



STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

ERI-250-19.742

VILLAGE OF MILAN
MILAN TOWNSHIP
ERIE COUNTY

PROJECT DESCRIPTION

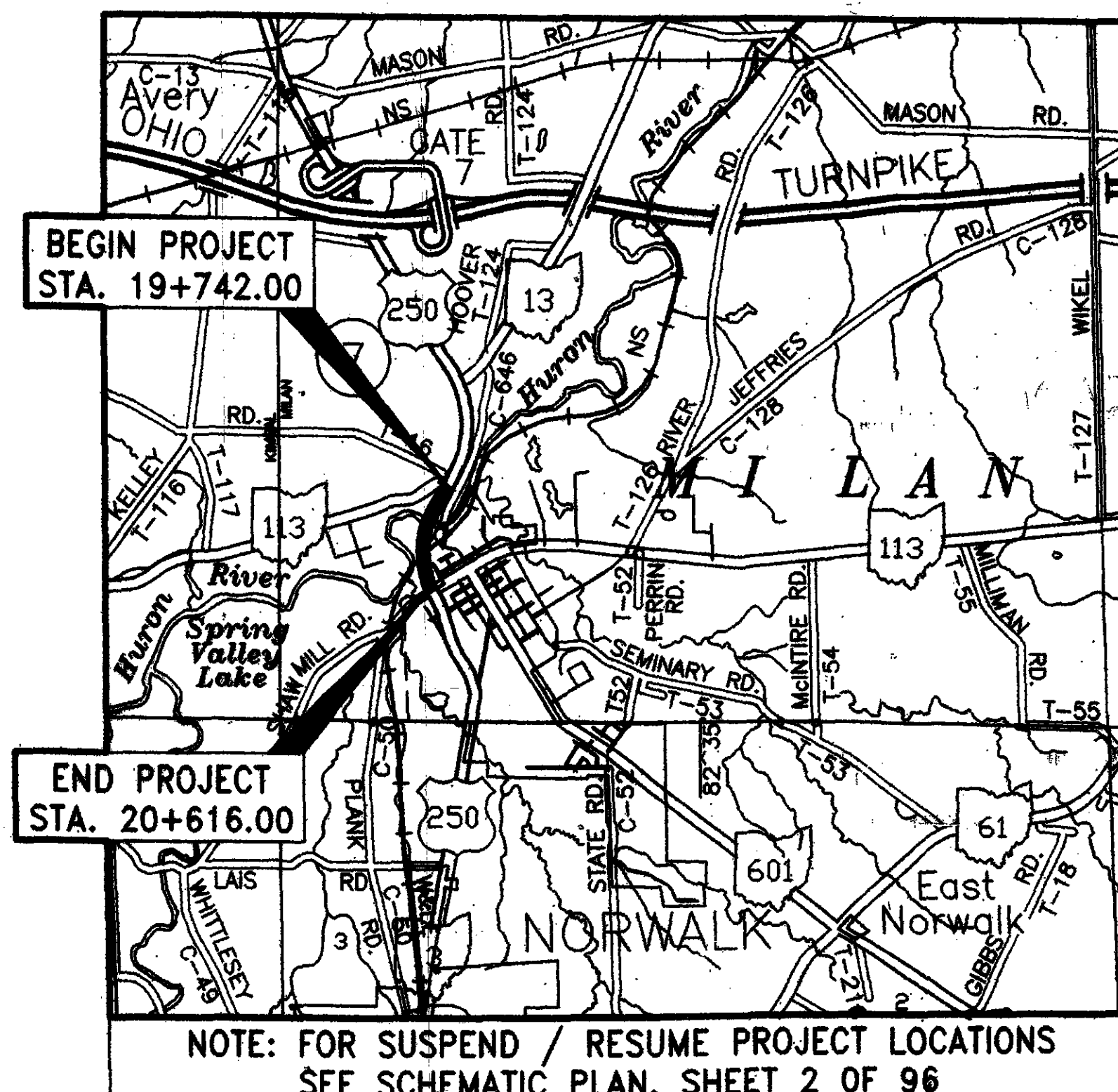
IMPROVEMENT OF 0.89 KILOMETERS OF U.S. 250 BY REPLACEMENT OF EXISTING SHOULDERS AND MEDIANS, PLANING AND RESURFACING OF EXISTING PAVEMENT, THE REHABILITATION AND WIDENING OF THE EXISTING STRUCTURE OVER THE HURON RIVER, REPLACEMENT OF THE EXISTING STRUCTURE OVER THE ABANDONED RAILROAD, AND UPGRADING OF GUARDRAIL, DRAINAGE, AND TRAFFIC CONTROL.

2005 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.

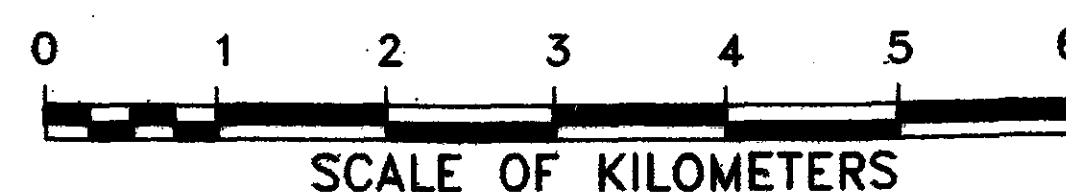
MAINTENANCE OF TRAFFIC ENDORSEMENT

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 MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.



LOCATION MAP

LATITUDE: N 41°18'00" LONGITUDE: W 82°36'35"



PORTION TO BE IMPROVED
STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

CURRENT A.D.T. (2007) 18,860
DESIGN YEAR A.D.T. (2027) 21,210
DESIGN HOURLY VOLUME 2120
DIRECTIONAL DISTRIBUTION 55%
TRUCKS (24 HOUR B&C) 5%
DESIGN SPEED 90 km/h
LEGAL SPEED LIMIT 55 MPH

DESIGN FUNCTIONAL CLASSIFICATION:
RURAL PRINCIPAL ARTERIAL

DESIGN EXCEPTIONS

NONE REQUIRED

STRUCTURE PLANS REVIEWED
by
URS GREINER
(ERI-250-20036 ONLY)

PLAN REVISED BY:

ENGINEERING ASSOCIATES, INC.
1935 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE: (330) 345-6556

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ENGINEERS SEAL:

FOR REVISIONS ONLY *



SIGNED: *Frederick Selig, Jr.*
DATE: 05/09/07

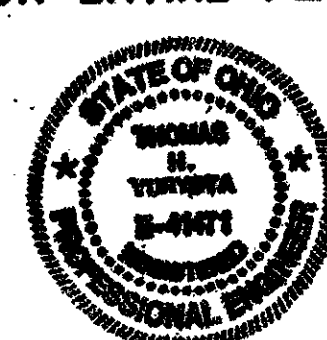
* SEE SHEETS 7A-7B FOR REVISIONS

PROJECT EDA	- 4.4 ACRES
CONTRACTOR EDA	- 0.5 ACRES
NOI EDA	- 4.9 ACRES

SPECIAL PROVISIONS		
WATERWAY PERMIT NWP*	3 & #33	DATE: 4-15-04

STANDARD CONSTRUCTION DRAWINGS												SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	07-16-04	GR-1.1	07-16-04	RM-1.1	04-21-06	MT-35.10	04-20-01	MT-105.11	10-18-02	800	04-20-07		
BP-5.1	07-28-00	GR-2.1	01-16-04	RM-4.1	10-20-06	MT-95.30	09-05-06	MT-97.11	09-05-06	802	04-15-05		
CB-1.2	07-15-05	GR-3.1	01-19-07	RM-4.2	10-20-06	MT-95.31	09-05-06	TC-41.20	01-19-01	832	04-25-06		
CB-2.2	07-15-05	GR-3.2	01-19-07			MT-95.32	09-05-06	TC-42.10	01-19-07	833	02-12-03		
CB-3.2	07-15-05	GR-4.2	01-19-07	AS-1-81	07-19-02	MT-95.40	10-20-06	TC-42.20	07-16-04	835	04-21-06		
DM-1.1	04-21-06	GR-5.3	01-16-04	BR-1	07-19-02	MT-95.70	04-19-02	TC-52.10	01-19-07	839	04-20-07		
DM-1.2	10-21-05			EXJ-4-87	07-19-02	MT-95.82	09-05-06	TC-52.20	01-19-07	848	04-15-05		
DM-1.4	04-21-06	HW-2.1	04-21-06	GSD-1-96	07-19-02	MT-99.20M	01-30-95	TC-65.10	01-21-05	898	07-21-06		
DM-4.1	07-19-02	HW-2.2	04-21-06	PCB-91	07-19-02	MT-100.00	04-19-02	TC-65.11	01-21-05	939	04-20-07		
DM-4.2	01-21-05			RB-1-55	02-02-59	MT-101.20	10-18-02	TC-71.10	01-19-07	1011	07-30-04		
DM-4.3	07-19-02					MT-101.70	10-18-02	TC-82.10	04-19-02	1080	04-19-02		
DM-4.4	07-19-02					MT-105.10	10-18-02	WQ-1.2	04-21-06				

ENGINEERS SEAL:
FOR ENTIRE PLAN



SIGNED: *Thomas H. Vetter*
DATE: FEB 7, 2001

APPROVED
DATE 5-10-07 *John Hart* DISTRICT DEPUTY DIRECTOR

APPROVED
DATE 5-18-07 *James J. Fleasch, Jr.* DIRECTOR, DEPARTMENT
TRANSPORTATION

	GENERAL PLAN REVISIONS	SLM	4/07
	NO. REVISIONS	BY	DATE

FEDERAL PROJECT NO.
E060 (658)

PID NO.
13136

CONSTRUCTION PROJECT NO.

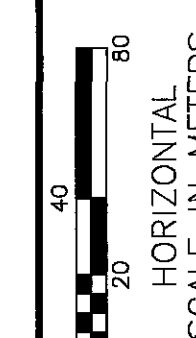
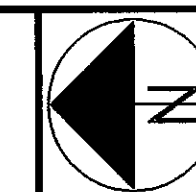
RAILROAD INVOLVEMENT
NONE

ERI-250-19.742

1
96

ERI-250-12.43
076004 PID 13136
DIST 03 6/27/2007

130176T1

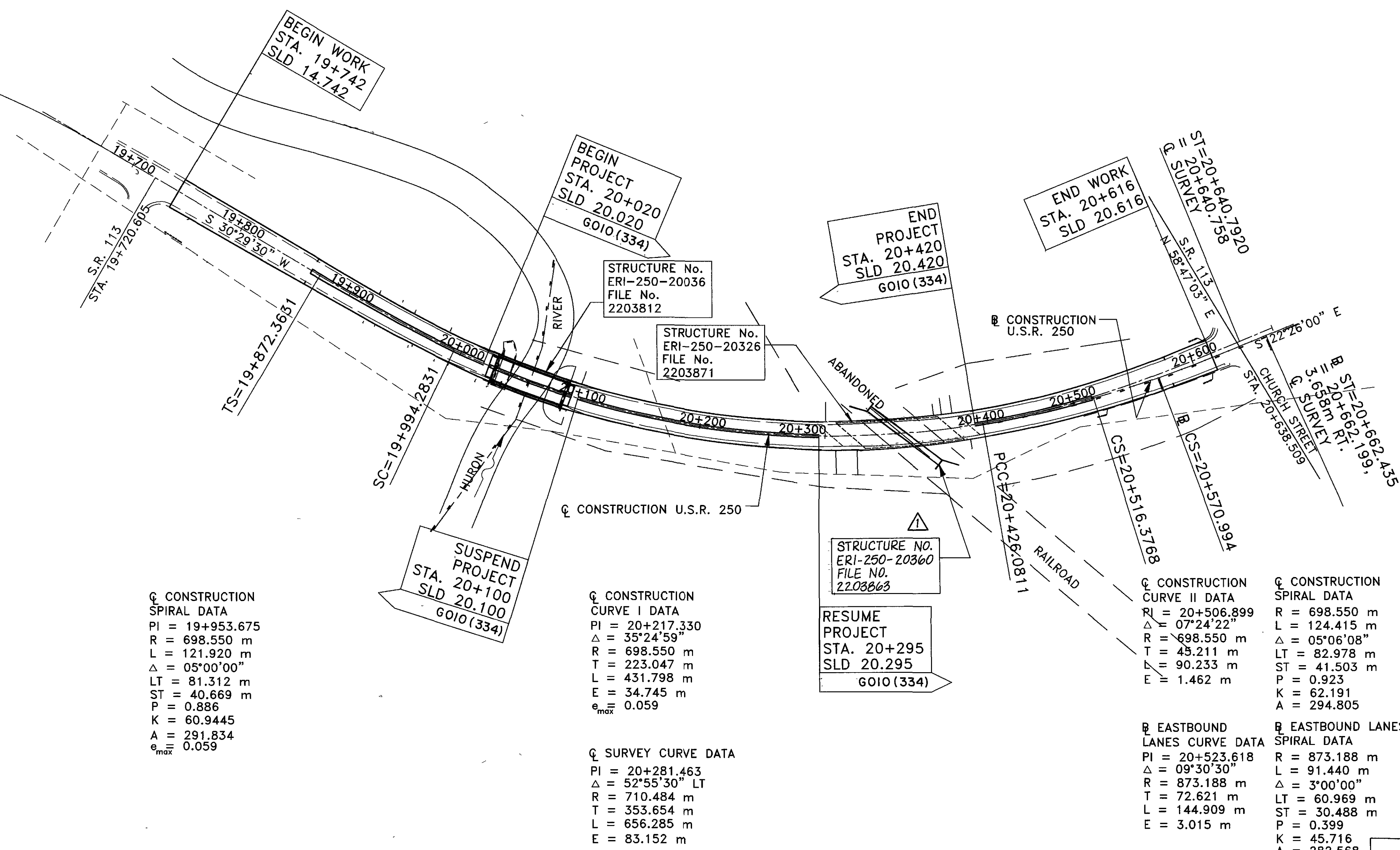
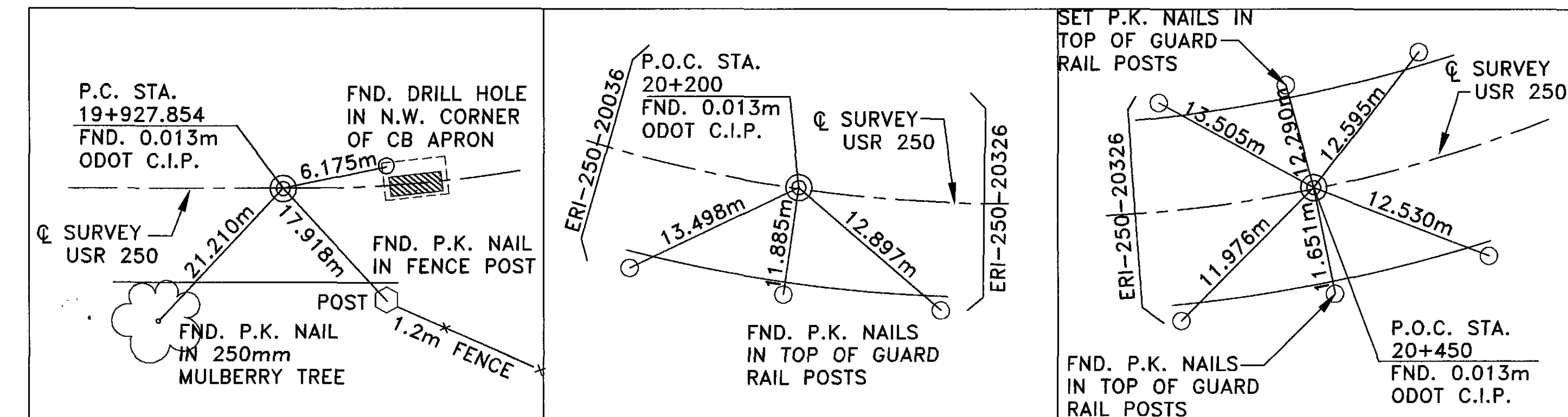


CALCULATED
MJS
CHECKED
THY

SCHEMATIC PLAN

ERI-250-19.742

CENTERLINE SURVEY REFERENCES



Q CONSTRUCTION SPIRAL DATA
PI = 19+953.675
R = 698.550 m
L = 121.920 m
 Δ = 05°00'00"
LT = 81.312 m
ST = 40.669 m
P = 0.886
K = 60.9445
A = 291.834
 e_{max} = 0.059

Q CONSTRUCTION CURVE I DATA
PI = 20+217.330
 Δ = 35°24'59"
R = 698.550 m
T = 223.047 m
L = 431.798 m
E = 34.745 m
 e_{max} = 0.059

Q SURVEY CURVE DATA
PI = 20+281.463
 Δ = 52°55'30" LT
R = 710.484 m
T = 353.654 m
L = 656.285 m
E = 83.152 m

STRUCTURE NO. ERI-250-20360
FILE NO. 2203863
RESUME PROJECT
STA. 20+295
SLD 20.295
GOIO (334)

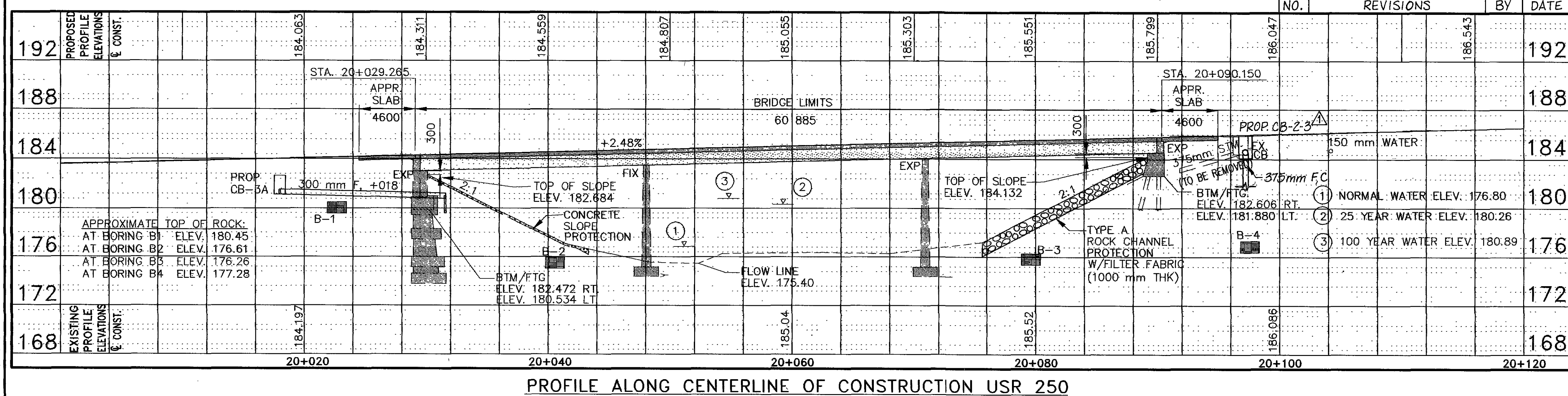
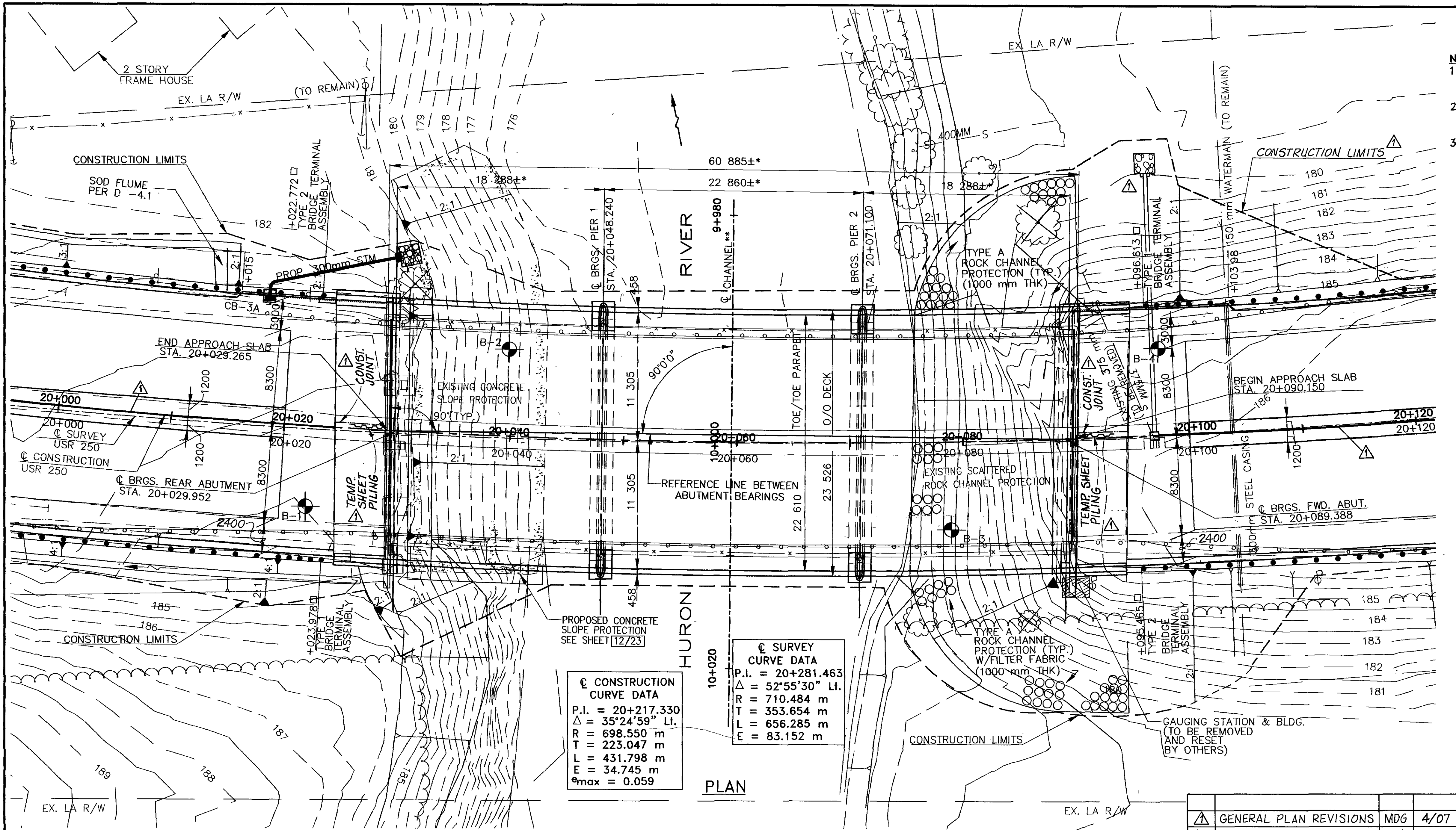
Q CONSTRUCTION CURVE II DATA
PI = 20+506.899
 Δ = 07°24'22"
R = 698.550 m
T = 45.211 m
L = 90.233 m
E = 1.462 m

Q CONSTRUCTION SPIRAL DATA
R = 698.550 m
L = 124.415 m
 Δ = 05°06'08"
LT = 82.978 m
ST = 41.503 m
P = 0.923
K = 62.191
A = 294.805

Q EASTBOUND LANES CURVE DATA
PI = 20+523.618
 Δ = 09°30'30"
R = 873.188 m
T = 72.621 m
L = 144.909 m
E = 3.015 m

Q EASTBOUND LANES SPIRAL DATA
R = 873.188 m
L = 91.440 m
 Δ = 3°00'00"
LT = 60.969 m
ST = 30.488 m
P = 0.399
K = 45.716
A = 282.568

NO.	GENERAL PLAN REVISIONS	MDG	4/07
	REVISIONS	BY	DATE



- NOTES:
1. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN SECTIONS.
 2. ALL DIMENSIONS ARE GIVEN IN MILLIMETERS, UNLESS OTHERWISE NOTED. ALL STATIONS AND ELEVATIONS ARE GIVEN IN METERS.
 3. ALL SLOPES ARE 2:1 UNLESS OTHERWISE NOTED

PILE TABLE		
PILE #	PILE SIZE	ESTIMATED PAY LENGTH - METERS
1	HP250x62	9
2	HP250x62	9
3	HP250x62	8
4	HP250x62	8
5	HP250x62	8
6	HP250x62	9

915mm DIA. DRILLED SHAFT REAR ABT. RT. TOP/ BEDROCK ELEV. 180.112 1000mm EMBEDMENT

- LEGEND
- B-BRIDGE BORING LOCATION
 - ▨ SECTION TO BE REMOVED
 - FIRST POST OFF BRIDGE
 - * DIM. MEASURED ALONG C CONSTRUCTION
 - ** STA 10+000.000 C CHANNEL= STA 20+059.498 C CONSTRUCTION

BENCH MARKS

USGS DATUM - PER ODOT
FND "+" CUT ON EAST
BONNET BOLT OF HYDRANT IN FRONT OF CHURCH
STA. 19+775±; 19 m± RT. ELEV. 183.621

TRAFFIC DATA

CURRENT ADT (2004)	25400
DESIGN YEAR ADT (2024)	40640
DESIGN YEAR ADTT(2024)	1626

HYDRAULIC DATA

DRAINAGE AREA: 96100 HECTARE

Q ₂₅ = 572 c.m.s.	Q ₁₀₀ = 756 c.m.s.
V ₂₅ = 4.02 m.p.s.	V ₁₀₀ = 4.57 m.p.s.

25 YR DESIGN HIGH WATER ELEV. = 180.26
100 YR DESIGN HIGH WATER ELEV. = 180.89

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM
ROADWAY: 18.3 m F/F OF CURB, INCLUDING A 2.1 m MEDIAN
ALIGNMENT: CURVE LEFT
SKEW: 90° (TO REFERENCE LINE)
SPANS: 18 288±, 22 860±, 18 288± C/C BEARINGS (MEASURED ALONG C USR 250)
LOADING: CF-2000 (1951)
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: 2AS-4-47
CONDITION: POOR
DATE BUILT: 1956
STRUCTURE FILE NO.: 2203812

PROPOSED STRUCTURE

PROPOSED WORK: NEW COMPOSITE REINFORCED CONCRETE DECK ON WIDENED SUPERSTRUCTURE & SUBSTRUCTURE

TYPE: 3 SPAN CONTINUOUS STEEL BEAM
ROADWAY: 22 610 mm TOE/TOE PARAPET
ALIGNMENT: CURVE LEFT
SKEW: 90° (TO REFERENCE LINE)
SPANS: 18 288±, 22 860±, 18 288± C/C BEARINGS (MEASURED ALONG C USR 250)
WEARING SURFACE: MONOLITHIC CONCRETE
LOADING: MS18 AND THE ALTERNATE MILITARY LOADING
SUPERELEVATION: 0.059 m/m
APPROACH SLABS: AS-1-81, 4600 mm LONG
LATITUDE: N41°18'03" LONGITUDE: W82°36'35"

GENERAL PLAN REVISIONS			
NO.	REVISIONS	MDG	DATE
1	REVISED	MDG	4/07

△ PROPOSED WORK

THE PROJECT IS TO WIDEN THE DECK TO 23.526 METERS. REMOVE THE EXISTING DECK, BACKWALLS, WINGWALLS, PORTIONS OF THE ABUTMENT BRIDGE SEAT AND PORTIONS OF THE PIERS. DOWEL THE PROPOSED ABUTMENT BRIDGE SEAT, WIDENED WINGWALLS AND WIDENED PIERS INTO THE EXISTING STRUCTURE. BUILD THE PROPOSED STRINGERS, DECK, BACKWALLS, WINGWALLS, AND PIER EXTENSIONS TO THE DIMENSIONS SHOWN WITH TRAFFIC MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC DRAWINGS. USE QC/QA CONCRETE CLASS QS2C FOR THE NEW SUPERSTRUCTURE. INSTALL NEW ELASTOMERIC STRIP SEALS. PAINT EXISTING STRUCTURAL STEEL. REMOVE EXISTING BEARINGS AND REPLACE WITH NEW ELASTOMERIC BEARINGS.



DESIGN FIRM
PROUDFOOT ASSOCIATES

5580 HEATHERDOWNS BLVD., TOLEDO, OHIO 43614

DATE
PEP 7-19-99

REVIEWED
BDS
THY

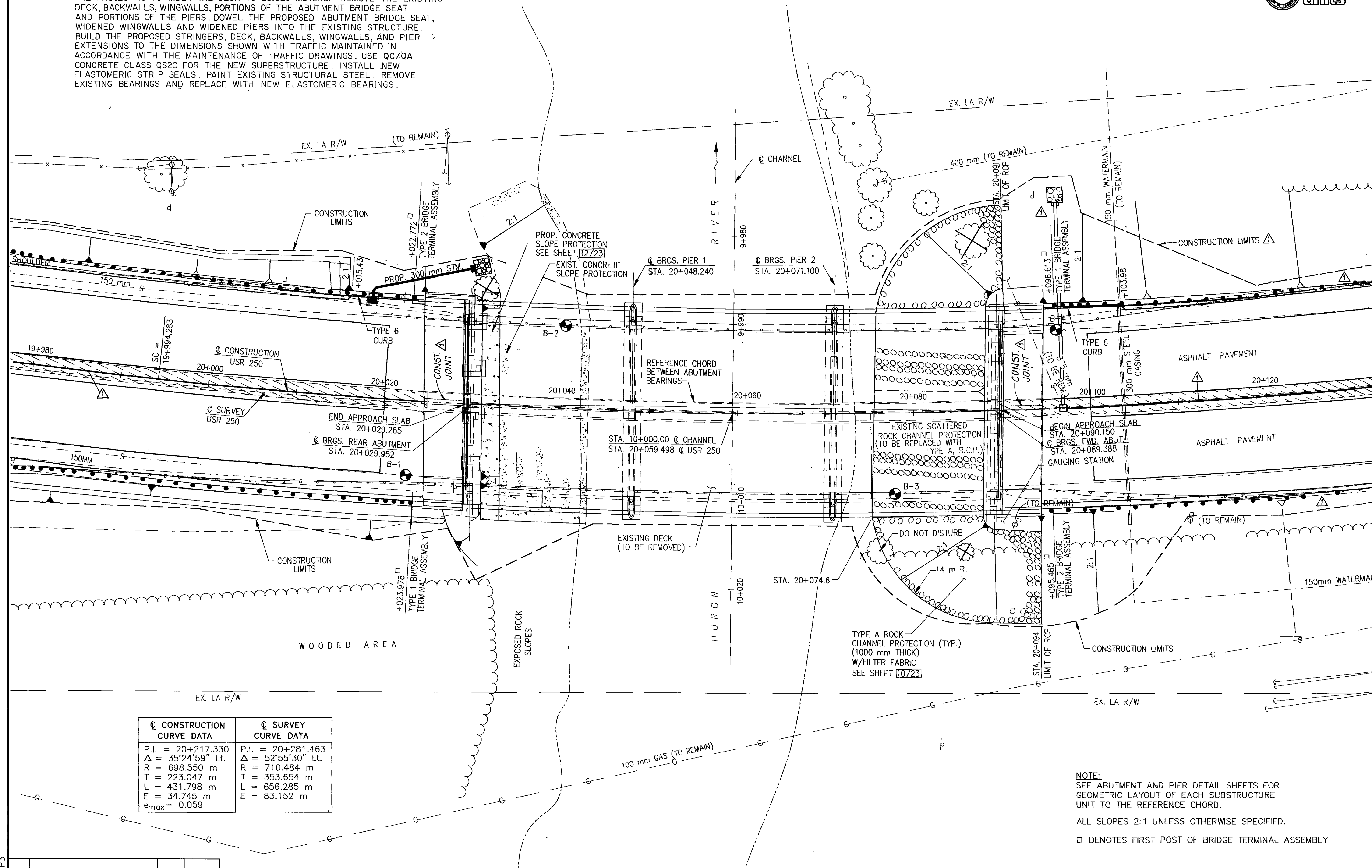
ERIC COUNTY
20+029.073
20+089.959

GENERAL PLAN
ERI-250-20036
OVER HURON RIVER

ERI-250-19.742

2 / 23

46
96



△ CONSTRUCTION CURVE DATA	△ SURVEY CURVE DATA
P.I. = 20+217.330	P.I. = 20+281.463
Δ = 35°24'59" Lt.	Δ = 52°55'30" Lt.
R = 698.550 m	R = 710.484 m
T = 223.047 m	T = 353.654 m
L = 431.798 m	L = 656.285 m
E = 34.745 m	E = 83.152 m
e _{max} = 0.059	

NO.	GENERAL PLAN REVISIONS	MDG	4/07
	REVISIONS	BY	DATE

13136SP3

ESTIMATED QUANTITIES

CALC. BY: BDH DATE: 04/2007 CHKD. BY: RLE DATE: 05/2007

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	SFN: 2203812				SEE SHEET
					ABUTS.	SUPER.	PIER	GENERAL	
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 6 METER SPAN, AS PER PLAN				LUMP	4
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP	4
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	00100	60	METER	STEEL PILES HP250x62, FURNISHED	60				
507	00150	51	METER	STEEL PILES HP250x62, DRIVEN	51				
509	10000	59,618	KILOGRAM	EPOXY COATED REINFORCING STEEL	5,560	51,936	2,122		
511	43001	52.4	CU METER	CLASS C CONCRETE, PIER, AS PER PLAN			52.4		4
511	43501	77.8	CU METER	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING, AS PER PLAN	77.8				4
511	71100	25.0	CU METER	CONCRETE, MISC.: BEAM SEAT REPAIR	24.0		1.0		4
512	10100	1,463	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	177.9	510.8	774.4		
512	10600	35	METER	CONCRETE REPAIR BY EPOXY INJECTION			35		4
512	44400	47.9	SQ METER	TYPE B WATERPROOFING	47.9				
513	10000	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL UF (CROSS FRAMES), ASTM A709 GRADE 36M		LUMP			
513	10020	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL 1, ASTM A709 GRADE 50M		LUMP			
513	20000	5,496	EACH	WELDED STUD SHEAR CONNECTORS		5,496			
513	95030	11	EACH	STRUCTURAL STEEL, MISC.: BEAM END REPAIR		11			4
514	00056	1,988	SQ METER	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT		1,988			4
514	00060	2,385	SQ METER	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT		2,385			4
514	00066	2,385	SQ METER	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT		2,385			4
514	00100	LUMP		SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL		LUMP			
514	00504	50	MAN HOUR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL		50			4
514	10000	26	EACH	FINAL INSPECTION REPAIR		26			4
516	11210	47.1	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL	47.1				
516	13600	6	SQ METER	25 MM PREFORMED EXPANSION JOINT FILLER	5.8				
516	44001	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN 305 MM x 305 MM x 44 MM (50 DUROMETER)		12			
516	44001	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN 275 MM x 275 MM x 28 MM (50 DUROMETER)		12			
516	44001	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN 305 MM x 305 MM x 46 MM (50 DUROMETER)		12			
516	44001	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN 381 MM x 305 MM x 56 MM (50 DUROMETER)		12			
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	4
518	21230	LUMP		POROUS BACKFILL WITH FILTER FABRIC	LUMP				
518	40000	58	METER	150 MM PERFORATED CORRUGATED PLASTIC PIPE	58.2				
518	40011	19	METER	150 MM NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	18.7				
524	94702	2.3	METER	DRILLED SHAFTS, 915 MM DIAMETER, ABOVE BEDROCK	2.3				
524	94704	1.0	METER	DRILLED SHAFTS, 915 MM DIAMETER, INTO BEDROCK	1.0				
898	10201	323.5	CU METER	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (DECK), AS PER PLAN		323.5			4
898	10689	208	SQ METER	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (APPROACH SLAB), 300MM, AS PER PLAN				208	4
898	11000	40.8	CU METER	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (PARAPET)		40.8			

STRUCTURE GENERAL NOTES



REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 REVISED 07-19-02
BR-1 REVISED 07-19-02
EXJ-4-87 REVISED 07-19-02
GSD-1-96 REVISED 07-19-02

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS:

898 DATED 07-21-06
1011 DATED 07-30-04
1080 DATED 04-19-02

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

CONSTRUCTION AND MATERIAL SPECIFICATIONS: STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, DATED JANUARY 1, 2005.

DESIGN LOADING: MS18 AND THE ALTERNATE MILITARY LOADING
FUTURE WEARING SURFACE (FWS) OF 60 PSF

DESIGN DATA

QC/QA CONCRETE CLASS QSC2 - COMPRESSIVE STRENGTH 31.0 MPa
(SUPERSTRUCTURE)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 27.5 MPa
(SUBSTRUCTURE)

CONCRETE CLASS S MODIFIED - COMPRESSIVE STRENGTH 27.5 MPa
(DRILLED SHAFT)

REINFORCING STEEL - ASTM A615 OR A996
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI
ALL REINFORCING STEEL SHALL BE EPOXY COATED

STRUCTURAL STEEL - ASTM A709 GRADE 50 YIELD STRENGTH 350 MPa

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, 65 MM COVER AND SEALING OF CONCRETE SURFACES.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 MM THICK.

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

BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED IN THE ODOT DISTRICT OFFICE IN ASHLAND, OHIO.

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THIS BRIDGE WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE.

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.

FOUNDATION BEARING PRESSURE: THE PIER FOOTINGS AS DESIGNED, PRODUCE AN ACTUAL MAXIMUM BEARING PRESSURE OF 0.462 MPa. THE ALLOWABLE BEARING PRESSURE IS 0.650 MPa.

PIER FOOTINGS SHALL BE PLACED IN BEDROCK AT THE ELEVATION SHOWN.

DRILLED SHAFTS: THE DESIGN LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 1000 KN AT THE ABUTMENTS. THIS LOAD IS RESISTED BY SHAFT ADHESION WITHIN A PORTION OF THE BEDROCK SOCKET AND ALSO BY SHAFT END BEARING. THE ALLOWABLE BEDROCK SOCKET ADHESION IS 1000 KN, ASSUMED TO ACT ALONG THE BOTTOM 1000 MM OF THE BEDROCK SOCKET FOR THE ABUTMENTS. THE ALLOWABLE END BEARING PRESSURE IS 1000 MPa. THE REINFORCING STEEL SHALL BE EPOXY COATED ACCORDING TO 709.00.

DRILLED SHAFT CONSTRUCTION METHOD

CONSTRUCTION ON THIS PROJECT SHALL PROCEED PER 524.04 (D) PERMANENT CASING CONSTRUCTION METHOD.

CONVERSION OF STANDARD BRIDGE DRAWINGS: THE STANDARD BRIDGE DRAWINGS REFERENCED IN THIS PLAN ARE IN ENGLISH UNITS. ANY CONVERSION OF DIMENSIONS REQUIRED TO CONSTRUCT THE ITEMS SHOWN ON THE STANDARDS IS THE RESPONSIBILITY OF THE CONTRACTOR. REFER TO 109.02 FOR A LISTING OF CONVERSION FACTORS. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY METRIC VALUES WHERE SUITABLE.

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
1935 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE (330) 345-6556
FAX (330) 345-6071

DATE
5/4/07

REVIEWED
DWS

STRUCTURE FILE NUMBER
2203812

DESIGNED
BDH

CHECKED
RLE

STRUCTURE GENERAL NOTES

BRIDGE NO. ERI-250-20036
OVER HURON RIVER

ERI-250-19.742
PID 13136

3 / 23

47
96

GENERAL PLAN REVISIONS	BDH	4/07
NO. REVISIONS	BY	DATE

STRUCTURE GENERAL NOTES (CONTINUED)

PILES TO BEDROCK: DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER 25 mm OR BY CONTACTING HARD BEDROCK AND THE PILE RECIEVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE ULTIMATE BEARING VALUE IS 924 KN PER PILE FOR THE ABUTMENT PILES.

ABUTMENT PILES 1, 2 & 6:
3 PILES 10.5 METERS LONG, ORDER LENGTH

ABUTMENT PILES 3, 4 & 5:
3 PILES 9.5 METERS LONG, ORDER LENGTH

ITEM 511 - CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING, AS PER PLAN
ITEM 511 - CLASS C CONCRETE, PIER, AS PER PLAN
THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

ITEM 511 - CONCRETE, MISC.: BEAM SEAT REPAIR
REPAIR ABUTMENT AND PIER BEAM SEATS ACCORDING TO THE DETAILS IN THE PLANS. CONCRETE SHALL BE CLASS C CONCRETE AND THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE. EPOXY COATED REINFORCING STEEL REQUIRED FOR REPAIR SHALL BE ACCORDING TO CMS 509 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING BAR MARKS, LENGTHS, WEIGHTS, ETC. OF THE REINFORCING STEEL TO THE SATISFACTION OF THE ENGINEER FOR THE REPAIR OF THE BEAM SEATS AT THE ABUTMENTS AND THE PIERS.

CONCRETE PARAPETS: AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAWCUT 32 mm DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. PLACE THE CONTROL JOINTS AS SPECIFIED ON SHEETS [21 & 22 / 23].

USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, NOMINAL WIDTH OF 6 mm. SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 25 mm WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM 13 mm OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 6 METER SPAN, AS PER PLAN
THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENCES 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. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

BEAM TRIMMING: TRIM BEAMS AS NECESSARY TO PROVIDE A MINIMUM CLEARANCE OF 75 mm @ 15° C WITH ABUTMENT BACKWALL. PERFORM BEAM TRIMMING AFTER REMOVAL OF EXISTING BACKWALL AND BEFORE PLACEMENT OF OF PROPOSED BACKWALL. ALL TRIMMED BEAMS SHALL BE GROUND SMOOTH ACCORDING TO 513.12 AND PAINTED ACCORDING TO 514.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW TO OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK. DRILL SMALL DIAMETER PILOT HOLES 50 mm OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 50 mm OF THE FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 50 mm 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 PORPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

SUPERSTRUCTURE 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 STEEL MEMBERS, THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 16 KILOGRAMS BUT NOT TO EXCEED 41 KILOGRAMS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.

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

EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS (FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

SUBSTRUCTURE CONCRETE REMOVAL METHODS: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 16 KILOGRAMS FOR REMOVAL WITHIN 450 mm OF PORTIONS TO BE PRESERVED. OUTSIDE THE 450 mm LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 41 KILOGRAMS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

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, OVER 6 METER SPAN, 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, 105.02 AND 513.04.

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

ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN
THIS WORK CONSISTS OF RAISING OR REPOSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

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

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

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

SURVEY DISC ON STRUCTURE
THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST ONE (1) WEEK IN ADVANCE OF POURING THE CONCRETE FOR COMPLETION OF THE WINGWALL. THE ENGINEER WILL PROVIDE THE CONTRACTOR ONE (1) SURVEY DISC (OBTAINED FROM THE DISTRICT SURVEYOR) WHICH THE CONTRACTOR SHALL PLACE IN THE SURFACE OF THE FRESH CONCRETE. THE LOCATION OF THE DISC SHALL BE ON THE WINGWALL, AND ON A FLAT, HORIZONTAL SURFACE BEYOND THE EDGE OF THE DECK AND GUARDRAIL OR PARAPET. THE BENCHMARK SHALL BE ACCESSIBLE TO A SURVEYOR'S ROD WITHOUT ANY OBSTRUCTIONS. COST OF THIS WORK IS CONSIDERED INCIDENTAL TO THE CONCRETE BID ITEM.

ITEM 513 - STRUCTURAL STEEL, MISC.: BEAM END REPAIR
PRIOR TO PAINTING AND BEARING REPLACEMENT, REPAIR THE ENDS OF THE EXISTING BEAMS AS SHOWN ON THE DETAILS ON SHEET [16 & 17 / 23]. ALL WORK SHALL CONFORM TO CMS 513.

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 898 - QC/QA CONCRETE CLASS QSC2, SUPERSTRUCTURE (DECK), AS PER PLAN. 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.

ITEM 514 - PAINTING OF STRUCTURAL STEEL
NEW STRUCTURAL STEEL SHALL HAVE A THREE COAT SYSTEM CONSISTING OF A SHOP APPLIED INORGANIC ZINC PRIME COAT, A FIELD APPLIED EPOXY INTERMEDIATE COAT, AND A FIELD APPLIED URETHANE FINISH COAT ACCORDING TO 514. INCLUDE INORGANIC PRIME COAT WITH COST OF ITEM 513. INCLUDE QUANTITIES FOR FIELD APPLIED EPOXY INTERMEDIATE COAT AND URETHANE FINISH COAT IN THE SQUARE METER UNIT PRICE BID FOR EACH OF THE 514 ITEMS.

EXISTING STRUCTURAL STEEL SHALL HAVE A THREE COAT FIELD APPLIED SYSTEM CONSISTING OF AN ORGANIC ZINC PRIME COAT, AN EPOXY INTERMEDIATE COAT, AND A URETHANE FINISH COAT ACCORDING TO 514.

THE COLOR OF THE FINISH COAT SHALL BE A GREEN COLOR MEETING FEDERAL STANDARD NUMBER 24277 OR A BLUE COLOR MEETING FEDERAL STANDARD NUMBER 25526. IN ADDITION TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL 25% OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS AS CROSS FRAMES AND BEARINGS.

BRIDGE DECK ELEVATIONS, SLAB THICKNESS AND APPROACH PROFILES:
IN ORDER TO MEET ROADWAY GRADES TO ASSURE THE CONSTRUCTION OF THE REQUIRED THICKNESS OF DECK SLAB, AND TO ASSURE THE PROPER LOCATION OF THE REINFORCING STEEL, IN THE DECK SLAB, THE CONTRACTOR SHALL OBTAIN THE ELEVATIONS OF THE TOP OF THE EXISTING STEEL BEAMS, AFTER THE COMPLETE REMOVAL OF THE EXISTING DECK SLAB, AT THE LOCATIONS SHOWN ON THE TRANSVERSE SECTION ON SHEET 19 23 FOR THE SCREED ELEVATIONS. THE CONTRACTOR SHALL CALCULATE THE DECK THICKNESS OVER THE BEAMS USING THE DECK SCREED ELEVATIONS AND THE TOP OF BEAM ELEVATIONS. THE CONTRACTOR SHALL FURNISH THE ELEVATIONS TO THE ENGINEER FOR FINAL CHECKING. IF THE COMPUTED DECK THICKNESS IS FOUND TO BE LESS THAN THE MINIMUM THICKNESS REQUIRED, THE FINAL PAVEMENT ELEVATIONS SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. FORM WORK SHALL NOT PROCEED UNTIL A CHECK OF THE FINAL ELEVATIONS HAS BEEN PERFORMED BY THE ENGINEER.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED WITH ITEM 898 - QC/QA CONCRETE CLASS QSC2, SUPERSTRUCTURE (DECK), AS PER PLAN.

DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT
CORE DRILL ALL DOWEL HOLES AND GROUT WITH AN EPOXY MORTAR MEETING THE REQUIREMENTS OF ITEM 510. INCLUDE ALL WORK IN THE APPROPRIATE 511 ITEMS FOR PAYMENT.

MECHANICAL CONNECTIONS: AN APPROVED TYPE OF NON-PROTRUDING MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE FURNISHED. INSTALLATION OF THE CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE PROVIDED WITH CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" AS SHOWN ON THE PLANS. CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR OTHERWISE DO NOT MEET SPECIFICATION WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY MAY BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. THE CONNECTORS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED IN THE BID PRICE FOR ITEM 509.

ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION
PERFORM THIS WORK IN CRACKS ON THE PIER WALLS DETAILED ON PLAN SHEET [14 / 23].

ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (APPROACH SLAB), AS PER PLAN
FURNISH APPROACH SLABS CONFORMING TO CMS 526 EXCEPT CONCRETE SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 898, QC/QA CONCRETE, CLASS QSC2. THE ACCEPTED QUANTITIES SHALL INCLUDE: CONCRETE, CURBS, REINFORCING STEEL, JOINT FILLERS, JOINT SEALERS, JOINT SEALS, AND WATERPROOFING. THE DEPARTMENT WILL MEASURE APPROACH SLABS BY THE NUMBER OF SQUARE YARDS. THE DEPARTMENT WILL INITIALLY PAY THE FULL BID PRICE TO THE CONTRACTOR UPON COMPLETING THE WORK. THE DEPARTMENT WILL CALCULATE THE FINAL ADJUSTED PAYMENT ACCORDING TO 898.17 AND INCLUDE APPROACH SLAB CONCRETE AND DECK CONCRETE IN THE SAME LOT TO DETERMINE FINAL PAY FACTORS.



DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
1835 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE: (330) 345-6556
FAX: (330) 345-9077



DATE
5/4/07
REVIEWED
DWS
STRUCTURE FILE NUMBER
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REVISED

STRUCTURE GENERAL NOTES
BRIDGE NO. ERI-250-20036
OVER HURON RIVER

ERI-250-19.742
PID 13136

4 / 23

48
96

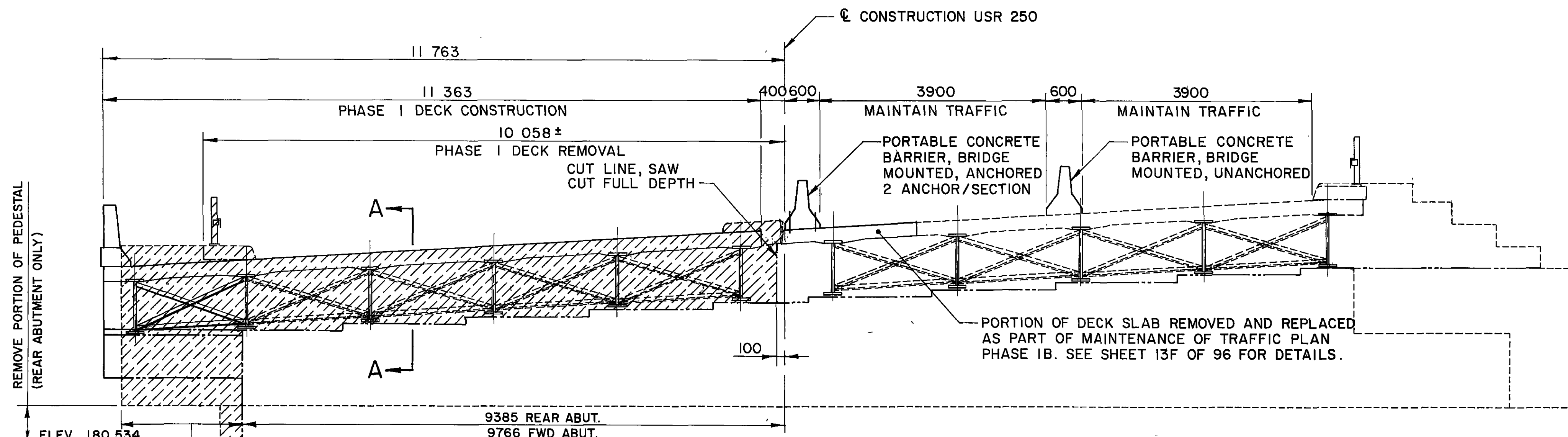
▲	GENERAL PLAN REVISIONS	BDH	4/07
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NOTES:

- 1) ALL DIMENSIONS ARE IN MILLIMETERS
- 2) PHASE I REMOVAL/CONSTRUCTION SHALL BE PERFORMED DURING MAINTENANCE OF TRAFFIC PLAN PHASE 2. PHASE 2 REMOVAL/CONSTRUCTION AND PHASE 3 CONSTRUCTION SHALL BE PERFORMED DURING MAINTENANCE OF TRAFFIC PLAN PHASE 3. SEE MAINTENANCE OF TRAFFIC PLAN SHEET 13A OF 96 FOR ADDITIONAL DETAILS.
- 3) CONSTRUCTION JOINT PREPARATION: REMOVE CONCRETE TO A ROUGH SURFACE. PRIOR TO CONCRETE PLACEMENT, ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN, THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.
- 4) FOR NEW BACKWALL AND CONCRETE PARAPET REPLACEMENT DETAILS, SEE SHEETS 6/23 AND 21/23.
- 5) FOR ABUTMENT BEAM SEAT AND FACE REMOVAL DETAILS, SEE SHEET 12/23.
- 6) FOR REAR ABUTMENT BEAM SEAT AND FACE REPAIR DETAILS, SEE SHEETS 6A/23 & 7/23.
- 7) FOR FORWARD ABUTMENT BEAM SEAT AND FACE REPAIR DETAILS, SEE SHEETS 9A/23 & 10/23.

SAW CUT PERPENDICULAR TO FACE OF BACKWALL.

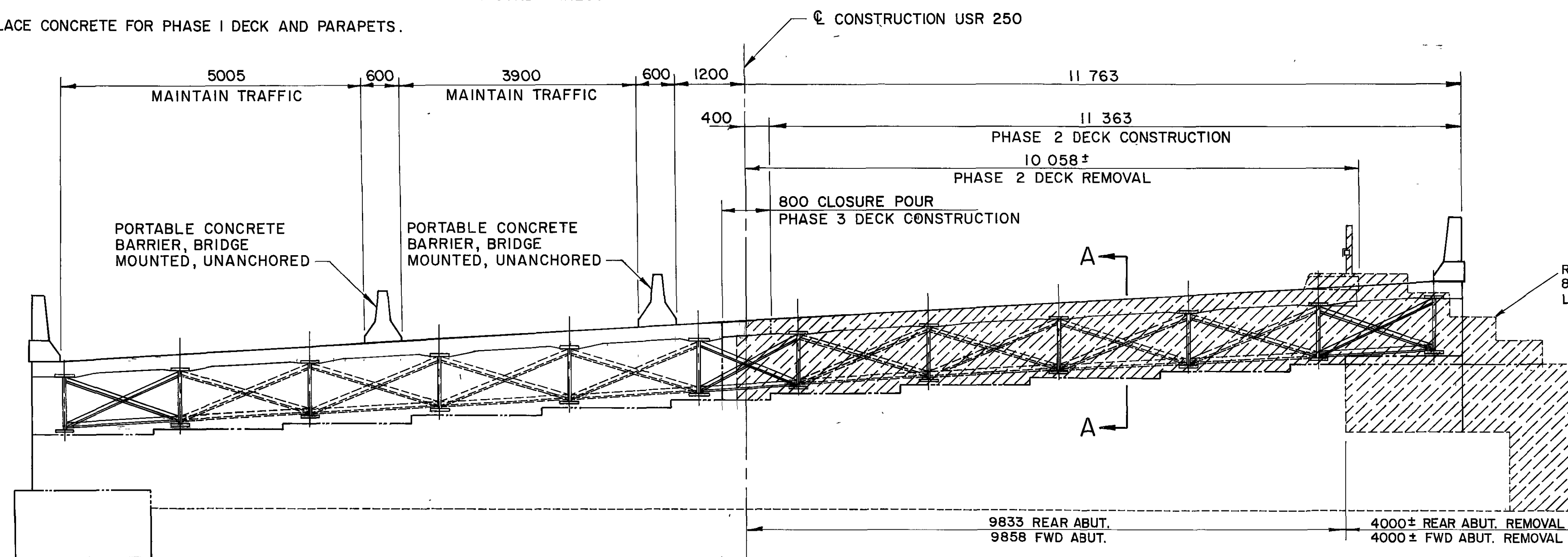
 SECTION TO BE REMOVED



PHASE 1 WORK SEQUENCING

- 1) SET PCB TO MAINTAIN TRAFFIC ON SOUTHBOUND LANES AND TO ISOLATE WORK AREA. INSTALL TEMPORARY SHEET PILING BEHIND ABUTMENT.
- 2) REMOVE PORTIONS OF DECK, BACKWALLS, PIERS AND ABUTMENTS AS SHOWN.
- 3) CONSTRUCT ABUTMENTS, PIERS, BACKWALLS AND APPROACH SLABS FOR NORTHBOUND LANES.
- 4) SET BEAM "A" AND INSTALL BRACING FOR WIDENING OF NORTHBOUND LANES.
- 5) PLACE CONCRETE FOR PHASE I DECK AND PARAPETS.

PHASE 1
STA. 20+029.073 TO STA. 20+089.959



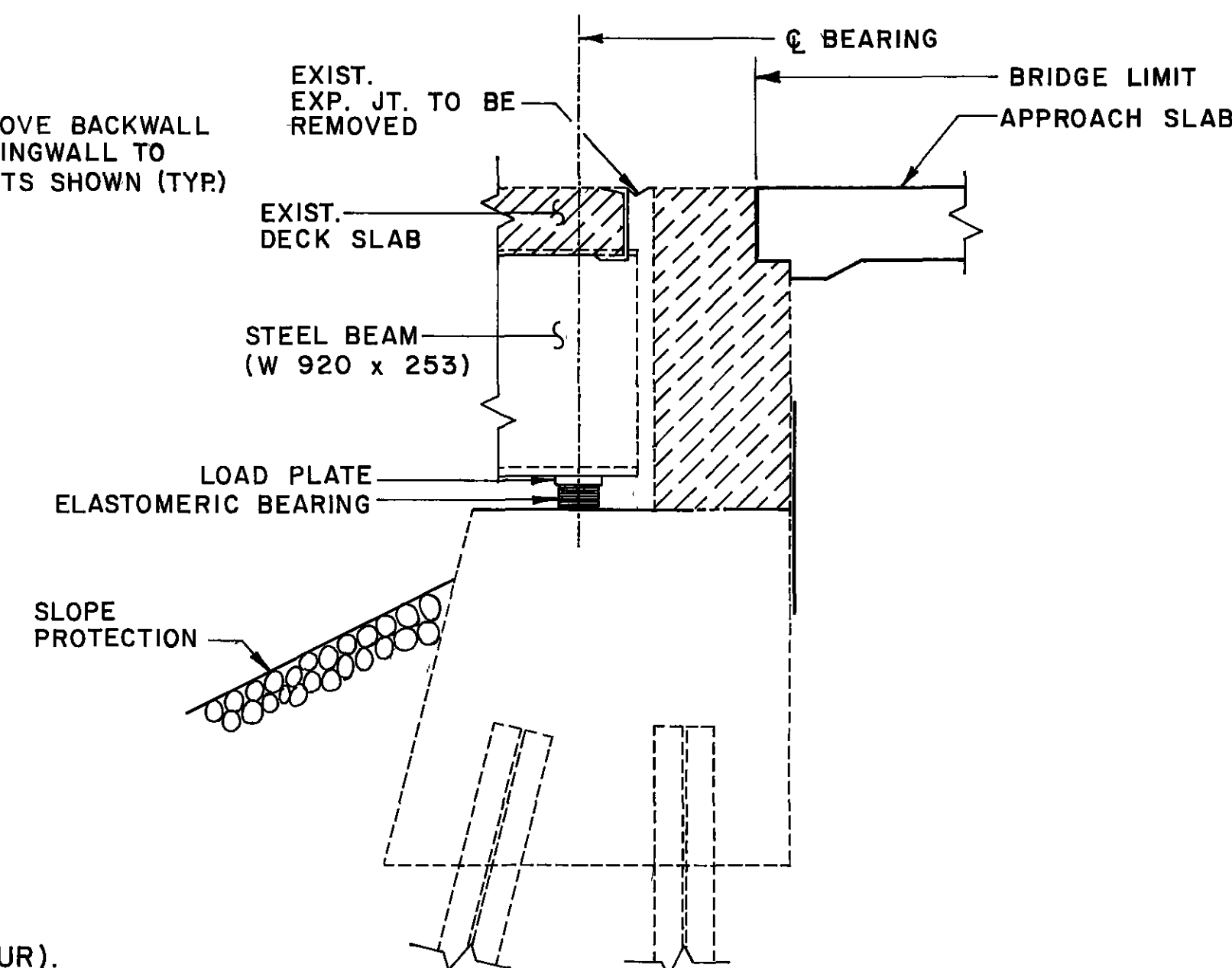
PHASE 2 WORK SEQUENCING

- 1) SET PCB TO MAINTAIN TRAFFIC ON NORTHBOUND LANES AND TO ISOLATE WORK AREA.
- 2) REMOVE REMAINING PORTIONS OF DECK, BACKWALLS, PIERS AND ABUTMENTS AS SHOWN.
- 3) CONSTRUCT ABUTMENTS, PIERS, BACKWALLS AND APPROACH SLABS FOR SOUTHBOUND LANES.
- 4) SET BEAM "M" AND INSTALL BRACING FOR WIDENING OF SOUTHBOUND LANES.
- 5) PLACE CONCRETE FOR PHASE 2 DECK AND PARAPETS.

PHASE 2 & 3
STA. 20+029.073 TO STA. 20+089.959

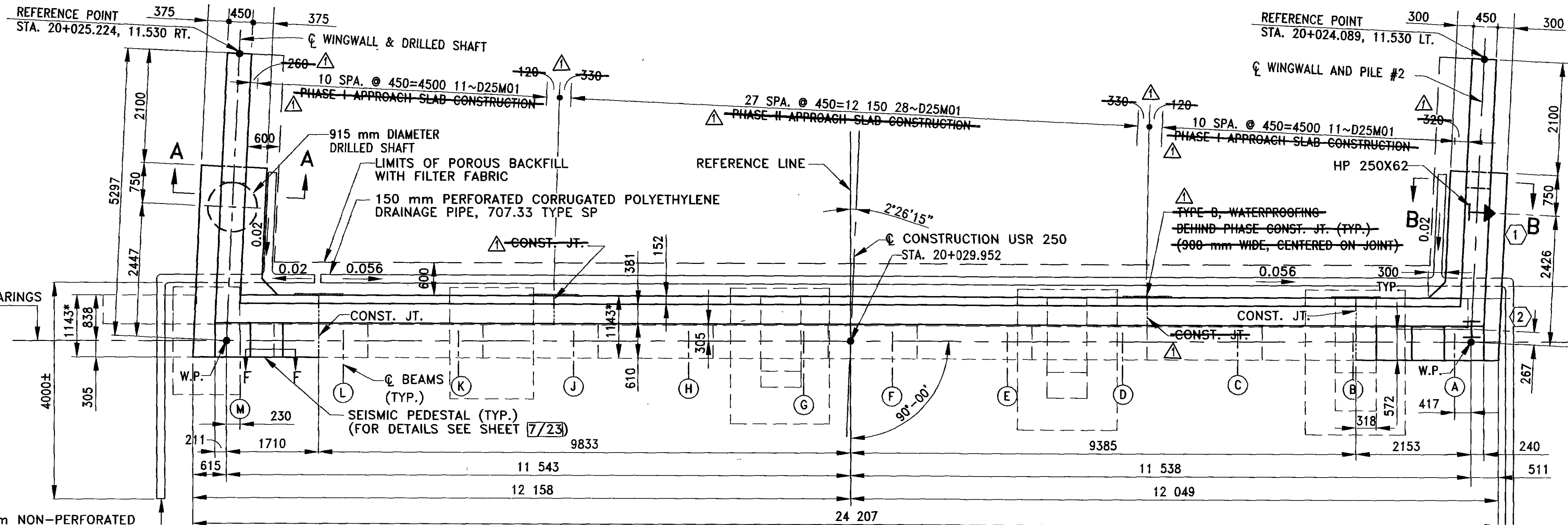
PHASE 3 WORK SEQUENCING

- 1) INSTALL BRACING BETWEEN BEAMS "F" AND "G".
- 2) PLACE CONCRETE FOR PHASE 3 DECK (CLOSURE POUR).



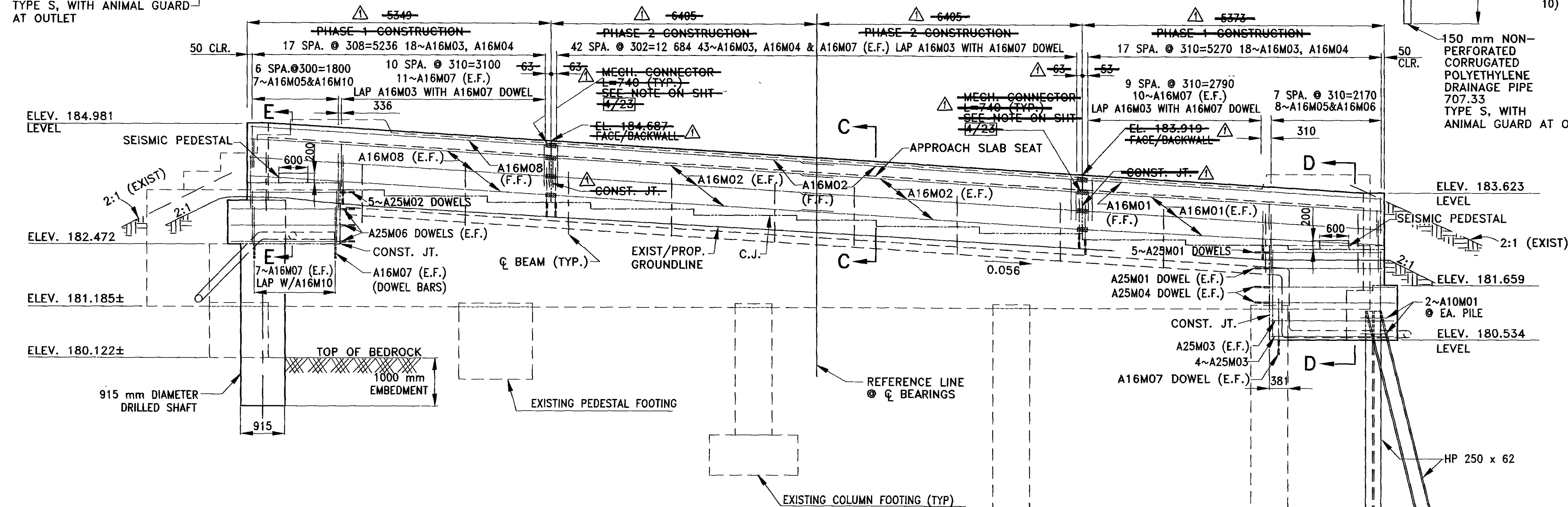
SECTION A-A

NO.	GENERAL PLAN REVISIONS	MDG	4/07
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PLAN

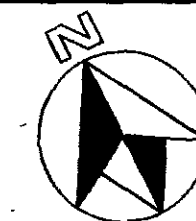
150 mm NON-PERFORATED CORRUGATED POLYETHYLENE DRAINAGE PIPE, 707.33 TYPE S, WITH ANIMAL GUARD AT OUTLET



ELEVATION

⚠ DIMENSIONS SHOWN ON THIS SHEET REGARDING PHASE CONSTRUCTION OF THE ABUTMENTS SHALL NOT BE USED. SEE SHEET [6A/23] FOR THE REVISED PHASE CONSTRUCTION REQUIREMENTS FOR THIS PROJECT.

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NOTES:

- POROUS BACKFILL WITH FILTER FABRIC, 600 mm THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE ENDS OF THE WINGWALLS.
- MINIMUM CONCRETE COVER IS 50 mm WHERE RIGID FORMS ARE USED AND 75 mm WHERE EARTH FORMED UNLESS OTHERWISE SPECIFIED.
- MINIMUM BAR LAPS SHALL BE AS FOLLOWS:
16M BARS 740 mm
25M BARS 1500 mm
- ALL REINFORCING STEEL SHALL BE EPOXY COATED SEE SHEET [23/23] FOR DETAILS.
- SEE SHEET [7/23] AND [8/23] FOR SECTION CUTS AND WINGWALL ELEVATIONS
- SEE SHEET [5/23] FOR PHASED CONSTRUCTION AND CONCRETE REMOVAL LIMITS
- DOWEL EMBEDMENT 300 mm UNLESS SHOWN OTHERWISE.
- ⚠ SEE SHEET [12/23] FOR CONCRETE REMOVAL AND REPAIR DETAILS.
- SEE SHEET [15/23] FOR BEARING DETAILS.
- ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLETS OF THE DRAINAGE PIPES. SEE STD. DRAWING DM-1.1 FOR DETAILS. THIS ITEM IS INCIDENTAL TO ITEM 518-150MM NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN.

BEAM SEAT ELEVATION	
BEAM	ELEVATION
(A)	182.366
(B)	182.475
(C)	182.603
(D)	182.729
(E)	182.860
(F)	182.984
(G)	183.069
(H)	183.195
(J)	183.327
(K)	183.456
(L)	183.585
(M)	183.713

LEGEND

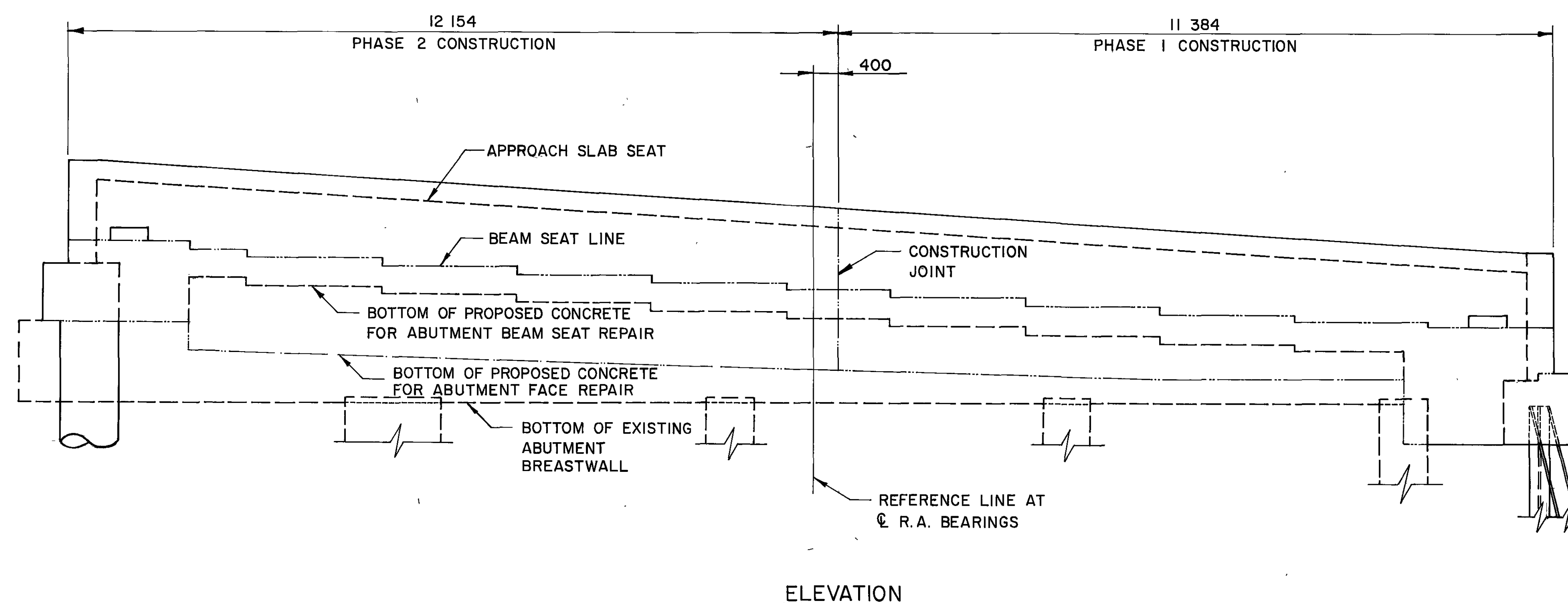
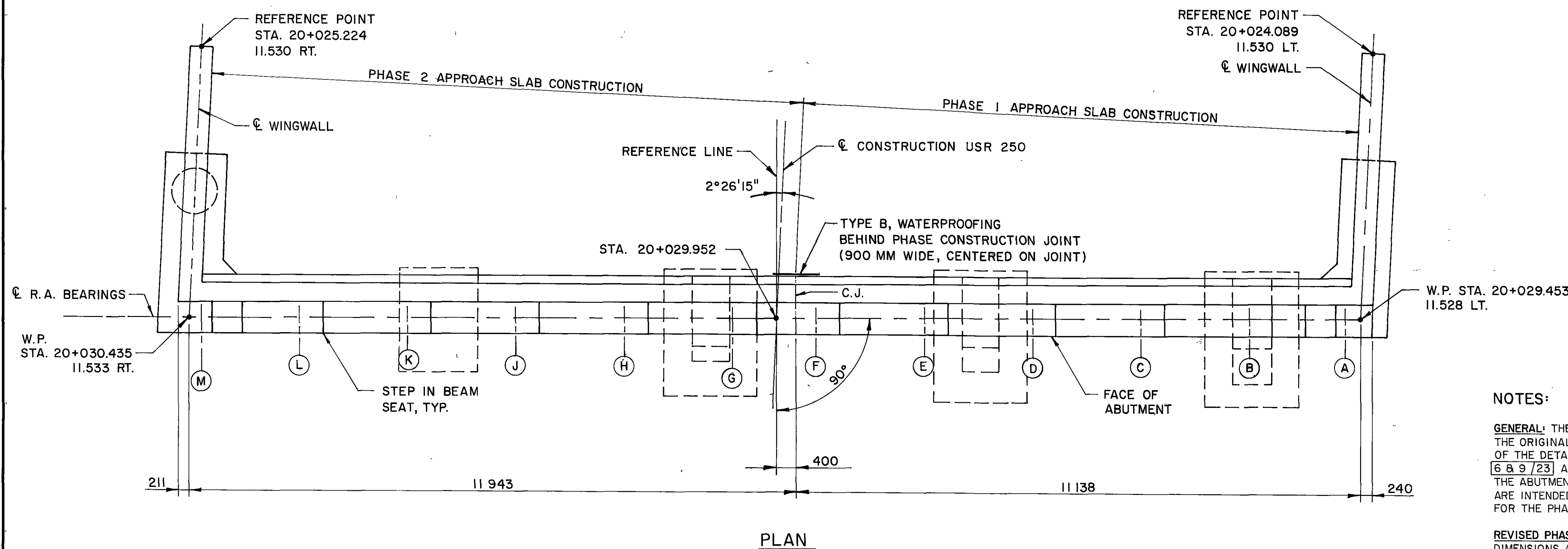
- * MATCH EXISTING DIMENSIONS OR ELEVATION
- ⦿ PILE IDENTIFICATION NUMBER
- (A) BEAM IDENTIFICATION
- W.P. WORK POINT
- ⤴ DENOTES BATTERED PILE (4:1)
- E.F. EACH FACE
- F.F. FAR FACE
- N.F. NEAR FACE

REAR ABUTMENT DETAILS
ERI-250-20036
OVER HURON RIVER

ERI-250-19.742

6/23

50
96



NOTES:

GENERAL: THE PHASE CONSTRUCTION SCHEME HAS BEEN REVISED FROM THE ORIGINAL DETAILS SHOWN ON SHEETS [6 & 9/23]. THE MAJORITY OF THE DETAILS AND OVERALL ABUTMENT GEOMETRY SHOWN ON SHEETS [6 & 9/23] ARE VALID AND SHALL BE USED FOR THE CONSTRUCTION OF THE ABUTMENT UNLESS SPECIALLY INDICATED. SHEETS [6A & 9A/23] ARE INTENDED TO BE USED IN CONJUNCTION WITH SHEETS [6 & 9/23] FOR THE PHASE CONSTRUCTION OF THE ABUTMENTS.

REVISED PHASE CONSTRUCTION JOINT LOCATION: DISREGARD DIMENSIONS AND CALLOUTS PERTAINING TO THE LOCATION OF THE PHASE CONSTRUCTION JOINTS ON THE DETAILS SHOWN ON SHEETS [6 & 9/23]. CONSTRUCT THE ABUTMENTS AND APPROACH SLABS IN PHASES TO THE DIMENSIONS SHOWN ON SHEETS [6A & 9A/23].

REVISIONS TO ABUTMENT REINFORCING STEEL: THE ABUTMENT REINFORCING STEEL SCHEDULE ON SHEET [23/23] HAS NOT BEEN REVISED TO REFLECT THE REVISED ABUTMENT PHASE CONSTRUCTION JOINT LOCATION SHOWN ON SHEETS [6A & 9A/23]. THE CONTRACTOR IS RESPONSIBLE FOR REVISING THE ABUTMENT REINFORCING STEEL AS NECESSARY TO MEET THE REQUIREMENTS OF THE REVISED PHASE CONSTRUCTION.

IN ADDITION TO THE REVISIONS TO THE ABUTMENT REINFORCING STEEL, THE NUMBER OF DOWELS WILL NEED TO BE REVISED DUE TO THE ABUTMENT BEAM SEAT REPAIR. DOWELS ARE INCLUDED UNDER ITEM 509 - EPOXY COATED REINFORCING STEEL FOR PAYMENT AND THE WORK FOR INSTALLING DOWELS IS INCLUDED UNDER THE APPROPRIATE 511 ITEM FOR PAYMENT.

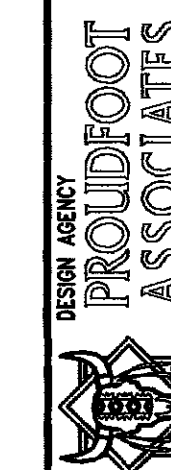
MEASUREMENT AND PAYMENT: BIDS SHALL BE BASED ON THE TOTAL WEIGHT OF ABUTMENT REINFORCING STEEL SHOWN IN THE REINFORCING STEEL SCHEDULE ON SHEET [23/23]. FINAL PAYMENT WILL BE BASED ON THE REVISED ACCEPTED QUANTITIES AT THE CONTRACT UNIT PRICE BID FOR ITEM 509 - EPOXY COATED REINFORCING STEEL.

ABUTMENT BEAM SEAT REPAIR: THE DETAILS SHOWN ON SHEETS [6 & 9/23] DO NOT INCLUDE ABUTMENT BEAM SEAT REMOVAL AND REPAIR THAT IS TO BE INCLUDED IN THE WORK. THE DETAILS SHOWN ON SHEETS [6A & 9A/23] INDICATE THE APPROXIMATE LIMITS OF THE PROPOSED REPAIR TO THE ABUTMENT BEAM SEAT AND FACE. RE-CONSTRUCT THE ABUTMENT BEAM SEATS TO THE ELEVATIONS SHOWN IN THE TABLES ON SHEETS [6 & 9/23]. SEE STRUCTURE GENERAL NOTES SHEET [4/23] FOR ADDITIONAL NOTES REGARDING THE BEAM SEAT REPAIR. SEE SECTION C-C ON SHEETS [7 & 10/23] FOR PROPOSED REINFORCING STEEL DETAILS OF THE BEAM SEAT.

NO.	GENERAL PLAN REVISIONS	MDG	4/07
NO.	REVISIONS	BY	DATE

NOTES:

1. * MATCH EXISTING DIMENSIONS
2. SEE SHEET 15/23 FOR BEARING DETAILS.
3. SEE SHEETS 22 & 23/23 FOR REINFORCING STEEL.
4. SEE SHEET 18/23 FOR EXPANSION JOINT DETAILS.



