Reichhardt & Ebe
ENGINEERING INC

TRANSMITTAL SHEET

Date sent: Monday, August 24, 2015

Sent to: All Planholders

Deliver to: Project Estimator

Transmission sent from: Reichhardt & Ebe Engineering

CONFIRMATION OF RECEIPT OF ADDENDUM

PROJECT: CRACK SEALING, CITY WIDE
CITY PROJECT NUMBER ST2015-05

Please complete the following form and fax or email back to Reichhardt & Ebe Engineering, Inc. 360-354-0407 or officeadmin@recivil.com as soon as possible.

Have you received Addendum No. 1 for the above-mentioned project?

☐ **YES, we received Addendum No. 1**

Signed: _____ **Dated:** _____

Company name (Please Print): _____

Please fax back to Reichhardt & Ebe Engineering, Inc. at 360-354-0407 or email back to officeadmin@recivil.com

Reichhardt & Ebe
ENGINEERING INC

TRANSMITTAL SHEET

TO:	FROM:
ALL BIDDERS	Luis Ponce, P.E.
COMPANY:	**DATE:**
	August 24, 2015
ADDRESS:	**TOTAL NO. OF PAGES INCLUDING COVER:**
	26

RE:
City of Ferndale
Addendum 1
CRACK SEALING, CITY WIDE
CITY PROJECT NUMBER ST2015-05

NOTES/COMMENTS:

To the attention of all bidders for the above project:

Please find the enclosed Addendum for the above referenced project.

The enclosed ADDENDUM is to be considered as much a part of the Contract Documents as if it were included in the body of the plans and specifications, and will be incorporated in and made a part of the contract when awarded and when formally executed.

The Bidder shall acknowledge in writing, on the bid form, this addendum in order to have the bid considered.

Luis Ponce, P.E.

Lynden | 360.354.3687 | P.O. Box 978 | 423 Front Street, Lynden WA 98264
Sedro-Woolley | 360.855.1713 | 813 Metcalf Street, Sedro-Woolley WA 98284
www.recivil.com

ADDENDUM NO. 1
To the Contract Provisions for
CITY OF FERNDALE, WASHINGTON

CRACK SEALING, CITY WIDE
CITY PROJECT NUMBER ST2015-05

ITEM 1

The date of opening bids has been revised to:

September 1, 2015, 3:00 PM

All references to the previous bid opening date shall be replaced with the revised bid opening date.

ITEM 2

The Bid Proposal Form is replaced in its entirety with the attached **REVISED BID PROPOSAL FORM.** Only bids submitted on the **REVISED BID PROPOSAL FORM** will be considered responsive.

Bid Proposal Form, ITEM NO. 22, 'Raised Pavement Markers Type 1', the quantity has been increased.

Bid Proposal Form, ITEM NO. 23, 'Raised Pavement Markers Type 2', the quantity has been increased.

Bid Proposal Form, ITEM NO. 27, 'Loop Replacement Type 3a', has been revised to read 'Signal System Modifications Complete'. The payment method has also been revised.

ITEM 3

Plan Sheets 2

Approximately 200 feet of additional Gore Stripe (Wide Lane Line) Raised Pavement Markers is shown on the Plans.

ITEM 4

Plan Sheets TS1

The attached Plan Sheet is added to the Contract Documents.

ITEM 5

Technical Special Provisions, Traffic Signal and Illumination System

The attached Technical Specifications are added to the Contract Documents.

ITEM 6

8-09 RAISED PAVEMENT MARKERS

8-09.1 Description

(August 24, 2015 R&E GSP)
Section 8-09.1 is supplemented with the following:

In addition to the Raised Pavement Markers installed as a result of the Raised Pavement Markers removed from the planing and pavement repair work, this work shall also include installing missing Raised Pavement Markers on Main Street, between Barrett Road and 3rd Avenue. The location of the missing Raised Pavement Markers shall be designated by the Engineer.

Estimated quantity of missing Raised Pavement Markers on Main Street, between Barrett Road and 3rd Avenue, are as follows:

- 3 HUND Type 1
- 1 HUND Type 2

CITY OF FERNDALE
CRACK SEALING, CITY WIDE
Addendum No. 1

( ) SECTION REFERENCE — August 24, 2015

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
		BASE BID		
1	1 LUMP SUM	MOBILIZATION 1-09.7	$ per LS	$
2	1 LUMP SUM	SPCC PLAN 1-07	$ per LS	$
3	800 HOUR	FLAGGERS AND SPOTTERS 1-10	$ per HR	$
4	70 HOUR	OTHER TRAFFIC CONTROL LABOR 1-10	$ per HR	$
5	1 LUMP SUM	PROJECT TEMPORARY TRAFFIC CONTROL 1-10	$ per LS	$
6	1 LUMP SUM	REMOVAL OF STRUCTURES AND OBSTRUCTIONS 2-02	$ per LS	$
7	60 LINEAR FOOT-INCH	SAW-CUT PCC 2-02	$ per LF-IN	$
8	700 LINEAR FOOT-INCH	SAW-CUT ACP 2-02	$ per LF-IN	$
9	10 M GAL.	WATER 2-07	$ per M GAL.	$

CITY OF FERNDALE
CRACK SEALING, CITY WIDE
Addendum No. 1

( ) SECTION REFERENCE August 24, 2015

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
10	100 SQUARE YARD	PAVEMENT REPAIR EXCAVATION INCL. HAUL 5-04	$ per SY	$
11	8,000 LINEAR FOOT	CRACK AND JOINT SEALING 5-04	$ per LF	$
12	700 TON	HMA CLASS 1/2" PG 64-22 5-04	$ per TON	$
13	3,000 SQUARE YARD	PLANING BITUMINOUS PAVEMENT 5-04	$ per SY	$
14	0 CALC	JOB MIX COMPLIANCE PRICE ADJUSTMENT 5-04	0.00 CALC	0.00
15	0 CALC	COMPACTION PRICE ADJUSTMENT 5-04	0.00 CALC	0.00
16	7 EACH	ADJUST MANHOLE 7-05	$ per EA	$
17	1 LUMP SUM	ESC LEAD 8-01	$ per LS	$
18	20 EACH	INLET PROTECTION 8-01	$ per EA	$

( ) SECTION REFERENCE August 24, 2015

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
19	1 FORCE ACCOUNT	EROSION/WATER POLLUTION CONTROL 8-01	$ 3,000.00 FA	$ 3,000.00
20	55 LINEAR FOOT	REINFORCED CEMENT CONCRETE TRAFFIC CURB AND GUTTER 8-04	$ per LF	$
21	30 LINEAR FOOT	CEMENT CONCRETE TRAFFIC CURB AND GUTTER 8-04	$ per LF	$
22	16.3 HUNDRED	RAISED PAVEMENT MARKERS TYPE 1 8-09	$ per HUN	$
23	3.5 HUNDRED	RAISED PAVEMENT MARKERS TYPE 2 8-09	$ per HUN	$
24	15 SQUARE YARD	CEMENT CONCRETE SIDEWALK 8-14	$ per SY	$
25	1 EACH	REINFORCED CEMENT CONC. CURB RAMP TYPE PARALLEL A , 6 IN. THICK 8-14	$ per EA	$
26	1 EACH	CEMENT CONC. CURB RAMP TYPE PARALLEL A 8-14	$ per EA	$
27	1 LUMP SUM	SIGNAL SYSTEM MODIFICATIONS COMPLETE 8-20	$ per LS	$

CITY OF FERNDALE
CRACK SEALING, CITY WIDE
Addendum No. 1

( ) SECTION REFERENCE August 24, 2015

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
28	200 SQUARE FOOT	PLASTIC CROSSWALK LINE 8-22	$ per SF	$
29	5 EACH	PLASTIC TRAFFIC ARROW 8-22	$ per EA	$
30	240 LINEAR FOOT	PAINT LINE 8-22	$ per LF	$
31	3 EACH	POTHOLE EXISTING UNDERGROUND UTILITY 8-30	$ per EA	$
32	1 FORCE ACCOUNT	REPAIR EXISTING PUBLIC AND PRIVATE FACILITIES 8-31	$ 5,000.00 FA	$ 5,000.00
33	1 FORCE ACCOUNT	UNANTICIPATED SITE WORK 8-32	$ 5,000.00 FA	$ 5,000.00

BASE BID SUBTOTAL $ _____

( ) SECTION REFERENCE August 24, 2015

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
		MAIN STREET - EASTERNMOST TO CITY LIMITS - ALTERNATE A1		
34	1 LUMP SUM	MOBILIZATION 1-09.7	$ per LS	$
35	1 LUMP SUM	SPCC PLAN 1-07	$ per LS	$
36	250 HOUR	FLAGGERS AND SPOTTERS 1-10	$ per HR	$
37	25 HOUR	OTHER TRAFFIC CONTROL LABOR 1-10	$ per HR	$
38	1 LUMP SUM	PROJECT TEMPORARY TRAFFIC CONTROL 1-10	$ per LS	$
39	1 FORCE ACCOUNT	CRACK AND JOINT SEALING 5-04	$ 20,000.00 FA	$ 20,000.00
40	4 EACH	INLET PROTECTION 8-01	$ per EA	$
41	1 FORCE ACCOUNT	UNANTICIPATED SITE WORK 8-32	$ 5,000.00 FA	$ 5,000.00

ALTERNATE A1 SUBTOTAL $ _____

( ) SECTION REFERENCE August 24, 2015

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
		VISTA DRIVE - THORNTON TO N CITY LIMITS - ALTERNATE A2		
42	1 LUMP SUM	MOBILIZATION 1-09.7	$ per LS	$
43	1 LUMP SUM	SPCC PLAN 1-07	$ per LS	$
44	200 HOUR	FLAGGERS AND SPOTTERS 1-10	$ per HR	$
45	25 HOUR	OTHER TRAFFIC CONTROL LABOR 1-10	$ per HR	$
46	1 LUMP SUM	PROJECT TEMPORARY TRAFFIC CONTROL 1-10	$ per LS	$
47	4,000 LINEAR FOOT	CRACK AND JOINT SEALING 5-04	$ per LF	$
48	6 EACH	INLET PROTECTION 8-01	$ per EA	$
49	40 SQUARE FOOT	PLASTIC CROSSWALK LINE (8-22)	$ per SF	$
50	1 FORCE ACCOUNT	UNANTICIPATED SITE WORK 8-32	$ 2,000.00 FA	$ 2,000.00

ALTERNATE A2 SUBTOTAL $ _____

( ) SECTION REFERENCE August 24, 2015

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
		VISTA DRIVE - MALLOY ROUNDABOUT TO THORNTON - ALTERNATE A3		
51	1 LUMP SUM	MOBILIZATION 1-09.7	$ per LS	$
52	1 LUMP SUM	SPCC PLAN 1-07	$ per LS	$
53	175 HOUR	FLAGGERS AND SPOTTERS 1-10	$ per HR	$
54	15 HOUR	OTHER TRAFFIC CONTROL LABOR 1-10	$ per HR	$
55	1 LUMP SUM	PROJECT TEMPORARY TRAFFIC CONTROL 1-10	$ per LS	$
56	450 LINEAR FOOT	CRACK AND JOINT SEALING 5-04	$ per LF	$
57	6 EACH	INLET PROTECTION 8-01	$ per EA	$
58	1 FORCE ACCOUNT	UNANTICIPATED SITE WORK 8-32	$ 2,000.00 FA	$ 2,000.00

ALTERNATE A3 SUBTOTAL $ _____

( ) SECTION REFERENCE August 24, 2015

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
		THORNTON - DELLA TO CHURCH - ALTERNATE A4		
59	1 LUMP SUM	MOBILIZATION (1-09.7)	$ per LS	$
60	1 LUMP SUM	SPCC PLAN 1-07	$ per LS	$
61	175 HOUR	FLAGGERS AND SPOTTERS 1-10	$ per HR	$
62	15 HOUR	OTHER TRAFFIC CONTROL LABOR 1-10	$ per HR	$
63	1 LUMP SUM	PROJECT TEMPORARY TRAFFIC CONTROL 1-10	$ per LS	$
64	1,600 LINEAR FOOT	CRACK AND JOINT SEALING 5-04	$ per LF	$
65	6 EACH	INLET PROTECTION 8-01	$ per EA	$
66	1 FORCE ACCOUNT	UNANTICIPATED SITE WORK 8-32	$ 2,000.00 FA	$ 2,000.00

