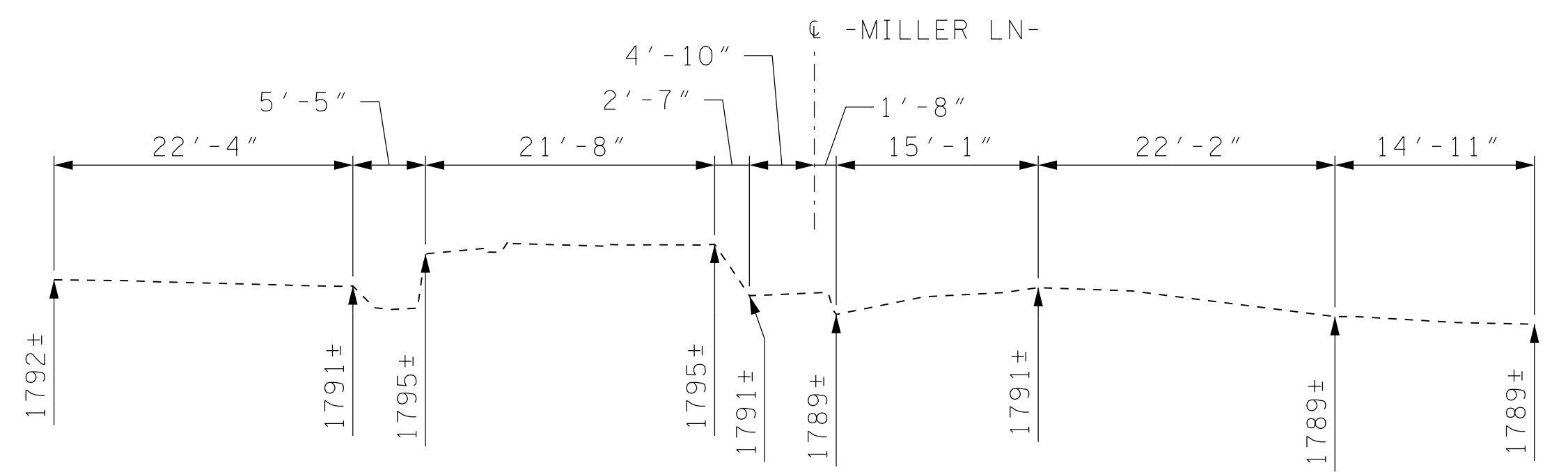


**LOCATION SKETCH**



**PROFILE ALONG CL CULVERT**

**CULVERT NOTES**

ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATIVE LOADING.

DESIGN FILL ----- MAX. = 0.6', MIN. 0.3'.

THE CONTRACTOR SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

CONCRETE SHALL BE POURED IN THE FOLLOWING ORDER:

1. CAPS, FULL LENGTH, INCLUDING 4" OF ALL VERTICAL WINGWALLS.
2. HEADWALLS AND THE REMAINING PORTION OF THE WINGWALLS, FULL HEIGHT.

THE CITY OF JOHNSON CITY IS RESPONSIBLE FOR TRAFFIC CONTROL. THE CONTRACTOR SHALL COORDINATE WITH THE CITY PRIOR TO BEGINNING CONSTRUCTION.

FOR FALSEWORK AND FORMWORK, SEE SECTIONS 604.05, 604.06 AND 604.19 OF TDOT STANDARD SPECIFICATIONS (2015).

FOR GROUT FOR STRUCTURES, SEE SECTION 921.09 OF TDOT STANDARD SPECIFICATIONS (2015).

WORKING DRAWINGS SHALL BE SUBMITTED TO THE CITY OF JOHNSON CITY, PUBLIC WORKS DEPT., ENGINEERING DIVISION FOR APPROVAL IN ACCORDANCE WITH SECTION 105.02 OF TDOT STANDARD SPECIFICATIONS (2015).

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRECAST 3-SIDED REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.

\* THE EXISTING BRIDGE SHOWN EXPERIENCED FLOOD DAMAGE AND WAS REMOVED DURING THE COURSE OF DEVELOPMENT OF THESE PLANS.

CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF THE TEMPORARY ROAD, CULVERT, AND RIPRAP. THE EXISTING CULVERTS SHALL BE RETURNED TO THE CITY OF JOHNSON CITY, CONTRACTOR WILL NEED TO CONTACT JOHNSON CITY STREET DEPARTMENT TO COME OUT AND PICK UP THE CULVERTS ONCE THEY ARE REMOVED. PAYMENT FOR THE REMOVAL OF TEMPORARY ROAD, CULVERT, & RIPRAP SHALL BE UNDER BID ITEM 202-04.01 REMOVAL OF EXISTING STRUCTURES, MILLER LN STA. 10+24.58.

