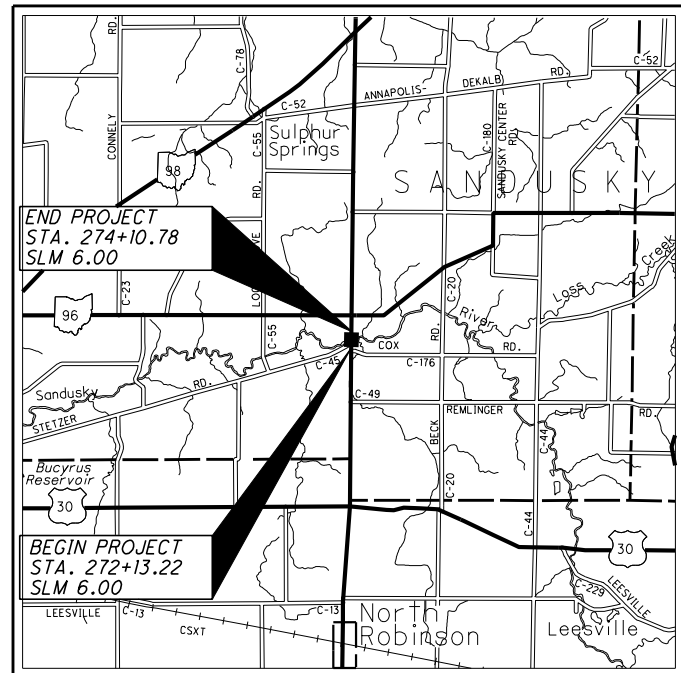


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CRA-602-6.00
LIBERTY AND SANDUSKY TOWNSHIPS
CRAWFORD COUNTY



LOCATION MAP

LATITUDE: 40°-50'-19" N LONGITUDE: 82°-51'-19" W



PORTION TO BE IMPROVED -

INTERSTATE HIGHWAY -

STATE & FEDERAL ROUTES -

COUNTY & TOWNSHIP ROADS -

OTHER ROADS -

DESIGN DESIGNATION

CURRENT ADT (2008)	1300
DESIGN YEAR ADT (2028)	1500
DESIGN HOURLY VOLUME (2028)	165
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	4%
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
RURAL MAJOR COLLECTOR	
NHS PROJECT	N/A

DESIGN EXCEPTIONS

NONE

AS-BUILT DRAWINGS: 12/2008

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UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: **1-800-925-0988**

PLAN PREPARED BY:
BARR & PREVOST
2800 CORPORATE EXCHANGE DR., STE 240
COLUMBUS, OH 43231
(614) 714-0270 FAX (614) 714-0323

ENGINEERS SEAL:

STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER
JAMES E. PREVOST
E-64055

SIGNED:
DATE: 7/29/08

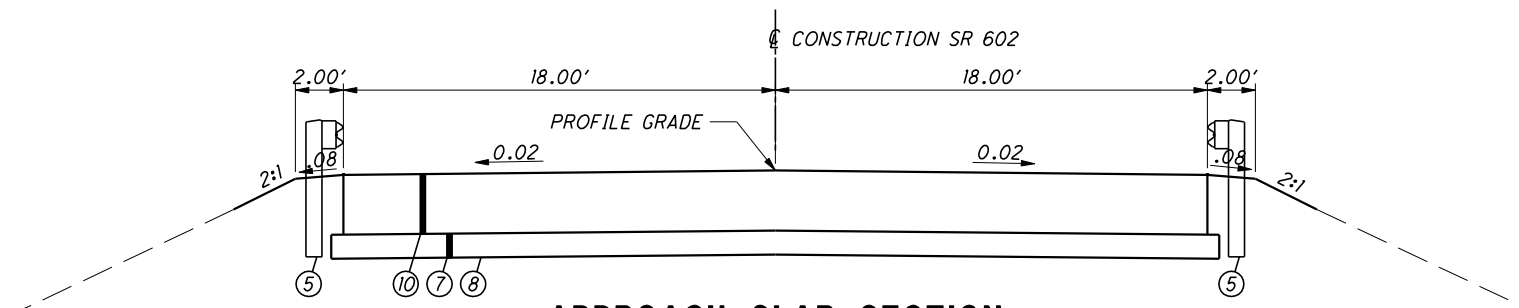
STANDARD CONSTRUCTION DRAWINGS					SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	10/19/07		AS-1-81	7/19/02		800 4/18/08
			DS-1-92	7/18/03		832 4/25/06
GR-1.1	7/16/04		SICD-1-96	7/19/02		892 4/15/05
GR-2.1	1/16/04		TST-1-99	4/18/08		898 4/18/08
GR-3.1	1/19/07					
GR-3.6	1/16/04		MT-101.60	9/05/06		
GR-4.2	1/19/07		MT-105.10	10/18/02		
GR-5.1	4/18/03		MT-105.11	10/18/02		
GR-5.2	1/16/04					
			TC-73.10	1/19/01		
DM-1.1	4/21/06					
DM-4.1	7/19/02					
DM-4.4	7/19/02					

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 4.

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

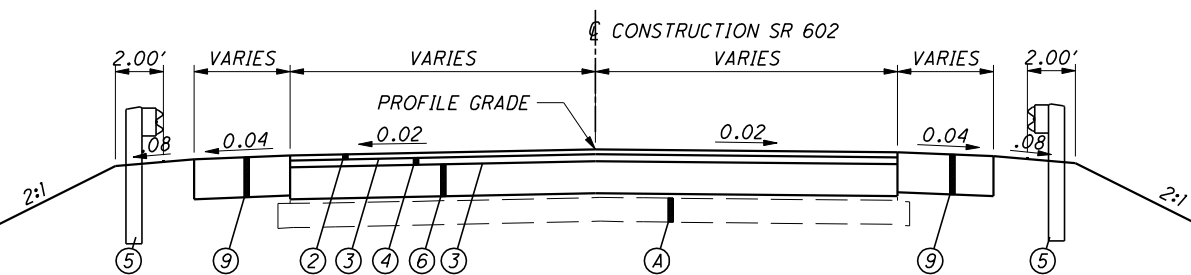
APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E070885
PID NO. 20375
CONSTRUCTION PROJECT NO. 083000
RAILROAD INVOLVEMENT NONE
CRA-602-6.00
1/22



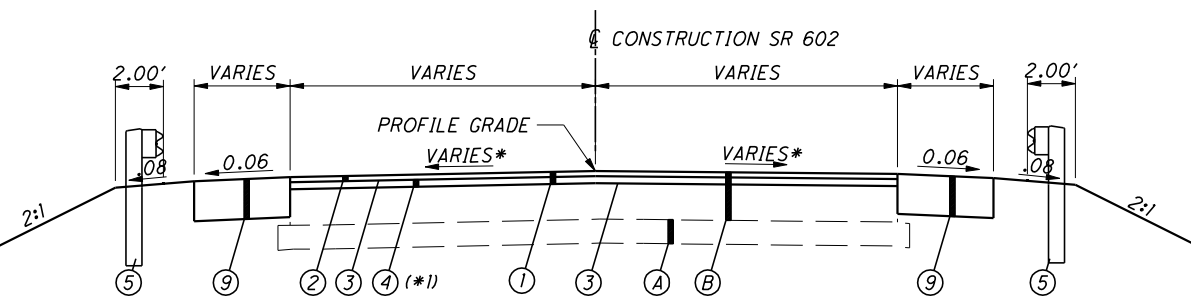
APPROACH SLAB SECTION

SECTION APPLIES:
 STA. 272+16.47 TO STA. 272+41.47 = 25.00 L.F.
 STA. 273+82.53 TO STA. 274+07.53 = 25.00 L.F.
 TOTAL LENGTH = 50.00 L.F.



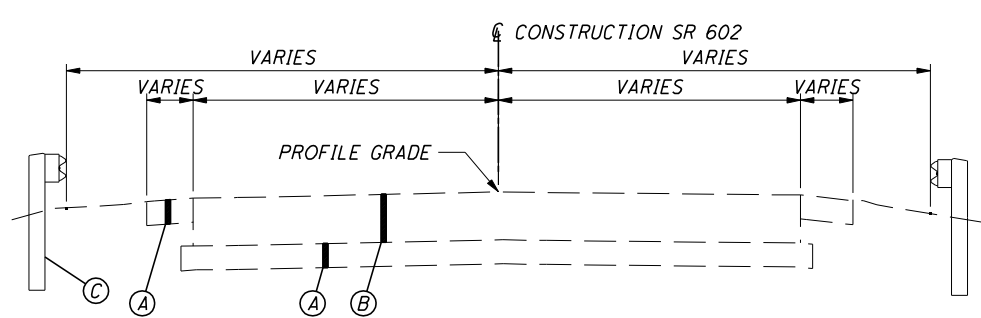
NORMAL SECTION

SECTION APPLIES:
 STA. 272+12.00 TO STA. 272+16.47 = 4.47 L.F.
 STA. 274+07.53 TO STA. 274+12.00 = 4.47 L.F.
 TOTAL LENGTH = 8.97 L.F.

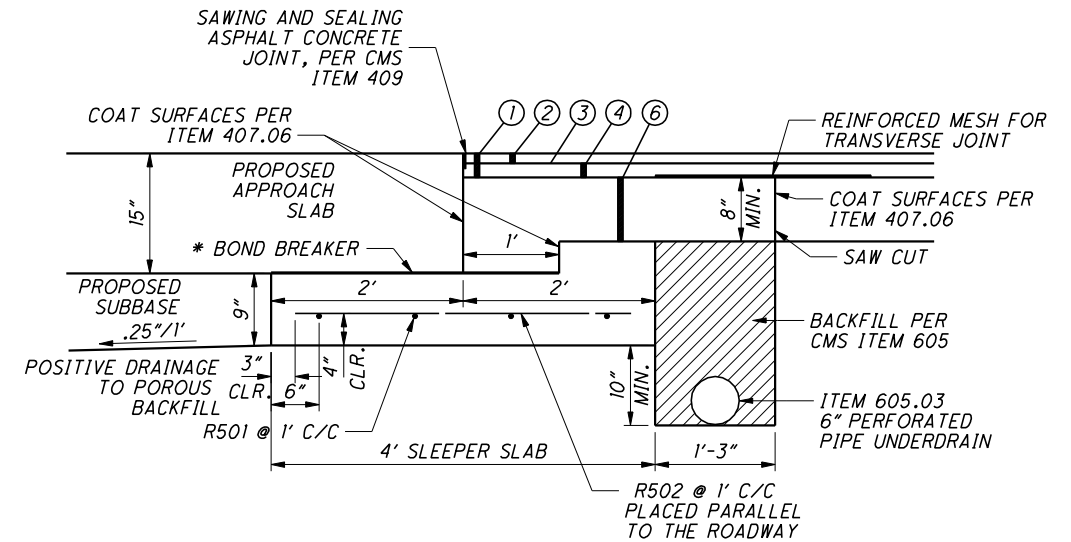


NORMAL SECTION - OVERLAY

SECTION APPLIES:
 STA. 271+62.00 TO STA. 272+12.00 = 50.00 L.F.
 (*1) STA. 274+12.00 TO STA. 275+25.00 = 113.00 L.F.
 TOTAL LENGTH = 163.00 L.F.



EXISTING SECTION



SLEEPER SLAB AND PAVEMENT DETAIL

THE SLEEPER SLAB SHALL EXTEND FROM THE EDGE TO EDGE OF THE APPROACH SLAB.

THE PERFORATED UNDERDRAIN SHALL EXTEND FROM EDGE TO EDGE OF THE SLEEPER SLAB AND BE OUTLETTED THROUGH THE DITCH FORESLOPE, ON BOTH SIDES OF THE ROAD, USING TYPE F CONDUIT WITH PRECAST OUTLETS.

* THE BOND BREAKER SHALL CONSIST OF TWO 3'-0" SHEETS OF CLEAR OR OPAQUE POLYETHYLENE FILM WITH A NORMAL THICKNESS OF 4 MILS AND SHALL EXTEND THE FULL LENGTH OF THE SLEEPER SLAB.

PROPOSED LEGEND

- ① ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (3" TH.: STA. 271+62.00 TO 272+12.00) (VAR. TH.: STA. 274+12.00 TO 275+25.00)
- ② ITEM 442 1 1/4" ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448)
- ③ ITEM 407 TACK COAT (APPLICATION RATE 0.08 GAL/S.Y.)
- ④ ITEM 442 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A, (448)
- ④ (*1) ITEM 442 VARIABLE THICKNESS ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A, (448)
- ⑤ ITEM 606 GUARDRAIL, TYPE 5
- ⑥ ITEM 301 8" ASPHALT CONCRETE BASE
- ⑦ ITEM 304 6" AGGREGATE BASE
- ⑧ ITEM 204 SUBGRADE COMPACTION
- ⑨ ITEM 411 10" STABILIZED CRUSHED AGGREGATE
- ⑩ ITEM 526 REINFORCED CONCRETE APPROACH SLAB (T=15")

EXISTING LEGEND

- Ⓐ 6"± AGGREGATE BASE
- Ⓑ 11"± ASPHALT CONCRETE
- Ⓒ GUARDRAIL, TYPE 5

* - CROSS SLOPE VARIES FROM 0.02 AT APPROACH SLAB TO MATCH EXISTING AT BUTT END JOINT

NOTES:
 1.) SEE CROSS SECTIONS FOR GRADING SLOPES
 2.) SEE BRIDGE PLANS FOR APPROACH SLAB DETAILS
 3.) SEE PLAN FOR VARIABLE DIMENSIONS

UTILITIES

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

EMBARO (FORMERLY SPRINT)
TIM BOWSER
175 ASHLAND RD
P.O. BOX 3555
MANSFIELD, OH 44907
419-755-7137
419-526-0042 (FAX)

THE AFOREMENTIONED UTILITY COMPANY HAS A FACILITY IN THE AREA THAT WILL REMAIN IN PLACE DURING CONSTRUCTION.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM NAVD 88.

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.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

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 RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

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 58 CU. YD.

659, SEEDING AND MULCHING 514 SQ. YD.

659, REPAIR SEEDING AND MULCHING 26 SQ. YD

659, INTER-SEEDING 26 SQ. YD.

659, COMMERCIAL FERTILIZER 0.08 TON

659, LIME 0.11 ACRES

659, WATER 3 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT OF WAY LINES, AND WITHIN CONSTRUCTION LIMITS. THE QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS WHICH ARE PROVIDED IN THE PLAN.

INDIANA BAT

THIS PROJECT IS WITHIN THE KNOWN BREEDING RANGE OF THE FEDERAL ENDANGERED INDIANA BAT. UNAVOIDABLE CUTTING OF TREES DEFINED AS POTENTIAL HABITAT FOR THE INDIANS BAT (I.E. LIVING OR STANDING DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES, OR CAVITIES) WILL BE PERFORMED ONLY BEFORE APRIL 15 OR AFTER SEPTEMBER 15 WHEN THE SPECIES WOULD NOT BE USING THE HABITAT.

REMOVAL OF TEMPORARY EROSION CONTROL ITEMS

ALL TEMPORARY EROSION CONTROL ITEMS SHALL BE REMOVED BEFORE THE PROJECT IS ACCEPTED. REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN ACCORDANCE WITH THE APPROPRIATE C&MS SPECIFICATIONS.

DEMOLITION OF DEBRIS

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING THE STREAM. ANY MATERIAL THAT DOES FALL INTO THE STREAM SHALL BE REMOVED AS SOON AS POSSIBLE.

REINFORCED MESH FOR TRANSVERSE JOINTS

THIS WORK CONSISTS OF PLACEMENT OF A SELF ADHESIVE GLASS FIBER MESH OVER THE JOINTS AS SHOWN IN THE DETAILS. FURNISH GLASGRID KNITTED GLASS FIBER STRAND MESH MEETING THE FOLLOWING PROPERTIES;

PROPERTIES	GLASGRID NO. 0230
MATERIAL WIDTH	2.5 FT.
MATERIAL - SELF ADHESIVE FIBERGLASS STRAND COATED WITH ELASTOMERIC POLYMER PER ASTM 4963	20% MIN. DRY PICKUP
TENSILE STRENGTH PER G.R.I. GG 1-87	WIDTH - 1120 LBS/IN LENGTH - 560 LBS/IN
ELONGATION AT BREAK (MIN)	<5%
MELTING POINT (MIN) ASTM D 276	>425° F
MASS/UNIT AREA (MIN) ASTM D5261-92 GRID PATTERN	16 OZ/SQ. YD. 0.5 IN x 0.5 IN

BEFORE INSTALLATION, SUBMIT A LETTER TO THE PROJECT WITH A STATEMENT CERTIFYING MATERIAL RECEIVED MEETS THE ABOVE PROPERTIES. SUBMIT TO THE PROJECT ACTUAL DATED (SALES FLYER DATA NOT ACCEPTABLE) TEST DATA WITH THE CERTIFICATION LETTER.

ENSURE ALL AREAS WHERE MESH IS TO BE PLACED ARE FREE OF ALL DIRT AND OTHER LOOSE MATERIALS BY SWEEPING OR OTHER APPROVED METHOD. PLACE THE MESH ON A PAVEMENT SURFACE THAT IS BETWEEN 40° F AND 140° F ALLOW FOR THE TACK COAT TO CURE BEFORE PLACING MESH.

PLACE MESH UNDER TENSION TO PREVENT RIPPLING. REMOVE RIPPLES BY PULLING, OR IF NECESSARY (IN CURVES FOR EX.) BY CUTTING AND FLATTENING THE MESH. OVERLAP LONGITUDINAL JOINTS OF THE MESH BY 1 INCH MINIMUM. ROLL THE MESH SURFACE 2 PASSES WITH A RUBBER COATED DRUM ROLLER, RUBBER TIRE ROLLER OR OTHER METHOD ACCEPTABLE TO THE MANUFACTURER. CLEAN RUBBER TIRE ROLLER IF BUILDUP ON THE RUBBER SURFACE INTERFERES WITH MESH PLACEMENT. DO NOT USE A STEEL DRUM ROLLER.

PLACING OF THE MESH SHALL BE PER THE MANUFACTURER RECOMMENDATIONS OR AS DIRECTED BY THE ENGINEER. PLACED MESH WILL HANDLE SPEED CONTROLLED EMERGENCY OR CONSTRUCTION TRAFFIC BUT DAMAGED SECTIONS MUST BE REMOVED AND/OR REPAIRED. DO NOT ALLOW MUD OR OTHER MATERIAL TO COLLECT ON THE MESH PRIOR TO ASPHALT CONCRETE PLACEMENT. COVER MESH WITH ASPHALT CONCRETE THE SAME DAY UNLESS WEATHER BECOMES UNSUITABLE

PAYMENT FOR ALL WORK AND MATERIALS REQUIRED TO ACCOMPLISH THIS TASK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM SPECIAL 442 FLEXIBLE PAVEMENT.

