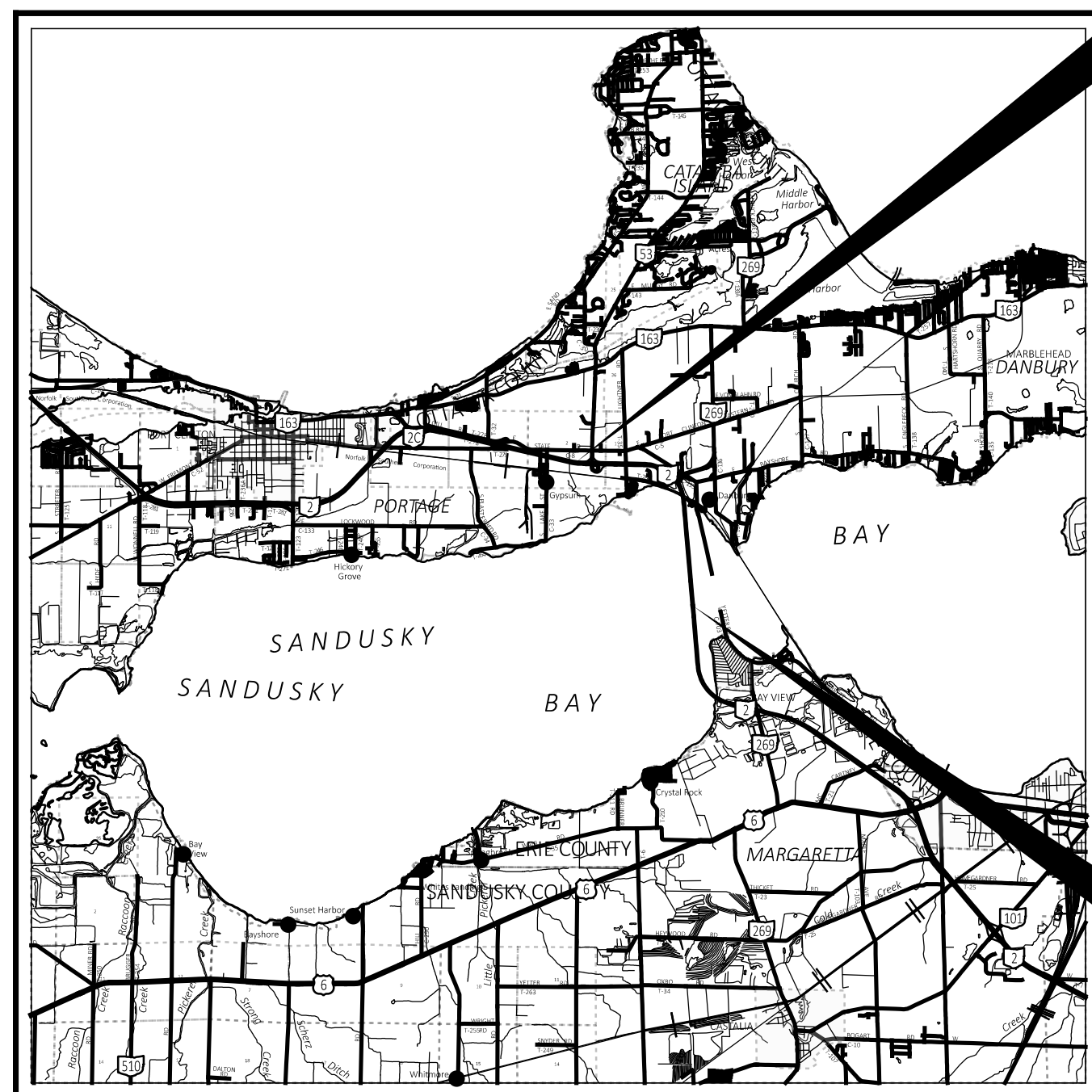


STATE OF OHIO DEPARTMENT OF TRANSPORTATION

OTT-2-23.29

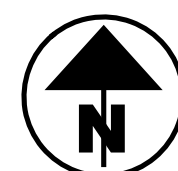
OTTAWA COUNTY

PORTAGE AND DANBURY TOWNSHIPS



LOCATION MAP

LATITUDE: 41°30'47" LONGITUDE: 82°56'28"



BEGIN PROJECT
BEGIN WORK
SR 2
STA. 1231+00

END PROJECT
END WORK
SR 2
STA. 1498+34

FEDERAL PROJECT NUMBER

E191661

RAILROAD INVOLVEMENT

NORFOLK SOUTHERN RAILROAD

PROJECT DESCRIPTION

RESURFACE SR-2 AND 2-C IN OTTAWA COUNTY; WORK WILL INCLUDE STRUCTURE WORK AND NECESSARY RELATED WORK.
STRUCTURES INCLUDE: OTT-2-2725 AND OTT-2-2757

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: N/A
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A
NOTICE OF INTENT EARTH DISTURBED AREA: N/A

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

INDEX OF SHEETS:

TITLE SHEET	1
TYPICAL SECTIONS	2-6, 4A
GENERAL NOTES	7-8, 8A
PLAN INSERT SHEETS (BOX BEAM RAIL)	9-32
MAINTENANCE OF TRAFFIC NOTES	33, 33A-33B
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PAVEMENT CALCULATIONS	36-38
GUARDRAIL CALCULATIONS	39
TRAFFIC CONTROL CALCULATIONS	40
PLAN SHEETS	41-59

STRUCTURE OVER 20'
NO. OTT-2-2725
STRUCTURE OVER 20'
NO. OTT-2-2757

SHEET ADDED
(pbq #10)
60-85, 62A
86-100

PORTION TO BE IMPROVED	-----	=====
INTERSTATE HIGHWAY	-----	=====
FEDERAL ROUTES	-----	=====
STATE ROUTES	-----	=====
COUNTY & TOWNSHIP ROADS	-----	=====
OTHER ROADS	-----	=====

