



# Oregon

Theodore R. Kulongoski, Governor

Department of Transportation  
Technical Services  
Roadway Engineering Section  
355 Capitol Street NE, Room 222  
Salem, OR 97301-3871  
Telephone 503-986-3714  
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DATE: June 10, 2009

## Addenda No. 1

TO: PLAN HOLDERS

PREPARED BY: Pamela O'R

APPROVED BY: James M. B. P.E.

SUBJECT: Redmond Adaptive Signal System  
The Dalles-California Highway  
Deschutes County  
(Bids to be opened and read June 18, 2009)

### The following changes are made to the Project Bid Booklet:

1. The following changes are made to the Project Bid Items:

a. Quantity changes:

<u>Number</u>	<u>Item</u>	<u>Quantity</u>	
		<u>Original</u>	<u>New</u>
0040	Temporary Barricades, Type III	4	8

b. Added items:

<u>Number</u>	<u>Item</u>	<u>Unit</u>	<u>Quantity</u>
0290	Sequential Arrow Signs	Each	2
0300	Temporary Plastic Drums	Each	100
0310	Flagger Station Lighting	Each	4

Make a copy of and use the new attached Bid Sheets. A Bid **not** including these new Bid Sheets **will be rejected as non-responsive**.

**The following changes are made to the Project Special Provisions:**

1. DESCRIPTION OF WORK page - The paragraph under WORK TO BE DONE is replaced with the following:

The Work to be done under this Contract consists of the following on Various Roadways in Deschutes County:

1. Construct traffic signal modifications at 20 intersections in Redmond.
2. Install traffic detection equipment.
3. Install fiber optic communications equipment along The Dalles-California Highway and at seven (7) intersections in Redmond.
4. Install wireless communications systems.
5. Perform additional and incidental Work as called for by the Specifications and Plans.

2. Subsection 00990.90 Payment - The paragraph that begins with the words "Item (h) includes..." is replaced with the following:

Item (h) includes furnishing, installing and configuring all materials, equipment, tools, labor and incidentals necessary to complete the work as specified at the three project locations.

3. Subsection 00990.51 Wireless Interconnect - This subsection is replaced with the following subsection:

**00990.51 Wireless Interconnect** – Add the following section:

**(a) Scope** The Contractor shall furnish and install a wireless radio interconnect system to provide communications at three separate locations. This work includes:

**(1) The Dalles-California Highway at Odem Medo Road and SW Veteran's Way** – This work consists of the following:

- Furnish, install and make operational 4.9 GHz broadband wireless integrated antennae, antenna cables, and necessary attachment/mounting hardware at The Dalles-California Hwy/Odem Medo Rd and The Dalles-California Hwy/SW Veteran's Way.
- Furnish, install and make operational the connection between antenna and the traffic signal controller, including, but not limited to CAT 5 cable and Ethernet over power injector.

- Equipment installed by the contractor shall be on existing poles and in existing conduits and cabinets.
- Configure, program and tune the wireless system to provide reliable communications between the communications hub (Glacier Ave/6<sup>th</sup> St) and the remote locations (approximately 1 ½ miles). Antennas must be aimed towards Glacier Avenue/6<sup>th</sup> Street.

**(2) Downtown Redmond** –This work consists of the following:

- Remove and salvage existing yagi antenna and radio modems at 5<sup>th</sup> St/Evergreen Ave, 6<sup>th</sup> St/Evergreen Ave, and 6<sup>th</sup> St/Black Butte Blvd.
- Remove existing communications cable between the controller cabinet and existing yagi antenna.
- Furnish, install and make operational 4.9 GHz broadband wireless antennae, antenna cables, and necessary attachment/mounting hardware at 5<sup>th</sup> St/Evergreen Ave, 6<sup>th</sup> St/Evergreen Ave and 6<sup>th</sup> St/Black Butte Blvd.
- Furnish, install and make operational the connection between antenna and the traffic signal controller, including, but not limited to CAT 5 cable and Ethernet over power injector.
- Equipment installed by the contractor shall be on existing poles and in existing conduits and cabinets.
- Configure, program and tune the wireless system to provide reliable communications between communications hub (Glacier Ave/6<sup>th</sup> St) and the remote locations (approximately 2000 feet). Antennas must be aimed towards Glacier Avenue/6<sup>th</sup> Street.

**(3) Glacier Avenue and 6<sup>th</sup> Street** –This work consists of the following:

- Remove and salvage existing yagi antenna and radio modem Glacier Ave/6<sup>th</sup> St (communications hub). Remove existing communications cable between the controller cabinet and existing yagi antenna.
- Furnish, install and make operational two 4.9 GHz broadband wireless antennae, connectorized radio, splitter kit, antenna cables, and necessary attachment/mounting hardware at Glacier Avenue/6<sup>th</sup> Street (communications hub).
- Furnish, install and make operational the connection between connectorized radio and the traffic signal controller, including, but not limited to CAT 5 cable and Ethernet over power injector.
- Furnish, install and make operational the connection between radio interconnect and the Ethernet edge switch at the intersection of Glacier Ave/6<sup>th</sup> St.
- Equipment installed by the contractor shall be on existing poles and in existing conduits and cabinets.
- Configure, program and tune the wireless system to provide reliable communications between the communications hub (Glacier Ave/6<sup>th</sup> St) and the remote locations (approximately 1 ½ miles to south and 2000 feet to north).

Perform site survey to confirm strength of radio path prior to installation of equipment.

4. Subsection 02925.70 – Wireless Radio Interconnect - This subsection is added after subsection 02925.69:

**02925.70 Wireless Radio Interconnect** – Add the following subsection:

**(a) General** – The wireless radio interconnect system shall have the functional characteristics of the Encom 4.9 GHz Commpak Broadband system and shall meet the following requirements:

- System shall operate using 4.9 GHz.
- System shall operate using an integrated antenna and radio unit or multiple flat panel antennas with connectorized radio and splitter kit.
- System shall operate using Ethernet over Power
- Radios shall include built in diagnostic tools for antenna alignment, bandwidth test and frequency usage. The system shall provide real-time diagnostics and set up menu access, without disrupting network communications.
- Radios shall operate with Dynamic Frequency Selection.
- Any radio must be capable to serve as a Master, Repeater, Slave and Slave/Repeater.
- System shall be capable of providing point-to-point and point-to-multipoint operation.
- Range performance shall be up to 20 miles with clear line of sight, ability to extend through repeaters.
- Antenna shall be field hardened with operating temperatures of -40°C to +80°C
- One year limited warranty period for defects in materials or workmanship under normal use and service for a period of two (2) years from the date of delivery.
- System shall provide up to 54 Mbps
- System shall be 802.11 a/b/g compliant
- System shall support AES-CCM Encryption
- System shall support 64 bit, 128 bit WEP Encryption

**(b) Antenna cable** – Antenna cables shall meet or exceed the following:

- Be CAT 5.
- Conform to the grade indicated for each installation according to the plan set.
- Be rated for outdoor use.

5. Subsection 00160.30 Agency-Furnished Material - This entire subsection is deleted.

**The following changes are made to the Project Plans:**

1. Plan sheets 1, 15286, 15292, 15296, 15297, 15298, 15314, 15315, 15318, and 15319 are replaced with revised plan sheets 1, 15286, 15292, 15296, 15297, 15298, 15314, 15315, 15318, and 15319.

These changes will be included in the Contract for this Project. It is understood that your Bid will be submitted accordingly.

Make copies of the new Bid Sheets to replace the Special Provisions Bid Schedule Sheets.

