SPECIFICATIONS
THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIALS SPECIFICATIONS, DATED JANUARY 1, 2019 SHALL GOVERN THIS IMPROVEMENT.

ELEVATION DATUM
ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

UTILITIES
UTILITY NOTIFICATION: AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA THAT MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN IN THE PLANS.

DUKE – GAS,
DENISE GROSS/MARK BRANSCUM
139 EAST FOURTH STREET, ROOM 460A
CINCINNATI, OH 45202
513–287–2517

DUKE ENERGY – ELECTRIC (DISTRIBUTION)
ARRON WRIGHT
2010 DANA AVENUE
CINCINNATI, OH 45207
513–458–3856 AARON WRIGHT
AARON.WRIGHT@DUKE–ENERGY.COM

DUKE ENERGY – ELECTRIC (TRANSMISSION)
TIM MEYER
139 E. 4TH STREET, ROOM 552A
CINCINNATI, OH 45202
513–287–1266 (TIM MEYER)
TIM.MEYER@DUKE–ENERGY.COM

CITY OF FRANKLIN WATER & SEWER DEPARTMENT
1 BENJAMIN FRANKLIN WAY
FRANKLIN, OHIO 45005
937–746–5001 (SONNY LEWIS)
SLEWIS@FRANKLINOHIO.ORG

CITY OF FRANKLIN PUBLIC WORKS
202 BAXTER DRIVE
FRANKLIN, OHIO 45005
937–746–5001 (STEVE INMAN)
SINMAN@FRANKLINOHIO.ORG

WARREN COUNTY WATER & SEWER
406 JUSTIC DRIVE
LEBANON, OHIO 45036
513–695–1337 (CHRIS BRAUSCH)
CHRIS.BRAUSCH@WARREN.OH.US

CENTURYLINK TELEPHONE
803 E 12TH STREET
GREENVILLE, OHIO
513–933–3502 (JORDAN LANGSTON)
JORDAN.LANGSTON@CENTURYLINK.COM

SPRINT – FIBER OPTIC
11370 ENTERPRISE PARK DRIVE
SHARONVILLE, OHIO 45241
513*459–5796 (STEVE HUGHES)
STEVEN.HUGHES@SPRINT.COM

BUTLER COUNTY ENGINEER'S OFFICE
1921 FAIRGROVE AVENUE
HAMILTON, OHIO 45011
513–785–4107 (GREGORY WILKENS)
WILKENSG@BCEO.ORG

WARREN COUNTY ENGINEER'S OFFICE
210 WEST MAIN STREET
LEBANON, OHIO 45036
513–695–3301 (NEIL TUNISON)
NEIL.TUNISON@CO.WARREN.OH.US

CITY OF MIDDLETOWN WATER & SEWER DEPT.
ONE DONHAM PLAZA
MIDDLETOWN, OH 45042
513–425–7845 (TODD TADYCH)
SCOTTT@CITYOFMIDDLETOWN.ORG

AT&T
7201 FAR HILLS AVENUE
DAYTON, OHIO 45459
937–296–3588 (HOWARD LAUDERMILK)
HL1596@ATT.COM

TEXAS EASTERN TRANSMISSION
1157 S.R.122 WEST
LEBANON, OHIO 45036
1–513–933–6031 (GLENN INGRAM)
HGINGRAM@SPECTRAENERGY.COM

CINCINNATI BELL (UNDERGROUND)
221 EAST 4TH STREET BUILDING 121–900
CINCINNATI OHIO, 45202
OFFICE – 1–513–565–7043 (MARK CONNER)
CELL – 1–513–565–7133
(PLEASE SEND UTILITY PLAN REVIEWS TO ROADPROJECTS@CINBELL.COM)

CINCINNATI BELL TELEPHONE (AERIAL)
209 EAST 7TH STREET BUILDING 121–900
CINCINNATI OHIO, 45202
513–566–5120 (DORIAN JOHNSON)
(PLEASE SEND UTILITY PLAN REVIEWS TO ROADPROJECTS@CINBELL.COM)

CHARTER COMMUNICATIONS/SPECTRUM
10920 KENWOOD ROAD
BLUEASH, OHIO 45242
(SEND ALL PLANS/CORRESPONDENCE TO DL–SOUTHERN–OHIO–OUTSIDE–PLANT@CHARTER.COM)

METROPOLITIAN COMMUNICATIONS GROUP (MCG)
155 COMMERCE PARK DRIVE, SUITE #1
WESTERVILLE, OHIO 43082
614–392–2873 (CHAD HARKNESS)
CHAD.HARKNESS@MCGFIBER.COM

THAYER POWER AND COMMUNICATION LINE CONSTRUCTION COMPANY, LLC
950 FREEWAY DRIVE N.
COLUMBUS, OHIO 43229
614–379–6419 (CHRISTOPHER MCCLOSKEY)
CHRISMCCLOSKEY@THAYERPC.COM

CROWN CASTLE FIBER
470 SCHROCK RD, SUITE B
COLUMBUS, OH 43229
585–445–5813 (JON TARNOWSKI)
JON.TARNOWSKI@CROWNCASTLE.COM

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE OBTAINED FROM THE OWNERS OF THE UTILITIES AS REQUIRED BY SECTION 153.64 O.R.C. THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS APPROXIMATE. THE EXACT LOCATION SHALL BE THE RESPONSIBILITY OF THE UTILITY OWNER. THE EXISTING UTILITIES IN THE PROJECT AREA SHALL BE PROTECTED DURING CONSTRUCTION.

COFFERDAMS AND EXCAVATION BRACING
THIS ITEM IS INCLUDED IN THE PLANS TO BE USED AS NEEDED BASED ON THE CONTRACTORS MEANS AND METHODS AT EACH WORK LOCATION. INCLUDES PAYMENT FOR THE WORK AT ALL PLAN LOCATIONS SHALL BE LUMP SUM BID ITEM 503 COFFERDAMS AND EXCAVATION BRACING.

ITEM 203, EMBANKMENT, AS PER PLAN
THIS ITEM CONSISTS OF ENGINEERED BACKFILL BEHIND THE RETAINING WALL AS DETAILED ON SHEET 67. THE FOLLOWING QUANTITY HAS BEEN DETERMINED USING THE END AREA METHOD FROM SHEETS 37 – 39 AND HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 203 EMBANKMENT, AS PER PLAN 555 CY

PROJECTS LOCATED OVER A SOLE SOURCE AQUIFER
THE PROJECT AREA IS LOCATED OVER THE BURIED VALLEY AQUIFER SYSTEM, A DESIGNATED SOLE SOURCE AQUIFER. IN ORDER TO MINIMIZE THE POTENTIAL FOR A RELEASE IN THIS SENSITIVE AREA, ALL PROJECT RELATED REFUELING AND MAINTENANCE ACTIVITIES SHALL BE PERFORMED IN AN ENVIRONMENTALLY RESPONSIBLE MANNER.

PROJECTS LOCATED OVER A SOLE SOURCE AQUIFER, CONTINUED
SPILLS OF FUELS, OILS, CHEMICALS OR OTHER MATERIALS WHICH COULD POSE A THREAT TO GROUNDWATER SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF THE SPILL IS A REPORTABLE AMOUNT, THE CONTRACTOR SHOULD CONTACT MIDDLETOWN, OHIO FIRE DEPARTMENT 1–513–425–7766, FRANKLIN FIRE DEPARTMENT 1–937–746–4542 OR THE OHIO EPA'S SPILLS HOTLINE 1–800–282–9378 FOR CLEAN–UP OF THE SPILL FOR CLEAN–UP OF THE SPILL.

PROJECTS IN OR NEAR A DRINKING WATER SOURCE
THIS PROJECT IS LOCATED IN OR NEAR THE SOURCE OF A PUBLIC DRINKING WATER SUPPLY. IN ORDER TO MINIMIZE THE POTENTIAL TO CONTAMINATE THIS WATER SUPPLY, PROJECT RELATED REFUELING AND MAINTENANCE ACTIVITIES SHALL BE PERFORMED IN AN ENVIRONMENTALLY RESPONSIBLE MANNER. THE CONTRACTOR SHALL IMMEDIATELY TAKE STEPS TO MITIGATE ANY EVENT, SUCH AS A SPILL OF FUELS, OILS, OR CHEMICALS, THAT COULD THREATEN TO CONTAMINATE THE DRINKING WATER SUPPLY. ANY SUCH SPILL OR EVENT SHALL BE REPORTED IMMEDIATELY TO THE MIDDLETOWN WATER TREATMENT FACILITY 1–513–425–7781 OR THE FRANKLIN OHIO WATER TREATMENT FACILITY 1–937–746–7634. IF THE SPILL IS A REPORTABLE AMOUNT, THE CONTRACTOR SHOULD CONTACT MIDDLETOWN, OHIO FIRE DEPARTMENT 1–513–425–7766, FRANKLIN FIRE DEPARTMENT 1–937–746–4542 OR THE OHIO EPA'S SPILLS HOTLINE 1–800–282–9378 FOR CLEAN–UP OF THE SPILL FOR CLEAN–UP OF THE SPILL.

MEASURES TO MINIMIZE HARM
THE FOLLOWING MEASURES TO MINIMIZE HARM WILL BE IMPLEMENTED, AS PER THE OFFICIAL WITH JURISDICTION (OWJ) LETTERS WITH THE CITY OF FRANKLIN, THE CITY OF MIDDLETOWN, AND MIAMI CONSERVANCY DISTRICT:

1) ACCESS TO THE GMRRT AND THE PARKING LOT ON BAXTER DRIVE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.

2) TEMPORARY CONSTRUCTION FENCING SHALL BE INSTALLED ALONG PROPOSED CONSTRUCTION LIMITS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES TO PROTECT THE EXISTING 4(F) PROPERTY AND THE PUBLIC.

3) APPROPRIATE SIGNAGE SHALL BE INSTALLED TO ALERT USERS OF THE GMRRT OF CONSTRUCTION ACTIVITIES, IF IN PROXIMITY TO RECREATIONAL FACILITIES OR FEATURES.

4) THE STAGING AND/OR STORAGE OF CONSTRUCTION EQUIPMENT OR MATERIALS SHALL NOT TAKE PLACE OUTSIDE PROPOSED CONSTRUCTION LIMITS THAT ARE WITHIN THE DEFINED BOUNDARIES OF THE 4(F) PROPERTY.

5) THE CONTRACTOR SHALL BE REQUIRED TO CLOSELY COORDINATE THE CONSTRUCTION SCHEDULE WITH ODOT AND THE CITY OF MIDDLETOWN PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

ITEM 204, EXCAVATION OF SUBGRADE AND EMBANKMENT
WHENEVER ROCK OR SHALE IS ENCOUNTERED WITHIN 24" OF THE BOTTOM OF ASPHALT, IT IS TO BE REMOVED ACCORDING TO 204.05 AND REPLACED WITH ITEM 204 EMBANKMENT. REMOVE THE ROCK OR SHALE TO 12" BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT OR PAVED SHOULDERS, INCLUDING UNDER NEW CURBS AND GUTTERS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 204, EXCAVATION OF SUBGRADE	500 CY
ITEM 204, EMBANKMENT	500 CY

ITEM 204 SUBGRADE COMPACTION AND PROOF ROLLING
UNSUITABLE SUBGRADE SHALL BE CORRECTED BY MEANS OF UNDERCUTTING AND REPLACING AS DIRECTED BY THE ENGINEER. THE ANTICIPATED DEPTH OF UNDERCUT IS 18". PLACE A TYPE D GEOTEXTILE AT THE BOTTOM OF THE UNDERCUT PRIOR TO FILLING. BACKFILL THE UNDERCUT WITH ITEM 204 GRANULAR MATERIAL, TYPE C. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR SUBGRADE TREATMENT.

