



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
ROADWAY IMPROVEMENT
FOR
HARRISBURG PIKE (US 62)
AND DEMOREST DRIVE
INTERSECTION
2021

SHEET INDEX

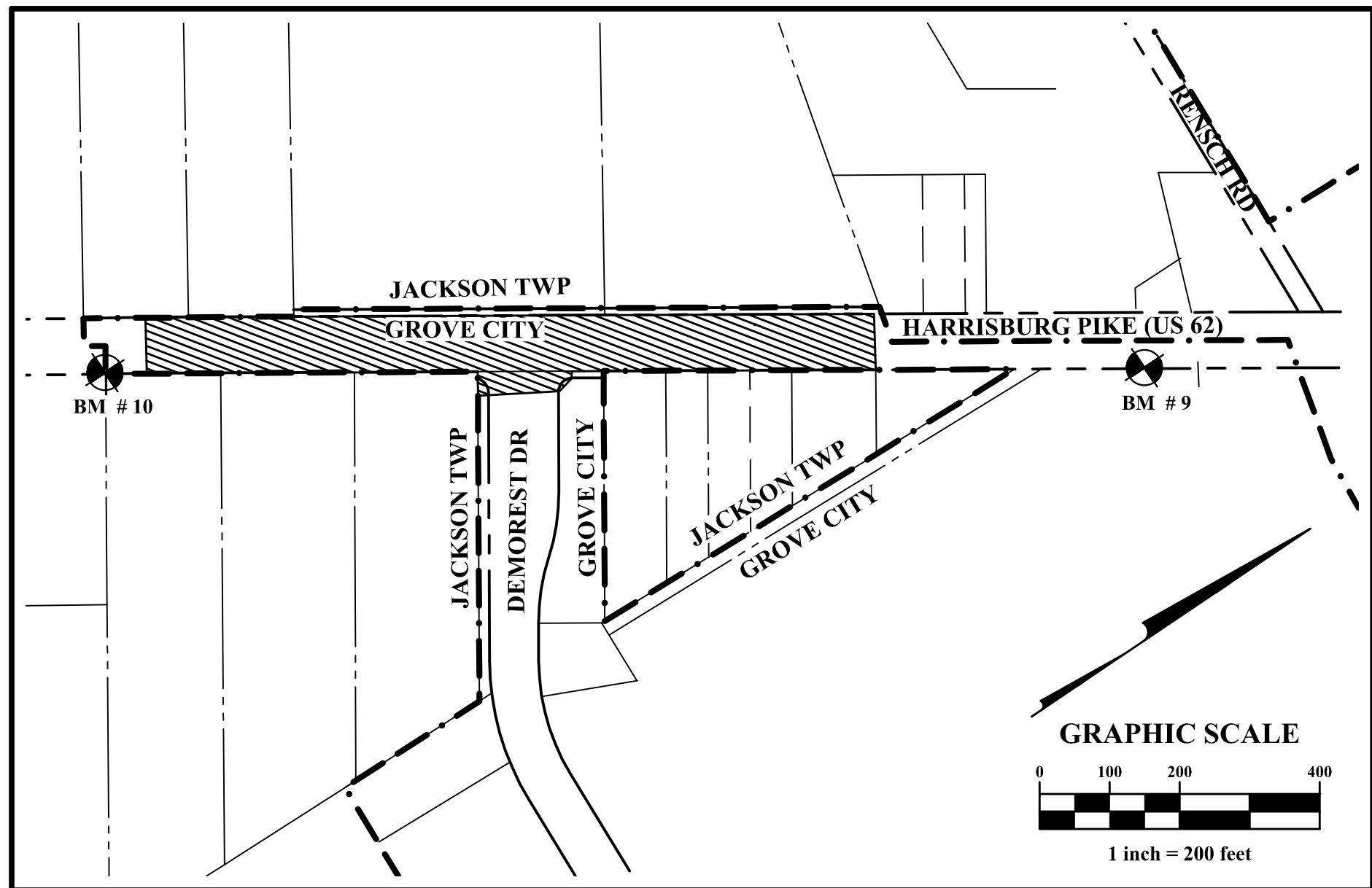
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Vertical Datum

The Vertical Datum is based on the elevations established by the Franklin County Engineering Department, at monument FCGS 0024 RESET, being 807.256 feet in elevation, and at monument FCGS 5539, being 811.272 feet in elevation. The said elevations were transferred from said Franklin County Engineering Department monuments using static GPS procedures to the site. The said monuments being source bench marks with elevations that are based on the North American Vertical Datum of 1988.

BENCH MARKS
(NAVD 1988)

Source BM FCGS0024 RESET	Aluminum cap in PVC encased concrete monument, at an angle point in the centerline of survey on Hoover Road, 0.43 miles north of London-Groepport Road, on a P/L west, access through F.C. Road Monument Box. Monument is on the east line of VMS 1434 and the west line of VMS 14081. Original monument FCGS 0024 replaced a found 3/4" solid iron pin 11 inches deep.	Elev. = 807.256
BM#9	Railroad spike in the west side of a wooden utility pole located on the east side of U.S. 62 (Harrisburg Pike), being the second utility pole (260 feet) south of the intersection with Rensch Road.	Elev. = 865.22
BM#10	Railroad spike in the west side of a wooden utility pole located on the east side of U.S. 62 (Harrisburg Pike), being the fourth utility pole (580 feet) south of the intersection with Demorest Drive.	Elev. = 870.50



INDEX MAP
Scale: 1" = 200'

STANDARD CONSTRUCTION DRAWINGS

The Standard Construction Drawings listed on these plans are to be considered a part thereof.

CITY OF GROVE CITY

C-GC-4	C-GC-41B	C-GC-68	C-GC-77
C-GC-19	C-GC-43A	C-GC-69	C-GC-83
C-GC-23	C-GC-43B	C-GC-70A	C-GC-102
C-GC-26	C-GC-43DW	C-GC-71A	C-GC-95D
C-GC-27	C-GC-46A	C-GC-73A	
C-GC-40	C-GC-66	C-GC-74	
C-GC-41A	C-GC-67	C-GC-75A	

CITY OF COLUMBUS

AA-S154	1441	1510	1540
AA-S159	1500	1520	1550

ODOT

BP-3.1	MT-97.10	TC-41.40	TC-81.22
BP-4.1	MT-99.20	TC-41.41	TC-83.20
DM-1.1	MT-101.60	TC-42.20	TC-85.10
LA-1.1	MT-101.90	TC-52.10	TC-85.20
HL-30.11	MT-105.10	TC-52.20	
HL-30.22	MT-120.00	TC-65.10	
MT-95.60	TC-21.21	TC-65.11	
MT-95.61	TC-41.20	TC-71.10	

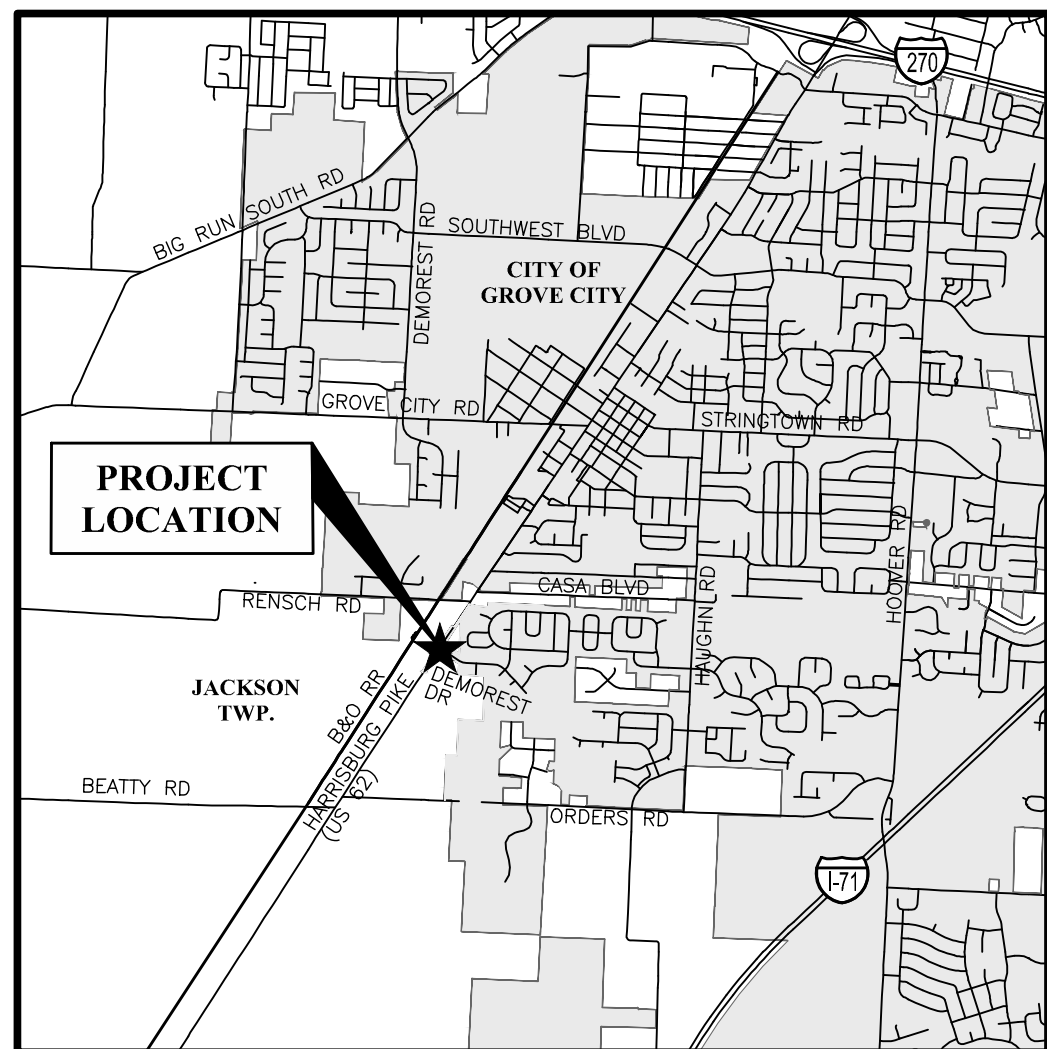
ODOT SUPPLEMENTAL SPECIFICATIONS

800	815	906	913
813	816	907	

OWNER

CITY OF GROVE CITY
4035 Broadway
Grove City, Ohio 43123
Tel: (614) 277-3000
Fax: (614) 277-3035

OHIO
Utilities Protection
SERVICE
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LOCATION MAP
Not to Scale

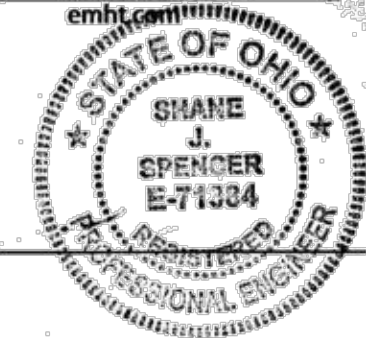
MUNICIPALITY APPROVAL

The signatures below signify only concurrence with the purpose and general location of the project. All technical details remain the responsibility of the Engineer preparing the plans.

	1-18-21
Mayor City of Grove City, Ohio	Date
	01/19/21
City Administrator City of Grove City, Ohio	Date
	1/8/21
Director of Public Safety City of Grove City, Ohio	Date
	1/6/2021
Director of Public Service City of Grove City, Ohio	Date

PREPARED BY:

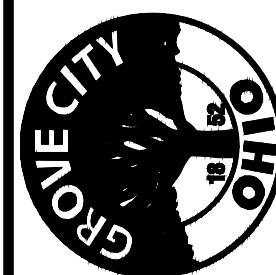
EMHT
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Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43204
Phone: 614.775.4500 Toll Free: 888.775.3446



Registered Engineer No. 74384

1/6/2021
Date

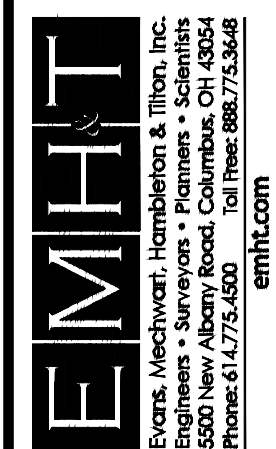
MARK	DATE	DESCRIPTION
Δ	10/10/23	Plan Revisions For New Annexation



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
ROADWAY IMPROVEMENT

FOR
HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION

TITLE SHEET



DATE

January 2021

SCALE

As Noted

JOB NO.

2019-0489

SHEET

1/36

\\s201-904893.Dwg\\045sheets\\QUANTITIES & LEGENDS.dwg - Last Saved By: kcaadv - 10/10/2023 10:17 AM - Last Printed By: Gorky_Kaibh - 2/15/2024 1:52 PM (No Xrefs)

Spec	Item No.	Description	Quantity	Units
		General Roadway		
CMSC	201	Clearing and Grubbing	1	L.S.
CMSC	202	Pipe Removed	800	L.F.
CMSC	202	Pipe Abandoned	750	L.F.
CMSC	202	Catch Basin/Inlet Removed	2	Ea.
CMSC	202	Landscape Column Removed, Complete	1	Ea.
CMSC	202	Headwall/Endwall Removed	2	Ea.
CMSC	203	Excavation	900	C.Y.
CMSC	203	Embankment	1,200	C.Y.
CMSC	203*	Excavation, Increase or Decrease	50	C.Y.
CMSC	203*	Embankment, Increase or Decrease	50	C.Y.
CMSC	204*	Excavation of Unsuitable Subgrade	250	C.Y.
CMSC	204*	Granular Embankment (304 Limestone)	250	C.Y.
CMSC	204*	Geogrid, Tensor BX-1 200 (or Approved Equal)	360	S.Y.
CMSC	204	Subgrade Compaction	2,700	S.Y.
CMSC	204*	Proof Rolling	5	Hr.
CMSC	605	4" Underdrain, As Per Plan	1,900	L.F.
CMSC	608	Concrete Walk (4") With 4" Aggregate Base	820	S.F.
CMSC	608	Curb Ramps - Sidewalk (w/ ADA Detectable Warning)	2	Ea.
CMSC	608	Curb Ramps - Shared Use Path (w/ ADA Detectable Warning)	2	Ea.
CMSC	616*	Water	10	M. Gal
CMSC	616*	Calcium Chloride	1	Ton
CMSC	653	Topsoil Furnished and Placed	520	C.Y.
CMSC	659	Seeding and Mulching, As Per Plan	4,700	S.Y.
CMSC	659	Watering, As Per Plan	1	L.S.
CMSC	670	Ditch Erosion Protection (WQ)	1,100	S.Y.
	807	Valve Box Adjusted to Grade	4	Ea.
	SPEC	Mailbox Removed and Replaced	9	Ea.
		Pavement		
CMSC	254	Pavement Planing (1.25")	4,100	S.Y.
CMSC	259	Pavement Replacement, Type 2B (per C-GC-67)	115	S.Y.
CMSC	301	Asphalt Concrete Base (T=8")	475	C.Y.
CMSC	304	Aggregate Base (T=6")	450	C.Y.
CMSC	407	Non Tracking Tack Coat for Surface Course (0.1 gal/SY)	610	Gal
CMSC	407	Non Tracking Tack Coat for Intermediate Course (0.1 gal/SY)	210	Gal
CMSC	441	Asphalt Concrete Surface Course, Type 1, (448), PG 64-22, (1.25")	220	C.Y.
CMSC	441	Asphalt Concrete Intermediate Course, Type 2, (448), PG 64-22 (1.75")	105	C.Y.
CMSC	452	Non-Reinforced Concrete Pavement (T=6"), Class MS	480	S.Y.
CMSC	615*	Temporary Pavement	70	S.Y.
		Storm Sewers		
CMSC	604	Catch Basin	17	Ea.
CMSC	901*	6 Inch Storm Sewer w/ Item 912 Compacted Granular Backfill	50	L.F.
CMSC	901*	8 Inch Storm Sewer w/ Item 912 Compacted Granular Backfill	50	L.F.
CMSC	901*	12 Inch Storm Sewer w/ Item 912 Compacted Granular Backfill	50	L.F.
CMSC	901	12 Inch Storm Sewer w/ Item 912 Compacted Granular Backfill	410	L.F.
CMSC	901	12 Inch Storm Sewer w/ Item 911 Compacted Backfill	1,010	L.F.
CMSC	901	15 Inch Storm Sewer w/ Item 912 Compacted Granular Backfill	25	L.F.
CMSC	901	15 Inch Storm Sewer w/ Item 911 Compacted Backfill	415	L.F.
CMSC	906*	Stone Foundation	10	C.Y.
		Erosion and Sediment Control		
CMSC	207*	Construction Seeding and Mulching	4,700	S.Y.
CMSC	207	Linear Sediment Barrier (per C-GC-74)	450	L.F.
CMSC	207*	Linear Sediment Barrier (per C-GC-74)	100	L.F.
CMSC	207	Rock Check Dam (per C-GC-73A)	2	Ea.
CMSC	207*	Rock Check Dam (per C-GC-73A)	1	Ea.
CMSC	207	Inlet Protection	17	Ea.
CMSC	207*	Inlet Protection	1	Ea.
	SPEC	Stabilized Construction Entrance (per C-GC-75A)	2	Ea.
	SPEC	Concrete Washout	1	Ea.

Spec	Item No.	Description	Quantity	Units
		Traffic Signal and Street Lighting		
ODOT	623	Power Cable, 2 Conductor, No. 6 AWG, As Per Plan	39	LF
ODOT	625	Conduit, 3", 725.051	20	LF
ODOT	625	Conduit, 2", 725.051	188	LF
ODOT	625	Conduit, 2", 725.04, Jacked or Drilled	462	LF
ODOT	625	Conduit Encased, 2", 725.051	13	LF
ODOT	625	Trench	107	LF
ODOT	625	Plastic Caution Tape	107	LF
ODOT	625	Pull Box, 725.08, 24", As Per Plan	4	EA
ODOT	625	Pull Box, 725.06, (12"x18"), As Per Plan	1	EA
ODOT	625	Ground Rod	7	EA
ODOT	625	Connection, Unfused Pull-Apart, Type III	4	EA
ODOT	625	Connection Fused Pull-Apart, Type II	4	EA
ODOT	625	No. 4 AWG 600 Volt Distribution Cable, As Per Plan	434	LF
ODOT	625	No. 6 AWG 600 Volt Distribution Cable (Lighting)	912	LF
ODOT	625	Pole and Bracket Cable, No. 10 AWG, 600 Volt	328	LF
ODOT	625	Bracket Arm, 10', (Lighting) As Per Plan	1	EA
ODOT	625	Bracket Arm, 15', (Lighting) As Per Plan	2	EA
ODOT	625	Bracket Arm, 20', (Lighting) As Per Plan	1	EA
ODOT	625	Luminaire, LED, 120 Volt, As Per Plan	4	EA
ODOT	630	Sign, Double Faced, Street Name, As Per Plan	3	EA
ODOT	630	Sign Support Assembly, Pole Mounted, As Per Plan	2	EA
ODOT	630	Sign, Flat Sheet, As Per Plan	4.5	SF
ODOT	632	Vehicular Signal Head, LED, 3-Section, 12" Lens, 1-Way, As Per Plan	7	EA
ODOT	632	Vehicular Signal Head, LED, 5-Section, 12" Lens, 1-Way, As Per Plan	1	EA
ODOT	632	Pedestrian Signal Head, As Per Plan	4	EA
ODOT	632	Pedestrian Pushbutton, As Per Plan	2	EA
ODOT	632	Covering Vehicular Signal Head	8	EA
ODOT	632	Covering Pedestrian Signal Head	4	EA
ODOT	632	Combination Signal Support, Type TC-81.22, Design No. 4, As Per Plan	3	EA
ODOT	632	Combination Signal Support, Type TC-81.22, Design No. 12, As Per Plan	1	EA
ODOT	632	Pedestal, 10.7', Transformer Base, As Per Plan	1	EA
ODOT	632	Signal Support Foundation, As Per Plan	4	EA
ODOT	632	Pedestal Foundation, As Per Plan	1	EA
ODOT	632	Signal Cable, 7 Conductor, No. 14 AWG	1,182	LF
ODOT	632	Signal Cable, 3 Conductor, No. 14 AWG (Signage)	530	LF
ODOT	632	Loop Detector Lead-In Cable	182	LF
ODOT	632	Power Service, As Per Plan	1	EA
ODOT	632	Conduit Riser, 2" Diameter, SCH 80, As Per Plan	1	EA
ODOT	632	Power Cable, 3 Conductor, No. 6 AWG, As Per Plan	50	LF
ODOT	632	Opticom System, As Per Plan	1	EA
ODOT	633	Controller Unit, Type TS-2/A2 with Cabinet, Type TS-1, As Per Plan	1	EA
ODOT	633	Cabinet Foundation, As Per Plan	1	EA
ODOT	633	Controller Work Pad, As Per Plan	1	EA
ODOT	633	Uninterruptible Power Supply (UPS), 1000 Watt, As Per Plan	1	EA
ODOT	815*	Spread Spectrum Radio Interconnect System, As Per Plan	1	EA
ODOT	815*	Spread Spectrum Radio Interconnect Repeater (At Existing Signalized Intersection), As Per Plan	1	EA
ODOT	816	Video Detection System, As Per Plan	1	EA
		Traffic Control		
ODOT	621	Raised Pavement Marker Removed	17	EA
ODOT	621	RPM	136	EA
ODOT	630	Ground Mounted Sign Support, As Per Plan	154	LF
ODOT	630	Removal of Ground Mounted Sign and Storage	5	EA
ODOT	630	Removal of Ground Mounted Sign Support and Disposal	4	EA
ODOT	630	Removal of Ground Mounted Sign and Reerection	1	EA
ODOT	630	Sign, Flat Sheet, As Per Plan	57.5	SF
ODOT	644	Edge Line	0.46	MI
ODOT	644	Center Line	0.33	MI
ODOT	644	Channelizing Line	341	LF
ODOT	644	Crosswalk Line	207	LF
ODOT	644	Lane Arrow	8	EA
ODOT	644	Stop Line	90	LF
ODOT	644	Transverse Line	123	LF
		Miscellaneous		
ODOT	614	Maintaining Traffic, As Per Plan	1	L.S.
CMSC	623	Construction Layout Stakes	1	L.S.
	SPEC	Landscape Plantings Complete, As Per Plan	1	L.S.

LEGEND - PROPOSED	
	Proposed Pavement
	Proposed Mill and Overlay
	Proposed Concrete Walk
	Proposed Concrete Drive
	Proposed Detectable Warning
	Proposed Concrete Curb & Gutter
	Proposed Concrete Straight 18" Curb
	Proposed Edge Of Pavement
	Proposed Shoulder of Road
	Proposed Right of way
	Proposed Easement
	Temporary Easement
	Proposed Ditch / Swale
	Proposed Underdrain Storm Sewer


LEGEND - PROPOSED	
	Proposed Underground Electricity
	Proposed Underground Lighting and Pull Box
	Proposed Street Light
	Work limits
	Proposed Fence
	Proposed Storm Sewer, Curb Inlet and Catch Basin
	Tree to be Removed

LEGEND - ABBREVIATIONS					
Asph	=	Asphalt	Prop	=	Proposed
BH	=	Bulkhead	PT	=	Point of Tangency
Bldg	=	Building	PVC	=	Polyvinyl Chloride
BM	=	Bench Mark	Pvmt	=	Pavement
BOB	=	Bottom of Bank	RD	=	Roof Drain
BOC	=	Back of Curb	Repl	=	Replacement
BOP	=	Back of Path	RR	=	Railroad
BOW	=	Back of Walk	Rt	=	Right
CATV	=	Cable Television	R/W	=	Right-of-Way
CB	=	Catch Basin	San	=	Sanitary Sewer
C&G	=	Curb and Gutter	Sas	=	Sanitary Service
C&GI	=	Curb and Gutter Inlet	St	=	Street
CI	=	Curb Inlet	Sta	=	Station
CIMH	=	Curb Inlet Manhole	Std	=	Standard
CL	=	Center Line	Strm	=	Storm Sewer
CO	=	Cleanouts	Str	=	Structure
COC	=	City of Columbus	TC	=	Top of Casting
Comm	=	Communication	Temp	=	Temporary
Conc	=	Concrete	Tel	=	Telephone
Const	=	Construction	TOB	=	Top of Bank
Defl	=	Deflection	TOC	=	Top of Curb
Dwg	=	Drawing	TOW	=	Top of Wall
Elec	=	Electric	Typ	=	Typical
Elev	=	Elevation	UD	=	Under Drain
Ex	=	Existing	UGC	=	Underground Communication
EOP	=	Edge of Pavement	UGE	=	Underground Electric
EOS	=	Edge of Shoulder	UGL	=	Underground Lighting Conduit
Esmt	=	Easement	UGT	=	Underground Telephone
EW	=	End Wall	UGTR	=	Underground Traffic
EOW	=	Edge of Walk	UGU	=	Underground Utilities
FDC	=	Fire Department Connection	Vert	=	Vertical
FH	=	Fire Hydrant	WL	=	Waterline
FO	=	Fiber Optic	WM	=	Water Main
FWS	=	Fire Water Service	WQ	=	Water Quality
GB	=	Grade Break	WS	=	Water Service
GM	=	Gas Main	WV	=	Water Valve
GS	=	Gas Service	YD	=	Yard Drain
HC	=	Horizontal Control	(APP)	=	As Per Plan
HD	=	Heavy Duty	(Approx)	=	Approximate
Horiz	=	Horizontal	(ATG)	=	Adjust To Grade
HW	=	Headwall	(BO)	=	By Others
Inv	=	Invert	(DND)	=	Do Not Disturb
Lt	=	Left	(FIP)	=	Fill In Place
MH	=	Manhole	(ME)	=	Meet Existing (Match Existing)
Max	=	Maximum	(RTG)	=	Reconstruct To Grade
Min	=	Minimum	(TBD)	=	To Be Demolish
NF	=	Not Found	(TBA)	=	To Be Abandoned
OHE	=	Overhead Electric	(TBR)	=	To Be Removed
OHC	=	Overhead	(TBRL)	=	To Be Relocated
		Communication/Telephone	(TBRL)(BO)	=	To Be Relocated By Others
PA	=	Previously Abandoned	(TBRR)	=	To Be Removed and Replaced
PC	=	Point of Curvature	(TBP)	=	Tree To Be Pruned
PL	=	Property Line			
Pkwy	=	Parkway			

LEGEND - EXISTING	
	Existing Storm Sewer and Inlet
	Existing Sanitary Sewer
	Existing Sanitary Service
	Existing Sanitary Force Main
	Existing Water Main
	Existing Gas Main
	Existing Underground Communication/Telephone
	Existing Underground Power
	Existing Underground Lighting
	Existing Overhead Electric Lines
	Existing Overhead Electric and Communication Lines
	Existing Traffic Conduit
	Existing Signal Loop Lines
	Existing Wood Fence
	Existing Chain-Link Fence
	Existing Property Line
	Existing Right-of-Way Line
	Existing Telephone Manhole
	Existing Telephone Pull Box
	Existing Communication Pedestal Box
	Existing Telephone Pedestal Box
	Existing Telephone Pole
	Existing Flood Light
	Existing Light Pull Box
	Existing Light Pole
	Existing Yard Light
	Existing Gas Service Valve
	Existing Gas Valve
	Existing Gas Meter
	Existing Gas Marker
	Existing Electric Manhole
	Existing Electric Pull Box
	Existing Electric Pedestal Box
	Existing Power Pole
	Existing Utility Pole
	Existing Transformer
	Existing Sign
	Existing Sanitary Manhole
	Existing Storm Catch Basin
	Existing Storm Manhole
	Existing Fire Hydrant
	Existing Water Service Valve
	Existing Water Valve
	Existing Water Meter

REVISIONS

MARK	DATE	DESCRIPTION
Δ	10/10/23	Plan Revisions For New Annexation



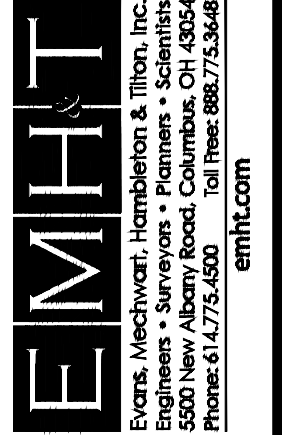
CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO

FOR

ROADWAY IMPROVEMENT

HARRISBURG PIKE (US 62) AND DEMOREST DRIVE INTERSECTION

ESTIMATE OF QUANTITIES AND LEGENDS



EMHT
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Engineers • Surveyors • Planners • Scientists
Phone: 614.775.5500 • Fax: 614.775.5501 • emht.com

DATE

January 2021

SCALE

None

JOB NO.

2019-0489

SHEET

2/36

Street and Storm General Notes

34. **CONCRETE PIPE AND STRUCTURE INSPECTION:** All precast concrete products shall be inspected at the location of manufacture. All concrete pipe, storm, and sanitary sewer structures shall be stamped or have such identification noting that said pipe, storm, and sanitary structures have been inspected by the City of Columbus and meets their specifications. Installation of pipe and structures without proper identification shall not be permitted. Cost of said inspection shall be the responsibility of the Contractor.

35. The installation of all sewer pipes on this project shall be in accordance with Section 901 of the CMSC, unless specifically indicated otherwise, with materials conforming to the appropriate referenced section of CMSC or ODOT CMS. Concrete pipe is required for all pipes that are exposed (such as pipes that outlet into drainage basins), regardless of the diameter. The following pipe materials will be permitted for use for public sewers.

STORM SEWER PIPE
Outside of Pavement Limits

Flexible Pipe according to the following specifications:

- * Polyvinyl Chloride (PVC) pipe <= 15" diameter with minimum of 4 feet coverage and a maximum of 15 feet coverage shall conform to CMSC 720.08 and/or ODOT CMS 707.45.
- * High Density Polyethylene (HDPE) pipe from 12" to 36" diameter conforming to CMSC 720.12 and/or ODOT CMS 707.33 with a maximum 20 feet coverage and a minimum 2.5 feet coverage.
- * Polypropylene (PP) pipe from 12" to 36" diameter conforming to ODOT CMS 707.65 or 707.69 and/or CMSC 720.13 or 720.14 with a maximum 20 feet coverage and a minimum 2.5 feet coverage.

Mandrel testing shall be performed on all flexible pipe per CMSC 901.21.

Rigid Pipe will be required for all sewers greater than 36" diameter (Reinforced Concrete Pipe CMSC 706.02, Concrete Box CMSC 706.05) and is also permitted on all sewers from 12" to 36" diameter.

Within Pavement Limits

Flexible Pipe according to the following specifications:

- * Flexible pipe installation which conforms to ODOT CMS 605 may be used for 4" and 6" underdrain tiles.
- * High Density Polyethylene (HDPE) pipe <=36" diameter conforming to CMSC 720.12 and/or ODOT CMS 707.33 with a maximum 20 feet coverage and a minimum 2.5 feet coverage.
- * Polypropylene (PP) pipe <=36" diameter conforming to ODOT CMS 707.65 and/or CMSC 720.13 with a maximum 20 feet coverage and a minimum 2.5 feet coverage.

Mandrel testing shall be performed on all flexible pipe (except underdrains) per CMSC 901.21.

Rigid Pipe will be required for all sewers greater than 36" (Reinforced Concrete Pipe CMSC 706.02, Concrete Box CMSC 706.05) and is also permitted for use on 12" to 36" sewers.

36. **TRENCH BACKFILL:** Trenches within a 1:1 influence of the roadway and/or pavement, including all points to within 3' behind the curb or edge of pavement, shall be filled and compacted per 912 backfill. Trenches within the right-of-way, but outside the road influence, shall be filled and compacted as per 911 backfill. All other trenches shall be filled and compacted as per 911 backfill at a minimum, or as otherwise indicated within these plans.

All item numbers shown below refer to City of Columbus Construction and Material Specifications (CMSC) item numbers.

912 backfill shall be granular material, conforming to Item 304, compacted as stipulated in Item 912.03. In all cases granular material shall be used around all manholes, structures and cleanouts. CDF is not permitted unless specifically requested by the City and in such case will be Type I or Type II

911 backfill shall be natural soil free from stones larger than two inches (2") across their greatest dimension, topsoil, vegetation, debris, rubbish or frozen material, compacted to 95% of its maximum laboratory dry weight and placed per Item 901.17.

Aggregate for bedding shall be No. 57 or No. 8, as per Item 703.

The excavated trench width twelve inches (12") above the conduit may be increased without extra compensation.

37. **TRENCHES:** All trenches shall be maintained as safe as possible by the Contractor at all times and backfilled as soon as practical. All trenches during non-working hours require traffic plates, and/or lighted barricades and construction fence.

38. **WATER MAIN SEPARATION:** The Contractor shall maintain eighteen inches (18") vertical and ten feet (10') horizontal separations between any water main and sanitary or storm sewers.

39. **DEFLECTION TESTING:** All flexible sewers are subject to Mandrel Testing and video inspection as directed by the City Engineer. Testing shall be performed no sooner than 30 days after the pipe trench has been backfilled and all roadway and site fills over the sewers constructed. The testing shall be completed in conformance with the requirements of CMSC Item 901.21. Maximum deflection shall not exceed 5% of the base inside diameter. Cost of the testing shall be at the expense of the Contractor.

40. **GRADE CHECKS:** The Contractor shall ensure there is a surveyor's level and rod on the project for use in performing grade checks whenever sewer line structures or pipe are being installed. The Contractor shall make this equipment available for the use of, and assist, the City Inspector in performing grade checks when requested by the Inspector. The Inspector will make all reasonable attempts to confine requests for assistance in performing grade checks to a time convenient to the Contractor.

These checks will be performed to ensure the following:

- A. Proper placement of each structure.
- B. Proper installation of initial runs of pipe from a structure.
- C. Grade, after an overnight or longer shutdown.
- D. Grade, at any other time the Inspector has reason to question grade of installation.

A grade check performed by the City Inspector in no way relieves the Contractor from the ultimate responsibility to ensure construction to the plan grade.

41. **GRADE CHANGES:** If it is determined that the elevation of the existing sewer, or existing appurtenance to be connected to, differs from the plan elevation or results in a change in the plan sewer slope, the Design Engineer shall be notified before starting construction of any portion of the proposed sewer which will be affected by the variance in the existing elevations.

If it is determined that the proposed sewer will intersect an existing sewer or underground utility if constructed as shown on the plan, the Design Engineer shall be notified before starting construction of any portion of the proposed sewer which would be affected by the interference with an existing facility.

Grades and elevations shown on the plans shall not be revised under any circumstances without first obtaining written approval from the City.

42. **STRUCTURE ADJUSTMENT:** The Contractor shall field verify the top of casting elevation of all proposed manholes. If precast structures are utilized, a minimum of the top 6" and a maximum of 12" shall be field placed either with grade rings or brick and mortar to allow for field adjustment.

43. **TEMPORARY BULKHEAD:** The Contractor shall install a temporary bulkhead, where directed on the plans, prior to construction of the proposed sewers and shall maintain same until said sewers are accepted by the City.

44. **BACKFILL TESTING:** Prior to construction of the public roadway, soil density tests shall be made on all sanitary sewer, water and designated storm sewer trenches which cross the proposed pavements or which lie such that the proposed pavements are located within any part of the influence line of said trench. Where said results indicate that the trench backfill does not meet the compaction requirements of Item 912.03 of the Construction and Material Specifications (CMSC), all backfill material shall be removed, replaced, and re-tested until compaction meets said requirements of Item 912.03.

45. **RECORD PLANS:** The City of Grove City is responsible for preparation of the "Record Plan" construction drawings after the project has been completed. The plans must include top of casting and invert elevations for all storm structures and identify any and all field modifications to, and deviations from, the approved plan set. A redline set of plans reflecting the "Record Plan" information shall be kept by the project inspector and provided to the City Engineer for review and subsequent preparation of the record plan drawings. If the redline plans are incomplete or missing information, the Inspector shall be responsible for supplying the missing information by field survey or other means to facilitate a complete set of record drawings.

46. **WORK HOURS:** Reference General Conditions for Work Hours.

47. **CONSTRUCTION LAYOUT STAKING:** Initial construction layout services for this project shall be provided by the City of Grove City. Any re-staking needed to replace stakes that have been removed or damaged throughout the course of work shall be provided by the Contractor at no additional cost to the City.

48. **SUBMITTALS:** To assure that the required products are furnished and installed in accordance with the design intent, procedures have been established for submittals for review by the City/Engineer. Submittals are required on all materials to be incorporated into the Work, without exception. Submittals are also required for project operations not requiring specific materials. These item may include maintenance of traffic, bypass pumping, etc.

Each submittal shall contain a cover sheet that identifies the submittal items for review and a correlation to the project item for which the submittal is made. Assume that each submittal is complete, thoroughly descriptive of the item proposed, legible and of sufficient detail to fully define the item(s) to be furnished. Clearly indicate all deviations from the Contract Documents, and describe the reason therefore. Any portions of the submittal not pertinent to the project shall be crossed out with a bold line or marked with "Does Not Apply", or identify clearly and without question the portions of the submittal that are pertinent. The City/Engineer shall subject submittals to a generalized checking process only. Review by the City/Engineer of such data shall not relieve the Contractor of any obligations under the Contract, shall not waive the right of the City/Engineer to order the remedy of such defects in any item of the Work as may later be revealed, and shall in no way render the City/Engineer liable for failure to detect any such defects.

49. **SCHEDULE:** The Contractor shall submit in writing a schedule of operations to the Engineer and receive approval in writing before work is started on this project. Monthly Schedule updates (at a minimum) are required to be submitted to the Engineer the first week of the month. Cost included in the various bid price items.

50. **EMERGENCY PROVISIONS:** The Contractor shall provide to the Owner a 24-hour emergency telephone numbers, in writing, prior to the start of construction.

51. **MATERIAL SAFETY DATA SHEETS:** The Contractor shall submit, for information only, the manufacturers' hazardous materials communication information forms for all materials to be incorporated into the work.

52. **STORAGE OF EQUIPMENT AND MATERIALS:** Materials, including pipe, shall not at any time (working or non-working hours) be stored within the right-of-way or within one hundred (100) feet of any intersecting street or driveway, without prior written approval from the Owner. Compliance with this requirement along with additional provisions of the Contract Specifications shall not in any way relieve the contractor of his legal responsibilities or liabilities for the safety of the public. The contractor shall inform the Owner of the plan for the on-site storage of equipment and materials at the pre-construction meeting.

53. **BENCHMARKS AND SURVEY MONUMENTS:** Elevations are based on 1988 North American Vertical Datum (NAVD 88).

All vertical control points were set using a County or City certified source monument for its point of origin. The Contractor is responsible for preserving benchmarks during the project and if destroyed he is responsible for replacing them at his own expense.

The Contractor shall reference all iron pins and monuments before excavating at or near said iron pins or monuments. The contractor shall not disturb existing right-of-way or property corner markers that are required to remain after construction, as determined by the City of Grove City. If any pins or monuments are disturbed, destroyed, or damaged by the Contractor that have not been designated to be removed in these plans, they shall be accurately replaced by a Registered Surveyor at the completion of the project or at the direction of the Engineer and at the Contractor's expense as per the City of Columbus CMSC, Section 107.11.

54. **SUBSURFACE SOIL DATA:** Subsurface investigations were not taken by the Engineer. It is the responsibility of the Contractor to make his own investigations of subsurface conditions prior to submitting his proposal. It is therefore the Contractor's responsibility to determine subsurface/site conditions, and no additional payment will be made for differing site conditions. Any performance of site subsurface investigations (test holes) shall be coordinated in advance with the City as warranted. Excavated material shall be replaced in a controlled manner to minimize impact on field earthwork.

55. **MAINTAINING SERVICE:** The Contractor shall be responsible for maintaining access for mail service, delivery service, police, fire and solid waste removal in the construction area. The Contractor shall contact the City of Grove City for current collection date each week prior to starting work and be responsible for maintaining access to the various facilities associated with these services such as dumpsters and mailboxes during the course of the project. Cost for maintaining service shall be included in the price bid for the various items in the contract.

56. **MAILBOXES:** The Contractor shall be responsible to ensure that U.S. Mail delivery within the project limits is not disrupted by construction operations. This responsibility is limited to relocation of mailboxes to a temporary location that will allow the completion of the work and shall also include the restoration of mailboxes to their original location or approved new location. Before relocating any mailboxes, the Contractor shall contact the U.S. Postal Service and relocate mailboxes according to the Postal Service and satisfaction of the property owners.

57. **SECURING EXCAVATIONS & TRENCHES FOR NON-WORKING HOURS:** Excavations and trenches over 24-inches deep shall be securely plated, or backfilled during non-working hours. The length of trench which is open at any one time shall at all times be subject to approval of the engineer.

58. **UNAUTHORIZED STREET EXCAVATION:** In the event the Contractor excavates below the elevations called for on the plans, the Contractor will be required to replace this excess excavated material with compacted crushed limestone aggregate, Item 304 as directed and at no extra cost to the City.

59. **RESTORATION, CLEANUP, & MAINTENANCE:** The Contractor shall be responsible for the immediate cleanup of any debris, mud or dirt tracked or spilled on City and/or public streets or private drives whether inside or outside the project area. The Contractor is responsible for the cost of any services contracted and/or completed by the City of Grove City in the cleanup of any tracking or spillage anytime during project construction. The Engineer may require the Contractor to perform weekly street cleaning if excessive amounts of dirt and mud are left along the street. This may include removal by sweeping, power cleaning, or manual methods. The cost of this work shall be included in the various contract items, unless otherwise specified.

The Contractor shall leave the area, disturbed by construction, in the same or better condition as prior to commencement of this work.

It is the intent of the City to keep inconvenience to the property owners to an absolute minimum. All work is to continue on a uniform basis and on schedule, particularly the restoration and clean up of disturbed areas after construction.

All fences, signs, drainage structures, landscaping areas, etc. removed, disturbed or damaged during work under the Contract Improvements shall be restored to their original condition by the Contractor unless otherwise provided for in the contract. All additional costs shall be at the Contractor's expense. No separate payment shall be made.