DESIGN DESIGNATION

	OTT-2:23.29-28.37	OTT-2C: 0.00-0.80
CURRENT ADT (2024)	26000	6100
DESIGN YEAR ADT (2036)	29200	6300
DESIGN HOURLY VOLUME (2036)	2630	630
DIRECTIONAL DISTRIBUTION	50%	56%
TRUCKS (24 HOUR B&C)	10%	3%
DESIGN SPEED	70 MPH	70 MPH
LEGAL SPEED	65 MPH	65 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	OTHER FREEWAY & ESPRESSWAY	URBAN MAJOR COLLECTOR
NHS PROJECT	YES	

DESIGN EXCEPTIONS

NONE REQUIRED

ADA DESIGN WAIVERS

NONE REQUIRED

UNDERGROUND UTILITIES
Contact Two Working Days
Before You Dig

OHIO811.org
Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non members must be called directly)

PLAN PREPARED BY:
OHIO DEPARTMENT OF
TRANSPORTATION - DISTRICT 2

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	1/21/22	MGS-6.1	1/19/18	MT-95.40	1/17/20	MT-105.10	1/17/20	800-2019 SEE PROPOSAL	
BP-3.2	1/18/19	MGS-6.2	7/19/19	MT-95.45	1/17/20			808	1/18/19
BP-5.1	7/15/22			MT-95.60	4/19/19	TC-65.10	1/17/14	832	7/15/22
BP-6.1	7/19/13	RM-1.1	1/15/21	MT-98.10	1/17/20	TC-65.11	7/15/22	848	1/15/21
BP-9.1	1/18/19			MT-98.11	1/17/20	TC-72.20	7/20/18	872	1/21/22
DM-4.1	7/17/20	AS-1-15	1/20/23	MT-98.20	4/19/19			908	10/20/17
DM-4.3	1/15/16	AS-2-15	1/20/23	MT-98.22	1/17/20				
DM-4.4	1/15/16	DS-1-92	7/15/22	MT-98.29	1/17/20				
		PCB-91	7/17/20	MT-99.20	4/19/19				
		SICD-1-96	7/18/14	MT-99.30	1/17/20				
MGS-1.1	7/16/21	SICD-2-14	1/15/21	MT-101.70	1/17/20				
MGS-2.1	1/19/18	TST-1-99	1/15/21	MT-101.75	1/17/20				
MGS-3.1	1/19/18			MT-101.90	7/17/20				
MGS-3.2	1/18/13	MT-95.30	7/19/19	MT-102.20	4/19/19				
MGS-4.2	7/19/13	MT-95.31	7/19/19	MT-102.30	10/16/15				
MGS-5.2	7/15/16	MT-95.32	4/19/19	MT-104.10	10/16/15				

DISTRICT DEPUTY DIRECTOR

Pat McCollery, PE
Pat McCollery, P.E., S.I.
DIRECTOR, DEPARTMENT OF TRANSPORTATION

Justin Mohr

ENGINEER'S SEAL ROADWAY	ENGINEER'S SEAL BRIDGE OTT-2-2725	ENGINEER'S SEAL BRIDGE OTT-2-2757

DESIGN AGENCY	
DESIGNER	ALF
REVIEWER	JMF
PROJECT ID	96755
SHEET	1
TOTAL	100

SHEET TITLE

OTT-2-23.29

MODEL: Sheet PAPER SIZE: 34x22 (in.) DATE: 5/19/2023 TIME: 10:26:32 AM USER: afntiel
pvc:\ohiodot-pw-bentley.com\ohiodot-pw-02\Documents\01 Active Projects\District 02\Ottawa\96755\400-Engineering\Roadway\Sheets\96755_GT001.dgn

ROUNDING

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

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

OHIO EDISON
2508 W. PERKINS AVE.
SANDUSKY, OHIO 44870
PH. 419.627.6887

FRONTIER
300 W. GYPSY LANE RD.
BOWLING GREEN, OHIO 43402
PH. 419.354.9452

OTTAWA COUNTY WATER DIVISION
315 MADISON AVE.
PORT CLINTON, OHIO 43452
PH. 419.734.6710

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
MONUMENT TYPE: TYPE B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (2011)
ELLIPSOID: GRS80
MAP PROJECTION: MAP PROJECTION
COORDINATE SYSTEM: OHIO STATE PLAN NORTH
COMBINED SCALE FACTOR: 1.000000 (GRID)
ORIGIN OF COORDINATE SYSTEM: 0, 0, 0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.
UNITS ARE IN U.S. SURVEY FEET.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E, MASH 2016

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.

PLANED SURFACES

NO PLANED SURFACES SHALL BE OPEN TO THE PUBLIC FOR MORE THAN 7 DAYS. IF THE PLANED SURFACE IS OPEN FOR MORE THAN 7 DAYS, THEN IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPAIR THE PAVEMENT FAILURES THAT OCCURRED AFTER THE 7 DAYS.

ASPHALT FOR PAVEMENT UNDER MASH BOX BEAM RAIL

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR REPLACEMENT OF ASPHALT UNDER THE MASH BOX BEAM RAIL THAT WILL BE CONSTRUCTED.

