

FULTON COUNTY  
DEPARTMENT OF HIGHWAYS

# CULVERT 10-2E.0 REPLACEMENT

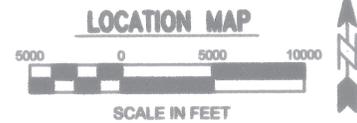
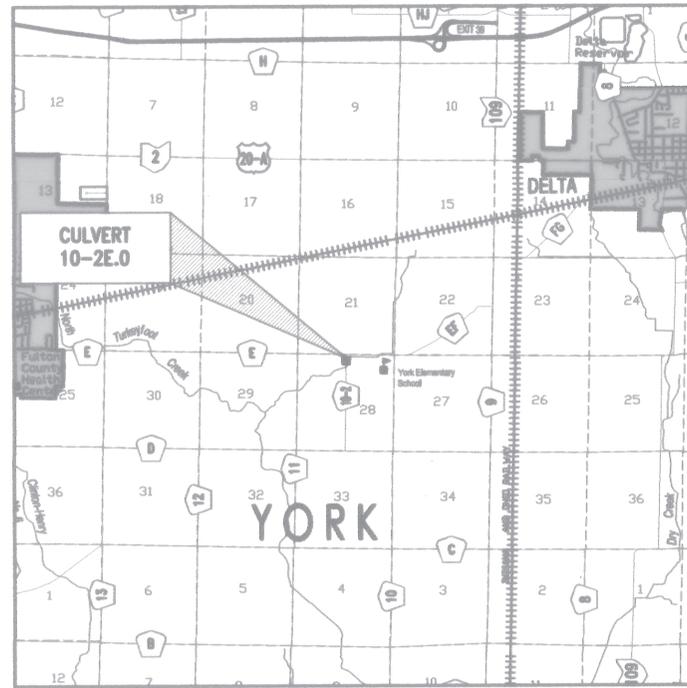
TWP. ROAD 10-2 BETWEEN ROAD D & ROAD E  
YORK TOWNSHIP, FULTON CO., OHIO  
2013

**PROJECT DESCRIPTION**

IMPROVEMENT BEING ON TOWNSHIP ROAD 10-2 IN YORK TOWNSHIP, WORK INCLUDES THE REMOVAL OF AN EXISTING CONCRETE SLAB CULVERT OVER BRANCH 2c OF TURKEYFOOT CREEK. THE REPLACEMENT STRUCTURE SHALL BE A PRECAST REINFORCED CONCRETE BOX CULVERT. ALSO INCLUDED IN THIS PROJECT IS HEADWALL WORK ON BRIDGE 10-2D.8, SOUTH OF THE CULVERT SITE.

**2010 SPECIFICATIONS**

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.



INDEX OF SHEETS

**LEGEND**

PORTION TO BE IMPROVED.....  
STATE AND FEDERAL ROUTES.....  
OTHER ROADS.....

**DESIGN DESIGNATION**

CURRENT ADT (2007)..... 17  
DESIGN YEAR ADT (2035)..... 25

**UTILITIES**

CENTURYLINK  
375 EAST RIVERVIEW  
NAPOLEON, OH 43545  
PH. 419-599-4024

TOLEDO EDISON  
6099 ANGOLA ROAD  
MAIL STOP HLOC-2330  
HOLLAND, OH 43528  
PH. 419-249-5900

TITLE SHEET 1  
GENERAL NOTES 2  
GENERAL NOTES, DETAILS AND QUANTITY TABLES 3  
TRAFFIC MAINTENANCE LAYOUT 4  
PLAN AND PROFILE 5-6  
ROAD CROSS SECTIONS 7-8  
DITCH CROSS SECTIONS 9

**PLAN & PROFILE SCALES:**



**CROSS SECTION SCALES:**



I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED.

APPROVED Paul Barnaby  
DATE 6/25/2013 PAUL BARNABY, FULTON COUNTY COMMISSIONER

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ PERRY RUPP, FULTON COUNTY COMMISSIONER

APPROVED Bill Rufenacht  
DATE 6/25/13 BILL RUFENACHT, FULTON COUNTY COMMISSIONER

APPROVED Frank T. Onweller  
DATE 6/24/13 FRANK T. ONWELLER, P.E., P.S., FULTON COUNTY ENGINEER

**UNDERGROUND UTILITIES**  
TWO WORKING DAYS  
**BEFORE YOU DIG**  
CALL 1-800-362-2764 (TOLL FREE)  
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

**VERTICAL DATUM**  
ALL VERTICAL CONTROL  
IS BASED OFF  
NAVD 88 (U.S.G.S.) DATUM  
(SEE GENERAL NOTES FOR BENCH MARK LOCATION)



STANDARD CONSTRUCTION DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	
DRAWING	DATE		
BP-3.1 ASPHALT PAVING	04-20-12	SS 800	01-18-13
		SS 838	04-15-05
DM-1.4 CONDUIT INSTALLATION	01-18-13		
GR-1.1 GUARDRAIL DETAILS	07-16-04		
GR-2.1 GUARDRAIL TYPE 5 & 5A	01-16-04		
GR-2.4 LONG-SPAN GUARDRAIL ACROSS CULVERT	04-18-03		

Drawn By: BCR  
 Date: 6/25/2013  
 Checked By: FTO  
 Revised:  
 CULVERT 10-2E.0 REPLACEMENT  
 TITLE SHEET  
 FULTON COUNTY ENGINEERING DEPT.  
 FRANK T. ONWELLER, P.E., P.S. - COUNTY ENGINEER  
 ROD CRAIGER, P.E., P.S. - CHIEF DEPUTY ENGINEER  
 9120 Co. Rd. 14, WAUSEON, OHIO, 43587  
 PHONE (419)355-3816 FAX (419)355-1091

# GENERAL NOTES

## UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 O.R.C.

## UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

CENTURYLINK 375 EAST RIVERVIEW NAPOLEON, OH 43545 PH. 419-599-4024	TOLEDO EDISON 6099 ANGOLA ROAD MAIL STOP HLOC-2330 HOLLAND, OH 43528 PH. 419-249-5900
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## CONSTRUCTION NOISE ASSESSMENT

IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER OPERATED CONSTRUCTION-TYPE DEVICE SHALL NOT BE OPERATED DURING THE HOURS OF 10:00 P.M. AND 6:00 A.M. IN ADDITION, ANY POWER OPERATED CONSTRUCTION-TYPE DEVICE SHALL NOT BE OPERATED IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

## CONTROL POINTS

BEFORE ACTUAL CONSTRUCTION OPERATIONS BEGIN, THE ENGINEER WILL REFERENCE ALL EXISTING MONUMENTS, RAILROAD SPIKES, HARROW TEETH, ETC. IN THE SURVEY LINE. UPON COMPLETION OF THE PROPOSED PAVEMENT, THE ENGINEER SHALL RESET ALL CONTROL POINTS IN THE NEW PAVEMENT.

## BENCH MARK DATUM

ALL ELEVATIONS ARE REFERRED TO AN ASSUMED ELEVATION OF 700.16 TO THE MAG NAIL WITHOUT SHINER LOCATED AT THE INTERSECTION OF TWP. RD. 10-2 AND TWP. RD. E, STA. 0+00.00, 0.0' RT. SITE BENCHMARKS HAVE BEEN ESTABLISHED AND CAN BE FOUND ON THE RESPECTIVE PLAN AND PROFILE SHEETS. ANY ADDITIONAL BENCH MARKS THAT MAY BE NEEDED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THIS SHALL BE PAID FOR UNDER ITEM 623 CONSTRUCTION LAYOUT AND STAKING.

## LOCAL DRIVE ACCESS

THE CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL DRIVES AT ALL TIMES UNLESS AN AGREEMENT IS MADE WITH ENGINEER OR LANDOWNER.

