CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM - ITS IMPROVEMENTS PHASE 1 & 2 AND PHASE 3 CITY OF FEDERAL WAY

OCTOBER 2019

APPROVED FOR CONSTRUCTION

Desireé S. Winkler, P.E.
Deputy Public Works Director

10/4/19
Date

CITY OF FEDERAL WAY
DEPARTMENT OF PUBLIC WORKS
33325 8TH AVE S
FEDERAL WAY, WA 98003

CITY OFFICIALS:

MAYOR:
JIM FERRELL

DEPUTY MAYOR:
SUSAN HONDA

COUNCIL MEMBERS:
LYDIA ASSEFA-DAWSON
JESSE E. JOHNSON
SUSAN HONDA
HOANG V. TRAN
MARK KOPPANG
MARTIN A. MOORE
DINI DUCLOS

PUBLIC WORKS DIRECTOR:
EJ WALSH, PE

DEPUTY PUBLIC WORKS DIRECTOR:
DESIREE WINKLER, PE

CITY TRAFFIC ENGINEER:
RICK PEREZ, PE

FEDERAL AID PROJECT NO. (PHASE 1 & 2): CM-HSIP-000S(464)
FEDERAL AID PROJECT NO. (PHASE 3): CM-9917(031)

LOCAL PROJECT NO. (PHASE 1 & 2): 202
LOCAL PROJECT NO. (PHASE 3): 216

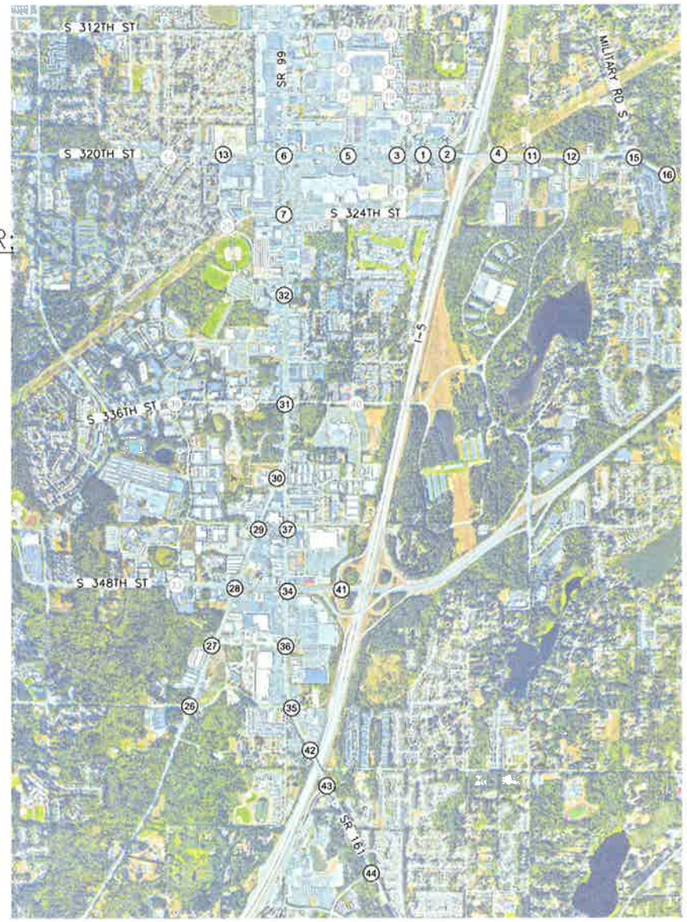
RFB NO. 19-011

LEGEND:

(##) PROJECT INTERSECTIONS

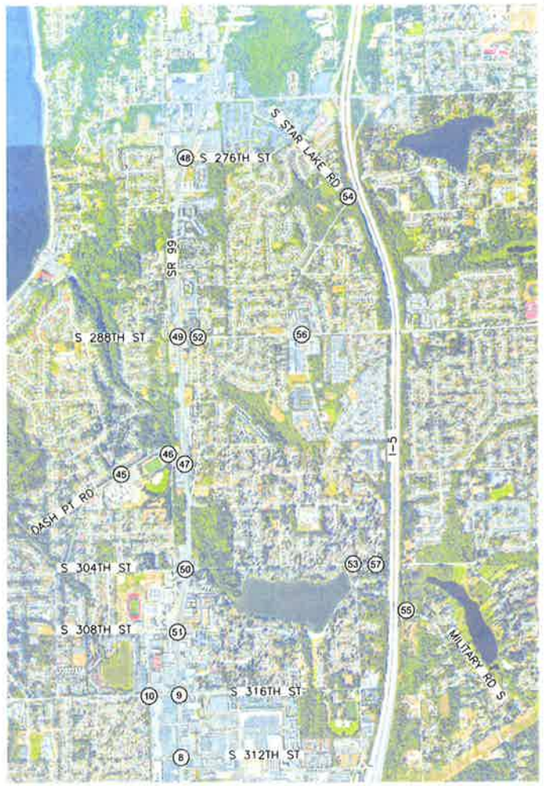
(##) INTERSECTIONS NOT INCLUDED AS PART OF THIS PLAN SET

CORRESPONDS WITH THE SHEET NAME
(E.G., ## REFERS TO SHEET ITS##)



VICINITY MAP – PHASE 1 & 2

N.T.S



VICINITY MAP – PHASE 3

N.T.S

N

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3	ITS02	S 320TH ST & I-5 SB	PHASE 1 & 2
4	ITS03	S 320TH ST & 23RD AVE S	PHASE 1 & 2
5	ITS04	S 320TH ST & I-5 NB	PHASE 1 & 2
6	ITS05	S 320TH ST & PETE VON REICHBAUER WAY S/20TH AVE S	PHASE 1 & 2
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21	ITS30	SR 99 & 16TH AVE S/S 340TH PL	PHASE 1 & 2
22	ITS31	SR 99 & S 336TH ST	PHASE 1 & 2
23	ITS32	SR 99 & S 330TH ST	PHASE 1 & 2
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LEGEND

DESCRIPTION	EXISTING	PROPOSED
CONDUIT	---------	---------
CONSTRUCTION NOTE		(#)
WIRE NOTE		(#)
SIGNAL POLE, MAST ARM, AND LUMINAIRE	⊗—☼—	
VIDEO DETECTION CAMERA	▬◀	▬◀
HYBRID RADAR/VIDEO DETECTION CAMERA		▬◀
CCTV CAMERA	▬◁	
TRAFFIC SIGNAL CONTROLLER CABINET	▭	
SERVICE CABINET	▭	▭
JUNCTION BOX, TYPE 1	⊠	⊠
JUNCTION BOX, TYPE 2	◪	◪
JUNCTION BOX, TYPE 5	☒	☒
JUNCTION BOX, TYPE 3 AND 8	◫	
SMALL CABLE VAULT	SCV	SCV
CABLE VAULT	CV	
PULL BOX	PB	
LOOP DETECTOR	○	○
STOP LINE DETECTION ZONE (6' X 35')	┌ ─ ─ ┐	┌ ─ ─ ┐
ADVANCE RADAR DETECTION ZONE (6' X 6')		A
EXIT VIDEO DETECTION ZONE (6' X 6')		E
FILTER VIDEO DETECTION ZONE (6' X 6')		F

DETECTION NOTES

1. ALL DETECTION LOOPS/ZONES SHALL BE LOCATED IN THE CENTER OF THE TRAVEL LANE.
2. FILTER DETECTION LOOPS/ZONES SHALL BE LOCATED 4' ON-CENTER BACK FROM THE STOP LINE, UNLESS OTHERWISE NOTED.
3. EXIT VIDEO DETECTION ZONES SHALL BE LOCATED AS SHOWN, UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL COORDINATE DETECTOR CHANNEL ASSIGNMENTS WITH KING COUNTY ROADS LEAD TRAFFIC SIGNAL TECHNICIAN.
5. ALL EXISTING LOOPS AND VIDEO DETECTION ZONES SHALL BE MAINTAINED.
6. ADVANCE LEFT-TURN LANE DETECTION LOOPS/ZONES SHALL BE LOCATED AT THE BEGINNING OF THE LEFT-TURN LANE, UNLESS OTHERWISE NOTED.
7. ADVANCE THRU-LANE RADAR DETECTION ZONES SHALL BE LOCATED BASED ON THE FOLLOWING ON-CENTER DISTANCES BACK FROM THE STOP LINE, BASED ON THE APPROACH'S POSTED SPEED LIMIT:
   - 20 MPH: 210'
   - 25 MPH: 260'
   - 30 MPH: 310'
   - 35 MPH: 360'
   - 40 MPH: 415'
   - 45 MPH: 465'

LIST OF ABBREVIATIONS

CV	CABLE VAULT
EX	EXISTING
FPP	FIBER PATCH PANEL
JB	JUNCTION BOX
MIN	MINIMUM
MPH	MILES PER HOUR
PB	PULL BOX
SCV	SMALL CABLE VAULT
SMFO	SINGLE MODE FIBER OPTIC
TYP	TYPICAL

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(2) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. RESTORE SIDEWALK TO PRE-EXISTING CONDITIONS. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(4) EXISTING LOOP DETECTOR TO REMAIN. RE-SPLICE TO SEPARATE LOOP LEAD-IN AND TERMINATE IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS. REMAINING LOOPS TO REMAIN SPLICED TO EXISTING LEAD-IN(S).

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(6) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(9) INSTALL VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(10) RE-ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.

(11) RE-ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.

(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(13) REMOVE EXISTING VIDEO DETECTION RACK FROM EXISTING TRAFFIC SIGNAL CONTROLLER CABINET FOR USE AT OTHER LOCATIONS ON THIS PROJECT.

(14) INSTALL SERVICE CABINET AND FOUNDATION PER CITY FEDERAL WAY STANDARD DRAWING 3-45. RE-ROUTE EXISTING SIGNAL SERVICE CONDUCTORS TO NEW SERVICE CABINET. IF EXISTING SIGNAL SERVICE CONDUCTORS NEED TO BE LENGTHENED, NEW CONDUCTORS SHALL BE USED. COORDINATE USE OF EXISTING POWER SUPPLY WITH PUGET SOUND ENERGY.

(15) INSTALL SPLICE CLOSURE AND SPLICE 24 SMFO PRE-TERMINATED STUB CABLE TO EXISTING FIBER OPTIC CABLE PER DETAILS ON SHEETS ITS58-ITS60.

(16) INSTALL 24-PORT FIBER OPTIC PATCH PANEL IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.

(17) INSTALL ETHERNET SWITCH AND SFP MODULE(S) IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.

(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(19) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON TOP OF EXISTING STRAIN POLE PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING SPAN WIRE, CONDUITS, AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

CONSTRUCTION NOTES (CONTINUED)

(20) INSTALL VIDEO DETECTION CAMERA ON SIDE OF EXISTING STRAIN POLE TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH SPAN WIRE, CONDUITS, AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

(22) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING TYPE I POLE PER MANUFACTURER'S RECOMMENDATION. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.

(24) SALVAGE EXISTING GRIDSMART VIDEO DETECTION CAMERA AND ASSOCIATED EQUIPMENT FROM EXISTING SIGNAL MAST ARM.

(25) SALVAGE EXISTING GRIDSMART VIDEO DETECTION CONTROL UNIT FROM EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(26) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE STOP LINE DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(27) INSTALL TYPE 1 JUNCTION BOX.

(28) REMOVE AND REPLACE EXISTING TYPE 1 JUNCTION BOX WITH TYPE 2 JUNCTION BOX.

(29) ABANDON EXISTING TYPE 1 INDUCTION LOOP. REMOVE EXISTING LOOP LEAD-INS BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET. INSTALL NEW TYPE 3S INDUCTION LOOPS PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. LOOP WIRES SHALL BE SPLICED TO LOOP LEAD-INS PER CITY OF FEDERAL WAY STANDARD DRAWING 3-44.

(30) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. RESTORE PAVEMENT TO PRE-EXISTING CONDITIONS. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

(31) INTERCEPT EXISTING CONDUIT WITH TYPE 2 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. RESTORE SIDEWALK TO PRE-EXISTING CONDITIONS. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

(32) INSTALL SFP MODULE IN EXISTING ETHERNET SWITCH PER DETAILS ON SHEETS ITS58-ITS60.

(33) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

(34) INTERCEPT EXISTING CONDUIT WITH TYPE 2 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF FEDERAL WAY STANDARDS AND SPECIFICATIONS AND WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARDS AND SPECIFICATIONS.
2. THE LOCATIONS OF FEATURES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION WORK.
3. ALL WORK SHALL BE CONSISTENT WITH UTILITY AGENCY REQUIREMENTS. THE CONTRACTOR SHALL CONTACT ALL PERTINENT UTILITY AGENCIES 48 HOURS PRIOR TO COMMENCING WORK, AND SHALL COORDINATE WITH AFFECTED UTILITY AGENCIES THROUGHOUT THE PROJECT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANY AND THE CITY IMMEDIATELY UPON DAMAGE AND BE RESPONSIBLE FOR REPLACING ANY DAMAGED EQUIPMENT TO THE SATISFACTION OF THE AFFECTED UTILITY COMPANY AND/OR THE CITY.
5. THE CONTRACTOR SHALL CALL FOR UTILITY LOCATES PRIOR TO PERFORMING ANY UNDERGROUND WORK, SUCH AS CONDUIT TRENCHING, TO AVOID DAMAGE TO ANY UNDERGROUND UTILITIES. UTILITIES TO BE CONTACTED THROUGH THE ENGINEER IF PROPOSED CONSTRUCTION CONFLICTS WITH ANY EXISTING UTILITIES.
6. APPROVED CONSTRUCTION PLANS (INCLUDING ANY APPROVED REVISIONS) SHALL BE AVAILABLE ON THE CONSTRUCTION SITE. ALL APPROPRIATE PERMITS AND EASEMENTS SHALL BE IN PLACE PRIOR TO START OF WORK.
7. ANY EXISTING UTILITIES THAT ARE IN SERVICE SHALL REMAIN OPERATIONAL AT ALL TIMES.
8. ANY SIDEWALK, LANDSCAPE, SHOULDER, OR ROADWAY DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EQUAL OR BETTER CONDITIONS. FULL DEPTH SAWCUT REQUIRED AT PAVEMENT PATCH EDGE FOR ROADWAY TRENCH WORK. ALL SIDEWALK REPAIR SHALL BE DONE TO FULL DEPTH BY WHOLE PANELS BETWEEN SIDEWALK JOINTS. PARTIAL PANEL REPLACEMENT WILL NOT BE ALLOWED. USE CDF IF COMPACTION CANNOT BE ACHIEVED UNDER ADJACENT SIDEWALK.
9. CONTRACTOR SHALL SUBMIT ALL MATERIAL CUT SHEETS TO THE CITY ENGINEER FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.
10. ALL CABLES INSTALLED BY THE CONTRACTOR SHALL BE LABELED IN EACH JUNCTION BOX, CABLE VAULT, AND TRAFFIC SIGNAL CONTROLLER CABINET.
11. EXISTING CONDUCTORS LISTED IN THE WIRING SCHEDULE ARE FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM CONDUIT CONTENTS IN THE FIELD.
12. PROPOSED ELECTRICAL EQUIPMENT SUCH AS JUNCTION BOXES AND CONDUIT ARE SHOWN SCHEMATICALLY AND MAY BE FIELD ADJUSTED TO AVOID CONFLICTS, AS DIRECTED BY THE ENGINEER.
13. ALL NEW JUNCTION BOXES, SMALL CABLE VAULT, PULL BOXES, AND SIDEWALK PANELS SHALL BE INSTALLED TO MATCH THE GRADE OF THE EXISTING SIDEWALK OR LANDSCAPE AREA. THE CONTRACTOR SHALL AVOID PLACEMENT OF ANY CONDUITS, JUNCTION BOXES AND CABLE VAULTS IN LOCATIONS THAT WILL AFFECT EXISTING PEDESTRIAN CURB RAMPS.
14. ALL LIDS AND FRAMES FOR JUNCTION BOXES AND CABLE VAULTS LOCATED IN SIDEWALKS SHALL HAVE NON-SLIP SURFACES.
15. CONTRACTOR SHALL INSTALL A GROUND WIRE EQUAL IN SIZE TO THE LARGEST CONDUCTOR (MIN. NO. 8) IN CONDUIT WITHOUT AN EXISTING GROUND WIRE, PER NEC REQUIREMENTS, AND WHERE NEW CONDUCTORS/FIBER OPTIC CABLE ARE INSTALLED.
16. CONTRACTOR SHALL COIL AND RACK 50', UNLESS OTHERWISE NOTED, OF EACH NEW FIBER OPTIC CABLE IN ALL PULL BOXES AND CABLE VAULTS.
17. CONTRACTOR SHALL INSTALL 15' OF FIBER OPTIC CABLE SLACK IN ALL JUNCTION BOXES CONTAINING NEW FIBER OPTIC CABLE, UNLESS OTHERWISE NOTED.
18. NEW JUNCTION BOXES SHALL BE INSTALLED PER WSDOT STANDARD PLAN J-40.10-04 AND J-40.20-03.
19. SMALL CABLE VAULTS SHALL BE INSTALLED PER WSDOT STANDARD PLANS J-90.21-02 AND J-90.50-00.
20. SEE SHEETS TTC1-TTC22 FOR TEMPORARY TRAFFIC CONTROL PLANS AND NOTES.

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

transpogroup
WHAT TRANSPORTATION CAN BE.
12131 113TH AVENUE NE, #203
KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

R. WESLEY PETERSON — STATE OF NORTH DAKOTA — 47366 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

ITSN01

NOTES AND LEGEND

SHEET 1 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

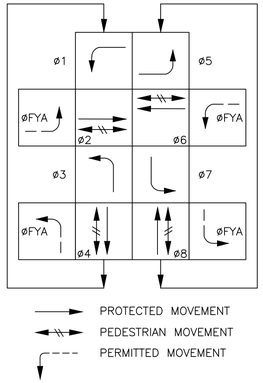
(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

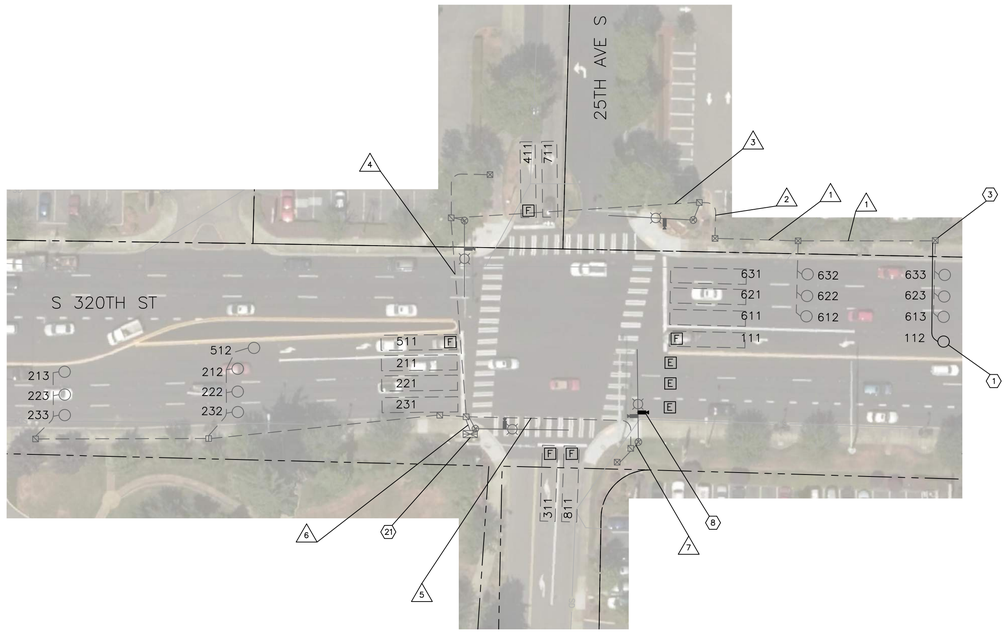
(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

SIGNAL PHASING (EX.)



WIRING SCHEDULE (THIS SHEET ONLY)													
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		FIBER		VIDEO DETECT VDCC		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"							3	1	1				
2	EX. 3"							4	1	1				
3	EX. 3"			4		1		8	1			1		
4	EX. 3"					1		8	1			2		
5	EX. 3"	2		4		1						1	1	
6	EX. 3-3"	12	1	16		4						4	1	
7	EX. 3"	2		4		1						1	1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

transpogroup
WHAT TRANSPORTATION CAN BE.
12131 113TH AVENUE NE, #203
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(FAX) 425 825-8434

R. WESLEY PETERSEN — STATE OF WASHINGTON — 17388 — REGISTERED PROFESSIONAL ENGINEER — 10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 320TH ST & 25TH AVE S/GATEWAY CENTER BLVD

ITS01

SHEET 2 OF 69 SHEETS

M:\16\1.16174.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Int 1 - S 320th St - 25th Ave S-4wayS 320th ST & 25TH AVE S\Dgnmon Materials 10/2/2019 6:47 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(4) EXISTING LOOP DETECTOR TO REMAIN. RE-SPLICE TO SEPARATE LOOP LEAD-IN AND TERMINATE IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS. REMAINING LOOPS TO REMAIN SPLICED TO EXISTING LEAD-IN(S).

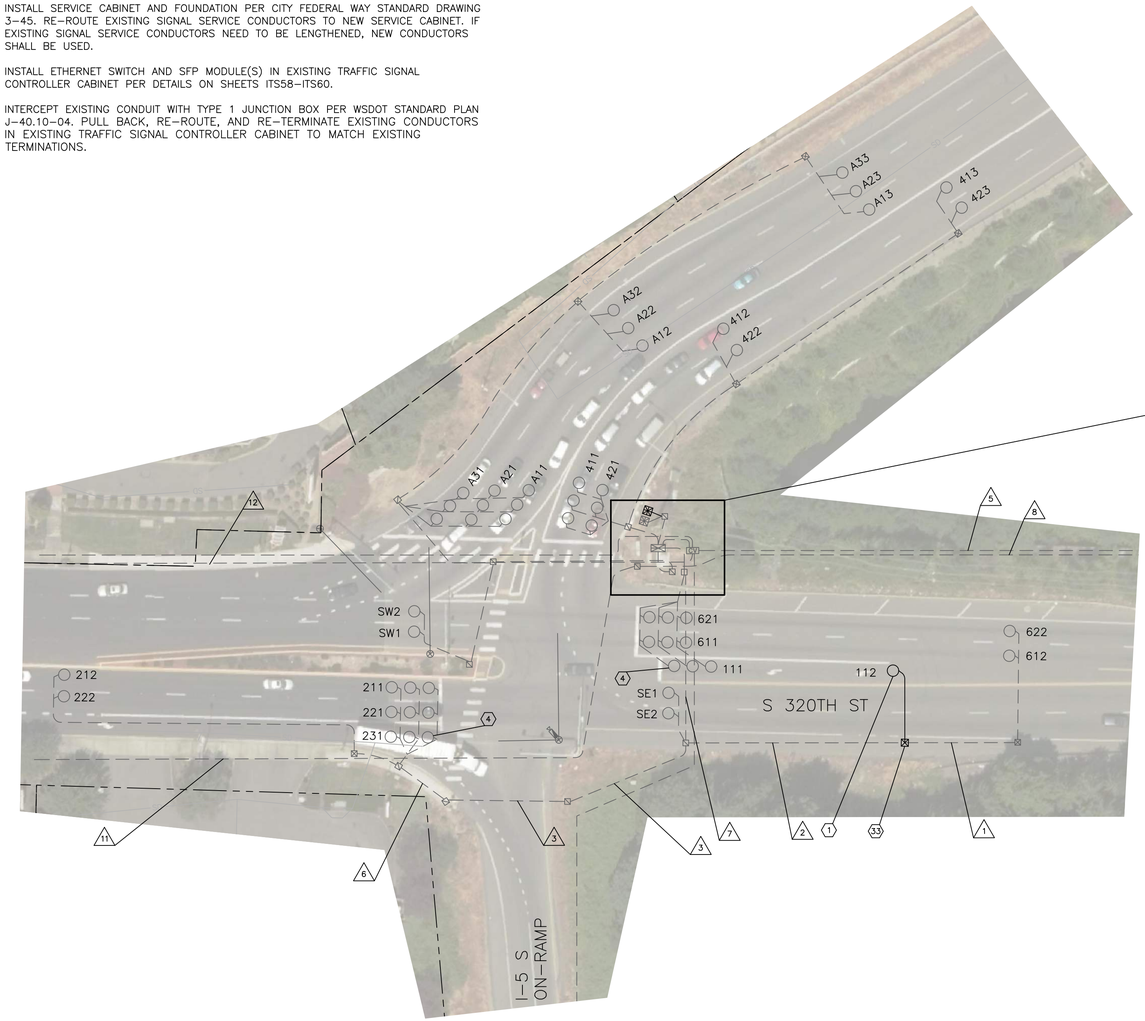
(14) INSTALL SERVICE CABINET AND FOUNDATION PER CITY FEDERAL WAY STANDARD DRAWING 3-45. RE-ROUTE EXISTING SIGNAL SERVICE CONDUCTORS TO NEW SERVICE CABINET. IF EXISTING SIGNAL SERVICE CONDUCTORS NEED TO BE LENGTHENED, NEW CONDUCTORS SHALL BE USED.

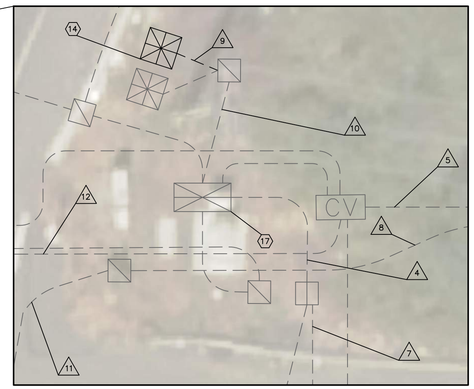
(17) INSTALL ETHERNET SWITCH AND SFP MODULE(S) IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.

(33) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

WIRING SCHEDULE (THIS SHEET ONLY)												
NO. △	RACEWAY CONDUIT SIZE*	VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		FIBER SMFO		#6 SERVICE POWER		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 1.5"					2						
2	EX. 1.5"					2	1					
3	EX. 2"	2		1		6	1					
4	EX. 2"	3		1			3	1				
5	EX. 2"							1				FC114 (WSDOT)
6	EX. 2"					5	1					
7	EX. 3"	3		1		10	2	1				
8	EX. 2"							1				FC50
9	2" SCH(80)										2	
10	EX. 2"										2	REROUTE EX. CONDUCTORS
11	EX. 2"							1				FC32
12	EX. 2"							1				FC48

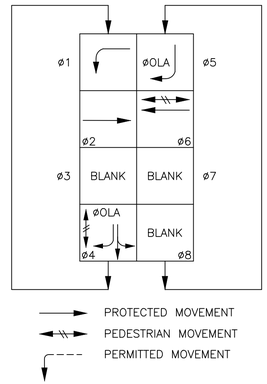
*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

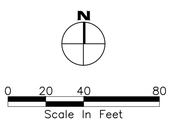




INSERT SCALE: 1" = 10'

SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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WHAT TRANSPORTATION CAN BE.
12131 113TH AVENUE NE, #203
KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

R.J. NAWEST, EV PE, LEED AP, STATE OF WASHINGTON, 47388, REGISTERED PROFESSIONAL ENGINEER, 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 320TH ST & I-5 SB

ITS02

SHEET 3 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(10) RE-ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.

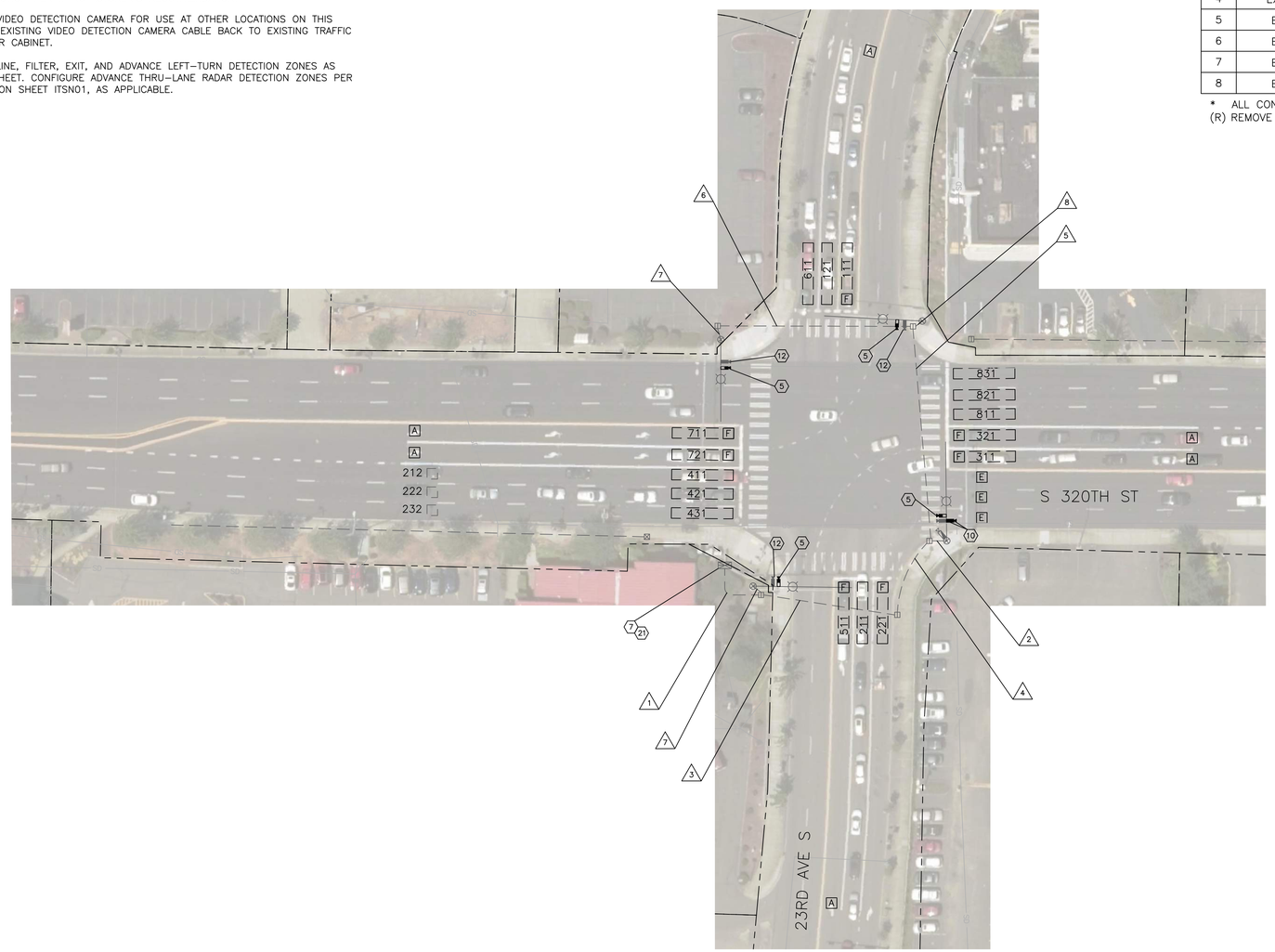
(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

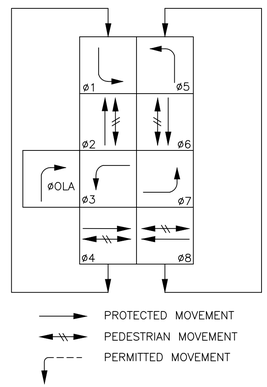
WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		INTERCONNECT		FIBER		VIDEO DETECT VDCC		CCTV CAMERA CAT6		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 4"	2				4		1		1		1(R),1					4	FC39
	EX. 4"	6						2				2(R)		2				
2	EX. 2"			2		1						1					1	
3	EX. 4"	6				3		2				2(R),1					3	
4	EX. 3.5"	6				3		2				2(R),1					3	
5	EX. 3"	4				2		1				2(R)					2	
6	EX. 2"	2				1		1				1(R)					1	
7	EX. 2"			2		1						1(R)					1	
8	EX. 2"	2				1						1(R)					1	

* ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.



SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(FAX) 425 825-8434

RYAN WESLEY PETERSON — STATE OF WASHINGTON — 17388 — REGISTERED PROFESSIONAL ENGINEER
10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 320TH ST & 23RD AVE S

ITS03

SHEET 4 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(9) INSTALL VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

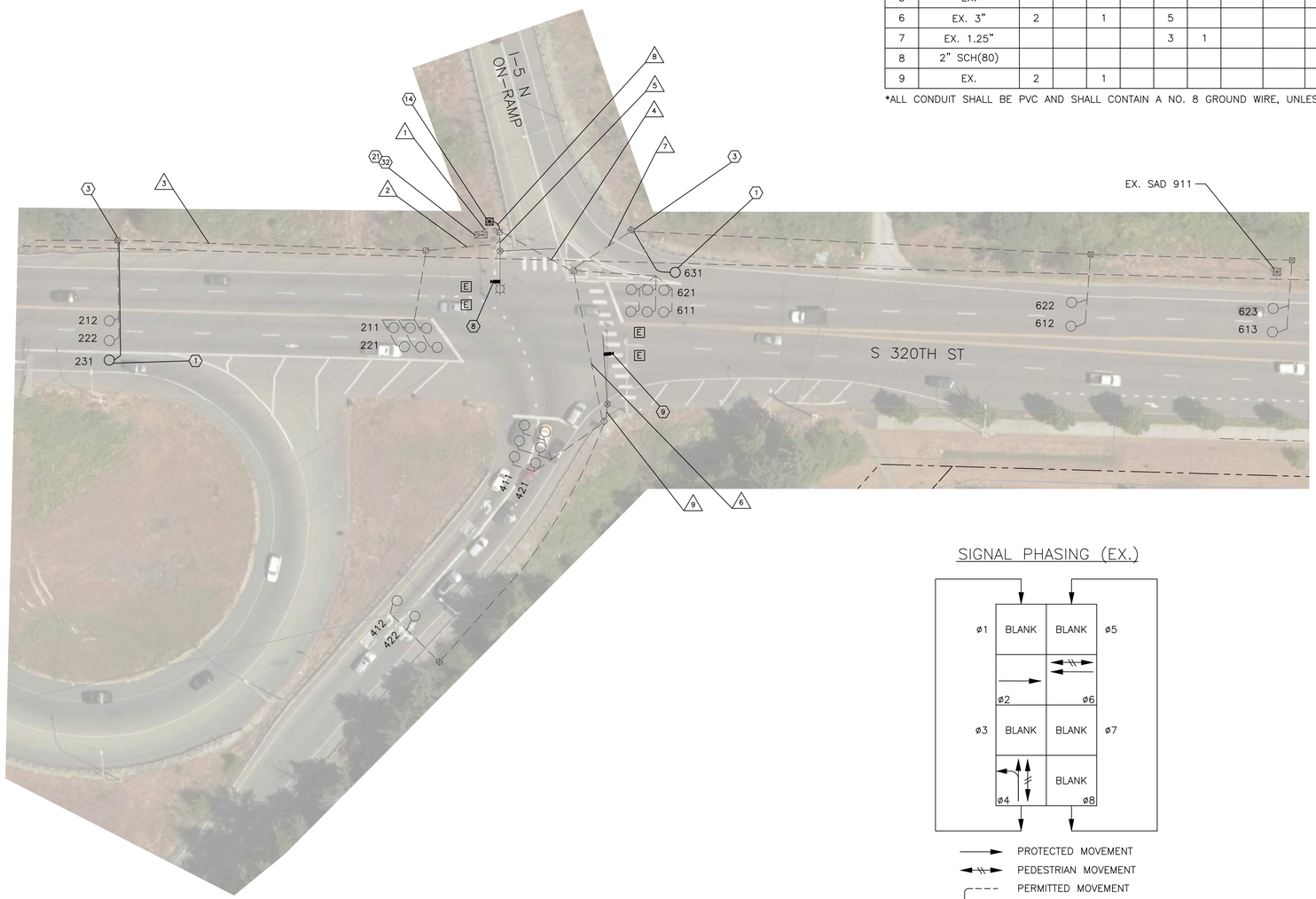
(14) INSTALL SERVICE CABINET AND FOUNDATION PER CITY FEDERAL WAY STANDARD DRAWING 3-45. RE-ROUTE EXISTING SIGNAL SERVICE CONDUCTORS TO NEW SERVICE CABINET. IF EXISTING SIGNAL SERVICE CONDUCTORS NEED TO BE LENGTHENED, NEW CONDUCTORS SHALL BE USED. COORDINATE USE OF EXISTING POWER SUPPLY WITH PUGET SOUND ENERGY.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

(32) REMOVE AND REPLACE EXISTING ETHERNET SWITCH AND SFP MODULE(S) PER SHEET ITS58. MATCH EXISTING TERMINATIONS.

WIRING SCHEDULE (THIS SHEET ONLY)														
NO. △	RACEWAY CONDUIT SIZE*	VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		FIBER		#6 SERVICE POWER		VIDEO DETECT VDCC		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	3		2		5	2						2	
	EX. 3"							1						FC114 (WSDOT)
	EX.										2			
2	EX. 2"					3	1	1						FC114 (WSDOT)
3	EX. 1.5"					3	1	1						FC114 (WSDOT)
4	EX. 4"	4		1		12	1						1	
5	EX.												1	
6	EX. 3"	2		1		5							1	
7	EX. 1.25"					3	1							
8	2" SCH(80)										2			
9	EX.	2		1									1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SERVICE CABINET BREAKER SCHEDULE

SERVICE & CIRCUITS	VOLTAGE	MAIN BREAKER AMPS	CONTACTOR AMPS
SERVICE	120V/240V	200A	
SIGNAL	120V		30A

SIGNAL PHASING (EX.)

N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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12131 113TH AVENUE NE, #203
KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

REGISTERED PROFESSIONAL ENGINEER 47388 STATE OF WASHINGTON

10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 320TH ST & I-5 NB

ITS04

SHEET 5 OF 69 SHEETS

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NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

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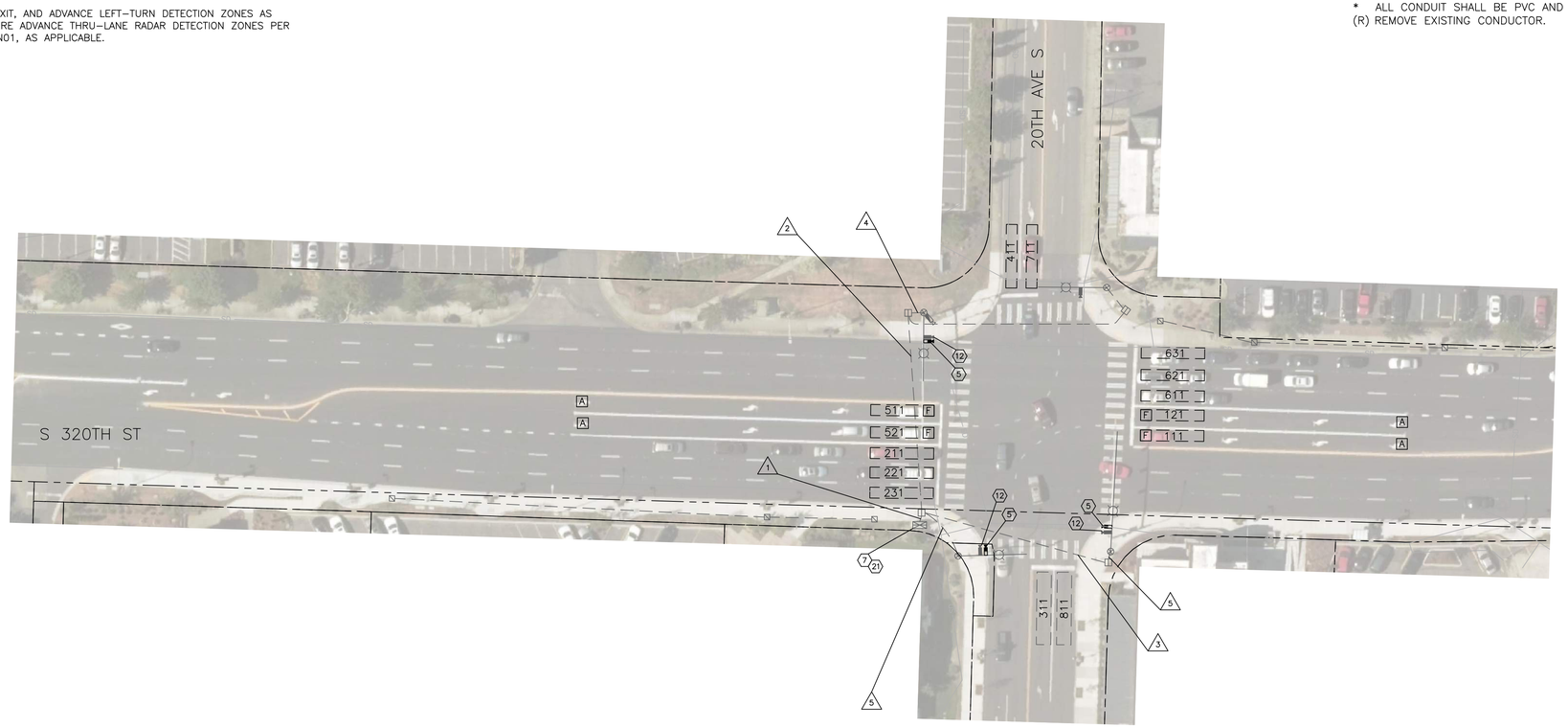
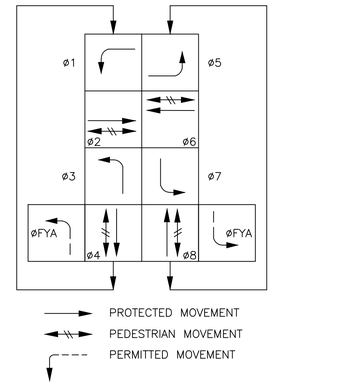
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		CCTV CAMERA CAT6		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	8						3(R),1		1			3	
2	EX. 3"	6		2				1(R),1					1	
3	EX. 2"	3		1				1(R)					1	
4	EX. 2"	1		1				1(R)		1			1	
5	EX. 2"	1		2				1(R)					1	

* ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.



SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

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REVIEWED BY	JC	10/02/2019			

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(TEL) 425 821-3665
(FAX) 425 825-8434

M. WESLEY PETERSON — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 320TH ST & PETE VON REICHBAUER WAY S/20TH AVE S

ITS05

SHEET 6 OF 69 SHEETS

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NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(10) RE-ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.

