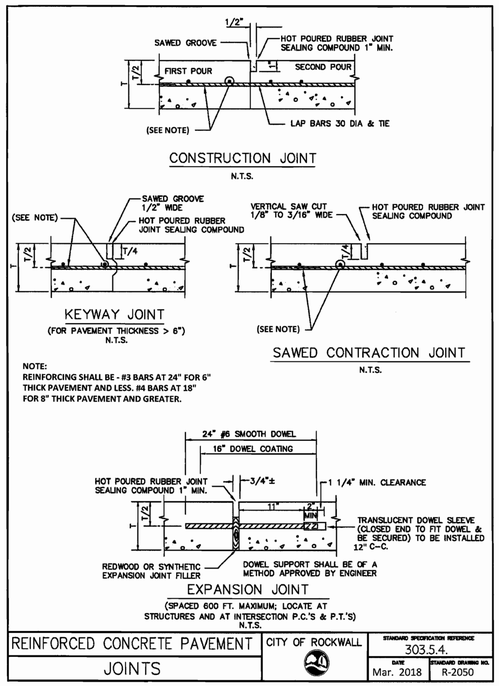
Revisions

Scale: N/A
Drawn By: BJ
Checked By: GTH

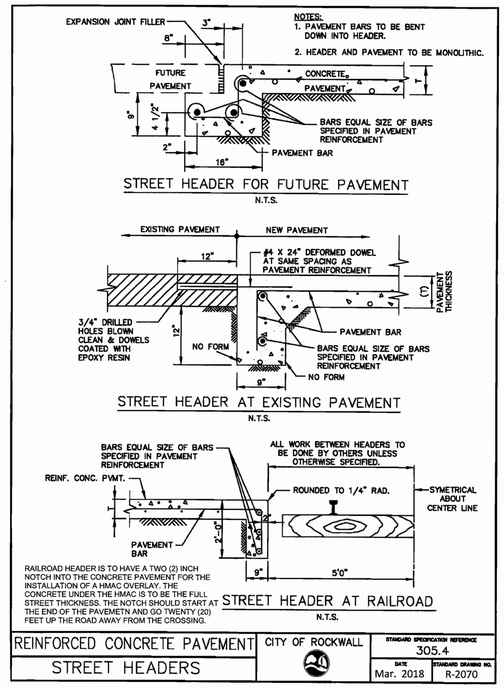
Sheet 64

SEI No. 20–112

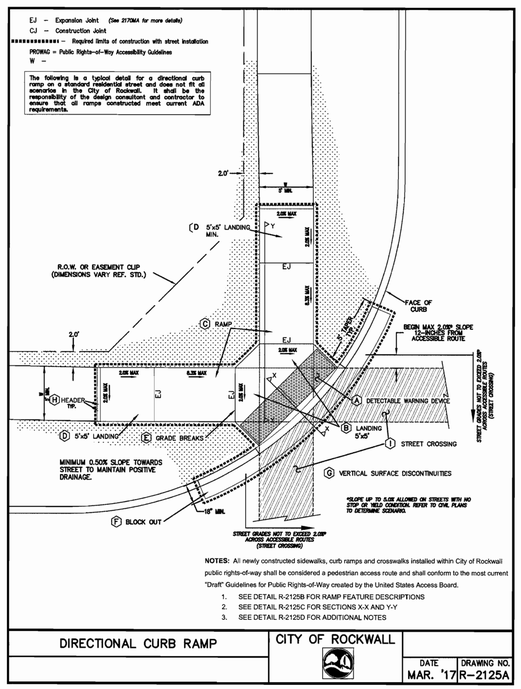
Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112-DETAILS.dwg Saved By: bjohnson Save Time: 9/27/2021 2:50:16 PM Plotted by: bjohnson Plot Date: 10/7/2021 7:36 AM



REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 303.5.4.
JOINTS		DATE Mar. 2018 / STANDARD DRAWING NO. R-2050



REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 305.4
STREET HEADERS		DATE Mar. 2018 / STANDARD DRAWING NO. R-2070



NOTES: All newly constructed sidewalks, curb ramps and crosswalks installed within City of Rockwall public rights-of-way shall be considered a pedestrian access route and shall conform to the most current "Draft" Guidelines for Public Rights-of-Way created by the United States Access Board.

1. SEE DETAIL R-2125B FOR RAMP FEATURE DESCRIPTIONS
2. SEE DETAIL R-2125C FOR SECTIONS X-X AND Y-Y
3. SEE DETAIL R-2125D FOR ADDITIONAL NOTES

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL	DATE MAR. '17 / DRAWING NO. R-2125A

(A) Detectable Warning Devices (DWD) shall be pre-manufactured cast-in-place truncated dome plates installed to the manufacturer's specifications, and shall meet all ADA requirements. No Brick Pavers allowed. Color to be approved by the City. DWD shall be 24 inches in length for the full width of the street connection starting at the back of curb. A maximum 2-inch border shall be allowed on the sides of the DWD for proper installation.

(B) Also known as "Clear Space" per ADA PROWAG, the City requires a minimum landing space of 5-foot by 5-foot at the bottom of every ramp. This landing space shall have a cross slope in both directions that does not exceed 2.0% and shall be wholly outside the parallel vehicular travel path.

(C) The ramp component of the directional curb ramp shall have a continuous longitudinal slope more than 5% and less than 8.3%. The ramp shall also have a cross slope of no more than 2.0%. Length of ramp can vary, but shall not exceed 15 feet to achieve desired elevation change.

(D) Also known as "Turning Space" per ADA PROWAG, a minimum landing space of 5-foot by 5-foot shall be at the top of every ramp. This landing (turning) space shall have a cross slope in both directions that does not exceed 2.0%. Landing must match width of sidewalk and length shall be the same distance ("Squared" Landing).

(E) All curb ramps shall have grade breaks at the top and bottom that are perpendicular to the direction of the ramp run. Where the ends of the bottom grade break are less than or equal to 5 feet, the DWD shall be placed within the ramp at the bottom grade break. Where either end of the bottom grade break is greater than 5 feet, the DWD shall be placed behind the back of the curb.

(F) Paving contractor shall leave block out with a keyway joint installed, minimum of 18 inches measured from back of curb. Block out shall be poured monolithically with Curb Ramp. Concrete shall tie to street paving with a keyway joint per NCTCOG detail 2050. No curb shall be constructed where a DWD is provided. The curb on either side shall have a typical 5 foot taper to transition from the standard 6-inch curb height to be flush with ramp.

(G) All work associated with accessible routes shall be installed flush with all features to minimize vertical surface discontinuities. Each segment along accessible route shall be flush with no more (zero tolerance) than a ¼-inch grade separation (elevation difference), or ½-inch grade separation if beveled (bevel slope shall not be steeper than 50%).

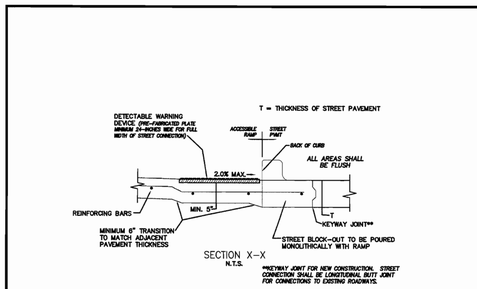
(H) A sidewalk header shall be constructed at ends of all work performed.

(I) Street crossings shall adhere to same guidelines as other accessible routes within public right-of-way, and shall be for the full width of the in-line accessible route. Cross slope shall not exceed 2.0*. New street construction shall incorporate all ADA design requirements. It shall be the responsibility of the Design Professional and Contractor to ensure all street crossings meet the requirements of PROWAG. Street alterations on existing streets to bring to compliance shall be at the City Engineer's discretion.

(J) All curbs constructed as part of an ADA Ramp shall match City curb standards.

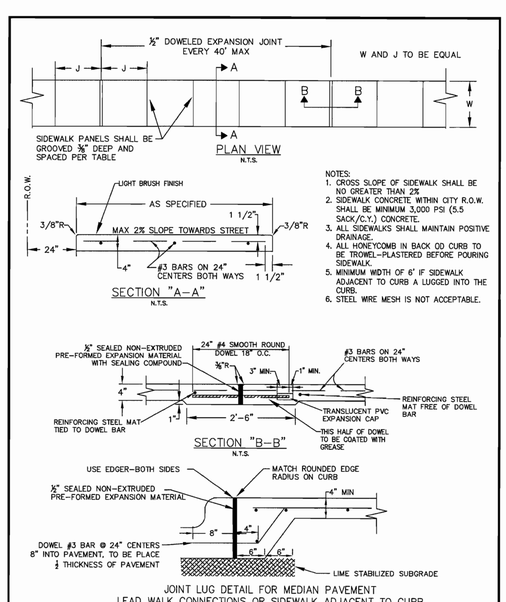
** See PROWAG special design considerations when street crossing has no stop or yield condition.*

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL	DATE MAR. '17 / DRAWING NO. R-2125B

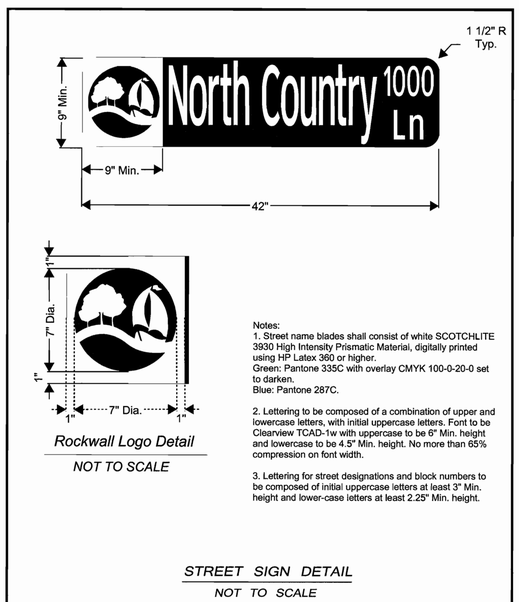


NOTE: ALL SIDEWALK CURB RAMPS WILL BE 3,600 PSI (6.5 SACK/CY) CONCRETE.

