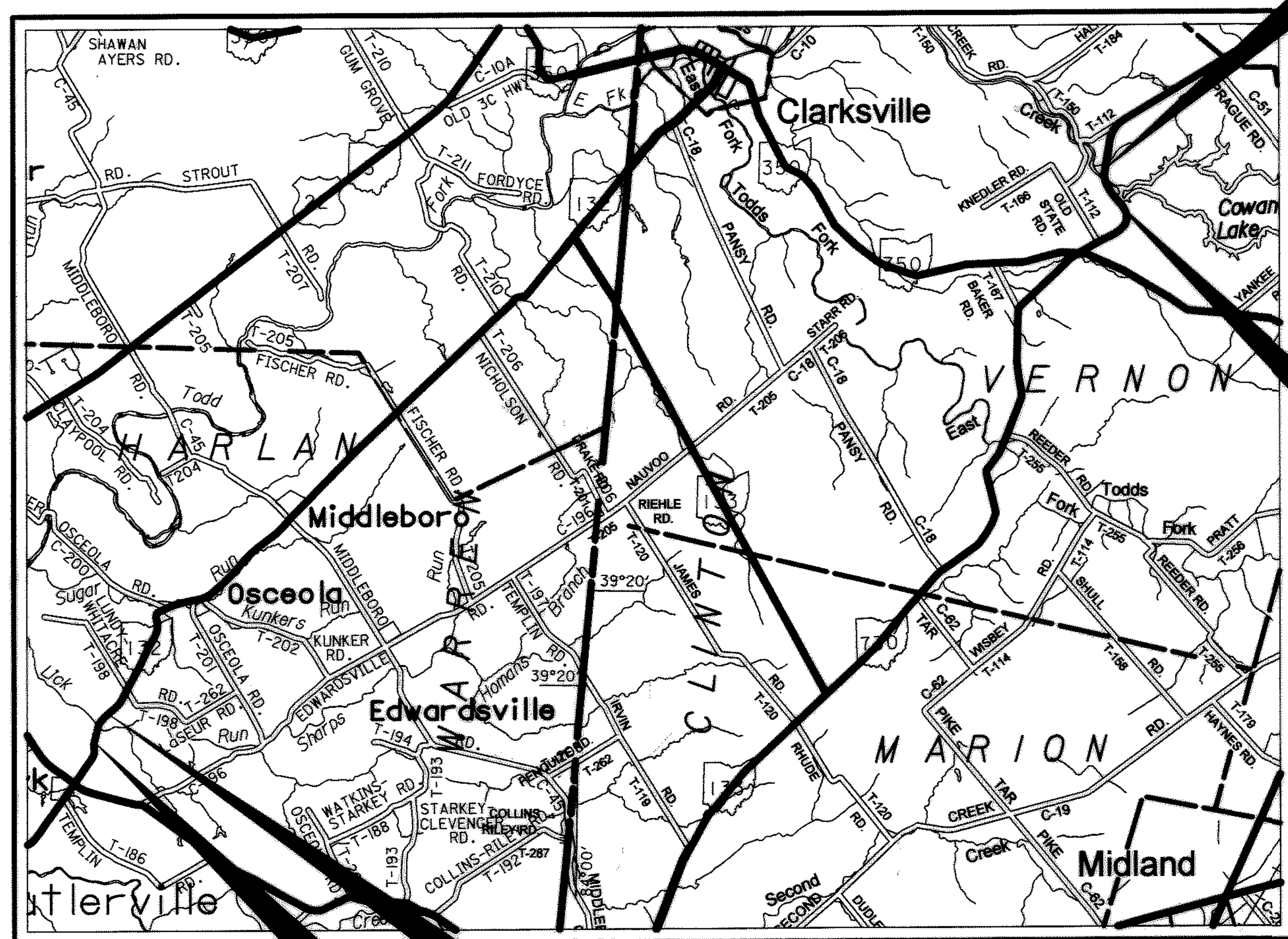


CLI-730-4.91
END PROJECT
STA 71+31.77

CLI-730-4.91
BEGIN PROJECT
STA 67+93.83

WAR-132-5.53
BEGIN PROJECT
STA 7+43.52

WAR-132-5.53
END PROJECT
STA 10+80.35

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

CLI-730-4.91, WAR-132-5.53

VERNON TOWNSHIP, CLINTON COUNTY
HARLAN TOWNSHIP, WARREN COUNTY

PROJECT DESCRIPTION

THE CLI-730-0491 PROJECT INVOLVES REPLACEMENT OF THE EXISTING DECK SLAB AND THE INSTALLATION OF NEW DEFLECTOR PARAPETS. BRIDGE DRAINAGE WILL BE UPGRADED. BRIDGE EXPANSION JOINTS AND EXISTING SUBSTRUCTURE WILL BE REHABILITATED.

THE WAR-132-0533 PROJECT INVOLVES REPLACEMENT OF THE EXISTING DECK EDGES AND THE INSTALLATION OF NEW DEFLECTOR PARAPETS. BRIDGE EXPANSION JOINTS WILL BE UPGRADED AND A MICROSILICA OVERLAY WILL BE PROVIDED.

LOCATION MAP

WAR-132-0533 : LATITUDE: 39°19′42″ LONGITUDE: 84°04′06″
CLI-730-0491 : LATITUDE: 39°23′24″ LONGITUDE: 83°55′36″

SCALE IN MILES
0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE & DIVIDED HIGHWAY
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

INDEX OF SHEETS:

2002 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

DESIGN DESIGNATION

	WAR-132-0533	CLI-730-0491
CURRENT ADT (2003)	800	2800
DESIGN ADT (2023)	840	2900
DESIGN HOURLY VOLUME	101	319
DIRECTIONAL DISTRIBUTION	0.55	0.55
TRUCKS (24 HOUR B&C)	1%	5%
DESIGN SPEED	55 MPH	55 MPH
LEGAL SPEED	55 MPH	55 MPH

DESIGN FUNCTIONAL CLASSIFICATION - RURAL ARTERIAL

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PLAN PREPARED BY:

M-E COMPANIES, INC.
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OHIO 45246

ENGINEERS SEAL:

STATE OF OHIO — CHRISTOPHER A. HOWARD — 54269 — PROFESSIONAL ENGINEER

SIGNED: Christopher A. Howard
DATE: 4-10-03

STANDARD CONSTRUCTION DRAWINGS

BP-3.1	07-28-00	DM-4.1	07-19-02	A-1-69	07-19-02		
		DM-4.3	07-19-02	AS-1-81	07-19-02		
GR-1.1	04-18-03	DM-4.4	07-19-02	BR-1	07-19-02		
				EXJ-4-87	07-19-02		
		RM-1.1	04-18-03	PCB-91	07-19-02		
GR-2.1	04-18-03	RM-4.2	04-18-03				
GR-3.1	04-18-03						
TC-41.20	01-19-01						
TC-65.10	10-19-01						
TC-65.12	10-19-01						
TC-73.10	1-19-01						

SUPPLEMENTAL SPECIFICATIONS	
832	2-12-03
833	2-12-03
846	4-19-02
848	2-8-02
864	7-11-00
898	1-17-03
954	9-9-97

SPECIAL PROVISIONS

APPROVED ________
DATE 7/8/03 DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor
DATE 7·22·03 DIRECTOR, DEPARTMENT OF TRANSPORTATION

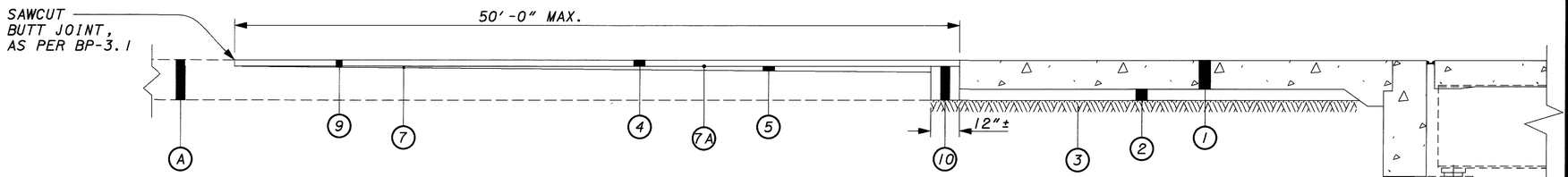
FEDERAL PROJECT NO. E036 (324)

PID NO. 21803

CONSTRUCTION PROJECT NO.

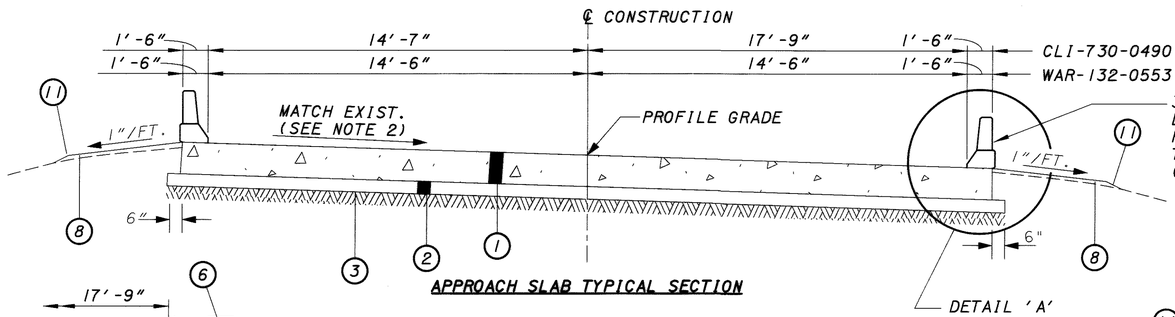
RAILROAD INVOLVEMENT NONE

CLI-730-4.91
WAR-132-5.53



LONGITUDINAL SECTION OF REINFORCED CONCRETE APPROACH SLAB

(CLI-730-0491 SHOWN, WAR-132-0553 SIMILAR)



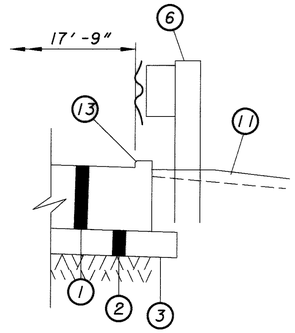
APPROACH SLAB TYPICAL SECTION

LIMITING STATIONS

WAR-132-0553
STA. 7+93.52 TO STA. 8+18.52 = 25.00 L.F.
STA. 10+05.35 TO STA. 10+30.35 = 25.00 L.F.

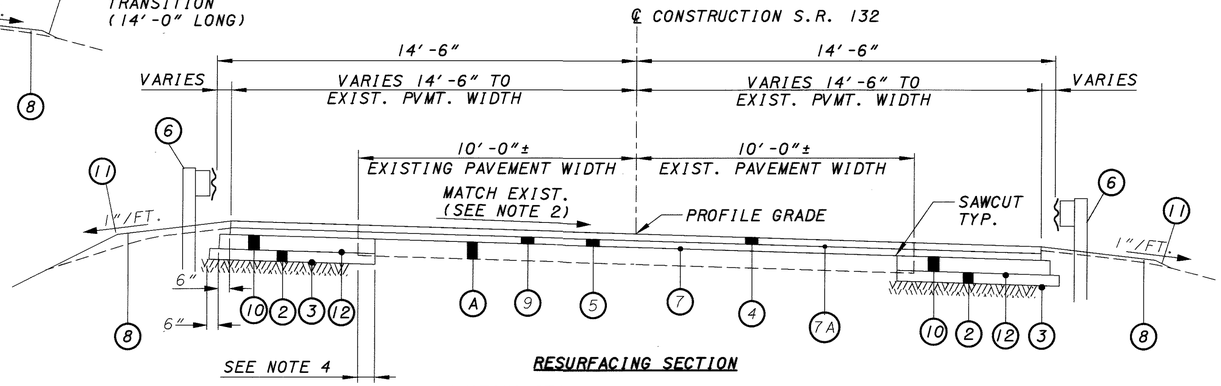
CLI-730-0491
STA. 68+43.83 TO STA. 68+68.83 = 25.00 L.F.
STA. 70+56.77 TO STA. 70+81.77 = 25.00 L.F.

TOTAL LENGTH = 100.00 L.F.



DETAIL 'A'

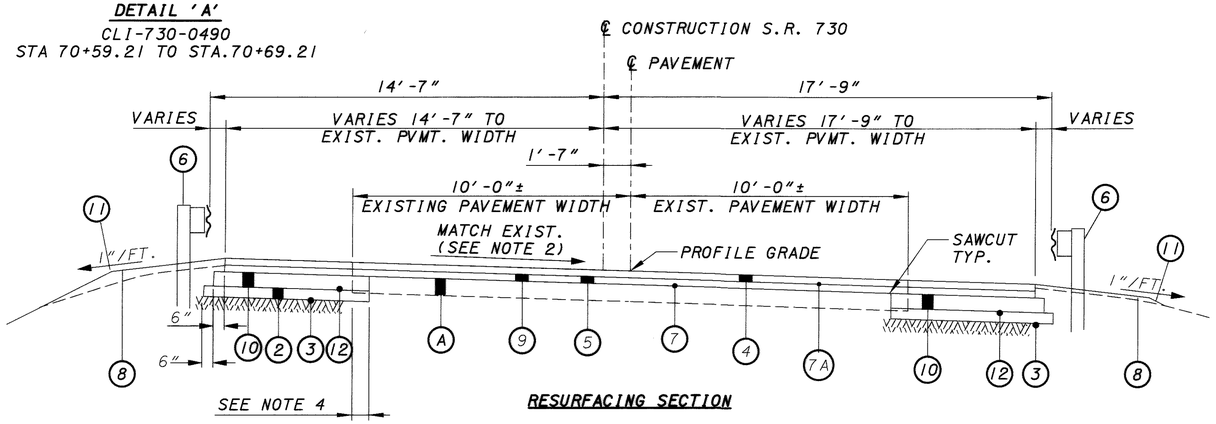
CLI-730-0490
STA 70+59.21 TO STA.70+69.21



RESURFACING SECTION

LIMITING STATIONS

WAR-132-0553
STA. 7+43.52 TO STA. 7+93.52 = 50 L.F.
STA. 10+30.35 TO STA. 10+80.35 = 50 L.F.
TOTAL LENGTH = 100 L.F.



RESURFACING SECTION

LIMITING STATIONS

CLI-730-0491
STA. 67+93.83 TO STA. 68+43.83 = 50 L.F.
STA. 70+81.77 TO STA. 71+31.77 = 50 L.F.
TOTAL LENGTH = 100 L.F.

NOTES:

1. STATIONS AND DISTANCES LISTED ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
2. CROSS SLOPE = 0.074 FT/FT (WAR-132-5.53)
   CROSS SLOPE = 0.083FT/FT (CLI-730-4.91)
3. PAVEMENT PLANING SHALL BE VARIABLE DEPTH FROM 0" TO 2" MAX.
4. THE EXISTING PAVEMENT EDGES SHALL BE SAWCUT TO LOCATE A SOUND PAVEMENT EDGE PER CMS 203.04. FOR ESTIMATING PURPOSES, PAVEMENT CALCULATIONS INCLUDED IN THE PLAN INDICATE AN AVERAGE WIDTH OF ONE FOOT OF EXISTING PAVEMENT BEING REPLACED.
5. INCLUDE SAW CUTTING WITH EXCAVATION FOR PAYMENT.

LEGEND

MARK	ITEM	DESCRIPTION
(1)	526	REINFORCED CONCRETE APPROACH SLAB, (T=15'), AS PER PLAN
(2)	304	6" AGGREGATE BASE
(3)	204	SUBGRADE COMPACTION
(4)	448	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1-H
(5)	448	VARIABLE THICKNESS ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28
(6)	606	GUARDRAIL, TYPE 5
(7)	407	TACK COAT
(7A)	407	TACK COAT FOR INTERMEDIATE COURSE
(8)	209	LINEAR GRADING, AS PER PLAN
(9)	254	PAVEMENT PLANNING
(10)	301	8" ASPHALT CONCRETE BASE, PG64-22
(11)	659	SEEDING AND MULCHING
(12)	408	PRIME COAT
(13)	609	CURB, TYPE 4A
(A)		EXISTING ASPHALT PAVEMENT

CALCULATED CAH
CHECKED JBK

TYPICAL SECTIONS

CLI-730-4.91
WAR-132-5.53

08:58:35 AM
04/09/2003
u:\02-252\21803\Dgn\Roadway\WAR_CLIGY.dgn

UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

ELECTRIC
THE DAYTON POWER AND LIGHT CO.
1900 DRYDEN RD.
DAYTON, OH 45439
(937) 331-4924

TELEPHONE
VERIZON
760 12th ST.
GREENEVILLE, OHIO 45331
(937) 382-4224

GAS
VECTREN - GAS
1335 E. DAYTON YELLOW SPRINGS RD.
FAIRBORN, OH 45324
9937) 440-1918

GAS/ELECTRIC
CINERGY
P.O. BOX 960 - ROOM 460A /467A
CINCINNATI, OHIO 45201
(513) 287-1928 / (513) 287-1043

WATER
WESTERN WATER
1775 S.R. 28
GOSHEN, OHIO 45122
(513) 899-3211

CABLE
ADEPLHIA
3416 S.R 132
AMELIA, OHIO 45102
(513) 797-5704

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON THE BENCHMARKS IN THESE DRAWINGS.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CONVERSATION OF STANDARD CONSTRUCTION DRAWINGS:

THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.011 OF THE 1997 CONSTRUCTION AND MATERIALS SPECIFICATIONS. THE APPENDIX OF ASTM E 380 SHALL BE UTILIZED FOR ANY ADDITIONAL CONVERSION FACTORS REQUIRED. CONVERSIONS SHALL BE APPOPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

ITEM 407 - TACK COAT & ITEM 408 - PRIME COAT

THE RATE OF APPLICATION OF THE 407 TACK COAT AND 408 PRIME COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. FOR ESTIMATING PURPOSES ONLY. THE PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF:

ITEM 407, TACK COAT 0.075 GAL. PER SQ. YARD
ITEM 407, INTERMEDIATE TACK COAT 0.05 GAL. PER SQ. YARD
ITEM 408, PRIME COAT 0.40 GAL. PER SQ. YARD

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THESE ITEMS SHALL BE USED FOR MAINTENANCE OF THE CONSTRUCTION AREA. THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES.

ITEM 616, WATER	0.32 M.GAL.
ITEM 616, CALCIUM CHLORIDE	0.03 TONS

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER OPERATED CONSTRUCTION-TYPE DEVICE SHAL NOT BE OPERATED BETWEEN THE HOURS OF 8:00 PM AND 7:00 AM. IN ADDITION, ANY SUCH DEVICE SHALL NOT BE OPERATED AT ANY TIME IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

GENERAL NOTES

ITEM 209 - LINEAR GRADING, AS PER PLAN

THIS WORK SHALL CONSIST OF PREPARING A SUBGRADE FOR THE SHOULDER PAVING (ON BOTH SIDES) OF A ROADWAY BY EXCAVATING THE EXISTING SHOULDER MATERIAL TO THE DEPTH SHOWN IN THE PLAN, OR AS DIRECTED BY THE ENGINEER, TO REMOVE ANY UNSTABLE MATERIAL AND BY SHAPING AND COMPACTING THE SUBGRADE.

UNSOUND OR BROKEN EDGES OF BITUMINOUS PAVEMENTS SHALL FIRST BE TRIMMED TO A LINE ESTABLISHED BY THE ENGINEER. THE EXISTING SHOULDER SHALL THEN BE EXCAVATED AND THE SUBGRADE SHAPED AND COMPACTED. COMPACTION SHALL BE CARRIED OUT TO THE SATISFACTION OF THE ENGINEER BY MEANS OF A TRENCH ROLLER, 401.11. AREAS GRADED IN EXCESS OF DEPTHS SPECIFIED OR DIRECTED BY THE ENGINEER SHALL BE REPLACED WITH COMPACTED AGGREGATE AT THE CONTRACTOR'S EXPENSE. EXCAVATED MATERIAL SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER.

GRADED SHOULDERS AT LOCATIONS WERE EXISTING GUARDRAIL IS REMOVED, OR WHERE NEW GUARDRAIL IS TO BE ERECTED, SHALL BE RESHAPED AS DIRECTED BY THE ENGINEER TO INSURE A SMOOTH DRAINABLE SURFACE FREE OF ALL IRREGULARITIES. EXCESS EXCAVATION RESULTING FROM RESHAPING SHOULDERS SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS ITEM INCLUDES ALL WORK NECESSARY TO PRODUCE TYPICAL SECTIONS AS SHOWN IN THIS PLAN. ALSO INCLUDED FOR PAYMENT IS THE FERTILIZING, SEEDING AND MULCHING OF THE SPECIFICATIONS. RESHAPING GRADED SHOULDERS AS DESCRIBED SHALL BE INCLUDED IN THE CONTRACT PRICE PER MILE FOR ITEM 209, LINEAR GRADING, AS PER PLAN.

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

THE CONTRACTOR SHALL CONSTRICT ALL OF HIS/HER ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT. SHOULD THE CONTRACTOR WISH TO USE ANY AREA OUTSIDE THESE LIMITS, A REQUEST IN WRITING MUST BE SUBMITTED TO THE PROJECT ENGINEER. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA THAT THE CONTRACTOR PLANS TO USE AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. THE ENGINEER SHALL APPROVE THE REQUEST IN WRITING BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA. PRIOR TO BEGINNING WORK, THE CONTRACTOR, SUPERINTENDENT OR HIS REPRESENTATIVE, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY SHALL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT-OF-WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE. ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS AS DEFINED ABOVE WILL BE REPLACED IN KIND OR AS DIRECTED BY THE PROJECT ENGINEER.

CLEARING AND GRUBBING

A LUMP SUM QUANTITY HAS BEEN INCLUDED FOR ITEM 201, CLEARING AND GRUBBING. AS PART OF THIS WORK SOME TRIMMING OF TREE BRANCHES OR SHRUBS MAY BE REQUIRED. THE CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM THE ENGINEER REGARDING ANY TREE OR SHRUB TRIMMING ACTIVITIES.

THE CONTRACTOR SHALL REMOVE ALL BRUSH AND DEBRIS FROM UNDER THE WAR-132-0553 BRIDGE AND FROM WITHIN 10 FEET OF EACH SIDE OF THE BRIDGE.

THE COST OF SUCH TRIMMING AND DEBRIS/BRUSH REMOVAL AS WELL AS ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK SHALL BE INCLUDED IN THE LUMP SUM COST FOR ITEM 201, CLEARING AND GRUBBING.

THE CONTRACTOR IS CAUTIONED THAT NO INDIANA BAT HABITAT SHALL BE REMOVED AS PART OF CLEARING AND GRUBBING ACTIVITIES ON THE PROJECT. IF THERE IS ANY INDIANA BAT HABITAT PRESENT ON THE PROJECT, IT SHALL BE MARKED BY ODOT PERSONNEL BEFORE CLEARING AND GRUBBING ACTIVITIES CAN BEGIN.

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.

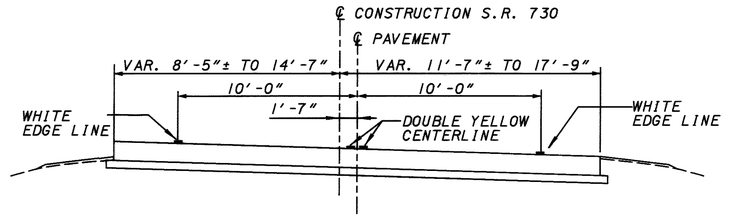
CONTINGENCY QUANTITIES

THE CONTRACTORS SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETEION OF THIS PROJECT.

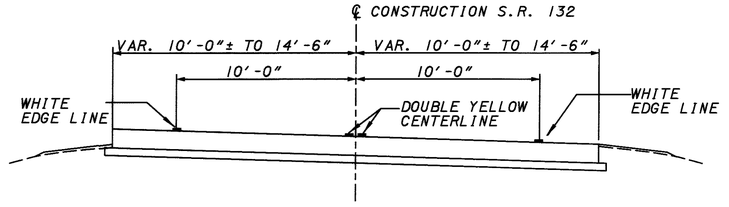
SEEDING AND MULCHING

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

ITEM 659, SEEDING AND MULCHING	334 S.Y.
ITEM 659, WATER	2 M.GAL.
ITEM 659, COMMERCIAL FERTILIZER	0.05 TONS



PAVEMENT MARKING DETAIL



PAVEMENT MARKING DETAIL

PAVEMENT MARKING

THE PERMANENT PAVEMENT MARKING SHALL BE PLACED AT EACH CONSTRUCTION SITE IN ACCORDANCE WITH THE ABOVE DETAIL. ADUST PAVEMENT MARKINGS AS REQUIRED TO MEET EXTISTING PAVEMENT MARKINGS. SEE SHEET 10 OF 55 FOR QUANTITES.

PART WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXTREME CARE SHALL BE TAKEN TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LONGITUDINAL JOINTS SHALL BE LAPPED AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

CALCULATED CAH
CHECKED JBK

GENERAL NOTES

CLI-730-4.91
WAR-132- 5.53

3
55

02:46:05 PM
04/08/2003
u:\02-252\2803\Dgn\Roadway\WAR_CLI6N.dgn

ITEM 606 - ANCHOR ASSEMBLY, TYPE E-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS OR APPROVED EQUAL.

1) THE ET-2000 (1997) MANUFACTURED BY SYRO, INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF TWO 25'-0" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SSS265M	ET-2000 (1997) PLAN, ELEVATION AND SECTIONS	6/20/97	3/6/98
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION AND SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION AND SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00
SS158	ET2000 PLUS 50'-0" WITH 12'-6" PANELS AND HBA POSTS 1-4 PLAN, ELEVATION AND SECTION	5/22/00	7/31/00

2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 7631 NEW CASTLE DRIVE, FRANKFORT, IL 60423 (TELEPHONE: 815-464-5917).

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF FOUR 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" X 18".

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E-98, 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.

SPECIAL REQUIREMENTS FOR PROTECTION OF ENDANGERED SPECIES HABITAT - INDIANA BAT

SPECIFIC DEAD TREES, SNAGS AND LIVE TREES OR TREE CLUSTERS WITH EXFOLIATING BARK (SUCH AS LARGE SHAGBARK, HICKORY AND SYCAMORE) WITHIN THE PROJECT LIMITS THAT ARE POTENTIAL SUMMER ROOST TREES FOR THE INDIANA BAT, A FEDERAL ENDANGERED SPECIES. THESE TREES HAVE SPECIAL REQUIREMENTS FOR TIMING OF REMOVAL AND PROTECTION DURING ROOSTING SEAON.

ALL POTENTIAL ROOST TREES SHALL BE CUT AND REMOVED FROM THE PROJECT AREA BEFORE APRIL 15. IF THE ROOST TREES CANNOT BE REMOVED BY APRIL 15, THEN THEY SHALL REMAIN PROTECTED AND UNDISTURBED FOR A PERIOD BETWEEN APRIL 15 AND SEPTEMBER 15, PER THE REQUIREMENTS BELOW, AND SUBSEQUENTLY REMOVED AFTER SEPTMEBER 15.

IF THE TREES DESCRIBED ABOVE ARE NOT REMOVED PRIOR TO THE NEXT BAT ROOSTING SEASON (APRIL 15), THEY SHALL BE PROTECTED BY INSTALLING WORK LIMIT FENCING AROUND EACH TREE OR TREE GROUP AT A RADIUS OF NOT LESS THAN 50 FEET FROM THE NEAREST POINT OF EACH ROOST TREE TRUNK. IF SUCH PROTECTION IS REQUIRED DUE TO TIMING OF CONSTRCTION, IT SHALL NOT BE CAUSE FOR TIME DELAY OR EXTRA COMPENSATION CLAIMS BY THE CONTRACTOR, AND THE WORK SHALL BE PERFORMED BER BID ITEM 201, CLEARING AND GRUBBING.

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN

PRIOR TO THE START OF ROADWAY OPERATIONS, THE CONTRACTOR SHALL REFERENCE THE LENGTH OF THE PROJECT ON BOTH SIDES OF THE ROADWAY, IN A MANNER SATISFACTORY TO THE ENGINEER. THE PAVEMENT SHALL BE REFERENCED IN 100 FT. INCREMENTS, OR IN INCREMENTS ACCEPTABLE TO THE ENGINEER, IN A SEMI-PERMANENT CONDITION.

INTERIM COMPLETION DATE

AN INTERIM COMPLETION DATE FOR THIE PROJECT IS SET 30 DAYS PRIOR TO THE FINAL COMPLETION DATE. ALL CONTRACT ITEMS OF WORK MUST BE COMPLETED BY THE INTERIM COMPLETION DATE. THE INTERIM COMPLETION DATE WILL BE SUBJECT TO LIQUIDATED DAMAGES AS INDICATED IN SECTION 108.07 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS HANDBOOK. REQUESTS FOR EXTENSION OF THE INTERIM COMPLETION DATE WILL BE PROCESSED AS PER SECTION 108.06 OF THE SPECIFICATIONS BOOK. THE PERIOD OF TIME BETWEEN THE INTERIM COMPLETION DATE AND THE FINAL COMPLETION DATE IS STRICTLY TO ALLOW FOR COMPLETION OF THE "PUNCH LIST" ITEMS AND REMOVAL OF THE FIELD OFFICES. FAILURE TO COMPLETE THE "PUNCH LIST" AND REMOVE THE FIELD OFFICES BY THE FINAL COMPLETION DATE WILL RESULT IN THE ASSESSMENT OF LIQUIDATED DAMAGES AS PER SECTION 108.07 OF THE SPECIFICATIONS BOOK.

A GRANTED TIME EXTENSION TO THE INTERIM COMPLETION DATE WILL NOT INCLUDE A CORRESPONDING EXTENSION TO THE FINAL COMPLETION DATE. EXTENSIONS OF TIME TO THE FINAL COMPLETION DATE WILL ONLY BE GRANTED IF IT CAN BE JUSTIFIED THAT NOT ENOUGH TIME EXISTS TO COMPLETE THE "PUNCH LIST" AND REMOVE THE PROJECT FIELD OFFICE PRIOR TO THE FINAL COMPLETION DATE.

CALCULATED CAH CHECKED JBK

GENERAL NOTES

CLI-730-4.91
WAR-132- 5.53

ITEM 614 - MAINTAINING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION 614 AND THE MAINTENANCE OF TRAFFIC NOTES AND DETAILS DESCRIBED IN THESE DRAWINGS.

THIS ITEM SHALL INCLUDE THE PREPARATION AND IMPLEMENTATION OF TRAFFIC CONTROL PLANS BASED ON THE CONTRACTOR'S SCHEDULE OF WORK ACTIVITIES. THIS WILL REQUIRE A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF OHIO, TO BE IN CHARGE OF DESIGNING, IMPLEMENTNG AND MONITORING TRAFFIC MAINTENANCE PLANS COORDINATED WITH THE SCHEDULE FOR THE BRIDGE REHABILITATIONS. THIS ENGINEER IS HEREIN REFERRED TO AS THE TRAFFIC CONTROL ENGINEER.

THE TRAFFIC CONTROL ENGINEER AND HIS STAFF SHALL HAVE EXPERIENCE IN THIS FIELD SATISFACTORY TO THE OHIO DEPARTMENT OF TRANSPORTATION. THE TRAFFIC CONTROL ENGINEER SHALL PROVIDE WRITTEN EVIDENCE OF PAST MAINTENANCE OF TRAFFIC PROJECTS COMPLETED BY THE MAINTENANCE OF TRAFFIC ENGINEER AND/OR HIS STAFF. THIS DOCUMENTATION SHALL BE FURNISHED AT THE PRELIMINARY CONSTRUCTION MEETING FOR REVIEW AND APPROVAL. IN ADDITION, THE TRAFFIC CONTROL ENGINEER SHALL HAVE DESIGN EXPERIENCE IN THIS FIELD ACCEPTABLE TO ODOT.

THE TRAFFIC CONTROL ENGINEER AND HIS TEAM SHALL HAVE EXPERTISE AND RESOURCES TO:

1. DEVELOP AND DESIGN TRAFFIC CONTROL PLANS MEETING CURRENT STANDARDS. THESE PLANS SHALL BE SUBMITTED TO AND APPROVED BY ODOT.
2. MONITOR ACCIDENT DATA AND RECOMMEND CHANGES, IF NEEDED AFTER APPROVAL AND IMPLEMENTATION, BASED ON THIS ANALYSIS.
3. PROVIDE, INSTALL, MAINTAIN AND SUBSEQUENTLY REMOVE THE REQUIRED TRAFFIC CONTROL EQUIPMENT AND PAVEMENT MARKING FEATURES.
4. PROVIDE QUICK RESPONSE TO ON SITE PROBLEMS OR ACCIDENT DAMAGE.

IN ADDITION TO THE NECESSARY SIGNAGE, TEMPORARY PAVEMENT MARKINGS, TEMPORARY PAVEMENT, TEMPORARY SHEET PILING, BARRELS, PORTABLE CONCRETE BARRIER AND OTHER CONSTRUCTION ITEMS, THE FOLLOWING REQUIREMENTS WILL BE INCLUDED IN THIS ITEM:

1. TRAFFIC CONTROL PLANS:
   TRAFFIC CONTROL PLANS PROPOSED SHALL BE SUBMITTED TO ODOT FOUR WEEKS PRIOR TO WORK IN THE AREA COVERED BY THE PLAN. THIS SUBMITTAL SHALL CONSIST OF 5 COPIES OF THE PLANS FOR REVIEW AND DISTRIBUTION. IF PLANS ARE NOT APPROVED, THEY WILL NEED TO BE RESUBMITTED. NO WORK SHALL BEGIN AT ANY LOCATION UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED BY ODOT.
2. PLAN CHANGES:
   THE TRAFFIC CONTROL ENGINEER SHALL OBTAIN ACCIDENT DATA FROM THE LAW ENFORCEMENT AGENCY AND ANALYZE CAUSES AND FURNISH RECOMMENDATIONS FOR CHANGE TO REDUCE THE ACCIDENT FREQUENCY. NO CHANGES TO THE APPROVED TRAFFIC CONTROL PLAN SHALL BE MADE UNTIL APPROVAL IS OBTAINED FROM ODOT IN WRITING.
3. PLAN IMPLEMENTATION:
   THE TRAFFIC CONTROL ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING, INSTALLING, MAINTAINING AND THE SUBSEQUENT REMOVAL OF ALL TRAFFIC CONTROL EQUIPMENT, PAVEMENT MARKING, SIGNS, OVERLAYS OR OTHER FEATURES NECESSARY TO IMPLEMENT THE APPROVED PLAN AT EACH WORK SITE. ALL REQUIREMENTS OF ITEM 614 SHALL APPLY TO THIS CONTRACT. EXCEPT AS LISTED HEREAFTER, THIS WORK SHALL BE INCLUDED FOR PAYMENT WITH THIS ITEM 614.
4. RESPONSE & REACTION PLAN:
   PROVIDE A MEANS OF QUICK RESPONSE TO ON SITE PROBLEMS OR ACCIDENTS TO MAINTAIN THE SYSTEM 24 HOURS PER DAY AND 7 DAYS A WEEK TO THE SATISFACTION OF THE ENGINEER.
   THE TRAFFIC CONTROL ENGINEER SHALL HAVE NECESSARY AUTHORITY TO PERFORM ANY WORK NECESSARY TO RECTIFY ANY PROBLEMS. THE TRAFFIC CONTROL ENGINEER AND THE PROJECT ENGINEER SHALL HAVE A CONSTANT MEANS OF COMMUNICATION FOR THE PURPOSE OF MAINTAINING TRAFFIC CONTROL. THE MEANS OF COMMUNICATION SHALL BE A TWO WAY RADIO, OR EQUIVALENT, FURNISHED AND SERVICED BY THE CONTRACTOR. THIS PLAN SHALL BE FURNISHED TO THE PROJECT ENGINEER TWO WEEKS PRIOR TO THE START OF WORK AND SHALL BE UPDATED AS REQUIRED BY THE PROJECT ENGINEER.

   A REACTION PLAN SHALL BE DEVELOPED SO AS TO MINIMIZE RESPONSE TIME TO CORRECT ON SITE PROBLEMS IMMEDIATELY AFTER NOTIFICATION OF ODOT OF THE NEED. CORRECTION SHALL BE MADE WITHIN 4 (FOUR) HOURS OF NOTIFICATION. THIS PLAN SHALL BE FURNISHED TO THE ENGINER PRIOR TO THE START OF WORK AND SHALL BE UPDATED AS REQUIRED BY THE ENGINEER.
5. PAYMENT:
   PAYMENT SHALL BE MADE AS FOLLOWS: AT THE LUMP SUM BID FOR ITEM 614 - MAINTANING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION.
   -30% UPON APPROVAL AND IMPLEMENTATION OF THE INITIAL PLAN FOR BOTH PARTS OF THE CONTRACT.
   -70% PRORATED OVER THE REMAINING WORKING TIME IN THE CONTRACT. THE ENGINEER SHALL CONSIDER THE MAGNITUDE OF TRAFFIC CONTROL BEING IMPLEMENTED IN THE ESTIMATE PERIOD AND PRORATE THE COST ACCORDINGLY.

STANDARD CONSTRUCTION DRAWINGS

MAINTENANCE OF TRAFFIC STANDARD CONSTRUCITON DRAWINGS HAVE NOT BEEN LISTED FOR THIS PRJECT. IT IS THE RESPONSIBILITY OF THE THE MAINTENANCE OF TRAFFIC ENGINEER AND THE CONTRACTOR TO DETERMINE THE APPROPRIATE STANDARD CONSTRUCTION DRAWINGS FOR MAINTENANCE OF TRAFFIC.

PARAMETERS FOR MAINTAINING TRAFFIC:

THE TRAFFIC CONTROL ENGINEER SHALL DESIGN PLANS TO MEET THE FOLLOWING REQUIREMENTS:

1. IT IS THE INTENTION TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO, AND THE MAXIMUM SAFETY TO THE CONTRACTOR AND THE TRAVELING PUBLIC. ANY VARIANCES FROM THESE MAINTENANCE OF TRAFFIC NOTES MUST BE APPROVED IN ADVANCE BY ODOT EXCEPT AS MODIFIED BELOW OR AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS. THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION WITH LATEST REVISIONS, AND PERTINENT ITEMS OF THE SPECIFICATIONS AND PROPOSAL SHALL APPLY.
2. THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC. ALL VEHICLES, EQUIPMENT, MEN AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT. VEHICLES AND EQUIPMENT SHALL NOT PARK OR STOP EXCEPT WITHIN DESIGNATED WORK AREAS, AND SHALL ENTER AND LEAVE WORK AREAS IN A MANNER WHICH WILL NOT BE HAZARDOUS TO, OR INTERFERE WITH THE NORMAL TRAFFIC FLOW. PERSONAL VEHICLES WILL NOT BE PERMITTED TO PARK WITHIN THE RIGHT-OF-WAY EXCEPT IN SPECIFIC ARE AS DESIGNATED BY THE ENGINEER.
3. WORK ON BOTH STRUCTURES SHALL BE PERFORMED UTILIZING PHASED CONSTRUCTION PER THE STAGED CONSTRUCTION NOTED IN THE DRAWINGS. MAINTENANCE OF TRAFFIC USING TEMPORARY SPAN MOUNTED SIGNALS SHALL BE IMPLEMENTED ALONG WITH PROVIDING ACTUATED SIGNALS FOR INTERSECTING SIDE ROADS AND DRIVE WAYS WITHIN OR NEAR THE WORK AREA. REFER TO ODOT STANDARD DRAWINGS FOR GUIDANCE. THE TEMPORARY SIGNALS SHALL MEET THE FOLLOWING REQUIREMENTS:

   A. THE TRAFFIC CONTROLLER SHALL BE FULLY ACTUATED WITH DETECTORS IN ADVANCE OF EACH END OF THE WORK ZONE FOR COMPENSATION OF CHANGING TRAFFIC PATTERNS.

   B. THE TEMPORARY SIGNAL CONTROL REQUIRED FOR THIS PROJECT SHALL BE CAPABLE OF PROVIDING MULTIPLE TIMING PATTERNS CHOSEN ON A TIME OF DAY BASIS.

4. THE MINIMUM LANE WIDTH FOR TRAFFIC CONTROL SHALL BE 11 FEET AT ALL TIMES EXCEPT FOR PHASES 3A AND 3B OF CLI-730-0491 WHEN THE LANE WIDTH FOR TRAFFIC CONTROL SHALL BE 10'-6".
5. ALL OPERATIONS AFFECTING THE FLOW OF TRAFFIC SHALL BE RESTRICTED TO ONE SIDE OF DIRECTIONAL LANES UNLESS OTHERWISE APPROVED.
6. ALL NECESSARY TEMPORARY AND/OR PERMANENT SIGNING AND PAVEMENT MARKING SHALL BE IN PLACE PRIOR TO RE-OPENING PAVEMENT TO TRAFFIC.
7. THE ADVISORY SPEED SHALL BE 55 MPH ON MAINLINE PAVEMENT AND 10 MPH LESS THAN POSTED FOR OTHER AREAS.
8. A ONE LANE TWO-WAY OPERATION SHALL REMAIN IN USE FOR A MAXIMUM OF 90 CONSECUTIVE CALENDER DAYS FOR BRIDGE No. WAR-132-5.53 AND BRIDGE No. CLI-730-4.91. FAILURE TO COMPLETE ALL WORK REQUIRING A LANE CLOSURE SHALL RESULT IN LIQUIDATED DAMAGES BEING ASSESSED IN ACCORDANCE WITH CMS 108.07 FOR EACH DAY A LANE IS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.
9. THE TEMPORARY TRAFFIC SIGNAL, ONE LANE TWO-WAY OPERATION, SHALL NOT BE UTILIZED BETWEEN THE TIME PERIOD OF OCTOBER 15 THROUGH MAY 1. FAILURE TO COMPLY WITH THIS NOTE SHALL RESULT IN LIQUIDATED DAMAGES BEING ASSESSED PER 108.07 FOR EACH DAY THE CONTRACTOR IS IN VIOLATION OF THIS NOTE.
10. SPAN MOUNTED SIGNALS SHALL BE USED.
11. THE DESIGN SPEED FOR MAINTENANCE OF TRAFFIC IS 55 MPH.
12. ACCESS SHALL BE MAINTAINED AT ALL TIMES TO DRIVES WITHIN THE PROJECT LIMITS

UNLESS SEPARATELY ITEMIZED IN THE PLANS, THE ABOVE WORK SHALL BE PAID FOR AS ITEM 614 - MAINTAINING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION.

CALCULATED CAH CHECKED JBK

MAINTENANCE OF TRAFFIC GENERAL NOTES

CLI-730-4.91
WAR-132-5.53

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF 614 AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) CURRENT EDITION, A UNIFORMED LAW ENFORCEMENT OFFICER (LEO) AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

- -FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.
- -DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- -DURING A TRAFFIC SIGNAL INSTALLATION.

LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE. PER EACH RESPECTIVE PROJECT, THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH:

(WAR-132-5.53)
WARREN COUNTY SHERIFF'S OFFICE
550 JUSTICE DRIVE
LEBANON, OHIO 45036
(513) 695-1280

OHIO STATE PATROL
POST 83
184 NELSON RD
LEBANON, OHIO 45036
(513) 932-4444

(CLI-730-4.91)
CLINTON COUNTY SHERIFF'S OFFICE
1645 DAVIDS DRIVE
WILMINGTON, OHIO 45177
(937) 382-1611

OHIO STATE PATROL
POST 14 (DISTRICT 8 HQ)
950 ROMBACH AVE.
WILMINGTON, OHIO 45177
(937) 382-2551

LAW ENFORCEMENT OFFICERS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR). THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR
40 HOURS

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

IF CONTRACTORS WISH TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, THEY MAY DO SO AT THEIR OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE THE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614 MAINTAINING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION.

ITEM 622 - PORTABLE CONCRETE BARRIER, 32"

THIS STANDARD TYPE OF P.C.B. SHALL BE FURNISHED AND INSTALLED AS PER STD. DWG. RM-4.2. ALL BARRIERS SHALL USE "J-J" HOOKS OR CONNECTING PIN AND STEEL ROD CONNECTOR METHOD OF CONNECTING THE SECTIONS TOGETHER. BRIDGE MOUNTED PORTABLE CONCRETE BARRIER SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING PCB-91 AND DESIGN DATA SHEET PCB-DD (PORTABLE CONCRETE BARRIER INSTALLATION GUIDELINES).

ALL PCB SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PROJECT AND FURNISHING,INSTALLING, MAINTAINING AND SUBSEQUENTLY REMOVING ALL PCB SHALL BE INCLUDED IN THE LUMP SUM PRICE BID ITEM 614 - MAINTANING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION. ALL PCB SHALL BE IN GOOD SHAPE, FREE OF CRACKS, SPALLING OR ANY OTHER DAMAGE OR DETERIORATION. PCB SHALL BE USED AT LOCATIONS REQUIRED BY THE DROPOFF IN WORK ZONES SHEET INCLUDED IN THESE PLANS.

PORTABLE CONCRETE BARRIER END TREATMENT

THE CONTRACTOR SHALL PROTECT THE ENDS OF ANY PORTABLE CONCRETE BARRIER WITH A TEMPORARY IMPACT ATTENUATOR AS SPECIFIED IN THESE PLANS AND THE STANDARD DRAWINGS.

ITEM 614 - WORK ZONE IMPACT ATTENUATOR, QUADGUARD CZ [(MODEL #), (UNIDIRECTIONAL OR BIDIRECTIONAL)]:

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING IMPACT ATTENUATORS.

1) THE QUADGUARD CZ (24" WIDE 6 BAY) WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY

ENERGY ABSORPTION SYSTEMS, INC.,
ONE EAST WACKER DRIVE, CHICAGO, IL 60601
(TELEPHONE: 312-467-6750).

THE LENGTH OF THE 6 BAY QUADGUARD CZ IS 20'-9". INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURE'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS.

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
QSCZCVR-T4	QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES	5/13/99 REV.J	8/27/99
35-40-10	QUADGUARD SYSTEM CONCRETE PAD, CZ,QG	11/19/99 REV.D	8/27/99
35-40-16	QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ,QG	7/30/99 REV. F	8/27/99
354051Z	QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36	5/17/99	8/27/99
35-40-18	TRANSITION ASSMEBLY, 4 OFFSET, QG	6/25/99 REV. F	8/27/99
35400260	QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY	11/19/97 REV. C	8/27/99

2) THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY

TRINITY INDUSTRIES,
1170 N. STATE STREET, GIRARD , OHIO 44420
(TELEPHONE: 330-545-4373).

THE TRACC IS 21'-0" LONG AND 2'-7" WIDE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURE'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS.

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS450 SS450 M	CRASH CUSHION ATTENUATING TERMINAL PLAN, ELEVATION AND SECTIONS	3/12/99 REV.1 3/12/99 REV.1	8/27/99
SS455	TRACC TRANSITION TO WIDE BEAM MEDIAN BARRIER PLAN, ELEVATION AND SECTIONS	2/18/99	8/27/99
SS461	TRACC TRANSITION TO CONCRETE SAFETY BARRIER PLAN, ELEVATION AND SECTIONS	6/30/99 REV. 1	8/27/99
SS462	TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION AND SECTIONS	6/30/99	8/27/99

CALCULATED CAH
CHECKED JBK

MAINTENANCE OF TRAFFIC GENERAL NOTES

CLI-730-4.91
WAR-132-5.53

3) THE GREAT CZ IMPACT ATTENUATOR MANUFACTURERB BY ENERGY ABSORPTION SYSTEMS, INC.. THIS ATTENUATOR MAY BE USED UNTIL JANUARY 1, 2007 IF THE ITEM WAS PURCHASED BEFORE OCTOBER 1, 1998 AND IS IN THE CONTRACTOR'S INVENTORY.

THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY 1 TO 6 UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, 5 INSTALLED UNITS REQUIRE 1 SPARE PARTS PACKAGE AND 7 INSTALLED UNITS REQUIRE 2 SPARE PARTS PACKAGES.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED UNDER ITEM 614 - MAINTANING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT, MAINTAIN, REPAIR, REPLACE OR RELOCATE 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 614 BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO ITEM 626 EXCEPT THAT THE SPACING SHALL BE 50 FEET. PAYMENT FOR THE ABOVE SHALL BE INCLUDED UNDER ITEM 614 - MAINTANING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION.

