

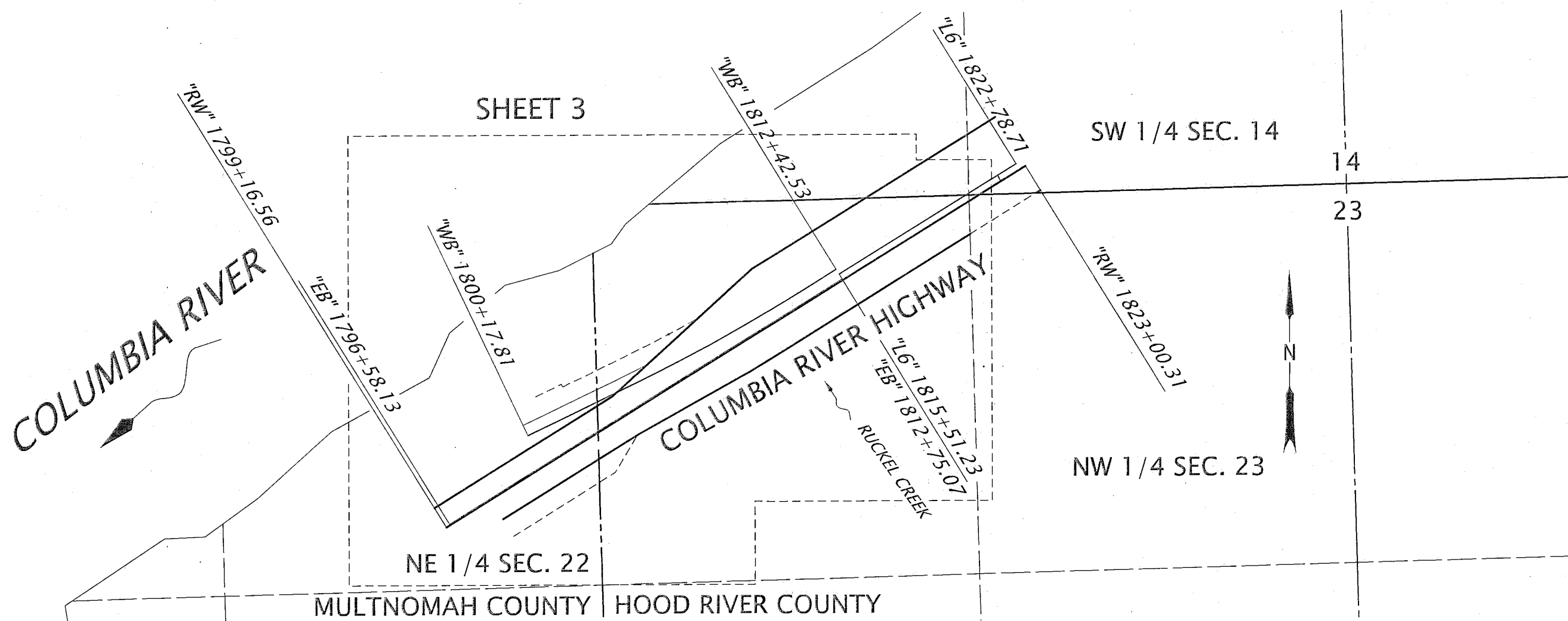
NE 1/4 SECTION 22, NW 1/4 SECTION 23, SW 1/4 SECTION 14,
SE 1/4 SECTION 14, T. 2 N. R. 7 E. W.M.

HOOD RIVER COUNTY
SURVEYOR'S OFFICE

SURVEY NO. 2023010

FILED: 3/22/2023

BY: BR



MONUMENT OBSERVATION NOTES:

A SEARCH FOR SURVEY MONUMENTS WAS MADE WITHIN THE PROJECT LIMITS. HORIZONTAL POSITIONS FOR FOUND MONUMENTS WERE OBTAINED USING EITHER TERRESTRIAL MEASUREMENTS OR REAL TIME KINEMATICS (RTK) GPS MEASUREMENTS. TERRESTRIAL MEASUREMENTS WERE MADE FROM THE HORIZONTAL CONTROL NETWORK WITH FORWARD AND BACK MEASUREMENTS. BLUNDER CHECKS WERE PERFORMED AT THE TIME OF EACH OBSERVATION. RTK POSITIONS WERE OBTAINED WITH CORRECTIONS FROM THE ORGN, AND EACH MONUMENT WAS OBSERVED TWICE, AT LEAST 45 MINUTES APART. THE POSITIONS WERE AVERAGED AND ANY POSITION WITH A HORIZONTAL DIFFERENCE GREATER THAN 0.06' WERE OBSERVED ADDITIONAL TIMES UNTIL DESIRED TOLERANCES WERE ACHIEVED. COPIES OF THE FIELD NOTES ARE ON FILE AT THE ADDRESS BELOW.