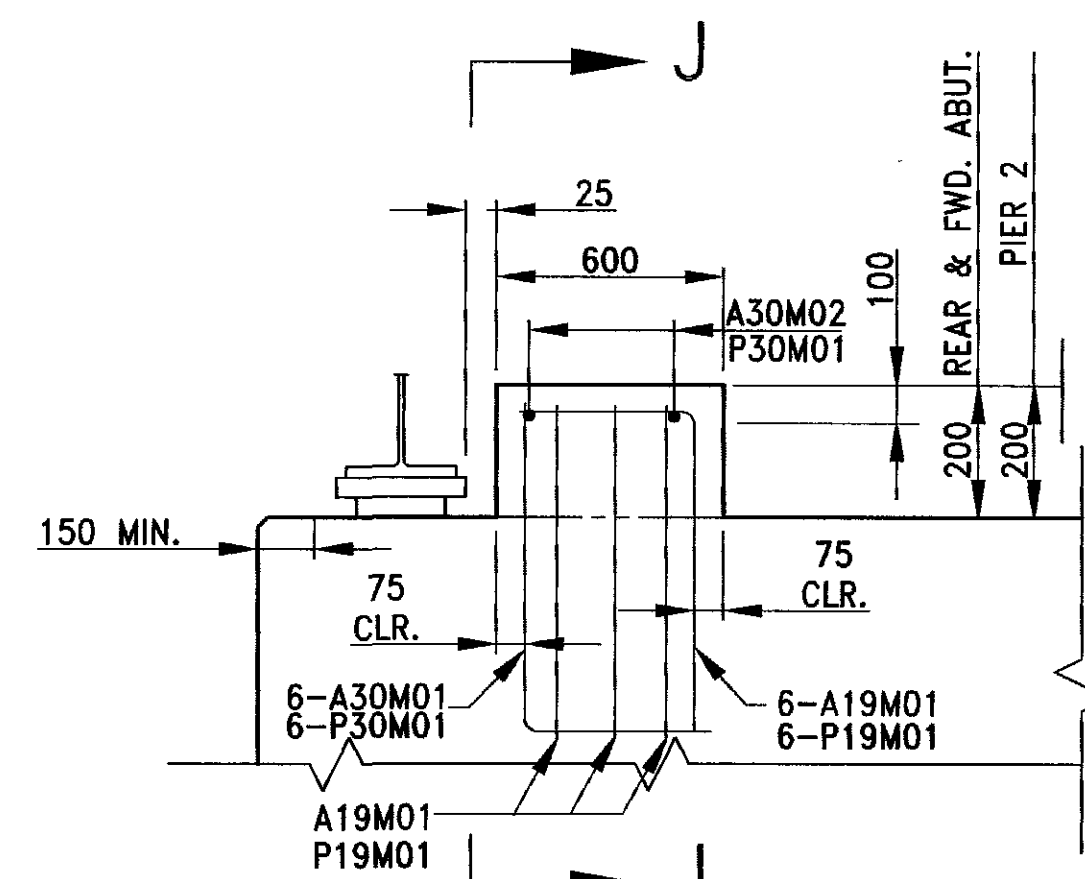
DATE 7-19-99
REVIEWED PEP
DRAWN MAK
DESIGNED MJS
CHECKED THY

REAR ABUTMENT DETAILS
ERI-250-20036
OVER HURON RIVER

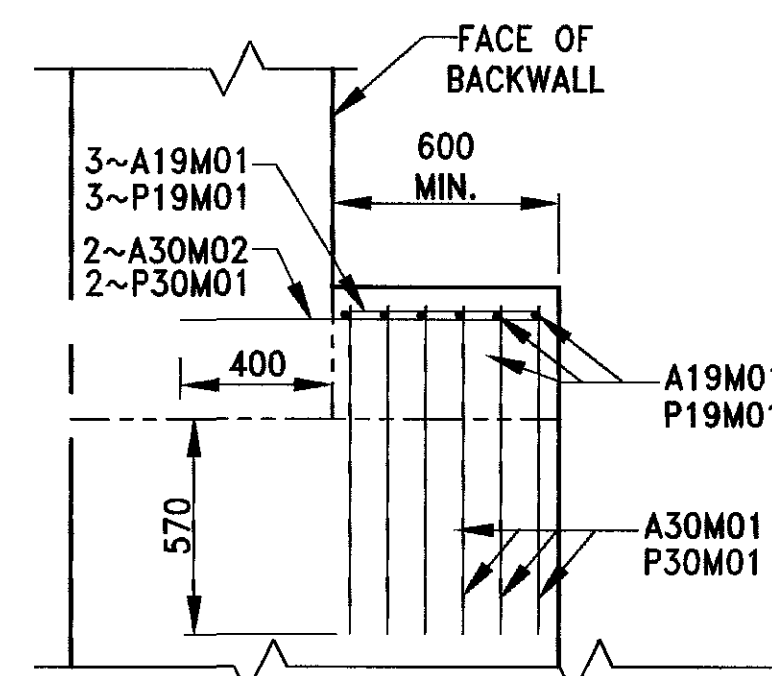
ERI-250-19.742

7/23

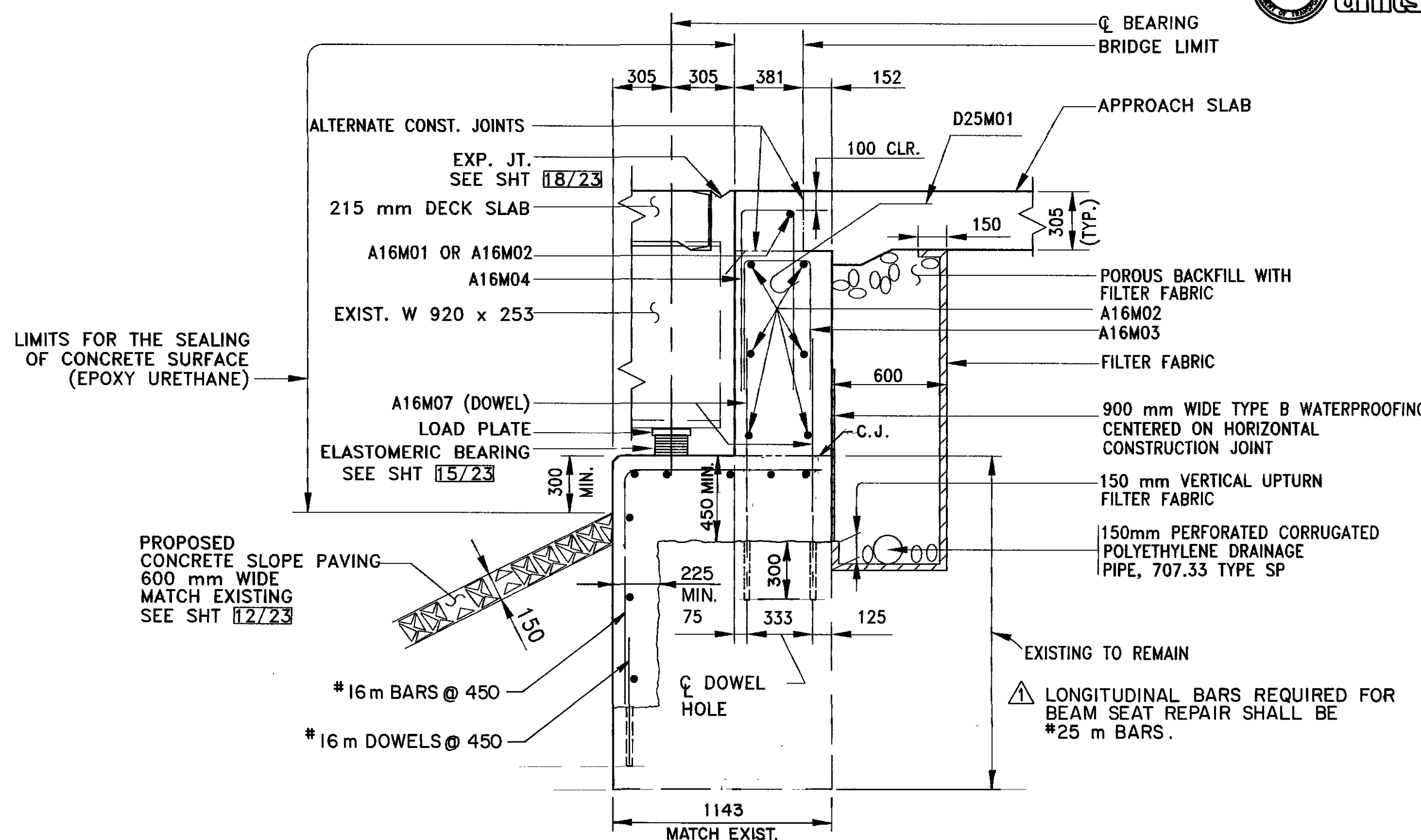
51
96



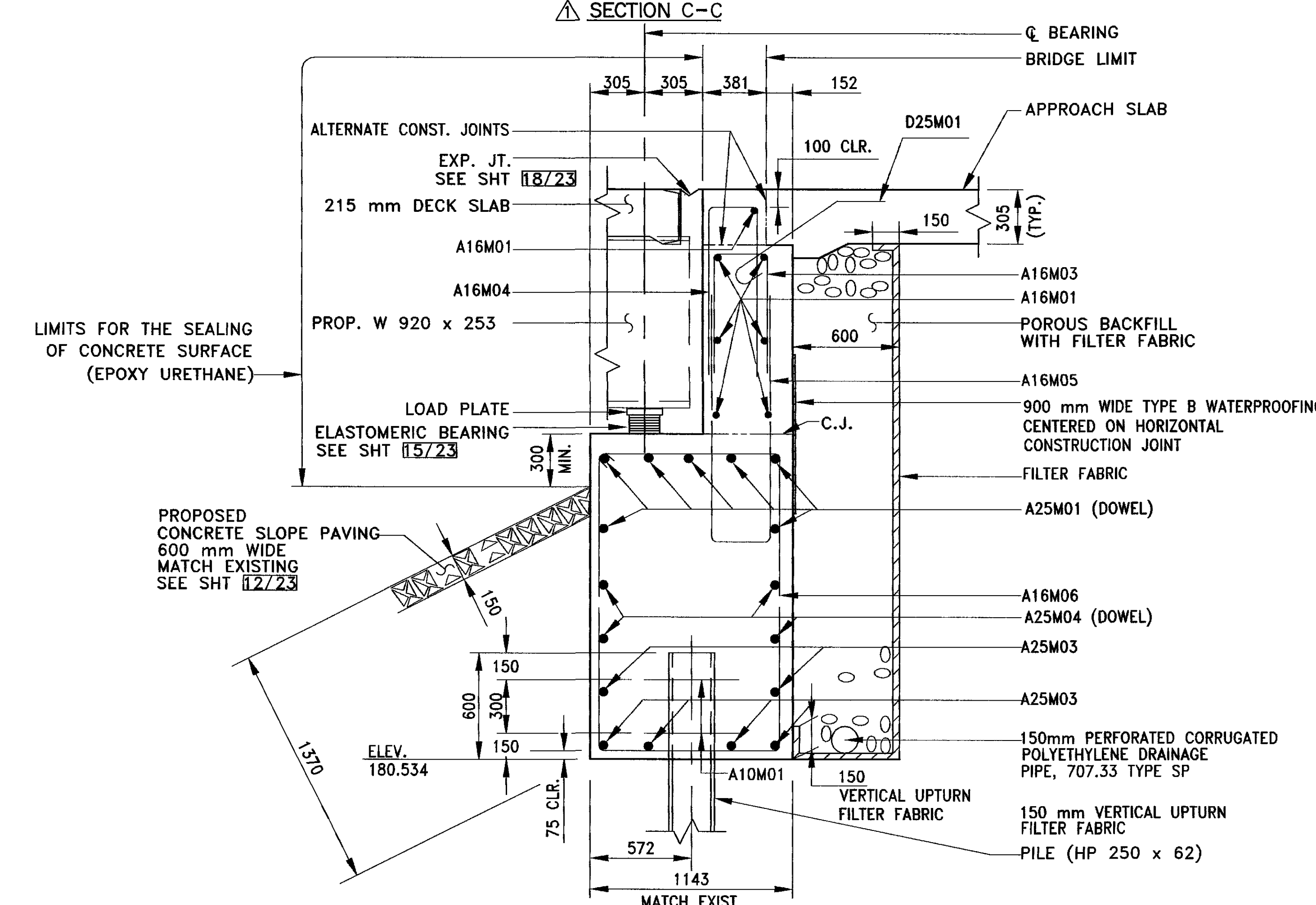
SEISMIC PEDESTAL - SECTION F-F



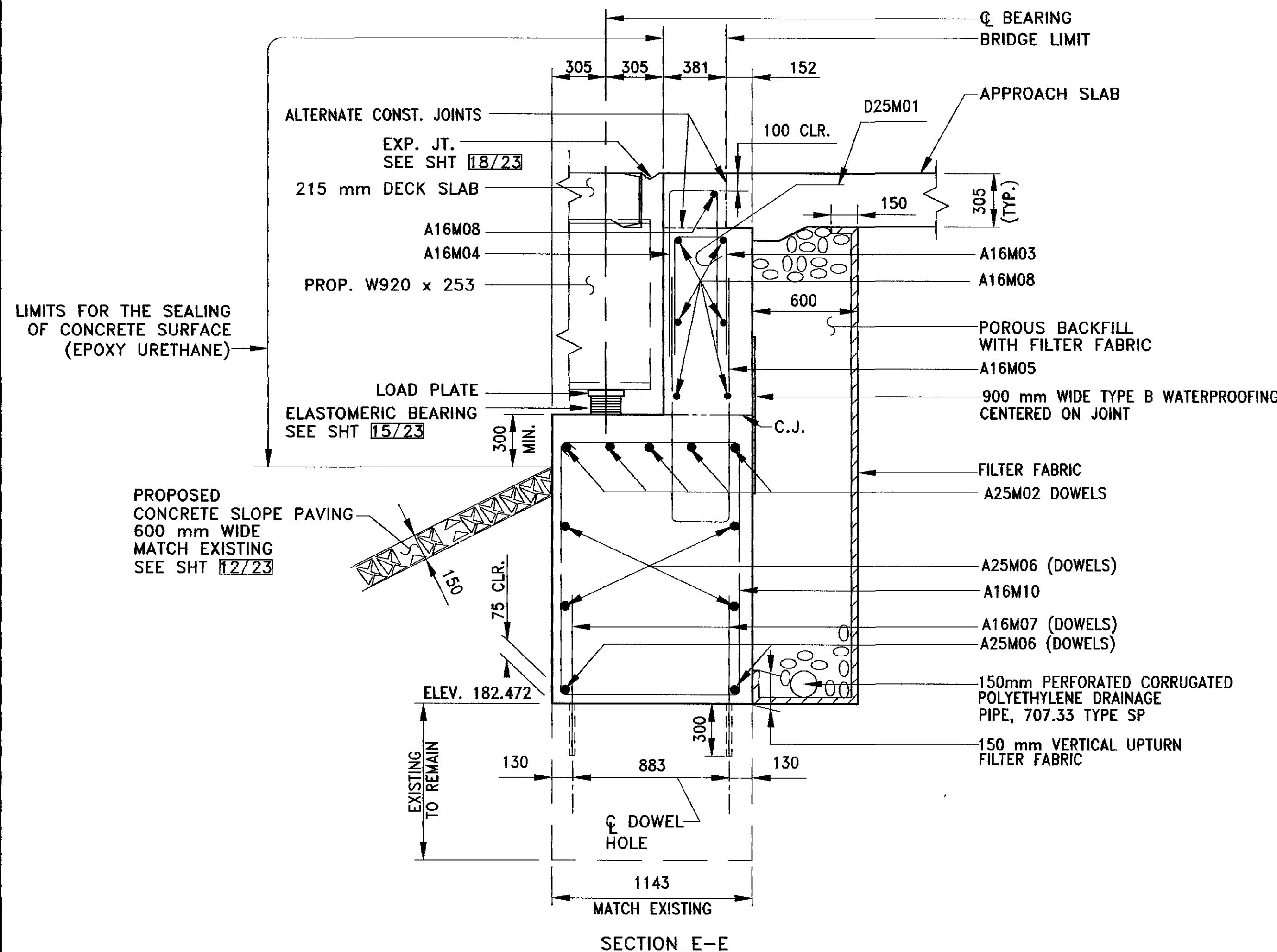
VIEW J-J



SECTION C-C



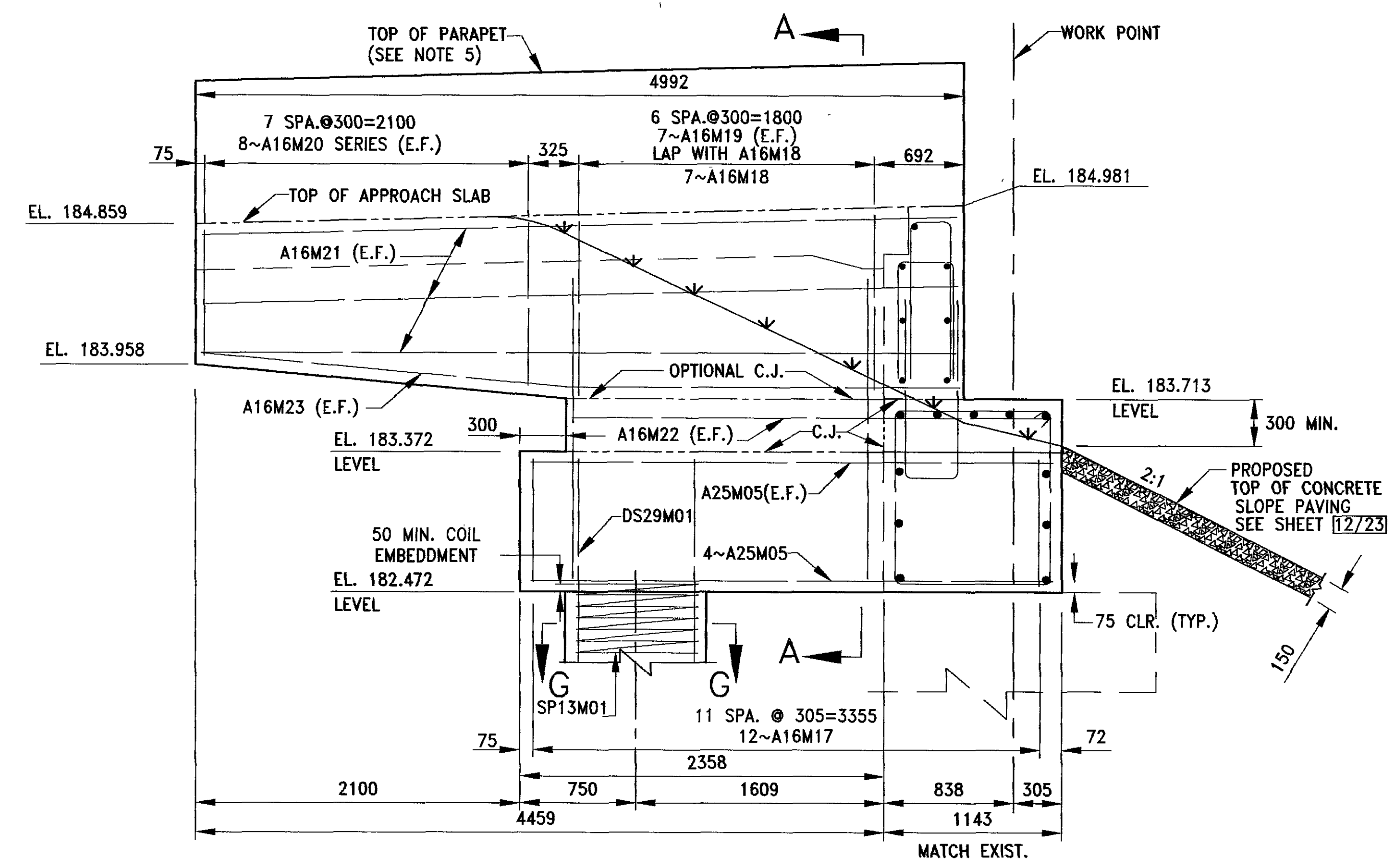
SECTION D-D



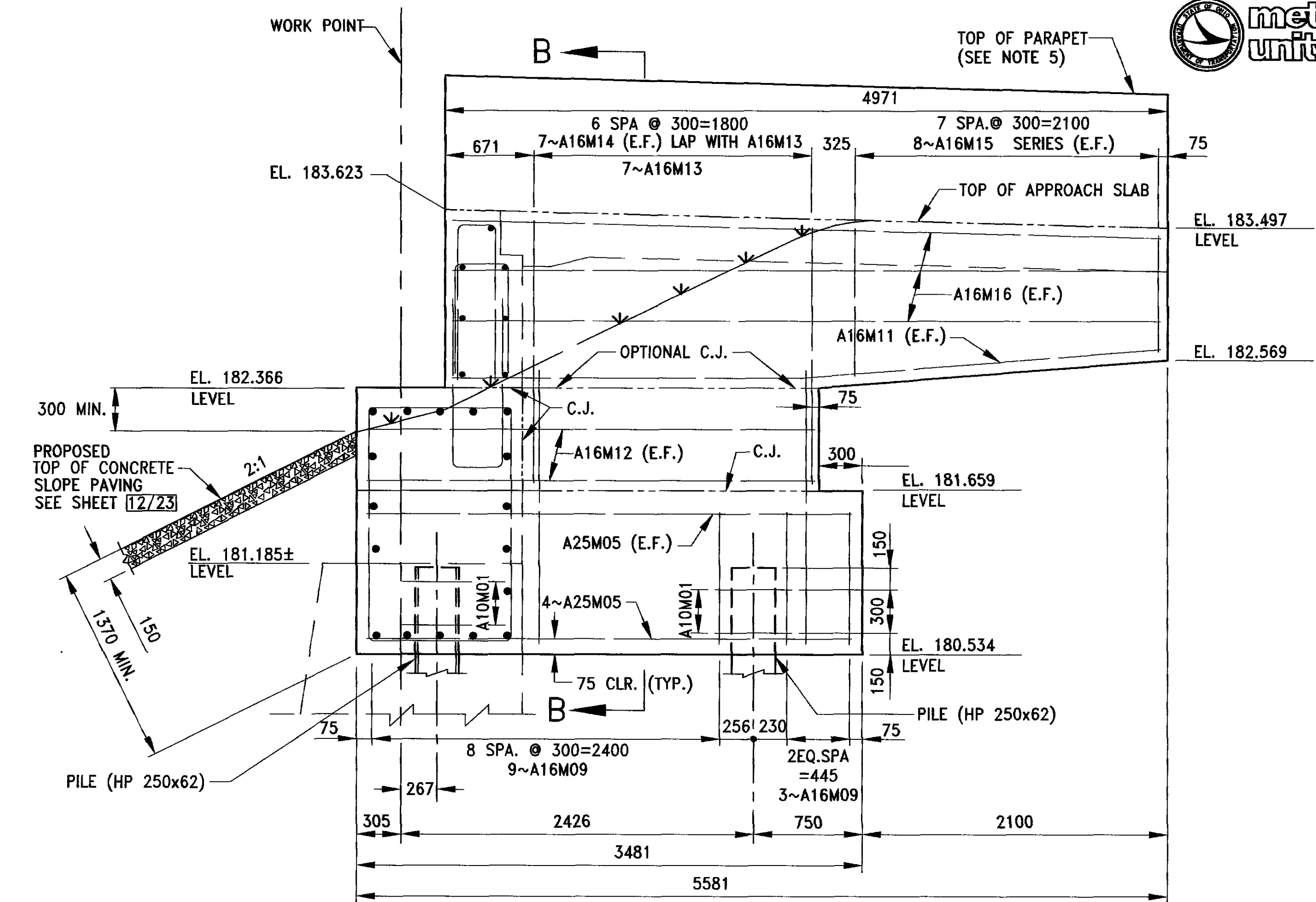
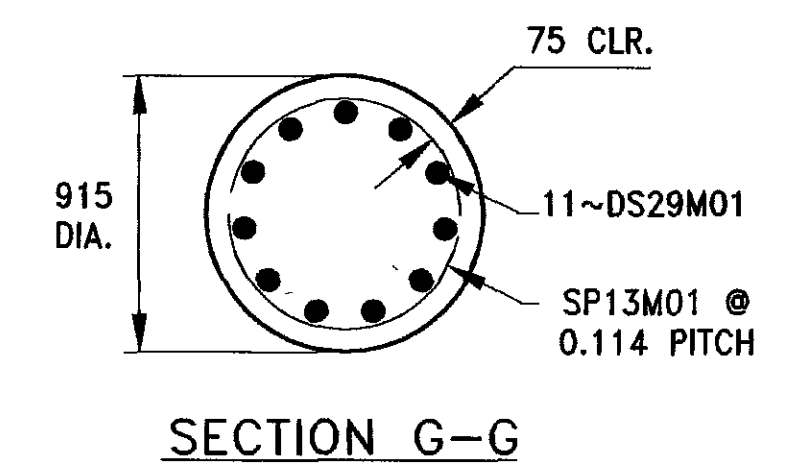
SECTION E-E

NO.	GENERAL PLAN REVISIONS	SLM	4/07
	REVISIONS	BY/	DATE

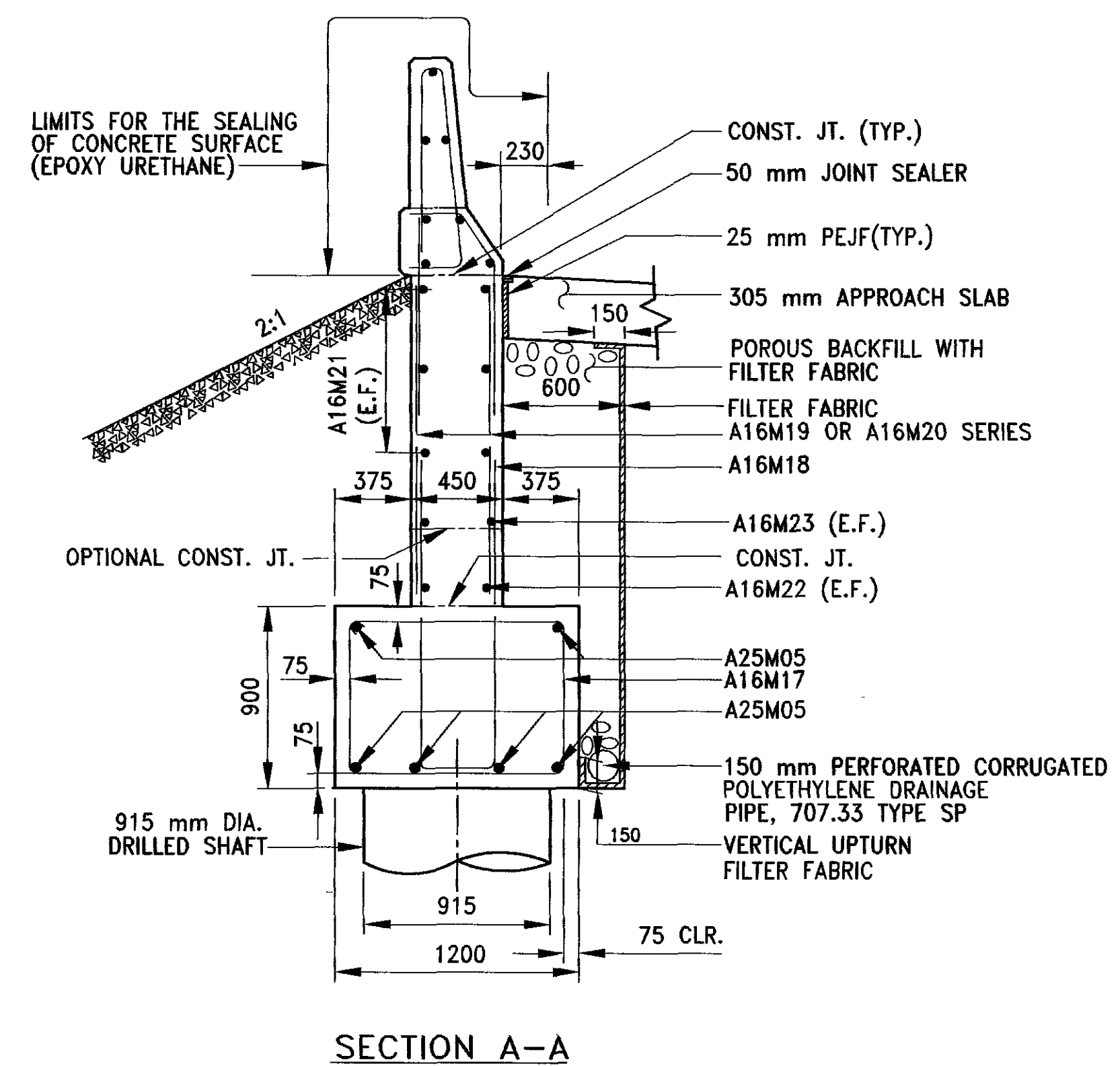
13136SA9



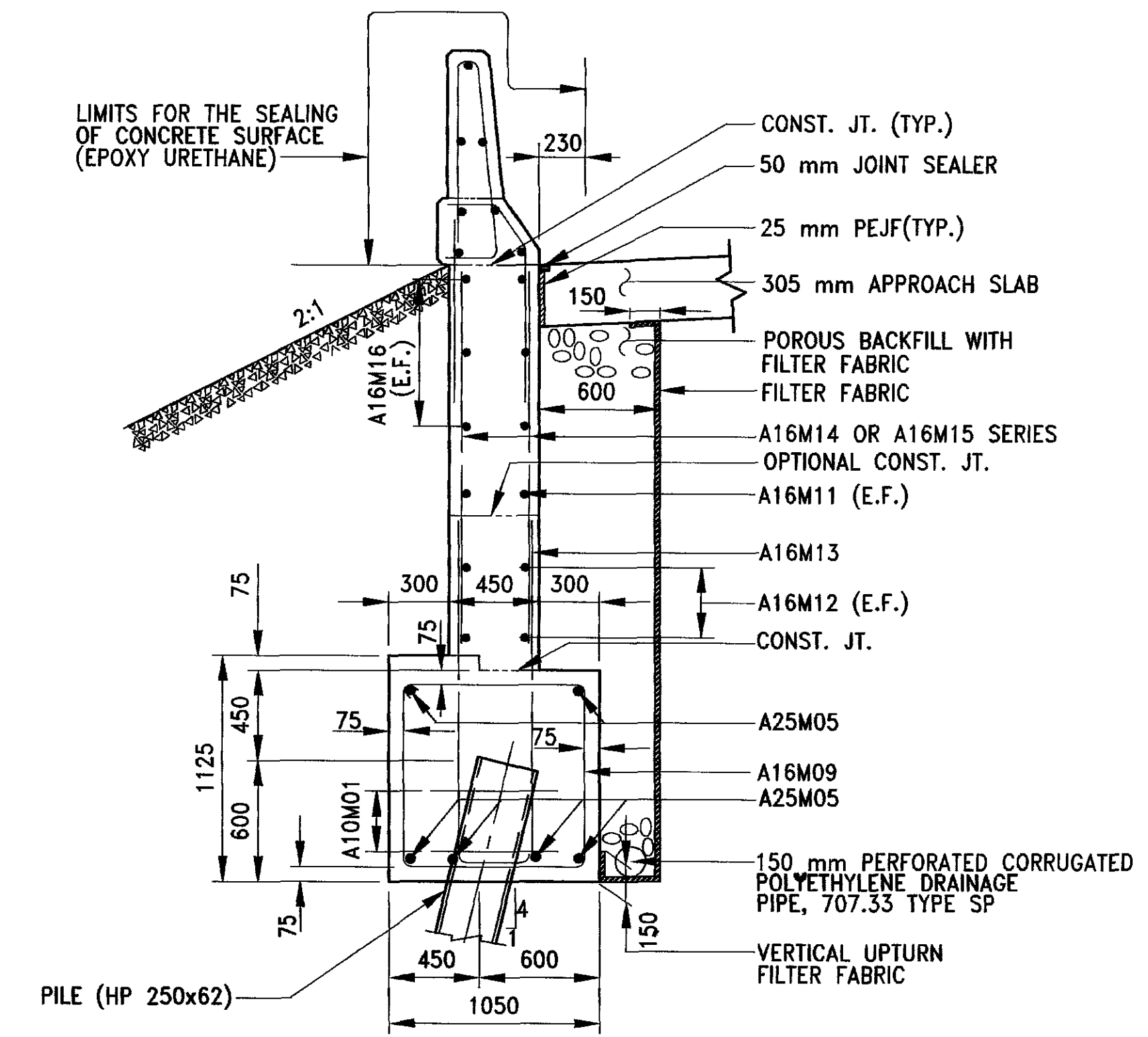
ELEVATION WEST WINGWALL
(C CONSTRUCTION RIGHT)



ELEVATION EAST WINGWALL
(C CONSTRUCTION LEFT)



SECTION A-A



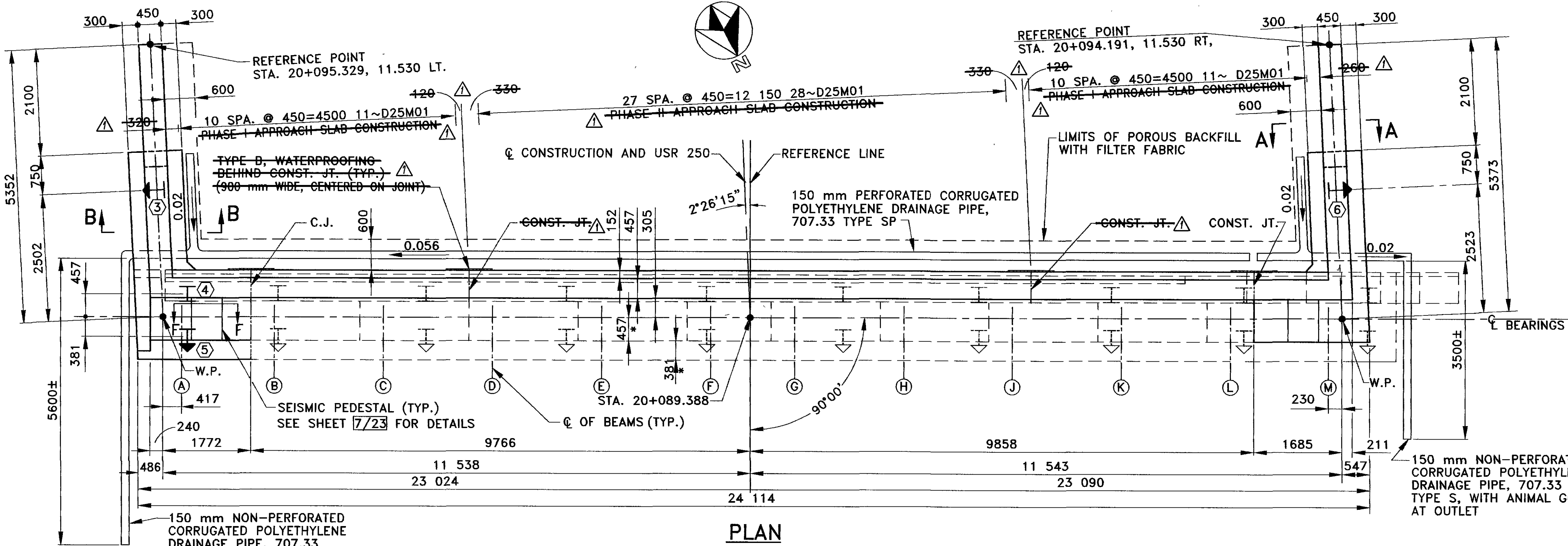
SECTION B-B

- NOTES:
- 1) REFER TO STD. DWG. BR-1 FOR PARAPET DIMENSIONS
 - 2) SEE SHEET 15/23 FOR BEARING DETAILS.
 - 3) SEE SHEETS 22 & 23/23 FOR REINFORCING STEEL.
 - 4) SEE SHEET 18/23 FOR EXPANSION JOINT DETAILS.
 - 5) PARAPET SHAPE AND REINFORCING STEEL VARIES SEE SHEET 21/23

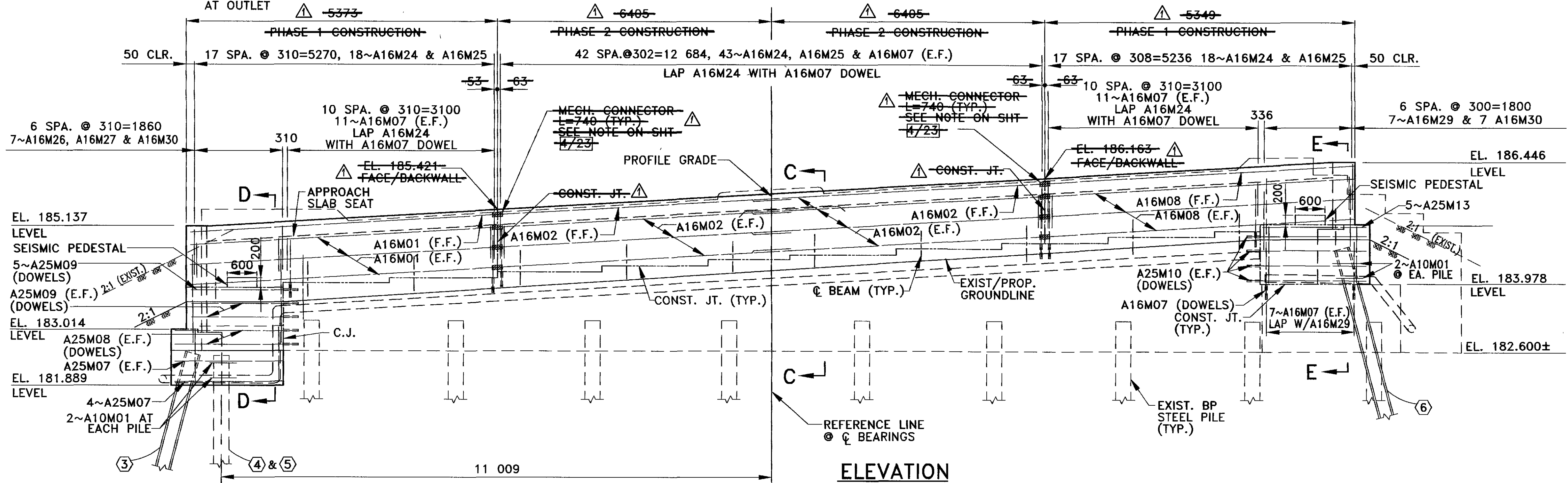
NO.	GENERAL PLAN REVISIONS	MDG	4/07
	REVISIONS	BY	DATE

NOTES:

- POROUS BACKFILL WITH FILTER FABRIC, 600 mm THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND Laterally TO THE ENDS OF THE WINGWALLS.
- MINIMUM CONCRETE COVER IS 50 mm WHERE RIGID FORMS ARE USED AND 75mm WHERE EARTH FORMED UNLESS OTHERWISE SPECIFIED.
- MINIMUM BAR LAPS SHALL BE AS FOLLOWS:
16M BARS 740 mm
25M BARS 1500 mm
- ALL REINFORCING STEEL SHALL BE EPOXY COATED SEE SHEET [22/23] & [23/23] FOR DETAILS
- SEE SHEETS [10/23] & [11/23] FOR SECTION CUTS AND WINGWALL ELEVATIONS
- SEE SHEET [5/23] FOR PHASED CONSTRUCTION AND REMOVAL SECTION DETAILS
- DOWEL EMBEDMENT 300 mm UNLESS SHOWN OTHERWISE.
- SEE SHEET [12/23] FOR CONCRETE REMOVAL AND REPAIR DETAILS.
- ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLETS OF THE DRAINAGE PIPES. SEE STD. DRAWING DM-1.1- FOR DETAILS. THIS ITEM IS INCIDENTAL TO ITEM 518-150MM NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN.
- SEE SHEET [15/23] FOR BEARING DETAILS.



PLAN

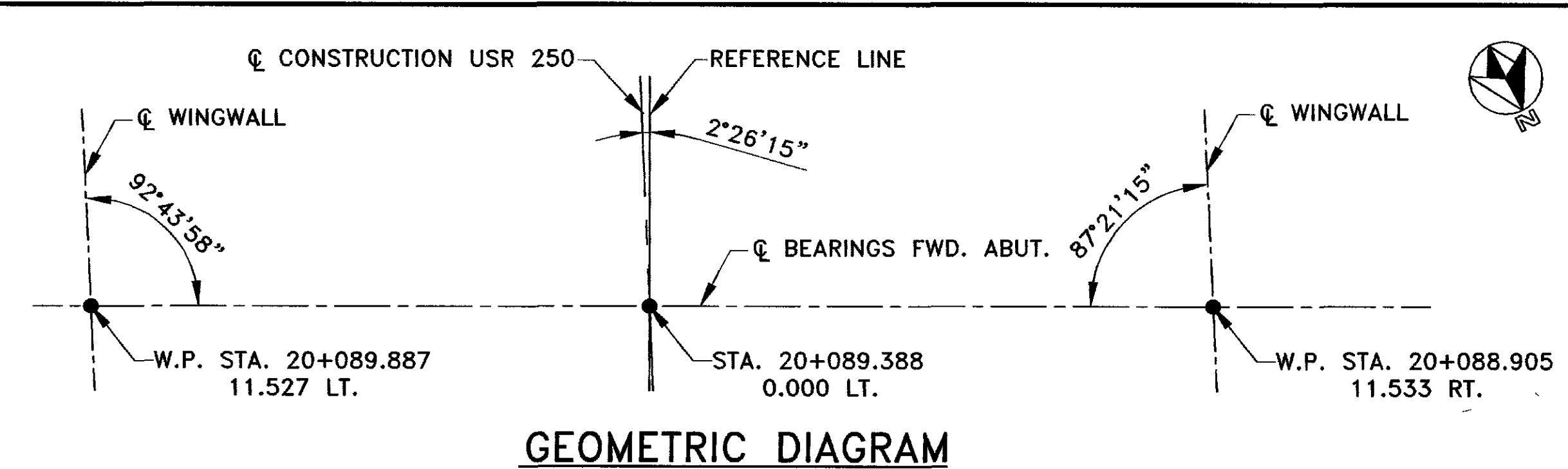


ELEVATION

BEAM SEAT ELEVATIONS	
BEAM	ELEVATION
(A)	183.853
(B)	183.957
(C)	184.061
(D)	184.188
(E)	184.314
(F)	184.432
(G)	184.532
(H)	184.665
(J)	184.787
(K)	184.910
(L)	185.036
(M)	185.153

LEGEND

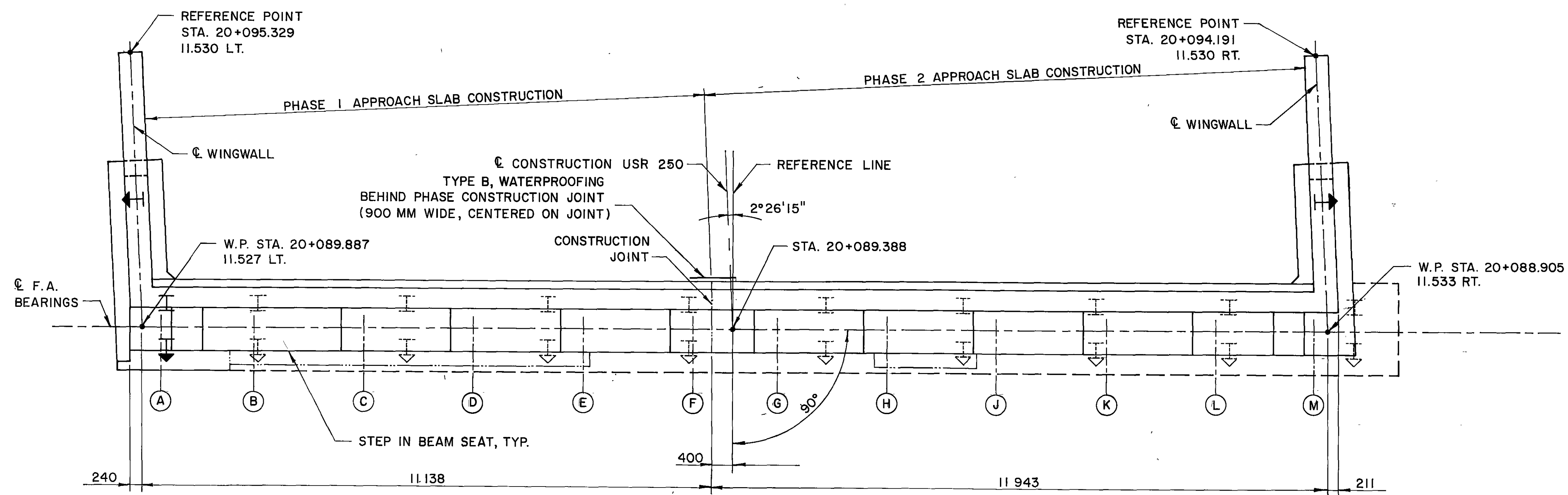
- * MATCH EXISTING DIMENSIONS OR ELEVATION
- PILE IDENTIFICATION NUMBER
- BEAM IDENTIFICATION
- W.P. WORK POINT
- Denotes BATTERED PILE (4:1)
- E.F. EACH FACE
- F.F. FAR FACE
- N.F. NEAR FACE



GEOMETRIC DIAGRAM

△ DIMENSIONS SHOWN ON THIS SHEET REGARDING PHASE CONSTRUCTION OF THE ABUTMENTS SHALL NOT BE USED. SEE SHEET [9A/23] FOR THE REVISED PHASE CONSTRUCTION REQUIREMENTS FOR THIS PROJECT.

