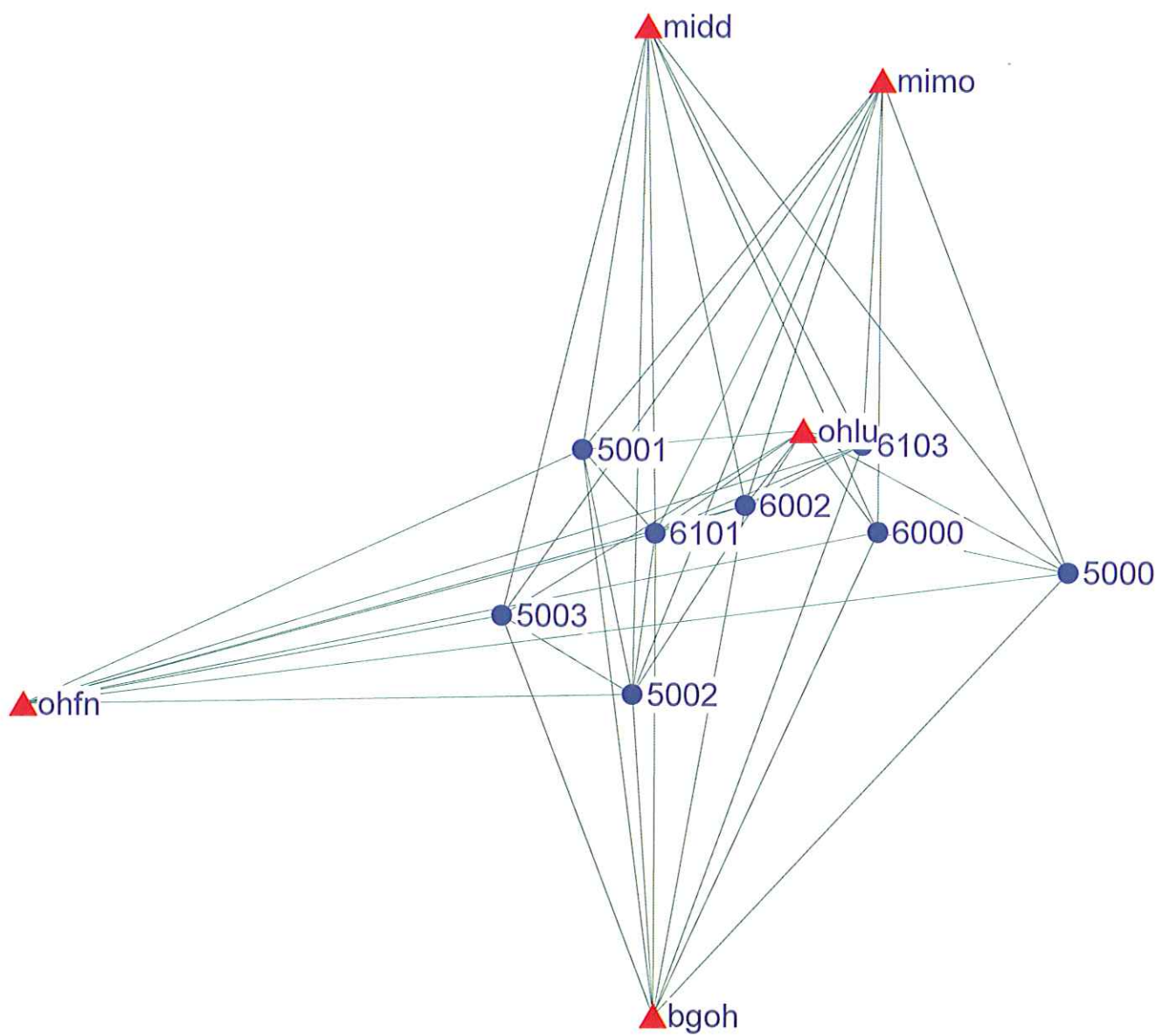




Adjusted
COLUMBUS 3D Geodetic Network Adjustment Software

COLUMBUS: Full - Ver 3.6.2.23
Report File: C:\DDTI\Geodetic Networks\LucasOH\Reports\Adjusted
Project: C:\DDTI\Geodetic Networks\LucasOH\Control Network\LucasOH
DATE: 10/04/2011 TIME: 10:11:55

