

**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		
CABLE VAULT		
PULL BOX		
LOOP DETECTOR		
STOP LINE DETECTION ZONE (6' X 35')		
ADVANCE RADAR DETECTION ZONE (6' X 6')		
EXIT VIDEO DETECTION ZONE (6' X 6')		
FILTER VIDEO DETECTION ZONE (6' X 6')		

**DETECTION NOTES**

- ALL DETECTION LOOPS/ZONES SHALL BE LOCATED IN THE CENTER OF THE TRAVEL LANE.
- FILTER DETECTION LOOPS/ZONES SHALL BE LOCATED 4' ON-CENTER BACK FROM THE STOP LINE, UNLESS OTHERWISE NOTED.
- EXIT VIDEO DETECTION ZONES SHALL BE LOCATED AS SHOWN, UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL COORDINATE DETECTOR CHANNEL ASSIGNMENTS WITH KING COUNTY ROADS LEAD TRAFFIC SIGNAL TECHNICIAN.
- ALL EXISTING LOOPS AND VIDEO DETECTION ZONES SHALL BE MAINTAINED.
- ADVANCE LEFT-TURN LANE DETECTION LOOPS/ZONES SHALL BE LOCATED AT THE BEGINNING OF THE LEFT-TURN LANE, UNLESS OTHERWISE NOTED.
- 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**

- 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.
- 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.
- 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.
- 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).
- 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.
- 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.
- INSTALL HYBRID RADAR/VIDEO DETECTION CONTROL UNIT IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.
- 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.
- 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.
- RE-ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.
- RE-ORIENT EXISTING VIDEO DETECTION CAMERA ON EXISTING SIGNAL MAST ARM TO PROVIDE EXIT DETECTION PER MANUFACTURER'S RECOMMENDATION.
- 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.
- REMOVE EXISTING VIDEO DETECTION RACK FROM EXISTING TRAFFIC SIGNAL CONTROLLER CABINET FOR USE AT OTHER LOCATIONS ON THIS PROJECT.
- 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.
- INSTALL SPLICE CLOSURE AND SPLICE 24 SMFO PRE-TERMINATED STUB CABLE TO EXISTING FIBER OPTIC CABLE PER DETAILS ON SHEETS ITS58-ITS60.
- INSTALL 24-PORT FIBER OPTIC PATCH PANEL IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.
- INSTALL ETHERNET SWITCH AND SFP MODULE(S) IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET PER DETAILS ON SHEETS ITS58-ITS60.
- INSTALL VIDEO DETECTION RACK IN EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.
- 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)**

- 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.
- 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 ITS01, AS APPLICABLE.
- INSTALL HYBRID RADAR/VIDEO DETECTION CAMERA ON EXISTING TYPE 1 POLE PER MANUFACTURER'S RECOMMENDATION. TERMINATE CONDUCTOR IN HYBRID RADAR/VIDEO DETECTION CONTROL UNIT.
- 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 ITS01.
- SALVAGE EXISTING GRIDSMART VIDEO DETECTION CAMERA AND ASSOCIATED EQUIPMENT FROM EXISTING SIGNAL MAST ARM.
- SALVAGE EXISTING GRIDSMART VIDEO DETECTION CONTROL UNIT FROM EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.
- 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.
- INSTALL TYPE 1 JUNCTION BOX.
- REMOVE AND REPLACE EXISTING TYPE 1 JUNCTION BOX WITH TYPE 2 JUNCTION BOX.
- 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.
- 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.
- 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.
- INSTALL SFP MODULE IN EXISTING ETHERNET SWITCH PER DETAILS ON SHEETS ITS58-ITS60.
- 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.
- 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.

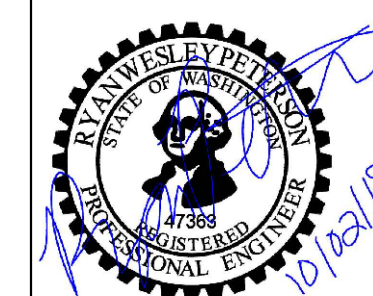
**NOTES**

- 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.
- THE LOCATIONS OF FEATURES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION WORK.
- 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.
- 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.
- 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.
- 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.
- ANY EXISTING UTILITIES THAT ARE IN SERVICE SHALL REMAIN OPERATIONAL AT ALL TIMES.
- 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.
- CONTRACTOR SHALL SUBMIT ALL MATERIAL CUT SHEETS TO THE CITY ENGINEER FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.
- ALL NEW CABLES INSTALLED BY THE CONTRACTOR SHALL BE LABELED IN EACH JUNCTION BOX, CABLE VAULT, AND TRAFFIC SIGNAL CONTROLLER CABINET.
- EXISTING CONDUCTORS LISTED IN THE WIRING SCHEDULE ARE FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM CONDUIT CONTENTS IN THE FIELD.
- 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.
- 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.
- ALL LIDS AND FRAMES FOR NEW JUNCTION BOXES AND CABLE VAULTS LOCATED IN SIDEWALKS SHALL HAVE NON-SLIP SURFACES.
- 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.
- CONTRACTOR SHALL COIL AND RACK 50', UNLESS OTHERWISE NOTED, OF EACH NEW FIBER OPTIC CABLE IN ALL PULL BOXES AND CABLE VAULTS.
- CONTRACTOR SHALL INSTALL 15' OF FIBER OPTIC CABLE SLACK IN ALL JUNCTION BOXES CONTAINING NEW FIBER OPTIC CABLE, UNLESS OTHERWISE NOTED.
- NEW JUNCTION BOXES SHALL BE INSTALLED PER WSDOT STANDARD PLAN J-40.10-04 AND J-40.20-03.
- SMALL CABLE VAULTS SHALL BE INSTALLED PER WSDOT STANDARD PLANS J-90.21-02 AND J-90.50-00.
- SEE SHEETS TTC1-TTC22 FOR TEMPORARY TRAFFIC CONTROL PLANS AND NOTES.

		DATE	REVISION	BY	DATE
DESIGNED BY	DGN	10/02/2019	ADDENDUM #2	RWP	10/22/2019
DRAWN BY	DGN	10/02/2019			
REVIEWED BY	JC	10/02/2019			



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CITYWIDE ADAPTIVE SIGNAL CONTROL SYSTEM - ITS IMPROVEMENTS

ITSN01

SHEET 1 OF 69 SHEETS

NOTES AND LEGEND