FIELD WORK WAS CONDUCTED BETWEEN NOVEMBER 2021 THROUGH FEBRUARY 2022.

REFERENCES:

ODOT DRAWINGS:

5B-8-21 REVISED OCT. 1976
8B-24-11 DEC. 1961

ODOT FILES: 48428

RAILROAD AGREEMENT 240 AND 656

HOOD RIVER COUNTY DEED DOCUMENT NUMBER:
762586, 871514, 861167

WASCO COUNTY DEED DOCUMENT:
BOOK 6, PAGE 139 & 140 RECORDED NOV. 21 1862

HOOD RIVER COUNTY CORNER CARDS:
CC00452

NO COUNTY SURVEYS, PARTITION PLATS, OR SUBDIVISION PLATS FOUND WITHIN PROJECT AREA.

INDEX:

SHEET 1	NARRATIVE, LAYOUT
SHEET 2	PROJECT CONTROL
SHEET 3	PROJECT RECOVERY
SHEET 4	MONUMENT TABLE

ALIGNMENT RECOVERY:

"RW" (I-84):

THE "RW" ALIGNMENT WAS RETRACED USING ODOT DRAWING 5B-8-21 AND 8B-24-11, HELD FOUND MONUMENT 1304 FOR OFFSET, 200' LEFT, AND STATION, 1813+00. NO SET MONUMENTS ARE SHOWN ON 5B-8-21. ROTATED TO FIT MONUMENT 1307 WHICH HAD AN OLD BURNED 4" X 4" WHITE CEDAR POST NEARBY WHICH IS EVIDENCE THAT THE MONUMENT WAS SET BY OREGON STATE HIGHWAY DEPARTMENT.

"L6" (I-84):

THE "L6" ALIGNMENT WAS RETRACED USING ODOT DRAWING 8B-24-11, HELD A LINE BETWEEN FOUND MONUMENT 1305 AND 1306 TO BE PERPENDICULAR TO START OF ALIGNMENT AT 1815+.23 P.O.T. RECORD DISTANCE OF 129.70' BETWEEN MONUMENTS WAS PROPORTIONED TO MATCH THE MEASURED DISTANCE OF 129.74'. ALIGNMENT WAS PROJECTED RECORD DISTANCE TO STATION 1822+78.71 P.O.T.

"WB" (I-84):

THE "WB" ALIGNMENT WAS RETRACED USING ODOT DRAWING 8B-24-11, HELD 1302 FOR POSITION AS A REFERENCE POINT TO ALIGNMENT P.I., HELD 27.18' OFFSET TO 1305. ANGLE BETWEEN 1302 AND FORWARD TANGENT 89°43'36" (RECORD 90°00'00").

"EB" (I-84):

THE "EB" ALIGNMENT WAS RETRACED USING ODOT DRAWING 8B-24-11, HELD 1306 FOR STATION 1812+75.07 AND OFFSET OF 62.52' RIGHT. ROTATED ALIGNMENT TO MATCH 33' OFFSET AT 1301, STATION 1796+58.78 (RECORD 1796+58.13).

RIGHT OF WAY LINES:

RIGHT OF WAY LINES AND PERMANENT EASEMENT LINES WERE RETRACED USING ODOT DRAWING 5B-8-21 AND 8B-24-11, STATION AND OFFSET CALLED FOR IN RAILROAD AGREEMENT 240 AND 656 MATCH ODOT DRAWINGS.

GOVERNMENT LINES:

THE QUARTER CORNER COMMON TO SECTION 12 AND 7, T. 2 N., R. 7 E., W.M., WAS LOCATED FOR A DIFFERENT ODOT PROJECT, AND WAS USED FOR THIS PROJECT. GOVERNMENT LINES WERE PROJECTED OUT TO PROJECT AREA. ALL LINES ARE APPROXIMATE.

