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LiDAR Ground Control Survey Report

USGS TN West Central LiDAR 2017 B17 Project

Task Order Number: G17PD00241

February 2018

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Section 1: LiDAR Ground Control Survey Report

Introduction

This report contains a comprehensive outline of the LiDAR ground control survey that supported the USGS TN West Central LiDAR 2017 B17 Project. All surveys were performed in compliance with the American Society for Photogrammetry and Remote Sensing (ASPRS) standards required to support new LiDAR data with 0.7 meter average point density and the U.S. Geological Survey National Geospatial Program LiDAR Base Specification Version 1.2.

Project Area

The project area includes approximately 5,735 square miles across various counties throughout west-central Tennessee.

Purpose

The purpose of this survey was to establish three-dimensional coordinates for fifty (50) new LiDAR control stations and two hundred fifty-seven (257) new LiDAR quality control stations. LiDAR quality control stations will be used as quality control for eventual LiDAR data with 0.7 meter average point density. Specifications for these point densities are outlined in the ASPRS Positional Accuracy Standards for Digital Geospatial Data (Edition 1, Version 1.0, November 2014).

Date of Survey

Ground control field operations took place in February and March of 2017.

Monumentation

Woolpert field crews performed a field reconnaissance to verify the existence and suitability of preselected existing National Geodetic Survey (NGS) control stations. These existing control stations were utilized to ensure that quality x, y, and z coordinate values were computed for each of the newly established LiDAR quality control stations.

Recovery information sheets and photographs for the newly established photogrammetric control stations can be found in Section 4. A control diagram showing the ground control stations used to support this LiDAR mapping project can be found in Section 5 of this report. LiDAR quality control station information sheets and photographs were not documented.

Methodology

Real-Time Kinematic (RTK) GPS

For this particular field effort, Woolpert field crews utilized Woolpert-owned, Trimble Navigation R series multi-frequency GPS receivers. Field personnel generated RTK vectors through the use of Sierra Wireless Raven XT Code Division Multiple Access (CDMA) modems and Tennessee Department of Transportation-operated Continually Operating Reference Stations (CORS).

Whenever possible, RTK observations were performed on all new LiDAR control points in order to collect data efficiently and accurately. The survey was conducted using a 1-second epoch rate, in a fixed solution RTK mode, with each observation lasting approximately 180 seconds. Each station was occupied twice to ensure the necessary horizontal and vertical accuracies were being met for this project. RTK surveys were performed where cellular data coverage was available and where baseline distance accuracy was maintained.

Static GPS

Due to the usage of multiple RTK base stations, base stations with accompanying measurements were not contiguous. These stations were linked together via concurrent static observations, allowing for one contiguous network. CORS were also incorporated into the dataset to strengthen the overall baseline network. Data from observation sessions typically lasted several hours, with each session utilizing a 5-second sync rate. Static GPS was also utilized in areas in which cellular data coverage was limited.

Post-Processing and Adjustments

All static GPS observations were processed using Trimble Navigation's Trimble Business Center (TBC) 3.80 baseline processor with precise ephemeris. Both unconstrained and constrained adjustments were computed using trivial and nontrivial baselines. After an acceptable unconstrained least-squares adjustment was obtained, Woolpert performed a fully constrained least-squares adjustment by fixing the GPS network to existing NGS control stations with known coordinate data. Fixed solutions were obtained for all vector baselines.

During this project, the following stations were fixed during the constrained adjustment:

3-D STATIONS	
Description	**PID**
101	N/A (OPUS)
102	N/A (OPUS)
103	N/A (OPUS)
104	N/A (OPUS)
105	N/A (OPUS)
106	N/A (OPUS)
107	N/A (OPUS)
108	N/A (OPUS)
F 181	GD0190
PARSPORT	FE2788

2-D STATIONS	
Description	**PID**
GPS 31	FE2743
TN30	DM3531
TN33	DJ9554
TN35	DJ9558
TN40	DL7339
TN41	DJ9564
TN42	DJ9566
TN43	DJ9568
TN44	DJ9570
TN45	DJ9572
TN46	DL6193
TN48	DL6197
TN49	DL6306

Datum Reference and Final Coordinates

All new horizontal GPS control was based on the Tennessee State Plane Coordinate System (Statewide Zone 4100), referenced to the North American Datum 1983, 2011 adjustment, expressed in U.S. Survey Feet. All vertical control was based on the North American Vertical Datum of 1988 (NAVD88) with GEOID12B applied to model the elevations, also expressed in U.S. Survey Feet. The coordinates for the ground control survey can be found in Section 2 of this report.

Accuracy Statement

The GPS adjustment indicates that the survey control network meets or exceeds the standards set forth by ASPRS in support of LiDAR data with 0.7 meter average point density.

Section 2: Ground Control Station Coordinate Listings

This section includes a complete listing of the final coordinates, orthometric heights, and ellipsoid heights for the USGS TN West Central LiDAR 2017 B17 Project.

USGS TN West Central Lidar 2017 B17
2017 LiDAR CONTROL

Horizontal Datum: NAD 83 (2011)
Vertical Datum: NAVD 88
Units: US Survey Feet
State Plane Zone: Tennessee FIPS Zone 4100
Geoid Model: Geoid 12B
Coordinate System: Grid
Date: February 2018

LiDAR Control and/or Quality Control Stations:

Station Name	Northing (USFT)	Easting (USFT)	Elevation (USFT)	Station Description
1001	334820.17	1254789.02	486.31	LT ASPHALT
1006	339713.52	1328669.36	490.02	LT ASPHALT
1009	360944.95	1390137.71	476.85	LT ASPHALT
1014	369924.47	1467921.39	757.29	LT ASPHALT
1017	587614.24	1164823.74	437.05	ASPHALT
1020	566926.59	1211522.67	537.38	ASPHALT
1024	559871.13	1273897.93	446.22	LT ASPHALT
1026	547883.86	1305049.38	497.39	LT ASPHALT
1034	568697.88	1429504.73	415.28	LT ASPHALT
1036	565360.83	1460769.84	419.26	LT ASPHALT
1040	615696.74	1507796.58	826.75	GRAVEL
1041	601573.94	1520108.25	705.15	LT ASPHALT
1042	451854.54	1476487.82	954.12	ASPHALT
1043	342881.63	1440855.72	823.26	ASPHALT
1044	723389.69	1224861.22	438.15	ASPHALT
1049	727190.71	1304302.25	415.92	ASPHALT
1050	747622.79	1320100.83	464.71	ASPHALT
1054	781971.95	1383550.15	473.32	ASPHALT
1055	786939.71	1399462.90	554.00	LT ASPHALT
1060	739830.72	1478681.12	379.50	ASPHALT
1061	754724.51	1490687.81	384.27	LT ASPHALT
1062	711065.53	1506471.71	469.94	ASPHALT

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LiDAR Control and/or Quality Control Stations:				
Station Name	Northing (USFT)	Easting (USFT)	Elevation (USFT)	Station Description
1064	725683.08	1526361.95	729.55	ASPHALT
1066	661834.46	1224778.07	469.42	ASPHALT
1067	660290.49	1507087.76	864.64	GRAVEL
1068	425155.30	1454860.18	975.20	ASPHALT
1069	424373.52	1270140.65	474.99	GRAVEL
1071	845179.02	1375029.92	390.14	GRAVEL
1072	829024.13	1430211.87	486.76	DIRT
1073	808361.40	1490043.26	659.77	GRAVEL
1074	303330.53	1388678.84	588.27	CONCRETE
1075	266096.89	1288796.19	485.52	LT ASPHALT
1076	387759.71	1374753.04	381.38	ASPHALT
1077	462141.65	1338227.97	518.20	PID
1078	471937.59	1422400.25	558.16	PID
1079	487802.70	1257113.84	506.21	PID
1080	634600.27	1346249.38	452.45	LT ASPHALT
1081	620609.75	1381926.47	385.45	LT ASPHALT
1082	704572.12	1333538.40	492.82	ASPHALT
1083	776607.11	1282063.53	608.58	PID
1084	452610.50	1371635.84	365.94	ASPHALT
1085	514330.89	1393954.10	412.93	PID
1086	526841.06	1222051.84	519.31	PID
1087	591524.62	1232175.61	567.77	CONCRETE
1088	680939.75	1385410.07	388.17	GRAVEL
1089	291617.22	1441299.27	1025.77	ASPHALT
1090	705359.37	1409777.02	390.23	ASPHALT
1091	251191.34	1324280.05	649.06	GRAVEL
1092	323027.27	1425090.75	610.19	ASPHALT
1093	408094.09	1444685.19	600.18	ASPHALT
2002	851365.89	1389393.27	391.89	SHORT GRASS
2003	843653.01	1418093.15	395.93	LT ASPHALT
2005	841371.07	1442748.32	427.52	GRAVEL
2006	822441.74	1451955.14	534.52	GRAVEL
2007	814139.21	1467166.95	642.81	LT ASPHALT
2009	779365.01	1494755.63	684.41	GRAVEL
2010	262705.21	1465360.94	822.56	GRAVEL
2011	251131.83	1424503.99	705.38	DIRT
2013	310409.63	1449950.76	1056.42	DIRT
2015	291572.16	1292795.41	489.84	GRAVEL
2016	327709.23	1302270.71	444.38	DIRT

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LiDAR Control and/or Quality Control Stations:				
Station Name	Northing (USFT)	Easting (USFT)	Elevation (USFT)	Station Description
2017	368768.77	1267613.92	467.96	GRAVEL
2018	387227.71	1310825.02	410.52	GRAVEL
2020	359625.16	1442755.21	744.65	GRAVEL
2021	436026.67	1277138.99	571.82	PID
2022	437630.06	1300829.69	522.41	LT ASPHALT
2024	483437.22	1335431.22	506.68	PID
2025	487320.05	1354637.05	590.96	PID
2027	447726.66	1471426.21	954.52	GRAVEL
2028	483429.62	1305539.03	476.88	PID
2030	470431.54	1198095.66	399.23	ASPHALT
2031	550340.63	1199085.39	489.09	ASPHALT
2032	568501.29	1259953.84	528.37	PID
2033	577055.34	1282292.34	467.15	LT ASPHALT
2034	607599.85	1175853.52	441.24	ASPHALT
2035	620858.44	1192499.48	472.85	GRAVEL
2036	612179.78	1205826.95	436.38	ASPHALT
2037	617829.90	1251055.06	385.86	DIRT
2038	606025.43	1290705.59	511.06	LT ASPHALT
2039	628217.15	1303905.13	430.52	LT ASPHALT
2042	566445.01	1332495.12	475.73	GRAVEL
2043	601275.96	1442454.72	413.58	GRAVEL
2044	527794.03	1438772.83	494.83	GRAVEL
2045	642087.99	1437732.94	524.90	PID
2046	649122.61	1487219.17	809.19	GRAVEL
2047	290032.21	1354233.89	544.82	DIRT
2048	535391.89	1269117.29	476.72	LT ASPHALT
2049	540207.41	1258887.65	514.99	GRAVEL
2050	670543.46	1226049.73	473.16	PID
2051	689507.83	1255696.26	547.35	GRAVEL
2052	679055.53	1293732.25	462.29	ASPHALT
2054	698604.69	1352305.98	368.08	GRAVEL
2055	727961.59	1426175.58	491.43	PID
2056	725518.57	1465218.57	460.94	ASPHALT
2057	752082.33	1487123.62	410.66	GRAVEL
2058	792518.07	1471508.19	383.89	GRAVEL
2059	789071.63	1427412.46	441.82	LT ASPHALT
2060	773112.63	1319516.72	444.13	ASPHALT
2062	797010.84	1284786.26	563.20	PID
2063	753952.16	1238855.40	571.64	PID
2064	466487.33	1215757.04	415.23	LT ASPHALT
2065	450572.45	1250160.60	541.34	LT ASPHALT

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LiDAR Control and/or Quality Control Stations:				
Station Name	Northing (USFT)	Easting (USFT)	Elevation (USFT)	Station Description
2067	448831.72	1416026.49	744.56	GRAVEL
2068	462095.46	1453187.82	894.82	GRAVEL
2069	502784.90	1449605.26	489.24	ASPHALT
2071	519265.02	1346618.75	529.99	ASPHALT
2072	512923.40	1258704.64	594.20	DIRT
2075	661469.36	1263991.71	412.92	CHIP-N-SEAL
2076	664560.09	1348548.13	423.87	ASPHALT
2077	689661.28	1434614.74	713.79	GRAVEL
2078	693959.90	1485707.62	612.63	ASPHALT
2079	767572.26	1458562.43	522.96	SHORT GRASS
2080	763586.62	1407014.11	497.27	GRAVEL
2081	807129.97	1382139.42	381.05	DIRT
2082	718633.98	1383014.62	417.64	ASPHALT
2083	733032.36	1283676.41	491.31	PID
2084	601610.06	1343219.54	485.66	PID
2085	274606.91	1381896.33	643.00	GRAVEL
2086	263633.95	1354484.61	768.99	ASPHALT
2087	347350.34	1392818.22	783.77	GRAVEL
2088	391925.33	1417900.32	477.63	ASPHALT
2089	405149.43	1471845.00	713.83	ASPHALT
2090	429909.61	1336978.45	531.01	ASPHALT
2091	528082.41	1306798.72	594.63	GRAVEL
2092	647197.87	1239712.17	485.21	PID
2093	658742.06	1177716.41	358.66	ASPHALT
2094	677577.34	1460902.10	567.88	GRAVEL
2095	582618.46	1480291.83	696.29	GRAVEL
2096	757191.30	1440881.23	680.45	GRAVEL
2098	716350.41	1292516.88	422.42	PID
2099	761082.75	1283731.20	549.74	GRAVEL
2100	832855.26	1398925.01	397.12	DIRT
2101	804969.06	1436265.99	391.86	PID
2102	819829.34	1415583.85	510.62	ASPHALT
2103	796503.36	1356832.54	397.40	GRAVEL
2104	773279.01	1356365.98	364.81	ASPHALT
2105	798884.41	1226931.23	466.28	GRAVEL
2106	776251.71	1256854.76	468.05	GRAVEL
2107	751341.40	1263430.87	477.47	CONCRETE
2108	717194.17	1239309.68	471.68	CHIP-N-SEAL
2109	688969.21	1233055.36	496.01	GRAVEL
2110	411627.13	1285182.48	495.67	PID
2111	414293.99	1324754.83	506.36	LT ASPHALT
2112	366995.54	1307820.86	414.86	DIRT

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LiDAR Control and/or Quality Control Stations:				
Station Name	Northing (USFT)	Easting (USFT)	Elevation (USFT)	Station Description
2113	347863.57	1313572.35	420.26	DIRT
2114	310697.46	1306873.33	460.50	PID
2115	365612.34	1356007.01	695.68	DIRT
2116	338231.25	1357576.34	734.67	GRAVEL
2117	365854.64	1492149.61	1036.70	GRAVEL
2118	338549.19	1480787.26	754.54	ASPHALT
2119	426199.68	1421323.02	553.87	ASPHALT
2120	277236.47	1495751.48	667.35	GRAVEL
2123	712934.80	1460239.26	792.61	GRAVEL
2124	551232.64	1364997.32	415.51	ASPHALT
2125	562878.33	1404471.51	387.95	PID
2126	599264.61	1389352.75	365.96	GRAVEL
2127	660878.84	1413560.64	680.28	ASPHALT
2128	645323.85	1272524.72	435.03	GRAVEL
2129	519560.26	1294878.63	621.77	LT ASPHALT
2130	510422.76	1196085.74	618.15	PID
2134	747509.58	1383472.30	392.32	GRAVEL
2135	821095.15	1400466.10	380.34	GRAVEL
2136	497302.26	1396288.11	455.06	PID
2137	332313.37	1266873.87	456.27	LT ASPHALT
2138	333280.28	1282253.53	405.41	LT ASPHALT
2139	334951.97	1297748.04	440.65	LT ASPHALT
2140	332903.05	1312888.18	412.84	LT ASPHALT
2141	348425.71	1361086.29	538.71	LT ASPHALT
2142	351280.98	1374849.72	503.33	LT ASPHALT
2143	358530.52	1405879.22	500.75	LT ASPHALT
2144	355438.51	1421386.91	574.14	LT ASPHALT
2145	365444.52	1436626.30	960.53	LT ASPHALT
2146	365496.77	1452067.61	925.52	LT ASPHALT
2147	366785.12	1483315.54	976.39	LT ASPHALT
2148	362003.13	1498567.89	1001.84	LT ASPHALT
2149	564379.74	1180252.34	551.09	GRAVEL
2150	572347.43	1195907.92	513.51	LT ASPHALT
2151	565825.73	1227107.17	487.85	ASPHALT
2152	566625.57	1242556.80	515.96	GRAVEL
2153	558186.76	1258183.23	517.07	GRAVEL
2154	546518.16	1289461.50	529.64	LT ASPHALT
2155	547665.41	1320697.30	517.47	LT ASPHALT
2156	549047.78	1336705.41	545.18	LT ASPHALT
2157	556377.09	1352017.83	580.54	ASPHALT
2158	565846.85	1367865.98	594.64	ASPHALT
2159	564821.67	1383011.04	638.31	ASPHALT
2160	563834.99	1398980.97	383.98	ASPHALT

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LiDAR Control and/or Quality Control Stations:				
Station Name	Northing (USFT)	Easting (USFT)	Elevation (USFT)	Station Description
2161	564143.85	1413793.09	456.26	LT ASPHALT
2162	569170.10	1445255.97	613.12	LT ASPHALT
2163	602795.32	1447218.83	430.15	GRAVEL
2164	622109.33	1476684.23	502.76	GRAVEL
2165	620490.25	1493246.01	572.10	SHORT GRASS
2166	721342.70	1240706.49	465.77	ASPHALT
2167	722550.46	1256838.75	494.61	ASPHALT
2168	724598.46	1272491.95	536.07	ASPHALT
2169	726317.85	1288359.57	487.42	ASPHALT
2170	739969.45	1336057.83	379.03	LT ASPHALT
2171	753294.48	1351614.58	457.15	GRAVEL
2172	776240.90	1367958.53	433.11	LT ASPHALT
2173	727469.43	1415323.32	428.10	ASPHALT
2174	730547.62	1431198.04	667.37	ASPHALT
2175	725764.18	1446824.76	737.91	ASPHALT
2176	729527.59	1463204.71	638.72	ASPHALT
2177	711794.05	1522567.56	629.25	ASPHALT
2178	728568.72	1445268.08	735.36	ASPHALT
2179	339318.40	1344162.27	540.79	LT ASPHALT
3001	845149.06	1375291.97	379.45	FOREST
3002	850890.81	1389543.17	396.57	FOREST
3003	843854.79	1418016.14	415.56	FOREST
3004	828770.58	1429110.67	415.18	SMALL GRASS
3005	841336.43	1442792.69	421.52	FOREST
3006	822330.96	1452208.96	543.06	TALL WEEDS
3007	814216.24	1466984.42	640.15	BRUSH
3008	808354.91	1489738.52	650.87	BRUSH
3009	779455.77	1495021.18	691.95	TALL WEEDS
3010	262642.16	1465376.59	822.48	TALL WEEDS
3011	251018.71	1424454.15	702.20	FOREST
3012	303919.07	1390195.23	574.95	TALL WEEDS
3013	309216.20	1449356.41	1036.20	TALL WEEDS
3014	266286.24	1288104.25	490.93	BRUSH
3015	291755.38	1292877.70	492.20	BRUSH
3016	322016.23	1300198.38	455.13	TALL WEEDS
3017	369500.72	1268005.34	401.15	TALL WEEDS
3018	386726.84	1312068.07	380.18	FOREST
3019	387367.51	1374685.42	389.09	FOREST
3020	357280.84	1444011.97	727.22	TALL WEEDS
3021	436136.21	1277165.99	564.97	TALL WEEDS
3022	437607.57	1299887.36	512.34	FOREST
3023	462132.60	1338832.66	512.33	TALL WEEDS
3024	483591.33	1335362.25	504.02	TALL WEEDS

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LiDAR Control and/or Quality Control Stations:				
Station Name	Northing (USFT)	Easting (USFT)	Elevation (USFT)	Station Description
3025	487268.98	1355396.25	594.02	FOREST
3026	471206.98	1423161.08	491.71	TALL WEEDS
3027	447717.82	1471098.84	947.63	TALL WEEDS
3028	483850.80	1305060.59	460.23	TALL WEEDS
3029	487205.38	1255775.19	468.94	BRUSH
3030	470371.27	1197926.22	413.14	TALL WEEDS
3031	550074.15	1199532.99	489.89	TALL WEEDS
3032	568712.86	1259079.28	525.35	TALL WEEDS
3033	575529.39	1281546.20	481.42	GRASS
3034	607344.92	1175361.39	442.41	TALL WEEDS
3035	618280.33	1191709.10	442.12	BRUSH
3036	612137.27	1207566.40	394.90	BRUSH
3037	614667.93	1251477.60	384.40	BRUSH
3038	602936.77	1287642.75	480.64	BRUSH
3039	629004.75	1303072.44	406.80	BRUSH
3040	632758.45	1343210.92	426.21	BRUSH
3041	620791.27	1382488.89	387.14	BRUSH
3042	567088.46	1334163.76	437.58	BRUSH
3043	601418.18	1441087.75	445.04	FOREST
3044	527771.07	1438274.81	483.41	TALL WEEDS
3045	640925.00	1438275.90	590.77	TALL WEEDS
3046	648187.23	1487926.70	828.60	BRUSH
3047	291188.37	1355016.82	536.93	FOREST
3048	535615.28	1266965.48	460.98	LONG GRASS
3049	540284.89	1259264.99	530.23	GRASS
3050	670556.79	1228023.96	477.79	BRUSH
3051	688940.45	1258104.21	503.96	FOREST
3052	679019.53	1293618.26	461.25	FOREST
3053	701203.85	1332897.50	478.16	BRUSH
3054	698274.84	1350795.60	383.91	FOREST
3055	727533.27	1427246.68	501.24	FOREST
3056	725477.34	1465077.80	465.50	BRUSH
3057	753040.69	1486728.91	381.89	FOREST
3058	792277.41	1471545.28	383.93	BRUSH
3059	787974.38	1423620.53	373.62	BRUSH
3060	773774.01	1319433.65	424.26	FOREST
3061	776951.74	1278802.50	561.56	FOREST
3062	796979.73	1284579.22	560.01	FOREST
3063	753983.30	1238604.54	570.18	FOREST
3064	466266.45	1215000.27	412.38	LONG GRASS
3065	450724.62	1250013.36	534.66	FOREST
3066	452078.41	1370932.00	394.90	FOREST
3067	449059.37	1415940.23	741.85	FOREST

LiDAR Control and/or Quality Control Stations:				
Station Name	Northing (USFT)	Easting (USFT)	Elevation (USFT)	Station Description
3068	462221.59	1452937.04	888.08	TALL WEEDS
3069	501363.17	1452048.38	479.89	BRUSH
3070	513997.87	1394676.61	417.26	FOREST
3071	519255.34	1346681.31	541.39	FOREST
3072	512621.86	1259585.69	582.32	BRUSH
3073	526976.00	1222004.75	525.30	BRUSH
3074	591340.57	1231864.77	555.56	FOREST
3075	661371.41	1264051.06	419.84	FOREST
3076	664657.23	1347099.28	448.28	FOREST
3077	689716.54	1434637.92	717.49	FOREST
3078	693940.49	1485265.77	621.97	FOREST
3079	768240.45	1458627.55	484.76	BRUSH
3080	763730.76	1406900.93	495.49	FOREST
3081	806561.53	1382811.18	374.36	FOREST
3082	718800.06	1383318.27	427.38	FOREST
3083	733086.27	1284086.58	494.10	FOREST
3084	601500.19	1343280.89	491.09	FOREST
3085	274622.13	1381845.85	642.59	BRUSH
3086	264884.35	1354440.57	755.24	BRUSH
3087	347015.35	1393244.31	847.20	FOREST
3088	392028.35	1417917.40	491.92	FOREST
3089	405167.63	1471961.13	710.23	FOREST
3090	430885.06	1336041.12	546.36	FOREST
3091	527991.62	1306782.16	591.34	FOREST
3092	646846.84	1238990.86	486.49	FOREST
3093	658084.74	1179667.65	379.14	FOREST
3094	677575.75	1460962.81	574.88	FOREST
3095	582618.62	1480346.31	708.31	FOREST
3096	757222.56	1440935.28	686.28	FOREST
3097	680778.98	1384986.15	396.03	FOREST
3098	715711.15	1293087.18	423.18	FOREST
3099	759431.44	1284224.66	489.58	FOREST
3100	832968.53	1399188.90	387.32	FOREST
3101	808267.53	1438825.84	452.16	TALL WEEDS

Woolpert Base Stations and Geodetic Control Stations:				
Station Name	Northing (USFT)	Easting (USFT)	Elevation (USFT)	Station Description
101	773155.12	1358076.97	362.58	TSM
102	810811.08	1441396.48	424.19	TSM
103	496702.65	1238272.91	502.52	TSM
104	642184.00	1445323.30	554.44	TSM
105	311527.20	1306957.59	449.92	TSM
106	360846.44	1386499.36	461.31	TSM
107	260348.50	1468449.85	806.07	TSM
108	628891.51	1323283.83	434.57	TSM
39 13	214898.83	1467829.01	617.55	EF1770
F 181	741191.55	1266556.66	566.36	GD0190
GPS 31	594470.89	1206930.67	525.22	FE2743
PARSPORT	482263.02	1336048.54	512.11	FE2788
TN30	447229.52	1500325.10	965.36	DM3531
TN33	812682.87	1580965.89	545.26	DJ9554
TN35	648484.14	1489174.04	853.98	DJ9558
TN40	487076.29	1255152.96	507.93	DL7339
TN41	662199.13	1226498.89	475.18	DJ9564
TN42	672397.53	1009534.97	406.34	DJ9566
TN43	336220.59	1190886.77	492.77	DJ9568
TN44	488719.63	1101271.46	395.79	DJ9570
TN45	372024.83	876710.99	300.52	DJ9572
TN46	331418.80	1276087.40	477.03	DL6193
TN48	722387.08	1291767.90	453.59	DL6197
TN49	545389.65	924891.34	407.49	DL6306