The Contractor shall perform daily cleanup of the work site. All trash, including cans, bottles, food scraps, containers, and wrappers shall be properly disposed of off-site and shall not be thrown in the construction area.

All debris, rubble, unusable materials, and items not salvaged by the City shall become the property of the Contractor and shall be removed from the site by the Contractor and disposed of properly. The Contractor shall restore disturbed areas to their original elevation and equal or better condition than existed before construction. The Contractor shall immediately clean any dirt, sediment or mud deposited on City streets, on or off the project site. The cost of this work shall be included in the overall price bid for the project. No separate payment shall be made.

60. **ADDITIONAL RESTORATION:** The Contractor may be required to perform restoration for areas disturbed by others (i.e. utility contractors) in the vicinity of the project. Where directed, the Contractor shall restore the areas in accordance with the applicable Grove City standards and project requirements. The Contractor will be compensated based upon unit prices within the contract for restoration of areas disturbed by those not under control of the Contractor.

61. **SIDEWALKS, CURB RAMPS AND DRIVE APPROACHES:** All sidewalk and curb ramps shall be constructed in strict accordance with the Americans with Disabilities Act (ADA) Accessibility Guidelines. The Contractor shall reference the latest edition of the City of Columbus ADA curb ramp standard drawings for additional details and material requirements. Final acceptance and compliance with ADA guidelines shall be the sole responsibility of the Contractor. All curb ramps or associated concrete work found to be non-compliant with ADA guidelines shall be removed and reconstructed by the Contractor to meet ADA requirements at no additional cost to the Owner.

62. **GUTTER SLOPES AT CURB RAMPS:** For new roadway construction, full depth pavement replacement, and when possible, resurfacing projects, the cross slope in the street at the bottom of curb ramps shall be a maximum of 2.0%.

For curb ramp installations at existing roadways, the counter slope in the street or gutter at the bottom of the curb ramp shall not exceed 5% while maintaining a cross slope of no greater than 1.56%. At existing roadway installations where the street conditions at the curb do not meet these slope requirements the Contractor shall construct a two foot transition to the existing street grades with a counter slope of 5% or less and a cross slope of no greater than 2.0%.

63. **PONDING:** Contractor is responsible for repairs to all areas that hold water after construction of the curb ramps. These areas include any and all areas within the pedestrian right-of-way approaching and leaving the newly constructed curb ramp. Areas of ponding cannot be identified until after adequate rainfall has occurred and repair to these areas will not occur until after such time.

64. **DRAINAGE AT INTERSECTING STREETS:** At intersecting streets where the drainage is toward or into the project, special care shall be taken by Contractor to maintain proper grade along the edge of pavement so that water will not pond. At intersecting streets, where the edge of pavement continues across the street, care shall be taken to feather down and form a neat seam with the proper grade.

65. **DRAIN PIPES:** When drain pipes are located in the curb and drain into the gutter, special care shall be taken by the Contractor so that these drains will not be closed or otherwise rendered inoperative.

The Contractor shall field verify the top of casting elevation of all new storm water structures. If precast structures are utilized, a minimum of the top 6-inches and a maximum of 12-inches shall be field placed either with grade rings or brick and mortar to allow for field adjustment. The cost for this work shall be included in the unit price bid for the applicable CMS Item 604.

If the Engineer determines that an inlet is too low after it has been placed and rough grading performed, the Contractor shall adjust the inlet as directed by the Engineer and re-grade the area accordingly. The cost to adjust the inlet shall be paid for in the unit price bid for CMS Item 604 Inlet Adjusted to Grade and shall constitute full payment for adjusting the inlet including grade rings, concrete, excavation, backfill, re-grading, etc.

66. **CURB HEIGHT:** The Contractor shall ensure that a 6" height curb (or plan specified height) is available upon completion of street construction. The City may require this curb to be removed and reconstructed if this height deviates more or less than 1/2" of the 6" required height. All costs associated with the above shall be borne by the Contractor.

67. **CONCRETE CURE AND SEAL:** All exposed concrete surfaces shall receive 2 coats of a clear, non-yellowing acrylic curing compound meeting the requirements of ASTM C309 and AASHTO M148. Maximum VOC shall be 400g/l with a minimum 25% solids by weight. Cost for the cure and seal shall be included in the price of the respective concrete items (curbs, walks, drive approaches, ramps, etc.)

68. **SERVICE BOXES:** All valve boxes, meter pits and other utility structures will be adjusted to grade where new walk, pavement and/or curb are constructed.

69. **COORDINATION BETWEEN CONTRACTORS:** The Contractor for this plan shall coordinate the construction and maintenance of traffic operations with any other Contractors in the vicinity. Prior to finalization of scheduling for this project, the Contractor will confirm there are no schedule conflicts.

70. **COORDINATING WITH UTILITIES:** It is the Contractor's responsibility to coordinate his work with other Contractors and the private utilities as required. The Contractor and Utility Owner(s) are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum. The Contractor shall notify the utility companies, giving ample lead-time of 72 hour notice minimum, of utility lines or poles that are in the way of construction.

Contractor shall prepare written notification to the business and property owners and respective utility companies a minimum of 48 hours in advance of all operations which may disconnect existing utilities.

71. **UTILITY POLE PROTECTION:** The Contractor shall coordinate construction operations and protect existing utility poles. Utility poles within the influence of trenches or earthwork operations shall be reinforced by the utility company prior to construction activities. Notification of the utility company prior to construction shall be the responsibility of the Contractor. All costs incurred for the support of utility poles and coordination for temporary support shall be included with the various bid items. All costs shall be at the Contractor's expense, and no reimbursement or separate payment shall be made.

72. **GAS NOTES:** The Contractor shall expose all gas lines at proposed utility crossings or proposed pavement cuts prior to installation of conduit, water items, etc. Gas lines shown in conflict with proposed improvements will be relocated by the gas company during the construction of this project. All trenches shall be backfilled and compacted as per the requirements of CMS Section 204. The Contractor shall coordinate with the Gas Company. Payment shall be included within the price of the project improvement. No separate payment will be made.

73. **GAS SERVICE VALVES ADJUSTED TO GRADE:** The contractor shall contact Columbia Gas (614-460-2244) to coordinate the adjustment of gas service valves. No separate payment will be made for the adjustment of valve boxes by the Contractor awarded this project.

74. **COLUMBIA GAS DAMAGE PREVENTION CENTER:** For information concerning Columbia Gas lines or equipment, or if damage occurs to gas lines or equipment the Contractor can call the Columbia Gas Damage Prevention Center at (614) 280-7372 or toll free at (866) 632-6243.

75. **REVIEW OF DRAINAGE FACILITIES:** Before any work is started on the project, and again before final acceptance by the City, the Contractor along with the local representatives shall make an inspection of the existing sewers within the work limits 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. The City shall keep records of the inspections in writing.

All new conduits, inlets, catch basins, and manholes constructed or reconstructed 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 City.

All existing manholes, catch basins, drains, sewers, and appurtenances inspected initially by the above mentioned parties shall be maintained and left in a condition reasonably comparable to that determined by the original inspection. The Contractor shall correct any change in the condition resulting from the Contractor's operations to the satisfaction of the Engineer. The above is not applicable for structures to be abandoned.

The Contractor shall remove debris, silt, etc., from the existing manholes and catch basins that have been affected by construction operations. The Contractor shall maintain service in existing sewers during construction. All existing charted or uncharted storm sewers encountered during construction shall be connected into the new system.

Payment for all the operations described above shall be included in the contract price for the pertinent 604 and 901 items.

76. **BYPASS PUMPING:** Bypass pumping is required wherever the flow in any sewer is disrupted by construction of new sewer segments, manholes, or associated activities. Bypass pumping must provide for possible storm flows that may typically be expected during the seasons that the work is in progress. The Contractor shall have a contingency plan to prevent damage during high flows. The City will not be responsible for damages due to high flows.

The cost of any bypass pumping required for the construction of storm sewers or waterlines shall be included in the price bid for the various sewer or water items.

77. **CONNECTIONS BETWEEN EXISTING PIPES AND PROPOSED STRUCTURES:** The cost of making connections between existing storm pipes that are to remain in service and proposed storm infrastructure, including but not limited to concrete collars, couplings, miscellaneous sections of pipe, backfilling and bedding shall be considered incidental to the project and included in the price bid for Item 901.

78. **TRENCHING:** Excavating and backfilling for sewers shall comply with CMS Item 901. The Contractor shall excavate all material of whatever nature encountered, including rock, and remove excess material from the site. No additional payment will be made for rock excavation. Blasting is not permitted.

If unsuitable material is encountered at the subgrade of the trench, the treatment of this material shall follow CMS Item 901.06. Replacement of unsuitable material with stone foundation as specified in CMS Item 906 shall be required if dewatering of the subgrade does not produce a subgrade acceptable to the Engineer. The following estimated quantities are to be used as directed by the Engineer: CMS Item 906 Stone Foundation 10 cubic yards

Any excavation performed beyond the standard trench width, as defined on Grove City Standard Construction Drawings C-GC-26 & C-GC-27 due to site conditions or the Contractor's methods are done so solely at the Contractor's expense. No extra payment will be made for unauthorized excavation.

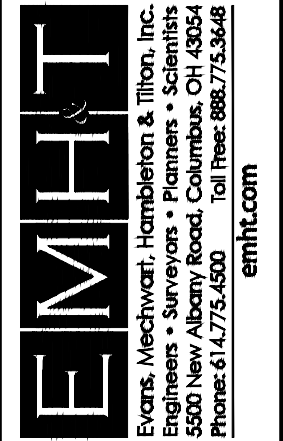
All trenches that cross pavement or where the front face of trenches, paralleling the pavement is within 24-inches of the face of curb or edge of pavement within public right-of-way shall be backfilled with Compacted Granular Material as per Item 912. The material shall extend laterally 36-inches beyond face of curb or edge of pavement. Other areas outside the above requirement but inside right-of-way shall be compacted as per Item 911 (Storm and Sanitary Sewers) or Item 801.09 (Water Main).

REVISIONS		DESCRIPTION	DATE				
MARK							



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT

HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
GENERAL NOTES



DATE	
January 2021	
SCALE	
None	
JOB NO.	
2019-0489	
SHEET	
4/36	

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CITY OF GROVE CITY, OHIO

Street and Storm General Notes

79. **SHEETING AND BRACING:** Any sheeting and bracing necessary to install the proposed project improvements shall be furnished, installed, and maintained by the Contractor at the Contractor's expense. No separate payment shall be made for sheeting and bracing. At ALL times the Contractor shall be required to excavate in a manner that is safe to all workers and the general traveling public. ALL OSHA requirements shall be upheld and sound safety practices shall be exercised at all times. Removal of sheeting and bracing items upon completion of work will be required as directed by the City of Grove City representatives.

80. **LOW STRENGTH MORTAR BACKFILL FOR STORM SEWER (OPTIONAL):** The Contractor may backfill the sewer pipe trench with Item 613 Low Strength Mortar Backfill, Type I or II in accordance with CMSC Section 636.03, with City Approval. No separate payment shall be made. Payment shall be included within the price bid for the sewer pipe if the Contractor chooses this alternative.

81. **CONDUIT END TREATMENT:** Immediately after placement of any conduits, the Contractor shall construct the end treatments required by the plans at both the outlet and inlet ends. This shall include headwalls, concrete riprap, rock channel protection, sodding, etc.

82. **EXISTING STRUCTURE ADJUSTMENT:** Before adjusting existing manholes and/or curb inlets to grade, the contractor, in the presence of the City Engineer or acceptable representative, shall inspect said structures. If structures are in poor condition, they shall be replaced with new structures at the appropriate elevations.

86. **STRUCTURES TO BE REMOVED/ABANDONED:** The Contractor is responsible for the removal/abandonment of sewer structures as designated on the plan and profile sheets. Removal and Disposal shall be in accordance with CMSC Item 202. Castings shall be salvaged and returned to the City of Grove City if requested. In the event the castings are not desired by the City, the contractor shall dispose of them in an environmentally sound manner. Existing structures to be abandoned shall be thoroughly filled with controlled density fill. All associated costs shall be included in the price bid for the removal/abandonment of the existing structure.

87. **PIPE TO BE ABANDONED:** Pipes identified as "To Be Abandoned" (TBA), shall be addressed in one of the following manners as applicable:

Pipes 12" and Smaller: These pipes shall be cut and plugged at the point the abandonment and left in place. No payment shall be made for this effort as it shall be considered incidental to the project.

Pipes greater than 12": These pipes shall be cut at the point the abandonment begins and filled in place. Performance of this work shall be in accordance with CMSC Items 202.04 and 202.041. Payment for this item shall be per Item 202, Pipe Filled in Place. Pipes meeting the requirement for fill which will be encountered during excavation activities shall be removed during the excavation. The City will not pay to fill pipes which will later be removed.

Pipes which are identified "To Be Abandoned" which are encountered during excavation for another item shall be removed within the limits of the excavation and plugged on either side. The cost for removal of this pipe shall be considered incidental to the excavation effort and no additional payment will be made. The removal of all underdrains shall be considered incidental to the excavation effort.

If the Contractor has any indication that a pipe to be abandoned has a direct connection (lateral) not shown on the plan, all abandonment activities shall be ceased and the Design Engineer shall be notified immediately.

88. **CROSSING 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 storm 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 in the plan conduit slope, the Engineer shall be notified before starting construction of any portion of the proposed conduit which would be affected by the variance in the existing elevations.

If it is determined 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 interface with an existing facility.

Grades and elevations shown on the plans shall not be revised under any circumstances without first obtaining written approval from the Engineer. Invert elevations shall not deviate from plan elevation by more than 0.05 foot. Failing to meet the above requirements is cause for rejection of the affected section of sewer.

Payment for all operations described above shall be included in the contract price for the pertinent 901 pipe, or 800 water items.

89. **EXISTING DRAINAGE SYSTEMS:** Existing drainage systems (field tiles, roof drain outlets, sump pumps, etc.) encountered during construction of the new storm sewer or removal of existing storm sewers shall be extended as necessary and blind tapped to the new storm sewer per Columbus Division of Sewerage and Drainage Standard Drawing AA-S159 or connected to the catch basin as directed by the Engineer. All costs associated with this work shall be included in the unit price bid for CMS Item 901.

This plan makes no provisions for connection, nor shall the Engineer or Contractor connect, any untreated septic drainage into the highway drainage system. If the Contractor encounters a pipe or connection to the storm sewer that in the estimate of the Engineer may be an illicit connection from an on-site sewage disposal system, the Columbus Health Department shall be contacted at 614-645-7156 to determine whether the pipe may be reconnected to the City's storm sewer system.

SUPPLEMENTAL ITEM NOTES

ITEM 201 – CLEARING AND GRUBBING:

All trees, fence posts, rocks, bush, stumps and fence specifically marked for removal that have not been itemized within the construction limits of this project shall be removed under the lump sum price bid for Item 201 – Clearing and Grubbing. The Owner reserves the right to order the removal of additional trees or stumps located within the right-of-way, but not shown on the plans. Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item 201 – Clearing and Grubbing.

ITEM 202 – PAVEMENT REMOVED:

This item has been provided for the removal of concrete pavement (including concrete drives and pads) within the project limits. This item shall include any sawcutting required to facilitate the removal. The cost for all asphalt pavement prescribed for removal shall be included in Item 203, Excavation.

ITEM 202 – LANDSCAPE COLUMN REMOVED, COMPLETE:

This item has been provided for the removal and disposal of landscape columns (including foundations) identified for removal within the project limits.

ITEM 203 – EXCAVATION, EMBANKMENT INCREASE OR DECREASE:

All excavation and embankment, (including temporary cuts and fills) required to complete the improvements identified in the plans shall be included in the lump sum price bid for Item 203, Excavation or Item 203, Embankment. In the event adjustments are required in the field, the following contingency items have been provided to establish unit prices.

Item 203 – Excavation, Increase or Decrease	50	C.Y.
Item 203 – Embankment, Increase or Decrease	50	C.Y.

The actual adjusted volume of excavation or embankment shall be as measured in the field.

ITEM 204 – EXCAVATION OF UNSUITABLE SUBGRADE, ITEM 204 – GRANULAR EMBANKMENT (304 LESTONE), AND ITEM SPEC – GEOGRID, TENSAR BX-1200 (OR APPROVED EQUAL):

If, in the opinion of the Site Soils Engineer, the subgrade does not meet the requirements of the Item 204 specification, and recommends that an undercut be required, the Contractor shall remove the specified material and then fill to the proposed subgrade elevation in accordance with Item 204.04. The Contractors price bid for these items shall include all work and materials associated excavation, embankment, supplying and installing of the geogrid.

The Contractor shall remove the unsuitable materials and replace them with geogrid and 304 limestone. This work shall consist of furnishing, placing, and compacting the 304 limestone in place. The aggregate shall consist of 304 limestone meeting the requirements for 703.17. Geogrid to be Tensar BX-1200 or approved equal.

Payment for the cost of removing the unsuitable material, filling with granular embankment and compacting along with placement of the Geogrid shall be paid for under the unit price bid for Item 204 – Excavation of Unsuitable Subgrade, Item 204 – Granular Embankment, and Item Spec Geogrid, Tensar BX-1200 (Or Approved Equal). These items are contingency items and not to be used due to the Contractor's negligence or failure to properly protect exposed subgrades per ODOT specifications and earthwork manuals and shall only be performed as directed by the owner or owner's representatives:

Item 204 – Excavation of Unsuitable Subgrade	250	C.Y.
Item 204 – Granular Embankment (304 Limestone)	250	C.Y.
Item Spec – Geogrid, Tensar BX-1200 (or approved equal)	360	S.Y.

ITEM 204 – PROOF ROLLING

In areas where new pavement is constructed, the exposed subgrade shall be proof-rolled in accordance with CMSC 204.06. An estimated quantity of five (5) hours has been included within the quantities. Additional hours of proof rolling to achieve subgrade compaction as defined in Item 204 of CMSC and shall be provided at the Contractor's expense.

ITEM 204 – SUBGRADE COMPACTION:

All earth below pavements, concrete sidewalk, path and curb areas shall be compacted in accordance with CMSC 204 where the upper 12 inches of subgrade soils are properly prepared and moisture conditioned to produce a stable subgrade on which pavements, sidewalks, paths and curbs can be constructed. Payment for subgrade compaction shall be included within the cost of sidewalk in walk areas, the cost of shared-use path in path areas and/or the cost of curb in curbed areas. No separate payment shall be made for subgrade compaction in areas of curb, path or sidewalk. Payment for this item shall be limited to areas beneath proposed pavements only.

ITEM 207 – TEMPORARY SOIL EROSION AND SEDIMENT CONTROL:

Erosion and Sediment Control measures are required as a part of this project. Erosion and Sediment Control measures relating to this project development are included within these plans. The Sedimentation and Erosion Control Plan reflects a schematic diagram of the intended measures for compliance with the required standards. General practice and/or site field conditions may warrant variation in the placement or use of the specified controls.

In addition to the items shown directly on the erosion and sediment control plan sheets, the following estimated quantities are to be used as directed by the Engineer--In-Charge for temporary erosion and sediment control measures:

207 – Linear Sediment Barrier	100	L.F.
207 – Construction Seeding and Mulching	4700	S.Y.
207 – Rock Check Dam	1	Each
207 – Inlet Protection	1	Each

Costs of watering, in accordance with CMSC 207.03 and 659.09, shall be included within the unit bid costs of Item 207, Construction Seeding & Mulching.

ITEM 452 – NON-REINFORCED CONCRETE PAVEMENT (T=6"), CLASS MS

This Item shall conform with CMSC Section 452 with the following additional requirements:

1. Concrete for driveways shall be Class "COC MS", Air Entrained w/ No. 57 Limestone Aggregate and 800 pounds of cement per C.Y.
2. Maximum 4" slump
3. Broom finish with edge trowel
4. No Fly Ash or GGBFS is permitted
5. Contraction Joints shall be sawn a minimum of 5" deep
6. Provide expansion joints as indicated in the applicable standard drawings
7. Apply cure and seal
8. All curbing for concrete driveways and approaches (Std. Dwg. C-GC-41A, C-GC-41B and C-GC-42) shall be integral curbing or straight 18" curbing. Costs to be included in the unit cost bid for Item 452.

ITEM 605 – 4" UNDERDRAIN, AS PER PLAN

Connection of existing underdrains to proposed underdrains or to proposed storm pipes or structures shall be included within the price bid for the proposed underdrain.

4" Pipe Underdrains shall be in accordance with CMSC 720.12.

All tees required to connect to existing or proposed underdrain shall be included within the cost of the underdrain.

The underdrain shall be placed at the depth detailed within the typical sections. Costs for excavation and backfill at the depths detailed within these plans shall be included within Item 605, 4" Pipe Underdrain, As Per Plan. Underdrains shall be installed per the curb grade, but shall have an absolute minimum positive drainage slope of 0.30%.

In the event that additional backfill or excavation is necessary to maintain minimum slopes, any additional costs shall be the responsibility of the Contractor.

The Contractor shall connect all proposed underdrains to new inlets. The cost of coring and connecting the underdrain to inlets shall be included within the bid cost of the inlets and the underdrain. No separate payment shall be made for underdrain connection.

ITEM 608 – CURB RAMPS – SIDEWALK (W/ ADA DETECTABLE WARNING)

ITEM 608 – CURB RAMPS – SHARED USE PATH (W/ ADA DETECTABLE WARNING)

The Contractor shall be responsible to construct all curb ramps to be ADA compliant per the City of Grove City Standard Construction Drawings (C-GC-43A, 43B, 43C, 43DW, 83). Details within this plan are for information only and may need to be adjusted for field variations. This item is inclusive of all work necessary to construct the Curb Ramp to be ADA compliant, including curb cutting, setting forms, and slope calculations. Payment shall be under Item 608, Curb Ramps – Sidewalk (w/ ADA Detectable Warning) or Item 608, Curb Ramps – Shared Use Path (w/ ADA Detectable Warning). Detectable warnings shall be installed per COC Supplemental Specification 1551, Type E, Color Red.

ITEM 616 – DUST CONTROL

The Contractor shall be responsible for providing Dust Control measures in accordance with CMSC Item 616. Dust Control operations shall be performed on a periodic basis and/or as directed by the Construction Manager to alleviate or prevent the dust nuisance originating within the project work limits. The tracking or spillage of mud, dirt or debris on public streets is prohibited and any such occurrence shall be cleaned up immediately by the Contractor. The following quantities have been provided for dust control:

Item 616	Water	10	M. Gal
Item 616	Calcium Chloride	1	Ton

ITEM SPECIAL – MAILBOX REMOVED AND RELOCATED:

This work shall consist of furnishing and erecting mailbox supports and any associated mounting hardware in accordance with plan details, and attaching an owner-supplied mailbox at locations specified in the plan, or otherwise established by the Engineer. Wood posts shall be nominal 4" by 4" square.

Hardware (plates, screws, bolts, etc.) shall be commercial-grade galvanized steel.

Posts shall be set per the first paragraph of 606.03, and shall in no instance be encased in concrete

Support hardware shall accommodate either a single or a double mailbox installation, and no more than two boxes may be mounted on a single post.

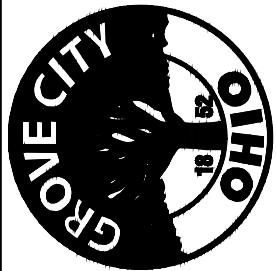
The mailbox shall be securely and neatly attached by the Contractor to the new support. The Contractor shall furnish all necessary attachment hardware (nuts, bolts, plates, spacers, and washers) as necessary to accommodate the complete installation.

In the absence of a new box supplied by the owner, the Contractor shall salvage the existing box and place it on the new support. Due care shall be exercised in such an operation, and the Contractor shall be responsible for repairing or replacing any box damaged by improper handling on his part, as judged and directed by the Engineer.

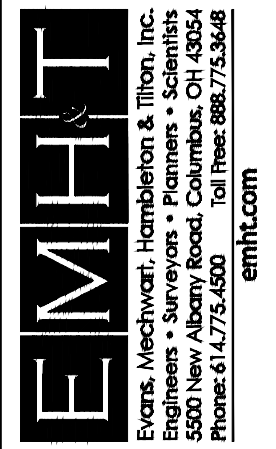
The Contractor shall be responsible for coordinating with the local post master regarding the timing of the movement of any mailbox to a new location. The Contractor may be required to temporarily relocate boxes during construction to ensure maintenance of mail delivery at no additional cost to the Owner.

Payment under this item shall be limited to final permanent installations. Temporary installations shall be in accordance with 107.12. However, the same material and size limitations as for permanent installations shall apply.

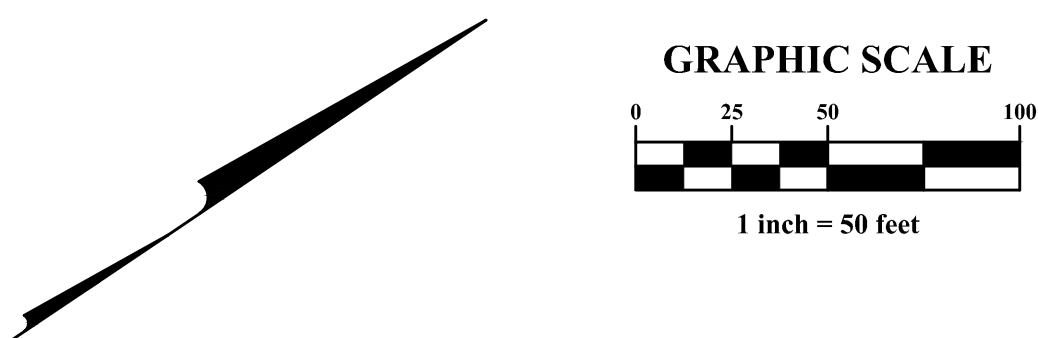
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MARK			








CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
GENERAL NOTES



DATE
January 2021
SCALE
None
JOB NO.
2019-0489
SHEET
5/36



	Proposed Pavement
	Proposed Concrete Walk
	Proposed Mill and Overlay
	Proposed Concrete Drive
	Proposed Driveway Replacement

MARK	DATE	DESCRIPTION	REVISIONS
△	10/10/23	Plan Revisions For New Annexation	



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
ROADWAY IMPROVEMENT
FOR
HARRISBURG PIKE (US 62) AND
DEMAREST DRIVE INTERSECTION
SCHEMATIC PLAN

EMH₂T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614/775-4500 Toll Free: 888-775-3648
emht.com

DATE

January 2021

SCALE

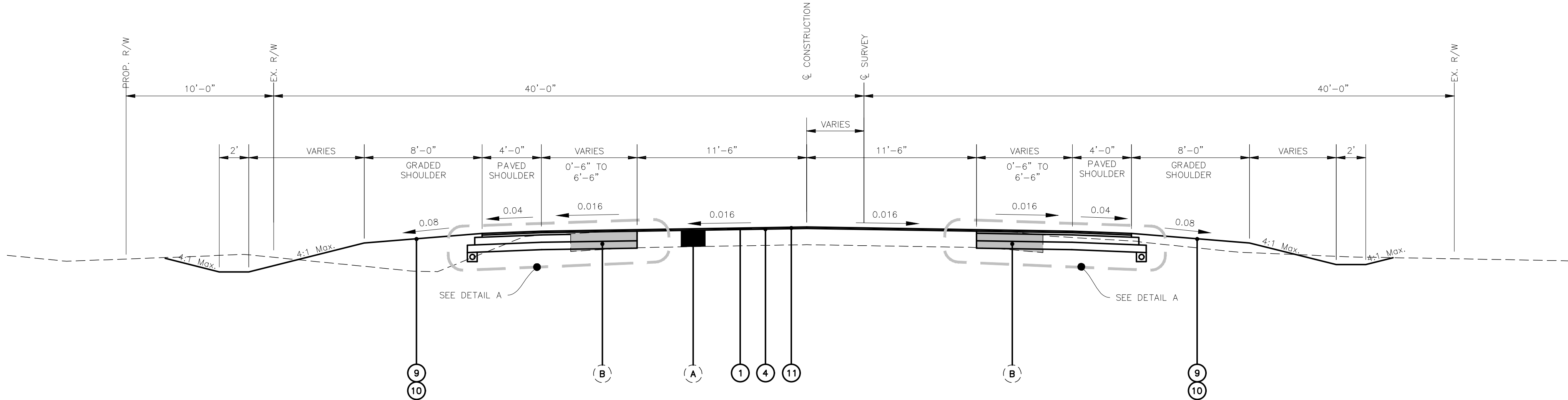
1" = 50'

JOB NO.
2019-0489

SHEET

6/36

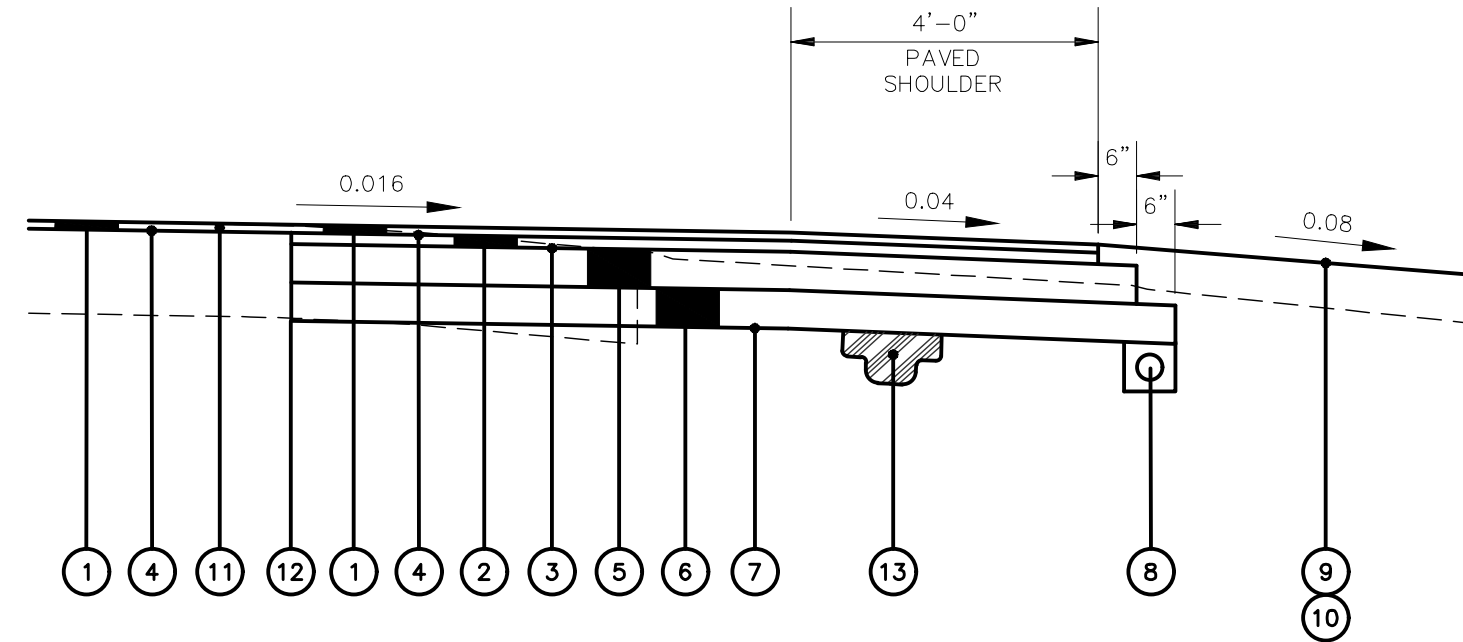
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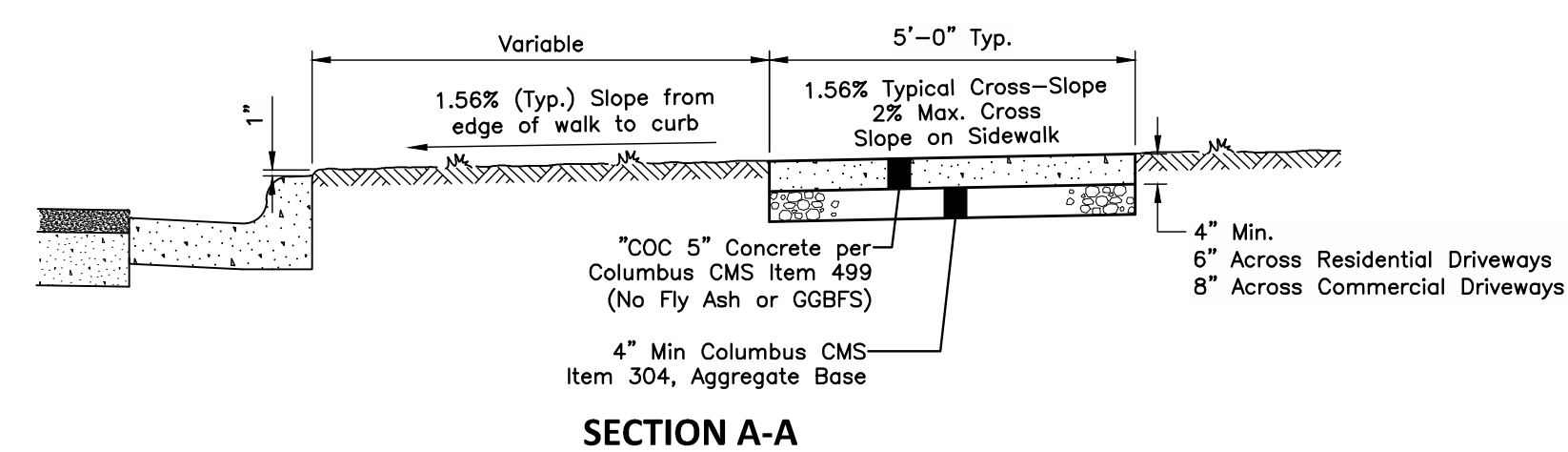


TYPICAL HARRISBURG PIKE (U.S. 62) ROAD SECTION
(STA 595+45.19 to STA 604+29.19)
Not to Scale

- ① Item 441, Asphalt Concrete, Surface Course, Type 1, (448) PG70-22M (1.25")
- ② Item 441, Asphalt Concrete, Intermediate Course, Type 2, (448) PG64-22 (1.75")
- ③ Item 407, Non-Tracking Tack Coat for Intermediate Course (0.1gal/S.Y.)
- ④ Item 407, Non-Tracking Tack Coat (0.1gal/S.Y.)
- ⑤ Item 301, Asphalt Concrete Base (8")
- ⑥ Item 304, Aggregate Base (6")
- ⑦ Item 204, Subgrade Compaction
- ⑧ Item 605, 4" Underdrain, As Per Plan
- ⑨ Item 653, Topsoil (3" min)
- ⑩ Item 659, Seeding and Mulching, As Per Plan
- ⑪ Item 254, Pavement Planing (1.25")
- ⑫ Item 252, Full Depth Pavement Sawing (included in Item 203 - Excavation)
- ⑬ Item 204, Excavation of Unsuitable Subgrade, Granular Embankment using No. 304 Limestone and Geogrid as directed by the Engineer

- (A) Ex. Asphalt Pavement (To Be Planed and Resurfaced)
- (B) Ex. Asphalt Shoulder (To Be Removed)



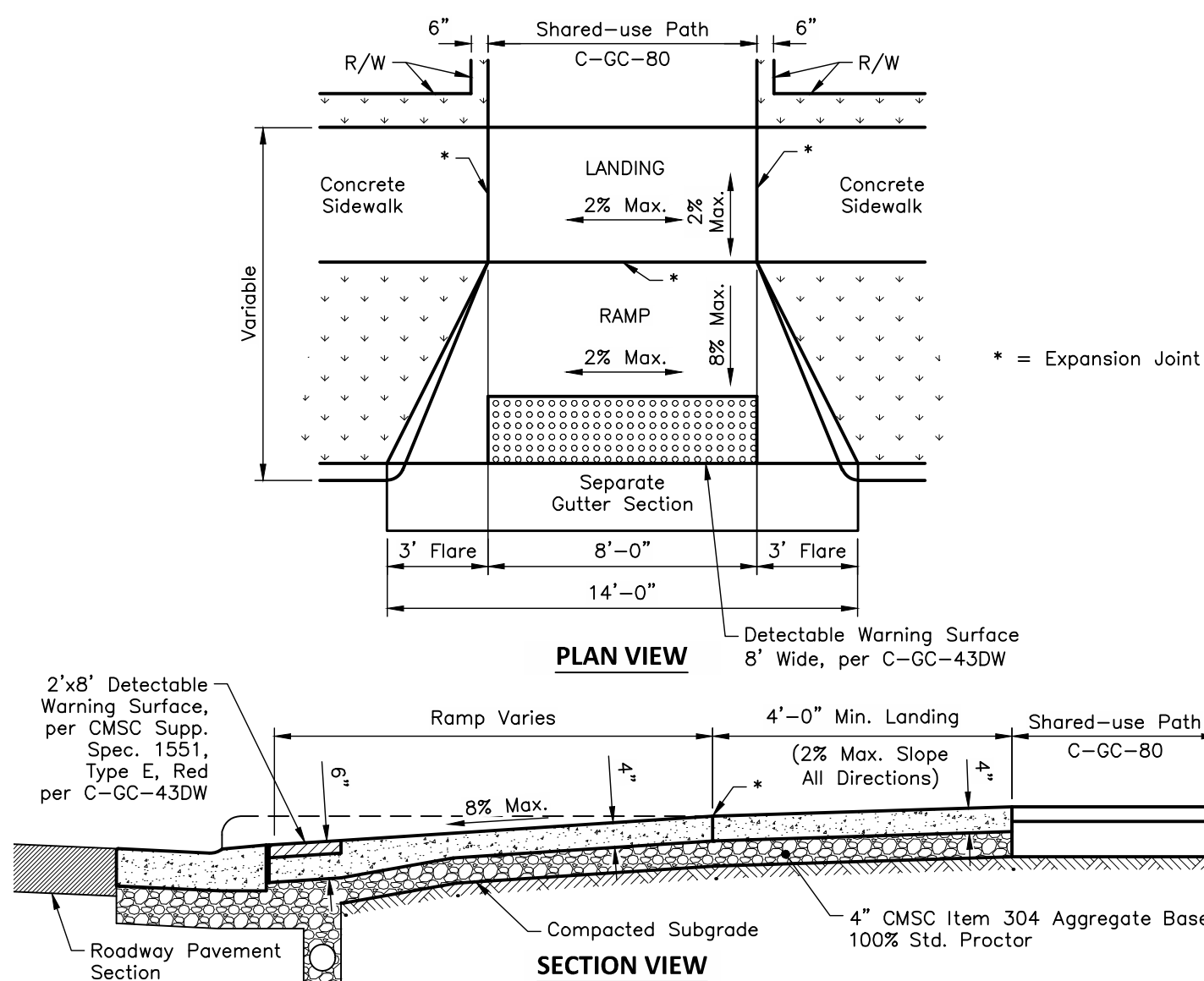


SECTION A-A

DETAIL NOTES

1. Sidewalks shall be constructed according to Columbus CMS Item 608.
2. All joints and edges shall be tooled after broom finish.
3. Sidewalk surface shall have a broom finish.
4. All castings shall be set to proper grade. Where feasible, tool a joint at the casting location to control cracking.
5. All concrete shall contain 6% \pm 2% air entrainment.
6. Contraction Joints shall be not less than 2-in in depth.
7. Contractor shall apply a cure & seal compound, as approved by the Owner, to finished concrete.

TYPICAL SIDEWALK DETAIL (PER C-GC-46A)

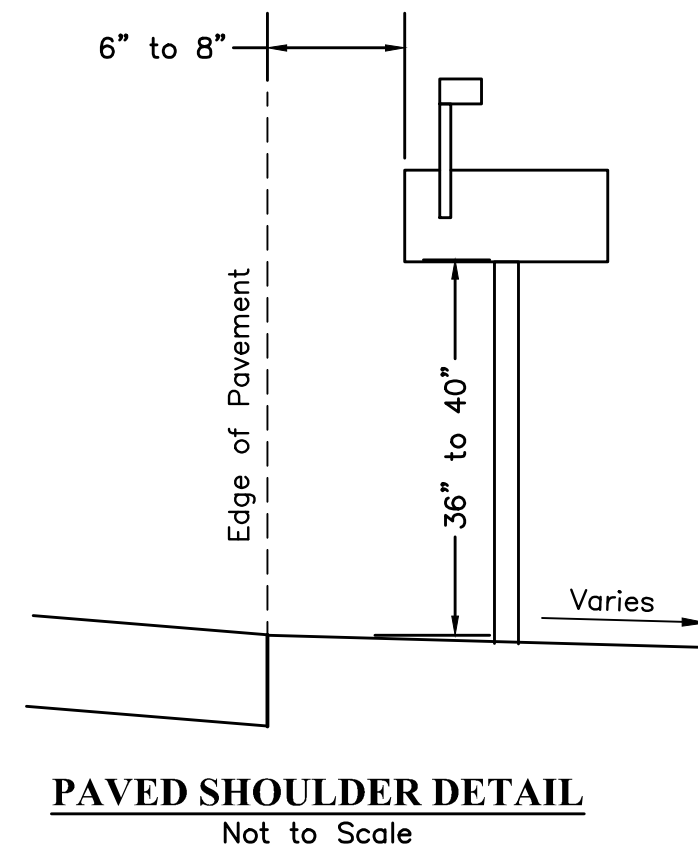


SECTION VIEW

NOTES:

1. Curb or combined curb and gutter shall be taken out and replaced with concrete separated from the ramp by 1/2" pre molded expansion joint. When less than 5'-0" of a curb section remains after the curb cut is located, it shall also be removed and replaced. New curb shall be constructed in min. 5'-0" sections and max. 10'-0" sections.
2. Fills, if required, shall be of earth compacted in 2" layers, or if Item 304, subbase compacted in layers not exceeding 4" layers.
3. Shored-use path ramp shall be constructed of portland cement concrete, 5% to 8% air entrained, Columbus "COC 5" per Item 499.
4. Expansion joints shall be placed to form utility strips where required and wherever new concrete touches existing construction.
5. Forms consist of 2" nominal thickness wood or metal of equal strength.
6. All construction and materials shall conform to the City of Columbus Construction and Material Specifications (CMSC), latest edition, unless noted otherwise.
7. Share-use paths shall meet the most current specifications of the ADA Accessibility Guidelines (ADAAG).
8. Concrete shall apply a cure & seal compound, as approved by the Owner, to finished concrete immediately after finishing.
9. Detectable Warning Surface per C-GC-43DW

STANDARD SHARE-USE PATH RAMP (PER C-GC-83)(MOD)



PAVED SHOULDER DETAIL

Not to Scale

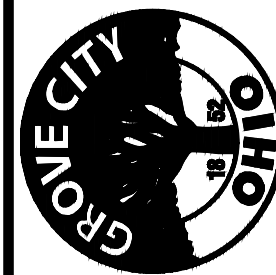
DETAIL NOTES

1. This work shall consist of furnishing and erecting mailbox supports and any associated mounting hardware in accordance with plan details, and attaching an owner-supplied mailbox at locations specified in the plan, or otherwise established by the Engineer.
2. Wood posts shall be nominal 4" by 4" square.
3. Hardware (plates, screws, bolts, etc.) shall be commercial-grade galvanized steel.
4. Posts shall be set per the first paragraph of 606.03, and shall in no instance be encased in concrete
5. Support hardware shall accommodate either a single or multiple mailbox installation.
6. The mailbox shall be securely and neatly attached by the Contractor to the new support. The Contractor shall furnish all necessary attachment hardware (nuts, bolts, plates, spacers, and washers) as necessary to accommodate the complete installation.
7. In the absence of a new box supplied by the owner, the Contractor shall salvage the existing box and place it on the new support. Due care shall be exercised in such an operation, and the Contractor shall be responsible for repairing or replacing any box damaged by improper handling on his part, as judged and directed by the Engineer.
8. The Contractor shall be responsible for coordinating with the local post master regarding the timing of the movement of any mailbox to a new location. The Contractor may be required to temporarily relocate boxes during construction to ensure maintenance of mail delivery at no additional cost to the Owner.
9. Payment under this item shall be limited to final permanent installations. Temporary installations shall be in accordance with 107.12. However, the same material and size limitations as for permanent installations shall apply.