NARRATIVE

PURPOSE OF SURVEY:

THE PURPOSE OF THIS SURVEY IS TO ESTABLISH PERMANENT CONTROL, RECOVER AND PERPETUATE THE POSITION OF EXISTING MONUMENTS WHICH MAY BE DISTURBED BY FUTURE CONSTRUCTION, RETRACE EXISTING RIGHT-OF WAY (R/W) BASED ON RECOVERED MONUMENTS AND DEED RECORDS, AND LOCATE CENTERLINES FOR A PROPOSED OREGON DEPARTMENT OF TRANSPORTATION (ODOT) CULVERT REPLACEMENT CONSTRUCTION PROJECT AT THE INTERSECTION OF RUCKEL CREEK AND THE COLUMBIA RIVER HIGHWAY (I-84 AT MILEPOST 42.15). THIS SURVEY MEETS THE REQUIREMENTS OF ORS 209.155.

PROJECT CONTROL:

THE PRIMARY HORIZONTAL CONTROL WAS ESTABLISHED BY GLOBAL POSITIONING SYSTEM (GPS) RAPID STATIC METHOD, HOLDING THE OREGON REAL TIME GPS NETWORK (ORGN) PUBLISHED NAD 1983 (2011) EPOCH 2010.00 POSITION FOR "P429" AND PARTIALLY FIXING STATIONS "P427", "SKC0", AND "VCWA" AT 0.01' OR LESS HORIZONTALLY. THE COORDINATES WERE THEN PROJECTED TO THE OREGON COORDINATE REFERENCES SYSTEM (OCRS) COLUMBIA RIVER WEST ZONE, AS DEFINED IN OAR 734-005-0010. PRIMARY HORIZONTAL CONTROL INCLUDE POINTS "LBJ" AND "JFK".

GPS SESSIONS WERE OBSERVED USING TWO LEICA GS14 GNSS RECEIVERS. THE GS14 HAS A STATED ACCURACY SPECIFICATION OF FIVE MILLIMETERS PLUS 0.5 PARTS PER-MILLION WHEN USED IN STATIC OR RAPID STATIC POST PROCESSING MODE. EACH CONTROL POINT WAS OCCUPIED TWO OR MORE TIMES.

ALL POST PROCESSING, INCLUDING LEAST SQUARES ADJUSTMENT AND CONVERSION TO OCRS, WAS COMPLETED USING LEICA INFINITY AND STARNET VERSION 9.0.3.6298.

POSITIONAL ACCURACY PUBLISHED ARE RELATIVE TO THE FIXED POINTS AND ARE STATED AT A 95% CONFIDENCE LEVEL. SUPPORTING DATA FOR THIS NETWORK IS LOCATED AT THE ADDRESS BELOW.

SECONDARY HORIZONTAL CONTROL WAS ESTABLISHED BY A TERRESTRIAL NETWORK INCLUDING POINTS 1-6, HOLDING THE POSITION FOR "LBJ" AND "JFK". TWO SETS OF HORIZONTAL ANGLES WERE TURNED AT EACH STATION. THE LENGTH OF EACH LEG OF THE NETWORK WAS DETERMINED BY MEASURING TWO SETS OF SLOPE DISTANCES AND TURNING TWO SETS OF ZENITH (VERTICAL) ANGLES, BOTH IN THE AHEAD AND BACK DIRECTIONS. THESE VALUES WERE USED TO COMPUTE A LEAST SQUARE ADJUSTMENT USING STARNET VERSION 9.03.6298. SUPPORTING DATA FOR THIS NETWORK IS LOCATED AT THE ADDRESS BELOW.

INSTRUMENTS USED:

LEICA GS14 SERIAL NUMBER: 2811210 & 2811207
LEICA M550 SERIAL NUMBER: 367134

REGISTERED
PROFESSIONAL
LAND SURVEYOR

Festus I. Obijiofor

OREGON
JANUARY 20, 1998
FESTUS I. OBJIOFOR
02852

RENEWS: 12-31-2024

OREGON DEPARTMENT OF TRANSPORTATION

HORIZONTAL CONTROL, RECOVERY AND RETRACEMENT MAP
I-84: RUCKEL CREEK CULVERT
COLUMBIA RIVER HIGHWAY
HOOD RIVER COUNTY

ODOT REGION 1
123 NW FLANDERS STREET
PORTLAND, OR 97209-4037
PH. NO.: 503-731-3240

SEPTEMBER 16, 2022
KEY NO. 21781
NO SCALE
SHEET 1 OF 4

NE 1/4 SECTION 22, NW 1/4 SECTION 23, SW 1/4 SECTION 14,
SE 1/4 SECTION 14, T. 2 N. R. 7 E. W.M.