ALTERNATE A4 SUBTOTAL $ _____

( ) SECTION REFERENCE August 24, 2015

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
		THORNTON - CHURCH TO SHANNON - ALTERNATE A5		
67	1 LUMP SUM	MOBILIZATION 1-09.7	$ per LS	$
68	1 LUMP SUM	SPCC PLAN 1-07	$ per LS	$
69	175 HOUR	FLAGGERS AND SPOTTERS 1-10	$ per HR	$
70	15 HOUR	OTHER TRAFFIC CONTROL LABOR 1-10	$ per HR	$
71	1 LUMP SUM	PROJECT TEMPORARY TRAFFIC CONTROL 1-10	$ per LS	$
72	350 LINEAR FOOT	CRACK AND JOINT SEALING 5-04	$ per LF	$
73	10 EACH	INLET PROTECTION 8-01	$ per EA	$
74	1 FORCE ACCOUNT	UNANTICIPATED SITE WORK 8-32	$ 2,000.00 FA	$ 2,000.00

ALTERNATE A5 SUBTOTAL $ _____

CITY OF FERNDALE
CRACK SEALING, CITY WIDE
Addendum No. 1

TOTAL BASE BID + ALT A1 (INCLUDING TAX) $ _____

TOTAL BASE BID + ALT A1 + ALT A2 (INCLUDING TAX) $ _____

TOTAL BASE BID + ALT A1 + ALT A2 + ALT A3 (INCLUDING TAX) $ _____

TOTAL BASE BID + ALT A1 + ALT A2 + ALT A3 + ALT A4 (INCLUDING TAX) $ _____

TOTAL BASE BID + ALT A1 + ALT A2 + ALT A3 + ALT A4 + A5 (INCLUDING TAX) $ _____

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft. H
1 inch = 0.5 ft. V

NOTE: SSMH AND PROPOSED GORE STRIPE RPMS BELOW TRACKS

LUIS PONCE
STATE OF WASHINGTON
38378
REGISTERED PROFESSIONAL ENGINEER
8/11/15

ADDENDUM 1

DESIGNED BY LP
DRAWN BY RWG
CHECKED BY LP

R&E Reichhardt & Ebe ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY
1	8/24/15	GORE STRIPE RPM	LP

CITY OF FERNDALE
2095 MAIN STREET
FERNDALE, WA 98248

CRACK SEALING - CITYWIDE
PROJECT
BASE BID

DWG 15019 PLANS
DATE 8/11/2015
JOB# 15019
SCALE H: 1"=40' V: N/A
SHEET 2 of 11

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2014 WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AND ITS CURRENT AMENDMENTS, THE SPECIAL PROVISIONS, THE CURRENT WSDOT STANDARD PLANS, THE CURRENT CITY OF BELLINGHAM STANDARD DRAWINGS AND THE CURRENT NATIONAL ELECTRICAL CODE. WHERE CONFLICTS BETWEEN WSDOT AND CITY OF BELLINGHAM SPECIFICATIONS AND STANDARD PLANS ARISE, CITY OF BELLINGHAM SPECIFICATIONS AND STANDARD PLANS SHALL GOVERN.

2. EXISTING LOOP STUB-OUT CONDUIT LOCATIONS SHOWN MAY NOT BE ACTUAL. CONTRACTOR SHALL LOCATE EXACT CONDUIT LOCATIONS. ANY DAMAGE TO ASPHALT PAVEMENT SHALL BE REPAIRED BY CONTRACTOR AT DIRECTION OF ENGINEER.

CONSTRUCTION NOTES

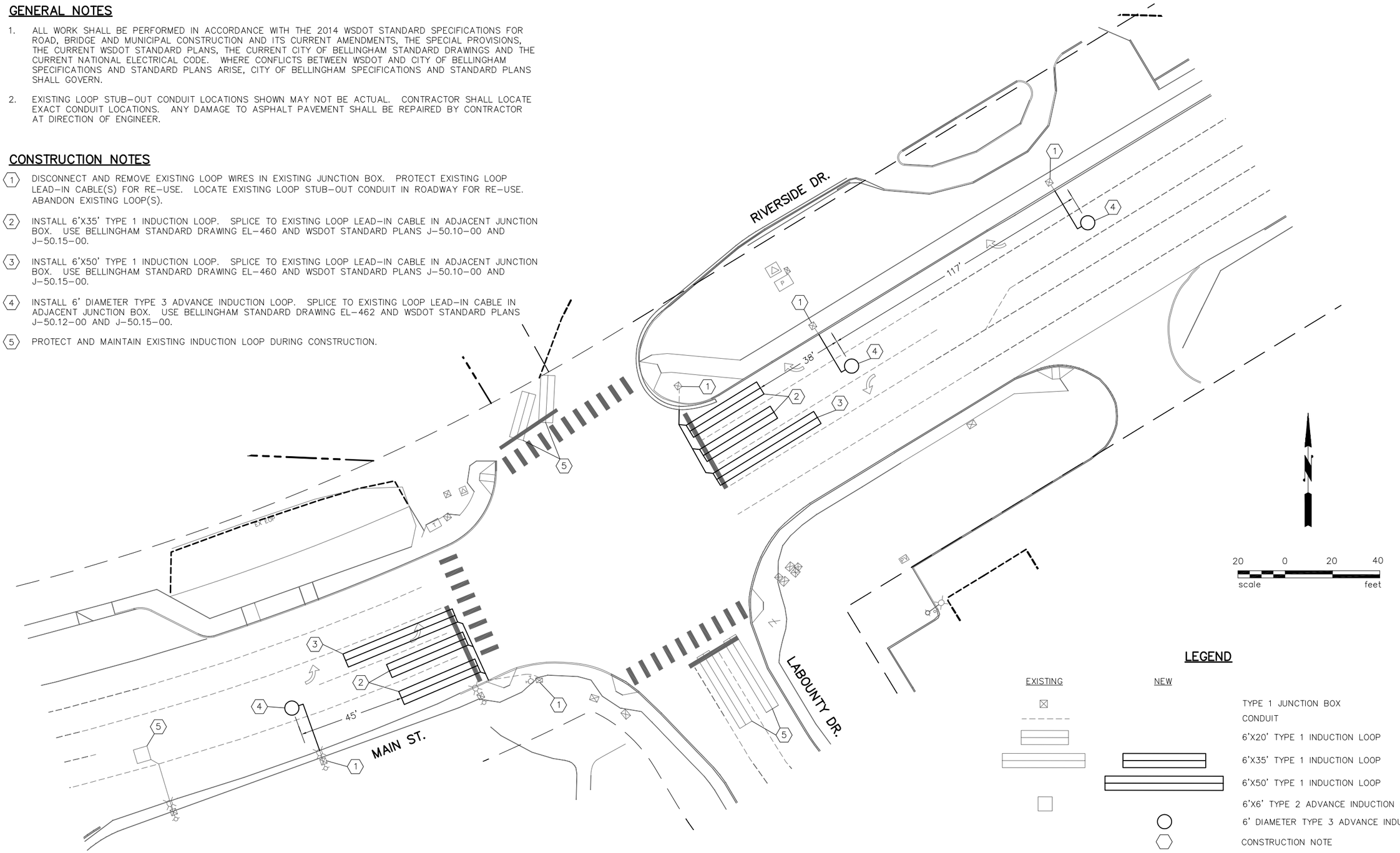
(1) DISCONNECT AND REMOVE EXISTING LOOP WIRES IN EXISTING JUNCTION BOX. PROTECT EXISTING LOOP LEAD-IN CABLE(S) FOR RE-USE. LOCATE EXISTING LOOP STUB-OUT CONDUIT IN ROADWAY FOR RE-USE. ABANDON EXISTING LOOP(S).

(2) INSTALL 6'X35' TYPE 1 INDUCTION LOOP. SPLICE TO EXISTING LOOP LEAD-IN CABLE IN ADJACENT JUNCTION BOX. USE BELLINGHAM STANDARD DRAWING EL-460 AND WSDOT STANDARD PLANS J-50.10-00 AND J-50.15-00.

(3) INSTALL 6'X50' TYPE 1 INDUCTION LOOP. SPLICE TO EXISTING LOOP LEAD-IN CABLE IN ADJACENT JUNCTION BOX. USE BELLINGHAM STANDARD DRAWING EL-460 AND WSDOT STANDARD PLANS J-50.10-00 AND J-50.15-00.

(4) INSTALL 6' DIAMETER TYPE 3 ADVANCE INDUCTION LOOP. SPLICE TO EXISTING LOOP LEAD-IN CABLE IN ADJACENT JUNCTION BOX. USE BELLINGHAM STANDARD DRAWING EL-462 AND WSDOT STANDARD PLANS J-50.12-00 AND J-50.15-00.

(5) PROTECT AND MAINTAIN EXISTING INDUCTION LOOP DURING CONSTRUCTION.



LEGEND

EXISTING	NEW	
⊠		TYPE 1 JUNCTION BOX
- - - - - -		CONDUIT
▭		6'X20' TYPE 1 INDUCTION LOOP
▭	▭	6'X35' TYPE 1 INDUCTION LOOP
	▭	6'X50' TYPE 1 INDUCTION LOOP
□		6'X6' TYPE 2 ADVANCE INDUCTION LOOP
○		6' DIAMETER TYPE 3 ADVANCE INDUCTION LOOP
⬡		CONSTRUCTION NOTE

DRAWN	RMH				
DESIGNED	RMH				
CHECKED	8/22/15 RMH				
PROJ. ENGR.					
DRAWING FILE	TS.DWG				
		DATE	REVISION	BY	APP'D

FOR:
REICHHARDT & EBE ENGINEERING, INC.
423 Front Street
Lynden, WA 98264

ROBERT MARTIN HERMAN — STATE OF WASHINGTON — 30730 — REGISTERED PROFESSIONAL ENGINEER
8-24-15

HTE HERMAN TRAFFIC ENGINEERING
15324 Southeast 133rd Court, Renton, Washington 98059
425-277-1740 tel. 425-277-5718 fax hte@comcast.net

CITY OF FERNDALE WASHINGTON
CRACK SEALING – CITYWIDE
MAIN ST./LABOUNTY DR.
TRAFFIC SIGNAL MODIFICATION PLAN

TS1
SHEET OF SHEETS

TECHNICAL SPECIAL PROVISIONS

TRAFFIC SIGNAL AND ILLUMINATION SYSTEMS

Introduction

The project involves replacing existing vehicle detector loops at the Main St./Labounty Dr. signalized intersection which will be damaged by paving operations.

The work consists of removing loop wires; locating existing loop stub-out conduits; furnishing and installing induction loop vehicle detectors, wiring and splices; and providing all necessary temporary traffic control, testing, site restoration work and all other work necessary for complete and operational traffic signal detection system as shown on the Plans, the Standard Drawings and contained herein.

Traffic Signal System Complete

This work consists of furnishing and installing all materials and equipment for a traffic signal system complete in place shown on the plans or designated by the Engineer. All work shall be in conformance with these provisions and with Sections 8-20 and 9-29 of the Standard Specifications.

The successful Contractor shall submit four copies of shop drawings for Contractor-supplied equipment to the Engineer for approval before ordering. All material shall be obtained from a source approved by the Engineer.

The signal system shall be demonstrated to the Engineer at an agreed upon time after completion and prior to final approval. The Contractor shall provide manpower and equipment for any necessary final adjustments and/or corrections.