NAD 83 Major = 6378137.0000 1/f = 298.25722210
Linear Units: Meters
Angular Units: Degrees

Hgt Update : Ortho Hgt Update (fix ghgt, float ellip hgt)
Settings : Geoid Hgt Update (float ortho, fix ellip hgt)
: Ellip Hgt Update (float ortho, fix geoid hgt)

Adjusted Coordinates

Station				Covariance Matrix		
5000						
Latitude	N	41-38-19.72558	0.000011604			
Longitude	W	83-19-09.76119	-0.000000046	0.000011358		
Ellip Hgt		141.61646	-0.000000070	0.000000005	0.000012209	
5001						
Latitude	N	41-42-34.30976	0.000003022			
Longitude	W	83-41-56.13000	-0.000000010	0.000003004		
Ellip Hgt		164.71304	-0.000000012	-0.000000014	0.000003209	
5002						
Latitude	N	41-34-01.07690	0.000002697			
Longitude	W	83-39-33.71839	-0.000000006	0.000002682		
Ellip Hgt		158.67529	-0.000000008	0.000000001	0.000002767	
5003						
Latitude	N	41-36-45.14810	0.000033793			
Longitude	W	83-45-42.12342	-0.000001008	0.000030452		
Ellip Hgt		161.62952	0.000000470	-0.000000635	0.000042887	
6000						
Latitude	N	41-39-43.94605	0.000009593			
Longitude	W	83-28-05.02477	-0.000000028	0.000009506		
Ellip Hgt		144.24861	-0.000000027	-0.000000009	0.000009871	
6001						
Latitude	N	41-39-39.95582	0.000015173			
Longitude	W	83-38-30.10692	-0.000000028	0.000015091		
Ellip Hgt		155.61193	-0.000000055	0.000000024	0.000016062	
6002						
Latitude	N	41-40-39.19078	0.000005868			
Longitude	W	83-34-17.44433	0.000000014	0.000005787		
Ellip Hgt		148.65507	0.000000015	-0.000000023	0.000006063	
6003						
Latitude	N	41-42-46.38960	0.000005499			
Longitude	W	83-28-47.84386	-0.000000009	0.000005455		
Ellip Hgt		142.02207	-0.000000025	-0.000000010	0.000005666	
6101						
Latitude	N	41-39-39.93958	0.000001423			
Longitude	W	83-38-30.09666	-0.000000000	0.000001417		

Ellip Hgt		155.66891	Adjusted -0.000000001	0.000000000	0.000001449
6103					
Latitude	N	41-42-46.37098	0.000023218		
Longitude	W	83-28-47.85807	-0.000000014	0.000023146	
Ellip Hgt		142.01112	-0.000000017	-0.000000036	0.000023603
bgoh					
F Latitude	N	41-22-48.59529	0.000000000		
F Longitude	W	83-38-33.45713	-0.000000000	0.000000000	
F Ellip Hgt		211.86900	-0.000000000	-0.000000000	0.000000000
midd					
F Latitude	N	41-57-20.98753	0.000000000		
F Longitude	W	83-38-55.65187	-0.000000000	0.000000000	
F Ellip Hgt		171.83000	-0.000000000	-0.000000000	0.000000000
mimo					
F Latitude	N	41-55-29.54928	0.000000000		
F Longitude	W	83-27-53.43668	-0.000000000	0.000000000	
F Ellip Hgt		158.72200	-0.000000000	-0.000000000	0.000000000
ohfn					
F Latitude	N	41-33-29.79049	0.000000000		
F Longitude	W	84-08-05.51780	-0.000000000	0.000000000	
F Ellip Hgt		205.23100	-0.000000000	-0.000000000	0.000000000
ohlu					
F Latitude	N	41-43-16.40595	0.000000000		
F Longitude	W	83-31-34.58748	0.000000000	0.000000000	
F Ellip Hgt		151.43700	0.000000000	0.000000000	0.000000000

