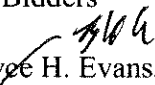


ADDENDUM NO. 1

DATE: February ¹³~~10~~, 2017
TO: All Bidders
FROM:  Boyce H. Evans, Purchasing Agent
SUBJECT: Addendum No. 1 - Jackson Avenue Streetscapes (Upper Second Creek Greenway)
BIDS TO BE OPENED: February 22, 2017, at 11:00 a.m. (Eastern)

This addendum is being published to make changes to the Contract Documents and specifications as well as respond to questions that the City has received from potential bidders. The City's responses hereby become a part of the Contract Documents and modify the original specifications as noted below.

Changes to the Contract Documents & Specifications:

1. The following plan sheets have been revised: CQ1.0, Estimated Construction Quantities; T1.0, Traffic Signal Plan; T2.0, Traffic Signal Notes & Quantities; L1.0 – L1.4, Street Lighting Plan; PP1.1, Streetscape Planting Plan.
2. The following pay items have been deleted: 920-40, Permeable Clay Pavers, 146 S.F.
3. The following pay items have been added: 920-40, Clay Pavers on Rigid Base, 146 S.F.
4. The following pay items have been revised: 307-01.07, Asphalt Concrete Mix Grading B-M, from 45 TON to 47 TON; 403-01, Bituminous Material for Tack Coat, from 2.33 TON to 2.45 TON; 611-12.02, Catch Basins, Type 12, 0'-4' Depth, from 7 EACH to 8 EACH; 714-02.01, Encased Conduit (2" PVC Sch. 40), from 1060 L.F. to 1100 L.F.; 714-06.08, Cable (1/C #6 AWG), from 12720 L.F. to 13000 L.F.; 714-08.10 Light Standards Type B Assembly, from 6 EACH to 7 EACH; 714-08.11, Light Standards Type C Assembly, from 5 EACH to 4 EACH.
5. The bid form has been revised to reflect the changes in Items 2-4 above.
6. The following Special Provisions have been revised: SP 72.1, Clay Pavers.

Clarifications to the Contract Documents & Specifications:

1. Item No.730-12.19, Paint (Signal Poles), 1 L.S., entails the following: Existing paint on signal poles A, D, and F shall be removed. These poles shall then be primed and painted with black paint. Contractor shall submit the method of painting to the City Traffic Engineering Department for approval.

2. Contractor shall maintain, at all times, pedestrian access to businesses and residences, and vehicular access to parking lots.

Questions Received

Question #1: How will the backfill materials for the storm sewer pipe installation be paid for?

Response #1: Bedding material and mineral aggregate base backfill will be included in the price of the pipe. Asphalt materials to repair pipe trenches will be paid for separately under pay items 307-01.07, 403-01, and 411-01.10.

Question #2: Can you provide the bid summary from when this project was previously bid on June 29, 2016.

Response #2: The bid summary from June 29, 2016 is included in this addendum. The City of Knoxville received concurrence from TDOT to reject those bids because they exceeded the project budget. The plans and quantities have since been revised and KUB gas, water, and sewer relocation work has been completed under a separate contract by their own crews.

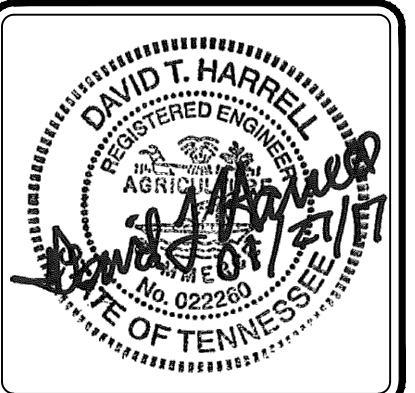
END OF ADDENDUM NO. 1

ESTIMATED ROADWAY QUANTITIES - Jackson Avenue Streetscapes			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
105-01	CONSTRUCTION STAKES, LINES AND GRADES	L.S.	1
202-01	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	1
202-03	REMOVAL OF RIGID PAVEMENT, SIDEWALK, ETC.	S.Y.	1061
202-03.01	REMOVAL OF ASPHALT PAVEMENT	S.Y.	836
202-08.15	REMOVAL OF CURB AND GUTTER (TYPE 6-30)	L.F.	30
209-01.10	EROSION & SILTATION CONTROL	L.S.	1
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	114
307-01.07	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING B-M	TON	47
403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	2.45
407-20.05	SAW CUTTING ASPHALT PAVEMENT	L.F.	1372
411-01.10	ACS MIX (PG64-22) GRADING D	TON	445
415-01.02	COLD PLANING BITUMINOUS PAVEMENT (1 1/2" DEPTH)	S.Y.	5363
(28) 604-07.01	RETAINING WALL	S.F.	275
607-03.02	18" CONCRETE PIPE CULVERT (CLASS III)	L.F.	320
607-05.02	24" CONCRETE PIPE CULVERT (CLASS III)	L.F.	26
(29) 607-19.05	TRENCH DRAIN/DOWNSPOUT EXTENSIONS	L.S.	1
611-01.02	MANHOLE (PRECAST NO. 3) 4'-8" DEPTH	EACH	4
611-09.01	ADJUSTMENT OF EXISTING CATCH BASIN	EACH	2
611-09.04	REMOVE CURB IRON	EACH	5
611-09.05	CONVERT CURB INLET TO MANHOLE	EACH	1
611-12.02	CATCH BASINS, TYPE 12, 0' - 4' DEPTH	EACH	8
701-014.01	CONCRETE SIDEWALK (4")	S.F.	5534
701-01.03	CONCRETE SIDEWALK (4" WITH INTEGRAL CURB)	S.F.	4410
701-02	CONCRETE DRIVEWAY (6")	S.F.	3662
701-02.03	CONCRETE HANDICAP RAMP	S.F.	925
702-01.02	CONCRETE CURB AND GUTTER (TYPE 6-30)	L.F.	30
702-01	CONCRETE CURB (6" DETACHED TYPE "A")	L.F.	972
712-01	TRAFFIC CONTROL	L.S.	1
713-01.10	SIGNING	L.S.	1
(1) 714-02.01	ENCASED CONDUIT (2" PVC, SCHEDULE 40)	L.F.	1100
714-05.05	PULL BOXES (LIGHTING)	EACH	4
714-06.08	CABLE (1/2" # 6 AWG - TYPE "XHHW")	L.F.	13000
(2) 714-08.09	LIGHT STANDARDS (TYPE "A" ASSEMBLY)	EACH	2
(3) 714-08.10	LIGHT STANDARDS (TYPE "B" ASSEMBLY)	EACH	7
(4) 714-08.11	LIGHT STANDARDS (TYPE "C" ASSEMBLY)	EACH	4
714-25	ELECTRICAL CONNECTION	EACH	1
716-02.05	PLASTIC PAVEMENT MARKINGS (STOP LINE)	L.F.	107
716-02.06	PLASTIC PAVEMENT MARKINGS (TURN ARROWS)	EA	5
716-02.09	PLASTIC PAVEMENT MARKINGS (LONGITUDINAL CROSS WALK)	L.F.	264
716-03.01	PLASTIC WORD PAVEMENT MARKING (ONLY)	EA	3
716-13.06	SPRAY THERMOPLASTIC PAVEMENT MARKING (40 MIL-4" WIDE) 0.06 LM W	L.M.	0.55
717-01	MOBILIZATION	L.S.	1
(5) 730-01.02	REMOVAL OF SIGNAL EQUIPMENT	EACH	1
(6) 730-03.21	INSTALL PULL BOX (TYPE B)	EACH	5
(7) 730-05.04	MODIFY EXISTING ELECTRIC SERVICE CONNECTION	EACH	1
730-08.03	SIGNAL CABLE (7 CONDUCTOR)	LF	1800
730-08.05	SIGNAL CABLE (12 CONDUCTOR)	LF	1000
730-11.01	STEEL CONDUIT RISER ASSEMBLY	EACH	6
(8) 730-12.02	CONDUIT 2" DIAMETER (PVC)	LF	450
(8) 730-12.13	CONDUIT 2" DIAMETER (JACK AND BORE)	LF	100
(9) 730-12.19	PAINT (SIGNAL POLES)	L.S.	4
730-14.13	SHIELDED DETECTOR CABLE (PEDESTRIAN PUSHBUTTONS)	LF	2800
(10) 730-14.14	MODIFY VEHICLE DETECTION	L.S.	1
(11) 730-15.32	CABINET (EIGHT PHASE BASE MOUNTED)	EACH	1
(12) 730-16.02	EIGHT PHASE ACTUATED CONTROLLER	EACH	1
(13) 730-23.30	PEDESTAL POLE (PEDESTRIAN)	EACH	5
(14) 730-26.05	COUNTDOWN PEDESTRIAN SIGNAL	EACH	10
(15) 730-26.09	PEDESTRIAN PUSHBUTTON WITH 15IN SIGN	EACH	10
(16) 793-13.12	1 DUCT FORMATION @ 36IN DEPTH	L.F.	205
(16) 793-13.17	2 DUCT FORMATION @ 36IN DEPTH	L.F.	30
(16) 793-13.27	4 DUCT FORMATION @ 36IN DEPTH	L.F.	485
(16) 793-13.32	6 DUCT FORMATION @ 36IN DEPTH	L.F.	80
(16) 793-13.51	5 DUCT FORMATION @ 36IN DEPTH	L.F.	275
(17) 793-11.16*	CONCRETE HANDHOLE 4'X4'X4'	EACH	1
(17) 793-11.20	HANDHOLE 30INX48IN	EACH	1
(18) 793-14.02**	CONCRETE ENCASMENT PER DUCT	L.F.	3795
(19) 793-14.05	MH PRECAST 4-FT W X 8-FT L X 6-FT H	EACH	3
ELECTRIC			
714-04.01	CONDUIT (STRUCTURES - 1" RGS)	LF	80
714-25.02	ELECTRICAL CONNECTION (W/ MANHOLE CORE DRILL)	EA	1
714-25.03	ELECTRICAL CONNECTION (TO EXST. OVERHEAD OR UNDERGROUND CONDUCTORS)	EA	2
714-25.22	INSTALL SVC RISER	EA	2
714-75.02	PHOTO ELECTRIC RELAY 240V	EA	4
790-41.62	UG SEC COND TPLX (#6CU NETWORK CABLE)	LF	80
790-41.63	UG SEC COND QPLX (3/0 CU)	LF	80
790-41.64	UG SEC COND SGL COND (#6 CU GND)	LF	80
790-42.16	2 DUCT BANK @ 36IN-48IN	LF	90
790-42.19	4 DUCT BANK @ 36IN-48IN	LF	75
790-44.13	REPLACE ELECTRIC VAULT FRAME AND GRATE	EA	2
790-98.01	REMOVE WIRE	LF	909
790-98.02	REMOVE POLES	EA	8
790-98.03	REMOVE FRAMING/ASSOCIATED APPARATUS	EA	25
LANDSCAPING			
20 802-03.03	Plants for Planters	L.S.	1
21 802-03.04	Limeholt Hydrangea	Each	14
22 802-03.05	Shamrock Holly	Each	35
23 802-03.06	Evergreen Giant Liriope	Each	95
24 820-30.01	Mondo Grass	Each	1,230
25 820-30.02	Metal Planters	Each	14
26 820-30.03	Bicycle Racks	Each	6
27 820-40	Clay Pavers on Rigid Base	S.F.	146

- FOOTNOTES:
- ITEM INCLUDES CONCRETE ENCASMENT UNDER ROADWAY PER KUB STANDARDS.
 - LUMINAIRE TO BE INSTALLED ON EXISTING ARM ON EXISTING SIGNAL POLE. LUMINAIRE SHALL BE AS SPECIFIED ON SHEET L1.0, OR APPROVED EQUAL.
 - ITEM INCLUDES TWO LUMINAIRES, TWO BRACKET ARMS, 27'-6" POLE, GFI DUPLEX RECEPTACLE WITH WEATHERPROOF COVER, BANNER ARMS, TRANSITION BASE, POLE FOUNDATION, AND ASSOCIATED WIRING INSIDE POLE FROM BASE TO LUMINAIRES. LUMINAIRES AND POLE ASSEMBLY SHALL BE AS SPECIFIED ON SHEET L1.0, OR APPROVED EQUAL.
 - ITEM INCLUDES ONE LUMINAIRE, ONE BRACKET ARM, 14'-7" POLE, GFI DUPLEX RECEPTACLE WITH WEATHERPROOF COVER, TRANSITION BASE, POLE FOUNDATION, AND ASSOCIATED WIRING INSIDE POLE FROM BASE TO LUMINAIRE. LUMINAIRE AND POLE ASSEMBLY SHALL BE AS SPECIFIED ON SHEET L1.0, OR APPROVED EQUAL.
 - ITEM INCLUDES REMOVAL OF EXISTING CABINET AND WIRING, AND TRANSFER OF ANY ITEMS NECESSARY FROM EXISTING CABINET TO NEW CABINET.
 - SEE TRAFFIC SIGNAL NOTE 18.
 - SEE TRAFFIC SIGNAL NOTES 7 AND 8.
 - ALL CONDUIT SHALL BE PVC SCHEDULE 80.
 - ITEM INCLUDES ALL MATERIALS AND LABOR NECESSARY TO REPAINT EXISTING STEEL SIGNAL POLES AS SHOWN ON SHEET T1.0.
 - ITEM INCLUDES ALL MATERIAL AND LABOR NECESSARY TO REWIRE EXISTING LOOP AND RADAR DETECTORS TO NEW CABINET.
 - ITEM INCLUDES CABINET, FOUNDATION, AND ALL NEW CABINET EQUIPMENT AS REQUESTED BY THE CITY OF KNOXVILLE. SEE TRAFFIC SIGNAL NOTE 12.
 - CONTROLLER SHALL BE TRAFFICWARE 980.
 - ITEM INCLUDES FOUNDATION.
 - SEE SHEET T1.0 FOR PEDESTRIAN SIGNAL SPECIFICATIONS.
 - SEE SHEET T1.0 FOR PEDESTRIAN PUSHBUTTON SPECIFICATIONS.
 - INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT INCLUDING BUT NOT LIMITED TO SPACERS, COUPLINGS, BENDS, OPENING TRENCH, BACKFILL PER SPECS, SURFACE RESTORATION OF ALL CROSSINGS TO TDOT STANDARDS, SETUP, TRAFFIC CONTROL
 - INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT INCLUDING BU NOT LIMITED TO DIGGING HOLE, PLACING HANDHOLE, TERMINATING CONDUIT, RESTORING SURFACE TO TDOT STANDARDS, SETUP, TRAFFIC CONTROL
 - INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT INCLUDING BUT NOT LIMITED TO DIGGING HOLE, GRAVEL BASE, BACKFILL, AND SURFACE RESTORATION TO TDOT STANDARDS, FRAME AND COVER, SETUP AND TRAFFIC CONTROL.
 - See COK Special Provisions 29.1 Plants for Planters
 - See COK Special Provisions 29.11 Limeholt Hydrangea
 - See COK Special Provisions 29.12 Shamrock Holly
 - See COK Special Provisions 29.13 Evergreen Giant Liriope
 - See COK Special Provisions 29.14 Mondo Grass
 - See COK Special Provisions 70.10 Metal Planters
 - See COK Special Provisions 71.10 Bicycle Racks
 - See COK Special Provisions 72.10 Clay Pavers on Rigid Base
 - RETAINING WALL QUANTITY IS EXPOSED FACE OF WALL. ALL ITEMS REQUIRED TO CONSTRUCT THE WALL ARE INCLUDED IN THIS ITEM.
 - 5 LOCATIONS. INCLUDES WYE PVC CLEANOUT AT CONNECTION TO EXISTING DRAINS.

SHEET	
PROJECT NO.	
YEAR	
TYPE	

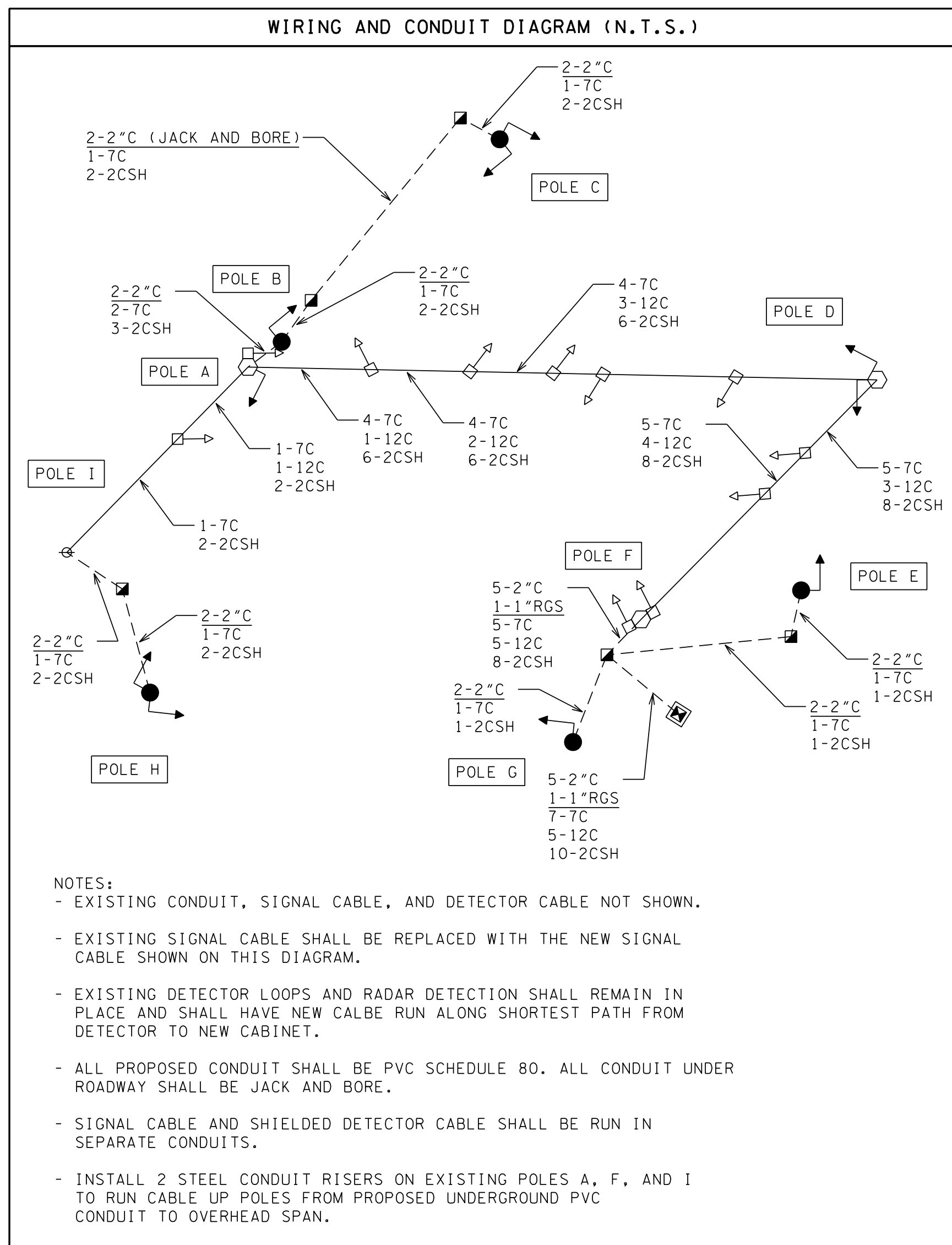
NO.	DATE	DESCRIPTION
1	2-10-17	REVISIONS (EIGHT ITEMS - REVISION QUANTITY REVISED)



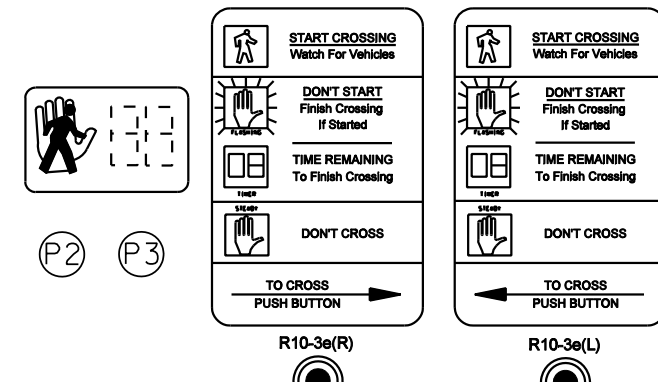
UPPER SECOND CREEK GREENWAY
(WEST JACKSON AVENUE STREETSCAPES)
KNOXVILLE - KNOX COUNTY, TENNESSEE
PIN: 107380.00

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DRAWN:	R.C.D.
CHECKED:	J.C.E.
COK JOB NO:	12B-R-0518
VM JOB NO:	51130-04
SCALE:	N/A
DATE:	27 JAN 2017
DRAWING TITLE: ESTIMATED CONSTRUCTION QUANTITIES	
SHEET	DRAWING NO:
OF	CQ1.0



PEDESTRIAN SIGNAL DETAILS



ALL PEDESTRIAN SIGNAL HEADS SHALL HAVE BLACK COLOR HOUSINGS AND FULLY POPULATED LED TYPE DISPLAYS CONFORMING TO CURRENT ITE STANDARDS, WITH WALK/DONT WALK SYMBOLS DISPLAYED IN SAME FACE WITH COUNTDOWN TIMER. PED HEAD MOUNTING ON NEW STRAIN POLES SHALL UTILIZE DRILLED ATTACHMENT (BAND MOUNTING NOT ALLOWED).

