

**Cuyahoga County  
Department of Public Works  
Cuyahoga County Engineer's  
Sample Drainage Notes**

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**Note to Designer:** In addition, the ODOT Location and Design (L&D) Manual (Volume 2) Drainage Notes most frequently used are: D103 Item Special – Fill and Plug Existing Conduit, D104 Crossings and Connections to Existing Pipes and Utilities, D117 Manholes, Catch Basins and Inlets Removed or Abandoned, and D124 Temporary Drainage Items.

**UNRECORDED TREATED NON-STORM WATER DRAINAGE CONNECTIONS (10/31/2013)**

LOCATIONS OF KNOWN ON-SITE TREATMENT SYSTEMS WITHIN OR NEAR THE PROJECT WORK LIMITS ARE SHOWN ON THE PLAN IN ACCORDANCE WITH INFORMATION FURNISHED BY THE PROPERTY OWNERS, THE CUYAHOGA COUNTY BOARD OF HEALTH AND/OR THE CITY/VILLAGE. THE COUNTY OF CUYAHOGA DOES NOT GUARANTEE THE ACCURACY OF SAME.

UNRECORDED TREATED NON-STORM WATER DRAINAGE CONNECTIONS DISTURBED BY THE WORK SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY RECONNECTING/CONNECTING TO THE EXISTING OR PROPOSED HIGHWAY DRAINAGE COLLECTION SYSTEM.

PROVIDE THE ENGINEER WITH A LIST OF ALL UNRECORDED TREATED NON-STORM WATER DRAINAGE CONNECTIONS DISTURBED BY THE WORK. THE ENGINEER WILL REPORT ALL TREATED NON-STORM WATER DRAINAGE CONNECTIONS DISTURBED BY THE WORK TO THE CUYAHOGA COUNTY BOARD OF HEALTH.

THE CONTRACTOR SHALL NOT CAUSE ANY OF THE AUTHORIZED PROPERTIES TO BE WITHOUT A SUITABLE OUTLET FOR TREATED NON-STORM WATER DRAINAGE FLOW DURING THE PROSECUTION OF THE WORK. REFERENCE IS MADE TO SECTION 611.07 OF THE SPECIFICATIONS.

WHERE A TREATED NON-STORM WATER DRAINAGE CONNECTION IS TO BE MADE INTO A HIGHWAY DRAINAGE CONDUIT, IT SHALL INCLUDE A TEST TEE, IN ACCORDANCE WITH THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING MD-6C. NO TEST TEE IS REQUIRED IF AN EXISTING FUNCTIONAL TEST TEE REMAINS IN SERVICE.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 706.01 (CLASS 3) OR 706.02 WITH 706.11 JOINTS, 706.08 (EXTRA STRENGTH) WITH 706.12 JOINTS, 707.42, 707.43, 707.45, 707.47, OR 707.52 (PS 45 MIN.)

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY, FOR USE AS DIRECTED BY THE ENGINEER, TO MAKE THE ABOVE DESCRIBED CONNECTIONS.

ITEM 611 - _____ CONDUIT, TYPE B, FOR DRAINAGE CONNECTION, AS PER PLAN	_____ FT.
ITEM 611 - _____ CONDUIT, TYPE C, FOR DRAINAGE CONNECTION, AS PER PLAN	_____ FT.
ITEM 611 - DRAINAGE STRUCTURE, MISC.: TEST TEE, AS PER PLAN	_____ EACH

WHEN ENCOUNTERED WITHIN THE SAME TRENCH, THE COST FOR REMOVAL AND DISPOSAL OF THE EXISTING TEST TEE AND/OR CONDUIT SHALL BE INCLUDED IN THE PAYMENT FOR THE PERTINENT 611 ITEM LISTED ABOVE.

**Designer Note:** CUY D01 is the County version of L&D Manual Note D111.

Use this note on all County projects where on-site treatment systems discharge into the highway drainage system.

Based on the designer's thorough investigations/documentated verification, list the required items and quantities for all treated non-storm water drainage connections at their specific locations on the plans.

The items/quantities listed in this plan note are only intended for additional (unrecorded) connections that may be encountered during construction.

When an on-site treatment system (other than simply the effluent outlet pipe itself) is within the proposed work limits and will be affected by the work, it will typically be relocated/reconstructed/replaced/abandoned by the property owner as a part of the negotiated right-of-way settlement. In these instances the plans shall indicate abandonment / relocation, reconstruction or replacement by owner.

Coordination with the County Board of Health, City/Village and City/Village Engineer is required.

The County Board of Health or the City/Village may have more restrictive requirements, which should be honored. Edit the pipe material listing in the note to comply with the County Board of Health or City/Village requirements, as long as said material is listed under 611.02.

Minimally specify six (6) inch diameter pipe sizes. Should sizes greater than the 6" minimum diameter pipe be required at commercial or multi-dwelling locations, separately list them in the note and on the General Summary. Delete concrete (706.01 or 706.02) conduits for sizes under 12 inches.

Reference MD-6C on the Title Sheet. Also add CUY-D09 plan note.

CUY-D02

**UNRECORDED STORM WATER DRAINAGE CONNECTIONS (10/31/2013)**

UNRECORDED STORM WATER DRAINAGE CONNECTIONS, SUCH AS EXISTING ROOF DRAINS, FOOTER DRAINS OR YARD DRAINS, DISTURBED BY THE WORK, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY CONNECTING A CONDUIT INTO A STORM SEWER OR DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEW CONDUIT REQUIRED TO REPLACE OR EXTEND THE EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 706.01 (CLASS 3) OR 706.02 WITH 706.11 JOINTS, 706.08 (EXTRA STRENGTH) WITH 706.12 JOINTS, 707.42, 707.43, 707.45, 707.47 or 707.52 (PS 45 MIN.).

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

ITEM 611 - \_\_\_\_ CONDUIT, TYPE B, FOR DRAINAGE CONNECTION, AS PER PLAN                    \_\_\_\_ FT.  
ITEM 611 - \_\_\_\_ CONDUIT, TYPE C, FOR DRAINAGE CONNECTION, AS PER PLAN                    \_\_\_\_ FT.

