

ADDENDUM NO. 2

Date: June 12, 2019

To: All Bidders

From: Penny Owens, Assistant Purchasing Agent, City of Knoxville

Subject: Addendum No. 2 –Mineral Springs Avenue Bridge Project

Bid Date: July 19, 2019 at 11:00 am (Eastern Time)

This addendum is being published to respond to questions asked by potential bidders regarding the Mineral Springs Avenue Bridge Project. This addendum becomes a part of the Contract Document and modifies the original project plans and specifications as noted.

Question #1: How is the Contractor to handle any drainage from Walker Boulevard during construction of the new bridge?

Response: The roadway grade slopes away from the bridge, towards Walker Avenue. There is an existing curb inlet (located approx. 35+39 LT) that has an existing 15” pipe which outlets near the bridge, on the north side of Mineral Springs Avenue. A new 18” pipe along the south side of Mineral Springs Avenue will ultimately replace the 15” pipe, but the 15” will need to be maintained until the 18” is installed and functional.

Question #2: Can we use a TDOT standard drawing for the new bridge rails?

Response: Yes. Plans are revised to reflect the use of TDOT Standard Drawing STD-11-3 which depicts the standard concrete pedestrian classic railing that is updated to account for sidewalk thickness cast adjacent to it. For clarity and conformance with TDOT specifications, the pay item will change from 620-03 to 620-05.02 Standard Concrete Classic Rail (LF). Plans are revised to reflect this change. Sheet 6M has been deleted. The only deviation from the standard drawing will be the omission of the Tri-Star Emblem from the larger rail posts shown on STD-11-3.

Question #3: Can you clarify what the sidewalk quantities refer to in the plans?

Response: Pay item 13.10 Concrete Sidewalks (SF) includes all labor and materials required to construct sidewalks on roadway approaches. Pay item 604-03.01 Class “A” Concrete (Bridges) (CY) includes the amount of concrete required for the sidewalks required on the bridge deck surface. All labor and materials required to construct the sidewalks on the bridge deck surface shall be included in 604-03.01. Plans are revised to provide this clarity.

Question #4: Do we need to maintain two lanes of traffic to Buddy's BBQ?

Response: The intent is to keep two lanes of traffic open to all private driveways. If the roadway will need to be narrowed, the contractor shall provide a flagging operation while the roadway width is reduced. Any costs associated with this work shall be included in the pay item for Traffic Control.

Question #5: On the retaining wall bar list and quantities page, the quantity is given as 1755 lbs of epoxy in the retaining wall. Per the reinforcing list for the retaining wall, I came up with 2,198 lbs of epoxy bar needed for the retaining wall. Please review the plans to confirm the quantities.

Response: We have reviewed this question, and it appeared to us that not enough clarity had been provided in the plans as to which bars specifically were to be epoxy coated. The only bars required to be epoxy coated are the back face (BF) bars that are embedded in the footing and then project vertically into the stem/wall. We have provided additional clarity in a plan revision to sheets 5A and 5B which indicate which bars are epoxy coated. Based upon this, we reviewed our quantities and have determined that the 1755 LBS of epoxy coated rebar for the retaining wall is correct.

Items for Clarification:

The Contractor shall ignore any notes associated with Piles shown in the General Notes on Sheet 6B – no piles are needed for the construction of this bridge. Plans have been revised to remove these notes.

The revised plans and bid form are attached to this addendum. The entire revised plan set may be viewed or downloaded from <https://ws.onehub.com/folders/tnzjahqe>.

END OF ADDENDUM NO. 2

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1.10	MOBILIZATION OF FORCES, SUPPLIES AND EQUIPMENT	L.S.	1
2.10	CLEARING AND GRUBBING	L.S.	1
① 3.10	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	1
4.10	EXCAVATION (UNCLASSIFIED)	C.Y.	178
5.10	MINERAL AGGREGATE BASE	TON	211
5.40	NO. 57 STONE	TON	14
7.10	TACK COAT	GALLON	163
9.10	BITUMINOUS PLANT MIX, GRADING BM-2	TON	78
9.11	BITUMINOUS PLANT MIX, GRADING C-S	TON	18
10.10	ASPHALTIC CONCRETE SURFACE, GRADING D	TON	105
12.62	6" CONCRETE COMBINED CURB & GUTTER, TYPE 6-30	L.F.	524
⑩ 13.10	CONCRETE SIDEWALKS	S.F.	2728
13.11	CURB CUT	EACH	3
20.14	18" R.C.P.	L.F.	243
22.12	NO. 12 CATCH BASIN	EACH	7
22.14	NO. 14 CATCH BASIN	EACH	2
22.15	AREA DRAIN CATCH BASIN	EACH	1
26.10	TOP SOIL	C.Y.	76
28.10	SODDING	S.Y.	912
31.50	SEDIMENT REMOVAL	C.Y.	36
② 31.70	EROSION AND SILTATION CONTROL	L.S.	1
④ 31.80	IN-STREAM DIVERSION	L.S.	1
⑤ 34.10	CONSTRUCTION AREA TRAFFIC CONTROL	L.S.	1
36.50	GEOTEXTILE FABRIC FOR EROSION STABILIZATION	S.Y.	80
38.10	MILLING ASPHALTIC CONCRETE, SURFACE MILLING	TON	89
39.10	PAVEMENT MARKING (LINE)	L.F.	1685
39.20	PAVEMENT MARKING (CROSSWALK STRIPPING)	L.F.	42
39.30	PAVEMENT MARKING (STOP LINE)	L.F.	55
42.10	CONCRETE DITCH	L.F.	180
70.20	TACTILE WARNING SYSTEM, CAST-IN-PLACE	EACH	3
203-03.10	SELECT GRANULAR MATERIAL	TON	660
⑥ 204-11	BRIDGE EXCAVATION (UNCLASSIFIED)	CY	550
⑦ 303-01.02	GRANULAR BACKFILL (BRIDGES)	TON	900
⑦ 303-01.03	GRANULAR BACKFILL (RETAINING WALLS)	TON	490
604-01.20	BOX TUBE SAFETY RAIL	L.F.	184
604-01.32	CLASS A CONCRETE (LEVELING)	CY	50
⑧ 604-02.03	EPOXY COATED REINFORCING STEEL	LBS	26769
⑨ 604-03.01	CLASS "A" CONCRETE (BRIDGES)	CY	255
604-03.02	STEEL BAR REINFORCEMENT (BRIDGES)	LBS	17439
⑩ 604-03.09	CLASS "D" CONCRETE (BRIDGES)	CY	115
⑪ 604-05.31	BRIDGE DECK GROOVING (MECHANICAL)	SY	380
604-09.10	CLASS "A" CONCRETE (RETAINING WALLS)	CY	155
⑫ 615-02.03	PRESTRESSED CONCRETE BOX BEAM (21"x36")	LF	520
⑬ 620-05.02	STANDARD CONCRETE PEDESTRIAN CLASSIC RAIL	LF	152
⑬ 621-05.02	TEMPORARY SHORING	LS	1
709-05.08	MACHINED RIP-RAP (CLASS B)	TON	235
⑭ 710-09.01	6" PERFORATED PIPE WITH VERTICAL DRAIN SYSTEM	LF	120
⑮ 710-09.02	6" PIPE UNDERDRAIN	LF	20

