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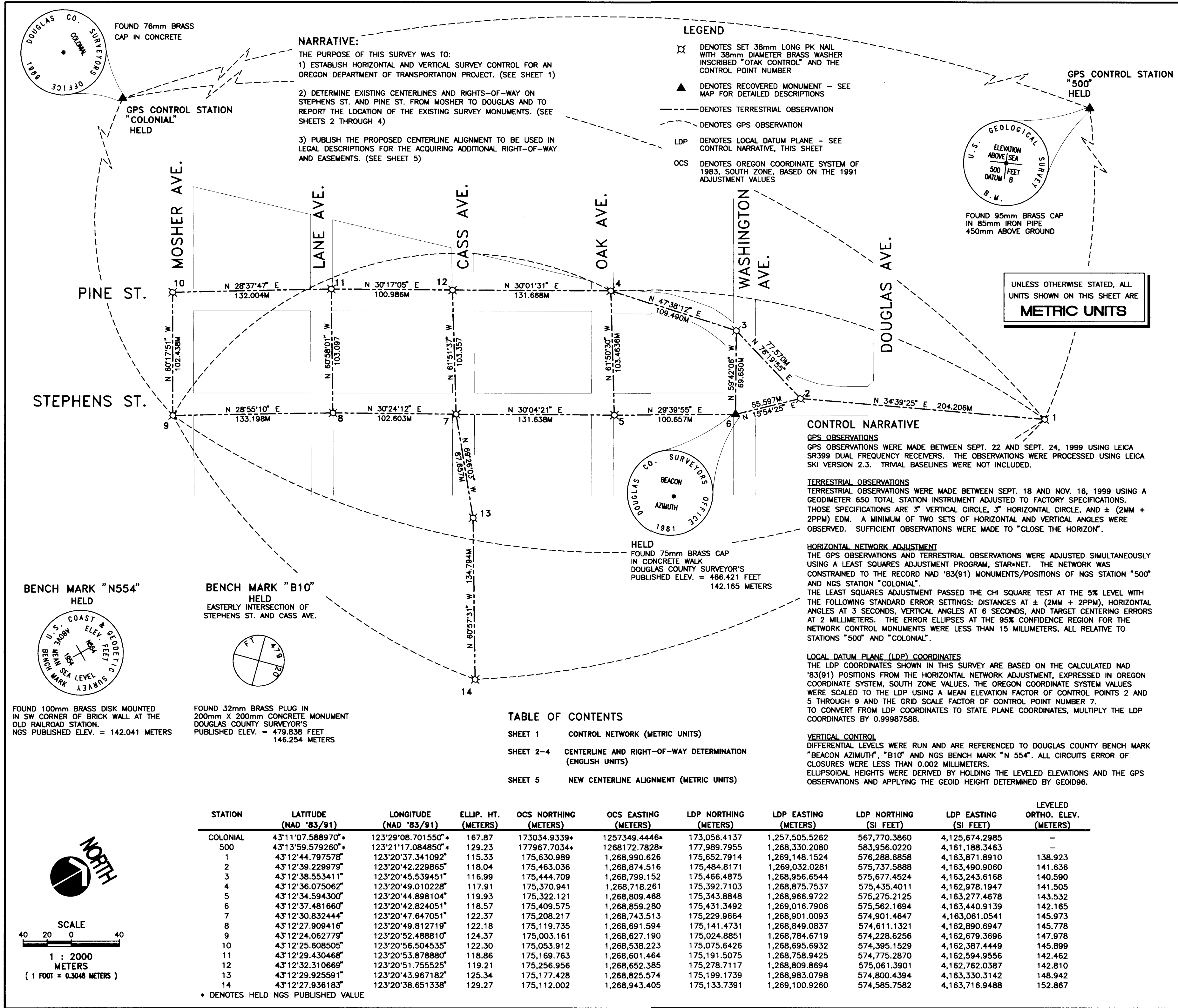
REGISTERED PROFESSIONAL LAND SURVEYOR
Robert C. Lennox
 OREGON JULY 14, 1996
 ROBERT C. LENNOX 2886
 RENEWAL: 12-31-00

Preconstruction and Centerline Survey
 FOR Oregon Department of Transportation
Control Diagram
 LOCATED IN THE NW 1/4 SECTION 19, T. 27 S., R. 5 W., W. M.
 AND
 LOCATED IN THE NE 1/4 SECTION 24, T. 27 S., R. 6 W., W. M.
 CITY OF ROSEBURG, DOUGLAS COUNTY, OREGON

FILED
 Date: 2/17/2000 By: _____
 This survey consists of: 5 Pgs.
 Map: M134-24A
 Narrative: _____
 Corner Rpt: _____