IN STREAM WORK RESTRICTION - WATERWAY PERMIT (404/401)

ALL PROJECTS INVOLVING JURISDICTIONAL WATERS OF THE UNITED STATES (STREAMS, RIVERS, NON-ISOLATED WETLANDS) AND/OR ISOLATED WETLANDS ARE SUBJECT TO REGULATION UNDER SECTIONS 404 AND 401 OF THE CLEAN WATER ACT, AND POSSIBLY OHIO EPA ISOLATED WETLAND LAW. IT IS ANTICIPATED THAT NO IN-STREAM WORK, OR WORK UNDER THE STREAM'S ORDINARY HIGH WATER MARK (OHWM) WILL BE NEEDED. THEREFORE NO WATERWAY PERMITS HAVE BEEN GRANTED FOR THIS PROJECT AND NO IN-STREAM WORK IS ALLOWED. IT SHOULD BE NOTED THAT FORDING OF STREAMS/RIVERS ARE NOT ALLOWED.

SHOULD THE CONTRACTOR DECIDE THAT WORK (EITHER TEMPORARY OR PERMANENT) IN THE STREAM IS NEEDED, IT WILL REQUIRE A PERMIT AND AUTHORIZATION BY THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE). THE CONTRACTOR SHALL COORDINATE SUCH PERMIT ACTIVITIES THROUGH ODOT'S OFFICE OF ENVIRONMENTAL SERVICES (OES) AND ALLOW 60 DAYS MINIMUM FOR THE PROCESSING WITH THE USACE. THE CONTRACTOR SHALL NOT COORDINATE THESE ACTIVITIES DIRECTLY WITH THE USACE. THE CONTRACTOR SHALL NOT UTILIZE FILLS BELOW OHWM UNTIL SUCH ACTIVITY IS AUTHORIZED BY THE USACE. DETAIL OF THIS REQUIREMENT ARE DESCRIBED IN ODOT'S SUPPLEMENTAL SPECIFICATION 832.09.

USACE DEFINITION OF OHWM - THE ORDINARY HIGH WATER MARK IS THE LINE ON THE SHORES ESTABLISHED BY THE FLUCTUATIONS OF WATER AND INDICATED BY PHYSICAL CHARACTERISTICS SUCH AS A CLEAR, NATURAL LINE IMPRESSED ON THE BANK; SHELVEING; CHANGES IN THE CHARACTER OF THE SOIL; DESTRUCTION OF TERRESTRIAL VEGETATION; THE PRESENCE OF LITTER AND DEBRIS; OR THE APPROPRIATE MEANS THAT CONSIDER THE CHARACTERISTICS OF THE SURROUNDING AREAS.

MAINTAINING TRAFFIC

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 75 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED. DISINCENTIVES SHALL BE ASSESSED IN ACCORDANCE WITH CMS 108.07 FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH (1200 X 750 MILLIMETER) ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES, GATES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC:

- A. ON THE NORTH SIDE OF THE DRIVE, LOCATED IMMEDIATELY SOUTH OF THE STRUCTURE.
- B. ACROSS THE LANE LEADING FROM SOUTHBOUND SR602 TO WESTBOUND CR45
- C. SOUTH OF THE TWO DRIVES LOCATED NORTH OF THE STRUCTURE, AT THE END OF THE GUARDRAIL RUNS.

THE CONTRACTOR SHALL NOTIFY THE DISTRICT WORK ZONE MANAGER (419-207-7092) IN WRITING A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE OF THE DATE THE DETOUR IS NEEDED. THE STATE WILL INSTALL, MAINTAIN AND SUBSEQUENTLY REMOVE THE DETOUR SIGNING.

NOTICE OF CLOSURE SIGNS (W20-H14) (5'X3') SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

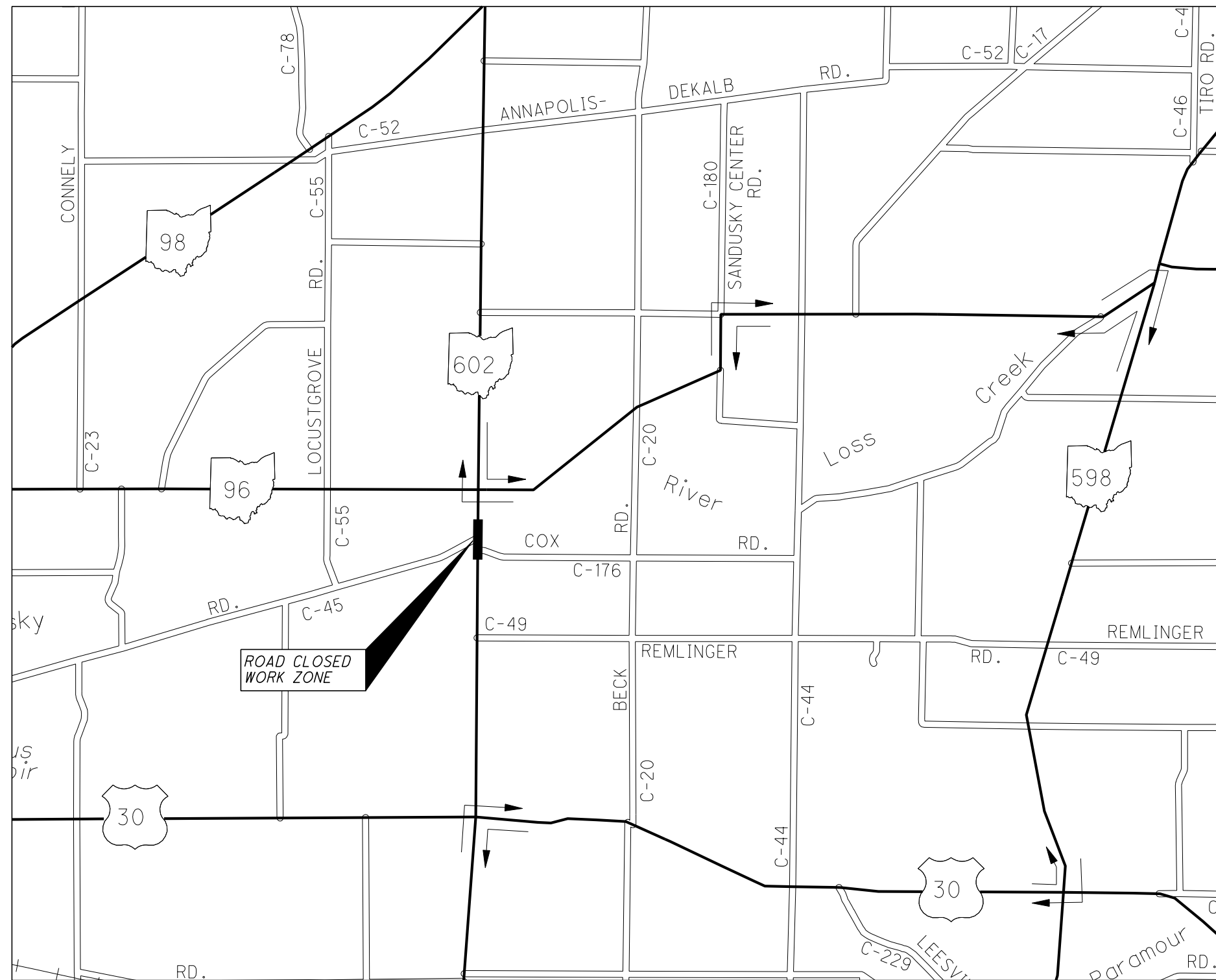
DESIGNATED LOCAL DETOUR (MAINTENANCE) ROUTE

A LOCAL DETOUR ROUTE OTHER THAN THE OFFICIAL ODOT ROUTE WILL BE DESIGNATED BY AGREEMENT BETWEEN ODOT AND LOCAL GOVERNMENT AGENCIES PRIOR TO THE HIGHWAY CLOSURE. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST AND STANDING WATER. ONCE THE DETOUR IS REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DETERMINED BY THE ENGINEER.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE BY FORCE ACCOUNT.

PLACEMENT OF ASPHALT CONCRETE

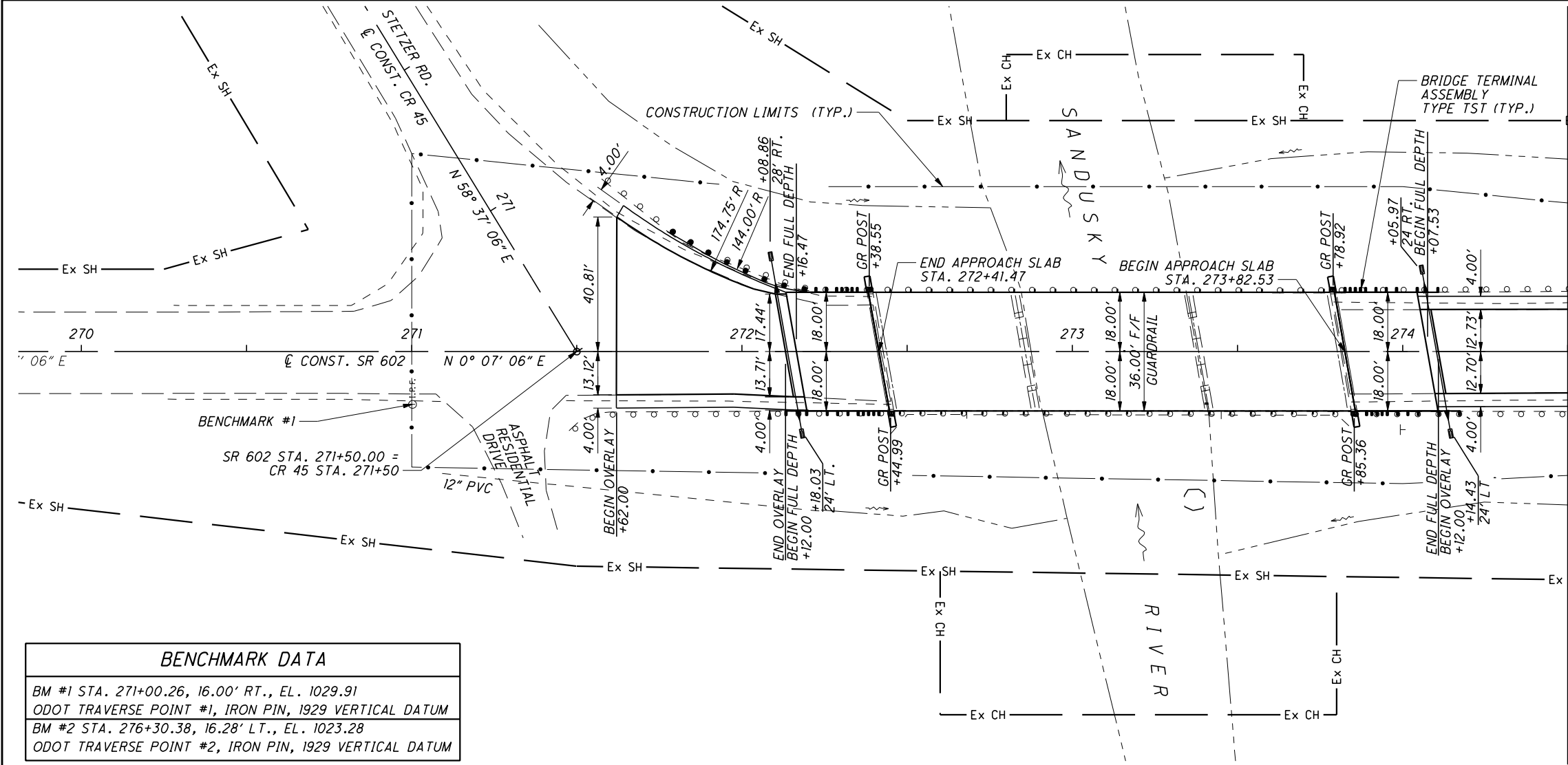
TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.



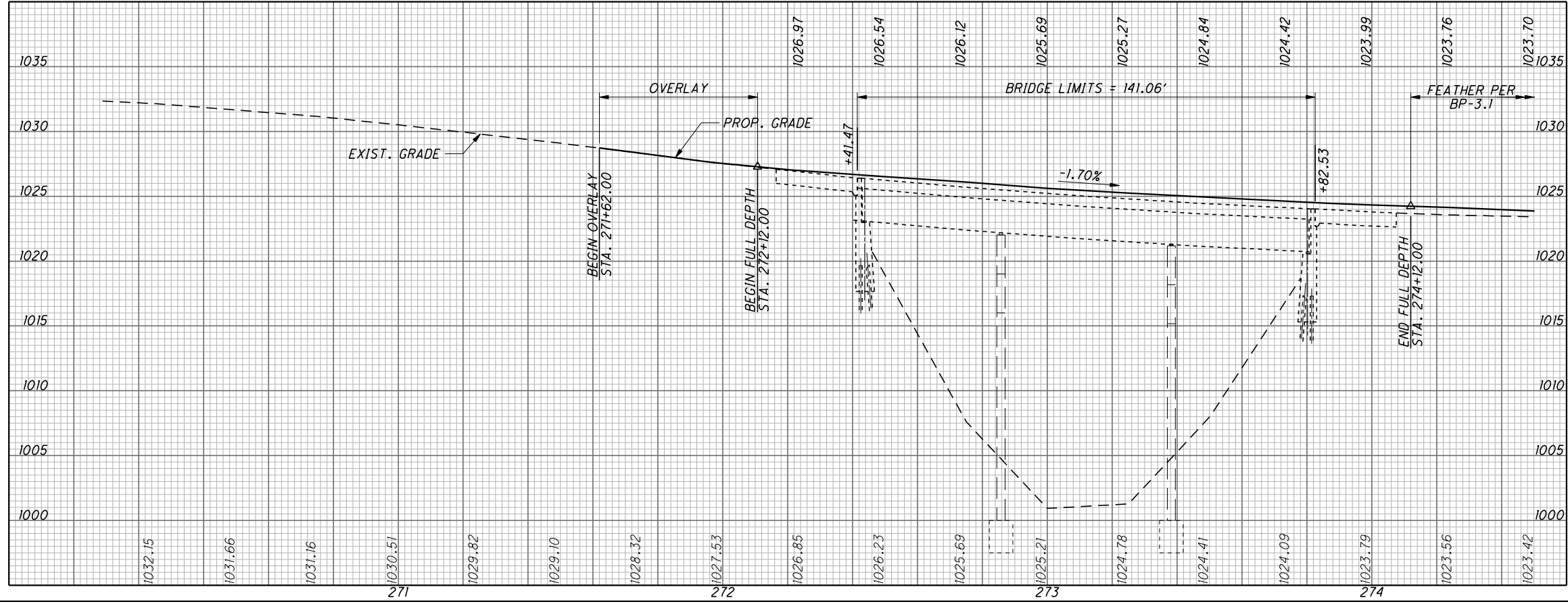
DETOUR MAP

**MAINTENANCE OF TRAFFIC
GENERAL NOTES AND DETOUR ROUTE**

CRA - 602 - 6.00

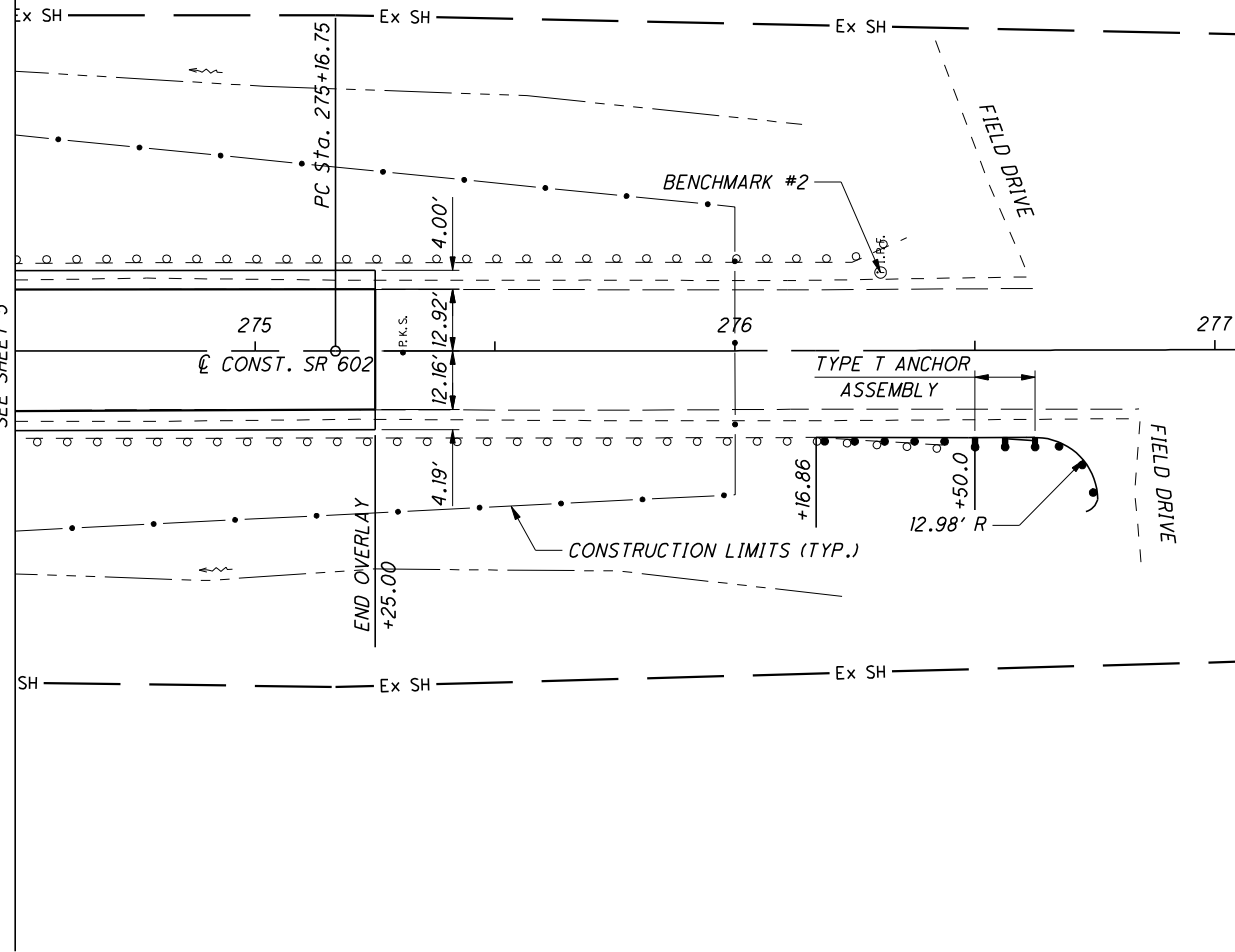


BENCHMARK DATA	
BM #1 STA. 271+00.26, 16.00' RT., EL. 1029.91	
ODOT TRAVERSE POINT #1, IRON PIN, 1929 VERTICAL DATUM	
BM #2 STA. 276+30.38, 16.28' LT., EL. 1023.28	
ODOT TRAVERSE POINT #2, IRON PIN, 1929 VERTICAL DATUM	



REF NO.	STATION		SIDE	CALCULATED	CHECKED
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TOTALS CARRIED TO GENERAL SUMMARY				.	.