- ① INCLUDES THE COST OF REMOVING ALL EXISTING DRAINAGE STRUCTURES AND TWO TREES (14" BRADFORD PEARS) IN CONFLICT WITH PROPOSED IMPROVEMENTS. ALSO INCLUDES COMPLETE REMOVAL OF EXISTING BRIDGE NO. 43-A658-00.22 AND APPROACHES TO NATURAL GROUND BETWEEN STA. 10+87.00 AND STA. 12+16.00. EXISTING BRIDGE CONSISTS OF: 3 CONCRETE DECK GIRDER APPROACH SPANS AT 56'-0" WIDE TOTALING 129'-0" LONG.
- ② INCLUDES THE COST OF INSTALLATION AND MAINTENANCE OF ALL CATCH BASIN PROTECTION, SEDIMENT TUBES, SLT FENCE, 15' X15' FILTER BAG AND 30" TEMPORARY DIVERSION CULVERT.
- ③ SEE SUBSECTION 209.07 OF THE TDOT STANDARD SPECIFICATIONS FOR MAINTENANCE AND REPLACEMENT OF SEDIMENT FILTER BAG.
- ④ INCLUDES ALL COSTS FOR ALL PHASES OF THE TEMPORARY IN-STREAM DIVERSION, INCLUDING LABOR, MATERIALS AND MAINTENANCE.
- ⑤ INCLUDES THE COST OF ALL LABOR AND MATERIALS REQUIRED FOR INSTALLATION AND REMOVAL OF ALL TEMPORARY TRAFFIC CONTROL ITEMS AND DETOUR SIGNAGE.
- ⑥ EXCAVATION BASED ON FINAL PROFILE AT ABUTMENTS AND EXISTING GROUND.
- ⑦ GRANULAR BACKFILL SHALL BE CLASS "A" GRADING "D" MATERIAL. SEE STANDARD DRAWING NO. STD-10-1.
- ⑧ INCLUDES QUANTITY OF STEEL REQUIRED FOR BRIDGE DECK, BACKWALL, AND ABUTMENTS. REBAR QUANTITIES NOT INCLUDED IN THIS ITEM FOR PAVEMENT AT BRIDGE ENDS AND PARAPETS.
- ⑨ INCLUDES QUANTITY OF CONCRETE REQUIRED FOR SIDEWALKS ON THE BRIDGE DECK. ITEM DOES NOT INCLUDE CONCRETE REQUIRED FOR SIDEWALKS ON ROADWAY APPROACHES.
- ⑩ INCLUDES ALL LABOR AND MATERIALS (EXCEPT REINFORCING STEEL) NECESSARY TO POUR THE NEW CONCRETE DECK AND ABUTMENT BACKWALL.
- ⑪ INCLUDES ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO MECHANICALLY GROOVE THE BRIDGE DECK AND PAVEMENT AT BRIDGE ENDS AND TO REMOVE GROOVING RESIDUE.
- ⑫ COST OF ELASTOMERIC PADS AND RUBBER BONDING CEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR THE PRESTRESSED BEAM.
- ⑬ INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO STABILIZE EXCAVATIONS AT ABUTMENTS, AS NEEDED.
- ⑭ COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.
- ⑮ SEE STANDARD DRAWING STD-10-1.
- ⑯ SEE TDOT STANDARD DRAWING STD-11-3 FOR DETAILS. CONTRACTOR SHALL OMIT THE TRI STAR EMBLEM FROM THIS INSTALLATION.
- ⑰ ITEM INCLUDES ALL LABOR AND MATERIALS REQUIRED TO CONSTRUCT NEW SIDEWALKS ON ROADWAY APPROACHES. ITEM DOES NOT INCLUDE LABOR OR MATERIALS REQUIRED FOR SIDEWALKS ON THE BRIDGE DECK.

GENERAL NOTES

UTILITIES

1. THE LOCATION OF UTILITIES SHOWN WITHIN THESE PLANS ARE APPROXIMATE ONLY. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY CONTACTING THE UTILITY COMPANIES INVOLVED.
2. UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OR ITS REPRESENTATIVE. THE CONTRACTORS AND UTILITY OWNERS WILL BE REQUIRED TO COOPERATE WITH EACH OTHER IN ORDER TO EXPEDITE THE WORK REQUIRED BY THIS CONTRACT.
3. THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT WILL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.
4. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING ALL AFFECTED UTILITIES PRIOR TO SUBMITTING HIS BID, IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND / OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF THE WORK FOR THE PROJECT. SOME UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS, WHILE SOME WORK MAY BE REQUIRED AROUND UTILITY FACILITIES THAT WILL REMAIN IN PLACE. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACTOR WILL RECEIVE NO ADDITIONAL COMPENSATION FOR ANY DELAYS OR INCONVENIENCE CAUSED BY THE UTILITY ADJUSTMENTS.
5. THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS PLAN OF OPERATION IN THE AREA OF THE UTILITIES. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY.
6. SOME UTILITIES CAN BE LOCATED BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC. AT 1-800-351-1111.
7. ALL POWER, LIGHT AND COMMUNICATION LINES, POLES, WATER LINES, GAS LINES, SEWER LINES OR OTHER PUBLIC UTILITIES CONFLICTING WITH THE PROPOSED IMPROVEMENTS SHALL BE RESET OR ADJUSTED BY THEIR RESPECTIVE OWNERS AS FOLLOWS:
 KNOXVILLE UTILITIES BOARD - ALL GAS, ELECTRIC, WATER, AND SANITARY SEWER LINES.
 AT&T - ALL TELEPHONE LINES.
 WOW! OR COMCAST - ALL CABLE TELEVISION

GRADING

1. ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE PROVISIONS SPECIFIED IN THE TENNESSEE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (JANUARY 1, 2015 EDITION)
2. EXCAVATED MATERIAL IN EXCESS OF THAT REQUIRED FOR EMBANKMENT FILLING, OR UNSUITABLE FOR SUCH SHALL BE DISPOSED OF PROPERLY BY THE CONTRACTOR WITH THE SITE OF DISPOSAL BEING APPROVED BY THE ENGINEER. ALL APPLICABLE PERMITS FOR THE DISPOSAL OF MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR.
3. ALL EARTHEN AREAS EXPOSED BY CONSTRUCTION SHALL BE COVERED WITH 4 INCHES OF TOPSOIL AND SODDED. WORK SHALL BE DONE IN AN EXPEDIENT MANNER TO MINIMIZE TIME OF EXPOSURE TO WEATHER.
4. ANY AREA THAT IS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. CONTRACTOR SHALL CLEAR ONLY AREAS TO BE EXCAVATED.

MAINTENANCE OF TRAFFIC

1. CONTRACTOR SHALL NOTIFY AFFECTED PROPERTY OWNERS TWO WEEKS PRIOR TO MAKING ANY LANE CLOSURES AND BEGINNING WORK.
2. ACCESS TO ALL PRIVATE DRIVES MUST BE MAINTAINED DURING CONSTRUCTION.
3. PEDESTRIAN ACCESS MUST BE MAINTAINED TO ALL ADJOINING PROPERTIES DURING CONSTRUCTION AND NON-CONSTRUCTION HOURS.
4. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNATING A STAGING AREA WITH THE APPROVAL OF THE ENGINEER, LOCATED TO MINIMIZE IMPACT TO THE AREA. THE CONTRACTOR MUST IDENTIFY A PARKING AREA, WITH THE APPROVAL OF THE ENGINEER, FOR EMPLOYEE PARKING.
5. THE CONTRACTOR SHALL NOT OPERATE TRACK-DRIVEN EQUIPMENT ON THE ADJACENT LOCAL STREET SYSTEM AND IS DISCOURAGED FROM OPERATING RUBBER-TIRED CONSTRUCTION EQUIPMENT ON ADJACENT STREETS. IN THE EVENT THAT SUCH OPERATIONS BECOME NECESSARY, THEY MUST BE COORDINATED THROUGH THE ENGINEER.
6. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING NECESSARY TRAFFIC CONTROL. ALL SITUATIONS AND TRAFFIC SCHEMES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF KNOXVILLE SPECIFICATIONS, SECTION 34.0 AND THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD).

