

CURVE TABLE					
CURVE	RADIUS	DELTA	ARC DIST.	CHORD BEARING	CHORD DIST.
C1	400.44'	101°11'12"	71.19'	N 09°27'46" E	71.10'
C2	522.96'	8°22'44"	76.48'	S 59°45'06" W	76.41'
C3	622.96'	21°54'53"	238.27'	N 52°59'00" E	236.82'
C4	492.96'	33°38'27"	289.44'	S 39°44'31" W	285.30'
C5	954.93'	9°23'50"	156.62'	S 18°15'50" W	156.44'
C6	572.96'	50°22'33"	503.76'	N 38°45'10" E	487.69'
C7	572.96'	42°01'11"	420.20'	S 42°55'53" W	410.85'
C8	1909.86'	9°11'57"	306.64'	N 26°31'13" E	306.31'
C9	1909.86'	12°49'08"	427.30'	N 37°31'46" E	426.41'
C10	674.07'	35°47'55"	421.16'	S 26°02'22" W	414.34'
C11	1157.49'	81°30'03"	1646.48'	N 48°53'26" E	1511.14'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 88°13'22" E	91.54'
L2	S 85°37'50" E	50.00'
L3	S 28°19'42" E	9.83'
L4	N 01°47'58" E	142.42'
L5	N 21°43'40" E	9.21'
L6	N 21°30'16" E	118.58'
L7	N 28°56'30" E	101.68'
L8	N 70°40'32" E	53.75'
L9	N 80°26'57" E	67.14'
L10	N 69°40'34" E	31.76'
L11	S 15°14'14" W	33.45'
L12	N 04°50'18" E	100.79'
L13	N 07°22'33" W	83.59'
L14	S 01°17'59" W	16.66'
L15	N 28°39'05" E	66.47'
L16	N 27°04'39" E	84.64'
L17	N 38°58'15" E	112.00'
L18	N 29°16'40" W	160.27'
L19	N 00°05'59" W	83.96'
L20	N 01°26'46" W	132.34'

LINE TABLE		
LINE	BEARING	DISTANCE
L21	N 04°02'54" W	101.35'
L22	S 70°27'13" E	12.45'
L23	S 20°19'49" W	32.24'
L24	N 31°14'03" E	168.26'
L25	N 60°13'26" E	80.30'
L26	N 39°11'27" E	50.25'
L27	N 33°28'58" E	131.85'
L28	N 63°25'52" E	64.81'
L29	N 20°43'06" E	45.52'
L30	N 65°30'35" W	67.36'
L31	S 16°58'44" W	38.88'
L32	S 17°30'50" W	72.22'
L33	S 19°21'46" W	14.92'
L34	S 24°14'40" W	35.17'
L35	S 29°23'21" W	19.59'
L36	S 31°01'10" W	14.12'
L37	S 34°29'42" W	34.05'
L38	S 37°53'38" W	32.31'
L39	S 40°05'10" W	48.19'
L40	S 39°45'35" W	32.28'

LINE TABLE		
LINE	BEARING	DISTANCE
L41	S 40°36'19" W	65.58'
L42	S 38°59'50" W	33.69'
L43	S 38°13'09" W	34.59'
L44	S 34°17'14" W	34.27'
L45	S 48°29'34" W	22.90'
L46	S 01°46'25" W	14.25'
L47	S 28°15'48" W	16.03'
L48	S 27°28'53" W	16.83'
L49	S 22°21'45" W	73.00'
L50	S 20°55'15" W	33.47'
L51	S 22°10'44" W	16.95'
L52	S 23°15'13" W	85.10'
L53	S 26°06'54" W	62.75'
L54	N 04°03'24" W	7.04'
L55	N 23°15'13" E	114.20'
L56	N 23°28'45" E	65.59'
L57	S 22°31'33" W	63.28'
L58	S 19°17'13" W	62.51'
L59	S 17°05'27" W	48.72'
L60	S 14°42'21" W	46.76'

