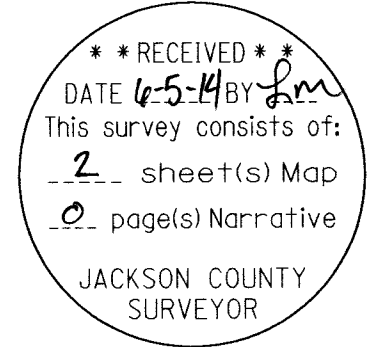


SHEET INDEX

1. NARRATIVE, CONTROL POINT TABLE, RECOVERED MONUMENT TABLE AND CONFIDENCE LEVEL LIMIT TABLE
2. CONTROL SCHEMATIC AND BASIS OF BEARING

NW 1/4, SW 1/4 & SE 1/4 SEC 25 T38S R1W WM
 SW 1/4 SEC 30 T38S R1E WM
 NW 1/4, NE 1/4 & SE 1/4 SEC 31 T38S R1E WM
 SW 1/4 SEC 32 T38S R1E WM
 NW 1/4 & NE 1/4 SEC 5 T39S R1E WM



CONTROL NARRATIVE

PROJECT: TAP EMERGENCY INTERTIE PROJECT
 LOCATION: TALENT & ASHLAND, JACKSON COUNTY, OREGON
 OBEC PROJECT: 0806-0001.00
 SURVEY DATUM:
 HORIZONTAL - OREGON STATE PLANE COORDINATE SYSTEM - SOUTH ZONE
 NAD 83(2011) EPOCH 2010.00 (INTERNATIONAL FEET)

VERTICAL - CITY OF TALENT BENCHMARK NUMBER 2
 PUBLISHED NAVD88 ELEVATION = 1660.24 (INTERNATIONAL FEET)

THE PURPOSE OF THIS SURVEY IS TO ESTABLISH HORIZONTAL AND VERTICAL CONTROL FOR A TOPOGRAPHIC SURVEY FOR THE DESIGN OF THE TAP EMERGENCY INTERTIE PROJECT LOCATED BETWEEN THE CITY OF TALENT AND THE CITY OF ASHLAND. THE SURVEY EQUIPMENT USED CONSISTED OF ONE TRIMBLE R8-MODEL 4 GPS RECEIVER, ONE TRIMBLE TSC3 CONTROLLER, ONE VERIZON JETPACK MOBILE HOTSPOT AND ONE SOKKIA SDL30 DIGITAL LEVEL. THIS SURVEY WAS PERFORMED DURING MARCH, APRIL AND MAY OF 2014.

THE CADASTRAL LINES AS SHOWN ON SHEET 2 ARE APPROXIMATE AND ARE NOT THE RESULT OF A SURVEY.

CONTROL POINTS FOR THIS SURVEY WERE NOT SET ON AND DO NOT REPRESENT PROPERTY LINES OR RIGHT-OF-WAY LINES AND ARE INTENDED FOR USE BY THE CITY OF ASHLAND AND OBEC CONSULTING ENGINEERS IN SUPPORT OF FUTURE PROJECTS. IT IS NOT THE INTENT OF THE CITY OF ASHLAND OR OBEC CONSULTING ENGINEERS TO PERPETUATE THESE CONTROL POINTS AS MONUMENTS.

HORIZONTAL CONTROL SURVEY

PRIMARY HORIZONTAL CONTROL FOR THIS PROJECT WAS ESTABLISHED BY USING THE OREGON REAL TIME GPS NETWORK (ORGN) TO ESTABLISH HORIZONTAL POSITIONS FOR CONTROL POINTS 1 THROUGH 14. THE MEAN NORTHINGS AND EASTINGS OF A MINIMUM OF TWO SEPARATE 180 EPOCH OBSERVATIONS UNDER DIFFERENT SATELLITE CONSTELLATIONS WERE HELD FIXED. ALL COORDINATES AND DISTANCES SHOWN ON THIS SURVEY ARE OREGON STATE PLANE - SOUTH ZONE GRID.

