

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

DEL-36-16.736

CITY OF DELAWARE
DELAWARE COUNTY

PROJECT DESCRIPTION

This project rehabilitates the existing structure on U.S. 36 over the Olentangy River on a revised profile and the existing alignment with a 50.179m length of roadway improvement.

1997 SPECIFICATIONS

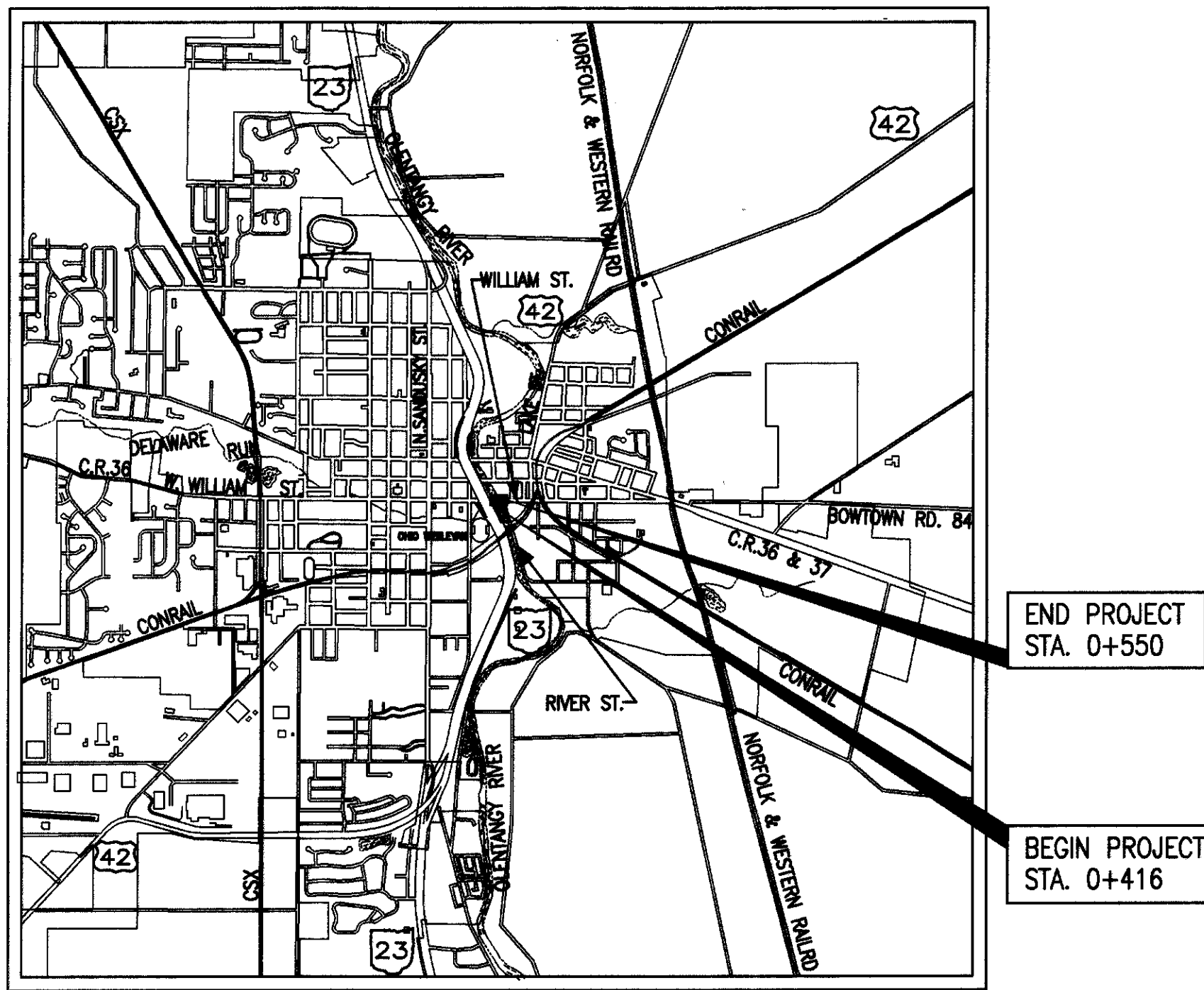
The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway except as noted on sheets 4-11, and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

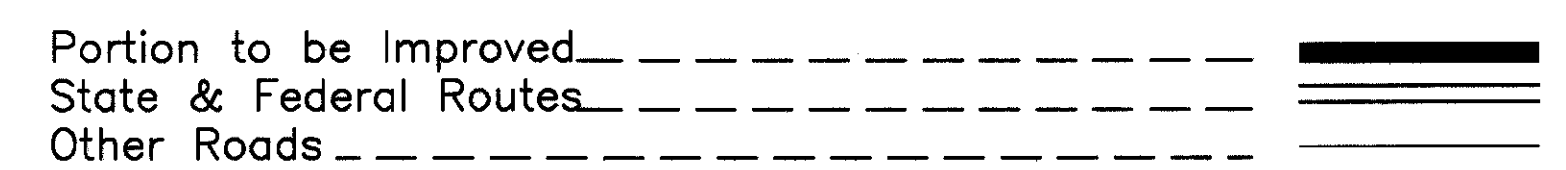
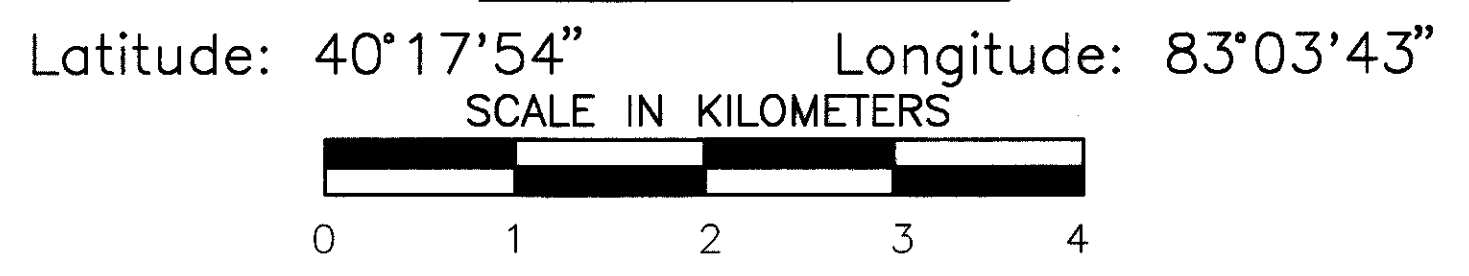
Approved Chris Bauserman
Date 8-18-97 Delaware County Engineer

Approved Jack R. Marchbanks
Date 9/15/97 District Deputy Director

Approved [Signature]
Date 10-10-97 Director, Department of Transportation



LOCATION MAP



DESIGN DESIGNATION

Current Year ADT (1997)	=	19160
Design Year ADT (2017)	=	30660
D H V	=	3066
D	=	55%
T24	=	8%
V (Design Speed)	=	56 km/h
Legal Speed Limit	=	35 MPH (56 km/h)
Functional Classification	=	Urban Arterial

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATE	SHEET NO.
None Required		

INDEX OF SHEETS

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SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-2.1M	4-8-97	HL-10.11M	5-1-95	HL-60.31M	3-31-95	MT-110.30M	3-1-96
BP-5.1M	10-28-94	HL-10.12M	5-1-95	I-1.2M	9-6-95		
BP-7.1M	10-28-94	HL-10.13M	5-1-95			RM-4.2M	6-30-95
		HL-20.11M	3-31-95	MT-35.10M	1-30-95	RM-4.3M	6-30-95
DM-1.1M	6-30-95	HL-20.14M	5-1-95	MT-35.11M	1-30-95	RM-4.4M	6-30-95
		HL-30.11M	3-31-95	MT-95.32M	4-25-94		
		HL-30.22M	3-31-95	MT-95.41M	4-25-94	TC-82.10M	11-24-93
		HL-30.31M	5-1-95	MT-98.17M	4-25-94		
		HL-30.33M	8-31-94	MT-98.19M	3-1-96	AS-1-81M	10-25-94
		HL-40.10M	3-31-95	MT-99.10M	1-30-95	BR-2-82M	11-01-82
		HL-50.11M	3-31-95	MT-101.60M	4-25-94	BS-1-93M	12-15-94
		HL-50.21M	3-31-94	MT-105.10M	4-25-94		
		HL-60.11M	5-1-95	MT-105.11M	4-25-94		

SUPPLEMENTAL SPECIFICATIONS

PLANS CERTIFIED BY:
NAME: Janet Johnson DATE: 9-15-97
DISTRICT 6
OHIO DEPT. OF TRANSPORTATION

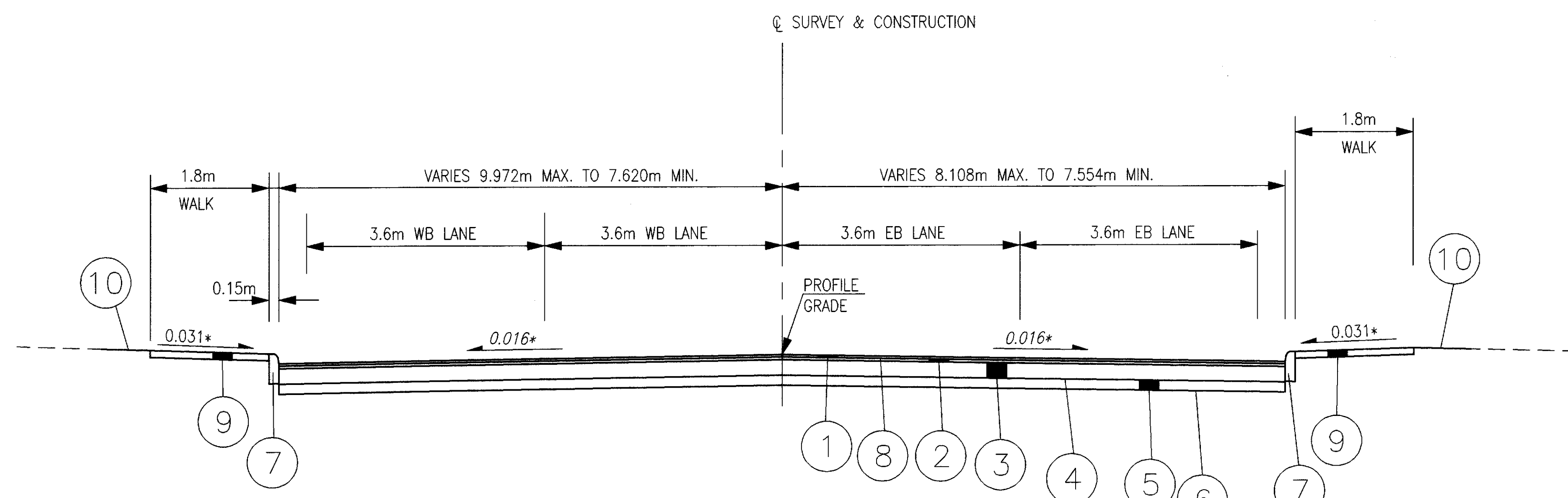
UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
Call 800-362-2764 (Toll Free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