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USGS TN West Central Lidar 2017 B17
2017 LiDAR CONTROL

Horizontal Datum: NAD 83 (2011)
Vertical Datum: NAVD 88
Units: US Survey Feet
State Plane Zone: Tennessee FIPS Zone 4100
Geoid Model: Geoid 12B
Coordinate System: Geographic
Date: February 2018

LiDAR Control and/or Quality Control Stations:

Station Name	Latitude	Longitude	Height (USFT)	Station Description
1001	N35°13'45.12797"	W88°23'23.67391"	395.57	LT ASPHALT
1006	N35°14'50.43193"	W88°08'34.65046"	399.26	LT ASPHALT
1009	N35°18'33.04784"	W87°56'18.78021"	385.30	LT ASPHALT
1014	N35°20'16.05795"	W87°40'42.26351"	665.71	LT ASPHALT
1017	N35°55'01.24686"	W88°42'52.17260"	344.18	ASPHALT
1020	N35°51'49.15694"	W88°33'18.04501"	444.41	ASPHALT
1024	N35°50'54.83950"	W88°20'38.37214"	353.24	LT ASPHALT
1026	N35°49'03.53077"	W88°14'16.73429"	404.57	LT ASPHALT
1034	N35°52'54.84759"	W87°49'10.47481"	322.04	LT ASPHALT
1036	N35°52'27.43171"	W87°42'49.87618"	326.03	LT ASPHALT
1040	N36°00'52.94066"	W87°33'28.24984"	732.58	GRAVEL
1041	N35°58'35.20136"	W87°30'55.73937"	611.14	LT ASPHALT
1042	N35°33'47.69324"	W87°39'15.59688"	861.72	ASPHALT
1043	N35°15'43.92485"	W87°46'02.99747"	731.98	ASPHALT
1044	N36°17'39.37574"	W88°31'25.05341"	345.22	ASPHALT
1049	N36°18'36.12650"	W88°15'15.95363"	322.39	ASPHALT
1050	N36°22'01.67664"	W88°12'08.59123"	370.87	ASPHALT
1054	N36°27'54.69181"	W87°59'21.49753"	378.30	ASPHALT
1055	N36°28'46.95896"	W87°56'07.93308"	458.82	LT ASPHALT
1060	N36°21'15.60781"	W87°39'48.29439"	283.75	ASPHALT
1061	N36°23'44.85834"	W87°37'24.55379"	288.16	LT ASPHALT
1062	N36°16'35.73163"	W87°34'02.96760"	374.46	ASPHALT
1064	N36°19'03.34669"	W87°30'02.81527"	633.73	ASPHALT
1066	N36°07'30.83535"	W88°31'06.72049"	376.41	ASPHALT
1067	N36°08'13.77714"	W87°33'45.54394"	769.87	GRAVEL
1068	N35°29'19.97778"	W87°43'31.63982"	882.89	ASPHALT
1069	N35°28'34.25125"	W88°20'44.55375"	383.31	GRAVEL
1071	N36°38'17.81872"	W88°01'21.77199"	295.15	GRAVEL
1072	N36°35'48.86493"	W87°50'01.15254"	391.14	DIRT

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LiDAR Control and/or Quality Control Stations:				
Station Name	Latitude	Longitude	Height (USFT)	Station Description
1073	N36°32'35.05158"	W87°37'43.35382"	563.20	GRAVEL
1074	N35°09'03.04959"	W87°56'22.60283"	497.51	CONCRETE
1075	N35°02'33.63616"	W88°16'14.65574"	395.45	LT ASPHALT
1076	N35°22'55.14533"	W87°59'30.95262"	289.44	ASPHALT
1077	N35°35'03.05123"	W88°07'11.40417"	425.93	PID
1078	N35°36'56.74429"	W87°50'14.72116"	465.68	PID
1079	N35°38'58.27434"	W88°23'40.77473"	413.84	PID
1080	N36°03'29.95681"	W88°06'19.22342"	359.18	LT ASPHALT
1081	N36°01'18.99856"	W87°59'01.33347"	291.84	LT ASPHALT
1082	N36°14'59.02209"	W88°09'12.74911"	399.24	ASPHALT
1083	N36°26'39.49280"	W88°20'01.98838"	515.02	PID
1084	N35°33'35.77276"	W88°00'24.64833"	273.49	ASPHALT
1085	N35°43'50.51674"	W87°56'09.34835"	320.60	PID
1086	N35°45'15.54555"	W88°30'57.64252"	426.57	PID
1087	N35°55'57.60582"	W88°29'14.79531"	474.71	CONCRETE
1088	N36°11'16.19496"	W87°58'33.76149"	294.29	GRAVEL
1089	N35°07'17.06614"	W87°45'46.51494"	935.24	ASPHALT
1090	N36°15'22.39850"	W87°53'42.32612"	295.82	ASPHALT
1091	N35°00'14.18226"	W88°09'04.10046"	559.23	GRAVEL
1092	N35°12'24.73526"	W87°49'08.61829"	519.13	ASPHALT
1093	N35°26'29.47350"	W87°45'30.95645"	507.92	ASPHALT
2002	N36°39'21.87854"	W87°58'27.11565"	296.81	SHORT GRASS
2003	N36°38'11.21339"	W87°52'33.16938"	300.56	LT ASPHALT
2005	N36°37'53.22201"	W87°47'30.22155"	331.73	GRAVEL
2006	N36°34'47.73688"	W87°45'33.11765"	438.49	GRAVEL
2007	N36°33'28.31917"	W87°42'24.87586"	546.53	LT ASPHALT
2009	N36°27'49.14338"	W87°36'39.76657"	587.99	GRAVEL
2010	N35°02'35.35003"	W87°40'50.93865"	732.42	GRAVEL
2011	N35°00'33.68540"	W87°48'59.60784"	615.17	DIRT
2013	N35°10'24.42789"	W87°44'06.39941"	965.65	DIRT
2015	N35°06'46.44074"	W88°15'33.64699"	399.61	GRAVEL
2016	N35°12'45.90220"	W88°13'49.54162"	353.84	DIRT
2017	N35°19'23.86288"	W88°20'58.95533"	376.99	GRAVEL
2018	N35°22'36.32477"	W88°12'22.64677"	319.20	GRAVEL
2020	N35°18'29.83550"	W87°45'43.73107"	653.13	GRAVEL
2021	N35°30'31.12183"	W88°19'23.30606"	479.98	PID
2022	N35°30'52.44172"	W88°14'37.26949"	430.46	LT ASPHALT
2024	N35°38'33.01735"	W88°07'50.86984"	414.39	PID
2025	N35°39'15.48298"	W88°03'59.21703"	498.70	PID
2027	N35°33'06.02315"	W87°40'16.00055"	862.14	GRAVEL

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LiDAR Control and/or Quality Control Stations:				
Station Name	Latitude	Longitude	Height (USFT)	Station Description
2028	N35°38'26.35413"	W88°13'52.94754"	384.50	PID
2030	N35°35'51.65869"	W88°35'30.07834"	306.84	ASPHALT
2031	N35°49'01.94472"	W88°35'43.75674"	396.20	ASPHALT
2032	N35°52'16.82905"	W88°23'30.26682"	435.36	PID
2033	N35°53'46.71646"	W88°19'01.37245"	374.08	LT ASPHALT
2034	N35°58'21.82814"	W88°40'44.77591"	348.31	ASPHALT
2035	N36°00'37.36129"	W88°37'26.65355"	379.86	GRAVEL
2036	N35°59'15.06622"	W88°34'41.70453"	343.36	ASPHALT
2037	N36°00'22.35916"	W88°25'33.21658"	292.67	DIRT
2038	N35°58'35.10045"	W88°17'27.38249"	417.89	LT ASPHALT
2039	N36°02'17.53398"	W88°14'53.02945"	337.33	LT ASPHALT
2042	N35°52'13.13170"	W88°08'48.49456"	382.78	GRAVEL
2043	N35°58'19.33415"	W87°46'40.31872"	319.69	GRAVEL
2044	N35°46'12.07056"	W87°47'08.79417"	402.20	GRAVEL
2045	N36°05'02.02414"	W87°47'46.86828"	430.57	PID
2046	N36°06'20.14571"	W87°37'45.47169"	714.61	GRAVEL
2047	N35°06'44.60279"	W88°03'13.93369"	454.41	DIRT
2048	N35°46'51.67670"	W88°21'29.26310"	383.92	LT ASPHALT
2049	N35°47'36.83235"	W88°23'34.81264"	422.14	GRAVEL
2050	N36°08'57.25545"	W88°30'53.95233"	380.18	PID
2051	N36°12'12.12211"	W88°24'58.28018"	454.34	GRAVEL
2052	N36°10'37.82442"	W88°17'11.32478"	369.10	ASPHALT
2054	N36°14'04.04723"	W88°05'22.11623"	274.39	GRAVEL
2055	N36°19'08.96174"	W87°50'27.32898"	396.55	PID
2056	N36°18'51.80776"	W87°42'29.79429"	365.59	ASPHALT
2057	N36°23'18.14802"	W87°38'07.60243"	314.63	GRAVEL
2058	N36°29'55.30685"	W87°41'27.09746"	287.60	GRAVEL
2059	N36°29'13.36723"	W87°50'26.26078"	346.22	LT ASPHALT
2060	N36°26'13.53722"	W88°12'22.75673"	350.06	ASPHALT
2062	N36°30'01.83252"	W88°19'34.60979"	469.47	PID
2063	N36°22'45.03495"	W88°28'43.61485"	478.53	PID
2064	N35°35'17.23496"	W88°31'55.04912"	322.98	LT ASPHALT
2065	N35°32'48.48259"	W88°24'53.87137"	449.36	LT ASPHALT
2067	N35°33'07.07401"	W87°51'26.59499"	652.06	GRAVEL
2068	N35°35'24.97464"	W87°43'59.77097"	802.30	GRAVEL
2069	N35°42'06.70427"	W87°44'51.93988"	396.63	ASPHALT
2071	N35°44'29.66303"	W88°05'44.64761"	437.60	ASPHALT
2072	N35°43'07.03031"	W88°23'28.94159"	501.62	DIRT
2075	N36°07'36.94124"	W88°23'08.75287"	319.83	CHIP-N-SEAL
2076	N36°08'26.65893"	W88°05'59.06061"	330.46	ASPHALT
2077	N36°12'51.83750"	W87°48'35.56975"	619.16	GRAVEL

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LiDAR Control and/or Quality Control Stations:				
Station Name	Latitude	Longitude	Height (USFT)	Station Description
2078	N36°13'43.23692"	W87°38'13.02875"	517.59	ASPHALT
2079	N36°25'46.43559"	W87°44'00.21191"	427.08	SHORT GRASS
2080	N36°24'57.54788"	W87°54'29.91599"	402.12	GRAVEL
2081	N36°32'03.12112"	W87°59'45.04458"	286.00	DIRT
2082	N36°17'28.39513"	W87°59'12.31263"	323.43	ASPHALT
2083	N36°19'29.10569"	W88°19'29.58646"	397.98	PID
2084	N35°58'03.12967"	W88°06'47.44143"	392.44	PID
2085	N35°04'17.68516"	W87°57'37.33276"	552.63	GRAVEL
2086	N35°02'23.62697"	W88°03'04.25785"	678.90	ASPHALT
2087	N35°16'19.14284"	W87°55'43.21212"	692.45	GRAVEL
2088	N35°23'44.70670"	W87°50'50.92145"	385.54	ASPHALT
2089	N35°26'05.05562"	W87°40'02.15520"	621.74	ASPHALT
2090	N35°29'44.07648"	W88°07'18.06929"	438.99	ASPHALT
2091	N35°45'48.14181"	W88°13'50.01870"	502.00	GRAVEL
2092	N36°05'09.89768"	W88°28'00.24026"	392.12	PID
2093	N36°06'47.91116"	W88°40'39.14075"	265.77	ASPHALT
2094	N36°10'57.04603"	W87°43'12.23333"	473.17	GRAVEL
2095	N35°55'21.39700"	W87°38'56.22608"	602.78	GRAVEL
2096	N36°24'00.65166"	W87°47'34.20599"	584.97	GRAVEL
2098	N36°16'46.25045"	W88°17'36.80529"	329.08	PID
2099	N36°24'06.41834"	W88°19'37.06660"	456.25	GRAVEL
2100	N36°36'20.77450"	W87°56'25.66422"	301.96	DIRT
2101	N36°31'52.16799"	W87°48'41.46685"	296.07	PID
2102	N36°34'15.21920"	W87°52'58.32658"	415.23	ASPHALT
2103	N36°30'12.85593"	W88°04'52.28556"	302.61	GRAVEL
2104	N36°26'23.16278"	W88°04'51.95039"	270.18	ASPHALT
2105	N36°30'06.18077"	W88°31'23.54906"	373.15	GRAVEL
2106	N36°26'29.92661"	W88°25'10.31296"	374.67	GRAVEL
2107	N36°22'25.27693"	W88°23'42.39558"	384.21	CONCRETE
2108	N36°16'41.77710"	W88°28'26.69904"	378.70	CHIP-N-SEAL
2109	N36°12'01.18265"	W88°29'34.28010"	403.06	GRAVEL
2110	N35°26'31.74770"	W88°17'39.12314"	404.11	PID
2111	N35°27'07.02560"	W88°09'41.69209"	414.61	LT ASPHALT
2112	N35°19'15.60241"	W88°12'53.38650"	323.84	DIRT
2113	N35°16'07.71046"	W88°11'38.82262"	329.48	DIRT
2114	N35°09'58.72754"	W88°12'49.45195"	370.13	PID
2115	N35°19'12.31642"	W88°03'11.68060"	604.30	DIRT
2116	N35°14'41.89335"	W88°02'45.83985"	643.69	GRAVEL
2117	N35°19'39.82126"	W87°35'49.06702"	945.35	GRAVEL
2118	N35°15'07.94400"	W87°38'00.67392"	663.44	ASPHALT
2119	N35°29'24.26678"	W87°50'17.36213"	461.40	ASPHALT

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LiDAR Control and/or Quality Control Stations:

Station Name	Latitude	Longitude	Height (USFT)	Station Description
2120	N35°05'04.05502"	W87°34'48.33753"	577.06	GRAVEL
2123	N36°16'46.52533"	W87°43'27.91685"	697.52	GRAVEL
2124	N35°49'49.58684"	W88°02'09.81187"	322.79	ASPHALT
2125	N35°51'52.59486"	W87°54'13.25608"	294.90	PID
2126	N35°57'49.42583"	W87°57'25.74920"	272.44	GRAVEL
2127	N36°08'03.33088"	W87°52'45.70880"	586.04	ASPHALT
2128	N36°04'59.36410"	W88°21'20.02967"	341.86	GRAVEL
2129	N35°44'21.16965"	W88°16'12.22403"	529.18	LT ASPHALT
2130	N35°42'26.50968"	W88°36'07.28189"	525.54	PID
2134	N36°22'13.96934"	W87°59'13.88455"	297.59	GRAVEL
2135	N36°34'24.81781"	W87°56'03.91767"	285.15	GRAVEL
2136	N35°41'02.59113"	W87°55'36.97729"	362.77	PID
2137	N35°13'23.23583"	W88°20'57.32412"	365.57	LT ASPHALT
2138	N35°13'36.40715"	W88°17'52.28197"	314.75	LT ASPHALT
2139	N35°13'56.49355"	W88°14'46.03374"	350.03	LT ASPHALT
2140	N35°13'39.63175"	W88°11'43.02465"	322.23	LT ASPHALT
2141	N35°16'23.42151"	W88°02'06.08836"	447.55	LT ASPHALT
2142	N35°16'54.45348"	W87°59'20.83205"	412.03	LT ASPHALT
2143	N35°18'12.21447"	W87°53'08.32242"	409.20	LT ASPHALT
2144	N35°17'44.55315"	W87°50'00.55939"	482.62	LT ASPHALT
2145	N35°19'26.28348"	W87°46'58.94650"	868.91	LT ASPHALT
2146	N35°19'29.54195"	W87°43'52.64281"	833.94	LT ASPHALT
2147	N35°19'47.58398"	W87°37'35.85245"	884.96	LT ASPHALT
2148	N35°19'02.76242"	W87°34'30.87020"	910.56	LT ASPHALT
2149	N35°51'15.73889"	W88°39'36.98689"	458.24	GRAVEL
2150	N35°52'38.67627"	W88°36'29.44617"	420.56	LT ASPHALT
2151	N35°51'42.25513"	W88°30'08.41895"	394.85	ASPHALT
2152	N35°51'54.02847"	W88°27'01.01812"	422.96	GRAVEL
2153	N35°50'34.42240"	W88°23'48.70552"	424.10	GRAVEL
2154	N35°48'46.46149"	W88°17'25.57215"	436.79	LT ASPHALT
2155	N35°49'04.86772"	W88°11'06.71559"	424.72	LT ASPHALT
2156	N35°49'22.02697"	W88°07'52.74577"	452.48	LT ASPHALT
2157	N35°50'37.75424"	W88°04'48.73449"	487.79	ASPHALT
2158	N35°52'14.67680"	W88°01'38.65709"	501.72	ASPHALT
2159	N35°52'07.60355"	W87°58'34.41973"	545.34	ASPHALT
2160	N35°52'00.99284"	W87°55'20.18037"	290.92	ASPHALT
2161	N35°52'06.88658"	W87°52'20.31571"	363.17	LT ASPHALT
2162	N35°53'02.37068"	W87°45'59.19390"	519.87	LT ASPHALT
2163	N35°58'35.20955"	W87°45'42.69975"	336.22	GRAVEL
2164	N36°01'51.28607"	W87°39'48.24375"	408.52	GRAVEL
2165	N36°01'38.01312"	W87°36'26.30421"	477.88	SHORT GRASS

WOOLPERT

LiDAR Control and/or Quality Control Stations:				
Station Name	Latitude	Longitude	Height (USFT)	Station Description
2166	N36°17'23.13695"	W88°28'10.92348"	372.78	ASPHALT
2167	N36°17'39.05727"	W88°24'54.29234"	401.54	ASPHALT
2168	N36°18'03.08094"	W88°21'43.73758"	442.89	ASPHALT
2169	N36°18'23.82256"	W88°18'30.43725"	394.07	ASPHALT
2170	N36°20'49.52112"	W88°08'51.47997"	285.09	LT ASPHALT
2171	N36°23'04.59019"	W88°05'44.84839"	362.85	GRAVEL
2172	N36°26'54.85874"	W88°02'30.86619"	338.29	LT ASPHALT
2173	N36°19'02.05715"	W87°52'39.79855"	333.35	ASPHALT
2174	N36°19'35.45959"	W87°49'26.55653"	572.41	ASPHALT
2175	N36°18'51.00335"	W87°46'14.56169"	642.82	ASPHALT
2176	N36°19'31.09731"	W87°42'55.25590"	543.34	ASPHALT
2177	N36°16'45.43977"	W87°30'46.55087"	533.69	ASPHALT
2178	N36°19'18.45318"	W87°46'34.20111"	640.25	ASPHALT
2179	N35°14'49.83920"	W88°05'27.80307"	449.91	LT ASPHALT
3001	N36°38'17.57604"	W88°01'18.54995"	284.45	FOREST
3002	N36°39'17.21207"	W87°58'25.15892"	301.49	FOREST
3003	N36°38'13.19355"	W87°52'34.16152"	320.20	FOREST
3004	N36°35'46.15415"	W87°50'14.59528"	319.58	SMALL GRASS
3005	N36°37'52.88757"	W87°47'29.66959"	325.73	FOREST
3006	N36°34'46.68678"	W87°45'29.98185"	447.03	TALL WEEDS
3007	N36°33'29.04924"	W87°42'27.12916"	543.87	BRUSH
3008	N36°32'34.93718"	W87°37'47.08629"	554.30	BRUSH
3009	N36°27'50.08393"	W87°36'36.53452"	595.53	TALL WEEDS
3010	N35°02'34.72924"	W87°40'50.73754"	732.34	TALL WEEDS
3011	N35°00'32.55770"	W87°49'00.18157"	611.99	FOREST
3012	N35°09'09.16609"	W87°56'04.48625"	484.18	TALL WEEDS
3013	N35°10'12.52207"	W87°44'13.30234"	945.45	TALL WEEDS
3014	N35°02'35.34956"	W88°16'23.02750"	400.85	BRUSH
3015	N35°06'48.27112"	W88°15'32.70758"	401.97	BRUSH
3016	N35°11'49.14368"	W88°14'12.94108"	364.64	TALL WEEDS
3017	N35°19'31.19299"	W88°20'54.44510"	310.17	TALL WEEDS
3018	N35°22'31.64915"	W88°12'07.50359"	288.86	FOREST
3019	N35°22'51.25352"	W87°59'31.67268"	297.16	FOREST
3020	N35°18'06.87671"	W87°45'28.06203"	635.74	TALL WEEDS
3021	N35°30'32.21124"	W88°19'23.01103"	473.13	TALL WEEDS
3022	N35°30'52.00552"	W88°14'48.65924"	420.40	FOREST
3023	N35°35'03.09121"	W88°07'04.08243"	420.05	TALL WEEDS
3024	N35°38'34.52631"	W88°07'51.74593"	411.73	TALL WEEDS
3025	N35°39'15.13644"	W88°03'50.00617"	501.77	FOREST
3026	N35°36'49.66096"	W87°50'05.34172"	399.22	TALL WEEDS
3027	N35°33'05.88039"	W87°40'19.96011"	855.25	TALL WEEDS
3028	N35°38'30.41064"	W88°13'58.85919"	367.85	TALL WEEDS

WOOLPERT

LiDAR Control and/or Quality Control Stations:				
Station Name	Latitude	Longitude	Height (USFT)	Station Description
3029	N35°38'52.04431"	W88°23'56.81296"	376.57	BRUSH
3030	N35°35'51.01846"	W88°35'32.11007"	320.76	TALL WEEDS
3031	N35°48'59.42762"	W88°35'38.23785"	397.00	TALL WEEDS
3032	N35°52'18.70937"	W88°23'40.95314"	432.34	TALL WEEDS
3033	N35°53'31.45459"	W88°19'09.99944"	388.37	GRASS
3034	N35°58'19.17463"	W88°40'50.67613"	349.48	TALL WEEDS
3035	N36°00'11.66457"	W88°37'35.42863"	349.13	BRUSH
3036	N35°59'15.09860"	W88°34'20.53169"	301.88	BRUSH
3037	N35°59'51.20189"	W88°25'27.12200"	291.22	BRUSH
3038	N35°58'03.85267"	W88°18'03.75389"	387.49	BRUSH
3039	N36°02'25.13164"	W88°15'03.38648"	313.62	BRUSH
3040	N36°03'11.09866"	W88°06'55.73656"	332.96	BRUSH
3041	N36°01'20.90603"	W87°58'54.53287"	293.52	BRUSH
3042	N35°52'19.85523"	W88°08'28.39542"	344.63	BRUSH
3043	N35°58'20.49456"	W87°46'56.97819"	351.15	FOREST
3044	N35°46'11.75358"	W87°47'14.83166"	390.78	TALL WEEDS
3045	N36°04'50.62330"	W87°47'39.99445"	496.44	TALL WEEDS
3046	N36°06'11.01307"	W87°37'36.66093"	734.02	BRUSH
3047	N35°06'56.19745"	W88°03'04.80396"	446.51	FOREST
3048	N35°46'53.37185"	W88°21'55.43771"	368.17	LONG GRASS
3049	N35°47'37.68962"	W88°23'30.25645"	437.38	GRASS
3050	N36°08'57.88815"	W88°30'29.89191"	384.81	BRUSH
3051	N36°12'07.09978"	W88°24'28.73770"	410.95	FOREST
3052	N36°10'37.44220"	W88°17'12.70456"	368.06	FOREST
3053	N36°14'25.58209"	W88°09'19.66630"	384.61	BRUSH
3054	N36°14'00.46686"	W88°05'40.46220"	290.24	FOREST
3055	N36°19'04.92597"	W87°50'14.14473"	406.35	FOREST
3056	N36°18'51.37574"	W87°42'31.50527"	370.16	BRUSH
3057	N36°23'27.55816"	W87°38'12.62519"	285.85	FOREST
3058	N36°29'52.93388"	W87°41'26.59231"	287.64	BRUSH
3059	N36°29'01.81186"	W87°51'12.43200"	278.09	BRUSH
3060	N36°26'20.05700"	W88°12'23.95555"	330.19	FOREST
3061	N36°26'42.12883"	W88°20'41.98924"	468.03	FOREST
3062	N36°30'01.47638"	W88°19'37.13574"	466.29	FOREST
3063	N36°22'45.27989"	W88°28'46.69112"	477.06	FOREST
3064	N35°35'14.85745"	W88°32'04.13957"	320.12	LONG GRASS
3065	N35°32'49.95111"	W88°24'55.69802"	442.68	FOREST
3066	N35°33'30.36858"	W88°00'33.03334"	302.45	FOREST
3067	N35°33'09.30889"	W87°51'27.69100"	649.35	FOREST
3068	N35°35'26.17796"	W87°44'02.83409"	795.56	TALL WEEDS
3069	N35°41'53.07595"	W87°44'22.01527"	387.27	BRUSH
3070	N35°43'47.36507"	W87°56'00.50673"	324.93	FOREST
3071	N35°44'29.58051"	W88°05'43.88637"	449.00	FOREST

