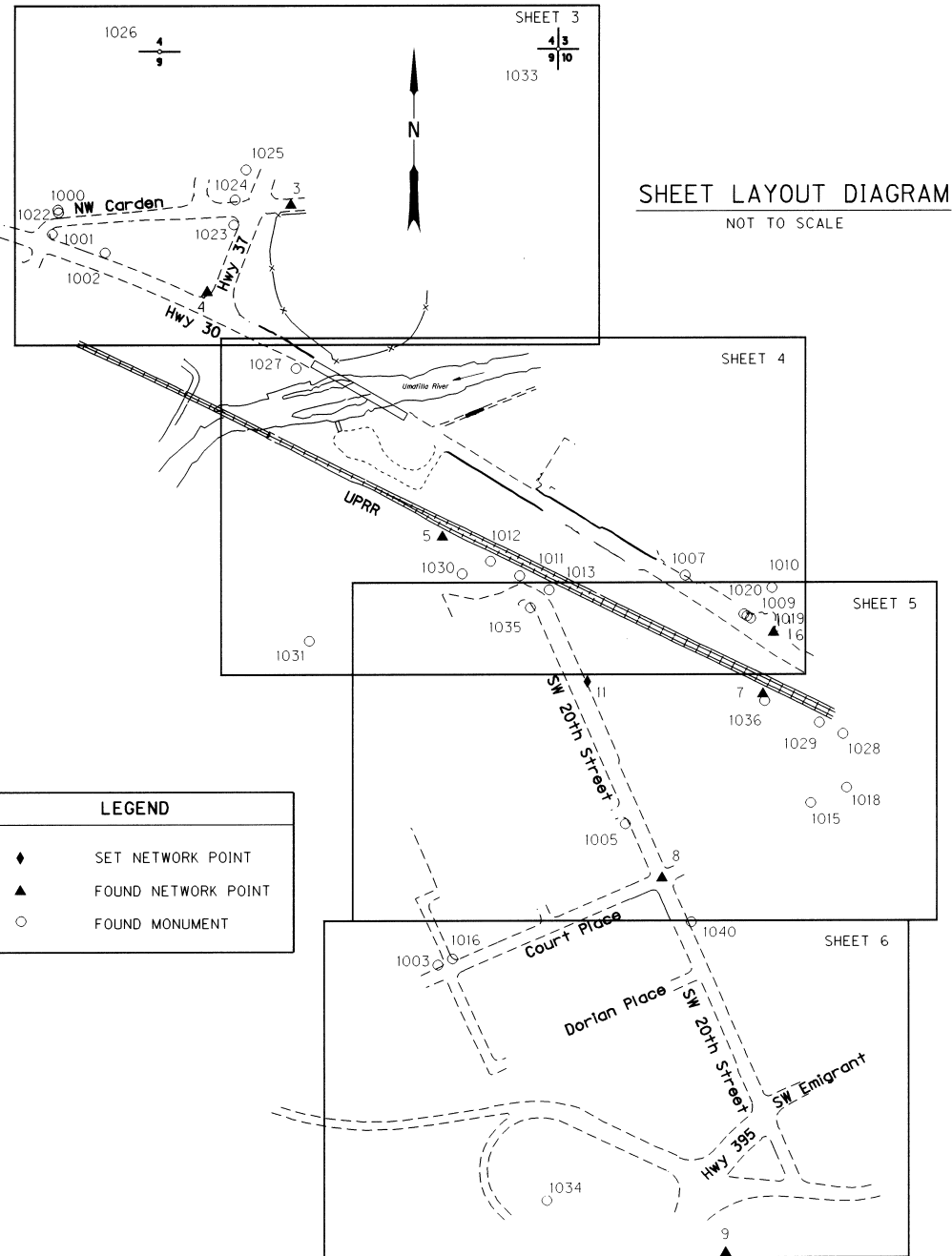


SEC. 9, 10, & 11 T.2 N. R.32 E. W. M.



**NARRATIVE**

THE PURPOSE OF THIS SURVEY IS TO SET UP A NETWORK AND MAPPING FOR THE 20TH STREET EXTENSION RAIL ROAD CROSSING; AND THE UMATILLA RIVER BALL PARK BRIDGE REPLACEMENT PROJECTS.

THE SURVEY CREW CONSISTED OF BRENT REYNOLDS AND JOEL ESTRADA; WITH BOB WALTER, MIKE POTTS, BRIAN CASE, JUSTIN WEATHERMON, OR ZACH RUBY TO FILL OUT THE CREW. THE CREW STARTED THE FIELDWORK ON APRIL 26, 2000 AND COMPLETED IT ON JULY 20, 2001. THIS SURVEY TOOK PLACE IN TOWNSHIP 2 NORTH; RANGE 32 EAST; SECTIONS 9 & 10.