WHEN ENCOUNTERED WITHIN THE SAME TRENCH, THE COST FOR REMOVAL AND DISPOSAL OF THE EXISTING CONDUIT SHALL BE INCLUDED IN THE PAYMENT FOR THE PERTINENT 611 ITEM LISTED ABOVE.

**Designer Note:**    CUY-D02 is the County version of L&D Manual Note D115.

This note is to be used only if there is a possibility that during construction there may be a need for additional residential and/or commercial storm water drainage connections.

The designer shall make a complete investigation for the presence of existing residential and/or commercial storm water drainage connections. Quantities for required reconnections/replacements should be listed at the specific locations on the Plan and Profile sheets or may be appropriately tabulated/located elsewhere in the plans.

Delete any of the pipe materials listed if, per City/Village requirements, they are not permitted. The list may also include any other materials permitted/preferred by the City/Village as long as they are specified for use under 611.02 of the specifications. List separately by conduit size and type. Minimally specify six inch diameter pipe sizes. Delete concrete (706.01 or 706.02) conduits for sizes under 12 inches.

Also add CUY-D09 plan note.

CUY-D03

**UNRECORDED ACTIVE SANITARY SEWER CONNECTIONS (10/31/2013)**

UNRECORDED ACTIVE SANITARY SEWER CONNECTIONS DISTURBED BY THE WORK SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY RECONNECTING TO THE EXISTING SANITARY SEWER TO THE SATISFACTION OF THE ENGINEER.

PROVIDE THE ENGINEER WITH A LIST OF ALL UNRECORDED ACTIVE SANITARY SEWER CONNECTIONS DISTURBED BY THE WORK. THE ENGINEER WILL REPORT ALL ACTIVE SANITARY SEWER CONNECTIONS DISTURBED BY THE WORK TO THE CUYAHOGA COUNTY BOARD OF HEALTH.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 706.01 (CLASS 3) OR 706.02 WITH 706.11 JOINTS; 706.08 (EXTRA STRENGTH) WITH 706.12 JOINTS; 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, OR 707.52 (PS 45 MIN.).

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

ITEM 611 - \_\_\_\_ CONDUIT, TYPE B, FOR SANITARY, AS PER PLAN                    \_\_\_\_ FT.  
ITEM 611 - \_\_\_\_ CONDUIT, TYPE C, FOR SANITARY, AS PER PLAN                    \_\_\_\_ FT.

WHEN ENCOUNTERED WITHIN THE SAME TRENCH, THE COST FOR REMOVAL AND DISPOSAL OF THE EXISTING CONDUIT SHALL BE INCLUDED IN THE PAYMENT FOR THE PERTINENT 611 ITEM LISTED ABOVE.

**Designer Note:**    CUY-D03 is the County version of L&D Manual Note D116.

This note is to be used only if there is a possibility that during construction there may be a need for additional active sanitary sewer connections.

The designer shall make a complete investigation for the presence of existing sanitary sewer connections. Quantities for required reconnections/replacements should be listed at the specific locations on the Plan and Profile sheets or may be appropriately tabulated/located elsewhere in the plans.

Delete any of the pipe materials listed if, per City/Village requirements, they are not permitted. The list may also include any other materials permitted/preferred by the City/Village as long as they are specified for use under 611.02

of the specifications. List separately by conduit size and type. Minimally specify six (6) inch diameter pipe sizes. Delete concrete (706.01 and 706.02) conduits for sizes under 12 inches.

Also add CUY-D09 plan note.

CUY-D04

**EXISTING TEST TEES (10/31/2013)**

STORM WATER DRAINAGE, TREATED NON-STORM WATER DRAINAGE AND/OR ACTIVE SANITARY SEWER CONNECTION TEST TEES ENCOUNTERED WITHIN THE CONSTRUCTION LIMITS SHALL BE ADJUSTED TO GRADE, RECONSTRUCTED TO GRADE, ABANDONED WITH NEW TEST TEES INSTALLED AT ALTERNATE LOCATIONS, OR SIMPLY REPLACED, AS REQUIRED AT THE LOCATION SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER; ALL IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF ITEM 611 AND THE DETAILS ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING MD-6C. WHEN IT BECOMES NECESSARY TO PLACE OR REPLACE TEST TEES WITHIN PAVED AREAS SUCH AS DRIVEWAYS, SIDEWALKS, ETC. (RELOCATE OUTSIDE PAVED AREAS WHERE POSSIBLE), THEY SHALL BE SET TO FINISHED PAVED SURFACE GRADE AS DETAILED ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING MD-6C AND/OR AS OTHERWISE SPECIFIED BY THE ENGINEER.

WHEN SIMPLY REPLACING TEST TEES IN THE SAME LOCATION, THE COST FOR REMOVAL AND DISPOSAL OF THE EXISTING TEST TEE SHALL BE INCLUDED IN THE PAYMENT FOR THE NEW TEST TEE.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 202 - ABANDON MISC.: TEST TEE	_____ EACH
ITEM 611 - DRAINAGE STRUCTURE, MISC.: TEST TEE ADJUSTED TO GRADE	_____ EACH
ITEM 611 - DRAINAGE STRUCTURE, MISC.: TEST TEE RECONSTRUCTED TO GRADE	_____ EACH
ITEM 611 - DRAINAGE STRUCTURE, MISC.: TEST TEE, AS PER PLAN	_____ EACH

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

**Designer Note:** Use this note in conjunction with CUY-D01, CUY-D02 and/or CUY-D03.

Based on the designer's thorough investigations/documentated verification, list the items and quantities known to be required at their specific locations on the plans with the associated connection. The items/quantities listed in this plan note are only intended for additional test tees that may be encountered during construction.

Reference MD-6C on the Title Sheet. Also add CUY-D09 plan note.

CUY-D05

**REVIEW OF DRAINAGE FACILITIES (10/31/2013)**

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE COUNTY, REPRESENTATIVES OF THE COUNTY AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE COUNTY.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE COUNTY.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE-MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT OR 611 STRUCTURE ITEMS.

**Designer Note:** CUY-D05 is the County version of L & D Manual Note D114. This note is to be used on projects where existing drainage facilities are to remain in service. Also add ODOT L&D Manual Note D104 where/as applicable.