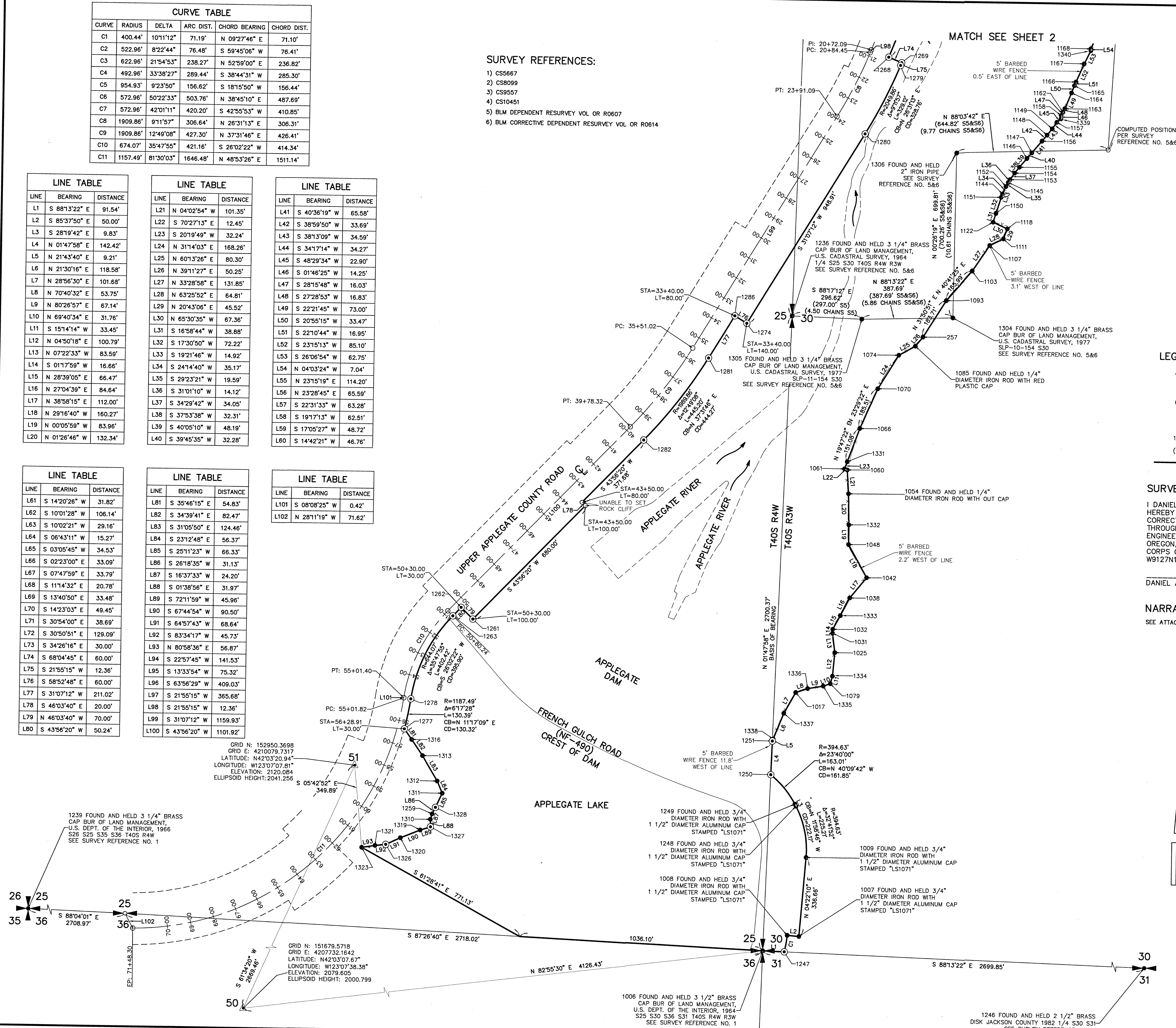
LINE TABLE		
LINE	BEARING	DISTANCE
L61	S 14°20'26" W	31.82'
L62	S 10°01'28" W	106.14'
L63	S 10°02'21" W	29.16'
L64	S 06°43'11" W	15.27'
L65	S 03°05'45" W	34.53'
L66	S 02°23'00" E	33.09'
L67	S 07°47'59" E	33.79'
L68	S 11°14'32" E	20.78'
L69	S 13°40'50" E	33.48'
L70	S 14°23'03" E	49.45'
L71	S 30°54'00" E	38.69'
L72	S 30°50'51" E	129.09'
L73	S 34°26'16" E	30.00'
L74	S 68°04'45" E	60.00'
L75	S 21°55'15" W	12.36'
L76	S 58°52'48" E	60.00'
L77	S 31°07'12" W	211.02'
L78	S 46°03'40" E	20.00'
L79	N 46°03'40" W	70.00'
L80	S 43°56'20" W	50.24'

LINE TABLE		
LINE	BEARING	DISTANCE
L81	S 35°46'15" E	54.83'
L82	S 34°39'41" E	82.47'
L83	S 31°05'50" E	124.46'
L84	S 23°12'48" E	56.37'
L85	S 25°11'23" W	66.33'
L86	S 26°18'35" W	31.13'
L87	S 16°37'33" W	24.20'
L88	S 01°38'56" E	31.97'
L89	S 72°11'59" W	45.96'
L90	S 67°44'54" W	90.50'
L91	S 64°57'43" W	68.64'
L92	S 83°34'17" W	45.73'
L93	N 80°58'36" E	56.87'
L94	S 22°57'45" W	141.53'
L95	S 13°33'54" W	75.32'
L96	S 63°56'29" W	409.03'
L97	S 21°55'15" W	365.68'
L98	S 21°55'15" W	12.36'
L99	S 31°07'12" W	1159.93'
L100	S 43°56'20" W	1101.92'

LINE TABLE		
LINE	BEARING	DISTANCE
L101	S 08°08'25" W	0.42'
L102	N 28°11'19" W	71.62'

SURVEY REFERENCES:

- 1) CS5667
- 2) CS8099
- 3) CS9557
- 4) CS10451
- 5) BLM DEPENDENT RESURVEY VOL OR R0607
- 6) BLM CORRECTIVE DEPENDENT RESURVEY VOL OR R0614