ITEM SPECIAL - MAILBOX REMOVED AND RE-ERECTED ON NEW SUPPORT

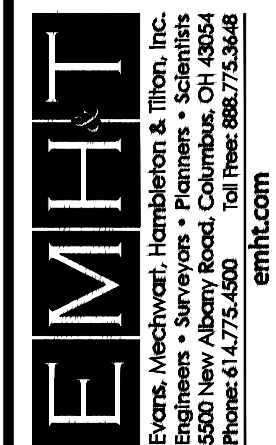
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REVISIONS	
MARK	DATE DESCRIPTION



**CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
ROADWAY IMPROVEMENT**

FOR HARRISBURG PIKE (US 62) AND DEMAREST DRIVE INTERSECTION DETAILS

**DAT**

January 2021

SCALE

Non

JOB NO.

2019-0489

SHEET

8/36

The Contractor shall be responsible for operating and maintaining all existing and proposed traffic signal devices under the following conditions from the time of award of the project until the device has been accepted by the Franklin County Engineer's Office.

The Contractor shall correct all LED outages, device malfunctions of any type, internal cabinet power losses, span or cable problems, and misaligned or damaged vehicular or pedestrian signal heads within two (2) hours after the Contractor's contact person has been notified of any one of the above. In the event a new signal device is damaged prior to acceptance, the damaged device except poles shall be replaced or repaired by the Contractor to the satisfaction of the Franklin County Engineer's Office. Any damaged cabinet assembly device if repaired shall be tested once again by Franklin County before the device can be installed.

If a traffic signal pole is damaged, and the damage causes pole instability, then the Contractor shall take immediate action (within 2 hours) to stabilize it. The Contractor shall still be responsible for providing the project with a new undamaged pole.

Where the Contractor has failed to respond or cannot respond to an out-of-service call within the time period specified above at locations under their responsibility, the Franklin County Engineer may take action as it deems necessary to correct the situation. This action may include controlling the intersection using Franklin County law enforcement officers, completely removing or replacing any malfunctioning traffic control device(s), and/or installing any device(s) required to return the intersection to regular signal operation. All costs associated with these actions shall be billed directly to the Contractor & not included in item 614 maintaining traffic.

Under Contractor Maintenance, it is the responsibility of the Contractor to mark underground electrical conduits/circuits requested by OUPS tickets. The Contractor shall mark any existing or newly installed underground conduits with paint and flags, within 24 hours of the direction of the Engineer.

LOCAL ACCESS

ITEM 614 MAINTAINING TRAFFIC, AS PER PLAN

The Contractor may submit an alternate MOT plan at the preconstruction meeting showing how they plan to maintain traffic in accordance with the OMMUTCD and these traffic maintenance notes. These plans will need to be reviewed and approved by the Franklin County Engineer's Office. The Contractor will be advised as to the review results in writing within thirty (30) days.

The following is the suggested sequence of construction for this project:

(See Sequence of Construction Notes)

All construction signing shall be installed and covered before construction begins. After construction sign installation, the Contractor shall notify the Franklin County Engineer's Office Mobility Department at 614-525-6036 three (3) working days before work begins and request an inspection of all signing.

Maintenance of all Contractor-supplied signs, barricades, vertical panels and drums is the Contractor's responsibility. If the Contractor fails to correct deficiencies within four (4) hours of notification, Franklin County shall correct or hire someone to correct the deficiencies. The Contractor shall then be back charged per ODOT Specification 614. In the case that back charging the Contractor is not applicable, the County will rescind and withhold all permits issued to the Contractor to work within County right-of-way until the issue is settled. These provisions shall not in any way relieve the Contractor of any of their legal responsibilities or liabilities for the safety of the public.

Cones are approved for daytime use only. Drums shall be used at night and have yellow Type C steady burn lights. Cones and Drums shall be placed as follows: 25' c/c on tangents, 15' c/c on tapers, and 8' c/c in radii.

All signs nine square feet (36" x 36") and over shall have yellow Type A low intensity flashing warning lights and two flags.

All work and traffic control devices shall be in accordance with ODOT CMS 614 and other applicable portions of the specifications, as well as the latest version of the OMUTCD. Payment for all labor, equipment and materials shall be included in the lump sum contract price for Item 614, Maintaining Traffic, as Per Plan, unless separately itemized in the plan.

The Contractor shall employ and identify a certified Worksite Traffic Supervisor (WTS) before starting work in the field. The WTS shall be certified from one of the following organizations:

- 24-hour contact information shall be provided to the Engineer at the preconstruction conference. If the designated WTS will not be available full time (24/7) the Contractor may designate an alternate WTS to be available when the primary is off duty. Each WTS shall have a current WTS certification. The WTS position has the responsibility of monitoring traffic control deficiencies for the entire work zone. The duties of the WTS are as follows:

1. Be available on a 24-hour per day basis, and be able to be on site for all emergency traffic control needs within one hour of notification by police or project staff and be prepared to effect corrective measures immediately on existing work zone traffic control devices.
2. Attend preconstruction meeting and all project meetings where traffic control management is discussed.
3. Be available for meetings or discussions with the Engineer upon request.
4. Ensure compliance with the contract documents for signs, barricades, temporary concrete barrier, pavement markings, portable message signs, and other traffic control devices on a daily basis; and facilitate any corrective action necessary.
5. Inspect, evaluate, propose necessary modifications to, and document the effectiveness of, the traffic control devices and/or traffic operations on a daily basis. In addition, a monthly night inspection of the work zone setup for daytime work operations; and one daytime inspection per month for nighttime projects. This shall include documentation on the following project events:
 - a. Initial traffic control setup (day and night review).
 - b. Daily traffic control setup and removal.
 - c. When construction staging causes a change in the traffic control setup.
 - d. Removal of traffic control devices at the end of a phase or project.
 - e. All other emergency traffic control needs.
6. Verify that all flagging operations are being conducted per the Ohio Manual of Uniform Traffic Control Devices.
7. Updates should be emailed to Franklin County's Mobility Department after each inspection. These updates shall include a checklist of all traffic control maintenance items to be reviewed. A copy of items that should be included in the inspections will be provided at the pre-construction meeting (and throughout the project, if conditions change). Any deficiencies observed shall be noted, along with recommended corrective actions and the dates by which such corrections were, or will be, completed.

EXISTING TRAFFIC SIGN MAINTENANCE

Special care shall be taken to maintain existing street name signs and stop signs. If necessary, the Contractor shall relocate these signs out of the way of construction, but in conformance with O MUTCD. Any damaged sign shall be replaced at the expense of the Contractor.

All existing and proposed permanent traffic controls not in conflict with the temporary traffic controls shall be maintained throughout the project by the Contractor. The Contractor shall contact the Franklin County Engineer's Mobility Department at 614-525-6036 prior to disturbing or relocating any existing signing. The Contractor shall assume all liability for missing, damaged, and improperly placed traffic control devices.

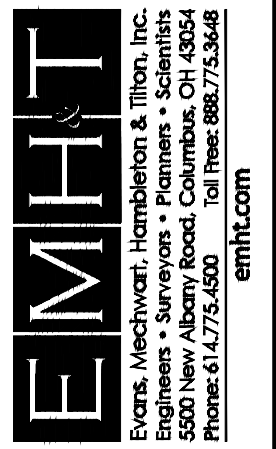
The Contractor shall be responsible for the protection and safe movement of pedestrians through, around, and away from the construction site. The safety of pedestrian traffic shall be considered at all times in the provision of traffic control devices required by these plans and notes. It shall be the Contractor's responsibility to provide lights, signs, barricades, and other warnings to physically separate the pedestrian from hazards incidental to the construction operations such as open excavations, etc. Traffic control for pedestrian movements shall be in accordance with O MUTCD Figure 6H-28 and 6H-29 (TA-28 and TA-29). Pedestrian MOT shall, at all times, be subject to the approval of the Engineer.

Work Zone Raised Pavement Markers (WZRPM) shall be placed on all work zone lines shown in the plans. Payments for the WZRPMs placement, replacement, removal, and relocation, including all labor and materials, shall be included in the contract price for Item 614, Maintaining Traffic, As Per Plan.

Removal of existing or work zone pavement markings from the final surface course using water blasting or grinding is not permitted. Removal of markings shall be by means of full-width milling and overlaying to a depth of 1 1/2" before the permanent markings are applied. All replacement pavement markings shall comply with ODOT Item 644 – Thermoplastic Pavement Markings, applied at the widths shown below:

[illegible]

CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
ROADWAY IMPROVEMENT
FOR
**HARRISBURG PIKE (US 62) AND
DEMAREST DRIVE INTERSECTION**
MAINTENANCE OF TRAFFIC NOTES



DATE

January 2021

SCALE

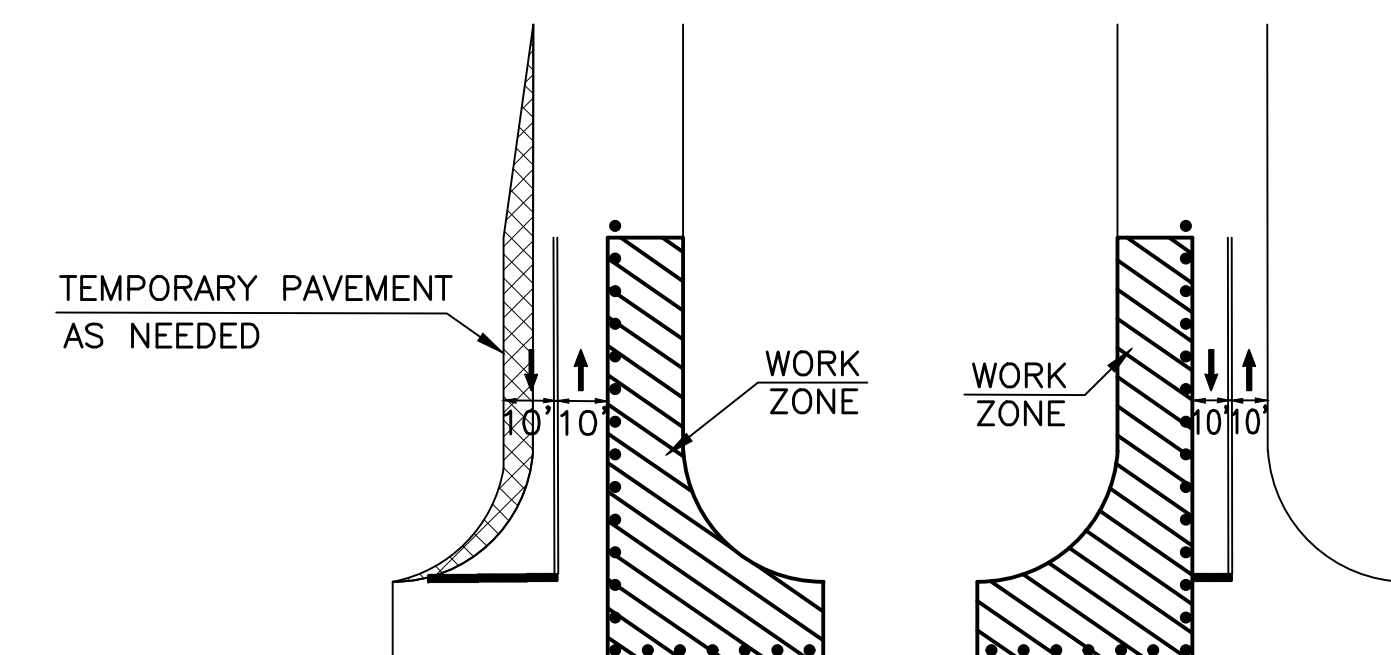
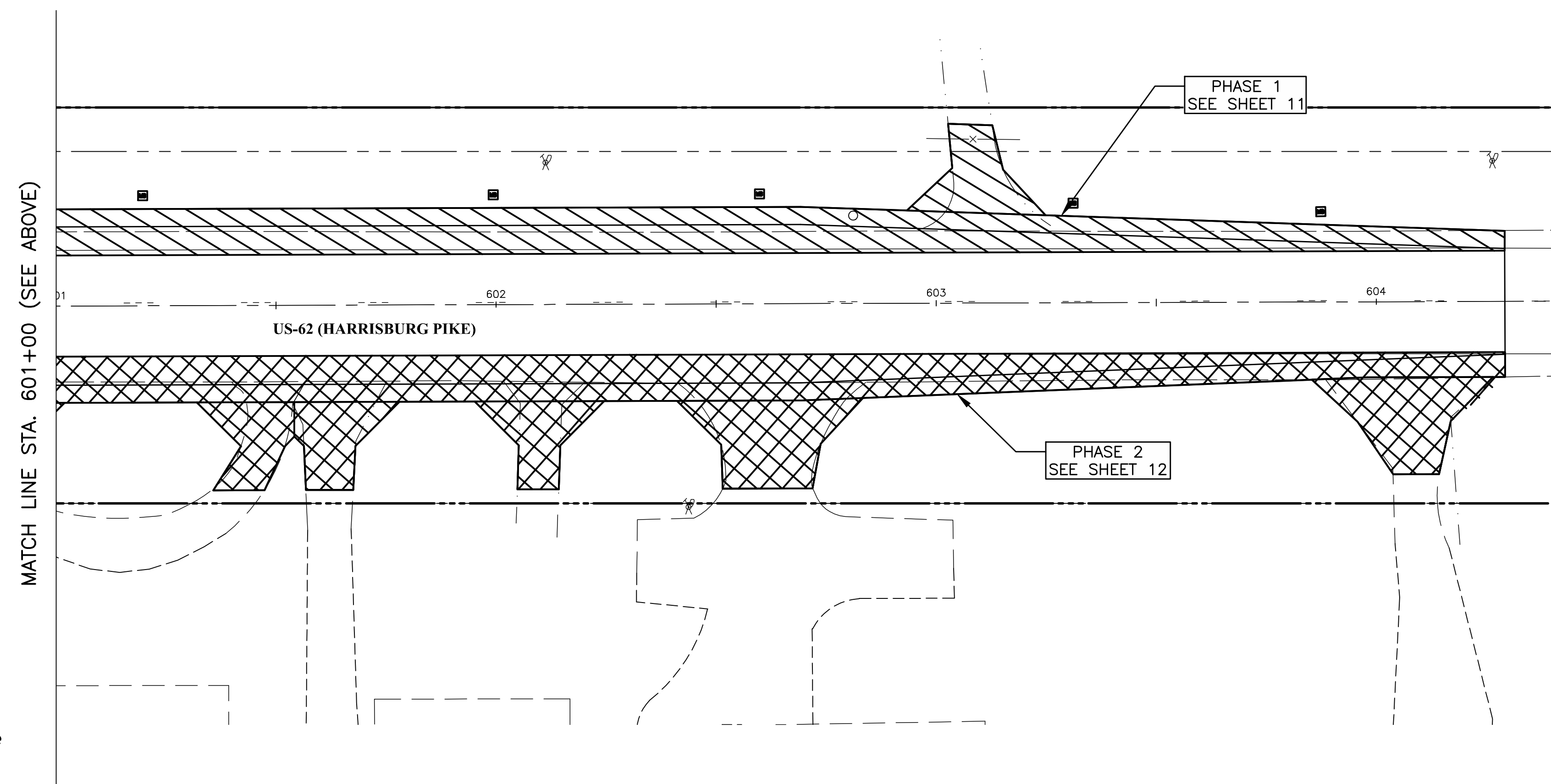
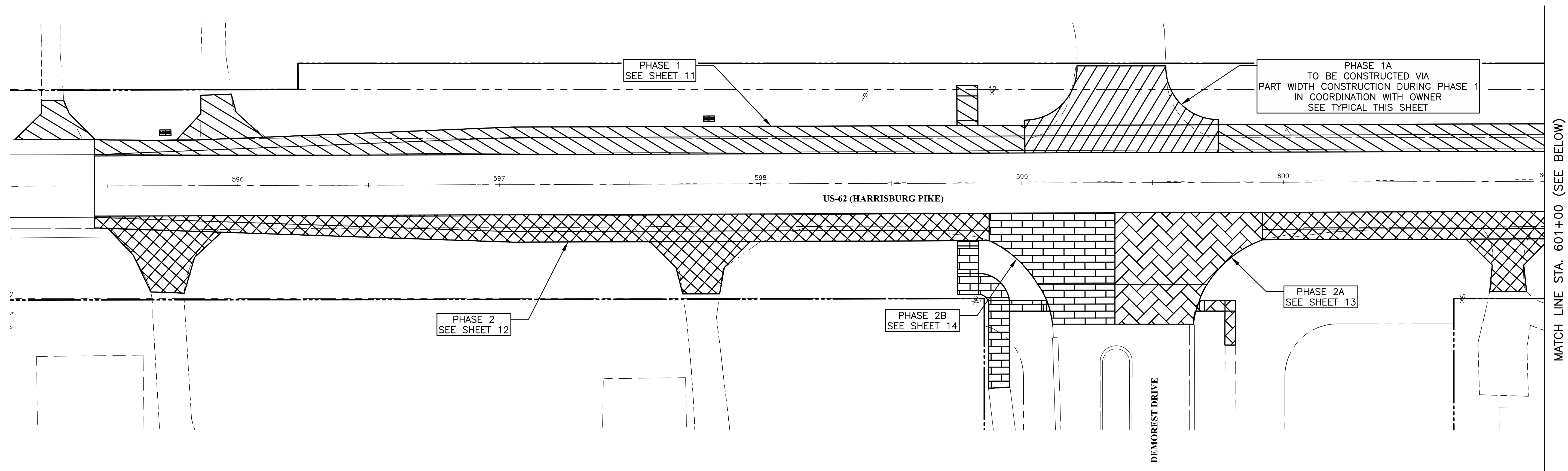
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JOB NO.

2019-0489

SHEET






10A/36

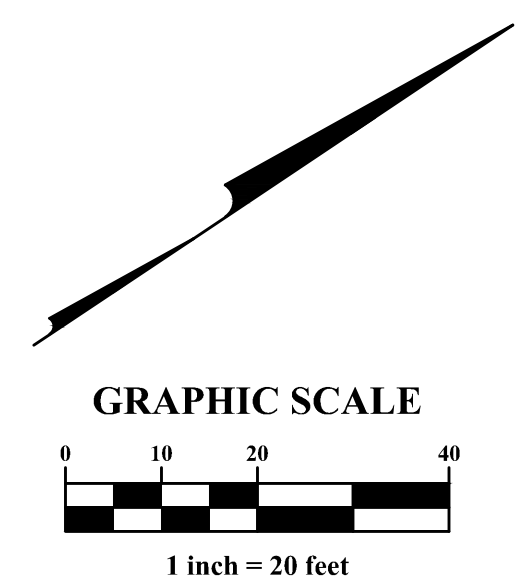
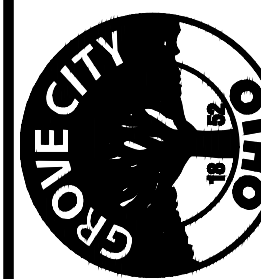


TYPICAL PART WIDTH CONSTRUCTION DETAIL

NOTE:
ALL COSTS ASSOCIATED WITH MAINTAINING
ACCESS TO DRIVEWAYS (INCLUDING
TEMPORARY PAVEMENT) SHALL BE
INCIDENTAL TO ITEM 614, MAINTAINING
TRAFFIC, AS PER PLAN.

LEGEND

-  = Phase 1 Work Zone
 = Phase 1A Work Zone
 = Phase 2 Work Zone
 = Phase 2A Work Zone
 = Phase 2B Work Zone

[illegible]

CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
ROADWAY IMPROVEMENT
FOR
**HARRISBURG PIKE (US 62) AND
DEMAREST DRIVE INTERSECTION**
MAINTENANCE OF TRAFFIC OVERVIEW



DATE _____

January 2021

SCALE

1" = 20'

JOB NO.

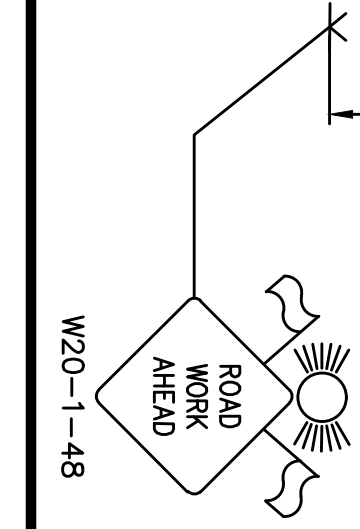
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W20-1-48



ROAD WORK AHEAD

220' SHIFT TAPER

Ex. R/W

Prop. R/W

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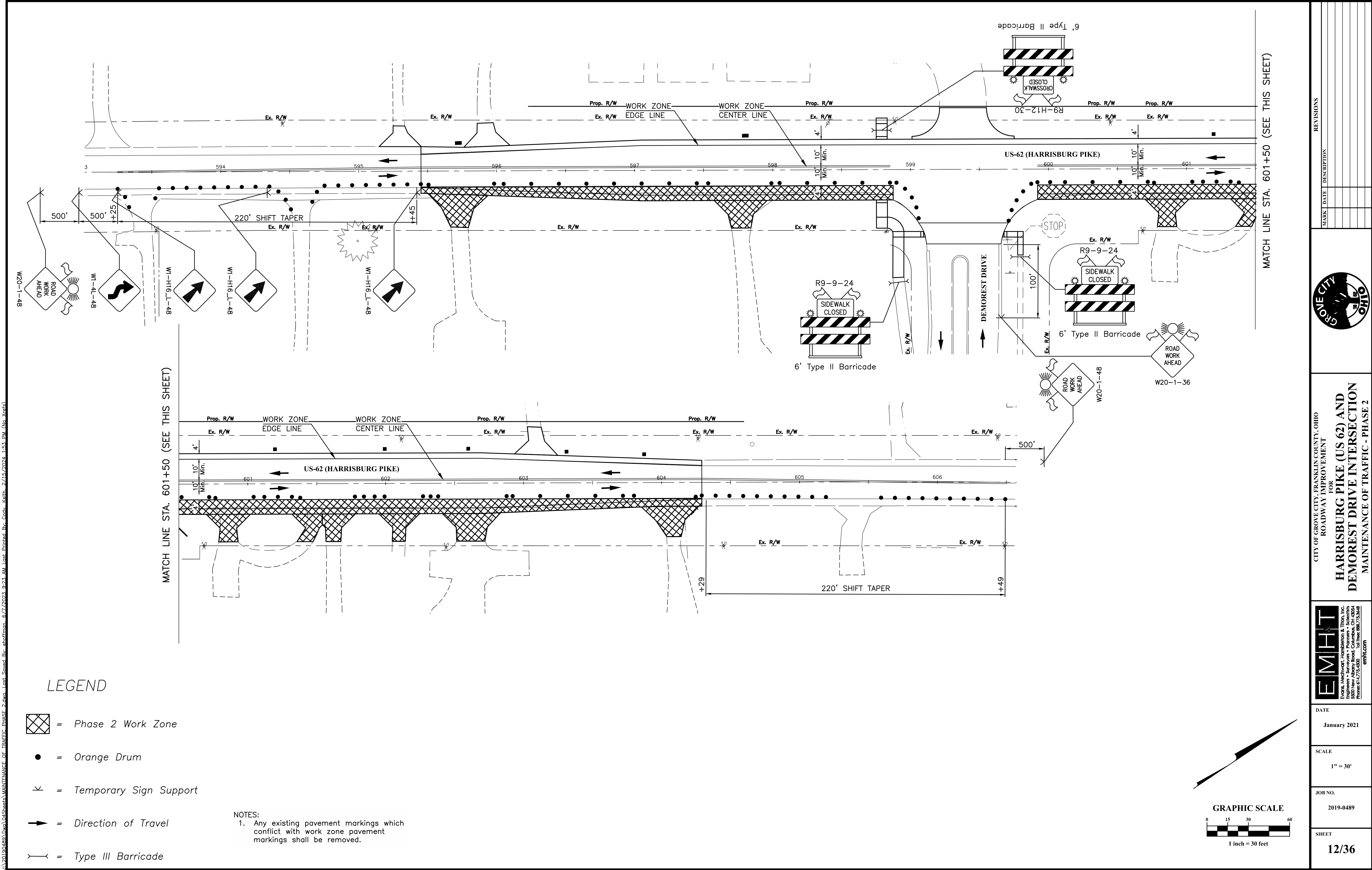
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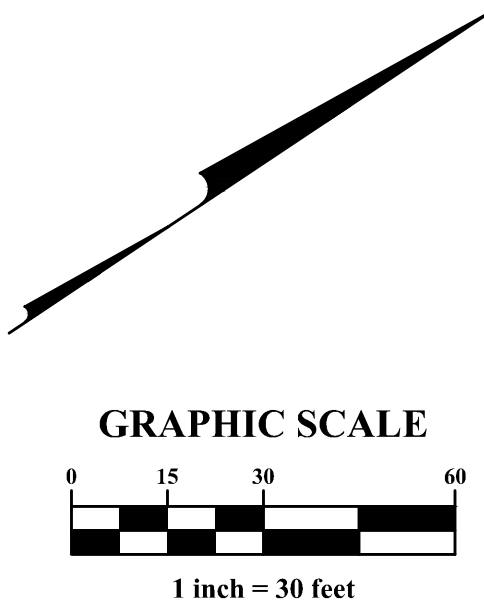
MATCH LINE STA. 601+50 (SEE THIS SHEET)

MATCH LINE STA. 601+50 (SEE THIS SHEET)

LEGEND

- = Phase 2 Work Zone
- = Orange Drum
- = Temporary Sign Support
- = Direction of Travel
- = Type III Barricade

NOTES:
1. Any existing pavement markings which conflict with work zone pavement markings shall be removed.



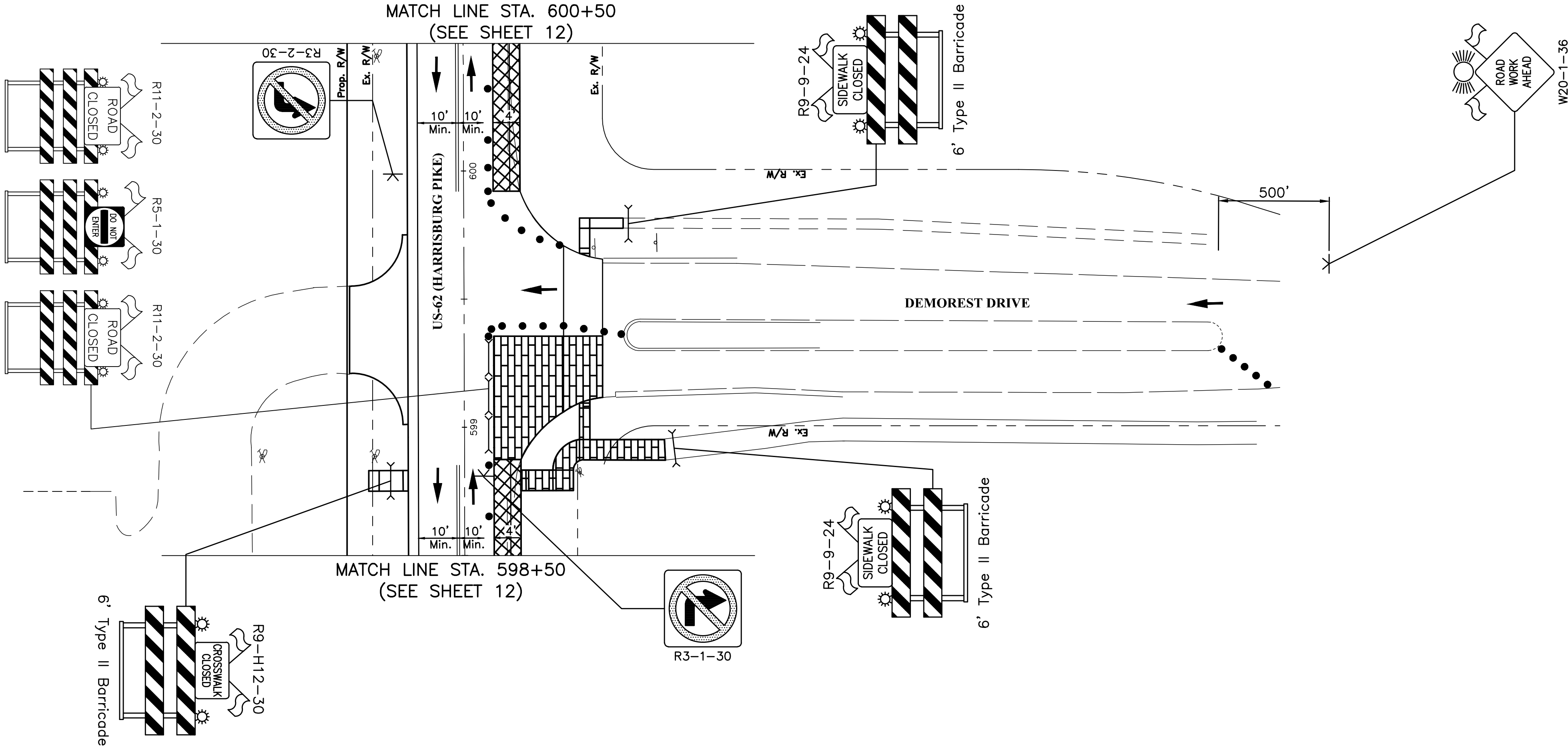
REVISIONS	
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CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
MAINTENANCE OF TRAFFIC - PHASE 2

EMHT
5075 New Albany Road, Columbus, OH 43254
614.775.5500 Fax: 614.775.5501 emht.com

DATE	January 2021
SCALE	1" = 30'
JOB NO.	2019-0489
SHEET	12/36

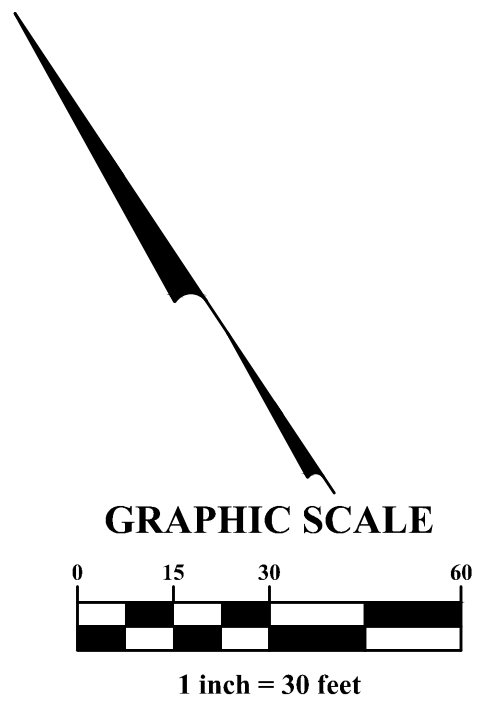


LEGEND

-  = Phase 2 Work Zone
 = Phase 2B Work Zone
 = Orange Drum
 = Temporary Sign Support
 = Direction of Travel
 = Type III Barricade

NOTES:

1. This phase of work in the Demorest Drive intersection shall be limited to 5 days.
2. See sheet 15 for US 62 detour.

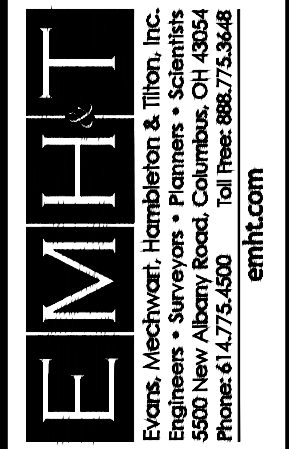
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CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
ROADWAY IMPROVEMENT

FOR

**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**

MAINTENANCE OF TRAFFIC - PHASE 2B



DATE

January 2021

SCALE

1" = 30"

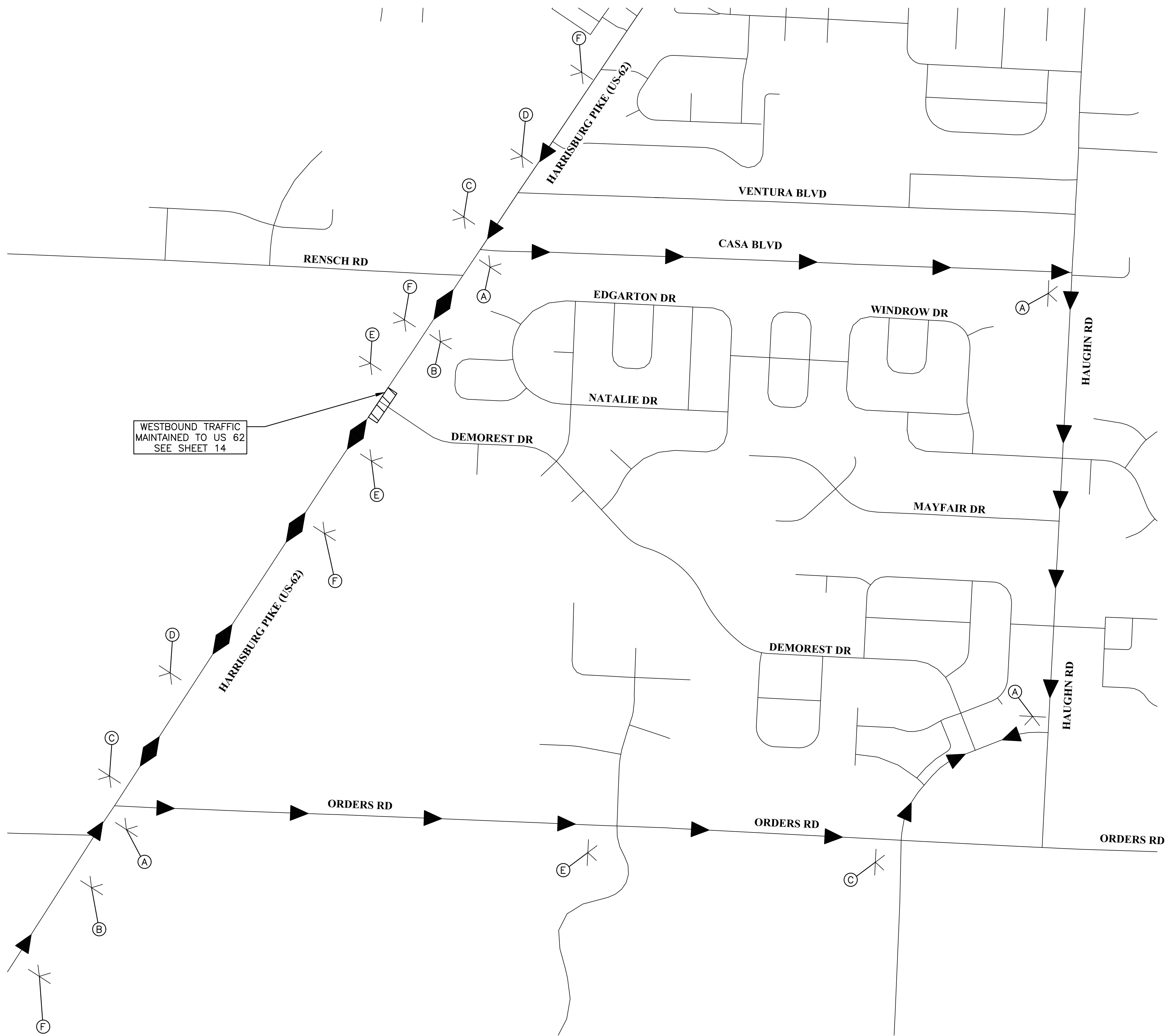
JOB NO.

2019-0489

SHEET

14/36

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SIGN LEGEND

48" x 12" BLK/ORG

DEMOREST DR
DETOUR
→
M4-9R-30
A

48" x 12" BLK/ORG

DEMOREST DR
DETOUR
↘
M4-9-30(MOD)
B

48" x 12" BLK/ORG

DEMOREST DR
DETOUR
←
M4-9L-30
C

48" x 12" BLK/ORG

DEMOREST DR
DETOUR
↙
M4-9-30(MOD)
D

48" x 12" BLK/ORG

DEMOREST DR
DETOUR
↑
M4-9-30
E

48" x 12" BLK/ORG

DEMOREST DR
CLOSED AT
US 62
FOLLOW DETOUR
60"x48" BLK/ORG
F

LEGEND

- = Work Zone
- = Detour Route
- = Temporary Sign Support
- = Type III Barricade

REVISIONS	
MARK	DESCRIPTION

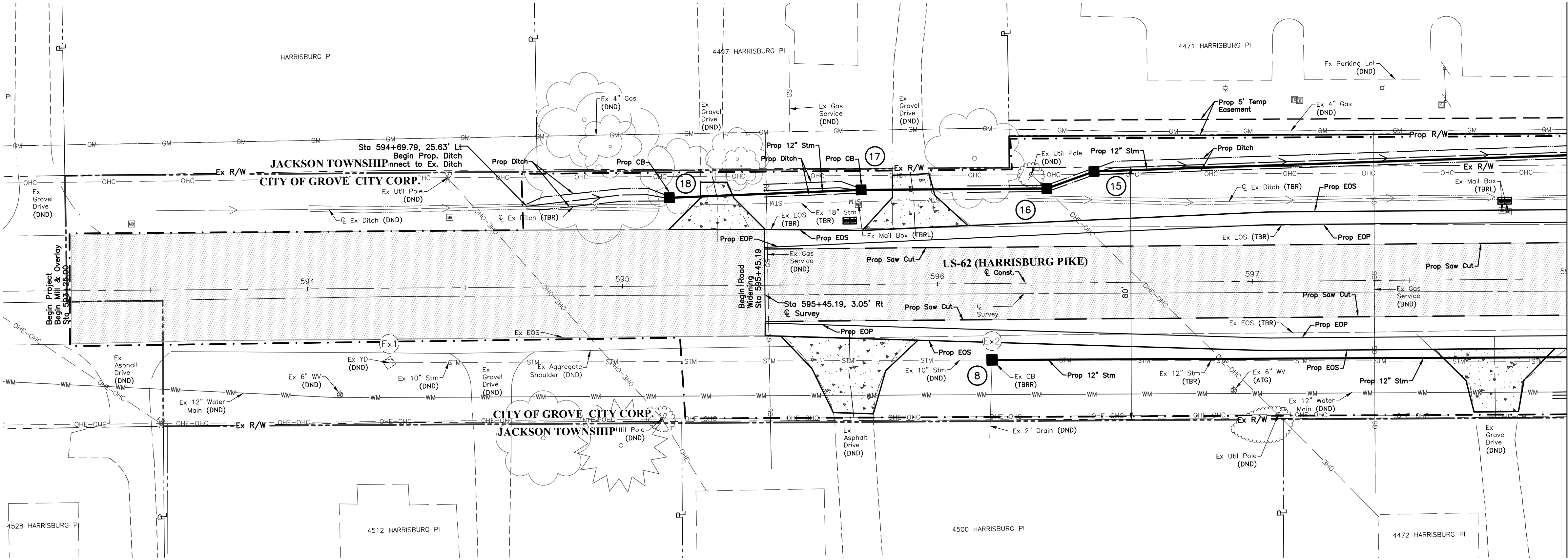


CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
PHASE 2B DETOUR PLAN

EMHT
Eckman, McHugh, Hinkle & Thomas, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43254
Phone: 614.775.5500 Fax: 614.775.3426
emht.com

DATE
January 2021
SCALE
None
JOB NO.
2019-0489
SHEET
15/36

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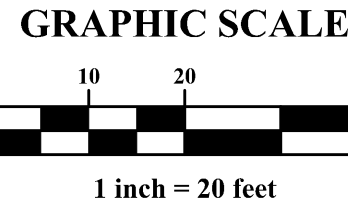
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MATCH LINE STA. 598+00 (SEE SHEET 16)

MATCH LINE STA. 598+00 (SEE SHEET 16)

MATCH LINE STA. 603+00 (SEE SHEET 18)

MATCH LINE STA. 603+00 (SEE SHEET 18)



- Proposed Concrete Walk
- Proposed Mill and Overlay
- Proposed Concrete Drive
- Proposed Driveway Replacement

STORM SEWER TABLE

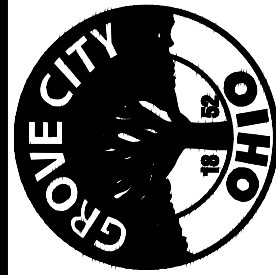
LINE	BEARING	LENGTH	SIZE
1-2	S33°43'57"W	147.27'	12"
2-3	S33°43'57"W	46.46'	12"
3-4	S33°43'57"W	70.79'	12"
4-5	S33°43'57"W	59.72'	12"
5-6	S78°32'51"W	17.01'	12"
6-7	S33°44'15"W	178.54'	12"
7-9	S56°30'19"E	15.00'	12"
Ex4-11	S35°36'56"W	169.65'	15"
11-12	S35°20'08"W	240.00'	15"
12-13	S33°02'55"W	156.31'	12"
13-14	S35°22'41"W	34.83'	12"
14-15	S32°02'42"W	215.27'	12"
Ex7-12	N56°58'54"W	14.17'	15"

STORM SEWER STRUCTURES

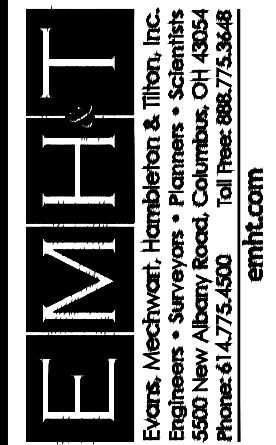
STRUCTURE#	STATION	OFFSET	RIM ELEV.
2	602+32.72	38.27' Rt	865.40
3	601+86.26	38.12' Rt	865.30
4	601+15.48	37.89' Rt	865.30
5	600+55.84	37.70' Rt	863.83
6	600+55.88	25.71' Rt	866.64
7	598+65.18	25.08' Rt	867.08
9	598+65.18	40.08' Rt	865.00
11	602+96.19	33.68' Lt	865.35
12	600+56.31	41.16' Lt	862.90
13	599+00.00	39.80' Lt	865.50
14	598+65.18	40.92' Lt	864.65

NOTE: Storm Structure Number 10 Not Used.