LiDAR Control and/or Quality Control Stations:				
Station Name	Latitude	Longitude	Height (USFT)	Station Description
3072	N35°43'04.26179"	W88°23'18.17045"	489.74	BRUSH
3073	N35°45'16.86763"	W88°30'58.25569"	432.56	BRUSH
3074	N35°55'55.70811"	W88°29'18.51701"	462.50	FOREST
3075	N36°07'35.98718"	W88°23'08.00052"	326.74	FOREST
3076	N36°08'27.31167"	W88°06'16.74642"	354.87	FOREST
3077	N36°12'52.38810"	W87°48'35.29937"	622.86	FOREST
3078	N36°13'42.97186"	W87°38'18.41706"	526.94	FOREST
3079	N36°25'53.05324"	W87°43'59.56005"	388.87	BRUSH
3080	N36°24'58.95109"	W87°54'31.33472"	400.34	FOREST
3081	N36°31'57.63695"	W87°59'36.67357"	279.31	FOREST
3082	N36°17'30.09803"	W87°59'08.64535"	333.16	FOREST
3083	N36°19'29.73496"	W88°19'24.59118"	400.76	FOREST
3084	N35°58'02.05638"	W88°06'46.66639"	397.87	FOREST
3085	N35°04'17.82571"	W87°57'37.94366"	552.22	BRUSH
3086	N35°02'35.98180"	W88°03'05.10241"	665.13	BRUSH
3087	N35°16'15.91337"	W87°55'37.99488"	755.88	FOREST
3088	N35°23'45.72856"	W87°50'50.73862"	399.82	FOREST
3089	N35°26'05.25525"	W87°40'00.75577"	618.15	FOREST
3090	N35°29'53.52056"	W88°07'29.65865"	454.34	FOREST
3091	N35°45'47.24040"	W88°13'50.19450"	498.71	FOREST
3092	N36°05'06.24745"	W88°28'08.91774"	393.40	FOREST
3093	N36°06'41.94031"	W88°40'15.14960"	286.24	FOREST
3094	N36°10'57.04086"	W87°43'11.49251"	480.17	FOREST
3095	N35°55'21.40768"	W87°38'55.56375"	614.80	FOREST
3096	N36°24'00.97051"	W87°47'33.55189"	590.80	FOREST
3097	N36°11'14.52076"	W87°58'38.89240"	302.17	FOREST
3098	N36°16'40.06275"	W88°17'29.65903"	329.83	FOREST
3099	N36°23'50.21007"	W88°19'30.55240"	396.10	FOREST
3100	N36°36'21.94597"	W87°56'22.45611"	292.15	FOREST
3101	N36°32'25.24492"	W87°48'10.85264"	356.32	TALL WEEDS

Woopert Base Stations and Geodetic Control Stations:				
Station Name	Latitude	Longitude	Height (USFT)	Station Description
101	N36°26'22.29722"	W88°04'30.98364"	267.92	TSM
102	N36°32'50.85828"	W87°47'39.92950"	328.31	TSM
103	N35°40'21.64871"	W88°27'31.70854"	410.07	TSM
104	N36°05'04.34134"	W87°46'14.42870"	460.07	TSM
105	N35°10'06.95068"	W88°12'48.66339"	359.55	TSM
106	N35°18'31.35872"	W87°57'02.64687"	369.78	TSM
107	N35°02'12.56817"	W87°40'13.31386"	715.96	TSM
108	N36°02'28.53900"	W88°10'57.30999"	341.38	TSM
39 13	N34°54'43.02398"	W87°40'11.45382"	527.78	EF1770
F 181	N36°20'45.69385"	W88°23'01.16246"	473.15	GD0190
GPS 31	N35°56'20.27991"	W88°34'22.61388"	432.21	FE2743
PARSPORT	N35°38'21.53992"	W88°07'43.08279"	419.82	FE2788
TN30	N35°33'05.84518"	W87°34'26.20759"	873.09	DM3531
TN33	N36°33'31.31771"	W87°19'09.98707"	448.02	DJ9554
TN35	N36°06'14.15372"	W87°37'21.52259"	759.39	DJ9558
TN40	N35°38'50.61711"	W88°24'04.31177"	415.56	DL7339
TN41	N36°07'34.87782"	W88°30'45.86531"	382.17	DJ9564
TN42	N36°08'12.54850"	W89°14'53.31342"	313.42	DJ9566
TN43	N35°13'42.85124"	W88°36'14.10605"	401.53	DJ9568
TN44	N35°38'25.50230"	W88°55'08.62785"	303.17	DJ9570
TN45	N35°17'57.37247"	W89°39'34.60010"	210.47	DJ9572
TN46	N35°13'16.56355"	W88°19'06.05170"	386.36	DL6193
TN48	N36°17'45.75572"	W88°17'47.68028"	360.22	DL6197
TN49	N35°46'48.30307"	W89°31'08.90979"	316.39	DL6306

Section 3: Existing NGS Control Information Sheets

This section contains the published National Geodetic Survey (NGS) Datasheets used in the final control network for the USGS TN West Central LiDAR 2017 B17 Project.

The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.11
1        National Geodetic Survey,   Retrieval Date = FEBRUARY 22, 2017
EF1770 ***********************************************************************
EF1770  FBN         -  This is a Federal Base Network Control Station.
EF1770  DESIGNATION -  39 13
EF1770  PID         -  EF1770
EF1770  STATE/COUNTY-  AL/LAUDERDALE
EF1770  COUNTRY     -  US
EF1770  USGS QUAD   -  BLACKBURN (1988)
EF1770
EF1770                        *CURRENT SURVEY CONTROL
EF1770  ______________________________________________________________________
EF1770* NAD 83(2011) POSITION- 34 54 43.02398(N) 087 40 11.45382(W)   ADJUSTED
EF1770* NAD 83(2011) ELLIP HT-   160.849 (meters)        (06/27/12)   ADJUSTED
EF1770* NAD 83(2011) EPOCH    -  2010.00
EF1770* NAVD 88 ORTHO HEIGHT -   188.229 (meters)      617.55  (feet) ADJUSTED
EF1770  ______________________________________________________________________
EF1770  GEOID HEIGHT    -        -27.362 (meters)                     GEOID12B
EF1770  NAD 83(2011) X  -    212,889.561 (meters)                     COMP
EF1770  NAD 83(2011) Y  - -5,231,825.777 (meters)                     COMP
EF1770  NAD 83(2011) Z  -  3,629,953.085 (meters)                     COMP
EF1770  LAPLACE CORR    -          1.03  (seconds)                    DEFLEC12B
EF1770  DYNAMIC HEIGHT  -        188.048 (meters)      616.95  (feet) COMP
EF1770  MODELED GRAVITY -    979,673.0   (mgal)                       NAVD 88
EF1770
EF1770  VERT ORDER      -  SECOND    CLASS I
EF1770
EF1770  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
EF1770  Standards:
EF1770         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
EF1770            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
EF1770  ------------------------------------------------------------------
EF1770  NETWORK    0.88   1.96           0.39   0.32   1.00     -0.06982841
EF1770  ------------------------------------------------------------------
EF1770  Click here for local accuracies and other accuracy information.
EF1770
EF1770
EF1770.The horizontal coordinates were established by GPS observations
EF1770.and adjusted by the National Geodetic Survey in June 2012.
EF1770
EF1770.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
EF1770.been affixed to the stable North American tectonic plate. See
EF1770.NA2011 for more information.
EF1770
EF1770.The horizontal coordinates are valid at the epoch date displayed above
EF1770.which is a decimal equivalence of Year/Month/Day.
EF1770
EF1770.The orthometric height was determined by differential leveling and
EF1770.adjusted by the NATIONAL GEODETIC SURVEY
EF1770.in February 2008.
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EF1770
EF1770.No vertical observational check was made to the station.
EF1770
EF1770.Significant digits in the geoid height do not necessarily reflect accuracy.
EF1770.GEOID12B height accuracy estimate available here.
EF1770
EF1770.The X, Y, and Z were computed from the position and the ellipsoidal ht.
EF1770
EF1770.The Laplace correction was computed from DEFLEC12B derived deflections.
EF1770
EF1770.The ellipsoidal height was determined by GPS observations
EF1770.and is referenced to NAD 83.
EF1770
EF1770.The dynamic height is computed by dividing the NAVD 88
EF1770.geopotential number by the normal gravity value computed on the
EF1770.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
EF1770.degrees latitude (g = 980.6199 gals.).
EF1770
EF1770.The modeled gravity was interpolated from observed gravity values.
EF1770
EF1770. The following values were computed from the NAD 83(2011) position.
EF1770
EF1770;                    North         East     Units Scale Factor Converg.
EF1770;SPC AL W     -   544,688.232   584,479.297   MT  0.99993630   -0 05 49.9
EF1770;UTM  16      - 3,863,483.566   438,809.347   MT  0.99964615   -0 23 00.2
EF1770
EF1770!             -  Elev Factor  x  Scale Factor =   Combined Factor
EF1770!SPC AL W     -   0.99997475  x   0.99993630  =   0.99991105
EF1770!UTM  16      -   0.99997475  x   0.99964615  =   0.99962091
EF1770
EF1770:                Primary Azimuth Mark                    Grid Az
EF1770:SPC AL W     -  39 12                                   179 20 24.0
EF1770:UTM  16      -  39 12                                   179 37 34.3
EF1770
EF1770_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDD3880963483(NAD 83)
EF1770
EF1770|-----------------------------------------------------------------------|
EF1770| PID    Reference Object                    Distance      Geod. Az  |
EF1770|                                                          dddmmss.s |
EF1770| EF1769 39 12                             APPROX. 0.5 KM 1791434.1 |
EF1770|-----------------------------------------------------------------------|
EF1770
EF1770                          SUPERSEDED SURVEY CONTROL
EF1770
EF1770  NAD 83(2007)-  34 54 43.02375(N)    087 40 11.45434(W) AD(2002.00) 0
EF1770  ELLIP H (02/10/07)  160.846  (m)                       GP(2002.00)
EF1770  NAD 83(1992)-  34 54 43.02389(N)    087 40 11.45442(W) AD(       ) A
EF1770  ELLIP H (08/29/05)  160.872  (m)                       GP(       ) 4 1
EF1770  ELLIP H (07/29/02)  160.849  (m)                       GP(       ) 4 1
EF1770  NAD 83(1992)-  34 54 43.02389(N)    087 40 11.45391(W) AD(       ) 1
EF1770  ELLIP H (12/04/92)  160.908  (m)                       GP(       ) 4 1
EF1770  NAD 83(1992)-  34 54 43.03050(N)    087 40 11.45028(W) AD(       ) 1
EF1770  NAVD 88 (08/29/05)  188.2    (m)  GEOID03 model used   GPS OBS
EF1770  NGVD 29 (12/04/92)  188.2    (m)  GEOID93 model used   GPS OBS
EF1770  NGVD 29 (08/18/92)  188.2    (m)  GEOID90 model used   GPS OBS
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EF1770
EF1770.Superseded values are not recommended for survey control.
EF1770
EF1770.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
EF1770.See file dsdata.txt to determine how the superseded data were derived.
EF1770
EF1770_MARKER: DD = SURVEY DISK
EF1770_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
EF1770_STAMPING: 39-13 1991
EF1770_MARK LOGO: ALHD
EF1770_MAGNETIC: R = STEEL ROD IMBEDDED IN MONUMENT
EF1770_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
EF1770+STABILITY: SURFACE MOTION
EF1770_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
EF1770+SATELLITE: SATELLITE OBSERVATIONS - October 30, 2007
EF1770
EF1770  HISTORY     - Date     Condition        Report By
EF1770  HISTORY     - 1991     MONUMENTED       ALHD
EF1770  HISTORY     - 19920212 GOOD
EF1770  HISTORY     - 20040324 GOOD             ALHD
EF1770  HISTORY     - 20040624 GOOD             ALDOT
EF1770  HISTORY     - 20051209 GOOD             MAPTEC
EF1770  HISTORY     - 20071030 GOOD             ALADT
EF1770
EF1770                          STATION DESCRIPTION
EF1770
EF1770'DESCRIBED BY ALABAMA HIGHWAY DEPARTMENT 1991
EF1770'THE STATION IS LOCATED IN LAUDERDALE COUNTY ON THE WEST RIGHT OF WAY
EF1770'OF ALA 17, ABOUT 3.75 MI (6.03 KM) NORTHWEST OF ST FLORAIN AND ABOUT
EF1770'7.75 MI (12.47 KM) NORTH OF FLORENCE.
EF1770'TO REACH THE STATION FROM THE JUNCTION OF ALA 17 NORTH AND ALA 133 BY
EF1770'PASS (MILE POST 335.75 ON ALA 17 AND MILE POST 12.90 ON ALA 133) IN
EF1770'NORTH FLORENCE, DRIVE NORTH ON ALA 17 FOR 5.05 MI (8.13 KM) TO MILE
EF1770'POST 341.05 AND THE STATION ON THE LEFT.
EF1770'THE STATION IS LOCATED IN FRONT OF TOWNSLEY GEN. MDSE, 20.5 FT
EF1770'(6.2 M) EAST OF THE EAST EDGE OF A PAVED PARKING LOT, 27.8 FT
EF1770'(8.5 M) WEST OF THE CENTERLINE OF ALA 17, 44.6 FT (13.6 M) SOUTH OF
EF1770'THE SOUTH END OF AN 18-INCH CONCRETE PIPE UNDER THE NORTH DRIVEWAY,
EF1770'66.2 FT (20.2 M) NORTH OF THE METAL POST OF AN EXXON SIGN, 78.8 FT
EF1770'(24.0 M) NORTHEAST OF THE NORTHEAST CORNER OF THE EAST PUMP ISLAND,
EF1770'87.0 FT (26.5 M) NORTH OF TELEPHONE CABLE POLE NO. 89 1/2, AND SET
EF1770'FLUSH WITH THE GROUND.
EF1770'STATION 39-12 1991 MAY BE USED AS AN AZIMUTH FOR THIS STATION.
EF1770
EF1770                          STATION RECOVERY (1992)
EF1770
EF1770'RECOVERED 1992
EF1770'RECOVERED IN GOOD CONDITION.
EF1770
EF1770                          STATION RECOVERY (2004)
EF1770
EF1770'RECOVERY NOTE BY ALABAMA HIGHWAY DEPARTMENT 2004 (JDS)
EF1770'RECOVERED IN GOOD CONDITION.
EF1770
EF1770                          STATION RECOVERY (2004)
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EF1770
EF1770'RECOVERY NOTE BY ALABAMA DEPARTMENT OF TRANSPORTATION 2004 (JC)
EF1770'RECOVERED AS DESCRIBED.
EF1770
EF1770                          STATION RECOVERY (2005)
EF1770
EF1770'RECOVERY NOTE BY MAPTECH INCORPORATED 2005 (JWF)
EF1770'RECOVERED AS DESCRIBED.
EF1770
EF1770                          STATION RECOVERY (2007)
EF1770
EF1770'RECOVERY NOTE BY ALABAMA DEPT OF TRANSPORTATION 2007 (JDS)
EF1770'RECOVERED IN GOOD CONDITION.
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The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.11
1        National Geodetic Survey,   Retrieval Date = FEBRUARY 22, 2017
GD0190 ***********************************************************************
GD0190  DESIGNATION -  F 181
GD0190  PID         -  GD0190
GD0190  STATE/COUNTY-  TN/HENRY
GD0190  COUNTRY     -  US
GD0190  USGS QUAD   -  OSAGE (1985)
GD0190
GD0190                         *CURRENT SURVEY CONTROL
GD0190  ______________________________________________________________________
GD0190* NAD 83(2011) POSITION- 36 20 45.69385(N) 088 23 01.16246(W)   ADJUSTED
GD0190* NAD 83(2011) ELLIP HT-   144.204 (meters)        (06/27/12)   ADJUSTED
GD0190* NAD 83(2011) EPOCH    -  2010.00
GD0190* NAVD 88 ORTHO HEIGHT -   172.628 (meters)      566.36  (feet) ADJUSTED
GD0190  ______________________________________________________________________
GD0190  GEOID HEIGHT    -        -28.410 (meters)                     GEOID12B
GD0190  NAD 83(2011) X  -    145,080.235 (meters)                     COMP
GD0190  NAD 83(2011) Y  - -5,141,406.239 (meters)                     COMP
GD0190  NAD 83(2011) Z  -  3,759,271.671 (meters)                     COMP
GD0190  LAPLACE CORR    -         -1.25  (seconds)                    DEFLEC12B
GD0190  DYNAMIC HEIGHT  -       172.486 (meters)      565.90  (feet) COMP
GD0190  MODELED GRAVITY -    979,805.4   (mgal)                       NAVD 88
GD0190
GD0190  VERT ORDER      -  FIRST     CLASS II
GD0190
GD0190  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
GD0190  Standards:
GD0190         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
GD0190            Horiz  Ellip          SD_N   SD_E   SD_h      (unitless)
GD0190  ------------------------------------------------------------------
GD0190  NETWORK    0.43   0.92           0.18   0.17   0.47      0.03359607
GD0190  ------------------------------------------------------------------
GD0190  Click here for local accuracies and other accuracy information.
GD0190
GD0190
GD0190.This mark is at Henry County Airport (PHT)
GD0190
GD0190.The horizontal coordinates were established by GPS observations
GD0190.and adjusted by the National Geodetic Survey in June 2012.
GD0190
GD0190.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
GD0190.been affixed to the stable North American tectonic plate. See
GD0190.NA2011 for more information.
GD0190
GD0190.The horizontal coordinates are valid at the epoch date displayed above
GD0190.which is a decimal equivalence of Year/Month/Day.
GD0190
GD0190.The orthometric height was determined by differential leveling and
GD0190.adjusted by the NATIONAL GEODETIC SURVEY
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GD0190.in June 1991.
GD0190
GD0190.Significant digits in the geoid height do not necessarily reflect accuracy.
GD0190.GEOID12B height accuracy estimate available here.
GD0190
GD0190.Photographs are available for this station.
GD0190
GD0190.The X, Y, and Z were computed from the position and the ellipsoidal ht.
GD0190
GD0190.The Laplace correction was computed from DEFLEC12B derived deflections.
GD0190
GD0190.The ellipsoidal height was determined by GPS observations
GD0190.and is referenced to NAD 83.
GD0190
GD0190.The dynamic height is computed by dividing the NAVD 88
GD0190.geopotential number by the normal gravity value computed on the
GD0190.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
GD0190.degrees latitude (g = 980.6199 gals.).
GD0190
GD0190.The modeled gravity was interpolated from observed gravity values.
GD0190
GD0190. The following values were computed from the NAD 83(2011) position.
GD0190
GD0190;                    North         East     Units Scale Factor Converg.
GD0190;SPC TN       -   225,915.637   386,047.241   MT  0.99998823   -1 23 43.8
GD0190;SPC TN       -   741,191.55  1,266,556.66   sFT  0.99998823   -1 23 43.8
GD0190;UTM  16      - 4,023,217.541   375,837.787   MT  0.99978994   -0 49 12.5
GD0190
GD0190!             -  Elev Factor  x  Scale Factor =   Combined Factor
GD0190!SPC TN       -   0.99997737  x   0.99998823  =   0.99996560
GD0190!UTM  16      -   0.99997737  x   0.99978994  =   0.99976731
GD0190
GD0190_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCF7583723217(NAD 83)
GD0190
GD0190                           SUPERSEDED SURVEY CONTROL
GD0190
GD0190  NAD 83(2007)-  36 20 45.69400(N)    088 23 01.16326(W) AD(2002.00) 0
GD0190  ELLIP H (02/10/07)  144.218  (m)                       GP(2002.00)
GD0190  NAD 83(1995)-  36 20 45.69338(N)    088 23 01.16299(W) AD(       ) 1
GD0190  ELLIP H (02/20/01)  144.288  (m)                       GP(       ) 2 1
GD0190  NAVD 88             172.63   (m)          566.4    (f) LEVELING    3
GD0190  NGVD 29 (11/26/84)  172.668  (m)          566.49   (f) ADJUSTED    1 2
GD0190
GD0190.Superseded values are not recommended for survey control.
GD0190
GD0190.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
GD0190.See file dsdata.txt to determine how the superseded data were derived.
GD0190
GD0190_MARKER: DB = BENCH MARK DISK
GD0190_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
GD0190_STAMPING: F 181 1949
GD0190_MARK LOGO: NONE
GD0190_PROJECTION: PROJECTING 2 CENTIMETERS
GD0190_MAGNETIC: N = NO MAGNETIC MATERIAL
GD0190_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
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GD0190+STABILITY: SURFACE MOTION
GD0190_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
GD0190+SATELLITE: SATELLITE OBSERVATIONS - 1999
GD0190
GD0190  HISTORY     - Date     Condition        Report By
GD0190  HISTORY     - 1949     MONUMENTED       CGS
GD0190  HISTORY     - 1968     GOOD             CGS
GD0190  HISTORY     - 1999     GOOD             LOWE
GD0190
GD0190                          STATION DESCRIPTION
GD0190
GD0190'DESCRIBED BY COAST AND GEODETIC SURVEY 1968
GD0190'5 MI NW FROM PARIS.
GD0190'THE MARK IS ABOUT 4.95 MILES NORTHWEST ALONG STATE ROUTE 69 FROM
GD0190'THE SOUTHWEST CORNER OF THE HENRY COUNTY COURTHOUSE SQUARE IN
GD0190'PARIS AT THE NORTHWEST CORNER OF THE HENRY COUNTY AIRPORT.  IT
GD0190'IS 135 FEET NORTH-NORTHWEST OF BENCH MARK G 181 1949, 69 FEET
GD0190'SOUTH AND ACROSS STATE ROUTE 69 FROM A 24-INCH PINE OAK TREE, 50
GD0190'FEET EAST OF THE APPROXIMATE CENTER OF A GRAVELED T ROAD LEFT,
GD0190'39.5 FEET SOUTHEAST OF GUYED POWERLINE POLE NO. 62, 39 FEET
GD0190'SOUTH-SOUTHWEST OF THE APPROXIMATE CENTER OF STATE ROUTE 69, AND
GD0190'0.9 OF A FOOT NORTH OF A METAL WITNESS POST AND SIGN.  IT IS A
GD0190'STANDARD DISK SET IN THE TOP OF A 12-INCH, ROUND, CONCRETE
GD0190'MONUMENT THAT PROJECTS 1 INCH AND THE DISK IS STAMPED F 181
GD0190'1949.
GD0190
GD0190                          STATION RECOVERY (1999)
GD0190
GD0190'RECOVERY NOTE BY LOWE ENGINEERS 1999
GD0190'RECOVERED 1999
GD0190'RECOVERED IN GOOD CONDITION.
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The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

```
PROGRAM = datasheet95, VERSION = 8.11
1        National Geodetic Survey,   Retrieval Date = FEBRUARY 22, 2017
FE2743 ***********************************************************************
FE2743  HT_MOD      -  This is a Height Modernization Survey Station.
FE2743  CBN         -  This is a Cooperative Base Network Control Station.
FE2743  DESIGNATION -  GPS 31
FE2743  PID         -  FE2743
FE2743  STATE/COUNTY-  TN/CARROLL
FE2743  COUNTRY     -  US
FE2743  USGS QUAD   -  MC LEMORESVILLE (1981)
FE2743
FE2743                        *CURRENT SURVEY CONTROL
FE2743  ______________________________________________________________________
FE2743* NAD 83(2011) POSITION- 35 56 20.27995(N) 088 34 22.61438(W)   ADJUSTED
FE2743* NAD 83(2011) ELLIP HT-   131.740 (meters)        (06/27/12)   ADJUSTED
FE2743* NAD 83(2011) EPOCH    -  2010.00
FE2743* NAVD 88 ORTHO HEIGHT -   160.06  (meters)      525.1   (feet) GPS OBS
FE2743  ______________________________________________________________________
FE2743  NAVD 88 orthometric height was determined with an earlier geoid model
FE2743  GEOID HEIGHT    -        -28.348 (meters)                    GEOID12B
FE2743  NAD 83(2011) X  -    128,756.645 (meters)                    COMP
FE2743  NAD 83(2011) Y  - -5,168,479.562 (meters)                    COMP
FE2743  NAD 83(2011) Z  -  3,722,788.082 (meters)                    COMP
FE2743  LAPLACE CORR    -         -0.16  (seconds)                   DEFLEC12B
FE2743
FE2743  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
FE2743  Standards:
FE2743         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
FE2743            Horiz  Ellip          SD_N   SD_E   SD_h      (unitless)
FE2743  ------------------------------------------------------------------
FE2743  NETWORK    0.66   1.20           0.29   0.25   0.61     -0.03176805
FE2743  ------------------------------------------------------------------
FE2743  Click here for local accuracies and other accuracy information.
FE2743
FE2743
FE2743.The horizontal coordinates were established by GPS observations
FE2743.and adjusted by the National Geodetic Survey in June 2012.
FE2743
FE2743.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
FE2743.been affixed to the stable North American tectonic plate. See
FE2743.NA2011 for more information.
FE2743
FE2743.The horizontal coordinates are valid at the epoch date displayed above
FE2743.which is a decimal equivalence of Year/Month/Day.
FE2743
FE2743.The orthometric height was determined by GPS observations and a
FE2743.high-resolution geoid model using precise GPS observation and
FE2743.processing techniques.
FE2743
FE2743.Significant digits in the geoid height do not necessarily reflect accuracy.
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FE2743.GEOID12B height accuracy estimate available here.
FE2743
FE2743.The X, Y, and Z were computed from the position and the ellipsoidal ht.
FE2743
FE2743.The Laplace correction was computed from DEFLEC12B derived deflections.
FE2743
FE2743.The ellipsoidal height was determined by GPS observations
FE2743.and is referenced to NAD 83.
FE2743
FE2743. The following values were computed from the NAD 83(2011) position.
FE2743
FE2743;                    North         East     Units Scale Factor Converg.
FE2743;SPC TN       -   181,195.092   367,873.191   MT  0.99995007   -1 30 22.7
FE2743;SPC TN       -   594,470.90  1,206,930.63   sFT  0.99995007   -1 30 22.7
FE2743;UTM  16      - 3,978,322.219   358,119.148   MT  0.99984805   -0 55 24.1
FE2743
FE2743!             -  Elev Factor  x  Scale Factor =   Combined Factor
FE2743!SPC TN       -   0.99997932  x   0.99995007  =   0.99992939
FE2743!UTM  16      -   0.99997932  x   0.99984805  =   0.99982738
FE2743
FE2743_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCE5811978322(NAD 83)
FE2743
FE2743                           SUPERSEDED SURVEY CONTROL
FE2743
FE2743  NAD 83(2007)-  35 56 20.27978(N)    088 34 22.61476(W) AD(2002.00) A
FE2743  ELLIP H (10/16/11)  131.752  (m)                       GP(2002.00) 3 2
FE2743  NAD 83(2007)-  35 56 20.28009(N)    088 34 22.61529(W) AD(2002.00) 0
FE2743  ELLIP H (02/10/07)  131.758  (m)                       GP(2002.00)
FE2743  ELLIP H (08/03/04)  131.767  (m)                       GP(       ) 4 1
FE2743  NAD 83(1995)-  35 56 20.27987(N)    088 34 22.61519(W) AD(       ) B
FE2743  ELLIP H (09/08/03)  131.761  (m)                       GP(       ) 1 2
FE2743  NAD 83(1995)-  35 56 20.27975(N)    088 34 22.61540(W) AD(       ) B
FE2743  ELLIP H (12/14/95)  131.773  (m)                       GP(       ) 1 2
FE2743  NAD 83(1990)-  35 56 20.27984(N)    088 34 22.61620(W) AD(       ) B
FE2743  ELLIP H (09/07/90)  131.772  (m)                       GP(       ) 4 1
FE2743  NAVD 88             160.11   (m)          525.3    (f) LEVELING    3
FE2743  NAVD 88 (08/03/04)  160.0    (m)  GEOID03 model used   GPS OBS
FE2743  NAVD 88 (12/14/95)  160.1    (m)  UNKNOWN model used   GPS OBS
FE2743  NGVD 29 (09/07/90)  160.1    (m)  TENN MD model used   GPS OBS
FE2743
FE2743.Superseded values are not recommended for survey control.
FE2743
FE2743.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
FE2743.See file dsdata.txt to determine how the superseded data were derived.
FE2743
FE2743_MARKER: I = METAL ROD
FE2743_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
FE2743_STAMPING: GPS 31 1987
FE2743_MARK LOGO: NGS
FE2743_PROJECTION: FLUSH
FE2743_MAGNETIC: N = NO MAGNETIC MATERIAL
FE2743_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
FE2743_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
FE2743+SATELLITE: SATELLITE OBSERVATIONS - December 11, 2008
FE2743_ROD/PIPE-DEPTH: 9.10 meters
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FE2743_SLEEVE-DEPTH  : 0.90 meters
FE2743
FE2743  HISTORY     - Date     Condition        Report By
FE2743  HISTORY     - 1987     MONUMENTED       NGS
FE2743  HISTORY     - 1987     GOOD             NGS
FE2743  HISTORY     - 19890711 GOOD
FE2743  HISTORY     - 19901219 GOOD             NGS
FE2743  HISTORY     - 19910131 GOOD
FE2743  HISTORY     - 19950619 GOOD             NGS
FE2743  HISTORY     - 20020129 GOOD             USACE
FE2743  HISTORY     - 20020504 GOOD             EMCINC
FE2743  HISTORY     - 20031010 GOOD             TNDT
FE2743  HISTORY     - 20081211 GOOD             TNDOT
FE2743
FE2743                          STATION DESCRIPTION
FE2743
FE2743'DESCRIBED BY NATIONAL GEODETIC SURVEY 1987 (DAC)
FE2743'THE STATION IS LOCATED ABOUT 42 KM (26 MI) NORTHEAST OF JACKSON,
FE2743'5 KM (3 MI) SOUTH OF MCLEMORESVILLE, ON THE WEST RIGHT-OF-WAY OF
FE2743'STATE ROUTE 105.
FE2743'OWNERSHIP--STATE RIGHT-OF-WAY.
FE2743'
FE2743'TO REACH THE STATION FROM THE CITY HALL IN MCLEMORESVILLE GO
FE2743'SOUTH FOR 0.2 KM (0.1 MI) ON U.S. HIGHWAY 70A TO THE JUNCTION OF
FE2743'STATE ROUTE 105.
FE2743'TURN LEFT AND GO SOUTH ON STATE ROUTE 105 TO A
FE2743'BAPTIST CHURCH ON THE LEFT.
FE2743'CONTINUE STRAIGHT AHEAD AND GO SOUTH FOR 3.5 KM (2.2 MI) ON STATE
FE2743'ROUTE 105 TO THE STATION ON THE RIGHT ATOP A CUT.
FE2743'
FE2743'THE STATION IS A 3-D MARK WITH STAINLESS STEEL ROD DRIVEN 9.1 METERS
FE2743'(30 FT).  THE LOGO CAP IS STAMPED---GPS 31 1987---, AND A STEEL
FE2743'SPIKE IS EMBEDDED IN THE CONCRETE.  LOCATED
FE2743'102.7 METERS (337 FT) SOUTH FROM THE CENTER OF A HIGH VOLTAGE POWER
FE2743'LINE CROSSING THE ROAD,
FE2743'9.4 METERS (31 FT) WEST FROM THE ROAD CENTER AND 0.9 METERS (3 FT)
FE2743'ABOVE SAME,
FE2743'36.0 METERS (118 FT) SOUTH FROM A BURIED CABLE WARNING SIGN,
FE2743'0.2 METERS (1 FT) NORTH FROM A FIBERGLASS WITNESS POST.
FE2743
FE2743                          STATION RECOVERY (1987)
FE2743
FE2743'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1987
FE2743'RECOVERED IN GOOD CONDITION.
FE2743
FE2743                          STATION RECOVERY (1989)
FE2743
FE2743'RECOVERED 1989
FE2743'RECOVERED IN GOOD CONDITION.
FE2743
FE2743                          STATION RECOVERY (1990)
FE2743
FE2743'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1990
FE2743'THE STATION IS LOCATED ABOUT 4.82 KM (3.00 MI) SOUTH OF
FE2743'MCLEMORESVILLE, ON THE WEST SIDE OF A COUNTY ROAD.
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FE2743'OWNERSHIP--TENNESSEE DEPARTMENT OF TRANSPORTATION, P.O. BOX 23170,
FE2743'NASHVILLE, TN 37202, PHONE 615-741-2158.
FE2743'TO REACH THE STATION FROM THE CITY MUNICIPAL BUILDING AND POST OFFICE
FE2743'IN MCCLEMORESVILLE, LOCATED ON STATE HIGHWAY 70A (MAIN STREET) ABOUT
FE2743'0.08 KM (0.05 MI) SOUTHWEST OF THE JUNCTION OF STATE HIGHWAY 105
FE2743'WEST, GO SOUTHWESTERLY ON STATE HIGHWAY 70A FOR 0.16 KM (0.10 MI) TO
FE2743'THE JUNCTION OF A PAVED ROAD LEFT (NO ROAD SIGN BUT THERE IS A METAL
FE2743'SIGN WITH ARROW READING REED CREEK BAPTIST CHURCH), TURN LEFT, SOUTH,
FE2743'ON THE PAVED ROAD FOR 5.23 KM (3.25 MI) TO A MAJOR POWER LINE
FE2743'CROSSING THE HIGHWAY, CONTINUE AHEAD ON THE PAVED ROAD FOR 0.08 KM
FE2743'(0.05 MI) TO THE STATION ON THE RIGHT ON TOP OF A CUT BANK ABOUT 1.22
FE2743'M (4.00 FT) ABOVE THE ROAD.
FE2743'THE STATION IS LOCATED 36.0 M (118.1 FT) SOUTH OF A SIGN (WARNING
FE2743'BURIED CABLE), 9.4 M (30.8 FT) WEST OF THE CENTER OF THE ROAD AND 0.2
FE2743'M (0.7 FT) EAST OF A FIBERGLASS WITNESS POST.
FE2743
FE2743                          STATION RECOVERY (1991)
FE2743
FE2743'RECOVERED 1991
FE2743'RECOVERED IN GOOD CONDITION.
FE2743
FE2743                          STATION RECOVERY (1995)
FE2743
FE2743'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (CFS)
FE2743'THE STATION IS LOCATED ABOUT 42 KM (26.10 MI) NORTHEAST OF JACKSON, 5
FE2743'KM (3.10 MI) SOUTH OF MCLEMORESVILLE, ON THE WEST RIGHT-OF-WAY OF
FE2743'COUNTY ROAD 80361.  OWNERSHIP--CARROLL COUNTY.  TO REACH THE STATION
FE2743'FROM THE CITY HALL IN MCLEMORESVILLE, GO SOUTH FOR 0.2 KM (0.10 MI) ON
FE2743'U.S. HIGHWAY 70A TO THE JUNCTION OF COUNTY ROAD 80361.  TURN LEFT AND
FE2743'GO SOUTH FOR 1.8 KM (1.10 MI) ON COUNTY ROAD 80361 TO A BAPTIST CHURCH
FE2743'ON LEFT.  CONTINUE STRAIGHT AHEAD AND GO SOUTH FOR 3.5 KM (2.15 MI) ON
FE2743'COUNTY ROAD 80361 TO THE STATION ON RIGHT ATOP A CUT. LOCATED 103.6 M
FE2743'(339.9 FT) SOUTH FROM THE CENTER OF A HIGH VOLTAGE POWER LINE CROSSING
FE2743'THE ROAD, 9.4 M (30.8 FT) WEST FROM THE ROAD CENTER, 0.9 M (3.0 FT)
FE2743'ABOVE THE ROAD, 36.0 M (118.1 FT) SOUTH FROM A BURIED CABLE WARNING
FE2743'SIGN, 21.3 M (69.9 FT) NORTHWEST FROM A UTILITY POLE AND 0.3 M (1.0
FE2743'FT) NORTH FROM A FIBERGLASS WITNESS POST.  A STEEL SPIKE IS EMBEDDED
FE2743'IN THE CONCRETE.
FE2743
FE2743                          STATION RECOVERY (2002)
FE2743
FE2743'RECOVERY NOTE BY US ARMY CORPS OF ENGINEERS 2002 (JMH)
FE2743'RECOVERED IN GOOD CONDITION.
FE2743
FE2743                          STATION RECOVERY (2002)
FE2743
FE2743'RECOVERY NOTE BY EMC INCORPORATED 2002 (WB)
FE2743'MARK FOUND AS DESCRIBED.
FE2743'
FE2743
FE2743                          STATION RECOVERY (2003)
FE2743
FE2743'RECOVERY NOTE BY TN DEPT OF TRANSP 2003
FE2743'RECOVERED AS DESCRIBED.
FE2743
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FE2743                          STATION RECOVERY (2008)
FE2743
FE2743'RECOVERY NOTE BY TENNESSEE DEPT. OF 2008 (JTZ)
FE2743'DESCRIPTION IS ADEQUATE
FE2743'128.7 M ( 0.08 ) MILES NORTHEAST FROM CENTERLINE OF GRAVEL DRIVE TO
FE2743'3390 TERRY ROAD
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The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.11
1        National Geodetic Survey,   Retrieval Date = FEBRUARY 22, 2017
FE2788 ***********************************************************************
FE2788  PACS        -  This is a Primary Airport Control Station.
FE2788  DESIGNATION -  PARSPORT
FE2788  PID         -  FE2788
FE2788  STATE/COUNTY-  TN/DECATUR
FE2788  COUNTRY     -  US
FE2788  USGS QUAD   -  PARSONS (1986)
FE2788
FE2788                        *CURRENT SURVEY CONTROL
FE2788  ______________________________________________________________________
FE2788* NAD 83(2011) POSITION- 35 38 21.53992(N) 088 07 43.08279(W)   ADJUSTED
FE2788* NAD 83(2011) ELLIP HT-   127.928 (meters)        (06/27/12)   ADJUSTED
FE2788* NAD 83(2011) EPOCH    -  2010.00
FE2788* NAVD 88 ORTHO HEIGHT -   156.09  (meters)      512.1   (feet) GPS OBS
FE2788  ______________________________________________________________________
FE2788  NAVD 88 orthometric height was determined with geoid model    GEOID99
FE2788  GEOID HEIGHT    -        -28.093 (meters)                     GEOID99
FE2788  GEOID HEIGHT    -        -28.129 (meters)                     GEOID12B
FE2788  NAD 83(2011) X  -    169,467.477 (meters)                     COMP
FE2788  NAD 83(2011) Y  - -5,186,755.990 (meters)                     COMP
FE2788  NAD 83(2011) Z  -  3,695,815.644 (meters)                     COMP
FE2788  LAPLACE CORR    -          0.37  (seconds)                    DEFLEC12B
FE2788
FE2788  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
FE2788  Standards:
FE2788         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
FE2788            Horiz  Ellip          SD_N   SD_E   SD_h      (unitless)
FE2788  ------------------------------------------------------------------
FE2788  NETWORK    0.59   1.49           0.25   0.23   0.76     -0.00168481
FE2788  ------------------------------------------------------------------
FE2788  Click here for local accuracies and other accuracy information.
FE2788
FE2788
FE2788.This mark is at Scott Field Airport (0M1)
FE2788
FE2788.The horizontal coordinates were established by GPS observations
FE2788.and adjusted by the National Geodetic Survey in June 2012.
FE2788
FE2788.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
FE2788.been affixed to the stable North American tectonic plate. See
FE2788.NA2011 for more information.
FE2788
FE2788.The horizontal coordinates are valid at the epoch date displayed above
FE2788.which is a decimal equivalence of Year/Month/Day.
FE2788
FE2788.The orthometric height was determined by GPS observations and a
FE2788.high-resolution geoid model.
FE2788
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FE2788.GPS derived orthometric heights for airport stations designated as
FE2788.PACS or SACS are published to 2 decimal places.  This maintains
FE2788.centimeter relative accuracy between the PACS and SACS.  It does
FE2788.not indicate centimeter accuracy relative to other marks which are
FE2788.part of the NAVD 88 network.
FE2788
FE2788.Significant digits in the geoid height do not necessarily reflect accuracy.
FE2788.GEOID12B height accuracy estimate available here.
FE2788
FE2788.Photographs are available for this station.
FE2788
FE2788.The X, Y, and Z were computed from the position and the ellipsoidal ht.
FE2788
FE2788.The Laplace correction was computed from DEFLEC12B derived deflections.
FE2788
FE2788.The ellipsoidal height was determined by GPS observations
FE2788.and is referenced to NAD 83.
FE2788
FE2788. The following values were computed from the NAD 83(2011) position.
FE2788
FE2788;                    North         East     Units Scale Factor Converg.
FE2788;SPC TN       -   146,994.061   407,228.409   MT  0.99995415   -1 14 46.3
FE2788;SPC TN       -   482,263.02  1,336,048.54   sFT  0.99995415   -1 14 46.3
FE2788;UTM  16      - 3,944,531.075   397,815.579   MT  0.99972867   -0 39 27.7
FE2788
FE2788!             -  Elev Factor  x  Scale Factor =   Combined Factor
FE2788!SPC TN       -   0.99997992  x   0.99995415  =   0.99993407
FE2788!UTM  16      -   0.99997992  x   0.99972867  =   0.99970860
FE2788
FE2788:                Primary Azimuth Mark                     Grid Az
FE2788:SPC TN       -  PARSPORT AZ MK                           335 26 42.3
FE2788:UTM  16      -  PARSPORT AZ MK                           334 51 23.7
FE2788
FE2788_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCE9781544531(NAD 83)
FE2788
FE2788|-----------------------------------------------------------------------|
FE2788| PID    Reference Object                    Distance      Geod. Az  |
FE2788|                                                          dddmmss.s |
FE2788| FE2789 PARSPORT AZ MK                   434.324 METERS 3341156.0 |
FE2788|-----------------------------------------------------------------------|
FE2788
FE2788                          SUPERSEDED SURVEY CONTROL
FE2788
FE2788  NAD 83(2007)-  35 38 21.54005(N)    088 07 43.08356(W) AD(2002.00) 0
FE2788  ELLIP H (02/10/07)  127.942  (m)                       GP(2002.00)
FE2788  NAD 83(1995)-  35 38 21.53967(N)    088 07 43.08362(W) AD(       ) B
FE2788  ELLIP H (02/20/01)  127.975  (m)                       GP(       ) 2 1
FE2788  NAD 83(1995)-  35 38 21.54518(N)    088 07 43.09304(W) AD(       ) 3
FE2788  ELLIP H (04/12/99)  127.681  (m)                       GP(       ) 4 1
FE2788  NAD 83(1990)-  35 38 21.54539(N)    088 07 43.09396(W) AD(       ) 3
FE2788  NGVD 29 (09/17/90)  155.73   (m)  TENN MD model used   GPS OBS
FE2788
FE2788.Superseded values are not recommended for survey control.
FE2788
FE2788.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
```