SURVEY

OF APPLGATE LAKE INTERCHANGE
CORPS. OF ENGINEERS OPERATIONAL AREA
LOCATED IN A PORTION OF THE
SE 1/4 OF THE NE 1/4
NW 1/4 OF THE SE 1/4
NE 1/4 OF THE SE 1/4
SW 1/4 OF THE SE 1/4
SE 1/4 OF THE SE 1/4
OF SECTION 25
T. 40 S., R. 4 W., W.M.
AND IN PORTIONS OF GOVERNMENT LOTS
1 2, 3, 4, 5, 6 AND 7
OF SECTION 30
T. 40 S., R. 3 W., W.M.
JACKSON COUNTY, OREGON

- LEGEND:**
- △ INDICATES SURVEY CONTROL POINT
 - INDICATES FOUND 3/4" DIAMETER IRON ROD WITH ALUMINUM CAP (UNRECORDED SURVEY) UNLESS OTHERWISE NOTED
 - ⊙ INDICATES 5/8" X 30" REBAR WITH STANDARD 3-1/2" U.S.A.C.E. ALUMINUM CAP STAMPED WITH DESIGNATOR, SET (SEE TABLE FOR DESCRIPTIONS)
 - INDICATES CALCULATED POSITION
 - 1277 INDICATES POINT NUMBER (SEE TABLE)
 - (S#) INDICATES SURVEY REFERENCE
 - INDICATES BOUNDARY

SURVEYOR'S CERTIFICATE:

I DANIEL A. RENTON, REGISTERED LAND SURVEYOR IN THE STATE OF OREGON, I HEREBY CERTIFY THAT THIS PLAN AND NOTES HEREON, OR ATTACHED, ARE A CORRECT REPRESENTATION OF A SURVEY I PERFORMED DURING JANUARY 2019 THROUGH NOVEMBER 2019 AT THE REQUEST OF THE U.S. ARMY CORPS OF ENGINEERS, IN ACCORDANCE WITH THE SURVEY RECORDING ACT OF THE STATE OF OREGON, AND ARTICLES OF THE DEPARTMENT OF THE ARMY, PORTLAND DISTRICT, CORPS OF ENGINEERS, CONTRACT NO. W9127N16-D-3003 AND DELIVERY ORDER W9127N18F0147.

DANIEL A. RENTON

NARRATIVE:
SEE ATTACHED 8 1/2" X 11" NARRATIVE

RECEIVED

DATE: 12/31/19 BY: PB

THIS SURVEY CONSISTS OF:
3 SHEET(S) MAP
3 PAGE(S) NARRATIVE
JACKSON COUNTY SURVEYOR

REGISTERED PROFESSIONAL LAND SURVEYOR
Daniel A. Renton
OREGON
JUNE 30, 1997
DANIEL A. RENTON
2830
Expires 12-31-2020
12/31/19

SCALE 1 INCH = 200 FEET

THE DISTANCES SHOWN HEREON ARE GRID TO OBTAIN GROUND DISTANCES, DIVIDE THE GRID DISTANCES BY THE COMBINED SCALE FACTOR OF 0.9999931229 (0.036' PER MILE/0.0007 PER 100')

US Army Corps of Engineers

PREPARED FOR: U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
333 SW FIRST AVE
PORTLAND OR 97204

MINISTER-GLAESER SURVEYING INC.
2200 E. EVERGREEN BLVD.
VANCOUVER, WA 98661
(360) 694-3313

DESIGNED BY: DAN RENTON
DRAWN BY: NG
CHECKED BY: DMR
DATE: 2019/201
FILE NUMBER:
PLOT SCALE: 1"=200'
PLOT DATE: 2019/2019
SIZE: 11x17
ARCH ID: 18936/APPLGATE_S1.DWG

RECORD OF SURVEY
APPLGATE LAKE LAND INTERCHANGE CORP. OF ENGINEERS
OPERATIONAL AREA LAND SURVEY
SECTION BOUNDARY MAINTENANCE
CONTRACT NO. W9127N16-D-3003
DELIVERY ORDER NO. W9127N18F0147
OPTIONAL TASK 13

SHEET IDENTIFICATION
1 OF 3

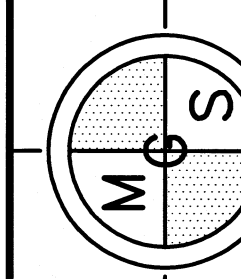
SURVEY

OF APPLAGATE LAKE LAND INTERCHANGE
 CORPS. OF ENGINEERS OPERATIONAL AREA
 LOCATED IN A PORTION OF THE
 SE 1/4 OF THE NE 1/4
 NW 1/4 OF THE SE 1/4
 NE 1/4 OF THE SE 1/4
 SW 1/4 OF THE SE 1/4
 SE 1/4 OF THE SE 1/4
 OF SECTION 25
 T. 40 S., R. 4 W., W.M.
 AND IN PORTIONS OF GOVERNMENT LOTS
 1 2, 3, 4, 5, 6 AND 7
 OF SECTION 30
 T. 40 S., R. 3 W., W.M.
 JACKSON COUNTY, OREGON