ITEM 204 – EXCAVATION OF SUBGRADE, 18 INCHES DEEP	3,000CY
ITEM 204 – GRANULAR MATERIAL, TYPE C	3,000CY
ITEM 204 – GEOTEXTILE FABRIC	6,000SY

ITEM 204 –PROOF ROLLING,
THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING.

ITEM 204, PROOF ROLLING 4 HOUR

ITEM 623 – CONSTRUCTION LAYOUT STAKES
THE CONTRACTOR IS TO PROVIDE ALL LABOR AND MATERIALS REQUIRED TO ADEQUATELY INSURE THE PROPER ELEVATIONS AND LOCATIONS OF ALL ITEMS INCLUDED IN THE WORK. THIS IS TO BE PAID FOR UNDER ITEM 623, LUMP SUM, CONSTRUCTION LAYOUT STAKES. PRIOR TO CONSTRUCTION, BENCH MARKS SHALL BE RE–ESTABLISHED OUTSIDE OF THE CONSTRUCTION LIMITS. THIS WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A PROFESSIONAL SURVEYOR, REGISTERED IN THE STATE OF OHIO. UNLESS OTHERWISE NOTED, ALL STATIONING AND OFFSET CALLOUTS ARE REFERENCED TO THE CONSTRUCTION CENTERLINE.

ROUNDING
THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS SECTIONS, EVEN THOUGH OTHERWISE SHOWN.

CONDUIT
THE LOCATIONS AND ELEVATIONS OF THE CONDUITS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY BE CHANGED AT THE DIRECTION OF THE PROJECT ENGINEER TO BETTER ACCOMODATE NATURAL DRAINAGE. INVERT ELEVATIONS OF STORM CONDUITS ARE TO BE FIELD VERIFIED AND ADJUSTED IF REQUIRED.

STORM SEWER PIPES
THE CONTRACTOR TO FIELD VERIFY THE SIZES AND TYPE OF EXISTING STORM SEWER PIPES BEFORE ORDERING COLLARS AND NEW STORM PIPES TO EXTEND LINES.
EXTEND PIPES BASED UPON MATERIAL TYPE. CONTRACTOR TO VERIFY PRIOR TO ORDERING MATERIAL
CONTRACTOR TO REMOVE HALF HEADWALL AND FULL HEADWALL BEFORE EXTENDING THE PIPES.

EXISTING SUBSURFACE DRAINAGE
PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.
PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM–1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE. UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:
601, TIED CONCRETE BLOCK MAT, TYPE 1, 6 SQ. YD.
611, PRECAST REINFORCED CONCRETE OUTLET, 3 EACH
605, 4" UNCLASSIFIED PIPE UNDERDRAINS 90 FT.

FENCE LENGTHS
THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES WILL BE IN ACCORDANCE WITH ITEM 607

DITCH PROFILE GRADES
NOTE THAT DITCH PROFILE GRADES ARE SHOWN ON CROSS SECTIONS.

ENDANGERED BAT HABITAT REMOVAL
THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT (MY OTIS SODALIS) AND THE NORTHERN LONG–EARED BAT (MY OTIS SEPTENTRIONALIS). NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OF GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

CONSTRUCTION NOISE
ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER–OPERATED CONSTRUCTION–TYPE DEVICE SHALL NOT BE OPERATED BETWEEN THE HOURS OF 9:00 PM AND 7:00 AM. IN ADDITION, ANY SUCH DEVICE SHALL NOT BE OPERATED AT ANY TIME IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

ITEM 201 – CLEARING AND GRUBBING, AS PER PLAN
ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FOURTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING. ONLY TREES DEEMED NECESSARY WILL BE REMOVED. ANY TREE GREATER THAN 12" IN DIAMETER SCHEDULED FOR REMOVAL SHALL BE CONFIRMED WITH THE OWNER. THE CITY OF MIDDLETOWN ENGINEER CAN BE REACHED AT 1–513–425–7710, AND THE CITY OF FRANKLIN ENGINEER CAN BE REACHED AT 1–937–746–9921. ENGINEER SHALL RESPOND WITHIN TWO WORKING DAYS.

ITEM 203 – SPECIAL BENCHING

ALTHOUGH CROSS–SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN 203.05. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF 203.05.

ITEM 606 – ANCHOR ASSEMBLY, MGS TYPE E
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS.
INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON–SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 614, MAINTENANCE OF TRAFFIC
A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES DURING WORKING HOURS BY USE OF THE EXISTING PAVEMENT.
LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER.
IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.
ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

CALCULATED LG
CHECKED TGB

GENERAL NOTES

BUT/WAR GMR TRAIL EXTENSION

CALCULATED LG CHECKED TGB

ITEM 614 – NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION TIME TABLE

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP & ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTICE TO OFFICE OF COMMUNICATIONS TIME TABLE.

POST CONSTRUCTION STORM WATER TREATMENT

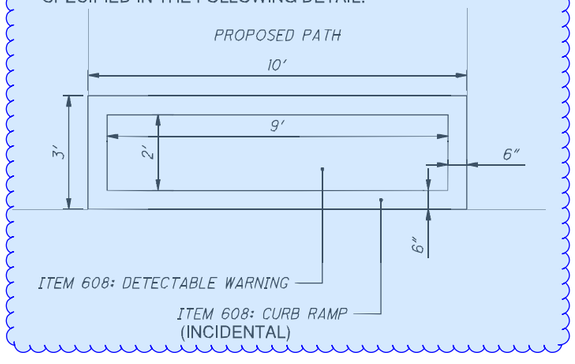
THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

VEGETATED FILTER STRIP

THIS PLAN UTILIZES VEGETATED FILTER STRIP(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4 INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

ITEM 608 – DETECTABLE WARNINGS, AS PER PLAN

CONSTRUCT CURB RAMPS PER BP 7.1. ANY INCIDENTAL CONCRETE REQUIRED IS INCLUDED WITH THE COST OF DETECTABLE WARNINGS, AS PER PLAN. THIS QUANTITY INCLUDES PAYMENT AND PLACEMENT OF THE ITEMS SPECIFIED IN THE FOLLOWING DETAIL:



GENERAL NOTES

BUT/WAR GMR TRAIL EXTENSION

5A
67

SHEET NUM.									PART.		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5	8	9	10	52	67				01/CMQ/OT	02/CMQ/OT						
															ROADWAY	
LS									LS	LS	201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	5
	1									1	202	20010	1	EACH	HEADWALL REMOVED	
	65									65	202	35100	65	FT	PIPE REMOVED, 24" AND UNDER	
	21									21	202	35200	21	FT	PIPE REMOVED, OVER 24"	
	1562								1,562		202	38000	1,562	FT	GUARDRAIL REMOVED	
				8398					3,929	4,469	203	10000	8,398	CY	EXCAVATION	
				15026					6,145	8,881	203	20000	15,026	CY	EMBANKMENT	
500									215	285	204	13000	500	CY	EXCAVATION OF SUBGRADE	
3000									1,290	1,710	204	13000	3,000	CY	EXCAVATION OF SUBGRADE 18" DEEP	
500									215	285	204	20000	500	CY	EMBANKMENT	
3000									1,290	1,710	204	30020	3,000	CY	GRANULAR MATERIAL, TYPE C	
4									2	2	204	45000	4	HOUR	PROOF ROLLING	
6000									2,580	3,420	204	50000	6,000	SY	GEOTEXTILE FABRIC	
	300								225	75	606	15050	300	FT	GUARDRAIL, TYPE MGS	
	50								25	25	606	15150	50	FT	GUARDRAIL, TYPE MGS HALF POST SPACING	
	1550								975	575	606	15250	1,550	FT	GUARDRAIL, TYPE MGS QUARTER POST SPACING	
	2								1	1	606	26100	2	EACH	ANCHOR ASSEMBLY, TYPE E, (MASH 2016)	5
	2								2		606	26500	2	EACH	ANCHOR ASSEMBLY, TYPE T	
	1805								860	945	607	98000	1,805	FT	FENCE, MISC.: RM 5.2 WOOD FENCE	5
	708								357	351	607	98000	708	FT	FENCE, MISC.:RM 5.2 WOOD FENCE, AS PER PLAN	67
	12									12	608	53021	12	SF	DETECTABLE WARNING, AS PER PLAN	5 A
	9								9		617	10100	9	CY	COMPACTED AGGREGATE, 2"	
															EROSION CONTROL	
	125								55	70	653	10000	125	CY	TOPSOIL FURNISHED AND PLACED, 4"	
	1123			20727					9,878	11,972	659	00510	21,850	SY	SEEDING AND MULCHING, CLASS 2	
	1123								478	645	670	00500	1,123	SY	SLOPE EROSION PROTECTION	
									LS	LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
									LS	LS	832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
									LS	LS	832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
									50,224	66,576	832	30000	116,800	EACH	EROSION CONTROL	
															DRAINAGE	
LS									LS	LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
		12							4.9	7.1	601	11000	12	SY	RIPRAP, TYPE D, 6" SLAB	
		29							7	22	601	21050	29	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
		15							0.0	15.0	601	21060	15	SY	TIED CONCRETE BLOCK MAT, TYPE 2	
		12							12		601	32100	12	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
		67							43	24	601	32200	67	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
		12							6.1	5.9	602	20000	12	CY	CONCRETE MASONRY	
90									40	50	605	98000	90	FT	UNDERDRAINS, MISC.:ENCOUNTERED	5
		142							50	92	611	00406	142	FT	4" CONDUIT, TYPE F, FOR UNDERDRAIN OUTLETS	
		53							34	19	611	04200	53	FT	12" CONDUIT, TYPE A, 706.02	
		55								55	611	04900	55	FT	12" CONDUIT, TYPE D	
		35							35		611	06400	35	FT	15" CONDUIT, TYPE D	
		139								139	611	10200	139	FT	24" CONDUIT, TYPE A, 707.01, AL COATED	
		15							15		611	16200	15	FT	36" CONDUIT, TYPE A, 707.01, AL COATED	
		36							36		611	16600	36	FT	36" CONDUIT, TYPE C	
		21								21	611	22200	21	FT	54" CONDUIT, TYPE A, 707.01, AL COATED	
		55								55	611	24300	55	FT	60" CONDUIT, TYPE D, 707.01, AL COATED	
		19							19		611	28000	19	FT	84" CONDUIT, TYPE A, 707.03	
		1								1	611	98470	1	EACH	CATCH BASIN, NO. 2-2B	
		6							2	4	611	99574	6	EACH	MANHOLE, NO. 3	
3		4							3	4	611	99710	7	EACH	PRECAST REINFORCED CONCRETE OUTLET	