ITEM 254 - 1 3/4" PAVEMENT PLANING, ASPHALT CONCRETE	1143 SY
ITEM 442 - 1 3/4" ASPHALT CONCRETE SURFACE COURSE, 12.55MM, TYPE A, (449)	56 CY

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN

AFTER COMPLETION OF ALL WORK, BUT PRIOR TO THE FINAL ACCEPTANCE OF THE PROJECT, A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF OHIO SHALL DETERMINE THE MINIMUM VERTICAL CLEARANCES OF ALL EXISTING AND NEW BRIDGES WITHIN THE PROJECT LIMITS. AT A MINIMUM, MEASUREMENTS SHALL BE TAKEN ALONG EACH FACIA BEAM AT THE EDGE OF SHOULDERS, EDGE LINES, LANE LINES, AND CROWN OF THE ROADWAY BELOW. THE ODOT DISTRICT 2 VERTICAL CLEARANCE SURVEY FORM SHALL BE USED, WHERE APPLICABLE, TO DOCUMENT THE MEASUREMENTS. WHERE THE ODOT DISTRICT 2 VERTICAL CLEARANCE FORM IS NOT APPLICABLE, THE MEASUREMENTS SHALL BE DOCUMENTED ON A CONTRACTOR-DEVELOPED FORM THAT CLOSELY RESEMBLES THE ODOT DISTRICT 2 VERTICAL CLEARANCE SURVEY FORM AND SHALL BEAR THE STAMP OR SEAL OF THE OHIO PROFESSIONAL SURVEYOR WHO HAS TAKEN THE MEASUREMENTS AND SHALL BE SUBMITTED TO THE PROJECT ENGINEER PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

THE ODOT DISTRICT 2 VERTICAL CLEARANCE SURVEY FORM CAN BE DOWNLOADED FROM THE FOLLOWING WEBSITE:

<http://www.dot.state.oh.us/districts/D02/Pages/Permits.aspx>

ITEMS ADJUSTED TO GRADE

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED FOR ADJUSTMENTS REQUIRED FOR THE FOLLOWING ITEMS, AS DIRECTED BY THE ENGINEER.

ITEM 611-INLET ADJUSTED TO GRADE			
LOCATION	ROUTE	PLAN SPLIT CODE	EACH
OTT	2	01/NHS/PV	2
TOTAL CARRIED TO GENERAL SUMMARY			2

ITEM 611 - CATCH BASIN ADJUSTED TO GRADE			
LOCATION	ROUTE	PLAN SPLIT CODE	EACH
OTT	2	01/NHS/PV	2
TOTAL CARRIED TO GENERAL SUMMARY			2

ITEM 623 - MONUMENT BOX ADJUSTED TO GRADE			
LOCATION	ROUTE	PLAN SPLIT CODE	EACH
OTT	2	01/NHS/PV	2
TOTAL CARRIED TO GENERAL SUMMARY			2

ITEM 606 - IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE TYPE 2 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE (REFER TO THE POSTED SHOP DRAWINGS FOR THE MOST CURRENT APPROVED PRODUCT MODELS). WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 2 [(SPEED (IN MPH), HAZARD WIDTH (IN INCHES)), (UNIDIRECTIONAL OR BIDIRECTIONAL)], EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS/BACKSTOPS, TRANSITIONS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

ITEM 255 - FULL DEPTH PAVEMENT REPAIR AND RIGID REPLACEMENT, MISC.: CLASS QC 3

ITEM 255 FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, MISC.: CLASS QC 3 SHALL FOLLOW SPECIFICATION FOR THE 255 ITEM EXCEPT FOR SECTION 255.01 DESCRIPTION. THE PLACING, CONSOLIDATION, FINISHING AND CURING NEW PORTLAND CEMENT CONCRETE TO THE LEVEL OF THE EXISTING PAVEMENT.

MATERIALS: PROVIDE MATERIALS CONFORMING TO THE FOLLOWING REQUIREMENTS:

PORTLAND CEMENT CONCRETE
499.03, CLASS QC 3, WITH MACRO-FIBERS*

QC3: FLEXURAL STRENGTH: 300 PSI IN 12 HOURS

PERMEABILITY: 2000 COULOMBS

MACROFIBERS: MINIMUM 4.0 LB/CY

COARSE AGGREGATE (NO. 57 & NO. 8)	703.02 & 703.13
FINE AGGREGATE (NATURAL SAND)	703.02
PORTLAND CEMENT, TYPE 1	701.04
FLY ASH OR NATURAL POZZOLAN	701.13
SLAG CEMENT	701.09
WATER	499.02
CHEMICAL ADMIXTURE	705.12
AIR-ENTRAINING ADMIXTURE	705.10
MACRO-FIBERS FOR CONCRETE	705.29
LIQUID MEMBRANE-FORMING COMPOUNDS FOR CONCRETE CURING	705.07

*USE A MINIMUM DOSAGE RATE OF FIBERS OF 4.0 LB/YD³ OF CONCRETE. ENSURE THE FINAL PROPOSED MIX IS WORKABLE AND ABLE TO BE PRODUCED SUCH THAT BALLING OR CLUMPING OF THE FIBERS IS NOT A PROBLEM AS DETERMINED BY THE ENGINEER. A DEMONSTRATION OF THE MIX PRODUCTION, OR TRIAL MIX, MAY BE REQUIRED BY THE ENGINEER PRIOR TO PLACING ANY OF THE MIX ON THE PROJECT.

ITEM 255 - FULL DEPTH PAVEMENT AND RIGID REPLACEMENT MISC.: CLASS QC 3
400 (6' X 12') JOINTS = 3200 SQ. YD.

ITEM 255 - FULL DEPTH PAVEMENT SAWING = 14,400 FT
ITEMS CARRIED TO THE GENERAL SUMMARY.

ITEM 442 ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, AS PER PLAN

FOLLOW ALL REQUIREMENTS OF THE SPECIFICATIONS WITH THE ADDITION OF THE FOLLOWING:

PERFORM THE IDEAL-CT FOR THE MIX DESIGN SUBMITTAL PER SUPPLEMENT 1033 ON THE JMF ASPHALT BINDER CONTENT DETERMINED FROM THE DESIGN AIR VOIDS AND ENSURE THE MINIMUM IN THE TABLE BELOW IS MET FOR THE MIX TYPE. THE IDEAL-CT ONLY NEEDS TO BE RAN FOR MIX DESIGN ACCEPTANCE.

PROVIDE RESULTS PER SUPPLEMENT 1033 WITH THE MIX DESIGN. SUPPLY SIX GYRATORY COMPACTED SPECIMENS TO THE HEIGHT MENTIONED IN SUPPLEMENT 1033 FOR THE MIX TYPE SPECIFIED. ALLOW MORE THAN TWO WEEKS FOR MIX DESIGN REVIEW AND PRELIMINARY APPROVAL DUE TO OMM VERIFYING THE MIX.