PREPARED FOR:
 CORPS OF ENGINEERS
 PORTLAND DISTRICT
 333 SW FIRST AVE
 PORTLAND OR 97204

MINISTER-GLAESER
 SURVEYING INC.
 2200 E. EVERGREEN BLVD.
 VANCOUVER, WA 98661
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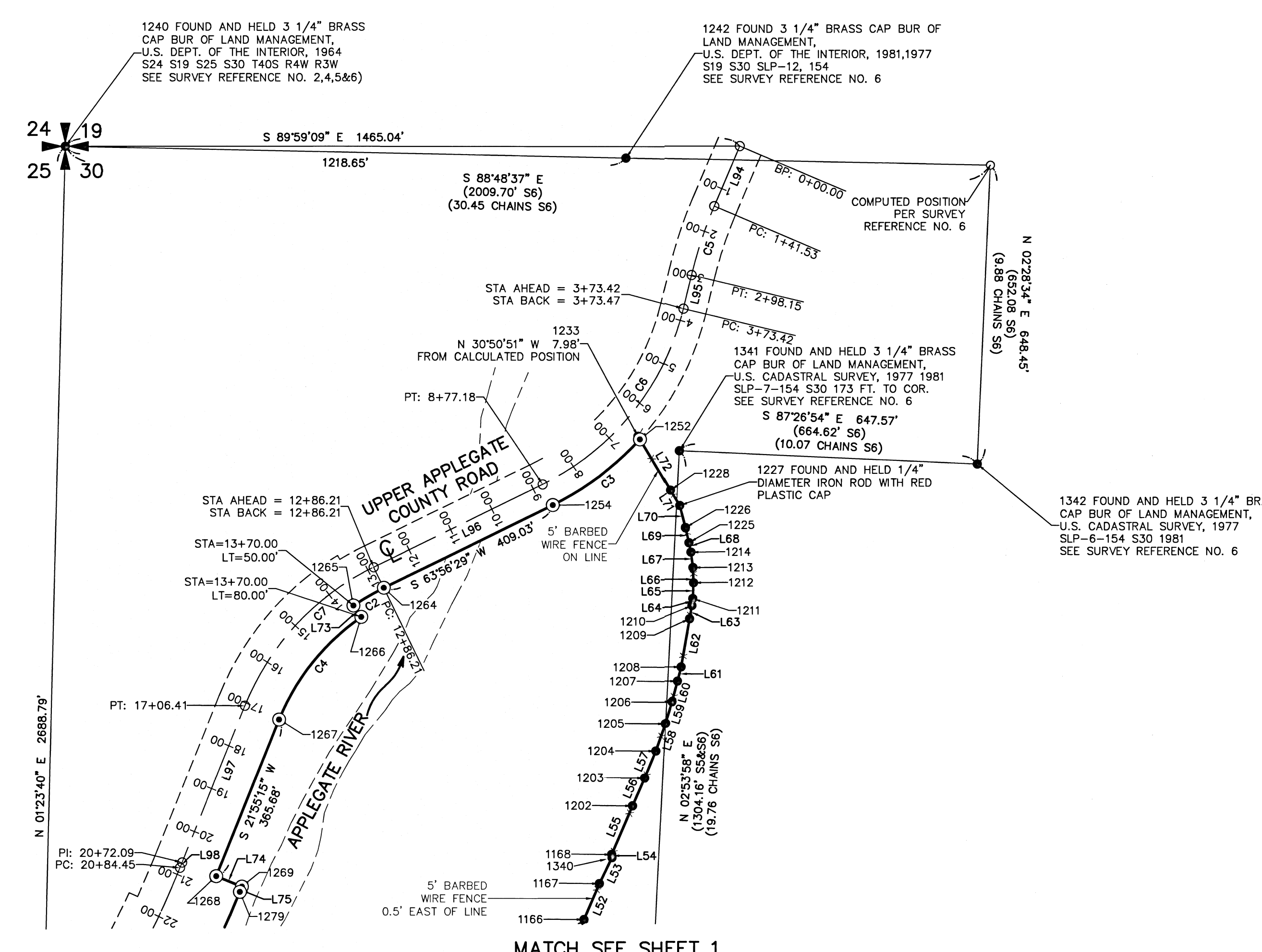


DESIGNED BY: DAN RENTON	DATE: 2019/02/01
DRAWN BY: DK	CHECKED BY: DK
SUBMITTED BY: DAN RENTON	FILE NUMBER:
DATE: 1/20/20	FILE NAME: 10002-APPLAGATE-S1.DWG

U.S. ARMY
 CORPS OF ENGINEERS
 PORTLAND DISTRICT
 333 SW FIRST AVE
 PORTLAND OR 97204

RECORD OF SURVEY
 APPLAGATE LAKE LAND INTERCHANGE CORP. OF ENGINEERS
 OPERATIONAL AREA LAND SURVEY
 FOR PROJECT BOUNDARY MAINTENANCE
 CONTRACT NO. W6127N-16-D-3003
 DELIVERY ORDER NO. 09127N16P0147
 OPTIONAL TASK 13

SHEET IDENTIFICATION
 2 OF 3

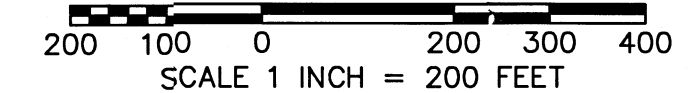


- LEGEND:
- △ INDICATES SURVEY CONTROL POINT
 - INDICATES FOUND 3/4" DIAMETER IRON ROD WITH ALUMINUM CAP (UNRECORDED SURVEY) UNLESS OTHERWISE NOTED
 - ⊙ INDICATES 5/8" x 30" REBAR WITH STANDARD 3-1/2" U.S.A.C.E. ALUMINUM CAP STAMPED WITH DESIGNATOR, SET (SEE TABLE FOR DESCRIPTIONS)
 - INDICATES CALCULATED POSITION
 - 1277 INDICATES POINT NUMBER (SEE TABLE)
 - (S#) INDICATES SURVEY REFERENCE
 - INDICATES BOUNDARY
 - x-x- INDICATES FENCE LINE

