Job # J20190718.100

September 22, 2023

Mr. Greg Fedner, PE
Plan Review Section Manager
City of Columbus
1250 Fairwood Avenue
Columbus, Ohio 43206

Re: Trabue Road (FRA-CR27-1077 and FRA-CR27-1089) (3902-E)
Type II Variance Request

Dear Mr. Fedner:

On behalf of the Franklin County Engineers Office, Osborn Engineering is applying for a Type II Variance Request from Section 3.2, "Stormwater Quantity Controls" of the City of Columbus Stormwater Drainage Manual (December 2022).

The Primary Contact for the project owner is as follows:

Franklin County Engineers Office
970 Dublin Road
Columbus, Ohio 43215
614-525-4825

Kailen Akers (kakers@franklincountyengineer.org)

Executive Summary

On behalf of the Franklin County Engineers Office, Osborn Engineering is requesting:

1. Type II Variance Request for not providing stormwater ***quantity*** controls as required by the City of Columbus's Stormwater Drainage Manual (SWDM) dated December 2022.
    a. Section 3.2 – Stormwater Quantity Controls

Site constraints, steep embankments, bridge structures, and limited right-of-way within the project limits prohibit full compliance with the City of Columbus SWDM. In addition, most of the proposed project is within a FEMA Floodway / Floodzone AE or X, and the Columbus SWDM prohibits quantity controls from being placed in these areas. The only areas of the project that are both out of the floodplain and that do not have prohibitively steep slopes are under the existing Scioto Pointe Drive bridge, within the City of Columbus right-of-way. In addition, underground storage systems placed within the public right-of-way must have green infrastructure practice associated with the facility. This further limits the available methods for meeting all requirements of the City of Columbus's SWDM.

The project does provide the required stormwater quality measures in conformance with the Ohio EPA General Permit and ODOT Location and Design Manual. To meet the stormwater quality requirements for the project, a manufactured system (hydro-dynamic separator) will be installed.

The manufactured system will be a pass-through on-line design and will not have a controlled discharge and **is not being designed to provide any storage for stormwater quantity**.

Project funding has been set by grants and loans from MORPC and OPWC, and the FCEO does not have additional funds available to expand the budget. This project began in 2016 and project funding was obtained under the 2012 SWDM in which Section 3.2 states that "A developed or redeveloped property that discharges directly into the Olentangy River or the Scioto River is exempt from meeting stormwater quantity control requirements, provided the following apply: 1. Site (or portion thereof) is located within 1000 feet of the top of the bank of the river." In addition, Section 3.2.5 (2012 SWDM) states that "underground storage facilities shall not be used in instances where the City is to own or operate the facility." The assumption when applying for funding was that stormwater detention would not be necessary under the 2012 SWDM. The BMPs as required by ODOT and the Ohio EPA are covered under the requested funding.

Project Description

The project consists of the improvement of two bridges on Trabue Road between Lake Shore Drive and Riverside Drive in the City of Columbus. The western bridge (FRA-CR27-1077) carries Trabue Road over the Scioto River, and the eastern bridge (FRA-CR27-1089) carries Trabue Road over Scioto Pointe Drive. Along with various work to rehabilitate the structures, each bridge will be widened to allow for construction of a shared-use path on the north side and a sidewalk on the south side. The Scioto River bridge will also be widened to allow for a left turn lane to be constructed across the entire structure. The roadway west of the Scioto River bridge and between the bridges will also be widened and the shared use path and sidewalk installed. The project will add approximately 0.6 acres of impervious area within the existing Right of Way of Trabue Road, all of which will discharge either directly or through the storm sewer drainage system into the Scioto River.

The existing storm sewers that collect runoff from Trabue Road were installed with the original bridge project in 1971 by Franklin County. All existing storm sewers are within the existing right-of-way of Trabue Road, therefore are believed to be publicly owned. The original construction Plan and Profile and Title Sheets are included in Appendix C as reference.

The project is expected to be bid/awarded in Fall 2023, with construction beginning Spring 2024.

Existing Right-of-Way

The area adjacent to the project within the existing Right of Way consists of paved roadway, with approximate 2:1 slopes to existing ditches or directly into the Scioto River. Private property along the existing Right of Way within the flatter areas is primarily developed, with residences and commercial structures.

The Project Site Plan, showing the existing Right of Way and contours, is included as Figure 1 in Appendix A.

The existing right-of-way, adjacent property lines, and project area are also depicted in the following image:

Trabue Road Limits

Existing Right-of-Way

Scioto River

Proposed Project Stormwater Quality:

Please note that the purpose of this Section is to provide a brief analysis of the storm water quality and BMPs that are included on the Project and is for information only, **no variance is being requested as it relates to storm water quality**. The required storm water quality and BMP requirements are being fully met for this project as noted within this section.

The Site Data for this project is summarized as follows:

Total area of Project in R/W	7.4 ac
Project Earth Disturbing Activities	3.9 ac
Contractor Earth Disturbing Activities	0.25 ac
NOI Earth Disturbing Activities	4.15 ac

As per Part III.G.2.e.vi of Ohio EPA Permit No. OHC000006, roadway improvement projects by public entities may implement Post-Construction BMPs in compliance with the current version of the ODOT Location and Design Volume Two Drainage Design. For this project, a manufactured system conforming to ODOT Supplemental Specifications 895 and 995 and Section 1113.1 of the ODOT Location and Design Manual Vol. 2, with flow being pretreated by a grassed swale, is proposed to meet the Stormwater Quality requirements of the Ohio EPA General Permit. The construction plans for this Project provide plans and details of the Post-Construction BMPs being provided, and a Stormwater Control Practice Maintenance Plan will be prepared and submitted with the plans.

The manufactured system will be provided to meet stormwater quality requirements only. The system will be a pass-through on-line design and will not have a controlled discharge and is not being designed to provide any storage for stormwater quantity.

Type II Variance Request for not providing stormwater quantity controls as required in *Section 3.2 - Stormwater Quantity Controls* of the City of Columbus Stormwater Drainage Manual (SWDM) (December 2022):

SWDM Acceptable Stormwater Control Methods

Table 3-2 of the Columbus SWDM contains a list of post-construction stormwater controls that are acceptable to be used for quantity control in the City. These controls were reviewed to determined which ones, if any, could be used as detention on this project. The following table provides an analysis of why each of the allowable Stormwater Quantity Controls were not considered as being practical for this project:

SWDM Section	SCP Type	Reasons SCP is not practical for this project
3.4.1	Wet and Dry Detention Basins	• Lack of available level area within project limits to construct a basin capable of ponding or holding water.
3.4.2	Parking Lot Storage	• No available parking lots within Trabue Road Right-of-Way • All private parking lots are located at the high point of the drainage area and would require land acquisition from private ownership
3.4.3	Underground Storage	• SWDM states that underground storage systems must be associated with a green infrastructure practice. • SWDM also states that the use of over-sized storm sewer pipes within the public right-of-way is not permitted.
3.4.4 & 3.4.5	Rooftop Controls	• No available building to install green or blue roofs within or adjacent to the Trabue Road Right-of-Way
3.4.6	Permeable Pavement	• SWDM refers to the Ohio Rainwater and Land Development Manual for permeable pavement, which states that “pervious pavement typically is not suitable for areas…such as busy roadways”, and states that pervious pavement is suited for parking lanes on roadways. There are no parking lanes being provided on Trabue Road. • Permeable pavement installed on the asphalt shared use path and/or concrete sidewalk was not considered due to the City of Columbus’ position that they would not maintain a permeable pavement SUP or sidewalk. The Franklin County Engineer’s Office also noted that they do not have the equipment available to perform this maintenance. This correspondence from the City DPS and FCEO has been included in Appendix B.

SWDM Section	SCP Type	Reasons SCP is not practical for this project
3.4.7	Rainwater Harvesting	• SWDM refers to the Ohio Rainwater and Land Development Manual for rainwater harvesting. This control captures runoff, typically from roofs, in a storage reservoir. As noted, there are no available building roofs to harvest water from within or adjacent to the Trabue Road right-of-way
3.4.8	Infiltration Basin (SCP not acceptable for Quantity Control)	• Lack of available level area within project limits to construct an infiltration basin.
3.4.9 3.4.10	Constructed Wetlands Shallow Constructed Wetlands	• Lack of available level area within project limits to construct wetlands capable of ponding or holding water.
3.4.11	Bioretention Facilities	• Lack of available level area within project limits to construct a bioretention facility capable of ponding or holding water. (approximately 3500 SF would be required for a bioretention facility)
3.4.12	Sand Filters (SCP not acceptable for Quantity Control)	• Lack of available level area within project limits to construct sand filters.
3.4.13	Vegetated Filter Strips (SCP not acceptable for quantity control)	• Typically used as a pre-treatment practice and not generally allowed as a primary water quality control.

In review of the above acceptable stormwater control methods, it was concluded that full compliance with the SWDM would not be achievable for this project. Therefore, ***a Type II Variance for not providing stormwater quantity controls as required in Section 3.2 – Stormwater Quantity Controls of the City of Columbus Stormwater Drainage Manual (SWDM) is being requested***.

As required by the SWDM, this application for a variance request includes supporting information for 1) full compliance, 2) minimal impact and 3) preferred alternate.

1) FULL COMPLIANCE ALTERNATIVE:
   - Full compliance to the SWDM is not practical or cost-effective – refer to the following Section of this document.
2) MINIMAL IMPACT ALTERNATIVE:
   - Variance would be required for not meeting the requirements of:
     - Section 3.4.3.1.a Underground Storage – green infrastructure requirement.
     - Section 3.4.3.1.b. Underground Storage – use of oversized sewer in R/W
3) PREFERRED ALTERNATIVE:
   - Variance required for not meeting the requirements of:
     - Section 3.2 - Stormwater Quantity Control

Alternatives Discussion

Full Compliance Alternative: As noted in the table in the SWDM Acceptable Stormwater Control Methods section above, the available options to provide stormwater quantity control in full compliance with the Columbus SWDM are very limited. The use of underground storage in accordance with Section 3.4.3 was considered the only feasible option.

However, Section 3.4.3.1 of the SWDM provides conditions on the usage of underground storage, including that the "function of the facility is associated with a green infrastructure practice." Table 3-2 includes the post-construction stormwater controls that can provide Green Infrastructure, as follows:

- Shallow Constructed Wetland.
- Permeable Pavement.
- Bioretention
- Green Roof
- Rainwater Harvesting

All these Stormwater Control Practices are not practical for this project as noted in the above table.

Acquisition of private property to provide a location to install a stormwater quantity control practice and/or green infrastructure (such as bioretention) was considered. All the adjacent properties are developed with commercial or residential structures, including parking lots on the commercial sites with minimal grassed land available for green infrastructure. A search of the Franklin County Auditor GIS site found that the adjacent properties where the green infrastructure could be constructed are appraised as follows:

- Parcel 010-24373, southeast corner of Trabue Road and Lake Shore Drive (residence): $557,400.
- Parcel 070-007625, northwest corner of Trabue Road and Riverside Drive (Domino's Pizza): $1,164,000.
- Parcel 070-012897, southwest corner of Trabue Road and Riverside Drive (Office Building): $814,000.

These costs do not include any expenses to prepare the site, such as demolition, grading, construction of the green infrastructure, etc.

Therefore, due to the lack of available practical and cost-effective options, full compliance with the City of Columbus SWDM is not feasible.

Since the Full Compliance Alternative is not feasible and does not contain any improvements to be shown, an exhibit showing this Alternative has not been prepared or included with this application.

