SUNRIDGE PLACE SECOND ADDITION - REPLAT 1
PHASE 1 IMPROVEMENTS

GRADING, PAVING, WATER, STORM & SANITARY SEWER PLANS

PREPARED FOR:

DON PETERSON AND ASSOCIATES REALTY

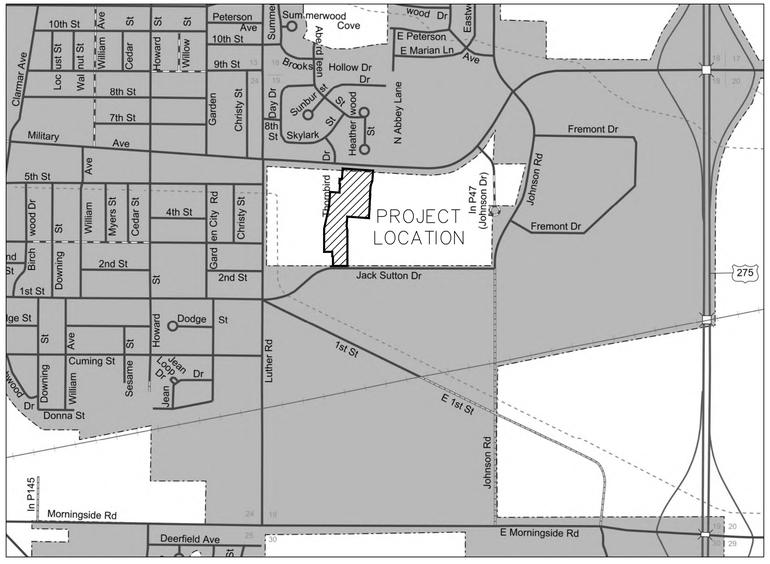
BY:

DODD ENGINEERING & SURVEYING LLC

SunRidge Place

ESTIMATE OF QUANTITIES

#	DESCRIPTION	UNIT	AMOUNT
SANITARY SEWER ITEMS			
101	8" DIA. SDR 26 PVC SANITARY SEWER	LF	1437.96
102	8" DIA. C900 DR18 WATER MAIN	LF	69.37
103	8" SDR 26 TO C900 ENCASED COUPLER	EA	3
104	48" DIA . MANHOLE	VF	65.33
105	8" X 4" SERVICE WYES	EA	39
106	4" SANITARY SEWER SERVICE W/CAPS & END MARKERS	LF	1205.7
107	CONNECT TO EXISTING SYSTEM	EA	3
108	8" DIA. PLUG	EA	2
WATER MAIN ITEMS			
201	CONNECT TO EXISTING SYSTEM	EA	4
202	REMOVE, SALVAGE & REINSTALL HYDRANTS AND REDUCERS	EA	2
203	16" X 8" TAPPING SLEEVE & VALVE	EA	1
204	8" DIA. WATER MAIN, PRESSURE CLASS 350	LF	2150.5
205	6" DIA. WATER MAIN, PRESSURE CLASS 350	LF	63
206	PROVIDE & INSTALL FIRE HYDRANTS (6.5' BURY)	EA	2
207	8" RESILIENT WEDGE VALVE W/BOX	EA	6
208	6" RESILIENT WEDGE VALVE W/BOX	EA	3
209	8" CROSS	EA	1
210	8" TEE	EA	3
211	8" X 6" TEE	EA	3
212	8" X 11.25° BEND	EA	4
213	8" X 22.5° BEND	EA	2
214	6" X 22.5° BEND	EA	1
215	8" X 90° BEND	EA	1
216	8" PLUG	EA	1
217	1" WATER SERVICE TAPS	EA	39
218	1" CURB STOPS W/BOXES	EA	39
219	1" COPPER SERVICE	LF	967.7
STORM SEWER ITEMS			
301	TAP 36" STORM INTO BOX INLET PER NDOT STD PLAN 428-R4	EA	1
302	18" RCP STORM SEWER	LF	492.79
303	24" RCP STORM SEWER	LF	242.01
304	30" RCP STORM SEWER	LF	708.98
305	36" RCP STORM SEWER	LF	234.21
306	30" RCP REMOVABLE PLUG	EA	1
307	12" HDPE OR PVC STORM SEWER	LF	1089
308	12" X 11.25° OR 22.5° BEND	EA	4
309	12" HDPE OR PVC REMOVABLE PLUG	EA	2
310	TYPE D INLET-MANHOLE	EA	3
311	TYPE D INLET	EA	6
312	DOUBLE TYPE D INLET	EA	2
313	30" X 30" GRATE INLET	EA	1
314	24" DIA. NYLOPLAST INLET WITH DROP-IN GRATE	EA	8
315	4' X 4' TYPE 2 BOX MANHOLE	EA	3
316	5' X 5' TYPE 2 BOX MANHOLE	EA	2
GRADING & PAVING ITEMS			
401	6" PC CONCRETE PAVING (INCLUDING SUBGRADE	SY	6062
402	8" PC CONCRETE PAVING (INCLUDING SUBGRADE	SY	148
403	FULL EXPANSION JOINTS	LF	36
404	HALF EXPANSION JOINTS	LF	64
405	CONCRETE HEADERS	LF	56
406	EXCAVATION (ESTABLISHED QUANTITY)	CY	8
407	HAULED-IN FILL (ROADWAY) (ESTABLISHED QUANTITY)	CY	5918
408	TRAFFIC CONTROL	LS	1
REMOVAL ITEMS			
501	SAW CUT FULL DEPTH AND REMOVE 8" PC CONCRETE PAVEMENT	SY	20
501	REMOVE & REPLACE 6" PC CONCRETE BIKE TRAIL	SF	100
SWPPP ITEMS			
601	CONSTRUCTION EXIT	EA	2
602	INLET FILTERS / INLET PROTECTION	EA	26
603	SEEDING, TYPE B (NDOT)	AC	1.6
604	MULCH (NDOT)	TONS	3.2
605	SILT FENCE	LF	218
606	OTHER SWPPP ITEMS (TEMPORARY SEEDING, REMOVE BMP'S, CONCRETE PIT, ETC.)	LS	1



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NOTE: UTILITY LOCATIONS ARE INCOMPLETE AND APPROXIMATE AND MAY NOT BE RELIED ON FOR CONSTRUCTION. NOTIFY DIGGERS HOTLINE (1-800-331-5666) 24 HOURS PRIOR TO ANY CONSTRUCTION. DODD ENGINEERING & SURVEYING IS NOT RESPONSIBLE FOR ANY DAMAGE TO ANY UNDERGROUND UTILITY OR STRUCTURE.

CALL COVERS ALL 1-800-331-5666 UTILITIES COORDINATING COMMITTEE

REGISTERED PROFESSIONAL ENGINEER
STEPHEN W. DODD
E-6508
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08/22/2022

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COVER SHEET

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

LEGEND

- SUBDIVISION BOUNDARY
- CENTERLINE
- UTILITY & DRAINAGE EASEMENT UNLESS OTHERWISE NOTED
- C1 — CURVE NUMBER
- 1 — BLOCK NUMBER

CURVE TABLE

#	RADIUS	ARC LEN	CH LEN	CH BEARING	DELTA
C1	75.00'	118.04'	106.23'	N47°19'13"W	90°10'21"
C2	25.00'	39.35'	35.41'	S47°19'13"E	90°10'21"
C3	80.00'	131.16'	116.96'	S44°44'04"W	93°56'12"
C4	30.00'	49.19'	43.86'	S44°44'04"W	93°56'12"
C5	885.00'	131.76'	131.63'	S5°58'04"W	8°31'48"
C6	935.00'	86.08'	86.05'	S7°35'47"W	5°16'29"
C7	350.00'	77.21'	77.05'	S3°54'47"W	12°38'22"
C8	300.00'	25.63'	25.62'	S0°00'13"W	4°53'43"
C9	55.00'	233.23'	93.81'	S60°45'07"E	242°57'52"
C10	55.00'	60.44'	57.45'	S29°14'53"W	62°57'52"

SUNRIDGE CONTROL POINTS

POINTNO.	NORTHING(Y)	EASTING(X)	ELEV(Z)	DESCRIPTION	BENCH MARK?
A113	601333.3100	2612330.5299	1175.23	CP HOLE-MIDPT-E-HDWL-JOHNSON-CULVERT	Y
A115	602473.3240	2612258.0874	1174.94	CP 1/2IN-REBAR-IN-CONC-SW-COR-FANNING	Y
A116	602966.0710	2612123.5626	1175.44	CP X-N-END-RCP-UNDER-TRAIL@JOHNSON-DR	Y
A117	602838.3130	2610025.6310	1178.73	CP X-NEDGE-TRAIL-BUMP-OUT@PEDS	N
A118	602553.7724	2609471.7052	1179.59	CP X-NW-COR-5TH&LUTHER-CULVERT	Y
A119	601315.7749	2609605.2854	1178.03	CP X-NE-COR-SUTTON-CULVERT	Y
A125	601734.7472	2612199.1192	1176.12	REF X-N-RIM-E-STM-MH-ON-N-SIDE-SUTTON	Y

CONTROL POINT MAP

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RELELVANT PORTIONS OF FINAL PLAT, CONTROL POINTS & BENCHMARKS

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
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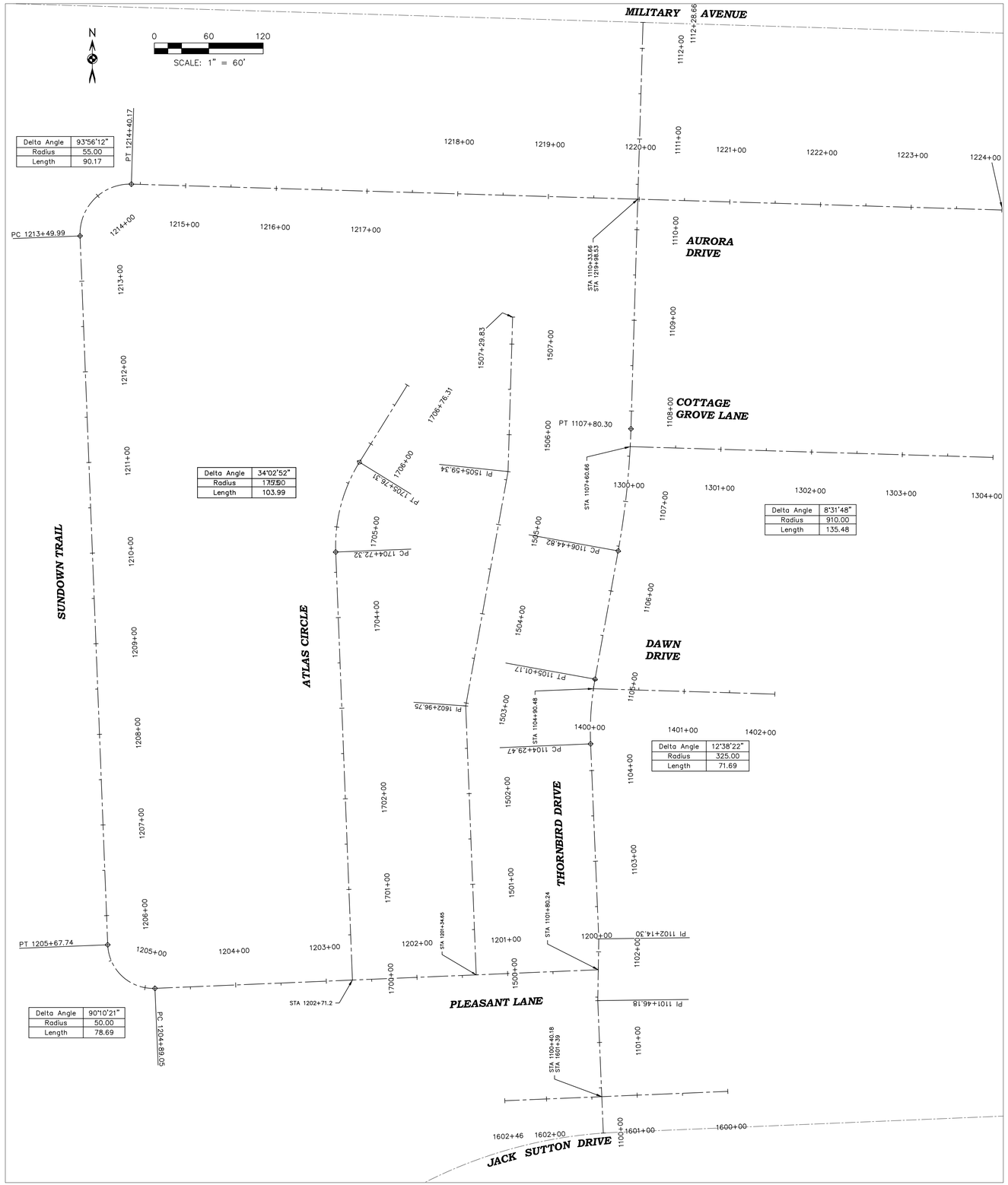

THORNBIRD DRIVE CENTERLINE DATA

Station	Northing	Easting	Bearing	Distance
1100+00	601627.26	2610403.6		
			N 02°24'24" W	146.18'
1101+46.18	601773.31	2610397.47	Deflection: 03°21'59" Right	
			N 00°57'36" E	68.12'
1102+14.3	601841.42	2610398.61	Deflection: 03°21'59" Left	
			N 02°24'24" W	215.18'
1104+29.47	602056.4	2610389.57	PC	
Radius:	602070.05	2610714.29	Radius Length: 325'	
PI:	602092.37	2610388.06	1104+65.47 Tangent: 35.99'	
Arc Len:	71.69'	Delta: 12°38'22" Right	Degree: 17°37'46"	
Chord Len:	71.55'	Chord Brg: N 03°54'47" E		
Radial–In:	N 87°35'36" E	Radial–Out: S 79°46'02" E		
Tangential–In, Tangential–Out				
1105+01.17	602127.79	2610394.46	PT	
			N 10°13'58" E	143.66'
1106+44.82	602269.16	2610419.98	PC	
Radius:	602430.82	2609524.45	Radius Length: 910'	
PI:	602335.94	2610432.03	1107+12.69 Tangent: 67.86'	
Arc Len:	135.48'	Delta: 08°31'48" Left	Degree: 06°17'46"	
Chord Len:	135.35'	Chord Brg: N 05°58'04" E		
Radial–In:	N 79°46'02" W	Radial–Out: N 88°17'50" W		
Tangential–In, Tangential–Out				
1107+80.3	602403.78	2610434.05	PT	
			N 01°42'10" E	253.36'
1110+33.66	602657.03	2610441.58	Deflection: 00°00'00" Right	
			N 01°42'10" E	195'
1112+28.66	602851.94	2610447.37		
Total Length: 1228.66'				

ATLAS CIRCLE CENTERLINE DATA

Station	Northing	Easting	Bearing	Distance
1700+00	601795.98	2610127.08		
			N 02°14'03" W	472.32'
1704+72.32	602267.94	2610108.67	PC	
Radius:	602274.76	2610283.53	Radius Length: 175'	
PI:	602321.48	2610106.58	1705+25.9 Tangent: 53.58'	
Arc Len:	103.99'	Delta: 34°02'52" Right	Degree: 32°44'26"	
Chord Len:	102.47'	Chord Brg: N 14°47'23" E		
Radial–In:	N 87°45'57" E	Radial–Out: S 58°11'11" E		
Tangential–In, Tangential–Out				
1705+76.31	602367.01	2610134.82	PT	
			N 31°48'49" E	100'
1706+76.31	602451.99	2610187.54		
Total Length: 676.31'				

PLEASANT–SUNDOWN–AURORA CENTERLINE DATA

Station	Northing	Easting	Bearing	Distance
1200+00	601807.37	2610398.04		
			S 87°35'36" W	489.05'
1204+89.05	601786.83	2609909.42	PC	
Radius:	601836.79	2609907.32	Radius Length: 50'	
PI:	601784.72	2609859.31	1205+39.2 Tangent: 50.15'	
Arc Len:	78.69'	Delta: 90°10'21" Right	Degree: 114°35'30"	
Chord Len:	70.82'	Chord Brg: N 47°19'13" W		
Radial–In:	N 02°24'24" W	Radial–Out: N 87°45'57" E		
Tangential–In, Tangential–Out				
1205+67.74	601834.84	2609857.36	PT	
			N 02°14'03" W	782.25'
1213+49.99	602616.5	2609826.86	PC	
Radius:	602618.64	2609881.82	Radius Length: 55'	
PI:	602675.37	2609824.57	1214+08.91 Tangent: 58.92'	
Arc Len:	90.17'	Delta: 93°56'12" Right	Degree: 104°10'27"	
Chord Len:	80.41'	Chord Brg: N 44°44'04" E		
Radial–In:	N 87°45'57" E	Radial–Out: S 01°42'10" W		
Tangential–In, Tangential–Out				
1214+40.17	602673.62	2609883.46	PT	
			S 88°17'50" E	959.83'
1224+00	602645.1	2610842.87		
Total Length: 2400'				

COTTAGE GROVE LANE CENTERLINE DATA

Station	Northing	Easting	Bearing	Distance
1300+00	602384.15	2610433.25		
			S 88°17'50" E	400'
1304+00	602372.27	2610833.08		
Total Length: 400'				

DAWN DRIVE CENTERLINE DATA

Station	Northing	Easting	Bearing	Distance
1400+00	602117.24	2610392.73		
			S 88°17'50" E	200'
1402+00	602111.3	2610592.64		
Total Length: 200'				

THORNBIRD BACK–LINE WEST CENTERLINE DATA

Station	Northing	Easting	Bearing	Distance
1500+00	601801.71	2610263.51		
			N 02°14'03" W	296.75'
1502+96.75	602098.23	2610251.94	Deflection: 12°28'01" Right	
			N 10°13'58" E	262.6'
1505+59.34	602356.65	2610298.59	Deflection: 08°31'48" Left	
			N 01°42'10" E	170.49'
1507+29.83	602527.07	2610303.65		
Total Length: 729.83'				

SUTTON NORTH R/W LINE CENTERLINE DATA

Station	Northing	Easting	Bearing	Distance
1600+00	601673.24	2610540.79		
			S 87°35'36" W	246'
1602+46	601662.91	2610295.01		
Total Length: 246'				

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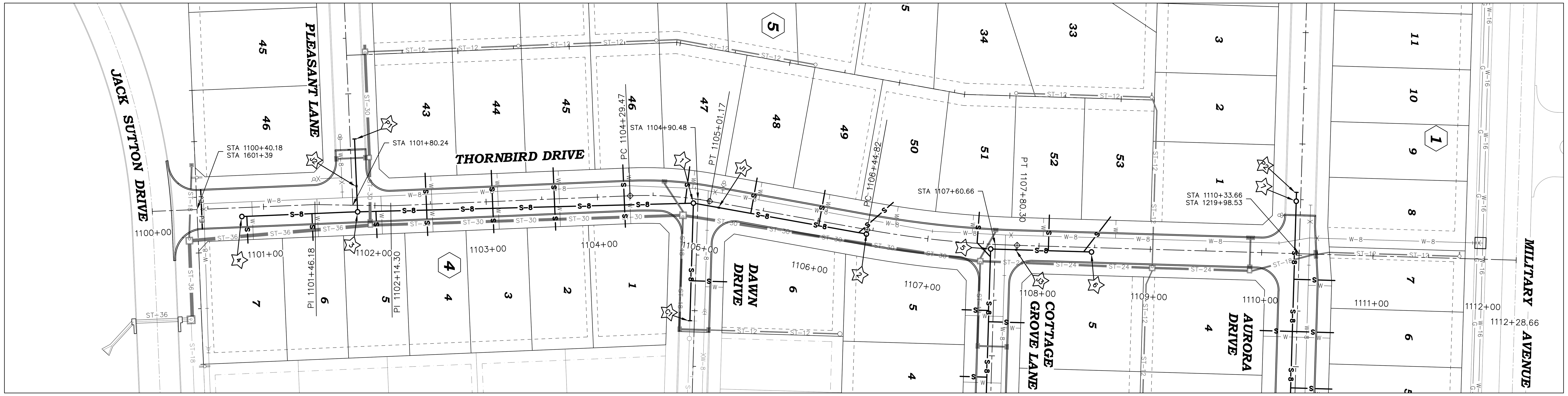
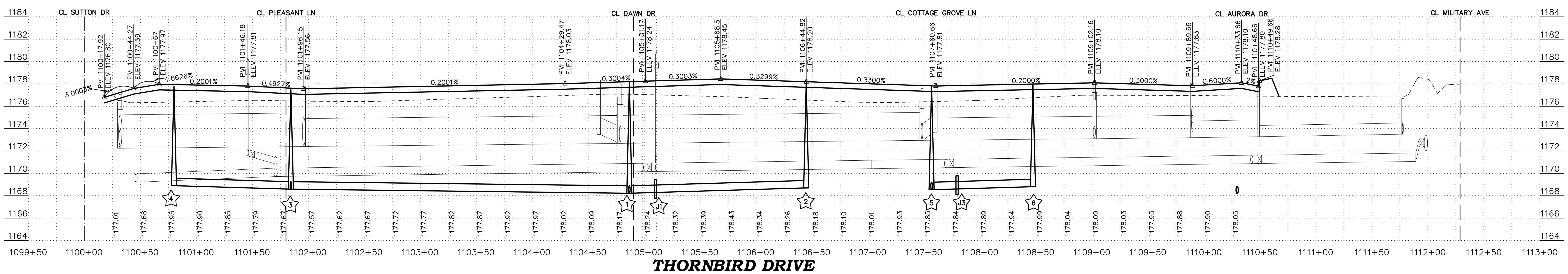
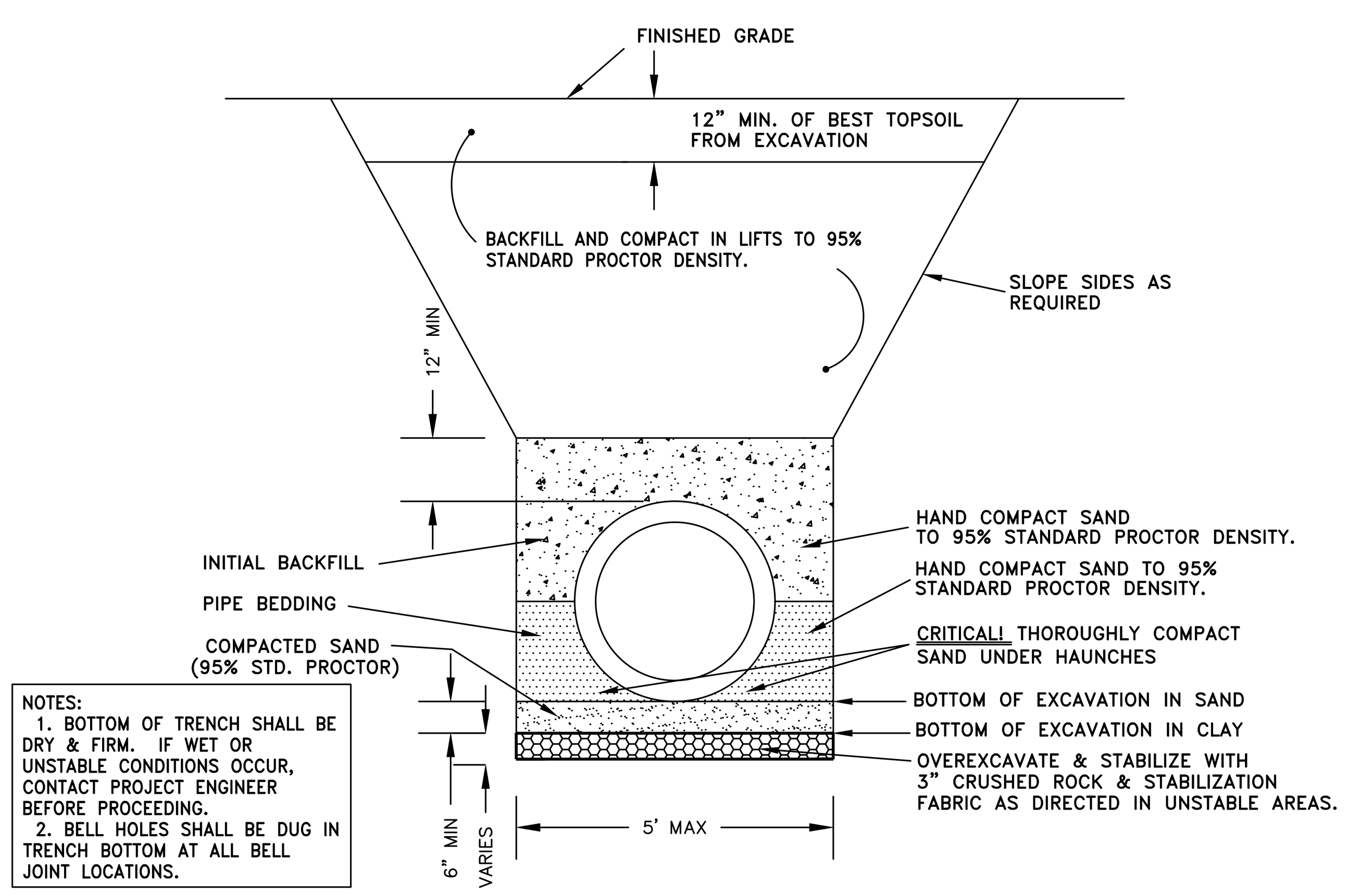
CENTERLINE DATA

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA







TYPICAL TRENCH DETAIL

APPLIES TO ALL WATER MAINS, SANITARY AND STORM SEWERS AND SERVICE LINES.

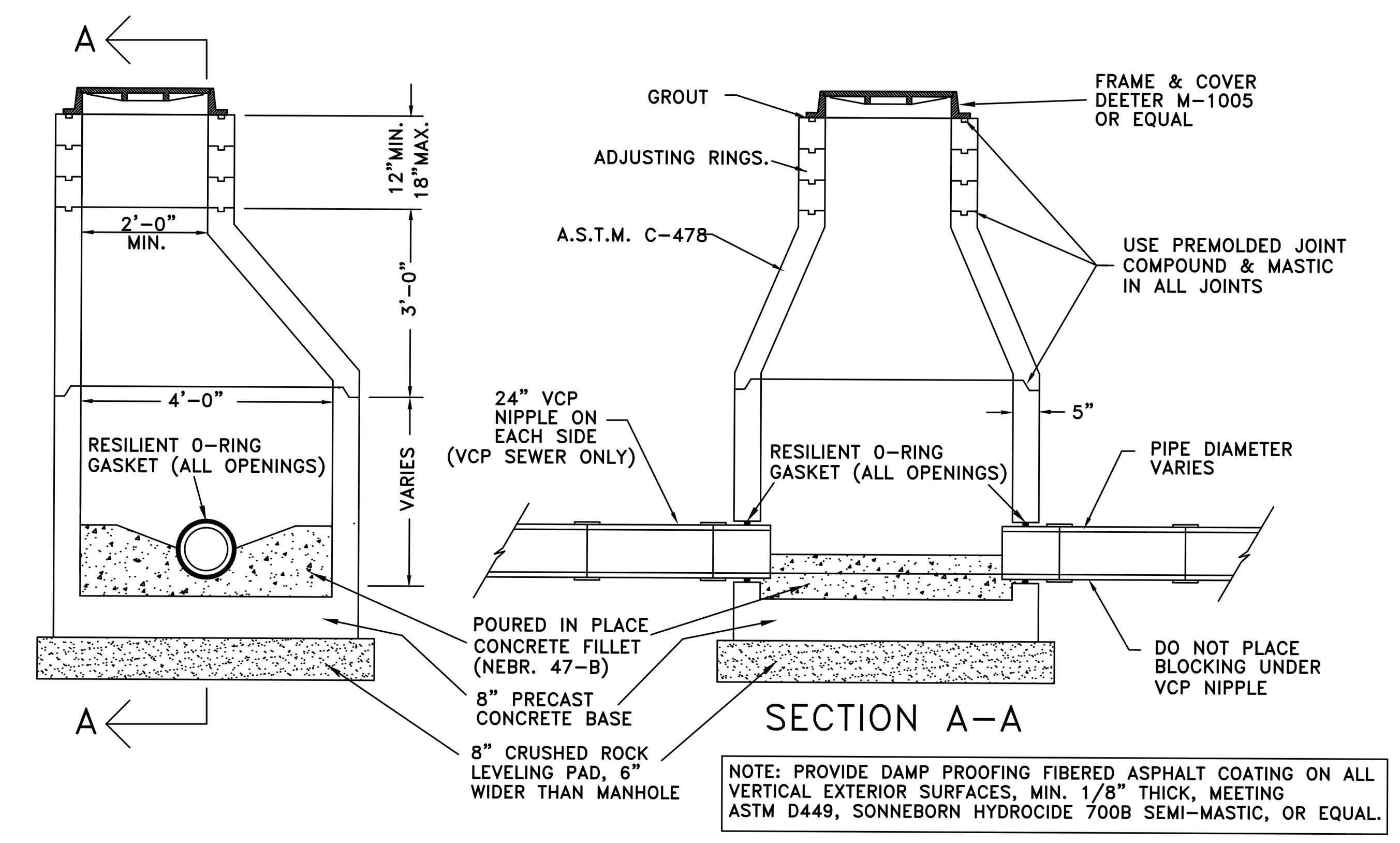
NOT TO SCALE

7

SANITARY MANHOLE/ STRUCTURE TABULATION						
NO.	LOCATION STATION	LOCATION OFFSET	RIM ELEV	FLOWLINES OUT	FLOWLINES IN	DEPTH
C1	1401+09.15	R-4		1167.96	1167.96	
1	1104+86.87	R-4	1178.12	1168.22	1168.22	9.90
J1	1105+10.30	R-4		1168.29	1168.29	
2	1106+44.82	R-4	1178.12	1168.70		9.42
3	1101+80.24	R-5.88	1177.50	1168.59	1168.59	8.91
4	1100+80.18	R-8	1177.78	1168.90		8.88
J2	1100+42.17	R-4		1168.61	1168.61	
P1	1200+59.33	R-4		1168.66		
C2	1303+17.46	R-4		1167.91	1167.91	
5	1107+56.77	R-4.31	1177.78	1168.54	1168.54	9.24
J3	1107+79.66	R-4		1168.61	1168.61	
6	1108+47.27	L-4'	1177.91	1168.81		9.10
C3	1223+12.60	R-4		1167.53	1167.53	
7	1219+51.53	R-4	1178.12	1168.25	1168.25	9.87
P2	1219+43.53	R-4		1168.26		
				TOTALS		65.33

SANITARY SEWER LINE TABULATION						
FROM	TO	LENGTH 8" SAN	LENGTH 8" DR18	SLOPE	8" X 4" WYES	4" SERVICES
C1	1	105.56		0.25%	1	32.00
1	J1		23.24	0.30%		
J1	2	134.52		0.30%	3	105.49
1	3	301.62		0.12%	10	280.72
3	4	104.00		0.30%	2	48.00
3	J2		23.13	0.12%		
J2	P1	42.33		0.12%		
C2	5	313.25		0.20%	10	292.81
5	J3		23.00	0.30%		
J3	6	67.61		0.30%	2	71.53
C3	7	361.07		0.20%	11	375.14
7	P2	8.00		0.15%		
		1437.96	69.37		39	1205.7

NOTES:
1. CONNECTION LOCATIONS AND ELEVATIONS ARE FROM PREVIOUS PLANS. VERIFY AND MAKE MINOR ADJUSTMENTS IF NECESSARY.
2. FLOWLINES AND DISTANCES ARE TO CENTER OF MANHOLES.



