

REVISIONS		
NO.	DESCRIPTION	DATE
1	UPDATED CATEGORY #	09/28/17

TRAFFIC SIGNAL GENERAL CONSTRUCTION NOTES

- (C-1) ANY SIGNS AND/OR DELINEATORS WHICH ARE TO BE REMOVED DURING THIS PROJECT WILL BE STORED IN A PROTECTED AREA DESIGNATED BY THE RESIDENT ENGINEER UNTIL SUCH A TIME THAT THEY ARE TO BE RESET BY THE CONTRACTOR. COST OF THIS WORK TO BE INCLUDED IN OTHER ITEMS OF WORK.
- (C-2) EXISTING ROADWAY SHALL REMAIN OPEN DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER BARRICADES, LIGHTS, AND SIGNING WITHIN THE LIMITS OF CONSTRUCTION. ALL CONSTRUCTION SIGNING WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS. CONSTRUCTION TRAFFIC CONTROL WILL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS.
- (C-3) THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING TRAFFIC ON CROSS STREETS. A MINIMUM OF ONE LANE IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.
- (C-6) THE STRUCTURAL DESIGN OF ALL POLES, MAST ARMS, HIGH-MAST POLES, AND OTHER SUPPORTS FOR SIGNS, LUMINAIRES, AND SIGNALS, AS WELL AS THEIR CONNECTIONS, SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. THE MANUFACTURER SHALL ENSURE THE FOLLOWING ARE APPLIED TO THE DESIGN:

 THE MINIMUM DESIGN WIND SPEED AND DESIGN LIFE AS REQUIRED IN THE AASHTO SPECIFICATIONS;

 THE CALCULATED STRESSES AND FORCES FROM THE DESIGN LOADINGS DO NOT EXCEED THOSE REQUIRED IN THE AASHTO SPECIFICATIONS;

 A CATEGORY I FATIGUE IMPORTANCE FACTOR (IF) FOR ALL STRUCTURES; NO VIBRATORY MITIGATION SHALL BE ALLOWED. TRUCK-INDUCED GUSTS SHALL BE APPLIED TO ALL OVERHEAD TRAFFIC SIGNAL SUPPORTS.

 ALL MEMBERS ARE AT LEAST THE MINIMUM THICKNESS AS REQUIRED IN THE AASHTO SPECIFICATIONS;

 LUMINAIRE MAST ARMS SHALL BE DESIGNED TO SUPPORT AT LEAST A 50 LB. (22.7 KG) LUMINAIRE WITH AN EFFECTIVE PROJECTED AREA OF 2.5 FT² (0.23 M²); THE ANCHOR BOLT DESIGN AND AMOUNT OF ANCHOR BOLTS TO BE USED SHALL BE AS REQUIRED IN THE AASHTO SPECIFICATIONS.

 SIGNAL MAST ARMS AND POLES SHALL BE DESIGNED FOR SPECIFIC SIGNAL HEAD AND SIGN PLACEMENT.

 UNLESS SITE SPECIFIC GEOTECHNICAL DATA IS AVAILABLE, FOUNDATIONS SHALL BE DESIGNED UTILIZING THESE PARAMETERS: SHEAR STRENGTH OF COHESIVE SOIL (C) OF 500 PSF, ANGLE OF INTERNAL FRICTION (?) OF 22 DEGREES, AND EFFECTIVE UNIT WEIGHT OF SOIL (?) OF 120 PCF.

 MINIMUM HAND HOLE SIZE OF 3 INCH WIDTH BY 5 INCH HEIGHT.
- (C-150) SYMBOLS AND LEGENDS ARE DIAGRAMMATIC ONLY AND LOCATIONS SHALL BE ADJUSTED FOR EXISTING FIELD CONDITIONS, BUT NO MAJOR ALTERATIONS OR RELOCATIONS WILL BE MADE WITHOUT FIRST CONSULTING WITH THE TRAFFIC ENGINEERING DIVISION AT (405)521-2861.
- (C-151) THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING THE EXISTING ROAD TO LOCAL AND THROUGH TRAFFIC. SEE STANDARD SPECIFICATIONS FOR MAINTENANCE OF LOCAL AND THROUGH TRAFFIC.
- (C-152) ALL BROKEN CONCRETE, WASTE MATERIAL, AND DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE REMOVED FROM THE LIMITS OF THE PROJECT AND DISPOSED OF IN AN AREA APPROVED BY THE ENGINEER. NO PAYMENT WILL BE MADE FOR THE DISPOSAL OF THIS MATERIAL.
- (C-155) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE HE MAY INFLICT TO THE EXISTING UNDERGROUND UTILITIES WITHIN THE PROJECT AREA AS A RESULT OF HIS DIGGING, TRENCHING, BORING, ETC.... PRIOR TO DIGGING NEAR THE UTILITIES, THE CONTRACTOR SHALL CALL FOR A LIST OF ALL UNDERGROUND FACILITIES REGISTERED IN THE AREA OF CONSTRUCTION LISTED WITH THE FOLLOWING AGENCIES:
 THE "OKIE" NOTIFICATION CENTER 811 OR (405)522-6543 OR WWW.CALLOKIE.COM OR THE LOCAL COUNTY CLERK'S OFFICE.