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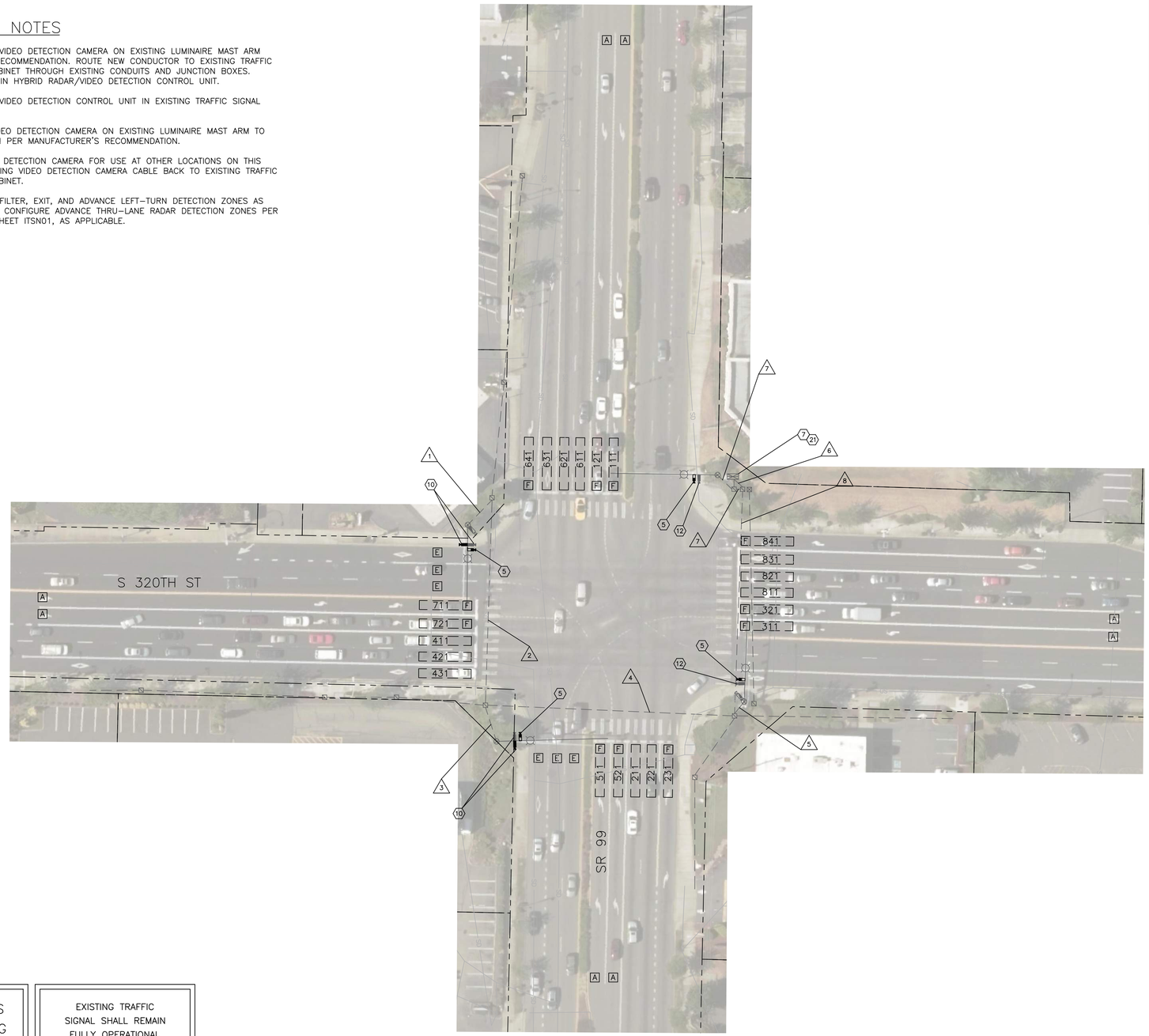
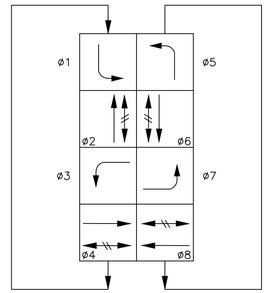
(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.



WIRING SCHEDULE (THIS SHEET ONLY)													
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		VIDEO DETECT VDCC		CCTV CAMERA CAT6		HYBRID RADAR/VIDEO CAT6	NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX. NEW	
1	EX. 3"			3		1		1		1		1	
2	EX. 3"	2				1		1		1		1	
3	EX. 3"	1		4		1		1				1	
4	EX. 3"	2				1		2		1		2	
5	EX. 3"	1		4		1		1(R)		1		1	
6	EX. 4"					4		2(R),2				4	
7	EX. 3"	1		3		1		1(R)				1	
8	EX. 3"	2				1		1(R)					
	EX. 4"	4				2		2		2		3	

* ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.

SIGNAL PHASING (EX.)



PROTECTED MOVEMENT
PEDESTRIAN MOVEMENT
PERMITTED MOVEMENT

N

0 20 40 80
Scale In Feet

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RYAN WEST EVERETT
STATE OF WASHINGTON
47388
REGISTERED PROFESSIONAL ENGINEER
10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 320TH ST & SR 99

ITS06

SHEET 7 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(2) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. RESTORE SIDEWALK TO PRE-EXISTING CONDITIONS. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

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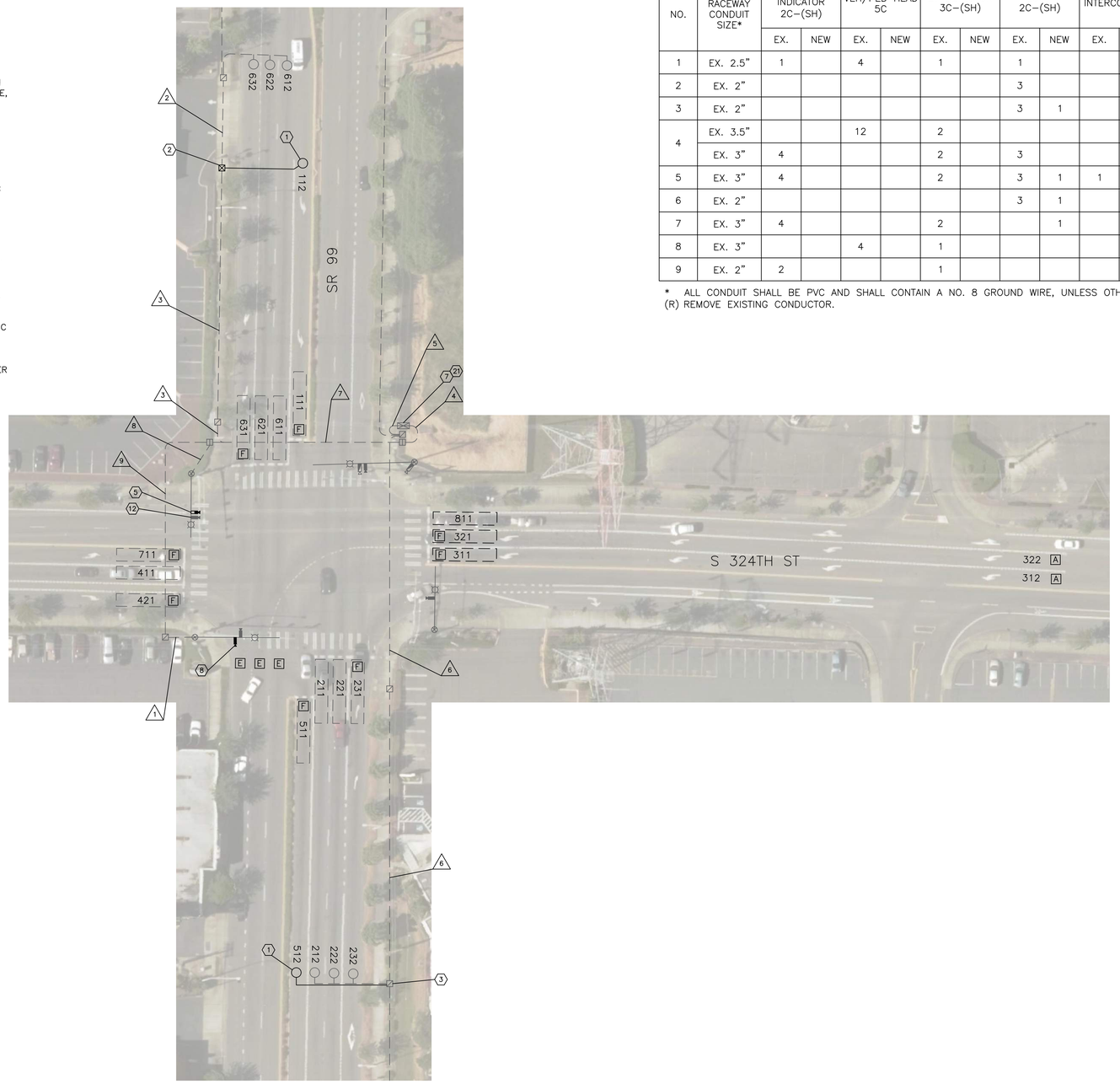
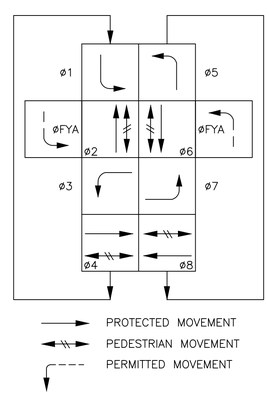


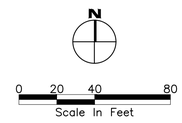
WIRING SCHEDULE (THIS SHEET ONLY)

NO.	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		INTERCONNECT		FIBER		VIDEO DETECT VDCC		CCTV CAMERA CAT6		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2.5"	1		4		1		1						1	1					
2	EX. 2"							3												
3	EX. 2"							3	1											
4	EX. 3.5"			12		2										2			1	
	EX. 3"	4				2		3						1(R), 1	1					
5	EX. 3"	4				2		3	1	1		1								
6	EX. 2"							3	1			1								
7	EX. 3"	4				2			1			1		1(R)	1	2			1	
8	EX. 3"			4		1						1		1(R)					1	
9	EX. 2"	2				1								1	1					

* ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.

SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	TDL	10/02/2019			
DRAWN BY	TDL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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R. ALAN WESLEY PETERSON — 17388 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2 – BID ALTERNATIVE 1

S 324TH ST & SR 99

ITS07

SHEET 8 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

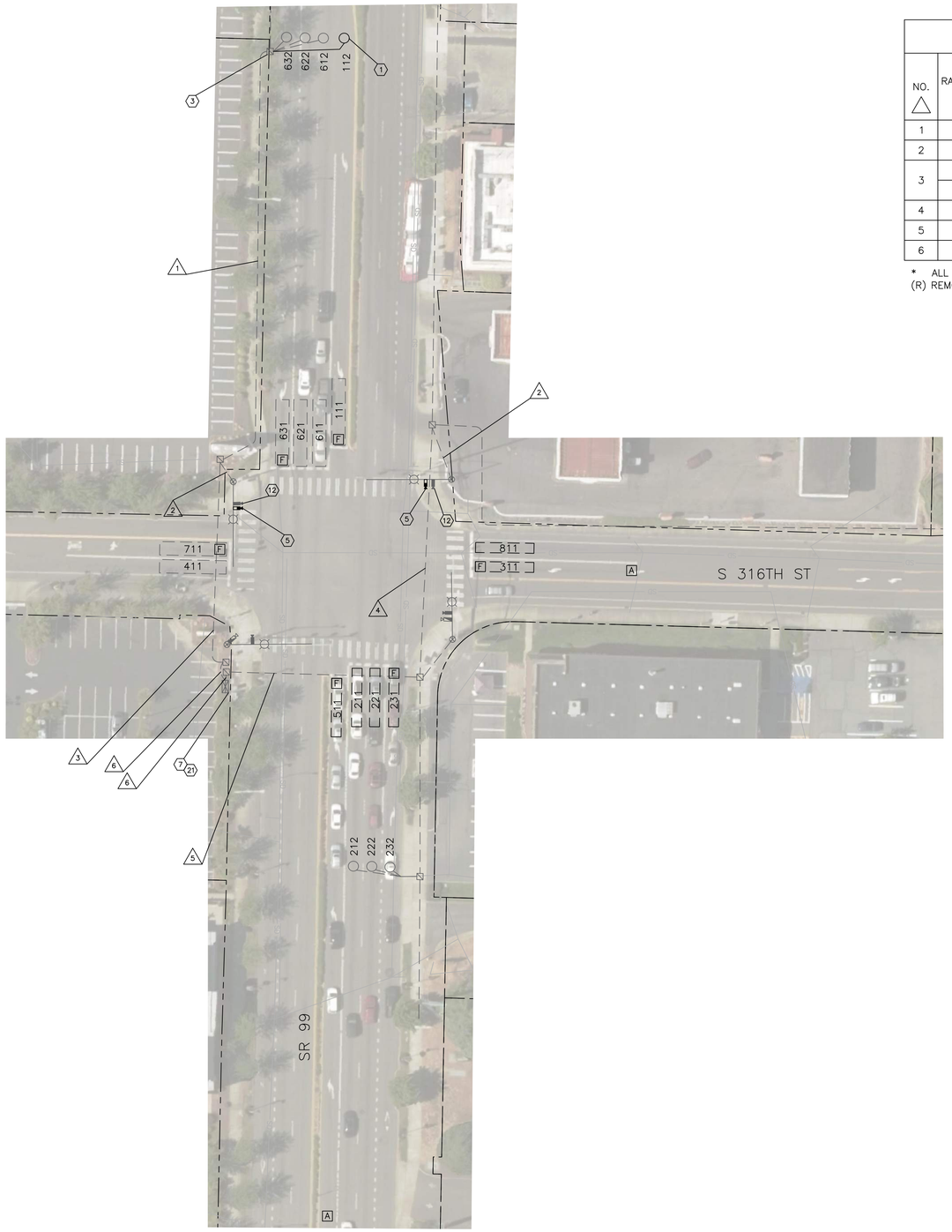
(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

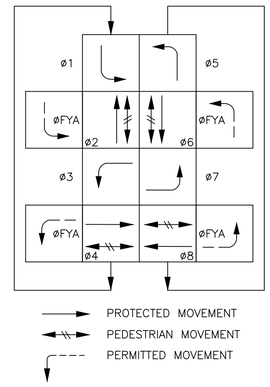
(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

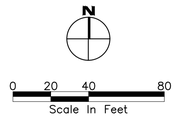


WIRING SCHEDULE (THIS SHEET ONLY)															
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		CAMERA		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"							3	1							
2	EX. 3"	2		3		1				1(R)					1	
3	EX. 2"	2				1				1(R)					1	
	EX. 2"							3	1							
4	EX. 2"	2				1				1(R)					1	
5	EX. 3"	4				2				1(R),1		1			1	
6	EX. 3"	4				2				1(R),1		1			1	

* ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.

SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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RAANWEST PETERSEN STATE OF WASHINGTON 47388 REGISTERED PROFESSIONAL ENGINEER 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

S 316TH ST & SR 99

ITS08

SHEET 9 OF 69 SHEETS

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NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

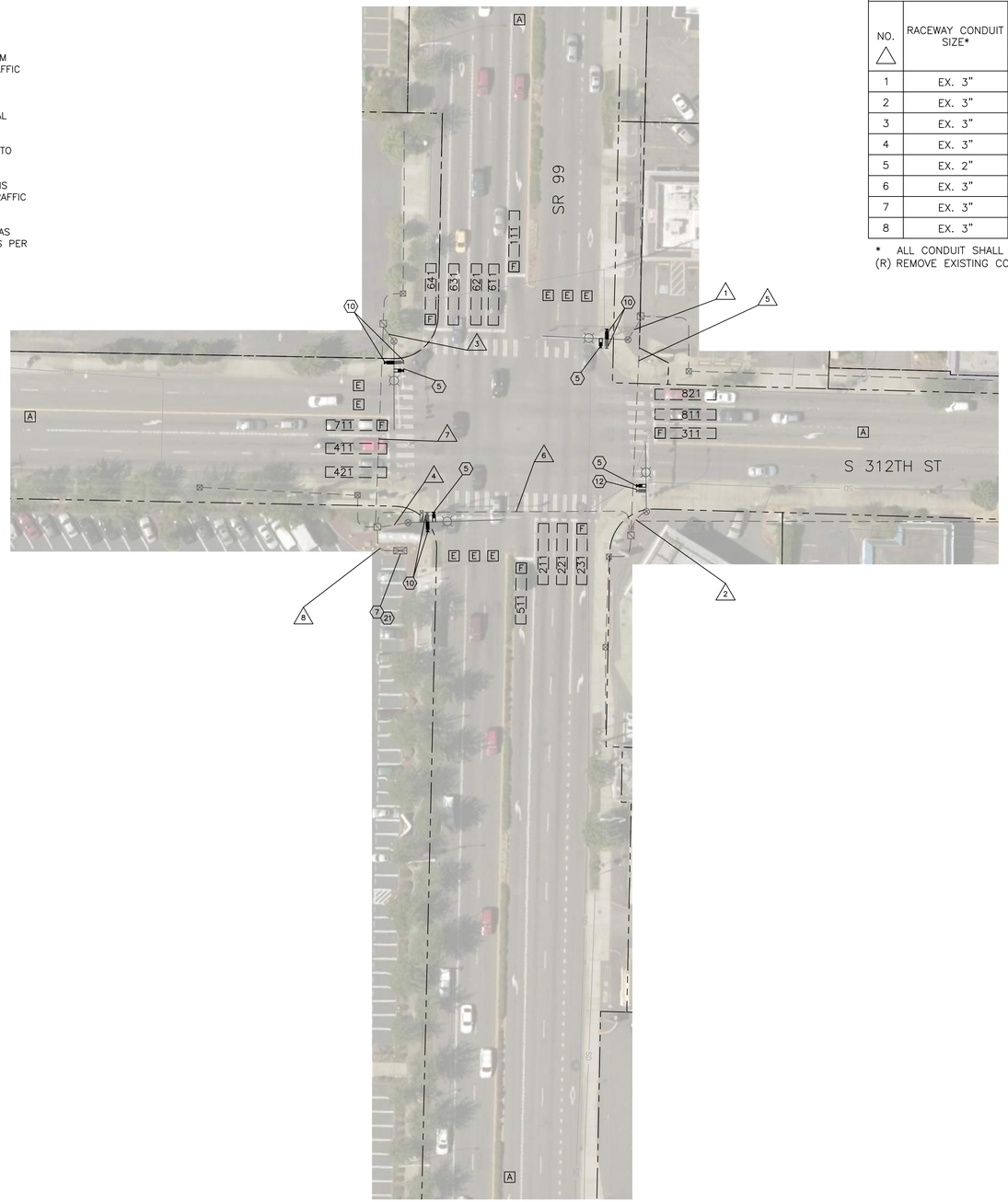
(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(10) RE-ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.

(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

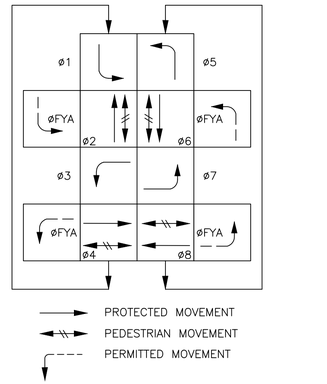


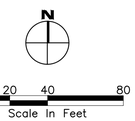
WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		INTERCONNECT		FIBER		VIDEO DETECT VDCC		CCTV CAMERA CAT6		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	2		4		1						1					1	
2	EX. 3"	3		5		1						1(R)					1	
3	EX. 3"	3		5		1						1					1	
4	EX. 3"	1		3		1						1		1			1	
5	EX. 2"	6										1					1	
6	EX. 3"	12										1(R),1					2	
7	EX. 3"	13										1					1	
8	EX. 3"	5						1		1		1(R),3		1			4	

* ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR

SIGNAL PHASING (EX.)





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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
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REVIEWED BY	JC	10/02/2019			

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R. WESLEY PETERSEN — STATE OF WASHINGTON — 17388 — REGISTERED PROFESSIONAL ENGINEER — 10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

S 312TH ST & SR 99

ITS09

SHEET 10 OF 69 SHEETS

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NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(6) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

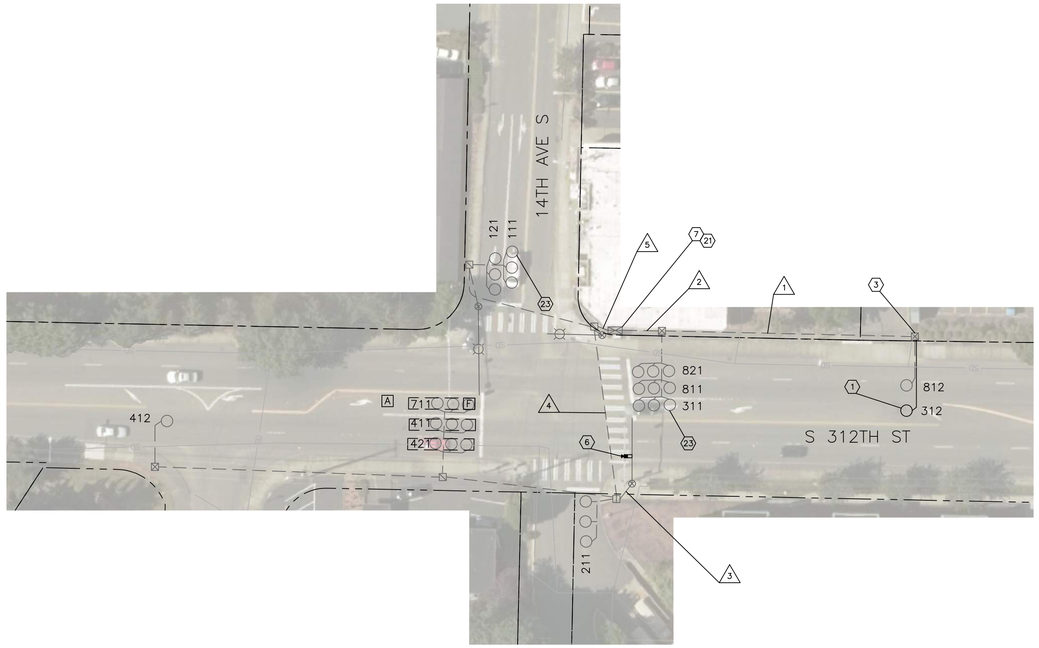
(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

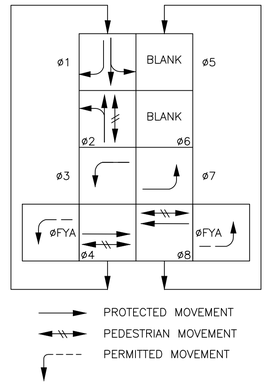
(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.

WIRING SCHEDULE (THIS SHEET ONLY)												
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX.							1	1			
2	EX.							6	1			
3	EX.	3		4		1					1	
4	EX.	4		7		1		12			1	
5	EX. 2"	8									1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SIGNAL PHASING (EX.)



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Scale In Feet

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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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RYAN WESLEY PETERSON, STATE OF WASHINGTON, 17388, REGISTERED PROFESSIONAL ENGINEER
10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

S 312TH ST & 14TH AVE S

ITS10

SHEET 11 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

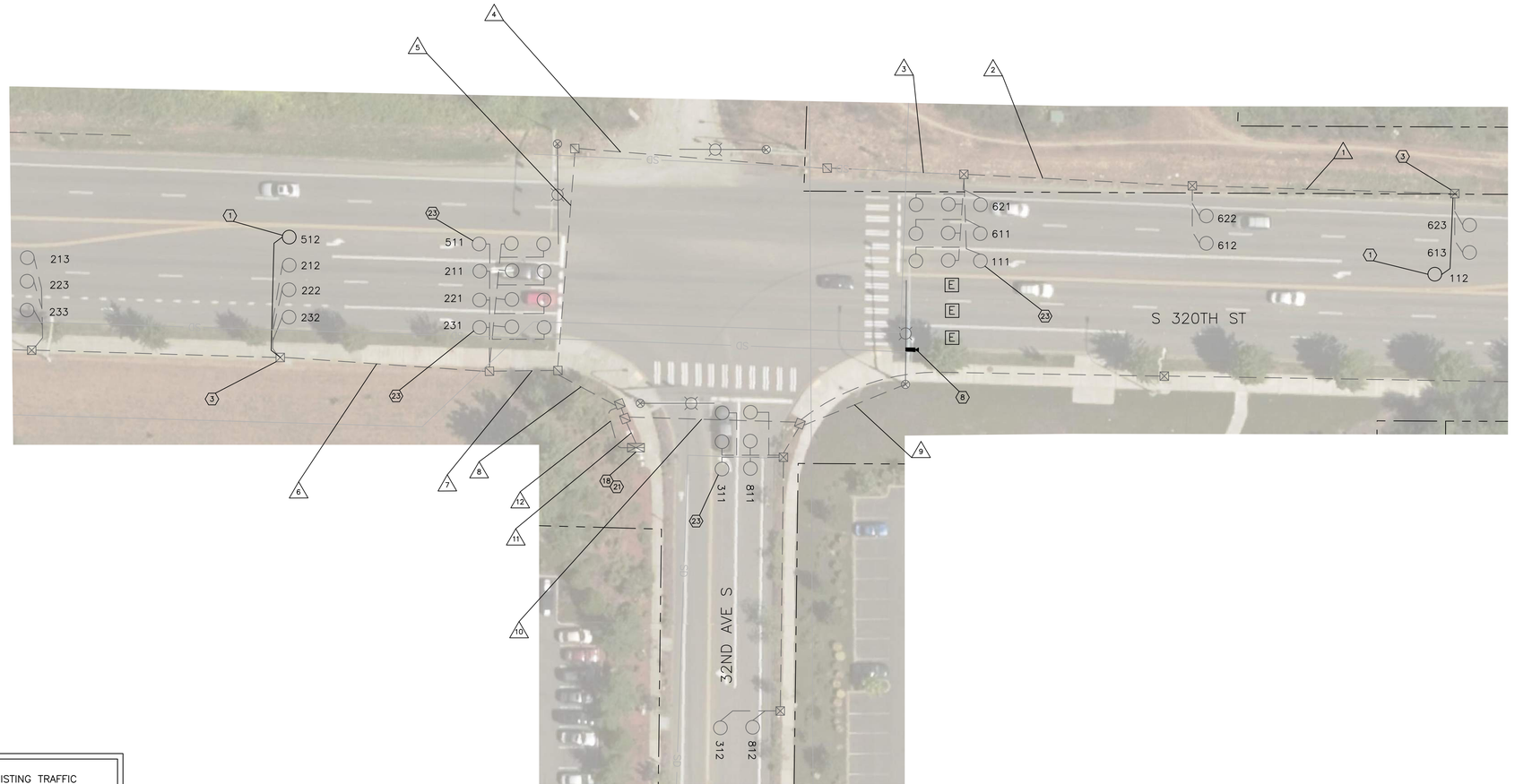
(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

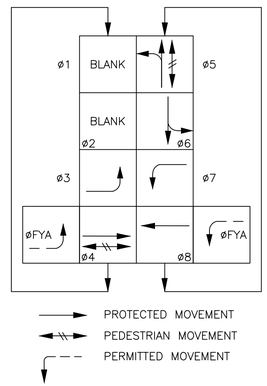
(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.

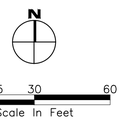
WIRING SCHEDULE (THIS SHEET ONLY)												
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		FIBER		VIDEO DETECT VDCC		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"					2	1					
2	EX. 2"					3	1					
3	EX. 2"					9	1					
4	EX. 2.5"	2				9	1					
5	EX. 3"	4		2		10	1					
6	EX. 2"					6	1	1				
7	EX. 2"					12	1	1				
8	EX. 2.5"					12	2					
9	EX. 2"	2		1							1	
10	EX. 2.5"	3		1		6		1			1	
11	EX. 2.5"	2				12		1			1	
12	EX. 3"	2		1		12	2					

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SIGNAL PHASING (EX.)





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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
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REVIEWED BY	JC	10/02/2019			

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R. MAWESLEY PETERSEN — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 320TH ST & 32ND AVE S

ITS11

SHEET 12 OF 69 SHEETS

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NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

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(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(20) INSTALL VIDEO DETECTION CAMERA ON SIDE OF EXISTING STRAIN POLE TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH SPAN WIRE, CONDUITS, AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

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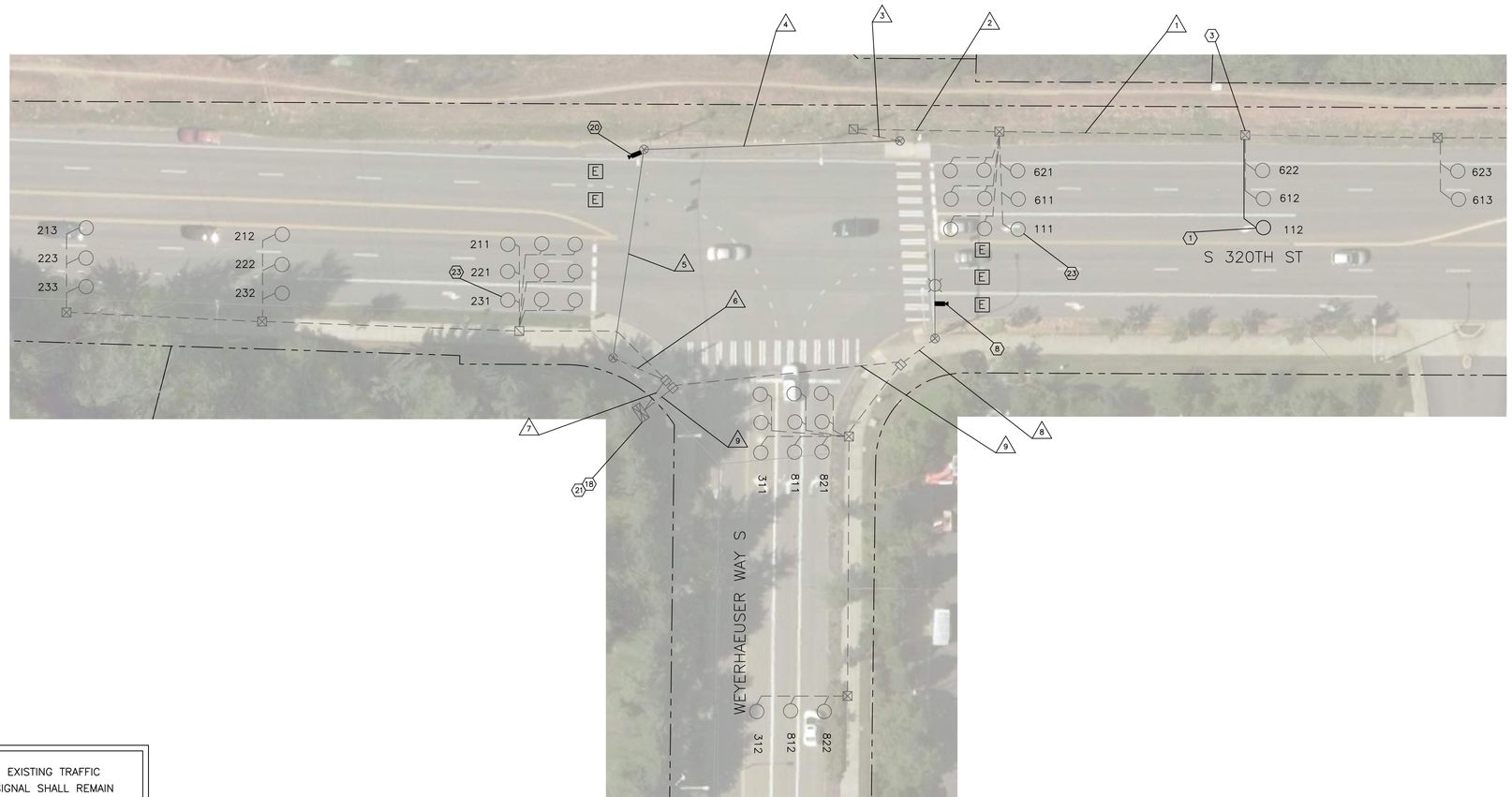
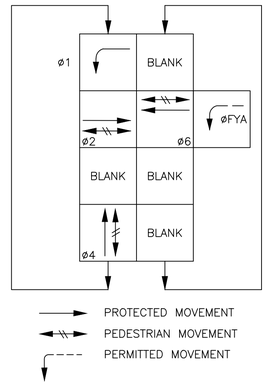
WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		ILLUM #8		LOOP 2C-(SH)		VIDEO DETECT VDCC		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"					1				4	1			
2	EX. 2"					1				10	1			
3	EX. 3"	1		1		1				10	1			
4	SPANWIRE	1		2		2		2		10	1			
5	SPANWIRE	1		4		3		2		10	1		1	
6	EX. 3"	2				3				10	1		1	
7	EX. 3"	2				2				10	1		1	
8	EX. 2"	2				1							1	
9	EX. 2.5"	12				1							1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SIGNAL PHASING (EX.)



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Scale In Feet

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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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R. A. WESTLEY PETERSEN — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 320TH ST & WEYERHAEUSER WAY S

ITS12

SHEET 13 OF 69 SHEETS

M:\16\1.16674.00 – Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Int 12 – S 320th St – Weyerhaeuser Way S.dwg=S 320th ST & WEYERHAEUSER WAY S\Dotnom Mavoiva 10/2/2019 1:00 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.50-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(2) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. RESTORE SIDEWALK TO PRE-EXISTING CONDITIONS. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

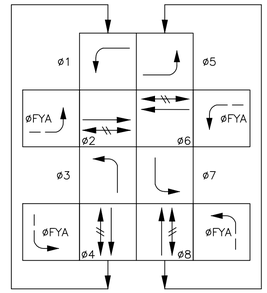
(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

WIRING SCHEDULE (THIS SHEET ONLY)												
NO. △	RACEWAY CONDUIT SIZE*	VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	3						1(R)			1	
2	EX. 2"			3			1	1,2(R)			2	
3	EX. 3"			2				1,1(R)			1	
4	EX. 2"			1				1(R)			1	
5	EX. 3"			4			1	2,2(R)			2	
6	EX. 2"					2	1					EX. LOOPS UN-USED

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.

SIGNAL PHASING (EX.)



PROTECTED MOVEMENT
PEDESTRIAN MOVEMENT
PERMITTED MOVEMENT

N

0 15 30 60
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JAH	10/02/2019			
DRAWN BY	JAH	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(FAX) 425 825-8434

RYAN WEST EY PETERSEN
STATE OF WASHINGTON
47388
REGISTERED
PROFESSIONAL ENGINEER
10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2 – BID ALTERNATIVE 1

S 320TH ST & 11TH PL S

ITS13

SHEET 14 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(4) EXISTING LOOP DETECTOR TO REMAIN. RE-SPLICE TO SEPARATE LOOP LEAD-IN AND TERMINATE IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS. REMAINING LOOPS TO REMAIN SPLICED TO EXISTING LEAD-IN(S).

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

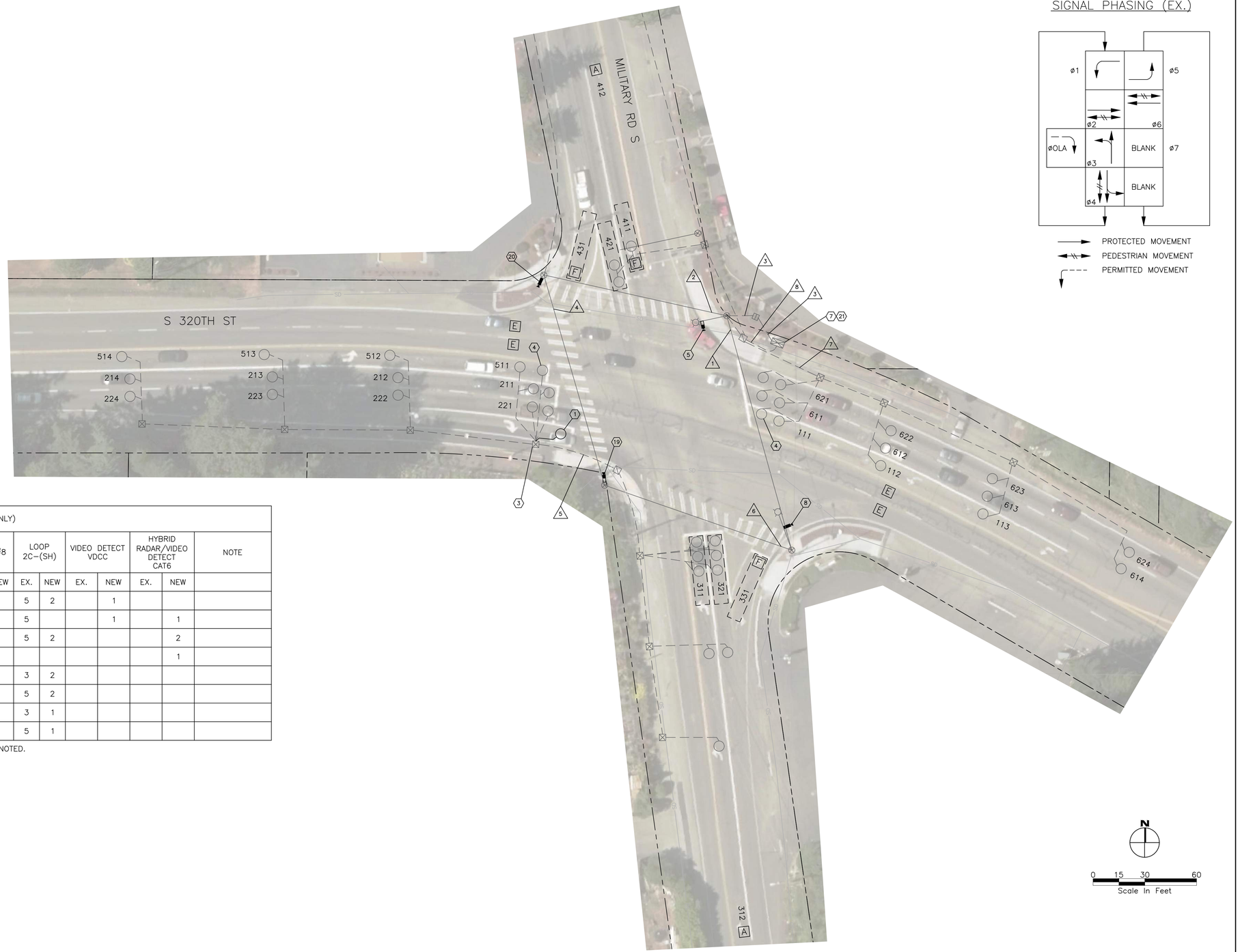
(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(19) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON SIDE OF EXISTING STRAIN POLE PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING SPAN WIRE, CONDUITS, AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(20) INSTALL VIDEO DETECTION CAMERA ON SIDE OF EXISTING STRAIN POLE TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH SPAN WIRE, CONDUITS, AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.



SIGNAL PHASING (EX.)

WIRING SCHEDULE (THIS SHEET ONLY)																			
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/ EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		VEH/PED HEAD 4C/8C		VEH/PED HEAD 10C		EV DETECTOR 3C-(SH)		ILLUM #8		LOOP 2C-(SH)		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. SPANWIRE			2		4				4		1		5	2		1			
2	EX. SPANWIRE			4		6				4				5			1		1	
3	EX. 4"			5		4				4				5	2				2	
4	EX. SPANWIRE	1		1		2		1		1									1	
5	EX. 2"													3	2					
6	EX. SPANWIRE			1		2				1				5	2					
7	EX. 2"													3	1					
8	EX. 3"	1		2										5	1					

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	TDL	10/02/2019			
DRAWN BY	TDL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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(FAX) 425 825-8434

RAANWEST TRIPATHI — #7388 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 320TH ST/S PEASLEY CANYON RD & MILITARY RD S

ITS15

SHEET 15 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(4) EXISTING LOOP DETECTOR TO REMAIN. RE-SPLICE TO SEPARATE LOOP LEAD-IN AND TERMINATE IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS. REMAINING LOOPS TO REMAIN SPLICED TO EXISTING LEAD-IN(S).