Minimal Impact Alternative: The minimal impact alternative will provide stormwater detention as required per SWDM in over-sized storm sewer pipes. The Minimal Impact Alternative would require a variance for not meeting the requirements of the following sections of the SWDM:

Section 3.4.3.1.a Underground Storage – green infrastructure requirement.
Section 3.4.3.1.b. Underground Storage – use of oversized sewer in R/W

The minimal impact alternative consists of a series of underground storm sewer pipes installed under Trabue Road within the roadway pavement limits. This approach was chosen due to amount of impervious surface being installed with the project that cannot be retained before discharging (bridge scuppers, path and walk between the bridges, etc.), and the lack of level areas within the Right of Way where a conventional detention basin can be constructed.

Since most of the new impervious surface would discharge unretained into the River, under this alternative, the stormwater from the existing and proposed catch basins along Trabue Road will be routed into new underground storage systems consisting of various sized detention pipes, stored, and then released through orifices to the Scioto River. Sumps and access points would be installed in the systems in accordance with the 2022 SWDM Section 3.4.3.3. The layout of detention structures is included in Appendix A as *Figure 2 – Minimal Impact Alternative* and summarized as follows:

1) **Storage System No. 1:** West of the Scioto River bridge, the existing catch basins along the north side of the pavement would be connected to a 48-inch diameter underground storage chamber. The stormwater would be stored within this chamber and discharge through a 2-inch diameter orifice to the catch basin on the southwest corner of the bridge.
2) **Storage System No. 2:** Between the Scioto River bridge and the Scioto Pointe Drive bridge, all the new catch basins on both sides of the street would be connected to a 72-inch diameter underground storage chamber. The stormwater would be stored within this chamber and discharge through a 2-inch diameter orifice to a 12-inch storm conduit that will discharge to the existing ditch on the south side.
3) **Storage System No. 3:** East of the Scioto Pointe Drive bridge, all the existing catch basins on both sides of the street would be disconnected from their existing discharge pipes and reconnected to a 72-inch diameter underground storage chamber. The stormwater would be stored within this chamber and discharge through a 2-inch diameter orifice to a 12-inch storm conduit that will discharge to the existing ditch on the south side. Under this alternative, the existing storm sewer on the north side of Trabue Road that is carrying the off-site flow from Riverside Drive would be rerouted into the storage chamber and released unretained through a weir at the outlet.

The sizing of the underground storage systems was determined using the critical storm method and the maximum allowable flow rates for the various storms as determined by the Columbus Stormwater Design Manual. When sizing the storage pipes, the sizes of the orifices were kept to even ½ inch diameter increments and the pipe lengths were kept to even 5-foot lengths to help in the constructability of the outlets. This created available storage volumes that are slightly larger than the storage that is required for the 100-year storm event. The storage has been optimized to

help reduce the costs associated with the underground storage, while still maintaining a practical, constructible design.

STORMWATER DETENTION TABLE

Total Volume Required (UNITS)	Volume Provided			
	Storage System No. 1	Storage System No. 2	Storage System No. 3	Total
15,495 cf	1,571 cf	5,656 cf	9,898 cf	17,125 cf

The critical storm calculations are summarized as follows:

CRITICAL STORM SUMMARY TABLE

1 YR PRE-DEVELOPMENT STORM RUNOFF VOLUME	17,377 cf
1 YR POST-DEVELOPMENT STORM RUNOFF VOLUME	20,780 cf
VOLUME INCREASE	19.6%
CRITICAL STORM	2-year

STORMWATER RUNOFF SUMMARY TABLE

STORM EVENT	PRE-DEVELOPMENT PEAK FLOW	POST-DEVELOPMENT PEAK FLOW	PROP. ALLOWABLE RELEASE RATE	POST-DEVELOPMENT RELEASE RATE
1-YR	7.2 CFS	8.6 CFS	7.2 CFS	See "Post-Development Release Rate Table"
2-YR	9.8 CFS	11.3 CFS	7.2 CFS*	
5-YR	13.6 CFS	15.3 CFS	13.6 CFS	
10-YR	16.8 CFS	18.5 CFS	16.8 CFS	
25-YR	21.4 CFS	23.1 CFS	16.8 CFS	
50-YR	25.2 CFS	26.9 CFS	16.8 CFS	
100-YR	29.2 CFS	30.9 CFS	16.8 CFS**	

* = Critical year storm event discharge rate

** = As per Columbus Stormwater Drainage Manual, the peak runoff rate during 100-year storm event shall be released at a rate less than or equal to the peak runoff rate during the 10-year storm. The total maximum storage required for this release rate is 15,495 cubic feet, spread over the three storage systems.

Using the proposed design shown in Appendix A; Figure 2 – Minimal Impact Alternative, the total Post-Development Release Rates from the site during the various storm events, along with the comparison to the allowable rate for that event, is summarized as follows:

POST-DEVELOPMENT RELEASE RATE SUMMARY TABLE

STORM EVENT	POST-DEVELOPMENT PEAK FLOWS						ALLOW. RELEASE RATE
	West of River (unretained)	Underground Storage System Release Rates			East of River (unretained)	Total Flow	
		1	2	3			
1-YR	1.7 cfs	0.1 cfs	0.1 cfs	0.2 cfs	1.2 cfs	3.3 cfs	7.2 CFS
2-YR	2.3 cfs	0.1 cfs	0.2 cfs	0.2 cfs	2.0 cfs	4.7 cfs	7.2 CFS
5-YR	3.2 cfs	0.1 cfs	0.2 cfs	0.2 cfs	3.3 cfs	6.9 cfs	13.6 CFS
10-YR	4.0 cfs	0.1 cfs	0.2 cfs	0.2 cfs	4.4 cfs	8.7 cfs	16.8 CFS
25-YR	5.0 cfs	0.2 cfs	0.2 cfs	0.2 cfs	6.1 cfs	11.5 cfs	16.8 CFS
50-YR	5.9 cfs	0.2 cfs	0.2 cfs	0.2 cfs	7.5 cfs	13.4 cfs	16.8 CFS
100-YR	6.9 cfs	0.2 cfs	0.2 cfs	0.2 cfs	9.1 cfs	16.3 cfs	16.8 CFS

The estimated cost to install the necessary structures to provide the detention required by the Manual, including the conduits needed to re-route the existing catch basins and storm sewers and replacing pavement outside of the locations that are being replaced or installed as part of this project, is summarized as follows:

ESTIMATED CONSTRUCTION COST FOR MINIMAL IMPACT ALTERNATIVE

Item	Quantity	Unit Cost	Total Cost
12” Conduit, Type B	748 ft	$108/ft	$80,784.00
12” Conduit, Type C	84 ft	$78/ft	$6,552.00
48” Conduit, Type B	125 ft	$335/ft	$41,875.00
72” Conduit, Type B	550 ft	$650/ft	$357,500.00
Manholes	12 ea	$3800/ea	$45,600.00
Pavement Replacement	800 SY	$100/SY	$80,000.00
SUBTOTAL, ESTIMATED COST FOR MINIMAL IMPACT ALTERNATIVE =			**$612,311.00**
+ 8.70% Contingency =			**$53,271.06**
TOTAL =			**$665,582.06**

The current construction cost estimate for the project is $11,038,693.51. The installation of stormwater controls described for the Minimal Impact Alternative will increase the construction cost estimate by about 6% of the current cost. As per the FCEO, the project funding has been set by grants and loans from MORPC and OPWC; the FCEO does not have additional funds available to expand the budget.

This project began in 2016, when it was Declared Necessary by the County Commissioners. Funding was applied for at this time, and the preliminary investigation and studies began in 2019. At the time of funding applications, the 2012 Stormwater Design Manual was still in place and noted in the Executive Summary, Section 3.2 states that “A developed or redeveloped property that discharges directly into the Olentangy River or the Scioto River is exempt from meeting stormwater quantity control requirements, provided the following apply: 1. Site (or portion thereof) is located within 1000 feet of the top of the bank of the river.” In addition, Section 3.2.5 (2012 SWDM) states that “Underground storage facilities shall not be used in instances where the City

is to own or operate the facility," and due to the project location, the only area outside the floodplain that is suitable for stormwater detention is under the existing roadway. Due to these limitations, the assumption when applying for funding was that underground stormwater detention would not be necessary or feasible. Therefore, the project would be designed to meet ODOT and Ohio EPA stormwater requirements. The BMPs as required by ODOT and the Ohio EPA are covered under the requested funding.

In summary, the Minimal Impact Alternative is not practical due to the increased maintenance requirements (periodic cleaning of the sump, inspection, maintenance of the outlet orifice, need for lane closures during system maintenance, etc.), and significant increased costs of over $665,000 to the project at construction, and additional on-going maintenance costs for the remainder of the system's lifecycle.

The Minimum Impact Alternative exhibit is included in Appendix A as Figure 2 – Minimal Impact Alternative.

Preferred Alternative: The preferred alternative for this project will not provide any stormwater quantity controls. The Preferred Alternative requires a Type II Variance for not meeting the requirements of *Section 3.2 – Stormwater Quantity Controls* of the City of Columbus SWDM.

This variance request is justified by the following reasons:

- As noted above, the Full Compliance Alternative is not feasible due to the lack of available practical, cost-effective options.
- The Minimal Impact Alternative will significantly increase project costs and provides long-term operational and maintenance concerns.
- The project funding has been set by grants and loans from MORPC and OPWC and the FCEO does not have additional funds available to expand the budget.
- The Franklin County Engineers Office reached out to the Franklin County Metroparks to determine if there was an opportunity for the Metroparks to provide off-site stormwater capacity within the watershed area. The response from Steven Studenmund, Metropark Planning & Design Manager, was that the Metroparks did not have any additional capacity in their stormwater plan. The email correspondence between the County Engineers office and the County Metroparks is included in Appendix B.
- The project is adjacent to the Scioto River and all stormwater discharges into the river. It is expected that during storm events that the peak discharge from the Trabue Road project will be over before the peak flow of the Scioto River reaches the project area. Therefore, no negative impacts are anticipated within the existing watershed as a result of this project.
- The widening of the asphalt pavement produced storm water pavement spreads that exceeded the SWDM. Additional catch basins and storm sewer outlets for these structures were provided to reduce this pavement spread to meet SWDM criteria. These improvements were required because of the additional paved surface discharging to the curb or barrier wall and would have been required regardless of whether detention was provided or not.

- The existing storm sewers that the new drainage structures would tie into were checked and have enough capacity to carry the additional discharge created by widening the pavement.

The Preferred Alternative exhibit is included in Appendix A as Figure 3 – Preferred Alternative.