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FE2788.See file dsdata.txt to determine how the superseded data were derived.
FE2788
FE2788_MARKER: I = METAL ROD
FE2788_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
FE2788_STAMPING: PARSPORT 1987
FE2788_MARK LOGO: NONE
FE2788_PROJECTION: RECESSED 2 CENTIMETERS
FE2788_MAGNETIC: O = OTHER; SEE DESCRIPTION
FE2788_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
FE2788_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
FE2788+SATELLITE: SATELLITE OBSERVATIONS - July 15, 2012
FE2788_ROD/PIPE-DEPTH: 9.44 meters
FE2788_SLEEVE-DEPTH  : 0.90 meters
FE2788
FE2788  HISTORY     - Date     Condition        Report By
FE2788  HISTORY     - 1987     MONUMENTED       NGS
FE2788  HISTORY     - 19890713 GOOD
FE2788  HISTORY     - 1999     GOOD             LOWE
FE2788  HISTORY     - 20120715 GOOD             INDIV
FE2788
FE2788                          STATION DESCRIPTION
FE2788
FE2788'DESCRIBED BY NATIONAL GEODETIC SURVEY 1987 (DBC)
FE2788'0.65 MILE SOUTH ALONG STATE HIGHWAY 69 FROM THE JUNCTION OF US
FE2788'HIGHWAY 412 IN PARSONS TO THE JUNCTION OF A BLACK TOP ROAD, THENCE
FE2788'0.30 MILE ALONG THE BLACK TOP ROAD TO THE BRICK OFFICE BUILDING FOR
FE2788'PARSONS MUNICIPAL AIRPORT, CONTINUE WESTERLY ALONG TAXIWAY FOR 0.05
FE2788'MILE TO JUNCTION OF RUNWAY AND MARK ON RIGHT, A 3-D MARK A STAINLESS
FE2788'STEEL ROD DRIVEN 31.0 FEET TO REFUSAL 4 INCHES BELOW GROUND ENCASED
FE2788'IN A 3 FOOT GREASED FILLED 1 INCH PVC PIPE ENCASED IN A 5 INCH PVC
FE2788'PIPE WITH A LOGO CAP ---STAMPED PARSPORT 1987, 1 INCH BELOW GROUND,
FE2788'WITH A RAILROAD SPIKE IN CONCRETE, 34.2 FEET NORTHEAST OF NORTHEAST
FE2788'EDGE OF RUNWAY, 43.7 FEET NORTHWEST OF NORTHWEST EDGE OF TAXIWAY
FE2788'7.0 FEET WEST OF WEST CORNER OF BRICK OFFICE BUILDING 77.0 FEET23*
FE2788'SOUTHWEST OF SOUTHWEST EDGE OF ASPHALT PARKING LOT, 29.5 FEET
FE2788'NORTHEAST OF A STEEL PIPE FOR A DIRECTIONAL BOX AND 1.0 FOOT SOUTHEAST
FE2788'OF A FIBERGLASS WITNESS POST.
FE2788'
FE2788'NOTE--  CONTACT SONNY BYTER (MANAGER) AT 901 847 7423 BEFORE WORKING
FE2788'ON AIRPORT.
FE2788
FE2788                          STATION RECOVERY (1989)
FE2788
FE2788'RECOVERED 1989
FE2788'RECOVERED IN GOOD CONDITION.
FE2788
FE2788                          STATION RECOVERY (1999)
FE2788
FE2788'RECOVERY NOTE BY LOWE ENGINEERS 1999
FE2788'RECOVERED 1999
FE2788'RECOVERED IN GOOD CONDITION. THIS STATION IS DESIGNATED A PRIMARY
FE2788'AIRPORT CONTROL STATION.
FE2788
FE2788                          STATION RECOVERY (2012)
FE2788
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FE2788'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2012 (JRL)
FE2788'RECOVERED AS DESCRIBED
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The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.12
1        National Geodetic Survey,   Retrieval Date = MARCH 29, 2017
DM3531 ***********************************************************************
DM3531  CORS         -  This is a GPS Continuously Operating Reference Station.
DM3531  DESIGNATION  -  TDOT DISTRICT 30 CORS ARP
DM3531  CORS_ID      -  TN30
DM3531  PID          -  DM3531
DM3531  STATE/COUNTY-  TN/LEWIS
DM3531  COUNTRY      -  US
DM3531  USGS QUAD    -  HOHENWALD (1991)
DM3531
DM3531                         *CURRENT SURVEY CONTROL
DM3531  ______________________________________________________________________
DM3531* NAD 83(2011) POSITION- 35 33 05.84518(N) 087 34 26.20759(W)   ADJUSTED
DM3531* NAD 83(2011) ELLIP HT-   266.113 (meters)        (08/??/11)   ADJUSTED
DM3531* NAD 83(2011) EPOCH    -  2010.00
DM3531* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DM3531  ______________________________________________________________________
DM3531  GEOID HEIGHT    -        -28.124 (meters)                     GEOID12B
DM3531  NAD 83(2011) X  -    219,916.868 (meters)                     COMP
DM3531  NAD 83(2011) Y  - -5,190,642.922 (meters)                     COMP
DM3531  NAD 83(2011) Z  -  3,687,984.182 (meters)                     COMP
DM3531
DM3531.Formal positional accuracy estimates are not available for this CORS
DM3531.because its coordinates were determined in part using modeled
DM3531.velocities. Approximate one-sigma accuracies for latitude, longitude,
DM3531.and ellipsoid height can be obtained from the short-term time series.
DM3531.Additional information regarding modeled velocities is available on
DM3531.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DM3531
DM3531.The coordinates were established by GPS observations
DM3531.and adjusted by the National Geodetic Survey in August 2011.
DM3531
DM3531.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DM3531.been affixed to the stable North American Tectonic Plate.
DM3531
DM3531.The coordinates are valid at the epoch date displayed above
DM3531.which is a decimal equivalence of Year/Month/Day.
DM3531
DM3531.Significant digits in the geoid height do not necessarily reflect accuracy.
DM3531.GEOID12B height accuracy estimate available here.
DM3531
DM3531.The PID for the CORS L1 Phase Center is DM3532.
DM3531
DM3531.The XYZ, and position/ellipsoidal ht. are equivalent.
DM3531
DM3531.The ellipsoidal height was determined by GPS observations
DM3531.and is referenced to NAD 83.
DM3531
DM3531. The following values were computed from the NAD 83(2011) position.
```

```
DM3531
DM3531;                    North         East     Units Scale Factor Converg.
DM3531;SPC TN       -   136,315.829   457,300.005   MT  0.99996048   -0 55 17.2
DM3531;SPC TN       -   447,229.52  1,500,325.10   sFT  0.99996048   -0 55 17.2
DM3531;UTM  16      - 3,934,370.318   447,980.050   MT  0.99963335   -0 20 01.4
DM3531
DM3531!             -  Elev Factor  x  Scale Factor =   Combined Factor
DM3531!SPC TN       -   0.99995823  x   0.99996048  =   0.99991871
DM3531!UTM  16      -   0.99995823  x   0.99963335  =   0.99959160
DM3531
DM3531_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDE4798034370(NAD 83)
DM3531
DM3531                           SUPERSEDED SURVEY CONTROL
DM3531
DM3531  NAD 83(CORS)-  35 33 05.84554(N)    087 34 26.20839(W) AD(2002.00) c
DM3531  ELLIP H (09/??/10)  266.086  (m)                       GP(2002.00) c c
DM3531
DM3531.Superseded values are not recommended for survey control.
DM3531
DM3531.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DM3531.See file dsdata.pdf to determine how the superseded data were derived.
DM3531
DM3531_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DM3531
DM3531                           STATION DESCRIPTION
DM3531
DM3531'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DM3531'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DM3531'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DM3531'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DM3531'   ftp://cors.ngs.noaa.gov/cors/README.txt
DM3531'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DM3531'   ftp://cors.ngs.noaa.gov/cors/station_log
DM3531'   http://geodesy.noaa.gov/CORS
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The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.12.1
1        National Geodetic Survey,   Retrieval Date = APRIL  5, 2017
DJ9554 ***********************************************************************
DJ9554  CORS         -  This is a GPS Continuously Operating Reference Station.
DJ9554  DESIGNATION  -  TDOT DISTRICT 33 CORS ARP
DJ9554  CORS_ID      -  TN33
DJ9554  PID          -  DJ9554
DJ9554  STATE/COUNTY-  TN/MONTGOMERY
DJ9554  COUNTRY      -  US
DJ9554  USGS QUAD    -  CLARKSVILLE (1984)
DJ9554
DJ9554                          *CURRENT SURVEY CONTROL
DJ9554  ______________________________________________________________________
DJ9554* NAD 83(2011) POSITION- 36 33 31.31771(N) 087 19 09.98707(W)   ADJUSTED
DJ9554* NAD 83(2011) ELLIP HT-   136.572 (meters)        (08/??/11)   ADJUSTED
DJ9554* NAD 83(2011) EPOCH    -  2010.00
DJ9554* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DJ9554  ______________________________________________________________________
DJ9554  GEOID HEIGHT    -        -29.640 (meters)                     GEOID12B
DJ9554  NAD 83(2011) X  -    239,890.447 (meters)                     COMP
DJ9554  NAD 83(2011) Y  - -5,123,811.794 (meters)                     COMP
DJ9554  NAD 83(2011) Z  -  3,778,250.074 (meters)                     COMP
DJ9554
DJ9554.Formal positional accuracy estimates are not available for this CORS
DJ9554.because its coordinates were determined in part using modeled
DJ9554.velocities. Approximate one-sigma accuracies for latitude, longitude,
DJ9554.and ellipsoid height can be obtained from the short-term time series.
DJ9554.Additional information regarding modeled velocities is available on
DJ9554.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DJ9554
DJ9554.The coordinates were established by GPS observations
DJ9554.and adjusted by the National Geodetic Survey in August 2011.
DJ9554
DJ9554.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DJ9554.been affixed to the stable North American Tectonic Plate.
DJ9554
DJ9554.The coordinates are valid at the epoch date displayed above
DJ9554.which is a decimal equivalence of Year/Month/Day.
DJ9554
DJ9554.Significant digits in the geoid height do not necessarily reflect accuracy.
DJ9554.GEOID12B height accuracy estimate available here.
DJ9554
DJ9554.The PID for the CORS L1 Phase Center is DJ9555.
DJ9554
DJ9554.The XYZ, and position/ellipsoidal ht. are equivalent.
DJ9554
DJ9554.The ellipsoidal height was determined by GPS observations
DJ9554.and is referenced to NAD 83.
DJ9554
DJ9554. The following values were computed from the NAD 83(2011) position.
```