CALCULATED GAB
CHECKED TGB

GENERAL SUMMARIES

BUT/WAR GMR TRAIL EXTENSION

SHEET NUM.									PART.		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5	8	9	10	52	67				01/CMQ/OT	02/CMQ/OT						
															PAVEMENT	
			9652						4150	5502	204	10000	9652	SY	SUBGRADE COMPACTION	
			734						315	419	301	46000	734	CY	ASPHALT CONCRETE BASE, PG64-22, 3"	
			1609						692	917	304	20000	1609	CY	AGGREGATE BASE, 6"	
			454						195	259	407	10000	454	GAL	TACK COAT @ 0.055 GAL/SY	
			286						123	163	441	50000	286	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22, 1.25"	
															TRAFFIC CONTROL	
		18							11	7	626	00110	18	EACH	BARRIER REFLECTOR, TYPE 2, (ONE-WAY)	
		312							228	96	630	03100	324	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
		7							2	5	630	80100	7	SF	SIGN, FLAT SHEET	
		25							22	3	630	85100	25	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
		25							19	6	630	86002	25	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
															RETAINING WALLS (361+50 to 368+56)	
555									277	278	203	20001	555	CY	EMBANKMENT, AS PER PLAN	67
					485				242	243	204	50100	485	SY	GEOTEXTILE FABRIC, 712.09, TYPE A	
					2848				1424	1424	507	00400	2,848	FT	STEEL PILES, MISC.:SOLDIER PILES	67
1808									904	904	524	94602	1,808	FT	DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK	
					712				356	356	524	94604	712	FT	DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK	
					4350				2175	2175	610	50010	4,350	SF	RETAINING WALL, MISC.:PRECAST LAGGING	67
					LS				LS	LS	610	60000	LS		RETAINING WALL, MISC.:CAST-IN-PLACE LAGGING	67
					89				44	45	866	00101	89	EACH	GROUND ANCHOR, AS PER PLAN (80 KIP DESIGN LOAD AT 30 DEG)	67
															INCIDENTALS	
LS									LS	LS	614	11000	LS		MAINTAINING TRAFFIC	
LS									LS	LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
LS									LS	LS	624	10000	LS		MOBILIZATION	

CALCULATED GAB
CHECKED TGB

GENERAL SUMMARIES

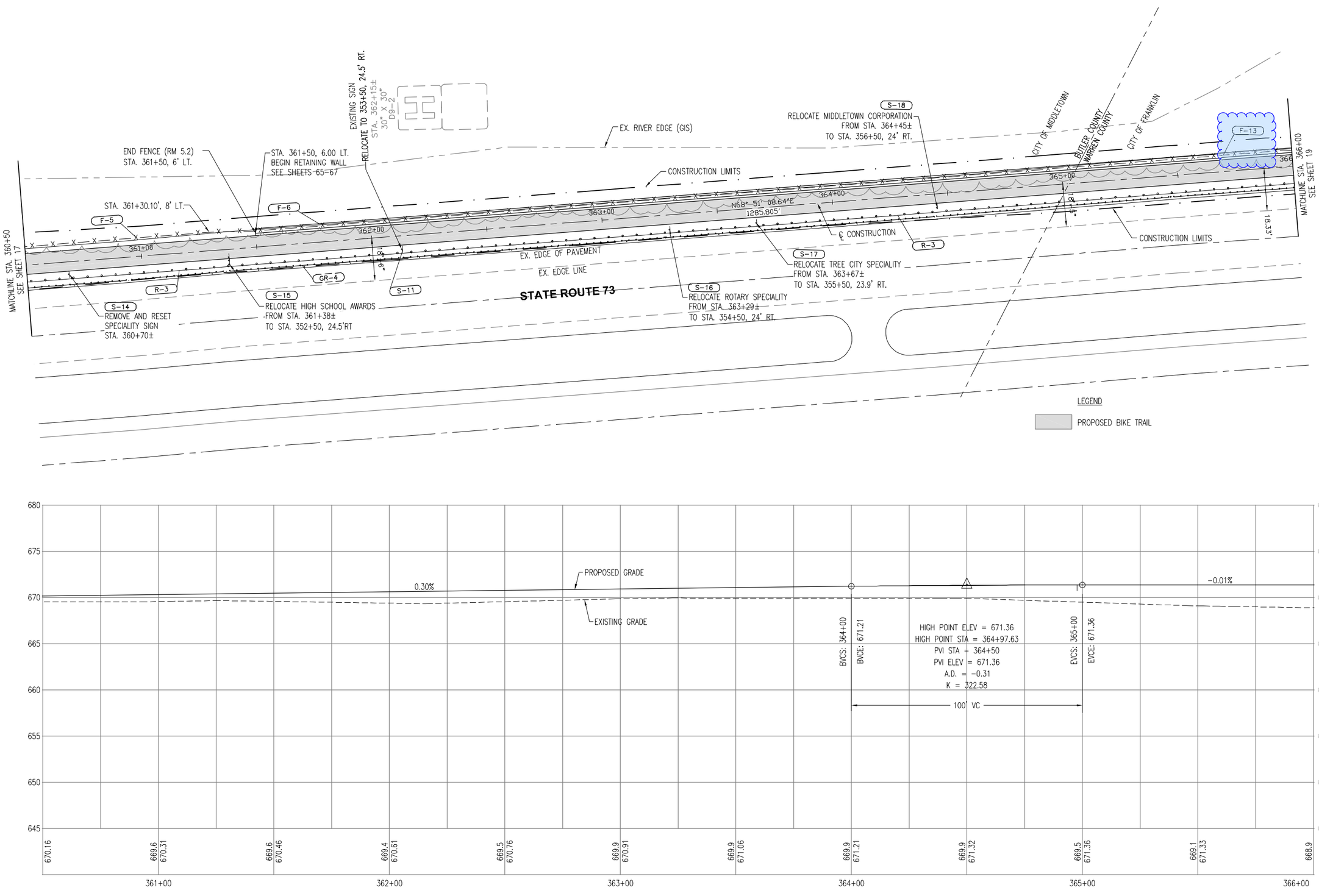
BUT/WAR GMR TRAIL EXTENSION

SHEET NO.	REFERENCE NO.	STATION		SIDE	202				606					607		608	617	626	630				651	659	670
					HEADWALL REMOVED	PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	GUARDRAIL REMOVED	GAURDRAIL, TYPE MGS	GAURDRAIL, TYPE MGS, HALF POST SPACING	GAURDRAIL, TYPE MGS, QUARTER POST SPACING	ANCHOR ASSEMBLY, MGS, TYPE E, (MASH 2016)	ANCHOR ASSEMBLY,MGS,TYPE T	FENCE, MISC: RM-5.2 WOOD FENCE	FENCE, MISC: RM-5.2 WOOD FENCE, AS PER PLAN	DETECTABLE WARNING, AS PER PLAN	COMPACTED AGGREGRATE, 2"	BARRIER REFLECTOR, TYPE 2, (ONE-WAY)	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	SIGN, FLAT SHEET	GROUND MOUNTED SUPPORT, NO 3 POST	TOPSOIL FURNISHED AND PLACED, 4"	SEEDING AND MULCHING, CLASS 2	SLOPE EROSION PROTECTION
		FROM	TO		EA	FT	FT	FT	FT	FT	FT	EACH	EACH	FT	FT	SF	CY	EACH	EACH	EACH	SF	FT	CY	SY	SY
13	F-1	335+11	335+53	L										44											
14	S-1	341+40	-	R															2	2		12/12			
14	GR-1	341+45	342+95	R							150		1												
14	F-2	341+87	342+85	L										101											
14	R-2	341+95	345+01	R				307																	
14	S-8	343+17	-	R															1	1	2	12			
14	GR-2	342+95	344+95	R					175	25		1						3							
14	F-3	343+63	345+61	L										200											
14	S-2	343+85	-	R															1	2		12/12			
15	V-1	344+00	348+29	L																			53	478	478
15	S-3	346+48	-	R															2	1		12			
15	S-4	348+27	-	R															1	1		12			
15	F-4	348+90	349+82	L										94											
17	GR-3	356+70	357+10	R						25			1					1							
17	GR-4	357+10	372+20	R					75	25	1400	1						14							
17	F-5	357+31	361+50	L										421											
17	S-12	357+55	-	R															1	1		12			
17	R-3	357+57	370+12	R				1255																	
17	S-13	358+63	-	R															1	1		12			
17	S-9	359+82	-	R															2	1		12			
18	S-14	360+70	-	R															1	1		12			
18	S-15	361+38	-	R															4	3		12/12/12			
18	F-6	361+50	365+07	L											357		4.5								
19	S-11	362+15	-	R															2	1		12			
18	S-16	363+29	-	R															1	1		12			
18	S-17	363+67	-	R															1	1		12			
18	S-18	364+45	-	R															2	2		12/12			
19	R-4	366+80	-	L	1																				
19	F-7	368+56	369+50	L										96											
19	F-8	368+56	373+47	L										493											
19	R-6	368+77	-	L		10																			
19	F-13	365+07	368+58	L											351		4.5								
20	S-5	374+54	-	R															1	2		12/12			
21	F-9	377+06	377+47	L										43											
21	F-10	381+79	382+20	L										43											
21	R-5	382+12	-	L		21																			
22	S-6	384+84	-	R															1	2		12/12			
22	F-13	387+60	389+50	L										190											
23	R-7	393+08	-	-		4																			
24	F-11	395+81	396+23	L										44											
24	R-8	396+00	-	-		30																			527
25	V-2	399+75	404+50	L																			59	527	527
25	S-7	403+67	-	R															1	2		12/12			118
26	V-3	404+50	405+56	L																			13	118	118
26	R-9	406+18	-	-			21																		
26	S-10	406+50	-	R																	2.25	12			
26	S-19	408+27	-	R																	2.25	12			
26	F-12	407+79	408+13	L										36											
26	D-1	408+18	-	-												12									123
SUBTOTALS					**1**	**65**	**21**	**1,562**	**250**	**75**	**1,550**	**2**	**2**	**1,805**	**708**	**12**	**9**	**18**	**25**	**25**	**6.5**	**324**	**125**	**1,123**	**1,123**
CARRIED TO GENERAL SUMMARY					**1**	**65**	**21**	**1,562**	**250**	**75**	**1,550**	**2**	**2**	**1,805**	**708**	**12**	**9**	**18**	**25**	**25**	**7**	**324**	**125**	**1,123**	**1,123**