CUY-D06

**ITEM SPECIAL - MISCELLANEOUS METAL (10/31/2013)**

THE ENGINEER SHALL INSPECT THE EXISTING CASTINGS ON ALL STRUCTURES WITHIN THE WORK LIMITS, EXCEPTING CASTINGS ON STRUCTURES OWNED BY PRIVATE COMPANIES AND CASTINGS ON STRUCTURES TO BE REMOVED AND/OR REPLACED. THOSE CASTINGS THAT THE ENGINEER DETERMINES ARE UNSUITABLE SHALL BE REPLACED. TO PROVIDE FOR THIS CONTINGENCY, AN ESTIMATED QUANTITY OF ITEM SPECIAL - MISCELLANEOUS METAL HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL CASTING MATERIALS SHALL CONFORM TO ITEM 611 OR ITEM 638, IF APPLICABLE, AND HAVE THE PRIOR APPROVAL OF THE ENGINEER.

WHERE IT IS NECESSARY TO REPLACE UNSUITABLE STORM/SANITARY SEWER MANHOLE CASTINGS (FRAMES AND COVERS), THEY SHALL BE REPLACED USING CUYAHOGA COUNTY NO. 9 FRAMES AND NO. 28 COVERS (OR NO.28 SANITARY COVERS FOR SANITARY OR COMBINED SEWERS), AS DETAILED ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING MH-10C.

WHERE THE ENGINEER DETERMINES CATCH BASIN GRATES ENCOUNTERED WITHIN THE WORK ARE NON-BICYCLE/PEDESTRIAN SAFE, THEY SHALL BE REMOVED AND REPLACED WITH THE APPROPRIATE BICYCLE / PEDESTRIAN SAFE GRATES AS AVAILABLE AND RECOMMENDED BY THE VARIOUS CASTING MANUFACTURERS AND APPROVED BY THE ENGINEER.

REGARDLESS OF THEIR CONDITION, ALL EXISTING CUYAHOGA COUNTY 3C CATCH BASIN FRAMES AND GRATES SHALL BE EXAMINED BY THE ENGINEER TO DETERMINE THAT THEY ARE OF THE TYPE SPECIFIED ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING CB-3C (FOUR-SIDED BEARING FRAME AND BICYCLE/PEDESTRIAN SAFE GRATE). ANY THAT ARE NOT SHALL BE REPLACED AND PAID FOR UNDER THIS ITEM.

WHERE ENCOUNTERED/DISTURBED DURING CATCH BASIN RECONSTRUCTION, EXISTING CAST IRON TRAPS SHALL TYPICALLY BE REUSED. IF, IN THE OPINION OF THE ENGINEER, THE EXISTING TRAP IS UNSUITABLE FOR REUSE, THE CONTRACTOR SHALL REPLACE IT. SEE THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING CB-3C S/T FOR APPROPRIATE CAST IRON TRAP TO BE USED ON CUYAHOGA COUNTY NO. 3C CATCH BASINS.

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL, CLEANING, STORAGE AND RESETTING OF ALL EXISTING CASTINGS. CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTINGS AT THE CONTRACTOR'S EXPENSE.

EXCEPT WHERE/IF SPECIFICALLY REQUIRED AND SO SPECIFIED ELSEWHERE IN THE PLANS, THE CONTRACTOR SHALL NOT ORDER ANY OF THE ABOVE CASTINGS UNTIL DIRECTED BY THE ENGINEER, AND IN THE EVENT NO REPLACEMENT CASTINGS ARE REQUIRED, THE ITEM SHALL BE NONPERFORMED.

ALL COST ASSOCIATED WITH FURNISHING ACCEPTABLE NEW CASTING MATERIALS SHALL BE INCLUDED UNDER THIS ITEM. IN ADDITION, THE COST FOR SIMPLY INSTALLING NEW GRATES/COVERS ONLY SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. ALL COST ASSOCIATED WITH SETTING NEW CASTINGS (FRAMES AND COVERS/GRATES) TO GRADE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT STRUCTURE (611) "ADJUSTED TO GRADE, AS PER PLAN" OR "RECONSTRUCTED TO GRADE, AS PER PLAN".

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM SPECIAL - MISCELLANEOUS METAL \_\_\_\_\_ POUND

**Designer Note:** CUY-D06 is the County version of L& D Manual Note D119. Reference CB-3C, CB-3C S/T, MH-10C or MH-11C on the Title Sheet as applicable.

Edit note for job specific requirements. Add, delete or modify paragraphs/language as necessary.

Unless otherwise required by maintaining agency, specify No. 28 sanitary covers for all sanitary or combined sewer manholes.

Include in the plans any Water Department castings known or otherwise anticipated to be required. Where separate water work notes are required, delete the reference to Item 638 and use "Item Special - Miscellaneous Metal Work" in lieu of the above item for all waterwork items.

CUY-D07

**ITEM 611 - STRUCTURES ADJUSTED (RECONSTRUCTED) TO GRADE, AS PER PLAN (10/31/2013)**

**611.10 DRAINAGE STRUCTURE CONSTRUCTION.** EXCEPT AS NOTED BELOW FOR EXISTING PRECAST SANITARY SEWER MANHOLES, STRUCTURES SHALL BE ADJUSTED OR RECONSTRUCTED TO GRADE USING CLAY BRICKS (704.01), CLASS QC 1

CONCRETE (511) AND/OR CONCRETE MORTAR (602), AS NECESSARY, AND BY RESETTING THE EXISTING FRAME IN A BED OF CONCRETE MORTAR OR CLASS QC 1 CONCRETE. EXCEPT FOR EXISTING PRECAST SANITARY SEWER MANHOLES, NO GRADE RINGS OR METAL ADJUSTING RINGS (CASTINGS) ARE PERMITTED. MAXIMUM CONCRETE MORTAR THICKNESS IS 1-1/2".