VERTICAL CONTROL SURVEY

VERTICAL CONTROL WAS ESTABLISHED BY A CLOSED LEVEL LOOP THROUGH CONTROL POINTS 3 THROUGH 14 FROM THE CITY OF TALENT BENCHMARK NUMBER 2 LOCATED AT THE INTERSECTION OF CREEL ROAD AND LITHIA WAY. THE PUBLISHED NAVD88 ELEVATION OF SAID BENCHMARK IS 1660.24 INTERNATIONAL FEET. CONTROL POINTS 1 AND 2 WERE NOT LEVELED TO.

1.96 SIGMA (95%) CONFIDENCE LEVEL
 LIMITS-RTK GPS CONFIDENCE TABLE

PT NO	SOLUTION	RMS
1	WIDE AREA RTK - L1 FIXED	0.03'
2	WIDE AREA RTK - L1 FIXED	0.02'
3	WIDE AREA RTK - L1 FIXED	0.03'
4	WIDE AREA RTK - L1 FIXED	0.03'
5	WIDE AREA RTK - L1 FIXED	0.03'
6	WIDE AREA RTK - L1 FIXED	0.02'
7	WIDE AREA RTK - L1 FIXED	0.01'
8	WIDE AREA RTK - L1 FIXED	0.04'
9	WIDE AREA RTK - L1 FIXED	0.01'
10	WIDE AREA RTK - L1 FIXED	0.02'
11	WIDE AREA RTK - L1 FIXED	0.01'
12	WIDE AREA RTK - L1 FIXED	0.01'
13	WIDE AREA RTK - L1 FIXED	0.02'
14	WIDE AREA RTK - L1 FIXED	0.02'

RMS (ROOT MEAN SQUARE) AFTER A MINIMUM OF 180 MEASUREMENTS OF EACH BASE LINE INDICATES THE QUALITY OF THE SOLUTION BASED ON MEASUREMENT NOISE. THE LOWER THE RMS VALUE, THE HIGHER THE QUALITY OF THE BASELINE. RMS IS EXPRESSED IN FEET AND IS THE RADIUS OF THE ERROR CIRCLE WITHIN WHICH 95% OF THE POSITION FIXES ARE FOUND.

CONTROL POINT COORDINATE TABLE

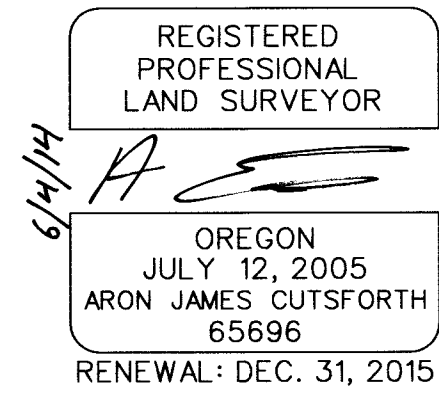
* = NOT LEVELED TO
 FD = FOUND
 OPC = ORANGE PLASTIC CAP