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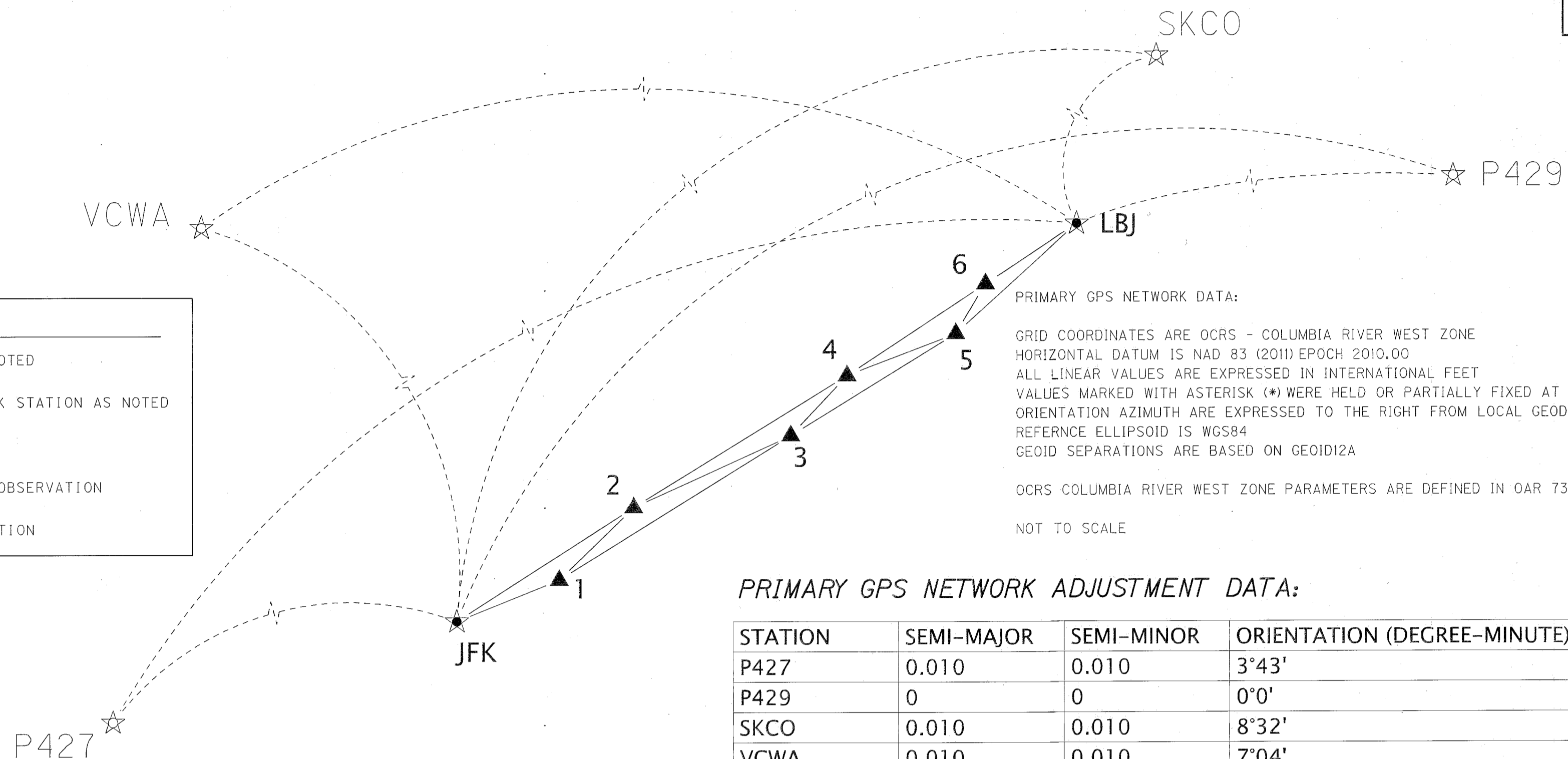
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LEGEND