EXISTING PRECAST SANITARY SEWER MANHOLES SHALL BE RECONSTRUCTED TO GRADE USING A FOUR (4) INCH MINIMUM TO TWELVE (12) INCH MAXIMUM DEPTH OF EXISTING AND/OR PROPOSED GRADE RINGS (706.13) IN LIEU OF BRICK OR CLASS QC 1 CONCRETE. GROUT BETWEEN GRADE RINGS AND ON THE OUTSIDE OF THE GRADE RINGS. SET THE MANHOLE FRAME IN A FINISHED MORTAR BED WITH A FLUSH MORTAR JOINT. WHERE NECESSARY, RECONSTRUCTION WORK SHALL BE ACCOMPLISHED BY THE REMOVAL AND/OR ADDITION OF FOUR (4) FOOT DIAMETER PRECAST MANHOLE RISER SECTIONS (706.13). IN ADDITION, APPROVED CHIMNEY SEALS SHALL BE INSTALLED AFTER THE EXISTING PRECAST SANITARY SEWER MANHOLES HAVE BEEN RECONSTRUCTED TO GRADE.

ITEM 611 - STRUCTURE ADJUST TO GRADE OR RECONSTRUCT TO GRADE WORK SHALL, WHERE REQUIRED, INCLUDE THE REMOVAL AND REPLACEMENT OF ANY EXISTING CONCRETE BLOCKOUT CURB AND/OR PAVEMENT USING MEDIUM SET (CLASS QC MS) CONCRETE OR, IF APPROVED/DIRECTED BY THE ENGINEER, FAST SET (CLASS QC FS) CONCRETE PER 499.03 OF THE SPECIFICATIONS, TO FACILITATE REMOVAL, THE BLOCKOUT PAVEMENTS SHALL BE SAWED FULL DEPTH (PER 255.03) ALONG THE LIMITS OF THEIR REMOVAL UNLESS OTHERWISE DESIGNATED/DIRECTED BY THE ENGINEER. UNLESS OTHERWISE APPROVED/DIRECTED BY THE ENGINEER, BLOCKOUT PAVEMENT AND LOAD TRANSFER DEVICES SHALL BE REPLACED/INSTALLED IN ACCORDANCE WITH THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING(S) BP-2.7C (MANHOLES) AND CB-3C OR OTHER APPROPRIATE CATCH BASIN DRAWING(S). UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER, REPLACE EXCAVATED SUBBASE AND SUBGRADE MATERIALS BELOW THE PROPOSED BLOCKOUT PAVEMENT WITH "ITEM 613-LOW STRENGTH MORTAR BACKFILL MATERIAL, TYPE 1" **EXCEPT THE USE OF FOUNDRY SAND IS STRICTLY PROHIBITED.** ALL COSTS ASSOCIATED WITH THE BLOCKOUT REMOVALS/REPLACEMENTS SHALL BE CONSIDERED INCIDENTAL TO THE PER EACH BID ITEMS.

ALL EXISTING CASTINGS FOR STRUCTURES TO BE ADJUSTED OR RECONSTRUCTED TO GRADE SHALL BE FIELD CHECKED AT THE TIME OF CONSTRUCTION AND MARKED SUITABLE FOR SALVAGE AND REUSE OR REPLACED AS DIRECTED BY THE ENGINEER. UNLESS OTHERWISE INDICATED ON THE PLAN, REPLACEMENT CASTINGS ARE PAID UNDER ITEM SPECIAL – MISCELLANEOUS METAL.

THE FOLLOWING GUIDELINES WERE USED TO DETERMINE THE SPECIFIC PLAN LOCATIONS/QUANTITIES OF THE ITEM 611 ADJUST TO GRADE OR RECONSTRUCT TO GRADE WORK:

1. "ADJUST TO GRADE, AS PER PLAN" INCLUDES ALL WORK SPECIFIED IN 611.10 (D) AS NECESSARY TO RAISE THE EXISTING/NEW CASTING NO MORE THAN ONE (1) FOOT FROM ITS EXISTING ELEVATION OR TO LOWER THE EXISTING/NEW CASTING NO MORE THAN SIX (6) INCHES FROM ITS EXISTING ELEVATION. **IN ADDITION, THIS ITEM INCLUDES ANY SUPPORTING WALL REPAIR WORK NECESSARY, UP TO SIX (6) INCHES BELOW THE TOP OF THE EXISTING SUPPORTING WALL.**

PAYMENT WILL BE MADE UNDER THE APPROPRIATE STRUCTURE (ITEM 611) ADJUSTED TO GRADE, AS PER PLAN.

2. "RECONSTRUCT TO GRADE, AS PER PLAN" INCLUDES ALL WORK SPECIFIED IN 611.10 (C) AND ALSO INCLUDES EXISTING/NEW CASTINGS RAISED MORE THAN ONE (1) FOOT FROM THEIR EXISTING ELEVATION OR LOWERED MORE THAN SIX (6) INCHES FROM THEIR EXISTING ELEVATION.

THE WORK LIMIT SHALL BE SPECIFIED BY THE ENGINEER AND PAYMENT WILL BE MADE UNDER THE APPROPRIATE STRUCTURE (ITEM 611) RECONSTRUCTED TO GRADE, AS PER PLAN.

BASED ON THE ABOVE GUIDELINES, THE ENGINEER WILL EXAMINE EACH STRUCTURE TO ASSURE THAT THE APPROPRIATE ITEM 611 ADJUST TO GRADE OR RECONSTRUCT TO GRADE WORK IS PERFORMED.

"RECONSTRUCT TO GRADE, AS PER PLAN" WORK SHALL NOT BE PERFORMED UNLESS SPECIFICALLY INDICATED IN THE PLANS OR OTHERWISE ORDERED BY THE ENGINEER. ANY SUCH WORK MADE NECESSARY DUE TO THE CONTRACTOR'S NEGLIGENT OPERATIONS, AS DETERMINED BY THE ENGINEER, SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

**Designer Note:** This note is intended for County projects that tabulate the adjust to grade or reconstruct to grade work on the plans. Separately list/quantify "storm", "sanitary" or "water supply" structures in the subsummaries and in the General Summary. Reference BP-2.7C and, if applicable, CB-3C on the Title Sheet. Add CUY-D09 plan note.

For pavement replacement projects, replace the third paragraph with the following:

"UNLESS OTHERWISE APPROVED/DIRECTED BY THE ENGINEER, BLOCKOUT PAVEMENT AND LOAD TRANSFER DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING(S) BP-2.7C (MANHOLES) AND CB-3C OR OTHER APPROPRIATE CATCH BASIN DRAWING(S)."

