


ADDENDUM NO. 1

DATE: September 7, 2018

TO: All Bidders

FROM: Penny Owens, Assistant Purchasing Agent 

SUBJECT: Addendum No. 1 – 600 Block of Market Street Project

PROJECT NO.: 17A-R-0625

BIDS TO BE OPENED: **September 19, 2018, at 11:00 a.m. Eastern Time**

This addendum becomes a part of the Contract Documents and modifies the original specifications as noted.

Changes to the Contract Documents & Specifications:

Deadline for Questions

The deadline for submission of questions is hereby changed from Wednesday, September 5, 2018 to **Wednesday, September 12, 2018.**

Bid Opening Date

The bid opening date of the 600 Block of Market Street Project Invitation to Bid is hereby changed from Wednesday, September 12, 2018 at 11:00 a.m. (Eastern Time) to **Wednesday, September 19, 2018 at 11:00 a.m. (Eastern Time).**

Bid Proposal

A revised bid proposal form is attached to this addendum. The following is a summary of the changes made:

- 1.) Item No. 4.10, Excavation (Unclassified) has been added.
- 2.) The Item No. for Backfill for Structural Soil Cells has been changed to 4.40.
- 3.) The description for Item No. 11.10 has been revised.
- 4.) The description for Item No. 12.65 has been revised.
- 5.) The description for Item No. 12.69 has been revised.
- 6.) The description for Item No. 13.10 has been revised.
- 7.) The description for Item No. 13.20 has been revised.

- 8.) Item No. 17.11 has been added.
- 9.) The description for Item No. 23.30 has been revised.
- 10.) The description for Item No. 36.10 has been revised.
- 11.) Item No. 714-02.04 has been removed.
- 12.) The quantity for Item No. 714-03.01 has been revised.
- 13.) Item No. 714-05.02 has been added.
- 14.) The quantity for Item No. 714-06.05 has been revised.
- 15.) The description and quantity for Item No. 714-08.09 has been revised.
- 16.) Item No. 714-08.10 has been added.
- 17.) The quantity for Item No. 714-08.32 has been revised.
- 18.) Item No. 714-08.34 has been added.
- 19.) The quantity for Item No. 714-09.09 has been revised.
- 20.) Item No. 714-09.10 has been removed.
- 21.) Item No. 714-12.09 has been added.

Revised Sheets

Revised sheets are attached to this addendum. The following is a summary of the changes made:

- 1.) Sheet 2 – Revised pay items and quantities.
- 2.) Sheet 5 – Added note for utility vault to be removed.
- 3.) Sheet 6 – Added approximate basement locations.
- 4.) Sheet 9 – Revised electrical design and quantities.
- 5.) Sheet 9A – Revised one line diagrams and Note 4.
- 6.) Sheet 9B – Removed reference to KUB in detail notes.

Removal of Utility Vault

The utility vault shown on Sheet No. 5 in front of the steps to the East Tennessee History Center contains abandoned equipment related to a pump system and lighting for fountains that were formerly located on the site. A sketch from KUB showing the service to the fountains from 1967 has been included for informational purposes. Pay Item No. 23.30, Removal of Utility Vault, shall include all materials, equipment, and labor necessary to disconnect any wiring, remove the equipment, and backfill with mineral aggregate base.

Unclassified Excavation

Item No. 4.10, Excavation (Unclassified) has been added in the event that poor soils are encountered during construction and undercutting is necessary.

Natural Sand Mix

Concrete used for Item Numbers 11.10, 12.65, 12.69, 13.10, 13.20, and 714-08.09 shall contain natural sand.

Placing Concrete

Subsection 5. (f) 1 regarding placement of concrete in Technical Specification 11.0 for Portland Cement Concrete Pavement (Plain) shall be deleted. A mechanical spreader and screed will be required for placement and finishing of concrete pavement. Sectional concrete pours and spreading/finishing by hand will not be permitted.

Excavation for Structural Soil Cells

Excavation necessary for the installation of structural soil cells shall be included in the cost for Item Numbers 71.10 and 71.20 respectively.

Basements

The attached revised proposed layout sheet shows approximate locations for basements under the brick sidewalk on the west side of Market Street. Basements have been identified for the Trotter Building at 625 Market Street and the US Bank building at 607 Market Street. Field investigation of the sidewalk in front of the Trotter building shows that the existing top of sidewalk is located approximately 3.25" above the basement structural slab (2.25" thick brick on top of 1" mortar bed).

Waterproofing

The proposed concrete sidewalks that are above basements require waterproofing membrane to be applied to the cleaned and leveled concrete subbase. The attached revised proposed layout sheet shows approximate locations for basements under the existing brick sidewalks. The Contractor shall install waterproofing membrane in accordance with the attached Special Provision 17.1 for Waterproofing Membrane. All materials, equipment, and labor necessary to perform this work shall be included in the unit cost for Item No. 17.11, Waterproofing, and be paid for by the square foot.

Abandoned Sidewalk Heating System

It has been discovered that there is an old heating system installed under the brick sidewalk in front of the Trotter Building at 625 Market Street. Discussions with the building maintenance manager indicate that the system is no longer operational. It is not anticipated that the system will be disturbed as part of the proposed sidewalk construction. However, a letter and diagram from January 5, 1968 is included with this addendum for informational purposes.

Clarification of Contract Documents & Specifications:

The following are responses to questions received from potential bidders:

Questions

Question #1: On Sheet No. 5 of the construction plans there are several utilities marked to be adjusted by others. Can you elaborate?

Response: All water, sanitary sewer, gas, and electric infrastructure will be adjusted by KUB. All telephone infrastructure will be adjusted by AT&T.

Question #2: How will utilities affect the stamping pattern in the integrally colored concrete band?

Response: The contractor will be allowed to square off the stamping pattern and leave a void in the pattern around the base of utilities and light pole foundations as shown in the attached revised Sheet No. 6. The concrete around fire hydrants, telephone manholes, water meters, and power manholes within the band will still be integrally colored. The exposed light pole foundations will not be integrally colored, but will require a natural sand mix concrete to in order to match the adjoining sidewalk and curb.

Question #3: Is there a specified “Special Event Box”? As I understand it, they are to be used for potable power needs. Do they need special receptacles or wiring? Or only the 200 amp feeder cables?

Response: The Special Event boxes are 17” X 30” Quazite style sidewalk boxes that contain approximately 3FT of #2/0 copper conductors with waterproof, set screw connectors on the end. The other end of the #2/0 conductor extends to the interior of KUB’s Vault 5 and VF vault. The City of Knoxville has portable 200A 120/208 2P panels that will connect to the set screw connector in the box.

Question #4: Do the subcontractors need to have the Highway, Railroad and Airport classification?

Response: No, only the prime contractor submitting a bid must have an HRA – Highway, Railroad and Airport Construction classification or have all three subcategories of HRA-A, HRA-B, and HRA-E.

END OF ADDENDUM NO. 1

BID PROPOSAL
CITY OF KNOXVILLE, TENNESSEE

**600 Block of Market Street Project
Project No. 17A-R-0625**

TO THE PURCHASING AGENT
CITY OF KNOXVILLE, TENNESSEE

_____ hereby propose(s) to furnish all material, labor, and appliances and do all work required to complete the Contract for the 600 Block of Market Street Project, Project No. 17A-R-0625, located in the City of Knoxville, Tennessee, in a workmanlike manner and in accordance with the plans of the Department of Engineering and specifications herewith attached.

Bidder further agrees that in case of failure to sign a delivered contract within thirty (30) days, the certified check or bid bond accompanying this bid and the proceeds thereof shall be the property of the City of Knoxville if the City chooses to retain said bid bond or check.

BID SCHEDULE

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
1.10	Mobilization of Forces, Supplies and Equipment (Max. Amt. = \$14,000 + 1% of Contract Amt.)	LS	1	_____	_____
2.10	Clearing and Grubbing	LS	1	_____	_____
3.10	Removal of Structures and Obstructions	LS	1	_____	_____
3.20	Removal of Concrete Street	LS	1	_____	_____
4.10	Excavation (Unclassified)	CY	100	_____	_____
4.40	Backfill for Structural Soil Cells	CY	40	_____	_____
5.10	Mineral Aggregate Base	TON	620	_____	_____
7.10	Tack Coat	GAL	2	_____	_____
9.20	Bituminous Plant Mix, Grading B-M	TON	8	_____	_____
9.50	Bituminous Plant Mix, Grading C-S	TON	1	_____	_____
10.10	Asphaltic Concrete Surface, Grading D	TON	2	_____	_____
11.10	10" Portland Cement Concrete Pavement (Plain) (Natural Sand)	SY	621	_____	_____

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
12.65	6" Detached Concrete Curb, Type A (Natural Sand)	LF	15		
12.69	6" Doweled Concrete Curb (Natural Sand)	LF	600		
13.10	Concrete Sidewalks (Natural Sand)	SF	6,711		
13.11	4" Thick Concrete Paving (Colored and Stamped)	SF	878		
13.20	Concrete Driveways (Natural Sand)	SF	710		
17.11	Waterproofing	SF	500		
21.20	Filter Cloth Underdrain w/pipe (4" HDPE)	LF	311		
22.18	Adjust Roof Drains	EA	1		
23.10	Power Vault Frame Adjustments	LS	1		
23.20	Catch Basin Adjustment	EA	2		
23.30	Removal of Utility Vault	EA	1		
26.10	Planting Soil for Structural Cells	CY	70		
30.20	Hardwood Mulch (3")	CY	2		
31.10	Erosion Prevention and Sediment Control	LS	1		
34.10	Construction Area Traffic Control	LS	1		
36.10	Geotextile Filter Fabric for Structural Cells	SY	345		
40.20	Preformed Pavement Marking (Crosswalk Striping)	LF	45		
40.30	Preformed Pavement Marking (STOP Line)	LF	18		
63.10	Signage	LS	1		
64.10	Handrail at Steps (600 Market Street)	LS	1		
70.20	Tactile Warning System, Cast-In-Place	EA	5		
71.10	Structural Soil Cell System (16.7" Depth)	EA	25		
71.20	Structural Soil Cell System (43" Depth)	EA	55		
74.20	Geo-Grid for Structural Cells	SY	140		
74.30	18" Root Barrier	LF	100		

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
714-03.01	Direct Burial Conduit (2" PVC, Schedule 40)	LF	610		
714-05.02	Pull Boxes (Type A)	EA	1		
714-05.05	Pull Boxes (Special Event Boxes)	EA	2		
714-06.05	Cable (1/C # 6 AWG)	LF	2,830		
714-06.08	Cable (#3/0)	LF	225		
714-08.09	Light Standards (Decorative with Foundation)	EA	10		
714-08.10	Light Standards (Decorative)	EA	1		
714-08.32	Removal of Light Standard & Foundation	EA	5		
714-08.34	Removal of Light Standard	EA	1		
714-09.09	Luminaires (60W LED)	EA	11		
714-12.09	Control Center (Street Light Contractor)	LS	1		
714-25.01	Electrical Connection	LS	1		
714-25.02	Electrical Connection (VF Vault)	LS	1		
714-25.03	Electrical Connection (V-5 Vault)	LS	1		

TOTAL BID

\$

TOTAL BID (In Words):

QUANTITIES

ITEM	DESCRIPTION	QUANTITIES	UNIT
1.10	MOBILIZATION OF FORCES, SUPPLIES AND EQUIPMENT (MAX. AMOUNT = \$14,000 + 1% CONTRACT AMOUNT)	1	L.S.
① 2.10	CLEARING AND GRUBBING	1	L.S.
② 3.10	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	1	L.S.
3.20	REMOVAL OF CONCRETE STREET	1	L.S.
⑨ 4.10	EXCAVATION (UNCLASSIFIED)	100	C.Y.
4.40	BACKFILL FOR STRUCTURAL SOIL CELLS	40	C.Y.
③ 5.10	MINERAL AGGREGATE BASE	620	TON
7.10	TACK COAT	2	GAL.
9.20	BITUMINOUS PLANT MIX BASE, GRADING "B-M"	8	TON
9.50	BITUMINOUS PLANT MIX BASE, GRADING "C-S"	1	TON
10.10	ASPHALTIC CONCRETE SURFACE, GRADING "D"	2	TON
11.10	10" PORTLAND CEMENT CONCRETE PAVEMENT (PLAIN) (NATURAL SAND)	621	S.Y.
12.65	6" DETACHED CONCRETE CURB, TYPE A (NATURAL SAND)	15	L.F.
12.69	6" DOWELED CONCRETE CURB (NATURAL SAND)	600	L.F.
④ 13.10	CONCRETE SIDEWALKS (NATURAL SAND)	6,711	S.F.
13.11	4" THICK CONCRETE PAVING (COLORED AND STAMPED)	878	S.F.
13.20	CONCRETE DRIVEWAYS (NATURAL SAND)	710	S.F.
17.11	WATER PROOFING	500	S.F.
⑤ 21.20	FILTER CLOTH UNDERDRAIN w/ PIPE (4" HDPE)	311	L.F.
22.18	ADJUST ROOF DRAINS	1	EACH
23.10	POWER VAULT FRAME ADJUSTMENTS	1	L.S.
23.20	CATCH BASIN ADJUSTMENT	2	EACH
23.30	REMOVAL OF UTILITY VAULT	1	EACH
26.10	PLANTING SOIL FOR STRUCTURAL CELLS	70	C.Y.
30.20	HARDWOOD MULCH (3")	2	C.Y.
31.10	EROSION PREVENTION AND SEDIMENT CONTROL	1	L.S.
34.10	CONSTRUCTION AREA TRAFFIC CONTROL	1	L.S.
36.10	GEOTEXTILE FILTER FABRIC FOR STRUCTURAL CELLS	345	S.Y.
40.20	PREFORMED THERMOPLASTIC PAVEMENT MARKING (CROSSWALK STRIPING)	45	L.F.
40.30	PREFORMED THERMOPLASTIC PAVEMENT MARKING (STOP LINE)	18	L.F.
⑥ 63.10	SIGNAGE	1	L.S.
⑦ 64.10	HANDRAIL AT STEPS (600 MARKET STREET)	1	L.S.
70.20	TACTILE WARNING SYSTEM, CAST-IN-PLACE	5	EACH
⑧ 71.10	STRUCTURAL SOIL CELL SYSTEM (16.7" DEPTH)	25	EACH
⑧ 71.20	STRUCTURAL SOIL CELL SYSTEM (43" DEPTH)	55	EACH
74.20	GEO-GRID FOR STRUCTURAL CELLS	140	S.Y.
74.30	18" ROOT BARRIER	100	L.F.