NETWORK POINT 1 IS A FOUND STANDARD BRASS DISK STAMPED "PENDLETON 1973"; SET IN A 12 INCH SQUARE CONCRETE POST. THIS POINT IS STA. 2 AS SHOWN ON THE CITY OF PENDLETON HORIZONTAL CONTROL NET. NETWORK POINT 2 IS A FOUND BRASS BOLT IN THE GROUND. THIS POINT IS STA. 6 AS SHOWN ON THE CITY OF PENDLETON HORIZONTAL CONTROL NET. NETWORK POINT 3 IS A FOUND BRASS DISK SET FOR THE CONTROL SURVEY N. W. CARDEN R/W BY THE CITY OF PENDLETON 1985. NETWORK POINT 4 IS A FOUND 5/8" IN IRON PIN AT STATION 1623+00.00, 45.00 FEET RIGHT FOR THE OREGON DEPARTMENT OF TRANSPORTATION U.P.R.R. O'XING - PENDLETON HWY. (SOUTH UNIT) SECTION 1990. NETWORK POINT 5 IS A FOUND 5/8" IN IRON PIN SET FOR HARRIS OF PENDLETON 1988 BY KRUMBEIN ENGINEERING CO. NETWORK POINT 6 IS A FOUND RAIL ROAD SPIKE SET FOR MRS. TERRY 1974 BY WAYNE HARRIS CO. NETWORK POINT 7 IS A FOUND 5/8" IN IRON PIN SET FOR JONES 1979 BY KRUMBEIN ENGINEERING CO. NETWORK POINT 8 IS A FOUND RAIL ROAD SPIKE RESET FOR THE S. W. 17TH STREET SURVEY BY THE CITY OF PENDLETON 1976. NETWORK POINT 9 IS A FOUND RAIL ROAD SPIKE OF UNKNOWN ORIGIN ON S. W. 21ST STREET. NETWORK POINT 10 IS THE MORMON CHURCH SPIRE. THIS POINT IS STA. 1 AS SHOWN ON THE CITY OF PENDLETON HORIZONTAL CONTROL NET. NETWORK POINT 11 IS A PK NAIL SET IN THE SIDEWALK ON THE EAST SIDE OF 20TH STREET SOUTH OF SHUCKS ENTRANCE.

THIS SURVEY USED EXISTING MONUMENTS FROM THE 1973 CITY OF PENDLETON HORIZONTAL CONTROL NET FOR THE BASIS OF BEARING. COORDINATES ARE ASSUMED ALSO BASED ON THE 1973 CITY OF PENDLETON HORIZONTAL CONTROL NET. THE COORDINATES WERE CONVERTED TO METRIC; AND THE POSITION OF POINTS 1, 2, & 10 WERE FIXED.

HORIZONTAL LEAST SQUARES ADJUSTMENT WAS THEN CALCULATED IN LISCAD TO ESTABLISH COORDINATES FOR OTHER NETWORK POINTS AND MONUMENTS TIED TO THE NETWORK. THE LEAST SQUARES ADJUSTMENT METHOD PRODUCED ANGULAR AND DISTANCE RESIDUALS (THE AMOUNT THE FIELD OBSERVED MEASUREMENTS WERE CHANGED DUE TO THE ADJUSTMENT). THE ANGULAR RESIDUALS AVERAGED 2.3 SECONDS, WITH THE GREATEST RESIDUAL BEING 13 SECONDS. THE DISTANCE RESIDUALS AVERAGED 2.8 MM THE GREATEST BEING 19 MM. THE NETWORK MEETS ODOT STANDARD.

THE VERTICAL DATA FOR THIS PROJECT WAS OBTAINED FROM BENCHMARK H 113, ELEVATION 322.327 METERS NGVD 29. THE CITY OF PENDLETON USES AN ELEVATION OF 1048.249 FEET (319.506 M) FROM BENCHMARK STAN AS A BASE. THIS MATCHES THE 29 DATUM.

THE DATA WAS OBTAINED, EDITED AND CONVERTED TO A TERRAIN MODEL BY LISCAD (4.1).

THE EQUIPMENT USED ON THIS PROJECT WAS A TCA 1800 (98-TS10), AND A LIETZ LEVEL NA 2002 (99-DL02).

