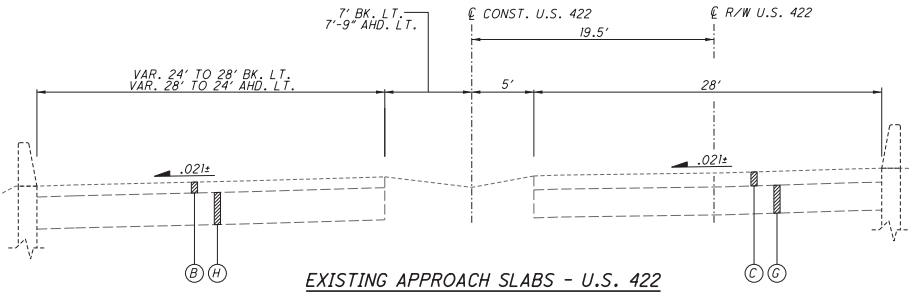


EXISTING ROADWAY SECTION - U.S. 422
STA. 853+85.00 TO STA. 854+71.55



EXISTING APPROACH SLABS - U.S. 422
STA. 854+71.55 TO STA. 854+96.55
STA. 855+42.65 TO STA. 855+67.65

EXISTING LEGEND

- (A) EXISTING ASPHALT CONCRETE (ID = 4"±)
- (B) EXISTING ASPHALT CONCRETE (ID = 5 1/4"±)
- (C) EXISTING ASPHALT CONCRETE (ID = 6 3/4"±)
- (D) EXISTING CONCRETE BASE (ID = 10"±)
- (E) EXISTING SLAG BASE (ID = 12"±)
- (F) EXISTING GRAVEL LEVELING COURSE (ID = 2"±)
- (G) EXISTING CONCRETE APPROACH SLAB (ID = 13 1/2"±)
- (H) EXISTING CONCRETE APPROACH SLAB (ID = 15 1/2"±)

NOTE:
ALL EXISTING DIMENSIONS ARE ±

FOR PROPOSED LEGEND SEE SHEET 4

DRAINAGE (CON'T)

REVIEW OF DRAINAGE FACILITIES

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

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

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

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

UNRECORDED STORM WATER DRAINAGE

FURNISH A CONTINUANCE FOR ALL UNRECORDED STORM WATER DRAINAGE, SUCH AS ROOF DRAINS, FOOTER DRAINS, OR YARD DRAINS, DISTURBED BY THE WORK. FURNISH EITHER AN OPEN CONTINUANCE OR AN UNOBSTRUCTED CONTINUANCE BY CONNECTING A CONDUIT THROUGH THE CURB OR INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEEDED CONDUIT TO REPLACE OR EXTEND AN EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES A RIGHT OF WAY PERMIT.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.33, 808.41 NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, 707.52 SDR35.

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

611, 12" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION	50 FT.
611, 12" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION	50 FT.
611, 12" CONDUIT, TYPE E, FOR DRAINAGE CONNECTION	20 FT.
611, 12" CONDUIT, TYPE F, FOR DRAINAGE CONNECTION	20 FT.

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	4 SQ. YD.
611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	25 FT.
611, PRECAST REINFORCED CONCRETE OUTLET	2 EACH
605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	50 FT.

ITEM 202 - CATCH BASIN REMOVED, AS PER PLAN
ITEM 202 - PIPE REMOVED, 24" AND UNDER, AS PER PLAN
ITEM 611 - CATCH BASIN 2-28, AS PER PLAN
ITEM 611 - 12" CONDUIT, TYPE B, AS PER PLAN
ITEM 611 - 12" CONDUIT, TYPE C, AS PER PLAN

TEMPORARY DRAINAGE ITEMS LABELED ON THE MAINTENANCE OF TRAFFIC PLAN ARE ITEMIZED IN THE MOT PLANS. PAYMENT FOR INSTALLATION AND REMOVAL OF THE TEMPORARY DRAINAGE ITEMS ARE ITEMIZED AND CARRIED TO THE GENERAL SUMMARY. ONCE THESE ITEMS ARE REMOVED, THEY SHALL BE THE PROPERTY OF THE CONTRACTOR.

ITEM 202 - REMOVAL MISC.: REMOVE CATCH BASIN STEEL PLATE

ITEM 611 - DRAINAGE STRUCTURE MISC.: COVER CATCH BASIN WITH STEEL PLATE

IN ORDER TO CONSTRUCT THE TEMPORARY PAVEMENT IN THE MEDIAN OF U.S. 422 THE CONTRACTOR IS REQUIRED TO COVER EACH OF THE EXISTING CATCH BASINS AT STA. 853+20.46, 1.16 FT. LT. AND STA. 855+68.09, 0.38 FT. LT. WITH A STEEL PLATE. THE PLATE SHALL BE ADEQUATE TO SPAN THE CATCH BASIN AND TO SUPPORT THE PORTABLE BARRIER AND PAVEMENT LOADS. AT THE CONCLUSION OF THE APPLICABLE MAINTENANCE OF TRAFFIC PHASE THE STEEL PLATES SHALL BE REMOVED AND SHALL BE THE PROPERTY OF THE CONTRACTOR.

EROSION CONTROL

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SOIL ANALYSIS TEST	2 EACH
659, TOPSOIL	177 CU. YD.
659, SEEDING AND MULCHING	1,599 SQ. YD.
659, REPAIR SEEDING AND MULCHING	80 SQ. YD.
659, INTER-SEEDING	80 SQ. YD.
659, COMMERCIAL FERTILIZER	0.22 TON
659, LIME	0.33 ACRES
659, WATER	13 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ENVIRONMENTAL

TEMPORARY CONSTRUCTION FILL

ANY TEMPORARY CONSTRUCTION ACCESS FILL WITHIN "WATERS OF THE US" (E.G., STREAMS, WETLANDS) SUBJECT TO US ARMY CORPS OF ENGINEERS (USACE) REGULATORY JURISDICTION WILL REQUIRE AUTHORIZATION BY THE USACE PRIOR TO THE PLACEMENT OF TEMPORARY FILL VIA THE WATERWAY PERMITTING PROCESS (404/401). ALL TEMPORARY CONSTRUCTION ACCESS FILLS SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WATERWAY PERMITS (404/401) AND SHOULD NOT EXCEED THE QUANTITIES AND/OR SURFACE AREA OF TEMPORARY FILL THAT HAS BEEN PERMITTED. ADDITIONALLY, SOME TEMPORARY CONSTRUCTION ACCESS FILLS MAY ONLY BE ALLOWED IN SPECIFIC LOCATIONS, PER THE WATERWAY PERMITS (404/401) AND/OR OTHER ENVIRONMENTAL COMMITMENTS, AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH ANY SUCH LOCATION RESTRICTIONS TO AVOID ENVIRONMENTALLY SENSITIVE AREAS. THE WATERWAY PERMITS ARE ATTACHED TO THE CONSTRUCTION PLANS AS SPECIAL PROVISIONS AND ARE AVAILABLE IN THE PROJECT CONSTRUCTION OFFICE.

ITEM SPECIAL - ASBESTOS ABATEMENT

AN ASBESTOS SURVEY OF THE US-422 BRIDGE OVER THE GRAND RIVER WAS COMPLETED ON JUNE 14, 2013 BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. NO ASBESTOS CONTAINING MATERIAL (ACM) WAS IDENTIFIED ON THE BRIDGE.

THE REMOVAL AND DISPOSAL OF ANY ASBESTOS CONTAINING MATERIAL DURING THE DECK REPLACEMENT OF THE BRIDGE MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARDS FOR ASBESTOS.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORMS WITH SECTIONS I-IV, VI AND VII COMPLETED IS INCLUDED WITH THE BID PACKAGE. THE CONTRACTOR WILL COMPLETE SECTIONS V, VIII-XVII OF THE FORM AND SUBMIT THE COMPLETED FORM TO THE LOCAL AIR AUTHORITY AT LEAST TEN (10) DAYS PRIOR TO RECONSTRUCTION OF THE BRIDGES. THE CONTRACTOR WILL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. THE LOCAL AIR AUTHORITY IS:

ATTN: BERT MECHEMBIER
LAKE COUNTY
AIR POLLUTION CONTROL
33 MILL STREET
PAINESVILLE, OHIO 44077

THE CONTRACTOR WILL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF NESHAP THAT WILL BE ON-SITE DURING REMOVAL OF THE ASBESTOS CONTAINING MATERIALS. IN ADDITION TO THE ASBESTOS CONTAINING MATERIAL IDENTIFIED IN THE ASBESTOS SURVEY REPORT, THIS INDIVIDUAL WILL ALSO, MONITOR ANY ADDITIONAL NON-VISIBLE ASBESTOS ENCOUNTERED WITHIN THE PROJECT WORK LIMITS.

THE CONTRACTOR WILL FURNISH ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE, SUBMIT, AND COMPLY WITH THE OEPA NOTIFICATION FORM AND TO REMOVE, TRANSPORT, AND DISPOSE OF THE MATERIALS CONTAINING ASBESTOS FROM WITHIN THE PROJECT WORK LIMITS. PAYMENT OF THIS WORK WILL BE INCLUDED IN THE BID LUMP SUM PRICE ITEM SPECIAL - ASBESTOS ABATEMENT.

ITEM SPECIAL - ASBESTOS ABATEMENT LUMP SUM

ENDANGERED BAT HABITAT REMOVAL

THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. 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 OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

ITEM 614 - MAINTAINING TRAFFIC

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES ON THE PROJECT IN ACCORDANCE WITH ITEM 614 MAINTAINING TRAFFIC AND AS DESCRIBED BELOW.

1. ALL SIGNS, BARRICADES, SIGN SUPPORTS, DRUMS, FLAGGERS AND INCIDENTALS FOR TRAFFIC CONTROL SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR IN CONFORMANCE WITH THE MOST RECENT REVISION, CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (OMUTCD). ALL SIGNS USED FOR THE MAINTENANCE OF TRAFFIC SHALL BE NEW OR LIKE NEW CONDITION SUBJECT TO THE APPROVAL OF THE ENGINEER. DEVICES USED TO MAINTAIN TRAFFIC SHALL BE REMOVED IMMEDIATELY AFTER THE TERMINATION OF SAID WORK. PAYMENT SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

WITH THE EXCEPTION OF SEPARATE PAY ITEMS, PAYMENTS FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR THE APPLICABLE MAINTAINING TRAFFIC ITEMS.

ITEM 614. MAINTAINING TRAFFIC (AT ALL TIMES)

A MINIMUM OF 1 LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, AND ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC.

NOTIFICATION OF CONSTRUCTION INITIATION

AT LEAST FOURTEEN (14) DAYS PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL ADVISE THE DISTRICT OFFICE OF COMMUNICATIONS VIA EMAIL AT dl2.pio@dot.state.oh.us AND THE WORK ZONE TRAFFIC MANAGER AT dl2.mot@dot.state.oh.us OF THE ANTICIPATED START DATE OF ANY CONSTRUCTION ACTIVITIES, INCLUDING BUT NOT LIMITED TO THE PLACING OF WORK ZONE SIGNS. THE NOTIFICATION SHALL ALSO INCLUDE THE PROJECT NUMBER, PID, NAME AND PHONE NUMBER OF THE CONTRACTOR, A POINT OF CONTACT AND THE ANTICIPATED IMPACT ON TRAFFIC. THE CONTRACTOR WILL IMMEDIATELY INFORM THE DISTRICT OFFICE WORK ZONE TRAFFIC MANAGER OF ANY AND ALL DELAYS AND/OR CHANGES REGARDING THE CONSTRUCTION INITIATION DATE.

LANES OPEN DURING HOLIDAYS AND SPECIAL EVENTS

NO WORK SHALL BE PERFORMED AND THE SAME NUMBER OF LANES AS WERE AVAILABLE AT THE START OF THE PROJECT SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

HOLIDAYS	SPECIAL EVENTS
CHRISTMAS	N/A
FOURTH OF JULY	
NEW YEARS EVE	
LABOR DAY	
MEMORIAL DAY	
THANKSGIVING	

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY
THURSDAY (THANKSGIVING ONLY)	6:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$75/LANE FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

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. 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 SHOULD LIST THE SPECIFIC LOCATIONS, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, DETOUR ROUTES IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION TIME FRAME TABLE		
ITEM	DURATION OF CLOSURE	NOTIFICATION DUE TO DISTRICT 12 COMMUNICATIONS OFFICE
RAMP AND ROAD CLOSURES	>= 2 WEEKS	14 BUSINESS DAYS PRIOR TO CLOSURE
	>= 12 HOURS AND < 2 WEEKS	7 BUSINESS DAYS PRIOR TO CLOSURE
	< 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES/ RESTRICTIONS	>= 2 WEEKS	7 BUSINESS DAYS PRIOR TO CLOSURE
	< 2 WEEKS	2 BUSINESS DAYS PRIOR TO CLOSURE

LANE CLOSURE/REDUCTION REQUIRED

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS ON US-422 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.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES AND CARRIED TO THE GENERAL SUMMARY:

ITEM 616, WATER L.M. GAL

ITEM 614 - WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARD'S WEB PAGE FOR ROADWAY STANDARDS APPROVED PRODUCTS.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 622 - PORTABLE BARRIER, 50", AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 50-INCH PORTABLE BARRIER AT THE LOCATIONS SHOWN ON THE PLANS. FOR DETAILS, SEE SCD RM-4.1.

PORTABLE STEEL BARRIER IS AN APPROVED ALTERNATIVE TO PORTABLE CONCRETE BARRIER, FOR INFORMATION ON APPROVED VENDORS, SEE THE APPROVED PRODUCTS LIST MAINTAINED BY THE OFFICE OF ROADWAY ENGINEERING.

PORTABLE BARRIER, 32" HIGH WITH AN 18-INCH MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE GLARE SCREEN SHALL BE CONSTRUCTED USING ONE OF THE SCREENS PROVIDED ON THE APPROVED LIST, AVAILABLE AT THE OFFICE OF ROADWAY ENGINEERING WEBSITE.

PADDLE OR INTERMITTENT TYPE GLARE SCREENS SHALL BE DESIGNED USING A 20 DEGREE CUT-OFF ANGLE BASED ON TANGENT ALIGNMENT. THAT SPACING SHALL BE USED THROUGHOUT THE BARRIER LENGTH WITHOUT REGARD TO BARRIER CURVATURE.

THE GLARE SCREEN SYSTEM SHALL BE SECURELY FASTENED TO THE 32-INCH PORTABLE BARRIER USING THE HARDWARE AND PROCEDURES SPECIFIED BY THE MANUFACTURER.

FOR DIRECTIONS ON HOW TO INSTALL THE GLARE SCREEN AND THE BARRIER, SEE THE MANUFACTURER'S INSTRUCTIONS.

IN ADDITION, THE PORTABLE BARRIER DRAINAGE SLOTS SHALL BE CENTERED ABOVE THE TEMPORARY CATCH BASINS SHOWN IN THE PLANS.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 622, PORTABLE BARRIER, 50", AS PER PLAN.

ITEM 614 - MAINTAINING TRAFFIC, MISC.: REMOVAL OF RUMBLE STRIPS

THE CONTRACTOR SHALL MILL 2 INCHES BY 2 FEET WIDE OF THE EXISTING ASPHALT SHOULDER IN ORDER TO REMOVE THE EXISTING RUMBLE STRIPS ALONG U.S. 422 IN THE AREA WHERE TRAFFIC IS SHIFTED. THE CONTRACTOR SHALL THEN COAT ALL MILLED SURFACES HORIZONTAL AND VERTICAL WITH APPROVED AC LIQUID. NEXT THE CONTRACTOR SHALL PLACE 2 INCHES OF ITEM 448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-2E.

ALL COST ASSOCIATED WITH THE REMOVAL OF THE EXISTING PAVEMENT AND PLACEMENT OF THE SURFACE COURSE SHALL BE INCLUDED IN THE UNIT PRICE BID PER FOOT OF ITEM 614 - MAINTAINING TRAFFIC, MISC.: REMOVAL OF RUMBLE STRIPS.

AN ESTIMATED QUANTITY OF 492 FEET HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ms consultants, inc.

SHEET NO.	STATION		SIDE	202			611				614				615				620		622		622				
	FROM	TO		PIPE REMOVED, 24" AND UNDER, AS PER PLAN	CATCH BASIN REMOVED, AS PER PLAN	REMOVAL - MISC.: REMOVE CATCH BASIN STEEL PLATE	12" CONDUIT, TYPE C, AS PER PLAN	12" CONDUIT, TYPE B, AS PER PLAN	CATCH BASIN, NO. 2-2B, AS PER PLAN	DRAINAGE STRUCTURE, MISC.: COVER CATCH BASIN WITH STEEL PLATE	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	BARRIER REFLECTOR, TYPE 1, 1 WAY	OBJECT MARKER, ONE WAY	OBJECT MARKER, TWO WAY	MAINTAINING TRAFFIC, MISC.: REMOVAL OF RUMBLE STRIPS	WORK ZONE LANE LINE, CLASS 1, 4"	WORK ZONE EDGE LINE, WHITE, CLASS 1, 4"	WORK ZONE EDGE LINE, YELLOW, CLASS 1, 4"	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN	DELINEATOR, POST GROUND MOUNTED, WHITE	DELINEATOR, POST GROUND MOUNTED, YELLOW	PORTABLE BARRIER, 32"	PORTABLE BARRIER, 50", AS PER PLAN				
				EACH	EACH	EACH		FT	FT	EACH	EACH		EACH	FT	FT/MI	FT/MI	FT/MI		SO YD		EACH	EACH		FT	FT		
TEMPORARY DRAINAGE INSTALLATION																											
14	850+05	860+70	LT/RT																1420								
14	851+00	852+50	LT				150		1																		
15	852+50	853+20.41	LT					70	1																		
15	853+20.41	853+25	LT					5		1																	
15	853+25	854+00	LT/CL					75	2																		
15	855+68.09	855+80	LT/CL					12		1																	
15	855+80	856+80	CL					100	1																		
15	856+80		CL/LT					4	1																		
15	856+80	858+32	CL/RT				111		1																		
PHASE 1 US-422																											
14	843+05	860+25	RT														1720										
16	849+65	868+50	LT														1885										
14	850+05	852+50	RT																10								
14	850+05	859+25	RT														920										
14	850+60	852+50	LT																	8							
14	850+65	860+70	LT														1005										
15	852+75	857+55	RT								1	10	10										480				
15	852+95	857+45	LT								1	10	10										450				
15	852+70	858+00	CL								2	22		11										530			
15	858+35	860+70	LT																		10						
15	858+35	859+25	RT																	4							
PHASE 2 US-422																											
19	843+05	859+25	RT															1620									
19	850+06	857+55	RT											492		749											
19	850+65	866+35	LT														1570										
19	850+65	853+75	LT												310												
20	852+55	856+55	RT								1	8	8										400				
20	853+75	857+65	LT								1	8	8										390				
20	861+15	866+35	CL												520												
TEMPORARY DRAINAGE REMOVAL																											
14	851+00	852+50	LT	150	1																						
15	852+50	853+20.41	LT	70	1																						
15	853+20.41	853+25	LT	5		1																					
15	853+25	854+00	LT/CL	80	2																						
15	855+68.09	855+80	LT/CL	12		1																					
15	855+80	856+80	CL	100	1																						
15	856+80		CL/LT	1																							
15	856+80	858+32	CL/RT	111	1																						
TOTAL																											
TOTAL (FT)				528	7	2	261	266	7	2	6	57	35	11	492	830	4354	5115	1420	14	18		1720	530			
TOTAL (MI)																0.16	1.79										
TOTALS CARRIED TO GENERAL SUMMARY				528	7	2	261	266	7	2	6	57	35	11	492	0.16	1.79		1420		32		1720	530			