PUSH BUTTONS SHALL BE 2" AUDIBLE ADA ACCEPTABLE, VANDAL RESISTANT WITH LED INDICATOR.

PEDESTRIAN TIMING

PHASE 2:
 - WALK = 7 SEC.
 - FLASHING DON'T WALK = 19 SEC.

PHASE 3:
 - WALK = 7 SEC.
 - FLASHING DON'T WALK = 20 SEC.

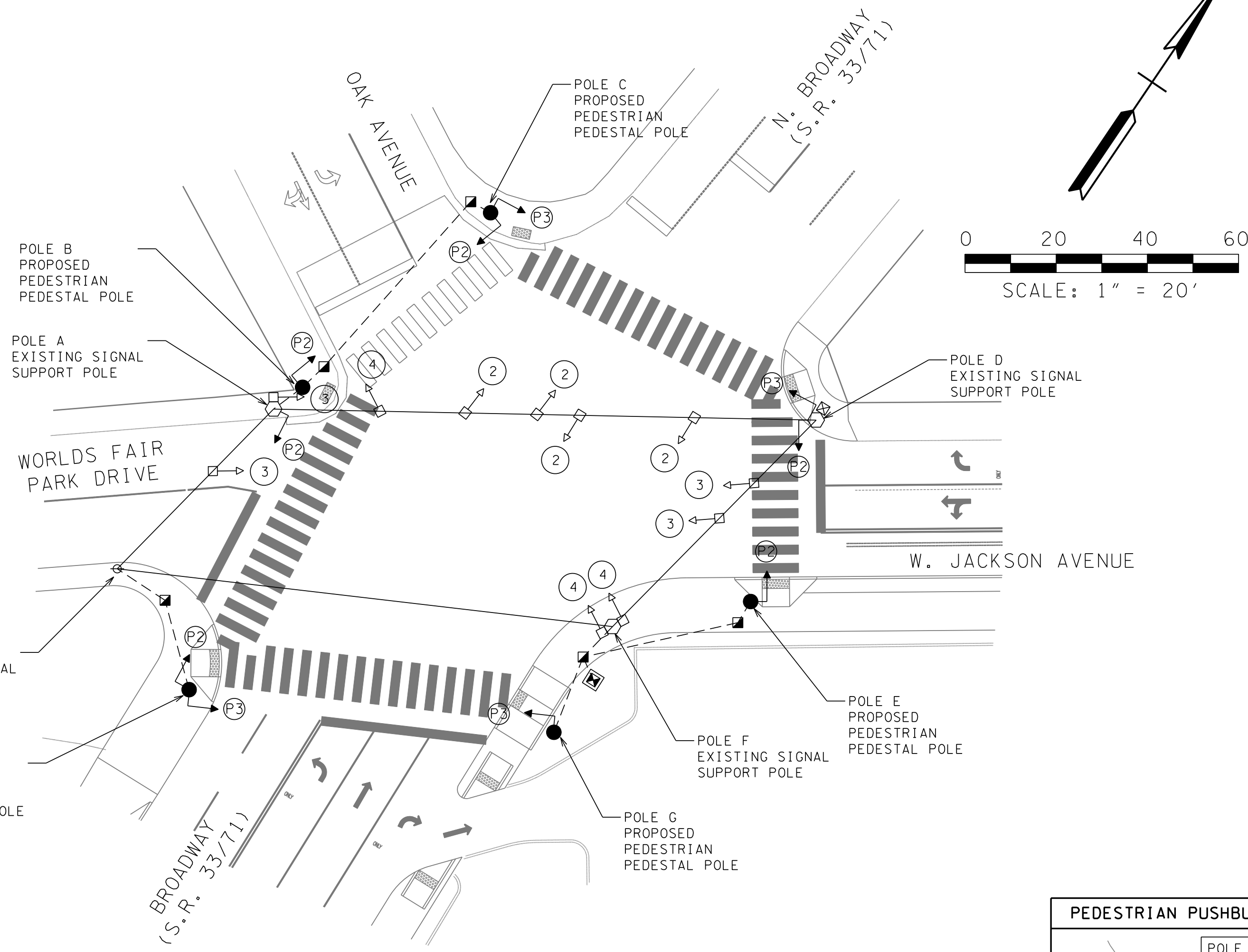
FLASHING DON'T WALK TO TERMINATE AT BEGINNING OF YELLOW.

ALL OTHER TIMING TO REMAIN AS EXISTING OR BE ADJUSTED AS REQUIRED TO ACCOMMODATE PEDSTRIAN TIMING.

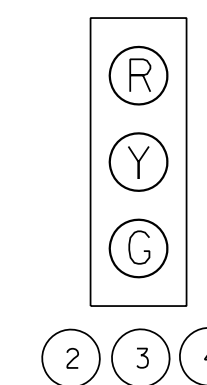
LEGEND

- PROPOSED PAD MOUNTED CONTROLLER CABINET
- PROPOSED PEDESTAL POLE
- ↑ P2 PROPOSED PEDESTRIAN SIGNAL HEAD W/ ASSOCIATED PHASE
- PB P2 PROPOSED PEDESTRIAN PUSHBUTTON W/ R10-3E SIGN
- PROPOSED PULL BOX
- PROPOSED CONDUIT
- EXISTING STEEL SIGNAL SUPPORT POLE
- ⊕ EXISTING WOOD UTILITY POLE
- 2 EXISTING SIGNAL HEAD W/ ASSOCIATED PHASE

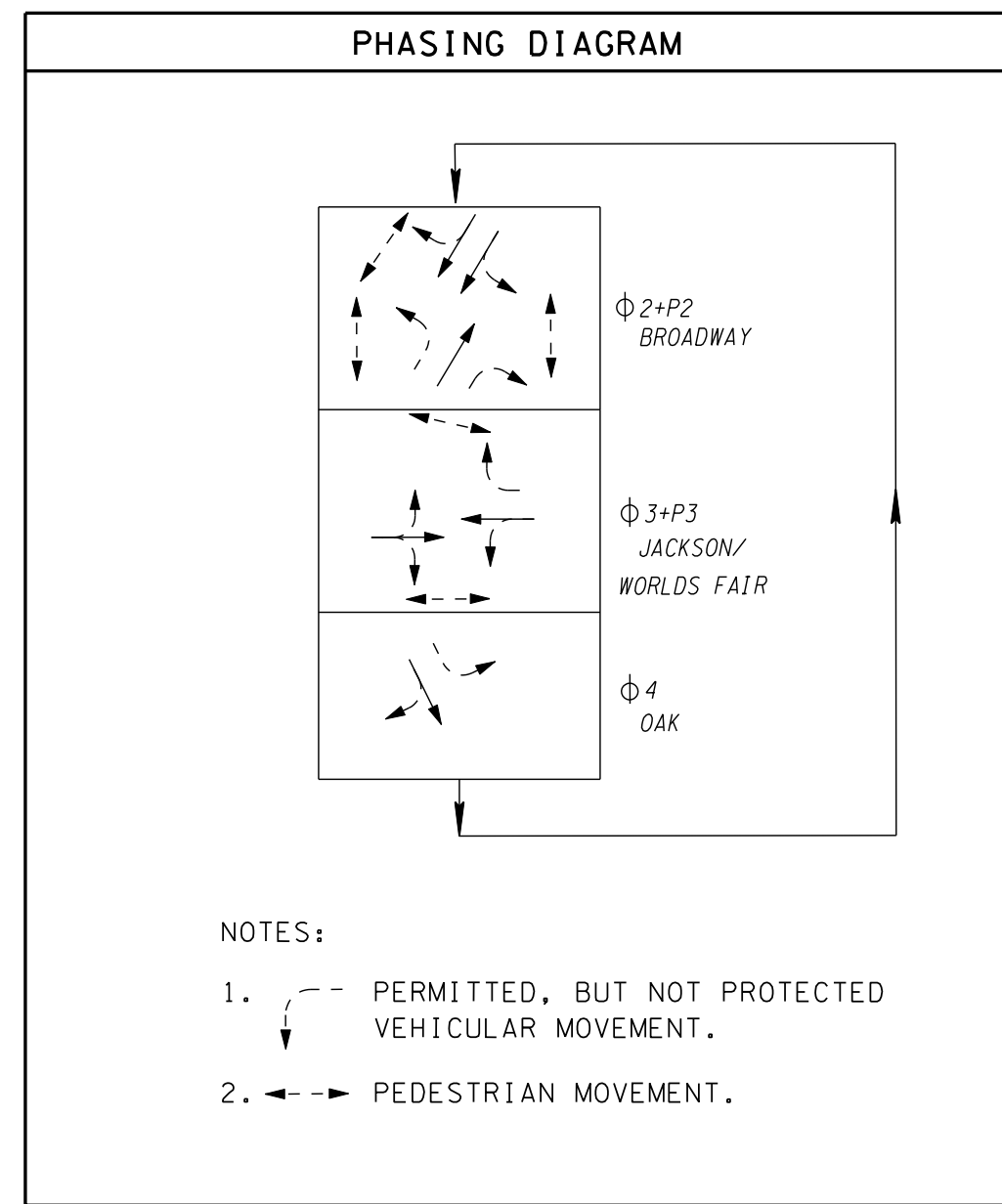
REVISIONS		DESCRIPTION
NO.	DATE	DESCRIPTION
1	04/08/16	MODIFIED PEDESTRIAN SIGNAL SPEC NOTE
2	02/09/17	REVISED NOTE # IN DATA TABLE



SIGNAL HEAD DETAILS



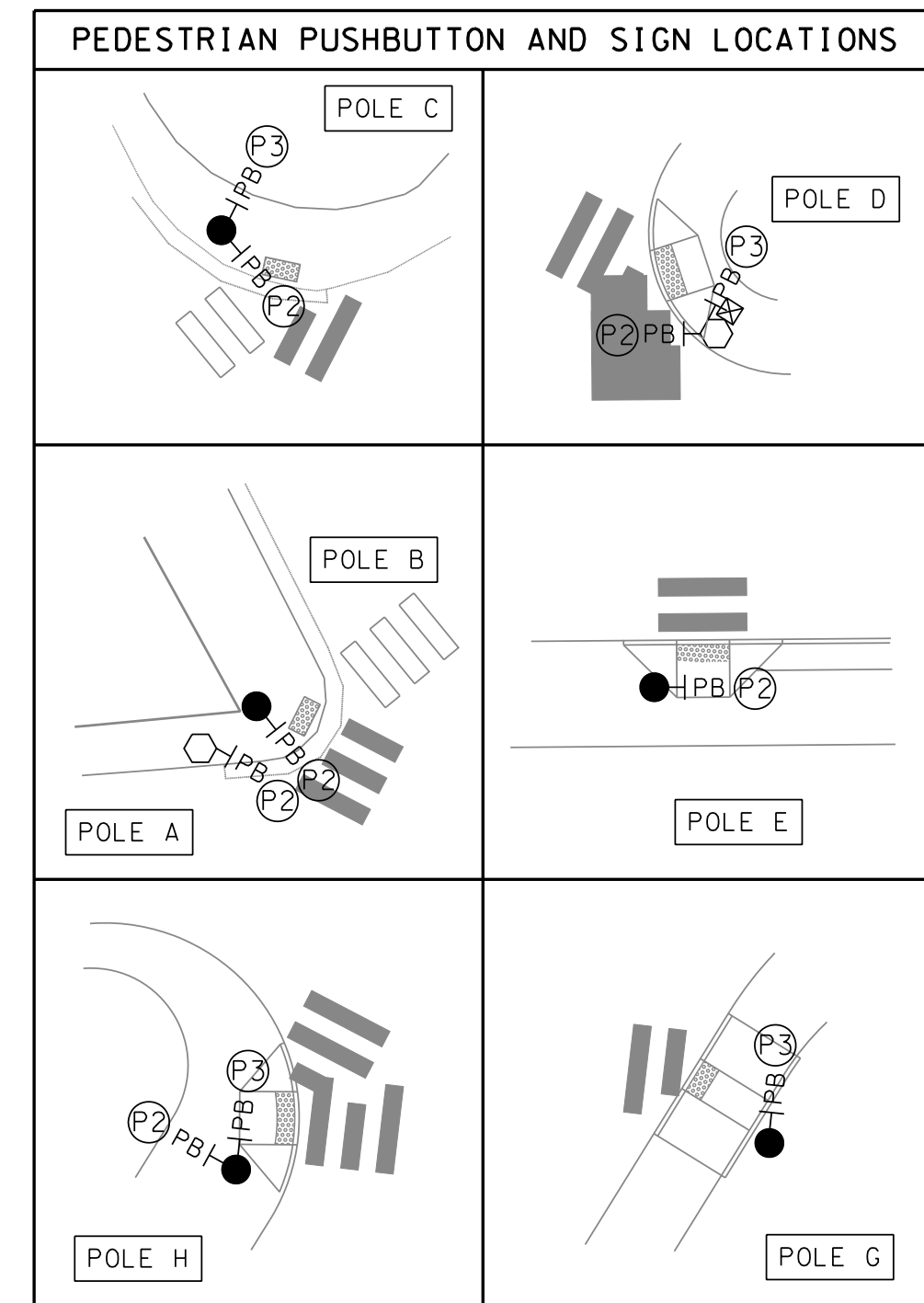
ALL SIGNAL HEADS ARE EXISTING AND SHALL REMAIN.



MAST ARM, POLE & FOOTING DATA		
POLE	FOOTING DEPTH X DIAMETER	NOTES
A (EXISTING)	EXISTING	INSTALL 2 RISERS
B (PEDESTAL)	3' X 2'	
C (PEDESTAL)	3' X 2'	
D (EXISTING)	EXISTING	
E (PEDESTAL)	3' X 2'	
F (EXISTING)	EXISTING	INSTALL 2 RISERS
G (PEDESTAL)	3' X 2'	
H (PEDESTAL)	3' X 2'	
I (EXISTING)	EXISTING	INSTALL 2 RISERS

NOTES:

- FOOTING DEPTH IS DEPTH BELOW SURFACE OF GROUND.
- POLE SIZE AND LENGTH SHALL BE DESIGNED BY THE POLE MANUFACTURER FOR THE LOADINGS REQUIRED BY THIS DESIGN PLAN. THE DESIGN SHALL COMPLY WITH THE REQUIREMENTS OF T.D.O.T. STANDARD SPECIFICATION SECTION 730 AND T.D.O.T. STANDARD DRAWING T-SG-9A.
- NEW POLES SHALL BE BLACK POWDER COAT.
- EXISTING POLES A, D, AND F SHALL BE REPAINTED IN PLACE WITH BLACK PAINT.