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL	DATE MAR. '17 / DRAWING NO. R-2125C



REINFORCED CONCRETE SIDEWALKS	CITY OF ROCKWALL	DATE AUG '19 / DRAWING NO. R-2170
JOINTS AND SPACING		



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

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SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
DETAILS

Date

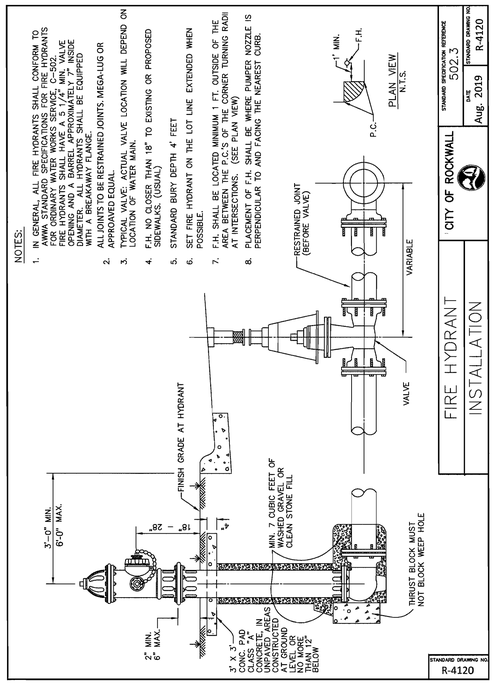
Revisions

Scale: N/A
Drawn By: BJ
Checked By: GTH

Sheet 65

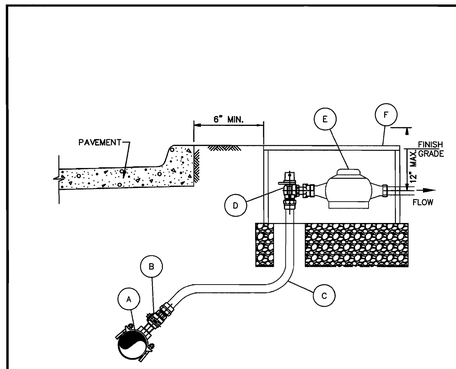
SEI No. 20-112

Drawing: G:\2020 JOBS\20-112 Somerset Park\20-112-DETS.dwg Saved By: Bjohnson Save Time: 9/27/2021 2:55:16 PM Plotted by: bJohnson Plot Date: 10/11/2021 7:37 AM



FIRE HYDRANT INSTALLATION	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.3
		DATE Aug. 2019
		STANDARD DRAWING NO. R-4120

STANDARD DRAWING NO. R-4120



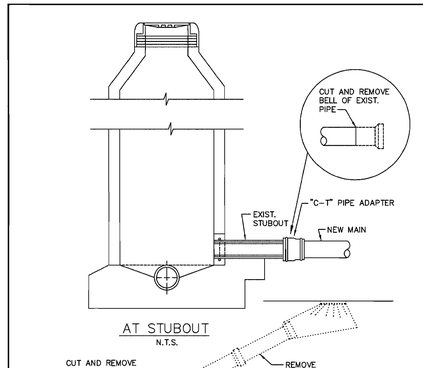
NOTES:

1. SERVICE PIPE SHALL BE 1" OR 2" SEAMLESS 250 PSI BLUE COLORED POLYETHYLENE ASTM D2737, SDR 9, CTS WATER SERVICE PIPE, NSF61 APPROVED.
2. TOP OF METER BOXES SHALL BE 1" ABOVE FINISHED GRADE.
3. METER BOX SHALL HAVE A MINIMUM OF 6" OF GRAVEL BENEATH METER BOX AS ILLUSTRATED.
4. LOCATION OF THE METER BOX SHALL BE LOCATED TO ALLOW 6" CLEARANCE FROM CURB.

MATERIAL LIST:

A. SERVICE SADDLE SHALL BE BRASS WITH DOUBLE BRONZE FLATTENED STRAPS OR STAINLESS STEEL DOUBLE BOLT WIDE STRAPS. NO BANDED OR HINGED STRAPS SHALL BE ALLOWED. SERVICE SADDLES SHALL MEET AWWA/CC TAPPING OUTLET (TAPERED THREADS) REQUIREMENTS. ALL SERVICE SADDLES SHALL BE PER APPROVED WATER MATERIALS LIST.
B. 1" OR 2" CORPORATION STOP PER APPROVED WATER MATERIALS LIST.
C. 1" OR 2" SERVICE PIPE SHALL BE SEAMLESS 250 PSI BLUE COLORED POLYETHYLENE ASTM D2737, SDR9, CTS WATER SERVICE PIPE, NSF61 APPROVED.
D. 1" OR 2" LOCKING ANGLE METER VALVE (STOP) PER APPROVED WATER MATERIALS LIST.
E. WATER METERS CENTERED IN BOX AS ILLUSTRATED.
F. ROUND METER BOX PER APPROVED WATER MATERIALS LIST.

WATER SERVICE INSTALLATION	CITY OF ROCKWALL		
1" OR 2" LINE		DATE AUG '19	DRAWING NO. R-4130

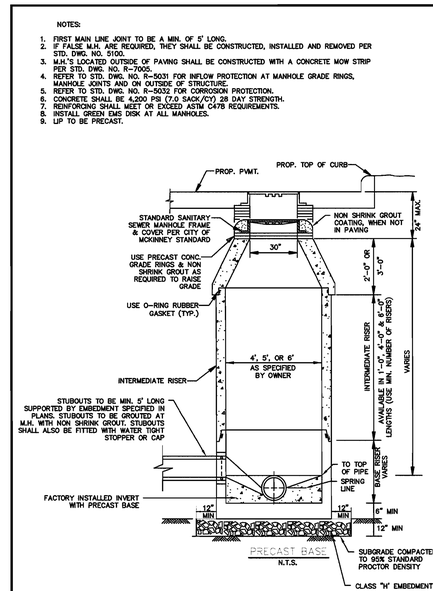


NOTE:
THIS DETAIL FOR USE ONLY WHEN NEW MAIN WILL NOT MATE WITH EXISTING MAIN JOINT DUE TO DIFFERENT DIMENSIONS OR MATERIALS AND A MANHOLE IS NOT REQUIRED.

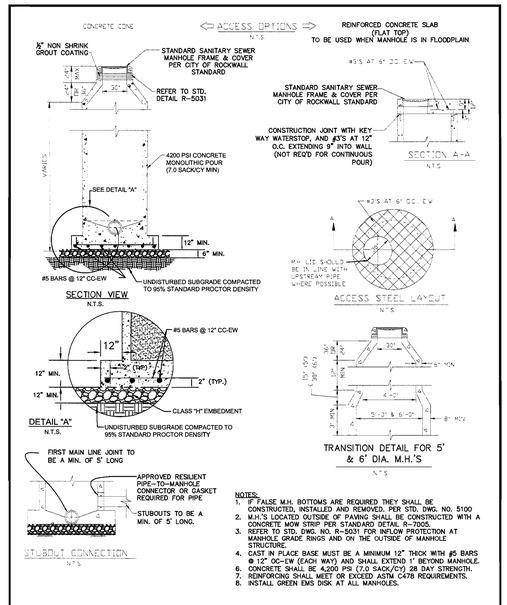
WASTEWATER MAIN TIE-IN AT CLEANOUT OR M.H. STUBOUT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.10	
		DATE Mar. 2018	STANDARD DRAWING NO. R-5010

NOTES:

1. FIRST MAIN LINE JOINT TO BE A MIN. OF 5' LONG.
2. IF FALSE M.H. ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED PER STD. DWG. NO. 5100.
3. M.H.'S LOCATED OUTSIDE OF PAVING SHALL BE CONSTRUCTED WITH A CONCRETE MOW STRIP PER STD. DWG. NO. R-7005.
4. REFER TO STD. DWG. NO. R-5031 FOR INFLOW PROTECTION AT MANHOLE GRADE RINGS, MANHOLE JOINTS AND ON OUTSIDE OF STRUCTURE.
5. REFER TO STD. DWG. NO. R-5032 FOR CORROSION PROTECTION.
6. CONCRETE SHALL BE 4,200 PSI (7.0 SACK/CY) 28 DAY STRENGTH.
7. REINFORCING SHALL MEET OR EXCEED ASTM C478 REQUIREMENTS.
8. INSTALL GREEN EMS DISK AT ALL MANHOLES.
9. LIP TO BE PRECAST.



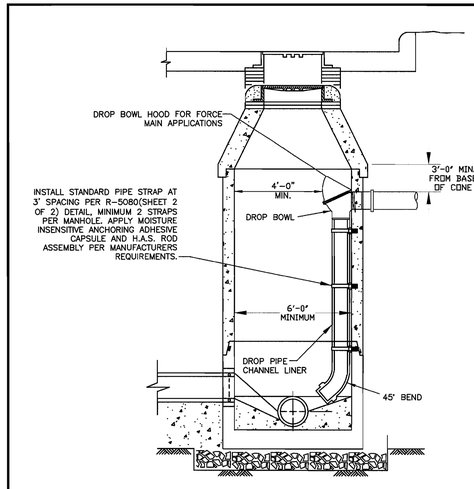
WASTEWATER MANHOLE PRECAST	CITY OF ROCKWALL		
		DATE AUG '19	DRAWING NO. R-5020



NOTES:

1. IF FALSE M.H. BOTTOMS ARE REQUIRED THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED. PER STD. DWG. NO. 5100
2. M.H.'S LOCATED OUTSIDE OF PAVING SHALL BE CONSTRUCTED WITH A CONCRETE MOW STRIP PER STANDARD DETAIL R-7005.
3. REFER TO STD. DWG. NO. R-5031 FOR INFLOW PROTECTION AT MANHOLE GRADE RINGS AND ON THE OUTSIDE OF MANHOLE STRUCTURE.
4. CAST IN PLACE BASE MUST BE A MINIMUM 12" THICK WITH #5 BARS @ 12" OC-EW (EACH WAY) AND SHALL EXTEND 1' BEYOND MANHOLE.
6. CONCRETE SHALL BE 4,200 PSI (7.0 SACK/CY) 28 DAY STRENGTH.
7. REINFORCING SHALL MEET OR EXCEED ASTM C478 REQUIREMENTS.
8. INSTALL GREEN EMS DISK AT ALL MANHOLES.

WASTEWATER MANHOLE CAST-IN-PLACE	CITY OF ROCKWALL		
		DATE AUG '19	DRAWING NO. R-5030



ELEVATION
N.T.S.

NOTE:
1. DROP BOWL, DROP PIPE CHANNEL LINER AND STAINLESS STEEL PIPE CLAMPS AS MANUFACTURED BY RELINER/DURAN INC. OR APPROVED EQUAL.