STANDARD SANITARY SEWER MANHOLE DETAIL

NOT TO SCALE

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SANITARY SEWER PLAN & PROFILE
THORNBIRD DRIVE

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
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FREMONT, NEBRASKA

SHEET 4

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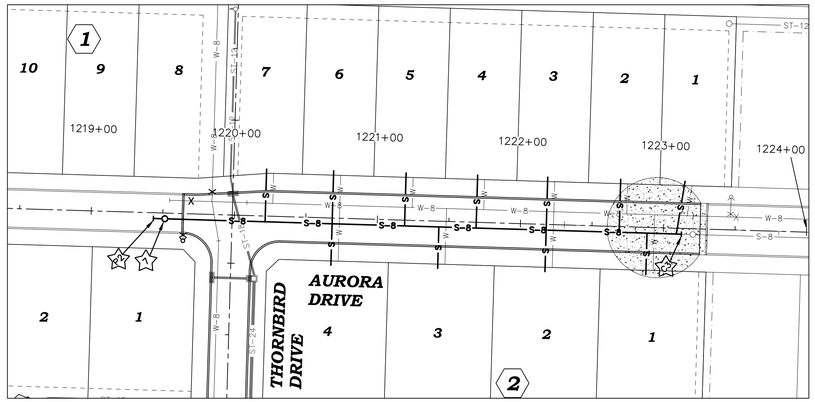

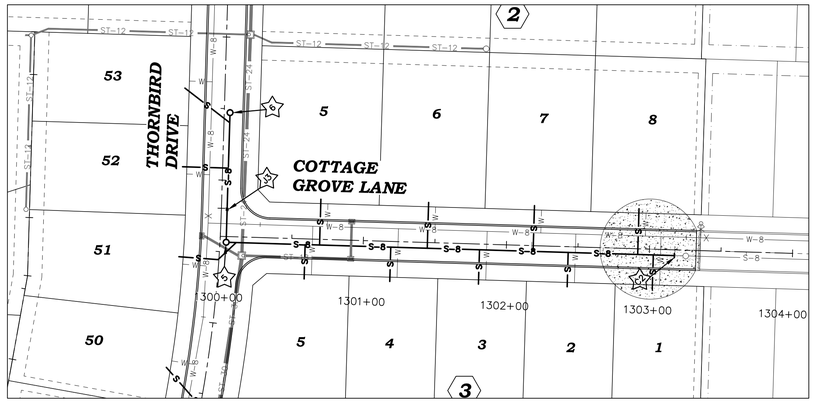

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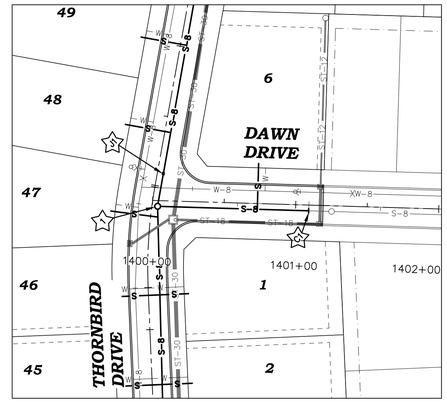
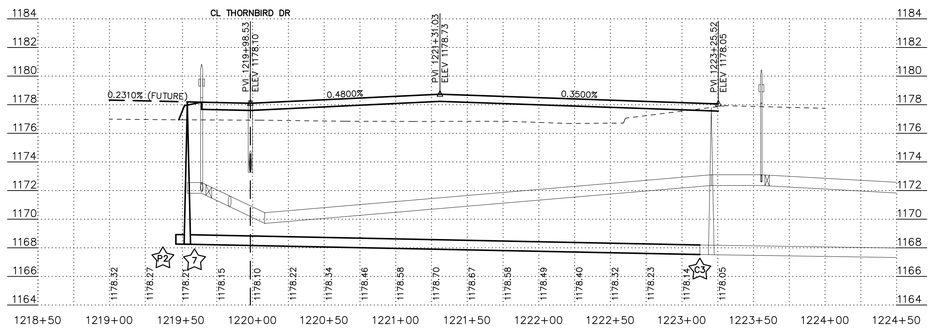
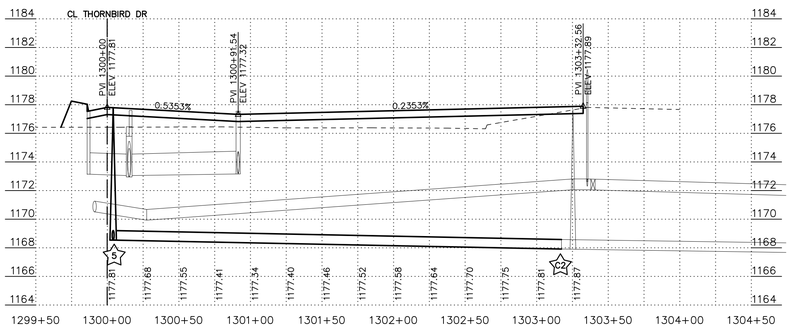
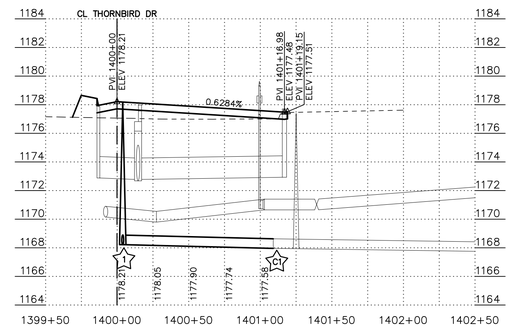




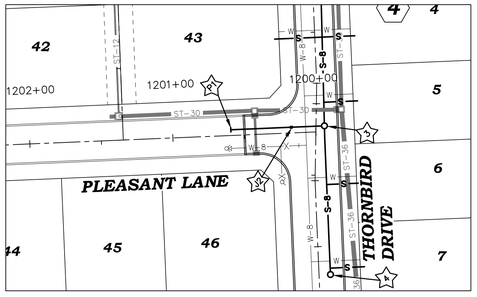
AURORA DRIVE

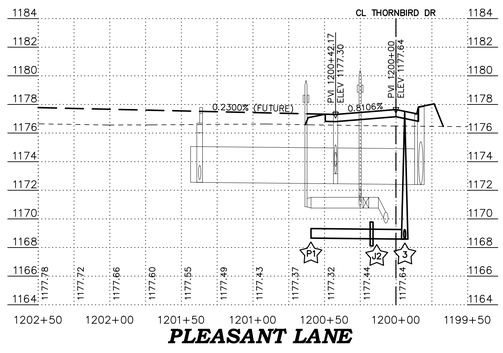


COTTAGE GROVE LANE



DAWN DRIVE

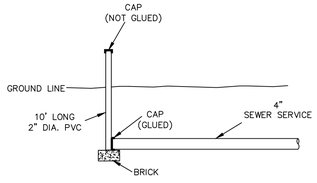




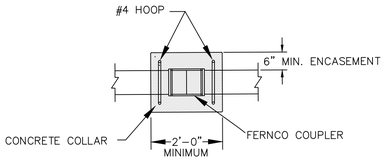
PLEASANT LANE

NO.	SANITARY MANHOLE/ STRUCTURE TABULATION						FROM	TO	SANITARY SEWER LINE TABULATION				
	LOCATION		RIM	FLOWLINES		DEPTH			LENGTH	LENGTH	SLOPE	8" X 4"	4"
	STATION	OFFSET	ELEV	OUT	IN				8" SAN	8" DR18		WYES	SERVICES
C1	1401+09.15	R-4		1167.96	1167.96								
1	1104+86.87	R-4	1178.12	1168.22	1168.22	9.90	C1	1	105.56		0.25%	1	32.00
J1	1105+10.30	R-4		1168.29	1168.29		1	J1		23.24	0.30%		
2	1106+44.82	R-4	1178.12	1168.70		9.42	J1	2	134.52		0.30%	3	105.49
3	1101+80.24	R-5.88	1177.50	1168.59	1168.59	8.91	1	3	301.62		0.12%	10	280.72
4	1100+80.18	R-8	1177.78	1168.90		8.88	3	4	104.00		0.30%	2	48.00
J2	1100+42.17	R-4		1168.61	1168.61		3	J2		23.13	0.12%		
P1	1200+59.33	R-4		1168.66			J2	P1	42.33		0.12%		
C2	1303+17.46	R-4		1167.91	1167.91								
5	1107+56.77	R-4.31	1177.78	1168.54	1168.54	9.24	C2	5	313.25		0.20%	10	292.81
J3	1107+79.66	R-4		1168.61	1168.61		5	J3		23.00	0.30%		
6	1108+47.27	L-4'	1177.91	1168.81		9.10	J3	6	67.61		0.30%	2	71.53
C3	1223+12.60	R-4		1167.53	1167.53								
7	1219+51.53	R-4	1178.12	1168.25	1168.25	9.87	C3	7	361.07		0.20%	11	375.14
P2	1219+43.53	R-4		1168.26			7	P2	8.00		0.15%		
				TOTALS		65.33			1437.96	69.37		39	1205.7

NOTES:
1. CONNECTION LOCATIONS AND ELEVATIONS ARE FROM PREVIOUS PLANS. VERIFY AND MAKE MINOR ADJUSTMENTS IF NECESSARY.
2. FLOWLINES AND DISTANCES ARE TO CENTER OF MANHOLES.



TYPICAL END OF SEWER SERVICE
(FOR DEVELOPED LOTS)



ENCASED COUPLER DETAIL
NOT TO SCALE

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REGISTERED PROFESSIONAL ENGINEER
STEPHEN W. DODD
E-6508
STATE OF NEBRASKA

08/22/2022

SANITARY SEWER PLAN & PROFILE
AURORA DRIVE, COTTAGE GROVE LANE, DAWN DRIVE & PLEASANT LANE

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

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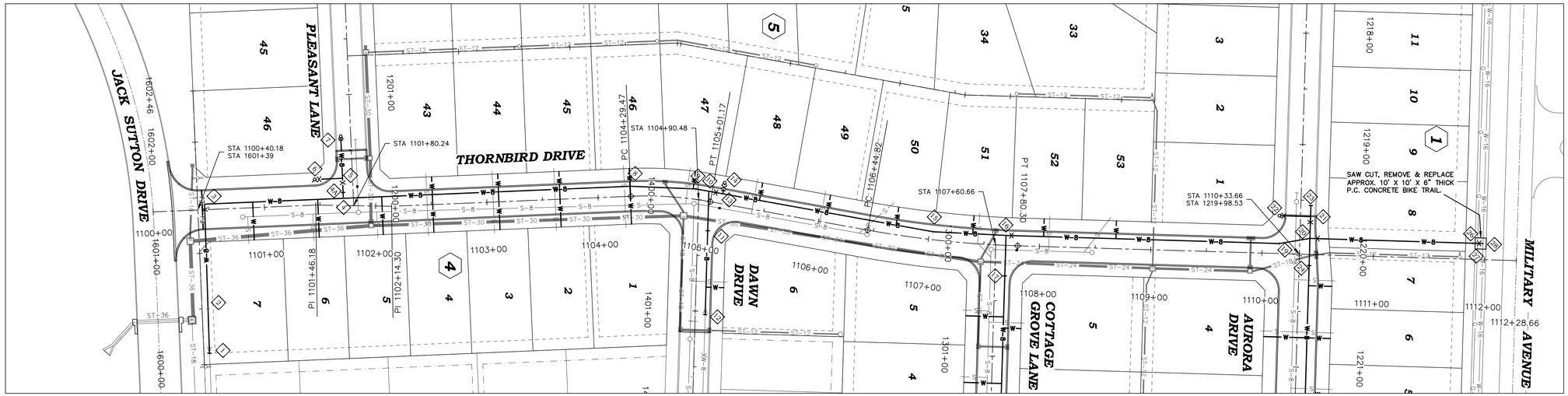
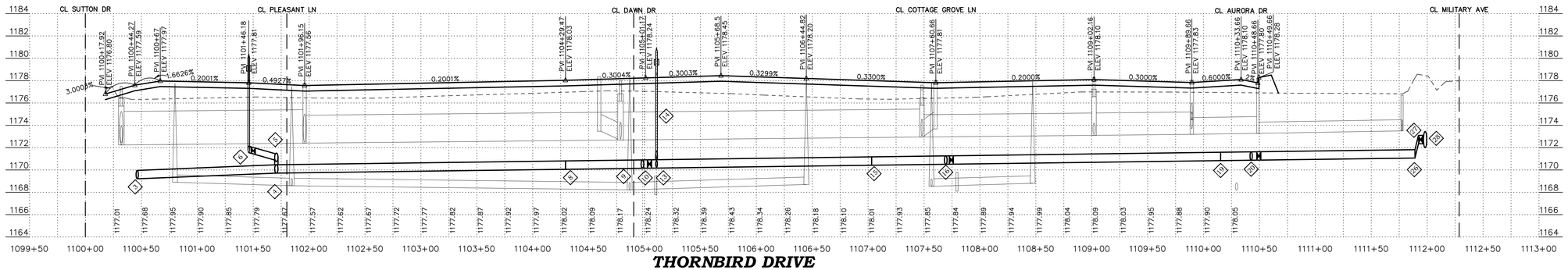




THORNBIRD DRIVE

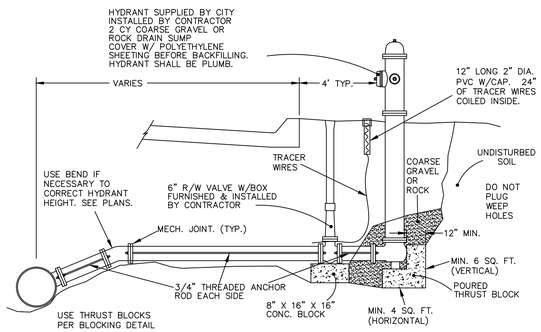
TABULATION OF WATER MAIN FITTINGS & HYDRANTS

#	STATION	OFFSET	TOP OF PIPE ELEV.	REMOVE & REUSE HYDRANT & REDUCER. CONNECT TO EXIST WATER MAIN.	REMOVE PLUG & CONNECT TO EXIST WATER MAIN.	16" X 8" TSV	8" X 11.25° BEND	8" X 22.5° BEND	8" X 90° BEND	6" X 22.5° BEND	8" PLUG	DEFL. JT. =3°	8" CROSS	8" TEE	8" X 6" TEE	8" R/W VALVE	6" R/W VALVE	8" X 6" REDUCER	7.5' BURY HYDRANT	6.5' BURY HYDRANT	1" WATER SERVICE
1	1600+10.00	R-5	1169.93	1																	
2	1600+50.00	R-5.36	1169.77									1									
3	1100+46.39	L-5	1169.96						1							1					
4	1101+70.84	L-6.46	1170.47										1								
4A	1200+12.25	L-9	1171.51			1															
5	1200+25.00	L-9	1171.51											1	1						
6	1200+25.00	L-34	1172.13														1				1
7	1200+59.33	L-9	1171.51															1			1
8	1104+29.47	L-9	1170.81									1									
9	1104+86.87	L-9.32	1170.89									1									
10	1104+98.28	L-9.01	1170.90			1									1		1				
11	1400+27.55	L-9	1170.55									1									
12	1401+02.98	L-9	1171.40	1																	
13	1105+10.89	L-9	1170.92												1						
14	1105+10.89	L-19	1172.67								1							1			1
15	1107+03.28	L-7.14	1171.17									1									
16	1107+69.55	L-8.94	1171.26												1		1				
17	1300+27.62	L-9	1170.68									1									
18	1303+25.46	L-9	1172.81		1																
19	1110+15.36	L-9	1171.59				1														
20	1110+42.66	L-14.43	1171.62				1						1			1					
21	1219+64.53	L-9	1172.56												1	1					
22	1219+64.53	R-19	1172.57															1			1
23	1219+54.53	L-9	1172.56								1										
24	1220+0853	L-9	1170.46									1									
25	1223+20.60	L-9	1173.11		1																
26	1111+89.18	L-14.43	1171.82					1													
27	1111+92.26	L-14.43	1173.10					1													
28	1111+98.26	L-9	1173.10			1															
	TOTALS					1	4	2	1	1	1	7	1	3	3	6	3	1	1	1	3

TABULATION OF WATER MAIN PIPES

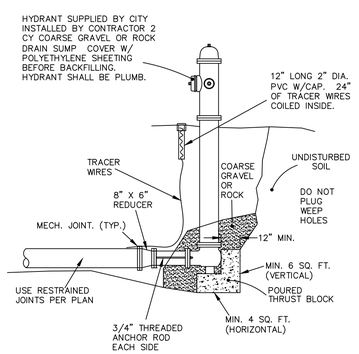
FROM	TO	8" DIP	6" DIP	SLOPE	TAPS	CURB STOPS
1	2	40.00		-0.400%		
3	4	124.79		0.405%	2	2
4A	5	12.75		0.000%		
5	6		25.00	2.816%		
5	7	34.33		0.000%		
4	8	258.18		0.133%	9	9
8	9	58.95		0.133%	1	1
9	10	11.74		0.133%		
10	11	35.48		-1.000%		
11	12	75.44		0.133%	1	1
10	13	12.69		0.133%		
13	14		10.00	VARIES		
13	15	191.89		0.133%	3	3
15	16	65.70		0.133%	1	1
16	17	36.41		-1.600%		
17	18	297.71		0.716%	9	9
19	19	245.70		0.133%	2	2
19	20	27.83		0.133%		
20	21	19.57		4.780%		
21	22		28.00	0.357%		
21	23	10.00		0.000%		
20	24	24.43		-4.780%		
24	25	312.07		0.849%	11	11
20	26	146.52		0.133%		
26	27	3.08		41.421%		
26	28	6.00		0.000%		
		2150.50	63.00		39	39

NOTES:
1. VERIFY LOCATION & ELEVATION OF CONNECTIONS TO EXISTING WATER MAINS. MAKE MINOR ADJUSTMENTS IF NECESSARY.
2. REUSE SALVAGED 6.5' BURY AND 7.5' BURY HYDRANTS AND 1 REDUCER.

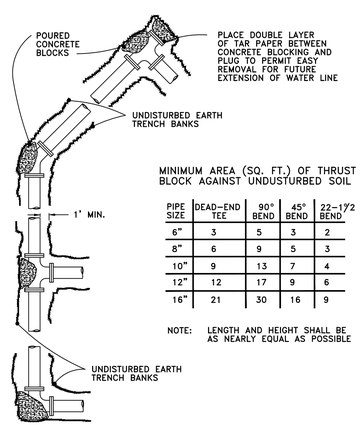


FIRE HYDRANT DETAIL

NOTE: DETAIL ALSO APPLIES WHEN STREET IS LOCATED ON OPPOSITE SIDE OF HYDRANT FROM MAIN.



FLUSHING HYDRANT DETAIL



MINIMUM AREA (SQ. FT.) OF THRUST BLOCK AGAINST UNDUSTURBED SOIL

PIPE SIZE	DEAD-END TEE	90° BEND	45° BEND	22-1/2 BEND
6"	3	5	3	2
8"	6	9	5	3
10"	9	13	7	4
12"	12	17	9	6
16"	21	30	16	9

NOTE: LENGTH AND HEIGHT SHALL BE AS NEARLY EQUAL AS POSSIBLE

BLOCKING DETAIL – WATER MAIN D.I. FITTINGS

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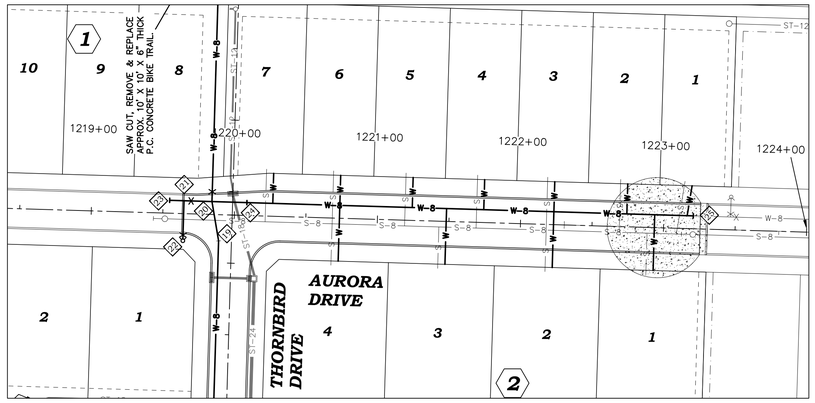
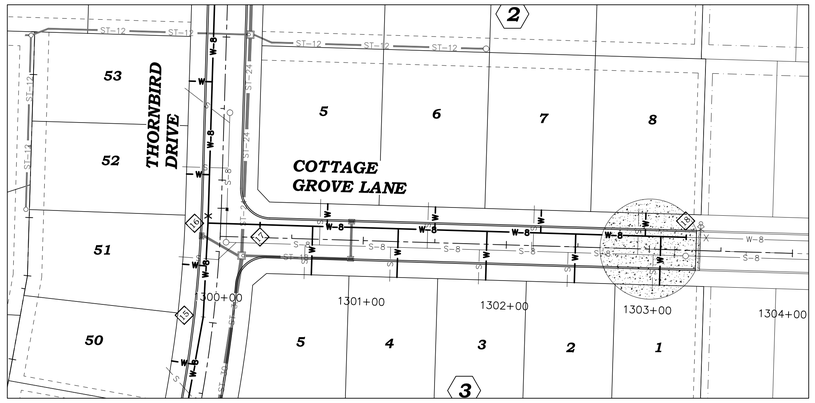
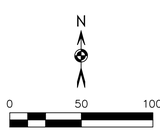
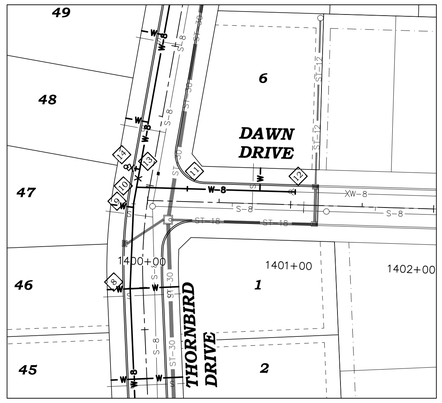
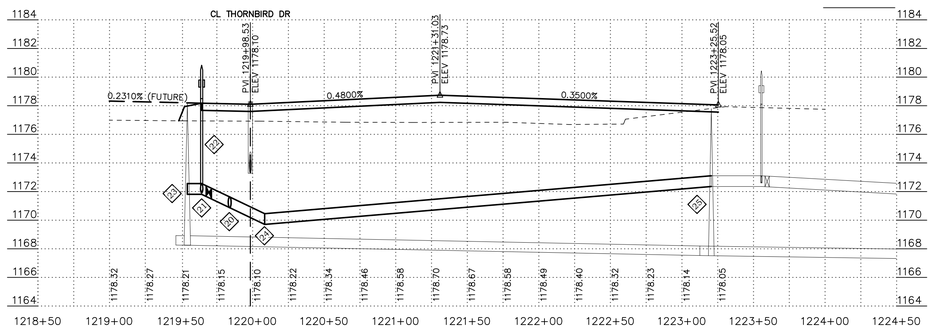


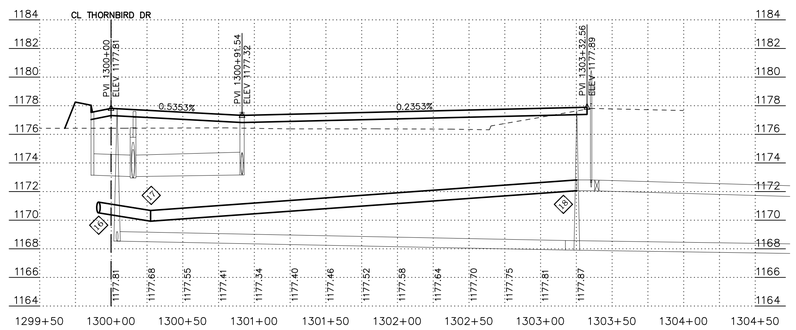




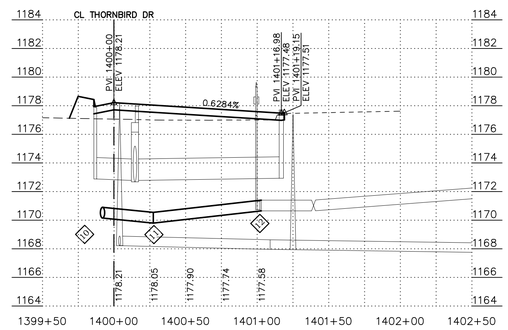




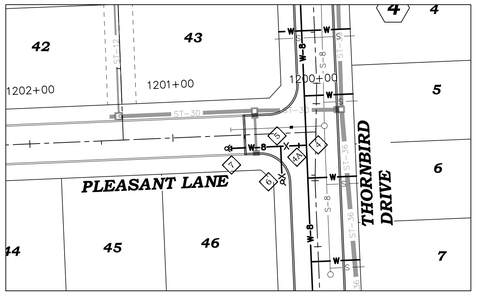
AURORA DRIVE

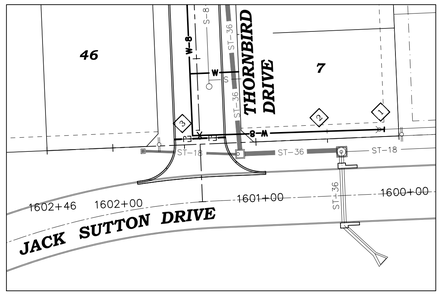


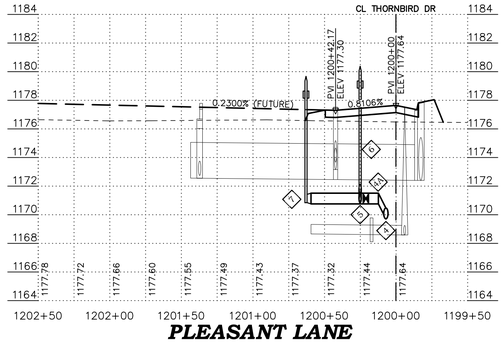
COTTAGE GROVE LANE



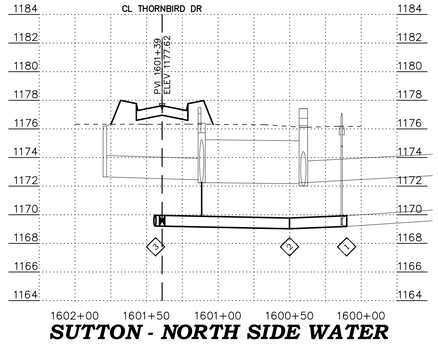
DAWN DRIVE







PLEASANT LANE



SUTTON - NORTH SIDE WATER

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08/22/2022

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#	STATION	OFFSET	TOP OF PIPE ELEV.	REMOVE & REUSE HYDRANT & REDUCER, CONNECT TO EXIST WATER MAIN.	REMOVE PLUG & CONNECT TO EXIST WATER MAIN.	16" X 8" TSV	8" X 11.25° BEND	8" X 22.5° BEND	8" X 90° BEND	6" X 22.5° BEND	8" PLUG	DEFL. PT. <3°	8" CROSS	8" TEE	8" X 6" TEE	8" R/W VALVE	6" R/W VALVE	8" X 6" REDUCER	7.5' BURY HYDRANT	6.5' BURY HYDRANT
1	1600+10.00	R-5	1169.93	1																
2	1600+50.00	R-5.36	1169.77									1								
3	1100+46.39	L-5	1169.96						1						1					
4	1101+70.84	L-6.46	1170.47											1						
4A	1200+12.25	L-9	1171.51				1													
5	1200+25.00	L-9	1171.51												1	1				
6	1200+25.00	L-34	1172.13														1			1
7	1200+59.33	L-9	1171.51															1		1
8	1104+29.47	L-9	1170.81										1							
9	1104+86.87	L-9.32	1170.89										1							
10	1104+98.28	L-9.01	1170.90				1								1	1				
11	1400+27.55	L-9	1170.55										1							
12	1401+02.98	L-9	1171.40	1																
13	1105+10.89	L-9	1170.92												1					
14	1105+10.89	L-19	1172.67								1						1		1	
15	1107+03.28	L-7.14	1171.17										1							
16	1107+69.55	L-8.94	1171.26												1	1				
17	1300+27.62	L-9	1170.68										1							
18	1303+25.46	L-9	1172.81		1															
19	1110+15.36	L-9	1171.59				1													
20	1110+42.66	L-14.43	1171.62				1							1		1				
21	1219+64.53	L-9	1172.56												1	1				
22	1219+64.53	R-19	1172.57														1			1
23	1219+54.53	L-9	1172.56									1								
24	1220+08.53	L-9	1170.46										1							
25	1223+20.60	L-9	1173.11		1															
26	1111+89.18	L-14.43	1171.82					1												
27	1111+92.26	L-14.43	1173.10					1												
28	1111+98.26	L-9	1173.10			1														
		TOTALS				1	4	2	1	1	1	1	7	1	3	3	6	3	1	1	3

TABULATION OF WATER MAIN PIPES

FROM	TO	8" DIP	6" DIP	SLOPE	TAPS	CURB STOPS	1" WATER SERVICE
1	2	40.00		-0.400%			
2	3	94.00		0.200%			
3	4	124.79		0.405%	2	2	68.0
4	4A	5.25		19.890%			
4A	5	12.75		0.000%			
5	6		25.00	2.816%			
5	7	34.33		0.000%			
4	8	258.18		0.133%	9	9	234.0
8	9	58.95		0.133%	1	1	15.9
9	10	11.74		0.133%			
10	11	35.48		-1.000%			
11	12	75.44		1.129%	1	1	16.0
10	13	12.69		0.133%			
13	14		10.00	VARIES			
13	15	191.89		0.133%	3	3	48.3
15	16	65.70		0.133%	1	1	16.3
16	17	36.41		-1.600%			
17	18	297.71		0.716%	9	9	234.0
16	19	245.70		0.133%	2	2	32.0
19	20	27.83		0.133%			
20	21	19.57		4.780%			
21	22		28.00	0.357%			
21	23	10.00		0.000%			
20	24	24.43		-4.780%			
24	25	312.07		0.849%	11	11	303.2
20	26	146.52		0.133%			
26	27	3.08		41.421%			
26	28	6.00		0.000%			
		2150.50	63.00		39	39	967.7

NOTES:
1. VERIFY LOCATION & ELEVATION OF CONNECTIONS TO EXISTING WATER MAINS. MAKE MINOR ADJUSTMENTS IF NECESSARY.
2. REUSE SALVAGED 6.5' BURY AND 7.5' BURY HYDRANTS AND 1 REDUCER.