**UPPER SECOND CREEK GREENWAY
 (WEST JACKSON AVENUE STREETSCAPES)**

KNOXVILLE - KNOX COUNTY, TENNESSEE
 PIN: 107380.00

V&M
Vaughn & Melton
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DRAWN:	B.J.H.
CHECKED:	A.L.C.
COK JOB NO:	12B-R-0518
VM JOB NO:	51130-04
SCALE:	AS NOTED
DATE:	26 JAN 2016
DRAWING TITLE:	
TRAFFIC SIGNAL PLAN	
SHEET	DRAWING NO:
OF	T1.0

TRAFFIC SIGNAL NOTES

- (1) SCOPE OF WORK INCLUDES THE FOLLOWING:
 - A. INSTALLATION OF NEW PEDESTRIAN PEDESTAL POLES, PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND ASSOCIATED WIRING, CONDUIT, AND PULL BOXES.
 - B. INSTALLATION OF NEW SIGNAL CABINET AND CONTROLLER.
 - C. REPLACEMENT OF EXISTING TRAFFIC SIGNAL AND DETECTOR WIRING.
 - D. REPAINTING OF EXISTING STEEL SIGNAL POLES.
 - E. REMOVAL OF EXISTING POLE MOUNTED CABINET AND ALL ASSOCIATED CONTENTS THAT WILL NOT BE TRANSFERRED FROM OLD CABINET TO NEW CABINET.
- (2) THE EXISTING WOOD POLE MOUNTED CONTROLLER CABINET AND EXISTING SIGNAL CABLE AND DETECTOR CABLE SHALL BE REMOVED. THIS REMOVAL SHALL BE COORDINATED WITH THE CONSTRUCTION OF THE NEW SIGNAL FACILITIES IN ORDER TO ENSURE CONTINUOUS INTERSECTION SIGNAL CONTROL. FACILITIES REMOVED SHALL REMAIN THE PROPERTY OF THE CITY OF KNOXVILLE AND SHALL BE DELIVERED TO SIGNAL SHOP AT 1025 ELM STREET. CONTACT ALLEN ARNETT, SIGNAL MAINTENANCE SUPERVISOR (865-215-6730) TO COORDINATE.
- (3) EQUIPMENT AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE FOLLOWING TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT) PUBLICATIONS:
 - A. "SPECIAL PROVISIONS" SECTION 730 AND 730K - TRAFFIC SIGNALS
 - B. "SPECIAL SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (JANUARY 1, 2015)
 - C. "STANDARD ROADWAY AND STRUCTURE DRAWINGS"
- (4) THE NEW POLE LOCATIONS ARE SUBJECT TO MINOR CHANGES AS APPROVED BY THE ENGINEER.
- (5) ALL NEW POLES SHALL BE PLACED AS SHOWN IMMEDIATELY BESIDE OR BEHIND SIDEWALK HANDICAP RAMPS. IF ANY OF THESE REQUIRE RELOCATION, CONTRACTOR SHALL COORDINATE WITH ENGINEER TO PROVIDE ADDITIONAL SIDEWALK OR PEDESTAL POLES TO MAINTAIN ADA ASSESSIBILITY TO PUSH BUTTONS.
- (6) NEW POLES AND ARMS SHALL BE BLACK POWDER COAT. EXISTING STEEL SIGNAL POLES SHALL BE REPAINTED IN PLACE WITH BLACK PAINT.
- (7) ELECTRICAL SERVICE CONNECTION SHALL INCLUDE A MINIMUM 1-INCH STEEL CONDUIT RISER WITH WEATHER HEAD. ALL ELECTRICAL PERMITS REQUIRED BY CITY ORDINANCES SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR. AFTER COMPLETION OF THE SIGNAL WORK, THE ENGINEER SHALL BE FURNISHED A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTION DEPARTMENT OF THE CITY OF KNOXVILLE.
- (8) THE CONTRACTOR SHALL PROVIDE A COMPLETE ELECTRICAL SERVICE AND SHALL COORDINATE THIS ACTIVITY WITH THE LOCAL UTILITY, INCLUDING THE PROVISION OF ANY REQUIRED METERING OR OTHER SPECIAL EQUIPMENT. THE SIGNAL CONTRACTOR WILL NOT CONTACT THE CITY OF KNOXVILLE TO REQUEST SERVICE HOOKUP UNTIL THE SIGNAL IS READY TO BE PLACED INTO OPERATION AND READY FOR FINAL INSPECTION BY THE CITY OF KNOXVILLE.
- (9) THE SIGNAL CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CITY SIGNAL MAINTENANCE SUPERVISOR, ALLEN ARNETT, AT 865-215-6730 OR 865-215-6100 TO OBTAIN WIRING COLOR-CODE FOR 12-POSITION QUICK DISCONNECTS REQUIRED BY THE CITY.
- (10) THE SIGNAL CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND DELIVERING THE CONTROLLER AND SIGNAL MONITOR TO THE CITY SIGNAL MAINTENANCE SUPERVISOR, ALLEN ARNETT, AT 865-215-6732 OR 865-215-6100 FOR TESTING AND PROGRAMMING, A MINIMUM OF 14 WORKING DAYS PRIOR TO PLACING THE SIGNAL IN THE INITIAL START-UP FLASHING SEQUENCE.
- (11) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CITY SIGNAL MAINTENANCE SUPERVISOR, ALLEN ARNETT, AT 865-215-6732 OR 865-215-6100 TO OBTAIN TRAFFIC SIGNAL CONTROLLER TIMING.
- (12) THE CONTRACTOR SHALL PROVIDE A NEW CITY OF KNOXVILLE STANDARD CONFIGURATION CABINET. CONTRACTOR SHALL CONTACT THE CITY SIGNAL MAINTENANCE SUPERVISOR, ALLEN ARNETT, AT 865-215-6732 OR 865-215-6100 TO OBTAIN SPECIFICATIONS FOR NEW CABINET AND CONTROLLER AS WELL AS TO DETERMINE WHAT EQUIPMENT SHALL BE TRANSFERRED FROM THE EXISTING CABINET TO THE NEW CABINET. ALL EQUIPMENT WILL MEET ALL NATIONAL ELECTRICAL MANUFACTURERS

ASSOCIATION (NEMA) STANDARDS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH COPIES OF THE PAID INVOICES FOR ALL TRAFFIC SIGNAL EQUIPMENT INSTALLED ON THIS PROJECT.

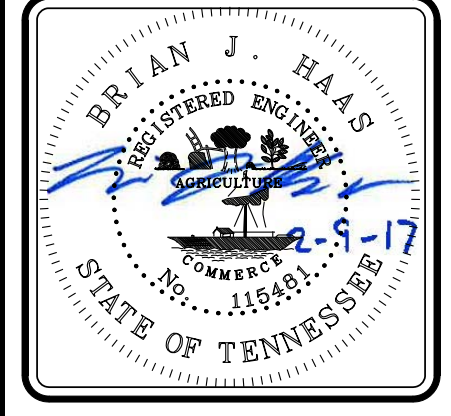
- (13) ALL SIGNAL CABLE SHALL BE INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION (IMSA) APPROVED CABLE:
 - A. TRAFFIC SIGNAL CABLE SHALL BE IMSA SPECIFICATION 20-2, 12-CONDUCTOR STRANDED WIRE.
 - B. PEDESTRIAN SIGNAL CABLE SHALL BE IMSA SPECIFICATION 20-2, 7-CONDUCTOR STRANDED WIRE.
 - C. PEDESTRIAN PUSH BUTTON CABLE SHALL BE IMSA SPECIFICATION 50-2, 2-CONDUCTOR STRANDED WIRE.
 - D. LOOP DETECTOR CABLE SHALL BE IMSA SPECIFICATION 50-2, 2-CONDUCTOR STRANDED WIRE.
 - E. RADAR DETECTOR WIRE SHALL BE PER MANUFACTURER'S SPECIFICATIONS.
- (14) THE SIGNAL CONTRACTOR SHALL NOTIFY THE CITY IN WRITING UPON COMPLETION OF ALL WORK REGARDING THE SIGNAL INSTALLATION, EG., SIGNAL, SIGNS, AND MARKINGS.
- (15) THE SIGNAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SIGNAL UNTIL THE FINAL APPROVAL IS PROVIDED FOR THE CITY TO ASSUME MAINTENANCE ON THE SIGNAL.
- (16) ANY DISTURBED AREA DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR AS ACCEPTABLE BY THE CITY OF KNOXVILLE.
- (17) THE CONTRACTOR SHALL MAINTAIN EXISTING SIGNAL OPERATION DURING THE INSTALLATION OF THE NEW SIGNAL EQUIPMENT.
- (18) ALL PULL BOXES SHALL HAVE "TRAFFIC" STAMPED ON LID.

ESTIMATED TRAFFIC SIGNAL QUANTITIES			
ITEM NO.	DESCRIPTION	QTY.	UNIT
(1) 730-01.02	REMOVAL OF SIGNAL EQUIPMENT	1	EACH
(2) 730-03.21	INSTALL PULL BOX (TYPE B)	5	EACH
(3) 730-05.04	MODIFY EXISTING ELECTRIC SERVICE CONNECTION	1	EACH
730-08.03	SIGNAL CABLE (7 CONDUCTOR)	1800	LF
730-08.05	SIGNAL CABLE (12 CONDUCTOR)	1000	LF
730-11.01	STEEL CONDUIT RISER ASSEMBLY	6	EACH
(4) 730-12.02	CONDUIT 2" DIAMETER (PVC)	450	LF
(4) 730-12.13	CONDUIT 2" DIAMETER (JACK AND BORE)	100	LF
(5) 730-12.19	PAINT (SIGNAL POLES)	1	LS
730-14.13	SHIELDED DETECTOR CABLE (PEDESTRIAN PUSHBUTTONS)	2800	LF
(6) 730-14.14	MODIFY VEHICLE DETECTION	1	LS
(7) 730-15.32	CABINET (EIGHT PHASE BASE MOUNTED)	1	EACH
(8) 730-16.02	EIGHT PHASE ACTUATED CONTROLLER	1	EACH
(9) 730-23.30	PEDESTAL POLE (PEDESTRIAN)	5	EACH
(10) 730-26.05	COUNT DOWN PEDESTRIAN SIGNAL	10	EACH
(11) 730-26.09	PEDESTRIAN PUSHBUTTON WITH 15IN SIGN	10	EACH

FOOTNOTES:

- (1) ITEM INCLUDES REMOVAL OF EXISTING CABINET AND WIRING, AND TRANSFER OF ANY ITEMS NECESSARY FROM EXISTING CABINET TO NEW CABINET.
- (2) SEE TRAFFIC SIGNAL NOTE 18.
- (3) SEE TRAFFIC SIGNAL NOTES 7 AND 8.
- (4) ALL CONDUIT SHALL BE PVC SCHEDULE 80.
- (5) ITEM INCLUDES ALL MATERIALS AND LABOR NECESSARY TO REPAINT EXISTING STEEL SIGNAL POLES AS SHOWN ON SHEET T1.0.
- (6) ITEM INCLUDES ALL MATERIAL AND LABOR NECESSARY TO REWIRE EXISTING LOOP AND RADAR DETECTORS TO NEW CABINET.
- (7) ITEM INCLUDES CABINET, FOUNDATION, AND ALL NEW CABINET EQUIPMENT AS REQUESTED BY THE CITY OF KNOXVILLE. SEE TRAFFIC SIGNAL NOTE 12.
- (8) CONTROLLER SHALL BE TRAFFICWARE 980.
- (9) ITEM INCLUDES FOUNDATION.
- (10) SEE SHEET T1.0 FOR PEDESTRIAN SIGNAL SPECIFICATIONS.
- (11) SEE SHEET T1.0 FOR PEDESTRIAN PUSHBUTTON SPECIFICATIONS.

REVISIONS	
NO.	DATE
1	02/08/17



UPPER SECOND CREEK GREENWAY
(WEST JACKSON AVENUE STREETSCAPES)
 KNOXVILLE - KNOX COUNTY, TENNESSEE
 PIN: 107380.00

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Vaughn & Melton
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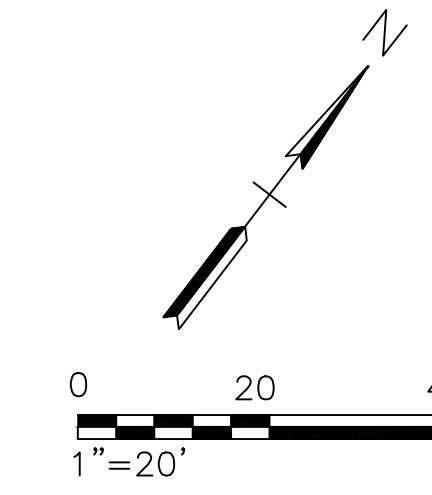
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DRAWN:	B.J.H.
CHECKED:	A.L.C.
CHK JOB NO:	12B-R-0518
VM JOB NO:	51130-04
SCALE:	AS NOTED
DATE:	26 JAN 2016
DRAWING TITLE:	
TRAFFIC SIGNAL NOTES AND QUANTITIES	
SHEET	DRAWING NO:
OF	T2.0

ILLUMINATION RESULTS					
ROADWAY	AVG.	MAX	MIN.	MAX/MIN	AVG/MIN
W JACKSON AVE	1.3 fc	3.0 fc	0.6 fc	5.0:1	2.2:1

FIXTURE / POLE ASSEMBLY SCHEDULE								
ASSEMBLY TYPE	LAMP TYPE	QUANTITY	LIGHT SOURCE / WATTS	MOUNTING HEIGHT	POLE TYPE	MANUFACTURER INFORMATION		COMMENTS
						COMPANY	CATALOG NO.	
A	L.E.D.	2	2 SQUARE / 107 W	Existing	Signal	FIXTURE: COOPER LIGHTING POLE: N/A	NVN-AE-02-D-U-T3-10K-4N7-BK-U0061 N/A	
B	L.E.D.	7	2 SQUARE / 107 W	30'	ROUND ALUMINUM	FIXTURE: COOPER LIGHTING	NVN-AE-02-D-U-T3-10K-4N7-BK-U0061	LUMINAIRE 1
			1 SQUARE / 56 W	16'	ROUND ALUMINUM	FIXTURE: COOPER LIGHTING	NVN-AE-01-D-U-T3-10K-4N7-BK-U0060	LUMINAIRE 2
						POLE: HAPCO	HAPCO #B34794P1	
C	L.E.D.	4	1 SQUARE / 56 W	16'	ROUND ALUMINUM	FIXTURE: COOPER LIGHTING POLE: HAPCO	NVN-AE-01-D-U-T3-10K-4N7-BK-U0060 HAPCO #B34549P1	



LEGEND

- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT
- PROPOSED PULL BOX
- PROPOSED CONDUIT (SCH. 40 UNLESS OTHERWISE NOTED)
- ELECTRIC VAULT

NOTE
KUB TAGS TO BE INSTALLED BY KUB.

SHEET	PROJECT NO.	YEAR

NO.	DATE	DESCRIPTION
1	02/09/2017	REVISED LAYOUT AND TABLES



**UPPER SECOND CREEK GREENWAY
(WEST JACKSON AVENUE STREETSCAPES)**
KNOXVILLE - KNOX COUNTY, TENNESSEE
PIN: 107380.00

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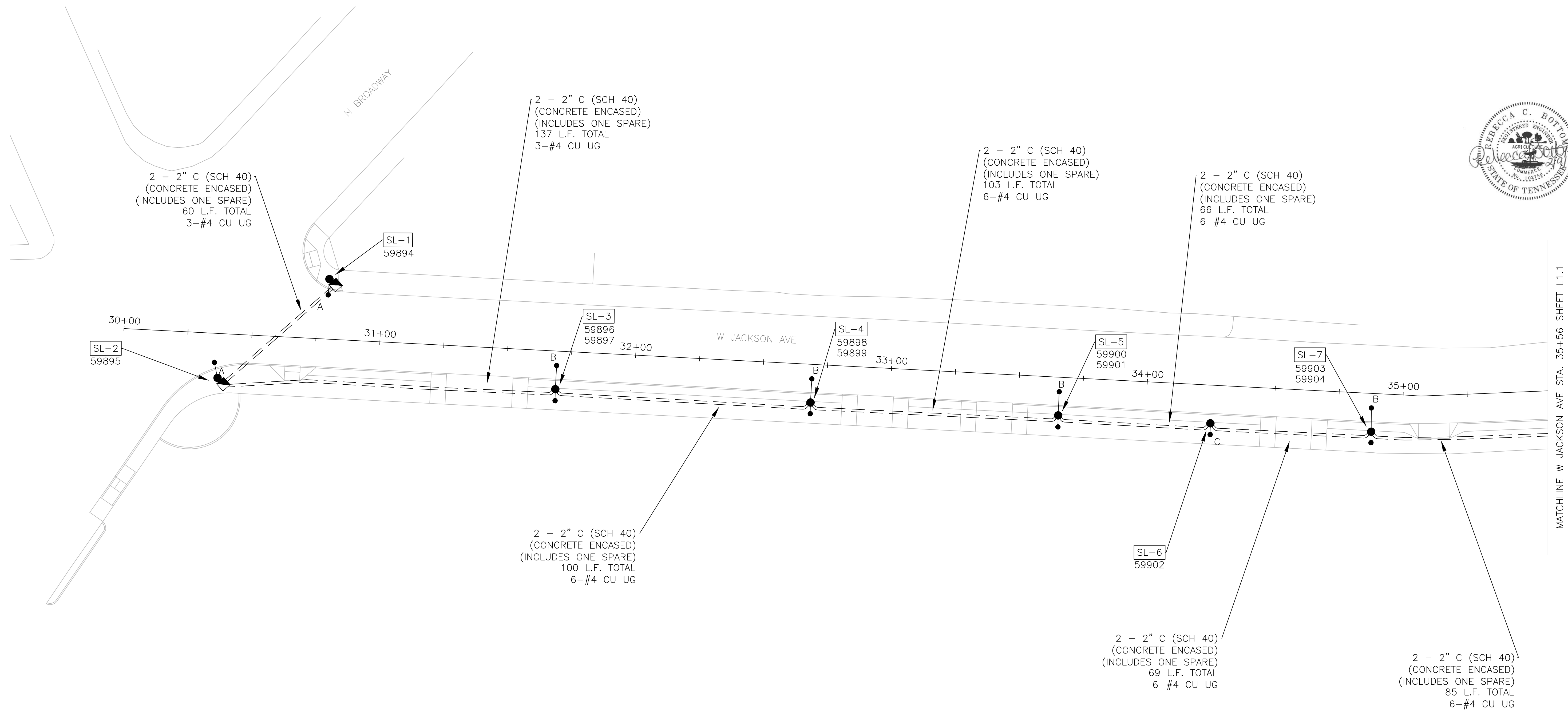
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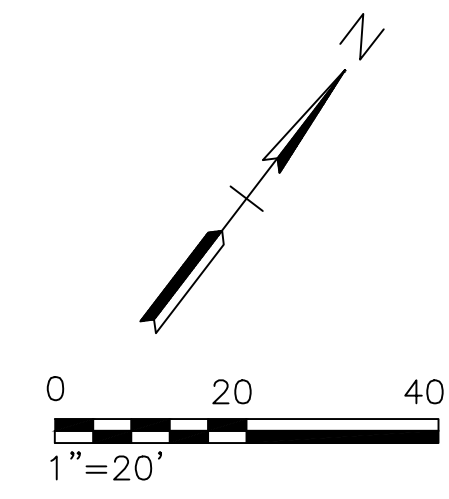
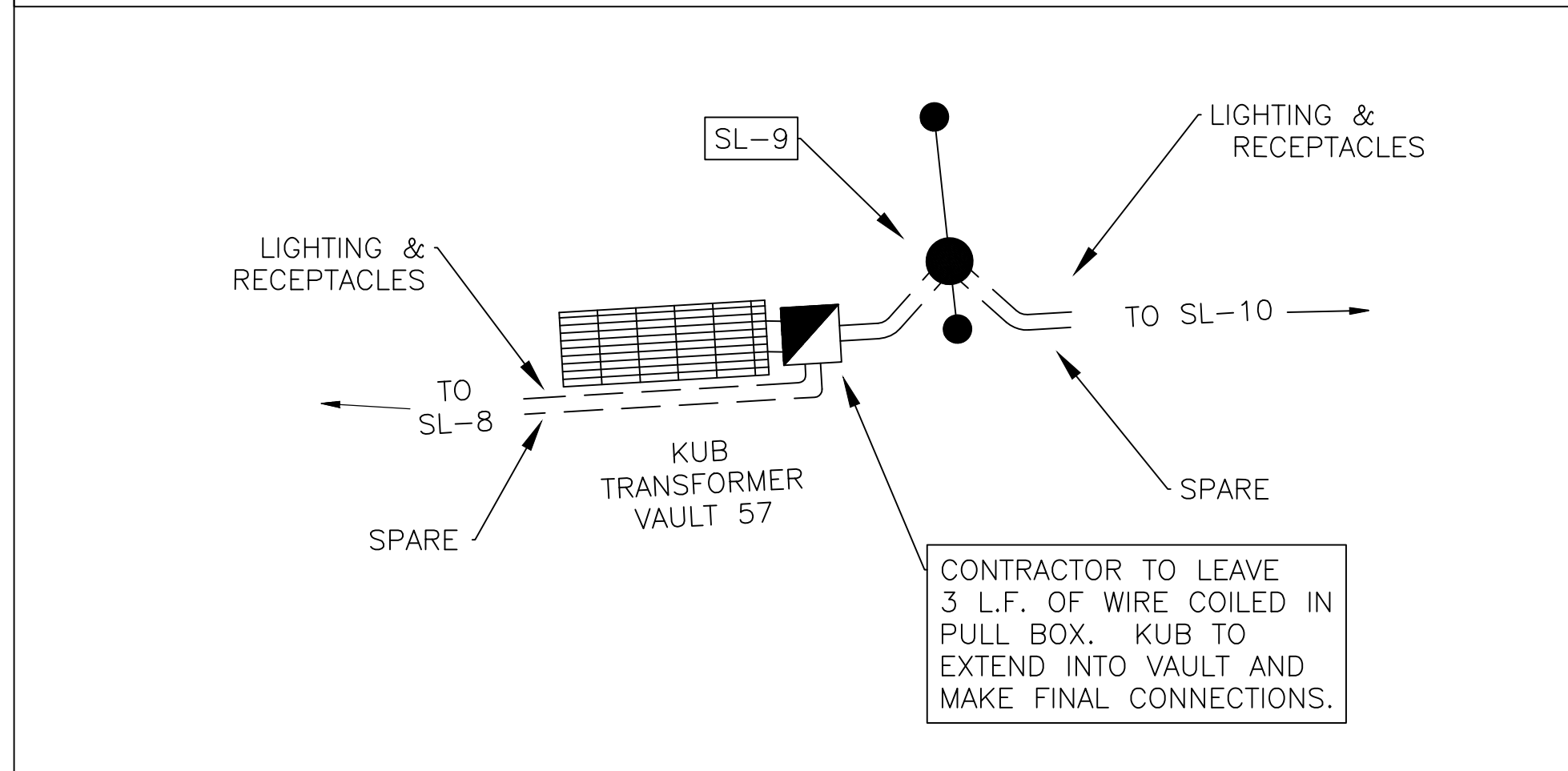
DRAWN:	S.R.
CHECKED:	B.B.
COK JOB NO:	12B-R-0518
VM JOB NO:	51130-04
SCALE:	AS NOTED
DATE:	26 JAN 2016
DRAWING TITLE:	
STREET LIGHTING PLAN	
W. JACKSON AVE.	
SHEET	DRAWING NO:
OF	L1.0