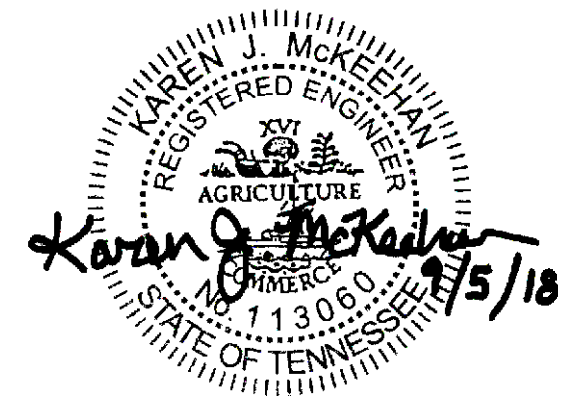
- ① Includes the removal of 8 trees and one stump. See Sheet No. 5.
- ② Includes the removal of tree wells, concrete pads, concrete bands, and brick sidewalks. See Sheet No. 5.
- ③ Includes 350 Tons for subgrade, 240 Tons for sidewalks, Alley, and driveways, and 30 Tons for Structural Soil Cell System.
- ④ To include the cost of curb ramps at roadway intersections and any incidental removal and replacement of brick to allow installation of the concrete sidewalk.
- ⑤ For joints between asphalt and concrete pavement, tie to storm sewer. Pipe will be solid from joint to catch basin.
- ⑥ To include the cost of removal and reinstallation. See Sheet No. 5.
- ⑦ To include the cost of removal and reinstallation in proposed sidewalk. See Sheet No. 5.
- ⑧ To include Excavation, Decks, Frames, Posts, and Appurtenances.
- ⑨ To be used if undercutting is necessary.

ESTIMATED LIGHTING QUANTITIES

ITEM	DESCRIPTION	QUANTITIES	UNIT
714-03.01	DIRECT BURIAL CONDUIT (2" PVC, SCHEDULE 40)	415	L.F.
714-05.02	PULL BOXES (TYPE A)	1	EACH
① 714-05.05	PULL BOXES (SPECIAL EVENT BOXES)	2	EACH
714-06.05	CABLE (1/C # 6 AWG)	2,830	L.F.
714-06.08	CABLE (#3/0)	225	L.F.
② 714-08.09	LIGHT STANDARDS (DECORATIVE w/ FOUNDATION)	10	EACH
③ 714-08.10	LIGHT STANDARDS (DECORATIVE)	1	EACH
④ 714-08.32	REMOVAL OF LIGHT STANDARD & FOUNDATION	5	EACH
⑤ 714-08.34	REMOVAL OF LIGHT STANDARD	1	EACH
⑥ 714-09.09	LUMINAIRES (60W LED)	11	EACH
⑦ 714-12.09	CONTROL CENTER (STREET LIGHT CONTRACTOR)	1	L.S.
⑧ 714-25.01	ELECTRICAL CONNECTION	1	L.S.
⑨ 714-25.02	ELECTRICAL CONNECTION (VF VAULT)	1	L.S.
⑨ 714-25.03	ELECTRICAL CONNECTION (V-5 VAULT)	1	L.S.

- ① Item includes 17" x 30" x 24" D pull box, waterproof two-point junction blocks, 5/8" x 8' copper clad ground rod, and #6 bare copper grounding conductor.
- ② Item includes 15' Holophane Columbia cast iron pole (CLC 15 FTN 20 P07 ABG BK R168B FGIUS_S BK), or approved equivalent, associated hardware, and pole foundation.
- ③ Item includes 15' Holophane Columbia cast iron pole (CLC 15 FTN 20 P07 ABG BK R168B FGIUS_S BK), or approved equivalent, associated hardware.
- ④ Item includes removal of luminare, bracket arm, pole, foundation, and delivery of removed equipment to City of Knoxville. See Note 26, Sheet 9A.
- ⑤ Item includes removal of luminare, decorative pole, and delivery of removed equipment to City of Knoxville. See Note 26, Sheet 9A.
- ⑥ Luminaire shall be Holophane Utility Washington Postlite LED 2 (WAUE2P3030KASBK5BK4HNL1X1-MOD RFD281080), or approved equivalent.
- ⑦ Item includes trinetics MR-XD SPEC 6283, or approved equivalent. Contractor to furnish. KUB to install in vault V-5.
- ⑧ Includes conduit, cable, and other items necessary for connection of street lights. The contractor shall be responsible for contacting KUB to obtain the estimate for any charges by the utility for providing electrical service to the street lights. These charges shall be included in the price bid for Item No. 730-05.01 for payment by the contractor. Item also includes provisions for temporary service to the existing street lights, if needed.
- ⑨ Includes special event electrical panel, meter box, conduit, and conductors as shown on Sheet 9A. Contractor to furnish material, KUB to install in vault.

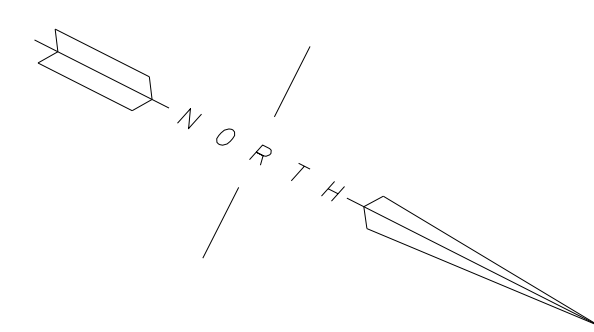
PROJECT No.	YEAR	SHEET No.	
17A-R-0625	2017	2	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	9-5-2018	K.M.	Changed Items 4.10 and 23.30, added 4.40 and 17.11, and added (Natural Sand) to 11.10, 12.65, 12.69, and 13.20. Added Excavation to Quantities. Revised Lighting Items 714-03.01 and 714-03.05. Added Items 714-05.02, 714-05.05, 714-06.05, and 714-06.08. Revised Lighting Footcandle through 11.



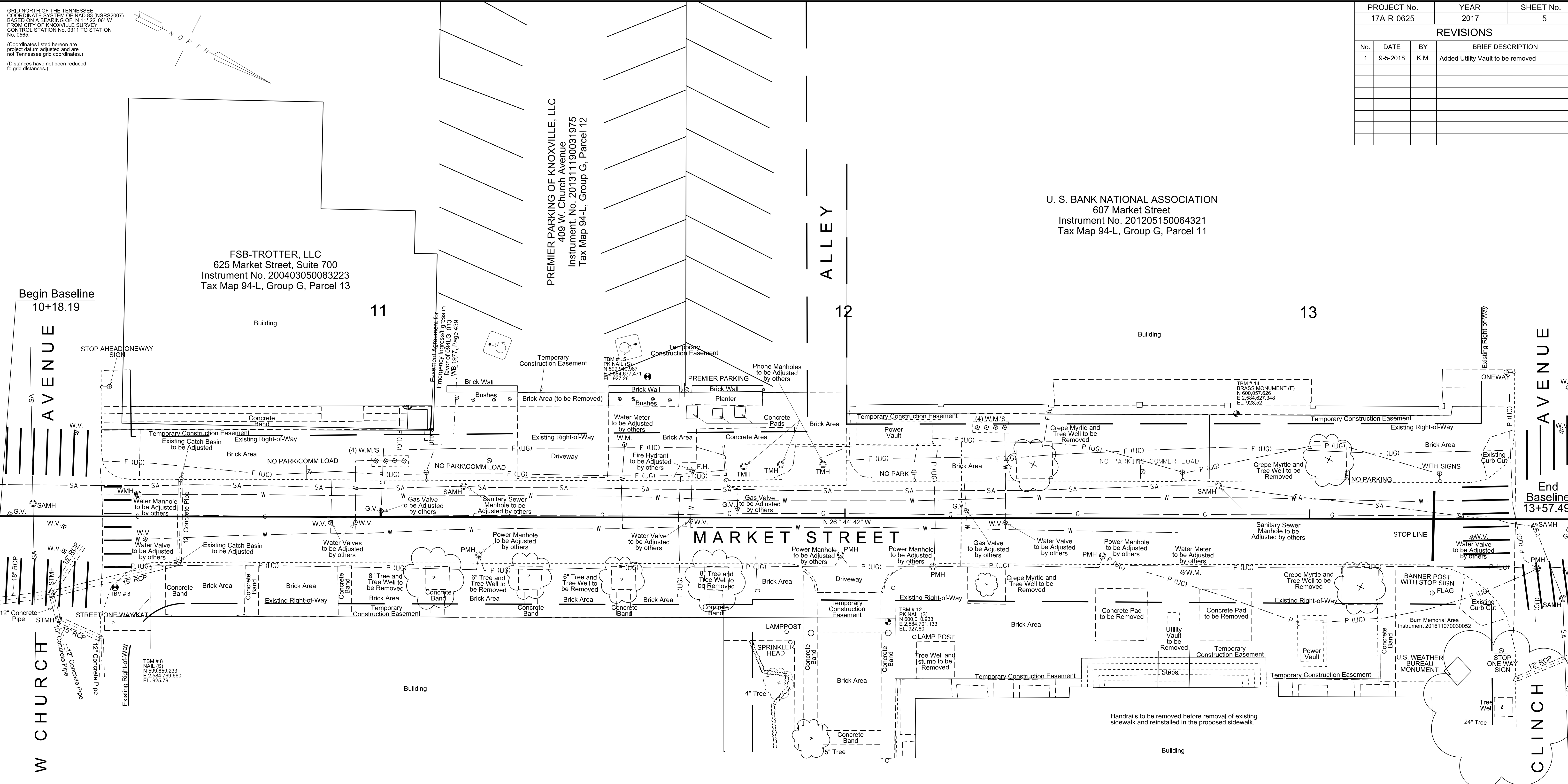
CITY OF KNOXVILLE DEPARTMENT OF ENGINEERING	DRAWN: R.W. DESIGNED: K.M. DATE: 8-17-2018 CHECKED: S.F. APPROVED: T.C.
ESTIMATED QUANTITIES	
600 BLOCK OF MARKET STREET	

GRID NORTH OF THE TENNESSEE COORDINATE SYSTEM OF NAD 83 (NSRS2007) BASED ON A BEARING OF N 11° 22' 09" W FROM CITY OF KNOXVILLE SURVEY CONTROL STATION No. 0311 TO STATION No. 0565.

(Coordinates listed hereon are project datum adjusted and are not Tennessee grid coordinates.) (Distances have not been reduced to grid distances.)



PROJECT No.	YEAR	SHEET No.	
17A-R-0625	2017	5	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	9-5-2018	K.M.	Added Utility Vault to be removed



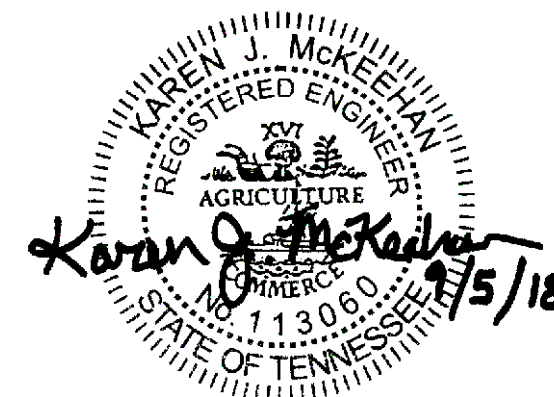
FSB-TROTTER, LLC
625 Market Street, Suite 700
Instrument No. 200403050083223
Tax Map 94-L, Group G, Parcel 13

PREMIER PARKING OF KNOXVILLE, LLC
409 W. Church Avenue
Instrument No. 201311190031975
Tax Map 94-L, Group G, Parcel 12

U. S. BANK NATIONAL ASSOCIATION
607 Market Street
Instrument No. 201205150064321
Tax Map 94-L, Group G, Parcel 11

ONE CENTRE SQUARE GROUP, LLC
620 Market Street
Instrument No. 201503190050126
Tax Map 095-I, Group E, Parcel 6.01

KNOX COUNTY, TENNESSEE
600 Market Street
Instrument No. 200111130037830
Tax Map 95-I, Group E, Parcel 1



ACQUISITION TABLE				
Tax Map - Parcel	Name	Type	*To Be Acquired	** INSTRUMENT No.
094LG-011	U.S. Bank National Association	TCE	284 Sq. Ft.	---
094LG-012	Premier Parking of Knoxville, LLC	TCE	564 Sq. Ft.	---
094LG-013	FSB-Trotter, LLC	TCE	75 Sq. Ft.	---
095IE-001	Knox County	TCE	1,657 Sq. Ft.	---
095IE-006.01	One Centre Square Group, LLC	TCE	359 Sq. Ft.	---

*TCE = Temporary Construction Easement
** Recorded in the Knox County Register of Deeds Office

CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING

PRESENT LAYOUT
600 BLOCK OF MARKET STREET
STA. 10+18.19 TO STA. 13+57.49
SCALE: 1" = 10'

DRAWN: R.W.
DESIGNED: K.M.
DATE: 8-17-2018
CHECKED: R.T.
APPROVED: T.C.