SHEET 1 OF 2

WASTEWATER MANHOLE DROP CONNECTIONS	CITY OF ROCKWALL		
		DATE AUG '19	DRAWING NO. R-5080

HVA ADHESIVE CAPSULE ANCHOR

A. DRILL HOLES WITH ANSI B212.15 MATCHED TOLERANCE CARBIDE TIPPED DRILL BITS WITH DRILL IN ROTO-HAMMER MODE OR USE A MATCHED TOLERANCE DIAMOND CORE DRILL BIT OF DIAMETER SPECIFIED BY HILTI.
B. DRILLED HOLE SPECIFICATIONS (DIAMETER & DEPTH) SHALL COMPLY WITH HILTI SPECIFICATION OR ICC ESR 1562.
C. ALLOWABLE LOADS MAY BE INCREASED BY 33-1/3% FOR SHORT-TERM WIND OR SEISMIC LOAD RESISTANCE IAW ICC ESR 1682 UNLESS NOT PERMITTED BY THE APPLICABLE BUILDING CODE.
D. WHEN CONDUCTED, PROOF TEST ANCHORS IN THE FIELD TO 150-200% OF HILTI PUBLISHED ALLOWABLE TENSION LOAD UNLESS NOTED OTHERWISE IN A PROOF TEST LOAD TABLE. TORQUE TESTING IS NOT PERMITTED.
E. ANCHORS SHALL BE TIGHTENED WITH A CALIBRATED TORQUE WRENCH. USE OF AN IMPACT WRENCH IS NOT PERMITTED.
F. CONTACT HILTI TECHNICAL SUPPORT AT 1-800-879-8000 FOR INSTALLATION INSTRUCTIONS IN SUBMERGED WATER CONDITIONS.
G. CONTACT HILTI TECHNICAL SUPPORT AT 1-800-879-8000 FOR ADDITIONAL ASSISTANCE WITH HVA ADHESIVE ANCHOR INSTALLATIONS.
H. INSTALLATION INSTRUCTIONS:
H.1. FOR HVA ADHESIVE CAPSULES WITH H.A.S. THREADED RODS:
1. DRILL ANCHOR HOLE WITH A CARBIDE BIT (SEE NOTE 1 ABOVE), TO SPECIFIED EMBEDMENT DEPTH.
2. CLEAN HOLE WITH COMPRESSED AIR OR BLOW OUT PUMP. INSERT NOZZLE TO BOTTOM OF HOLE.
3. IF USING MATCHED TOLERANCE CORE BIT, REMOVE STANDING WATER FROM HOLE.
4. INSERT APPROPRIATE HVU CAPSULE INTO HOLE WITH POINTED END FIRST. CAPSULE LENGTH IS LONGER THAN STANDARD EMBEDMENT AND WILL PROTRUDE FROM HOLE. DO NOT CUT OFF ANY PART OF THE HVU CAPSULE.
5. THREAD NUT ONTO ROD.
6. PLACE A WASHER ON FIRST NUT AND THREAD BLACK SETTING NUT DOWN ON WASHER.
7. TIGHTEN NUTS TOGETHER SO THAT BLACK SETTING WASHER IS AT TOP OF ROD.
8. INSERT SQUARE DRIVE SHAFT INTO HAMMER DRILL AND ATTACH PROPER IMPACT SOCKET.
9. WITH HAMMER DRILL ON ROTARY HAMMER, ENGAGE TOP NUT OF HAS ROD ASSEMBLY AND ROTOHAMMER ROD THROUGH CAPSULE(S) INTO THE HOLE. STOP DRILL ROTATION IMMEDIATELY UPON REACHING BOTTOM OF HOLE.
10. DO NOT DISTURB OR LOAD ANCHOR BEFORE CURING TIME ELAPSES.

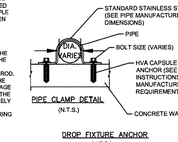
HVA INSTALLATION SPECIFICATION TABLE FOR H.A.S. RODS

DETAILS	HAS Rod Size		3/8	1/2	5/8	3/4	7/8	1	1-1/4
d (a)	nominal bit diameter	in.	15/32	9/16	11/16	7/8	1	1-1/8	1-3/8
h_{nom}	= std. depth of embed. + capsule length	in.	3-1/2	4-1/4	5	6-5/8	6-5/8	8-1/4	12
t	max. thickness fastened	in.	1	1-1/2	1-3/4	2	2-1/4	2-1/2	2-3/4
T_{max}	max. tightening torque	All Hilti Rods	ft-lb	18	30	75	150	175	235	400
h_{min}	minimum base material thickness	h_{nom} + d+1/4in ocrn	in.	5-1/4	6-3/8	7-1/2	10	10	12-3/8	18
		h_{nom} + d+1/4in ocrn	in.	1.0h_{nom} + 2	1.0h_{nom} + 2	1.0h_{nom} + 2	1.0h_{nom} + 2	1.0h_{nom} + 2 1/4	1.0h_{nom} + 3
Recommended Hilti Rotary Hammer Drill				TE-5,15, 1845,25	TE-15M,25,55,76		TE-55, 70		TE-76	

For SI: 1 inch = 25.4mm, 1ft-lb = 1.4 Nm
Curing Time Table (Approximate)

Approx. Curing Time	Base Material Temperature
20 Minutes	ABOVE 68° F/20°C
30 Minutes	50° F/10° C
1 Hour	32° F/0° C
5 Hour	23° F/-5° C

HILTI HVA ADHESIVE CAPSULE ANCHOR
OR APPROVED EQUAL

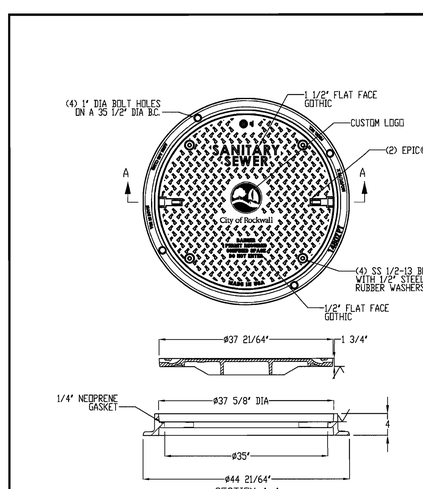


PIPE CLAMP DETAIL
(N.T.S.)

DROP FIXTURE ANCHOR
(N.T.S.)

SHEET 2 OF 2

WASTEWATER MANHOLE DROP CONNECTIONS	CITY OF ROCKWALL		
		DATE AUG '19	DRAWING NO. R-5080



WASTEWATER MANHOLE BOLT AND GASKET RIM AND COVER	CITY OF ROCKWALL		
		DATE AUG '19	DRAWING NO. R-5102

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SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
DETAILS

Date

Revisions

Scale: N/A
Drawn By: BJ
Checked By: GTH

Sheet 66

SEI No. 20-112

Plotted By: bjohnson Plot Date: 10/1/2021 7:37 AM
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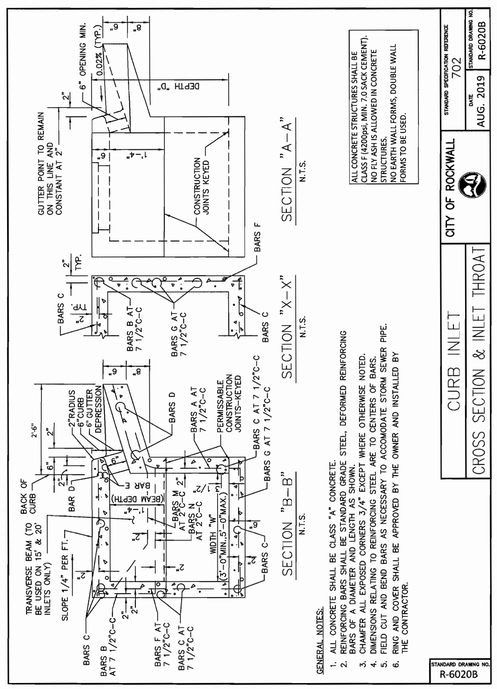
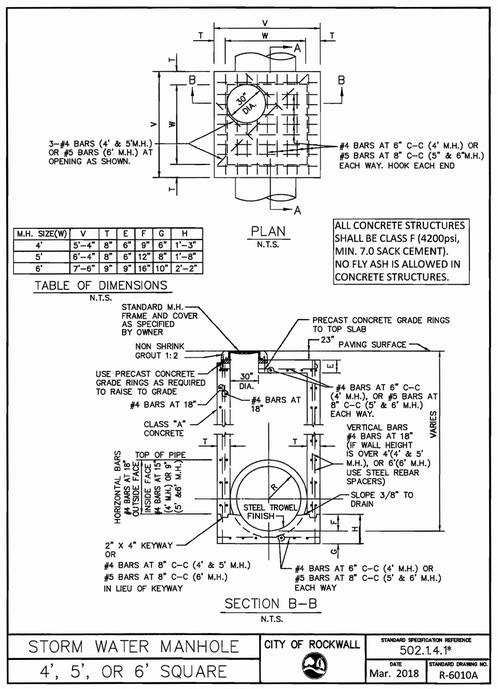


CURB INLET	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
CROSS SECTION & INLET THROAT		DATE AUG. 2019 / STANDARD DRAWING NO. R-6020B

STANDARD DRAWING NO. R-6020B

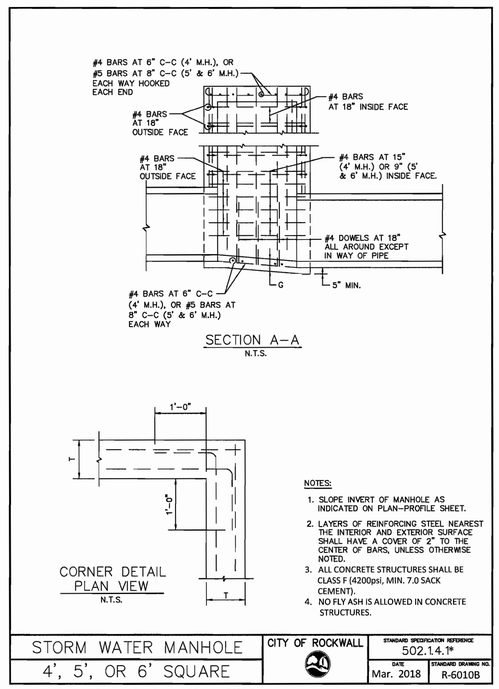


M.H. SIZE(W)	V	T	E	F	G	H
4'	5'–4"	8"	6"	9"	6"	1'–3"
5'	6'–4"	8"	6"	12"	8"	1'–6"
6'	7'–6"	9"	9"	16"	10"	2'–2"

ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

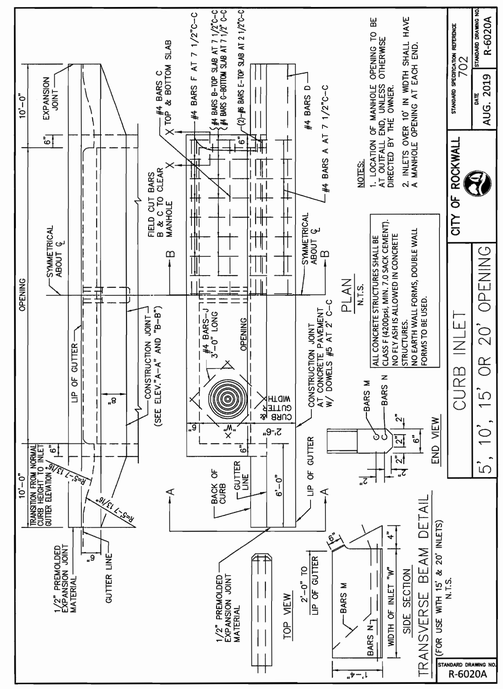
STORM WATER MANHOLE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.1.4.1*
4', 5', OR 6' SQUARE		DATE Mar. 2018 / STANDARD DRAWING NO. R-6010A