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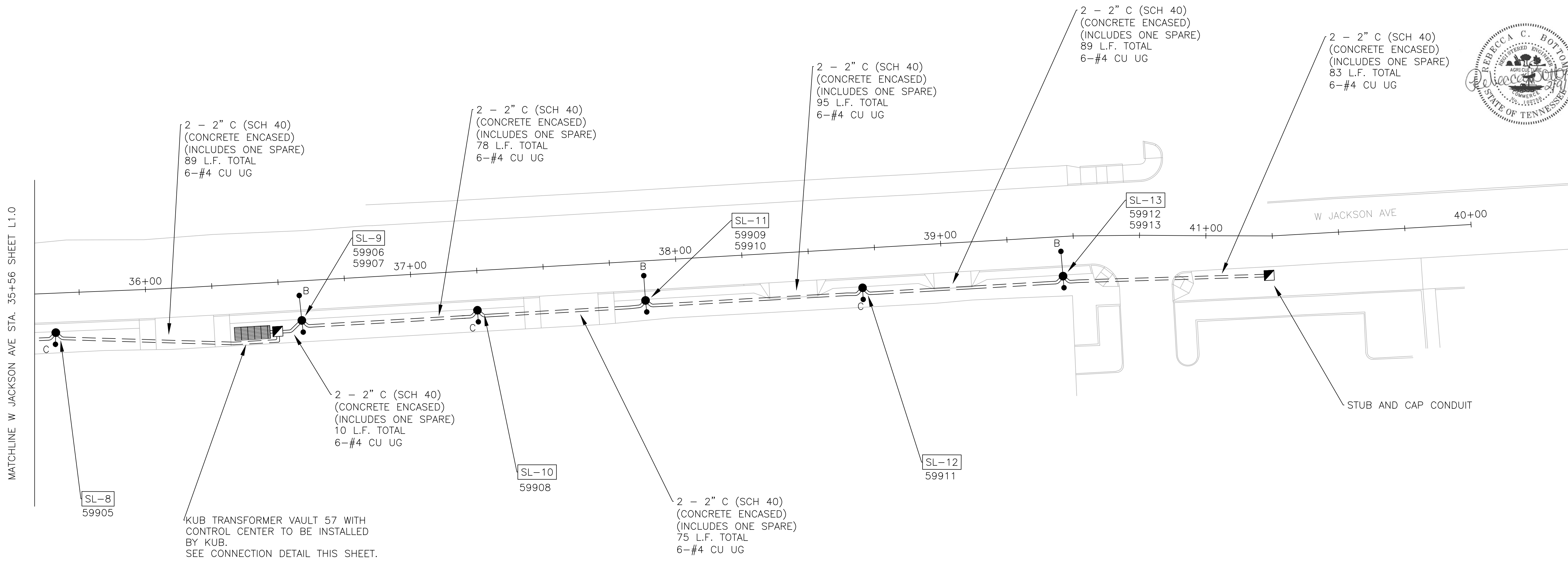
TRANSFORMER VAULT "CC" CONNECTION DETAIL



LEGEND

- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT
- PROPOSED PULL BOX
- PROPOSED CONDUIT (SCH. 40 UNLESS OTHERWISE NOTED)
- ELECTRIC VAULT

NOTE
KUB TAGS TO BE INSTALLED BY KUB.



SHEET	PROJECT NO.	YEAR

NO.	DATE	DESCRIPTION
1	02/09/2017	REVISED LT. NUMBERING



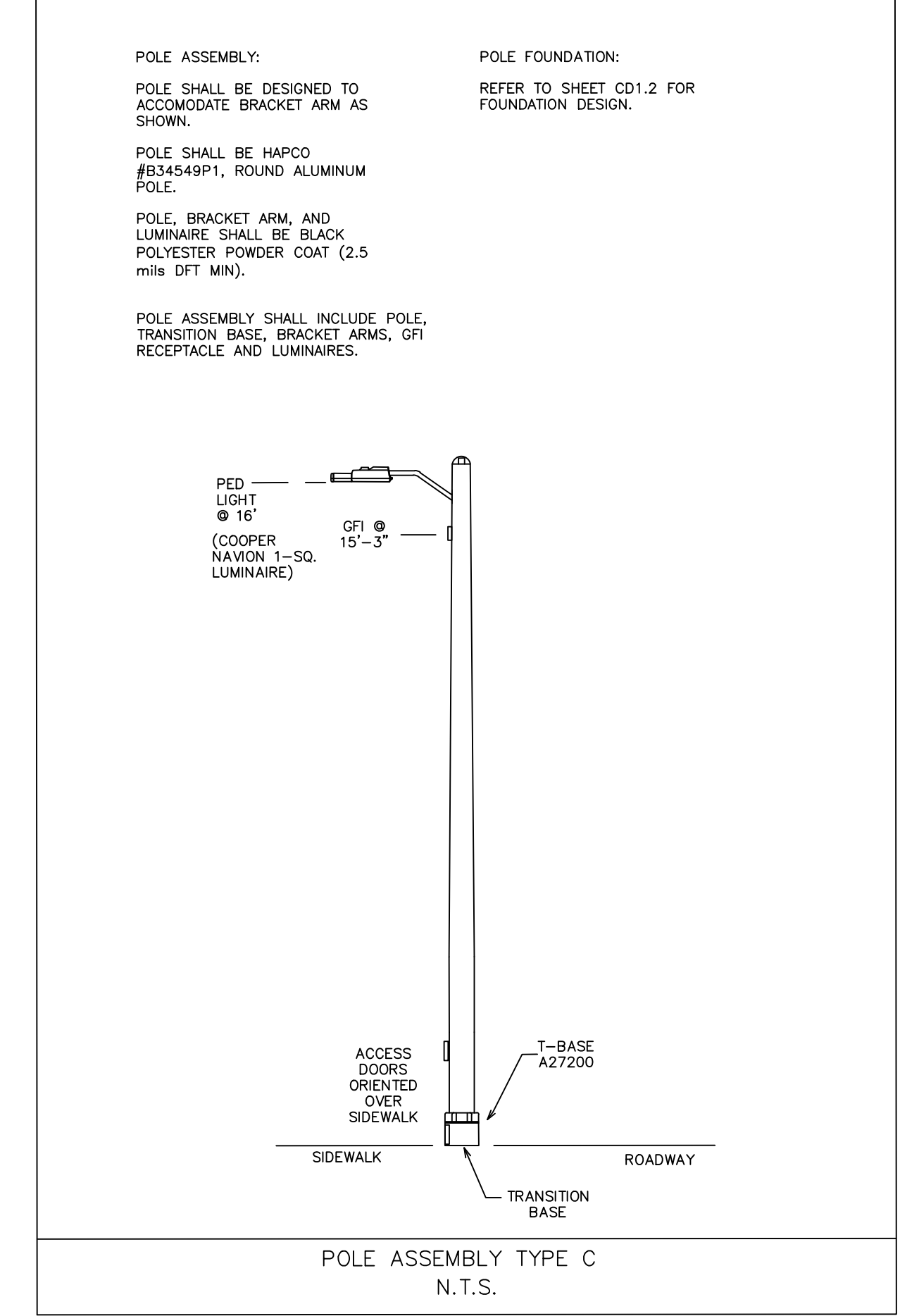
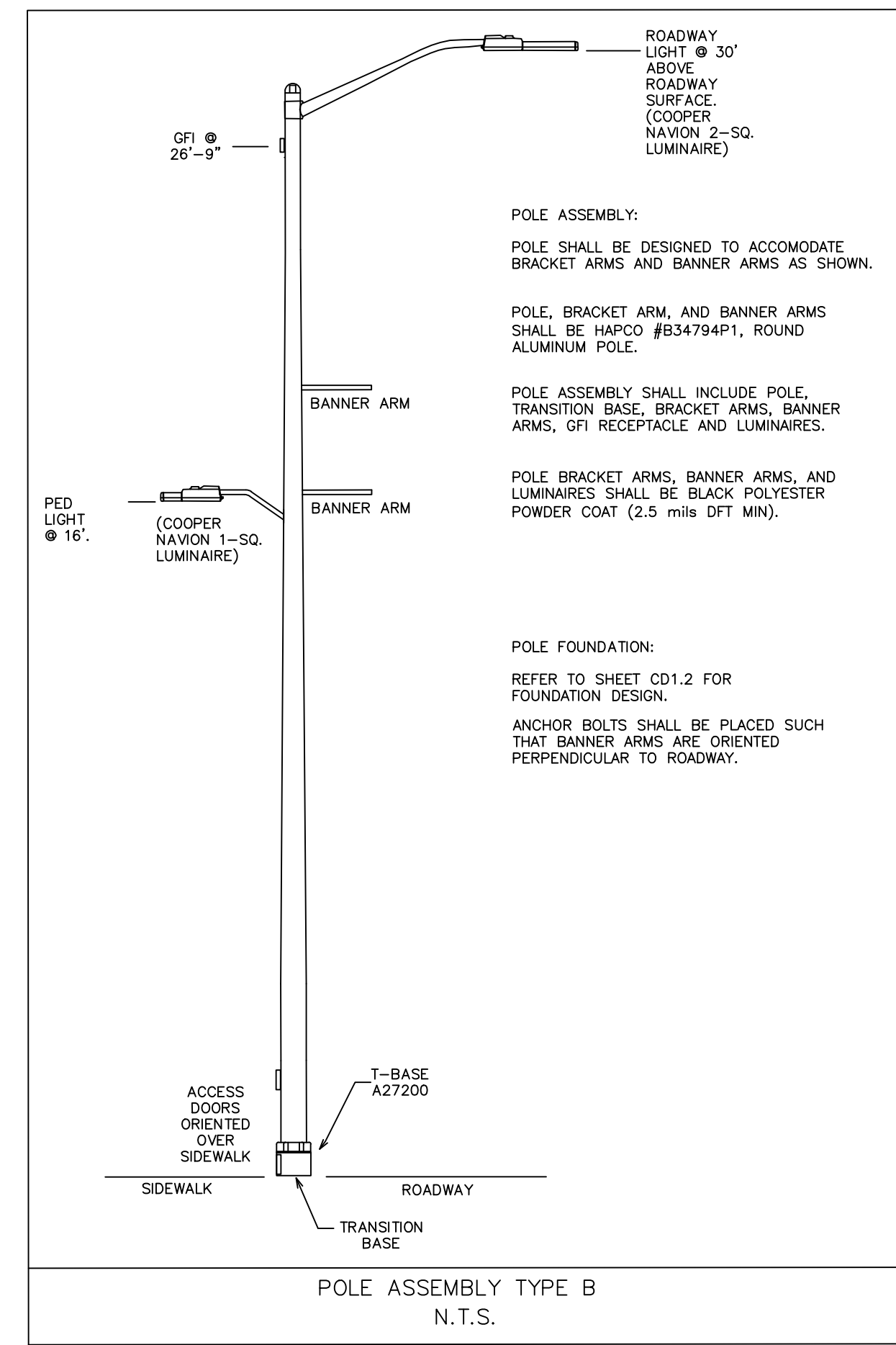
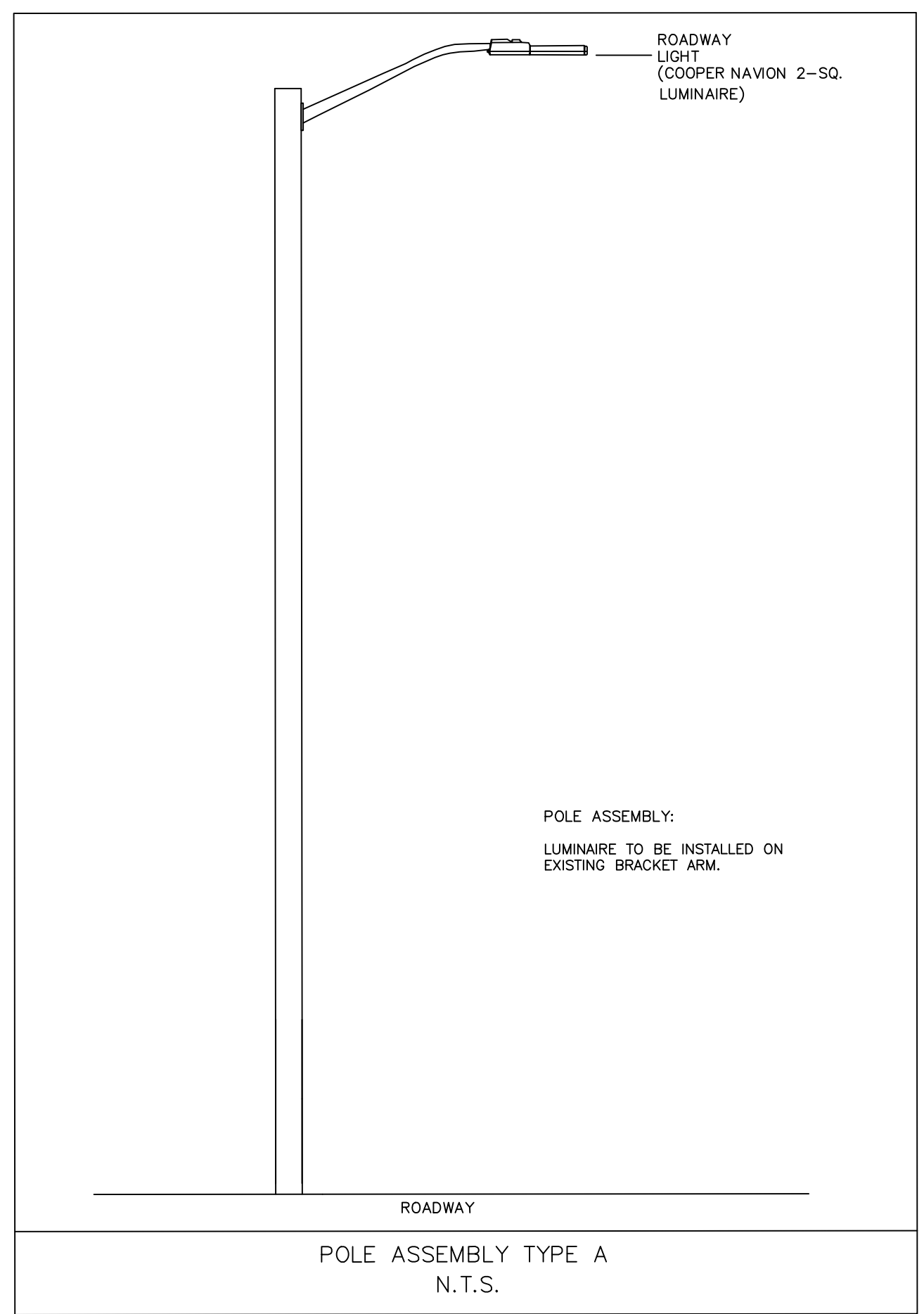
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KNOXVILLE - KNOX COUNTY, TENNESSEE
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W. JACKSON AVE.	
SHEET	DRAWING NO:
OF	L1.1

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WWW.CANNON-CANNON.COM Knoxville, TN 37919