Conclusion

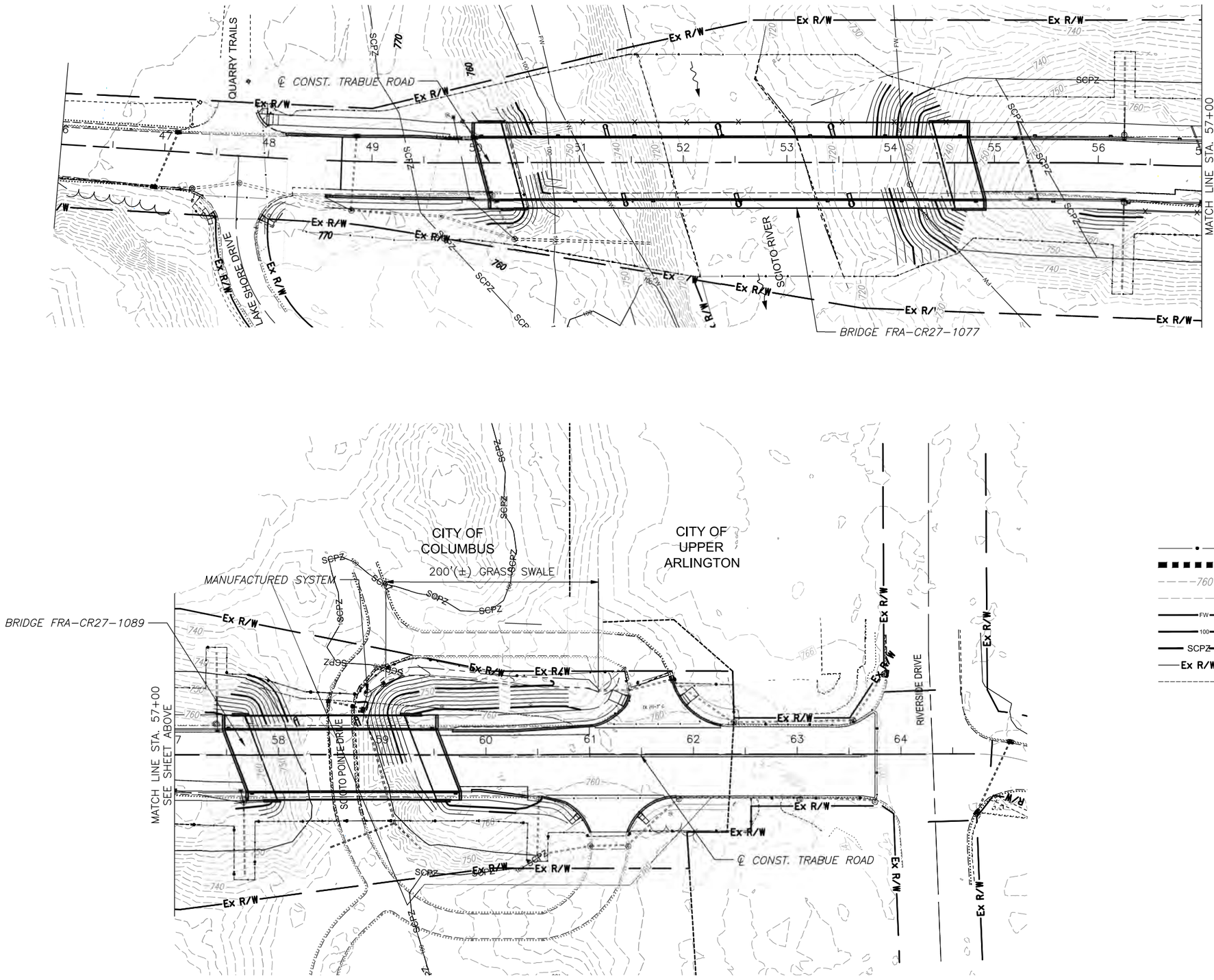
The Franklin County Engineers Office and Osborn Engineering respectfully requests the Variance Committee's review and approval of the **Preferred Alternative for the Type II Variance Request for not providing stormwater quantity controls as required in Section 3.2 – Stormwater Quantity Controls of the 2022 SWDM.** Please provide comments at your earliest convenience. If you have any questions or need any further information, please do not hesitate to contact me directly at (330) 535-3132 x14006 or at dphifer@osborn-eng.com.

Sincerely,
OSBORN ENGINEERING

Donald Phifer

Donald R. Phifer, PE
Senior Roadway and Traffic Engineer

APPENDIX A



LEGEND

- DITCH INLET
- CATCH BASIN
- EXISTING CATCH BASIN
- MANHOLE
- CONSTRUCTION LIMIT
- EARTH DISTURBANCE LIMIT
- 760 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- FW REGULATORY FLOODWAY
- 100 100-YEAR FLOODPLAIN
- SCPZ STREAM CORRIDOR PROTECTION ZONE
- Ex R/W EXISTING RIGHT OF WAY
- CORPORATION LINE

FIGURE 1
EXISTING PROJECT SITE PLAN

CALCULATED DRP | CHECKED DJG

HORIZONTAL SCALE IN FEET
0 30 60 120

PROJECT SITE PLAN

FRA-CR 27-10.77 & FRA-CR 27-10.89
FRA. CO. RD. NO. 27

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251

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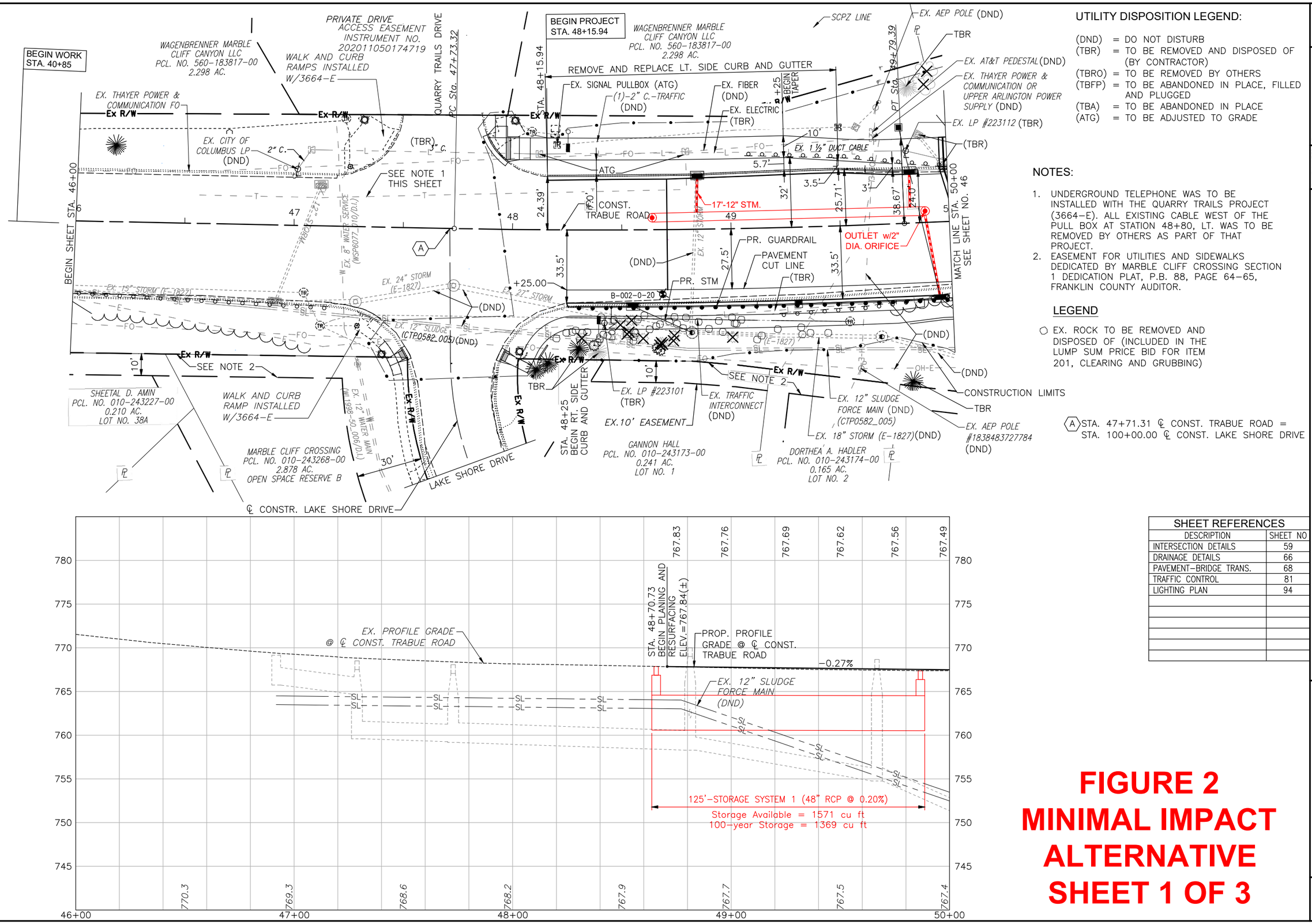

UTILITY DISPOSITION LEGEND:

(DND)	=	DO NOT DISTURB
(TBR)	=	TO BE REMOVED AND DISPOSED OF (BY CONTRACTOR)
(TBRO)	=	TO BE REMOVED BY OTHERS
(TBFP)	=	TO BE ABANDONED IN PLACE, FILLED AND PLUGGED
(TBA)	=	TO BE ABANDONED IN PLACE
(ATG)	=	TO BE ADJUSTED TO GRADE

NOTES:

1. UNDERGROUND TELEPHONE WAS TO BE INSTALLED WITH THE QUARRY TRAILS PROJECT (3664-E). ALL EXISTING CABLE WEST OF THE PULL BOX AT STATION 48+80, LT. WAS TO BE REMOVED BY OTHERS AS PART OF THAT PROJECT.
2. EASEMENT FOR UTILITIES AND SIDEWALKS DEDICATED BY MARBLE CLIFF CROSSING SECTION 1 DEDICATION PLAT, P.B. 88, PAGE 64-65, FRANKLIN COUNTY AUDITOR.

LEGEND

○ EX. ROCK TO BE REMOVED AND DISPOSED OF (INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING)

Ⓐ STA. 47+71.31 ℄ CONST. TRABUE ROAD = STA. 100+00.00 ℄ CONST. LAKE SHORE DRIVE

SHEET REFERENCES	
DESCRIPTION	SHEET NO
INTERSECTION DETAILS	59
DRAINAGE DETAILS	66
PAVEMENT-BRIDGE TRANS.	68
TRAFFIC CONTROL	81
LIGHTING PLAN	94

FIGURE 2
MINIMAL IMPACT ALTERNATIVE
SHEET 1 OF 3

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED DRP CHECKED DJG

PLAN AND PROFILE - TRABUE ROAD STA. 46+00 TO STA. 50+00

FRA-CR 27-10.77 & FRA-CR 27-10.89
FRA. CO. RD. NO. 27

25
251

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*=ITEM ALREADY INCLUDED IN TRABUE ROAD DESIGN

END RETAINING WALL STA. 57+55.67

RETAINING WALL NO. 1 (SEE SHEET NO. 103–104)

100–YEAR FLOODPLAIN LINE

EX. 8" WATER MAIN (WL2001–07–006) (TBR)

CONSTRUCTION LIMITS

LANE WOODS MASTER ASSOCIATION PCL. NO. 580–259058–00 3.132 AC. D.B. 98, PG. 9, RESERVE "A"

SCIOTO POINTE DRIVE

Ex R/W

EX. LP #223109 (TBR)

EX. LP #223110 (TBR)

R–001–0–22

PC Sta. 55+65.65

PRT Sta. 56+40.30

PT Sta. 57+00.00

EX. 12" STORM (CC 7539)

EX. 1 ½" DUCT CABLE

R–006–0–22

R–005–0–22

R–004–0–22

R–007–0–22

R–008–0–22

B–012–0–20

B–007–0–20

B–006–0–20

B–005–0–20

C–8

C–7

C–2

C–1

PR. 12" STM*

PAVEMENT CUT LINE

CONST. TRABUE ROAD

116'–12" STM.

48'–12" STM.

76'–12" STM.

84'–12" STM.