DOUGLAS COUNTY SURVEYOR

 17355 S.W. BOONES FERRY ROAD
 LAKE OSWEGO, OREGON 97035
 (503)635-3618 FAX (503)635-5395

1 OF 5
 Sheet No.
9054-003
 Project No.



NARRATIVE:
 THE PURPOSE OF THIS SURVEY WAS TO:
 1) ESTABLISH HORIZONTAL AND VERTICAL SURVEY CONTROL FOR AN OREGON DEPARTMENT OF TRANSPORTATION PROJECT. (SEE SHEET 1)
 2) DETERMINE EXISTING CENTERLINES AND RIGHTS-OF-WAY ON STEPHENS ST. AND PINE ST. FROM MOSHER TO DOUGLAS AND TO REPORT THE LOCATION OF THE EXISTING SURVEY MONUMENTS. (SEE SHEETS 2 THROUGH 4)
 3) PUBLISH THE PROPOSED CENTERLINE ALIGNMENT TO BE USED IN LEGAL DESCRIPTIONS FOR THE ACQUIRING ADDITIONAL RIGHT-OF-WAY AND EASEMENTS. (SEE SHEET 5)

LEGEND
 ✕ DENOTES SET 38mm LONG PK NAIL WITH 38mm DIAMETER BRASS WASHER INSCRIBED "OTAK CONTROL" AND THE CONTROL POINT NUMBER
 ▲ DENOTES RECOVERED MONUMENT - SEE MAP FOR DETAILED DESCRIPTIONS
 --- DENOTES TERRESTRIAL OBSERVATION
 - - - DENOTES GPS OBSERVATION
 LDP DENOTES LOCAL DATUM PLANE - SEE CONTROL NARRATIVE, THIS SHEET
 OCS DENOTES OREGON COORDINATE SYSTEM OF 1983, SOUTH ZONE, BASED ON THE 1991 ADJUSTMENT VALUES

UNLESS OTHERWISE STATED, ALL UNITS SHOWN ON THIS SHEET ARE
METRIC UNITS

CONTROL NARRATIVE
GPS OBSERVATIONS
 GPS OBSERVATIONS WERE MADE BETWEEN SEPT. 22 AND SEPT. 24, 1999 USING LEICA SR399 DUAL FREQUENCY RECEIVERS. THE OBSERVATIONS WERE PROCESSED USING LEICA SKI VERSION 2.3. TRIVIAL BASELINES WERE NOT INCLUDED.

TERRESTRIAL OBSERVATIONS
 TERRESTRIAL OBSERVATIONS WERE MADE BETWEEN SEPT. 18 AND NOV. 16, 1999 USING A GEODIMETER 650 TOTAL STATION INSTRUMENT ADJUSTED TO FACTORY SPECIFICATIONS. THOSE SPECIFICATIONS ARE 3" VERTICAL CIRCLE, 3" HORIZONTAL CIRCLE, AND ± (2MM + 2PPM) EDM. A MINIMUM OF TWO SETS OF HORIZONTAL AND VERTICAL ANGLES WERE OBSERVED. SUFFICIENT OBSERVATIONS WERE MADE TO "CLOSE THE HORIZON".

HORIZONTAL NETWORK ADJUSTMENT
 THE GPS OBSERVATIONS AND TERRESTRIAL OBSERVATIONS WERE ADJUSTED SIMULTANEOUSLY USING A LEAST SQUARES ADJUSTMENT PROGRAM, STAR*NET. THE NETWORK WAS CONSTRAINED TO THE RECORD NAD '83(91) MONUMENTS/POSITIONS OF NGS STATION "500" AND NGS STATION "COLONIAL".
 THE LEAST SQUARES ADJUSTMENT PASSED THE CHI SQUARE TEST AT THE 5% LEVEL WITH THE FOLLOWING STANDARD ERROR SETTINGS: DISTANCES AT ± (2MM + 2PPM), HORIZONTAL ANGLES AT 3 SECONDS, VERTICAL ANGLES AT 6 SECONDS, AND TARGET CENTERING ERRORS AT 2 MILLIMETERS. THE ERROR ELLIPSES AT THE 95% CONFIDENCE REGION FOR THE NETWORK CONTROL MONUMENTS WERE LESS THAN 15 MILLIMETERS, ALL RELATIVE TO STATIONS "500" AND "COLONIAL".

LOCAL DATUM PLANE (LDP) COORDINATES
 THE LDP COORDINATES SHOWN IN THIS SURVEY ARE BASED ON THE CALCULATED NAD '83(91) POSITIONS FROM THE HORIZONTAL NETWORK ADJUSTMENT, EXPRESSED IN OREGON COORDINATE SYSTEM, SOUTH ZONE VALUES. THE OREGON COORDINATE SYSTEM VALUES WERE SCALED TO THE LDP USING A MEAN ELEVATION FACTOR OF CONTROL POINTS 2 AND 5 THROUGH 9 AND THE GRID SCALE FACTOR OF CONTROL POINT NUMBER 7.
 TO CONVERT FROM LDP COORDINATES TO STATE PLANE COORDINATES, MULTIPLY THE LDP COORDINATES BY 0.99987588.