MARK	DATE	DESCRIPTION
Δ	10/10/23	Plan Revisions For New Annexation



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
PLAN AND PROFILE



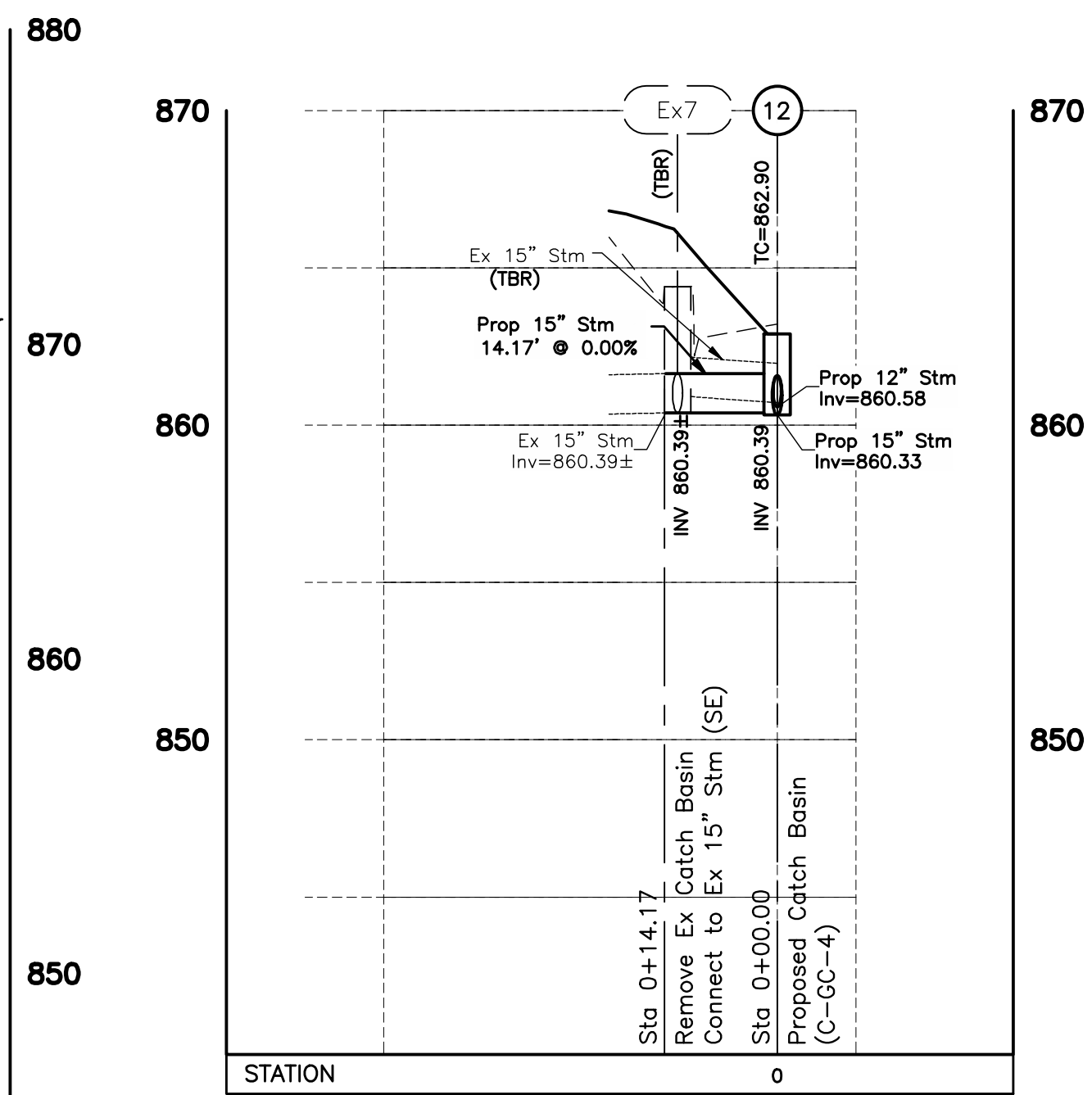
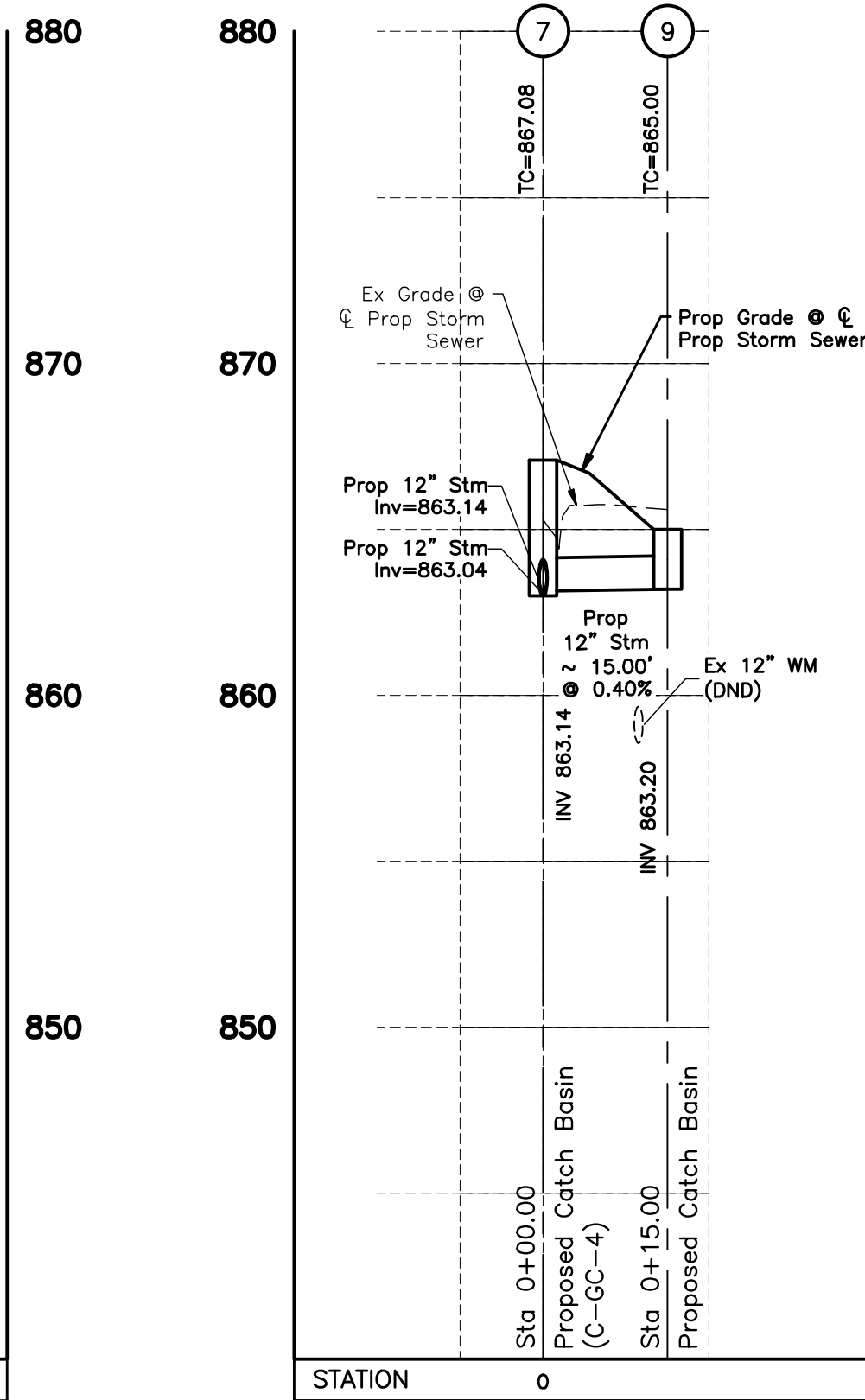
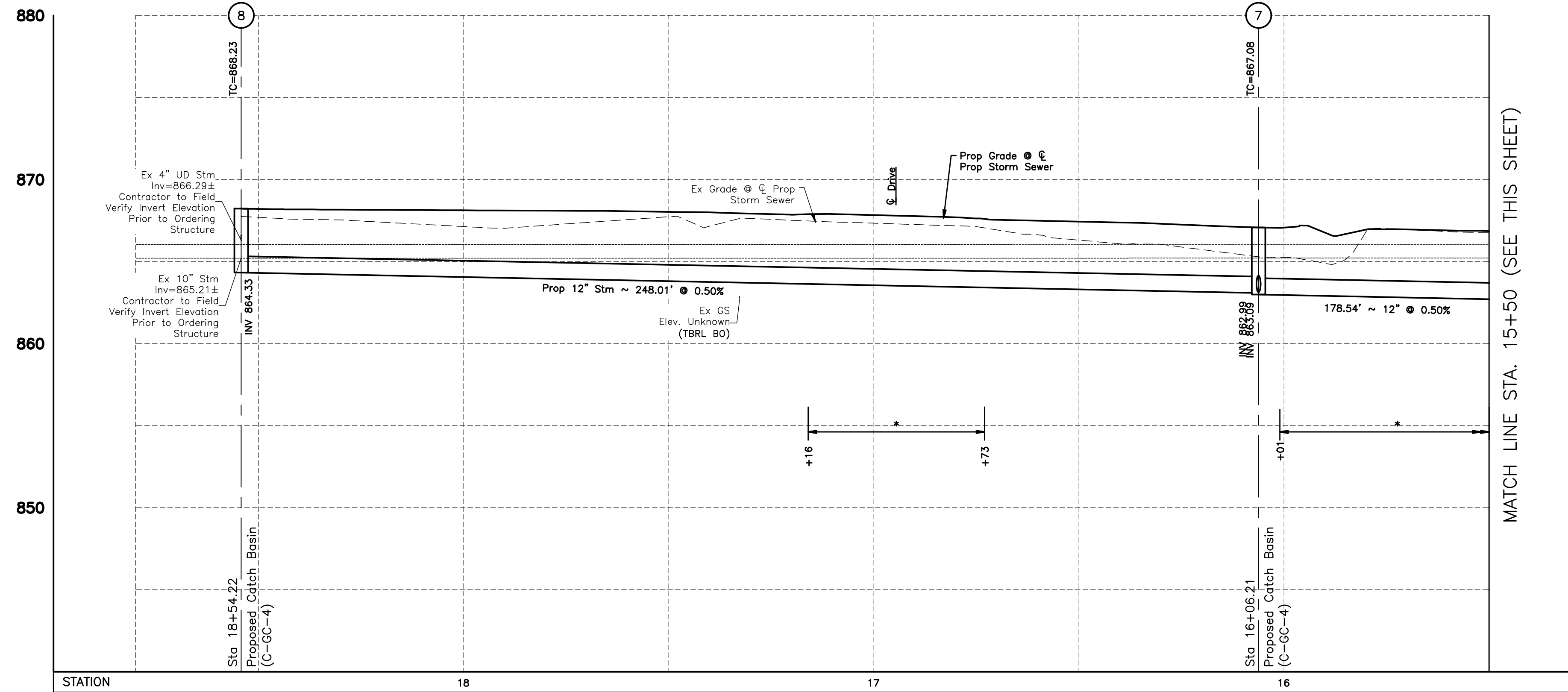
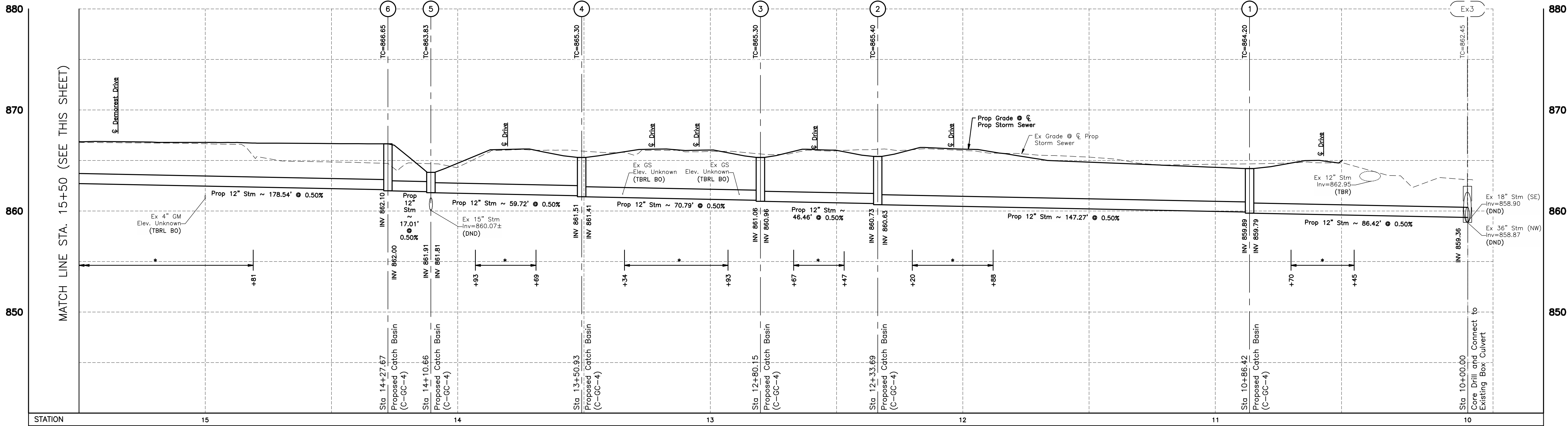
DATE
January 2021

SCALE
1" = 20'

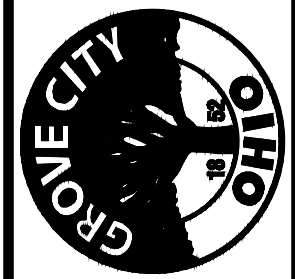
JOB NO.
2019-0489

SHEET
17/36

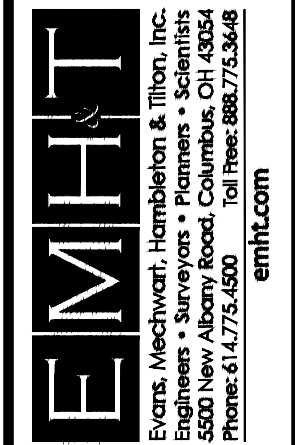
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REVISIONS		
MARK	DATE	DESCRIPTION

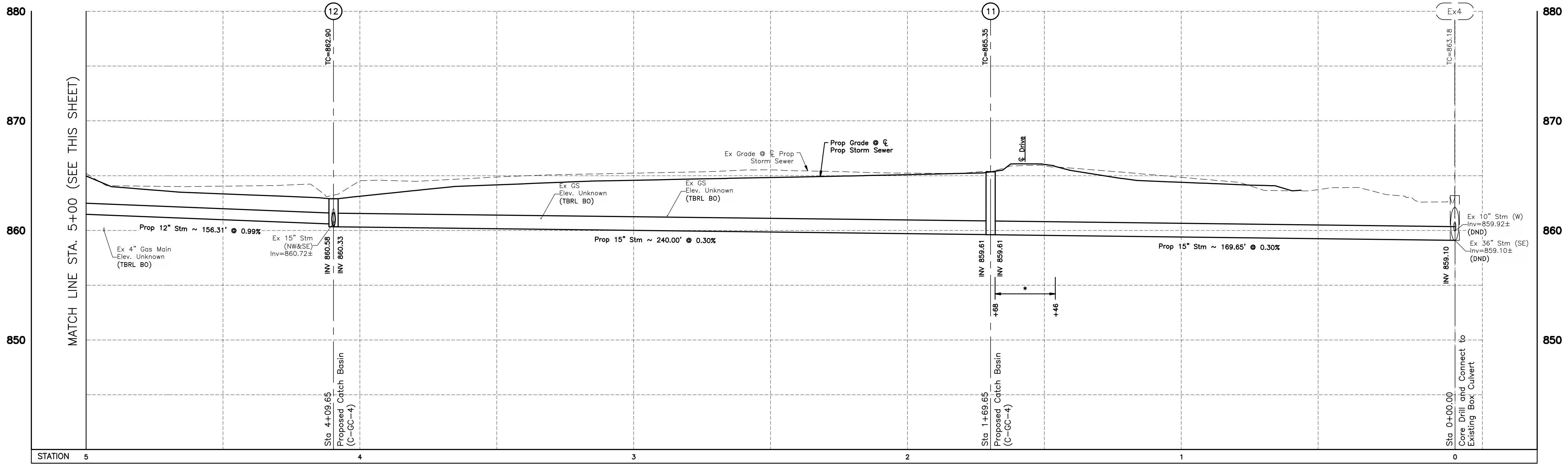


CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
STORM SEWER PROFILE



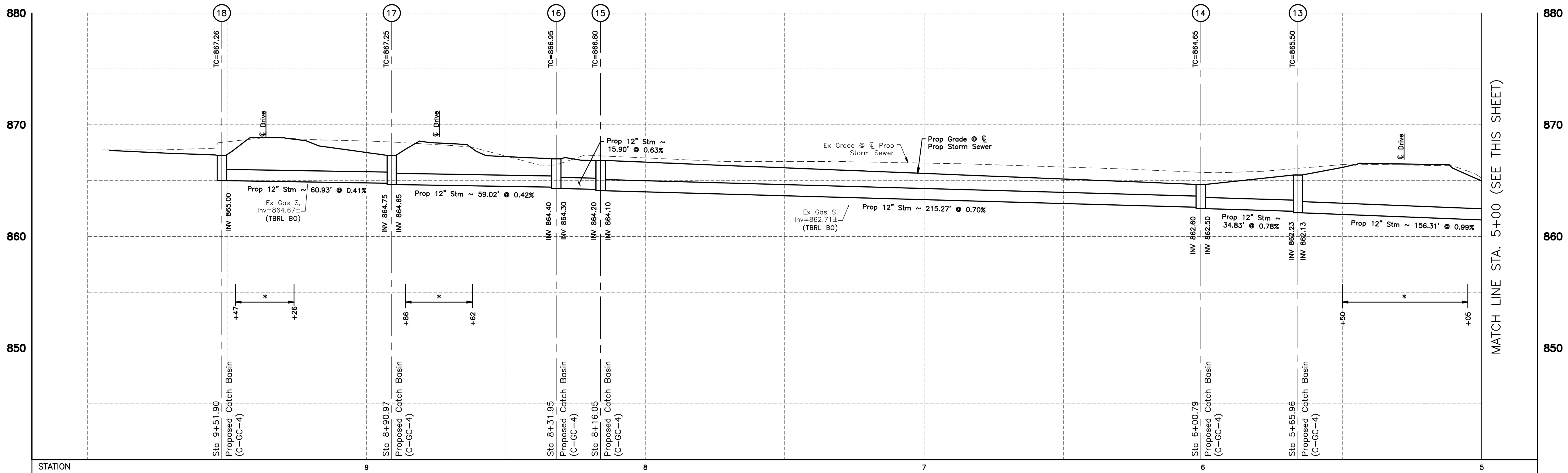
DATE
January 2021
SCALE
Horiz: 1" = 20' Vert: 1" = 5'
JOB NO.
2019-0489
SHEET
19/36

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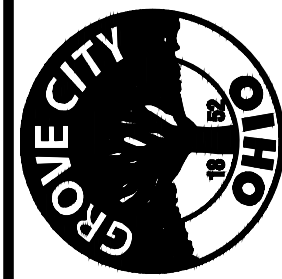


NOTE: Storm Structure Number 10 Not Used.

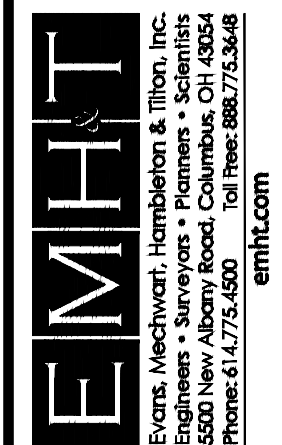
ALL BACKFILL TO BE CMSC ITEM 911 COMPACTED BACKFILL UNLESS NOTED OTHERWISE
* = ITEM 912 COMPACTED GRANULAR BACKFILL



MARK	DATE	DESCRIPTION



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
STORM SEWER PROFILE



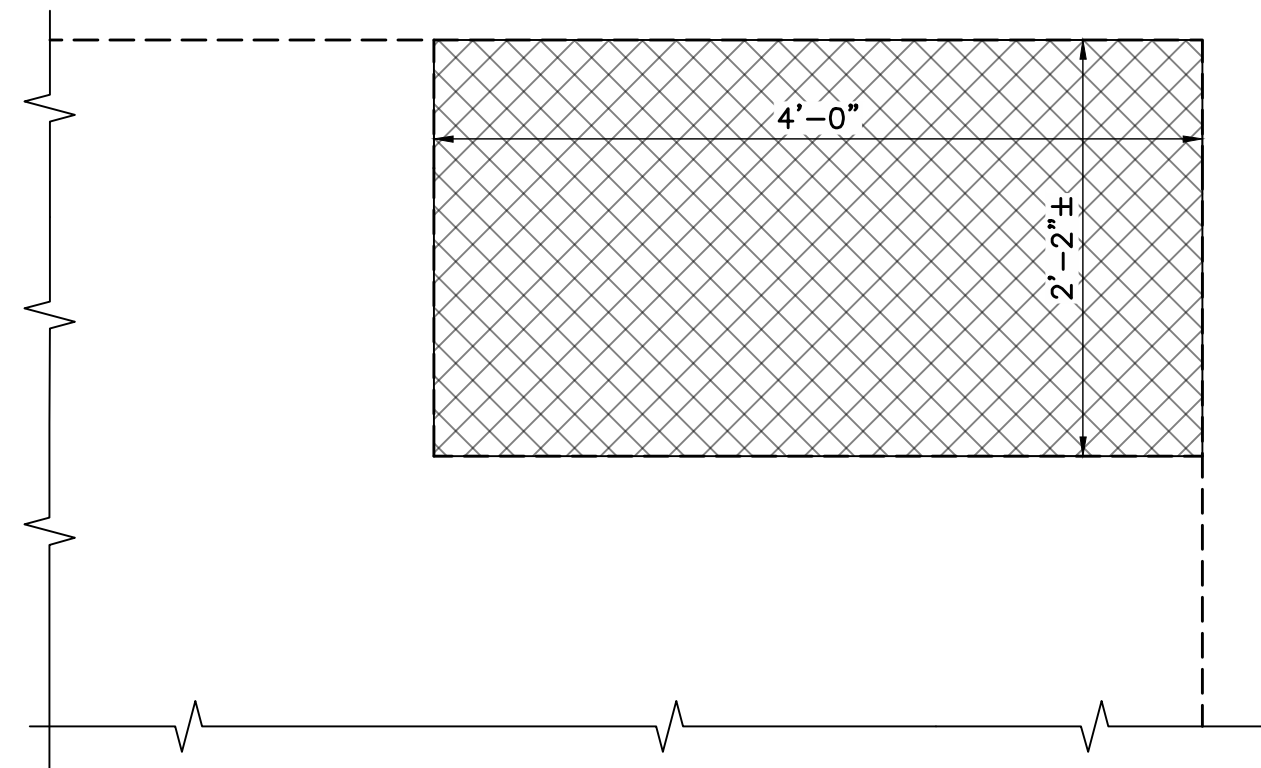
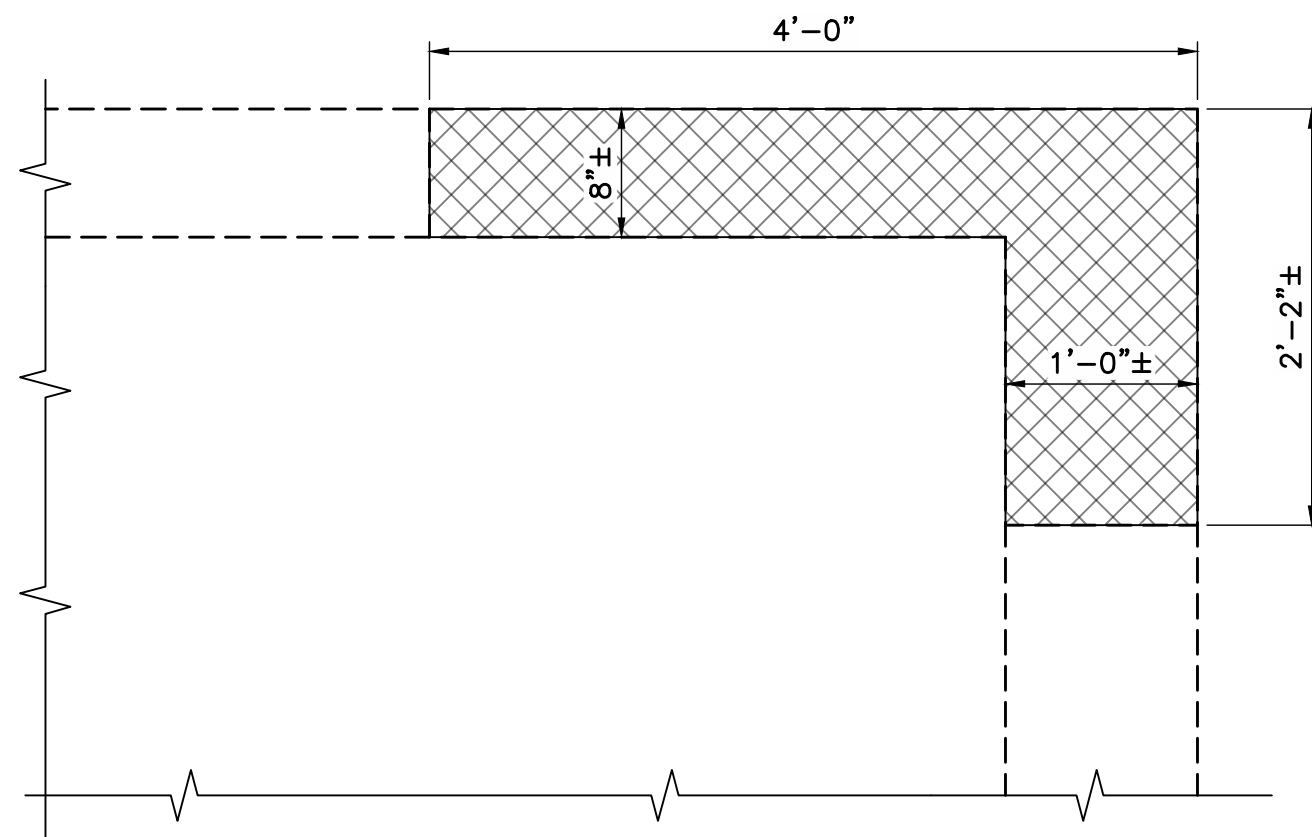
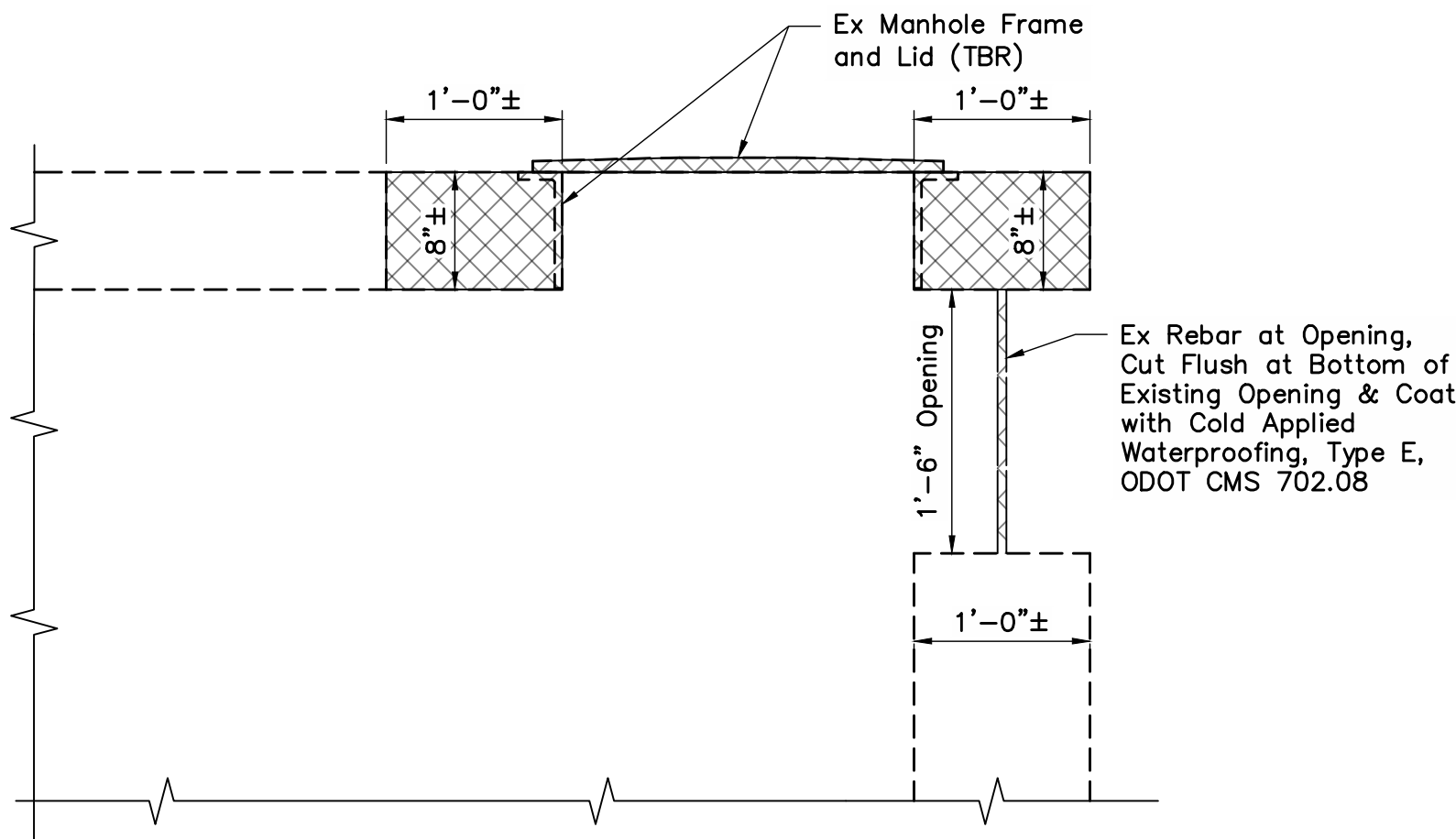
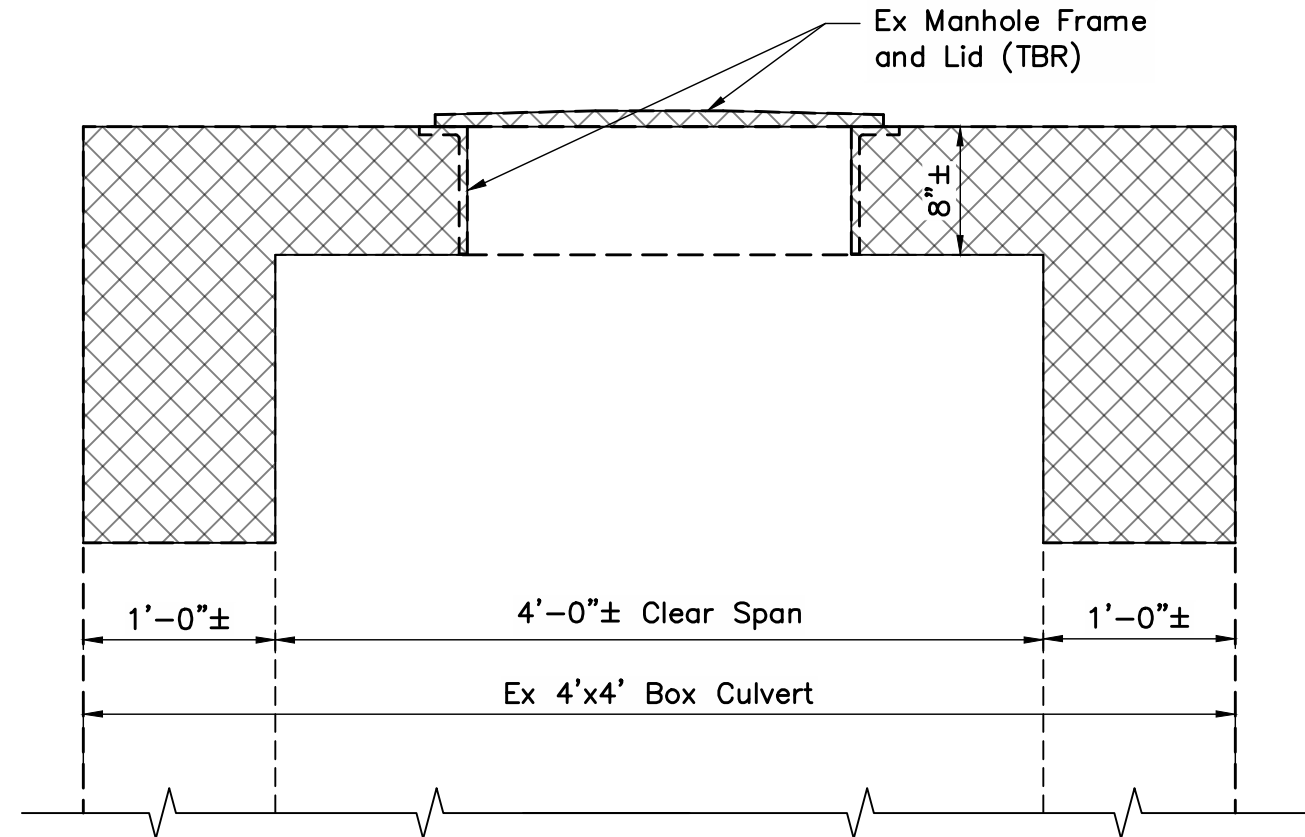
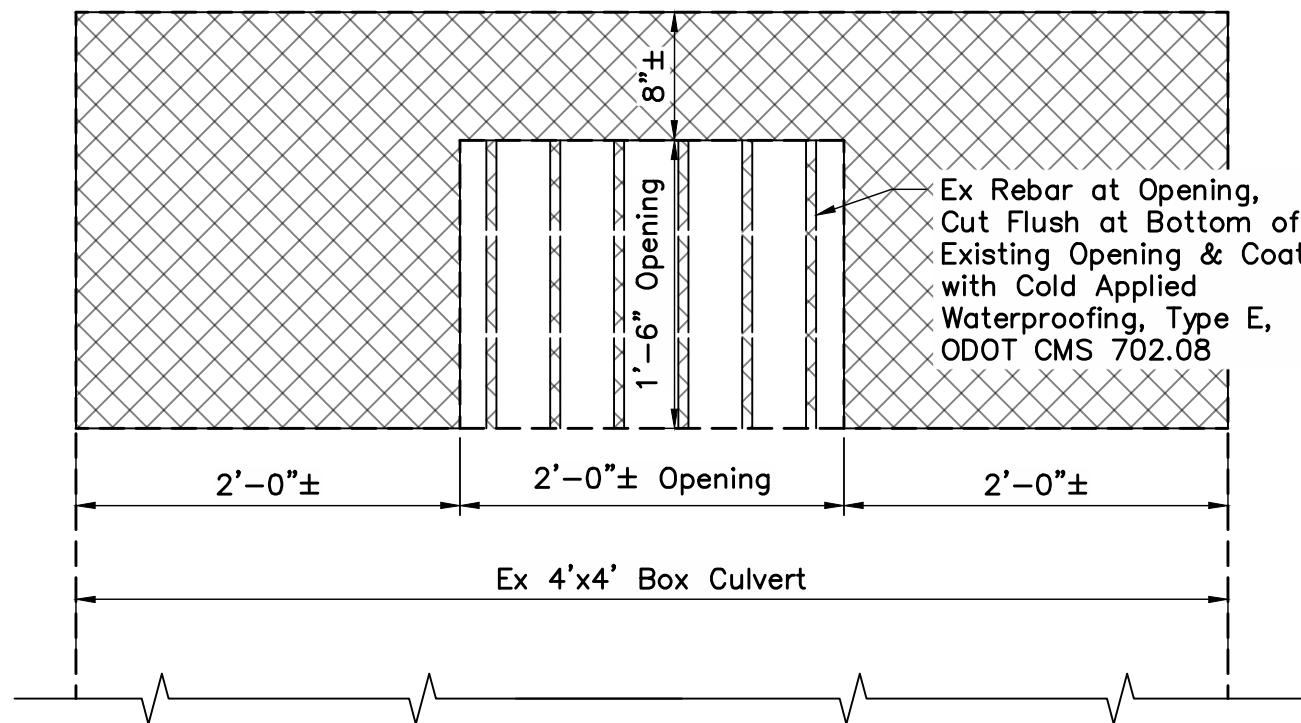
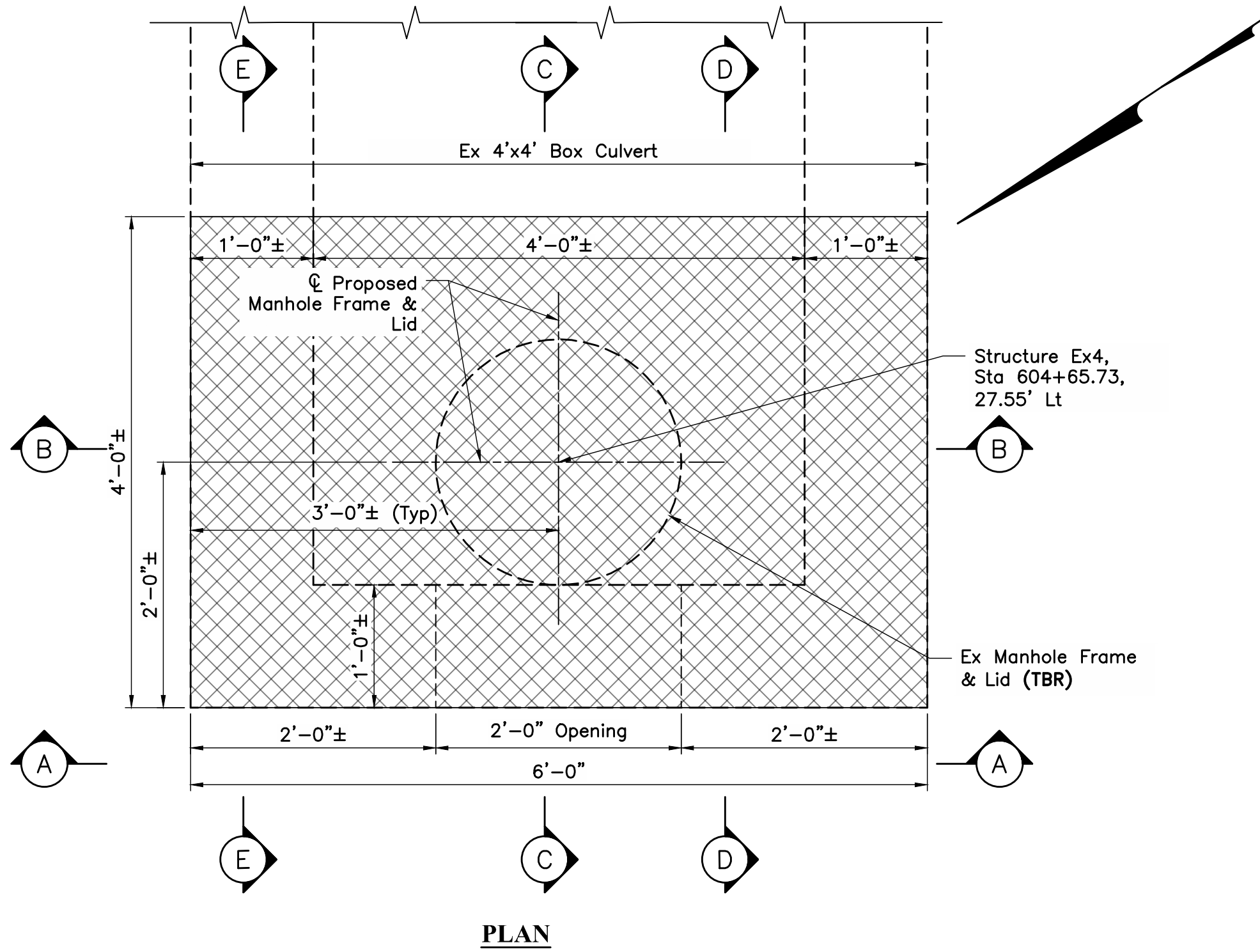
DATE
January 2021

SCALE
Horiz: 1" = 20'
Vert: 1" = 5'

JOB NO.
2019-0489

SHEET
20/36

X:\2019\04489\Drawings\Sheets\EXISTING_CATCH_BASIN_MODIFICATIONS.dwg, Last Saved: By: rmlv_12/15/2023 8:36 AM, Last Printed: By: Cady_Kalish_2/15/2024 1:54 PM, (No Xrefs)



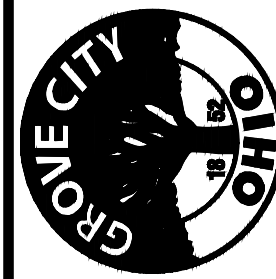
LEGEND

— Denotes Areas to be Removed

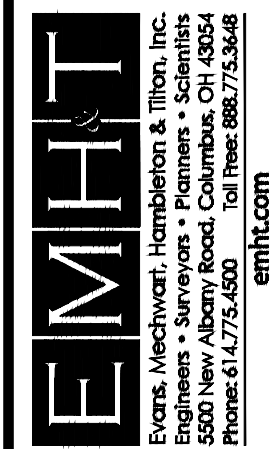
LEGEND

- All removals for the existing box culvert inlet shall be included for payment under Item 530 – Special – Structures: Existing Box Culvert Repairs.
- Removal details are shown with anticipated original dimensions. Existing structure is deteriorated with losses to top slab and wall thickness.