WATER PLAN & PROFILE
AURORA DRIVE, COTTAGE GROVE LANE, DAWN DRIVE, PLEASANT LANE & SUTTON DRIVE

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
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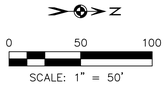
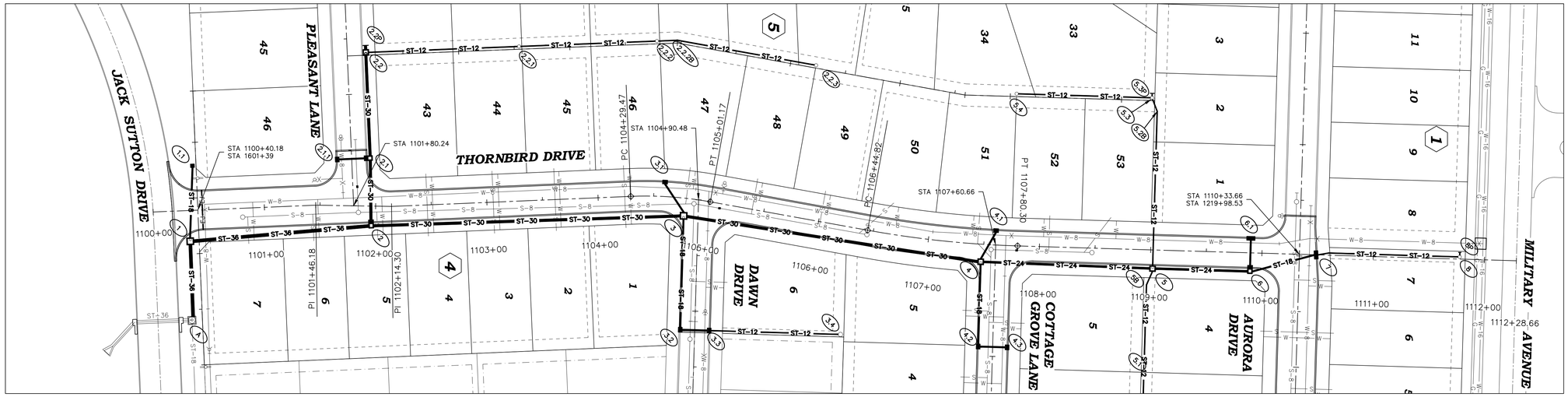
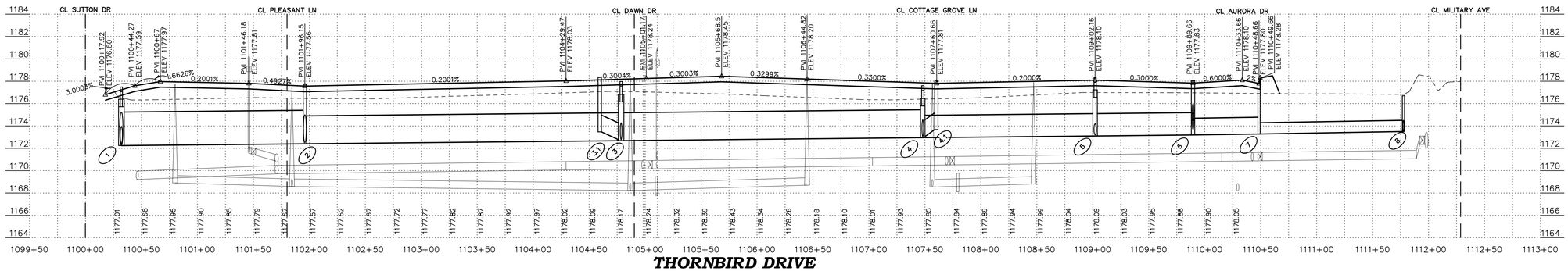
Stephen W. Dodd, P.E. & L.S. Ph. 402-720-5017



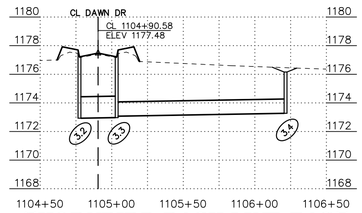




THORNBIRD DRIVE

STORM STRUCTURE TABULATION								STORM SEWER LINE TABULATION					
NO.	DESCRIPTION	LOCATION		RIM OR TOP	FLOWLINES			FROM	TO	SIZE	TYPE	LENGTH	SLOPE
		STATION	OFFSET	OF CURB	OUT	IN	OTHER			IN.		FT.	%
A	TAP 36" STORM INTO EXISTING BOX INLET PER NDOT STD PLAN 428-R4	1100+30.77	R-98.68	1177.41	1172.01	1172.17							
1	BUILD 5'X5' TYPE 2 BOX MANHOLE	1100+32.18	R-27.64	1177.44	1172.24	1172.24	1172.44	A	1	36	RCP	71.05	0.1
1.1	BUILD 30" X 30" GRATE INLET	1100+37.00	L-40.00	1176.20	1172.64			1	1.1	18	RCP	67.81	0.30
2	BUILD TYPE D INLET-MANHOLE	1101+96.15	R-15.09	1177.75	1172.4	1172.4		1	2	36	RCP	163.16	0.10
2.1	BUILD TYPE D INLET-MANHOLE	1200+42.17	R-14	1177.52	1172.46	1172.46	1172.96	2	2.1	30	RCP	57.18	0.10
2.1.1	BUILD TYPE D INLET	1200+42.18	R-14	1177.52	1173.48			2.1	2.1.1	18	RCP	26	2.00
2.2	BUILD 4' X 4' TYPE 2 BOX MANHOLE	1201+37.10	R-16.67	1177.79	1172.55	1172.55	1172.75	2.1	2.2	30	RCP	94.93	0.10
2.2P	BUILD 30" REMOVABLE PLUG	1201+43.43	R-16.67		1172.56	1172.56		2.2	2.2P	30	RCP	6	0.10
2.2.1	BUILD 24" DIA NYLOPLAST INLET	1501+54.42	L-2.5	1176.43	1172.98	1172.98		2.2	2.2.1	12	HDPE/PVC	137.76	0.17
2.2.2	BUILD 24" DIA NYLOPLAST INLET	1502+78.42	L-2.5	1176.83	1173.19	1173.19		2.2.1	2.2.2	12	HDPE/PVC	124	0.17
2.2.2B	BUILD 12" X 11.25° BEND	1502+96.75	L-2.5		1173.22	1173.22		2.2.2	2.2.2B	12	HDPE/PVC	18.60	0.17
2.2.3	BUILD 24" DIA NYLOPLAST INLET	1504+22.87	L-2.5	1176.86	1173.43	1173.43		2.2.2B	2.2.3	12	HDPE/PVC	126.4	0.17
3	BUILD 5'X5' TYPE 2 BOX MANHOLE	1104+78.69	R-15.93	1177.91	1172.68	1172.68	1172.78	2	3	30	RCP	280.82	0.10
3.1	BUILD TYPE D INLET	1104+59.59	L-14	1178.34	1173.47			3	3.1	18	RCP	34.6	2.00
3.2	BUILD TYPE D INLET	1401+16.98	R-14	1177.70	1172.93	1172.93		3	3.2	18	RCP	102.25	0.15
3.3	BUILD TYPE D INLET	1401+16.98	L-14	1177.67	1172.97	1173.07		3.2	3.3	18	RCP	26	0.15
3.4	BUILD 24" DIA NYLOPLAST INLET	1401+16.98	L-131	1176.16	1173.27			3.3	3.4	12	HDPE/PVC	118.00	0.17
4	BUILD 4' X 4' TYPE 2 BOX MANHOLE	1107+48.21	R-15.75	1177.55	1172.95	1172.95	1173.05	3	4	30	RCP	270.05	0.10
4.1	BUILD TYPE D INLET	1107+60.35	L-14	1178.03	1173.67			4	4.1	18	RCP	31.22	2.00
4.2	BUILD TYPE D INLET	1300+91.54	R-14	1177.54	1173.16	1173.16		4	4.2	18	RCP	76.14	0.15
4.3	BUILD TYPE D INLET	1300+91.54	L-14	1177.54	1173.24			4.2	4.3	18	RCP	26.00	0.30
5	BUILD 4' X 4' TYPE 2 BOX MANHOLE	1109+02.16	R-16.67	1178.32	1173.1	1173.1	1173.2	4	5	24	RCP	154.51	0.10
5B	BUILD 12" X 22.5° BEND	1108+97.16	R-31.4		1173.23	1173.23		5	5B	18	RCP	15.56	0.17
5.1	BUILD 24" DIA NYLOPLAST INLET	1108+97.16	R-94.57	1176.53	1173.49			5B	5.1	12	HDPE/PVC	151.17	0.17
5.2B	BUILD 12" X 22.5° BEND	1109+02.16	L-124.43		1173.44	1173.44		5	5.2B	12	HDPE/PVC	141.10	0.17
5.3	BUILD 24" DIA NYLOPLAST INLET	1507+27.33	L-2.5	1176.86	1173.46	1173.46		5.2B	5.3	12	HDPE/PVC	13.07	0.17
5.3P	BUILD 12" HDPE/PVC REMOVABLE PLUG	1108+97.16	L-140.5		1173.47	1173.47	1173.47	5.3	5.3P	12	HDPE/PVC	4.00	0.17
5.4	BUILD 24" DIA NYLOPLAST INLET	1506+05.61	L-2.5	1176.29	1173.67			5.3	5.4	12	HDPE/PVC	121.73	0.17
6	BUILD TYPE D INLET-MANHOLE	1109+89.66	R-14	1178.05	1173.19	1173.19	1173.69	5	6	24	RCP	87.50	0.10
6.1	BUILD DOUBLE TYPE D INLET	1109+89.66	L-14	1178.05	1174.5			6	6.1	18	RCP	26	3.10
7	BUILD DOUBLE TYPE D INLET	1110+49.66	0	1178.28	1173.28	1173.28		6	7	18	RCP	61.21	0.15
7B	BUILD 12" X 11.25° BEND	1110+60.03	L-1.93		1173.3	1173.3		7	7B	12	HDPE/PVC	11.54	0.17
8	BUILD 24" DIA NYLOPLAST INLET	1111+77.66	L-1.93	1176.70	1173.50	1173.50		7B	8	12	HDPE/PVC	117.63	0.17
8P	BUILD 12" HDPE/PVC REMOVABLE PLUG	1111+77.66	L-5.93		1173.51			8	J11	12	HDPE/PVC	4	0.17

NOTES: 1. PIPE LENGTHS ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE WITH FOLLOWING EXCEPTION:
(A) CROSS PIPES BETWEEN INLETS ARE MEASURED FROM CENTER OF GRATE.
2. STORM INLET LOCATIONS ARE AT BACK-OF-CURB. OTHER STRUCTURE LOCATIONS ARE AT CENTER OF STRUCTURE.



THORNBIRD BACK-LINE EAST

NOTE FOR BACKYARD INLETS. GRADE AROUND INLETS TO DRAIN. ADJUST INLET ELEVATIONS IF NECESSARY.

NOTE: UTILITY LOCATIONS ARE INCOMPLETE AND APPROXIMATE AND MAY NOT BE RELIED ON FOR CONSTRUCTION. NOTIFY DIGGERS HOTLINE (1-800-331-5666) 24 HOURS PRIOR TO ANY CONSTRUCTION. DODD ENGINEERING & SURVEYING IS NOT RESPONSIBLE FOR ANY DAMAGE TO ANY UNDERGROUND UTILITY OR STRUCTURE.

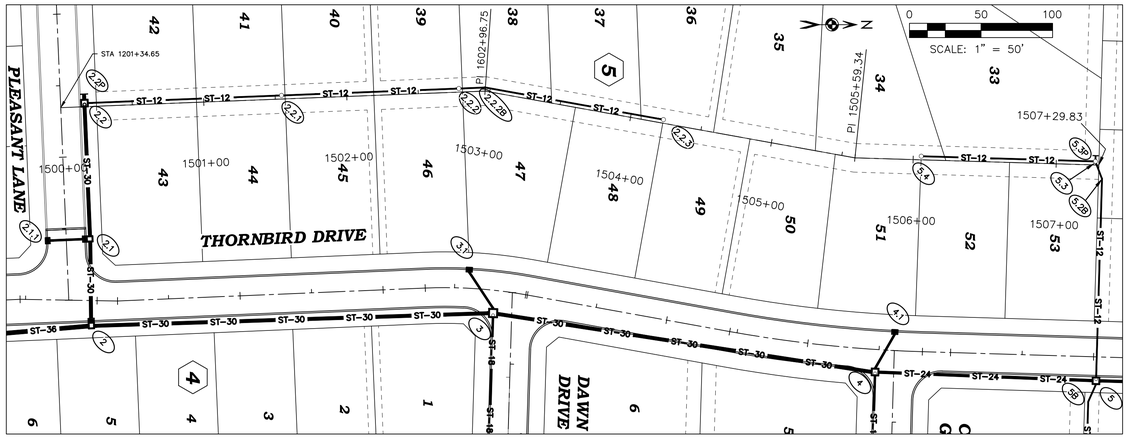
CALL COVERS ALL
1-800-331-5666
UTILITIES COORDINATING COMMITTEE

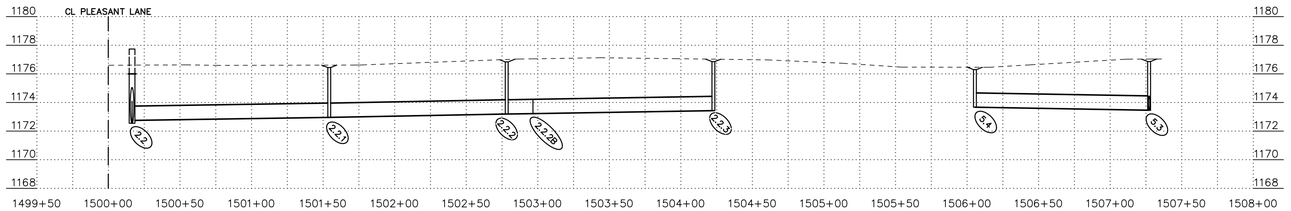
REGISTERED PROFESSIONAL ENGINEER
STEPHEN W. DODD
E-6508
STATE OF NEBRASKA
08/22/2022

Dodd Engineering & Surveying LLC
OFFICE: 432 E. Military Ave. Fremont, NE 68025
MAILING ADDRESS: 2753S Kirkwood Circle Wesley Chapel, FL 33544
Email: doddeng1@gmail.com
Stephen W. Dodd, P.E. & L.S. Ph. 402-720-5017

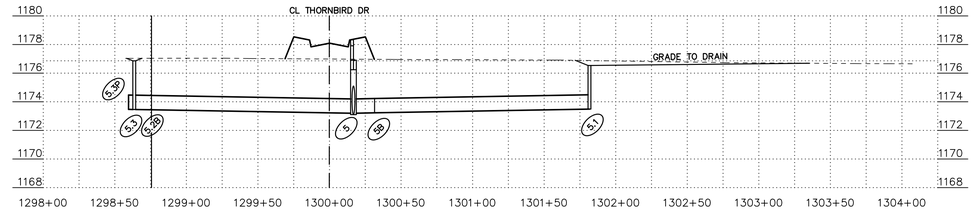
STORM SEWER PLAN & PROFILE
THORNBIRD DRIVE

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

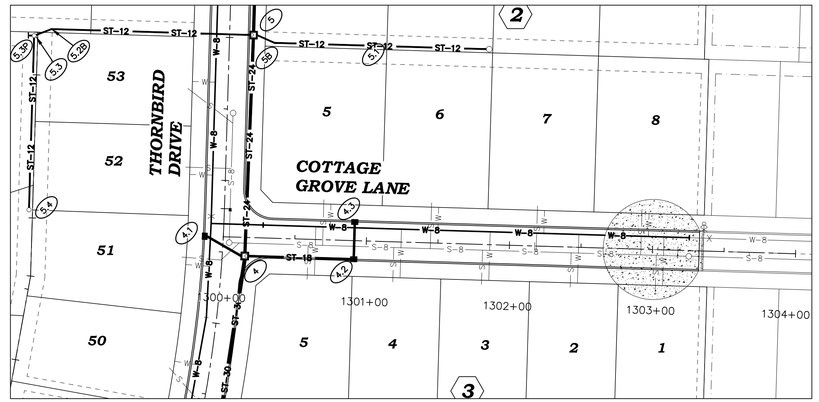


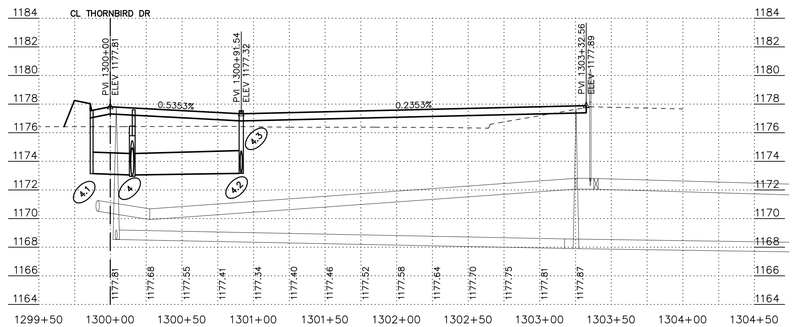


THORNBIRD BACK-LINE WEST



COTTAGE GROVE BACK-LINE NORTH





COTTAGE GROVE LANE

(1)

STORM STRUCTURE TABULATION								STORM SEWER LINE TABULATION					
NO.	DESCRIPTION	LOCATION		RIM OR TOP	FLOWLINES			FROM	TO	SIZE	TYPE	LENGTH	SLOPE
		STATION	OFFSET	OF CURB	OUT	IN	OTHER			IN.		FT.	%
A	TAP 36" STORM INTO EXISTING BOX INLET PER NDOT STD PLAN 428-R4	1100+30.77	R-98.68	1177.41	1172.01	1172.17							
1	BUILD 5'X5' TYPE 2 BOX MANHOLE	1100+32.18	R-27.64	1177.44	1172.24	1172.24	1172.44	A	1	36	RCP	71.05	0.1
1.1	BUILD 30" X 30" GRATE INLET	1100+37.00	L-40.00	1176.20	1172.64			1	1.1	18	RCP	67.81	0.30
2	BUILD TYPE D INLET-MANHOLE	1101+96.15	R-15.09	1177.75	1172.4	1172.4		1	2	36	RCP	163.16	0.10
2.1	BUILD TYPE D INLET-MANHOLE	1200+42.17	R-14	1177.52	1172.46	1172.46	1172.96	2	2.1	30	RCP	57.18	0.10
2.1.1	BUILD TYPE D INLET	1200+42.18	R-14	1177.52	1173.48			2.1	2.1.1	18	RCP	26	2.00
2.2	BUILD 4' X 4' TYPE 2 BOX MANHOLE	1201+37.10	R-16.67	1177.79	1172.55	1172.55	1172.75	2.1	2.2	30	RCP	94.93	0.10
2.2P	BUILD 30" REMOVABLE PLUG	1201+43.43	R-16.67		1172.56	1172.56		2.2	2.2P	30	RCP	6	0.10
2.2.1	BUILD 24" DIA NYLOPLAST INLET	1501+54.42	L-2.5	1176.43	1172.98	1172.98		2.2	2.2.1	12	HDPE/PVC	137.76	0.17
2.2.2	BUILD 24" DIA NYLOPLAST INLET	1502+78.42	L-2.5	1176.83	1173.19	1173.19		2.2.1	2.2.2	12	HDPE/PVC	124	0.17
2.2.2B	BUILD 12" X 11.25° BEND	1502+96.75	L-2.5		1173.22	1173.22		2.2.2	2.2.2B	12	HDPE/PVC	18.60	0.17
2.2.3	BUILD 24" DIA NYLOPLAST INLET	1504+22.87	L-2.5	1176.86	1173.43	1173.43		2.2.2B	2.2.3	12	HDPE/PVC	126.4	0.17
3	BUILD 5'X5' TYPE 2 BOX MANHOLE	1104+78.69	R-15.93	1177.91	1172.68	1172.68	1172.78	2	3	30	RCP	280.82	0.10
3.1	BUILD TYPE D INLET	1104+59.59	L-14	1178.34	1173.47			3	3.1	18	RCP	34.6	2.00
3.2	BUILD TYPE D INLET	1401+16.98	R-14	1177.70	1172.93	1172.93		3	3.2	18	RCP	102.25	0.15
3.3	BUILD TYPE D INLET	1401+16.98	L-14	1177.67	1172.97	1173.07		3.2	3.3	18	RCP	26	0.15
3.4	BUILD 24" DIA NYLOPLAST INLET	1401+16.98	L-131	1176.16	1173.27			3.3	3.4	12	HDPE/PVC	118.00	0.17
4	BUILD 4' X 4' TYPE 2 BOX MANHOLE	1107+48.21	R-15.75	1177.55	1172.95	1172.95	1173.05	3	4	30	RCP	270.05	0.10
4.1	BUILD TYPE D INLET	1107+60.35	L-14	1178.03	1173.67			4	4.1	18	RCP	31.22	2.00
4.2	BUILD TYPE D INLET	1300+91.54	R-14	1177.54	1173.16	1173.16		4	4.2	18	RCP	76.14	0.15
4.3	BUILD TYPE D INLET	1300+91.54	L-14	1177.54	1173.24			4.2	4.3	18	RCP	26.00	0.30
5	BUILD 4' X 4' TYPE 2 BOX MANHOLE	1109+02.16	R-16.67	1178.32	1173.1	1173.1	1173.2	4	5	24	RCP	154.51	0.10
5B	BUILD 12" X 22.5° BEND	1108+97.16	R-31.4		1173.23	1173.23		5	5B	18	RCP	15.56	0.17
5.1	BUILD 24" DIA NYLOPLAST INLET	1108+97.16	R-94.57	1176.53	1173.49			5B	5.1	12	HDPE/PVC	151.17	0.17
5.2B	BUILD 12" X 22.5° BEND	1109+02.16	L-124.43		1173.44	1173.44		5	5.2B	12	HDPE/PVC	141.10	0.17
5.3	BUILD 24" DIA NYLOPLAST INLET	1507+27.33	L-2.5	1176.86	1173.46	1173.46		5.2B	5.3	12	HDPE/PVC	13.07	0.17
5.3P	BUILD 12" HDPE/PVC REMOVABLE PLUG	1108+97.16	L-140.5		1173.47	1173.47	1173.47	5.3	5.3P	12	HDPE/PVC	4.00	0.17
5.4	BUILD 24" DIA NYLOPLAST INLET	1506+05.61	L-2.5	1176.29	1173.67			5.3	5.4	12	HDPE/PVC	121.73	0.17
6	BUILD TYPE D INLET-MANHOLE	1109+89.66	R-14	1178.05	1173.19	1173.19	1173.69	5	6	24	RCP	87.50	0.10
6.1	BUILD DOUBLE TYPE D INLET	1109+89.66	L-14	1178.05	1174.5			6	6.1	18	RCP	26	3.10
7	BUILD DOUBLE TYPE D INLET	1110+49.66	0	1178.28	1173.28	1173.28		6	7	18	RCP	61.21	0.15
7B	BUILD 12" X 11.25° BEND	1110+60.03	L-1.93		1173.3	1173.3		7	7B	12	HDPE/PVC	11.54	0.17
8	BUILD 24" DIA NYLOPLAST INLET	1111+77.66	L-1.93	1176.70	1173.50	1173.50		7B	8	12	HDPE/PVC	117.63	0.17
8P	BUILD 12" HDPE/PVC REMOVABLE PLUG	1111+77.66	L-5.93		1173.51			8	J11	12	HDPE/PVC	4	0.17

NOTES: 1. PIPE LENGTHS ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE WITH FOLLOWING EXCEPTION:
(A) CROSS PIPES BETWEEN INLETS ARE MEASURED FROM CENTER OF GRATE.
2. STORM INLET LOCATIONS ARE AT BACK-OF-CURB. OTHER STRUCTURE LOCATIONS ARE AT CENTER OF STRUCTURE.

NOTE FOR BACKYARD INLETS. GRADE AROUND INLETS TO DRAIN. ADJUST INLET ELEVATIONS IF NECESSARY.

NOTE: UTILITY LOCATIONS ARE INCOMPLETE AND APPROXIMATE AND MAY NOT BE RELIED ON FOR CONSTRUCTION. NOTIFY DIGGERS HOTLINE (1-800-331-5666) 24 HOURS PRIOR TO ANY CONSTRUCTION. DODD ENGINEERING & SURVEYING IS NOT RESPONSIBLE FOR ANY DAMAGE TO ANY UNDERGROUND UTILITY OR STRUCTURE.