POLE DATA													
ASSEMBLY NO.	ASSEMBLY TYPE	KUB TAG NO.	POLE TYPE	STATION	OFFSET	NO. OF LUMINAIRES	ARM LENGTH	MOUNTING HEIGHT	BANNER ARMS	SERVICE TYPE	ELECT. SOURCE	VOLTAGE	COMMENTS
SL-1	A	59894	EX SIGNAL	EXISTING	EXISTING	1	EXISTING	EXISTING	NO	UNDERGROUND	CKT1	120 V	
SL-2	A	59895	EX SIGNAL	EXISTING	EXISTING	1	EXISTING	EXISTING	NO	UNDERGROUND	CKT1	120 V	
SL-3	B	59896 / 59897	ALUMINUM	31 + 69.50	14.92 RT	2	22' / 5' 6"	16' / 30'	YES	UNDERGROUND	CKT1	120 V	
SL-4	B	59898 / 59899	ALUMINUM	32 + 69.50	14.92 RT	2	22' / 5' 6"	16' / 30'	YES	UNDERGROUND	CKT1	120 V	
SL-5	B	59000 / 59001	ALUMINUM	33 + 66.00	14.92 RT	2	22' / 5' 6"	16' / 30'	YES	UNDERGROUND	CKT1	120 V	
SL-6	C	59902	ALUMINUM	34 + 25.50	14.92 RT	1	22"	16'	NO	UNDERGROUND	CKT1	120 V	
SL-7	B	59903 / 59904	ALUMINUM	34 + 88.50	14.92 RT	2	22' / 5' 6"	16' / 30'	YES	UNDERGROUND	CKT1	120 V	
SL-8	C	59905	ALUMINUM	35 + 65.50	14.92 RT	1	22"	16'	NO	UNDERGROUND	CKT1	120 V	
SL-9	B	59906 / 59907	ALUMINUM	36 + 58.00	14.92 RT	2	22' / 5' 6"	16' / 30'	YES	UNDERGROUND	CKT2	120 V	
SL-10	C	59908	ALUMINUM	37 + 24.50	14.92 RT	1	22"	16'	NO	UNDERGROUND	CKT2	120 V	
SL-11	B	59909 / 59910	ALUMINUM	37 + 88.00	14.92 RT	2	22' / 5' 6"	16' / 30'	YES	UNDERGROUND	CKT2	120 V	
SL-12	C	59911	ALUMINUM	38 + 69.50	14.92 RT	1	22"	16'	NO	UNDERGROUND	CKT2	120 V	
SL-13	B	59912 / 59913	ALUMINUM	39 + 45.50	14.92 RT	2	22' / 5' 6"	16' / 30'	YES	UNDERGROUND	CKT2	120 V	



REVISIONS		DESCRIPTION
NO.	DATE	
1	02/09/2017	REVISED TABLE

TYPE	YEAR	PROJECT NO.	SHEET

UPPER SECOND CREEK GREENWAY
(WEST JACKSON AVENUE STREETSCAPES)
KNOXVILLE - KNOX COUNTY, TENNESSEE
PIN: 107380.00

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DRAWN: S.R.
CHECKED: B.B.
COK JOB NO: 12B-R-0518
VM JOB NO: 51130-04
SCALE: AS NOTED
DATE: 26 JAN 2016

DRAWING TITLE:
STREET LIGHTING PLAN
W. JACKSON AVE.
SHEET DRAWING NO:
OF L1.2

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STREET LIGHTING NOTES

- (1) ALL INSTALLATIONS SHALL CONFORM TO NATIONAL, STATE, & LOCAL CODES AS WELL AS TO KUB'S STANDARDS, DRAWINGS, & SPECIFICATIONS. SHOULD CONFLICTS OCCUR BETWEEN THESE DOCUMENTS, THE MOST STRICT REQUIREMENTS SHALL BE USED.
- (2) CONTRACTOR SHALL FURNISH VIDEO, DVD, OR PICTURES OF CONSTRUCTION ZONE TO KUB'S PROJECT MANAGER BEFORE START OF CONSTRUCTION.
- (3) CONTRACTOR SHALL DIRECT ALL CUSTOMER INQUIRIES & CONCERNS THROUGH KUB'S CUSTOMER SUPPORT REPRESENTATIVE.
- (4) CONTRACTOR TO CONTACT KUB INSPECTOR AT 865-558-2786 THREE DAYS BEFORE START OF PROJECT WORK TO ARRANGE FOR KUB INSPECTIONS. FAILURE TO OBTAIN KUB INSPECTIONS MAY RESULT IN THE INSTALLATION NOT BEING ACCEPTED BY KUB.
- (5) CONTRACTOR TO CONTACT TENNESSEE ONE CALL AT 1-800-351-1111 THREE DAYS BEFORE START OF WORK TO LOCATE UNDERGROUND FACILITIES.
- (6) LOCATION OF UNDERGROUND UTILITIES SHOWN IS APPROXIMATE AND INCOMPLETE. CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS IN THE FIELD.
- (7) CONTRACTOR SHALL POT HOLE AND VISUALIZE ALL UTILITIES PER KUB STANDARDS & SPECIFICATIONS IN SECTION 01110 TITLED "SPECIAL WORK PROVISIONS". CONTRACTOR SHALL HAND DIG ALL INSTALLATIONS LOCATED WITHIN 2 FEET ON EITHER SIDE OF LOCATE MARKS.
- (8) CONTRACTOR SHALL PROVIDE MANUFACTURER'S SPECIFICATION SHEETS FOR ALL CONTRACTOR SUPPLIED MATERIALS TO KUB FOR REVIEW AND APPROVAL PRIOR TO PURCHASING AND INSTALLING MATERIALS. ANY REWORK REQUIRING REMOVAL OF NON-KUB APPROVED MATERIALS WILL BE PERFORMED AT NO ADDITIONAL EXPENSE TO KUB, CITY OF KNOXVILLE, OR OWNER.
- (9) CONTRACTOR SHALL CONFINE ALL WORK TO PUBLIC RIGHT-OF-WAYS AND RECORDED UTILITY EASEMENTS. CONTRACTOR IS RESPONSIBLE FOR FURNISHING RECORDABLE LEGAL DOCUMENTATION OF WORK OUTSIDE EXISTING EASEMENTS.
- (10) CONTRACTOR SHALL USE VACUUM TRUCK TO CLEAN UP ANY SPOILS, SPILLS, OR DRILL FLUIDS. CONTRACTOR SHALL ALSO REMOVE SCRAP MATERIALS & DEBRIS FROM JOB SITE EACH DAY.
- (11) CONTRACTOR SHALL INSTALL HANDHOLES WHERE QUANTITY OF BENDS IS GREATER THAN 270 DEGREES SHALL EXCEEDS 200 LINEAR FEET.
- (12) FACTORY BENDS ARE MANDATORY. HEAT BENDING OF CONDUIT IS NOT ALLOWED. ALL CONDUIT INSTALLATIONS ARE SUBJECT TO MANDREL TESTING. MANDRELS TO BE FURNISHED BY KUB. CONTRACTOR TO PERFORM TESTING AT NO ADDITIONAL EXPENSE TO KUB, CITY OF KNOXVILLE, OR OWNER.
- (13) CONTRACTOR SHALL COLOR CODE ALL LIGHT POLE RELATED CABLES PER KUB STANDARD DWG-A-15688.
- (14) CONTRACTOR SHALL SUBMIT WRITTEN REQUEST FOR ANY PROPOSED FIELD CHANGES ALONG WITH MANUFACTURER'S SPECIFICATIONS SHEETS FOR ANY SUBSTITUTED MATERIALS TO KUB FOR REVIEW AND WRITTEN APPROVAL BEFORE MAKING ANY CHANGES. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWING MARKUPS TO KUB UPON COMPLETION OF PROJECT BEFORE FINAL INVOICE CAN BE PAID.
- (15) CONTRACTOR SHALL HAVE A QUALIFIED JOURNEYMAN ELECTRICIAN OR JOURNEYMAN WIREMAN ON THE JOB SITE AT ALL TIMES TO SUPERVISE THE INSTALLATION AND TESTING OF ALL LIGHTING SYSTEM COMPONENTS AND TO INSURE ADHERANCE TO ALL STANDARDS AND CODES.
- (16) PRIOR TO COMPLETION OF INSTALLATION, CONTRACTOR SHALL PERFORM A PERFORMANCE TEST TO INSURE THAT THE SYSTEM IS PROPERLY FUNCTIONING. THIS TEST CONSISTS OF A 48 HOUR CONTINUOUS BURN-IN OF ALL COMPONENTS WITHOUT INTERRUPTION OR FAILURE ATTRIBUTABLE TO POOR WORKMANSHIP OR DEFECTIVE MATERIAL. OTHER SYSTEM TESTS MAY BE REQUIRED AT THE DISCRETION OF KUB REPRESENTATIVES TO INSURE THAT SYSTEM WILL FUNCTION PROPERLY OVER TIME. THESE ADDITIONAL TESTS MAY INCLUDE ANY OR ALL OF THE FOLLOWING: VOLTAGE AND CURRENT READINGS OF EACH CIRCUIT, GROUND RESISTANCE TEST, INSULATION RESISTANCE TEST. FORMS WILL BY SUPPLIED BY KUB ON WHICH TO RECORD THESE READINGS.
- (17) ALL CONNECTIONS OF THE LIGHTING SYSTEM TO POWER SHALL BE MADE BY KUB. CONNECTION WILL ONLY BE PERFORMED AFTER PRELIMINARY VERIFICATION OF COMPLETION OF INSTALLATION AND CIRCUITRY ACCORDING TO CONTRACT DOCUMENTS. LIGHTING SYSTEM WILL REMAIN ENERGIZED FOR TWO WEEKS FOR CONTRACTOR TO PERFORM SYSTEM TESTING AND SATISFACTORY CORRECTION OF ANY ISSUES OR UNTIL FINAL WRITTEN ACCEPTANCE BY KUB.
- (18) CONTRACTOR TO CONTACT KUB DISPATCH AT 568-2600 FOR OPENING TRANSFORMERS TO RECEIVE CONDUIT AND WIRE OR WHEN WORKING WITHIN 10 FEET OF ANY ENERGIZED KUB POWER LINE OR POWER POLE.
- (19) CONTRACTOR TO BE RESPONSIBLE FOR INSTALLATION DEFECTS FOR A PERIOD OF ONE YEAR AFTER KUB ACCEPTS THE LIGHTING INSTALLATION.
- (20) IN-LINE FUSES ARE REQUIRED IN EACH AND EVERY HOT LEG IN POLE BASE. SEE DETAIL.
- (21) ALL CONCEALED WIRE IN CONDUIT SHALL BE RATED FOR DRY AND WET LOCATIONS AND SHALL BE STRANDED COPPER WITH XHHW TYPE THERMOSET INSULATION. WIRE SIZE 6-2 AWG SHALL HAVE A MINIMUM INSULATION THICKNESS OF 45 MILS. WIRE SIZE 10 AWG SHALL HAVE MINIMUM INSULATION THICKNESS OF 30 MILS. WIRE SIZE AND QUANTITIES PER PLANS.
- (22) ALL WIRING SHALL BE CONCEALED UNDERGROUND IN 2-INCH SCHEDULE 40 PVC CONDUIT, UNLESS OTHERWISE NOTED. MINIMUM CONDUIT DEPTH SHALL BE 30".
- (23) EACH CONDUIT RUN INTO A PULL BOX SHALL HAVE AN END BELL, AND A MINIMUM OF THIRTY-SIX (36) INCHES OF SLACK IN THE WIRE FROM END BELL TO END BELL IN THE SAME PULL BOX.
- (24) EACH CONDUIT RUN INTO A TRANSFORMER VAULT SHALL HAVE AN END BELL.
- (25) ALL CONDUIT LOCATED IN ROADWAYS SHALL BE CONCRETE ENCASED PER KUB DWG-16132-DINFO AND DWG-16132-DL9.
- (26) THE GROUND WIRE SHALL BE RUN INSIDE CONDUIT WITHIN STRUCTURES, SHALL BE COLORED GREEN AND HAVE XHHW INSULATION.

- (27) ALL GROUND RODS SHALL BE 5/8" X 8 FT COPPERWELD TYPE. GROUND WIRE TO COPPERWELD GROUND RODS SHALL BE BARE, SOFT DRAWN COPPER. CONNECTIONS TO GROUND ROD SHALL BE WITH KUB APPROVED ACORN TYPE FITTING.
- (28) ALL INCIDENTAL EQUIPMENT AND MATERIAL REQUIRED FOR THE SUCCESSFUL EXECUTION OF THIS WORK SHALL BE FURNISHED IN LIGHTING PAY ITEMS WHETHER SPECIFICALLY NOTED OR NOT.
- (29) STANDARDS SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORT FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS.
- (30) LIGHTING ASSEMBLIES SHALL INCLUDE THE FOLLOWING:
 - A. HOT DIPPED, GALVANIZED ANCHOR BOLTS AND FULLY GALVANIZED NUTS, AND WASHERS (ASTM A153).
 - B. POLE GROUND LUG SHALL BE TINNED OR RATED FOR COPPER TO ALUMINUM CONNECTIONS.
 - C. TAMPER RESISTANT STAINLESS STEEL SCREWS SIMILAR TO FASTENAL X204C0040SSX600, SIZED AS REQUIRED.
 - D. WIRING INSIDE POLES SHALL BE THW TYPE WITH 75 DEG C RATING PER KUB STANDARDS.
- (31) REGARDLESS OF IDENTIFIED SPECIFICATION REQUIREMENTS, POLE FOUNDATIONS ARE TO BE FURNISHED AS FOLLOWS:
 - A. 4000 PSI RATED.
 - B. TROWEL FINISHED. BROOM FINISHES WILL NOT BE ACCEPTED.
 - C. CONSTRUCTED WITH CONTINUOUS AND MONOLITHIC POURS WITH NO CONSTRUCTION JOINTS.
 - D. TOPS SHALL BE FLAT, LEVEL AND POURED TO EXACT ELEVATION SUCH THAT POLES MAY BE MOUNTED DIRECTLY ON EACH FOUNDATION WITHOUT THE USE OF LEVELING NUTS.
 - E. FORMS AND SHAFTS SHALL BE FREE OF MUD AND WATER WITH TAMPED EARTH BOTTOMS PRIOR TO POURING CONCRETE.
- (32) STREET LIGHT TAGS TO BE FURNISHED AND INSTALLED BY KUB.
- (33) CONTRACTOR SHALL PROVIDE ALL MATERIAL WARRANTY INFORMATION TO KUB BEFORE CLOSE OUT OF PROJECT. WARRANTY INFORMATION SHALL INCLUDE COPIES OF PURCHASE ORDERS SHOWING ADDRESS OF ELECTRICAL DISTRIBUTOR AND ALL CONTACT INFORMATION.
- (34) OBTAIN FINAL KUB INSPECTION AND WRITTEN LETTER OF ACCEPTANCE FROM KUB BEFORE FINAL PROJECT CLOSE OUT.

TABULATED STREET LIGHTING QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
(1) 714-02.01	ENCASED CONDUIT (2" PVC, SCHEDULE 40)	L.F.	1,100
714-05.05	PULL BOXES (LIGHTING)	EACH	4
714-06.08	CABLE (1/C # 6 AWG - TYPE "XHHW")	L.F.	13,000
714-08.09	LIGHT STANDARDS (TYPE "A" ASSEMBLY)	EACH	2
(3) 714-08.10	LIGHT STANDARDS (TYPE "B" ASSEMBLY)	EACH	7
(4) 714-08.11	LIGHT STANDARDS (TYPE "C" ASSEMBLY)	EACH	4
714-25	ELECTRICAL CONNECTION	EACH	1

- FOOTNOTES:
- (1) ITEM INCLUDES CONCRETE ENCASEMENT UNDER ROADWAY PER KUB STANDARDS.
 - (2) LUMINAIRE TO BE INSTALLED ON EXISTING ARM ON EXISTING SIGNAL POLE. LUMINAIRE SHALL BE AS SPECIFIED ON SHEET L1.0, OR APPROVED EQUAL.
 - (3) ITEM INCLUDES TWO LUMINAIRES, TWO BRACKET ARMS, 27'-6" POLE, GFI DUPLEX RECEPTACLE WITH WEATHERPROOF COVER, BANNER ARMS, TRANSITION BASE, POLE FOUNDATION, AND ASSOCIATED WIRING INSIDE POLE FROM BASE TO LUMINAIRES. LUMINAIRES AND POLE ASSEMBLY SHALL BE AS SPECIFIED ON SHEET L1.0, OR APPROVED EQUAL.
 - (4) ITEM INCLUDES ONE LUMINAIRE, ONE BRACKET ARM, 14'-7" POLE, GFI DUPLEX RECEPTACLE WITH WEATHERPROOF COVER, TRANSITION BASE, POLE FOUNDATION, AND ASSOCIATED WIRING INSIDE POLE FROM BASE TO LUMINAIRE. LUMINAIRE AND POLE ASSEMBLY SHALL BE AS SPECIFIED ON SHEET L1.0, OR APPROVED EQUAL.