CALCULATED GAB
CHECKED TGB

ROADWAY SUB- SUMMARY

BUT/WAR GMR TRAIL EXTENSION



Centerline Profile

Scale
1" = 5' VERTICAL
1" = 20' HORIZONTAL

HORIZONTAL SCALE IN FEET
0 10 20 40

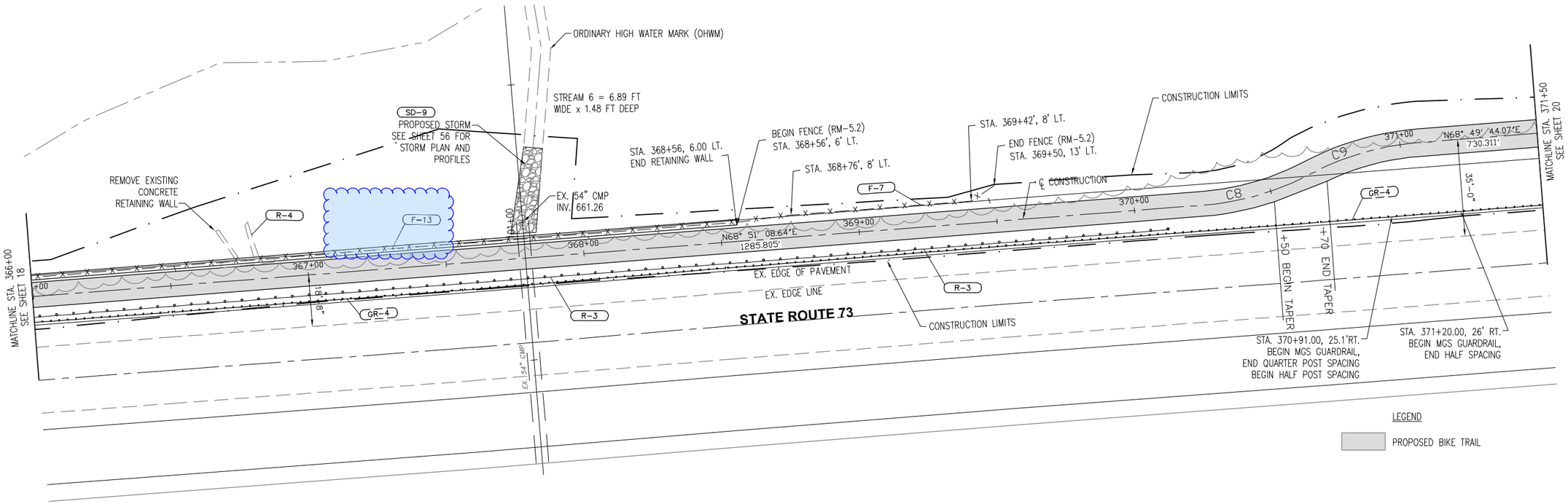
CALCULATED LG
CHECKED TGB

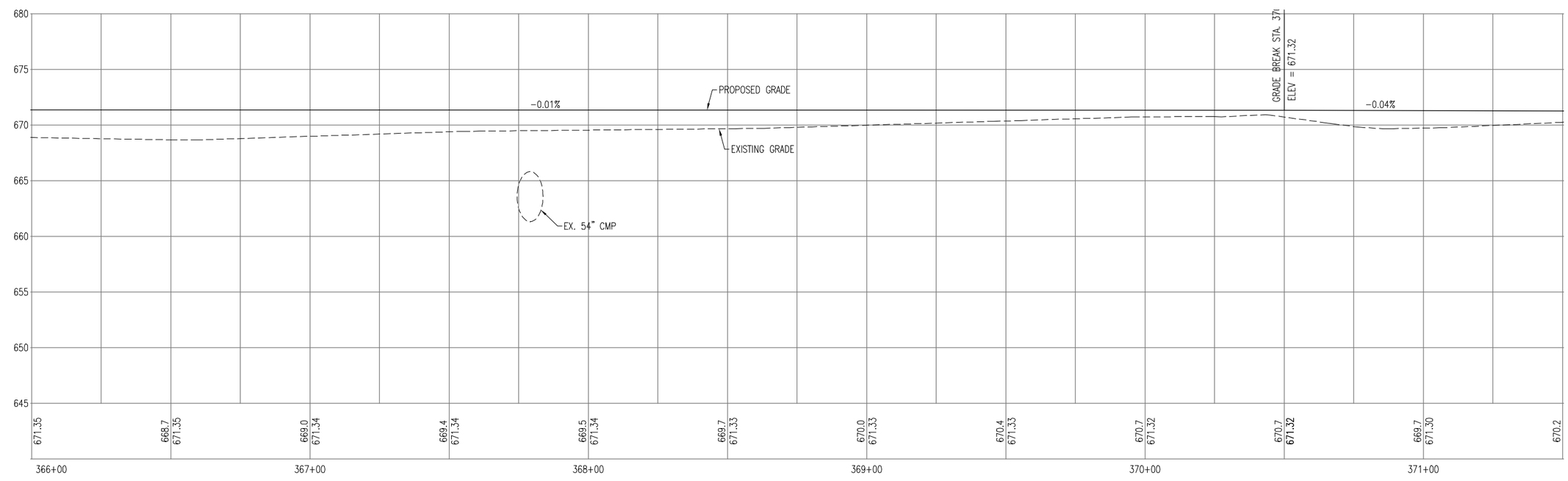
PLAN & PROFILE
Sta. 360+50 to Sta. 366+00

BUT/WAR GMR TRAIL EXTENSION

18
67

CURVE TABLE							
CURVE	PI	NORTHING	EASTING	DELTA ANGLE	RADIUS	LENGTH	TANGENT
C8	370+45.56	569555.2420	1452450.1912	23°44'90"	100.00	40.93	20.75
C9	370+86.47	569412.8286	1452590.6134	23°42'55"	100.00	40.89	20.73





Centerline Profile

Scale
1" = 5' VERTICAL
1" = 20' HORIZONTAL

HORIZONTAL SCALE IN FEET
0 10 20 40

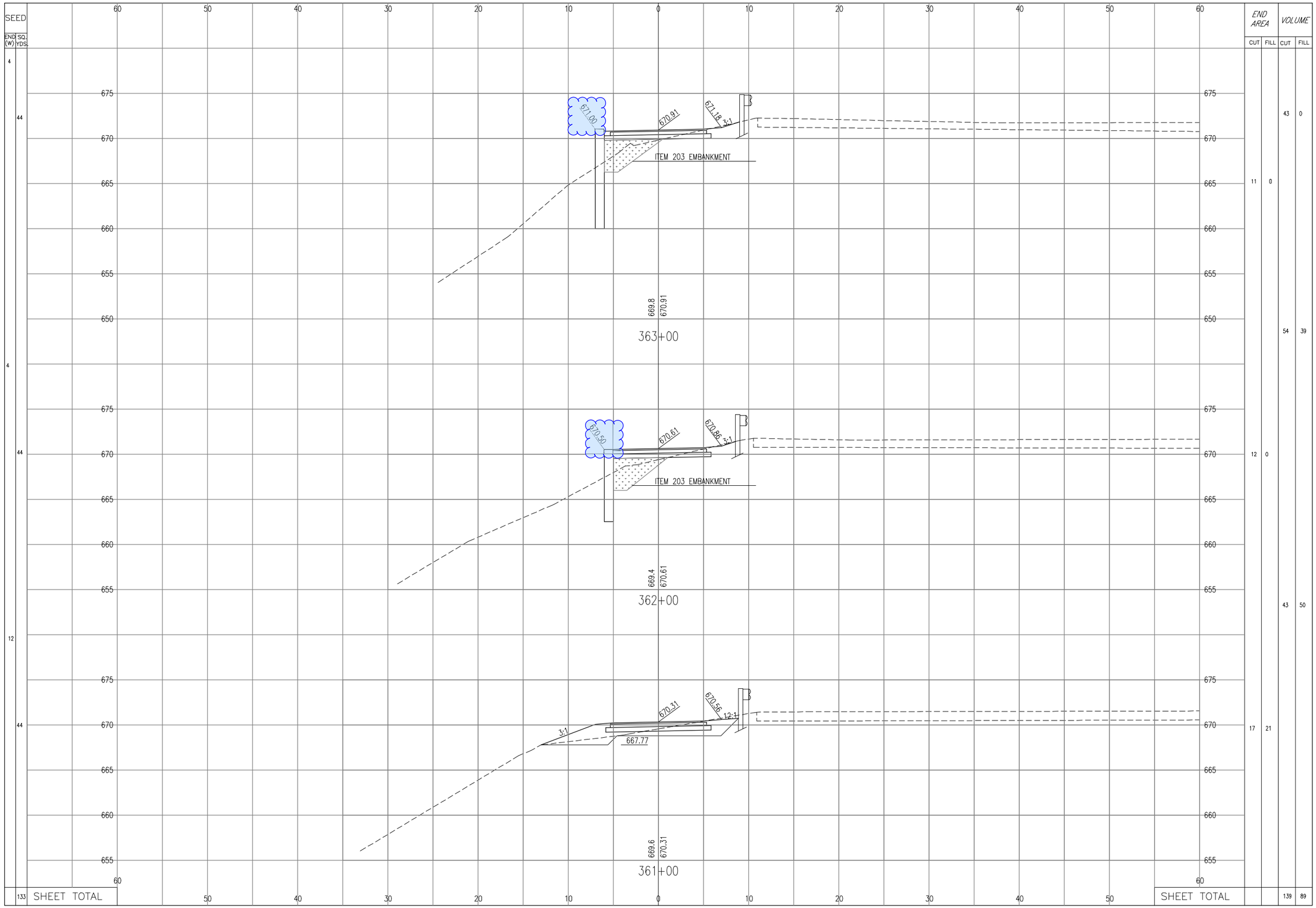
CALCULATED LG
CHECKED TGB

PLAN & PROFILE
Sta. 366+00 to Sta. 371+50

BUT/WAR GMR TRAIL EXTENSION

19
67

SEED		END AREA		VOLUME	
END (W)	SQ. YDS.	CUT	FILL	CUT	FILL
4	44			43	0
		11	0		
4				54	39
		12	0		
12	44			43	50
		17	21		
				139	89
133	SHEET TOTAL				