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

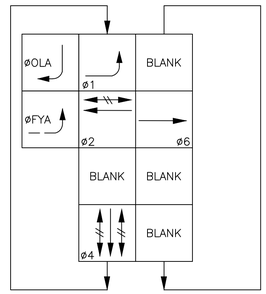
(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

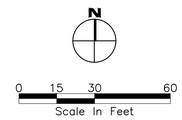
(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

WIRING SCHEDULE (THIS SHEET ONLY)												
NO. △	RACEWAY CONDUIT SIZE*	VEH/PED HEAD 8C/7C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO CAT 6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"			4		14	3		1		1	
2	EX. 3"	1		3					1		1	
	EX. 2"					6	1					
3	EX. SPANWIRE											
4	EX. 2"					6	1					
5	EX. 2"					4	2					

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	TDL	10/02/2019			
DRAWN BY	TDL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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RAANWEST TRUMAN STATE OF WASHINGTON 47388 REGISTERED PROFESSIONAL ENGINEER 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S PEASLEY CANYON RD & S 321ST ST

ITS16

SHEET 16 OF 69 SHEETS

M:\16\1.16774.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Jet 16 - S Peasley Canyon Rd - S 321st St.dwg>S PEASLEY CANYON RD & S 321ST ST> Dominic Valeviaus 10/2/2019 7:04 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

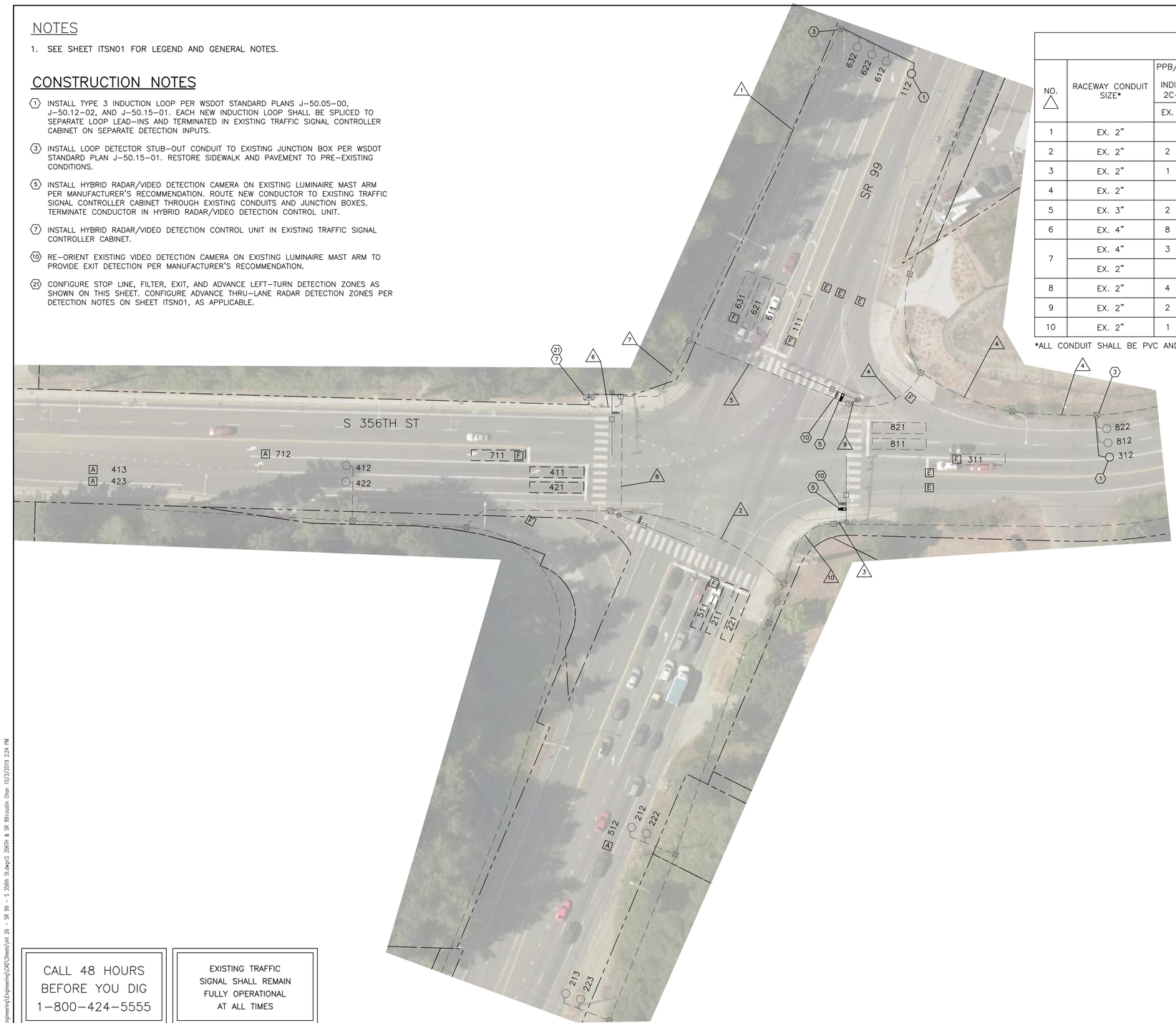
(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(10) RE-ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

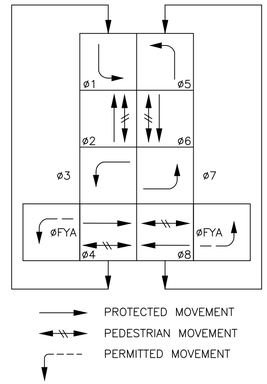


WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		INTERCONNECT		FIBER		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"							3	1									
2	EX. 2"	2				2								1			1	
3	EX. 2"	1				1								1			1	
4	EX. 2"							2	1									
5	EX. 3"	2				1		2	1					1			1	
6	EX. 4"	8				5			2					4			2	
7	EX. 4"	3				1				1		1		1			1	
	EX. 2"							5	2									
8	EX. 2"	4				3								2			1	
9	EX. 2"	2				1								1			1	
10	EX. 2"	1				2								1			1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	TDL	10/02/2019			
DRAWN BY	TDL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(FAX) 425 825-8434

RAANWEST BRETT HANSEN STATE OF WASHINGTON 47388 REGISTERED PROFESSIONAL ENGINEER 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 356TH & SR 99

ITS26

SHEET 17 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

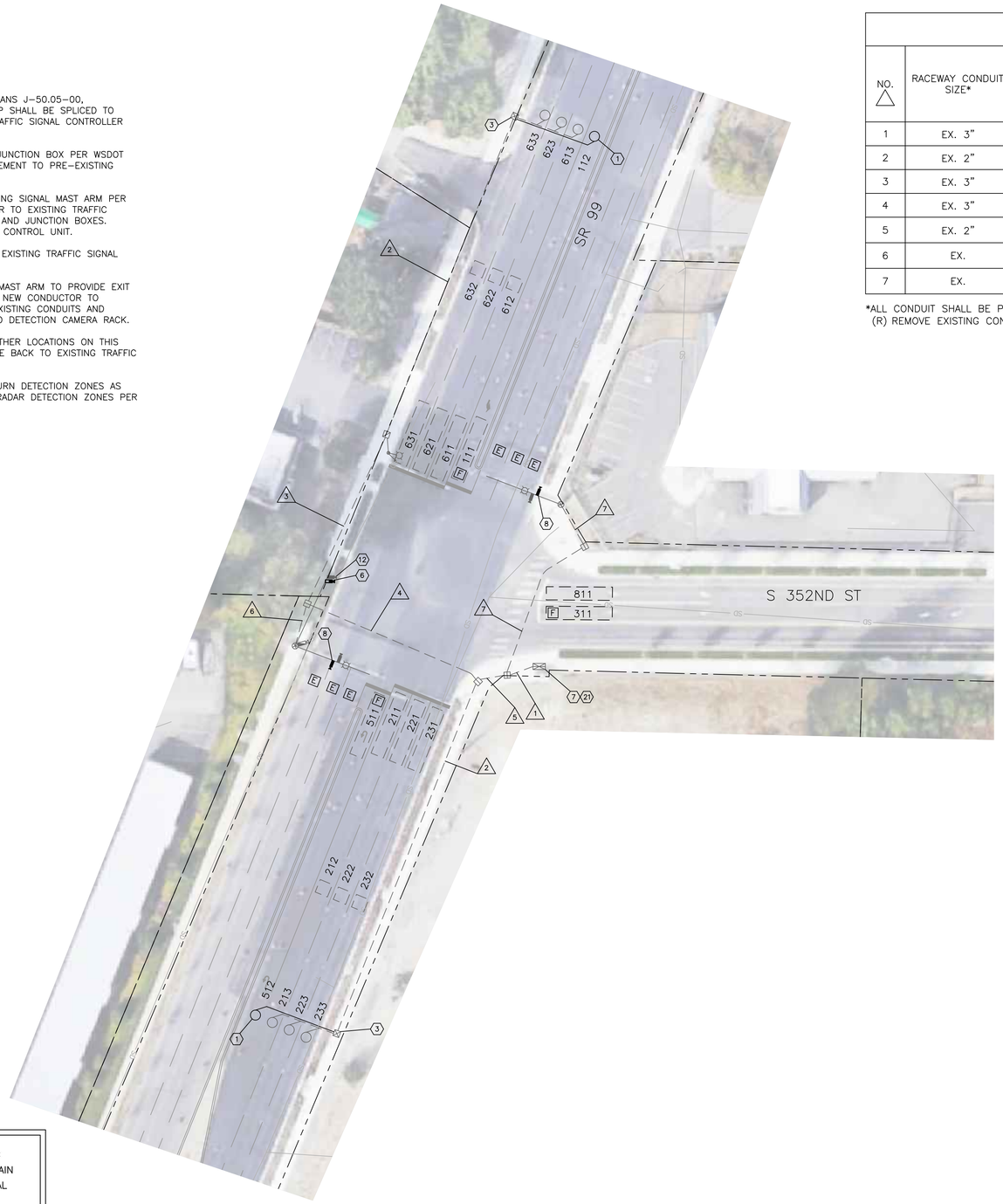
(6) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

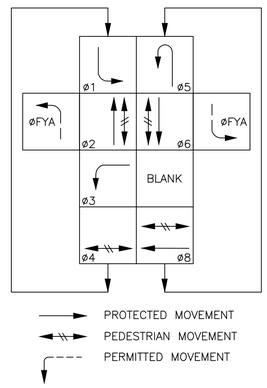


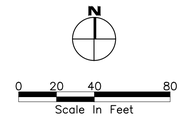
WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		VEH SIGNAL HEAD 7C		VEH/PED HEAD 5C		CCTV CAMERA CAT6		HYBRID RADAR/VIDEO DETECTION CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	2				4	2	1(R), 2	2			8		1			1	
2	EX. 2"					2	1											
3	EX. 3"			1		2	1			1		3						
4	EX. 3"					2	1	1(R), 1	1	1		8		1			1	
5	EX. 2"	2		2		4	2	1(R), 1	1	1		8		1			1	
6	EX.	1		2				1(R), 1	1					1			1	
7	EX.	2		1				1	1									

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.

SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	TDL	10/02/2019			
DRAWN BY	TDL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

R. MATTHEW LEYPOLDT PETERSEN — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER
10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 352ND ST & SR 99

ITS27

SHEET 18 OF 69 SHEETS

M:\16\1.16174.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Vol 27 - SR 99 - S 352nd St.dwg S 352ND ST & SR 99\Mahmood Alavi 10/2/2019 12:39 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

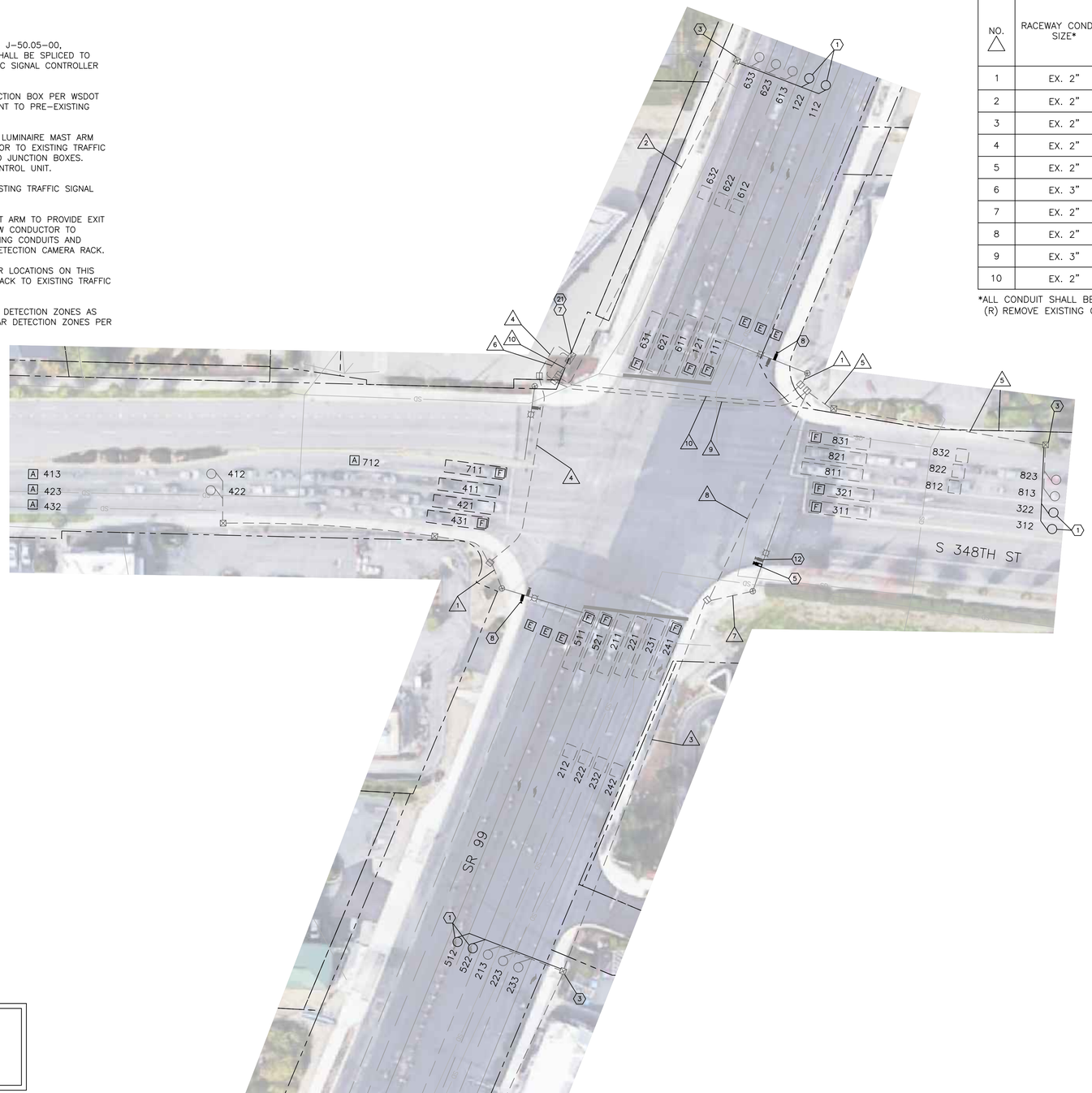
(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

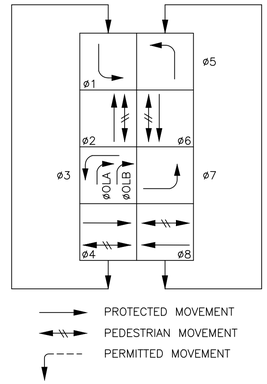


WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		BLANK OUT SIGN 5C		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO DETECTION CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"			1						1	1			
2	EX. 2"					3	2							
3	EX. 2"					4	2	1						
4	EX. 2"	2		1		2				1	1			
5	EX. 2"					2	2							
6	EX. 3"	2		1		9	6			1(R)			1	
7	EX. 2"			1						1(R)			1	
8	EX. 2"	2		1		4	2			1(R)			1	
9	EX. 3"	2		1		6	4			1(R)			1	
10	EX. 2"	2		1						1	1			

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.

SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	TDL	10/02/2019			
DRAWN BY	TDL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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WHAT TRANSPORTATION CAN BE.
12131 113TH AVENUE NE, #203
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(TEL) 425 821-3665
(FAX) 425 825-8434

RYAN WESLEY PETERSEN, STATE OF WASHINGTON, 47388, REGISTERED PROFESSIONAL ENGINEER, 10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 348TH ST (SR 18) & SR 99

ITS28

SHEET 19 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

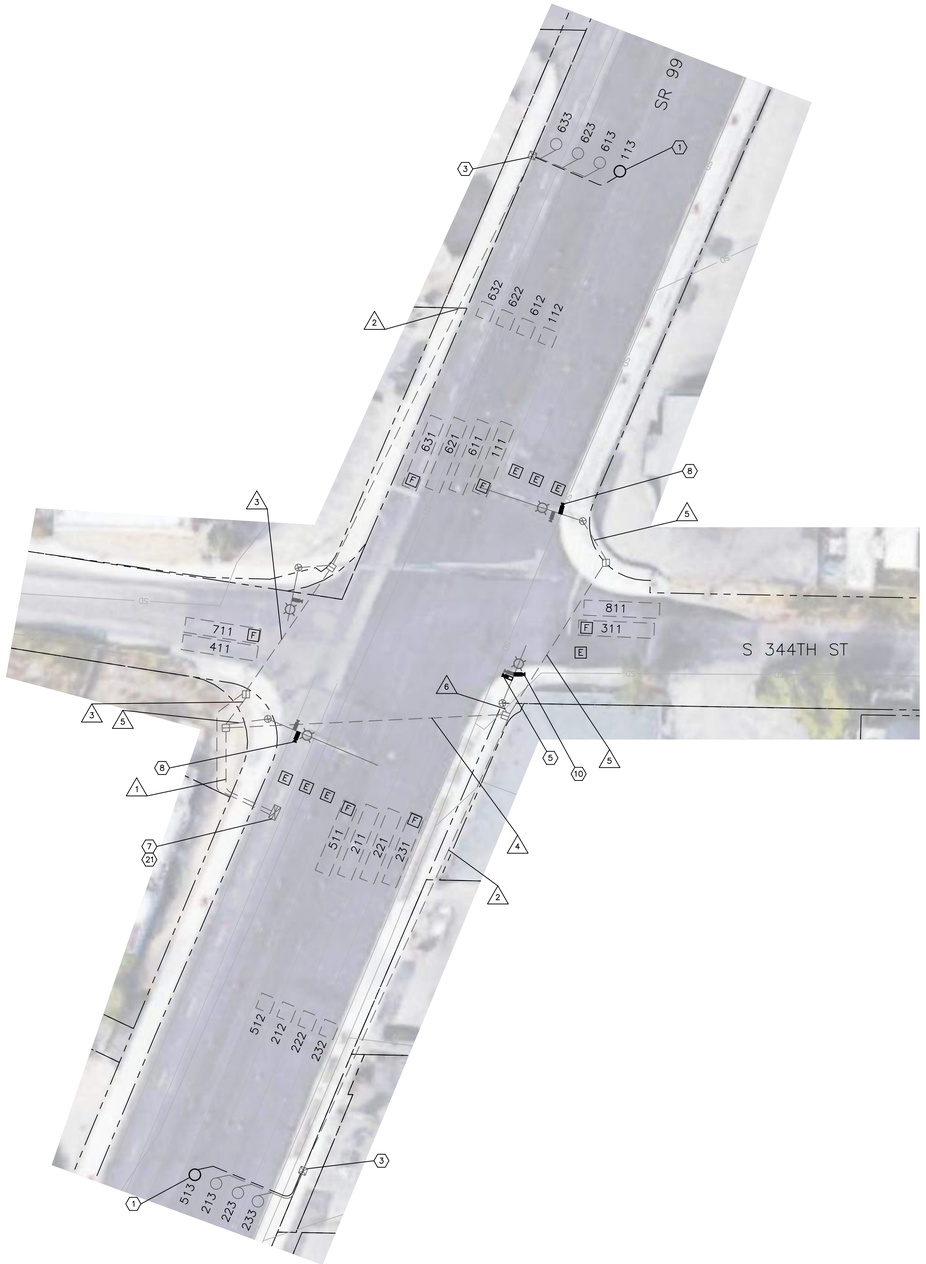
(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(10) RE-ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

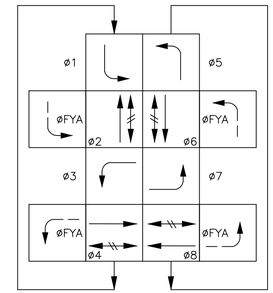


WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/ EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	2		1		3	1	3	2		1	
2	EX. 2"					3	1					
3	EX. 2"	2		1		3	1	1				
4	EX. 2"	2		1		3	1	1	1		1	
5	EX. 2"	1		1				1	1			
6	EX. 2"	1		1				1			1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)



PROTECTED MOVEMENT
PEDESTRIAN MOVEMENT
PERMITTED MOVEMENT

N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	MHA	10/02/2019			
DRAWN BY	MHA	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(TEL) 425 821-3665
(FAX) 425 825-8434

REGISTERED PROFESSIONAL ENGINEER
STATE OF WASHINGTON
47388
JOSHUA WESTBY CHAN
10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

SR 99 & S 344TH ST

ITS29

SHEET 20 OF 69 SHEETS

M:\16\1.16774.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Jet 29 - SR 99 - S 344th St.dwg<SR 99 & S 344th ST>Justin Chan 10/2/2019 12:56 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

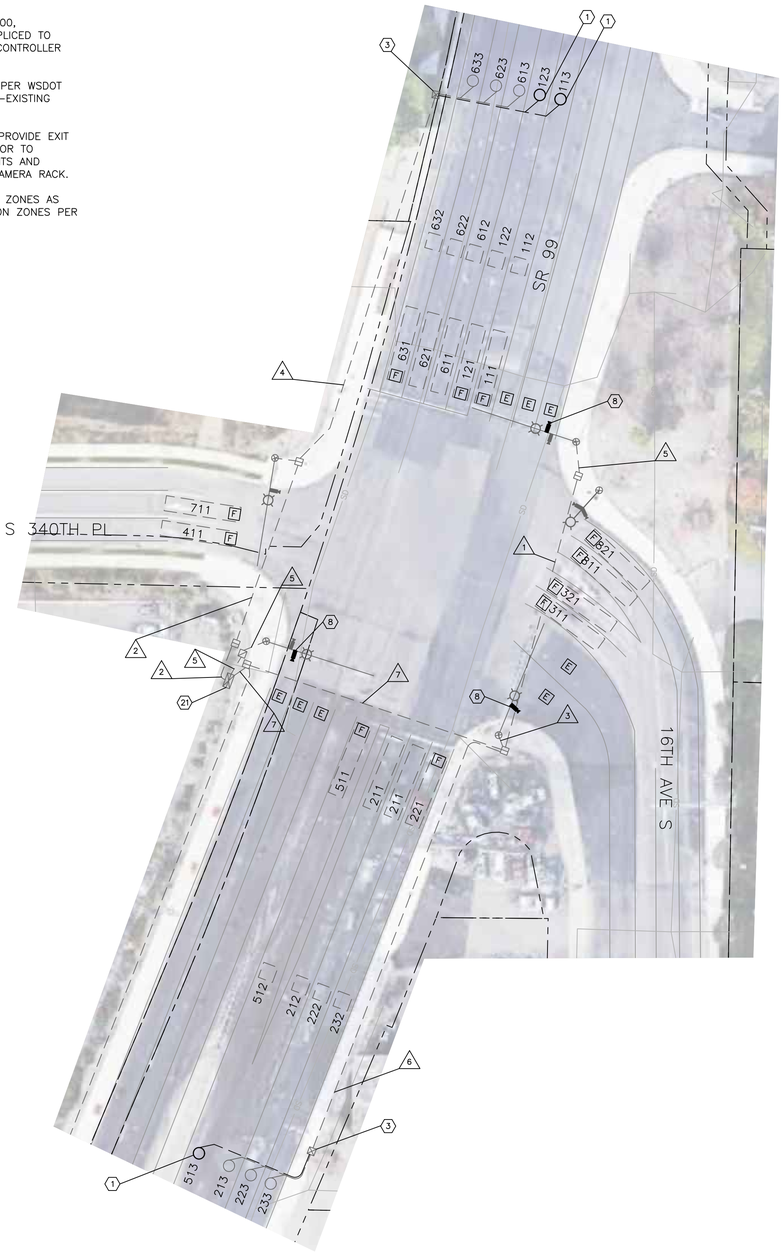
CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

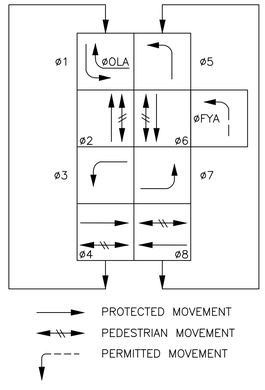


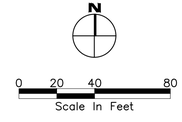
WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	2				2				3	1	
2	EX. 3"	2				1		3	2	1		
3	EX. 2"	1		2							1	
4	EX. 2"							3	2			
5	EX. 3"	2				1				1	1	
6	EX. 2"							3	1			
7	EX. 3"	4				4		3	1	3	2	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	MHA	10/02/2019			
DRAWN BY	MHA	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(FAX) 425 825-8434

R. J. NAWEST EY PETERSEN
STATE OF WASHINGTON
17388
REGISTERED
PROFESSIONAL ENGINEER
10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

SR 99 & 16TH AVE S/S 340TH PL

ITS30

SHEET 21 OF 69 SHEETS

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NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

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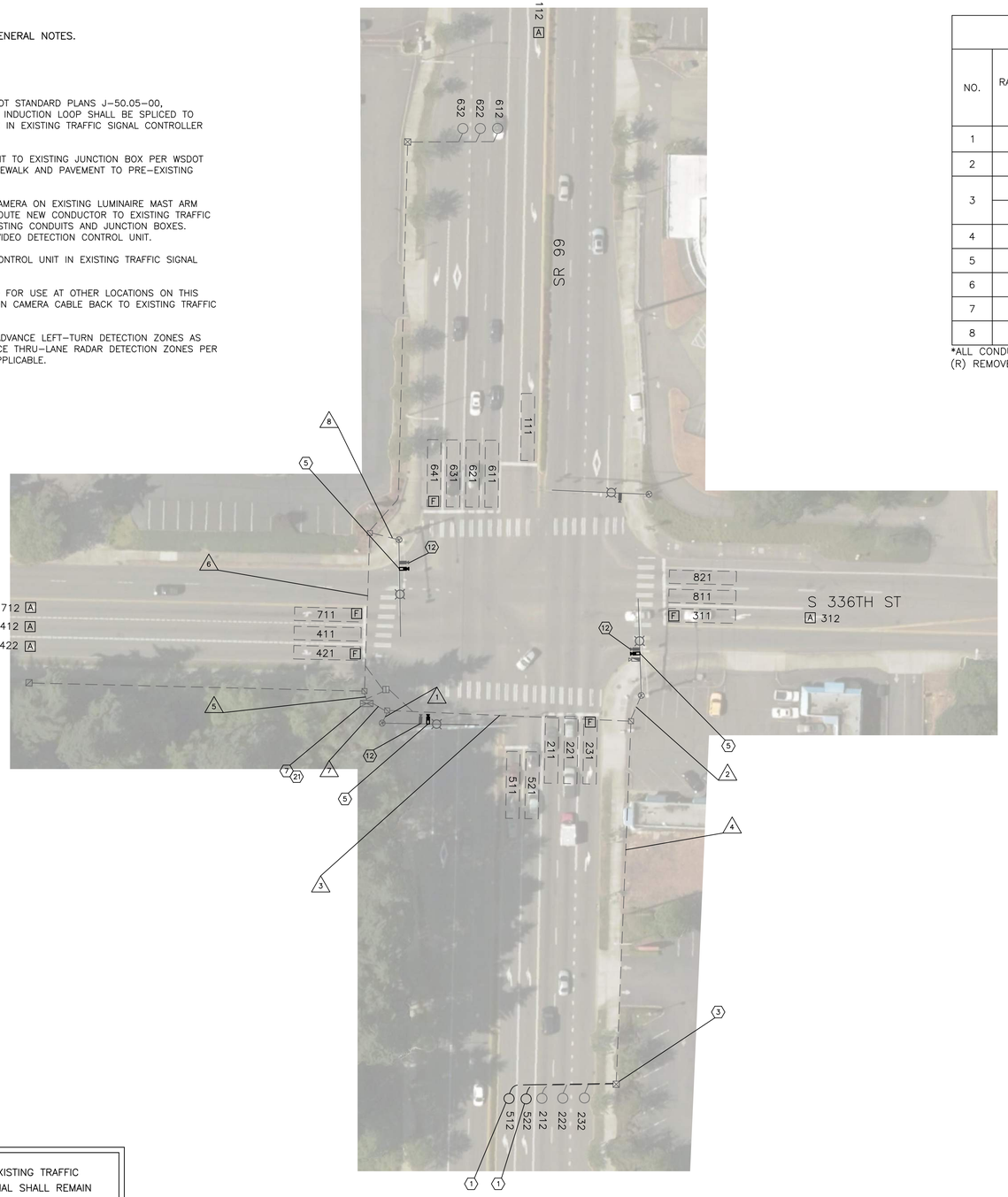
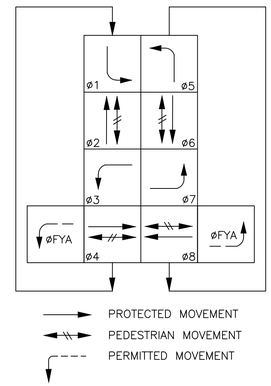


WIRING SCHEDULE (THIS SHEET ONLY)

NO.	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		FIBER		VIDEO DETECT VDCC		CCTV CAMERA		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	1		4		1						1(R)					1	
2	EX. 3"	1		5		1						1(R)		1			1	
3	EX. 2"	2				1				1		1(R)		1			1	
	EX. 2"							3	2	1								
4	EX. 2"							3	2	1								
5	EX. 4"	2		17								1(R),1					1	
6	EX. 2"	4				2						1(R),1					1	
7	EX. 4"	4		18		1			2			2(R)		1			2	
8	EX. 3"	3		8		1						1(R)					1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.

SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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12131 113TH AVENUE NE, #203
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(TEL) 425 821-3665
(FAX) 425 825-8434

RAMWEST E. PETERSEN #7388 REGISTERED PROFESSIONAL ENGINEER STATE OF WASHINGTON 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 336TH ST & SR 99

ITS31

SHEET 22 OF 69 SHEETS

M:\16\1.16174.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Jet 31 - S 336th St - SR 99.dwg<S 336th ST & SR 99>Common Materials 10/2/2019 7:12 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

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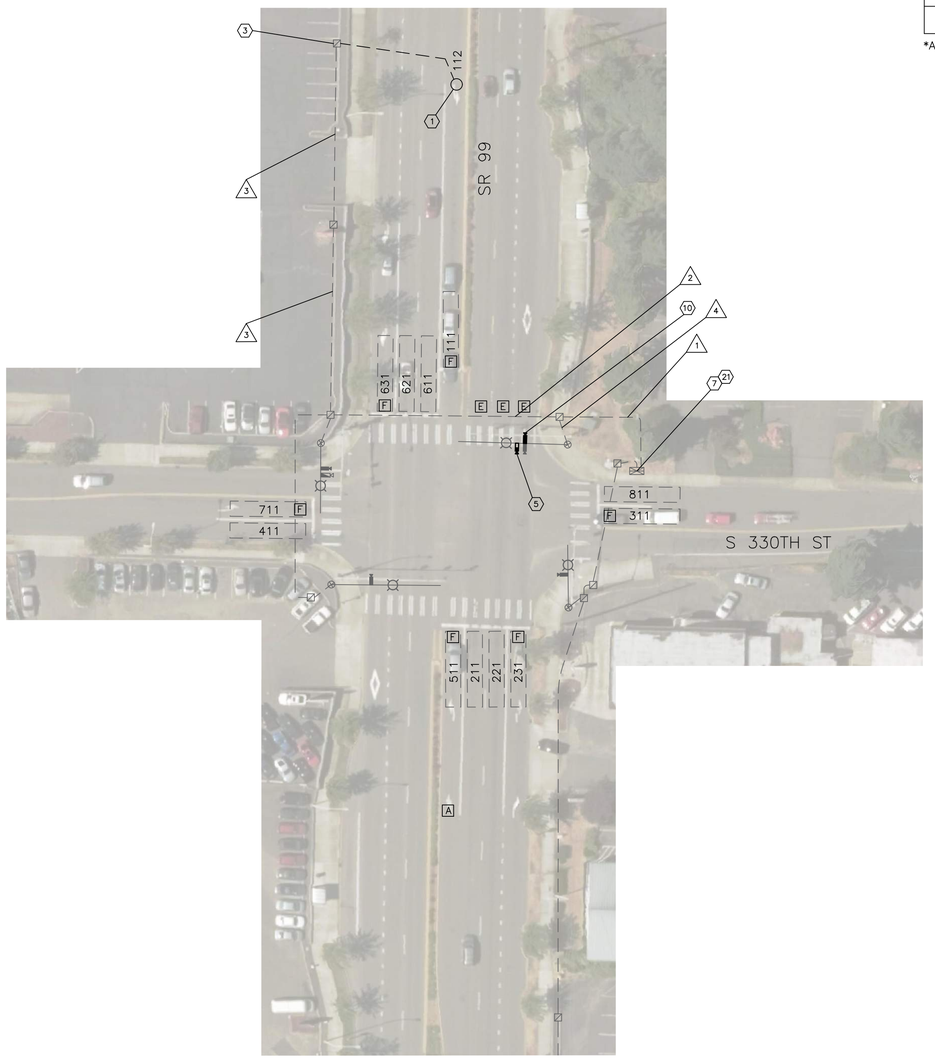
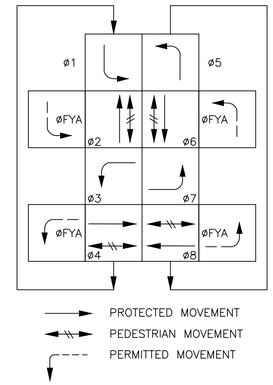
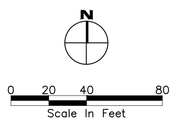


WIRING SCHEDULE (THIS SHEET ONLY)													
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		LOOP 2C-(SH)		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	7		2					1	2			1	
2	EX. 3"	2		2					1	2				
3	EX. 2"								1					
4	EX. 3"	3		1		5				1			1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	MHA	10/02/2019			
DRAWN BY	MHA	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(FAX) 425 825-8434

R. J. WESTLEY PETERSEN — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 330TH ST & SR 99

ITS32

SHEET 23 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

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(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(15) INSTALL SPLICE CLOSURE AND SPLICE 24 SMFO PRE-TERMINATED STUB CABLE TO EXISTING FIBER OPTIC CABLE PER DETAILS ON SHEETS ITS58-ITS60.

(16) INSTALL 24-PORT FIBER OPTIC PATCH PANEL IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

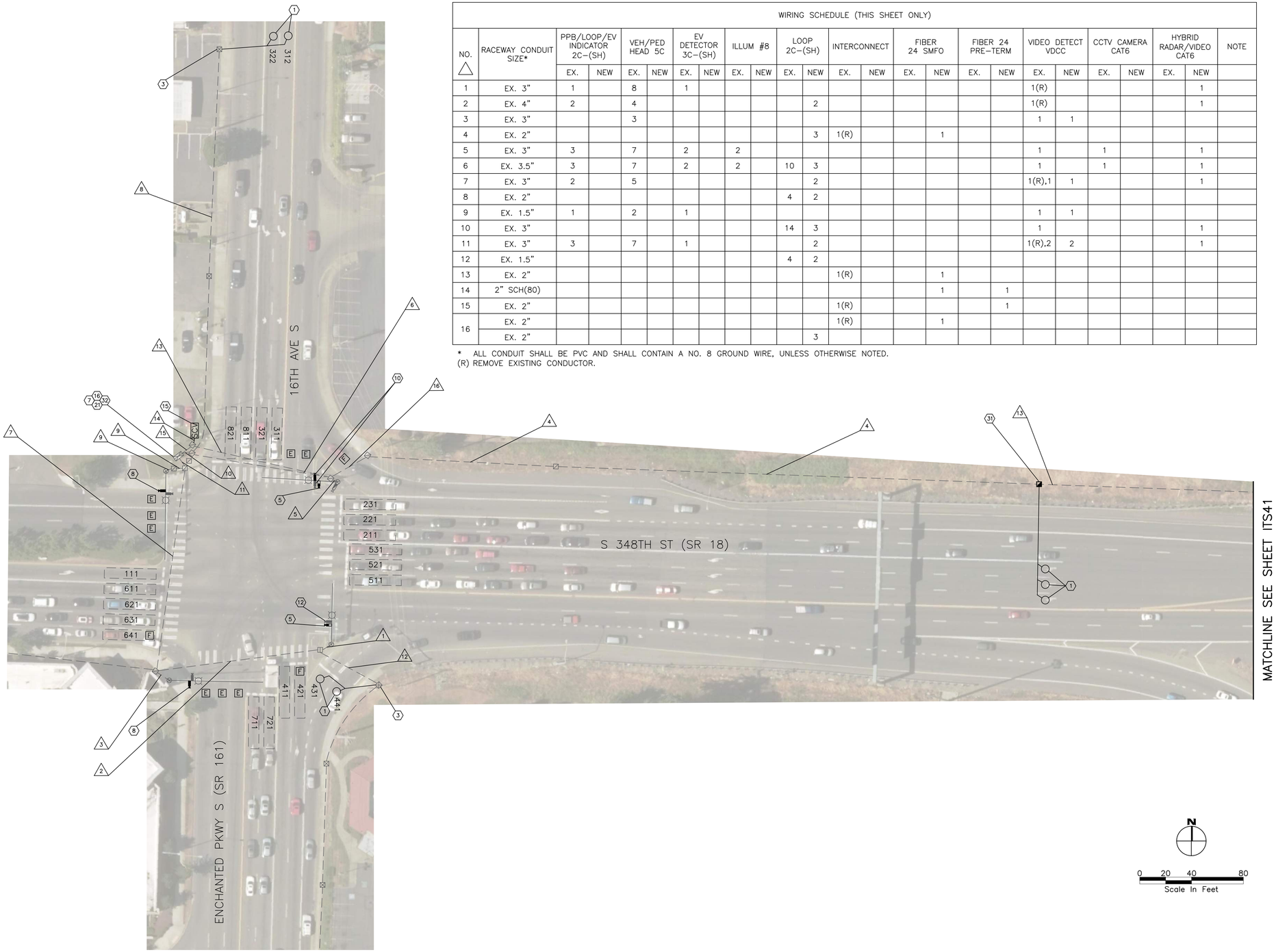
(32) INSTALL SFP MODULE IN EXISTING ETHERNET SWITCH PER DETAILS ON SHEETS ITS58-ITS60.

(34) INTERCEPT EXISTING CONDUIT WITH TYPE 2 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

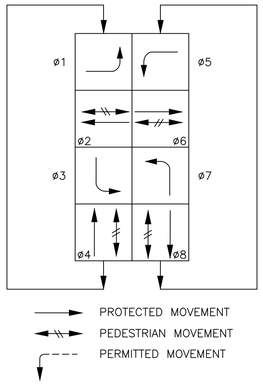
WIRING SCHEDULE (THIS SHEET ONLY)

NO.	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		ILLUM #8		LOOP 2C-(SH)		INTERCONNECT		FIBER 24 SMFO		FIBER 24 PRE-TERM		VIDEO DETECT VDCC		CCTV CAMERA CAT6		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	1		8		1												1(R)					1	
2	EX. 4"	2		4							2							1(R)					1	
3	EX. 3"			3														1	1					
4	EX. 2"										3	1(R)			1									
5	EX. 3"	3		7		2		2										1		1			1	
6	EX. 3.5"	3		7		2		2		10	3							1		1			1	
7	EX. 3"	2		5							2							1(R),1	1				1	
8	EX. 2"									4	2													
9	EX. 1.5"	1		2		1												1	1					
10	EX. 3"									14	3							1					1	
11	EX. 3"	3		7		1					2							1(R),2	2				1	
12	EX. 1.5"									4	2													
13	EX. 2"											1(R)			1									
14	2" SCH(80)														1		1							
15	EX. 2"											1(R)					1							
16	EX. 2"											1(R)			1									
	EX. 2"										3													

* ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR.



SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019			
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(FAX) 425 825-8434

STATE OF WASHINGTON #7388 REGISTERED PROFESSIONAL ENGINEER
10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2 – BID ALTERNATIVE 1

S 348TH ST (SR 18) & ENCHANTED PKWY S (SR 161)

ITS34

SHEET 24 OF 69 SHEETS

M:\16\1.16774.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Jet 34 - S 16th Ave S.dwg=S 348TH ST & 16TH AVE S\Shannon Materials 10/2/2019 1:36 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(2) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. RESTORE SIDEWALK TO PRE-EXISTING CONDITIONS. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(4) EXISTING LOOP DETECTOR TO REMAIN. RE-SPLICE TO SEPARATE LOOP LEAD-IN AND TERMINATE IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS. REMAINING LOOPS TO REMAIN SPLICED TO EXISTING LEAD-IN(S).

(6) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

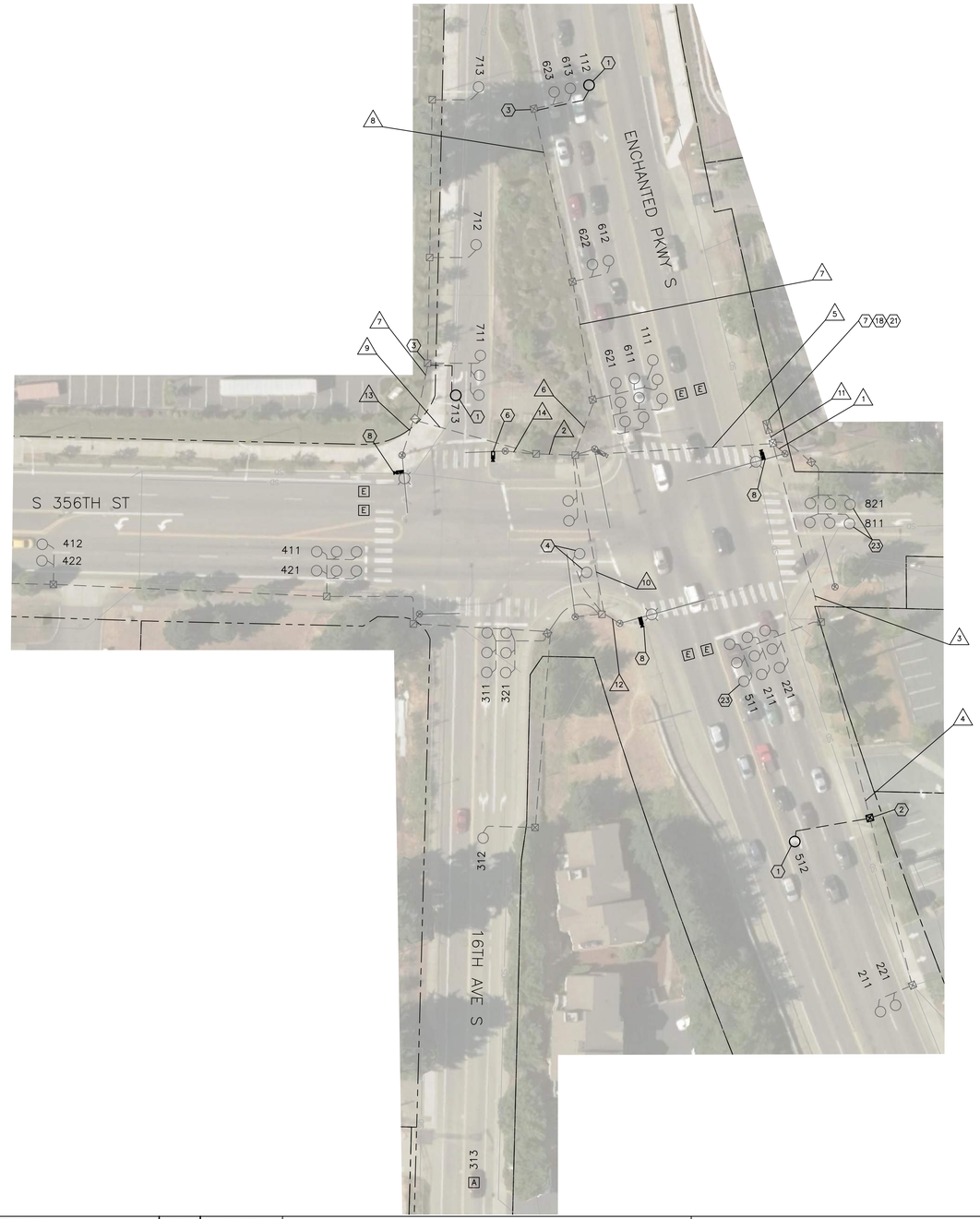
(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.