TRAFFIC SIGNAL PAY QUANTITY NOTES

- (TP-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITY. SEE THE 2009 SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- (TS-18) THE CITY OF OKLAHOMA CITY WILL PROVIDE THE SIGNAL CONTROLLER TIMING PLAN. CONTACT THE TRAFFIC MANAGEMENT DIVISION AT LEAST TEN (10) WORKING DAYS PRIOR TO THE ANTICIPATED TURN ON DATE.
- (TS-27) THIS BID ITEM CONSISTS OF THE INSTALLATION OF FOUR MAST ARM MOUNTED INTEGRATED THERMAL TRAFFIC SENSORS AT THE INTERSECTION OF 4, ASSOCIATED WIRING/CABLES, INTERFACE PANELS, NEMA TS--2 SDLC CONTROLLER INTERFACE MODULES AND ALL OTHER NECESSARY ITEMS OF WORK FOR A COMPLETE OPERATIONAL VEHICLE DETECTION SYSTEM. THE INTEGRATED THERMAL TRAFFIC SENSORS SHALL UTILIZE FORWARD LOOKING INFRARED CAMERA TECHNOLOGY AND DETECTION PROCESSING WITHIN THE SINGLE SENSOR WITHOUT REQUIRING DETECTION PROCESSORS IN THE TRAFFIC CONTROLLER CABINET, AND SHALL BE ABLE TO DETECT AND REPORT PRESENCE OF VEHICLES 24 HOURS PER DAY WITHOUT NEEDING ARTIFICIAL LIGHTING IN ALL WEATHER AND NATURAL LIGHTING CONDITIONS WITHIN A 17, 25, 35, OR 90 DEGREE FIELD OF VIEW INTEGRATED THERMAL TRAFFIC SENSORS SHALL BE ABLE TO DETECT AND REPORT PRESENCE IN CURVED LANES AND AREAS WITH ISLANDS AND MEDIANS. THE INTEGRATED THERMAL TRAFFIC SENSORS SHALL UTILIZE ONLY THREE CONDUCTOR WIRES FOR POWER AND COMMUNICATIONS AND SHALL NOT REQUIRE COAXIAL CABLE. FIELD SETUP SHALL BE DONE USING A SETUP COMPUTER RUNNING MICROSOFT WINDOWS 7/WINDOWS 8 OR A TOUCH-SCREEN TABLET RUNNING WINDOWS SURFACE PRO OPERATING SYSTEM. INTERFACE SOFTWARE SHALL BE PROVIDED TO THE CITY AT NO ADDITIONAL COST. CONTRACTOR SHALL NOT BE REQUIRED TO PROVIDE A SETUP COMPUTER OR TABLET UNLESS SPECIFICALLY CALLED OUT ELSEWHERE IN THE PROJECT SPECIFICATIONS.

 SUPPLIER OF INTEGRATED THERMAL TRAFFIC SENSORS SHALL VERIFY SENSOR FIELD OF VIEW ANGLE REQUIRED FOR INDIVIDUAL APPROACHES BASED ON PROJECT PLANS AND/OR SITE SURVEY PRIOR TO ORDERING EQUIPMENT.