REGISTERED PROFESSIONAL LAND SURVEYOR

*K W Eddy*  
OREGON  
FEBRUARY 14, 1985  
KEN W. EDDY  
2129

EXPIRES 12/31/07 KWE



TO CONVERT METERS TO FEET DIVIDE BY 0.3048

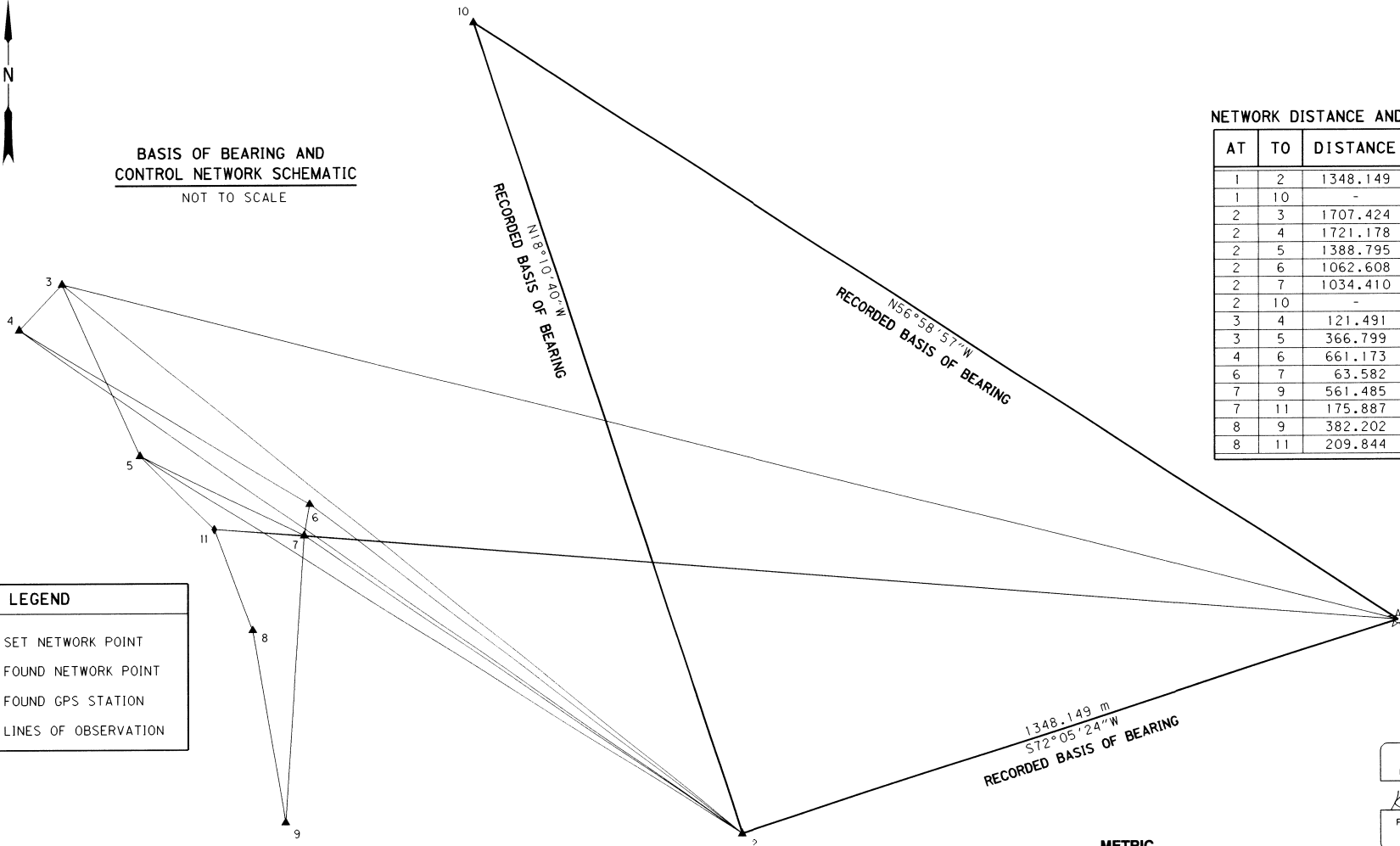
**OREGON DEPARTMENT OF TRANSPORTATION**  
HORIZONTAL CONTROL AND RECOVERY MAP  
COLD SPRINGS HWY - SOUTH WEST  
COURT PLACE (WEST PENDLETON)  
PENDLETON HIGHWAY  
UMATILLA COUNTY

Reviewed By: *Umatilla County Surveyor*  
Date: *01-02*  
Red'd by: *KE*  
No: *02-09-B*

SEC. 9, 10, & 11 T.2 N. R.32 E. W. M.



**BASIS OF BEARING AND CONTROL NETWORK SCHEMATIC**  
NOT TO SCALE



**NETWORK DISTANCE AND BEARING TABLE**

AT	TO	DISTANCE	BEARING
1	2	1348.149	S72°05'24"W
1	10	-	N56°58'57"W
2	3	1707.424	N50°53'25"W
2	4	1721.178	N54°55'31"W
2	5	1388.795	N57°39'18"W
2	6	1062.608	N52°26'32"W
2	7	1034.410	N55°33'25"W
2	10	-	N18°10'40"W
3	4	121.491	S43°35'19"W
3	5	366.799	S24°24'11"E
4	6	661.173	S58°55'06"E
6	7	63.582	S09°41'02"W
7	9	561.485	S03°49'03"E
7	11	175.887	N85°49'24"W
8	9	382.202	S09°33'47"E
8	11	209.844	N20°48'25"W

LEGEND	
◆	SET NETWORK POINT
▲	FOUND NETWORK POINT
☆	FOUND GPS STATION
—▲—	LINE OF OBSERVATION

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*K W Eddy*  
OREGON  
FEBRUARY 14, 1985  
KEN W. EDDY  
2129

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TO CONVERT METERS TO FEET DIVIDE BY 0.3048