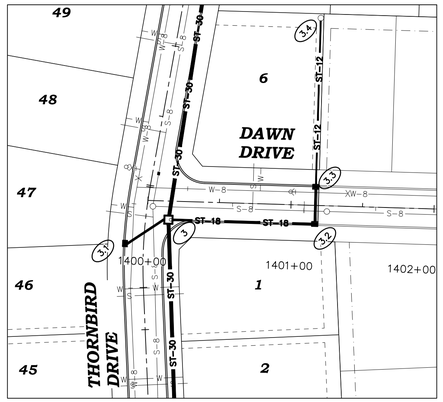
CALL COVERS ALL
1-800-331-5666
UTILITIES COORDINATING COMMITTEE

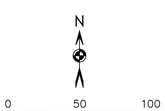
REGISTERED PROFESSIONAL ENGINEER
STEPHEN W. DODD
E-6508
STATE OF NEBRASKA
08/22/2022

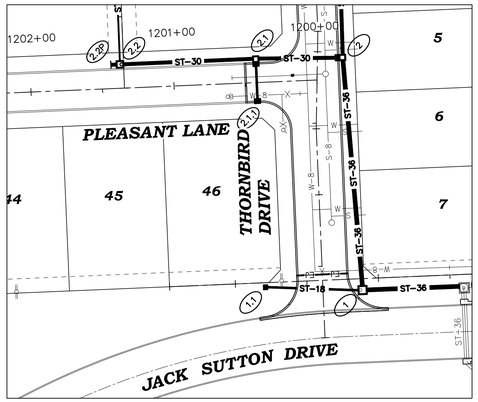
STORM SEWER PLAN & PROFILE
THORNBIRD BACK-LINE WEST, COTTAGE GROVE LANE,
DAWN DRIVE & PLEASANT LANE

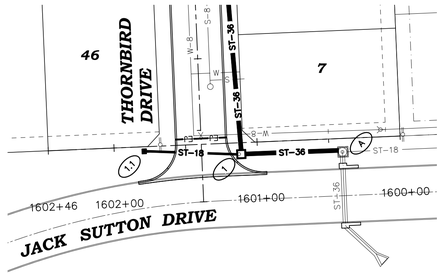
GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

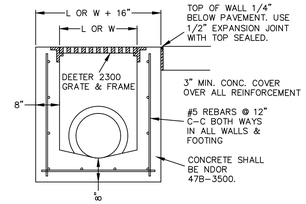
Dodd Engineering & Surveying LLC
OFFICE: 432 E. Military Ave. Fremont, NE 68025
MAILING ADDRESS: 2753S Kirkwood Circle
Wesley Chapel, FL 33544
Email: doddeng1@gmail.com
Ph. 402-720-5017
Stephen W. Dodd, P.E. & L.S.



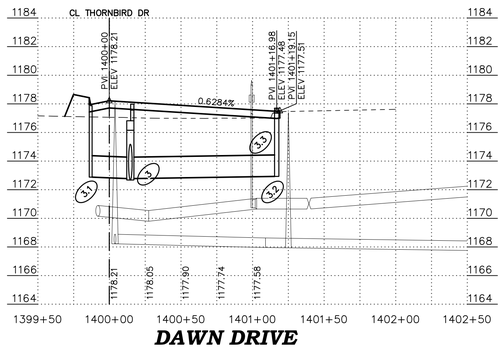




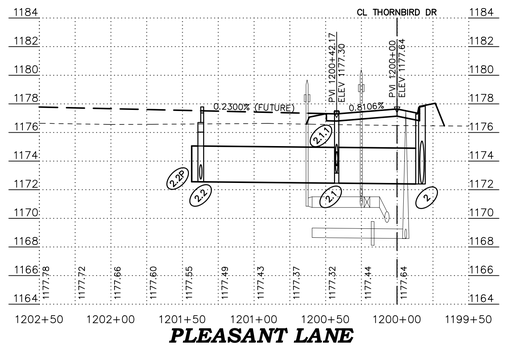




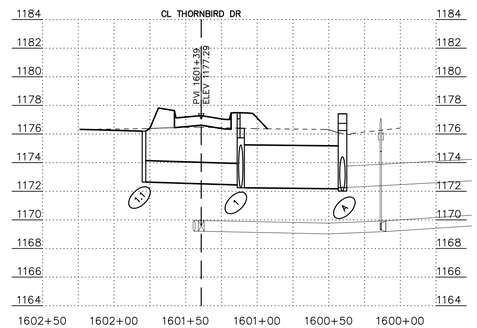
30" X 30" GRATE INLET
(NOT TO SCALE)



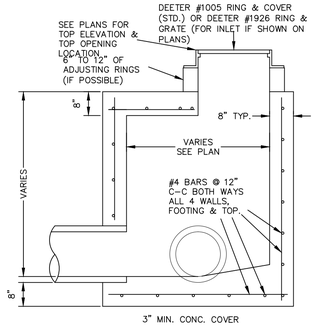
DAWN DRIVE



PLEASANT LANE



SUTTON DRIVE - NORTH SIDE

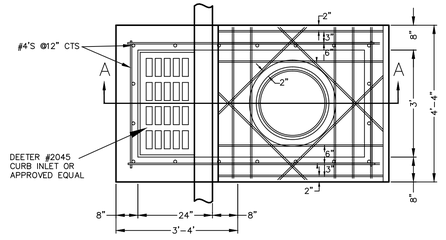


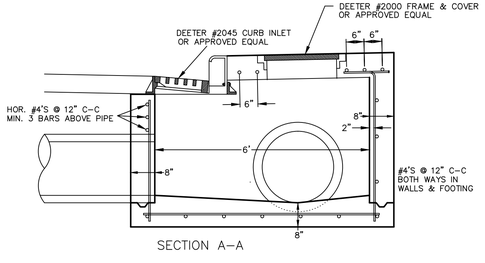
TYPE 2 BOX MANHOLE
(NOT TO SCALE)

STORM STRUCTURE TABULATION								STORM SEWER LINE TABULATION					
NO.	DESCRIPTION	LOCATION		RIM OR TOP	FLOWLINES			FROM	TO	SIZE	TYPE	LENGTH	SLOPE
		STATION	OFFSET	OF CURB	OUT	IN	OTHER			IN.		FT.	%
A	TAP 36" STORM INTO EXISTING BOX INLET PER NDOT STD PLAN 428-R4	1100+30.77	R-98.68	1177.41	1172.01	1172.17							
1	BUILD 5'X5' TYPE 2 BOX MANHOLE	1100+32.18	R-27.64	1177.44	1172.24	1172.24	1172.44	A	1	36	RCP	71.05	0.1
1.1	BUILD 30" X 30" GRATE INLET	1100+37.00	L-40.00	1176.20	1172.64			1	1.1	18	RCP	67.81	0.30
2	BUILD TYPE D INLET-MANHOLE	1101+96.15	R-15.09	1177.75	1172.4	1172.4		1	2	36	RCP	163.16	0.10
2.1	BUILD TYPE D INLET-MANHOLE	1200+42.17	R-14	1177.52	1172.46	1172.46	1172.96	2	2.1	30	RCP	57.18	0.10
2.1.1	BUILD TYPE D INLET	1200+42.18	R-14	1177.52	1173.48			2.1	2.1.1	18	RCP	26	2.00
2.2	BUILD 4' X 4' TYPE 2 BOX MANHOLE	1201+37.10	R-16.67	1177.79	1172.55	1172.55	1172.75	2.1	2.2	30	RCP	94.93	0.10
2.2P	BUILD 30" REMOVABLE PLUG	1201+43.43	R-16.67		1172.56	1172.56		2.2	2.2P	30	RCP	6	0.10
2.2.1	BUILD 24" DIA NYLOPLAST INLET	1501+54.42	L-2.5	1176.43	1172.98	1172.98		2.2	2.2.1	12	HDPE/PVC	137.76	0.17
2.2.2	BUILD 24" DIA NYLOPLAST INLET	1502+78.42	L-2.5	1176.83	1173.19	1173.19		2.2.1	2.2.2	12	HDPE/PVC	124	0.17
2.2.2B	BUILD 12" X 11.25° BEND	1502+96.75	L-2.5		1173.22	1173.22		2.2.2	2.2.2B	12	HDPE/PVC	18.60	0.17
2.2.3	BUILD 24" DIA NYLOPLAST INLET	1504+22.87	L-2.5	1176.86	1173.43	1173.43		2.2.2B	2.2.3	12	HDPE/PVC	126.4	0.17
3	BUILD 5'X5' TYPE 2 BOX MANHOLE	1104+78.69	R-15.93	1177.91	1172.68	1172.68	1172.78	2	3	30	RCP	280.82	0.10
3.1	BUILD TYPE D INLET	1104+59.59	L-14	1178.34	1173.47			3	3.1	18	RCP	34.6	2.00
3.2	BUILD TYPE D INLET	1401+16.98	R-14	1177.70	1172.93	1172.93		3	3.2	18	RCP	102.25	0.15
3.3	BUILD TYPE D INLET	1401+16.98	L-14	1177.67	1172.97	1173.07		3.2	3.3	18	RCP	26	0.15
3.4	BUILD 24" DIA NYLOPLAST INLET	1401+16.98	L-131	1176.16	1173.27			3.3	3.4	12	HDPE/PVC	118.00	0.17
4	BUILD 4' X 4' TYPE 2 BOX MANHOLE	1107+48.21	R-15.75	1177.55	1172.95	1172.95	1173.05	3	4	30	RCP	270.05	0.10
4.1	BUILD TYPE D INLET	1107+60.35	L-14	1178.03	1173.67			4	4.1	18	RCP	31.22	2.00
4.2	BUILD TYPE D INLET	1300+91.54	R-14	1177.54	1173.16	1173.16		4	4.2	18	RCP	76.14	0.15
4.3	BUILD TYPE D INLET	1300+91.54	L-14	1177.54	1173.24			4.2	4.3	18	RCP	26.00	0.30
5	BUILD 4' X 4' TYPE 2 BOX MANHOLE	1109+02.16	R-16.67	1178.32	1173.1	1173.1	1173.2	4	5	24	RCP	154.51	0.10
5B	BUILD 12" X 22.5° BEND	1108+97.16	R-31.4		1173.23	1173.23		5	5B	18	RCP	15.56	0.17
5.1	BUILD 24" DIA NYLOPLAST INLET	1108+97.16	R-94.57	1176.53	1173.49			5B	5.1	12	HDPE/PVC	151.17	0.17
5.2B	BUILD 12" X 22.5° BEND	1109+02.16	L-124.43		1173.44	1173.44		5	5.2B	12	HDPE/PVC	141.10	0.17
5.3	BUILD 24" DIA NYLOPLAST INLET	1507+27.33	L-2.5	1176.86	1173.46	1173.46		5.2B	5.3	12	HDPE/PVC	13.07	0.17
5.3P	BUILD 12" HDPE/PVC REMOVABLE PLUG	1108+97.16	L-140.5		1173.47	1173.47	1173.47	5.3	5.3P	12	HDPE/PVC	4.00	0.17
5.4	BUILD 24" DIA NYLOPLAST INLET	1506+05.61	L-2.5	1176.29	1173.67			5.3	5.4	12	HDPE/PVC	121.73	0.17
6	BUILD TYPE D INLET-MANHOLE	1109+89.66	R-14	1178.05	1173.19	1173.19	1173.69	5	6	24	RCP	87.50	0.10
6.1	BUILD DOUBLE TYPE D INLET	1109+89.66	L-14	1178.05	1174.5			6	6.1	18	RCP	26	3.10
7	BUILD DOUBLE TYPE D INLET	1110+49.66	0	1178.28	1173.28	1173.28		6	7	18	RCP	61.21	0.15
7B	BUILD 12" X 11.25° BEND	1110+60.03	L-1.93		1173.3	1173.3		7	7B	12	HDPE/PVC	11.54	0.17
8	BUILD 24" DIA NYLOPLAST INLET	1111+77.66	L-1.93	1176.70	1173.50	1173.50		7B	8	12	HDPE/PVC	117.63	0.17
8P	BUILD 12" HDPE/PVC REMOVABLE PLUG	1111+77.66	L-5.93		1173.51			8	J11	12	HDPE/PVC	4	0.17

NOTES: 1. PIPE LENGTHS ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE WITH FOLLOWING EXCEPTION:
(A) CROSS PIPES BETWEEN INLETS ARE MEASURED FROM CENTER OF GRATE.
2. STORM INLET LOCATIONS ARE AT BACK-OF-CURB. OTHER STRUCTURE LOCATIONS ARE AT CENTER OF STRUCTURE.

TOP VIEW

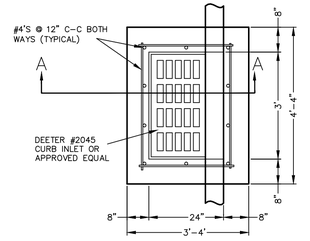


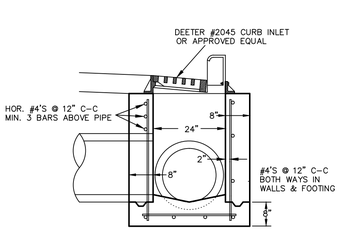


SECTION A-A

TYPE "D" INLET-MANHOLE
SCALE: NONE

TOP VIEW

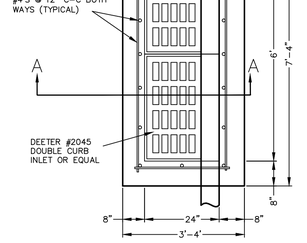


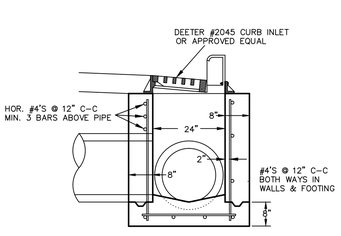


SECTION A-A

TYPE "D" INLET
STANDARD
SCALE: NONE

TOP VIEW





SECTION A-A

DOUBLE TYPE "D" INLET
SCALE: NONE

NOTE FOR ALL STRUCTURES: ADJUST DIMENSIONS AS NECESSARY TO FIT CASTINGS AND PIPES.

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CALL COVERS ALL
1-800-331-5666
UTILITIES COORDINATING COMMITTEE

REGISTERED PROFESSIONAL ENGINEER
STEPHEN W. DODD
E-6508
STATE OF NEBRASKA

08/22/2022

STORM SEWER PLAN & PROFILE
DAWN DRIVE, PLEASANT LANE & SUTTON DRIVE

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

Dodd Engineering & Surveying LLC
Stephen W. Dodd, P.E. & L.S.
OFFICE: 432 E. Military Ave. Fremont, NE 68025 Ph. 402-720-5017
MAILING ADDRESS: 27535 Kirkwood Circle Wesley Chapel, FL 33544
Email: doddeng1@gmail.com

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REGISTERED PROFESSIONAL ENGINEER
STEPHEN W. DODD
E-6508
STATE OF NEBRASKA
08/22/2022

GRADING PLAN

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

SHEET 11

Dodd Engineering & Surveying LLC
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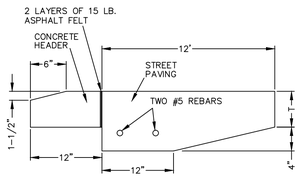
Wesley Chapel, FL 33544
Email: doddeng1@gmail.com
Ph. 402-720-5017
Stephen W. Dodd, P.E. & L.S.



CONCRETE HEADER
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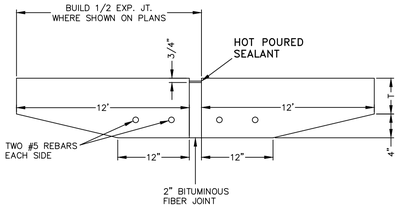
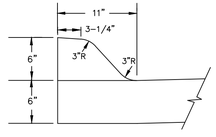
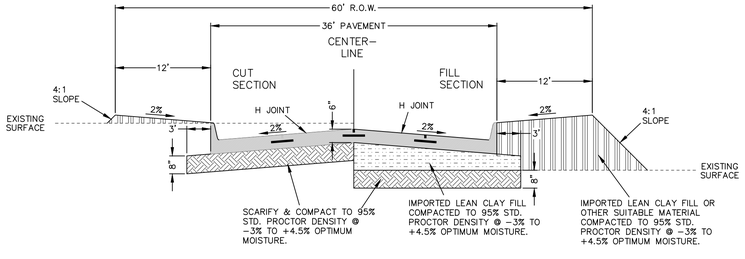


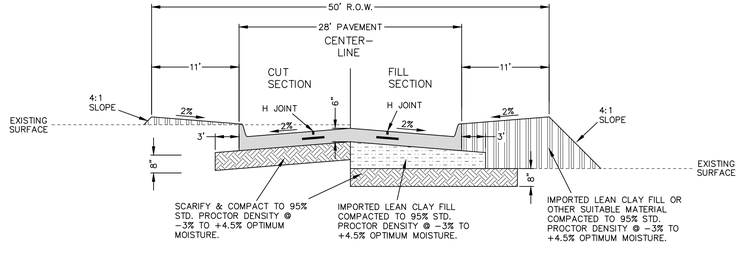
TYPICAL EXPANSION JOINT
N.T.S.



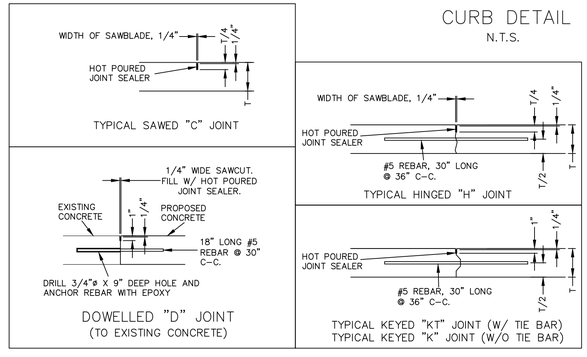
CURB DETAIL
N.T.S.



TYPICAL X-SECTION
(NOT TO SCALE)



TYPICAL X-SECTION
(NOT TO SCALE)



NOTES:
1. EXCEPT AS OTHERWISE NOTED; ALL PAVING TO BE 6" THICK NDOT 47-B 3500 P. C. CONCRETE WITH 6" INTEGRAL CURBS.
2. ALL RETURN RADII ARE 20' UNLESS OTHERWISE SHOWN.
3. INSTALL 5' X 1/2" HIGH DROPPED CURB FOR FUTURE WHEELCHAIR RAMPS NEAR THE CENTER OF ALL RETURNS UNLESS OTHERWISE INSTRUCTED. VERIFY EXACT LOCATION WITH FREMONT PUBLIC WORKS DIRECTOR BEFORE INSTALLATION.
4. TRANSVERSE C JOINTS SHALL BE PLACED AT 12' C-C NORMAL SPACING.
5. CONSTRUCTION JOINTS SHALL BE "KT" OR "D" JOINTS.
6. STRIP VEGETATION PRIOR TO GRADING.
7. TAKE CARE NOT TO DAMAGE SHALLOW STORM SEWER OR OTHER UTILITIES.

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UTILITIES COORDINATING COMMITTEE

REGISTERED PROFESSIONAL ENGINEER
STEPHEN W. DODD
E-6508
STATE OF NEBRASKA
08/22/2022

PAVING LAYOUT

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

Dodd Engineering & Surveying LLC
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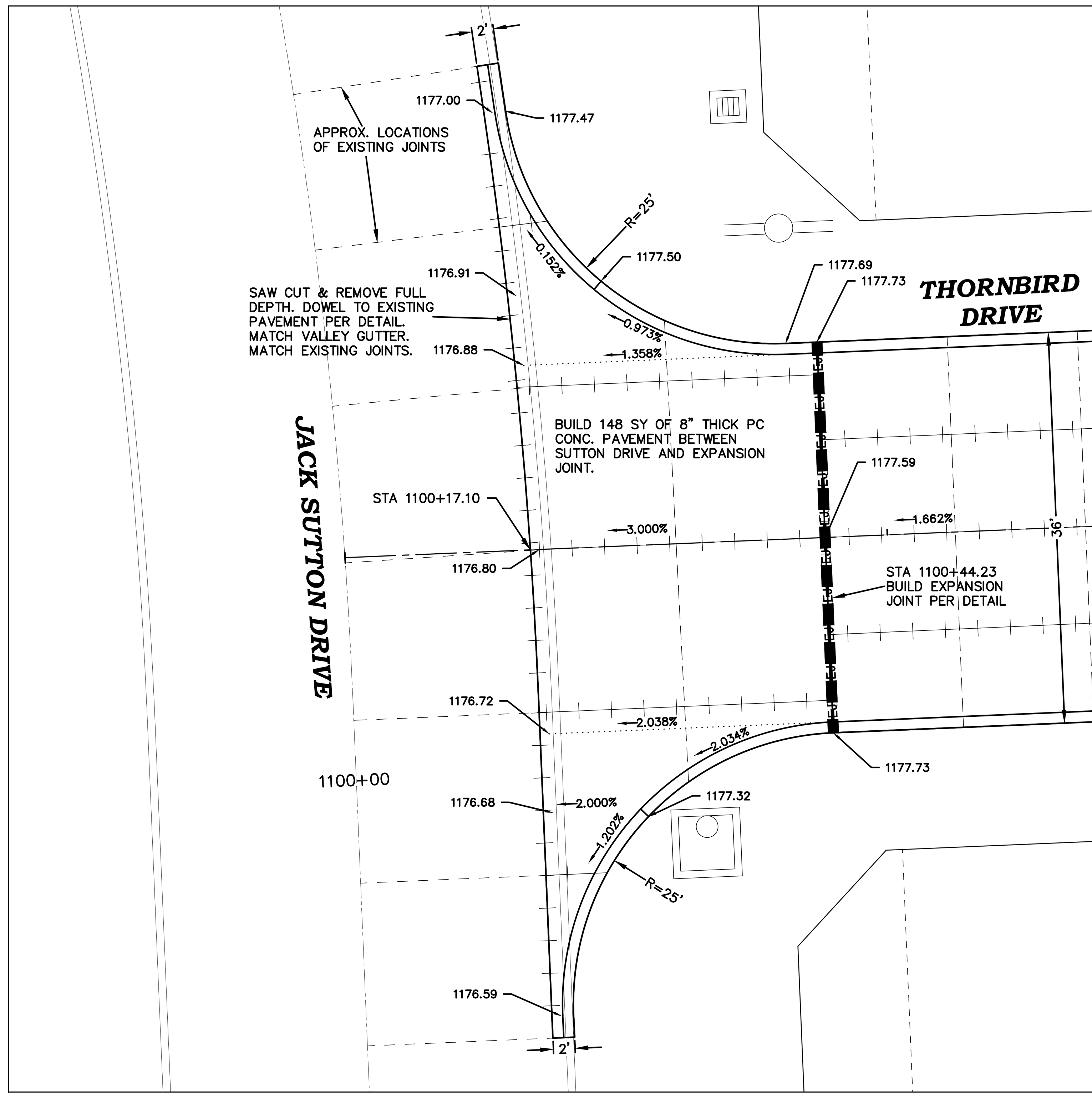
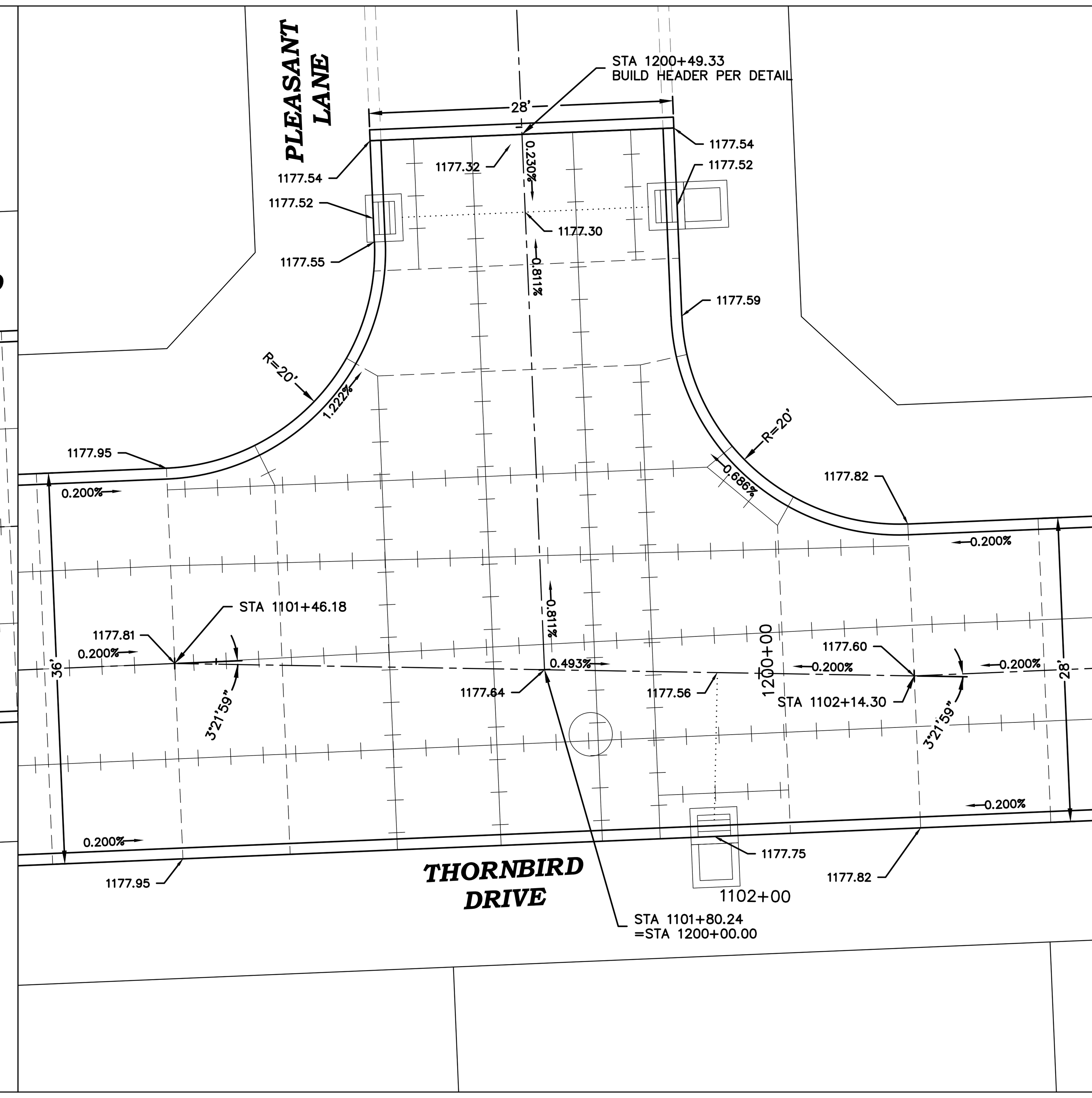
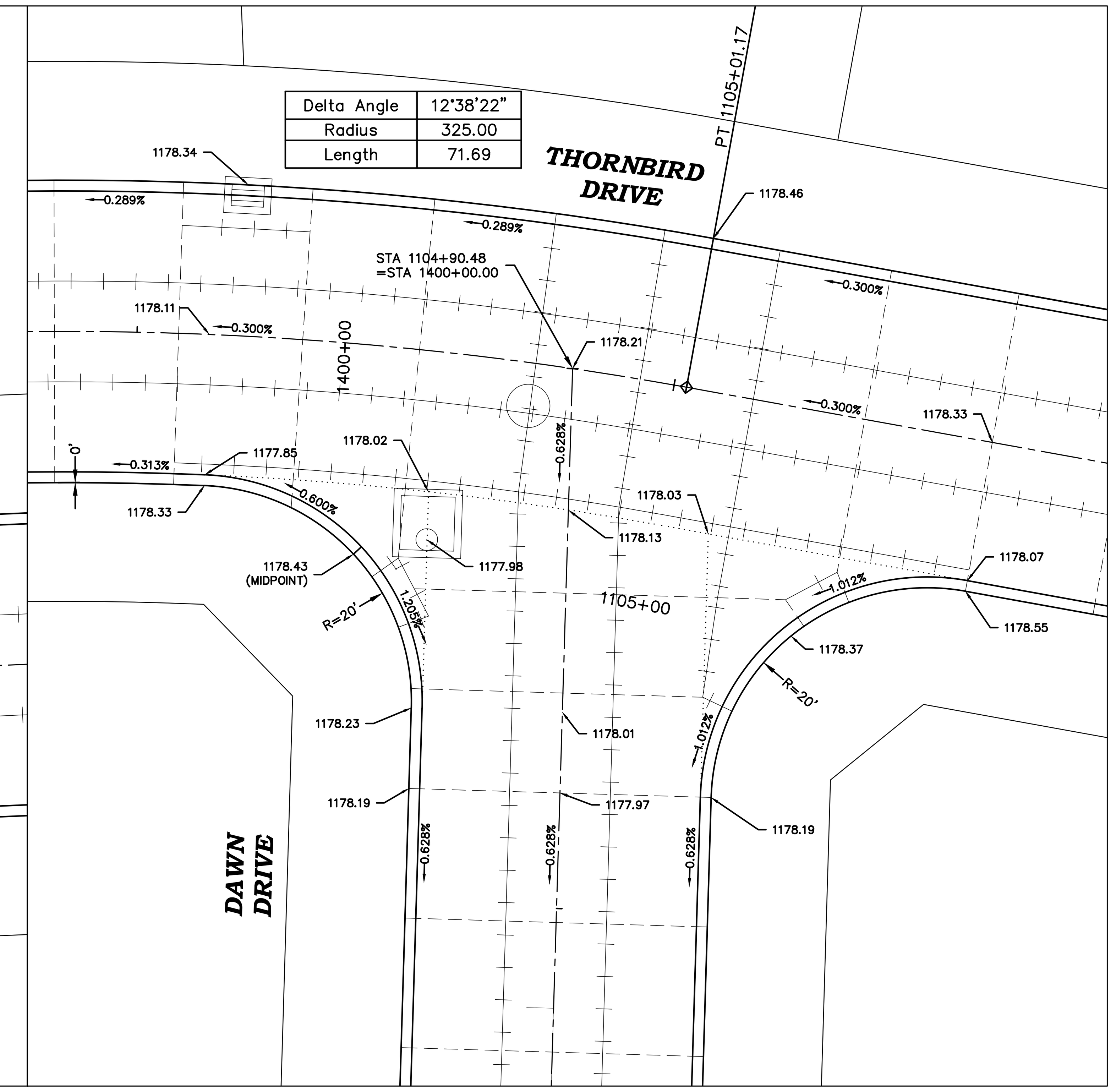