REVISIONS	
MARK	DESCRIPTION



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
BOX CULVERT INLET - REMOVAL DETAILS



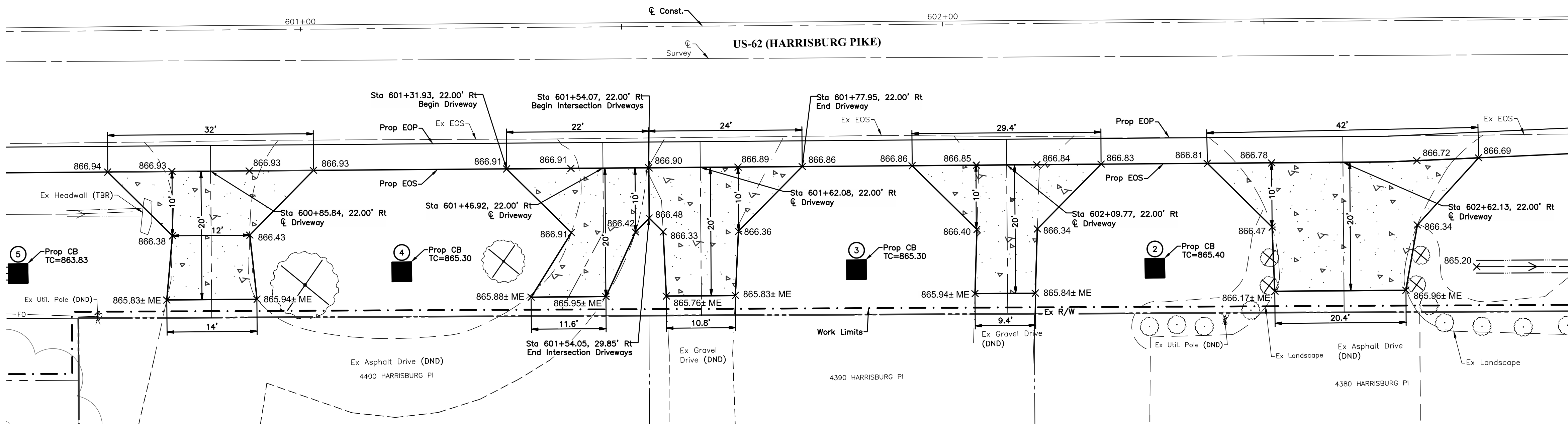
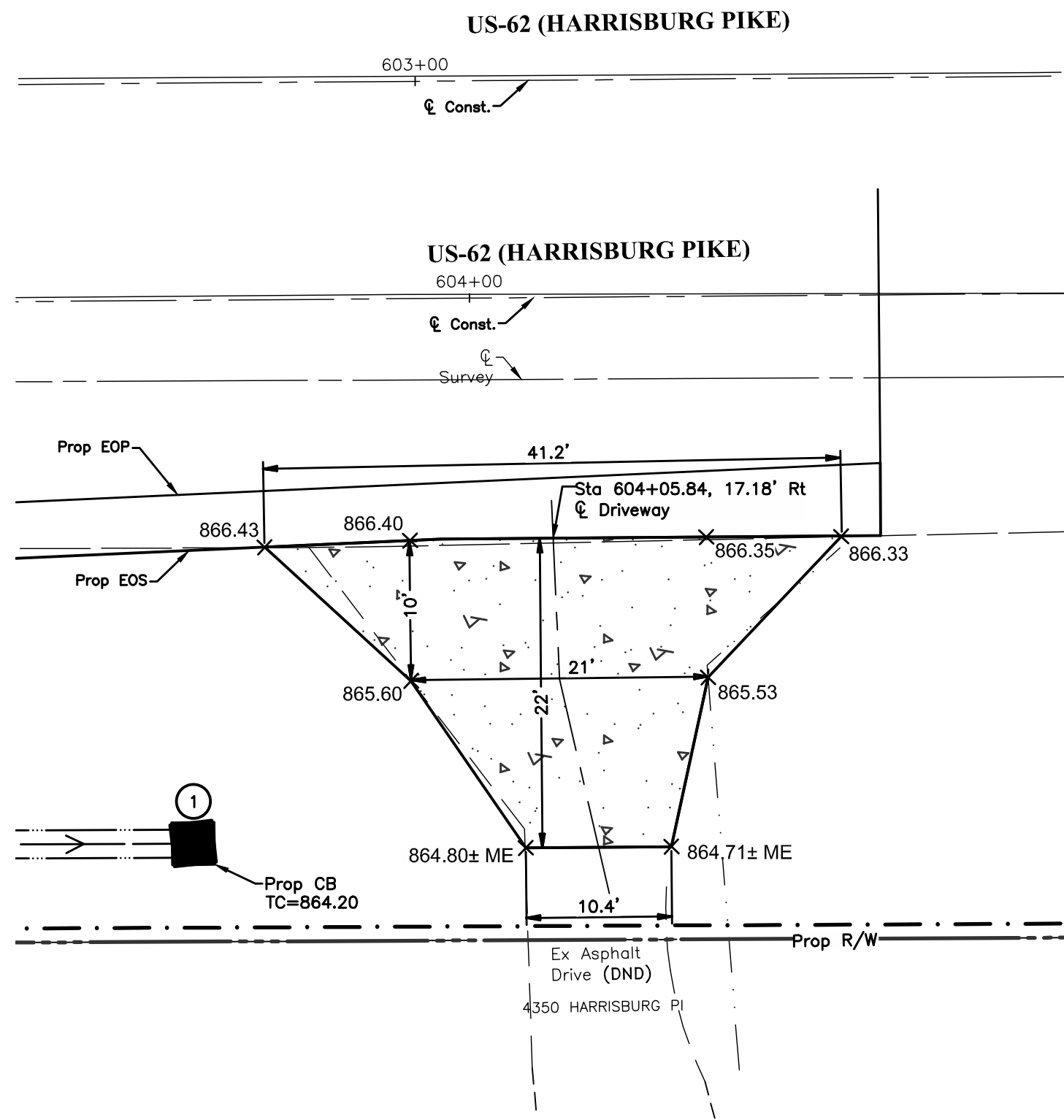
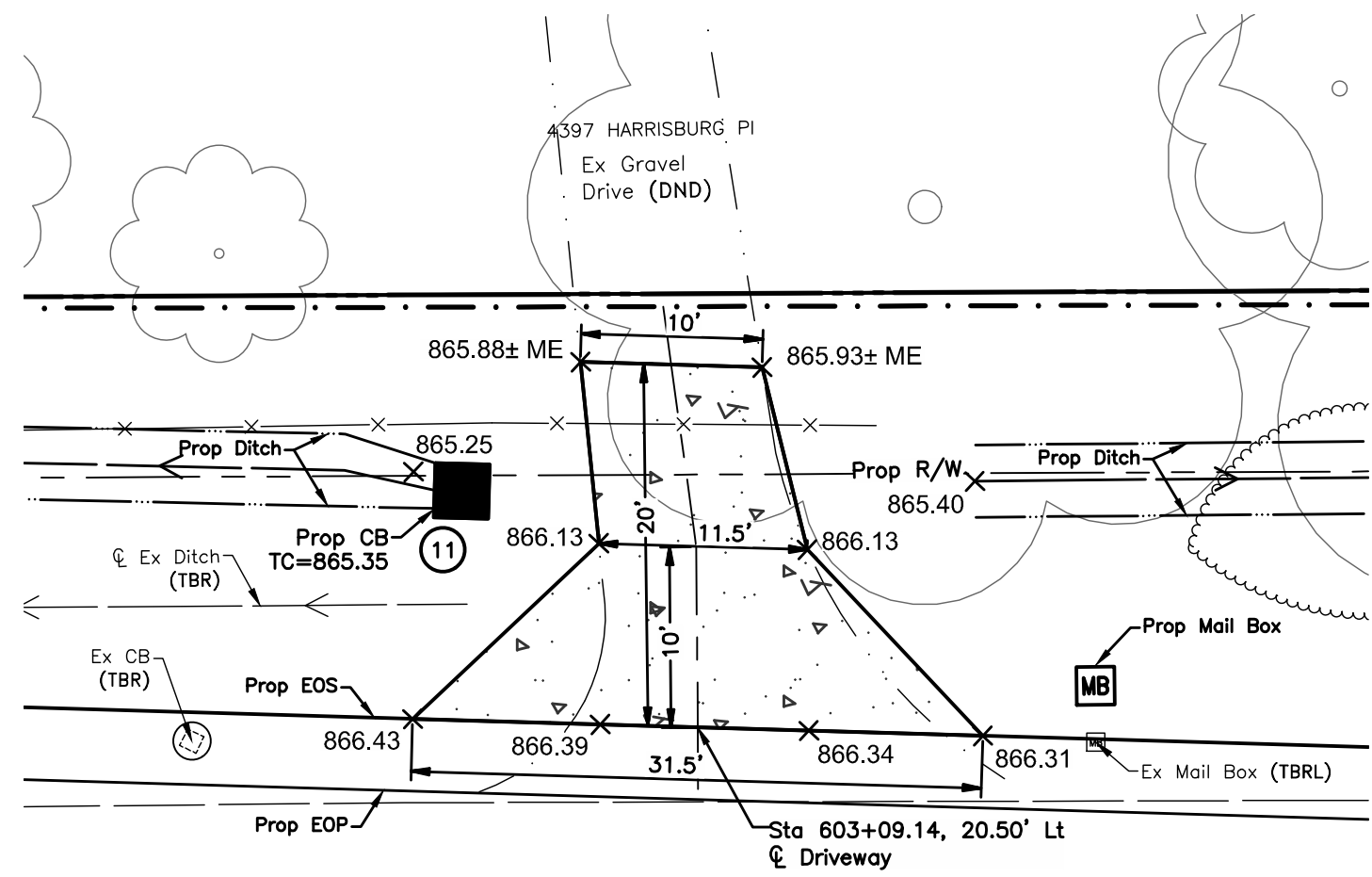
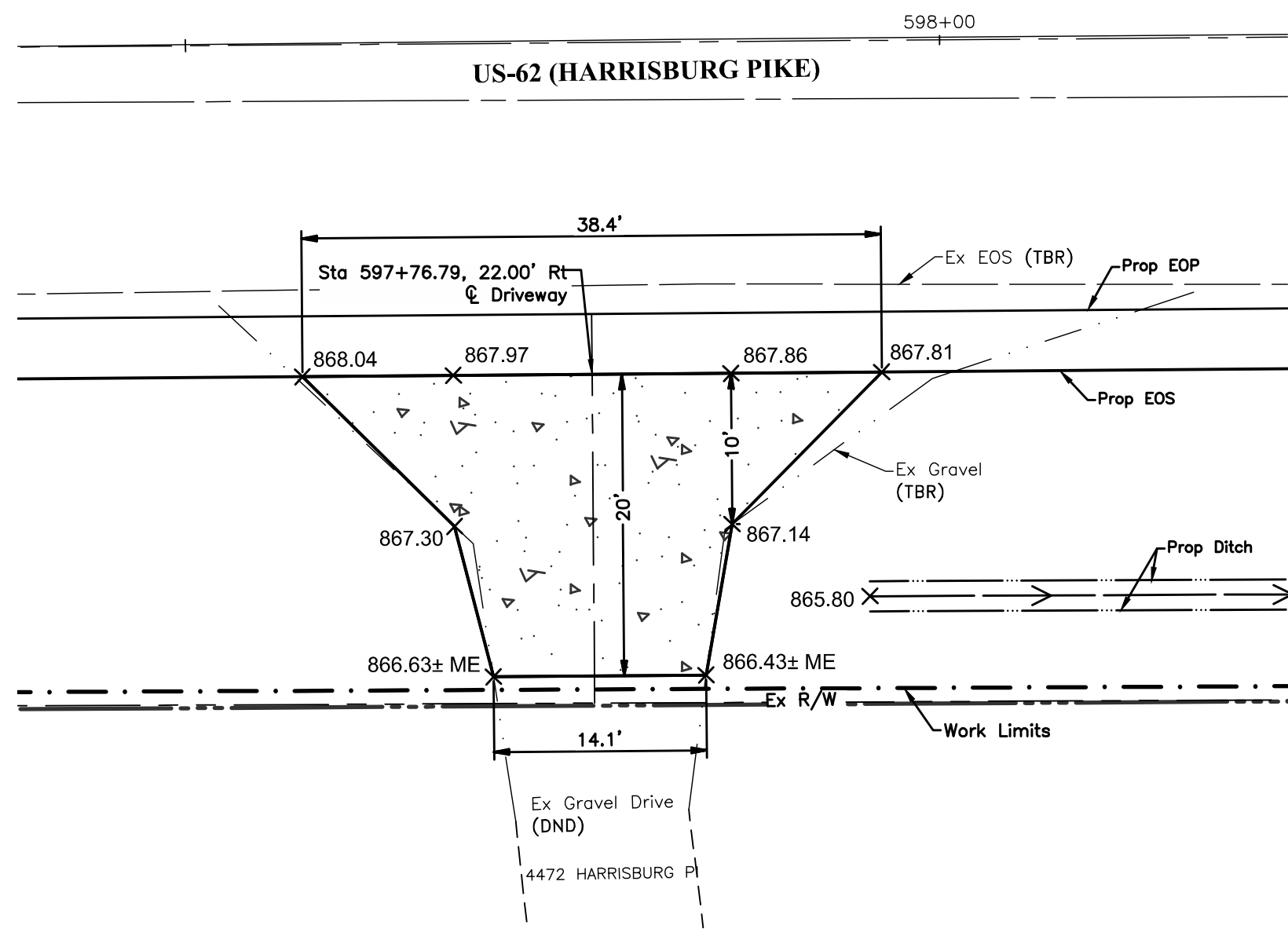
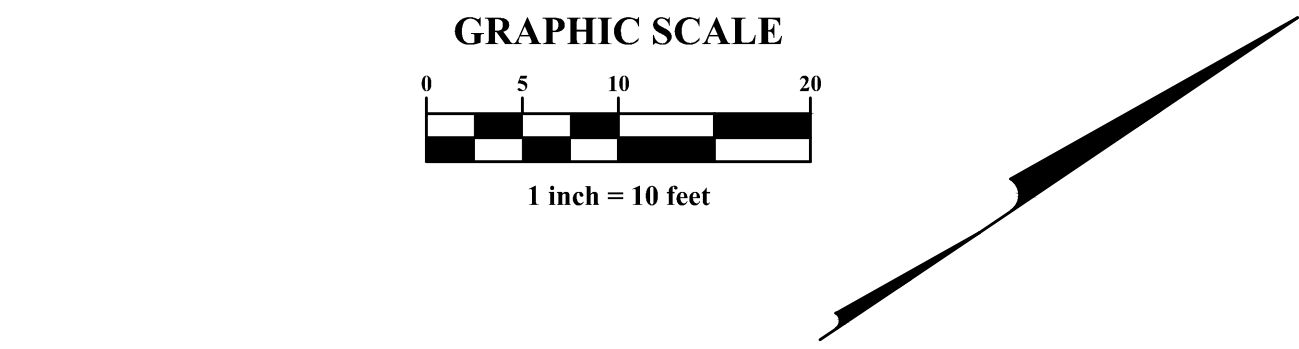
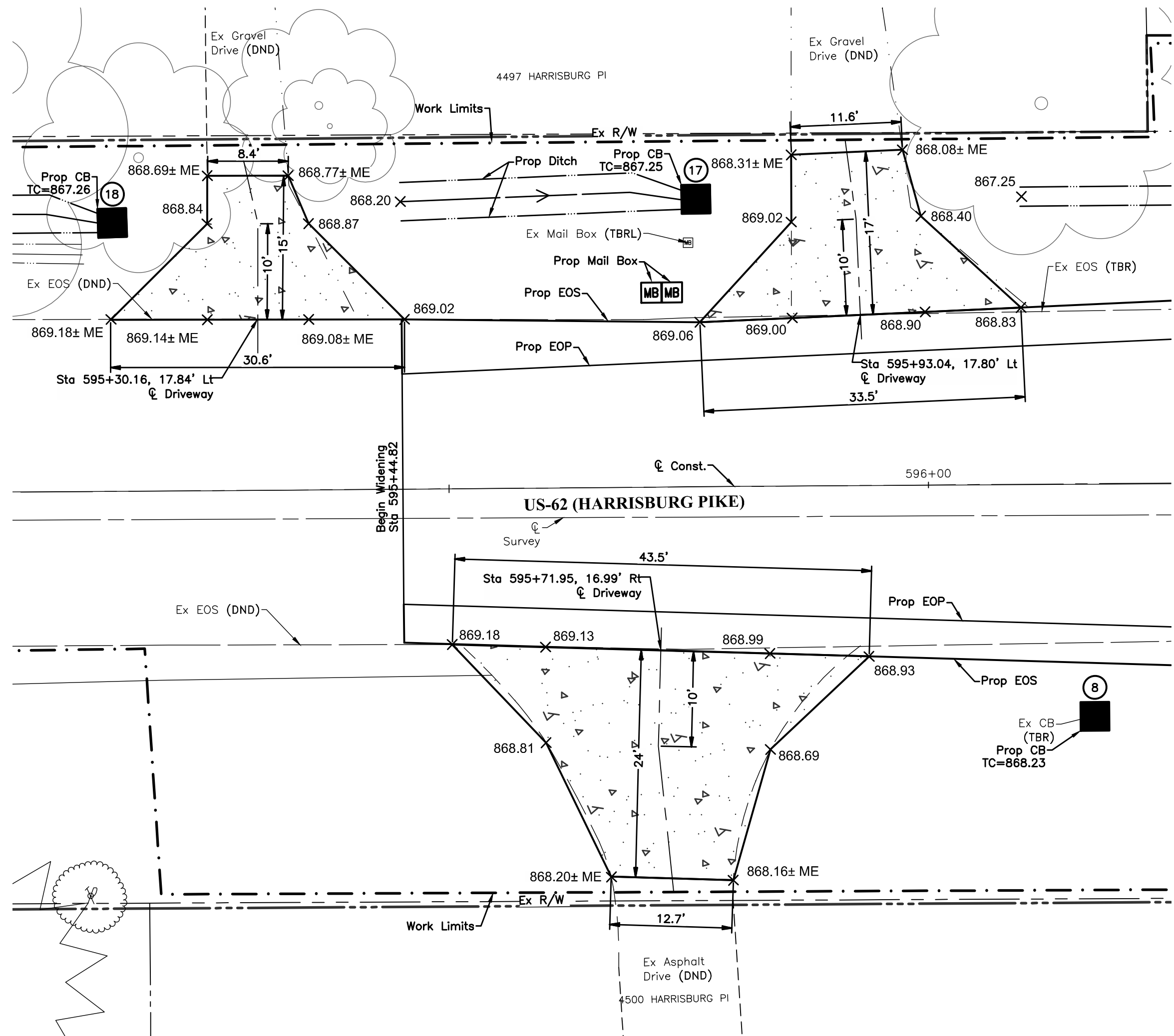
DATE
January 2021

SCALE
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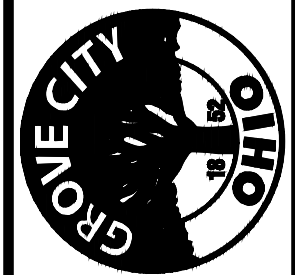
JOB NO.
2019-0489

SHEET
20A/36

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REVISIONS	
MARK	DESCRIPTION



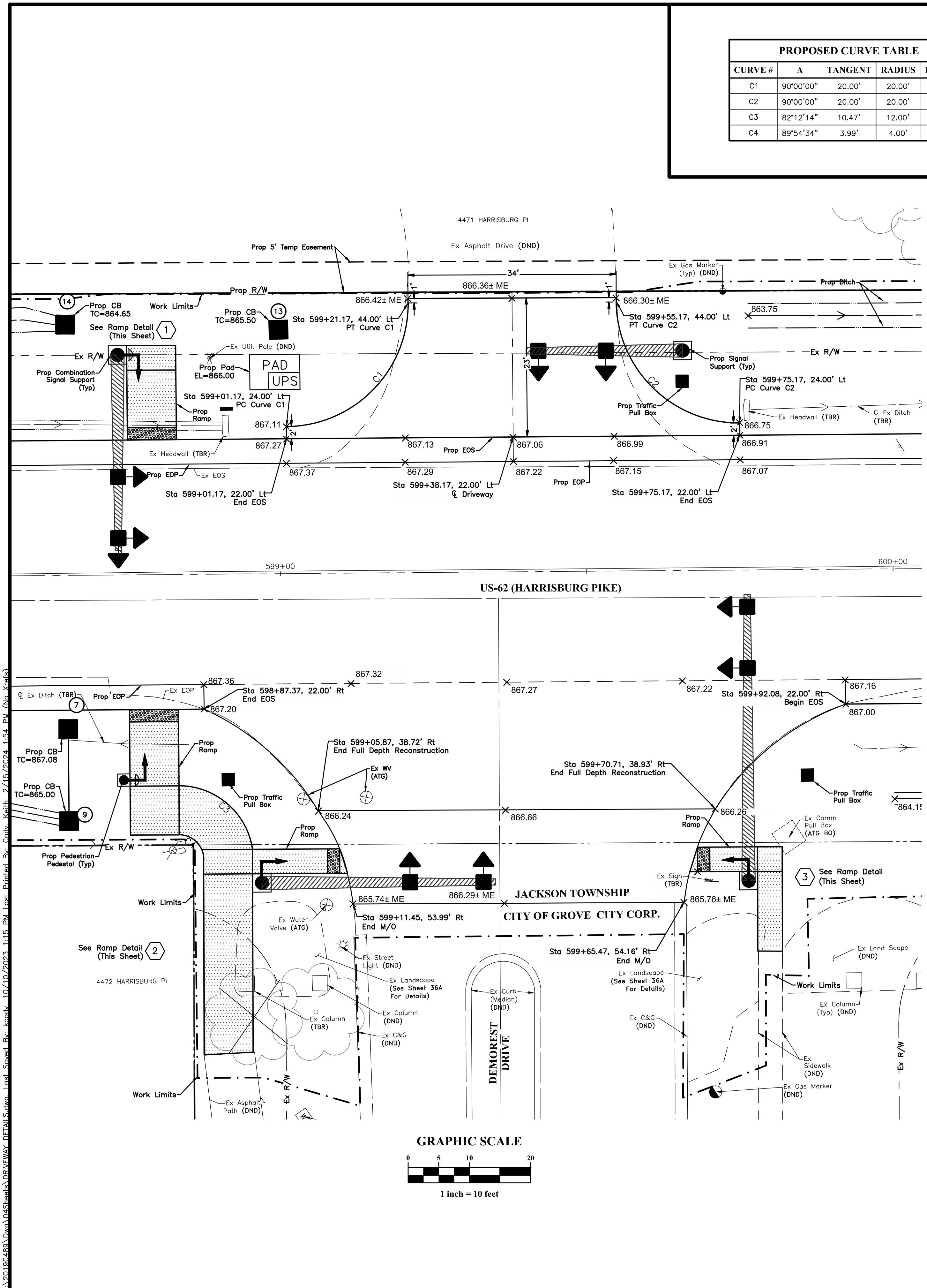
CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
ROADWAY IMPROVEMENT
DRIVEWAY DETAILS

EMHT
500 New Albany Road, Columbus, OH 43254
Phone: 614.775.5500 Fax: 614.775.3426
emht.com

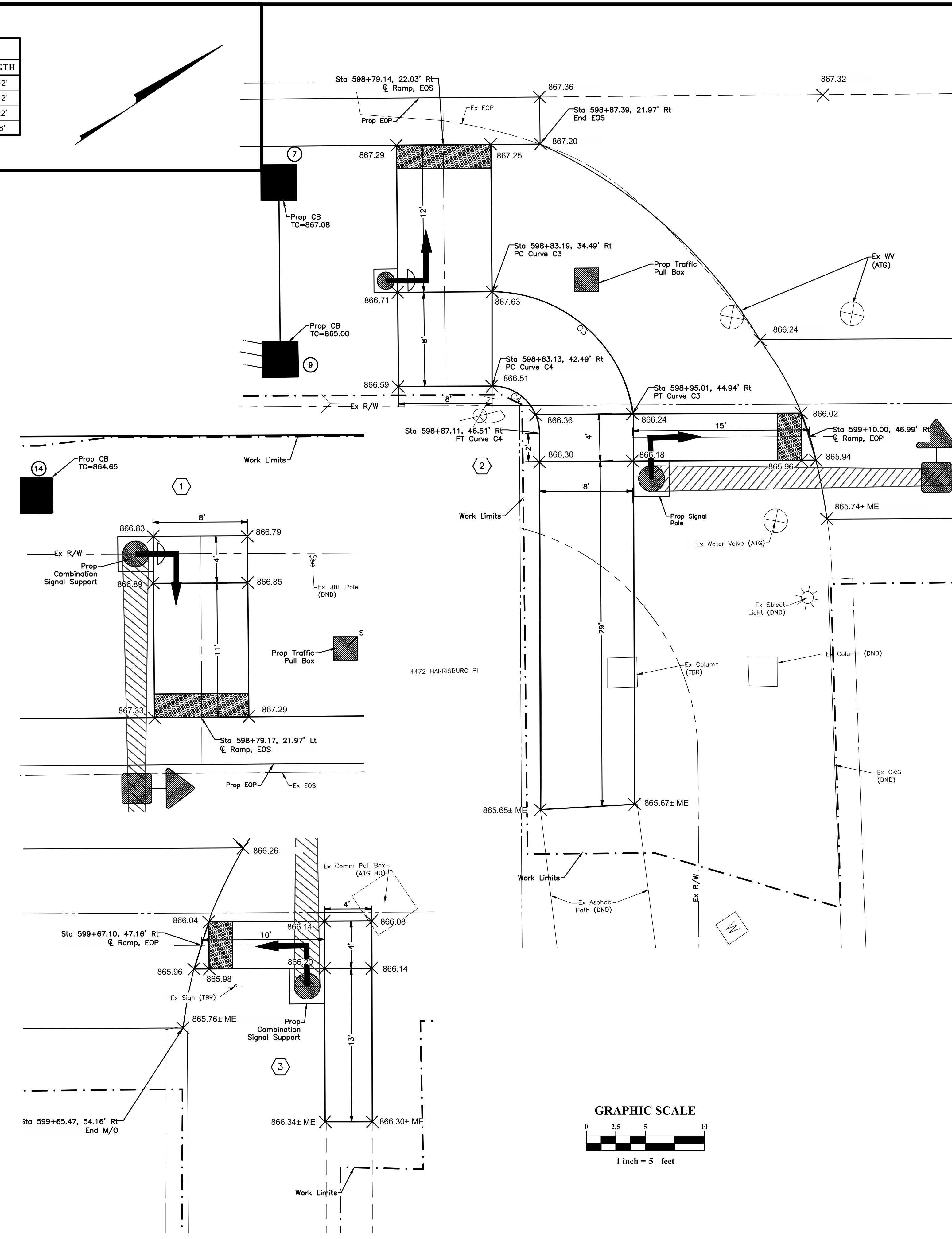
Scott A. McWhorter, Registered Professional Engineer
No. 10874, State of Ohio
Professional Seal

DATE
January 2021
SCALE
1" = 10'
JOB NO.
2019-0489
SHEET
21/36

\\s201904893\Drawings\445\Streets\DRIVEWAY DETAIL 1.dwg, Last Saved By: kathy, 2/15/2024, 1:54 PM (No Xrefs)



PROPOSED CURVE TABLE				
CURVE #	Δ	TANGENT	RADIUS	LENGTH
C1	90°00'00"	20.00'	20.00'	31.42'
C2	90°00'00"	20.00'	20.00'	31.42'
C3	82°12'14"	10.47'	12.00'	17.22'
C4	89°54'34"	3.99'	4.00'	6.28'



REVISIONS

MARK	DATE	DESCRIPTION
Δ	10/10/23	Plan Revisions For New Annexation

CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT

**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
DRIVEWAY & RAMP DETAILS

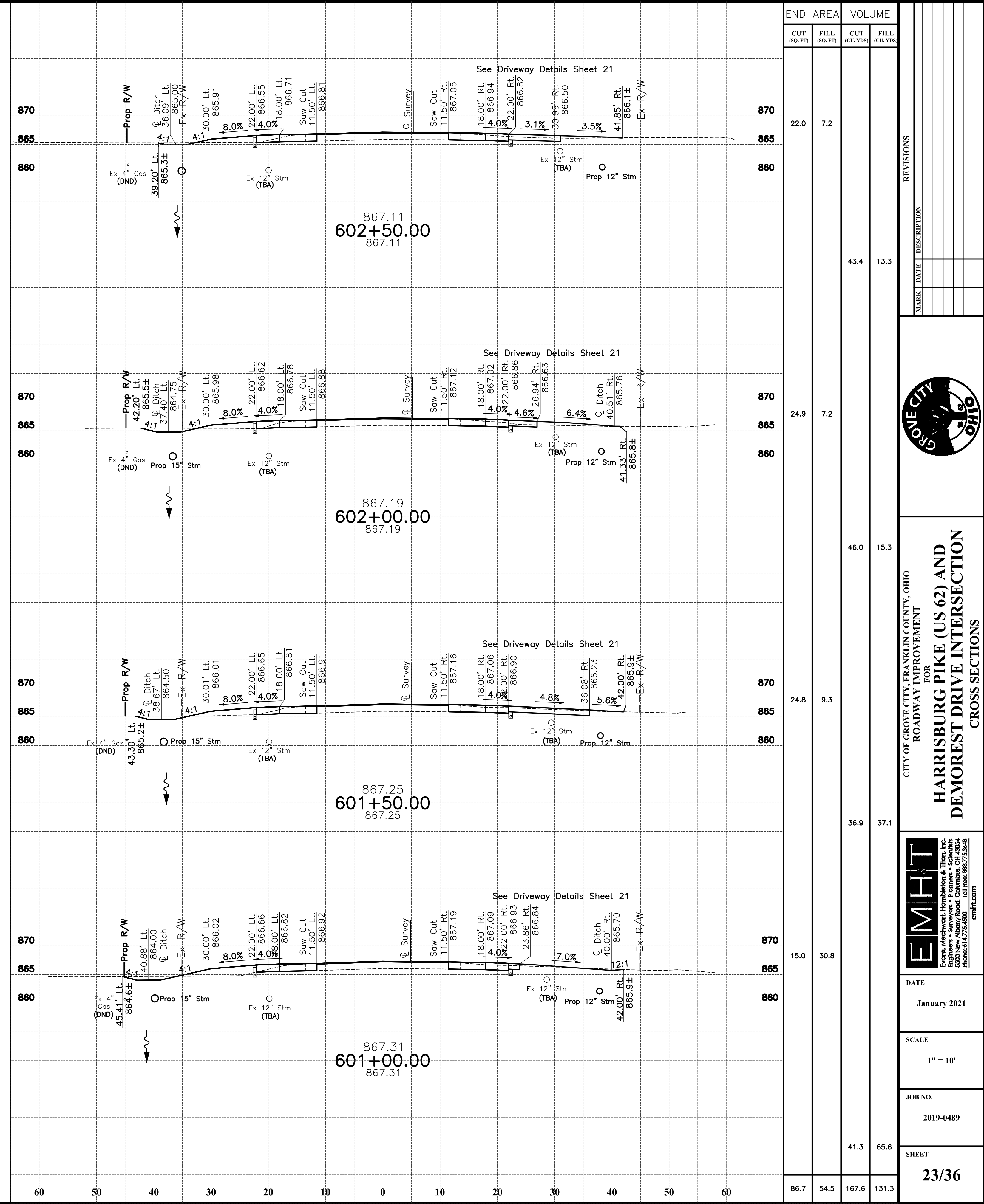
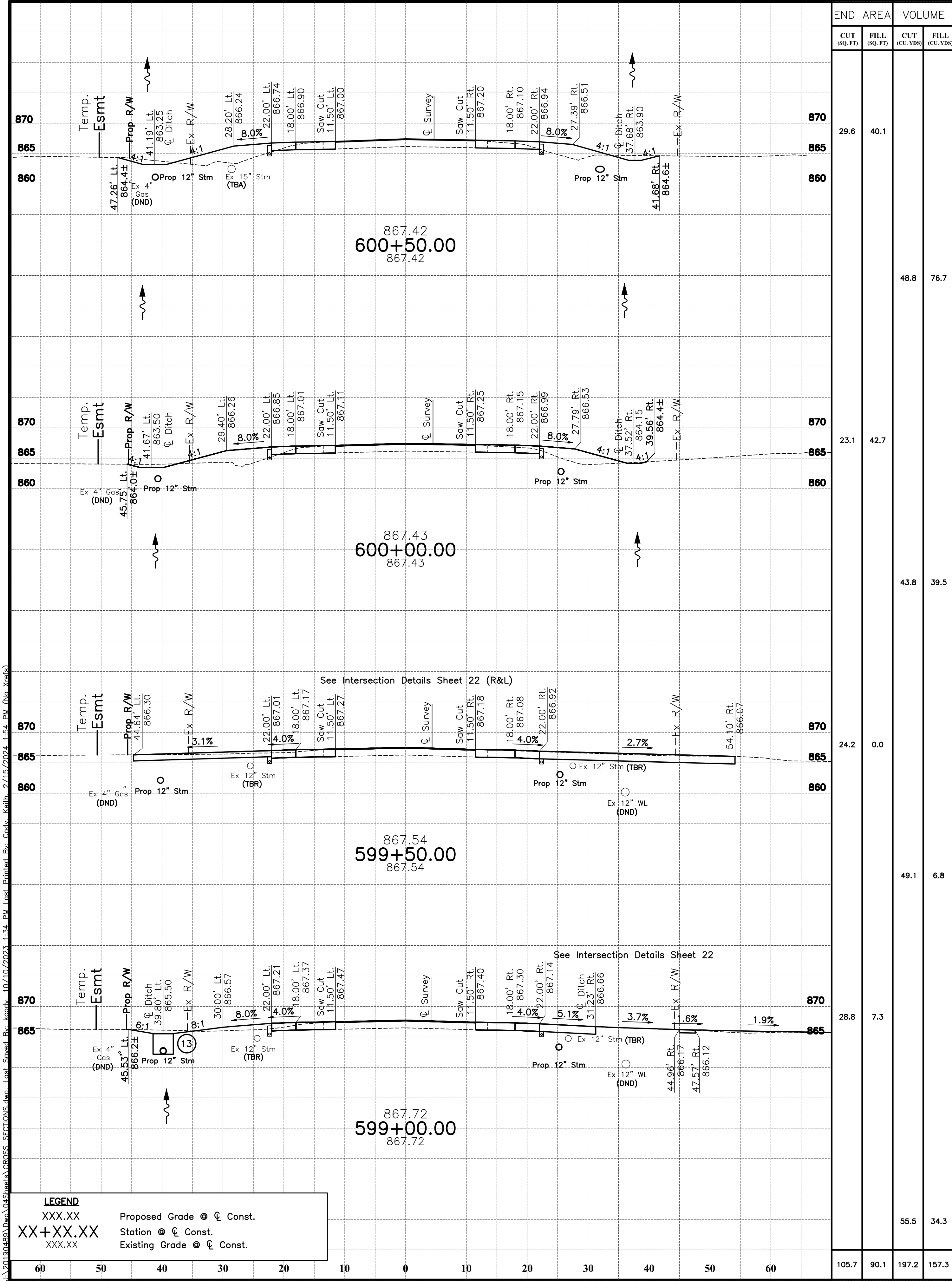
EMHT
Brett A. Huchard, Inc.
Engineers - Surveyors - Planners - Scientists
5200 New Albany Road, Columbus, OH 43254
Phone: 614.775.5500 Fax: 614.775.3426
emht.com

DATE
January 2021

SCALE
As Noted

JOB NO.
2019-0489

SHEET
22/36



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
CROSS SECTIONS



DATE
January 2021
SCALE
1" = 10'
JOB NO.
2019-0489
SHEET
23/36

X:\2019\04489\Drawn\045\Drawn\TRAFFIC CONTROL.dwg, Last Saved: Fri, 10/10/2023 10:35 AM, Last Printed: By: Cath. Keith, 2/15/2024 1:54 PM (No Xrefs)

GENERAL

These specifications, together with the accompanying plans are intended to describe the type, size and location of the products and materials to be provided and installed under the various bid items related to traffic control. The Contractor shall furnish and install traffic control devices and related materials in compliance with these plans and specifications, as well as the 2023 Ohio Department of Transportation Construction and Material Specifications, the Ohio Manual of Uniform Traffic Control Devices and the Standard Construction Drawings issued by the Ohio Department of Transportation. These specifications set forth the minimum performance and operating requirements of the traffic control items referred to herein.

PLAN AND SPECIFICATION COMPLIANCE

The Contractor shall furnish and install traffic control devices in compliance with these plans and specifications, the 2023 Ohio Department of Transportation Construction and Material Specifications and its supplemental specifications, Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, and the "TC" Standard Construction Drawings issued by the ODOT Office of Traffic Engineering.

Traffic control devices shall meet or exceed the standards specified in the following documents.

- (a) Specifications listed in this plan;
- (b) 2023 Ohio Department of Transportation Construction and Material Specifications.

In case of a conflicting specification statement, the specification document hierarchy shall be in the order listed from (a), highest, to (b), lowest.

ITEM 630 SIGN, FLAT SHEET, AS PER PLAN

ITEM 630 GROUND MOUNTED SIGN SUPPORT, AS PER PLAN

Signs shall be as detailed on the traffic control sheets. The requirements of the specification including painting, apply to all permanent signs whether they are ground mounted on posts or pole supports, or overhead mounted on mast arms. This specification shall not apply to temporary signs.

In addition to 630, all sign sheet material shall be Diamond Grade DG3 manufactured by 3M Company or approved equal.

Ground mounted post supports shall be a square post with anchor base as per detail on ODOT Standard Drawing TC-41.20. All posts shall be 2"x2" 12 gauge square tubing with open holes and all anchor bases shall be 2 W"x2 W" 12 gauge square tubing with open holes.

All visible elements of sign mounting systems, e.g. sign backing assemblies, support posts, stainless steel banding, back of all signs etc., shall be painted similar to Federal Specification 595-B Color #27040, BLACK whenever payment for those items is made under this item of work. Nuts and bolts need not be painted.

All painting shall be performed under controlled environmental conditions, and in accordance with all manufacturers recommendations pertaining to surface preparation, material handling, and application. Prior to painting, paint sample shall be submitted for review.

The Contractor shall provide sleeves for sign posts to be installed in sidewalk areas. The sleeves shall be placed at all post mounted sign locations during the sidewalk concrete pour. In areas of brick walk, the pavers shall be cut around the sleeves. The sleeve shall then be cut flush to the surface of the sidewalk. The costs for sleeving shall be included within the bid payment for Item 630, Ground Mounted Support, As Per Plan. If the contractor fails in providing post sleeving, the concrete walk shall be cored and any damaged bricks shall be replaced at no costs to the project.

All regulatory and traffic control signs shall comply with Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, state requirements and local requirements.

Payment shall be as per item 630.

