



STATION COORDINATE 95% ERROR ELLIPSES - METERS				
STATION	SEMI-MAJOR AXIS	SEMI-MINOR AXIS	MAJOR AXIS AZIMUTH	ELEVATION
N-24	0.009	0.004	157° 42'	0.002

STATION COORDINATE 95% ERROR ELLIPSES - U.S. SURVEY FEET				
STATION	SEMI-MAJOR AXIS	SEMI-MINOR AXIS	MAJOR AXIS AZIMUTH	ELEVATION
N-24	0.028	0.015	157° 42'	0.006

**LEGEND**

- CITY OF WOODLAND GEODETIC CONTROL NETWORK MARK PER 2002 M 88 (UNDISTURBED AND CONSIDERED STABLE).
- ⊙ CITY OF WOODLAND GEODETIC CONTROL NETWORK MARK N-24, A STANDARD CITY STREET MONUMENT LOCATED AT THE INTERSECTION OF MATMOR ROAD AND SPORTS PARK DRIVE, POSITIONED PER THIS SURVEY.

ADJUSTED STATION POSITION - CCS83 ZONE 2 (EPOCH 1999.51) METERS			
STATION	NORTHING	EASTING	ELEVATION
N-24	609797.510	2021184.163	17.167

ADJUSTED STATION POSITIONS - CCS83 ZONE 2 (EPOCH 1999.51) U.S. SURVEY FEET			
STATION	NORTHING	EASTING	ELEVATION
N-24	2000643.996	6631168.376	56.323

ADJUSTED STATION POSITIONS - NAD83 (EPOCH 1999.51) GEOGRAPHIC (ELLIPSOID HEIGHT IN METERS AND U.S. SURVEY FEET)				
STATION	LATITUDE	LONGITUDE	EH (M)	EH (FT)
N-24	38° 39' 19.896933"	121° 45' 23.814380"	-13.744	-45.092

**NOTES**

- THIS MAP PRESENTS THE SPATIAL RELATIONSHIPS BETWEEN CERTAIN GEODETIC SURVEY CONTROL MARKS IN THE CITY OF WOODLAND. IT DOES NOT PERTAIN TO REAL PROPERTY BOUNDARY LINES OR CORNERS.
- THE PURPOSE OF THIS SURVEY IS TO ESTABLISH CCS83 EPOCH 1999.51 POSITIONAL VALUES FOR NEW CITY OF WOODLAND GEODETIC CONTROL STATION N-24.
- THE POSITION SHOWN FOR STATION N-24 MEETS FEDERAL GEODETIC DATA COMMITTEE (FGDC) 1998 DRAFT GEOSPATIAL POSITIONING STANDARDS FOR LOCAL NETWORK ACCURACY (CITY OF WOODLAND GEODETIC CONTROL NETWORK, EPOCH 1999.51) AT THE 1 CENTIMETER LEVEL FOR HORIZONTAL POSITION AND ORTHOMETRIC HEIGHT.
- OBSERVATION EQUIPMENT, GPS: TRIMBLE 4000SSI RECEIVERS WITH GROUNDPLANE-EQUIPPED TRIMBLE MICROCENTERED L1/L2 GEODETIC ANTENNAS MOUNTED ON 2-METER FIXED-HEIGHT TRIPODS WERE USED FOR ALL GPS OBSERVATIONS.
- OBSERVATION EQUIPMENT, LEVELING: A LEICA DNA03 DIGITAL LEVEL AND GPCL2 BARCODE INVAR ROD WERE USED FOR ALL LEVELING OBSERVATIONS.
- OBSERVATION PROCEDURES, GPS: SIMULTANEOUS GPS OBSERVATIONS WERE MADE AT STATIONS AS INDICATED BY NETWORK CONNECTION LINES SHOWN ABOVE LEFT. 30-MINUTE NOMINAL RAPID-STATIC SESSIONS WERE OBSERVED AT LEAST TWICE ON EACH LINE, WITH SESSIONS ON AT LEAST TWO DIFFERENT DAYS.
- OBSERVATION PROCEDURES, LEVELING: A LEVEL LINE WAS DOUBLE-RUN BETWEEN STATIONS L-24 AND N-24. SECOND-ORDER CLASS II PROCEDURES WERE OBSERVED.
- TRIMBLE GEOMATICS OFFICE V1.63 WAS USED TO PROCESS ALL GPS BASELINES, USING INTERNATIONAL GNSS SERVICE (IGS) PRECISE EPHEMERIDES. A CURRENT-EPOCH ITRF2005 POSITION WAS OBTAINED FOR THE CONTINUOUSLY OPERATING REFERENCE STATION (CORS) P271 (NOT SHOWN), LOCATED AT THE CITY OF WOODLAND WASTEWATER TREATMENT PLANT AND OPERATED BY THE PLATE BOUNDARY OBSERVATORY (PBO). THIS POSITION WAS USED AS THE SEED VALUE FOR BASELINE PROCESSING IN ORDER TO MAINTAIN CONSISTENCY WITH THE PRECISE EPHEMERIDES.
- STAR\*NET PRO V6.0 WAS USED FOR THE SIMULTANEOUS ADJUSTMENT OF GPS AND LEVEL OBSERVATIONS. AN INITIAL MINIMALLY CONSTRAINED ADJUSTMENT WAS RUN WITHOUT THE LEVEL DATA. THE POSITION OF P271, WHICH WAS CONVERTED TO NAD83 EPOCH 1999.51 VIA THE HORIZONTAL TIME DEPENDENT POSITIONING (HTDP) TOOL DEVELOPED BY THE NATIONAL GEODETIC SURVEY (NGS), WAS HELD FIXED. THIS ADJUSTMENT PRODUCED A STANDARD ERROR OF UNIT WEIGHT OF 1.184. DIFFERENCES BETWEEN THE PUBLISHED VALUES OF THE CITY OF WOODLAND STATIONS AND THE POSITIONS PRODUCED BY THE INITIAL MINIMALLY CONSTRAINED ADJUSTMENT WERE CONSISTENT AMONG ALL STATIONS. THE AVERAGE OFFSETS WERE 0.000 METER NORTH, -0.017 METER EAST, AND 0.001 METER ELEVATION.