Attachments: New Bid Sheets  
Revised Plan Sheets

BID SCHEDULE

CONTRACT ID: 14066

PROJECT: REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM

PROJECT KEY: 16559

ADDENDUM NUMBER: 1

ITEM NO	ITEM DESCRIPTION	QUANTITY AND UNITS	UNIT PRICE (IN FIGURES)	BID AMOUNT (IN FIGURES)
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SECTION 0001 TEMPORARY FEATURES AND APPURTENANCES

0010	0210-0100000A MOBILIZATION	LS	ALL	
0020	0225-0100000A TEMPORARY PROTECTION AND DIRECTION OF TRAFFIC	LS	ALL	
0030	0225-0102000J TEMPORARY SIGNS	SQFT	550.00	
0040	0225-0105000E TEMPORARY BARRICADES, TYPE III	EACH	8.00	
0050	0225-0168000T FLAGGERS	HOUR	80.00	
0060	0280-0100000A EROSION CONTROL	LS	ALL	
0070	0290-0100000A POLLUTION CONTROL PLAN	LS	ALL	

SECTION 0002 PERMANENT TRAFFIC CONTROL AND ILLUMINATION SYSTEMS

0080	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT EVERGREEN\5TH STREET	LS	ALL	
0090	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT EVERGREEN\6TH STREET	LS	ALL	
0100	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT GLACIER\11TH STREET	LS	ALL	

BID SCHEDULE

CONTRACT ID: 14066

PROJECT: REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM

PROJECT KEY: 16559

ADDENDUM NUMBER: 1

ITEM NO	ITEM DESCRIPTION	QUANTITY AND UNITS	UNIT PRICE (IN FIGURES)	BID AMOUNT (IN FIGURES)
0110	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT GLACIER\5TH STREET	LS ALL		
0120	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT GLACIER\6TH STREET	LS ALL		
0130	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT GLACIER\9TH STREET	LS ALL		
0140	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT HIGHLAND\11TH STREET	LS ALL		
0150	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT HIGHLAND\5TH STREET	LS ALL		
0160	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT HIGHLAND\6TH STREET	LS ALL		
0170	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT HIGHLAND\9TH STREET	LS ALL		
0180	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT US97(REROUTE)\EVERGREEN	LS ALL		
0190	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT US97(REROUTE)\NB RAMP	LS ALL		
0200	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT US97(REROUTE)\SB RAMP	LS ALL		

BID SCHEDULE

CONTRACT ID: 14066

PROJECT: REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM

PROJECT KEY: 16559

ADDENDUM NUMBER: 1

ITEM NO	ITEM DESCRIPTION	QUANTITY AND UNITS	UNIT PRICE (IN FIGURES)	BID AMOUNT (IN FIGURES)
0210	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT US97\MAPLE STREET	LS ALL		
0220	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT US97\MCKENZIE HWY	LS ALL		
0230	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT US97\OAK TREE LANE	LS ALL		
0240	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT US97\QUINCE AVE	LS ALL		
0250	0990-0102000A TRAFFIC SIGNAL MODIFICATION AT BLACK BUTTE BLVD\6TH STREET	LS ALL		
0260	0990-9Z90000A FIBER OPTIC COMMUNICATIONS SYSTEM	LS ALL		
0270	0990-9Z90000A FIBER OPTIC TESTING	LS ALL		
0280	0990-9Z90000A WIRELESS RADIO INTERCONNECT	LS ALL		

SECTION 0003 ADDED BID ITEMS

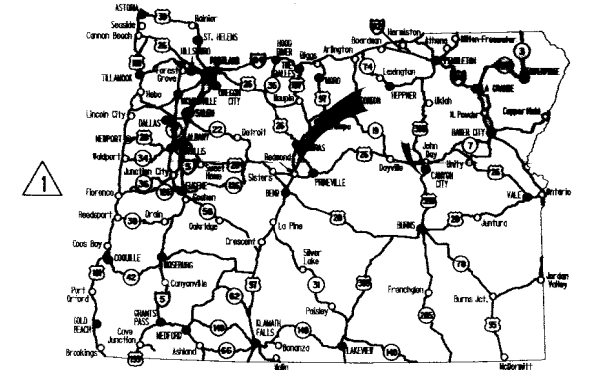
0290	0225-0162000E SEQUENTIAL ARROW SIGNS	EACH 2.00		
0300	0225-0145000E TEMPORARY PLASTIC DRUMS	EACH 100.00		
0310	0225-0168100E FLAGGER STATION LIGHTING	EACH 4.00		
	TOTAL BID			

STATE OF OREGON  
 DEPARTMENT OF TRANSPORTATION  
 PLANS FOR PROPOSED PROJECT  
**SIGNALS**

**REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM**

**THE DALLES-CALIFORNIA HIGHWAY  
 DESCHUTES COUNTY  
 JUNE 2009**

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A	Index of Sheets



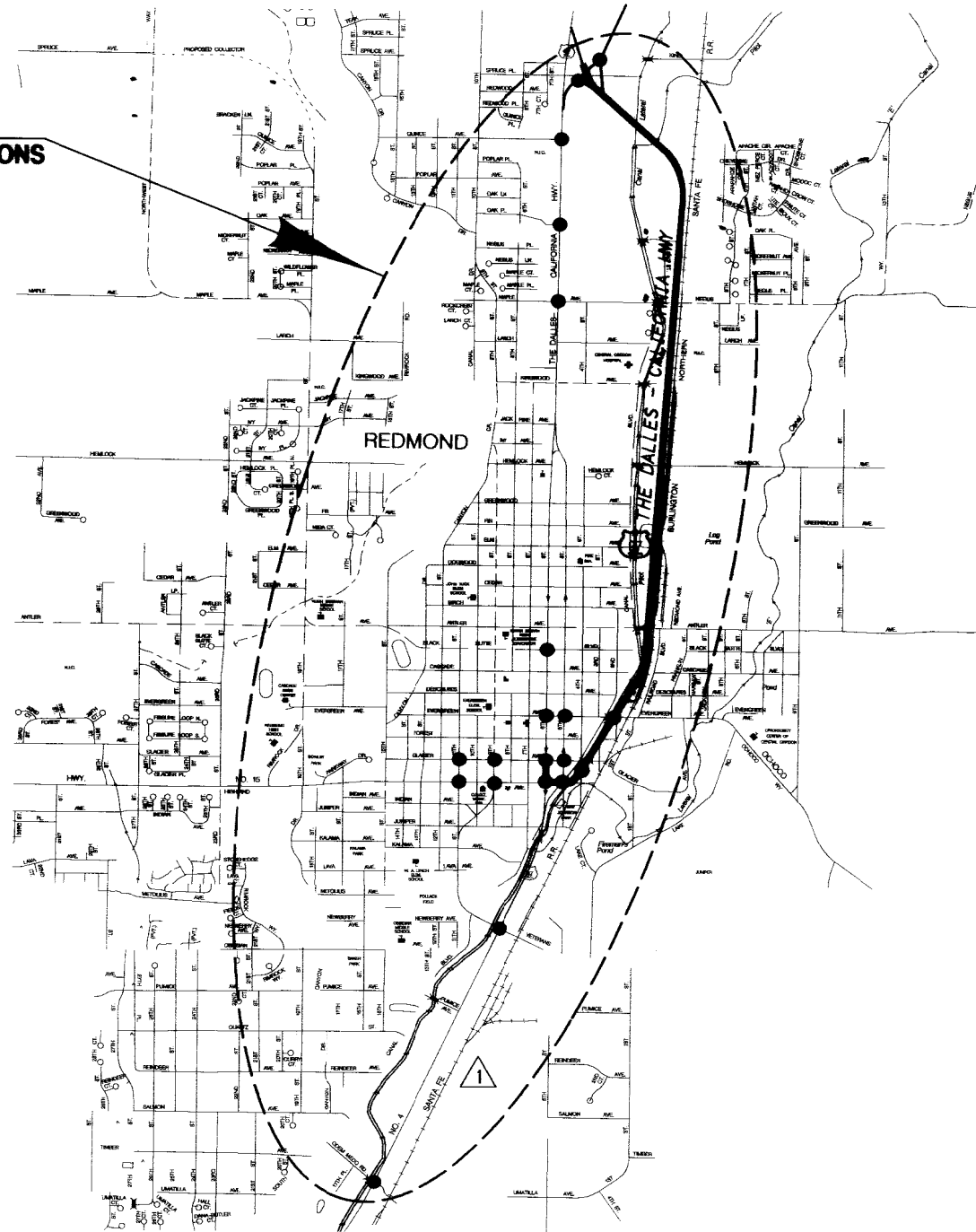
Overall Length Of Project - 2.5 Miles

**ATTENTION:**  
 Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Marking Center. These Rules Are Set Forth In OAR 820-001-0000 Through OAR 820-001-0000. You May Obtain Copies Of The Rules By Calling The Center. Service The Telephone Number For The Oregon Utility Center Is 600-522-6273.

**LET'S ALL  
 WORK TOGETHER  
 TO MAKE THIS  
 JOB SAFE**

T. 15S , R. 13E, W.M.  
 T. 17S , R. 12E, W.M.

**PROJECT SITE  
 VARIOUS LOCATIONS**



REVISIONS	
⚠	Revised 6-09-2009
	Revised Project Limits

**DKS Associates** 1400 SW Fifth Avenue, Suite 500 Telephone: (503) 243-3500  
 TRANSPORTATION SOLUTIONS Portland, Oregon 97201-5502 Fax: (503) 243-1934

**OREGON TRANSPORTATION COMMISSION**

Gail L. Achterman	CHAIR
Mike Nelson	VICE-CHAIR
Janice J. Wilson	COMMISSIONER
Alan Brown	COMMISSIONER
David Lohman	COMMISSIONER
Matthew L. Garrett	DIRECTOR OF TRANSPORTATION

These plans were developed using ODOT design standards. Exceptions to these standards, if any, have been submitted and approved by the ODOT Chief Engineer or their delegated authority.