RAISED PAVEMENT MARKER SPACING

NORMAL:

Centerlines 80' Two-Way Yellow
Lane Lines 80' Two-Way White
Edge Lines 80' One-Way White
Channelizing Lines 20' Two-Way White
Two Way Left Turn Lane 40' Both Sides Two-Way Yellow

APPROACH TO STOP OR SIGNAL:

(Measured from stop line or radius tangent point)
Edge Lines 12@20' / 9@40' / 5@80'
Lane Lines 12@20' / 9@40' / 80' Normal Spacing
Centerlines 12@20' / 9@40' / 80' Normal Spacing

THROUGH STREET APPROACH:

Edge Line 11@80' One-Way White
Lane Line 21@40' / 80' Normal Spacing Two-Way White
Centerline 21@40' / 80' Normal Spacing Two-Way Yellow

DEPARTURE FROM THROUGH STREET, SIGNAL OR STOP CONDITION:

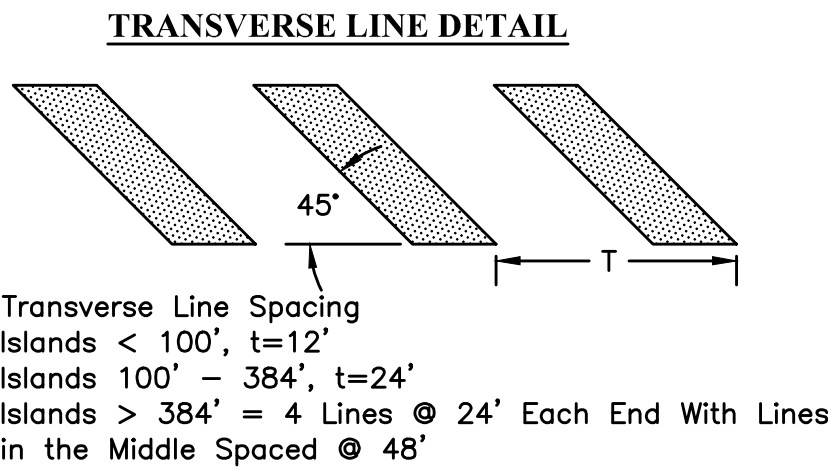
Lane Line 5@80' Two-Way White
Edge Line 5@80' One-Way White

TWO-WAY LEFT TURN:

(Stop condition or approach to a signal)
Approach 2WLT Markings 12@20' / Normal Spacing Both Sides Two-Way Yellow

NOTES:

- Where edge line RPMs fall within the limits of a driveway, they are to be relocated longitudinally a maximum of ten percent (10%) of the normal spacing. If relocation is still within driveway limits, the effected rpm shall not be installed.
- White edge line RPMs shall not be installed adjacent to curbs even if edge line exists.
- RPMs shall not be installed within intersections.
- RPMs shall not be installed on bridge decks.
- RPMs shall not be installed on dotted lines. (2'dot/4' gap)
- Diverging tapers (returns) shall have a minimum of three (3) evenly spaced two-way yellow rpm's if normal spacing does not provide for at least three.
- RPMs shall not be placed within crosswalks, school symbols or rail road markings.



LINE SPECIFICATIONS	
WE	Edge Line, 5", White
YE	Edge Line, 5", Yellow
DY	Center Line, 5" Solid Double
CH	Channelizing Line, 10" White
SL	Stop Line, 24" White
XW	Crosswalk Line, 10", White
YT	Transverse Line, 24", Yellow
LA	Lane Arrow, 6', White

(DY) Pavement Marking shall be Item 644



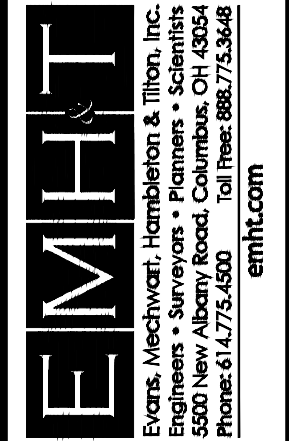
Traffic Control Plan - Estimate of Quantities

Item	Quantity	Unit	Item Description
621	17	EA	Raised Pavement Marker Removed
621	136	EA	RPM
630	154	LF	Ground Mounted Sign Support, As Per Plan
630	5	EA	Removal of Ground Mounted Sign and Storage
630	4	EA	Removal of Ground Mounted Sign Support and Disposal
630	1	EA	Removal of Ground Mounted Sign and Reerection
630	57.5	SF	Sign, Flat Sheet, As Per Plan
644	0.46	MI	Edge Line
644	0.33	MI	Center Line
644	341	LF	Channelizing Line
644	207	LF	Crosswalk Line
644	8	EA	Lane Arrow
644	90	LF	Stop Line
644	123	LF	Transverse Line

REVISIONS			
MARK	DATE	DESCRIPTION	
Δ	10/10/23	Plan Revisions For New Annexation	



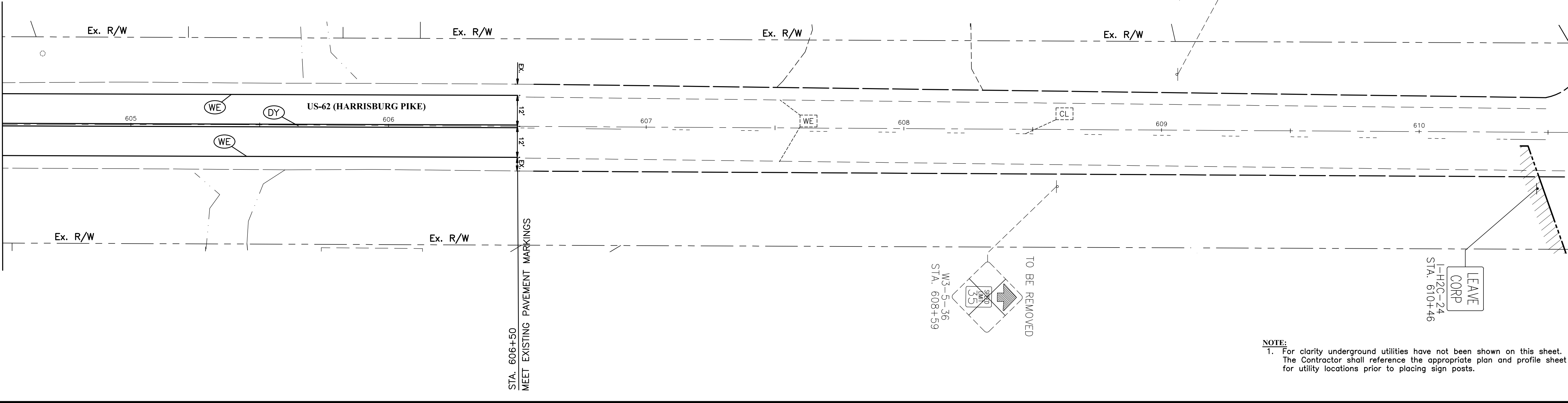
CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
TRAFFIC CONTROL NOTES



DATE
January 2021
SCALE
None
JOB NO.
2019-0489
SHEET
26/36

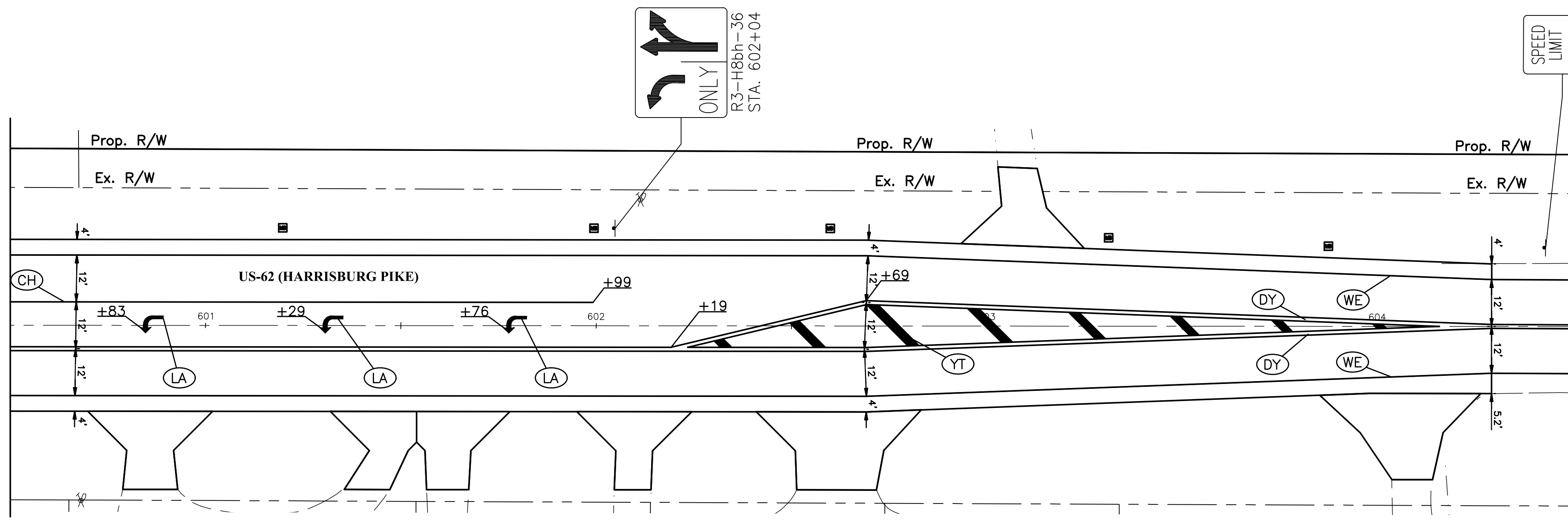
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MATCH LINE STA. 604+50 (SEE THIS SHEET)

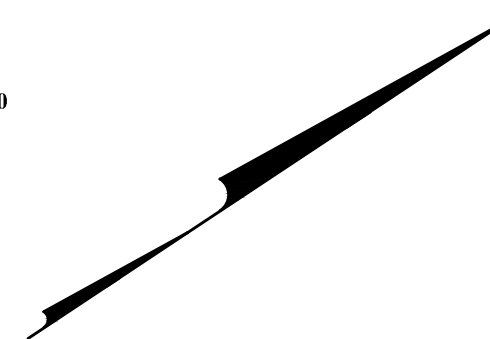
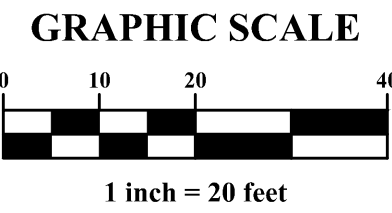


NOTE:
1. For clarity underground utilities have not been shown on this sheet. The Contractor shall reference the appropriate plan and profile sheet for utility locations prior to placing sign posts.

MATCH LINE STA. 599+75 (SEE SHEET 27)



MATCH LINE STA. 604+50 (SEE THIS SHEET)



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
TRAFFIC CONTROL PLAN

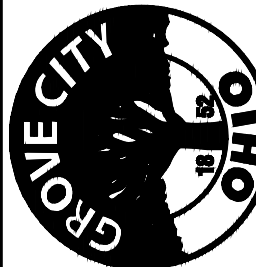

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DATE	January 2021
SCALE	1" = 20'
JOB NO.	2019-0489
SHEET	28/36

MARK	DATE	DESCRIPTION
Δ	10/10/23	Plan Revisions For New Annexation



REVISIONS

A:\2019\4493\Drawn\4493.dwg 2/15/2023 10:37 AM Last Saved By: Condy Keith 2/15/2023 1:55 PM (No Xrefs)	GENERAL These specifications, together with the accompanying plans, are intended to describe the type, size, and location of the products and materials to be provided and installed under various bid items related to traffic control and highway lighting. The Contractor shall furnish and install traffic control and highway lighting devices and related materials in compliance with these plans and specifications, as well as the 2023 Ohio Department of Transportation Construction and Material Specifications, the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, and the Standard Construction Drawings issued by the Ohio Department of Transportation. These specifications set forth the minimum performance and operating requirements of the traffic control and highway lighting items referred to herein.																													
	PLAN AND SPECIFICATION COMPLIANCE The Contractor shall furnish and install traffic signal devices in compliance with these plans and specifications, the 2023 ODOT Construction and Material Specifications including all supplemental specifications, the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, and the "TC" and "HL" standard construction drawings issued by ODOT. These specifications set forth the minimum design and operating requirements for traffic signal and highway lighting equipment.																													
	Traffic signal control and highway lighting equipment shall meet or exceed the standards specified in the following documents: a) Specifications listed in this plan. b) NEMA Standards Publication no. TS1–1989 and/or TS2–2003 (or current NEMA issue) c) 2023 ODOT Construction and Material Specifications.																													
	In case of a conflicting specification statement, the specification document hierarchy shall be in the order listed from (A), highest, to (C), lowest.																													
TRANSITION TO SIGNAL CONTROL New signals shall be placed on flash for a minimum of 7 days prior to being placed on regular cycling operation. The signal shall not be placed on flash until the permanent pavement markings and lane control signs have been installed with the exception of stop lines, which shall be in place prior to the signal being placed in regular operation.																														
ODOT standard construction drawing MT–120.00 shall be implemented for transition to signal control.																														
At the time of plan development the warrant status for the planned traffic signal at the US 62/Demorest Drive intersection was unknown. Grove City officials shall be the sole agency to determine when the proposed traffic signal shall be placed in operation.																														
Payment for all labor, equipment, and materials necessary to complete this item of work shall be included in the lump sum price bid for 614 Maintaining Traffic, As Per Plan.																														
MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS The Contractor shall be responsible for maintaining traffic signal installations within the project under the following conditions:																														
1.The Contractor shall be responsible for existing signal installations which the plan requires the Contractor to adjust, modify, add on to, or remove, or which the Contractor actually adjusts, modifies, or otherwise disturbs, from the time his operations first disturb the installation until the time the installation has subsequently been removed or modified and the work has been accepted.																														
2.The Contractor shall be responsible for maintenance of new signal installations or devices, installed by the Contractor, from the time of installation until the work is accepted.																														
The Contractor shall correct as quickly as possible all outages or malfunctions. He shall provide the Engineer such addresses and phone numbers where his maintenance forces can be contacted. The Contractor shall provide one or more persons to receive all calls and dispatch the necessary maintenance forces to correct outages. Such a person or persons may be used to perform other duties as long as prompt attention is given to these calls and a person is readily available continuously 24 hours a day, 7 days a week. All lamp outages, cable outages, electrical failures, equipment malfunctions and misaligned signal heads shall be corrected to the satisfaction of the Engineer with the signal back to service within four hours after the Contractor has been notified of the outage.																														
In the event new signals are damaged prior to acceptance all damaged equipment except poles and control equipment shall be replaced by the Contractor to the satisfaction of the Engineer with the signal back in service within 8 hours after the Contractor's notification of the outage.																														
If poles and/or control equipment are damaged and must be replaced, the Contractor shall make temporary repairs as necessary to bring the signal back into full operation within the allowed 8-hour period, and shall make permanent repairs or replacement as soon thereafter as possible.																														
None of the above shall be construed as collective or consecutive outage time periods at any one location. That is, where more than one outage occurs at any one location, then the allotted time limit shall be for the worst single outage.																														
Where outages are the direct result of a vehicular accident, the response of the Contractor shall be as outlined above. The Contractor shall be responsible for collection of any compensation for this work from those parties responsible for the damage.																														
Where the Contractor has failed to or cannot respond to an outage or signal equipment malfunction, at these locations within his responsibility, within periods as specified above, the Engineer may invoke the provisions of Section 105.15 and any subsequent costs to the City of Grove City for Police Services and Maintenance Services shall be deducted from monies due or to become due the Contractor in accordance with provisions of Section 105.15.																														
Any signalized intersection, where the signal is out of service due to construction procedures, or due to an outage or malfunction of equipment as described above, shall be placed under officer control.																														
Any vehicular traffic signal head which will be out of operation shall be covered in the manner described in 632.25.																														
All costs resulting from the above requirements shall be considered to be included in the lump sum price bid for Item 614 Maintaining Traffic, As Per Plan.																														
PAINT CHIP SUBMITTAL Prior to any painting, the Contractor shall submit paint samples to both the Engineer and Grove City officials. Paint samples shall be representative of the color, type and manufacture that will be used for finishing the various items. The Engineer and Grove City officials shall review the paint samples prior to the commencement of the finishing process.																														
Paint samples shall be submitted for all proposed traffic signal items called for in this plan set, including, signal supports, signal heads, pedestrian heads, pushbuttons, signs, bracket arms, luminaires and controller cabinets. Any cost associated with providing paint samples shall be incidental to the individual items to be painted.																														
GROUNDING AND BONDING The requirements of the Construction and Material Specifications (C&MS) and the HL and TC series of Standard Construction Drawings are modified as follows:																														
1.All metallic parts containing electrical conductors shall be permanently joined to form an Effective Ground Fault Current Path back to the grounded conductor in the power service disconnect switch. a.Provide an equipment grounding conductor in metallic conduits (725.04) in addition to the conductors specified and bond the conduit to this grounding conductor. b.When an equipment grounding conductor is required in plastic conduit (725.05), the installation shall include a separate equipment grounding conductor in addition to the conductors specified. c.Metallic conduit carrying the loop wires from in the pavement to the pull box splice location will only be bonded at the pull box end, and will not contain an equipment grounding conductor. d.Metal pull box lids shall be bonded by attachment of the equipment grounding conductor to the frame diagonal as provided on HL–30.11. e.If multiple conduit runs begin and end at the same points, only one equipment grounding conductor is required.																														
2.Conduits. a.The 725.04 conduit shall have grounding bushings installed at all termination points. The bushing material shall be compatible with galvanized steel conduit and the grounding lug material shall be compatible for use with copper wire. Threaded or compression type bushings may be used. b.The 725.05 conduit shall have the inside and outside diameters of the conduit deburred at all termination points. c.Both ends of metallic conduit shall be bonded to the equipment grounding conductor. d.Metallic conduit may be bonded to metallic boxes through the use of conduit fittings UL approved for this type of connection, with the box bonded to the equipment grounding conductor.																														
3.Wire for grounding and bonding. a.Use insulated, copper wire for the equipment grounding conductor. Bonding jumpers in boxes and enclosures may be bare or insulated copper wire. Wire size shall be as follows: i. Use 4 AWG between the power service and supports, poles, pedestals, controller or flasher cabinets. ii. Use a minimum 8 AWG between loop detector pull boxes and the first conduit that requires a larger size as specified in 3.a.i above. iii.The insulation shall be green or green with yellow stripe(s). For 4 AWG or larger, insulation may also be black with green tape/labels installed at all access points. b.In a highway lighting system, the equipment grounding conductor shall be the same wire size as the duct cable or distribution cable circuit conductors, with the minimum conductor size of 4 AWG. Bonding jumpers will be minimum size 4 AWG.																														
4.Ground rod. a.A 3/4 inch Schedule 40 PVC conduit will be used in foundations and concrete walls for the grounding conductor (ground wire) raceway to the ground rod. Should metallic conduit be used, both ends of the conduit shall be bonded to the grounding conductor. b.The typical grounding conductor (ground wire) shall be 4 AWG insulated, copper.																														
5.The green conductor in signal cables (conductor #4) shall not be used to supply power to a signal indication. It will be connected to the signal body as an equipment ground in aluminum heads and it will be unused in plastic heads. Unused conductors shall be grounded in the cabinet. Typical use of conductors is as follows:																														
	Cond. No.	Color	Vehicle Signal	Pedestrian Signal																										
	1	Black	green ball	#1 Walk																										
	2	White	AC neutral	AC neutral																										
	3	Red	red ball	#1 DW/FDW																										
	4	Green	equipment ground	equipment ground																										
	5	Orange	yellow ball	#2 DW/FDW																										
	6	Blue	green arrow	#2 Walk																										
	7	White/black stripe	yellow arrow	not used																										
6.Power Service and Disconnect Switch. a.At the power service location, the grounding conductor (ground wire) from the disconnect switch neutral (AC–) bar to the ground rod shall be a continuous, unspliced conductor. If spliced, it shall be an exothermic weld butt splice. b.The service neutral (AC–) shall only be connected to ground at the main power service disconnect switch, and at the controller cabinet with UPS and generator. c.Connections in the equipment grounding conductors shall be brought to the main switch, but shall be grounded at both secondary and main switches.																														
Payment for the above work shall be incidental to "Item 625 No. 4 AWG 600 Volt Distribution Cable, As Per Plan" and "Item 625 No. 6 AWG 600 Volt Distribution Cable"																														
ITEM 625 NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN A green colored, insulated, cable shall be used for the ground wire (GND) where indicated. This GND cable shall be separate from the ground rod wire, but shall be connected to the same grounding bolt used for the ground rod wire attachment at the pole. The GND cable shall be tagged as "GND SYS" at all pole locations & control cabinets.																														
Payment shall be as per Item 625.																														
ITEM 625 CONDUIT, (BY SIZE), 725.04, JACKED OR DRILLED, AS PER PLAN Conduit placed under proposed roadways shall have a minimum overall depth of 24 inches and or a minimum depth of 12 inches under the final pavement subgrade whichever is deeper. This item of work shall include exposing all water line and gas line crossings and restoration of disturbed areas to original condition.																														
Payment shall be as Item 625.																														
ITEM 625 PULL BOX, (BY TYPE), (BY SIZE), AS PER PLAN Pull boxes shall have the word "TRAFFIC" on the lid. All pull boxes within or adjacent to sidewalk shall be flush with the walk.																														
Payment shall be as per Item 625.																														
ITEM 625 BRACKET ARM, (BY SIZE, BY TYPE), AS PER PLAN Bracket arms shall be furnished as per 625 except that the bracket arms shall be painted to match the signal supports. Bracket arms shall be monotube, tapered elliptical arms. The rise of the bracket arm shall not exceed the height depicted on the detail, measured from the vertical center of the arm at the attachment end to the vertical center of the arm at the opposite end.																														
Payment shall be as per Item 625.																														
ITEM 625 LUMINAIRE, LED, 120 VOLT, AS PER PLAN The luminaire shall be in accordance with the City of Grove City standard drawing C–GC–95D. It shall be LED, 120V, type III IES distribution, 4000K color temperature, with glass housing. The luminaire shall be Holophone ESL3–P10S–40K–MVOLT–TG3–QSM–CMC–SS, or an approved equal.																														
Luminaires shall be as per item 625 except that the luminaires at each intersection shall run off a single photoelectric cell. The luminaire and all mounting hardware shall be painted to match the signal support.																														
Measurement and payment shall be as per Item 625.																														
ITEM 630 SIGN, DOUBLE FACED, STREET NAME, AS PER PLAN Under this item of work the Contractor shall furnish and install LED internally illuminated street name signs, as manufactured by National Sign and Signal, South Armstrong Road, Battle Creek, Michigan 49015 (616) 963–2817 or approved equal. Internally illuminated signs shall be supplied with all the hardware for mounting below the specified mast arm.																														
The sign shall be constructed of cast and extruded aluminum components welded to provide a weatherproof housing suitable for outdoor use. Drip rails shall overhang the sign face to prevent water from entering the electrical housing. Drain holes shall be provided in the bottom of the housing. Each door shall be secured to the housing by a full length, open, stainless steel hinge on the door and three–quarter turn air lock fasteners. Neoprene gasketing shall form a watertight seal between the door and the housing. The exterior of the sign housing shall be primed and coated to match the signal supports. Surface preparation shall be as per the paint manufacturer's recommendations. Prior to painting the Contractor shall submit paint samples to the Engineer and Grove City officials for review and comment.																														
All sign components shall be accessible when one door is open and shall not require removal of the sign for access or maintenance operations. LED's shall be furnished in a sealed tube similar to Keystone's LED sign tubes. All drivers shall be internal to the tube. Sign manufacturer shall provide the appropriate length and wattage to correlate with the sign length.																														
Signs shall operate on 120 volt/60 hertz power and shall be capable of continuous operation over a range in temperatures from –35 degrees to 140 degrees Fahrenheit. A wire entrance junction box shall be supplied with the sign and shall mount inside the sign enclosure. Signs shall not have individual photocells.																														
The sign face shall be constructed of shatterproof, translucent polycarbonate material. The sign face and legend shall conform to the requirements of the Ohio Manual of Uniform Traffic Control Devices. The background color shall be translucent black. White letters shall be twelve inch upper case and nine inch lower case. A clear coat shall be applied to all sign faces to prevent fading and protect the surface.																														
Mounting hardware shall be provided to hang the sign below a signal mast arm using a two point attachment system. Mounting brackets shall be adjustable to allow the sign to hang plumb with minimal sway. All mounting hardware shall be manufactured of heat treated aluminum bar stock or galvanized steel of adequate design and strength for its intended use. All hardware, including stainless steel cables if used, shall be painted as per this specification to match the mast arm and support.																														
Payment for Item 630 Sign, Double Faced, Street Name, As Per Plan will be made at the contract unit price bid per each sign including all labor, materials, connections, and appurtenances complete, in place, tested and accepted.																														
ITEM 630 SIGN, FLAT SHEET, AS PER PLAN ITEM 630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN The back of all signs, mounting hardware, and support assemblies mounted on either signal supports or pedestal supports shall be coated to match its respective support. Finish requirements shall be in accordance with that listed for the support, pedestal, or light pole used for attachment.																														
Payment shall be as per Item 630.																														
ITEM 632 POWER CABLE, 3 CONDUCTOR, (BY SIZE), AS PER PLAN ITEM 632 POWER SERVICE, AS PER PLAN Power cable shall be provided as per 632.23 between the control cabinet and the tap–in location noted in the plan. When the power cable is in place and two weeks prior to the time that electrical power will be required, the Contractor shall contact the American Electric Power Company (Customer Solutions Center 800–277–2177) which will make the electrical service connection. Under no circumstances shall the Contractor connect power cable into the power company's circuits. A common photo electric relay and contactor with HAND/OFF/AUTO switch shall control all street lighting and internally illuminated street name signs. Photo electric relay shall be located at the designated signal pole where noted. The voltage supplied shall be 120/240 volts, 120 volts per circuit with one circuit for traffic signals and one circuit for street lighting and street name signs. Power cable conductors shall be copper. The neutral of the power cable shall only be grounded in the main power service disconnect switch at controller cabinet and in the controller cabinet with UPS and generator connections. The service shall be metered in accordance with AEP.																														
Provide an Arc Flash Hazard Warning sign on the outside front door of the enclosure in accordance with the current National Electrical Code paragraph 110.16.																														
Provide an Available Fault Current sign on the outside of the front door of the power service disconnect switch at the controller cabinet in accordance with the National Electrical Code paragraph 110.24.																														
Measurement and payment shall be as per Item 632.																														
ITEM 632 VEHICULAR SIGNAL HEAD, LED, (BY TYPE AND SIZE), 1-WAY, AS PER PLAN Signal heads shall be as per item 632 and shall be furnished with louvered aluminum backplates providing a 5 inch border around the signal face. Backplates shall be manufactured by Eagle Traffic Control Systems, 8004 Cameron Road, Austin, Texas, 78754–3899. Model number BPA–503ANL shall be used for 3 section heads and model number BPA–505HNL shall be used for 5 section heads. Aluminum backplates shall have a factory applied black powder coat finish. Backplates shall not have a reflective yellow border.																														
Vehicular signal heads shall conform to the Equipment and Material Standards of the ITE as published by the Institute of Transportation Engineers and all indications shall use a light emitting diode (LED) light source conforming therewith. Vehicular signal heads shall be rigidly mounted to the signal support as per standard drawing TC–85.20. All bolts and washers for securing sections together, all mounting hardware for the lens, all door latching bolts, and all hinge pins shall be stainless steel.																														
Vehicular signal heads shall be polycarbonate and the top and bottom of the housing shall have an opening to accommodate standard 1–1/2" pipe brackets. Mounting hardware shall attach to the signal head housing with tri–stud type connections. Signal supports shall be designed to also accommodate aluminum signal heads.																														
Vehicular signal heads shall be painted black to match the signal supports. Prior to painting the Contractor shall submit paint samples to the Engineer and Grove City officials for review and comment.																														
Payment shall be as per Item 632.																														
ITEM 632 PEDESTRIAN SIGNAL HEAD, AS PER PLAN Pedestrian signal heads shall display international symbols in lieu of the words "WALK" and "DON'T WALK" and shall be supplemented by a clearance interval countdown timer. The international symbols and the countdown display shall be housed in a single enclosure. The display shall utilize an LED light source that complies with applicable standards promulgated by the Ohio Department of Transportation and the Institute of Transportation Engineers.																														
Countdown timer requirements: 1.The countdown feature shall automatically adjust to the programmed intervals of the traffic controller per the requirements of 732.05 2.The countdown timer shall be to the right of the international symbols. 3.Countdown numbers shall be created using two rows of L.E.D.'s and be 9 inches high.																														
The housing shall be field drilled to fit the hinged mounting bracket and reinforced with parts furnished by the manufacturer. Heads shall be mounted on two–hinged type brackets which are bolted to the pole. Banding will not be permitted. The Contractor shall supply the mounting brackets and all other necessary hardware.																														
When two pedestrian heads are attached to a single pole, the bottom of one head shall be mounted 8 feet above foundation level and the second mounted one–half its housing height above the first. The brackets shall be hinged to allow the pedestrian heads to swing away from each other. A clear, shatterproof, lens shall cover the face of the signal head and be of sufficient strength to protect the components from roadside hazards and vandalism.																														
The signal housings shall be black polycarbonate to match the signal supports.																														
Payment shall be as per Item 632.																														
ITEM 632 PEDESTRIAN PUSHBUTTON, AS PER PLAN The exterior pushbutton housing shall be black to match the signal supports. The pushbutton shall be a Polara Bull Dog Model with L.E.D., Momentary. The pushbutton shall be rated for medium or heavy duty usage and have a barrier type of lug terminal for attachment of the field cable. A clear bead of silicone sealant shall be applied to the top of the pushbutton housing (1 inch each side of top center) against the pole to prevent water from entering the back of the pushbutton housing. One aluminum sign shall be supplied with each pushbutton. The bottom of the sign shall be mounted just above the top of the pushbutton. Mount the center of the pushbutton 42 inches above the pedestrian pathway surface. The signs shall be as detailed in these plans.																														
The back of all signs, mounting hardware, and support assemblies mounted on either signal supports or pedestal supports shall be coated to match its respective support. Finish requirements shall be in accordance with that listed for the support, pedestal, or light pole used for attachment.																														
Payment shall be as per Item 632.																														
ITEM 632 (COMBINATION) SIGNAL SUPPORT, TYPE TC-81.22, (BY SIZE), AS PER PLAN The combination signal support foundations shall be excavated or vacuum excavated to test for conflicts prior to shop drawings approval. Foundation voids shall be temporary backfilled, securely covered, or the foundations installed while signal supports are manufactured. If utility conflicts are encountered during excavation, the Engineer shall be notified. Modifications to the foundation location may be required. Vacuum excavation, and foundation location adjustments shall be incidental to Item 632 Signal Support Foundation, As Per Plan.																														
Traffic signal supports shall be as per Item 632 except that the support poles and arms shall have a circular cross section and shall be tapered tubes having a true and continuous taper. Multi–sided or fluted poles and poles having a tapered effect accomplished with the use of reducers will not be accepted. Arm length shall be as specified but arms forty feet in length or less shall be of one piece construction. Arms more than forty feet long may be constructed in no more than two pieces.																														
Bolt covers shall be provided. Anchor bolts shall be oriented as required by the plans however the formed top of the support foundation shall be oriented square to the adjacent sidewalk where applicable.																														
All signal cables shall be run inside the poles. Standard Drawing TC–83.10 is hereby modified to prohibit the use of external conduit risers for signal cabling, or any other use.																														
The Contractor shall provide all necessary attachments or connections to the poles. Additional wiring holes in the pole shall be drilled, reamed, or hole sawed. Flame cutting (oxacetylene or electrical arc) will not be accepted. All cut edges or other defects in the zinc coating shall be cleaned and covered with two coats of zinc rich repair paint matching the factory finish. Brackets and appurtenances shall be securely attached with stainless steel screws of sufficient size for the intended loading. Stainless steel banding shall not be used unless specifically authorized by these plans and specifications or directed by the Engineer. All banding, where used, shall be factory painted to match the signal supports.																														
Design Criteria In addition to the requirements of item 632, signal support structures shall be designed and constructed by the supplier to support the loads caused by the signs, signals, and other equipment that the plan requires the Contractor to install. The use of standard ODOT design designations such as those described on Standard Drawing TC–81.22, and any details provided in this plan, are intended to promote uniformity of design and are not warranted to be structurally adequate. To the maximum extent practicable, the Contractor and supplier shall provide a structurally adequate support that utilizes standard ODOT anchor bolt sizing and spacing.																														
The mast arm support pole assembly, and the mast arm assembly shall be made by the same manufacturer and designed and sold as a unit.																														
All pre–drilled holes for all items shall be deburred and free of all sharp edges. All outside welds shall be rolled or ground smooth. All inside welds shall be void of sharp edges. Any structural fastener (3/4" or greater) shall be galvanized per ASTM 153 and shall be made of high strength carbon steel. Any other fastener (less than 3/4") shall be stainless steel. All visible fasteners shall match the coating of the structure.																														
Finish Poles and arms, including base and flange plates, bolt covers, handholes, and wire entrances, shall be hot dipped galvanized after fabrication in accordance with 711.02. All visible elements of the signal support, and any other parts required to be coated, shall be galvanized and then powder–coated. All painting shall be performed under controlled environmental conditions, and in accordance with the paint manufacturer's recommendations pertaining to surface preparation, material handling, and application. The top finish coat of paint shall be similar to Federal Specification AMS Color #27040, BLACK. Paint samples shall be submitted with the signal support shop drawings for review.																														
The inside of each signal support pole assembly, each mast arm assembly, and other signal support accessories shall be coated with galvanizing material. The inside area formed by the gussets, pole, and pole flange plate shall be coated to protect the area from corrosion. It is to be noted that some type of opening shall be required to coat																														
<div>REVISIONS</div> <table><tr><th>MARK</th><th>DATE</th><th>DESCRIPTION</th></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table> <div> </div> <div></div> <div>CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO FOR ROADWAY IMPROVEMENT</div> <div>HARRISBURG PIKE (US 62) AND DEMOREST DRIVE INTERSECTION</div> <div>TRAFFIC SIGNAL NOTES</div> <div><div>5000 New Albany Road, Columbus, OH 43244 Phone: 614.775.5500 Fax: 614.775.3446 emht.com</div></div> <table><tr><th>DATE</th></tr><tr><td>January 2021</td></tr></table> <table><tr><th>SCALE</th></tr><tr><td>None</td></tr></table> <table><tr><th>JOB NO.</th></tr><tr><td>2019-0489</td></tr></table> <table><tr><th>SHEET</th></tr><tr><td>29/36</td></tr></table>					MARK	DATE	DESCRIPTION																DATE	January 2021	SCALE	None	JOB NO.	2019-0489	SHEET	29/36
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the gusset area. This opening shall not hamper the structural integrity of the flange assembly.

All exterior surfaces of the signal support pole shaft assembly, mast arm assembly, all bolt covers, all clamps, clevis—to-clevis universal, wire entrance, all handhole covers, luminaire and video brackets, pole and arm caps, signal head hangers and weatherheads shall have a coating properly applied to them. Exterior surfaces of all fastener bolts/screws, washers, nuts, and other attachment hardware shall have a coating applied to them. Fastener threads shall not be clogged with coating material.

All coated items shall be shipped in a manner to minimize damage in transit. Surfaces should be protected by foam padding, by wrapping in cardboard, by spiral wrapping with wax paper, by crating, by a combination of methods, or by any other method selected by the manufacturer which will insure delivery of undamaged materials. Materials damaged in transit caused by improper packaging or improper transit handling shall be rejected. The Contractor shall be responsible for obtaining matching paint coating material for touch-up work identical to the original coating placed on the structure.

Each coating layer shall be properly cured before the application of the next coat. The application procedure shall be such to guarantee a finish that will not scale, flake or peel, and will retain its color brightness and fresh, attractive appearance for 10 years without dulling or fading.

Payment

This item of work shall be measured as each complete signal support, in place in essentially a vertical position under full plan loading. All labor, equipment, and materials necessary to pickup, transport, store, erect, adjust, and repair the signal support and anchor bolts shall be included for payment in the bid item.

Payment shall be as per Item 632.

ITEM 632 PEDESTAL, 10.7', TRANSFORMER BASE, AS PER PLAN

Pedestals shall be as per the details in this plan. All exterior surfaces shall be coated in accordance with the finish section requirements of Item 632 Combination Signal Support, Type TC-81.22 (BY SIZE), As Per Plan.

All signal cables shall be run inside the poles. Standard Drawing TC-83.10 is hereby modified to prohibit the use of external conduit risers for signal cabling, or any other use.

Payment shall be as per Item 632.

ITEM 632 PEDESTAL FOUNDATION, AS PER PLAN
ITEM 632 SIGNAL SUPPORT FOUNDATION, AS PER PLAN

The formed top of the anchor base pole foundation shall be oriented parallel to the sidewalk or back-of-curb or edge-of-pavement as shown on the signal plans. The top of the foundation shall be flush with any adjacent sidewalk or concrete area. A minimum of two conduit ells, used or unused, shall be installed in each pole foundation.

Contractor shall vacuum excavate proposed foundation locations prior to installation. The signal support foundations shall be excavated or vacuum excavated to test for conflicts prior to shop drawings approval. Foundation voids shall be temporary backfilled, securely covered, or the foundations installed while signal supports are manufactured. If utility conflicts are encountered during excavation, the Engineer shall be notified. Modifications to the foundation location may be required. Vacuum excavation, and foundation location adjustments shall be incidental to this item of work.

Payment shall be as per Item 632.

ITEM 632 OPTICOM SYSTEM, AS PER PLAN

The Contractor shall furnish and install a fully functioning Opticom Infrared priority control system manufactured by 3M, St. Paul, Min.

The Opticom System shall be compatible with any NEMA controller.

The following shall be furnished and installed as needed by the Contractor. This list shall not be considered collectively exhaustive. All other equipment and connectors necessary to provide a fully functioning system shall also be provided.

- 1.Card Rack w/harness
- 2.Phase Selector/Reporter
- 3.Detector/Sensor (one per approach)
- 4.Opticom Cable
- 5.Mast Arm Mounting Bracket with 42" strap.
- 6.Confirmation Lights (one per approach)

An adapter shall be included as needed to make the Opticom harness compatible with the controller as applicable.

Opticom cable shall be continuous, with no splices between the Controller Cabinet and the Detector/Light. Payment for the Opticom Cable shall be included as part of this item.

Payment for this item of work shall be at the contract bid price for ITEM 632 Opticom System, As Per Plan and shall include furnishing, installing, tuning, testing and acceptance of the Opticom system. A "System" shall be considered the equipment installed at one intersection.

ITEM 633 CONTROLLER UNIT, TYPE TS-2/A2 WITH CABINET, TYPE TS-1, AS PER PLAN

This item of work shall include furnishing and installing an EPAC M 60 or newer actuated controller unit, as manufactured by YUNEX Traffic, with ground mounted 8 phase cabinet and all accessories in accordance with these plans and specifications. The controller unit shall provide telemetry features for inclusion in Grove City existing interconnect systems (Tactics).

The cabinet shall be size "P-UPS" with integral battery back-up compartment with a separate door. The controller and battery back-up cabinet shall appear as one cabinet from the outside with two internal compartments accessed by separate doors (P-UPS). The ground mounted control cabinet shall be configured for eight phase operation and shall be provided with a powder coated finish to match the signal supports. Cabinets shall be properly insulated to prevent solid state equipment from overheating. Operating temperatures shall conform to that specified in ODOT 733.03. In addition to the requirements of Item 633, the controller and cabinet shall provide the following features:

- Extended monitoring
- Manual control and pushbutton
- Automatic/Manual transfer switch
- Coordinated/free switch
- Detector test switches
- Interconnect isolation panel and de-connector
- Slide out laptop shelf
- 8 port SDLC panel
- Power harness for Type 1 and Type 2 controllers
- Surge suppressor in modular package utilizing a 12 pin BEAU connector with LED failure indicators.
- Cabinet shall include wiring from uninterruptible power supply to signal cabinet to provide alarms for on battery, two hour timer, low battery and off battery in signal cabinet.

- Auxiliary power shall charge batteries.

- Provide a 10 Amp circuit breaker or fuse ahead of the street name sign circuit contactor pole. Contactor and HOA switch to be in controller cabinet.

- The applicable Datakey shall be provided for connectivity with the radio interconnect system.

- Provide an Arc Flash Hazard Warning sign on the outside front door of the enclosure in accordance with the current National Electrical Code paragraph 110.16.

- See item 633 Uninterruptible Power Supply, 1000 Watt, As Per Plan for additional cabinet requirements.

Payment shall be per Item 633.

ITEM 633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

In addition to the requirements of CMS 633 and 733, the UPS cabinet shall include a generator power panel with a heavy duty power relay versus the line voltage generator switch. The generator inlet shall be a recessed panel with a door that is flush with the external side of the UPS cabinet. It shall include a recessed plug, manual transfer switch and a door that securely closes over the power cord. The Contractor must test the generator hookup with Grove City's generator. Proper operation is required before payment.

The Uninterruptible Power Supply shall be Model No. FXM HP as manufactured by the Alpha Group. Additionally, the Alpha Remote Battery Management System Plus (RBMS) shall be furnished and installed under this item of work.

Generator plug shall be 120V, 30 AMP, 4-Prong, locking receptacle (NEMA L14-30P).

The UPS output notifications for on battery, battery 2 hour timer, off battery and low battery shall be wired into the traffic signal cabinet back panel to provide special status alarms for each output into the signal controller.

This item shall include a red L.E.D. status indicator lamp to allow maintenance personnel and law enforcement to quickly assess whether a traffic signal cabinet is being powered by an uninterruptible power supply (UPS). The LED housing shall be NEMA 4X or IP 66 rated for outdoor use and be tamper/shatter resistant. It shall be domed red LED lenses that is visible from 100 ft minimum. The enclosure and LED lamp unit should be placed on the side of the cabinet most visible to traffic and sealed from water intrusion. It should be wired using minimum 20 AWG stranded, insulated hookup wire to the status relay outputs of the UPS. The wires shall be terminated by lugs at the display end and permanently labeled "BACKUP POWER STATUS DISPLAY," with wire polarity indicated. The red LED shall only illuminate to indicate the cabinet is operating under UPS backup power (the "BACKUP" operating condition). This item also includes programming the UPS status relay outputs to produce the lamp status displays. These status displays will be solid 100% duty cycle (not flashing) displays. The operating voltage of the LED lamp shall be 120V AC unless otherwise indicated.