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*



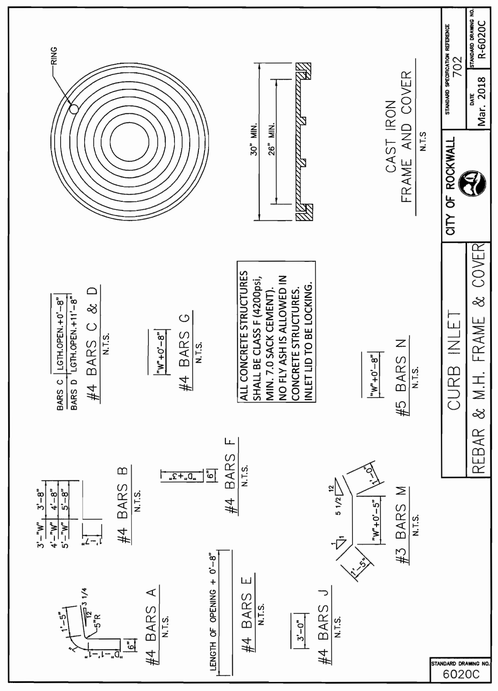
STORM WATER MANHOLE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.1.4.1*
4', 5', OR 6' SQUARE		DATE Mar. 2018 / STANDARD DRAWING NO. R-6010B

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*



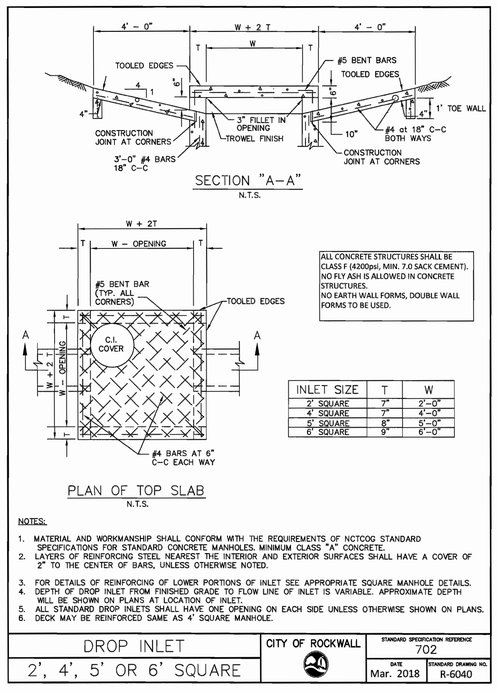
CURB INLET	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
5', 10', 15' OR 20' OPENING		DATE AUG. 2019 / STANDARD DRAWING NO. R-6020A

STANDARD DRAWING NO. R-6020A



CURB INLET	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
REBAR & M.H. FRAME & COVER		DATE Mar. 2018 / STANDARD DRAWING NO. R-6020C

STANDARD DRAWING NO. 6020C

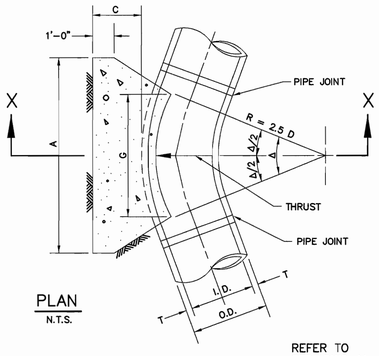


INLET SIZE	T	W
2' SQUARE	7"	2'–0"
4' SQUARE	7"	4'–0"
5' SQUARE	8"	5'–0"
6' SQUARE	9"	6'–0"

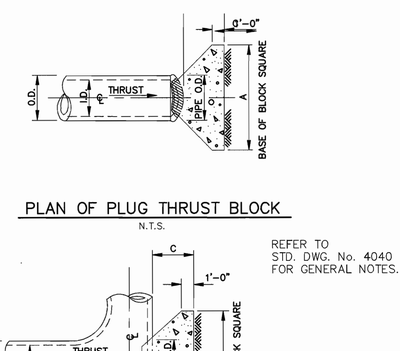
ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES. NO EARTH WALL FORMS, DOUBLE WALL FORMS TO BE USED.

NOTES:
1. MATERIAL AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF NCTCOG STANDARD SPECIFICATIONS FOR STANDARD CONCRETE MANHOLES. MINIMUM CLASS "A" CONCRETE.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACES SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
3. FOR DETAILS OF REINFORCING OF LOWER PORTIONS OF INLET SEE APPROPRIATE SQUARE MANHOLE DETAILS.
4. DEPTH OF DROP INLET FROM FINISHED GRADE TO FLOW LINE OF INLET IS VARIABLE. APPROXIMATE DEPTH WILL BE SHOWN ON PLANS AT LOCATION OF INLET.
5. ALL STANDARD DROP INLETS SHALL HAVE ONE OPENING ON EACH SIDE UNLESS OTHERWISE SHOWN ON PLANS.
6. DECK MAY BE REINFORCED SAME AS 4' SQUARE MANHOLE.

DROP INLET	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
2', 4', 5' OR 6' SQUARE		DATE Mar. 2018 / STANDARD DRAWING NO. R-6040



HORIZONTAL THRUST BLOCK AT PIPE BEND	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 6.7.
		DATE NOV. '96 / STANDARD DRAWING NO. 4010A



I.D. (IN.)	THRUST (TONS)	C (FT.)	EARTH A (FT.)	EARTH VOL. (C.Y.)	ROCK A (FT.)	ROCK VOL. (C.Y.)
4,6,8	5.1	1.5	2.5	0.3	2.0	0.2
10,12	11.3	1.5	3.5	0.6	2.5	0.3
16,18	25.5	2.0	5.5	1.6	4.0	0.9
20	31.5	2.0	6.0	1.9	4.0	0.9
24	45.2	2.5	7.0	3.1	5.0	1.7
30	53.0	3.0	7.5	4.1	5.5	2.4
36	76.3	4.0	9.0	7.3	6.5	4.2
42	104.0	4.5	10.5	11.0	7.5	6.2
48	136.0	5.0	12.0	15.5	8.5	8.7
54	172.0	5.5	13.5	21.4	9.5	11.9
60	212.0	6.0	15.0	28.4	10.5	15.7
66	257.0	6.5	16.5	36.8	11.5	20.5
72	305.0	7.5	17.5	47.2	12.5	27.2
78	358.0	8.0	19.0	58.9	13.5	33.7
84	416.0	8.5	20.5	72.3	14.5	41.2
90	477.0	9.0	22.0	87.7	15.5	49.7
96	543.0	9.5	23.5	104.8	16.5	61.0

HORIZONTAL THRUST BLOCK AT TEES AND PLUGS	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 6.7.
		DATE NOV. '96 / STANDARD DRAWING NO. 4020

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SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
DETAILS

Date

Revisions

Scale: N/A

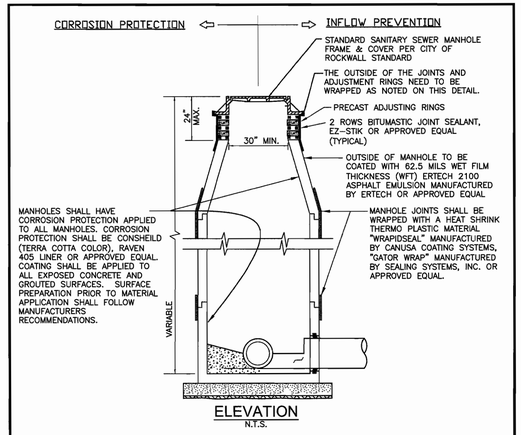
Drawn By: BJ

Checked By: GTH

Sheet 67

SEI No. 20–112

Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112-25TL.dwg Saved By: BJohnson Save Time: 9/27/2020 2:50:16 PM Plotted by: BJohnson Plot Date: 10/1/2020 7:27 AM

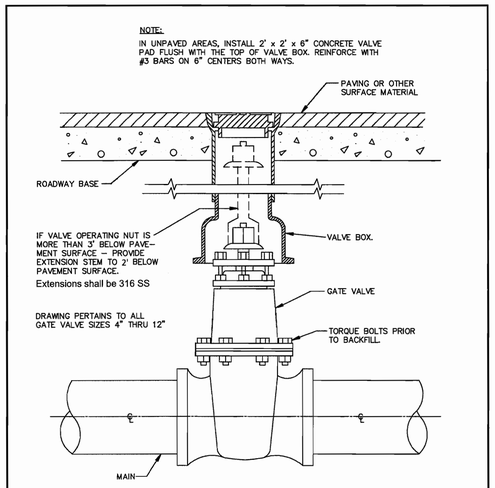


ELEVATION
N.T.S.

INFLOW PREVENTION NOTES:
1. REQUIRED ON ALL SANITARY SEWER MANHOLES AND LIFT STATION WET WELLS AND VALVE VAULTS.

CORROSION PREVENTION NOTES:
1. TO CORROSION PROTECTIVE COATING PROCESS, PRESSURE WASH AND CLEAN STRUCTURE. FILL BUG HOLES, JOINTS, HONEYCOMBS AND AROUND PIPE PENETRATIONS WITH A CEMENTITIOUS REPAIR MATERIAL (CRM) AS NEEDED. USE STRONG SEAL MS2C MANUFACTURED BY THE STRONG COMPANY, INC. OR APPROVED EQUAL. THEN APPLY A MINIMUM OF 125 MILS (⅛ INCH) THICKNESS OF A POLYURETHANE COATING MATERIAL (EXISTING MANHOLES REQUIRE A MINIMUM OF 250 MILS THICKNESS OF POLYURETANE COATING MATERIAL). FOR THE POLYURETHANE COATING MATERIAL USE RAVEN 405 LINER OR APPROVED EQUAL.
2. ADDITIONAL CLEANING, PREPARATION, AND REPAIR METHODS MAY BE REQUIRED FOR EXISTING MANHOLES DEPENDING ON CONDITION ASSESSMENT OF THE MANHOLE. CONTACT ENGINEERING DIVISION FOR ADDITIONAL SPECIFICATIONS.
3. SPARK TESTING IS REQUIRED FOR COATINGS. COST FOR TESTING IS SUBSIDIARY TO OTHER BID ITEMS. CITY INSPECTOR TO BE PRESENT FOR SPARK TESTING. CONTRACTOR TO PROVIDE WRITTEN SPARK TEST RESULTS TO CITY.
4. EXISTING BRICK MANHOLES SHALL BE REPLACED.
5. REQUIRED ON ALL WASTEWATER MANHOLES AND LIFT STATION WET WELLS.