Approving Authority: *James M. Peters* 6/10/09  
 Signature & date  
 James M. Peters, Principal  
 Print name and title  
*William J. ...*  
 Concurrence by ODOT Chief Engineer

REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM THE DALLES - CALIFORNIA HIGHWAY DESCHUTES COUNTY		
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	X-STP-S004-(137)	1




**DETECTOR AND INTERCONNECT LEGEND  
 REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM  
 THE DALLES-CALIFORNIA HWY**

**LEGEND**


**CONTROLLERS**

-  Retain and protect existing controller and cabinet
-  Furnish model 2070 controller








**POLES**

-  Retain and protect existing traffic signal mast arm pole
-  Retain and protect existing traffic signal mast arm pole with luminaire extension
-  Retain and protect existing pedestrian signal pedestal









**CABINETS**

-  Retain and protect existing service cabinet





**JUNCTION BOXES**

-  Retain and protect existing junction box
-  Retain and protect existing sand pocket block-out with conduit to junction box
-  Retain and protect existing communications junction box
-  Remove existing junction box
-  Install 36"x24"x18" (min. dimension) communications junction box. See sheet 15321 for details
-  Install 6" diameter x14" PVC conduit sleeve street entrance with (S=size) inch conduit to junction box
-  Abandon existing sand pocket block-out





**LOOPS**

-  Retain and protect existing phase (Ph=phase) vehicle detector loop
-  Install phase (Ph=phase) 6' round vehicle detector loop
-  Install phase (Ph=phase) 2 1/2' diamond bicycle detector loop
-  Install phase (Ph=phase) wireless magnetometer vehicle detector
-  Install (X=number of cables) phase (Ph=phase) loop feeder cables
-  Install (N=number) pair of loop wires
-  Abandon existing phase (Ph = phase) vehicle detector loop
-  Install wireless vehicle detection access point on signal pole









**CONDUITS**

-  Retain and protect existing electrical conduit
-  Retain and protect existing conduit (S=size) inch
-  Retain and protect existing interconnect conduit
-  Install (S=size) inch electrical conduit






**WIRES**

-  Retain and protect existing wiring
-  Retain and protect existing copper pair interconnect cable
-  Install Category 5 outdoor rated cable
-  Install Category 6 outdoor rated cable

**COMMUNICATIONS**

-  Install fiber distribution unit
-  Furnish and install fiber optic splice closure. See Sheet 15316 for splice requirements.
-  Coil and protect 100 feet of fiber optic cable in junction box
-  Coil and protect 30 feet of fiber optic cable in junction box
-  Coil and protect 15 feet of fiber optic cable in controller cabinet
-  Furnish and install fiber optic cable with (N) strands single mode. See Special Provisions Section 00995.04.
-  Install 1/4" pull rope consisting of a polyester core with polyethelene exterior jacket or equivalent with a minimum pull strength of 1250 lbs.
-  Install 1 No. 16 AWG THWN stranded copper locate wire per 00960.42. Electrically connect wire ends across all access points to from an electrically continuous wire (path) throughout the entire conduit run.

**MISCELLANEOUS**

-  Install 4.9 GHz Broadband antenna. Attach antenna to luminaire pole or traffic signal mast arm using adjustable bracket.
-  Install power over ethernet adaptor between traffic signal controller and antenna.
-  Remove existing Yagi Antenna
-  Remove existing communications wiring
-  Remove existing radio modem

**NOTE:**  
 See T.R.S. Dwg. 15287 Thru 15301 for Detector Plans.  
 See T.R.S. Dwg. 15302 Thru 15313 for Interconnect Plans.

REVISIONS	
	Revised 6-09-2009 Revised note

*[Signature]*  
 Traffic Section Approval

**REGISTERED PROFESSIONAL ENGINEER**  
 72,367  
*[Signature]*  
 OREGON  
 NOVEMBER 12, 2002  
**JAMES M. PETERS**

EXPIRES: DEC. 31, 2010

**OREGON DEPARTMENT OF TRANSPORTATION**  
 TRAFFIC - ROADWAY SECTION

**DKS Associates** 1400 SW Fifth Avenue, Suite 500 Telephone: (503) 243-3500  
 TRANSPORTATION SOLUTIONS Portland, Oregon 97201-5502 Fax: (503) 243-1934

**REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM**  
 THE DALLES - CALIFORNIA HIGHWAY  
 DESCHUTES COUNTY

DESIGNED BY: P. O'Brien	ACCOMPANIED BY DWGS: <u>TM458, TM472,</u>
REVIEWED BY: J. Peters	<u>TM475, TM480, TM498, TM670,</u>
DRAWN BY: DKS CAD	<u>TM671, TM800, TM841, TM842,</u>
FC: MP:	<u>TM843, RD720, RD725, RD755,</u>
	<u>RD756, RD757, RD759</u>
	<u>and T.R.S. Dwg. 15287 thru 15321</u>

**DETECTOR AND INTERCONNECT LEGEND**

SY. ID. No. \_\_\_\_\_ T.R.S. DWG. NO. **15286**





**GENERAL NOTES:**


1. For existing traffic signal and detector equipment not shown, see T.E. Drawing 2096 which is available from the Engineer.

2. Remove and Reconstruct sidewalk panel(s) to ODOT Standard Dwg. RD720 as necessary to install new conduit from existing junction boxes. Match sidewalk color per Special Provisions. (Section - 00759.10).

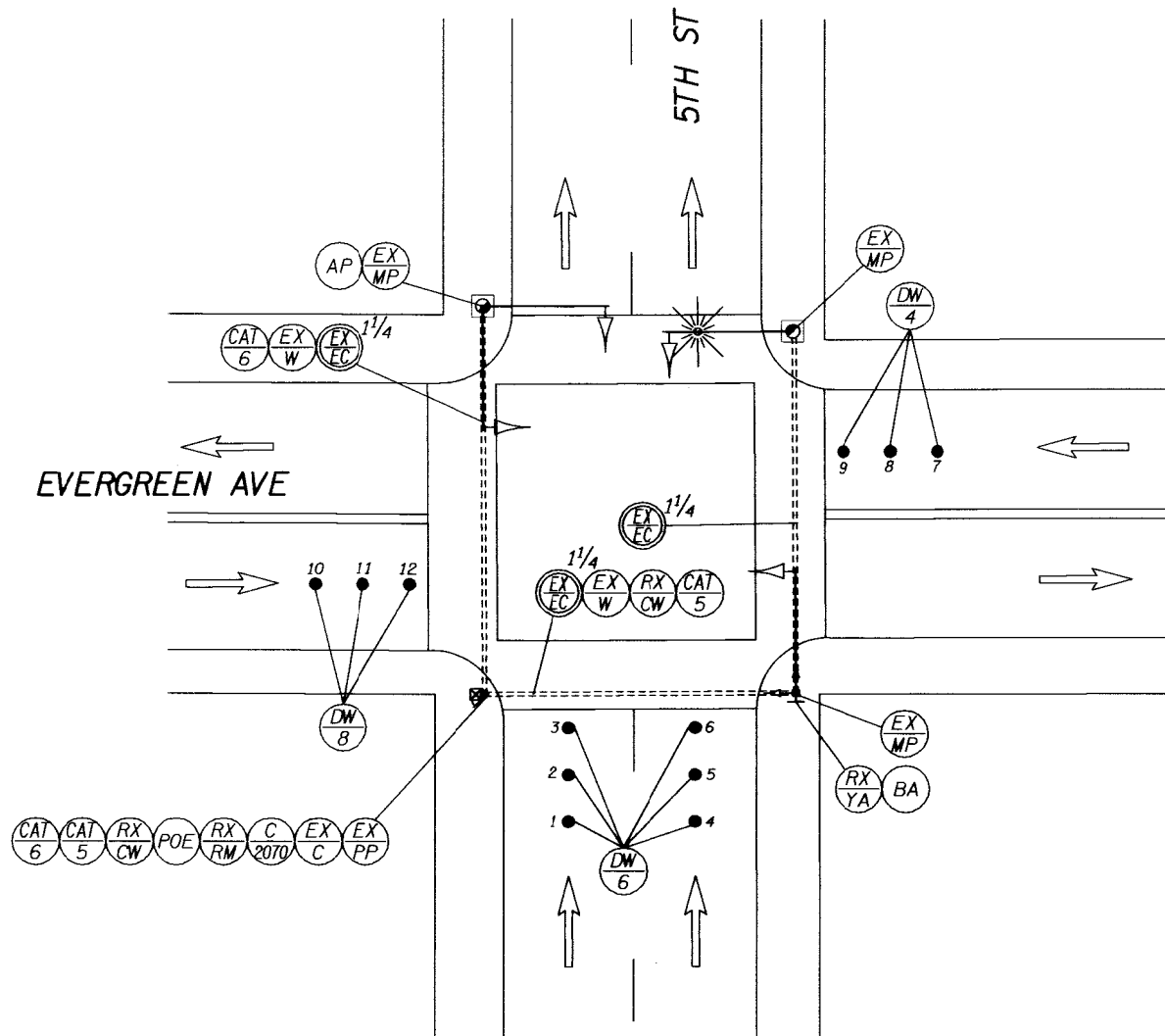
3. See Drawing 15320 for Access Point mounting detail and detector installation detail.