```
DJ9554
DJ9554;                    North         East     Units Scale Factor Converg.
DJ9554;SPC TN       -   247,706.235   481,879.368   MT  1.00002828   -0 46 20.8
DJ9554;SPC TN       -   812,682.87  1,580,965.89   sFT  1.00002828   -0 46 20.8
DJ9554;UTM  16      - 4,045,966.743   471,413.955   MT  0.99961007   -0 11 25.0
DJ9554
DJ9554!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ9554!SPC TN       -   0.99997857  x   1.00002828  =   1.00000685
DJ9554!UTM  16      -   0.99997857  x   0.99961007  =   0.99958865
DJ9554
DJ9554_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDF7141345966(NAD 83)
DJ9554
DJ9554                           SUPERSEDED SURVEY CONTROL
DJ9554
DJ9554  NAD 83(CORS)-  36 33 31.31787(N)    087 19 09.98739(W) AD(2002.00) c
DJ9554  ELLIP H (02/??/08)  136.566  (m)                       GP(2002.00) c c
DJ9554
DJ9554.Superseded values are not recommended for survey control.
DJ9554
DJ9554.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ9554.See file dsdata.pdf to determine how the superseded data were derived.
DJ9554
DJ9554_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DJ9554
DJ9554                           STATION DESCRIPTION
DJ9554
DJ9554'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DJ9554'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DJ9554'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DJ9554'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DJ9554'   ftp://cors.ngs.noaa.gov/cors/README.txt
DJ9554'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DJ9554'   ftp://cors.ngs.noaa.gov/cors/station_log
DJ9554'   http://geodesy.noaa.gov/CORS
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The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.12
1        National Geodetic Survey,   Retrieval Date = MARCH 29, 2017
DJ9558 ***********************************************************************
DJ9558  CORS         -  This is a GPS Continuously Operating Reference Station.
DJ9558  DESIGNATION  -  TDOT DISTRICT 35 CORS ARP
DJ9558  CORS_ID      -  TN35
DJ9558  PID          -  DJ9558
DJ9558  STATE/COUNTY-  TN/HUMPHREYS
DJ9558  COUNTRY      -  US
DJ9558  USGS QUAD    -  TENNESSEE CITY (1973)
DJ9558
DJ9558                        *CURRENT SURVEY CONTROL
DJ9558  ______________________________________________________________________
DJ9558* NAD 83(2011) POSITION- 36 06 14.15372(N) 087 37 21.52259(W)   ADJUSTED
DJ9558* NAD 83(2011) ELLIP HT-   231.475 (meters)        (08/??/11)   ADJUSTED
DJ9558* NAD 83(2011) EPOCH    -  2010.00
DJ9558* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DJ9558  ______________________________________________________________________
DJ9558  GEOID HEIGHT    -        -28.829 (meters)                     GEOID12B
DJ9558  NAD 83(2011) X  -    214,015.809 (meters)                     COMP
DJ9558  NAD 83(2011) Y  - -5,154,958.175 (meters)                     COMP
DJ9558  NAD 83(2011) Z  -  3,737,651.702 (meters)                     COMP
DJ9558
DJ9558  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DJ9558  Standards:
DJ9558         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
DJ9558            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
DJ9558  ------------------------------------------------------------------------
DJ9558  NETWORK    5.39  19.11           2.32   2.08   9.75      0.01770700
DJ9558  ------------------------------------------------------------------------
DJ9558
DJ9558
DJ9558.The coordinates were established by GPS observations
DJ9558.and adjusted by the National Geodetic Survey in August 2011.
DJ9558
DJ9558.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DJ9558.been affixed to the stable North American Tectonic Plate.
DJ9558
DJ9558.The coordinates are valid at the epoch date displayed above
DJ9558.which is a decimal equivalence of Year/Month/Day.
DJ9558
DJ9558.Significant digits in the geoid height do not necessarily reflect accuracy.
DJ9558.GEOID12B height accuracy estimate available here.
DJ9558
DJ9558.The PID for the CORS L1 Phase Center is DJ9559.
DJ9558
DJ9558.The XYZ, and position/ellipsoidal ht. are equivalent.
DJ9558
DJ9558.The ellipsoidal height was determined by GPS observations
DJ9558.and is referenced to NAD 83.
```

```
DJ9558
DJ9558. The following values were computed from the NAD 83(2011) position.
DJ9558
DJ9558;                    North         East     Units Scale Factor Converg.
DJ9558;SPC TN       -   197,658.362   453,901.155   MT  0.99995946   -0 56 59.9
DJ9558;SPC TN       -   648,484.14  1,489,174.04   sFT  0.99995946   -0 56 59.9
DJ9558;UTM  16      - 3,995,655.530   443,955.857   MT  0.99963870   -0 22 00.9
DJ9558
DJ9558!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ9558!SPC TN       -   0.99996367  x   0.99995946  =   0.99992313
DJ9558!UTM  16      -   0.99996367  x   0.99963870  =   0.99960238
DJ9558
DJ9558_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDE4395595655(NAD 83)
DJ9558
DJ9558                           SUPERSEDED SURVEY CONTROL
DJ9558
DJ9558  NAD 83(CORS)-  36 06 14.15393(N)    087 37 21.52290(W) AD(2002.00) c
DJ9558  ELLIP H (02/??/08)  231.450  (m)                       GP(2002.00) c c
DJ9558
DJ9558.Superseded values are not recommended for survey control.
DJ9558
DJ9558.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ9558.See file dsdata.pdf to determine how the superseded data were derived.
DJ9558
DJ9558_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DJ9558
DJ9558                           STATION DESCRIPTION
DJ9558
DJ9558'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DJ9558'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DJ9558'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DJ9558'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DJ9558'   ftp://cors.ngs.noaa.gov/cors/README.txt
DJ9558'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DJ9558'   ftp://cors.ngs.noaa.gov/cors/station_log
DJ9558'   http://geodesy.noaa.gov/CORS
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The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

```
PROGRAM = datasheet95, VERSION = 8.12
1        National Geodetic Survey,   Retrieval Date = MARCH 29, 2017
DL7339 ***********************************************************************
DL7339  CORS         -  This is a GPS Continuously Operating Reference Station.
DL7339  DESIGNATION  -  TDOT DISTRICT 40 CORS ARP
DL7339  CORS_ID      -  TN40
DL7339  PID          -  DL7339
DL7339  STATE/COUNTY-  TN/HENDERSON
DL7339  COUNTRY      -  US
DL7339  USGS QUAD    -  LEXINGTON (1992)
DL7339
DL7339                         *CURRENT SURVEY CONTROL
DL7339  ______________________________________________________________________
DL7339* NAD 83(2011) POSITION- 35 38 50.61711(N) 088 24 04.31177(W)   ADJUSTED
DL7339* NAD 83(2011) ELLIP HT-   126.652 (meters)        (08/??/11)   ADJUSTED
DL7339* NAD 83(2011) EPOCH    -  2010.00
DL7339* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DL7339  ______________________________________________________________________
DL7339  GEOID HEIGHT    -        -28.154 (meters)                     GEOID12B
DL7339  NAD 83(2011) X  -    144,776.968 (meters)                     COMP
DL7339  NAD 83(2011) Y  - -5,186,980.406 (meters)                     COMP
DL7339  NAD 83(2011) Z  -  3,696,543.191 (meters)                     COMP
DL7339
DL7339.Formal positional accuracy estimates are not available for this CORS
DL7339.because its coordinates were determined in part using modeled
DL7339.velocities. Approximate one-sigma accuracies for latitude, longitude,
DL7339.and ellipsoid height can be obtained from the short-term time series.
DL7339.Additional information regarding modeled velocities is available on
DL7339.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DL7339
DL7339.The coordinates were established by GPS observations
DL7339.and adjusted by the National Geodetic Survey in August 2011.
DL7339
DL7339.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DL7339.been affixed to the stable North American Tectonic Plate.
DL7339
DL7339.The coordinates are valid at the epoch date displayed above
DL7339.which is a decimal equivalence of Year/Month/Day.
DL7339
DL7339.Significant digits in the geoid height do not necessarily reflect accuracy.
DL7339.GEOID12B height accuracy estimate available here.
DL7339
DL7339.The PID for the CORS L1 Phase Center is DL7340.
DL7339
DL7339.The XYZ, and position/ellipsoidal ht. are equivalent.
DL7339
DL7339.The ellipsoidal height was determined by GPS observations
DL7339.and is referenced to NAD 83.
DL7339
DL7339. The following values were computed from the NAD 83(2011) position.
```

```
DL7339
DL7339;                      North         East     Units Scale Factor Converg.
DL7339;SPC TN       -   148,461.150   382,571.386   MT  0.99995368   -1 24 20.7
DL7339;SPC TN       -   487,076.29  1,255,152.96   sFT  0.99995368   -1 24 20.7
DL7339;UTM  16      - 3,945,744.482   373,149.512   MT  0.99979829   -0 49 00.2
DL7339
DL7339!             -  Elev Factor  x  Scale Factor =   Combined Factor
DL7339!SPC TN       -   0.99998012  x   0.99995368  =   0.99993380
DL7339!UTM  16      -   0.99998012  x   0.99979829  =   0.99977842
DL7339
DL7339_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCE7314945744(NAD 83)
DL7339
DL7339                           SUPERSEDED SURVEY CONTROL
DL7339
DL7339  NAD 83(CORS)-  35 38 50.61715(N)    088 24 04.31267(W) AD(2002.00) c
DL7339  ELLIP H (04/??/10)  126.636  (m)                      GP(2002.00) c c
DL7339
DL7339.Superseded values are not recommended for survey control.
DL7339
DL7339.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DL7339.See file dsdata.pdf to determine how the superseded data were derived.
DL7339
DL7339_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DL7339
DL7339                           STATION DESCRIPTION
DL7339
DL7339'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DL7339'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DL7339'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DL7339'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DL7339'   ftp://cors.ngs.noaa.gov/cors/README.txt
DL7339'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DL7339'   ftp://cors.ngs.noaa.gov/cors/station_log
DL7339'   http://geodesy.noaa.gov/CORS
```

The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

```
PROGRAM = datasheet95, VERSION = 8.12
1        National Geodetic Survey,   Retrieval Date = MARCH 29, 2017
DJ9564 ***********************************************************************
DJ9564  CORS         -  This is a GPS Continuously Operating Reference Station.
DJ9564  DESIGNATION  -  TDOT DISTRICT 41 CORS ARP
DJ9564  CORS_ID      -  TN41
DJ9564  PID          -  DJ9564
DJ9564  STATE/COUNTY-  TN/CARROLL
DJ9564  COUNTRY      -  US
DJ9564  USGS QUAD    -  MC KENZIE (1985)
DJ9564
DJ9564                          *CURRENT SURVEY CONTROL
DJ9564  ______________________________________________________________________
DJ9564* NAD 83(2011) POSITION- 36 07 34.87782(N) 088 30 45.86531(W)   ADJUSTED
DJ9564* NAD 83(2011) ELLIP HT-   116.496 (meters)        (08/??/11)   ADJUSTED
DJ9564* NAD 83(2011) EPOCH    -  2010.00
DJ9564* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DJ9564  ______________________________________________________________________
DJ9564  GEOID HEIGHT    -        -28.350 (meters)                     GEOID12B
DJ9564  NAD 83(2011) X  -    133,869.981 (meters)                     COMP
DJ9564  NAD 83(2011) Y  - -5,156,101.840 (meters)                     COMP
DJ9564  NAD 83(2011) Z  -  3,739,593.977 (meters)                     COMP
DJ9564
DJ9564  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DJ9564  Standards:
DJ9564         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
DJ9564            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
DJ9564  ------------------------------------------------------------------------
DJ9564  NETWORK    4.09  14.50           1.76   1.57   7.40     -0.03386800
DJ9564  ------------------------------------------------------------------------
DJ9564
DJ9564
DJ9564.The coordinates were established by GPS observations
DJ9564.and adjusted by the National Geodetic Survey in August 2011.
DJ9564
DJ9564.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DJ9564.been affixed to the stable North American Tectonic Plate.
DJ9564
DJ9564.The coordinates are valid at the epoch date displayed above
DJ9564.which is a decimal equivalence of Year/Month/Day.
DJ9564
DJ9564.Significant digits in the geoid height do not necessarily reflect accuracy.
DJ9564.GEOID12B height accuracy estimate available here.
DJ9564
DJ9564.The PID for the CORS L1 Phase Center is DJ9565.
DJ9564
DJ9564.The XYZ, and position/ellipsoidal ht. are equivalent.
DJ9564
DJ9564.The ellipsoidal height was determined by GPS observations
DJ9564.and is referenced to NAD 83.
```

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DJ9564
DJ9564. The following values were computed from the NAD 83(2011) position.
DJ9564
DJ9564;                    North         East     Units Scale Factor Converg.
DJ9564;SPC TN       -   201,838.699   373,837.610   MT  0.99996137   -1 28 15.8
DJ9564;SPC TN       -   662,199.13  1,226,498.89   sFT  0.99996137   -1 28 15.8
DJ9564;UTM  16      - 3,999,022.826   363,873.266   MT  0.99982832   -0 53 31.2
DJ9564
DJ9564!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ9564!SPC TN       -   0.99998172  x   0.99996137  =   0.99994309
DJ9564!UTM  16      -   0.99998172  x   0.99982832  =   0.99981004
DJ9564
DJ9564_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCE6387399022(NAD 83)
DJ9564
DJ9564                           SUPERSEDED SURVEY CONTROL
DJ9564
DJ9564  NAD 83(CORS)-  36 07 34.87790(N)    088 30 45.86556(W) AD(2002.00) c
DJ9564  ELLIP H (02/??/08)  116.491  (m)                      GP(2002.00) c c
DJ9564
DJ9564.Superseded values are not recommended for survey control.
DJ9564
DJ9564.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ9564.See file dsdata.pdf to determine how the superseded data were derived.
DJ9564
DJ9564_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DJ9564
DJ9564                           STATION DESCRIPTION
DJ9564
DJ9564'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DJ9564'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DJ9564'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DJ9564'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DJ9564'   ftp://cors.ngs.noaa.gov/cors/README.txt
DJ9564'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DJ9564'   ftp://cors.ngs.noaa.gov/cors/station_log
DJ9564'   http://geodesy.noaa.gov/CORS
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The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.12.1
1        National Geodetic Survey,   Retrieval Date = APRIL  5, 2017
DJ9566 ***********************************************************************
DJ9566  CORS         -  This is a GPS Continuously Operating Reference Station.
DJ9566  DESIGNATION  -  TDOT DISTRICT 42 CORS ARP
DJ9566  CORS_ID      -  TN42
DJ9566  PID          -  DJ9566
DJ9566  STATE/COUNTY-  TN/DYER
DJ9566  COUNTRY      -  US
DJ9566  USGS QUAD    -  TRIMBLE (1983)
DJ9566
DJ9566                        *CURRENT SURVEY CONTROL
DJ9566  ______________________________________________________________________
DJ9566* NAD 83(2011) POSITION- 36 08 12.54850(N) 089 14 53.31342(W)   ADJUSTED
DJ9566* NAD 83(2011) ELLIP HT-    95.533 (meters)        (08/??/11)   ADJUSTED
DJ9566* NAD 83(2011) EPOCH    -  2010.00
DJ9566* NAVD 88 ORTHO HEIGHT -          **(meters)          **(feet)
DJ9566  ______________________________________________________________________
DJ9566  GEOID HEIGHT    -        -28.322 (meters)                    GEOID12B
DJ9566  NAD 83(2011) X  -     67,672.015 (meters)                    COMP
DJ9566  NAD 83(2011) Y  - -5,156,693.812 (meters)                    COMP
DJ9566  NAD 83(2011) Z  -  3,740,519.419 (meters)                    COMP
DJ9566
DJ9566  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DJ9566  Standards:
DJ9566         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
DJ9566            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
DJ9566  ------------------------------------------------------------------------
DJ9566  NETWORK    2.94  10.40           1.27   1.14   5.30     -0.00803600
DJ9566  ------------------------------------------------------------------------
DJ9566
DJ9566
DJ9566.The coordinates were established by GPS observations
DJ9566.and adjusted by the National Geodetic Survey in August 2011.
DJ9566
DJ9566.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DJ9566.been affixed to the stable North American Tectonic Plate.
DJ9566
DJ9566.The coordinates are valid at the epoch date displayed above
DJ9566.which is a decimal equivalence of Year/Month/Day.
DJ9566
DJ9566.Significant digits in the geoid height do not necessarily reflect accuracy.
DJ9566.GEOID12B height accuracy estimate available here.
DJ9566
DJ9566.The PID for the CORS L1 Phase Center is DJ9567.
DJ9566
DJ9566.The XYZ, and position/ellipsoidal ht. are equivalent.
DJ9566
DJ9566.The ellipsoidal height was determined by GPS observations
DJ9566.and is referenced to NAD 83.
```

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DJ9566
DJ9566. The following values were computed from the NAD 83(2011) position.
DJ9566
DJ9566;                    North         East     Units Scale Factor Converg.
DJ9566;SPC TN       -   204,947.175   307,706.875   MT  0.99996232   -1 54 05.7
DJ9566;SPC TN       -   672,397.52  1,009,534.97   sFT  0.99996232   -1 54 05.7
DJ9566;UTM  16      - 4,001,464.888   297,714.876   MT  1.00010421   -1 19 34.4
DJ9566
DJ9566!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ9566!SPC TN       -   0.99998501  x   0.99996232  =   0.99994733
DJ9566!UTM  16      -   0.99998501  x   1.00010421  =   1.00008922
DJ9566
DJ9566_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SBF9771401464(NAD 83)
DJ9566
DJ9566                           SUPERSEDED SURVEY CONTROL
DJ9566
DJ9566  ELLIP H (06/27/12)   95.520  (m)                       GP(2010.00) 0 0
DJ9566  NAD 83(2011)-  36 08 12.54836(N)    089 14 53.31349(W) AD(2010.00) c
DJ9566  NAD 83(CORS)-  36 08 12.54858(N)    089 14 53.31384(W) AD(2002.00) c
DJ9566  ELLIP H (02/??/08)   95.533  (m)                       GP(2002.00) c c
DJ9566
DJ9566.Superseded values are not recommended for survey control.
DJ9566
DJ9566.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ9566.See file dsdata.pdf to determine how the superseded data were derived.
DJ9566
DJ9566_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DJ9566
DJ9566                           STATION DESCRIPTION
DJ9566
DJ9566'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DJ9566'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DJ9566'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DJ9566'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DJ9566'   ftp://cors.ngs.noaa.gov/cors/README.txt
DJ9566'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DJ9566'   ftp://cors.ngs.noaa.gov/cors/station_log
DJ9566'   http://geodesy.noaa.gov/CORS
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The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.12.1
1        National Geodetic Survey,   Retrieval Date = APRIL  5, 2017
DJ9568 ***********************************************************************
DJ9568  CORS         -  This is a GPS Continuously Operating Reference Station.
DJ9568  DESIGNATION -  TDOT DISTRICT 43 CORS ARP
DJ9568  CORS_ID      -  TN43
DJ9568  PID          -  DJ9568
DJ9568  STATE/COUNTY-  TN/MCNAIRY
DJ9568  COUNTRY      -  US
DJ9568  USGS QUAD    -  PURDY (1984)
DJ9568
DJ9568                         *CURRENT SURVEY CONTROL
DJ9568  ______________________________________________________________________
DJ9568* NAD 83(2011) POSITION- 35 13 42.85124(N) 088 36 14.10605(W)   ADJUSTED
DJ9568* NAD 83(2011) ELLIP HT-   122.382 (meters)        (08/??/11)   ADJUSTED
DJ9568* NAD 83(2011) EPOCH    -  2010.00
DJ9568* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DJ9568  ______________________________________________________________________
DJ9568  GEOID HEIGHT    -        -27.811 (meters)                    GEOID12B
DJ9568  NAD 83(2011) X  -    127,080.188 (meters)                    COMP
DJ9568  NAD 83(2011) Y  - -5,214,392.272 (meters)                    COMP
DJ9568  NAD 83(2011) Z  -  3,658,680.611 (meters)                    COMP
DJ9568
DJ9568  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DJ9568  Standards:
DJ9568         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
DJ9568            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
DJ9568  ------------------------------------------------------------------------
DJ9568  NETWORK    3.81  13.49           1.63   1.48   6.88     -0.02570100
DJ9568  ------------------------------------------------------------------------
DJ9568
DJ9568
DJ9568.The coordinates were established by GPS observations
DJ9568.and adjusted by the National Geodetic Survey in August 2011.
DJ9568
DJ9568.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DJ9568.been affixed to the stable North American Tectonic Plate.
DJ9568
DJ9568.The coordinates are valid at the epoch date displayed above
DJ9568.which is a decimal equivalence of Year/Month/Day.
DJ9568
DJ9568.Significant digits in the geoid height do not necessarily reflect accuracy.
DJ9568.GEOID12B height accuracy estimate available here.
DJ9568
DJ9568.The PID for the CORS L1 Phase Center is DJ9569.
DJ9568
DJ9568.The XYZ, and position/ellipsoidal ht. are equivalent.
DJ9568
DJ9568.The ellipsoidal height was determined by GPS observations
DJ9568.and is referenced to NAD 83.
```