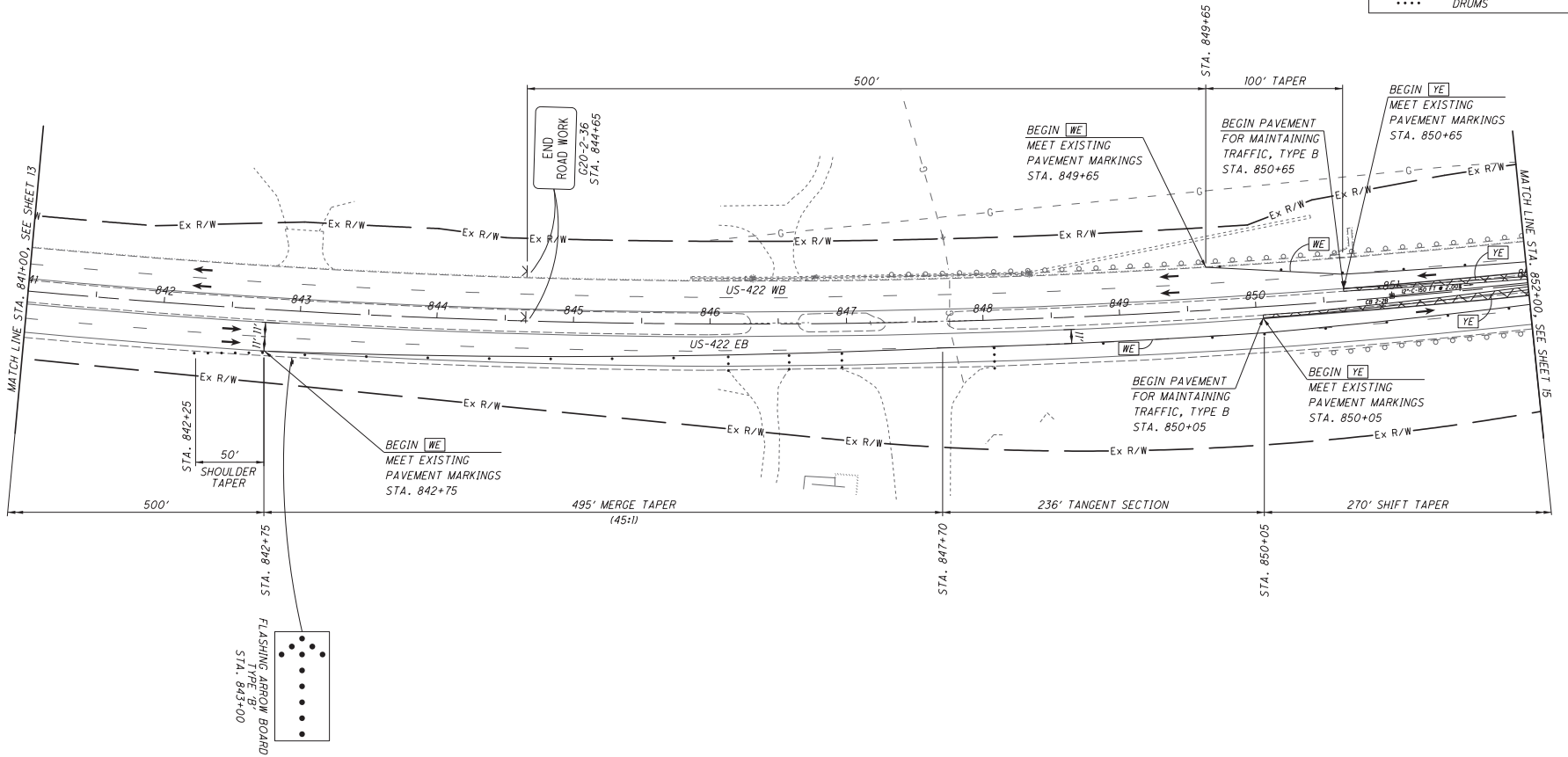
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74

MAINTENANCE OF TRAFFIC SUBSUMMARY

GEA-422-16.38

CALCULATED
TAG
CHECKED
JML



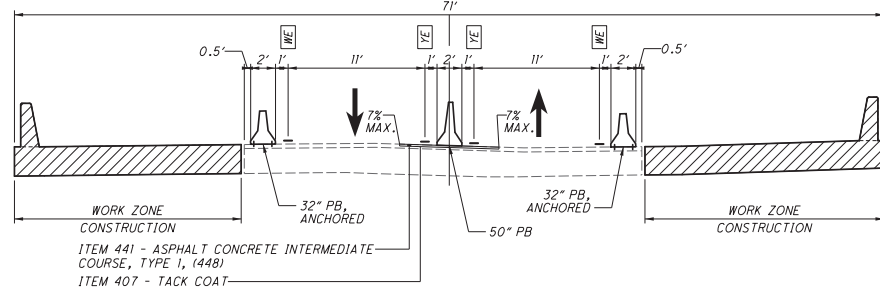
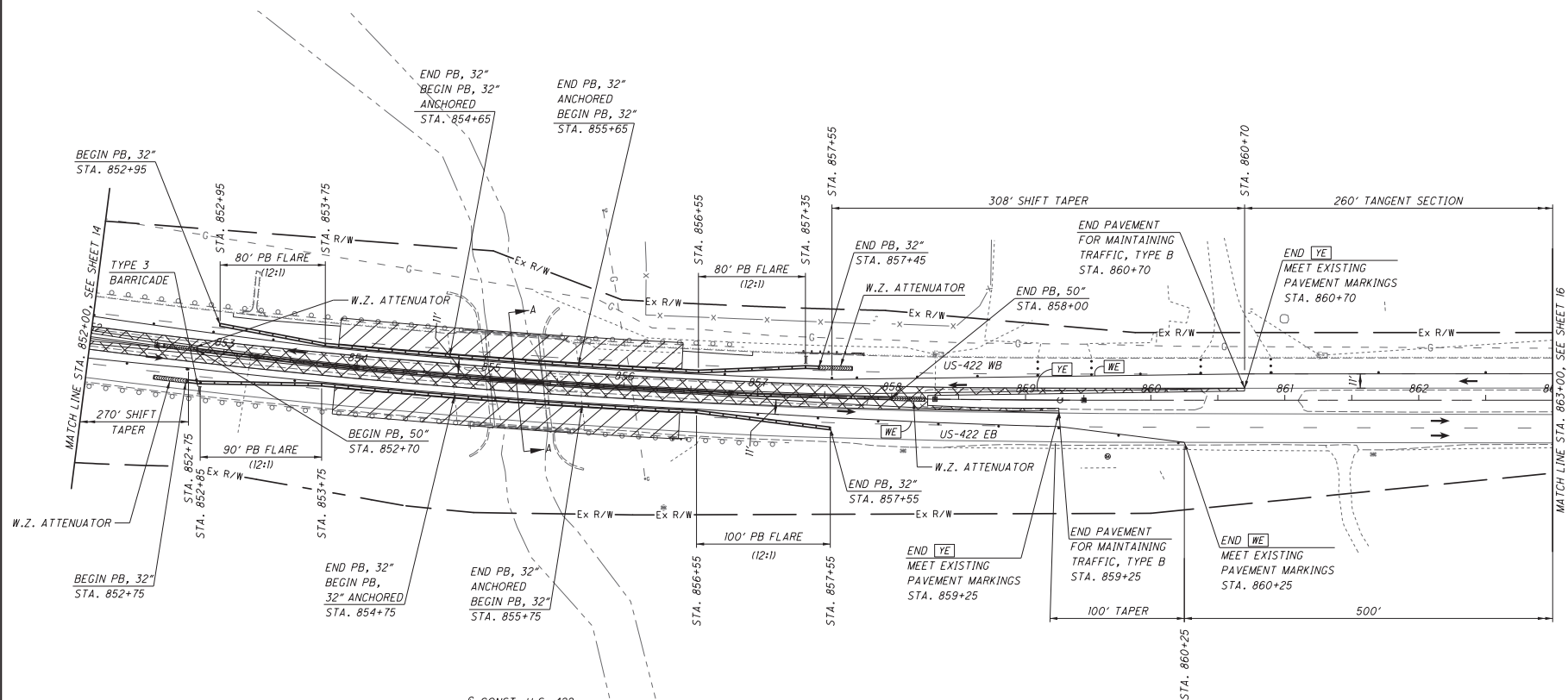
SHEET LEGEND

- WORK AREA
- TEMPORARY PAVEMENT
- EDGE LINE, YELLOW
- LANE LINE, WHITE
- EDGE LINE, WHITE
- TYPE 3 BARRICADE
- TYPE A WARNING LIGHT
- FLASHING ARROW PANEL
- WORKZONE ATTENUATOR
- PORTABLE BARRIER
- DRUMS

MAINTENANCE OF TRAFFIC - PHASE 1
 U.S.-422 - STA. 841+00 TO STA. 852+00

GEA-422-16.38












14
74

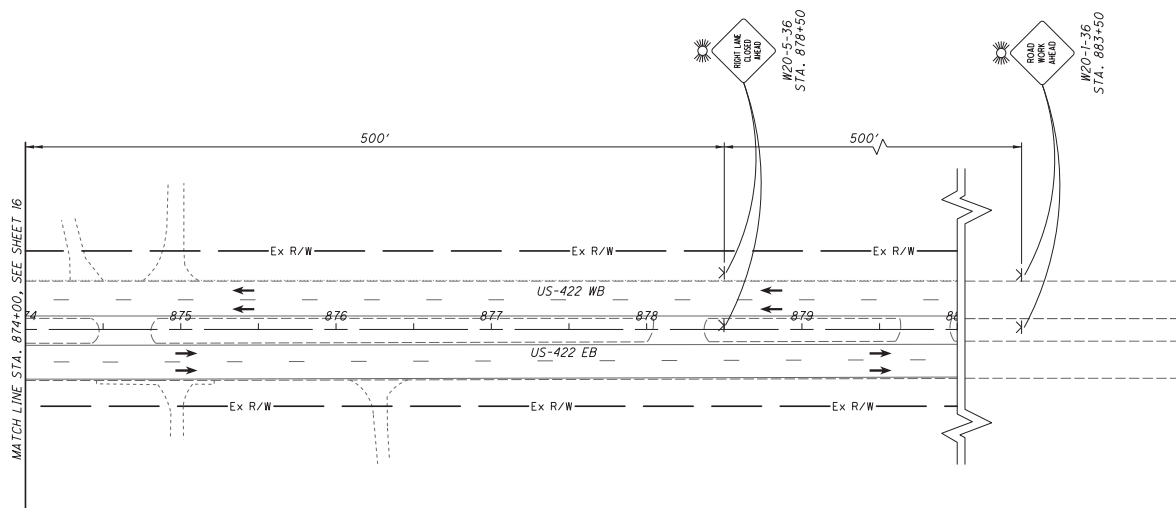


PHASE 1 CONSTRUCTION (SECTION A-A)












NOTE: OVERLAY EXISTING BRIDGE DECK. ALSO SEE STA. 855+00
CROSS SECTIONS ON SHEET 27.

SHEET LEGEND

	WORK AREA
	TEMPORARY PAVEMENT
	EDGE LINE, YELLOW
	LANE LINE, WHITE
	EDGE LINE, WHITE
	TYPE 3 BARRICADE
	TYPE A WARNING LIGHT
	FLASHING ARROW PANEL
	WORKZONE ATTENUATOR
	PORTABLE BARRIER
	DRUMS



SHEET LEGEND

	WORK AREA
	TEMPORARY PAVEMENT
	EDGE LINE, YELLOW
	LANE LINE, WHITE
	EDGE LINE, WHITE
	TYPE 3 BARRICADE
	TYPE A WARNING LIGHT
	FLASHING ARROW PANEL
	WORKZONE ATTENUATOR
	PORTABLE BARRIER
	DRUMS

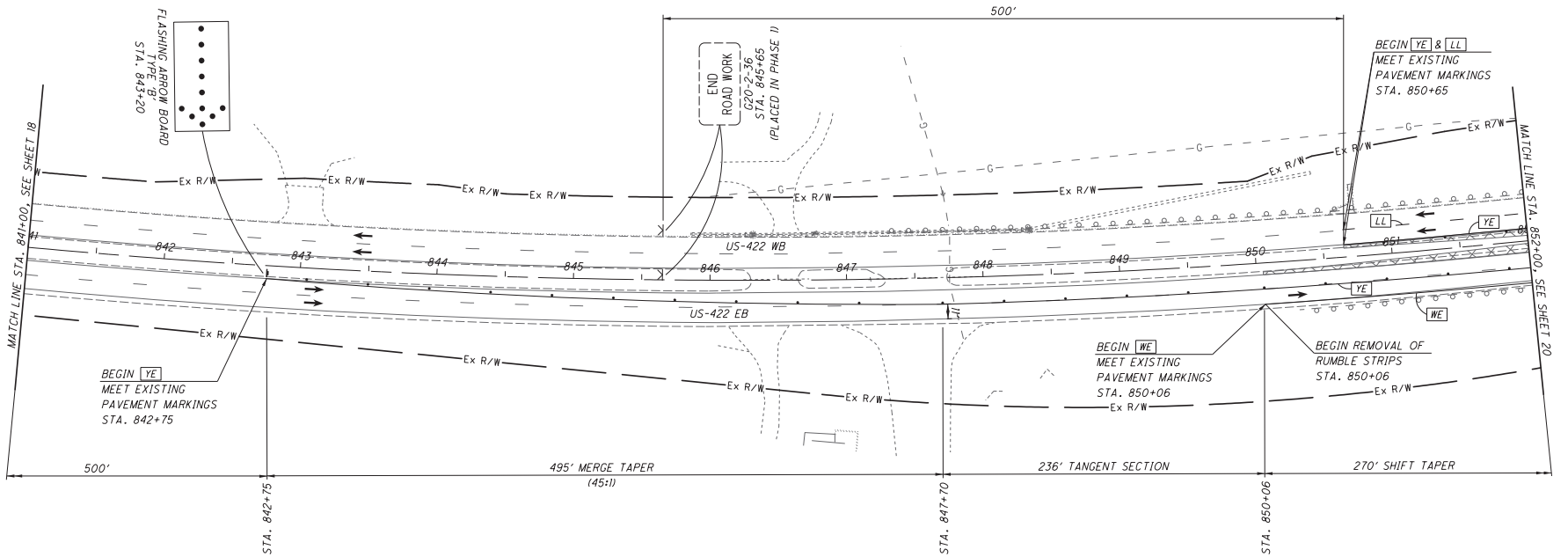


CALCULATED	0
CHECKED	

MAINTENANCE OF TRAFFIC - PHASE 1
U.S.-422 - STA. 874+00 TO STA. 880+00

GEA-422-16.38

$$\frac{17}{74}$$



SHEET LEGEND

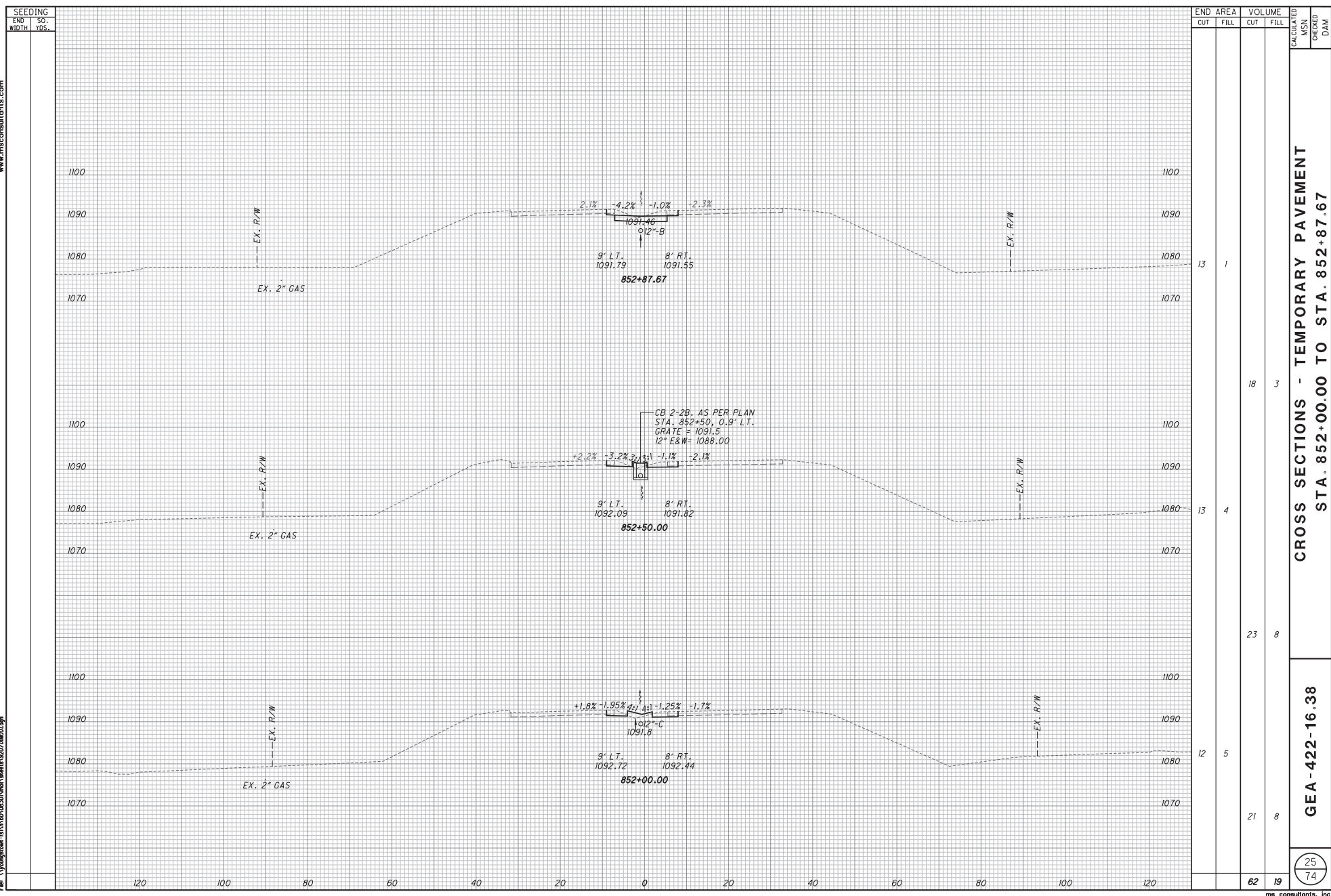
- WORK AREA
- TEMPORARY PAVEMENT
- EDGE LINE, YELLOW
- LANE LINE, WHITE
- EDGE LINE, WHITE
- TYPE 3 BARRICADE
- TYPE A WARNING LIGHT
- FLASHING ARROW PANEL
- WORKZONE ATTENUATOR
- PORTABLE BARRIER
- DRUMS