EXISTING FEATURES SHOWN HERE ARE FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE CITY OF JOHNSON CITY FOR ANY DELAYS OR ADDITIONAL COSTS INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING FEATURES SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS OF THE PROJECT SITE.

REMOVAL OF ANY REMNANTS OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER, THE CONTRACTOR SHALL REMOVE THE BRIDGE IN ACCORDANCE WITH THE TENNESSEE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

3" DIA. WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH SECTION 604.09 OF THE TDOT STANDARD SPECIFICATIONS (2015).

TEMPORARY SHORING MAY BE REQUIRED. THE CONTRACTOR SHALL SUBMIT SHORING PLANS AND DESIGN TO THE ENGINEER FOR APPROVAL. ALL SHORING DESIGN SHALL BE COMPLETED UNDER THE DIRECT SUPERVISION OF AN ENGINEER REGISTERED IN THE STATE OF TENNESSEE. THE COST OF TEMPORARY SHORING SHALL BE INCIDENTAL TO THE PAY ITEMS SHOWN.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

THE CONCRETE FOR THE PRECAST UNITS SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 5000 P.S.I.. THE CONCRETE FOR THE HEADWALLS, CAPS AND WINGWALLS SHALL BE CLASS "A" CONCRETE AS PER THE STANDARD SPECIFICATIONS.

ALL PRECAST UNITS SHALL BE PLACED PRIOR TO POURING THE WINGS AND HEADWALLS.

WHEN ANY PRECAST UNIT IS DAMAGED DURING HANDLING, THE ENGINEER AT HIS DISCRETION SHALL REJECT THE UNIT AS BEING UNFIT FOR INSTALLATION AND THE CONTRACTOR SHALL REMOVE SUCH REJECTED UNIT FROM THE PROJECT. MINOR DAMAGE TO THE UNIT MAY BE REPAIRED BY THE CONTRACTOR WHEN PERMITTED BY THE ENGINEER.

TOP OF THE PRECAST CULVERT SHALL BE ROUGHENED.

THE CONCRETE FILL BETWEEN THE ROCK LINE AND THE BOTTOM OF CAP ELEVATION SHALL HAVE A MINIMUM  $f'c = 2,500$  PSI.

CARE SHALL BE TAKEN DURING BACKFILL AND COMPACTION OPERATION TO MAINTAIN ALIGNMENT AND PREVENT DAMAGE TO THE JOINTS. UNITS WHICH BECOME MISALIGNED, SHOW EXCESSIVE SETTLEMENT, OR HAVE OTHERWISE BEEN DAMAGED BY THE CONTRACTOR'S OPERATION SHALL AT THE DISCRETION OF THE ENGINEER BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY OF JOHNSON CITY.

CONCRETE CHAMFERS ON EXTERIOR LONGITUDINAL EDGES OF THE PRECAST UNITS MAY BE AS PER THE FABRICATOR'S RECOMMENDATION. HOWEVER, ALL WORKMANSHIP SHALL PROVIDE CONCRETE COVER OVER ALL REINFORCEMENT AS SPECIFIED ON THE PLANS AND THE CONCRETE CHAMFERS CHOSEN SHALL IN NO WAY FUNCTIONALLY LESSEN THE DESIGN SHOWN ON THE PLANS.

**FOUNDATION NOTES**

FOR PILES, SEE SECTION 606 OF TDOT STANDARD SPECIFICATIONS (2015).

PILES: A MINIMUM PILE LENGTH OF 10 FEET AS MEASURED FROM THE BOTTOM OF THE CAP IS REQUIRED.

PILES SHALL BE HP12X53, GRADE 50, VERTICAL PILES, AND SHALL BE SEATED BY PILE HAMMER IN PRE-DRILLED ROCK SOCKET.

PILES: A MINIMUM 4-FOOT DEEP, 18-INCH DIAMETER ROCK SOCKET IS REQUIRED AT EACH PILE LOCATION. PILES SHALL BE GROUTED IN ROCK SOCKET WITH MINIMUM 4,000 PSI NON-SHRINK GROUT.