- ★ SET GPS STATION AS NOTED
- ▲ SET SECONDARY NETWORK STATION AS NOTED
- ☆ FOUND GPS STATION
- ▲-★ TERRESTRIAL LINES OF OBSERVATION
- ★-☆ GPS LINES OF OBSERVATION



PRIMARY GPS NETWORK DATA:

GRID COORDINATES ARE OCRS - COLUMBIA RIVER WEST ZONE
HORIZONTAL DATUM IS NAD 83 (2011) EPOCH 2010.00
ALL LINEAR VALUES ARE EXPRESSED IN INTERNATIONAL FEET
VALUES MARKED WITH ASTERISK (*) WERE HELD OR PARTIALLY FIXED AT 0.010
ORIENTATION AZIMUTH ARE EXPRESSED TO THE RIGHT FROM LOCAL GEODETIC NORTH
REFERENCE ELLIPSOID IS WGS84
GEOID SEPARATIONS ARE BASED ON GEOID12A

OCRS COLUMBIA RIVER WEST ZONE PARAMETERS ARE DEFINED IN OAR 734-005-0010

NOT TO SCALE

PRIMARY GPS NETWORK ADJUSTMENT DATA:

STATION	SEMI-MAJOR	SEMI-MINOR	ORIENTATION (DEGREE-MINUTE)	HEIGHT
P427	0.010	0.010	3°43'	0.010
P429	0	0	0°0'	0
SKCO	0.010	0.010	8°32'	0.010
VCWA	0.010	0.010	7°04'	0.010
JFK	0.013	0.009	6°36'	0.025
LBJ	0.014	0.010	3°39'	0.027

NETWORK COORDINATE TABLE:

POINT NO.	OCRS NORTHING	OCRS EASTING	DESCRIPTION
1	512260.913	828331.081	SET 5/8" X 30" IRON ROD WITH 1-1/2" BRASS CAP STAMPED "ODOT CONTROL #1" WITH CENTER PUNCHMARK, DOWN 0.4 IN GRAVEL
2	512561.349	828641.397	FOUND 3" BRASS DISK IN CONCRETE DOWN 0.8' IN GRAVEL WITH METAL POST (NO PADDLE)
3	512858.980	829296.199	SET 5/8" X 30" IRON ROD WITH 1-1/2" BRASS CAP STAMPED "ODOT CONTROL #3" WITH CENTER PUNCHMARK, DOWN 0.3 IN GRAVEL
4	513107.824	829530.625	SET 5/8" X 30" IRON ROD WITH 1-1/2" BRASS CAP STAMPED "ODOT CONTROL #4" WITH CENTER PUNCHMARK, DOWN 0.2 IN GRAVEL
5	513282.033	829984.402	SET 5/8" X 30" IRON ROD WITH 1-1/2" BRASS CAP STAMPED "ODOT CONTROL #5" WITH CENTER PUNCHMARK, FLUSH IN GRASS
6	513488.301	830107.911	SET 5/8" X 30" IRON ROD WITH 1-1/2" BRASS CAP STAMPED "ODOT CONTROL #6" WITH CENTER PUNCHMARK, DOWN 0.4 IN GRAVEL
JFK	512090.211	827903.993	SET 5/8" X 30" IRON ROD WITH 1-1/2" BRASS CAP STAMPED "ODOT CONTROL JFK" WITH CENTER PUNCHMARK, DOWN 0.2 IN MOSS
LBJ	513737.891	830487.399	SET 5/8" X 30" IRON ROD WITH 1-1/2" BRASS CAP STAMPED "ODOT CONTROL LBJ" WITH CENTER PUNCHMARK

PRIMARY GPS NETWORK COORDINATE TABLE:

STATION	OCRS NORTHING	OCRS EASTING	LATITUDE	LONGITUDE
P427*	432466.014	721459.872	45°25'48.62857"	122°20'26.21269"
P429*	523465.899	839135.187	45°40'34.04510"	121°52'38.43686"
SKCO*	530048.835	837356.270	45°41'39.27428"	121°53'02.19401"
VCWA*	500493.806	676003.363	45°41'39.27428"	121°53'02.19401"
JFK	512090.211	827903.993	45°38'43.273989"	121°55'18.75248"
LBJ	513737.891	830487.399	45°38'59.19398"	121°54'42.07767"