MIX TYPE MINIMUM	CT INDEX
ITEM 442 (SUPERPAVE) 9.5 MM	80
ITEM 442 (SUPERPAVE) 12.5 MM (SURFACE)	80
ITEM 442 (SUPERPAVE) 12.5 MM (INTERMEDIATE)	70
ITEM 442 (SUPERPAVE) 19 MM (INTERMEDIATE)	60
ITEM 441 (MARSHALL) TYPE 1 SURFACE MIXES	80
ITEM 441 (MARSHALL) TYPE 1 INTERMEDIATE MIXES	80
ITEM 441 (MARSHALL) TYPE 2 INTERMEDIATE MIXES	60
ITEM 302 (MARSHALL) MIXES	60

NOTE REVISED (PBQ #3)

DESIGN AGENCY



DESIGNER	ALF
REVIEWER	JMF
PROJECT ID	96755
SHEET	7
TOTAL	100

OTT-2-23.29


MODEL: Sheet: PAPER: 34x22 (in.) DATE: 5/16/2023 TIME: 11:34:30 AM USER: afnief
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SHEET NUM.								PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
7	8A	33	33A	33B	38	39	40	01/NHS/06	02/NHS/14						
ROADWAY															
					86			86		202	23000	86	SY	PAVEMENT REMOVED	
						23,837.5		23,837.5		202	38000	23,837.5	FT	GUARDRAIL REMOVED	
					35			35		202	42010	35	EACH	ANCHOR ASSEMBLY REMOVED, TYPE E	
					28			28		202	42040	28	EACH	ANCHOR ASSEMBLY REMOVED, TYPE T	
					33			33		202	47000	33	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
					3			3		202	47800	3	EACH	IMPACT ATTENUATOR REMOVED	
					86			86		204	10000	86	SY	SUBGRADE COMPACTION	
					375			375		209	15000	375	STA	RESHAPING UNDER GUARDRAIL	
					25.47			25.47		209	60500	25.47	MILE	LINEAR GRADING	
					21,450			21,450		606	15050	21,450	FT	GUARDRAIL, TYPE MGS	
					35			35		606	26150	35	EACH	ANCHOR ASSEMBLY, MGS TYPE E, MASH 2016	
					28			28		606	26550	28	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
					24			24		606	35002	24	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
					11			11		606	35102	11	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
					2			2		606	60022	2	EACH	IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL), (70 MPH/90°)	
					1			1		606	60028	1	EACH	IMPACT ATTENUATOR, TYPE 2 (BIDIRECTIONAL), (70 MPH/84°)	
					7,692			7,692		606	98000	7,692	FT	GUARDRAIL, MISC.:MEDIAN BOX BEAM RAIL, REMOVED	39
					7,692			7,692		606	98000	7,692	FT	GUARDRAIL, MISC.:MEDIAN BOX BEAM RAIL	39
					11,088			11,088		606	98000	11,088	FT	GUARDRAIL, MISC.:BOX BEAM RAIL, REMOVED	39
					11,088			11,088		606	98000	11,088	FT	GUARDRAIL, MISC.:BOX BEAM RAIL	39
2								2		623	39500	2	EACH	MONUMENT BOX ADJUSTED TO GRADE	
EROSION CONTROL															
					7,795			7,795		659	10000	7,795	SY	SEEDING AND MULCHING	
					1.05			1.05		659	20000	1.05	TON	COMMERCIAL FERTILIZER	
					42			42		659	35000	42	MGAL	WATER	
								1,000		832	30000	1,000	EACH	EROSION CONTROL	
DRAINAGE															
2								2		611	98630	2	EACH	CATCH BASIN ADJUSTED TO GRADE	
2								2		611	99150	2	EACH	INLET ADJUSTED TO GRADE	
PAVEMENT															
1,143					302,634			303,777		254	01000	303,777	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1 3/4"	
3,200								3,200		255	10200	3,200	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, MISC.:CLASS QC 3	7
14,400								14,400		253	20000	14,400	FT	FULL DEPTH PAVEMENT SAWING	
					172			172		302	56000	172	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
					129			129		304	20000	129	CY	AGGREGATE BASE	
					26,155			26,155		407	10000	26,155	GAL	TACK COAT	
					14,712			14,712		442	10001	14,712	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22	7
56								56		442	22100	56	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (449)	
					48			48		442	22400	48	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (449)	
					1,239			1,239		617	10100	1,239	CY	COMPACTED AGGREGATE	
					104,414			104,414		618	40100	104,414	FT	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	
					52,207			52,207		872	10000	52,207	FT	VOID REDUCING ASPHALT MEMBRANE (VRAM)	
								LUMP		SPECIAL	69098400	LS		PAVER MOUNTED THERMAL PROFILING	8A
TRAFFIC CONTROL															
						18		18		620	60000	18	EACH	DELINEATOR, POST SURFACE MOUNTED	
						774		774		621	00100	774	EACH	RPM	
						774		774		621	54000	774	EACH	RAISED PAVEMENT MARKER REMOVED	
					475			475		626	00116	475	EACH	BARRIER REFLECTOR, TYPE 5, UNIDIRECTIONAL	
						27.43		27.43		642	00104	27.43	MILE	EDGE LINE, 6", TYPE 1	
					10.32			10.32		642	00204	10.32	MILE	LANE LINE, 6", TYPE 1	
					10,499			10,499		642	00404	10,499	FT	CHANNELIZING LINE, 12", TYPE 1	
					7,188			7,188		642	01510	7,188	FT	DOTTED LINE, 6", TYPE 1	
					1,062			1,062		644	00720	1,062	FT	CHEVRON MARKING	