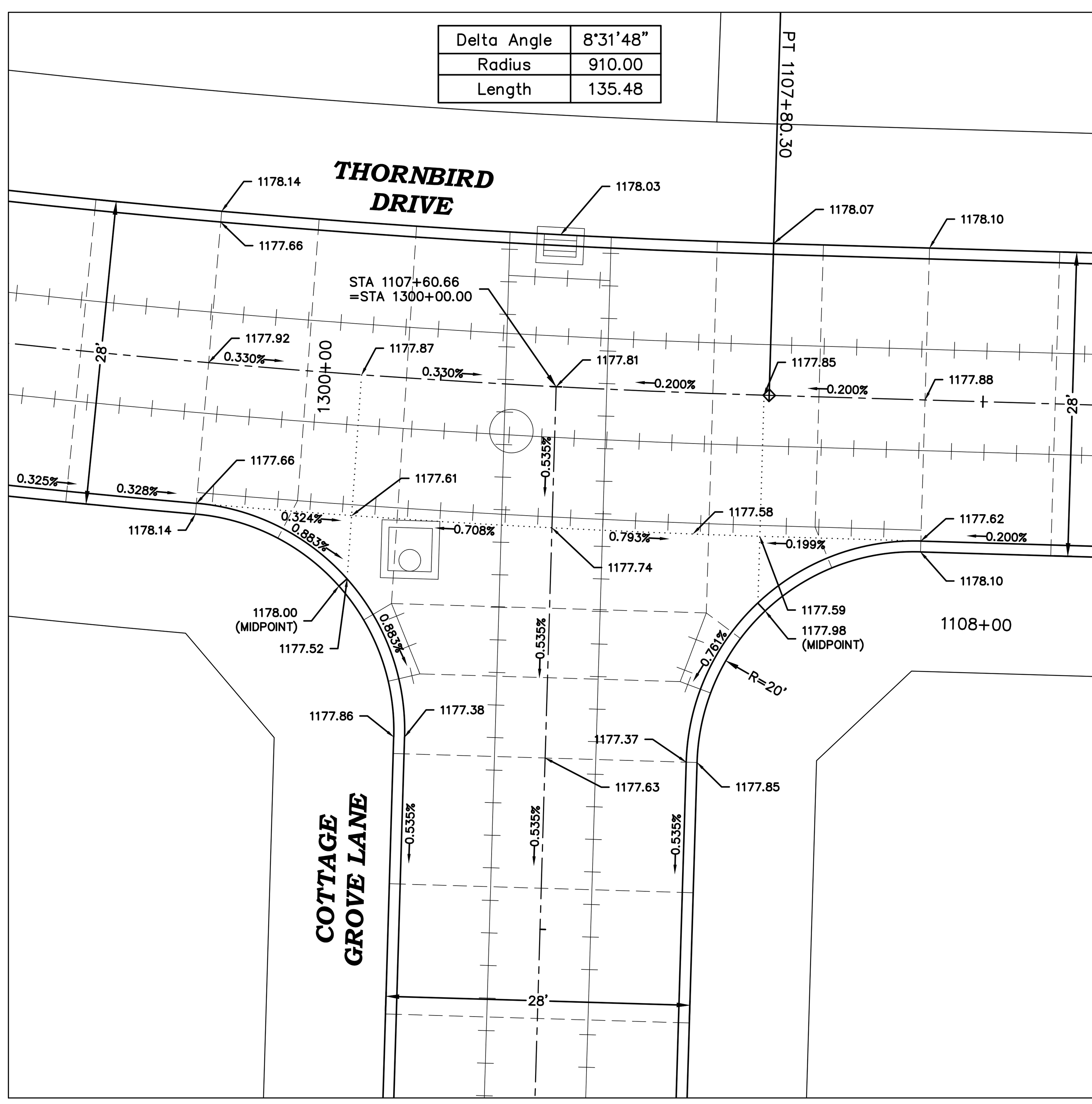
THORNBIRD DRIVE & SUTTON DRIVE



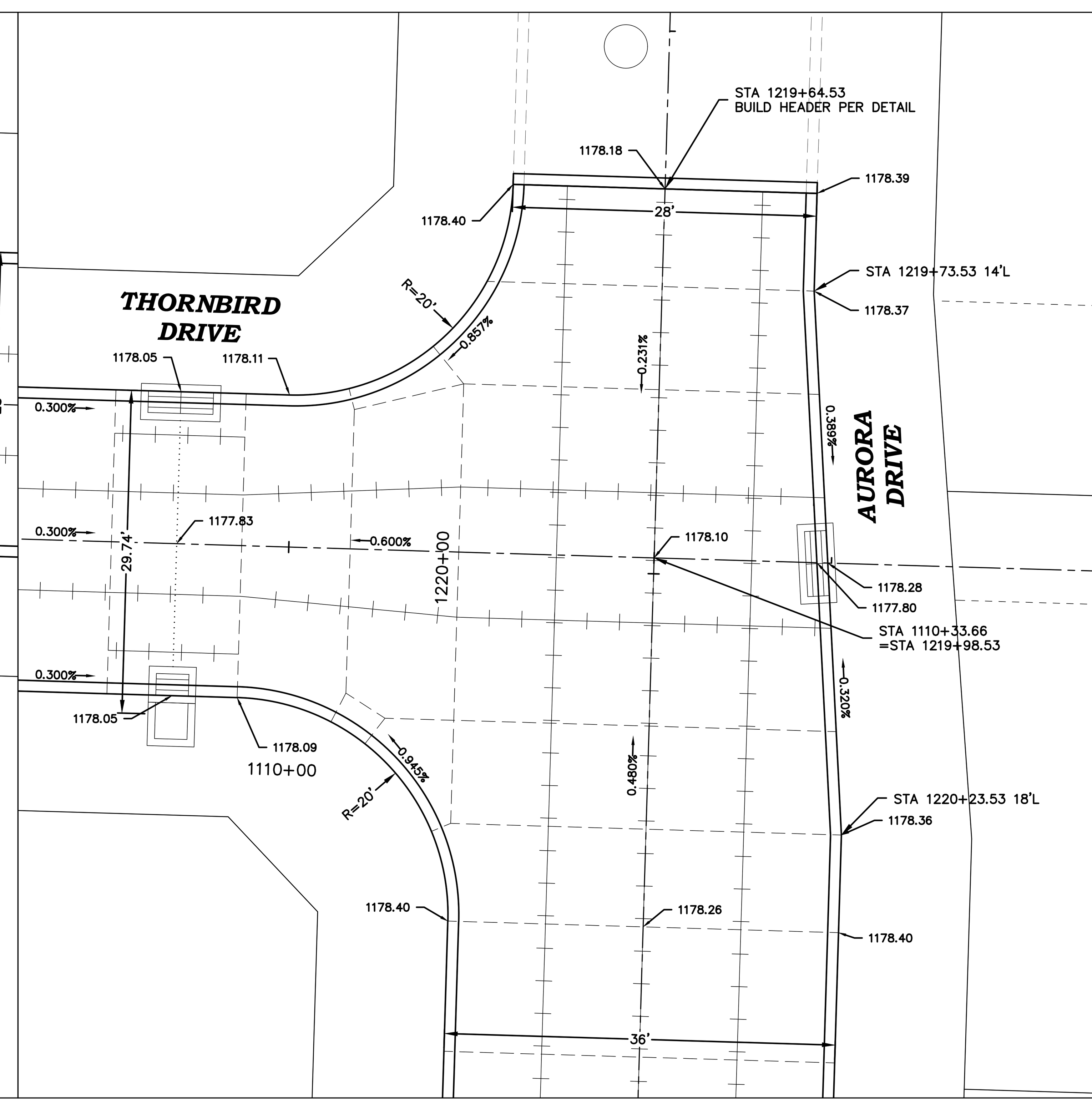
THORNBIRD DRIVE & PLEASANT LANE



THORNBIRD DRIVE & DAWN DRIVE



THORNBIRD DRIVE & COTTAGE GROVE LANE



THORNBIRD DRIVE & AURORA DRIVE

0 10 20
SCALE: 1"=10'

LEGEND
"C" JOINTS
"H", "D" OR "KT" JOINTS
1176.80 PROPOSED ELEVATIONS – TOP OF CURB, TOP OF CONCRETE OR FINISHED GRADE AS SHOWN
1.750% PROPOSED SLOPES

NOTES:
1. VERIFY EXISTING GRADES AND LOCATIONS. IF THERE IS A SIGNIFICANT DEVIATION FROM THE PLAN, REVISE PROPOSED AS NEEDED AFTER CONSULTING WITH THE ENGINEER.
2. THE JOINT LAYOUT MAY BE MODIFIED TO ACCOMMODATE THE CONTRACTOR'S EQUIPMENT AND METHODS. IF THE CONTRACTOR WISHES TO MAKE CHANGES, HE SHALL SUBMIT AN ALTERNATE JOINT LAYOUT FOR APPROVAL OF THE ENGINEER AT LEAST 10 DAYS PRIOR TO COMMENCEMENT OF ANY PAVEMENT CONSTRUCTION.
3. INSTALL 5' WIDE BY 1/2" HIGH DROPPED CURBS NEAR THE MIDPOINT OF ALL INTERSECTION RETURNS FOR FUTURE WHEELCHAIR RAMPS. VERIFY EXACT LOCATION WITH THE FREMONT PUBLIC WORKS DIRECTOR BEFORE INSTALLATION.

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CALL COVERS ALL 1-800-331-5666 UTILITIES COORDINATING COMMITTEE

REGISTERED PROFESSIONAL ENGINEER STEPHEN W. DODD E-6508 STATE OF NEBRASKA
08/22/2022

INTERSECTION DETAILS

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

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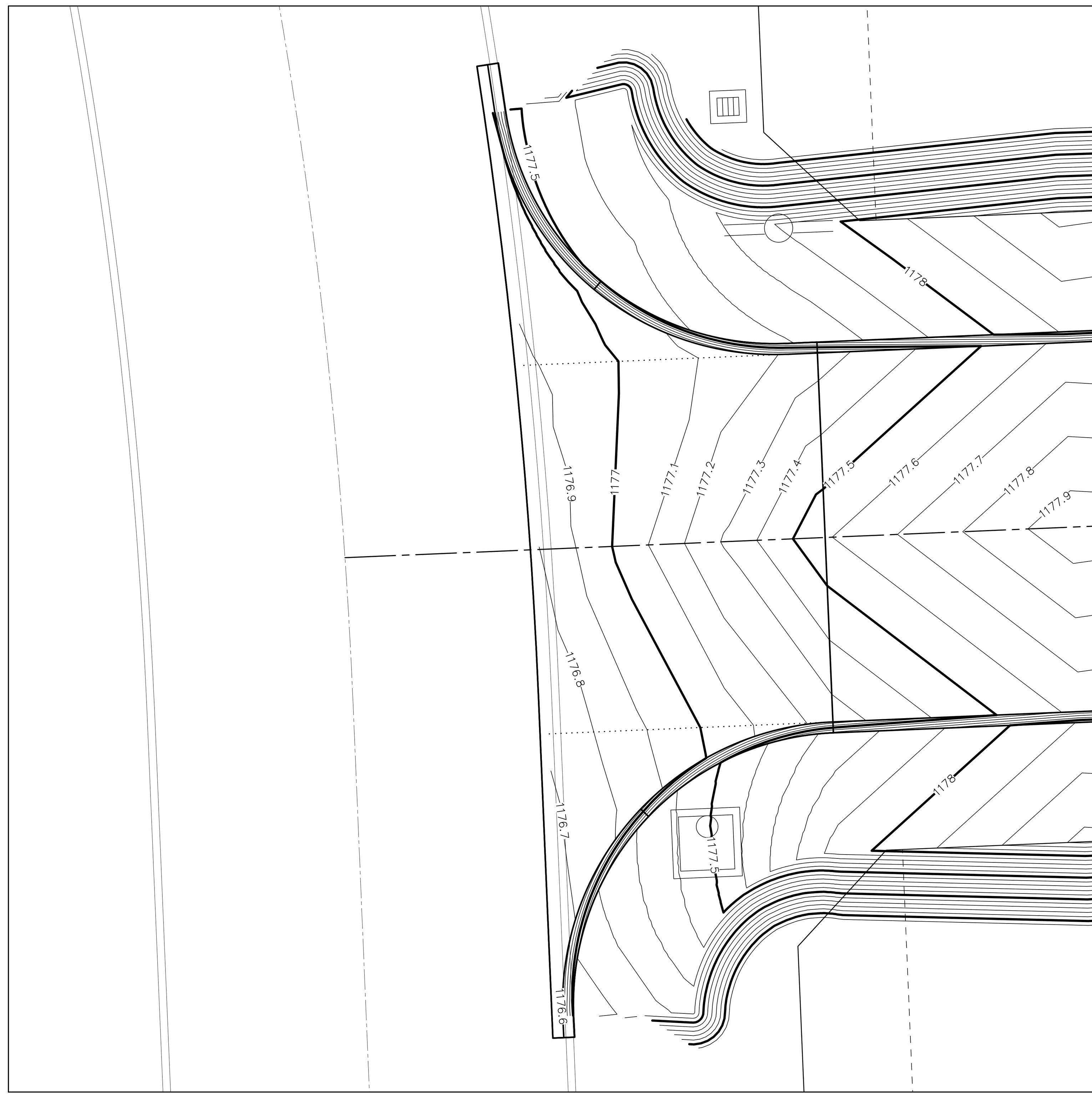
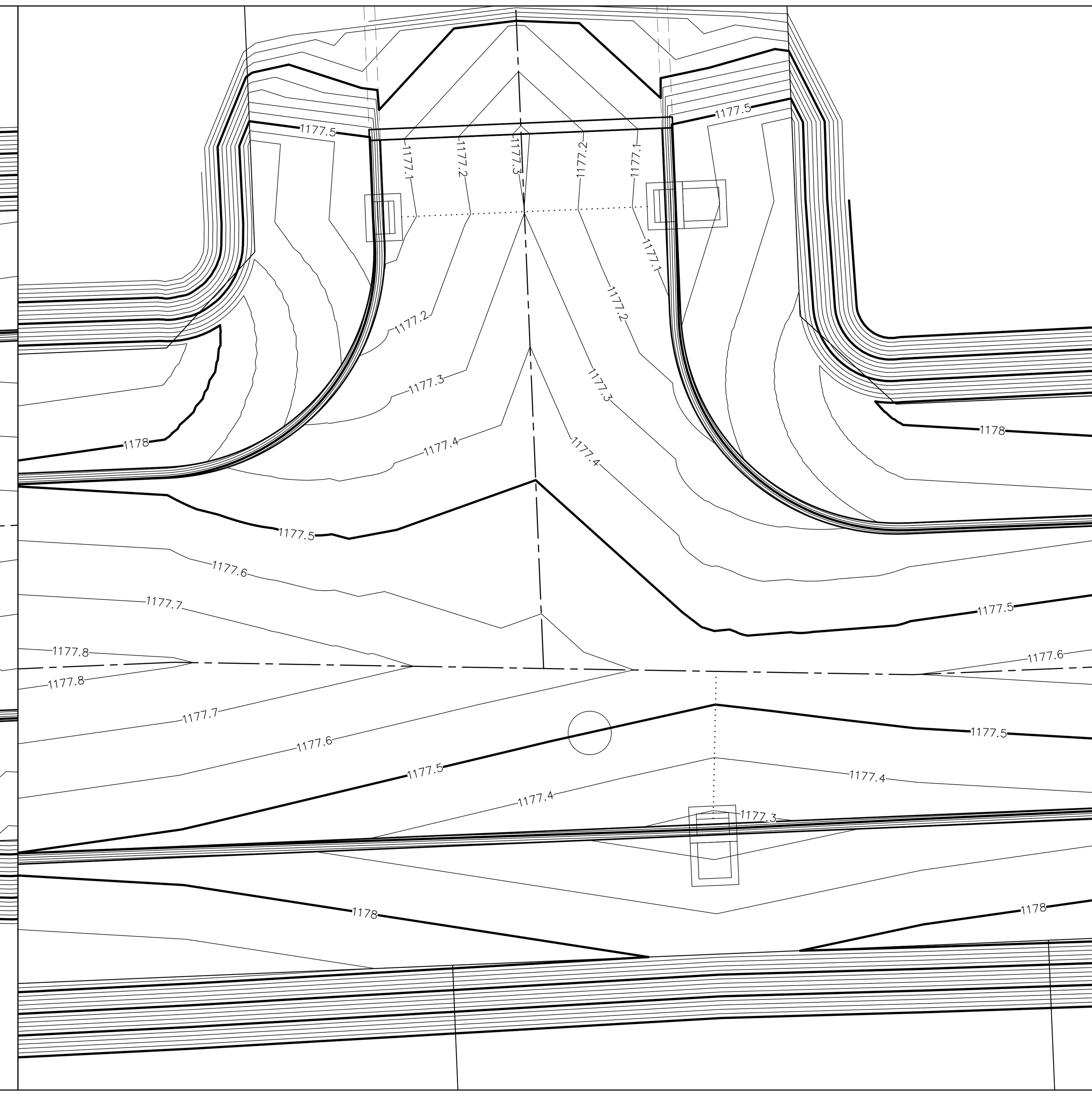
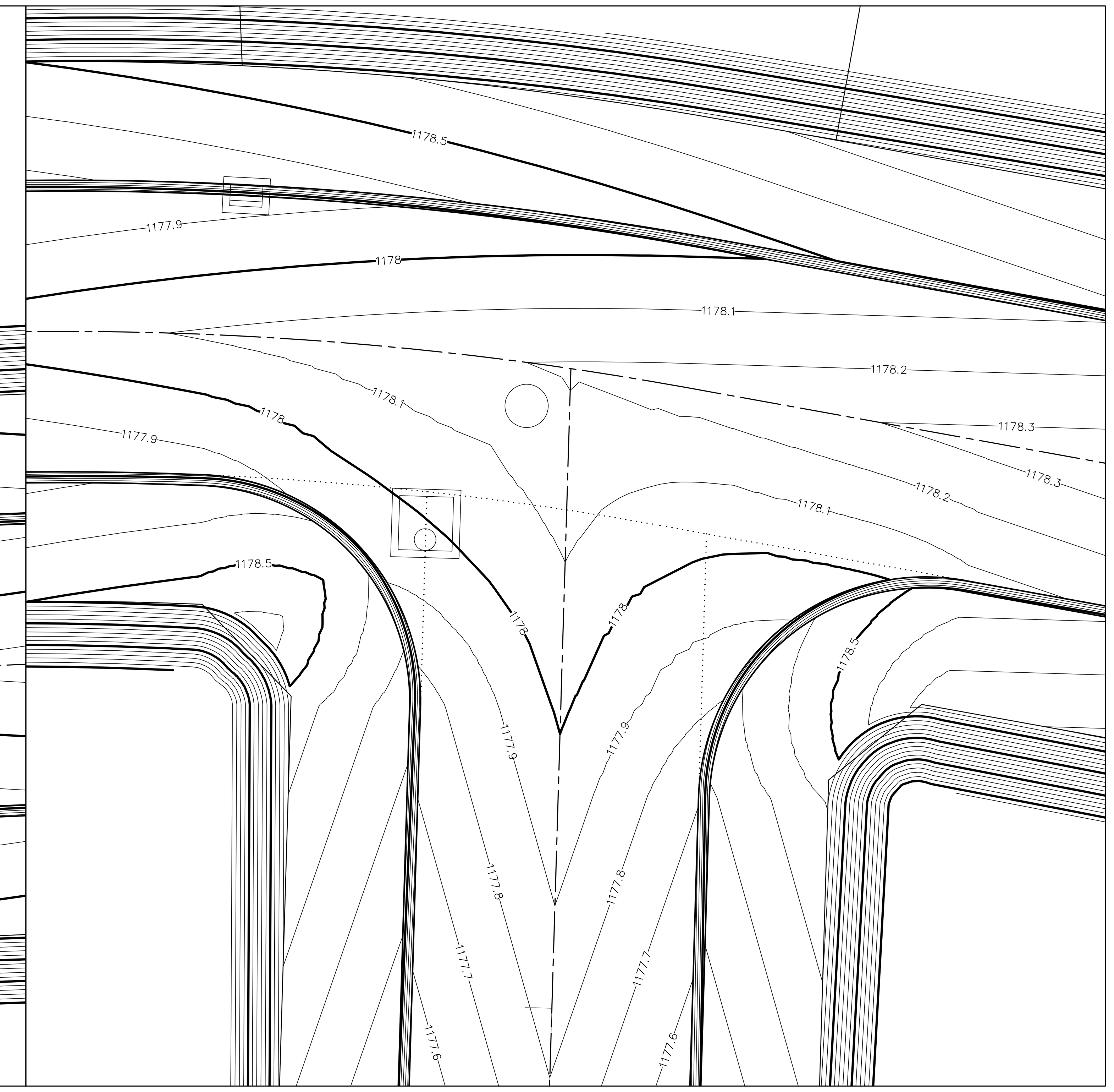


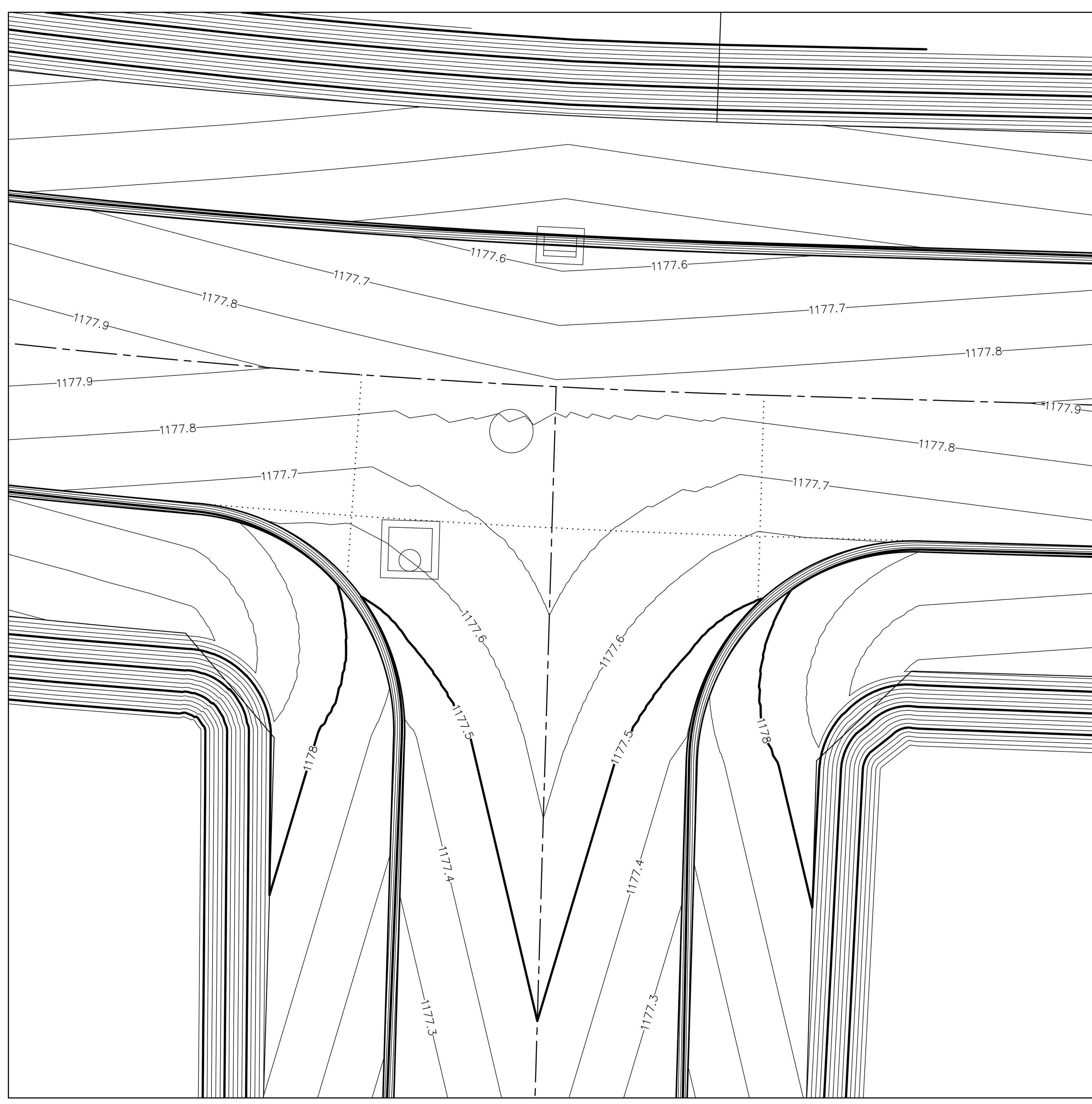
THORNBIRD DRIVE & SUTTON DRIVE



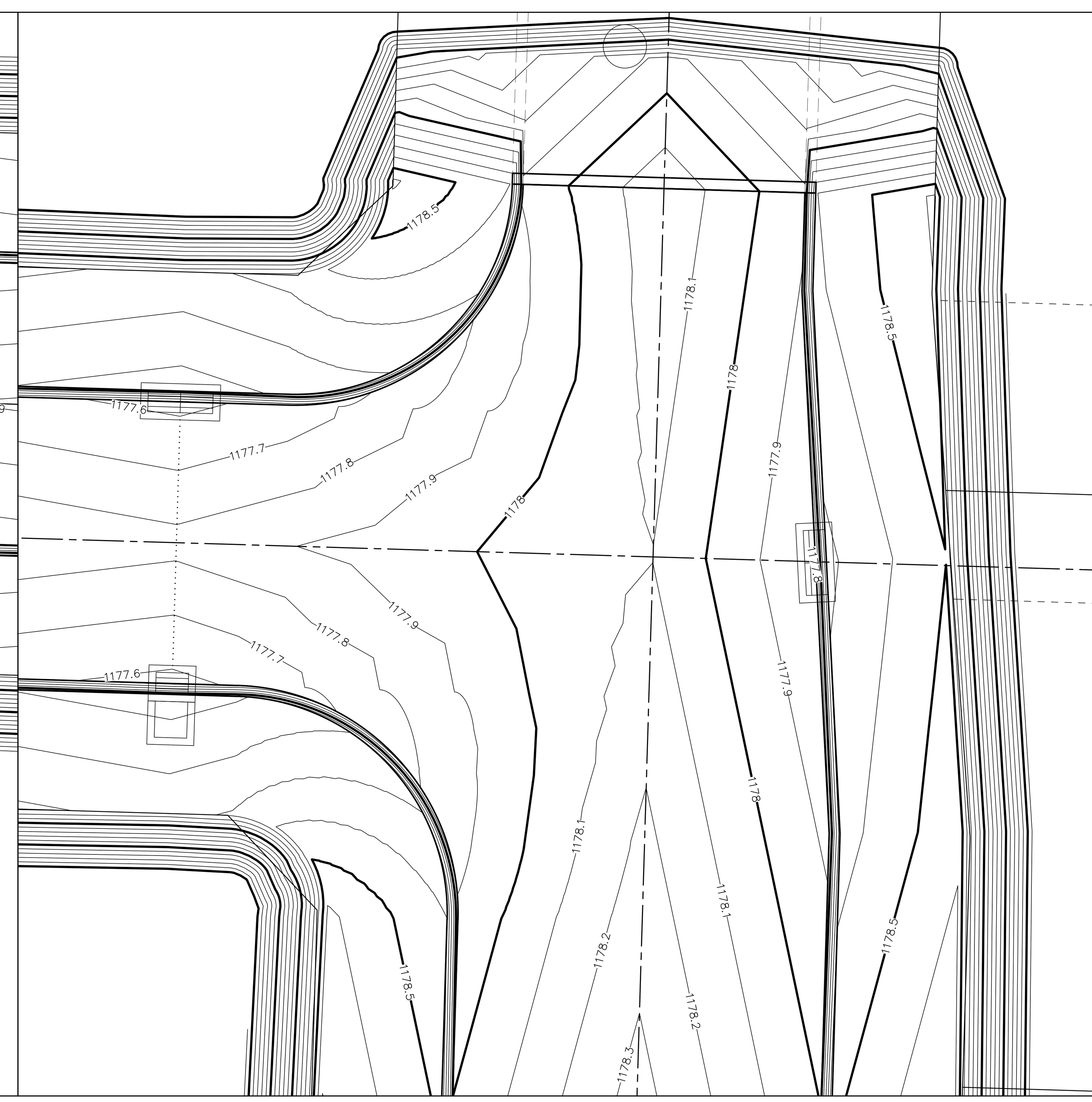
THORNBIRD DRIVE & PLEASANT LANE



THORNBIRD DRIVE & DAWN DRIVE



THORNBIRD DRIVE & COTTAGE GROVE LANE



THORNBIRD DRIVE & AURORA DRIVE

N

0 10 20

SCALE: 1"=10'

NOTE: CONTOURS DO NOT SHOW DROPPED CURBS FOR FUTURE WHEELCHAIR RAMPS, BECAUSE LOCATIONS WILL BE DETERMINED IN THE FIELD.