VERTICAL CONTROL
 DIFFERENTIAL LEVELS WERE RUN AND ARE REFERENCED TO DOUGLAS COUNTY BENCH MARK "BEACON AZIMUTH", "B10" AND NGS BENCH MARK "N 554". ALL CIRCUITS ERROR OF CLOSURES WERE LESS THAN 0.002 MILLIMETERS.
 ELLIPSOIDAL HEIGHTS WERE DERIVED BY HOLDING THE LEVELED ELEVATIONS AND THE GPS OBSERVATIONS AND APPLYING THE GEOID HEIGHT DETERMINED BY GEOID96.

TABLE OF CONTENTS

SHEET 1 CONTROL NETWORK (METRIC UNITS)
 SHEET 2-4 CENTERLINE AND RIGHT-OF-WAY DETERMINATION (ENGLISH UNITS)
 SHEET 5 NEW CENTERLINE ALIGNMENT (METRIC UNITS)

STATION	LATITUDE (NAD '83/91)	LONGITUDE (NAD '83/91)	ELLIP. HT. (METERS)	OCS NORTHING (METERS)	OCS EASTING (METERS)	LDP NORTHING (METERS)	LDP EASTING (METERS)	LDP NORTHING (SI FEET)	LDP EASTING (SI FEET)	LEVELED ORTHO. ELEV. (METERS)
COLONIAL	43°11'07.588970"	123°29'08.701550"	167.87	173034.9339*	1257349.4446*	173,056.4137	1,257,505.5262	567,770.3860	4,125,674.2985	-
500	43°13'59.579260"	123°21'17.084850"	129.23	177967.7034*	1268172.7828*	177,989.7955	1,268,330.2080	583,956.0220	4,161,188.3463	-
1	43°12'44.797578"	123°20'37.341092"	115.33	175,630.989	1,268,990.626	175,652.7914	1,269,148.1524	576,288.6858	4,163,871.8910	138.923
2	43°12'39.229979"	123°20'42.229865"	118.04	175,463.036	1,268,874.516	175,484.8171	1,269,032.0281	575,737.5888	4,163,490.9060	141.636
3	43°12'38.553411"	123°20'45.539451"	116.99	175,444.709	1,268,799.152	175,466.4875	1,268,956.6544	575,677.4524	4,163,243.6168	140.590
4	43°12'36.075062"	123°20'49.010228"	117.91	175,370.941	1,268,718.261	175,392.7103	1,268,875.7537	575,435.4011	4,162,978.1947	141.505
5	43°12'34.594300"	123°20'44.898104"	119.93	175,322.121	1,268,809.468	175,343.8848	1,268,966.9722	575,275.2125	4,163,277.4678	143.532
6	43°12'37.481660"	123°20'42.824051"	118.57	175,409.575	1,268,859.280	175,431.3492	1,269,016.7906	575,562.1694	4,163,440.9139	142.165
7	43°12'30.832444"	123°20'47.647051"	122.37	175,208.217	1,268,743.513	175,229.9664	1,268,901.0093	574,901.4647	4,163,061.0541	145.973
8	43°12'27.909416"	123°20'49.812719"	122.18	175,119.735	1,268,691.594	175,141.4731	1,268,849.0837	574,611.1321	4,162,890.6947	145.778
9	43°12'24.062779"	123°20'52.488810"	124.37	175,003.161	1,268,627.190	175,024.8851	1,268,784.6719	574,228.6256	4,162,679.3696	147.978
10	43°12'25.608505"	123°20'56.504535"	122.30	175,053.912	1,268,538.223	175,075.6426	1,268,695.6932	574,395.1529	4,162,387.4449	145.899
11	43°12'29.430468"	123°20'53.878880"	118.86	175,169.763	1,268,601.464	175,191.5075	1,268,758.9425	574,775.2870	4,162,594.9556	142.462
12	43°12'32.310669"	123°20'51.755525"	119.21	175,256.956	1,268,652.385	175,278.7117	1,268,809.8694	575,061.3901	4,162,762.0387	142.810
13	43°12'29.925591"	123°20'43.967182"	125.34	175,177.428	1,268,825.574	175,199.1739	1,268,983.0798	574,800.4394	4,163,330.3142	148.942
14	43°12'27.936183"	123°20'38.651338"	129.27	175,112.002	1,268,943.405	175,133.7391	1,269,100.9260	574,585.7582	4,163,716.9488	152.867

* DENOTES HELD NGS PUBLISHED VALUE

BENCH MARK "N554" HELD
 FOUND 100mm BRASS DISK MOUNTED IN SW CORNER OF BRICK WALL AT THE OLD RAILROAD STATION. NGS PUBLISHED ELEV. = 142.041 METERS

BENCH MARK "B10" HELD
 EASTERLY INTERSECTION OF STEPHENS ST. AND CASS AVE.
 FOUND 32mm BRASS PLUG IN 200mm X 200mm CONCRETE MONUMENT DOUGLAS COUNTY SURVEYOR'S PUBLISHED ELEV. = 479.838 FEET 146.254 METERS