OUTLET w/2" DIA. ORIFICE

PR. STM*

BEGIN APPROACH SLAB STA. 57+57.57

BEGIN APPROACH SLAB STA. 59+35.89

END APPROACH SLAB STA. 57+82.57

END APPROACH SLAB STA. 59+60.89

2" CONDUIT (LIGHT.) (TBR)

1 ½" DUCT CABLE (LIGHT.) (TBR)

EX. LP #223104 (TBR)

EX. LP #223105 (TBR)

CITY OF COLUMBUS POWER LIGHTING PULLBOX (TBR)

END RETAINING WALL STA. 56+00.00

RETAINING WALL NO. 2 (SEE SHEET NO. 105–106)

MATCH LINE STA. 55+00 SEE SHEET NO. 46

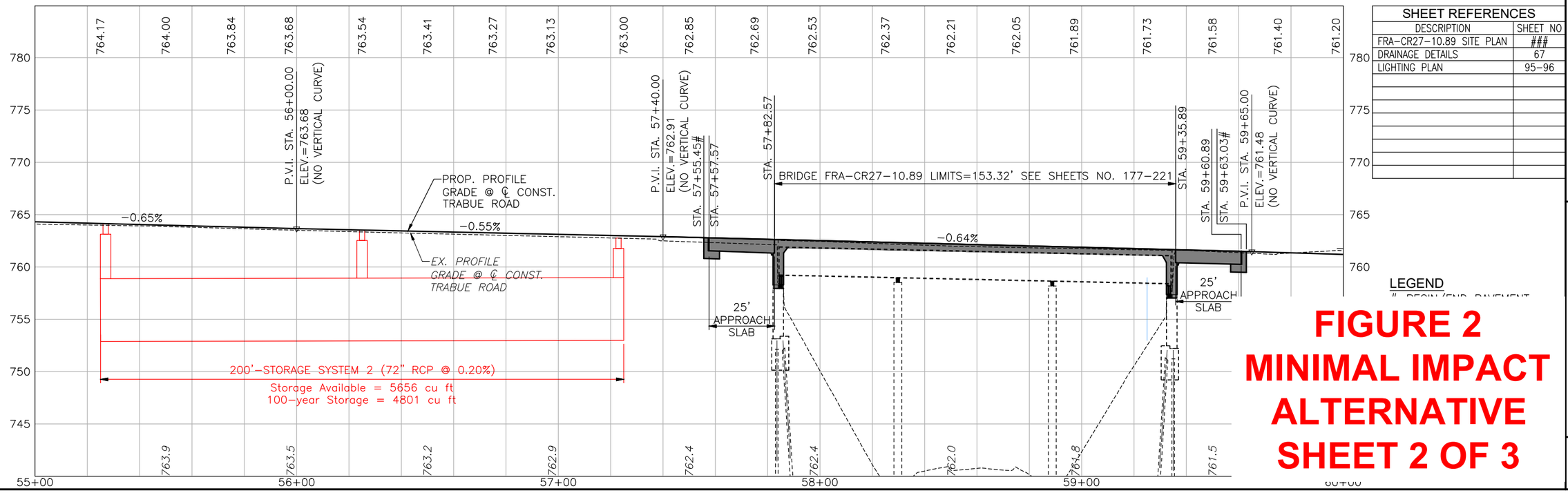
MATCH LINE STA. 60+00 SEE SHEET NO. 48

STA. 59+95

56+75

UTILITY DISPOSITION LEGEND:

(DND) = DO NOT DISTURB
(TBR) = TO BE REMOVED AND DISPOSED OF (BY CONTRACTOR)
(TBRO) = TO BE REMOVED BY OTHERS
(TBFP) = TO BE ABANDONED IN PLACE, FILLED AND PLUGGED
(TBA) = TO BE ABANDONED IN PLACE



SHEET REFERENCES	
DESCRIPTION	SHEET NO
FRA–CR27–10.89 SITE PLAN	###
DRAINAGE DETAILS	67
LIGHTING PLAN	95–96

LEGEND

FIGURE 2
MINIMAL IMPACT ALTERNATIVE
SHEET 2 OF 3

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED DRP CHECKED DJG

PLAN AND PROFILE - TRABUE ROAD
STA. 55+00 TO STA. 60+00

FRA-CR 27-10.77 & FRA-CR 27-10.89
FRA. CO. RD. NO. 27

27
251

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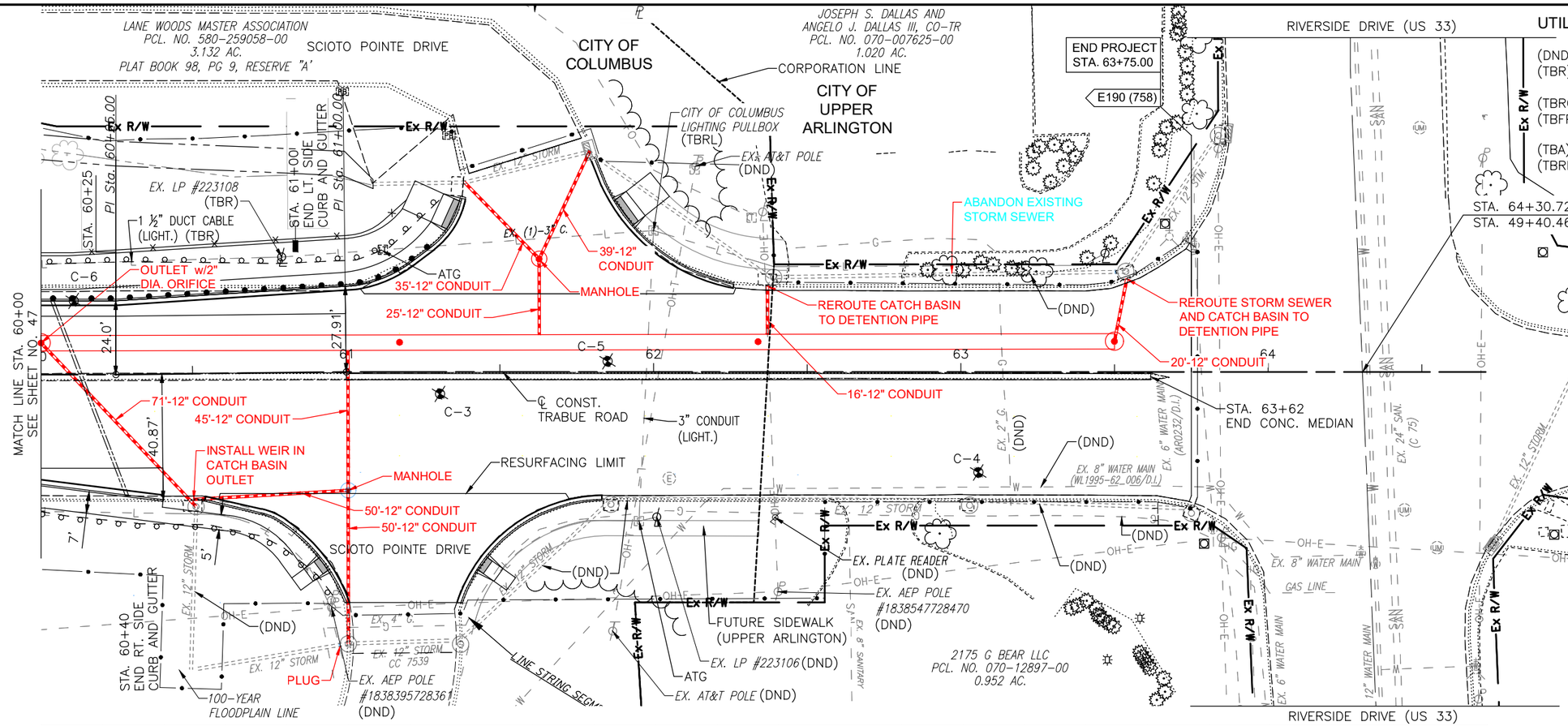

SHEET REFERENCES	
DESCRIPTION	SHEET NO
INTERSECTION DETAILS	60
LIGHTING PLAN	96-97

FIGURE 2
MINIMAL IMPACT ALTERNATIVE
SHEET 3 OF 3

PLAN AND PROFILE - TRABUE ROAD
STA. 60+00 TO RIVERSIDE DRIVE

FRA-CR 27-10.77 & FRA-CR 27-10.89
FRA. CO. RD. NO. 27

28
251

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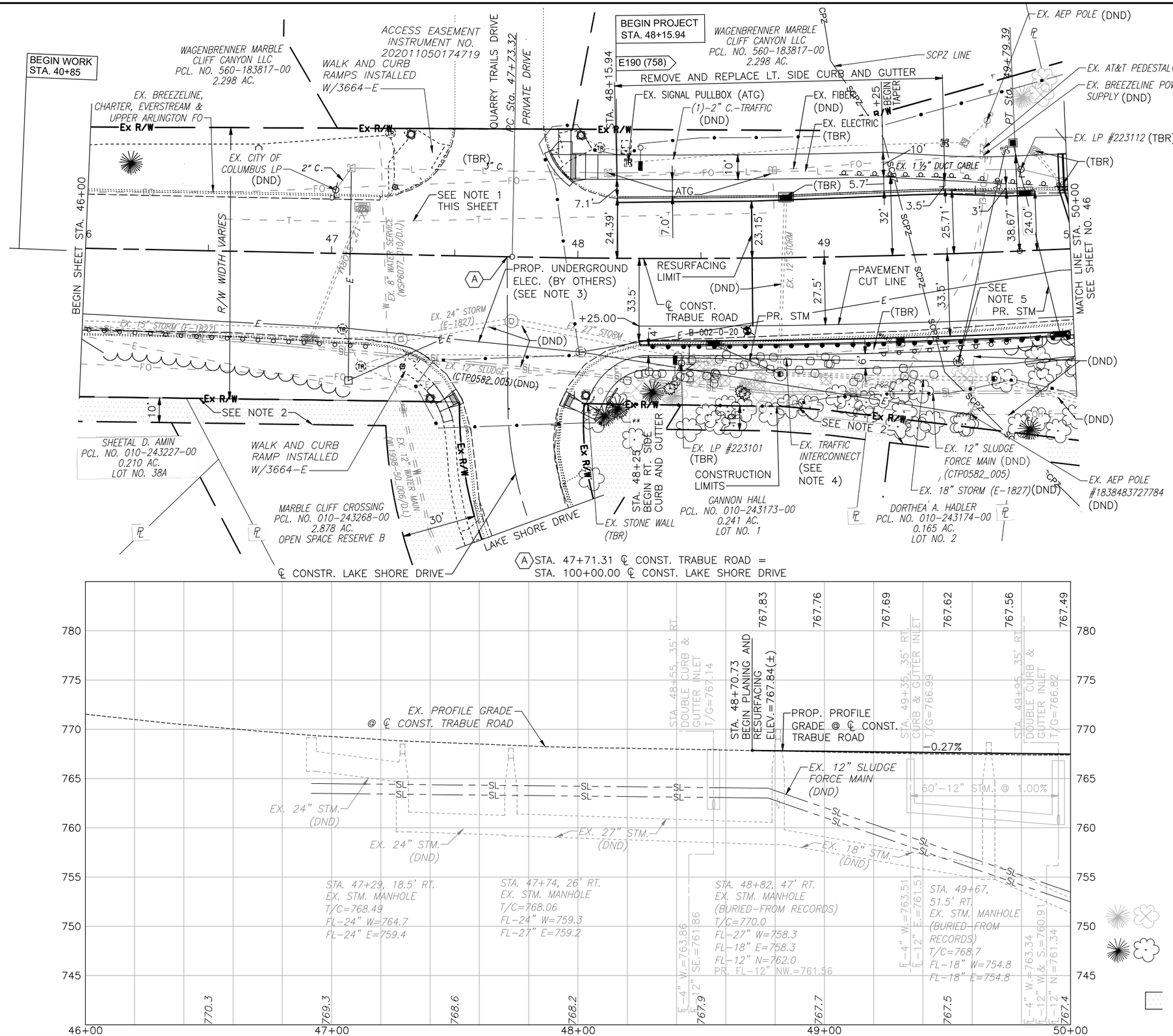

UTILITY DISPOSITION LEGEND:

(DND)	=	DO NOT DISTURB
(TBR)	=	TO BE REMOVED AND DISPOSED OF (BY CONTRACTOR)
(TBRO)	=	TO BE REMOVED BY OTHERS
(TBFP)	=	TO BE ABANDONED IN PLACE, FILLED AND PLUGGED
(TBA)	=	TO BE ABANDONED IN PLACE
(ATG)	=	TO BE ADJUSTED TO GRADE
(TBRLO)	=	TO BE RELOCATED BY OTHERS

NOTES:

1. UNDERGROUND TELEPHONE WAS TO BE INSTALLED WITH THE QUARRY TRAILS PROJECT (3664-E). ALL EXISTING CABLE WEST OF THE PULL BOX AT STATION 48+80, LT. WAS TO BE REMOVED BY OTHERS AS PART OF THAT PROJECT. CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION.
2. EASEMENT INDICATED ALONG SOUTH R/W LINE WAS DEDICATED WITH THE PLAT FOR THE MAPLE CLIFF CROSSING SUBDIVISION (PLAT BOOK 88, PAGE 64). AS PER THE PLAT THE EASEMENT IS RESERVED IN PART OF THE "CONSTRUCTION AND MAINTENANCE OF PUBLIC SIDEWALKS."
3. PROPOSED UG ELECTRIC FACILITIES BY AEP SHOWN ARE APPROXIMATE BASED ON INFORMATION AVAILABLE AT THE TIME OF DESIGN. CONTRACTOR SHALL COORDINATE WITH AEP AND OUPS FOR AS-BUILT CONDITIONS OF THESE PROPOSED FACILITIES.
4. CONTRACTOR IS TO REMOVE THE EXISTING TRAFFIC CONDUIT BANK FROM STA. 48+25 TO STA. 49+53 AND REPLACE WITH TWO 3", TWO 2", AND ONE 1.5" CONDUIT BANK WITH 3" CONCRETE ENCASEMENT (COLUMBUS STD DWG 4001). QUANTITIES FOR THIS WORK INCLUDED ON SHEET NO. 31.
5. CONTRACTOR IS TO REMOVE AND REPLACE THE EXISTING SIGNAL PULLBOX WITH NEW 32" PULLBOX (COLUMBUS STD DWG 4022) AT STA. 49+53, 43.9' RT. QUANTITIES FOR THIS WORK INCLUDED ON SHEET NO. 31).