## HIGHWAY EASEMENTS

THE YORK TOWNSHIP TRUSTEES HAVE ACQUIRED ALL THE ADDITIONAL RIGHT OF WAY NECESSARY TO COMPLETE THIS PROJECT. THE CONTRACTOR SHALL NOT PERFORM WORK, NOR STORE EQUIPMENT AND/OR MATERIALS OUTSIDE THE ESTABLISHED HIGHWAY RIGHT OF WAY. IN THE EVENT THAT THE CONTRACTOR NEEDS TO OCCUPY LAND OUTSIDE THE ESTABLISHED HIGHWAY RIGHT OF WAY, IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN AN AGREEMENT WITH THE LAND OWNER.

## REMOVAL OF EXISTING STRUCTURES

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURES, INCLUDING HEADWALLS, SHALL BE REMOVED TO A POINT ONE (1) FOOT BELOW THE EXISTING CHANNEL BOTTOM. SUITABLE WASTE MASONRY AND CONCRETE MAY BE PLACED AS BANK PROTECTION, AS DIRECTED BY THE ENGINEER.

## RELOCATION OR REMOVAL OF EXISTING TRAFFIC CONTROL DEVICES

ANY EXISTING TRAFFIC CONTROL SIGNS OR DELINEATORS WHICH CONFLICT WITH THE PROPOSED CONSTRUCTION OPERATIONS WILL BE RELOCATED OR REMOVED PRIOR TO CONSTRUCTION BY THE FULTON COUNTY HIGHWAY DEPARTMENT. TO ALLOW FOR PROPER SCHEDULING OF THE WORK, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO GIVE FULTON COUNTY AT LEAST A THREE WORKING DAY NOTICE OF THEIR INTENT TO BEGIN WORK IN THOSE AREAS WHERE TRAFFIC CONTROL DEVICES MUST BE RELOCATED. FAILURE TO PROVIDE THIS NOTICE WILL RESULT IN THE REMOVAL AND RE-ERECTION OF THE TRAFFIC CONTROL SIGNS BY THE CONTRACTOR AT HIS EXPENSE TO THE SATISFACTION OF THE ENGINEER.

## ITEM 201 CLEARING AND GRUBBING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING ALL DEBRIS TO THE ROAD RIGHT OF WAY LINE. THE COUNTY SHALL REMOVE ALL TREES IN THE PROJECT VICINITY PRIOR TO THE START OF CONSTRUCTION.

THE EXISTING DITCH SHALL BE SCALPED AND CLEARED OF ANY AND ALL DEBRIS PRIOR TO EMBANKMENT CONSTRUCTION.

## EROSION CONTROL

THE CONTRACTOR SHALL PROVIDE AND INSTALL EROSION CONTROL DEVICES AS PER DETAIL ON SHEET 3 AND AS DIRECTED BY THE ENGINEER THROUGHOUT THE DURATION OF THE PROJECT AS NEEDED. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM STRAW BALES FOR EROSION CONTROL AS PER PLAN.

## ROADBED & CHANNEL EMBANKMENTS

FILL MATERIAL TO BE PLACED AT LOCATIONS WITHIN THE ROADBED, INCLUDING AT THE CULVERT REMOVAL, SHALL CONSIST OF SUITABLE EXCAVATED MATERIAL. EMBANKMENT AREAS SHALL BE CONTINUOUSLY BENCHED AND FILL MATERIAL SHALL BE BROUGHT UP IN MAXIMUM 8" LAYERS AND COMPACTED. THE CONTRACTOR SHALL USE SUITABLE MATERIALS, TO THE EXTENT AVAILABLE, FOR CHANNEL EMBANKMENTS. WHEN BORROW IS SPECIFIED IN THE PLANS AND TO THE BE PROVIDED BY THE CONTRACTOR, ALL MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

NO PROVISIONS OF THE SPECIFICATIONS SHALL BE WAIVED FOR EMBANKMENT WHICH SUPPORT ANY PORTION OF THE ROADWAY OR STRUCTURAL MEMBERS.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203, EMBANKMENT.

## ITEM 203 EXCAVATION

ALL EXISTING PAVEMENT AND BASE REMOVAL SHALL BE INCLUDED IN THE QUANTITY AND PAY ITEM 203 EXCAVATION.

## ITEM 304 AGGREGATE BASE

MATERIALS FURNISHED FOR THIS ITEM SHALL EXCLUDE ALL SLAG. ONLY LIMESTONE ALLOWED.

## ITEM 407 TACK COAT

THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

## ITEM 408 PRIME COAT

THE RATE OF APPLICATION OF THE 408 PRIME COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.40 GALLONS PER SQUARE YARD OF PRIME COAT FOR ESTIMATING PURPOSES ONLY.

## CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE OF PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATION ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE 603 CONDUIT ITEM.

## FARM DRAINS AND HOUSE CONNECTIONS

EXISTING FARM DRAINS, ROOF DRAINS, CLEAN WATER DRAINS, FOOTER DRAINS, OR YARD DRAINS DISTURBED BY THE PROPOSED WORK SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY CONNECTION TO A STORM SEWER, CATCH BASIN, OR OUTLET INTO A DITCH AS DIRECTED BY THE ENGINEER.

THE LOCATION, TYPE, SIZE AND GRADE OF THE REQUIRED REPLACEMENT WILL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION.

NONE OF THE ABOVE MATERIAL SHALL BE ORDERED BY THE CONTRACTOR UNTIL APPROVED BY THE ENGINEER.

## PIPE FITTINGS

THE UNIT PRICE BID FOR THE CONDUIT ITEMS SHALL INCLUDE ALL PROPOSED BENDS, TEES, WYES, AND OTHER FITTINGS NECESSARY TO CONSTRUCT THE CONDUIT. ALL PIPE FITTINGS SHALL BE FACTORY MADE.

## PIPE COLLARS

WHERE CONNECTIONS ARE MADE BETWEEN RIGID AND FLEXIBLE PIPE SECTIONS OR BETWEEN PIPE SECTIONS OF DIFFERENT MATERIAL OR TYPE OF END FABRICATION, WHETHER REQUIRED BY THE PLANS OR ENCOUNTERED IN CONNECTION TO EXISTING FACILITIES, THE JOINT SHALL BE SEALED BY MEANS OF A CONCRETE COLLAR OR FERNCO FITTING. PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 603.

## GUARDRAIL REMOVED FOR STORAGE

ANY EXISTING GUARDRAIL WHICH CONFLICT WITH THE PROPOSED CONSTRUCTION OPERATIONS WILL BE REMOVED PRIOR TO CONSTRUCTION BY THE YORK TOWNSHIP HIGHWAY DEPARTMENT. TO ALLOW FOR PROPER SCHEDULING OF THE WORK, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO GIVE FULTON COUNTY AT LEAST A THREE WORKING DAY NOTICE OF THEIR INTENT TO BEGIN WORK IN THOSE AREAS WHERE EXISTING GUARDRAIL MUST BE REMOVED. FAILURE TO PROVIDE THIS NOTICE WILL RESULT IN THE REMOVAL AND STORAGE OF THE GUARDRAIL BY THE CONTRACTOR AT HIS EXPENSE TO THE SATISFACTION OF THE ENGINEER.

## ITEM 603

THE JOINTS OF ALL PIPE PROVIDED FOR ALL CONDUIT SHALL BE EQUIPPED WITH GASKETS. ALL PROPOSED CONNECTIONS TO EXISTING CONDUITS AND STRUCTURES SHALL BE A PREMIUM WATERTIGHT JOINT.

ANY EXISTING TILE TO BE CUT OFF AND DESIGNATED AS "ABANDONED TILE" BY THE ENGINEER, SHALL BE SEALED OFF AND APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL MAKE NOTE OF LOCATION, SIZE, AND CONDITION OF ANY EXISTING TILE THAT MAY COME INTO CONTACT WITH THE PROPOSED CONDUIT TRENCH.

TYPE A CONDUIT SHALL MEET ANY OF THE FOLLOWING O.D.O.T. ITEMS: 706.05  
TYPE D CONDUIT SHALL MEET ANY OF THE FOLLOWING O.D.O.T. ITEMS: 707.33, 707.42, 707.45.  
TYPE E CONDUIT SHALL MEET ANY OF THE FOLLOWING O.D.O.T. ITEMS: 707.33, 707.42, 707.45.