**NETWORK/TRAVERSE POINT COORDINATE TABLE**

PT	NORTHING	EASTING	DESCRIPTION AND REFERENCE DOCUMENTS
1	15112.850	15282.538	FD BRASS DISK STAMPED "PENDLETON 1963", CITY OF PENDLETON HORIZONTAL CONTROL NET
2	14698.263	13999.719	FD BRASS BOLT, CITY OF PENDLETON HORIZONTAL CONTROL NET, 89-128-B, L-29
3	15775.322	12674.864	FD BRASS DISK, 89-132-C
4	15687.325	12591.099	FD 5/8 IN IRON PIN AT STA 1623+00, 45.00 FT RT, UPRR O'XING-PEND HWY SEC(PEND COLD SPRINGS HWY)
5	15441.292	12826.408	FD 5/8 IN IRON PIN, 97-45-B, 88-85-C
6	15345.987	13157.348	FD RR SPIKE, A-148-B, 88-77-B, I-200-A
7	15283.312	13146.653	FD 5/8 IN IRON PIN, 93-09-B, 97-45-B, 82-45-B, S-100-B, O-1207-B
8	15099.964	13045.774	FD RR SPIKE, 93-09-B, 97-45-B, S-100-B, O-1207-B, L-29, 88-85-C, S-65-C, 00-205-B
9	14723.073	13109.271	FD RR SPIKE, UNKNOWN ORIGIN
10	16285.069	13478.686	FD MORMON CHURCH SPIRE, CITY OF PENDLETON HORIZONTAL CONTROL NET
11	15296.122	12971.233	SET PK NAIL

**OREGON DEPARTMENT OF TRANSPORTATION**

HORIZONTAL CONTROL AND RECOVERY MAP

COLD SPRINGS HWY - SOUTH WEST

COURT PLACE (WEST PENDLETON)

PENDLETON HIGHWAY

UMATILLA COUNTY

RECEIVED BY  
*1-02*  
STATE  
DRAWN BY  
*KK*  
DATE  
*02-09-03*

FOR O.D.O.T. REGION 5  
JULY 23, 2001

80788 KIK RD., HERMISTON, OR. 97838

SHEET 2 OF 6

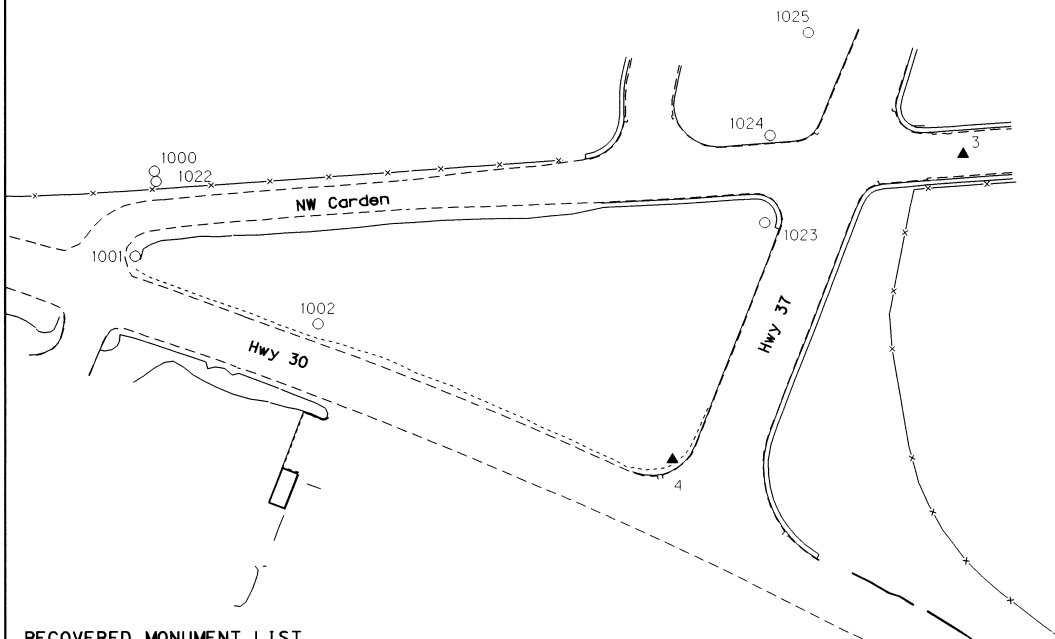
SEC. 9, 10, & 11 T.2 N. R.32 E. W. M.