NOTE: ANY FILLS ADJACENT TO THE CAPS, WINGWALLS OR PRECAST CULVERT SHALL BE IN PLACE AND COMPACTED AS STIPULATED IN SECTION 205.04 OF TDOT STANDARD SPECIFICATIONS (2015).

**GENERAL NOTES**

**DESIGN DATA:**

SPECIFICATIONS - - - - - A.A.S.H.T.O. (CURRENT)

IMPACT ALLOWANCE - - - - - SEE A.A.S.H.T.O.

STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 50 - - - - - 27,000 PSI

REINFORCING STEEL IN TENSION - - - - - 24,000 PSI (GRADE 60)

CONCRETE IN COMPRESSION - - - - - 1,200 PSI

CONCRETE IN SHEAR - - - - - SEE A.A.S.H.T.O.

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2015 "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4".

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

GENERALLY, IN CASE OF DISCREPANCY, THESE PLANS AND PLAN NOTES SHALL GOVERN OVER THE SPECIFICATIONS, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL.

**CULVERT HYDRAULIC DATA**

DESIGN DISCHARGE	= 500	CFS
DESIGN FREQUENCY	= 10	YRS
DESIGN BACKWATER ELEVATION	= 1794.5	FT
BASE DISCHARGE	= 1010	CFS
BASE FREQUENCY	= 100	YRS
BASE HEADWATER ELEVATION	= 1795.4	FT
OVERTOPPING DISCHARGE	= 500	CFS
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING ELEVATION	= 1794.5	FT
DRAINAGE AREA	= 4.5	SQ MI
W.S. ELEVATION AT DATE OF SURVEY	= 1788.7	FT (02/2020)

**TOTAL STRUCTURE QUANTITIES**

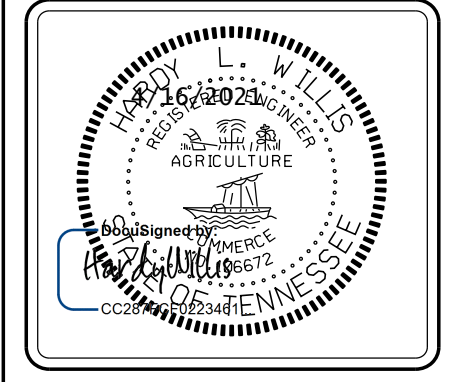
ITEM NO.	DESCRIPTION	UNIT	TOTAL
202-04.01	REMOVAL OF EXISTING STRUCTURES, MILLER LN STA. 10+24.58	L.S.	1
204-01	CULVERT EXCAVATION (UNCLASSIFIED)	C.Y.	247
204-14	CORE DRILLING FOR PILES (ROCK)	L.F.	124
604-03.01	CLASS "A" CONCRETE (BRIDGES)	C.Y.	207.5
604-03.02	STEEL BAR REINFORCEMENT (BRIDGES)	LB.	7210
606-03.03	STEEL PILES (12 INCH)	L.F.	228
607-50.60	THREE SIDED PRECAST CULVERT STRUCTURE - BARREL 5'-6" X 16'-0"	L.S.	1

THE CONTRACTOR SHALL VERIFY ALL QUANTITIES WHEN PREPARING HIS BID. THE QUANTITIES SHOWN IN THESE PLANS ARE PROVIDED FOR THE CONVENIENCE OF THE BIDDERS, ESTIMATED ONLY, AND ARE NOT GUARANTEED.

DESIGNED BY: HARDY WILLIS      DATE: 04-2020  
 DRAWN BY: NICK WARREN      DATE: 04-2020  
 SUPERVISED BY: HARDY WILLIS      DATE: 04-2020  
 CHECKED BY: TRACY WALTER      DATE: 04-2020

**REVISIONS**

NO.	DATE	DESCRIPTION
2	4/15/2021	ADDENDUM NO. 2



**JOHNSON CITY**  
TENNESSEE

**CITY OF JOHNSON CITY**  
BRIDGE REPLACEMENT PROJECT  
MILLER LANE OVER SINKING CREEK  
VAUGHN & MELTON  
GRAY, TN

**V&M**  
Vaughn & Melton  
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TENNESSEE  
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DRAWN: NCW  
CHECKED: HLW  
JOB NO: 52040-04  
SCALE: 1" = 10'  
DATE: MARCH, 2021

DRAWING TITLE:  
**GENERAL DRAWING**  
DRAWING NO:  
**C-1**

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