BASIS OF BEARING:
 NAD83(2011) EPOCH: 2010.0000 OREGON STATE
 PLANE COORDINATE, SOUTH ZONE, US-FEET,
 NOT 47°58'E, BETWEEN THE FOUND AND HELD SE COR
 AND THE FOUND AND HELD E 1/4 COR OF SECTION 25
 AS SHOWN ON THIS SURVEY
 CONVERGENCE ANGLE: -01°47'14"
 COMBINED SCALE FACTOR: 0.9999931229

RECEIVED
 DATE 12/31/19 BY: RB
 THIS SURVEY CONSISTS OF:
 3 SHEET(S) MAP
 3 PAGE(S) NARRATIVE
 JACKSON COUNTY
 SURVEYOR

REGISTERED
 PROFESSIONAL
 LAND SURVEYOR
 DANIEL A. RENTON
 2830
 Expires 12-31-2020
 12131119



THE DISTANCES SHOWN HEREON ARE GRID
 TO OBTAIN GROUND DISTANCES, DIVIDE THE
 GRID DISTANCES BY THE
 COMBINED SCALE FACTOR OF 0.9999931229
 (0.036' PER MILE/0.0007 PER 100')

SURVEY

OF APPLGATE LAKE LAND INTERCHANGE CORPS. OF ENGINEERS OPERATIONAL AREA LOCATED IN A PORTION OF THE SE 1/4 OF THE NE 1/4 NW 1/4 OF THE SE 1/4 SW 1/4 OF THE SE 1/4 SE 1/4 OF THE SE 1/4 OF SECTION 25 T. 40 S., R. 4 W., W.M. AND IN PORTIONS OF GOVERNMENT LOTS 1 2, 3, 4, 5, 6 AND 7 OF SECTION 30 T. 40 S., R. 3 W., W.M. JACKSON COUNTY, OREGON

SET MONUMENTS US- FEET			
POINT NO.	NORTHING	EASTING	DESIGNATION
1247	152184.9710	4211918.6747	BNDY-RW
1250	152936.6466	4211850.7074	BNDY-SEC
1251	153078.9923	4211855.1797	BNDY-SEC
1252	156939.7234	4213226.3283	6+58.03 LT 50
1254	156797.1459	4213037.2354	8+77.18 LT 50
1261	153578.9365	4210573.0971	50+30.00 LT 100
1262	153627.5088	4210522.6913	50+30.00 LT 30
1263	153591.3319	4210487.8303	50+80.24 LT 30
1264	156617.4624	4212669.7856	12+86.21 LT 50
1265	156578.9711	4212603.7789	13+70.00 LT 50
1266	156554.2289	4212620.7441	13+70.00 LT 80
1267	156331.7044	4212442.2008	17+06.41 LT 80
1268	155992.4626	4212305.6839	20+72.09 LT 80
1269	155970.0632	4212361.3459	20+72.09 LT 140
1274	154852.0762	4211719.5075	33+40.00 LT 140
1277	153107.3980	4210288.4686	56+28.91 LT 30
1278	153235.6172	4210314.0327	55+01.40 LT 30
1279	155958.5988	4212356.7317	20+84.45 LT 140
1280	155664.4262	4212209.9333	23+91.09 LT 140
1281	154702.4344	4211559.0807	35+51.02 LT 80
1282	154350.1095	4211288.4450	39+78.32 LT 80
1286	154883.0860	4211668.1423	33+40.00 LT 80
1326	152616.2600	4210216.1800	BNDY
1327	152693.6300	4210405.8900	BNDY
1328	152776.6800	4210425.6900	BNDY

POINT TABLE US- FEET			
POINT NO.	NORTHING	EASTING	DESCRIPTION
257	154806.3749	4212469.9923	FND
1006	152187.8100	4211827.1800	FND
1007	152251.2947	4211980.2189	FND
1008	152255.1041	4211930.3642	FND
1009	152586.9000	4212005.8900	FND
1017	153286.8620	4211951.2650	FND
1025	153459.5210	4212115.2710	FND
1031	153542.4180	4212104.5400	FND
1032	153559.0770	4212104.9180	FND
1038	153692.7710	4212175.3170	FND
1042	153779.8450	4212245.7550	FND
1048	153919.6410	4212167.3760	FND
1054	154135.8940	4212163.8900	FND
1060	154236.9890	4212156.7300	FND
1061	154241.1560	4212144.9980	FND
1066	154413.5430	4212207.3490	FND
1070	154583.6790	4212281.2890	FND
1074	154727.5500	4212368.5380	FND
1079	153326.8200	4212097.9800	FND
1085	154767.4300	4212438.2400	FND