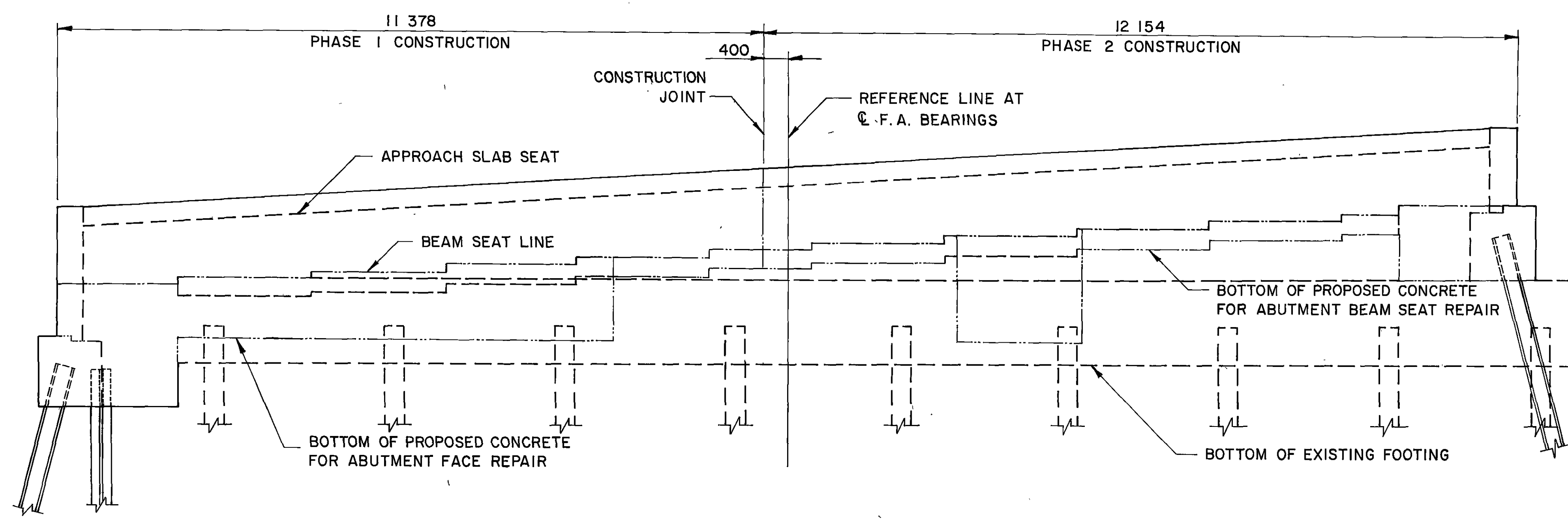
NO.	GENERAL PLAN REVISIONS	MD6	4/07
	REVISIONS	BY	DATE



PLAN

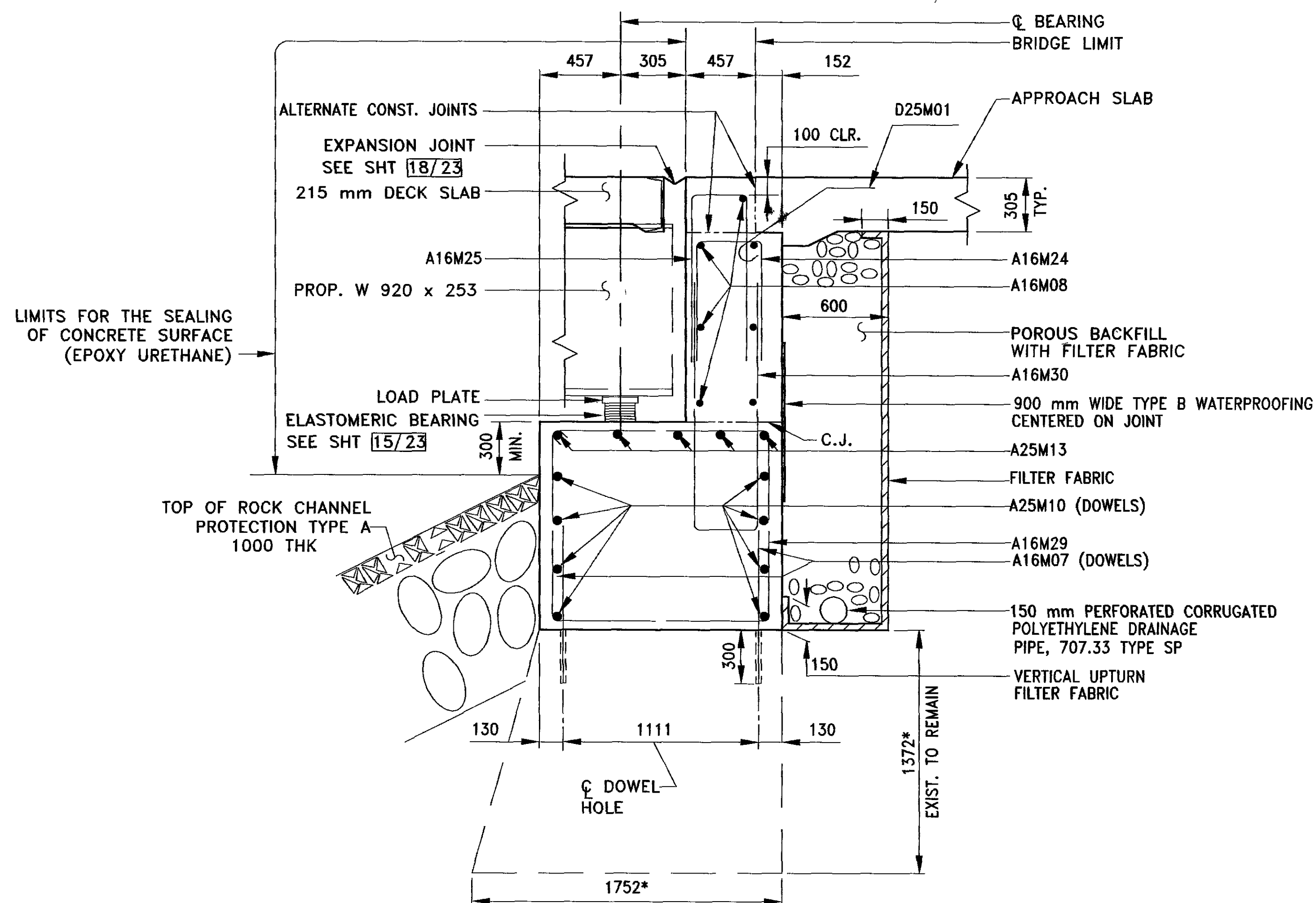
SEE SHEET 6A/23 FOR NOTES REGARDING PHASE CONSTRUCTION REVISIONS.

SEE SHEET 9/23 FOR ADDITIONAL ABUTMENT NOTES.



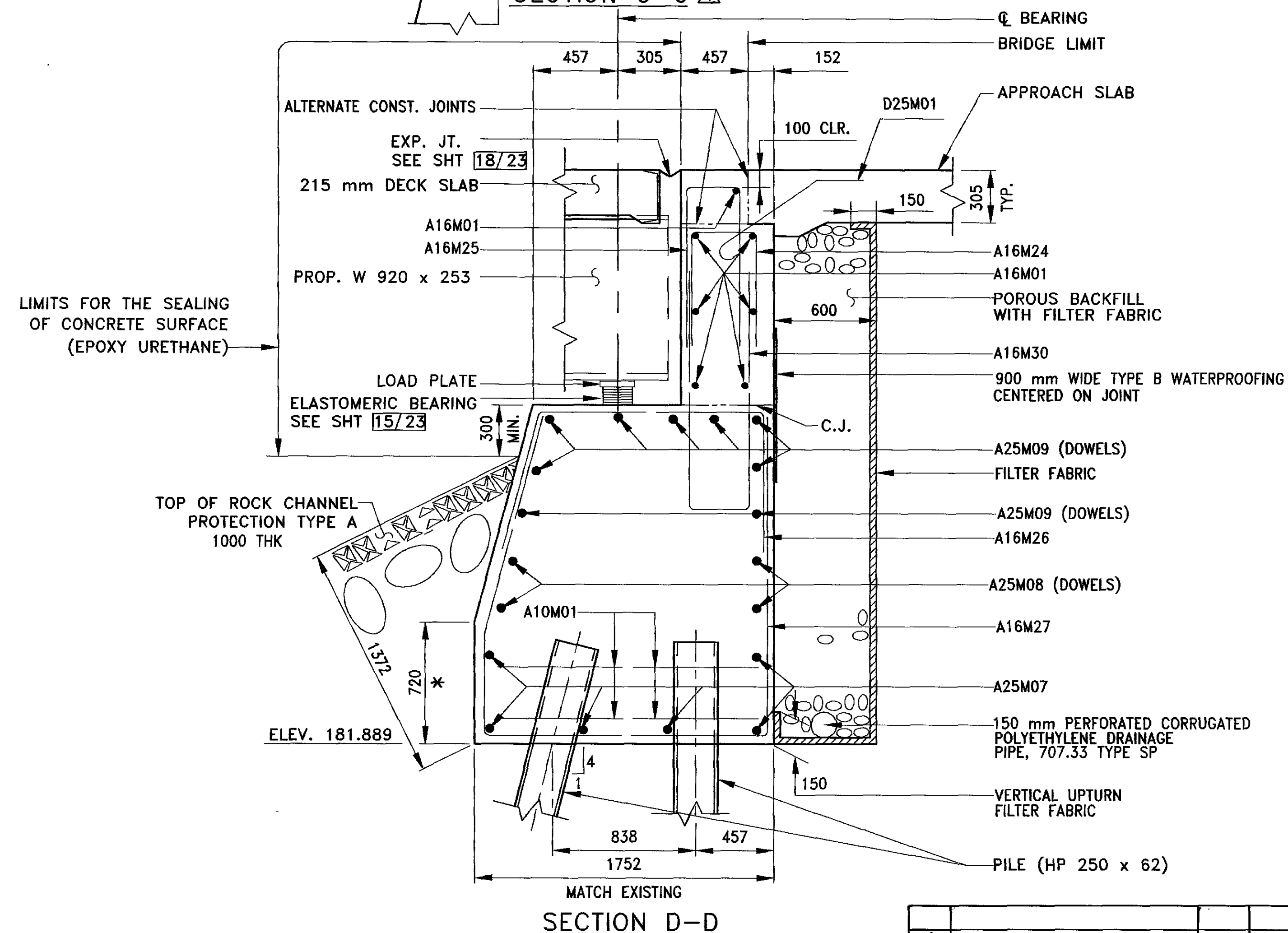
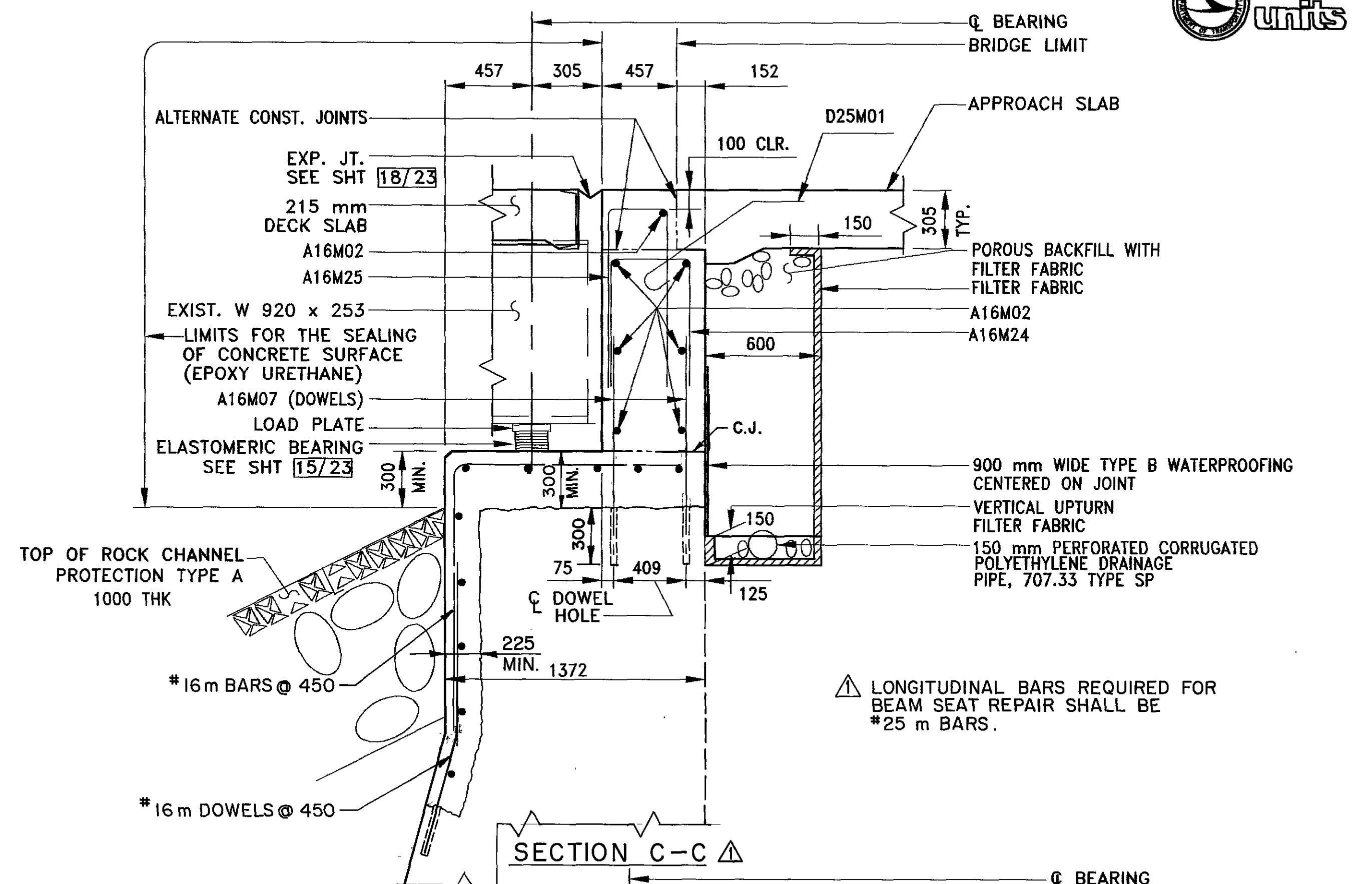
ELEVATION

NO.	GENERAL PLAN REVISIONS	MDG	4/07
	REVISIONS	BY	DATE

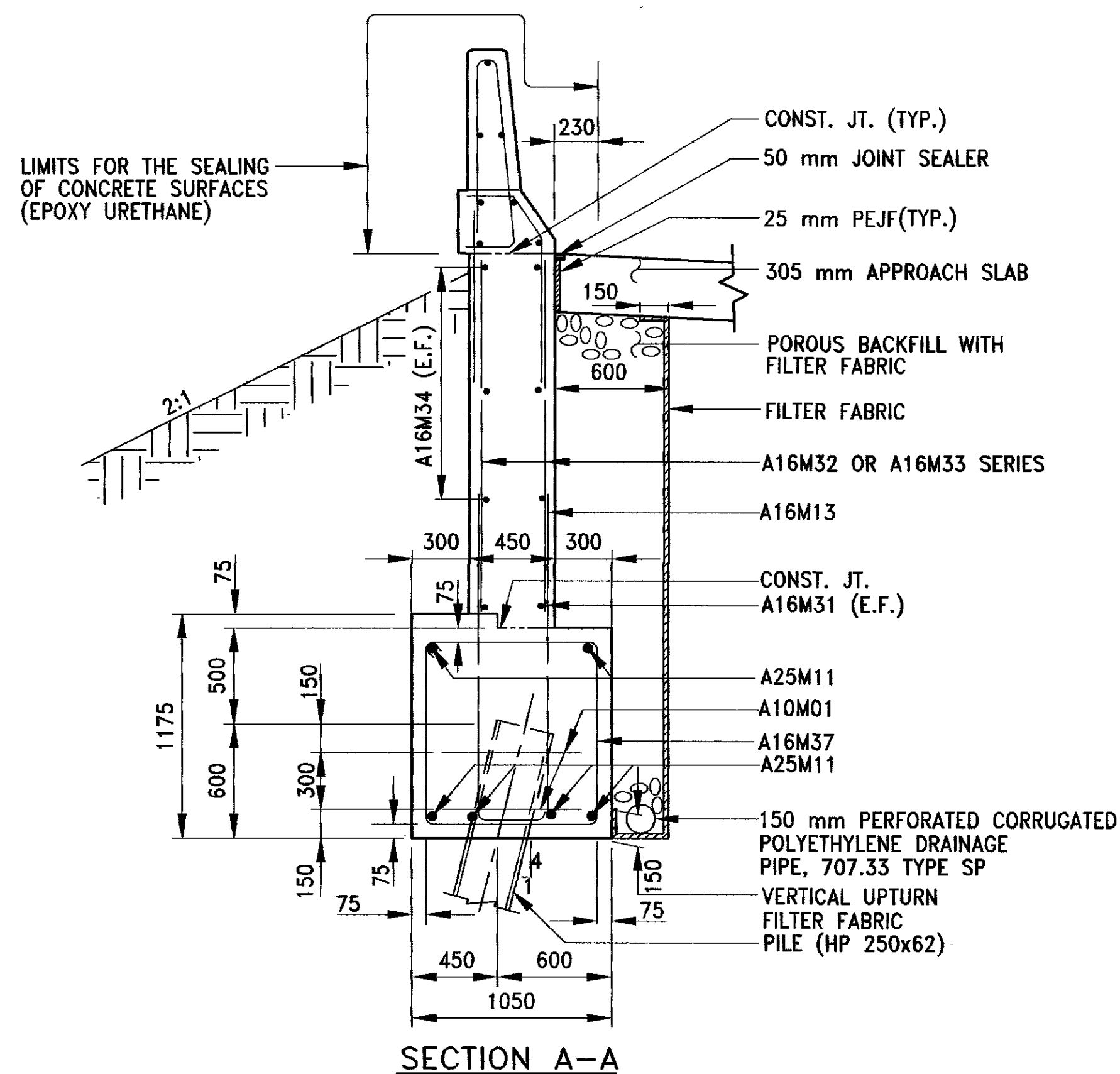
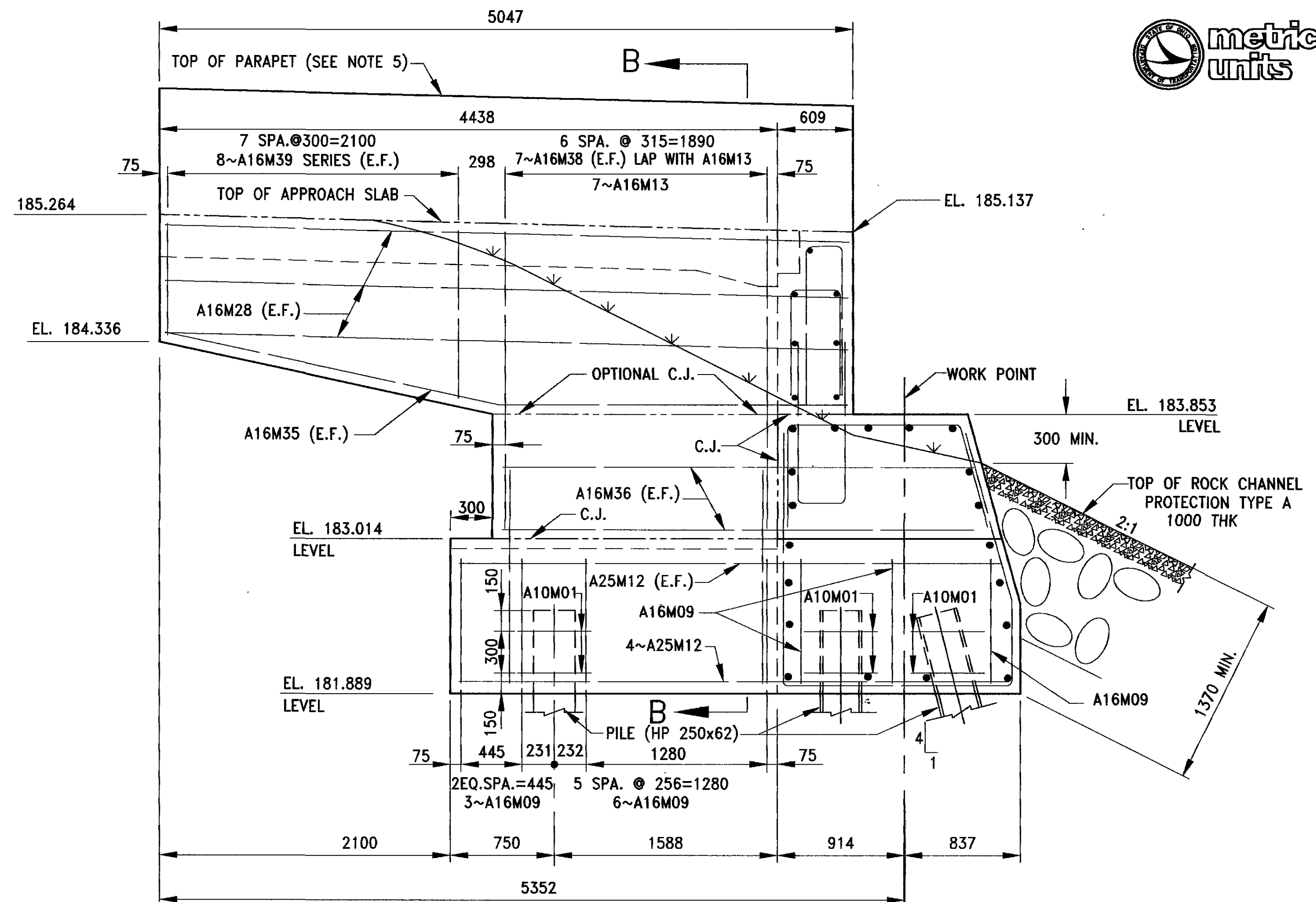
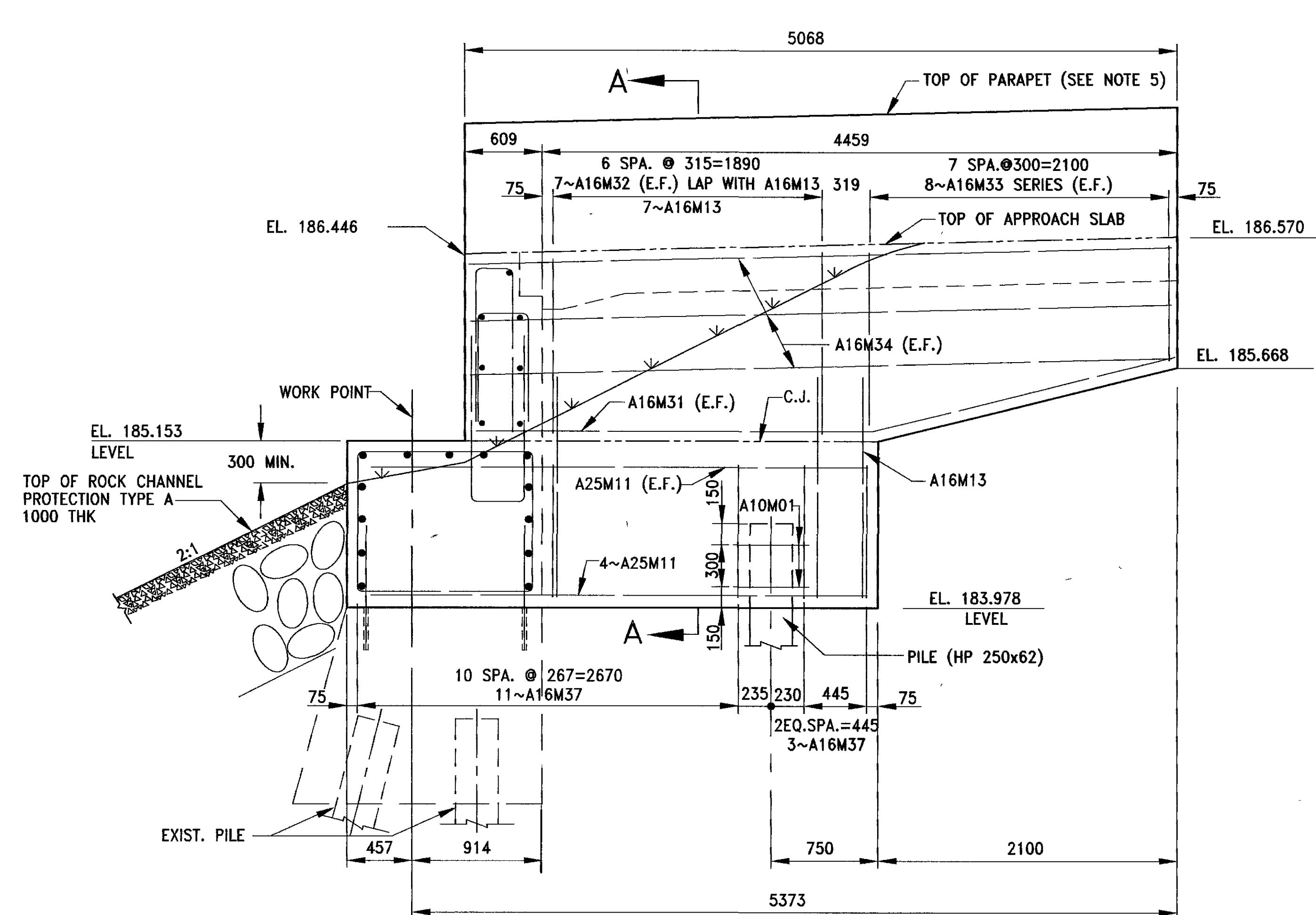


NOTES:

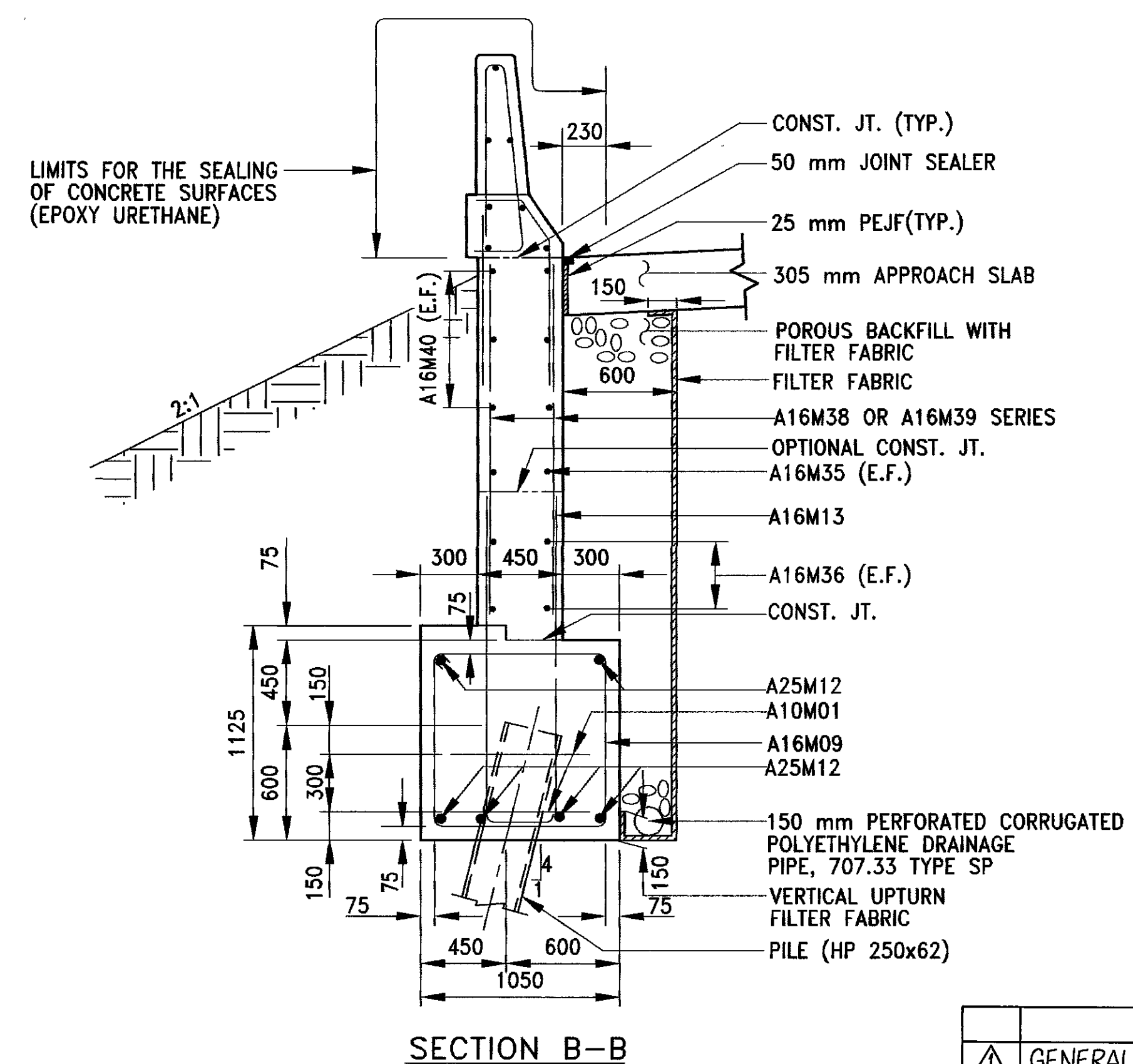
1. SEE SHEET 15/23 FOR BEARING DETAILS.
2. SEE SHEETS 22 & 23/23 FOR REINFORCING STEEL.
3. SEE SHEET 18/23 FOR EXPANSION JOINT DETAILS.
4. * DENOTES MATCHING EXISTING DIMENSION



NO.	GENERAL PLAN REVISIONS	SLM	4/07
	REVISIONS	BY	DATE



- NOTES:
1. SEE SHEET 15/23 FOR BEARING DETAILS.
 2. SEE SHEETS 22 & 23/23 FOR REINFORCING STEEL.
 3. SEE SHEET 18/23 FOR EXPANSION JOINT DETAILS.
 4. REFER TO STD. DWG. BR-1 FOR PARAPET DIMENSIONS.
 5. PARAPET SHAPE AND REINFORCING STEEL VARIES, SEE SHEET 21/23



NO.	GENERAL PLAN REVISIONS	MDG	4/07
	REVISIONS	BY	DATE



ITEM	ITEM EXT.	DESCRIPTION	TOTAL
202	32800	CONCRETE SLOPE PROTECTION REMOVED	60 SQ. M.
601	21000	CONCRETE SLOPE PROTECTION	60 SQ. M.

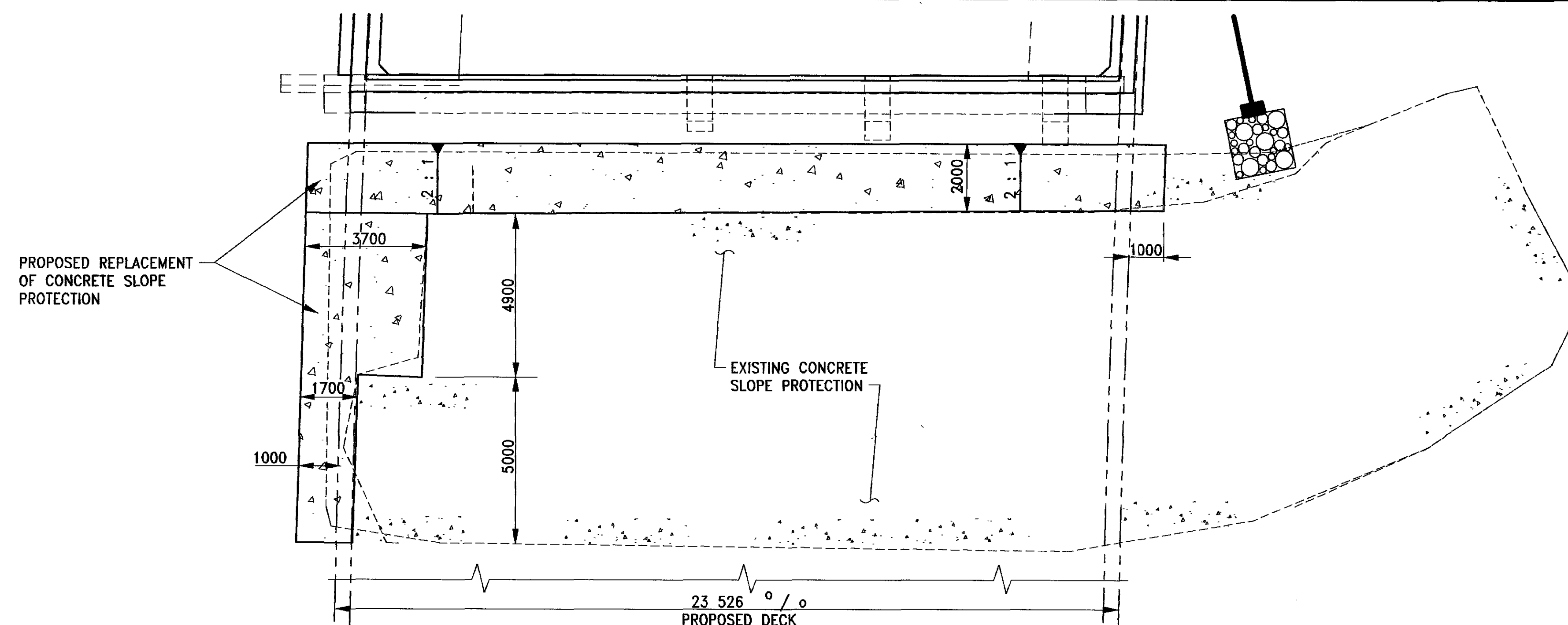
TOTALS CARRIED TO SHEET 14 OF 96.

NOTES:

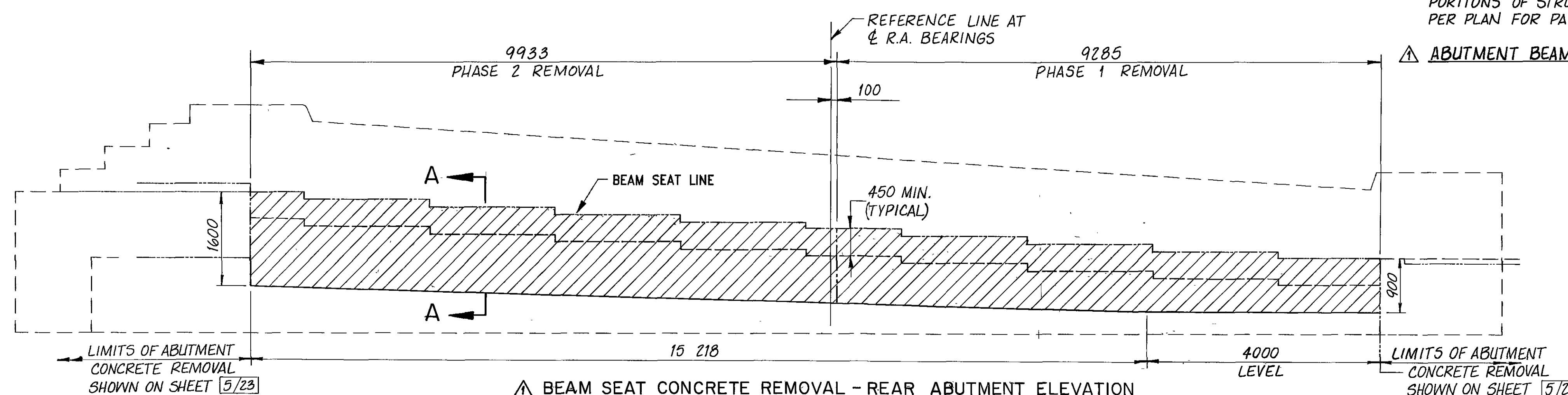
- 1) ESTIMATED QUANTITY HAS BEEN INCREASED OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.
- 2) EXACT LOCATIONS AND DIMENSIONS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.

△ **ABUTMENT BEAM SEAT REMOVAL:** REMOVE EXISTING ABUTMENT BEAM SEAT CONCRETE TO THE LIMITS SHOWN ON THIS SHEET OR TO SOUND CONCRETE. SEE STRUCTURE GENERAL NOTES SHEET 4/23 FOR NOTES REGARDING SUBSTRUCTURE REMOVAL METHODS. ABUTMENT BEAM SEAT REMOVAL SHALL BE INCLUDED IN ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 6 METER SPAN, AS PER PLAN FOR PAYMENT.