MAINTENANCE OF TRAFFIC - PHASE 2
 U.S.-422 - STA. 841+00 TO STA. 852+00

GEA-422-16.38

19
74

PLOT.CDL
 ms consultants, inc.
 www.msconsultants.com
 Ohio DOT Worksheet
 PG 2077
 1" = 40'-0.00"
 0.5"
 34" x 22"
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 Printed: 9/26/2017 @ 7:29:41 AM By: spdy
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 Plot Table: \\youngstown\fs1\050507\msc\852-00.00\plot\plot.dwg
 Plot Driver: \\youngstown\fs1\050507\msc\852-00.00\plot\plot.dwg



END CUT	AREA FILL	VOLUME CUT	VOLUME FILL	CALCULATED MSN	CHECKED MSN	DAM
13	1					
		18	3			
13	4					
		23	8			
12	5					
		21	8			
		62	19			

CROSS SECTIONS - TEMPORARY PAVEMENT
 STA. 852+00.00 TO STA. 852+87.67
 GEA-422-16.38



ms consultants, inc.
macconsultants.com

Plot Scale
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0.5"

Plot Scale
1" = 20'
0.5"

Plot Scale
1" = 20'
0.5"

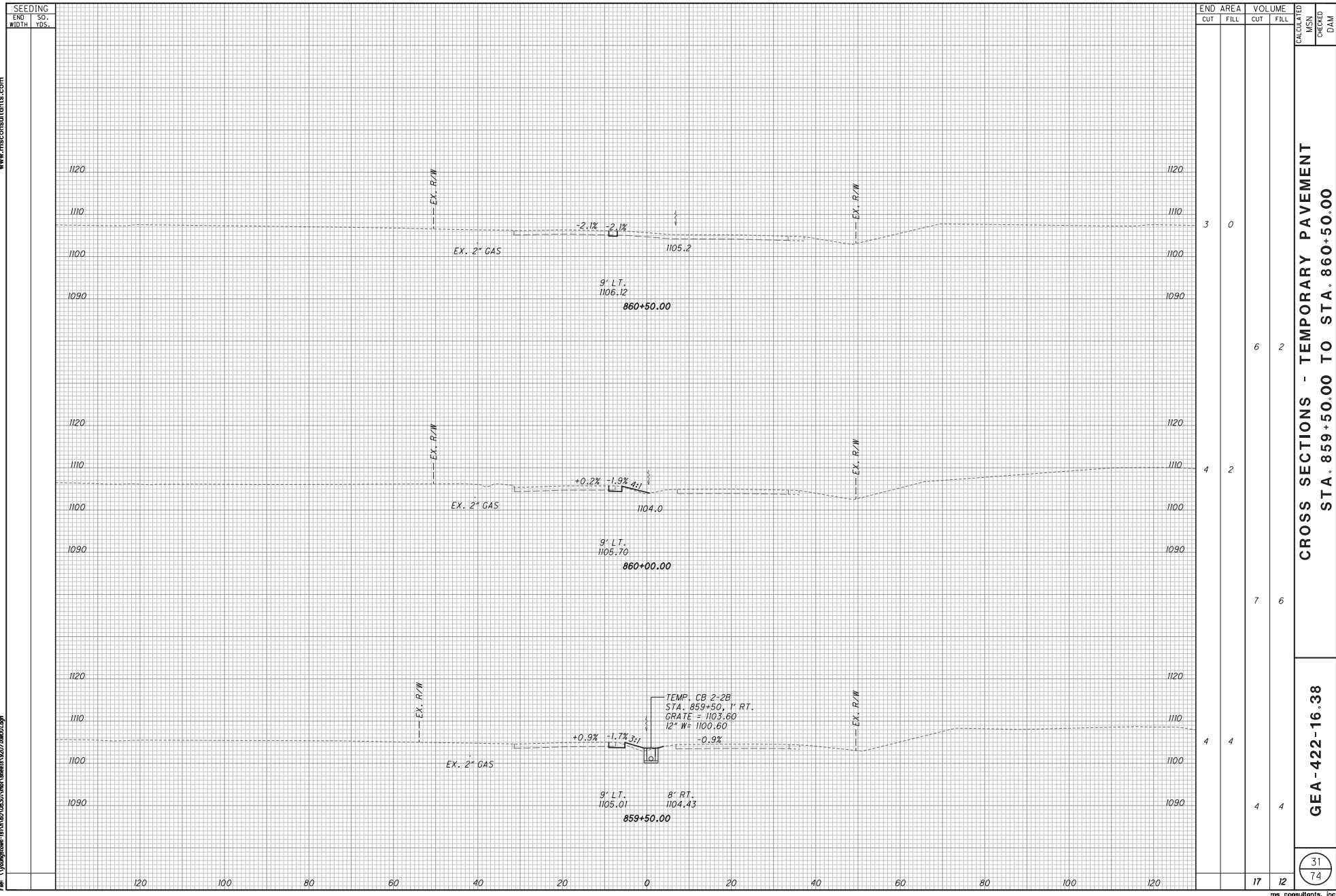
Plot Scale
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0.5"

Plot Scale
1" = 20'
0.5"

Plot Scale
1" = 20'
0.5"

Plot Scale
1" = 20'
0.5"

Plot Scale
1" = 20'
0.5"



CROSS SECTIONS - TEMPORARY PAVEMENT
STA. 859+50.00 TO STA. 860+50.00

GEA-422-16.38

31
74



PLOT.CEL

Ohio DOT Workspace
PID 92071

UCF: chda1v86
PCF: 60-08J01_Youngstown

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Plot Driver: \\mscsconsultants.com\files\Standards\usm\batchplot\V81.ms_plot.tbl

 \oplus

34" x 22"

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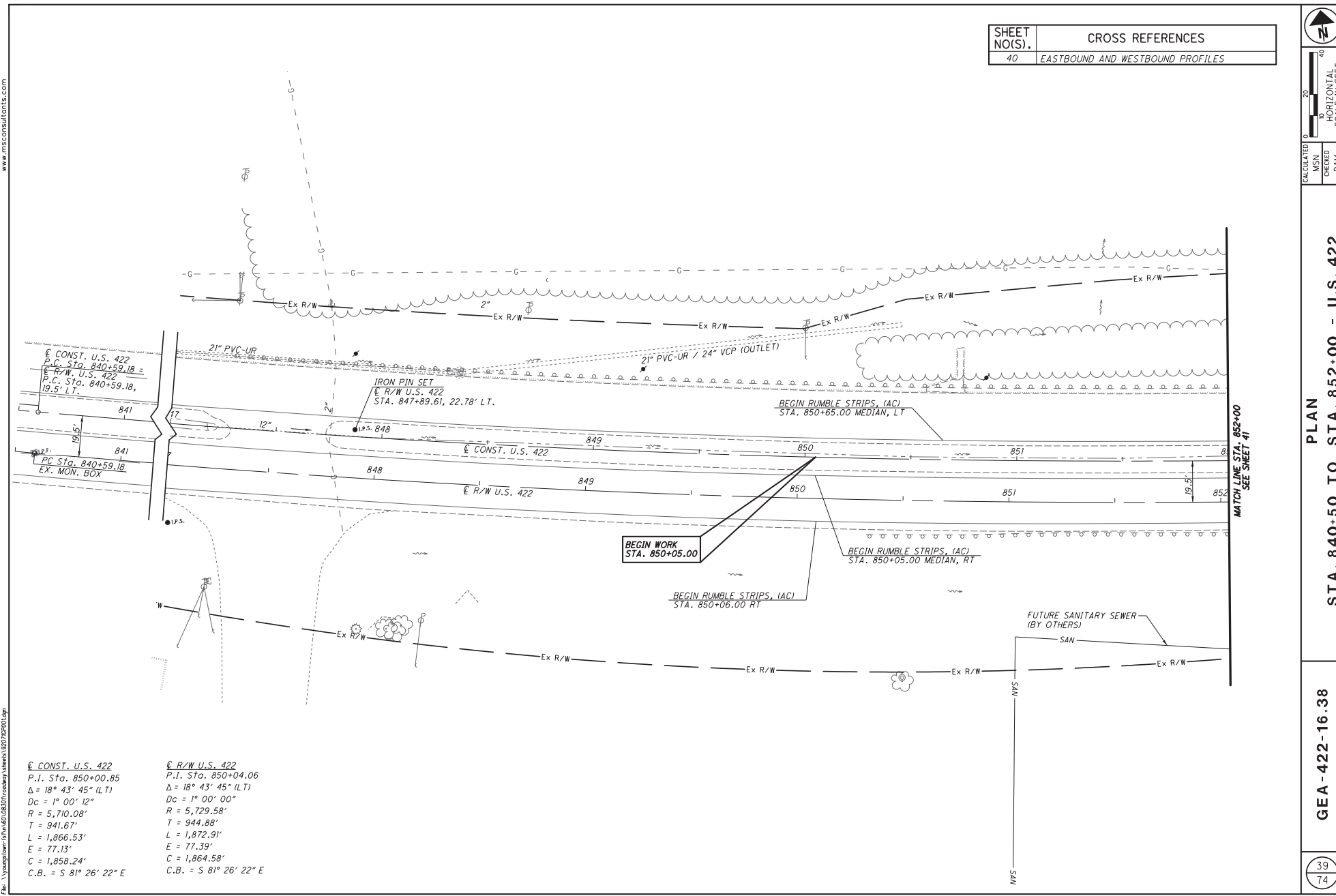
www.msconsultants.com

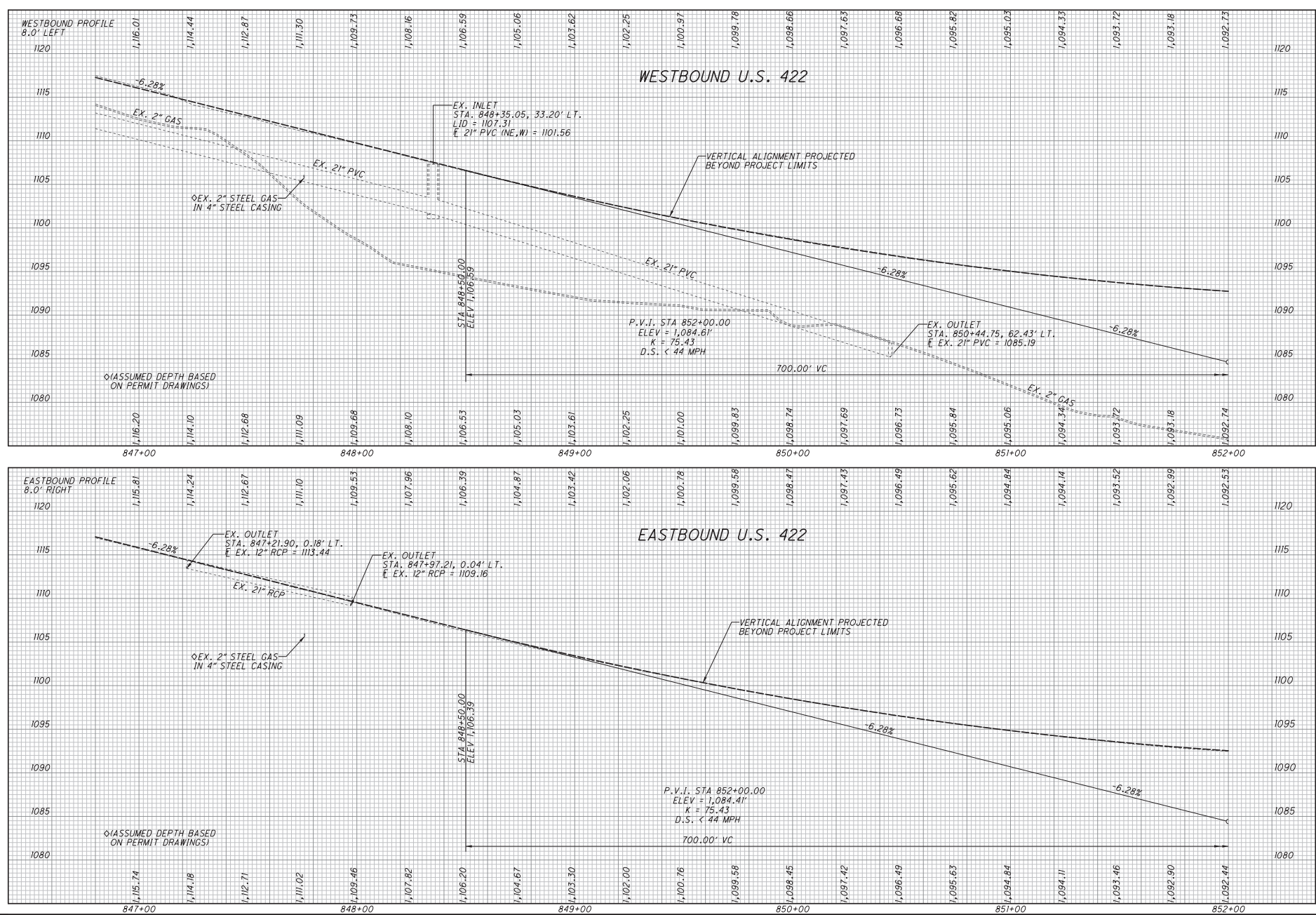
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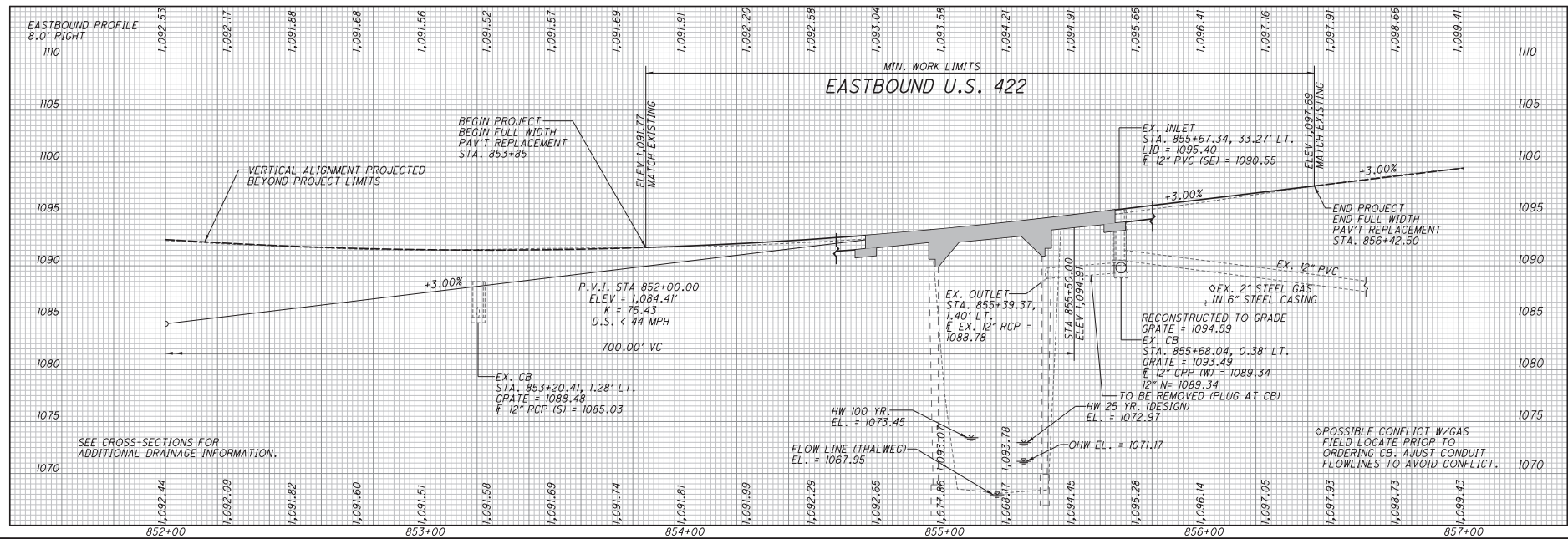
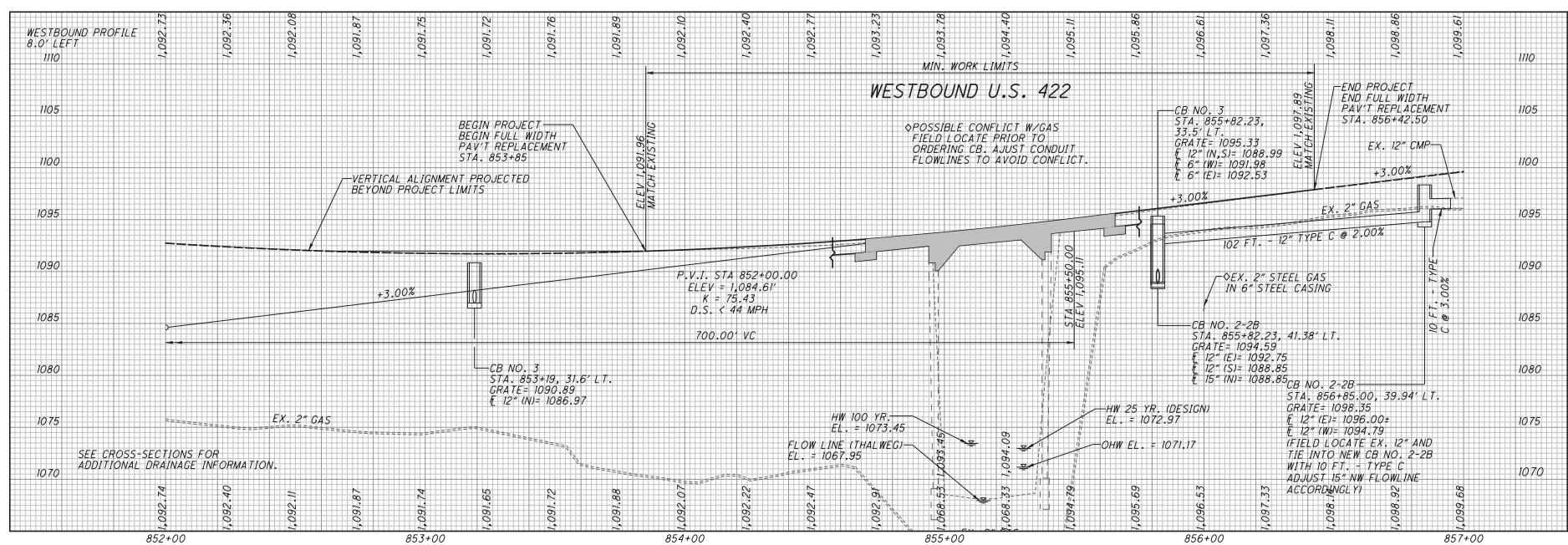
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END	SO.	END	SO.	END	SO.	END	SO.	END	SO.	END	SO.	END	SO.	END	SO.
WIDTH	YOS.	WIDTH	YOS.	WIDTH	YOS.	WIDTH	YOS.	WIDTH	YOS.	WIDTH	YOS.	WIDTH	YOS.	WIDTH	YOS.
<p>CROSS SECTIONS - TEMPORARY PAVEMENT</p> <p>STA. 860+70.00 TO STA. 861+50.00</p>															
<p>GEA-422-16.38</p>															
<p>32</p>															