4. Install and test wireless detection system. Turn system off-to be configured by others. 

5. Remove existing Yagi radio antenna. Install 4.9 GHz integrated antenna on pole in southeast corner and power over ethernet adapter in traffic signal cabinet. 

6. Remove existing communications cable between existing Yagi antenna and controller cabinet. Install CAT-5 cable between new antenna and controller cabinet. 

**DETECTOR PLAN  
EVERGREEN AVE. AT 5TH ST.  
OFF SYSTEM  
REDMOND**



REVISIONS	
	Revised 6-09-2009 Revised notes

**"UTILITIES NOT SHOWN"**  
Contractor to contact utility companies for field locations.

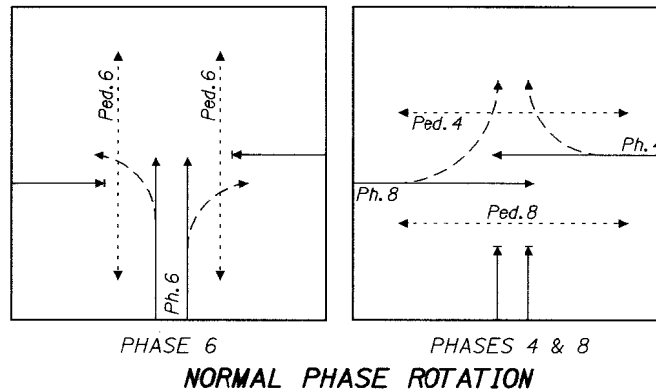
NOTE:  
See T.R.S. Dwg. 15286 for Legend

Magnetometer Number	Distance Feet	Phase	Slot
1	12	6	6U
2	7.5		
3	3		
4	12	6	6L
5	7.5		
6	3	4	4U
7	12		
8	7.5		
9	3	8	8U
10	12		
11	7.5		
12	3		

Controller Cabinet

**DETECTOR WIRING DIAGRAM**

"Distance" is from Stop Line to center of the magnetometer in feet



Traffic Section Approval

**REGISTERED PROFESSIONAL ENGINEER**  
72,367  
OREGON  
NOVEMBER 12, 2002  
JAMES M. PETERS  
EXPIRES: DEC. 31, 2010

**OREGON DEPARTMENT OF TRANSPORTATION**  
TRAFFIC - ROADWAY SECTION

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
**REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM**  
THE DALLES - CALIFORNIA HIGHWAY  
DESCHUTES COUNTY

DESIGNED BY: P. O'Brien  
REVIEWED BY: J. Peters  
DRAWN BY: DKS CAD  
FC: OFF MP:

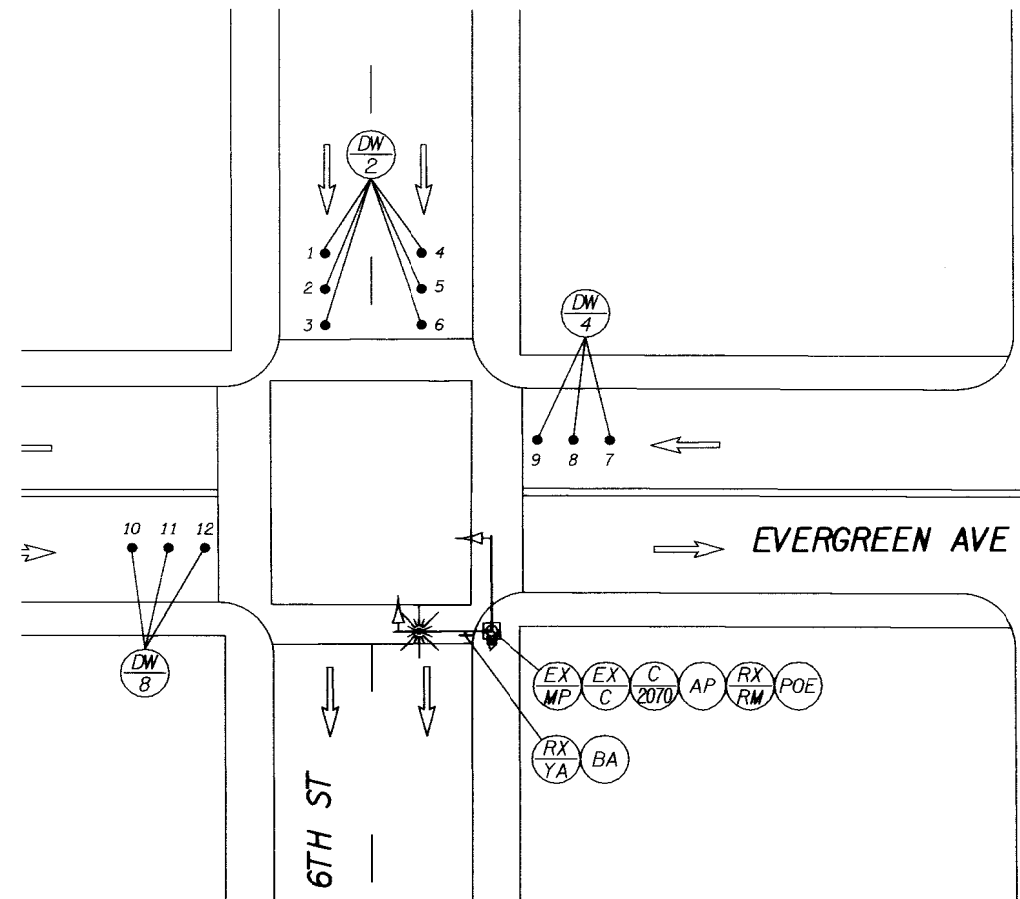
**DETECTOR PLAN**


Str. ID. No. T.R.S. DWG. NO. **15296**

**GENERAL NOTES:**

1. For existing traffic signal and detector equipment not shown, see T.E. Drawing 2096 which is available from the Engineer.
2. Remove and Reconstruct sidewalk panel(s) to ODOT Standard Dwg. RD720 as necessary to install new conduit from existing junction boxes. Match sidewalk color per Special Provisions. (Section - 00759.10).
3. See Drawing 15320 for Access Point mounting detail and detector installation detail.
4. Install and test wireless detection system. Turn system off-to be configured by others.
5. Remove existing Yagi radio antenna. Install 4.9 GHz integrated antenna on pole in southeast corner and power over ethernet adapter in traffic signal cabinet. 
6. Remove existing communications cable between existing Yagi antenna and controller cabinet. Install CAT-5 cable between new antenna and controller cabinet. 

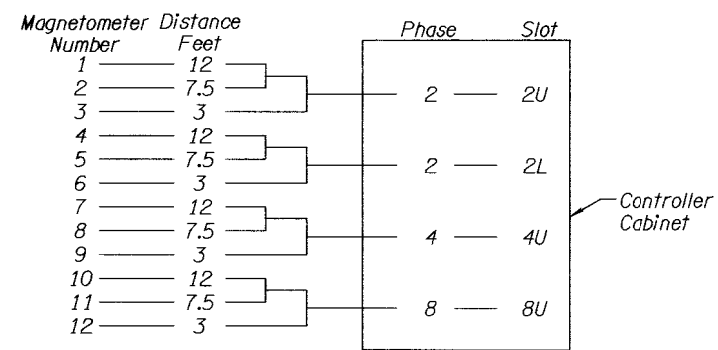
**DETECTOR PLAN  
EVERGREEN AVE. AT 6TH ST.  
OFF SYSTEM  
REDMOND**



REVISIONS	
	Revised 6-09-2009 Revised notes

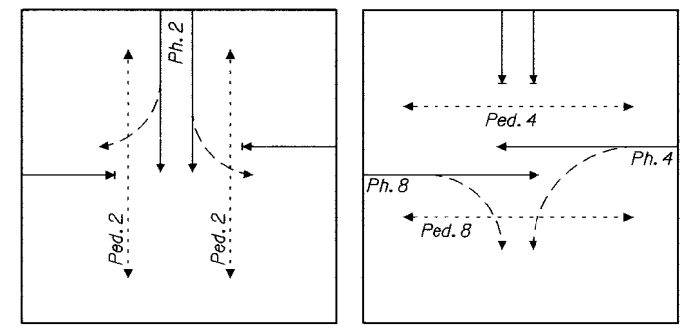
**"UTILITIES NOT SHOWN"**  
Contractor to contact utility companies for field locations.