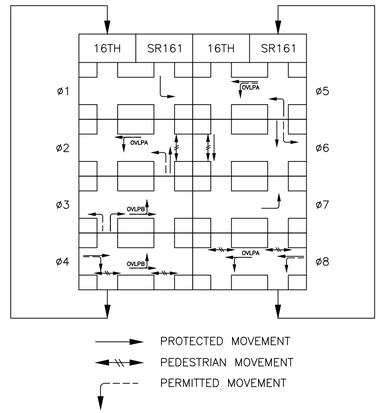


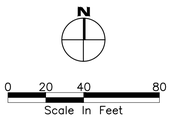
WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		VEH/PED HEAD 7C		HYBRID RADAR/VIDEO CAT6	
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW
1	EX. 2.5"	3		1							1				
2	EX. 2"	6							1		1				1
3	EX. 2"	11				1			1						
4	EX. 2"							2	1						
5	EX. 2.5"	12							4		2				1
6	EX. 2"							7	1						
7	EX. 1.5"							4	1						
8	EX. 1.5"							2	1						
9	EX. 2"	6							1		1	2			
10	EX. 3"	3		7		4					1				
	EX. 3"	17							2						
11	EX. 4"	32		2					5		3				1
12	EX. 2.5"	2		2							1				
13	EX. 2"	2									1	2			
14	EX. 2"	1		2											1

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)





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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	RDM	10/02/2019			
DRAWN BY	RDM	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(TEL) 425 821-3665
(FAX) 425 825-8434

RYAN WESLEY PETERSON — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/23/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1&2

ENCHANTED PKWY S (SR 161) & S 356TH ST

ITS35

SHEET 25 OF 69 SHEETS

M:\161.161740 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Art 35 - S 356th St - Enchanted Pkwy.dwg\S 356TH & ENCHANTED PKWY S.Justin Chan 10/1/2019 12:59 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(2) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. RESTORE SIDEWALK TO PRE-EXISTING CONDITIONS. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

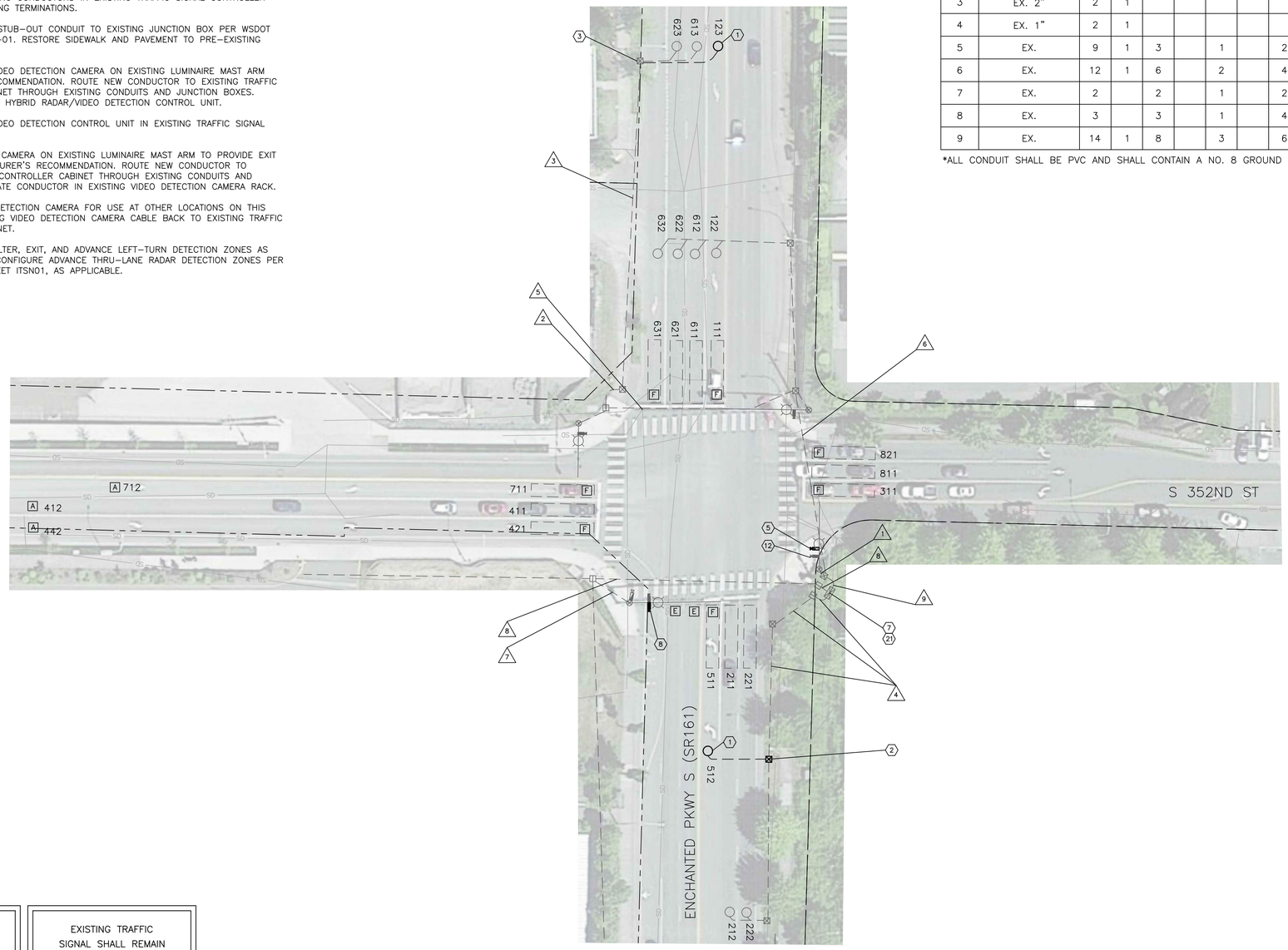
(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

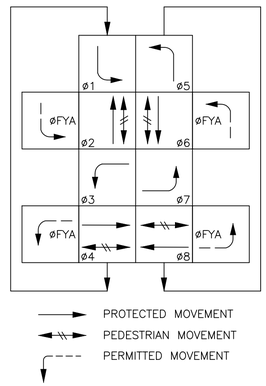
WIRING SCHEDULE (THIS SHEET ONLY)

NO.	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		ILLUM #8		VEH/PED HEAD 7C		FIBER		VIDEO DETECT VDCC		CAMERA		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX.	1		1						1				1(R)					1	
2	EX. 3"	4	1	3		1														
3	EX. 2"	2	1																	
4	EX. 1"	2	1																	
5	EX.	9	1	3		1		2		2										
6	EX.	12	1	6		2		4		3		1								
7	EX.	2		2		1		2		1				1	1	1				
8	EX.	3		3		1		4		1		1		1	1	1				
9	EX.	14	1	8		3		6		4				1(R), 1					1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	RDM	10/02/2019			
DRAWN BY	RDM	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

R. WESLEY PETERSEN — STATE OF WASHINGTON — 17388 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

ENCHANTED PKWY S (SR 161) & 352ND ST

ITS36

SHEET 26 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(9) INSTALL VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

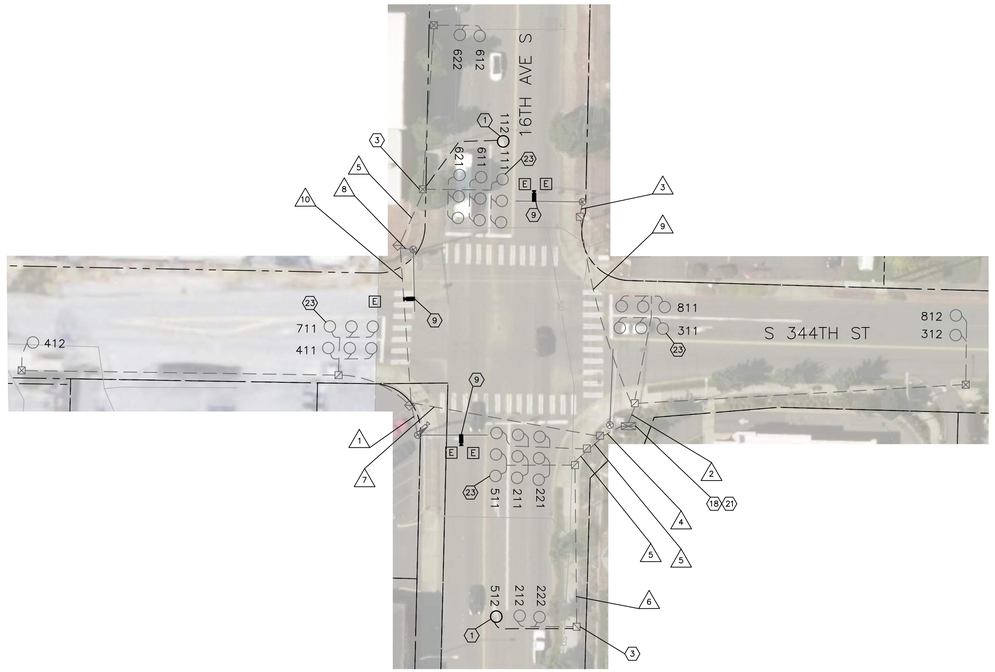
(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

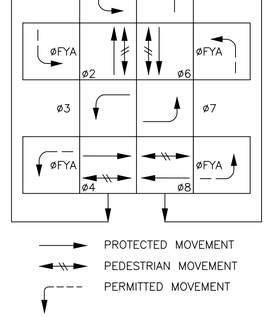
(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.

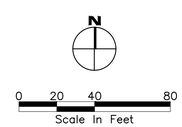
WIRING SCHEDULE (THIS SHEET ONLY)													
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		CAMERA		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	1		2		1					1	1		
2	EX. 2"	2				1		6			1			
3	EX. 2"	1		2		1					1			
4	EX. 4"	20				3			2		2	1		
5	EX. 2"							8	1					
6	EX. 2"							2	1					
7	EX. 3"	4				2		13	1		2			
8	EX. 3"	3		4		1					1			
9	EX. 2"	2				1					1			
10	EX. 3"	3				1		8	1		1			

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	RDM	10/02/2019			
DRAWN BY	RDM	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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(TEL) 425 821-3665
(FAX) 425 825-8434

R. WESLEY PETERSON — STATE OF WASHINGTON — 47385 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

S 344TH ST & 16TH AVE S

ITS37

SHEET 27 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(6) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(14) INSTALL SERVICE CABINET AND FOUNDATION PER CITY FEDERAL WAY STANDARD DRAWING 3-45. RE-ROUTE EXISTING SIGNAL SERVICE CONDUCTORS TO NEW SERVICE CABINET. IF EXISTING SIGNAL SERVICE CONDUCTORS NEED TO BE LENGTHENED, NEW CONDUCTORS SHALL BE USED.

(15) INSTALL SPLICE CLOSURE AND SPLICE 24 SMFO PRE-TERMINATED STUB CABLE TO EXISTING FIBER OPTIC CABLE PER DETAILS ON SHEETS ITS58-ITS60.

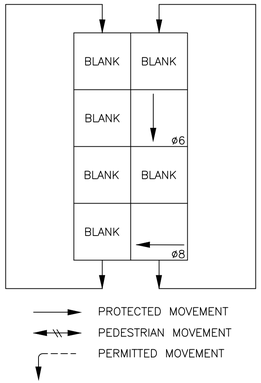
(16) INSTALL 24-PORT FIBER OPTIC PATCH PANEL IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.

(17) INSTALL ETHERNET SWITCH AND SFP MODULE(S) IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

(28) REMOVE AND REPLACE EXISTING TYPE 1 JUNCTION BOX WITH TYPE 2 JUNCTION BOX.

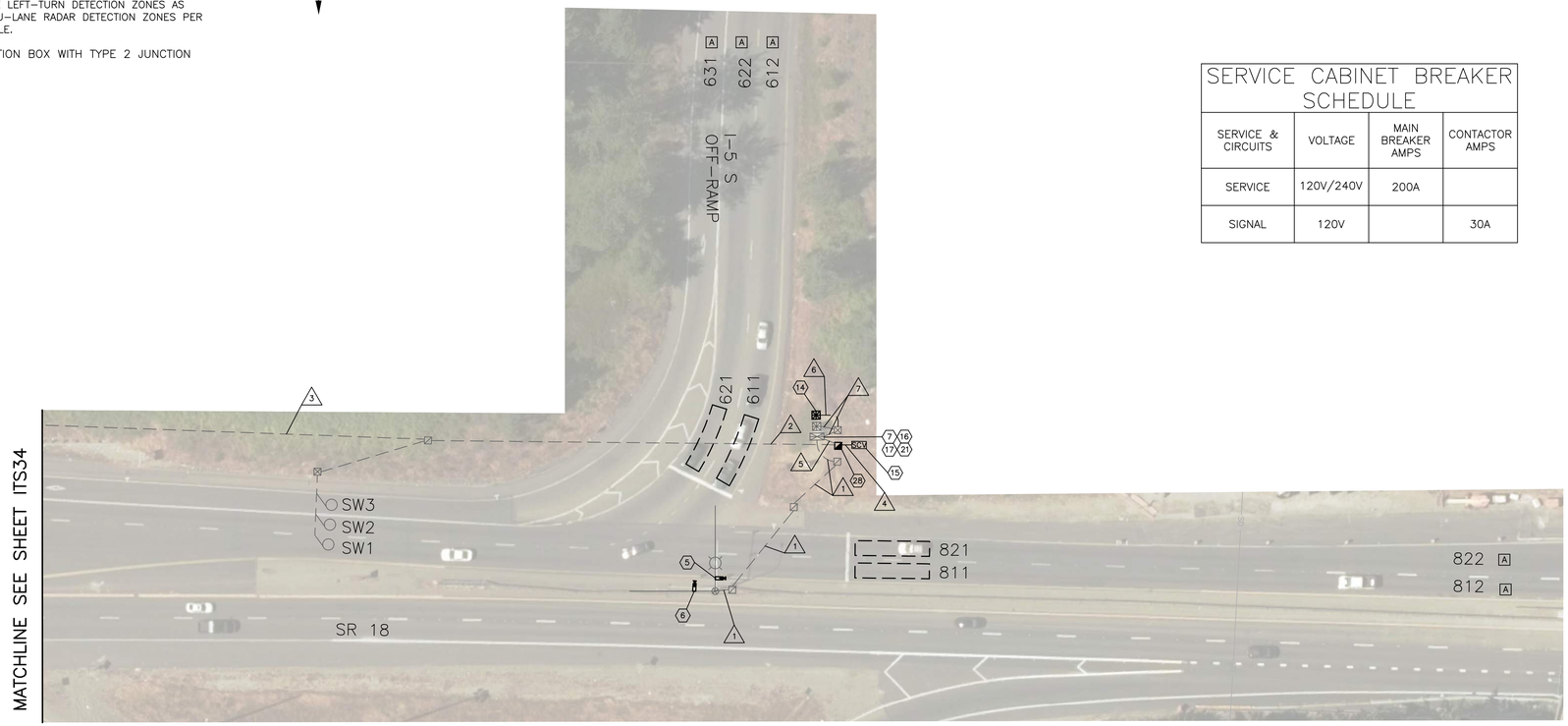
SIGNAL PHASING (EX.)

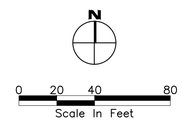


WIRING SCHEDULE (THIS SHEET ONLY)																			
NO. △	RACEWAY CONDUIT SIZE*	VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		ILLUM #8		LOOP 2C-(SH)		HYBRID RADAR/VIDEO CAT6		INTERCONNECT 6 PR		FIBER 24 SMFO		FIBER 24 PRE-TERM		SIGNAL SERVICE #6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX.	4		2		2					2									
2	EX. 2"							3				1(R)			1					
3	EX. 2"											1(R)			1					
4	2" SCH80														1		1			
5	2" SCH80							3				1(R)					1			
6	2" SCH80																		2	
7	EX. 1"																	2		RE-ROUTE EX. CONDUCTORS

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR

SERVICE CABINET BREAKER SCHEDULE			
SERVICE & CIRCUITS	VOLTAGE	MAIN BREAKER AMPS	CONTACTOR AMPS
SERVICE	120V/240V	200A	
SIGNAL	120V		30A





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DRAWN BY	RDM	10/02/2019			
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RYAN WESLEY PRATT JOHNSON — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

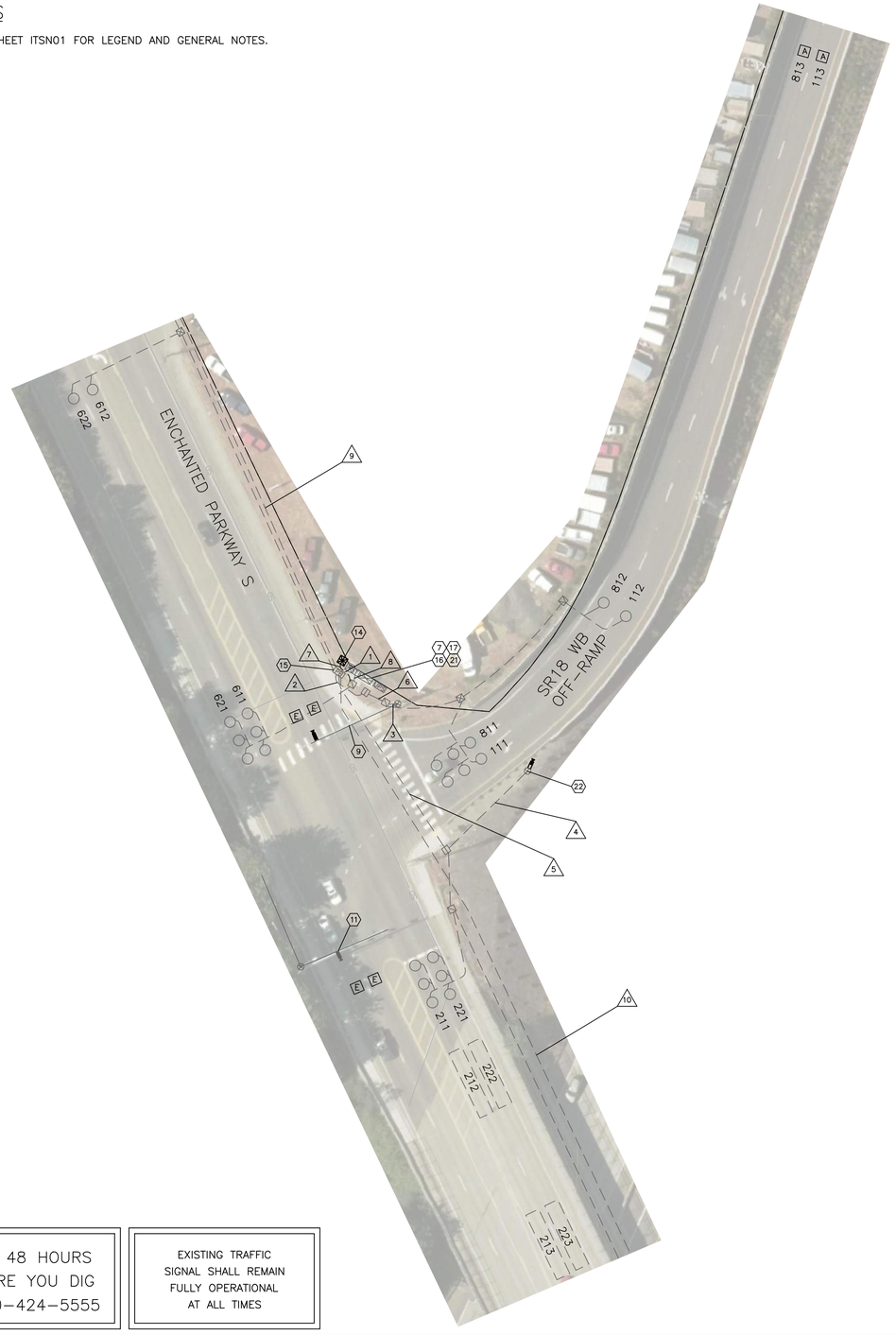
SR 18 & I-5 SB

ITS41

SHEET 28 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.



WIRING SCHEDULE (THIS SHEET ONLY)																								
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/ EV INDICATOR 2C–(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C–(SH)		ILLUM #8		#8 SERVICE POWER		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO CAT6		SIGNAL POWER #6		ITS POWER #4		FIBER 24 PER–TERM		FIBER 48 SMFO		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	9		3		2						2	1		1									
	EX. 2"																				1	1		
2	EX. 2.5"	7		5		1		4					1											
3	EX. 2"			1		1		2					1											
4	EX. 1.5"			1											1									
5	EX. 2"														1									
6	EX. 3"	4		1		1		2		2			1											
7	2" SCH80																1		1					
8	EX. 2"																1		1					
9	EX. 2"																					1		FC92
10	EX. 2"																					1		FC95

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

CONSTRUCTION NOTES

⟨7⟩ INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

⟨9⟩ INSTALL VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

⟨11⟩ RE–ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.

⟨15⟩ INSTALL SPLICE CLOSURE AND SPLICE 24 SMFO PRE–TERMINATED STUB CABLE TO EXISTING FIBER OPTIC CABLE PER DETAILS ON SHEETS ITS58–ITS60.

⟨16⟩ INSTALL 24–PORT FIBER OPTIC PATCH PANEL IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58–ITS60.

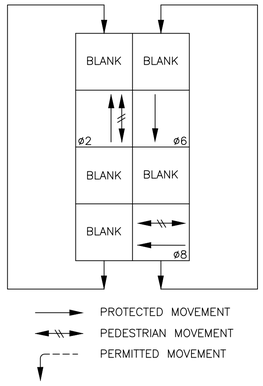
⟨17⟩ INSTALL ETHERNET SWITCH AND SFP MODULE(S) IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58–ITS60.

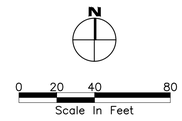
⟨21⟩ CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT–TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU–LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

⟨22⟩ INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING TYPE I POLE PER MANUFACTURER'S RECOMMENDATION. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

SERVICE CABINET BREAKER SCHEDULE			
SERVICE & CIRCUITS	VOLTAGE	MAIN BREAKER AMPS	CONTACTOR AMPS
SERVICE	120V/240V	200A	
SIGNAL	120V		30A

SIGNAL PHASING (EX.)





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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	RDM	10/02/2019			
DRAWN BY	RDM	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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R. A. WESTLEY PETERSEN — STATE OF WASHINGTON — 17388 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

ENCHANTED PKWY S (SR 161) & SR 18 WB

ITS42

SHEET 29 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(2) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. RESTORE SIDEWALK TO PRE-EXISTING CONDITIONS. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(14) INSTALL SERVICE CABINET AND FOUNDATION PER CITY FEDERAL WAY STANDARD DRAWING 3-45. RE-ROUTE EXISTING SIGNAL SERVICE CONDUCTORS TO NEW SERVICE CABINET. IF EXISTING SIGNAL SERVICE CONDUCTORS NEED TO BE LENGTHENED, NEW CONDUCTORS SHALL BE USED. COORDINATE USE OF EXISTING POWER SUPPLY WITH PUGET SOUND ENERGY.

(15) INSTALL SPLICE CLOSURE AND SPLICE 24 SMFO PRE-TERMINATED STUB CABLE TO EXISTING FIBER OPTIC CABLE PER DETAILS ON SHEETS ITS58-ITS60.

(16) INSTALL 24-PORT FIBER OPTIC PATCH PANEL IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.

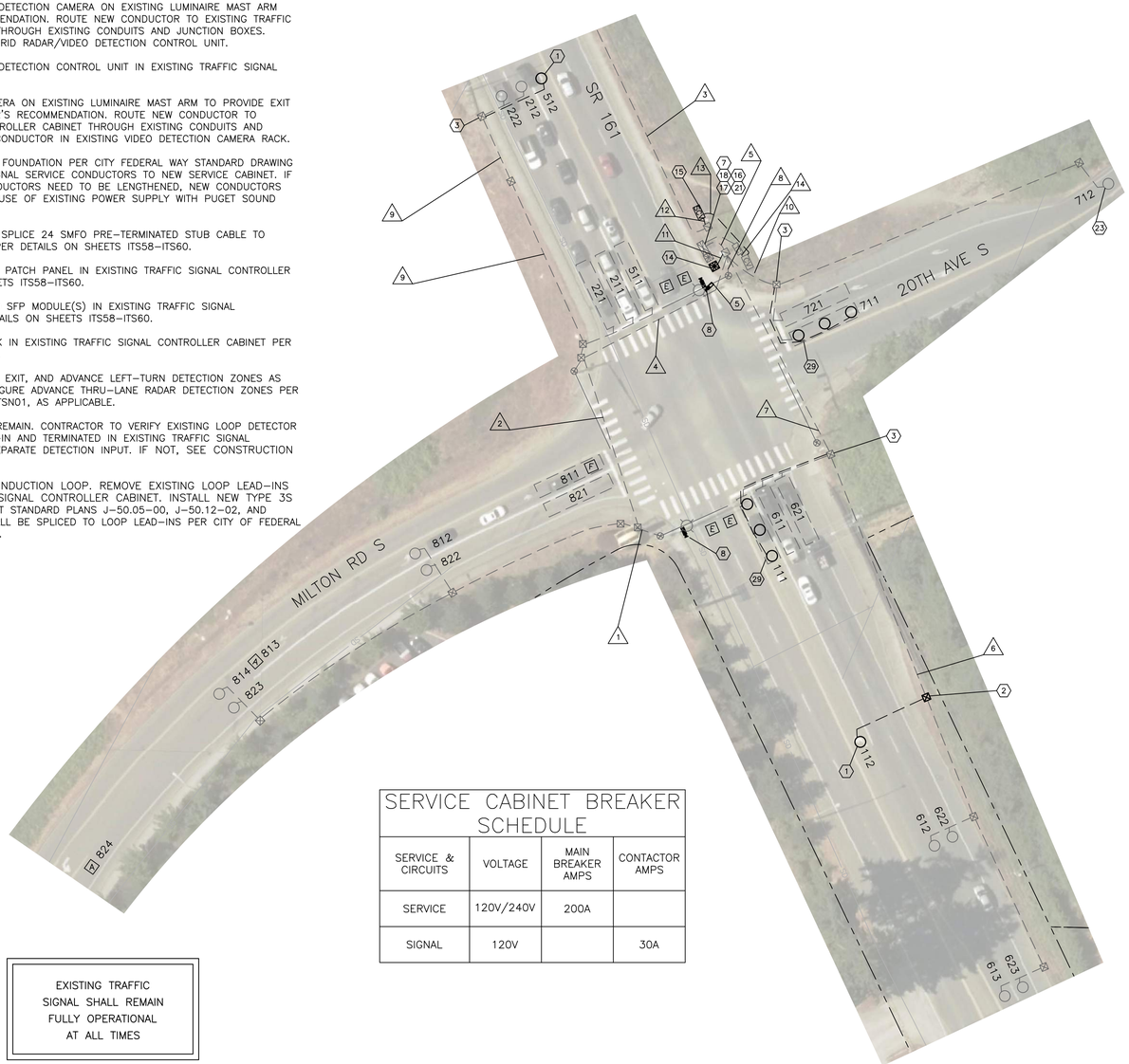
(17) INSTALL ETHERNET SWITCH AND SFP MODULE(S) IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.

(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAIL ON SHEET ITS58-ITS60.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.

(29) ABANDON EXISTING TYPE 1 INDUCTION LOOP. REMOVE EXISTING LOOP LEAD-INS BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET. INSTALL NEW TYPE 3S INDUCTION LOOPS PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. LOOP WIRES SHALL BE SPLICED TO LOOP LEAD-INS PER CITY OF FEDERAL WAY STANDARD DRAWING 3-44.



WIRING SCHEDULE (THIS SHEET ONLY)

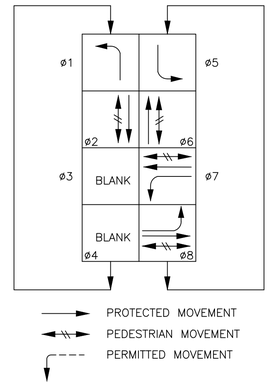
NO. △	RACEWAY CONDUIT SIZE*	VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		LOOP 2C-(SH)		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO CAT6		FIBER 48 SMFO		FIBER 24 PRE-TERM		SIGNAL SERVICE #6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	3		1					1									
2	EX. 2"			1		3			1									
3	EX. 2"											1						FC95
4	EX. 3"			2		9	1		1									
5	EX. 3"					13	6		2		1							
	EX. 3.5"																2	
6	EX. 2"					3	1											
7	EX. 3"			1		6	3											
8	EX. 2"	4		1					1		1							
9	EX. 2"					2	1											
10	EX. 2"					4	2											
11	3" SCH80																2	
12	2" SCH80											1			1			
13	2" SCH80														1			
14	EX. 2"													1	1			

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SERVICE CABINET BREAKER SCHEDULE

SERVICE & CIRCUITS	VOLTAGE	MAIN BREAKER AMPS	CONTACTOR AMPS
SERVICE	120V/240V	200A	
SIGNAL	120V		30A

SIGNAL PHASING (EX.)



PROTECTED MOVEMENT
PEDESTRIAN MOVEMENT
PERMITTED MOVEMENT

N

0 20 40 80
Scale In Feet

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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	RDM	10/02/2019			
DRAWN BY	RDM	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

ENCHANTED PKWY S (SR 161) & MILTON RD S

ITS43

SHEET 30 OF 69 SHEETS

M:\16\1.16174.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Int 43 - Kits Corner RD S - 20th Ave S.dwg<KITS CORNER RD S & 20TH AVE S> Justin Chan 10/2/2019 2:26 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

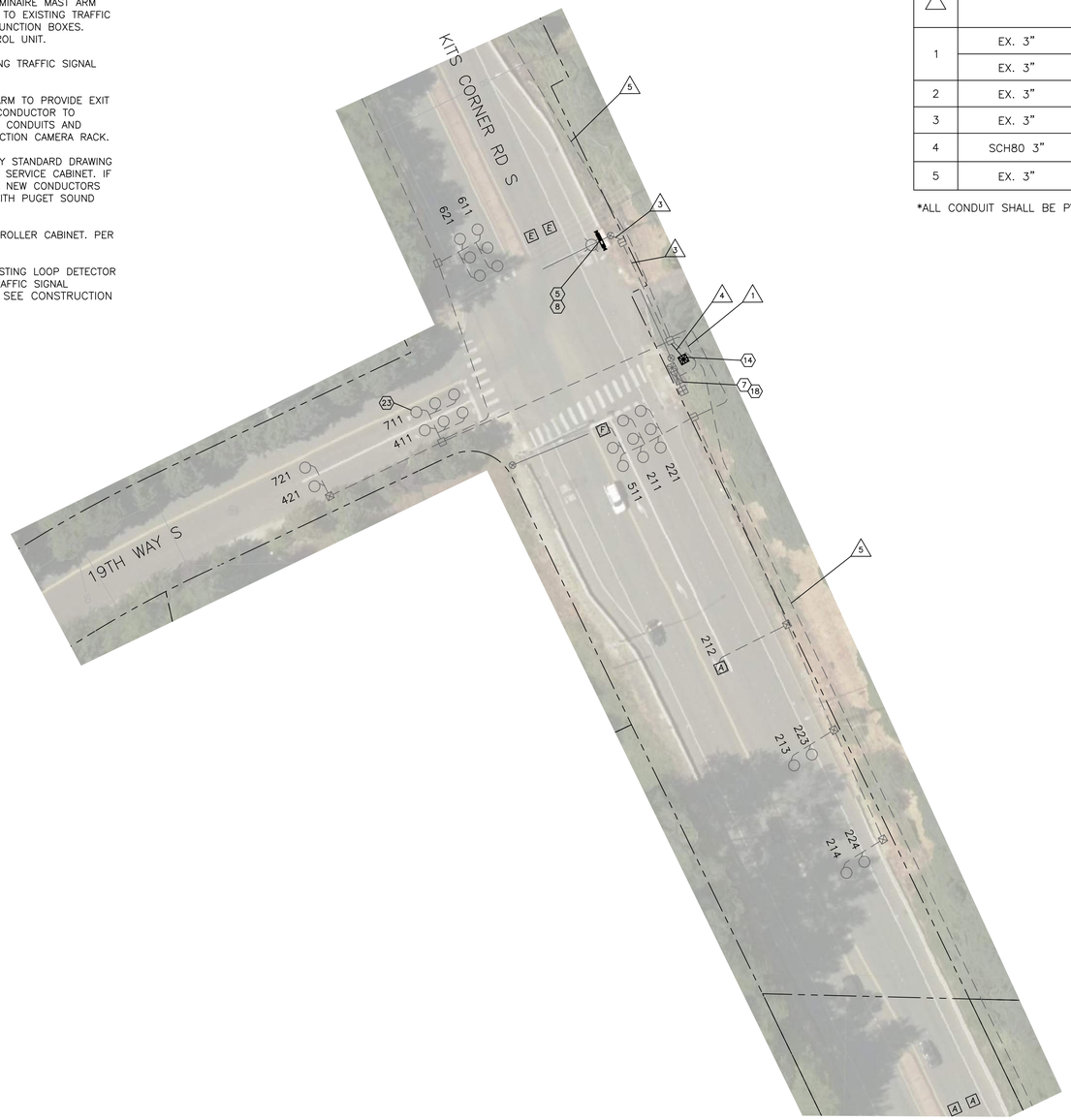
(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(14) INSTALL SERVICE CABINET AND FOUNDATION PER CITY FEDERAL WAY STANDARD DRAWING 3-45. RE-ROUTE EXISTING SIGNAL SERVICE CONDUCTORS TO NEW SERVICE CABINET. IF EXISTING SIGNAL SERVICE CONDUCTORS NEED TO BE LENGTHENED, NEW CONDUCTORS SHALL BE USED. COORDINATE USE OF EXISTING POWER SUPPLY WITH PUGET SOUND ENERGY.

(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET. PER DETAIL ON SHEET ITS58-ITS60.

(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.

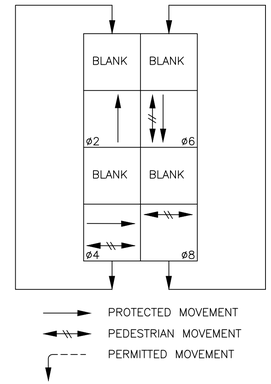


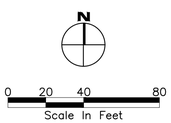
WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		EV DETECTOR 3C-(SH)		ILLUM #8		LOOP 2C-(SH)		HYBRID RADAR/VIDEO CAT6		VIDEO DETECT VDCC		FIBER 48 SMFO		SIGNAL SERVICE #6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"		2	10		3							1		1					
	EX. 3"																		2	
2	EX. 3"									7	1									
3	EX. 3"			2		1		2					1		1					
4	SCH80 3"																		2	
5	EX. 3"															1				

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)





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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	RDM	10/02/2019			
DRAWN BY	RDM	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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RYAN WESLEY PETERSEN — STATE OF WASHINGTON — 47360 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 1 & 2

ENCHANTED PKWY S (SR 161) & 19TH WAY S

ITS44

SHEET 31 OF 69 SHEETS

M:\161\1.161074.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Int 44 - Kits Corner Rd S - 19th Way S\sheets\KITS CORNER RD S & 19TH WAY S\Justin Chan 10/2/2019 2:27 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(4) EXISTING LOOP DETECTOR TO REMAIN. RE-SPLICE TO SEPARATE LOOP LEAD-IN AND TERMINATE IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS. REMAINING LOOPS TO REMAIN SPLICED TO EXISTING LEAD-IN(S).

(6) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

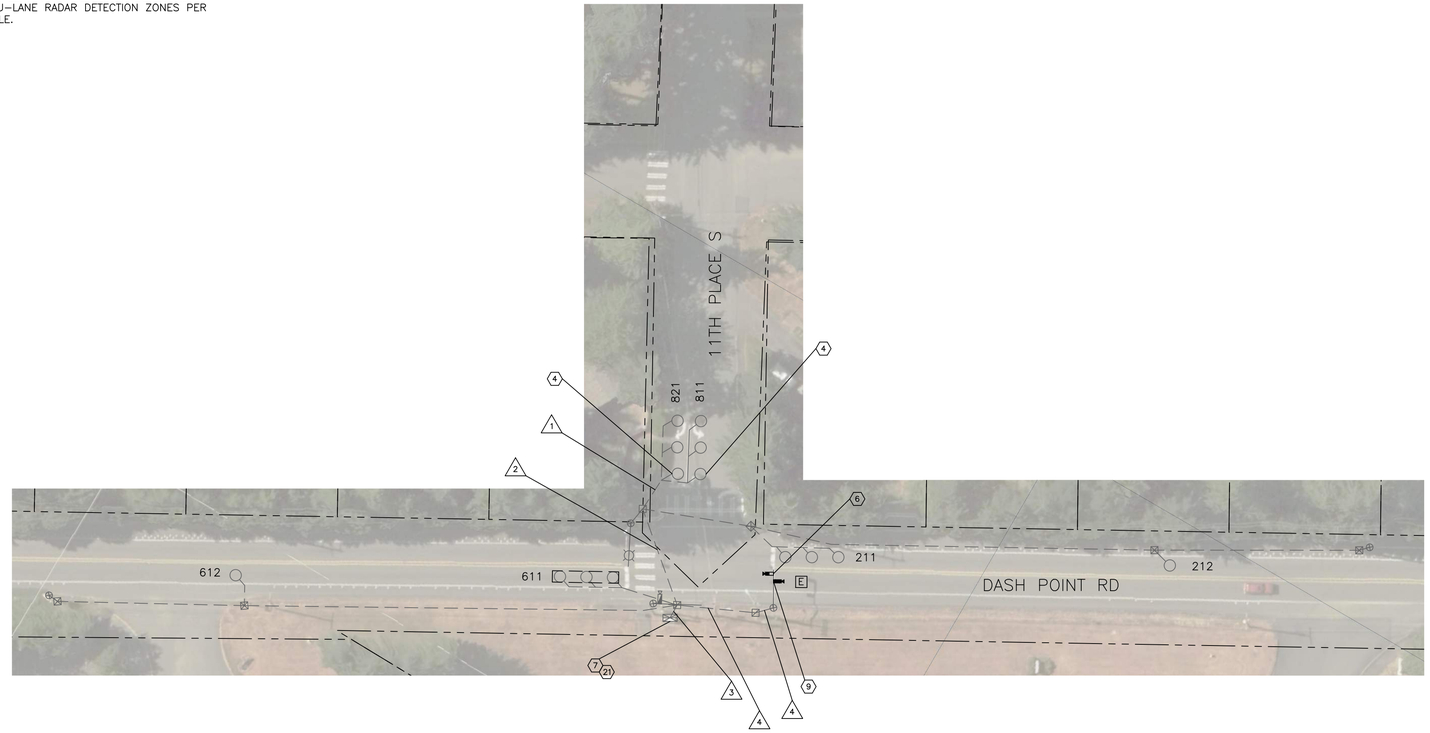
(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(9) INSTALL VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

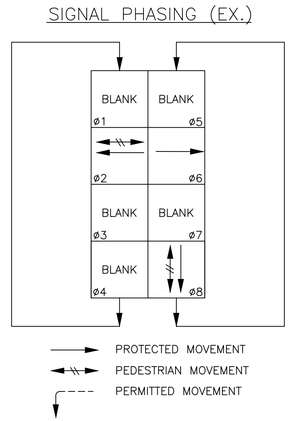
(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

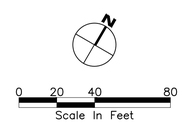
WIRING SCHEDULE (THIS SHEET ONLY)																		
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR/SCHOOL FLASHER 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		LOOP 2C-(SH)		VIDEO DETECT VDCC		CCTV CAMERA		#10 ILLUM		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	2							2									
2	EX. 3"	12		1		4			2									
3	EX. 3"	6		3		1			2		1	1		3			1	
4	EX. 2"	1		1		2					1						1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SIGNAL PHASING (EX.)





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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JAH	10/02/2019			
DRAWN BY	JAH	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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R. A. NWESTE PETERSEN
STATE OF WASHINGTON
17388
REGISTERED
PROFESSIONAL ENGINEER
10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

DASH POINT RD & 11TH PL S

ITS45

SHEET 32 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

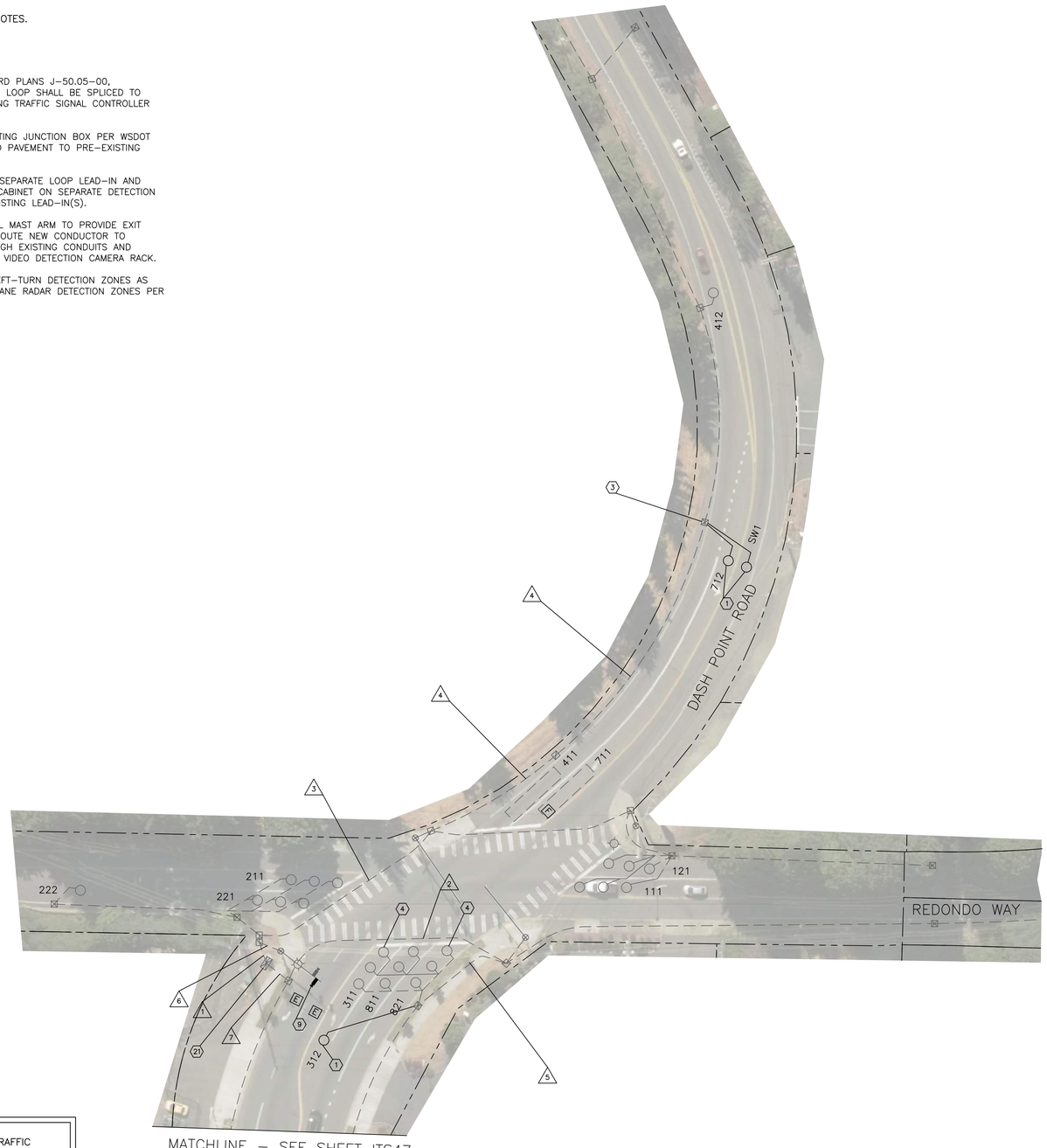
(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(4) EXISTING LOOP DETECTOR TO REMAIN. RE-SPLICE TO SEPARATE LOOP LEAD-IN AND TERMINATE IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS. REMAINING LOOPS TO REMAIN SPLICED TO EXISTING LEAD-IN(S).

(9) INSTALL VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

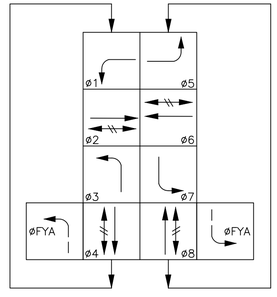


MATCHLINE – SEE SHEET ITS47

WIRING SCHEDULE (THIS SHEET ONLY)														
NO.	RACEWAY CONDUIT SIZE*	LOOP 2C-(SH)		PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		ILLUM #8		VIDEO DETECT VDCC		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3.5"	4	2	4				9					1	
2	EX. 3"		1	7		1		5						
3	EX. 3"		2	6				4						
4	EX. 2"	1	2	1		1								
5	EX. 2"	6	1											
6	EX. 3"			2				5		2		1	1	
7	EX. 2"	6	1	1		1								

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)



PROTECTED MOVEMENT
PEDESTRIAN MOVEMENT
PERMITTED MOVEMENT

N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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(FAX) 425 825-8434

R. J. ATWESTLEY PETERSEN STATE OF WASHINGTON 47368 REGISTERED PROFESSIONAL ENGINEER 10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

DASH POINT RD & REDONDO WAY

ITS46

SHEET 33 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(6) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

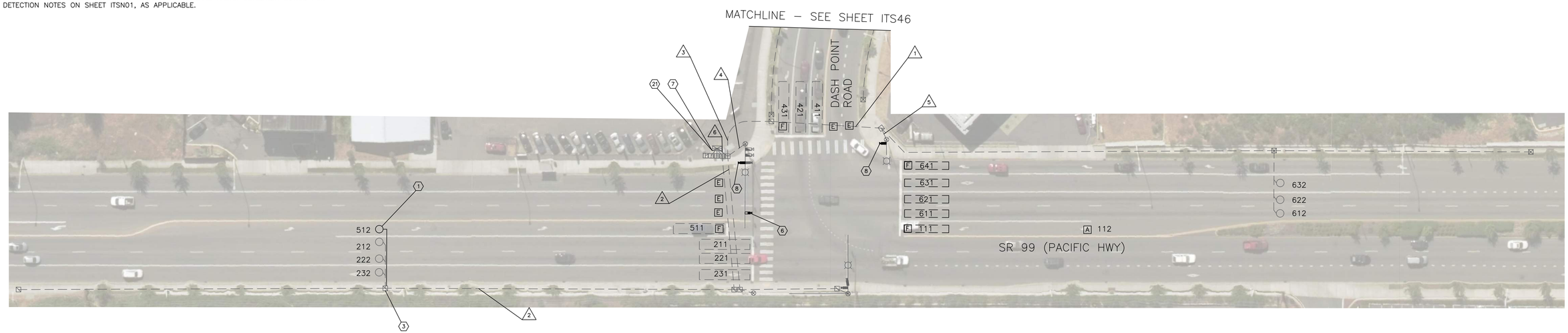
(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

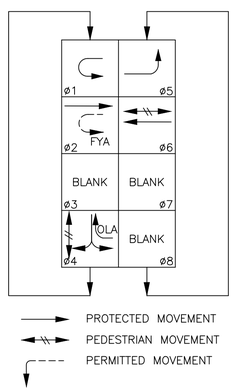
WIRING SCHEDULE (THIS SHEET ONLY)

NO.	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		VEH HEAD 7C		FIBER		LOOP 2C-(SH)		VIDEO DETECT VDCC		CCTC CAMERA CAT6		HYBRID RADAR/VIDEO DETECT CAT6		ILLUM #8		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	4				2									1					2		
2	EX. 2"											3	1									
3	EX. 2"	3				1		1		1				1	1							
4	EX. 2.5"	2		2										1	1	2			1			
5	EX. 2	1				1		1							1					2		
6	EX. 3.5	3		3									1	3	2	2			1			

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

transpogroup
WHAT TRANSPORTATION CAN BE.
12131 113TH AVENUE NE, #203
KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

R.V. ANWEST EVERETT WASHINGTON STATE OF WASHINGTON 47388 REGISTERED PROFESSIONAL ENGINEER 10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

SR 99 & DASH POINT RD

ITS47

SHEET 34 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(4) EXISTING LOOP DETECTOR TO REMAIN. RE-SPLICE TO SEPARATE LOOP LEAD-IN AND TERMINATE IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS. REMAINING LOOPS TO REMAIN SPLICED TO EXISTING LEAD-IN(S).