LEGEND

	"C" JOINTS
	"H", "D" OR "KT" JOINTS
1176.80	PROPOSED ELEVATIONS – TOP OF CURB, TOP OF CONCRETE OR FINISHED GRADE AS SHOWN
1.750%	PROPOSED SLOPES
1178	CONTOURS
1178.1	1/10TH CONTOURS

NOTES:
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STEPHEN W. DODD
E-6508
STATE OF NEBRASKA

08/22/2022

INTERSECTION CONTOURS

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GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

ROADWAY DESIGN DIVISION
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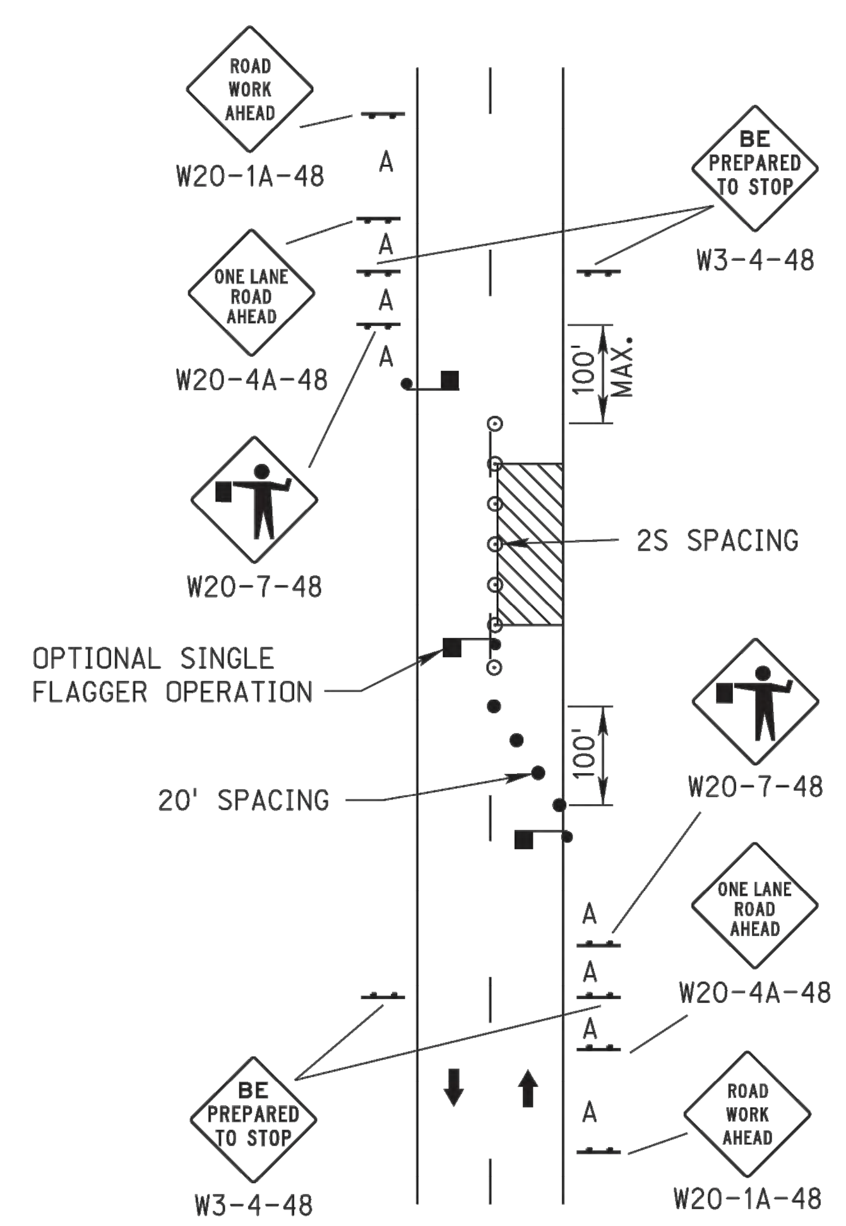
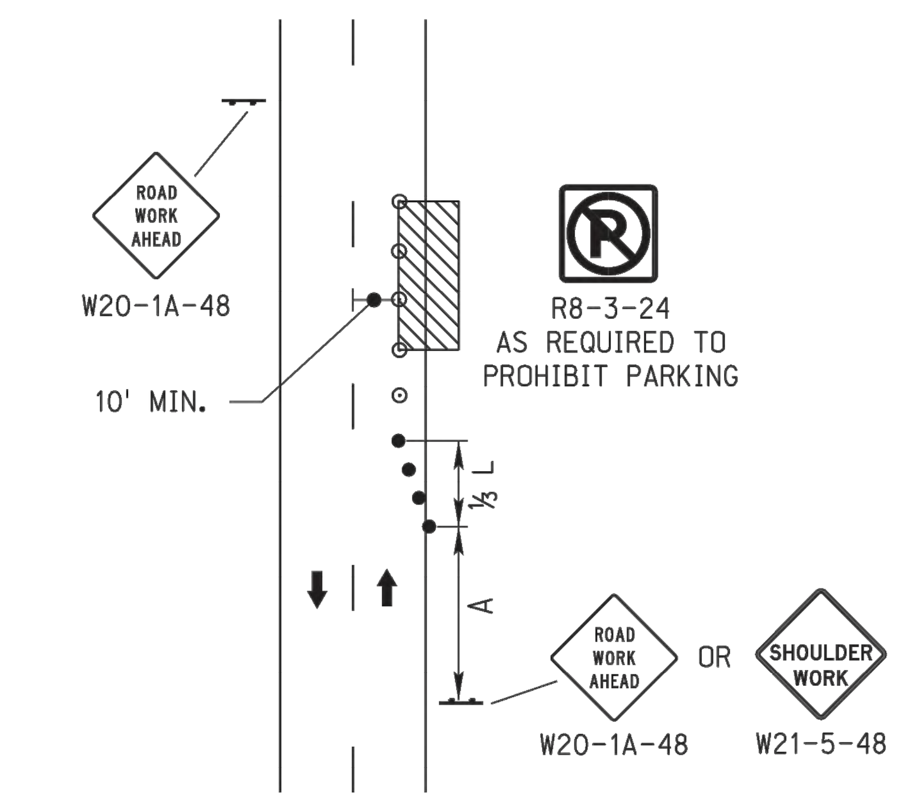
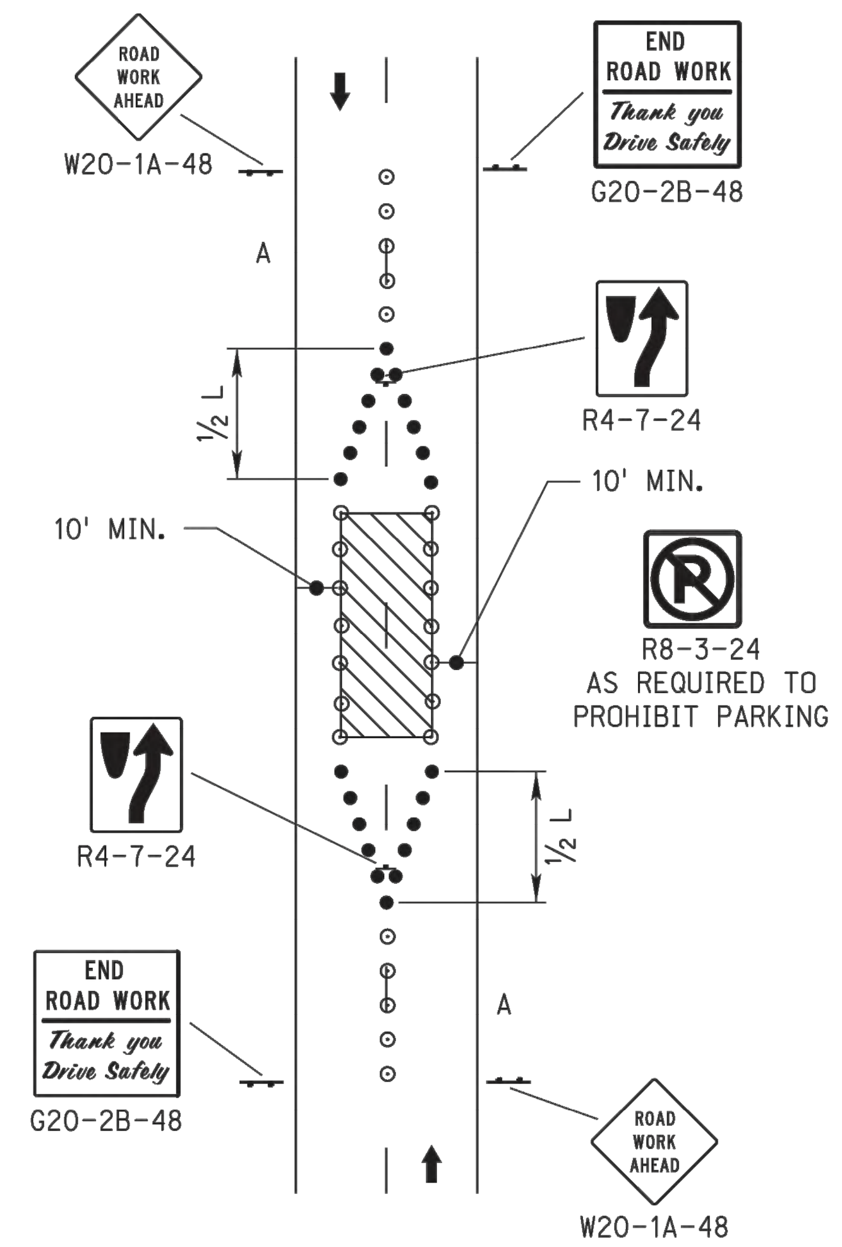
User: dor13017
Date: 05-FEB-2018 09:00
File: 92400e02.dgn
Scale: 1:100
SHEET 1 OF 3



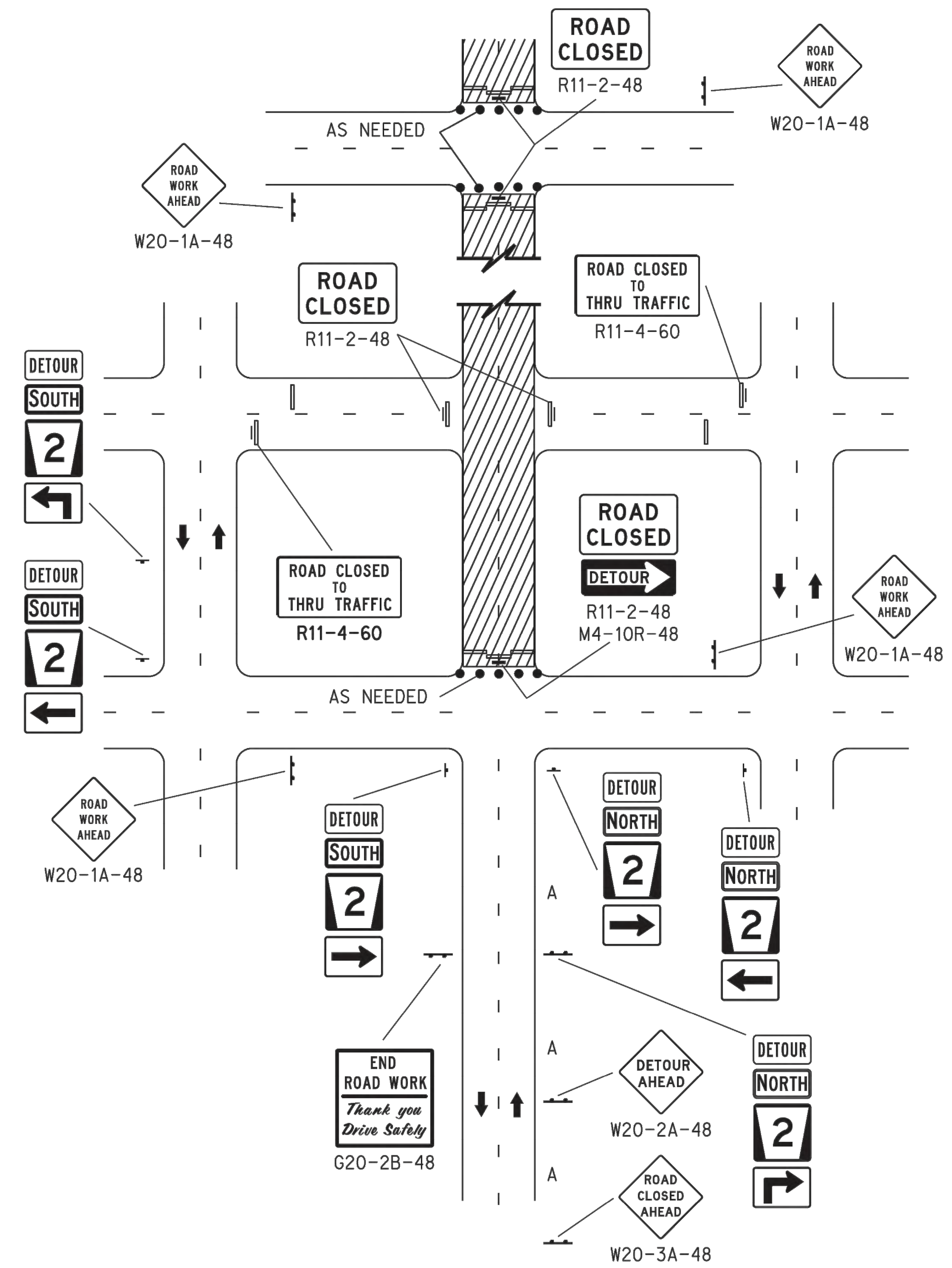
ONE LANE CLOSED WITH FLAGGER



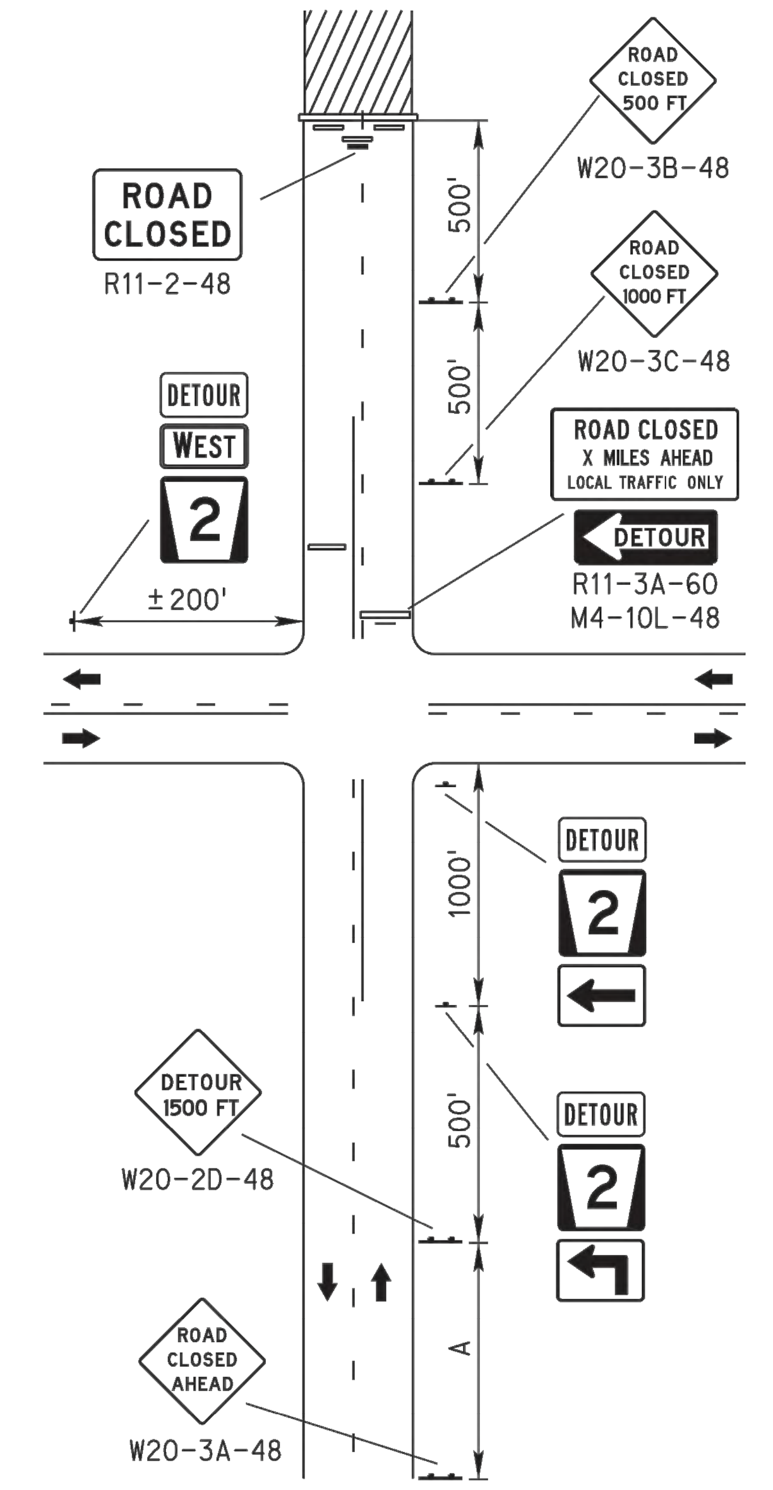
SHOULDER OR PARKING LANE CLOSED



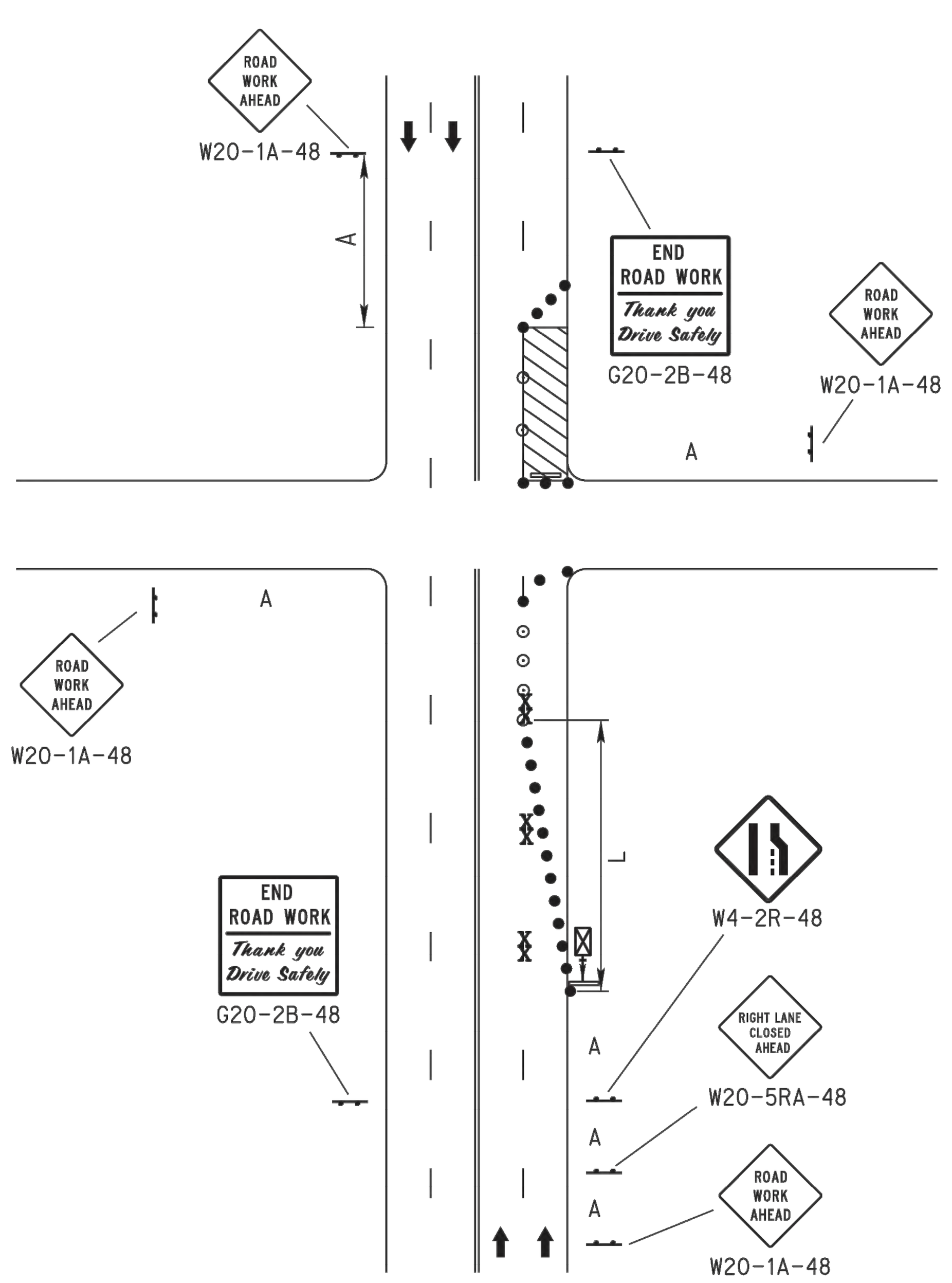
WORK IN CENTER OF ROAD WITH LOW TRAFFIC VOLUMES



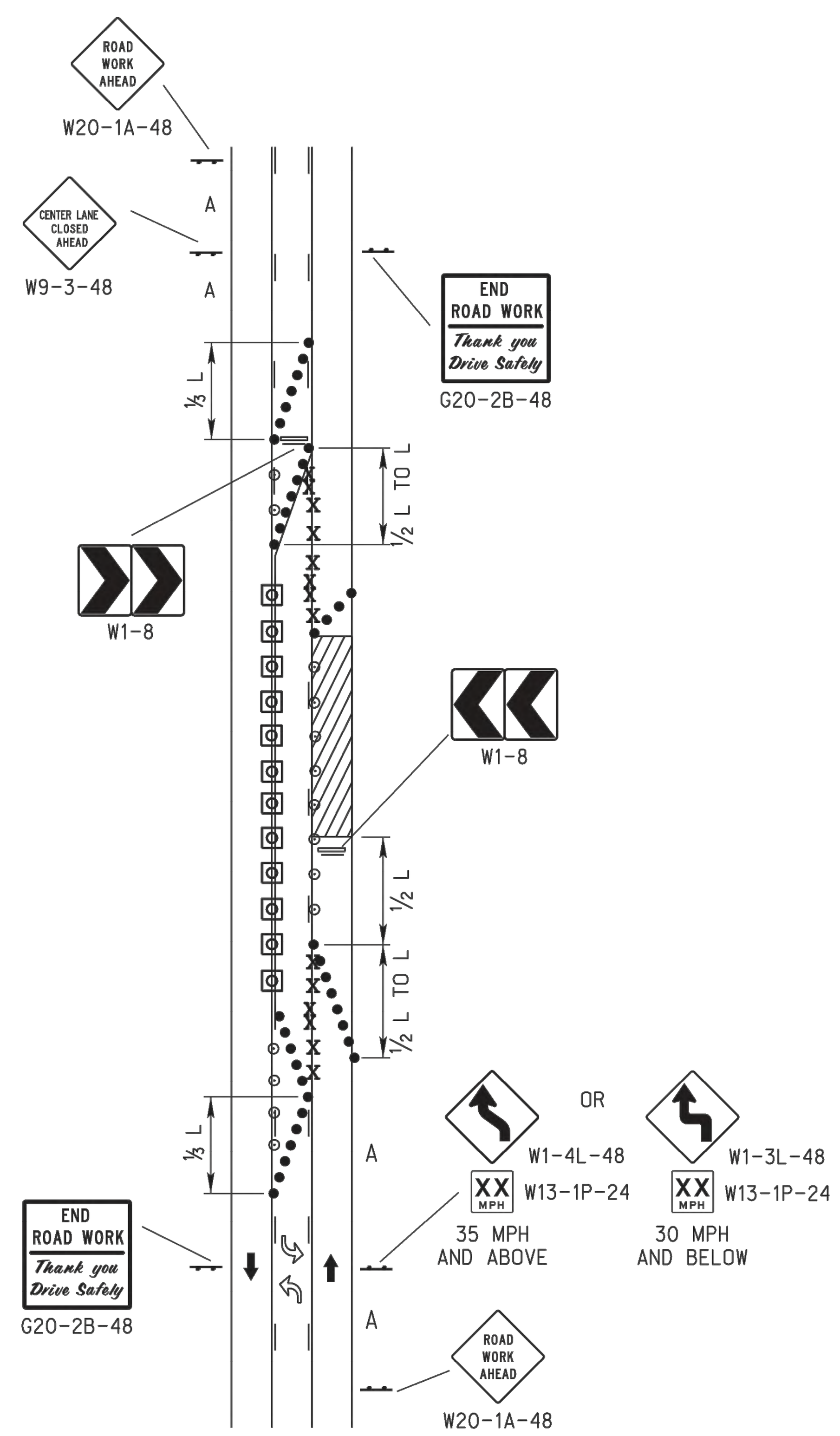
ROAD CLOSED AT DETOUR



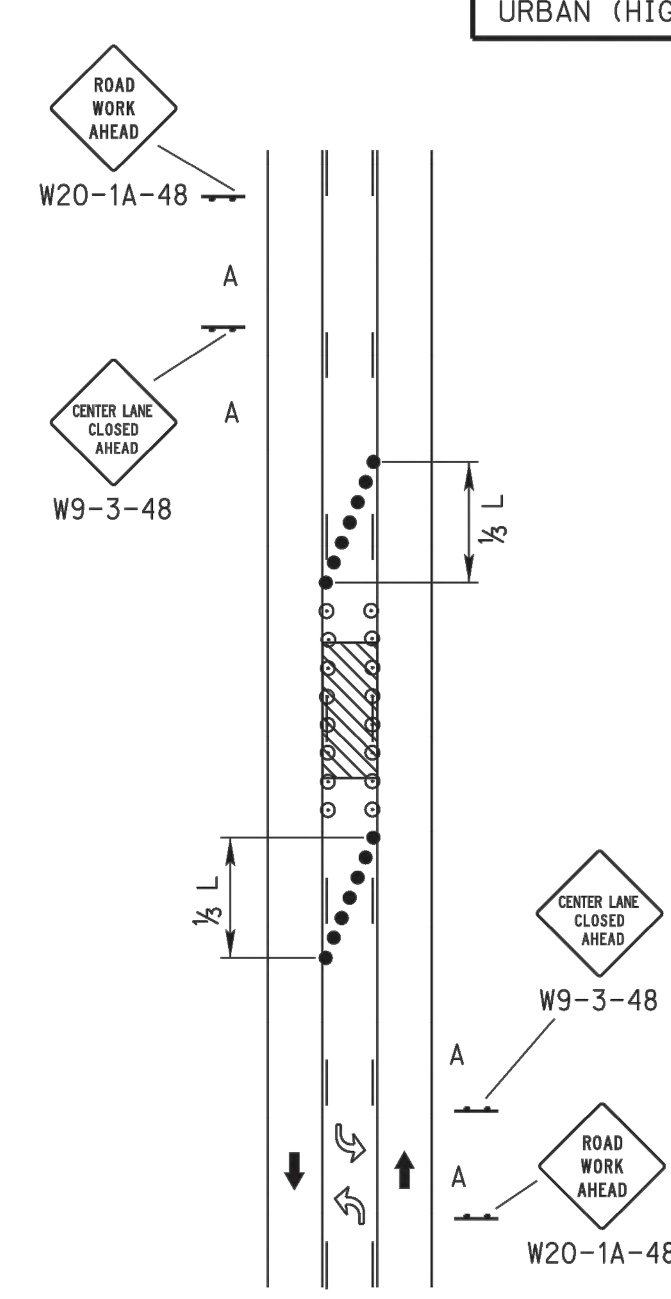
ROAD CLOSED BEYOND DETOUR



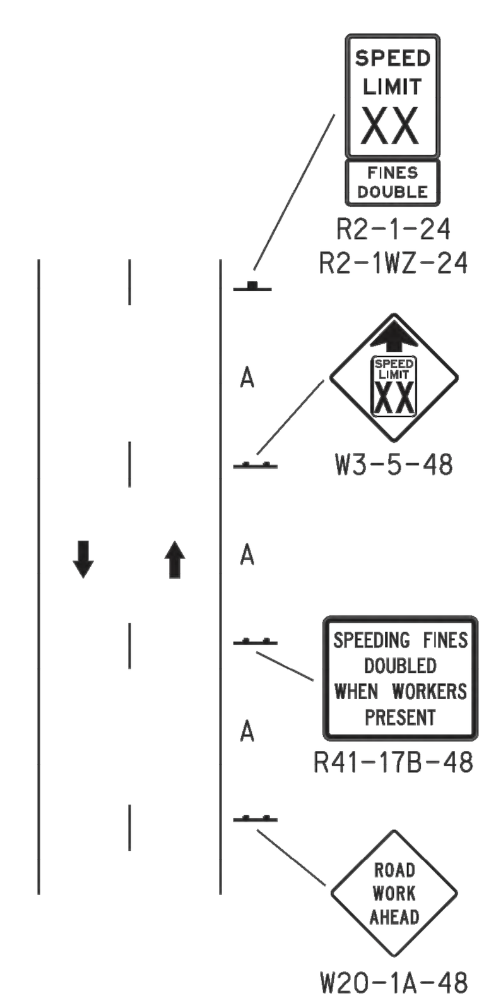
LANE CLOSED NEAR INTERSECTION (RIGHT LANE CLOSED)



3-LANE ROADWAY ONE LANE CLOSED



TWO-WAY LEFT TURN LANE CLOSED



TYPICAL ADVANCED SIGNING

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- TUBULAR POST
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- FLAGGER
- xxxx PAVEMENT MARKING REMOVAL

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LESS.