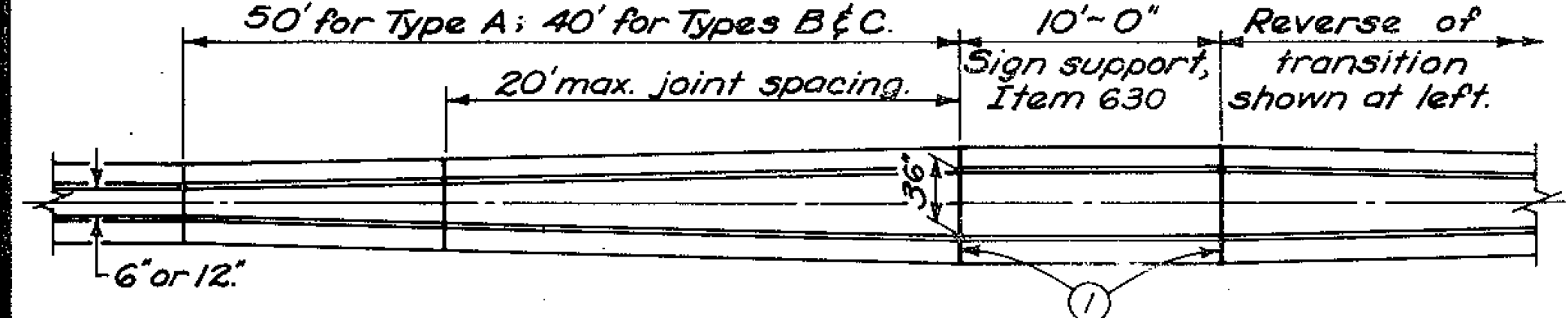
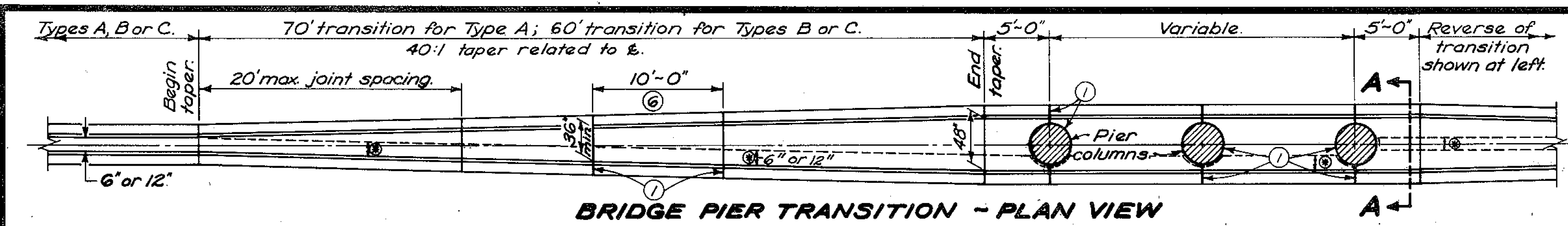
ITEMS REVISED AND ADDED (PBQ #3, #4)

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER: ALF
 REVIEWER: JMF
 PROJECT ID: 96755
 SHEET: 34 | TOTAL: 100



SIGN SUPPORT TRANSITION - PLAN VIEW
 (For 50" barriers the upper 18" varies from 6" or 12" to 36" width)

- LEGEND**
- ① Expansion joint, 3/4" min. Preformed Filler 705.03.
 - ② No. 8 deformed steel bars, 12" long, spaced on staggered (except Type D) 4' centers. The End Terminal will require shorter dowel between points A & B. Omit dowels when top is constructed integral with the base.
 - ③ 1" Radius or 3/4" chamfer.
 - ④ Permissible 10" radius.
 - ⑤ Permissible 1" radius.
 - ⑥ 630 Overhead Sign Support Foundation, if specified in the plan.

NOTES

JOINTS: Unsealed contraction joints spaced at 20' max. shall be constructed throughout the run of Concrete Barrier except that expansion joints shall be used at the center line of and around each bridge pier column and on either side of overhead sign supports, inlets and light pole foundations. If inlet top is slip formed the expansion joints adjacent to it may be omitted. Contraction joints may be constructed with metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts or tooled or sawed joints shall have a 1/2" min. depth. All joints shall be constructed for the full height of the barrier including the base.

MEASUREMENT: 622 Concrete Barrier, including transitions and end terminals and pier sections, is paid for in linear feet as one of the four types (A, B, C or D) or as Type A50, B50, etc. (for 50" high barrier), with appropriate deductions for other items such as:

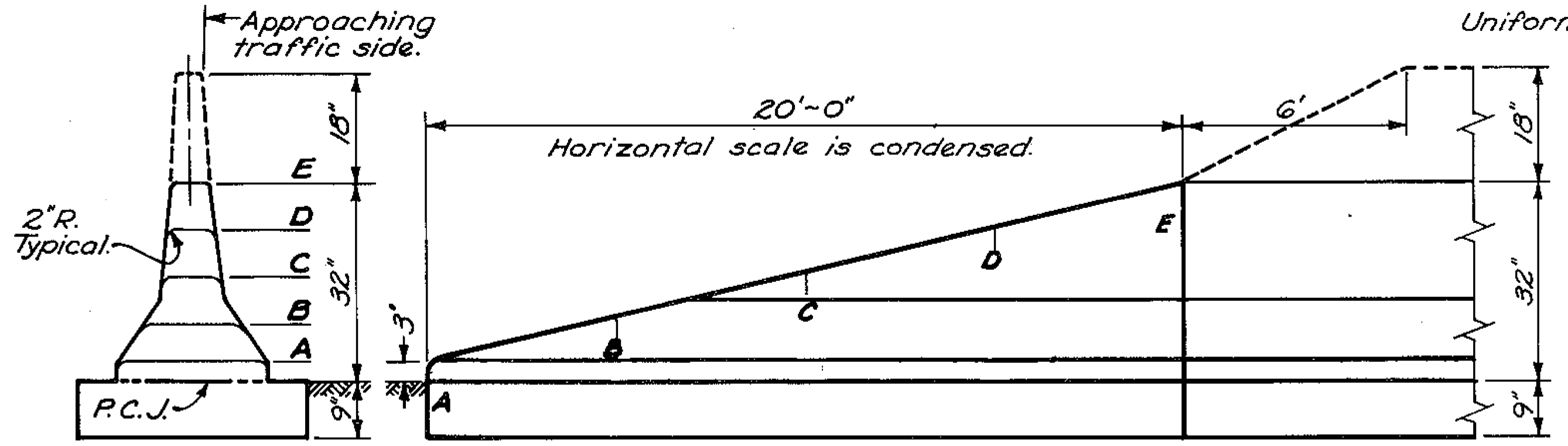
- 604 I-3 Median inlet ----- 20 Lin. Ft.
- 625 Light pole foundation or pullbox ----- 2.5 Lin. Ft.
- 630 Overhead sign support foundation ----- 10 Lin. Ft.
- 630 Barrier wall assembly ----- 10 Lin. Ft.