DRAINAGE

1. THE COST OF EXCAVATION AND BACKFILL FOR PIPE CULVERTS AND CATCH BASINS IS TO BE INCLUDED IN THE PRICE BID FOR THE RESPECTIVE STRUCTURE.
2. WHERE A PIPE CULVERT OR CATCH BASIN IS MOVED TO A NEW LOCATION FROM THAT SHOWN ON THE PLANS, THUS INCREASING OR DECREASING THE AMOUNT OF EXCAVATION, NO INCREASE OR DECREASE OF PAYMENT SHALL BE MADE FOR SUCH CHANGE.
3. ALL PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLASS "B" BEDDING WITH A MINERAL AGGREGATE BASE FOUNDATION MEETING THE REQUIREMENTS OF SECTION 5.0 OF THE CITY OF KNOXVILLE SPECIFICATIONS. BACKFILL OF PIPES, SEWERS AND CULVERTS UNDER STREETS (OR LESS THAN 5 FEET FROM THE OUTSIDE EDGE OF THE ROADWAY) CURBS, GUTTERS AND SIDEWALKS SHALL BE ACCOMPLISHED WITH MINERAL AGGREGATE BASE MATERIAL MEETING THE REQUIREMENTS OF SECTION 5 OF THESE SPECIFICATIONS AND COMPACTED AS HEREIN ABOVE SPECIFIED. THE COST OF THE BACKFILL IS NOT A SEPERATE PAY ITEM AND SHALL BE INCLUDED IN THE BID PRICE PER LINEAR FOOT.

PROJECT No.	YEAR	SHEET No.	
14A-B-0570	2019	2	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	06-12-19	KR	FOOTNOTES ADDED; RAIL ITEM UPDATE



**CONSTRUCTION
PLANS**

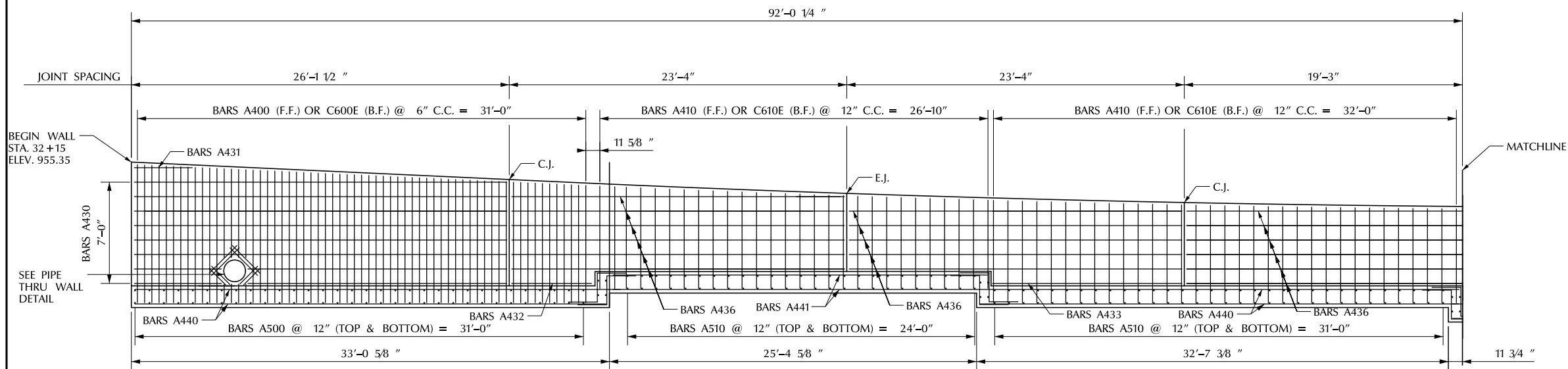
CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING

ESTIMATED QUANTITIES
AND GENERAL NOTES

DRAWN:
DESIGNED:
DATE:
CHECKED:
APPROVED:



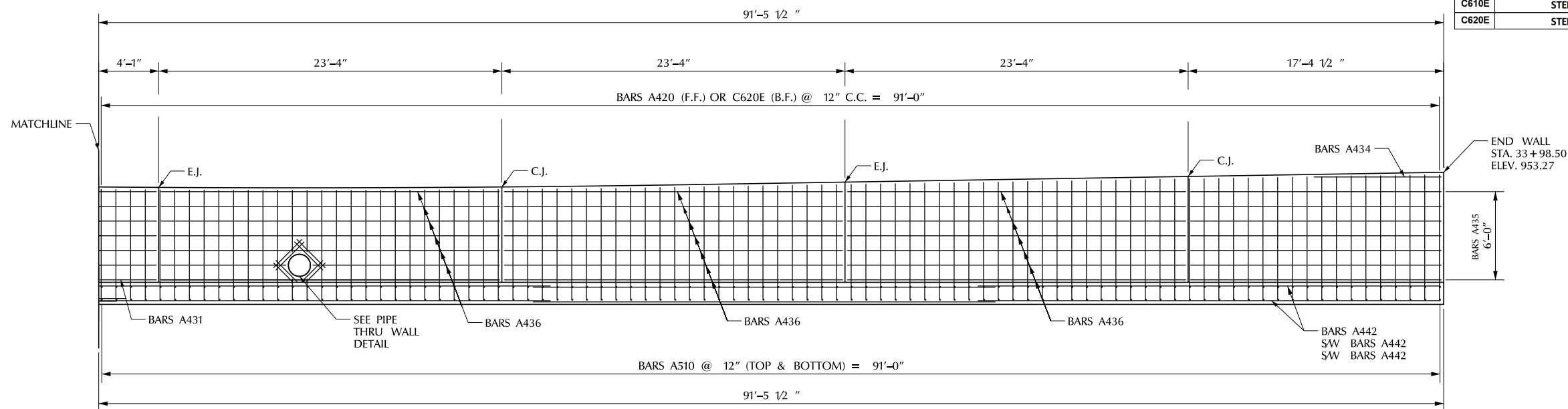
PROJECT No.	YEAR	SHEET No.	
14A-B-0570	2019	5A	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	06-12-19	KR	ADDED EPOXY BAR LABELS



RETAINING WALL ELEVATION VIEW – BACK FACE

RETAINING WALL BILL OF STEEL

BAR	LOCATION	SIZE	NO. RQD	BENDING DIMENSIONS				LENGTH
				A	B	C	D	
A400	STEM	4	32	8'-4"				8'-4"
A410	STEM	4	61	5'-10"				5'-10"
A420	STEM	4	33	7'-4"				7'-4"
A430	STEM	4	16	25'-0"				25'-0"
A431	STEM	4	4	4'-0"				4'-0"
A432	STEM	4	2	5'-6"				5'-6"
A433	STEM	4	2	13'-0"				13'-0"
A434	STEM	4	2	8'-8"				8'-8"
A435	STEM	4	14	17'-0"				17'-0"
A436	STEM	4	76	23'-0"				23'-0"
A440	FOOTING	4	42	32'-6"				32'-6"
A441	FOOTING	4	20	26'-0"				26'-0"
A442	FOOTING	4	60	31'-5"				31'-5"
A500	FOOTING	5	64	9'-4"				9'-4"
A510	FOOTING	5	298	9'-0"				9'-0"
C600E	STEM	6	63	9'-6"	1'-0"			10'-6"
C610E	STEM	6	61	7'-0"	1'-0"			8'-0"
C620E	STEM	6	33	8'-6"	1'-0"			9'-6"



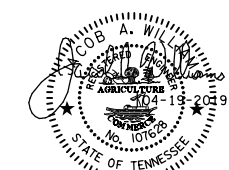
RETAINING WALL ELEVATION VIEW – BACK FACE