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DJ9568
DJ9568. The following values were computed from the NAD 83(2011) position.
DJ9568
DJ9568;                    North         East     Units Scale Factor Converg.
DJ9568;SPC TN       -   102,480.242   362,983.013   MT  1.00000385   -1 31 28.0
DJ9568;SPC TN       -   336,220.59  1,190,886.77   sFT  1.00000385   -1 31 28.0
DJ9568;UTM  16      - 3,899,569.703   354,041.523   MT  0.99986255   -0 55 31.3
DJ9568
DJ9568!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ9568!SPC TN       -   0.99998079  x   1.00000385  =   0.99998464
DJ9568!UTM  16      -   0.99998079  x   0.99986255  =   0.99984334
DJ9568
DJ9568_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCD5404199569(NAD 83)
DJ9568
DJ9568                           SUPERSEDED SURVEY CONTROL
DJ9568
DJ9568  ELLIP H (06/27/12)  122.374  (m)                        GP(2010.00) 0 0
DJ9568  NAD 83(2011)-  35 13 42.85113(N)    088 36 14.10618(W) AD(2010.00) c
DJ9568  NAD 83(CORS)-  35 13 42.85140(N)    088 36 14.10634(W) AD(2002.00) c
DJ9568  ELLIP H (02/??/08)  122.362  (m)                        GP(2002.00) c c
DJ9568
DJ9568.Superseded values are not recommended for survey control.
DJ9568
DJ9568.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ9568.See file dsdata.pdf to determine how the superseded data were derived.
DJ9568
DJ9568_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DJ9568
DJ9568                           STATION DESCRIPTION
DJ9568
DJ9568'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DJ9568'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DJ9568'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DJ9568'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DJ9568'   ftp://cors.ngs.noaa.gov/cors/README.txt
DJ9568'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DJ9568'   ftp://cors.ngs.noaa.gov/cors/station_log
DJ9568'   http://geodesy.noaa.gov/CORS
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The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.12.1
1        National Geodetic Survey,   Retrieval Date = APRIL  5, 2017
DJ9570 ***********************************************************************
DJ9570  CORS         -  This is a GPS Continuously Operating Reference Station.
DJ9570  DESIGNATION  -  TDOT DISTRICT 44 CORS ARP
DJ9570  CORS_ID      -  TN44
DJ9570  PID          -  DJ9570
DJ9570  STATE/COUNTY-  TN/MADISON
DJ9570  COUNTRY      -  US
DJ9570  USGS QUAD    -  ADAIR (1979)
DJ9570
DJ9570                          *CURRENT SURVEY CONTROL
DJ9570  ______________________________________________________________________
DJ9570* NAD 83(2011) POSITION- 35 38 25.50230(N) 088 55 08.62785(W)   ADJUSTED
DJ9570* NAD 83(2011) ELLIP HT-    92.404 (meters)        (08/??/11)   ADJUSTED
DJ9570* NAD 83(2011) EPOCH    -  2010.00
DJ9570* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DJ9570  ______________________________________________________________________
DJ9570  GEOID HEIGHT    -        -28.232 (meters)                     GEOID12B
DJ9570  NAD 83(2011) X  -     97,897.365 (meters)                     COMP
DJ9570  NAD 83(2011) Y  - -5,188,500.248 (meters)                     COMP
DJ9570  NAD 83(2011) Z  -  3,695,894.194 (meters)                     COMP
DJ9570
DJ9570  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DJ9570  Standards:
DJ9570         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
DJ9570            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
DJ9570  ------------------------------------------------------------------------
DJ9570  NETWORK    4.11  14.59           1.76   1.59   7.44     -0.02804200
DJ9570  ------------------------------------------------------------------------
DJ9570
DJ9570
DJ9570.The coordinates were established by GPS observations
DJ9570.and adjusted by the National Geodetic Survey in August 2011.
DJ9570
DJ9570.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DJ9570.been affixed to the stable North American Tectonic Plate.
DJ9570
DJ9570.The coordinates are valid at the epoch date displayed above
DJ9570.which is a decimal equivalence of Year/Month/Day.
DJ9570
DJ9570.Significant digits in the geoid height do not necessarily reflect accuracy.
DJ9570.GEOID12B height accuracy estimate available here.
DJ9570
DJ9570.The PID for the CORS L1 Phase Center is DJ9571.
DJ9570
DJ9570.The XYZ, and position/ellipsoidal ht. are equivalent.
DJ9570
DJ9570.The ellipsoidal height was determined by GPS observations
DJ9570.and is referenced to NAD 83.
```

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DJ9570
DJ9570. The following values were computed from the NAD 83(2011) position.
DJ9570
DJ9570;                    North         East     Units Scale Factor Converg.
DJ9570;SPC TN       -   148,962.041   335,668.213   MT  0.99995408   -1 42 32.2
DJ9570;SPC TN       -   488,719.63  1,101,271.46   sFT  0.99995408   -1 42 32.2
DJ9570;UTM  16      - 3,945,762.596   326,247.104   MT  0.99997204   -1 07 06.6
DJ9570
DJ9570!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ9570!SPC TN       -   0.99998550  x   0.99995408  =   0.99993958
DJ9570!UTM  16      -   0.99998550  x   0.99997204  =   0.99995754
DJ9570
DJ9570_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCE2624745762(NAD 83)
DJ9570
DJ9570                           SUPERSEDED SURVEY CONTROL
DJ9570
DJ9570  ELLIP H (06/27/12)   92.400  (m)                       GP(2010.00) 0 0
DJ9570  NAD 83(2011)-  35 38 25.50219(N)    088 55 08.62802(W) AD(2010.00) c
DJ9570  NAD 83(CORS)-  35 38 25.50244(N)    088 55 08.62811(W) AD(2002.00) c
DJ9570  ELLIP H (02/??/08)   92.381  (m)                       GP(2002.00) c c
DJ9570
DJ9570.Superseded values are not recommended for survey control.
DJ9570
DJ9570.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ9570.See file dsdata.pdf to determine how the superseded data were derived.
DJ9570
DJ9570_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DJ9570
DJ9570                           STATION DESCRIPTION
DJ9570
DJ9570'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DJ9570'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DJ9570'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DJ9570'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DJ9570'   ftp://cors.ngs.noaa.gov/cors/README.txt
DJ9570'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DJ9570'   ftp://cors.ngs.noaa.gov/cors/station_log
DJ9570'   http://geodesy.noaa.gov/CORS
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The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.12.1
1        National Geodetic Survey,   Retrieval Date = APRIL  5, 2017
DJ9572 ***********************************************************************
DJ9572  CORS         -  This is a GPS Continuously Operating Reference Station.
DJ9572  DESIGNATION  -  TDOT DISTRICT 45 CORS ARP
DJ9572  CORS_ID      -  TN45
DJ9572  PID          -  DJ9572
DJ9572  STATE/COUNTY-  TN/SHELBY
DJ9572  COUNTRY      -  US
DJ9572  USGS QUAD    -  ARLINGTON (1973)
DJ9572
DJ9572                         *CURRENT SURVEY CONTROL
DJ9572  ______________________________________________________________________
DJ9572* NAD 83(2011) POSITION- 35 17 57.37247(N) 089 39 34.60010(W)   ADJUSTED
DJ9572* NAD 83(2011) ELLIP HT-    64.142 (meters)        (08/??/11)   ADJUSTED
DJ9572* NAD 83(2011) EPOCH    -  2010.00
DJ9572* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DJ9572  ______________________________________________________________________
DJ9572  GEOID HEIGHT    -        -27.448 (meters)                     GEOID12B
DJ9572  NAD 83(2011) X  -     30,960.046 (meters)                     COMP
DJ9572  NAD 83(2011) Y  - -5,211,272.383 (meters)                     COMP
DJ9572  NAD 83(2011) Z  -  3,665,051.618 (meters)                     COMP
DJ9572
DJ9572  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DJ9572  Standards:
DJ9572         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
DJ9572            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
DJ9572  ------------------------------------------------------------------------
DJ9572  NETWORK    4.09  14.44           1.74   1.60   7.37     -0.05039500
DJ9572  ------------------------------------------------------------------------
DJ9572
DJ9572
DJ9572.The coordinates were established by GPS observations
DJ9572.and adjusted by the National Geodetic Survey in August 2011.
DJ9572
DJ9572.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DJ9572.been affixed to the stable North American Tectonic Plate.
DJ9572
DJ9572.The coordinates are valid at the epoch date displayed above
DJ9572.which is a decimal equivalence of Year/Month/Day.
DJ9572
DJ9572.Significant digits in the geoid height do not necessarily reflect accuracy.
DJ9572.GEOID12B height accuracy estimate available here.
DJ9572
DJ9572.The PID for the CORS L1 Phase Center is DJ9573.
DJ9572
DJ9572.The XYZ, and position/ellipsoidal ht. are equivalent.
DJ9572
DJ9572.The ellipsoidal height was determined by GPS observations
DJ9572.and is referenced to NAD 83.
```

```
DJ9572
DJ9572. The following values were computed from the NAD 83(2011) position.
DJ9572
DJ9572;                     North         East     Units Scale Factor Converg.
DJ9572;SPC TN       -   113,393.394   267,222.043   MT  0.99999167   -2 08 32.9
DJ9572;SPC TN       -   372,024.83    876,710.99   sFT  0.99999167   -2 08 32.9
DJ9572;UTM  16      - 3,909,476.569   258,163.930   MT  1.00032081   -1 32 15.3
DJ9572
DJ9572!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ9572!SPC TN       -   0.99998993  x   0.99999167  =   0.99998160
DJ9572!UTM  16      -   0.99998993  x   1.00032081  =   1.00031074
DJ9572
DJ9572_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SBE5816309476(NAD 83)
DJ9572
DJ9572                           SUPERSEDED SURVEY CONTROL
DJ9572
DJ9572  NAD 83(CORS)-  35 17 57.37272(N)    089 39 34.60027(W) AD(2002.00) c
DJ9572  ELLIP H (02/??/08)   64.113  (m)                       GP(2002.00) c c
DJ9572
DJ9572.Superseded values are not recommended for survey control.
DJ9572
DJ9572.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ9572.See file dsdata.pdf to determine how the superseded data were derived.
DJ9572
DJ9572_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DJ9572
DJ9572                           STATION DESCRIPTION
DJ9572
DJ9572'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DJ9572'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DJ9572'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DJ9572'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DJ9572'   ftp://cors.ngs.noaa.gov/cors/README.txt
DJ9572'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DJ9572'   ftp://cors.ngs.noaa.gov/cors/station_log
DJ9572'   http://geodesy.noaa.gov/CORS
```

The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

```
PROGRAM = datasheet95, VERSION = 8.12
1        National Geodetic Survey,   Retrieval Date = MARCH 29, 2017
DL6193 ***********************************************************************
DL6193  CORS         -  This is a GPS Continuously Operating Reference Station.
DL6193  DESIGNATION  -  TDOT DISTRICT 46 CORS ARP
DL6193  CORS_ID      -  TN46
DL6193  PID          -  DL6193
DL6193  STATE/COUNTY-  TN/HARDIN
DL6193  COUNTRY      -  US
DL6193  USGS QUAD    -  PITTSBURG LANDING (1972)
DL6193
DL6193                         *CURRENT SURVEY CONTROL
DL6193  ______________________________________________________________________
DL6193* NAD 83(2011) POSITION- 35 13 16.56355(N) 088 19 06.05170(W)   ADJUSTED
DL6193* NAD 83(2011) ELLIP HT-   117.773 (meters)        (08/??/11)   ADJUSTED
DL6193* NAD 83(2011) EPOCH    -  2010.00
DL6193* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DL6193  ______________________________________________________________________
DL6193  GEOID HEIGHT    -        -27.636 (meters)                     GEOID12B
DL6193  NAD 83(2011) X  -    153,081.408 (meters)                     COMP
DL6193  NAD 83(2011) Y  - -5,214,157.440 (meters)                     COMP
DL6193  NAD 83(2011) Z  -  3,658,016.147 (meters)                     COMP
DL6193
DL6193.Formal positional accuracy estimates are not available for this CORS
DL6193.because its coordinates were determined in part using modeled
DL6193.velocities. Approximate one-sigma accuracies for latitude, longitude,
DL6193.and ellipsoid height can be obtained from the short-term time series.
DL6193.Additional information regarding modeled velocities is available on
DL6193.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DL6193
DL6193.The coordinates were established by GPS observations
DL6193.and adjusted by the National Geodetic Survey in August 2011.
DL6193
DL6193.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DL6193.been affixed to the stable North American Tectonic Plate.
DL6193
DL6193.The coordinates are valid at the epoch date displayed above
DL6193.which is a decimal equivalence of Year/Month/Day.
DL6193
DL6193.Significant digits in the geoid height do not necessarily reflect accuracy.
DL6193.GEOID12B height accuracy estimate available here.
DL6193
DL6193.The PID for the CORS L1 Phase Center is DL6194.
DL6193
DL6193.The XYZ, and position/ellipsoidal ht. are equivalent.
DL6193
DL6193.The ellipsoidal height was determined by GPS observations
DL6193.and is referenced to NAD 83.
DL6193
DL6193. The following values were computed from the NAD 83(2011) position.
```

```
DL6193
DL6193;                      North         East     Units Scale Factor Converg.
DL6193;SPC TN       -   101,016.651   388,952.218   MT  1.00000519   -1 21 26.1
DL6193;SPC TN       -   331,418.80  1,276,087.40   sFT  1.00000519   -1 21 26.1
DL6193;UTM  16      - 3,898,377.430   380,019.757   MT  0.99977741   -0 45 37.5
DL6193
DL6193!             -  Elev Factor  x  Scale Factor =   Combined Factor
DL6193!SPC TN       -   0.99998151  x   1.00000519  =   0.99998670
DL6193!UTM  16      -   0.99998151  x   0.99977741  =   0.99975893
DL6193
DL6193_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCD8001998377(NAD 83)
DL6193
DL6193                           SUPERSEDED SURVEY CONTROL
DL6193
DL6193  NAD 83(CORS)-  35 13 16.56381(N)    088 19 06.05275(W) AD(2002.00) c
DL6193  ELLIP H (01/??/10)  117.753  (m)                      GP(2002.00) c c
DL6193
DL6193.Superseded values are not recommended for survey control.
DL6193
DL6193.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DL6193.See file dsdata.pdf to determine how the superseded data were derived.
DL6193
DL6193_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DL6193
DL6193                           STATION DESCRIPTION
DL6193
DL6193'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DL6193'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DL6193'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DL6193'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DL6193'   ftp://cors.ngs.noaa.gov/cors/README.txt
DL6193'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DL6193'   ftp://cors.ngs.noaa.gov/cors/station_log
DL6193'   http://geodesy.noaa.gov/CORS
```

The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

```
PROGRAM = datasheet95, VERSION = 8.12
1        National Geodetic Survey,   Retrieval Date = MARCH 29, 2017
DL6197 ***********************************************************************
DL6197  CORS         -  This is a GPS Continuously Operating Reference Station.
DL6197  DESIGNATION  -  TDOT DISTRICT 48 CORS ARP
DL6197  CORS_ID      -  TN48
DL6197  PID          -  DL6197
DL6197  STATE/COUNTY-  TN/HENRY
DL6197  COUNTRY      -  US
DL6197  USGS QUAD    -  PARIS (1986)
DL6197
DL6197                          *CURRENT SURVEY CONTROL
DL6197  ______________________________________________________________________
DL6197* NAD 83(2011) POSITION-  36 17 45.75572(N) 088 17 47.68028(W)   ADJUSTED
DL6197* NAD 83(2011) ELLIP HT-    109.800 (meters)        (08/??/11)   ADJUSTED
DL6197* NAD 83(2011) EPOCH    -   2010.00
DL6197* NAVD 88 ORTHO HEIGHT -           **(meters)           **(feet)
DL6197  ______________________________________________________________________
DL6197  GEOID HEIGHT    -         -28.459 (meters)                     GEOID12B
DL6197  NAD 83(2011) X  -    152,990.828 (meters)                     COMP
DL6197  NAD 83(2011) Y  - -5,144,435.862 (meters)                     COMP
DL6197  NAD 83(2011) Z  -  3,754,782.457 (meters)                     COMP
DL6197
DL6197.Formal positional accuracy estimates are not available for this CORS
DL6197.because its coordinates were determined in part using modeled
DL6197.velocities. Approximate one-sigma accuracies for latitude, longitude,
DL6197.and ellipsoid height can be obtained from the short-term time series.
DL6197.Additional information regarding modeled velocities is available on
DL6197.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DL6197
DL6197.The coordinates were established by GPS observations
DL6197.and adjusted by the National Geodetic Survey in August 2011.
DL6197
DL6197.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DL6197.been affixed to the stable North American Tectonic Plate.
DL6197
DL6197.The coordinates are valid at the epoch date displayed above
DL6197.which is a decimal equivalence of Year/Month/Day.
DL6197
DL6197.Significant digits in the geoid height do not necessarily reflect accuracy.
DL6197.GEOID12B height accuracy estimate available here.
DL6197
DL6197.The PID for the CORS L1 Phase Center is DL6198.
DL6197
DL6197.The XYZ, and position/ellipsoidal ht. are equivalent.
DL6197
DL6197.The ellipsoidal height was determined by GPS observations
DL6197.and is referenced to NAD 83.
DL6197
DL6197. The following values were computed from the NAD 83(2011) position.
```

```
DL6197
DL6197;                      North         East     Units Scale Factor Converg.
DL6197;SPC TN       -   220,184.021   393,731.644   MT  0.99998083   -1 20 40.2
DL6197;SPC TN       -   722,387.08  1,291,767.90   sFT  0.99998083   -1 20 40.2
DL6197;UTM  16      - 4,017,564.648   383,577.838   MT  0.99976700   -0 46 03.4
DL6197
DL6197!             -  Elev Factor  x  Scale Factor =   Combined Factor
DL6197!SPC TN       -   0.99998277  x   0.99998083  =   0.99996360
DL6197!UTM  16      -   0.99998277  x   0.99976700  =   0.99974977
DL6197
DL6197_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCF8357717564(NAD 83)
DL6197
DL6197                           SUPERSEDED SURVEY CONTROL
DL6197
DL6197  NAD 83(CORS)-  36 17 45.75598(N)    088 17 47.68131(W) AD(2002.00) c
DL6197  ELLIP H (01/??/10)  109.778  (m)                       GP(2002.00) c c
DL6197
DL6197.Superseded values are not recommended for survey control.
DL6197
DL6197.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DL6197.See file dsdata.pdf to determine how the superseded data were derived.
DL6197
DL6197_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DL6197
DL6197                           STATION DESCRIPTION
DL6197
DL6197'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DL6197'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DL6197'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DL6197'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DL6197'   ftp://cors.ngs.noaa.gov/cors/README.txt
DL6197'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DL6197'   ftp://cors.ngs.noaa.gov/cors/station_log
DL6197'   http://geodesy.noaa.gov/CORS
```

The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

```
PROGRAM = datasheet95, VERSION = 8.12.1
1        National Geodetic Survey,   Retrieval Date = APRIL  5, 2017
DL6306 ***********************************************************************
DL6306  CORS         -  This is a GPS Continuously Operating Reference Station.
DL6306  DESIGNATION  -  TDOT DISTRICT 49 CORS ARP
DL6306  CORS_ID      -  TN49
DL6306  PID          -  DL6306
DL6306  STATE/COUNTY-  TN/LAUDERDALE
DL6306  COUNTRY      -  US
DL6306  USGS QUAD    -  RIPLEY NORTH (1972)
DL6306
DL6306                         *CURRENT SURVEY CONTROL
DL6306  ______________________________________________________________________
DL6306* NAD 83(2011) POSITION- 35 46 48.30307(N) 089 31 08.90979(W)   ADJUSTED
DL6306* NAD 83(2011) ELLIP HT-    96.427 (meters)        (08/??/11)   ADJUSTED
DL6306* NAD 83(2011) EPOCH    -  2010.00
DL6306* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DL6306  ______________________________________________________________________
DL6306  GEOID HEIGHT    -        -27.768 (meters)                     GEOID12B
DL6306  NAD 83(2011) X  -     43,476.165 (meters)                     COMP
DL6306  NAD 83(2011) Y  - -5,180,199.306 (meters)                     COMP
DL6306  NAD 83(2011) Z  -  3,708,479.599 (meters)                     COMP
DL6306
DL6306.Formal positional accuracy estimates are not available for this CORS
DL6306.because its coordinates were determined in part using modeled
DL6306.velocities. Approximate one-sigma accuracies for latitude, longitude,
DL6306.and ellipsoid height can be obtained from the short-term time series.
DL6306.Additional information regarding modeled velocities is available on
DL6306.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DL6306
DL6306.The coordinates were established by GPS observations
DL6306.and adjusted by the National Geodetic Survey in August 2011.
DL6306
DL6306.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DL6306.been affixed to the stable North American Tectonic Plate.
DL6306
DL6306.The coordinates are valid at the epoch date displayed above
DL6306.which is a decimal equivalence of Year/Month/Day.
DL6306
DL6306.Significant digits in the geoid height do not necessarily reflect accuracy.
DL6306.GEOID12B height accuracy estimate available here.
DL6306
DL6306.The PID for the CORS L1 Phase Center is DL6307.
DL6306
DL6306.The XYZ, and position/ellipsoidal ht. are equivalent.
DL6306
DL6306.The ellipsoidal height was determined by GPS observations
DL6306.and is referenced to NAD 83.
DL6306
DL6306. The following values were computed from the NAD 83(2011) position.
```

```
DL6306
DL6306;                      North         East     Units Scale Factor Converg.
DL6306;SPC TN       -   166,235.097   281,907.444   MT  0.99994884   -2 03 36.9
DL6306;SPC TN       -   545,389.65    924,891.34   sFT  0.99994884   -2 03 36.9
DL6306;UTM  16      - 3,962,484.777   272,303.663   MT  1.00023891   -1 28 24.7
DL6306
DL6306!             -  Elev Factor  x  Scale Factor =   Combined Factor
DL6306!SPC TN       -   0.99998487  x   0.99994884  =   0.99993371
DL6306!UTM  16      -   0.99998487  x   1.00023891  =   1.00022377
DL6306
DL6306_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SBE7230362484(NAD 83)
DL6306
DL6306                           SUPERSEDED SURVEY CONTROL
DL6306
DL6306  NAD 83(CORS)-  35 46 48.30333(N)    089 31 08.91079(W) AD(2002.00) c
DL6306  ELLIP H (02/??/10)   96.420  (m)                       GP(2002.00) c c
DL6306
DL6306.Superseded values are not recommended for survey control.
DL6306
DL6306.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DL6306.See file dsdata.pdf to determine how the superseded data were derived.
DL6306
DL6306_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DL6306
DL6306                           STATION DESCRIPTION
DL6306
DL6306'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DL6306'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DL6306'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DL6306'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DL6306'   ftp://cors.ngs.noaa.gov/cors/README.txt
DL6306'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DL6306'   ftp://cors.ngs.noaa.gov/cors/station_log
DL6306'   http://geodesy.noaa.gov/CORS
```

Section 4: Station Observation Sheets and Photos

This section contains the station observation sheets and photos for the LiDAR control stations and recovered geodetic control stations for the USGS TN West Central LiDAR 2017 B17 Project. The stations appear as they are ordered in the final coordinate listing of Section 2. LiDAR quality control stations and CORS were not documented.

WOOLPERT

LiDAR Control Stations

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	3/2/17
Station Name	1001	File Name	TENN_061-2RL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 13' 45.13" N
Longitude 88° 23' 23.61" W
Ellipsoidal Height 120.675 M

Type of Mark LT ASPHALT
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 8:44 Stop Time : 8:47
PDOP Max: 1.4
Start Time : 8:48 Stop Time : 8:51
PDOP Max: 1.4

Weather Conditions 46° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemam
Project Number	77390	Date of Survey	03-01-2017
Station Name	1006	File Name	TENN_060_ERL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 14' 50.43" N
Longitude 88° 08' 34.65" W
Ellipsoidal Height 121.710 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark: LT ASPHALT
Mark Stamping: N/A

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 14:43 Stop Time : 14:46
PDOP Max: 1.5
Start Time : 14:46 Stop Time : 14:49
PDOP Max: 1.3

Weather Conditions: 70° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	03-01-2017
Station Name	1009	File Name	TENN_060_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 18' 33.05" N
Longitude 87° 56' 18.78" W
Ellipsoidal Height 145.360 m

Type of Mark LT ASPHALT
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 15:36 Stop Time : 15:39
PDOP Max: 2.2
Start Time : 15:39 Stop Time : 15:42
PDOP Max: 2.2

Weather Conditions 67° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemam
Project Number	77390	Date of Survey	03-01-2017
Station Name	1014	File Name	TENN_060_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 20' 16.06" N
Longitude 87° 40' 42.26" W
Ellipsoidal Height 202.928 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark: LT ASPHALT
Mark Stamping: N/A

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 16:52 Stop Time : 16:55
PDOP Max: 1.3
Start Time : 16:55 Stop Time : 16:58
PDOP Max: 1.4

Weather Conditions: 64° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/26/17
Station Name	1017	File Name	TENN-057-BSM.30B

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency

PID
Hor. Order
Ver. Order
Designation

*UNABLE TO GET ORIGINAL LOCATION
*ARMY AMMO. PLANT

Global Coordinates

Latitude	35°55'01.25"N
Longitude	88°42'52.17"W
Ellipsoidal Height	104.891 M

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark: ASPHALT
Mark Stamping: ———

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 11:27 Stop Time: 11:30
PDOP Max: 1.8
Start Time: 11:30 Stop Time: 11:33
PDOP Max: 1.7

Weather Conditions: 45° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/26/17
Station Name	1020	File Name	TENN-057-BSH1705

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	35°51'49.16"N
Longitude	88°33'18.05"W
Ellipsoidal Height	135.417M
Type of Mark	ASPHALT
Mark Stamping	———

Receiver :
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time :	15:25	Stop Time :	15:29
PDOP Max:	1.9		
Start Time :	15:29	Stop Time :	15:32
PDOP Max:	1.8		

Weather Conditions: 50° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-26-2017
Station Name	1024	File Name	TENN_057_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 50' 54.84" N
Longitude 88° 20' 38.37" W
Ellipsoidal Height 107.655 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark LT ASPHALT
Mark Stamping N/A

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 12:50 Stop Time : 12:53
PDOP Max: 1.7
Start Time : 12:54 Stop Time : 12:57
PDOP Max: 1.7

Weather Conditions 55° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-27-2017
Station Name	1026	File Name	TENN-058-ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 49' 03.53" N
Longitude 88° 14' 16.73" W
Ellipsoidal Height 123.277 M

Type of Mark LT ASPHALT
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 10:09 Stop Time : 10:12
PDOP Max: 1.8
Start Time : 10:12 Stop Time : 10:15
PDOP Max: 1.7

Weather Conditions 58° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	03-01-2017
Station Name	1034	File Name	TENN_060_7R1.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 52' 54.85" N
Longitude 87° 49' 10.48" W
Ellipsoidal Height 98.139 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark LT ASPHALT
Mark Stamping N/A

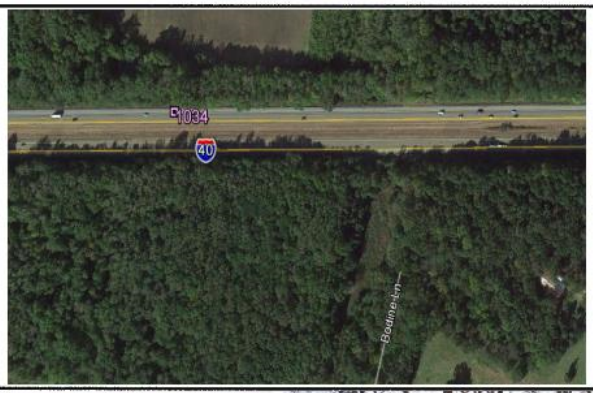
Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 9:33 Stop Time : 9:36
PDOP Max: 1.8
Start Time : 9:47 Stop Time : 9:50
PDOP Max: 3.0

Weather Conditions 64° LT RAIN

LOCATION PHOTO

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemam
Project Number	77380	Date of Survey	03-01-2017
Station Name	1036	File Name	TENN. 060_2RL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 52' 27.43" N
Longitude 87° 42' 49.88" W
Ellipsoidal Height 99.386 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark: LT ASPHALT
Mark Stamping: N/A

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 9:06 Stop Time : 9:09
PDOP Max: 1.6
Start Time : 9:11 Stop Time : 9:14
PDOP Max: 1.8

Weather Conditions: 61° CLOUDY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-28-2017
Station Name	1040	File Name	TENN_059_2RL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36° 00' 52.94" N
Longitude 87° 33' 28.25" W
Ellipsoidal Height 223.313 M

Type of Mark GRAVEL
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 14:15 Stop Time : 14:18
PDOP Max: 1.5
Start Time : 14:18 Stop Time : 14:21
PDOP Max: 1.6

Weather Conditions 66° CLOUDY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-28-2017
Station Name	1041	File Name	TENN_059_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35°58'35.20"N
Longitude 87°30'55.74"W
Ellipsoidal Height 186.293 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark: LT ASPHALT
Mark Stamping: N/A

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 16:26 Stop Time : 16:29
PDOP Max: 2.3
Start Time : 16:29 Stop Time : 16:32
PDOP Max: 2.1

Weather Conditions: 69° CLOUDY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	03/01/17
Station Name	1042	File Name	TENN-060-BSM.JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	35°33'47.69"N
Longitude	87°35'15.60"W
Ellipsoidal Height	262.676M
Type of Mark	ASPHALT
Mark Stamping	—

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	15:51	Stop Time:	15:54
PDOP Max:	2.1		
Start Time:	15:54	Stop Time:	15:57
PDOP Max:	2.1		

Weather Conditions: 70° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	3/2/17
Station Name	1043	File Name	TENN-061-BSM.JOB

Methodology

RTK Base	X
RTK VRS	
Rapid Static	

Photo Control Point (PCP)	
LiDAR Control Point (GCP)	X
LiDAR QC Point (QCP)	
Control Station	