PAVEMENT MARKING

PRIOR TO PLACEMENT OF ANY TEMPORARY PAVEMENT MARKINGS, THE CONTRACTOR SHALL COMPLETELY OBLITERATE, AS PER SPEC. 641.10, ALL EXISTING PAVEMENT MARKINGS THAT WOULD CREATE CONFUSION OR CONFLICT WITH THE TEMPORARY PAVEMENT MARKINGS. PAYMENT FOR THE ABOVE SHALL BE INCLUDED UNDER ITEM 614 - MAINTANING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION.

TEMPORARY PAVEMENT MARKING

TEMPORARY PAVEMENT MARKINGS WHICH ARE PLACED ON EXISTING PAVEMENT, NEW CONCRETE DECKS/OVERLAYS OR NEW PAVEMENT WHICH WILL NOT BE OVERLAID WITH AN ASPHALT SURFACE COURSE OR DECK OVERLAY IN A SUBSEQUENT PHASE OF CONSTRUCTION SHALL BE 740.06 TYPE 1 REMOVABLE TAPE. PAYMENT FOR THE ABOVE SHALL BE INCLUDED ITEM 614 - MAINTANING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

CONSTRUCTION NOTIFICATION

THE CONTACTOR WILL ADVISE THE PROJECT ENGINEER A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR MUST ALSO PROVIDE NOTIFICATION FOURTEEN (14) DAYS PRIOR TO ANY RAMP CLOSURES, LANE CLOSURES OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THE INFORMATION TO THE DISTRICT PUBLIC INFORMATION OFFICER BY FAX OR EMAIL :

PHONE: 513-932-3030 EXTENSION 279
FAX: 513-932-7651 OR
E-MAIL: brenda.bradds@dot.state.oh.us

TEMPORARY PAVEMENT WEDGE

TEMPORARY PAVEMENT WEDGES SHALL BE PROVIDED AT ALL TIMES WHERE TRAFFIC IS REQUIRED TO TRAVEL FROM OR ONTO A PAVEMENT SURFACE OF A DIFFRENT ELEVATION. THE MINIMUM SLOPE OF THE TEMPORARY PAVEMENT WEDGE SHALL BE 3:1 ALONG THE LONGITUDINAL JOINTS AND 120:1 AT TRANSVERSE JOINTS. THESE WEDGES SHALL BE REMOVED PRIOR TO PLACING THE SPECIFIED PAVEMENT COURSE PAYMENT FOR ALL WORK, MATERIALS, ETC. ASSOCOATED WITH THIS ITEM SHALL BE PAYED FOR UNDER ITEM 614 - MAINTANING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION.

TEMPORARY PAVEMENT FOR MAINTAINING TRAFFIC

THE CONTRACTOR SHALL PLACE TEMPORARY SHOULDER PAVEMENT ADJACENT TO THE EXISTING GUARDRAIL FOR THE PURPOSES OF MAINTAINING TRAFFIC DURING PHASE CONSTRUCTION. THIS PAVEMENT SHALL BE PLACED ALONG EACH SIDE OF THE ROAD BETWEEN THE STATIONS SHOWN BELOW AND SHALL HAVE THE FOLLOWING COMPOSITION:

ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE PG64-22
ITEM 302 - 8½" ASPHALT CONCRETE BASE, PG-64-22

IN ADDITION, THE CONTRACTOR SHALL PLACE TEMPORARY PAVEMENT ALONG EACH TRAVELED LANE OF THE CLI-730-4.91 BRIDGE FOR THE PURPOSES OF MAINTAINING TRAFFIC UNDER PHASE CONSTRUCTION DURING THE JACKING OPRATION. THIS PAVEMENT SHALL BE PLACED AT EACH END OF THE BRIDGE BETWEEN THE STATIONS SHOWN BELOW AND SHALL HAVE THE FOLLOWING COMPOSITION:

ITEM 448 - VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL TEMPORARY PAVEMENT. PAYMENT FOR THESE ITEMS SHALL BE INCLUDED UNDER ITEM 614 - MAINTANING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION.

WAR-132-5.53 - TEMPORARY SHOULDER PAVEMENT
STA 5+00 TO STA. 8+18.52 = 318.52 FEET
STA 10+05.35 TO STA. 13+00.00 = 294.65 FEET
(318.52' + 294.65') * 4' * 2 = 4,905 SQ FT

CLI-730-4.91 - TEMPORARY SHOULDER PAVEMENT
STA 65+00 TO STA. 68+68.83 = 318.83 FEET
STA 70+56.77 TO STA. 73+50.00 = 293.23 FEET
(318.83' + 293.23') * 4' * 2 = 4,897 SQ FT

ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE PG64-22
4,905 SQ FT * 0.125'/27 = 22.7 CU YD
4,897 SQ FT * 0.125'/27 = 22.7 CU YD
45.4 CU YD

ITEM 302 - 8½" ASPHALT CONCRETE BASE, PG-64-22
4,905 SQ FT * 0.708'/27 = 128.6 CU YD
4,897 SQ FT * 0.708'/27 = 128.4 CU YD
257.0 CU YD

CLI-730-4.91 - TEMPORARY ROADWAY PAVEMENT
STA 68+18.83 TO STA. 68+68.83 = 50 FEET
STA 70+56.77 TO STA. 71+06.77 = 50 FEET
(50' + 50') * 10' * 2 = 2,000 SQ FT

ITEM 448 - VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE PG64-22 (ASSUME 2")
2,000 SQ FT * 0.167'/27 = 12.3 CU YD

TOTAL = 316 CU YD

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN THREE INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

CALCULATED CAH
CHECKED JBK

MAINTENANCE OF TRAFFIC GENERAL NOTES

CLI-730-4.91
WAR-132-5.53

GENERAL NOTES

1. It is intended that this drawing be used for treatment of drop-offs that develop during construction operations, and that are not otherwise provided for in the construction plans. The suggested treatments are intended for high volume projects that will last at least seven days and have an active work zone 1 mile [1.6 km] or less in length. For guidance on the use of this sheet, see L&D Manual Volume One, Section 500. Where the plans do not provide specific items for labor, equipment, or materials to implement the drop-off treatments specified hereon, they shall be included for payment in the lump sum bid item 614 - Maintaining Traffic.

2. While the need for certain advisory signing is noted hereon, it is not intended that this be indicative of all signing that may be required to advise or warn motorists, and all requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) must be fulfilled.

3. In urban or otherwise heavily developed areas where pedestrians and/or bicyclists may be present in significant numbers, additional signing and protective measures other than those shown hereon may be required.

4. The drop-off treatment selected for use at any given location shall be as appropriate for the prevailing conditions at the site.

5. Where concrete barrier is specified, it shall be in accordance withSCD RM-4.2 and Item 622.

6. When drums are specified for a drop-off condition, a minimum number of four drums shall be used. Spacing shall be as indicated in the plans or as specified in the OMUTCD.

7. When OW-151 (Low Shoulder) signs or OW-155 (Shoulder Drop-Off) signs or OW-171 (Uneven Lanes) signs are required, they shall be placed 750' [230 m] in advance of the condition, on all intersecting entrance ramps within the limits of the condition and immediately beyond all inter secting roadways within the limits of the condition. When the drop-off condition extends more than 0.5 mile [800 m], additional signs should be erected at intervals of 1.0 mile [1600 m] or less.

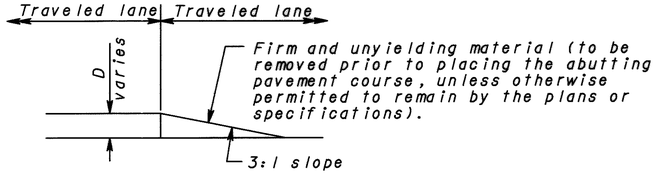
8. For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate a difference in elevation between pavements, a 3:1 slope treatment similar to the Optional Wedge Treatment shall be provided.

9. Portable concrete barrier shall be placed on the same level as the traffic surface and shall not encroach on lane width(s) designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 10' [3.0 m], drums may be placed on the opposite level from that of traffic provided the dropoff depth does not exceed 5" [125] and approval is granted by the Project Engineer.

10. Pavement Repairs (or similar work):
    a. Lengths greater than 60' [18 m] - utilize appropriate treatment from Condition I.
    b. Lengths of 60' [18 m] or less - repairs shall be effected in accordance with CMS 255.08. Drums may be used as a separtor adjacent to the traveled lane.

OPTIONAL WEDGE TREATMENT
(MILLING OR RESURFACING)

1. This treatment may be used when permitted for Condition I only.
2. OW-171 sign required.



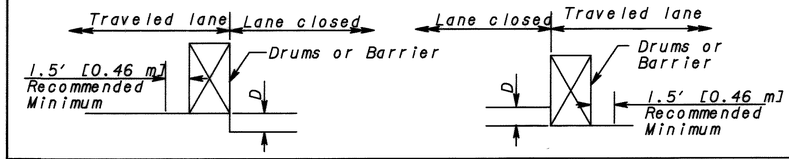
CONDITION I

DROP-OFFS BETWEEN TRAVELED LANES

1. These treatments are to be used for resurfacing, pavement planing, excavation, etc. between or within traveled lanes.

D	Treatment
≤1½" [≤40]	Erect OW-171 sign.
1½"-3" [40-75]	1) Lane closure utilizing drums* as shown below OR 2) Optional Wedge Treatment
>3"-5" [>75-125]	Lane closure utilizing drums as shown below.
>5" [>125]	Lane closure utilizing portable concrete barrier as shown below.

* Cones may be used for daytime only conditions.



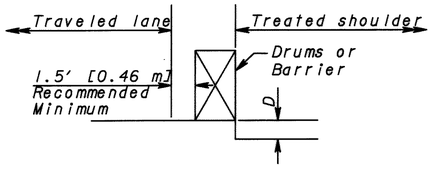
CONDITION II

DROP-OFFS WITHIN GRADED SHOULDER AREA

1. The treatments indicated below are for use in conjunction with resurfacing, planing, or excavations within the graded shoulder area.
2. The graded shoulder area is that flat or gradually sloping area between the edge of a normally traveled lane and the more steeply sloping ditch foreslope or embankment slope. Its surface may be soil or turf, and/or it may be inclusive of a "treated" area (improved with aggregates, asphaltic materials or concrete). For the purpose herein, its maximum width shall be considered to be 12' [3.6 m].

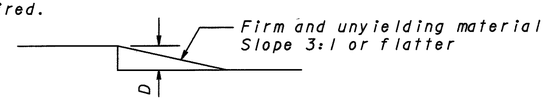
D	Treatment
≤1½" [≤40]	1) Erect OW-155 signs.
>1½"-5" [>40-125]	1) If minimum lane width(*)requirements can be met, maintain lanes utilizing drums as shown below OR 2) If minimum. lane width(*)requirements cannot be met, close adjacent lane utilizing drums OR 3) Optional Shoulder Treatment.
>5"-12" [125-305] Daylight only	If minimum lane width (*)requirements can be met, maintain lanes utilizing drums as shown below.
>5"-24" [>125-610]	1) If minimum lane width(*)requirements can be met, maintain lanes utilizing portable concrete barrier as shown below. OR 2) If minimum lane width (*)requirements cannot be met, close adjacent lane utilizing drums.
>24" [>610]	Lane closure utilizing portable concrete barrier as shown below.

* Minimum lane widths shall be 10' [3.0 m] unless otherwise specified in the plans.



OPTIONAL SHOULDER TREATMENT

1. This treatment may not be used within a bitumunos shoulder where a hot longitudnal joint per CMS 401.15 is required.
2. OW-151 signs required.



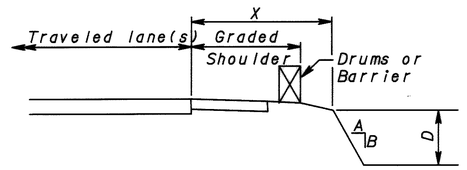
CONDITION III

DROP-OFFS BEYOND GRADED SHOULDER OR BACK OF CURB

1. See Note 2 under Condition II.
2. Use Chart A or B below, as applicable.

CHART A

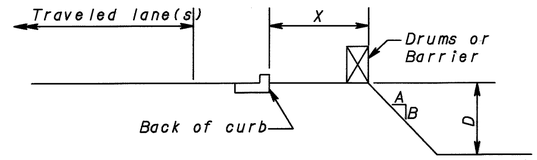
USE FOR: 1. Uncurbed Facilities.
2. Curbed Facilities, where:
   a. Curbs are less than 6" [150] in height.
   b. Curbs are 6" [150] or greater in height and the legal speed is greater than 40 mph [70 km/h].



X	D	A/B	Treatment Required	
			Day	Night
0-4' [0-1.2 m]	Any	Any	(a)	(a)
4'-30' [1.2-9.1 m]	Any	3:1 or Flatter	None	None
4'-12' [1.2-3.6 m]	≤3" [≤75]	Steeper than 3:1	None	None
4'-12' [1.2-3.6 m]	>3"-≤12" [>75-≤305]	Steeper than 3:1	Drums	Drums
4'-12' [1.2-3.6 m]	>12" [>305]	Steeper than 3:1	Drums	Barrier
>12'-20' [>3.6-6.1 m]	<12" [<305]	Steeper than 3:1	None	None
>12'-20' [>3.6-6.1 m]	>12"-≤24" [>305-≤610]	Steeper than 3:1	Drums	Drums
>12'-20' [>3.6-6.1 m]	>24" [>610]	Steeper than 3:1	Drums	Barrier
>20'-30' [>6.1-9.1 m]	<24" [<610]	Steeper than 3:1	None	None
>20'-30' [>6.1-9.1 m]	>24" [>610]	Steeper than 3:1	Drums	Barrier
>30' [>9.1 m]	Any	Any	None	None
(a) Use treatment specified under Condition II.				

CHART B

USE FOR: Curbed facilities, where the curb is 6" [150] or greater in height and the legal speed is 40 mph [70 km/h] or less.



X	D	A/B	Treatment Required	
			Day	Night
0-10' - [0-3.0 m]	<12" [<305]	Any	None	Drums
0-10' [0-3.0 m]	>12" [>305]	Any	Drums	Drums
>10' [>3.0 m]	Any	Any	None	None

NOTE: All metric dimensions (in brackets []) are in millimeters unless otherwise noted.

08-07-10

DROPOFFS IN WORK ZONES

OFFICE OF TRAFFIC ENGINEERING

CLI-730-4.91
WAR-132-5.53

8
55

2010190

1 / 1

02:47:22 PM
04/08/2003
u:\02-252\2803\Dgn\Roadway\WAR-CLMOT.dgn

SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
				6		10		11								
															ROADWAY	
											201	11000	LUMP		CLEARING AND GRUBBING	
						289					202	22900	289	SQ YD	APPROACH SLAB REMOVED	
						50					202	34900	50	FEET	PIPE REMOVED	
						671					202	38000	671	FEET	GUARDRAIL REMOVED	
						20					202	54100	20	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE	
						1					202	58100	1	EACH	CATCH BASIN REMOVED	
						0.14					209	60501	0.14	MILE	LINEAR GRADING, AS PER PLAN	3
						509					606	13000	509	FEET	GUARDRAIL, TYPE 5	
						8					606	22010	8	EACH	ANCHOR ASSEMBLY, TYPE E-98	
						8					606	35000	8	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
						10					609	24000	10	FEET	CURB, TYPE 4A	
															EROSION CONTROL	
						334					659	10000	334	SQ YD	SEEDING AND MULCHING	
						0.05					659	20000	0.05	TON	COMMERCIAL FERTILIZER	
						2					659	35000	2	M GAL	WATER	
						73					660	20000	73	SQ YD	SODDING REINFORCED	
											832	10000	1	EACH	STORM WATER POLLUTION PREVENTION PLAN	12/13
											833(2)	20000	LUMP		EROSION CONTROL	
															PAVEMENT	
								727			204	10000	727	SQ YD	SUBGRADE COMPACTION	
								445			254	01000	445	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE	
								70			301	46000	70	CU YD	ASPHALT CONCRETE BASE, PG 64-22	
								115			304	20000	115	CU YD	AGGREGATE BASE	
								76			407	10000	76	GALLON	TACK COAT	
								37			407	14000	37	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
								127			408	10000	127	GALLON	PRIME COAT	
								40			448	46050	40	CU YD	ASPHALT CONCRETE INTEMEDIATE COURSE, TYPE 2, PG 64-22 (VARIABLE DEPTH)	
								31			448	50004	31	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1H, PG 64-22	
															TRAFFIC CONTROL	
						20					621	00100	20	EACH	RPM	
						0.26					642	00090	0.26	MILE	EDGE LINE	
						0.13					642	00290	0.13	MILE	CENTER LINE	
															MAINTENANCE OF TRAFFIC	
				40							614	11100	40	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
											614	18002	LUMP		MAINTAINING TRAFFIC, MISC.: PLANNING & IMPLEMENTATION	
						0.32					616	10000	0.32	M GAL	WATER	
						0.03					616	20000	0.03	TON	CALCIUM CHLORIDE	
											619	16010	10	MONTH	FIELD OFFICE, TYPE B	
											623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN	4
											624	10000	LUMP		MOBILIZATION	
															CAST-IN-PLACE STRUCTURES	
															WAR-132-0553 QUANTITIES	14
															CLI-730-0491 QUANTITIES	32

CALCULATED CAH
CHECKED JBK

GENERAL SUMMARY

CLI-730-4.91
WAR-132-0.553

9
55

3:47:35 PM
04/08/2003
d:\02-252\21803\Dgn\Roadway\WAR_CLI_GS.dgn

REF NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 GUARDRAIL REMOVED	202 RPM, REMOVED FOR STORAGE	202 CATCH BASIN REMOVED	202 PIPE REMOVED		606 GUARDRAIL, TYPE 5	606 BRIDGE TERMINAL ASSEMBLY, TYPE I	606 TYPE 'E' ANCHOR ASSEMBLY	609 TYPE 4A CURB	621 RPM (YELLOW/YELLOW) SPA. @ 40' O.C. ALONG CENTERLINE		642 WHITE EDGE LINE	642 CENTER LINE		660 SODDING REINFORCED			
					FEET	EACH	EACH	FEET		FEET	EACH	EACH	EACH	EACH		MILE	MILE		SQ YD			
R-1	12/13	STA. 7+43.52	STA. 10+80.35	℄		10								10								
R-2	27/28	STA. 67+93.83	STA. 71+31.77	℄		10								10								
R-3	28	STA. 70+59.21	STA. 70+69.21	RT									10									
D-1	28	STA. 70+10.00	STA. 70+50.00	LT/RT			1	50														
GR-1	12	STA. 7+39.00	STA. 8+06.00	LT	50					50	1	1										
GR-2	12	STA. 7+39.00	STA. 7+92.00	RT	50					50	1	1										
GR-3	13	STA. 10+28.00	STA. 11+00.00	LT	88					50	1	1										
GR-4	13	STA. 10+20.00	STA. 11+00.00	RT	62					50	1	1										
GR-5	27	STA. 67+38.00	STA. 68+65.00	LT	100					100	1	1										
GR-6	27	STA. 67+38.00	STA. 68+29.00	RT	107					65	1	1										
GR-7	28	STA. 70+86.00	STA. 71+86.00	LT	107					75	1	1										
GR-8	28	STA. 70+63.00	STA. 71+59.00	RT	107					69	1	1										
E-1	13	STA. 10+30.00		℄															42			
E-2	28	STA. 70+74.00		℄															31			
EL-1	12/13	STA. 7+43.52	STA. 10+80.35	LT												0.064						
EL-2	12/13	STA. 7+43.52	STA. 10+80.35	RT												0.064						
DY-1	12/13	STA. 7+43.52	STA. 10+80.35	℄													0.064					
EL-3	27/28	STA. 67+93.83	STA. 71+31.77	LT												0.064						
EL-4	27/28	STA. 67+93.83	STA. 71+31.77	RT												0.064						
DY-2	27/28	STA. 67+93.83	STA. 71+31.77	℄													0.064					
			TOTALS		671	20	1	50		509	8	8	10	20		0.256	0.128		73			
TOTALS CARRIED TO GENERAL SUMMARY					671	20	1	50		509	8	8	10	20		0.26	0.13		73			

ITEM 659 - SEEDING & MULCHING
(ADJACENT TO ABUTMENT/APPROACH SLAB WORK)

WAR-132-5.53
STA. 7+93.52 TO STA. 8+18.52 = 25 FEET
STA. 10+05.35 TO STA. 10+30.35 = 25 FEET

CLI-730-4.91
STA. 68+43.83 TO STA. 68+68.83 = 25 FEET
STA. 70+56.77 TO STA. 70+81.77 = 25 FEET

2* [100' * 15]/9 = 334 SQ YD

ITEM 659 - COMMERCIAL FERTILIZER

PERMANENT
334 SQ YD * 9 * (30 LB/1000 SQ FT) =
90 LB / 2000 = 0.045 TONS

TOTAL = 0.045 TONS (USE 0.05 TONS)

ITEM 659 - WATER

334 SQ YD * 9 * (300 GAL/1000 SQ FT) * 2 APPLICATIONS =
1,804 GALLONS/ 1000 = 1.8 M GAL (USE 2 M GAL)

ITEM 202 - APPROACH SLAB REMOVED)

WAR-132-5.53
STA. 7+93.52 TO STA. 8+18.52 = 25 FEET
STA. 10+05.35 TO STA. 10+30.35 = 25 FEET

50' * 20' WIDE = 1,000 FT /9 = 111.2 SQ YD

CLI-730-4.91
STA. 68+43.83 TO STA. 68+68.83 = 25 FEET
STA. 70+56.77 TO STA. 70+81.77 = 25 FEET

50' * 32' WIDE = 1,600 FT /9 = 177.8 SQ YD

111.2 SQ YD + 177.8 SQ YD = 289 SQ YD

ITEM 616 - DUST CONTROL

WATER
6' * (6'/2) * 60'/27*4 ABUTMENTS * (0.002 MGAL/CU YD) = 0.32 M GAL

CALCIUM CHLORIDE
0.32 M GAL * (5 TONS/50 M GAL) = 0.03 TONS

ITEM 209 - LINEAR GRADING, AS PER PLAN

509' (GUARDRAIL) + 8x25' (BRIDGE TERMINAL ASSEMBLIES)
= 709' /5280 = 0.134 MILES (USE 0.14 MILES)

NOTE:
ALL ESTIMATED QUANTITY TOTALS HAVE BEEN CARRIED TO GENERAL SUMMARY

CALCULATED CAH
CHECKED JBK

ESTIMATED QUANTITIES

CLI-730-4.91
WAR-132-0.553

10
55

STATION		SIDE	AVERAGE WIDTH	LENGTH		204	254	301	301	304	407	407	408	448	448					
					AREA	SUBGRADE COMPACTION	PAVEMENT PLANNING, ASPHALT CONRETE	ASPHALT CONCRETE BASE	ASPHALT CONCRETE BASE (ADJACENT TO APPROACH SLAB)	AGGREGATE BASE	TACK COAT	TACK COAT FOR INTERMEDIATE COURSE	PRIME COAT	ASPHALT CONCRETE SURFACE COURSE, TYPE IH, P664-22	VARIABLE THICKNESS ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, P664-22					
			W	L	A=LxW	A / 9	A / 9	Ax8" / 12x27	Ax17½" / 12x27	Ax6" / 12x27	Ax0.075 / 9	Ax0.05 / 9	Ax0.04 / 9	Ax1½" / 12x27	Ax2" / 12x27					
FROM	TO		FEET	FEET	SQ FT	SQ YD	SQ YD	CU YD	CU YD	CU YD	GALLONS	GALLONS	GALLONS	CU YD	CU YD					
STA. 7+43.52	STA.7+93.52	MAINLINE	20	50	1000		111.1				8.3	5.6		4.7	6.2					
STA. 7+43.52	STA.7+93.52	LT./ RT. SHLDR.	2x6'=12'	50	600						5.0	3.4		2.9	3.8					
STA. 7+43.52	STA.7+93.52	LT./ RT. SHLDR.	2x6.5'=13'	50	650			16.1			5.5									
STA. 7+43.52	STA.7+93.52	LT./ RT. SHLDR.	2x7'=14'	50	700					13.0			31.2							
STA. 7+43.52	STA.7+93.52	LT./ RT. SHLDR.	2x7.5'=15'	50	750	83.4														
STA. 10+30.35	STA.10+80.35	MAINLINE	20	50	1000		111.1				8.3	5.6		4.7	6.2					
STA. 10+30.35	STA.10+80.35	LT./ RT. SHLDR.	2x6'=12'	50	600						5.0	3.4		2.9	3.8					
STA. 10+30.35	STA.10+80.35	LT./ RT. SHLDR.	2x6.5'=13'	50	650			16.1			5.5									
STA. 10+30.35	STA.10+80.35	LT./ RT. SHLDR.	2x7'=14'	50	700					13.0			31.2							
STA. 10+30.35	STA.10+80.35	LT./ RT. SHLDR.	2x7.5'=15'	50	750	83.4														
STA. 67+93.83		MAINLINE	20	50	1000		111.1				8.3	5.6		4.7	6.2					
STA. 67+93.83	STA. 68+43.83	LT./ RT. SHLDR.	2x6.17'=12.34'	50	617						5.2	3.5		2.9	3.8					
STA. 67+93.83	STA. 68+43.83	LT./ RT. SHLDR.	2x6.67'=13.34'	50	667			16.5			5.6									
STA. 67+93.83	STA. 68+43.83	LT./ RT. SHLDR.	2x7.17=14.34'	50	717					13.3			31.9							
STA. 67+93.83	STA. 68+43.83	LT./ RT. SHLDR.	2x7.67'=15.34'	50	767	85.3														
STA. 70+81.77	STA. 71+31.77	MAINLINE	20	50	1000		111.1				8.3	5.6		4.7	6.2					
STA. 70+81.77	STA. 71+31.77	LT./ RT. SHLDR.	2x6.17'=12.34'	50	617						5.2	3.5		2.9	3.8					
STA. 70+81.77	STA. 71+31.77	LT./ RT. SHLDR.	2x6.67'=13.34'	50	667			16.5			5.6									
STA. 70+81.77	STA. 71+31.77	LT./ RT. SHLDR.	2x7.17=14.34'	50	717					13.3			31.9							
STA. 70+81.77	STA. 71+31.77	LT./ RT. SHLDR.	2x7.67'=15.34'	50	767	85.3														
STA. 7+93.52	STA. 8+18.52	APPR. SLAB	(33+30)/2=31.5	25	787.5					14.6										
STA. 10+05.35	STA. 10+30.35	APPR. SLAB	(33+30)/2=31.5	25	787.5					14.6										
STA. 68+43.83	STA. 68+68.83	APPR. SLAB	(36.33+33.33)/2=34.83	25	870.75					16.2										
STA. 70+56.77	STA. 70+81.77	APPR. SLAB	(36.33+33.33)/2=34.83	25	870.75					16.2										
STA. 7+93.52	STA. 8+18.52	APPR. SLAB	(34+31)/2=32.5	25	812.5	90.3														
STA. 10+05.35	STA. 10+30.35	APPR. SLAB	(34+31)/2=32.5	25	812.5	90.3														
STA. 68+43.83	STA. 68+68.83	APPR. SLAB	(37.33+34.33)/2=35.83	25	895.75	99.6														
STA. 70+56.77	STA. 70+81.77	APPR. SLAB	(37.33+34.33)/2=35.83	25	895.75	99.6														
STA. 7+92.52	STA. 7+93.52	MAINLINE	20	1	20	2.3			1.1											
STA. 10+30.35	STA. 10+31.35	MAINLINE	20	1	20	2.3			1.1											
STA. 68+42.83	STA. 68+43.83	MAINLINE	20	1	20	2.3			1.1											
STA. 70+81.77	STA. 70+82.77	MAINLINE	20	1	20	2.3			1.1											
					TOTALS	726.4	444.4	65.2	4.4	114.2	75.8	36.2	126.2	30.4	40.0					
TOTALS CARRIED TO GENERAL SUMMARY						727	445	70		115	76	37	127	31	40					

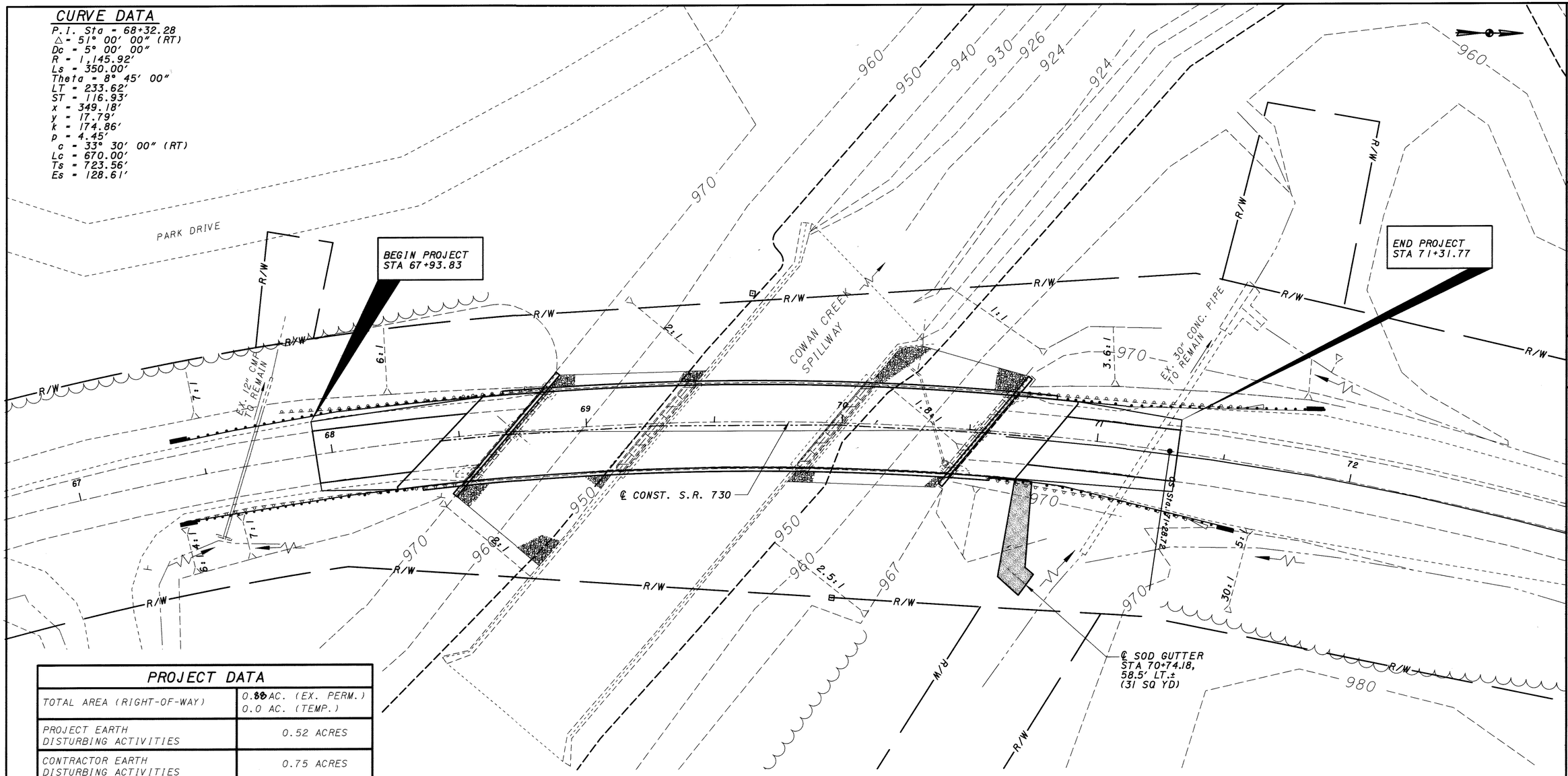
CALCULATED CAH
CHECKED JBK

PAVEMENT CALCULATIONS

CLI-730-4.91
WAR-132-0.553

CURVE DATA

P.I. Sta = 68+32.28
△ = 51° 00′ 00″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
Ls = 350.00′
Theta = 8° 45′ 00″
LT = 233.62′
ST = 116.93′
x = 349.18′
y = 17.79′
k = 174.86′
p = 4.45′
c = 33° 30′ 00″ (RT)
Lc = 670.00′
Ts = 723.56′
Es = 128.61′



PLAN

PROJECT DATA	
TOTAL AREA (RIGHT-OF-WAY)	0.88 AC. (EX. PERM.) 0.0 AC. (TEMP.)
PROJECT EARTH DISTURBING ACTIVITIES	0.52 ACRES
CONTRACTOR EARTH DISTURBING ACTIVITIES	0.75 ACRES
NOI EARTH DISTURBING ACTIVITIES	4.90 ACRES
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.4
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.4
IMPERVIOUS PAVED AREA FOR PRE-CONSTRUCTION SITE	0.07 ACRES
IMPERVIOUS PAVED AREA FOR POST-CONSTRUCTION SITE	0.09 ACRES
SOIL DATA	N/A
SOILS MAP	SCS CLINTON COUNTY SOILS SURVEY MAP
IMMEDIATE RECEIVING WATERS	COWAN CREEK/ COWAN LAKE
SUBSEQUENT RECEIVING WATERS	TODD FORK

PROJECT DESCRIPTION (CLI-730-4.91)

THE CLI-730-0491 BRIDGE PROJECT INVOLVES REPLACEMENT OF THE EXISTING DECK SLAB AND THE INSTALLATION OF NEW DEFLECTOR PARAPETS. BRIDGE DRAINAGE WILL BE UPGRADED. BRIDGE EXPANSION JOINTS AND EXISTING SUBSTRUCTURE WILL BE REHABILITATED.

LOCATION

USGS QUADRANT No.
CLARKSVILLE, OHIO
LATITUDE: N 39° 23′ 24″
LONGITUDE: W 83° 55′ 36″

DRAINAGE AREA - 50 SQUARE MILES

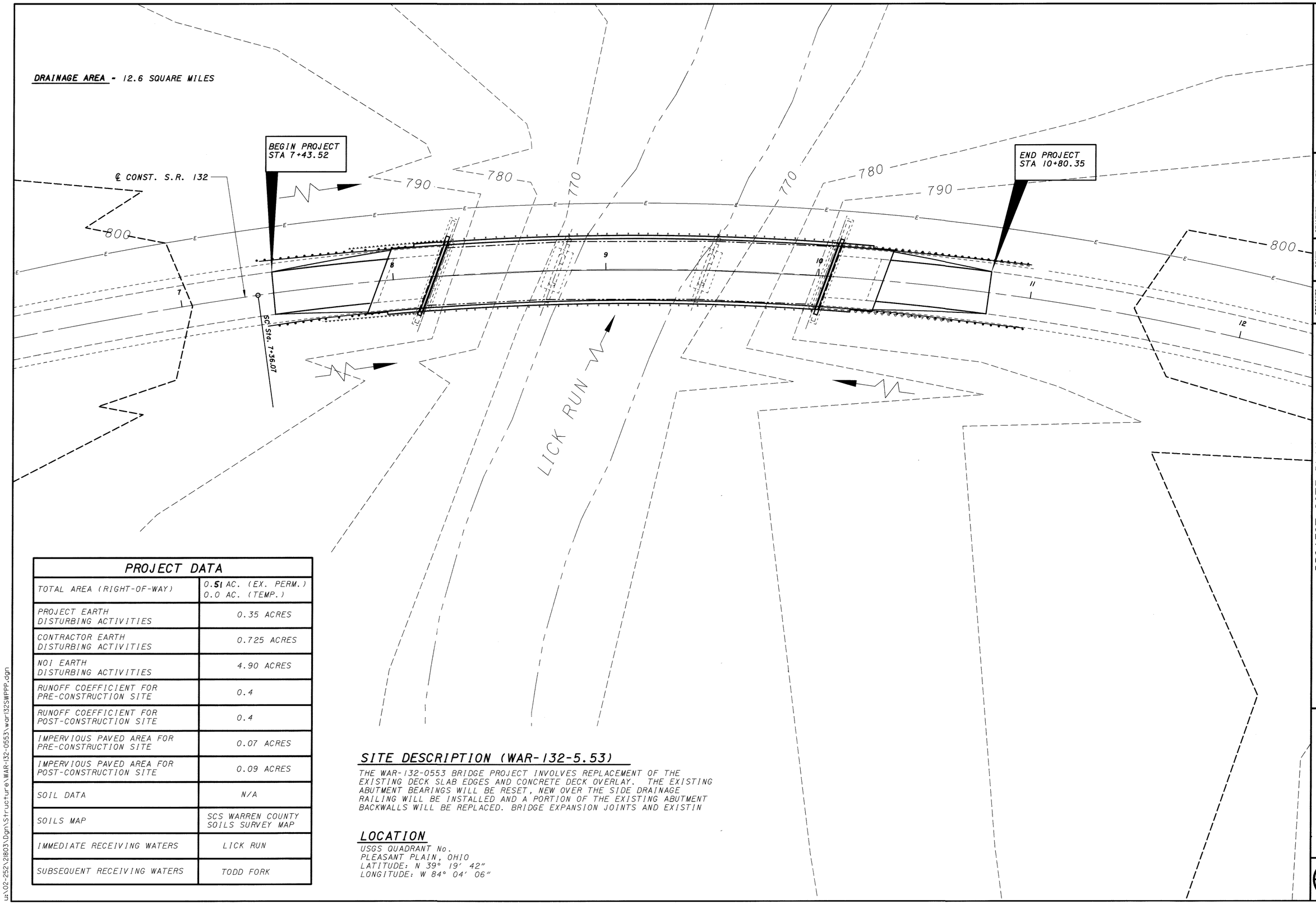
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

PROJECT SITE PLAN

BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-1932-5.53



PROJECT DATA	
TOTAL AREA (RIGHT-OF-WAY)	0.51 AC. (EX. PERM.) 0.0 AC. (TEMP.)
PROJECT EARTH DISTURBING ACTIVITIES	0.35 ACRES
CONTRACTOR EARTH DISTURBING ACTIVITIES	0.725 ACRES
NOI EARTH DISTURBING ACTIVITIES	4.90 ACRES
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.4
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.4
IMPERVIOUS PAVED AREA FOR PRE-CONSTRUCTION SITE	0.07 ACRES
IMPERVIOUS PAVED AREA FOR POST-CONSTRUCTION SITE	0.09 ACRES
SOIL DATA	N/A
SOILS MAP	SCS WARREN COUNTY SOILS SURVEY MAP
IMMEDIATE RECEIVING WATERS	LICK RUN
SUBSEQUENT RECEIVING WATERS	TODD FORK

SITE DESCRIPTION (WAR-132-5.53)

THE WAR-132-0553 BRIDGE PROJECT INVOLVES REPLACEMENT OF THE EXISTING DECK SLAB EDGES AND CONCRETE DECK OVERLAY. THE EXISTING ABUTMENT BEARINGS WILL BE RESET, NEW OVER THE SIDE DRAINAGE RAILING WILL BE INSTALLED AND A PORTION OF THE EXISTING ABUTMENT BACKWALLS WILL BE REPLACED. BRIDGE EXPANSION JOINTS AND EXISTIN

LOCATION

USGS QUADRANT No.
PLEASANT PLAIN, OHIO
LATITUDE: N 39° 19′ 42″
LONGITUDE: W 84° 04′ 06″

DESIGN AGENCY
MS CONSULTANTS COMPANIES
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

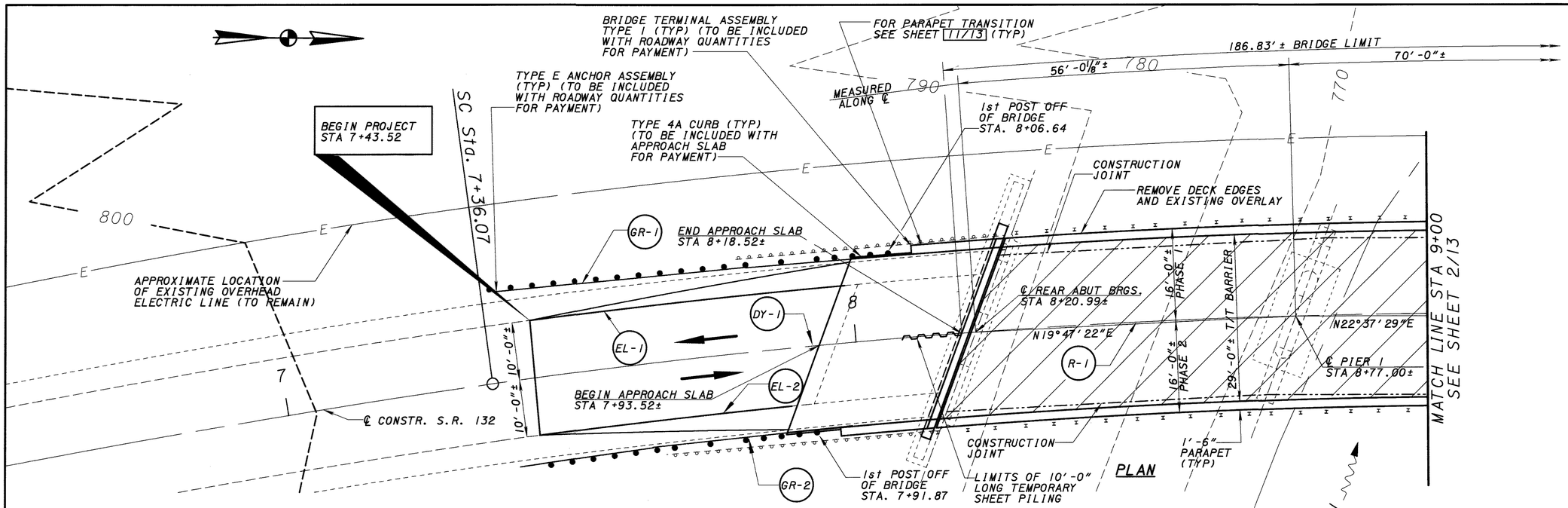
DESIGNED	DRAWN	REVIEWED	DATE
ENB	ENB	CMD	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAH		8304920	

PROJECT SITE PLAN
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

13
55

02:48:47 PM
04/08/2003
u:\02-252\2\803\Dgn\Structure\WAR-132-0553\war132SWPPP.dgn



CURVE DATA

P.I. Sta = 10+47.83
D= 33° 46' 32" (RT)
Dc = 4° 30' 00"
R = 1,273.24'
Ls = 150.00'
Theta = 3° 22' 30"
LT = 100.02'
ST = 50.02'
x = 149.95'
y = 2.94'
k = 74.99'
p = 0.74'
Dc = 27° 01' 32" (RT)
Lc = 600.57'
Ts = 461.76'
Es = 58.15'
Super = 0.074

ESTIMATED QUANTITIES

COMPUTED BY : ENB DATE : 11/02
CHECKED BY : CAH DATE : 12/02

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SHEET NO.
202	11203	LUMP	SUM	PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN				LUMP	3
503	11100	LUMP		COFFERDAMS, CRIB, AND SHEETING				LUMP	4
503	21101	29	CU YD	UNCLASSIFIED EXCAVATION, AS PER PLAN	29				
509	10000	35,342	POUND	EPOXY COATED REINFORCING STEEL	2,769		13,586	18,987	
509	20001	100	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				100	3
510	10000	79	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	79				
511	34400	72	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE			72		
511	45701	25	CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	25				4
512	33000	28	SQ YD	TYPE 2 WATERPROOFING	28				
514	00050	7,207	SQ FT	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			7,207		
514	00056	7,207	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT			7,207		
514	00060	7,207	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT			7,207		
514	00066	7,207	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, FINISH COAT			7,207		
516	11210	69	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL			69		
516	13600	13	SQ FT	1" PREFORMED EXPANSION JOINT FILLER				13	
516	45305	8	EACH	REFURBISH BEARING DEVICES, AS PER PLAN	8				3
516	47001	LUMP	SUM	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	4
517	73200	5	FT	RAILING (DEFLECTOR PARAPET TYPE)	5				
518	21200	29	CU YD	POROUS BACKFILL WITH FILTER FABRIC	29				
519	11100	12	SQ FT	PATCHING CONCRETE STRUCTURE	12				
526	25001	178	SQ YD	REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN				178	3
848	10000	587	SQ YD	MICROSILICA MODIFIED CONCRETE OVERLAY USING HYDRO-DEMOLITION, 2" THICK			587		
848	20000	587	SQ YD	SURFACE PREPARATION USING HYDRO-DEMOLITION			587		
848	30000	4	CU YD	MICROSILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY			15		
848	50000	6	SQ YD	HAND CHIPPING			6		
848	50100	LUMP	SUM	TEST SLAB				LUMP	
848	50200	7	CU YD	FULL DEPTH REPAIR			7		
848	50320	647	SQ YD	EXISTING CONCRETE OVERLAY REMOVED, 1½" THICK			647		
848	50340	65	SQ YD	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIBLE THICKNESS CONCRETE OVERLAY			70		
864	10100	467	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	87		380		3

PORTION OF DECK TO BE OVERLAID

TRAFFIC DATA

CURRENT ADT (2003) = 800
DESIGN YEAR ADT (2023) = 840
DESIGN YEAR ADTT (2023) = 9
SOURCE = ODOT

EXISTING STRUCTURE DATA

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPAN: 56⅛'-70'-56⅛'± c/c BEARINGS.
ROADWAY: 32'-0" ± f/f OF GUARDRAIL
DESIGN LOAD: H-15
SKEW: 70°± LEFT FORWARD
WEARING SURFACE: CONCRETE OVERLAY
APPROACH SLABS: 25'± (AS-1-54)
ALIGNMENT: 4° 30'± CURVE TO RIGHT
DATE BUILT: 1961
SFN: 8304920

PROPOSED STRUCTURE DATA

PROPOSED WORK: REPLACE DECK EDGES, REMOVE EXISTING CONCRETE OVERLAY AND REPLACE WITH MICROSILICA CONCRETE OVERLAY
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPAN: 56⅛'-70'-56⅛'± c/c BEARINGS.
ROADWAY: 29'-0" ± T/T OF PARAPET
DESIGN LOAD: HS-15
SKEW: 70°± LEFT FORWARD
WEARING SURFACE: 2" MICROSILICA OVERLAY
APPROACH SLABS: 25' (AS-1-81)
CROWN: MATCH EXISTING
ALIGNMENT: 4° 30'± CURVE TO RIGHT
LATITUDE: 39°19'42"
LONGITUDE: 84°04'06"

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

DATE 1/06/03
REVIEWED CMD
STRUCTURE FILE NUMBER 8304920
DRAWN ENB
REVISED
DESIGNED ENB
CHECKED CAH

WARREN COUNTY
STA. 8+18.52±
STA. 10+05.35±

GENERAL PLAN AND ESTIMATED QUANTITIES
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

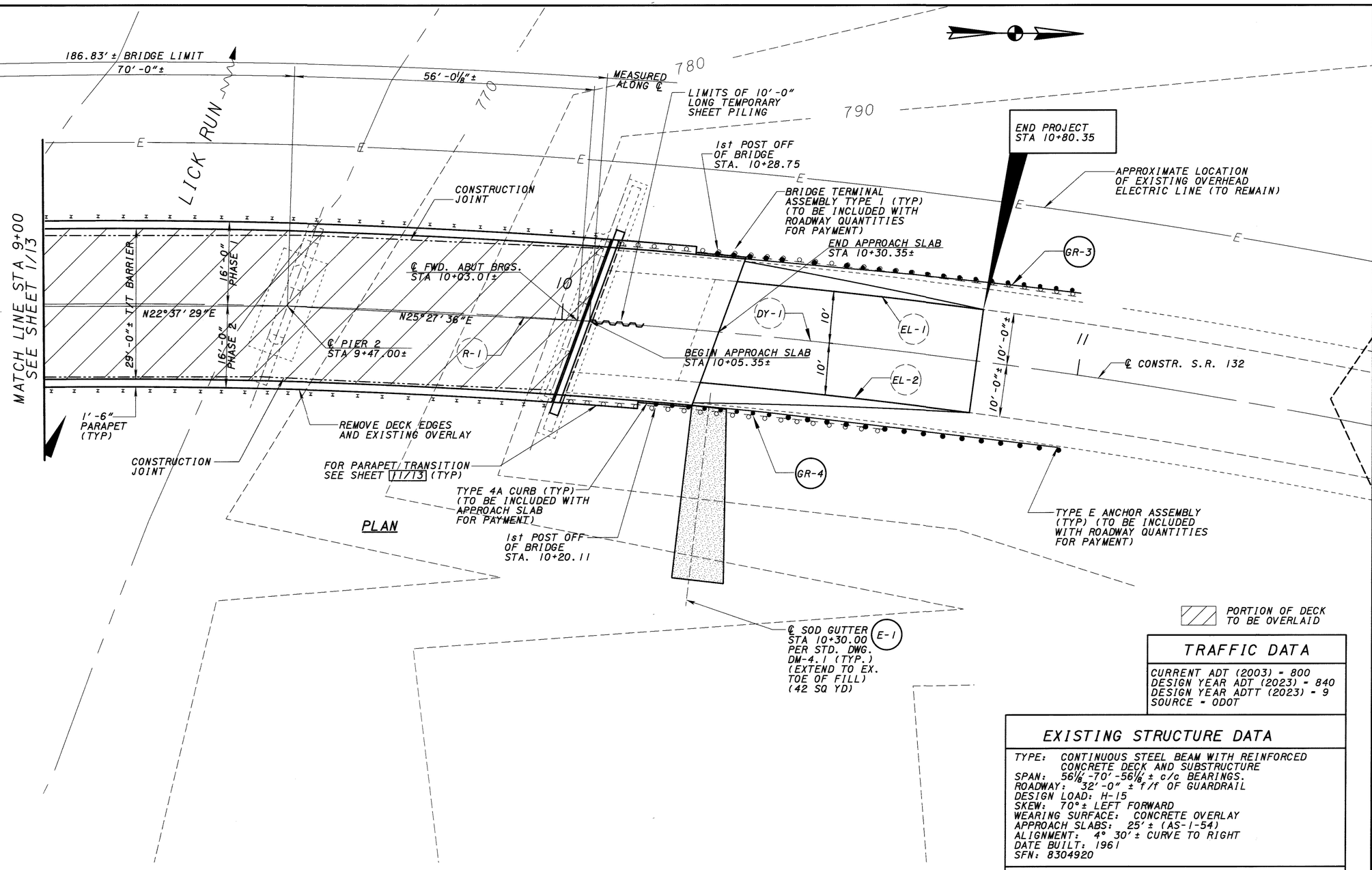
1 / 13

14 / 55

02:49:08 PM
04/08/2003
u:\02-252\21803\Dgn\Structure\WAR-132-0553\warl32spl.dgn

CURVE DATA

P.I. Sta = 10+47.83
D= 33° 46′ 32″ (RT)
Dc = 4° 30′ 00″
R = 1,273.24′
Ls = 150.00′
Theta = 3° 22′ 30″
LT = 100.02′
ST = 50.02′
x = 149.95′
y = 2.94′
k = 74.99′
p = 0.74′
Dc = 27° 01′ 32″ (RT)
Lc = 600.57′
Ts = 461.76′
Es = 58.15′
Super = 0.074



PLAN

PORTION OF DECK TO BE OVERLAID

TRAFFIC DATA

CURRENT ADT (2003) = 800
DESIGN YEAR ADT (2023) = 840
DESIGN YEAR ADTT (2023) = 9
SOURCE = ODOT

EXISTING STRUCTURE DATA

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPAN: 56⅛′-70′-56⅛′ ± c/c BEARINGS.
ROADWAY: 32′-0″ ± f/f OF GUARDRAIL
DESIGN LOAD: H-15
SKEW: 70°± LEFT FORWARD
WEARING SURFACE: CONCRETE OVERLAY
APPROACH SLABS: 25′ ± (AS-1-54)
ALIGNMENT: 4° 30′ ± CURVE TO RIGHT
DATE BUILT: 1961
SFN: 8304920

PROPOSED STRUCTURE DATA

PROPOSED WORK: REPLACE DECK EDGES, REMOVE EXISTING CONCRETE OVERLAY AND REPLACE WITH MICROSILICA CONCRETE OVERLAY
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPAN: 56⅛′-70′-56⅛′ ± c/c BEARINGS.
ROADWAY: 29′-0″ ± T/T OF PARAPET
DESIGN LOAD: HS-15
SKEW: 70°± LEFT FORWARD
WEARING SURFACE: 2″ MICROSILICA OVERLAY
APPROACH SLABS: 25′ (AS-1-81)
CROWN: MATCH EXISTING
ALIGNMENT: 4° 30′ ± CURVE TO RIGHT
LATITUDE: 39°19′42″
LONGITUDE: 84°04′06″

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
ENB	ENB	CMD	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAH		8304920	

WARREN COUNTY
STA. 8+18.52±
STA. 10+05.35±

GENERAL PLAN
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

2 / 13

15 / 55

02:49:23 PM
04/08/2003
u:\02-252\2803\Dgn\Structure\WAR-132-0553\war132sp2.dgn

REFERENCE:

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

AS-1-81	REVISED	07-19-02	EXJ-4-87	REVISED	07-19-02
BR-1	REVISED	07-19-02			

AND TO SUPPLEMENTAL SPECIFICATION(S):

848	DATED	02-08-02	864	DATED	07-11-00
954	DATED	09-09-97			

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
MICROSILICA CONCRETE OVERLAY

DESIGN DATA:

CLASS S CONCRETE FOR SUPERSTRUCTURE - COMPRESSIVE STRENGTH 4500 P.S.I.
CLASS C CONCRETE FOR SUBSTRUCTURE - COMPRESSIVE STRENGTH 4000 P.S.I.