F - Fixed Component

Ellipse COLUMBUS 3D Geodetic Network Adjustment Software

COLUMBUS: Full - Ver 3.6.2.23
 Report File: C:\DDTI\Geodetic Networks\LucasOH\Reports\Ellipse
 Project: C:\DDTI\Geodetic Networks\LucasOH\Control Network\LucasOH
 DATE: 10/04/2011 TIME: 10:12:36

NAD 83 Major = 6378137.0000 1/f = 298.25722210
 Linear Units: Meters
 Angular Units: Degrees

Station 2D Error Ellipses

Confidence Level 0.950
 Expansion 1D Chi Square 1.959
 Expansion 2D Chi Square 2.448 (1st row)
 Expansion 2D 'F' 2.450 (2nd row)

AT	Semi-Major	Semi-Minor	Azimuth	Height
5000	0.0083	0.0082	169.7	0.0068
5000	0.0083	0.0083	169.7	0.0068
5001	0.0043	0.0042	156.3	0.0035
5001	0.0043	0.0042	156.3	0.0035
5002	0.0040	0.0040	162.4	0.0033
5002	0.0040	0.0040	162.4	0.0033
5003	0.0143	0.0134	164.4	0.0128
5003	0.0143	0.0135	164.4	0.0128
6000	0.0076	0.0075	163.5	0.0062
6000	0.0076	0.0076	163.5	0.0062
6001	0.0095	0.0095	162.5	0.0079
6001	0.0095	0.0095	162.5	0.0079
6002	0.0059	0.0059	9.6	0.0048
6002	0.0059	0.0059	9.6	0.0048
6003	0.0057	0.0057	168.7	0.0047
6003	0.0057	0.0057	168.7	0.0047
6101	0.0029	0.0029	179.0	0.0024
6101	0.0029	0.0029	179.0	0.0024
6103	0.0118	0.0118	169.0	0.0095
6103	0.0118	0.0118	169.0	0.0095
bgoh	0.0000	0.0000	0.0	0.0000
bgoh	0.0000	0.0000	0.0	0.0000
midd	0.0000	0.0000	0.0	0.0000
midd	0.0000	0.0000	0.0	0.0000
mimo	0.0000	0.0000	0.0	0.0000
mimo	0.0000	0.0000	0.0	0.0000
ohfn	0.0000	0.0000	0.0	0.0000
ohfn	0.0000	0.0000	0.0	0.0000

ohlu	0.0000	0.0000	Ellipse	0.0	0.0000
ohlu	0.0000	0.0000		0.0	0.0000

Geoid COLUMBUS 3D Geodetic Network Adjustment Software

COLUMBUS: Full - Ver 3.6.2.23
Report File: C:\DDTI\Geodetic Networks\LucasOH\Reports\Geoid
Project: C:\DDTI\Geodetic Networks\LucasOH\Control Network\LucasOH
DATE: 10/04/2011 TIME: 10:16:55

NAD 83 Major = 6378137.0000 1/f = 298.25722210
Linear Units: Meters
Angular Units: Degrees

Hgt Update : Ortho Hgt Update (fix ghgt, float ellip hgt)
Settings : Geoid Hgt Update (float ortho, fix ellip hgt)
: Ellip Hgt Update (float ortho, fix geoid hgt)

Adjusted Geodetic Geoid Modeling

Geoid Modeling File:
c:\program files\best-fit computing\columbus 3.6\geoid03\conterminous
us\litttleendian\g2003u07.bin