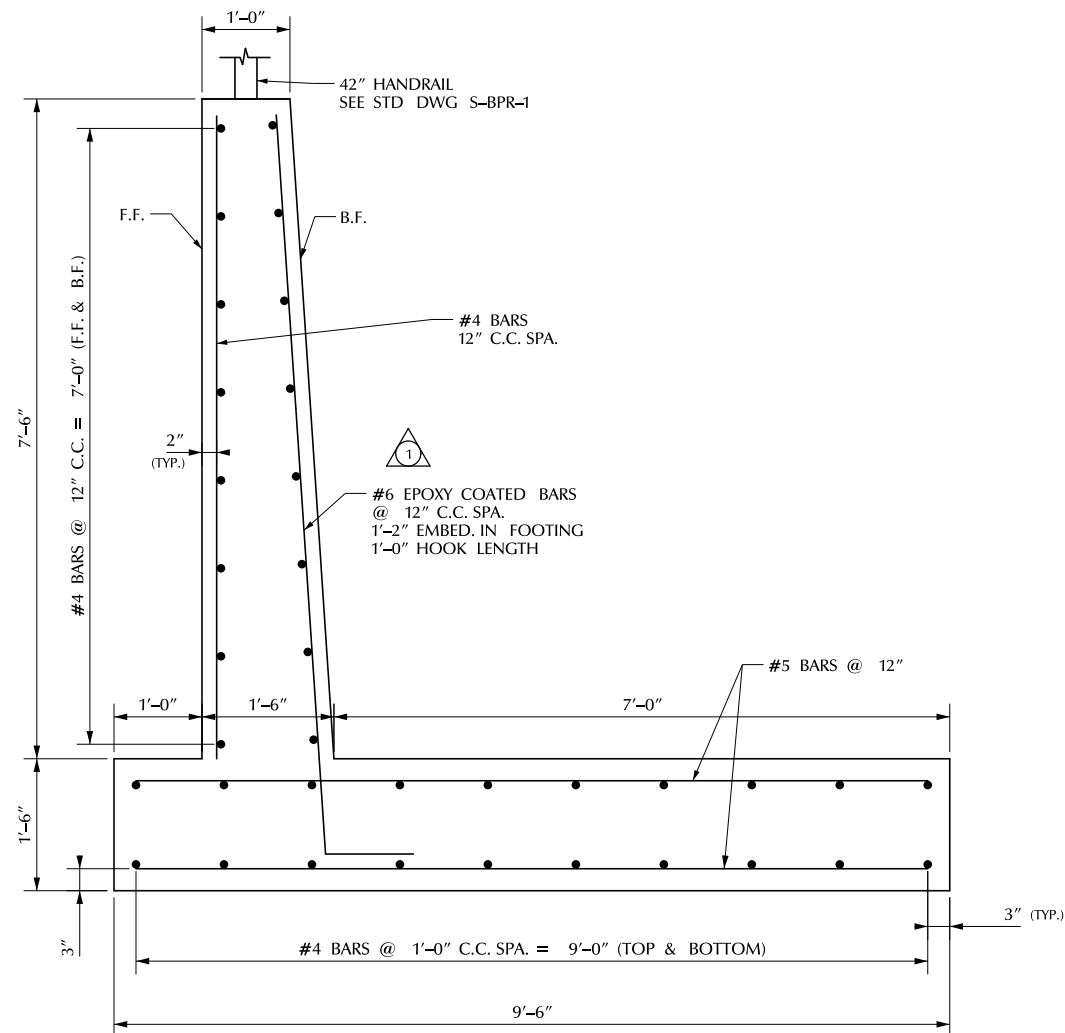
CITY OF KNOXVILLE DEPARTMENT OF ENGINEERING	DRAWN:
	DESIGNED:
RETAINING WALL ELEVATION	DATE:
	CHECKED:
MINERAL SPRINGS AVENUE BRIDGE REPLACEMENT PROJECT	APPROVED:

NOTE: FIELD CUT VERTICAL BARS IN STEM TO OBTAIN CLEARANCE REQUIREMENTS AND AVOID PIPES.

6/12/2019 10:25:28 AM \\nashville\BENESCH\local\benesch_projects\nashville\16050005\160504\Eng_Docs\Bridges\DRN\Retaining Wall Elevation.dgn

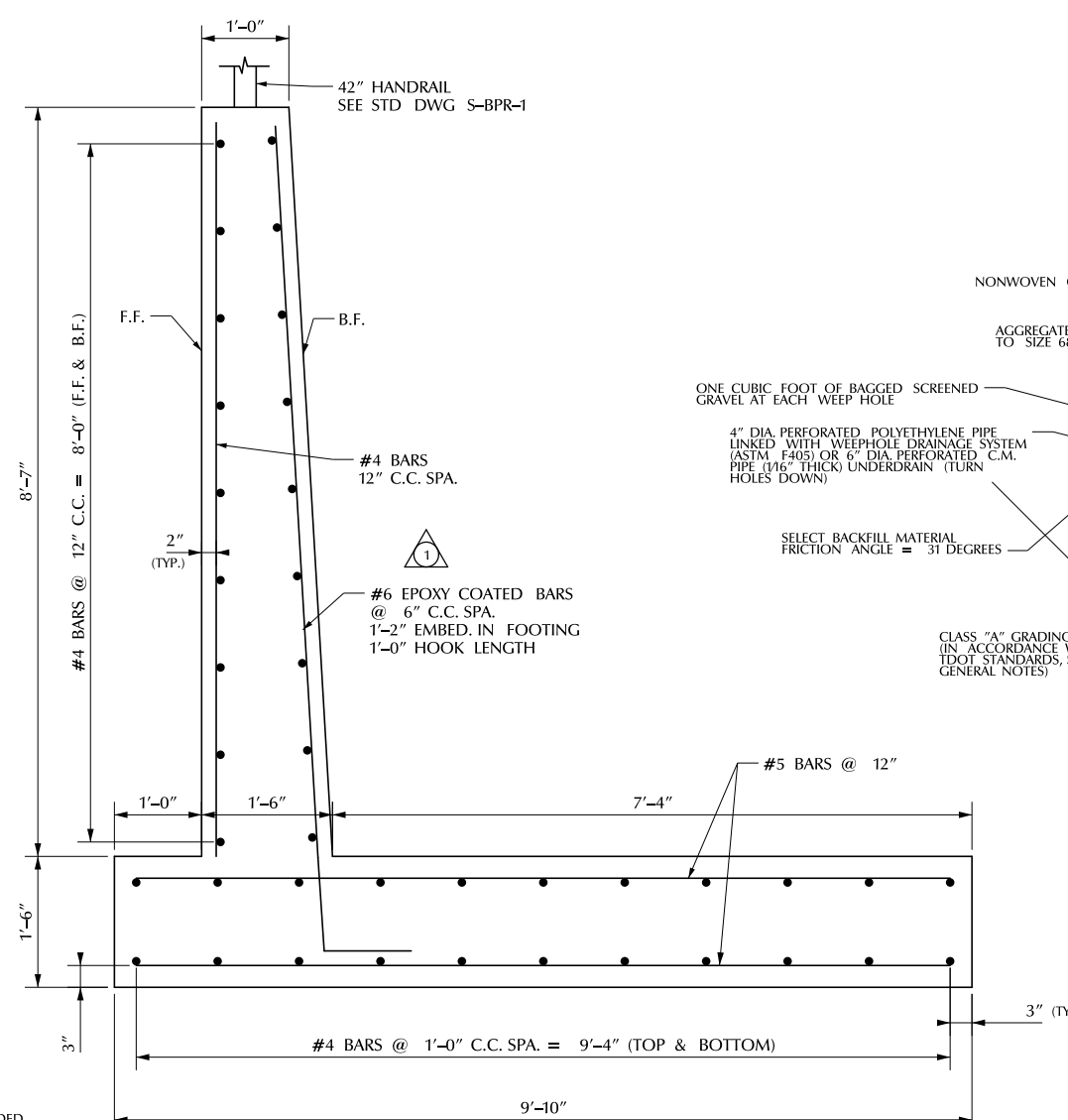


PROJECT No.	YEAR	SHEET No.	
14A-B-0570	2019	5B	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	06-12-19	KR	ADDED EPOXY BAR LABELS