A. Conductors

Electrical conductors used on this project shall conform to all pertinent requirements of Section 9-29.3 of the State's Standard Specifications, except as otherwise provided herein or on the plans. Each conductor shall have a PVC wire marking sleeve bearing the circuit number indicated in the wiring schematic drawings. No splicing of any traffic signal conductors or detector conductors shall be permitted, including service wires.

The following conductors are exceptions to the Standard Specifications.

(1) Loop Wire

Wire for the vehicle detection loops shall be #12 USE.

B. Vehicle Detectors - Induction Loop

The intention of this specification is to describe a detection system consisting of an induction loop embedded in the roadway surface with a lead-in cable

connected to a detector amplifier which shall detect the presence or passage of vehicles over the induction loop.

Type I and II induction loops shall conform to Bellingham STD Plans EL-460 and EL-462. The induction loops shall be #12 USE and shall be a minimum of 3 inches below the final roadway surface. Lead-in from loop to junction box shall be twisted at least 2 turns/foot.

After the lead-in and loop sawcuts are completed, the slot shall be thoroughly blown out with 100 psi air pressure so that no rocks and debris remain in the sawcut. If traffic is allowed to travel over the sawcuts before they are sealed, they shall be blown out again before placement of the wire and sealing. The sawcut shall be sealed with Craftco detector-loop sealant, Preco sealant, 3M sealant, or prior approved equal.

The conductors that form the induction loop and terminate in the lead-in junction box shall be joined to the cable as follows:

Detector lead-ins shall be spliced at the junction box nearest to the induction loop. Sufficient cable length shall always be provided to permit the preparation of wire splices 2 to 4 feet above ground.

The conductors and detector lead-in shall be twisted together than soldered, conforming to the wiring diagram for loop identification. The soldered connections shall then be trimmed and taped, assuring good electrical insulation of the loop pair. Pigtail splices are permissible.

Each loop pair shall then be sealed in an epoxy resin, Scotchsast size "G" (Sealing Pack #3570) or approved equal, assuring a good seal on the splice and insulated sheaths of the conductors.

Overlap splices, parallel splices, "Y" or "T" splice kits shall not be allowed.

Loops shall be tested as per Section 8-20.3 (14) of the Standard Specifications. Documentation of testing shall be submitted to the Engineer.

C. Payment

Payment shall be per lump sum for "Signal System Modifications Complete" and shall cover all costs of furnishing, installing and testing as specified, and City Electrical Permit.

APPROVED

City Engineer

6/16/10
Date

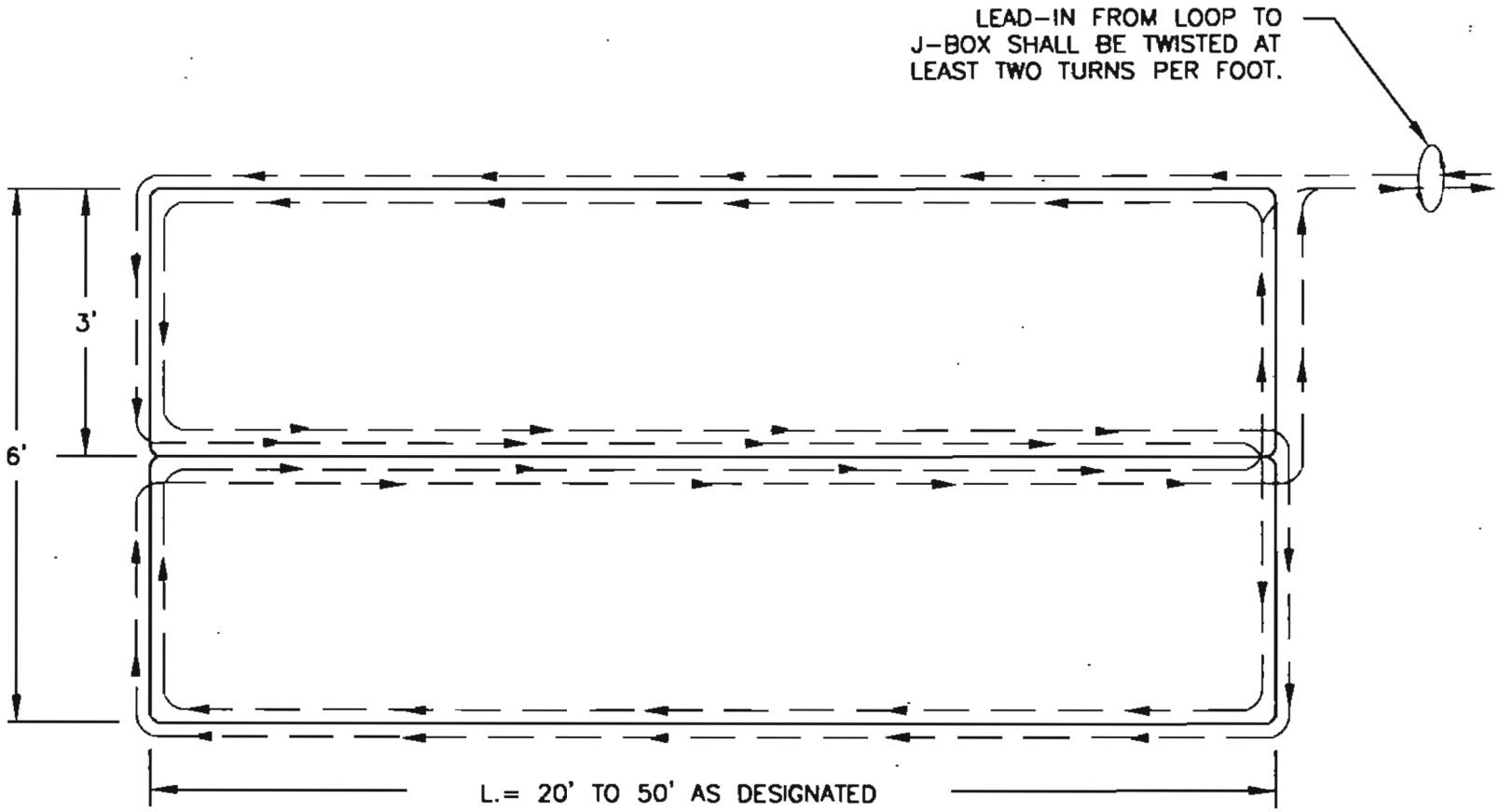
CITY OF BELLINGHAM

TYPE 1 INDUCTION LOOP

DRAWING

EL-460

THE TYPE 1 OR QUADRAPOLE INDUCTION LOOPS ARE 6' WIDE BY SPECIFIED LENGTH (20 OR MORE FEET). INSTALLED FROM THE LEAD-IN CUT, LOOP WIRE SHALL FOLLOW A FIGURE EIGHT CONFIGURATION, SO ALL DETECTOR WIRES ARE LAID IN THE SAME DIRECTION IN ANY ONE CUT. THE CENTER WIRES SHALL BE TRAVELING IN THE OPPOSITE DIRECTION FROM EACH OF THE OUTSIDE WIRES. THE LOOP WIRE SHALL BE #12 USE. LEAD IN FROM LOOP SHALL BE INSTALLED IN A 1 1¼" CONDUIT, WITH SWEEP, FROM J-BOX PAST FACE OF CURB. ALL LOOPS SHALL BE INSTALLED PRIOR TO PLACEMENT OF FINAL LIFT OF ASPHALT.