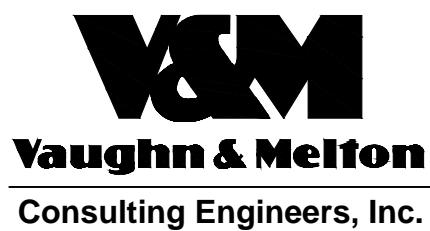


PROJECT NO.	TYPE	YEAR	SHEET

NO.	DATE	DESCRIPTION
1	02/09/2017	REVISED TABLE



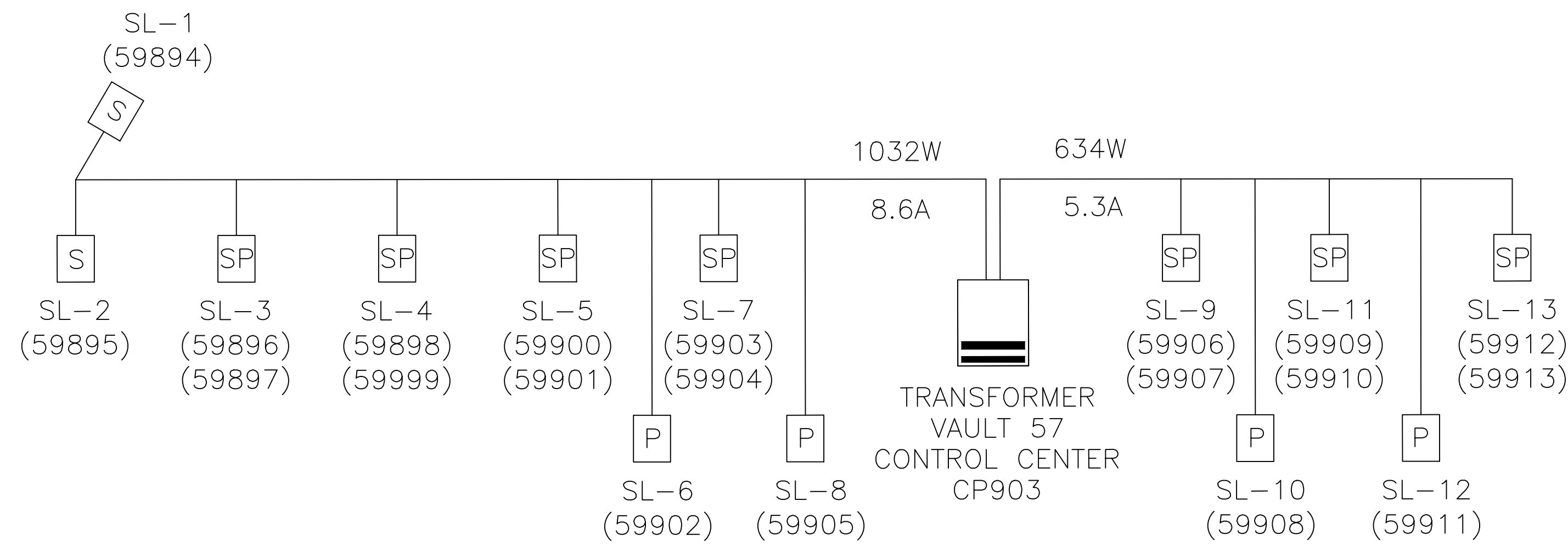
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(WEST JACKSON AVENUE STREETSAPES)
 KNOXVILLE - KNOX COUNTY, TENNESSEE
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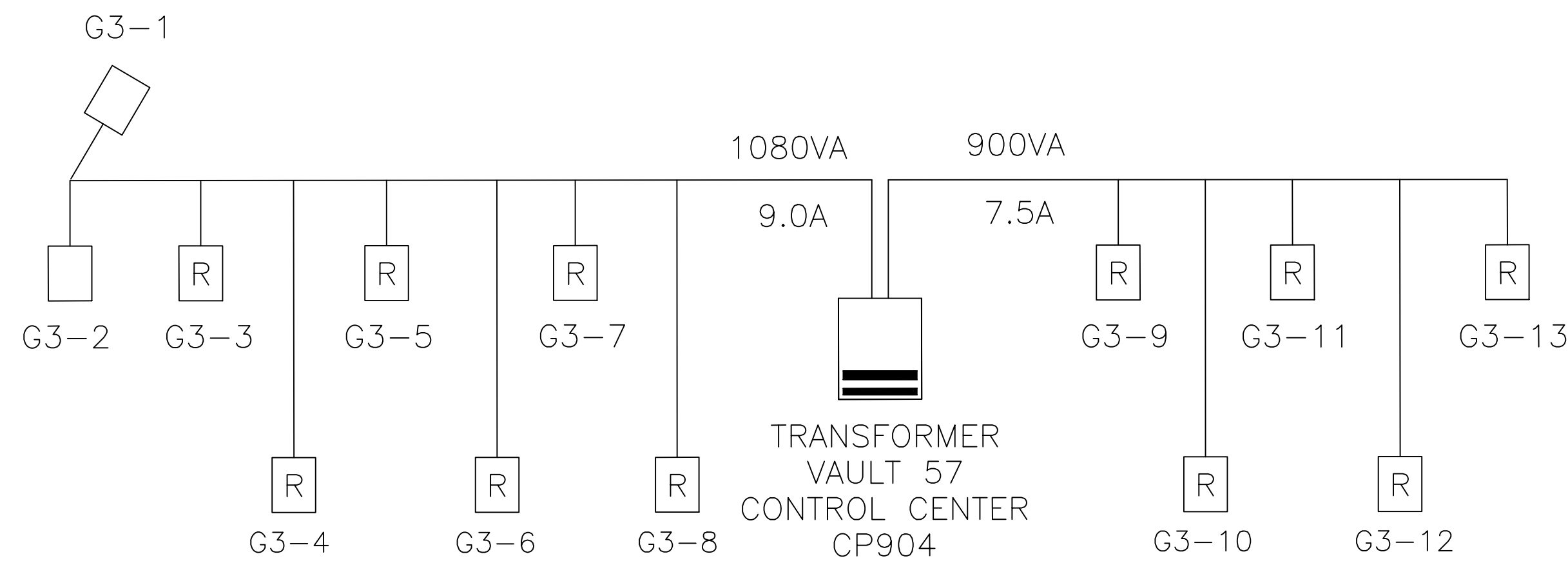
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W. JACKSON AVE.	
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OF	L1.3

LIGHTING CIRCUIT DIAGRAM – CONTROL CENTER



- LEGEND
- S** STREET LIGHT
NVN-AE-02-D-U-T3-10K-4N7-BK-U0061
107 WATT LED
(#####) KUB ST. LT. TAG NO.
 - SP** STREET LIGHT
NVN-AE-02-D-U-T3-10K-4N7-BK-U0061
107 WATT LED
(#####) KUB ST. LT. TAG NO.
 - P** PEDESTRIAN LIGHT
NVN-AE-01-D-U-T3-10K-4N7-BK-U0060
56 WATT LED
(#####) KUB ST. LT. TAG NO.

RECEPTACLE CIRCUIT DIAGRAM



- LEGEND
- R** RECEPTACLE

SHEET	
PROJECT NO.	
TYPE	
YEAR	

NO.	DATE	DESCRIPTION
1	02/09/2017	REVISED LT. CIRCUIT DIAGRAM

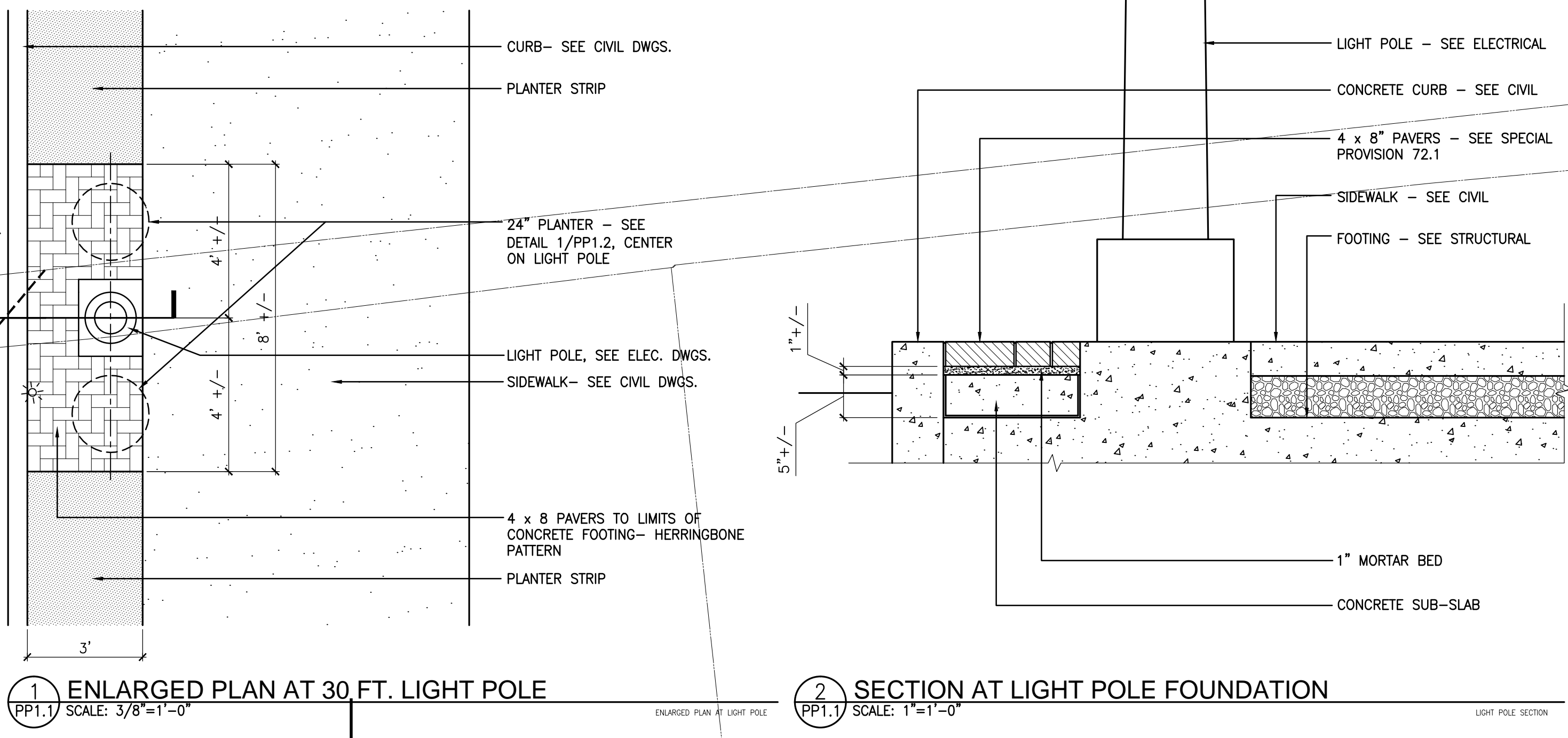
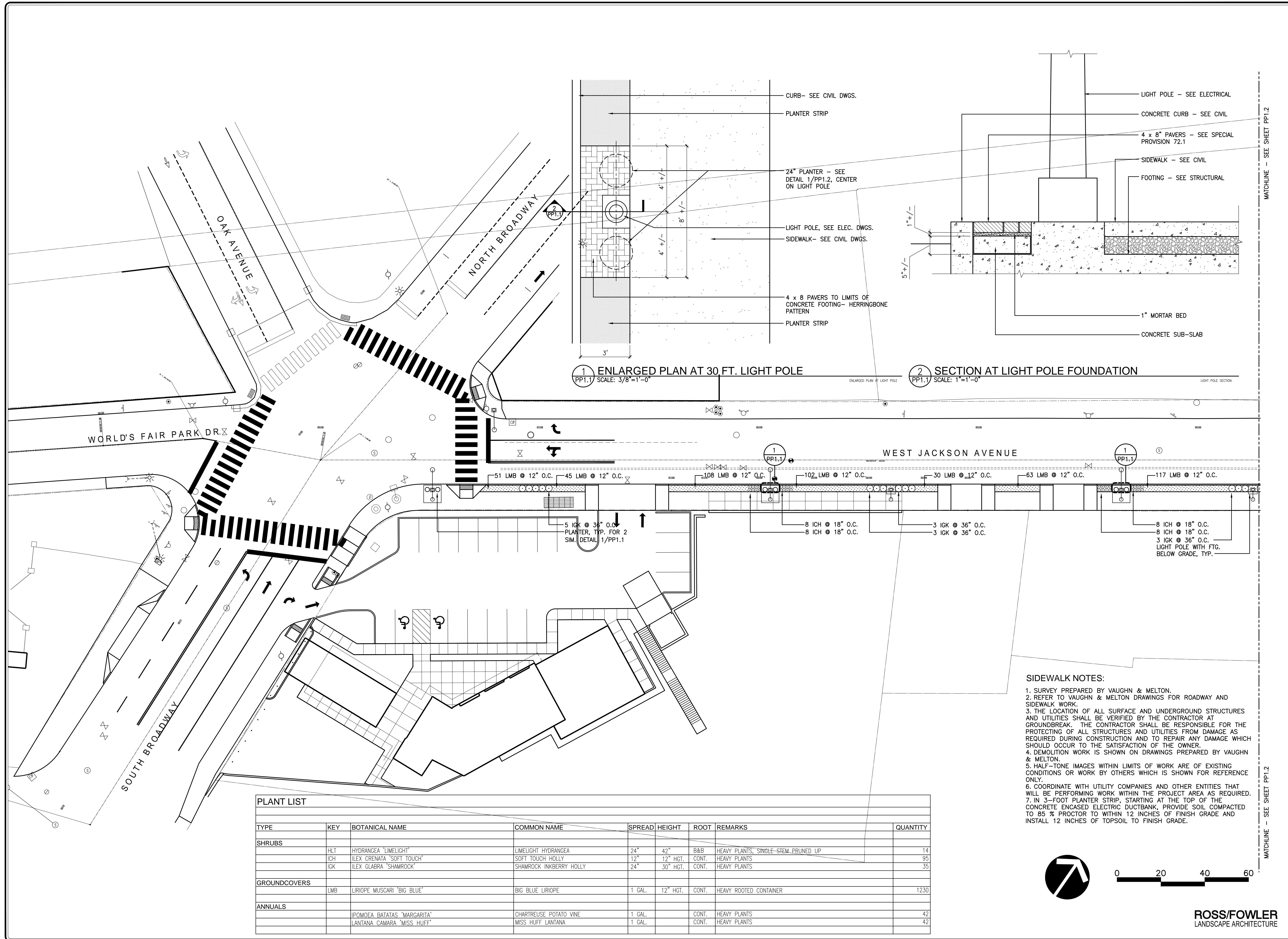


UPPER SECOND CREEK GREENWAY
 (WEST JACKSON AVENUE STREETSCAPES)
 KNOXVILLE - KNOX COUNTY, TENNESSEE
 PIN: 107380.00

VM
Vaughn & Melton
 Consulting Engineers, Inc.
 TENNESSEE
 865-546-5800
 www.vaughnmelton.com
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DRAWN:	S.R.
CHECKED:	B.B.
COK JOB NO:	12B-R-0518
VM JOB NO:	51130-04
SCALE:	AS NOTED
DATE:	26 JAN 2016
DRAWING TITLE:	
STREET LIGHTING PLAN	
W. JACKSON AVE.	
SHEET	DRAWING NO:
OF	L1.4

CANNON & CANNON INC.
 CONSULTING ENGINEERS · FIELD SURVEYORS
 TEL 865.670.8555 | 8550 Kingeton Pike
 WWW.CANNON-CANNON.COM | Knoxville, TN 37919

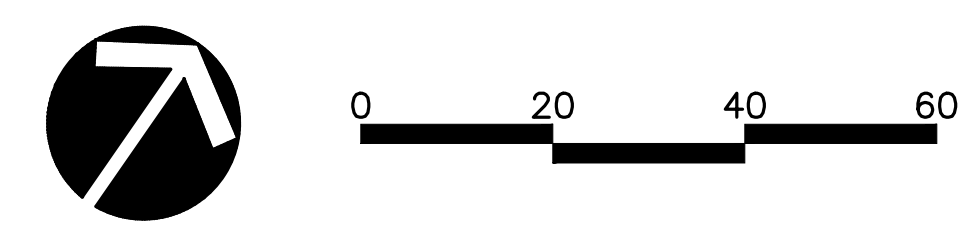


PLANT LIST

TYPE	KEY	BOTANICAL NAME	COMMON NAME	SPREAD	HEIGHT	ROOT	REMARKS	QUANTITY
SHRUBS	HLT	HYDRANGEA 'LIMELIGHT'	LIMELIGHT HYDRANGEA	24"	42"	B&B	HEAVY PLANTS, SINGLE-STEM, PRUNED UP	14
	ICH	ILEX CRENATA 'SOFT TOUCH'	SOFT TOUCH HOLLY	12"	12" HGT.	CONT.	HEAVY PLANTS	95
	IGK	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY HOLLY	24"	30" HGT.	CONT.	HEAVY PLANTS	35
GROUNDCOVERS	LMB	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LIRIOPE	1 GAL.	12" HGT.	CONT.	HEAVY ROOTED CONTAINER	1230
ANNUALS	IPOMOEA	BATATAS 'MARGARITA'	CHARTREUSE POTATO VINE	1 GAL.		CONT.	HEAVY PLANTS	42
	LANTANA	CAMARA 'MISS HUFF'	MISS HUFF LANTANA	1 GAL.		CONT.	HEAVY PLANTS	42

SIDEWALK NOTES:

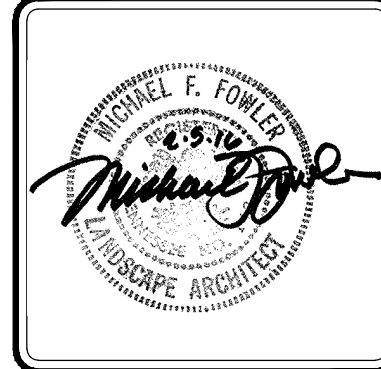
1. SURVEY PREPARED BY VAUGHN & MELTON.
2. REFER TO VAUGHN & MELTON DRAWINGS FOR ROADWAY AND SIDEWALK WORK.
3. THE LOCATION OF ALL SURFACE AND UNDERGROUND STRUCTURES AND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR AT GROUND BREAK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTING OF ALL STRUCTURES AND UTILITIES FROM DAMAGE AS REQUIRED DURING CONSTRUCTION AND TO REPAIR ANY DAMAGE WHICH SHOULD OCCUR TO THE SATISFACTION OF THE OWNER.
4. DEMOLITION WORK IS SHOWN ON DRAWINGS PREPARED BY VAUGHN & MELTON.
5. HALF-TONE IMAGES WITHIN LIMITS OF WORK ARE OF EXISTING CONDITIONS OR WORK BY OTHERS WHICH IS SHOWN FOR REFERENCE ONLY.
6. COORDINATE WITH UTILITY COMPANIES AND OTHER ENTITIES THAT WILL BE PERFORMING WORK WITHIN THE PROJECT AREA AS REQUIRED.
7. IN 3-FOOT PLANTER STRIP, STARTING AT THE TOP OF THE CONCRETE ENCASED ELECTRIC DUCTBANK, PROVIDE SOIL COMPACTED TO 85% PROCTOR TO WITHIN 12 INCHES OF FINISH GRADE AND INSTALL 12 INCHES OF TOPSOIL TO FINISH GRADE.



ROSS/FOWLER
LANDSCAPE ARCHITECTURE

SHEET	PROJECT NO.
YEAR	TYPE

NO.	DATE	REVISIONS DESCRIPTION
-----	------	-----------------------



UPPER SECOND CREEK GREENWAY
(WEST JACKSON AVENUE STREETSAPES)

KNOXVILLE - KNOX COUNTY, TENNESSEE
PIN: 107380.00

VM
Vaughn & Melton
Consulting Engineers, Inc.