Local Geoid Modeling Surface Correction = 0.0000

Stations Within The Grid

Station Latitude	Longitude	Ortho Hgt	Geoid Hgt	Ellip Hgt
5000				
N 41-38-19.72558	W 83-19-09.76119	177.066	-35.450	141.616
5001				
N 41-42-34.30976	W 83-41-56.13000	199.953	-35.240	164.713
5002				
N 41-34-01.07690	W 83-39-33.71839	193.915	-35.240	158.675
5003				
N 41-36-45.14810	W 83-45-42.12342	196.871	-35.242	161.630
6000				
N 41-39-43.94605	W 83-28-05.02477	179.589	-35.340	144.249
6001				
N 41-39-39.95582	W 83-38-30.10692	190.868	-35.256	155.612
6002				
N 41-40-39.19078	W 83-34-17.44433	183.938	-35.283	148.655
6003				
N 41-42-46.38960	W 83-28-47.84386	177.359	-35.337	142.022
6101				
N 41-39-39.93958	W 83-38-30.09666	190.925	-35.256	155.669
6103				
N 41-42-46.37098	W 83-28-47.85807	177.348	-35.337	142.011
bgoh				
N 41-22-48.59529	W 83-38-33.45713	247.137	-35.268	211.869
midd				
N 41-57-20.98753	W 83-38-55.65187	206.829	-34.999	171.830
mimo				
N 41-55-29.54928	W 83-27-53.43668	193.878	-35.156	158.722
ohfn				
N 41-33-29.79049	W 84-08-05.51780	240.174	-34.943	205.231
ohlu				
N 41-43-16.40595	W 83-31-34.58748	186.745	-35.308	151.437

StatePlane
COLUMBUS 3D Geodetic Network Adjustment Software

COLUMBUS: Full - Ver 3.6.2.23
Report File: C:\DDTI\Geodetic Networks\LucasOH\Reports\StatePlane
Project: C:\DDTI\Geodetic Networks\LucasOH\Control Network\LucasOH
DATE: 10/04/2011 TIME: 10:13:54

NAD 83 Major = 6378137.0000 1/f = 298.25722210
Linear Units: Meters
Angular Units: Degrees

Hgt Update : Ortho Hgt Update (fix ghgt, float ellip hgt)
Settings : Geoid Hgt Update (float ortho, fix ellip hgt)
: Ellip Hgt Update (float ortho, fix geoid hgt)

ADJUSTED GEODETTIC TO STATE PLANE TRANSFORMATION

OHIO,N,3401,L2

Standard Parallel 1 N 40-26-00.00000
Standard Parallel 2 N 41-42-00.00000
Central Meridian W 82-30-00.00000
Central Parallel N 39-40-00.00000
False Easting 600000.0000
False Northing 0.0000

Combined Scale Factor Information:
Average Ground Height Used = 0.00000
Average Earth Radius Used = 6375623
Grid Dist = Ground Dist * Scale
Ground Dist = Grid Dist / Scale

Station	Geodetic	To	State Plane	Map Ang / Scale
5000	N 41-38-19.72558 W 83-19-09.76119		219325.0957 531733.1318	0-32-17.847 0.999988775
5001	N 41-42-34.30976 W 83-41-56.13000		227544.6225 500220.6517	0-47-15.483 1.000001852
5002	N 41-34-01.07690 W 83-39-33.71839		211667.5588 503302.2167	0-45-41.926 0.999977058
5003	N 41-36-45.14810 W 83-45-42.12342		216847.2390 494840.7090	0-49-43.949 0.999984307
6000	N 41-39-43.94605 W 83-28-05.02477		222050.2060 519374.7377	0-38-09.488 0.999992931
6001	N 41-39-39.95582 W 83-38-30.10692		222102.0210 504912.7549	0-45-00.136 0.999992731
6002	N 41-40-39.19078 W 83-34-17.44433		223855.2168 510780.2473	0-42-14.149 0.999995749
6003	N 41-42-46.38960 W 83-28-47.84386		227689.6501 518447.4130	0-38-37.618 1.000002510
6101	N 41-39-39.93958 W 83-38-30.09666		222101.5168 504912.9855	0-45-00.129 0.999992730

StatePlane

6103	N	41-42-46.37098	227689.0792	0-38-37.627
	W	83-28-47.85807	518447.0780	1.000002509
bgoh	N	41-22-48.59529	190905.0160	0-45-02.337
	W	83-38-33.45713	504426.4942	0.999953978
midd	N	41-57-20.98753	254843.3693	0-45-16.918
	W	83-38-55.65187	504752.9984	1.000059377
mimo	N	41-55-29.54928	251220.3375	0-38-01.875
	W	83-27-53.43668	519965.5652	1.000051123
ohfn	N	41-33-29.79049	211337.8287	-1-04-26.493
	W	84-08-05.51780	463628.6846	0.999975748
ohlu	N	41-43-16.40595	228659.9926	0-40-27.160
	W	83-31-34.58748	514603.8991	1.000004162