TYPE I INDUCTION LOOP
MINIMUM OF TWO TURNS

APPROVED

City Engineer

6/16/11

Date

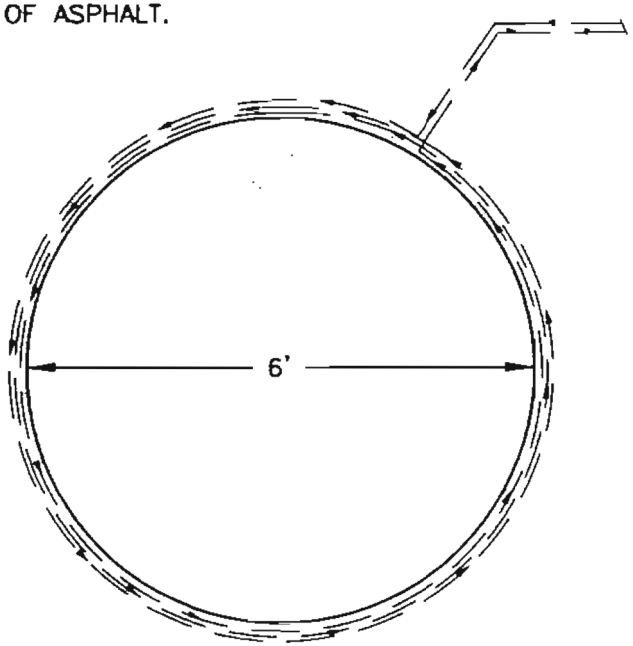
CITY OF BELLINGHAM

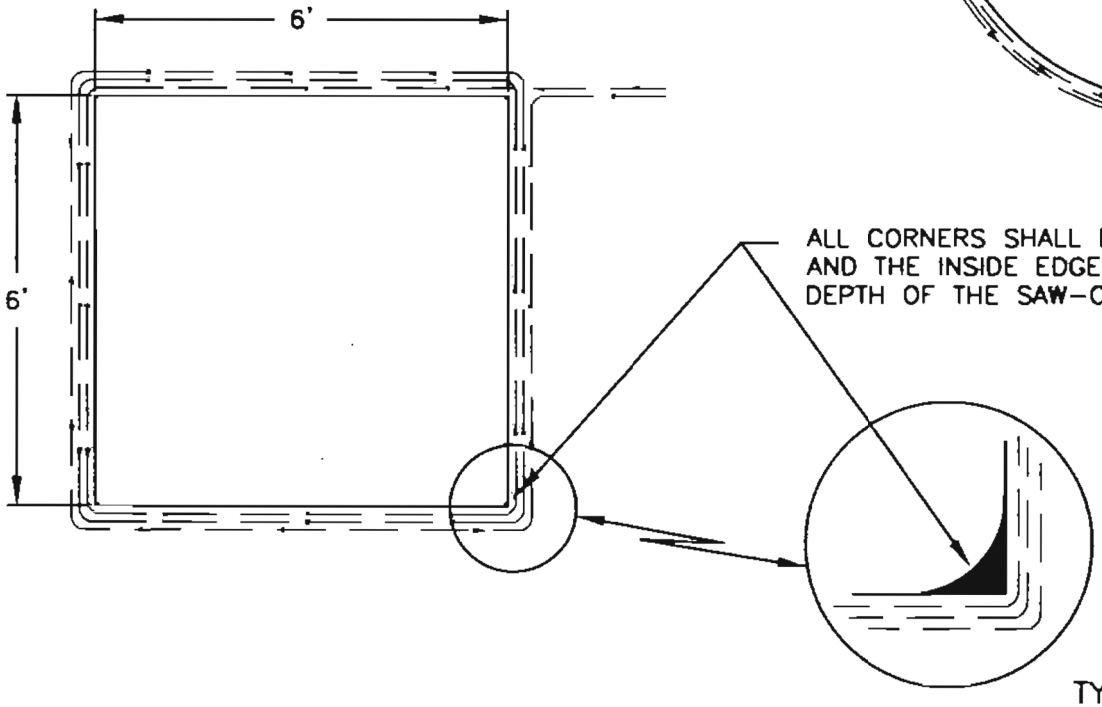
TYPE 2 INDUCTION LOOP

DRAWING

EL-462

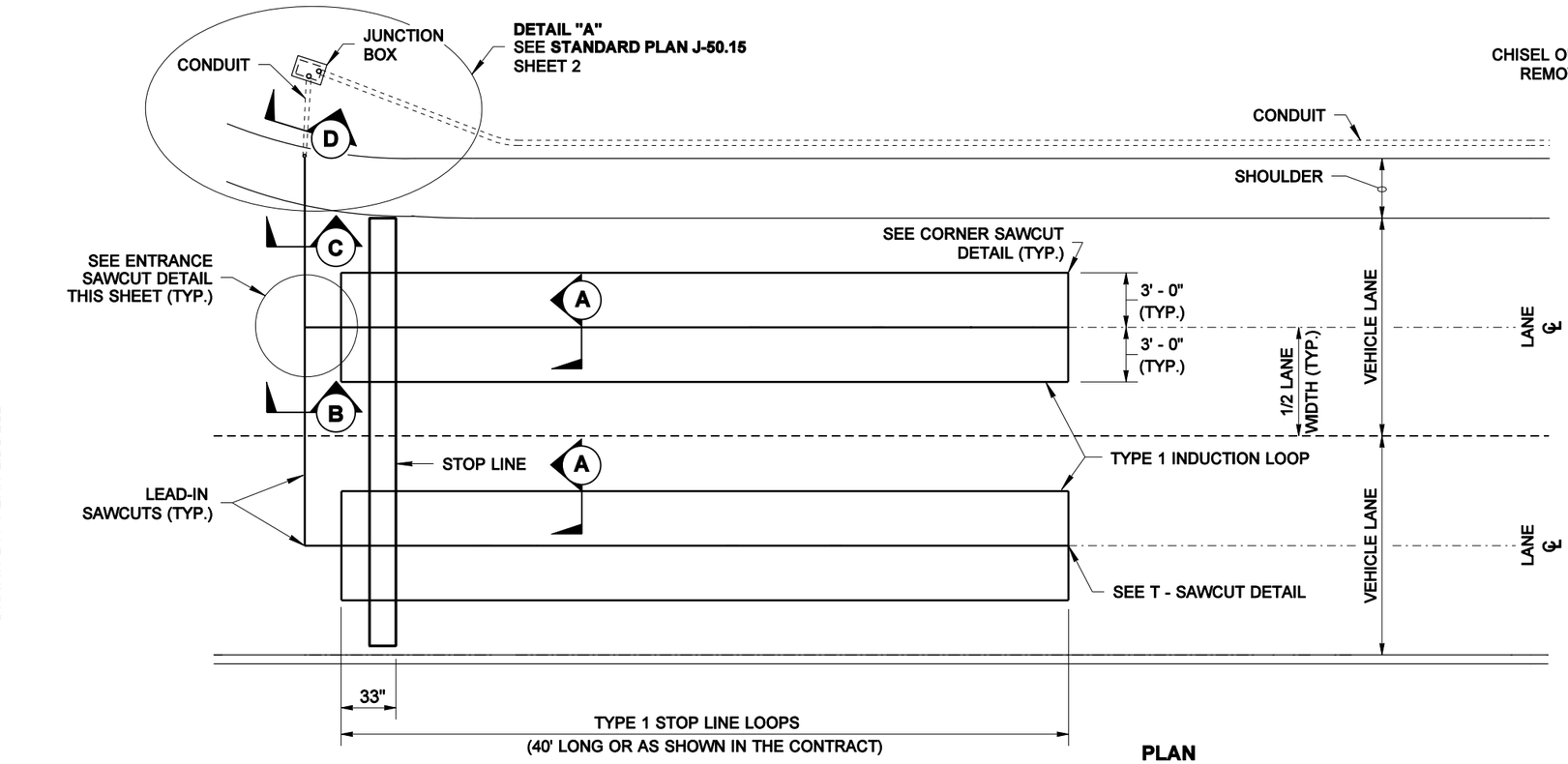
THE TYPE 2 OR ADVANCE INDUCTION LOOPS ARE 6 FEET BY 6 FEET SQUARE OR A 6 FOOT DIAMETER CIRCLE. ALL DETECTOR WIRES ARE INSTALLED IN ONE DIRECTION AROUND THE LOOP. LEAD-IN FROM LOOP TO J-BOX SHALL BE TWISTED AT LEAST TWO TURNS PER FOOT. WIRE SHALL BE #12 USE. LEAD IN SHALL BE INSTALLED THROUGH A 1¼" CONDUIT, WITH SWEEP, FROM J-BOX PAST FACE OF CURB. ALL LOOPS SHALL BE INSTALLED PRIOR TO PLACEMENT OF FINAL LIFT OF ASPHALT.





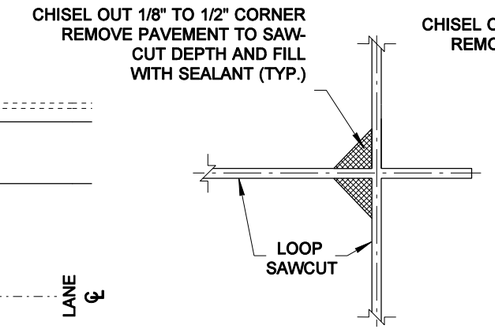
TYPE 2 INDUCTION LOOP MINIMUM OF THREE TURNS

DRAWN BY: FERN LIDDELL

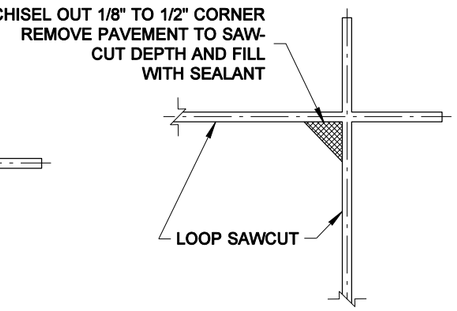


PLAN

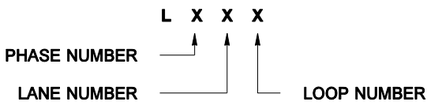
TYPE 1 STOP LINE LOOPS



T - SAWCUT DETAIL



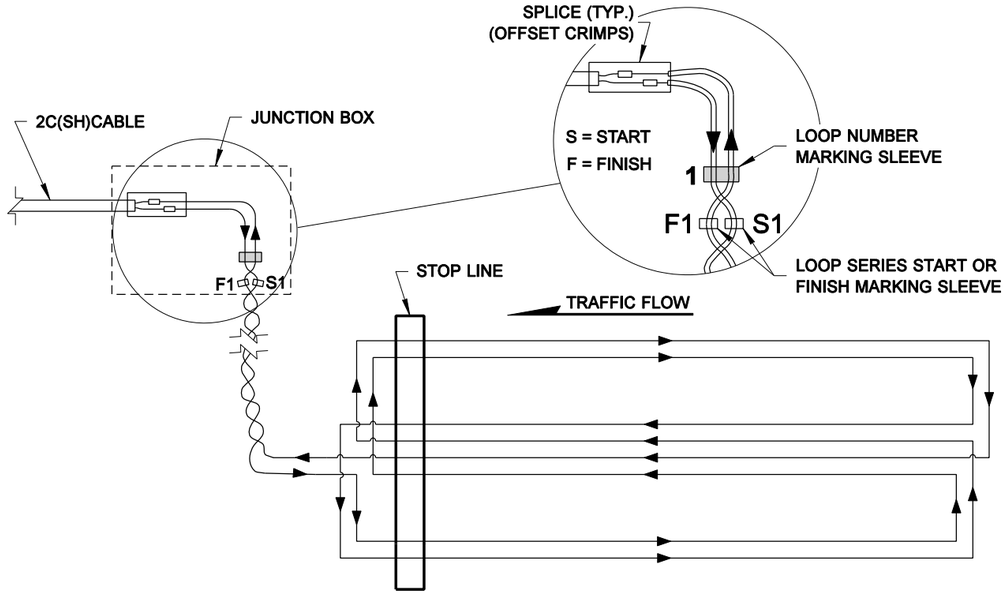
CORNER SAWCUT DETAIL



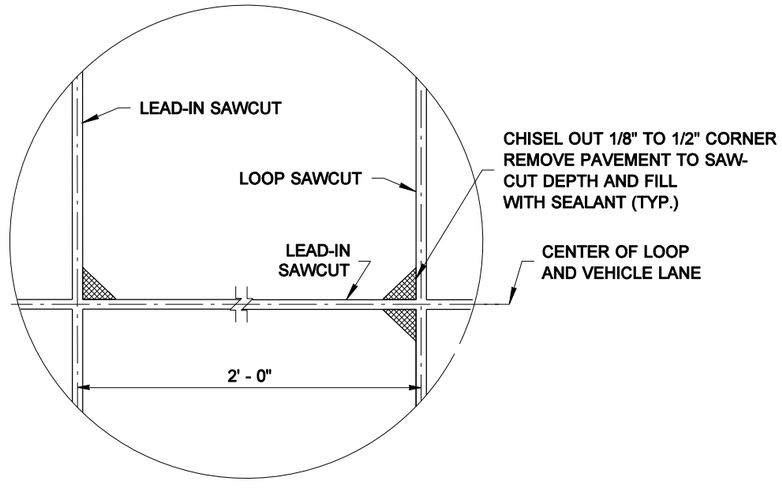
LOOP NUMBER MARKING DETAIL

NOTES

1. For Installation Notes and Details see **Standard Plan J-50.15.**
2. For Sections A, B, C, and D, see **Standard Plan J-50.15.**