Plan Prepared By:
STICKLEN-BELSHEIM & ASSOCIATES
COLUMBUS, OHIO

DEL-36-16.736
980620
34POS
PID# 11232
09-23-98
DIST. 06

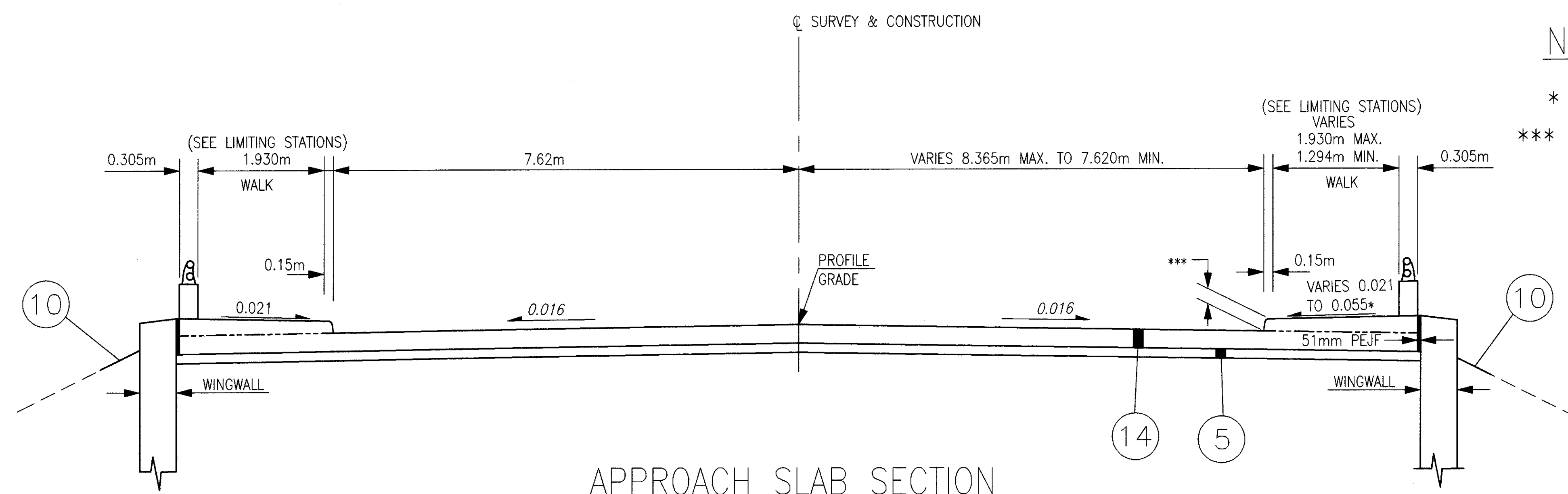
LEGEND

- ① ITEM 448 32mm ASPHALT CONCRETE SURFACE COURSE, TYPE 1H
- ② ITEM 448 45mm ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG64-28
- ③ ITEM 301 230mm BITUMINOUS AGGREGATE BASE, PG64-22
- ④ ITEM 408 BITUMINOUS PRIME COAT (APPLIED @ 1.8 L/m²)
- ⑤ ITEM 304 150mm AGGREGATE BASE
- ⑥ ITEM 203 SUBGRADE COMPACTION
- ⑦ ITEM 609 CURB, TYPE 6
- ⑧ ITEM 407 TACK COAT FOR INTERMEDIATE COURSE
- ⑨ ITEM 608 100mm CONCRETE WALK
- ⑩ ITEM 659 SEEDING AND MULCHING
- ⑭ ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=305mm)



NORMAL MAINLINE SECTION

LIMITING STATIONS
 STATION 0+416.000 TO STATION 0+453.239 = 37.239m
 STATION 0+536.204 TO STATION 0+550.000 = 13.796m
 TOTAL = 51.035m



APPROACH SLAB SECTION

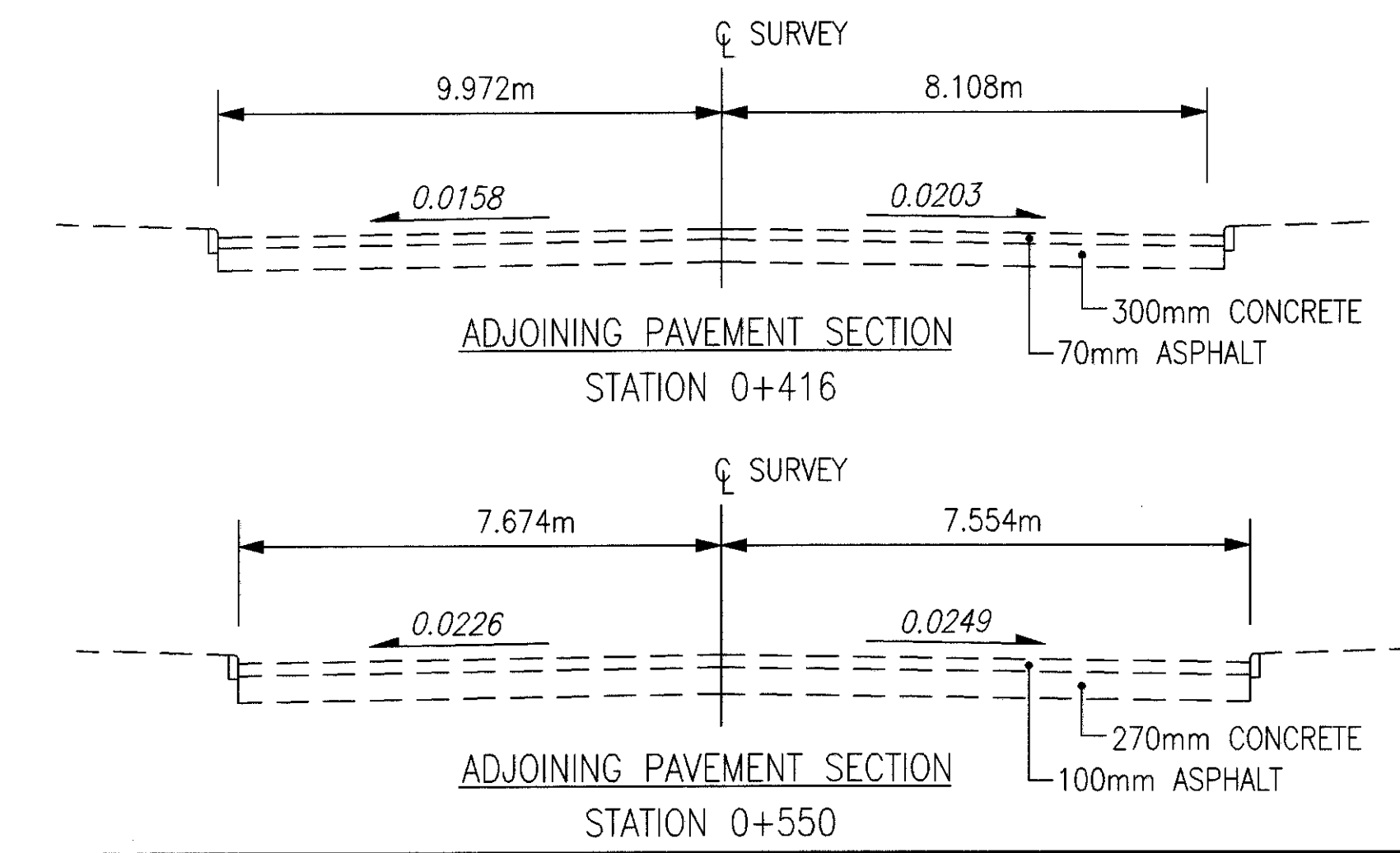
LIMITING STATIONS
 STATION 0+453.239 TO STATION 0+457.839 = 4.6m LF
 STATION 0+531.604 TO STATION 0+536.204 = 4.6m LF
 TOTAL = 9.2m LF

LIMITING STATIONS SIDEWALK AND BRIDGE RAILING
 LEFT SIDE: BEGINNING STATION 0+444.297; ENDING STATION 0+537.144
 RIGHT SIDE: BEGINNING STATION 0+456.914; ENDING STATION 0+545.146

NOTE: THE SIDEWALK AND RAILING SHOWN ON THE APPROACH SLAB SHALL BE INCLUDED WITH ITEM 611, REINFORCED CONCRETE APPROACH SLAB (T=305mm) FOR PAYMENT.

NOTES

- * UNLESS OTHERWISE SHOWN ON THE PAVEMENT DETAILS.
- *** CURB HEIGHT INCREASES FROM 150mm TO 200mm FROM STA. 0+440.000 TO STA. 0+444.297 (LEFT SIDE) AND FROM STA. 0+456.914 TO STA. 0+461.514 (RIGHT SIDE). CURB HEIGHT DECREASES FROM 200mm TO 150mm FROM STA. 0+537.144 TO STA. 0+542.000 (LEFT SIDE) AND FROM STA. 0+545.146 TO STA. 0+550.000 (RIGHT SIDE).
- FOR ROADWAY TRANSITION DETAILS, SEE PLAN AND PROFILE SHEETS.
- FOR PAVEMENT DETAILS, SEE SHEET NO. 18.
- FOR APPROACH SLAB DETAILS, SEE SHEET NOS. 19-20.
- FOR PHASE CONSTRUCTION DETAILS, SEE SHEET NO. 33.



TYPICAL SECTIONS

DEL-36-16.736

GENERAL NOTES

CALC. VDK
BY: DATE: 1/97
CHKD. GED
BY: DATE: 7/97

ROUNDING

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

UTILITIES

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

<u>TELEPHONE</u>	<u>CABLE TV</u>
GENERAL TELEPHONE COMPANY	TIME WARNER COMMUNICATIONS
550 LEADER ST.	156 JOHNSON DRIVE
MARION, OHIO 43302	DELAWARE, OHIO 43015
(614)369-0576	(614)363-8944

<u>WATER, SEWER & TRAFFIC</u>	<u>ELECTRIC</u>
CITY OF DELAWARE	AEP (COLUMBUS SOUTHERN POWER)
1 S. SANDUSKY ST.	61 WEST WILLIAM ST.
DELAWARE, OHIO 43015	DELAWARE, OHIO 43015
(614)363-9405	(614)363-7410

SCENIC RIVERS
YETTY M. ALLEY, SCENIC RIVER COORDINATOR
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF NATURAL AREAS AND PRESERVES
BUILDING F-1
1889 FOUNTAIN SQUARE COURT
COLUMBUS, OHIO 43224

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.

CONTINGENCY QUANTITIES

THE CONTRACTOR 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 COMPLETION OF THIS PROJECT.

ELEVATION DATUM

ELEVATION DATUM FOR THIS PROJECT ARE BASED ON THE FOLLOWING POINTS: (NAVD 88)

ELEVATION=866.56 (264.128m) AT DELAWARE, ABOUT 0.2 MILE (0.322km) EAST ALONG U.S. HIGHWAY 36 (WILLIAMS STREET) FROM THE DELAWARE CITY HALL, SET VERTICALLY IN THE SOUTH FACE OF THE CENTER LEG OF THE NORTH PIER UNDER THE NORTHBOUND LANE OF U.S. HIGHWAY 23 OVERPASS OVER U.S. HIGHWAY 36, 6 FEET (1.829m) NORTH OF THE NORTH CURB OF U.S. HIGHWAY 36 ADN 2.4 FEET (0.732m) ABOVE THE LEVEL OF THE SIDEWALK.

CONSTRUCTION LIMITS

THE CONSTRUCTION LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATIONS 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 CONSTRUCTION LIMITS.

CLEARING AND GRUBBING

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

EARTHWORK

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 203 EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION 290 CU.METER
ITEM 203 EMBANKMENT 7 CU.METER

WATERING PERMANENT SEEDING AREAS

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED "AS DIRECTED BY THE ENGINEER" TO PROMOTE GROWTH AND CARE FOR PERMANENT SEEDED AREAS PER 659.09:

659 WATER 2 CU. METER

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED "AS DIRECTED BY THE ENGINEER" FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

207, STRAW OR HAY BALES 50 EACH
207, FILTER FABRIC FENCE 100 METER

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 SHALL NOT BE OPERATED BETWEEN THE HOURS OF 9 P.M. AND 6:30 A.M.. 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.

ITEM 659, SEEDING AND MULCHING

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR ITEM 659, SEEDING AND MULCHING, ARE BASED ON THESE LIMITS.

ITEM 659, SEEDING AND MULCHING 230 SQ. M
ITEM 659, COMMERCIAL FERTILIZER 23 KILOGRAM

ROADWAY CLOSURE

NO TOTAL CLOSURE OF THE ROADWAY WILL BE PERMITTED DURING THE THIRD WEEK IN SEPTEMBER DUE TO THE DELAWARE COUNTY FAIR AND THE LITTLE BROWN JUG.