The cabinet's exterior finish shall match the color of the main traffic signal controller cabinet. This item of work shall also include furnishing and installing a foundation and work pad of appropriate size to accommodate the UPS cabinet. Reference is made to the work pad details presented herein.

Prior to acceptance of this item, the Contractor shall inspect the cabinet and all wiring to ensure all components and connections comply with the National Electrical Code.

All connections, wiring, attachment hardware and miscellaneous materials for both attaching the cabinets and for full operation of the UPS system shall be included in the unit price bid for this item. Payment shall be per item 633 and shall be made at the unit price bid per each, complete, in place, tested and accepted.

ITEM 816 VIDEO DETECTION SYSTEM, AS PER PLAN

Under this item of work the Contractor shall furnish and install a complete video vehicle detection system as manufactured by Iteris Inc. (www.iteris.com). The video vehicle detection system shall monitor vehicles on a roadway via processing of video images and provide standard detector outputs to the traffic signal controller. Each system shall outfit one entire intersection and shall include one image sensor (camera) for each intersection approach (per plan), communication hubs and all necessary mating cables. Wiring, couplers, modification of the cabinet facilities, and all other devices, whether or not specifically itemized on the plan sheets, shall be provided and installed as required to render the video system completely operational in compliance with the Ohio Department of Transportation Standards, Supplemental Specifications 816 and 907 and the Manufacturer's recommendations. All major components of the video vehicle detection system shall be supplied by the same manufacturer as a complete system, ready to operate.

All video devices except the image sensors shall be housed in the controller cabinet. All devices shall be mounted so all cable connections are accessible and all device doors can be fully opened for servicing. The video vehicle detection system shall be capable of being controlled via a remote supervisor computer, either on-line or off-line. The user shall be able to create edit, store and delete detection zones from either the supervisor computer or at the remote intersection location.

The image sensor shall be equipped with an adjustable focal length, auto-iris lens. The image sensor shall be housed in an environmental enclosure that is waterproof and dust tight to NEMA-4 specifications.

The enclosure shall be heated to prevent the accumulation of ice and condensation on the lens. All exposed exterior surfaces of the video image sensor, mounting hardware, and related items shall be painted to match the signal supports.

In addition to the requirements outlined above payment for the Video Detection System, As Per Plan shall include the following:

-5 inch LCD, portable, battery/AC operated monitor (leave in cabinet)

All devices, wiring, and cabinet modifications required to make the video vehicle detection system fully operational shall be provided, installed and paid for under this item of work. Payment for all of the above will be made at the contract unit price bid, including all labor, materials, and appurtenances for each complete video vehicle detection system at one intersection, installed, tested, and accepted.

ITEM 815 SPREAD SPECTRUM RADIO INTERCONNECT SYSTEM, AS PER PLAN

Under this item of work a fully functioning spread spectrum radio (SSR) interconnect system, complete with all accessories shall be furnished and installed at the U.S. 62/Demorest Drive intersection. The SSR system shall be compatible with the existing Siemens local and master controllers within Grove City. The system shall be manufactured by Microwave Data Systems, Transnet 900MZ and in conformance with supplemental specifications 815 and 906. The system shall include: spread spectrum radio transceiver, (Yagi or omni) antenna, half inch coax cable and all mounting supports and hardware.

The preferred communication method shall be direct spread spectrum connectivity between the master controller Omni-directional antenna at Broadway/Southwest Boulevard and the individual local unidirectional (Yagi) intersection antenna. Prior to furnishing and installing radio interconnect equipment, the Contractor shall test the feasibility of this installation and

provide a written summary to the Engineer outlining optimal and measured signal strength. If measured signal strength is below acceptable levels, the Contractor shall continue measuring signal strength at adjacent signalized intersections that have access to the existing twisted pair interconnect system, until an acceptable location has been identified. Where measured signal strength is below acceptable levels, the combined use of the existing twisted pair interconnect cable and a spread spectrum radio interconnect repeater may be used at the direction of the Engineer. Payment for all feasibility testing shall be paid for under this item of work.

Payment for repeater hardware and installation have been listed under the separate contingency item "815 Spread Spectrum Radio Interconnect Repeater (By Location), As Per Plan".

It shall be the Contractor's responsibility to locate the antenna in a location that achieves optimal signal strength for communication with the master controller, while maintaining applicable clearance requirements from adjacent overhead utilities. The antenna discharge unit shall be properly grounded to the ground bus in the traffic control cabinet.

Wiring, couplers, modifications of the cabinet facilities, and all other devices, whether or not specifically itemized on the plan or these notes shall be provided and installed as required to render the spread spectrum radio interconnect system completely operational and in compliance with the Ohio Department of Transportation standards, supplemental specifications 815 and 906 and the manufacturers recommendations.

Programming at the master controller shall be included in this item of work.

Payment for this item of work shall be at the Contract bid price for Item 815 Spread Spectrum Radio Interconnect System, As Per Plan and shall include furnishing and installing, tuning, preliminary field testing, final field testing and acceptance of the system. A "system" shall be considered the equipment installed at one intersection. Successful communication between the intersection and the specified master controller must be achieved prior to acceptance.

CONTINGENCY ITEM
ITEM 815 SPREAD SPECTRUM RADIO INTERCONNECT REPEATER (At Existing Signalized Intersection), AS PER PLAN

This item shall only be implemented with the advanced authorization from the Engineer.

This item will only be used where direct communication between local and master intersections cannot be accomplished as discussed under item "815 Spread Spectrum Radio Interconnect System, As Per Plan". Repeaters at these locations will extend the communication range by connecting to the existing radio or twisted pair interconnect system. The following list provides possible tap-in locations, but if used, final location will be developed from the Contractor's preliminary feasibility report paid for under item "815 Spread Spectrum Radio Interconnect System, As Per Plan".

- Broadway/Kingston Avenue

Payment shall be per each repeater furnished, installed and accepted and shall include all work as described above.

SIGNAL INSTALLATION WITHIN OVERHEAD ELECTRIC PRIMARY ZONE

Signal pole placement shall be performed by linemen qualified to work in the American Electric Power (AEP) primary zone. The Contractor is required to contact and coordinate with AEP prior to installing the proposed signal supports.

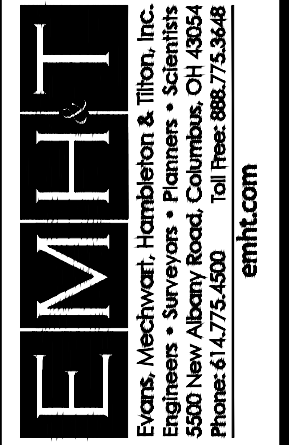


William C. Mess
William C. Mess, Date 5/15/2023
For Power Distribution and Grounding Only on Sheets 29 through 34.

REVISIONS		MARK	DATE	DESCRIPTION					

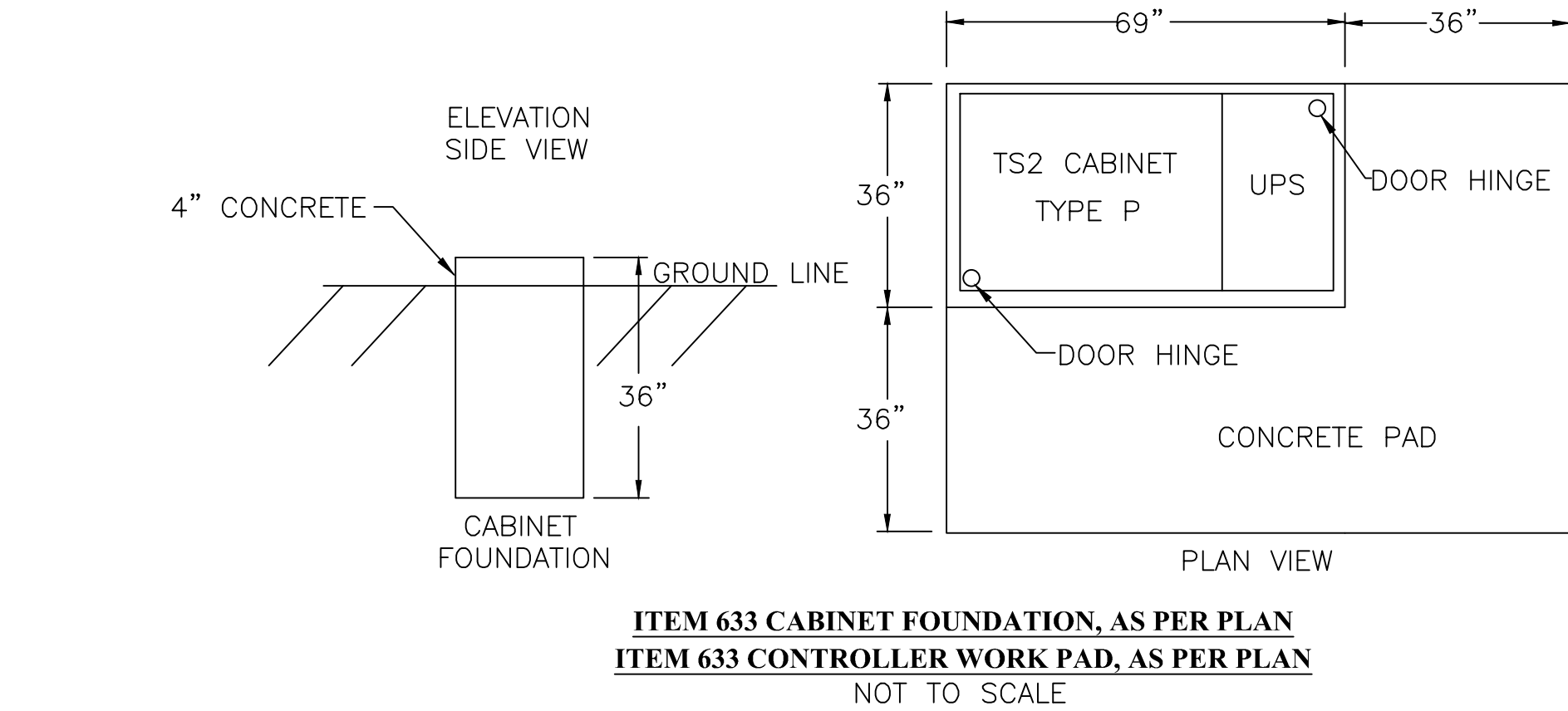


CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
TRAFFIC SIGNAL NOTES



DATE
January 2021
SCALE
None
JOB NO.
2019-0489
SHEET
30/36

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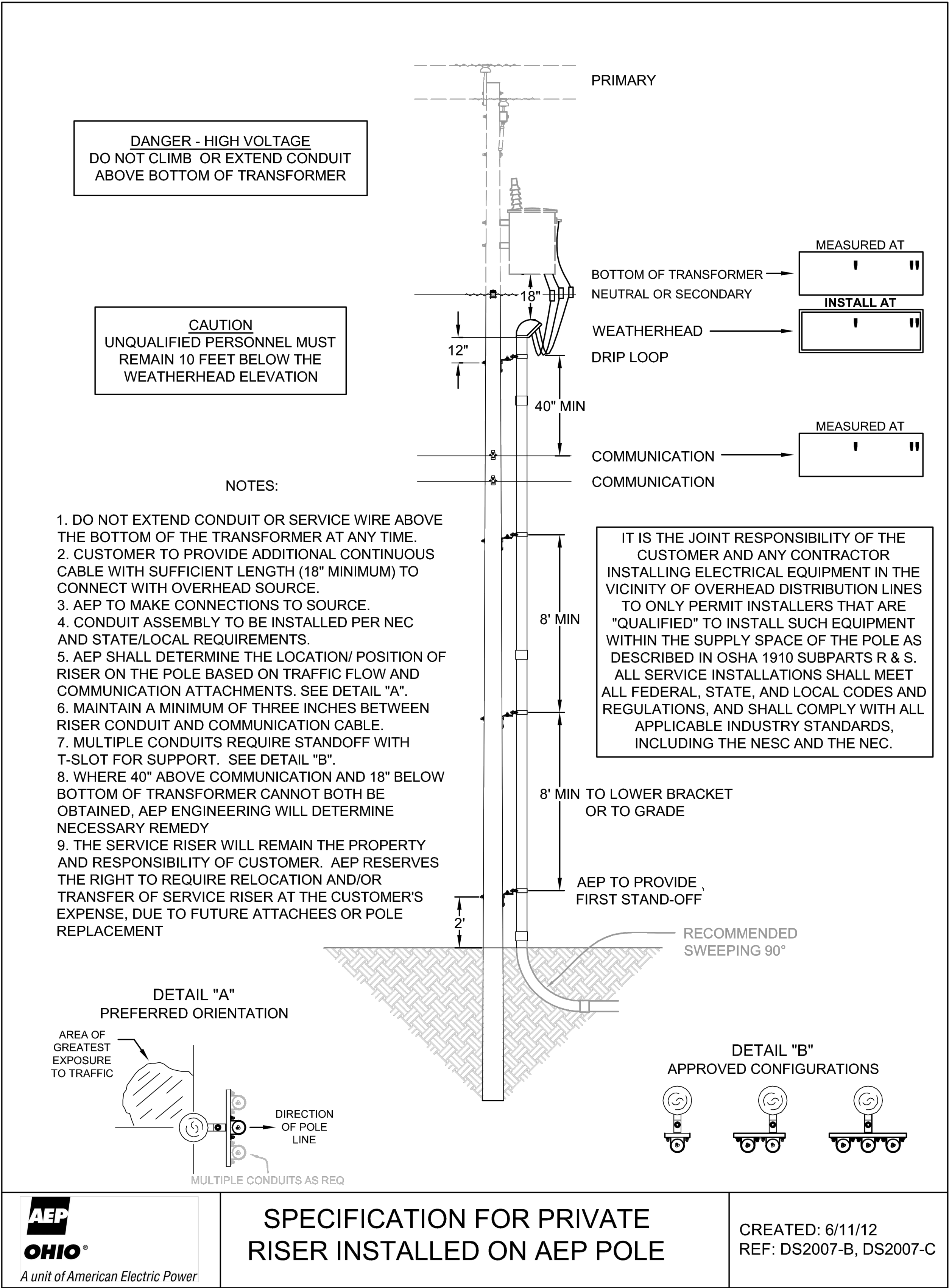
ITEM 633 CABINET FOUNDATION, AS PER PLAN
ITEM 633 CONTROLLER WORK PAD, AS PER PLAN
NOT TO SCALE

TRAFFIC SIGNAL PLAN - ESTIMATE OF QUANTITIES

Item	Quantity	Unit	Item Description
623	39	LF	Power Cable, 2 Conductor, No. 6 AWG, As Per Plan
625	20	LF	Conduit, 3", 725.051
625	188	LF	Conduit, 2", 725.051
625	462	LF	Conduit, 2", 725.04, Jacked or Drilled, As Per Plan
625	13	LF	Conduit Encased, 2", 725.051
625	107	LF	Trench
625	107	LF	Plastic Caution Tape
625	4	EA	Pull Box, 725.08, 24", As Per Plan
625	1	EA	Pull Box, 725.06, (12"x18"), As Per Plan
625	7	EA	Ground Rod
625	4	EA	Connection, Unfused Pull-Apart, Type III
625	4	EA	Connection Fused Pull-Apart, Type II
625	434	LF	No. 4 AWG 600 Volt Distribution Cable, As Per Plan
625	912	LF	No. 6 AWG 600 Volt Distribution Cable (Lighting)
625	328	LF	Pole and Bracket Cable, No. 10 AWG, 600 Volt
625	1	EA	Bracket Arm, 10', (Lighting) As Per Plan
625	2	EA	Bracket Arm, 15', (Lighting) As Per Plan
625	1	EA	Bracket Arm, 20', (Lighting) As Per Plan
625	4	EA	Luminaire, LED, 120 Volt, As Per Plan
630	3	EA	Sign, Double Faced, Street Name, As Per Plan
630	2	EA	Sign Support Assembly, Pole Mounted, As Per Plan
630	4.5	SF	Sign, Flat Sheet, As Per Plan
632	7	EA	Vehicular Signal Head, LED, 3-Section, 12" Lens, 1-Way, As Per Plan
632	1	EA	Vehicular Signal Head, LED, 5-Section, 12" Lens, 1-Way, As Per Plan
632	4	EA	Pedestrian Signal Head, As Per Plan
632	2	EA	Pedestrian Pushbutton, As Per Plan
632	8	EA	Covering Vehicular Signal Head
632	4	EA	Covering Pedestrian Signal Head
632	3	EA	Combination Signal Support, Type TC-81.22, Design No. 4, As Per Plan
632	1	EA	Combination Signal Support, Type TC-81.22, Design No. 12, As Per Plan
632	1	EA	Pedestal, 10.7', Transformer Base, As Per Plan
632	4	EA	Signal Support Foundation, As Per Plan
632	1	EA	Pedestal Foundation, As Per Plan
632	1182	LF	Signal Cable, 7 Conductor, No. 14 AWG
632	530	LF	Signal Cable, 3 Conductor, No. 14 AWG (Signage)
632	182	LF	Loop Detector Lead-In Cable
632	1	EA	Power Service, As Per Plan
632	1	EA	Conduit Riser, 2" Diameter, SCH 80 PVC, As Per Plan
632	49	LF	Power Cable, 3 Conductor, No. 6 AWG, As Per Plan
632	1	EA	Opticom System, As Per Plan
633	1	EA	Controller Unit, Type TS-2/A2 with Cabinet, Type TS-1, As Per Plan
633	1	EA	Cabinet Foundation, As Per Plan
633	1	EA	Controller Work Pad, As Per Plan
633	1	EA	Uninterruptible Power Supply (UPS), 1000 Watt, As Per Plan
816	1	EA	Video Detection System, As Per Plan

TRAFFIC SIGNAL PLAN - CONTINGENCY ITEMS

815	1	EA	Spread Spectrum Radio Interconnect Repeater (At Existing Signalized Intersection), As Per Plan
815	1	EA	Spread Spectrum Radio Interconnect System, As Per Plan

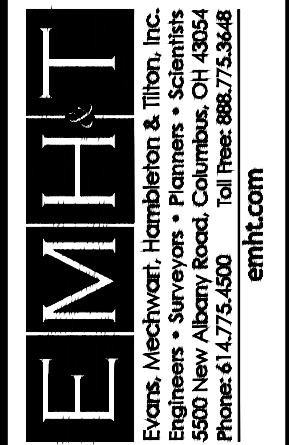


ITEM 632 CONDUIT RISER, 2" DIAMETER, SCH 80 PVC, AS PER PLAN

REVISIONS		
MARK	DATE	DESCRIPTION



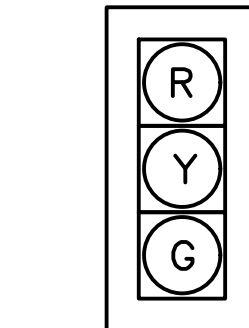
CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
**HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION**
TRAFFIC SIGNAL NOTES



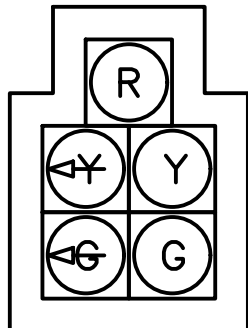
DATE
January 2021
SCALE
None
JOB NO.
2019-0489
SHEET
31/36

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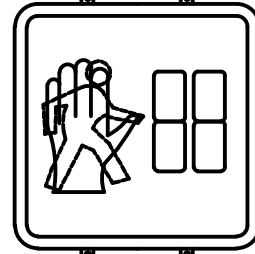
PROPOSED SIGNAL HEADS



2B, 4A, 4B,
6A, 6B, 8A, 8B



2A

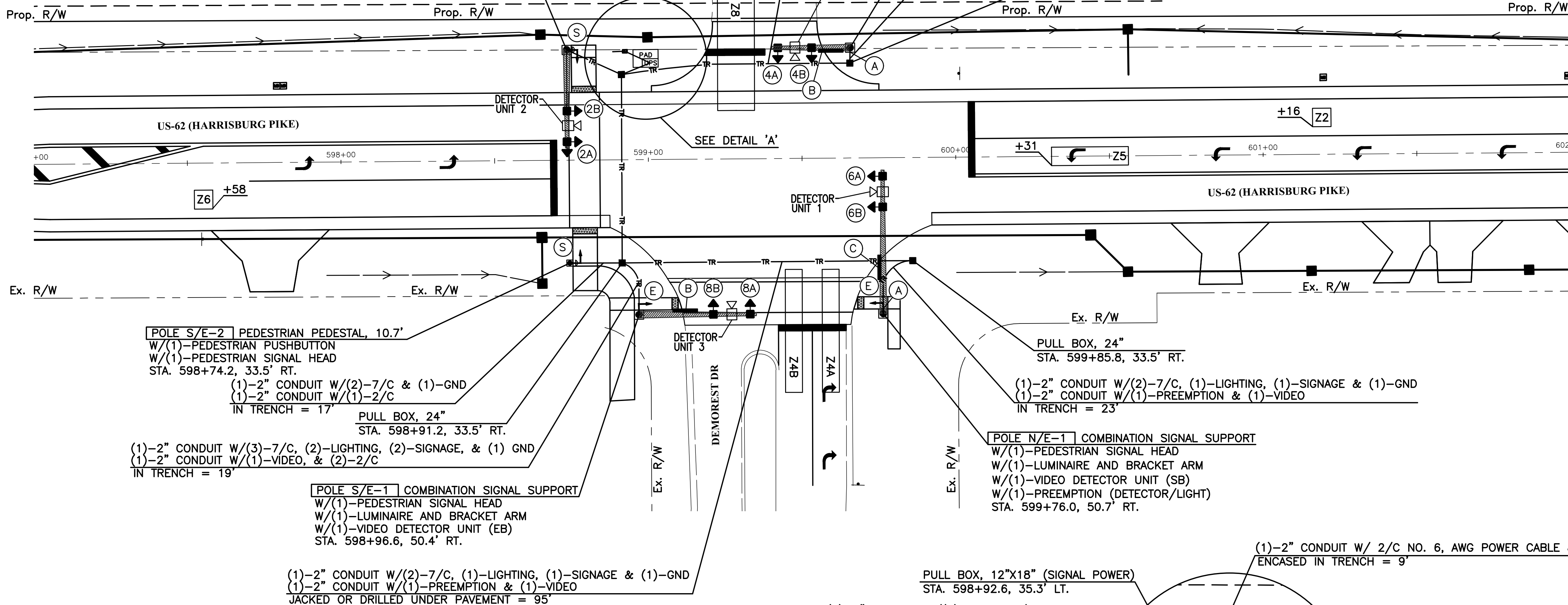


PEDESTRIAN HEADS
(LED, COUNTDOWN,
TYPE D2)

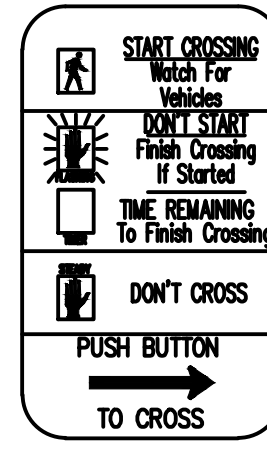
(S) (E)

POLE S/W-1 COMBINATION SIGNAL SUPPORT

W/(1)-VIDEO DETECTOR UNIT (NB)
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-PEDESTRIAN PUSHBUTTON
W/(1)-LUMINAIRE AND BRACKET ARM
W/(1)-PREEMPTION (DETECTOR/LIGHT)
W/(1)-PHOTOELECTRIC CELL
STA. 598+73.5, 35.9' LT.



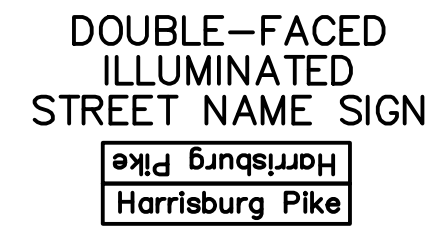
SIGN LEGEND



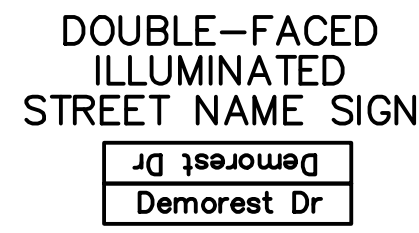
R10-3E-9
1 - LEFT ARROWS
1 - RIGHT ARROWS



(A)



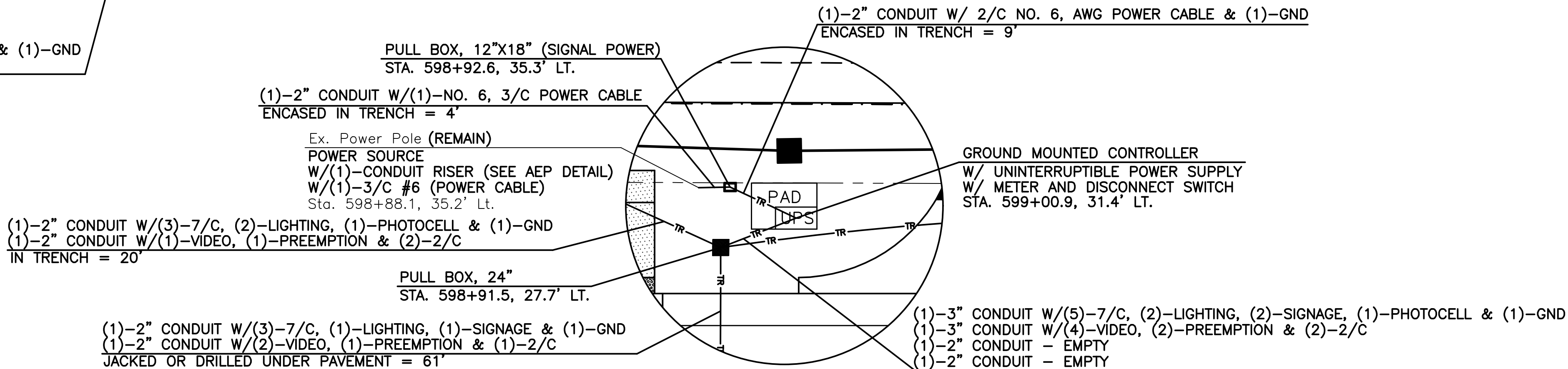
(B)



(C)

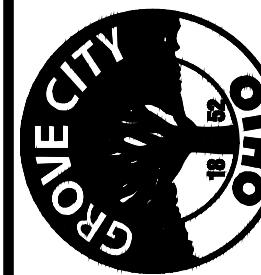
LEGEND

- SIGNAL HEADS: PROP. VEHICULAR EX. VEHICULAR
PROP. PEDESTRIAN EX. PEDESTRIAN
- SIGNAL POLES: PROP. ANCHOR/STRAIN POLE EX. ANCHOR/STRAIN POLE
PROP. PEDESTAL EX. PEDESTAL PUSHBUTTON
PROP. MASTARM
- CONTROLLERS & CABINETS: EX. CABINET W/PAD PROP. CABINET W/PAD
EX. CABINET (NO PAD) PROP. CABINET (NO PAD)
- PULL BOXES: EX. PULL BOX PROP. PULL BOX
- DETECTION: FLOW MONITOR MICROWAVE RADAR
VIDEO CAMERA VIDEO ZONE



REVISIONS

MARK DATE DESCRIPTION



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO

ROADWAY IMPROVEMENT
FOR

HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
TRAFFIC SIGNAL PLAN



DATE

January 2021

SCALE

1" = 20'

JOB NO.

2019-0489

SHEET

32/36

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FIELD WIRING HOOK-UP CHART

SIGNAL HEAD #	INDICATION	FIELD TERMINAL	FLASH
2A (SB)	R	ø2 R	R
	Y	ø2 Y	
	G	ø2 G	
	←Y	ø5 Y	
2B (SB)	R	ø2 R	R
	Y	ø2 Y	
	G	ø2 G	
	←Y	ø5 Y	
4A (WB)	R	ø4 R	R
	Y	ø4 Y	
	G	ø4 G	
	←Y	ø5 Y	
4B (EB)	R	ø4 R	R
	Y	ø4 Y	
	G	ø4 G	
	←Y	ø5 Y	
6A (NB)	R	ø6 R	R
	Y	ø6 Y	
	G	ø6 G	
	←Y	ø5 Y	
6B (NB)	R	ø6 R	R
	Y	ø6 Y	
	G	ø6 G	
	←Y	ø5 Y	
8A (EB)	R	ø8 R	R
	Y	ø8 Y	
	G	ø8 G	
	←Y	ø5 Y	
8B (EB)	R	ø8 R	R
	Y	ø8 Y	
	G	ø8 G	
	←Y	ø5 Y	
S	WALK	G ø8-W	OFF
	DON'T WALK	R ø8-DW	OFF
E	WALK	G ø6-W	OFF
	DON'T WALK	R ø6-DW	OFF

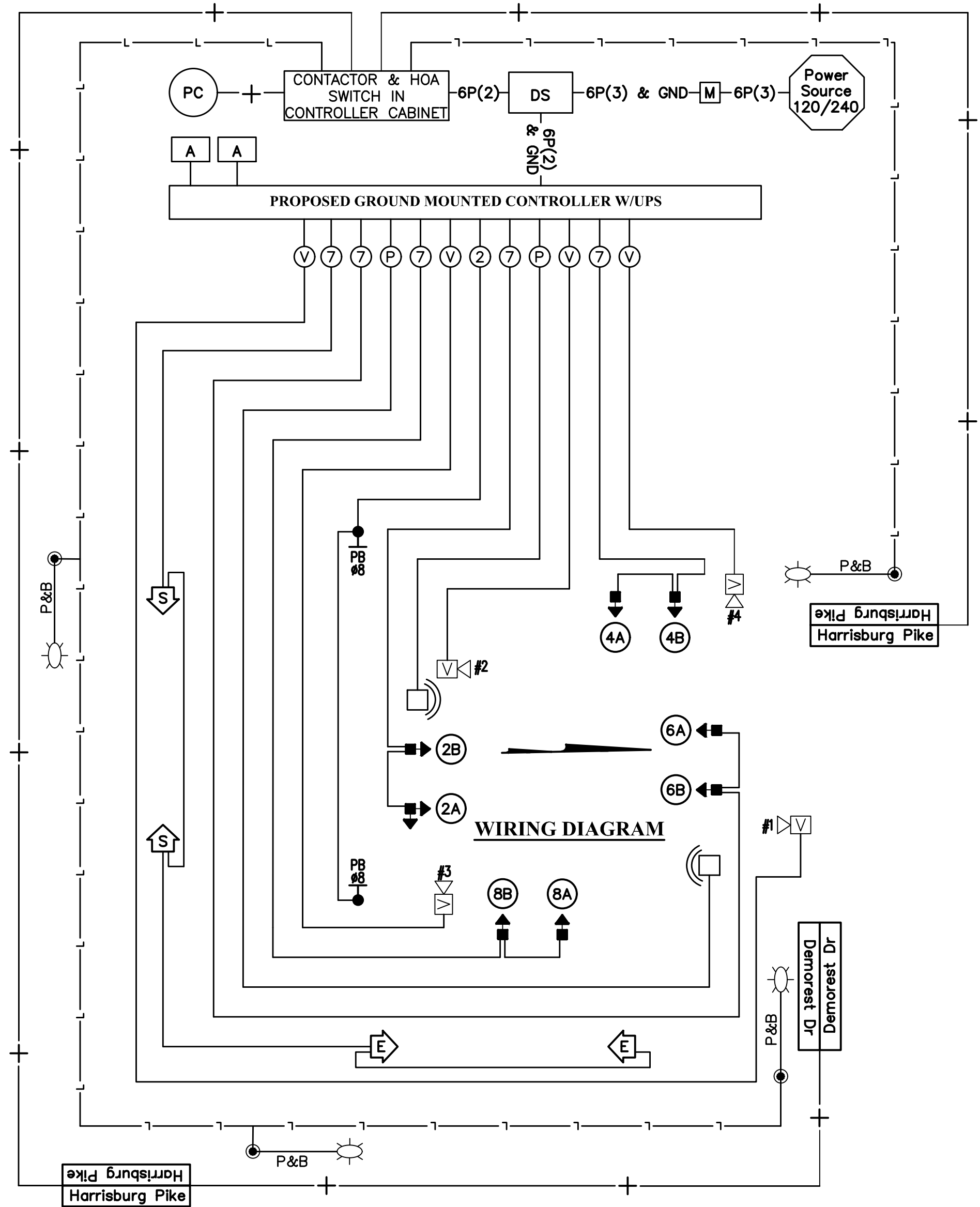
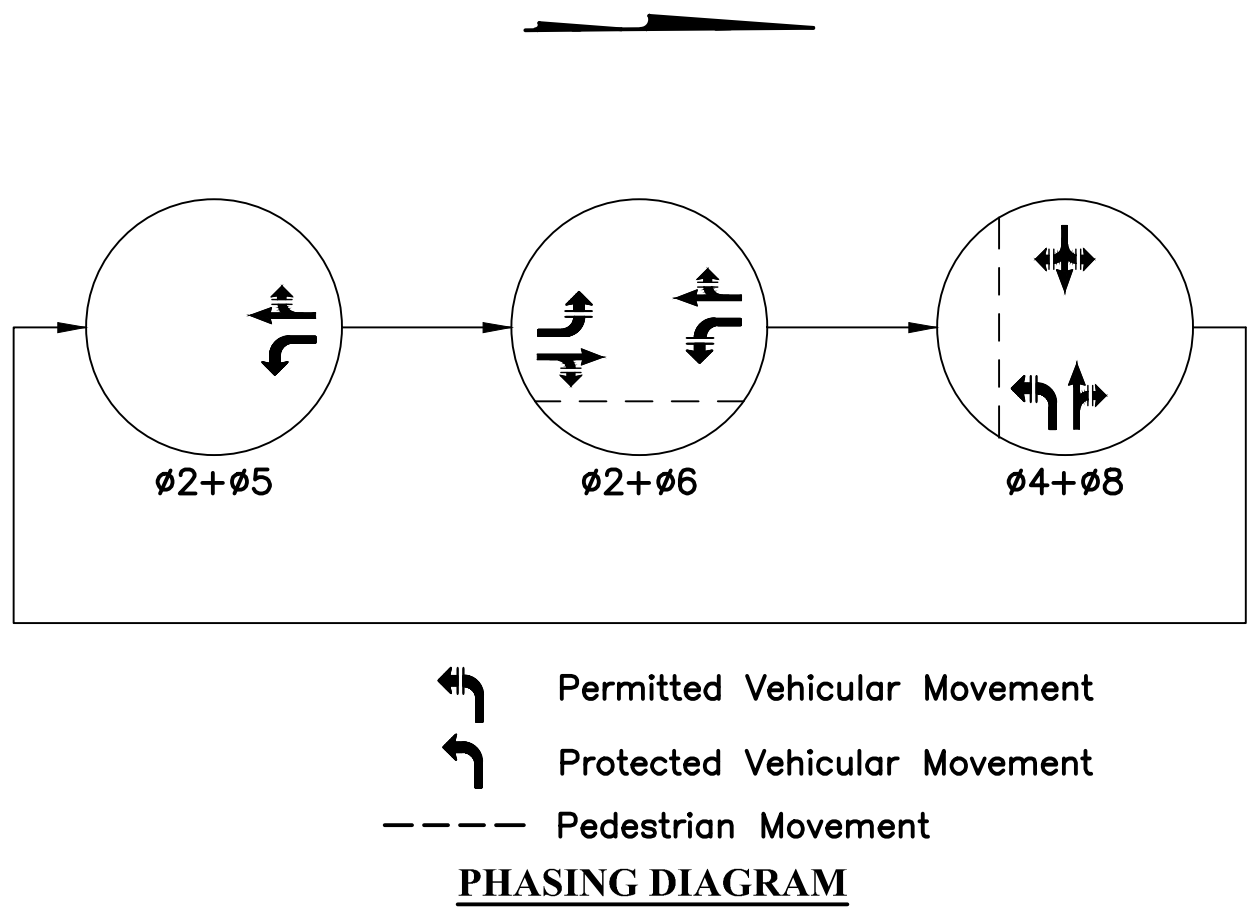
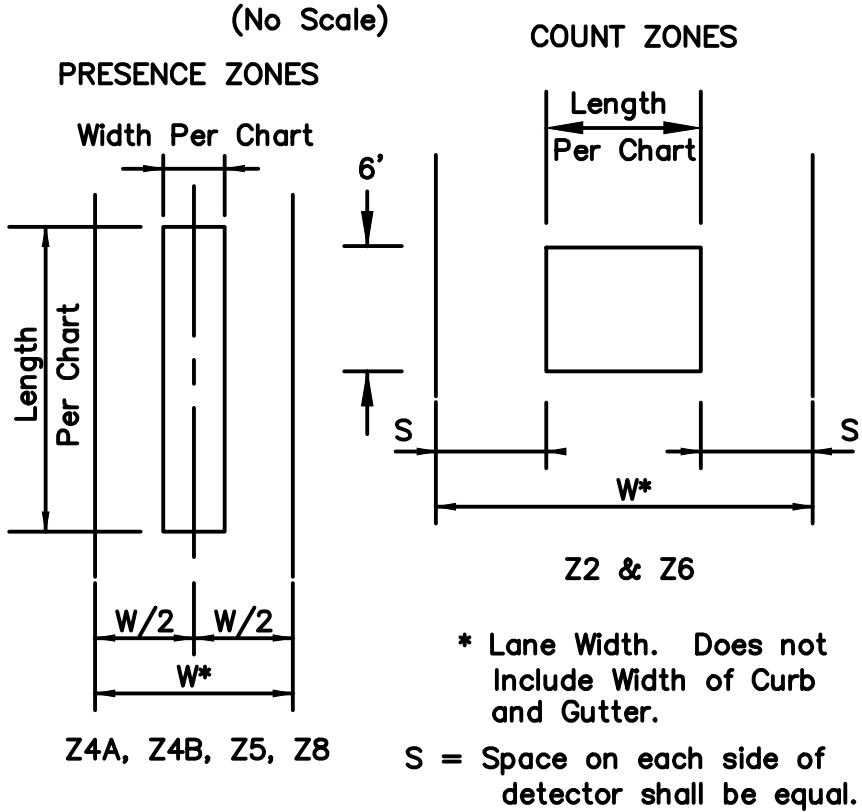
TIMING CHART

PHASE	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
MOVEMENT	—	SB	—	WB	SBLT	NB	—	EB
MIN INITIAL	—	20	—	10	7	20	—	10
PASS / EXT	—	3.7	—	3.7	3.7	3.7	—	3.7
MAX GRN 1	—	60	—	30	15	60	—	30
MAX GRN 2	—	60	—	30	15	60	—	30
YELLOW	—	4.1	—	3.4	3.2	4.1	—	3.4
RED CLR	—	1.6	—	1.7	1.7	1.6	—	1.7
WALK	—	—	—	—	—	7	—	7
PED CLR	—	—	—	—	—	13	—	10
PED RECALL	—	OFF	—	OFF	OFF	ON	—	OFF
VEH RECALL	—	MIN	—	OFF	OFF	MIN	—	OFF
MEMORY	—	ON	—	OFF	OFF	ON	—	OFF

VIDEO DETECTION ASSIGNMENTS

DETECTOR	CAMERA/UNIT	PHASE	DETECTION ZONE SIZE	PRESENCE	DELAY DATA	
					DELAY (sec.)	INHIBIT DELAY DURING GREEN ø
Z2	2	2	6'x6'	—	—	—
Z4A	4	4	6'x40'	X	5	4
Z4B	4	4	6'x40'	X	0	4
Z5	2	5	6'x25'	X	3	5
Z6	1	6	6'x6'	—	—	—
Z8	3	8	8'x40'	X	5	8

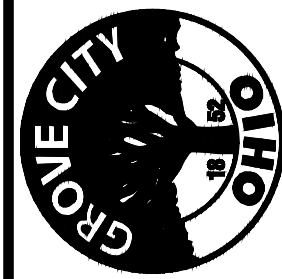
VEHICLE DETECTOR DETAILS



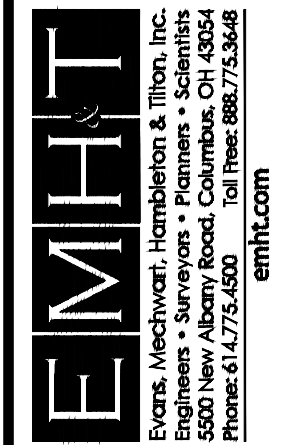
WIRING DIAGRAM LEGEND

	Vehicular Signal Head		Connection of Distribution Cable to Pole and Bracket Cable Connector Kit Fused and Unfused.
	Pedestrian Signal Head		
	Pedestrian Pushbutton		P&B
	Illuminated Street name Sign		#10 AWG Pole and Bracket Cables
	Power Source w/Proposed 120/240 Volt Single Phase		Distribution Cable #6 AWG (2 Wire)
	3/C #6 AWG (Power)		Vehicular Signal Head Number
	2/C #6 AWG (Power)		Main Disconnect Switch
	Video Detection Camera		Photoelectric Cell
	Luminaire		3/C #14 AWG (Signage / Photocell)
	Video Detection Cable		Meter
	Preemption Detector/Light Cable		Preemption Detector/Light
	Signal Cable w/Number of Conductors		Spread Spectrum Radio
	Ground Wire		

REVISIONS		
MARK	DATE	DESCRIPTION



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
TRAFFIC SIGNAL DETAILS



DATE
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SCALE
None
JOB NO.
2019-0489
SHEET
33/36