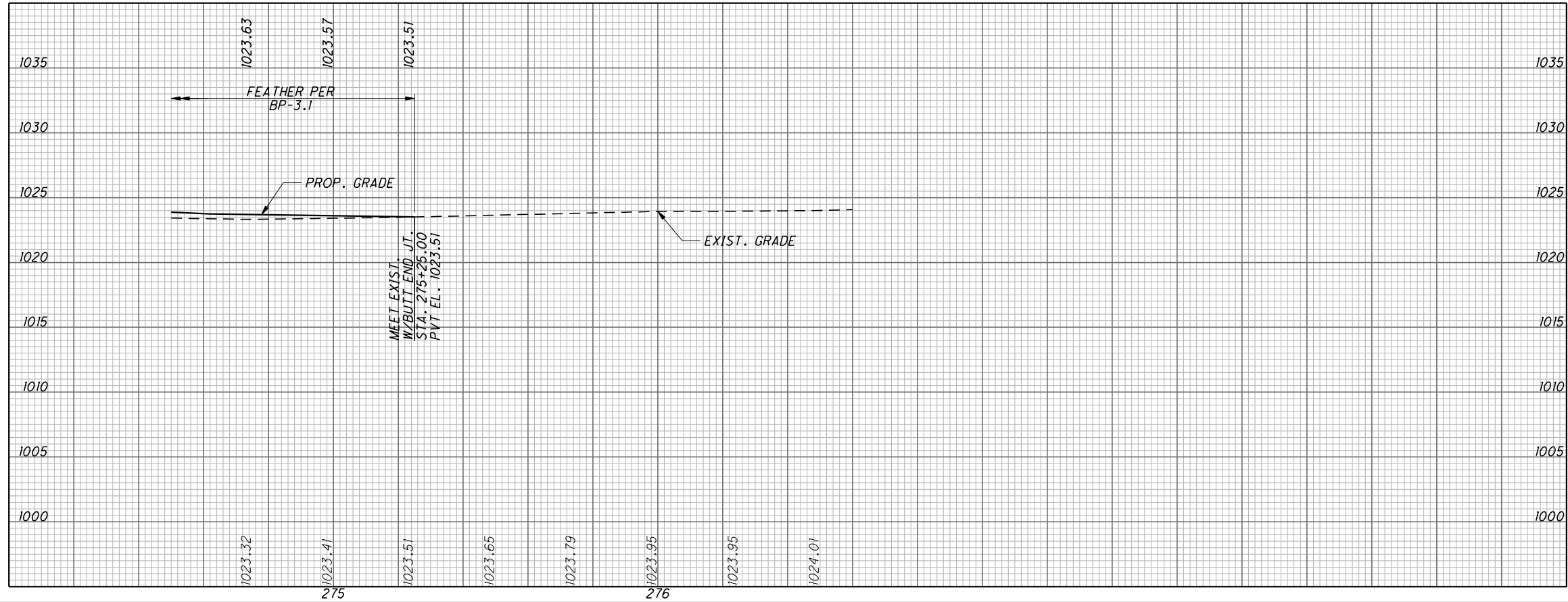
MATCH LINE STA. 274+50.00
 SEE SHEET 5



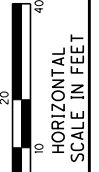
HORIZONTAL CURVE DATA
 P.I. STA. 277+20.92
 $\Delta = 0^\circ 24' 30''$ (LT)
 $D_C = 0^\circ 06' 00''$
 $R = 57,295.78'$
 $T = 204.17'$
 $L = 408.34'$
 $E = 0.36'$

BENCHMARK DATA

BM #1 STA. 271+00.26, 16.00' RT., EL. 1029.91
 ODOT TRAVERSE POINT #1, IRON PIN, 1929 VERTICAL DATUM
 BM #2 STA. 276+30.38, 16.28' LT., EL. 1023.28
 ODOT TRAVERSE POINT #2, IRON PIN, 1929 VERTICAL DATUM



REF NO.	STATION		SIDE	TOTALS CARRIED TO GENERAL SUMMARY																
	FROM	TO																		
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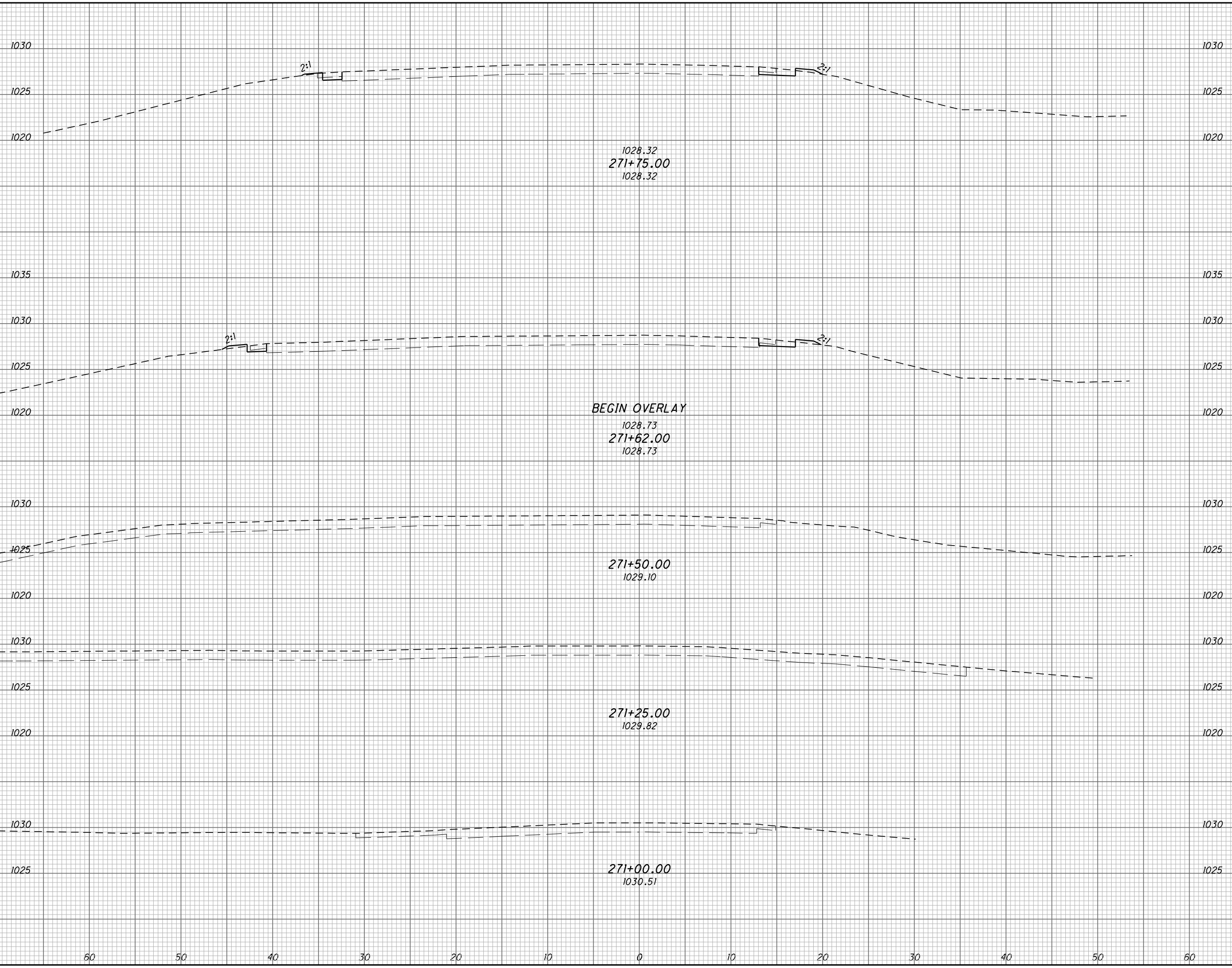
CALCULATED
 RS
 CHECKED
 JP

**PLAN AND PROFILE
 STA. 274+50.00 TO STA. 277+00.00**

CRA-602-6.60

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SEEDING	
END WIDTH	SO. YDS.
15	1030
22	1035
16	1025
11	1020
0	1025
33	1030



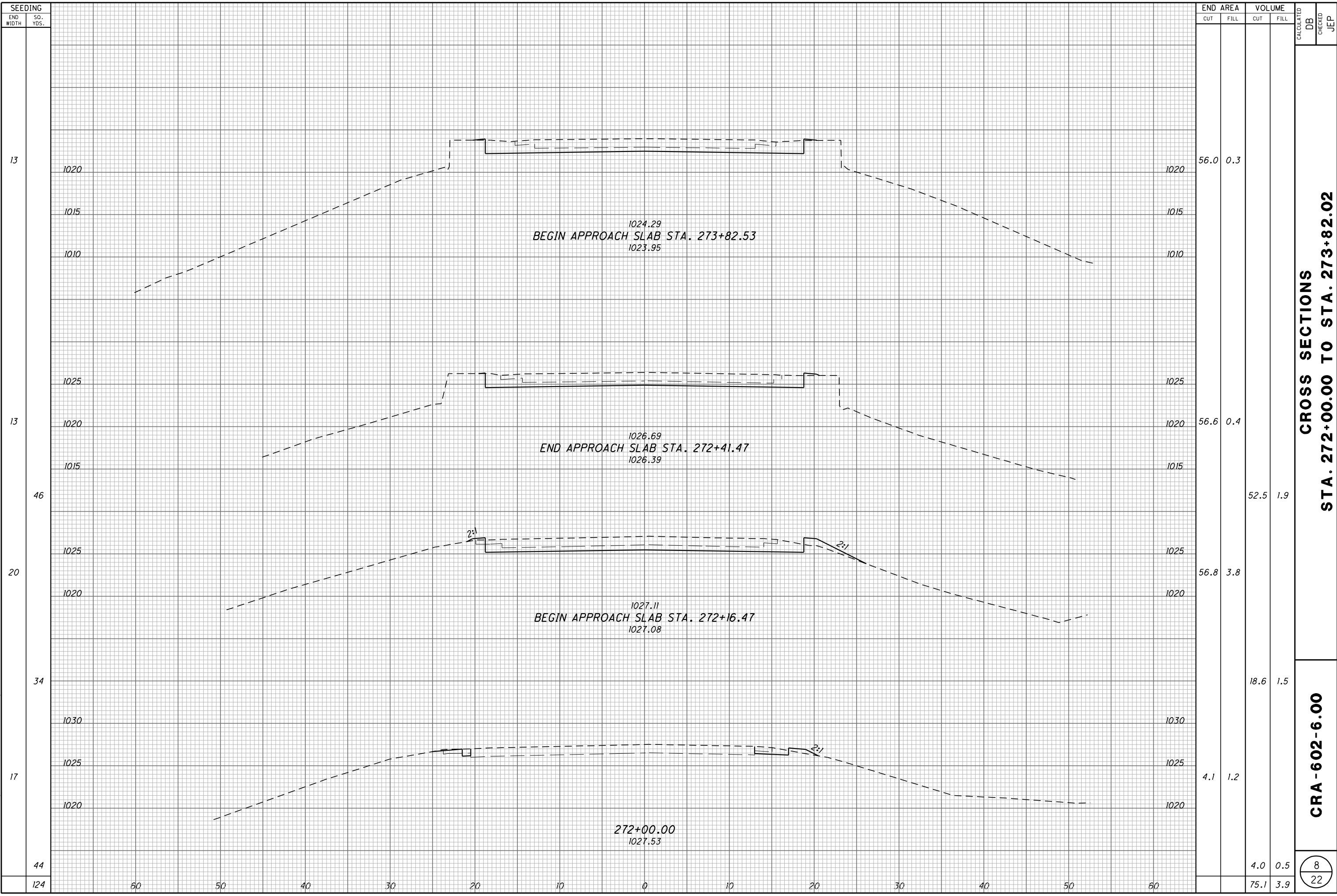
END AREA		VOLUME		CALCULATED	DB	CHECKED	JEP
CUT	FILL	CUT	FILL				
4.6	0.9	2.2	0.5				
4.3	1.2	0.9	0.3				
0	0						
3.1	0.8						

CROSS SECTIONS
 STA. 271+00.00 TO STA. 271+75.00

CRA - 602 - 6.00

7
22

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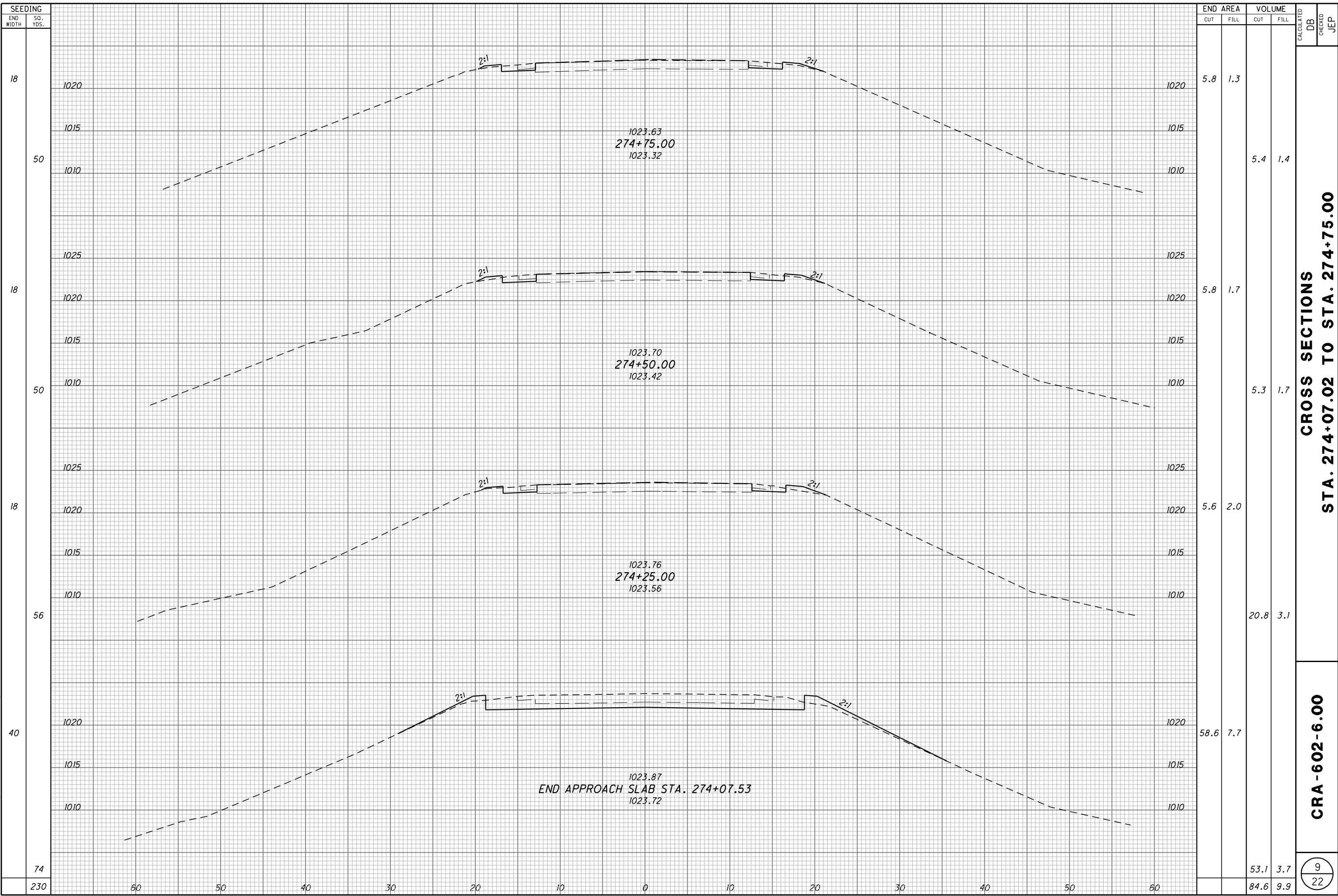
SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	DB	JEP
13		56.0	0.3				
13		56.6	0.4				
46				52.5	1.9		
20		56.8	3.8				
34				18.6	1.5		
17		4.1	1.2				
44				4.0	0.5		
124		75.1	3.9				