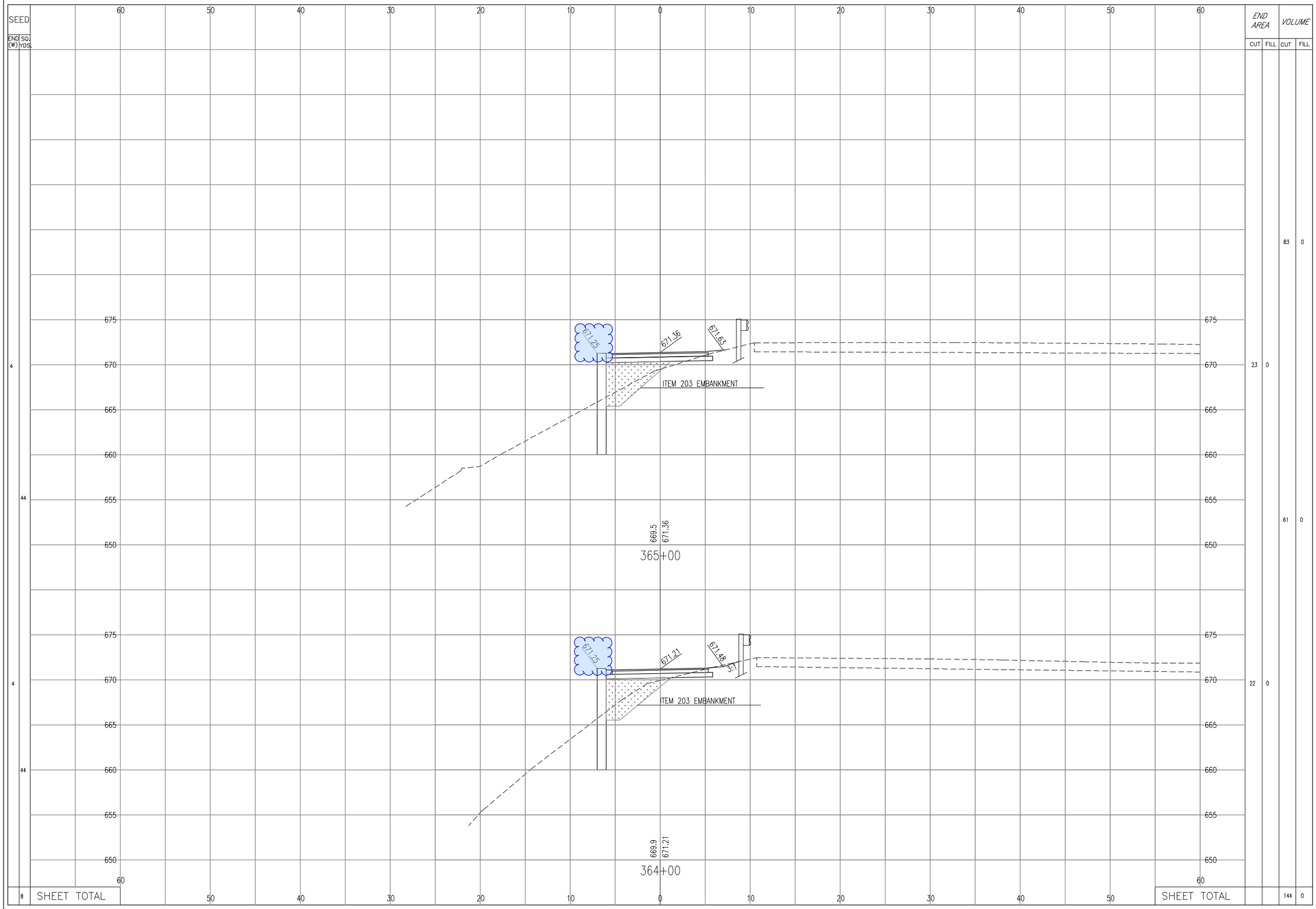
CALCULATED LG
CHECKED TGB

CROSS SECTIONS
STA. 361+00 to STA. 363+00

BUT/WAR GMR TRAIL EXTENSION

37
67

SEED		END AREA		VOLUME	
END (W)	SQ. YDS.	CUT	FILL	CUT	FILL
				83	0
4		23	0		
44				61	0
4		22	0		
44					
8	SHEET TOTAL			144	0
	SHEET TOTAL				



CALCULATED LG

CHECKED TGB

CROSS SECTIONS
STA. 364+00 to STA. 365+00

BUT/WAR GMR TRAIL EXTENSION

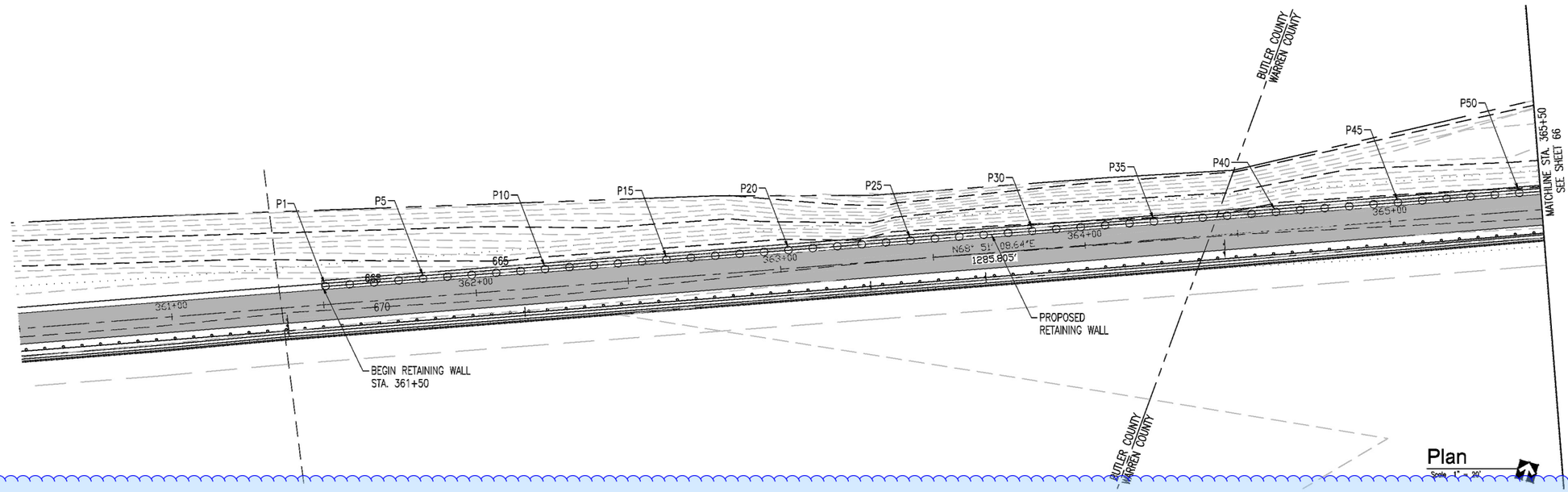
38
67

SEED				END AREA		VOLUME	
END (W)	SQ. YDS.			CUT	FILL	CUT	FILL
						54	0
4		671.25	671.33 / 671.60 50:1	17	0		
			ITEM 203 EMBANKMENT				
	128	669.5 / 671.33	368+00			49	0
4		671.25	671.34 / 671.61 12:1	12	0		
			ITEM 203 EMBANKMENT				
	44	669.0 / 671.34	367+00			69	0
4		671.25	671.35 / 671.63 12:1	14	0		
			ITEM 203 EMBANKMENT				
	44	668.9 / 671.35	366+00				
217	SHEET TOTAL					171	0

CALCULATED LG
CHECKED TGB

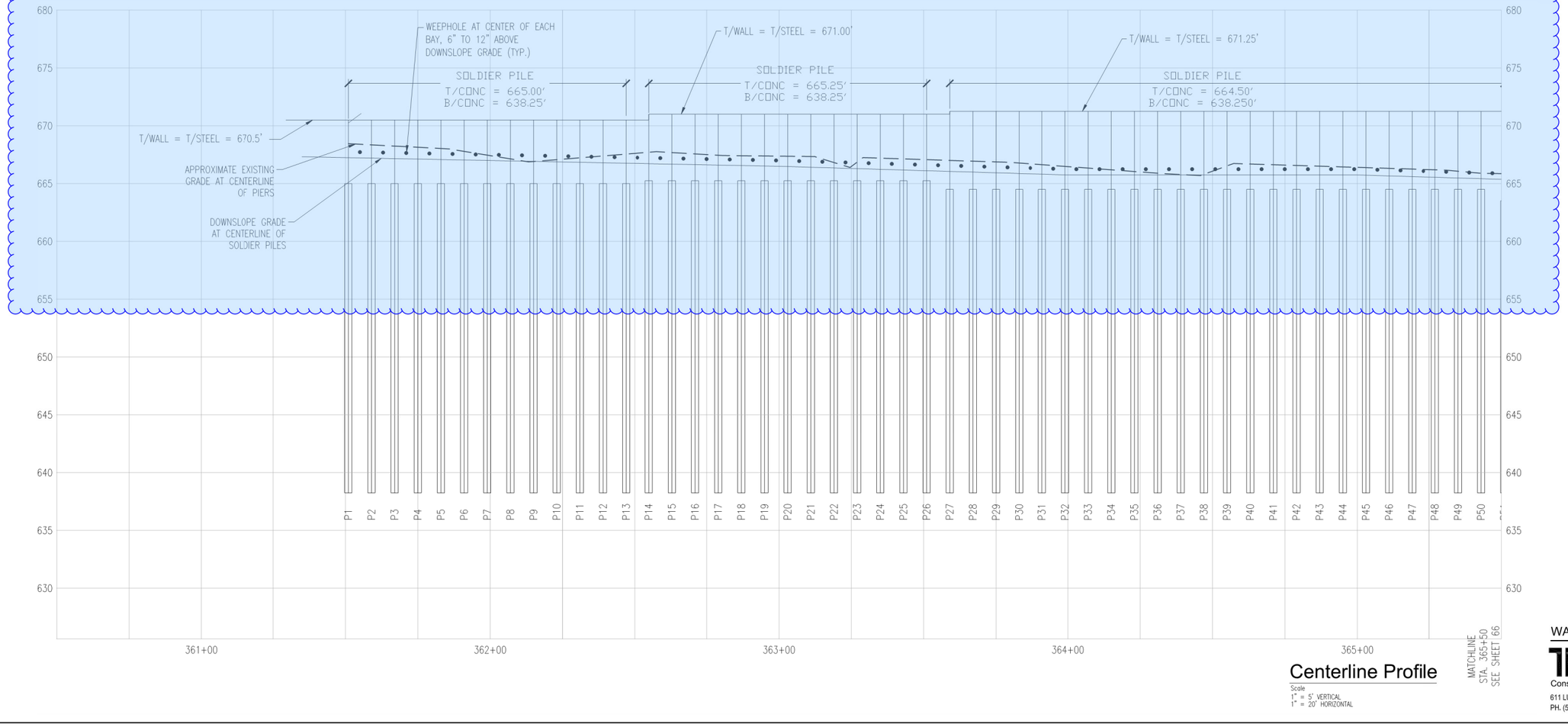
CROSS SECTIONS
STA. 366+00 to STA. 368+00

BUT/WAR GMR TRAIL EXTENSION



Plan

Scale 1" = 20'



Centerline Profile

Scale
1" = 5' VERTICAL
1" = 20' HORIZONTAL

REV.	DATE	BY	DESCRIPTION
1	2-12-19	DWW	ADDED 18" CULVERT & REMOVED FENCE DETAIL
2	4-7-20	DWW	ADJUSTED TOP OF WALL ELEVATIONS TO MATCH TRAIL