PT. NO.	NORTHING	EASTING	LEVELED ELEVATION	CONVERGENCE ANGLE	DATE	DESCRIPTION
1*	216730.53	4306075.35	N/A	-01°33'16"	3/13/14	FD 2" ALUMINUM CAP STAMPED "ODOT CONTROL POINT 1747805", FLUSH W/GROUND, GOOD CONDITION
2*	216297.80	4306727.55	N/A	-01°33'10"	3/13/14	FD 2" ALUMINUM CAP STAMPED "ODOT CONTROL POINT 1747806", FLUSH W/GROUND, GOOD CONDITION
3	215609.23	4307460.37	1641.22	-01°33'03"	3/13/14	FD MAGNAIL & WASHER STAMPED "ODOT 1747807", FLUSH W/ROAD, GOOD CONDITION
4	213950.62	4309659.32	1622.82	-01°32'42"	3/13/14	FD 2" ALUMINUM CAP STAMPED "ODOT CONTROL POINT 1747810", FLUSH W/GROUND, GOOD CONDITION
5	213109.23	4310567.78	1637.06	-01°32'34"	3/13/14	SET 5/8" X 15" REBAR W/OPC STAMPED "OBEC CONTROL"
6	212589.19	4311331.83	1651.48	-01°32'27"	3/13/14	SET MAGNAIL & WASHER STAMPED "OBEC CONTROL"
7	211647.41	4312385.15	1653.52	-01°32'17"	3/13/14	SET 60d SPIKE AND WASHER STAMPED "OBEC CONTROL"
8	210560.41	4313897.77	1658.00	-01°32'03"	3/13/14	FD 3" BRASS DISK IN CONCRETE STAMPED "CITY OF ASHLAND SURVEY MARKER, GPS 530, 1997", DOWN 0.3', GOOD CONDITION
9	210108.81	4314287.88	1660.20	-01°31'59"	3/20/14	SET MAGNAIL & WASHER STAMPED "OBEC CONTROL"
10	209377.04	4315322.45	1670.72	-01°31'50"	3/20/14	SET MAGNAIL & WASHER STAMPED "OBEC CONTROL"
11	208703.88	4316038.85	1702.12	-01°31'43"	3/20/14	SET MAGNAIL & WASHER STAMPED "OBEC CONTROL"
12	208141.65	4316661.72	1755.06	-01°31'37"	3/24/14	SET 5/8" X 30" REBAR W/ OPC STAMPED "OBEC CONTROL"
13	207149.39	4317108.95	1787.02	-01°31'33"	3/24/14	SET MAGNAIL & WASHER STAMPED "OBEC CONTROL"
14	206655.38	4317759.95	1819.51	-01°31'27"	3/24/14	SET MAGNAIL & WASHER STAMPED "OBEC CONTROL"

RECOVERED MONUMENT COORDINATE TABLE

FD = FOUND

PT. NO.	NORTHING	EASTING	DATE	DESCRIPTION
1000	213108.24	4314325.70	5/5/14	FD 2-1/2" BRASS CAP STAMPED "JACKSON COUNTY SURVEYOR, T38S R1E, SW DLC 45, 2012", FLUSH IN ROADWAY, GOOD CONDITION, PER JACKSON COUNTY SURVEYOR CORNER RECORDS - FOURTH RE-ESTABLISHMENT



FILE NAME: 0806-0001.00_Control Survey.dgn

Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6089, 541-683-6090
 3990 FAIRVIEW INDUSTRIAL DR SE, SUITE 200 SALEM, OREGON 97302-1166, 503-589-4100
 831 O'HARE PARKWAY MEDFORD, OREGON 97504-4005, 541-774-5590
 5000 MEADOWS ROAD, SUITE 420 LAKE OSWEGO, OREGON 97035, 503-620-6103
 1111 MAIN STREET, SUITE 401 VANCOUVER, WASHINGTON 98660 360-314-2391