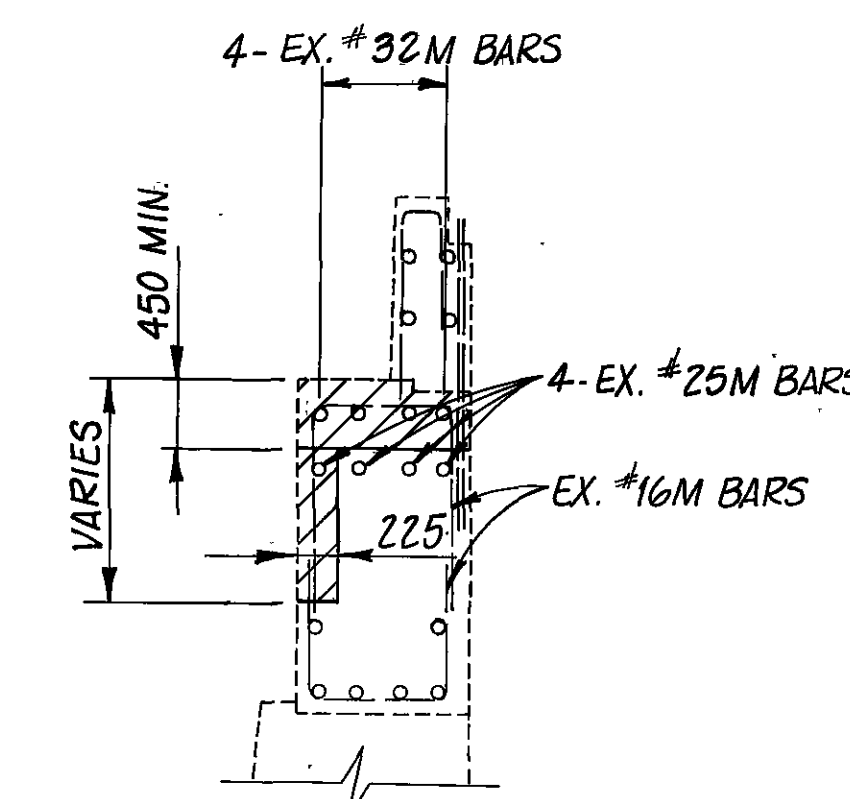
△ **ABUTMENT BEAM SEAT REPAIR:** SEE SHEETS 6A & 9A/23



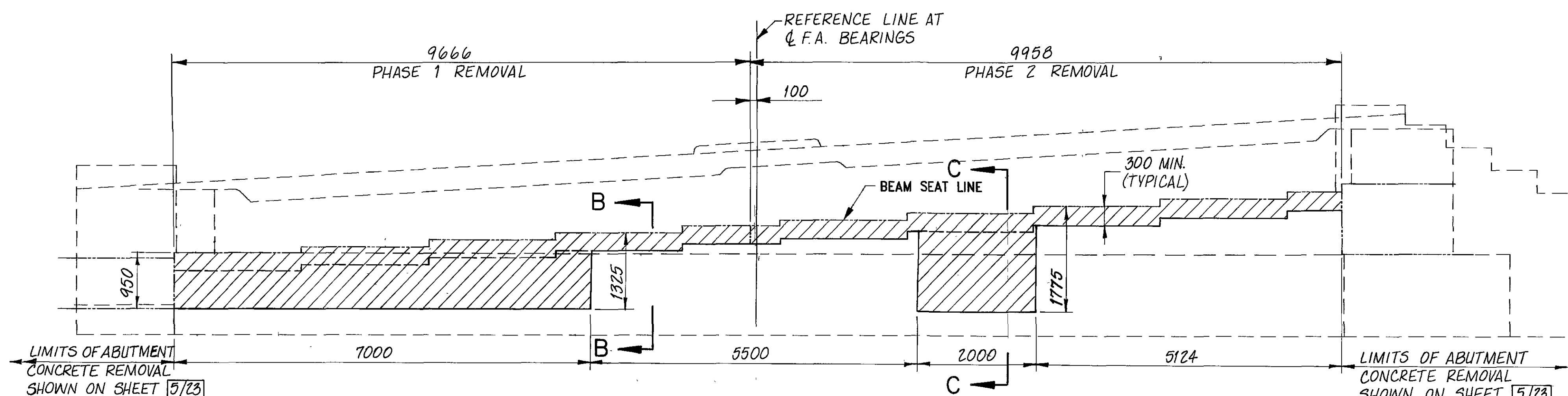
CONCRETE SLOPE REPLACEMENT-REAR ABUTMENT



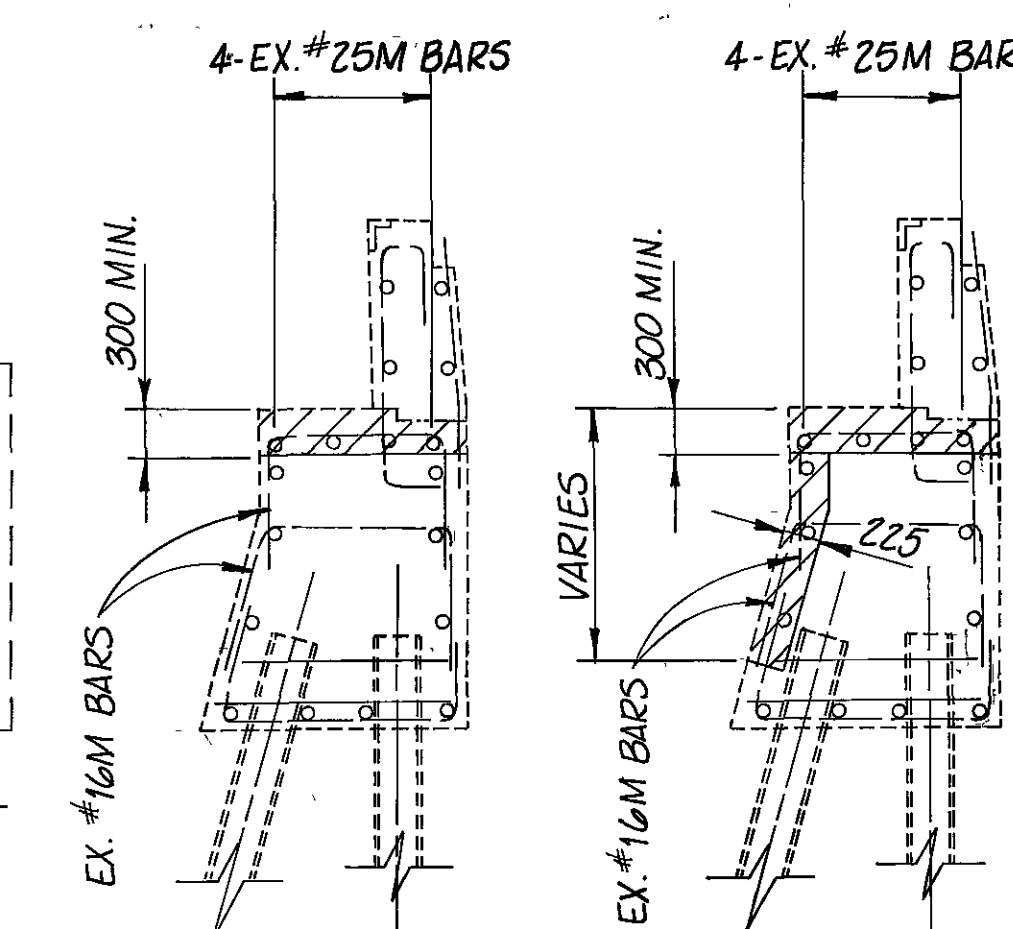
△ BEAM SEAT CONCRETE REMOVAL - REAR ABUTMENT ELEVATION



△ SECTION A-A



△ BEAM SEAT CONCRETE REMOVAL - FORWARD ABUTMENT ELEVATION

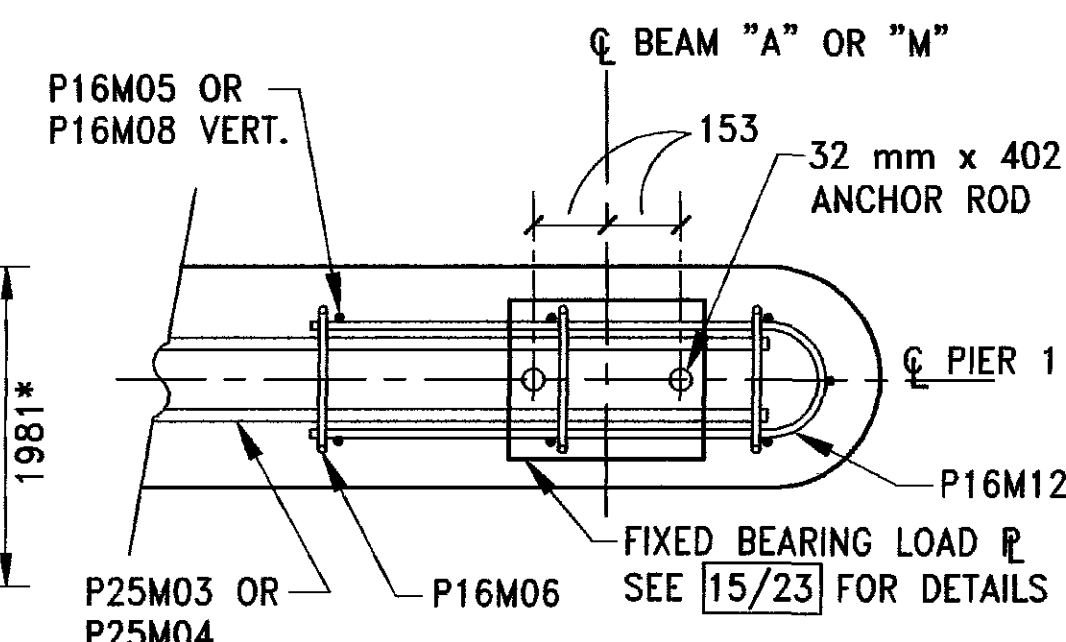
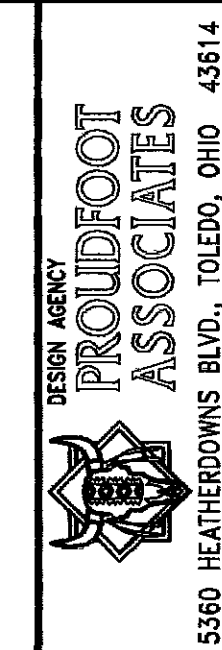


△ SECTION B-B

△ SECTION C-C

LEGEND

- * MATCH EXISTING DIMENSIONS OR ELEVATION
- △ ABUTMENT BEAM SEAT CONCRETE REMOVAL



BEARING ANCHOR PLAN

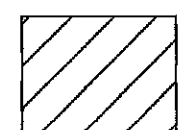
SHOWING PLAN VIEW OF TOP OF PIER 1.
REINFORCING STEEL IN THE VICINITY OF
THE BRIDGE SEAT SHALL BE ACCURATELY PLACED
TO AVOID INTERFERENCE WITH THE DRILLING
OF BEARING ANCHOR HOLES OR THE PRE-SETTING
OF BEARING ANCHORS.



1. SECTION TYPICAL FOR PIERS 1 & 2.
2. BARS P16M02, P16M03, P25M01, P25M02, AND P25M03 ARE DOWEL BARS. THESE BARS ARE DESIGNED TO HAVE A MINIMUM EMBEDMENT 300 mm.
3. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
4. LAP LENGTH FOR P16M BARS SHALL BE 740 mm.
5. SEE SHEET 14/23 FOR PIER DETAIL SECTIONS.

**** SEAL EXISTING PIER WALLS DOWN TO WATERLINE**

LEGEND:



SECTION TO BE REMOVED INCLUDING
EXISTING REINFORCING.

* MATCH EXISTING DIMENSION OR ELEVATION.

BEAM SEAT ELEVATIONS		
POINT	PIER 1	PIER 2
A	182.832	183.386
B*	182.897	183.471
C*	183.009	183.565
D*	183.129	183.693
E*	183.260	183.821
F*	183.387	183.946
G*	183.487	184.043
H*	183.616	184.166
J*	183.742	184.291
K*	183.862	184.413
L*	183.992	184.536
M	184.172	184.708

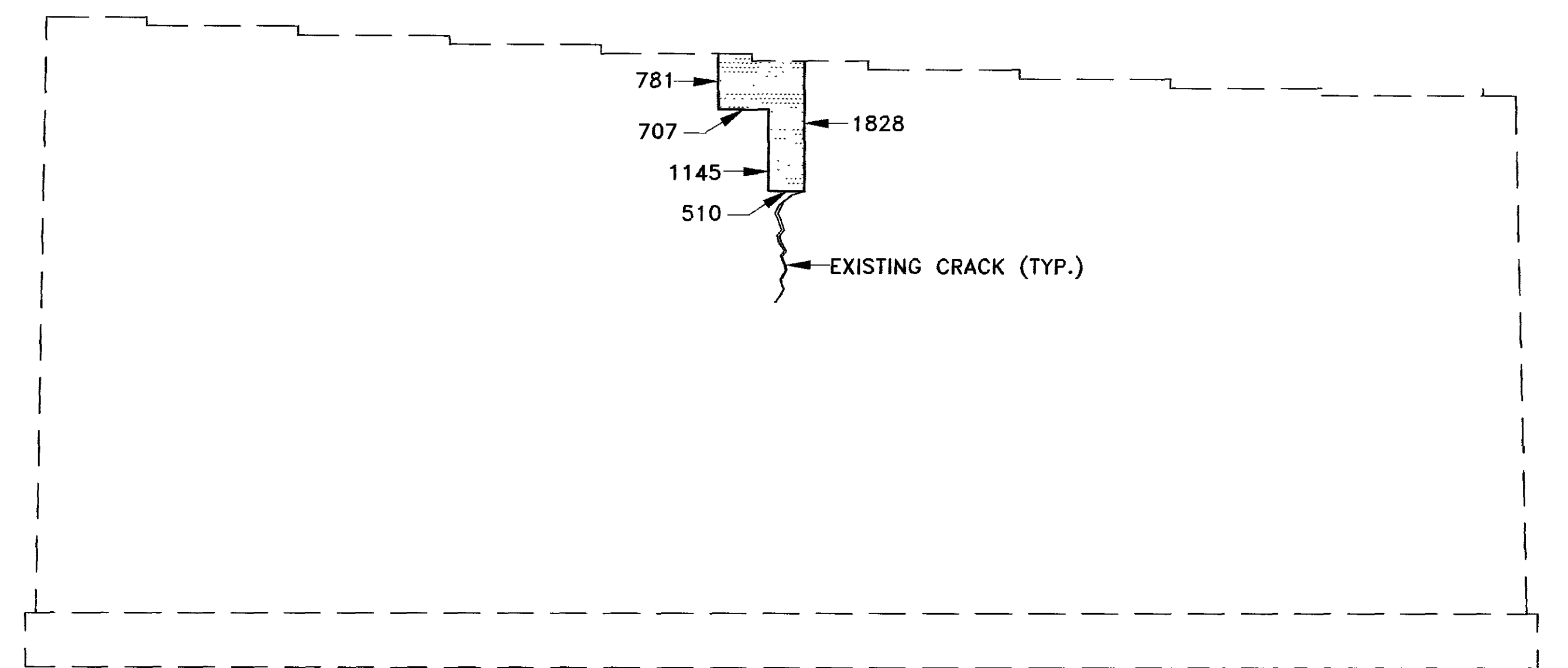
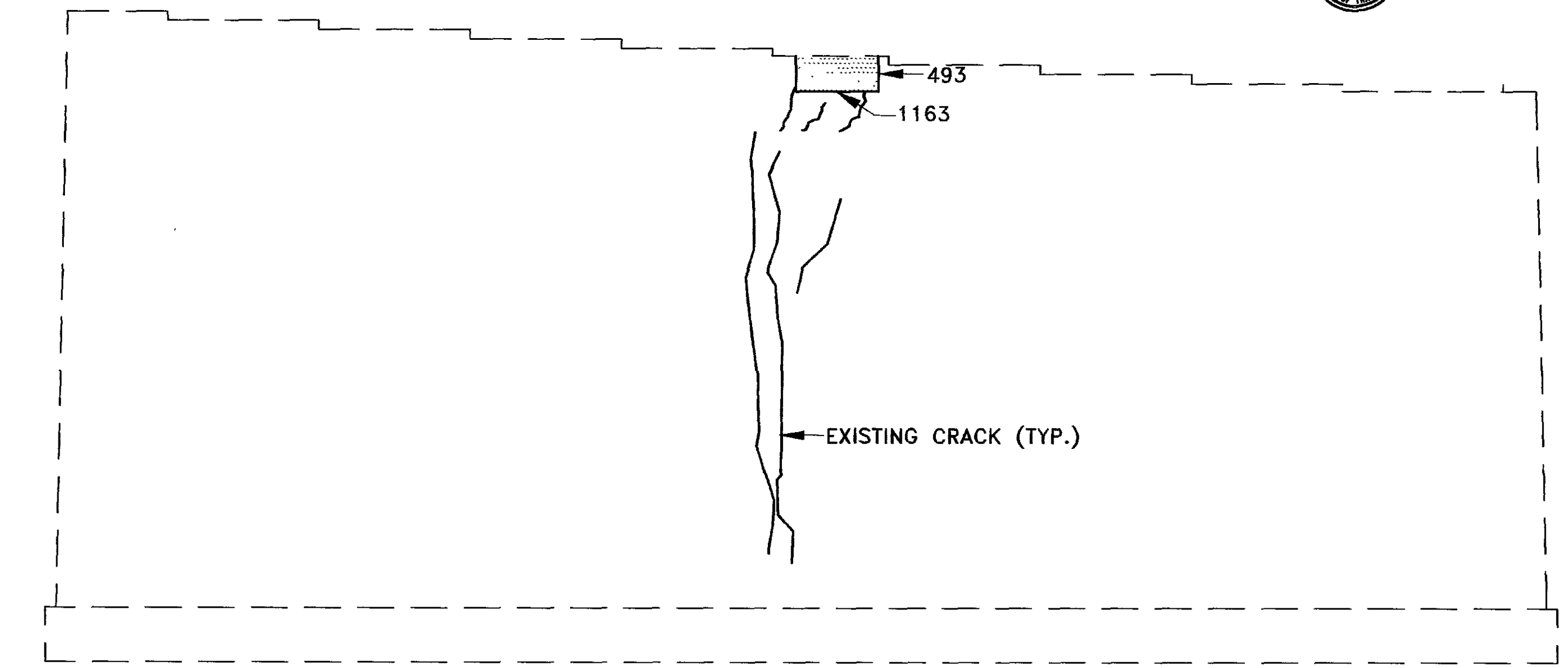
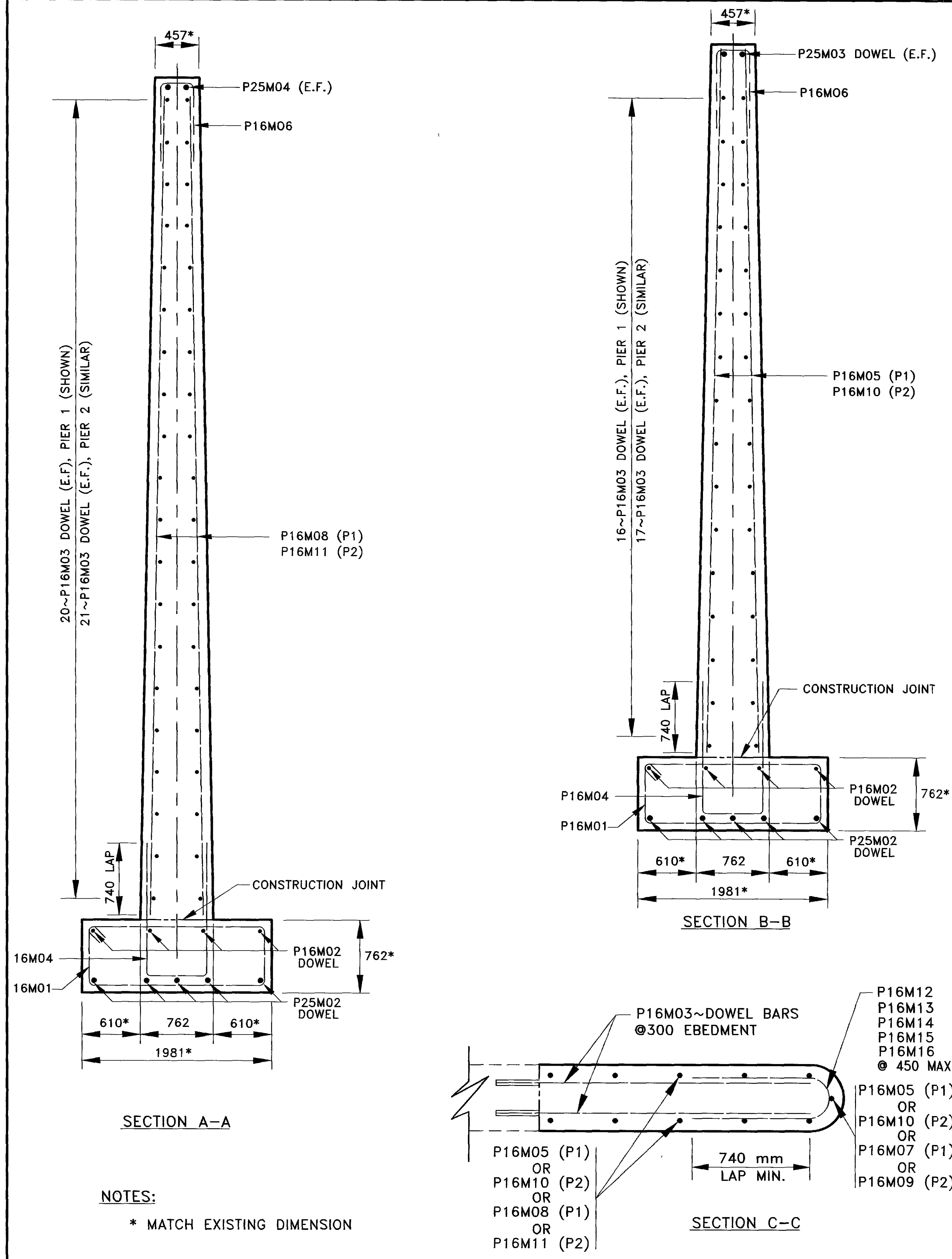
	GENERAL PLAN REVISIONS	MDG	4/07
NO.	REVISIONS	BY	DATE

PIER DETAILS
ERI-250-20036
OVER HURON RIVER

ERI-250-19.742

13 / 23

57
96

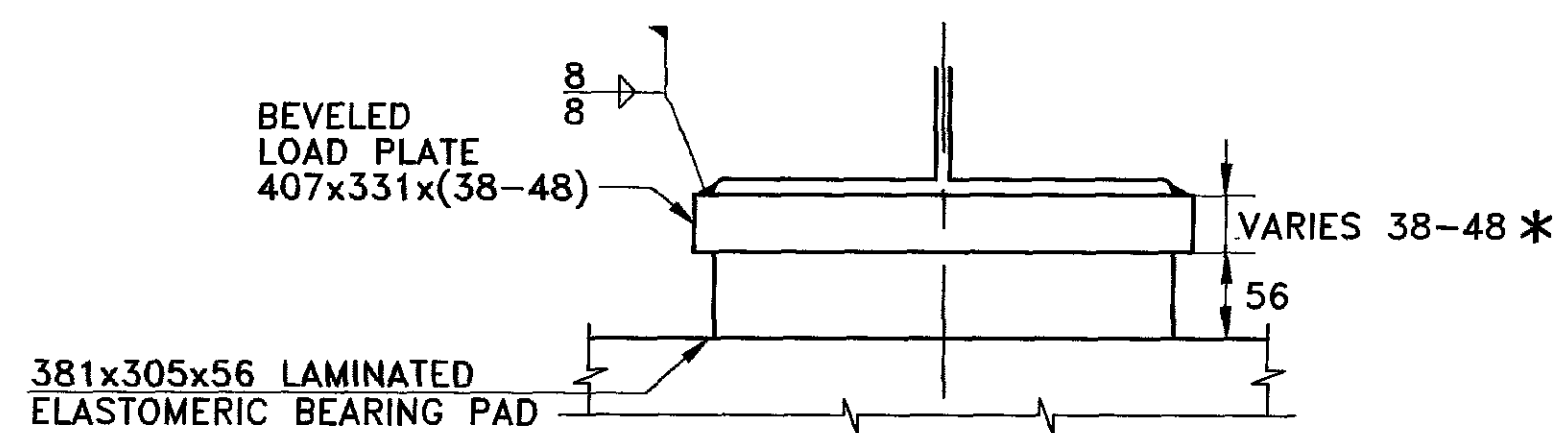


PIER BEAM SEAT REPAIR: REMOVE BEAM SEAT CONCRETE TO THE LIMITS SHOWN AND TO A MINIMUM DEPTH OF 150 MM OR TO SOUND CONCRETE. EXISTING REINFORCING STEEL WITHIN THE LIMITS OF REMOVAL CONSIDERED BY THE ENGINEER UNSUITABLE TO REMAIN SHALL BE CUT AND REPLACED WITH EPOXY COATED REINFORCING STEEL AS DIRECTED BY THE ENGINEER. EPOXY COATED REINFORCING STEEL REQUIRED FOR REPLACEMENT SHALL BE INCLUDED UNDER ITEM 511 - CONCRETE, MISC. BEAM SEAT REPAIR. PLACE CONCRETE TO THE EXISTING BEAM SEAT ELEVATIONS AS NECESSARY. SEE STRUCTURE GENERAL NOTES SHEET 4/23 FOR ADDITIONAL NOTES REGARDING BEAM SEAT REPAIR.

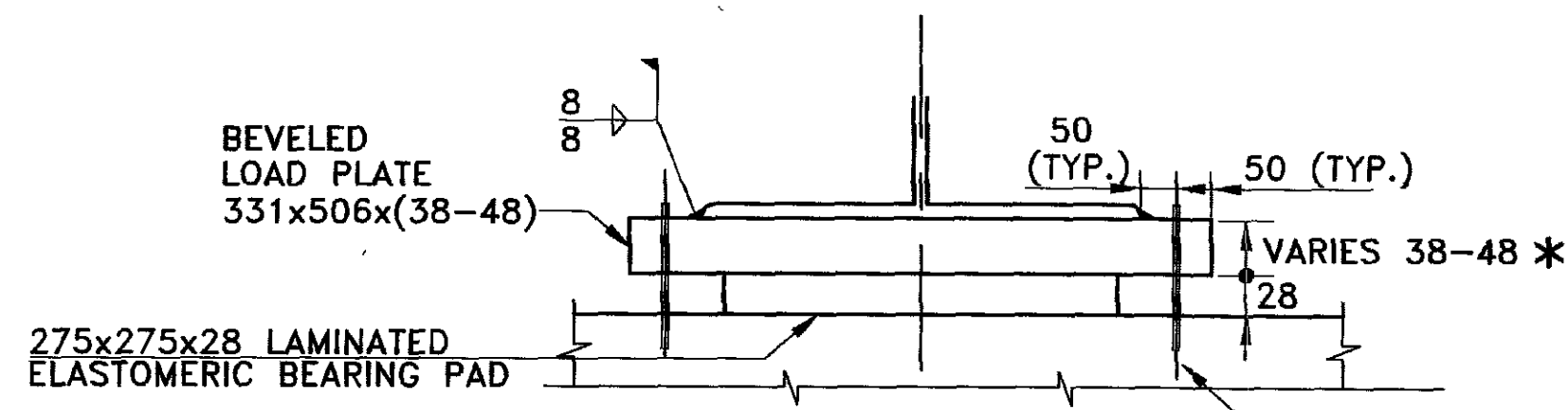
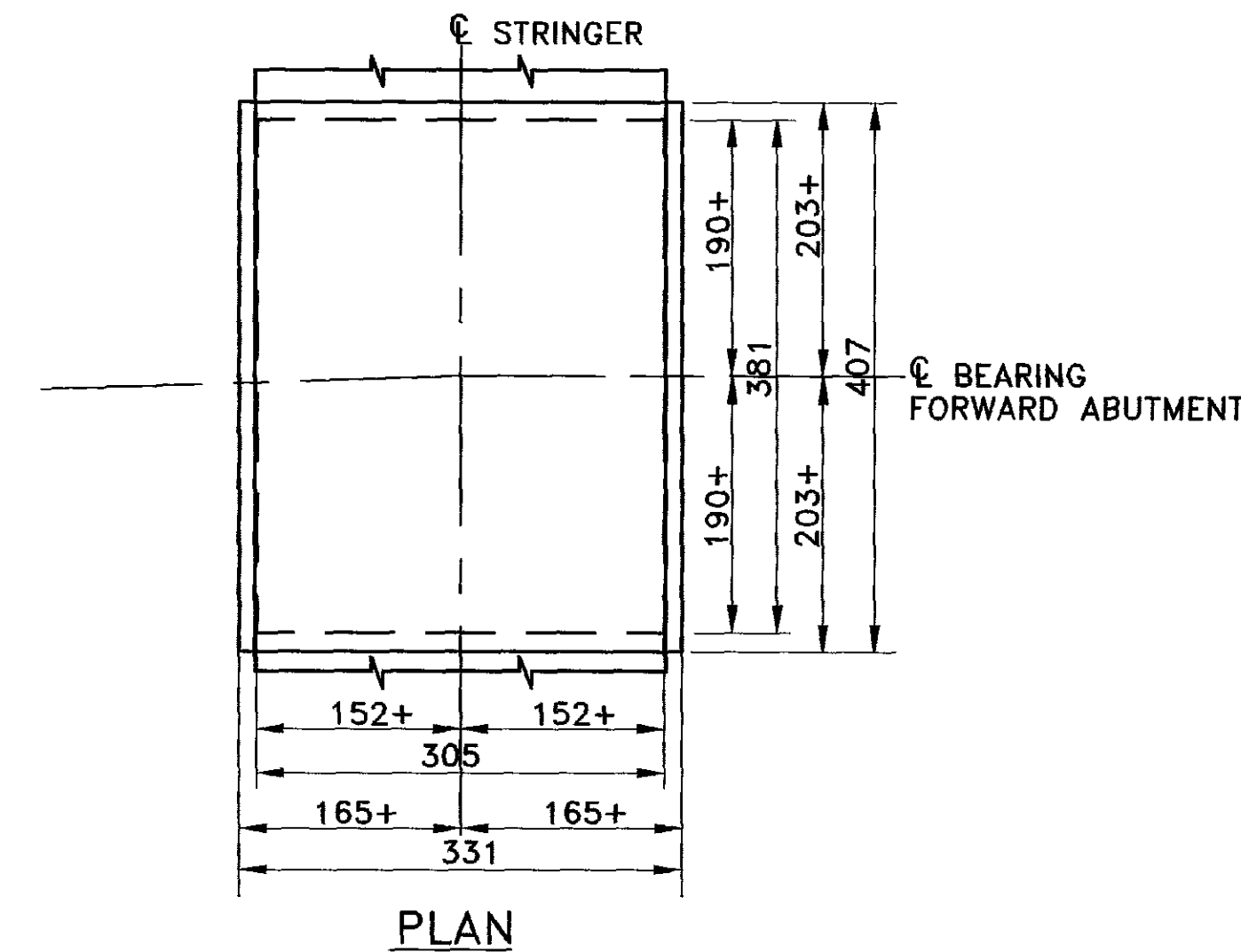
SECTION TO BE REMOVED

ITEM	UNIT	DESCRIPTION	PIER 1	PIER 2	100% FACTOR	TOTALS CARRIED TO EST. QUANTITIES
SPECIAL	METER	CONCRETE REPAIR BY EPOXY INJECTION	15.3	2.0	17.3	35

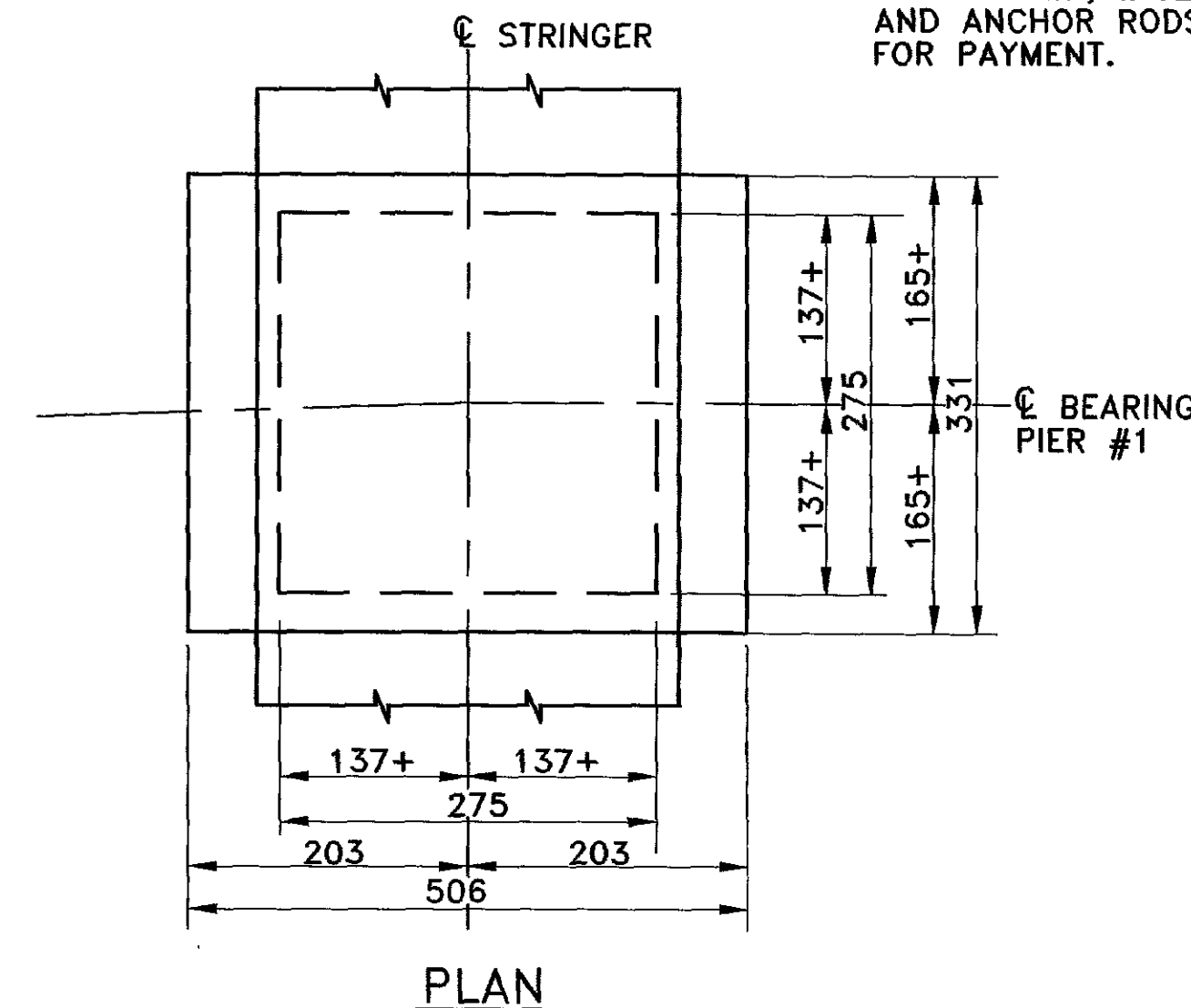
NO.	GENERAL PLAN REVISIONS	MDG	4/07
	REVISIONS	BY	DATE



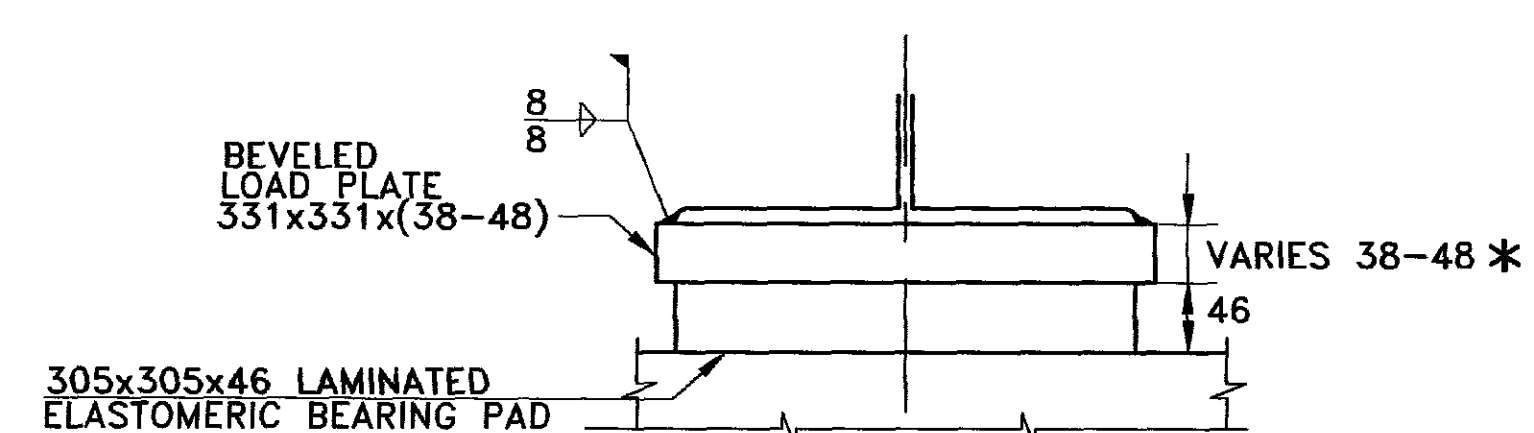
LAMINATED ELASTOMERIC EXPANSION
BEARING-FORWARD ABUTMENT SECTION



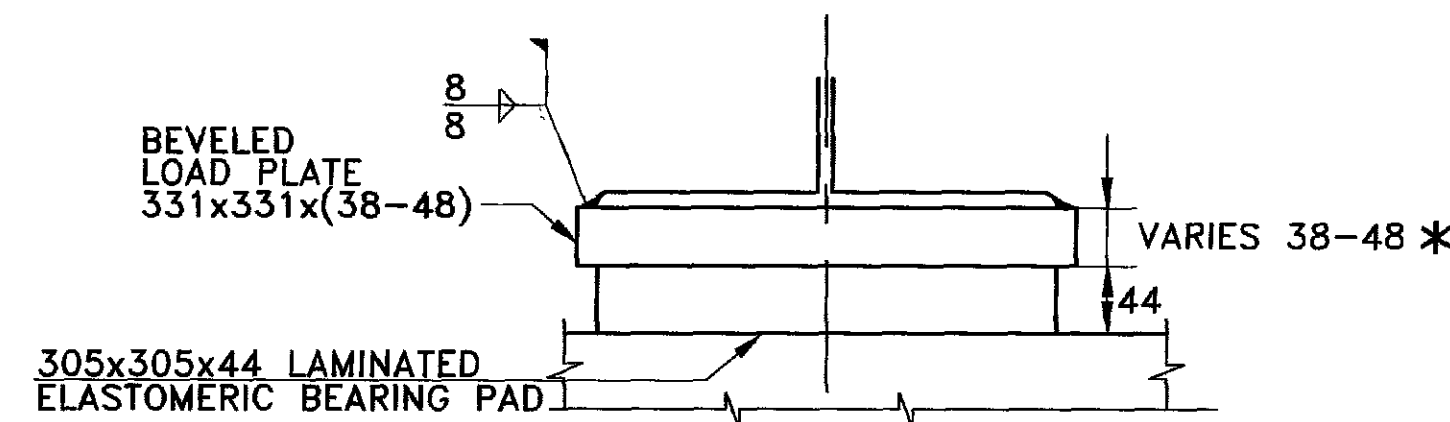
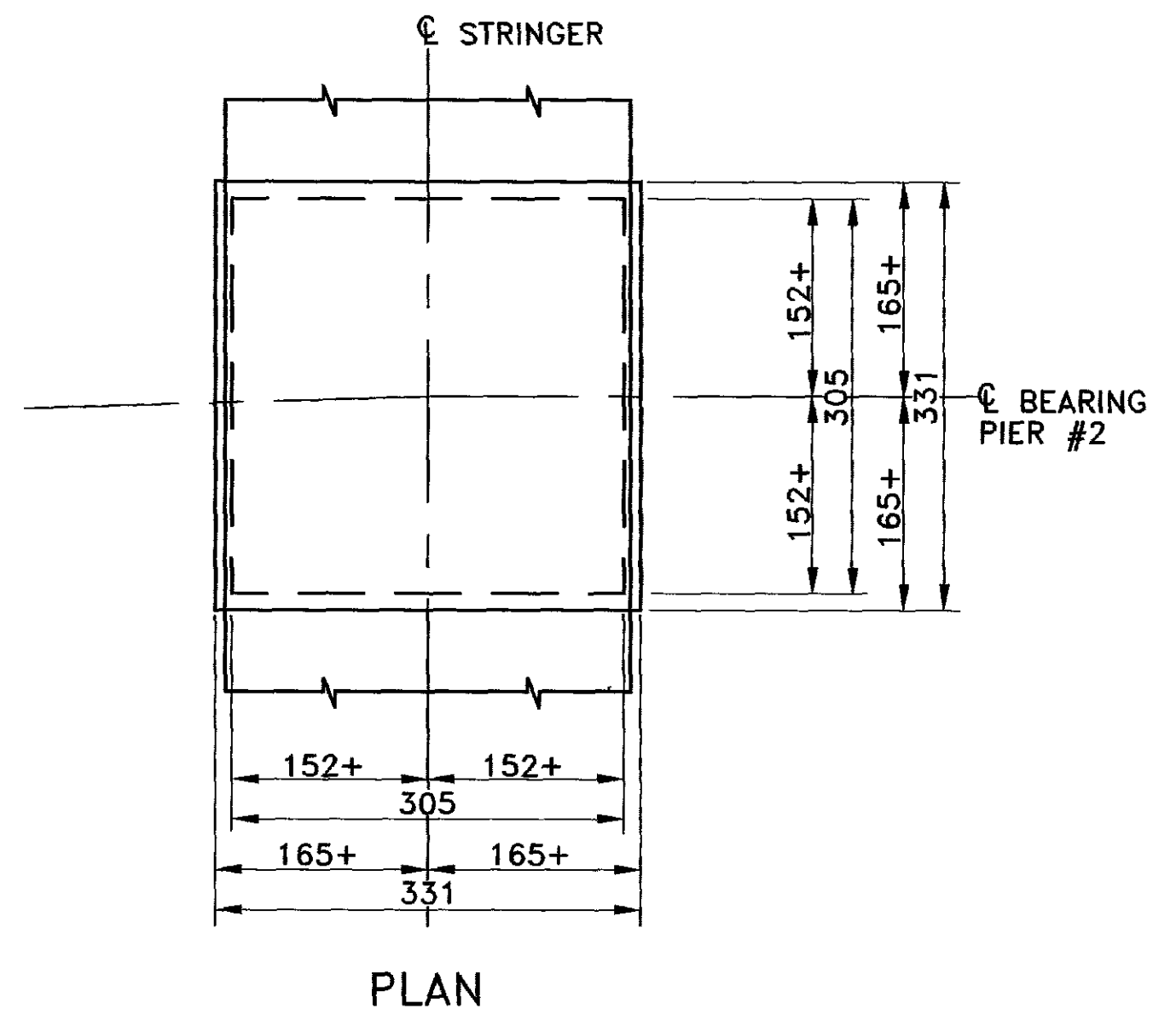
FIXED BEARING-PIER 1
SECTION



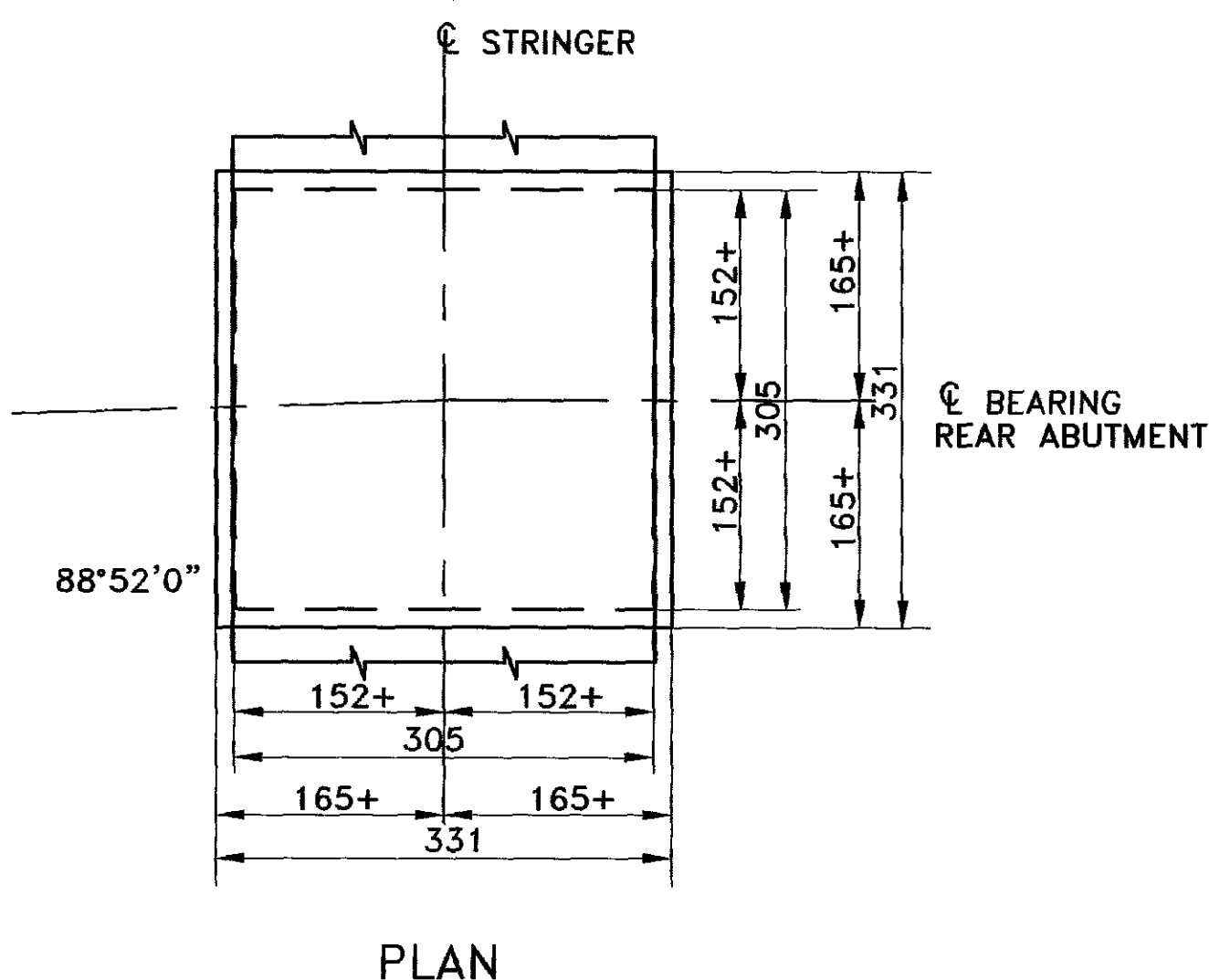
Ø 45 mmØ HOLE IN STEEL LOAD PLATE FOR 32 mm DIA. x 402 mm ANCHOR ROD, GALVANIZED ACCORDING TO 711.02 INSTALL ANCHOR RODS PER 510 FOR AN EMBEDMENT LENGTH OF 305 mm, INCLUDE DOWEL HOLES AND ANCHOR RODS WITH ITEM 516 FOR PAYMENT.