**CROSS SECTIONS
 STA. 272+00.00 TO STA. 273+82.02**

CRA - 602 - 6.00

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22

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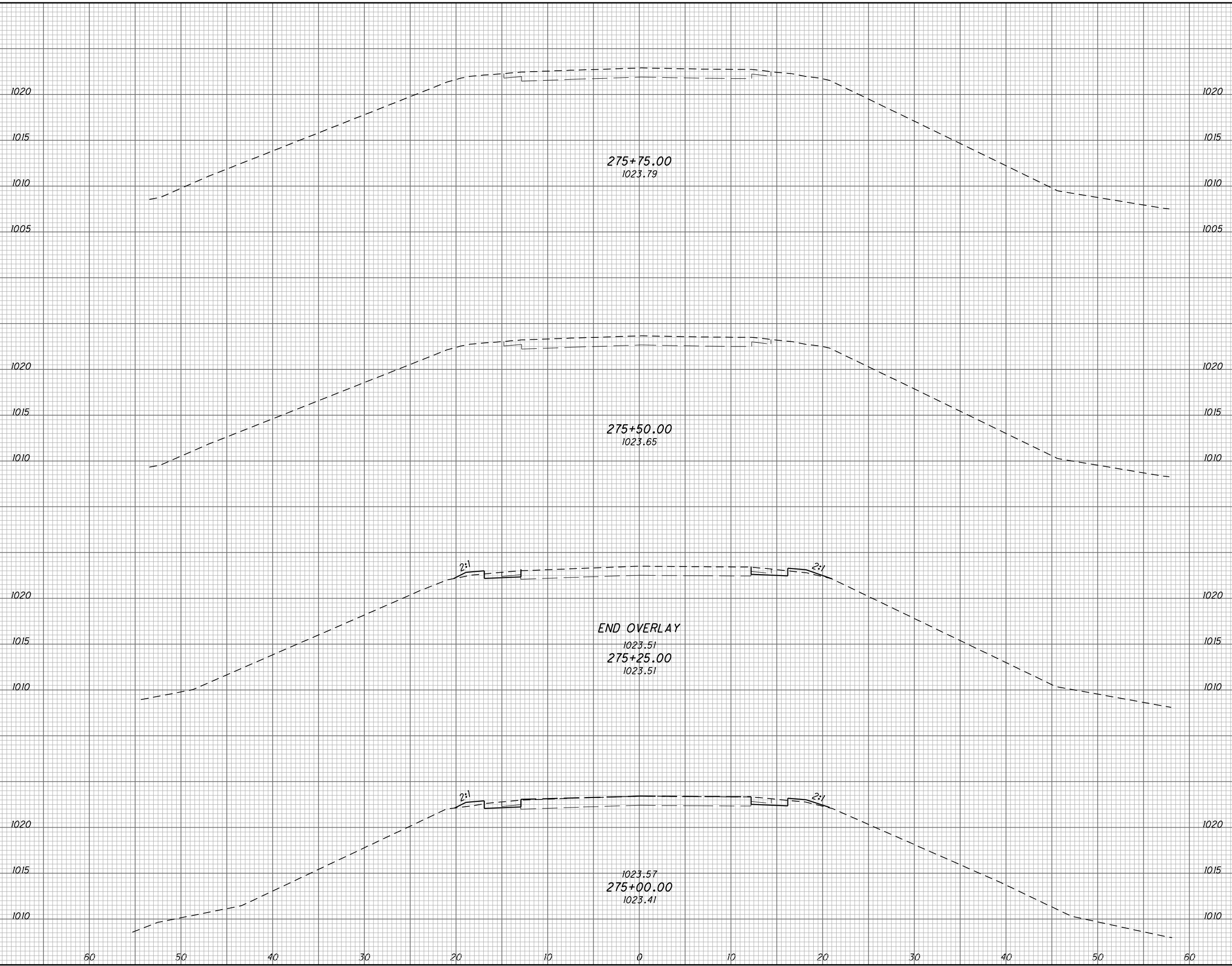
CROSS SECTIONS
STA. 274+07.02 TO STA. 274+75.00

CRA-602-6.00

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22

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SEEDING	
END WIDTH	SO. YDS.
0	
26	
19	
51	
18	
50	
127	
TOTAL	514

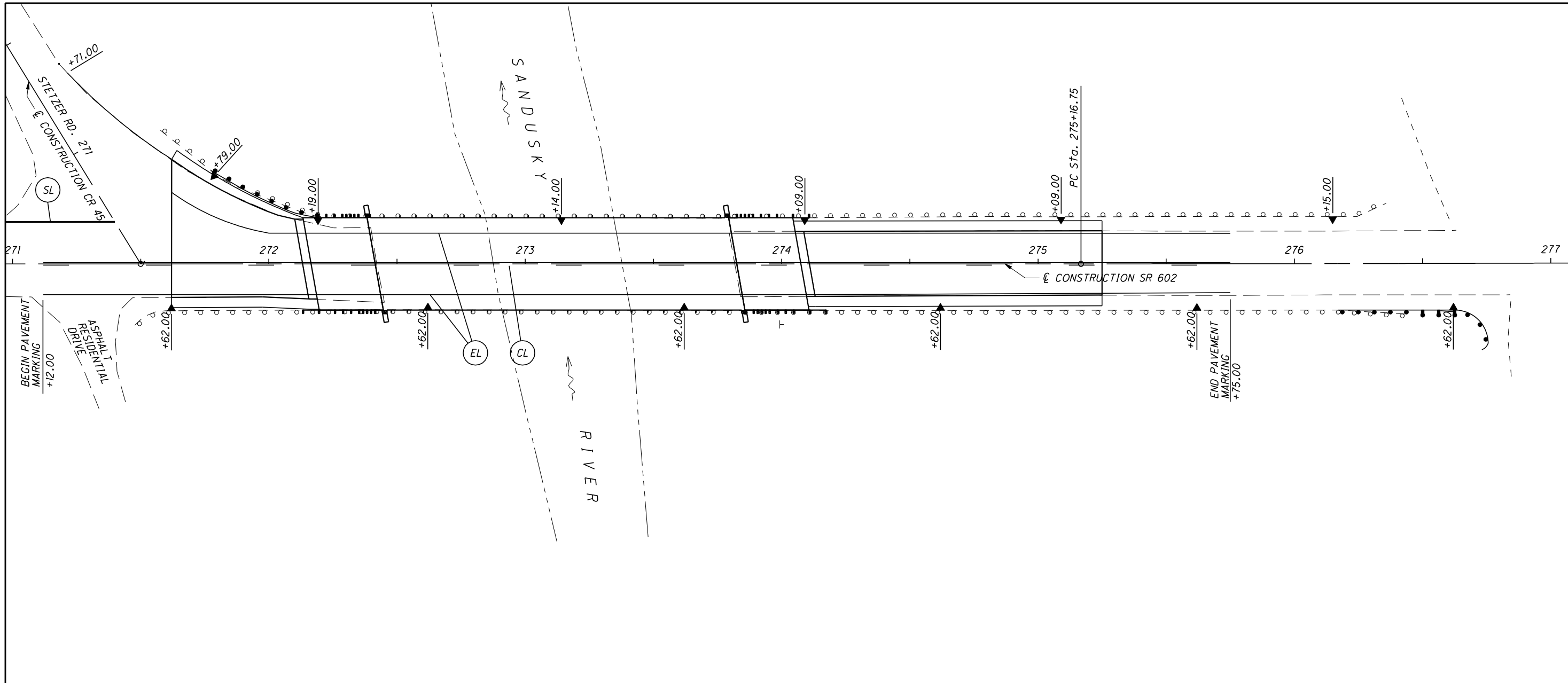


END AREA	VOLUME	CALCULATED	DB	CHECKED	JEP
0	0				
2.4	1.0				
5.2	2.1				
5.0	1.9				
5.6	2.0				
5.3	1.5				
SHT. TOTAL	12.7	4.4			
TOTAL	175.5	19.0			

CROSS SECTIONS
STA. 275+00.00 TO STA. 275+75.00

CRA-602-6.00

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CALCULATED CD
 CHECKED JP

0 10 20 40
 HORIZONTAL SCALE IN FEET

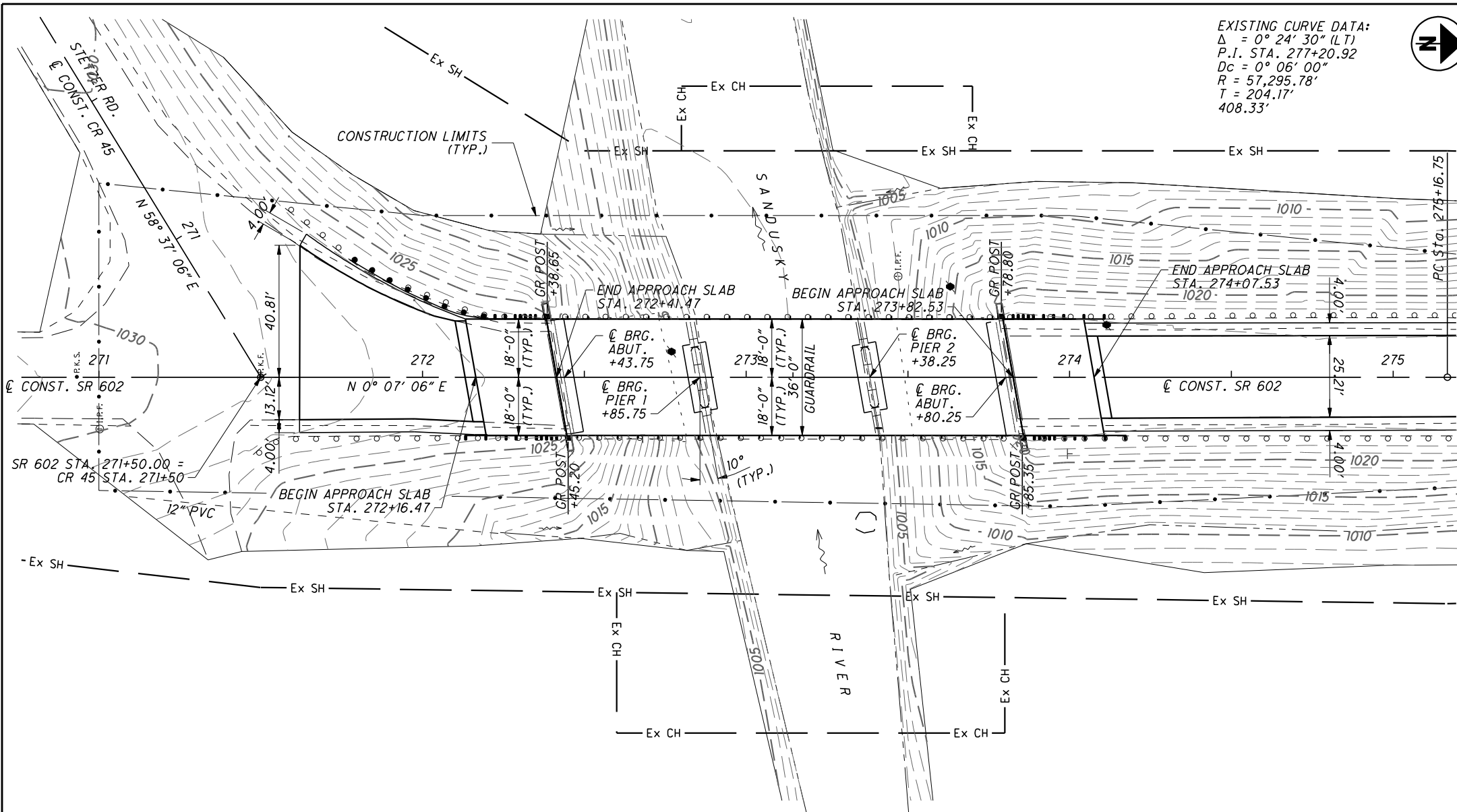
N

PAVEMENT MARKING PLAN
STA. 271+00.00 TO STA. 277+00.00

LEGEND
 ▲ BARRIER REFLECTOR TYPE A2

REF NO.	STATION		SIDE	626	644	646	646
				BARRIER REFLECTOR, TYPE A2	THERMOPLASTIC STOP LINE	EDGE LINE	CENTER LINE PASS PROTECTION LT.
				EACH	FOOT	MILE	MILE
CL	271+12	275+75					0.08
EL	271+12	275+75	L&R		0.16		
SL	271+30.79	271+30.79	RT	43			
	271+62	276+60	RT	6			
	271+79	276+15	LT	6			
TOTALS				12	43	0.16	0.08

NOTES
 1. STOP BAR ON CR4 SHALL BE PLACED 4.00' FROM THE IMAGINARY EDGE LINE OF SR 602



EXISTING CURVE DATA:
 $\Delta = 0^\circ 24' 30''$ (LT)
 P.I. STA. 277+20.92
 $Dc = 0^\circ 06' 00''$
 $R = 57,295.78'$
 $T = 204.17'$
 $408.33'$



BENCHMARK DATA	
BM #1 STA. 271+00.26, 16.00' RT., EL. 1029.91	
ODOT TRAVERSE POINT #1, IRON PIN, 1929 VERTICAL DATUM	
BM #2 STA. 276+30.38, 16.28' LT., EL. 1023.28	
ODOT TRAVERSE POINT #2, IRON PIN, 1929 VERTICAL DATUM	

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC:
 2008 ADT = 1300 2008 ADTT = 52
 2028 ADT = 1500 2028 ADTT = 60
 DIRECTIONAL DISTRIBUTION = 55%

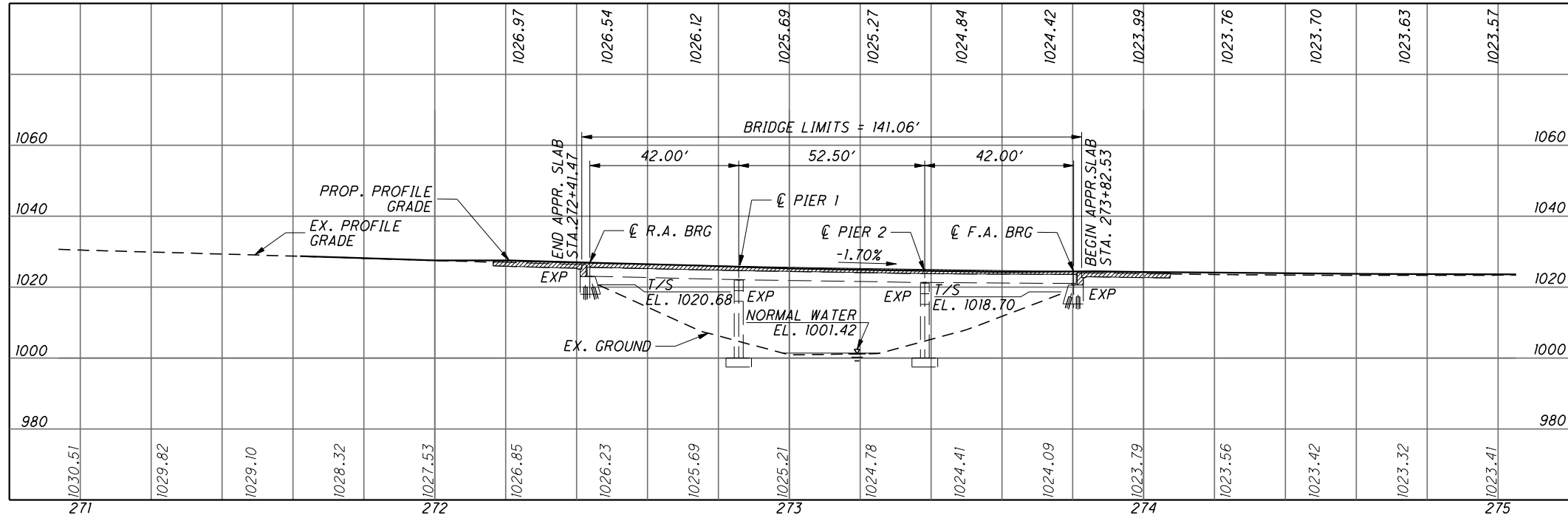
HYDRAULIC DATA

DRAINAGE AREA = 59.79 SQ. MILES
 STRUCTURE CLEARS THE 10-15 YEAR
 DESIGN HW BY 6.0 FEET.

EXISTING STRUCTURE	
TYPE:	CONTINUOUS STEEL BEAM WITH CONCRETE DECK AND SUBSTRUCTURE
SPANS:	42'-0"±, 52'-6"±, 42'-0"±
ROADWAY:	36' F/F GUARDRAIL
LOADING:	CF-130 (1957)
SKEW:	10° R.F.
APPROACH SLABS:	AS-1-54 (25' LONG)
ALIGNMENT:	TANGENT
CROWN:	NORMAL
STRUCTURAL FILE NUMBER:	1703846
DATE BUILT:	1960
DISPOSITION:	REHABILITATE

PROPOSED WORK	
1.	REMOVE AND REPLACE EXISTING REINFORCED CONCRETE DECK
2.	PARTIALLY REMOVE EXISTING ABUTMENT TO PROVIDE NEW SEMI-INTEGRAL ABUTMENTS
3.	REMOVE AND REPLACE APPROACH SLABS
4.	PROVIDE NEW GUARDRAIL AT THE REAR LEFT CORNER
5.	REMOVE EXISTING BEARINGS AND REPLACE WITH ELASTOMERIC BEARING PADS AT THE PIERS AND ABUTMENTS

PROPOSED STRUCTURE	
TYPE:	CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS:	42'-0"±, 52'-6"±, 42'-0"±
ROADWAY:	36' F/F GUARDRAIL
LOADING:	HS20, ALTERNATE MILITARY AND FWS OF 60 PSF
SKEW:	10° R.F.
APPROACH SLABS:	25' LONG (AS-1-81)
ALIGNMENT:	TANGENT
CROWN:	0.0156 FT/FT
COORDINATES:	LATITUDE 40°-50'-19" N LONGITUDE 82°-51'-19" W



DESIGN AGENCY: BARR & PREVOST 2800 CORPORATE EXCHANGE DR., STE 240 COLUMBUS, OH 43231 (614) 714-0270 FAX (614) 714-0323	DATE: 4/2008	DESIGNED: KCS	CRAWFORD COUNTY STA. 272+41.47 STA. 273+82.53	SITE PLAN BRIDGE NO. CRA-602-0600 OVER THE SANDUSKY RIVER
REVIEWED: ASB	STRUCTURE FILE NUMBER: 1703846	CHECKED: JEP	CRA-602-6.00 PID No. 20375	
1 / 11				
12 / 22				

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

AS-1-81 REVISED 07-19-02
DS-1-92 REVISED 07-18-03
SICD-1-96 REVISED 07-19-02
TST-1-99 REVISED 04-18-08

DESIGN SPECIFICATIONS:

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

DESIGN LOADING:

HS20, CASE II AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 POUNDS PER SQUARE FOOT.

DESIGN STRESSES:

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)
REINFORCING STEEL - ASTM A615 OR A996, GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI
STRUCTURAL STEEL - ASTM A709 GRADE 50, MINIMUM YIELD STRENGTH 50,000 PSI

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
2 1/2" CONCRETE COVER
STEEL DRIP STRIP

MONOLITHIC WEARING SURFACE:

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

UTILITY LINES:

THE UTILITIES SHALL BEAR ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITIES ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

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

THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). IN GENERAL, IT INCLUDES THE REMOVAL OF ALL ELEMENTS AS DETAILED OR DESCRIBED IN THESE PLANS TO CONSTRUCT THE PROPOSED DESIGN. THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

THE CONTRACTOR MUST REVIEW THE STRUCTURE WHEN PREPARING HIS/HER BID. THE CONTRACTOR WILL REVIEW THE CONDITION OF THE STRUCTURE TO DETERMINE WHAT DEBRIS WILL FALL FROM THE STRUCTURE DURING REMOVAL. THE CONTRACTOR WILL DETERMINE THE CORRESPONDING COST TO CLEAN-UP ANY AND ALL DEBRIS WHICH FALLS FROM THE STRUCTURE DURING ANY REMOVAL OPERATION. THE COST TO CLEAR AND CLEAN-UP ALL DEBRIS DURING REMOVAL SHALL BE INCLUDED WITH THE BID FOR THIS ITEM OF WORK. NO ADDITIONAL COST WILL BE RECOGNIZED TO CLEAN DEBRIS RESULTING FROM THE STRUCTURE REMOVAL OPERATION.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING THE REPAIR.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM, STEEL GIRDER, ETC.), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.

DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES. THE CONTRACTOR IS NOT PERMITTED TO LIFT EXISTING DECK SLABS THAT ARE STILL ATTACHED TO THE BEAMS. THE RESULTING OPERATION WILL REQUIRE THE HEAT STRAIGHTENING OF THE BEAMS AT THE CONTRACTORS EXPENSE.

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 DIS-INTEGRATED 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.

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.

REMOVAL AND DISPOSAL OF 2.5" OD CONDUIT:

THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND DISPOSAL OF THE EXISTING 2.5" OD CONDUIT LOCATED IN THE EXISTING DECK SLAB.

REPAIRING AND RESTORING PAINT COATING:

THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL BEAR ALL COST FOR REPAIRING AND RESTORING THE PAINT COATING THAT MAY BE DAMAGED DURING THE DEMOLITION PROCESS

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.

ITEM 511 - CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN:

CLASS S CONCRETE SHALL BE USED FOR THE SUPERSTRUCTURE AND THE APPROACH SLAB. THE AGGREGATE USED IN CLASS S CONCRETE SHALL CONSIST OF LIMESTONE.

ITEM 511 - CLASS C CONCRETE, SUBSTRUCTURE, AS PER PLAN:

CLASS C CONCRETE SHALL BE USED FOR THE SUBSTRUCTURE CONVERSION TO A SEMI-INTEGRAL ABUTMENT. THE AGGREGATE USED IN CLASS C CONCRETE SHALL CONSIST OF LIMESTONE.

ITEM 511 - CLASS C CONCRETE, PATCHING, AS PER PLAN:

CLASS C CONCRETE SHALL BE USED FOR PATCHING THE MARKED AREAS ON THE FORWARD ABUTMENT. THE AGGREGATE USED IN CLASS C CONCRETE SHALL CONSIST OF LIMESTONE. THESE AREAS MARKED WITH PAINTED SHALL BE REMOVED TO A DEPTH OF 9" AND REPLACED WITH ITEM 511 - CLASS C CONCRETE, AS PER PLAN.

ITEM 512 - SEALING OF CONCRETE SURFACES:

A CONCRETE SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES AS SHOWN IN THE PLAN SHEETS. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES. THE COLOR OF THE FINISH COAT SHALL BE FEDERAL COLOR NO. 17778 (LIGHT NEUTRAL).

ITEM 514 - FIELD PAINTING:

ALL AREAS AS DESCRIBED IN THE SCOPE AND APPROVED BY THE ENGINEER SHALL BE CLEANED AND PAINTED AS FOLLOWS:

CMS 514.07 THROUGH 514.09 APPLY. REMOVE EXISTING PAINT COATING ACCORDING TO SSPC-SP3 POWER AND HAND TOOL CLEANING, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 3.

APPLY THE THREE-COAT PAINT SYSTEM AND THE SINGLE PRIME COAT, CMS 708.02, ACCORDING TO CMS 514.15 THROUGH 514.17 WITH A BRUSH. EACH COAT SHALL MEET THE MINIMUM THICKNESS ACCORDING TO CMS 514.20 AND SHALL BE SPOT INSPECTED USING A TYPE 2 MAGNET GAGE. TINT THE SURFACE COAT TO APPROXIMATELY THE SAME COLOR AS THE EXISTING COLOR. THE ORIGINAL COLOR OF THE PAINT WAS FEDERAL COLOR NUMBER 16515 (GRAY).

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ALL NECESSARY EQUIPMENT TO INSPECT THE WORK.

ITEM 514 - FIELD PAINTING MISC.: 3 COAT PAINT SYSTEM:

CLEAN THE ENTIRE BEAM SURFACE FROM THE ENDS OF THE BEAMS TO ONE FOOT OF THE PROPOSED DIAPHRAGMS BY HAND TOOLING AND PAINT THE CLEANED AREAS, USING PRIME, INTERMEDIATE, AND SURFACE COATS. WORK SHALL BE IN ACCORDANCE WITH ITEM 514 - FIELD PAINTING.

AN ESITIMATED QUANTITY OF 273 S.F. HAS BEEN PROVIDED AND WILL BE PAID FOR UNDER ITEM 514 - FIELD PAINTING MISC.: 3 COAT PAINT SYSTEM.

ITEM 514 - FIELD PAINTING MISC.: PRIME COAT ONLY:

CLEAN THE ENTIRE TOP AND EDGES OF THE TOP BEAM FLANGES TO WITHIN ONE FOOT OR THE PROPOSED DIAPHRAGMS BY HAND TOOLING AND PROVIDE ONLY A PRIME COAT. WORK SHALL BE IN ACCORDANCE WITH ITEM 514 - FIELD PAINTING.

AN ESITIMATED QUANTITY OF 674 S.F. HAS BEEN PROVIDED AND WILL BE PAID FOR UNDER ITEM 514 - FIELD PAINTING MISC.: PRIME COAT ONLY.

ITEM 514 - FIELD PAINTING MISC.: 3 COAT PAINT SYSTEM:

MARK THEN CLEAN RUSTED AREAS ON THE EXISTING STRUCTURAL STEEL BY HAND TOOLING. PAINT THESE AREAS USING PRIME, INTERMEDIATE AND SURFACE COATS. THESE AREAS SHALL BE APPROVED BY THE ENGINEER AND WORK PERFORMED IN ACCORDANCE WITH ITEM 514 - FIELD PAINTING.

AN ESITIMATED QUANTITY OF 100 S.F. HAS BEEN PROVIDED AND WILL BE PAID FOR UNDER ITEM 514 - FIELD PAINTING MISC.: 3 COAT PAINT SYSTEM.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE 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, 105.02 AND 513.04.

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 WHICH HAVE BEEN VERIFIED IN THE FIELD.

ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH CMS 512.07. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS. THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

INSPECTION OF EXISTING STRUCTURAL STEEL:

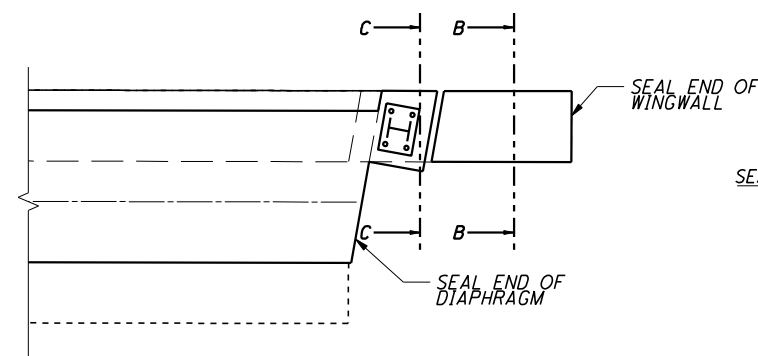
THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES AND BEAMS OR GIRDERS ARE FREE OF DEFECTS AND CRACKS. IF NECESSARY, REMOVE ALL DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS THAT MAY INTERFERE WITH THE ENGINEER'S INSPECTION. THE INSPECTION WILL NOT TAKE PLACE UNTIL THE TOP FLANGES ARE CLEANED ACCORDING TO 511.10, BUT IT WILL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE DEPARTMENT WILL PAY FOR THE COST ASSOCIATED WITH THIS INSPECTION WITH ITEM 511, SUPERSTRUCTURE CONCRETE. THE ENGINEER WILL REPORT ALL CRACKS FOUND TO THE OFFICE OF CONSTRUCTION ADMINISTRATION, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF THE CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

NON-USE OF ASBESTOS-CONTAINING MATERIALS:

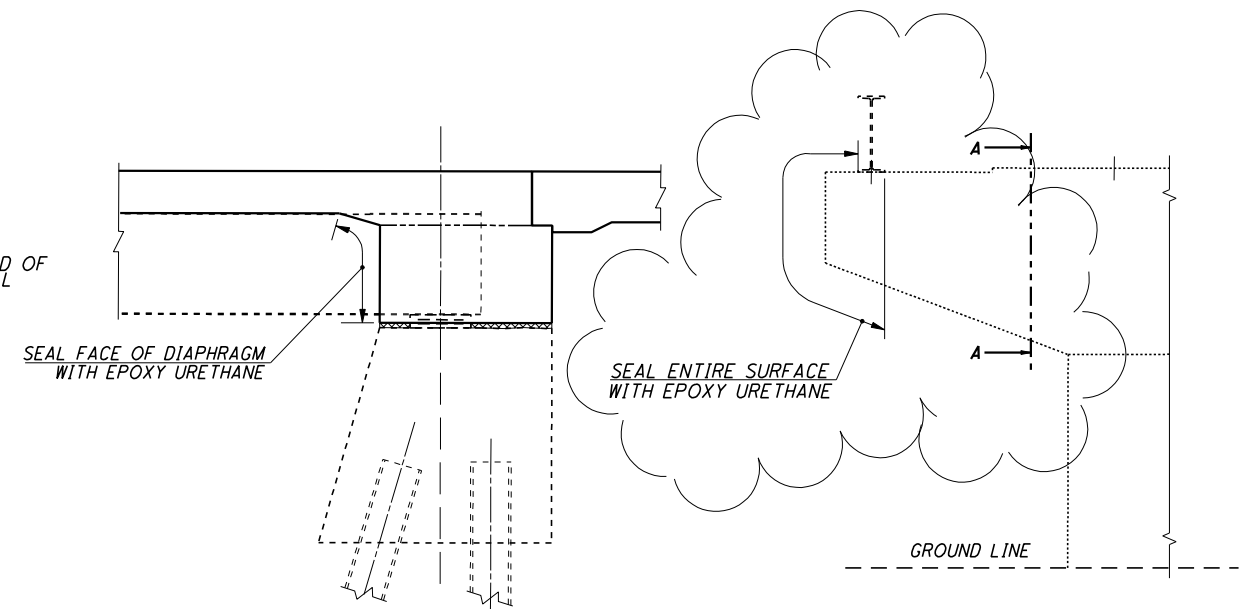
THE CONTRACTOR SHALL AT NO TIME INCORPORATE ANY MATERIALS WHICH ARE COMPOSED OF OR CONTAIN ANY AMOUNTS OF ASBESTOS. THE SUBSTITUTION OF MATERIALS WHICH CONTAIN ANY AMOUNTS OF ASBESTOS WILL IN NO CIRCUMSTANCES BE ACCEPTABLE. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF CERTIFICATION ASSERTING THAT NO ASBESTOS CONTAINING MATERIALS WERE USED IN ANY PORTION OF THE CONSTRUCTION.

ABBREVIATIONS:

- | | |
|-----------------------------------|---------------------------------|
| A.S. - APPROACH SLAB | NW - NORTHWEST |
| BRGS. - BEARINGS | NO. - NUMBER |
| BOT. - BOTTOM | PCB - PORTABLE CONCRETE BARRIER |
| B.T.A. - BRIDGE TERMINAL ASSEMBLY | PVMT. - PAVEMENT |
| EB - EASTBOUND | R.A. - REAR ABUTMENT |
| E.F. - EACH FACE | REQ'D - REQUIRED |
| E.X. - EXISTING | SER. - SERIES |
| F.A. - FORWARD ABUTMENT | S.O. - SET OF |
| F/F - FACE TO FACE | SUPER. - SUPERSTRUCTURE |
| F.F. - FAR FACE | TEMP. - TEMPORARY |
| INCR. - INCREMENT | T/T - TOE TO TOE |
| MSC - MICROSILICA CONCRETE | TYP. - TYPICAL |
| MIN. - MINIMUM | VAR. - VARIES |
| M.O.T. - MAINTENANCE OF TRAFFIC | V.C. - VERTICAL CLEARANCE |
| N.F. - NEAR FACE | WB - WESTBOUND |
| NE - NORTHEAST | |

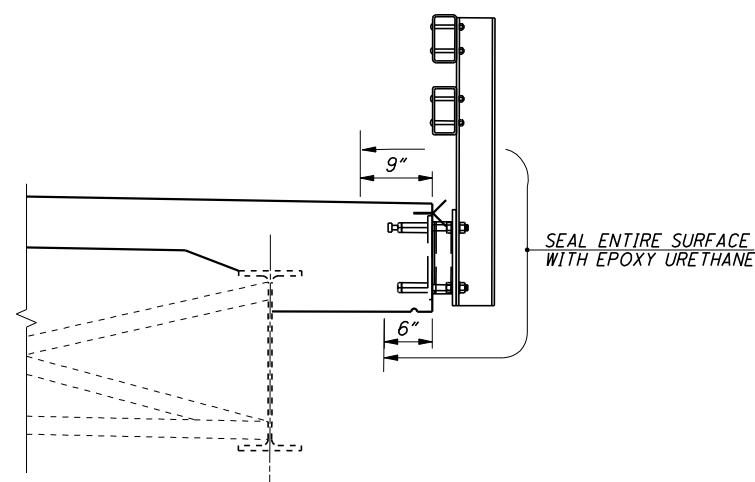


ABUTMENT PLAN SEALING LIMITS

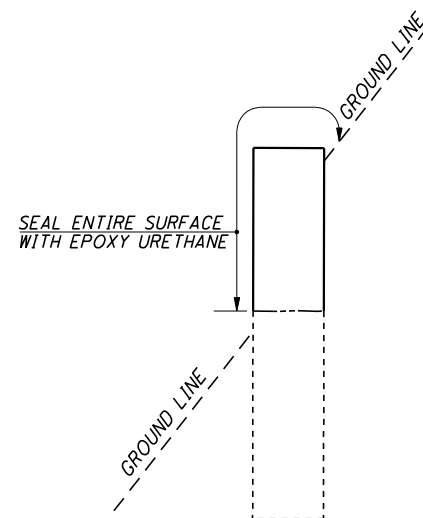


ABUTMENT SEALING LIMITS

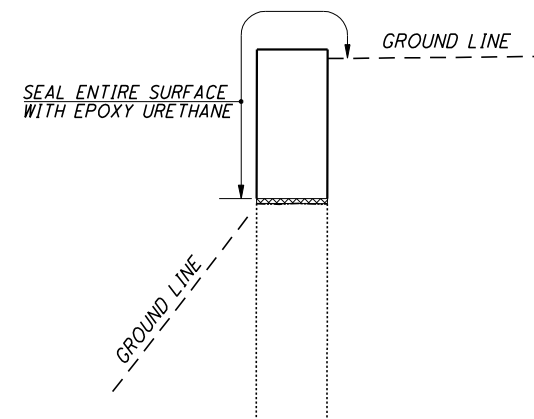
PIER SEALING LIMITS



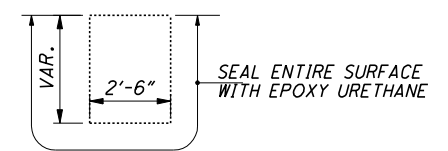
DECK SEALING LIMITS



B-B WINGWALL



C-C DIAPHRAGM



SECTION A-A

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DESIGN AGENCY
BARR & PREVOST
2800 CORPORATE EXCHANGE DR., STE 240
COLUMBUS, OH 43231
(614) 714-0270 FAX (614) 714-0323

DATE
12/2008
REVIEWED
JEP
STRUCTURE FILE NUMBER
1703846

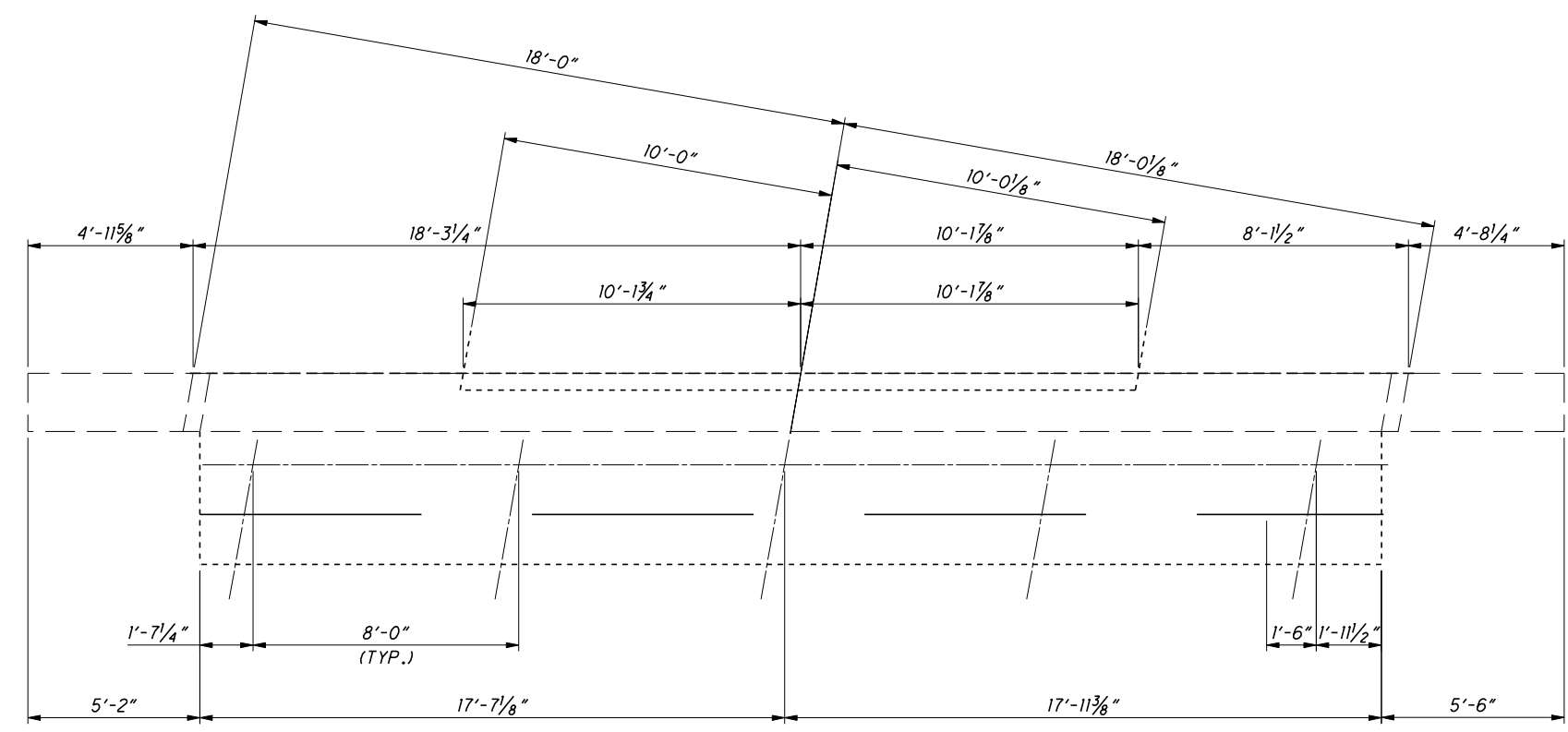
DRAWN
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KCS
REVISED
JEP