**NOTE:**  
See T.R.S. Dwg. 15286 for Legend





**DETECTOR WIRING DIAGRAM**

"Distance" is from Stop Line to center of the magnetometer in feet



PHASE 2                      PHASES 4 & 8  
**NORMAL PHASE ROTATION**

Traffic Section Approval 

**REGISTERED PROFESSIONAL ENGINEER**  
72,367  
  
OREGON  
NOVEMBER 12, 2002  
**JAMES M. PETERS**

EXPIRES: DEC. 31, 2010

**OREGON DEPARTMENT OF TRANSPORTATION**  
TRAFFIC - ROADWAY SECTION

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TRANSPORTATION SOLUTIONS Portland, Oregon 97201-5502 Fax: (503) 243-1934

**REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM**  
THE DALLES - CALIFORNIA HIGHWAY  
DESCHUTES COUNTY

DESIGNED BY: P. O'Brien  
REVIEWED BY: J. Peters  
DRAWN BY: DKS CAD  
FC: OFF MP:

**DETECTOR PLAN**

Str. ID. No. \_\_\_\_\_ T.R.S. Dwg. No. **15297**

**GENERAL NOTES:**

1. For existing traffic signal and detector equipment not shown, see T.E. Drawing 8883 which is available from the Engineer.

2. Remove and Reconstruct sidewalk panel(s) to ODOT Standard Dwg. RD720 as necessary to install new conduit from existing junction boxes. Match sidewalk color per Special Provisions. (Section - 00759.10).

3. See Drawing 15320 for Access Point mounting detail and detector installation detail.

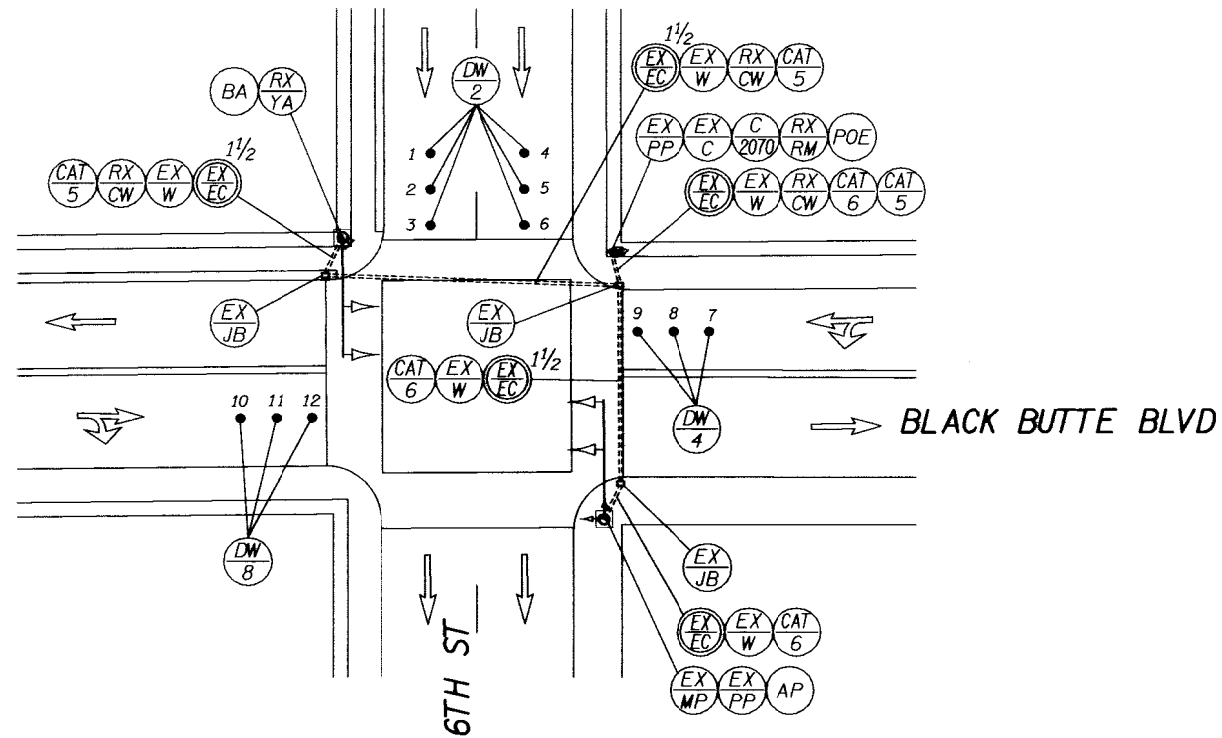
4. Install and test wireless detection system. Turn system off-to be configured by others.

5. Remove existing Yagi radio antenna. Install 4.9 GHz integrated antenna on pole in northeast corner and power over ethernet adapter in traffic signal cabinet.

6. Remove existing communications cable between existing Yagi antenna and controller cabinet. Install CAT-5 cable between new antenna and controller cabinet.



**DETECTOR PLAN  
6TH ST. AT BLACK BUTTE BLVD.  
OFF SYSTEM  
REDMOND**



REVISIONS	
	Revised 6-09-2009 Revised notes

**"UTILITIES NOT SHOWN"**  
Contractor to contact utility companies for field locations.

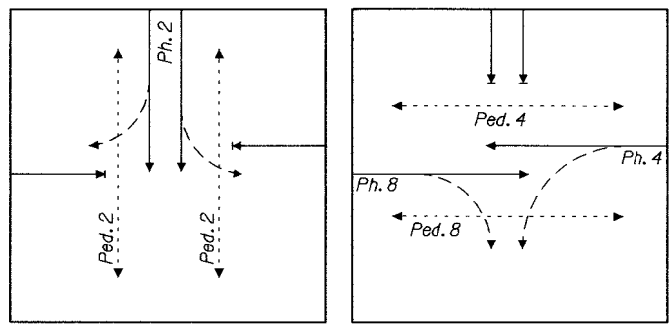
**NOTE:**  
See T.R.S. Dwg. 15286 for Legend

Magnetometer Number	Distance Feet	Phase	Slot
1	12	2	2U
2	7.5		
3	3		
4	12		
5	7.5	2	2L
6	3		
7	12	4	4U
8	7.5		
9	3		
10	12		
11	7.5	8	8U
12	3		

Controller Cabinet

**DETECTOR WIRING DIAGRAM**

"Distance" is from Stop Line to center of the magnetometer in feet



PHASE 2 PHASES 4 & 8  
**NORMAL PHASE ROTATION**

Traffic Section Approval

**OREGON DEPARTMENT OF TRANSPORTATION**  
TRAFFIC - ROADWAY SECTION

**DKS Associates** 1400 SW Fifth Avenue, Suite 500 Telephone: (503) 243-3500  
TRANSPORTATION SOLUTIONS Portland, Oregon 97201-5502 Fax: (503) 243-1934

**REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM**  
THE DALLES - CALIFORNIA HIGHWAY  
DESCHUTES COUNTY

DESIGNED BY: P. O'Brien  
REVIEWED BY: J. Peters  
DRAWN BY: DKS CAD  
FC: OFF MP:

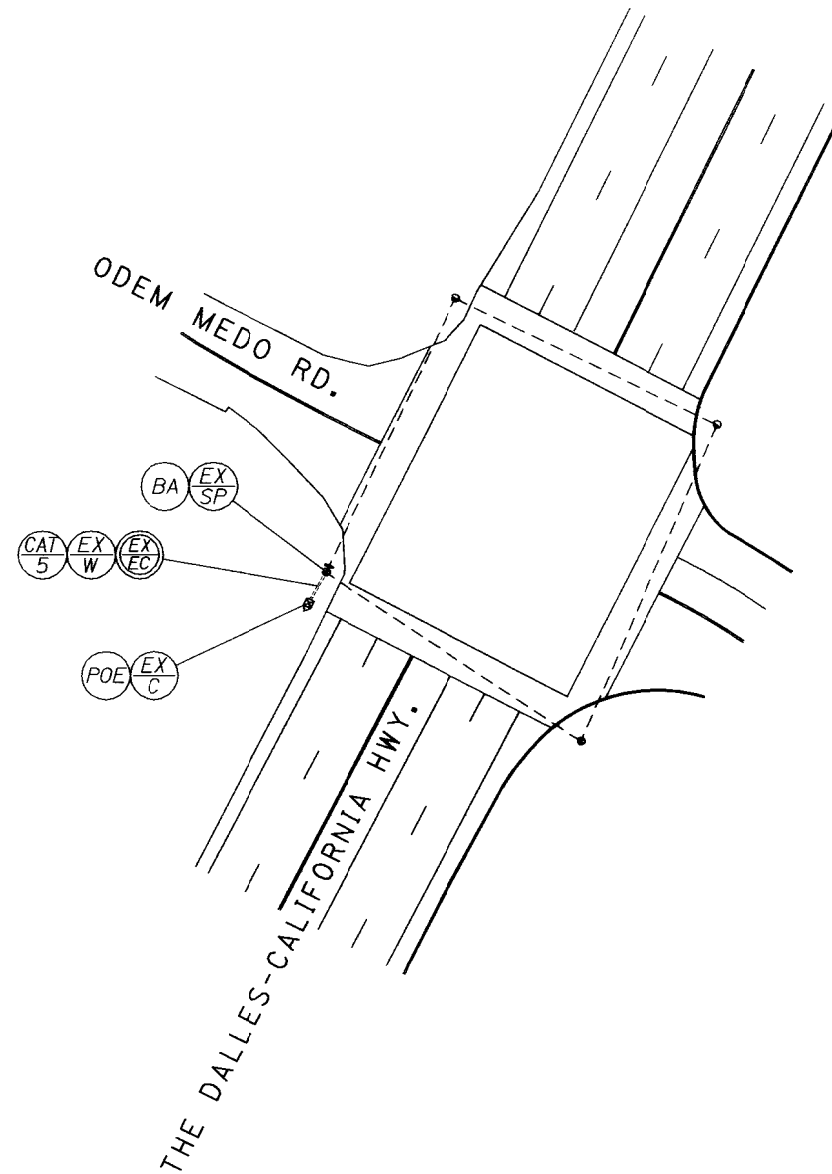
**DETECTOR PLAN**

Str. ID. No. T.R.S. DWG. NO. **15298**

**GENERAL NOTES:**

1. See drawing 15319 for mount detail.
2. Install 4.9 GHz integrated antenna on signal pole in southwest corner.

**INTERCONNECT PLAN  
ODEM MEDO RD. AT THE DALLES-CALIFORNIA HWY.  
US 97 M.P. 122.85**



REVISIONS	
1	Revised 6-09-2009 Deleted design at US97/Cooley Rd. Added design at US97/Odem Medo Rd

**"UTILITIES NOT SHOWN"**  
Contractor to contact utility  
companies for field locations.

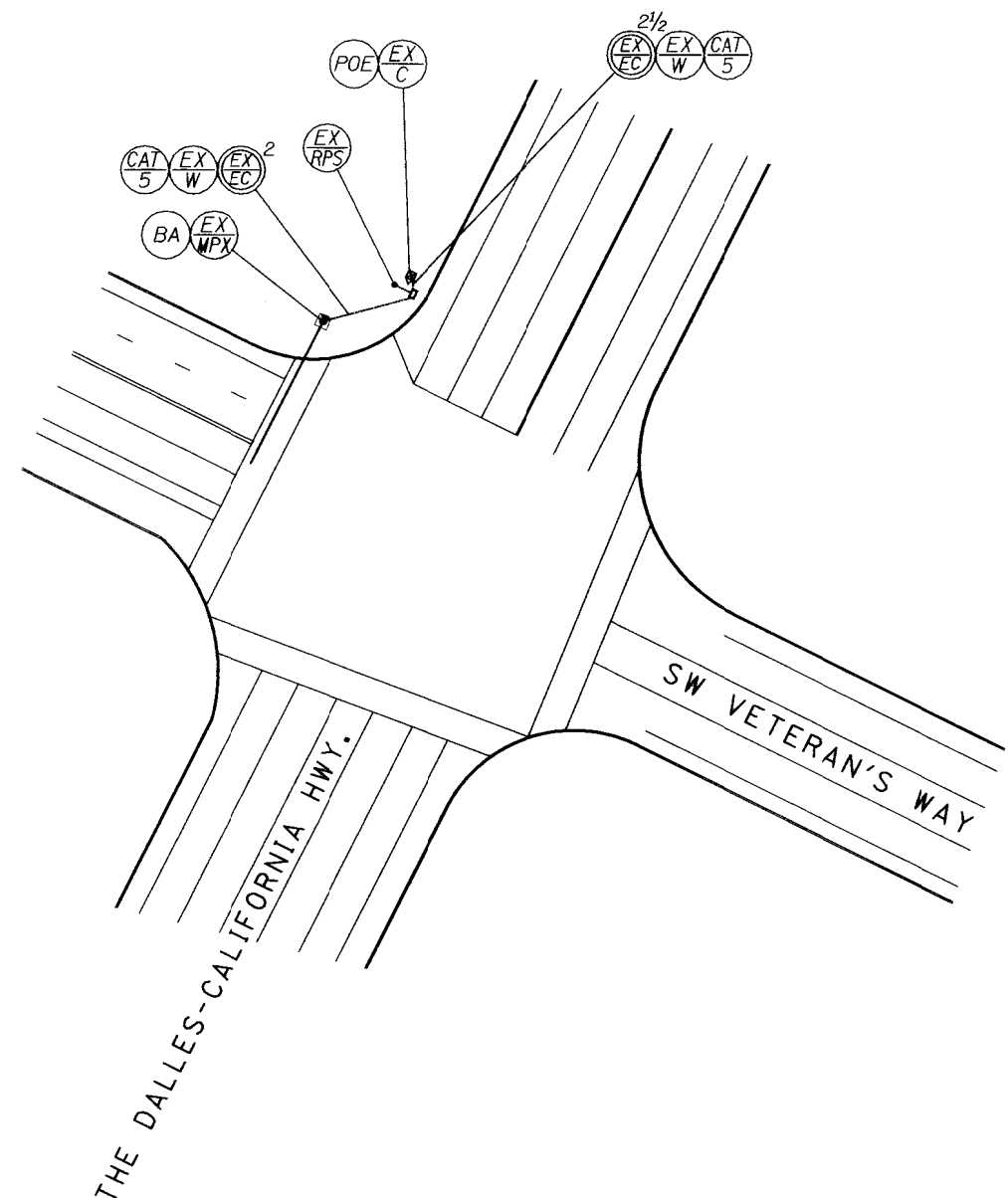
**NOTE:**  
See T.R.S. Dwg. 15286 for Legend

<p style="text-align: center;"><i>[Signature]</i> Traffic Section Approval</p> <div style="text-align: center;"> <p>REGISTERED PROFESSIONAL ENGINEER 72,367 OREGON NOVEMBER 12, 2002 JAMES M. PETERS</p> <p>EXPIRES: DEC. 31, 2010</p> </div>	<p style="text-align: center;"><b>OREGON DEPARTMENT OF TRANSPORTATION</b> TRAFFIC - ROADWAY SECTION</p> <p><b>DKS Associates</b> 1400 SW Fifth Avenue, Suite 500 Telephone: (503) 243-3500 TRANSPORTATION SOLUTIONS Portland, Oregon 97201-5502 Fax: (503) 243-1984</p> <p style="text-align: center;"><b>REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM</b> THE DALLES - CALIFORNIA HIGHWAY DESCHUTES COUNTY</p> <p>DESIGNED BY: P. O'Brien REVIEWED BY: J. Peters DRAWN BY: DKS CAD FC: 004 MP: 122.85</p> <p style="text-align: center;"><b>INTERCONNECT PLAN</b></p> <p style="text-align: right;">Str. ID. No. _____ T.R.S. DWG. NO. <b>15314</b></p>
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**GENERAL NOTES:**

1. See drawing 15319 for mount detail.
2. Install 4.9 GHz integrated antenna on signal pole in northwest corner.


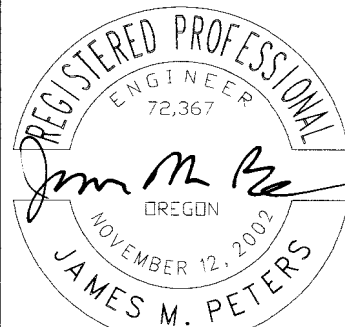
**INTERCONNECT PLAN**  
**SW VETERAN'S WAY AT THE DALLES-CALIFORNIA HWY.**  
**US 97 M.P. 121.98**



**"UTILITIES NOT SHOWN"**  
 Contractor to contact utility companies for field locations.

**NOTE:**  
 See T.R.S. Dwg. 15286 for Legend

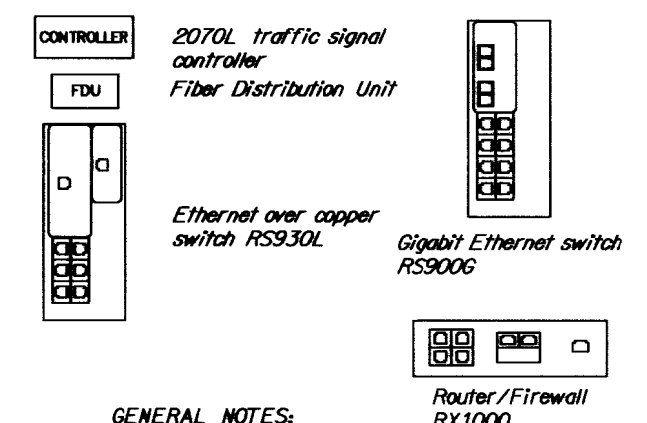
REVISIONS	
1	Revised 6-09-2009 Deleted design at US97/Robal Rd. Added design at US97/SW Veteran's Way