**STRUCTURES ADJUSTED TO GRADE, RECONSTRUCTED TO GRADE OR REPLACED (10/31/2013)**

ALL ADJUSTMENT, RECONSTRUCTION OR REPLACED WORK, EXCEPT FOR THOSE STRUCTURES OWNED BY PRIVATE COMPANIES, SHALL BE PERFORMED BY THE CONTRACTOR. WHERE APPLICABLE, THE TIME BETWEEN RESETTING THE CASTINGS AND RESURFACING SHALL BE KEPT TO AN ABSOLUTE MINIMUM.

EXCEPT AS NOTED BELOW FOR EXISTING PRECAST SANITARY SEWER MANHOLES, ALL PUBLICALLY OWNED CASTINGS SHALL BE ADJUSTED OR RECONSTRUCTED TO GRADE IN ACCORDANCE WITH 611.10 USING CLAY BRICKS (704.01), CLASS QC 1 CONCRETE (511) AND/OR CONCRETE MORTAR (602), OR PER 638.18 AND AS SPECIFIED BELOW FOR SERVICE BOX AND VALVE BOX ADJUSTMENTS. EXCEPT FOR EXISTING PRECAST SANITARY SEWER MANHOLES, NO GRADE RINGS OR METAL ADJUSTING RINGS (CASTINGS) ARE PERMITTED. MAXIMUM CONCRETE MORTAR THICKNESS IS 1-1/2".

EXISTING PRECAST SANITARY SEWER MANHOLES SHALL BE RECONSTRUCTED TO GRADE USING A FOUR (4) INCH MINIMUM TO TWELVE (12) INCH MAXIMUM DEPTH OF EXISTING AND/OR PROPOSED GRADE RINGS (706.13) IN LIEU OF BRICK OR CLASS QC 1 CONCRETE. GROUT BETWEEN GRADE RINGS AND ON THE OUTSIDE OF THE GRADE RINGS. SET THE MANHOLE FRAME IN A FINISHED MORTAR BED WITH A FLUSH MORTAR JOINT. WHERE NECESSARY, RECONSTRUCTION WORK SHALL BE ACCOMPLISHED BY THE REMOVAL AND/OR ADDITION OF FOUR (4) FOOT DIAMETER PRECAST MANHOLE RISER SECTIONS (706.13). IN ADDITION, APPROVED CHIMNEY SEALS SHALL BE INSTALLED AFTER THE EXISTING PRECAST SANITARY SEWER MANHOLES HAVE BEEN RECONSTRUCTED TO GRADE.

THE CONTRACTOR SHALL RESET EXISTING VALVE BOXES OR EXISTING CURB SHUT-OFF VALVE BOXES TO ESTABLISHED GRADE BY RAISING OR LOWERING THE EXISTING CASTINGS OR BY EITHER ADDING, DELETING OR CUTTING THE APPROPRIATE VALVE BOX STEM SECTIONS. IN RAISING OF THE CASTINGS, NO INSERTS WILL BE PERMITTED. ANY VALVE BOXES OR CURB SHUT-OFF VALVE BOXES FOUND TO BE DAMAGED OR UNSUITABLE FOR REUSE SHALL BE REPLACED BY THE CONTRACTOR AND PAID FOR UNDER ITEM SPECIAL - MISCELLANEOUS METAL. THE CONTRACTOR SHALL PERFORM ALL WORK NECESSARY AS REQUIRED OR AS ORDERED TO COMPLETE THE ITEM.

ADJUST TO GRADE, RECONSTRUCT TO GRADE OR TOTAL REPLACEMENT WORK SHALL, WHERE REQUIRED, INCLUDE THE REMOVAL AND REPLACEMENT OF ANY EXISTING CONCRETE BLOCKOUT CURB AND/OR PAVEMENT USING MEDIUM SET (CLASS QC MS) CONCRETE OR, IF APPROVED/DIRECTED BY THE ENGINEER, FAST SET (CLASS QC FS) CONCRETE PER 499.03 OF THE SPECIFICATIONS. TO FACILITATE REMOVAL, THE BLOCKOUT PAVEMENTS SHALL BE SAWED FULL DEPTH (PER 255.03) ALONG THE LIMITS OF THEIR REMOVAL UNLESS OTHERWISE DESIGNATED/DIRECTED BY THE ENGINEER. UNLESS OTHERWISE APPROVED/DIRECTED BY THE ENGINEER, BLOCKOUT PAVEMENT, REINFORCING STEEL, JOINT MATERIAL AND LOAD TRANSFER DEVICES SHALL BE REPLACED / INSTALLED IN ACCORDANCE WITH THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING(S) BP-2.7C (MANHOLES) AND CB-3C OR OTHER APPROPRIATE CATCH BASIN DRAWING(S). UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER, REPLACE EXCAVATED SUBBASE AND SUBGRADE MATERIALS BELOW THE PROPOSED BLOCKOUT PAVEMENT WITH "ITEM 613-LOW STRENGTH MORTAR BACKFILL MATERIAL, TYPE 1" **EXCEPT THE USE OF FOUNDRY SAND IS STRICTLY PROHIBITED**. ALL COSTS ASSOCIATED WITH THE BLOCKOUT REMOVALS/REPLACEMENTS SHALL BE CONSIDERED INCIDENTAL TO THE PER EACH BID ITEMS.

ALL EXISTING CASTINGS FOR STRUCTURES TO BE ADJUSTED OR RECONSTRUCTED TO GRADE SHALL BE FIELD CHECKED AT THE TIME OF CONSTRUCTION AND MARKED SUITABLE FOR SALVAGE AND REUSE OR REPLACED AS DIRECTED BY THE ENGINEER. UNLESS OTHERWISE INDICATED ON THE PLAN, REPLACEMENT CASTINGS ARE PAID UNDER ITEM SPECIAL - MISCELLANEOUS METAL.