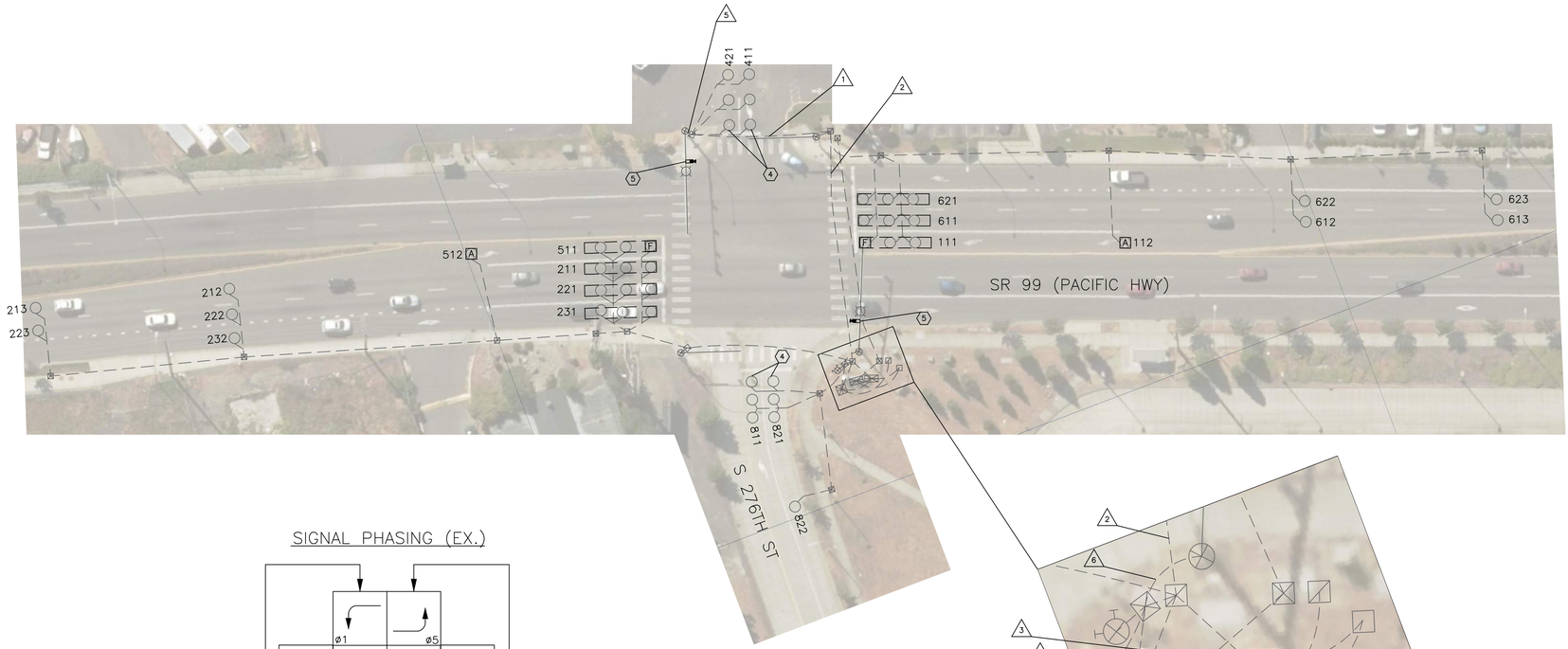
(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

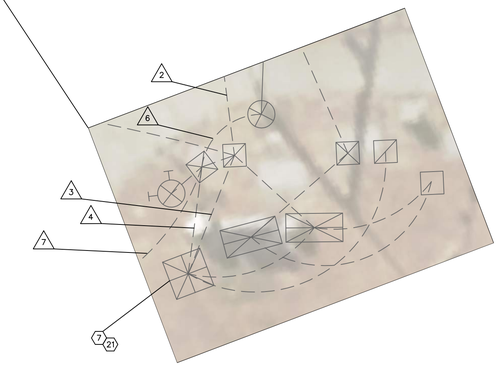
(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

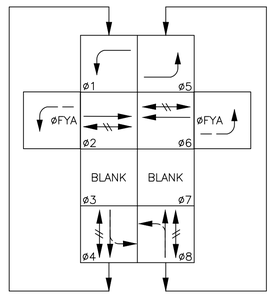
WIRING SCHEDULE (THIS SHEET ONLY)														
NO.	RACEWAY CONDUIT SIZE*	LOOP/PPB/EV INDICATOR 2C-(SH)		LOOP 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		PED HEAD 7C		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	2		2	2	1		2		1			1	
2	EX. 4"	4		10	2	2		4		2			1	
3	EX. 4"	4		10	2	2		4		2			1	
4	EX. 4"	4		11	2	2		4		2			1	
5	EX. 2"	2				1		2		1			1	
6	EX. 2"					1		2					1	
7	EX. 2"			3	2									

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.





SIGNAL PHASING (EX.)



PROTECTED MOVEMENT
PEDESTRIAN MOVEMENT
PERMITTED MOVEMENT

N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(TEL) 425 821-3665
(FAX) 425 825-8434

RAYMOND EUGENE PETERSON — STATE OF WASHINGTON — 17388 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

SR 99 & S 276TH ST

ITS48

SHEET 35 OF 69 SHEETS

M:\16\1.16174.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Jot 48 - SR 99 - 276th St.dwg<CTSA1>\Dominic Mavindula 10/2/2019 7:27 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

(24) SALVAGE EXISTING GRIDSMART VIDEO DETECTION CAMERA AND ASSOCIATED EQUIPMENT FROM EXISTING SIGNAL MAST ARM.

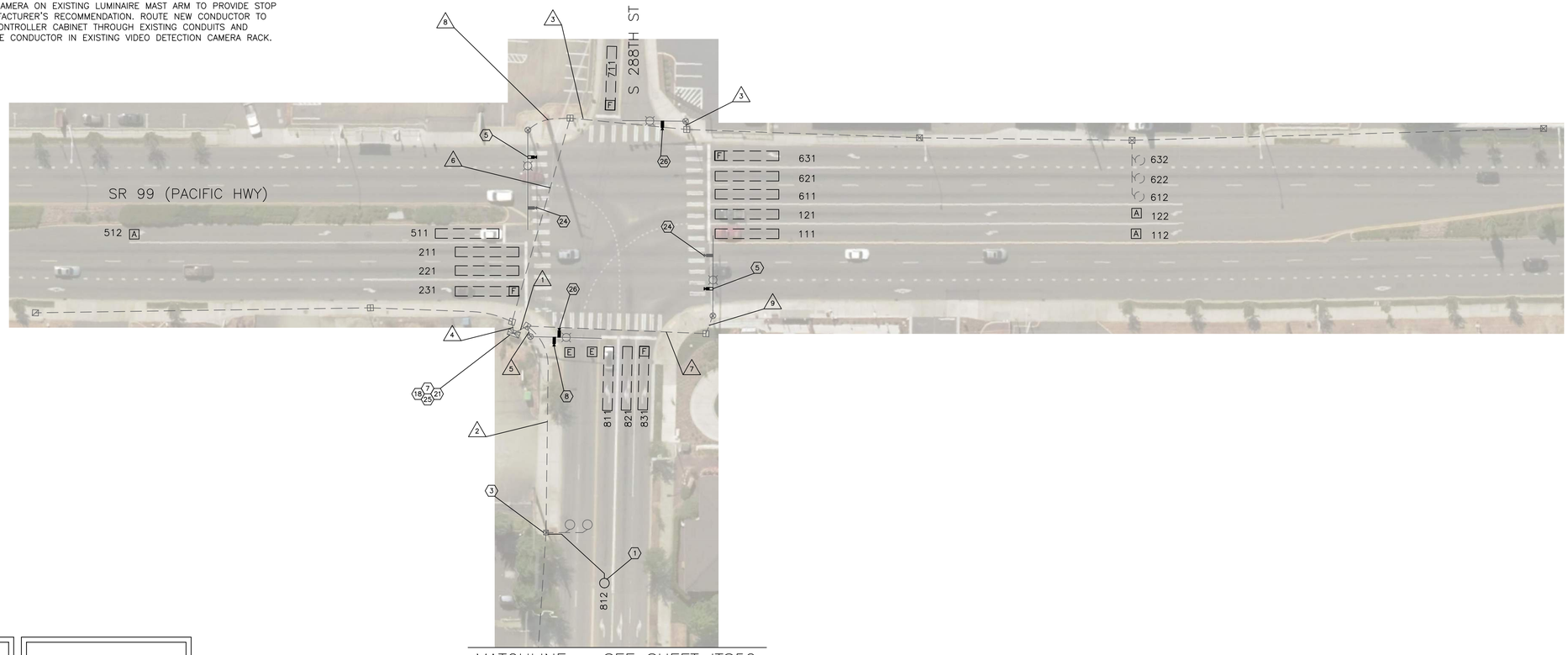
(25) SALVAGE EXISTING GRIDSMART VIDEO DETECTION CONTROL UNIT FROM EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(26) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE STOP LINE DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

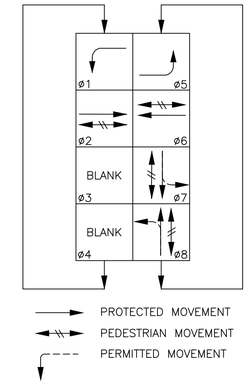
WIRING SCHEDULE (THIS SHEET ONLY)

NO.	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		VIDEO DETECT VDCC		LOOP 2C-(SH)		FIBER		GRIDSMART CAT6		CCTV CAMERA		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"					8			2		1	2		1(R)					1	
2	EX. 2"			1							1	1								
3	EX.	3		1		5			1											
4	EX. 4"	3				7			1					1(R)					1	
5	EX.	2		1		4			2											
6	EX.	9		3		10			1					1(R)					1	
7	EX.	3		1		6								1(R)					1	
8	EX.	1		1		5								1(R)					1	
9	EX.	1		1		6								1(R)					1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(TEL) 425 821-3665
(FAX) 425 825-8434

RYAN WEST EVERETT HANSEN
STATE OF WASHINGTON
47388
REGISTERED PROFESSIONAL ENGINEER
10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

SR 99 & S 288TH ST

ITS49

SHEET 36 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

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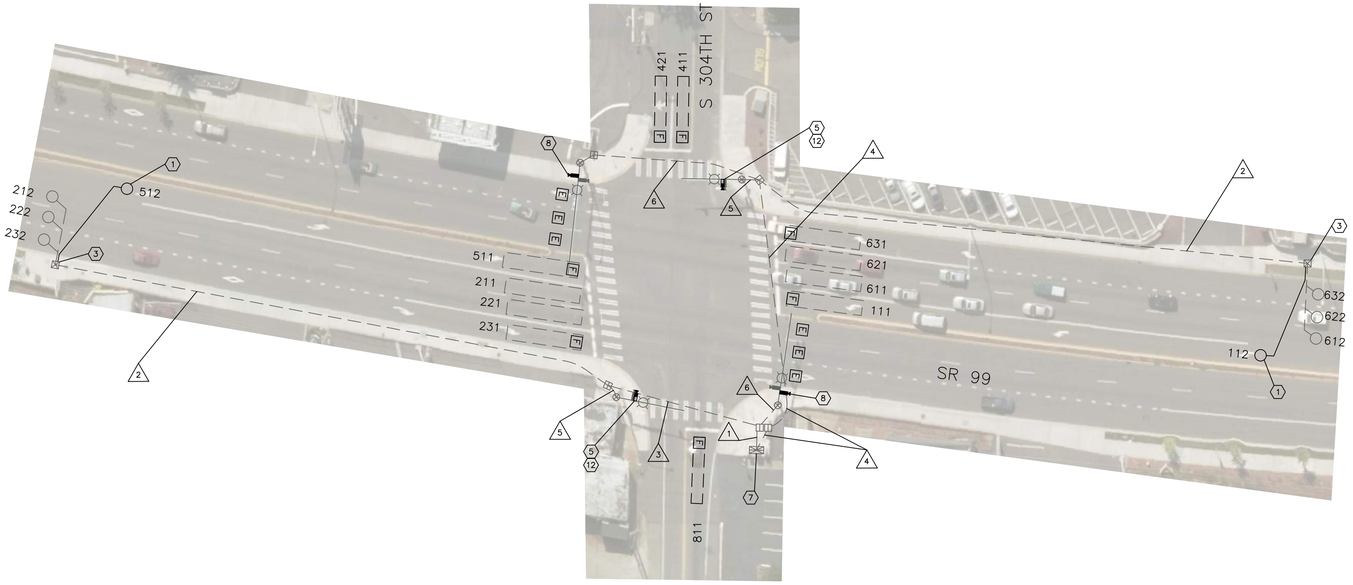
(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

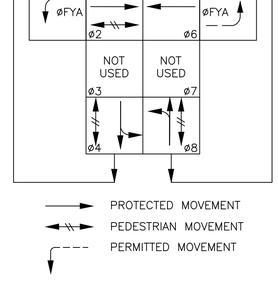
WIRING SCHEDULE (THIS SHEET ONLY)

NO. △	RACEWAY CONDUIT SIZE*	LOOP 2C-(SH)		PPB/LOOP/ EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"			7		3				2,1(R)	1		1	
	EX. 3"	3	1					10						
2	EX. 2"	3	1											
3	EX. 2"	3	1	2		1				1(R)			1	
4	EX. 3"	3	1	4		1				2,1(R)	1		1	
5	EX. 3"			2		1				1(R)			1	
6	EX. 2"			2						1	1			
7	EX. 3"			2		2				1	1			

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR



SIGNAL PHASING EX.



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0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	RDM	10/02/2019			
DRAWN BY	RDM	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(TEL) 425 821-3665
(FAX) 425 825-8434

BY WESLEY PETERSON STATE OF WASHINGTON 47380 REGISTERED PROFESSIONAL ENGINEER 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

SR 99 & S 304TH ST

ITS50

SHEET 37 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

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(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

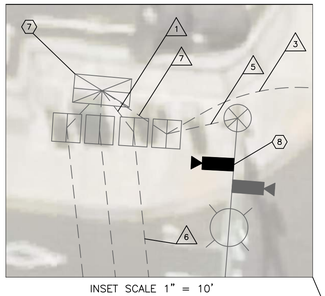
(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(12) REMOVE EXISTING VIDEO DETECTION CAMERA FOR USE AT OTHER LOCATIONS ON THIS PROJECT. REMOVE EXISTING VIDEO DETECTION CAMERA CABLE BACK TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

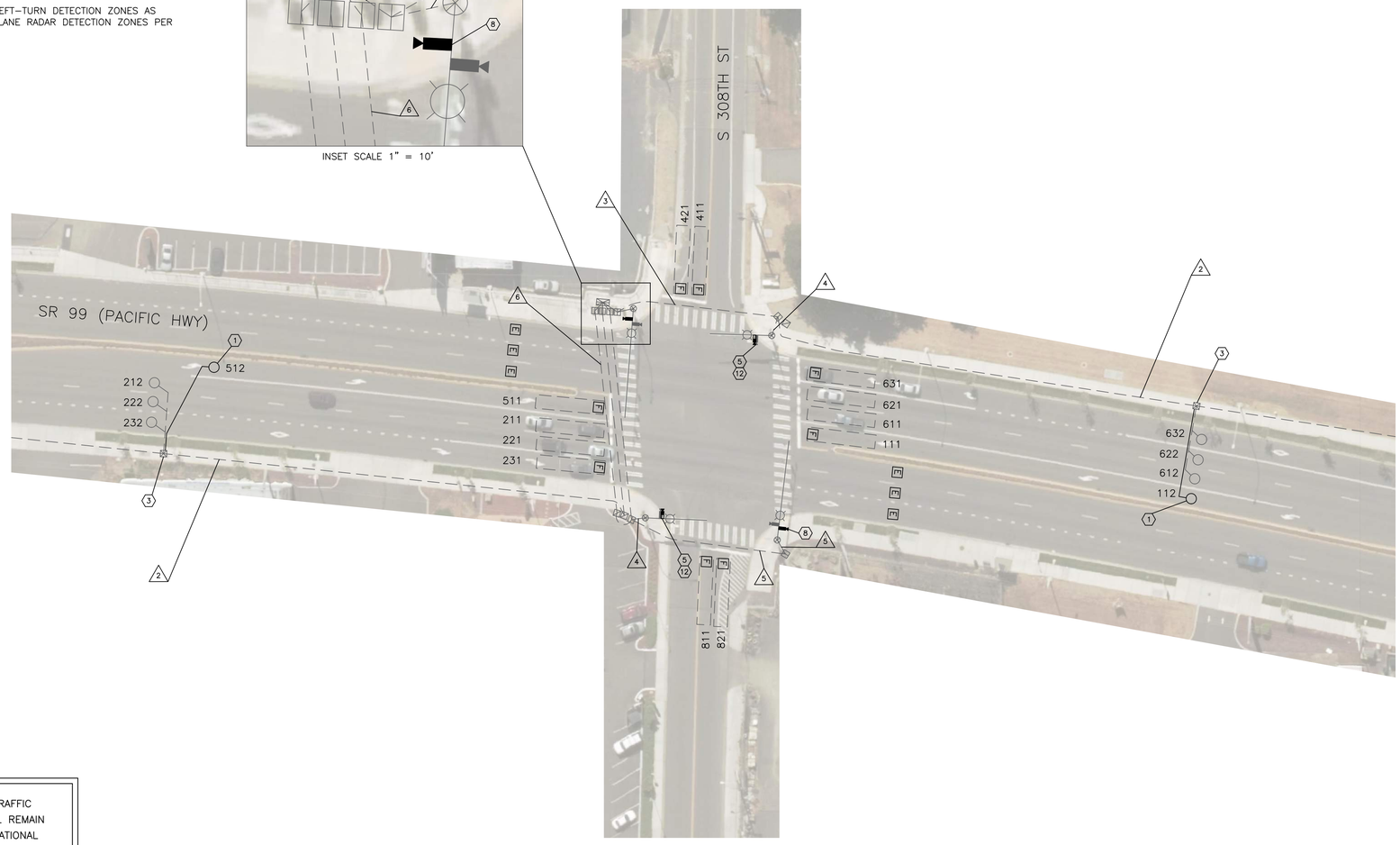
(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

WIRING SCHEDULE (THIS SHEET ONLY)										
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		VEH/PED HEAD 5C		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	5	1							
	EX. 3"			10		1,1(R)			1	
2	EX. 2"	3	1							LEAD-INS INTACT, BUT LOOPS TURNED OFF IN CABINET (TYP. ALL)
3	EX. 2"	4	1	5		1(R)			1	
4	EX. 2"	1		5		1(R)			1	
5	EX. 2"	1		5		1	1			
6	EX. 2"	5	1	10		1,1(R)	1		1	
7	EX. 2"	5	1	10		1,1(R)	1		1	

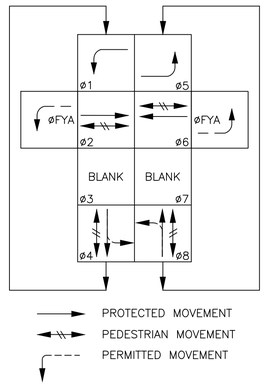
*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.
(R) REMOVE EXISTING CONDUCTOR



INSET SCALE 1" = 10'



SIGNAL PHASING (EX.)



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Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	RDM	10/02/2019			
DRAWN BY	RDM	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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WHAT TRANSPORTATION CAN BE.
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R. A. WESTLEY PETERSEN — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER
10/31/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

SR 99 & S 308TH ST

ITS51

SHEET 38 OF 69 SHEETS

M:\16\1.16174.00 – Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Jul 51 – SR 99 – S 308th St.dwg<SR 99 & S 308th St>Justin Chon 10/13/2019 2:29 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

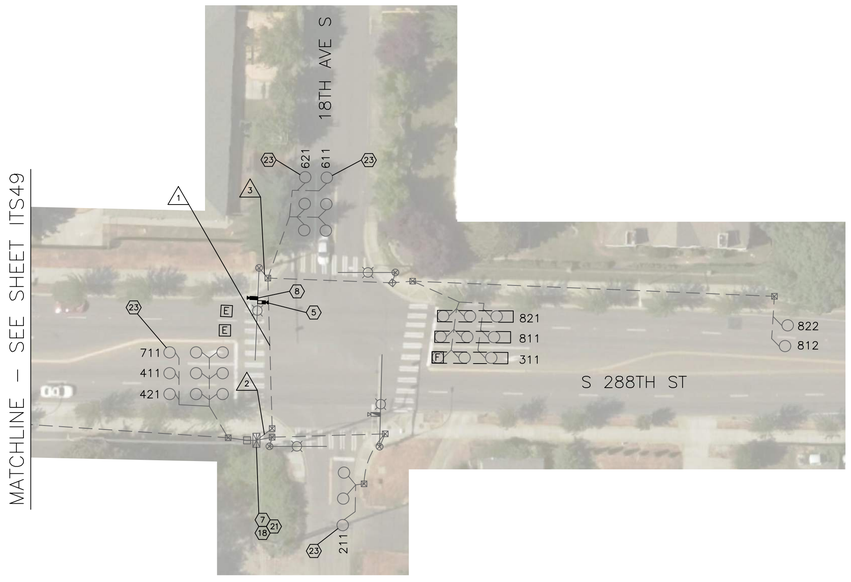
(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

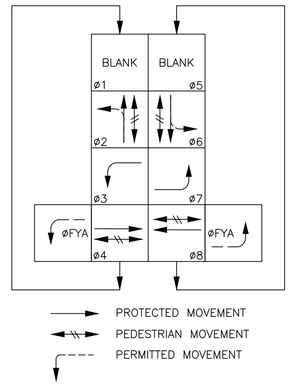
(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.

WIRING SCHEDULE (THIS SHEET ONLY)												
NO.	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	16		2					1		1	
2	EX. 3"	16		2					1		1	
3	EX. 3"	3		1		5			1		1	



SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

CITY OF Federal Way

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(FAX) 425 825-8434

BY WESLEY PETERSEN STATE OF WASHINGTON 47380 REGISTERED PROFESSIONAL ENGINEER 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM - ITS IMPROVEMENTS

PHASE 3

S 288TH ST & 18TH AVE

ITS52

SHEET 39 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(6) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

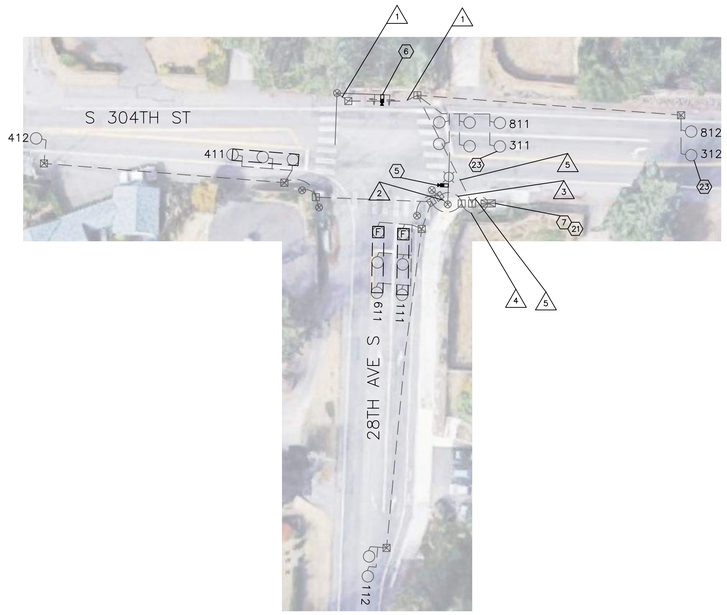
(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

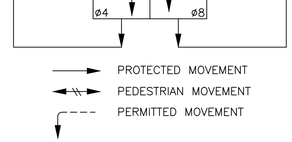
(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.

WIRING SCHEDULE (THIS SHEET ONLY)												
NO.	RACEWAY CONDUIT SIZE*	LOOP 2C-(SH)		PPB/LOOP/EV INDICATOR 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"			1		2					1	
2	EX. 2"			1				3			1	
3	EX. 2"			2		1					1	
4	EX. 3"	9		4		1					1	
5	EX. 3"	6		2		2					1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.



SIGNAL PHASING (EX.)



N

0 20 40 80
Scale In Feet

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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R. JUSTIN WESLEY PETERSEN — STATE OF WASHINGTON — 47380 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

S 304TH ST & 28TH AVE S

ITS53

SHEET 40 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

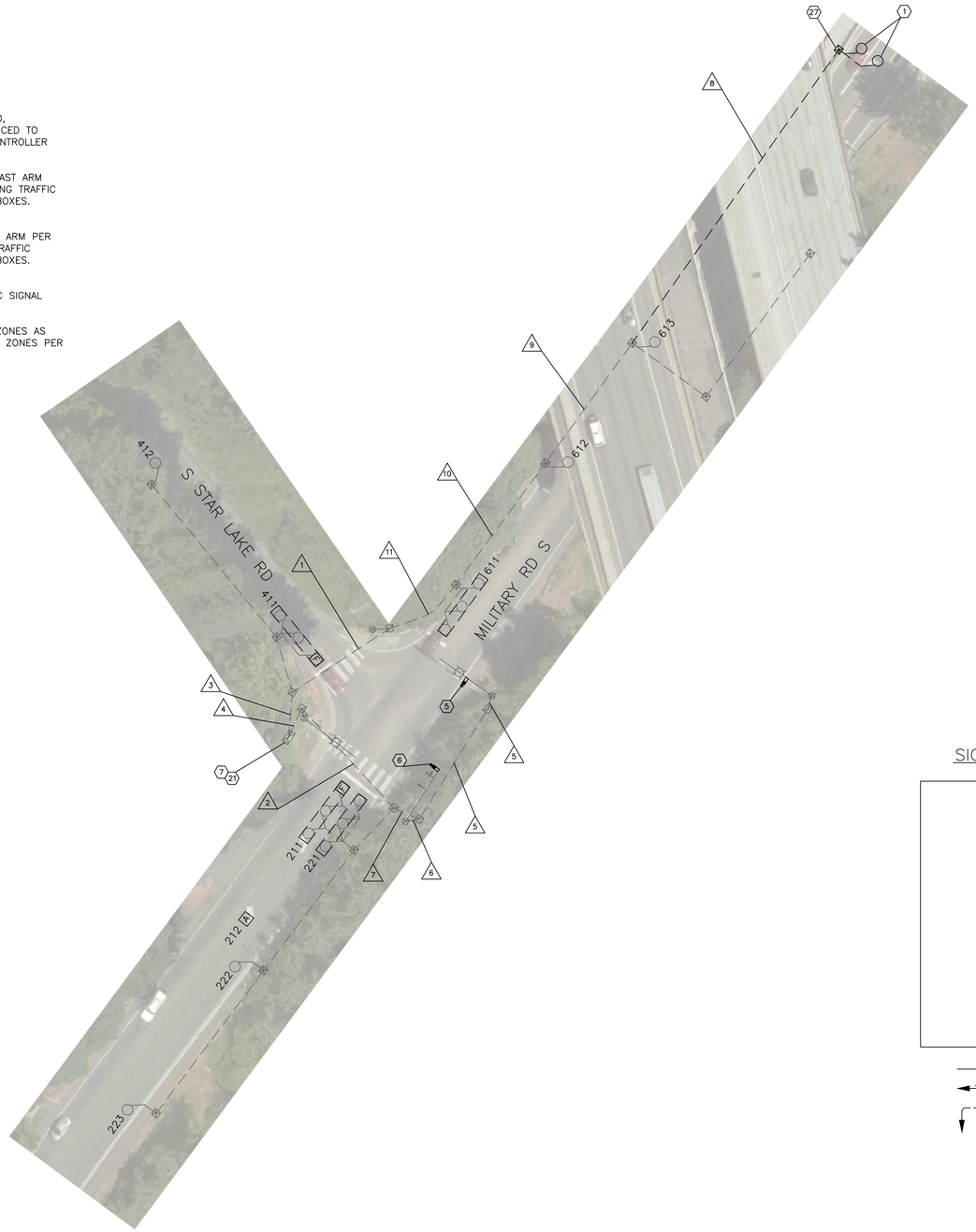
(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(6) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

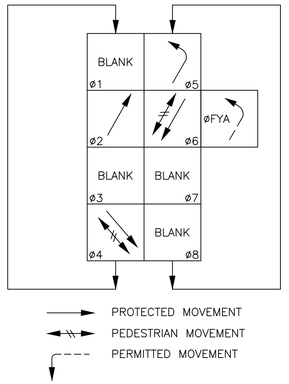
(27) INSTALL TYPE 1 JUNCTION BOX.

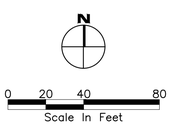


WIRING SCHEDULE (THIS SHEET ONLY)												
NO.	RACEWAY CONDUIT SIZE*	PPB/LOOP/EV INDICATOR 2C-(SH)		LOOP 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		HYBRID RADAR/VIDEO DETECT CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	1		4	2	1						
	EX. 2"							1				
2	EX. 3"	9				2					2	
	EX. 2"							4				
3	EX. 2"	4		4	2	1						
4	EX. 2"	12				3						
	EX. 2"							7			2	
5	EX. 2"	1				1					1	
	EX. 2"							2				
6	EX. 2"	1				1		2			1	
7	EX. 2"	2				2		4			2	
8	2" SCH 80				2							
9	EX. 2"	1		1	2	1						
10	EX. 2"	1		2	2	1						
11	EX. 2"	1		4	2	1						

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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R. A. WESLEY PETERSEN — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

MILITARY RD S & S STAR LAKE RD

ITS54

SHEET 41 OF 69 SHEETS

M:\16\1.16674.00 – Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Int 54 – Military Rd – S Star Lake Rd.dwg<ITS54>,Justin Chon 10/3/2019 1:12 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

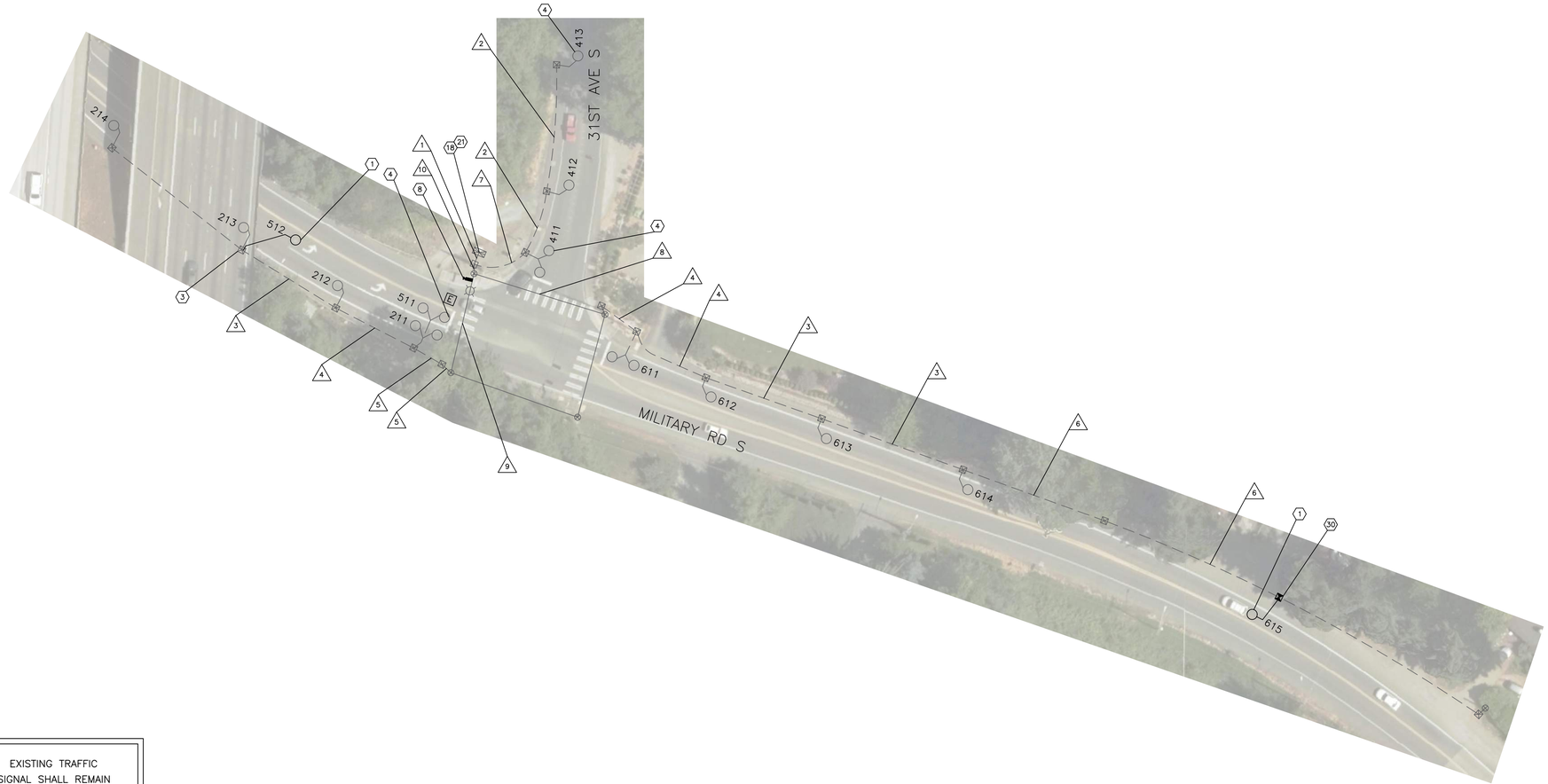
(4) EXISTING LOOP DETECTOR TO REMAIN. RE-SPLICE TO SEPARATE LOOP LEAD-IN AND TERMINATE IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS. REMAINING LOOPS TO REMAIN SPLICED TO EXISTING LEAD-IN(S).

(8) INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN EXISTING VIDEO DETECTION CAMERA RACK.

(18) INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

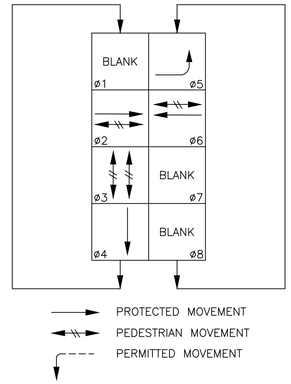
(30) INTERCEPT EXISTING CONDUIT WITH TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10-04. RESTORE PAVEMENT TO PRE-EXISTING CONDITIONS. PULL BACK, RE-ROUTE, AND RE-TERMINATE EXISTING CONDUCTORS IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET TO MATCH EXISTING TERMINATIONS.

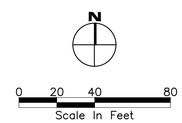


WIRING SCHEDULE (THIS SHEET ONLY)														
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/ EV INDICATOR 2C-(SH)		LOOP 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		INTERCONNECT 6PR		VIDEO DETECT VDCC		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"	7			5			10					1	
2	EX. 2"			1	1									
3	EX. 2"			1	1									
4	EX. 2"			2	1									
5	EX. 2"			4	2									
6	EX. 2"	1			1	1								
7	EX. 2"			2	2									
8	EX. SPANWIRE			2	1	3		4						
9	EX. SPANWIRE			4	2	1		4						
10	EX. 3"			6	3			4					1	

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)





CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	MHA	10/02/2019			
DRAWN BY	MHA	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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RYAN W. ESLEY, 47360, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER
10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

MILITARY RD S & 31ST AVE S

ITS55

SHEET 42 OF 69 SHEETS

M:\16\1.16174.00 – Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\vt 55 – Military Rd – 31st Ave.dwg<ITS55>,Justin Chan 10/3/2019 1:14 PM

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(1) INSTALL TYPE 3 INDUCTION LOOP PER WSDOT STANDARD PLANS J-50.05-00, J-50.12-02, AND J-50.15-01. EACH NEW INDUCTION LOOP SHALL BE SPLICED TO SEPARATE LOOP LEAD-INS AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON SEPARATE DETECTION INPUTS.

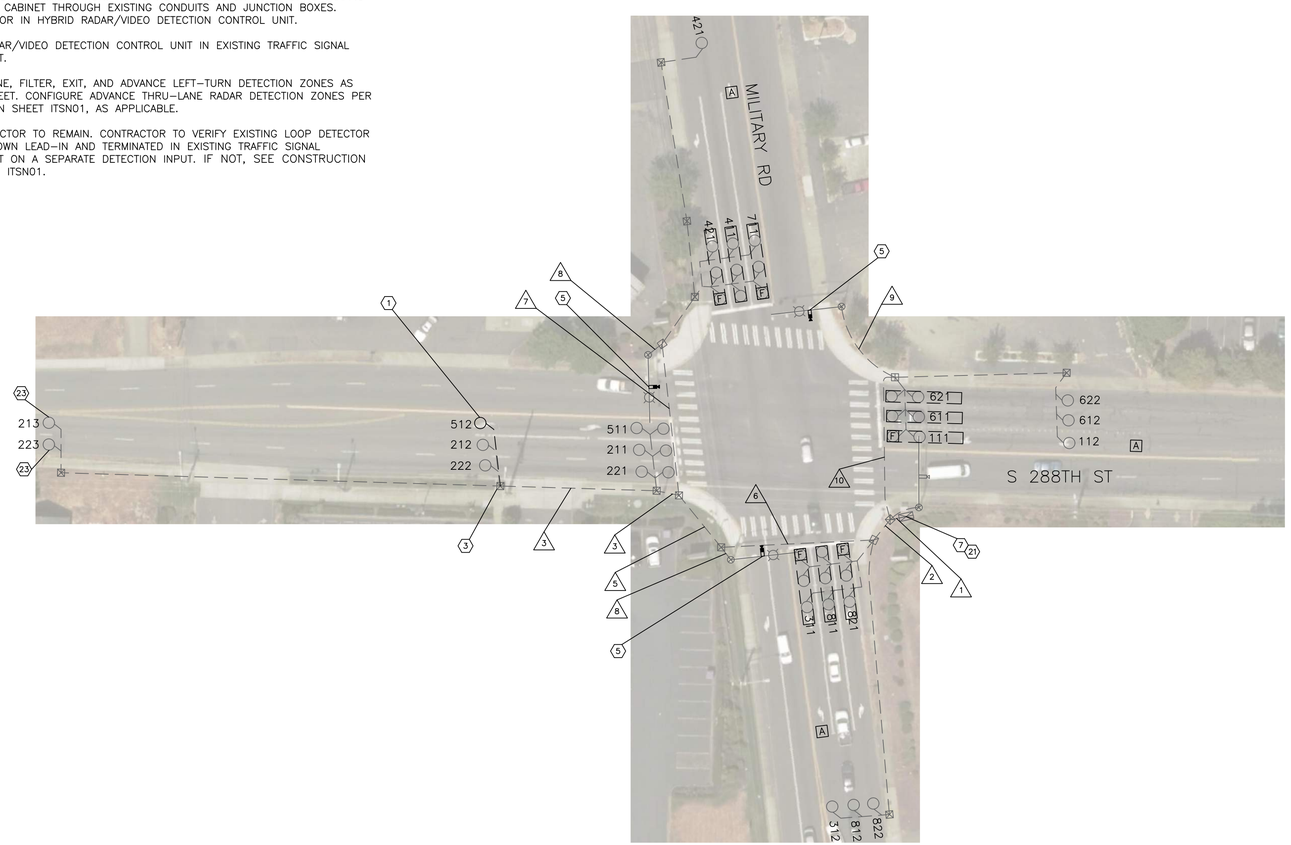
(3) INSTALL LOOP DETECTOR STUB-OUT CONDUIT TO EXISTING JUNCTION BOX PER WSDOT STANDARD PLAN J-50.15-01. RESTORE SIDEWALK AND PAVEMENT TO PRE-EXISTING CONDITIONS.

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

(7) INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.

(21) CONFIGURE STOP LINE, FILTER, EXIT, AND ADVANCE LEFT-TURN DETECTION ZONES AS SHOWN ON THIS SHEET. CONFIGURE ADVANCE THRU-LANE RADAR DETECTION ZONES PER DETECTION NOTES ON SHEET ITSN01, AS APPLICABLE.

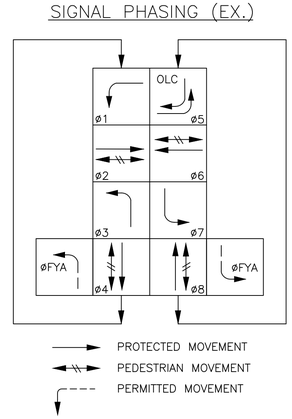
(23) EXISTING LOOP DETECTOR TO REMAIN. CONTRACTOR TO VERIFY EXISTING LOOP DETECTOR IS SPLICED TO ITS OWN LEAD-IN AND TERMINATED IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET ON A SEPARATE DETECTION INPUT. IF NOT, SEE CONSTRUCTION NOTE 4 ON SHEET ITSN01.



WIRING SCHEDULE (THIS SHEET ONLY)																
NO. △	RACEWAY CONDUIT SIZE*	PPB/EV INDICATOR 2C-(SH)		LOOP 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		LPR/CCTV CAMERA CAT6		HYBRID RADAR/VIDEO CAT6		SERVICE POWER #6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 2"				1					1			3	1		
2	EX. 1 1/2"			3	1								2			
3	EX. 1"			3	1											
5	EX. 2"			3	1								1			
6	EX. 2"	6			1			2					2			
7	EX. 1 1/2"	2						2					1			
8	EX. 2"	1				2		2		1			1			
9	EX. 1 1/2"	1				2		2		2			1			
10	EX. 2"	6						2		2			1			

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING (EX.)



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0 20 40 80
Scale In Feet

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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
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DRAWN BY	MHA	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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R. ANDREW LEVY PETERSEN — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

MILITARY RD S & S 288TH ST

ITS56

SHEET 43 OF 69 SHEETS

NOTES

1. SEE SHEET ITSN01 FOR LEGEND AND GENERAL NOTES.

CONSTRUCTION NOTES

(5) INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM PER MANUFACTURER'S RECOMMENDATION. ROUTE NEW CONDUCTOR TO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET THROUGH EXISTING CONDUITS AND JUNCTION BOXES. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.