SEEDING		SO.		END		AREA		VOLUME		CALCULATED		CHECKED		DAM	
END	SO.	END	SO.	END	SO.	END	SO.	END	SO.	END	SO.	END	SO.	END	SO.
WIDTH	YDS.	WIDTH	YDS.	WIDTH	YDS.	WIDTH	YDS.	WIDTH	YDS.	WIDTH	YDS.	WIDTH	YDS.	WIDTH	YDS.
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R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p> </div> <div style="width: 10%; text-align: center;"> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> <p>EX. R/W</p> </div> <div style="width: 45%;"> <p>1120</p> <p>1110</p> <p>1100</p> <p>1090</p></div></div>															

SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE
7	8	9	10	11	12	37	38	50	53	57	CALCS		01/BRO/ BR	EXT	TOTAL				NO.
ROADWAY																			
LS													LS	201	11000	LS		CLEARING AND GRUBBING	
											469		469	202	23001	469	SY	PAVEMENT REMOVED, AS PER PLAN	8
											499		499	202	23010	499	SY	PAVEMENT REMOVED, ASPHALT	
						317							317	202	32000	317	FT	CURB REMOVED	
							245						245	202	35100	245	FT	PIPE REMOVED, 24" AND UNDER	
					528								528	202	35101	528	FT	PIPE REMOVED, 24" AND UNDER, AS PER PLAN	9
						429							429	202	38000	429	FT	GUARDRAIL REMOVED	
						2							2	202	42010	2	EACH	ANCHOR ASSEMBLY REMOVED, TYPE E	
						4							4	202	47000	4	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
													7	202	58101	7	EACH	CATCH BASIN REMOVED, AS PER PLAN	9
													1	202	58200	1	EACH	INLET REMOVED	
													2	202	98100	2	EACH	REMOVAL MISC.REMOVE CATCH BASIN STEEL PLATE	9
								220					220	203	10000	220	CY	EXCAVATION	
								222					222	203	20000	222	CY	EMBANKMENT	
											1,470		1,470	204	10000	1,470	SY	SUBGRADE COMPACTION	
						290							290	204	13000	290	CY	EXCAVATION OF SUBGRADE	
						308							308	204	30010	308	CY	GRANULAR MATERIAL, TYPE B	
1						1							2	204	45000	2	hour	PROOF ROLLING	
						698							698	204	50000	698	SY	GEOTEXTILE FABRIC	
											6		6	209	15001	6	STA	RESHAPING UNDER GUARDRAIL, AS PER PLAN	8
													487.5	606	15050	487.5	FT	GUARDRAIL, TYPE MGS	
													1	606	26150	1	EACH	ANCHOR ASSEMBLY, MGS TYPE E	8
													1	606	26550	1	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
													2	606	35002	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
													2	606	35102	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
EROSION CONTROL																			
		4											8	601	21050	8	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
													50	601	21060	50	SY	TIED CONCRETE BLOCK MAT, TYPE 2	
													4	601	32204	4	CY	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	
		2											2	659	00100	2	EACH	SOIL ANALYSIS TEST	
		177											177	659	00300	177	CY	TOPSOIL	
								1,599					1,599	659	10000	1,599	SY	SEEDING AND MULCHING	9
		80											80	659	14000	80	SY	REPAIR SEEDING AND MULCHING	
		80											80	659	15000	80	SY	INTER-SEEDING	
		0.22											0.22	659	20000	0.22	TON	COMMERCIAL FERTILIZER	
		0.33											0.33	659	31000	0.33	ACRE	LIME	
													13	659	35000	13	MGAL	WATER	
													15,000	832	30000	15,000	EACH	EROSION CONTROL	
ENVIRONMENTAL / REMEDIATION																			
		LS											LS	SPECIAL	69071000	LS		ASBESTOS ABATEMENT	9
DRAINAGE																			
								0.52					0.52	602	20000	0.52	CY	CONCRETE MASONRY	
		50						102					152	605	13410	152	FT	6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	
								721					721	605	14020	721	FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	
		25						74					99	611	00510	99	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
								35					35	611	04400	35	FT	12" CONDUIT, TYPE B	
		50											50	611	04400	50	FT	12" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION	
								266					266	611	04401	266	FT	12" CONDUIT, TYPE B, AS PER PLAN	9, 11
								113					113	611	04600	113	FT	12" CONDUIT, TYPE C	
		50											50	611	04600	50	FT	12" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION	
								261					261	611	04601	261	FT	12" CONDUIT, TYPE C, AS PER PLAN	9, 11





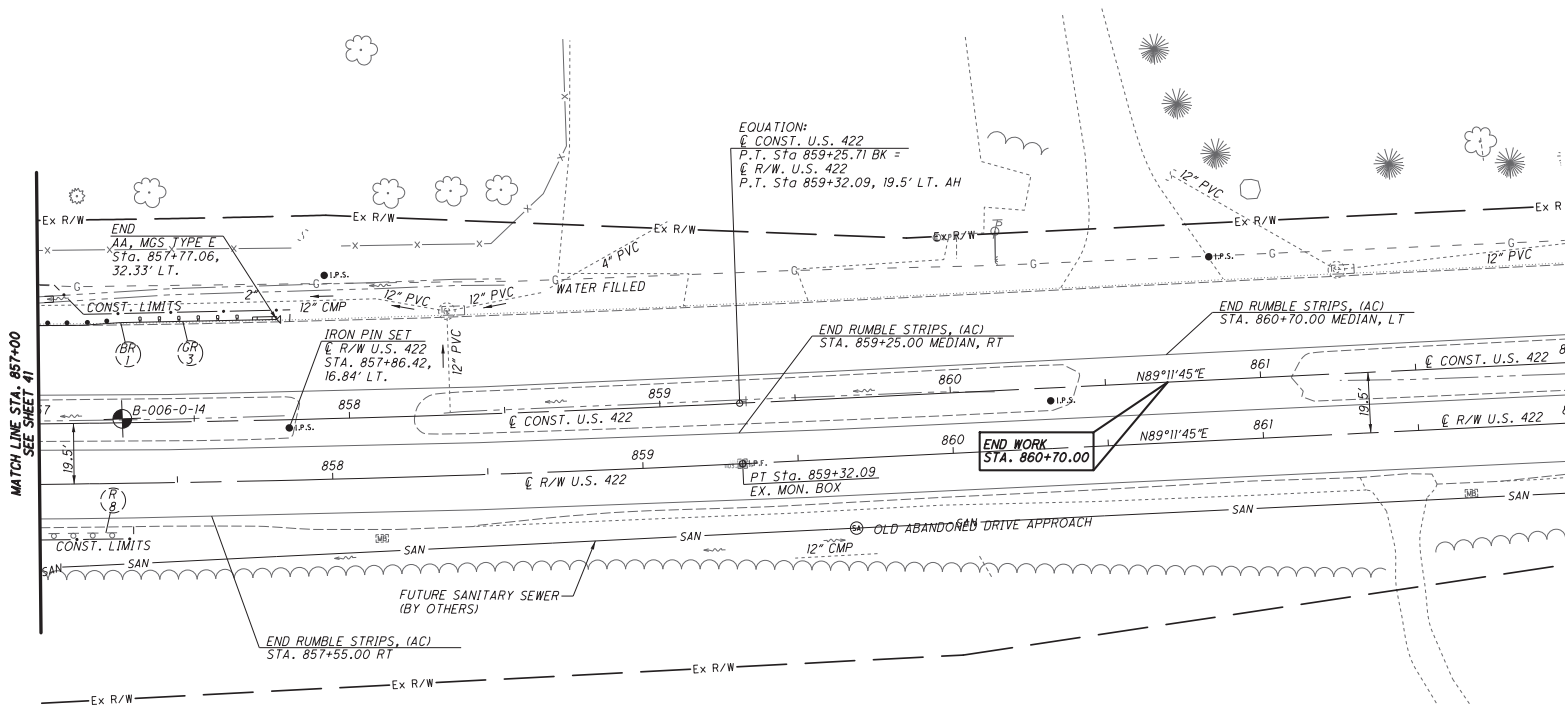


Model: Sheet
Printed: 9/26/2017 @ 7:30:14 AM By: sgeydy
View: SHEET
File: \\youngstown-fs1\\n\\6010830\\roadway\\sheets\\9207GP005.dgn

<u>€ CONST. U.S. 422</u>	<u>€ R/W U.S. 422</u>
P.I. Stg. 850+00.85	P.I. Stg. 850+04.06
Dc = 18° 43' 45" (LT)	Dc = 18° 43' 45" (LT)
Dc = 1° 00' 12"	Dc = 1° 00' 00"
R = 5,710.08'	R = 5,729.58'
T = 941.67'	T = 944.88'
L = 1,866.53'	L = 1,872.91'
E = 77.13'	E = 77.13'
C = 1,858.24'	C = 1,864.58'
C.B. = S 81° 26' 22" E	C.B. = S 81° 26' 22" E

EQUATION:
 $\frac{\text{CONST. U.S. 422}}{\text{P.T. Sta } 859+25.71 \text{ BK} =}$
 $\frac{\text{R/W. U.S. 422}}{\text{P.T. Sta } 859+32.09, 19.5' \text{ LT. AH}}$

SHEET NO(S).	CROSS REFERENCES
44	EASTBOUND AND WESTBOUND PROFILES
37	ROADWAY & REMOVAL SUBSUMMARY

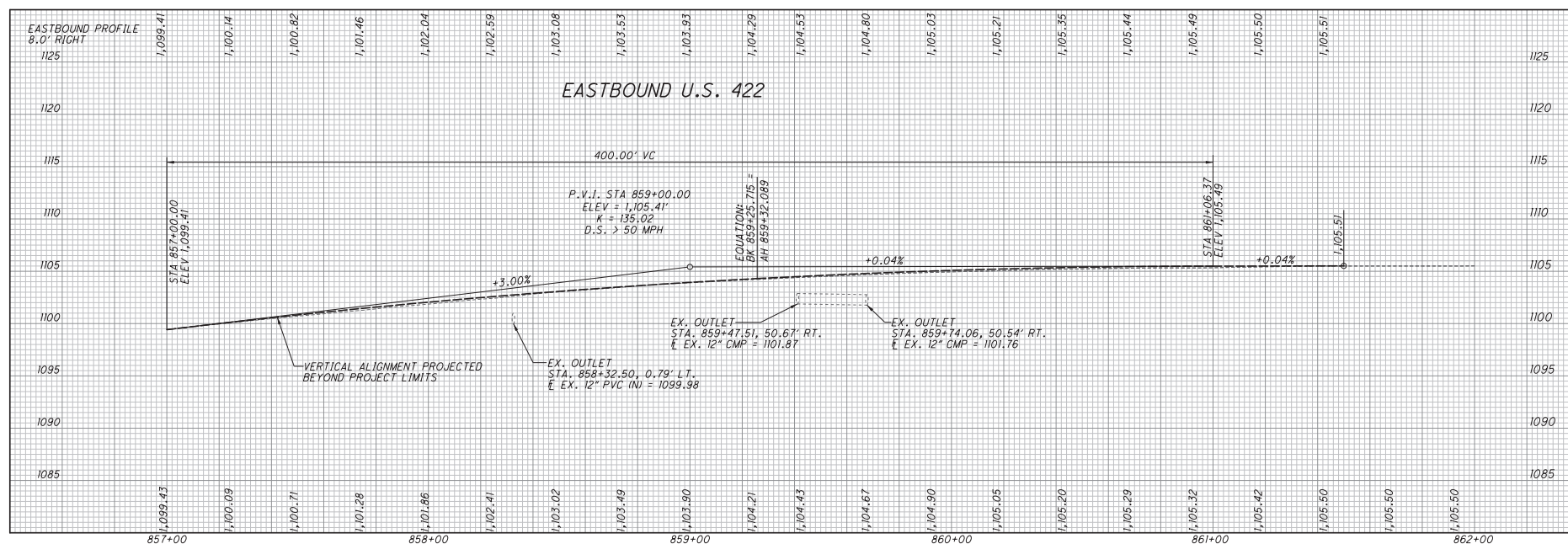
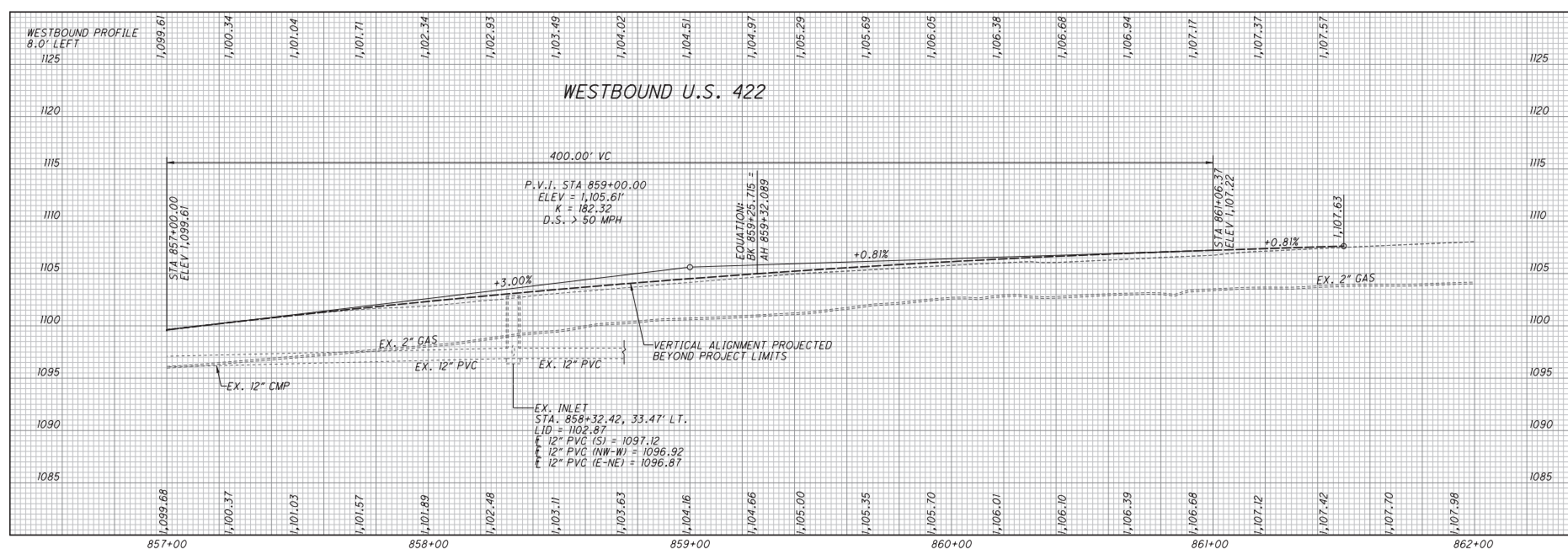