Location of all underground utilities shown hereon are approximate and are based on field location of visible structures such as catch basins, manholes, water gates, etc. and compiling information from utility company plans. The utilities shown hereon may not comprise all of the existing utilities in this area, either in service or abandoned. In accordance with the Underground Utility Damage Prevention Act, prior to any excavation work call Tennessee One Call System, Inc. at 1-800-351-1111.

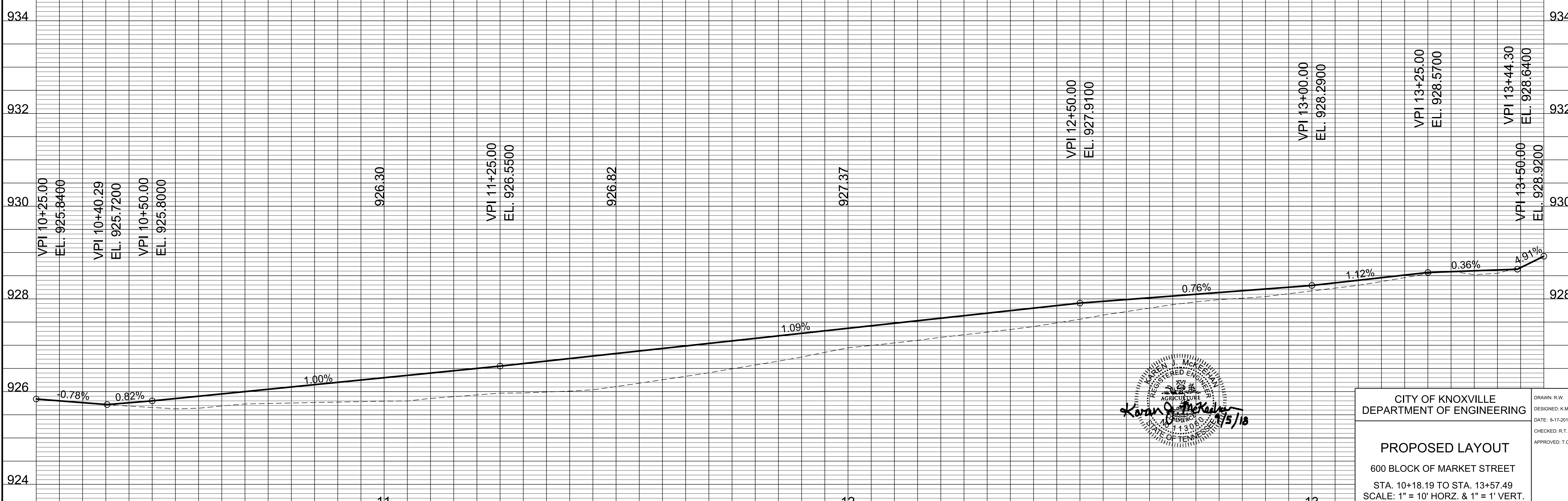
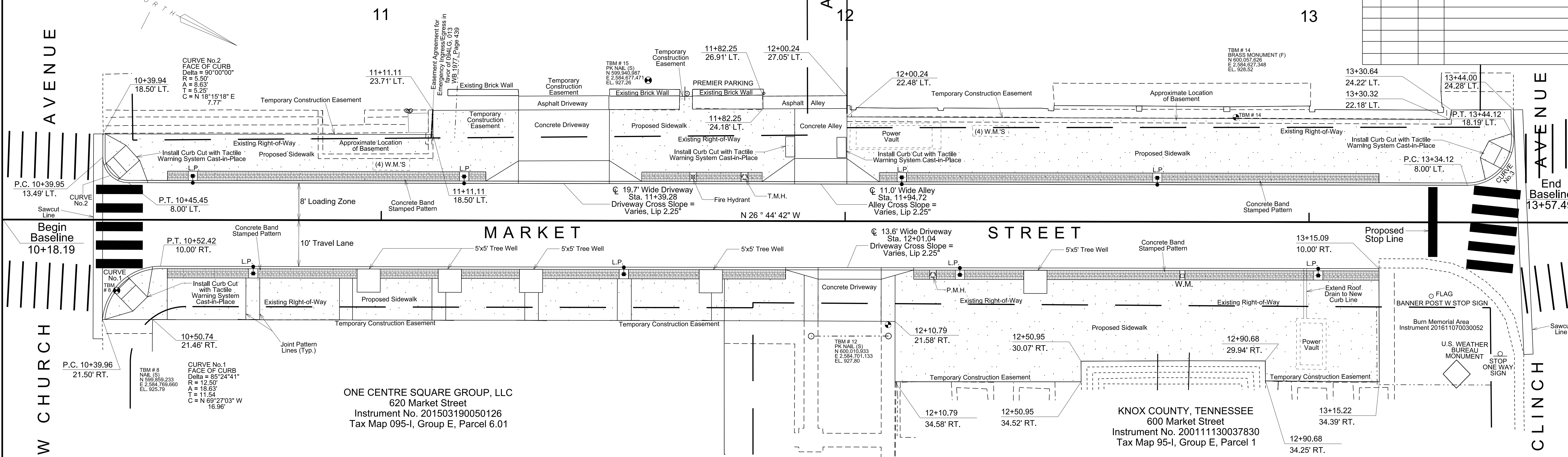
GRID NORTH OF THE TENNESSEE COORDINATE SYSTEM OF NAD 83 (NSRS2007) BASED ON A BEARING OF N 11° 22' 08" W FROM CITY OF KNOXVILLE SURVEY CONTROL STATION No. 0311 TO STATION No. 0565.
(Coordinates listed hereon are project datum adjusted and are not Tennessee grid coordinates.)
(Distances have not been reduced to grid distances.)

FSB-TROTTER, LLC
625 Market Street, Suite 700
Instrument No. 200403050083223
Tax Map 94-L, Group G, Parcel 13

PREMIER PARKING OF KNOXVILLE, LLC
409 W. Church Avenue
Instrument No. 201311190031975
Tax Map 94-L, Group G, Parcel 12

U. S. BANK NATIONAL ASSOCIATION
607 Market Street
Instrument No. 201205150064321
Tax Map 94-L, Group G, Parcel 11

PROJECT No.	YEAR	SHEET No.	
17A-R-0625	2017	6	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	9-5-2018	K.M.	Added Approximate Location of Basement. Removed Utility Vault. Added voids in stamp pattern around utilities.



Karan J. McKelvey
REGISTERED ENGINEER
AGRICULTURE
No. 1130
STATE OF TENNESSEE
1/5/18

CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING

PROPOSED LAYOUT
600 BLOCK OF MARKET STREET
STA. 10+18.19 TO STA. 13+57.49
SCALE: 1" = 10' HORIZ. & 1" = 1' VERT.

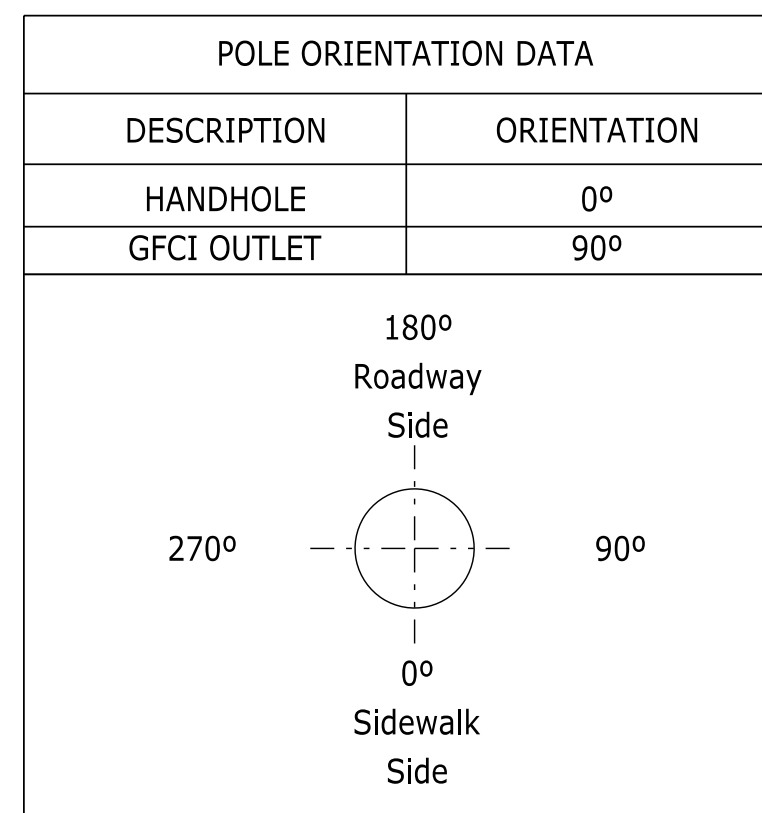
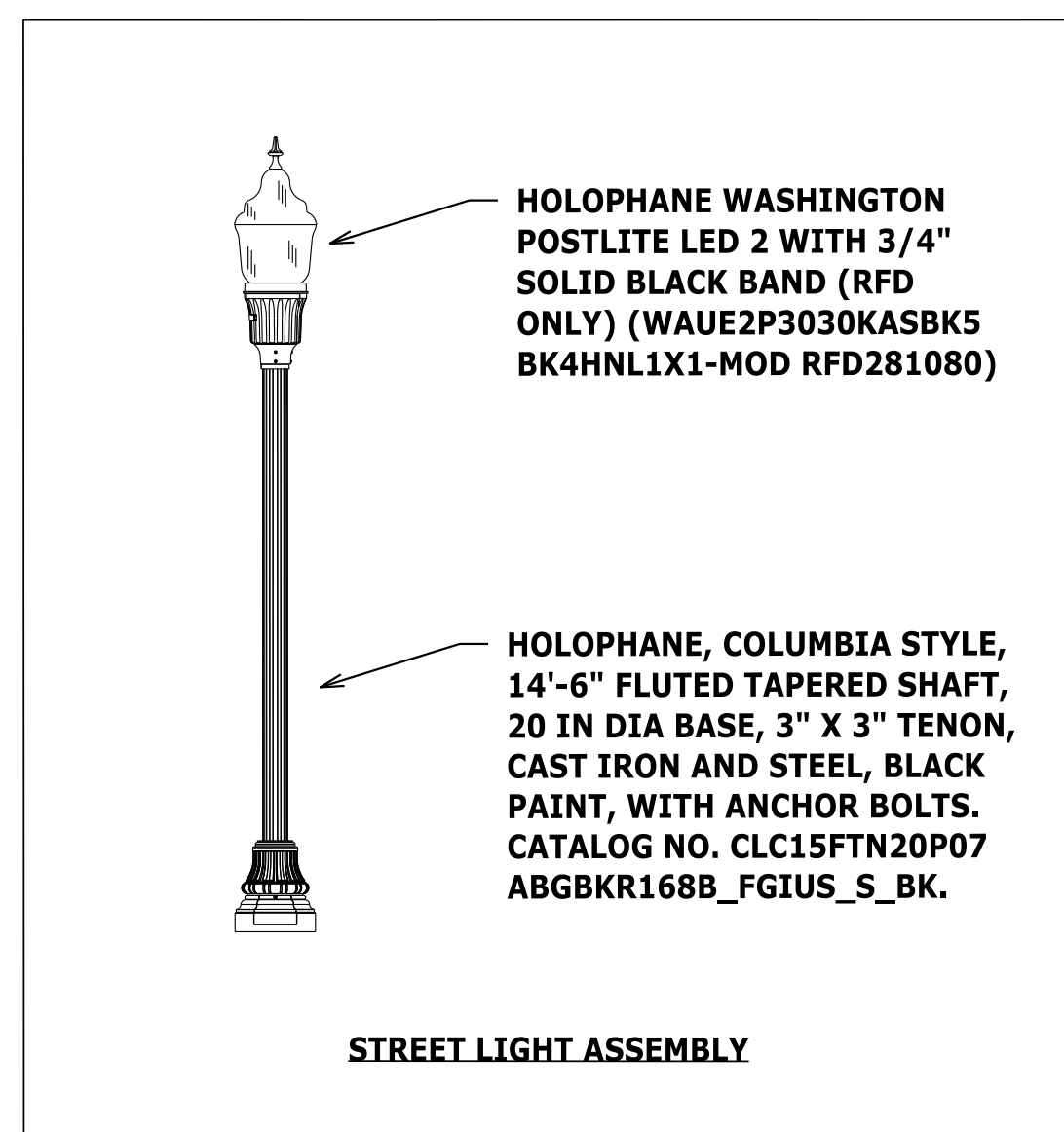
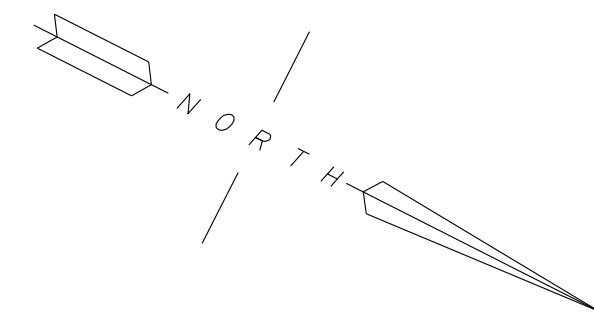
DRAWN: R.W.
DESIGNED: K.M.
DATE: 8-17-2018
CHECKED: R.T.
APPROVED: T.C.