GENERAL NOTES
BRIDGE NO. CRA-602-0600
OVER THE SANDUSKY RIVER

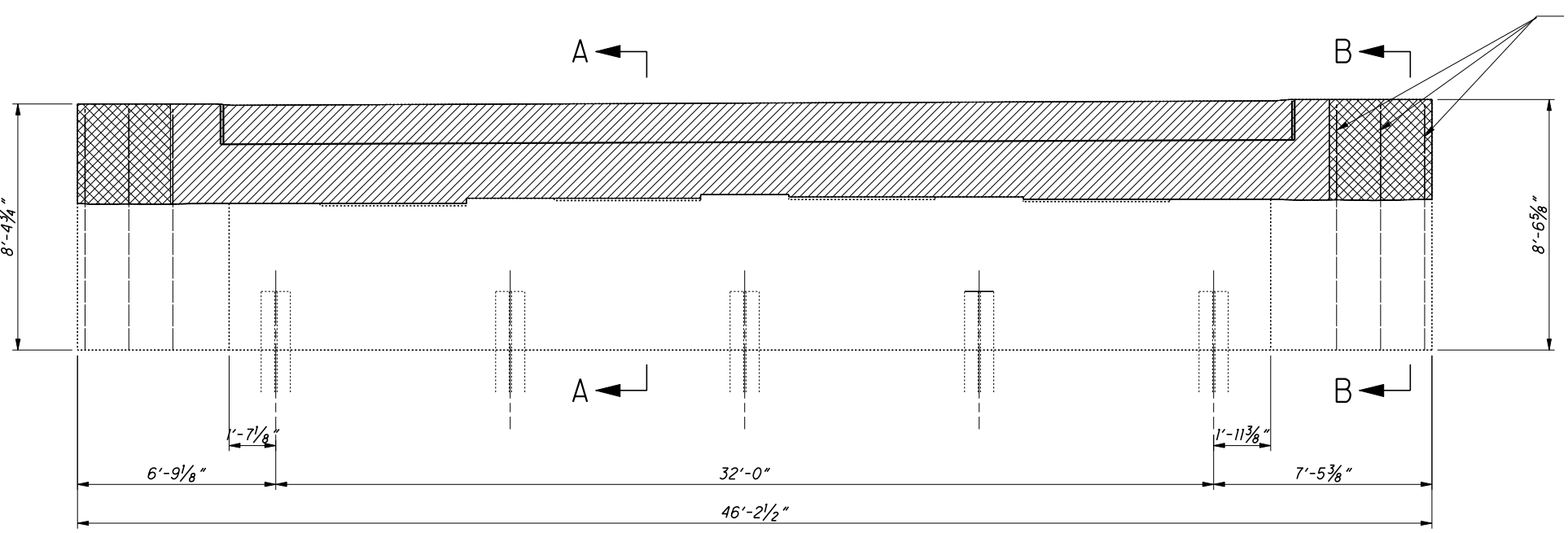
CRA-602-0600
PID No. 20375

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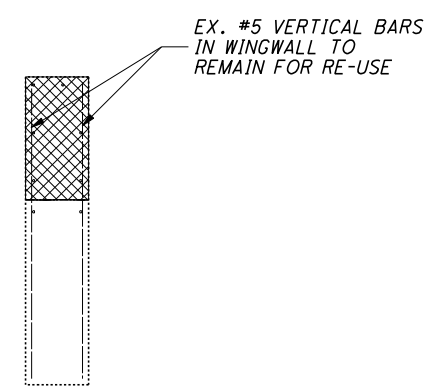
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PLAN

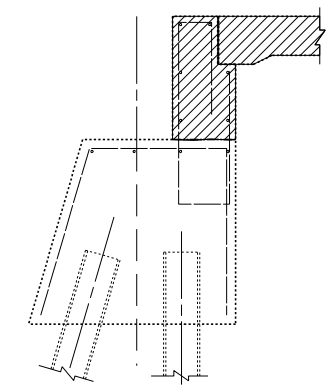


ELEVATION



SECTION B-B

EX. #5 VERTICAL BARS IN WINGWALLS TO REMAIN FOR RE-USE (TYP.)



SECTION A-A (EXISTING)

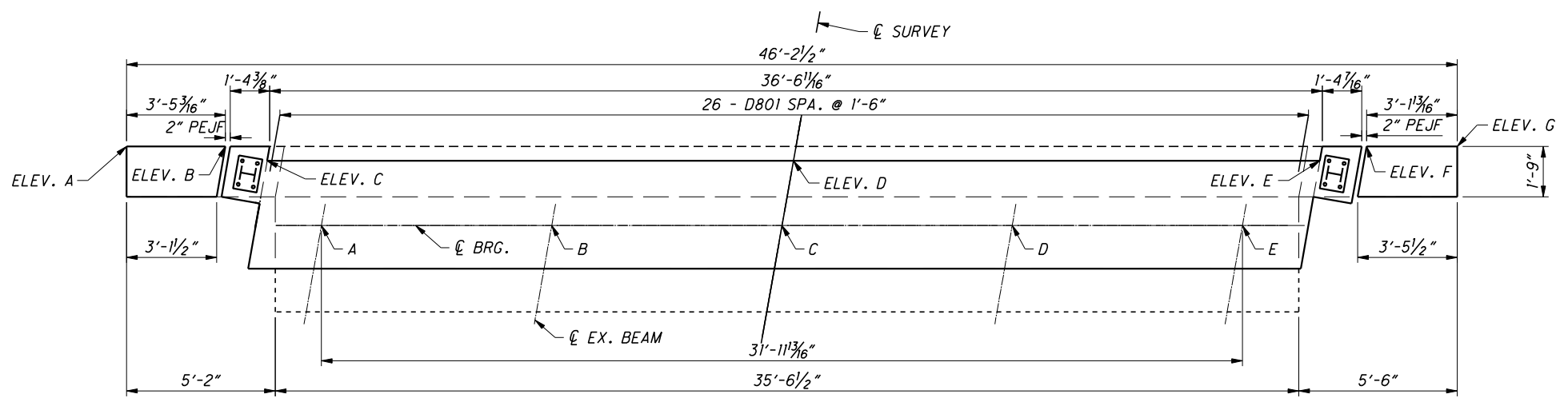
LEGEND:

- CONCRETE AND REBAR REMOVAL AREA
- CONCRETE REMOVAL AREA (VERTICAL REBAR TO REMAIN FOR RE-USE)

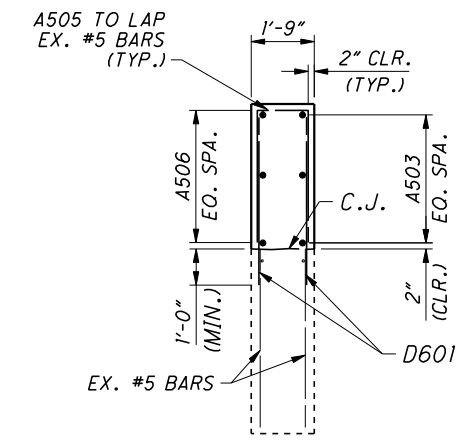
NOTE:

1. ALL EXISTING DIMENSIONS ARE ±.

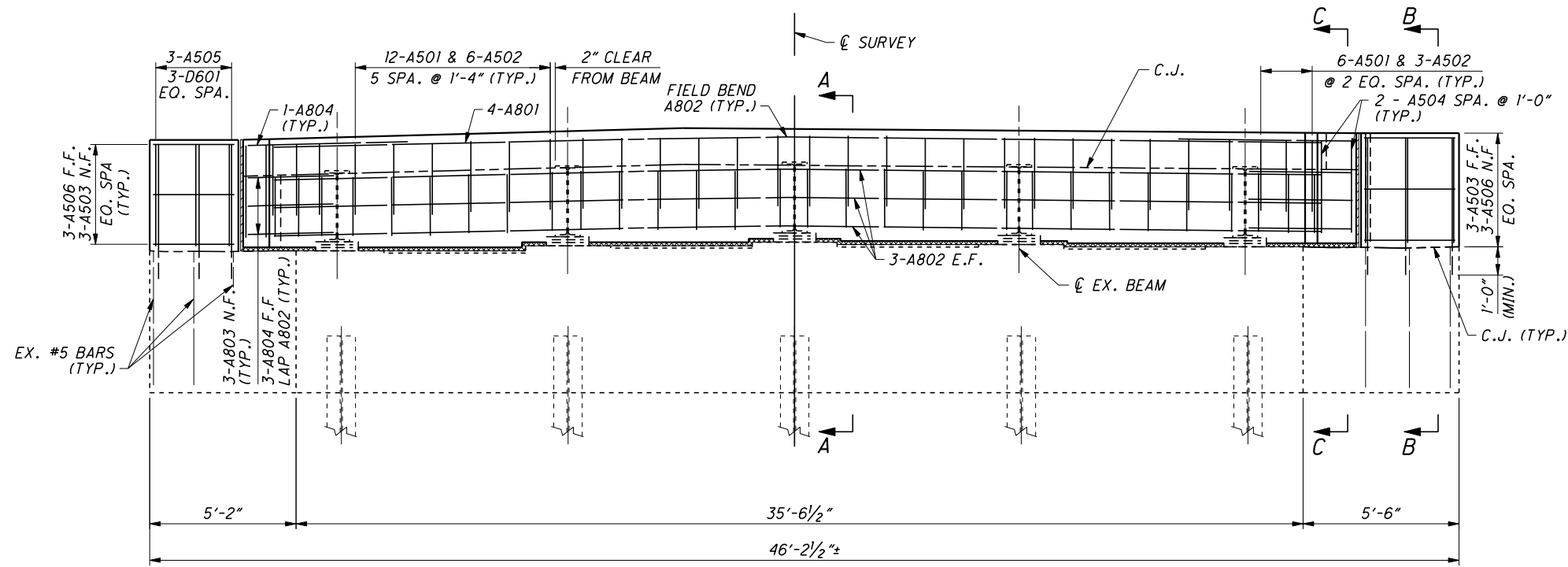
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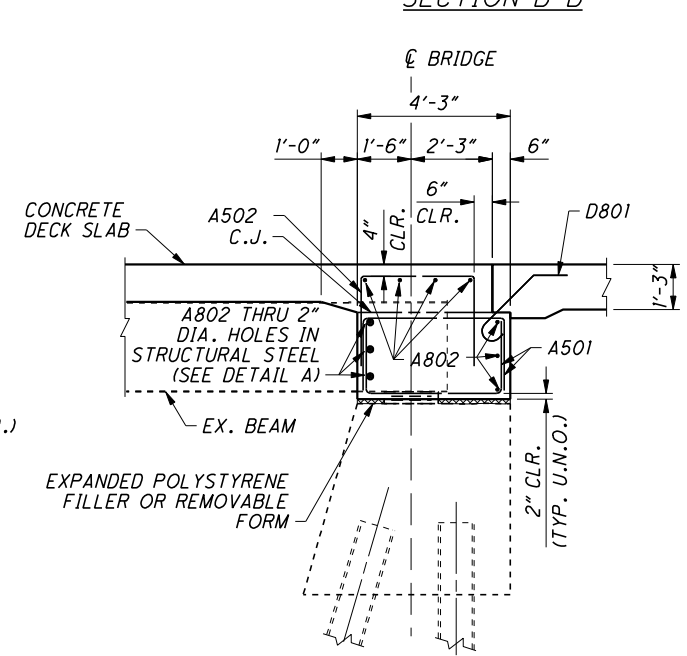
PLAN



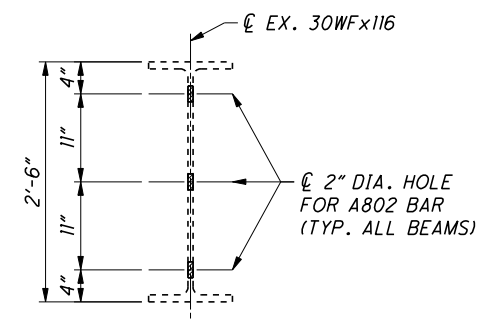
SECTION B-B



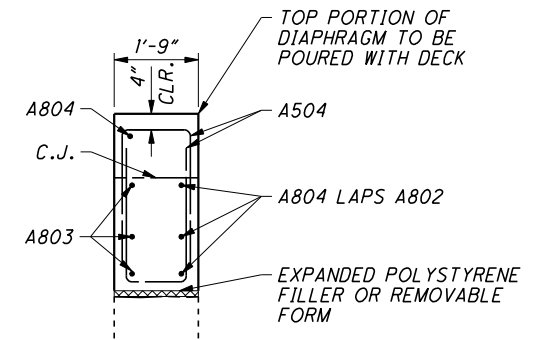
ELEVATION



SECTION A-A



DETAIL A



SECTION C-C

TOP OF DIAPHRAGM & WINGWALL ELEVATIONS		
ELEVATION	REAR ABUTMENT	FORWARD ABUTMENT
A	1026.37	1024.01
B	1026.37	1024.01
C	1026.38	1024.04
D	1026.71	1024.27
E	1026.48	1023.94
F	1026.47	1023.91
G	1026.47	1023.91

MIN. LAPS
 #5 BAR = 2'-5"
 #6 BAR = 2'-11"
 #8 BAR = 4'-11"

DESIGN AGENCY: BARR & PREVOST
 2800 CORPORATE EXCHANGE DR., STE 240
 COLUMBUS, OH 43231
 (614) 714-0270 FAX (614) 714-0323

DATE: 06/2008
 REVIEWED: ASB
 DRAWN: DB
 DESIGNED: JAD
 CHECKED: JEP

STRUCTURE FILE NUMBER: 1703846

ABUTMENT DETAILS
 BRIDGE NO. CRA-602-0600
 OVER THE SANDUSKY RIVER

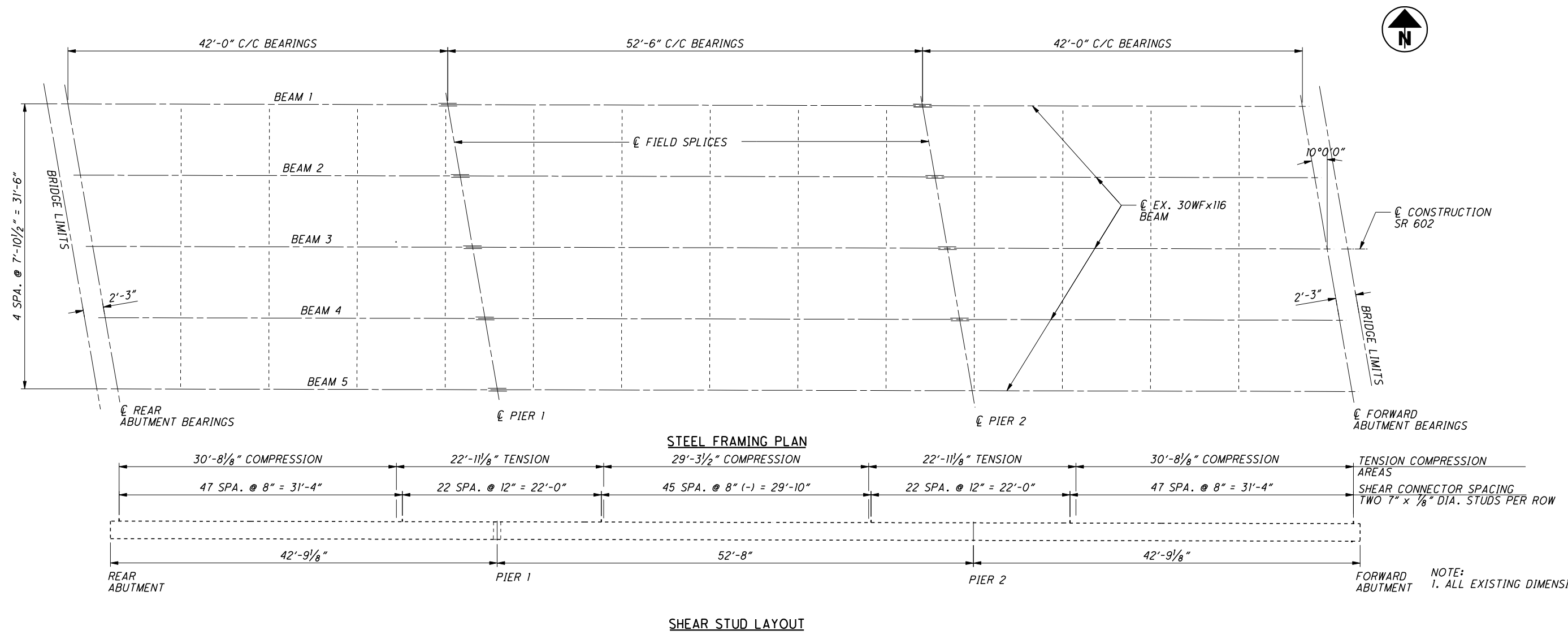
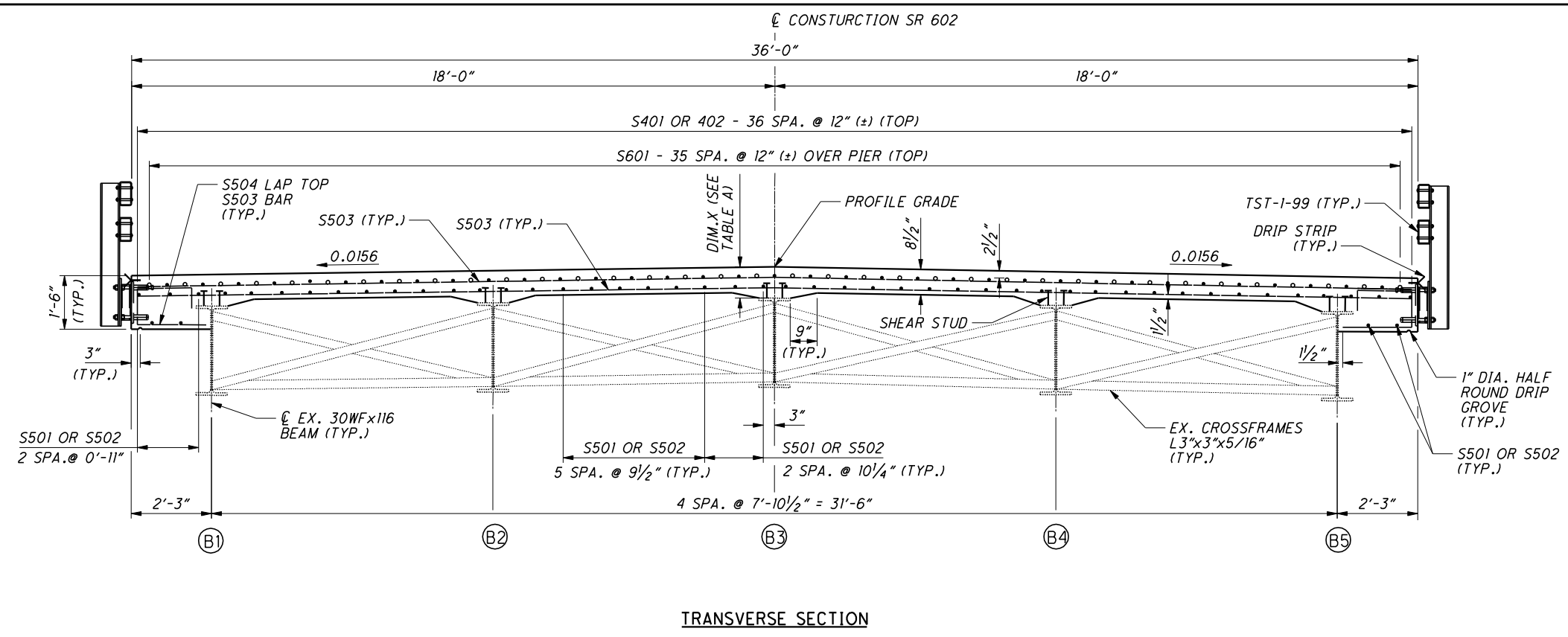
CRA-602-0600
 PID No. 23075