SHEET REFERENCES

DESCRIPTION	SHEET NO
PAVEMENT CALCULATIONS	29-30
TREE CLEARING PLAN	41
INTERSECTION DETAILS	59
DRAINAGE PLAN AND PROFILE	62
DRAINAGE DETAILS	66
PAVEMENT-BRIDGE TRANS.	68
GUARDRAIL & BARRIER PLAN	70
ROADWAY BARRIER DETAILS	71-75
TRAFFIC SIGNAL PLAN	86
LIGHTING DEMOLITION PLAN	94
LIGHTING PLAN	98

LEGEND

FIGURE 3
PREFERRED ALTERNATIVE
SHEET 1 OF 4

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED DRP CHECKED DJG

PLAN AND PROFILE - TRABUE ROAD
STA. 46+00 TO STA. 50+00

FRA-CR 27-10.77 & FRA-CR 27-10.89
FRA. CO. RD. NO. 27

45
251

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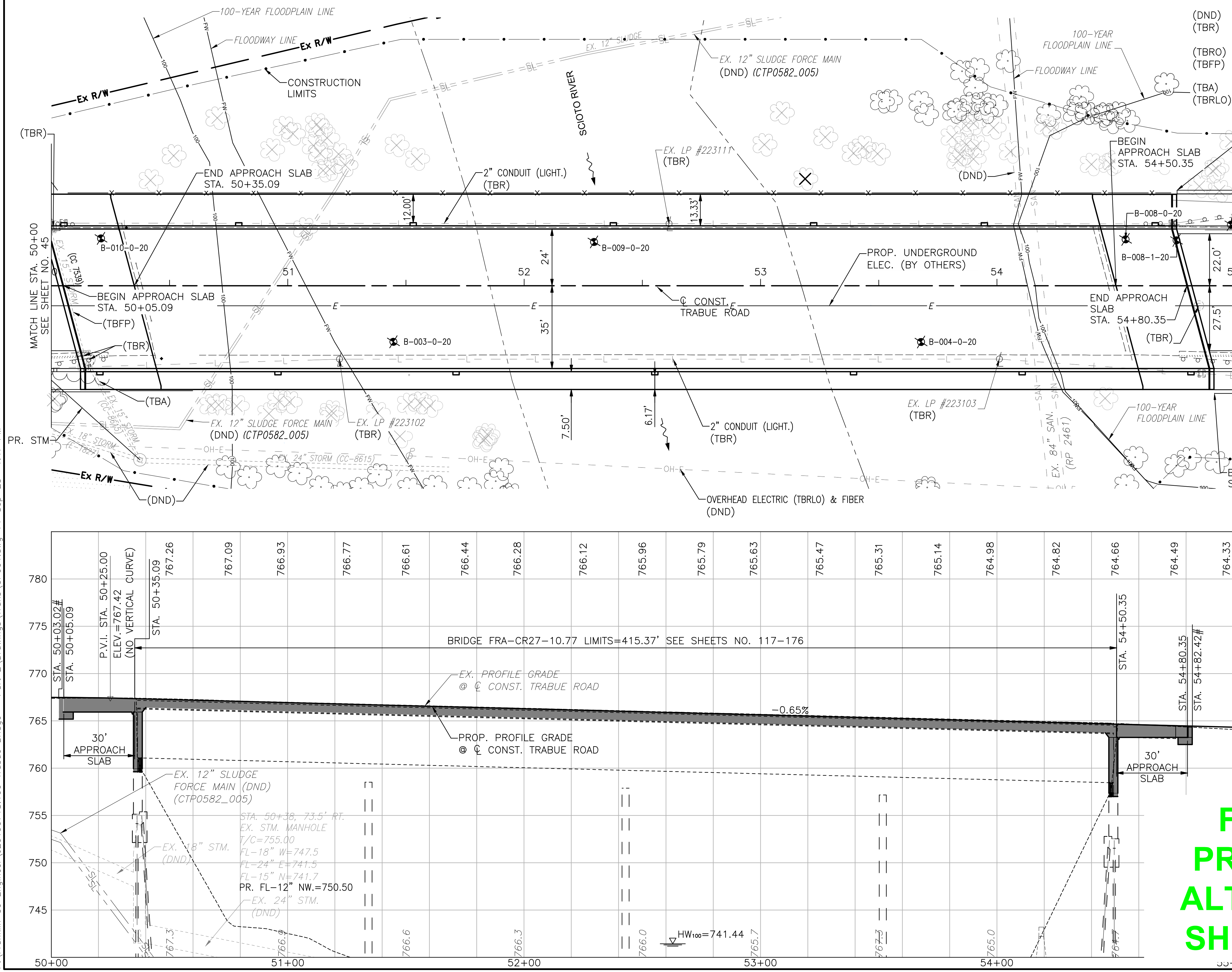
UTILITY DISPOSITION LEGEND:

(DND) = DO NOT DISTURB
(TBR) = TO BE REMOVED AND DISPOSED OF (BY CONTRACTOR)
(TBRO) = TO BE REMOVED BY OTHERS
(TBFP) = TO BE ABANDONED IN PLACE, FILLED AND PLUGGED
(TBA) = TO BE ABANDONED IN PLACE
(TBRLO) = TO BE RELOCATED BY OTHERS



100-YEAR FLOODPLAIN LINE
FLOODWAY LINE
Ex R/W
CONSTRUCTION LIMITS
EX. 12" SLUDGE FORCE MAIN (DND) (CTP0582_005)
SCIOTO RIVER
(TBR)
END APPROACH SLAB STA. 50+35.09
2" CONDUIT (LIGHT.) (TBR)
EX. LP #223111 (TBR)
(DND)
BEGIN APPROACH SLAB STA. 54+50.35
BEGIN RETAINING WALL STA. 54+76.16
R-002-0-22
B-008-0-20
B-008-1-20
B-010-0-20
B-009-0-20
B-003-0-20
B-004-0-20
MATCH LINE STA. 50+00 SEE SHEET NO. 45
MATCH LINE STA. 55+00 SEE SHEET NO. 47
BEGIN APPROACH SLAB STA. 50+05.09
(TBFP)
(TBR)
(TBA)
PROP. UNDERGROUND ELEC. (BY OTHERS)
℄ CONST. TRABUE ROAD
END APPROACH SLAB STA. 54+80.35
EX. 12" SLUDGE FORCE MAIN (DND) (CTP0582_005)
EX. LP #223102 (TBR)
EX. LP #223103 (TBR)
2" CONDUIT (LIGHT.) (TBR)
PR. STM
EX. 18" STORM
EX. 24" STORM (CC-8615)
(DND)
OVERHEAD ELECTRIC (TBRLO) & FIBER (DND)
EX. 84" SAN. (RP 2461)
BEGIN RETAINING WALL STA. 54+91.80
12.00'
13.33'
24'
35'
22.0'
27.5'
7.50'
6.17'
51
52
53
54
STA. 50+03.02#
STA. 50+05.09
P.V.I. STA. 50+25.00 ELEV.=767.42 (NO VERTICAL CURVE)
STA. 50+35.09
767.26
767.09
766.93
766.77
766.61
766.44
766.28
766.12
765.96
765.79
765.63
765.47
765.31
765.14
764.98
764.82
764.66
764.49
764.33
BRIDGE FRA-CR27-10.77 LIMITS=415.37' SEE SHEETS NO. 117-176
STA. 54+50.35
STA. 54+80.35
STA. 54+82.42#
EX. PROFILE GRADE @ ℄ CONST. TRABUE ROAD
-0.65%
PROP. PROFILE GRADE @ ℄ CONST. TRABUE ROAD
30' APPROACH SLAB
30' APPROACH SLAB
EX. 12" SLUDGE FORCE MAIN (DND) (CTP0582_005)
EX. 18" STM. (DND)
STA. 50+38, 73.5' RT. EX. STM. MANHOLE T/C=755.00 FL-18" W=747.5 FL-24" E=741.5 FL-15" N=741.7
PR. FL-12" NW.=750.50
EX. 24" STM. (DND)
HW100=741.44
780
775
770
765
760
755
750
745
50+00
51+00
52+00
53+00
54+00
55+00

SHEET REFERENCES	
DESCRIPTION	SHEET NO
PAVEMENT CALCULATIONS	29-30
TREE CLEARING PLAN	42
DRAINAGE PLAN AND PROFILE	63
DRAINAGE DETAILS	66
PAVEMENT-BRIDGE TRANS.	68
GUARDRAIL & BARRIER PLAN	70
ROADWAY BARRIER DETAILS	71-75
LIGHTING DEMOLITION PLAN	95
LIGHTING PLAN	99
FRA-CR27-10.77 SITE PLAN	117-118

LEGEND
#=BEGIN/END PAVEMENT

FIGURE 3 PREFERRED ALTERNATIVE SHEET 2 OF 4

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED DRP CHECKED DJG

PLAN AND PROFILE - TRABUE ROAD STA. 50+00 TO STA. 55+00

FRA-CR 27-10.77 & FRA-CR 27-10.89
FRA. CO. RD. NO. 27

UTILITY DISPOSITION LEGEND:

(DND) = DO NOT DISTURB
(TBR) = TO BE REMOVED AND DISPOSED OF (BY CONTRACTOR)
(TBRO) = TO BE REMOVED BY OTHERS
(TBFP) = TO BE ABANDONED IN PLACE, FILLED AND PLUGGED
(TBA) = TO BE ABANDONED IN PLACE
(TBRLO) = TO BE RELOCATED BY OTHERS