ITEM 659, AGRICULTURAL LIMING, AS PER PLAN

THE LOCATION AND NEED FOR AGRICULTURAL LIMING WILL BE DETERMINED BY LABORATORY TESTS AFTER ROUGH GRADING OPERATIONS HAVE BEEN PERFORMED. QUANTITIES FOR AGRICULTURAL LIMING, AS SHOWN ON THE PLANS, ARE SUFFICIENT FOR THE ENTIRE PROJECT BUT WILL BE NONPERFORMED FOR THE AREAS WHERE TESTS SHOW THAT LIMING IS NOT REQUIRED. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 659, AGRICULTURAL LIMING, AS PER PLAN 130 KILOGRAM

DRAINS

THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY AND ARE TO BE USED "AS DIRECTED BY THE ENGINEER":

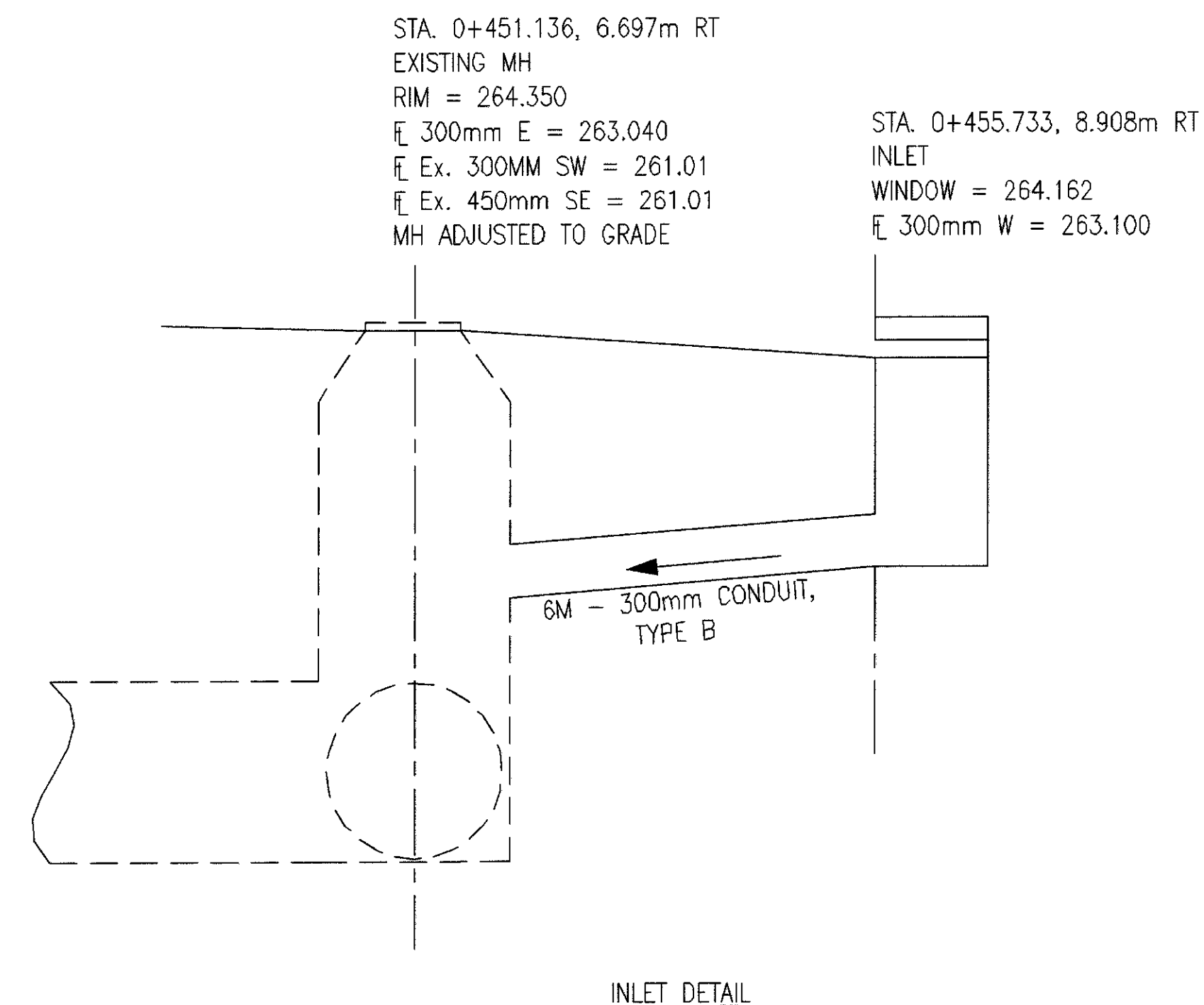
601 ROCK CHANNEL PROTECTION TYPE C WITH FILTER 10 CU. METER
603 300mm CONDUIT, TYPE B 30 METER

CONTRACTOR COOPERATION

THE CONTRACTOR SHALL COOPERATE WITH ANY OTHER CONTRACTORS THAT MAY BE PERFORMING WORK, FOR THE CITY OF DELAWARE, WITHIN THE VICINITY OF THIS PROJECT, AS PER THE REQUIREMENTS OF 105.07.

CONSTRUCTION INITIATION

THE CONTRACTOR SHALL ADVISE THE CITY OF DELAWARE DEPARTMENT OF PUBLIC WORKS (614-368-1631), THE DELAWARE COUNTY ENGINEER (614-368-1930), AND THE DISTRICT COMMUNICATIONS OFFICER AT (614-363-1251) EXTENSION 469 AND THE DISTRICT MAINTENANCE OF TRAFFIC ENGINEER AT (614-363-1251) EXTENSION 323 OR BY FAX AT (614-369-7437), FOURTEEN (14) DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE PROJECT ENGINEER WILL PROVIDE ASSISTANCE/CLARIFICATION FOR ANY QUESTIONS.



GENERAL NOTES

DEL-36-16.736

3
34

GENERAL

IN ADDITION TO THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, AND ITEM 614, THE FOLLOWING REQUIREMENTS SHALL APPLY:

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, THE NAMES AND TELEPHONE NUMBERS OF A PERSON OR PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR MAINTAINING THE TRAFFIC CONTROL DEVICES.

IF THE CONTRACTOR SO ELECTS, ALTERNATE METHODS MAY BE SUBMITTED FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE CITY OF DELAWARE, DIRECTOR OF PUBLIC WORKS, SCOTT GRAUBARD, 1 SOUTH SANDUSKY STREET, DELAWARE, OHIO, 43015, PHONE: 614-368-1661, FAX: 614-369-2659

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON WILLIAM STREET, EXCEPT FOR TWO PERIODS NOT TO EXCEED 2 AND 5 CONSECUTIVE CALENDAR DAYS, RESPECTIVELY, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEETS 7 & 9. LIQUIDATED DAMAGES SHALL BE ASSESSED (IN ACCORDANCE WITH 108.07) IN THE AMOUNT OF \$ 1500 PER HOUR FOR EACH HOUR THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT AS DESCRIBED IN CONSTRUCTION SEQUENCING, PHASE II AND PHASE IV. NO TOTAL CLOSURE WILL BE PERMITTED DURING THE THIRD WEEK OF SEPTEMBER.

DURING THE PROJECT ALL PHASES OF WORK SHALL BE CONDUCTED IN A MANNER THAT WILL ASSURE MINIMUM DANGER AND INCONVENIENCE TO THE MOTORIST.

THE CONTRACTOR SHALL ARRANGE THE OPERATIONS SO AS TO PREVENT ANY INTERFERENCE, OTHER THAN DETAILED IN THESE PLANS, TO THE CONTINUOUS FLOW OF TRAFFIC.

LENGTH AND DURATION OF CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

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

LOCAL ACCESS

INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL PROPERTIES AT ALL TIMES.

PLACEMENT OF ASPHALT CONCRETE

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES DURING THE PLACEMENT OF THE ASPHALT SURFACE COURSE EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES. SEE O.D.O.T. STANDARD DRAWING MT-97.11M.

CONSTRUCTION INITIATION

THE CONTRACTOR SHALL ADVISE THE CITY OF DELAWARE DEPARTMENT OF PUBLIC WORKS (614-368-1631), THE DELAWARE COUNTY ENGINEER (614-368-1930), AND THE DISTRICT COMMUNICATIONS OFFICER AT (614-363-1251) EXTENSION 469 AND THE DISTRICT MAINTENANCE OF TRAFFIC ENGINEER AT (614-363-1251) EXTENSION 323 OR BY FAX AT (614-369-7437), FOURTEEN (14) DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE PROJECT ENGINEER WILL PROVIDE ASSISTANCE/CLARIFICATION FOR ANY QUESTIONS.

CONSTRUCTION SEQUENCING

PHASE I

WORK - DURING THIS PHASE THE EXISTING EASTBOUND (SOUTH) STRUCTURE WILL BE CLOSED TO TRAFFIC AND THE EXISTING SUPERSTRUCTURE AND PORTIONS OF THE SUBSTRUCTURE WILL BE REMOVED AND REPLACED. THE EXISTING SIDEWALK ON THE EXISTING WESTBOUND STRUCTURE WILL BE REMOVED AND REPLACED WITH 614 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC. THE EASTBOUND AND WESTBOUND PEDESTRIANS ARE TO BE DETOURED FOR THE DURATION OF THE PROJECT, SEE DETAIL SHEET NO. 5. TWO-WAY, TWO LANE TRAFFIC IS TO BE MAINTAINED ON EXISTING WESTBOUND PAVEMENT, SEE DETAIL SHEET NO. 6. THE EASTBOUND BRIDGE DECK, SIDEWALK AND APPROACH SLAB WILL BE CONSTRUCTED.

THE PORTABLE CONCRETE BARRIER (PCB) WILL BE PLACED ON THE EXISTING WESTBOUND BRIDGE FOR MAINTENANCE OF TRAFFIC. ALL TRAFFIC MAINTENANCE DEVICES; PCB, DRUMS, SIGNS AND PAVEMENT MARKINGS ARE TO BE PLACED IN A CONTINUOUS COORDINATED EFFORT.

TRAFFIC - ONE 3.3m LANE OF TRAFFIC WILL BE MAINTAINED IN EACH DIRECTION USING THE WESTBOUND LANES ON THE NORTH BRIDGE. THE STOP LINES WILL BE MOVED IN ORDER TO FACILITATE THE TURNING MOVEMENTS FOR TRUCKS. FOR DETAIL SEE SHEET 6. THE U.S. 23 NORTHBOUND EXIT RAMP SHALL BE REDUCED TO ONE (1) 3.6m LANE FOR THE DURATION OF THE PROJECT, SEE DETAIL SHEET NO. 10. MAINTENANCE OF TRAFFIC TO BE AS PER STANDARD DRAWING MT-95.41.

PHASE II

WORK - DURING THIS PHASE THE PROPOSED PAVEMENT BETWEEN STATION 0+416 AND THE PROPOSED WESTERLY APPROACH SLAB WILL BE CONSTRUCTED. ALL PAVEMENT COURSES SHALL BE PLACED.

TRAFFIC - THE U.S. 23 NORTHBOUND EXIT RAMP AND WILLIAM ST. WILL BE CLOSED WHILE WORK IS PERFORMED. ONCE THE RAMP AND BRIDGE ARE CLOSED, WORK IS TO PROGRESS WITHOUT ANY INTERRUPTION, EXCEPT FOR THE 9 P.M. TO 6:30 A.M. NOISE RESTRICTION, THROUGH COMPLETION. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER THAT THE NOISE RESTRICTION HAS BEEN LIFTED (PHASE II ONLY) BEFORE PROCEEDING WITH WORK DURING THE RESTRICTED HOURS. THE RAMP AND BRIDGE ARE TO BE RE-OPENED TO TRAFFIC AS SOON AS POSSIBLE. THIS PHASE II CLOSURE SHALL NOT EXCEED TWO (2) DAYS. THIS "TWO" DAY PERIOD SHALL BE CONSIDERED TO BE FROM 9 P.M. FRIDAY EVENING UNTIL 5:30 A.M. MONDAY MORNING. TRAFFIC WILL BE DETOURED, SEE SHEET NO. 7.

PHASE III

WORK - THE EXISTING NORTH BRIDGE SUPERSTRUCTURE AND PORTIONS OF THE SUBSTRUCTURE ARE TO BE REMOVED AND THE PROPOSED BRIDGE DECK, SIDEWALK AND APPROACH SLAB WILL BE CONSTRUCTED. DURING THIS PHASE, SIGNING AND PAVEMENT MARKINGS ARE REVISED, DRUMS AND PCB ARE RELOCATED. NEW EASTBOUND LANES ARE OPENED TO MAINTAIN TWO-WAY TRAFFIC.

TRAFFIC - ONE 3.0m LANE OF TRAFFIC IS TO BE MAINTAINED IN EACH DIRECTION, ON U.S. 36, ON THE NEW EASTBOUND BRIDGE DECK. FOR DETAILS SEE SHEET 8.

PHASE IV

WORK - DURING THIS PHASE, WILLIAM ST. IS TO BE CLOSED TO THROUGH TRAFFIC. THE DECK CLOSURE WILL BE POURED AND THE LIGHTING WILL BE INSTALLED. THE PAVEMENT AT THE EAST END OF THE STRUCTURE WILL BE PLACED. FINAL PAVEMENT MARKINGS WILL BE PLACED. ALL WORK OUTSIDE THE PAVEMENT AREA IS PERFORMED.

TRAFFIC - THE WILLIAM ST. BRIDGE OVER THE OLENTANGY RIVER WILL BE CLOSED. THE EXIT RAMP FROM NORTHBOUND U.S. 23 TO U.S. 36 WILL REMAIN OPEN FOR WESTBOUND TRAFFIC ONLY. ALL OTHER TRAFFIC WILL BE DETOURED, SEE DETAIL, SHEET 9. THE BRIDGE MAY BE CLOSED FOR A MAXIMUM OF FIVE (5) DAYS. THIS FIVE (5) DAY CLOSURE PERIOD MUST INCLUDE A WEEKEND AS TWO (2) OF THE FIVE (5) DAYS.