LAMINATED ELASTOMERIC EXPANSION
BEARING-PIER 2 SECTION



LAMINATED ELASTOMERIC EXPANSION
BEARING-REAR ABUTMENT SECTION



NOTES:

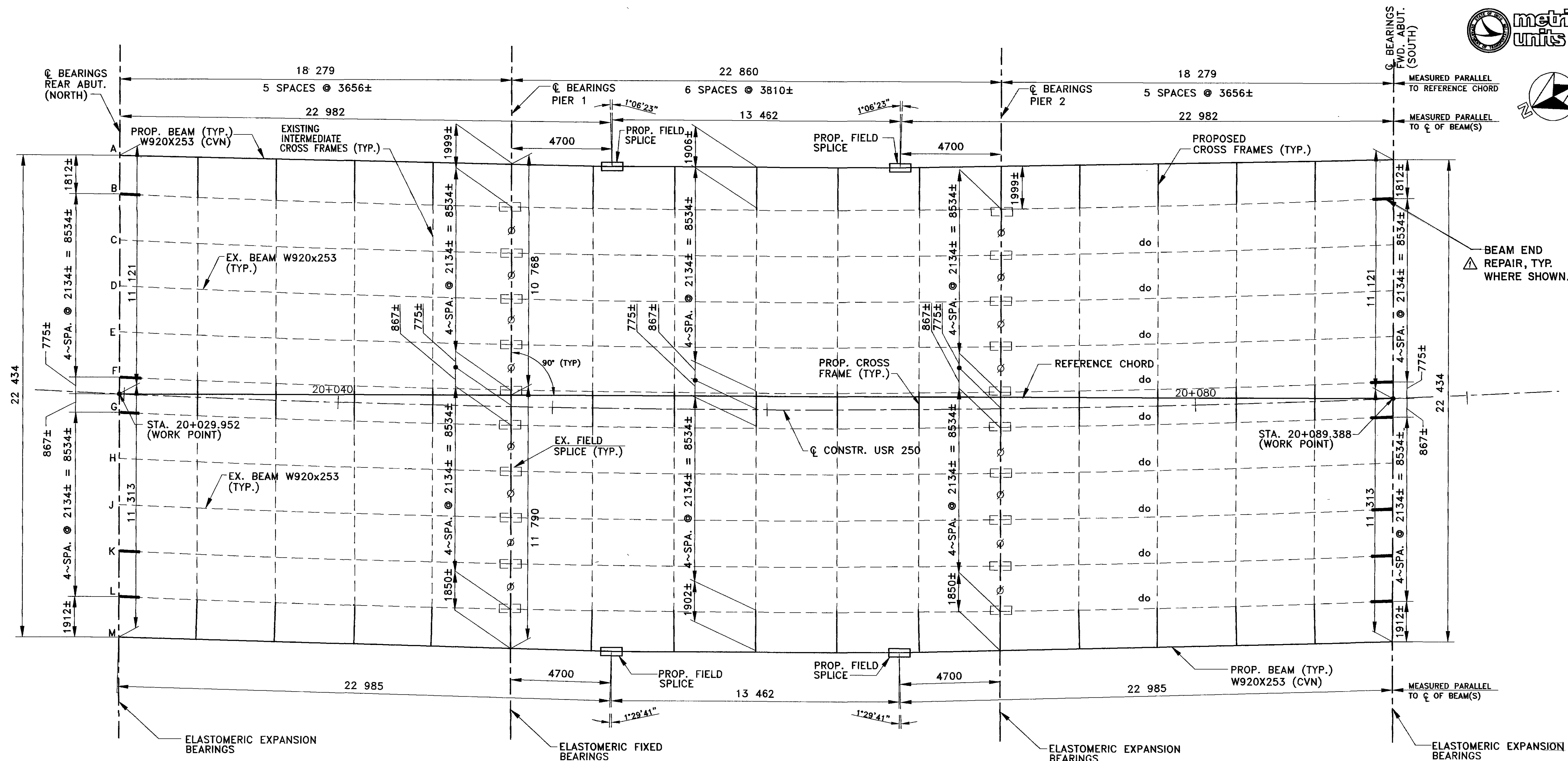
- STEEL FOR LOAD PLATES SHALL BE A36M
- THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. WELDING OF THE LOAD PLATE TO THE SUPERSTRUCTURE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE SHALL NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER MONITORING DEVICES.
- BEARING ANCHOR RODS: AT THE OPTION OF THE CONTRACTOR, THE BEARING ANCHOR RODS FOR FORMED HOLES, LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.
- ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND SECTION 18.7.4.5 TEST REQUIREMENTS FOR ELASTOMERIC BEARINGS, DIVISION II, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, TESTING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE BEARINGS, EACH. THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, ANCHOR RODS, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR THE APPROPRIATE ITEM 516, EACH, ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.
- EXISTING BEARING REMOVAL: EXISTING BEARINGS SHALL BE REMOVED. EXISTING BEARINGS CONSIST OF A BEARING PLATE. EXISTING STRUCTURAL STEEL SHALL BE PROVIDED WITH ADEQUATE SUPPORT DURING CONSTRUCTION IN ACCORDANCE WITH ITEM SPECIAL - JACKING AND TEMPORARY SUPPORT OF STRUCTURES, AS PER PLAN. THE STRUCTURAL STEEL SHALL BE GROUND SMOOTH AFTER BEARING REMOVAL AND SHALL BE FREE OF FINS, TEARS AND SLIVERS. ANCHOR BARS AT FIXED BEARINGS ARE TO BE REMOVED OR TRIMMED TO 1" BELOW BEAM SEAT, AS DIRECTED BY THE ENGINEER. ANY DAMAGE TO THE BEAM SEAT SHALL BE REPAIRED IN ACCORDANCE WITH ITEM 843 PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR OR ITEM 511 CLASS C CONCRETE, WHICHEVER IS DEEMED APPROPRIATE BY THE ENGINEER. EXISTING BEARING REMOVAL SHALL BE INCLUDED IN ITEM 202 PORTIONS OF STRUCTURE REMOVED, OVER 6 METER SPAN, AS PER PLAN FOR PAYMENT.

* BEVELED LOAD PLATE VARIES FROM 38 mm AT UP STATION TO 48 mm AT DOWN STATION.

LAMINATED ELASTOMERIC BEARING DATA

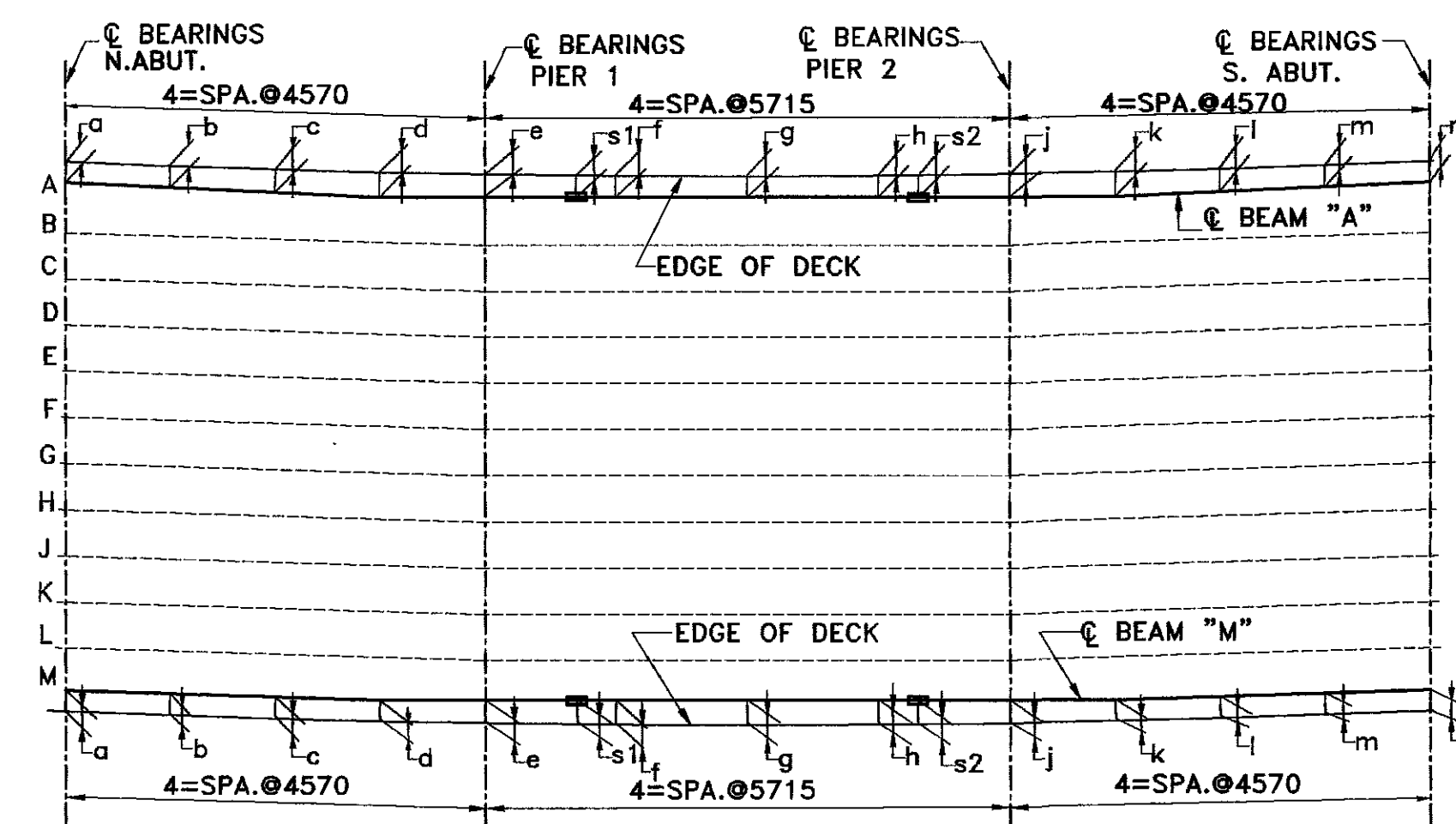
TYPE	LOCATION	DEAD LOAD (KN)	LIVE LOAD (KN)	DESIGN LOAD (KN)	EXTERIOR ELASTOMERIC LAYER		INTERIOR ELASTOMERIC LAYER		STEEL PLATE LAMINATE		TOTAL THICKNESS mm
					THICKNESS (mm)	NUMBER	THICKNESS (mm)	NUMBER	THICKNESS (mm)	NUMBER	
EXP.	REAR ABUTMENT	112	313	425	4	2	5	5	1.89	6	44
FIX	PIER 1	374	466	840	5	2	6	2	1.89	3	28
EXP.	PIER 2	374	466	840	5.5	2	9	3	1.89	4	46
EXP.	FORWARD ABUTMENT	112	313	425	4	2	6	6	1.89	7	56

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FRAMING PLAN

Δ	GENERAL PLAN REVISIONS	MDG	4/07
NO.	REVISIONS	BY	DATE

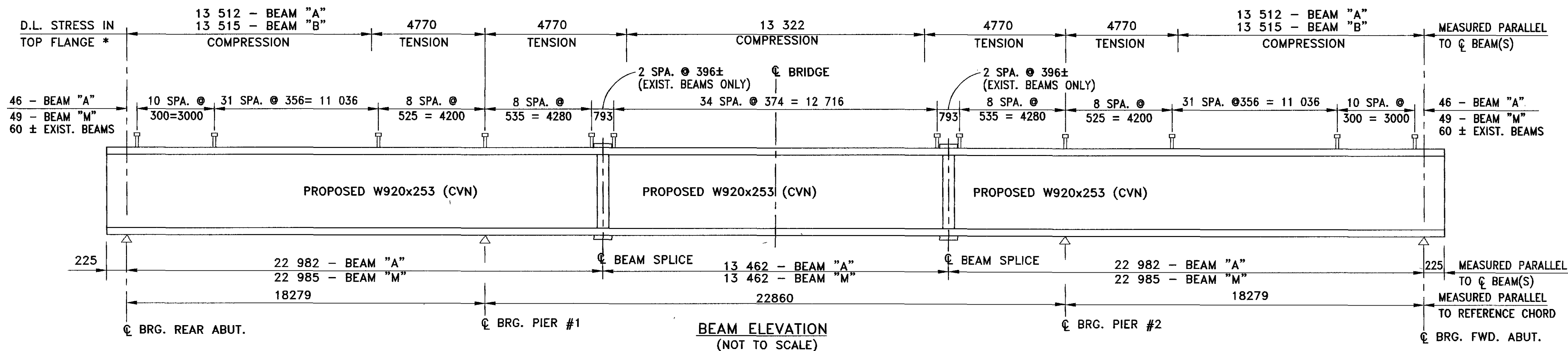


EDGE OF DECK LAYOUT DIAGRAM

OFFSET DIMENSION FROM CL OF FACIA BEAMS TO EDGE OF DECK															
	CL REAR ABUT.					CL PIER 1					CL PIER 2				
BEAM	a	b	c	d	e	s1	f	g	h	s2	j	k	l	m	n
FACIA BEAM "A"	652	558	494	461	458	487	477	454	477	487	458	461	494	558	652
FACIA BEAM "M"	460	517	545	544	513	451	459	482	459	451	513	544	545	517	460
OFFSET DIMENSION FROM CL OF FACIA BEAMS TO REFERENCE CHORD															
FACIA BEAM "A"	11 121				10 768						10 768				11 121
FACIA BEAM "M"	11 313				11 790						11 790				11 313

NOTES:

- 1) REPLACEMENT OF END FRAMES D-E, F-G ON FORWARD AND REAR ABUTMENTS.
- 2) INTERMEDIATE CROSS FRAMES
X-FRAMES MARKED Ø HAVE 102 X 102 X 7.9 L STRUT TOP AND BOTTOM AND 2-76 X 76 X 7.9 Ls. OTHER X-FRAMES HAVE 76 X 76 X 7.9 L STRUT AT BOTTOM AND 2-76 X 76 X 7.9 DIAGONAL Ls.
- 3) WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
- 4) SEE SHEET 17/23 FOR BEAM SPLICE DETAILS.
- 5) SEE BEAM REPAIR DETAIL ON SHEET 17/23 AND STRUCTURE GENERAL NOTES ON SHEET 4/23.



NOTES:

- 1) HIGH STRENGTH BOLTS FOR SPLICES SHALL BE 27 mm DIAMETER A325 GALVINIZED UNLESS OTHERWISE NOTED.
- 2) 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". FIELD WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 25 mm FROM EDGE OF FLANGE, BE NOT MORE THAN 50 mm LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
- 3) ALL NON-STRUCTURAL STEEL TO BE INCORPORATED INTO NEW WORK SHALL BE A36M
- 4) WHERE A SHAPE OR PLATE IS DESIGNATED "CVN" THE MATERIAL SHALL MEET REQUIREMENTS OF ODOT C & M SPECIFICATIONS SECTION 711.01. ALL FIELD SPLICE MATERIAL EXCEPT FILL PLATES SHALL BE "CVN".
- 5) FOR LOCATIONS OF BEAM END REPAIR SEE SHEET 16/23.

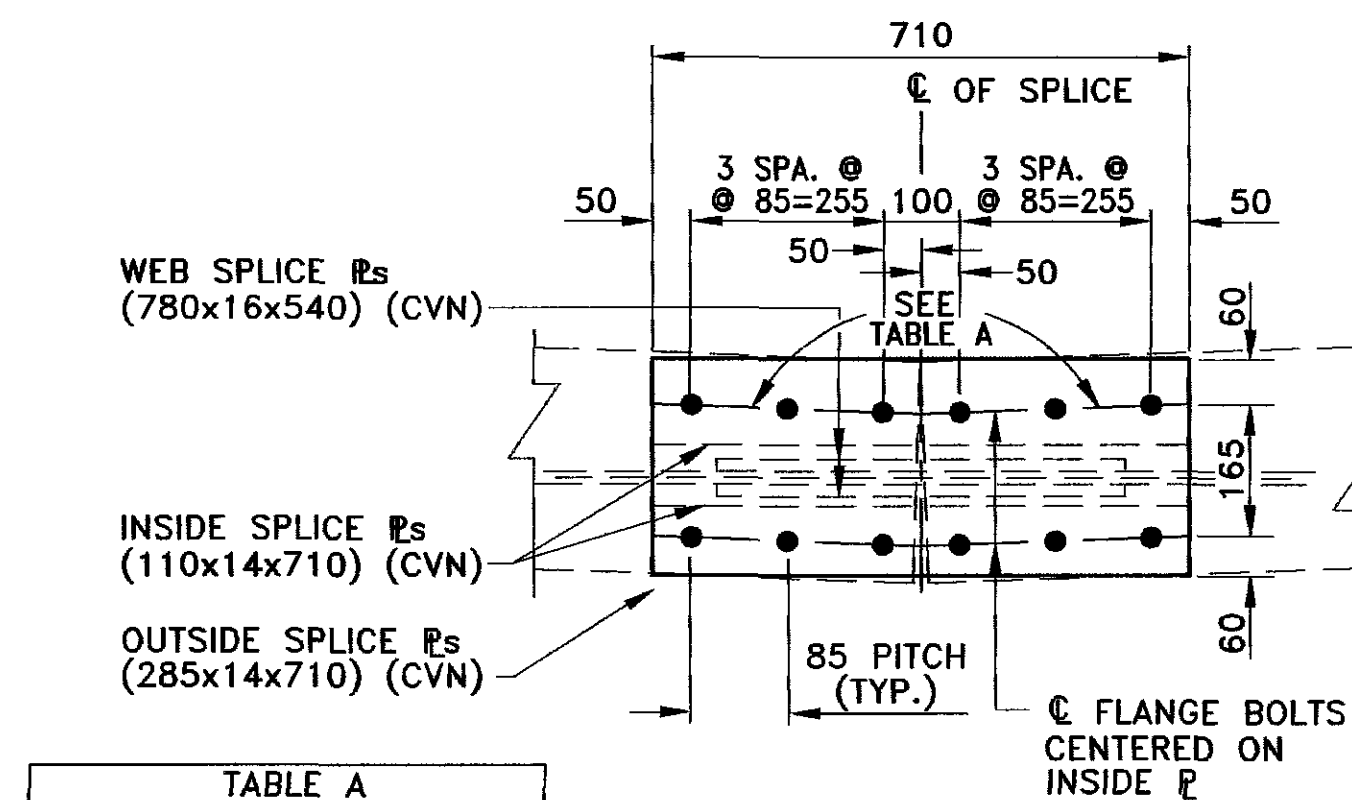
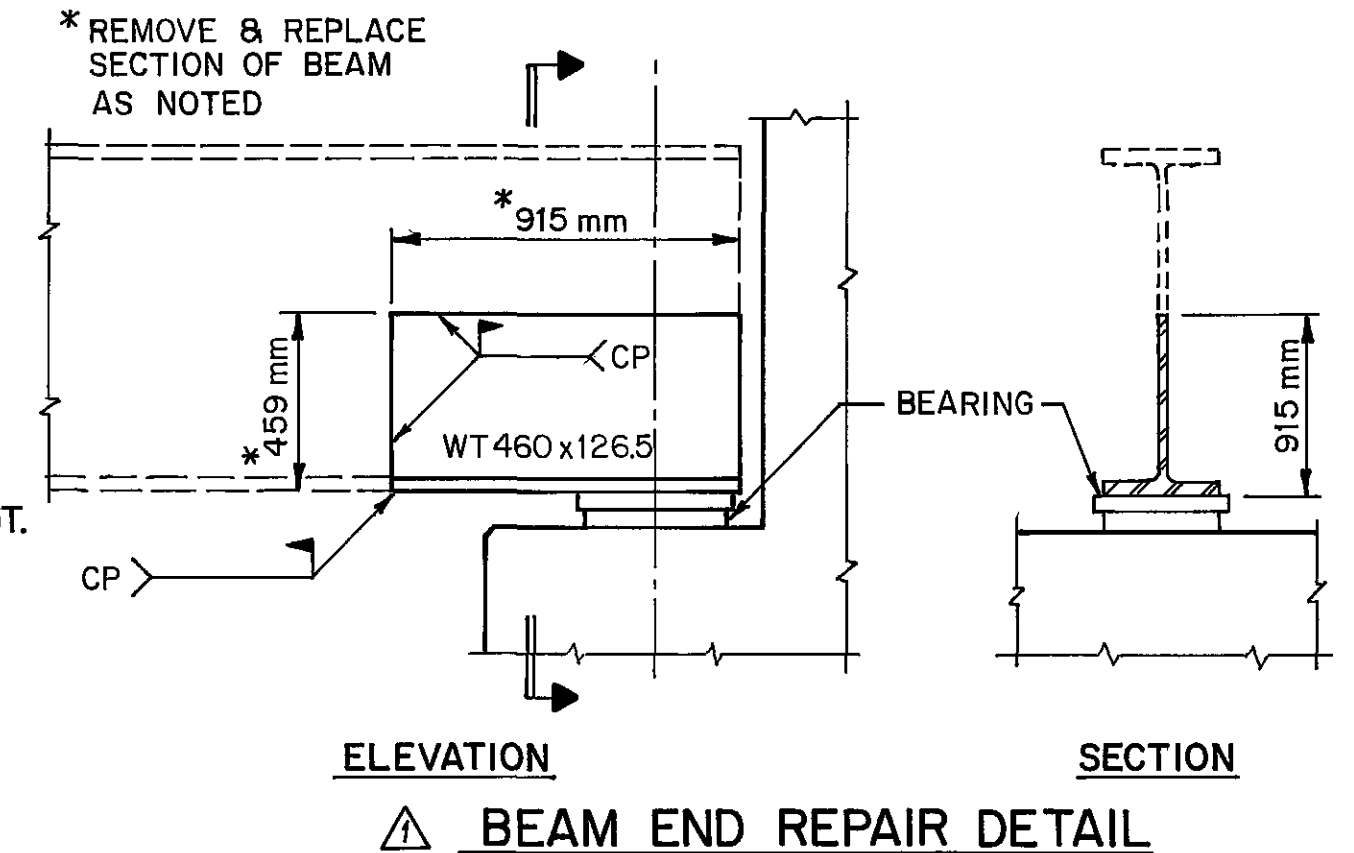
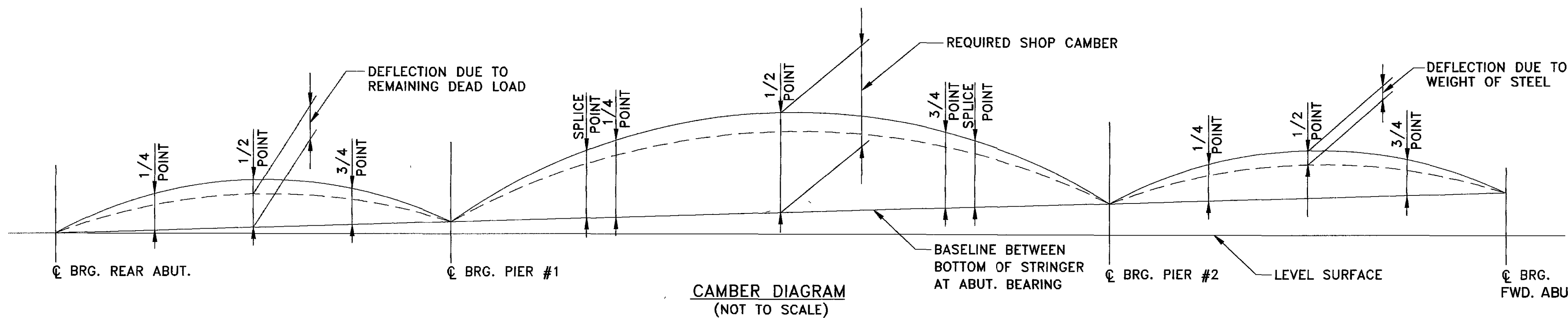
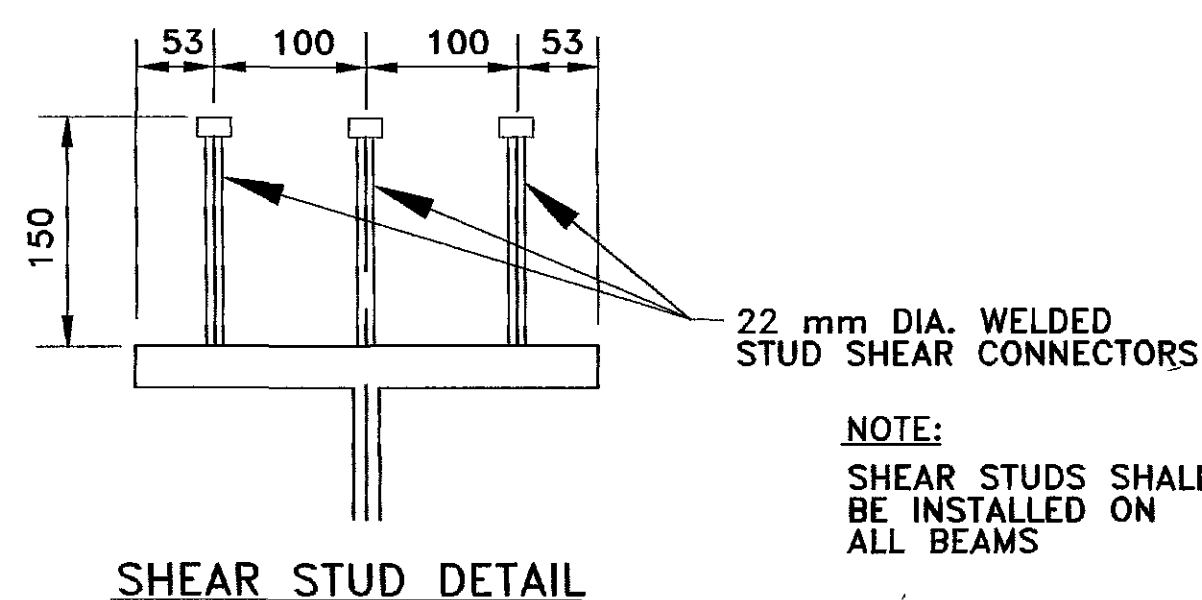
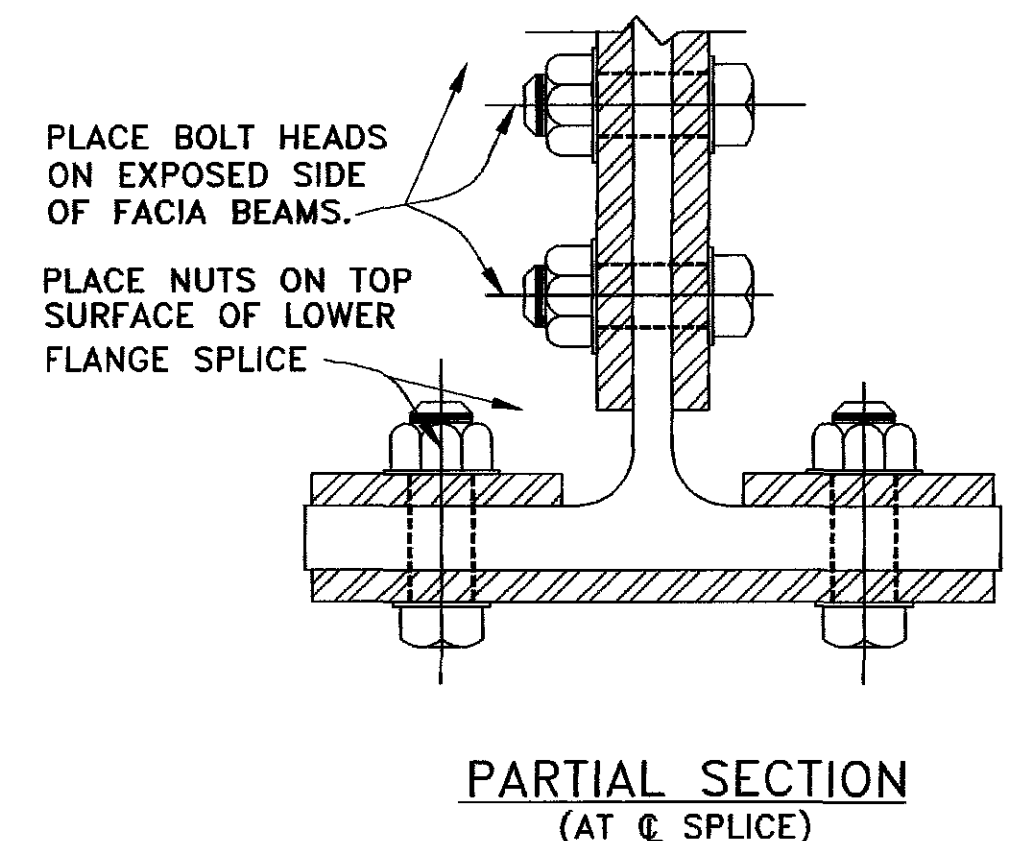
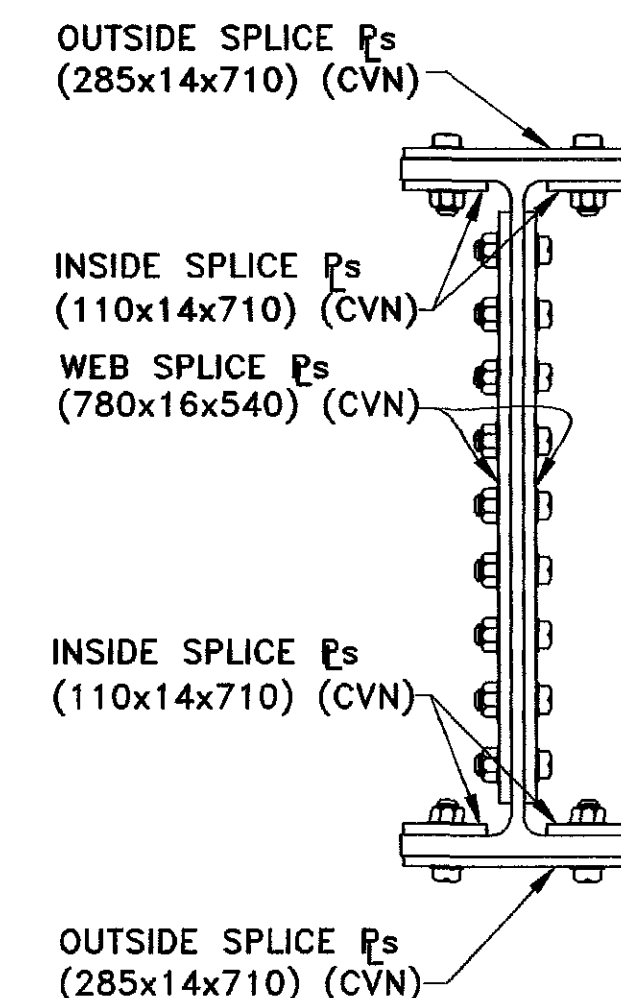
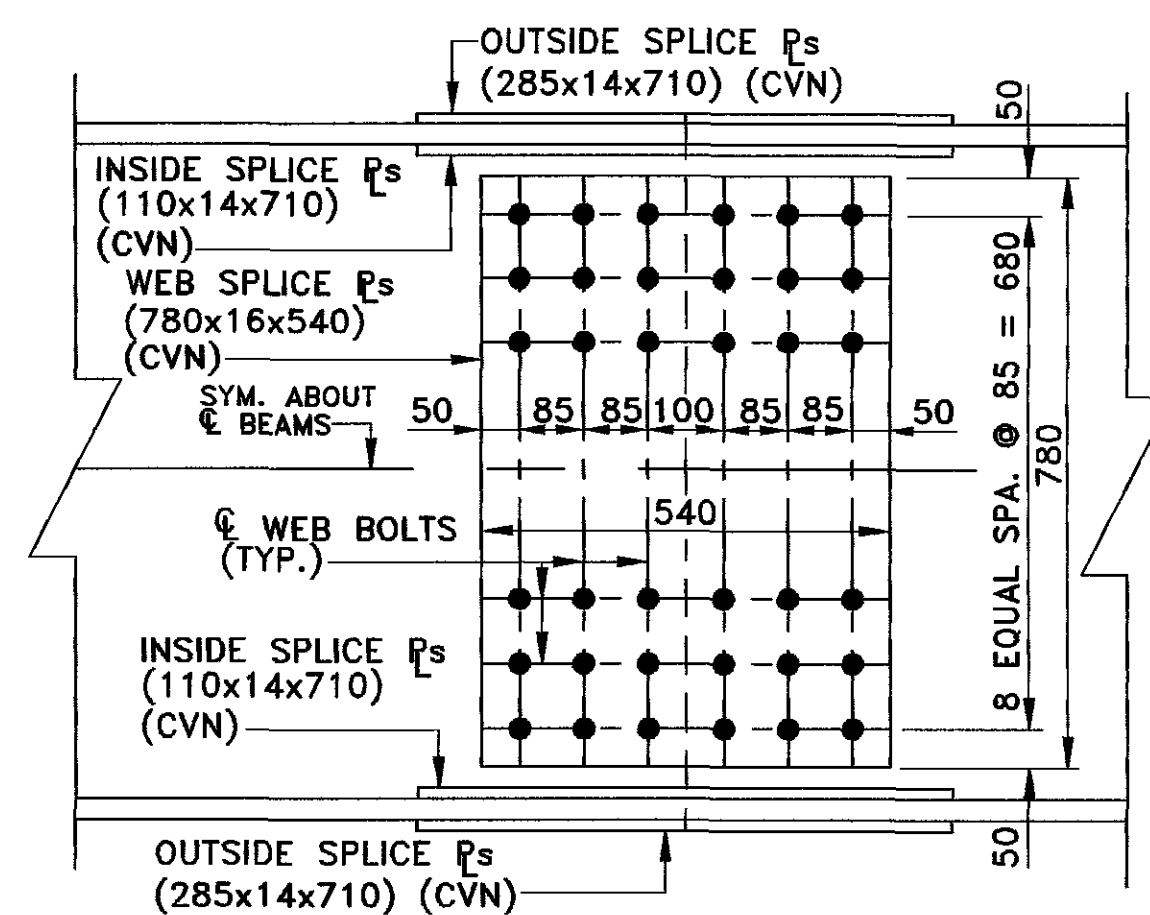
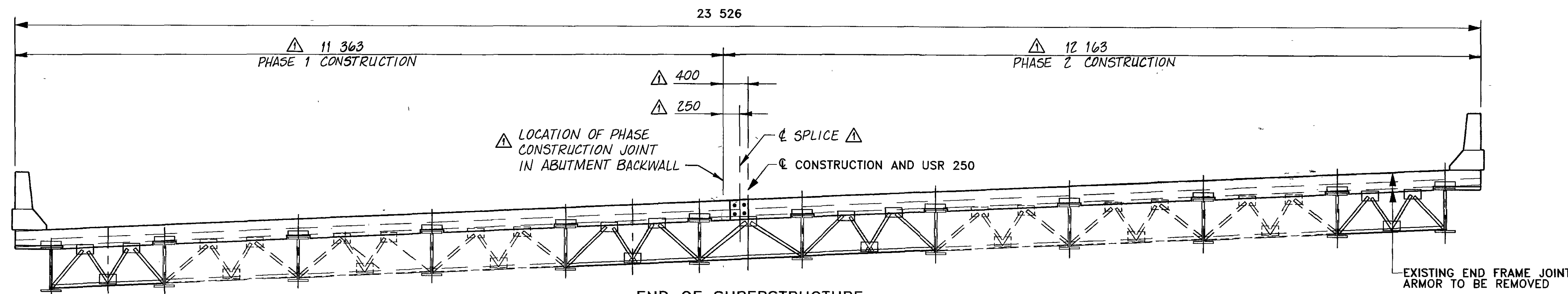


TABLE A	
LOCATION	ANGLE
BEAM "A" REAR	178°53'37"
BEAM "A" FWD.	178°53'37"
BEAM "M" REAR	178°30'19"
BEAM "M" FWD.	178°30'19"



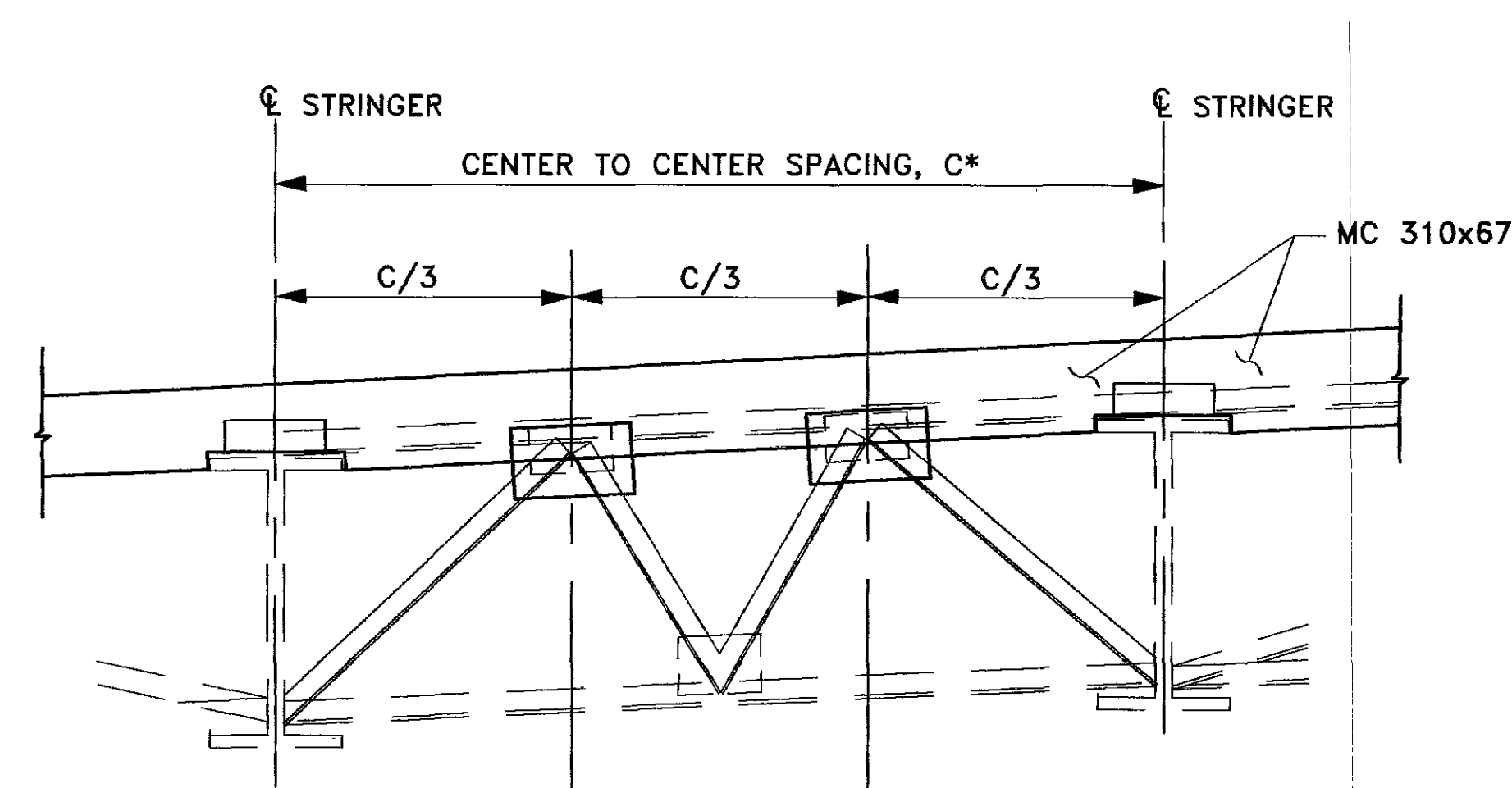
ESTIMATED DEFLECTION AND CAMBER DATA																
POINT (*)	SPAN 1					SPAN 2					SPAN 3					C FWD. ABUT.
	C REAR ABUT.	1/4 POINT	1/2 POINT	3/4 POINT	C PIER # 1	SPLICE POINT	1/4 POINT	1/2 POINT	3/4 POINT	SPLICE POINT	C PIER # 2	1/4 POINT	1/2 POINT	3/4 POINT	C FWD. ABUT.	
DEFLECTION DUE TO WEIGHT OF STEEL	0.00	1.4	1.6	0.7	0.00	1.0	1.2	2.1	1.2	1.0	0.00	0.7	1.6	1.4	0.00	
DEFLECTION DUE TO REMAINING DEAD LOAD	0.00	6.6	7.7	3.5	0.00	4.7	5.9	10.3	5.9	4.7	0.00	3.5	7.7	6.6	0.00	
REQUIRED SHOP CAMBER	0.00	8.0	9.3	4.2	0.00	5.7	7.1	12.4	7.1	5.7	0.00	4.2	9.3	8.0	0.00	

* 1/4, 1/2, OR 3/4 POINT OF SPAN LENGTH.