TYPE 1 STOP LINE LOOP WIRING DIAGRAM



ENTRANCE SAWCUT DETAIL

JOHN C. NISBET
STATE OF WASHINGTON
29115
REGISTERED
PROFESSIONAL ENGINEER

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

TYPE 1 INDUCTION LOOP

STANDARD PLAN J-50.10-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER

06-03-11 — DATE

Washington State Department of Transportation

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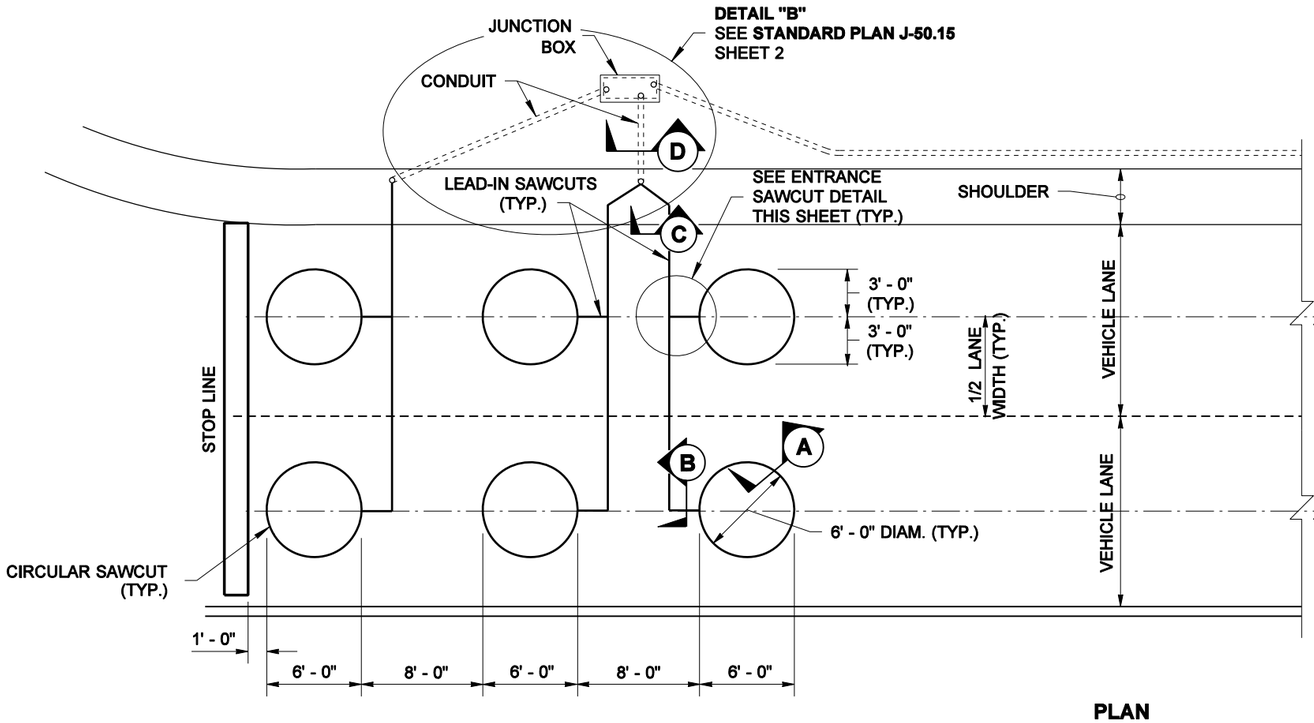
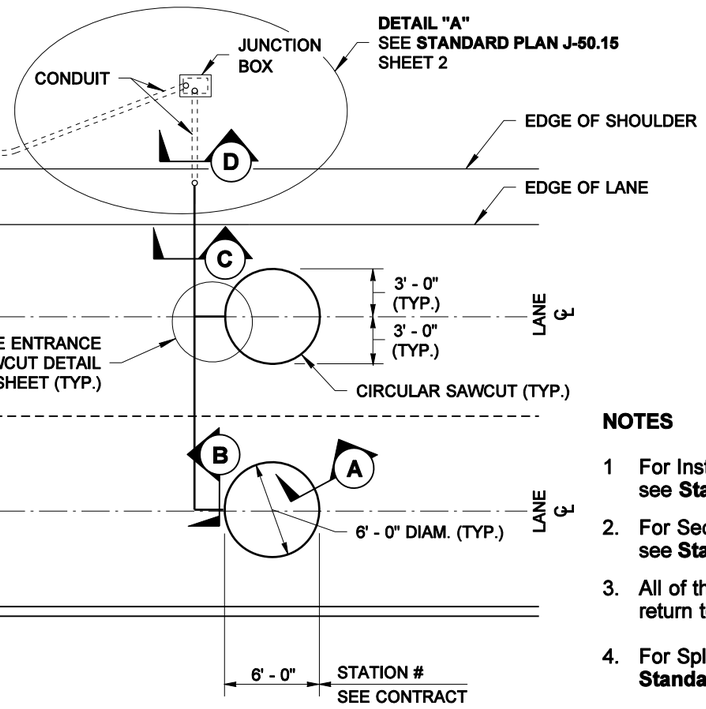
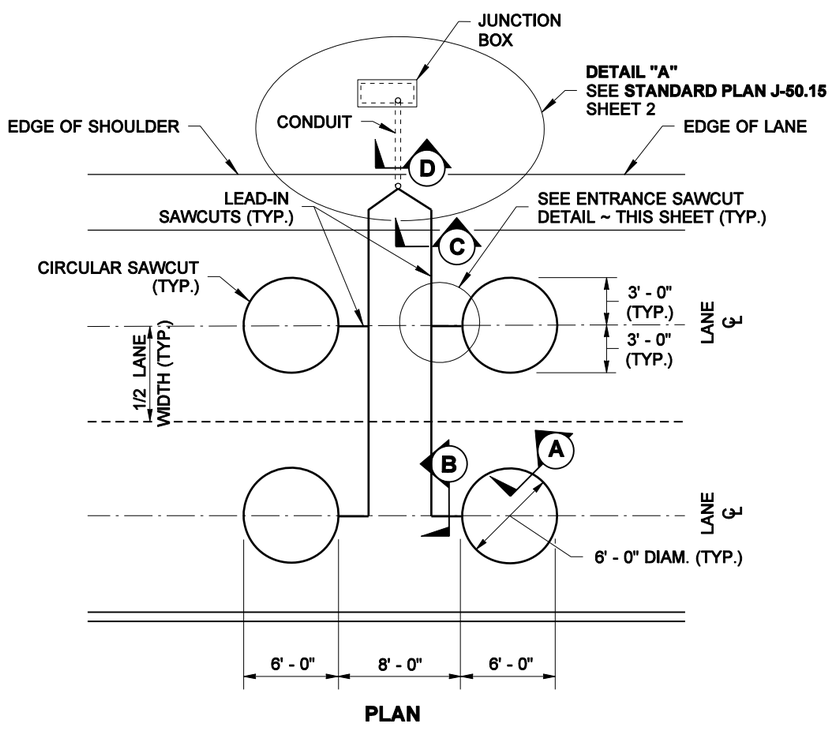


PLAN

TYPE 3 STOP LINE LOOPS

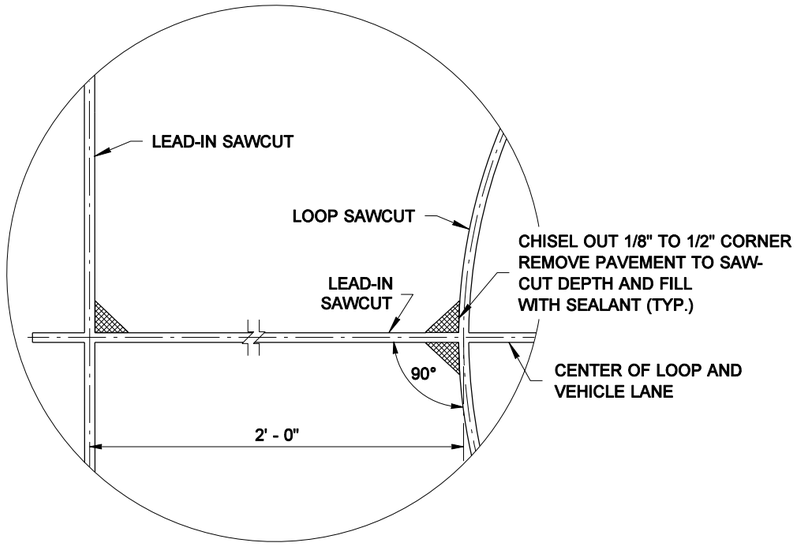


TYPE 3 ADVANCE LOOPS



PLAN

TYPE 3 SAMPLING LOOPS



ENTRANCE SAWCUT DETAIL

NOTES

1. For Installation Notes and Details see **Standard Plan J-50.15.**
2. For Sections A, B, C, and D, see **Standard Plan J-50.15.**
3. All of the loop lead-in wires shall return to the Junction Box.
4. For Splice Detail, see **Standard Plan J-50.15.**
5. For Loop numbering Layout Details, see **sheet 3.**
6. For additional Induction Loop Details, see **Standard Plan J-50.15.**

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29115
REGISTERED
PROFESSIONAL ENGINEER

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TYPE 3 INDUCTION LOOP

STANDARD PLAN J-50.12-00

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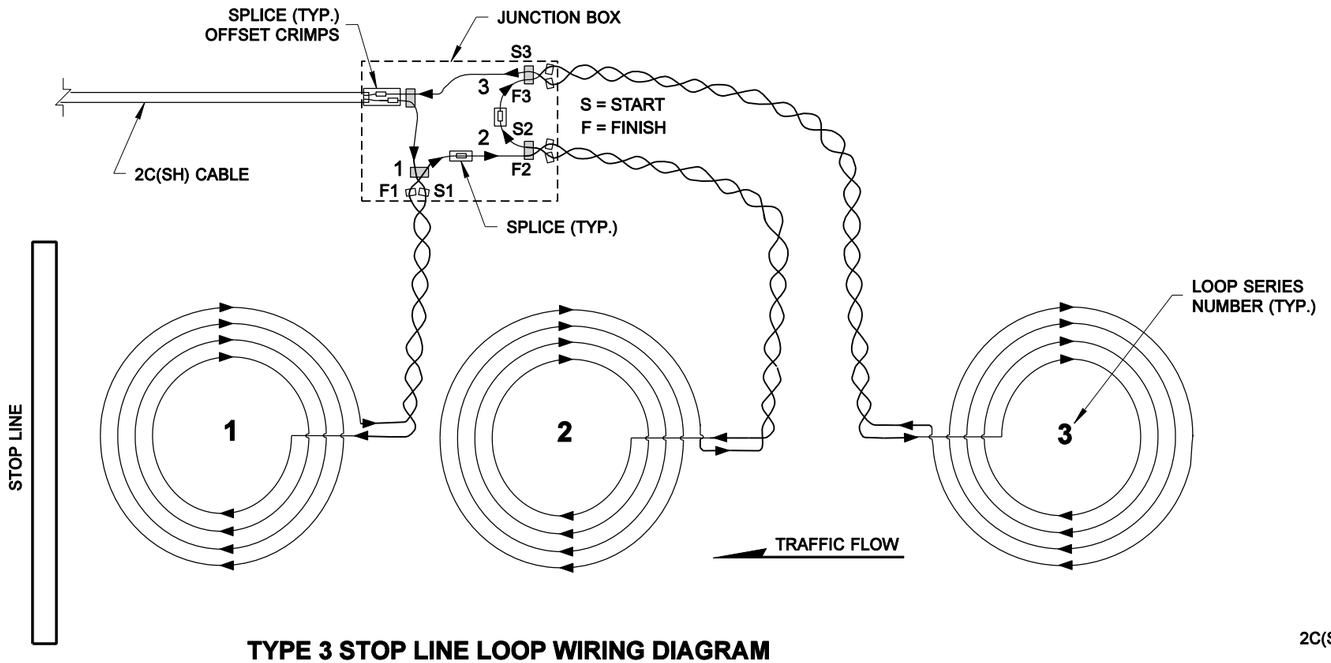

TYPE 3 STOP LINE LOOP WIRING DIAGRAM

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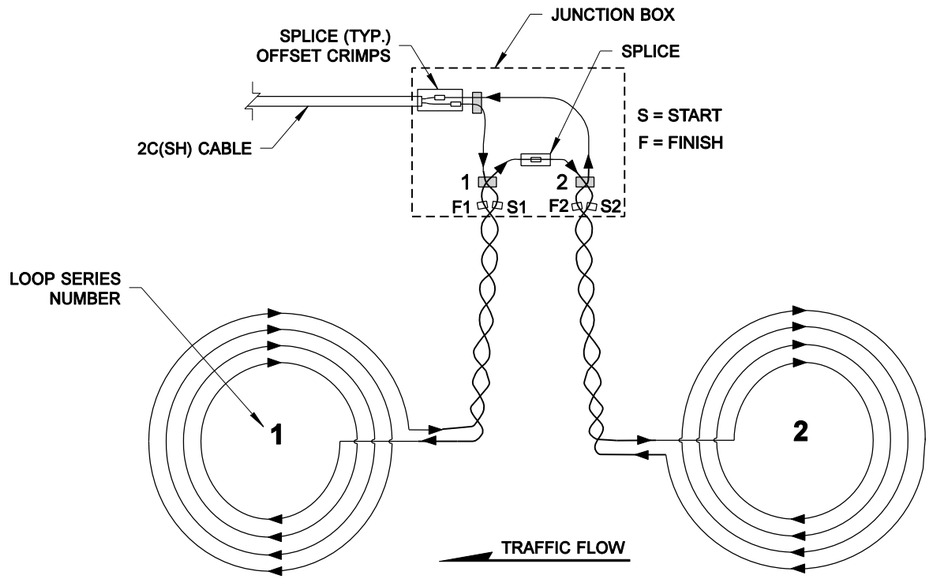

TYPE 3 SAMPLING LOOP WIRING DIAGRAM

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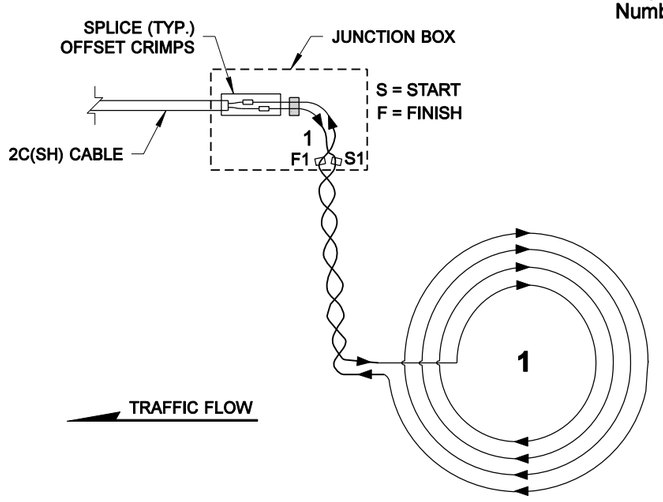
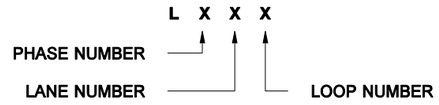