REINFORCING STEEL - ASTM A615 OR A996
GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

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 CURRENT EDITION OF THE ODOT BRIDGE DESIGN MANUAL.

PROPOSED WORK:

1) REMOVE AND REPLACE EXISTING DECK EDGES, INSTALL 36" HIGH BRIDGE RAILING DEFLECTOR PARAPET.
2) REMOVE EXISTING RIGID CONCRETE OVERLAY AND PLACE A MICROSILICA CONCRETE OVERLAY.
3) REMOVE THE TOP THREE FEET OF THE EXISITNG BACKWALLS AND REPLACE WITH NEW REINFORCED CONCRETE BACKWALLS
4) REFURBISH THE EIGHT(8) ABUTMENT BEARINGS.
5) RETROFIT EXISTING EXPANSION JOINTS TO STRIP SEAL EXPANSION JOINT.
6) PROVIDE NEW FULL WIDTH APPROACH SLABS.
7) UPGRADE THE APPROACH GUARDRAIL TO CURRENT STANDARDS.
8) PAINT THE EXISTING STRUCTURAL STEEL WITH SYSTEM OZEU.
9) PATCH FORWARD ABUTMENT AND WINGWALLS
10) SEAL ABUTMENTS, BACKWALLS, WINGWALLS, DECK EDGES, AND DEFLECTOR PARAPET WITH EPOXY-URETHANE.
11) REMOVE BRUSH FROM BENEATH AND WITHIN 10 FEET OF THE STRUCTURE.

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.

AN ALLOWANCE OF 100 POUNDS IS INCLUDED IN REINFORCING STEEL, REPLACEMENT OF EXISITING REINFORCING STEEL, AS PER PLAN, FOR THIS PURPOSE

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

REMOVAL SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND ALL MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED IN 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. ALL WORK SHALL BE DONE 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.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS SHALL BE LEFT 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXSITING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, THE TIME OF CONCRETE

LOADING LIMITATIONS:

NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF ALLOWABLE UNIT STRESSES AS DEFINED IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A OHIO REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

MEASUREMENT & PAYMENT:

THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

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 WHICH HAVE BEEN VERIFIED IN THE FIELD.

ITEM 514 FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU:

ALL EXISTING STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE AND FINISH COAT OF PAINT IN THE FIELD USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE FEDERAL COLOR NO. 14277 (GREEN).

ITEM 526: REINFORCED CONCRETE APPROACH SLAB (T-15"), AS PER PLAN

THE #5 TRANSVERSE APPROACH SLAB BARS MUST HAVE MECHANICAL CONNECTORS FURNISHED AT THE PHASE CONSTRUCTION JOINT. THE CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125% OF THE YIELD STRENGTH OF THE REINFORCING BAR.

PAYMENT OF THE CONCRETE CURB & PARAPET SHALL BE INCLUDED IN THE COST OF ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN.

ITEM 516 REFURBISHING BEARING DEVICES, AS PER PLAN:

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING ACCORDING TO ITEM 514, REPLACEMENT OF ANY DAMAGED SHEET LEAD WITH PREFORMED BEARING PADS (711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT NO ADDITIONAL COST TO THE STATE, THE CONTRACTOR MAY INSTALL NEW BEARINGS OF THE SAME TYPE AS THE EXISTING IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - REFURBISH BEARING DEVICES, AS PER PLAN.

ITEM 519 PATCHING CONCRETE STRUCTURE

THIS ITEM IS TO BE USED TO PATCH AREAS OF DETERIORATED CONCRETE GREATER THAN 3" THICK. THE FOLLOWING CONTINGENCY QUANTITIES ARE PROVIDED AND SHALL BE DIRECTED BY THE ENGINEER:

2) FORWARD ABUTMENT & WINGWALLS 12 S.F.

AREAS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE MARKED BY THE PROJECT ENGINEER. MATERIALS SHOULD NOT BE ORDERED UNTIL THE AREAS FOR REPAIR HAVE BEEN MARKED. ONLY EPOXY BASED MATERIALS LISTED IN THE PROPOSAL NOTE CAN BE USED.

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.

ITEM 864 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

THE FOLLOWING CONCRETE SURFACES SHALL BE SEALED:

BRIDGE NO. WAR-132-0553
1) THE CONCRETE SUPERSTRUCTURE AS SHOWN ON THE PLAN DETAILS.
2) ALL EXPOSED SURFACES OF BOTH ABUTMENTS AND WINGWALLS.

THE COLOR OF THE URETHANE COATING SHALL BE FEDERAL COLOR STANDARD NO. 17778 (LIGHT NEUTRAL).

WELDED ATTACHMENTS:

WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FACIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN 1/4" FOR THICKNESSES UP TO 3/4" AND 5/16" FOR GREATER THAN 3/4" THICK.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

DESIGNED	DRAWN	REVISED	DATE
ENB	ENB	CMD	1/06/03

STRUCTURE FILE NUMBER
8304920

CHECKED CAH

GENERAL NOTES
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

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

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

SUBMITTAL REQUIREMENTS: AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.

2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.

3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.

4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.

5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.

6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.

7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.

8 METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

JACKING SYSTEM REQUIREMENTS: THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN, (CONTINUED):

JACKING OPERATION REQUIREMENTS: AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH. THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. 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 ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". 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.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

STREAM CHANNEL EXCAVATION

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ANY INCIDENTAL DISCHARGES ASSOCIATED WITH THE EXCAVATION AND HAULING OF MATERIALS FROM THE STREAM CHANNEL. THIS PERTAINS TO ANY EXCAVATION OPERATIONS SUCH AS, FOUNDATION, PIER OR ABUTMENT EXCAVATION, CHANNEL CLEAN OUT, EXCAVATION FOR ROCK CHANNEL PROTECTION AND REMOVAL OF ANY TEMPORARY FILL ASSOCIATED WITH CONSTRUCTION OPERATIONS.

INSTREAM WORK

INSTREAM WORK WILL BE LIMITED WHERE PRACTICABLE AND ONLY CLEAN NON-ERODIBLE MATERIAL WILL BE USED FOR FORDS AND COFFERDAMS. THIS TEMPORARY PLACED MATERIAL WILL BE REMOVED AND THE STREAM BOTTOM RESTORED TO NEAR NATURAL CONDITIONS WHEN THE WORK IS COMPLETED.

INSTALLATION OF SEAL

DURING INSTALLATION OF SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF THE BEAMS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B GRANULAR MATERIAL, 703.16.C, PLACED AND COMPACTED IN 6 INCH LIFTS.

UTILITY LINES

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

MECHANICAL CONNECTORS

AN APPROVED MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH THE MANUFACTURERS RECOMMENDED PROCEDURES.

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

MECHANICAL CONNECTORS SHALL BE ABLE TO DEVELOP 125% OF THE FULL YIELD STRENGTH OF THE REINFORCING STEEL AS A MINIMUM.

MECHANICAL CONNECTORS SHALL BE INCLUDED WITH ITEM 509 FOR PAYMENT.

ABBREVIATIONS

THE FOLLOWING ABBREVIATIONS ARE USED THROUGHOUT THESE PLANS:

CJ - CONSTRUCTION JOINT
N.F. - NEAR FACE
F.F. - FAR FACE
E.F. - EACH FACE
PEJF - PREFORMED EXPANSION JOINT FILLER

MAINTENANCE OF TRAFFIC

SEE GENERAL NOTES ON SHEET 5/55

ITEM 511 CLASS C CONCRETE, ABUTMENT, AS PER PLAN:

IN ADDITION TO THE REQUIREMENTS OF ITEM 511, A REFERENCE DISK SHALL BE CAST IN THE ABUTMENT CONCRETE. THE DISK WILL BE CENTERED ON THE TOP HORIZONTAL SURFACE OF THE FORWARD ABUTMENT RIGHT WINGWALL. THE DISK WILL BE PROVIDED BY THE DISTRICT EIGHT SURVEY MANAGER.

THE CONTRACTOR WILL MARK THE DISK WITH THE NAVD88 PROJECT ELEVATION UNDER THE SUPERVISION OF A PROFESSIONAL SURVEYOR REGISTERED IN THE STATE OF OHIO.

BRIDGE IDENTIFICATION SIGN:

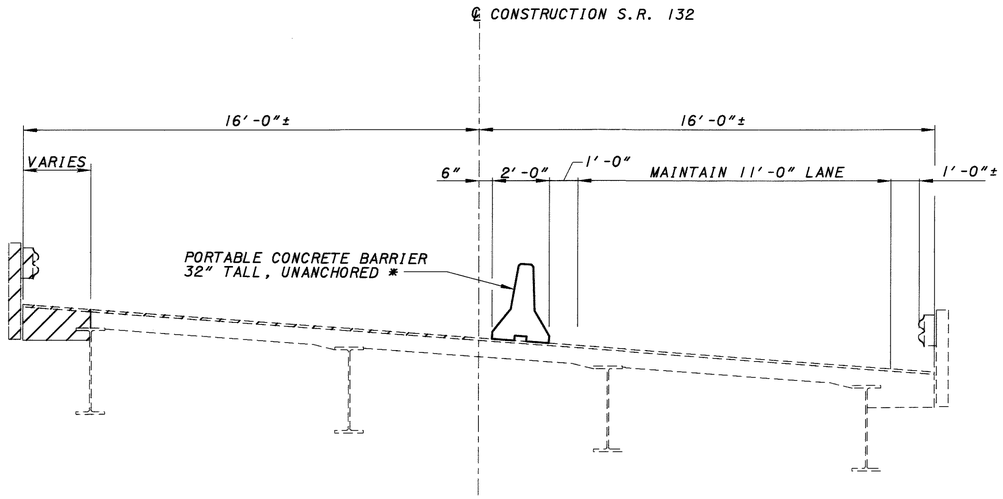
THE EXISTING BRIDGE IDENTIFICATION SIGN SHALL BE CAREFULLY REMOVED PRIOR TO BEGINNING DEMOLITION WORK AND SHALL BE SALVAGED FOR REUSE. AFTER COMPLETION OF THE PROPOSED STRUCTURE, THE SIGN SHALL BE INSTALLED ON THE SIDE OF THE RIGHT REAR PARAPET WITH DRILLED CONCRETE ANCHORS. PAYMENT FOR ALL WORK REQUIRED TO COMPLETE THIS ITEM WILL BE INCLUDED IN ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

DESIGNED ENB | DRAWN ENB | REVIEWED CMD | DATE 1/06/03
CHECKED CAH | REVISED | STRUCTURE FILE NUMBER 8304920

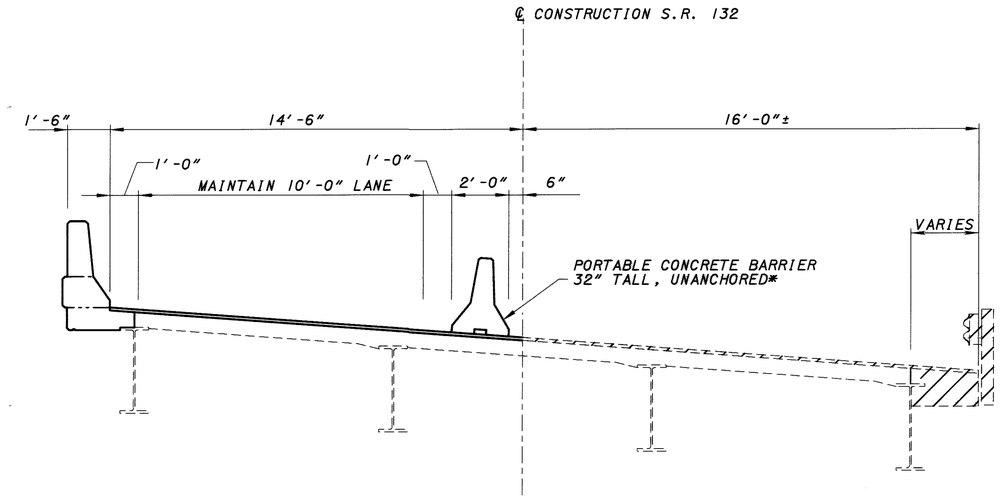
GENERAL NOTES
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53



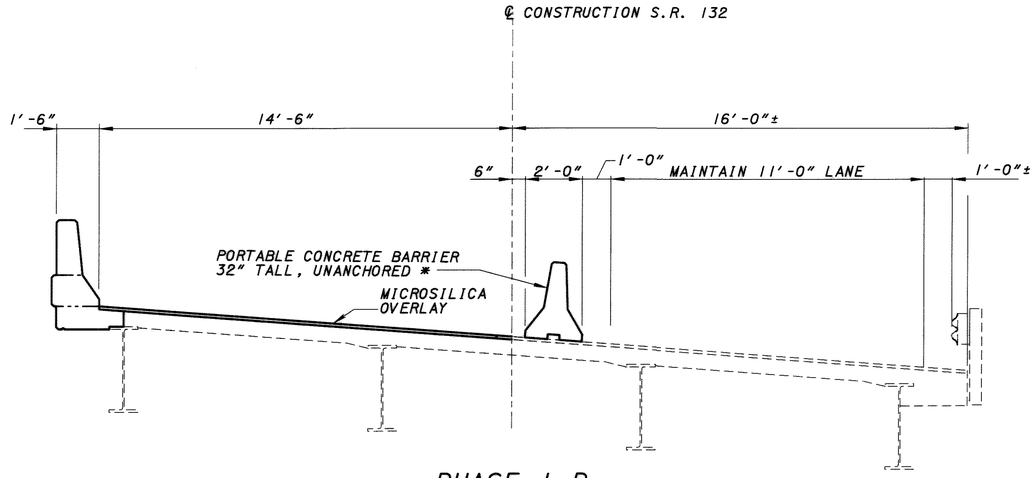
PHASE 1-A

DEMOLITION



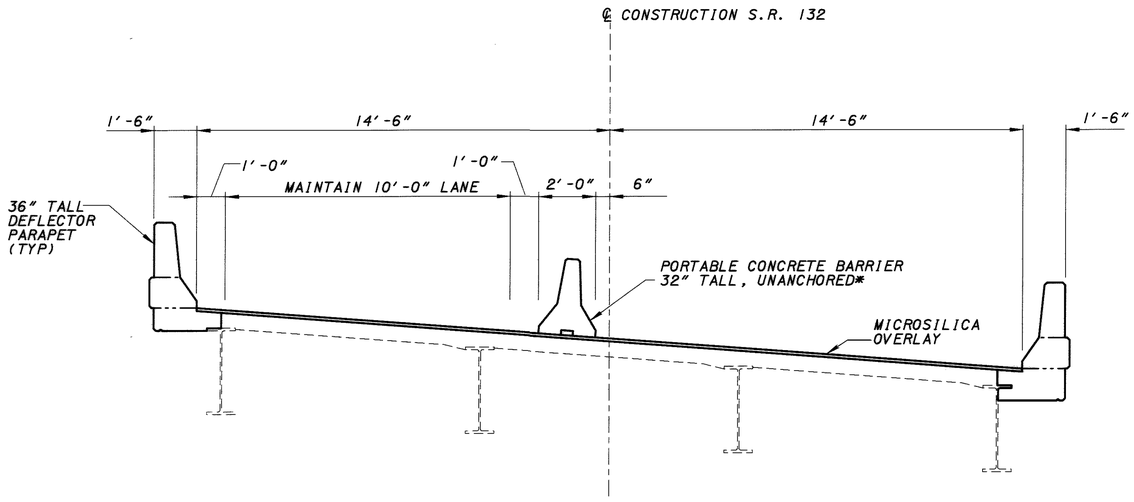
PHASE 2-A

DEMOLITION



PHASE 1-B

CONSTRUCTION



PHASE 2-B

CONSTRUCTION

NOTES:

CONSTRUCTION SEQUENCE:

1. SET UP PHASE 1 MAINTENANCE OF TRAFFIC AS STATED IN THE PLANS.
2. JACK EXISTING SUPERSTRUCTURE & REFURBISH BEARING DEVICES. REMOVE JACKS WHEN WORK IS COMPLETE.
3. REMOVE PORTION OF DECK SPECIFIED AS PHASE 1 DEMOLITION
4. REMOVE PORTION OF ABUTMENTS SPECIFIED AS PHASE 1 DEMOLITION
5. CONSTRUCT PORTION OF ABUTMENTS SPECIFIED AS PHASE 1 CONSTRUCTION.
6. CONSTRUCT PORTION OF DECK SPECIFIED AS PHASE 1 CONSTRUCTION.
7. REMOVE PHASE 1 AND SET UP PHASE 2 MAINTENANCE OF TRAFFIC AS STATED IN THE PLANS.
8. REMOVE PORTION OF DECK SPECIFIED AS PHASE 2 DEMOLITION
9. REMOVE PORTION OF ABUTMENTS SPECIFIED AS PHASE 2 DEMOLITION
10. CONSTRUCT PORTION OF ABUTMENTS SPECIFIED AS PHASE 2 CONSTRUCTION.
11. CONSTRUCT PORTION OF DECK SPECIFIED AS PHASE 2 CONSTRUCTION.
12. REMOVE PHASE 2 MAINTENANCE OF TRAFFIC.

* TO BE INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED

02:52:23 PM
04/08/2003
u:\02-252\2IB03\Dgn\Structure\WAR-132-0553\war132sd3.dgn

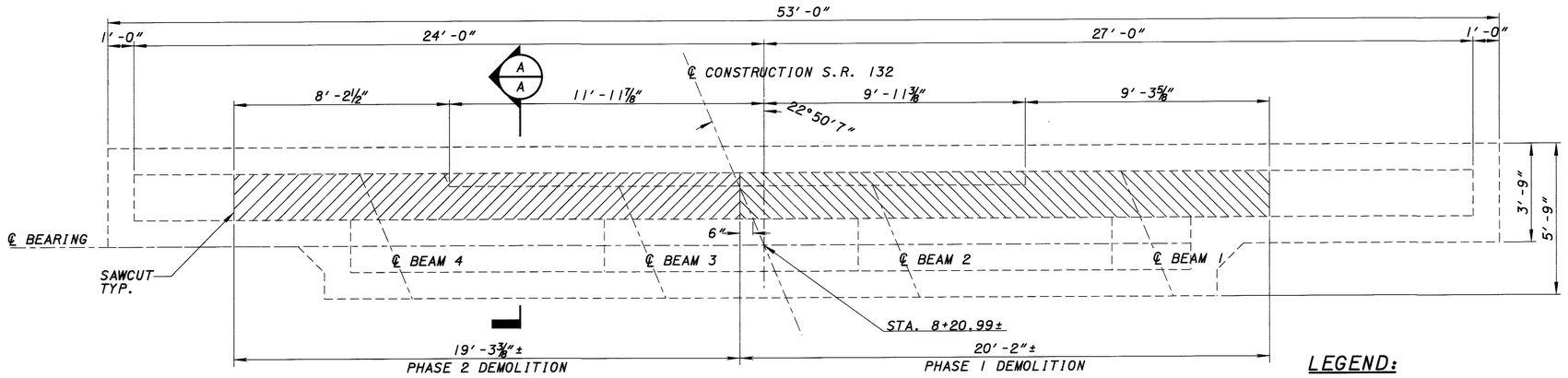
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
ENB	ENB	CMD	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAH		8304920	

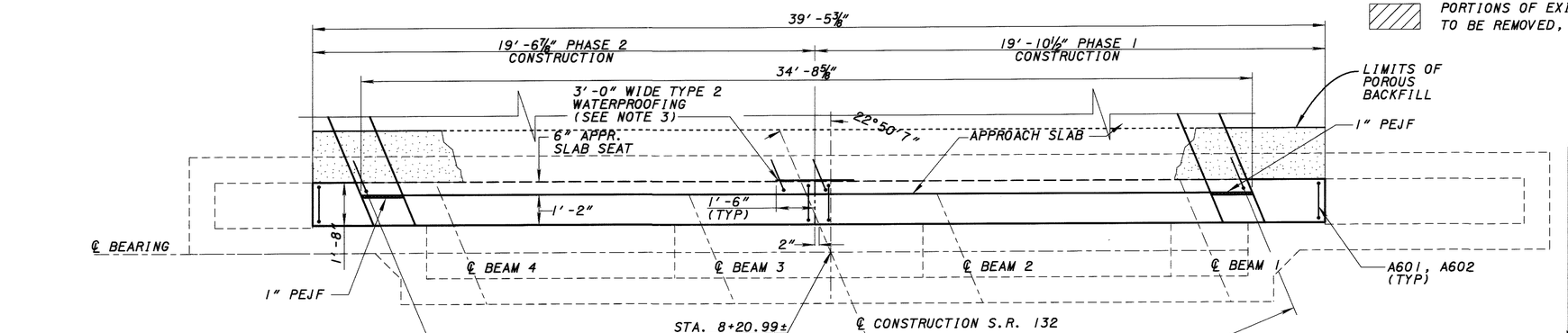
PHASE CONSTRUCTION DETAILS

BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53



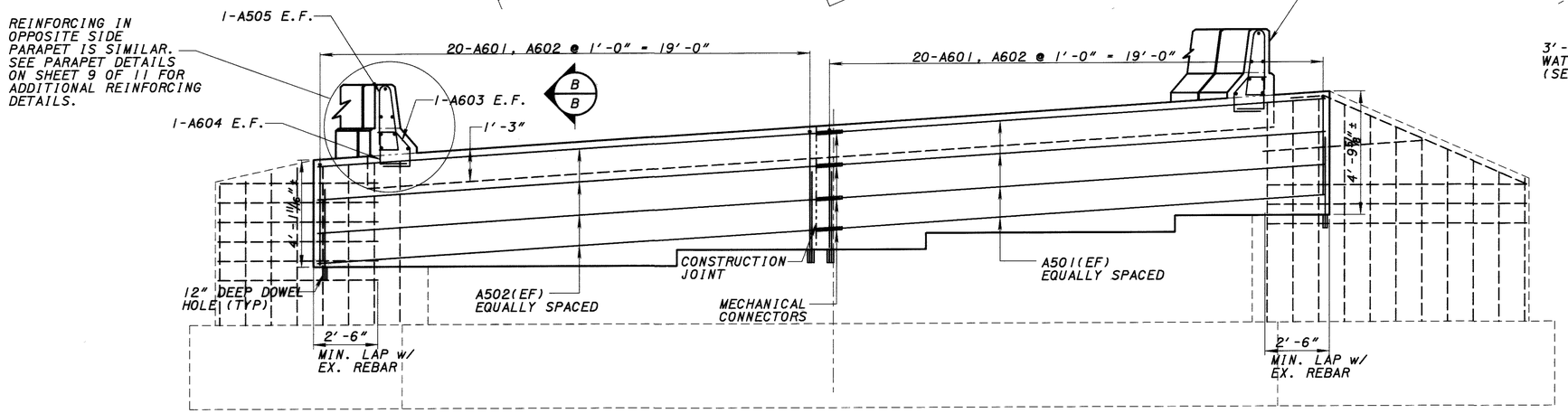
REAR ABUTMENT DEMOLITION PLAN



REAR ABUTMENT REHABILITATION PLAN

MINIMUM LAP LENGTHS:

LAP NO. 5 BARS 33"
LAP NO. 6 BARS 40"

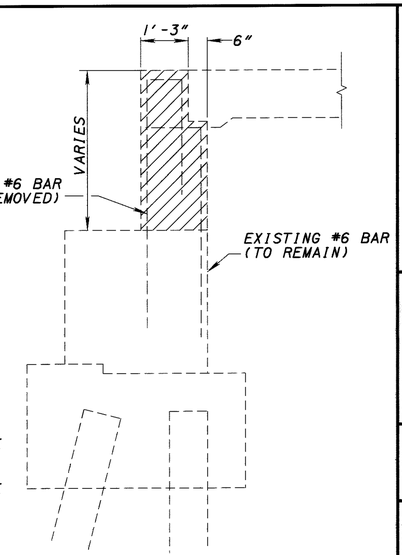


REAR ABUTMENT REHABILITATION ELEVATION

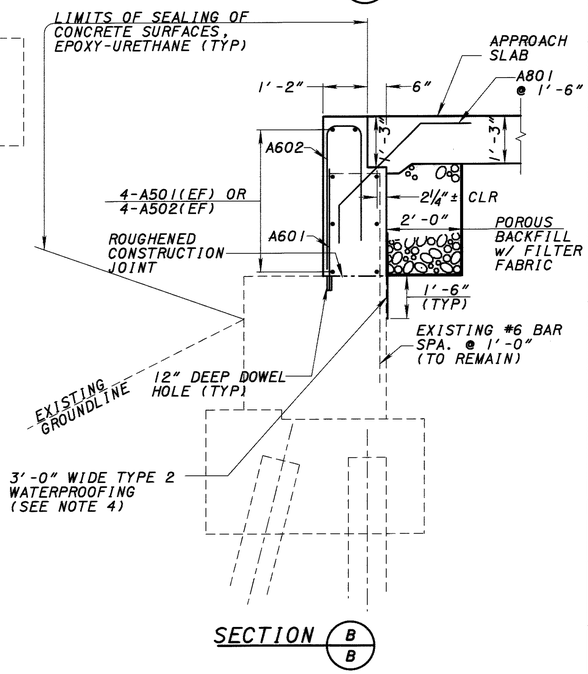
LEGEND:

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED, PHASE 1

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED, PHASE 2



SECTION A/A



SECTION B/B

NOTES:

1. SEAL ENTIRE EXPOSED SURFACE AREA OF EXISTING ABUTMENT AND WINGWALLS WITH EPOXY-URETHANE.
2. FOR APPROACH SLAB DETAILS, SEE STD. DWG AS-1-81 AND SHEET 12 OF 13.
3. TYPE 2 WATERPROOFING SHALL EXTEND FROM THE BEAM SEAT CONSTRUCTION JOINT TO THE BOTTOM OF THE APPROACH SLAB
4. TYPE 2 WATERPROOFING SHALL BE CENTERED ALONG THE BEAM SEAT CONSTRUCTION JOINT FORTHE EXTENT OF THE BACKWALL
5. SAWCUTTING SHALL BE INCLUDED WITH ITEM 202 - PORTION OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN FOR PAYMENT

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVISED	DATE
ENB	ENB	CMD	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAH		8304920	

REAR ABUTMENT REHABILITATION DETAILS

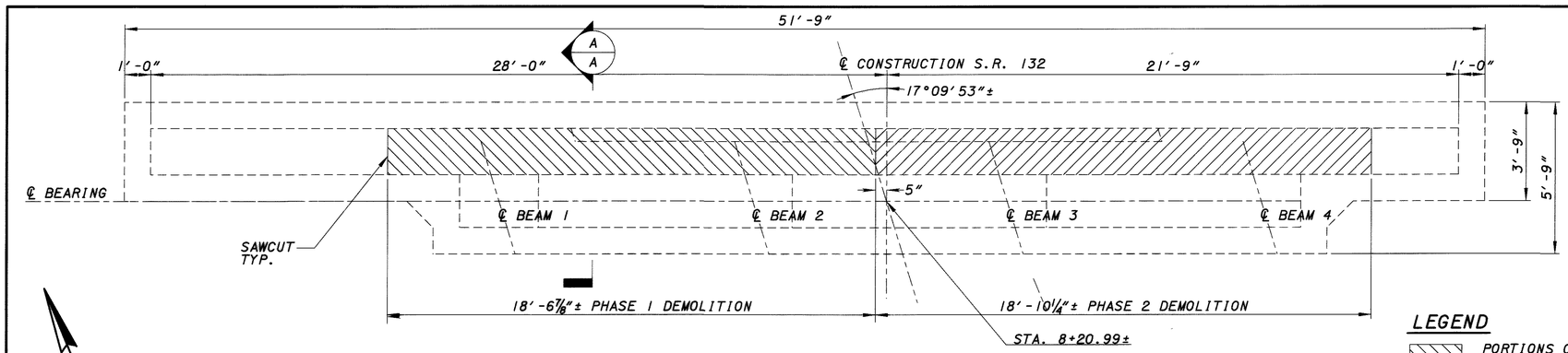
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

6 / 13

19 / 55

02:52:47 PM
04/08/2003
u:\02-252-21803\Dgn\Structure\WAR-132-0553\war132rabdgn

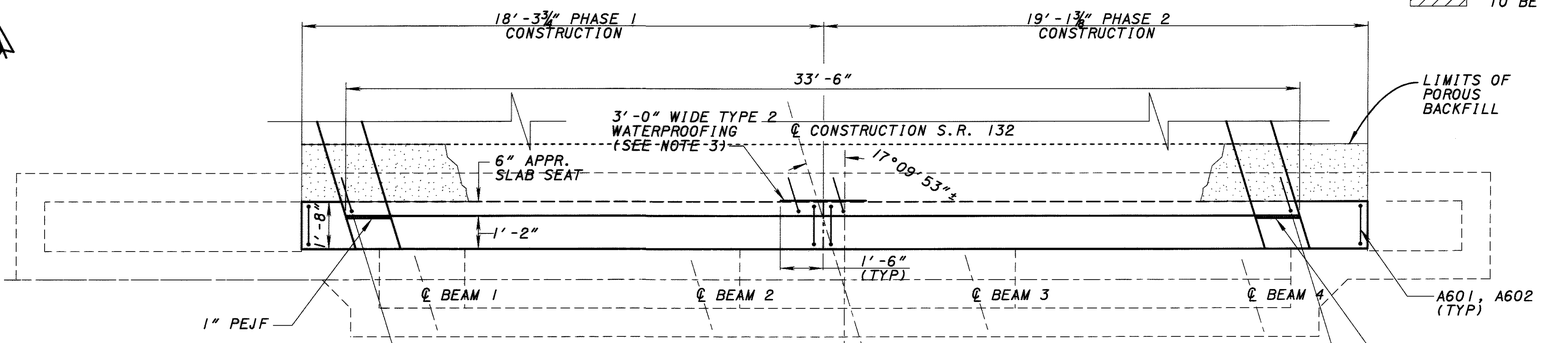


FORWARD ABUTMENT DEMOLITION PLAN

LEGEND

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED, PHASE 1

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED, PHASE 2

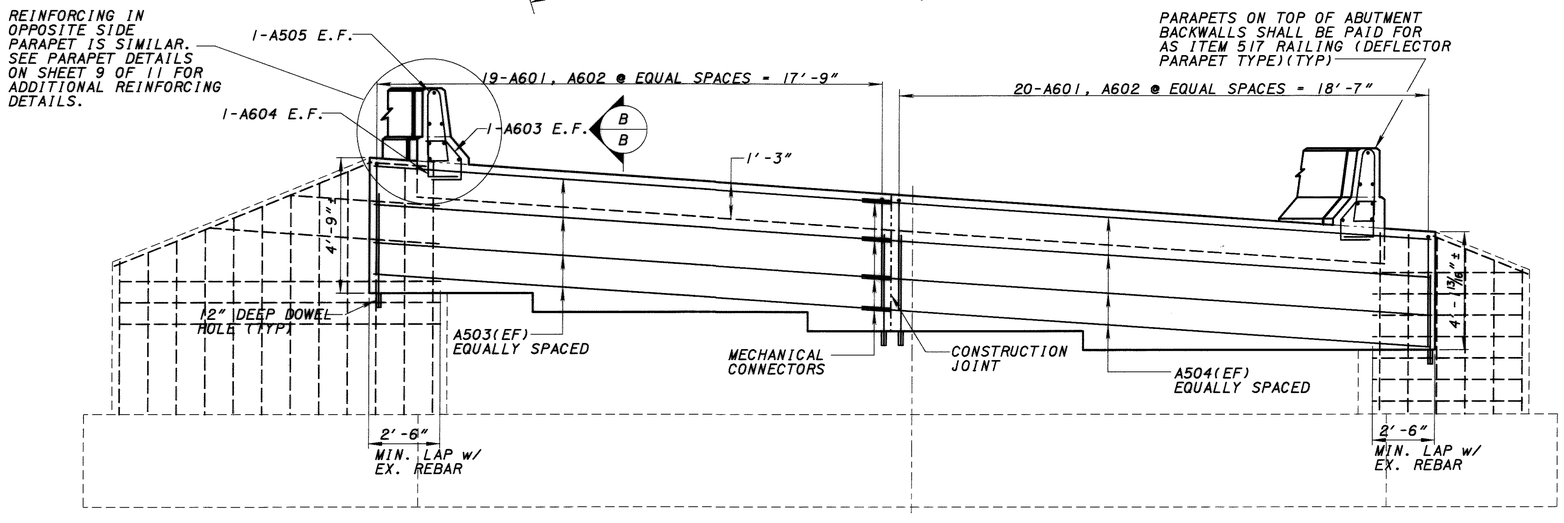


FORWARD ABUTMENT REHABILITATION PLAN

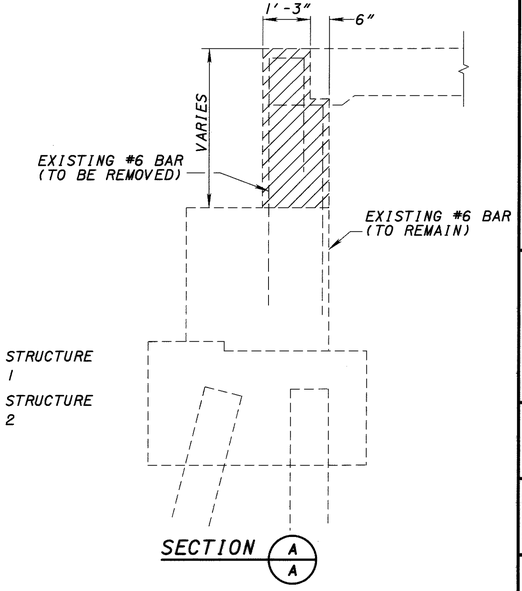
MINIMUM LAP LENGTHS:

LAP NO. 5 BARS 33"
LAP NO. 6 BARS 40"

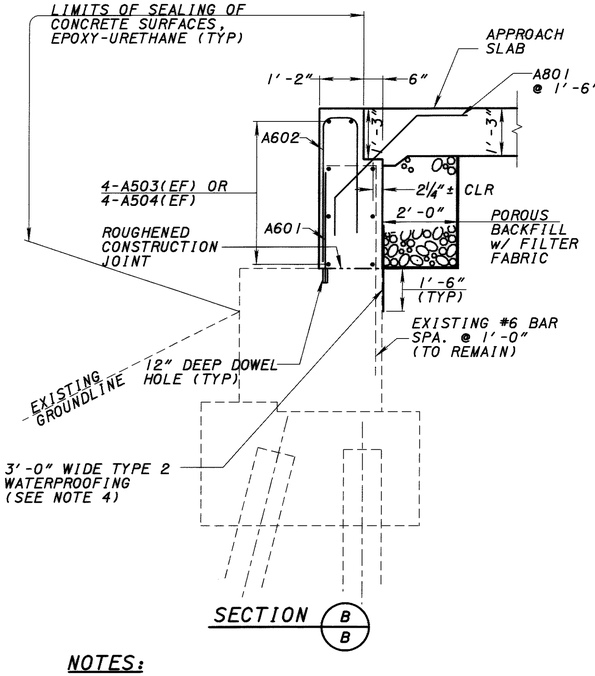
22-A801 @1'-6" =31'-6"



FORWARD ABUTMENT REHABILITATION ELEVATION



SECTION A A



SECTION B B

NOTES:

1. SEAL ENTIRE EXPOSED SURFACE AREA OF EXISTING ABUTMENT AND WINGWALLS WITH EPOXY-URETHANE.
2. FOR APPROACH SLAB DETAILS, SEE STD. DWG AS-1-81 AND SHEET 12 OF 13.
3. TYPE 2 WATERPROOFING SHALL EXTEND FROM THE BEAM SEAT CONSTRUCTION JOINT TO THE BOTTOM OF THE APPROACH SLAB
4. TYPE 2 WATERPROOFING SHALL BE CENTERED ALONG THE BEAM SEAT CONSTRUCTION JOINT FORTHE EXTENT OF THE BACKWALL
5. SAWCUTTING SHALL BE INCLUDED WITH ITEM 202 - PORTION OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN FOR PAYMENT

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
ENB	ENB	CMD	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAH		8304920	

FORWARD ABUTMENT REHABILITATION DETAILS

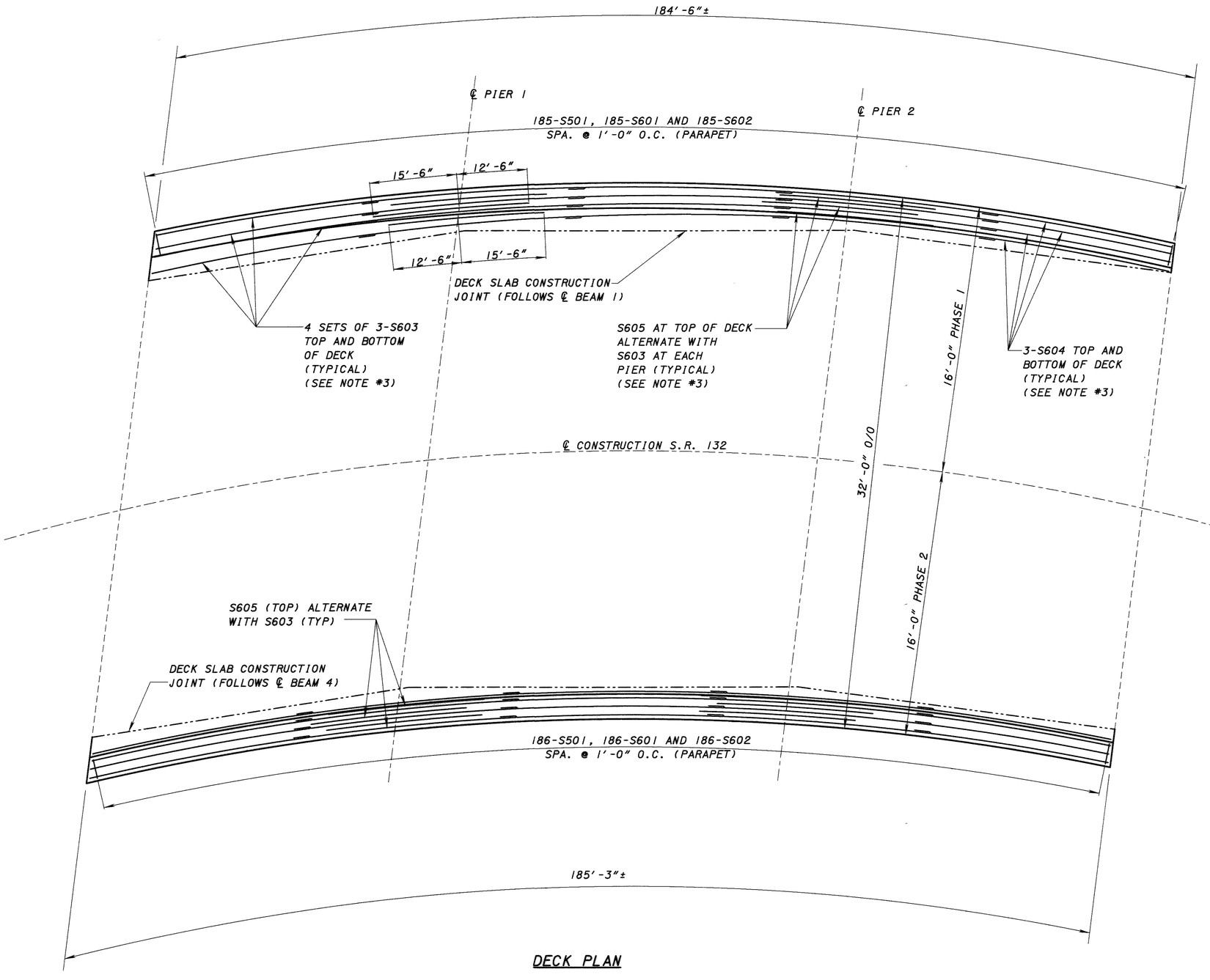
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

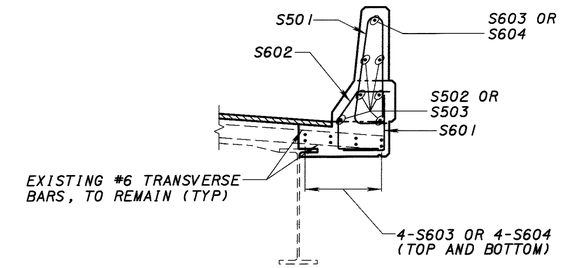
7 / 13

20 / 55

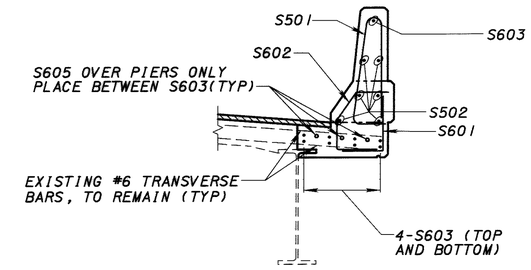
02:53:08 PM
04/08/2003
u:\02-252\2803\Dgn\Structure\WAR-132-0553\war132fal.dgn



DECK PLAN



DECK EDGE SECTION @ MIDSPAN



DECK EDGE SECTION @ PIER

NOTES:

1. MINIMUM LAP LENGTHS:
   LAP NO. 5 BARS 33"
   LAP NO. 6 BARS 40"
2. SEE SHEET 9 OF 13 FOR PROPOSED TRANSVERSE DECK SECTION.
3. REINFORCING ON OPPOSITE SIDE OF DECK SLAB IS SIMILAR.
4. DRAWING IS NOT TO SCALE.