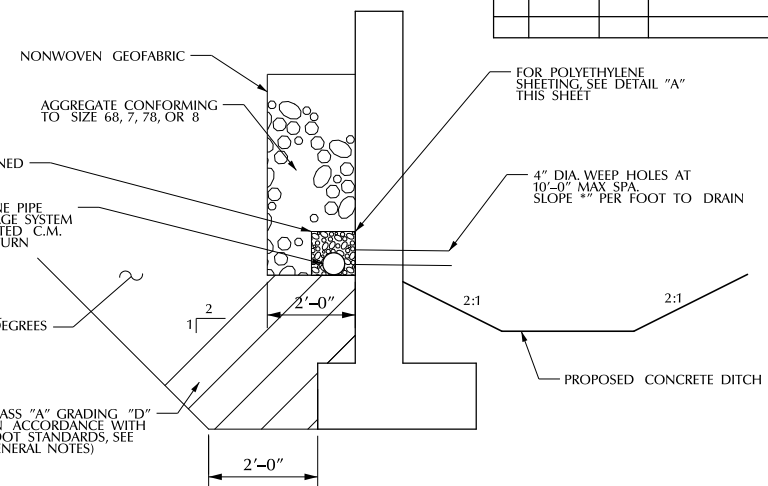


7'-6" DESIGN SECTION

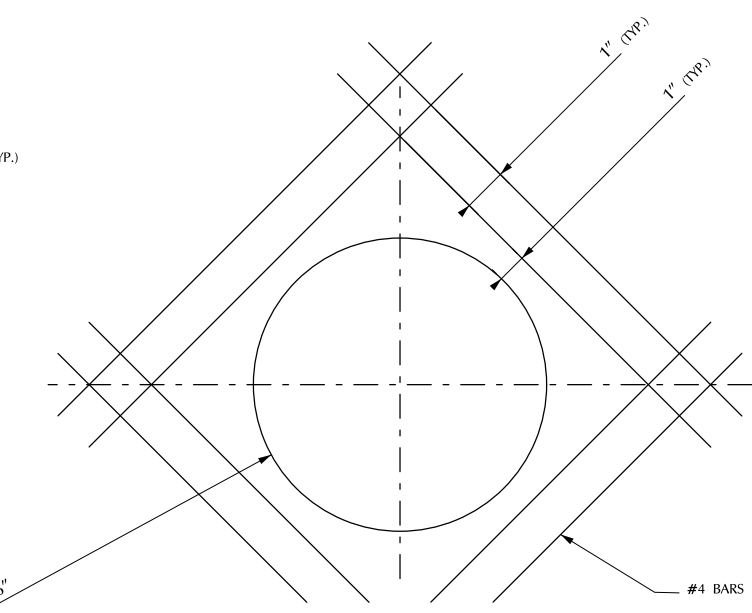
NOTE: USE LEVELING CONCRETE AS NEEDED.
NOTE: SEE SHEET 5A FOR BAR DESIGNATIONS.



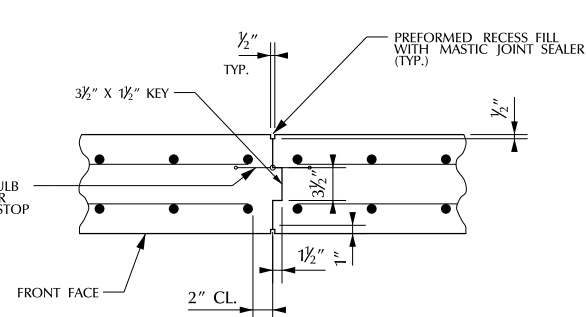
8'-7" DESIGN SECTION



TYPICAL SECTION



PIPE THRU WALL DETAIL



CONTRACTION JOINT
(NOT TO SCALE)

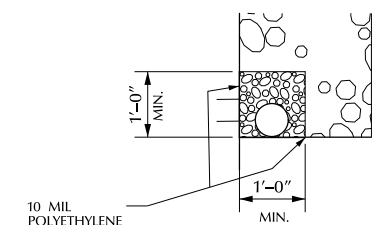
WALL JOINT NOTES:

EXPANSION JOINTS SHALL BE INSTALLED AT INTERVALS NOT TO EXCEED 90 FEET. THE EXPANSION JOINTS SHALL BE USED IN THE WALL ONLY AND NOT CARRIED THROUGH THE FOOTING. NO WALL REINFORCEMENT SHALL PASS THROUGH THE JOINT. ONE END OF THE DOWELS SHALL BE WRAPPED IN A LAYER OF TARPAPER WITH A TARPAPER CAP OVER THE END.

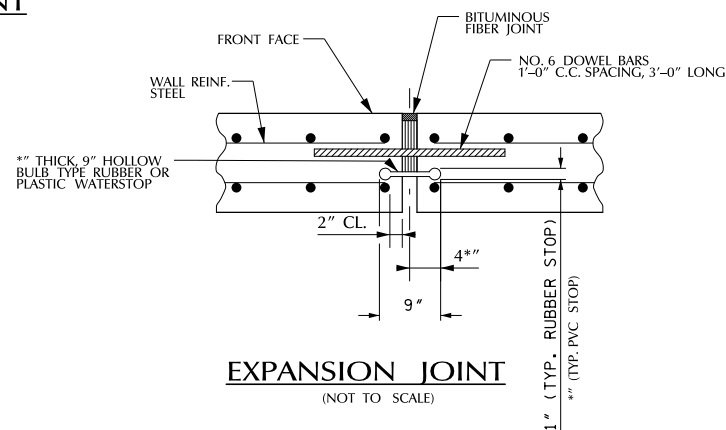
CONTRACTION JOINTS SHALL EXIST IN THE RETAINING WALL AND SHALL BE SPACED AT A MAXIMUM OF 30 FEET APART. THE CONTRACTION JOINTS CLOSEST TO THE ENDS OF THE WALLS SHALL OCCUR NO FURTHER THAN 30 FEET FROM THE END OF THE WALL.

JOINT MATERIAL SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION NUMBERS 904 AND 905

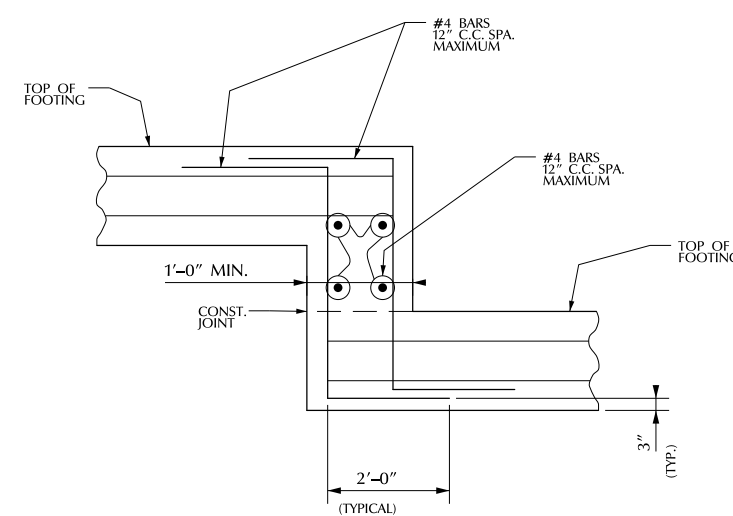
FOOTING AND FOOTING REINFORCEMENT SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED.



DETAIL "A"



EXPANSION JOINT
(NOT TO SCALE)



STEPPED FOOTING DETAIL
(NOT TO SCALE)
WHERE REQUIRED

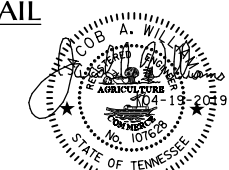


CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING

RETAINING WALL DETAILS

MINERAL SPRINGS AVENUE
BRIDGE REPLACEMENT PROJECT

DRAWN:
DESIGNED:
DATE:
CHECKED:
APPROVED:



PROJECT No.	YEAR	SHEET No.	
14A-B-0570	2019	6A	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	06-12-19	KR	STANDARD DRAWING UPDATE

LIST OF DRAWINGS	DWG. NO.	LAST REV. DATE
LAYOUT OF BRIDGE	6	
INDEX OF DRAWINGS	6A	
NOTES	6B	
ESTIMATED QUANTITIES	6C	
FOUNDATION DATA	6D	
SUPERSTRUCTURE	6E	
SUPERSTRUCTURE DETAILS	6F	
FRAMING PLAN	6G	
PRESTRESSED BOX BEAM	6H	
PRESTRESSED BOX BEAM DETAILS	6I	
ABUTMENTS	6J	
ABUTMENT DETAILS	6K	
ABUTMENT DETAILS	6L	
MODIFIED RAIL DETAILS	6M	
BILL OF STEEL	6N	