 LEGEND
PROJECT BORING/CORE LOCATION

PLAN
STA. 857+00 TO STA. 862+00 - U.S. 422

GEA-422-16.38

$$\frac{43}{74}$$

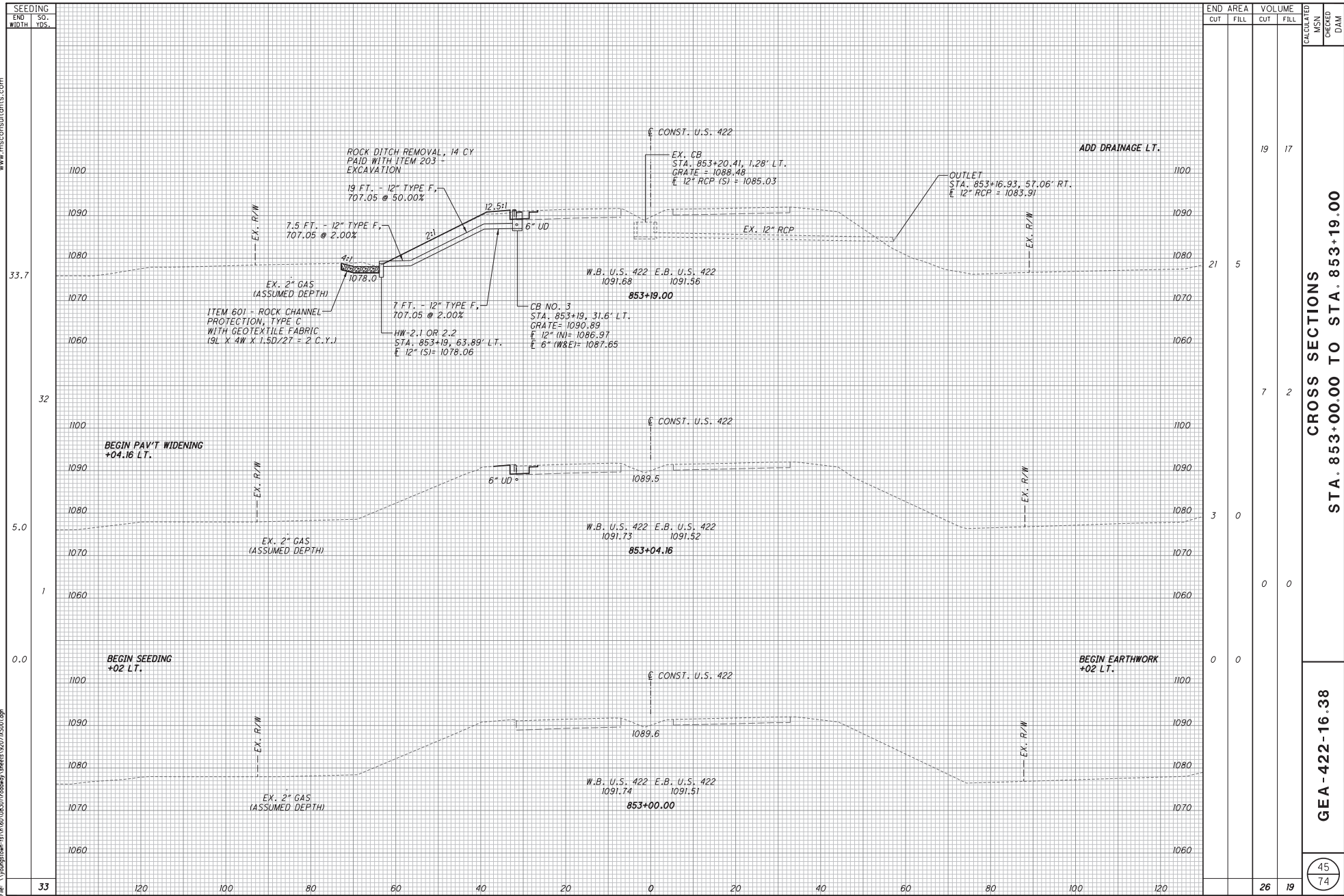


LCULATED	CHECKED
MSN	DAM

PROFILE
STA. 857+00 TO STA. 862+00

GEA-422-16.38

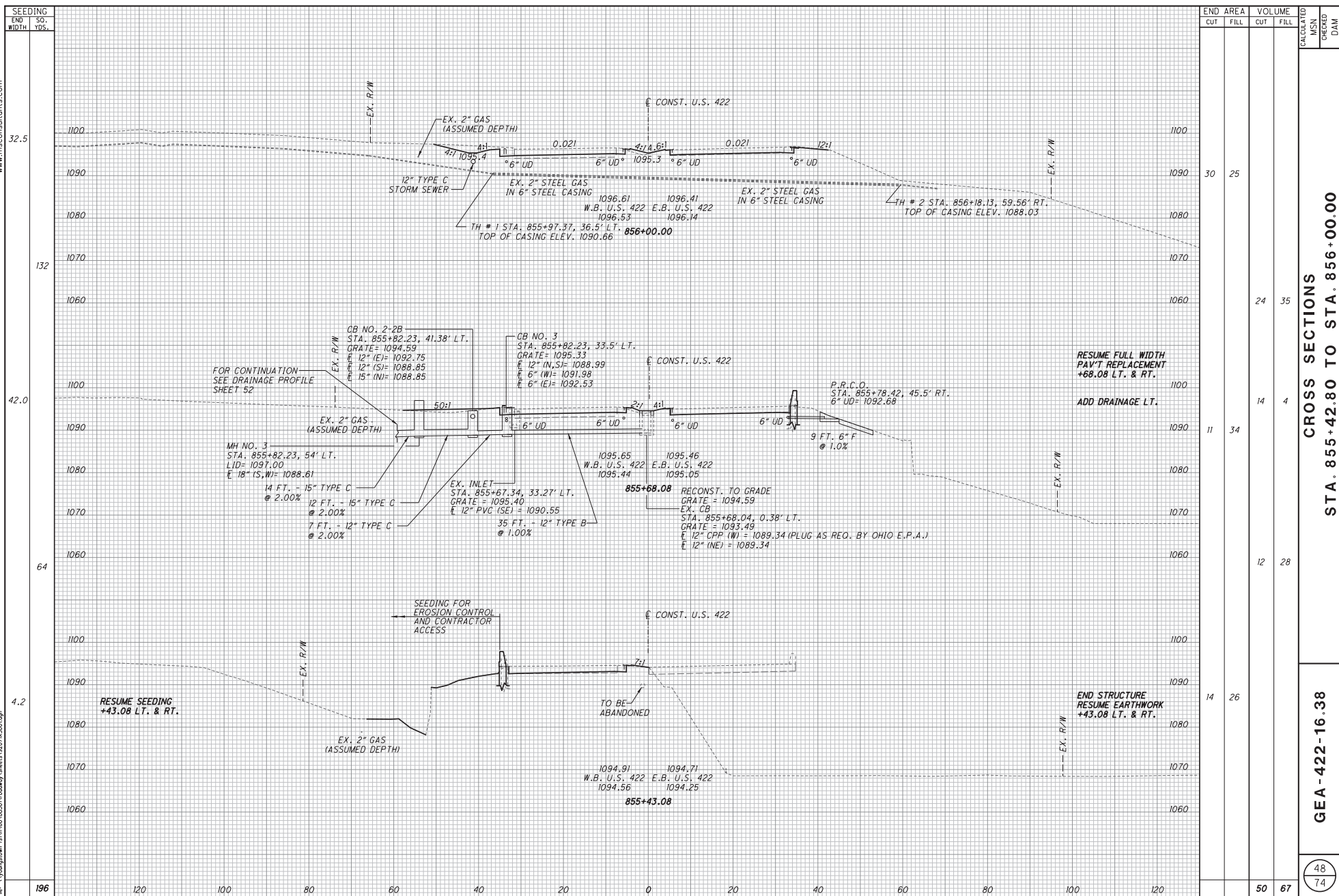
44
74

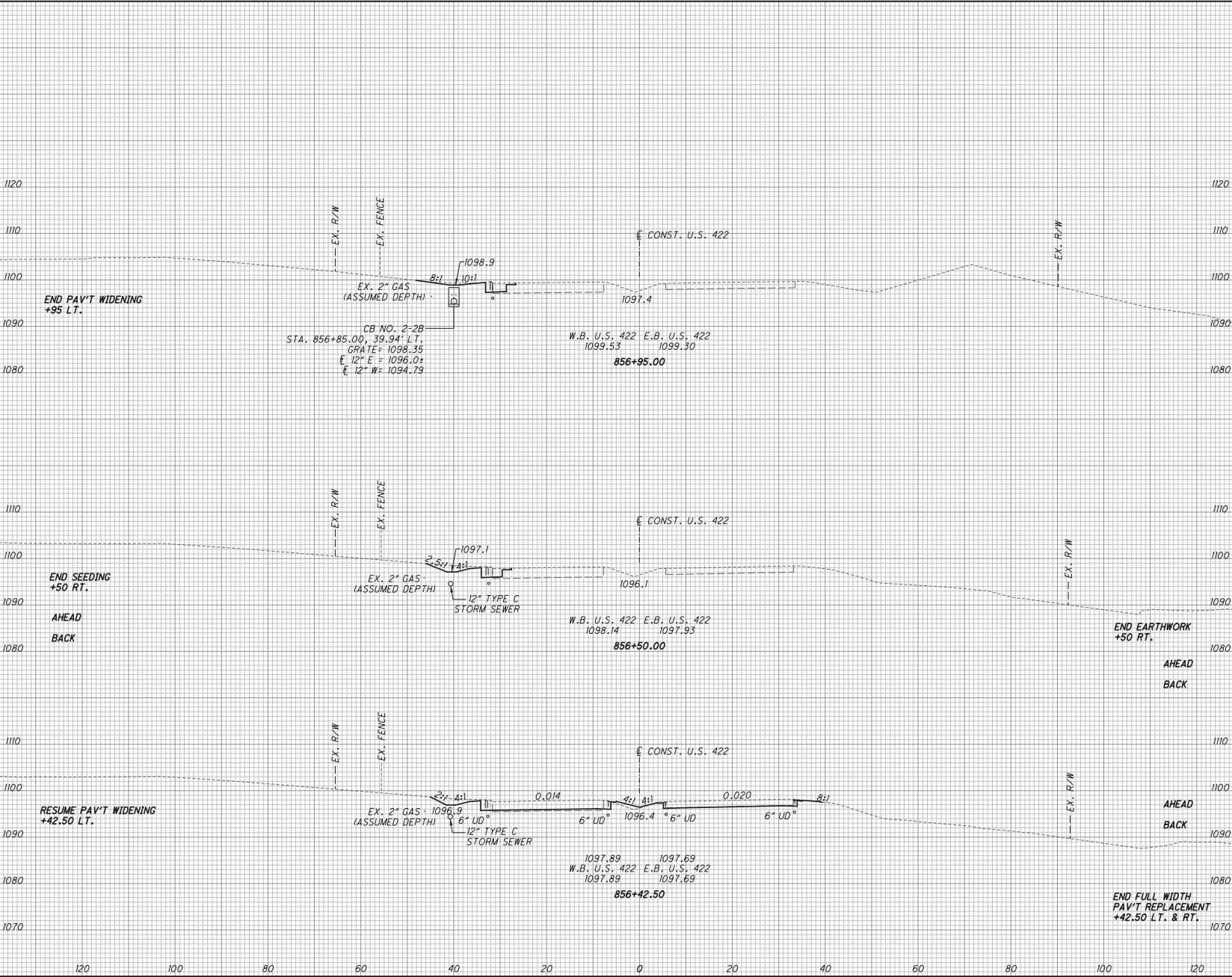


END CUT	AREA FILL	VOLUME CUT	VOLUME FILL	CALCULATED MSN	CHECKED DAM
21	5	19	17		
7	2				
3	0				
0	0				
0	0				
26	19				

CROSS SECTIONS
STA. 853+00.00 TO STA. 853+19.00

GEA-422-16.38

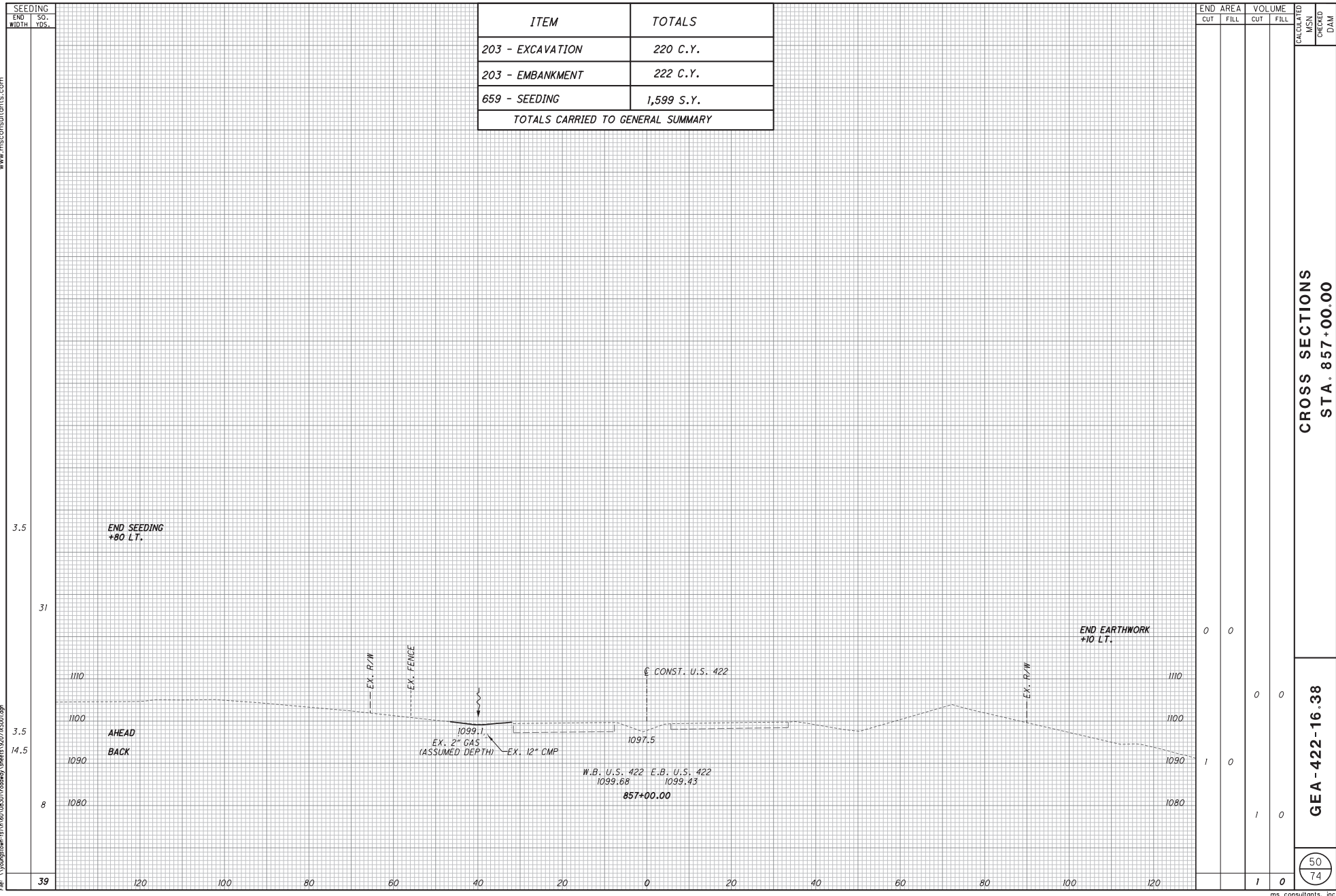




END	AREA	VOLUME	CALCULATED	CHECKED	DAM
CUT	FILL	CUT	FILL	MSN	DAM
6	0	18	0		
15	0	15	0		
4	0				
15	0	22	11		
41	28				
63	28				

CROSS SECTIONS
STA. 856+42.50 TO STA. 856+95.00

GEA-422-16.38



ITEM	TOTALS
203 - EXCAVATION	220 C.Y.
203 - EMBANKMENT	222 C.Y.
659 - SEEDING	1,599 S.Y.
TOTALS CARRIED TO GENERAL SUMMARY	

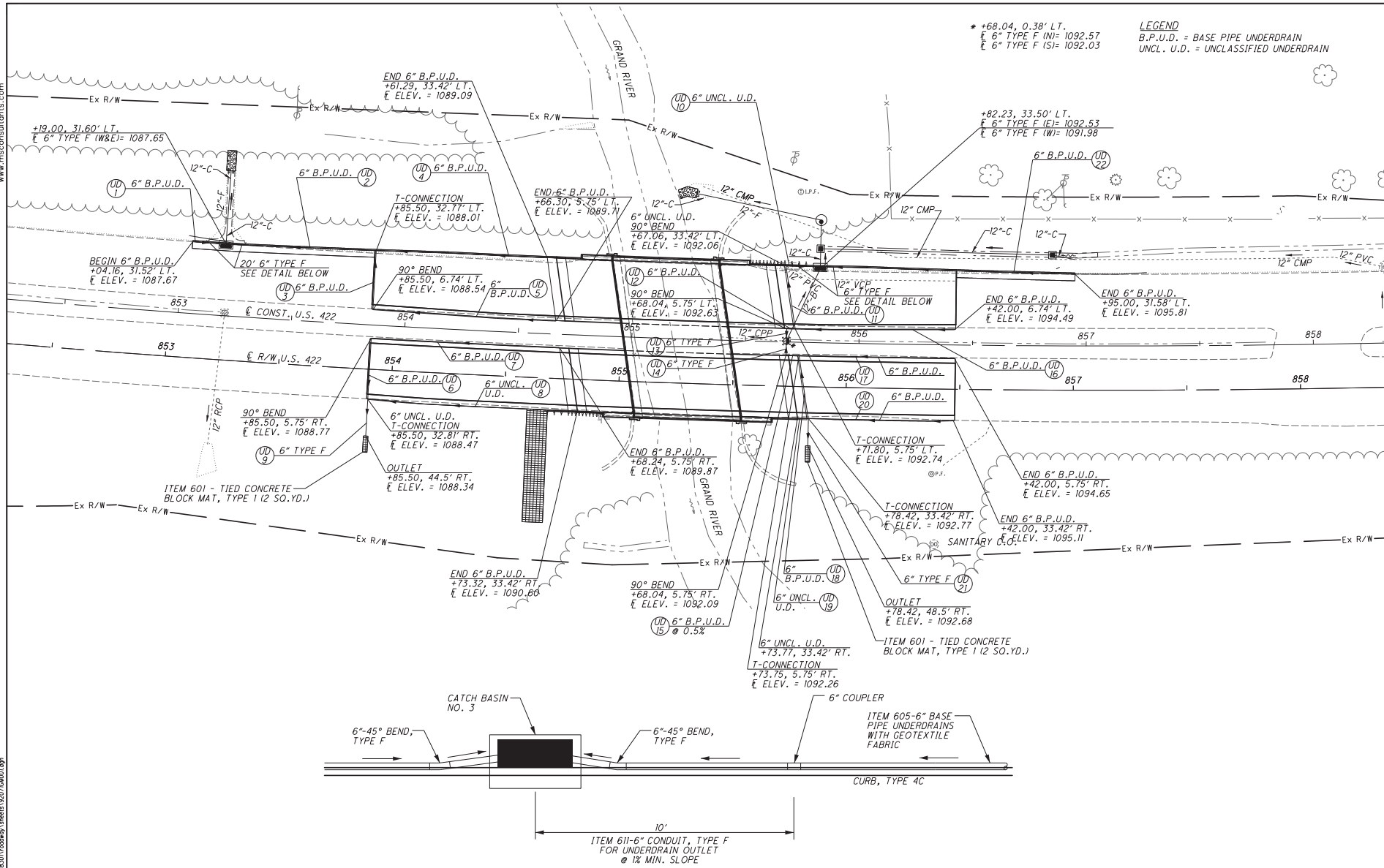
END CUT	AREA FILL	VOLUME CUT	VOLUME FILL	CALCULATED MSN	CHECKED DAM
0	0	0	0	0	0
1	0	1	0	1	0
1	0	1	0	1	0

CROSS SECTIONS
STA. 857+00.00

GEA-422-16.38

50
74

PLOT.CEL
 msc consultants, inc.
 www.mscconsultants.com
 Ohio DOT Worksheet
 MSN 30201
 DDT: 08/08/16
 PCS: 60-08301 - Township
 0.5" = 10' (Horizontal)
 1" = 20' (Vertical)
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 Model: Sheet
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SHEET NO(S).	CROSS REFERENCES
38	DRAINAGE, UNDERDRAIN & EROSION CONTROL SUBSUMMARY

PLAN VIEW
 UNDERDRAIN OUTLET INTO PROPOSED CATCH BASIN
 N.T.S

* +68.04, 0.38' LT.
 6" TYPE F (N)= 1092.57
 6" TYPE F (S)= 1092.03
LEGEND
 B.P.U.D. = BASE PIPE UNDERDRAIN
 UNCL. U.D. = UNCLASSIFIED UNDERDRAIN

0 20 40
 HORIZONTAL SCALE IN FEET

CALCULATED

MSN

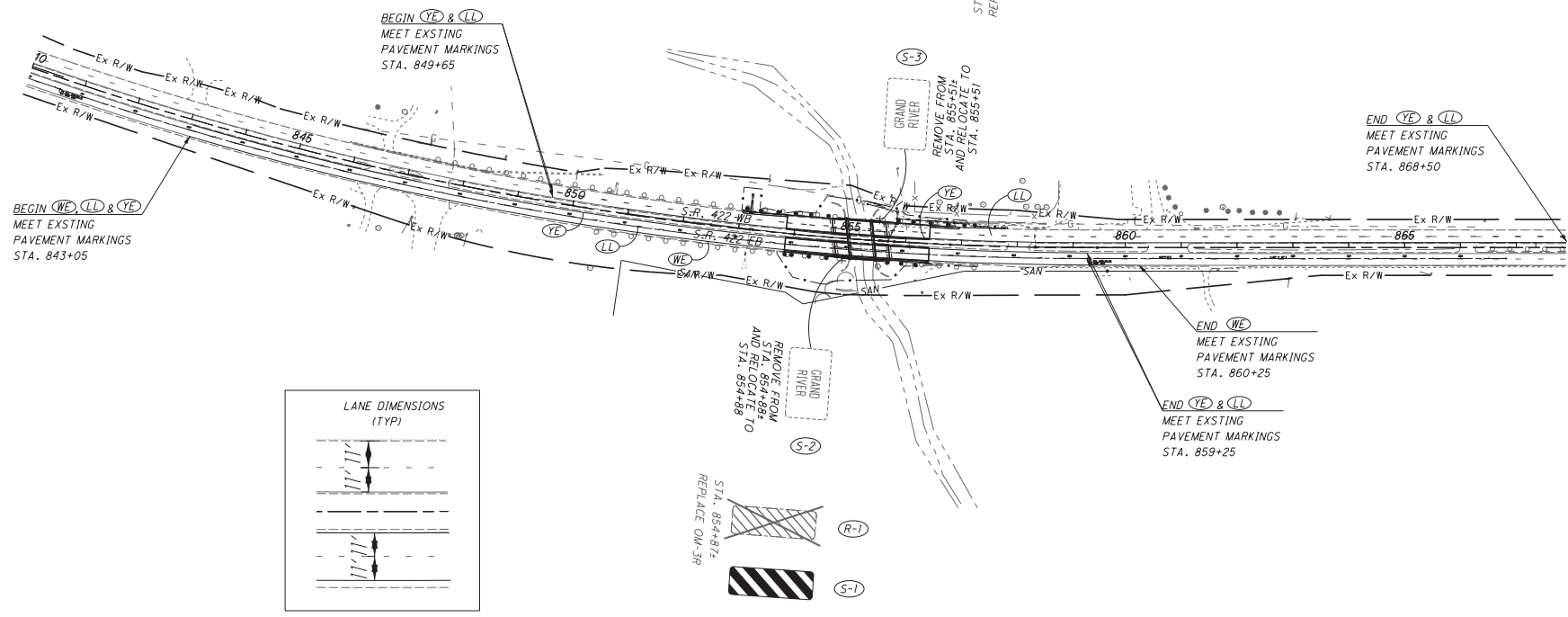
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DAM

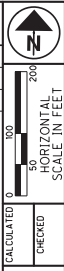
UNDERDRAIN PLAN AND DETAILS

GEA-422-16.38

51
74



ITEM	ODOT LINE SPECIFICATIONS
644	
(WE)	EDGE LINE, WHITE, 6"
(YE)	EDGE LINE, YELLOW, 6"
(LL)	LANE LINE, 6"



SIGNING AND PAVEMENT MARKING PLAN

GEA-422-16.38

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-15	REVISED	7-17-15	PCB-91	REVISED	01-18-13
AS-2-15	REVISED	7-17-15	SBR-1-13	REVISED	01-17-14

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

SS800	DATED	9-15-17
SS832	DATED	1-17-14
SS846	DATED	4-17-15

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION, 2002 AND THE ODOT BRIDGE DESIGN MANUAL 2004.