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED DRP
CHECKED DJG

RETAINING WALL NO. 1 (SEE SHEET NO. 103–104)
END RETAINING WALL STA. 57+55.67
100–YEAR FLOODPLAIN LINE
HYDRODYNAMIC SEPARATOR
EX. 8" WATER (WL2001–07)
LANE WOODS MASTER ASSOCIATION PCL. NO. 580–259058–00 3.132 AC. R. 98, PG. 9, RESERVE "A"
SCIOTO POINTE DRIVE
Ex R/W
GRASSED SWALE
CONSTRUCTION LIMITS
EX. LP #223109 (TBR)
2" CONDUIT (LIGHT.) (TBR)
PC Sta. 55+60.65
PT Sta. 56+40.30
PT Sta. 57+00.00
EX. 12" STORM (CC 7539)
EX. 1 ½" DUCT CABLE
R-001-0-22
EX. LP #223110 (TBR)
STA. 57+04.85 (TBR)
R-006-0-22
R-005-0-22
B-012-0-20
℄ CONST. TRABUE ROAD
PR. STM
PAVEMENT CUT LINE
C-8
C-7
C-2
C-1
B-007-0-20
B-006-0-20
BEGIN APPROACH SLAB STA. 57+57.57
END APPROACH SLAB STA. 57+82.57
BEGIN APPROACH SLAB STA. 59+35.89
END APPROACH SLAB STA. 59+60.89
MATCH LINE STA. 55+00 SEE SHEET NO. 46
MATCH LINE STA. 60+00 SEE SHEET NO. 48
STA. 55+32.92
PROP. UNDERGROUND ELEC. (BY OTHERS)
56+75
R-004-0-22
R-007-0-22
R-008-0-22
1 ½" DUCT CABLE (LIGHT.) (TBR)
EX. LP #223104 (TBR)
EX. LP #223105 (TBR)
CITY OF COLUMBUS POWER LIGHTING PULLBOX (TBR)
CONSTRUCTION LIMITS
END RETAINING WALL STA. 56+00.00
RETAINING WALL NO. 2 (SEE SHEET NO. 105–106)
OVERHEAD ELECTRIC (TBRLO) & FIBER (DND)
STA. 59+95

SHEET REFERENCES	
DESCRIPTION	SHEET NO
PAVEMENT CALCULATIONS	29–30
TREE CLEARING PLAN	43
DRAINAGE PLAN AND PROFILE	64
DRAINAGE DETAILS	67
GUARDRAIL & BARRIER PLAN	70
ROADWAY BARRIER DETAILS	71–75
LIGHTING DEMOLITION PLAN	96
LIGHTING PLAN	100
FRA–CR27–10.89 SITE PLAN	177

P.V.I. STA. 56+00.00 ELEV.=763.68 (NO VERTICAL CURVE)
P.V.I. STA. 57+40.00 ELEV.=762.91 (NO VERTICAL CURVE)
P.V.I. STA. 59+65.00 ELEV.=761.48 (NO VERTICAL CURVE)
STA. 57+82.57
STA. 59+35.89
STA. 59+60.89
STA. 59+63.03#
STA. 57+55.45#
STA. 57+57.57
PROP. PROFILE GRADE @ ℄ CONST. TRABUE ROAD
EX. PROFILE GRADE @ ℄ CONST. TRABUE ROAD
BRIDGE FRA–CR27–10.89 LIMITS=153.32' SEE SHEETS NO. 177–221
−0.65%
−0.55%
−0.64%
105'–12" STM. @ 0.63% (LT.)
90'–12" STM. @ 0.62% (RT.)
64'–12" STM. @ 0.75%
25' APPROACH SLAB
25' APPROACH SLAB
55+00
56+00
57+00
58+00
59+00

LEGEND
#=BEGIN/END PAVEMENT

FIGURE 3 PREFERRED ALTERNATIVE SHEET 3 OF 4

PLAN AND PROFILE - TRABUE ROAD
STA. 55+00 TO STA. 60+00
FRA-CR 27-10.77 & FRA-CR 27-10.89
FRA. CO. RD. NO. 27
47
251

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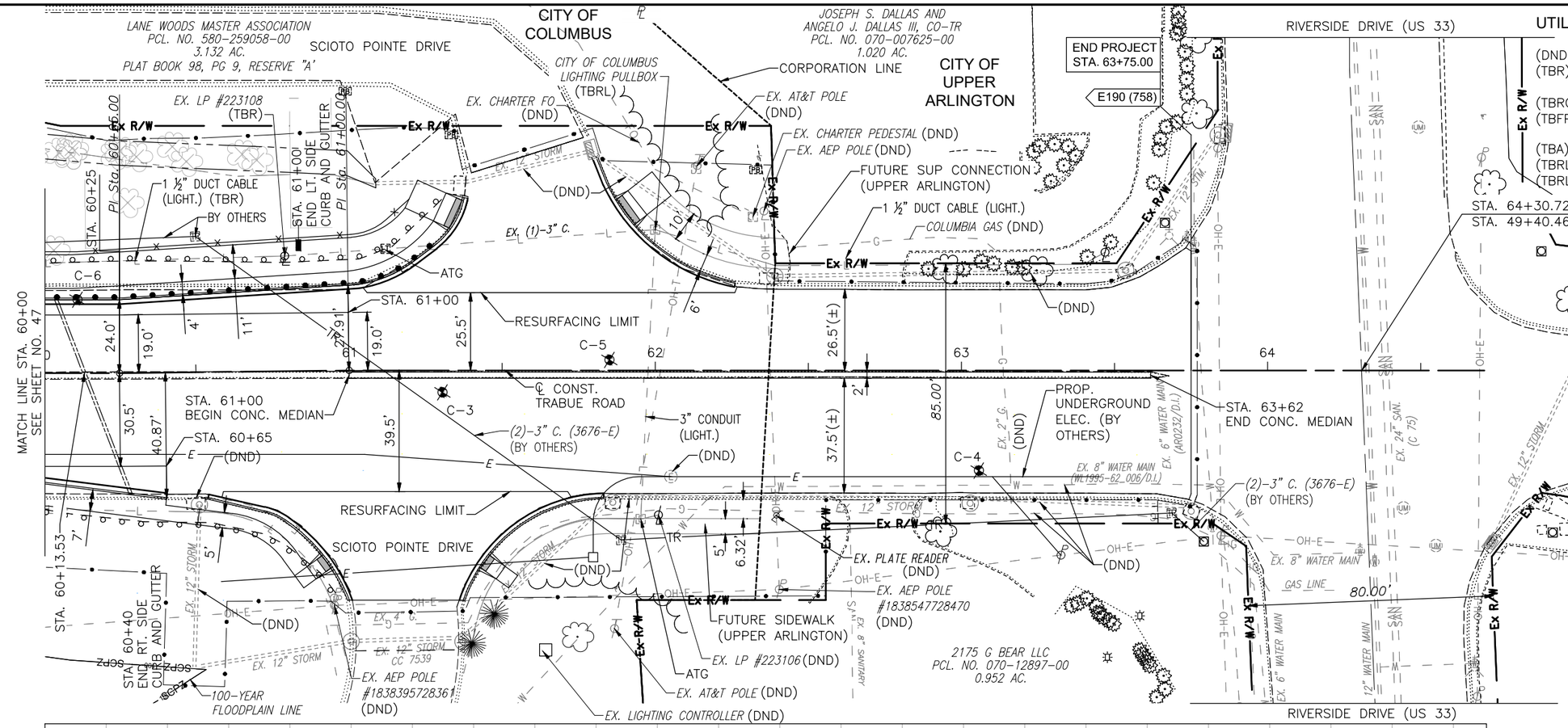

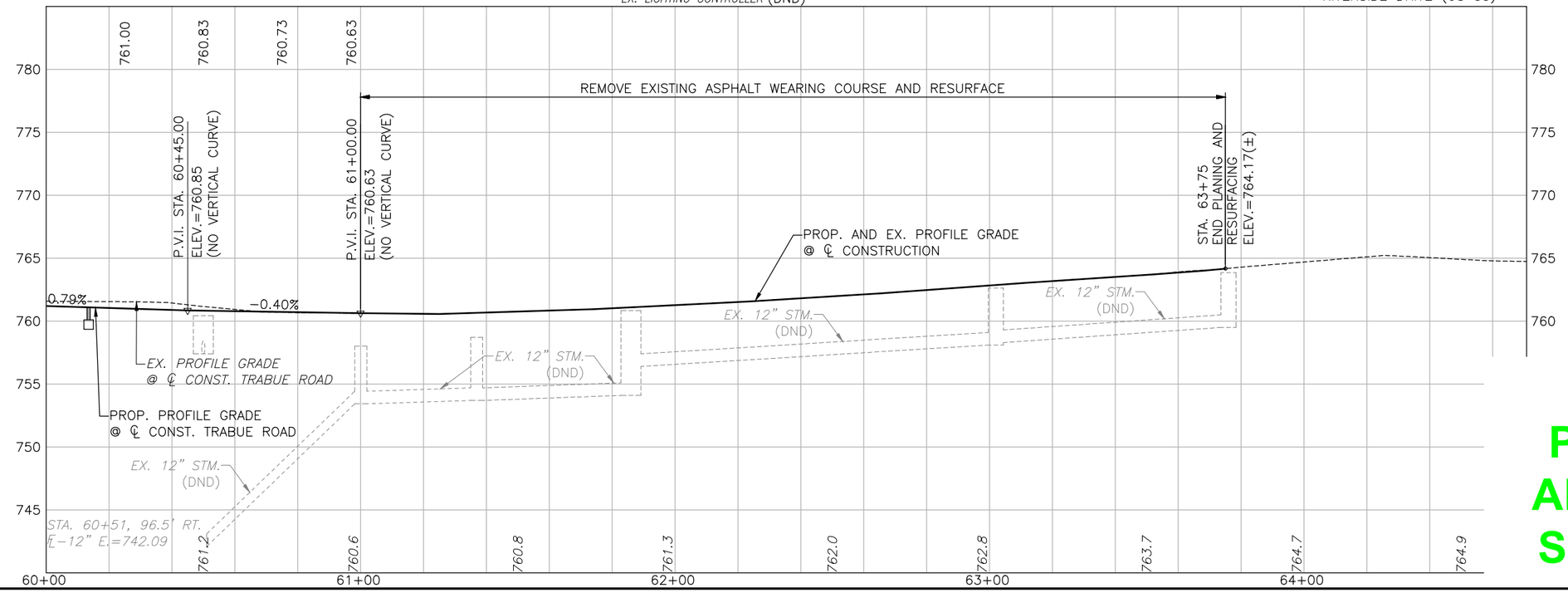

SHEET REFERENCES	
DESCRIPTION	SHEET NO
PAVEMENT CALCULATIONS	29-30
TREE CLEARING PLAN	44
INTERSECTION DETAILS	60
DRAINAGE PLAN AND PROFILE	65
DRAINAGE DETAILS	67
PAVEMENT-BRIDGE TRANS.	69
GUARDRAIL & BARRIER PLAN	70
ROADWAY BARRIER DETAILS	71-75
LIGHTING DEMOLITION PLAN	97
LIGHTING PLAN	101

NOTES:

1. CTSS CONDUITS AND PULLBOXES INDICATED (3676-E) ARE TO BE INSTALLED BY OTHERS PRIOR TO CONSTRUCTION OF THIS PROJECT.

LEGEND:

FIGURE 3
PREFERRED ALTERNATIVE
SHEET 4 OF 4

PLAN AND PROFILE - TRABUE ROAD
STA. 60+00 TO RIVERSIDE DRIVE

FRA-CR 27-10.77 & FRA-CR 27-10.89
FRA. CO. RD. NO. 27

48
251

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Appendix B

Email correspondence between Agencies

Kailen E. Akers,P.E.

From: Elchert, Tiffany M. <TMElchert@columbus.gov>
Sent: Wednesday, June 28, 2023 9:33 AM
To: Kailen E. Akers,P.E.
Cc: David R. Dibling, P.E., S.I.
Subject: RE: Trabue Rd - Permeable Pavement for Sidewalk/SUP

Hi Kailen,

Correct DPS would not maintain a permeable pavement SUP or sidewalk. This would be either the property owners responsibility or DPU's responsibility. DPS has not done them because it is unfair to place that responsibility on the homeowner. Per City code it is the homeowners/adjacent property owner's responsibility to replace sidewalk.

It may be an option for FCEO to suggest an MOU with DPU/DPS for FCEO to maintain the permeable pavement SUP or sidewalk. With this idea, DPU may allow this as a treatment option on your project.