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16 / 22

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TABLE A: DIMENSION "X" (INCHES)				
LOCATION	R. A. BRGS.	PIER 1	PIER 2	F. A. BRGS.
BEAM 1	10 1/4"	13 1/4"	12"	10 1/2"
BEAM 2	10 1/4"	13 1/4"	12 1/4"	10 3/4"
BEAM 3	10 1/2"	13 1/2"	12 1/4"	10 1/2"
BEAM 4	10 1/4"	13"	11 3/4"	10 3/4"
BEAM 5	10 5/8"	13 1/4"	12 1/4"	10 3/4"



DESIGN AGENCY
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 04/2008

REVIEWED
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DESIGNED
 KCS

DRAIN
 DB

CHECKED
 JEP

STRUCTURE FILE NUMBER
 1703846

DESIGNED
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DRAIN
 DB

CHECKED
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DATE
 04/2008

DESIGN AGENCY
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 2800 CORPORATE EXCHANGE DR., STE 240
 COLUMBUS, OH 43231
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SUPERSTRUCTURE DETAILS
 BRIDGE NO. CRA-602-0600
 OVER THE SANDUSKY RIVER

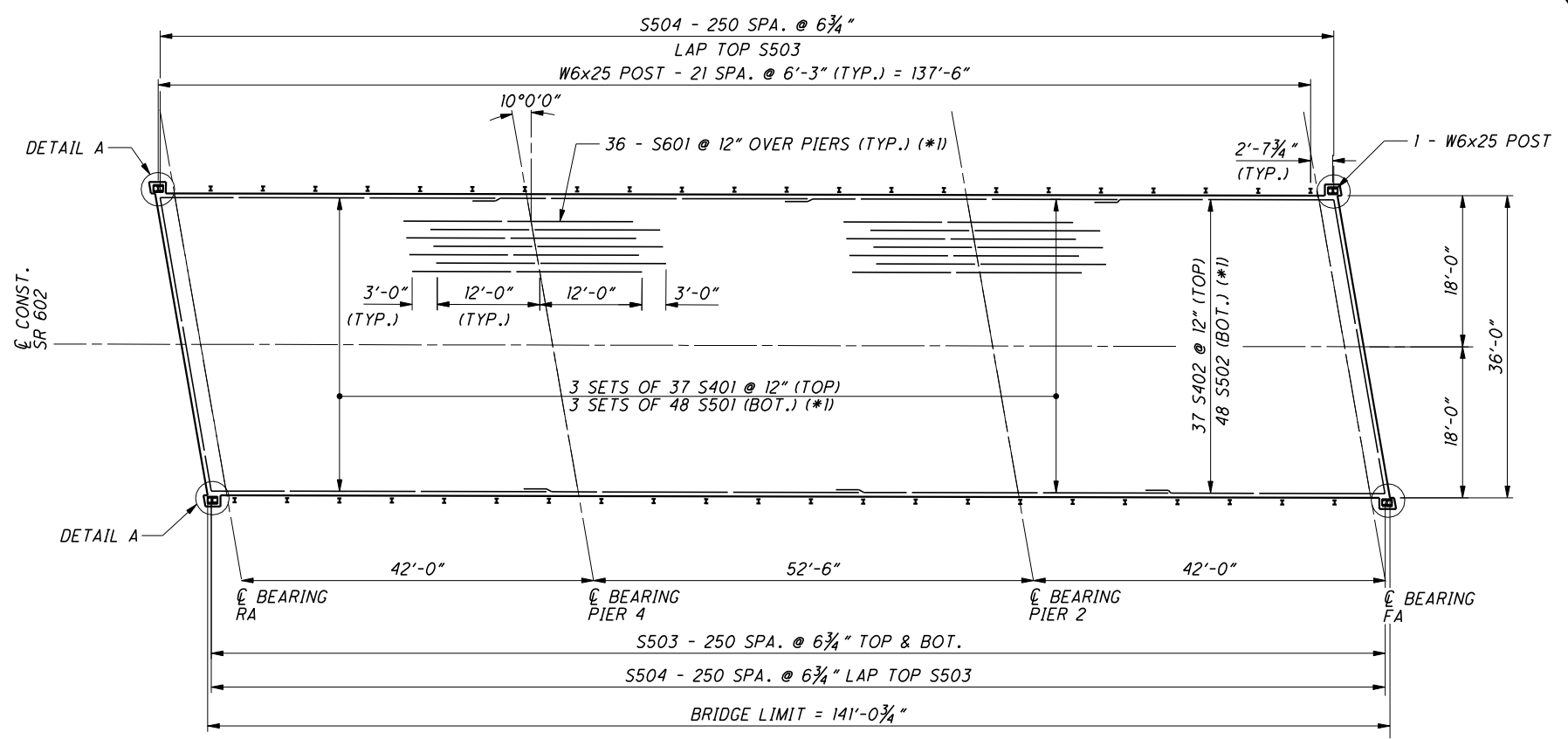
CRA-602-0600
PID No. 20375

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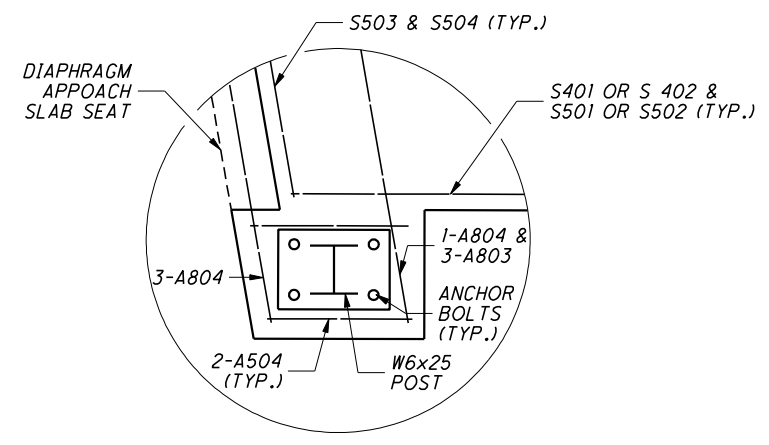
17
 22

NOTE:
1. ALL EXISTING DIMENSIONS ARE ±.

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DECK PLAN

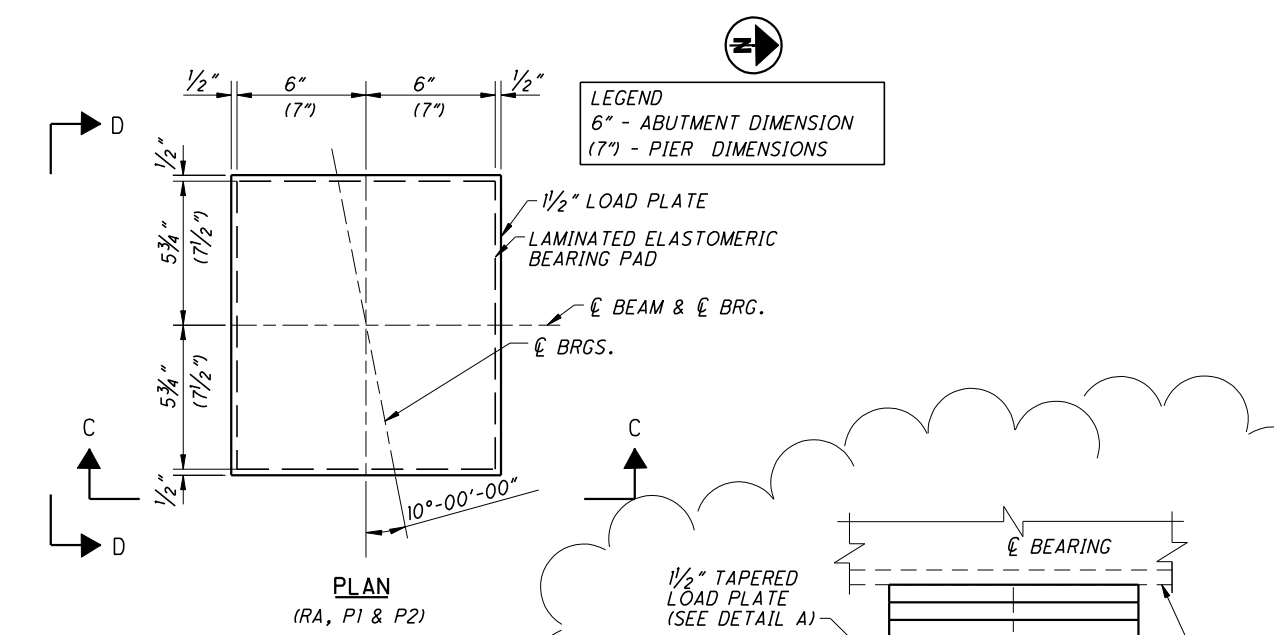


DETAIL A
 (F.A. DETAILS SIMILAR, SEE NOTES 2 & 3)

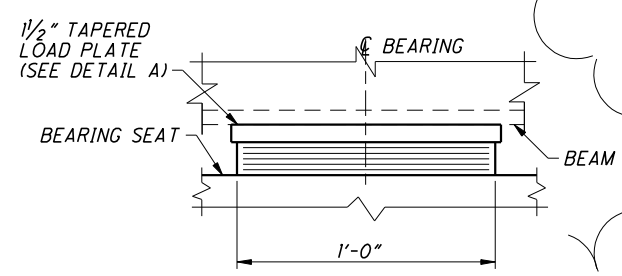
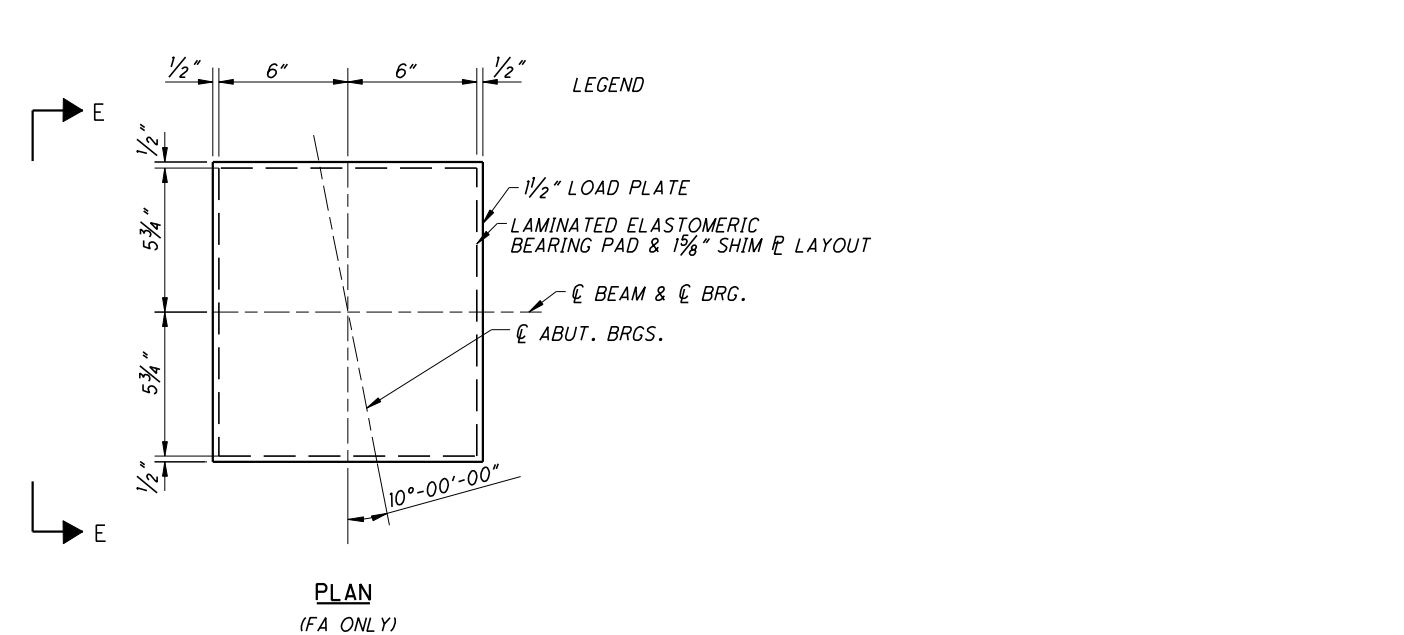
- NOTES:
- MINIMUM BAR LAPS:
 #4 BARS - 2'-9" (TOP)
 #5 BARS - 2'-5"
 #6 BARS - 2'-11"
 - SEE SHEET 16/22 FOR ADDITIONAL DETAILS FOR THE ABUTMENT REINFORCING BAR SHOWN IN "DETAIL A"
 - REFER TO STANDARD DRAWING TST-1-99 FOR ADDITIONAL RAILING INFORMATION
- (*1) SEE TRANSVERSE SECTION FOR ADDITIONAL SPACING DETAIL ON SHEET 17/22

DESIGNED	KCS	CHECKED	JAD
DRAWN	DB	REVISED	
REVIEWED	JEP	STRUCTURE FILE NUMBER	1703846
DATE	04/2008		
DESIGN AGENCY	BARR & PREVOST 2800 CORPORATE EXCHANGE DR., STE 240 COLUMBUS, OH 43231 (614) 714-0270 FAX (614) 714-0322		
DECK PLAN			
BRIDGE NO. CRA-602-0600 OVER THE SANDUSKY RIVER			
CRA-602-0600		PID No. 20375	
7 / 11		18 / 22	

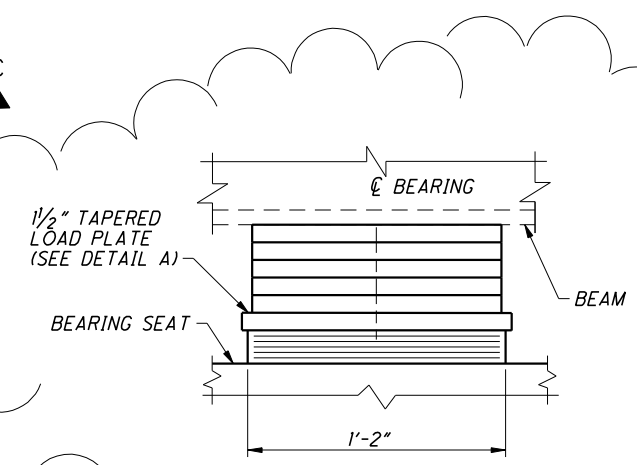
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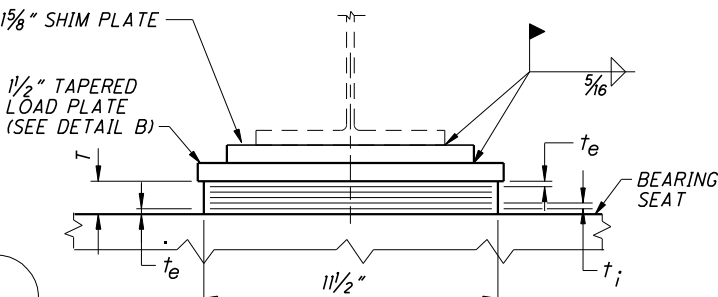
LEGEND
 6" - ABUTMENT DIMENSION
 7" - PIER DIMENSIONS



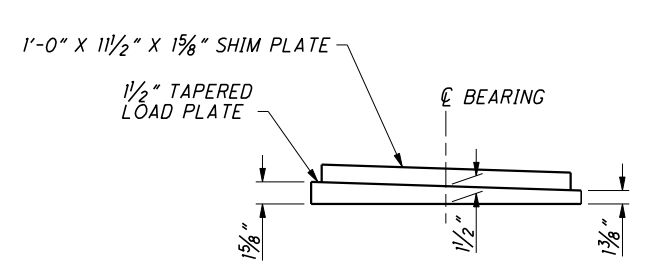
VIEW C-C (RA ONLY)



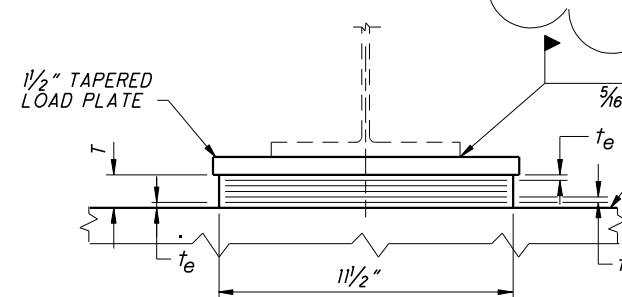
VIEW C-C (P1 & P2)