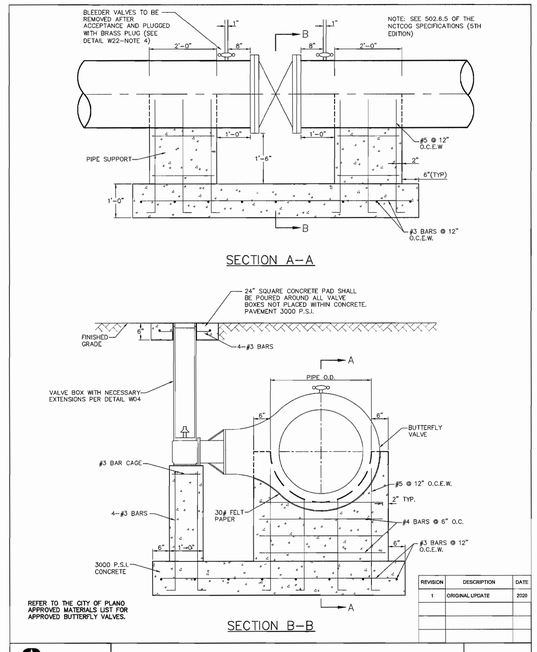
WASTEWATER MANHOLE	CITY OF ROCKWALL	
INFLOW PREVENTION & CORROSION PROTECTION		DATE: AUG '19 | DRAWING NO.: R-5031



GATE VALVE BOX AND EXTENSION STEM
N.T.S.

GATE VALVE 4" TO 12" BOX & EXTENSION STEM	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE: 502.6.6*
		DATE: AUG. '19 | STANDARD DRAWING NO.: R-4050

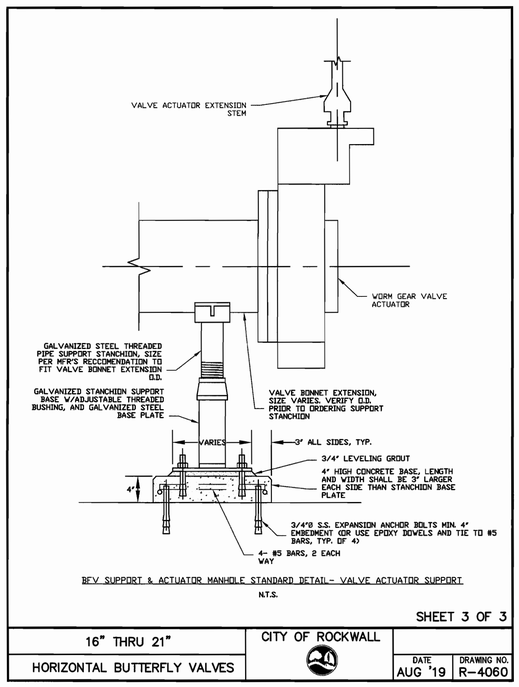
*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*



REFER TO THE CITY OF PLANO APPROVED MATERIALS LIST FOR APPROVED BUTTERFLY VALVES.

REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

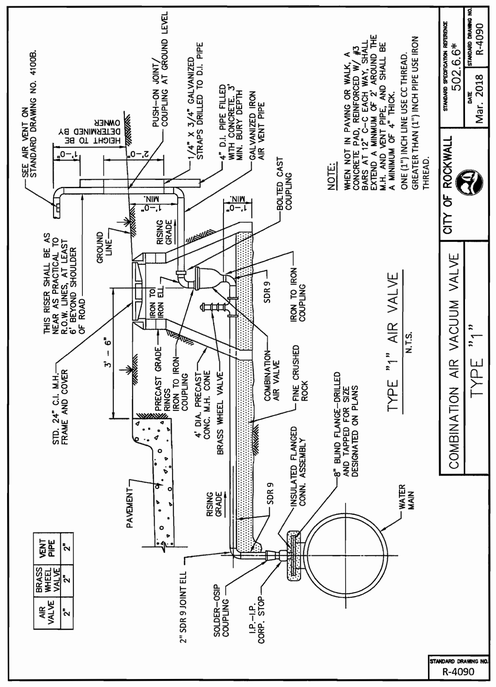
Plano ENGINEERING STANDARD DETAILS	BUTTERFLY VALVE	WATER DETAILS: W21
		6/1/20



BFV SUPPORT & ACTUATOR MANHOLE STANDARD DETAIL – VALVE ACTUATOR SUPPORT
N.T.S.

SHEET 3 OF 3

16" THRU 21" HORIZONTAL BUTTERFLY VALVES	CITY OF ROCKWALL	DATE: AUG '19 | DRAWING NO.: R-4060



NOTE:
WHEN NOT IN PAVING OR WALK, A CONCRETE ENCASEMENT WITH #3 BARS AT 12" O.C. EACH WAY SHALL EXTEND A MINIMUM OF 2' AROUND THE M.H. AND PIPE, AND SHALL BE A MINIMUM OF 4" THICK.
ONE (1") INCH LINE USE CC THREAD.
GREATER THAN (1") INCH PIPE USE IRON THREAD.

TYPE "1" AIR VALVE
N.T.S.

COMBINATION AIR VACUUM VALVE TYPE "1"	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE: 502.6.6*
		DATE: Mar. 2018 | STANDARD DRAWING NO.: R-4090

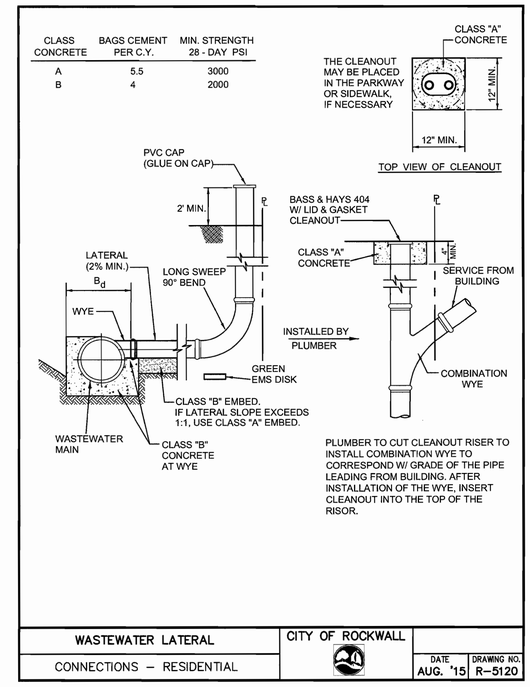
STANDARD DRAWING NO. R-4090

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

CONCRETE ENCASEMENT SHALL EXTEND 10' BEYOND WATER MAIN, DEFLECT WATER LINE WHEN POSSIBLE.

WATER MAIN LOWERING BELOW WASTEWATER MAIN	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE: 506.6
		DATE: Mar. 2018 | STANDARD DRAWING NO.: R-4200

STANDARD DRAWING NO. R-4200



PLUMBER TO CUT CLEANOUT RISER TO INSTALL COMBINATION WYE TO CORRESPOND W/ GRADE OF THE PIPE LEADING FROM BUILDING. AFTER INSTALLATION OF THE WYE, INSERT CLEANOUT INTO THE TOP OF THE RISOR.

WASTEWATER LATERAL CONNECTIONS – RESIDENTIAL	CITY OF ROCKWALL	DATE: AUG. '15 | DRAWING NO.: R-5120

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SOMERSET PARK PHASE 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
DETAILS

Revisions	Date

Scale: N/A
Drawn By: BJ
Checked By: GTH

Sheet 68

SEI No. 20–112

Plotted by: bjohnson Plot Date: 10/1/2021 7:36 AM
Drawing: G:\2020_JOBS\20-112 Somerset Park\20-112-DETL.dwg Saved By: bjohnson Save Time: 9/27/2021 2:50:16 PM

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DATE:
FILE:

TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

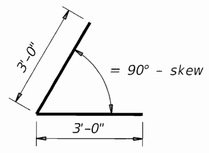
Dimensions					Variable Reinforcing				Estimated Quantities per ft of wing (2~wings) (4)		Estimated Quantities per ft of Toewall (1~toewall)	
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1		Bars J2					
					Size	Spa	Size	Spa	Reinf (Lb/Ft)	Conc (CY/Ft)	Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-6"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-6"	6'-5"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-6"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'-8"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

TABLE OF WINGWALL REINFORCING
(2~wings)

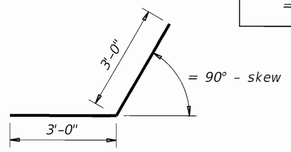
Bar	Size	No.	Spa
D1	#6	~	1'-0"
D2	#6	~	1'-0"
E1	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	~	8"
M1	#4	4	~
P	#4	~	1'-0"
V	#4	~	1'-0"

TABLE OF TOEWALL REINFORCING

Bar	Size	No.	Spa
J3	#4	~	1'-0"
M2	#4	2	~
E2	#4	~	1'-0"



BARS D1



BARS D2

WING DIMENSION FORMULAS:

(All values are in feet.)

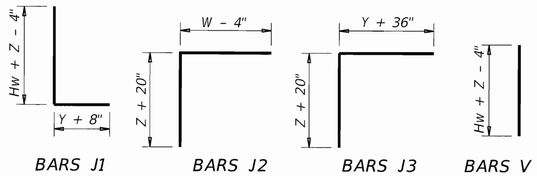
Hw = H + T + C
Lw = (Hw) (SL) ÷ cosine (θ) for Type PW-1
= (Hw - 1') (SL) ÷ cosine (θ) for Type PW-2 and Hw ≥ 4'
= (Hw - 0.5') (SL) ÷ cosine (θ) for Type PW-2 and Hw < 4'

For cast-in-place culverts:
Ltw = [(N) (S) + (N + 1) (U)] ÷ cosine (θ)

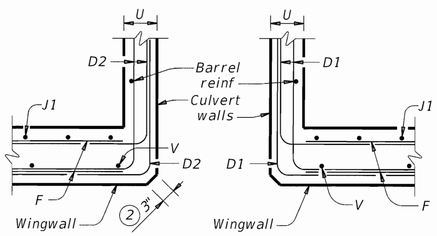
For precast culverts:
Ltw = [(N) (2 U + S) + (N - 1) (0.5')] ÷ cosine (θ)
Total Wingwall Area (two wings ~ SF)
= (2)(Hw)(Lw) for Type PW-1
= (2)(Hw)(Lw) - 6 SF for Type PW-2 and Hw ≥ 4'
= (2)(Hw)(Lw) - 1.5 SF for Type PW-2 and Hw < 4'

Hw = Height of wingwall
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans
SL:1 = Channel slope ratio. (horizontal: 1 vertical, usual value is 2:1)
θ = Culvert skew

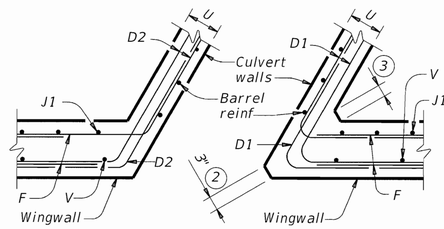
See applicable box culvert standard sheet for S, H, T, and U values.