THE ENGINEER WILL DETERMINE THE ITEM 604 WORK REQUIRED BASED ON THE GUIDELINES STIPULATED BELOW:

1. "ADJUST TO GRADE, AS PER PLAN" SHALL INCLUDE ALL WORK SPECIFIED IN 611.10 (D) AS NECESSARY TO RAISE THE EXISTING/NEW CASTING NO MORE THAN ONE (1) FOOT FROM ITS EXISTING ELEVATION OR TO LOWER THE EXISTING/NEW CASTING NO MORE THAN SIX (6) INCHES FROM ITS EXISTING ELEVATION. **IN ADDITION, THIS ITEM WILL INCLUDE ANY SUPPORTING WALL REPAIR WORK NECESSARY, UP TO SIX (6) INCHES BELOW THE TOP OF THE EXISTING SUPPORTING WALL.**

PAYMENT SHALL BE MADE UNDER THE APPROPRIATE STRUCTURE (ITEM 611) ADJUSTED TO GRADE, AS PER PLAN.

2. "RECONSTRUCT TO GRADE, AS PER PLAN" SHALL INCLUDE ALL WORK SPECIFIED IN 611.10 (C) AND SHALL ALSO INCLUDE EXISTING/NEW CASTINGS RAISED MORE THAN ONE (1) FOOT FROM THEIR EXISTING ELEVATION OR LOWERED MORE THAN SIX (6) INCHES FROM THEIR EXISTING ELEVATION.

THE WORK LIMIT SHALL BE SPECIFIED BY THE ENGINEER AND PAYMENT SHALL BE MADE UNDER THE APPROPRIATE STRUCTURE (ITEM 611) RECONSTRUCTED TO GRADE, AS PER PLAN.

ONLY ONE (1) OF THE ABOVE PAYMENT ITEMS MAY BE USED PER STRUCTURE.

"RECONSTRUCT TO GRADE, AS PER PLAN" WORK SHALL NOT BE PERFORMED UNLESS SPECIFICALLY INDICATED IN THE PLANS OR OTHERWISE ORDERED BY THE ENGINEER. ANY SUCH WORK MADE NECESSARY DUE TO THE CONTRACTOR'S NEGLIGENT OPERATIONS, AS DETERMINED BY THE ENGINEER, SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 611 - CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	_____	EACH
ITEM 611 - CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN	_____	EACH
ITEM 611 - MANHOLE ADJUSTED TO GRADE, AS PER PLAN	_____	EACH
ITEM 611 - MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN	_____	EACH
ITEM 638 - VALVE BOX ADJUSTED TO GRADE, AS PER PLAN	_____	EACH
ITEM 638 - SERVICE BOX ADJUSTED TO GRADE, AS PER PLAN	_____	EACH

THE ENGINEER MAY DETERMINE THAT CERTAIN STRUCTURES SHALL BE REPLACED RATHER THAN BEING ADJUSTED OR RECONSTRUCTED. HIS/HER DETERMINATION MAY BE BASED ON EITHER OR BOTH OF THESE JUDGMENTS:

1. THE CONDITION OF THE STRUCTURE.
2. THE COMPARATIVE CONTRACT PRICES OF THE ADJUST TO GRADE, RECONSTRUCT TO GRADE AND REPLACEMENT WORK ITEMS.

WHERE TOTAL REPLACEMENT WORK IS DETERMINED TO BE PRUDENT BY THE ENGINEER, THE EXISTING STRUCTURE SHALL BE COMPLETELY REMOVED AND REPLACED IN KIND WITH A NEW STRUCTURE OF THE TYPE SPECIFIED BY THE ENGINEER AND IN ACCORDANCE WITH ITEM 611. NEW STORM OR SANITARY SEWER MANHOLE CASTINGS SHALL CONFORM TO THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING MH-10C (No. 9 FRAME AND NO. 28 COVER OR NO. 28 SANITARY COVER FOR SANITARY OR COMBINED SEWERS). THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR THIS CONTINGENCY:

ITEM 202 - CATCH BASIN REMOVED	_____	EACH
ITEM 202 - MANHOLE REMOVED	_____	EACH
ITEM 611 - MANHOLE, NO. _____, AS PER PLAN	_____	EACH
ITEM 611 - CATCH BASIN (INLET), NO. _____, AS PER PLAN	_____	EACH
ITEM 611 - CATCH BASIN, CUYAHOGA COUNTY NO. 3 C, AS PER PLAN	_____	EACH

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

THE COST OF REPLACING EXISTING CONDUIT CONNECTIONS, IF REQUIRED, SHALL BE PAID FOR BY SIZE AND TYPE SPECIFIED AND/OR DESIGNATED BY THE ENGINEER. AN ESTIMATED QUANTITY OF THE FOLLOWING IS PROVIDED IN THE GENERAL SUMMARY FOR THIS WORK:

ITEM 202 - PIPE REMOVED, 24" AND UNDER	_____	FT.
ITEM 611 - _____ CONDUIT, TYPE B, (SPECIFY MATERIAL), AS PER PLAN	_____	FT.
ITEM 611 - _____ CONDUIT, TYPE C, (SPECIFY MATERIAL), AS PER PLAN	_____	FT.
ITEM 611 - 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS, AS PER PLAN	_____	FT.

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

**Designer Note:** This is typically used on maintenance resurfacing or rehabilitation and resurfacing projects. Based on the plan note guidelines and field investigations/verification, edit note to reflect items, quantities and language specifically required on each project. Separately list/quantify "storm", "sanitary" or "water supply" structures in the plan note and in the General Summary. Unless otherwise verified by field investigations, typically assume that the number of catch basins requiring reconstruction to grade approximately equals the number of catch basins adjusted to grade. For manholes assume approximately 75% adjusted to grade versus 25% reconstructed to grade. The designer shall determine the appropriate quantities for associated conduit replacements and contingency structure replacements. Typically specify pipe material to match existing. Where requested/required by the City/Village, alternate or additional pipe materials may be specified if said materials are listed for use under Section 611.02 of the specifications. Unless otherwise required by maintaining agency, specify No. 28 sanitary covers for all sanitary or combined sewer manholes. Reference BP-2.7C, MH-10C and CB-3C on the Title Sheet, as applicable. Add CUY-D09 plan note. Where separate waterwork or sanitary sewer notes are required, waterwork and/or sanitary sewer items and plan note language should be deleted from this note and reappear in the waterwork and/or sanitary sewer notes.