 Traffic Section Approval	<b>OREGON DEPARTMENT OF TRANSPORTATION</b> <b>TRAFFIC - ROADWAY SECTION</b>
	<b>DKS Associates</b> 1400 SW Fifth Avenue, Suite 500 Telephone: (503) 243-3500 TRANSPORTATION SOLUTIONS Portland, Oregon 97201-5502 Fax: (503) 243-1934
<b>REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM</b> THE DALLES - CALIFORNIA HIGHWAY DESCHUTES COUNTY	
DESIGNED BY: P. O'Brien REVIEWED BY: J. Peters DRAWN BY: DKS CAD FC: 004 MP: 121.98	
<b>INTERCONNECT PLAN</b>	
Str. ID. No. _____ T.R.S. DWG. NO. <b>15315</b>	
EXPIRES: DEC. 31, 2010	

# COMMUNICATIONS LOGICAL DIAGRAM THE DALLES-CALIFORNIA HWY. REDMOND

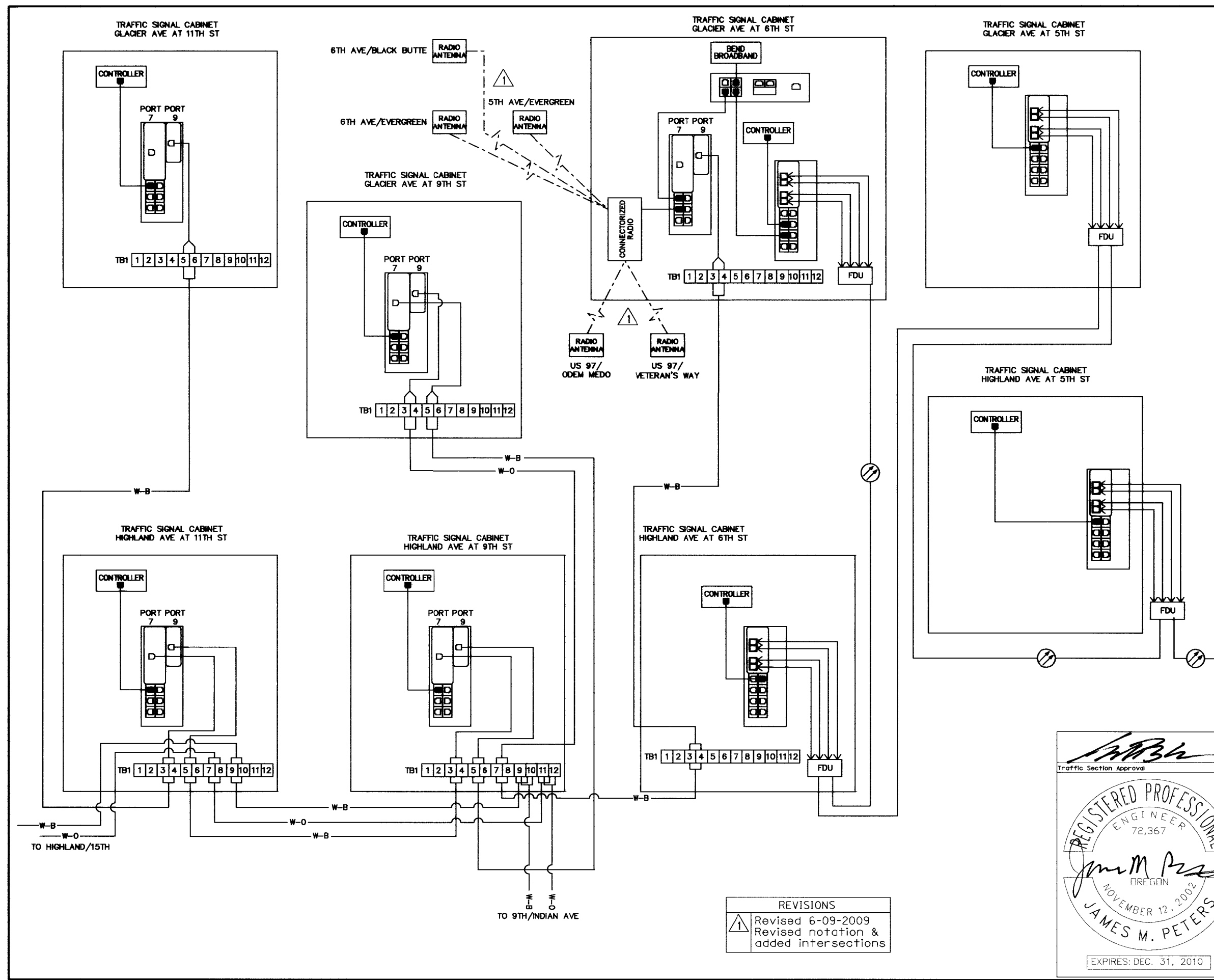
## LEGEND

- New CAT 6 Ethernet cable
- New Standard phone cable with RJ-11 connector
- Wireless Link
- Existing twisted pair communications cable
- White-blue pair
- White-orange pair
- New Singlemode fiber optic patch cord with SC/UPC connectors
- New Singlemode fiber optic cable
- Existing 12-position terminal block



### GENERAL NOTES:

1. Each device shown here and listed in Special Provisions shall be connected to an Ethernet Port.
2. Reconfigure existing copper pairs. Disconnect white-orange pair and relocate white-blue pair as shown.
3. Furnish and install new RJ-11 connectors as shown.
4. See fiber splice diagram Drawing No. 15316.



REVISIONS	
	Revised 6-09-2009 Revised notation & added intersections

*APB*  
Traffic Section Approval

REGISTERED PROFESSIONAL  
ENGINEER  
72,367  
*James M. Peters*  
OREGON  
NOVEMBER 12, 2002  
JAMES M. PETERS  
EXPIRES: DEC. 31, 2010

**OREGON DEPARTMENT OF TRANSPORTATION**  
TRAFFIC - ROADWAY SECTION

**DKS Associates** 1400 SW Fifth Avenue, Suite 500 Telephone: (503) 243-3500  
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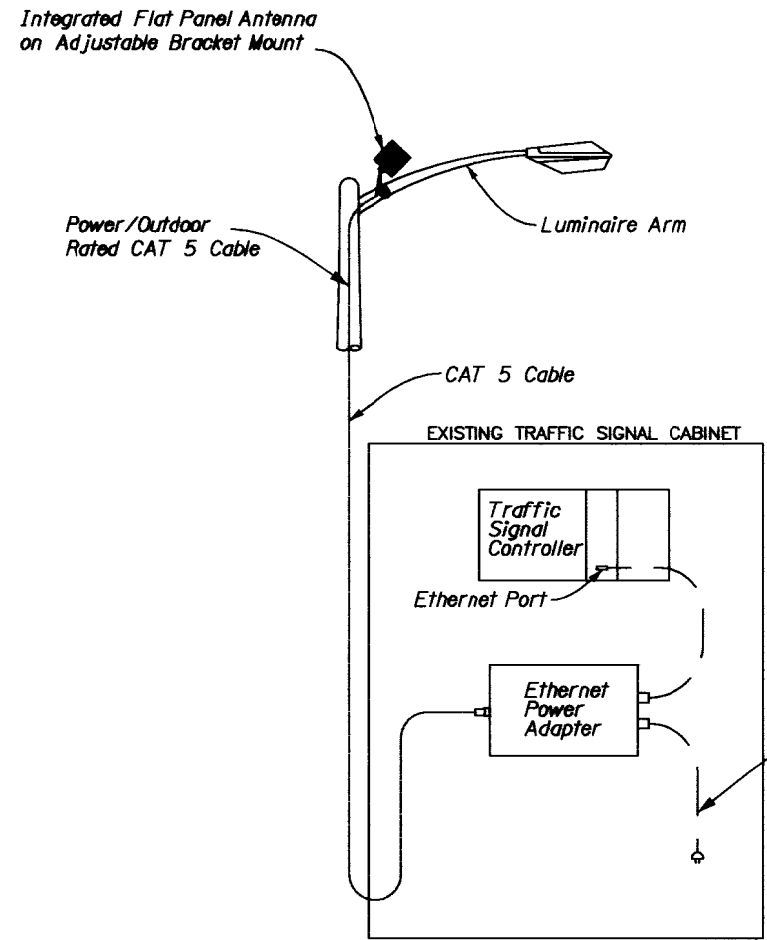
**REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM**  
THE DALLES - CALIFORNIA HIGHWAY  
DESCHUTES COUNTY