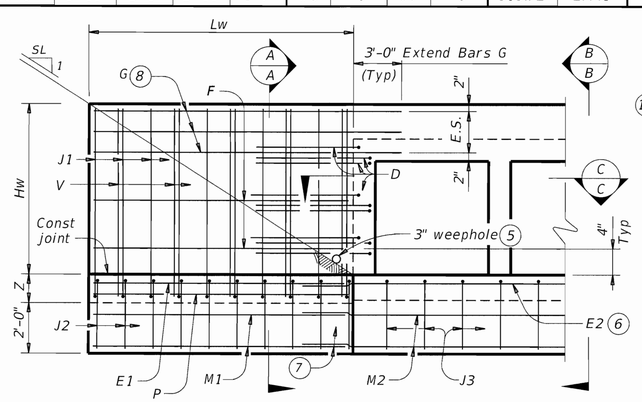
BARS J1 BARS J2 BARS J3 BARS V



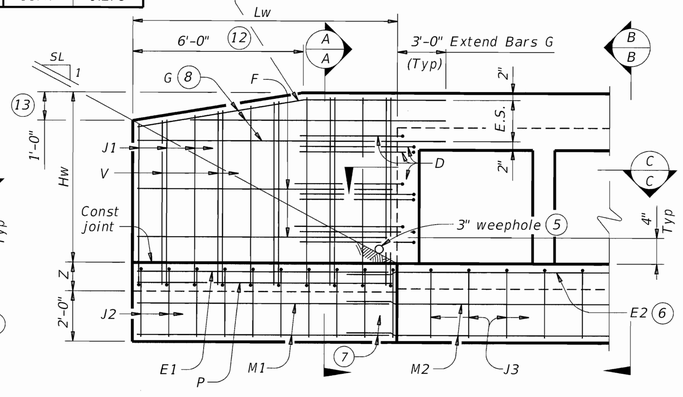
SECTION C-C - PW-1



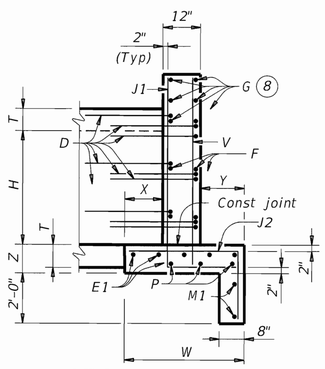
SECTION C-C - PW-2



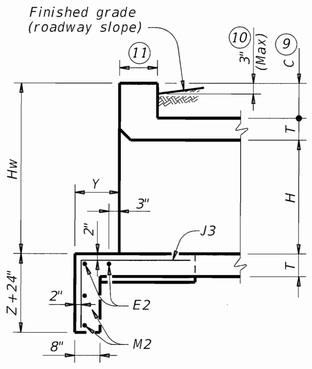
PARTIAL ELEVATION - PW-1



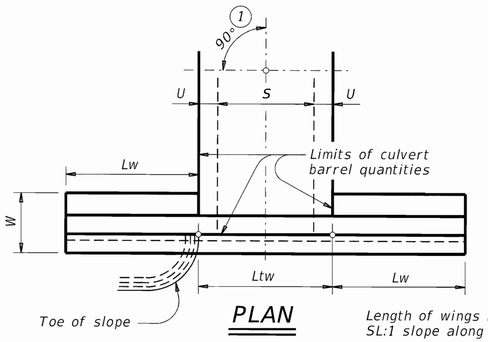
PARTIAL ELEVATION - PW-2



SECTION A-A
(Showing wing reinforcement.)

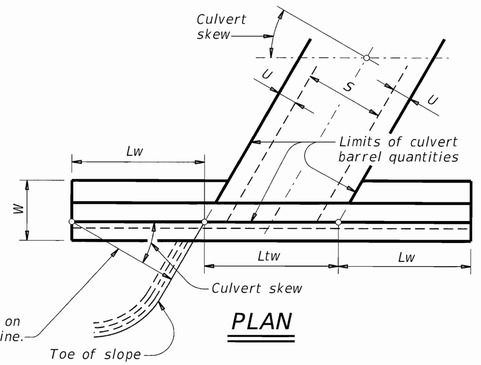


SECTION B-B
(Showing wing reinforcement.)



PLAN

DETAILS FOR NON-SKEWED BOX CULVERTS



PLAN

DETAILS FOR SKEWED BOX CULVERTS
(Showing 30° skew.)

(1) Skew = 0°

(2) At discharge end, chamfer may be ¾" minimum.

(3) For 15° skew ~ 1"
For 30° skew ~ 2"
For 45° skew ~ 3"

(4) Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.

(5) Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.

(6) Extend Bars E2 1'-6" minimum into the wingwall footing.

(7) Lap Bars M1 1'-6" minimum with Bars M2.

(8) Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.

(9) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

(10) For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(11) 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elswhere in the plans.

(12) 3'-0" for Hw < 4'.

(13) 6" for Hw < 4'.

DESIGNER NOTES:
Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall.
Type PW-2 can only be used for applications without a railing mounted to the wingwall.

MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforing steel if required elsewhere in the plans.

GENERAL NOTES:
Designed in accordance with AASHTO LRFD Bridge Design Specifications.
Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for wingwall type and additional dimensions and information.
Quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation

Bridge Division Standard

CONCRETE WINGWALLS
WITH PARALLEL WINGS FOR BOX CULVERTS
TYPES PW-1 AND PW-2

PW

FILE:	pwstde01-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT	February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS					
		DIST	COUNTY		SHEET NO.

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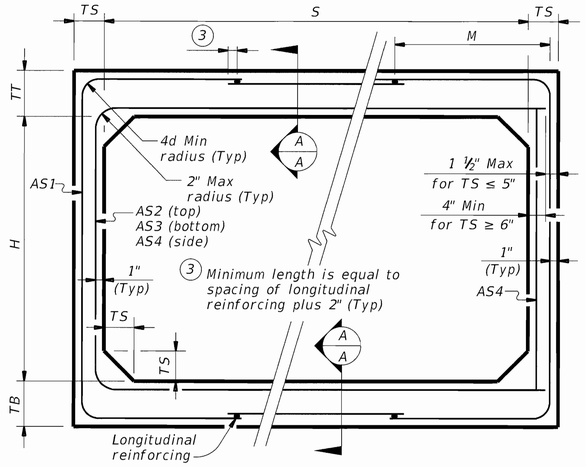
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
6	2	8	7	7	< 2	–	0.23	0.27	0.19	0.17	0.19	0.19	0.17	7.2
6	2	7	7	7	2 < 3	43	0.25	0.21	0.17	0.17	–	–	–	6.8
6	2	7	7	7	3 – 5	43	0.20	0.17	0.17	0.17	–	–	–	6.8
6	2	7	7	7	10	39	0.20	0.17	0.17	0.17	–	–	–	6.8
6	2	7	7	7	15	39	0.26	0.20	0.20	0.17	–	–	–	6.8
6	2	7	7	7	20	39	0.34	0.26	0.26	0.17	–	–	–	6.8
6	2	7	7	7	25	39	0.43	0.32	0.32	0.17	–	–	–	6.8
6	2	7	7	7	30	39	0.52	0.38	0.39	0.17	–	–	–	6.8
6	3	8	7	7	< 2	–	0.20	0.31	0.22	0.17	0.19	0.19	0.17	7.9
6	3	7	7	7	2 < 3	43	0.21	0.24	0.19	0.17	–	–	–	7.5
6	3	7	7	7	3 – 5	39	0.17	0.18	0.17	0.17	–	–	–	7.5
6	3	7	7	7	10	39	0.17	0.18	0.19	0.17	–	–	–	7.5
6	3	7	7	7	15	38	0.22	0.24	0.24	0.17	–	–	–	7.5
6	3	7	7	7	20	38	0.28	0.31	0.31	0.17	–	–	–	7.5
6	3	7	7	7	25	38	0.35	0.38	0.39	0.17	–	–	–	7.5
6	3	7	7	7	30	38	0.42	0.46	0.46	0.17	–	–	–	7.5
6	4	8	7	7	< 2	–	0.19	0.34	0.25	0.17	0.19	0.19	0.17	8.6
6	4	7	7	7	2 < 3	43	0.19	0.27	0.21	0.17	–	–	–	8.2
6	4	7	7	7	3 – 5	39	0.17	0.21	0.19	0.17	–	–	–	8.2
6	4	7	7	7	10	39	0.17	0.20	0.21	0.17	–	–	–	8.2
6	4	7	7	7	15	38	0.18	0.27	0.27	0.17	–	–	–	8.2
6	4	7	7	7	20	38	0.24	0.34	0.35	0.17	–	–	–	8.2
6	4	7	7	7	25	38	0.29	0.43	0.42	0.17	–	–	–	8.2
6	4	7	7	7	30	38	0.35	0.51	0.52	0.17	–	–	–	8.2
6	5	8	7	7	< 2	–	0.19	0.37	0.28	0.17	0.19	0.19	0.17	9.3
6	5	7	7	7	2 < 3	43	0.17	0.30	0.24	0.17	–	–	–	8.9
6	5	7	7	7	3 – 5	43	0.17	0.23	0.21	0.17	–	–	–	8.9
6	5	7	7	7	10	39	0.17	0.22	0.23	0.17	–	–	–	8.9
6	5	7	7	7	15	38	0.17	0.28	0.29	0.17	–	–	–	8.9
6	5	7	7	7	20	38	0.20	0.37	0.38	0.17	–	–	–	8.9
6	5	7	7	7	25	38	0.25	0.45	0.46	0.17	–	–	–	8.9
6	5	7	7	7	30	38	0.30	0.54	0.55	0.17	–	–	–	8.9
6	6	8	7	7	< 2	–	0.19	0.38	0.30	0.17	0.19	0.19	0.17	10
6	6	7	7	7	2 < 3	52	0.17	0.32	0.26	0.17	–	–	–	9.6
6	6	7	7	7	3 – 5	52	0.17	0.24	0.22	0.17	–	–	–	9.6
6	6	7	7	7	10	43	0.17	0.23	0.24	0.17	–	–	–	9.6
6	6	7	7	7	15	39	0.17	0.29	0.31	0.17	–	–	–	9.6
6	6	7	7	7	20	39	0.18	0.38	0.39	0.17	–	–	–	9.6
6	6	7	7	7	25	38	0.23	0.46	0.48	0.17	–	–	–	9.6
6	6	7	7	7	30	38	0.27	0.55	0.57	0.17	–	–	–	9.6

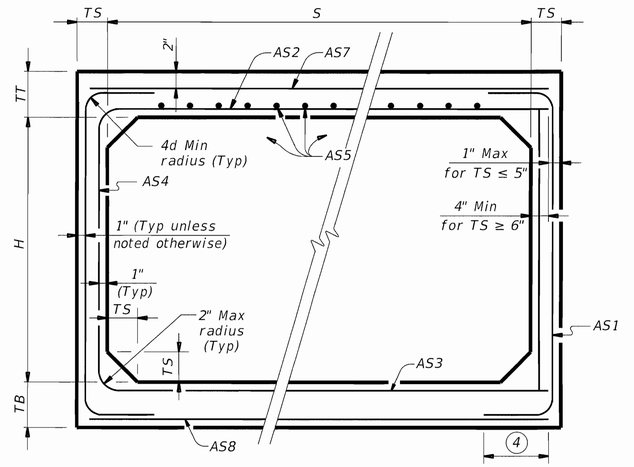
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