ESTIMATED QUANTITIES

	614 BARRIER RELECTOR, TYPE B2	614 OBJECT MARKER	614 PORTABLE CONCRETE BARRIER, 813mm	614 PORTABLE CONCRETE BARRIER, 813mm, BRIDGE MOUNTED	614 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC
	EACH	EACH	METER	METER	CU. METER
PHASE I	19	19	48	87	7
PHASE III	18	18	36	87	
TOTAL	37	37	84	174	7

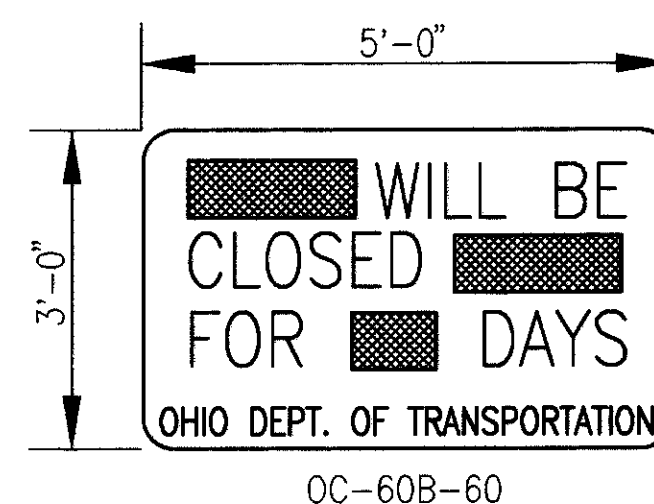
QUANTITIES CARRIED TO THE GENERAL SUMMARY

MAINTENANCE OF TRAFFIC

NOTICE OF CLOSURE SIGN

THE FOLLOWING SIGN SHALL BE ERECTED AND REMAIN IN PLACE FOR 7 DAYS IMMEDIATELY PRECEDING A CLOSURE. THE SIGN SHALL BE BLACK LEGEND ON A REFLECTORIZED ORANGE BACKGROUND.

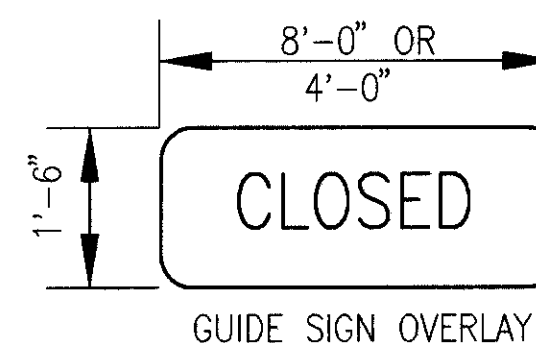
FOR EXIT RAMP CLOSURE A SIGN SHALL BE PLACED ON U.S. 23 OPPOSITE THE BEGINNING OF THE DECELERATION LANE.



EXIT RAMP CLOSURE

THE EXIT RAMP IS TO BE CLOSED FOR TWO (2) CONSECUTIVE DAYS WHILE THE WEST APPROACH IS CONSTRUCTED. THE FOLLOWING IS TO BE THE MINIMUM PROCEDURE:

1. ALL GUIDE SIGNS AND EXIT SIGNS FOR THE CLOSED RAMP, ON U.S. 23, SHALL HAVE THE MESSAGE FOR THE RAMP, COVERED BY AN OVERLAY. THIS OVERLAY SHALL HAVE A BLACK LEGEND ON A REFLECTORIZED ORANGE BACKGROUND BEARING THE MESSAGE "CLOSED". THE OVERLAY FOR THE GUIDE SIGNS SHALL BE 8'X1'-6". THE OVERLAY FOR EXIT SIGNS SHALL BE 4'X1'-6". SEE DETAIL BELOW.
2. THE RAMP SHALL BE CLOSED AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-98.19M.
3. THE RAMP TERMINAL AT U.S. 36 (WILLIAM ST.) IS TO BE CLOSED WITH DRUMS. THE DRUMS ARE TO BE PLACED 4.5m CENTER TO CENTER.
4. SEVEN DAYS PRIOR TO CLOSING THE RAMP, THE CONTRACTOR SHALL NOTIFY AT ODOT DISTRICT SIX OFFICE (614-363-1251), THE DISTRICT COMMUNICATIONS OFFICER (AT EXTENSION 469) AND THE DISTRICT MAINTENANCE OF TRAFFIC ENGINEER (AT EXTENSION 323) AND THE DELAWARE COUNTY ENGINEER AND THE CITY OF DELAWARE ENGINEER OF THE TIME THE CLOSURE BEGINS AND THE LENGTH OF TIME THE RAMP WILL BE CLOSED.
5. DETOUR SIGNS FOR U.S.R. 23, U.S.R. 36 AND U.S.R. 42 ARE TO BE ERECTED BY THE CONTRACTOR AS PER THE DETAIL ON SHEET NO. 7.



WILLIAM ST. CLOSURE

WILLIAM ST. IS TO BE CLOSED TO THROUGH TRAFFIC FOR TWO (2) PERIODS. THESE PERIODS ARE TWO (2) DAYS WHILE THE WEST APPROACH IS BEING CONSTRUCTED (COINCIDES WITH RAMP CLOSURE) AND FOR FIVE (5) DAYS WHILE THE BRIDGE DECK CONCRETE CLOSURE POUR IS COMPLETED.

1. FOR EASTBOUND U.S. 36 (WILLIAM ST.), A SIGN SHALL BE PLACED NEAR THE THE INTERSECTION OF HENRY ST. AND AT THE INTERSECTION OF RIVER ST. FOR WESTBOUND TRAFFIC.
2. DETOURS WILL BE ESTABLISHED BY THE CONTRACTOR AS PER THE DETAIL ON SHEET NOS. 7 & 9.
3. SEVEN DAYS PRIOR TO CLOSING WILLIAM ST., THE CONTRACTOR SHALL NOTIFY THE ODOT DISTRICT SIX DEPUTY DIRECTOR AND THE DISTRICT PUBLIC RELATIONS OFFICER (614-363-1251), THE DELAWARE COUNTY ENGINEER AND THE CITY OF DELAWARE ENGINEER OF THE TIME THE CLOSURE BEGINS AND THE LENGTH OF TIME WILLIAM ST. WILL BE CLOSED.

CONSTRUCTION SIGNING FOR OLENTANGY RIVER

A ROAD WORK AHEAD SIGN (OW-134) SHALL BE PLACED ALONG THE BANKS OF THE OLENTANGY RIVER TO WARN BOATERS OF THE CONSTRUCTION ON THE BRIDGE. THE SIGNS SHALL BE PLACED ON THE LEFT AND RIGHT SIDES OF THE RIVER APPROACHING THE STRUCTURE AT A DISTANCE OF 150m NORTH AND SOUTH OF THE BRIDGE. THE SIGNS SHALL BE PLACED IN SUCH A MANNER THAT THEY WILL BE VISIBLE TO BOATERS ON THE OLENTANGY RIVER. COST SHALL BE INCLUDED IN THE LUMP SUM FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 622, PORTABLE CONCRETE BARRIER

IT IS ANTICIPATED THAT THE SAME BARRIER WILL BE USED IN VARIOUS PHASES OF CONSTRUCTION. MOVEMENT OF THE CONCRETE BARRIER BETWEEN PHASES SHALL BE ACCOMPLISHED IN ONE WORKING DAY. FLAGGERS SHALL BE UTILIZED FOR PROTECTION OF VEHICULAR TRAFFIC UNTIL MOVEMENT OF THE BARRIER IS COMPLETE.

ALL COSTS INVOLVED IN REMOVING AND REINSTALLING THE CONCRETE BARRIER WILL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 622, PORTABLE CONCRETE BARRIER.

ITEM 614-LAW ENFORCEMENT OFFICER (WITH PATROL CAR)

IN ADDITION TO THE REQUIREMENTS OF 614 AND THE LATEST EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER (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 CONSIDERED TO BE 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.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH:

CITY OF DELAWARE
CHIEF OF POLICE
70 N. UNION STREET
DELAWARE, OHIO 43015
614-368-1600

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 12 HOURS

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR 32 HOURS

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

IF THE CONTRACTOR WISHES TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, HE MAY DO SO AT HIS OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE THE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614 MAINTAINING TRAFFIC.

CALC. VDK
DATE: 7/97
CHKD. GED
DATE: 7/97

MAINTENANCE OF TRAFFIC
NOTES

DEL-36-16.736

4
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MAINTENANCE OF TRAFFIC

PAVEMENT MARKING

THE FOLLOWING QUANTITY IS TO BE USED "AS DIRECTED BY THE ENGINEER" IN CASE PERMANENT PAVEMENT MARKINGS ARE NOT IN PLACE WHEN THE PROJECT IS RE-OPENED TO TRAFFIC.

614 TEMPORARY CENTER LINE, CLASS II = 0.14 KILOMETER

ITEM 614, BARRIER REFLECTORS

REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO THE REQUIREMENTS OF ITEM 626 EXCEPT THAT SPACING SHALL BE AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-95.41M.

TEMPORARY WORK ZONE MARKINGS

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE PAVEMENT MARKINGS PER THE REQUIREMENTS OF THE STANDARD CONSTRUCTION DRAWINGS:

614, TEMPORARY PAVEMENT MARKINGS 2.70 KILOMETER

TEMPORARY SIGNS

THE COST OF PROVIDING, ERECTING, AND MAINTAINING TEMPORARY SIGNS REQUIRED BY THIS PLAN AND THE STANDARD DRAWINGS SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, CLASS III, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR.

EACH SIGN SHALL BE TRAILER MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM TO DIM THE SIGN DURING DARKNESS AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY.

THE PROBABLE LOCATIONS FOR THE SIGNS ARE NORTHBOUND USR 23 NORTH OF STRATFORD ROAD. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE HIGH INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT AND TO REVISE SIGN MESSAGES, IF NECESSARY.

THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGED MESSAGES WILL BE IMPLEMENTED WITHIN 2 HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED, BUT NORMALLY, NOT MORE THAN TWO MESSAGE PHASES SHOULD BE EMPLOYED, ALTHOUGH THREE PHASES MAY BE USED IN UNUSUAL CONDITIONS. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, CLASS III, AS PER PLAN (CON'T)

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614.03 (C). THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC AND THE ENTIRE COST TO CONTROL TRAFFIC ACCRUED BY THE DEPARTMENT WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE TO THE CONTRACTOR ON HIS CONTRACT

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24 HOURS PER DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN AND REMOVE A PCMS UNIT ON THIS PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES AS OUTLINED IN 104.04.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID PER SIGN-MONTH FOR EACH ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTAL TO PERFORM THE ABOVE DESCRIBED WORK.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, CLASS III, AS PER PLAN 2 EACH, SIGN MONTH

DETOUR ROUTE MAINTENANCE

IN ADDITION TO THE OFFICIAL, SIGNED DETOUR ROUTES (SEE SHEETS NO. 7 & 9), A LOCAL ROUTE HAS BEEN DETERMINED TO BE THE SECONDARY, DETOUR ROUTE OR "DESIGNATED LOCAL DETOUR ROUTE". THIS ROUTE IS SHOWN ON THIS SHEET. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THESE ROUTES IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST AND STANDING WATER. ONCE THE DETOURS ARE REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE OFFICIAL, SIGNED DETOUR ROUTES AND THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DIRECTED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE OFFICIAL, SIGNED DETOUR ROUTES AND THE DESIGNATED LOCAL DETOUR ROUTE.