ALL EXPOSED TILE OUTLETS SHALL HAVE ANIMAL GUARDS PLACED AT THE OUTLET AND INCLUDED IN THE PAY ITEM OF THE RESPECTIVE CONDUIT.

ALL PROPOSED CONNECTIONS TO EXISTING STRUCTURES SHALL BE A WATERTIGHT PREMIUM JOINT OR A CONCRETE COLLAR.

## ITEM 610 SPECIAL - RETAINING WALL, MISC.: TIRE FACED WALL

THIS WORK SHALL CONSIST OF CONSTRUCTING RETAINING WALLS COMPOSED OF A SERIES OF CELLS FORMED BY ASSEMBLING USED TIRES TO FORM STABLE WALL UNITS AS DETAILED ON SHEET 6/9. PAYMENT IS FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND BACKFILLING. THE COUNTY WILL PAY FOR EXCAVATION UNDER ITEM 503 UNCLASSIFIED EXCAVATION. THE COUNTY HAS AN ESTIMATED STOCKPILE OF 60 TIRES THAT IS AVAILABLE TO THE CONTRACTOR AT NO COST IF THE CONTRACTOR CHOOSES TO USE THEM.

## ITEM 838 GABIONS

THIS WORK SHALL CONSIST OF CONSTRUCTING RETAINING WALLS COMPOSED OF GABION WIRE BASKETS TO FORM STABLE WALL UNITS AS DETAILED ON SHEET 6/9. PAYMENT IS FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING GABIONS, FILL MATERIALS AND BACKFILL, AND ALL EQUIPMENT AND LABOR TO COMPLETELY INSTALL THE BASKET. THE COUNTY WILL PAY FOR EXCAVATION UNDER ITEM 503 UNCLASSIFIED EXCAVATION.

## SEEDING AND MULCHING

THE SEEDING AND MULCHING IS TO BE PERFORMED BY FULTON COUNTY. THE CONTRACTOR SHALL KEEP THE AMOUNT OF DISTURBED SOIL TO A MINIMUM. IT IS THE INTENT OF FULTON COUNTY TO PERFORM THE SEEDING AND MULCHING ONCE AN AREA HAS REACHED FINAL GRADE. THIS WILL BE COORDINATED WITH THE CONTRACTOR SO THAT THE COUNTY DOES NOT DISTURB THE WORK OF THE CONTRACTOR.

## ITEM 659 SEEDING AND MULCHING SITE PREPARATION

ITEM 659.10 AND 659.11 SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

UNDER ITEM 659.10, NO COMMERCIAL FERTILIZER, LIME, OR OTHER SOIL AMENDMENTS ARE REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE TO RETURN THE LANDOWNERS' FRONTAGE TO ITS ORIGINAL CONDITION OR BETTER.

UNDER ITEM 659.11, THE CONTRACTOR WILL BE RESPONSIBLE TO FURNISH 4" OF TOP SOIL ON ALL FRONTAGE THAT IS MAINTAINED AS LAWN. THE REMAINDER OF THE PROJECT SHALL HAVE TOPSOIL PLACED, ENOUGH SO THAT IT IS SUITABLE FOR SEEDING. SUITABLE MATERIAL FROM THE PROJECT CAN BE USED FOR TOPSOIL, OTHERWISE THE CONTRACTOR WILL BE RESPONSIBLE TO HAUL IN SUITABLE MATERIAL PRIOR TO SEEDING.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN ITEM 203, EMBANKMENT.

## ITEM 614 MAINTAINING TRAFFIC

A) METHODS OF MAINTAINING TRAFFIC SHALL BE IN ACCORDANCE WITH O.D.O.T. ITEM 614 AND THE LATEST EDITION OF THE "OHIO MANUAL UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD).

B) SHOULD ADDITIONAL SIGNS AND/OR BARRICADES BE REQUIRED TO PROVIDE CLARITY TO THE TRAFFIC CONTROL SCHEMES SET FORTH IN THE PLANS OR THE O.M.U.T.C.D. OR SHOULD ANY SIGNS AND/OR BARRICADES REQUIRE RELOCATION TO PROVIDE THIS CLARITY AS DIRECTED BY THE ENGINEER, THIS WORK SHALL BE INCLUDED IN ITEM 614, MAINTAINING TRAFFIC.

C) THE CONTRACTOR SHALL NOTIFY THE FULTON COUNTY ENGINEER IN WRITING SEVEN (7) WORKING DAYS PRIOR TO THE CLOSING OF THE ROAD UNDER CONSTRUCTION.

D) THE CONTRACTOR SHALL FOLLOW THE TRAFFIC MAINTENANCE DIAGRAM AS DETAILED ON THE SPECIFIED SHEET BEING TRAFFIC MAINTENANCE LAYOUT (SHEET 4/9).

E) THE CONTRACTOR SHALL PLACE CONSTRUCTION DRUMS ALONG THE EDGE(S) OF PAVEMENT THROUGHOUT THE DURATION OF CONSTRUCTION IN PERTINENT AREAS.

F) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND KEEPING INFORMED, THE FULTON COUNTY SHERIFF AND ALL EFFECTED SCHOOL DISTRICTS FOR THE DURATION OF THE PROJECT.

G) PAYMENT FOR PROVIDING THE ABOVE METHODS OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE ITEM 614, MAINTAINING TRAFFIC.

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**DESIGN SPECIFICATIONS**

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2007 AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

**DESIGN LOADING AND STRESSES**

DESIGN LOADING - HL93  
 FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SQ. FT.

FOR BOX CULVERT, SEE ODOT 2010 CMS 603.

**ITEM 512, SEALING OF CONCRETE SURFACES**

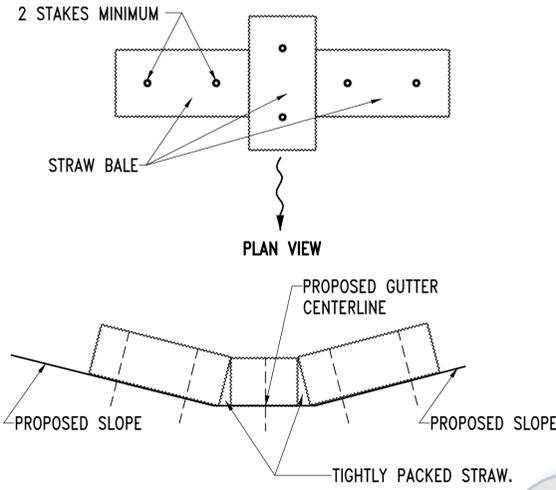
AN EPOXY CONCRETE SEALER SHALL BE APPLIED TO ALL SURFACES NOT COVERED BY TYPE 2 WATERPROOFING. EXTEND THE SEALER 1 FOOT BELOW THE BACKFILL ON ALL SIDES OF THE CULVERT SECTIONS INCLUDING THE JOINT. PAYMENT FOR THE SEALING OF THE PRECAST CONCRETE BOX SURFACES SHALL BE MADE AT THE CONTRACT BID PRICE PER SQUARE YARD FOR ITEM 512, SEALING OF CONCRETE SURFACES.

**ITEM 603, 7' X 6' CONCRETE BOX CONDUIT, TYPE A, 706.05, AS PER PLAN**

MEMBRANE WATERPROOFING (SHEET TYPE 2) SHALL BE APPLIED TO THE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND VERTICALLY DOWN ALL SIDES FOR THE PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL AS SHOWN ON THE DETAIL ON THIS SHEET. THE EXTERIOR JOINT GAP ON THE TOP AND SIDES BETWEEN THE PRECAST CULVERT SECTIONS SHALL BE FILLED WITH PORTLAND CEMENT MORTAR PRIOR TO INSTALLING THE MEMBRANE WATERPROOFING. PAYMENT FOR THE MEMBRANE WATERPROOFING OF THE PRECAST CONCRETE BOX SURFACES SHALL BE MADE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512, TYPE 2 WATERPROOFING.