OBEC CONSULTING ENGINEERS
 www.obec.com

CITY OF ASHLAND
 HORIZONTAL & VERTICAL CONTROL SURVEY
 TAP EMERGENCY INTERTIE PROJECT
 JACKSON COUNTY

CITY OF ASHLAND
 51 WINBURN WAY
 ASHLAND OR, 97520

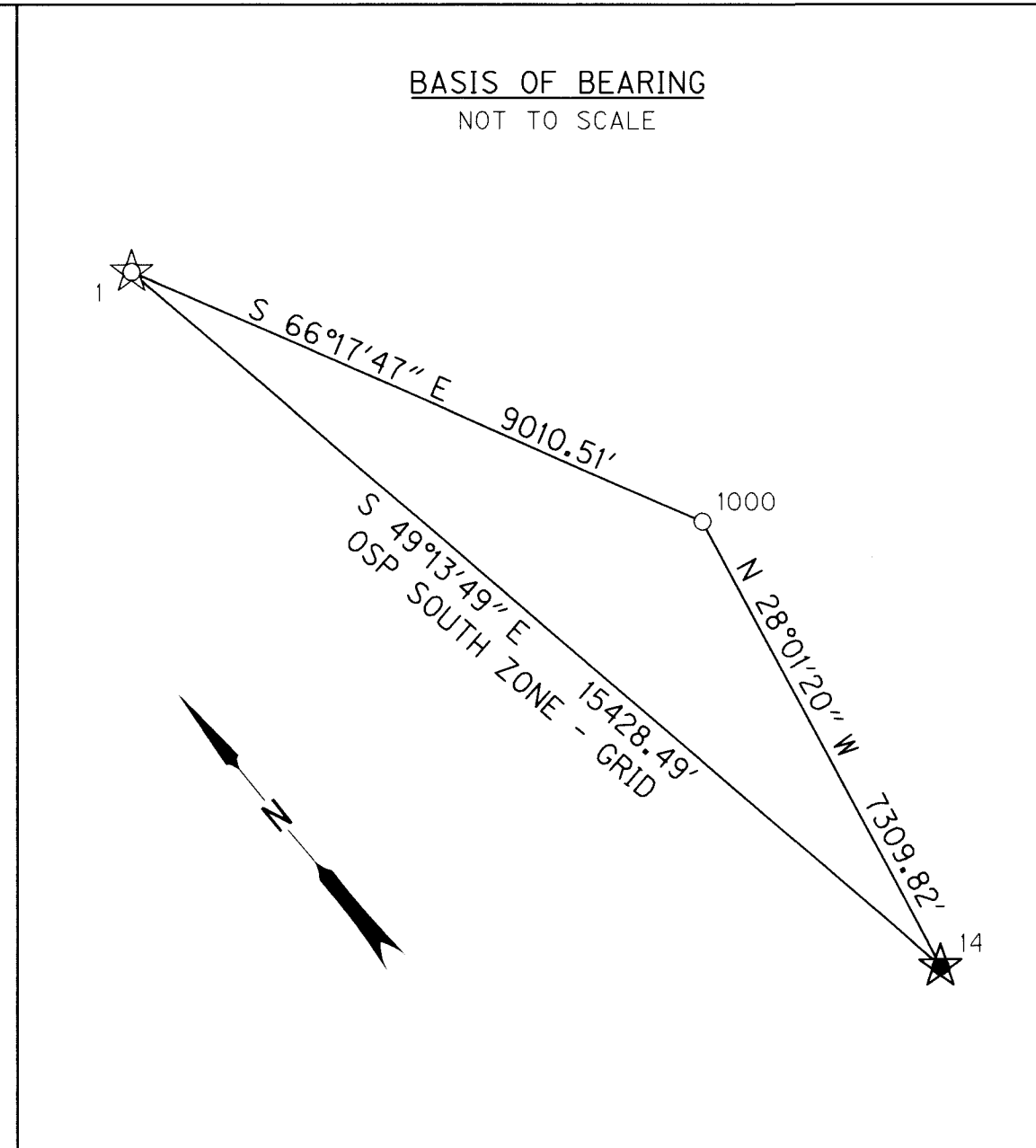
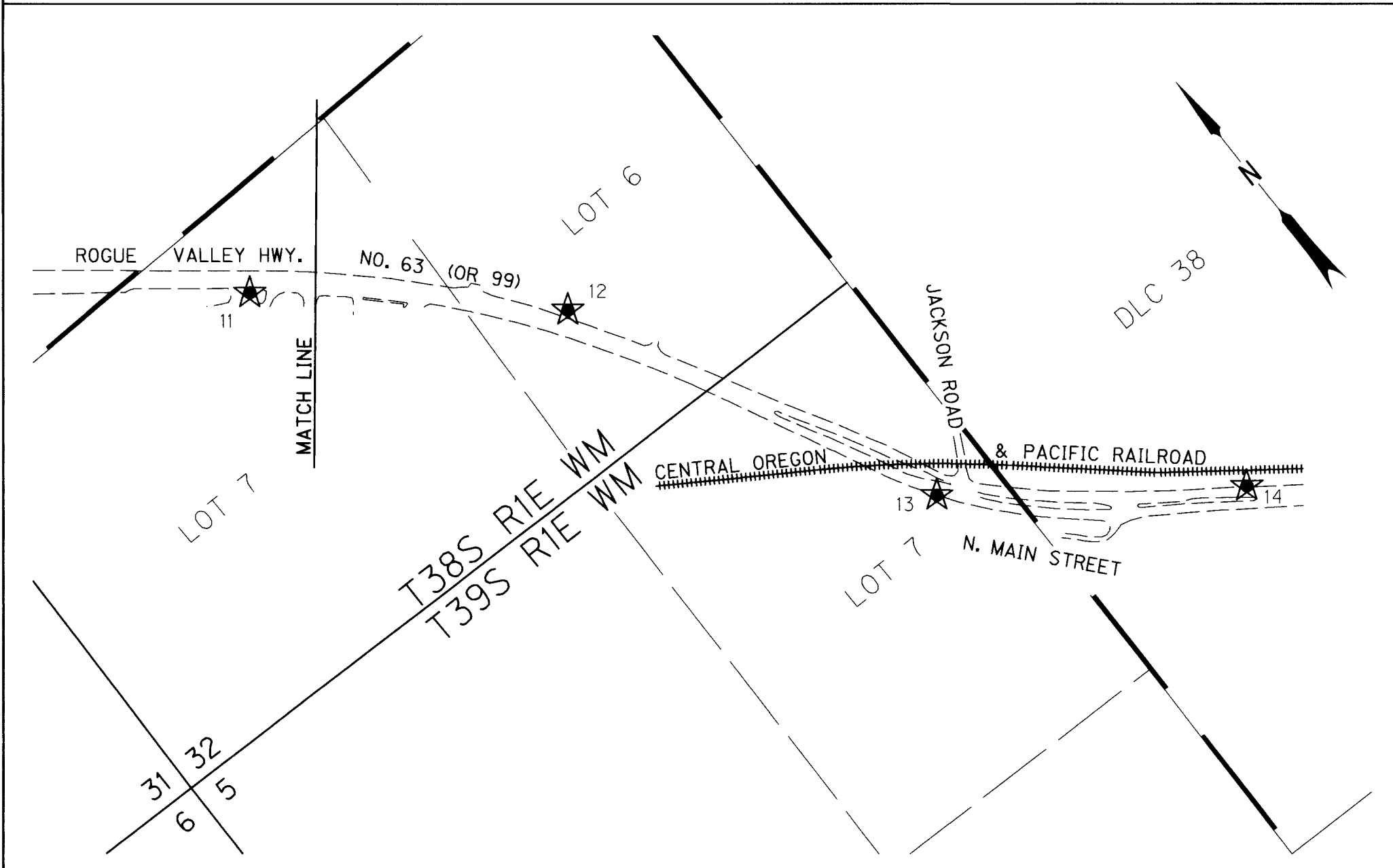
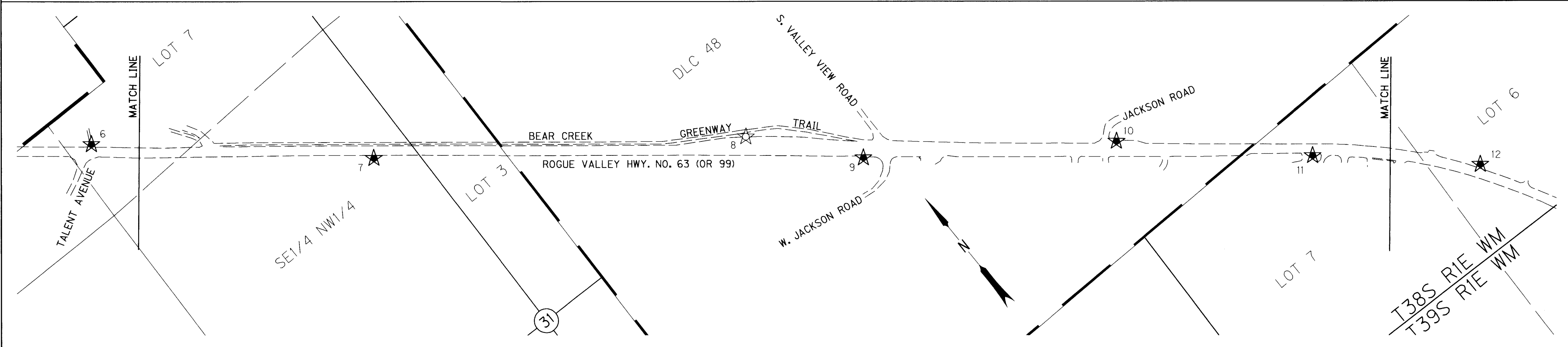
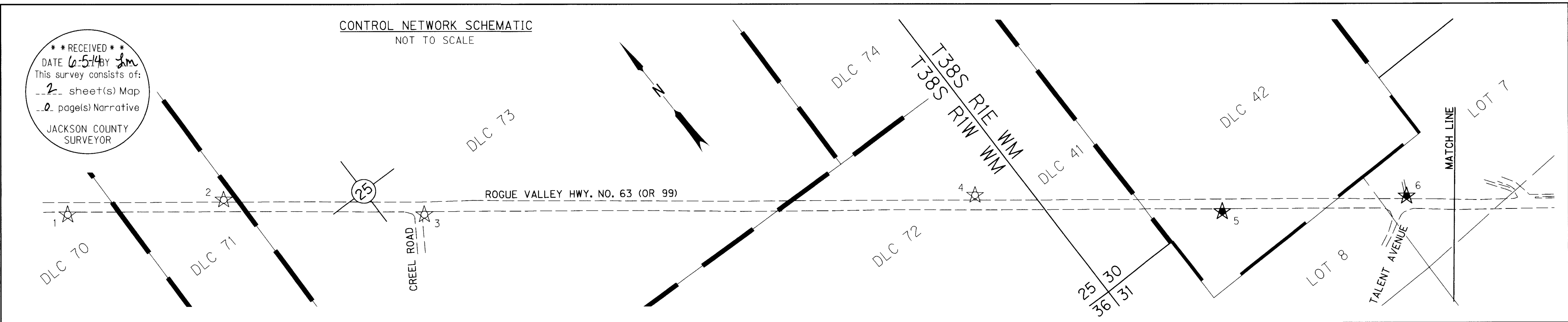
JUNE, 2014
 NO SCALE
 SHEET 1 OF 2