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED LG
CHECKED TGB

RETAINING WALL PLAN & PROFILE STA. 361+50 TO STA. 365+50

BUT/WAR GMR TRAIL EXTENSION

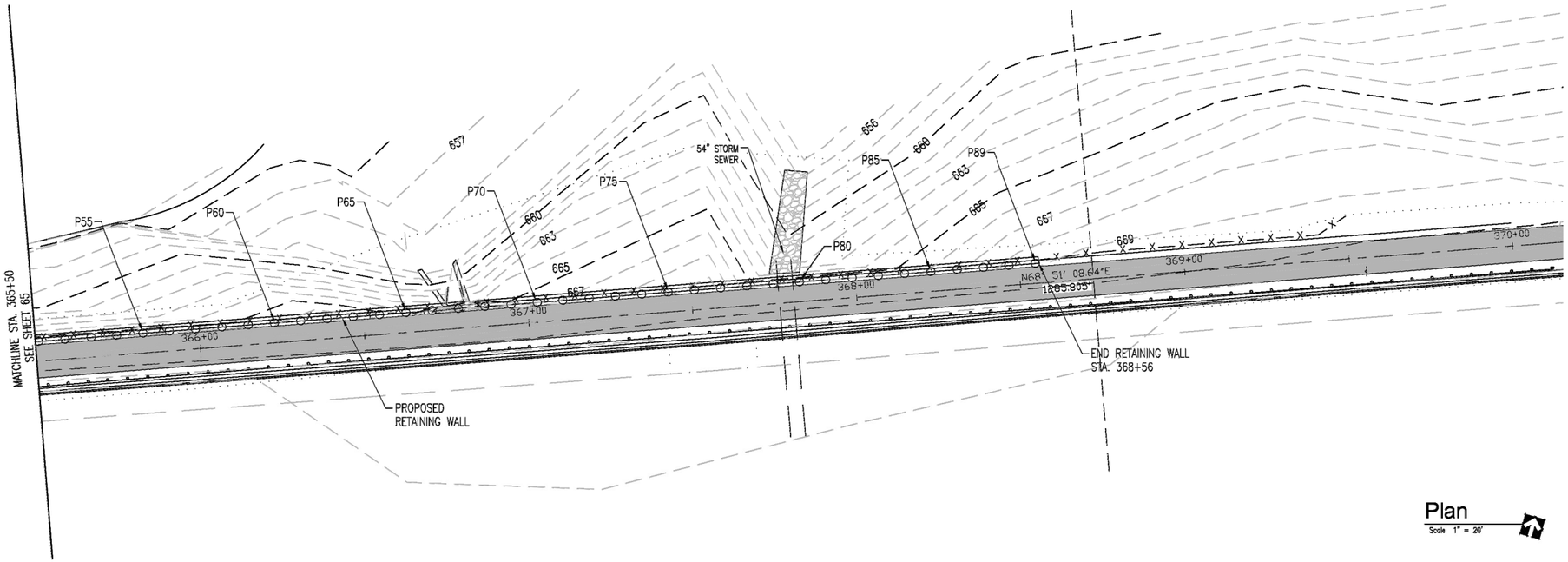
STATE OF OHIO
DAVID W. WESTENDORF
74346
REGISTERED PROFESSIONAL ENGINEER

EXHIBIT 1

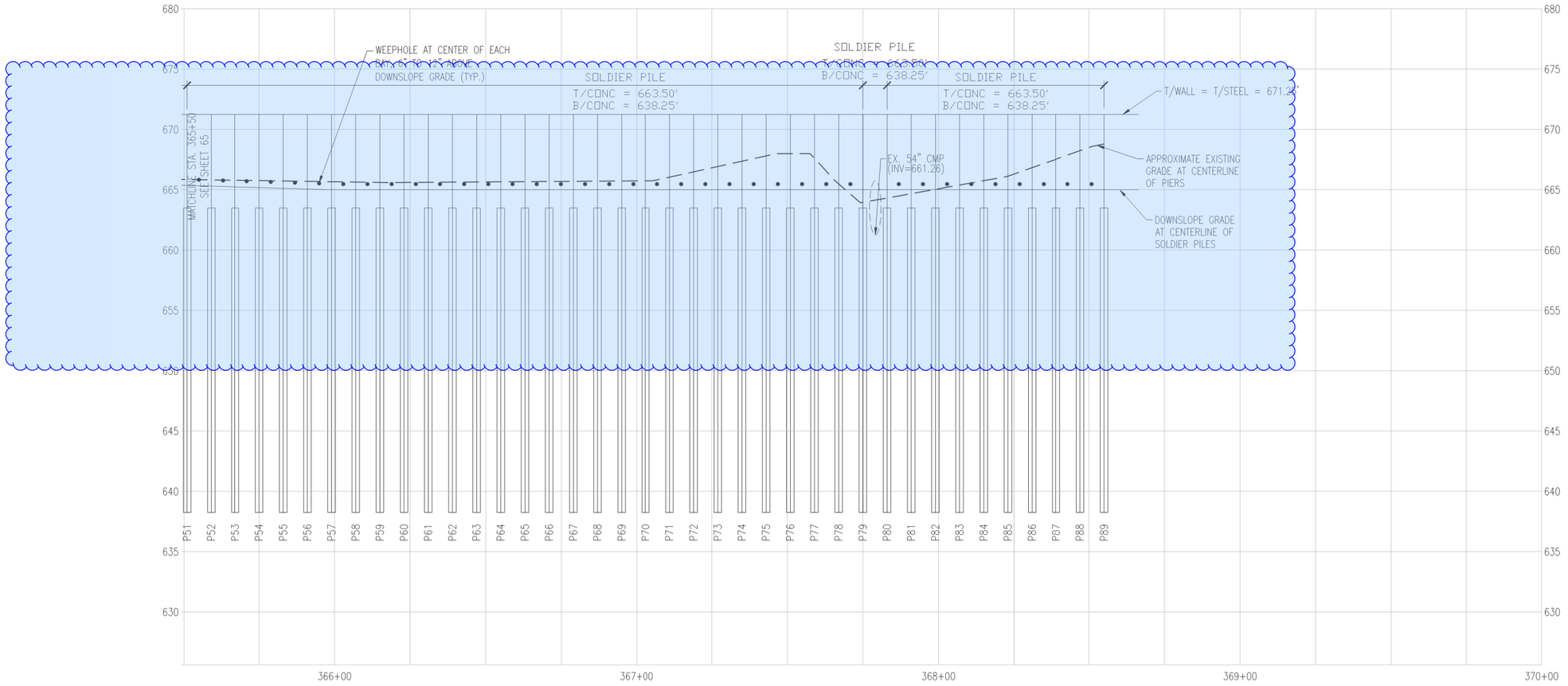
DESIGNED BY:	DWW
DRAWN BY:	KM
APPVD. BY:	DWW
SCALE:	AS SHOWN
DATE:	04/07/2020
JOB NO.	N1165434
ACAD NO.	RW.DWG
SHEET NO.:	1

WALL DESIGNED BY

Terracon
Consulting Engineers and Scientists
611 LUNKEN PARK DRIVE CINCINNATI, OHIO 45226
PH. (513) 321-5816 FAX. (513) 321-4540



Plan
Scale 1" = 20'



Centerline Profile
Scale
1" = 5' VERTICAL
1" = 20' HORIZONTAL

REV.	DATE	BY	DESCRIPTION
1	2-12-19	DWW	ADDED 18" CULVERT & REMOVED FENCE DETAIL
2	4-7-20	DWW	ADJUSTED TOP OF WALL ELEVATIONS TO MATCH TRAIL

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED LG
CHECKED TGB

RETAINING WALL PLAN & PROFILE STA. 361+50 TO STA. 365+50

BUT/WAR GMR TRAIL EXTENSION

STATE OF OHIO
DAVID W. WESTENDORF
74346
REGISTERED PROFESSIONAL ENGINEER

EXHIBIT 2	
DESIGNED BY:	DWW
DRAWN BY:	KM
APPVD. BY:	DWW
SCALE:	AS SHOWN
DATE:	04/07/2020
JOB NO.:	N1165434
ACAD NO.	RW.DWG
SHEET NO.:	2

WALL DESIGNED BY

Terracon
Consulting Engineers and Scientists
611 LUNKEN PARK DRIVE CINCINNATI, OHIO 45226
PH. (513) 321-5816 FAX. (513) 321-4540

PIER #	STATION	OFFSET	TOP OF WALL/STEEL ELEV.	TOP OF CONCRETE ELEV.	TOTAL LENGTH	ESTIMATED BOTTOM OF PIER ELEV.
			FEET	FEET	FEET	FEET
P1	361+51	6.0'LT	670.5	665.0	32.25	638.25
P2	361+59	6.0'LT	670.5	665.0	32.25	638.25
P3	361+67	6.0'LT	670.5	665.0	32.25	638.25
P4	361+75	6.0'LT	670.5	665.0	32.25	638.25
P5	361+83	6.0'LT	670.5	665.0	32.25	638.25
P6	361+91	6.0'LT	670.5	665.0	32.25	638.25
P7	361+99	6.0'LT	670.5	665.0	32.25	638.25
P8	362+07	6.0'LT	670.5	665.0	32.25	638.25
P9	362+15	6.0'LT	670.5	665.0	32.25	638.25
P10	362+23	6.0'LT	670.5	665.0	32.25	638.25
P11	362+31	6.0'LT	670.5	665.0	32.25	638.25
P12	362+39	6.0'LT	670.5	665.0	32.25	638.25
P13	362+47	6.0'LT	670.5	665.0	32.25	638.25
P14	362+55	6.0'LT	671.0	665.25	32.75	638.25
P15	362+63	6.0'LT	671.0	665.25	32.75	638.25
P16	362+71	6.0'LT	671.0	665.25	32.75	638.25
P17	362+79	6.0'LT	671.0	665.25	32.75	638.25
P18	362+87	6.0'LT	671.0	665.25	32.75	638.25
P19	362+95	6.0'LT	671.0	665.25	32.75	638.25
P20	363+03	6.0'LT	671.0	665.25	32.75	638.25
P21	363+11	6.0'LT	671.0	665.25	32.75	638.25
P22	363+19	6.0'LT	671.0	665.25	32.75	638.25
P23	363+27	6.0'LT	671.0	665.25	32.75	638.25
P24	363+35	6.0'LT	671.0	665.25	32.75	638.25
P25	363+43	6.0'LT	671.0	665.25	32.75	638.25
P26	363+51	6.0'LT	671.0	665.25	32.75	638.25
P27	363+59	6.0'LT	671.25	664.5	33	638.25
P28	363+67	6.0'LT	671.25	664.5	33	638.25
P29	363+75	6.0'LT	671.25	664.5	33	638.25
P30	363+83	6.0'LT	671.25	664.5	33	638.25
P31	363+91	6.0'LT	671.25	664.5	33	638.25
P32	363+99	6.0'LT	671.25	664.5	33	638.25
P33	364+07	6.0'LT	671.25	664.5	33	638.25
P34	364+15	6.0'LT	671.25	664.5	33	638.25
P35	364+23	6.0'LT	671.25	664.5	33	638.25
P36	364+31	6.0'LT	671.25	664.5	33	638.25
P37	364+39	6.0'LT	671.25	664.5	33	638.25
P38	364+47	6.0'LT	671.25	664.5	33	638.25
P39	364+55	6.0'LT	671.25	664.5	33	638.25
P40	364+63	6.0'LT	671.25	664.5	33	638.25
P41	364+71	6.0'LT	671.25	664.5	33	638.25
P42	364+79	6.0'LT	671.25	664.5	33	638.25
P43	364+87	6.0'LT	671.25	664.5	33	638.25
P44	364+95	6.0'LT	671.25	664.5	33	638.25
P45	365+03	6.0'LT	671.25	664.5	33	638.25
P46	365+11	6.0'LT	671.25	664.5	33	638.25
P47	365+19	6.0'LT	671.25	664.5	33	638.25
P48	365+27	6.0'LT	671.25	664.5	33	638.25
P49	365+35	6.0'LT	671.25	664.5	33	638.25
P50	365+43	6.0'LT	671.25	664.5	33	638.25
P51	365+51	6.0'LT	671.25	663.5	33	638.25
P52	365+59	6.0'LT	671.25	663.5	33	638.25
P53	365+67	6.0'LT	671.25	663.5	33	638.25
P54	365+75	6.0'LT	671.25	663.5	33	638.25
P55	365+83	6.0'LT	671.25	663.5	33	638.25
P56	365+91	6.0'LT	671.25	663.5	33	638.25
P57	365+99	6.0'LT	671.25	663.5	33	638.25
P58	366+07	6.0'LT	671.25	663.5	33	638.25
P59	366+15	6.0'LT	671.25	663.5	33	638.25
P60	366+23	6.0'LT	671.25	663.5	33	638.25
P61	366+31	6.0'LT	671.25	663.5	33	638.25
P62	366+39	6.0'LT	671.25	663.5	33	638.25
P63	366+47	6.0'LT	671.25	663.5	33	638.25
P64	366+55	6.0'LT	671.25	663.5	33	638.25
P65	366+63	6.0'LT	671.25	663.5	33	638.25
P66	366+71	6.0'LT	671.25	663.5	33	638.25
P67	366+79	6.0'LT	671.25	663.5	33	638.25
P68	366+87	6.0'LT	671.25	663.5	33	638.25
P69	366+95	6.0'LT	671.25	663.5	33	638.25
P70	367+03	6.0'LT	671.25	663.5	33	638.25
P71	367+11	6.0'LT	671.25	663.5	33	638.25
P72	367+19	6.0'LT	671.25	663.5	33	638.25
P73	367+27	6.0'LT	671.25	663.5	33	638.25
P74	367+35	6.0'LT	671.25	663.5	33	638.25
P75	367+43	6.0'LT	671.25	663.5	33	638.25
P76	367+51	6.0'LT	671.25	663.5	33	638.25
P77	367+59	6.0'LT	671.25	663.5	33	638.25
P78	367+67	6.0'LT	671.25	663.5	33	638.25
P79	367+75	6.0'LT	671.25	663.5	33	638.25
P80	367+83	6.0'LT	671.25	663.5	33	638.25
P81	367+91	6.0'LT	671.25	663.5	33	638.25
P82	367+99	6.0'LT	671.25	663.5	33	638.25
P83	368+07	6.0'LT	671.25	663.5	33	638.25
P84	368+15	6.0'LT	671.25	663.5	33	638.25
P85	368+23	6.0'LT	671.25	663.5	33	638.25
P86	368+31	6.0'LT	671.25	663.5	33	638.25
P87	368+39	6.0'LT	671.25	663.5	33	638.25
P88	368+47	6.0'LT	671.25	663.5	33	638.25
P89	368+55	6.0'LT	671.25	663.5	33	638.25