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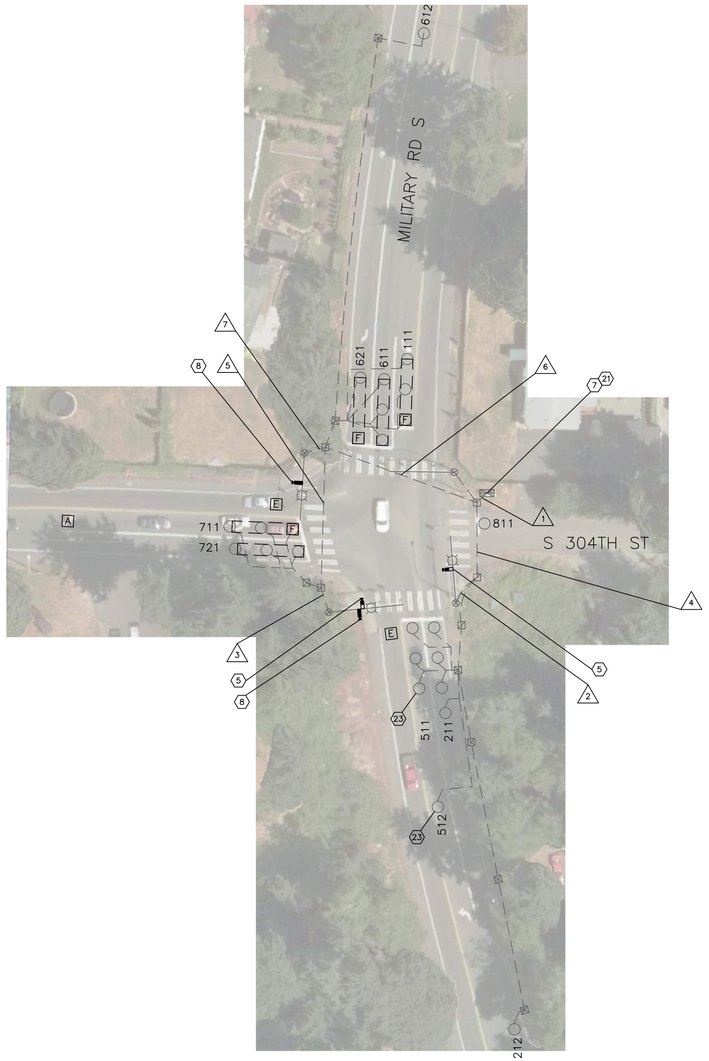
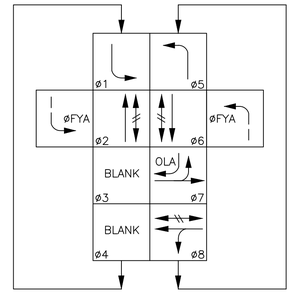


WIRING SCHEDULE (THIS SHEET ONLY)													
NO. △	RACEWAY CONDUIT SIZE*	PPB/LOOP/ EV INDICATOR 2C-(SH)		LOOP 2C-(SH)		EV DETECTOR 3C-(SH)		VEH/PED HEAD 5C		VIDEO DETECT VDCC		HYBRID RADAR/VIDEO CAT6		NOTE
		EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	EX.	NEW	
1	EX. 3"	10						4			2		2	
2	EX. 2", 2-3"	3				1		4					1	
3	EX. 2", 2-3"	3				1		6			1		1	
4	EX. 2"	3		6		1							1	
5	EX. 2"	3		6		2					1		1	
6	EX. 2", 2-3"	6		11		3		10			2		1	
7	EX. 2", 2-3"	3				1		4			1			

*ALL CONDUIT SHALL BE PVC AND SHALL CONTAIN A NO. 8 GROUND WIRE, UNLESS OTHERWISE NOTED.

SIGNAL PHASING EX.



PROTECTED MOVEMENT
PEDESTRIAN MOVEMENT
PERMITTED MOVEMENT

N

0 20 40 80
Scale In Feet

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EXISTING TRAFFIC SIGNAL SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES

		DATE	REVISION	BY	DATE
DESIGNED BY	MHA	10/02/2019			
DRAWN BY	MHA	10/02/2019			
REVIEWED BY	JC	10/02/2019			

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RYAN WESLEY PETERSON STATE OF WASHINGTON 17380 REGISTERED PROFESSIONAL ENGINEER
10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

PHASE 3

MILITARY RD S & S 304TH ST

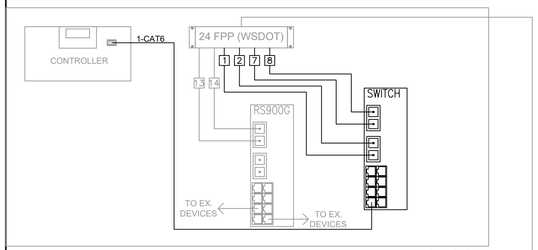
ITS57

SHEET 44 OF 69 SHEETS

M:\JOBS\116174.00 - Federal Way ASC Systems Engineering\Engineering\CAD\Sheets\Vol 57 - Military Rd - S 304th St.dwg<ITS57>,Justin Chen 10/3/2019 2:20 PM

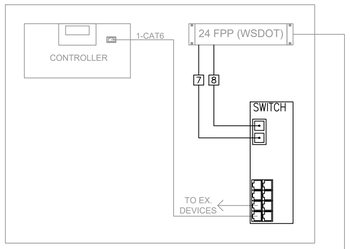
ITS02

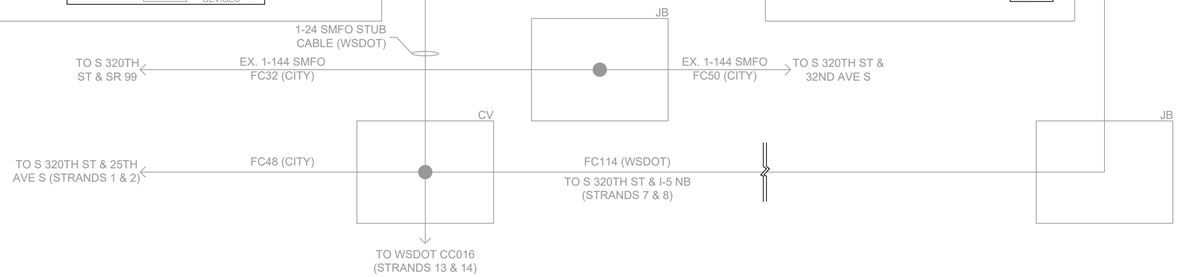
TRAFFIC SIGNAL CONTROLLER CABINET
S 320TH ST & I-5 SB



ITS04

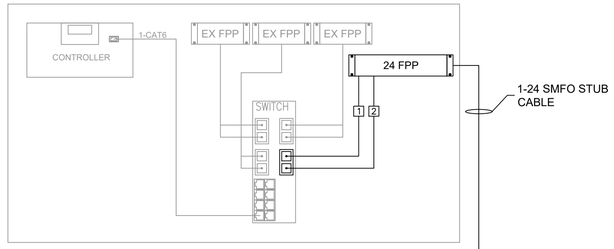
TRAFFIC SIGNAL CONTROLLER CABINET
S 320TH ST & I-5 NB





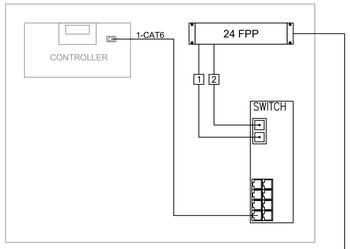
ITS34

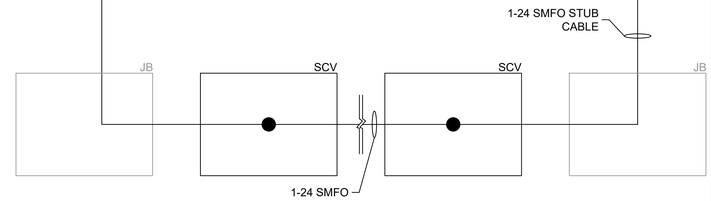
TRAFFIC SIGNAL CONTROLLER CABINET
S 348TH ST (SR 18) & ENCHANTED PKWY S (SR 161)



ITS41

TRAFFIC SIGNAL CONTROLLER CABINET
SR 18 & I-5 SB





COMMUNICATIONS EQUIPMENT QUANTITIES

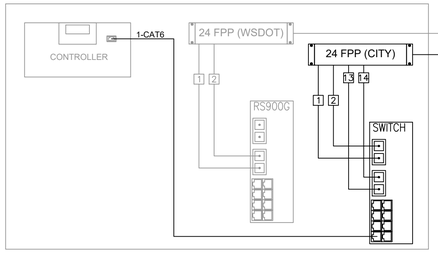
SHEET NAME	INTERSECTION NAME	ETHERNET SWITCHES	SFP MODULES	RACK-MOUNTED FIBER OPTIC PATCH PANELS	WALL-MOUNTED FIBER OPTIC PATCH PANELS
ITS02	S 320TH ST & I-5 SB	1	2	–	–
ITS04	S 320TH ST & I-5 NB	1	1	–	–
ITS34	S 348TH ST (SR 18) & ENCHANTED PKWY S (SR 161)/16TH AVE S	–	1	–	1
ITS41	SR 18 & I-5 SB	1	1	1	–
ITS42	ENCHANTED PKWY S (SR 161) & SR 18 WB	1	2	1	–
ITS43	ENCHANTED PKWY S (SR 161) & MILTON RD S	1	2	1	–

NOTES

1. NOT ALL EXISTING JUNCTION BOXES/CABLE VAULTS SHOWN.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT EXISTING FIBER OPTIC COMMUNICATIONS EQUIPMENT, UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF SEVEN (7) DAYS PRIOR TO PERFORMING ANY WORK ON THE EXISTING FIBER OPTIC COMMUNICATIONS SYSTEM.
4. CONTRACTOR SHALL COORDINATE WITH WSDOT AND CITY OF FEDERAL WAY IT FOR THE INSTALLATION OF FIBER OPTIC COMMUNICATIONS SYSTEMS, INCLUDING BUT NOT LIMITED TO THE INSTALLATION AND CONFIGURATION OF ETHERNET SWITCHES, INSTALLATION OF FIBER OPTIC PATCH PANELS AND PATCH CORDS, AND SPLICING OF EXISTING FIBER OPTIC CABLE.

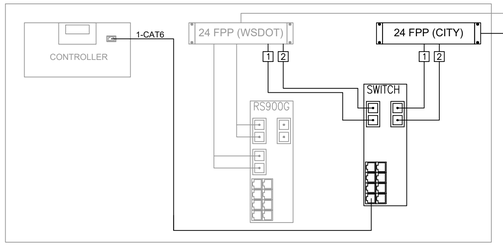
ITS42

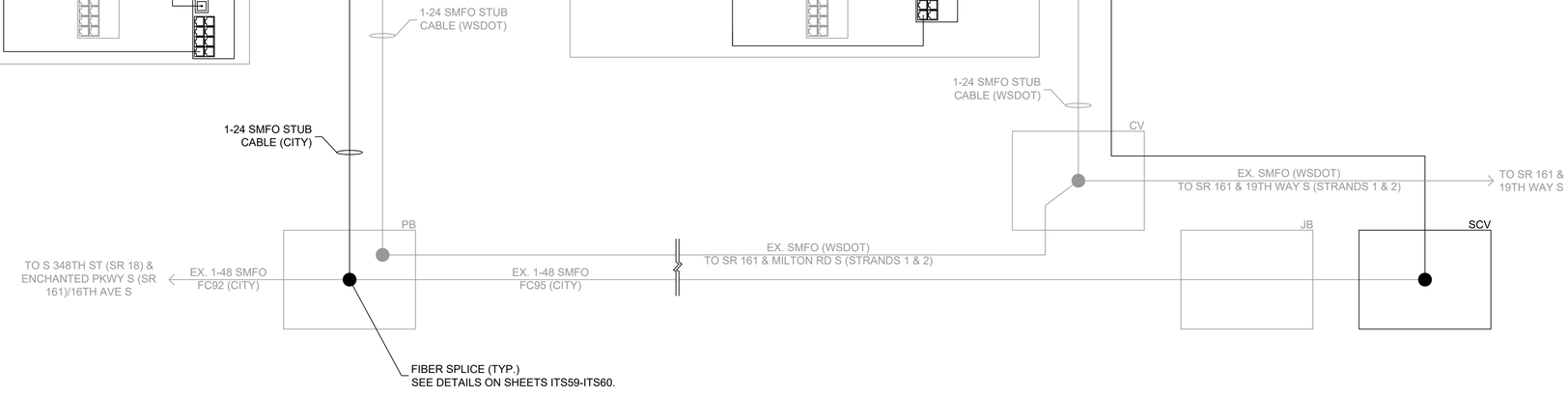
TRAFFIC SIGNAL CONTROLLER CABINET
SR 161 & SR 18 WB



ITS43

TRAFFIC SIGNAL CONTROLLER CABINET
SR 161 & MILTON RD S





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REVIEWED BY	RWP	10/02/2019			

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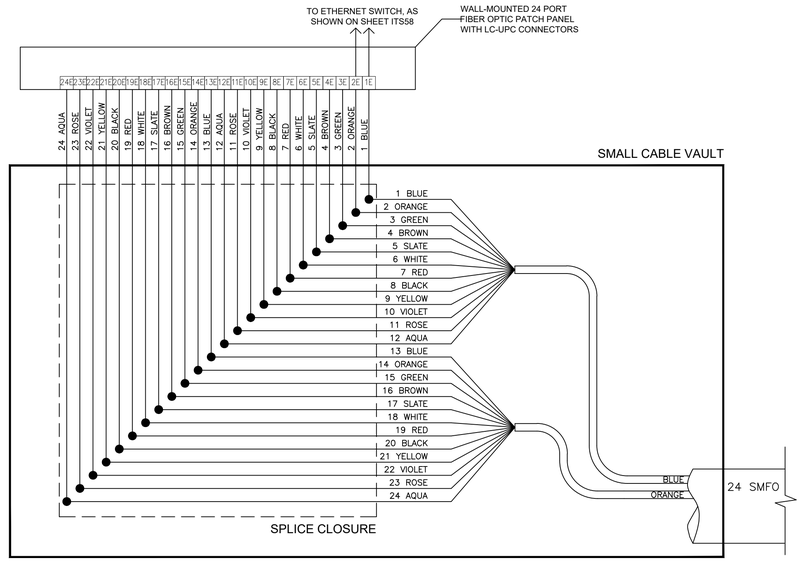
CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

COMMUNICATIONS DETAILS

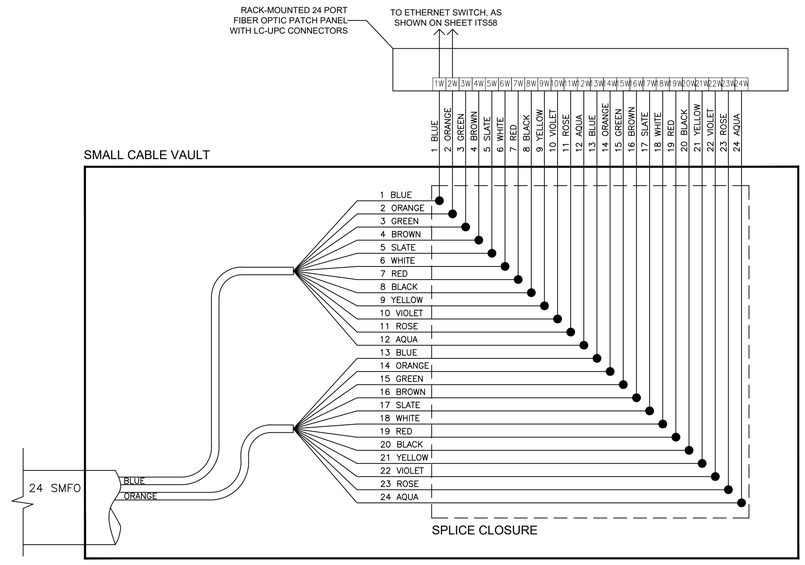
ITS58

SHEET 45 OF 69 SHEETS



FIBER SPLICE DETAIL
TRAFFIC SIGNAL CONTROLLER CABINET (S 348TH ST & ENCHANTED PKWY S)

ITS34



FIBER SPLICE DETAIL
TRAFFIC SIGNAL CONTROLLER CABINET (SR 18 & I-5 SB)

ITS41

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10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

COMMUNICATIONS DETAILS

ITS59

SHEET 46 OF 69 SHEETS

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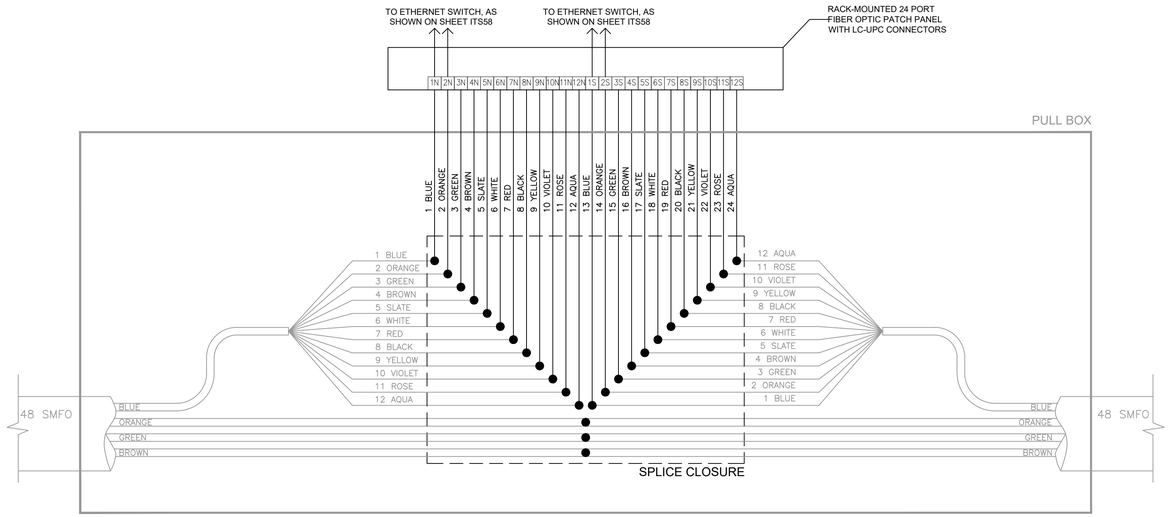
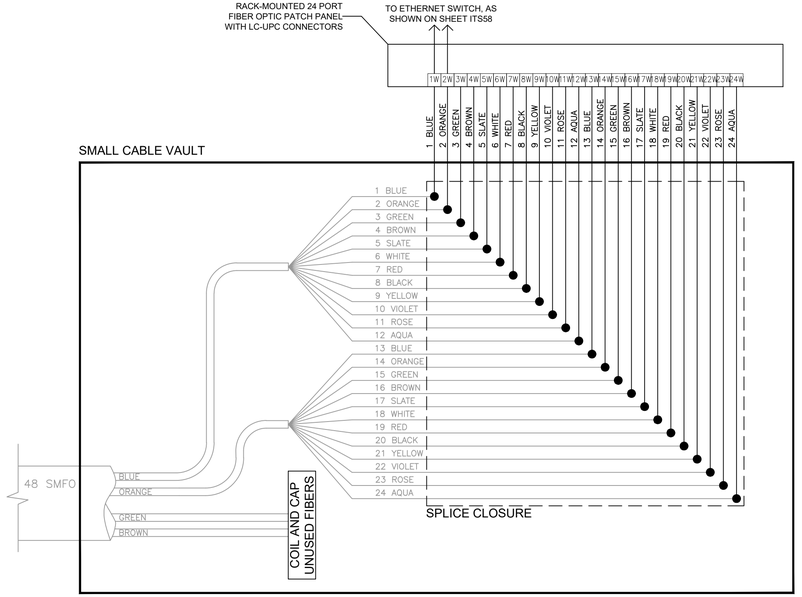


FIBER SPLICE DETAIL
TRAFFIC SIGNAL CONTROLLER CABINET (SR 161 & SR 18 WB)

ITS42



FIBER SPLICE DETAIL
TRAFFIC SIGNAL CONTROLLER CABINET (SR 18 & I-5 SB)

ITS43

		DATE	REVISION	BY	DATE
DESIGNED BY	JC	10/02/2019			
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STATE OF WASHINGTON
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REGISTERED
PROFESSIONAL ENGINEER
10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

COMMUNICATIONS DETAILS

ITS60

SHEET 47 OF 69 SHEETS

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TEMPORARY TRAFFIC CONTROL (TTC) NOTES:

1. MAINTAIN ACCESS TO ALL PRIVATE DRIVEWAYS AND BUS STOPS AT ALL TIMES
2. ALL TEMPORARY TRAFFIC CONTROL (TTC) SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PART 6 AND THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (DATED 2014).
3. ALL W-SERIES SIGNS SHALL BE BLACK LEGEND ON ORANGE BACKGROUND, UNLESS OTHERWISE SPECIFIED.
4. ALL R-SERIES SIGNS SHALL BE BLACK LEGEND ON WHITE BACKGROUND, UNLESS OTHERWISE SPECIFIED.
5. ALL DIAMOND SHAPED WARNING SIGNS SHALL BE 48"x48".
6. A UNIFORMED POLICE OFFICER OR STATE TROOPER SHALL CONTROL INTERSECTION TRAFFIC WHENEVER SIGNAL OPERATIONS ARE IMPACTED, A TRAFFIC SIGNAL IS NOT OPERATIONAL, OR AS SHOWN IN THESE PLANS. TRAFFIC SIGNALS SHALL BE SET TO ALL RED "FLASH" MODE WHEN THE INTERSECTION IS BEING CONTROLLED BY A UNIFORMED POLICE OFFICER OR STATE TROOPER.
7. REDUCE SPACING OF DEVICES SHOWN IN THE "CHANNELIZATION DEVICE SPACING" TABLE BY 1/2 WHERE DEVICES ARE USED AS A "CENTERLINE" TO SEPARATE ADJACENT OPPOSING LANES OF TRAFFIC.
8. ALL STREET LIGHT INSTALLATIONS ON EXISTING POLES SHALL BE COMPLETED DURING LANE CLOSURES FOR OTHER WORK OR COMPLETED WITHOUT BLOCKING TRAVEL LANES. ALL WORK TRUCKS REQUIRED TO INSTALL STREET LIGHTS SHALL HAVE A ROTATING BEACON IN COMPLIANCE WITH MUTCD CHAPTER 6H.
9. TYPE 3 BARRICADES SHALL CONFORM TO WSDOT STANDARD PLAN K-80.20-00.
10. PROVIDE ALL PEDESTRIANS WITH AN ALTERNATE ACCESSIBLE ROUTE WHEN THE CONSTRUCTION ACTIVITY OR TTC CLOSES AN ACCESSIBLE PEDESTRIAN ROUTE. THE FOLLOWING GUIDANCE AND DETAIL ON SHEET TC02 ARE PROVIDED REGARDING TEMPORARY TRAFFIC CONTROL FOR PEDESTRIANS:
    - 10.1. TTC DEVICES AND OTHER CONSTRUCTION MATERIALS/FEATURES SHALL NOT INTRUDE INTO THE USABLE WIDTH OF PEDESTRIAN ROUTES.
    - 10.2. PROVIDE A MINIMUM 84" VERTICAL CLEARANCE FOR PEDESTRIAN ROUTES. SIGNS AND OTHER DEVICES MOUNTED LOWER THAN 84" ABOVE THE PEDESTRIAN ROUTE SHALL NOT PROJECT MORE THAN 4" INTO THE PEDESTRIAN ROUTE.
    - 10.3. MAINTAIN THE WIDTH OF EXISTING PEDESTRIAN FACILITIES WHEN FEASIBLE. WHEN IT IS NOT FEASIBLE TO MAINTAIN A MINIMUM WIDTH OF 60" THROUGHOUT THE LENGTH OF THE PEDESTRIAN ACCESSIBLE ROUTE, A MINIMUM WIDTH OF 48" SHALL BE PROVIDED WITH 60" X 60" PASSING ZONES SPACED AT MAXIMUM INTERVALS OF 200' TO ALLOW INDIVIDUALS IN WHEELCHAIRS TO PASS.
    - 10.4. PROVIDE A SMOOTH, CONTINUOUS HARD SURFACE THROUGHOUT THE ENTIRE LENGTH AND WIDTH OF THE PEDESTRIAN ROUTE THROUGH THE WORK ZONE. THERE SHALL BE NO CURBS OR VERTICAL ELEVATION CHANGES GREATER THAN ½" IN GRADE OR TERRAIN THAT COULD CAUSE TRIPPING OR BE A BARRIER TO WHEELCHAIR USE. VERTICAL ELEVATION DIFFERENCES BETWEEN ¼" AND ½" SHALL BE BEVELED AT A MAXIMUM 2:1 SLOPE.
    - 10.5. WHEN CHANNELIZATION IS USED TO DELINEATE A PEDESTRIAN PATHWAY, A CONTINUOUS DETECTABLE EDGING SHALL BE PROVED THROUGHOUT THE LENGTH OF THE FACILITY SUCH THAT PEDESTRIANS USING A CANE CAN FOLLOW IT. EDGING SHALL PROTRUDE AT LEAST 6" ABOVE THE SURFACE OF THE SIDEWALK OR PATHWAY WITH THE BOTTOM OF EDGING A MAXIMUM OF 2.5" ABOVE THE SURFACE.
    - 10.6. AT LOCATIONS WHERE ADJACENT ALTERNATE ROUTES CANNOT BE PROVIDED, APPROPRIATE SIGNS SHALL BE POSTED IN ADVANCE OF THE CLOSURE AT THE NEAREST MARKED CROSSWALK OR INTERSECTION TO DETOUR PEDESTRIANS ACROSS THE STREET. PHYSICAL BARRICADES SHALL BE INSTALLED TO PREVENT VISUALLY IMPAIRED PEOPLE FROM INADVERTENTLY ENTERING A CLOSED AREA. APPROPRIATE SIGNING SHALL BE PLACED AT THE INTERSECTIONS PRIOR TO ANY PEDESTRIAN ROUTE CLOSURE.
    - 10.7. PROVIDE TEMPORARY RAMPS WHEN AN ALTERNATE PEDESTRIAN ROUTE CROSSES A CURB AND NO PERMANENT CURB RAMPS ARE IN PLACE. THE WIDTH OF THE CURB RAMP SHALL BE A MINIMUM OF 48" AND THE MAXIMUM SLOPE OF THE RAMP SHALL BE 8.3%. THE MAXIMUM CROSS SLOPE SHALL BE 2%. THE BOTTOM OF THE CURB RAMP SHALL BE FLUSH WITH THE ROADWAY. TEMPORARY DETECTABLE WARNING MATS SHALL BE INSTALLED AT STREET CROSSINGS.
    - 10.8. INFORMATION REGARDING CLOSED PEDESTRIAN ROUTES, ALTERNATE CROSSINGS, AND SIGN AND SIGNAL INFORMATION SHALL BE COMMUNICATED TO PEDESTRIANS WITH VISUAL DISABILITIES BY PROVIDING DEVICES SUCH AS AUDIBLE INFORMATION DEVICES, ACCESSIBLE PEDESTRIAN SIGNALS, OR BARRIERS/CHANNELIZATION DEVICES THAT ARE DETECTABLE TO PEDESTRIANS TRAVELING WITH THE AID OF A CANE OR WHO HAVE LOW VISION.
11. WORK DURING HOURS OF DARKNESS SHALL PROVIDE:
    - 11.1. ILLUMINATION AT ALL FLAGGING STATIONS.
    - 11.2. TYPE C STEADY BURNING LIGHTS ON TRAFFIC CONTROL DEVICES.
12. ALL WORK INVOLVING THE INSTALLATION OF NEW LOOP DETECTORS SHALL BE PERFORMED AT NIGHT, IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

TTC SHEET REFERENCE TABLE:

PHASE 1&2		
SHEET NO.	WORK ELEMENT	TTC DETAIL
ITS1	WB LT LOOP	K,L
ITS1	VIDEO ON EB ARM	A
ITS2	WB LT LOOP	B,D
ITS3	NB RADAR	A
ITS3	SB RADAR	I
ITS3	EB RADAR	A
ITS3	WB RADAR	A
ITS4	LOOP RAMP LOOP	M
ITS4	WB RT LOOP	N
ITS4	WB VIDEO	N
ITS4	EB VIDEO	M
ITS5	EB RADAR	A
ITS5	WB RADAR	A
ITS5	SB RADAR	I
ITS6	NB RADAR	A
ITS6	SB RADAR	C
ITS6	EB RADAR	H
ITS6	WB RADAR	C
ITS7	SB LT LOOP/RADAR/VIDEO	B,E
ITS7	NB LT LOOP	B,E
ITS7	WB RADAR	O
ITS8	SB LT LOOP	B, E
ITS8	WB RADAR	F
ITS8	NB RADAR	A
ITS9	EB RADAR	A
ITS9	NB RADAR	A
ITS9	SB RADAR, VIDEO	C
ITS9	WB RADAR, VIDEO	A
ITS10	EB RADAR	A
ITS10	WB LT LOOP	B,D
ITS11	EB LT LOOP/VIDEO	B, E
ITS11	WB LT LOOP	B,D
ITS12	WB LT LOOP/VIDEO	B,D
ITS12	EB VIDEO	A
ITS13	EB RADAR	A
ITS13	NB RADAR	G
ITS13	WB LT LOOP	B, D
ITS15	SB RADAR/EB VIDEO	G
ITS15	WB VIDEO/NB RADAR	A
ITS16	NB RADAR/VIDEO	A
ITS23	SB LT LOOP, VIDEO	B, E
ITS23	NB LT LOOP, VIDEO	B, E
ITS23	WB LT LOOP	B, E
ITS23	EB RADAR	A
ITS26	SB LT LOOP	B,E
ITS26	NB RADAR/VIDEO	A
ITS26	EB RADAR/VIDEO	C
ITS27	SB LT LOOP, VIDEO, WB RADAR	B,E
ITS27	NB LT LOOP,VIDEO	B,E
ITS29	SB LT LOOP, VIDEO	B, E
ITS29	NB LT LOOP, VIDEO	B, E
ITS29	WB RADAR, VIDEO	G
ITS30	SB LT LOOP, VIDEO	P,E
ITS30	NB LT LOOP, VIDEO	B, E
ITS30	16TH VIDEO	I
ITS31	NB LT LOOP, EB RADAR	B,E
ITS31	SB RADAR/WB RADAR	A, C
ITS32	SB LT LOOP	B,E
ITS32	NB RADAR/VIDEO	A
ITS34	SB LT LOOP,VIDEO	B,D
ITS34	NB RADAR/VIDEO, EB RADAR	R
ITS34	NB RT LOOPS	S
ITS34	WB VIDEO	T
ITS35	SB LOOP AND VIDEO	B, D
ITS35	NB LOOP AND VIDEO	B, D
ITS35	NB RADAR AND WB VIDEO	W
ITS36	SB VIDEO	A
ITS36	EB RADAR	U
ITS37	SB LT LOOP, VIDEO	B,D
ITS37	NB LT LOOP, VIDEO	B,D
ITS37	WB VIDEO	G
ITS41	SB AND WB RADAR	X

PHASE 3		
ITS SHEET	WORK ELEMENT	TTC DETAIL
ITS42	NB VIDEO	D
ITS43	NB LOOP AND VIDEO	B,D
ITS43	SB LOOP AND VIDEO	B,D
ITS43	SB RADAR	G
ITS45	EB RADAR AND VIDEO	AA
ITS46	WB LOOP AND VIDEO	B, Y
ITS46	EB LOOP AND VIDEO	F, Z
ITS47	NB LOOP	B,E
ITS47	SB VIDEO AND RADAR	A
ITS47	WB VIDEO	Y
ITS48	NB RADAR	A
ITS48	SB RADAR	A
ITS49	SB RADAR	A
ITS49	EB VIDEO	A
ITS49	WB VIDEO	D
ITS50	SB LOOP,WB RADAR AND VIDEO	B, E
ITS50	NB LOOP, EB RADAR AND VIDEO	B, E
ITS51	SB LOOP,WB RADAR AND VIDEO	B, E
ITS51	NB LOOP, EB RADAR AND VIDEO	B, E
ITS52	WB RADAR AND VIDEO	A
ITS53	EB RADAR	CC
ITS53	NB RADAR	BB
ITS54	SWB LOOP	BB
ITS54	SEB RADAR	BB
ITS54	NEB RADAR	BB
ITS55	WB LOOP	BB
ITS55	EB LOOP	BB
ITS55	WB VIDEO	G
ITS56	NB RADAR	CC
ITS56	SB RADAR	A
ITS56	WB RADAR	A
ITS56	EB LOOP	B,D
ITS57	SB RADAR AND VIDEO	G
ITS57	EB RADAR	A
ITS57	WB VIDEO	CC

		DATE	REVISION	BY	DATE
DESIGNED BY	CRD	10/02/2019			
DRAWN BY	CRD	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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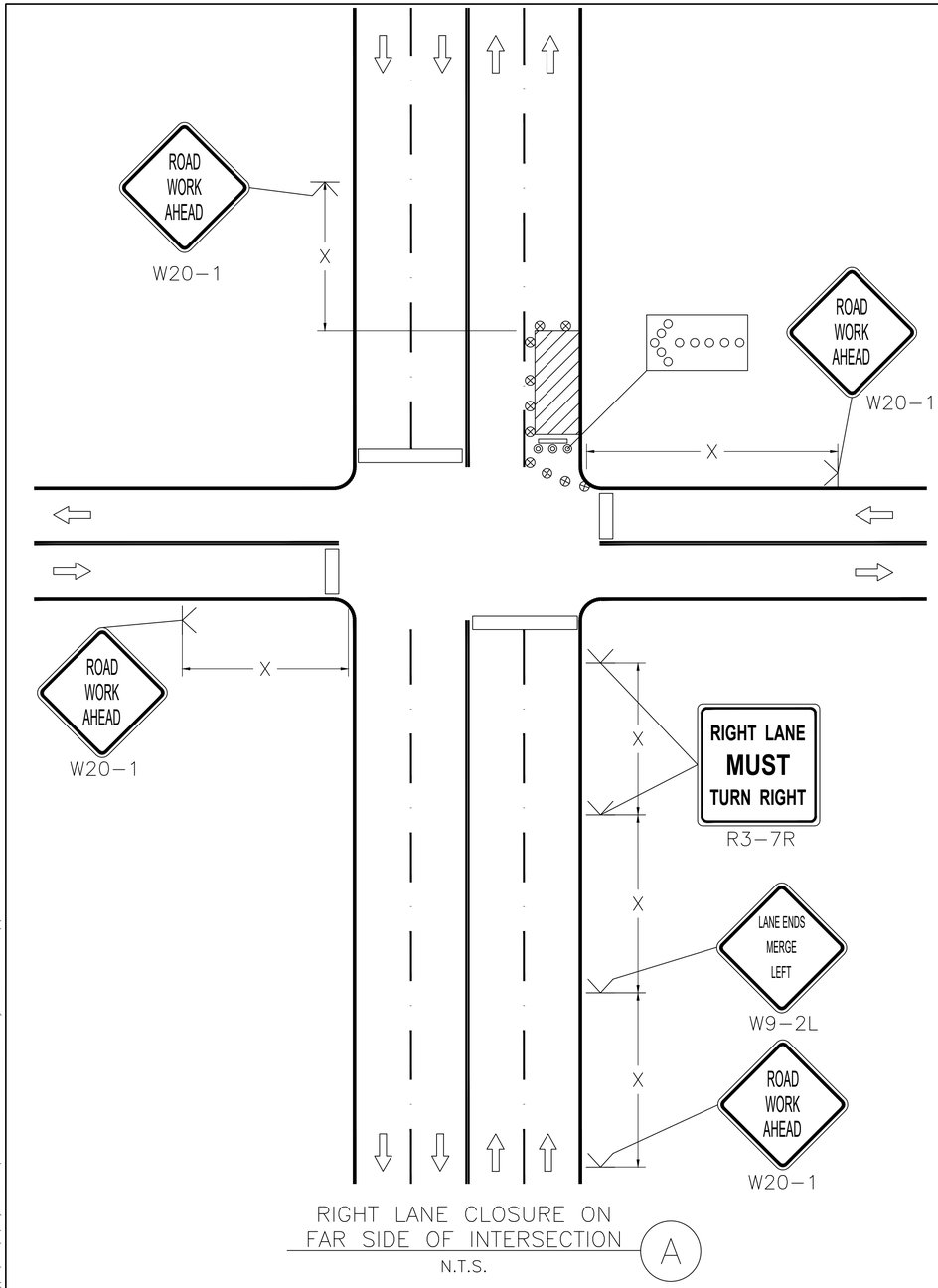
10/03/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC1

SHEET 48 OF 69 SHEETS

TEMPORARY TRAFFIC CONTROL



RIGHT LANE CLOSURE ON FAR SIDE OF INTERSECTION

N.T.S.

A

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
⊗	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
	TRANSPORTABLE ATTENUATOR

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

SIGN SPACING = X (1)

RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

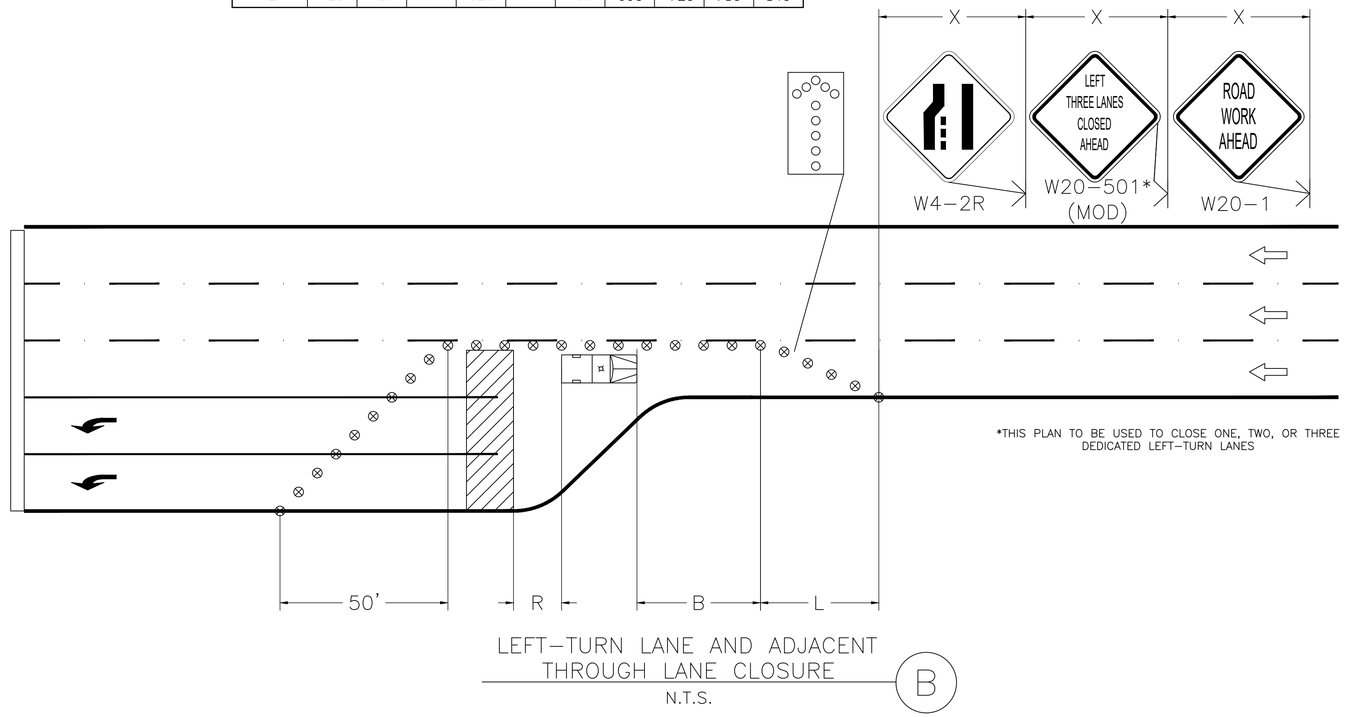
BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'



*THIS PLAN TO BE USED TO CLOSE ONE, TWO, OR THREE DEDICATED LEFT-TURN LANES

LEFT-TURN LANE AND ADJACENT THROUGH LANE CLOSURE

N.T.S.

B

		DATE	REVISION	BY	DATE
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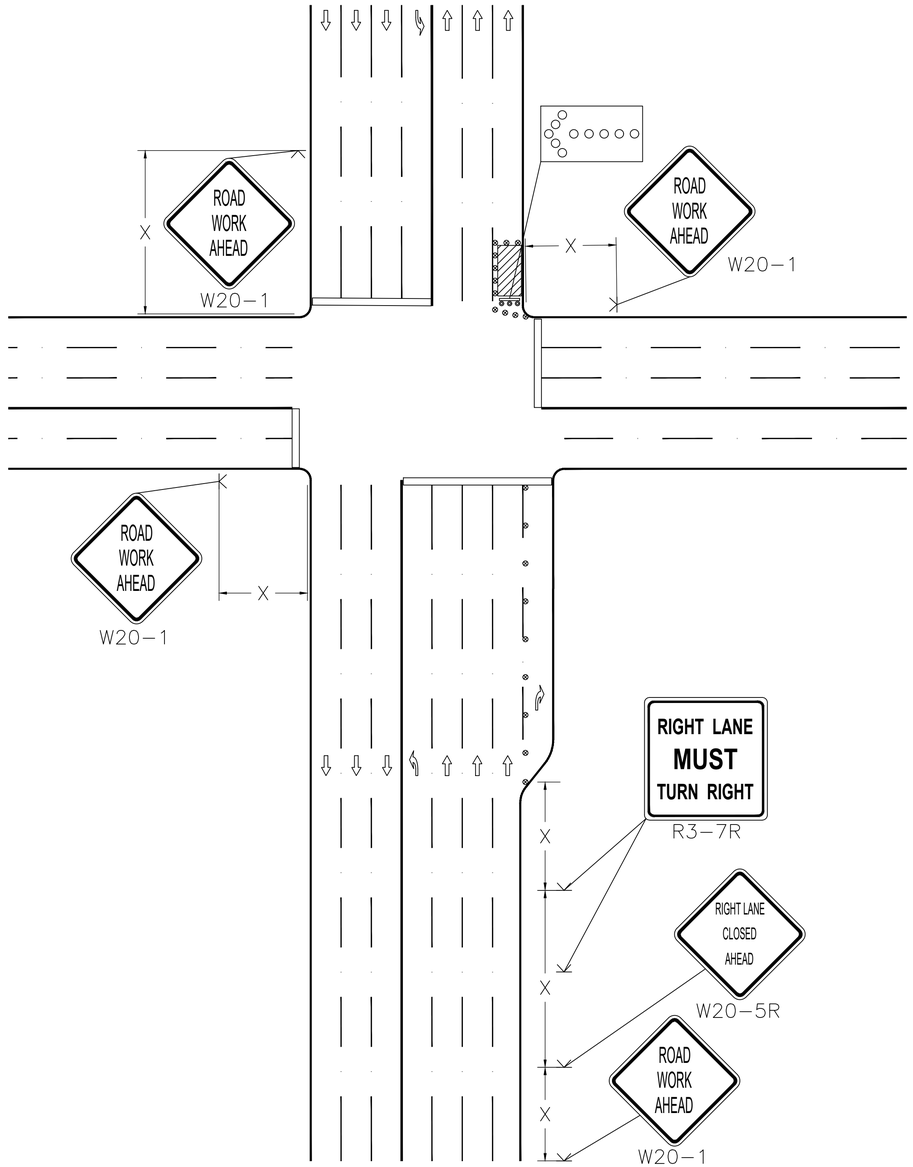
CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC2

TEMPORARY TRAFFIC CONTROL

SHEET 49 OF 69 SHEETS



RIGHT LANE CLOSURE ON FAR SIDE OF INTERSECTION WITH RIGHT-TURN LANE CLOSURE

N.T.S.