LIST OF STANDARD DRAWINGS	DWG. NO.	LAST REV. DATE
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS	STD-4-1	04/08/2005
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS DESIGN CRITERIA	STD-4-2	04/08/2005
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS	STD-4-3	03/02/2002
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS CONSTRUCTION DETAILS	STD-4-4	06/10/1996
STD. PILE DETAILS	STD-5-1	10/25/1993
STD. PILE DETAILS	STD-5-2	05/01/2014
REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS	STD-9-1	10/07/2008
MISCELLANEOUS ABUTMENT AND DRAINAGE DETAILS	STD-10-1	04/08/2005
STANDARD CONCRETE CLASSIC RAIL	STD-11-3	05/01/2014
STD. DETAILS FOR PRESTRESSED BOX BEAMS	STD-14-3	10/15/2008



6/12/2019 10:30:35 AM \\nashville\BENESCH\local\benesch_projects\nashville\16050005\1605004\Eng_Docs\Brdge\DRN\002-index of Drawings.dgn



CITY OF KNOXVILLE DEPARTMENT OF ENGINEERING		DRAWN: DESIGNED: DATE: CHECKED: APPROVED:
INDEX OF DRAWINGS & STD. DWGS.		
MINERAL SPRINGS AVENUE BRIDGE REPLACEMENT PROJECT		

PROJECT No.	YEAR	SHEET No.	
14A-B-0570	2019	6B	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	06-12-19	KR	NOTES REMOVED/UPDATED

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (JANUARY 1, 2015 EDITION).
LOADING: HL-93 LIVE LOADING; SEISMIC ZONE 1 SITE CLASS "A" WITH
 $A_s = 0.102G$, $S_{DS} = 0.239G$, $S_{D1} = 0.085G$, (1000 YEAR RETURN PERIOD).
DEAD LOAD INCLUDES 35 LB./SQ. FT. FOR FUTURE WEARING SURFACE.

DESIGN SPECIFICATION: AASHTO LRFD SEVENTH EDITION, 2014, AND THE 2011 AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN, EDITION 2 (WITH INTERIMS).

CONCRETE: TO BE CLASS "A" f'_c 3,000 PSI EXCEPT AS NOTED OTHERWISE.

CLASS "D" CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY BE EITHER REMAIN-IN-PLACE STEEL OR PRECAST, PRESTRESSED CONCRETE PANELS. IN EITHER CASE, FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO MAIN STRUCTURAL MEMBERS OR REINFORCING STEEL. TEMPORARY ERECTION DIAPHRAGMS MUST BE USED AT THE ENDS OF PRECAST CONCRETE GIRDERS WHERE END DIAPHRAGMS, SUPPORT DIAPHRAGMS, OR ABUTMENT BACKWALLS ARE TO BE POURED CONCURRENTLY WITH THE DECK AND SHALL BE PROVIDED ELSEWHERE IN ACCORDANCE WITH THE SPECIFICATIONS TO PREVENT GIRDER ROTATION. SEE STANDARD DRAWINGS STD-4-1 THRU 4, STD-14-1 AND ARTICLE 604.05 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH METHOD 1 IN ARTICLE 604.22 OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL: SHALL BE ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE. SEE SECTION 604 AND 907 OF THE STANDARD SPECIFICATIONS.

FOUNDATION PREPARATION: SEE SECTION 204 OF THE STANDARD SPECIFICATIONS. IF COFFERDAMS ARE REQUIRED, THEY SHALL BE IN ACCORDANCE WITH SECTION 204.09 OF THE STANDARD SPECIFICATIONS.



BRIDGE RAIL SYSTEM: BUILD BRIDGE RAILINGS ACCORDING TO STANDARD DRAWING STD-11-3. THE RAILING SHALL BE FORMED AND CAST PLUMB, NOT PERPENDICULAR TO THE SLAB. THE DIMENSIONS AT THE TRAFFIC FACE SHALL BE KEPT CONSTANT, WITH VARIATION DUE TO CROSS SLOPE ACCOMMODATED AT THE REAR FACE.

GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED $\frac{1}{8}$ " IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH NON-SHRINK GROUT, AND THE BAR ROTATED (NOT DRIVEN) TO ITS SEAT. VERTICALLY DRILLED HOLES SHALL BE DRILLED $\frac{1}{8}$ " IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.

NOTE: THE CONTRACTOR SHALL PROVIDE 100% CONVENTIONAL FALL PROTECTION FOR WORKERS INSTALLING DECKING ABOVE 15 FEET.

SPECIAL NOTE FOR UTILITIES: IT IS INTENDED THAT THE COST OF MATERIALS AND LABOR NECESSARY FOR THE COMPLETE INSTALLATION OF UTILITIES SHALL BE BORNE BY OTHERS AND SHALL NOT BE PAID FOR AS PART OF THIS CONTRACT. THE CONTRACTOR SHALL COOPERATE WITH OTHERS IN THE INSTALLATION OF UTILITIES WITH NO ADDITIONAL COMPENSATION ALLOWED THE CONTRACTOR AS A RESULT.

SHOP DRAWINGS: SEE SECTION 105.02 OF THE STANDARD SPECIFICATIONS.

FINISHING CONCRETE SURFACES: ALL EXPOSED CONCRETE SURFACES SHALL RECEIVE A CLASS II FINISH IN ACCORDANCE WITH SECTION 604.21 OF THE TENNESSEE STANDARD SPECIFICATION. THE COST OF FINISHING CONCRETE SHALL BE INCLUDED IN OTHER ITEMS.



NOTE HAS BEEN DELETED.



CITY OF KNOXVILLE
DEPARTMENT OF ENGINEERING

GENERAL
NOTES

MINERAL SPRINGS AVENUE
BRIDGE REPLACEMENT PROJECT

DRAWN:
DESIGNED:
DATE:
CHECKED:
APPROVED:

PROJECT No.		YEAR		SHEET No.	
14A-B-0570		2019		6C	
REVISIONS					
No.	DATE	BY	BRIEF DESCRIPTION		
1	06-12-19	KR	ITEM	UPDATE; FOOTNOTES	ADDED/REVISED

ITEM NO.	DESCRIPTION	UNIT	TOTAL	SUPERSTRUCTURE	ABUTMENT NO.1	ABUTMENT NO.2	RETAINING WALL
① 3.10	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	1				
203-03.10	SELECT GRANULAR MATERIAL	TON	660				660
② 204-11	BRIDGE EXCAVATION (UNCLASSIFIED)	CY	550		245	305	865
③ 303-01.02	GRANULAR BACKFILL (BRIDGES)	TON	900		400	500	
③ 303-01.03	GRANULAR BACKFILL (RETAINING WALLS)	TON	490				490
604-01.20	BOX TUBE SAFETY RAIL	L.F.	184				184
604-01.32	CLASS A CONCRETE (LEVELING)	CY	50		30	20	
④ 604-02.03	EPOXY COATED REINFORCING STEEL	LBS	26,769	18,940	2,684	3,390	1755
⑤ 604-03.01	CLASS "A" CONCRETE (BRIDGES)	CY	255	31	106	118	
604-03.02	STEEL BAR REINFORCEMENT (BRIDGES)	LBS	17,439		4,440	5,074	7925
⑥ 604-03.09	CLASS "D" CONCRETE (BRIDGES)	CY	115	115			
⑦ 604-05.31	BRIDGE DECK GROOVING (MECHANICAL)	SY	380				
604-09.10	CLASS "A" CONCRETE (RETAINING WALLS)	CY	155				155
⑧ 615-02.03	PRESTRESSED CONCRETE BOX BEAM (21"x36")	LF	520				
⑩ 620-05.02	STANDARD CONCRETE PEDESTRIAN CLASSIC RAIL	LF	152				
⑪ 621-05.02	TEMPORARY SHORING	LS	1		0.33	0.33	0.33
709-05.08	MACHINED RIP-RAP (CLASS B)	TON	235				
⑨ 710-09.01	6" PERFORATED PIPE WITH VERTICAL DRAIN SYSTEM	LF	120		60	60	
⑩ 710-09.02	6" PIPE UNDERDRAIN	LF	20		10	10	

- ① LUMP SUM: TO INCLUDE COMPLETE REMOVAL OF EXISTING BRIDGE NO. 43-A658-00.22 AND APPROACHES TO NATURAL GROUND BETWEEN STA. 10+87.00 AND STA. 12+16.00. EXISTING BRIDGE CONSISTS OF: 3 CONCRETE DECK GIRDER APPROACH SPANS AT 56'-0" WIDE TOTALING 129'-0" LONG.
- ② EXCAVATION BASED ON FINAL PROFILE AT ABUTMENTS AND EXISTING GROUND.
- ③ GRANULAR BACKFILL SHALL BE CLASS "A" GRADING "D" MATERIAL. SEE STANDARD DRAWING NO. STD-10-1.
- ④ INCLUDES QUANTITY OF STEEL REQUIRED FOR BRIDGE DECK, BACKWALL, AND ABUTMENTS. REBAR QUANTITIES NOT INCLUDED IN THIS ITEM FOR PAVEMENT AT BRIDGE ENDS AND PARAPETS.