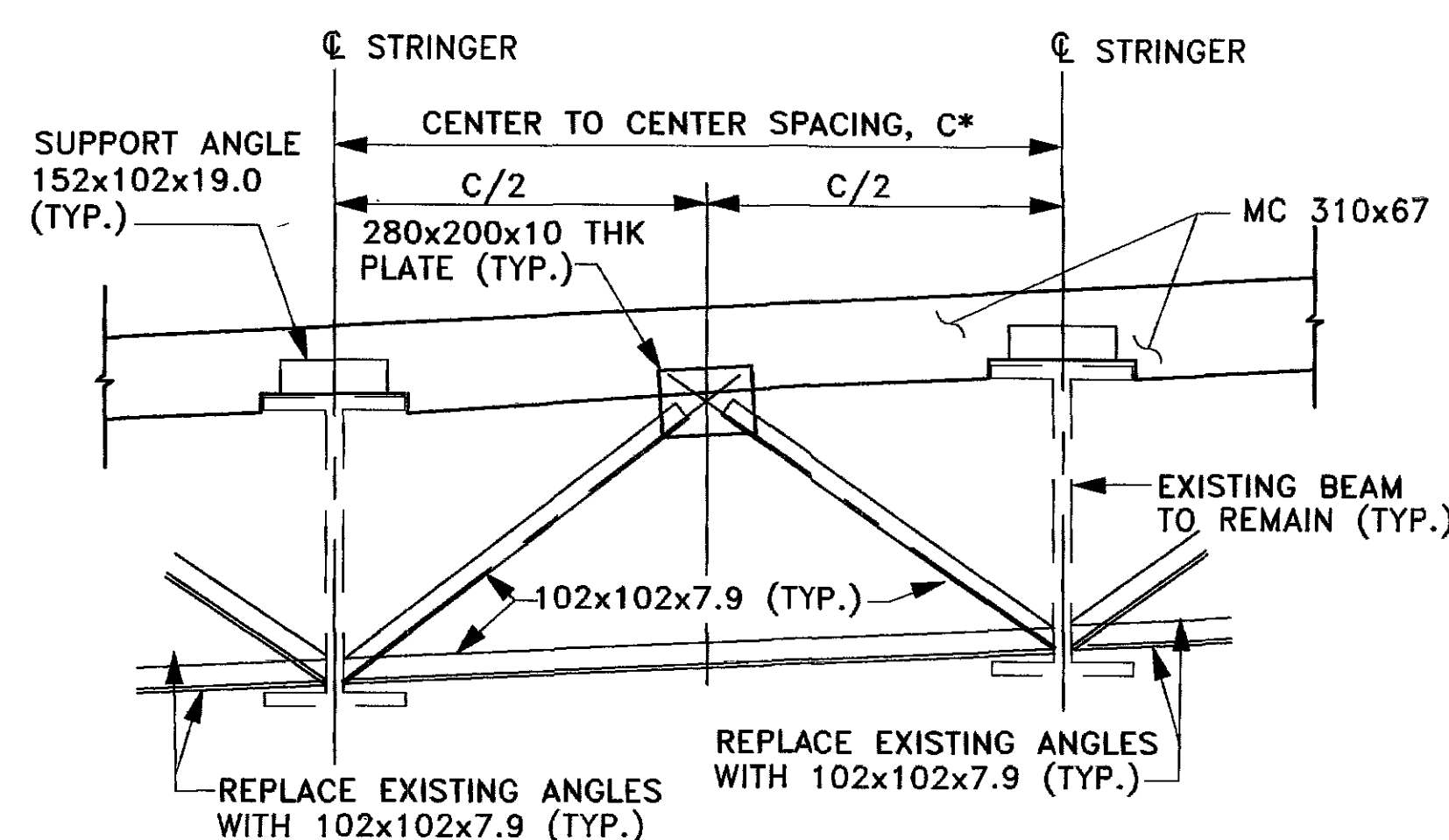


END OF SUPERSTRUCTURE
FORWARD ABUTMENT SHOWN LOOKING FORWARD
(TYPICAL END CROSS FRAMES ONLY)

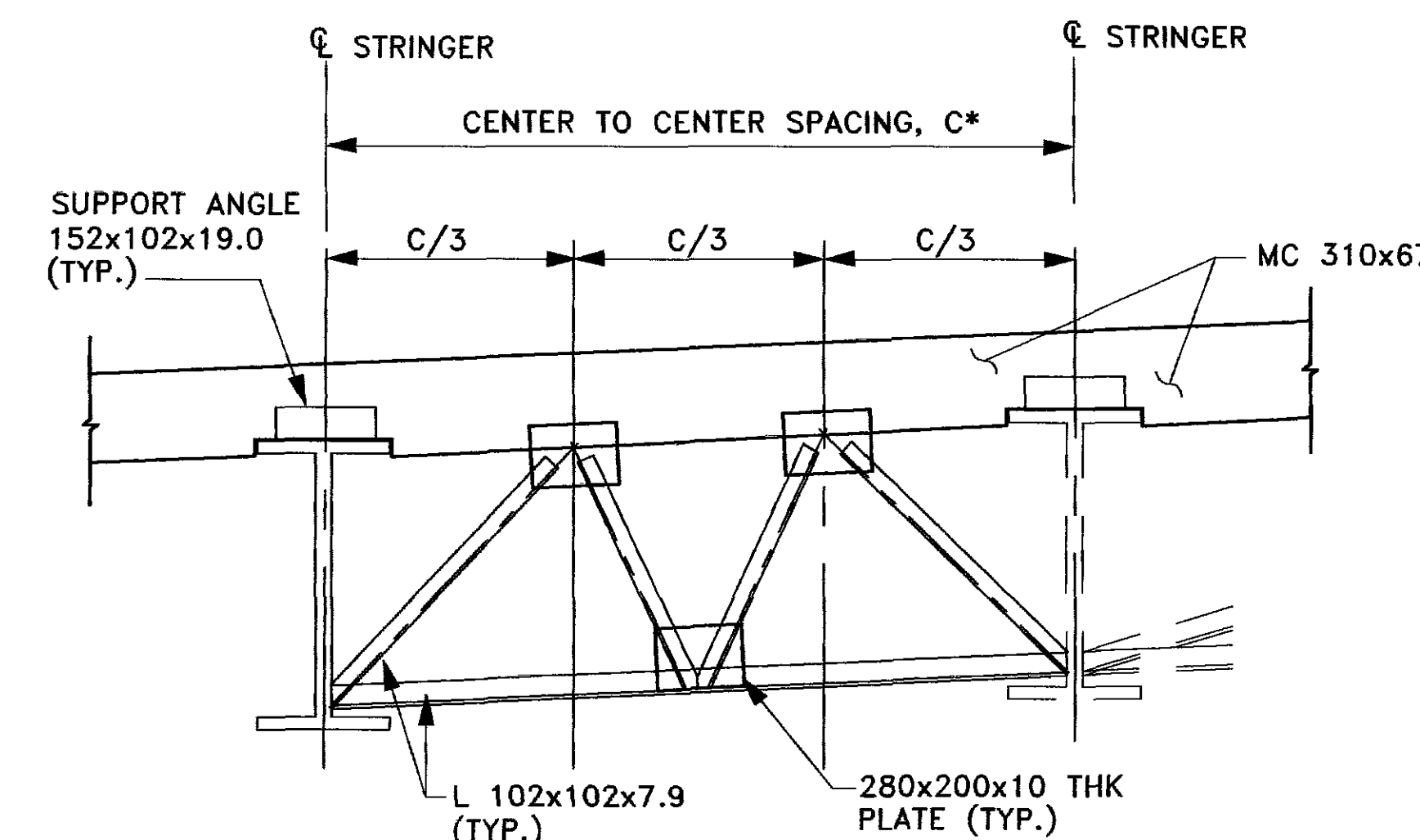
TEMPERATURE (°C)	LOCATION	
	REAR ABUT.	FORWARD ABUT.
0	46	48
5	45	45
10	44	43
15	42	40
20	41	38
25	40	36
30	39	34
35	38	31



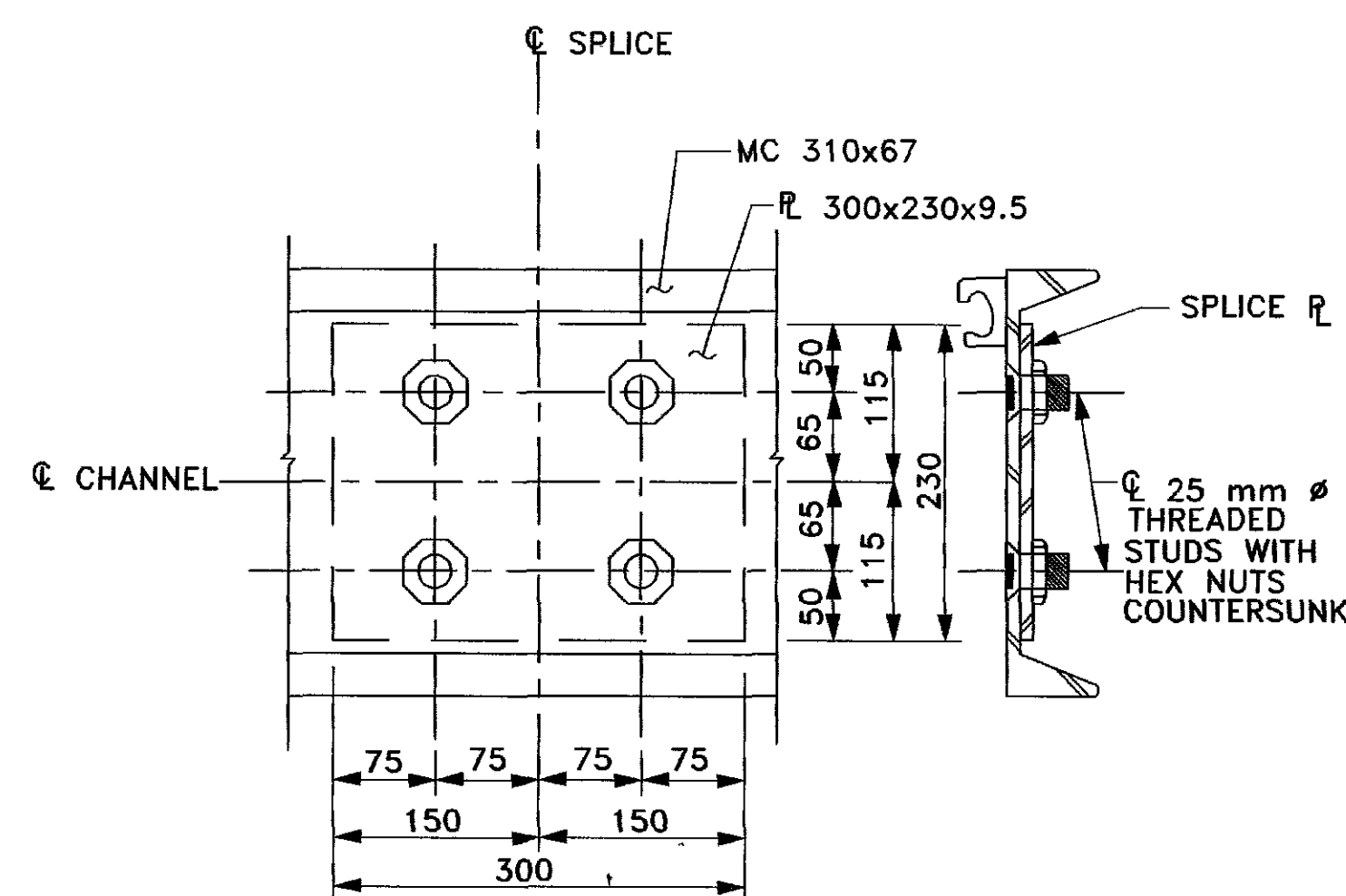
EXISTING END FRAME SECTION
WELD CONNECTIONS PER STD. DWG. EXJ-2-87



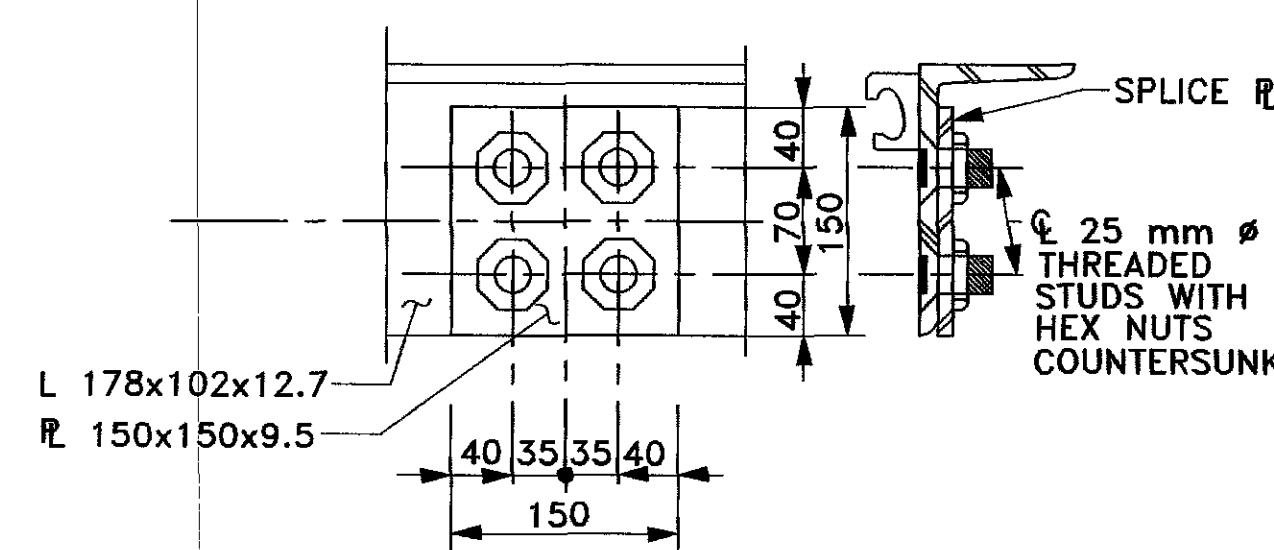
MEDIAN END FRAME SECTION
WELD CONNECTIONS PER STD. DWG. EXJ-4-87



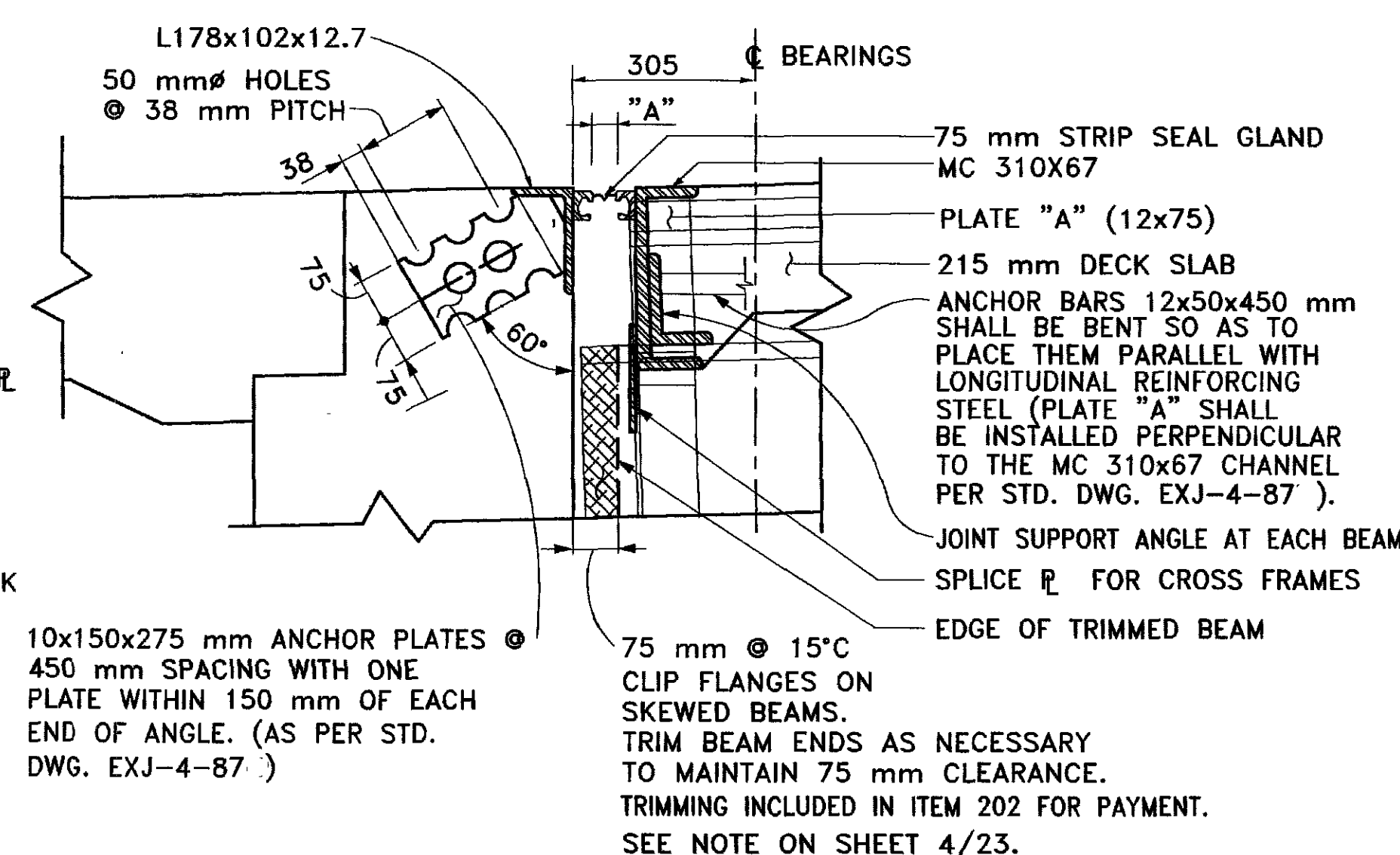
NEW END FRAME SECTION
WELD CONNECTIONS PER STD. DWG. EXJ-4-87



FIELD SPLICE DETAIL



ANGLE SPLICE
(REAR ABUTMENT SHOWN LOOKING FORWARD)
SEE ABUTMENT DRAWINGS FOR LOCATION



EXPANSION JOINT AND
BEARING DETAILS

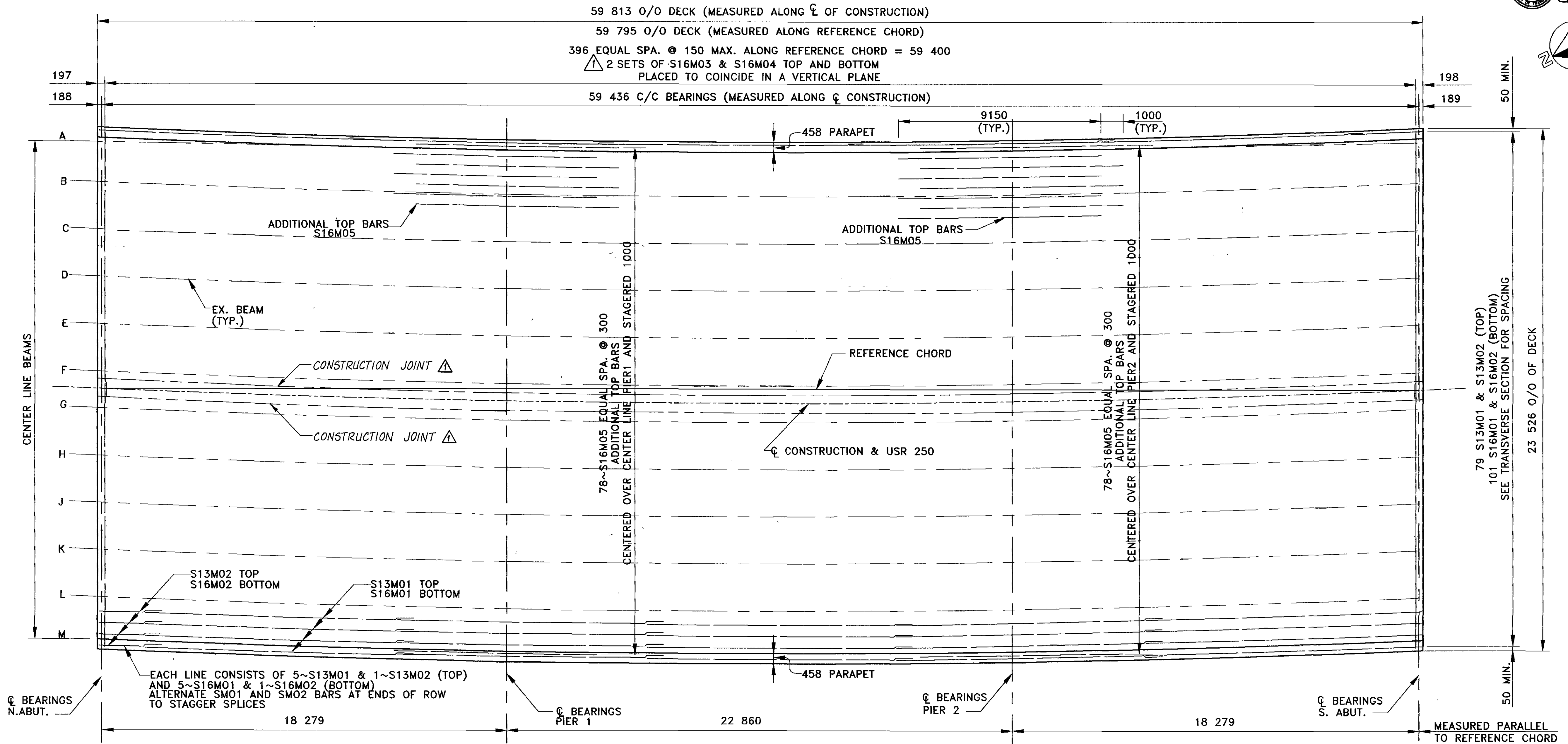
LEGEND

* SEE FRAMING PLAN FOR SPACING,
SHEET 16/23

NOTES:

- SEE STANDARD DRAWING EXJ-4-87. FOR STRIP SEAL EXPANSION JOINT DETAILS NOT SHOWN
- THE STRIP SEAL GLAND SHALL BE 75 mm AND SHALL BE INSTALLED IN ONE CONTINUOUS PIECE.
- THE JOINT ASSEMBLY SHALL BE PLACED PARALLEL TO THE CENTERLINE OF THE ABUTMENT BEARING.
- END CROSS FRAME OR JOINT ARMOR REMOVAL: ROUGH BEAM WEB SURFACES RESULTING FROM REMOVAL OF END CROSS FRAME OR JOINT ARMOR SHALL BE GROUND SMOOTH. PAYMENT FOR WORK SHALL BE MADE UNDER ITEM 202.
- ADDITIONAL PLATES MAY BE REQUIRED TO PLACE THE PROPOSED MC 310 x 67 CHANNEL PARALLEL WITH THE ABUTMENT CENTERLINE AND IN A WORKING POSITION. ONCE FIELD VERIFIED, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A SET OF PLANS OUTLINING THE PROPOSED WORK AND NECESSARY REMEDIATION REQUIRED. PAYMENT FOR THIS WORK SHALL BE INCLUDED UNDER ITEM 202.
- REFER TO STANDARD DWG. GSD-1-96 FOR ADDITIONAL CROSS FRAMING DETAILS.

NO.	GENERAL PLAN REVISIONS	MDG	4/07
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DECK SLAB PLAN

NOTES:

- 1) REINFORCING STEEL LAP LENGTHS SHALL BE AS FOLLOWS (UNLESS OTHERWISE SHOWN): △

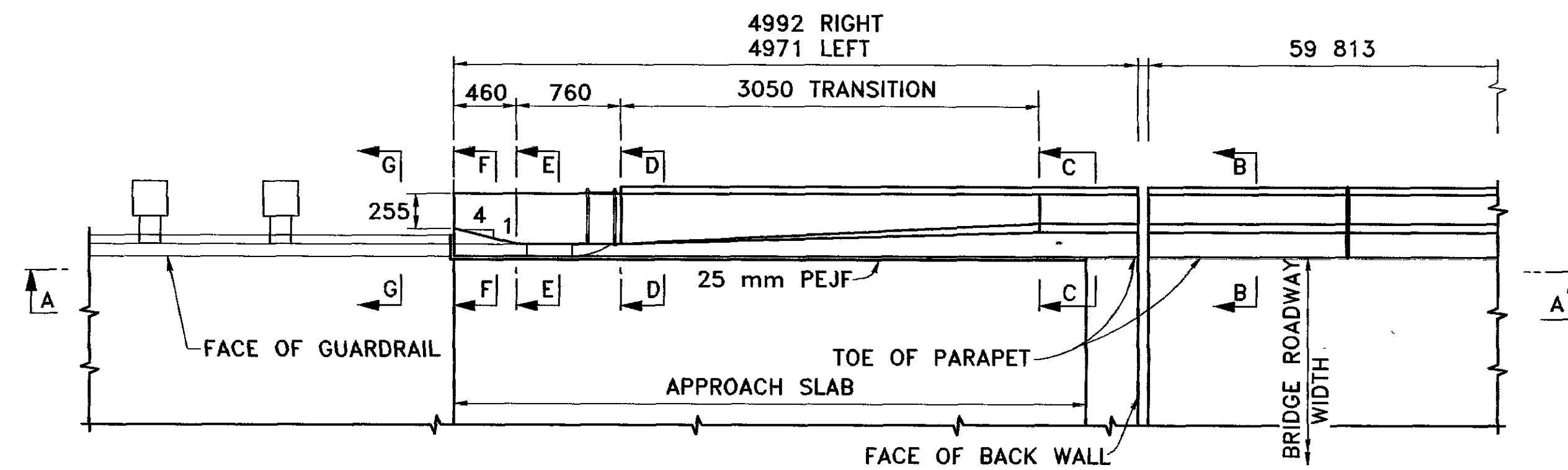
13M BARS	680 mm
16M BARS	970 mm
19M BARS	1170 mm
25M BARS	1500 mm
- 2) SEE SHEET 19/23 FOR SCREED ELEVATIONS.
- 3) SEE SHEET 19/23 FOR TRANSVERSE SECTION.
- 4) SEE SHEET 22/23 FOR REINFORCING STEEL SCHEDULE.

NO.	GENERAL PLAN REVISIONS	SLM	4/07
	REVISIONS	BY	DATE

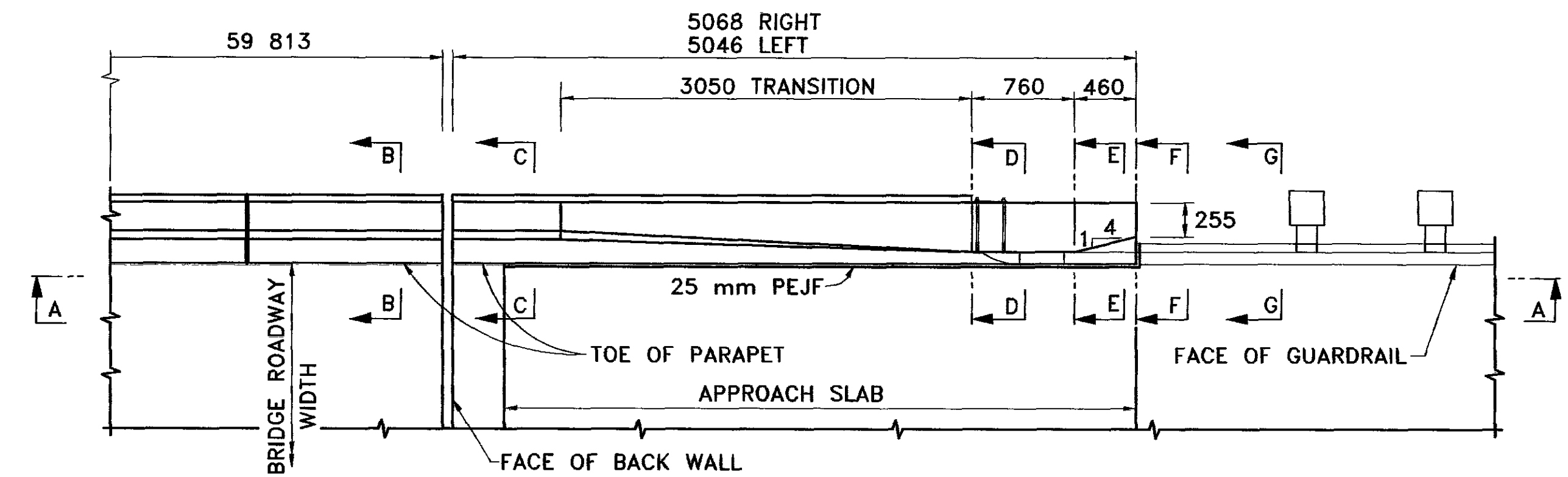
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20/23

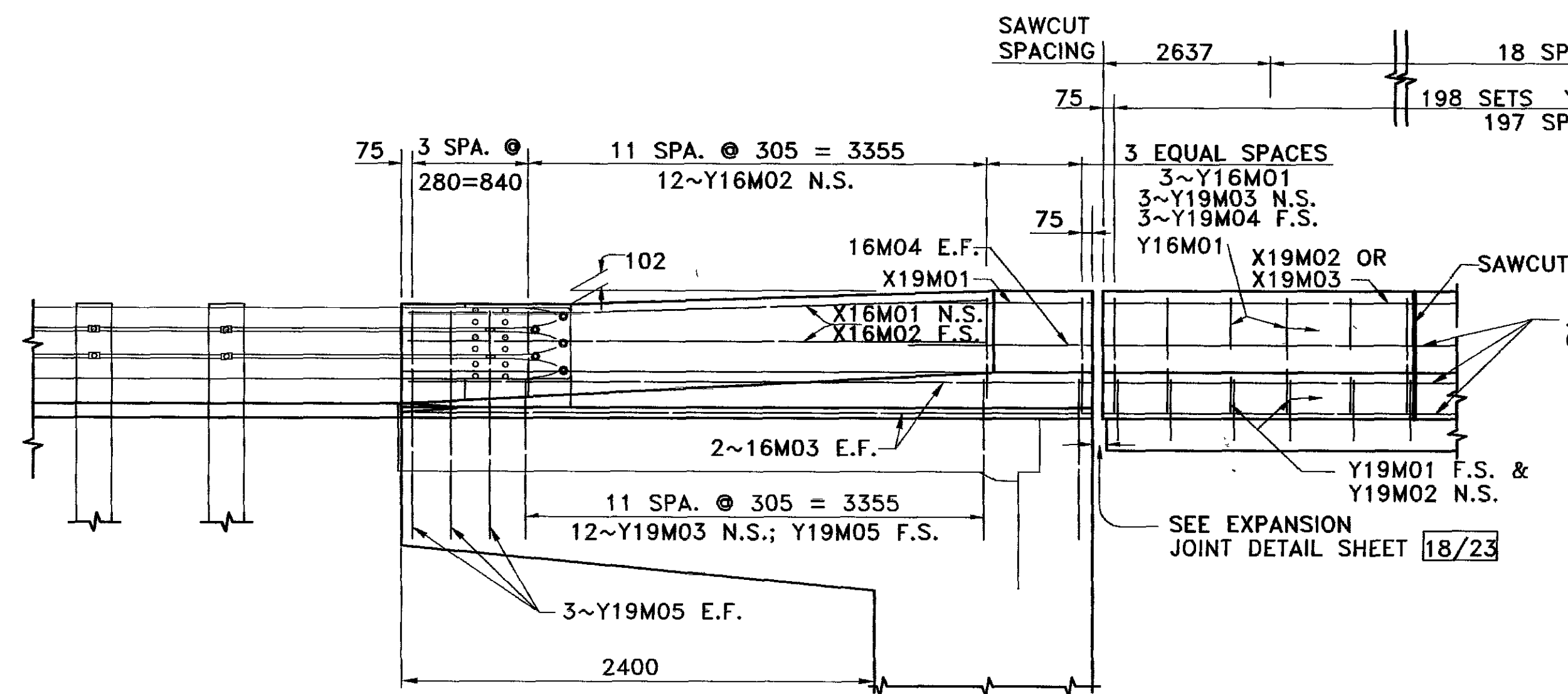
64
96



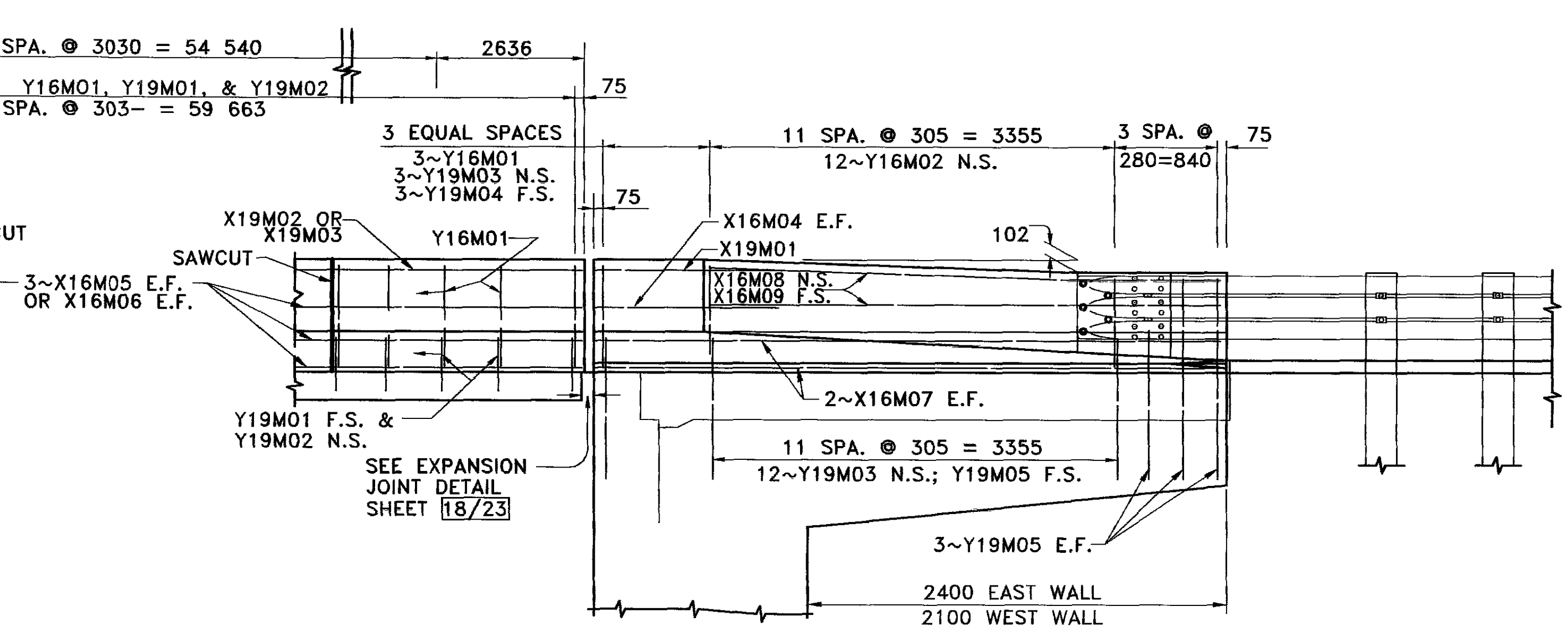
PART PLAN AT ABUTMENT (REAR)



PART PLAN AT ABUTMENT (FORWARD)