DESIGN AGENCY
MS CONSULTANTS COMPANIES
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVISED	DATE
ENB	ENB		1/06/03
CHECKED	REVISED		STRUCTURE FILE NUMBER
CAH			8304920

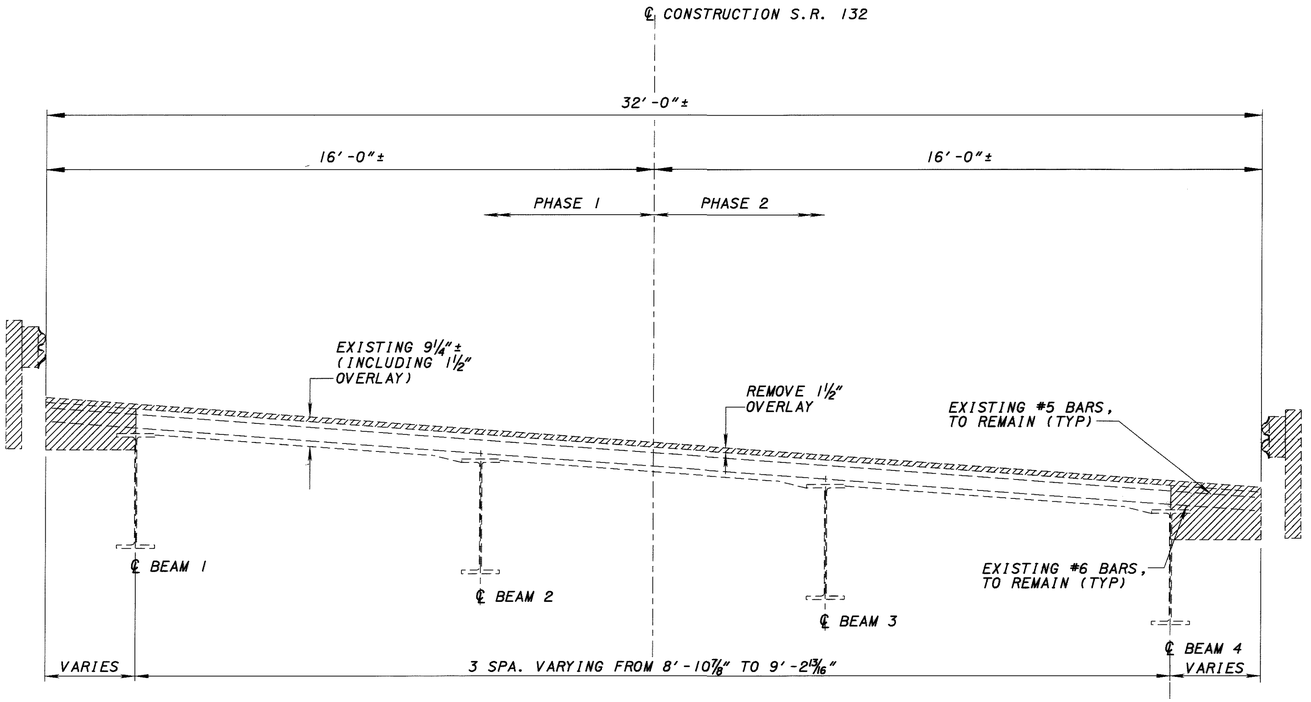
DECK PLAN
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

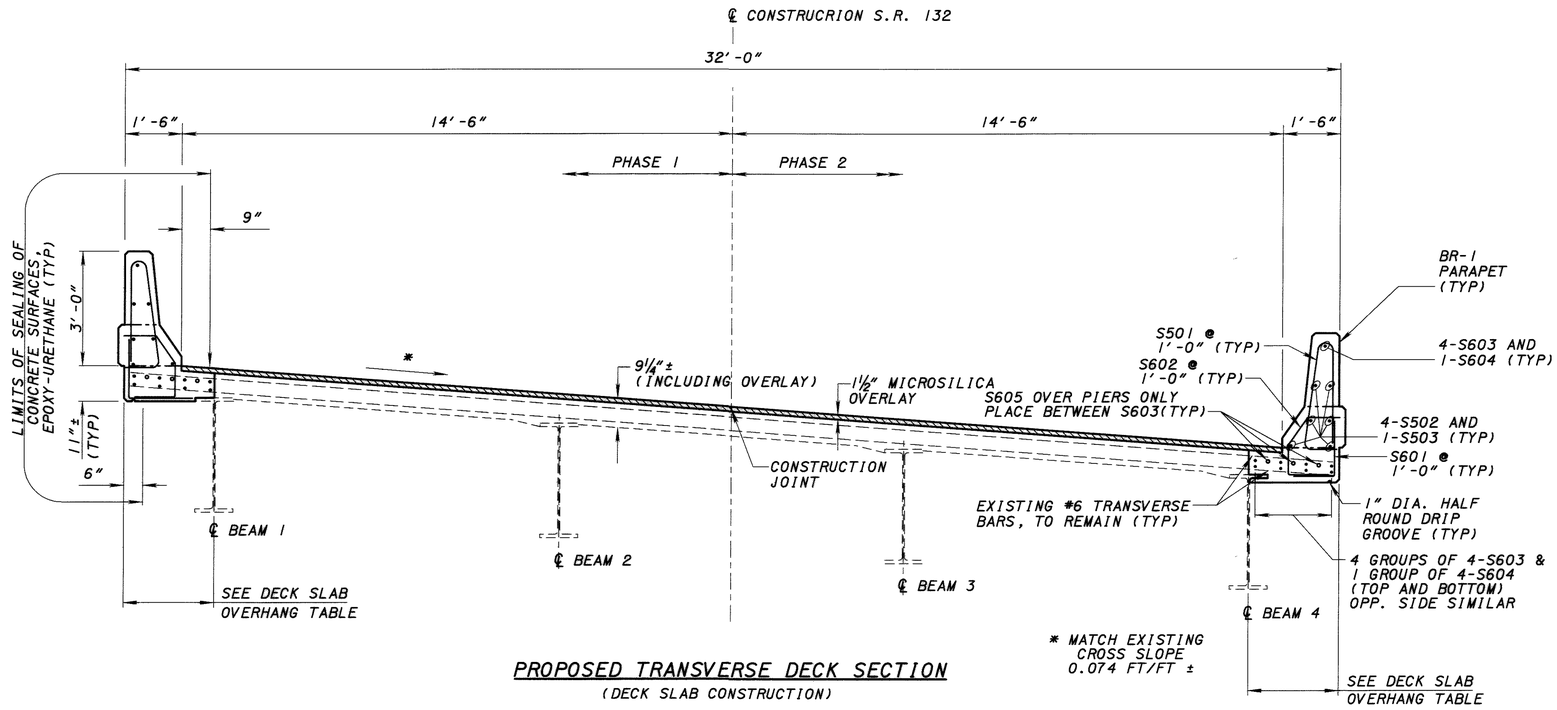
8 / 13

21 / 55

02:54:18 PM
04/08/2003
u:\02-252\2803\Dgn\Structure\WAR-132-0553\war132sd5.dgn



EXISTING TRANSVERSE DECK SECTION
(DECK SLAB DEMOLITION)



PROPOSED TRANSVERSE DECK SECTION
(DECK SLAB CONSTRUCTION)

DECK SLAB OVERHANG TABLE (**)		
LOCATION	LEFT EDGE OF DECK SLAB	RIGHT EDGE OF DECK SLAB
REAR ABUTMENT	2′-10¾″	2′-7¾″
MIDSPAN	3′-0″	2′-3¼″
PIER #1	2′-6″	2′-6⅜″
MIDSPAN	2′-10¼″	1′-10⅞″
PIER #2	2′-2¾″	2′-3″
MIDSPAN	2′-3⅞″	1′-11⅝″
FWD. ABUTMENT	1′-9⅝″	2′-3¾″

(**)-ALL DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

NOTES:

1. MINIMUM LAP LENGTHS:
   LAP NO. 5 BARS 33″
   LAP NO. 6 BARS 40″
2. SEE SHEET 8 OF 13 FOR DECK PLAN.

LEGEND:

MICROSILICA OVERLAY

TO BE REMOVED

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

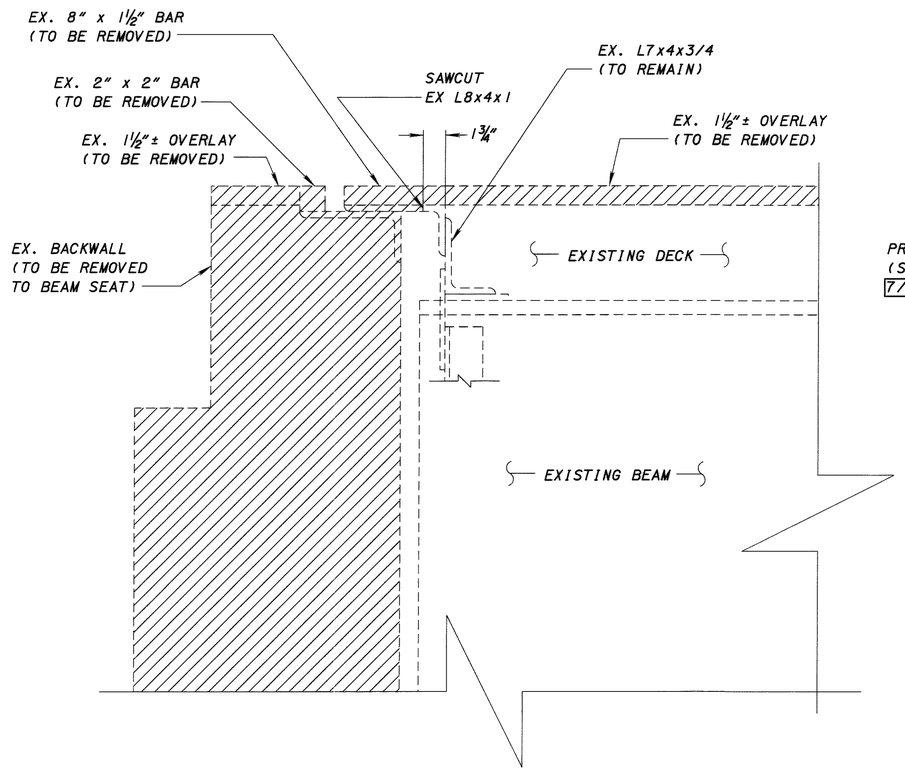
DESIGNED	DRAWN	REVIEWED	DATE
ENB	ENB	CMD	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAH		8304920	

TRANSVERSE SECTION
BRIDGE NO. WAR-132-0553
OVER LICK RUN

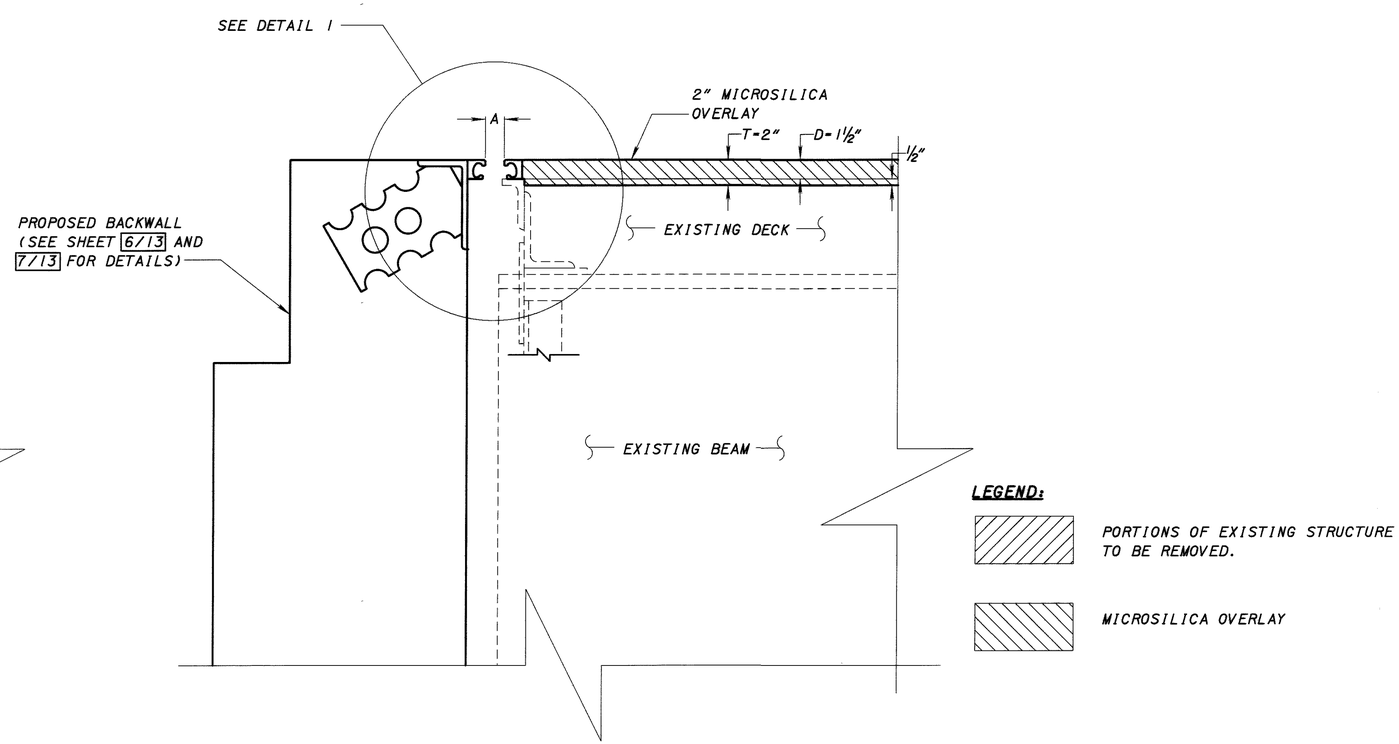
CLI-730-4.91
WAR-132-5.53

9 / 13

22 / 55

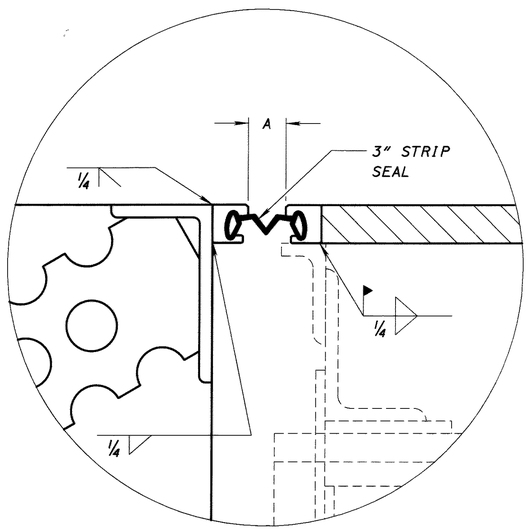


EXISTING JOINT DETAIL

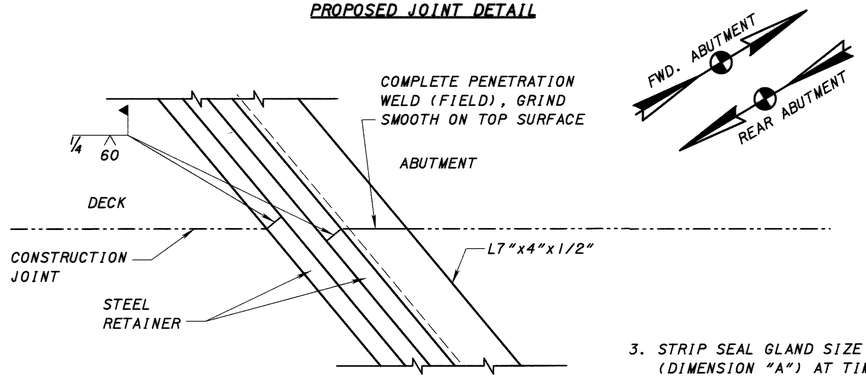


PROPOSED JOINT DETAIL

DIMENSION "A"		
	REAR ABUTMENT	FORWARD ABUTMENT
30°	1 7/8"	1 7/8"
40°	1¾"	1¾"
50°	1¾"	1¾"
60°	1 5/8"	1 5/8"
70°	1½"	1 5/8"
80°	1⅜"	1 5/8"
90°	1⅜"	1½"



DETAIL 1



WELDED BUTT JOINT IN END FINISH

NOTES:

1. FOR ADDITIONAL EXPANSION JOINT DETAILS, SEE STD. DWG. EXJ-4-87.
2. THE STEEL RETAINERS SHALL BE CONSTRUCTED SO THAT THEIR TOP SURFACES ARE EVEN. FOLLOWING COMPLETION OF THIS WORK, THE PROJECT ENGINEER SHALL CONDUCT A VISUAL INSPECTION OF THE RETAINERS TO ENSURE THAT THEIR TOP SURFACES ARE LEVEL WITH EACH OTHER. IF THEY ARE FOUND TO BE UNEVEN, THE PROJECT ENGINEER SHALL DIRECT THE CONTRACTOR TO RECONSTRUCT OR REPLACE THE RETAINERS AT NO ADDITIONAL COST TO THE STATE.
3. STRIP SEAL GLAND SIZE SHALL BE 3". MINIMUM JOINT OPENING (DIMENSION "A") AT TIME OF SEAL GLAND INSTALLATION SHALL NOT BE LESS THAN 1½". IF THE JOINT OPENING IS LESS, INSTALLATION SHALL BE POSTPONED UNTIL THE TEMPERATURE DROPS A SUFFICIENT AMOUNT TO ALLOW THE MINIMUM 1½" OPENING. THE STRIP SEAL SHALL BE ONE CONTINUOUS PIECE THE FULL WIDTH OF THE DECK.
4. THE STEEL RETAINERS AND ELASTOMERIC SEAL GLAND SHALL BE AS SUPPLIED BY:

   A) D.S. BROWN CO. — RETAINER: TYPE SSE2
   P.O. BOX 158 — GLAND: A2R-400
   NORTH BALTIMORE, OHIO 45872

   B) WATSON BOWMAN ACME — RETAINER: TYPE E
   95 PINEVIEW DR. — GLAND: SE-300
   AMHERST, NY 14228

   C) EQUAL APPROVED BY THE DIRECTOR

DESIGN AGENCY
M/E COMPANIES
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
ENB	ENB	CMD	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAH		8304920	

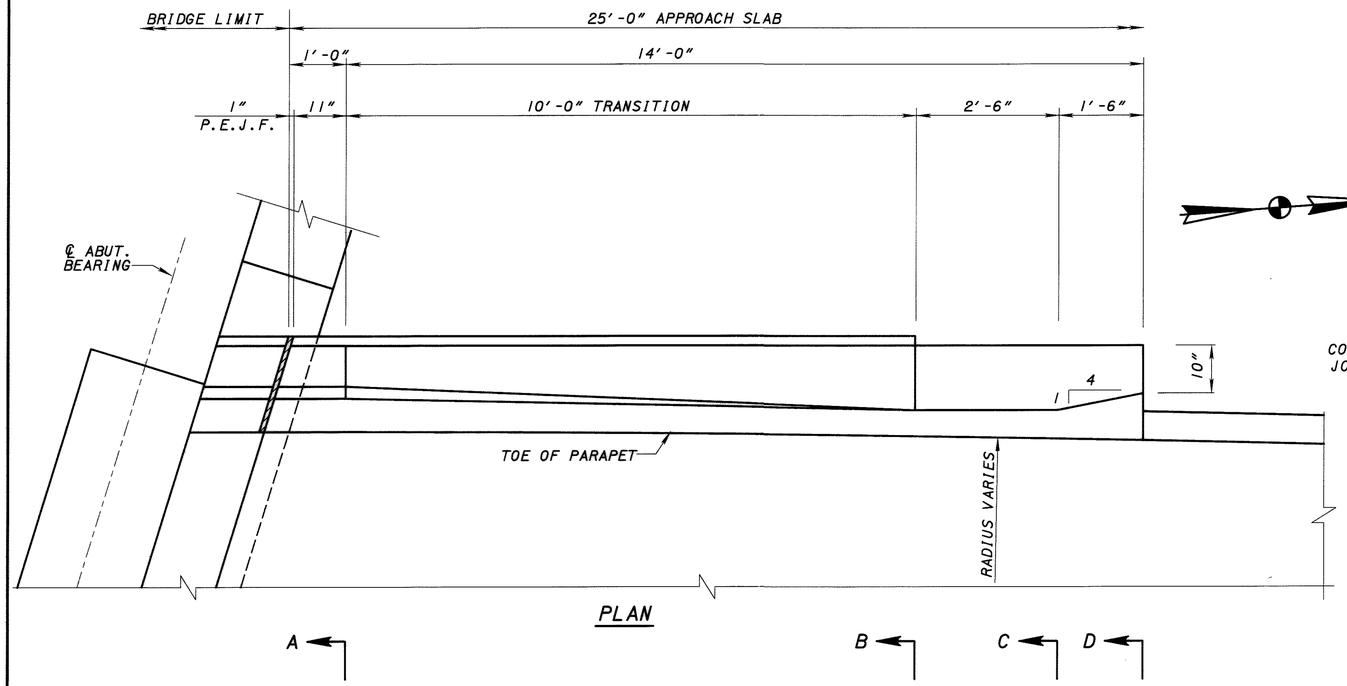
EXPANSION JOINT RETROFIT DETAIL
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

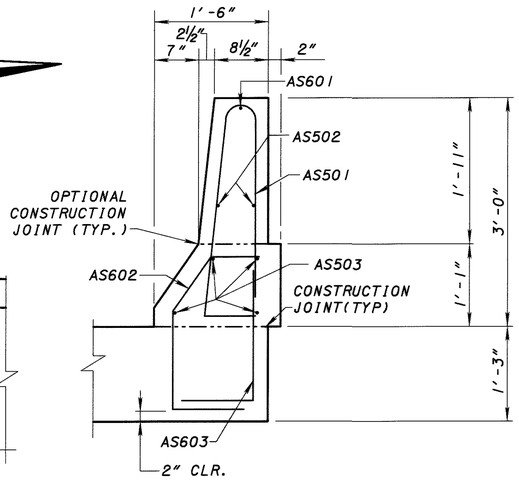
10 / 13

23
55

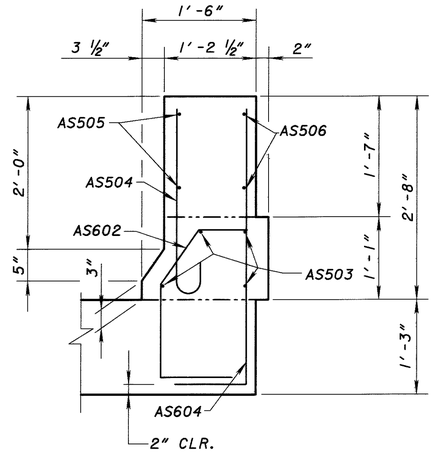
02:55:36 PM
04/08/2003
u:\02-252\2803\Dgn\Structure\WAR-132-0553\war132ex1.dgn



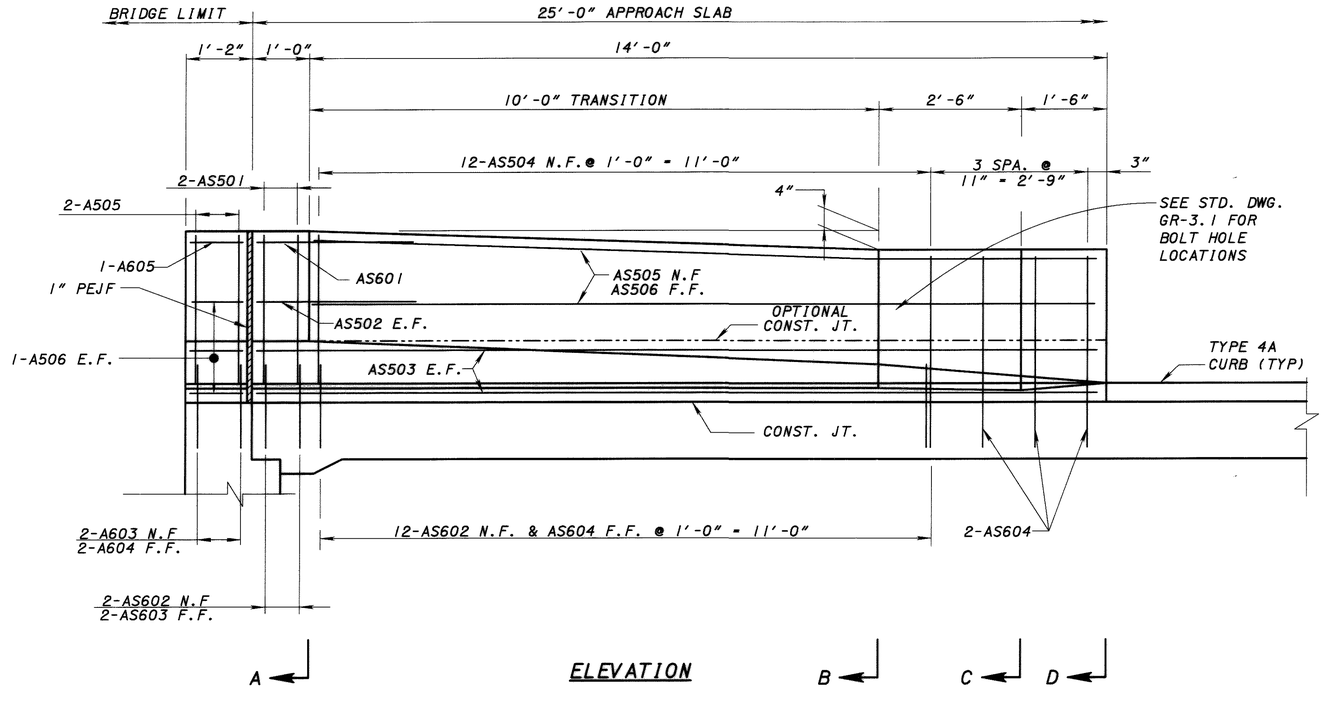
PLAN



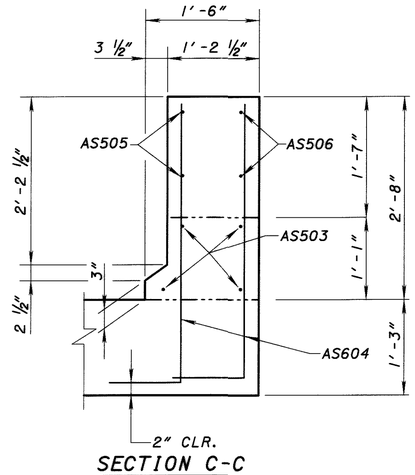
SECTION A-A



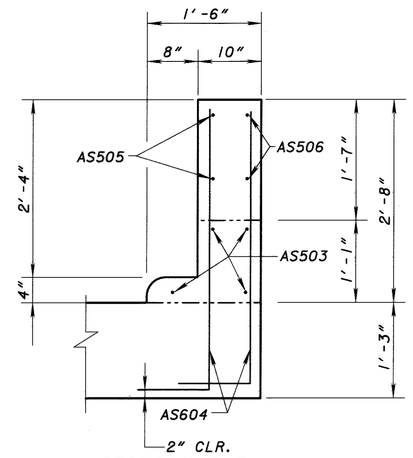
SECTION B-B



ELEVATION



SECTION C-C



SECTION D-D

PARAPET TRANSITION DETAIL

FWD. ABUT., LT. SIDE & REAR ABUT. RT. SIDE-SHOWN
FWD. ABUT., RT. SIDE & REAR ABUT. LT. SIDE-OPP.HAND & SIM.

LEGEND

N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE

NOTES:

1. SEE STD. DWG. AS-1-81 FOR ADDITIONAL APPROACH SLAB NOTES AND DETAILS. SEE STD. DWG. BR-1 FOR ADDITIONAL PARAPET NOTES AND DETAILS.
2. MINIMUM LAP LENGTHS:
   LAP NO. 5 BARS 33"
   LAP NO. 6 BARS 40"
3. SEE SHEET 12 OF 13 FOR APPROACH SLAB DETAILS.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
ENB	ENB	CMD	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAH		8304920	

APPROACH SLAB PARAPET DETAILS

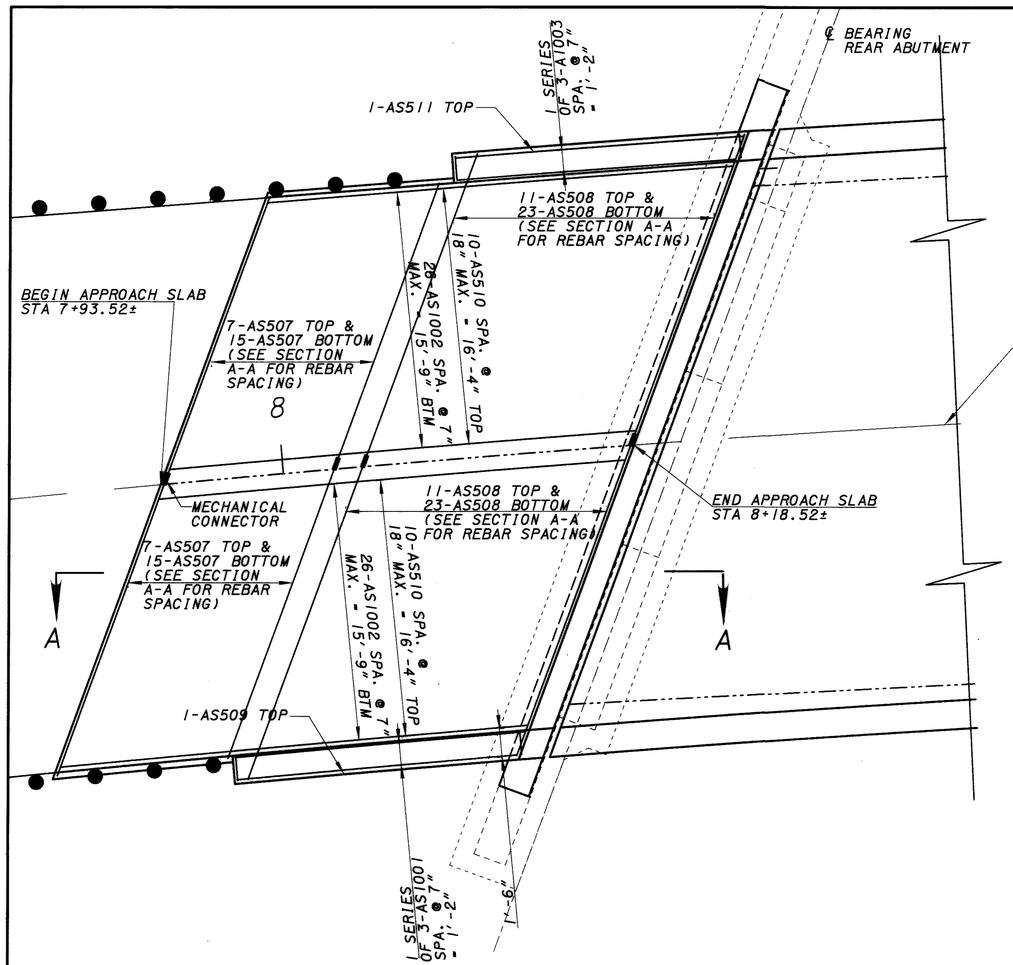
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

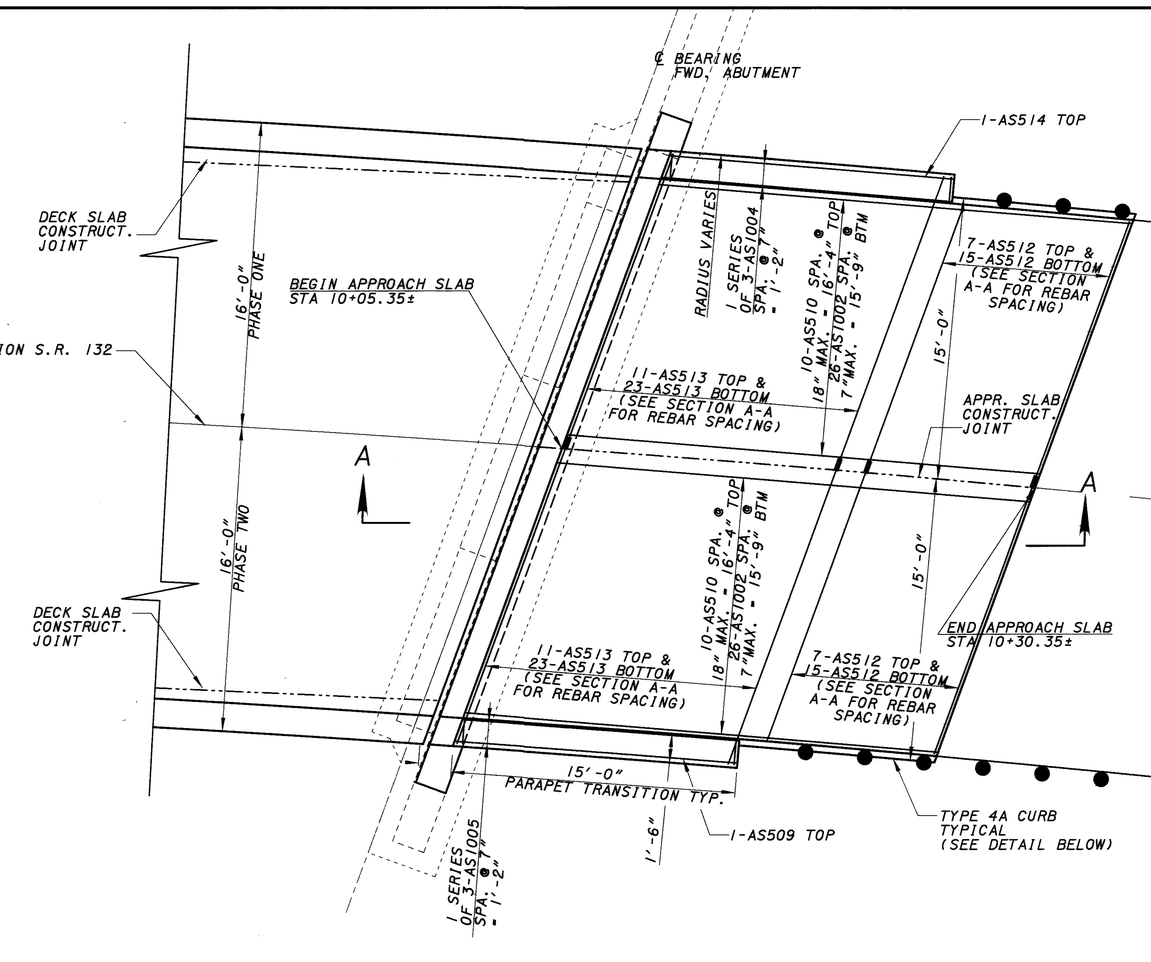
11 / 13

24 / 55

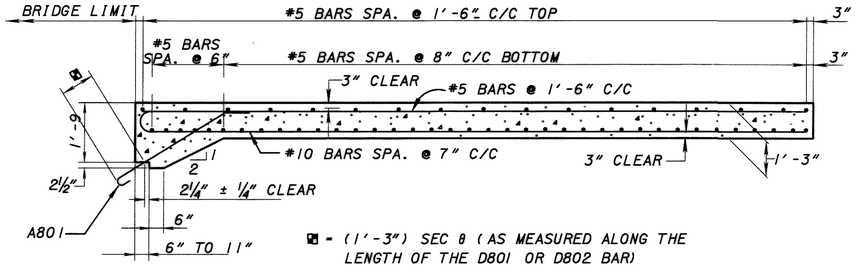
02:55:56 PM
04/08/2003
u:\02-252\21803\Dgn\Structure\WAR-132-0553\war132sd2.dgn



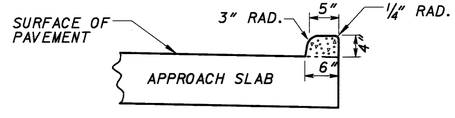
REAR ABUTMENT SLAB PLAN



FORWARD ABUTMENT SLAB PLAN



SECTION A-A



TYPE 4-A CURB DETAIL

NOTES:

1. SEE SHEET 1,3 & 4 OF 13 FOR GENERAL NOTES AND ESTIMATED QUANTITIES.
2. ALL EXISTING STRUCTURE DIMENSIONS SHALL BE FIELD VERIFIED.
3. SEE SHEET 13 OF 13 FOR REINFORCING STEEL LIST.
4. SEE SHEET 11 OF 13 FOR PARAPET TRANSITION DETAILS.
5. SEE SHEET 9 OF 13 FOR TRANSVERSE DECK SLAB SECTION

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

REVIEWED	DATE
CMD	1/06/03
DRAWN	STRUCTURE FILE NUMBER
ENB	8304920
DESIGNED	REVISED
ENB	
CHECKED	
CAH	

APPROACH SLAB & PARTIAL DECK SLAB PLAN
BRIDGE NO. WAR-132-0553
OVER LICK RUN

CLI-730-4.91
WAR-132-5.53

12/13

25/55

02:56:18 PM
04/08/2003
u:\02-252\2803\Dgn\Structure\WAR-132-0553\war132sd4.dgn

SUPERSTRUCTURE REINFORCING STEEL

MARK	NO.				LENGTH	WEIGHT	TYPE	DIMENSIONS			
	GENERAL	PHASE 1	PHASE 2	TOTAL	(FT)	(LB)		A	B	C	INCR.
S501		183	183	366	6'-0"	2291	9	2'-6"	2'-9"		
S502		24	24	48	40'-0"	2003	STR				
S503		6	6	12	35'-11"	450	STR				
S601		183	183	366	2'-4"	1281	1	11"	1'-7"		
S602		183	183	366	3'-1"	1693	10	11"			
S603		36	36	72	40'-0"	4326	STR				
S604		9	9	18	38'-4"	1037	STR				
S605		6	6	12	28'-0"	505	STR				
					TOTAL	13,586					

APPROACH SLAB REINFORCING STEEL - FOR INFORMATION ONLY

MARK	NO.				LENGTH	WEIGHT	TYPE	DIMENSIONS			
	GENERAL	PHASE 1	PHASE 2	TOTAL	(FT)	(LB)		A	B	C	INCR.
AS501		4	4	8	6'-0"	50	9	2'-6"	2'-9"		
AS502		4	4	8	3'-9"	32	STR				
AS503		8	8	16	14'-8"	245	STR				
AS504		24	24	48	3'-0"	150	6	2'-5"			
AS505		4	4	8	13'-10"	116	11				
AS506		4	4	8	13'-10"	116	STR				
AS507		22**	22*	44	15'-11"	731	STR				
AS508		34**	34*	68	17'-5"	1236	STR				
AS509		0	2	2	14'-9"	31	STR				
AS510		20	20	40	24'-8"	1,029	STR				
AS511		1	0	1	15'-3"	16	STR				
AS512		22**	22*	44	14'-11"	685	STR				
AS513		34**	34*	68	16'-5"	1165	STR				
AS514		1	0	1	14'-10"	16	STR				
AS601		2	2	4	4'-4"	26	STR				
AS602		28	28	56	3'-5"	288	10	1'-3"			
AS603		4	4	8	2'-8"	32	1	11"	1'-11"		
AS604		36	36	72	4'-8"	505	1	11"	3'-11"		
			1	1	VAR. FROM			VAR. FROM			
AS1001			SERIES OF	SERIES OF	16'-2" TO	213	6	14'-9" TO			3½"
			3	3	16'-9"			15'-4"			
AS1002		52	52	104	26'-1"	11,673	6	24'-8"			
		1		1	VAR. FROM			VAR. FROM			
AS1003		SERIES OF		SERIES OF	16'-1" TO	212	6	14'-8" TO			3½"
		3		3	16'-8"			15'-3"			
		1		1	VAR. FROM			VAR. FROM			
AS1004		SERIES OF		SERIES OF	16'-4" TO	213	6	14'-11" TO			2"
		3		3	16'-8"			15'-3"			
			1	1	VAR. FROM			VAR. FROM			
AS1005			SERIES OF	SERIES OF	15'-10" TO	207	6	14'-5" TO			2"
			3	3	16'-2"			14'-9"			
					TOTAL	18,987					

ABUTMENT REINFORCING STEEL

MARK	NO.				LENGTH	WEIGHT	TYPE	DIMENSIONS			
	GENERAL	PHASE 1	PHASE 2	TOTAL	(FT)	(LB)		A	B	C	INCR.
A501		8**		8	19'-10"	166	STR				
A502			8*	8	19'-5"	162	STR				
A503		8**		8	18'-2"	152	STR				
A504			8*	8	19'-0"	159	STR				
A505		4	4	8	6'-0"	50	9	2'-6"	2'-9"		
A506		12	12	24	10"	21	STR				
A601		39	40	79	4'-0"	475	STR				
A602		39	40	79	7'-5"	880	2	3'-0"	9"	4'-0"	
A603		4	4	8	3'-1"	37	10	11"			
A604		4	4	8	3'-9"	45	1	11"	3'-0"		
A605		2	2	4	10"	5	STR				
A801		22	22	44	5'-3"	617	20	1'-5"	2'-5"	1'-5"	
					TOTAL	2,769					

NOTES:

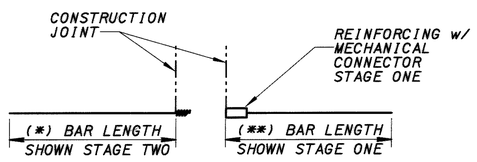
1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, S501 IS A NO. 5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

2. "STR" IN THE TYPE COLUMN INDICATES STRAIGHT BARS.

3. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.

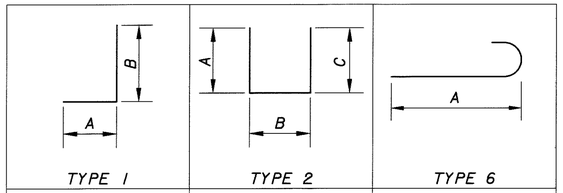
4. PROVISIONS SHALL BE MADE AS NECESSARY FOR ALL REINFORCING BARS THAT REQUIRE, AS PER THE PLANS, A MECHANICAL CONNECTOR FOR SPLICING. THESE MODIFICATIONS ARE INCLUDED IN THE CONTRACT PRICE FOR ITEM 509. MECHANICAL CONNECTORS SHALL BE NON-PROTRUDING TYPE.

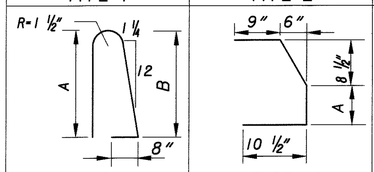
5. ALL REINFORCING STEEL SHALL BE EPOXY COATED.

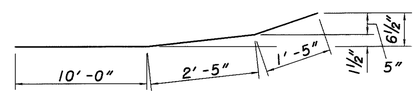


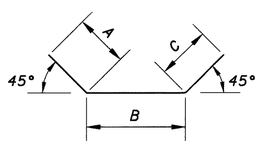
MECHANICAL CONNECTOR DETAIL

BENDING DIAGRAMS









DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED ENB | DRAWN ENB | REVIEWED CMD | DATE 1/06/03
CHECKED CAH | REVISED | STRUCTURE FILE NUMBER 8304920

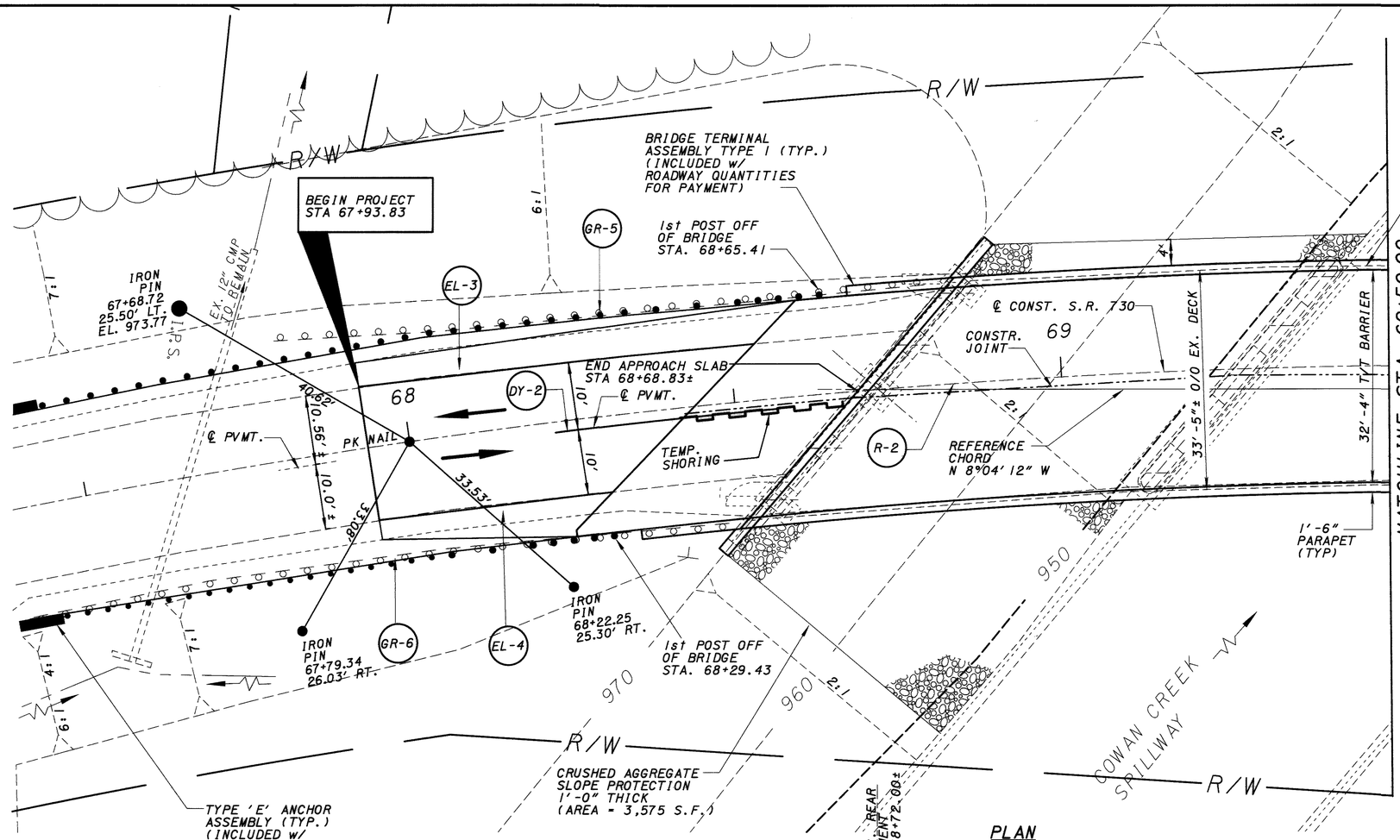
REINFORCING DETAIL
BRIDGE NO. WAR-132-0553
OVER LICK RUN

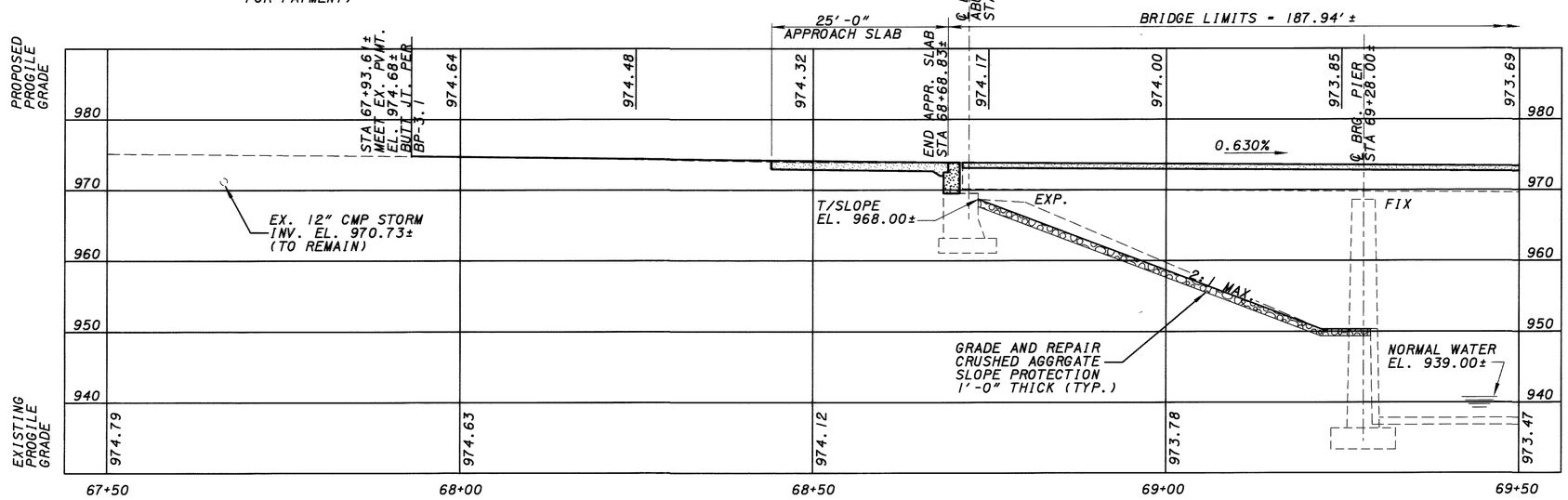
CLI-730-4.91
WAR-132-5.53

13 / 13

26 / 55

02:56:34 PM
04/08/2003
u:\02-252\2803\Dgn\Structure\WAR-132-0553\war132rll.dgn





PROFILE ALONG ℄ CONSTRUCTION S.R. 730

CURVE DATA

P.I. Sta - 68+32.28
△ - 51° 00′ 00″ (RT)
Dc - 5° 00′ 00″
R - 1,145.92′
Ls - 350.00′
Theta - 8° 45′ 00″
LT - 233.62′
ST - 116.93′
x - 349.18′
y - 17.79′
k - 174.86′
p - 4.45′
△c - 33° 30′ 00″ (RT)
Lc - 670.00′
Ts - 723.56′
Es - 128.61′

NOTES:

1. THE EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.
2. SEE SHEET 7 OF 29 FOR SEQUENCE OF CONSTRUCTION.
3. SEE GENERAL PLAN ON SHEET 3 OF 29 FOR GEOMETRIC LAYOUT AND ADDITIONAL DETAILS.