**SHOP DRAWING AND LOAD RATING SUBMITTAL**

THE CONTRACTOR SHALL SUBMIT TO THE FULTON COUNTY ENGINEER'S OFFICE THE ACTUAL INFORMATION ABOUT THE DIMENSIONS AND REINFORCING BARS/CAGE ALONG WITH SHOP DRAWINGS AND A SIGNED AND STAMPED LOAD RATING BY AN OHIO REGISTERED PROFESSIONAL ENGINEER BEFORE PLACEMENT OF THE STRUCTURE.



**STRAW BALE DITCH CHECK**

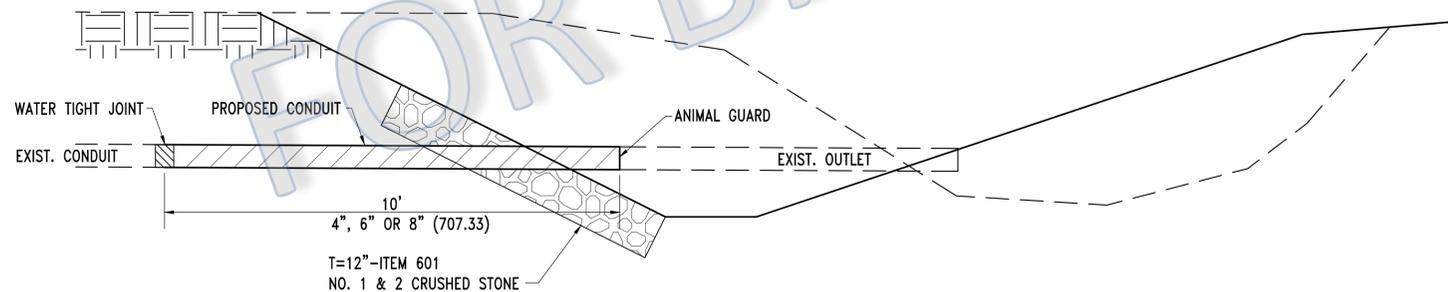
**BALE PLACEMENT:** BALES SHALL BE TIGHTLY PLACED AND ADJACENTLY; EACH BALE SHALL BE FIRMLY STAKED WITH A MINIMUM OF 2 STAKES AT LEAST 3' IN LENGTH. STAKES SHALL BE WOODEN 2"x2", REINFORCING BARS, OR FENCE POSTS, AS APPROVED BY THE ENGINEER.

LOOSE STRAW OR HAY SHALL BE SCATTERED FOR A DISTANCE OF 10' ON THE UPSTREAM END OF EACH DITCH CHECK, AND SHALL BE WEDGED BETWEEN AND UNDER STAKED BALES.

THE ENGINEER MAY DIRECT THE PLACEMENT OF ADDITIONAL BALES AS DEEMED NECESSARY FOR TEMPORARY EROSION CONTROL.

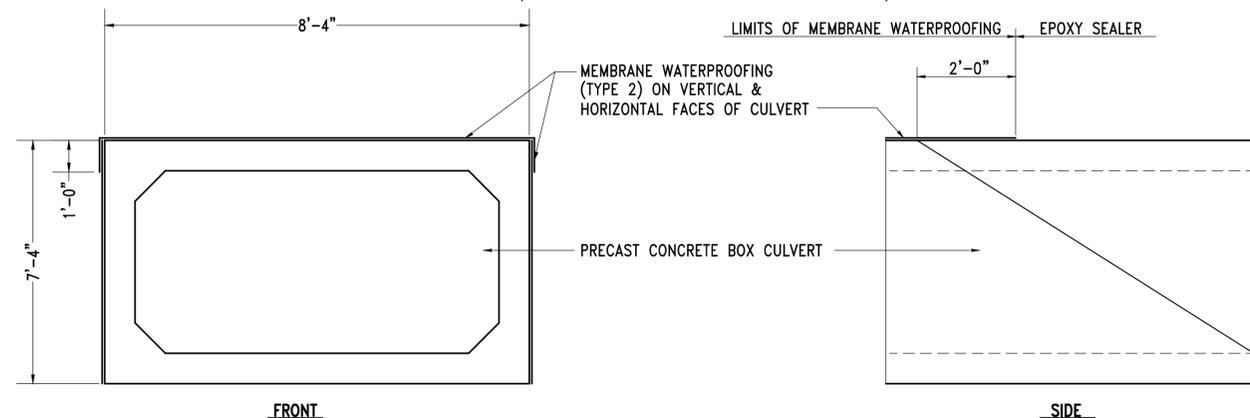
**BASIS OF PAYMENT:** STRAW BALE INSTALLATION SHALL BE PAID ON A PER BALE BASIS AND UNDER ITEM STRAW BALES FOR EROSION CONTROL AS PER DETAIL. COST WILL INCLUDE PLACING, STAKING, AND MAINTAINING.

PAVEMENT TABLE "P"													
LINE NO.	SHEET NO.	STATION		LENGTH	EXISTING PAVEMENT WIDTH	PROPOSED PAVEMENT WIDTH	202	204	304	407	408	448	
		FROM	TO										CU YD
P-1	5	1+00	1+15	15	VARIES	VARIES	21.2			2.1		0.7	
P-2	5	1+15	1+70	55	12	12		79	13.2	7.3	30.6	3.7	
P-3	5	1+70	1+85	15	VARIES	VARIES	18.8			1.5		0.6	
TOTALS TO GENERAL SUMMARY							40	79	13	11	31	4	4



**PROPOSED TYPICAL DRAINAGE OUTLET INTO PROPOSED DITCH**

(SEE ITEM 603 IN GENERAL SUMMARY FOR QUANTITIES)



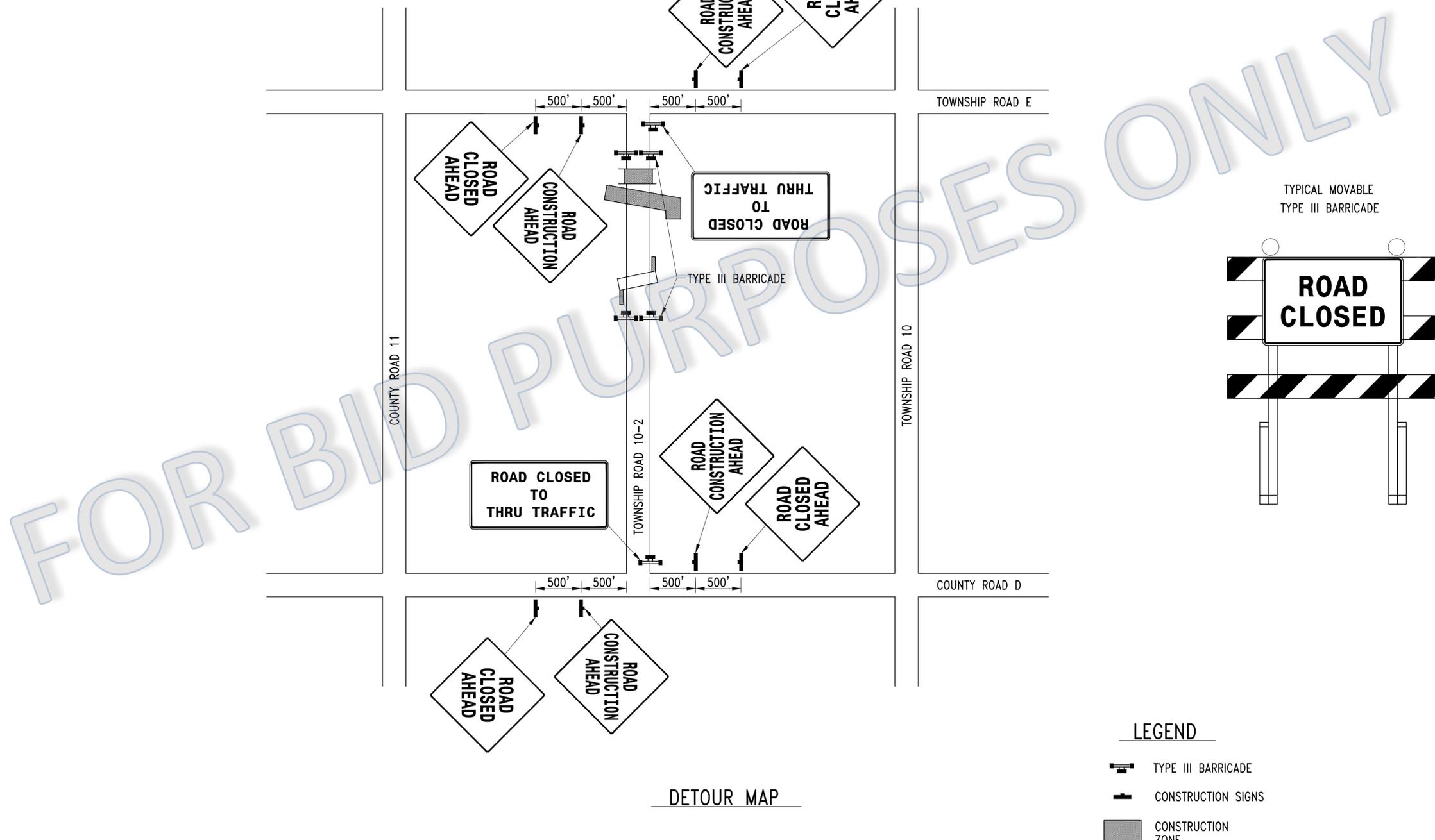
**MEMBRANE WATERPROOFING (TYPE 2) DETAIL**