P:\04062 - Market Street Upgrade\Geopak\Proposed Layout.dgn - Default - RWebb 06-SEP-2018 08:48:11 Tables\T50_black.dgn

GRID NORTH OF THE TENNESSEE COORDINATE SYSTEM OF NAD 83 (NSRS2007) BASED ON A BEARING OF N 11° 22' 00" W FROM CITY OF KNOXVILLE SURVEY CONTROL STATION No. 0311 TO STATION No. 0565.

(Coordinates listed hereon are project datum adjusted and are not Tennessee grid coordinates.)

(Distances have not been reduced to grid distances.)



LUMINAIRE SCHEDULE					
QUANTITY	DESCRIPTION	CATALOG NUMBER	WATTAGE	IES FILE	LLF
11	HOLOPHANE WASHINGTON POSTLITE LED 2	WAUE2P3030KASBK5BK4HNL1X1-MOD RFD281080	60	WAUE2_P30_30K_AS_5.ies	0.9

ILLUMINATION RESULTS					
SECTION	AVG.	MAX	MIN.	MAX/MIN	AVG/MIN
EAST SIDEWALK	1.4 fc	3.1 fc	0.6 fc	5.2 : 1	2.3 : 1
MARKET STREET	1.4 fc	2.5 fc	0.7 fc	3.6 : 1	1.9 : 1
WEST SIDEWALK	1.1 fc	1.6 fc	0.7 fc	2.3 : 1	1.6 : 1

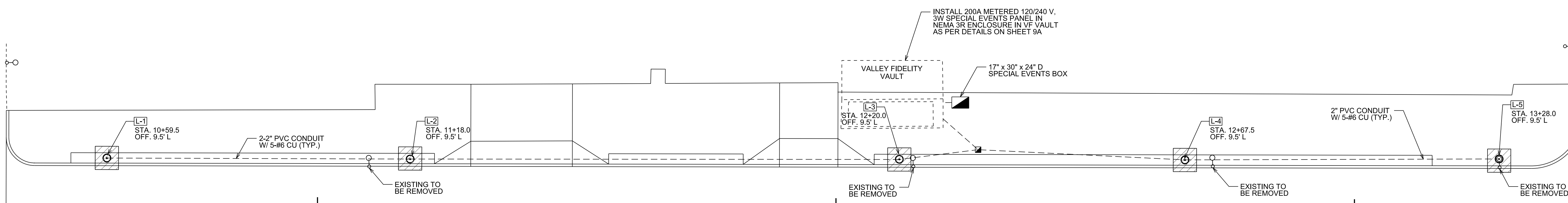
ILLUMINATION RESULTS BASED ON LUMINAIRES SPECIFIED IN LUMINAIRE SCHEDULE.

PROJECT No.	YEAR	SHEET No.
17A-R-0625	2018	9

REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	8/30/17	RB	Revised electrical design and quantities.

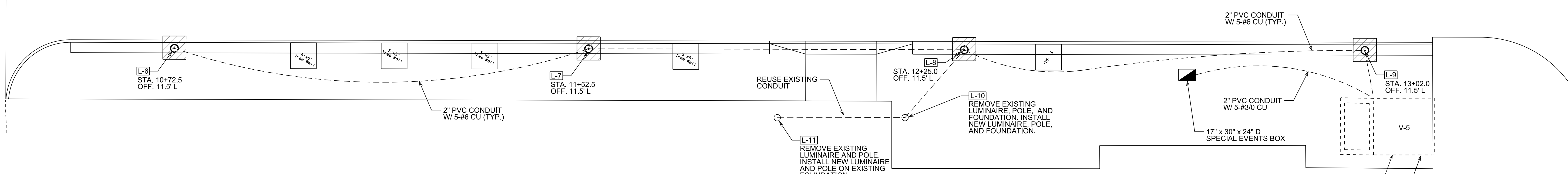
AVENUE

AVENUE



W CHURCH

CLINCH



ESTIMATED LIGHTING QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
(1) 714-03.01	DIRECT BURIAL CONDUIT (2" PVC, SCHEDULE 40)	L.F.	610
714-05.02	PULL BOXES (TYPE A)	EACH	1
714-05.05	PULL BOXES (SPECIAL EVENT BOXES)	EACH	2
714-06.05	CABLE (1/C # 6 AWG)	L.F.	2,830
714-06.08	CABLE (#3/0)	L.F.	225
(2) 714-08.09	LIGHT STANDARDS (DECORATIVE W/ FOUNDATION)	EACH	10
(3) 714-08.10	LIGHT STANDARDS (DECORATIVE)	EACH	1
(4) 714-08.32	REMOVAL OF LIGHT STANDARD & FOUNDATION	EACH	5
(5) 714-08.34	REMOVAL OF LIGHT STANDARD	EACH	1
(6) 714-09.09	LUMINAIRES (60W LED)	EACH	11
(7) 714-12.09	CONTROL CENTER (STREET LIGHT CONTACTOR)	LS	1
(8) 714-25.01	ELECTRICAL CONNECTION	LS	1
(9) 714-25.02	ELECTRICAL CONNECTION (VF VAULT)	LS	1
(10) 714-25.03	ELECTRICAL CONNECTION (V-5 VAULT)	LS	1

FOOTNOTES:

- ITEM INCLUDES 17" X 30" X 24" D PULL BOX, WATERPROOF TWO-POINT JUNCTION BLOCKS, 5/8" X 8" COPPER CLAD GROUND ROD, AND #6 BARE COPPER GROUNDING CONDUCTOR.
- ITEM INCLUDES 15' HOLOPHANE COLUMBIA CAST IRON POLE (CLC 15 FTN 20 P07 ABG BK R168B FGIUS_S BK), OR APPROVED EQUIVALENT, ASSOCIATED HARDWARE, AND POLE FOUNDATION.
- ITEM INCLUDES 15' HOLOPHANE COLUMBIA CAST IRON POLE (CLC 15 FTN 20 P07 ABG BK R168B FGIUS_S BK), OR APPROVED EQUIVALENT, AND ASSOCIATED HARDWARE.

FOOTNOTES (CONT):

- ITEM INCLUDES REMOVAL OF LUMINAIRE, BRACKET ARM, POLE, FOUNDATION, AND DELIVERY OF REMOVED EQUIPMENT TO CITY OF KNOXVILLE. SEE NOTE 26, SHEET 9A.
- ITEM INCLUDES REMOVAL OF LUMINAIRE, DECORATIVE POLE, AND DELIVERY OF REMOVED EQUIPMENT TO CITY OF KNOXVILLE. SEE NOTE 26, SHEET 9A.
- LUMINAIRE SHALL BE HOLOPHANE UTILITY WASHINGTON POSTLITE LED 2 (WAUE2P3030KASBK5BK4HNL1X1-MOD RFD281080), OR APPROVED EQUIVALENT.
- ITEM INCLUDES TRINETICS MR-XD SPEC 6283, OR APPROVED EQUIVALENT. CONTRACTOR TO FURNISH. KUB TO INSTALL IN VAULT V-5.
- INCLUDES CONDUIT, CABLE, AND OTHER ITEMS NECESSARY FOR CONNECTION OF STREET LIGHTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING KUB TO OBTAIN THE ESTIMATE FOR ANY CHARGES BY THE UTILITY FOR PROVIDING ELECTRICAL SERVICE TO THE STREET LIGHTS. THESE CHARGES SHALL BE INCLUDED IN THE PRICE BID FOR ITEM NO. 730-05.01 FOR PAYMENT BY THE CONTRACTOR. ITEM ALSO INCLUDES PROVISIONS FOR TEMPORARY SERVICE TO THE EXISTING STREET LIGHTS, IF NEEDED.
- INCLUDES SPECIAL EVENT ELECTRICAL PANEL, METER BOX, CONDUIT, AND CONDUCTORS AS SHOWN ON SHEET 9A. CONTRACTOR TO FURNISH MATERIAL, KUB TO INSTALL IN VAULT.
- INCLUDES SPECIAL EVENT ELECTRICAL PANEL, METER BOX, CONDUIT, AND CONDUCTORS AS SHOWN ON SHEET 9A. CONTRACTOR TO FURNISH MATERIAL, KUB TO INSTALL IN VAULT.

INSTALL 200A METERED 120/240 V, 3W SPECIAL EVENTS PANEL IN NEMA 3R ENCLOSURE IN V-5 VAULT AS PER DETAILS ON SHEET 9A

CONTRACTOR TO FURNISH NEW STREET LIGHT CONTACTOR. KUB TO INSTALL NEW STREET LIGHT CONTACTOR IN V-5 ALONG WITH NETWORK RED WIRE AND NETWORK CONDUCTORS.

LEGEND	
○	EXISTING STREET LIGHT
⊙	PROPOSED STREET LIGHT
▭	PROPOSED LIGHT FOUNDATION (APPROX.)
---	PROPOSED CONDUIT
▭	PROPOSED SPECIAL EVENTS BOX
▭	PROPOSED LIGHTING PULL BOX

Location of all underground utilities shown hereon are approximate and are based on field location of visible structures such as catch basins, manholes, water gates, etc. and compiling information from utility company plans. The utilities shown hereon may not comprise all of the existing utilities in this area, either in service or abandoned. In accordance with the Underground Utility Damage Prevention Act, prior to any excavation work call Tennessee One Call System, Inc. at 1-800-351-1111.



CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING

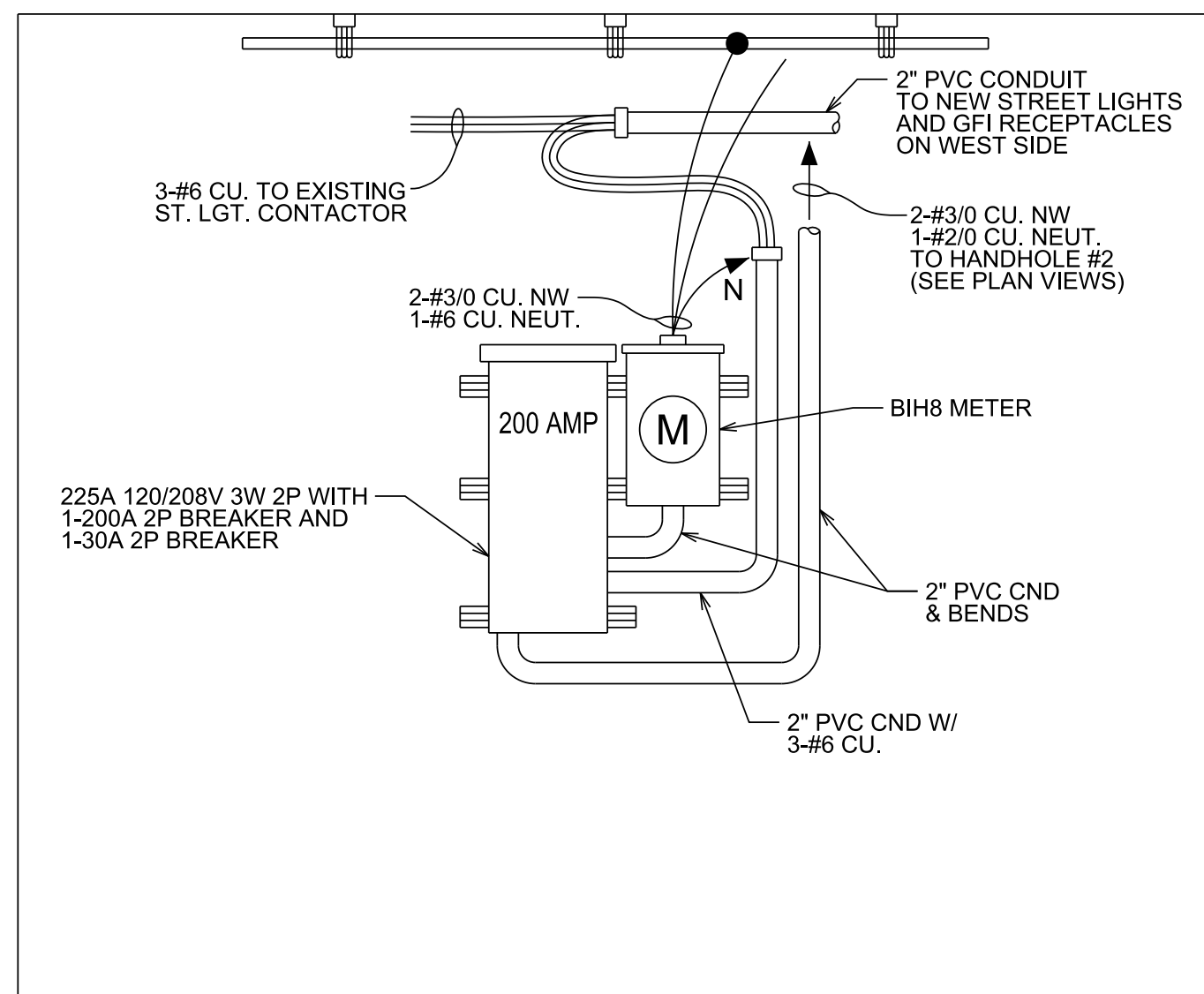
PROPOSED LIGHTING
600 BLOCK OF MARKET STREET