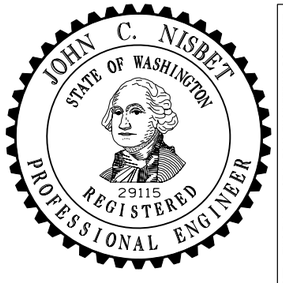
TYPE 3 ADVANCE LOOP WIRING DIAGRAM



LOOP NUMBER MARKING DETAIL

NOTES

Loop numbering layout will be simillar to Loop Numbering Layout Detail, Sheet 3



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TYPE 3 INDUCTION LOOP

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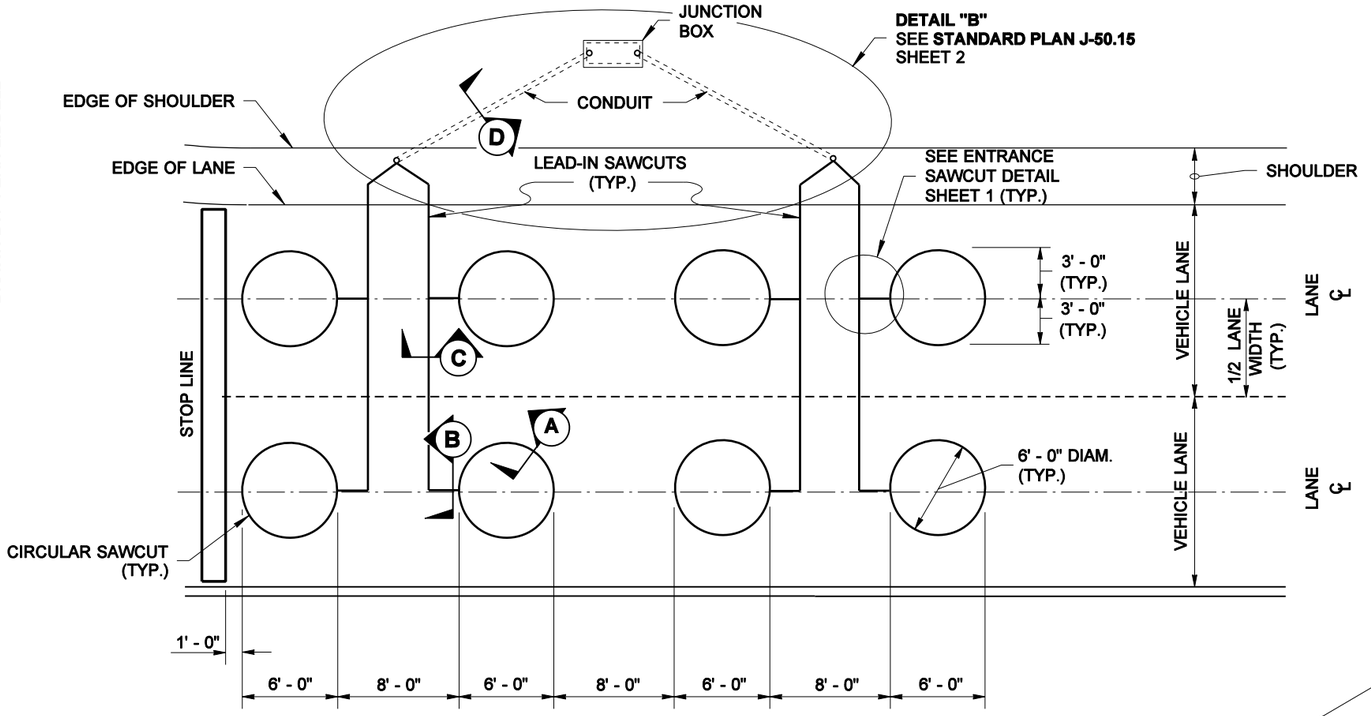
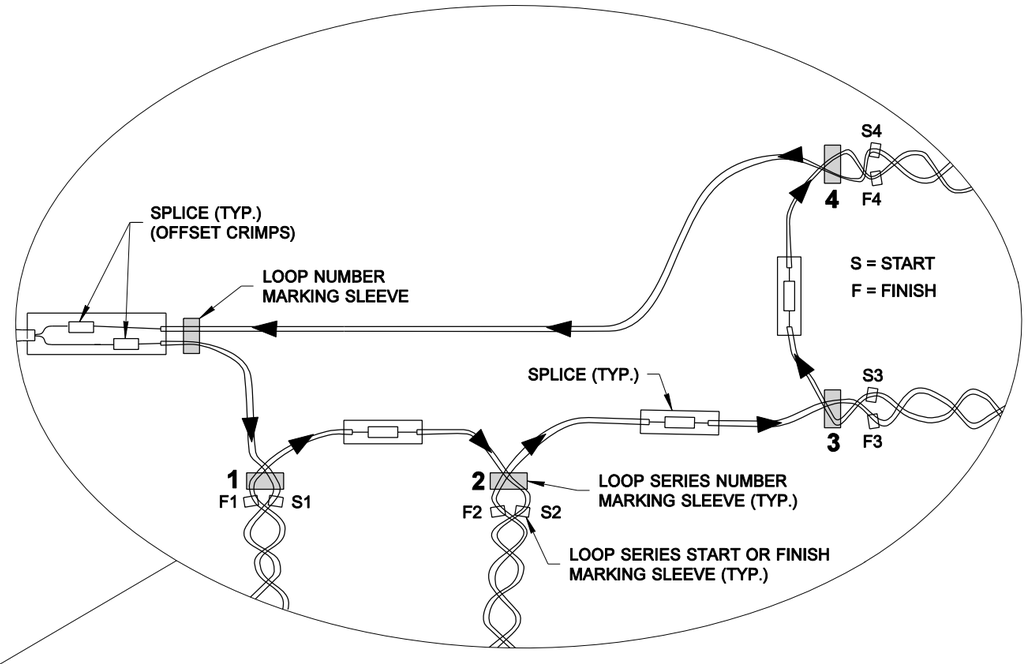
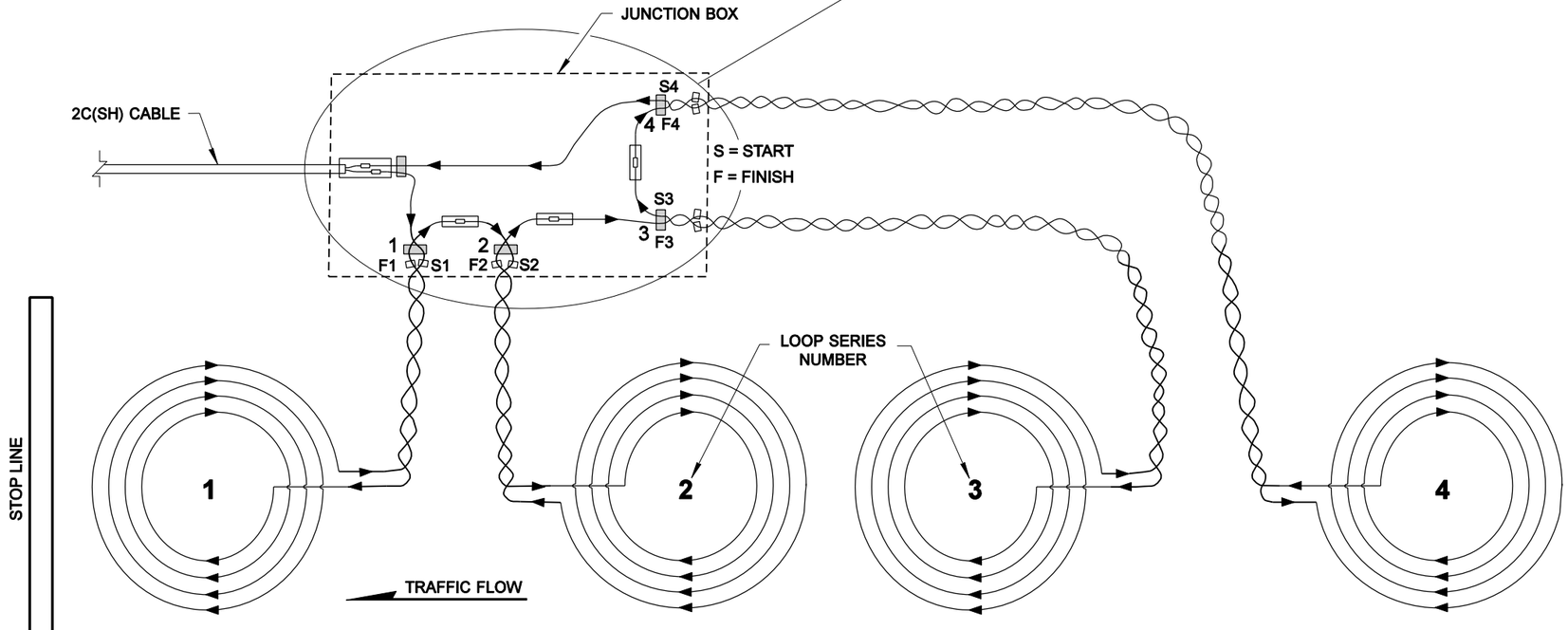


PLAN

TYPE 3A STOP LINE LOOPS

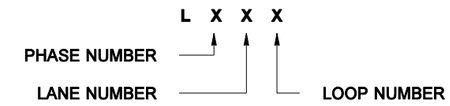


LOOP NUMBERING LAYOUT DETAIL



TYPE 3A STOP LINE LOOP WIRING DIAGRAM

SERIES SPLICE SHOWN



LOOP NUMBER MARKING DETAIL

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TYPE 3 INDUCTION LOOP

STANDARD PLAN J-50.12-00

SHEET 3 OF 3 SHEETS

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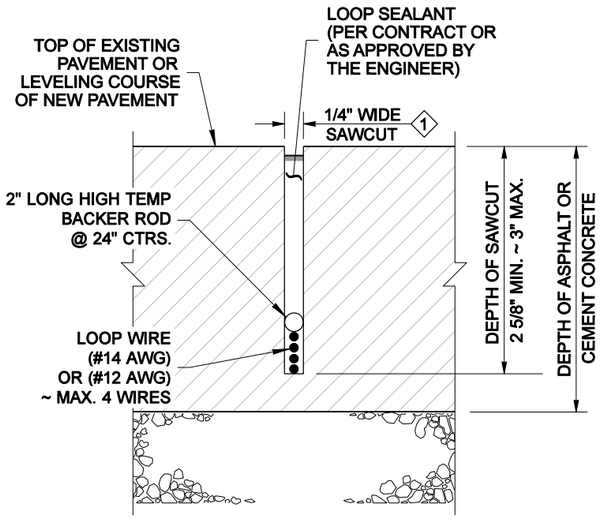
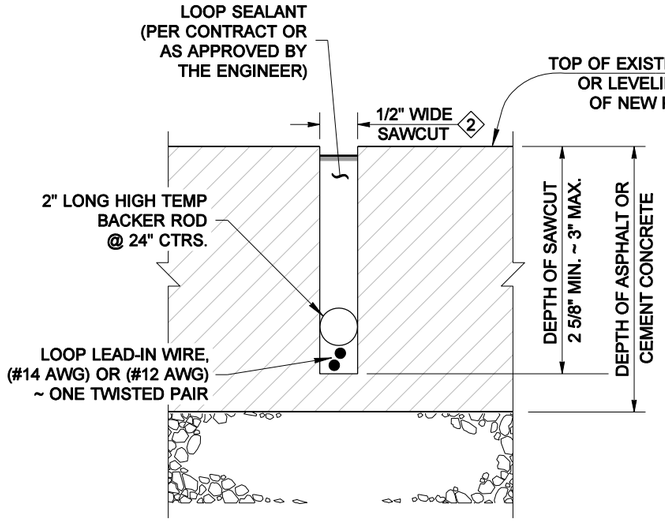
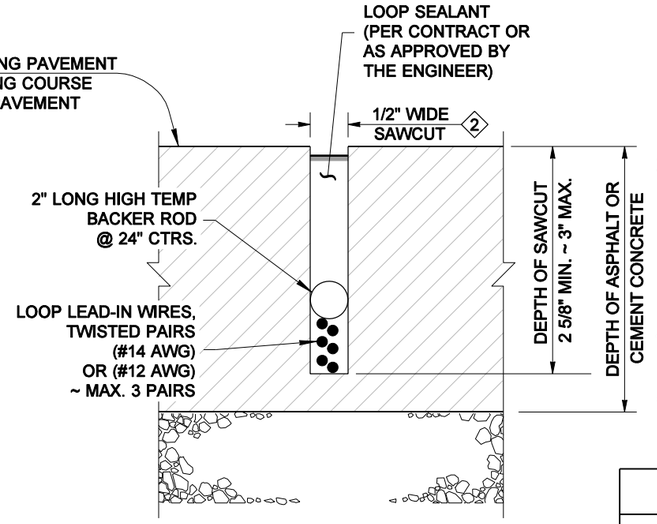