BENCHMARK	TRAFFIC DATA
IRON PIN STA. 67+68.72, 25.5'± LT EL. 973.77± IRON PIN STA. 72+02.23, 21.1'± LT EL. 972.23±	CURRENT ADT (2003) - 2800 CURRENT ADTT (2003) - 140 DESIGN ADT (2023) - 2900 DESIGN ADTT (2023) - 145 SOURCE - ODOT

EXISTING STRUCTURE DATA

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPAN: 53′-3⅝″±,70′-0″±,58′-6⅛″± c/c BEARINGS (MEASURED ALONG REFERENCE CHORD)
ROADWAY: 33′-5″± o/o OF DECK
DESIGN LOAD: S-15-46
SKEW: 40°15′00″± LF (MEASURED TO REFERENCE CHORD)
WEARING SURFACE: PREVIOUS OVERLAY
APPROACH SLABS: 25′ ± LONG
ALIGNMENT: 5° CURVE TO RIGHT
SUPERELEVATION: 0.082 FT/FT
DATE BUILT: 1953
SFN: 1403966

PROPOSED STRUCTURE DATA

PROPOSED WORK: REPLACE DECK SLAB, EXPANSION JOINT BEARINGS AND ABUTMENT BACKWALLS.
TYPE: EX. CONTINUOUS STEEL BEAM MADE COMPOSITE WITH REINFORCED CONCRETE DECK ON EXISTING REINFORCED CONCRETE SUBSTRUCTURES
SPAN: 53′-3⅝″±,70′-0″±,58′-6⅛″± c/c BEARINGS (MEASURED ALONG REFERENCE CHORD)
ROADWAY: 32′-4″ TOE/TOE OF PARAPET
DESIGN LOAD: HS-20 & ALT. MILITARY LOADING, CASE II
SKEW: 40°15′00″± LF (MEASURED TO REFERENCE CHORD)
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: 25′ LONG (AS-1-81)
SUPERELEVATION: 0.082 FT/FT
ALIGNMENT: 5° CURVE TO RIGHT
LATITUDE: 39°23′24″
LONGITUDE: 83°55′36″

DESIGN AGENCY
MS CONSULTANTS
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

REVIEWED	DATE
JBK	1/06/03
DRAWN	REVISED
CAH	
DESIGNED	CHECKED
CAH	CMD

STRUCTURE FILE NUMBER 1403966

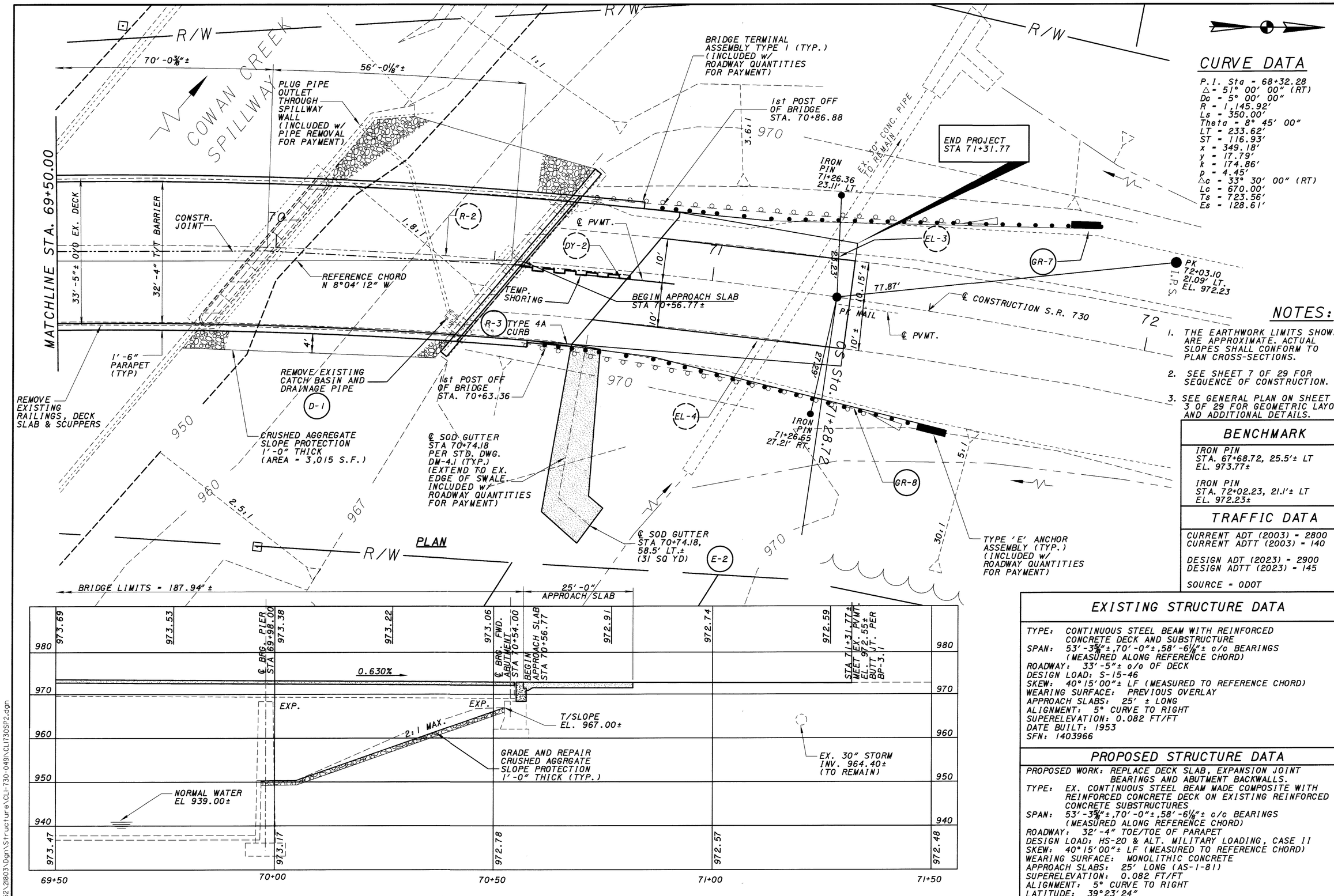
CLINTON COUNTY
STA. 68+68.83± TO STA. 70+56.77±

SITE PLAN-1
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

1/29
27/55

07:22:19 AM
04/09/2003
u:\02-252\21803\Dgn\Structure\CLI-730-0491\CLI730SPL.dgn



CURVE DATA

P.I. Sta = 68+32.28
△ = 51° 00′ 00″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
Ls = 350.00′
Theta = 8° 45′ 00″
LT = 233.62′
ST = 116.93′
x = 349.18′
y = 17.79′
k = 174.86′
p = 4.45′
△c = 33° 30′ 00″ (RT)
Lc = 670.00′
Ts = 723.56′
Es = 128.61′

NOTES:

1. THE EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.
2. SEE SHEET 7 OF 29 FOR SEQUENCE OF CONSTRUCTION.
3. SEE GENERAL PLAN ON SHEET 3 OF 29 FOR GEOMETRIC LAYOUT AND ADDITIONAL DETAILS.

BENCHMARK

IRON PIN
STA. 67+68.72, 25.5'± LT
EL. 973.77±

IRON PIN
STA. 72+02.23, 21.1'± LT
EL. 972.23±

TRAFFIC DATA

CURRENT ADT (2003) = 2800
CURRENT ADTT (2003) = 140

DESIGN ADT (2023) = 2900
DESIGN ADTT (2023) = 145

SOURCE = ODOT

PROFILE ALONG ℄ CONSTRUCTION S.R. 730

EXISTING STRUCTURE DATA

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPAN: 53′-3⅝″±,70′-0″±,58′-6⅛″± c/c BEARINGS (MEASURED ALONG REFERENCE CHORD)
ROADWAY: 33′-5″± o/o OF DECK
DESIGN LOAD: S-15-46
SKEW: 40°15′00″± LF (MEASURED TO REFERENCE CHORD)
WEARING SURFACE: PREVIOUS OVERLAY
APPROACH SLABS: 25′ ± LONG
ALIGNMENT: 5° CURVE TO RIGHT
SUPERELEVATION: 0.082 FT/FT
DATE BUILT: 1953
SFN: 1403966

PROPOSED STRUCTURE DATA

PROPOSED WORK: REPLACE DECK SLAB, EXPANSION JOINT BEARINGS AND ABUTMENT BACKWALLS.
TYPE: EX. CONTINUOUS STEEL BEAM MADE COMPOSITE WITH REINFORCED CONCRETE DECK ON EXISTING REINFORCED CONCRETE SUBSTRUCTURES
SPAN: 53′-3⅝″±,70′-0″±,58′-6⅛″± c/c BEARINGS (MEASURED ALONG REFERENCE CHORD)
ROADWAY: 32′-4″ TOE/TOE OF PARAPET
DESIGN LOAD: HS-20 & ALT. MILITARY LOADING, CASE II
SKEW: 40°15′00″± LF (MEASURED TO REFERENCE CHORD)
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: 25′ LONG (AS-1-81)
SUPERELEVATION: 0.082 FT/FT
ALIGNMENT: 5° CURVE TO RIGHT
LATITUDE: 39°23′24″
LONGITUDE: 83°55′36″

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

REVIEWED	DATE
JBK	1/06/03
DRAWN	REVISED
CAH	
DESIGNED	CHECKED
CAH	CMD

STRUCTURE FILE NUMBER 1403966

CLINTON COUNTY
STA. 68+68.83±
STA. 70+56.77±

SITE PLAN-2

BRIDGE NO. CLI-730-049 I
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

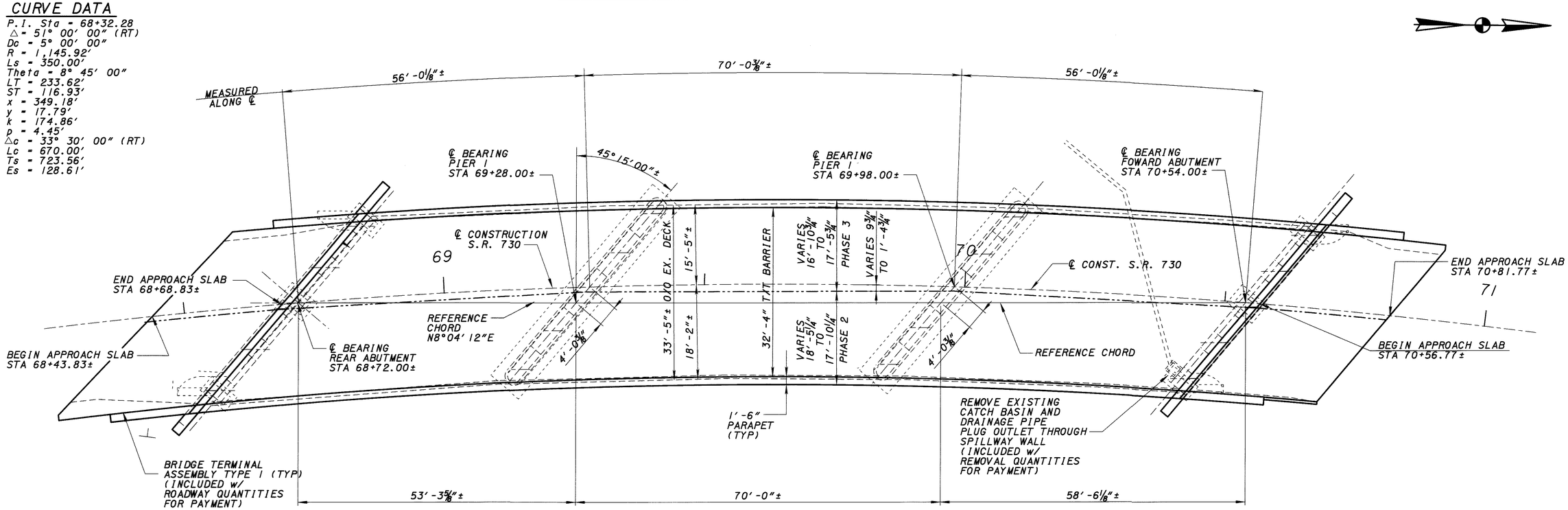
2 / 29

28 / 55

08:14:31 AM
04/09/2003
u:\02-252\21803\Dgn\Structure\CLI-730-049\CLI730SP2.dgn

CURVE DATA

P.I. Sta = 68+32.28
△ = 51° 00′ 00″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
Ls = 350.00′
Theta = 8° 45′ 00″
LT = 233.62′
ST = 116.93′
x = 349.18′
y = 17.79′
k = 174.86′
p = 4.45′
△c = 33° 30′ 00″ (RT)
Lc = 670.00′
Ts = 723.56′
Es = 128.61′



PLAN

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DATE	REVIEWED	DRAWN	DESIGNED
1/06/03	JBK	CAH	CAH

STRUCTURE FILE NUMBER	REVISED	CHECKED
1403966		CMD

CLINTON COUNTY
STA. 68+68.83±
STA. 70+56.77±

GENERAL PLAN
BRIDGE NO. CLI-730-049 I
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

3 / 29

29 / 55

07:56:11 AM
04/09/2003
u:\02-252\21803\Dgn\Structure\CLI-730-049I\CLI730GP.dgn

REFERENCE:

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

AS-1-81	REVISED 07-19-02		EXJ-4-87	REVISED	07-19-02
BR-1	REVISED 07-19-02		PCB-91	REVISED	07-19-02
A-1-69	REVISED 07-19-02				

AND TO SUPPLEMENTAL SPECIFICATION(S):

846	DATED	04-19-02	864	DATED	07-11-00
898	DATED	01-17-03	954	DATED	09-09-97

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 CURRENT EDITION OF THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:

HS25-44 AND THE ALTERNATE MILITARY LOADING
FOR THE REPLACEMENT DECK SLAB
HS20-44, CASE II AND THE ALTERNATE MILITARY LOADING
FOR THE REMAINDER OF THE SUPERSTRUCTURE
FUTURE WEARING SURFACE (FWS) OF 60 PSF

DESIGN STRESSES:

CLASS S CONCRETE FOR SUPERSTRUCTURE - COMPRESSIVE STRENGTH 4500 P.S.I.
CLASS C CONCRETE FOR SUBSTRUCTURE - COMPRESSIVE STRENGTH 4000 PSI
STRUCTURAL STEEL - ASTM A572/A709, GRADE 50 (YIELD STRENGTH 50,000 PSI)
REINFORCING STEEL - ASTM A615 OR A996, GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
2½" CONCRETE COVER
HMWM RESIN SEALER AT DECK JOINTS

MONOLITHIC WEARING SURFACE:

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

PROPOSED WORK:

1) REMOVE THE EXISTING DECK SLAB AND SCUPPERS. REMOVE THE EXISTING CATCH BASIN AT THE FORWARD ABUTMENT AND CORRESPONDING DRAIN PIPE
2) REPLACE THE EXISTING BEARINGS WITH ELASTOMERIC BEARINGS
3) REPLACE THE EXISTING DECK SLAB, AND INSTALL 36" HIGH BRIDGE RAILING DEFLECTOR PARAPETS IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC.
4) PROVIDE NEW FULL WIDTH APPROACH SLABS.
5) UPGRADE THE APPROACH GUARDRAIL TO CURRENT STANDARDS.
6) PAINT THE EXISTING STRUCTURAL STEEL WITH SYSTEM OZEU: COLOR SHALL BE FEDERAL COLOR NO. 14277 (GREEN).
7) SEAL ABUTMENTS, BACKWALLS, WINGWALLS, DECK EDGES, AND DEFLECTOR PARAPETS WITH EPOXY-URETHANE
8) PROVIDE FOR MINIMAL APPROACH WORK TO TRANSITION THE APPROACH ROADWAY FEATURES TO MATCH THE BRIDGE.
9) REPAIR SLOPE EROSION PROTECTION.

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.

AN ALLOWANCE OF 100 POUNDS IS INCLUDED IN REINFORCING STEEL, REPLACEMENT OF EXISITING REINFORCING STEEL, AS PER PLAN, FOR THIS PURPOSE.

SEALING WITH HMWM RESIN:

STAGE CONSTRUCTION JOINTS IN THE CONCRETE DECK SHALL BE SEALED WITH A HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM) RESIN.

MECHANICAL CONNECTORS

AN APPROVED MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH THE MANUFACTURERS RECOMMENDED PROCEDURES.

CONNECTORS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATION. COATINGS WHICH HAVE BEEN DAMAGED OR OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AN UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIALS WHICH MEET THE SPECIFICATIONS. THE MECHANICAL CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125% OF THE FULL YIELD STRENGTH OF THE REINFORCING STEEL AS A MINIMUM.

MECHANICAL CONNECTORS SHALL BE INCLUDED WITH ITEM 509 FOR PAYMENT.

ITEM 526: REINFORCED CONCRETE APPROACH SLAB (T-15"), AS PER PLAN

THE #5 TRANSVERSE APPROACH SLAB BARS MUST HAVE MECHANICAL CONNECTORS FURNISHED AT THE PHASE CONSTRUCTION JOINT. THE CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125% OF THE YIELD STRENGTH OF THE REINFORCING BAR.

PAYMENT FOR THE CONCRETE CURB AND PARAPET SHALL BE INCLUDED IN THE COST OF ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T-15"), AS PER PLAN.

ITEM 514 - FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU:

ALL EXISTING STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE AND FINISH COAT OF PAINT IN THE FIELD USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE FEDERAL COLOR NO. 14277 (GREEN).

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, 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.

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.

STREAM CHANNEL EXCAVATION

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ANY INCIDENTAL DISCHARGES ASSOCIATED WITH THE EXCAVATION AND HAULING OF MATERIALS FROM THE STREAM CHANNEL. THIS PERTAINS TO ANY EXCAVATION OPERATIONS SUCH AS, FOUNDATION, PIER OR ABUTMENT EXCAVATION, CHANNEL CLEAN OUT, EXCAVATION FOR ROCK CHANNEL PROTECTION AND REMOVAL OF ANY TEMPORARY FILL ASSOCIATED WITH CONSTRUCTION OPERATIONS.

INSTREAM WORK

INSTREAM WORK WILL BE LIMITED WHERE PRACTICABLE AND ONLY CLEAN NON-ERODIBLE MATERIAL WILL BE USED FOR FORDS AND COFFERDAMS. THIS TEMPORARY PLACED MATERIAL WILL BE REMOVED AND THE STREAM BOTTOM RESTORED TO NEAR NATURAL CONDITIONS WHEN THE WORK IS COMPLETED.

SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

THE FOLLOWING CONCRETE SURFACES SHALL BE SEALED:

BRIDGE NO. CLI-730-0491
1) THE CONCRETE SUPERSTRUCTURE AS SHOWN ON THE PLAN DETAILS.
2) ALL EXPOSED SURFACES OF BOTH ABUTMENTS AND WINGWALLS.

THE COLOR OF THE URETHANE COATING SHALL BE FEDERAL COLOR STANDARD NO. 17778 (LIGHT NEUTRAL).

UTILITY LINES

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

ABBREVIATIONS

THE FOLLOWING ABBREVIATIONS ARE USED THROUGHOUT THESE PLANS:

CJ - CONSTRUCTION JOINT
N.F. - NEAR FACE
F.F. - FAR FACE
E.F. - EACH FACE
PEJF - PREFORMED EXPANSION JOINT FILLER
T & B - TOP & BOTTOM

MAINTENANCE OF TRAFFIC

SEE GENERAL NOTES ON SHEET 5/55

UNCLASSIFIED EXCAVATION, AS PER PLAN

THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B GRANULAR MATERIAL, 703.16.C, PLACED AND COMPACTED IN 6 INCH LIFTS.

ITEM 511 - CLASS 'C' CONCRETE, ABUTMENT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 842, A REFERENCE DISK SHALL BE CAST IN THE ABUTMENT CONCRETE. THE DISK WILL BE CENTERED ON THE TOP HORIZONTAL SURFACE OF THE FORWARD ABUTMENT RIGHT WINGWALL. THE DISK WILL BE PROVIDED BY THE DISTRICT EIGHT SURVEY MANAGER.

THE CONTRACTOR WILL MARK THE DISK WITH THE NAVD88 PROJECT ELEVATION UNDER THE SUPERVISION OF A PROFESSIONAL SURVEYOR REGISTERED IN THE STATE OF OHIO.

BRIDGE IDENTIFICATION SIGN

THE EXISTING BRIDGE IDENTIFICATION SIGN SHALL BE CAREFULLY REMOVED PRIOR TO BEGINNING DEMOLITION WORK AND SHALL BE SALVAGED FOR REUSE. AFTER COMPLETION OF THE PROPOSED STRUCTURE, THE SIGN SHALL BE INSTALLED ON THE SIDE OF THE RIGHT REAR PARAPET WITH DRILLED CONCRETE ANCHORS. PAYMETN FOR ALL WORK REQUIRED TO COMPLETE THIS ITEM WILL BE INCLUDED IN ITEM 202, PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
M/E COMPANIES

DESIGNED CAH | DRAWN CAH | REVISED | DATE 1/06/03
CHECKED CMD | REVIEWED JBK | STRUCTURE FILE NUMBER 1403966

GENERAL NOTES
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

DESCRIPTION:
HIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). 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. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC:
PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

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.

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 BRIDGE 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 BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS:
DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. REPLACE OR REPAIR STRINGERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

EXTRANEOUS MEMBERS:
REMOVE EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTION TO THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS:
NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF ALLOWABLE UNIT STRESSES AS DEFINED IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. SUBMIT STRUCTURAL ANALYSIS COMPUTATIONS, BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE REMOVAL METHODS OR EQUIPMENT TO THE DIRECTOR AT LEAST 20 DAYS BEFORE CONSTRUCTION BEGINS.

SUBSTRUCTURE CONCRETE REMOVAL:
REMOVAL SHALL BE 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 (16 KILOGRAMS) FOR REMOVAL WITHIN 18 INCHES (450 MM) OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH (450 MM) LIMIT, HAMMERS NOT EXCEEDING 90 POUNDS (41 KILOGRAMS), MAY BE USED UPON THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ALL SURFACES TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WITHIN SHALL BE THROUGHLY CLEANED BY ABRASIVE BLASTING PRIOR TO THE CLEANING SPECIFIED BY 519.04. CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS.

CUT LINE CONSTRUCTION JOINT PREPARATION:
SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS SHALL BE LEFT 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXSITING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, THE TIME OF CONCRETE

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

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

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

SUBMITTAL REQUIREMENTS:
AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.

2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.

3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.

4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.

5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.

6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.

7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.

8 METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

JACKING SYSTEM REQUIREMENTS:
THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOWED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

JACKING OPERATION REQUIREMENTS:
AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH. THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. 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 ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". 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.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

GENERAL NOTES
BRIDGE NO. CLI-730-049 / OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

COMPUTED BY : CAH DATE : 11-23-02
CHECKED BY : MSW DATE : 1-3-03

ESTIMATED QUANTITIES

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	A.P.P.
202	11203	LUMP	SUM	PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN				LUMP	5
503	11100	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21101	68	CU YD	UNCLASSIFIED EXCAVATION, AS PER PLAN	68				4
509	10000	73,598	POUND	EPOXY COATED REINFORCING STEEL	3,973		69,625		
509	20001	100	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				100	4
510	10000	40	EACH	DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT	40				
511	45701	35	CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	35				4
512	33000	42	SQ YD	TYPE 2 WATERPROOFING	42				
513	20000	2,042	EACH	WELDED SHEAR STUD CONNECTORS			2,042		
514	00050	10,859	SQ FT	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			10,859		
514	00056	10,859	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT			10,859		
514	00060	10,859	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT			10,859		
514	00066	10,859	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, FINISH COAT			10,859		
516	11210	95	FEET	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL			95		
516	13600	20	SQ FT	1" PREFORMED EXPANSION JOINT FILLER				20	
516	44000	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), 12"x8½"x1.36" LAMINATED ELASTOMERIC PAD WITH 13"x9½"x4" LOAD PLATE	5				
516	44000	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), 18"x10½"x1.95" LAMINATED ELASTOMERIC PAD WITH 24"x11½"x2¼" LOAD PLATE		5			
516	44000	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), 18"x11½"x1.77" LAMINATED ELASTOMERIC PAD WITH 19"x12½"x2¾" LOAD PLATE		5			
516	44100	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), 12"x8½"x2.30" LAMINATED ELASTOMERIC PAD WITH 13"x9½"x2⅜" LOAD PLATE	5				
516	47001	LUMP	SUM	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	5
517	73200	7	FEET	RAILING (DEFLECTOR PARAPET TYPE)	7				
518	21200	66	CU YD	POROUS BACKFILL WITH FILTER FABRIC	66				
518	40000	126	FEET	6" PERFORATED CORRUGATED PLASTIC PIPE	126				
518	40010	20	FEET	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	20				
526	25001	189	SQ YD	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN				189	4
601	20000	733	SQ YD	CRUSHED AGGREGATE SLOPE PROTECTION	733				
846	73000	64	SQ YD	TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN			42	22	
864	10100	585	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	149		386	50	
898	11100	238.5	CU YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE			238.5		

NOTE:

ALL REFERENCES TO ITEM 511 - CLASS S CONCRETE, SUPERSTRUCTURE SHALL BE CHANGED TO ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

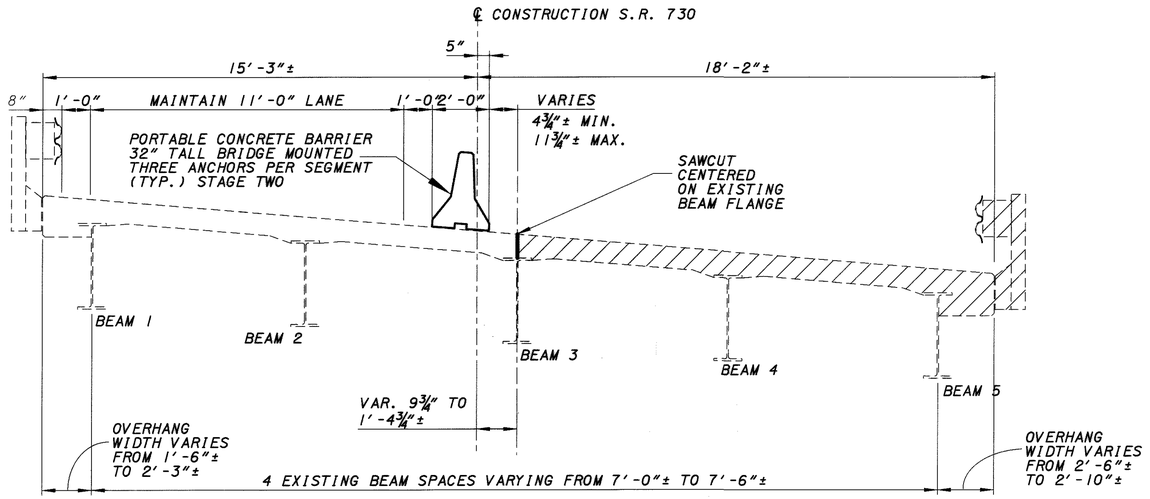
DESIGNED CAH | DRAWN CAH | REVIEWED JBK | DATE 1/06/03
CHECKED CMD | REVISED | STRUCTURE FILE NUMBER 1403966

GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

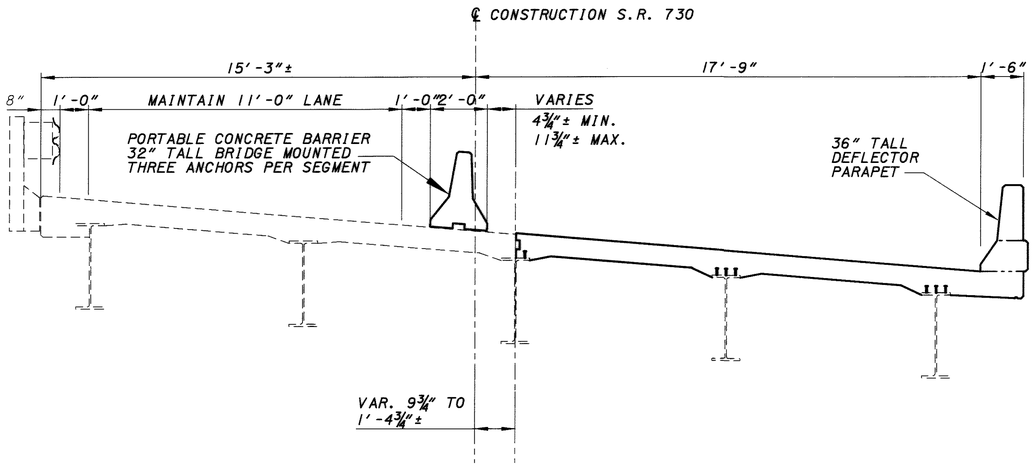
PHASE 1

JACK EXISTING SUPERSTRUCTURE & REPLACE EXISTING BEARINGS WITH ELASTOMERIC BEARINGS & LOAD PLATES. PLACE TEMPORARY PAVEMENT AT EACH END OF BRIDGE TO ACCOMODATE PROFILE ADJUSTMENT. TEMPORARY PAVEMENT SHALL BE PAYED FOR UNDER ITEM 614 - MAINTAINING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION.



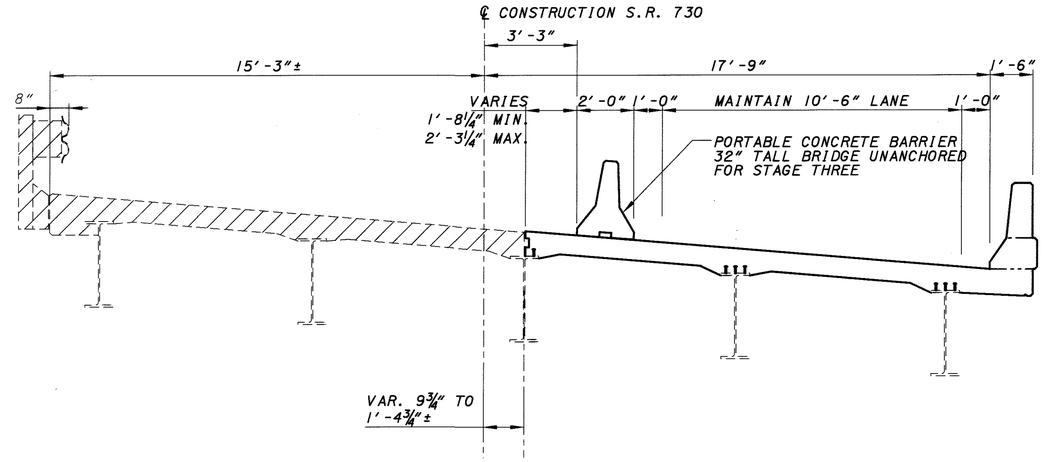
PHASE 2A - DEMOLITION

- ESTABLISH TWO-WAY/ ONE-LANE TRAFFIC PATTERN ALONG WEST SIDE OF BRIDGE.
- REMOVE RAILING AND PORTION OF EXISTING DECK SLAB ALONG EAST SIDE OF BRIDGE.
- PERFORM PARTIAL DEMOLITION OF THE ABUTMENTS.



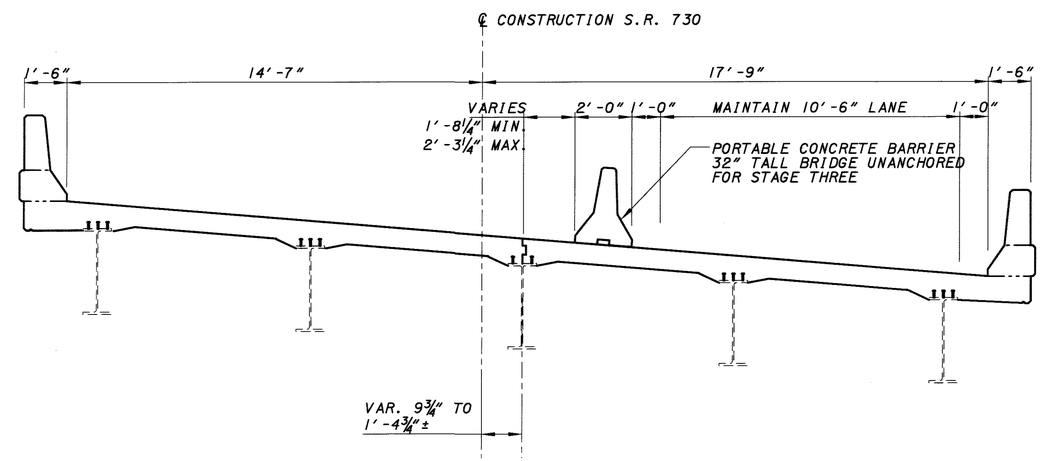
PHASE 2B - CONSTRUCTION

- CONSTRUCT PORTION OF NEW DECK SLAB ALONG EAST SIDE OF BRIDGE.
- PERFORM PARTIAL CONSTRUCTION OF ABUTMENTS.



PHASE 3A - DEMOLITION

- ONCE SLAB HAS PROPERLY CURED, SHIFT AND ESTABLISH TWO WAY-ONE LANE TRAFFIC ON NEW PORTION OF DECK SLAB.
- REMOVE REMAINDER OF EXISTING RAILING, DECK SLAB AND ABUTMENTS.



PHASE 3B - CONSTRUCTION

- CONSTRUCT REMAINING PORTION OF NEW DECK SLAB AND ABUTMENTS
- ONCE SLAB HAS PROPERLY CURED, SEAL DECK JOINT WITH HMWM RESIN.
- OPEN BRIDGE TO NORMAL TRAFFIC PATTERN.

LEGEND

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED.

NOTES:

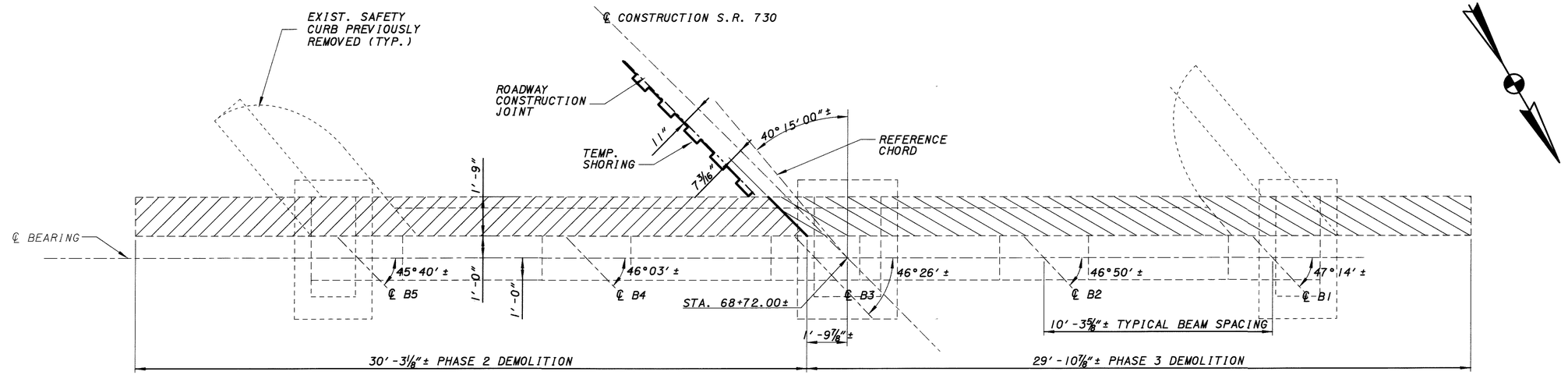
1. SAW CUTTING SHALL BE INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN FOR PAYMENT.
2. PORTABLE CONCRETE BARRIER SHALL BE INCLUDED WITH ITEM 614- MAINTAINING TRAFFIC, MISC.: PLANNING AND IMPLEMENTATION FOR PAYMENT. REFERENCE STD. DWG. PCB-91.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

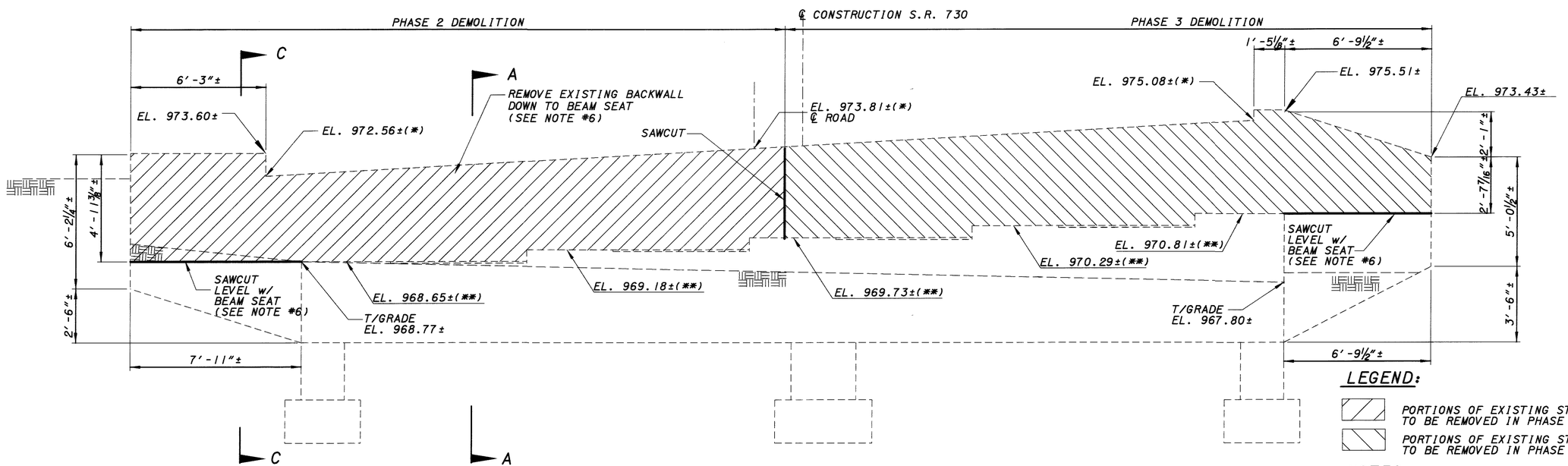
DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

PHASE CONSTRUCTION DETAILS
BRIDGE NO. CLI-730-049 I
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53



ABUTMENT PLAN



ABUTMENT ELEVATION

LEGEND

* - ELEVATION GIVEN TO FACE OF BACKWALL
** - ELEVATION GIVEN TO ℄ OF BEARING AT BEAM SEAT

LEGEND:

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED IN PHASE 2.

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED IN PHASE 3.

NOTES:

1. SEE SHEETS 4 & 5 OF 29 FOR GENERAL NOTES.
2. SEE SHEET 6 OF 29 FOR ESTIMATED QUANTITIES.
3. CONTRACTOR SHALL VERIFY EXISTING STRUCTURE ELEVATIONS AND SHALL ALERT THE ENGINEER OF ANY CONFLICTS WITH PROPOSED WORK.
4. SAWCUT AND REMOVE PORTIONS OF EXISTING ABUTMENT TO THE LIMTS SHOWN. SAW CUTTING SHALL BE INCLUDED WITH CONCRETE REMOVAL FOR PAYMENT.
5. SEE SHEETS 12 & 13 OF 29 FOR ABUTMENT SECTIONS.
6. SALVAGE EXISTING VERTICAL REBAR FOR WINGWALLS AND BACKWALLS (TYPICAL)

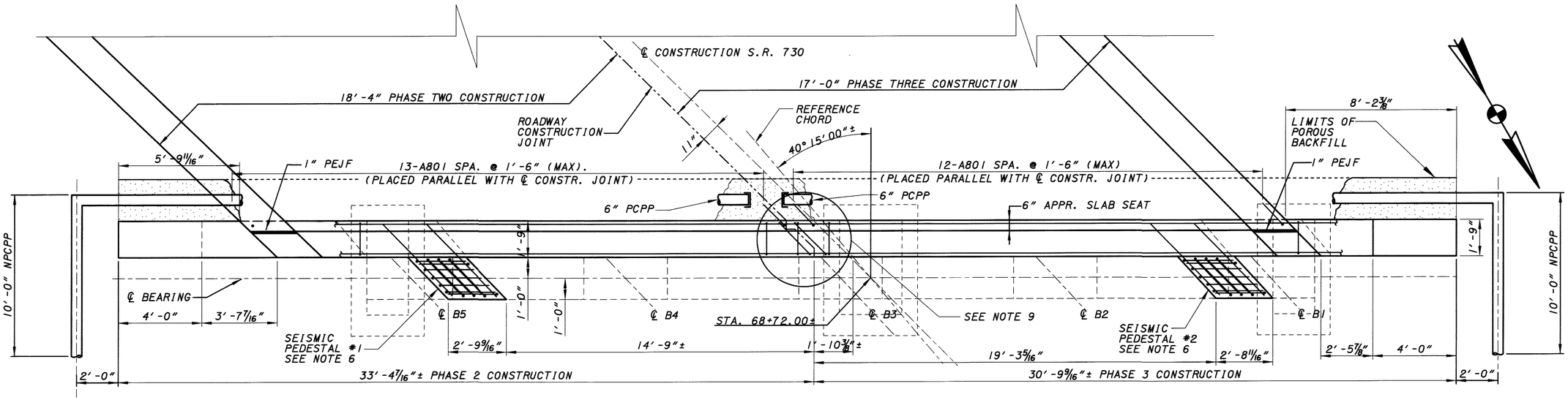
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

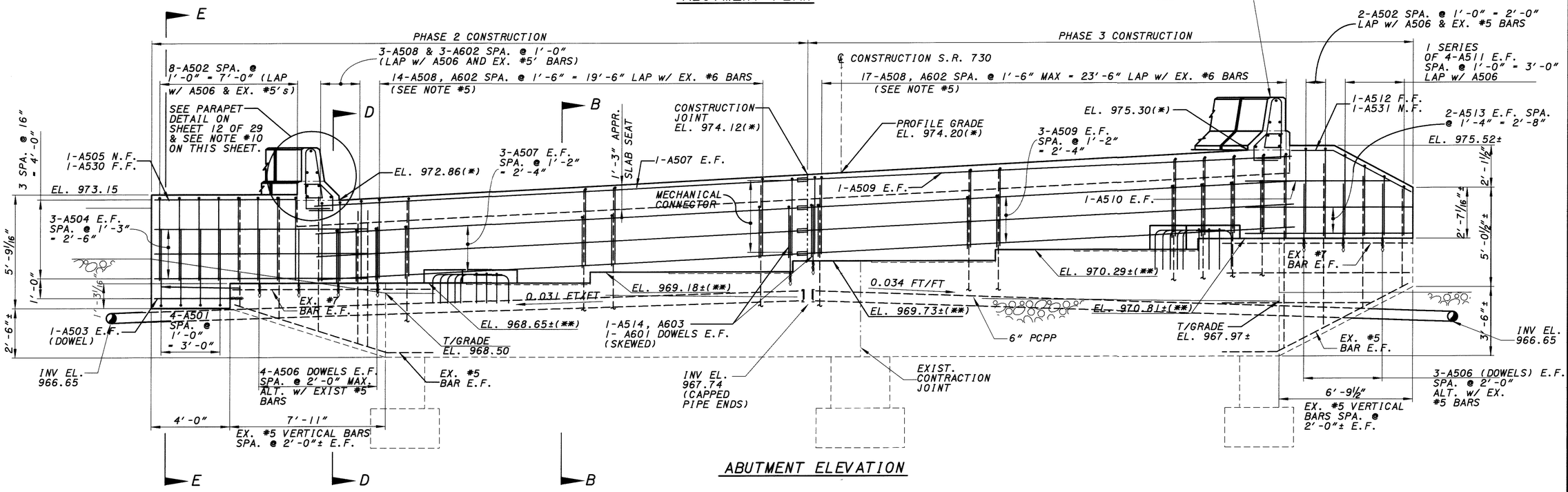
REAR ABUTMENT DEMOLITION PLAN

BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53



ABUTMENT PLAN



ABUTMENT ELEVATION

LEGEND

* - ELEVATION GIVEN TO FACE OF BACKWALL
** - ELEVATION GIVEN TO ℄ OF BEARING AT BEAM SEAT
PCPP - PERFORATED CORRUGATED PLASTIC PIPE (707.33 TYPE SP)
NPCPP - NON-PERFORATED CORRUGATED PLASTIC PIPE (707.33 TYPE S)

REBAR LAP LENGTHS
#5 BAR - 30"
#6 BAR - 35"

NOTES:

1. SEAL ENTIRE EXPOSED SURFACE AREA OF EXISTING ABUTMENTS WITH EPOXY-URETHANE.
2. PROVIDE ROUGHENED CONSTRUCTION JOINT AT EXISTING BEAM SEAT TO ACCEPT NEW CONCRETE BACKWALL. INCLUDE WITH PORTIONS OF STRUCTURES REMOVED FOR PAYMENT
3. PROVIDE CRUSHED AGGREGATE SLOPE PROTECTION AT FACE OF ABUTMENT. (SEE SITE PLAN)
4. SEE SHEETS 4 THRU 6 OF 29 FOR GENERAL NOTES AND ESTIMATED QUANTITIES.
5. EXISTING VERTICAL REINFORCEMENT THAT IS FOUND TO BE IN GOOD CONDITION ONCE DEMOLITION IS COMPLETE, SHALL BE REUSED. WHERE EXISTING REINFORCEMENT CAN NOT BE REUSED OR WHERE A REQUIRED LAP CAN NOT BE ACHIEVED, DOWELS SHALL BE SET INTO THE EXISTING CONCRETE USING NON-SHRINK, NON-METALLIC GROUT. SEE DETAIL 'B' ON SHEET 12 OF 29.
6. SEE SHEETS 12 & 13 OF 29 FOR ABUTMENT SECTIONS AND SEISMIC PEDESTAL DETAILS.
7. NEW REINFORCING STEEL MAY REQUIRE FIELD CUTTING OR BENDING TO BE PROPERLY FITTED.
8. SEE SHEET 28 OF 29 FOR REINFORCING STEEL LIST.
9. SEE SHEET 13 OF 29 FOR CONSTRUCTION JOINT DETAIL.
10. PARAPETS ON TOP OF ABUTMENT BACKWALLS SHALL BE PAYED FOR UNDER ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE) TYPICAL.