TENNESSEE
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DRAWN:
CHECKED:
COJ JOB NO: 12B-R-0518
VM JOB NO: 51130-04
SCALE: 1" = 20'
DATE: 29 JAN 2016
DRAWING TITLE:
STREETSAPES PLANTING PLAN

SHEET 1 OF 3
DRAWING NO: **PP1.1**

MATCHLINE - SEE SHEET PP1.2

Bid Quantities - Jackson Avenue Streetscapes

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
105-01	CONSTRUCTION STAKES, LINES AND GRADES	L.S.	1		
202-01	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	1		
202-03	REMOVAL OF RIGID PAVEMENT, SIDEWALK, ETC.	S.Y.	1061		
202-03.01	REMOVAL OF ASPHALT PAVEMENT	S.Y.	836		
202-08.15	REMOVAL OF CURB AND GUTTER (TYPE 6-30)	L.F.	30		
209-01.10	EROSION & SILTATION CONTROL	L.S.	1		
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	114		
307-01.07	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING B-M	TON	47		
403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	2.45		
407-20.05	SAW CUTTING ASPHALT PAVEMENT	L.F.	1372		
411-01.10	ACS MIX (PG64-22) GRADING D	TON	445		
415-01.02	COLD PLANING BITUMINOUS PAVEMENT (1 1/2" DEPTH)	S.Y.	5363		
(28) 604-07.01	RETAINING WALL	S.F.	275		
607-03.02	18" CONCRETE PIPE CULVERT (CLASS III)	L.F.	320		
607-05.02	24" CONCRETE PIPE CULVERT (CLASS III)	L.F.	26		
(29) 607-19.05	TRENCH DRAIN/DOWNPOUT EXTENSIONS	L.S.	1		
611-01.02	MANHOLE (PRECAST NO. 3) 4'-8" DEPTH	EACH	4		
611-09.01	ADJUSTMENT OF EXISTING CATCH BASIN	EACH	2		
611-09.04	REMOVE CURB IRON	EACH	5		
611-09.05	CONVERT CURB INLET TO MANHOLE	EACH	1		
611-12.02	CATCH BASINS, TYPE 12, 0' - 4' DEPTH	EACH	8		
701-014.01	CONCRETE SIDEWALK (4")	S.F.	5534		
701-01.03	CONCRETE SIDEWALK (4" WITH INTEGRAL CURB)	S.F.	4410		
701-02	CONCRETE DRIVEWAY (6")	S.F.	3662		
701-02.03	CONCRETE HANDICAP RAMP	S.F.	925		
702-01.02	CONCRETE CURB AND GUTTER (TYPE 6-30)	L.F.	30		
702-01	CONCRETE CURB (6' DETACHED TYPE "A")	L.F.	972		
712-01	TRAFFIC CONTROL	L.S.	1		
713-01.10	SIGNING	L.S.	1		
(1) 714-02.01	ENCASED CONDUIT (2" PVC, SCHEDULE 40)	L.F.	1100		
714-05.05	PULL BOXES (LIGHTING)	EACH	4		
714-06.08	CABLE (1/C # 6 AWG - TYPE "XHHW")	L.F.	13,000		
(2) 714-08.09	LIGHT STANDARDS (TYPE "A" ASSEMBLY)	EACH	2		
(3) 714-08.10	LIGHT STANDARDS (TYPE "B" ASSEMBLY)	EACH	7		
(4) 714-08.11	LIGHT STANDARDS (TYPE "C" ASSEMBLY)	EACH	4		
714-25	ELECTRICAL CONNECTION	EACH	1		
716-02.05	PLASTIC PAVEMENT MARKINGS (STOP LINE)	L.F.	107		
716-02.06	PLASTIC PAVEMENT MARKINGS (TURN ARROWS)	EA	5		
716-02.09	PLASTIC PAVEMENT MARKINGS (LONGITUDINAL CROSS WALK)	L.F.	264		
716-03.01	PLASTIC WORD PAVEMENT MARKING (ONLY)	EA	3		
716-13.06	SPRAY THERMOPLASTIC PAVEMENT MARKING (40 MIL - 4"WIDE) (0.12 LM WHITE, 0.43 LM YELLOW)	L.M.	0.55		
717-01	MOBILIZATION	L.S.	1		
(5) 730-01.02	REMOVAL OF SIGNAL EQUIPMENT	EACH	1		
(6) 730-03.21	INSTALL PULL BOX (TYPE B)	EACH	5		
(7) 730-05.04	MODIFY EXISTING ELECTRIC SERVICE CONNECTION	EACH	1		
730-08.03	SIGNAL CABLE (7 CONDUCTOR)	LF	1800		
730-08.05	SIGNAL CABLE (12 CONDUCTOR)	LF	1000		
730-11.01	STEEL CONDUIT RISER ASSEMBLY	EACH	6		
(8) 730-12.02	CONDUIT 2" DIAMETER (PVC)	LF	450		
(8) 730-12.13	CONDUIT 2" DIAMETER (JACK AND BORE)	LF	100		
(9) 730-12.19	PAINT (SIGNAL POLES)	LS	1		
730-14.13	SHIELDED DETECTOR CABLE (PEDESTRIAN PUSHBUTTONS)	LF	2800		
(10) 730-14.14	MODIFY VEHICLE DETECTION	LS	1		
(11) 730-15.32	CABINET (EIGHT PHASE BASE MOUNTED)	EACH	1		
(12) 730-16.02	EIGHT PHASE ACTUATED CONTROLLER	EACH	1		
(13) 730-23.30	PEDESTAL POLE (PEDESTRIAN)	EACH	5		
(14) 730-26.05	COUNTDOWN PEDESTRIAN SIGNAL	EACH	10		
(15) 730-26.09	PEDESTRIAN PUSHBUTTON WITH 15IN SIGN	EACH	10		
TELECOMM.					
(16) 793-13.12	1 DUCT FORMATION @ 36IN DEPTH	L.F.	205		
(16) 793-13.17	2 DUCT FORMATION @ 36IN DEPTH	L.F.	30		
(16) 793-13.27	4 DUCT FORMATION @ 36IN DEPTH	L.F.	485		
(16) 793-13.32	6 DUCT FORMATION @ 36IN DEPTH	L.F.	80		
(16) 793-13.51	5 DUCT FORMATION @ 36IN DEPTH	L.F.	275		
(17) 793-11.16	CONCRETE HANDHOLE 4'X4'X4'	EACH	1		
(17) 793-11.20	HANDHOLE 30INX48IN	EACH	1		
(18) 793-14.02	CONCRETE ENCASMENT PER DUCT	L.F.	3795		
(19) 793-14.05	MH PRECAST 4-FT W X 8-FT L X 6-FT H	EACH	3		
ELECTRIC					
714-04.01	CONDUIT (STRUCTURES - 1" RGS)	LF	80		
714-25.02	ELECTRICAL CONNECTION (W/ MANHOLE CORE DRILL)	EA	1		
714-25.03	ELECTRICAL CONNECTION (TO EXST. OVERHEAD OR UNDERGROUND)	EA	2		
714-25.22	INSTALL SVC RISER	EA	2		

Bid Quantities - Jackson Avenue Streetscapes

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
714-75.02	PHOTO ELECTRICAL RELAY 240V	EA	4		
790-41.62	UG SEC COND TPLX (6CU NETWORK CABLE)	LF	80		
790-41.63	UG SEC COND QPLX (3/0 CU)	LF	80		
790-41.64	UG SEC COND SGL COND (#6 CU GND)	LF	80		
790-42.16	2 DUCT BANK @ 36IN-48IN	LF	90		
790-42.19	4 DUCT BANK @ 36IN-48IN	LF	75		
790-44.13	REPLACE ELECTRIC VAULT FRAME AND GRATE	EA	2		
790-98.01	REMOVE WIRE	LF	909		
790-98.02	REMOVE POLES	EA	8		
790-98.03	REMOVE FRAMING/ASSOCIATED APPARATUS	EA	25		
LANDSCAPING					
(20)	802-03.03	Plants for Planters	L.S.	1	
(21)	802-03.04	Limelight Hydrangea	Each	14	
(22)	802-03.05	Shamrock Holly	Each	35	
(23)	802-03.06	Evergreen Giant Liriope	Each	95	
(24)	802-03.07	Mondo Grass	Each	1,230	
(25)	920-30.01	Metal Planters	Each	14	
(26)	920-30.03	Bicycle Racks	Each	6	
(27)	920-40	Clay Pavers on Rigid Base	S.F.	146	

Total Amount Bid:

FOOTNOTES:

- (1) ITEM INCLUDES CONCRETE ENCASMENT UNDER ROADWAY PER KUB STANDARDS.
- (2) LUMINAIRE TO BE INSTALLED ON EXISTING ARM ON EXISTING SIGNAL POLE. LUMINAIRE SHALL BE AS SPECIFIED ON SHEET L1.0, OR APPROVED EQUAL.
- (3) ITEM INCLUDES TWO LUMINAIRES, TWO BRACKET ARMS, 27'-6" POLE, GFI DUPLEX RECEPTACLE WITH WEATHERPROOF COVER, BANNER ARMS, TRANSITION BASE, POLE FOUNDATION, AND ASSOCIATED WIRING INSIDE POLE FROM BASE TO LUMINAIRES. LUMINAIRES AND POLE ASSEMBLY SHALL BE AS SPECIFIED ON SHEET L1.0, OR APPROVED EQUAL.
- (4) ITEM INCLUDES ONE LUMINAIRE, ONE BRACKET ARM, 14'-7" POLE, GFI DUPLEX RECEPTACLE WITH WEATHERPROOF COVER, TRANSITION BASE, POLE FOUNDATION, AND ASSOCIATED WIRING INSIDE POLE FROM BASE TO LUMINAIRE. LUMINAIRE AND POLE ASSEMBLY SHALL BE AS SPECIFIED ON SHEET L1.0, OR APPROVED EQUAL.
- (5) ITEM INCLUDES REMOVAL OF EXISTING CABINET AND WIRING, AND TRANSFER OF ANY ITEMS NECESSARY FROM EXISTING CABINET TO NEW CABINET.
- (6) SEE TRAFFIC SIGNAL NOTE 18.
- (7) SEE TRAFFIC SIGNAL NOTES 7 AND 8.
- (8) ALL CONDUIT SHALL BE PVC SCHEDULE 80.
- (9) ITEM INCLUDES ALL MATERIALS AND LABOR NECESSARY TO REPAINT EXISTING STEEL SIGNAL POLES AS SHOWN ON SHEET T1.0.
- (10) ITEM INCLUDES ALL MATERIAL AND LABOR NECESSARY TO REWIRE EXISTING LOOP AND RADAR DETECTORS TO NEW CABINET.
- (11) ITEM INCLUDES CABINET, FOUNDATION, AND ALL NEW CABINET EQUIPMENT AS REQUESTED BY THE CITY OF KNOXVILLE. SEE TRAFFIC SIGNAL NOTE 18.
- (12) CONTROLLER SHALL BE TRAFFICWARE 980.
- (13) ITEM INCLUDES FOUNDATION.
- (14) SEE SHEET T1.0 FOR PEDESTRIAN SIGNAL SPECIFICATIONS.
- (15) SEE SHEET T1.0 FOR PEDESTRIAN PUSHBUTTON SPECIFICATIONS.
- (16) INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT INCLUDING BUT NOT LIMITED TO SPACERS, COUPLINGS, BENDS, OPENING TRENCH, BACKFILL PER SPECS, SURFACE RESTORATION OF ALL CROSSINGS TO TDOT STANDARDS, SETUP, TRAFFIC CONTROL.
- (17) INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT INCLUDING BU NOT LIMITED TO DIGGING HOLE, PLACING HANDHOLE, TERMINATING CONDUIT, RESTORING SURFACE TO TDOT STANDARDS, SETUP, TRAFFIC CONTROL.
- (18) ALL DUCT FORMATIONS
- (19) INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT INCLUDING BUT NOT LIMITED TO DIGGING HOLE, GRAVEL BASE, BACKFILL, AND SURFACE RESTORATION TO TDOT STANDARDS, FRAME AND COVER, SETUP AND
- (20) See COK Special Provisions 29.1 Plants for Planters
- (21) See COK Special Provisions 29.11 Limelight Hydrangea
- (22) See COK Special Provisions 29.12 Shamrock Holly
- (23) See COK Special Provisions 29.13 Evergreen Giant Liriope
- (24) See COK Special Provisions 29.14 Mondo Grass
- (25) See COK Special Provisions 70.10 Metal Planters
- (26) See COK Special Provisions 71.10 Bicycle Racks
- (27) See COK Special Provisions 72.10 Clay Pavers on Rigid Base
- (28) RETAINING WALL QUANTITY IS EXPOSED FACE OF WALL. ALL ITEMS REQUIRED TO CONSTRUCT WALL ARE INCLUDED IN THIS ITEM.
- (29) 5 LOCATIONS. INCLUDES WYE PVC CLEANOUT AT CONNECTION TO EXISTING DRAINS.

SPECIAL PROVISION
FOR
CLAY PAVERS ON RIGID BASE

1. Description

- (a) This work shall consist of constructing clay paver sidewalk treatment on a concrete sub-slab and mortared in place at the locations and to the dimensions, lines, grades, and cross section indicated on the Plans or as directed by the Engineer, and in conformity with the provisions and requirements set out in these Specifications.
- (b) Clay pavers on rigid base shall include all the necessary excavation; the backfilling; the concrete sub-slab and mortar; the final cleaning up; and completing all incidentals thereto; as indicated on the Plans or as directed by the Engineer.

2. Materials

- (a) Traditional clay paver materials shall meet the applicable requirements of ASTM C902, Class SX, Type 1, Application PX as manufactured by Pine Hall Brick Co., Inc. Model: "Courtyard" standard modular size 3 5/8" X 7 5/8" X 2-1/4" Full Range, Color: "Red Flash", square edges, 10,000 psi minimum compressive strength and below 6% cold water absorption.
- (b) Mortar materials shall be as specified in TS 16.0.

3. Construction Requirements

- (a) Submittals
 - 1) Installer Qualifications:
 - a) Provide list of references that illustrate a minimum three years experience with at least 5,000 square feet of satisfactory installations of clay pavers on a rigid base.
 - 2) Manufacturer's Product Data including certification of compliance with specifications and installation requirements.
 - 3) A minimum five physical samples for color approval by Landscape Architect
 - 4) Submit samples of each paver type representative of size, shape, color and finish, indicating color variation expected in finished installation.
 - 5) Submit test results from approved independent testing laboratory indicating brick paver ASTM C902 compliance.

- (b) Sample Panels
 - 1) Install 3'X8' area of clay pavers on concrete sub-slab with mortar setting bed as shown on the drawings illustrating all conditions that will be encountered during construction. Installation shall be a test panel for review and approval. Sample panel may become permanent installation upon approval by the Landscape Architect.
 - 2) Landscape Architect will inspect sample panel. If sample is not acceptable continue sample panel construction until Landscape Architect approves sample panel.
- (c) Delivery Storage and Handling
 - 1) Deliver all materials to the project site in closed packaging.
 - 2) Store in locked containers or behind locked chain link fencing system.
- (d) Protection of Adjacent Surfaces

Finished surfaces adjacent to the clay pavers on rigid base shall be adequately protected from soiling, staining and other damage during construction.
- (e) Follow industry standard and manufacturer's written instructions and installation procedures, whichever is more stringent.

4. Method of Measurement

- (a) Clay pavers on rigid base at sidewalks will be measured for payment per square foot, complete in place.
- (b) The area shall be obtained from surface measurements. The area measured shall not exceed standard widths indicated on the plans, unless otherwise directed in writing by the Engineer.
- (c) No measurement for payment will be made for excavation, subgrade preparation, jointing, jointing materials, expansion joint materials or for backfill materials, as these are a necessary part of the construction and a responsibility to be assumed by the Contractor.

5. Basis of Payment

This item will be paid for at the Contract unit price per square foot for clay pavers on rigid base, complete in place. The price shall be full compensation for all work, excavation, concrete sub-slab, mortar bed and joint mortar materials, labor and incidentals required to complete this item in accordance with the Plans and Specifications.

**CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING**

Project: Jackson Avenue Streetscapes (Upper Second Creek Greenway)
Project No: 12B-R-0518
Pin No. 107380.00
Federal Project No. HPP-9109(118)
State Project No. 47LPLM-F3-022

Opened in Knoxville, TN
Date: June 29, 2016
Time: 11:00 a.m.

SUMMARY OF BIDS

CITY OF KNOXVILLE BID SCHEDULE				Southern Constructors, Inc.		Design & Construction Services, Inc.	
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	PRICE	AMOUNT	PRICE	AMOUNT
105-01	Construction Stakes, Lines and Grades	LS	1	60,000.00	60,000.00	47,227.00	47,227.00
202-01	Removal of Structures and Obstructions	LS	1	25,000.00	25,000.00	15,000.00	15,000.00
202-03	Removal of Rigid Pavement, Sidewalk, etc.	SY	1,061	15.00	15,915.00	40.00	42,440.00
202-03.01	Removal of Asphalt Pavement	SY	836	15.00	12,540.00	40.00	33,440.00
202-08.15	Removal of Curb and Gutter (Type 6-30)	LF	30	10.00	300.00	9.10	273.00
209-01.10	Erosion & Siltation Control	LS	1	15,000.00	15,000.00	3,983.00	3,983.00
303-01	Mineral Aggregate, Type A Base, Grading D	TON	114	35.00	3,990.00	45.52	5,189.28
307-01.07	Asphalt Concrete Mix (PG64-22) (BPMB-HM) Grading B-M	TON	45	200.00	9,000.00	227.60	10,242.00
407-20.05	Saw Cutting Asphalt Pavement	LF	1,372	3.00	4,116.00	2.85	3,910.20
411-01.10	ACS Mix (PG64-22) Grading D	TON	445	140.00	62,300.00	284.50	126,602.50
415-01.02	Cold Planing Bituminous Pavement (1 1/2" Depth)	SY	5,363	5.00	26,815.00	7.97	42,743.11
604-07.01	Retaining Wall	SF	398	85.00	33,830.00	119.49	47,557.02
607-03.02	18" Concrete Pipe Culvert (Class III)	LF	320	150.00	48,000.00	97.87	31,318.40
607-05.02	24" Concrete Pipe Culvert (Class III)	LF	26	220.00	5,720.00	108.11	2,810.86
611-01.02	Manhole (Precast No. 3) 4' - 8' Depth	EA	4	5,000.00	20,000.00	2,845.00	11,380.00
611-09.01	Adjustment of Existing Catch Basin	EA	2	600.00	1,200.00	682.80	1,365.60
611-09.04	Remove Curb Iron	EA	5	350.00	1,750.00	341.40	1,707.00

**CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING**

Project: Jackson Avenue Streetscapes (Upper Second Creek Greenway)
Project No: 12B-R-0518
Pin No. 107380.00
Federal Project No. HPP-9109(118)
State Project No. 47LPLM-F3-022

Opened in Knoxville, TN
Date: June 29, 2016
Time: 11:00 a.m.