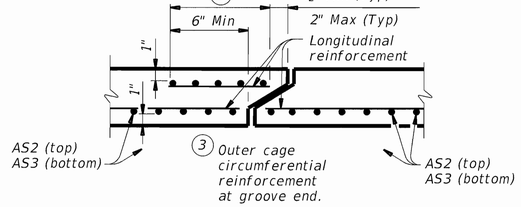
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

6'-0" SPAN

SCP-6

FILE: scp06sts-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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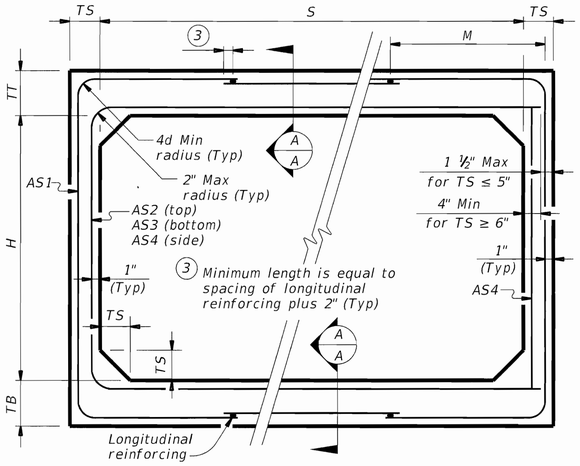
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
7	3	8	8	8	< 2	–	0.23	0.31	0.22	0.19	0.19	0.19	0.19	9.6
7	3	8	8	8	2 < 3	47	0.27	0.25	0.24	0.19	–	–	–	9.6
7	3	8	8	8	3 – 5	43	0.19	0.19	0.19	0.19	–	–	–	9.6
7	3	8	8	8	10	43	0.21	0.20	0.21	0.19	–	–	–	9.6
7	3	8	8	8	15	43	0.28	0.26	0.27	0.19	–	–	–	9.6
7	3	8	8	8	20	43	0.36	0.34	0.35	0.19	–	–	–	9.6
7	3	8	8	8	25	43	0.45	0.42	0.43	0.19	–	–	–	9.6
7	3	8	8	8	30	43	0.54	0.50	0.51	0.19	–	–	–	9.6
7	4	8	8	8	< 2	–	0.21	0.34	0.25	0.19	0.19	0.19	0.19	10.4
7	4	8	8	8	2 < 3	43	0.23	0.28	0.28	0.19	–	–	–	10.4
7	4	8	8	8	3 – 5	43	0.19	0.22	0.19	0.19	–	–	–	10.4
7	4	8	8	8	10	43	0.19	0.23	0.23	0.19	–	–	–	10.4
7	4	8	8	8	15	41	0.24	0.30	0.30	0.19	–	–	–	10.4
7	4	8	8	8	20	41	0.31	0.38	0.39	0.19	–	–	–	10.4
7	4	8	8	8	25	41	0.38	0.47	0.48	0.19	–	–	–	10.4
7	4	8	8	8	30	41	0.46	0.57	0.57	0.19	–	–	–	10.4
7	5	8	8	8	< 2	–	0.19	0.36	0.27	0.19	0.19	0.19	0.19	11.2
7	5	8	8	8	2 < 3	47	0.21	0.31	0.31	0.19	–	–	–	11.2
7	5	8	8	8	3 – 5	43	0.19	0.24	0.21	0.19	–	–	–	11.2
7	5	8	8	8	10	43	0.19	0.25	0.26	0.19	–	–	–	11.2
7	5	8	8	8	15	41	0.21	0.32	0.33	0.19	–	–	–	11.2
7	5	8	8	8	20	41	0.27	0.41	0.42	0.19	–	–	–	11.2
7	5	8	8	8	25	41	0.33	0.51	0.52	0.19	–	–	–	11.2
7	5	8	8	8	30	41	0.40	0.61	0.62	0.19	–	–	–	11.2
7	6	8	8	8	< 2	–	0.19	0.38	0.30	0.19	0.19	0.19	0.19	12.0
7	6	8	8	8	2 < 3	59	0.19	0.33	0.34	0.19	–	–	–	12.0
7	6	8	8	8	3 – 5	47	0.19	0.25	0.23	0.19	–	–	–	12.0
7	6	8	8	8	10	43	0.19	0.26	0.27	0.19	–	–	–	12.0
7	6	8	8	8	15	41	0.19	0.34	0.35	0.19	–	–	–	12.0
7	6	8	8	8	20	41	0.24	0.43	0.45	0.19	–	–	–	12.0
7	6	8	8	8	25	41	0.29	0.53	0.55	0.19	–	–	–	12.0
7	6	8	8	8	30	41	0.35	0.64	0.65	0.19	–	–	–	12.0
7	7	8	8	8	< 2	–	0.19	0.40	0.33	0.19	0.19	0.19	0.19	12.8
7	7	8	8	8	2 < 3	59	0.19	0.36	0.37	0.19	–	–	–	12.8
7	7	8	8	8	3 – 5	59	0.19	0.27	0.25	0.19	–	–	–	12.8
7	7	8	8	8	10	47	0.19	0.27	0.29	0.19	–	–	–	12.8
7	7	8	8	8	15	43	0.19	0.35	0.37	0.19	–	–	–	12.8
7	7	8	8	8	20	43	0.22	0.44	0.46	0.19	–	–	–	12.8
7	7	8	8	8	25	43	0.27	0.54	0.57	0.19	–	–	–	12.8
7	7	8	8	8	30	41	0.32	0.65	0.67	0.19	–	–	–	12.8

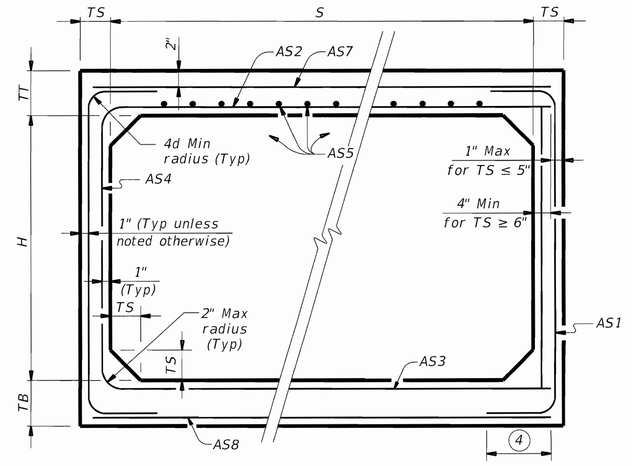
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

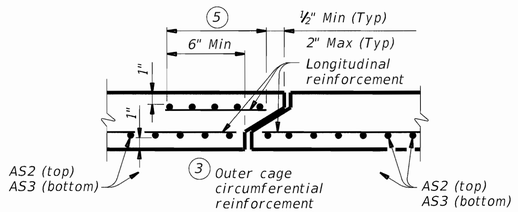
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

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In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

7'-0" SPAN

SCP-7

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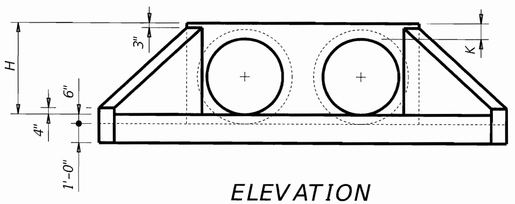
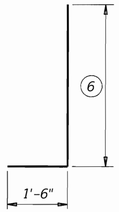
TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (5)