Agency: _____

PID: _____
Hor. Order: _____
Ver. Order: _____
Designation: _____

Global Coordinates

Latitude	35°15'43.93"N
Longitude	87°46'02.10"W
Ellipsoidal Height	223.125M

Type of Mark: ASPHALT

Mark Stamping: ———

Receiver :

R10	
R8	X
Other, specify	

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 13:46 Stop Time : 13:49
PDOP Max: 1.7
Start Time : 13:49 Stop Time : 13:52
PDOP Max: 1.7

Weather Conditions: 70° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/24/17
Station Name	1044	File Name	TENN-055-BSM. JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	36° 17' 39.38" N
Longitude	88° 31' 25.05" W
Ellipsoidal Height	105.240M

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark: ASPHALT
Mark Stamping: ———

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	9:41	Stop Time:	9:44
PDOP Max:	1.6		
Start Time:	9:45	Stop Time:	9:48
PDOP Max:	1.5		

Weather Conditions: 70°SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/25/17
Station Name	1049	File Name	TENN-056-BSN.JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [X]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	36°18'36.13"N
Longitude	88°15'15.95"W
Ellipsoidal Height	98.294M
Type of Mark	ASPHALT
Mark Stamping	———

Receiver: R10 [ ], R8 [X], Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	10:05	Stop Time:	10:08
PDOP Max:	1.4		
Start Time:	10:08	Stop Time:	10:11
PDOP Max:	1.5		

Weather Conditions: 40° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/25/17
Station Name	1050	File Name	TENN-056-BSM.308

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [X]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	36°22'01.68"N
Longitude	88°12'08.59"W
Ellipsoidal Height	113.073M
Type of Mark	ASPHALT
Mark Stamping	—

Receiver:

R10	
R8	X
Other, specify	

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	9:47	Stop Time:	9:50
PDOP Max:	1.6		
Start Time:	9:51	Stop Time:	9:54
PDOP Max:	1.5		

Weather Conditions: 40° Sunny

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-24-2017
Station Name	1054	File Name	1054_44280550.T02

Methodology: RTK Base [ ], RTK VRS [ ], Rapid Static [X]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36° 27' 54.69" N
Longitude 87° 59' 21.50" W
Ellipsoidal Height 115.314 M

Type of Mark LT ASPHALT
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 9:08 Stop Time : 9:29
PDOP Max: 2.1
Start Time : N/A Stop Time : N/A
PDOP Max: N/A

Weather Conditions 68° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-23-2017
Station Name	1055	File Name	TENN_054_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36° 28' 46.96" N
Longitude 87° 56' 07.93" W
Ellipsoidal Height 139.905 M

Receiver:
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark: LT ASPHALT
Mark Stamping: N/A

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 17:04 Stop Time: 17:07
PDOP Max: 1.6
Start Time: 17:08 Stop Time: 17:11
PDOP Max: 1.6

Weather Conditions: 73° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	
Station Name	1060	File Name	TENN-059 - FSM,308

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	36°21'15.61"N
Longitude	87°39'48.30"W
Ellipsoidal Height	86.512M

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark: ASPHALT
Mark Stamping:

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	10:20	Stop Time:	10:23
PDOP Max:	1.5		
Start Time:	10:23	Stop Time:	10:26
PDOP Max:	2.8		

Weather Conditions: 60° RAIN

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-25-2017
Station Name	1061	File Name	1061_44280560.T02

Methodology: RTK Base [ ], RTK VRS [ ], Rapid Static [Y]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36° 23' 44.86" N
Longitude 87° 37' 24.55" W
Ellipsoidal Height 87.856 M

Type of Mark LT ASPHALT
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 11:45 Stop Time : 12:06
PDOP Max: 2.0
Start Time : N/A Stop Time : N/A
PDOP Max: N/A

Weather Conditions 42° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/28/17
Station Name	1062	File Name	1062-83540590.T02

Methodology: RTK Base [ ], RTK VRS [ ], Rapid Static [X]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [✓]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	36°16'35.73"N
Longitude	87°34'02.97"W
Ellipsoidal Height	114.157 M

Receiver: R10 [ ], R8 [X], Other, specify [ ]

Type of Mark: ASPHALT

Mark Stamping: ~

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 10:51 Stop Time: 11:11
PDOP Max:
Start Time: Stop Time:
PDOP Max:

Weather Conditions: 65° RAIN/OC

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/28/17
Station Name	1064	File Name	TENN_059-BSM.JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	36°19'03.35"N
Longitude	87°30'07.82"W
Ellipsoidal Height	193.187M
Type of Mark	ASPHALT
Mark Stamping	—

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 12:01 Stop Time: 12:04
PDOP Max: 2.0
Start Time: 12:04 Stop Time: 12:07
PDOP Max: 2.4

Weather Conditions: 60° OVERCAST

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/24/17
Station Name	1066	File Name	TENN-055-BSM,JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	36° 07' 30.84"N
Longitude	88° 31' 06.72"W
Ellipsoidal Height	114.728M

Receiver: R10 [ ], R8 [X], Other, specify [ ]

Type of Mark: ASPHALT

Mark Stamping: —

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 12:09 Stop Time: 12:12
PDOP Max: 1.5
Start Time: 12:12 Stop Time: 12:15
PDOP Max: 1.4

Weather Conditions: 70° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-28-2017
Station Name	1067	File Name	TENN_059_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36° 08' 13.78" N
Longitude 87° 33' 45.54" W
Ellipsoidal Height 234.682 M

Type of Mark GRAVEL
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

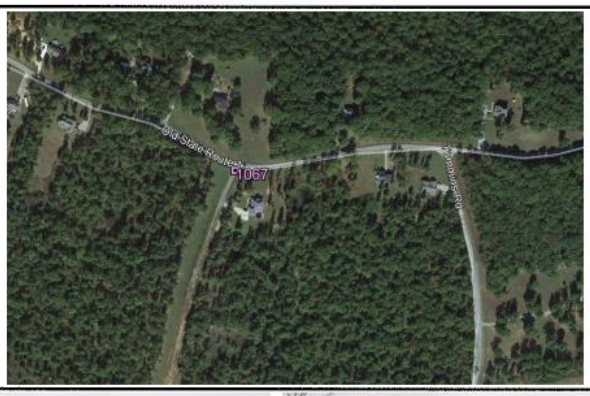
Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 15:12 Stop Time : 15:15
PDOP Max: 1.5
Start Time : 15:18 Stop Time : 15:21
PDOP Max: 1.6

Weather Conditions 68° CLOUDY

LOCATION PHOTO

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	03/01/17
Station Name	1068	File Name	TENN-060 -BSM, JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency
PID
Hor. Order
Ver. Order
Designation

Global Coordinates

Latitude	35°29'19.98"N
Longitude	87°43'31.64"W
Ellipsoidal Height	269.129M

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark: ASPHALT
Mark Stamping: ——

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	16:15	Stop Time:	16:17
PDOP Max:	1.9		
Start Time:	16:17	Stop Time:	16:20
PDOP Max:	1.6		

Weather Conditions: 70°SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-27-2017
Station Name	1069	File Name	TENN_058_7RL_.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 28' 34.25" N
Longitude 88° 20' 44.55" W
Ellipsoidal Height 116.796 M

Type of Mark GRNEL
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 17:02 Stop Time : 17:05
PDOP Max: 1.5
Start Time : 17:05 Stop Time : 17:08
PDOP Max: 1.5

Weather Conditions 61° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-24-2017
Station Name	~~2001~~ 1071	File Name	2001_44280556.T02

Methodology: RTK Base [ ] RTK VRS [ ] Rapid Static [X]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36° 38′ 17.82″ N
Longitude 88° 01′ 21.77″ W
Ellipsoidal Height 89.984 M

Type of Mark GRAVEL
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 12:20 Stop Time : 12:41
PDOP Max: 1.8
Start Time : N/A Stop Time : N/A
PDOP Max: N/A

Weather Conditions 79° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-23-2017
Station Name	~~2004~~ 1072	File Name	2004-44280541.T02

Methodology: RTK Base [ ] RTK VRS [ ] Rapid Static [X]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36° 35' 48.87" N
Longitude 87° 50' 01.15" W
Ellipsoidal Height 119.26 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark DIRT/GRAVEL
Mark Stamping N/A

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 12:46 Stop Time : 13:07
PDOP Max: 1.7
Start Time : N/A Stop Time : N/A
PDOP Max: N/A

Weather Conditions 70° PARTLY CLOUDY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-25-2017
Station Name	~~2008~~ 1073	File Name	TENN_056_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36° 32' 35.65" N
Longitude 87° 37' 43.35" W
Ellipsoidal Height 171.702 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark GRAVEL
Mark Stamping N/A

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 9:37 Stop Time : 9:41
PDOP Max: 1.3
Start Time : 9:41 Stop Time : 9:44
PDOP Max: 1.2

Weather Conditions 37° PARTLY CLOUDY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	3/2/17
Station Name	~~2017~~ 1074	File Name	2017-9955 0610, T01

Methodology

RTK Base	
RTK VRS	
Rapid Static	X

Photo Control Point (PCP)	
LiDAR Control Point (GCP)	X
LiDAR QC Point (QCP)	
Control Station	

Agency: N/A

PID	N/A
Hor. Order	N/A
Ver. Order	N/A
Designation	N/A

Global Coordinates

Latitude	35°09' 03.05"N
Longitude	87°56' 22.60"W
Ellipsoidal Height	151.650M

Type of Mark	CONCRETE
Mark Stamping	—

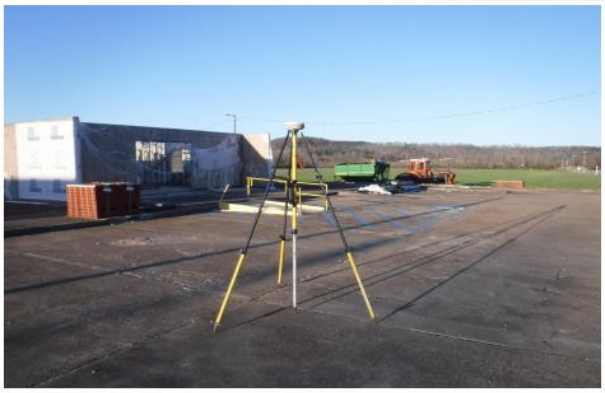
Receiver :

R10	
R8	X
Other. specify	

Antenna Height:	6.562	USFT	
	2.000	METERS	
Start Time :	17:01	Stop Time :	17:21
PDOP Max:	1.7		
Start Time :		Stop Time :	
PDOP Max:			
Weather Conditions	70°SUNNY		

LOCATION PHOTO

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	3/2/17
Station Name	~~2014~~ 1075	File Name	TENN-061-ZBL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 02' 33.64" N
Longitude 88° 16' 14.66" W
Ellipsoidal Height 120.535 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark LT ASPHALT
Mark Stamping N/A

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 14:23 Stop Time : 14:26
PDOP Max: 1.3
Start Time : 14:27 Stop Time : 14:30
PDOP Max: 1.4

Weather Conditions 59° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	3/2/17
Station Name	~~2019~~ 1076	File Name	TENN-061-BSM1.308

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A

PID	N/A
Hor. Order	N/A
Ver. Order	N/A
Designation	N/A

Global Coordinates

Latitude	35°22' 55.15"N
Longitude	87° 59' 30.95"W
Ellipsoidal Height	88.237M
Type of Mark	ASPH ALT
Mark Stamping	—

Receiver: R10 [ ], R8 [X], Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time :	9:58	Stop Time :	10:01
PDOP Max:	1.4		
Start Time :	10:01	Stop Time :	10:04
PDOP Max:	1.4		

Weather Conditions: 60°SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77370	Date of Survey	02/27/17
Station Name	~~2023~~ 1077	File Name	TENN_058_BSM.30Z

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [X]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [ ]
Agency: N/A
PID: PAINT STRIPES
Hor. Order: N/A
Ver. Order: N/A
Designation: N/A

Global Coordinates

Latitude	35°35'03.05"N
Longitude	88°07'11.40"W
Ellipsoidal Height	129.81M
Type of Mark	PID
Mark Stamping	—

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 16:17 Stop Time: 16:15
PDOP Max: 2.0
Start Time: 16:15 Stop Time: 16:18
PDOP Max: 1.3

Weather Conditions: 65°SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	03/01/17
Station Name	~~2626~~ 1078	File Name	TENN-060-BSM.JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [X]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [ ]
Agency: N/A
PID: PAINT STRIPES
Hor. Order: N/A
Ver. Order: N/A
Designation: N/A

Global Coordinates

Latitude	35°36'56.74"N
Longitude	87°50'14.72"W
Ellipsoidal Height	141.962M

Type of Mark: PID
Mark Stamping: —

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 14:28 Stop Time: 14:31
PDOP Max: 1.3
Start Time: 14:31 Stop Time: 14:34
PDOP Max: 1.3

Weather Conditions: 70°SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-27-2017
Station Name	~~2029~~ 1079	File Name	TENN-058-2RL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ]
Agency N/A
PID PAINT CORNER
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 38' 58.27" N
Longitude 88° 23' 40.77" W
Ellipsoidal Height 126.103 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark PID
Mark Stamping MAG

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 13:11 Stop Time : 13:14
PDOP Max: 1.7
Start Time : 13:15 Stop Time : 13:18
PDOP Max: 1.7

Weather Conditions 62° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-28-2017
Station Name	~~2040~~ 1080	File Name	TENN_059_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates

Latitude	36° 03' 29.96" N
Longitude	83° 06' 19.22" W
Ellipsoidal Height	109.496 M
Type of Mark	LT ASPHALT
Mark Stamping	N/A

Receiver:
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 8:42 Stop Time: 8:45
PDOP Max: 1.8
Start Time: 8:45 Stop Time: 8:48
PDOP Max: 1.7

Weather Conditions: 64° CLOUDY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-28-2017
Station Name	~~2041~~ 1081	File Name	TENN_059_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36° 01' 19.00" N
Longitude 87° 59' 01.33" W
Ellipsoidal Height 88.972 M

Type of Mark LT ASPHALT
Mark Stamping N/A

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

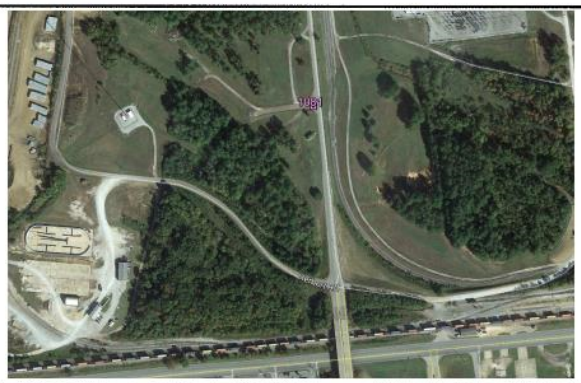
Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 10:18 Stop Time : 10:21
PDOP Max: 1.5
Start Time : 10:21 Stop Time : 10:24
PDOP Max: 1.5

Weather Conditions 66° CLOUDY

LOCATION PHOTO

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/25/17
Station Name	~~2053~~ 1082	File Name	TENN-056-BSM.308

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ]

Agency: N/A
PID: N/A
Hor. Order: N/A
Ver. Order: N/A
Designation: N/A

Global Coordinates

Latitude	36°14'59.02"N
Longitude	88°09'12.75"W
Ellipsoidal Height	121.727M
Type of Mark	ASPHALT
Mark Stamping	

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	12:23	Stop Time:	12:26
PDOP Max:	1.4		
Start Time:	12:26	Stop Time:	12:29
PDOP Max:	1.5		

Weather Conditions: 43° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/23/17
Station Name	~~Z061~~ 1083	File Name	TENN-054-B5M.JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [X]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates

Latitude	36°26' 39.49" N
Longitude	88° 20' 01.99" W
Ellipsoidal Height	156.971 M
Type of Mark	PID
Mark Stamping	———

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 12:59 Stop Time: 13:02
PDOP Max: 1.8
Start Time: 13:02 Stop Time: 13:05
PDOP Max: 1.8

Weather Conditions: SUNNY 70°

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/27/17
Station Name	~~2066~~ 1084	File Name	TENN-058-BSM.JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ]

Agency: N/A
PID: N/A
Hor. Order: N/A
Ver. Order: N/A
Designation: N/A

Global Coordinates

Latitude	35°33' 35.77"N
Longitude	88° 00' 24.65"W
Ellipsoidal Height	83.320M

Type of Mark: ASPHALT
Mark Stamping: ~~~~

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 16:39 Stop Time: 16:43
PDOP Max: 1.4
Start Time: 16:43 Stop Time: 16:45
PDOP Max: 1.3

Weather Conditions: 65° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/27/17
Station Name	~~2070~~ 1085	File Name	2070-83540582, T02

Methodology: RTK Base [ ] RTK VRS [ ] Rapid Static [X]

Photo Control Point (PCP) [X]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID PAINT CORNER
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 45' 50.52" N
Longitude 87° 56' 07.35" W
Ellipsoidal Height 97.690 M

Receiver :
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark PID
Mark Stamping —

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 10:47 Stop Time : 11:52
PDOP Max: 1.7
Start Time : Stop Time :
PDOP Max:

Weather Conditions 50° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/26/17
Station Name	~~2073~~ 1086	File Name	TENN-057-BSM, JOB

Methodology

RTK Base	X
RTK VRS	
Rapid Static	

Photo Control Point (PCP)	X
LiDAR Control Point (GCP)	
LiDAR QC Point (QCP)	
Control Station	
Agency	N/A
PID	PAINT CORNER
Hor. Order	N/A
Ver. Order	N/A
Designation	N/A

Global Coordinates

Latitude	35°45'15.55"N
Longitude	88°30' 57.64"W
Ellipsoidal Height	129.987M

Type of Mark	PID
Mark Stamping	—

Receiver :		
R10		
R8	X	
Other, specify		
Antenna Height:	6.562	USFT
	2.000	METERS
Start Time :	13:54	Stop Time : 13:57
PDOP Max:	1.5	
Start Time :	13:58	Stop Time : 14:01
PDOP Max:	1.5	
Weather Conditions	50° Sunny	

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/26/17
Station Name	~~2074~~ 1087	File Name	TENN-057-155M, JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ]

Agency: N/A
PID: N/A
Hor. Order: N/A
Ver. Order: N/A
Designation: N/A

Global Coordinates

Latitude: 35°55'57.61"N
Longitude: 88° 29' 14. 80"W
Ellipsoidal Height: 144.677M

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark: CONCRETE
Mark Stamping: ———

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 16:01 Stop Time: 16:04
PDOP Max: 2.1
Start Time: 16:04 Stop Time: 16:07
PDOP Max: 2.0

Weather Conditions: 50°SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/25/17
Station Name	~~2097~~ 1088	File Name	2097_83540560.T02

Methodology: RTK Base [ ] RTK VRS [ ] Rapid Static [X]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36°11'16.19"N
Longitude 87°58'33.76"W
Ellipsoidal Height 89.720 M

Receiver :
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark GRAVEL
Mark Stamping —

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 15:44 Stop Time : 16:09
PDOP Max: 1.7
Start Time : Stop Time :
PDOP Max:

Weather Conditions 45° Sunny

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	07/28/17
Station Name	~~7122~~ 1090	File Name	2177-83540596.T02

Methodology: RTK Base [ ] RTK VRS [ ] Rapid Static [X]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 36°15'22.40"N
Longitude 87°53'42.33"W
Ellipsoidal Height 90.184M

Type of Mark ASPHALT
Mark Stamping ~

Receiver :
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 16:07 Stop Time : 16:27
PDOP Max: 1.7
Start Time : Stop Time :
PDOP Max:

Weather Conditions 600 OVERCAST

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	3/2/17
Station Name	~~2131~~ 1091	File Name	TENN_061_ZRL.job

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35° 00' 14.18" N
Longitude 88° 09' 04.10" W
Ellipsoidal Height 170.462 M

Receiver :
R10 [ ]
R8 [X] 5211484428
Other, specify [ ]

Type of Mark GRAVEL
Mark Stamping N/A

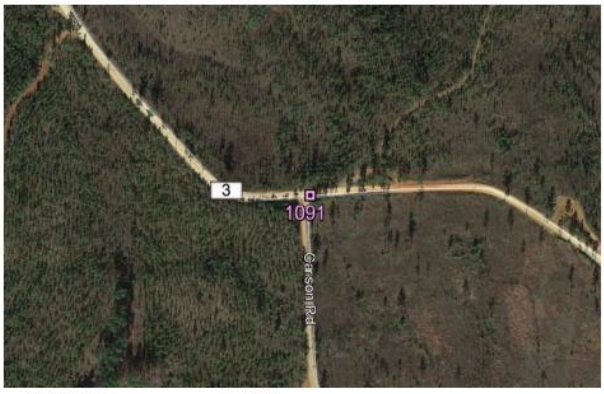
Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 16:55 Stop Time : 16:58
PDOP Max: 1.5
Start Time : 16:58 Stop Time : 17:01
PDOP Max: 1.7

Weather Conditions 54° SUNNY

LOCATION PHOTO

NORTH



GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	3/2/17
Station Name	~~2137~~ 1092	File Name	TENN_061_BSM.JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates
Latitude 35°12'24.74"N
Longitude 87°49'08.62"W
Ellipsoidal Height 158.249M

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark ASPHALT
Mark Stamping ———

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 16:04 Stop Time: 16:06
PDOP Max: 1.7
Start Time: 16:06 Stop Time: 16:09
PDOP Max: 1.7

Weather Conditions 70°SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	03/01/17
Station Name	~~2133~~ 1093	File Name	2133 - 83540603.T02

Methodology: RTK Base [ ] RTK VRS [ ] Rapid Static [X]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [X]
LiDAR QC Point (QCP) [ ]
Control Station [ ] Agency N/A
PID N/A
Hor. Order N/A
Ver. Order N/A
Designation N/A

Global Coordinates

Latitude	35°26'29.47"N
Longitude	87°45'30.96"W
Ellipsoidal Height	154.821
Type of Mark	ASPHALT
Mark Stamping	—

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 16:33 Stop Time: 16:53
PDOP Max: 1.7
Start Time: Stop Time:
PDOP Max:

Weather Conditions: 70° SUNNY

LOCATION PHOTO

NORTH

Geodetic Control Stations

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/23/17
Station Name	101	File Name	TENN-054- BSM, JOB

Methodology

RTK Base	X
RTK VRS	
Rapid Static	

Photo Control Point (PCP)		
LiDAR Control Point (GCP)		
LiDAR QC Point (QCP)		
Control Station	X	Agency: WOOLPERT
PID		—
Hor. Order		—
Ver. Order		—
Designation		101

Global Coordinates

Latitude	36° 26' 22.30"N
Longitude	88°04' 30.98"W
Ellipsoidal Height	81.705M

Type of Mark	WOOLPERT CNTR STA.
Mark Stamping	101 2017

Receiver :		
R10		
R8	X	
Other, specify		

Antenna Height:	6.562	USFT	
	2.000	METERS	
Start Time :	9:40	Stop Time :	9:43
PDOP Max:	1.3		
Start Time :	9:44	Stop Time :	9:47
PDOP Max:	1.2		
Weather Conditions	75° Sunny		

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-23/24-2017
Station Name	101	File Name	101-52700540.T02 101_42350550.T02

Methodology

RTK Base		
RTK VRS		
Rapid Static		
FAST STATIC CDMA	X	02/23/17
FAST STATIC	X	02/24/17

Photo Control Point (PCP)		
LiDAR Control Point (GCP)		
LiDAR QC Point (QCP)		
Control Station	X	Agency: WOOLPERT
PID		N/A
Hor. Order		N/A
Ver. Order		N/A
Designation		101

Global Coordinates

Latitude	36° 26' 22.30" N
Longitude	88° 04' 30.98" W
Ellipsoidal Height	81.701 M

Type of Mark	5/8" x 18" REBAR w/ CAP
Mark Stamping	1001 2017

Receiver:

R10		
R8	X	~~5211483428~~ 5270
Other, specify		

Antenna Height:	6.562	USFT	
	2.000	METERS	
Start Time:	02/23	9:53	Stop Time: 17:35
PDOP Max:		2.0	
Start Time:	02/24	8:02	Stop Time: 17:54
PDOP Max:		2.0	

Weather Conditions: 70° PARTLY CLOUDY

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon **Murphy**
Project Number	77390	Date of Survey	02/25/17
Station Name	101	File Name	101 - 83460560.T02

Methodology

RTK Base	
RTK VRS	
Rapid Static	X

Photo Control Point (PCP)		
LiDAR Control Point (GCP)		
LiDAR QC Point (QCP)		
Control Station	X	Agency: WOOLPERT
PID		—
Hor. Order		—
Ver. Order		—
Designation		101

Global Coordinates

Latitude	36° 26' 22.30"N
Longitude	88° 04' 30.98"W
Ellipsoidal Height	81.705M

Type of Mark	WOOLPERT CNTR. STA.
Mark Stamping	101 2017

Receiver:

R10	
R8	X
Other, specify	

Antenna Height:	6.562	USFT
	2.000	METERS
Start Time:	7:24	Stop Time: 18:30
PDOP Max:		
Start Time:		Stop Time:
PDOP Max:		
Weather Conditions	40° SUNNY	

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-23/24-2017
Station Name	102	File Name	102_42350540.T02 102_52100550.T02

Methodology

RTK Base		
RTK VRS		
Rapid Static		
FAST STATIC	X	02/23/17
FAST STATIC CDMA	X	02/24/17

Photo Control Point (PCP)		
LiDAR Control Point (GCP)		
LiDAR QC Point (QCP)		
Control Station	X	Agency: WOOLPERT
PID		N/A
Hor. Order		N/A
Ver. Order		N/A
Designation		102

Global Coordinates

Latitude	36° 32' 50.86" N
Longitude	87° 47' 39.93" W
Ellipsoidal Height	100.111 M
Type of Mark	5/8" x 18" REBAR W/ CAP
Mark Stamping	102 2017

Receiver :		
R10		
R8	X	~~5211484428~~ 4235
Other, specify		
Antenna Height:	6.562	USFT
	2.000	METERS
Start Time : 02/23	12:32	Stop Time : 17:29
PDOP Max:	1.7	
Start Time : 02/24	8:44	Stop Time : 17:25
PDOP Max:	2.0	
Weather Conditions	70° PARTLY CLOUDY	