SECTION A



SECTION B



SECTION C

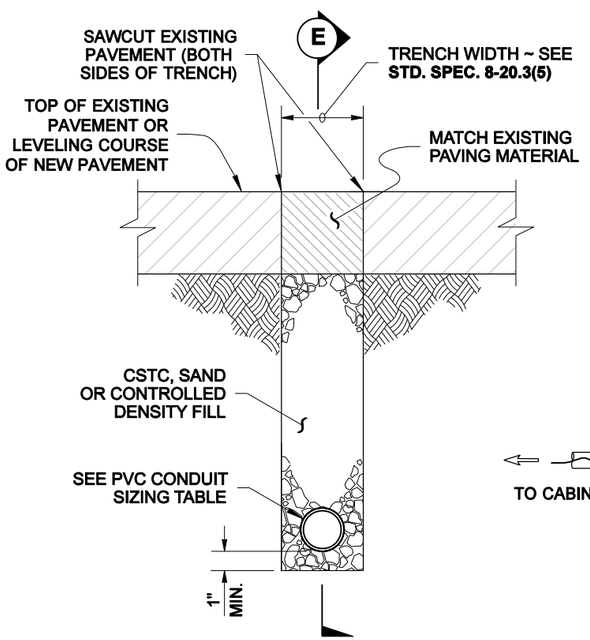
NOTES

1. Fill the conduit trench to the bottom of the existing or new surfacing with CSTC, sand or controlled density fill. See **Standard Specifications Section 2-09.3(1)E**.
2. Minor Regional variations are allowed in the soft pocket closure. Consult with the Engineer or see the Contract for additional requirements.
3. Conductors shall be snug to the bottom of the sawcut. High temperature backer rod shall be snug to the conductors and sides of cut.
4. Fill the sealant to within 1/8" to 3/16" from top of saw cut.
5. See **Standard Plan J-40.10** for additional Junction Box details.

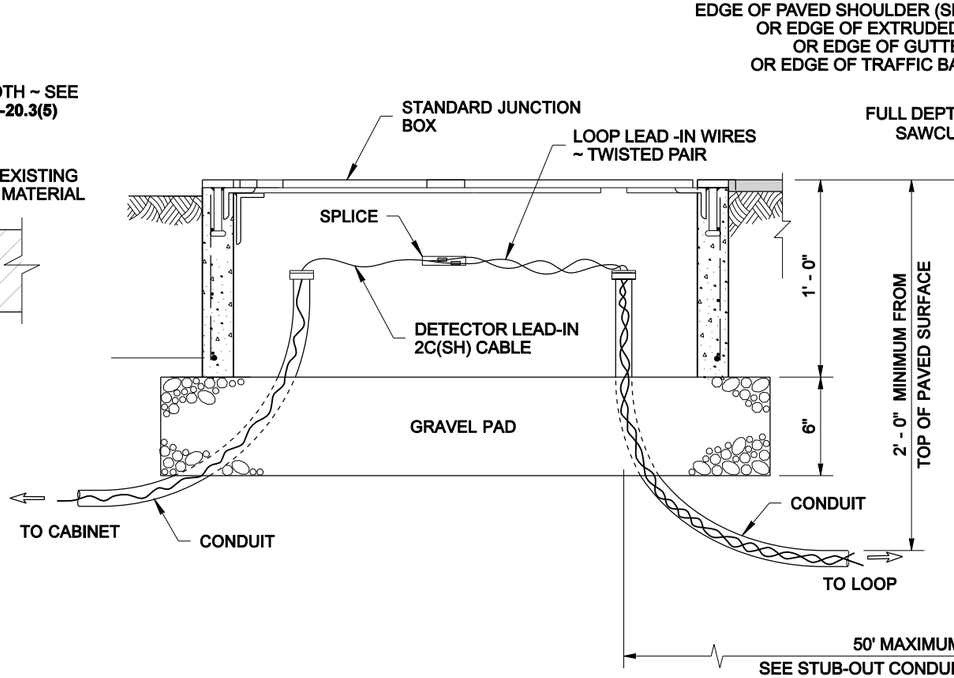
PVC CONDUIT SIZING TABLE					
LOOP LEAD PAIRS	1 - 4	5 - 10	11 - 16	17 - 22	23 - 28
NUMBER AND SIZE OF CONDUITS	1 - 2"	2 - 2"	3 - 2"	4 - 2"	3 - 3"

1 ADD 1/16" TO THE SAWCUT FOR IMSA 51 - 7 CONDUCTORS

2 ADD 1/8" TO THE SAWCUT FOR IMSA 51 - 7 CONDUCTORS

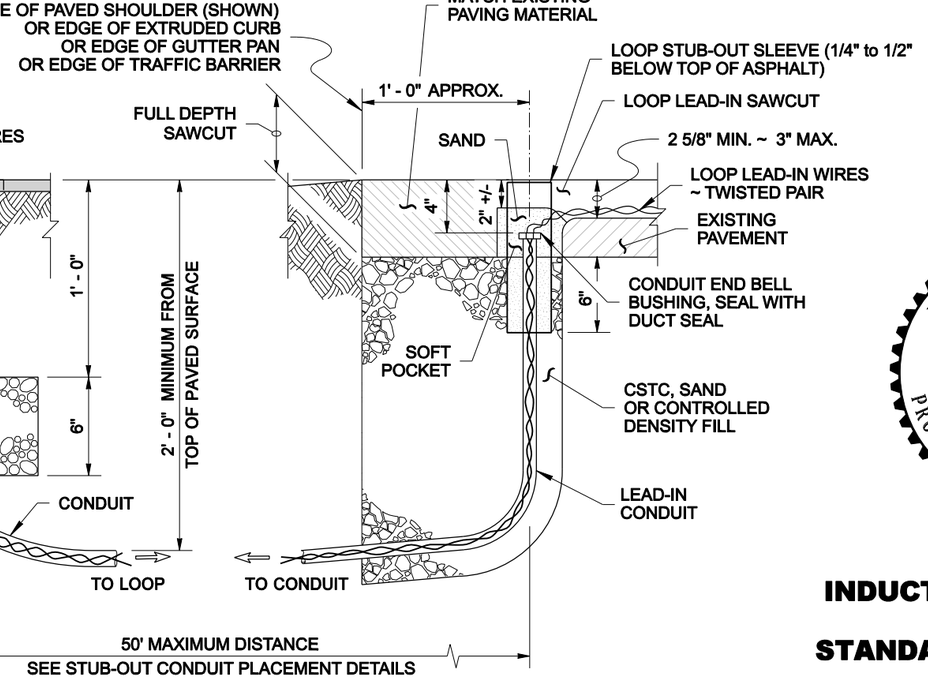


SECTION D



JUNCTION BOX PLACEMENT

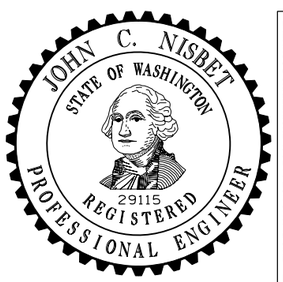
SEE NOTE 5



LEAD-IN CONDUIT SECTION

MAX. 50 FT POCKET SECTION

SECTION E



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INDUCTION LOOP DETAILS

STANDARD PLAN J-50.15-00

SHEET 1 OF 3 SHEETS

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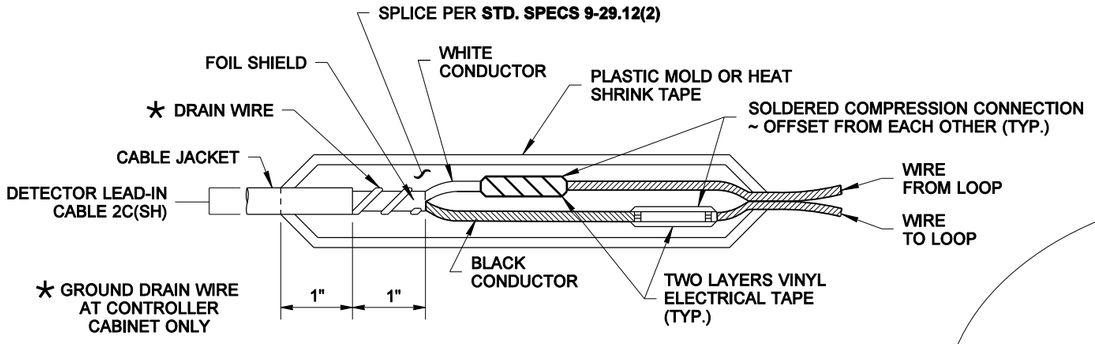
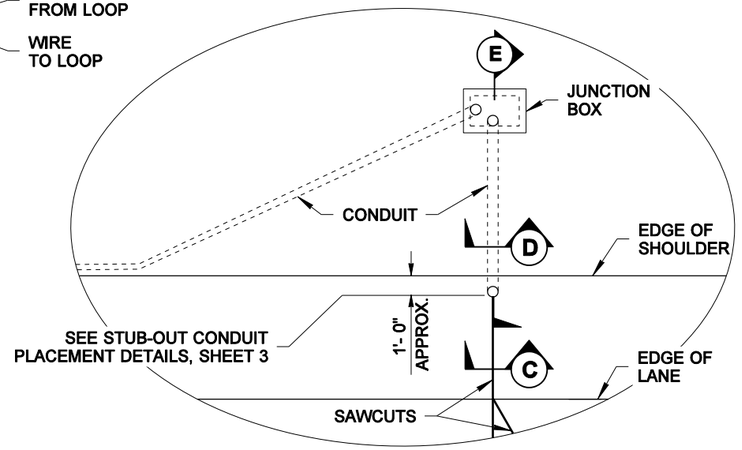
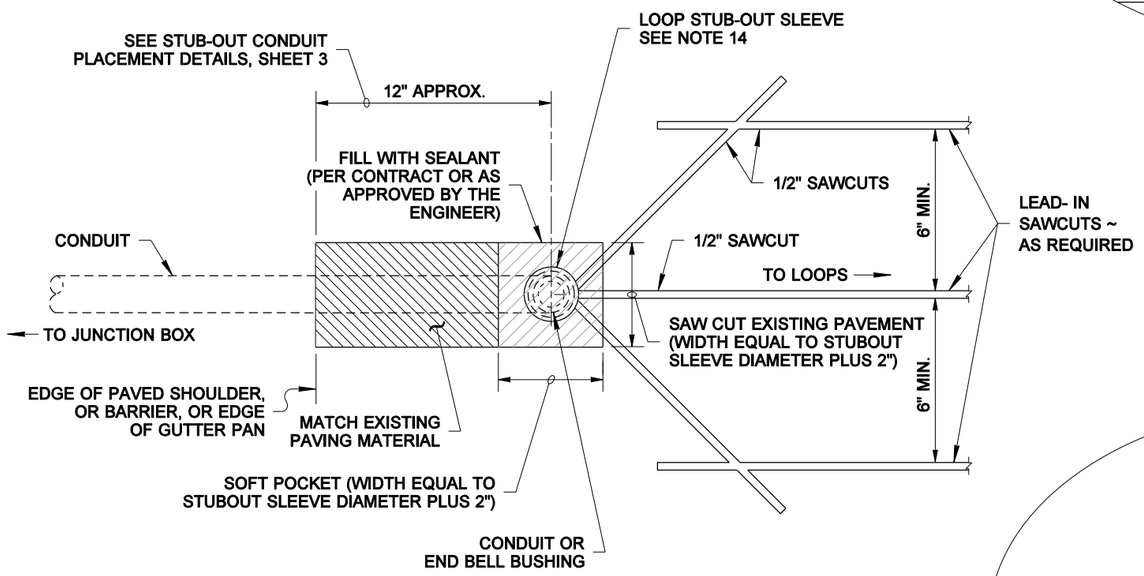