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

ROAD TYPE	MINIMUM DISTANCE BETWEEN SIGNS A
URBAN (LOW SPEED - 25 MPH TO 40 MPH)	100'
URBAN (HIGH SPEED - 45 MPH OR HIGHER)	350'

NOTES

1. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
2. MINIMUM WIDTH OF TRAVELLED LANE SHALL BE AS REQUIRED BY THE ENGINEER.
3. FLASHING ARROW PANEL REQUIRED ON ALL ROADWAYS WITH POSTED SPEED LIMIT 45 MPH OR HIGHER. THE USE OF A FLASHING ARROW PANEL IS OPTIONAL ON ROADWAYS WITH A POSTED SPEED OF 40 MPH OR LOWER.
4. LONG-TERM FLASHING ARROW PANELS IN URBAN RESIDENTIAL AREAS WHERE DIESEL ENGINE NOISE WILL BE DISRUPTIVE TO RESIDENTS, MAY BE REQUIRED TO OPERATE BY 120 VAC, OR IF SIGHT DISTANCE ALLOWS, A SOLAR POWERED ARROW PANEL MAY BE USED.
5. FOR SHORT-TERM WORK (LESS THAN 24 HOURS) SIGN G20-2B-48 (END ROAD WORK, THANK YOU, DRIVE SAFELY) MAY BE OMITTED.
6. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT (S). WHERE CHANNELIZING DEVICES ARE USED ALONG THE WORK AREA, THE SPACING MAY BE INCREASED TO THE DISTANCE IN FEET EQUAL TO THE SPEED LIMIT, DOUBLED (2 x S). SEE "TAPER FORMULA" TABLE FOR MORE INFORMATION.
7. FOR LANE CLOSURES OVER 72 HOURS, ALL CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED. ON ASPHALT SURFACES, DURABLE PAVEMENT MARKINGS MAY BE COVERED WITH APPROVED BLACK TEMPORARY PAVEMENT MARKING TAPE.
8. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS W13-1P SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.

REV. NO.	DATE	DESCRIPTION OF REVISION
R2	JAN 18	NDOR BORDER TO NDOT BORDER
R1	JUN 14	2009 MUTCD UPDATES

NEBRASKA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN NO. 924-R2

URBAN TRAFFIC CONTROL PLAN

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

DATE

PROFESSIONAL CIVIL ENGINEER DANIEL J. WADDLE E-6289 STATE OF NEBRASKA

ORIGINAL: FEBRUARY 1, 2010

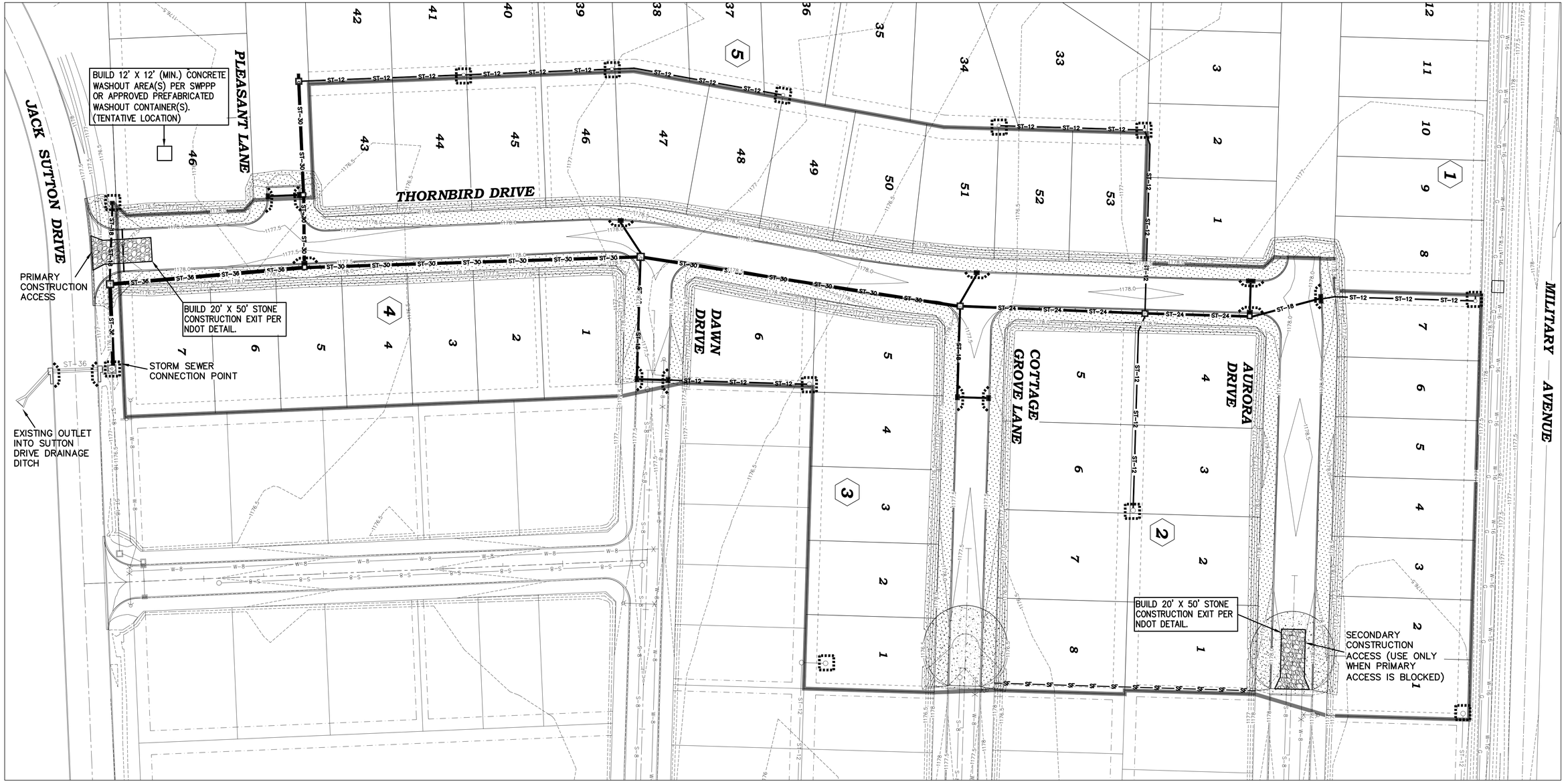
DATE

1 / 3

Dodd Engineering & Surveying LLC
OFFICE: 432 E. Military Ave., Fremont, NE 68025
MAILING ADDRESS: 27535 Kirkwood Circle Wesley Chapel, FL 33544
Email: doddeng1@gmail.com
Stephen W. Dodd, P.E. & L.S. Ph. 402-720-5017

TRAFFIC CONTROL PLAN

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA



SWPPP LEGEND

- SF — SILT FENCE
- INLET PROTECTION
- INLET FILTER
- TYPE B SEEDING & MULCHING

NOTE: SEE SPECIAL PROVISIONS FOR FINAL SEED MIXTURE.

ACTIVITY	SCHEDULE
INSTALL CONSTRUCTION EXIT	AT COMMENCMENT OF CONSTRUCTION
COLLECT TRASH AND LITTER FROM WORK AREAS AND PLACE IN COVERED DUMPSTERS	FROM COMMENCEMENT TO COMPLETION
INSTALL AND MAINTAIN SILT FENCE AND/OR SILT CHECKS AS SHOWN ON PLANS WHEN APPROPRIATE FOR PHASE OF CONSTRUCTION	FROM COMMENCEMENT TO COMPLETION
KEEP VEHICLE AND EQUIPMENT FUELING, CLEANING, AND MAINTENANCE AREAS FREOF SPILLS, LEAKS, OR ANY OTHER DELETERIOUS MATERIAL	FROM COMMENCEMENT TO COMPLETION
KEEP MATERIALS THAT ARE POTENTIAL STORMWATER CONTAMINANTS STORED INSIDE OR UNDER COVER	FROM COMMENCEMENT TO COMPLETION
INSTALL CONCRETE WASHOUT AREA	AT COMMENCEMENT OF CONCRETE PLACEMENT.
TEMPORARY SEEDING AND MULCHING	WHENEVER WORK IS SCHEDULED TO CEASE IN AN AREA FOR MORE THAN 30 DAYS.

ACTIVITY	SCHEDULE
INSTALL CONSTRUCTION EXIT	AT COMMENCMENT OF CONSTRUCTION
INSTALL INLET PROTECTION	INSTALL FILTER SOCKS AND EXISTING INLETS AT COMMENCEMENT OF CONSTRUCTION. INSTALL INLET PROTECTION AT THE NEW INLETS AS SOON AS WALLS ARE POURED. INSTALL FILTER SOCKS AS SOON AS GRATES OR CURB OPENINGS ARE INSTALLED.
INSTALL DITCH CHECKS	INSTALL AS SOON AS DITCHES ARE GRADED.
PERMANENT SEEDING, MULCHING, SOIL STABILIZATION BLANKET OR SODDING	WITHIN 30 DAYS OF COMPLETION OF FINAL GRADING.
BMP'S TO BE LEFT IN PLACE	FOR SUBDIVISIONS; LEAVE REAR YARD AND FIELD INLET PROTECTION IN PLACE TO BE REMOVED BY OTHERS LATER AS LOTS ARE DEVELOPED.
REMOVAL OF BMP'S	AFTER ALL GRADING, UTILITY AND PAVING IS COMPLETED AND AFTER FINAL SEEDING AND SODDING IS 70% ESTABLISHED.

0 40 80

SCALE: 1" = 40'

NOTE: UTILITY LOCATIONS ARE INCOMPLETE AND APPROXIMATE AND MAY NOT BE RELIED ON FOR CONSTRUCTION. NOTIFY DIGGERS HOTLINE (1-800-331-5666) 24 HOURS PRIOR TO ANY CONSTRUCTION. DODD ENGINEERING & SURVEYING IS NOT RESPONSIBLE FOR ANY DAMAGE TO ANY UNDERGROUND UTILITY OR STRUCTURE.

CALL COVERS ALL
1-800-331-5666
UTILITIES COORDINATING COMMITTEE

REGISTERED PROFESSIONAL ENGINEER
STEPHEN W. DODD
E-6508
STATE OF NEBRASKA
08/03/2022

SPECIAL PROVISIONS
FOR
STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

REFERENCE DOCUMENTS
1. Plan sheets prepared by Dodd Engineering & Surveying LLC.
2. Omaha Regional Stormwater Design Manual (ORSDM) This may be downloaded from the following website:
http://www.papiopartnership.org/downloads/stormwater_design_manual.pdf/
3. NDOT Standard Plans and Special Plans

GENERAL

A Notice of Intent shall be filed by the Owner prior to commencement of construction. Regular inspections will be conducted by the Owner or his representative. All other provisions with regard to the City of Fremont's blanket NPDES permit shall apply.

Activities, facilities and schedule shall be as per Plan sheets prepared by Dodd Engineering & Surveying LLC. The Contractor is responsible for all activities, installation, maintenance and removal of facilities and adherence to the provisions of the NPDES permit.

Portions of the ORSDM and NDOT Standard Plans and Special Plans are included herein for convenience. However, those portions of the ORSDM not included apply as well.

TABLE OF CONTENTS

Concrete Washout & Const. Ent.	NDOT Special Plan C (Concrete Washout & Const. Ent.)
Silt Fence	NDOT Std Plan 502
Inlet Protection	NDOT Special Plan C –Inlet Protection
Temporary Seeding	9-128 to 9-129
Permanent Seeding	per NDOT standard specs. (not included)
Mulching	9-140 to 9-142

STORM WATER POLLUTION PREVENTION LAYOUT (SWPPP)

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

SWPPP 1

Dodd Engineering & Surveying LLC
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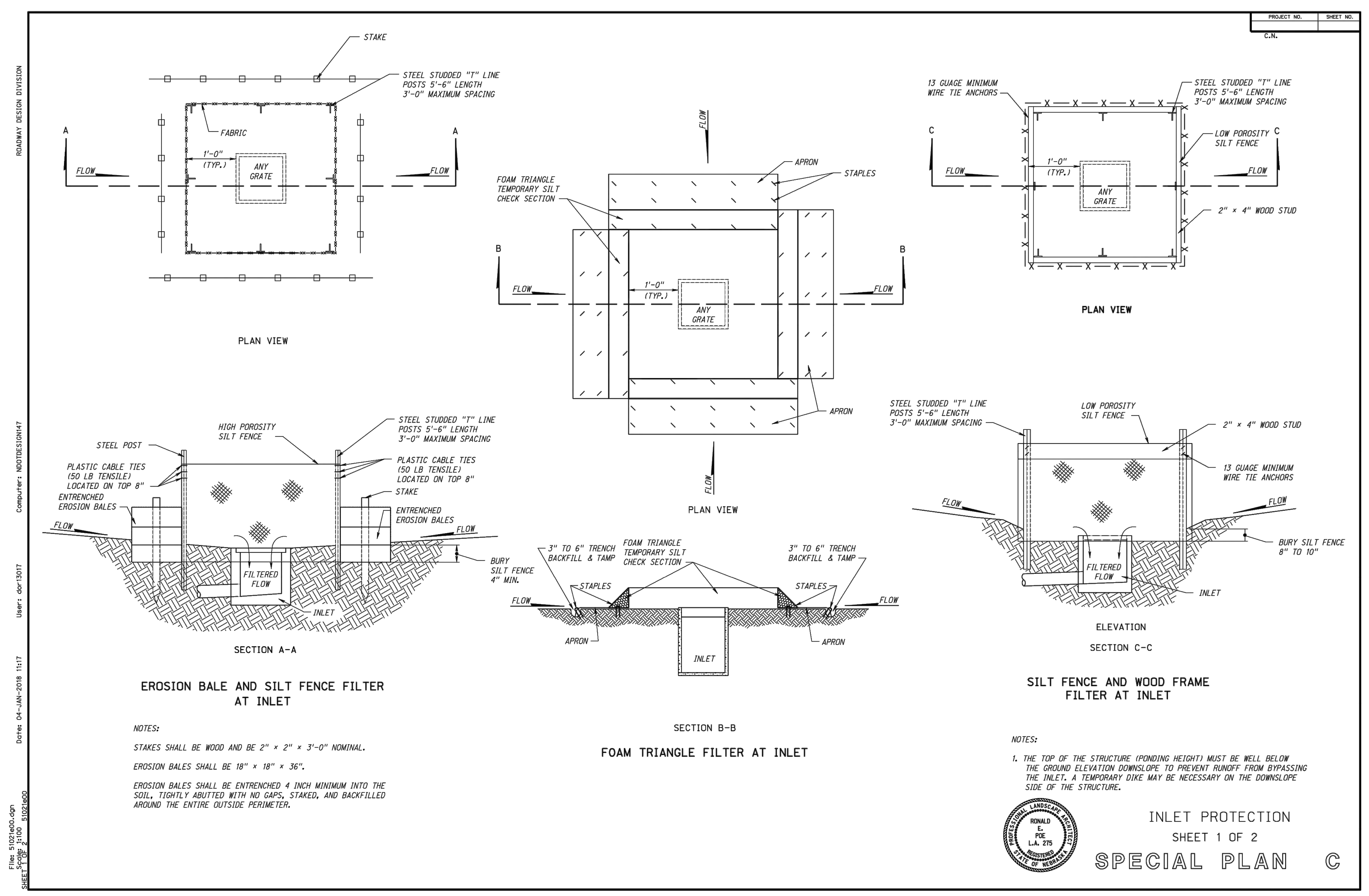


9.5.20 TEMPORARY SEEDING

STANDARD AND SPECIFICATION

Definition: The establishment of a temporary vegetative cover on disturbed areas by seeding with appropriate rapidly growing annual plants.

Purpose: To reduce erosion and sedimentation by stabilizing disturbed areas that will not be brought to final grade for a period of thirty days or more, reduce damage from sediment and runoff to downstream or off-site areas, and to provide protection to bare soils exposed during construction until permanent vegetation or other erosion control measures can be established.

Conditions Where Practice Applies:

Where exposed soil surfaces are not to be fine-graded for periods longer than 14 days. Such areas include denuded areas, soil stockpiles, dikes, dams, sides of sediment basins, temporary roadbanks, etc. A permanent vegetative cover shall be applied to areas that will be left dormant for a period of more than 1 year.

Construction Specifications:

1. Prior to seeding, install all necessary erosion control practices such as dikes, waterways, and basins.
2. Provide proper shaping of the area to be seeded in a manner such that seedbed preparation and seeding operations can be carried out.
3. Seedbed Preparation:
   a. If the area has been recently loosened or disturbed, no further roughening is required. When the area is compacted, crusted or hardened, the soil surface shall be loosened by discing, raking, harrowing, or other acceptable means. Seedbed preparation should not be undertaken when excessively wet conditions exist. Seedbed shall be prepared to a depth of approximately 3 inches.
   b. If the soil being seeded is fertile topsoil (see Std. & Spec. 9.5.19, Topsoiling), fertilizer is not required. However, if subsoil is to be seeded, it will most likely be deficient in nutrients required for seed germination and growth. 450 lbs./acre of 10-20-20 fertilizer should be used, and it is essential that this fertilizer be incorporated into the top 2-4 inches of soil during seedbed preparation. Soils which are highly acidic should be limited.
4. Seeding:
   a. Certified seed shall be used on all temporary seedings. Select plants appropriate to the season and site conditions from those listed in the accompanying table.

Time of Year	Species	Seeding Rate
March 15 – May 15	Spring Oats	2 bu./AC.
	Barley	2 bu./AC.
	Perennial Ryegrass	30-40 lbs./AC.
	Orchard Grass	20-25 lbs./AC.

Time of Year	Species	Seeding Rate
May 16 – July 15	Grain Sorghum (drilled)	10-20 lbs./AC.
	Forage Sorghum (drilled)	10-20 lbs./AC.
	Hybrid Sundangrass	20-30 lbs./AC.
July 16 – October 15	Spring Oats	2 bu./AC.
	Barley	2 bu./AC.
August 16 – October 15	Winter Wheat	1.5 bu./AC.
	Winter Rye	1.5 bu./AC.
October 15 – March 15	No Planting, use mulches	1.5 bu./AC.

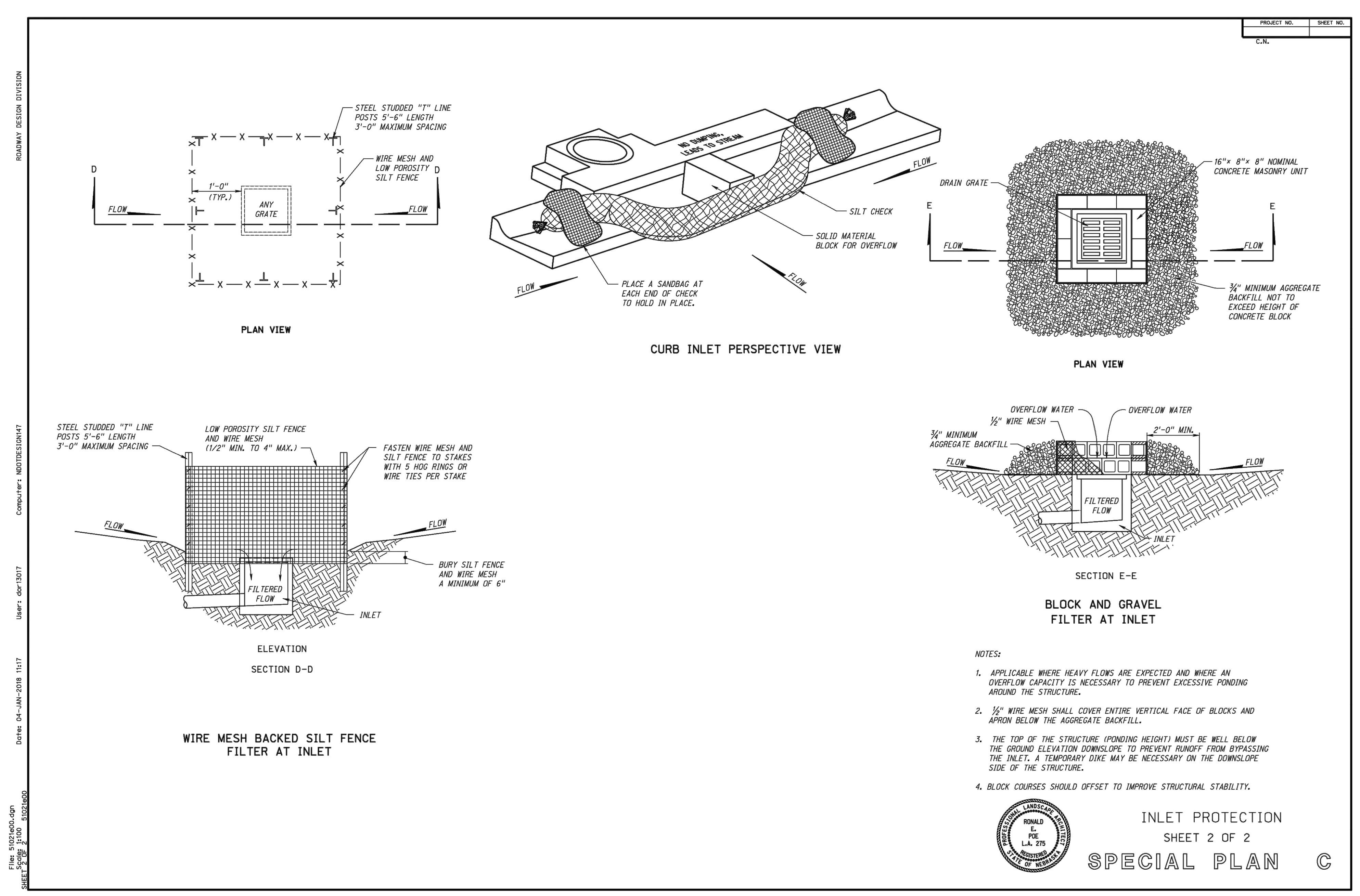
Other seedings may be used as recommended by qualified agronomists or soil conservationists.

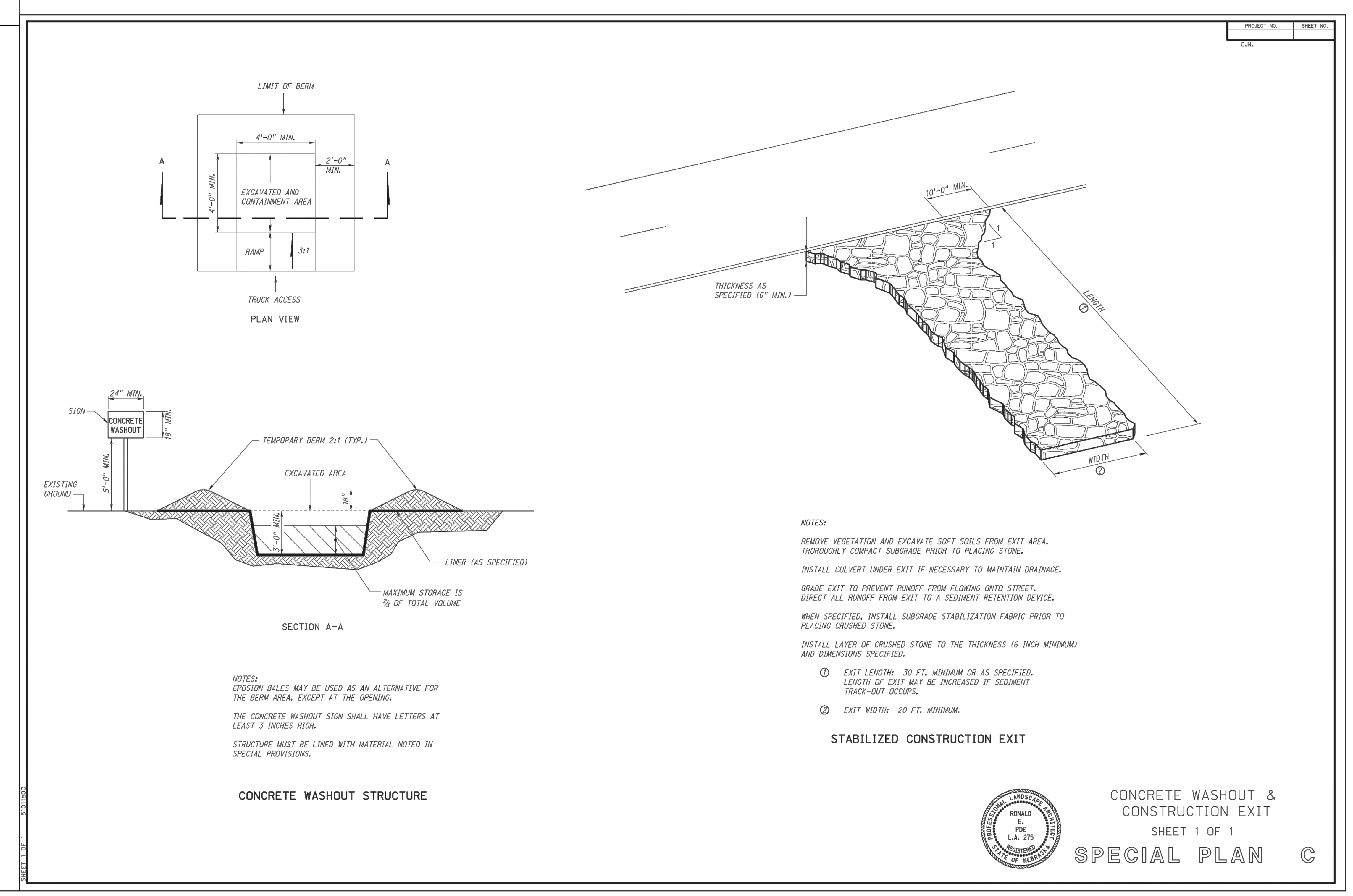
   b. Seed should be evenly applied with a cyclone spreader, drill, cultipacker seeder, or hydroseeder. Small grains shall be planted no more than 1-1/2 inches deep and grasses no more than 1/2 inch deep.

5. When seedings are made on critical sites or adverse soil conditions, mulch material will be applied immediately after seeding. Seedings made during optimum seeding dates and with favorable soils on very flat areas may not need to be mulched. Mulching shall be done in accordance with Std. & Spec. 9.5.23, Mulching.

Maintenance:

Areas which fail to establish vegetative cover adequate to prevent rill erosion will be re-seeded as soon as such areas are identified. Control weeds by mowing.