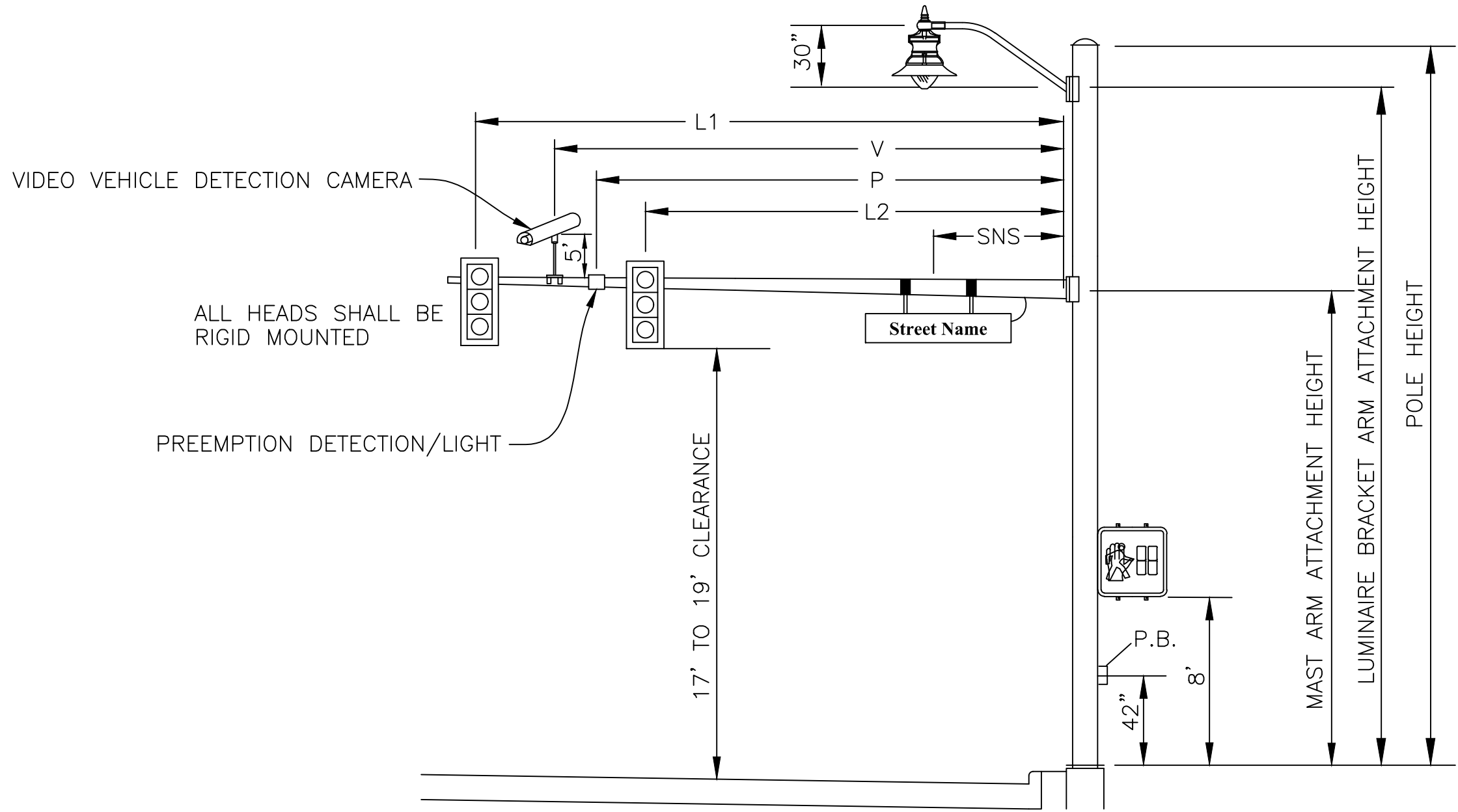
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INTERSECTION	SHEET NO.	SUPPORT DESIGNATION	ODOT DESIGN NO.	POLE HT. (FT.)	ARM LENGTH (FT.)		OBJECT ATTACHMENT HEIGHT (FT.)		DISTANCE FROM BUTT PLATE (FT.)					POLE FABRICATION DATA—CLOCKWISE FROM MAST ARM A AT 0 DEGREES					FIELD ORIENTATION ELEVATION		
					MASTARM	LUMINAIRE BRACKET ARM	MASTARM	LUMINAIRE BRACKET ARM	L1	L2	VIDEO DETECTION CAMERA	PREEMPTION DECTOR (P)	ILLUMINATED STREETNAME SIGN (SNS)	ANCHOR BOLT REFERENCE LINE	PED. SIGNALS **	LUMINAIRE BRACKET ARM	PUSHBUTTON	HANDHOLE	INDEX LINE ANGLE MAST ARM A	ANCHOR BOLT REF. LINE	POLE FND. ELEVATION
		N/W-1	4	27	25.5	10	21.5	26	23.5	12.5	18	—	6	90°	—	0°	—	180°	90°	0°	865.13
US 62 (HARRISBURG PIKE)		S/W-1	4	27	32	15	21.5	26	30	20	25	23	—	90°	270°	0°	270°	180°	0°	90°	FLUSH W/WALK
③ DEMOREST DRIVE	32	S/E-1	4	26	38	15	20.5	25	36	24	30	—	15	90°	270°	0°	—	180°	90°	0°	FLUSH W/WALK
		N/E-1	12	27	47	20	21.5	26	45	35	40	38	15	90°	0°	0°	—	180°	0°	90°	FLUSH W/WALK
		S/E-2	Pedestal	10.7	—	—	—	—	—	—	—	—	—	90°	90°	—	90°	180°	0°*	90°	FLUSH W/WALK

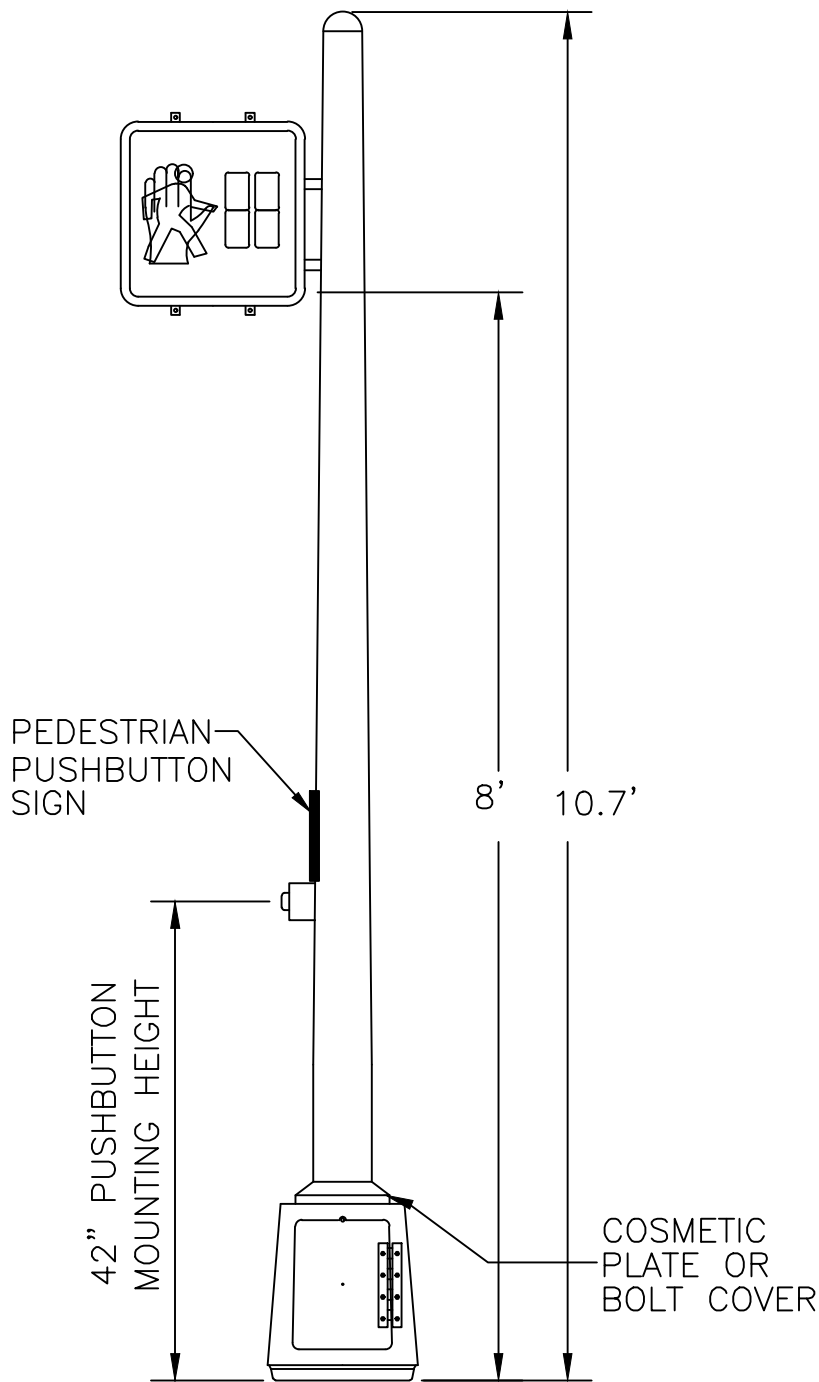
NOTES:

* Pedestal has no mast arm. Orientation angle is for reference only.

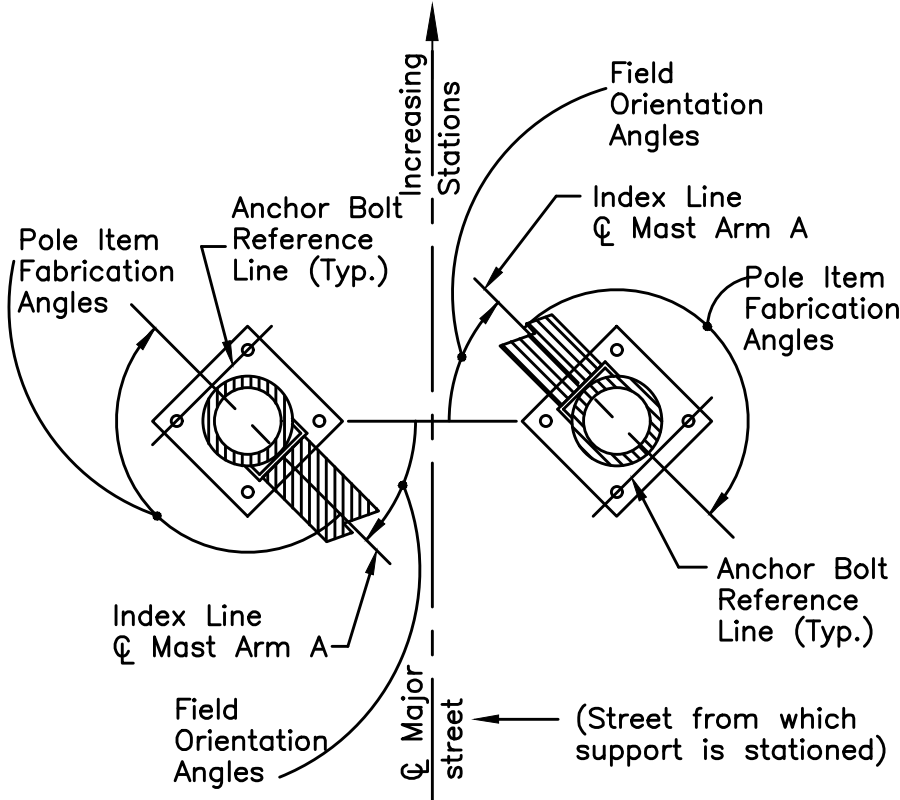
** Two-piece brackets shall be provided for pedestrian signals as per plan and at the orientation noted in the above table.



TYPICAL SIGNAL ELEVATION DETAIL
NOT TO SCALE



ITEM 632 PEDESTAL, 10.7', TRANSFORMER BASE, AS PER PLAN
NOT TO SCALE



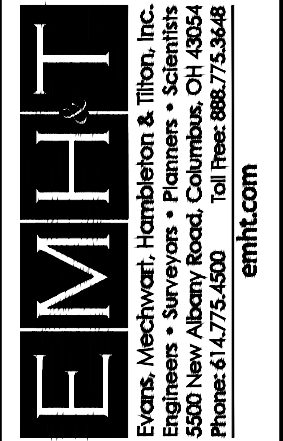
All angles measured clockwise.
Base plate is oriented square to Mast Arm A.
Mast Arm A is the largest arm if the support has two arms.

TYPICAL SIGNAL SUPPORT
ORIENTATION DETAIL

REVISIONS	
MARK	DESCRIPTION

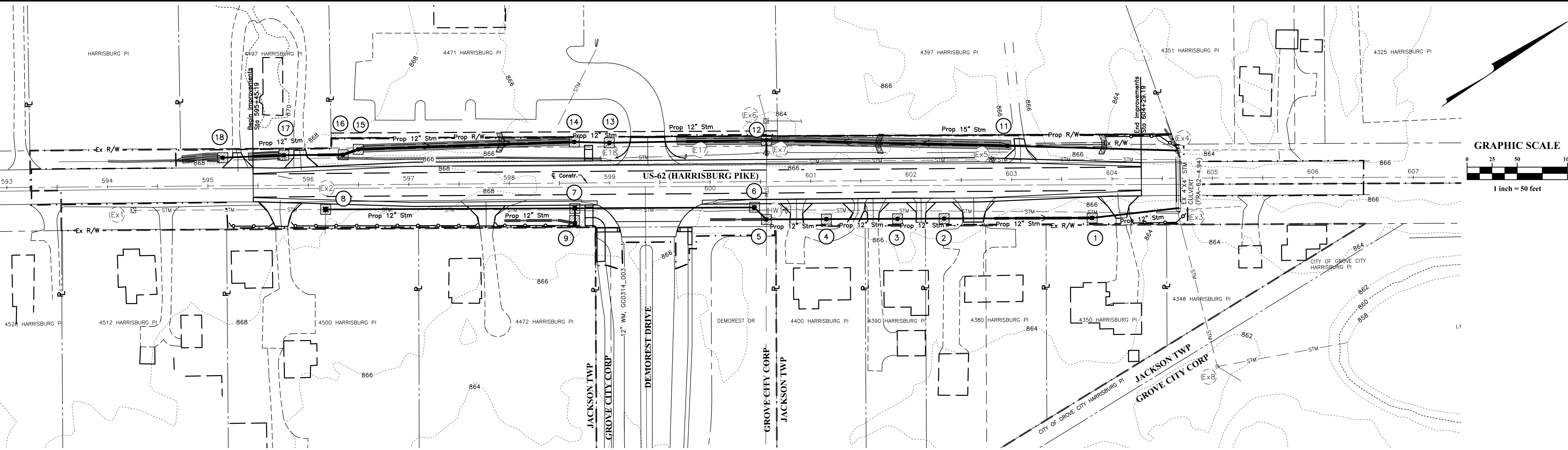


CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
POLE FABRICATION DETAILS



DATE
January 2021
SCALE
None
JOB NO.
2019-0489
SHEET
34/36

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NOTE: Storm Structure Number 10 Not Used.

EROSION AND SEDIMENT CONTROL NARRATIVE

ALL EROSION & SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATION AT THE DIRECTION OF CITY OF GROVE CITY AND/OR OHIO EPA.	
PLAN DESIGNER:	EMH&T 5500 New Albany Road Columbus, Ohio 43054 Tel: 614-775-4500 FAX: 614-775-4800
OWNER:	City of Grove City 4035 Broadway Grove City, Ohio 43123
PROJECT DESCRIPTION:	This project shall consist of 884 feet of full depth widening of US 62. The project includes pavement mill and overlay, and full depth reconstruction, concrete walk, a traffic signal system, and storm sewer improvements.
EXISTING SITE CONDITIONS:	The site is currently tributary to existing storm sewers and roadside ditches that are tributary to the Scioto River.
RECEIVING STREAM:	Scioto River
ADJACENT AREAS:	The site is bounded residential and commercial areas.
CRITICAL AREAS:	None.
EROSION AND SEDIMENT CONTROL MEASURES:	Erosion and sediment will be controlled by the use of inlet protection at storm sewer inlets, aggregate check dams and linear sediment barriers.
PERMANENT STABILIZATION:	All disturbed areas shall be seeded and mulched or paved.
MAINTENANCE:	All erosion control devices are to be inspected by the construction superintendent daily and after rainfalls. Any damaged facilities are to be replaced/repared immediately as may be necessary.
CONSTRUCTION SEQUENCE:	Existing Storm sewer inlets that will remain in service shall be protected prior to construction. Inlet protection shall be placed on new inlets as soon after construction as feasible. Aggregate check dams shall be placed as soon as possible after ditch establishment. Linear sediment barriers shall be installed prior to any earth disturbance. Only after areas have been permanently stabilized may the erosion control devices be removed and storm sewer pipe and inlets cleaned of all sediment incurred during construction.
SCHEDULE:	The Contractor shall provide a schedule of operations to the City. Sedimentation and erosion control features shall be placed and maintained in accordance with this schedule.
SITE CONTACT:	City of Grove City Cindi Fitzpatrick, PE Public Service Director 4035 Broadway Grove City, Ohio 43123 Tel: (614) 277-3000, Fax: (614) 277-3034

PROJECT DATA			
Total Area (Construction Limits):	1.95 Acres	Runoff Coefficient for Pre-Construction Site:	0.75
Project Earth Disturbed Area:	1.49 Acres	Runoff Coefficient for Post-Construction Site:	0.84
Estimated Contractor Earth Disturbed Area:	0.25 Acres	Post-Construction BMP:	Vegetated Biofilters
Notice of Intent Earth Disturbed Area:	1.74 Acres	Immediate Receiving Waters:	Holton Run
Impervious (Paved) Area for Pre-Construction Site:	0.90 Acres	Subsequent Receiving Waters:	Spitlinger Ditch
Impervious (Paved) Area for Post-Construction Site:	1.05Acres		

*Calculated per ODOT L&D Vol. 2, Sec. 1115.7

GENERAL NOTES

CONTRACTOR RESPONSIBILITY: Details have been provided on the plans in an effort to help the Contractor provide erosion and sedimentation control. The details shown on the plan shall be considered a minimum. Additional or alternate details may be found in Ohio's Manual "Rainwater and Land Development." The Contractor shall be solely responsible for providing necessary and adequate measures for proper control of erosion and sediment runoff from the site along with proper maintenance and inspection in compliance with the NPDES General Permit for Stormwater Discharges Associated with Construction Activity and the City of Grove City Erosion and Sediment Pollution Control Regulation, Codified Ordinance 1399.

Contractor's Responsibilities:

Prior to Construction Operations in a particular area, all sedimentation and erosion control features shall be in place. Field adjustments with respect to locations and dimensions may be made by the Engineer and the City of Grove City.

The Contractor shall replace inlet protection for erosion control immediately after construction in the immediate area of the catch basins or inlets has occurred.

The Contractor shall be responsible to have the current Stormwater Pollution Prevention Plan immediately available or posted on site.

The Contractor shall be responsible to ensure that off-site tracking of sediments by vehicles and equipment is minimized. All such off-site sediment shall be cleaned up daily.

The Contractor shall be responsible to ensure that no solid or liquid waste is discharged into storm water runoff. Untreated sediment-laden runoff shall not flow off of site without being directed through a control practice. Concrete trucks will not be allowed to wash out or discharge surplus concrete into or alongside rivers, streams, or creeks or into natural or man-made channels or swales leading thereto. Concrete wash water and surplus concrete shall be confined to approved areas; after solidifying, these waste materials shall be removed from the site.

The Contractor shall remove all temporary erosion and sedimentation controls upon permanent stabilization of the site.

It may become necessary to remove portions of the sedimentation and erosion control features during construction to facilitate the grading operations in certain areas. However, the sedimentation and erosion control features shall be in place in the evening or during any inclement weather.

All Temporary and Permanent seeding shall be completed using the requirements indicated under item 659. The cost for temporary channels, sediment dams, sediment basins, and other appurtenant earthmoving operations shall be included in the price bid for erosion and sedimentation control quantities.

MAINTENANCE: It is the Contractor's responsibility to maintain the sediment control features used on this project. The site shall be inspected periodically and within 24 hours of a significant rainfall. Records of these inspections shall be kept and made available to jurisdictional agencies if requested. Any sediment or debris which has reduced the efficiency of a structure shall be removed immediately. Should a structure or feature become damaged, the Contractor shall repair or replace at no additional cost to the City.

Note: Not all details indicated on the Erosion and Sedimentation Control features indicated on this sheet will be pertinent to this project. See the Erosion and Sedimentation Control Plan for features used.

WATER QUALITY BMP DATA							
BMP TYPE	DITCH WIDTH	DITCH EROSION PROTECTION WIDTH	LENGTH	BEGIN STATION	END STATION	SIDE	EDA TREATMENT CREDIT
VEGETATED BIOFILTER 1	4'	7.5'	109'	594+75	595+86	LT	0.09 AC
VEGETATED BIOFILTER 2	4'	7.5'	233'	596+50	598+83	LT	0.25 AC
VEGETATED BIOFILTER 3	4'	7.5'	348'	599+55	603+03	LT	0.36 AC
TREATMENT PROVIDED							0.70 AC
TREATMENT REQUIRED							0.53 AC

* CALCULATED PER ODOT L&D VOL. 2, SEC. 1115.7

LEGEND	
Existing Storm Sewer	CB — MH — CB
Inlet Protection	▨ ▨
Proposed Linear Sediment Barrier	— — —
Aggregate Check Dam	⌒
Proposed Storm Sewer	CB — CB
Flow Direction	→
Work Limits	- - -
Vegetated Biofilter	■

REVISIONS

MARK	DATE	DESCRIPTION
Δ	10/10/23	Plan Revisions For New Annexation

CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT

CITY OF GROVE CITY
OHIO

CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT

HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
SEDIMENT & EROSION CONTROL PLAN

EMH&T

5500 New Albany Road Columbus, OH 43054
Engineers • Surveyors • Planners • Scientists
Phone: 614.775.5500 Fax: 614.775.3626
emht.com

DATE

January 2021

SCALE

1" = 50'

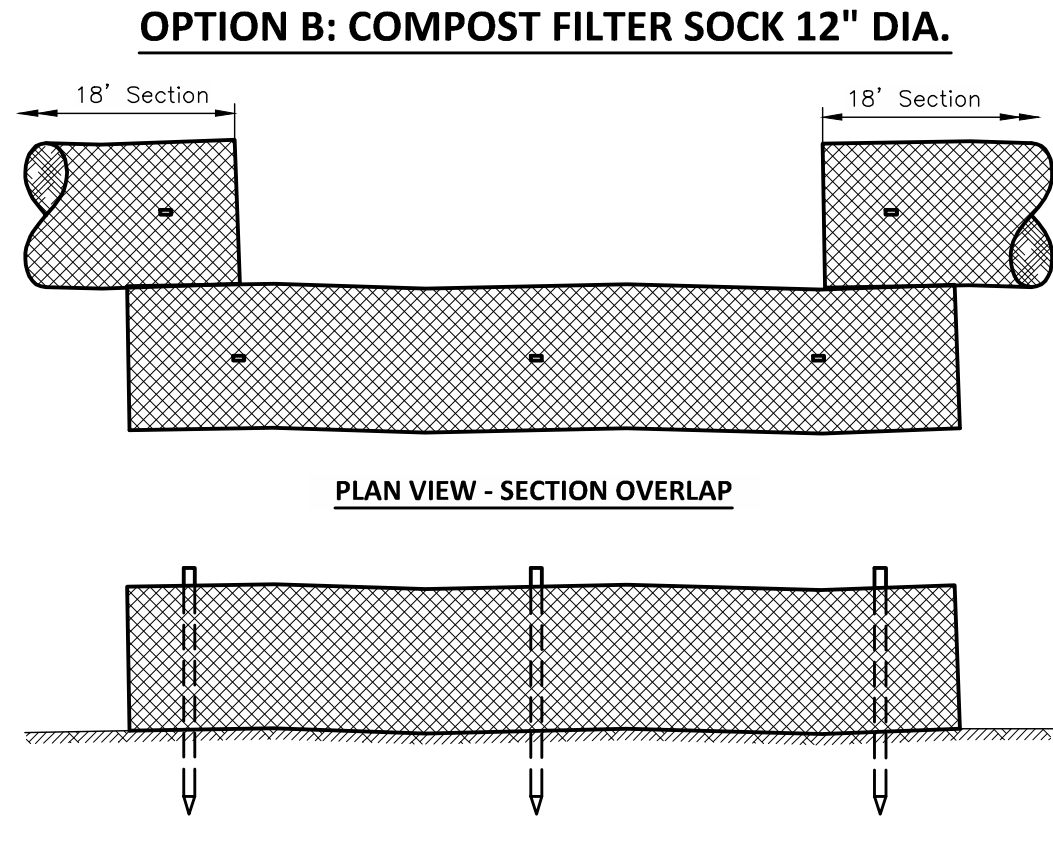
JOB NO.

2019-0489

SHEET

35/36

OPTION B: COMPOST FILTER SOCK 12" DIA.



* Post height to
match Fabric Fence

ELEVATION VIEW



Compost filter sock shall be comprised of a tabular fabric filled with aged all-natural hardwoods.

SEDIMENT FENCE:
This sediment barrier is designed for situations in which only sheet or overland flows are expected. Material Properties are listed in the provided table.

- MAINTENANCE OF LINEAR SEDIMENT BARRIERS:
Sediment Fence and/or Compost Filter Sock shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.

Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly.

Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

Sediment fence shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.

Concrete trucks shall utilize areas to washout trucks. Accumulated concrete shall be removed from the site and disposed of properly.

The drawing consists of two parts: a top cross-section of a dam and a bottom cross-section of a drainage ditch.

Top Cross-Section (Dam):

- The top surface is labeled "Sediment Laden Runoff".
- The top width is labeled "2'".
- The slope on both sides is labeled "1:1 Max".
- A horizontal line represents the "Drainage Way".
- Below the drainage way is a layer of "Compacted Soil To Prevent Piping".
- At the bottom is a layer of stones.
- Annotations include "See Note 1" pointing to the top surface and the stone layer, and "The Base of the Dam Shall be Entrenched Approximately 6\"

Bottom Cross-Section (Drainage Ditch):

- The ditch is V-shaped with a stone lining at the bottom.
- The bottom width is labeled "12\" Min.".
- The depth is labeled "6\"".
- The slope on both sides is labeled "1:1".
- An annotation "See Note 1" points to the stone lining.

1. The check dam shall be constructed of 4–8-in diameter stone placed so that it completely covers the width of the channel. ODOT Type D stone is acceptable, but should be underlain with a gravel filter consisting of ODOT No. 3 or 4 or suitable filter fabric.
2. The check dam shall be placed so it completely covers the width of the channel.
3. The top center of the check dam shall be approximately 6-in lower than the outside edges, so runoff will flow across the center of the dam rather than around the edges.
4. The maximum height of the dam shall not exceed 3-ft.
5. Aggregate check dams shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
6. Close attention shall be paid to the repair of damaged check dams, end runs and undercutting beneath dams.
7. Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.
8. Any sediment deposits remaining in place after the aggregate is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

1. Stone Size – Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length – As required.
3. Thickness – Not less than six (6) inches.
4. Width – Twenty (20) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Geotextile – will be placed over the entire area prior to placing of stone.
6. Surface Water – All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance – The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing – Wheels shall be cleaned to remove sediment prior to entrance onto public right-of-ways. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

SECTION A-A

INSTALLATION:
Stand grate on end. Place Dandy Bag over grate. Flip grate over so that open end is up. Pull up slack. Tuck flap in. Be sure end of grate is completely covered by flap or Dandy Bag will not fit properly. Holding handles, carefully place Dandy Bag with grate inserted into Catch Basin frame.

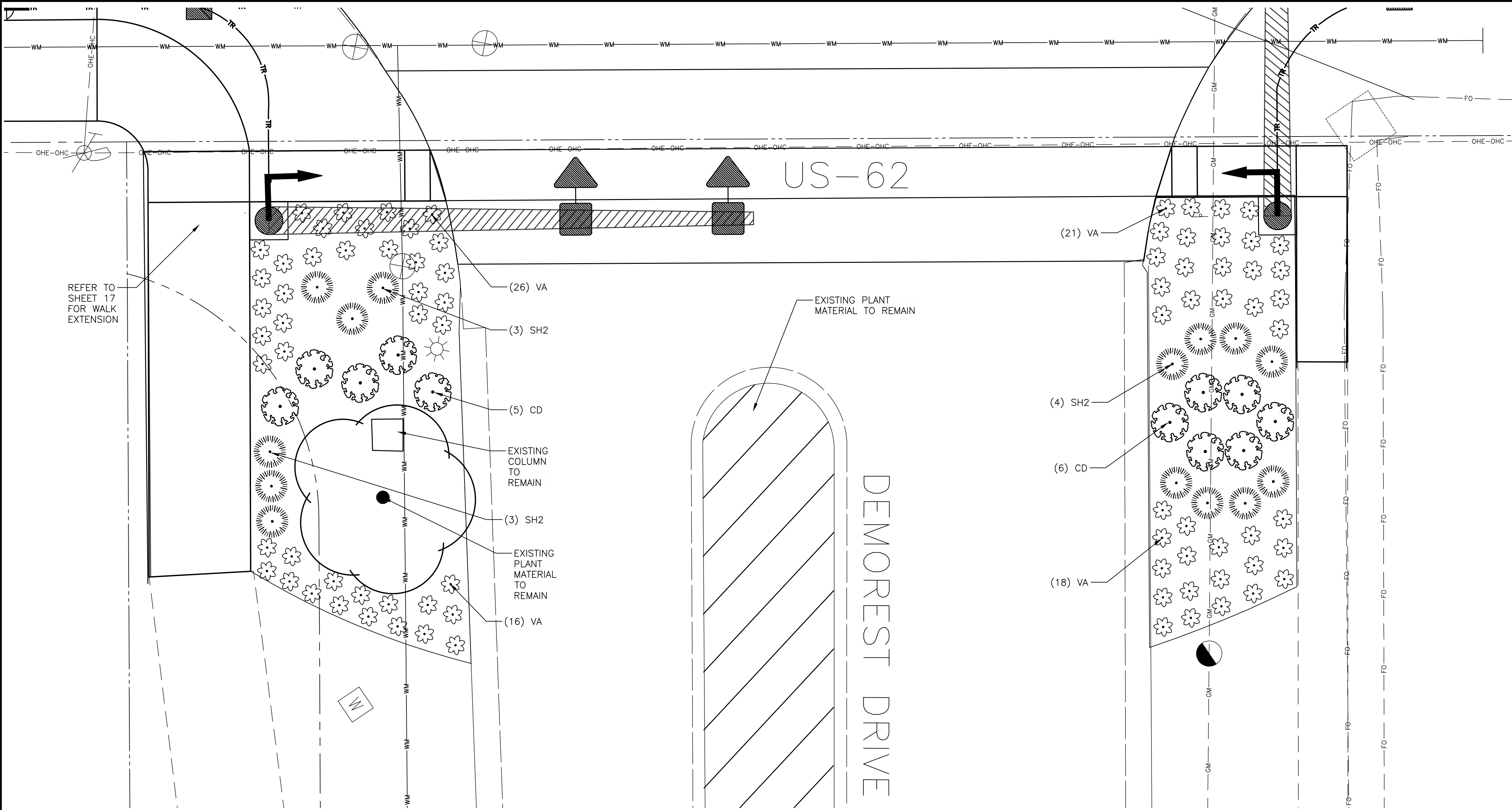
MAINTENANCE:
After silt has dried, remove it from the surface of Dandy Bag with broom.

SECTION A-A

1. Drop Inlet Sediment Barriers are to be used for Small, Nearly Level Drainage Areas. (Less Than 5%)
2. Use 2"x4" (100x50mm) Wood or Equivalent Metal Stakes, 3' (1m) Minimum Length.
3. Install 2"x4" (100x50mm) Wood Top Frame to Insure Stability.
4. The Top of the Frame (Ponding Height) must be well Below the Ground Elevation Downslope to Prevent Runoff from Bypassing the Inlet. A Temporary Dike may be Necessary on the Downslope Side of the Structure.
5. Wire mesh backing shall be of sufficient strength to support the geotextile fabric with runoff fully impounding against the structure.
6. The geotextile shall have an equivalent opening size of 20-40 sieve and be resistant to sunlight.
7. Backfill shall placed around the inlet and compacted to ensure that runoff will not undercut the fabric.

MAINTENANCE:
The filter fabric be cleaned with a stiff broom and assure that the filter fabric and geotextile is securely fastened to the frame of the structure. Backfill around the structure shall be compacted as needed to assure that runoff is not undercutting the structure.

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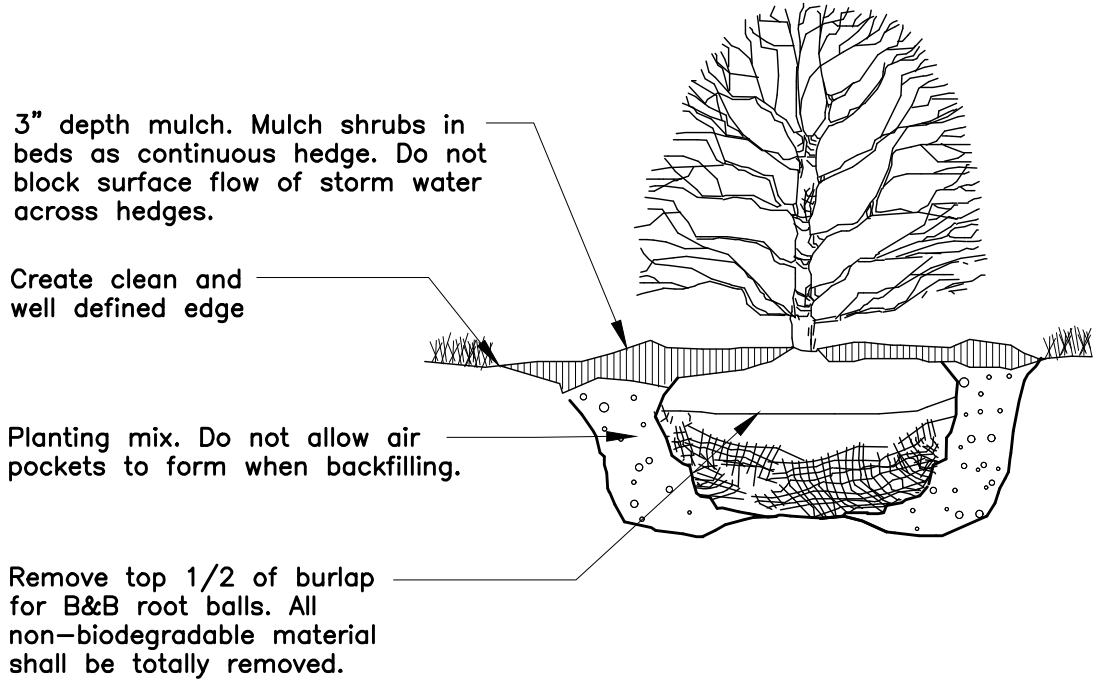


PLANT SCHEDULE ENTRY BEDS

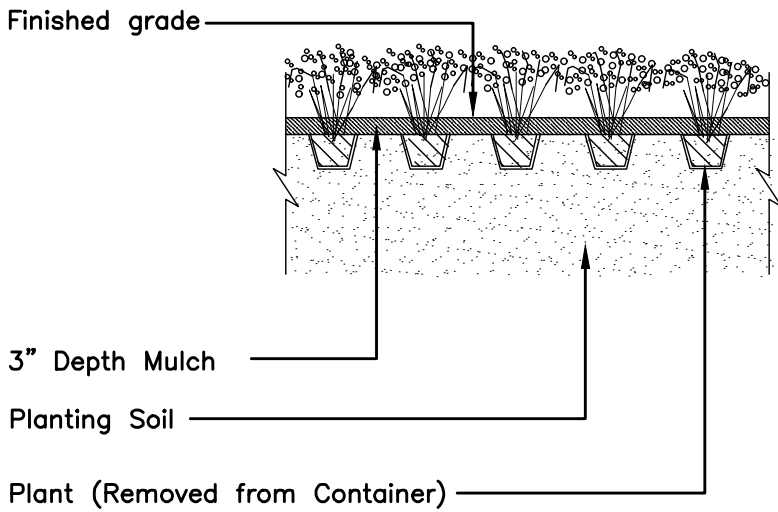
TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION
CA	1	Carpinus caroliniana	American Hornbeam	4" Cal.	Existing
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION
CD	11	Caryopteris x clandonensis 'Dark Knight'	Dark Knight Bluebeard	#3	Cont.
SH2	14	Sporobolus heterolepis	Prairie Dropseed	#2	Cont.
VA	81	Veronica spicata 'Novaverlig'	Moody Blues Light Blue Speedwell	#2	Cont.

LANDSCAPE GENERAL NOTES

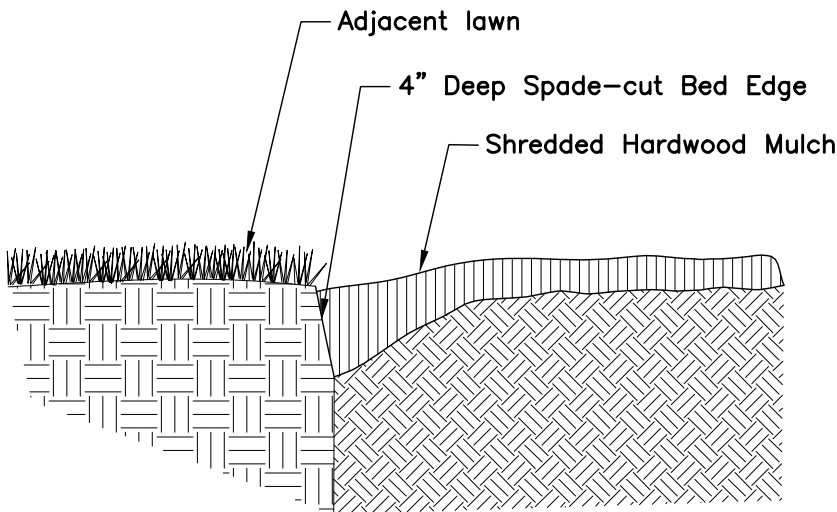
- Plants and planting operations shall conform to Item 661 except where modified in these notes and plans.
- Prior to installation, the landscape contractor shall inspect the general site conditions and verify the subgrade, elevations, utility locations and topsoil provided by general contractor. The landscape contractor shall notify the general contractor of any unsatisfactory conditions and work shall not proceed until such conditions have been corrected and are acceptable to the landscape contractor.
- Confirm location of all utilities and subsurface drain lines prior to plant installation.
- Mulch planting beds with triple shredded hardwood mulch of uniform black color. It shall be free of twigs, leaves, disease, pest or other material unsightly or injurious to plants. Average applied thickness shall be 3" depth.
- Planting beds shall be covered with pre-emergent herbicide applied at product specified rate unless otherwise noted.
- Contractor shall field locate each tree for approval by City Forester prior to planting. Clearly label each stake to identify the tree species to be planted.
- Install all plants in accordance with planting details and reference specifications.
- All planting beds to be tilled and backfilled with prepared planting soil to the minimum depth indicated.
- Planting Soil shall be blended, manufactured soil consisting of three (3) parts topsoil, one (1) part compost, one (1) part sand. Topsoil shall be per Item 653. Compost shall be yard waste compost from an EPA rated Class IV compost facility or Com-til compost from City of Columbus Department of Public Utilities. Sand shall be per Item 703.02. Proprietary manufactured Planting Soil such as Kurtz Bros. Professional Blend or Jones SuperSoil may be used. Submit product data for review by Engineer. Place Planting Soil in 6 inch lifts compacted to 75 to 80 percent of maximum dry density.
- Mix Mycorrhizal Fungi into Planting Soil during placement of Planting Soil. Application rate shall be according to manufacturer's written recommendations.
- Roto-Til subgrade below Planting Soil to a depth of 4 inches prior to placement of Planting Soil.
- Planting beds, including mulch, shall be flush with adjacent grade. Finished planting beds shall be graded to provide positive drainage.
- Contractor to determine plant list quantities from the plan. Graphic representation on plan supersedes in case of discrepancy with quantities on General Summary.
- All layout, excavation, bed preparation, planting soil, root ball preparation, mycorrhizal fungi, water, mulch, bed edge, staking, stake removal, adjustment, and any other appurtenances and miscellaneous work required for a complete planting installation shall be included in the unit price bid for each plant.



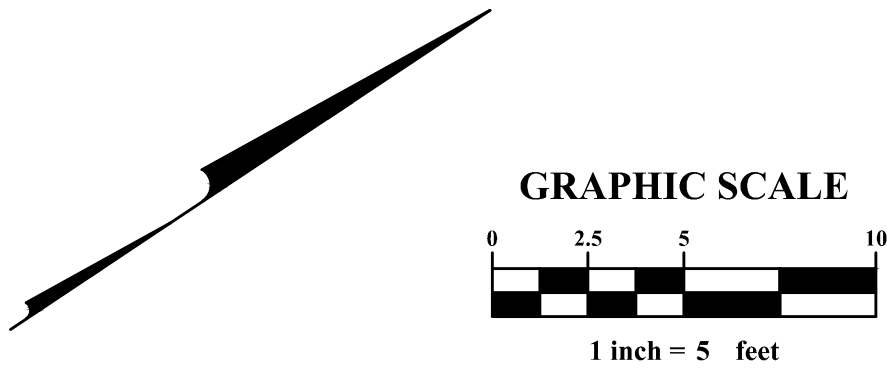
Shrub Planting
No Scale



Perennial Planting
No Scale



Planting Bed Edge
No Scale

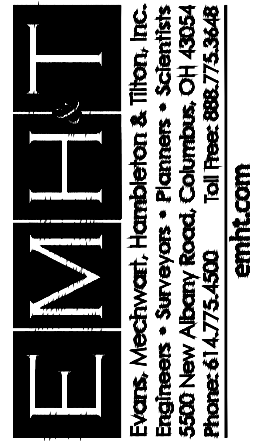


REVISIONS

MARK	DATE	DESCRIPTION



CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
FOR
ROADWAY IMPROVEMENT
HARRISBURG PIKE (US 62) AND
DEMOREST DRIVE INTERSECTION
PLAN AND PROFILE



DATE

JUNE 2022

SCALE

1" = 5'

JOB NO.

2019-0489

SHEET

36A/36