CUY-D09

**ITEM 611 - CONDUITS, AS PER PLAN**  
**ITEM 611 - STRUCTURES, AS PER PLAN (10/31/2013)**

IN ADDITION TO THE REQUIREMENTS OF ITEM 611, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING ADDITIONAL RESTRICTIONS SHALL BE MET FOR ITEM 611 - CONDUITS, AS PER PLAN AND ITEM 611 - STRUCTURES, AS PER PLAN:



611.02 (A): NON-REINFORCED CONCRETE PIPE (706.01) AND VITRIFIED CLAY PIPE (706.08) WILL NOT BE USED. ONLY CLASS III MINIMUM FOR REINFORCED CONCRETE CIRCULAR PIPE (706.02) AND CLASS HE-III MINIMUM FOR REINFORCED CONCRETE ELLIPTICAL PIPE (706.04) WILL BE USED.

611.02 (B): MAXIMUM ALLOWABLE SIZE FOR NON-REINFORCED CONCRETE PIPE (706.01) IS 21". ONLY CLASS III MINIMUM FOR REINFORCED CONCRETE CIRCULAR PIPE (706.02) AND CLASS HE-III MINIMUM FOR REINFORCED CONCRETE ELLIPTICAL PIPE (706.04) WILL BE USED. MAXIMUM ALLOWABLE SIZE FOR VITRIFIED CLAY PIPE (706.08) IS 15".

611.02 (C): USE CLASS 3 MINIMUM FOR NON-REINFORCED CONCRETE CIRCULAR PIPE (706.01) WITH A MAXIMUM ALLOWABLE SIZE OF 21". MAXIMUM ALLOWABLE SIZE FOR VITRIFIED CLAY PIPE (706.08) IS 15" AND ONLY EXTRA STRENGTH WILL BE USED.

STORM SEWER MANHOLES CONSTRUCTED FOR THIS PROJECT SHALL HAVE A CUYAHOGA COUNTY NO. 9 FRAME AND NO. 28 COVER, AS DETAILED ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING MH-10C.

STRUCTURAL BACKFILL MATERIAL (703.11) FURNISHED FOR BEDDING AND BACKFILL OPERATIONS SHALL BE LIMITED TO CRUSHED CARBONATE STONE. GRANULAR EMBANKMENT MATERIAL (203.02.R) FURNISHED FOR NON-STRUCTURAL BACKFILL OPERATIONS SHALL BE LIMITED TO NATURAL GRANULAR MATERIAL (203.02.H) AND RECYCLED PORTLAND CEMENT CONCRETE (RPCC). IN ADDITION TO THE REQUIREMENTS OF 703.16, THE USE OF RPCC IS SUBJECT TO THE RESTRICTIONS OF 203.03(B) AND 203.03(E). BEDDING SHALL BE PLACED AND COMPACTED PER 611.06. THE METHOD OF BACKFILLING SHALL BE PER 611.06.

AT THE CONTRACTOR'S OPTION AND WITH THE APPROVAL OF THE MAINTAINING AGENCY, ITEM 613 – LOW STRENGTH MORTAR BACKFILL (TYPE 1), AS PER PLAN MAY BE USED IN LIEU OF OR IN CONJUNCTION WITH THE SPECIFIED STRUCTURAL AND NON-STRUCTURAL BACKFILL MATERIAL. SEE THE "ITEM 613 – LOW STRENGTH MORTAR BACKFILL (TYPE 1), AS PER PLAN" PROPOSAL NOTE CONTAINED IN SECTION 400 OF THE "CUYAHOGA COUNTY ENGINEER SPECIFICATION BOOKLET".

PROVIDE 706.11 JOINTS FOR ALL CONCRETE PIPE (706.01, 706.02, 706.04 AND 706.05) AND FOR ALL PRECAST MANHOLE OR CATCH BASIN SECTIONS. PROVIDE 706.12 JOINTS FOR VITRIFIED CLAY PIPE (706.08 EXTRA STRENGTH).

**Designer Note:** Use this note on all projects involving 611 conduit or 611 structure items. Add "As Per Plan" to the Item 611 conduit and Item 611 structure descriptions.

If sanitary sewers or water mains are included in the plans, the notes pertaining to their construction are required to minimally comply with the above. Since sanitary sewers/water mains may have different bedding requirements than the ODOT Item 611 bedding, the backfill for sanitary sewers/water mains shall be defined to begin immediately above their respective upper limits of bedding material.

When premium backfill is required for all conduit types, replace the word "GRANULAR" with the term "ALL OTHER" in the second sentence of the sixth paragraph.

Modify seventh paragraph as necessary if design requirements mandate the use of low strength mortar backfill.

CUY-D10

**CONTINGENCY ITEMS FOR DRAINING PONDED (TRAPPED) RUNOFF (10/31/2013)**

AS A RESULT OF THE PROPOSED CONSTRUCTION, RAINWATER MAY UNEXPECTEDLY / UNAVOIDABLY POND IN A FEW SPOT LOCATIONS WITHIN THE PROJECT WORK LIMITS / EASEMENTS (i.e., TREE LAWNS, BEHIND SIDEWALK, ADJACENT TO DRIVES/APRONS, ETC.). SUITABLE PROVISIONS FOR COLLECTING, CONVEYING AND DISCHARGING ANY SUCH LOCALIZED PONDING SHALL BE AS DETERMINED / DIRECTED BY THE ENGINEER.

TO PROVIDE FOR THIS CONTINGENCY, THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 611 - 12" CONDUIT, TYPE C, AS PER PLAN	_____	FT.
ITEM 611 - 12" CONDUIT, TYPE B, AS PER PLAN	_____	FT.
ITEM 611 - INLET, SIDE DITCH, AS PER PLAN	_____	EACH
ITEM 611 - CATCH BASIN, NO. 2-2B, AS PER PLAN	_____	EACH

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

**Designer Note:** Use this note where appropriate and edit to include the items and quantities that may be required. If requested by the City/Village, specify proposed pipe material(s) in the pay item description(s) that were approved by the City/Village and which are approved for use under Section 611.02 of the specifications. If approved pipe material listing becomes too lengthy for pay item description, specify pipe materials in a separate paragraph of the plan note. Add CUY-D09 plan note.