301 BITUMINOUS AGGREGATE BASE, PG64-28	<u>400</u> CU. METER
304 AGGREGATE BASE	<u>400</u> CU. METER
448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1H	<u>90</u> CU. METER
408 BITUMINOUS PRIME COAT	<u>4900</u> LITER
609 CURB, TYPE 6	<u>100</u> METER
617 COMPACTED AGGREGATE, TYPE A	<u>70</u> CU. METER

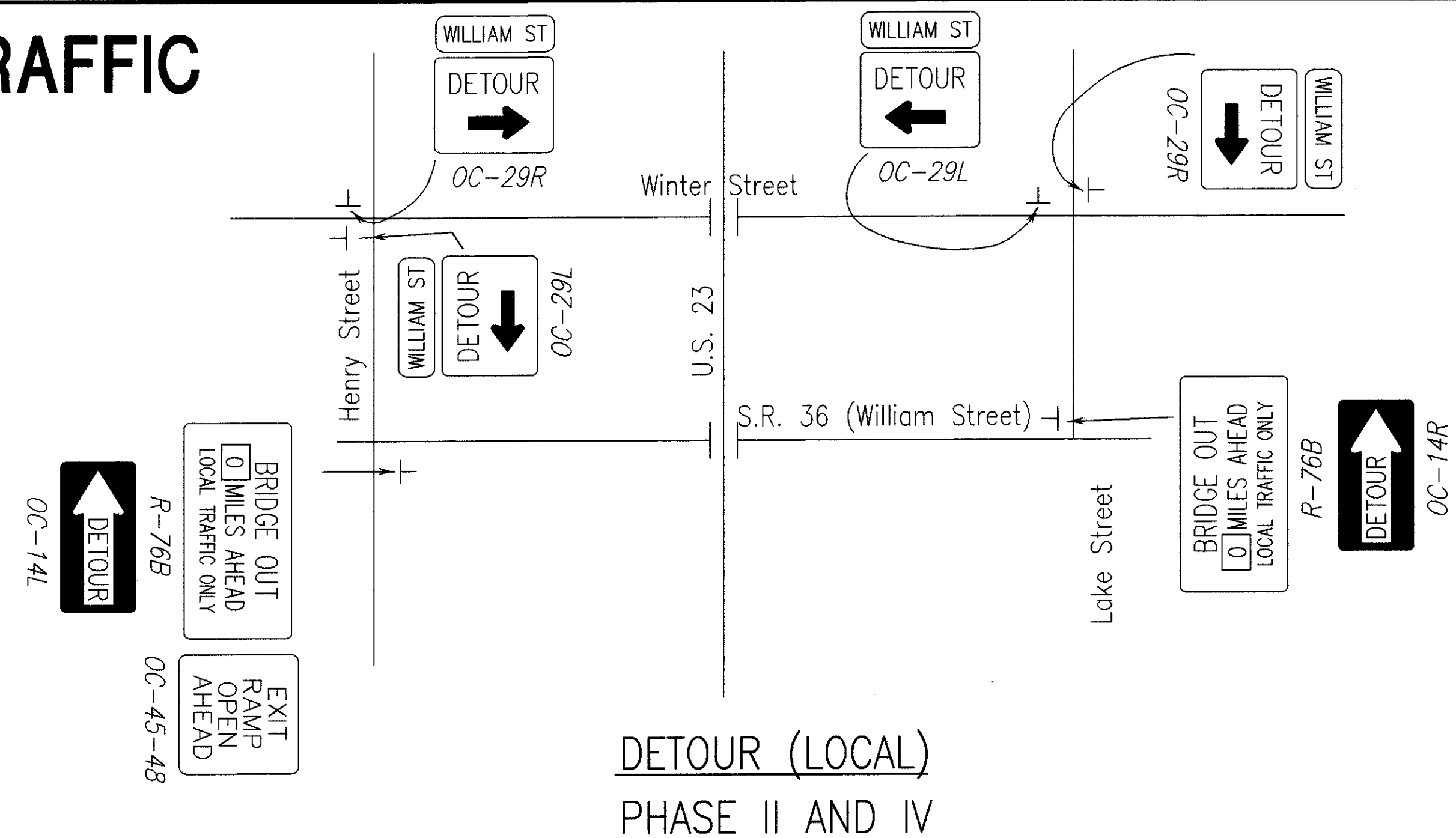
DETOURS

DETOUR ROUTE POSTING WILL BE PROVIDED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR.

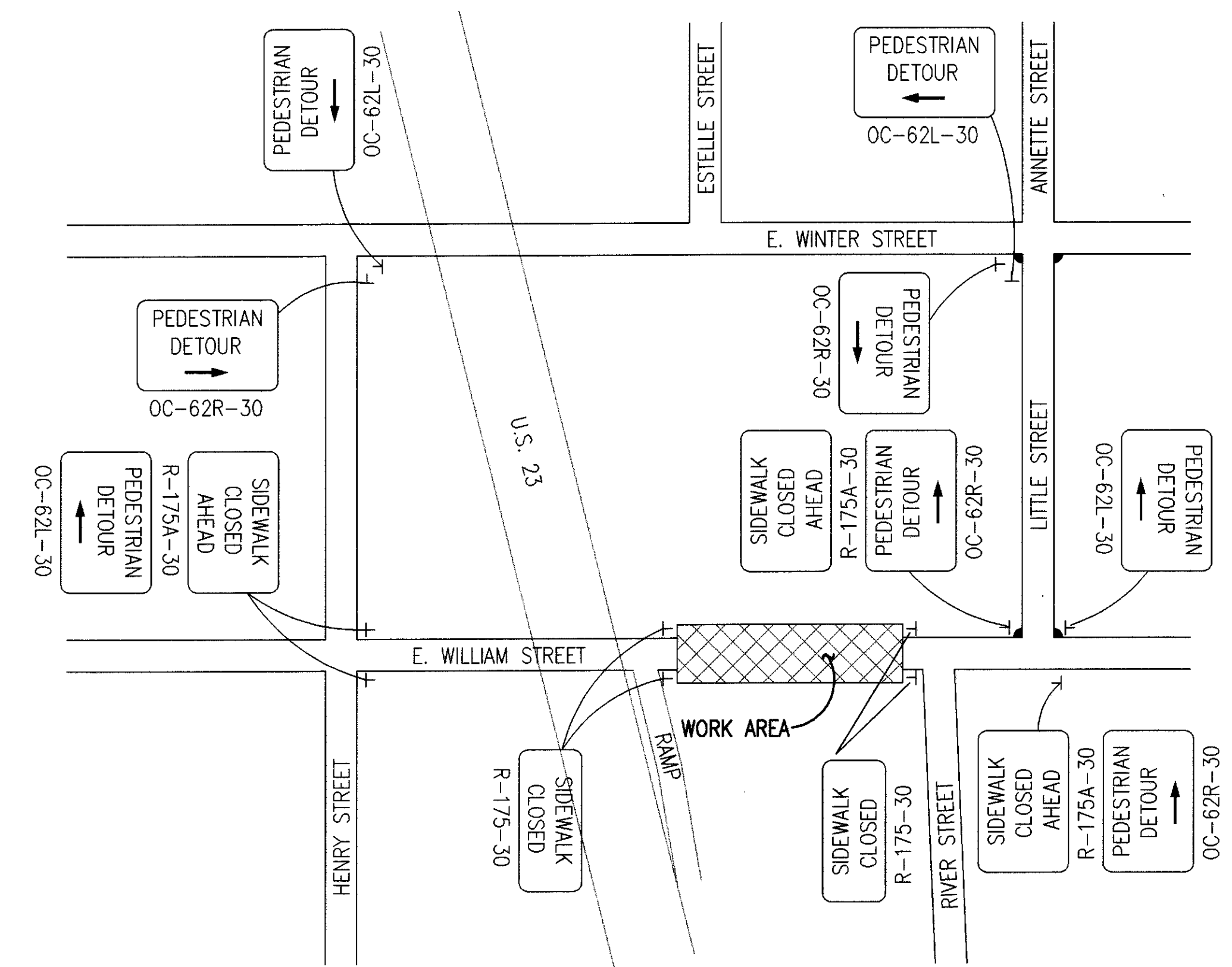
DELAWARE COUNTY ENGINEER
50 CHANNING STREET
DELAWARE, OHIO 43015
614-368-1930
FAX: 614-368-1941

CITY OF DELAWARE
PUBLIC WORKS DEPARTMENT
1 SOUTH SANDUSKY STREET
DELAWARE, OHIO 43015
614-368-1631
FAX: 614-369-2659
ATTENTION: SCOTT GRAUBARD
DIRECTOR OF PUBLIC WORKS


THE CONTRACTOR SHALL NOTIFY THE DELAWARE COUNTY ENGINEER'S OFFICE AND THE CITY OF DELAWARE AT LEAST (7) DAYS IN ADVANCE OF ANY DETOUR SIGNING. THE CONTRACTOR SHALL NOTIFY THE DISTRICT MAINTENANCE OF TRAFFIC ENGINEER IMMEDIATELY AT (614-363-1251), EXTENSION 323, OR BY FAX AT (614-369-7437) WHEN THE DETOUR IS ERECTED.



DETOUR (LOCAL)
PHASE II AND IV



PEDESTRIAN DETOUR
PHASE I, II, III AND IV

NOTE: BEFORE IMPLEMENTING THE PEDESTRIAN DETOUR, NEW CURB RAMPS ARE TO BE INSTALLED AT THE LOCATIONS INDICATED BY A  ON THE PEDESTRIAN DETOUR SHOWN ABOVE.

A QUANTITY OF 14 SQ.M., ITEM 608 CURB RAMP, TYPE 2 HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

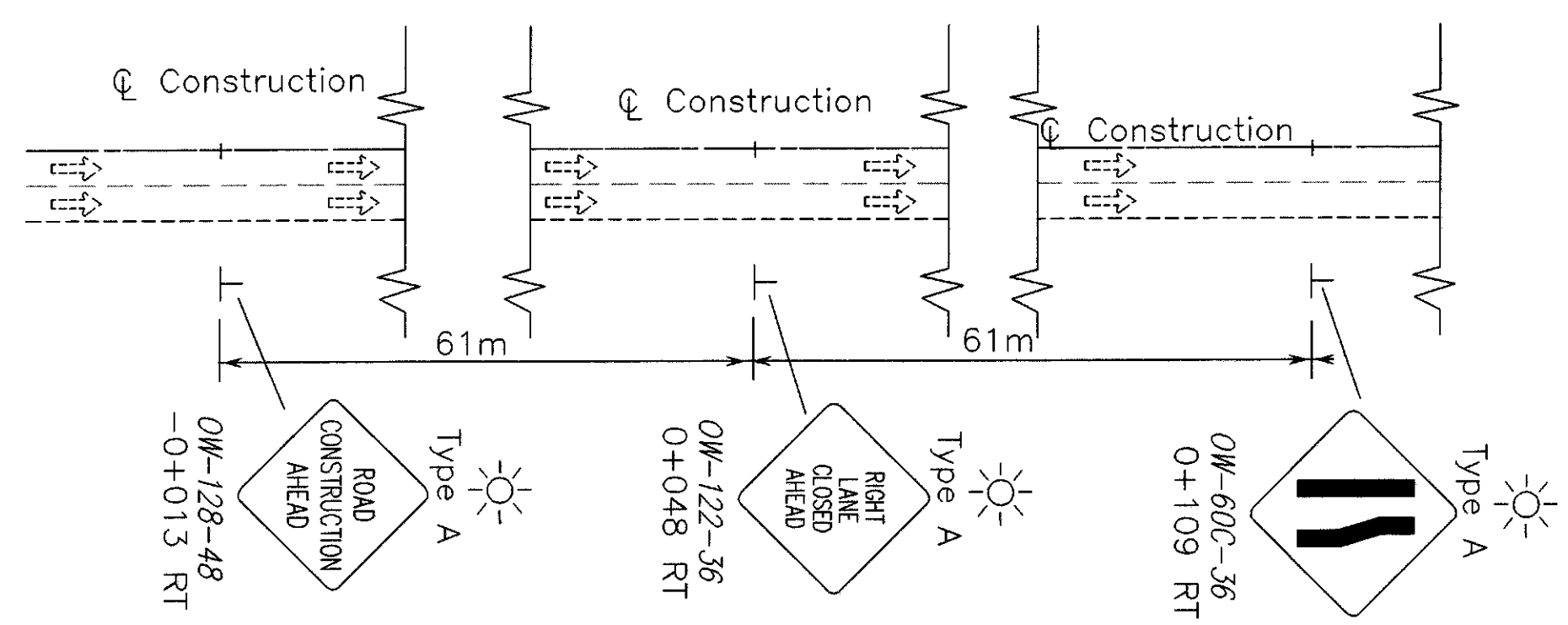
CALC. BY: VOK
DATE: 3/29/97
CHKD. BY: GED
DATE: 4/9/97