50 INCH HIGH BARRIER shall be built where specified on the plan, with the same bottom 32" slopes and 9" foundation as the standard Type specified. The upper 18" may be constructed integral with the bottom, or separately with #4 rebar dowels at 4' max. spacing. Start and end dowels 6" from barrier vertical joints.

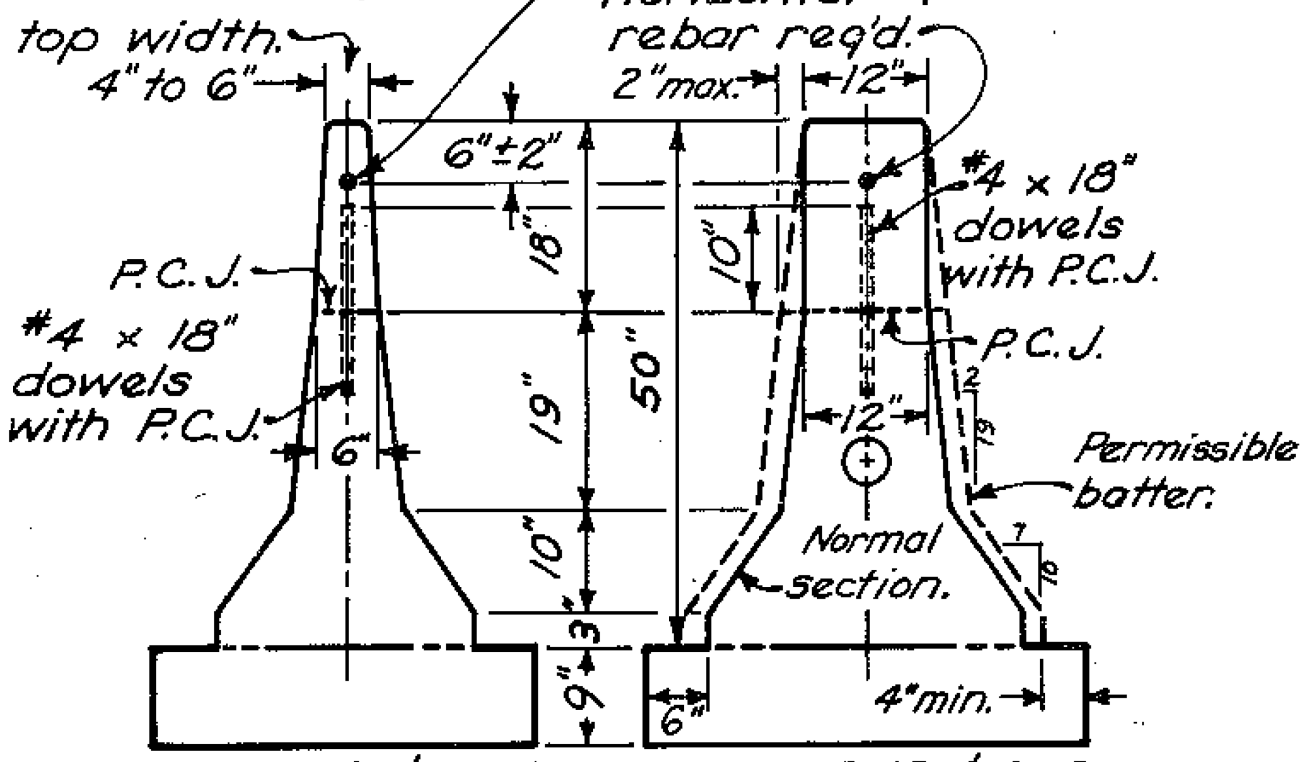
⑥ On variable width (i.e. pier transition) barrier sections not having sign support foundations, the upper 18" may be built with a 6" or 12" top width (per Type specified) on the E or along one face of the barrier. At End Terminals taper the upper 18" to 0" in 6".

RACEWAY: The Contractor shall insure that the electrical raceway is clear of internal obstructions. Cost of the 4" polyvinyl chloride raceway and No. 10 AWG copper-clad or aluminum-clad pull wire if needed for future installation of circuits shall be included in the unit price bid per linear for 622 Concrete Barrier.