POINT TABLE US- FEET			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1093	154962.4300	4212566.9300	FND
1103	155088.2900	4212675.1500	FND
1107	155198.2600	4212747.8900	FND
1111	155227.2500	4212805.8600	FND
1118	155269.8240	4212821.9630	FND
1122	155297.7480	4212760.6620	FND
1144	155417.8840	4212798.6970	FND
1145	155467.0140	4212822.7490	FND
1146	155569.5450	4212900.1860	FND
1147	155594.3570	4212920.8290	FND
1148	155670.3340	4212984.7160	FND
1149	155697.5060	4213006.1130	FND
1150	155334.9340	4212772.0160	FND
1151	155403.8100	4212793.7510	FND
1152	155449.9480	4212813.1370	FND
1153	155479.1140	4212830.0250	FND
1154	155507.1790	4212849.3100	FND
1155	155532.6740	4212869.1530	FND
1156	155644.1490	4212963.5140	FND
1157	155726.8240	4213025.4210	FND

POINT TABLE US- FEET			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1158	155755.2410	4213043.0110	FND
1162	155769.3570	4213050.6000	FND
1163	155784.2910	4213058.3680	FND
1164	155851.7990	4213086.1410	FND
1165	155883.0640	4213098.0930	FND
1166	155898.7560	4213104.4900	FND
1167	155976.9460	4213138.0890	FND
1168	156040.3120	4213165.2120	FND
1202	156145.2350	4213210.3020	FND
1203	156205.3940	4213236.4340	FND
1204	156263.8450	4213260.6760	FND
1205	156322.8470	4213281.3230	FND
1206	156369.4150	4213295.6410	FND
1207	156414.6420	4213307.5110	FND
1208	156445.4690	4213315.3920	FND
1209	156549.9850	4213333.8670	FND
1210	156578.7030	4213338.9510	FND
1211	156593.8700	4213340.7380	FND
1212	156628.3530	4213342.6030	FND
1213	156661.4140	4213341.2270	FND

POINT TABLE US- FEET			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1214	156694.8870	4213336.6420	FND
1225	156715.2670	4213332.5910	FND
1226	156747.7960	4213324.6730	FND
1227	156795.6980	4213312.3880	FND
1228	156828.8950	4213292.5200	FND
1233	156946.5720	4213222.2380	FND
1236	154886.8520	4211911.9800	FND
1239	152400.3810	4206404.4350	FND
1240	157574.8480	4211977.4170	FND
1242	157549.5430	4213195.8010	FND
1246	152104.0770	4214525.7280	FND
1248	152804.1990	4211959.6970	FND
1249	152812.8120	4211954.9460	FND
1259	152748.7780	4210411.8940	FND
1304	154890.0070	4212595.9670	FND
1305	154877.9840	4212208.4630	FND
1306	155589.8000	4212601.3230	FND
1310	152725.5900	4210404.9700	FND
1311	152836.7000	4210453.9200	FND
1312	152888.5100	4210431.7000	FND

POINT TABLE US- FEET			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1313	152995.0800	4210367.4200	FND
1316	153062.9100	4210320.5200	FND
1319	152679.5800	4210362.1300	FND
1320	152645.3100	4210278.3700	FND
1321	152611.1400	4210170.7400	FND
1323	152602.2200	4210114.5700	FND
1331	154271.3900	4212156.2000	FND
1332	154003.6000	4212167.2300	FND
1333	153617.4100	4212136.7900	FND
1334	153359.0900	4212106.7700	FND
1335	153315.7900	4212068.2000	FND
1336	153304.6500	4212001.9900	FND
1337	153197.8800	4211902.0600	FND
1338	153087.5500	4211858.5000	FND
1339	152741.0000	4213042.5700	FND
1340	156033.2900	4213165.7100	FND
1341	156914.1000	4213311.7400	FND
1342	156885.2700	4213958.6700	FND

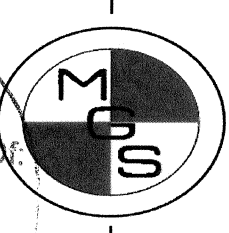
SET MONUMENTS INTERNATIONAL FEET			
POINT NO.	NORTHING	EASTING	DESIGNATION
1247	152185.2754	4211927.0990	BNDY-RW
1250	152936.9525	4211859.1310	BNDY-SEC
1251	153079.2985	4211863.6030	BNDY-SEC
1252	156940.0373	4213234.7550	6+58.03 LT 50
1254	156797.4595	4213045.6610	8+77.18 LT 50
1261	153579.2437	4210581.5180	50+30.00 LT 100
1262	153627.8161	4210531.1120	50+30.00 LT 30
1263	153591.6391	4210496.2510	50+80.24 LT 30
1264	156617.7756	4212678.2110	12+86.21 LT 50
1265	156579.2843	4212612.2040	13+70.00 LT 50
1266	156554.5420	4212629.1690	13+70.00 LT 80
1267	156332.0171	4212450.6260	17+06.41 LT 80
1268	155992.7746	4212314.1090	20+72.09 LT 80
1269	155970.3751	4212369.7710	20+72.09 LT 140
1274	154852.3859	4211727.9310	33+40.00 LT 140
1277	153107.7042	4210296.8890	56+28.91 LT 30
1278	153235.9237	4210322.4530	55+01.40 LT 30
1279	155958.9087	4212365.1560	20+84.45 LT 140
1280	155664.7375	4212218.3580	23+91.09 LT 140
1281	154702.7438	4211567.5040	35+51.02 LT 80
1282	154350.4182	4211296.8680	39+78.32 LT 80
1286	154883.3958	4211676.5660	33+40.00 LT 80
1326	152616.5652	4210224.6000	BNDY
1327	152693.9354	4210414.3110	BNDY
1328	152776.9856	4210434.1110	BNDY