MAINTENANCE OF TRAFFIC
NOTES AND DETOURS

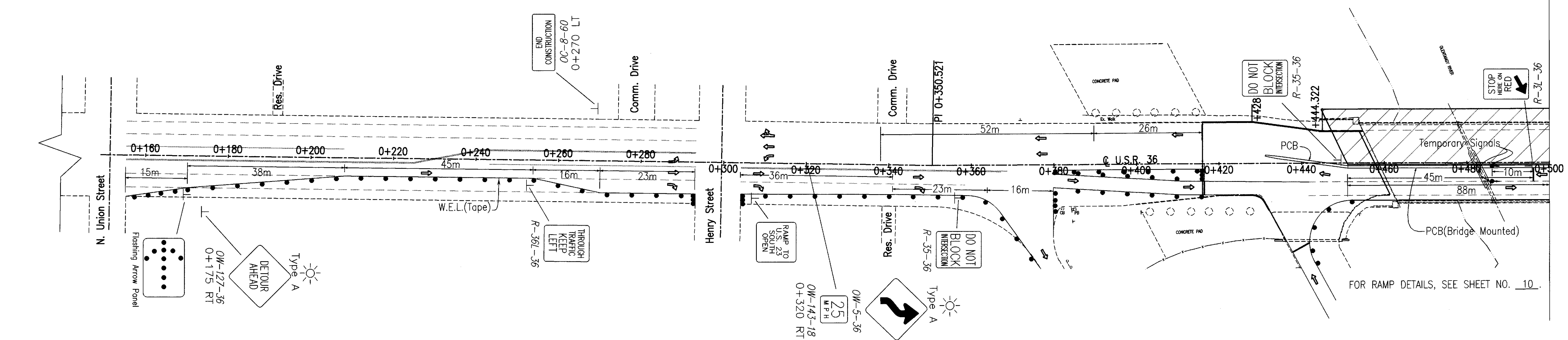
DEL-36-16.736

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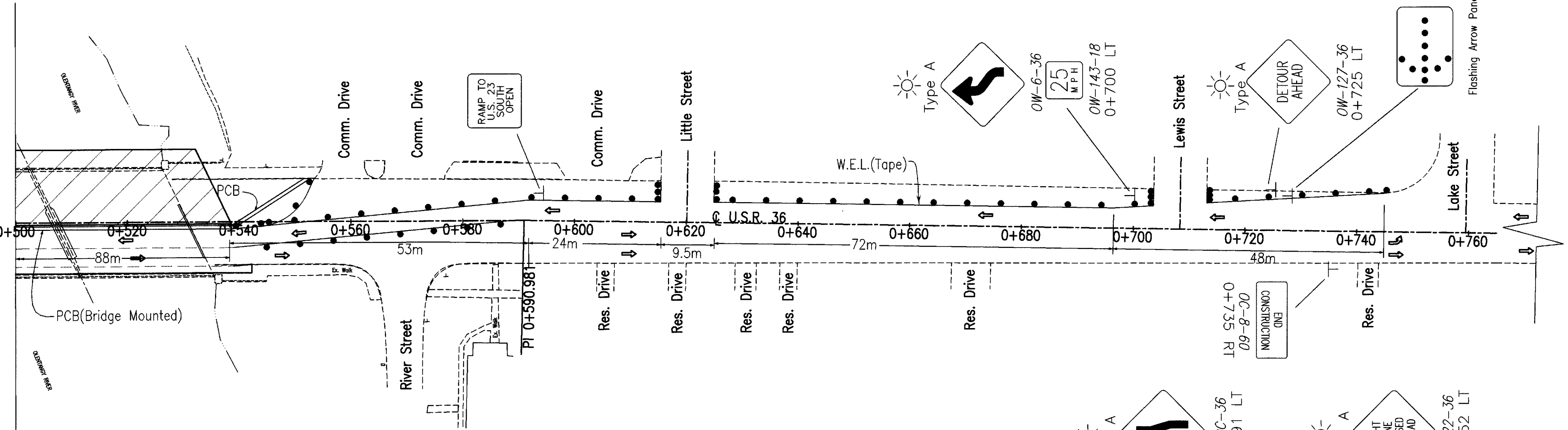
MAINTENANCE OF TRAFFIC - PHASE III



EASTBOUND - ADVANCE WARNING SIGNS



FOR RAMP DETAILS, SEE SHEET NO. 10.



WESTBOUND - ADVANCE WARNING SIGNS

NOTES:
For Quantities, See Sheet No. 5.
For Signal Details, See Sheet No. 11.
For Additional Details, See Standard Drawing MT-95.41.

LEGEND:
PCB = Portable Concrete Barrier, 813mm
W.E.L. = White Edge Line
Y.E.L. = Yellow Edge Line
• = Drum
 WORK AREA

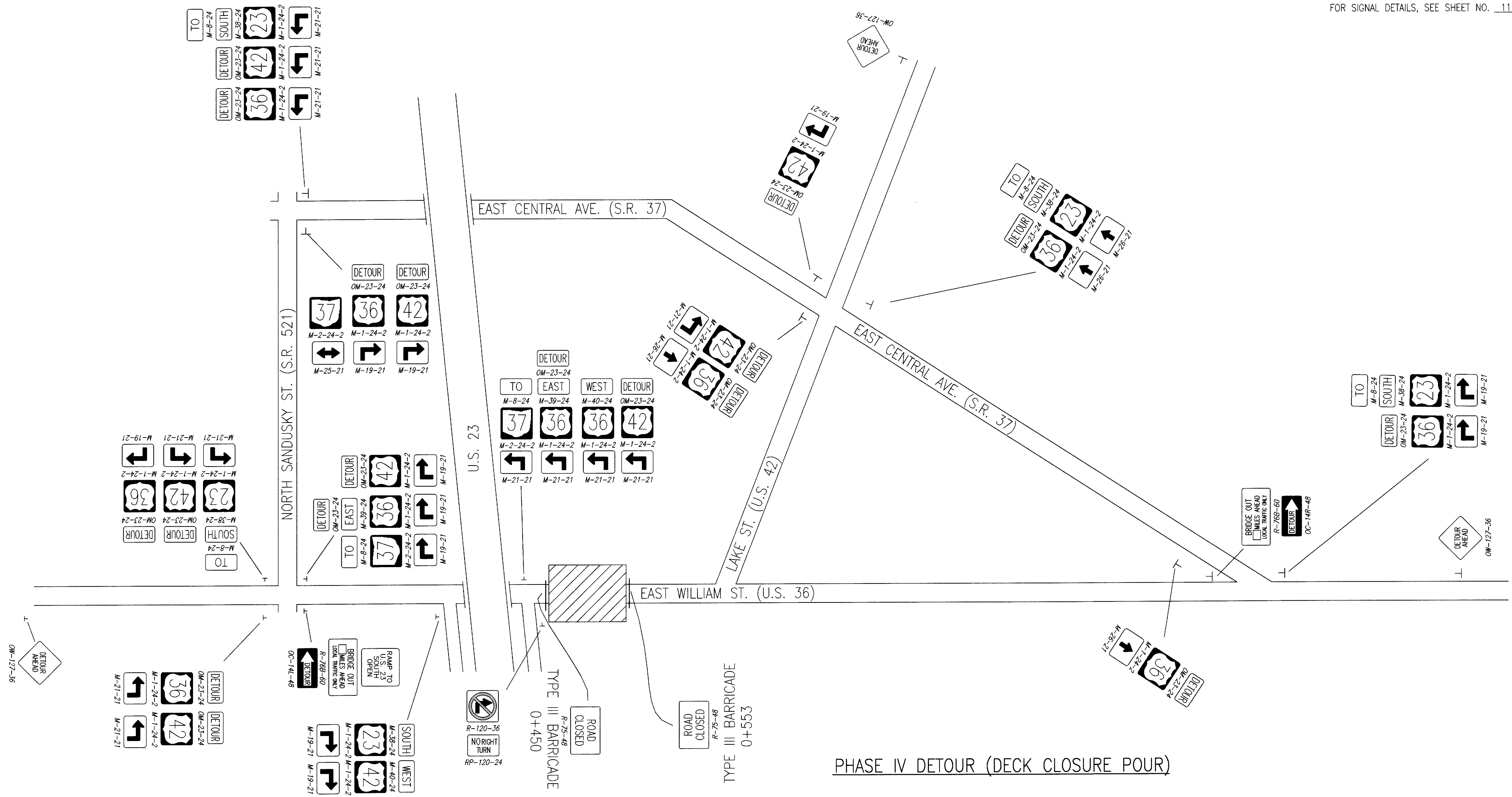
FINAL 1796MT2 8/5/97

MAINTENANCE OF TRAFFIC

PCMS PORTABLE CHANGEABLE MESSAGE SIGN
 WORK AREA

FOR SIGNAL DETAILS, SEE SHEET NO. 11.

CAC: VDK
 BY: DATE: 4/97
 GED: VDK
 BY: DATE: 4/97



PHASE IV DETOUR (DECK CLOSURE POUR)

MAINTENANCE OF TRAFFIC
 PHASE IV DETOUR


DEL-36-16.736

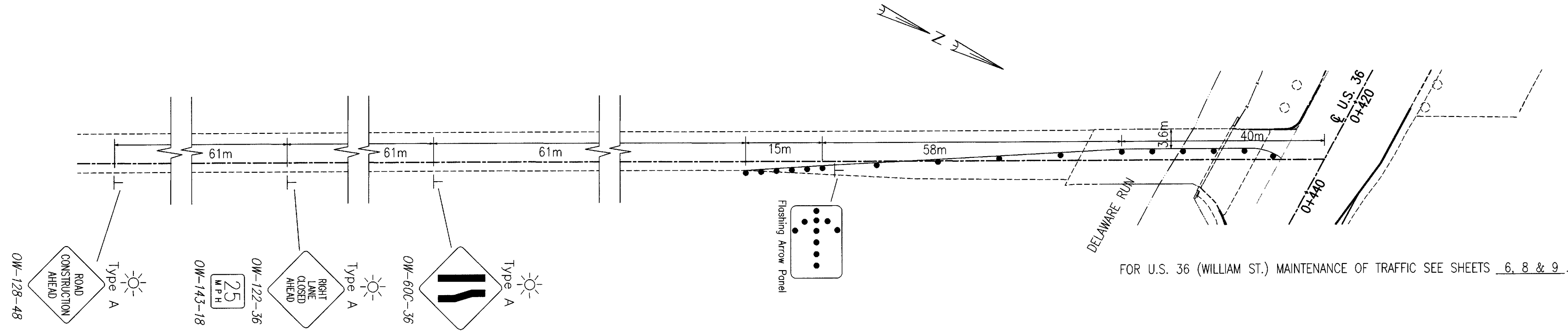
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MAINTENANCE OF TRAFFIC - RAMP DETAIL

NOTES:

For Additional Details, See
Standard Drawing MT-95.41.

- LEGEND:
- PCB = Portable Concrete Barrier, 813mm
 - W.E.L. = White Edge Line
 - Y.E.L. = Yellow Edge Line
 - = Drum
 -  WORK AREA



FOR U.S. 36 (WILLIAM ST.) MAINTENANCE OF TRAFFIC SEE SHEETS 6, 8 & 9.

RAMP FROM U.S. 23 NORTHBOUND TO U.S. 36 (WILLIAM ST.) PHASES I, III AND IV

FOR PHASE II EXIT RAMP CLOSURE SEE STANDARD DRAWING MT-98.19M.