DESIGNED: A. CUTSFORTH
 DRAWN: A. CUTSFORTH
 CHK'D: J. COLTON

PROJ. NO. 806-001.00

CONTROL NETWORK SCHEMATIC
NOT TO SCALE

****RECEIVED****
DATE 6-5-14 by Jm
This survey consists of:
2 sheet(s) Map
0 page(s) Narrative
JACKSON COUNTY
SURVEYOR



LEGEND

- ☆ FOUND SURVEY MARKER USED AS GPS CONTROL POINT (ORGN RTK)
- ★ SET GPS CONTROL POINT (ORGN RTK)
- FOUND MONUMENT AS NOTED IN TABLE ON SHEET 1
- EDGE OF PAVEMENT

REGISTERED PROFESSIONAL LAND SURVEYOR
6/4/14
ARON JAMES CUTSFORTH
OREGON
JULY 12, 2005
65696
RENEWAL: DEC. 31, 2015

Corporate Offices: 920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6089, 541-683-6090
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CITY OF ASHLAND
HORIZONTAL & VERTICAL CONTROL SURVEY
TAP EMERGENCY INTERTIE PROJECT
JACKSON COUNTY

CITY OF ASHLAND
51 WINBURN WAY
ASHLAND OR, 97520

JUNE, 2014
NO SCALE
SHEET 2 OF 2

DESIGNED: A. CUTSFORTH
DRAWN: A. CUTSFORTH

CHK'D: J. COLTON

PROJ. NO. 806-001.00