SCALE: 1" = 10'

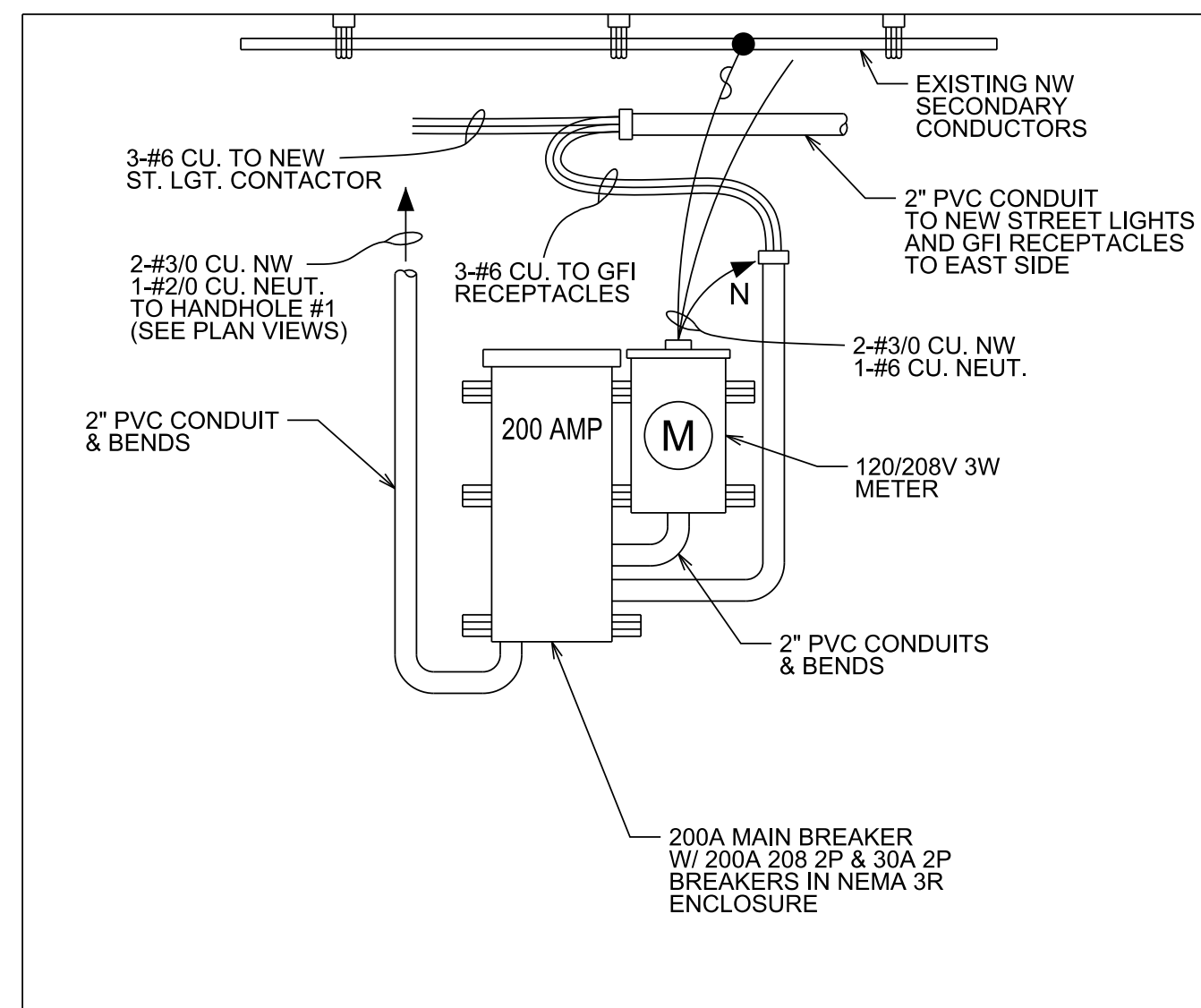
DRAWN: T.S.N.
DATE: 08-17-2018
CHECKED: R.C.B.

88f11enome\$pp1otted.by\$stoday

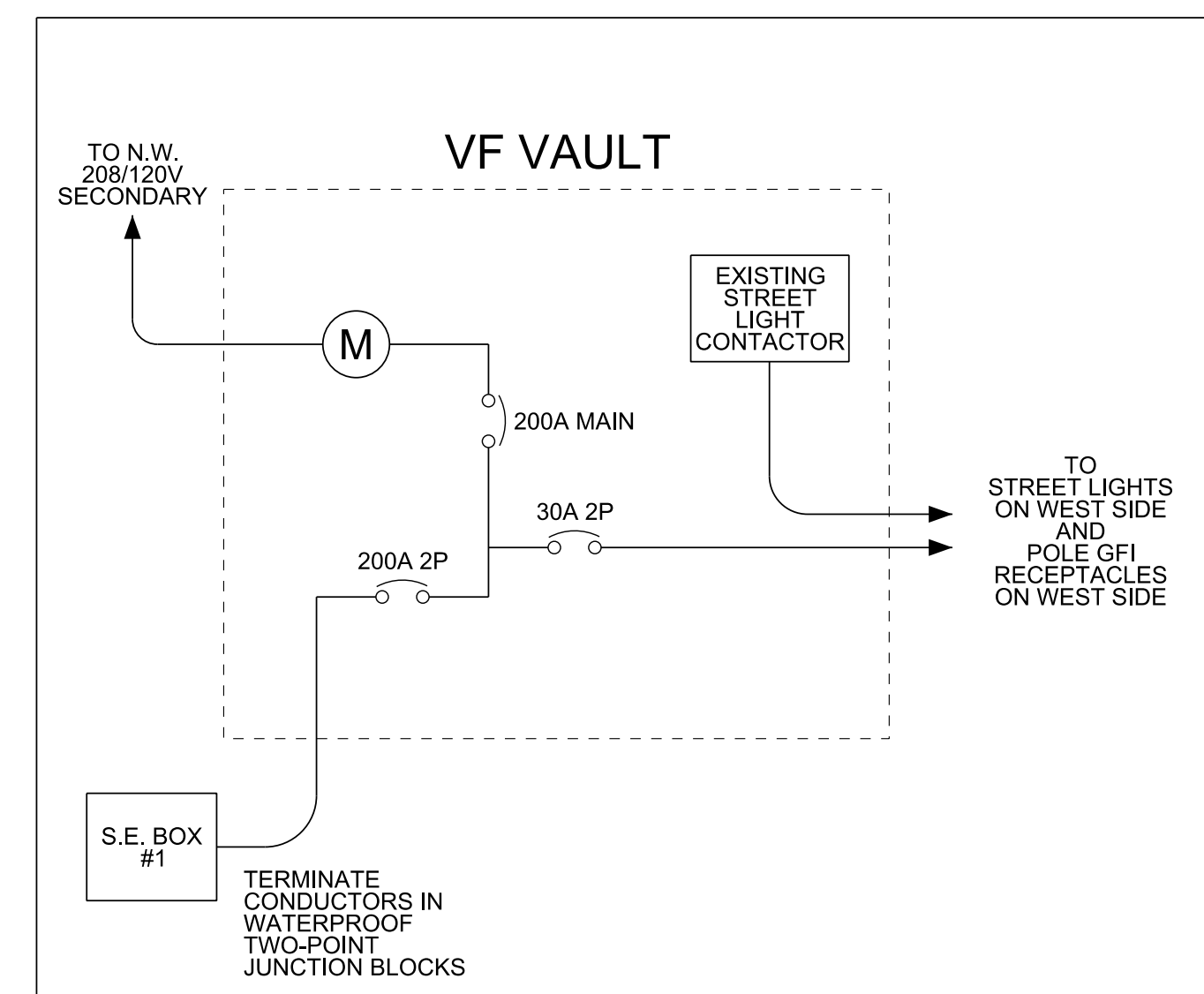
PROJECT No.	YEAR	SHEET No.	
17A-R-0625	2018	9A	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	8/30/18	RB	Revised One Line Diagrams & Note 4



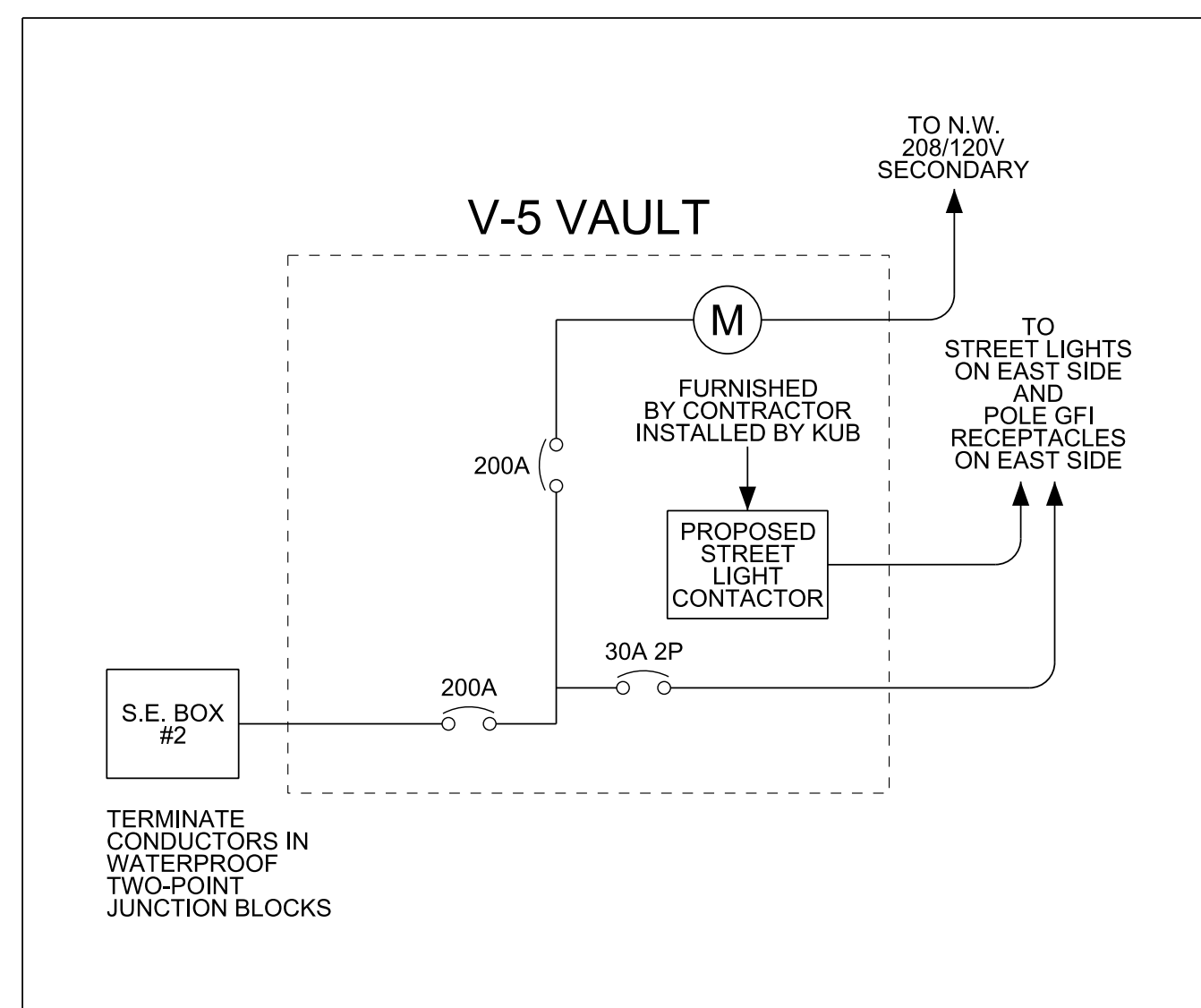
225A SAFETY SWITCH INSTALLATION
LOCATED IN VF VAULT