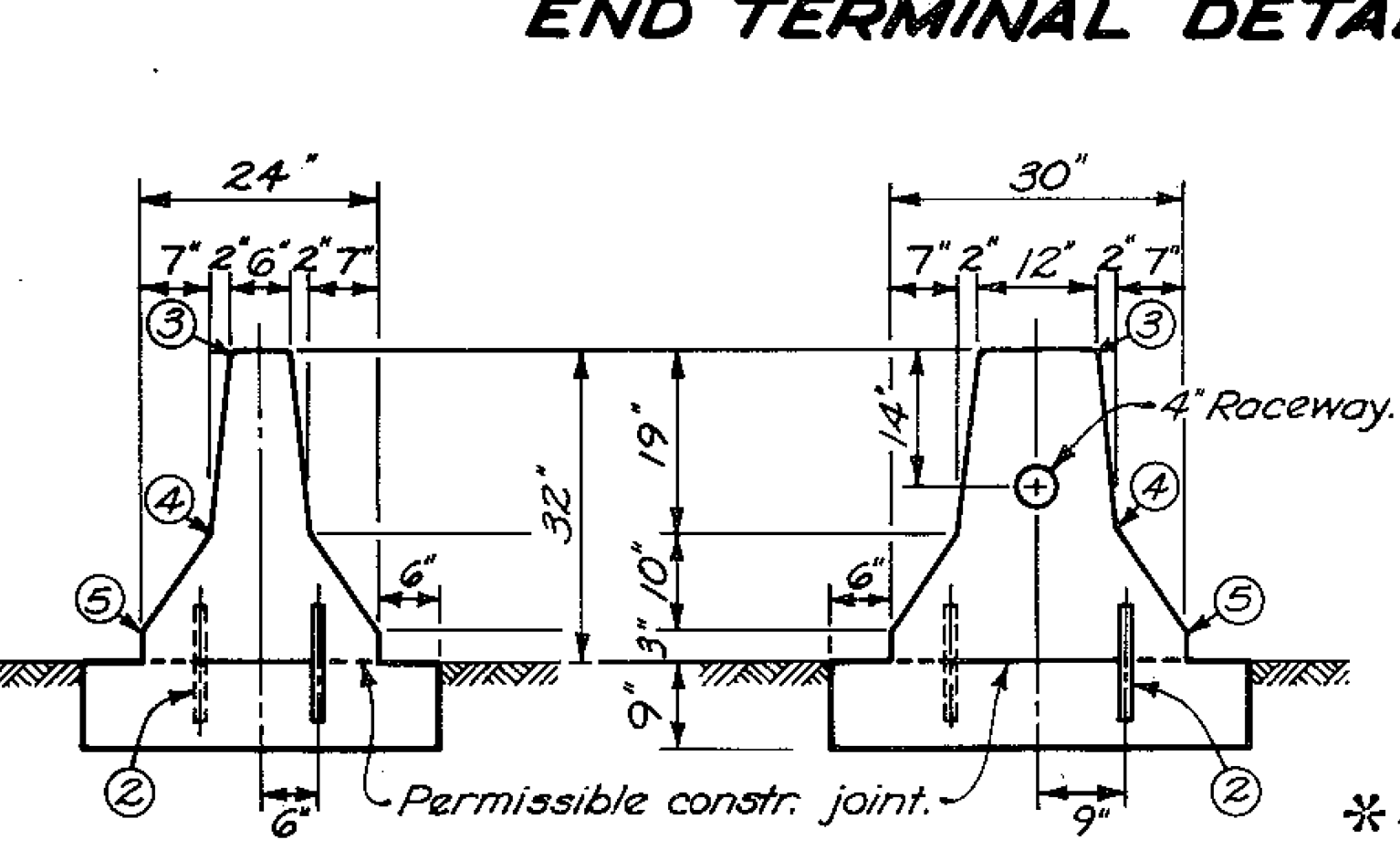
STATION MARKING shall be impressed in the "green" concrete on both sides at the top of the barrier if specified in the plans which cost shall be incidental to the unit cost per linear foot bid for 622 Concrete Barrier.



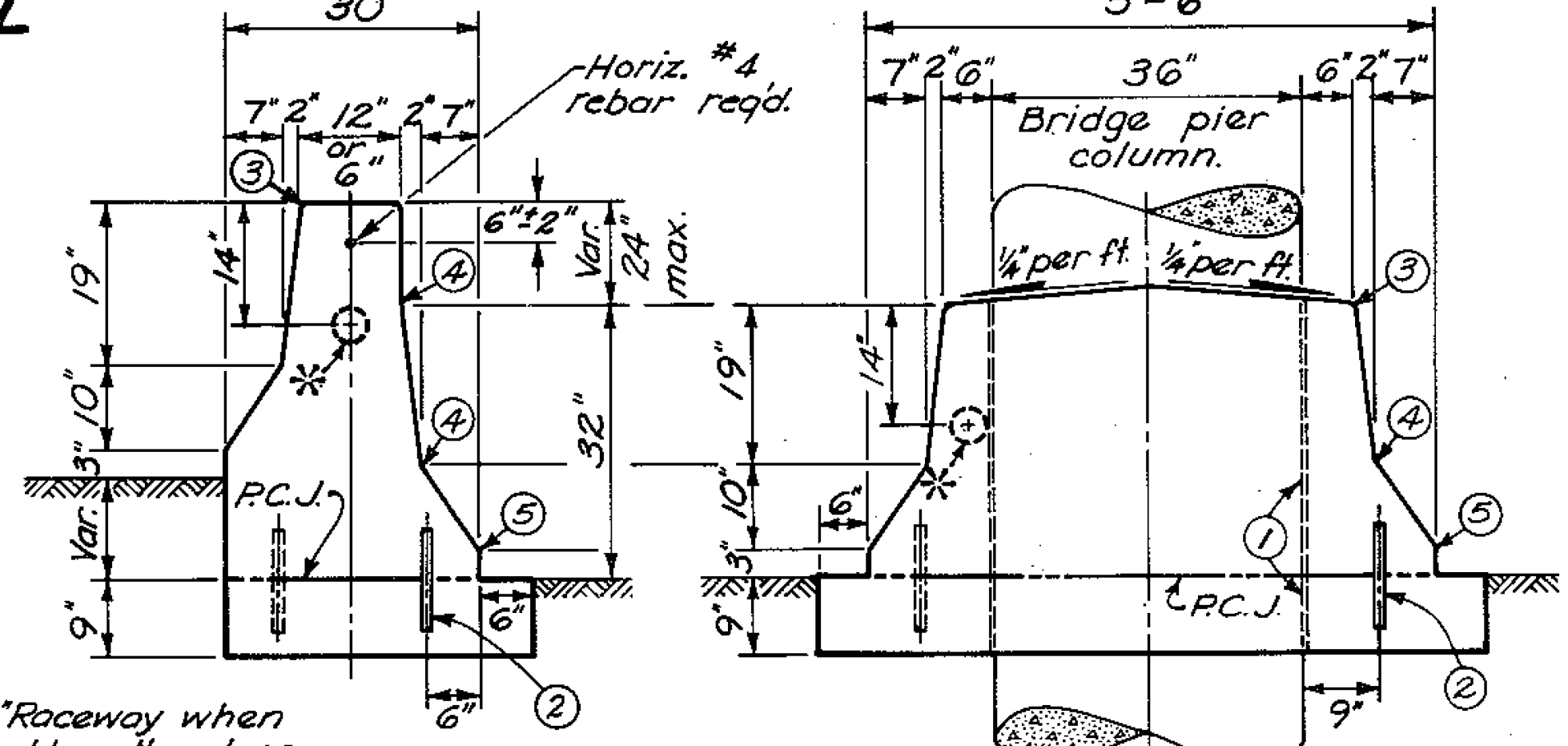
END VIEW **PROFILE VIEW**
END TERMINAL DETAIL