- ⑤ INCLUDES QUANTITY OF CONCRETE REQUIRED FOR SIDEWALKS ON THE BRIDGE DECK. ITEM DOES NOT INCLUDE CONCRETE REQUIRED FOR SIDEWALKS ON ROADWAY APPROACHES.
- ⑥ INCLUDES ALL LABOR AND MATERIALS (EXCEPT REINFORCING STEEL) NECESSARY TO POUR THE NEW CONCRETE DECK AND ABUTMENT BACKWALL.

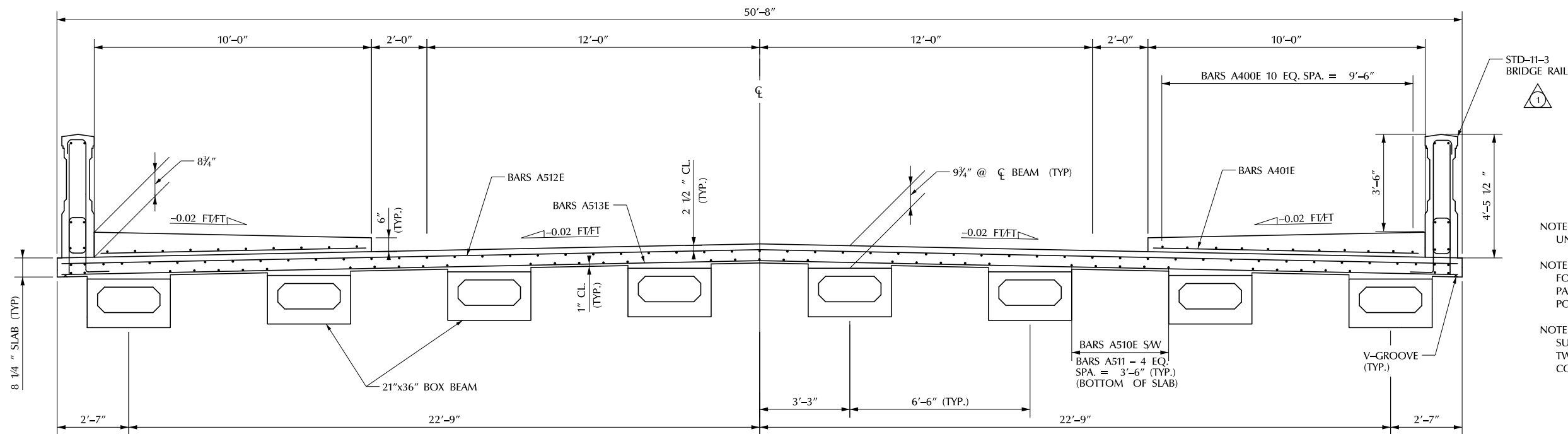
- ⑦ INCLUDES ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO MECHANICALLY GROOVE THE BRIDGE DECK AND PAVEMENT AT BRIDGE ENDS AND TO REMOVE GROOVING RESIDUE.
- ⑧ COST OF ELASTOMERIC PADS AND RUBBER BONDING CEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR THE PRESTRESSED BEAM.
- ⑨ COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.
- ⑩ SEE STANDARD DRAWING STD-10-1.
- ⑪ INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO STABILIZE EXCAVATIONS AT ABUTMENTS, AS NEEDED.
- ⑫ SEE TDOT STANDARD DRAWING STD-11-3 FOR DETAILS. CONTRACTOR SHALL OMIT THE TRI STAR EMBLEM FROM THIS INSTALLATION.

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CITY OF KNOXVILLE DEPARTMENT OF ENGINEERING		DRAWN: DESIGNED: DATE: CHECKED: APPROVED:
TABULATED QUANTITIES		
MINERAL SPRINGS AVENUE BRIDGE REPLACEMENT PROJECT		

PROJECT No.	YEAR	SHEET No.	
14A-B-0570	2019	6E	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	06-12-19	KR	RAIL UPDATE



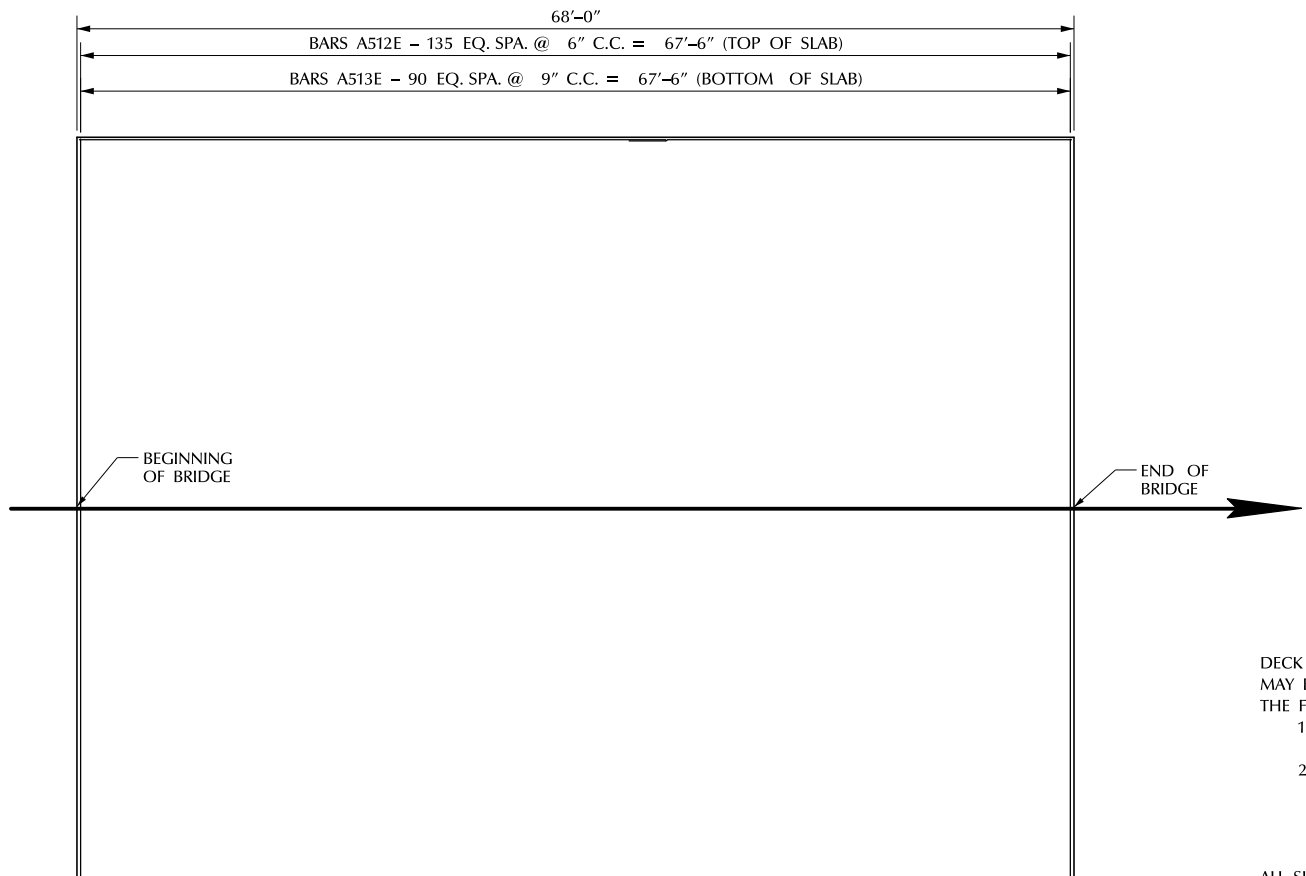
X-SECTION OF SUPERSTRUCTURE
LOOKING AHEAD ON SURVEY

NOTE: NO PORTION OF THE PARAPET SHALL BE POURED UNTIL THE ENTIRE DECK SLAB IS IN PLACE.