C

LEGEND

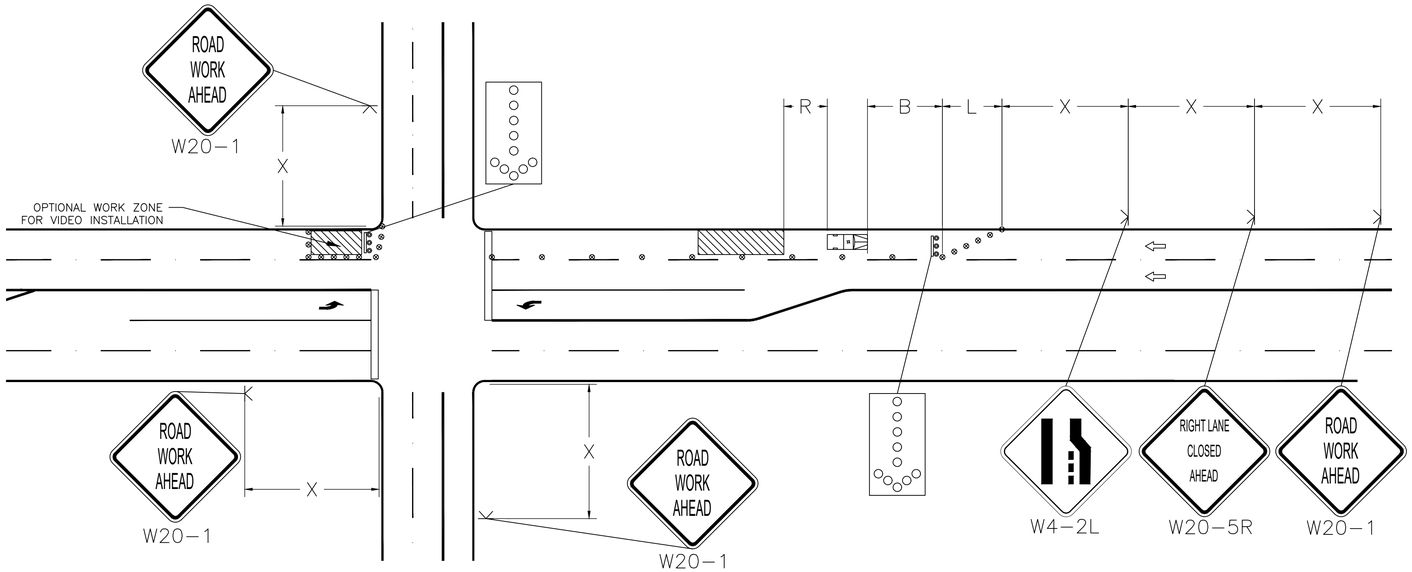
SYMBOL	DESCRIPTION
	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
	TRANSPORTABLE ATTENUATOR

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840



RIGHT LANE CLOSURE WITH MULTIPLE WORK AREAS

N.T.S.

D

SIGN SPACING = X (1)

RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

		DATE	REVISION	BY	DATE
DESIGNED BY	CRD	10/02/2019			
DRAWN BY	CRD	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

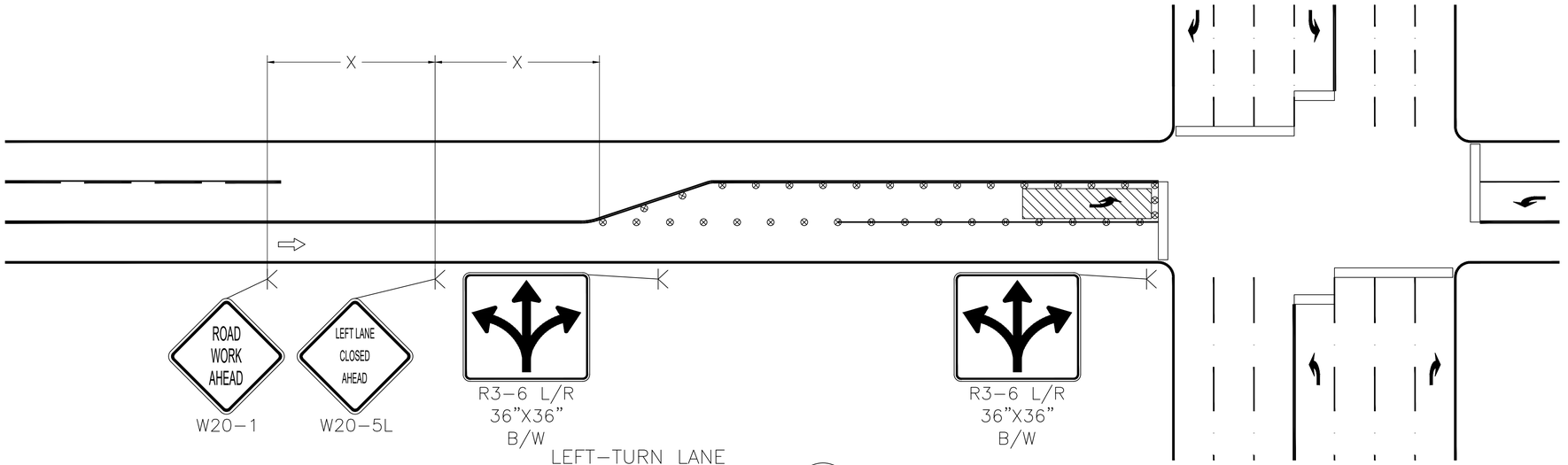
R. WESLEY PETERSON, STATE OF WASHINGTON, #7388, REGISTERED PROFESSIONAL ENGINEER
10/03/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC3

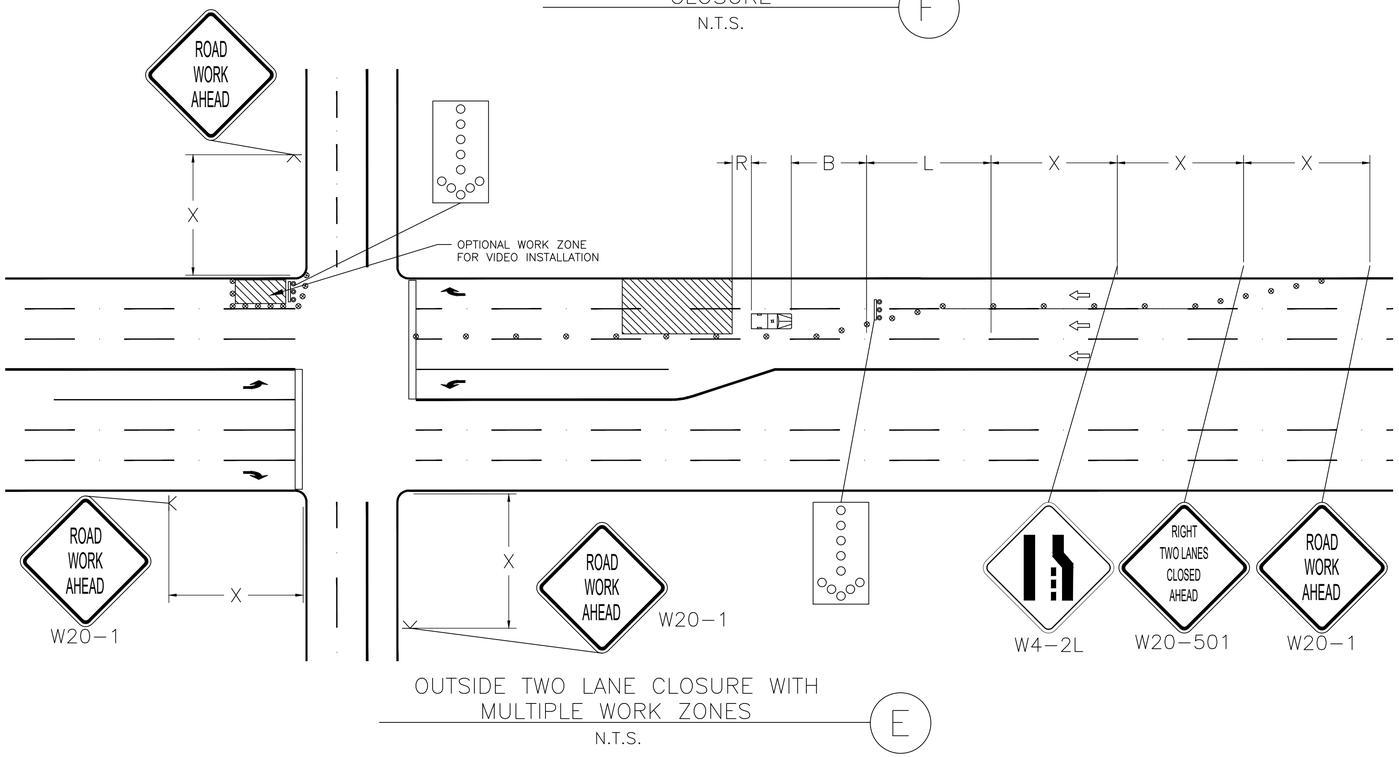
TEMPORARY TRAFFIC CONTROL

SHEET 50 OF 69 SHEETS



LEFT-TURN LANE CLOSURE
N.T.S.

F



OUTSIDE TWO LANE CLOSURE WITH MULTIPLE WORK ZONES
N.T.S.

E

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
⊗	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
	TRANSPORTABLE ATTENUATOR

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

SIGN SPACING = X (1)

RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

		DATE	REVISION	BY	DATE
DESIGNED BY	CRD	10/02/2019			
DRAWN BY	CRD	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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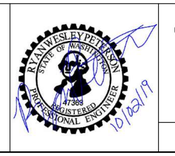
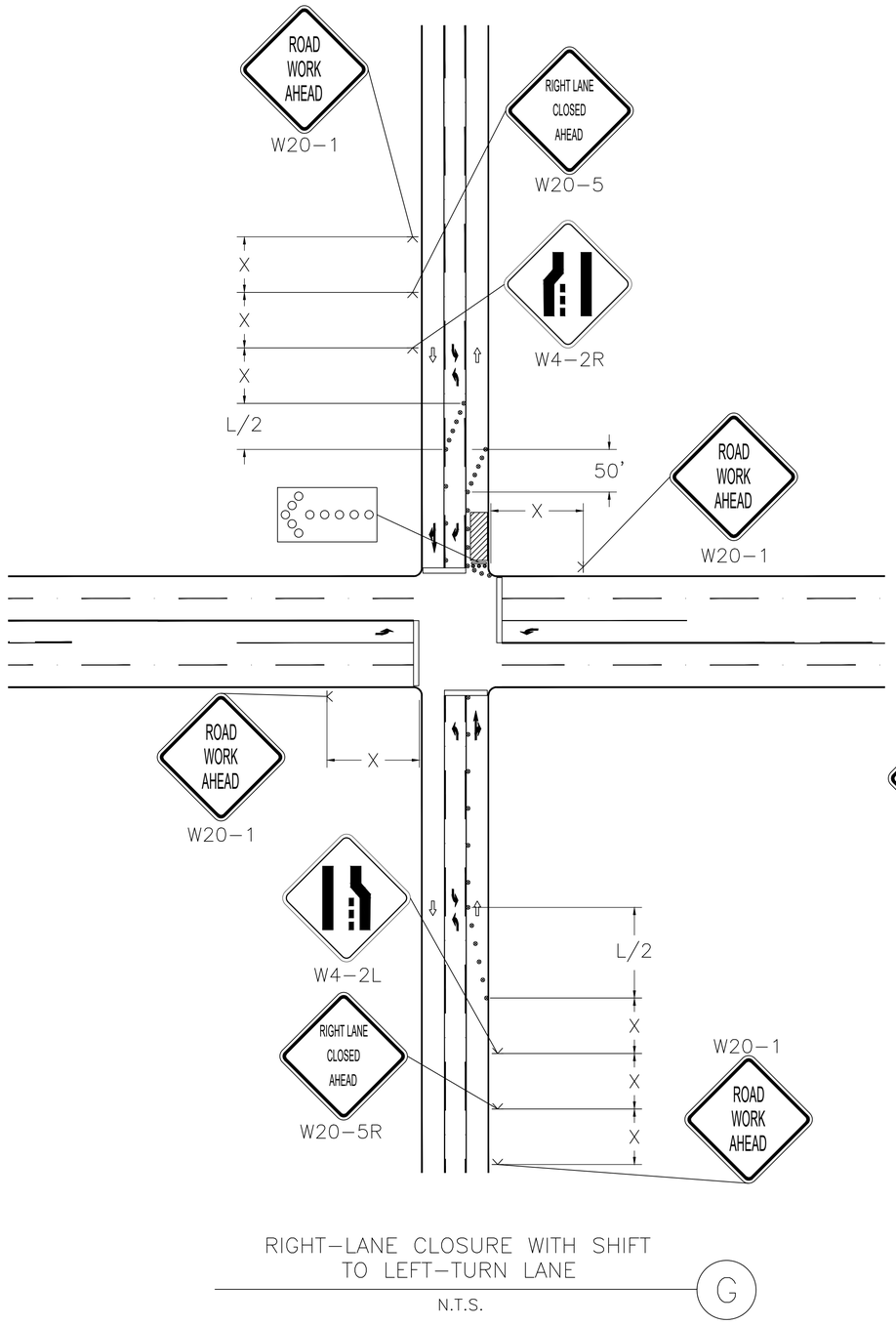


CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC4

SHEET 51 OF 69 SHEETS

TEMPORARY TRAFFIC CONTROL



RIGHT-LANE CLOSURE WITH SHIFT TO LEFT-TURN LANE

N.T.S.

G

LEGEND

SYMBOL	DESCRIPTION
	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

SIGN SPACING = X (1)

RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

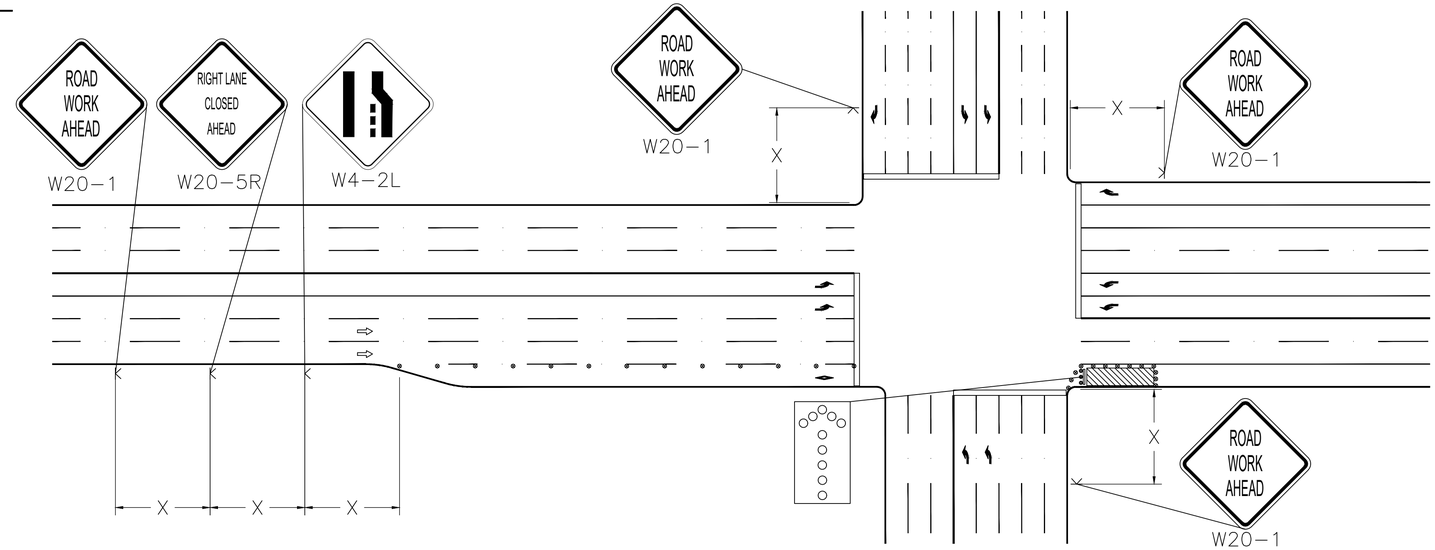
BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'



RIGHT-TURN/HOV LANE CLOSURE

N.T.S.

H

		DATE	REVISION	BY	DATE
DESIGNED BY	CRD	10/02/2019			
DRAWN BY	CRD	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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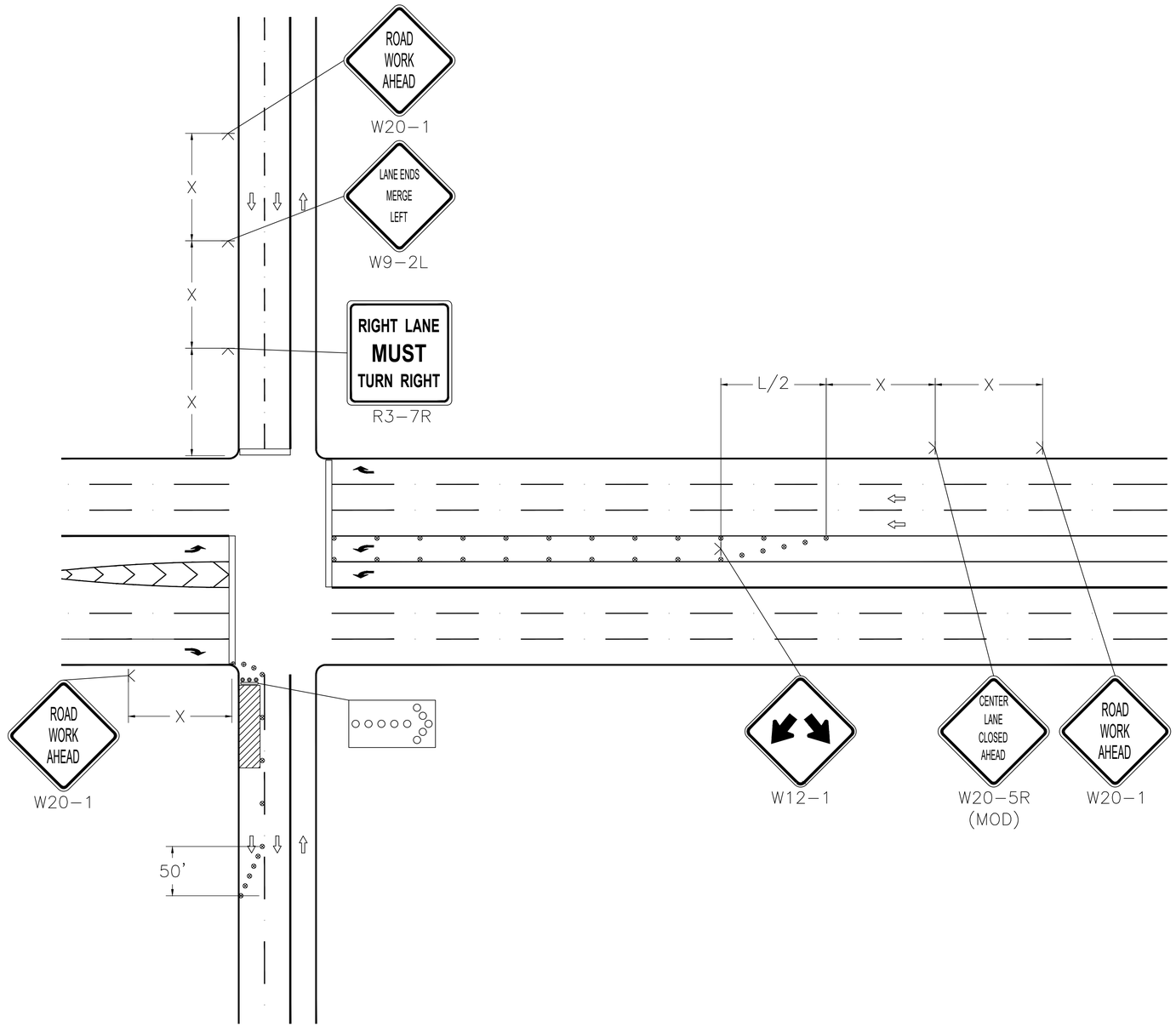
REAGAN WESLEY PETERSON STATE OF WASHINGTON 47388 PROFESSIONAL ENGINEER 10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC5

TEMPORARY TRAFFIC CONTROL

SHEET 52 OF 69 SHEETS



SINGLE LEFT-TURN LANE CLOSURE AND THROUGH LANE CLOSURE AT INTERSECTION

N.T.S.

J

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD

		DATE	REVISION	BY	DATE
DESIGNED BY	CRD	10/02/2019			
DRAWN BY	CRD	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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(FAX) 425 825-8434

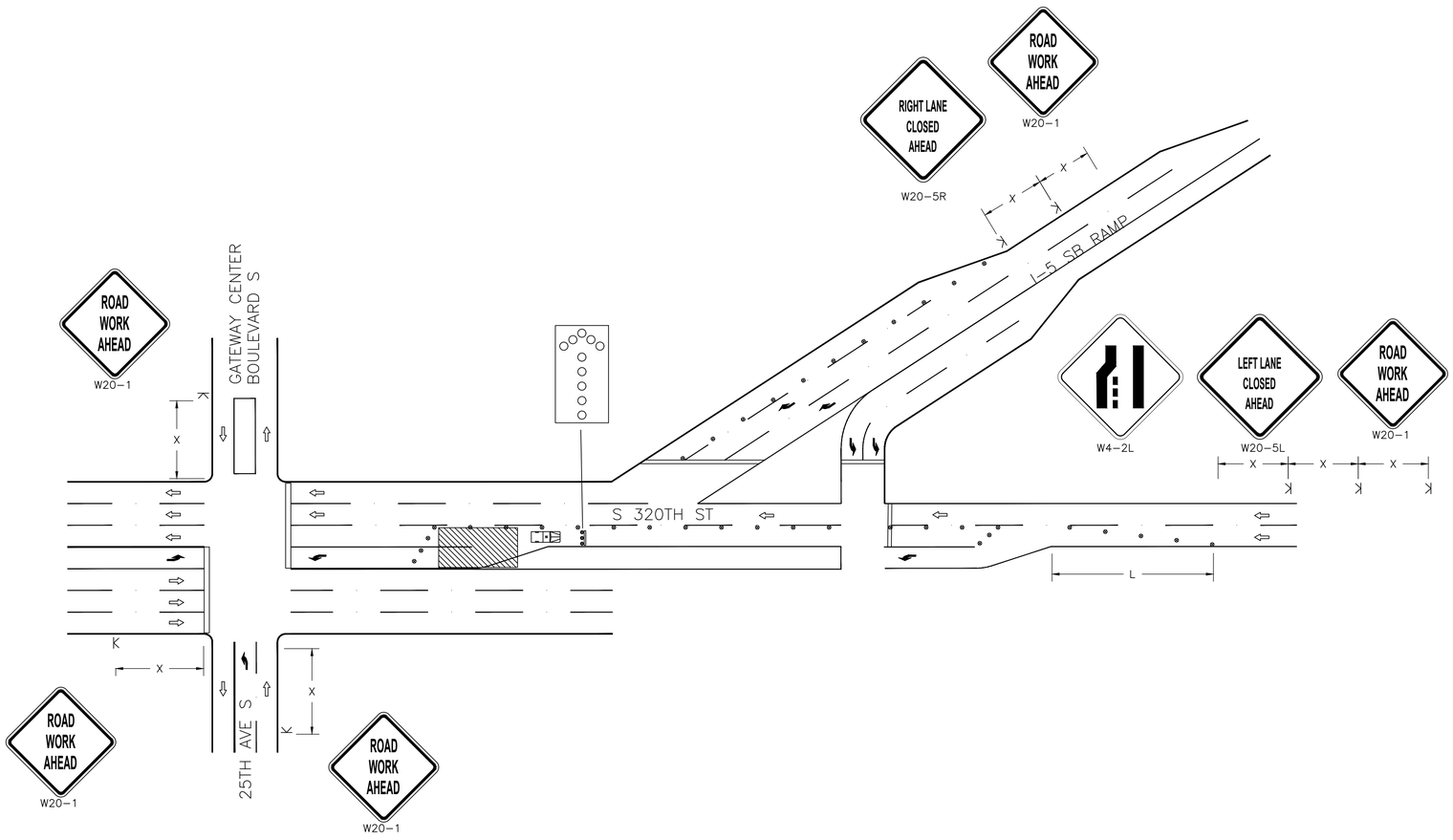
R. WESLEY PETERSEN, STATE OF WASHINGTON, #7388, REGISTERED PROFESSIONAL ENGINEER
10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC6

SHEET 53 OF 69 SHEETS

TEMPORARY TRAFFIC CONTROL



SIGN SPACING = X (1)

RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
TMA	TRANSPORTABLE ATTENUATOR

S 320TH ST AND 25TH AVE S LOOP INSTALL – PHASE 1

K

N.T.S.

		DATE	REVISION	BY	DATE
DESIGNED BY	BAS	10/02/2019			
DRAWN BY	BAS	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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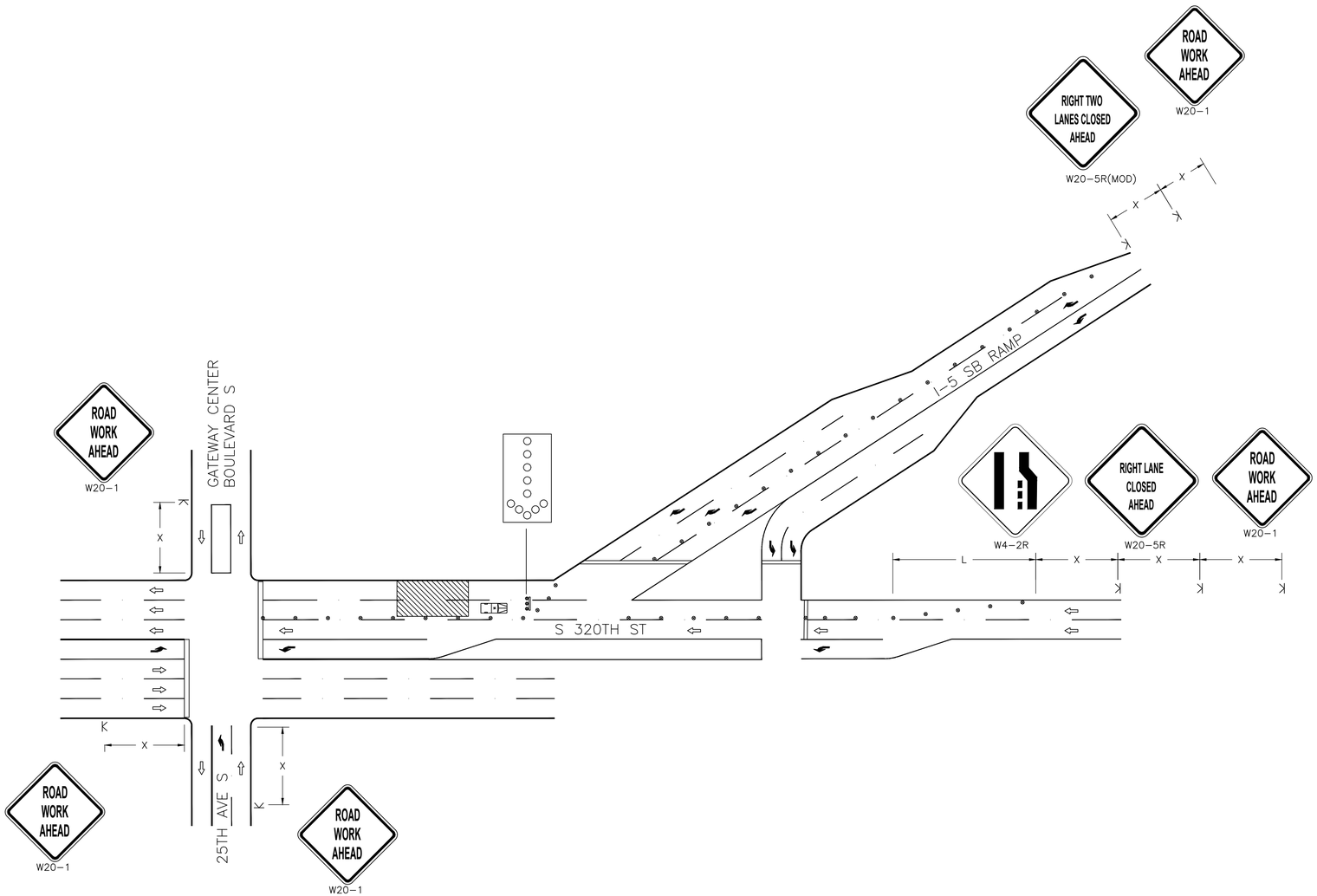
RYAN WESLEY PETERSON — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/31/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC7

TEMPORARY TRAFFIC CONTROL

SHEET 54 OF 69 SHEETS



SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)										
LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
TMA	TRANSPORTABLE ATTENUATOR

S 320TH ST AND 25TH AVE S
LOOP INSTALL – PHASE 2

N.T.S.

L

		DATE	REVISION	BY	DATE
DESIGNED BY	BAS	10/02/2019			
DRAWN BY	BAS	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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(FAX) 425 825-8434

BRANDON W. PETERSON
STATE OF WASHINGTON
#73868
REGISTERED PROFESSIONAL ENGINEER
10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TEMPORARY TRAFFIC CONTROL

TTC8

SHEET 55 OF 69 SHEETS

LEGEND

SYMBOL	DESCRIPTION
	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
	TRANSPORTABLE ATTENUATOR

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

SIGN SPACING = X (1)

RURAL HIGHWAYS	60 / 65 MPH	800' +/–
RURAL ROADS	45 / 55 MPH	500' +/–
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/–
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/–(2)
URBAN STREETS	25 MPH OR LESS	100' +/–(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

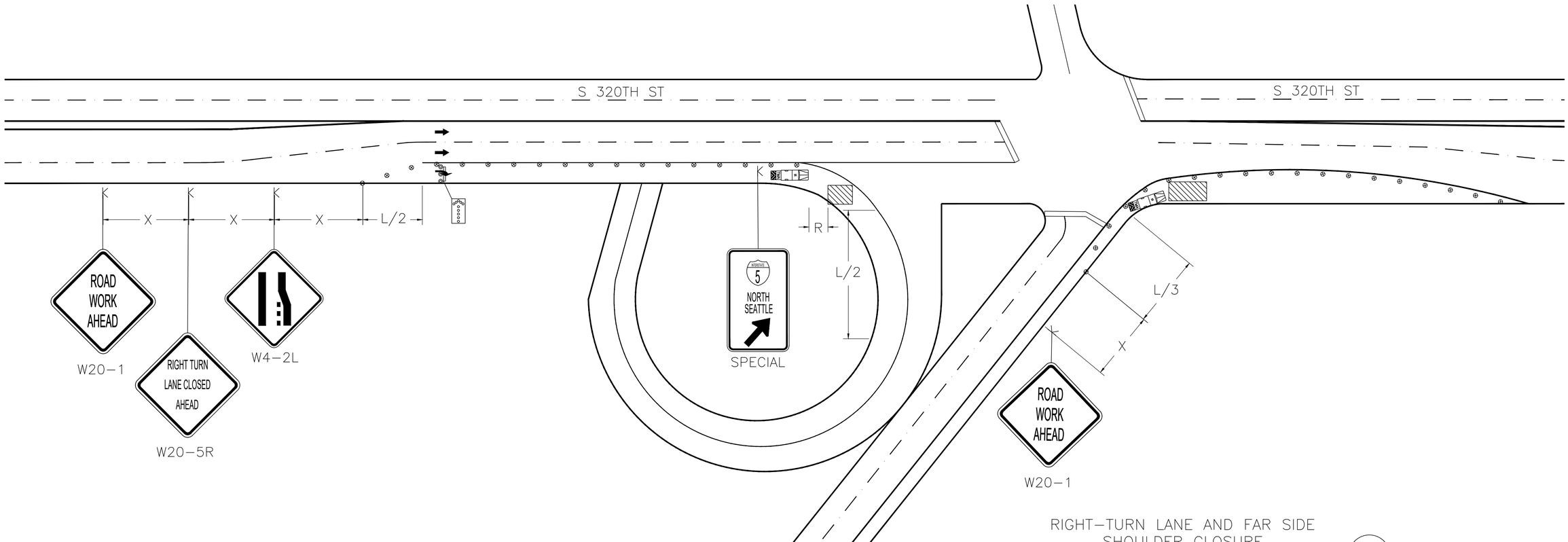
BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'



RIGHT–TURN LANE AND FAR SIDE SHOULDER CLOSURE

N.T.S.

M

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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KIRKLAND, WASHINGTON 98034
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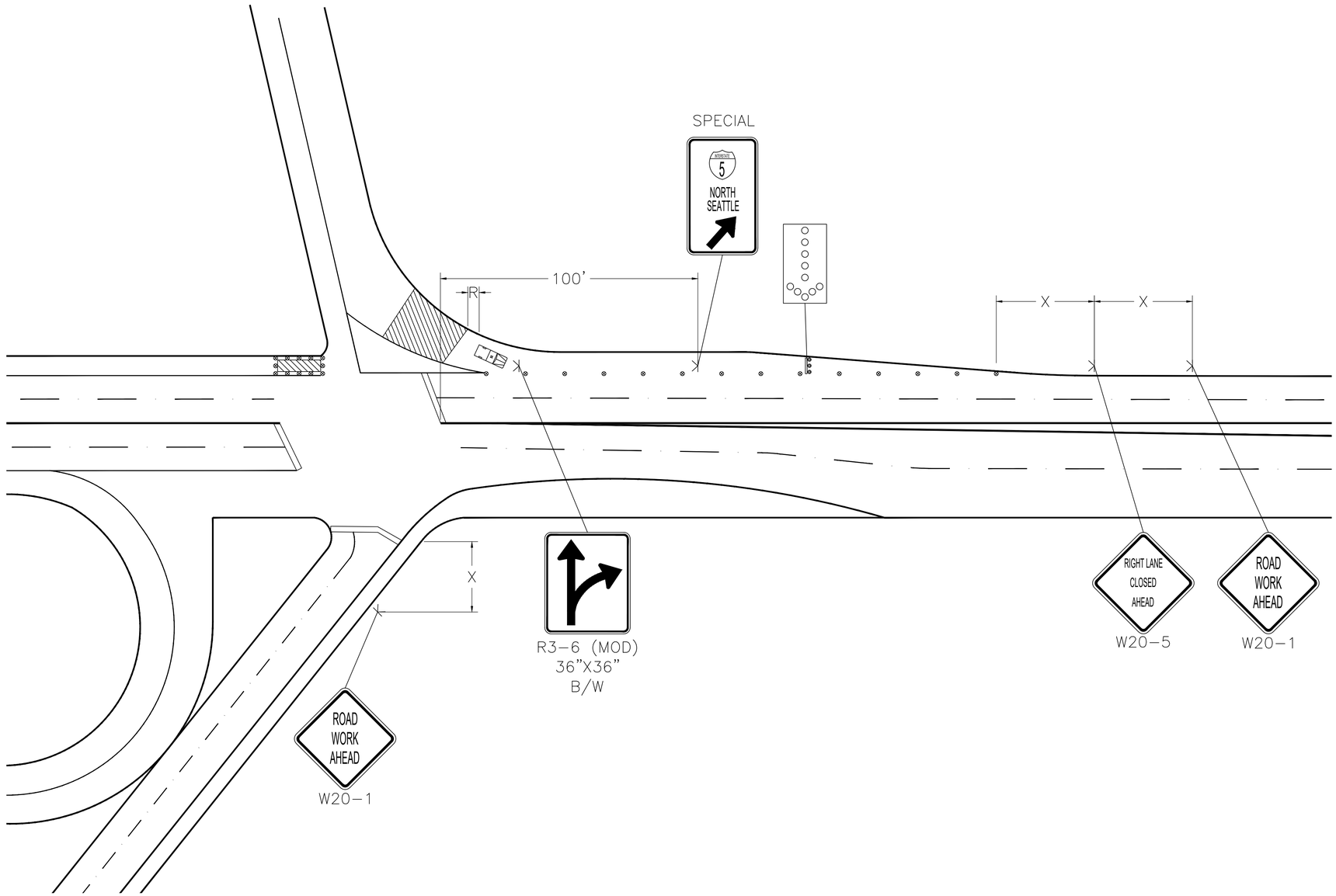
PLANS APPROVED BY DIRECTION STATE OF WASHINGTON 47388 REGISTERED PROFESSIONAL ENGINEER 10/03/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC9

TEMPORARY TRAFFIC CONTROL

SHEET 56 OF 69 SHEETS



RIGHT–TURN SLIP RAMP AND FAR SIDE SHOULDER CLOSURE

N.T.S.

N

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
TMA	TRANSPORTABLE ATTENUATOR

		DATE	REVISION	BY	DATE
DESIGNED BY	CRD	10/02/2019			
DRAWN BY	CRD	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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12131 113TH AVENUE NE, #203
KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

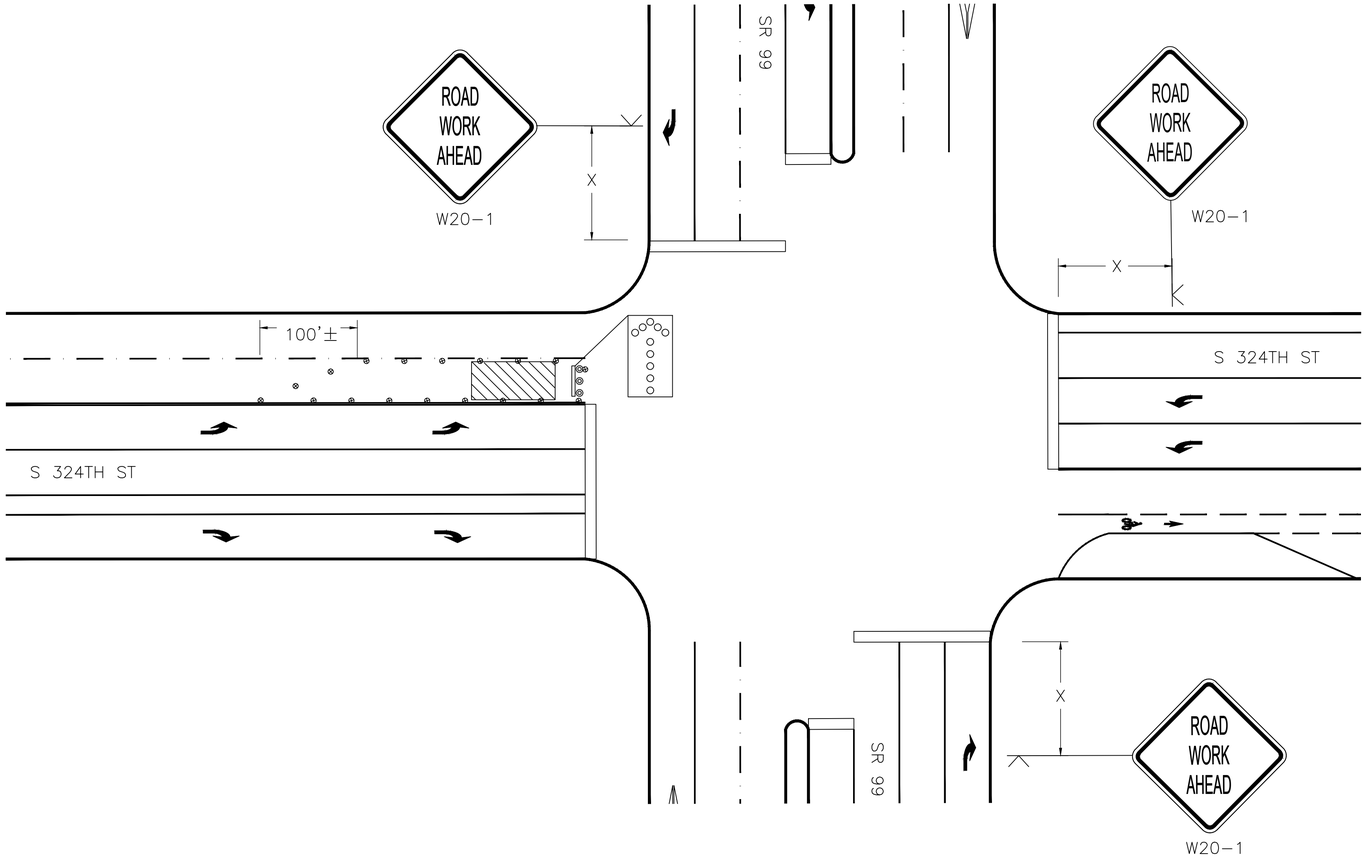
R. WESLEY PETERSEN, STATE OF WASHINGTON, #7388, REGISTERED PROFESSIONAL ENGINEER
10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC10

TEMPORARY TRAFFIC CONTROL

SHEET 57 OF 69 SHEETS



WESTBOUND EXIT LANE CLOSURE

N.T.S.

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
TMA	TRANSPORTABLE ATTENUATOR

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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12131 113TH AVENUE NE, #203
KIRKLAND, WASHINGTON 98034
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(FAX) 425 825-8434

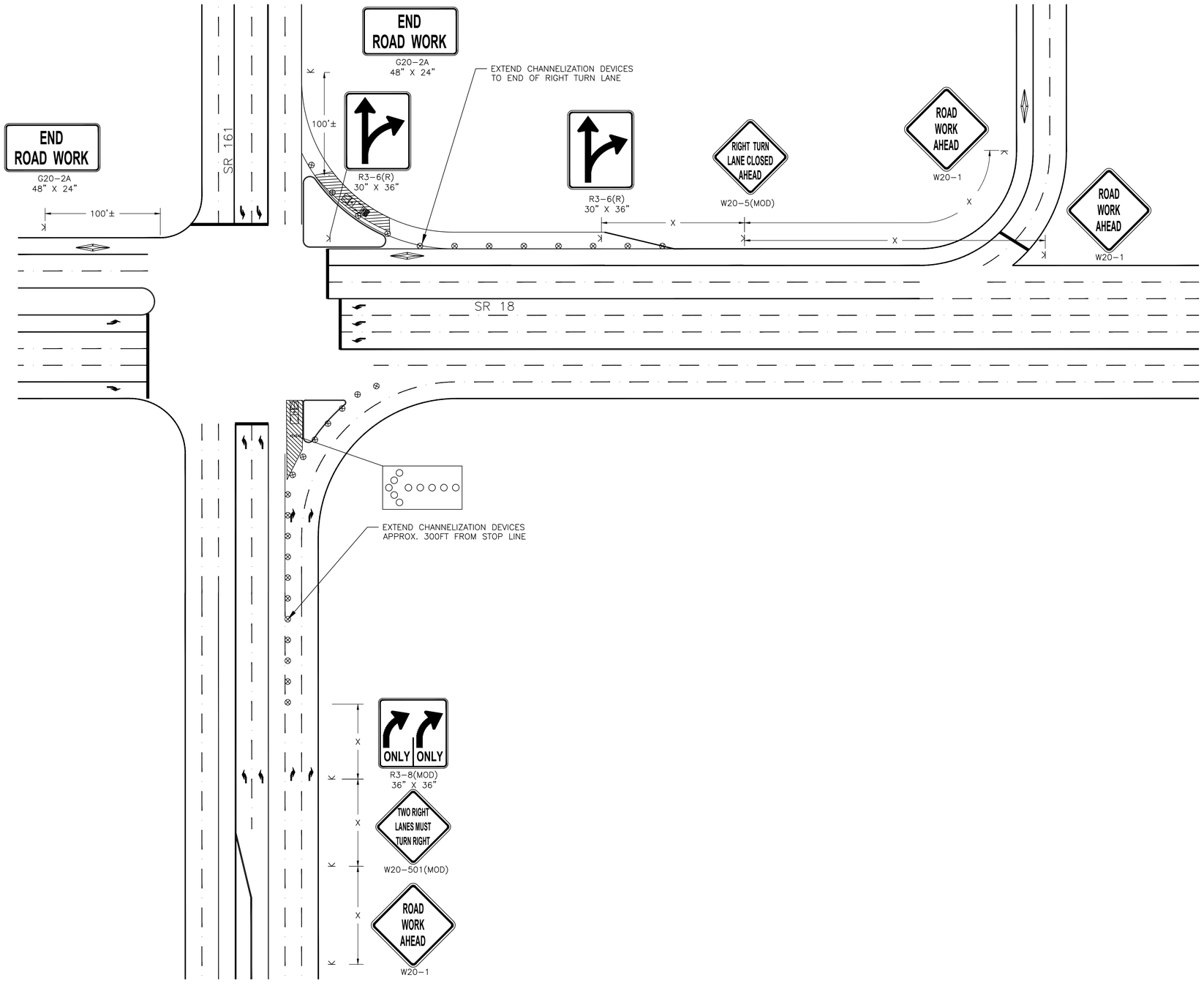
RYAN WESLEY PETERSON — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/31/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TCC11

TEMPORARY TRAFFIC CONTROL

SHEET 58 OF 69 SHEETS



NORTHBOUND RADAR/VIDEO AND
EASTBOUND RADAR INSTALLATION (R)

N.T.S.