MAINTENANCE OF TRAFFIC - RAMP DETAIL

DEL-36-16.736

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FINAL

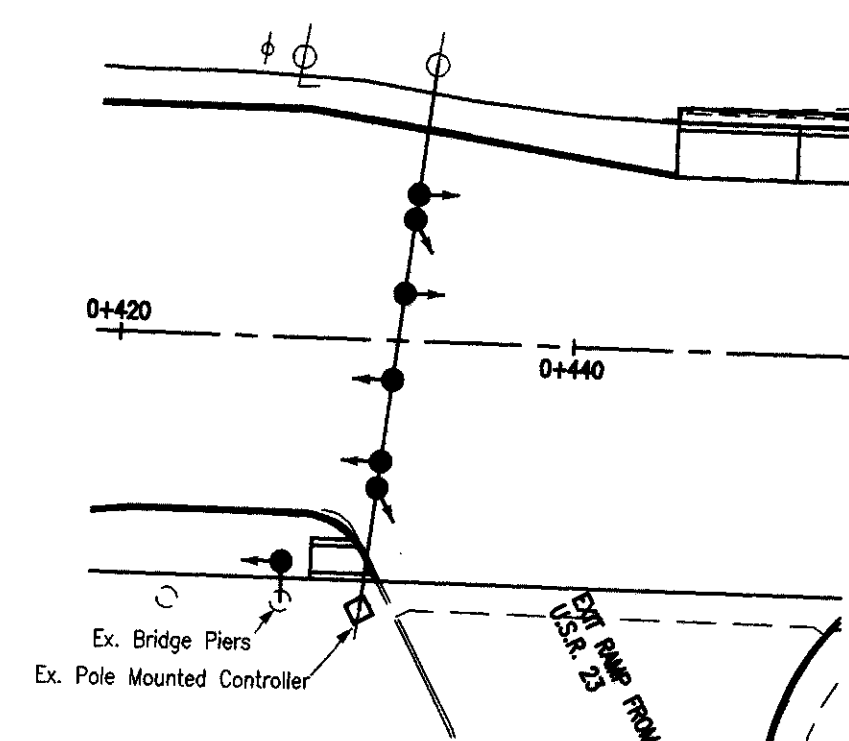
1796MTR

ATH

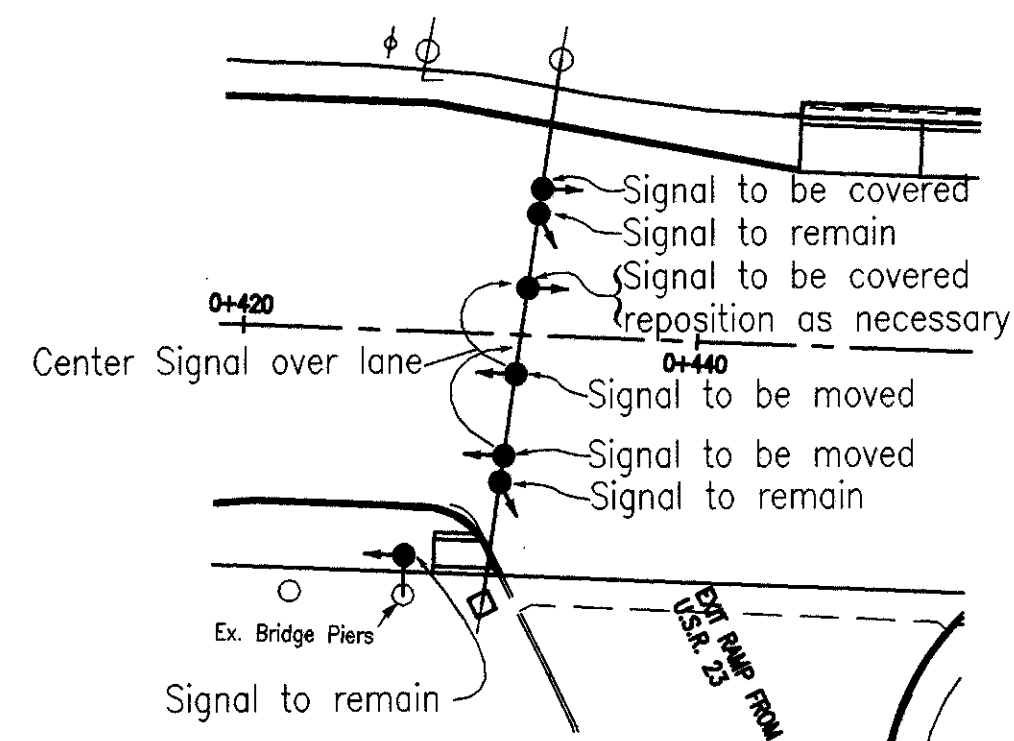
8/5/97

CALC.	YJK
BY:	12/29/96
CHKD.	GED
DATE:	4/97

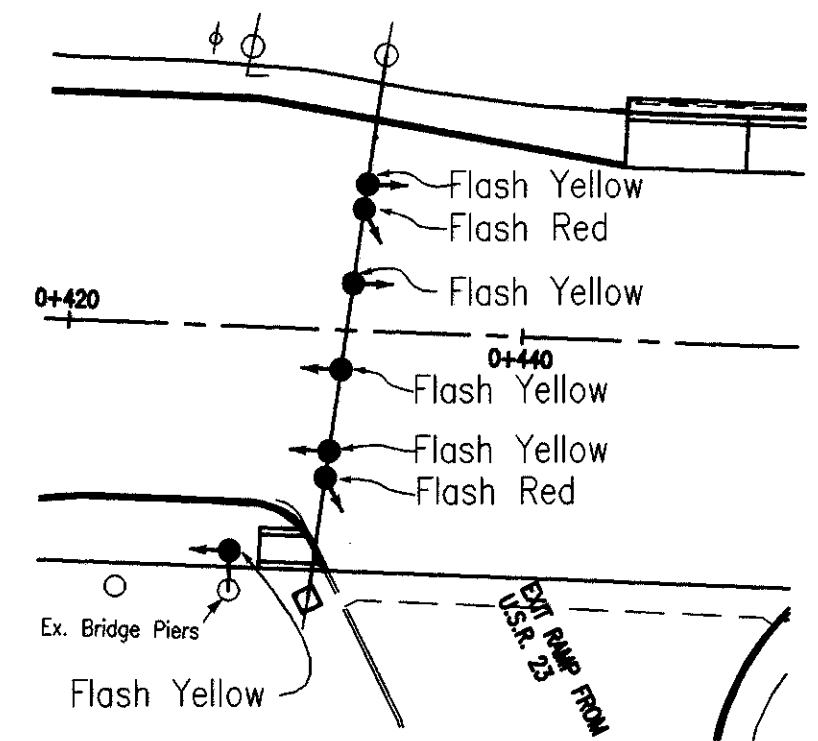
MAINTENANCE OF TRAFFIC



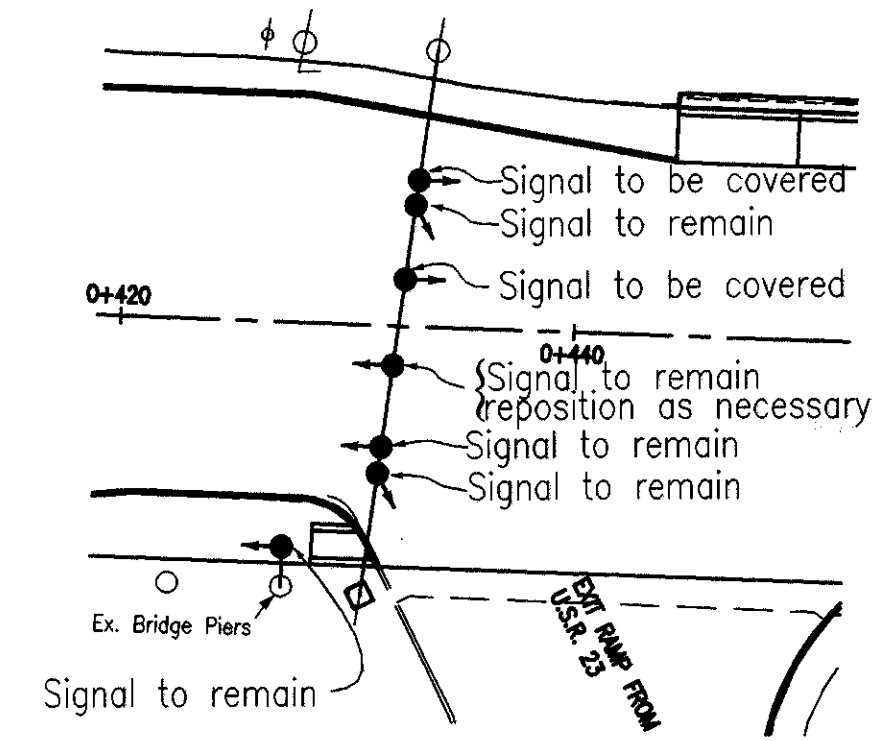
EXISTING SIGNAL LAYOUT



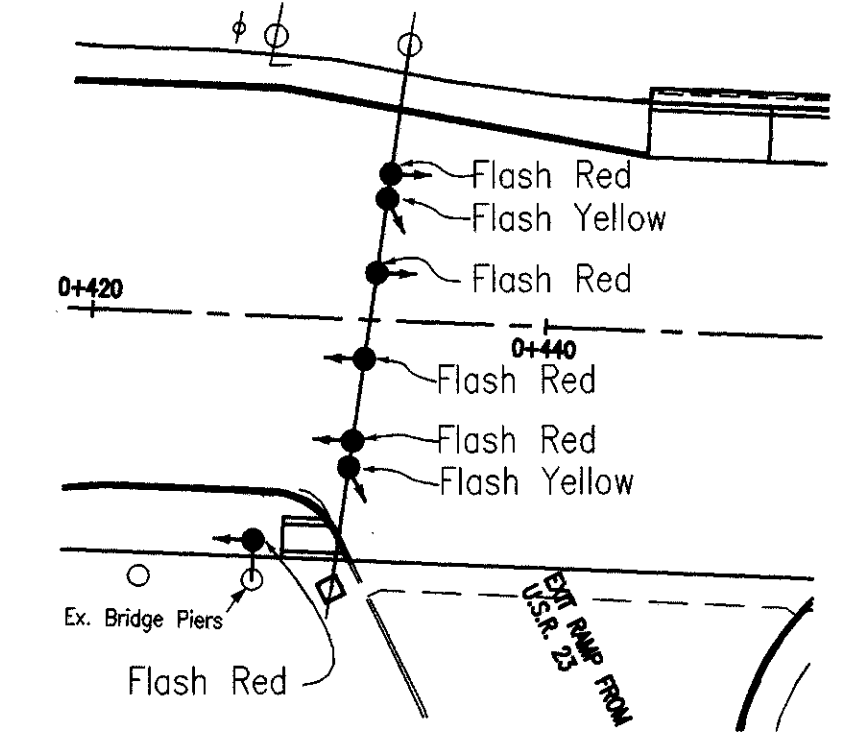
PHASE I SIGNAL LAYOUT



PHASE II SIGNAL LAYOUT



PHASE III SIGNAL LAYOUT



PHASE IV SIGNAL LAYOUT

TEMPORARY TRAFFIC SIGNAL NOTES:

SIGNAL PHASING

THE SIGNAL PHASING FOR THIS PROJECT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER, SHALL BE:

	PHASE 1			PHASE 2 (SKIPPED UNLESS ACTUATED)			TOTAL
	1	2	3	1	2	3	
WEST BOUND	G	Y	R	R	R	R	
EAST BOUND	G	Y	R	R	R	R	
RAMP	R	R	R	G	Y	R	
MOVEMENTS	← T	← T	← T	← T	← T	← T	

SIGNAL TIMING

THE EXISTING CONTROLLER AT STATION 0+431.0, 11.9m RIGHT IS TO BE RESET FOR THE DURATION OF THIS PROJECT. THE FOLLOWING INTERSECTION TIMING IS TO BE USED FOR PHASE I AND PHASE III. BEFORE RESETTING THE CONTROLLER THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTING THE EXISTING TIMING SO THAT THE CONTROLLER CAN BE RETURNED TO ITS ORIGINAL TIMING WHEN THIS PROJECT IS COMPLETED. BEFORE ANY WORK ON THE CONTROLLER IS PERFORMED THE CONTRACTOR SHALL CONTACT THE CITY OF DELAWARE, DIRECTOR OF PUBLIC WORKS, SCOTT GRUBARD AT 1 SOUTH SANDUSKY STREET, DELAWARE, OHIO, 43015, PHONE: 614-368-1631, FAX: 614-369-2659 FOR HIS APPROVAL IN MAKING THE TIMING CHANGES.

INTERSECTION TIMING								
PHASE	1 E-W	2 NB	3	4	5	6	7	8
MIN GREEN	35	10						
ADD INITIAL	0	0						
MAX INITIAL	0	0						
PASSAGE	0	3.0						
TBR	0	0						
TTR	0	0						
MIN GAP	2.5	2.5						
MAX 1	40	35						
MAX 2	40	35						
YELLOW	4	4						
ALL RED	4.2	1						
WALK	0	0						
PED CLEAR	0	0						
INITIALIZE	G	R						
NON LOCKING	OFF	ON						
VEH RECALL	ON	OFF						
PED RECALL	OFF	OFF						
FLASH WALK	OFF	OFF						

CALC. BY: VDK
DATE: 3/27/97
DWD. BY: JAR
DATE: 3/27/97

MAINTENANCE OF TRAFFIC SIGNALS - ALL PHASES

DEL-36-16.736

ITEM	SHEET NUMBER						ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
	3	5	13	14	15							
ROADWAY												
201	LUMP						201	11000	LUMP	CLEARING AND GRUBBING	3	
202				772	278		202	23000	1050	SQ METER	PAVEMENT REMOVED	
202				150	87		202	30000	237	SQ METER	WALK REMOVED	
202				70	38		202	32000	108	METER	CURB REMOVED	
203	290						203	12000	290	CU METER	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
EROSION CONTROL												
203	7						203	20000	7	CU METER	EMBANKMENT	
203			1133				203	50000	1133	SQ METER	SUBGRADE COMPACTION	
604					1		604	20800	1	EACH	INLET RECONSTRUCTED TO GRADE	
604				4			604	34500	4	EACH	MANHOLE ADJUSTED TO GRADE	
608				102	38		608	10000	140	SQ METER	100mm CONCRETE WALK	
608				2			608	51000	2	EACH	CURB RAMP, TYPE 2	
608		14					608	54000	14	SQ METER	CURB RAMP, TYPE 2	
609		100		59	20		609	26000	179	METER	CURB, TYPE 6	
PAVEMENT												
207	100						207	30000	100	METER	FILTER FABRIC FENCE	
207	50						207	70000	50	EACH	STRAW OR HAY BALES	
659	230						659	10000	230	SQ METER	SEEDING AND MULCHING	
659	23						659	20000	23	KILOGRAM	COMMERCIAL FERTILIZER	
659	130						659	30001	130	KILOGRAM	AGRICULTURAL LIMING, AS PER PLAN	
659	2						659	35000	2	CU METER	WATER	
DRAINAGE												
601	10						601	32200	10	CU METER	ROCK CHANNEL PROTECTION TYPE C WITH FILTER	
603	30			6			603	04400	36	METER	300mm CONDUIT, TYPE B	
604				1			604	17500	1	EACH	INLET, PAVEMENT, 1.8m	
CAST-IN-PLACE STRUCTURES												
BRIDGE OVER THE OLENTANGY RIVER (SEE SHEET NOS. 21-34)												