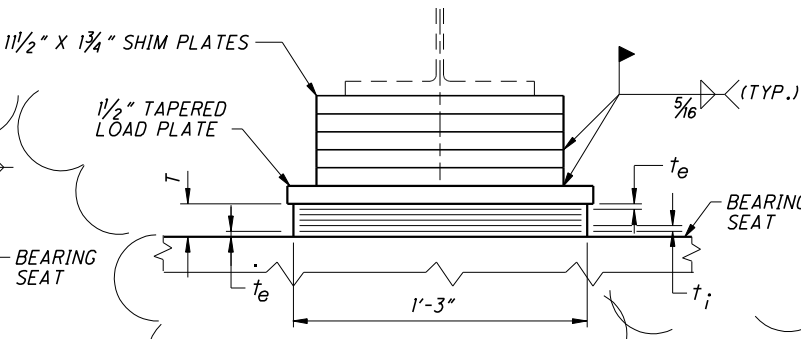
VIEW E-E (FA ONLY)



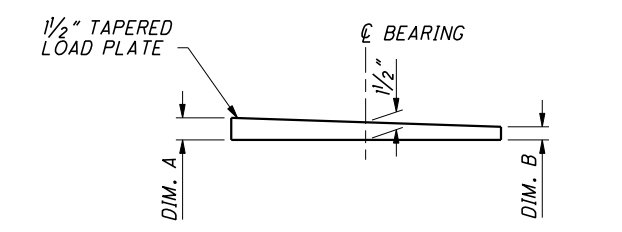
DETAIL B (FA ONLY)



VIEW D-D (RA ONLY)



VIEW D-D (P1 & P2)



DETAIL A

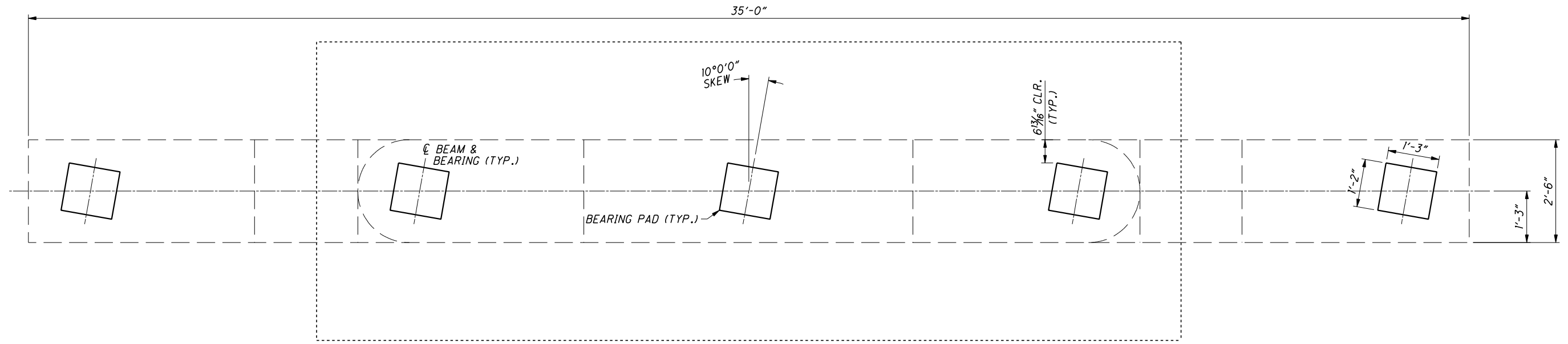
LOCATION	DIM. A	DIM. B
RA	1 1/16"	1 1/16"
P1	1 5/8"	1 3/8"
P2	1 9/16"	1 1/16"

* DIM'S OBTAINED FROM EX. PLAN INFORMATION. CONTRACTOR SHALL FIELD VERIFY EX. BEVELED SOLE PLATE DIMENSIONS

LOCATION	TYPE	BEARING DIMENSIONS						STEEL LOAD PLATE		REACTIONS		MAXIMUM DESIGN LOAD
		L	W	t _i	t _e	T	N	LENGTH X WIDTH X THICKNESS	DL	LL		
ABUTMENTS	EXPANSION	1'-0"	1 1/2"	0.375"	0.263"	2 3/8"	5	1'-1" X 1'-0 1/2" X 1/2"	41 k	56 k	97 k	
PIER 1 & 2	EXPANSION	1'-2"	1'-3"	0.500"	0.350"	3 1/16"	5	1'-3" X 1'-4" X 1/2"	78 k	66 k	144 k	

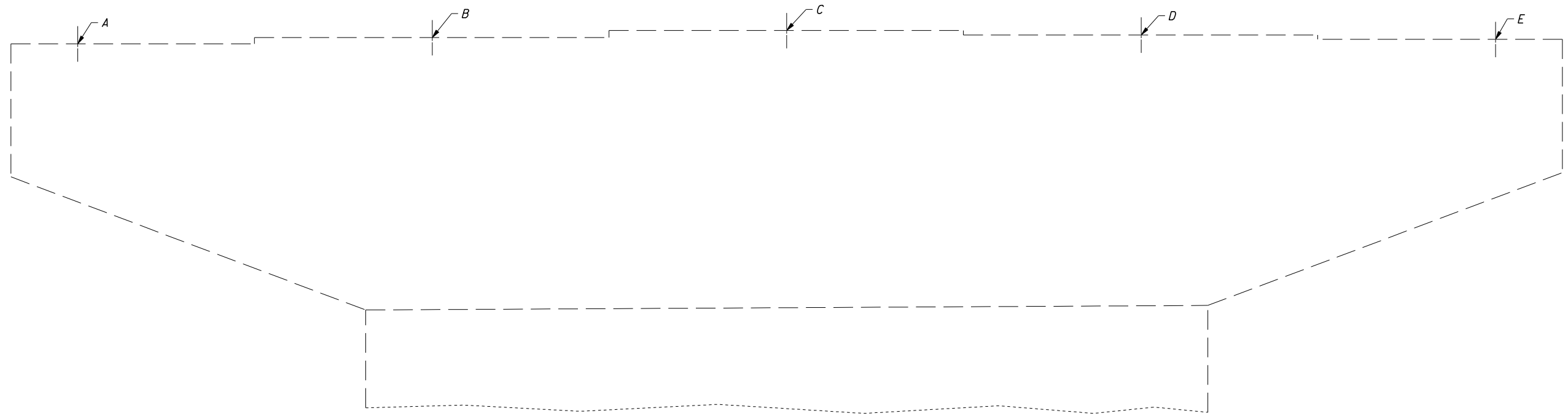
t_i = THICKNESS OF INTERNAL LAYER
 t_e = THICKNESS OF EXTERNAL LAYER
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING
 N = NO. OF STEEL LAMINATES
 INTERNAL STEEL LAMINATE THICKNESS = 0.0747"
 DUROMETER OF ELASTOMER = 50 DUROMETER

- NOTES:
- THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION 1, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
 - CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300 DEGREES F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
 - IF THE STEEL IS PLACED ON ELASTOMER AT AN AMBIENT TEMPERATURE HIGHER THAN 80 DEGREES F OR LOWER THAN 40 DEGREES F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60 DEGREES F (±) 10 DEGREES F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60 DEGREES F (±) 10 DEGREES F.
 - LOAD PLATES SHALL RECEIVE A FINAL TOUCH UP COAT AFTER WELDING.



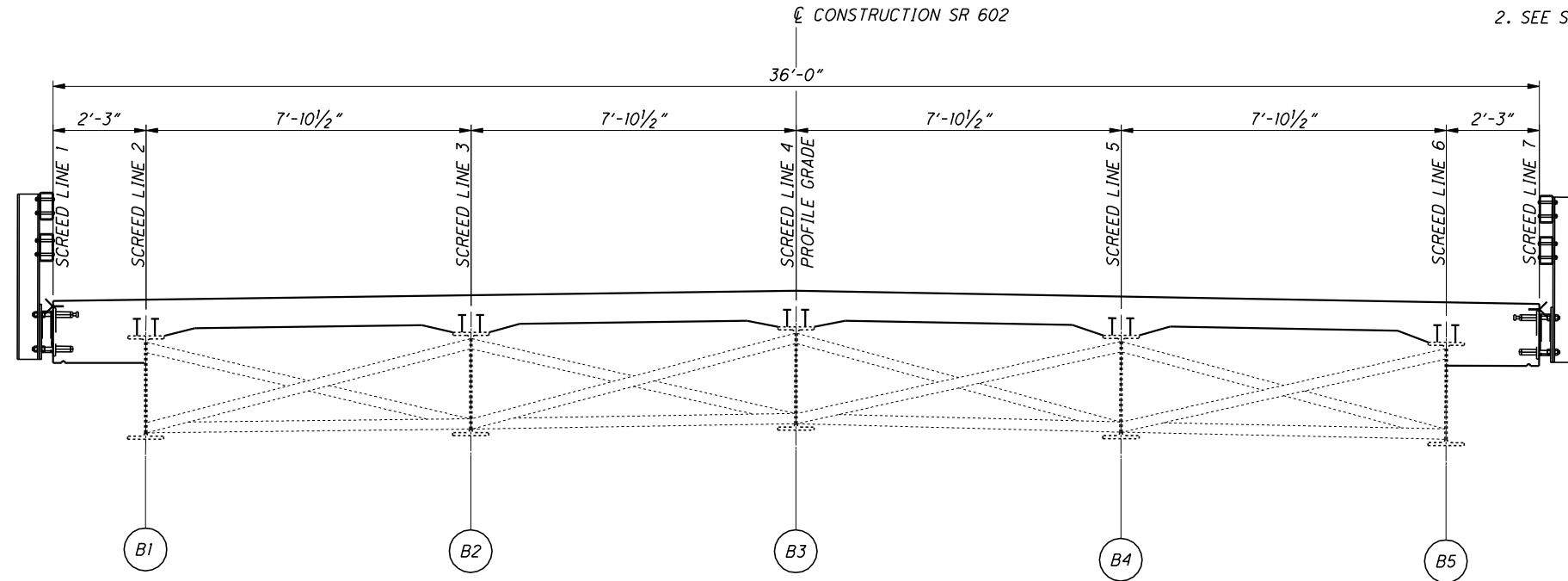
PLAN

ELEVATIONS	A	B	C	D	E
REAR PIER	1022.20	1022.34	1022.50	1022.40	1022.30
FORWARD PIER	1021.38	1021.52	1021.66	1021.57	1021.47



ELEVATION

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BRIDGE SCREE LINE LOCATIONS

NOTES:

1. SCREE ELEVATIONS SHOWN ARE FOR DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.
2. SEE SHEET 17/22 FOR THE FRAMING PLAN.

SCREE ELEVATION TABLE

	LOCATION	R. A. BRGS.	1/4 SPAN 1	1/2 SPAN 1	3/4 SPAN 1	PIER 1	1/4 SPAN 2	1/2 SPAN 2	3/4 SPAN 2	PIER 2	1/4 SPAN 3	1/2 SPAN 3	3/4 SPAN 3	F. A. BRGS.	
SCREEDED LINE 1 (TOE OF PARAPET)	STATION	272+40.58	272+51.08	272+61.58	272+72.08	272+82.58	272+95.70	273+08.83	273+21.95	273+35.08	273+45.58	273+56.08	273+66.58	273+77.08	SCREEDED LINE 1
	FINAL DECK ELEVATION	1026.42	1026.25	1026.07	1025.89	1025.71	1025.49	1025.26	1025.04	1024.82	1024.64	1024.46	1024.28	1024.10	(TOE OF PARAPET)
	DEAD LOAD DEFLECTION	0.000	0.011	0.013	0.005	0.000	0.008	0.015	0.008	0.000	0.005	0.013	0.011	0.000	
	SCREEDED ELEVATION	1026.42	1026.26	1026.08	1025.89	1025.71	1025.50	1025.28	1025.05	1024.82	1024.64	1024.47	1024.29	1024.10	
SCREEDED LINE 2 (BEAM 1)	STATION	272+40.97	272+51.47	272+61.97	272+72.47	272+82.97	272+96.10	273+09.22	273+22.35	273+35.47	273+45.97	273+56.47	273+66.97	273+77.47	SCREEDED LINE 2
	FINAL DECK ELEVATION	1026.45	1026.27	1026.10	1025.92	1025.74	1025.52	1025.29	1025.07	1024.85	1024.67	1024.49	1024.31	1024.13	(BEAM 1)
	DEAD LOAD DEFLECTION	0.000	0.011	0.013	0.005	0.000	0.008	0.015	0.008	0.000	0.005	0.013	0.011	0.000	
	SCREEDED ELEVATION	1026.45	1026.28	1026.11	1025.92	1025.74	1025.52	1025.31	1025.08	1024.85	1024.67	1024.50	1024.32	1024.13	
SCREEDED LINE 3 (BEAM 2)	STATION	272+42.36	272+52.86	272+63.36	272+73.86	272+84.36	272+97.49	273+10.61	273+23.74	273+36.86	273+47.36	273+57.86	273+68.36	273+78.86	SCREEDED LINE 3
	FINAL DECK ELEVATION	1026.55	1026.37	1026.20	1026.02	1025.84	1025.61	1025.39	1025.17	1024.95	1024.77	1024.59	1024.41	1024.23	(BEAM 2)
	DEAD LOAD DEFLECTION	0.000	0.011	0.013	0.005	0.000	0.008	0.015	0.008	0.000	0.005	0.013	0.011	0.000	
	SCREEDED ELEVATION	1026.55	1026.38	1026.21	1026.02	1025.84	1025.62	1025.41	1025.18	1024.95	1024.77	1024.60	1024.42	1024.23	
SCREEDED LINE 4 (BEAM 3 & P/G)	STATION	272+43.75	272+54.25	272+64.75	272+75.25	272+85.75	272+98.88	273+12.00	273+25.13	273+38.25	273+48.75	273+59.25	273+69.75	273+80.25	SCREEDED LINE 4
	FINAL DECK ELEVATION	1026.65	1026.47	1026.29	1026.12	1025.94	1025.71	1025.49	1025.27	1025.04	1024.87	1024.69	1024.51	1024.33	(BEAM 3 & P/G)
	DEAD LOAD DEFLECTION	0.000	0.011	0.013	0.005	0.000	0.008	0.015	0.008	0.000	0.005	0.013	0.011	0.000	
	SCREEDED ELEVATION	1026.65	1026.48	1026.31	1026.12	1025.94	1025.72	1025.51	1025.28	1025.04	1024.87	1024.70	1024.52	1024.33	
SCREEDED LINE 5 (BEAM 4)	STATION	272+45.14	272+55.64	272+66.14	272+76.64	272+87.14	273+00.26	273+13.39	273+26.51	273+39.64	273+50.14	273+60.64	273+71.14	273+81.64	SCREEDED LINE 5
	FINAL DECK ELEVATION	1026.50	1026.33	1026.15	1025.97	1025.79	1025.57	1025.34	1025.12	1024.90	1024.72	1024.54	1024.36	1024.18	(BEAM 4)
	DEAD LOAD DEFLECTION	0.000	0.011	0.013	0.005	0.000	0.008	0.015	0.008	0.000	0.005	0.013	0.011	0.000	
	SCREEDED ELEVATION	1026.50	1026.34	1026.16	1025.97	1025.79	1025.58	1025.36	1025.13	1024.90	1024.73	1024.55	1024.37	1024.18	
SCREEDED LINE 6 (BEAM 5)	STATION	272+46.53	272+57.03	272+67.53	272+78.03	272+88.53	273+01.65	273+14.78	273+27.90	273+41.03	273+51.53	273+62.03	273+72.53	273+83.03	SCREEDED LINE 6
	FINAL DECK ELEVATION	1026.36	1026.18	1026.00	1025.82	1025.64	1025.42	1025.20	1024.97	1024.75	1024.57	1024.39	1024.22	1024.04	(BEAM 5)
	DEAD LOAD DEFLECTION	0.000	0.011	0.013	0.005	0.000	0.008	0.015	0.008	0.000	0.005	0.013	0.011	0.000	
	SCREEDED ELEVATION	1026.36	1026.19	1026.01	1025.83	1025.64	1025.43	1025.21	1024.98	1024.75	1024.58	1024.41	1024.23	1024.04	
SCREEDED LINE 7 (TOE OF PARAPET)	STATION	272+46.92	272+57.42	272+67.92	272+78.42	272+88.92	273+02.05	273+15.17	273+28.30	273+41.42	273+51.92	273+62.42	273+72.92	273+83.42	SCREEDED LINE 7
	FINAL DECK ELEVATION	1026.32	1026.14	1025.96	1025.78	1025.60	1025.38	1025.16	1024.93	1024.71	1024.53	1024.35	1024.17	1024.00	(TOE OF PARAPET)
	DEAD LOAD DEFLECTION	0.000	0.011	0.013	0.005	0.000	0.008	0.015	0.008	0.000	0.005	0.013	0.011	0.000	
	SCREEDED ELEVATION	1026.32	1026.15	1025.97	1025.79	1025.60	1025.39	1025.17	1024.94	1024.71	1024.54	1024.37	1024.19	1024.00	

SCREE ELEVATIONS
 BRIDGE NO. CRA-602-0600
 OVER THE SANDUSKY RIVER

CRA-602-0600
 PID No. 20375

10 / 11

21
22

DESIGN AGENCY
 BARR & PREYOST
 2800 CORPORATE EXCHANGE DR., STE 240
 COLUMBUS, OH 43231
 (614) 714-0270 FAX (614) 714-0323

REVIEWED
 KCS
 DATE
 6/2008

DRAWN
 SBH
 CHECKED
 JEP

DESIGNED
 JAD

STRUCTURE FILE NUMBER
 1703846

MARK	NUMBER			LENGTH	WEIGHT (LBS.)	TYPE	DIMENSIONS						
	REAR	FORWARD	TOTAL				A	B	C	D	E	R	INCR.
ABUTMENTS													
A501	60	60	120	7'-10"	980	2	2'-1"	3'-11"	2'-1"				
A502	30	30	60	8'-8"	542	2	3'-1"	2'-9"	3'-1"				
A503	6	6	12	2'-9"	34	ST							
A504	8	8	16	6'-8"	111	2	2'-9"	1'-5"	2'-9"				
A505	6	6	12	7'-0"	88	2	2'-11"	1'-5"	2'-11"				
A506	6	6	12	3'-1"	39	ST							
D601	12	12	24	3'-6"	126	ST							
D801	26	26	52	5'-8"	787	18	3'-9"	1'-0"	1'-0"				
A802	10	10	20	35'-3"	1882	ST							
A803	6	6	12	4'-0"	128	ST							
A804	8	8	16	6'-2"	263	ST							
				TOTAL	4980								
DECK													
S401			111	40'-0"	2966	ST							
S402			37	29'-0"	717	ST							
S501			150	40'-0"	6258	ST							
S502			50	28'-0"	1460	ST							
S503			502	36'-2"	18936	ST							
S504			502	4'-9"	2487	7	0'-8"	1'-6"	1'-0"	1'-11"			
S601			72	30'-0"	3244	ST							
				TOTAL	36194								