POINT TABLE INTERNATIONAL FEET			
POINT NO.	NORTHING	EASTING	DESCRIPTION
257	154806.6845	4212478.4170	FND
1006	152188.1144	4211835.6040	FND
1007	152251.5992	4211988.6430	FND
1008	152255.4086	4211938.7880	FND
1009	152587.2052	4212014.3140	FND
1017	153287.1686	4211959.6890	FND
1025	153459.8279	4212123.6950	FND
1031	153542.7251	4212112.9640	FND
1032	153559.3841	4212113.3420	FND
1038	153693.0784	4212183.7410	FND
1042	153780.1526	4212254.1800	FND
1048	153919.9488	4212175.8000	FND
1054	154136.2023	4212172.3140	FND
1060	154237.2975	4212165.1900	FND
1061	154241.4645	4212153.4220	FND
1066	154413.8518	4212215.7730	FND
1070	154583.9882	4212289.7140	FND
1074	154727.8595	4212376.9630	FND
1079	153327.1267	4212106.4040	FND
1085	154767.7395	4212446.6650	FND

POINT TABLE INTERNATIONAL FEET			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1093	154962.7399	4212478.3550	FND
1103	155088.6002	4212683.5750	FND
1107	155198.5704	4212756.3160	FND
1111	155227.5605	4212814.2860	FND
1118	155270.1345	4212830.3890	FND
1122	155298.0586	4212769.0880	FND
1144	155418.1948	4212807.1230	FND
1145	155467.3249	4212831.1750	FND
1146	155569.8561	4212908.6120	FND
1147	155594.6682	4212929.2550	FND
1148	155670.6453	4212993.1420	FND
1149	155697.8174	4213014.5390	FND
1150	155335.2447	4212780.4420	FND
1151	155404.1208	4212802.1770	FND
1152	155450.2589	4212821.5630	FND
1153	155479.4250	4212838.4510	FND
1154	155507.4900	4212857.7360	FND
1155	155532.9851	4212877.5790	FND
1156	155644.4603	4212971.9400	FND
1157	155726.1355	4213033.8470	FND

POINT TABLE INTERNATIONAL FEET			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1158	155755.5525	4213051.4370	FND
1162	155769.6685	4213059.0260	FND
1163	155784.6026	4213066.7940	FND
1164	155852.1107	4213094.5670	FND
1165	155883.3758	4213106.5190	FND
1166	155899.0678	4213112.9160	FND
1167	155977.2580	4213146.5150	FND
1168	156040.6241	4213173.6380	FND
1202	156145.5473	4213218.7280	FND
1203	156205.7064	4213244.8600	FND
1204	156264.1575	421326	

FILED
 Date 12/31/19 By PB
 This Survey Consist Of:
3 sheet(s) Map
3 page(s) Narrative
JACKSON COUNTY SURVEYOR



**MINISTER-GLAESER
 SURVEYING INC.**

*Vancouver Office - 2200 E. Evergreen Blvd., Vancouver, Washington 98661 (360) 694-3313
 Pasco Office - 6303 Burden Boulevard Suite B, Pasco, Washington 99301 (509) 544-7802*

SURVEY NARRATIVE

**UNITED STATES ARMY CORPS OF ENGINEERS
 PORTLAND DISTRICT
 LAND SURVEY FOR PROJECT BOUNDARY LINE MAINTENANCE
 CONTRACT NO. W9127N-16-D-3003,
 MINISTER & GLAESER SURVEYING, INC.
 TASK ORDER W9127N18F0147
 OPTIONAL TASK 13
 APPLGATE BOUNDARY
 JACKSON COUNTY, OREGON
 DECEMBER 27, 2019**

The purpose of this survey was to monument, mark and post the United States Army Corps of Engineers (USACE), Portland District, Applegate Dam and Lake Project Boundary.

Equipment

- 2018 GMC Sierra 2500 HD Survey Rig
- 2 Trimble R8s GNSS Receiver's
- 1 Trimble R10-2 GNSS Receiver
- 1 Trimble S8 Total Station
- 2 Trimble TDL 450H 35-Watt Radio
- 1 Trimble TSC3 Data Collector with Trimble Access Software
- AutoDesk Civil 3D (2020)
- Trimble Business Center
- Star-Net Least Squares Adjustment Software

12/30/19
**REGISTERED
 PROFESSIONAL
 LAND SURVEYOR**

**OREGON
 JUNE 30, 1997
 DANIEL A. RENTON
 2830**
 Expires 12-31-2020

Procedure

A Trimble R8s GNSS base receiver was set on OPUS Shared Solution Point "1406 01" (PID: BBDP63, see attachment "I"). A second Trimble R8s GNSS base receiver was set on OPUS Shared Solution Point "PILLAR AG 1" (PID: BBGG98 see attachment "I").

Both base receivers were operating in a Real Time Kinematic (RTK) mode and both transmitted the real time correction using a Trimble TDL 450H 35-Watt Radio.