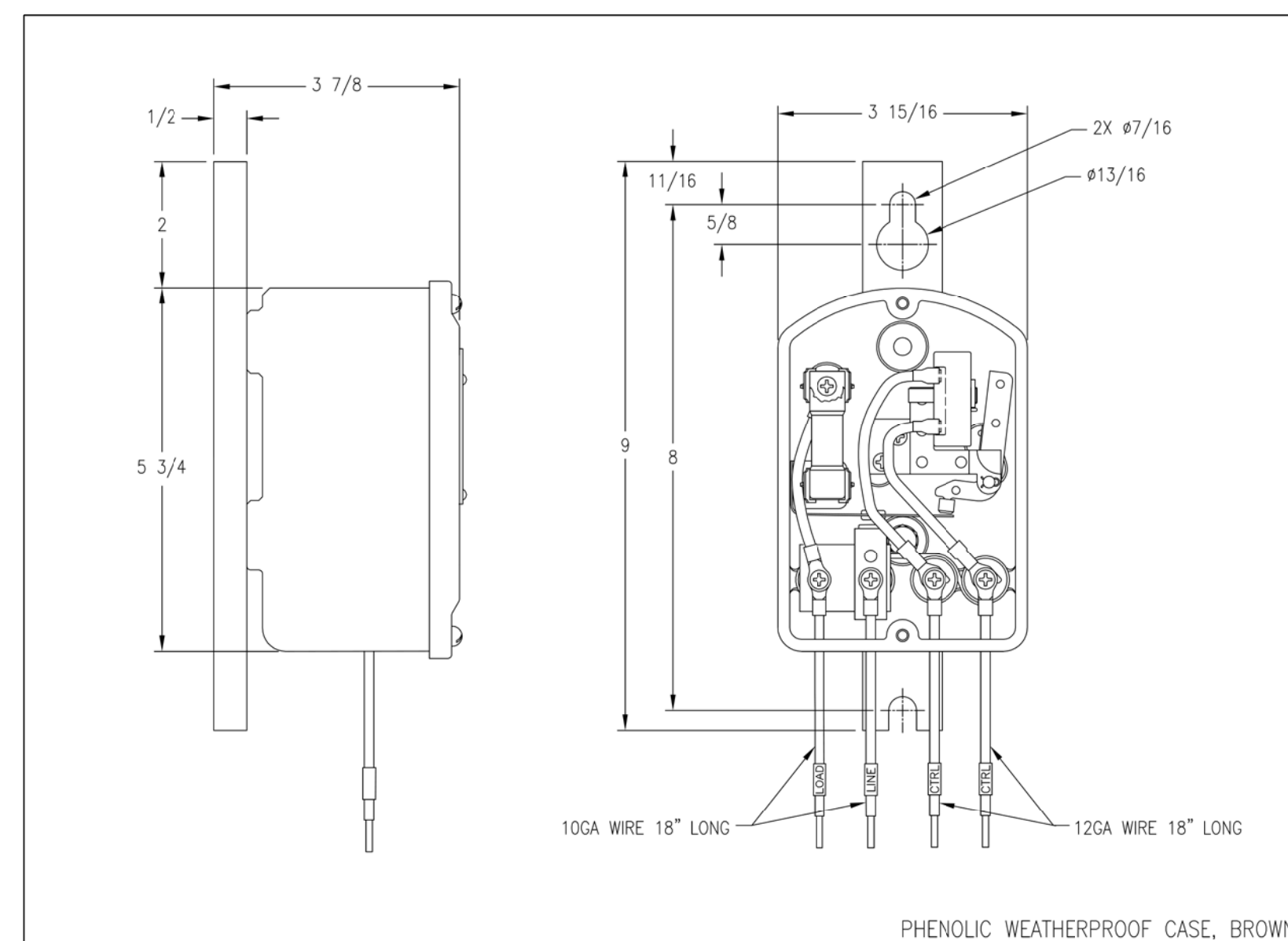
200A SAFETY SWITCH INSTALLATION
LOCATED IN V-5 VAULT



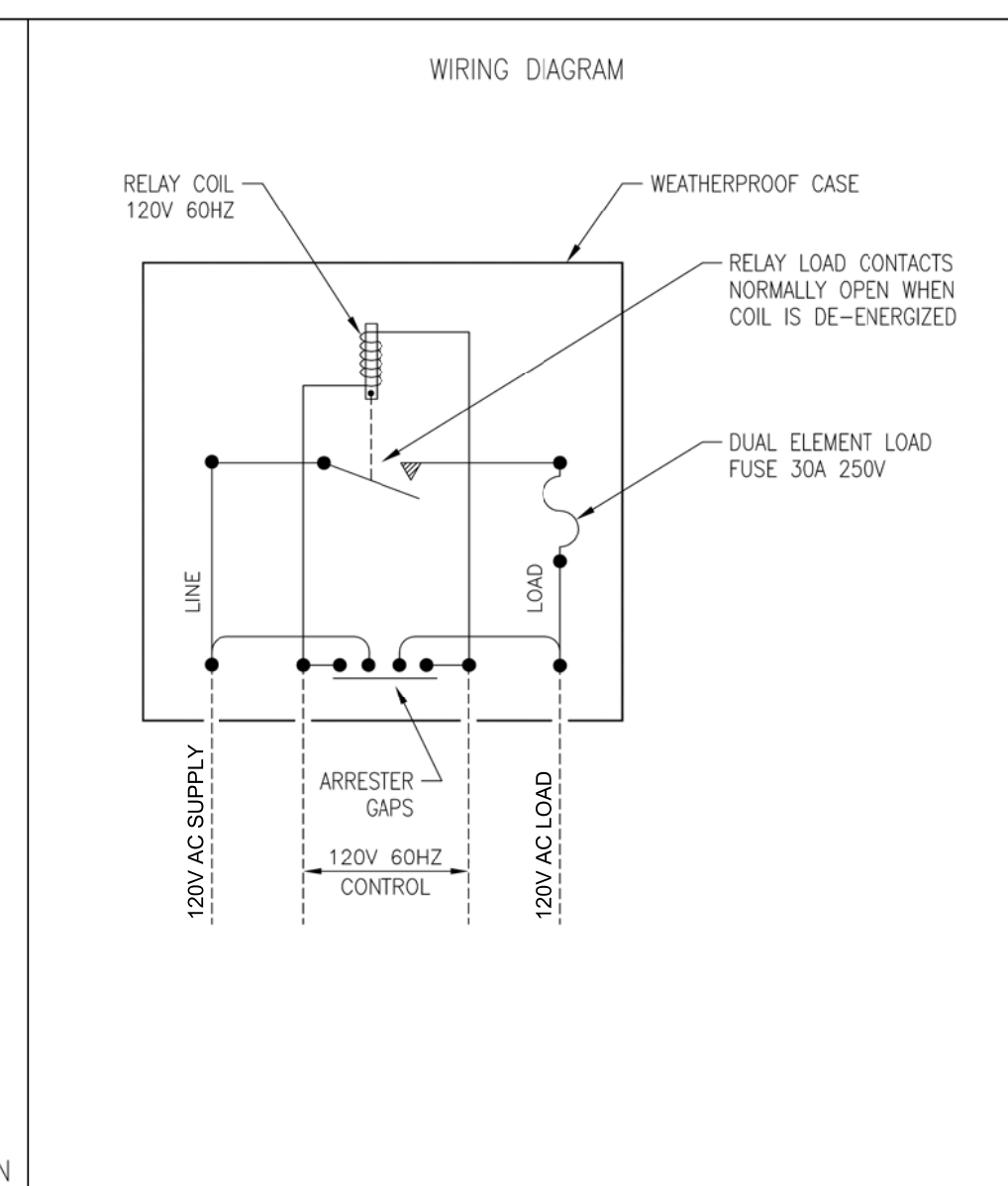
ONE LINE DIAGRAM
VF VAULT



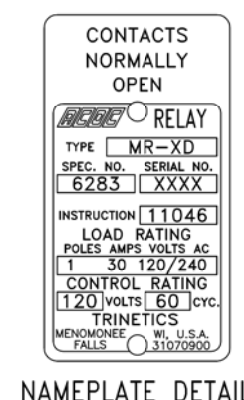
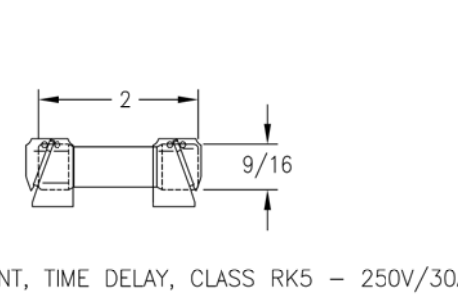
ONE LINE DIAGRAM
V-5 VAULT



PHENOLIC WEATHERPROOF CASE, BROWN



STREET LIGHTING
CONTACTOR DETAIL



LIGHTING NOTES

- INSTALLATION AND MATERIALS SHALL COMPLY WITH SECTIONS 714 AND 917 OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED JANUARY 1, 2015 AND WITH THE LATEST REVISIONS TO THE NATIONAL ELECTRIC CODE, NFPA 70.
- ALL WORK WILL BE PERFORMED PER NEC, NESC, AND C.O.K. ELECTRIC CODES AS WELL AS TO KUB STANDARDS.
- CONTRACTOR TO FURNISH AND INSTALL ALL CONDUIT, CONDUCTORS, STREET LIGHT POLES AND LUMINAIRES, AND SPECIAL EVENT BOXES.
- CONTRACTOR TO FURNISH SPECIAL EVENT'S ELECTRIC PANELS, METER BOXES, CONDUIT, AND CONDUCTORS AND KUB WILL INSTALL IN V-5 AND V-VF.
- ALL WIRING SHALL BE CONCEALED UNDERGROUND IN 2-INCH SCHEDULE 40 PVC RIGID CONDUIT.
- THE GROUND WIRE SHALL BE RUN INSIDE CONDUIT WITHIN STRUCTURES, SHALL BE COLORED GREEN AND HAVE THW INSULATION.
- ALL INCIDENTAL EQUIPMENT AND MATERIAL REQUIRED FOR THE SUCCESSFUL EXECUTION OF THIS WORK SHALL BE FURNISHED IN 714 ITEMS WHETHER SPECIFICALLY NOTED OR NOT.
- LIGHT STANDARDS SHALL BE HOLOPHANE "COLUMBIA" CAST IRON POLE (CLC-15-FTN-20-P07-ABG-BK-R168B-FGIUS_S-BK), OR APPROVED EQUIVALENT.
- 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.
- LUMINAIRES SHALL BE HOLOPHANE UTILITY WASHINGTON POSTLITE LED 2 WITH 3/4" SOLID BLACK BAND (RFD ONLY) (WAUE2P3030KASBK5BK4HNL1X1-MOD RFD281080), OR APPROVED EQUIVALENT.
- CONTRACTOR SHALL PROVIDE MANUFACTURER'S SPECIFICATION SHEETS FOR ALL CONTRACTOR SUPPLIED MATERIALS TO CITY OF KNOXVILLE FOR REVIEW AND APPROVAL PRIOR TO PURCHASING AND INSTALLING MATERIALS. ANY REWORK REQUIRING REMOVAL OF NON-APPROVED MATERIALS WILL BE PERFORMED AT NO ADDITIONAL EXPENSE TO THE CITY OF KNOXVILLE.
- CONTRACTOR SHALL INSTALL HANDHOLES WHERE QUANTITY OF BENDS IS GREATER THAN 270 DEGREES AND/OR PULL EXCEEDS 200 LINEAR FEET.
- 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 / CITY OF KNOXVILLE. CONTRACTOR TO PERFORM TESTING AT NO ADDITIONAL EXPENSE TO KUB OR THE CITY OF KNOXVILLE.
- 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 / CITY OF KNOXVILLE 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 / CITY OF KNOXVILLE ON WHICH TO RECORD THESE READINGS.
- 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 / CITY OF KNOXVILLE.
- CONTRACTOR TO CONTACT KUB DISPATCH AT 558-2600 FOR OPENING TRANSFORMERS TO RECEIVE CONDUIT AND WIRE OR WHEN WORKING WITHIN 10 FEET OF ANY ENERGIZED KUB POWER LINE OR POWER POLE.
- IN-LINE FUSES ARE REQUIRED IN EACH AND EVERY HOT LEG IN POLE BASE.
- 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.
- 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.
- 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.
- LIGHT POLE FOUNDATION TO BE PER SHEET 9C.
- LIGHTING ASSEMBLIES SHALL INCLUDE THE
 - FOLLOWING: HOT DIPPED, GALVANIZED ANCHOR BOLTS AND FULLY GALVANIZED NUTS, AND WASHERS (ASTM A153).
 - POLE GROUND LUG SHALL BE TINNED OR RATED FOR COPPER TO ALUMINUM CONNECTIONS.
 - TAMPER RESISTANT STAINLESS STEEL SCREWS SIMILAR TO FASTENAL X204C0040SSX600, SIZED AS REQUIRED.
 - WIRING INSIDE POLES SHALL BE THW TYPE WITH 75 DEG C RATING PER KUB STANDARDS.
- REGARDLESS OF IDENTIFIED SPECIFICATION REQUIREMENTS, POLE FOUNDATIONS ARE TO BE FURNISHED AS FOLLOWS:
 - 4000 PSI RATED.
 - TROWEL FINISHED. BROOM FINISHES WILL NOT BE ACCEPTED.
 - CONSTRUCTED WITH CONTINUOUS AND MONOLITHIC POURS WITH NO CONSTRUCTION JOINTS.
 - 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.
 - FORMS AND SHAFTS SHALL BE FREE OF MUD AND WATER WITH TAMPED EARTH BOTTOMS PRIOR TO POURING CONCRETE.
- LOCATION OF SPECIAL EVENT SIDEWALK BOXES AS SHOWN ON THE DRAWING ARE APPROXIMATE WITH FINAL LOCATION TO BE DETERMINED BY C.O.K. SPECIAL EVENT'S PERSONNEL.
- EXISTING STREET LIGHTS ALONG THE WEST SIDE OF MARKET STREET SHALL REMAIN IN PLACE AND OPERATIONAL UNTIL NEW LIGHTS ALONG THE EAST SIDE OF MARKET STREET ARE INSTALLED AND OPERATIONAL.
- EXISTING STREET LIGHTS AND POLES MARKED AS TO BE REMOVED SHALL BE RETURNED TO THE CITY OF KNOXVILLE. CONTACT CHEVELLE LEWIS (865-215-6046) TO COORDINATE DELIVERY OF LIGHTS AND POLE TO THE CITY.

CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING

LIGHTING DETAILS
600 BLOCK OF MARKET STREET

DRAWN: T.S.N.
DATE: 8-17-2018
CHECKED: R.C.B.



PROJECT No.	YEAR	SHEET No.	
17A-R-0625	2018	9B	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	8/30/18	RB	Removed reference to KUB in detail notes.

BRASS TAG - MANDATORY FOR ALL MANHOLES, VAULTS, & PULL BOXES

NOTE 1: SOLID BRASS CABLE TAG SHALL BE APPROXIMATELY TWO INCHES ROUND WITH A SMALL HOLE NEAR ITS EDGE TO INSERT A TIE WIRE. LETTERS/NUMBERS SHALL BE APPROX. ONE-QUARTER INCH TALL & ENGRAVED IN THE CENTER OF THE TAG SIMILAR TO THAT SHOWN IN THE ABOVE SCALED DRAWING.