50" BARRIERS
 Types A50 & D50 Types B50 & C50



TYPE A **TYPE B**
NORMAL SECTIONS



TYPE C **TYPE D**
SECTION A-A

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER

STANDARD CONSTRUCTION DRAWING **MC-9**

APPROVED: *[Signature]* ENGR., L. & D.

DATE: 1-1-74
 11-1-77
 1-30-84

GENERAL NOTES
 BRIDGE NO. OTT-2-2725
 SR 2 OVER NORFOLK SOUTHERN R.R.

DESIGNER	CHECKER
TSR	TLR
REVIEWER	
DTC 02/03/23	
PROJECT ID	
96755	
SUBSET	TOTAL
3A	26
SHEET	TOTAL
P.62A	100

SHEET ADDED (PBQ #10)

ESTIMATED QUANTITIES (02/NHS/14)

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	SUPER.	GEN.	SEE SHEET
202	11203	LS	LS	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				3
202	22900	402	SY	APPROACH SLAB REMOVED			402	
202	30700	100	FT	CONCRETE BARRIER REMOVED			100	4 of 100
503	11100	LS	LS	COFFERDAMS AND EXCAVATION BRACING				
503	21101	51	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	51			3
509	10000	40539	LB	EPOXY COATED REINFORCING STEEL	8500	32039		
509	20001	200	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN		200		3
509	30020	9157	FT	NO. 4 DEFORMED GFRP REINFORCEMENT		9157		
510	10000	1705	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	415	1290		
511	33500	4	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE	4			
511	34413	213	CY	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN		213		3
511	34450	139	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)		139		
511	45710	94	CY	CLASS QC1 CONCRETE, ABUTMENT	94			
512	10050	1264	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	75	1189		
512	33000	32	SY	TYPE 2 WATERPROOFING	32			
516	13600	12	SF	1" PREFORMED EXPANSION JOINT FILLER	12			
516	13900	197	SF	2" PREFORMED EXPANSION JOINT FILLER	197			
516	14020	281	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	281			
516	44100	20	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (10.5" X 17" X 2.258" WITH 11.5" X 18" X 1.5" LOAD PLATE)		20		
516	47001	LS	LS	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				3
518	21200	163	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	163			
518	40000	279	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	279			
518	40010	20	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	20			
519	11101	100	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	100			3
526	25010	419	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")			419	
526	90010	200	FT	TYPE A INSTALLATION			200	
SPECIAL	53000200	LS	LS	STRUCTURES: SURVEY OF EXISTING STRUCTURE				3
SPECIAL	53000400	16	EACH	STRUCTURES: SCUPPER PROTECTION		16		3
601	20000	310	SY	CRUSHED AGGREGATE SLOPE PROTECTION		310		
601	21060	11	SY	TIED CONCRETE BLOCK MAT WITH TYPE 2 UNDERLAYMENT		11		
622	90000	100	FT	BARRIER, MISC.: 50" HIGH BARRIER (MC-9)			100	4
846	00110	3	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM			3	
848	10200	2215	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION (2 1/4" THICK), AS PER PLAN		2215		3
848	20000	2215	SY	SURFACE PREPARATION USING HYDRODEMOLITION		2215		
848	30200	10	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN		10		3
848	50000	15	SY	HAND CHIPPING		15		
848	50100	LS	LS	TEST SLAB				
848	50200	3	CY	FULL-DEPTH REPAIR		3		
848	50320	2098	SY	EXISTING CONCRETE OVERLAY REMOVED (1 1/4" THICK)		2098		
848	50340	222	SY	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY		222		

ITEM 622 - BARRIER, MISC.: 50" HIGH BARRIER (MC-9)

THIS WORK CONSISTS OF CONSTRUCTING PORTLAND CEMENT CONCRETE BARRIER ON THE ACCEPTED AND PREPARED SUBGRADE PER C&MS ITEM 622 CONCRETE BARRIER. THE DIMENSIONS AND DETAILS FOR THIS BARRIER SHALL CONFORM TO THOSE SHOWN FOR 50" HIGH BARRIER TYPE A50 IN THE RETIRED OHIO DEPARTMENT OF TRANSPORTATION STD. DWG. MC-9 DATED 1-30-1984.

ITEM ADDED (PBQ #10)

ESTIMATED QUANTITIES
 BRIDGE NO. OTT-2-2725
 SR 2 OVER NORFOLK SOUTHERN R.R.

SFN
 6200729

DESIGN AGENCY



DESIGNER
 TSR

CHECKER
 TLR

REVIEWER
 DTC 02/03/23

PROJECT ID
 96755

SUBSET TOTAL
 4 26

SHEET TOTAL
 P.63 100