1026  
4  
9

1033  
4 3  
9 10



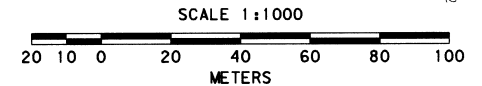
LEGEND	
▲	FOUND NETWORK POINT
☆	FOUND GPS STATION
○	FOUND MONUMENT



REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*KW Eddy*  
OREGON  
FEBRUARY 14, 1985  
KEN W. EDDY  
2129

EXPIRES 12/31/03 *KWE*



TO CONVERT METERS TO FEET DIVIDE BY 0.3048

RECOVERED MONUMENT LIST

PT	NORTHING	EASTING	DESCRIPTION & REFERENCE DOCUMENTS
1000	15770.992	12441.908	CONCRETE MONUMENT WITH SPIKE 1.5 FT ABOVE EXISTING GROUND, 84-65-C, A-28-AX
1001	15746.201	12436.370	5/8 IN BENT IRON PIN, 4B-21-7, A-25-AX
1002	15726.759	12489.042	5/8 IN IRON PIN, 4B-21-7, A-25-AX
1022	15768.013	12442.386	5/8 IN IRON PIN WITH ALUMINUM CAP MARKED PLS 933, 84-65-C
1023	15755.409	12617.696	OSHD 5/8 IN PIN WITH PLASTIC CAP, UPRR O'XING-PEND HWY SEC (PEND COLD SPRINGS HWY)
1024	15780.781	12619.272	OSHD 5/8 IN PIN WITH PLASTIC CAP, UPRR O'XING-PEND HWY SEC (PEND COLD SPRINGS HWY)
1025	15810.436	12630.219	OSHD 5/8 IN PIN WITH PLASTIC CAP, UPRR O'XING-PEND HWY SEC (PEND COLD SPRINGS HWY)
1026	15929.068	12543.367	2 1/2 IN BRASS CAP EAST 1/16 CORNER OF 4:9, UPRR O'XING-PEND HWY SEC (PEND COLD SPRINGS HWY)
1033	15930.981	12942.165	2 1/2 IN BRASS CAP SET IN CONCRETE SECTION CORNER 3 4 9 10, 90-50-C, 89-121-B, 88-19-C

OREGON DEPARTMENT OF TRANSPORTATION

HORIZONTAL CONTROL AND RECOVERY MAP

COLD SPRINGS HWY - SOUTH WEST

COURT PLACE (WEST PENDLETON)

PENDLETON HIGHWAY

UMATILLA COUNTY

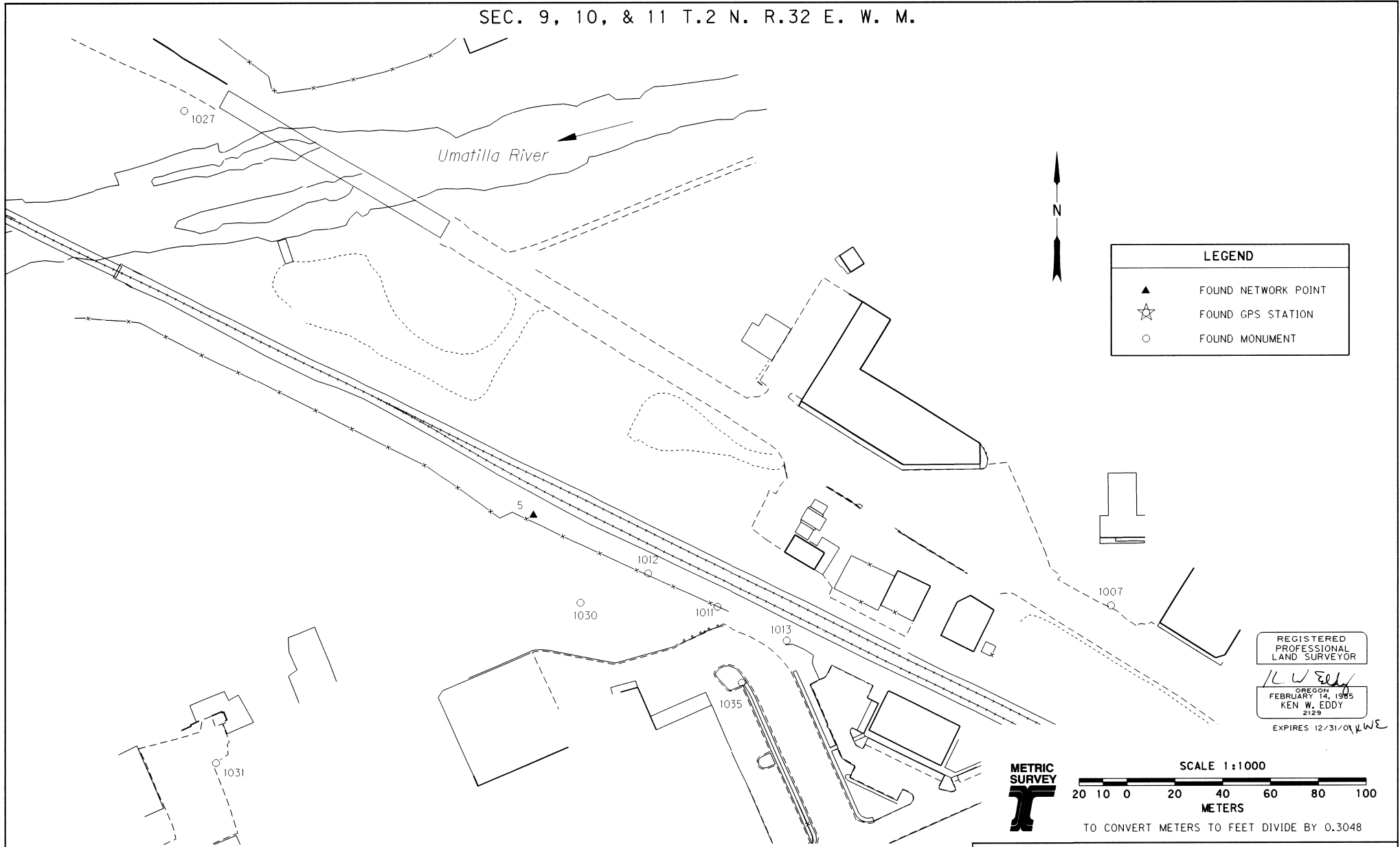
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JULY 23, 2001