GENERAL SUMMARY						
SHEET NO.	ITEM	GRAND TOTAL	UNIT	DESCRIPTION	ORIGIN	
ROADWAY						
5	201	1	LUMP	CLEARING AND GRUBBING	PLAN	
3	202	1	LUMP	STRUCTURE REMOVED	TABLE D	
3	202	2	EACH	HEADWALL REMOVED	TABLE D	
5	202	40	SQ YD	PAVEMENT REMOVED FOR BUTT JOINTS	TABLE P	
3	202	67	FT	PIPE REMOVED, UNDER 24-INCH	TABLE D	
7-9	203	420	CU YD	EXCAVATION	PLAN	
7-9	203	345	CU YD	EMBANKMENT	PLAN	
5	204	79	SQ YD	SUBGRADE COMPACTION	PLAN	
5	503	59	CU YD	UNCLASSIFIED EXCAVATION	PLAN	
6	606	12.5	FT	GUARDRAIL, TYPE 5	TABLE G	
6	606	75	FT	GUARDRAIL, TYPE 5, LONG-SPAN	TABLE G	
6	606	4	EACH	FLARED END SECTION	TABLE G	
EROSION CONTROL						
5	207	3	EACH	STRAW BALES FOR EROSION CONTROL, AS PER PLAN	PLAN	
3	601	7	SQ YD	CRUSHED AGGREGATE SLOPE PROTECTION	TABLE D	
3	601	197	CU YD	ROCK CHANNEL PROTECTION WITHOUT FILTER, TYPE C	TABLE D	
DRAINAGE						
3	512	51	SQ YD	SEALING OF CONCRETE SURFACES	PLAN	
3	512	178	SQ YD	TYPE 2 WATERPROOFING, AS PER PLAN	PLAN	
3	603	20	FT	4" CONDUIT, TYPE E, 707.33, 707.42, 707.45	TABLE D	
3	603	10	FT	6" CONDUIT, TYPE E, 707.33, 707.42, 707.45	TABLE D	
3	603	30	FT	8" CONDUIT, TYPE D, 707.33, 707.42, 707.45	TABLE D	
3	603	78	FT	7x 6' CONDUIT, TYPE A, 706.05, AS PER PLAN	TABLE D	
PAVEMENT						
5	304	13	CU YD	AGGREGATE BASE, (T=6")	TABLE P	
5	407	11	GALLON	TACK COAT	TABLE P	
5	408	31	GALLON	PRIME COAT	TABLE P	
5	448	4	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	TABLE P	
5	448	4	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	TABLE P	
RETAINING WALLS						
6	503	62	CU YD	UNCLASSIFIED EXCAVATION	PLAN	
6	610	1	LUMP	SPECIAL - RETAINING WALL, MISC.: TIRE FACED WALL	PLAN	
6	838	12	CU YD	GABIONS	PLAN	
INCIDENTALS						
	103	1	LUMP	PREMIUM FOR CONTRACT PERFORMANCE BOND AND MAINTENANCE GUARANTEE BOND		
4	614	1	LUMP	MAINTAINING TRAFFIC	PLAN	
	623	1	LUMP	CONSTRUCTION LAYOUT AND STAKING		

DRAINAGE TABLE "D", CULVERT 10-2E.0													
REFERENCE NUMBER	SHEET NUMBER	STATION		SIDE	202			601		603			
		FROM	TO		REMOVE PIPE 24" & UNDER	STRUCTURE REMOVED	HEADWALL REMOVED	ROCK CHANNEL PROTECTION, TYPE C WITHOUT FILTER	CRUSHED AGGREGATE SLOPE PROTECTION	7' x 6' CONDUIT	4' CONDUIT	6' CONDUIT	8' CONDUIT
					FT	LUMP	EACH	CU YD	SQ YD	FT	FT	FT	FT
D-1	5	1+31	1+31	LT. & RT.		1							
D-2	5	1+32	1+37	RT.	20						20		
D-3	5	1+28	1+38	RT.					7				
D-4	5	1+18	1+50	RT.				23					
D-5	5	1+54.27	1+54.27	LT. & RT.						78			
D-6	5	1+69	2+38	LT.					65				
D-7	5	2+30	2+72	LT.				29					
D-8	6	5+66	5+78	LT.	20							10	
D-9	6	5+55	5+85	LT.				44					
D-10	6	5+68	6+11	LT.	27								30
D-11	6	5+81	6+18	RT.				36					
D-12	6	5+51	5+70	LT.			1						
D-13	6	5+91	6+20	RT.			1						
TOTALS TO GENERAL SUMMARY					67	1	2	197	7	78	20	10	30

Drawn By: BCR  
 Date: 6/25/2013  
 Checked By: FTO  
 Revised:  
 FULTON COUNTY ENGINEERING DEPT.  
 FRANK T. OWKELLER, P.E., P.S. - COUNTY ENGINEER  
 ROD CREGGER, P.E., P.S. - CHIEF DEPUTY ENGINEER  
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 PHONE (419)335-3816 FAX (419)335-1091