DESIGN LOADING

HS20 AND THE ALTERNATE MILITARY LOADING. FUTURE WEARING SURFACE (FWS) OF 60 PSF.

DESIGN STRESSES

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 ksi, (SUPERSTRUCTURE)
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 ksi
STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 ksi

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2 1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

SUBSTRUCTURE CONCRETE REMOVAL

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ITEM 530, SPECIAL-STRUCTURE, MISC.: TEMPORARY SHORING

THE DESIGN SHOWN ON THE PLANS FOR TEMPORARY SUPPORT OF THE ABUTMENT WALLS AND SLAB IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN. IF CONSTRUCTING AN ALTERNATE DESIGN, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT AT THE CONTRACT LUMP SUM PRICE FOR SPECIAL-STRUCTURE, MISC.: TEMPORARY SHORING. NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES.

CONNECTORS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL THAT MEETS THE SPECIFICATIONS.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

A CONTINGENCY QUANTITY OF 100 POUNDS IS INCLUDED IN THE ESTIMATED QUANTITIES.

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

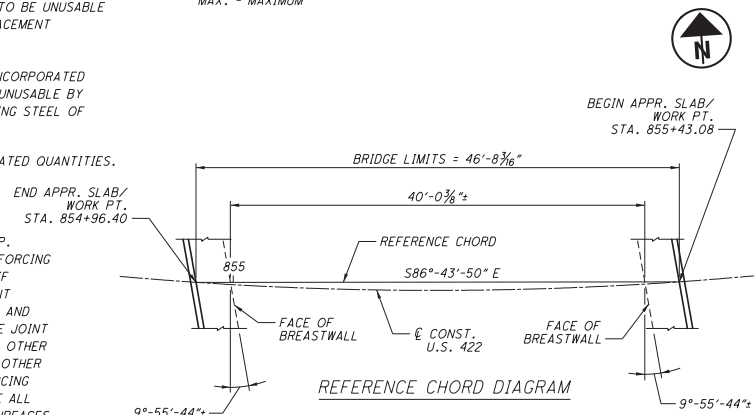
THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED. ALL COURSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127. SLIP FORMING IS PROHIBITED.

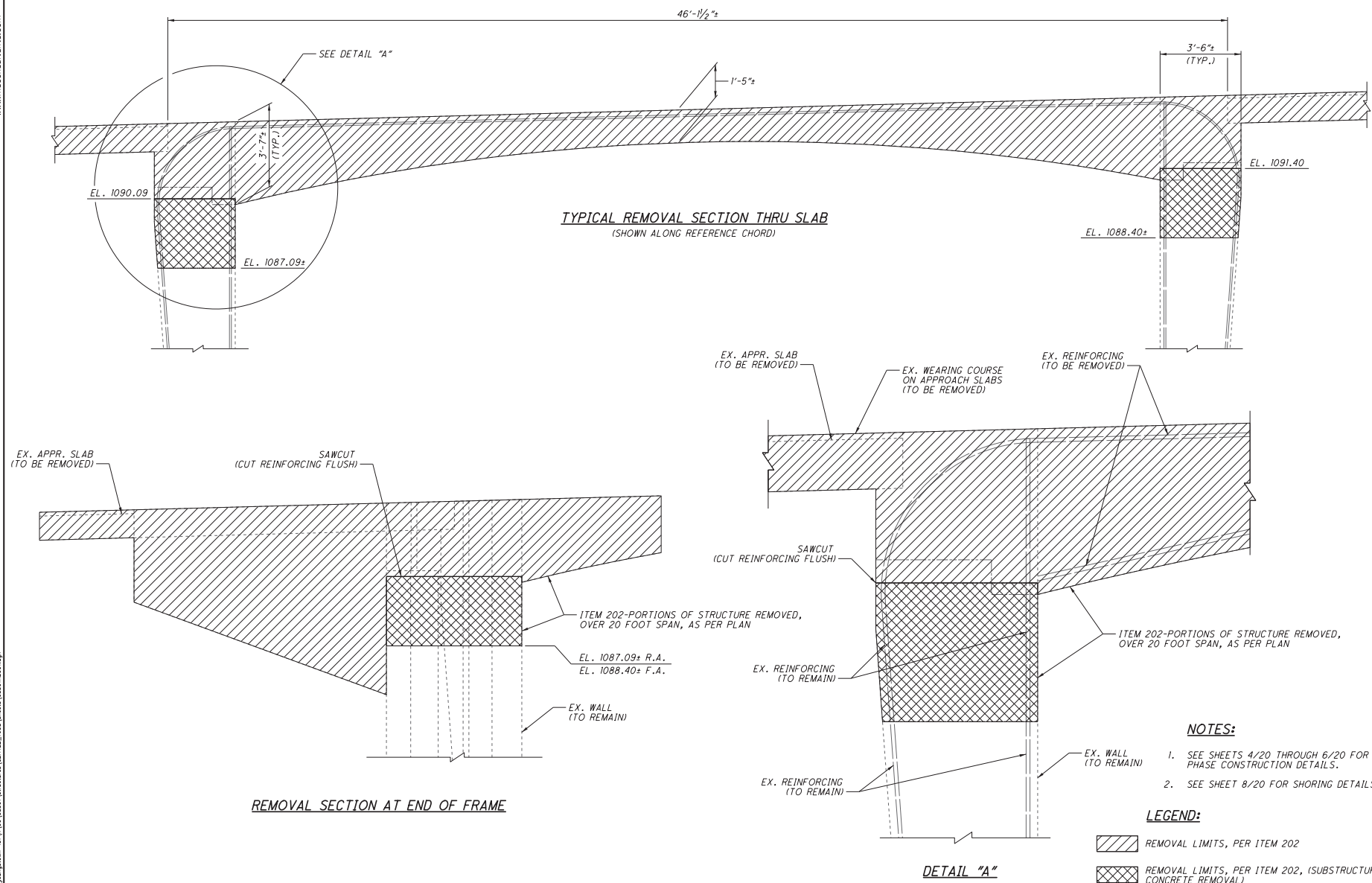
ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

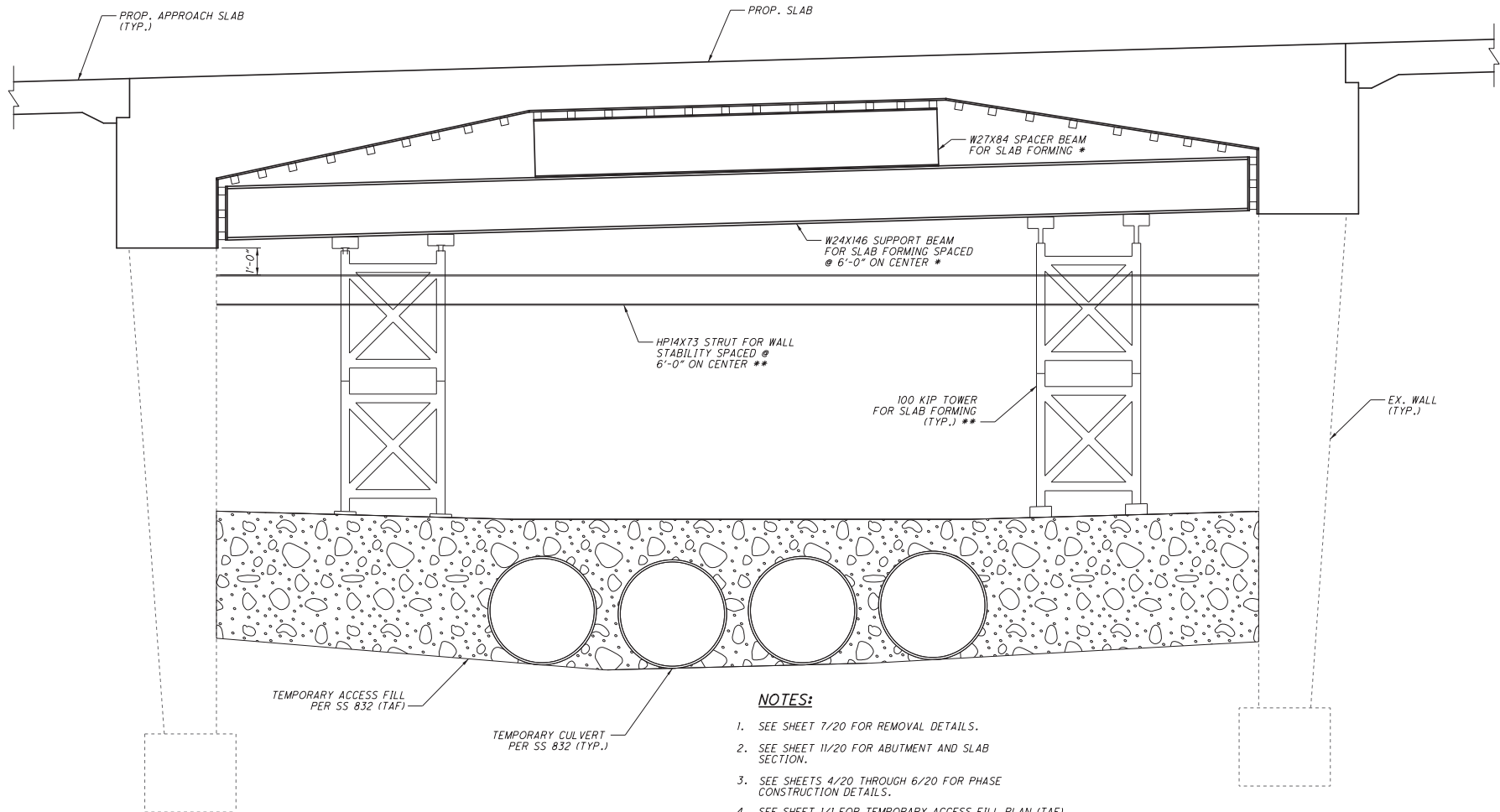
PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ABBREVIATIONS:

ABUT. - ABUTMENT	M.O.T. - MAINTENANCE OF TRAFFIC
APPR. - APPROACH	MIN. - MINIMUM
APPROX. - APPROXIMATE	N.F. - NEAR FACE
BOT. - BOTTOM	N.P.C.P.P. - NON-PERFORATED CORRUGATED PLASTIC PIPE
BRG. - BEARING	OHW - ORDINARY HIGH WATER
CB - CATCH BASIN	P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
C/C - CENTER TO CENTER	P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE
C.J. - CONSTRUCTION JOINT	R.A. - REAR ABUTMENT
CONST. - CONSTRUCTION	RT. - RIGHT
DIA. - DIAMETER	R.F. - RIGHT FORWARD
EL. - ELEV. - ELEVATION	R.R. - RIGHT REAR
EX. - EXIST. - EXISTING	S.B. - SOUTHBOUND
EXP. - EXPANSION	SER. - SERIES
EQ. SPA. - EQUAL SPACE	SHOR. - SHOULDER
E.F. - EACH FACE	SPA. - SPACING
F.A. - FORWARD ABUTMENT	STA. - STATION
F.F. - FAR FACE	T & B - TOP AND BOTTOM
FTG. - FOOTING	TYP. - TYPICAL
FWD. - FORWARD	T/T - TOE TO TOE
H.M.W.M. - HIGH MOLECULAR WEIGHT METHACRYLATE	VAR. - VARIES
HW - HIGH WATER	V.C. - VERTICAL CURVE
LT - LEFT	VERT. - VERTICAL
L.F. - LEFT FORWARD	
L.R. - LEFT REAR	
MAX. - MAXIMUM	





**NOTES:**

1. SEE SHEET 7/20 FOR REMOVAL DETAILS.
2. SEE SHEET 11/20 FOR ABUTMENT AND SLAB SECTION.
3. SEE SHEETS 4/20 THROUGH 6/20 FOR PHASE CONSTRUCTION DETAILS.
4. SEE SHEET 1/1 FOR TEMPORARY ACCESS FILL PLAN (TAF).
5. STRUTS AND TOWERS TO BE PAID FOR WITH ITEM 530, SPECIAL-STRUCTURE, MISC.: TEMPORARY SHORING. SUPPORT BEAMS AND FALSEWORK INCIDENTAL TO ITEM 511, CLASS OC2 CONCRETE WITH OA/OA. SUPERSTRUCTURE. STRUTS TO BE INSTALLED BEFORE START OF REMOVALS.
6. TEMPORARY ACCESS FILL (TAF) AND CULVERTS TO BE INCIDENTAL TO SS 832.
7. STRUTS MUST BE SHIMMED TIGHT PRIOR TO REMOVAL OF TOP SLAB.
8. SHORING PLAN IS SCHEMATIC. SHORING SHALL BE DESIGNED BY THE CONTRACTOR. CALCULATIONS AND WORKING DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH CMS 501.05.

LEGEND:

- * INCIDENTAL TO ITEM 511, CLASS OC2 CONCRETE WITH OC/OA.
- ** INCLUDED FOR PAYMENT UNDER ITEM 530, SPECIAL-STRUCTURE, MISC.: TEMPORARY SHORING.

TEMPORARY SHORING DETAILS

BRIDGE NO. GE-422-1638
US 422 OVER GRAND RIVER

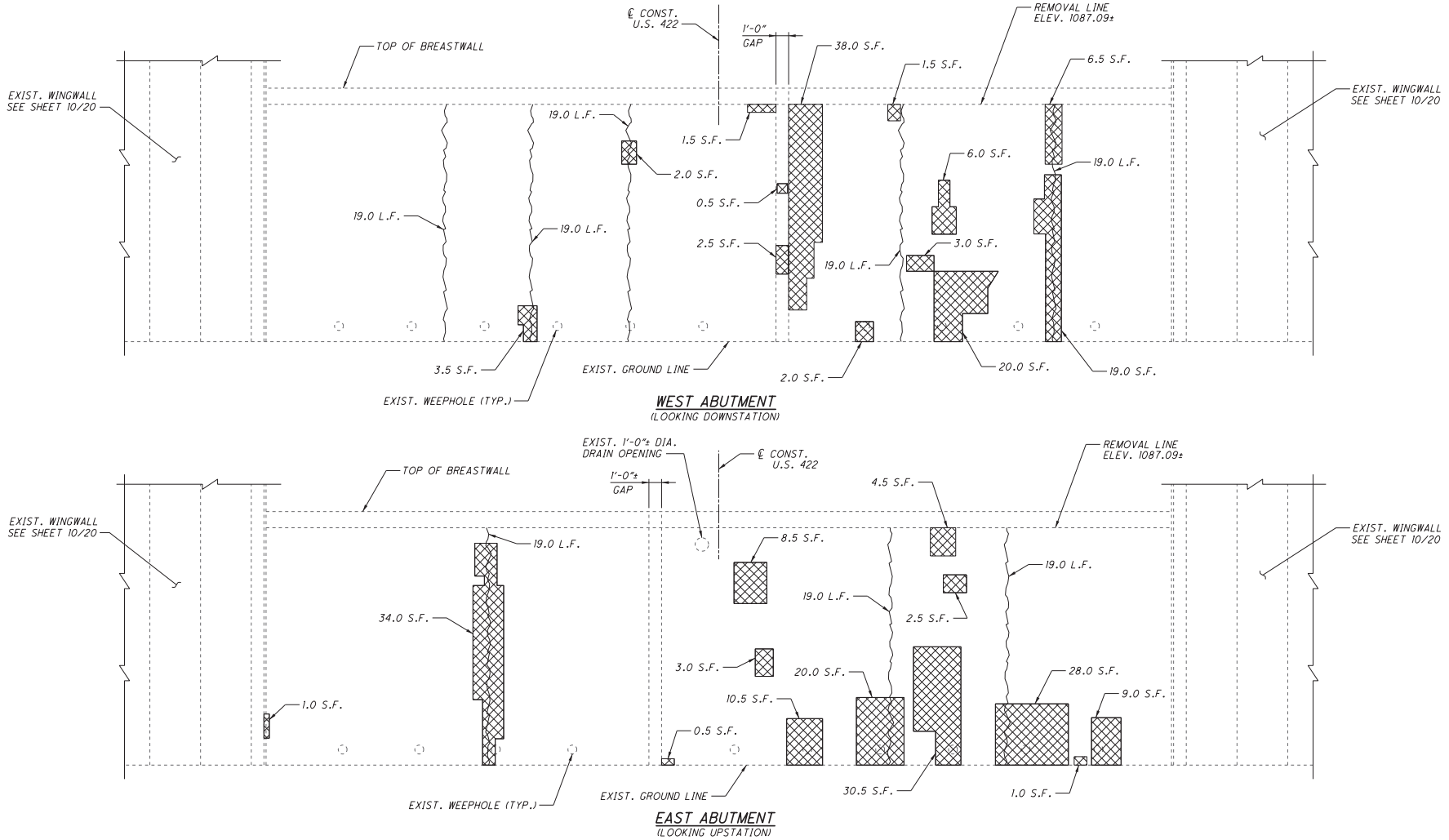
GE-422-16.38
PID No. 92071



8 20

62
74

ms consultants, inc.