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*KE*  
*02-09-B*

SHEET 3 OF 6

SEC. 9, 10, & 11 T.2 N. R.32 E. W. M.



**LEGEND**

- ▲ FOUND NETWORK POINT
- ☆ FOUND GPS STATION
- FOUND MONUMENT

REGISTERED  
LAND SURVEYOR

*KW Eddy*  
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FEBRUARY 14, 1995  
KEN W. EDDY  
2129  
EXPIRES 12/31/01 *KWE*



SCALE 1:1000  
20 10 0 20 40 60 80 100  
METERS  
TO CONVERT METERS TO FEET DIVIDE BY 0.3048

RECOVERED MONUMENT LIST

PT	NORTHING	EASTING	DESCRIPTION & REFERENCE DOCUMENTS
1007	15402.941	13069.096	CIP, COUNTY SURVEY 258, 11-18-49
1011	15402.765	12903.534	5/8 IN IRON PIN WITH ALUMINUM CAP MARKED PLS 933, 97-45-B, 88-85-C, 86-54-B
1012	15416.968	12874.482	5/8 IN IRON PIN WITH PLASTIC CAP MARKED WORLEY 13352, 97-45-B, 86-54-B, 01-06-B, 00-202-B
1013	15388.768	12932.986	5/8 IN IRON PIN WITH ALUM CAP STAMPED PLS 933, 97-45-B
1027	15611.402	12680.049	5/8 IN IRON PIN WITH ALUM CAP MARKED PLS 933, 84-65-C
1030	15404.534	12846.118	5/8 IN IRON PIN WITH PLASTIC CAP MARKED WORLEY 13352, 99-275-B, 01-06-B
1031	15337.833	12693.372	5/8 IN IRON PIN WITH PLASTIC CAP MARKED WORLEY 13352, 99-275-B, 97-45-B, 86-54-B, 01-06-B, 00-202-B
1035	15370.941	12914.157	5/8 IN IRON PIN WITH PLASTIC CAP MARKED WORLEY 13352, 99-275-B

OREGON DEPARTMENT OF TRANSPORTATION

HORIZONTAL CONTROL AND RECOVERY MAP

COLD SPRINGS HWY - SOUTH WEST

COURT PLACE (WEST PENDLETON)