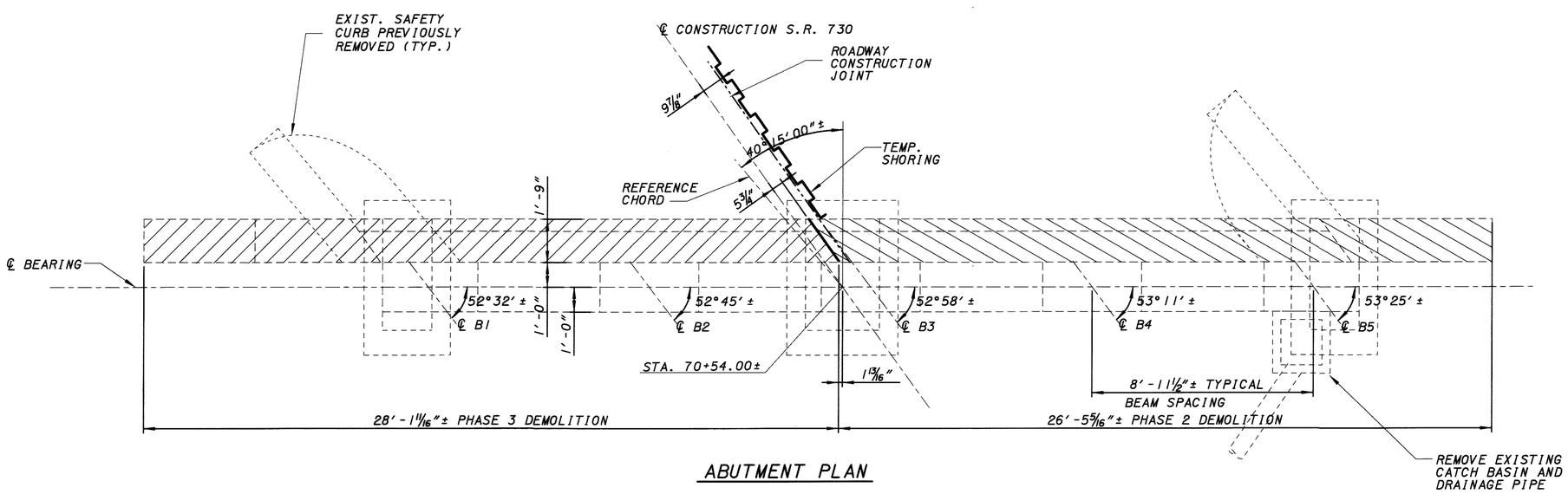
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

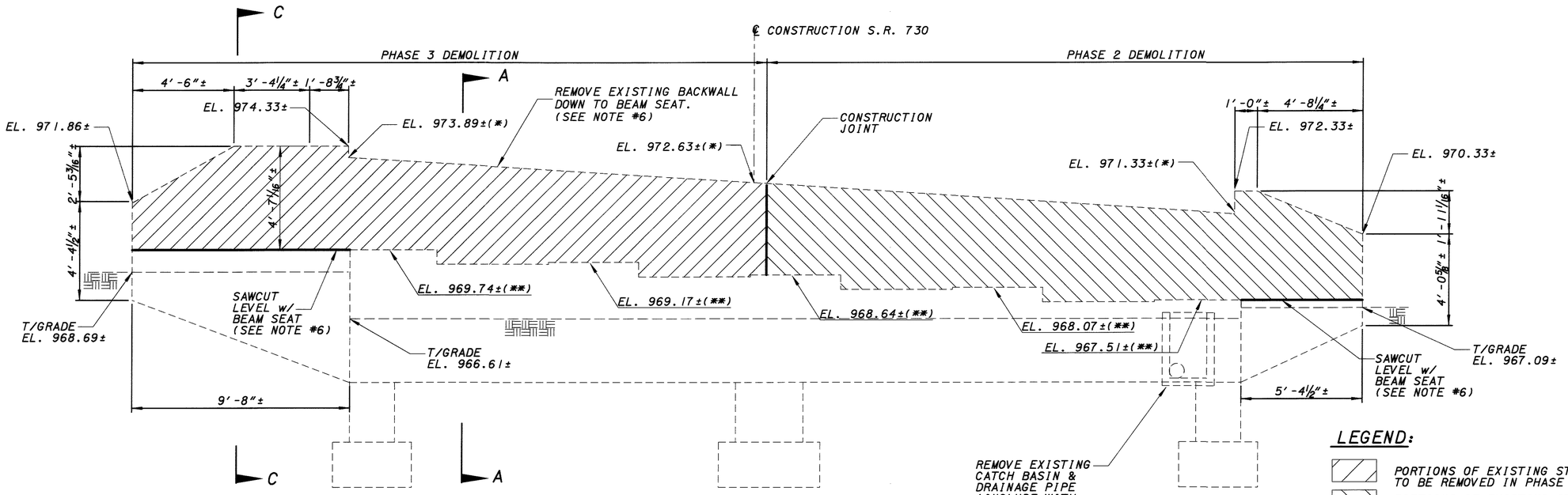
REAR ABUTMENT REHABILITATION PLAN

BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53



ABUTMENT PLAN



ABUTMENT ELEVATION

LEGEND

* - ELEVATION GIVEN TO FACE OF BACKWALL
** - ELEVATION GIVEN TO ℄ OF BEARING AT BEAM SEAT

LEGEND:

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED IN PHASE 3.

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED IN PHASE 2.

NOTES:

1. SEE SHEETS 4 & 5 OF 29 FOR GENERAL NOTES.
2. SEE SHEET 6 OF 29 FOR ESTIMATED QUANTITIES.
3. CONTRACTOR SHALL VERIFY EXISTING STRUCTURE ELEVATIONS AND SHALL ALERT THE ENGINEER OF ANY CONFLICTS WITH PROPOSED WORK.
4. SAWCUT AND REMOVE PORTIONS OF EXISTING ABUTMENT TO THE LIMITS SHOWN. SAW CUTTING SHALL BE INCLUDED WITH CONCRETE REMOVAL FOR PAYMENT.
5. SEE SHEETS 12 & 13 OF 29 FOR ABUTMENT SECTIONS.
6. SALVAGE EXISTING VERTICAL REBAR FOR WINGWALLS AND BACKWALLS (TYPICAL)

DESIGN AGENCY
ME COMPANIES
23 TRIANGLE PARK DRIVE SUITE 2300 CINCINNATI, OH 45246

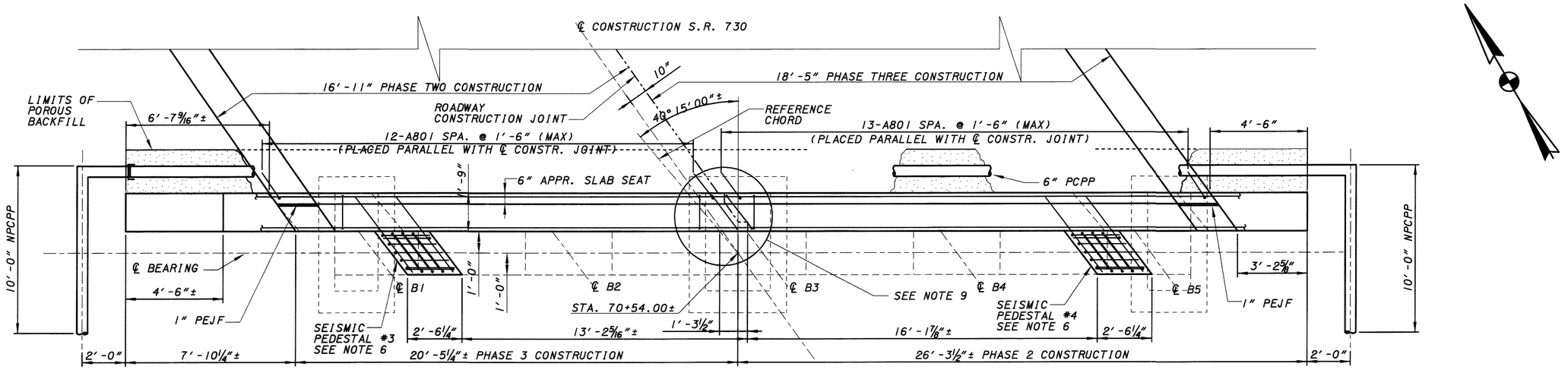
DESIGNED CAH | DRAWN CAH | REVIEWED JBK | DATE 1/06/03
CHECKED CMD | REVISED | STRUCTURE FILE NUMBER 1403966

FORWARD ABUTMENT DEMOLITION PLAN

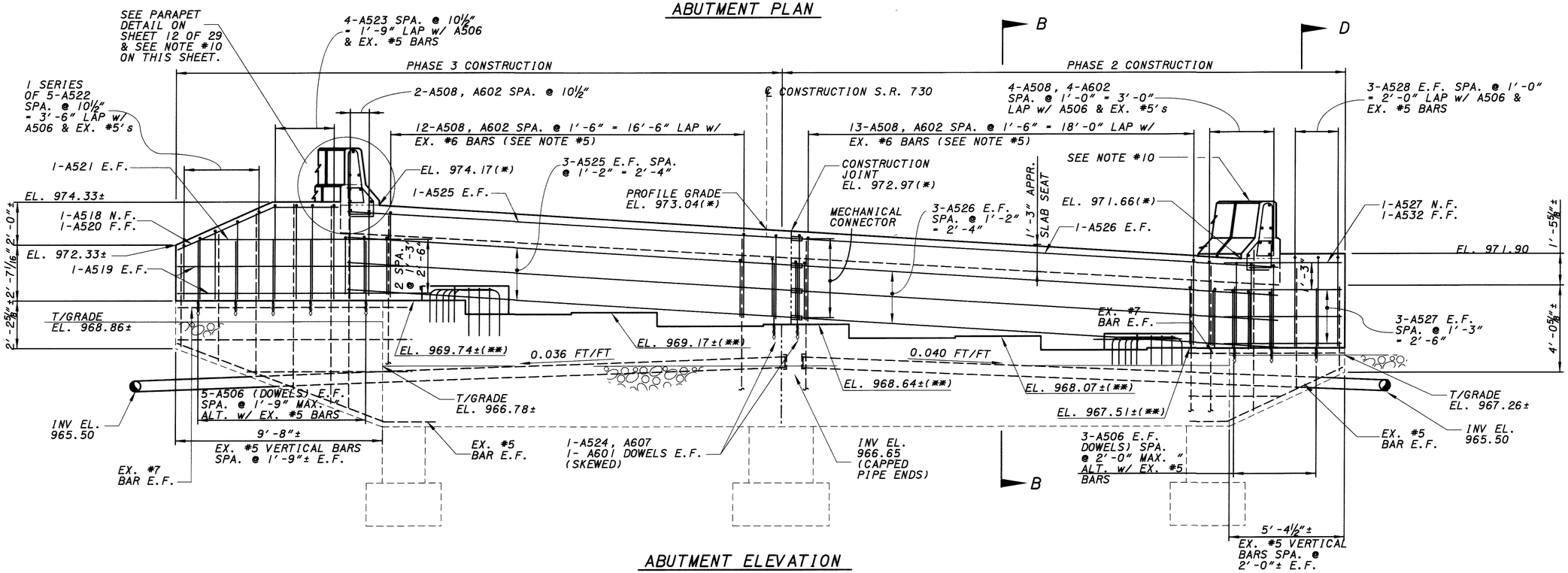
BRIDGE NO. CLI-730-049 / OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

08:22:06 AM
04/09/2003
u:\02-252\2803\Dgn\Structure\CLI-730-049\CLI730abut4.dgn



ABUTMENT PLAN



ABUTMENT ELEVATION

REBAR LAP LENGTHS

#5 BAR - 30″
#6 BAR - 35″

LEGEND

* - ELEVATION GIVEN TO FACE OF BACKWALL
** - ELEVATION GIVEN TO ℄ OF BEARING AT BEAM SEAT

NOTES:

1. SEAL ENTIRE EXPOSED SURFACE AREA OF EXISTING ABUTMENTS WITH EPOXY-URETHANE.
2. PROVIDE ROUGHENED CONSTRUCTION JOINT AT EXISTING BEAM SEAT TO ACCEPT NEW CONCRETE BACKWALL. INCLUDE WITH PORTIONS OF STRUCTURES REMOVED FOR PAYMENT
3. PROVIDE CRUSHED AGGREGATE SLOPE PROTECTION AT FACE OF ABUTMENT. (SEE SITE PLAN)
4. SEE SHEETS 4 THRU 6 OF 29 FOR GENERAL NOTES AND ESTIMATED QUANTITIES.
5. EXISTING VERTICAL REINFORCEMENT THAT IS FOUND TO BE IN GOOD CONDITION ONCE DEMOLITION IS COMPLETE, SHALL BE REUSED. WHERE EXISTING REINFORCEMENT CAN NOT BE REUSED OR WHERE A REQUIRED LAP CAN NOT BE ACHIEVED, DOWELS SHALL BE SET INTO THE EXISTING CONCRETE USING NON-SHRINK, NON-METALLIC GROUT. SEE DETAIL 'B' ON SHEET 12 OF 29.
6. SEE SHEETS 12 & 13 OF 29 FOR ABUTMENT SECTIONS AND SEISMIC PEDESTAL DETAILS.
7. NEW REINFORCING STEEL MAY REQUIRE FIELD CUTTING OR BENDING TO BE PROPERLY FITTED.
8. SEE SHEET 28 OF 29 FOR REINFORCING STEEL LIST.
9. SEE SHEET 13 OF 29 FOR CONSTRUCTION JOINT DETAIL.
10. PARAPETS ON TOP OF ABUTMENT BACKWALLS SHALL BE PAYED FOR UNDER ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE) TYPICAL.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

DESIGNED CAH | DRAWN CAH | REVIEWED JBK | DATE 1/06/03
CHECKED CMD | REVISED | STRUCTURE FILE NUMBER 1403966

FORWARD ABUTMENT REHABILITATION PLAN

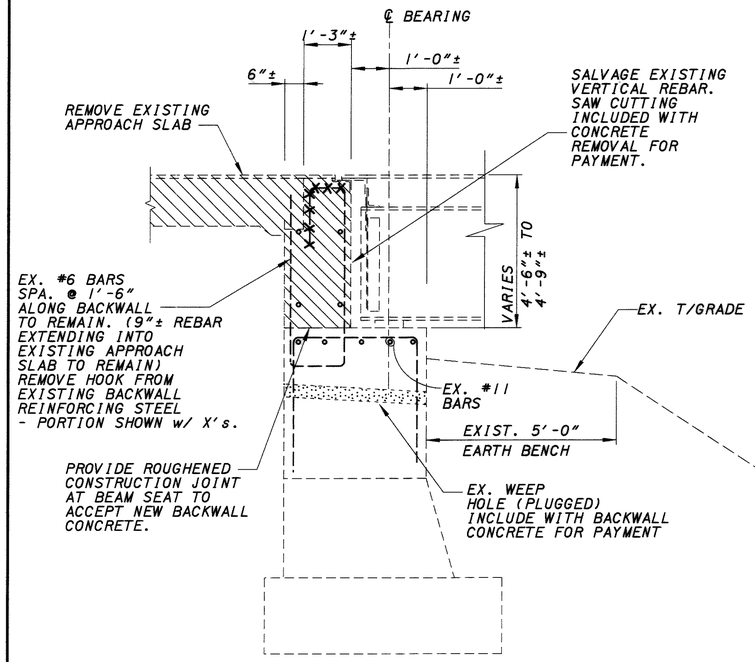
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

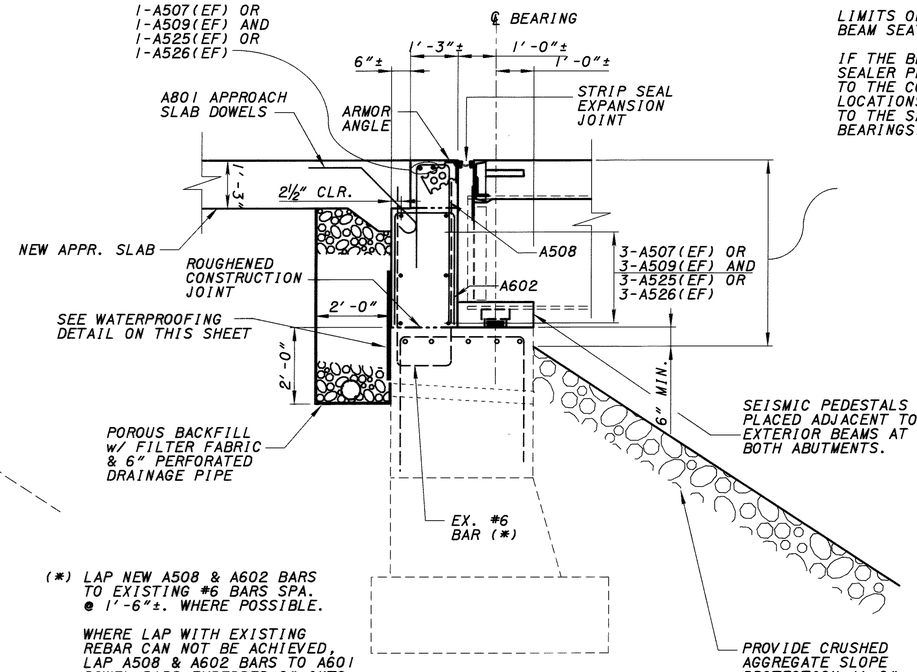
11/29

37/55

08:22:21 AM
04/09/2003
u:\02-252\2803\Dgn\Structure\CLI-730-049\NCLI730abut5.dgn



SECTION A
ABUTMENT DEMOLITION



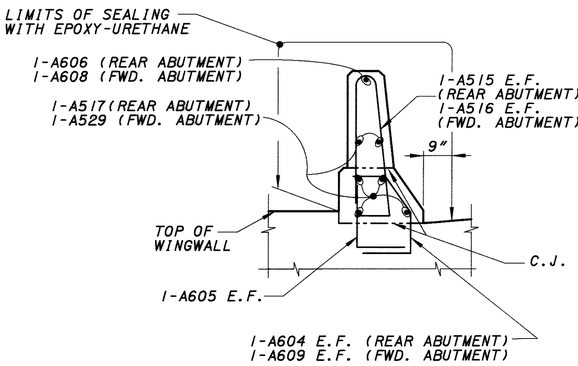
(*) LAP NEW A508 & A602 BARS TO EXISTING #6 BARS SPA. @ 1'-6"±. WHERE POSSIBLE.

WHERE LAP WITH EXISTING REBAR CAN NOT BE ACHIEVED, LAP A508 & A602 BARS TO A801 DOWEL BARS EMBEDDED 6" INTO EXISTING CONCRETE BEAM SEAT. (SEE DETAIL 'B')

SECTION B
ABUTMENT REHABILITATION

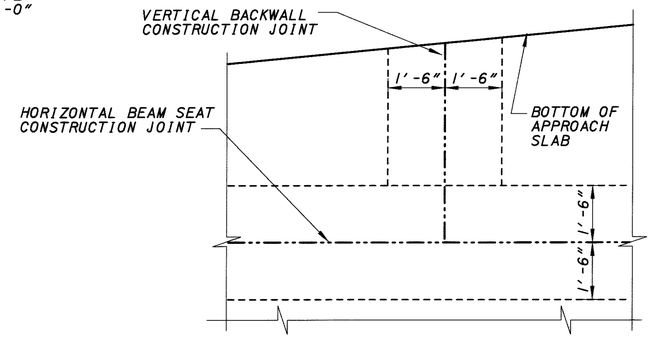
LIMITS OF SEALING WITH EPOXY-URETHANE FOR BACKWALL, BEAM SEAT, BREAST WALL AND WINGWALLS

IF THE BEAMS SEATS ARE SEALED WITH AN EPOXY OR NON-EPOXY SEALER PRIOR TO SETTING THE BEARINGS, DO NOT APPLY SEALER TO THE CONCRETE SURFACES UNDER THE PROPOSED BEARING LOCATIONS. IF THESE LOCATIONS ARE SEALED, REMOVE THE SEALER TO THE SATISFACTION OF THE ENGINEER PRIOR TO SETTING THE BEARINGS. THE DEPARTMENT WILL NOT PAY FOR THIS REMOVAL.



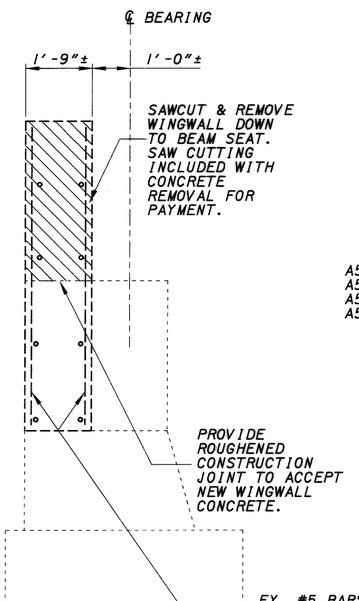
DETAIL A
ABUTMENT PARAPET DETAIL

FOR ADDITIONAL DETAILS SEE PARAPET DETAILS ON SHEET 26 OF 29

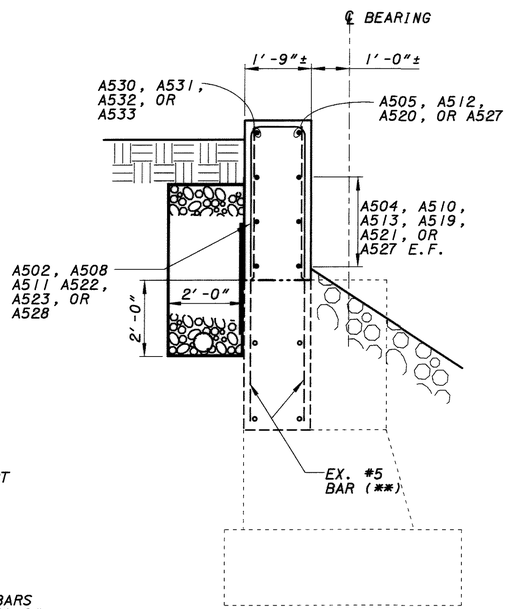


ABUTMENT BACKWALL WATER PROOFING DETAIL

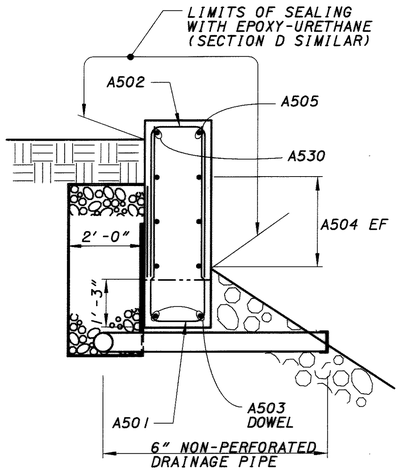
(VIEW OF BACK OF ABUTMENT BACKWALL) SEAL ABUTMENT CONSTRUCTION JOINTS AS SHOWN WITH TYPE 2 WATERPROOFING. EXTEND WATERPROOFING TO ENDS OF WINGWALLS.



SECTION C
WINGWALL DEMOLITION



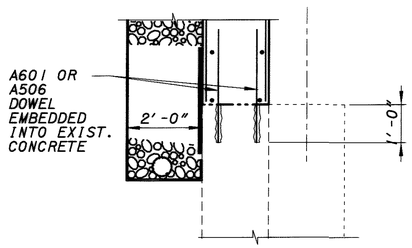
SECTION D
WINGWALL REHABILITATION



SECTION E
WINGWALL EXTENSION

(**) LAP NEW #5 BARS (⌐¬) TO EXISTING #5 VERTICAL BARS WHERE POSSIBLE TO ACHIEVE A 1'-0" MAX. BAR SPACING

WHERE LAP WITH EXISTING REBAR CAN NOT BE ACHIEVED, LAP NEW #5 (⌐¬) BARS TO A506 DOWEL BARS EMBEDDED 6" INTO EXISTING WINGWALL CONCRETE. (SEE DETAIL 'B')



DETAIL B
REBAR DOWEL DETAIL

REBAR LAPS
#5 BAR - 30"
#6 BAR - 35"

LEGEND:

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED

NOTES:

1. SEAL ENTIRE EXPOSED SURFACE AREA OF ABUTMENTS AND WINGWALLS WITH EPOXY-URETHANE.
2. PLACE BACKFILL BEHIND BACKWALL IN SIX INCH LIFTS AND COMPACT PER CMS 203.
3. BACKWALL CONCRETE: IN ADDITION TO 511.10, DO NOT PLACE BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
4. SEE SHEETS 4 THRU 6 OF 29 FOR GENERAL NOTES & ESTIMATED QUANTITIES.
5. PROVIDE ROUGHENED SURFACE AT EXISTING BEAM SEAT TO ACCEPT NEW CONCRETE BACKWALL.
6. FOR APPROACH SLAB DETAILS, SEE SHEET 25 OF 29
7. SEE SHEET 28 OF 29 FOR REINFORCING STEEL TABLE.
8. PLUG WEEPHOLES AND PLACE POROUS BACKFILL POROUS BACKFILL WITH FILTER FABRIC, 2'-0" THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO ONE FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS. TURN FILTER FABRIC UP 6" ALONG BACKSIDE OF ABUTMENT.

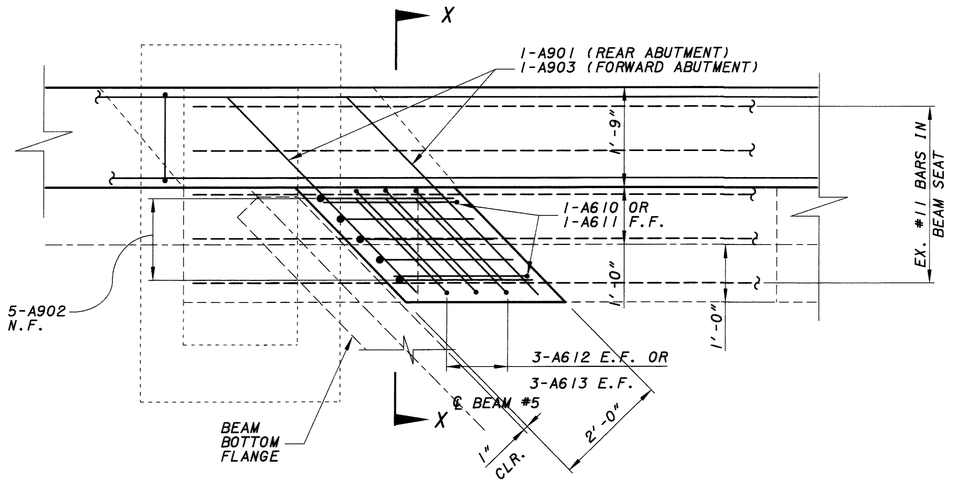
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

ABUTMENT DETAILS
BRIDGE NO. CLI-730-049 I
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

08:22:46 AM
04/09/2003
u:\02-252\2803\dgn\Structure\CLI-730-049I\CLI730abut3.dgn

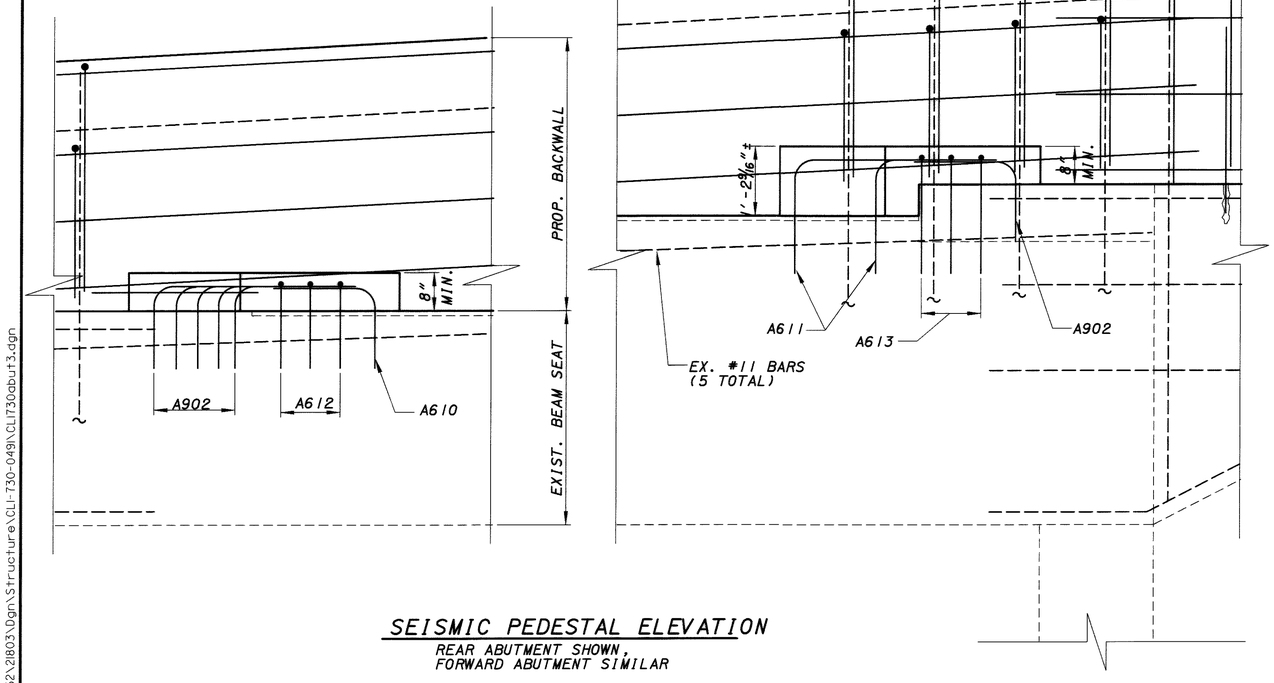


SEISMIC PEDESTAL DETAIL

(PLAN VIEW OF REAR ABUTMENT BEAM SEAT & ABUTMENT BACKWALL SHOWN. OTHER SEISMIC PEDESTALS SIMILAR)

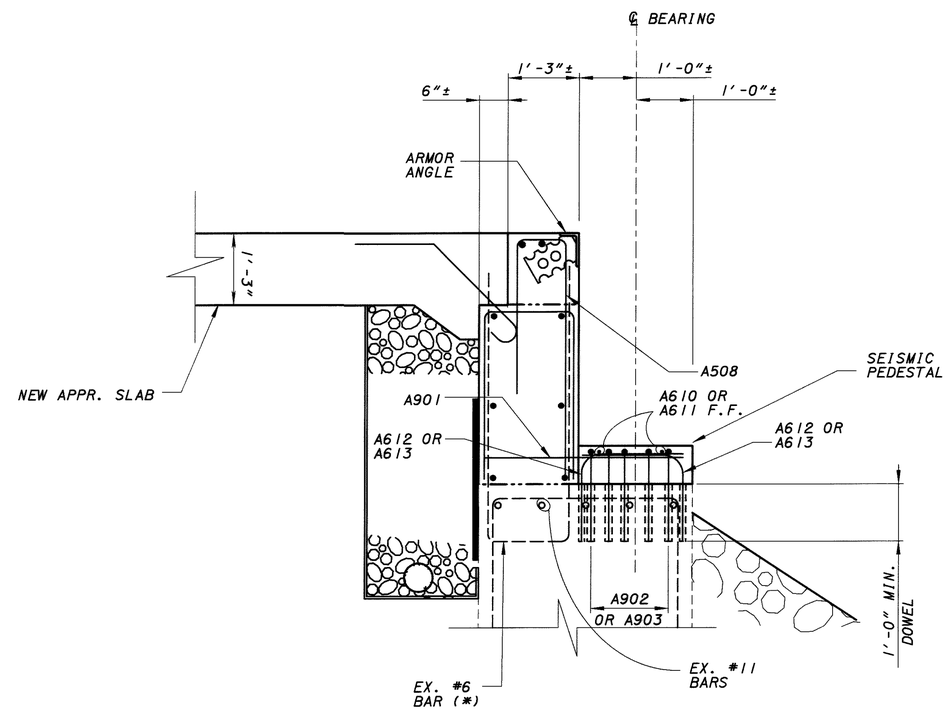
SEAL ALL EXPOSED SURFACES OF PEDESTALS WITH EPOXY-URETHANE SEALER. CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING REINFORCEMENT PRIOR TO DRILLING DOWELS. THE CONTRACTOR MAY ADJUST THE LOCATION OF THE DOWEL HOLES TO ENSURE THAT THE EXISTING REINFORCEMENT IS NOT DAMAGED. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER BEFORE MAKING ANY ADJUSTMENTS TO THE DETAILS SHOWN.

CONTRACTOR SHALL FIELD CUT REBAR AS REQUIRED TO ACCOMMODATE ABUTMENT BEAM SEAT STEPS SO AS TO MAINTAIN 1'-0" DOWEL EMBEDMENT.



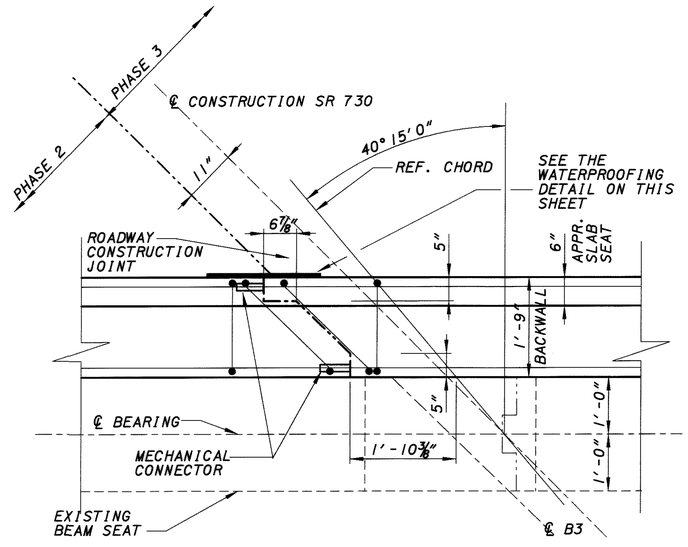
SEISMIC PEDESTAL ELEVATION

REAR ABUTMENT SHOWN,
FORWARD ABUTMENT SIMILAR



SECTION X

SEISMIC PEDESTAL AT ABUTMENT BEAM SEAT



ABUTMENT BACKWALL CONSTRUCTION JOINT DETAIL

REAR ABUTMENT SHOWN, FORWARD ABUTMENT SIMILAR
MAKE EACH RESPECTIVE BACKWALL CONSTRUCTION JOINT SKEWED SO THAT IT IS PARALLEL WITH BEAM #3 AT EACH END OF THE BRIDGE.

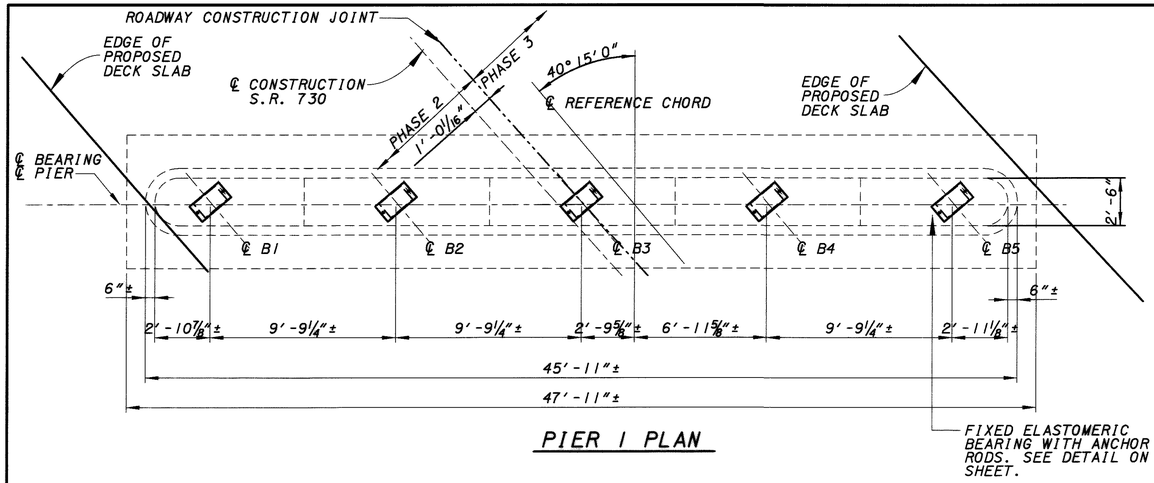
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

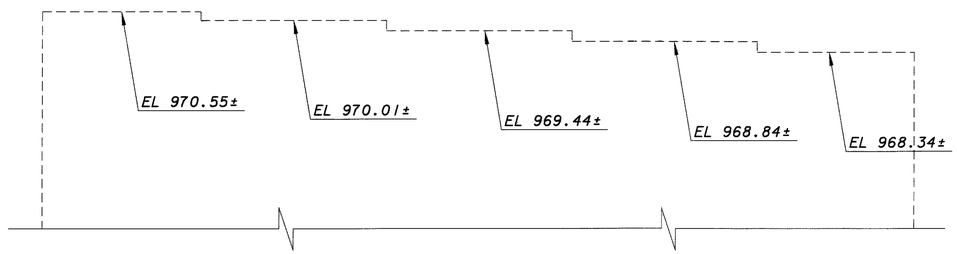
ABUTMENT DETAILS

BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

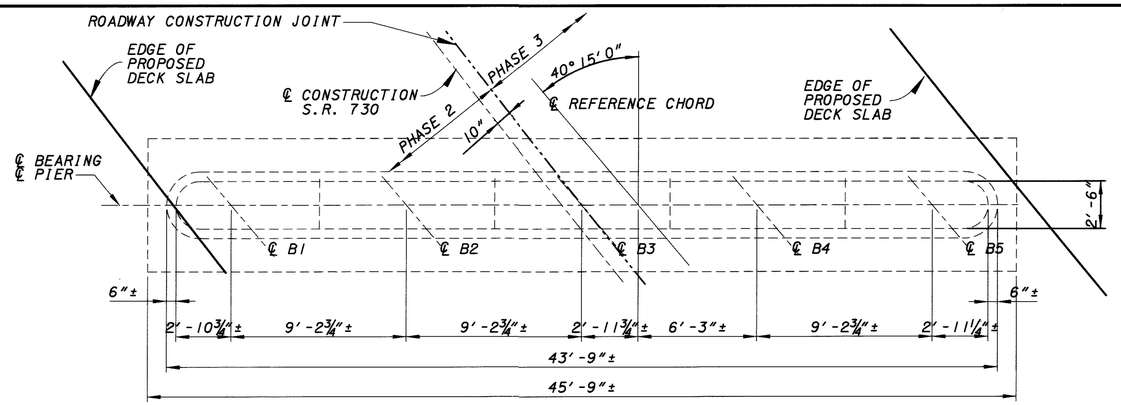


PIER 1 PLAN

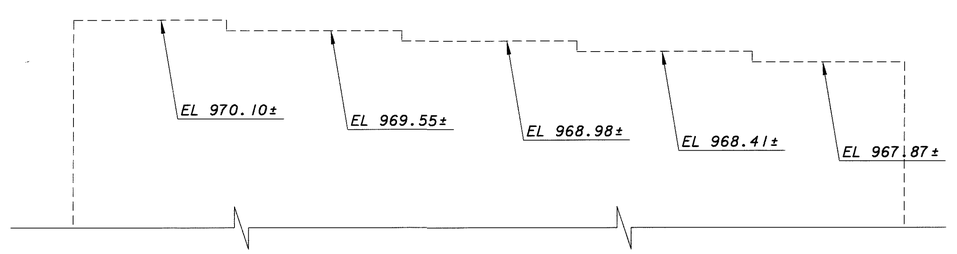


PIER 1 PARTIAL ELEVATION

SOUTH PIER - FIXED

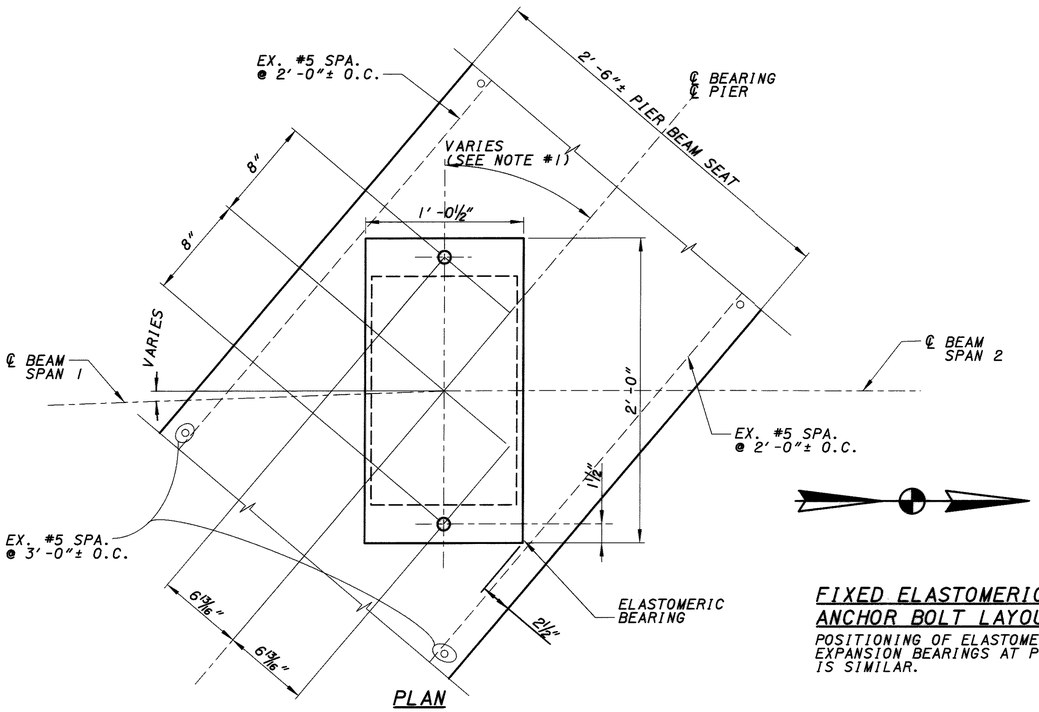


PIER 2 PLAN



PIER 2 PARTIAL ELEVATION

NORTH PIER - EXPANSION



PLAN

FIXED ELASTOMERIC BEARING ANCHOR BOLT LAYOUT

POSITIONING OF ELASTOMERIC EXPANSION BEARINGS AT PIER #2 IS SIMILAR.

NOTE:

1. REFERENCE FRAMING PLANS ON SHEETS 15 & 16 OF 29 FOR SKEW ANGLE TO BE USED FOR BEARING PLACEMENT. BEARINGS SHALL BE PLACED SUCH THAT THE CENTERLINE OF BEAM/ CENTERLINE OF BEARING PAD IS AS CLOSE AS POSSIBLE TO BEING PARALLEL WITH REFERENCE CHORD.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

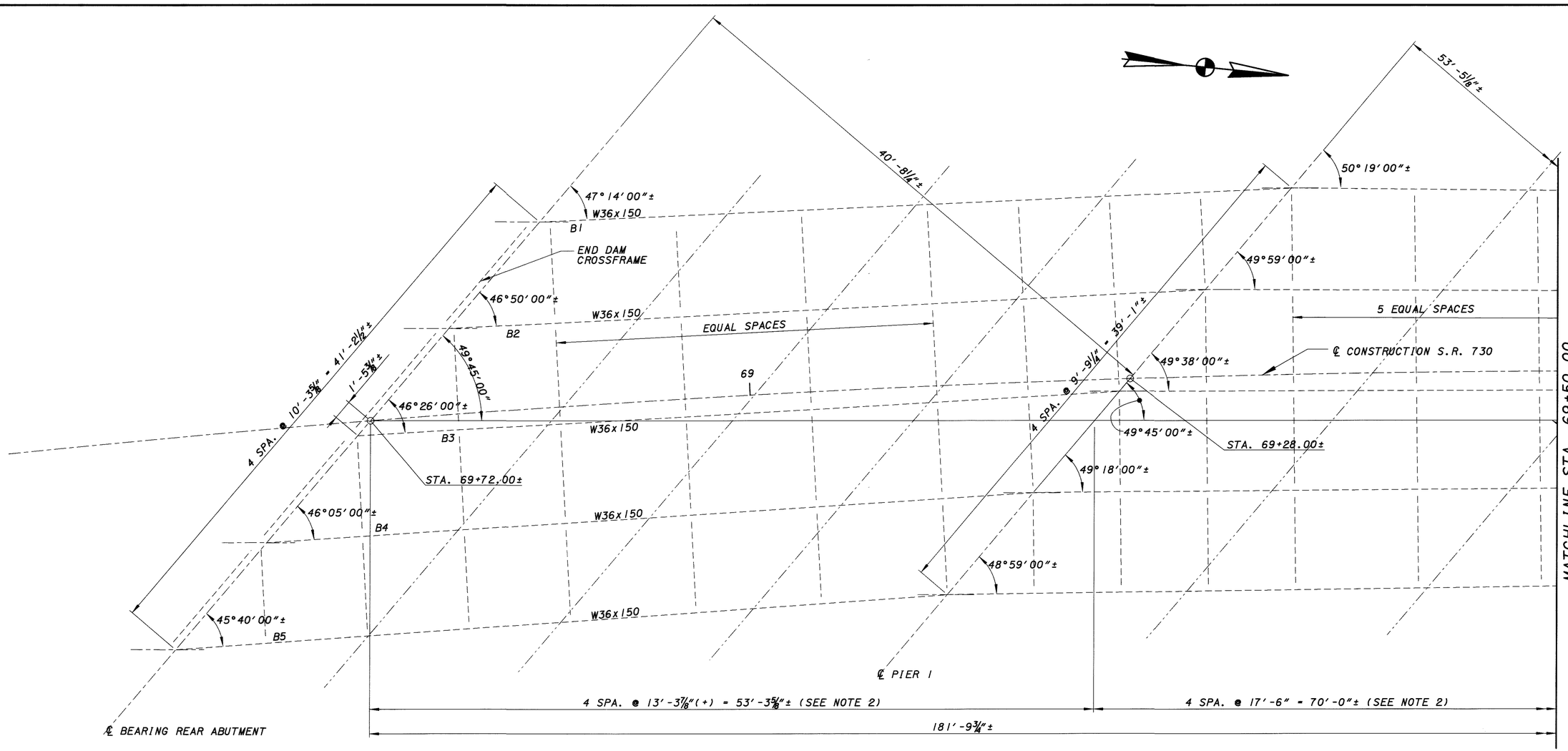
PIER DETAILS

BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

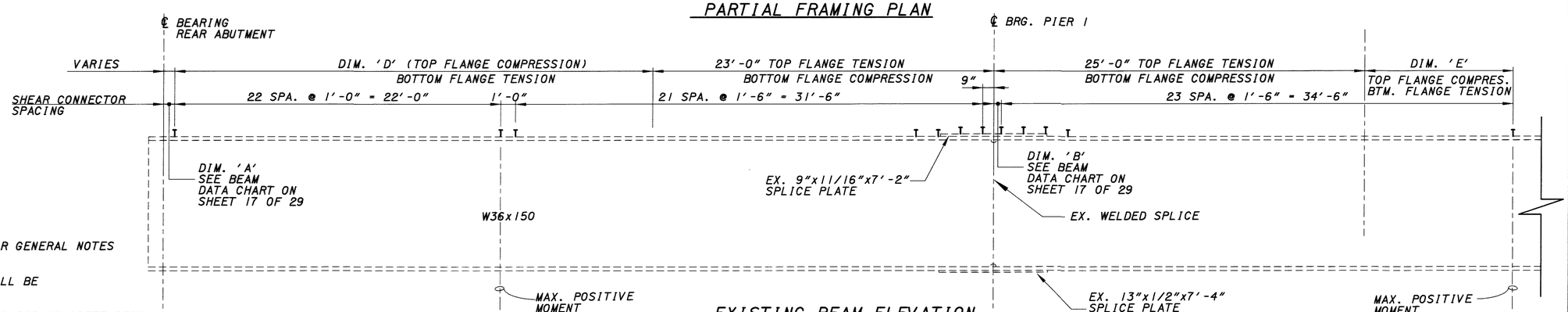
CLI-730-4.91
WAR-132-5.53

14/29

40/55



PARTIAL FRAMING PLAN



EXISTING BEAM ELEVATION

(BEAMS 1,2,4 & 5)

NOTES:

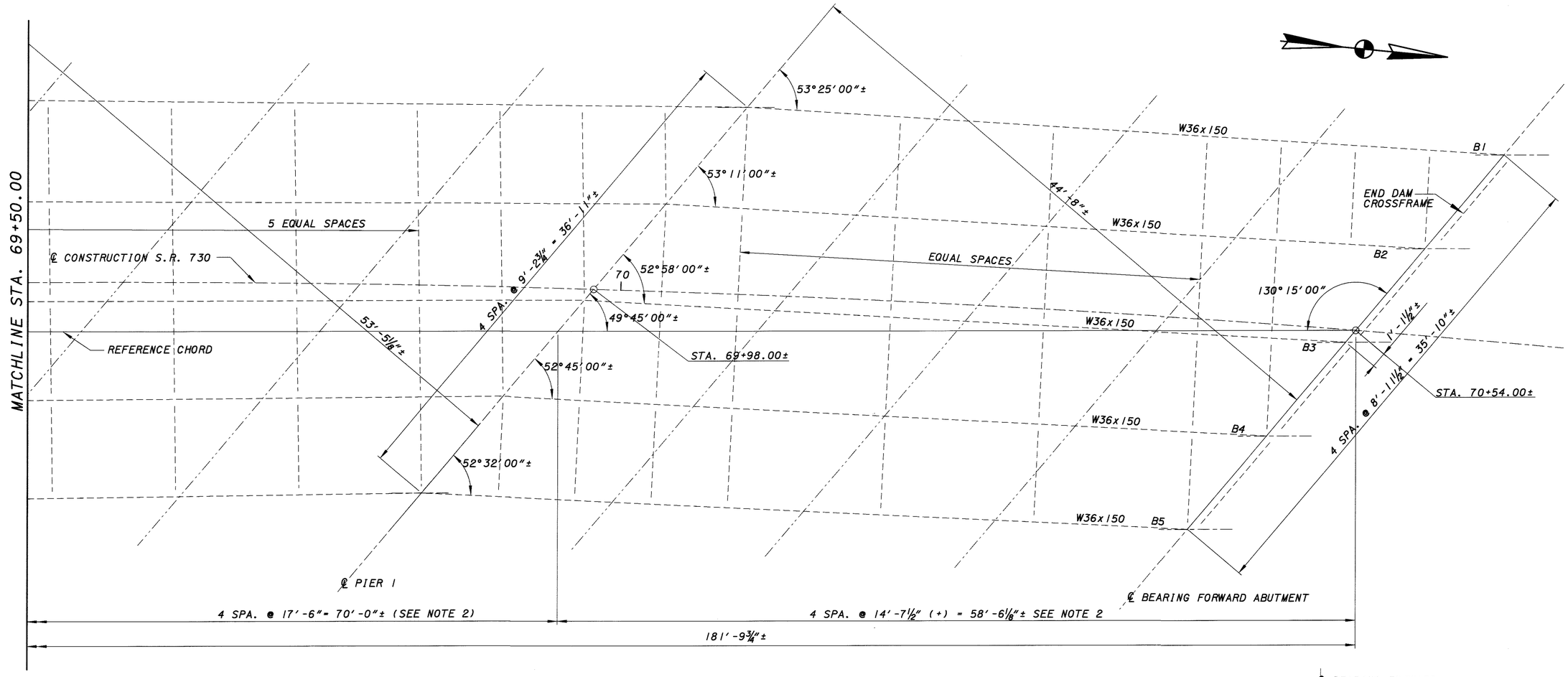
1. SEE SHEETS 4 THRU 6 OF 29 FOR GENERAL NOTES AND ESTIMATED QUANTITIES.
2. ALL STRUCTURE DIMENSIONS SHALL BE FIELD VERIFIED.
3. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FACIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN 1/4" FOR THICKNESSES UP TO 3/4" AND 5/16" FOR GREATER THAN 3/4" THICK.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