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Ohio DOT Worksheet
RD 92071
www.msconsultants.com
DOT: 6010301
PC: 6010301
Bridges: 6010301
File: \\youngstown\ryna\6010301\structures\GEA-422-1638\sheet10\1000003.dgn
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File: \\youngstown\ryna\6010301\structures\GEA-422-1638\sheet10\1000003.dgn



KEY		ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN JUNE 2014. * ESTIMATED PATCHING QUANTITIES HAVE BEEN INCREASED BY 150% AND ROUNDED TO THE NEAREST 10 SQ. FT. OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION. ** ESTIMATED CRACK REPAIRS HAVE BEEN ROUNDED TO THE NEAREST 10 FT. OVER MEASURED QUANTITIES . EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.	ESTIMATED PATCHING QUANTITIES (SQ. FEET)			ESTIMATED CRACK REPAIRS (FEET)		
			LOCATION	MEASURED QUANTITIES	ESTIMATED QUANTITIES	LOCATION	MEASURED QUANTITIES	ESTIMATED QUANTITIES
	- AREA OF SPALLING OR DELAMINATION TO BE REPAIRED PER ITEM 519		WEST ABUT.	106.0	160.0 *	WEST ABUT.	95.0	100.0 **
	- CRACK TO BE EPOXY-INJECTED		EAST ABUT.	153.0	230.0 *	EAST ABUT.	57.0	60.0 **
			TOTAL	259.0	390.0 *	TOTAL	152.0	160.0 **

NOTES:
1. SEE SHEET 10/20 FOR WINGWALL REPAIRS.

DESIGN AGENCY
ms consultants, inc.
102 West Prospect Avenue, Ste 250
Cleveland, Ohio 44115-3806

DATE
11-19-15
JDN
STRUCTURE FILE NUMBER
2801809

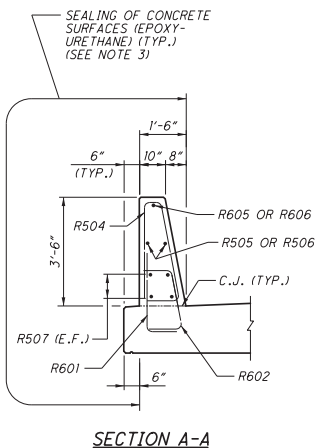
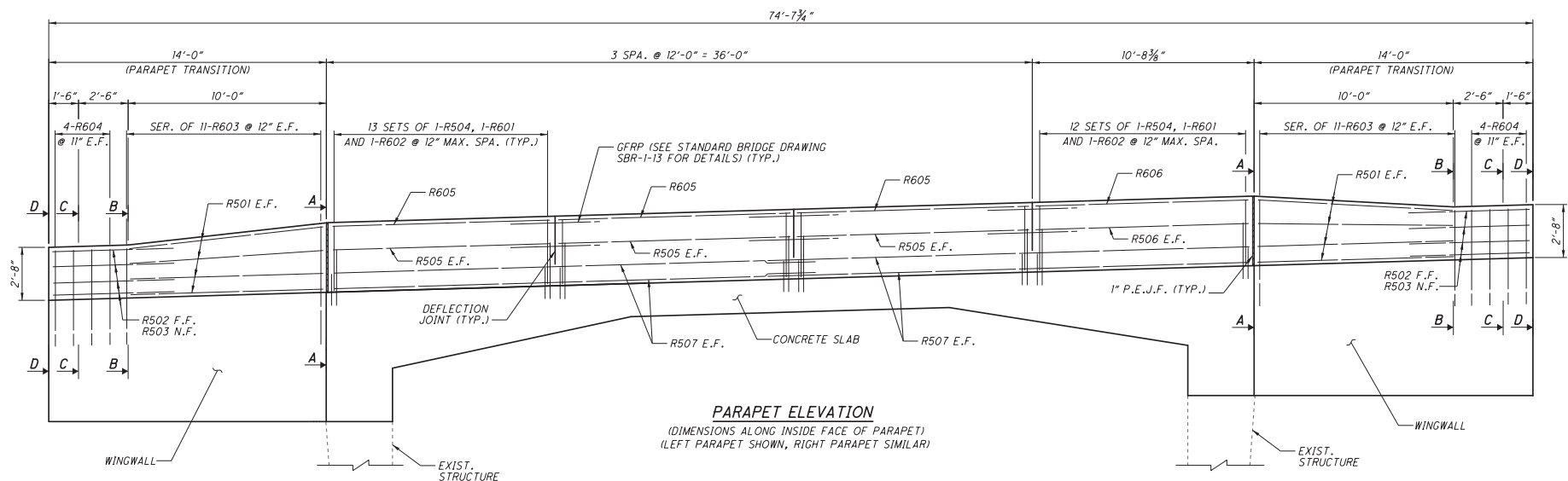
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KRM
CHECKED
RSW

DESIGNED
FBW

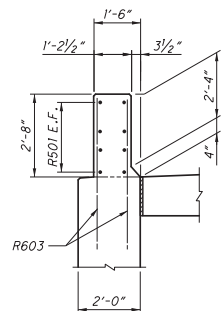
ABUTMENT PATCHING AND CRACK DETAILS
BRIDGE NO. GEA-422-1638
US 422 OVER GRAND RIVER

GEA-422-16.38
PID No. 92071

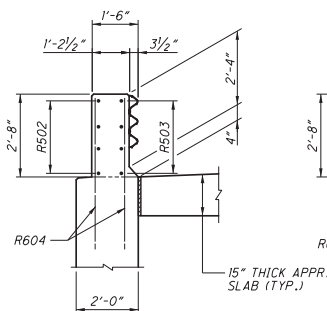
9 20
63 74



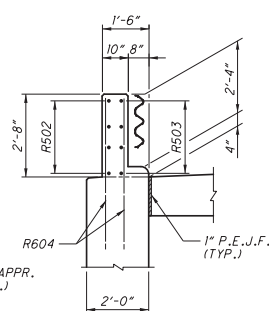
SECTION A-A



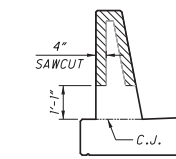
SECTION B-B



SECTION C-C



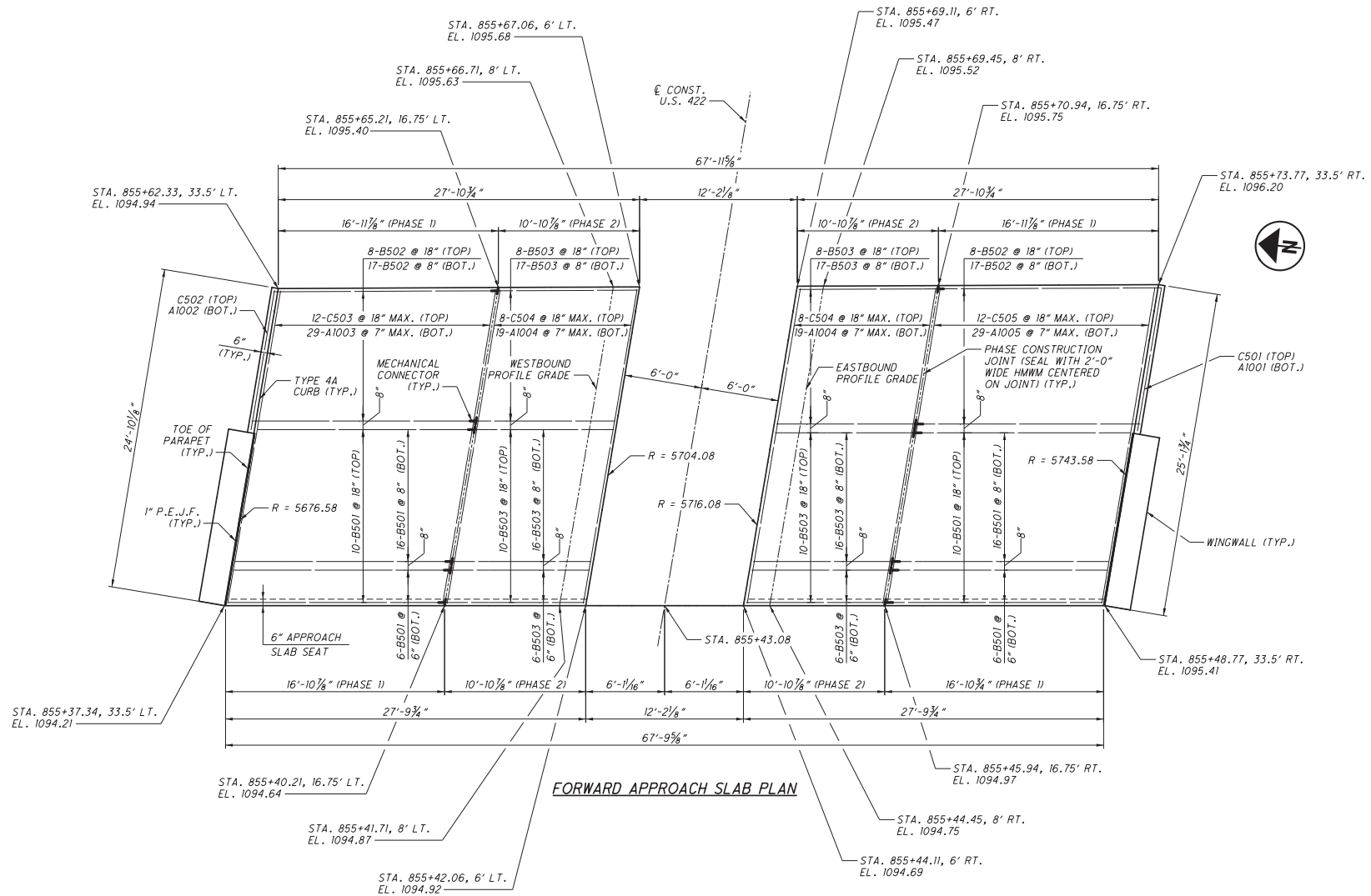
SECTION D-D



DEFLECTION JOINT DETAIL

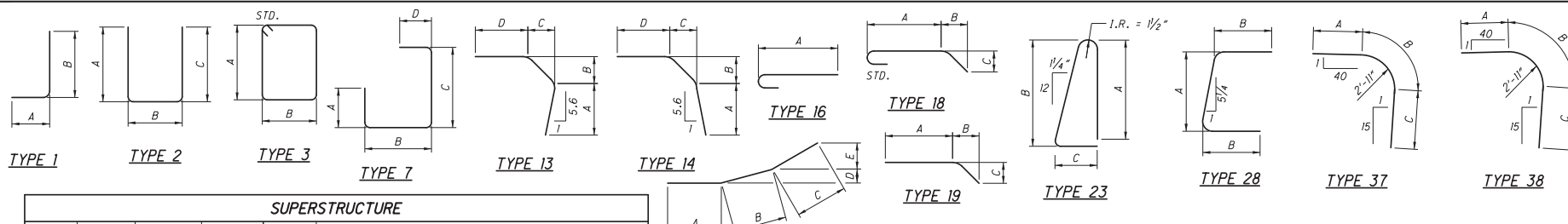
NOTES:

1. FOR ADDITIONAL NOTES AND PARAPET DETAILS, SEE STANDARD BRIDGE DRAWING SBR-1-13.
2. SEE SHEET 15/20 FOR DECK PLAN AND DEFLECTION JOINT SPACING.
3. CONCRETE SEALER SHALL BE FEDERAL COLOR #595C27778 (LIGHT NEUTRAL SEMIGLOSS).
4. MINIMUM LAP LENGTHS:
#5 BAR = 2'-5"
#6 BAR = 3'-10"
5. FOR BRIDGE TERMINAL ASSEMBLY, SEE STD. DWGS. MGS-3.1 AND MGS-3.2.



NOTE:

1. FOR ADDITIONAL NOTES AND DETAILS, SEE SHEET 18/20.



SUPERSTRUCTURE									
MARK	TOTAL	LENGTH	WEIGHT (POUNDS)	TYPE	DIMENSIONS				
					A	B	C	D	E
S501	324	18'-10"	6364	STR.					
S502	324	18'-3"	6167	STR.					
S801	144	1'-8"	641	STR.					
S901	72	25'-3"	6181	37	18'-6"	5'-4"	1'-5"		
S902	71	20'-9"	5009	37	12'-6"	5'-4"	2'-11"		
S903	143	30'-0"	14,586	STR.					
S904	143	31'-4"	15,234	19	16'-1"	15'-3"	2'-10"		
S905	71	25'-4"	6115	38	18'-6"	5'-6"	1'-4"		
S906	72	20'-10"	5100	38	12'-6"	5'-6"	2'-10"		
S907	143	24'-6"	11,912	19	9'-3"	15'-3"	2'-10"		
TOTAL = 77,309									

PARAPETS									
MARK	TOTAL	LENGTH	WEIGHT (POUNDS)	TYPE	DIMENSIONS				
					A	B	C	D	E
R501	32	10'-0"	334	STR.					
R502	16	5'-8"	95	STR.					
R503	16	5'-8"	95	25	1'-10"	2'-5"	1'-5"	2"	5"
R504	102	7'-4"	780	23	3'-0"	3'-3"	11"		
R505	12	11'-8"	146	STR.					
R506	4	10'-4"	44	STR.					
R507	16	24'-4"	406	STR.					
R601	102	3'-2"	485	1	1'-0"	2'-4"			
R602	102	3'-10"	587	28	2'-4"	1'-0"	11"		
R603	8 SER. OF 11	4'-10" TO 5'-8"	584	STR.					1"
R604	32	4'-10"	232	STR.					
R605	6	11'-8"	105	STR.					
R606	2	10'-4"	31	STR.					
TOTAL = 3924									

LEGEND:
* FOR INFORMATION ONLY

- NOTES:
1. BAR SIZE: THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, AN A601 IS A #6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. STD. * WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
 2. ALL REINFORCING SHALL BE EPOXY COATED.
 3. MECHANICAL SPLICE CONNECTORS SHALL BE INCLUDED FOR PAYMENT WITH REINFORCING STEEL.
 4. REINFORCING FOR APPROACH SLABS IS FOR INFORMATION ONLY. PAYMENT SHALL BE INCLUDED WITH CMS ITEM 526- REINFORCED CONCRETE APPROACH SLABS (7'-15'), AS PER PLAN.

ABUTMENTS									
MARK	NUMBER			LENGTH	WEIGHT (POUNDS)	TYPE	DIMENSIONS		
	REAR	FWD.	TOTAL				A	B	C
A401	15	15	30	11'-2"	224	7	2'-0"	4'-2"	2'-4"
A501	72	42	144	10'-1"	1514	2	3'-8"	3'-0"	3'-8"
A502	26	26	52	18'-10"	1021	STR.			
A503	26	26	52	18'-3"	990	STR.			
A504	2	2	4	4'-3"	18	STR.			
A505	15	15	30	17'-4"	542	STR.			
A601	13		13	16'-6"	322	3	6'-3"	1'-8"	
A602	13		13	14'-6"	283	3	5'-3"	1'-8"	
A603		13	13	15'-0"	293	3	5'-6"	1'-8"	
A604		13	13	17'-4"	338	3	6'-8"	1'-8"	
A701	15	12	27	9'-11"	547	13	2'-10"	1'-9"	1'-7"
A702	26	26	52	14'-10"	1577	STR.			
A703	12	15	27	9'-11"	547	14	2'-10"	1'-9"	1'-7"
D801	40	40	80	4'-11"	1050	18	2'-8"	1'-0"	1'-0"
A901	72	72	144	5'-4"	2611	STR.			
A902	18	18	36	5'-10"	714	STR.			
TOTAL = 12,591									

APPROACH SLABS									
MARK	NUMBER			LENGTH	WEIGHT (POUNDS)	TYPE	DIMENSIONS		
	REAR	FWD.	TOTAL				A	B	C
B501	64	64	128	16'-9"	2236	STR.			
B502	50	50	100	17'-4"	1808	STR.			
B503	114	114	228	10'-9"	2556	STR.			
C501	1	1	2	11'-3"	23	STR.			
C502	1	1	2	11'-0"	23	STR.			
C503	12	12	24	24'-6"	613	STR.			
C504	16	16	32	24'-8"	823	STR.			
C505	12	12	24	24'-10"	622	STR.			
A1001	1	1	2	11'-3"	97	STR.			
A1002	1	1	2	11'-0"	95	STR.			
A1003	29	29	58	25'-11"	6468	16	24'-6"		
A1004	38	38	76	26'-1"	8530	16	24'-8"		
A1005	29	29	58	26'-3"	6551	16	24'-10"		
TOTAL = 30,445 *									

PROJECT DESCRIPTION

THIS PROJECT GEA-422-16.38 INVOLVES IMPROVEMENTS TO A SECTION OF US ROUTE (US) 422 IN GAUGA COUNTY, OHIO. THIS SECTION OF US 422 IS LOCATED ON BOTH EAST AND WEST SIDES OF BRIDGE NO. GEA-422-1638 OVER THE GRAND RIVER. THE PROJECT WILL EXTEND FROM 115 FEET WEST OF THE BRIDGE TO 101 FEET EAST OF THE BRIDGE WITH A TOTAL PROJECT LENGTH OF APPROXIMATELY 247 FEET.

HISTORIC RECORDS

HISTORIC INFORMATION FROM A GEOTECHNICAL EXPLORATION PERFORMED FOR THE BRIDGE NO. GEA-422-1638 (ORIGINALLY NAMED BRIDGE NO. GE-422-1616) PROJECT WAS OBTAINED FROM THE ODOT GEOTECHNICAL DOCUMENTS MANAGEMENT SYSTEM. THESE HISTORIC DOCUMENTS APPEAR TO HAVE BEEN FOR THE ORIGINAL CONSTRUCTION OF THE BRIDGE AND THE ADJACENT US 422 ROADWAY. THE HISTORIC GEOTECHNICAL EXPLORATION CONSISTS OF A TOTAL OF 14 HISTORIC TEST BORINGS WHICH APPEAR TO BE 12 ROADWAY AND 2 STRUCTURAL BORINGS THAT WERE ADVANCED ALONG US 422 BETWEEN STATIONS 845+00 AND 857+00 WITH DRILLING DATES RANGING FROM AUGUST 9, 1960 THROUGH AUGUST 25, 1960. NOTE THAT MANY OF THE SOIL SAMPLES PRESENTED ON THE HISTORIC TEST BORINGS REPRESENT THE ORIGINAL GRADE WHICH IS NOW EITHER CUT TO THE CURRENT US 422 SUBGRADE OR FILL WITH EMBANKMENT SOIL TO RAISE THE GRADE TO CURRENT US 422 SUBGRADE. N-VALUES FROM SPT TESTS WERE NOT INCLUDED IN THE SOIL PROFILES OF THE HISTORIC ROADWAY TEST BORINGS, THEREFORE THEY WERE NOT INCLUDED IN THE CURRENT SOIL PROFILE SHEETS.

GEOLOGY

THE PROJECT SITE LIES IN THE GLACIATED PORTION OF OHIO, WITHIN THE KILLBUCK-GLACIATED PITTSBURGH PLATEAU REGION OF THE GLACIATED ALLEGHENY PLATEAUS PROVINCE. THE WISCONSIN GLACIER PASSED OVER THE AREA AND LEFT A COATING OF CLAY TILL OF VARIABLE THICKNESS. THE PROJECT AREA IS CHARACTERIZED BY UNUNDULATING, HUMMOCKY AND DISSECTED AREAS ON OUTWASH PLAINS, STREAM TERRACES, AND KAMES. THE GLACIAL DRIFT WAS DEPOSITED OVER PRIMARILY PENNSYLVANIAN-AGE BEDROCK. BEDROCK IS ANTICIPATED TO BE PRESENT AT AN APPROXIMATE ELEVATION OF 1050 FEET AND IS EXPECTED TO GENERALLY CONSIST OF SHALE, SILTSTONE, CONGLOMERATE AND LESSER AMOUNTS OF LIMESTONE OF THE ALLEGHENY AND POTTSVILLE GROUPS UNDIVIDED.