 CABINET INTERFACE FOR THE SYSTEM SHALL BE LIMITED TO A OWER/COMMUNICATIONS INTERFACE PANEL, ETHERNET COMMUNICATIONS EDGE CARD USING BROADBAND - OVER - POWER (BPL) TECHNOLOGY, AND A TS-2 SDLC MODULE AND SHALL BE COMPATIBLE WITH STANDARD NEMA TS-1 AND TS-2 LOOP DETECTOR CARD RACKS. TS-2 SDLC MODULE SHALL BE CONFIGURED SO THAT VEHICLE AND BICYCLE DETECTION OUTPUTS ARE ASSIGNED STARTING WITH TS-2 DETECTOR INPUT #17. DETECTOR INPUTS 1 THROUGH 16 ARE RESERVED FOR TECHNICIAN PANEL DETECTOR TEST SWITCHES AND SHALL NOT BE USED FOR INTEGRATED THERMAL TRAFFIC SENSOR INTERFACE.
- (1) POLYMER CONCRETE PULL BOXES SHALL BE USED.
- (4) PEDESTAL POLE TO BE TRIMMED TO HEIGHT OF 8'.
- (5) THIS PAY ITEM INCLUDES THE REMOVAL OF UP TO 6 PULL BOXES IF NECESSARY.
- (6) THIS PAY ITEM IS FOR THE REMOVAL AND RELOCATION OF PEDESTAL POLES LOCATED ON THE NORTHWEST AND NORTHEAST CORNERS OF THE WESTERN AVE. & 178TH ST. INTERSECTION, AS INDICATED ON THE PLANS. QUANTITY IS TO INCLUDE INSTALLATION OF NEW FOOTINGS AND REMOVAL OF OLD FOOTINGS.
- (7) THIS AY ITEM INCLUDES 3000 FEET OF LOOP WIRE FOR THE WESTERN AVE. & 178TH ST. INTERSECTION AND 1000 FEET OF LOOPWIRE FOR THE WESTERN AVE. & 192ND STREET INTERSECTION.
- (8) CONTRACTOR SHALL PROVIDE POLARA 2-WIRE NAVIGATOR ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTON OR APPROVED EQUAL. R10-3E PEDESTRIAN PUSH BUTTON SIGNS SHALL BE USED.
- (11) PAY ITEM IS TO RUN FROM THE PEDESTRIAN PUSH BUTTONS TO THE TERMINAL STRIP AT THE BASE OF THE POLES.

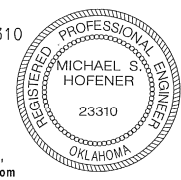
TRAFFIC SIGNAL PAY QUANTITIES				
Western Ave. & 178th St.				
0301 TRAFFIC				
ITEM	DESCRIPTION	UNIT	WESTERN & 178TH ST	
802(B) 8338	1 1/2" PVC SCH. 40 PLASTIC CONDUIT TRENCHED	(TP-1) L.F.	1170	
802(B) 8336	1 1/2" PVC SCH. 40 PLASTIC CONDUIT BORED	(TP-1) L.F.	100	
802(B) 8342	2" PVC SCH. 40 PLASTIC CONDUIT TRENCHED	(TP-1) L.F.	190	
802(B) 8344	3" PVC SCH. 40 PLASTIC CONDUIT BORED	(TP-1) L.F.	285	
803(A) 8065	PULL BOX (SIZE I)	(1) EA.	13	
804(A) 2915	STRUCTURAL CONCRETE	(TP-1) C.Y.	2.4	
804(B) 2916	REINFORCING STEEL	(TP-1) LBS.	178.4	
805(A) 8704	REMOVAL OF PULL BOX	EA.	6	
805(D) 8742	(PL) REMOVE & RESET TRAFFIC SIGNAL EQUIPMENT	(6) L.SUM	1	
806(B) 8894	10' MTG. HT. TS PED. POLE (G.STL.)	EA.	3	
806(B) 8892	8' MTG. HT. TS PED. POLE (G.STL.)	(4) EA.	3	
828 8132	(PL)DETECTIONSYSM (VIDEO)	TS-27 L.SUM	1	
830 8000	PEDESTRIAN PUSH BUTTON	(8) EA.	8	
831 8295	1WAY2SEC. ADJ. PED. SIG. HD. S-20	(TS-18) EA.	8	
834(A) 8207	5/C TRAFFIC SIGNAL ELECTRICAL CABLE	(TP-1) L.F.	1897	
834(A) 8213	21/C TRAFFIC SIGNAL ELECTRICAL CABLE	(TP-1) L.F.	655	
834(B) 8220	2/C SHIELDED LOOP DETECTOR LEAD-IN CABLE	(TP-1)(11) L.F.	120	

G:\09\Projects\17-2202 NW 178th St. & Western Ave Ped Impr\CAD\QUANT 178th.dgn 09/28/17

Michael S. Hofener
 MICHAEL S. HOFENER, P.E. # 23310
 C.A. # 1160, RENEWAL 06-30-17

09-16-16
 DATE

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Design	MSH	09/28/17
Drawn	CCC	09/28/17



**PEDESTRIAN SIGNAL MODIFICATION
 PAY QUANTITIES & NOTES
 WESTERN AVE. & N.W. 178th ST.**
 State Job No. 30326(04) Sheet No. 6