Slope	Dia of Pipe (D)	Values for One Pipe						Values to be Added for Each Addt'l Pipe		
		W	X	Y	L	Reinf (Lbs)	Conc (CY) (1)	X and W	Reinf (Lbs)	Conc (CY) (1)
2:1	12"	4' - 7 1/2"	2' - 6"	2' - 10"	3' - 3 1/4"	88	0.6	1' - 9"	20	0.2
	15"	5' - 5 3/4"	2' - 9 1/2"	3' - 4"	3' - 10 1/4"	103	0.7	2' - 2"	24	0.3
	18"	6' - 4 1/4"	3' - 1"	3' - 10"	4' - 5"	124	0.9	2' - 8"	32	0.3
	21"	7' - 2 3/4"	3' - 4 1/2"	4' - 4"	5' - 0"	143	1.1	3' - 1"	43	0.4
	24"	8' - 2 1/2"	3' - 9 1/2"	4' - 10"	5' - 7"	164	1.3	3' - 7"	50	0.5
	27"	9' - 1"	4' - 1"	5' - 4"	6' - 2"	179	1.5	3' - 11"	56	0.6
	30"	9' - 11 1/2"	4' - 4 1/2"	5' - 10"	6' - 8 3/4"	203	1.7	4' - 4"	65	0.8
	33"	10' - 10"	4' - 8"	6' - 4"	7' - 3 3/4"	224	2.0	4' - 8"	71	0.9
	36"	11' - 8 1/4"	4' - 11 1/2"	6' - 10"	7' - 10 3/4"	249	2.2	5' - 1"	81	1.0
	42"	13' - 5 1/4"	5' - 6 1/2"	7' - 10"	9' - 0 1/2"	298	2.8	5' - 10"	97	1.3
	48"	15' - 9"	6' - 1 1/2"	9' - 4"	10' - 9 1/4"	360	3.8	6' - 7"	117	1.7
	54"	17' - 5 3/4"	6' - 8 1/2"	10' - 4"	11' - 11 1/4"	427	4.5	7' - 6"	151	2.1
	60"	19' - 2 3/4"	7' - 3 1/2"	11' - 4"	13' - 1"	481	5.3	8' - 3"	174	2.5
	66"	20' - 11 1/2"	7' - 10 1/2"	12' - 4"	14' - 3"	544	6.2	8' - 9"	194	2.9
	72"	22' - 8 1/2"	8' - 5 1/2"	13' - 4"	15' - 4 3/4"	601	7.1	9' - 4"	213	3.3
3:1	12"	6' - 3"	2' - 6"	4' - 3"	4' - 11"	118	0.8	1' - 9"	22	0.2
	15"	7' - 5"	2' - 9 1/2"	5' - 0"	5' - 9 1/4"	137	1.1	2' - 2"	28	0.3
	18"	8' - 6 3/4"	3' - 1"	5' - 9"	6' - 7 3/4"	170	1.3	2' - 8"	37	0.5
	21"	9' - 8 3/4"	3' - 4 1/2"	6' - 6"	7' - 6"	195	1.6	3' - 1"	48	0.6
	24"	11' - 0"	3' - 9 1/2"	7' - 3"	8' - 4 1/2"	227	2.0	3' - 7"	58	0.7
	27"	12' - 2"	4' - 1"	8' - 0"	9' - 2 3/4"	251	2.3	3' - 11"	67	0.8
	30"	13' - 4"	4' - 4 1/2"	8' - 9"	10' - 1 1/4"	293	2.7	4' - 4"	77	1.0
	33"	14' - 5 3/4"	4' - 8"	9' - 6"	10' - 11 3/4"	318	3.1	4' - 8"	84	1.2
	36"	15' - 7 3/4"	4' - 11 1/2"	10' - 3"	11' - 10"	351	3.5	5' - 1"	96	1.4
	42"	17' - 11 1/2"	5' - 6 1/2"	11' - 9"	13' - 6 3/4"	432	4.5	5' - 10"	119	1.7
	48"	21' - 1 3/4"	6' - 1 1/2"	14' - 0"	16' - 2"	537	6.1	6' - 7"	146	2.3
	54"	23' - 5 1/2"	6' - 8 1/2"	15' - 6"	17' - 10 3/4"	630	7.3	7' - 6"	186	2.9
	60"	25' - 9 1/4"	7' - 3 1/2"	17' - 0"	19' - 7 1/2"	719	8.7	8' - 3"	219	3.4
	66"	28' - 1"	7' - 10 1/2"	18' - 6"	21' - 4 1/4"	811	10.1	8' - 9"	242	3.9
	72"	30' - 4 3/4"	8' - 5 1/2"	20' - 0"	23' - 1 1/4"	924	11.7	9' - 4"	272	4.4
4:1	12"	7' - 10 3/4"	2' - 6"	5' - 8"	6' - 6 1/2"	148	1.1	1' - 9"	24	0.3
	15"	9' - 4"	2' - 9 1/2"	6' - 8"	7' - 8 1/2"	181	1.5	2' - 2"	32	0.4
	18"	10' - 9 1/2"	3' - 1"	7' - 8"	8' - 10 1/4"	221	1.9	2' - 8"	42	0.5
	21"	12' - 2 3/4"	3' - 4 1/2"	8' - 8"	10' - 0"	260	2.3	3' - 1"	57	0.7
	24"	13' - 9 1/2"	3' - 9 1/2"	9' - 8"	11' - 2"	301	2.8	3' - 7"	67	0.9
	27"	15' - 3"	4' - 1"	10' - 8"	12' - 3 3/4"	334	3.3	3' - 11"	77	1.0
	30"	16' - 8 1/4"	4' - 4 1/2"	11' - 8"	13' - 5 3/4"	385	3.8	4' - 4"	89	1.3
	33"	18' - 1 3/4"	4' - 8"	12' - 8"	14' - 7 1/2"	425	4.5	4' - 8"	101	1.4
	36"	19' - 7"	4' - 11 1/2"	13' - 8"	15' - 9 1/4"	472	5.1	5' - 1"	115	1.7
	42"	22' - 5 3/4"	5' - 6 1/2"	15' - 8"	18' - 1"	583	6.5	5' - 10"	141	2.1
	48"	26' - 6 1/4"	6' - 1 1/2"	18' - 8"	21' - 6 3/4"	730	8.9	6' - 7"	175	2.8
	54"	29' - 5"	6' - 8 1/2"	20' - 8"	23' - 10 1/4"	875	10.7	7' - 6"	226	3.6
	60"	32' - 3 3/4"	7' - 3 1/2"	22' - 8"	26' - 2"	996	12.7	8' - 3"	264	4.3
	66"	35' - 2 1/2"	7' - 10 1/2"	24' - 8"	28' - 5 3/4"	1,140	14.9	8' - 9"	300	4.9
	72"	38' - 1 1/4"	8' - 5 1/2"	26' - 8"	30' - 9 1/2"	1,297	17.3	9' - 4"	334	5.6
6:1	12"	11' - 2"	2' - 6"	8' - 6"	9' - 9 3/4"	224	1.9	1' - 9"	28	0.4
	15"	13' - 2 1/4"	2' - 9 1/2"	10' - 0"	11' - 6 1/2"	268	2.5	2' - 2"	37	0.5
	18"	15' - 2 1/2"	3' - 1"	11' - 6"	13' - 3 1/4"	330	3.2	2' - 8"	50	0.7
	21"	17' - 2 3/4"	3' - 4 1/2"	13' - 0"	15' - 0 1/4"	387	3.9	3' - 1"	69	0.9
	24"	19' - 4 1/2"	3' - 9 1/2"	14' - 6"	16' - 9"	453	4.8	3' - 7"	80	1.2
	27"	21' - 4 3/4"	4' - 1"	16' - 0"	18' - 5 3/4"	512	5.7	3' - 11"	96	1.4
	30"	23' - 5 1/4"	4' - 4 1/2"	17' - 6"	20' - 2 1/2"	593	6.7	4' - 4"	110	1.7
	33"	25' - 5 1/2"	4' - 8"	19' - 0"	21' - 11 1/4"	675	7.8	4' - 8"	127	2.0
	36"	27' - 5 3/4"	4' - 11 1/2"	20' - 6"	23' - 8"	735	9.0	5' - 1"	144	2.3
	42"	31' - 6 1/4"	5' - 6 1/2"	23' - 6"	27' - 1 1/2"	922	11.5	5' - 10"	179	3.0
	48"	37' - 3 1/2"	6' - 1 1/2"	28' - 0"	32' - 4"	1,191	15.9	6' - 7"	231	4.0
	54"	41' - 4 1/4"	6' - 8 1/2"	31' - 0"	35' - 9 1/2"	1,424	19.2	7' - 6"	300	5.0
	60"	45' - 4 3/4"	7' - 3 1/2"	34' - 0"	39' - 3"	1,631	22.9	8' - 3"	353	6.0

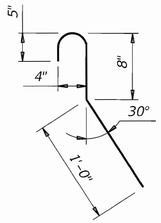


ELEVATION

(Showing dimensions.)



BARS V



BARS CL

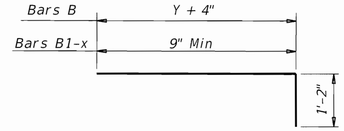
(Length = 2'-5")

TABLE OF (5) REINFORCING STEEL

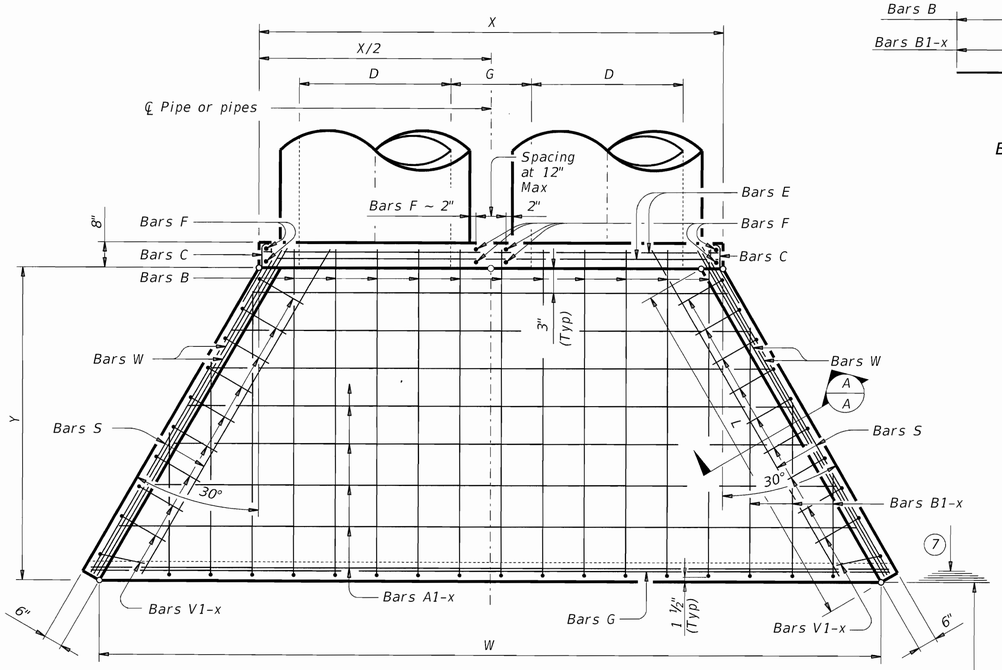
Bar	Size	Spa	No.
A	#4	1' - 0"	~
B	#3	1' - 6"	~
C	#4	1' - 0"	~
D	#3	1' - 0"	~
E	#5	~	4
F	#5	~	~
G	#3	~	2
S	#4	~	6
V	#4	1' - 0"	~
W	#5	~	4

TABLE OF CONSTANT DIMENSIONS

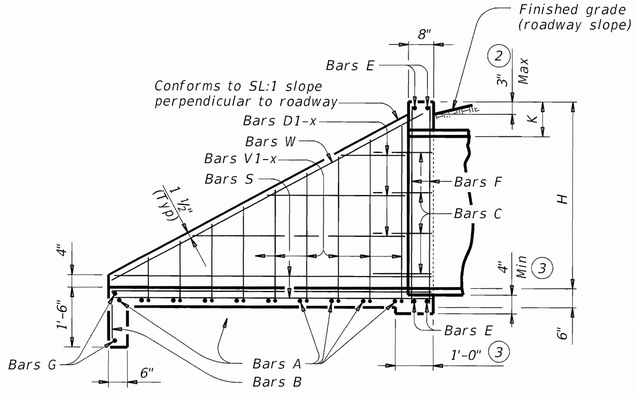
Dia of Pipe (D)	G	K (4)	H
12"	0' - 9"	1' - 0"	2' - 0"
15"	0' - 11"	1' - 0"	2' - 3"
18"	1' - 2"	1' - 0"	2' - 6"
21"	1' - 4"	1' - 0"	2' - 9"
24"	1' - 7"	1' - 0"	3' - 0"
27"	1' - 8"	1' - 0"	3' - 3"
30"	1' - 10"	1' - 0"	3' - 6"
33"	1' - 11"	1' - 0"	3' - 9"
36"	2' - 1"	1' - 0"	4' - 0"
42"	2' - 4"	1' - 0"	4' - 6"
48"	2' - 7"	1' - 3"	5' - 3"
54"	3' - 0"	1' - 3"	5' - 9"
60"	3' - 3"	1' - 3"	6' - 3"
66"	3' - 3"	1' - 3"	6' - 9"
72"	3' - 4"	1' - 3"	7' - 3"



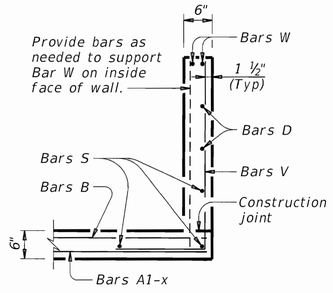
BARS B and B1-x



PLAN



TYPICAL WING ELEVATION



SECTION A-A

(1) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

(2) For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(3) Provide a 1'-0" footing as shown where required to maintain 4" minimum cover for pipes.

(4) Dimensions shown are usual and maximum.

(5) Quantities shown are for one structure end only (one headwall).

(6) Min Length = $6" + 3" \times \left(\frac{12 \times H - 7}{12 \times L} \right)$

Max Length = $12 \times H - 3" \times \left(\frac{12 \times H - 7}{12 \times L} \right) - 1"$

(7) Lengths of wings based on SL:1 slope along this line.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation

Bridge Division Standard

CONCRETE HEADWALLS WITH FLARED WINGS FOR 0° SKEW PIPE CULVERTS

CH-FW-0

FILE: chfw00se-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
	DIST	COUNTY		SHEET NO.