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Festus I. Obijiofor

OREGON
JANUARY 20, 1998
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02852

RENEWS: 12-31-2024

OREGON DEPARTMENT OF TRANSPORTATION

HORIZONTAL CONTROL, RECOVERY AND RETRACEMENT MAP

I-84: RUCKEL CREEK CULVERT
COLUMBIA RIVER HIGHWAY
HOOD RIVER COUNTY

ODOT REGION 1
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SHEET 2 OF 4

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HOOD RIVER COUNTY
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FILED: 3/22/2023

BY: PL

RECOVERED MONUMENT LIST:

POINT NO.	OCRS NORTHING	OCRS EASTING	STATION	OFFSET	DATE	DESCRIPTION AND REFERENCE DOCUMENTS
1206	520947.55	838155.01	N/A	N/A	6/21/2021	FOUND 2" BRASS DISK IN PIPE, UP 1.4' IN GRASS HAZMAT SITE WEST END OF WEIGH STATION, 1/4 CORNER SECTION 12-7, CC0452
1300	512192.24	828266.54	"RW" 1810+36.12 "EB" 1807+62.32	RT 46.49' RT 50.07'	10/1/2021	FOUND 3" BRASS DISK IN 1' X 1' CONCRETE POST STAMPED "LW P.I. SIGHT P.O.T. LE 1807+61.90 49.89 RT" WITH PUNCHMARK, FLUSH IN GRASS, ODOT DRAWING 8B-24-11
1301	511683.28	827283.86	"RW" 1799+32.58 "EB" 1796+58.78	LT 36.67' LT 32.96'	10/8/2021	FOUND 2-3/4" BRASS DISK IN CONCRETE DOWN 0.3' STAMPED "LE 1796+58.18 33.00 LT" WITH UNREADABLE PADDLE, ODOT DRAWING 8B-24-11
1302	512317.10	828189.41	"RW" 1810+36.08 "WB" 1807+26.87	LT 100.27' LT 47.10'	10/8/2021	FOUND 3" BRASS DISK IN CONCRETE POST FLUSH IN GRASS STAMPED "LW P.I. 56.90 LT" WITH METAL POST (NO PADDLE), ODOT DRAWING 8B-24-11
1303	512128.68	827719.59	"RW" 1805+36.64 "WB" 1802+18.97	LT 184.72' LT 88.37'	10/8/2021	FOUND 5/8" BENT IRON ROD, NO CAP, TOP DOWN 0.4', SHOT AT SPIN POINT DOWN 0.8', ROD WRAPPED IN WIRE, ORGIN UNKNOWN
1304	512540.61	828361.59	"RW" 1813+00.00	LT 200.00'	11/8/2021	FOUND 5/8" BENT IRON ROD, TOP DOWN 0.4', SHOT AT SPIN POINT DOWN 1.0', ODOT DRAWING 8B-24-11
1305	512561.44	828641.39	"RW" 1815+49.03 "L6" 1815+51.23 "WB" 1812+42.57	LT 70.74' LT 47.18' LT 27.18'	11/8/2021	FOUND 3" BRASS IN CONCRETE DOWN 0.8' IN GRAVEL STAMPED "P.O.T. EO. 1815+51.23 AH 47.18 LT" WITH METAL POST (NO PADDLE), ODOT DRAWING 8B-24-11
1306	512450.96	828709.41	"RW" 1815+48.87 "L6" 1815+51.23 "EB" 1812+75.07	RT 59.00' RT 82.56' RT 62.52'	11/8/2021	FOUND 3" BRASS IN CONCRETE FLUSH IN DIRT STAMPED "P.O.T. & EQ 1815+51.23 AH 82.52 RT" WITH POST AND PADDLE, "EQ LE 1812+75.07 L1815+51.23 82.52", ODOT DRAWING 8B-24-11
1307	512458.38	828944.53	"RW" 1818+00.09	RT 99.66'	2/8/2022	FOUND 5/8" IRON ROD, NO CAP, DOWN 0.1, W/BURNED 4X4 WOODEN POST, ORIGIN UNKNOWN

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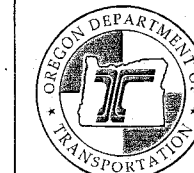
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