**SURVEYOR'S STATEMENT**

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT AT THE REQUEST OF THE CITY OF WOODLAND IN APRIL 2011.

*James H. Frame III*  
 JAMES H. FRAME III L.S. 5435



**COUNTY SURVEYOR'S STATEMENT**

THIS MAP HAS BEEN EXAMINED IN ACCORDANCE WITH SECTION 8766 OF THE PROFESSIONAL LAND SURVEYORS ACT THIS 23RD DAY OF OCTOBER, 2012.

*Kenneth A. Misner*  
 COUNTY SURVEYOR



**RECORDER'S STATEMENT**

FILED THIS 24th DAY OF OCTOBER, 2012, AT 8:15 A.M. IN BOOK 2012 OF MAPS AT PAGE 60, AT THE REQUEST OF FRAME SURVEYING & MAPPING.

*Freddie Oakley*  
 FREDDIE OAKLEY  
 COUNTY RECORDER



*Victoria Barnes*  
 DEPUTY

**NOTES (CONTINUED)**

- THE ADJUSTMENT WAS RERUN WITH THE L-24 PUBLISHED VALUES AS THE ONLY CONSTRAINT AND INCLUDING THE LEVEL DATA. THIS ADJUSTMENT PRODUCED A STANDARD ERROR OF UNIT WEIGHT OF 1.350. RESIDUALS WITH RESPECT TO PUBLISHED VALUES ARE AS FOLLOWS (VALUES ARE IN METERS):

STATION	NORTH	EAST	ELEVATION
L-24	0.000	0.000	0.000
N-22	-0.001	0.001	0.012
P-26	-0.002	-0.003	-0.024

- THE RESIDUALS SHOWN ABOVE ARE WITHIN THE NOISE LEVEL OF THE TECHNOLOGY. THE DECISION WAS MADE TO RETAIN THE VALUES OBTAINED FROM THE ABOVE ADJUSTMENT FOR THE FINAL ADJUSTED POSITION OF N-24.

CONVERGENCE ANGLES AND GRID FACTORS				
STATION	CONVERGENCE	SCALE FACTOR	ELEV. FACTOR	COMB. FACTOR
N-24	0° 09' 12.41"	0.99994255	1.00000216	0.99994471