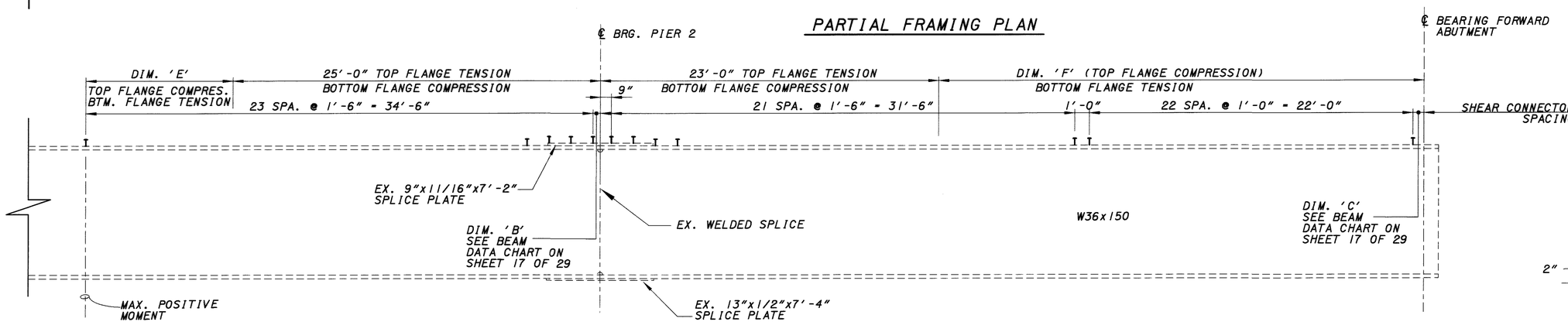
DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

FRAMING PLAN - 1
BRIDGE NO. CLI-730-049 I
OVER COWAN CREEK

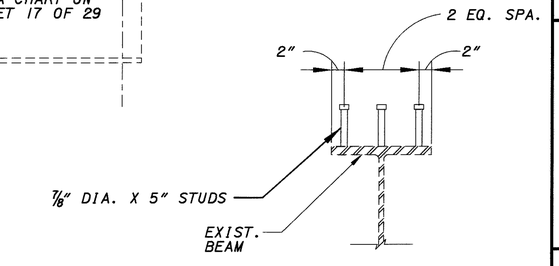
CLI-730-4.91
WAR-132-5.53



PARTIAL FRAMING PLAN



EXISTING BEAM ELEVATION
(BEAMS 1,2,4 & 5)



SHEAR CONNECTOR DETAIL
(BEAMS 1,2,4 & 5)

NOTES:

1. ALL STRUCTURE DIMENSIONS SHALL BE FIELD VERIFIED.
2. SEE SHEETS 15 OF 29 FOR ADDITIONAL NOTES.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

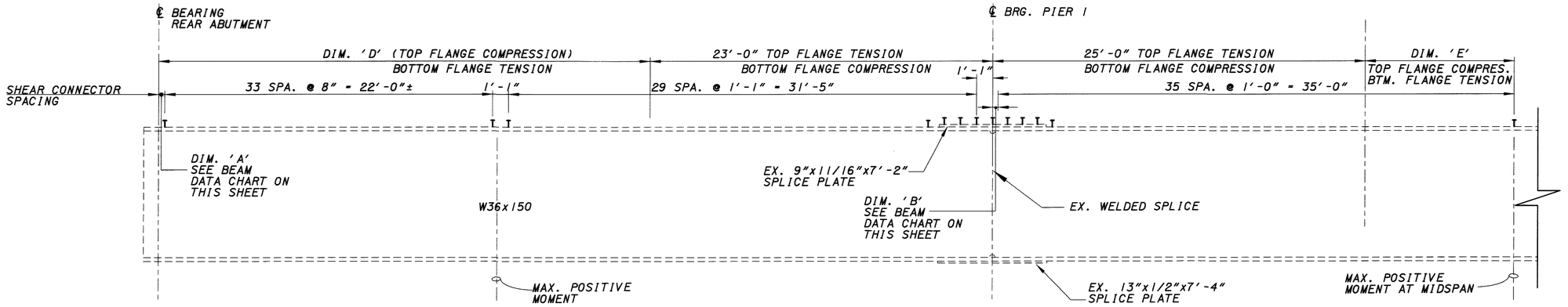
FRAMING PLAN - 2
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

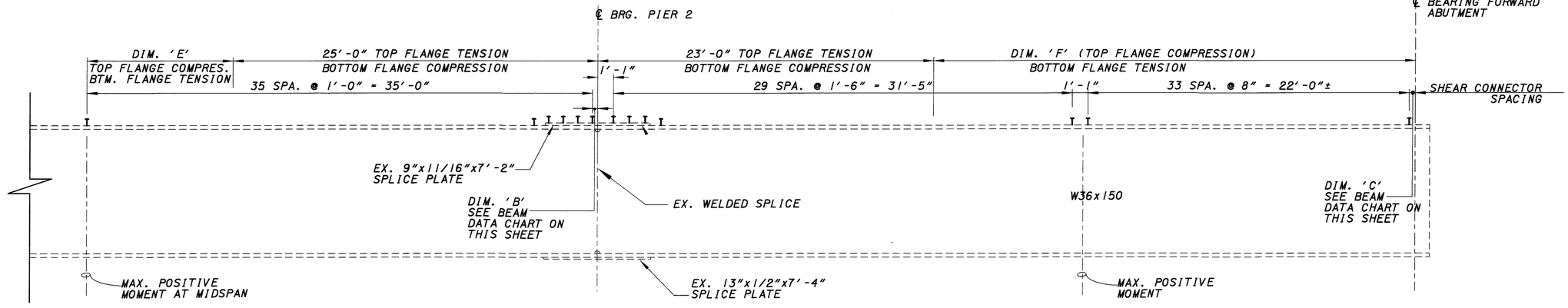
CLI-730-4.91
WAR-132-5.53

BEAM DATA CHART

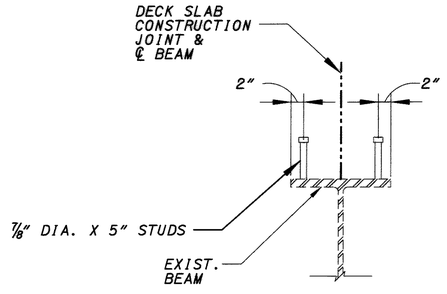
	SPAN 1 (*)	SPAN 2 (*)	SPAN 3 (*)	'A'	'B'	'C'	'D'	'E'	'F'
BEAM 1	55'-4 7/8" ±	69'-5" ±	55'-7 3/8" ±	1 7/8" ±	2 1/2" ±	4 3/8" ±	32'-4 7/8" ±	9'-8 1/2" ±	32'-7 3/8" ±
BEAM 2	55'-9 1/4" ±	69'-9 1/8" ±	55'-9 3/8" ±	6 1/4" ±	4 9/16" ±	6 3/8" ±	32'-9 1/4" ±	9'-10 1/2" ±	32'-9 3/8" ±
BEAM 3	56'-1 5/8" ±	70'-1 3/8" ±	55'-11 1/4" ±	10 5/8" ±	6 11/16" ±	8 1/4" ±	33'-1 5/8" ±	10'-0 11/16" ±	32'-11 1/4" ±
BEAM 4	56'-6" ±	70'-5 5/8" ±	56'-1 1/8" ±	1'-3" ±	8 13/16" ±	10 1/8" ±	33'-6" ±	10'-2 13/16" ±	33'-1 1/8" ±
BEAM 5	56'-10 1/2" ±	70'-9 1/8" ±	56'-3 1/4" ±	1'-7 1/2" ±	10 15/16" ±	1'-0 1/4" ±	33'-10 1/2" ±	10'-4 15/16" ±	33'-3 1/4" ±

* LENGTHS MEASURED C/C BEARING ALONG BEAMS





EXISTING BEAM ELEVATION
(BEAM 3)



SHEAR CONNECTOR DETAIL
(BEAM 3)

NOTES:

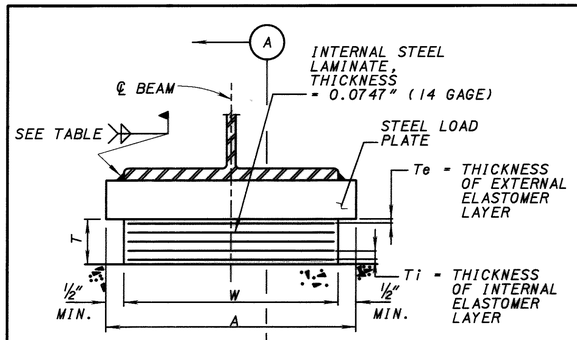
1. ALL STRUCTURE DIMENSIONS SHALL BE FIELD VERIFIED.
2. SEE SHEETS 15 OF 29 FOR ADDITIONAL NOTES.

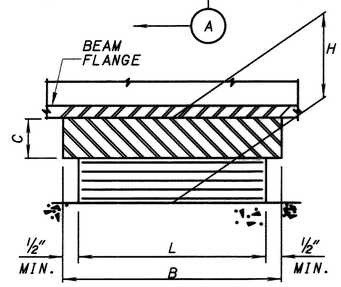
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

FRAMING DETAILS
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

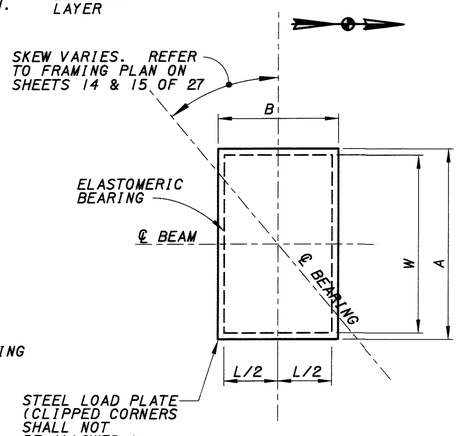




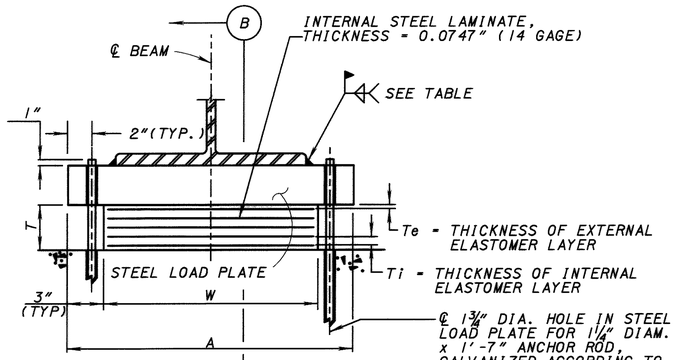
SECTION A-A

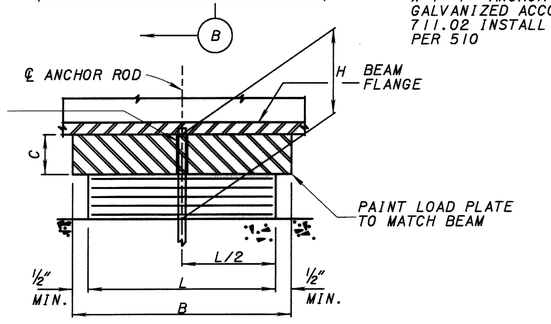
LAMINATED ELASTOMERIC EXPANSION BEARING
50 DUROMETER, GRADE 3

ANCHOR ROD (SEE SHEET 14 OF 29 FOR ANCHOR ROD LAYOUT DETAIL)



PLAN





SECTION B-B

LAMINATED ELASTOMERIC FIXED BEARING
50 DUROMETER, GRADE 3

NOTES:

STEEL FOR BEARING LOAD PLATES TO BE A36. PAINT FOR THE LOAD PLATES SHALL BE FIELD APPLIED. PAINT COLOR SHALL MATCH STEEL BEAM PAINT COLOR.

THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

BEARING ANCHOR RODS: THE BEARING ANCHOR RODS SHALL BE GROUTED IN ACCORDANCE WITH SP 853.

ANCHOR RODS SHALL BE GALVANIZED AS PER CMS 711.02. ANCHOR RODS SHALL EXTEND 1" ABOVE THE LOAD PLATE (PIER 1 BEARINGS).

BEARING REPOSITIONING AT ABUTMENTS: IF THE STEEL IS ERECTED 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.

1½" DIA. X 12" LONG ANCHOR BOLTS WITH NUT AND 4" X 4" X ½" SQUARE PLATE WASHER WITH 1¾" DIA. ANCHOR BOLTS SHALL BE GALVANIZED AS PER CMS 711.02. HOLES, TO BE FIELD DRILLED AND GROUTED WITH AN EPOXY NON-SHRINKING GROUT IN 1¾" X 10" DEEP HOLES.

THE UNIT BID PRICE FOR THE BEARINGS SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. INCLUDE ANCHOR RODS WITH BEARINGS FOR PAYMENT. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 EACH. ELASTOMERIC BEARING PADS WITH INTERNAL LAMINATES AND LOAD PLATE.

ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

BEARING LOCATION	BEARING TYPE	BEAM NUMBER	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (DL+LL) (KIPS)	L	W	INTERNAL ELASTOMER LAYER Ti	NO. OF Ti LAYERS	EXTERNAL ELASTOMER LAYER (Te) (2 EACH)	NUMBER OF INTERNAL STEEL LAMINATES (14 GAGE)	T	STEEL LOAD PLATE A	STEEL LOAD PLATE B	STEEL LOAD PLATE C	H	FILLET WELD SIZE	(*) APPROX. HEIGHT OF EX. BEARING
REAR ABUTMENT	EXPANSION	B1	33.2	56.1	89.3	8.5"	12"	0.24"	3	0.17"	4	1.36"	13"	9.5"	4"	5.36"	5/16"	2 1/16" ±
		B2	33.2	56.1	89.3	8.5"	12"	0.24"	3	0.17"	4	1.36"	13"	9.5"	4"	5.36"	5/16"	2 1/16" ±
		B3	33.2	56.1	89.3	8.5"	12"	0.24"	3	0.17"	4	1.36"	13"	9.5"	4"	5.36"	5/16"	2 1/16" ±
		B4	33.2	56.1	89.3	8.5"	12"	0.24"	3	0.17"	4	1.36"	13"	9.5"	4"	5.36"	5/16"	2 1/16" ±
		B5	33.2	56.1	89.3	8.5"	12"	0.24"	3	0.17"	4	1.36"	13"	9.5"	4"	5.36"	5/16"	2 1/16" ±
PIER 1	FIXED	B1	116.6	64.7	181.3	10.5"	18"	0.29"	4	0.21"	5	1.95"	24"	11.5"	2 1/4"	4.20"	3/8"	1 3/16" ±
		B2	116.6	64.7	181.3	10.5"	18"	0.29"	4	0.21"	5	1.95"	24"	11.5"	2 1/4"	4.20"	3/8"	1 3/16" ±
		B3	116.6	64.7	181.3	10.5"	18"	0.29"	4	0.21"	5	1.95"	24"	11.5"	2 1/4"	4.20"	3/8"	1 3/16" ±
		B4	116.6	64.7	181.3	10.5"	18"	0.29"	4	0.21"	5	1.95"	24"	11.5"	2 1/4"	4.20"	3/8"	1 3/16" ±
		B5	116.6	64.7	181.3	10.5"	18"	0.29"	4	0.21"	5	1.95"	24"	11.5"	2 1/4"	4.20"	3/8"	1 3/16" ±
PIER 2	EXPANSION	B1	116.6	64.7	181.3	11.5"	18"	0.33"	3	0.24"	4	1.77"	19"	12.5"	2 3/4"	4.52"	3/8"	2 3/16" ±
		B2	116.6	64.7	181.3	11.5"	18"	0.33"	3	0.24"	4	1.77"	19"	12.5"	2 3/4"	4.52"	3/8"	2 3/16" ±
		B3	116.6	64.7	181.3	11.5"	18"	0.33"	3	0.24"	4	1.77"	19"	12.5"	2 3/4"	4.52"	3/8"	2 3/16" ±
		B4	116.6	64.7	181.3	11.5"	18"	0.33"	3	0.24"	4	1.77"	19"	12.5"	2 3/4"	4.52"	3/8"	2 3/16" ±
		B5	116.6	64.7	181.3	11.5"	18"	0.33"	3	0.24"	4	1.77"	19"	12.5"	2 3/4"	4.52"	3/8"	2 3/16" ±
FORWARD ABUTMENT	EXPANSION	B1	33.2	56.1	89.3	8.5"	12"	0.24"	6	0.17"	7	2.30"	13"	9.5"	2 5/8"	4.93"	5/16"	2 1/8" ±
		B2	33.2	56.1	89.3	8.5"	12"	0.24"	6	0.17"	7	2.30"	13"	9.5"	2 5/8"	4.93"	5/16"	2 1/8" ±
		B3	33.2	56.1	89.3	8.5"	12"	0.24"	6	0.17"	7	2.30"	13"	9.5"	2 5/8"	4.93"	5/16"	2 1/8" ±
		B4	33.2	56.1	89.3	8.5"	12"	0.24"	6	0.17"	7	2.30"	13"	9.5"	2 5/8"	4.93"	5/16"	2 1/8" ±
		B5	33.2	56.1	89.3	8.5"	12"	0.24"	6	0.17"	7	2.30"	13"	9.5"	2 5/8"	4.93"	5/16"	2 1/8" ±

NOTES:

1. SEE SHEETS 4 THRU 6 OF 29 FOR GENERAL NOTES AND ESTIMATED QUANTITIES.
2. ALL MATERIAL TO BE ASTM- A572/A709 GRADE 50 UNLESS INDICATED OTHERWISE.
3. SEE SHEETS 15 & 16 OF 29 FOR FRAMING PLAN.
4. WELDING OF THE LOAD PLATE TO THE BEAM FLANGE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMERIC BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
5. LONGITUDINAL ROADWAY SLOPE SHALL BE ACCOMODATED THROUGH COMPRESSIONAL ROTATION OF THE ELASTOMERIC BEARING.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL BEARING DIMENSIONS PRIOR TO FABRICATION AND ALERT THE ENGINEER OF ANY PROBLEMS.

(*) EXISTING BEARING HEIGHTS ARE BASED ON STD. DWG. CSB-1-47 AND INCLUDE EXISTING 1/8" THICK SHEET LEAD

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

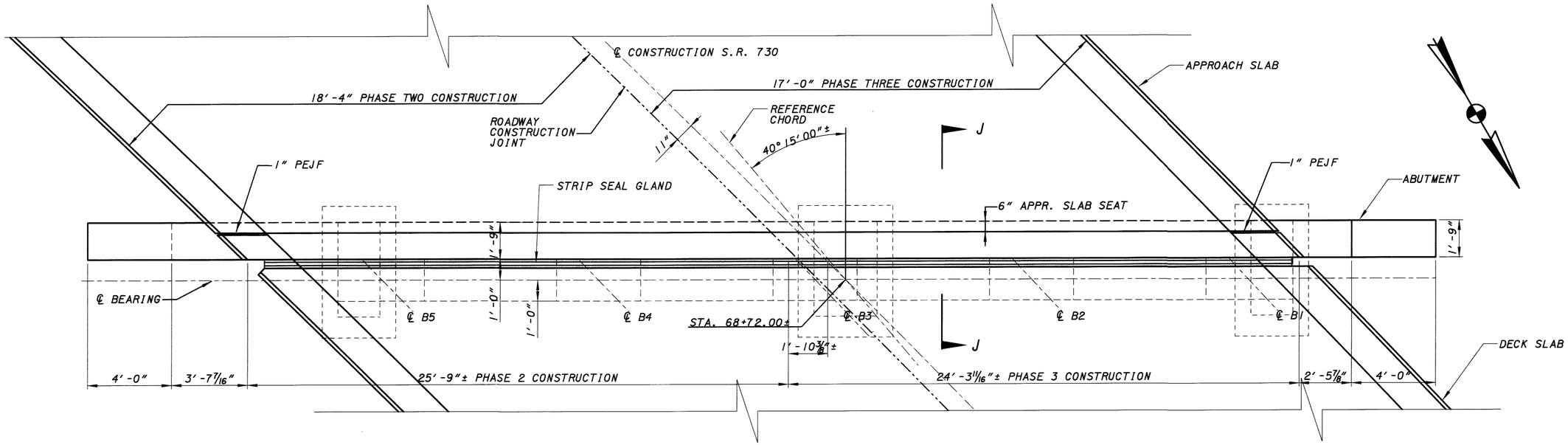
DESIGNED CAH | DRAWN CAH | REVIEWED JBK | DATE 1/06/03
CHECKED CMD | REVISED | STRUCTURE FILE NUMBER 1403966

BEARING DETAILS
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

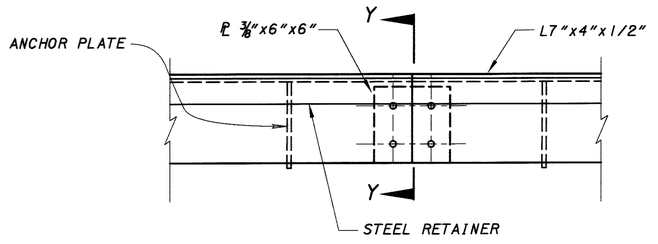
CLI-730-4.91
WAR-132-5.53

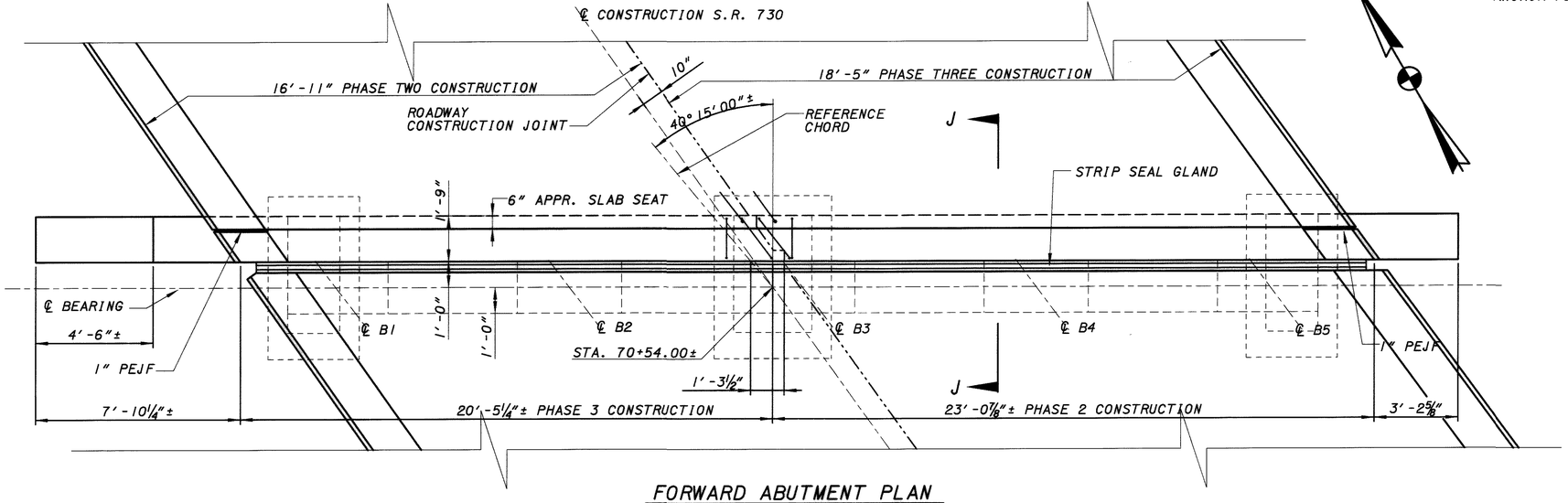
18 / 29

44 / 55



REAR ABUTMENT PLAN

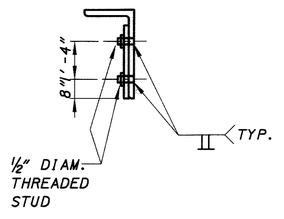




FORWARD ABUTMENT PLAN

ABUTMENT SIDE SUPPORT ARMOR SPLICE DETAIL

(ELEVATION)



SECTION Y-Y

INSTALLATION OF SEAL

DURING INSTALLATION OF SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF THE BEAMS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER ELEVATION OFTHE SUPPORT/ARMOR ON THE BEAMS SHALL BE ACHIEVED BY POSITIONING OF THE BEVEL FILL PLATES RATHER THAN BY CLAMPING FORCE.

NOTES:

1. FOR ADDITIONAL EXPANSION JOINT NOTES AND DETAILS SEE STD. DWG. EXJ-4-87.
2. SEE SHEET 6 OF 29 FOR ESTIMATED QUANTITIES.
3. SEE SHEET 4 & 5 OF 29 FOR GENERAL NOTES.
4. SAWCUTTING INCLUDED WITH ITEM 202- PORTIONS OF STRUCTURE REMOVED FOR PAYMENT.
5. SEE SHEET 20 OF 29 FOR SECTION J.

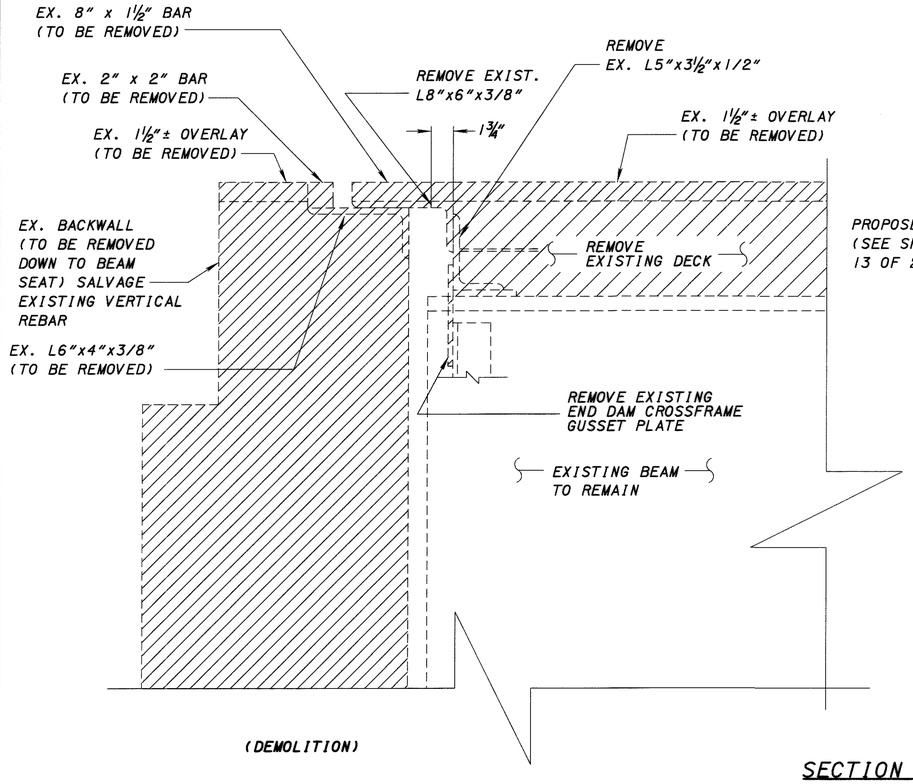
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

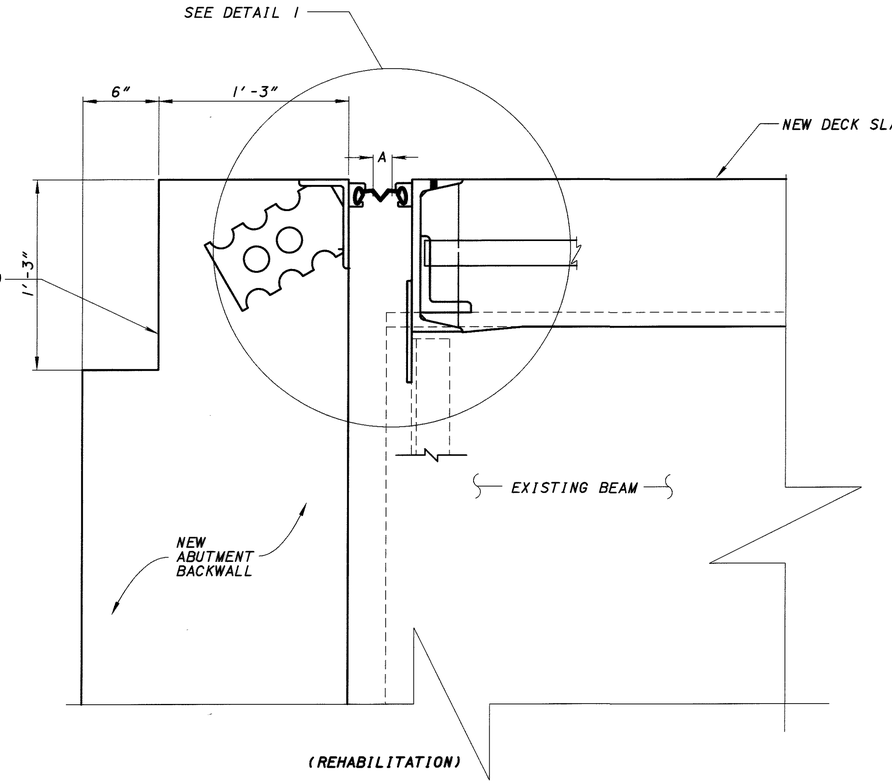
DESIGNED	DRAWN	REVISED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

EXPANSION JOINT DETAILS

BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

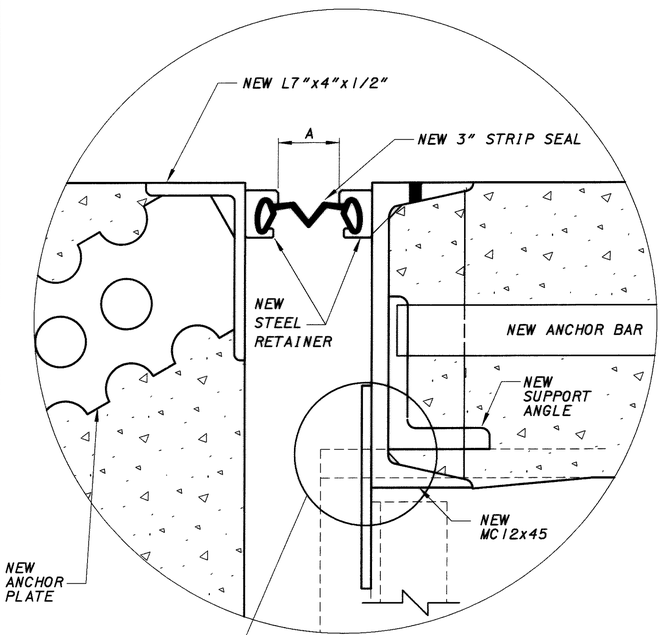




DIMENSION "A"		
	REAR ABUTMENT	FORWARD ABUTMENT
30°	1¾"	1⅞"
40°	1¾"	1¾"
50°	1¾"	1¾"
60°	1¾"	1⅝"
70°	1⅝"	1½"
80°	1⅝"	1½"
90°	1⅝"	1⅜"

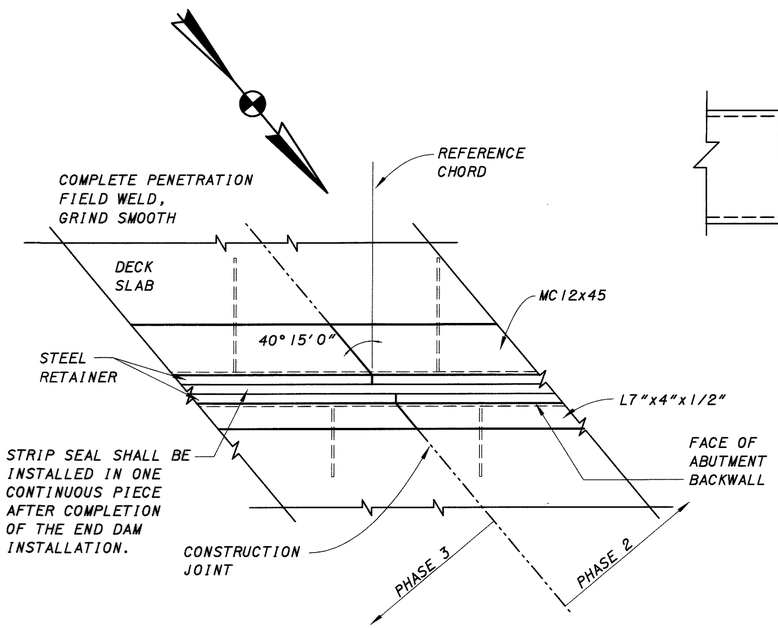
STRIP SEAL GLAND

MINIMUM JOINT OPENING (DIMENSION 'A') AT THE TIME OF SEAL GLAND INSTALLATION SHALL NOT BE LESS THAN 1½". IF THE JOINT OPENING IS LESS, INSTALLATION SHALL BE POSTPONED UNTIL THE TEMPERATURE DROPS A SUFFICIENT AMOUNT TO ALLOW THE 1½" OPENING.



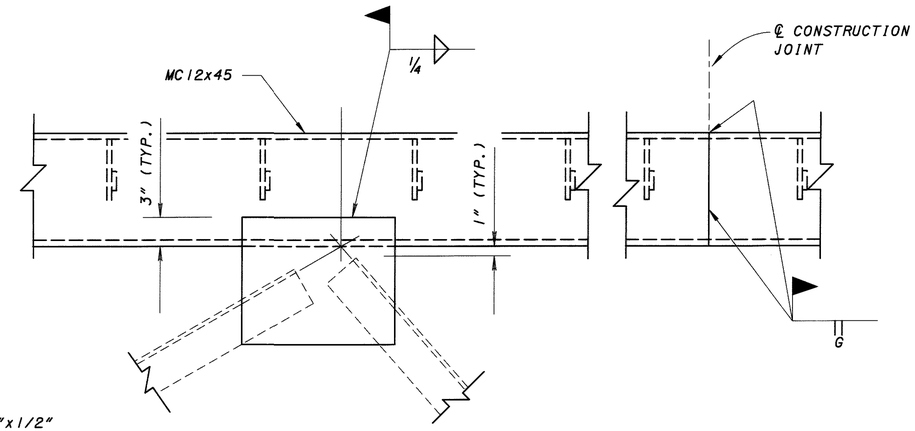
DETAIL 1

SECTION J-J



END DAM SPLCE DETAIL

FORWARD ABUTMENT SHOWN
REAR ABUTMENT SIMILAR



CROSS FRAME & END DAM WELDING DETAIL 2

(ELEVATION)

NOTES:

1. FOR ADDITIONAL EXPANSION JOINT DETAILS, SEE STD. DWG. EXJ-4-87.
2. SEE SHEET 6 OF 29 FOR ESTIMATED QUANTITIES.
3. SEE SHEET 4 & 5 OF 29 FOR GENERAL NOTES.
4. SAWCUTTING INCLUDED WITH ITEM 202- PORTIONS OF STRUCTURE REMOVED FOR PAYMENT.

LEGEND:

PORTIONS OF EXISTING STRUCTURE TO BE REMOVED.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

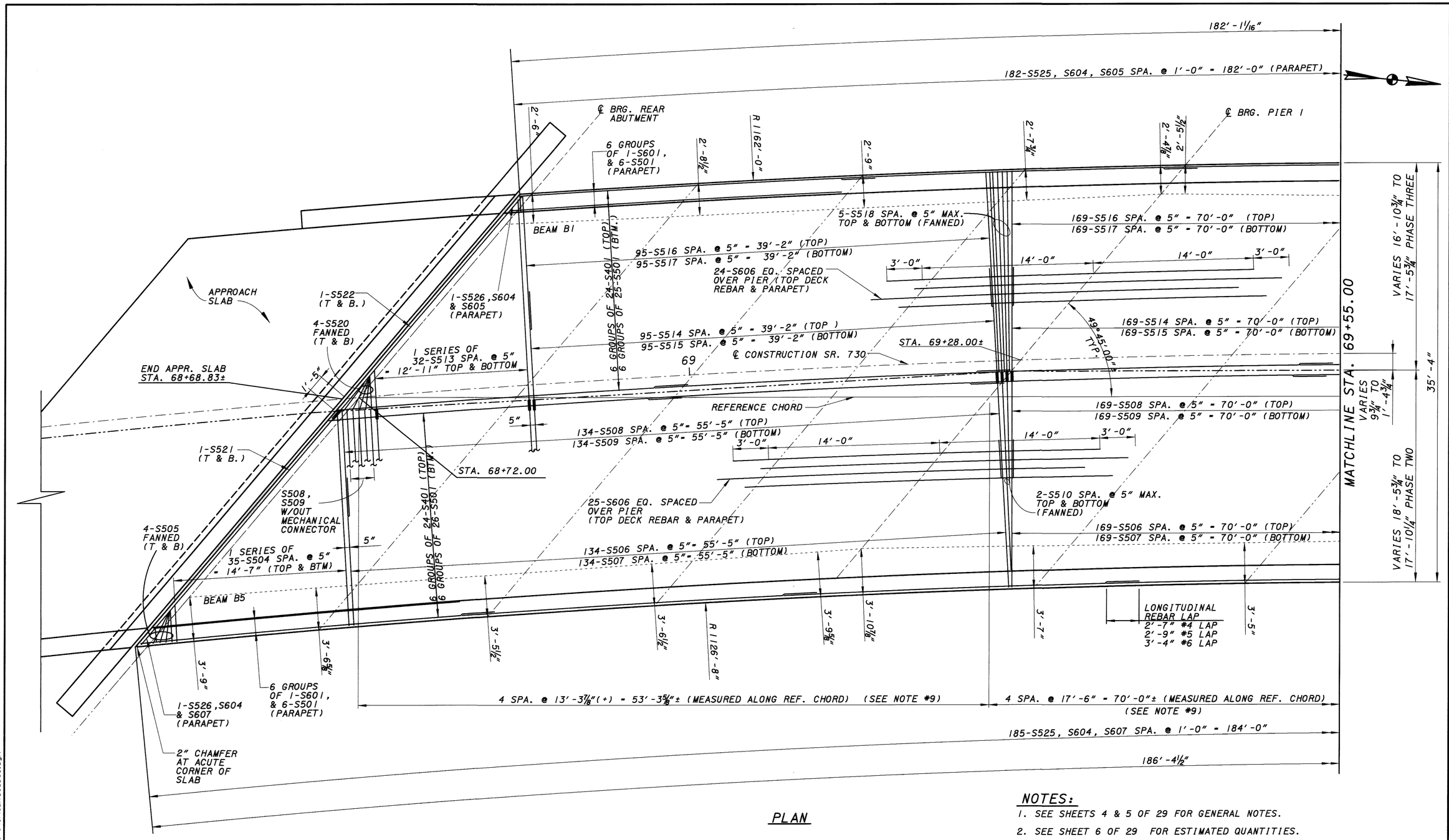
DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

EXPANSION JOINT DETAILS
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

20/29

46/55



PLAN

TRANSVERSE REBAR LAP

#5 LAP = 3'-2"

NOTES:

1. SEE SHEETS 4 & 5 OF 29 FOR GENERAL NOTES.
2. SEE SHEET 6 OF 29 FOR ESTIMATED QUANTITIES.
3. SEE SHEETS 15 & 16 OF 29 FOR FRAMING PLAN.
4. SEE SHEET 27 OF 29 FOR REINFORCING STEEL SCHEDULE.
5. CONTRACTOR SHALL VERIFY EXISTING STRUCTURE ELEVATIONS AND DIMENSIONS. THE CONTRACTOR SHALL ALERT THE ENGINEER OF ANY CONFILICTS WITH PROPOSED WORK.
6. SEE SHEET 23 OF 29 FOR ADDITIONAL SLAB DETAILS.
7. DECK SLAB CONSTRUCTION JOINT SHALL FOLLOW LAYOUT OF BEAM #3.
8. DECK SLAB OVERHANG DIMENSIONS MEASURED PERPENDICULAR TO BEAMS.
9. LOCATIONS OF SLAB OFFSETS AND SCREED TABLE POINTS

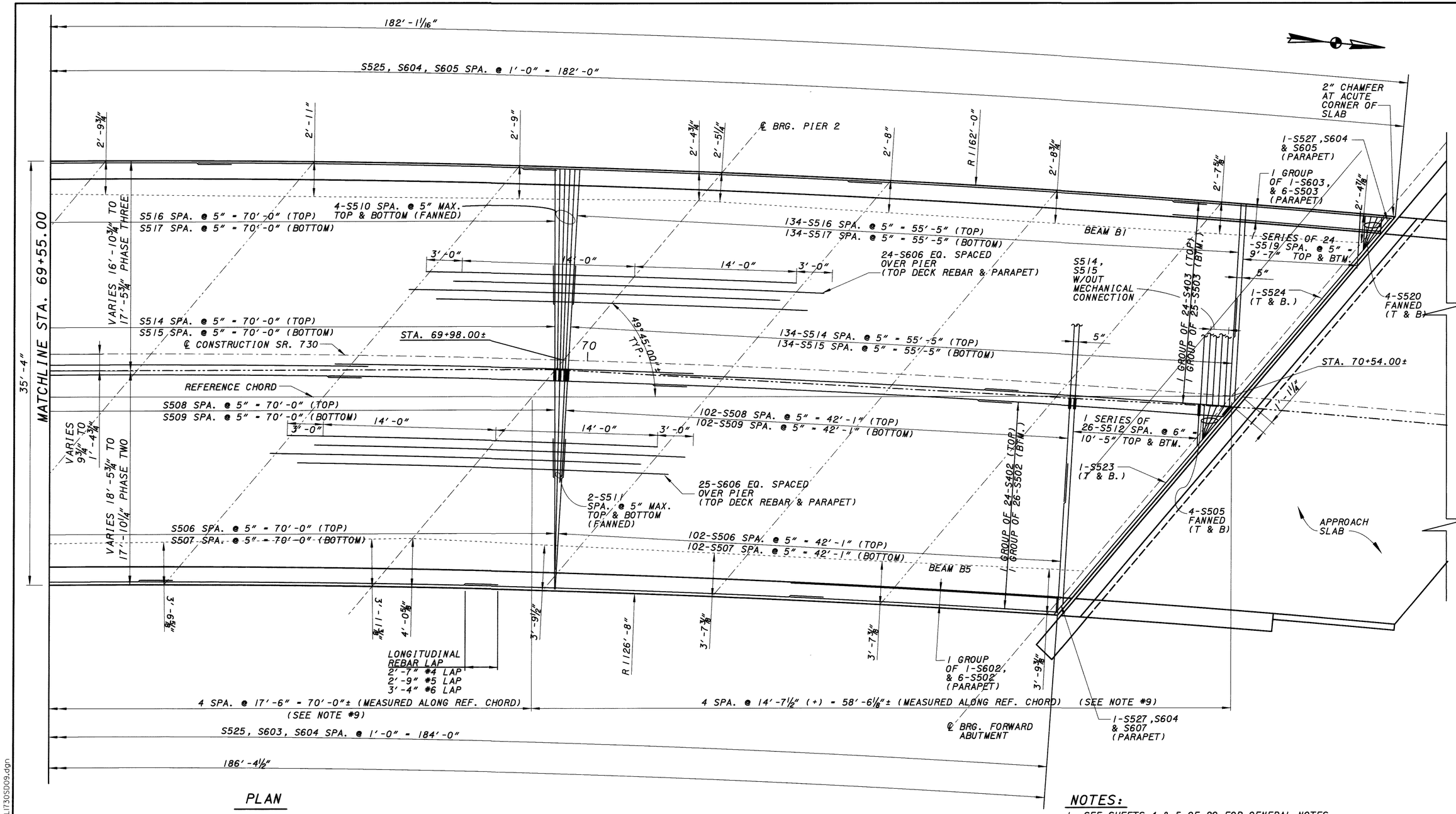
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

DECK SLAB PLAN - 1

BRIDGE NO. CLI-730-049 I
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53



PLAN

TRANSVERSE REBAR LAP

#5 LAP = 3'-2"

NOTES:

1. SEE SHEETS 4 & 5 OF 29 FOR GENERAL NOTES.
2. SEE SHEET 6 OF 29 FOR ESTIMATED QUANTITIES.
3. SEE SHEETS 15 & 16 OF 29 FOR FRAMING PLAN.
4. SEE SHEET 27 OF 29 FOR REINFORCING STEEL SCHEDULE.
5. CONTRACTOR SHALL VERIFY EXISTING STRUCTURE ELEVATIONS AND DIMENSIONS. THE CONTRACTOR SHALL ALERT THE ENGINEER OF ANY CONFILICTS WITH PROPOSED WORK.
6. SEE SHEET 23 OF 29 FOR ADDITIONAL SLAB DETAILS.
7. DECK SLAB CONSTRUCTION JOINT SHALL FOLLOW LAYOUT OF BEAM #3.
8. DECK SLAB OVERHANG DIMENSIONS MEASURED PERPENDICULAR TO BEAMS.
9. LOCATIONS OF SLAB OFFSETS AND SCREED TABLE POINTS