PENDLETON HIGHWAY

UMATILLA COUNTY

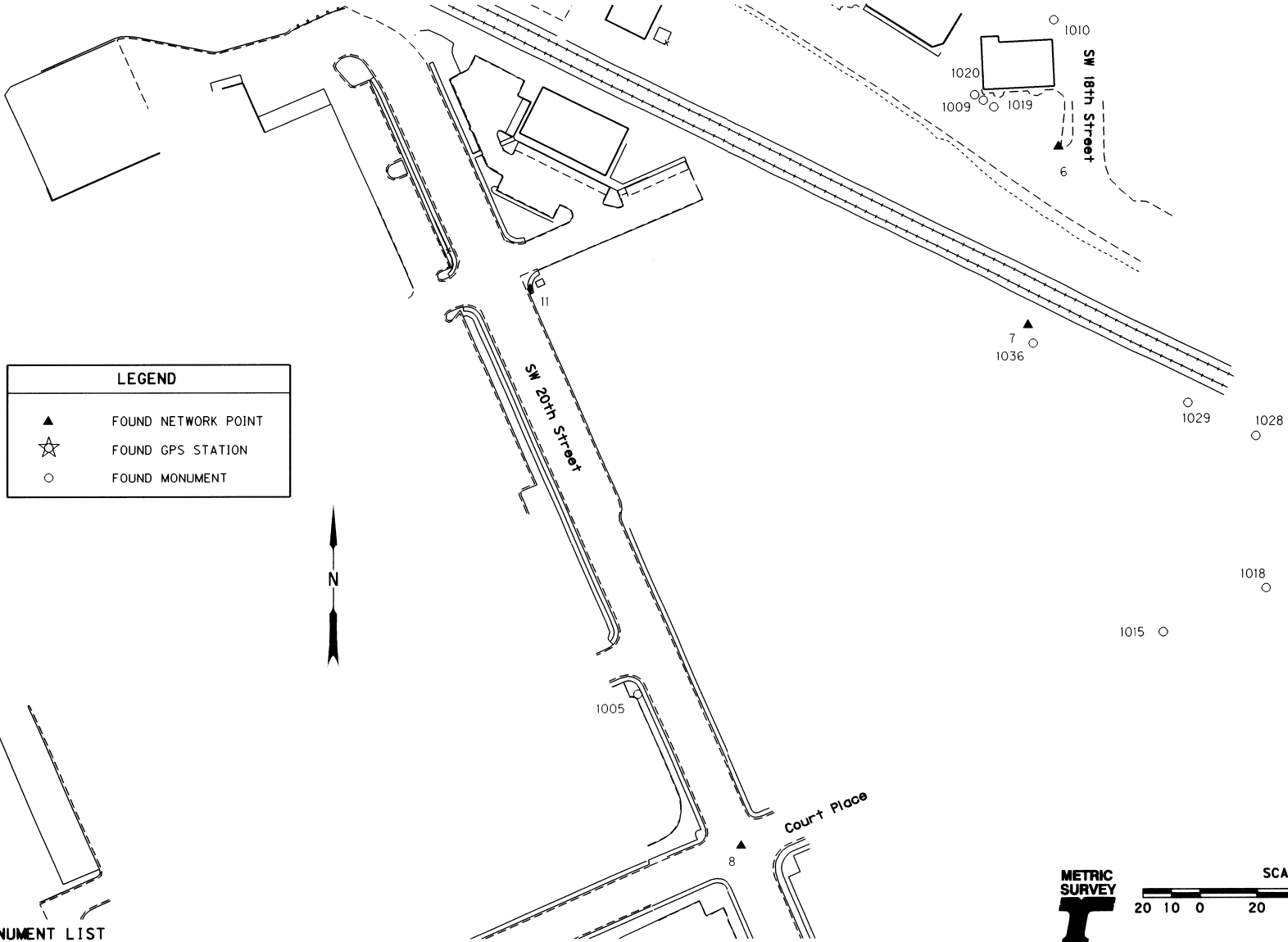
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SHEET 4 OF 6

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*02-09-B*

SEC. 9, 10, & 11 T.2 N. R.32 E. W. M.

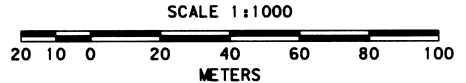


LEGEND	
▲	FOUND NETWORK POINT
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REGISTERED PROFESSIONAL LAND SURVEYOR

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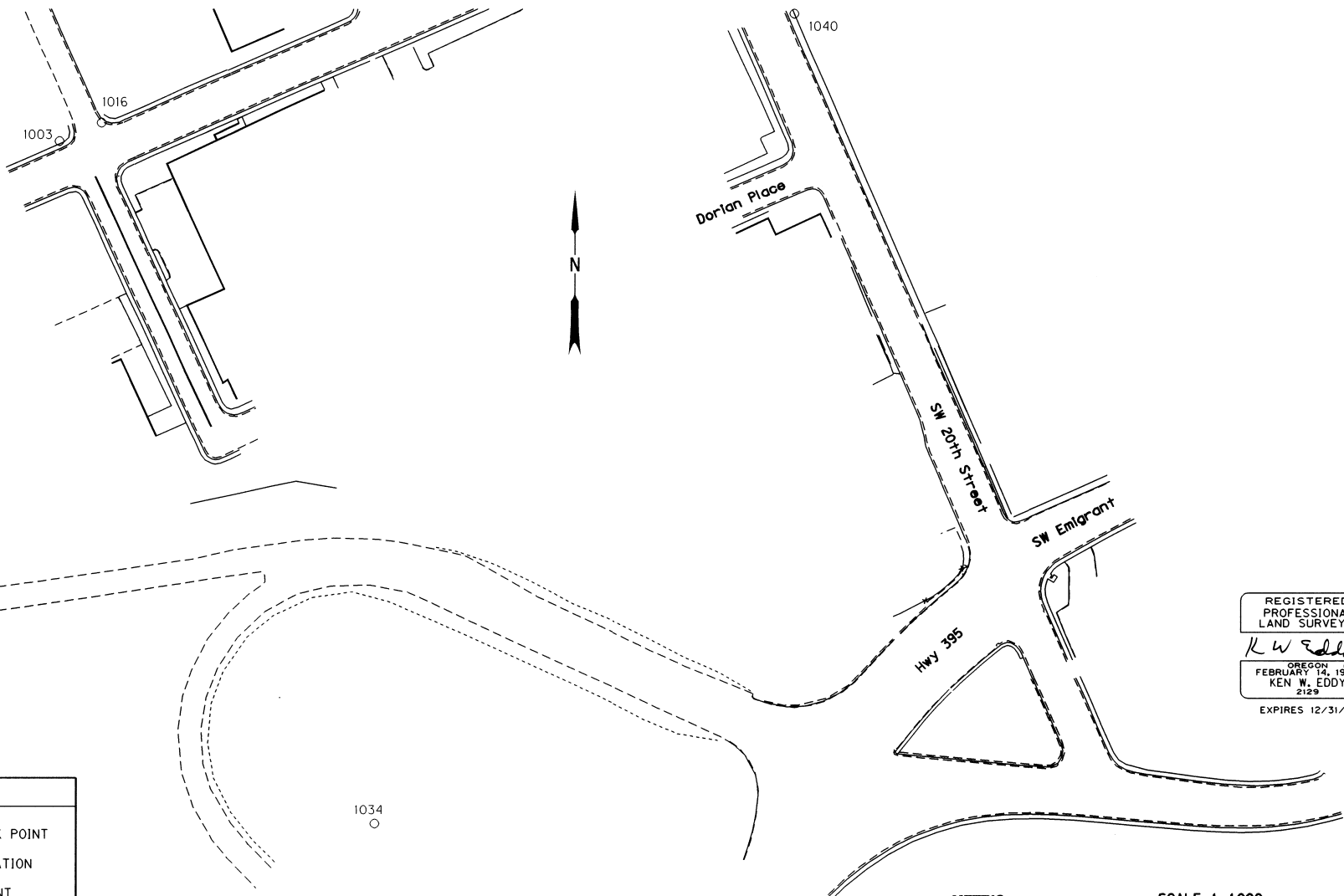
RECOVERED MONUMENT LIST