A Trimble R10-2 GNSS rover receiver operating in RTK mode and receiving corrections from both base receivers, was used to check existing USACE control, set additional control, tie GPS accessible found monuments and tie fences. All points tied with the RTK GPS had two 3-minute occupation from each base station and was averaged to a single position. A Trimble S8 total station was used to set corners and tie corners that were not GPS accessible. All data was processed in Trimble Business Center (TBC). All traverses were balanced using Star-Net Least Squares Adjustment Software.

All mapping was done in AutoDesk Civil3D (2020) software. All control monument found monuments and set monuments were submitted the USACE Survey Monument Archival and Retrieval Tool (U-SMART).

Boundary Resolution

The project boundary is located in a portion of the Southeast Quarter and Northeast Quarter of Section 25, Township 40 South, Range 4 West, Willamette Meridian, Jackson County, Oregon and portions of Government Lots 1, 2, 3, 4, 5, 6 and 7 of Section 30, Township 40 South, Range 3 West, Willamette Meridian, Jackson County, Oregon.

East Line

When I started the survey, I was provided a map that the United States Forest Service (USFS) had provided to the USACE that delineated the ***APPLEGATE LAKE LAND INTERCHANGE CORPS OF ENGINEERS OPERATIONAL AREA***. (see attachment "A") and an unrecorded deed description of land to be transferred from the USFS to the USACE (see attachment "B") After reviewing the map and legend, it appeared that ¾" diameter iron pins with aluminum caps were set along the East boundary. I knew that most of the Section control was in based on Jackson County Surveys 5667, 8099, 9557, 10451 (see attachment "C"), the February 4, 1982, BLM Corrective Dependent Survey of the "Squaw Lake Placer Mineral Survey 154" (see attachment "D"), the 1964 BLM Corner Remonumentation Without Survey for Township 40 South, Range 3 West, Willamette Meridian, Jackson County, Oregon and the 1966 BLM Corner Remonumentation Without Survey for Township 40 South, Range 4 West, Willamette Meridian, Jackson County, Oregon (see attachment "E"). As the field crew worked their way up the East line, they were finding ¾" rods with aluminum caps stamped LS1071 which is the retired USFS surveyor Harold Center. I contacted Harold Center who put me in contact with Clyde Davidson, a USFS surveyor in the Wild River Ranger District and Steven Beecher at the Jackson County Surveyors Office. Clyde Davidson put me in contact with Andrew Hill, a USFS surveyor and he informed me that all the records for this project were in storage in Medford and Eugene. I reached out to my USFS IDIQ contracting officer Alan Adam (Colville National Forest) and he put me in contact with Jonathan B. Drew II, USFS surveyor. It took Jonathan about 8 weeks of researching the archives but finally was able to get me a coordinate print out all the survey work that the USFS performed at Applegate Lake and Dam along with an ASCII text file and an

AutoCAD file. The coordinate file was NAD 27, Oregon State Plane Coordinate System, South Zone, US-Feet. I was able to take the coordinate file and translate and rotate to NAD83_2011(EPOCH:2010.0000), Oregon State Plane Coordinate System, South Zone, US-Feet based on common monuments that I had tied. With this in hand I was able to find all but 3 of the monuments on the East boundary. I reset the 3 missing monuments using the distances from the coordinate file. The portion of the East line from point 1247 to 1250 was computed from the USFS Right of Way map for Road Number 1075. (see attachment "H")

South Line

I held the South line of Southeast Quarter of the Southeast Quarter of Section 25, Township 40 South, Range 4 West, Willamette Meridian, Jackson County, Oregon and North line of the fee acquired USACE land that was interchanged to the USFS as shown in attachment "A" and computed from the coordinates provided by the USFS. I held the found monument at the West end of said North line.

West Line

I held the East Right of Way line of Upper Applegate County Road from Station 0+00 to Station 56+28.91. To establish the East Right of Way line, I needed to compute the centerline of Upper Applegate County Road. I created a mathematical model of said centerline from the description in the USACE document DACW57-2-84-39 (see attachment "F"). The mathematical model started at Station 0+00 and ended at Station 71+48.30. I set Station 0+00 of the mathematical model on the USFS coordinate position for said Station 0+00 and rotated the model to the record position from the South Quarter of Section 25. The model ended up having an inverse distance of 71.62 feet to said South Quarter corner verses a record distance of 71.58 feet. The said South Quarter corner was destroyed during the construction of Upper Applegate Road. I was able to compute the position from the coordinates shown on a 1965 USACE diagram showing a survey of Section 25, Township 40 South, Range 4 West, Willamette Meridian, Jackson County, Oregon (see attachment "G"). The overall record distance (1965 USACE diagram) between the Southwest corner and Southeast corner of said Section 25 was 5426.52 feet. My measured distance was 5426.99 feet. I multiplied the mathematical model of said 1965 USACE South line of said Section 25 by a scale factor of 1.00008743296 and translated and rotated said model to my tied positions for said Southwest and Southeast corners of Section 25. The remaining West line from said East Right of Way line at Station 56+28.31, 30 feet left, I held the said USFS monuments that were set as part of the Applegate Lake Land Interchange Corps of Engineers Operational Area Survey. I was able to find all but 4 of the monuments on this portion of the West boundary. I reset the 4 missing monuments using the distances from said coordinate file.