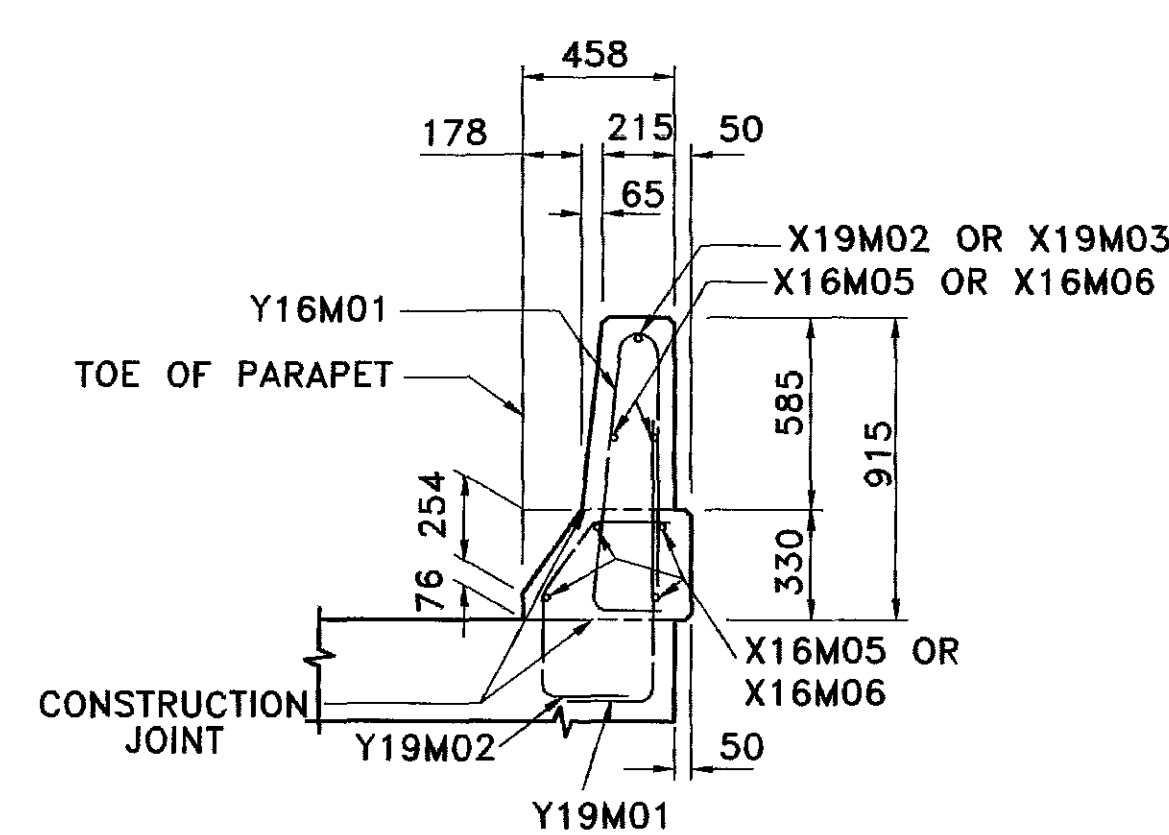
SECTION A-A (REAR)



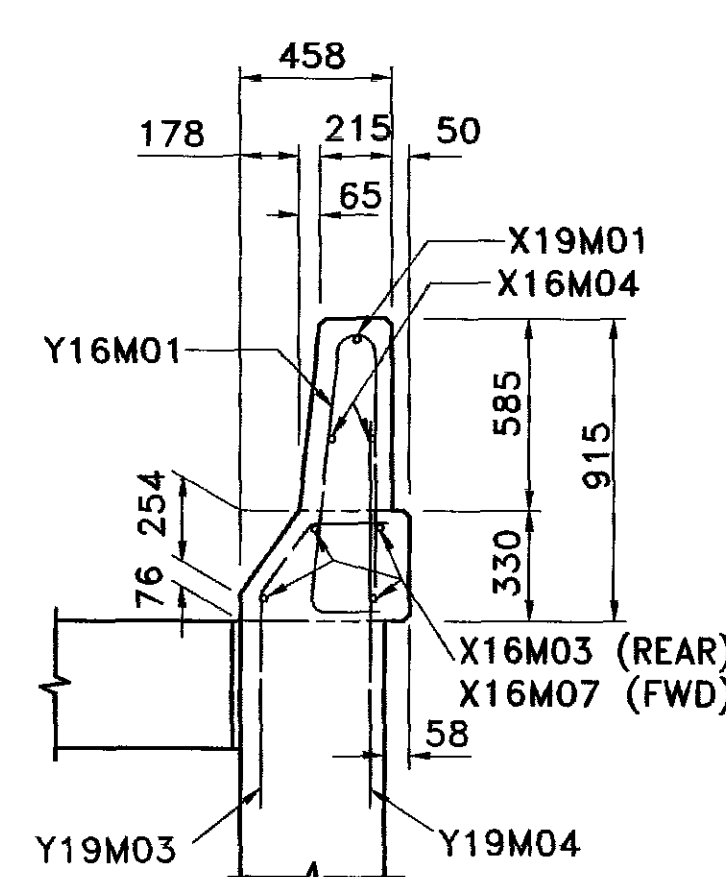
SECTION A-A (FORWARD)

NOTES:

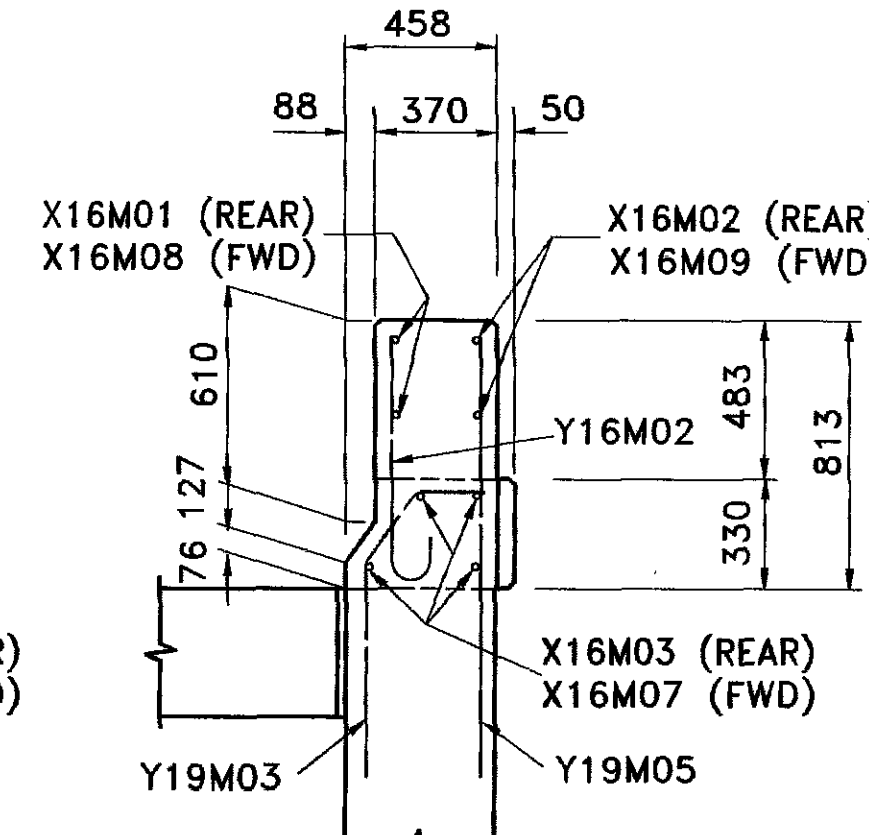
- 1) FOR ADDITIONAL DETAILS NOT SHOWN, REFER TO STANDARD DRAWING BR-1
- 2) SEE SHEET 8/23 (REAR) AND 11/23 (FWD) FOR WINGWALL ELEVATIONS
- 3) SEE SHEET 23/23 FOR REINFORCING STEEL LIST
- 4) VERIFY LOCATION OF PARAPET CONTRACTION SAWCUTS AT 3050 mm MAX. SPACING PRIOR TO CONCRETE PLACEMENT OF PARAPETS. ADJUST SPACING TO AVOID INTERFERENCE WITH VERTICAL PARAPET REINFORCING STEEL.



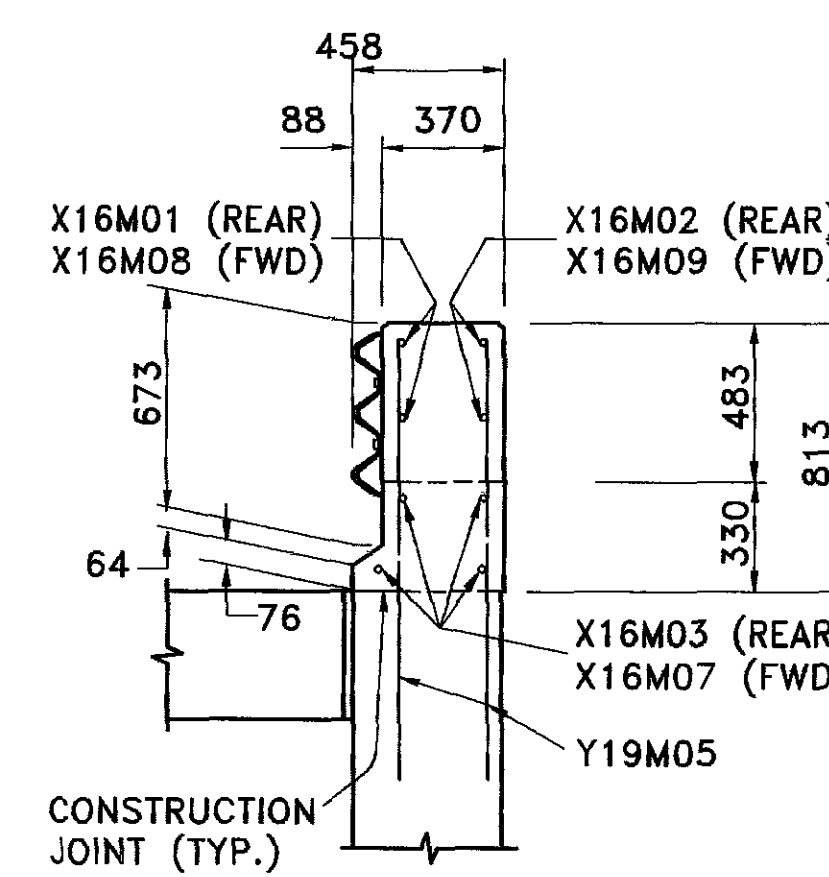
SECTION B-B



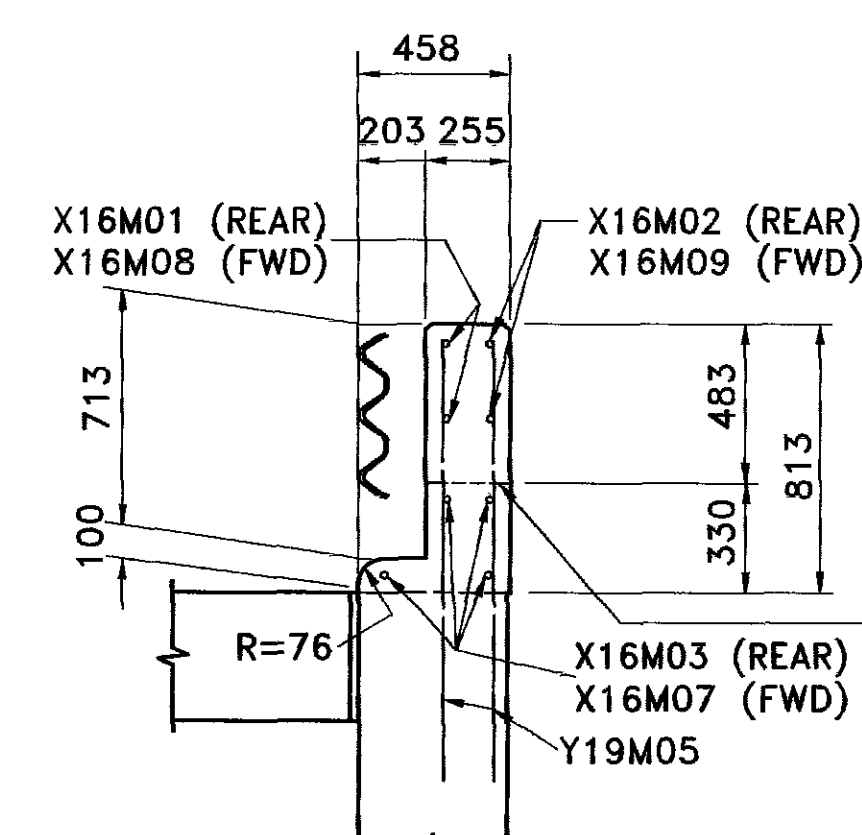
SECTION C-C



SECTION D-D

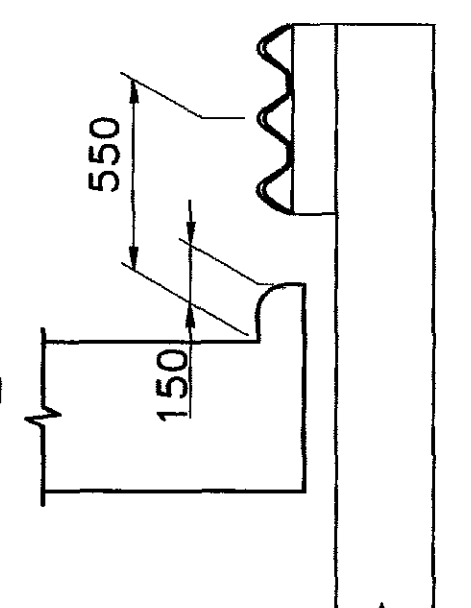


SECTION E-E



SECTION F-F

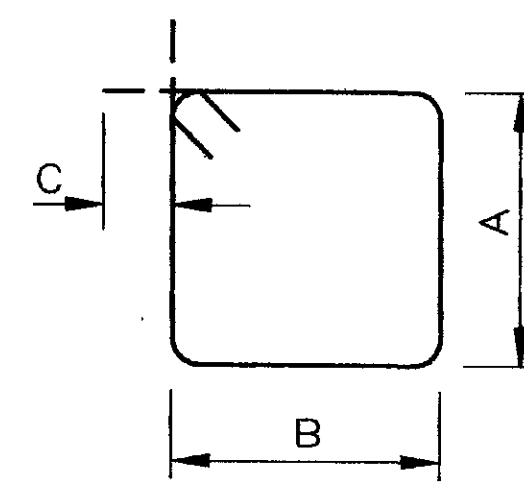
OPTIONAL CONSTRUCTION JOINT (TYP.)



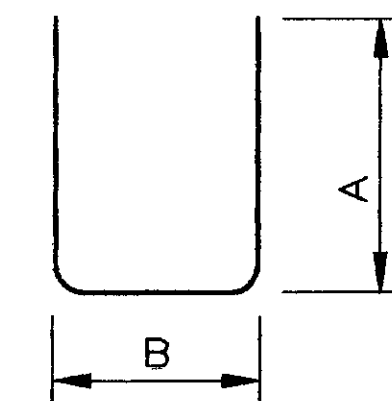
SECTION G-G

NO.	GENERAL PLAN REVISIONS	SLM	4/07
	REVISIONS	BY	DATE

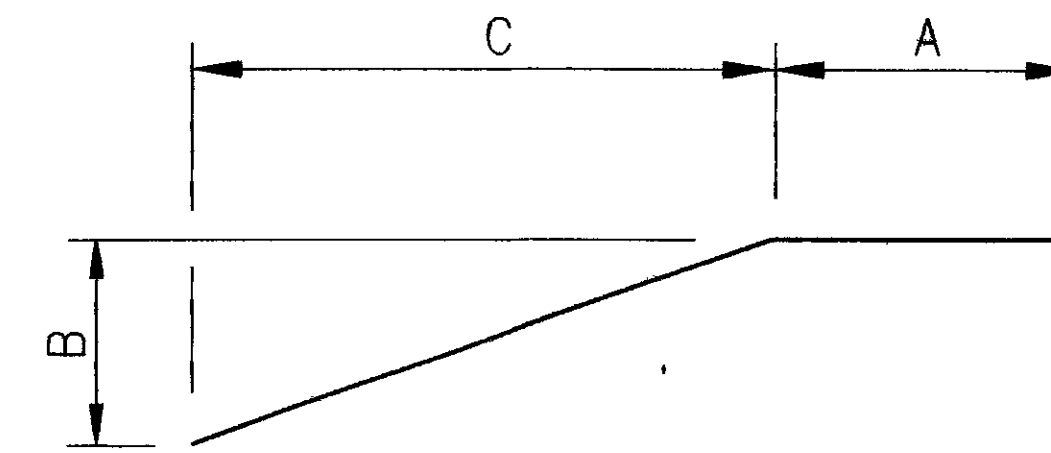
BAR MARK	NO. REQD.	LENGTH	TYPE	A (mm)	B (mm)	C (mm)	INCRM.			PHASE 1	PHASE 2	WEIGHT (kg)
SUPERSTRUCTURE												
S13M01	395	12000	ST							180	215	4712
S13M02	79	3200	ST							36	43	251
S16M01	505	12000	ST							230	275	9405
S16M02	101	4700	ST							46	55	737
S16M03	1588	11310	7							0	1588	27874
S16M04	1588	725	8							1588	0	1787
S16M05	156	9150	ST							72	84	2215
PARAPET												
X16M01	4	4220	17							4		26
X16M02	4	4220	ST							4		26
X16M03	8	4825	ST							8		60
X16M04	8	1525	ST							8		19
X16M05	60	12000	ST							60		1117
X16M06	12	4700	ST							12		88
X16M07	8	4900	ST							8		61
X16M08	4	4300	18							4		27
X16M09	4	4300	ST							4		27
X19M01	4	1525	ST							4		14
X19M02	10	12000	ST							10		268
X19M03	2	5700	ST							2		25
Y16M01	408	1825	13							408		1156
Y16M02	48	920	14	740						48		69
Y19M01	396	1030	12	800	280					396		912
Y19M02	396	750	15	200						396		664
Y19M03	60	1135	16							60		152
Y19M04	12	865	ST							12		23
Y19M05	72	1375	ST							72		221
										TOTAL		51936
BAR MARK	NO. REQD.	LENGTH	TYPE	A (mm)	B (mm)	C (mm)	INCRM.	PIER 1	PIER 2			WEIGHT (kg)
PIERS												
P16M01	8	5070	1	610	1830	140		8	8			126
P16M02	16	1675	ST					8	8			42
P16M03	148	2185	ST					72	76			502
P16M04	12	3490	2	1490	590			6	6			65
P16M05	11	7325	ST					11	0			125
P16M06	20	1825	2	800	305			10	10			57
P16M07	1	8660	ST					1	0			13
P16M08	10	8480	ST					10	0			132
P16M09	1	9200	ST					0	1			14
P16M10	11	7875	ST					0	11			134
P16M11	10	9025	ST					0	10			140
P16M12	16	2250	5	950	120			8	8			56
P16M13	18	2350	5	950	150			9	9			66
P16M14	18	2470	5	950	190			9	9			69
P16M15	18	2580	5	950	225			9	9			72
P16M16	6	2690	5	950	260			2	4			25
P25M01	24	1800	ST					12	12			172
P25M02	20	1675	ST					10	10			133
P25M03	4	2185	ST					2	2			35
P25M04	4	1610	ST					2	2			26
SEISMIC PEDESTAL												
P19M01	18	1075	12	670	450			0	18			34
P30M01	16	1025	12	670	450			0	16			84
										TOTAL		2122



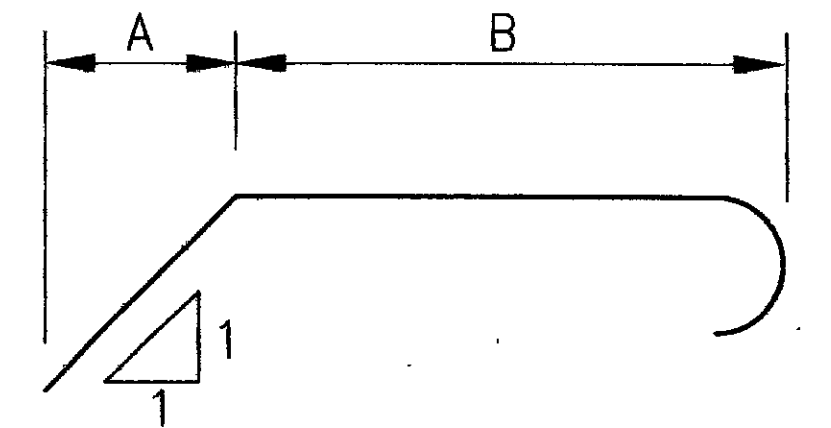
TYPE 1



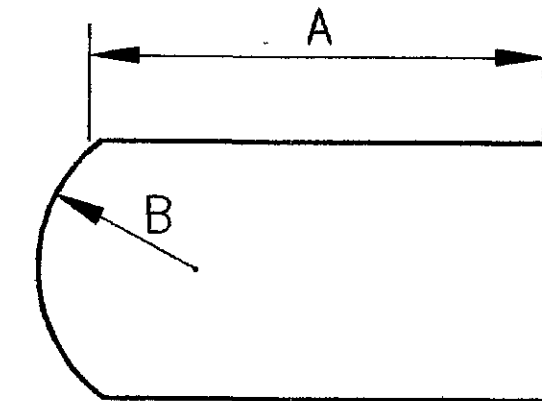
TYPE 2



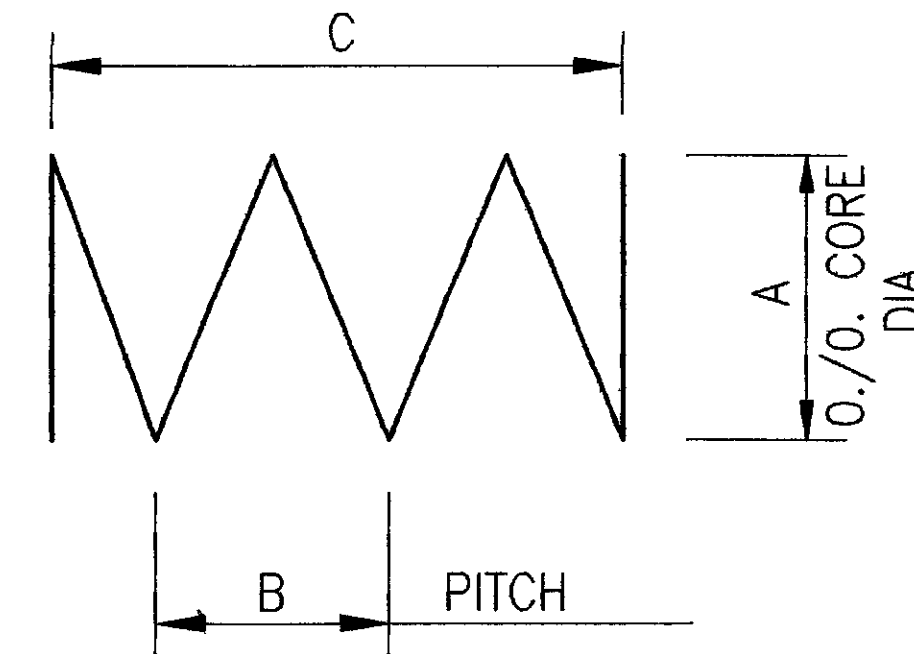
TYPE 3



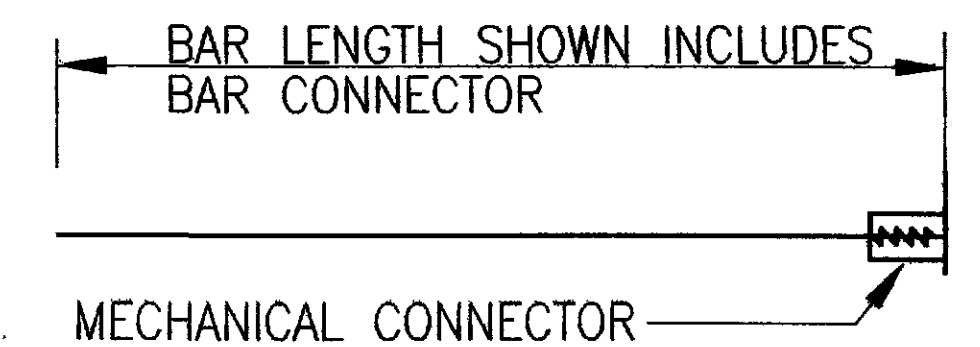
TYPE 4



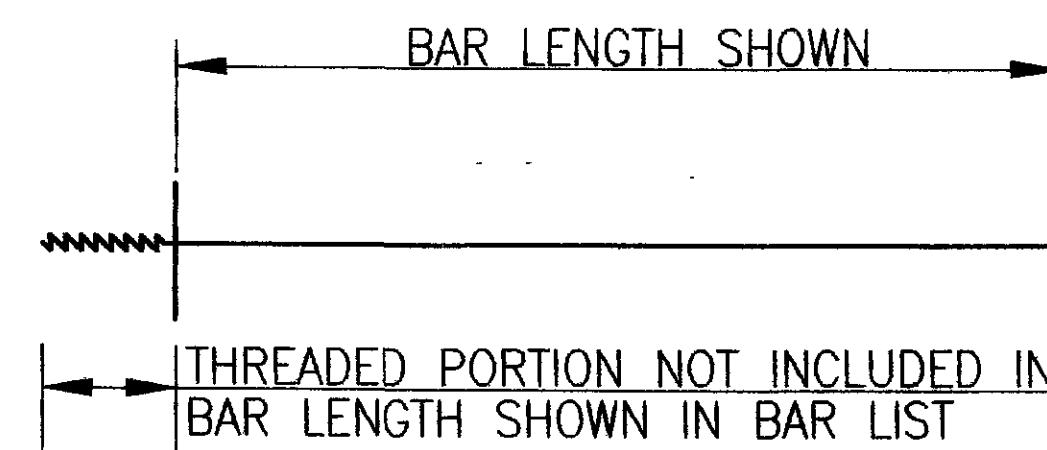
TYPE 5



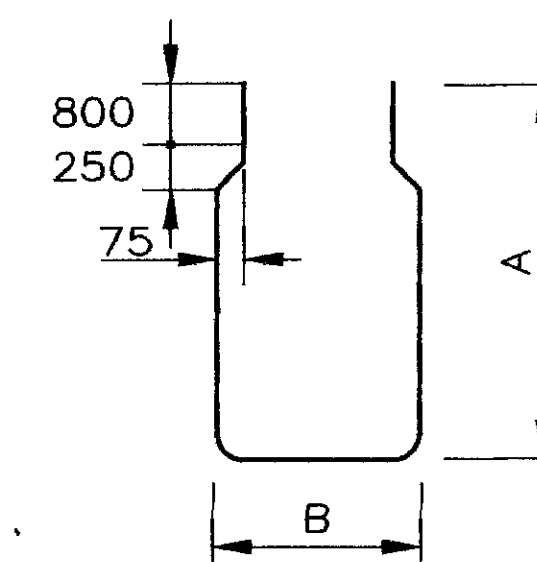
TYPE 6



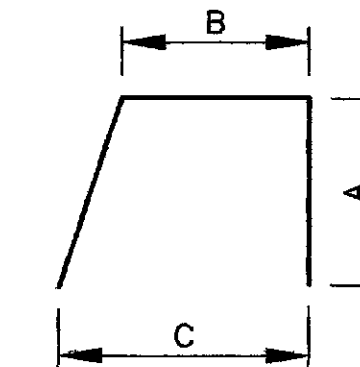
TYPE 7



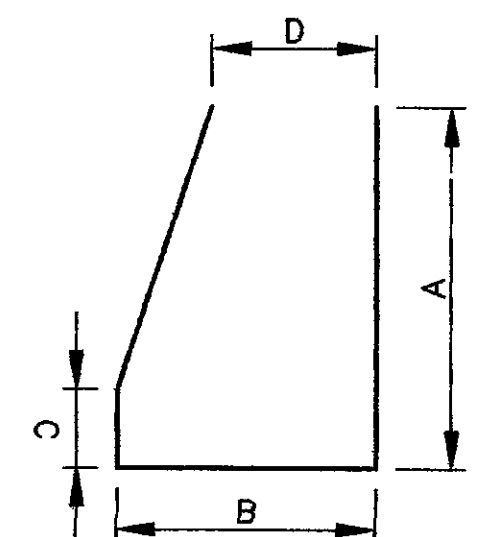
TYPE 8



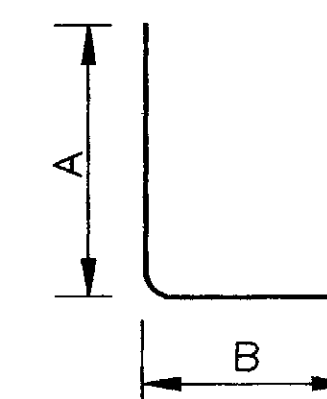
TYPE 9



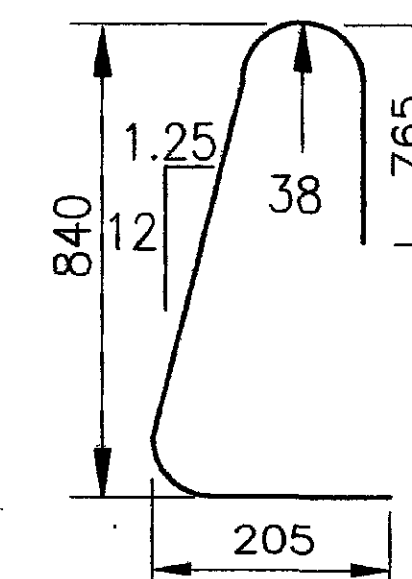
TYPE 10



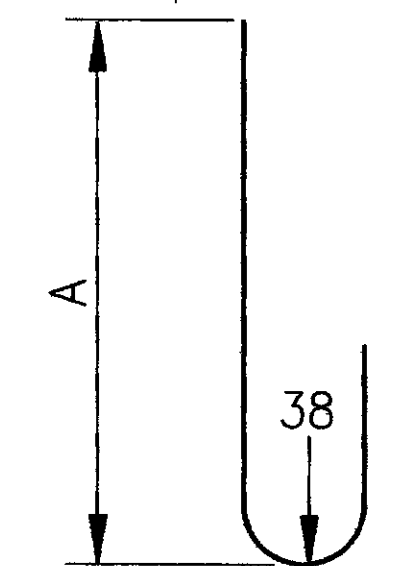
TYPE 11



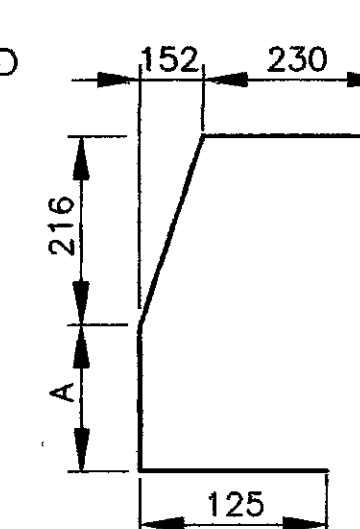
TYPE 12



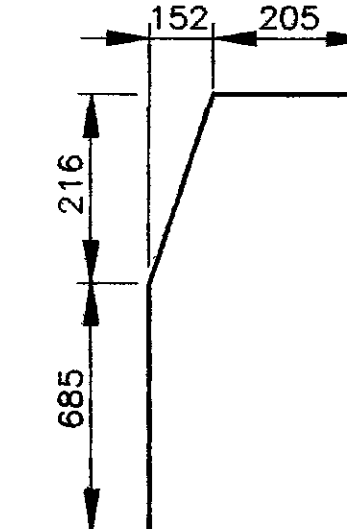
TYPE 13



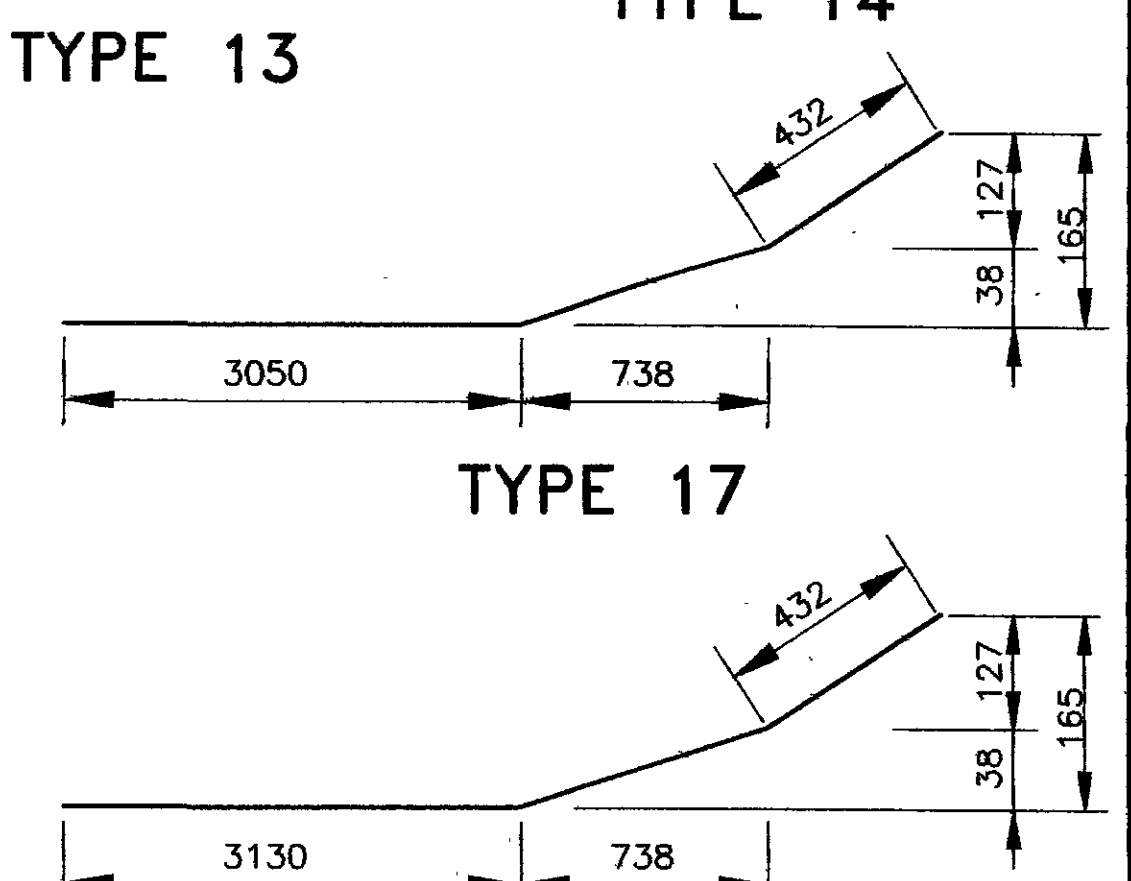
TYPE 14



TYPE 15



TYPE 16



TYPE 17



TYPE 18

NOTES:

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO NUMERICAL DIGITS INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, AN A16M01 IS A #16M BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED.

ALL BARS ARE EPOXY COATED.

SPACERS

CONCRETE SPACERS OR OTHER APPROVED NONCORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICIENT INTERVALS (NEAR THE BOTTOM AND AT INTERVALS NOT EXCEEDING 3050MM) TO INSURE CONCENTRIC SPACING FOR THE ENTIRE CAGE LENGTH. SPACERS SHALL BE CONSTRUCTED OF APPROVED MATERIAL EQUAL IN QUALITY AND DURABILITY TO THE CONCRETE SPECIFIED FOR THE SHAFT. THE SPACERS SHALL HAVE ADEQUATE DIMENSIONS TO ENSURE A MINIMUM 75MM CLEAR SPACE BETWEEN THE OUTSIDE OF THE REINFORCING CAGE AND THE DESIGN DIMENSION OF THE DRILLED SHAFT OR COLUMN. CYLINDRICAL CONCRETE FEET (BOTTOM SUPPORTS) SHALL BE PROVIDED TO ENSURE THAT THE BOTTOM OF THE CAGE IS MAINTAINED AT THE PROPER DISTANCE ABOVE THE BASE.

ALL BAR DIMENSIONS ARE GIVEN IN MILLIMETERS UNLESS OTHERWISE NOTED. PAYMENT FOR REINFORCING BARS SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.

NO.	GENERAL PLAN REVISIONS	SLM	4/07
	REVISIONS	BY	DATE

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BAR MARK	NO. REQD.	LENGTH	TYPE	A (mm)	B (mm)	C (mm)	D (mm)	INCRM.	REAR ABUT.		FORWARD ABUT.		WEIGHT (kg)
									PHASE 1	PHASE 2	PHASE 1	PHASE 2	
ABUTMENTS													
A10M01	10	2400	1	575	575	100			2		8		13
A16M01	14	5335	7						7	0	7	0	115
A16M02	28	6825	8						0	14	0	14	294
A16M03	79	1775	2	750	350				66	43	0	0	218
A16M04	79	2275	2	1050	250				36	43	0	0	279
A16M05	15	3175	2	1450	350				15	0	0	0	74
A16M06	8	5570	1	1700	990	140			8	0	0	0	69
A16M07	288	1150	ST						58	86	58	86	514
A16M08	14	5290	7						7	0	7	0	115
A16M09	24	3790	1	900	900	140			12	0	12	0	141
A16M10	7	4400	1	1115	990	140			7	0	0	0	48
A16M11	2	4850	3	2520	200	2325			2	0	0	0	15
A16M12	4	3050	ST						4	0	0	0	19
A16M13	22	4100	2	1910	350				7	0	15	0	140
A16M14	14	1800	ST						14	0	0	0	39
A16M15	2 OF 8	790-1035	ST					35	16	0	0	0	23
A16M16	6	4835	ST						6	0	0	0	45
A16M17	12	3790	1	750	1050	140			12	0	0	0	70
A16M18	7	3650	2	1685	350				7	0	0	0	40
A16M19	14	1450	ST						14	0	0	0	32
A16M20	2 OF 8	780-1060	ST					40	16	0	0	0	23
A16M21	6	4875	ST						6	0	0	0	45
A16M22	2	3070	ST						2	0	0	0	10
A16M23	2	4900	3	2530	240	2360			2	0	0	0	15
A16M24	79	1850	2	750	425				0	0	36	43	227
A16M25	79	2350	2	1050	325				0	0	36	43	288
A16M26	8	3000	10	900	1225	1500			0	0	8	0	37
A16M27	8	5150	11	1790	1600	635	1245		0	0	8	0	64
A16M28	6	4915	ST						0	0	6	0	46
A16M29	7	4730	1	1050	1220	140			0	0	7	0	51
A16M30	14	3250	2	1450	425				0	0	14	0	71
A16M31	2	5025	3	2920	510	2045			0	0	2	0	16
A16M32	14	1200	ST						0	0	14	0	26
A16M33	2 OF 8	790-1280	ST					70	0	0	16	0	26
A16M34	6	4960	ST						0	0	6	0	46
A16M35	2	4965	3	2590	470	2330			0	0	2	0	15
A16M36	4	3400	ST						0	0	4	0	21
A16M37	14	3890	1	950	900	140			0	0	14	0	84
A16M38	14	2050	ST						0	0	14	0	45
A16M39	2 OF 8	815-1200	ST					55	0	0	16	0	25
A19M01	36	1075	12	670	450				18	0	18	0	87
A25M01	7	2645	ST						7	0	0	0	74
A25M02	5	2150	ST						5	0	0	0	43
A25M03	6	2550	ST						6	0	0	0	61
A25M04	4	2915	ST						4	0	0	0	46
A25M05	12	3350	ST						12	0	0	0	160
A25M06	6	2525	ST						6	0	0	0	60
A25M07	6	2110	ST						0	0	6	0	50
A25M08	4	2475	ST						0	0	4	0	39
A25M09	9	2250	ST						0	0	9	0	80
A25M10	8	2400	ST						0	0	8	0	76
A25M11	6	3575	ST						0	0	6	0	85
A25M12	6	3885	ST						0	0	6	0	93
A25M13	8	2050	ST						0	0	8	0	65
D25M01	100	1500	4	305	775				22	28	22	28	596
A30M01	24	1025	12	670	450				12	0	12	0	125
A30M02	8	900	ST						4	0	4	0	36
SP1301	1	70 000±	6	765	114	3315±			1				70
DS29M01	11	4125±	ST						11				230

⚠ REVISIONS TO ABUTMENT REINFORCING STEEL: THE ABUTMENT REINFORCING STEEL SCHEDULE HAS NOT BEEN REVISED TO REFLECT THE REVISED ABUTMENT PHASE CONSTRUCTION JOINT LOCATION SHOWN ON SHEETS [6A & 9A/23]. SEE SHEET [6A/23] FOR ADDITIONAL NOTES REGARDING REVISIONS TO ABUTMENT REINFORCING STEEL.

TOTAL WEIGHT = 5560KG.

NO.	GENERAL PLAN REVISIONS	SLM	4/07
NO.	REVISIONS	BY	DATE

DESIGN AGENCY
PROUDFOOT ASSOCIATES
5360 HEATHERDOWNS BLVD., TOLEDO, OHIO 43614

DATE
7-19-99

REVIEWED
PEP

DRAWN
MAK

DESIGNED
MJS

STRUCTURE FILE NUMBER
2203812

REVISIONS
THY

REINFORCING BAR SCHEDULE
BRIDGE NO. ERI-250-20036
OVER HURON RIVER

ERI-250-19.742

23 / 23

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