CULVERT 10-2E.0 REPLACEMENT  
 GENERAL NOTES, DETAILS AND QUANTITY TABLES



DETOUR MAP

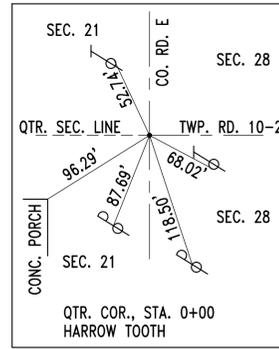
LEGEND

-  TYPE III BARRICADE
-  CONSTRUCTION SIGNS
-  CONSTRUCTION ZONE

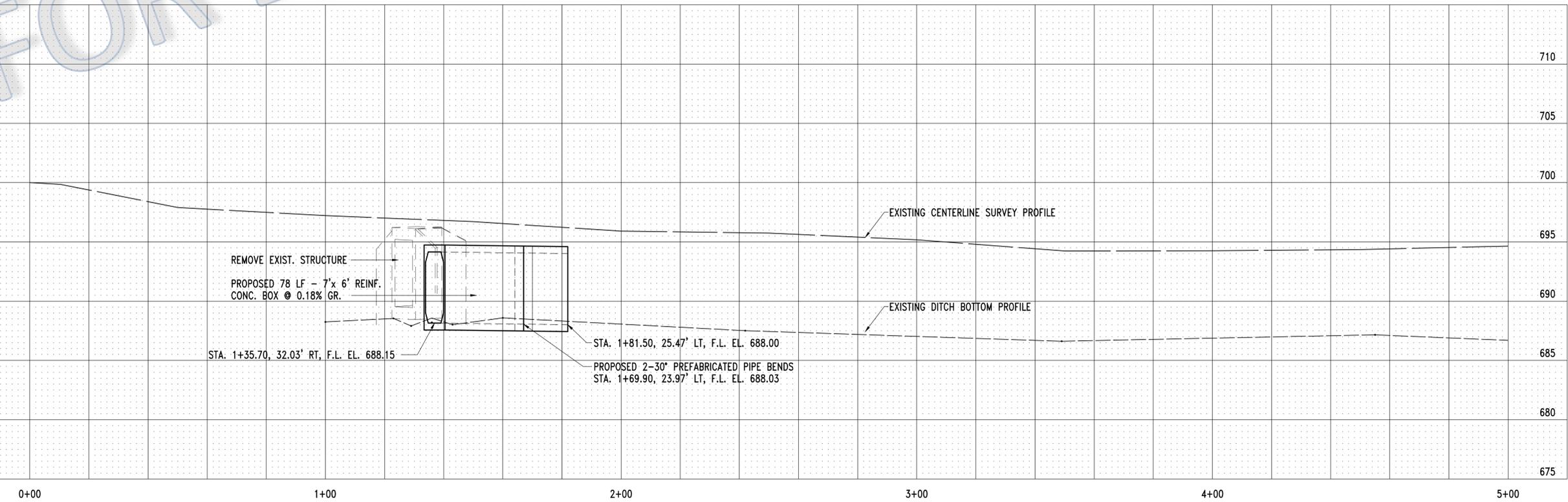
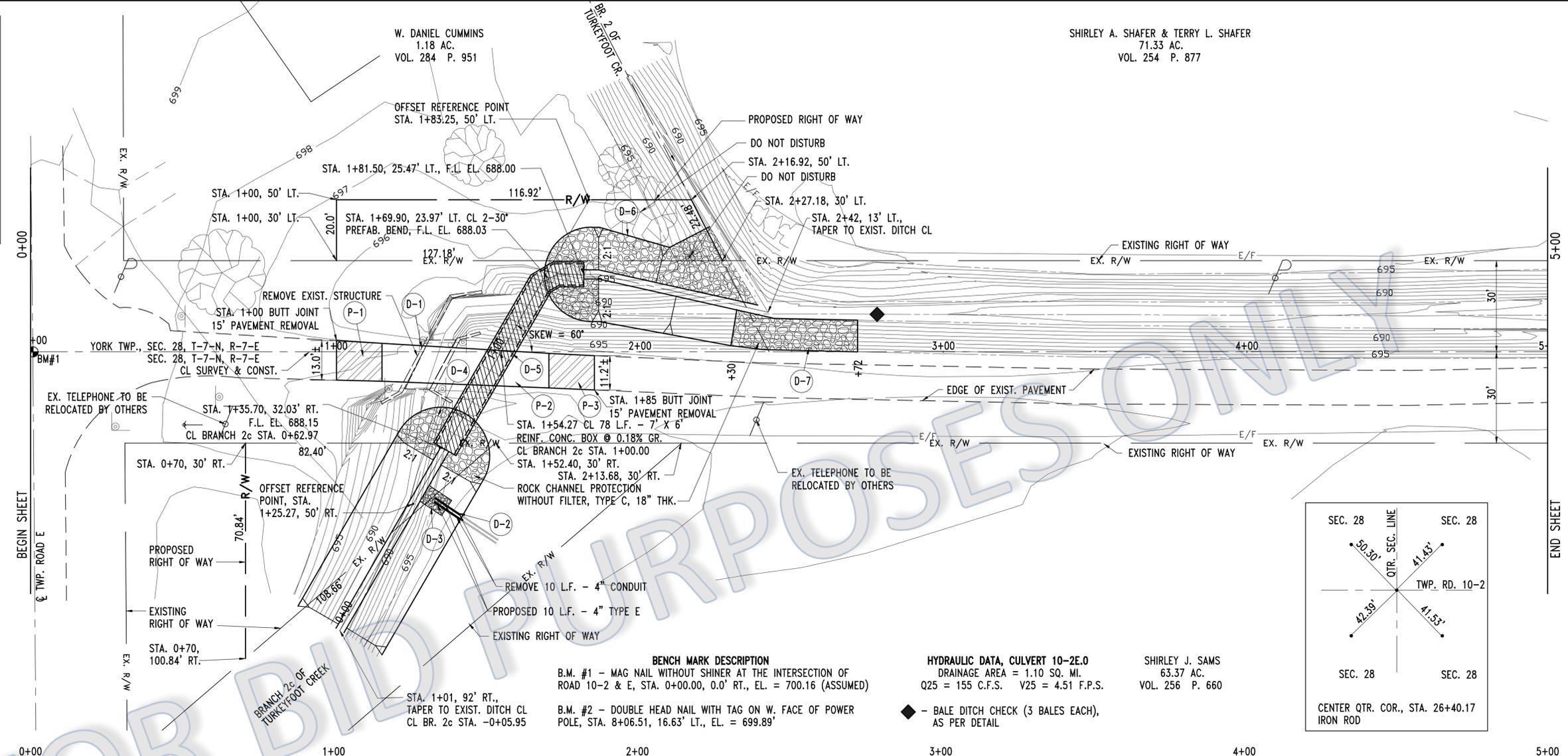


TYPICAL MOVABLE  
TYPE III BARRICADE

<p>4 9</p>	<p>FULTON COUNTY ENGINEERING DEPT. FRANK T. ONWELLER, P.E., P.S. - COUNTY ENGINEER ROD CREAHER, P.E., P.S. - CHIEF DEPUTY ENGINEER 9120 Co. Rd. 14, WAUSEON, OHIO, 43567 PHONE (419)335-3816 FAX (419)335-1091</p>		<p>CULVERT 10-2E.0 REPLACEMENT TRAFFIC MAINTENANCE LAYOUT</p>	<p>Date: 6/25/2013 Revised:</p>	<p>Drawn By: BCR</p>	<p>Checked By: FTO</p>
	<p>CULVERT 10-2E.0 REPLACEMENT TRAFFIC MAINTENANCE LAYOUT, FILE#VS10S003, DB#ENG01399, VS10S003</p>					



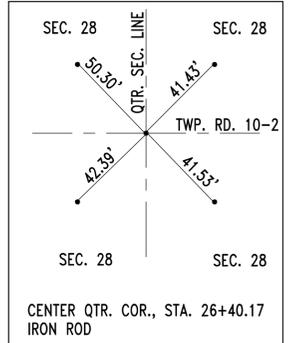
SHIRLEY A. SHAFER & TERRY L. SHAFER  
71.33 AC.  
VOL. 254 P. 877



**BENCH MARK DESCRIPTION**  
 B.M. #1 - MAG NAIL WITHOUT SHINER AT THE INTERSECTION OF ROAD 10-2 & E, STA. 0+00.00, 0.0' RT., EL. = 700.16 (ASSUMED)  
 B.M. #2 - DOUBLE HEAD NAIL WITH TAG ON W. FACE OF POWER POLE, STA. 8+06.51, 16.63' LT., EL. = 699.89'

**HYDRAULIC DATA, CULVERT 10-2E.0**  
 DRAINAGE AREA = 1.10 SQ. MI.  
 Q25 = 155 C.F.S. V25 = 4.51 F.P.S.  
 ◆ - BALE DITCH CHECK (3 BALES EACH), AS PER DETAIL