ITEM 524E94603- DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK , AS PER PLAN
ITEM 524E94605 - DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR A TIEBACK-ANCHORED RETAINING WALL. THE DRILLED SHAFTS ARE REINFORCED WITH STEEL SOLDIER BEAMS. FURNISH AND INSTALL THE DRILLED SHAFTS AS SHOWN ON THE PLAN AND PROFILE DRAWINGS AS WELL AS CMS, 524.

EXCAVATE THE HOLE FOR THE DRILLED SHAFT WITHIN 3 INCHES OF THE PLAN LOCATION. THE SHAFT SHALL BE PLUMB WITHIN ONE PERCENT (1%) OF IT'S LENGTH. ANY SHAFTS VARYING BY MORE THAN THE ABOVE TOLERANCES SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AT NO COST TO THE OWNER. THE DESIGN IS BASED ON A MAXIMUM DEPTH FROM FINISH PAVEMENT ELEVATION AS SUMMARIZED IN THE TABLE FOR SCHEDULE OF DRILLED SHAFTS. EACH SHAFT SHALL BE SOCKETED INTO SHALE BEDROCK A MINIMUM OF 8 FEET IN BROWN SHALE OR 5 FEET INTO GRAY SHALE. IF FIELD CONDITIONS INDICATE A LOWER BOTTOM OF PIER ELEVATION OF 2 FEET OR GREATER, NOTIFY THE ENGINEER FOR FURTHER EVALUATION.

TEMPORARY STEEL CASING SHALL BE PROVIDED WHERE NECESSARY TO PREVENT CAVING OR SLIPPING OF THE SHAFT WALLS AND/OR TO CONTROL SEEPAGE. CASING SHALL BE WITHDRAWN AS THE CONCRETE IS BEING PLACED, MAINTAINING SUFFICIENT HEAD OF CONCRETE WITHIN THE CASING TO PREVENT SOIL FROM ENTERING THE SHAFT THROUGH THE SIDES OF THE EXCAVATION AND MIXING WITH THE CONCRETE. DRILL CUTTINGS SHALL NOT BE TEMPORARILY STORED OR DISPOSED OF ON THE EXISTING SLOPE AT ANY TIME DURING CONSTRUCTION.

IT IS ANTICIPATED THAT WATER WILL ENTER SOME OF THE SHAFT EXCAVATIONS. THE DEPTH OF PONDED WATER AT THE BOTTOM OF THE SHAFT EXCAVATIONS SHOULD NOT EXCEED 2 INCHES, PRIOR TO PLACING CONCRETE. IF THE WATER CANNOT BE PUMPED DOWN, TREMIE PLACEMENT METHODS WILL BE REQUIRED.

IF FORMS ARE NEEDED, FORMS SHALL BE TRULY CYLINDRICAL IN SHAPE WITHOUT ANY BULGES OR DEPRESSIONS, AND BE PLUMB AND SECURELY BRACED SO THAT THE CENTERLINE OF THE TOP-OF-PIER IS WITHIN TWO INCHES (2") OF PLAN LOCATION. TOP-OF-FORM SHALL BE CUT TO TOP OF CONCRETE ELEVATION FOR THE DRILLED SHAFT SO THE CONCRETE CAN BE FINISHED SMOOTH AND LEVEL.

DISPOSABLE CARDBOARD OR LAMINATED PAPER TUBE FORMS MAY BE USED. FORMS SHALL BE STRIPPED IN ACCORDANCE WITH THEIR MANUFACTURER'S RECOMMENDATIONS SO AS TO OBTAIN A SMOOTH AND CLEAN SHAFT SURFACE.

PROVIDE QC1 CONCRETE WITH ENTRAINED AIR CONTENT BETWEEN FOUR (4%) TO SEVEN PERCENT (7%). PLACE CONCRETE TO THE TOP OF CONCRETE ELEVATION INDICATED ON THE PLANS. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 2 INCHES IN THE SHAFTS AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE EXCAVATION. CONCRETE SHALL BE PLACED IN THE DRILLED SHAFT EXCAVATIONS ON THE SAME DAY THE EXCAVATIONS ARE COMPLETED. ALL CONCRETE SHALL BE PLACED WITH MECHANICAL VIBRATION. NO HORIZONTAL CONSTRUCTION JOINTS WILL BE PERMITTED OTHER THAN THOSE SHOWN ON THE PLANS, WITHOUT THE APPROVAL OF THE ENGINEER.

FILL THE HOLE FROM THE TOP OF CONCRETE TO THE EXISTING GROUND SURFACE WITH ITEM 613 LOW STRENGTH MORTAR BACKFILL (LSM). REMOVE CONCRETE AND LSM AS NECESSARY FROM AROUND THE SOLDIER PILE IN ORDER TO PLACE THE PRECAST LAGGING.

CARE SHALL BE EXERCISED AS TO COVER UNATTENDED OPEN SHAFTS. TEMPORARY COVERS SHALL BE OF ADEQUATE STRENGTH TO PROTECT A PERSON OR ANIMAL FROM FALLING IN AN EXCAVATED SHAFT.

PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING PUBLIC UTILITIES IN THE CONSTRUCTION AREA. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY UTILITY CONFLICTS WITH THE PROPOSED SHAFTS.

ANY TEMPORARY GRADING, AGGREGATE, DRAINAGE, ETC. NEEDED FOR ACCESS TO THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR DRILLED SHAFTS.

THE CONTRACTOR SHALL MAINTAIN A RECORD OF EACH SHAFT DRILLED, WHICH WILL INCLUDE AS A MINIMUM: SHAFT NUMBER; SHAFT TIP ELEVATION; ROCK SOCKET LENGTH AND MATERIAL; ELEVATION OF THE TOP-OF-THE SHAFT CONCRETE; DATE DRILLED; DATE COMPLETED; AND WEATHER CONDITIONS.

PAYMENT IS FULL COMPENSATION FOR ALL FORMS, MOBILIZING AND REMOVING DRILLING EQUIPMENT, LAYOUT, SATISFACTORY REMOVAL OF DRILLING SPOILS, CONSTRUCTING THE DRILLED SHAFTS, INCLUDING FURNISHING AND PLACING CONCRETE AND SOLDIER BEAMS (ITEM 507), TEMPORARY CASING, AND FORMS.

PAYMENT FOR THE ITEM 524 - DRILLED SHAFTS ABOVE BEDROCK, AS PER PLAN WILL BE MADE BY FIELD MEASURING THE ACTUAL DRILLED DISTANCE FROM THE DRILLING PLATFORM TO THE TOP OF GRAY INTERBEDDED SHALE AND LIMESTONE. DRILLING IN BROWN WEATHER SHALE AND LIMESTONE WILL BE CONSIDERED OVERBURDEN. PAYMENT FOR ITEM 524 - DRILLED SHAFTS INTO BEDROCK, AS PER PLAN WILL BE BASED ON THE ACTUAL DRILLED DISTANCE INTO GRAY INTERBEDDED SHALE AND LIMESTONE BEDROCK BELOW THE OVERBURDEN OR BROWN WEATHERED SHALE AND LIMESTONE.

ITEM 507- STEEL, PILES, MISC: SOLDIER PILES

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL SOLDIER BEAMS (PILES) INTO DRILLED HOLES. FURNISH SOLDIER BEAMS CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A572, GRADE 50. ALL SOLDIER BEAMS SHALL BE HP 14X73 AND CENTERED WITHIN THE DRILLED SHAFT EXCAVATIONS. THE SOLDIER BEAMS SHALL BE ORIENTED IN THE DRILLED SHAFTS AS SHOWN ON THE PLANS.

GALVANIZE SOLDIER PILES FROM TOP OF SOLDIER PILE TO 3 FT. BELOW THE TOP OF CONCRETE. AND IN ACCORDANCE WITH CMS 711.02. DO NOT FIELD WELD OR SPLICE STEEL SOLDIER PILES. FIELD REPAIR DAMAGED GALVANIZATION WITH COLD GALVANIZATION.

PAINTING OF SOLDIER PILES IS DIFFICULT, PROVIDE GALVANIZATION FROM TOP OF SOLDIER PILE TO 3 FT. BELOW THE TOP OF CONCRETE.

MEASUREMENT FOR PAYMENT WILL BE LIMITED TO THE DISTANCE BETWEEN THE TOP OF WALL ELEVATION AND THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL PAY FOR SOLDIER PILES AT THE CONTRACT UNIT PRICE PER FOOT FOR ITEM 507, STEEL PILES, MISC.: SOLDIER PILES.