CUY-D11

**EXISTING UNDERDRAINS (10/31/2013)**

IT IS INTENDED NOT TO DISTURB THE EXISTING UNDERDRAINS DURING THE CURB AND PAVEMENT REMOVAL AND REPLACEMENT OPERATIONS. FOR INTEGRAL CONCRETE CURB REPLACEMENT SEE "METHOD B" DETAIL ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING MD-1C. ANY EXISTING UNDERDRAIN DAMAGED DURING THE REMOVAL OF EXISTING CURB AND PAVEMENT DUE TO THE CARELESSNESS OF THE CONTRACTOR SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT HIS/HER OWN EXPENSE.

EXISTING UNDERDRAINS WHICH THE ENGINEER DETERMINES ARE ADVERSELY AFFECTED (THROUGH NO FAULT OF THE CONTRACTOR) BY THE CONSTRUCTION OF THIS IMPROVEMENT OR ARE FOUND TO BE OTHERWISE UNSUITABLE SHALL BE REMOVED AND REPLACED, IN KIND (INCLUDING ALL NECESSARY BENDS OR BRANCHES), AT THE SAME TRENCH WIDTH AND DEPTH, UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.

GRANULAR BACKFILL MATERIAL SHALL BE LIMITED TO LIMESTONE.

THE COST FOR REMOVAL AND DISPOSAL OF EXISTING UNDERDRAIN PIPE/OUTLET PIPE IS INCLUDED UNDER THESE ITEMS.

THE FOLLOWING ESTIMATED QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER

ITEM 611 - _____	"CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS, AS PER PLAN	_____ FT.
ITEM 605 - _____	"SHALLOW (BASE) PIPE UNDERDRAINS, _____, AS PER PLAN	_____ FT.
	<b>(MATERIAL TYPE)</b>	

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

**Designer Note:** CUY-D11 is the County version of the L&D Manual Note D123. Edit note to specify "Base" pipe underdrains for depths of 18" or less. This note would not be used if total underdrain replacement is intended. Otherwise, include this note for all projects with existing underdrain. Specify underdrain size and material type to match existing. Edit or delete first paragraph based on job specific requirements. Reference MD-1C on the Title Sheet, if appropriate. Modify pay item description as appropriate to accommodate existing "Deep" or "Unclassified" underdrains.

CUY-D12

**ITEM 605 - X" SHALLOW (BASE) PIPE UNDERDRAINS WITH FABRIC WRAP, AS PER PLAN (10/31/2013)**

THE FOLLOWING PIPE MATERIAL TYPES MAY BE USED FOR SIX (6) INCH PERFORATED UNDERDRAIN PIPE: 706.06, 706.08, 707.31, 707.41, 707.42 (PERFORATED PER 707.31) AND 707.45 (PERFORATED PER 707.31).

THE FOLLOWING SMOOTH INTERIOR-WALLED PIPE MATERIAL TYPES MAY BE USED FOR FOUR (4) INCH PERFORATED UNDERDRAIN PIPE: 706.06, 706.08, 707.41, 707.42 (PERFORATED PER 707.31) AND 707.45 (PERFORATED PER 707.31).

THE SIZE OF UNDERDRAIN PIPE SHALL NOT BE REDUCED FROM THE SIZE SPECIFIED IN THE PLANS/PROPOSAL.

GRANULAR BACKFILL MATERIAL SHALL BE LIMITED TO LIMESTONE.

THE FABRIC WRAP SHALL BE A NON-WOVEN OR MONOFILAMENT WOVEN GEOTEXTILE FABRIC MEETING THE REQUIREMENTS OF AASHTO M 288, TABLE 1 (CLASS 3) AND TABLE 2.

WHEN ENCOUNTERED WITHIN THE PROPOSED UNDERDRAIN TRENCH EXCAVATION, THE COST FOR REMOVAL AND DISPOSAL OF EXISTING UNDERDRAIN PIPE SHALL BE INCLUDED UNDER THIS ITEM.

SEE DETAIL ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING MD-1C.

**Designer Note:** Edit note to specify "Base" pipe underdrains for depths of 18" or less. Edit note for appropriate size of underdrain used in project by deleting appropriate paragraph. Edit pipe material type(s) if City/Village requirements limit said material. If the longitudinal pavement/underdrain grades (slopes) are relatively flat, delete 707.31 from the six (6) inch size pipe listing and add the following sentence to the first paragraph: "WHERE DIRECTED/APPROVED BY THE ENGINEER, 707.31 MAY BE USED FOR RADIUS RETURNS AT INTERSECTIONS". If typical section or plan details sufficiently illustrate underdrain installation, delete last paragraph. Otherwise, reference MD-1C on the Title Sheet. Unless otherwise approved, a pre-pave underdrain installation design is required for total pavement/ underdrain replacement projects and/or new construction projects.

CUY-D13

**WATERWORK (10/31/2013)**

ALL WATERWORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND DRAWINGS OF THE CITY OF CLEVELAND, DEPARTMENT OF PUBLIC UTILITIES, DIVISION OF WATER (C.W.D.), 1201 LAKESIDE AVENUE, CLEVELAND, OHIO (AND THE NOTES & DETAILS SHOWN ON SHEET(S) \_\_\_\_). THE COST OF ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, EXCAVATION, BEDDING AND BACKFILL FOR THE WATER WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR EACH WATER WORK ITEM. THE REPLACEMENT OF PAVEMENT, WALKS, DRIVES, LANDSCAPING AND ALL OTHER WORK EXCEPTING THE "WATERWORK" ITSELF, SHALL BE AS STIPULATED IN THE CONTRACT SPECIFICATIONS.

ALL PERMITS, FEES AND C.W.D. CHARGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THEIR ASSOCIATED COST SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR THE PERTINENT WATERWORK ITEMS. FOR BIDDING PURPOSES, THE CLEVELAND DIVISION OF WATER (CWD) CHARGES AND FEES MAY BE OBTAINED FROM THE DIVISION OF WATER, PERMIT AND SALES SECTION AT (216) 664-2444 X 5203.

**Designer Note:** Additional notes as may be required by C.W.D. shall be added.