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
⊗	CHANNELIZATION DEVICE (HIGH VISIBILITY)
TMA	TRANSPORTABLE ATTENUATOR
▷▷▷	SEQUENTIAL ARROW SIGN

		DATE	REVISION	BY	DATE
DESIGNED BY	JAH	10/02/2019			
DRAWN BY	JAH	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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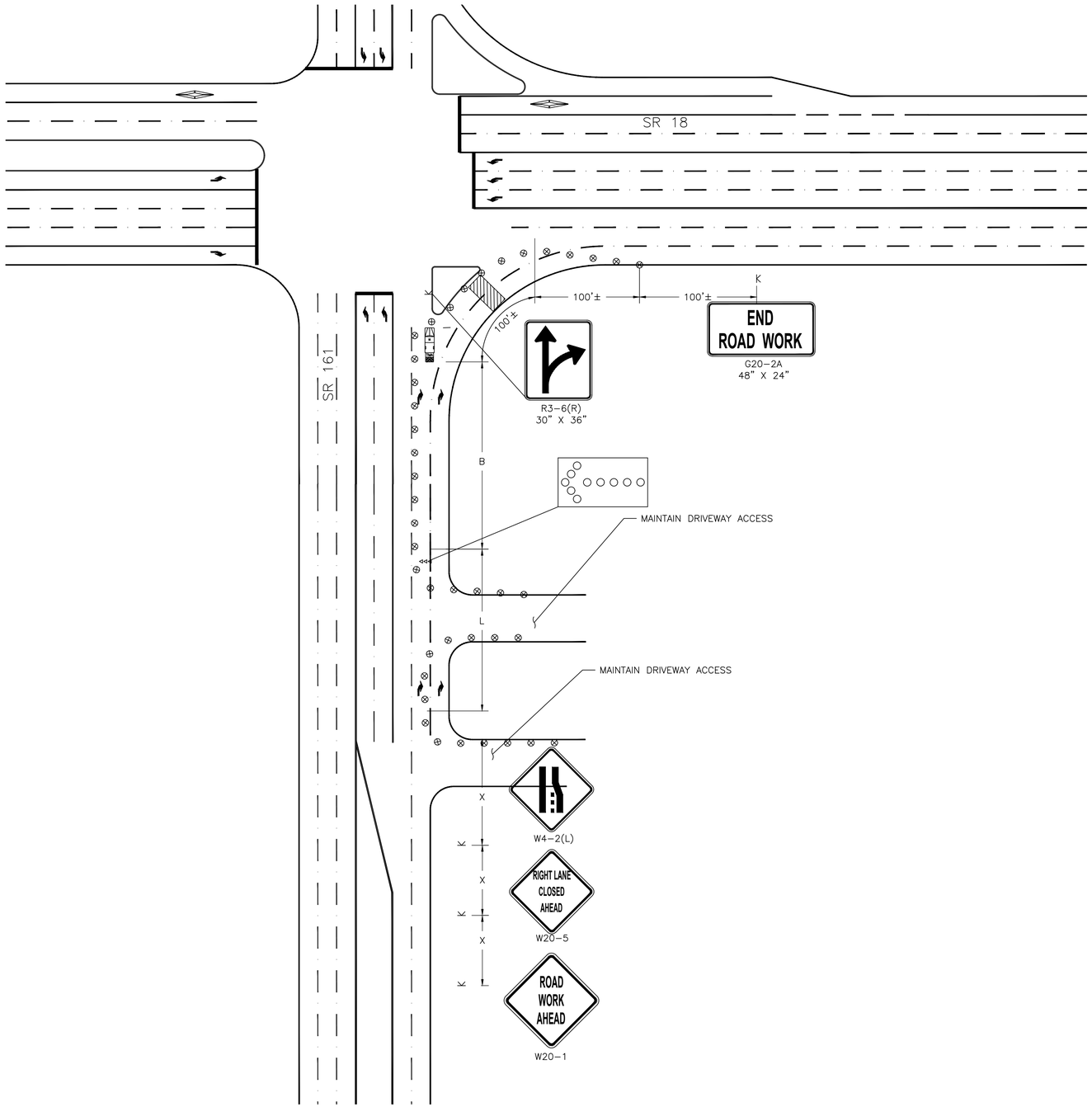
CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC12

TEMPORARY TRAFFIC CONTROL

SHEET 59 OF 69 SHEETS



NORTHBOUND RIGHT TURN LANE
LOOP INSTALLATION (S)

N.T.S.

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
⊗	CHANNELIZATION DEVICE (HIGH VISIBILITY)
TMA R	TRANSPORTABLE ATTENUATOR
▷▷▷	SEQUENTIAL ARROW SIGN

		DATE	REVISION	BY	DATE
DESIGNED BY	JAH	10/02/2019			
DRAWN BY	JAH	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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(FAX) 425 825-8434

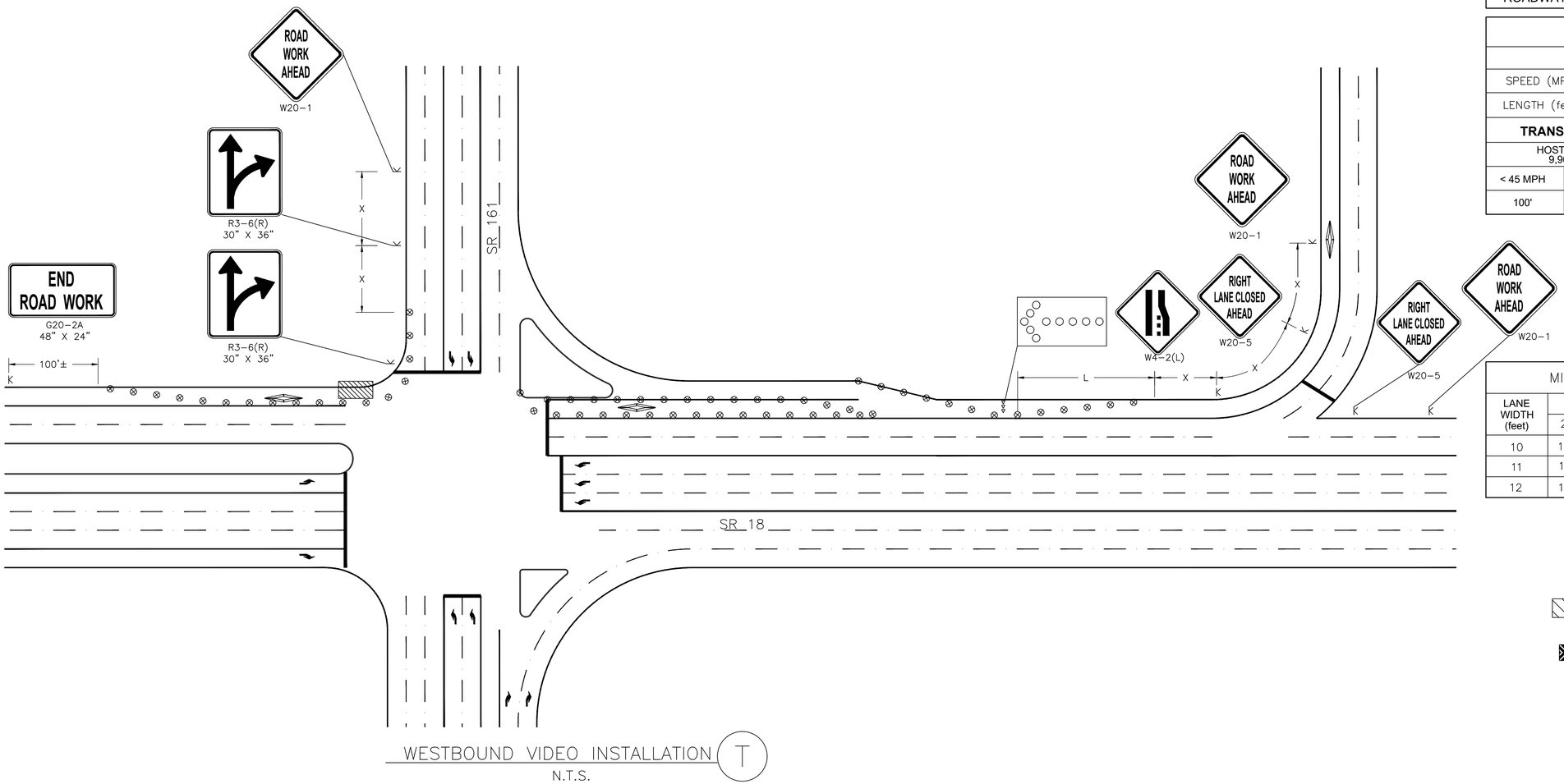
PLANS PREPARED BY OR UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF WASHINGTON
47368
REGISTERED PROFESSIONAL ENGINEER
10/03/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC13

TEMPORARY TRAFFIC CONTROL

SHEET 60 OF 69 SHEETS



WESTBOUND VIDEO INSTALLATION (T)

N.T.S.

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
K	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
TMA	TRANSPORTABLE ATTENUATOR
▷▷▷	SEQUENTIAL ARROW SIGN

		DATE	REVISION	BY	DATE
DESIGNED BY	JAH	10/02/2019			
DRAWN BY	JAH	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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12131 113TH AVENUE NE, #203
KIRKLAND, WASHINGTON 98034
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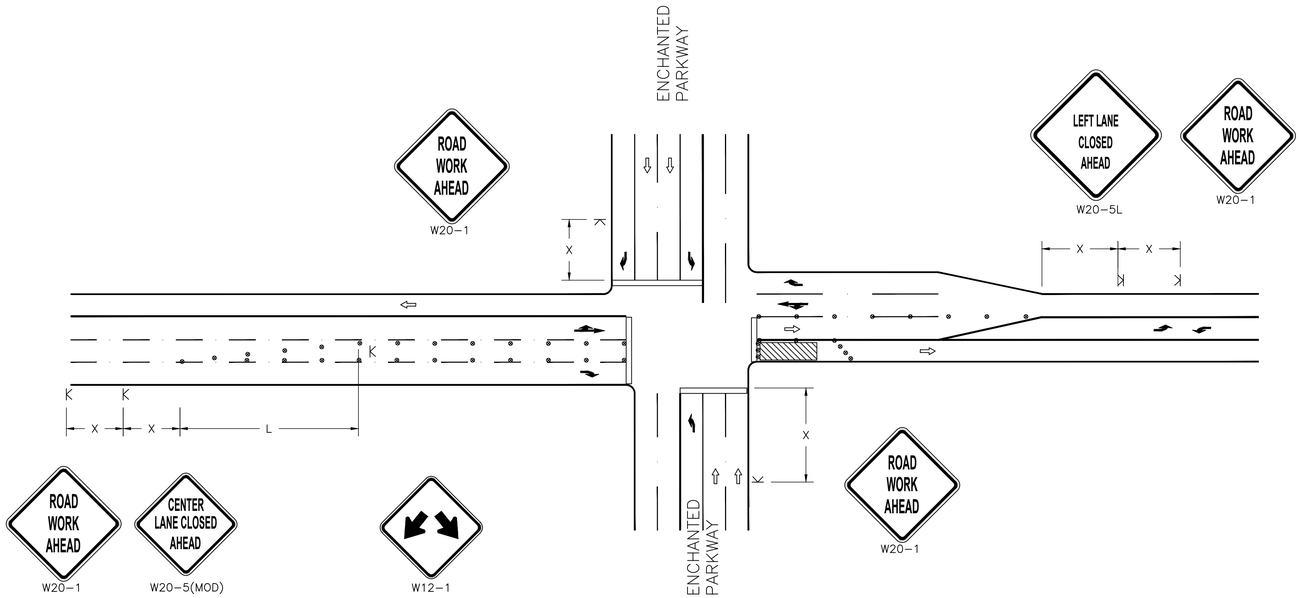
REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 47388 — RYAN W. PETERSON — 10/03/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC14

TEMPORARY TRAFFIC CONTROL

SHEET 61 OF 69 SHEETS



SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
TMA	TRANSPORTABLE ATTENUATOR

S 352ND ST AND ENCHANTED PARKWAY – EB RADAR

N.T.S.

U

		DATE	REVISION	BY	DATE
DESIGNED BY	BAS	10/02/2019			
DRAWN BY	BAS	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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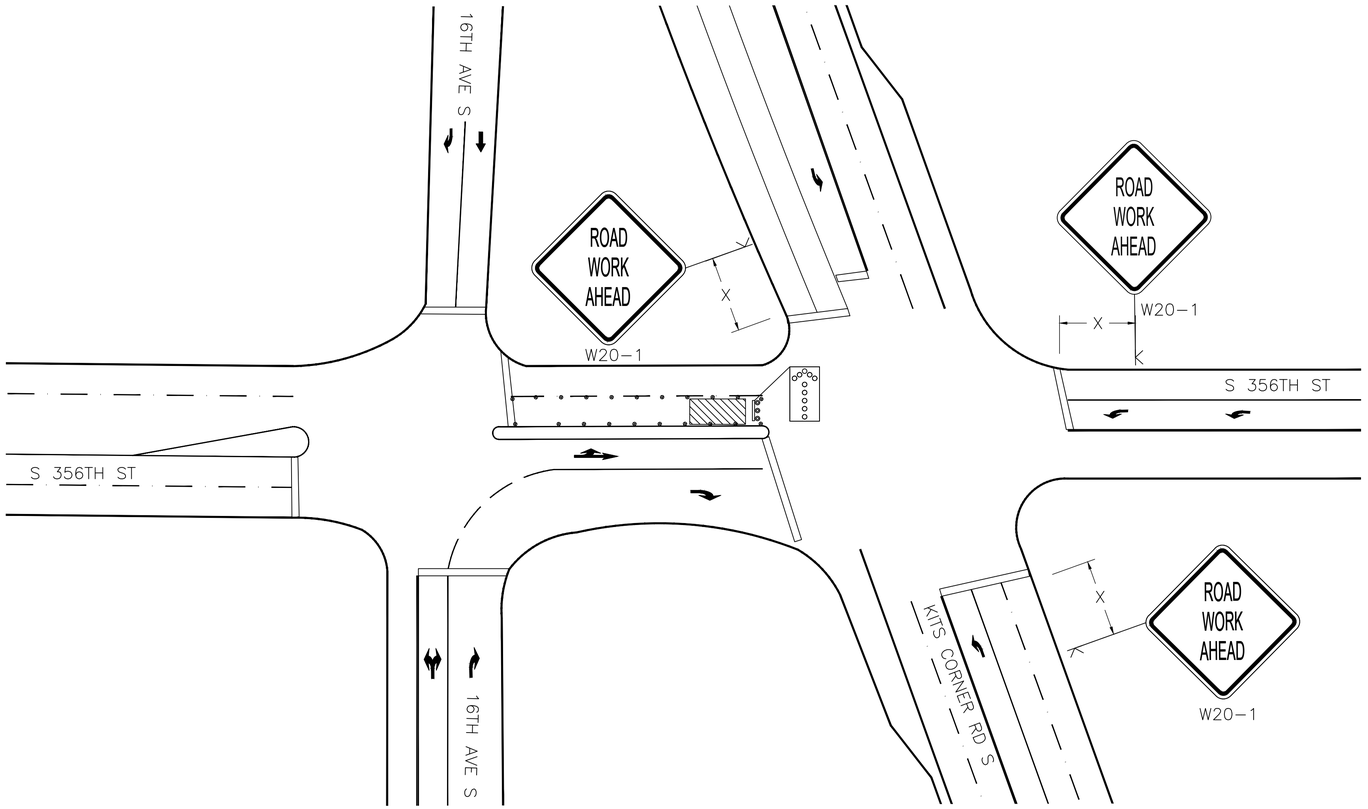
R. WESLEY PETERSEN STATE OF WASHINGTON 47388 REGISTERED PROFESSIONAL ENGINEER
10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC15

TEMPORARY TRAFFIC CONTROL

SHEET 62 OF 69 SHEETS



WESTBOUND THROUGH LANE CLOSURE

N.T.S.

W

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)										
LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
TMA	TRANSPORTABLE ATTENUATOR

		DATE	REVISION	BY	DATE
DESIGNED BY	JL	10/02/2019			
DRAWN BY	JL	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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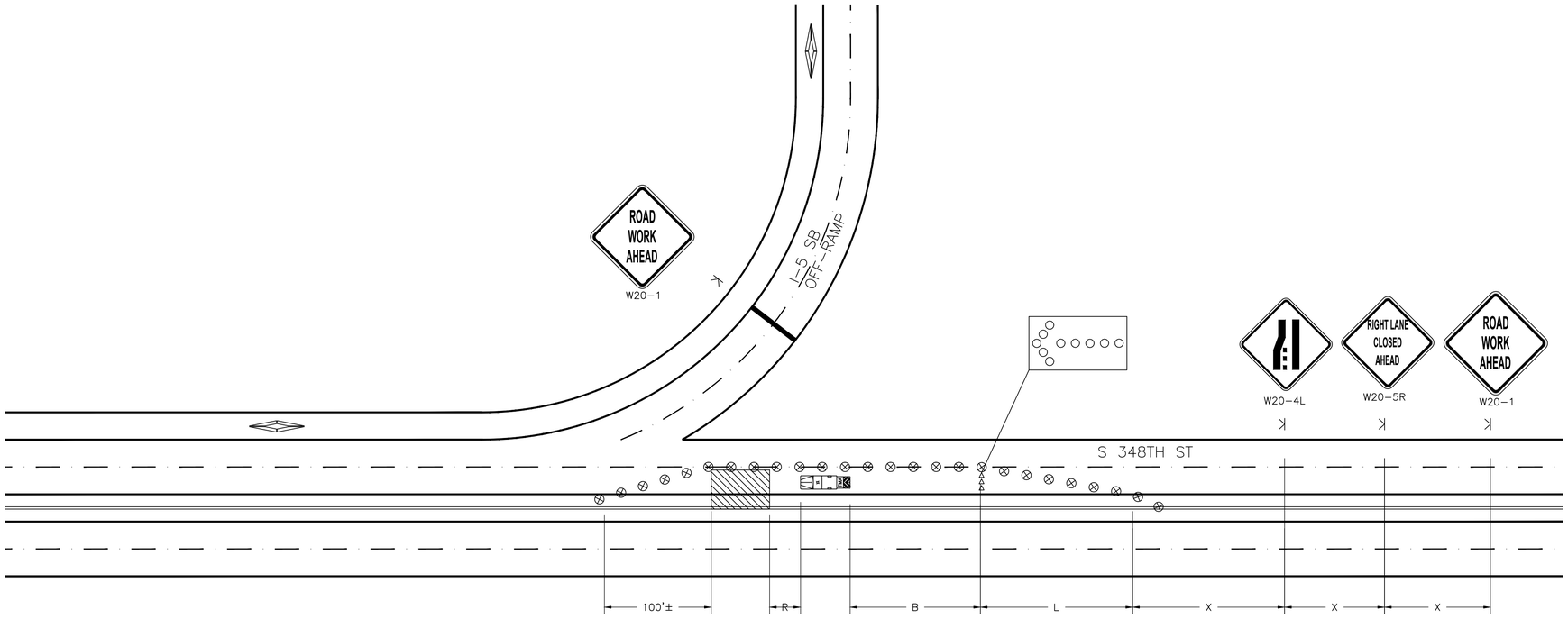
R. WESLEY PETERSEN — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER
10/02/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC16

TEMPORARY TRAFFIC CONTROL

SHEET 63 OF 69 SHEETS



SOUTHBOUND AND WESTBOUND
RADAR INSTALLATION
N.T.S.

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
TMA	TRANSPORTABLE ATTENUATOR
	FLAGGING STATION
	SEQUENTIAL ARROW SIGN

		DATE	REVISION	BY	DATE
DESIGNED BY	JAH	10/02/2019			
DRAWN BY	JAH	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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WHAT TRANSPORTATION CAN BE.
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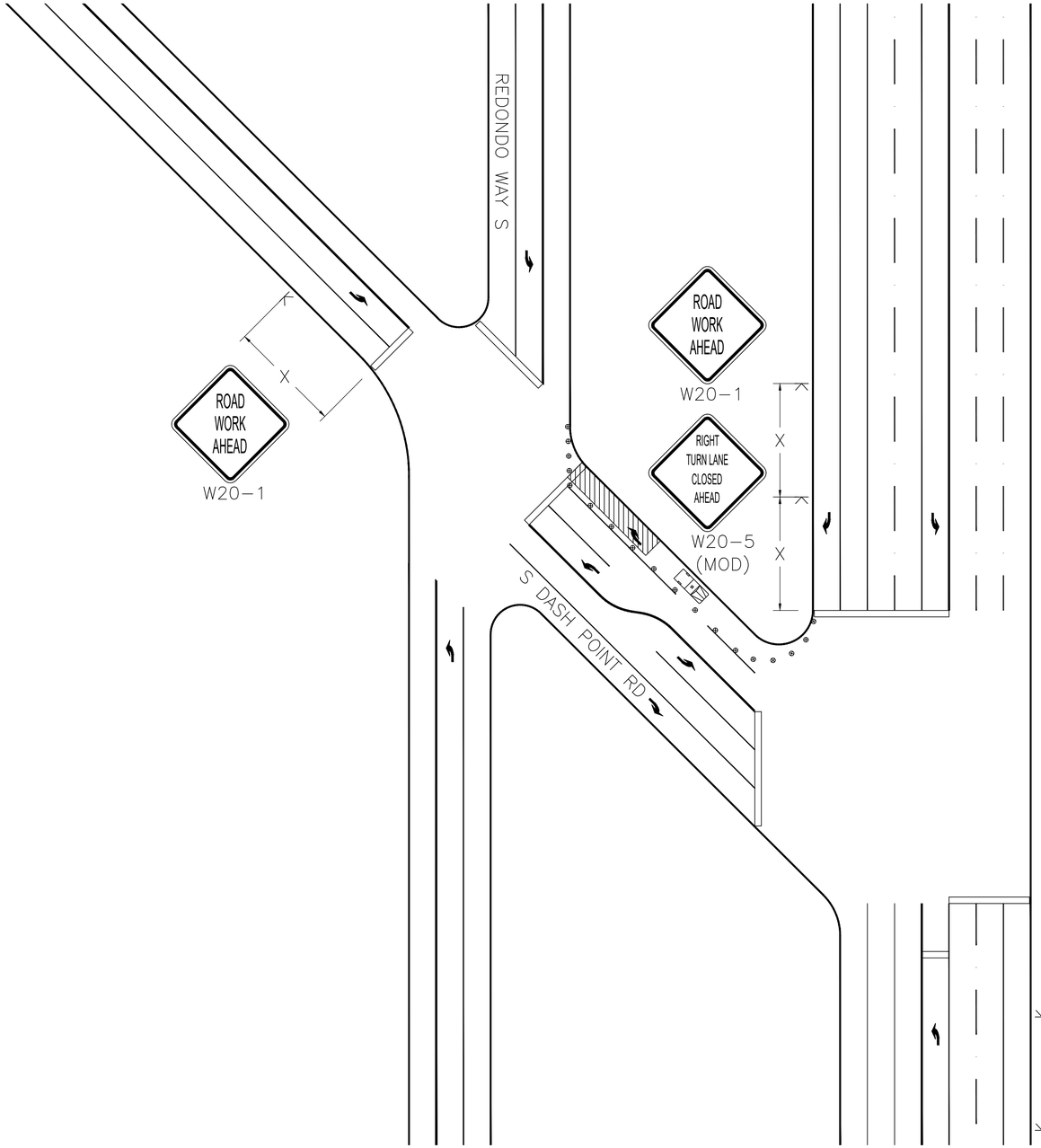
CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC17

TEMPORARY TRAFFIC CONTROL

SHEET 64 OF 69 SHEETS



RIGHT–TURN LANE CLOSURE (Y)

N.T.S.

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
⊗	CHANNELIZATION DEVICE (HIGH VISIBILITY)
TMA	TRANSPORTABLE ATTENUATOR

		DATE	REVISION	BY	DATE
DESIGNED BY	CRD	10/02/2019			
DRAWN BY	CRD	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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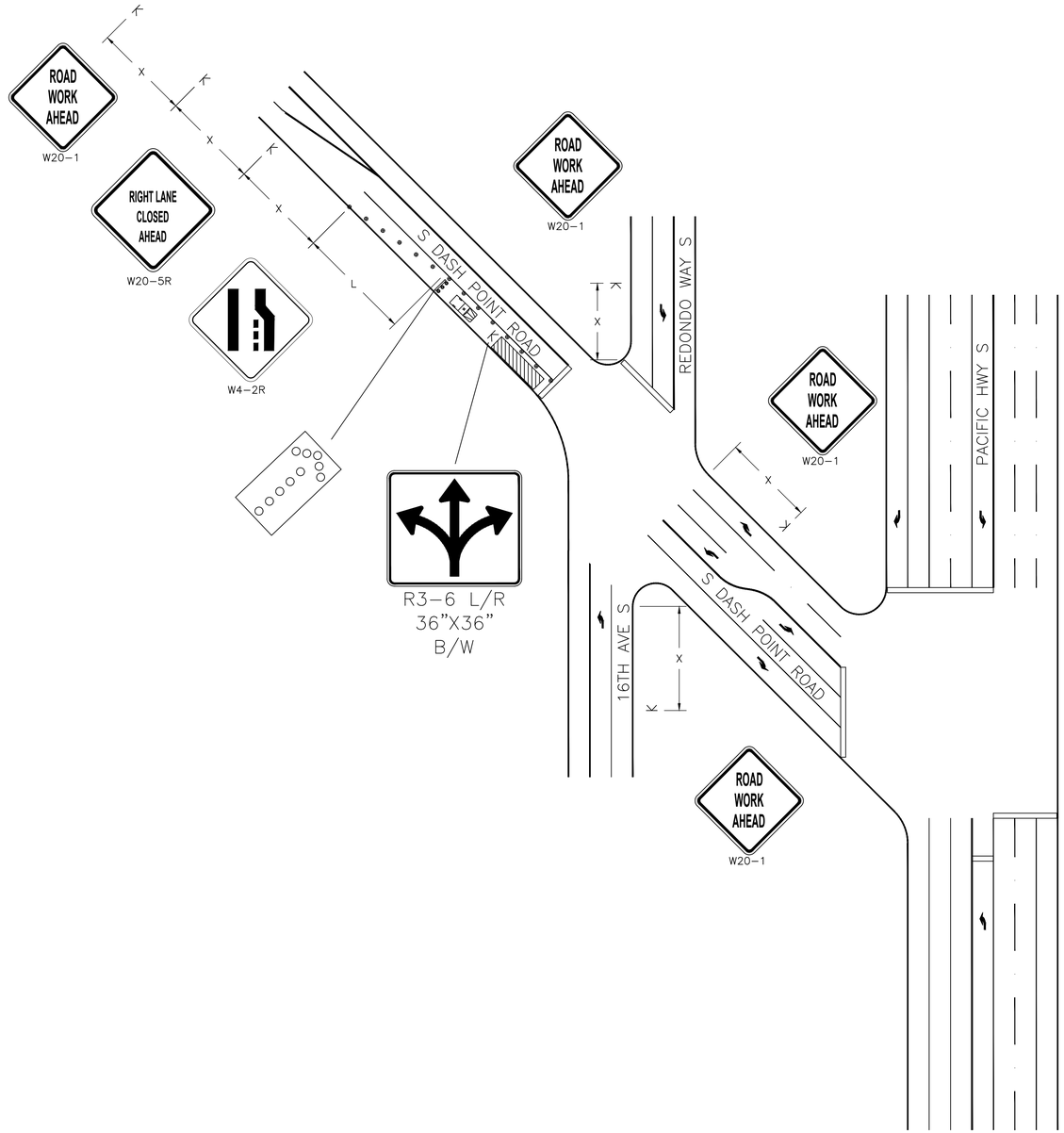
PLANS APPROVED BY PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 47368 — REGISTERED PROFESSIONAL ENGINEER

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC18

TEMPORARY TRAFFIC CONTROL

SHEET 65 OF 69 SHEETS



DASH POINT RD AND 16TH AVE S
LOOP AND VIDEO INSTALLATION (Z)
N.T.S.

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
K	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
TMA	TRANSPORTABLE ATTENUATOR

		DATE	REVISION	BY	DATE
DESIGNED BY	BAS	10/02/2019			
DRAWN BY	BAS	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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WHAT TRANSPORTATION CAN BE.
12131 113TH AVENUE NE, #203
KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

SIGNATURE REGISTERED PROFESSIONAL ENGINEER STATE OF WASHINGTON 47388 10/03/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC19

TEMPORARY TRAFFIC CONTROL

SHEET 66 OF 69 SHEETS

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' +/-
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
URBAN STREETS	25 MPH OR LESS	100' +/-(2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

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BUFFER DATA									
LONGITUDINAL BUFFER SPACE = B									
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
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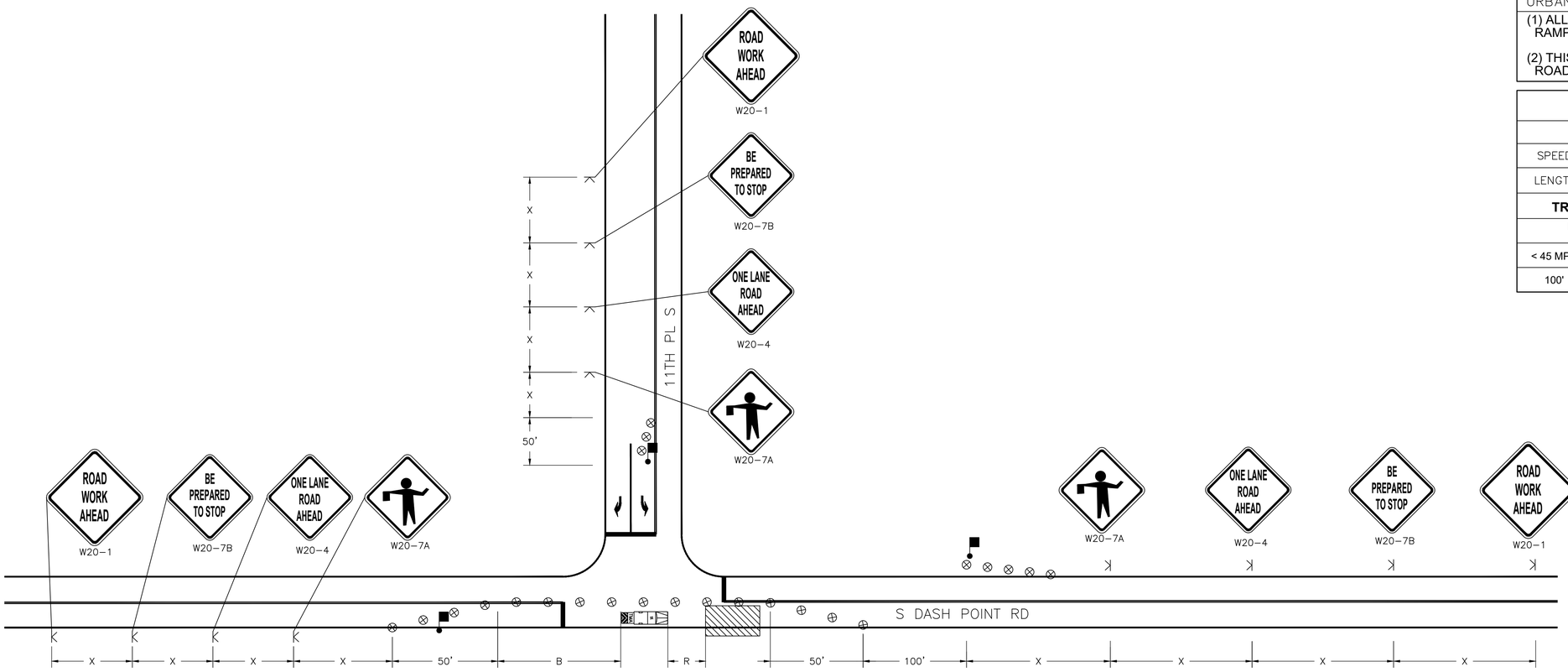
100'	123'	172'	74'	100'	150'

CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40



EASTBOUND RADAR AND VIDEO INSTALLATION (AA)
N.T.S.

LEGEND

SYMBOL	DESCRIPTION
X	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
TMA	TRANSPORTABLE ATTENUATOR
F	FLAGGING STATION

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)										
LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

		DATE	REVISION	BY	DATE
DESIGNED BY	JAH	10/02/2019			
DRAWN BY	JAH	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
(FAX) 425 825-8434

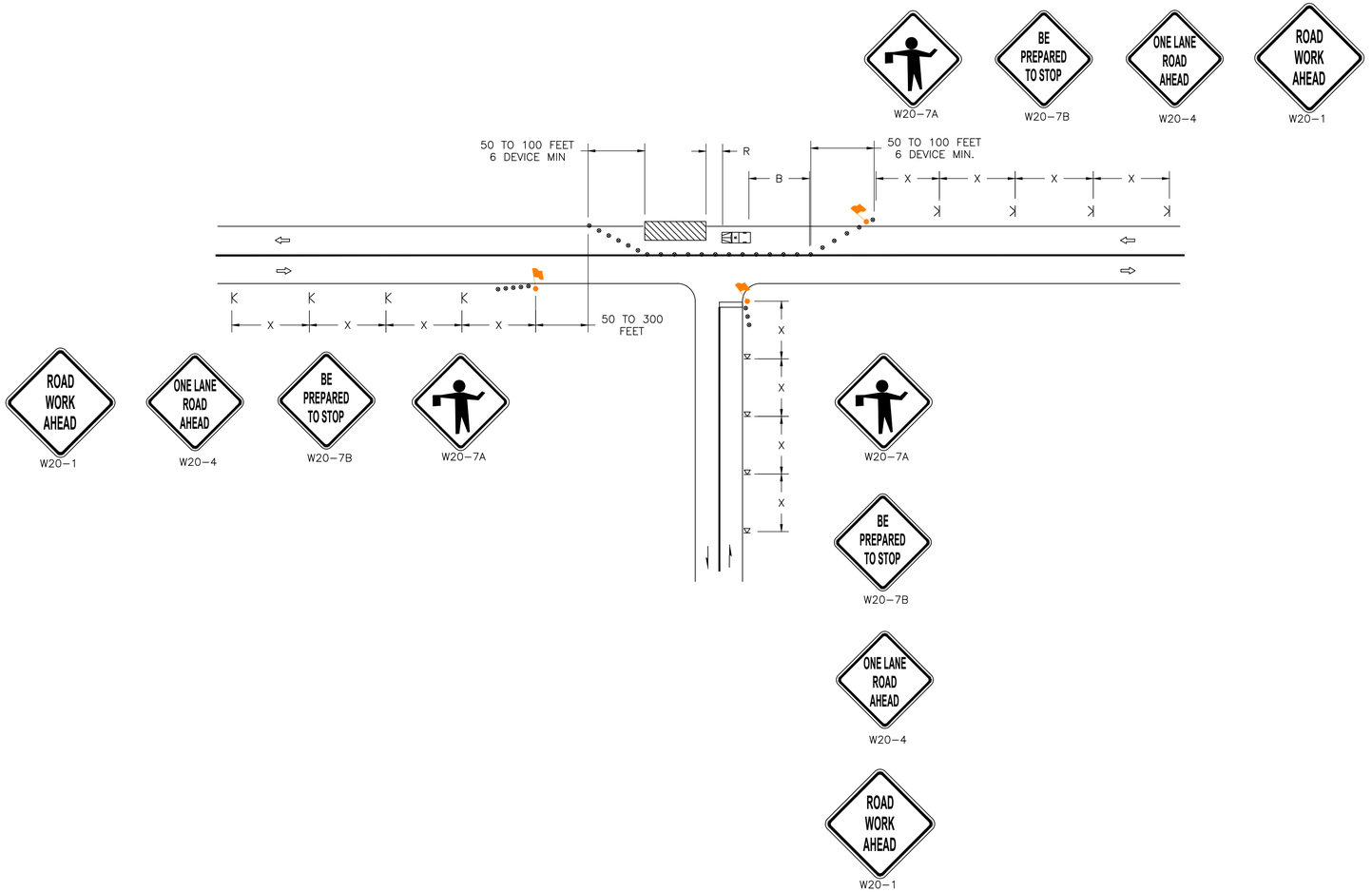
PLANS WERE BY THE PERSON WHOSE NAME AND SEAL APPEARS HEREON, A REGISTERED PROFESSIONAL ENGINEER 47388 STATE OF WASHINGTON 10/2/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TEMPORARY TRAFFIC CONTROL

TTC20

SHEET 20 OF 69 SHEETS



SIGN SPACING = X (1)

RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
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RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25 / 30 MPH	200' +/-(2)
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BUFFER DATA

LONGITUDINAL BUFFER SPACE = B

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TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R

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CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	–	–	–
11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
K	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
TMA	TRANSPORTABLE ATTENUATOR

FLAGGER CONTROLLED SINGLE LANE CLOSURE NEAR INTERSECTION — BB

N.T.S.

		DATE	REVISION	BY	DATE
DESIGNED BY	BAS	10/02/2019			
DRAWN BY	BAS	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

CITY OF Federal Way

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KIRKLAND, WASHINGTON 98034
(TEL) 425 821-3665
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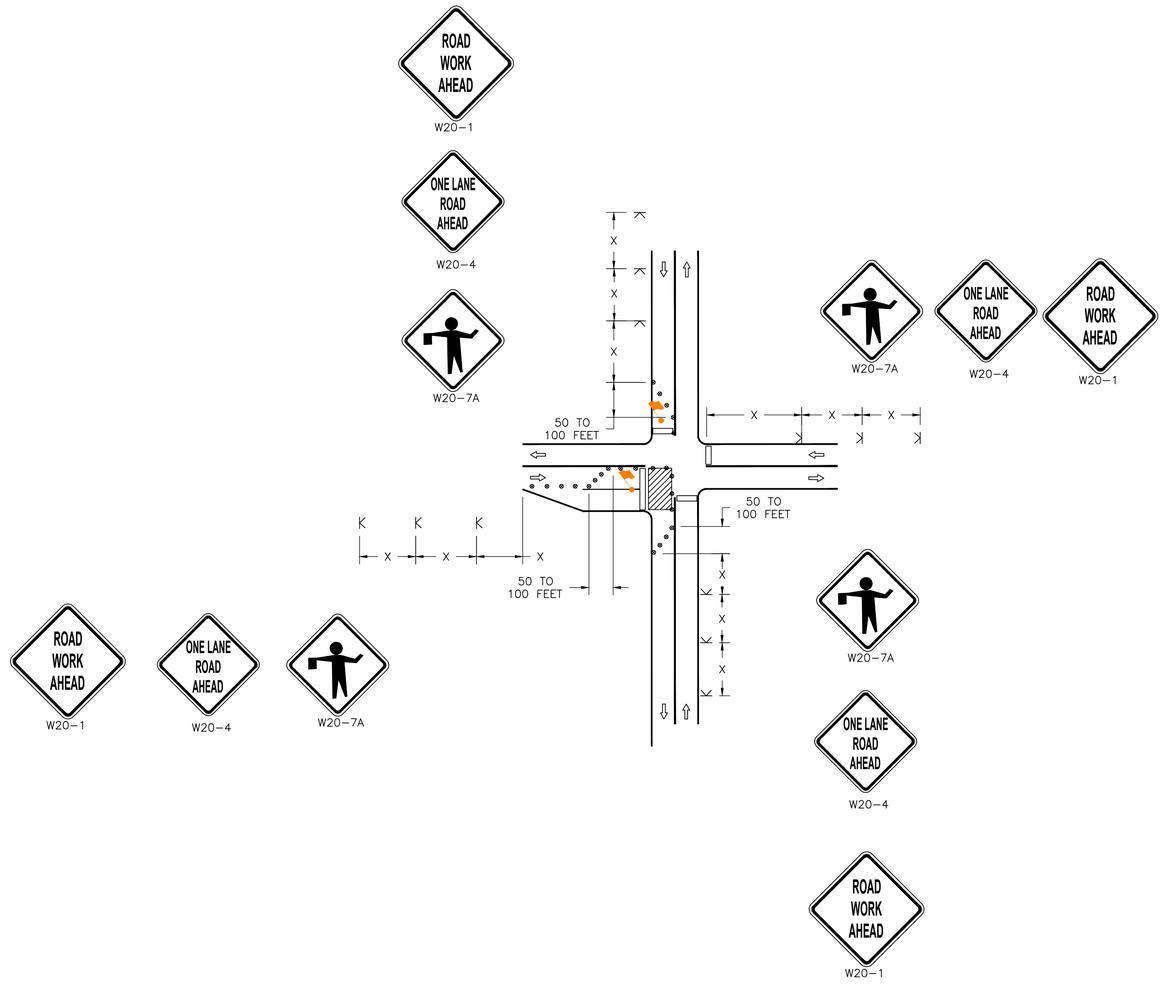
RYAN WESLEY DEVERSON — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/03/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC21

TEMPORARY TRAFFIC CONTROL

SHEET 68 OF 69 SHEETS



FLAGGER CONTROL FOR LANE CLOSURE AT INTERSECTION WITH RIGHT TURN LANE

N.T.S.

CC

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' +/-
RURAL ROADS	45 / 55 MPH	500' +/-
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MPH	TAPER	TANGENT
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MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

LANE WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
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11	115	165	225	295	495	550	605	660	–	–
12	125	180	245	320	540	600	660	720	780	840

LEGEND

SYMBOL	DESCRIPTION
	TEMPORARY SIGN
	WORK ZONE
	CHANNELIZATION DEVICE (HIGH VISIBILITY)
	ARROW BOARD SUPPORT
	ARROW BOARD
TMA	TRANSPORTABLE ATTENUATOR

		DATE	REVISION	BY	DATE
DESIGNED BY	BAS	10/02/2019			
DRAWN BY	BAS	10/02/2019			
REVIEWED BY	RWP	10/02/2019			

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(FAX) 425 825-8434

JEANNE LESLEY PETERSON — STATE OF WASHINGTON — 47388 — REGISTERED PROFESSIONAL ENGINEER — 10/31/19

CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM – ITS IMPROVEMENTS

TTC22

TEMPORARY TRAFFIC CONTROL

SHEET 69 OF 69 SHEETS