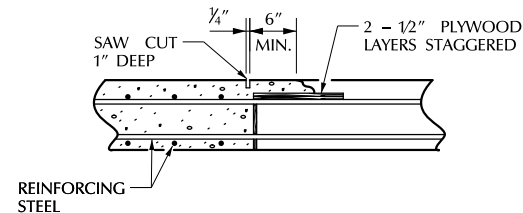
NOTE: WHEN POURING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR PARAPET. THE PARAPET SHALL NOT BE POURED UNTIL THE SLAB IS POURED AND CURED. ALSO SEE DRAWING NO. STD-11-3.

NOTE: THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SUPPORTING THE BEAMS TO PREVENT DAMAGE DUE TO TWISTING OR OVERTURNING DURING ALL PHASES OF CONSTRUCTION.

ESTIMATED QUANTITIES	
CLASS 'D' CONCRETE (BRIDGE DECK) C.Y.	EPOXY COATED REINFORCING STEEL LBS.
115	18,940



SLAB PLAN
(SHOWING TRANSVERSE REINFORCEMENT)

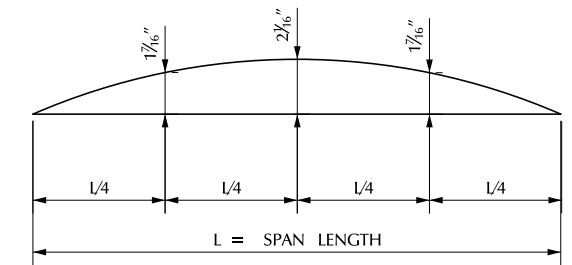


SLAB CONSTRUCTION JOINT DETAIL

DECK CONCRETE POURING SEQUENCE: SLAB CONSTRUCTION JOINTS MAY BE LOCATED AT THE CONTRACTOR'S OPTION SUBJECT TO THE FOLLOWING:

- 1) NO CONSTRUCTION JOINT MAY BE LOCATED CLOSER THAN 10 FEET OR FURTHER THAN 15 FEET FROM AN INTERIOR SUPPORT.
- 2) THE SLAB IN THE MIDDLE SECTION OF BOTH ADJACENT SPANS MUST BE POURED TO WITHIN AT LEAST 15 FEET OF THE SUPPORTS EITHER PRIOR TO OR CONCURRENTLY WITH THE SLAB OVER AN INTERIOR SUPPORT.

ALL SLAB CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE SLAB CONSTRUCTION JOINT DETAIL SHOWN ABOVE.



DEAD LOAD CORRECTION CURVE

DEAD LOAD CORRECTION CURVE: THIS CURVE IS FOR DEAD LOAD SLAB AND ALL DEAD LOADS THAT ARE APPLIED AFTER SLAB IS IN PLACE. IF PRESTRESSED DECK PANELS ARE USED AND THE BEAMS ARE PROFILED AFTER PANELS ARE IN PLACE, REDUCE THE DEAD LOAD CORRECTION VALUES SHOWN BY 25%.



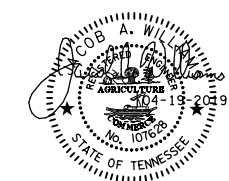
CITY OF KNOXVILLE DEPARTMENT OF ENGINEERING	DRAWN: DESIGNED: DATE: CHECKED: APPROVED:
SUPERSTRUCTURE	
MINERAL SPRINGS AVENUE BRIDGE REPLACEMENT PROJECT	



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PROJECT No.		YEAR		SHEET No.	
14A-B-0570		2019		6M	
REVISIONS					
No.	DATE	BY	BRIEF DESCRIPTION		
1	06-12-19	KR	SHEET REMOVED		


 SHEET HAS BEEN DELETED.



CITY OF KNOXVILLE DEPARTMENT OF ENGINEERING		DRAWN: DESIGNED: DATE: CHECKED: APPROVED:
MODIFIED RAIL DETAILS MINERAL SPRINGS AVENUE BRIDGE REPLACEMENT PROJECT		

BID PROPOSAL
CITY OF KNOXVILLE, TENNESSEE

Mineral Springs Avenue Bridge Project
Project No. 14A-B-0570

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 Mineral Springs Avenue Bridge Project, Project No. 14A-B-0570, 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	LS	1	_____	_____
2.10	Clearing and Grubbing	LS	1	_____	_____
3.10	Removal of Structures and Obstructions	LS	1	_____	_____
4.10	Excavation (Unclassified)	CY	178	_____	_____
5.10	Mineral Aggregate Base	TON	211	_____	_____
5.40	No 57 Stone	TON	14	_____	_____
7.10	Tack Coat	GAL	163	_____	_____
9.10	Bituminous Plant Mix, Grading B-M	TON	78	_____	_____
9.11	Bituminous Plant Mix, Grading C-S	TON	18	_____	_____
10.10	Asphaltic Concrete Surface, Grading D	TON	105	_____	_____
12.62	6" Concrete Combine Curb & Gutter, Type 6-30	LF	524	_____	_____
13.10	Concrete Sidewalks	SF	2,728	_____	_____
13.11	Curb Cut	EA	3	_____	_____
20.14	18" RCP	LF	243	_____	_____

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
22.12	No. 12 Catch Basin	EA	7		
22.14	No. 14 Catch Basin	EA	2		
22.15	Area Drain Catch Basin	EA	1		
26.10	Top Soil	CY	76		
28.10	Sodding	SY	912		
31.50	Sediment Removal	CY	36		
31.70	Erosion and Sediment Control	LS	1		
31.80	In-Stream Diversion	LS	1		
34.10	Construction Area Traffic Control	LS	1		
36.50	Geotextile Fabric for Erosion Stabilization	SY	80		
38.10	Milling Asphaltic Concrete, Surface Milling	TON	89		
39.10	Pavement Marking (Line)	LF	1,685		
39.20	Pavement Marking (Crosswalk Striping)	LF	42		
39.30	Pavement Marking (Stop Line)	LF	55		
42.10	Concrete Ditch	LF	180		
70.20	Tactile Warning System, Cast-In-Place	EA	3		
203-03.10	Select Granular Material	TON	660		
204-11	Bridge Excavation (Unclassified)	CY	550		
303-01.02	Granular Backfill (Bridges)	TON	900		
303-01.03	Granular Backfill (Retaining Walls)	TON	490		
604-01.20	Box Tube Safety Rail	LF	184		
604-01.32	Class A Concrete (Leveling)	CY	50		
604-02.03	Epoxy Coated Reinforcing Steel	LBS	26,769		
604-03.01	Class A Concrete (Bridges)	CY	255		
604-03.02	Steel Bar Reinforcement (Bridges)	LBS	17,439		
604-03.09	Class D Concrete (Bridges)	CY	115		
604-05.31	Bridge Deck Grooving (Mechanical)	SY	380		
604-09.10	Class A Concrete (Retaining Walls)	CY	155		
615-02.03	Prestressed Concrete Box Beam (21"x36")	LF	520		
620-05.02	Standard Concrete Pedestrian Classic Rail	LF	152		
621-05.02	Temporary Shoring	LS	1		
709-05.08	Machined Rip-Rap (Class B)	TON	235		

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
710-09.01	6" Perforated Pipe with Vertical Drain System	LF	120	_____	_____
710-09.02	6" Pipe Underdrain	LF	20	_____	_____
TOTAL BID				\$	_____

TOTAL BID (In Words):