DESIGNED BY: P. O'Brien  
REVIEWED BY: J. Peters  
DRAWN BY: DKS CAD  
FC: N/A MP:

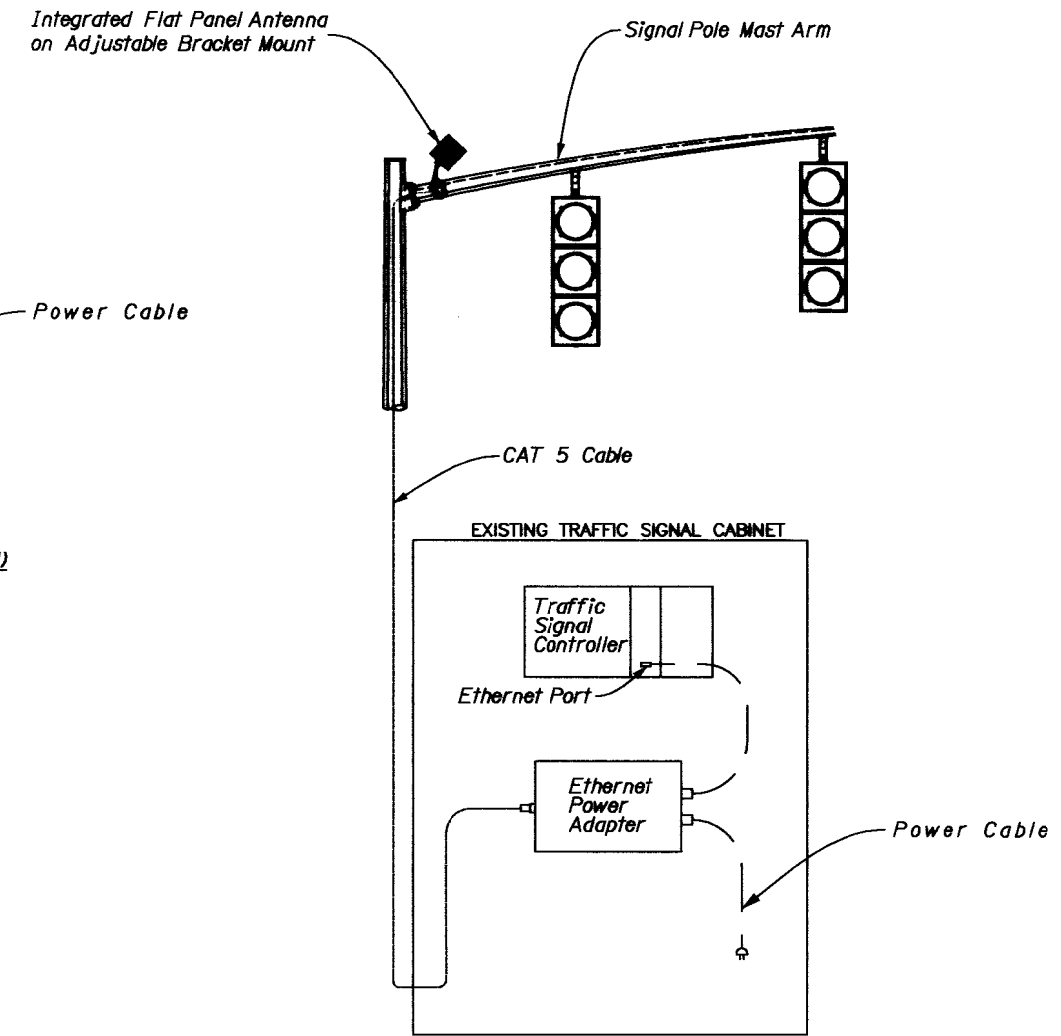
**COMMUNICATIONS LOGICAL DIAGRAM**

Str. ID. No. \_\_\_\_\_ T.R.S. DWG. NO. **15318**

ANTENNA MOUNT DETAIL

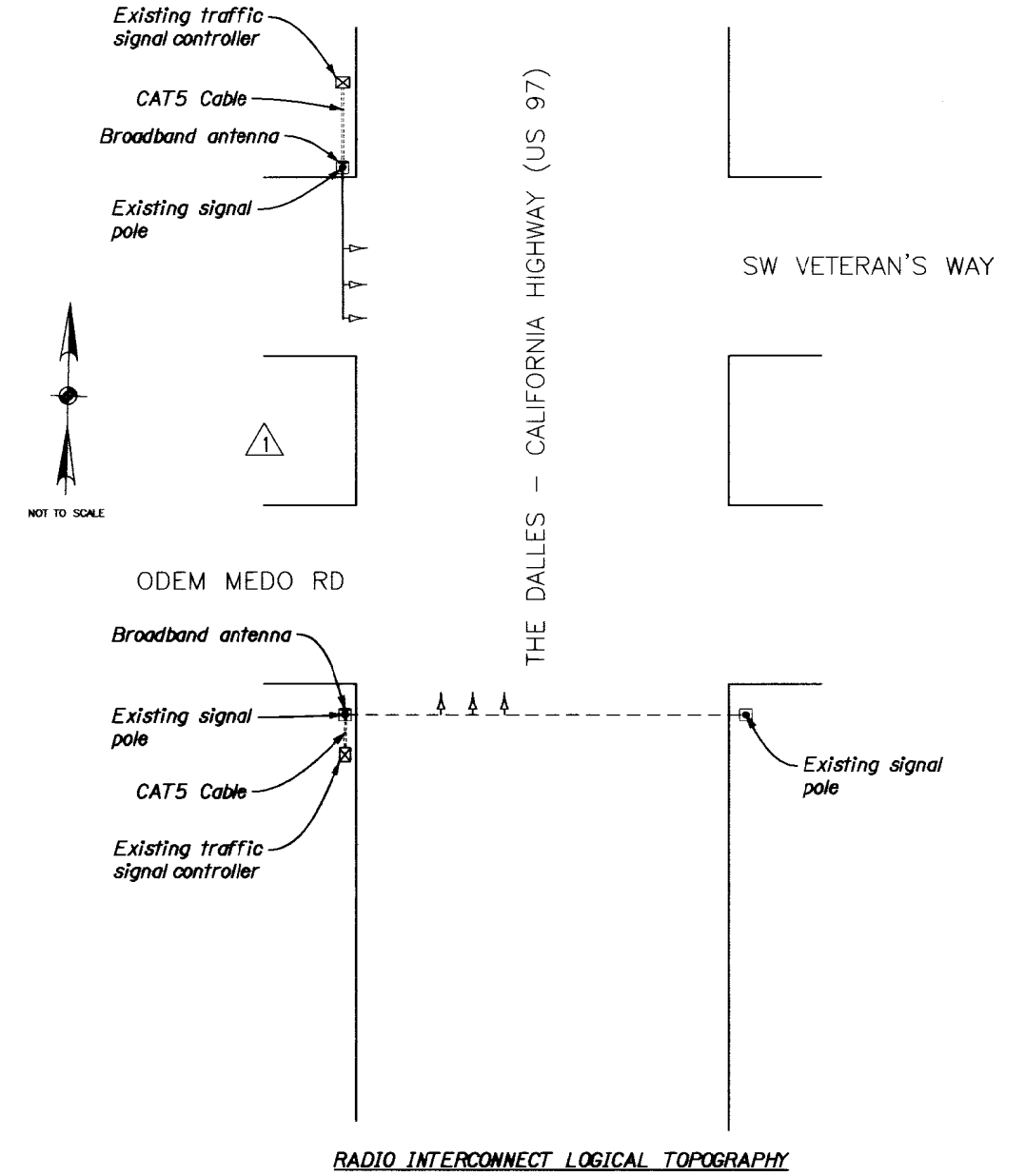


ANTENNA CONNECTION DETAIL (LUMINAIRE ARM)



ANTENNA CONNECTION DETAIL (MAST ARM)

REVISIONS	
1	Revised 6-09-2009
	Revised logical topography



Traffic Section Approval

REGISTERED PROFESSIONAL ENGINEER 72,367

JAMES M. PETERS

NOVEMBER 12, 2002

OREGON

EXPIRES: DEC. 31, 2010

**OREGON DEPARTMENT OF TRANSPORTATION**  
TRAFFIC - ROADWAY SECTION

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**REDMOND ADAPTIVE TRAFFIC SIGNAL SYSTEM**  
THE DALLES - CALIFORNIA HIGHWAY  
DESCHUTES COUNTY

DESIGNED BY: P. O'Brien  
REVIEWED BY: J. Peters  
DRAWN BY: DKS CAD  
FC: N/A MP:

**ANTENNA MOUNT DETAIL**

Str. ID. No. T.R.S. DWG. NO. **15319**