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-25-2017
Station Name	102	File Name	102-52700560.T02

Methodology

RTK Base		Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (GCP)	
Rapid Static		LiDAR QC Point (QCP)	
FAST STATIC CDMA	X	Control Station	X

Agency: WOOLPERT

PID	N/A
Hor. Order	N/A
Ver. Order	N/A
Designation	102

Global Coordinates

Latitude	36° 32' 50.86" N
Longitude	87° 47' 39.93" W
Ellipsoidal Height	110.111 M

Type of Mark	5/8" x 18" REBAR W/ CAP
Mark Stamping	102 2017

Receiver:

R10		
R8	X	5211484428
Other, specify		

Antenna Height:	6.562	USFT
	2.000	METERS

Start Time:	7:51	Stop Time:	17:59
PDOP Max:	2.0		
Start Time:	N/A	Stop Time:	N/A
PDOP Max:	N/A		

Weather Conditions: 40° SUNNY

LOCATION PHOTO

NORTH

SEE PREVIOUS

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/26/17
Station Name	103	File Name	TENN-057-BSM,30B

Methodology

RTK Base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (GCP)	
Rapid Static		LiDAR QC Point (QCP)	
		Control Station	X

Agency: WOOLPERT

PID	—
Hor. Order	—
Ver. Order	—
Designation	103

Global Coordinates

Latitude	35°40′ 21.65″N
Longitude	88°27′ 31.71″W
Ellipsoidal Height	124.943M

Receiver:

R10	
R8	X
Other, specify	

Type of Mark	TSM
Mark Stamping	103 2017

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	13:30	Stop Time:	13:33
PDOP Max:	1.9		
Start Time:	13:33	Stop Time:	13:36
PDOP Max:	1.9		

Weather Conditions: 50° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-27-2017
Station Name	103	File Name	103_4428 0580.T02

Methodology

RTK Base		Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (GCP)	
Rapid Static		LiDAR QC Point (QCP)	
FAST STATIC	X	Control Station	X

Agency: WOOLPERT

PID	N/A
Hor. Order	N/A
Ver. Order	N/A
Designation	103

Global Coordinates

Latitude	35° 40' 21.65" N
Longitude	88° 27' 31.71" W
Ellipsoidal Height	124.941 M
Type of Mark	5/8" x 18" REBAR W/ CAP
Mark Stamping	103 2017

Receiver:

R10		
R8	X	5211484428
Other, specify		

Antenna Height:	6.562	USFT
	2.000	METERS
Start Time:	7:31	Stop Time: 18:35
PDOP Max:	1.8	
Start Time:	N/A	Stop Time: N/A
PDOP Max:	N/A	
Weather Conditions	49° CLOUDY	

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/28/17
Station Name	104	File Name	104-83460590.T02

Methodology

RTK Base		Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (GCP)	
Rapid Static	X	LiDAR QC Point (QCP)	
		Control Station	X

Agency: WOOLPERT

PID:

Hor. Order:

Ver. Order:

Designation: 104

Global Coordinates

Latitude	36° 05' 04.34" N
Longitude	87° 46' 14.43" W
Ellipsoidal Height	140.250 M

Receiver :

R10	
R8	X
Other, specify	

Type of Mark: TSM

Mark Stamping: WOOLPERT CNTR. STA. 104 2017

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 8:22 Stop Time : 18:11

PDOP Max:

Start Time : Stop Time :

PDOP Max:

Weather Conditions: 60° RAIN

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	03/01/04
Station Name	104	File Name	104 - 8346600.TOZ

Methodology

RTK Base	
RTK VRS	
Rapid Static	X

Photo Control Point (PCP)	
LiDAR Control Point (GCP)	
LiDAR QC Point (QCP)	
Control Station	X

Agency: WOOLPERT

PID:
Hor. Order:
Ver. Order:
Designation:

Global Coordinates

Latitude	36°05'09.34"N
Longitude	87°46'14.43"W
Ellipsoidal Height	140.250M

Type of Mark: TSM

Mark Stamping: WOOLPERT CONTROL STA. 104 2017

Receiver:

R10	
R8	X
Other, specify	

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 7:50 Stop Time: 10:41
PDOP Max:
Start Time: Stop Time:
PDOP Max:

Weather Conditions: 65° RAIN/SUN/OC

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	03-01/02-2017
Station Name	105	File Name	105-42350601.T02

Methodology

RTK Base		Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (GCP)	
Rapid Static		LiDAR QC Point (QCP)	
FAST STATIC	X	Control Station	X

Agency: WOOLPERT

PID	N/A
Hor. Order	N/A
Ver. Order	N/A
Designation	105

Global Coordinates

Latitude	35° 10' 06.95" N
Longitude	88° 12' 43.66" W
Ellipsoidal Height	109.599 M

Type of Mark: 5/8" x 18" RGBAR w/ CAP

Mark Stamping: 105 2017

Receiver:

R10		
R8	X	5211484428
Other, specify		

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	03-01	12:56	Stop Time: 18:32
PDOP Max:		2.0	
Start Time:	03-02	8:06	Stop Time: 18:47
PDOP Max:		2.1	

Weather Conditions: 70° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	03/01/17
Station Name	106	File Name	106-83460601.T02

Methodology

RTK Base	☐	Photo Control Point (PCP)	☐
RTK VRS	☐	LiDAR Control Point (GCP)	☐
Rapid Static	☒	LiDAR QC Point (QCP)	☐
		Control Station	☒

Agency: WOOLPERT
PID:
Hor. Order:
Ver. Order:
Designation: 106

Global Coordinates

Latitude	35°18'31.36"N
Longitude	87°57'02.65"W
Ellipsoidal Height	112.725M
Type of Mark	WOOLPERTCNTK.STA
Mark Stamping	2017 106

Receiver:

R10	
R8	X
Other, specify	

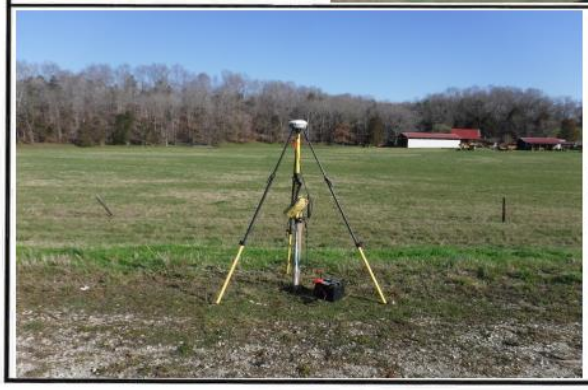
Antenna Height: 6.562 USFT / 2.000 METERS

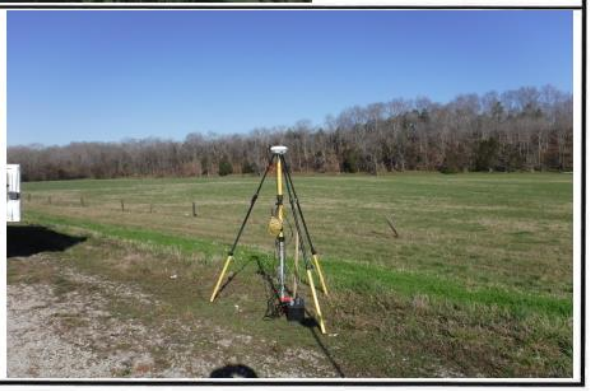
Start Time: 12:40 Stop Time: 18:09
PDOP Max:
Start Time: Stop Time:
PDOP Max:

Weather Conditions: 70°SUNNY

LOCATION PHOTO

NORTH





GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	3/2/17
Station Name	106	File Name	106 - 83460610, 70 Z

Methodology

RTK Base	☐
RTK VRS	☐
Rapid Static	☒

Photo Control Point (PCP)	☐
LiDAR Control Point (GCP)	☐
LiDAR QC Point (QCP)	☐
Control Station	☑
Agency	WOOLPERT
PID	
Hor. Order	
Ver. Order	
Designation	106

Global Coordinates

Latitude	35°18'31.36"N
Longitude	87°57'02.65"W
Ellipsoidal Height	112.725M

Type of Mark	TSM
Mark Stamping	2017 106

Receiver :

R10	☐
R8	X
Other, specify	☐

Antenna Height:	6.562	USFT
	2.000	METERS
Start Time :	8:37	Stop Time : 18:58
PDOP Max:	•	
Start Time :		Stop Time :
PDOP Max:		

Weather Conditions: 60° SUNNY

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	3/3/17
Station Name	107	File Name	TENN-062-BSM,JOB

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [X] Agency: WOOLPERT
PID: —
Hor. Order: —
Ver. Order: —
Designation: 107

Global Coordinates

Latitude	35°02'17.57"N
Longitude	87°40'13.31"W
Ellipsoidal Height	218.219 M

Type of Mark: TSM
Mark Stamping: —

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 7:39 Stop Time: 7:42
PDOP Max: 1.4
Start Time: 7:42 Stop Time: 7:45
PDOP Max: 1.7

Weather Conditions: 40° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	3/3/17
Station Name	107	File Name	107_42350620.T02

Methodology

RTK Base		Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (GCP)	
Rapid Static	X	LiDAR QC Point (QCP)	
		Control Station	X

Agency: WOOLPERT

PID	—
Hor. Order	—
Ver. Order	—
Designation	107

Global Coordinates

Latitude	35°02' 12.57"N
Longitude	87°40' 13.31"W
Ellipsoidal Height	218.219M

Type of Mark	TSM
Mark Stamping	107 2017

Receiver:

R10	
R8	X
Other, specify	

Antenna Height:	6.562	USFT
	2.000	METERS

Start Time:	7:49	Stop Time:	10:10
PDOP Max:			
Start Time:		Stop Time:	
PDOP Max:			

Weather Conditions: 40° SUNNY

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	02-26/28-2017
Station Name	108	File Name	108 - 4428 0570. T02

Methodology

RTK Base	
RTK VRS	
Rapid Static	
FAST STATIC	X

Photo Control Point (PCP)	
LiDAR Control Point (GCP)	
LiDAR QC Point (QCP)	
Control Station	X

Agency: N/A
PID: N/A
Hor. Order: N/A
Ver. Order: N/A
Designation: 108

Global Coordinates

Latitude	36° 02' 28.54" N
Longitude	88° 10' 57.31" W
Ellipsoidal Height	104.049 M

Type of Mark: 5/8" x 18" REBAR w/CAP
Mark Stamping: 108 2017

Receiver:

R10		
R8	X	5211484428
Other, specify		

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	02-26	8:48	Stop Time: 15:27
PDOP Max:		1.7	
Start Time:	02-28	8:05	Stop Time: 13:20
PDOP Max:		1.8	

Weather Conditions: 35° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Zach Leesemann
Project Number	77390	Date of Survey	03-01-2017
Station Name	108	File Name	108_42350600.T02

Methodology

RTK Base	
RTK VRS	
Rapid Static	
FAST STATIC	X

Photo Control Point (PCP)	
LiDAR Control Point (GCP)	
LiDAR QC Point (QCP)	
Control Station	X

Agency: WOOLPERT

PID	N/A
Hor. Order	N/A
Ver. Order	N/A
Designation	108

Global Coordinates

Latitude	36° 02' 28.54" N
Longitude	88° 10' 57.31" W
Ellipsoidal Height	104.049 M

Type of Mark	5/8" x 18" REBAR w/ CAP
Mark Stamping	108 2017

Receiver:

R10		
R8	X	5211484428
Other, specify		

Antenna Height:	6.562	USFT
	2.000	METERS

Start Time:	8:12	Stop Time:	10:34
PDOP Max:	1.9		
Start Time:	N/A	Stop Time:	N/A
PDOP Max:	N/A		

Weather Conditions: 65° PARTLY CLOUDY

LOCATION PHOTO

NORTH

SEE PREVIOUS

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	3/2/17
Station Name	39 13	File Name	39-13-42350610.T02

Methodology: RTK Base [X], RTK VRS [ ], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [X]

Agency: ALHD
PID: EF1770
Hor. Order: 0
Ver. Order: 2
Designation: 39 13

Global Coordinates

Latitude	34°54'43.02"N
Longitude	87°40'11.45"W
Ellipsoidal Height	160.849M
Type of Mark	CONCRETE MON
Mark Stamping	3913 1991

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 7:36 Stop Time: 19:52
PDOP Max:
Start Time: Stop Time:
PDOP Max:

Weather Conditions: 50° SUNNY

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee Lidar 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	3/3/17
Station Name	39 13	File Name	39-13-83960621.T02

Methodology: RTK Base [ ] RTK VRS [ ] Rapid Static [X]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [X]

Agency	ALIAD
PID	EF1770
Hor. Order	0
Ver. Order	1
Designation	39 13

Global Coordinates

Latitude	34°54' 43.02"N
Longitude	87°40' 11.45"W
Ellipsoidal Height	160.867

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark	CONCRETE MON
Mark Stamping	39 13 1991

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	7:18	Stop Time:	10:00
PDOP Max:			
Start Time:		Stop Time:	
PDOP Max:			

Weather Conditions: 35° SUNNY

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/23/17
Station Name	F 181	File Name	F-181- 83460540. T02

Methodology

RTK Base		Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (GCP)	
Rapid Static	X	LiDAR QC Point (QCP)	
		Control Station	X

Agency: USGS

PID	GD0190
Hor. Order	0
Ver. Order	1
Designation	F 181

Global Coordinates

Latitude	36° 20' 45.69" N	Receiver :	
Longitude	88° 23' 01.16" W	R10	
Ellipsoidal Height	144.218M	R8	X
		Other, specify	
Type of Mark	CONCRETE MON	Antenna Height:	6.562 USFT
			2.000 METERS
Mark Stamping	F 181 1949	Start Time :	8:14 Stop Time : 18:18
		PDOP Max:	
		Start Time :	Stop Time :
		PDOP Max:	
		Weather Conditions	SUNNY 70°

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon **Murphy**
Project Number	77390	Date of Survey	02/24/17
Station Name	F 181	File Name	TENN-055.BSH.JOB

Methodology: RTK Base [ ], RTK VRS [X], Rapid Static [ ]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [X] Agency USCGS
PID GD0190
Hor. Order 0
Ver. Order 1
Designation F181

Global Coordinates

Latitude	36°20'45.69"N
Longitude	88° 23' 01.16"W
Ellipsoidal Height	144.218M

Receiver:
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark: CONCRETE MON
Mark Stamping: F181 1949

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time: 8:06 Stop Time: 8:09
PDOP Max: 1.3
Start Time: 8:18 Stop Time: 8:21
PDOP Max: 1.4

Weather Conditions: 65° Sunny

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/24/17
Station Name	F181	File Name	F-181-83460550.T02

Methodology

RTK Base		Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (GCP)	
Rapid Static	X	LiDAR QC Point (QCP)	
		Control Station	X

Agency: USCGS
PID: GD0190
Hor. Order: 0
Ver. Order: 1
Designation: F181

Global Coordinates

Latitude	36° 20' 45.69" N
Longitude	88° 23' 01.16" W
Ellipsoidal Height	144.218M

Receiver:

R10	
R8	X
Other, specify	

Type of Mark	CONCRETE MON
Mark Stamping	F181 1949

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time:	8:30	Stop Time:	18:06
PDOP Max:			
Start Time:		Stop Time:	
PDOP Max:			

Weather Conditions: 65° Sunny

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/25/17
Station Name	F 181	File Name	TENN-056-BSM.J05

Methodology

RTK Base	X	Photo Control Point (PCP)	
RTK VRS		LiDAR Control Point (GCP)	
Rapid Static		LiDAR QC Point (QCP)	
		Control Station	X

Agency

PID	GD0190
Hor. Order	0
Ver. Order	1
Designation	F181

Global Coordinates

Latitude	36°20'45.69"N
Longitude	88°23'01.16"W
Ellipsoidal Height	144.218M

Type of Mark	CONCRETE MON
Mark Stamping	F 181 1949

Receiver :

R10	
R8	X
Other, specify	

Antenna Height:	6.562	USFT	
	2.000	METERS	
Start Time :	11:26	Stop Time :	11:29
PDOP Max:	1.7		
Start Time :	11:30	Stop Time :	11:33
PDOP Max:	1.7		
Weather Conditions	40°SUNNY		

LOCATION PHOTO

NORTH

SEE INITIAL SHEET FOR PHOTOS OF THIS POINT

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/26/17
Station Name	GPS 31	File Name	GPS-31-83460570.T02

Methodology: RTK Base [ ] RTK VRS [ ] Rapid Static [X]

Photo Control Point (PCP) [ ]
LiDAR Control Point (GCP) [ ]
LiDAR QC Point (QCP) [ ]
Control Station [X] Agency NGS
PID FE2743
Hor. Order O
Ver. Order HEIGHT MOD
Designation GPS 31

Global Coordinates
Latitude 35°56'20.28"N
Longitude 88°34'22.61"W
Ellipsoidal Height 131.740 M

Receiver :
R10 [ ]
R8 [X]
Other, specify [ ]

Type of Mark DEEP ROD
Mark Stamping GPS 31 1987

Antenna Height: 6.562 USFT / 2.000 METERS

Start Time : 8:14 Stop Time : 16:25
PDOP Max:
Start Time : Stop Time :
PDOP Max:

Weather Conditions 35° Sunny

LOCATION PHOTO

NORTH

GPS STATION RECOVERY - GPS LOG SHEET

Project Name	Tennessee LiDAR 2017	Operator Name	Brandon Murphy
Project Number	77390	Date of Survey	02/27/17
Station Name	PARSPORT	File Name	PARSPORT-83460580.T02

Methodology

RTK Base	
RTK VRS	
Rapid Static	X

Photo Control Point (PCP)	
LiDAR Control Point (GCP)	
LiDAR QC Point (QCP)	
Control Station	X
Agency	—
PID	FE2788
Hor. Order	0
Ver. Order	—
Designation	

Global Coordinates

Latitude	35°38' 21.54"N
Longitude	88° 07' 43.08"W
Ellipsoidal Height	127.928M

Type of Mark	DEEP ROD
Mark Stamping	PARSPORT 1987

Receiver :

R10	
R8	X
Other, specify	

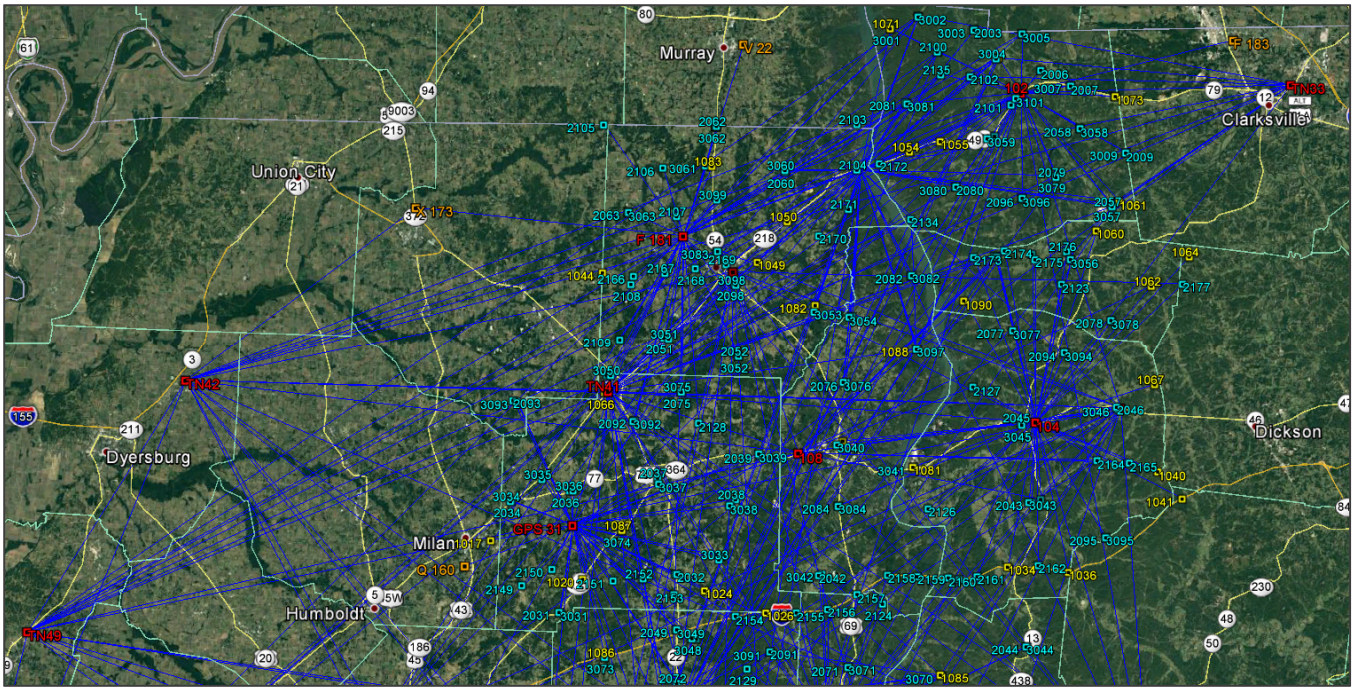
Antenna Height:	6.562	USFT
	2.000	METERS
Start Time :	8:04	Stop Time : 18:08
PDOP Max:		
Start Time :		Stop Time :
PDOP Max:		
Weather Conditions	45° OVERCAST	

LOCATION PHOTO

NORTH

Section 5: GPS Control Diagram

This section contains a graphical representation of the control stations used for the USGS TN West Central LiDAR 2017 B17 Project. The diagrams on the following pages depict the control stations used in the NAD83 (2011) adjustment.



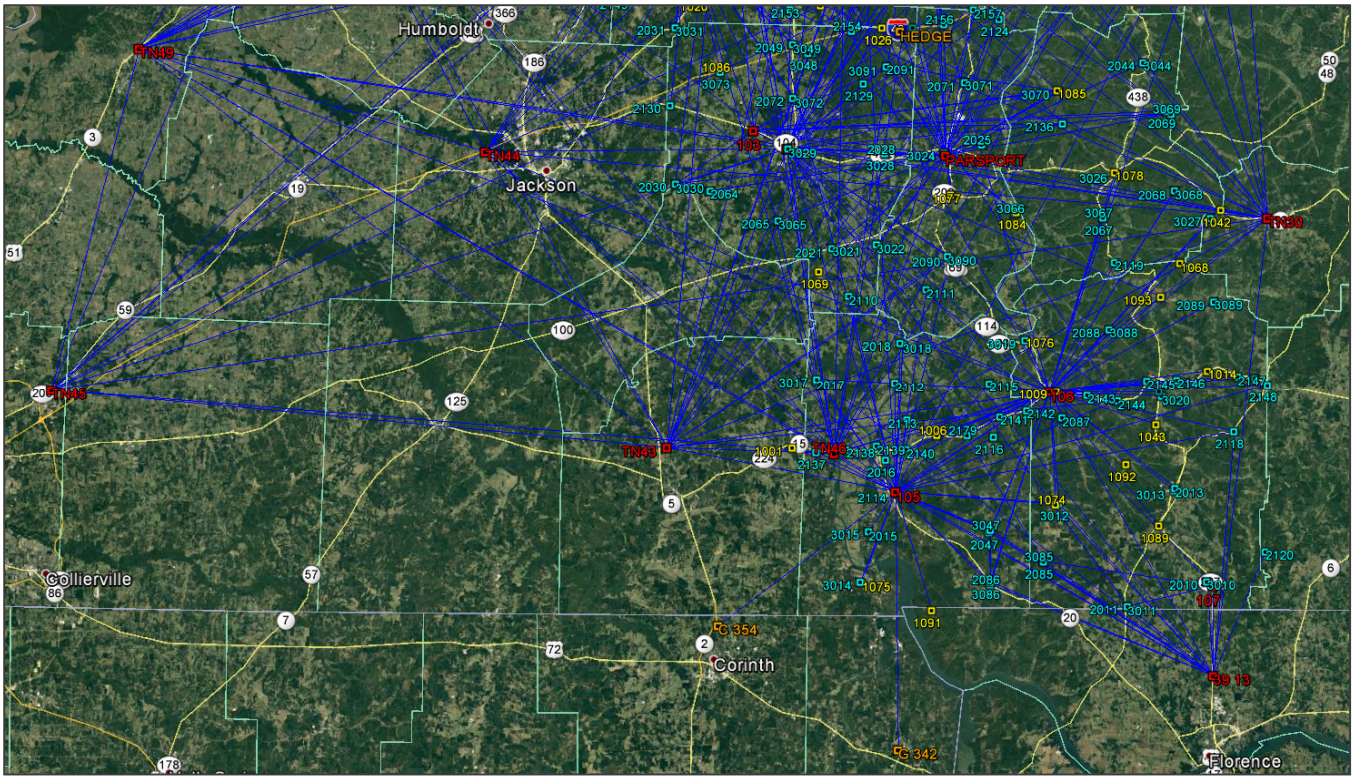
USGS TN WEST CENTRAL LIDAR 2017 B17
TASK ORDER NUMBER: G17PD00241
NORTHERN HALF

Horizontal Datum: NAD 83 (2011)
Vertical Datum: NAVD 88
Units: US Survey Feet
UTM Zone: Tennessee FIPS Zone 4100
Geoid Model: Geoid 12B
Coordinate System: Grid
Date: February 2018

N

- Base Station and/or Geodetic Control
- Geodetic Checks
- LiDAR Control Stations
- LiDAR Quality Control Stations

NOT TO SCALE



USGS TN WEST CENTRAL LIDAR 2017 B17
TASK ORDER NUMBER: G17PD00241
SOUTHERN HALF

Horizontal Datum: NAD 83 (2011)
Vertical Datum: NAVD 88
Units: US Survey Feet
UTM Zone: Tennessee FIPS Zone 4100
Geoid Model: Geoid 12B
Coordinate System: Grid
Date: February 2018

N

- Base Station and/or Geodetic Control
- Geodetic Checks
- LiDAR Control Stations
- LiDAR Quality Control Stations

NOT TO SCALE