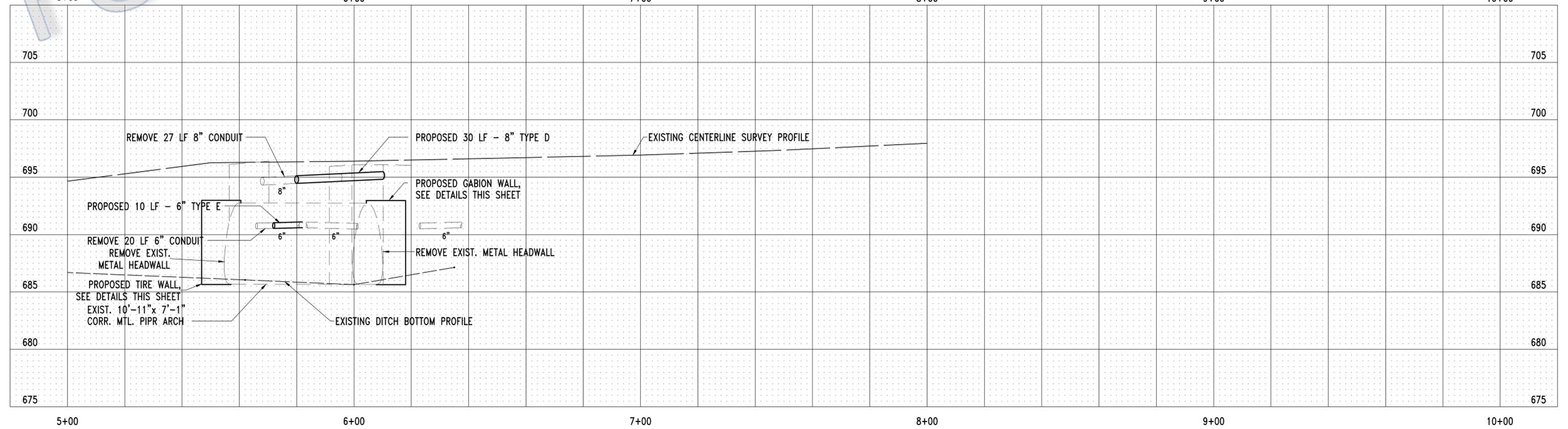
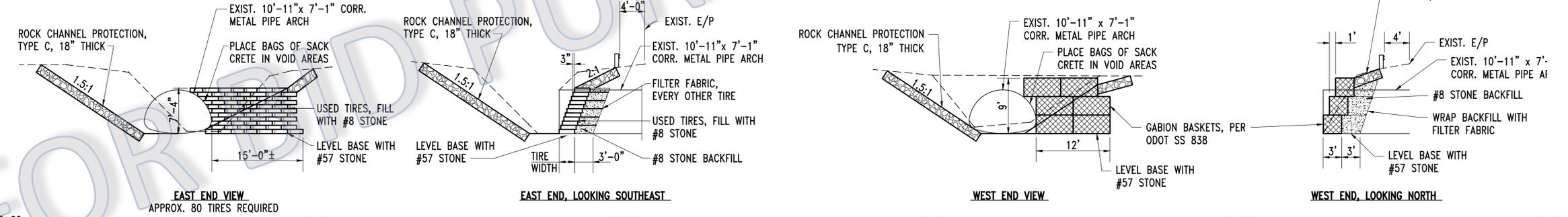
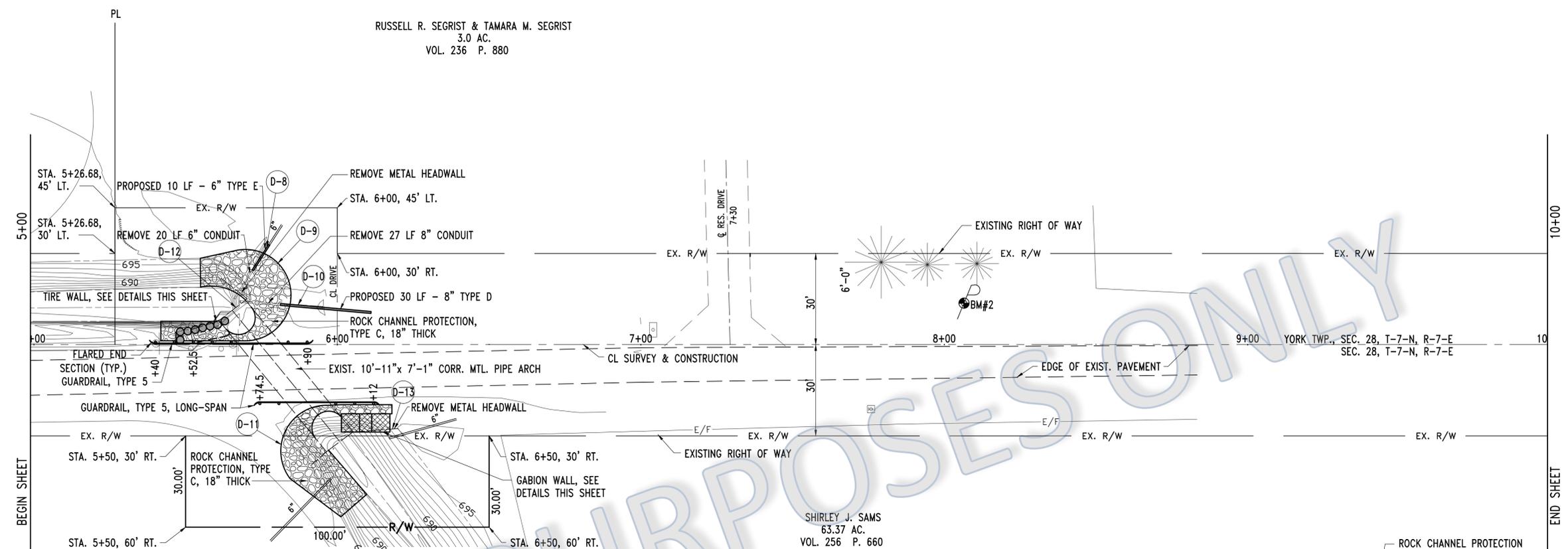
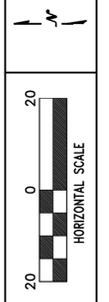
SHIRLEY J. SAMS  
63.37 AC.  
VOL. 256 P. 660



CULVERT 10-2E.0 REPLACEMENT  
PLAN & PROFILE, STA. 0+00 TO 5+00

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RUSSELL R. SEGRIST & TAMARA M. SEGRIST  
3.0 AC.  
VOL. 236 P. 880