SUMMARY OF BIDS

CITY OF KNOXVILLE BID SCHEDULE				Southern Constructors, Inc.		Design & Construction Services, Inc.	
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	PRICE	AMOUNT	PRICE	AMOUNT
611-09.05	Convert Curb Inlet to Manhole	EA	1	1,500.00	1,500.00	910.40	910.40
611-12.02	Catch Basins, Type 12, 0' - 4' Depth	EA	7	4,000.00	28,000.00	3,186.40	22,304.80
701-014.01	Concrete Sidewalk (4")	SF	5,534	8.00	44,272.00	8.00	44,272.00
701-01.03	Concrete Sidewalk (4" with Integral Curb)	SF	4,410	11.00	48,510.00	8.54	37,661.40
701-02	Concrete Driveway (6")	SF	3,662	11.00	40,282.00	9.10	33,324.20
701-02.03	Concrete Handicap Ramp	SF	925	15.00	13,875.00	25.00	23,125.00
702-01.02	Concrete Curb and Gutter (Type 6-30)	LF	30	35.00	1,050.00	56.90	1,707.00
702-01	Concrete Curb (6' Detached Type "A")	LF	561	30.00	16,830.00	34.14	19,152.54
712-01	Traffic Control	LS	1	60,000.00	60,000.00	95,000.00	95,000.00
713-01.10	Signing	LS	1	1,000.00	1,000.00	1,052.65	1,052.65
714-02.01	Encased Conduit (2" PVC, Schedule 40)	LF	1,060	26.00	27,560.00	39.83	42,219.80
714-05.05	Pull Boxes (Lighting)	EA	4	1,000.00	4,000.00	1,194.90	4,779.60
714-06.08	Cable (1/C # 6 AWG - Type "XHHW")	LF	12,720	4.00	50,880.00	4.54	57,748.80
714-08.09	Light Standards (Type "A" Assembly)	EA	2	700.00	1,400.00	711.25	1,422.50
714-08.10	Light Standards (Type "B" Assembly)	EA	6	7,500.00	45,000.00	8,068.42	48,410.52
714-08.11	Light Standards (Type "C" Assembly)	EA	5	5,500.00	27,500.00	5,916.46	29,582.30
714-25	Electrical Connection	EA	1	3,000.00	3,000.00	2,959.00	2,959.00

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State Project No. 47LPLM-F3-022

Opened in Knoxville, TN
Date: June 29, 2016
Time: 11:00 a.m.

SUMMARY OF BIDS

CITY OF KNOXVILLE BID SCHEDULE				Southern Constructors, Inc.		Design & Construction Services, Inc.	
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	PRICE	AMOUNT	PRICE	AMOUNT
716-02.05	Plastic Pavement Markings (Stop Line)	LF	107	15.00	1,605.00	11.38	1,217.66
716-02.06	Plastic Pavement Markings (Turn Arrows)	EA	5	200.00	1,000.00	170.70	853.50
716-02.09	Plastic Pavement Markings (Longitudnal Cross Walk)	LF	264	25.00	6,600.00	20.48	5,406.72
716-03.01	Plastic Word Pavement Marking (Only)	EA	3	250.00	750.00	142.25	426.75
716-13.06	Spray Thermoplastic Pavement Marking (40 mil - 4" Wide) 0.06 LM W 0.43 LM Y	LM	0.55	6,000.00	3,300.00	4,210.60	2,315.83
717-01	Mobilization	LS	1	100,000.00	100,000.00	105,000.00	105,000.00
730-01.02	Removal of Signal Equipment	EA	1	2,000.00	2,000.00	1,752.52	1,752.52
730-03.21	Install Pull Box (Type B)	EA	5	800.00	4,000.00	736.29	3,681.45
730-05.04	Modify Existing Electric Service Connection	EA	1	800.00	800.00	689.63	689.63
730-08.03	Signal Cable (7 Conductor)	LF	1,800	3.00	5,400.00	2.88	5,184.00
730-08.05	Signal Cable (12 Conductor)	LF	1,000	4.00	4,000.00	3.77	3,770.00
730-11.01	Steel Conduit Riser Assembly	EA	6	300.00	1,800.00	279.15	1,674.90
730-12.02	Conduit 2" Diameter (PVC)	LF	450	9.00	4,050.00	9.33	4,198.50
730-12.13	Conduit 2" Diameter (Jack and Bore)	LF	100	40.00	4,000.00	41.82	4,182.00
730-12.19	Paint (Signal Poles)	LS	1	1,300.00	1,300.00	1,367.50	1,367.50
730-14.13	Shielded Detector Cable (Pedestrian Pushbuttons)	LF	2,800	1.50	4,200.00	1.41	3,948.00
730-14.14	Modify Vehicle Detection	LS	1	3,000.00	3,000.00	2,549.14	2,549.14

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730-15.32	Cabinet (Eight Phase Base Mounted)	EA	1	35,000.00	35,000.00	37,395.73	37,395.73
730-16.02	Eight Phase Actuated Controller	EA	1	4,000.00	4,000.00	4,235.02	4,235.02
730-23.30	Pedestal Pole (Pedestrian)	EA	5	1,600.00	8,000.00	1,705.46	8,527.30
730-26.05	Countdown Pedestrian Signal	EA	10	700.00	7,000.00	708.04	7,080.40
730-26.09	Pedestrian Pushbutton with 15in Sign	EA	10	300.00	3,000.00	317.37	3,173.70
793-13.12	1 Duct Formation @ 36in Depth	LF	205	55.00	11,275.00	62.60	12,833.00
793-13.17	2 Duct Formation @ 36in Depth	LF	30	65.00	1,950.00	68.28	2,048.40
793-13.27	4 Duct Formation @ 36in Depth	LF	485	100.00	48,500.00	109.25	52,986.25
793-13.32	6 Duct Formation @ 36in Depth	LF	80	110.00	8,800.00	142.25	11,380.00
793-13.51	5 Duct Formation @ 36in Depth	LF	275	105.00	28,875.00	112.66	30,981.50
793-11.16*	Concrete Handhole 4' x 4' x 4'	EA	1	9,000.00	9,000.00	9,825.25	9,825.25
793-11.20	Handhole 30in x 48in	EA	1	1,500.00	1,500.00	2,845.00	2,845.00
793-14.02**	Concrete Encasement Per Duct	LF	3,795	7.00	26,565.00	13.66	51,839.70
793-14.05	MH Precast 4-Ft W x 8-Ft L x 6-Ft H	EA	3	26,000.00	78,000.00	30,600.01	91,800.03
	SANITARY SEWER						
2115	Gravity Sewer Pipe, PVC, 8 inches, Paved						
777-02.01	0 - 6 Feet Deep	LF	55	85.00	4,675.00	85.35	4,694.25

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777-02.03	6 - 8 Feet Deep	LF	451	110.00	49,610.00	96.73	43,625.23
2425	PVC Sewer Lateral, 6-inch Diameter						
777-02.09	PVC Sewer Lateral, 6-inch Diameter, in Road	LF	50	200.00	10,000.00	142.25	7,112.50
2435	Manhole, Concrete, 4-Foot Diameter						
777-02.19	6 - 8 Feet Deep	EA	3	6,500.00	19,500.00	3,414.00	10,242.00
2570	Pipe Connection with Coring to Existing Manhole						
777-02.32	8-inch Diameter	EA	1	1,000.00	1,000.00	1,251.80	1,251.80
777-02.34	Abandon Existing Manhole	EA	1	2,500.00	2,500.00	1,138.00	1,138.00
2620	Abandon Existing Sewers by Grouting in Place						
777-02.50	8-inch Diameter	LF	499	20.00	9,980.00	12.52	6,247.48
6005	Permanent Patching						
777-02.36	Asphalt Pavement Repair, Base Course (Base Course Only)	LF	550	55.00	30,250.00	28.45	15,647.50
	WATER						
3000	Water Line						
775-02.55	12" Water Line Under Pavement or Within 3' of Edge of Pavement Per Section 02321	LF	900	115.00	103,500.00	91.04	81,936.00
775-02.03	8" Water Line Under Pavement or Within 3' of Edge of Pavement Per Section 02322	LF	50	115.00	5,750.00	91.04	4,552.00
775-02.41	Clean Stone Backfill in or Within 3' of Pavement	LF	950	40.00	38,000.00	23.90	22,705.00

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ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	PRICE	AMOUNT	PRICE	AMOUNT
3010	Water Valve Installation						
775-02.13	2" Gate Valve	EA	2	1,000.00	2,000.00	910.40	1,820.80
775-02.14	6" Gate Valve	EA	6	2,500.00	15,000.00	1,365.60	8,193.60
775-02.15	8" Gate Valve	EA	2	3,000.00	6,000.00	1,707.00	3,414.00
775-02.16	12" Gate Valve	EA	1	2,500.00	2,500.00	2,617.40	2,617.40
3015	Air Valves, Blowoff Valves, & Hydrants						
775-02.30	2" Air Release Valve Assembly as Directed by KUB (Complete Installation per KUB Drawings)	EA	1	2,500.00	2,500.00	1,479.40	1,479.40
775-02.32	Fire Hydrant Assembly	EA	5	4,000.00	20,000.00	4,805.77	24,028.85
3020	Tie-ins to Existing Facilities (complete all labor and installation for tie-ups including installation of tees, couplings, reducers, backfill, asphalt/concrete restoration, cleanup/restoration, pressure test, & tracer wire)						
775-02.57	Connection to existing 12" water line (Sta. 0+00)	EA	1	5,000.00	5,000.00	3,414.00	3,414.00
775-02.56	Connection to existing 8" water line (Sta. 8+33)	EA	1	7,500.00	7,500.00	3,414.00	3,414.00
3025	Service Connections (complete all labor and installation for service connections per KUB Specifications 02518, Part 2, including, but not limited to all associated fittings, piping, backfill, asphalt/concrete restoration, cleanup etc.)						
775-02.49	Reconnection (service tap) - 1" and smaller	EA	7	1,600.00	11,200.00	967.30	6,771.10
775-02.66	Reconnection (service tap) - 1 1/2" - 2"	EA	2	2,000.00	4,000.00	1,411.12	2,822.24

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NO.	DESCRIPTION	UNIT	QUANTITY	PRICE	AMOUNT	PRICE	AMOUNT
775-02.67	Meter well and lid, meter horn, and associated fittings - 1" and smaller	EA	3	5,000.00	15,000.00	796.60	2,389.80
775-02.60	1" HDPE service pipe	LF	200	75.00	15,000.00	11.38	2,276.00
775-02.68	2" service pipe	LF	100	80.00	8,000.00	13.66	1,366.00
775-02.69	6" service pipe	LF	150	85.00	12,750.00	85.35	12,802.50
775-02.70	8" service pipe	LF	20	90.00	1,800.00	113.80	2,276.00
3030	Retire Existing Water Facilities						
775-02.51	Abandon Existing Mains	LS	1	10,000.00	10,000.00	1,365.60	1,365.60
775-02.52	Abandoned Existing Water Valves, Air Valves, & Blowoff Assemblies	EA	4	800.00	3,200.00	455.20	1,820.80
775-02.33	Remove Existing Fire Hydrants	EA	5	2,500.00	12,500.00	569.00	2,845.00
6006	Permanent Patching						
775-02.71	Asphalt Pavement Repair, Base Course (Base Course Only)	LF	1,500	45.00	67,500.00	28.45	42,675.00
6050	Concrete for Utilities						
775-02.38	Misc. Concrete for Water Line Installation	CY	50	250.00	12,500.00	341.40	17,070.00
	GAS						
4000	MDPE Gas Main Installation - Open Cut, exclusive of road boring, includes trench excavation providing no less than required minimum cover up to 8' maximum trench depth, pipe, fittings, bedding, testing and purging, complete. (The CONTRACTOR will furnish all gas line materials required for the gas line installation including tracer wire.)						

ITEM

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				PRICE	AMOUNT	PRICE	AMOUNT
771-10.02	4" MDPE gas main, SDR 11.5	LF	1,000	85.00	85,000.00	113.80	113,800.00
771-10.01	2" MDPE gas main, SDR 11	LF	50	85.00	4,250.00	113.80	5,690.00
771-10.26	Adder for full clean stone backfill of trench with compaction per Section 02321 for areas in or within 3' of pavement	LF	1,050	30.00	31,500.00	2.96	3,108.00
4010	Tie-ins to Existing Gas Main/New Mains Tie-ins & Valve Assemblies (complete all labor and installation for tie-ups including installation of tees, couplings, reducers, backfill, asphalt/concrete restoration, cleanup/restoration, pressure test, & tracer wire, valves and valve boxes and other fittings and bypasses as required by section 15320.)						
771-10.36	4" Polyethylene Straight Tie-in to 6" Cast Iron Main	EA	1	6,000.00	6,000.00	3,983.00	3,983.00
771-10.37	2" Polyethylene Straight Tie-in to 2" Polyethylene Main Per KUB Fig. 2-15320-b1	EA	1	3,000.00	3,000.00	3,414.00	3,414.00
771-10.38	2" Polyethylene Straight Tie-in to 4" Polyethylene Main Per KUB Fig. 19-15305-u	EA	1	3,000.00	3,000.00	3,983.00	3,983.00
4015	Gas Valve Installation (complete installation per KUB standard drawings. Additional valves, if required, shall be installed at the direction of the OWNER's Resident Project Representative). The installation includes valve, valve jacket, including bedding, valve box installation, pipe connections, backfill as required, and necessary equipment as required to complete the item in accordance with the Drawings and Specifications. The CONTRACTOR will furnish all gas line materials required for the gas valve installation as required by Section 15305.						
771-10.10	4" IPS, MDPE Gas Valve Installation	EA	1	2,000.00	2,000.00	2,276.00	2,276.00

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				PRICE	AMOUNT	PRICE	AMOUNT
4020	Gas Services Installation: The following unit prices will be utilized for the reconnection/interception of existing services for the installation of new services including the first 50' of pipe, tapping tee, pipe, valve, valve jacket, backfill, asphalt/concrete restoration, road bore, cleanup/restoration, pressure test, tracer wire, and service card as required by Section 15345.						
771-10.11	1" IPS Commercial Polyethylene Service on Polyethylene Mains Per KUB Fig. Figure 3-15345-c	EA	3	2,000.00	6,000.00	2,276.00	6,828.00
771-10.12	2" IPS Commercial Polyethylene Service on Polyethylene Mains Per KUB Fig. 3-15345-c	EA	2	3,000.00	6,000.00	2,845.00	5,690.00
4035	Condemn Existing Gas Facilities: Condemn gas facilities, to include but not be limited to, the disconnecting, purging and sealing of existing facilities as indicated on the drawings, removal of valve boxes no longer in service and any above ground appurtenances, backfill, asphalt/concrete restoration, & cleanup/restoration.						
771-10.30	Condemn Existing Gas Facilities	LS	1	12,000.00	12,000.00	2,276.00	2,276.00
4075	New Anodeless Riser						
771-10.39	2" Flanged Riser	EA	1	600.00	600.00	2,845.00	2,845.00
6007	Permanent Patching						
771-10.24	Asphalt Pavement Repair, Base Course (Base Course Only)	LF	1,300	45.00	58,500.00	62.60	81,380.00
6055	Concrete for Utilities						
771-10.25	Misc. Concrete for Gas Line Installation	CY	50	250.00	12,500.00	170.70	8,535.00

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				PRICE	AMOUNT	PRICE	AMOUNT
	ELECTRIC						
	INSTALLATION UNITS						
790-41.65	Single Run, 1" Conduit, Rigid Galvanized (w/o UGD Cable)	LF	80	35.00	2,800.00	39.83	3,186.40
790-42.26	2 Duct Bank, 2" Conduit (w/o UGD Cable)	LF	90	50.00	4,500.00	62.60	5,634.00
790-42.27	4 Duct Bank, 6" Conduit (w/o UGD Cable)	LF	75	110.00	8,250.00	136.56	10,242.00
790-41.66	UG Secondary Riser	EA	1	7,000.00	7,000.00	8,535.00	8,535.00
790-41.67	Photocell	EA	4	350.00	1,400.00	369.85	1,479.40
790-41.68	4-#3/0 CU UG Cable	LF	80	60.00	4,800.00	73.97	5,917.60
790-41.70	1-#6 CU UG Cable	LF	80	15.00	1,200.00	13.66	1,092.80
790-41.71	3-#6 CU Network Cable	LF	80	65.00	5,200.00	68.28	5,462.40
	REMOVAL UNITS						
790-01.03	30 Ft Class 4 Wood Pole	EA	4	1,000.00	4,000.00	1,707.00	6,828.00
790-02.03	35 Ft Class 4 Wood Pole	EA	4	1,000.00	4,000.00	1,707.00	6,828.00
790-41.72	Secondary Spool	EA	5	700.00	3,500.00	113.80	569.00
790-41.73	DXDE-6	EA	6	150.00	900.00	199.15	1,194.90
790-41.74	TXDE-1/0	EA	3	150.00	450.00	199.15	597.45
790-41.75	UG Conduit	LF	12	85.00	1,020.00	108.11	1,297.32

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790-41.76	UG Secondary Riser	EA	1	3,000.00	3,000.00	3,414.00	3,414.00
790-41.77	100W Mercury Vapor STLT	EA	2	300.00	600.00	398.00	796.00
790-41.78	250W Sodium Vapor STLT	EA	5	300.00	1,500.00	398.00	1,990.00
790-41.79	8" Secondary Rack	EA	3	2,000.00	6,000.00	2,845.00	8,535.00
790-41.80	UG Cable	LF	12	65.00	780.00	68.28	819.36
790-41.81	#1/0 AL. Triplex, Overhead Secondary Conductor	LF	340	15.00	5,100.00	17.07	5,803.80
790-41.82	#2 AL. Triplex, Overhead Service Conductor	LF	15	15.00	225.00	17.07	256.05
790-41.83	#6 Duplex, Overhead Conductor	LF	575	15.00	8,625.00	17.07	9,815.25
LANDSCAPING							
802-03.03	Plants for Planters	LS	1	10,000.00	10,000.00	10,811.00	10,811.00
802-03.04	Limelight Hydrangea	EA	14	70.00	980.00	141.20	1,976.80
802-03.05	Shamrock Holly	EA	35	70.00	2,450.00	139.70	4,889.50
802-03.06	Evergreen Giant Liriope	EA	95	7.00	665.00	12.64	1,200.80
802-03.07	Mondo Grass	EA	1,230	7.00	8,610.00	10.66	13,111.80
920-30.01	Metal Planters	EA	14	1,800.00	25,200.00	1,684.24	23,579.36
920-30.03	Bicycle Racks	EA	6	400.00	2,400.00	455.20	2,731.20
920-40	Permeable Clay Pavers	SF	146	25.00	3,650.00	27.31	3,987.26

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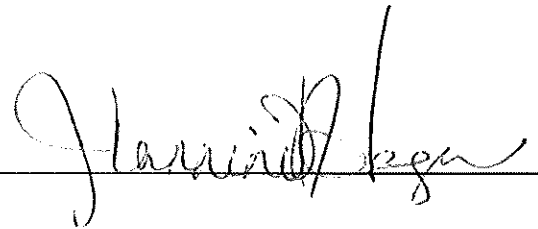
SUMMARY OF BIDS

CITY OF KNOXVILLE
BID SCHEDULE

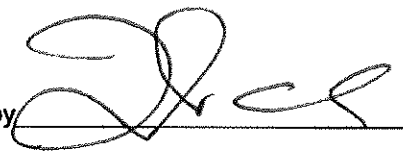
Southern Constructors, Inc.

Design & Construction
Services, Inc.

TOTAL BID	\$2,047,275.00	\$2,108,394.16
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Tabulated by 

Certified Correct 

Approved by 

Checked by 

Date 7-1-16

Date 7/18/16