SPLICE DETAIL

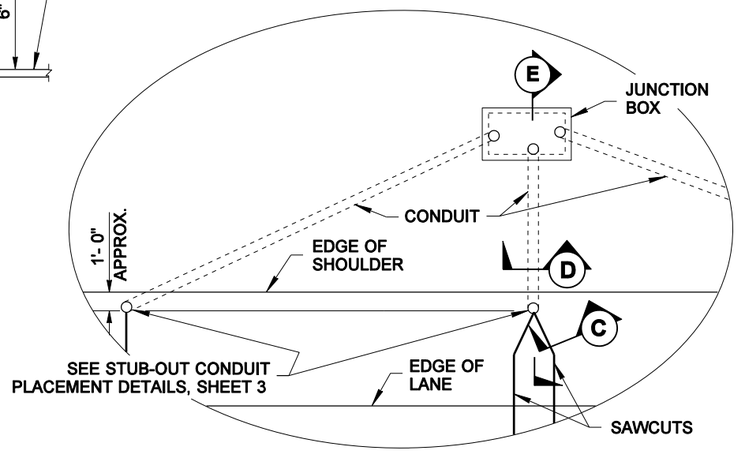


DETAIL "A"



PLAN

SAWCUT AND CONDUIT CONNECTION



DETAIL "B"

LOOP INSTALLATION NOTES

1. Install the Junction Box and the stub-out conduit with PVC sleeve. Conduit for the loop stub-out shall be as required in the conduit size table shown on sheet 1 of this set.
2. Lay out loops and loop lead-ins to miss cracks/joints in road, when possible. Maintain 18" minimum clearance from manholes and valve boxes.
3. The opening around the loop stub shall be patched with matching paving material if opened larger than PVC sleeve + 2".
4. Sawcut the loop slots and the lead-in slots. Wash/dry cuts. File edges to remove burr of all saw-cuts into stub out sleeve.
5. Lay out the loop wire starting at the Junction Box, allowing 5' minimum slack.
6. Install the wire in the loop slot as shown.
7. Finish laying out the wire at the Junction Box and identify the leads with the loop number, the "S" for start and the "F" for the finish, the loop series number, and the loop lead-in conductor number.
8. Twist each pair of the lead-in wires a minimum of two times per foot each foot, from the loop to the Junction Box. Reverse the direction of the twist for each successive pair installed. Seal loops/sawcuts.
9. Construct a supplemental splice containing any series loop connect-ions in the adjacent junction box as required in the plans. Supplemental splices are subject to the same requirements shown for the loop lead-in and the shielded cable splice.
10. Splice the loop lead-ins to the shielded cable as noted in the Contract.
11. All loop circuits shall be tested per **Standard Specifications 8-20.3(14)D** once installation is complete.
12. Existing stubouts shall be upgraded as necessary to conform to the conduit size table shown on sheet 1.
13. All loop lead-in sawcuts parallel to lane edge shall be at least 12" from edge of pavement and within six inches outside of lane or fog line when possible. Maintain 12" separation between parallel cuts or joints.
14. The loop stub-out sleeve shall have an inside diameter 1" larger than the outside diameter of the End Bell Bushing. Plug conduit and fill sleeve with sand untill loops are installed to keep out Hot Asphalt during paving operations.

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INDUCTION LOOP DETAILS

STANDARD PLAN J-50.15-00

SHEET 2 OF 3 SHEETS

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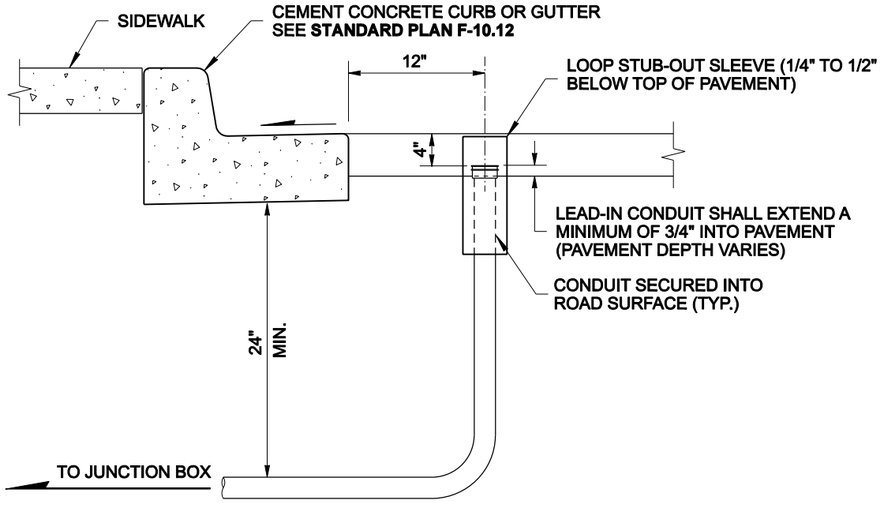
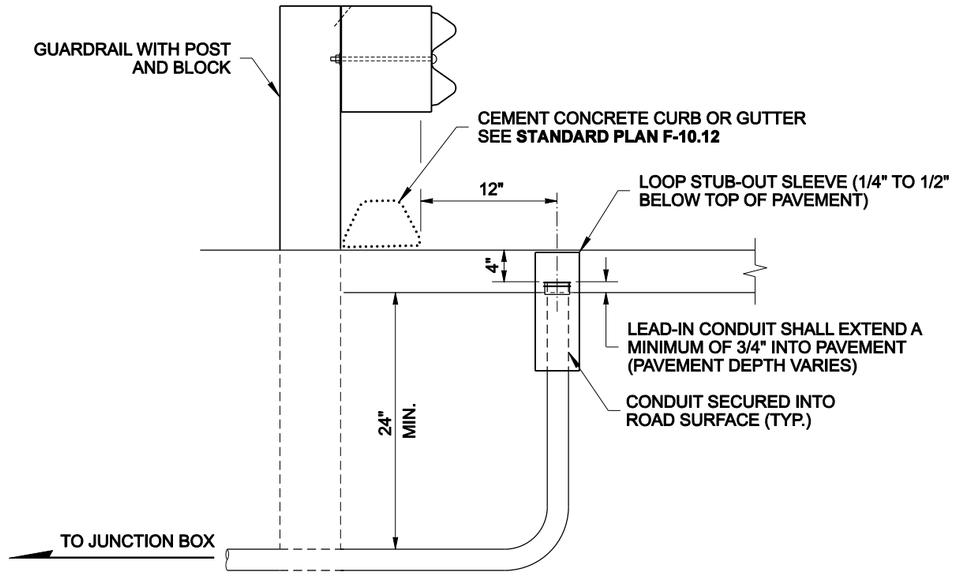
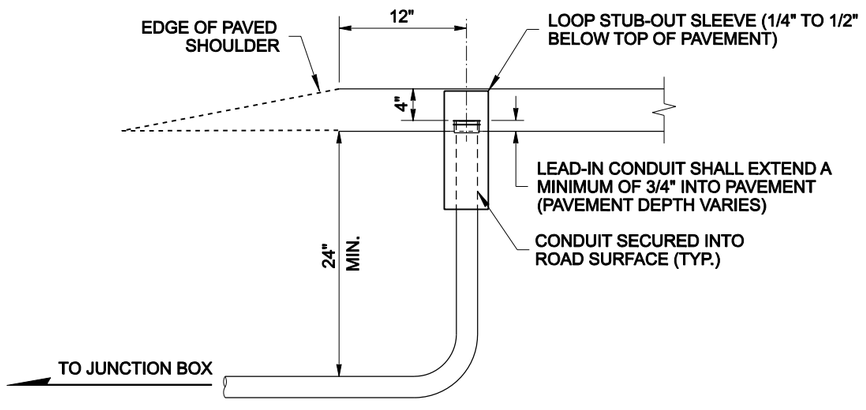


STUB-OUT DETAIL
WITH CEMENT CONCRETE CURB OR GUTTER

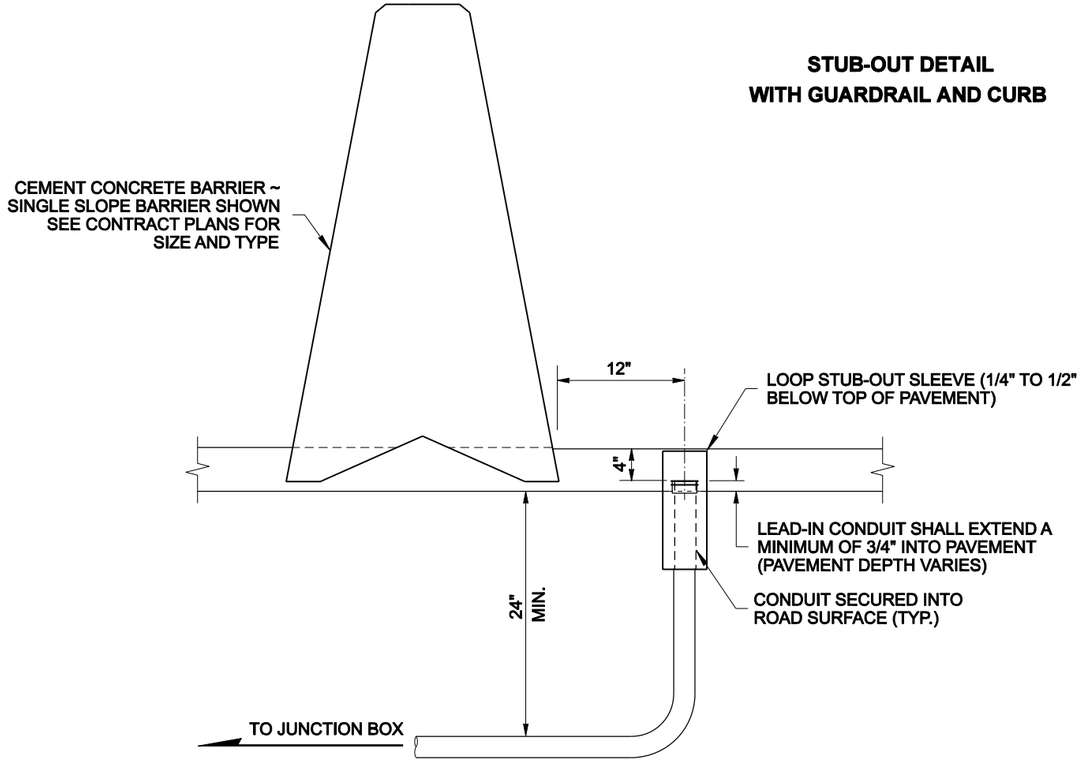


STUB-OUT DETAIL
WITH GUARDRAIL AND CURB



STUB-OUT DETAIL
WITH ROADWAY

STUBOUT CONDUIT PLACEMENT DETAILS



STUB-OUT DETAIL WITH
CEMENT CONCRETE BARRIER

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INDUCTION LOOP DETAILS

STANDARD PLAN J-50.15-00

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