NOTE 2: THE FIRST (TOP) LINE SHALL BE USED FOR CONTROLLER & CIRCUIT IDENTIFICATION. IN THIS LINE, THE NUMBER ON THE LEFT SHALL BE THE CONTROL CABINET NUMBER THAT IS ASSIGNED BY C.O.K.; THE NUMBER ON THE RIGHT IS THE LIGHTING OR RECEPTACLE CIRCUIT NUMBER. EACH CIRCUIT GROUP SHALL BE BUNDLED AND LABELED WITH THIS TAG.

NOTE 3: GROUPED PHASE CONDUCTORS #6 AWG AND SMALLER SHALL BE WRAPPED IN COLOR-CODED ELECTRICAL TAPE AT ALL TERMINATIONS, CONNECTIONS, AND SPLICE POINTS USING COLORS PER THE FOLLOWING TABLE "A" AND PER NOTES.

TABLE A - CONDUCTOR COLOR TAPE CIRCUIT CODE	
A PHASE HOT LEG IS ALWAYS BLACK	B PHASE HOT LEG IS ALWAYS RED
A PHASE NEUTRAL IS ALWAYS WHITE	B PHASE NEUTRAL IS ALWAYS GRAY

CIRCUIT IDENTIFIER COLOR CODING IS AS FOLLOWS:
 CIRCUIT 1 = BLACK CIRCUIT 5 = YELLOW
 CIRCUIT 2 = RED CIRCUIT 6 = BROWN
 CIRCUIT 3 = BLUE CIRCUIT 7 = PURPLE
 CIRCUIT 4 = ORANGE CIRCUIT 8 = VIOLET

NOTE 4: GROUPED PHASE CONDUCTORS #4 AWG SHALL USE SAME WIRE COLOR CODE FOR #6 AWG; HOWEVER, PER NEC REQUIREMENTS, WIRE SIZE #4 AND LARGER REQUIRE TAPE CIRCUIT COLOR CODES ONLY.

COLOR CODE EXAMPLES:

POWER SUPPLY: SINGLE PHASE 120/240V OR 240V/480V TRANSFORMER

480V TO HIGH MAST LIGHTS

480V 3-WIRE CIRCUITRY FOR HIGH MAST POLES ONLY (MAXIMUM ONE CIRCUIT PER CONDUIT)

120V AND 240V 2-WIRE CIRCUITRY (MAXIMUM TWO CIRCUITS PER CONDUIT)

WIRE IDENTIFICATION FOR SINGLE PHASE LIGHTING CIRCUITS

ORIG DWG BY: LGA DATE: 11-15-13 SHEET 1 OF 1 SHEETS LAST UPDATE: 8-27-15

A-15688

INSTALLATION NOTES:

- ALL PHASE, NEUTRAL, & GROUND CONNECTIONS IN THE C.O.K SYSTEM ARE TO BE MADE WITH SPLIT-BOLT CONNECTORS & WRAPPED WITH SELF-VULCANIZING RUBBER TAPE APPLIED IN HALF LAP LAYERS TO GIVE A SMOOTH COVERING OF NOT LESS THAN 2 TIMES THE THICKNESS OF THE WIRE INSULATION. OVER THIS RUBBER TAPE APPLY AT LEAST TWO LAYERS OF HALF-LAPPED 7-MIL ULTRAVIOLET, ABRASION, MOISTURE, ALKALID, ACID, & CORROSION RESISTANT VINYL PLASTIC TAPE. WIRE NUTS ARE NEVER ALLOWED.
- MULTIPLE LIGHTS ON SAME POLE ARE TO BE WIRED & FUSED INDEPENDENTLY AT LOCATIONS NOTED IN THE PLANS.
- ALL WIRING BETWEEN POLES TO BE INSULATED (600V) COPPER WITH INSULATION RATED FOR DIRECT-BURIAL APPLICATIONS, (TYPE "XHHW" OR EQUIV.) SIZE PER SITE PLAN.
- MULTIPLE CIRCUITS IN SAME POLE. "T" BASE, OR PULLBOX SHALL BE COLOR-CODED WITH CIRCUIT IDENTIFICATION PER C.O.K DWG-A-15688. CABLES IN PULL BOXES, MANHOLES, OR VAULTS MUST ALSO BE TAGGED WITH SOLID BRASS TAG.
- ALL WIRING FROM POLE ACCESS TO LIGHTS/RECEPTACLES SHALL BE "THW" TYPE OR RATED FOR USE IN WET LOCATIONS. SEE PLANS.

POLE FUSING DETAIL - ONE LIGHT

ORIG DWG BY: DATE: SHEET OF SHEETS LAST UPDATE:

TYPICAL POLE WIRING DETAIL

SCALE: N.T.S.

GENERAL NOTES:

- INSTALLATION SHALL MEET THE REQUIREMENTS OF NEC, NESC, AND C.O.K CONTRACT DOCUMENTS. C.O.K. AS OWNER, SHALL DECIDE THE MOST STRINGENT REQUIREMENTS TO USE SHOULD CONFLICTS ARISE.
- AT LEAST 3 DAYS, BUT NOT MORE THAN 10 DAYS IN ADVANCE OF EXCAVATION, CONTRACTOR SHALL CALL THE TENNESSEE ONE CALL SYSTEM AT 811 AND ALSO SHALL CONTACT C.O.K PROJECT INSPECTOR TO ARRANGE FOR INSPECTIONS.
- ALL TRENCHES FOR LIGHTING CONDUITS MUST BE INSPECTED BY C.O.K PROJECT INSPECTOR AFTER PLACEMENT OF CONDUIT AND BEFORE BACKFILLING. FAILURE TO HAVE C.O.K INSPECTION PRIOR TO BACKFILLING WILL RESULT IN REJECTION OF THE WORK.
- CUSTOMER/CONTRACTOR TO EXCAVATE AND BACKFILL TRENCHES AND TO FURNISH AND INSTALL CONDUIT AND FITTINGS. ENCASED CONDUIT TO BE GRAY PVC SCHEDULE-40 OR 80 ELECTRIC POWER CONDUIT MEETING THE REQUIREMENTS OF ASTM D1248 & D2447. HOPE DUCT WHEN ALLOWED MAY HAVE ADDITIONAL REQUIREMENTS; CONTACT C.O.K FOR APPROVED MATERIALS.
- CUSTOMER/CONTRACTOR TO FURNISH AND INSTALL 210LB-TEST POLYLINE PULL-STRING IN ALL CONDUITS.
- LIGHTING CONDUIT TO BE INSTALLED AS STRAIGHT AS PRACTICAL. ANY DEFINED CHANGES IN DIRECTION SHALL HAVE A BENDING RADIUS OF NOT LESS THAN 10 FEET UNLESS OTHERWISE DIRECTED BY C.O.K.
- ALL HORIZONTAL CHANGES IN CONDUIT ELEVATIONS SHALL BE SUPPORTED BY APPROVED BACKFILL MATERIAL AND COMPACTED TO ADJACENT SOIL COMPACTION.
- THE MAXIMUM OF BENDS IN ANY CONDUIT IS NOT TO EXCEED 270 DEGREES. FACTORY BENDS ARE REQUIRED AT ALL POLES, PULL BOXES, AND STRUCTURE MOUNTING. HEAT BENDING OF CONDUIT IS NOT ACCEPTABLE. CONDUIT IS SUBJECT TO MANDREL TESTING FOR ROUNDNESS IN THE PRESENCE OF C.O.K INSPECTOR.
- TRENCH DEPTH FOR DIRECT BURIAL CONDUIT IN EARTH IS 30IN (MIN) BELOW SUBGRADE. FOR CONDUIT INSTALLATION UNDER DRIVEWAYS, ROADWAYS, OR PARKING AREAS SEE C.O.K DRAWING A-15578 AND B-15710.
- BOTTOM 15IN OF TRENCH BACKFILL TO BE IN CLEAN GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3/4IN OR ANY MATERIAL WHICH COULD DAMAGE CONDUIT. REMAINING BACKFILL TO BE GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3IN.
- REFER TO LOCAL MUNICIPAL STANDARDS FOR REQUIREMENTS FOR STREET CUTS AND REPAIRS AND SIDEWALK REMOVALS AND REPAIRS.
- CONTACT C.O.K INSPECTOR IF ROCK IS ENCOUNTERED IN TRENCH ROUTE. INSTALLATION DETAILS OF TDOT DRAWING T-L-4 AND/OR C.O.K ACCEPTABLE PRACTICE SHALL APPLY FOR CONDUIT ON ROCK

ELECTRIC TRENCH DETAIL WITH ONE 2 INCH LIGHTING CONDUIT

ORIG DWG BY: LGA DATE: 6-28-13 SHEET 1 OF 1 SHEETS REVISION: 2 (1/24/2013)

A-15576

GENERAL NOTES:

- INSTALLATION SHALL MEET THE REQUIREMENTS OF NEC, NESC, AND C.O.K CONTRACT DOCUMENTS. C.O.K. AS OWNER, SHALL DECIDE THE MOST STRINGENT REQUIREMENTS TO USE SHOULD CONFLICTS ARISE.
- AT LEAST 3 DAYS, BUT NOT MORE THAN 10 DAYS IN ADVANCE OF EXCAVATION, CONTRACTOR SHALL CALL THE TENNESSEE ONE CALL SYSTEM AT 811 AND ALSO SHALL CONTACT C.O.K PROJECT INSPECTOR TO ARRANGE FOR INSPECTIONS.
- ALL TRENCHES FOR LIGHTING CONDUITS MUST BE INSPECTED BY C.O.K PROJECT INSPECTOR AFTER PLACEMENT OF CONDUIT AND BEFORE BACKFILLING. FAILURE TO HAVE C.O.K INSPECTION PRIOR TO BACKFILLING WILL RESULT IN REJECTION OF THE WORK.
- CUSTOMER/CONTRACTOR TO EXCAVATE AND BACKFILL TRENCHES AND TO FURNISH AND INSTALL CONDUIT AND FITTINGS. ENCASED CONDUIT TO BE GRAY PVC SCHEDULE-40 OR 80 ELECTRIC POWER CONDUIT MEETING THE REQUIREMENTS OF ASTM D1248 & D2447. HOPE DUCT WHEN ALLOWED MAY HAVE ADDITIONAL REQUIREMENTS; CONTACT C.O.K FOR APPROVED MATERIALS.
- CUSTOMER/CONTRACTOR TO FURNISH AND INSTALL 210LB-TEST POLYLINE PULL-STRING IN ALL CONDUITS.
- LIGHTING CONDUIT TO BE INSTALLED AS STRAIGHT AS PRACTICAL. ANY DEFINED CHANGES IN DIRECTION SHALL HAVE A BENDING RADIUS OF NOT LESS THAN 10 FEET UNLESS OTHERWISE DIRECTED BY C.O.K.
- ALL HORIZONTAL CHANGES IN CONDUIT ELEVATIONS SHALL BE SUPPORTED BY APPROVED BACKFILL MATERIAL AND COMPACTED TO ADJACENT SOIL COMPACTION.
- THE MAXIMUM OF BENDS IN ANY CONDUIT IS NOT TO EXCEED 270 DEGREES. FACTORY BENDS ARE REQUIRED AT ALL POLES, PULL BOXES, AND STRUCTURE MOUNTING. HEAT BENDING OF CONDUIT IS NOT ACCEPTABLE. CONDUIT IS SUBJECT TO MANDREL TESTING FOR ROUNDNESS IN THE PRESENCE OF C.O.K INSPECTOR.
- TRENCH DEPTH FOR DIRECT BURIAL CONDUIT IN EARTH IS 30IN (MIN) BELOW SUBGRADE. FOR CONDUIT INSTALLATION UNDER DRIVEWAYS, ROADWAYS, OR PARKING AREAS SEE C.O.K DRAWING A-15578 AND B-15710.
- BOTTOM 15IN OF TRENCH BACKFILL TO BE IN CLEAN GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3/4IN OR ANY MATERIAL WHICH COULD DAMAGE CONDUIT. REMAINING BACKFILL TO BE GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3IN.
- REFER TO LOCAL MUNICIPAL STANDARDS FOR REQUIREMENTS FOR STREET CUTS AND REPAIRS AND SIDEWALK REMOVALS AND REPAIRS.
- CONTACT C.O.K INSPECTOR IF ROCK IS ENCOUNTERED IN TRENCH ROUTE. INSTALLATION DETAILS OF TDOT DRAWING T-L-4 AND/OR C.O.K ACCEPTABLE PRACTICE SHALL APPLY FOR CONDUIT ON ROCK

ELECTRIC TRENCH DETAIL WITH TWO 2 INCH LIGHTING CONDUITS

ORIG DWG BY: LGA DATE: 6/29/2013 SHEET 1 OF 1 SHEETS REVISION: 1 (1/2/26/2013)

A-15577

GENERAL NOTES:

- INSTALLATION SHALL MEET THE REQUIREMENTS OF NEC, NESC, AND C.O.K CONTRACT DOCUMENTS. C.O.K. AS OWNER, SHALL DECIDE THE MOST STRINGENT REQUIREMENTS TO USE SHOULD CONFLICTS ARISE.
- AT LEAST 3 DAYS, BUT NOT MORE THAN 10 DAYS IN ADVANCE OF EXCAVATION, CONTRACTOR SHALL CALL THE TENNESSEE ONE CALL SYSTEM AT 811 AND SHALL ALSO CONTACT THE C.O.K PROJECT INSPECTOR TO ARRANGE FOR INSPECTIONS.
- ALL TRENCHES FOR LIGHTING CONDUITS MUST BE INSPECTED BY C.O.K PROJECT INSPECTOR AFTER PLACEMENT OF CONDUIT AND BEFORE POURING CONCRETE OR BACKFILLING. FAILURE TO HAVE A C.O.K INSPECTION PRIOR TO BACKFILLING WILL RESULT IN REJECTION OF THE WORK.
- CUSTOMER/CONTRACTOR TO EXCAVATE AND BACKFILL TRENCHES AND TO FURNISH AND INSTALL 2 INCH CONDUIT. ENCASED CONDUIT TO BE GRAY PVC SCHEDULE-80 ELECTRIC POWER CONDUIT (EPC-80) MEETING THE REQUIREMENTS OF ASTM D 1248 & D 2447. CUSTOMER TO FURNISH AND INSTALL PVC SOLVENT CEMENT AT EACH CONDUIT JOINT PER MANUFACTURERS INSTRUCTIONS. SEE SITE PLAN FOR QUANTITY AND LOCATION OF CONDUIT. HOPE DUCT, WHEN ALLOWED, MAY HAVE ADDITIONAL REQUIREMENTS. CONTACT C.O.K FOR APPROVED MATERIALS.
- CUSTOMER/CONTRACTOR TO FURNISH AND INSTALL 210LB-TEST POLYLINE PULL-STRING IN ALL CONDUITS.
- LIGHTING CONDUIT TO BE INSTALLED AS STRAIGHT AS PRACTICAL. ANY DEFINED CHANGES IN DIRECTION SHALL HAVE A BENDING RADIUS OF NOT LESS THAN 50 FEET UNLESS OTHERWISE DIRECTED BY C.O.K. THE MAXIMUM NUMBER OF BENDS IN ANY CONDUIT RUN IS NOT TO EXCEED 270 DEGREES. CONDUIT IS SUBJECT TO MANDREL TESTING FOR ROUNDNESS IN THE PRESENCE OF C.O.K INSPECTOR.
- REQUIRED ENCASED CONDUIT TRENCH DEPTH IS 30 INCHES MINIMUM (36IN UNDER VEHICLE TRAVEL AREAS) FROM TOP OF CONDUIT TO LOWEST SUBGRADE. EXTEND CONDUIT ENCASEMENT 3 FEET MINIMUM BEYOND ALL PAVED SURFACES. EXTEND CONDUIT 6 INCHES MINIMUM BEYOND CONCRETE ENCASEMENT.
- WHERE MORE THAN (1) 2 INCH CONDUIT IS INSTALLED IN TRENCH, CONDUITS SHALL NOT BE PLACED CLOSER THAN 8 INCHES CENTER TO CENTER.
- CONCRETE SHALL BE PROPERLY VIBRATED WHEN INSTALLED TO INSURE COMPLETE FLOW UNDER AND AROUND CONDUIT TO ELIMINATE ANY AIR POCKETS. ALLOW CONCRETE TO SET FIRM BEFORE BACKFILLING REMAINDER OF TRENCH. FOR CONCRETE ROADWAYS, FILL TRENCH WITH CONCRETE TO FINAL ROADWAY GRADE.
- FOR ADDITIONAL CONCRETE DETAIL INFORMATION, SEE C.O.K DWG-16132-DINFO AND DWG-16132-DL9.

ELECTRIC TRENCH DETAIL FOR 2 INCH CONDUITS UNDER ASPHALT TRAFFIC BEARING AREAS

ORIG DWG BY: LGA DATE: 6/29/2013 SHEET 1 OF 1 SHEETS REVISION: 2 (1/24/2014)

A-15578

**CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING**

600 BLOCK OF MARKET STREET

DRAWN: T.S.N.
DATE: 8-17-2018
CHECKED: R.C.B.



88f11.enom\$pp1otted.by\$today

SPECIAL PROVISION FOR
WATERPROOFING MEMBRANE1. Description

- (a) Structural slabs and slabs on grade shall be waterproofed with a modified bituminous sheet waterproofing system to the extent shown on the drawings.
- (b) Material shall be applied in strict accordance with the manufacturer's recommendations in all aspects of application.

2. Materials

- (a) Modified bituminous sheet shall be equivalent to Bituthene 4000 as manufactured by W.R. Grace & Co.: 60-mil (1.5-mm) thick, self-adhering sheet consisting of 56 mils (1.4mm) of rubberized asphalt laminated to a 4-mil (0.10-mm) thick, polyethylene film with release liner on adhesive side.
 1. Tensile Strength: 250 psi (1.7 MPa) minimum; ASTM D 412, Die C, modified.
 2. Ultimate Elongation: 300 percent minimum; ASTM D 412, Die C, modified.
 3. Low-Temperature Flexibility: Pass at minus 20 deg F (minus 29 deg C); ASTM D 1970.
 4. Crack Cycling: Unaffected after 100 cycles of 1/8-inch (3-mm) movement; ASTM C 836.
 5. Puncture Resistance: 40 lbf (180 N) minimum; ASTM E 154.
 6. Hydrostatic-Head Resistance: 150 feet (45 m) minimum; ASTM D 5385.
 7. Water Absorption: 0.15 percent weight-gain maximum after 48-hour immersion at 70 deg F (21 deg C); ASTM D 570.
 8. Vapor Permeance: 0.05 perms (2.9ng/Pa x s x sq. m); ASTM E 96, Water Method.
- (b) General: Furnish auxiliary materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.
 1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.
- (c) Primer: Liquid primer recommended for substrate by manufacturer of sheet waterproofing material.
- (d) Surface Conditioner: Liquid, waterborne surface conditioner recommended for substrate by manufacturer of sheet waterproofing material.
- (e) Liquid Membrane: Elastomeric, two-component liquid, cold fluid applied, trowel grade or low viscosity.

- (f) Substrate Patching Membrane: Low-viscosity, two-component, asphalt-modified coating.
- (g) Sheet Strips: Self-adhering, rubberized-asphalt sheet strips of same material and thickness as sheet waterproofing.
- (h) Mastic, Adhesives, and Tape: Liquid mastic and adhesives, and adhesive tapes recommended by waterproofing manufacturer.
 - 1. Detail Tape: Two-sided, pressure-sensitive, self-adhering reinforced tape, 4-1/2 inches (114mm) wide, with a tack-free protective adhesive coating on one side and release film on self-adhering side.
- (i) Metal Termination Bars: Aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick, predrilled at 9-inch (229-mm) centers.

3. Construction Requirements

- (a) Install modified bituminous sheets according to waterproofing manufacturer's written instructions and according to recommendations in ASTM D 6135.
- (b) Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by sheet waterproofing in same day. Reprime areas exposed for more than 24 hours.
- (c) Apply and firmly adhere sheets over area to receive waterproofing. Accurately align sheets and maintain uniform 2-1/2-inch- (64-mm) minimum lap widths and end laps. Overlap and seal seams and stagger end laps to ensure watertight installation. When ambient and substrate temperatures range between 25 and 40 deg F (minus 4 and Plus 5 deg C), install self-adhering, modified bituminous sheets produced for low-temperature application. Do not use low-temperature sheets if ambient or substrate temperature is higher than 60 deg F (16 deg C).
- (d) Horizontal Application: Apply sheets from low point to high point of decks to ensure that side laps shed water.
- (e) Apply continuous sheets over sheet strips bridging substrate cracks, construction, and contraction joints.
- (f) Seal exposed edges of sheets at terminations not concealed by metal counterflashings or ending in reglets with mastic.
- (g) Install sheet waterproofing and auxiliary materials to tie into adjacent waterproofing.

- (h) Repair tears, voids, and lapped seams in waterproofing not complying with requirements. Slit and flatten fishmouths and blisters. Patch with sheet waterproofing extending 6 inches (150 mm) beyond repaired areas in all directions.
- (i) Install protection course with butted joints over waterproofing membrane immediately.
 - 1. Molded-sheet drainage panels may be used in place of a separate protection course to vertical applications when approved by waterproofing manufacturer and installed immediately.
- (j) Make arrangements for manufacturer's representative to observe installation in progress.
- (k) Correct deficiencies in or remove sheet waterproofing that does not comply with requirements and as required by manufacturer's representative, repair substrates, reapply waterproofing, and repair sheet flashings.

4. Basis of Payment

This item will be paid for at the Contract unit price per square foot for waterproofing membrane properly terminated and covered with 1/4" protection board, complete in place. The price shall be full compensation for all work, materials, labor and incidentals required to provide a complete waterproofed surface approved by the manufacturer's representative in accordance with the plans and specifications.

Method of Measurement

- (a) Waterproofing membrane will be measured for payment per square foot, complete in place.
- (b) The area shall be obtained from surface measurements.

Mr. J...
JAC

FILE IN MKT ST. FOLDER

600 BL



BANK OF KNOXVILLE
Knoxville, Tennessee

JOHN C. COX
PRESIDENT
FRANK F. VENABLE
VICE-PRESIDENT
HARRY H. DUNCAN
CASHIER

January 5, 1968

OFFICE OF BUILDING MANAGER
MEL BURNSIDE, MANAGER

To whom it may concern:

Gentlemen:

Enclosed is a copy of a blue print showing a diagram of the heating system which was installed in the sidewalk in front of the Bank of Knoxville Building on Market St.

This print is being sent to you so that you will have a record of this installation in the event that you might at some time need it for reference.

Yours truly,

M. L. Burnside
Building Manager
Bank of Knoxville Building

SHOWED TO CET



That Friendly Bank

XERO COPY

XERO COPY

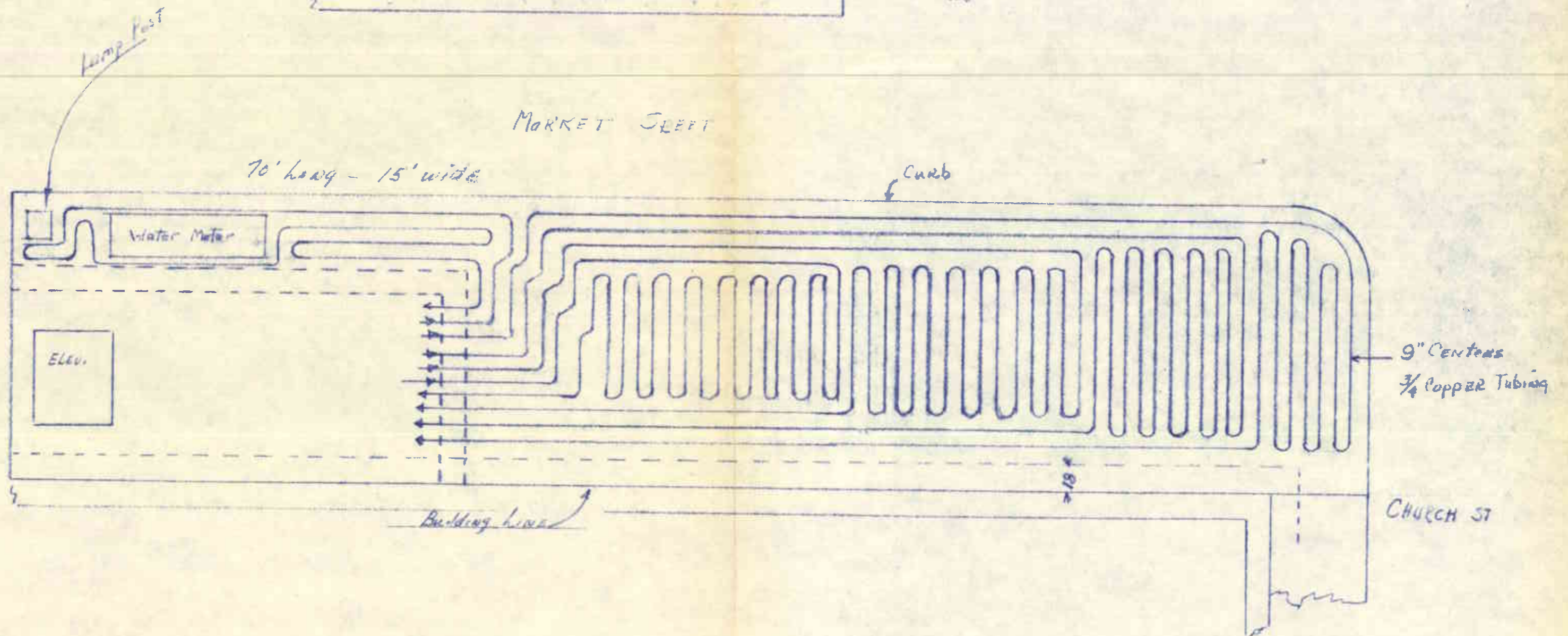
XERO COPY

XERO COPY



Copies sent to:

K.U.C. Water Dept	Mr R P Clatna, Water Engineering
do Elec. Dept	Mr L Pearson, Elec Engineering
do Sewer Dept	Mr J Whisman, Sewer Main PO Box 33
do Gas Dept	Mr R Kern, Gas Engineering
City of Knoxville	Mr Nick Ferro, Traffic Dept
Telephone Co.	Mr D Eldridge, Plant Dept 701 Meyer St
City of Knoxville	City Engineer



Bank Of Knoxville - Snow Melting system for sidewalk

92,000 BTU.
 19 GPM WATER.
 75°F WATER ENTERING
 55°F WATER LEAVING