RECONNAISSANCE

THE RECONNAISSANCE OF THE PROJECT SITE WAS PERFORMED BY ONE OF PGI'S GEOTECHNICAL ENGINEERS IN JUNE 2014. THE PROJECT SITE IS LOCATED IN A RURAL AREA WITH THE CLOSEST BUILDING LOCATED WITHIN 500 FEET OF THE BRIDGE SITE. THE EXISTING BRIDGE IS A SINGLE SPAN CONCRETE ARCH BRIDGE. THE EXISTING US 422 ROADWAY CONSISTS OF FOUR LANES WITH A GRASS MEDIAN. THE PAVEMENT OF THIS SECTION OF ROADWAY APPEARED TO BE IN POOR TO FAIR CONDITION. LONGITUDINAL AND LATERAL CRACKS WERE OBSERVED ACROSS THE EXISTING PAVEMENT OF THE US 422 EB AND WB TRAVEL LANES. OVERHEAD ELECTRIC AND COMMUNICATION LINES ARE LOCATED ALONG THE NORTH SIDE OF US 422. SEVERE SOIL EROSION WAS OBSERVED ALONG THE NORTH EMBANKMENT SLOPE APPROXIMATELY 175 FEET WEST OF THE BRIDGE WHERE AN EXISTING CONCRETE CHANNEL IS LOCATED TO DRAIN THE SURFACE WATER FROM US 422 TO THE TOE OF THE SLOPE. HOWEVER, IT APPEARS THAT THE EXISTING CHANNEL DOES NOT HAVE SUFFICIENT CAPACITY AND THE SURFACE WATER OVERFLOWS OUTSIDE THE CHANNEL DURING HEAVY RAINFALL AND ERODES THE SOIL BELOW THE CONCRETE CHANNEL. THE AREA GENERALLY SLOPES DOWNWARD FROM THE EAST TO THE WEST ALONG THIS SECTION OF US 422.

SUBSURFACE EXPLORATION

IN ORDER TO EXPLORE THE SUBSURFACE CONDITIONS AT THE PROJECT SITE, DRILLING, SAMPLING, AND FIELD TESTING OPERATIONS WERE PERFORMED DURING JUNE 2014. A TOTAL OF SIX (6) TEST BORINGS IDENTIFIED AS B-001-0-14 THROUGH B-006-0-14 WERE ADVANCED AT THE PROJECT SITE FOR PAVEMENT AND ROADWAY DESIGN PURPOSES. TEST BORING B-003-0-14 WAS ADVANCED ALONG THE US 422 EB RIGHT LANE AND TEST BORING B-004-0-14 WAS ADVANCED ALONG THE US 422 WB RIGHT LANE. THESE PAVEMENT TEST BORINGS WERE ADVANCED TO APPROXIMATE DEPTHS OF 8.0 AND 7.5 FEET, RESPECTIVELY BELOW THE PAVEMENT SURFACE. TEST BORINGS B-001-0-14 AND B-002-0-14 WERE ADVANCED ALONG THE US 422 GRASS MEDIAN WEST OF THE BRIDGE AND TEST BORINGS B-005-0-14 AND B-006-0-14 WERE ADVANCED ALONG THE US 422 GRASS MEDIAN EAST OF THE BRIDGE. THESE ROADWAY TEST BORINGS WERE EACH ADVANCED TO AN APPROXIMATE DEPTH OF 10.0 FEET BELOW THE GROUND SURFACE. A CME 45B TRUCK-MOUNTED DRILLING RIG WITH AN AUTOMATIC HAMMER THAT WAS CALIBRATED ON FEBRUARY 17, 2014 WAS USED TO ADVANCE THE TEST BORINGS. ALL BORINGS WERE ADVANCED USING 2.25-INCH INSIDE DIAMETER CONTINUOUS FLIGHT HOLLOW STEM AUGERS (HSA). DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (ASTM D 2266) AT CONTINUOUS AND 2.5 FOOT INTERVALS FOR THE FULL DEPTH OF THE BORINGS. IN ORDER TO DETERMINE THE CONDITION OF THE EXISTING APPROACH SLAB, A TOTAL OF TWO (2) PAVEMENT CORES WERE OBTAINED. PAVEMENT CORE C-01 WAS OBTAINED FROM THE US 422 WB APPROACH SLAB, WEST OF THE WEST ABUTMENT AND PAVEMENT CORE C-02 WAS OBTAINED FROM THE US 422 EB APPROACH SLAB, EAST OF THE EAST ABUTMENT. THE CORE SAMPLES WERE OBTAINED USING 4.0-INCH OUTSIDE DIAMETER CORE BARRELS WITH INDUSTRIAL DIAMOND IMPREGNATED CUTTING TEETH.

EXPLORATION FINDINGS

THE EXISTING SUBGRADE SOILS ENCOUNTERED ACROSS THE PROJECT SITE CONSISTED ENTIRELY OF BOTH COHESIVE AND NON-COHESIVE GRANULAR FILL MATERIAL. THE COHESIVE FILL MATERIAL CONSISTED OF SANDY SILT (A-4a), SILT AND CLAY (A-6a), THE NON-COHESIVE/GRANULAR FILL MATERIAL CONSISTED OF STONE FRAGMENTS (A-1-a), STONE FRAGMENTS WITH SAND (A-1-b), COARSE AND FINE SAND (A-3a), AND NON-PLASTIC SANDY SILT (A-4a). THE LABORATORY TEST RESULTS INDICATED THAT THE MOISTURE CONTENTS OF THE TESTED COHESIVE SOIL SAMPLES OBTAINED FROM THE TEST BORINGS RANGED FROM 12% TO 19% AND THE CONSISTENCY OF THESE SOILS RANGED FROM "SOFT" TO "VERY STIFF" BUT WAS PRIMARILY "STIFF". THE LABORATORY TEST RESULTS INDICATED THAT THE MOISTURE CONTENTS OF THE TESTED NON-COHESIVE SOILS RANGED FROM 6% TO 17%.

LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	1 2
GRAVEL WITH SAND	A-1-b	1 3
COARSE AND FINE SAND	A-3a	2 2
SANDY SILT	A-4a	5 5
SILT AND CLAY	A-6a	3 1
	TOTAL	12 13
PAVEMENT OR BASE = 1.3' = APPROXIMATE THICKNESS	VISUAL	
SOD AND TOPSOIL = 0.7' = APPROXIMATE THICKNESS	VISUAL	
BORING LOCATION - PLAN VIEW.		
CORE LOCATION - PLAN VIEW.		
DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.		
WC	INDICATES WATER CONTENT IN PERCENT.	
N ₆₀	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.	
X/Y/Z	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X = NUMBER OF BLOWS FOR FIRST 6 INCHES. Y = NUMBER OF BLOWS FOR SECOND 6 INCHES. Z = NUMBER OF BLOWS FOR THIRD 6 INCHES.	
W	INDICATES FREE WATER ELEVATION.	
*	INDICATES A SAMPLE TAKEN WITHIN 3 FT OF PROPOSED GRADE.	
**	SILT AND CLAY COMBINED	
SS	INDICATES A SPLIT SPOON SAMPLE.	

NOTE THAT THE TOP SAMPLE OBTAINED FROM B-003-0-14 CONSISTED OF WET SLAG ROADBASE BELOW THE ASPHALT PAVEMENT AND CONTAINED A MOISTURE CONTENT OF 46%. THE RELATIVE DENSITIES OF THE NON-COHESIVE SOILS RANGED FROM "LOOSE" TO "VERY DENSE" BUT WAS PRIMARILY "MEDIUM DENSE". NEITHER SILT CLASSIFIED AS A-4b NOR PEAT WAS ENCOUNTERED IN ANY OF THE TEST BORINGS. BEDROCK WAS NOT ENCOUNTERED IN ANY OF THE TEST BORINGS.

A TOTAL OF 7 COHESIVE SOIL SAMPLES WERE TESTED FOR ATTERBERG LIMITS WITH 3 CONTAINING NATURAL MOISTURE CONTENTS GREATER THAN OR EQUAL TO THEIR PLASTIC LIMITS.

UNSTABLE SOILS WITH LOW N VALUES AND/OR EXCESSIVE MOISTURE WERE ENCOUNTERED IN TEST BORINGS B-001-0-14, B-002-0-14, AND B-005-0-14 WITHIN THREE (3) FEET OF THE PROPOSED SUBGRADE. NOTE THAT THE ABOVE TEST BORINGS WERE DRILLED ALONG THE MEDIAN.

SULFATE TEST RESULTS RANGED FROM 117 TO 606 PARTS PER MILLION (PPM) AS DETERMINED BY THE TXDOT TEX-145-E METHOD AND THEREFORE WILL NOT REQUIRE STABILIZATION IN ACCORDANCE WITH THE ODOT GB-1 SPECIFICATIONS.

TRANSIENT GROUNDWATER WAS ENCOUNTERED IN TEST BORING B-002-0-14 AT 4.0 FEET (ELEVATION 1087.2 FEET) DURING DRILLING, BUT WAS DRY UPON COMPLETION OF DRILLING OPERATIONS.

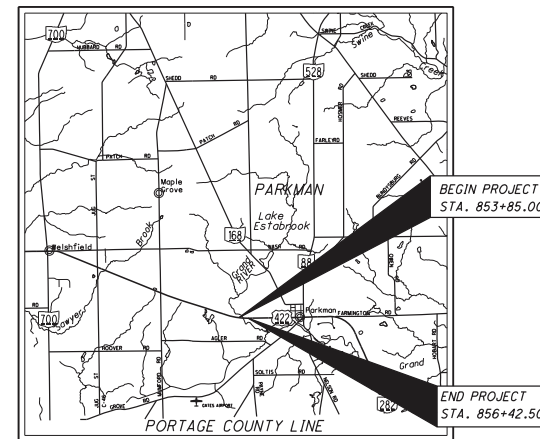
THE PAVEMENT CORE INFORMATION IS SUMMARIZED IN THE TABLE BELOW.

SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2007 AND UPDATED JANUARY 20, 2012.

AVAILABLE INFORMATION

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE SOIL PROFILE SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1600 WEST BROAD STREET OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET.



LOCATION MAP

SCALE IN MILES

PARTICLE SIZE DEFINITIONS

12"	3"	2.0 mm	0.42 mm	0.074 mm	0.005 mm
BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE	CLAY

RECON. - WN/6/2014
DRILLING - PGI/6/2014
DRAWN - SS/10/2014
REVIEWED - SS/10/2014

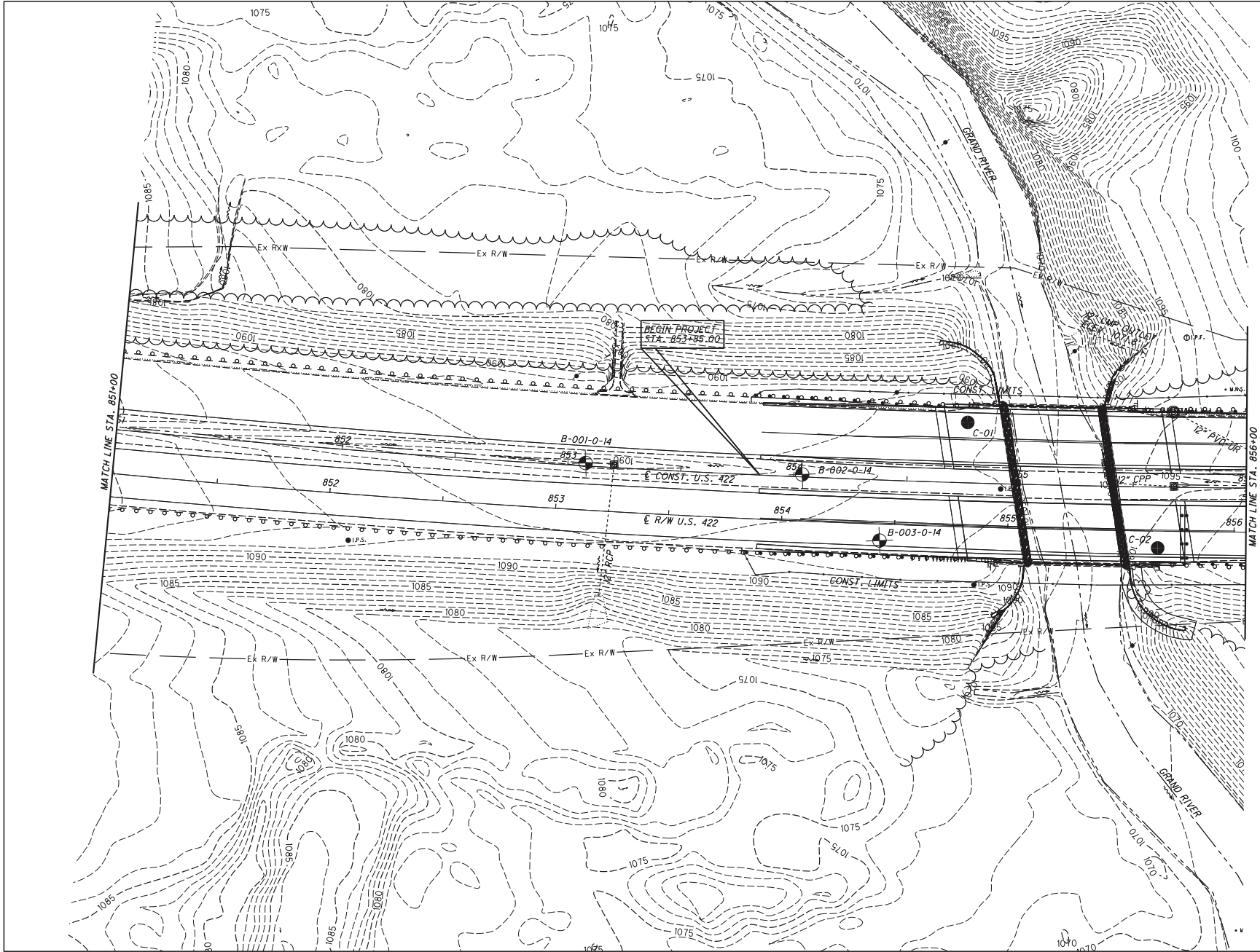
TABLE - SUMMARY OF PAVEMENT CORE INFORMATION

CORE SAMPLE NO.	STATIONS & OFFSET	ASPHALT THICKNESS (INCHES)	CONCRETE THICKNESS (INCHES)	TOTAL THICKNESS (INCHES)	REMARKS
C-01	854+76.1, 26.7' LT	5.25	15.50	20.75	1" DIA. REBAR CONCRETE CORE
C-02	855+61.2, 26.9' RT	6.75	13.50	20.25	1" DIA. REBAR CONCRETE CORE

INDEX OF SHEETS

LOCATION FROM STA. TO STA.	PLAN VIEW SHEET	PROFILE SHEET	CUT MAX.	FILL MAX.
U.S. 422 WB 853+85 856+00	3	4	--	<1'
856+00 856+42	5	6	--	<1'
U.S. 422 EB 853+85 856+00	3	4	--	<1'
856+00 856+42	5	6	--	<1'

SUMMARY OF SOIL TEST DATA																
GEA-422-1638																
EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% W.C.	ODOT CLASS		
B-001-0-14	1.00-2.50		SS-1	100	10	10	19	34	27	31	16	15	19	A-6a (7)*		
853+07.8, 13' LT.	3.50-5.00		SS-2	6	DARK BROWN AND BROWN NON-PLASTIC SANDY SILT, LITTLE STONE FRAGMENTS (FILL)										17	A-4a (V)
LATITUDE: 41.3706417	6.00-7.50		SS-2	100	7	10	20	32	31	28	15	13	17	A-6a (7)		
LONGITUDE: -81.0836670	8.60-10.00		SS-1	83	SAME AS SS-3										16	A-6a (V)
B-002-0-14	1.00-2.50		SS-1	89	13	7	20	34	26	26	15	11	14	A-6a (5)*		
854+03.6, 11' LT.	3.50-5.00		SS-2	89	26	15	21	23	15	24	16	8	15	A-4a (1)		
LATITUDE: 41.3706144	6.00-7.50		SS-3	100	SAME AS SS-2										14	A-4a (V)
LONGITUDE: -81.0832199	8.50-10.00		SS-4	100	SAME AS SS-2										15	A-4a (V)
B-003-0-14	0.50-2.00		SS-1	67	BROWN AND WHITE SLAG										46	A-1-a (V)*
854+38.84, 26.77' RT.	2.00-3.50		SS-2	83	6	6	15	48	25	26	18	8	15	A-4a (8)*		
LATITUDE: 41.3705294	3.50-5.00		SS-3	78	15	17	30	23	15	19	12	7	12	A-4a (1)*		
LONGITUDE: -81.0831010	5.00-6.50		SS-4	83	SAME AS SS-3										14	A-4a (V)
	6.50-8.50		SS-2	83	SAME AS SS-3										12	A-4a (V)
B-004-0-14	1.50-3.00		SS-1	89	7	6	28	37	22	22	15	7	13	A-4a (5)*		
856+09.3, 26.77' LT.	3.00-4.50		SS-2	56	7	7	67	12	7	NP	NP	NP	14	A-3a (0)*		
LATITUDE: 41.3706421	4.50-6.00		SS-3	94	SAME AS SS-2										13	A-3a (V)
LONGITUDE: -81.0824675	6.00-7.50		SS-4	83	BROWN AND GRAY STONE FRAGMENTS WITH SAND, LITTLE FINES (FILL)										8	A-1-b (V)
B-005-0-14	1.00-2.50		SS-1	100	6	5	32	41	16	NP	NP	NP	15	A-4a (4)*		
856+34.47, 1.3' LT.	3.50-5.00		SS-2	100	43	26	14	7 **		NP	NP	NP	6	A-1-b (0)		
LATITUDE: 41.3705685	6.00-7.50		SS-3	100	SAME AS SS-2										6	A-1-b (V)
LONGITUDE: -81.0823814	8.50-10.00		SS-4	94	SAME AS SS-2										8	A-1-b (V)
B-006-0-14	1.00-2.50		SS-1	94	24	22	38	13	3	NP	NP	NP	10	A-3a (0)*		
857+26.84, 1.26' LT.	3.50-5.00		SS-2	56	63	13	13	11 **		NP	NP	NP	7	A-1-a (0)		
LATITUDE: 41.3705569	6.00-6.90		SS-3	67	SAME AS SS-2										7	A-1-a (V)
LONGITUDE: -81.08204530	8.50-10.00		SS-4	72	BROWN COARSE AND FINE SAND, LITTLE STONE FRAGMENTS, LITTLE FINES (FILL)										7	A-3a (V)



  HORIZONTAL SCALE IN FEET	DRAWN SS	SOIL PROFILE STA. 851+00 TO STA. 856+00
	CHECKED SS	
	3 / 6	GEA-422-16.38