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REGISTERED PROFESSIONAL ENGINEER STEPHEN W. DODD E-6508 STATE OF NEBRASKA
08/03/2022

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) DETAILS

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

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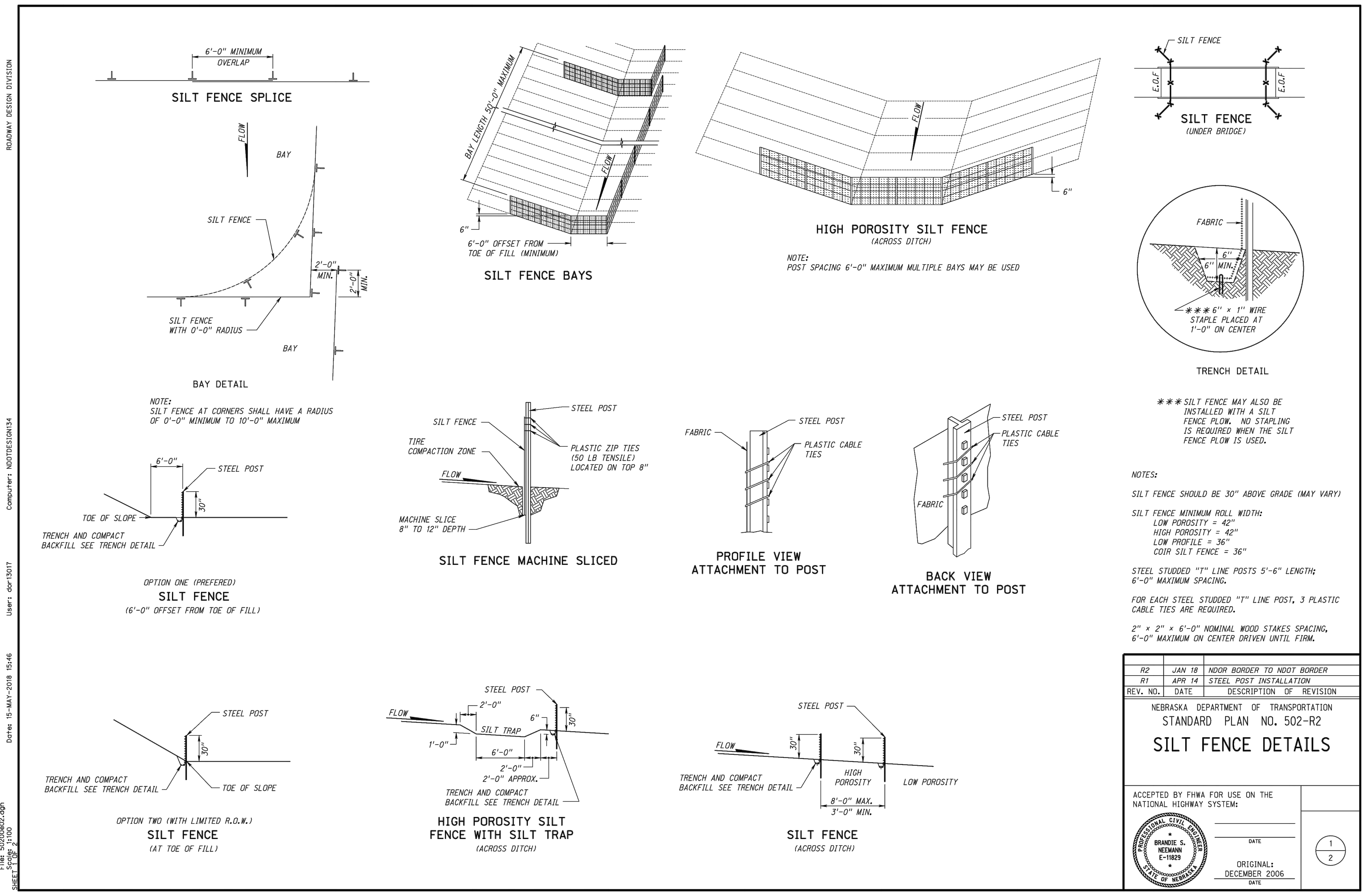

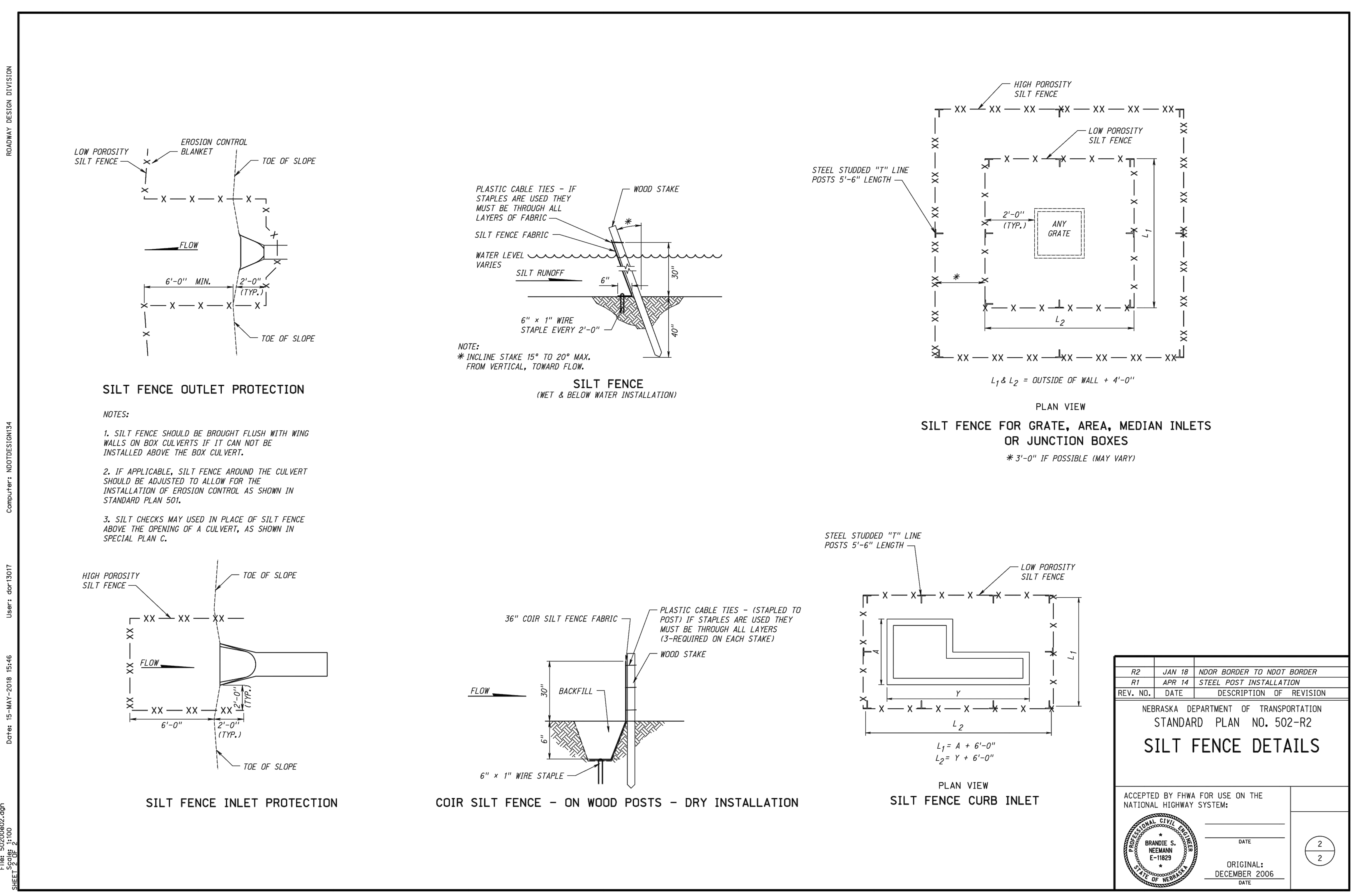

9.5.23 MULCHING

STANDARD AND SPECIFICATION

Definition: Application of plant residues or other suitable materials to the soil surface.

Purpose: To prevent erosion by protecting the soil surface from raindrop impact and reducing the velocity of overland flow. Mulch helps foster the growth of vegetation by increasing available moisture and providing insulation against extreme heat and cold.

Conditions Where Practice Applies:

Mulching can be used at anytime where protection of the soil surface is desired. Mulch can be used in conjunction with seedings to establish vegetation, or by itself to provide temporary protection of the soil surface.

Construction Specifications:

1. Site Preparation:

   a. Prior to mulching, install any needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways and sediment basins.

   b. Complete required shaping of area in a manner such that mulching operations can be carried out.

   c. Soil amendments shall be incorporated and surface roughening accomplished as needed. Seed shall be applied prior to mulching except where seed is to be applied as part of a hydroseeder slurry containing fiber mulch or where seed is to be applied following an organic mulch spread during winter months.

2. Materials:

   a. Organic materials may be used in any area where mulch is required, subject to the restrictions noted in Table 9.5.23A. Select mulch material based on site requirements, availability of materials, and availability of labor and equipment.

   b. Mulch materials shall be spread uniformly by hand or machine. When spreading straw mulch by hand, divide the area to be mulched into approximately 1,000 s.f. sections and place 70-90 lbs. (two bales) of straw in each section to facilitate uniform distribution.

3. Anchoring Mulch:

Mulching must be anchored immediately to minimize loss by wind and water. This may be done by one of the following methods (listed by preference) depending upon the size of area, erosion hazard and cost.

   a. Mulch Anchoring Tool and Tracking – A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the top two inches of soil. This practice offers maximum erosion control but is limited to flatter slopes where equipment can operate safely. "Tracking" is the process of cutting mulch into the soil using a bulldozer or other equipment that runs on cleated tracks. Tracking is used primarily on slopes 3:1 or steeper. This practice

should be done on the contour whenever possible, except tracking which should be done up and down the slope with cleat marks running across the slope.

   b. Mulch Nettings – Staple lightweight biodegradable paper, plastic or cotton netting over the mulch according to manufacturer's recommendations.

   c. Liquid Mulch Binders – Application of liquid mulch binders and tackifiers should be heavier at edges, in valleys, and at crests of banks and other areas where the mulch has a greater potential to be moved by wind or water. All other areas should have a uniform application of binder. Binders may be applied after the mulch is spread or may be sprayed into the mulch as it is being blown onto the soil. The use of synthetic binders is the preferred method of mulch binding. Apply at rates recommended by the manufacturer.

   d. Wood Cellulose Fiber – The fiber binder shall be applied at a net dry weight of 750 lbs./AC. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

   e. Peg and Twine – Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to the soil surface by stretching twine between pegs in a criss-cross within a square pattern. Secure twine around each peg with two or more turns.

Maintenance:

All mulches and soil coverings should be inspected periodically (particularly after rainstorms) to check for erosion. Where erosion is observed in mulched areas, additional mulch should be applied. Nets and mats should be inspected after rainstorms for dislocation or failure. If washouts or breakage occur, reinstall netting or matting as necessary after repairing damage to the slope or ditch. Inspections should take place until grasses are firmly established. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface; repair as needed.

TABLE 9.5.23-1a
ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCHES:	RATES:		NOTES:
	Per Acre	Per 1000 sq. ft.	
Straw or Hay	1 ½ - 2 tons (Minimum 2 tons for winter cover)	70 – 90 lbs.	Free from weeds and coarse matter. Must be anchored. spread with mulch blower or by hand.
Fiber Mulch	Minimum 1500 lbs.	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
Corn Stalks	4 – 6 tons	185 – 275 lbs.	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Wood Chips	4 – 6 tons	185 – 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
Bark Chips or Shredded Bark	50 – 70 cu. yds.	1 – 2 cu. yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.

* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. Or 45 lbs./1000 sq. ft.

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STEPHEN DODD E-6508 STATE OF NEBRASKA REGISTERED PROFESSIONAL ENGINEER
08/03/2022

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) DETAILS

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

SWPPP 3

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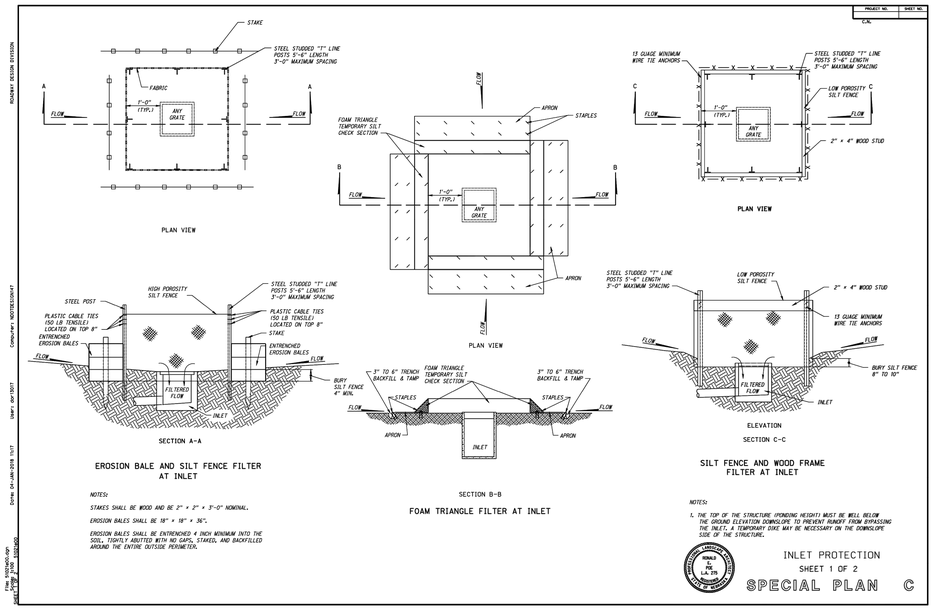

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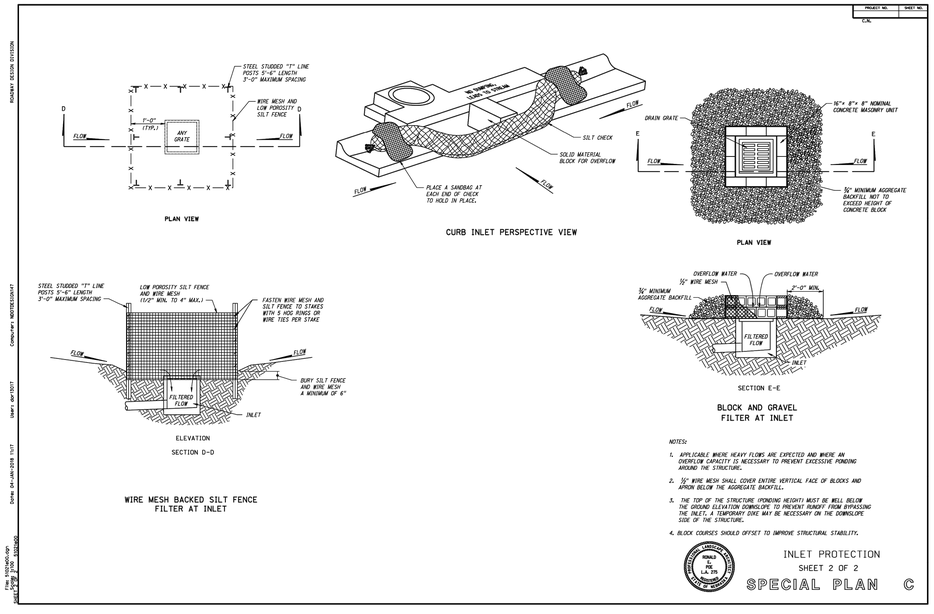

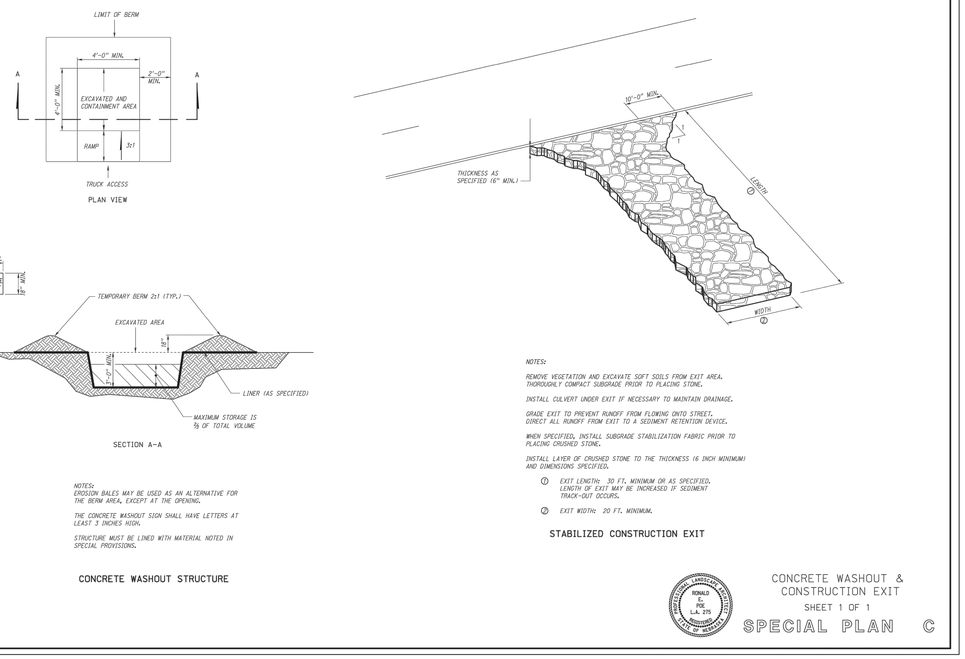

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STORM WATER POLLUTION PREVENTION PLAN (SWPPP) DETAILS

GRADING, PAVING, WATER, STORM AND SANITARY SEWER IMPROVEMENTS
SUNRIDGE PLACE SECOND ADDITION - REPLAT 1 - PHASE 1
FREMONT, NEBRASKA

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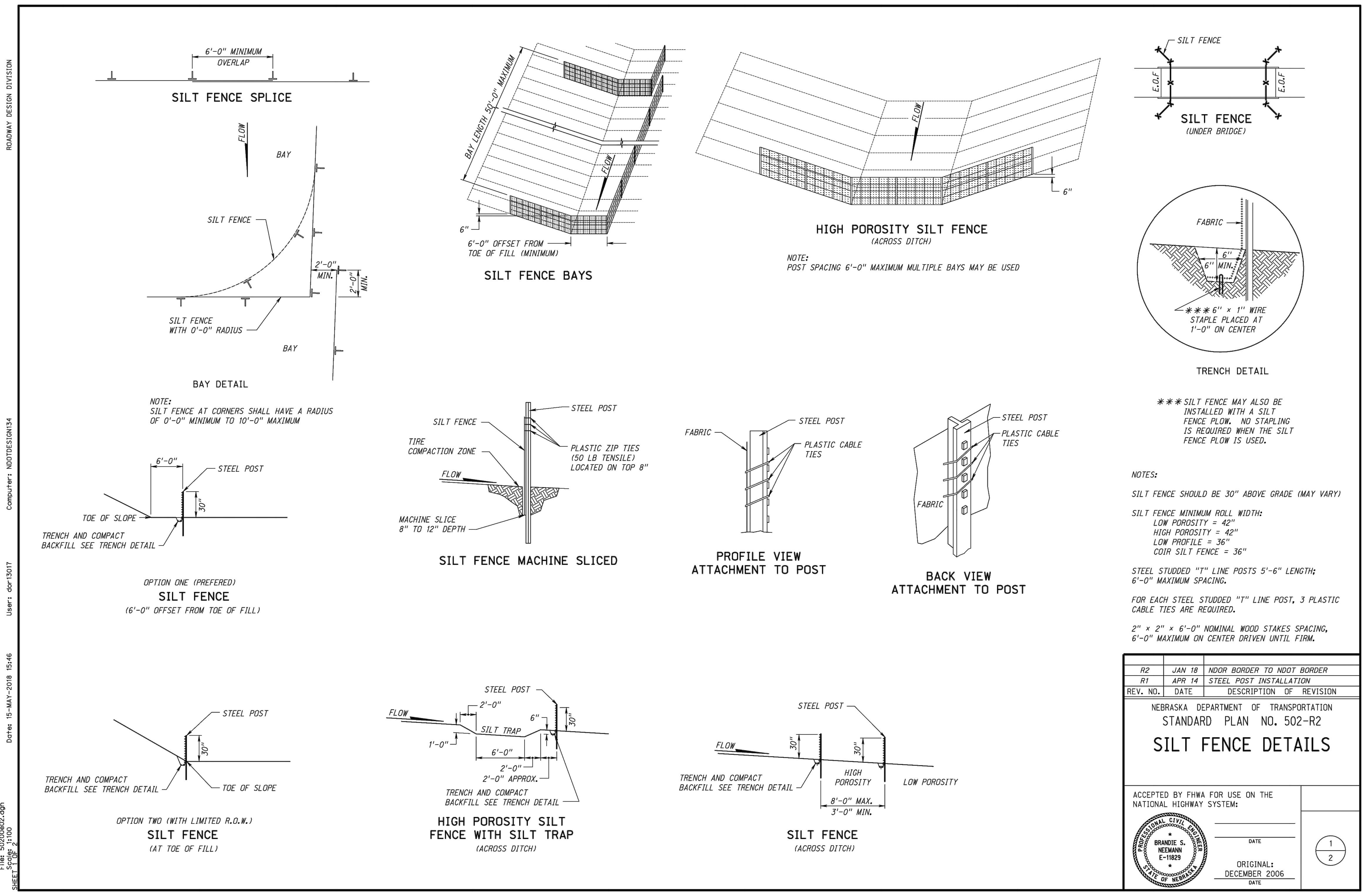

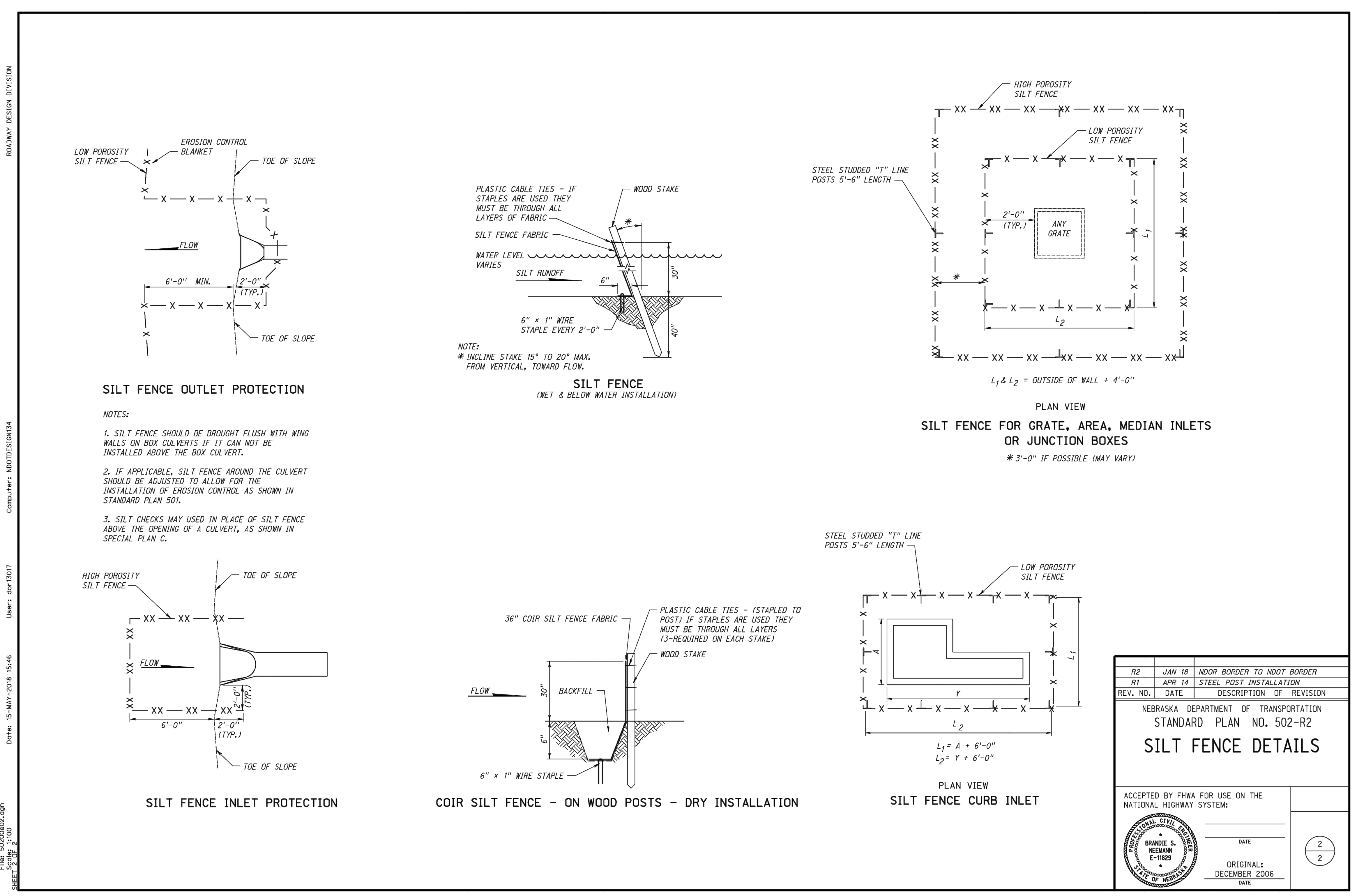

9.5.23 MULCHING

STANDARD AND SPECIFICATION

Definition: Application of plant residues or other suitable materials to the soil surface.

Purpose: To prevent erosion by protecting the soil surface from raindrop impact and reducing the velocity of overland flow. Mulch helps foster the growth of vegetation by increasing available moisture and providing insulation against extreme heat and cold.

Conditions Where Practice Applies:

Mulching can be used at anytime where protection of the soil surface is desired. Mulch can be used in conjunction with seedings to establish vegetation, or by itself to provide temporary protection of the soil surface.

Construction Specifications:

1. Site Preparation:

   a. Prior to mulching, install any needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways and sediment basins.

   b. Complete required shaping of area in a manner such that mulching operations can be carried out.

   c. Soil amendments shall be incorporated and surface roughening accomplished as needed. Seed shall be applied prior to mulching except where seed is to be applied as part of a hydroseeder slurry containing fiber mulch or where seed is to be applied following an organic mulch spread during winter months.

2. Materials:

   a. Organic materials may be used in any area where mulch is required, subject to the restrictions noted in Table 9.5.23A. Select mulch material based on site requirements, availability of materials, and availability of labor and equipment.

   b. Mulch materials shall be spread uniformly by hand or machine. When spreading straw mulch by hand, divide the area to be mulched into approximately 1,000 s.f. sections and place 70-90 lbs. (two bales) of straw in each section to facilitate uniform distribution.

3. Anchoring Mulch:

Mulching must be anchored immediately to minimize loss by wind and water. This may be done by one of the following methods (listed by preference) depending upon the size of area, erosion hazard and cost.

   a. Mulch Anchoring Tool and Tracking – A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the top two inches of soil. This practice offers maximum erosion control but is limited to flatter slopes where equipment can operate safely. "Tracking" is the process of cutting mulch into the soil using a bulldozer or other equipment that runs on cleated tracks. Tracking is used primarily on slopes 3:1 or steeper. This practice

should be done on the contour whenever possible, except tracking which should be done up and down the slope with cleat marks running across the slope.

   b. Mulch Nettings – Staple lightweight biodegradable paper, plastic or cotton netting over the mulch according to manufacturer's recommendations.

   c. Liquid Mulch Binders – Application of liquid mulch binders and tackifiers should be heavier at edges, in valleys, and at crests of banks and other areas where the mulch has a greater potential to be moved by wind or water. All other areas should have a uniform application of binder. Binders may be applied after the mulch is spread or may be sprayed into the mulch as it is being blown onto the soil. The use of synthetic binders is the preferred method of mulch binding. Apply at rates recommended by the manufacturer.

   d. Wood Cellulose Fiber – The fiber binder shall be applied at a net dry weight of 750 lbs./AC. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

   e. Peg and Twine – Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to the soil surface by stretching twine between pegs in a criss-cross within a square pattern. Secure twine around each peg with two or more turns.

Maintenance:

All mulches and soil coverings should be inspected periodically (particularly after rainstorms) to check for erosion. Where erosion is observed in mulched areas, additional mulch should be applied. Nets and mats should be inspected after rainstorms for dislocation or failure. If washouts or breakage occur, reinstall netting or matting as necessary after repairing damage to the slope or ditch. Inspections should take place until grasses are firmly established. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface; repair as needed.

TABLE 9.5.23-1a
ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCHES:	RATES:		NOTES:
	Per Acre	Per 1000 sq. ft.	
Straw or Hay	1 ½ - 2 tons (Minimum 2 tons for winter cover)	70 – 90 lbs.	Free from weeds and coarse matter. Must be anchored. spread with mulch blower or by hand.
Fiber Mulch	Minimum 1500 lbs.	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
Corn Stalks	4 – 6 tons	185 – 275 lbs.	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Wood Chips	4 – 6 tons	185 – 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
Bark Chips or Shredded Bark	50 – 70 cu. yds.	1 – 2 cu. yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.

* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. Or 45 lbs./1000 sq. ft.

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