Thanks,

Tiffany M. Elchert, PE
Project Manager
DIVISION OF DESIGN AND CONSTRUCTION

THE CITY OF COLUMBUS
ANDREW J. GINTHER, MAYOR
DEPARTMENT OF PUBLIC SERVICE

111 North Front Street
Columbus, OH 43215
Direct: 614-645-2923
E-mail: tmelchert@columbus.gov
www.columbus.gov

From: Kailen E. Akers,P.E. [mailto:kakers@franklincountyengineer.org]
Sent: Tuesday, June 27, 2023 3:43 PM
To: Elchert, Tiffany M. <TMElchert@columbus.gov>
Cc: David R. Dibling, P.E., S.I. <ddibling@franklincountyengineer.org>
Subject: [EXTERNAL] Trabue Rd - Permeable Pavement for Sidewalk/SUP

Hi Tiffany,

From our discussion of the Trabue Road BMPs yesterday – Columbus DPS will not maintain sidewalk or SUP constructed with permeable pavement. Any long-term or regular maintenance of this type of pavement would need to be performed by Franklin County.

Can you please reply to this email, revising or confirming the details above for our records?

Thanks,

Kailen E. Akers,P.E.
Bridge Design Engineer
970 Dublin Road
Columbus, Ohio 43215
(614) 525-4825
kakers@franklincountyengineer.org
www.franklincountyengineer.org

From: Studenmund, Steven <STUDENMUND@metroparks.net>
Sent: Monday, May 8, 2023 9:14 AM
To: Kailen E. Akers,P.E.
Subject: Quarry Trails Metro Park

Kailen, thanks for the voicemail last week. Unfortunately, we don't have any additional capacity in our stormwater plan. Yes, the majority of our site is in the floodplain and the area out of the floodplain is a former landfill which is capped with 2'-4' of clean fill.

Steve

--
Steve Studenmund
Planning & Design Manager
Columbus and Franklin County Metro Parks
1069 W. Main Street
Westerville, Ohio 43081
614-895-6231
studenmund@metroparks.net

Appendix C

ISSUE I PROJECT

TRABUE ROAD BRIDGES AND APPROACHES | 1/76

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

TRABUE ROAD BRIDGE OVER SCIOTO RIVER
FRA. 27-10.77
TRABUE ROAD BRIDGE OVER PENN CENTRAL R.R.
FRA. 27-10.87
AND APPROACHES
CITY OF COLUMBUS
CITY OF UPPER ARLINGTON
FRANKLIN COUNTY, OHIO

CONVENTIONAL SIGNS

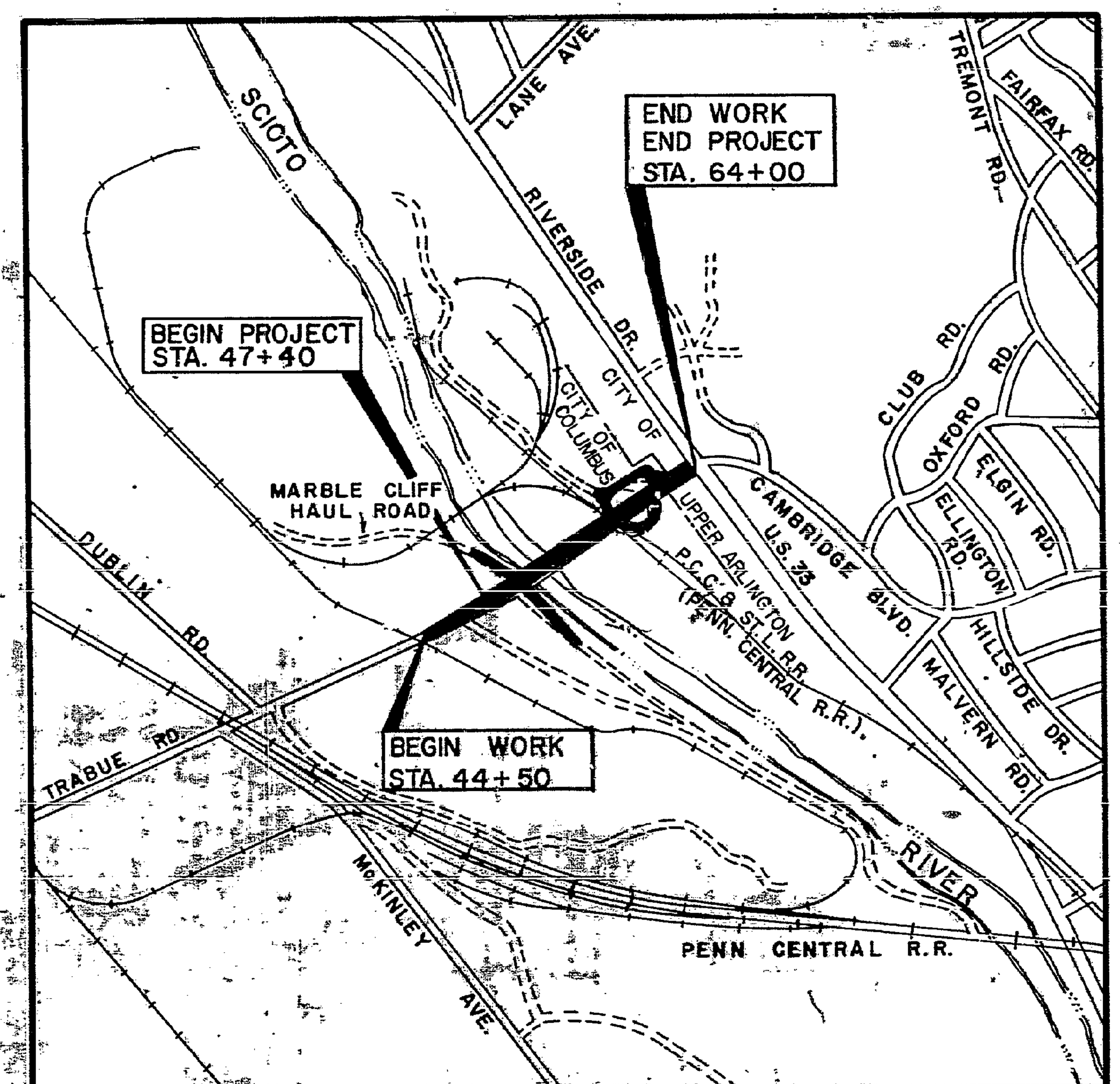
Proposed Guard Rail
Existing Guard Rail
Railroads
Manholes Reconstructed or Adjusted
Existing R/W
Proposed R/W
Proposed Temporary R/W
Center Line
Telephone Conduit
Corporation Line
Property Line
Existing Fence Line
Gas Line
Gas Valve
Existing Sewer
Proposed Sewer
Trees & Stumps
Power Pole
Light Pole
Telephone or Telegraph Pole
Water Line
Water Valves
Water Hydrant
Existing Manholes
Proposed Manholes
Existing Catch Basins
Proposed Catch Basins

DESIGN DESIGNATION

1971 ADT	= 18,308
1991 ADT	= 13,629
DHV	= 1363
Direction Distribution	= 53 %
% B & C Commercial	= 13 %
Design Speed	= 50 mph

LINE DATA

Trabue Road	
Begin Work	44+50.00
Begin Project	47+40.00
End Work	64+00.00
End Project	64+00.00
Haul Road	
Begin Work	9+96.98
End Work	18+50.00
Net Length	853.02 L.F.
Total Net Length of Work	2803.02 L.F. 0.531 Miles
Total Net Length of Project	1660.00 L.F. 0.314 Miles



SCALE: 1" = 800'

1971 SPECIFICATIONS

The Standard Specifications of the State of Ohio, Department of Highways including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway to traffic and that provisions for the maintenance and safety of the traffic will be as set forth on the plans and estimate.

FOR FRANKLIN COUNTY

CHIEF DEPUTY ENGINEER	DATE 5-17-71
Arch J. Warren — COUNTY AUDITOR	DATE 5-17-71
COUNTY ENGINEER	DATE 5-17-71

We, the Commissioners of Franklin County, hereby approve these plans and declare that the Right-Of-Way as shown on plans is available for the construction, maintenance and repair of the highway.

Harold M. Cooper	5-17-71
Michael J. Dorrian	5-17-71
COUNTY COMMISSIONERS	5/17/71 DATE

FOR CITY OF COLUMBUS

Warren J. Cremean — SERVICE DIRECTOR	DATE
Theodore L. Wallace — CITY ENGINEER	DATE 5-20-71

FOR CITY OF UPPER ARLINGTON

Hal W. ... — CITY MANAGER	DATE 5-18-71
CITY ENGINEER	DATE 5-17-71

STATE HIGHWAY DEPARTMENT			
STANDARD DRAWINGS		STANDARD DRAWINGS	
BP-1	6-1-65	HL-1	11-1-65
BP-3	1-1-71	HL-2	11-1-65
BP-4	1-1-71	HL-3	11-1-65
BP-5	1-1-71	HL-4	1-1-66
BP-7	1-1-66	BR-1-67	1-1-71
CB-2-2-A&B	6-1-65	SD-1-69 Sht.# 3	6-12-69
GR-2B	1-1-71	6R-2A	1-1-71
GR-3	1-1-71		
GR-4	1-1-71		
HW-4	1-1-70	SUPPLEMENTAL SPECIFICATIONS	
MC-3	6-20-69		
MC-4	6-13-69		
MC-6	6-1-65	808	1-1-71
AS-1-67	6-12-69	836	1-1-71
MH-1	10-1-68	1001	1-1-69
MC-8	12-1-67	941	11-25-70
F-1	3-10-69		

INDEX OF SHEETS

Delete Pages 30-33, 66-72 & 74

PLAN SCALE

PLAN AND PROFILE	0 25' 50' 100'
PAVEMENT DETAILS	0 10' 20' 40'
CROSS SECTIONS	0 5' 10' 20'

FOR THE STATE OF OHIO

Approved *Bernard B. Blunt Jr.*
Date *May 14, 1971* Division Deputy Director
Approved
Date Engineer of Bridges
Approved
Date Engineer of Location & Design
Approved
Date Deputy Director of Design & Construction
Approved
Date Deputy Director of Right of Way
Approved
Date Deputy Director of Planning & Programming
Approved
Date First Assistant Director
Approved
Date Director of Highways

FILE Nº	FRANKLIN COUNTY TRABUE ROAD BRIDGES
	DATE OF LETTING 1971
	CONTRACT Nº

PLANS PREPARED BY
ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
170 NORTH HIGH STREET
COLUMBUS, OHIO
FOR
FRANKLIN COUNTY, OHIO