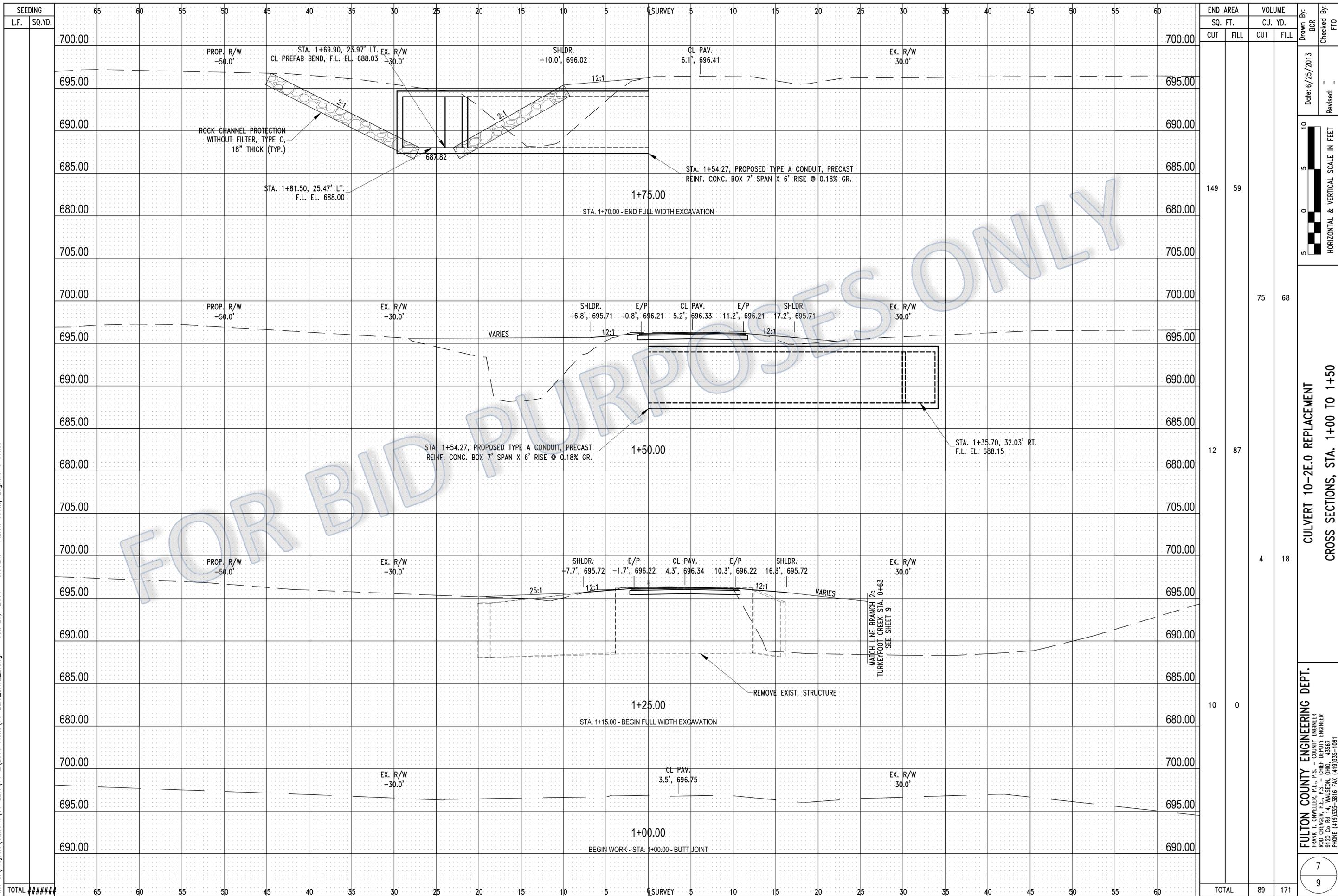
DRAWN BY: BCR  
CHECKED BY: FTO

CULVERT 10-2E.0 REPLACEMENT  
PLAN & PROFILE, STA. 5+00 TO 10+00

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File: C:\Projects\Culverts\10-2E.0\10-2\2013 Plans\10-2E.0\_BASE\_2.dwg - Jun 21, 2013 - 8:33am - Fulton County Engineer's Office



SEEDING	L.F.	SQ.YD.	END AREA		VOLUME		Drawn By: BCR	Checked By: FTO
			SQ. FT.	CUT	FILL	CU. YD.		
700.00								
695.00								
690.00								
685.00								
680.00			149		59			
705.00								
700.00								
695.00								
690.00								
685.00								
680.00			12		87			
705.00								
700.00								
695.00								
690.00								
685.00								
680.00								
700.00								
695.00								
690.00								
685.00								
680.00			10		0			
700.00								
695.00								
690.00								
685.00								
680.00								
700.00								
695.00								
690.00								
TOTAL	#####							
			89		171			

CULVERT 10-2E.0 REPLACEMENT  
 CROSS SECTIONS, STA. 1+00 TO 1+50

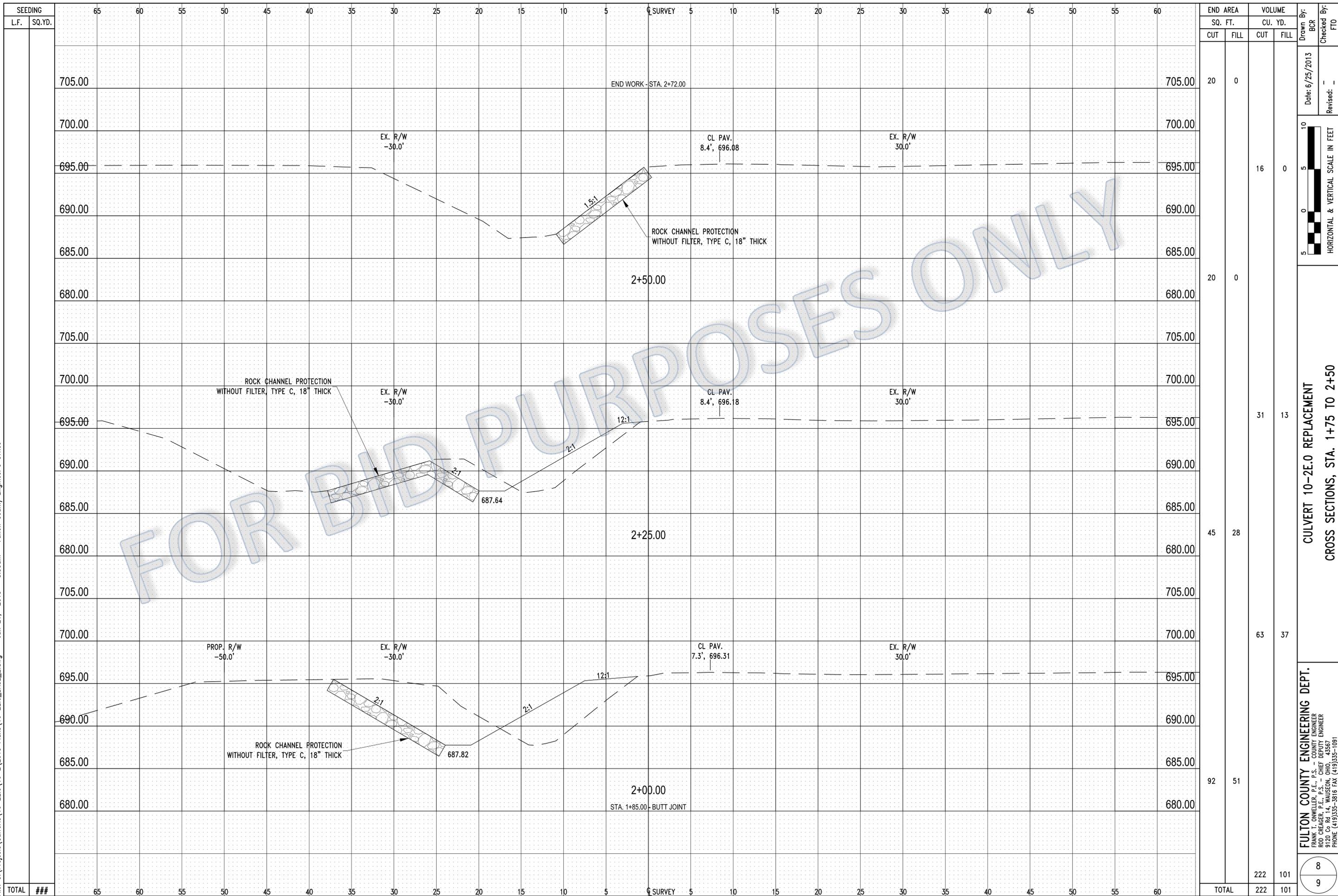
FULTON COUNTY ENGINEERING DEPT.  
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Date: 6/25/2013  
 Revised: -

10  
 HORIZONTAL & VERTICAL SCALE IN FEET

7  
 9

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SEEDING	END AREA		VOLUME		Drawn By: BCR	Checked By: FTO
	L.F.	SQ.YD.	SQ. FT.	CU. YD.		
			CUT	FILL		
705.00			20	0	Date: 6/25/2013	Revised: -
700.00						
695.00						
690.00						
685.00						
680.00			20	0		
705.00						
700.00						
695.00						
690.00						
685.00						
680.00			45	28		
705.00						
700.00						
695.00						
690.00						
685.00						
680.00			92	51		
TOTAL	###		222	101		

CULVERT 10-2E.0 REPLACEMENT  
CROSS SECTIONS, STA. 1+75 TO 2+50

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