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

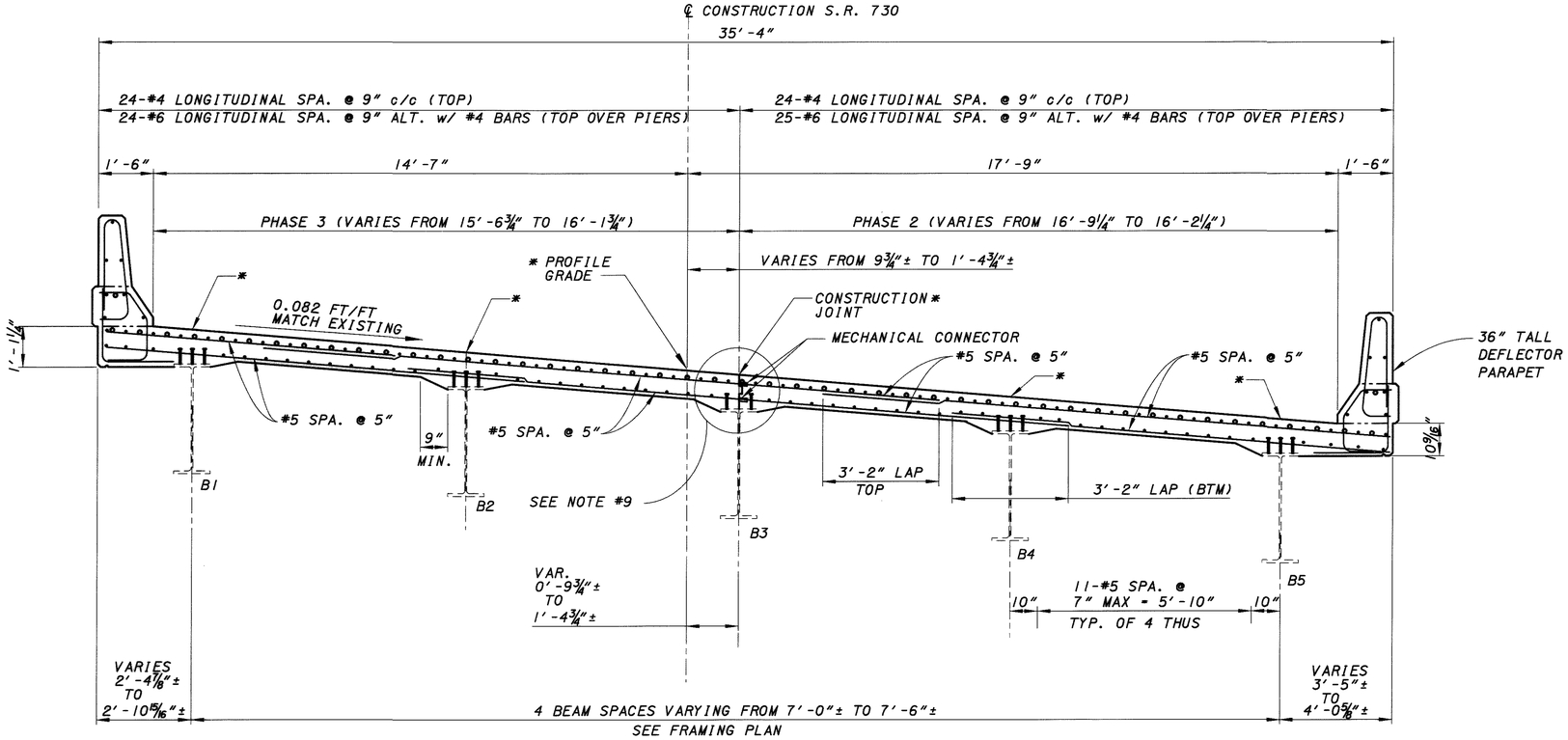
DECK SLAB PLAN - 2

BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

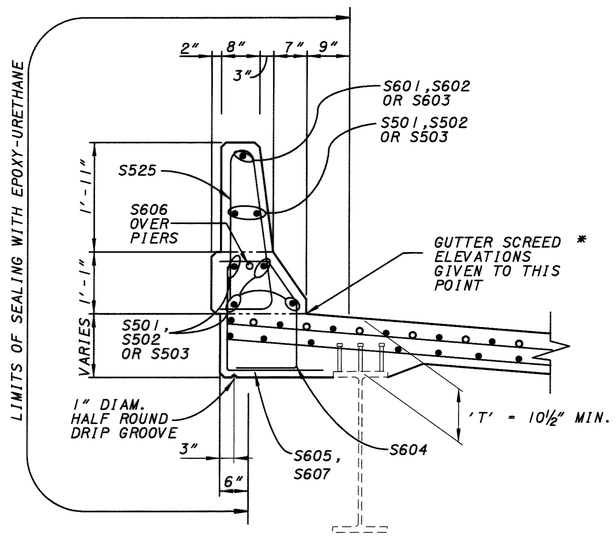
CLI-730-4.91
WAR-132-5.53

22 | 29

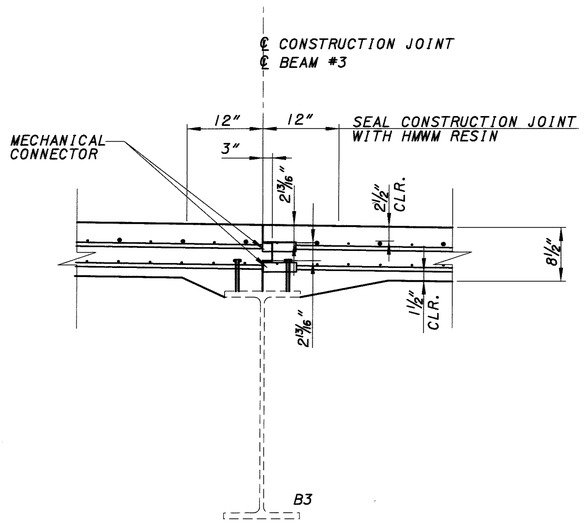
48
55



TYPICAL TRANSVERSE DECK SECTION



TYPICAL PARAPET DETAIL



CONSTRUCTION JOINT DETAIL

LEGEND:

* - SCREED ELEVATION GIVEN TO THIS POINT

NOTES:

1. SEE SHEETS 4 & 5 OF 29 FOR GENERAL NOTES.
2. SEE SHEET 6 OF 29 FOR ESTIMATED QUANTITIES.
3. SEE SHEET 15 & 16 OF 29 FOR FRAMING PLAN.
4. THE DISTANCE 'T' FROM THE TOP OF THE CONCRETE DECK TO THE TOP OF THE FLANGE, MINUS THE DESIGN HAUNCH THICKNESS OF 2 INCHES, HAS BEEN USED FOR COMPUTING THE DECK CONCRETE QUANTITIES. CONCRETE REQUIRED TO FILL THE HAUNCHES, INCLUDING ADDITIONAL OR LESS MATERIAL REQUIRED DUE TO HAUNCH CONSTRUCTION TOLERANCES AS WELL AS DECK OVERHANG CONCRETE IN EXCESS OF THE MINIMUM 8½" DEPTH, SHALL BE CONSIDERED AS INCIDENTAL AND WILL NOT BE INCLUDED IN THE QUANTITY CALCULATIONS FOR PAYMENT.
5. A HAUNCH WIDTH OF 9 INCHES SHALL BE USED. HOWEVER THE HAUNCH WIDTH MAY VARY FROM 6 INCHES TO 12 INCHES.
6. SEE SHEET 27 OF 29 FOR REINFORCING STEEL SCHEDULE.
7. SEAL PARAPTES AND DECK SLAB WITH EPOXY-URETHANE SEALER AND SEAL CONSTRUCTION JOINT WITH HMWM RESIN AS SHOWN ON THIS SHEET.
8. CONTRACTOR SHALL VERIFY EXISTING STRUCTURE ELEVATIONS AND DIMENSIONS. THE CONTRACTOR SHALL ALERT THE ENGINEER OF ANY CONFILICTS WITH PROPOSED WORK.
9. DECK SLAB CONSTRUCTION JOINT SHALL FOLLOW LAYOUT OF BEAM #3. PROVIDE JUST TWO LINES OF SHEAR STUDS AT BEAM #3 TO ACCOMMODATE DECK SLAB CONSTRUCTION JOINT CENTERED ON BEAM.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

DECK SLAB DETAILS

BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

08:59:14 AM
04/09/2003
u:\02-252\21803\Dgn\Structure\CLI-730-0491\CLI730S002.dgn

CONSTRUCTION ELEVATIONS (SCREEDS) FOR DECK SLAB PLACEMENT

	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13
TOE OF LEFT BARRIER	STATION	68+86.28	69+00.19	69+13.94	69+27.53	69+40.88	69+58.33	69+75.56	69+92.58	70+09.41	70+23.32	70+37.10	70+50.76	70+64.30
	PROFILE GRADE ELEVATION	974.099	974.011	973.925	973.839	973.755	973.645	973.536	973.429	973.323	973.236	973.149	973.063	972.977
	OFFSET	-14.58	-14.58	-14.58	-14.58	-14.58	-14.58	-14.58	-14.58	-14.58	-14.58	-14.58	-14.58	-14.58
	FINAL DECK ELEVATION	975.294	975.206	975.120	975.034	974.950	974.840	974.732	974.624	974.518	974.431	974.344	974.258	974.173
	DEAD LOAD DEFLECTION	0.000	0.024	0.028	0.012	0.000	0.019	0.035	0.019	0.000	0.012	0.028	0.024	0.000
	SCREED ELEVATION	975.294	975.230	975.148	975.046	974.950	974.859	974.767	974.643	974.518	974.443	974.372	974.282	974.173
BEAM 1	STATION	68+85.37	68+99.08	69+12.79	69+26.49	69+40.11	69+57.24	69+74.40	69+91.55	70+08.71	70+22.45	70+36.18	70+49.92	70+63.66
	PROFILE GRADE ELEVATION	974.105	974.018	973.932	973.846	973.760	973.652	973.544	973.436	973.328	973.241	973.155	973.068	972.981
	OFFSET	-13.64	-13.40	-13.33	-13.42	-13.68	-13.29	-13.16	-13.29	-13.67	-13.42	-13.33	-13.42	-13.66
	FINAL DECK ELEVATION	975.223	975.117	975.025	974.946	974.881	974.741	974.623	974.525	974.448	974.341	974.247	974.168	974.101
	DEAD LOAD DEFLECTION	0.000	0.024	0.028	0.012	0.000	0.019	0.035	0.019	0.000	0.012	0.028	0.024	0.000
	SCREED ELEVATION	975.223	975.141	975.053	974.958	974.881	974.760	974.658	974.544	974.448	974.353	974.275	974.192	974.101
BEAM 2	STATION	68+78.22	68+92.10	69+05.98	69+19.86	69+33.68	69+51.01	69+68.36	69+85.72	70+03.06	70+16.93	70+30.79	70+44.66	70+58.52
	PROFILE GRADE ELEVATION	974.150	974.062	973.975	973.887	973.800	973.691	973.582	973.472	973.363	973.276	973.189	973.101	973.014
	OFFSET	-6.29	-6.05	-5.99	-6.09	-6.36	-5.98	-5.86	-6.00	-6.41	-6.14	-6.05	-6.12	-6.35
	FINAL DECK ELEVATION	974.665	974.558	974.466	974.387	974.322	974.181	974.062	973.964	973.889	973.779	973.685	973.603	973.534
	DEAD LOAD DEFLECTION	0.000	0.024	0.028	0.012	0.000	0.019	0.035	0.019	0.000	0.012	0.028	0.024	0.000
	SCREED ELEVATION	974.665	974.582	974.494	974.399	974.322	974.200	974.097	973.983	973.889	973.791	973.713	973.627	973.534
PROFILE GRADE	STATION	68+72.00	68+86.26	69+00.34	69+14.25	69+28.00	69+45.84	69+63.45	69+80.83	69+98.00	70+12.19	70+26.25	70+40.18	70+53.99
	PROFILE GRADE ELEVATION	974.189	974.099	974.010	973.923	973.836	973.724	973.613	973.503	973.395	973.306	973.217	973.129	973.042
	OFFSET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	FINAL DECK ELEVATION	974.189	974.099	974.010	973.923	973.836	973.724	973.613	973.503	973.395	973.306	973.217	973.129	973.042
	DEAD LOAD DEFLECTION	0.000	0.024	0.028	0.012	0.000	0.019	0.035	0.019	0.000	0.012	0.028	0.024	0.000
	SCREED ELEVATION	974.189	974.123	974.038	973.935	973.836	973.743	973.648	973.522	973.395	973.318	973.245	973.153	973.042
BEAM 3 & CONSTR. JOINT	STATION	68+70.98	68+85.04	68+99.09	69+13.14	69+27.18	69+44.71	69+62.26	69+79.81	69+97.35	70+11.34	70+25.33	70+39.33	70+53.32
	PROFILE GRADE ELEVATION	974.195	974.107	974.018	973.930	973.841	973.731	973.620	973.510	973.399	973.311	973.223	973.135	973.047
	OFFSET	1.02	1.25	1.31	1.20	0.91	1.29	1.40	1.25	0.82	1.10	1.22	1.16	0.93
	FINAL DECK ELEVATION	974.112	974.004	973.911	973.831	973.767	973.625	973.506	973.407	973.332	973.221	973.123	973.040	972.970
	DEAD LOAD DEFLECTION	0.000	0.024	0.028	0.012	0.000	0.019	0.035	0.019	0.000	0.012	0.028	0.024	0.000
	SCREED ELEVATION	974.112	974.028	973.939	973.843	973.767	973.644	973.541	973.426	973.332	973.233	973.151	973.064	972.970
BEAM 4	STATION	68+63.64	68+77.88	68+92.11	69+06.34	69+20.59	69+38.32	69+56.07	69+73.82	69+91.56	70+05.68	70+19.80	70+33.93	70+48.05
	PROFILE GRADE ELEVATION	974.242	974.152	974.062	973.973	973.883	973.771	973.659	973.547	973.436	973.347	973.258	973.169	973.080
	OFFSET	8.29	8.52	8.57	8.45	8.15	8.53	8.64	8.47	8.03	8.33	8.45	8.41	8.19
	FINAL DECK ELEVATION	973.562	973.453	973.360	973.280	973.215	973.072	972.951	972.853	972.777	972.664	972.565	972.479	972.408
	DEAD LOAD DEFLECTION	0.000	0.024	0.028	0.012	0.000	0.019	0.035	0.019	0.000	0.012	0.028	0.024	0.000
	SCREED ELEVATION	973.562	973.477	973.388	973.292	973.215	973.091	972.986	972.872	972.777	972.676	972.593	972.503	972.408
BEAM 5	STATION	68+56.21	68+70.63	68+85.04	68+99.45	69+13.92	69+31.85	69+49.80	69+67.75	69+85.69	69+99.94	70+14.20	70+28.46	70+42.71
	PROFILE GRADE ELEVATION	974.288	974.198	974.107	974.016	973.925	973.812	973.699	973.586	973.473	973.383	973.293	973.203	973.113
	OFFSET	15.50	15.74	15.79	15.66	15.36	15.73	15.84	15.66	15.21	15.53	15.67	15.63	15.42
	FINAL DECK ELEVATION	973.018	972.907	972.812	972.732	972.666	972.522	972.400	972.302	972.226	972.110	972.008	971.922	971.849
	DEAD LOAD DEFLECTION	0.000	0.024	0.028	0.012	0.000	0.019	0.035	0.019	0.000	0.012	0.028	0.024	0.000
	SCREED ELEVATION	973.018	972.931	972.840	972.744	972.666	972.541	972.435	972.321	972.226	972.122	972.036	971.946	971.849
TOE OF RIGHT BARRIER	STATION	68+53.87	68+68.58	68+83.09	68+97.43	69+11.67	69+30.02	69+48.12	69+65.97	69+83.59	69+98.15	70+12.56	70+26.84	70+40.98
	PROFILE GRADE ELEVATION	974.303	974.210	974.119	974.029	973.939	973.823	973.709	973.597	973.486	973.394	973.303	973.213	973.124
	OFFSET	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75
	FINAL DECK ELEVATION	972.848	972.755	972.664	972.574	972.484	972.368	972.254	972.142	972.031	971.939	971.848	971.758	971.669
	DEAD LOAD DEFLECTION	0.000	0.024	0.028	0.012	0.000	0.019	0.035	0.019	0.000	0.012	0.028	0.024	0.000
	SCREED ELEVATION	972.848	972.779	972.692	972.586	972.484	972.387	972.289	972.161	972.031	971.951	971.876	971.782	971.669

SCREED ELEVATIONS: SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

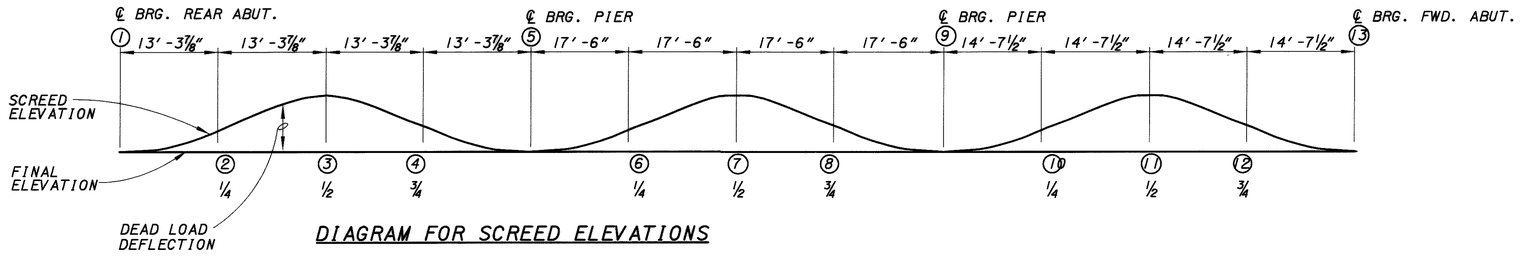


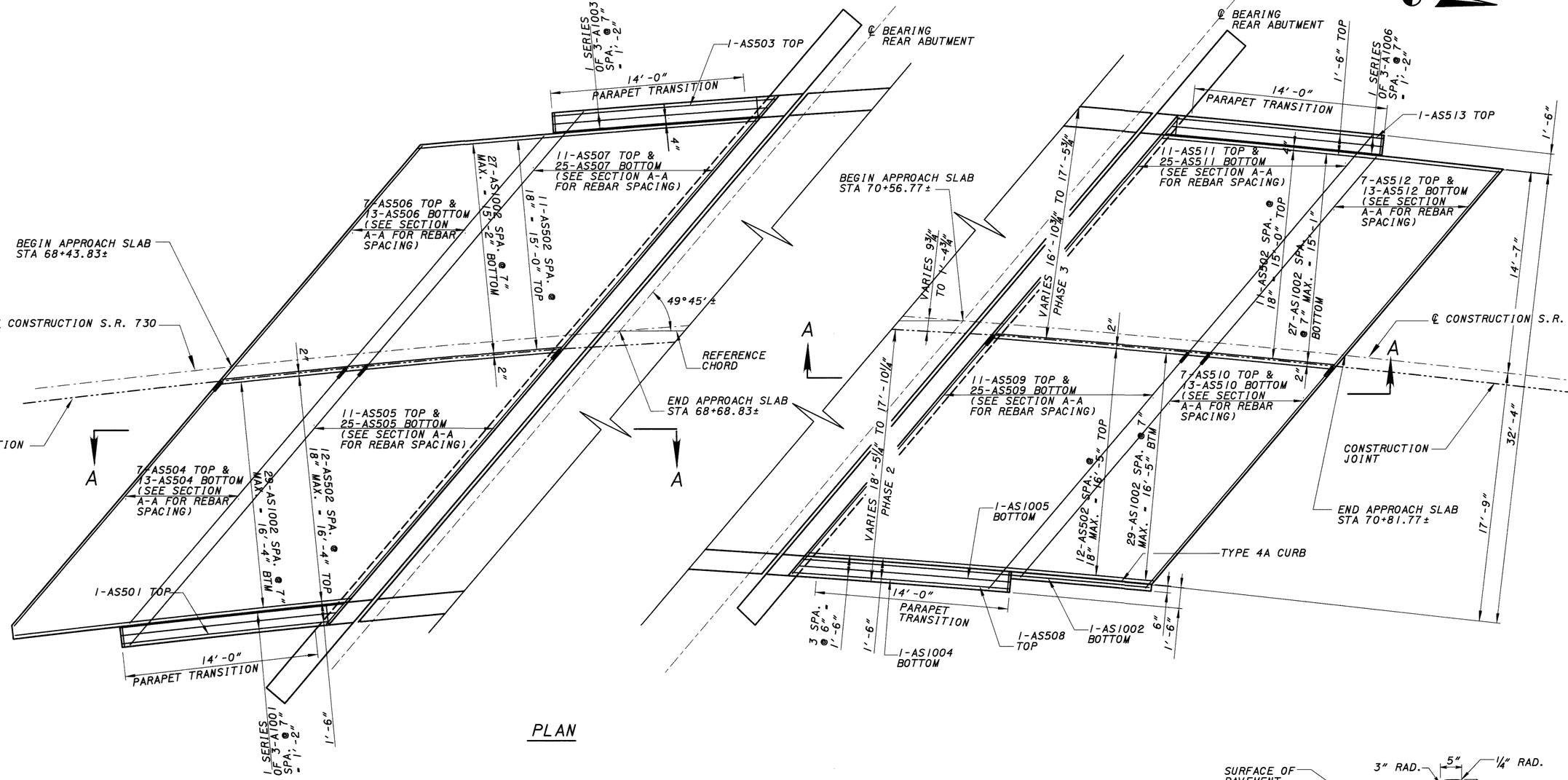
DIAGRAM FOR SCREED ELEVATIONS

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

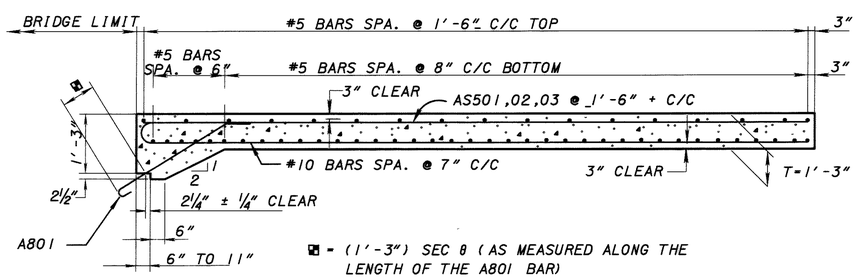
DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

SCREED TABLE
BRIDGE NO. CLI-730-049 I
OVER COWAN CREEK

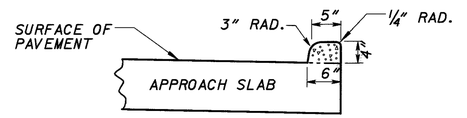
CLI-730-4.91
WAR-132-5.53



PLAN



SECTION A-A



TYPE 4-A CURB DETAIL

NOTES:

1. SEE SHEETS 4 THRU 6 OF 29 FOR GENERAL NOTES AND ESTIMATED QUANTITIES.
2. ALL EXISTING STRUCTURE DIMENSIONS SHALL BE FIELD VERIFIED.
3. SEE SHEET 29 OF 29 FOR REINFORCING STEEL LIST.
4. SEE SHEET 26 OF 29 FOR PARAPET TRANSITION DETAILS.
5. APPROACH SLAB REINFORCING AND PARAPET CONCRETE SHALL BE INCLUDED WITH THE APPROACH SLAB FOR PAYMENT.

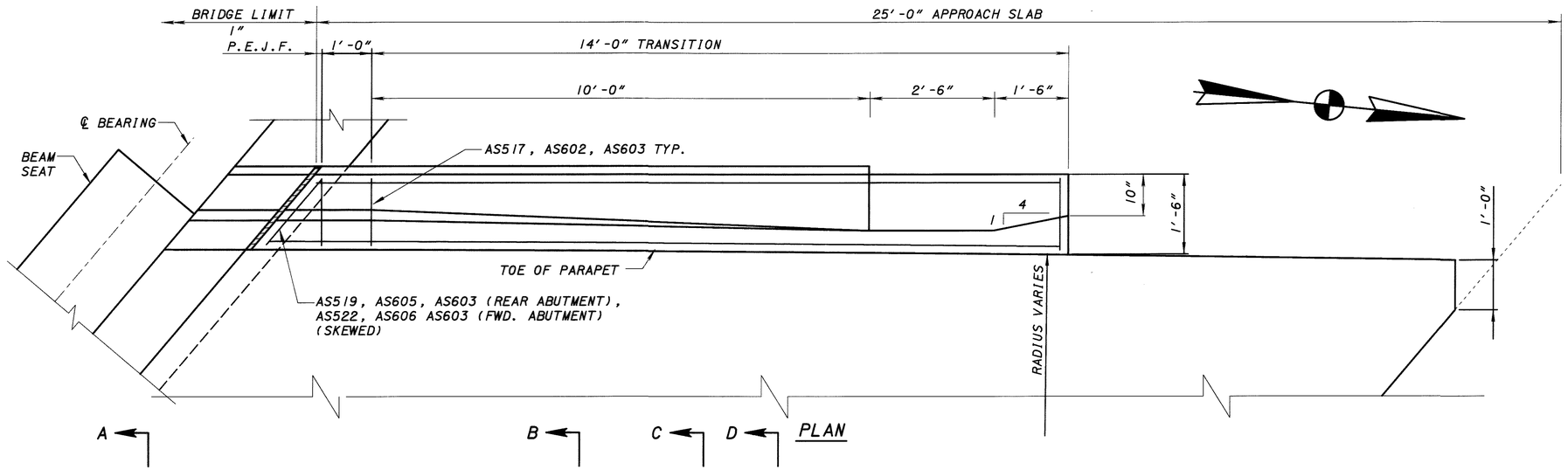
DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

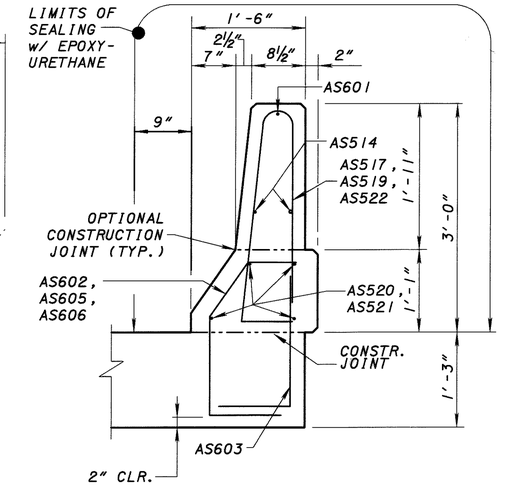
DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

APPROACH SLAB PLAN
BRIDGE NO. CLI-730-049 I
OVER COWAN CREEK

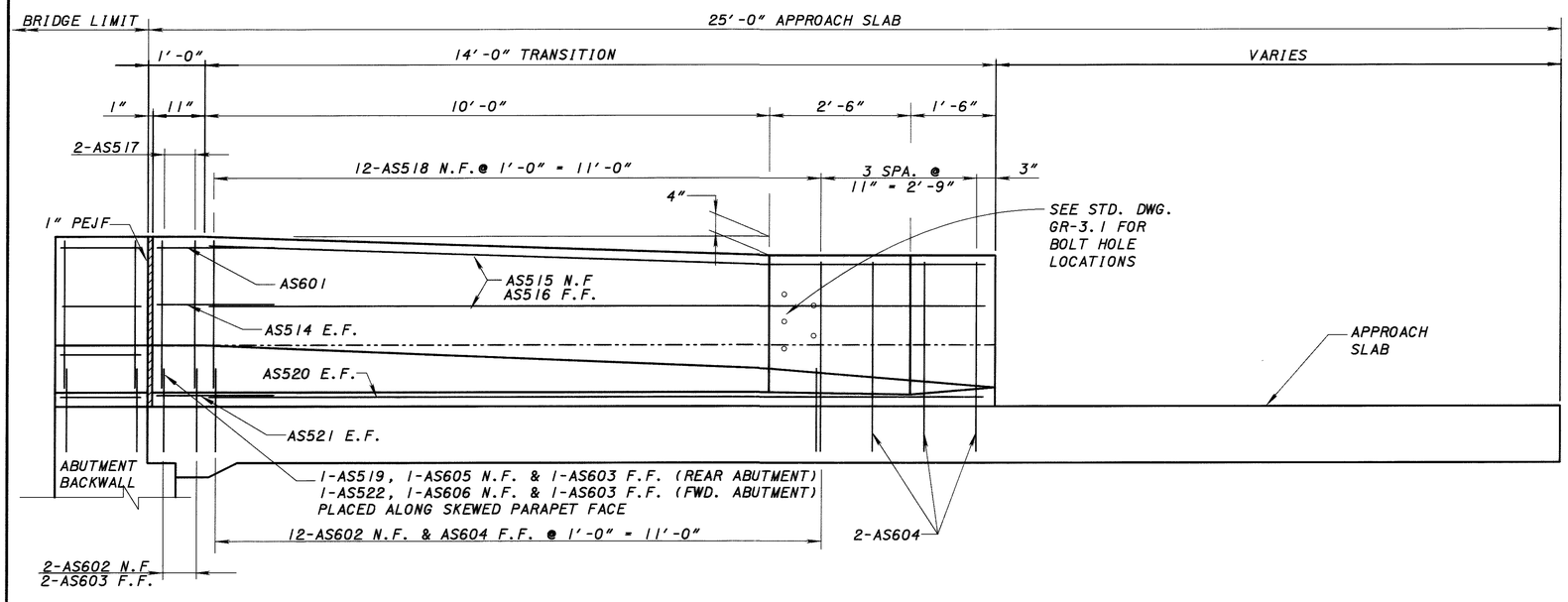
CLI-730-4.91
WAR-132-5.53

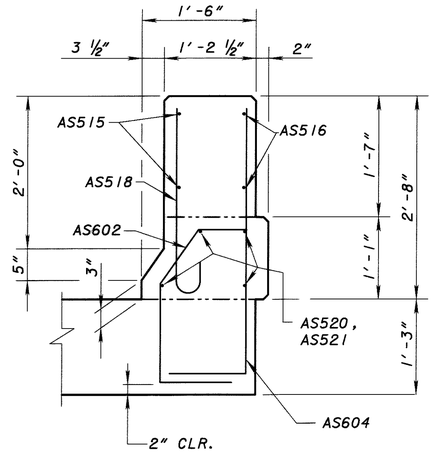
09:42:41 AM
04/09/2003
u:\02-252\2180\3\Dgn\Structure\CLI-730-049I\CLI730SDIL.dgn



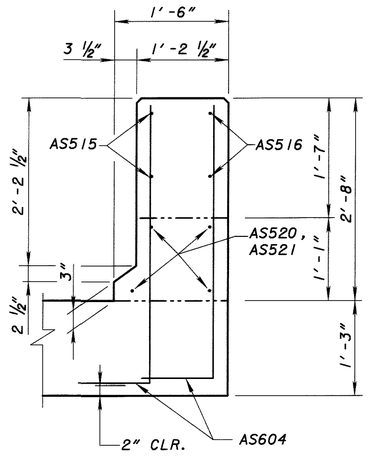


SECTION A-A

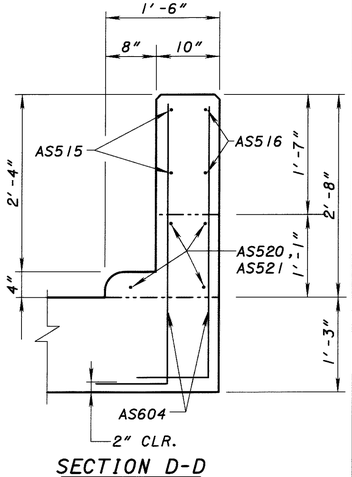




SECTION B-B



SECTION C-C



SECTION D-D

ELEVATION

FWD. ABUTMENT, LT. SIDE &
REAR ABUTMENT, RT. SIDE-SHOWN
FWD. ABUTMENT, RT. SIDE &
REAR ABUTMENT, LT. SIDE-OPP. HAND
& SIMILAR

LEGEND

N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE

NOTES:

1. SEE STD. DWG. AS-1-81 FOR ADDITIONAL APPROACH SLAB NOTES AND DETAILS. SEE STD. DWG. BR-1 FOR ADDITIONAL PARAPET NOTES AND DETAILS.
2. MINIMUM LAP LENGTHS:
   LAP NO. 5 BARS 33"
   LAP NO. 6 BARS 34"
3. SEE SHEET 6 OF 29 FOR ESTIMATED QUANTITIES.
4. SEE SHEET 4 AND 5 OF 29 FOR GENERAL NOTES.
5. SEE SHEET 29 OF 29 FOR REINFORCING STEEL TABLE.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246
ME COMPANIES

DESIGNED	DRAWN	REVIEWED	DATE
CAH	CAH	JBK	1/06/03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMD		1403966	

PARAPET TRANSITION DETAILS

BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

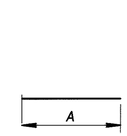
26/29

52/55

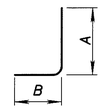
SUPERSTRUCTURE REINFORCING STEEL LIST

*	**	MARK	NUMBER	LENGTH FEET	LENGTH INCHES	WEIGHT	TYPE	A	B	C	D	E	F	R	INC
		S401	288	30	0	5,772	STR.								
		S402	24	21	5	344	STR.								
		S403	24	19	5	312	STR.								
		S501	378	30	0	11,828	STR.								
		S502	32	22	6	751	STR.								
		S503	31	20	6	663	STR.								
		S504	2 SER. OF 35	VARIES 3'-1" TO 17'-10"		764	STR.	VARIES 3'-1" TO 17'-10"							5"
		S505	16	2	8	45	STR.								
		S506	405	16	3	6,865	STR.								
		S507	405	12	7	5,316	STR.								
**		S508	405	5	5	2,289	STR.								
**		S509	405	9	0	3,802	STR.								
		S510	12	16	9	210	STR.								
		S511	4	16	8	70	STR.								
**		S512	2 SER. OF 26	VARIES 3'-5" TO 17'-2"		558	STR.	VARIES 3'-5" TO 17'-2"							6 1/2"
*		S513	2 SER. OF 32	VARIES 3'-3" TO 16'-10"		670	STR.	VARIES 3'-3" TO 16'-10"							5 1/4"
*		S514	398	12	6	5,189	STR.								
*		S515	398	8	10	3,667	STR.								
		S516	398	8	0	3,321	STR.								
		S517	398	11	7	4,809	STR.								
		S518	10	16	10	176	STR.								
		S519	2 SER. OF 24	VARIES 3'-9" TO 16'-5"		505	STR.	VARIES 3'-9" TO 16'-5"							6 3/4"
		S520	16	2	10	48	STR.								
**		S521	2	25	9	54	STR.								
*		S522	2	23	9	50	STR.								
**		S523	2	22	8	48	STR.								
*		S524	2	20	8	44	STR.								
		S525	367	6	0	2,297	5	2'-9"	2'-6"	8"				1 1/2"	
		S526	2	6	1	13	5	2'-9"	2'-6"	8 3/4"				2 3/8"	
		S527	2	6	2	13	5	2'-9"	2'-6"	10 1/4"				3"	
		S601	12	30	0	541	STR.								
		S602	1	26	0	40	STR.								
		S603	1	23	11	36	STR.								
		S604	371	3	0	1,672	6	10"	8 1/2"	6"	9"	10 1/2"			
		S605	184	3	7	991	1	1'-9"	2'-0"						
		S606	98	31	0	4,564	STR.								
		S607	187	4	7	1,288	1	1'-9"	3'-0"						
		TOTAL				69,625									

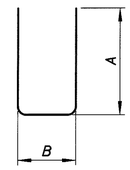
BAR BEND DIAGRAMS



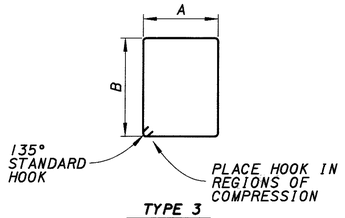
STR



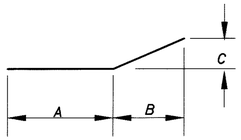
TYPE 1



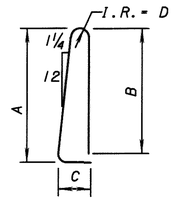
TYPE 2



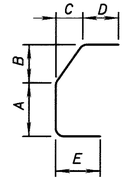
TYPE 3



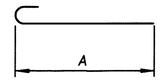
TYPE 4



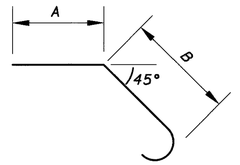
TYPE 5



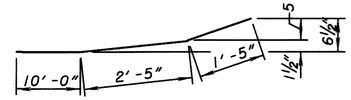
TYPE 6



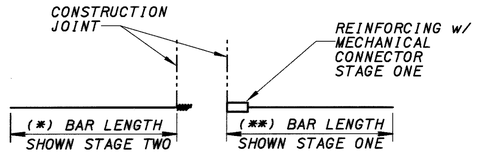
TYPE 7



TYPE 8



TYPE 9



MECHANICAL CONNECTOR DETAIL

NOTE:
1. ADJUST BARS PER MANUFACTURER'S SPECIFICATIONS.

2. MECHANICAL CONNECTOR SHALL BE NON-PROTRUDING TYPE

NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT ON 180° AND 135° HOOKS
2. DIMENSIONS ON HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE STANDARD HOOKS ARE TO BE USED. REFERENCE CMS 509.
3. ALL BENDS SHOWN ARE TO BE BENT AROUND A STANDARD MANDREL. EXCEPT WHERE RADIUS "R" IS INDICATED.
4. ALL BARS ARE TO BE EPOXY COATED.
5. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS WHERE FOUR NUMBERS ARE USED AND THE FIRST DIGIT WHERE THREE NUMBERS ARE USED INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P1001 IS A NUMBER 10 BAR.
6. ALL REINFORCING STEEL CLEARANCES ARE 2" UNLESS OTHERWISE NOTED.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED CAH | DRAWN CAH | REVIEWED JBK | DATE 1/06/03
CHECKED CMD | REVISED | STRUCTURE FILE NUMBER 1403966

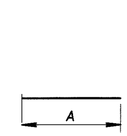
SUPERSTRUCTURE REINFORCING STEEL LIST
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

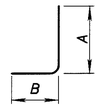
ABUTMENT REINFORCING STEEL LIST

MARK	REAR ABUTMENT	FORWARD ABUTMENT	TOTAL NUMBER	LENGTH FEET	LENGTH INCHES	WEIGHT	TYPE	A	B	C	D	E	R	INC
A501	4	0	4	8	9	37	2	3'-10"	1'-4"					
A502	10	0	10	9	5	99	2	4'-2"	1'-4"					
A503	2	0	2	4	11	11	STR.							
A504	6	0	6	10	10	68	STR.							
A505	1	0	1	7	6	8	STR.							
A506	14	16	30	3	10	120	STR.							
** A507	8	0	8	25	2	210	STR.							
A508	34	31	65	8	2	554	2	3'-9"	11"					
* A509	8	0	8	24	8	206	STR.							
A510	2	0	2	7	5	16	STR.							
A511	1 SER. OF 4	0	1 SER. OF 4	VARIES 6'-1" TO 8'-9"		32	2	VARIES 2'-6" TO 3'-11"	1'-4"					5 5/8"
A512	1	0	1	7	11	9	4	3'-5"	3'-11"	2'-1"				
A513	4	0	4	8	6	36	STR.							
A514	2	0	2	8	7	18	2	3'-9"	1'-4"					
A515	4	0	4	6	0	26	5	2'-9"	2'-6"	8"			1 1/2"	
A516	0	4	4	6	3	27	5	2'-9"	2'-6"	10 1/2"			2 1/2"	
A517	12	0	12	1	4	17	STR.							
A518	0	2	2	7	11	17	4	3'-0"	4'-4"	2'-0"				
A519	0	4	4	10	5	44	STR.							
A520	0	2	2	6	11	15	4	2'-0"	4'-4"	2'-0"				
A521	0	2	2	9	4	20	STR.							
A522		1 SER. OF 5	1 SER. OF 5	VARIES 5'-9" TO 8'-11"		39	2	VARIES 2'-4" TO 3'-11"	1'-4"					4 3/4"
A523	0	4	4	9	0	38	2	4'-4"	1'-4"					
A524	0	2	2	8	8	19	2	3'-10"	1'-4"					
* A525	0	8	8	20	4	170	STR.							
** A526	0	8	8	23	3	194	STR.							
A527	0	7	7	5	6	41	STR.							
A528	0	3	3	9	0	29	2	4'-0"	1'-4"					
A529	0	12	12	1	1	14	STR.							
A530	1	0	1	5	7	6	STR.							
A531	1	0	1	7	0	8	4	2'-6"	1'-11"					
A532	0	1	1	4	0	5	STR.							
A601	4	4	8	3	10	47	STR.							
A602	34	31	65	6	0	407	2	2'-6"	1'-4"					
A603	2	0	2	6	7	14	2	2'-6"	1'-11"					
A604	4	0	4	3	7	15	6	9"	7 3/4"	7 3/4"	9"	1'-2"		
A605	4	4	8	2	2	19	1	1'-3"	1'-0"					
A606	2	0	2	1	4	3	STR.							
A607	0	2	2	6	6	14	2	2'-6"	3'-11"	2'-1"				
A608	0	2	2	1	1	3	STR.							
A609	0	4	4	3	6	15	6	9"	7 3/4"	6 1/2"	9"	1'-2"		
A610	2	2	4	3	7	15	1	1'-5"	2'-4"					
A611	2	2	4	3	11	17	1	1'-11"	2'-2"					
A612	6	6	12	3	6	44	1	1'-5"	2'-3"					
A613	6	6	12	3	10	48	1	1'-11"	2'-1"					
A801	25	25	50	6	0	801	8	1'-5"	3'-8"					
A901	4	0	4	4	10	66	STR.							
A902	10	10	20	3	5	233	1	2'-3"	1'-5"					
A903	0	4	4	4	4	59	STR.							
					TOTAL	3,973								

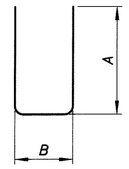
BAR BEND DIAGRAMS



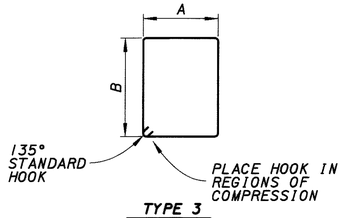
STR



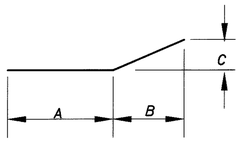
TYPE 1



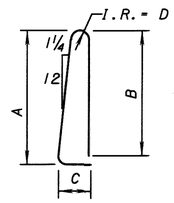
TYPE 2



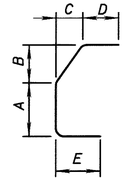
TYPE 3



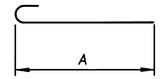
TYPE 4



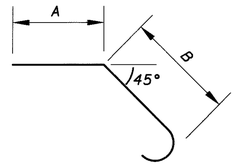
TYPE 5



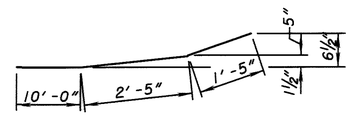
TYPE 6



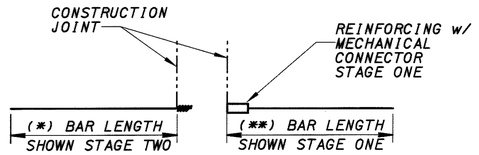
TYPE 7



TYPE 8



TYPE 9



MECHANICAL CONNECTOR DETAIL

NOTE:
1. ADJUST BARS PER MANUFACTURER'S SPECIFICATIONS.

2. MECHANICAL CONNECTOR SHALL BE NON-PROTRUDING TYPE

NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT ON 180° AND 135° HOOKS
2. DIMENSIONS ON HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE STANDARD HOOKS ARE TO BE USED. REFERENCE CMS 509.
3. ALL BENDS SHOWN ARE TO BE BENT AROUND A STANDARD MANDREL. EXCEPT WHERE RADIUS "R" IS INDICATED.
4. ALL BARS ARE TO BE EPOXY COATED.
5. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS WHERE FOUR NUMBERS ARE USED AND THE FIRST DIGIT WHERE THREE NUMBERS ARE USED INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P1001 IS A NUMBER 10 BAR.
6. ALL REINFORCING STEEL CLEARANCES ARE 2" UNLESS OTHERWISE NOTED.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED CAH | DRAWN CAH | REVIEWED JBK | DATE 1/06/03
CHECKED CMD | REVISED | STRUCTURE FILE NUMBER 1403966

ABUTMENT REINFORCING STEEL LIST
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

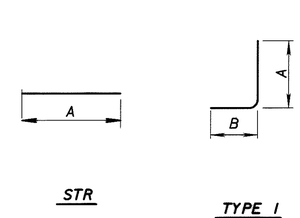
CLI-730-4.91
WAR-132-5.53

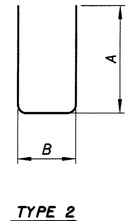
APPROACH SLAB REINFORCING STEEL LIST (*)

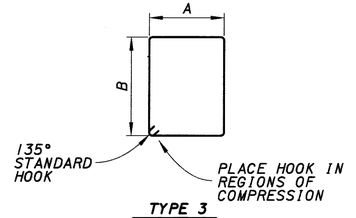
MARK	NUMBER	LENGTH FEET	LENGTH INCHES	WEIGHT	TYPE	A	B	C	D	E	F	R	INC
AS501	1	14	11	16	STR.								
AS502	46	24	8	1,184	STR.								
AS503	1	16	0	17	STR.								
** AS504	20	24	1	503	STR.								
** AS505	36	26	4	989	STR.								
* AS506	20	22	1	461	STR.								
* AS507	36	24	2	908	STR.								
AS508	1	15	8	17	STR.								
** AS509	36	22	4	839	STR.								
** AS510	20	20	11	437	STR.								
* AS511	36	20	6	770	STR.								
* AS512	20	18	8	390	STR.								
AS513	1	14	10	16	STR.								
AS514	8	2	1	18	STR.								
AS515	8	13	10	116	9								
AS516	8	13	10	116	STR.								
AS517	8	6	0	51	5	2'-9"	2'-6"	8 1/2"					
AS518	48	3	0	151	7	2'-5"							
AS519	2	6	2	13	5	2'-9"	2'-6"	10 1/2"					
AS520	8	14	10	124	STR.								
AS521	8	2	1	18	STR.								
AS522	2	6	1	13	5	2'-9"	2'-6"	9"					
AS601	4	2	1	13	STR.								
AS602	60	3	4	301	6	1'-2"	8 1/2"	6"	9"	10 1/2"			
AS603	12	2	8	49	1	11"	1'-11"						
AS604	72	4	4	469	1	11"	3'-7"						
AS605	2	3	4	11	6	1'-2"	7 3/4"	7 3/4"	9"	10 1/2"			
AS606	2	3	4	11	6	1'-2"	7 3/4"	6 1/2"	9"	10 1/2"			
AS1001	1 SER. OF 3	VARIES 16'-4" TO 17'-7"		201	7	VARIES 14'-11" TO 16'-2"							7 1/2"
AS1002	113	24	8	11,994	7	24'-8"							
AS1003	1 SER. OF 3	VARIES 16'-3" TO 17'-7"		201	7	VARIES 14'-10" TO 16'-2"							7 1/2"
AS1004	1	15	8	68	7	15'-8"							
AS1005	1	15	3	66	7	15'-3"							
AS1006	1 SER. OF 3	VARIES 17'-0" TO 16'-3"		196	7	VARIES 15'-7" TO 14'-10"							4 1/2"
		TOTAL		20,747									

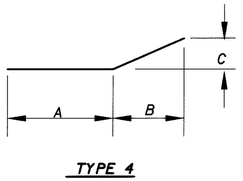
* - (SHOWN FOR INFORMATION PURPOSES ONLY)

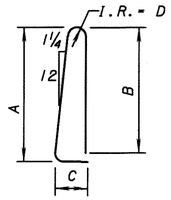
BAR BEND DIAGRAMS

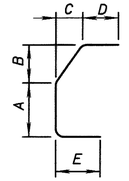


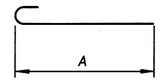


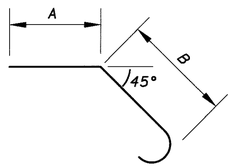


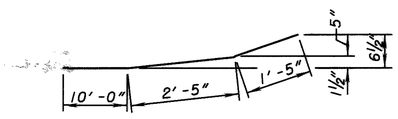


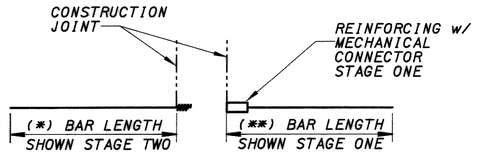












MECHANICAL CONNECTOR DETAIL

NOTE:
1. ADJUST BARS PER MANUFACTURER'S SPECIFICATIONS.

2. MECHANICAL CONNECTOR SHALL BE NON-PROTRUDING TYPE

NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT ON 180° AND 135° HOOKS
2. DIMENSIONS ON HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE STANDARD HOOKS ARE TO BE USED. REFERENCE CMS 509.
3. ALL BENDS SHOWN ARE TO BE BENT AROUND A STANDARD MANDREL. EXCEPT WHERE RADIUS "R" IS INDICATED.
4. ALL BARS ARE TO BE EPOXY COATED.
5. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS WHERE FOUR NUMBERS ARE USED AND THE FIRST DIGIT WHERE THREE NUMBERS ARE USED INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P1001 IS A NUMBER 10 BAR.
6. ALL REINFORCING STEEL CLEARANCES ARE 2" UNLESS OTHERWISE NOTED.

DESIGN AGENCY
23 TRIANGLE PARK DRIVE
SUITE 2300
CINCINNATI, OH 45246

DESIGNED CAH | DRAWN CAH | REVIEWED JBK | DATE 1/06/03
CHECKED CMD | REVISED | STRUCTURE FILE NUMBER 1403966

APPROACH SLAB REINFORCING STEEL LIST
BRIDGE NO. CLI-730-0491
OVER COWAN CREEK

CLI-730-4.91
WAR-132-5.53

29 | 29

55
55