ITEM 610E50110- RETAINING WALL, MISC.: PRECAST LAGGING

THIS WORK CONSISTS OF FURNISHING AND PLACING PRECAST CONCRETE PANELS BETWEEN THE SOLDIER PILES TO FUNCTION AS LAGGING FOR THE RETAINING WALL AS SHOWN ON THE PLANS. FIELD VERIFY LAGGING DIMENSIONS BEFORE CASTING LAGGING SHOULD EXTEND A MINIMUM OF 30 INCHES BELOW FINAL GRADES IN FRONT OF WALL. PROVIDE PRECAST CONCRETE LAGGING FROM A ODOT CERTIFIED PRECAST MANUFACTURER. CONCRETE SHALL BE QC1 PER CODT CMS 499. PROVIDE EPOXY COATED REINFORCING STEEL PER 709.00. PERMANENTLY MARK EACH PANEL TO INDICATE WHICH FACE WILL BE PLACED AGAINST THE SOIL. PLACE THE PANEL BETWEEN THE FLANGES OF THE SOLDIER BEAMS AND BEARING AGAINST THE FLANGES OF THE DOWNHILL SIDE OF THE WALL. PAYMENT SHALL BE PER SQUARE FOOT AND INCLUDES MATERIAL SUPPLY AND INSTALLATION.

ITEM 610E60000- RETAINING WALL, MISC.: CAST-IN-PLACE LAGGING (BETWEEN PIERS P79 & P80 AND P76 & P77)

THIS WORK CONSISTS OF FURNISHING AND PLACING A CAST-IN-PLACE CONCRETE PANEL BETWEEN THE SOLDIER PILES TO FUNCTION AS LAGGING FOR THE RETAINING WALL AROUND THE EXISTING 54" DIAMETER STORM SEWER BETWEEN PIERS 79 AND 80, AND THE PROPOSED 18" STORM SEWER BETWEEN PIERS 76 AND 77, AS SHOWN ON THE PLANS AND DETAILS. PROVIDE QC1 CONCRETE WITH A 28-DAY DESIGN STRENGTH OF AT LEAST 4,000 PSI AND AIR ENTRAINMENT OF BETWEEN FOUR (4%) TO SEVEN PERCENT (7%). PROVIDE EPOXY COATED REINFORCING STEEL. A FLEXIBLE RUBBER GASKET SHALL BE INCLUDED BETWEEN THE SEWER AND CAST-IN-PLACE CONCRETE AS SHOWN IN THE DETAIL. PAYMENT SHALL BE LUMP SUM AND INCLUDES MATERIAL SUPPLY AND INSTALLATION.

ITEM 866E00101 - GROUND ANCHOR, AS PER PLAN

THIS WORK CONSISTS OF DESIGNING AND FURNISHING TIEBACK GROUND ANCHORS WITH MINIMUM DESIGN LOADS AS SHOWN ON THE PLANS. WORK INCLUDES DESIGN OF TIEBACK ANCHORAGE AT BEAM (TYPICAL DETAIL IS SHOWN IN PLANS). TIEBACKS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER AND CONSTRUCTED ACCORDING TO ODOT SUPPLEMENTAL SPECIFICATION 866. PAYMENT IS PER TIEBACK AND INCLUDES DESIGN, MATERIALS, INSTALLATION, AND TESTING.

ITEM 907E89000- FENCE - MISC.: WOOD FENCE

CONTRACTOR TO SUPPLY AND INSTALL RAILING AS DEPICTED IN THE DRAWINGS AND ODOT STANDARD DRAWING RM-5.2. PAYMENT INCLUDES MATERIAL SUPPLY AND INSTALLATION.

ITEM 503.08- 203E20001 - EMBANKMENT, AS PER PLAN

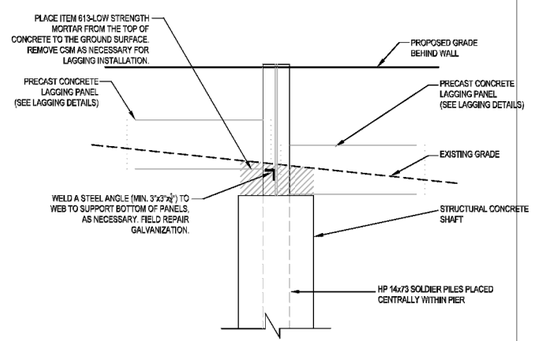
ENGINEERED BACKFILL USED BEHIND THE RETAINING WALL SHALL CONSIST OF FREE DRAINING GRANULAR FILL CONSISTING OF CRUSHED CARBONATE STONE, MEETING THE REQUIREMENTS OF ODOT 304 STONE. PAYMENT INCLUDES MATERIAL SUPPLY AND INSTALLATION.

ITEM 204E60100 - GEOTEXTILE FABRIC, 712.09, TYPE A

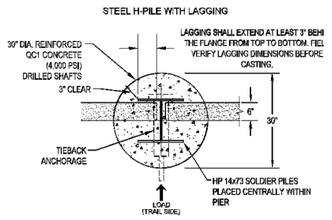
PLACE A NON-WOVEN GEOTEXTILE FABRIC PER ODOT 712.09 TYPE A ON THE BACK FACE OF THE LAGGING PRIOR TO PLACING THE BACKFILL. ENGINEERED BACKFILL USED BEHIND THE RETAINING WALL SHOULD BE PLACED IN MAXIMUM 8 INCH LIFTS AT MOISTURE CONTENTS OF WITHIN 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 98 PERCENT OF MAXIMUM DRY DENSITY. HAND OPERATED EQUIPMENT SHALL BE USED WITHIN 5 FEET OF THE WALL. PLACEMENT AND COMPACTION OF THE BACKFILL SHOULD BE WITNESSED BY OWNER'S TESTING AND INSPECTION AGENCY. PAYMENT INCLUDES MATERIAL SUPPLY AND INSTALLATION.

REINFORCEMENT

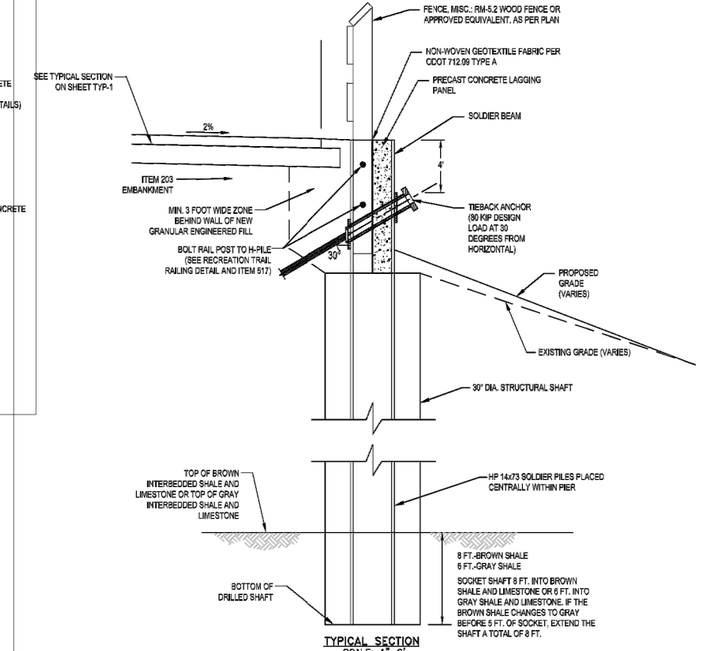
ALL REINFORCING STEEL SHALL BE PER CMS 709.00. PAYMENT INCLUDES MATERIAL SUPPLY AND INSTALLATION.



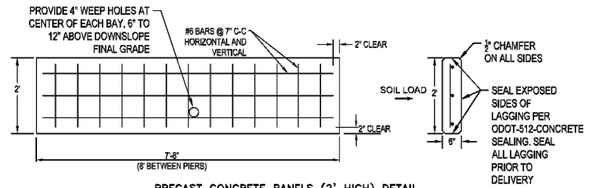
DETAIL AT VERTICAL STEP IN BOTTOM OF LAGGING
SCALE: 1"=2'



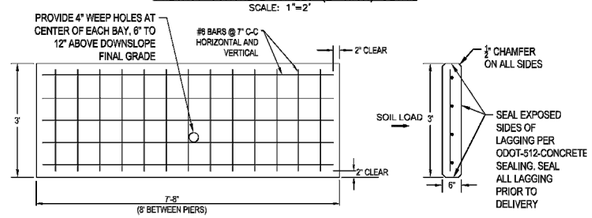
STRUCTURAL SHAFT DETAIL
SCALE: 1"=2'



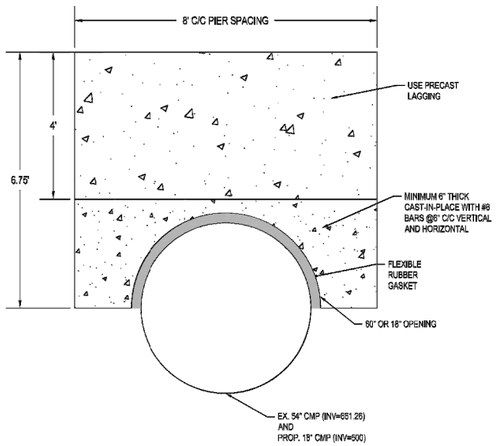
TYPICAL SECTION
SCALE: 1"=2'



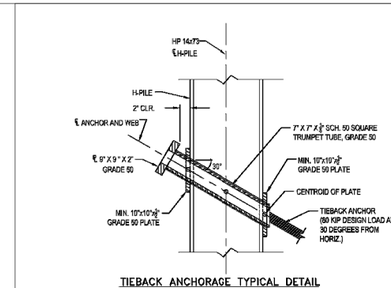
PRECAST CONCRETE PANELS (2' HIGH) DETAIL
SCALE: 1"=2'



PRECAST CONCRETE PANELS (3' HIGH) DETAIL
SCALE: 1"=2'



CAST-IN-PLACE LAGGING DETAIL BETWEEN P79-P80
SCALE: 1"=2'



TIEBACK ANCHORAGE TYPICAL DETAIL
SCALE: NOT TO SCALE

STATE OF OHIO
DAVID W. WESTENDORF
74346
REGISTERED PROFESSIONAL ENGINEER

REV.	DATE	BY	DESCRIPTION
1	2-12-19	DWW	ADDED 18" CULVERT & REMOVED FENCE DETAIL
2	4-7-20	DWW	ADJUSTED TOP OF WALL ELEVATIONS TO MATCH TRAIL

EXHIBIT 3	
DESIGNED BY:	DWW
DRAWN BY:	KM
APPVD. BY:	DWW
SCALE:	AS SHOWN
DATE:	04/07/2020
JOB NO.	N1165434
ACAD NO.	RW.DWG
SHEET NO.:	3

WALL DESIGNED BY
Terracon
Consulting Engineers and Scientists
611 LUNKEN PARK DRIVE CINCINNATI, OHIO 45226
PH. (513) 321-5816 FAX. (513) 321-4540

N
0 10 20 40
HORIZONTAL SCALE IN FEET
CALCULATED LG CHECKED TGB

RETAINING WALL NOTES & DETAILS
BUT/WAR GMR TRAIL EXTENSION
67
67