BRUNING 44-560 10943

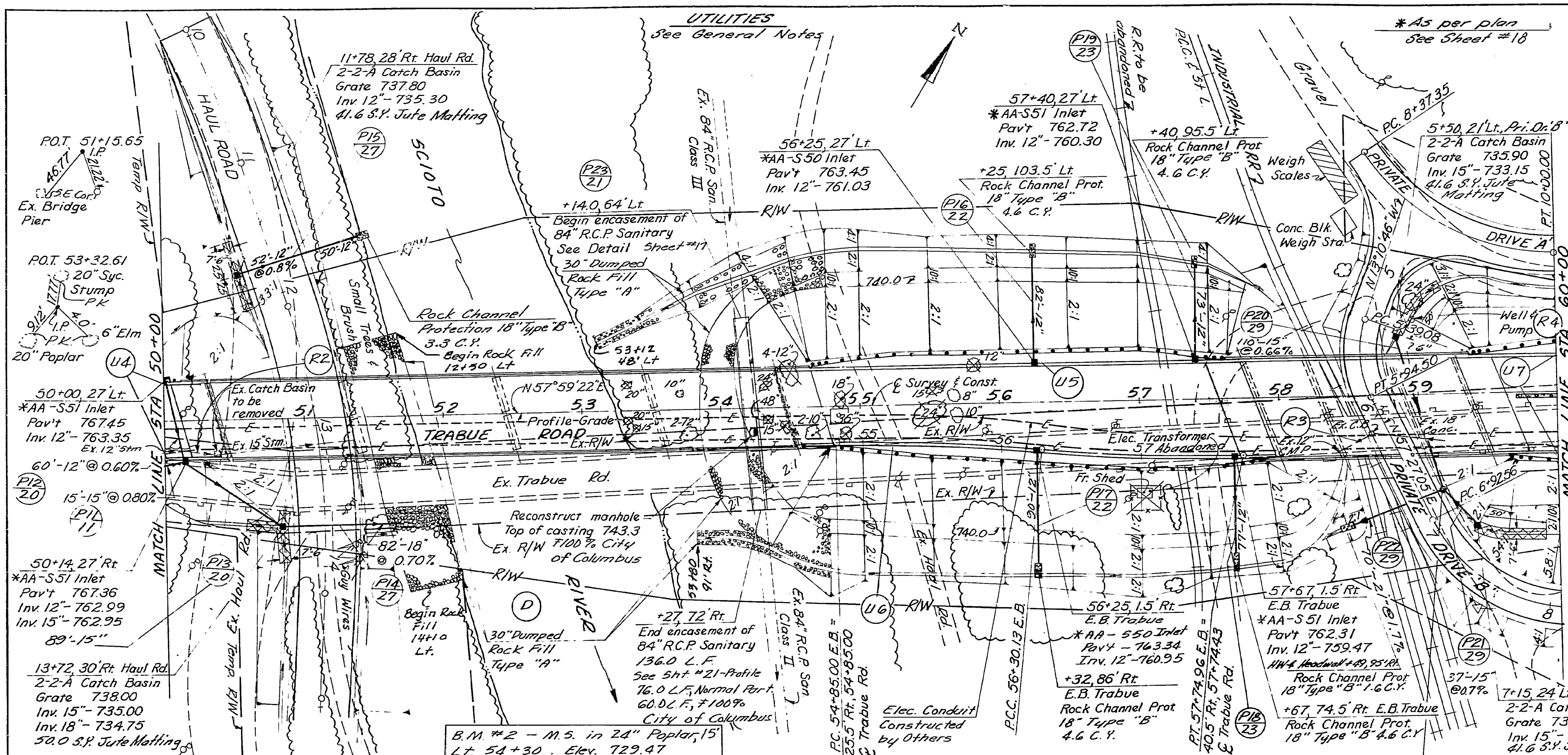
3910 01 Title Sheet 1971 0010 01

16-2

TRABUE ROAD BRIDGES AND APPROACHES

11/76

B.M.#3 – M.S. in 18" Stump, ℄ ± 58+00. Elev. 737.97



ǂ 100 % City of Columbus

ESTIMATED DRAINAGE QUANTITIES			603 STORM SEWER								604				605	202		601	Spec.	Spec.	602	601	667
			TYPE "B" CLASS I wall "B" 706.02	TYPE "B" 706.01 706.02	TYPE "B" 706.02 Class III		TYPE "C" 706.01, 706.02	TYPE "F" 707.04			Nº AA-S50 INLET	Nº AA-S51 INLET	Nº 2-2-A CATCH BASIN	M.H. RECONST. TO GRADE	UNDERDRAIN	C.B. or INLETS REMOVED	PIPE REMOVED (24" & Under)	18" ROCK CHANNEL PROT. TYPE "B"	CONC. ENCASEMENT of 84" SAN. SEWER	ABANDON DRILLED WELL	CONCRETE MASONRY	30" DUMPED ROCK FILL TYPE A	JUTE MATTING
			21"	12"	12"	18"	15"	12"	15"	18"					4"								
REF#	SIDE	LOCATION	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	EA.	EA.	L.F.	EA.	L.F.	C.Y.	L.F.	EA.	C.Y.	C.Y.	S.Y.
P11	Rt.	50+00 to 50+14					15																
P12	Lt.	50+00 to 50+14Rt.		60								1											
P13	Rt.	50+14 to 13+72H.R.							89			1											
P14	Rt.	13+72 Haul Rd.				54				28			1										50.0
P15	Rt.	11+78 Haul Rd.			52			50					1					3.3					41.6
P16	Lt.	56+25						82			1							4.6					
P17	Rt.	56+25						90			1							4.6					
P18	Rt.	57+67						77				1						4.6					
P19	Lt.	57+40						73				1						4.6					
P20	Lt.	5+50 Pri. Dr. "B"					110						1										41.6
P21	Lt.	7+15 Pri. Dr. "B"					37						1										41.6
P22	Rt.	58+49, 95' Rt.	70															1.6			.37		
P23		54+20												1					136				
U4	Lt/Rt.	50+00 to 50+26													38								
U5	Lt.	54+62 to 57+57													295								
U6	Rt.	54+76 to 57+86													310								
U7	Lt/Rt.	59+37 to 60+00													98								
D																						5113	
R2	Rt.	50+00 to 51+35														1	80						
R3	Rt.	58+43 to 59+19														1	76						
R4	Lt.	59+00, 55' Lt.																		1			
		TOTALS	70	60	52	54	162	372	89	28	2	4	4	1ǂ	741	2	156	23	136ǂ	1	.37	5113	175

CURVE DATA

PRIVATE DRIVE 'B'		E.B. TRABUE ROAD		PRIVATE DRIVE 'A'
PI = 5+68.25	7+63.54	PI = 55+57.63	57+02.61	PI = 9+26.28
Δ = 44°6'19"	64°43'33"	Δ = 5°56'0"	5°56'0"	Δ = 57°31'38"
DC = 79°34'39"	51°9'25"	DC = 4°5'17"	4°5'49"	DC = 35°22'4"
R = 72.00'	112.00'	R = 1401.50'	1398.50	R = 162.00'
T = 29.17	70.98'	T = 72.63	72.48'	T = 88.93'
L = 55.42	126.52	L = 145.13	144.82	L = 162.65

Tree Removal	
18"	9
30"	1
48"	1

Rev. 2-29-72

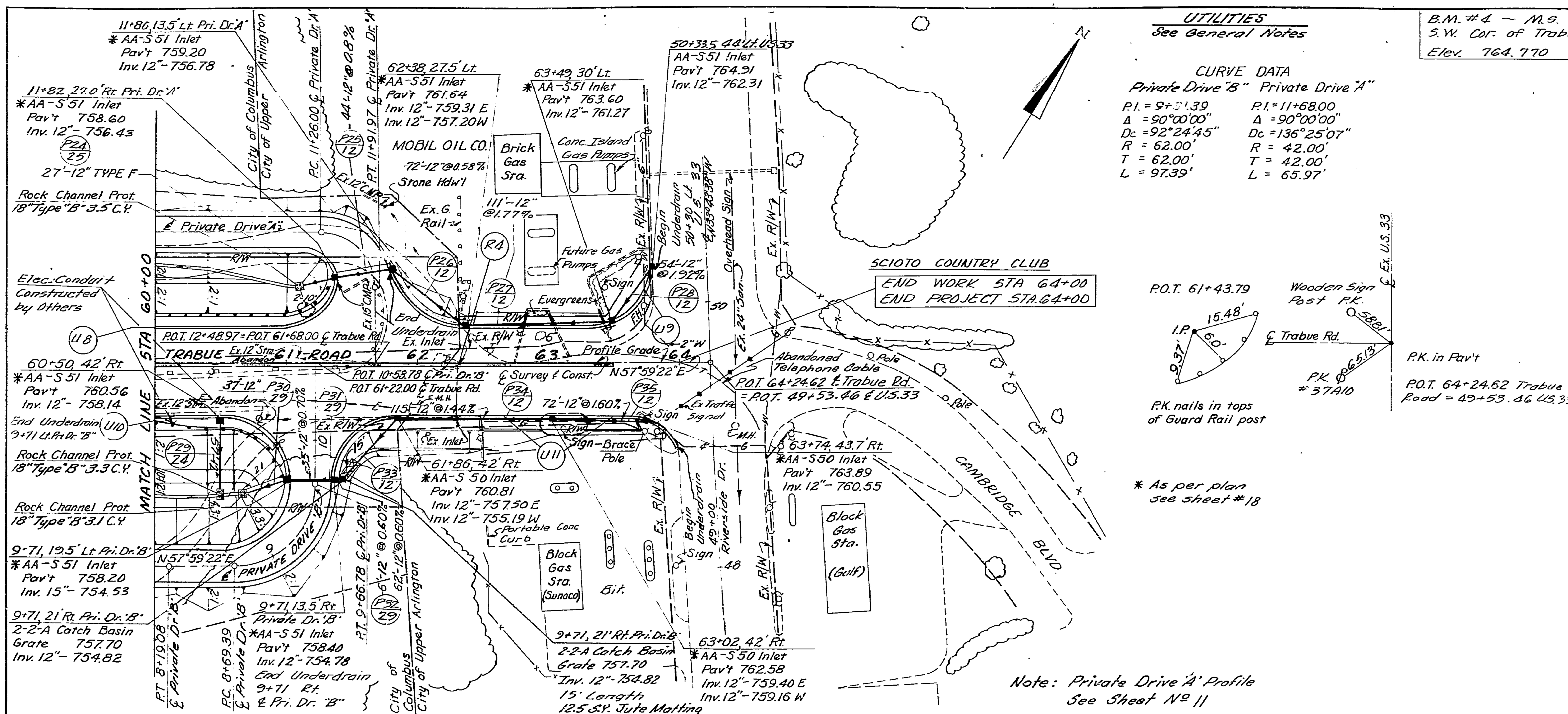
3910 010 50+00 To 60+00 A11;9 1971 0110 01

TRABUE ROAD STA 50+00 TO 60+00

B.M. #4 — M.S. in Power Pole #177A143
S.W. Cor. of Trabue Rd. & U.S. 33
Elev. 764.770

TRABUE ROAD BRIDGES AND APPROACHES

12/76



ESTIMATED DRAINAGE QUANTITIES			603 STORM SEWER						604				605	202	601	667
			TYPE 'B' 706.01 706.02		TYPE 'C' 706.01 706.02		TYPE 'F' 707.04		Nº AA-S50 INLET	Nº AA-S51 INLET		Nº 2-2-A CATCH BASIN	UNDERDRAIN	C.B. or INLETS REMOVED	18" ROCK CHANNEL PROTECTION	JUTE MATTING
			12"	15"	12"	15"	12"	15"					4"			
REF#	SIDE	LOCATION	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EA	EA		EA.	L.F.	EA.	C.Y.	S.Y.
P24	Rt.	11+82, Pri. Dr. "A"					27			1					3.5	
P25	Lt.	11+80, Pri. Dr. "A"	44							1						
P26	Lt.	62+38			72					1						
P27	Lt.	63+49 to 62+38	111							1						
P28	Lt.	50+335 to 63+49			54					1						
P29	Rt.	60+50					57			1					3.3	
P30	Lt.	9+71 Pri. Dr. "B"					37			1					3.1	
P31	Rt.	9+71 Pri. Dr. "B"	35							1						
P32	Rt.	9+71 Pri. Dr. "B"			6							1				125
P33	Rt.	61+86			62				1							
P34	Rt.	63+02 to 61+86	115						1							
P35	Rt.	63+74 to 63+02	72						1							
U8	Lt.	60+00 to 11+82 "A"											159			
U9	Lt.	11+80 "A" to 50+30 "33"											239			
U10	Rt.	60+00 to 9+71 "B"											123			
U11	Rt.	9+71 "B" to 49+00 "33"											282			
R4	Rt.	62+30, 3' Rt. & 43' Rt.												2.		
		TOTALS	377		194		121		3	8		1	803	2	10	13

3910 010 60+00 To 64+24.62 4/1/69 1971 0130 01

TRABUE ROAD STA 60+00 TO 64+24.62