PT	NORTHING	EASTING	DESCRIPTION & REFERENCE DOCUMENTS
1005	15153.502	13009.110	5/8" IN IRON PIN WITH PLASTIC CAP MARKED WORLEY 13352, 97-45-B, 99-275-B
1009	15362.575	13130.918	RR SPIKE, A-148-B, I-200-A
1010	15390.615	13155.703	RR SPIKE, A-148-B, 88-77-B, I-200-A
1015	15174.847	13194.396	5/8" IN IRON PIN WITH ALUM CAP STAMPED PLS 933, 97-45-B, 93-09-B, S-100-B, O-1207-B, 82-45-B
1018	15190.553	13230.354	5/8" IN IRON PIN, 93-09-B, 82-45-B, S-100-B, O-1207-B
1019	15360.230	13134.597	RR SPIKE, A-148-B
1020	15364.529	13127.828	RR SPIKE, A-148-B
1028	15244.068	13226.852	5/8" IN IRON PIN WITH PLASTIC CAP MARKED PLS 1106, 82-45-B, 93-09-B, S-100-B, O-1207-B
1029	15255.501	13203.049	5/8" IN IRON PIN WITH PLASTIC CAP MARKED PLS 1106, 97-45-B, 93-09-B, S-100-B, O-1207-B, 82-45-B,
1036	15276.879	13148.501	5/8" IN IRON PIN WITH ALUM CAP STAMPED PLS 933, 93-09-B, 82-45-B, 97-45-B, S-100-B

OREGON DEPARTMENT OF TRANSPORTATION  
 HORIZONTAL CONTROL AND RECOVERY MAP  
 COLD SPRINGS HWY - SOUTH WEST  
 COURT PLACE (WEST PENDLETON)  
 PENDLETON HIGHWAY  
 UMATILLA COUNTY

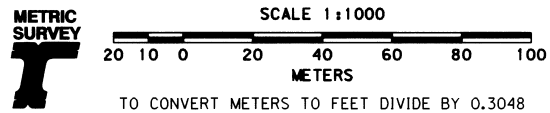
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*Ken W. Eddy*  
OREGON  
FEBRUARY 14, 1985  
KEN W. EDDY  
2129  
EXPIRES 12/31/03

LEGEND	
▲	FOUND NETWORK POINT
☆	FOUND GPS STATION
○	FOUND MONUMENT



RECOVERED MONUMENT LIST

PT	NORTHING	EASTING	DESCRIPTION & REFERENCE DOCUMENTS
1003	15012.147	12821.800	1/2 IN IRON REBAR, 89-100-C, 88-85-C, S-65-C, 01-06-B, 00-202-B
1016	15018.438	12836.267	3/8 IN IRON PIN WITH PLASTIC CAP, 99-275-B, 97-45-B, 86-54-B, 01-06-B, 00-202-B
1034	14776.772	12930.591	BRASS CAP RESERVATION BOUNDARY RB-2, 89-128-B, S-19-B, L-29, S-65-C
1040	13074.922	15056.145	3/8 IN IRON PIN WITH PLASTIC CAP MARKED STRATTON 111, 00-205-B

OREGON DEPARTMENT OF TRANSPORTATION  
HORIZONTAL CONTROL AND RECOVERY MAP  
COLD SPRINGS HWY - SOUTH WEST  
COURT PLACE (WEST PENDLETON)  
PENDLETON HIGHWAY  
UMATILLA COUNTY

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*Umatilla County Surveyors*  
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Scale *02-09-B*

FOR O.D.O.T. REGION 5 80788 KIK RD., HERMISTON, OR. 97838  
JULY 23, 2001 SHEET 6 OF 6