GENERAL SUMMARY

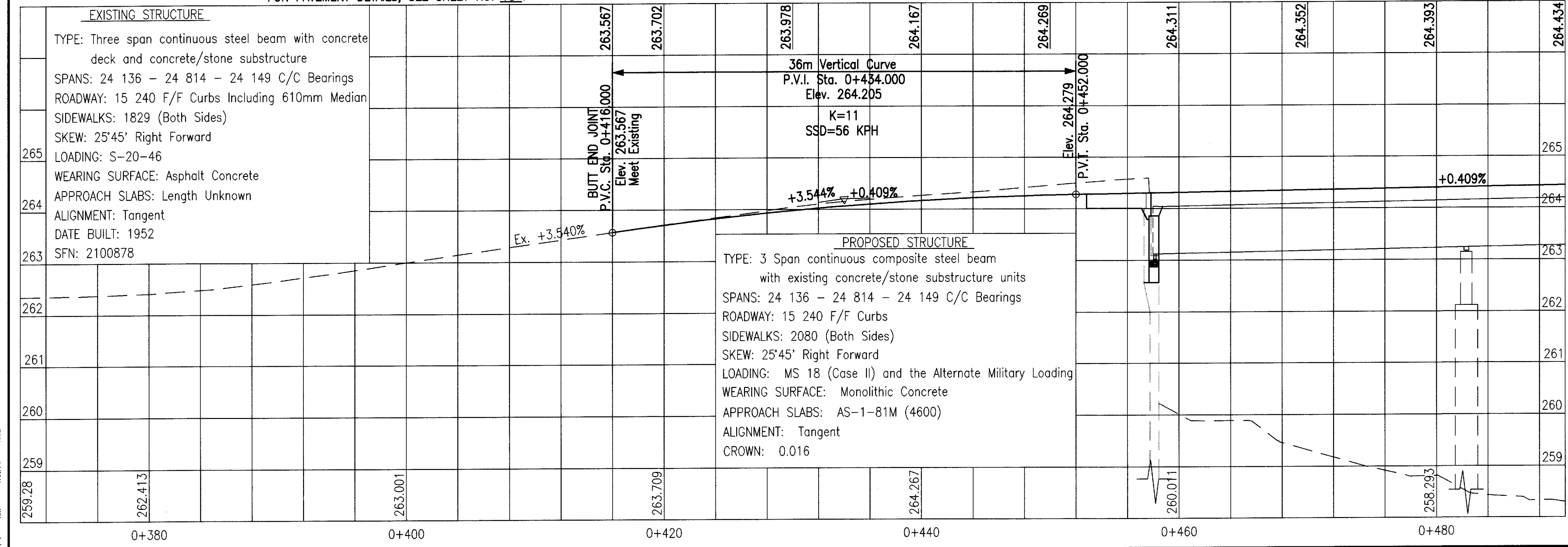
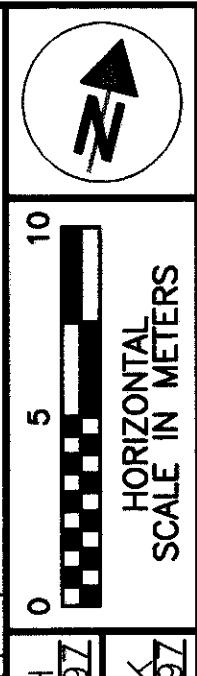
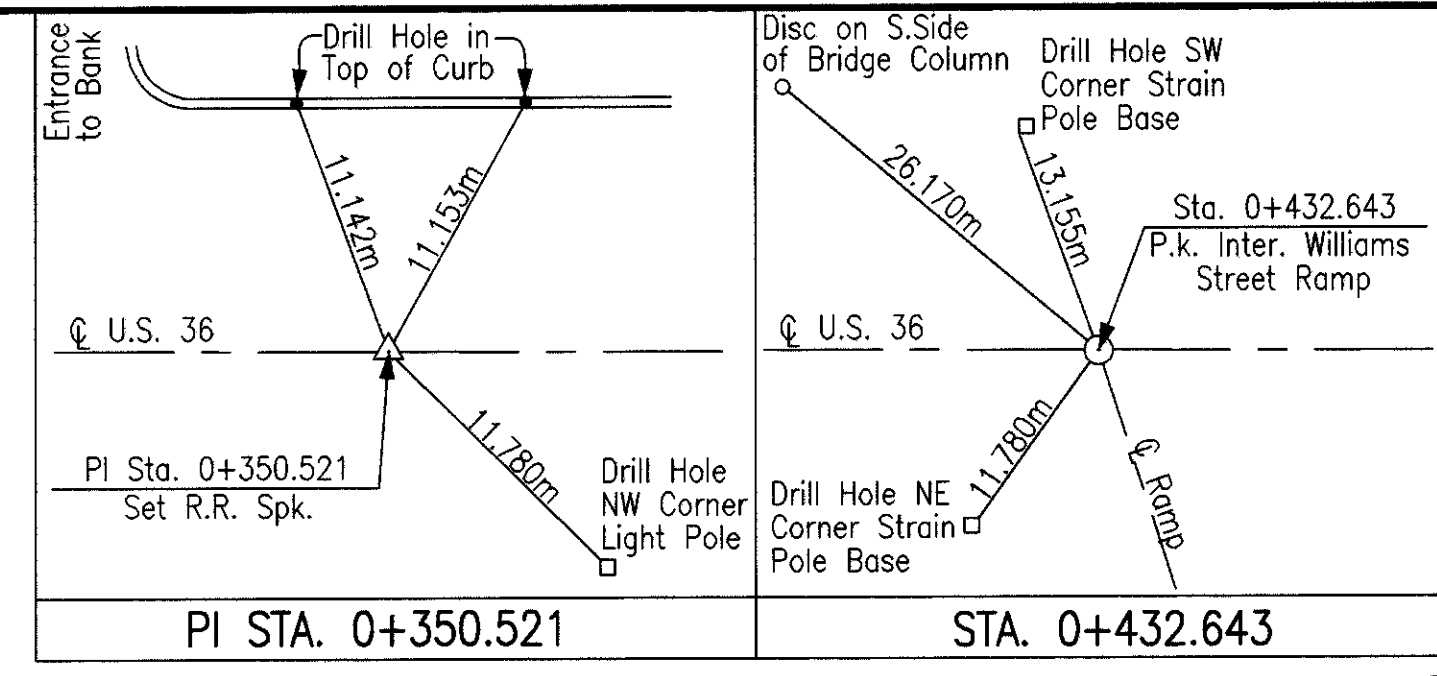
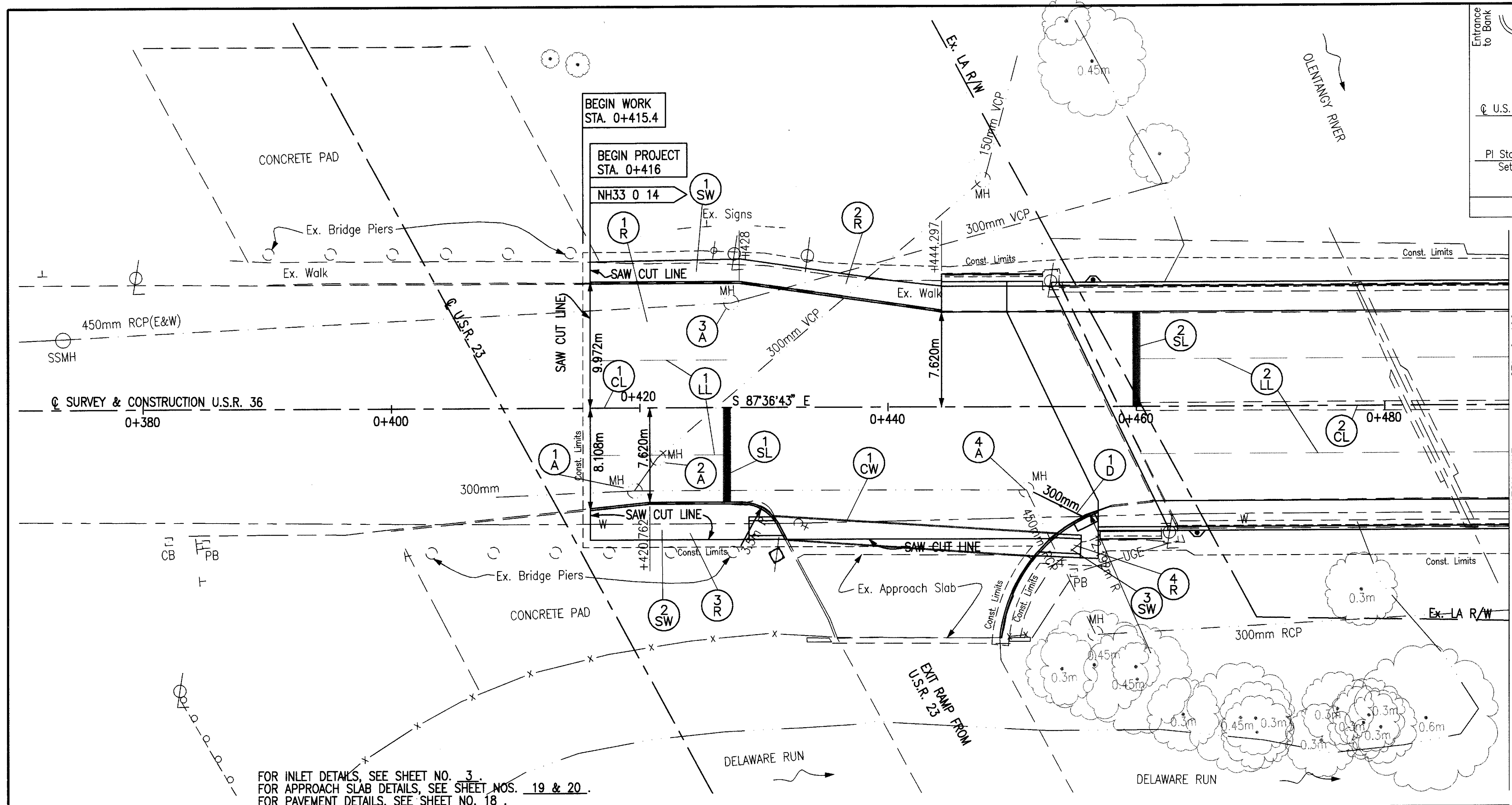
DEL-36-16.736

GENERAL SUMMARY AND CALCULATIONS

ITEM	SHEET NUMBER						ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
	4	5	14	15	17							
LIGHTING												
603						10	603	00400	10	METER	100mm CONDUIT, TYPE E	
625						6	625	00500	6	EACH	CONNECTOR KIT, TYPE II	
625						6	625	00600	6	EACH	CONNECTOR KIT, TYPE III	
625						6	625	10500	6	EACH	LIGHT POLE, MISC: AON3.658, AS PER PLAN	16
625						18	625	10620	18	EACH	LIGHT POLE ANCHOR BOLTS, MISC: ON STRUCTURE	
625						396	625	23302	396	METER	NO. 6 AWG, 5000 VOLT DISTRIBUTION CABLE	
625						58	625	23410	58	METER	NO.12 AWG POLE AND BRACKET CABLE	
625						167	625	25400	167	METER	CONDUIT, 51mm, 713.04	
625						22	625	25500	22	METER	CONDUIT, 76mm, 713.04	
625						7	625	25802	7	METER	CONDUIT, CONCRETE ENCASED, 51mm, 713.07	
625						6	625	27400	6	EACH	LUMINAIRE, POST TOP, 100 WATT HPS, TYPE III, 240 VOLTS, AS PER PLAN	16
625						29	625	29002	29	METER	TRENCH, 0.6 M DEEP	
625						6	625	29900	6	EACH	JUNCTION BOX	
625						2	625	30700	2	EACH	PULLBOX, 713.08, 450mm	
625						1	625	32000	1	EACH	GROUND ROD	
625						1	625	33000	1	EACH	STRUCTURE GROUNDING SYSTEM	
625						1	625	34000	1	EACH	POWER SERVICE	
625						LUMP	625	38000	LUMP		HIGH VOLTAGE TEST	
625						LUMP	625	98200	LUMP		LIGHTING, MISC.: REMOVAL OF EXISTING LIGHTING, AS PER PLAN	16
LIGHTING ALTERNATE BID ITEMS												
625						6	625	10500	6	EACH	LIGHT POLE, MISC: AON3.658, AS PER PLAN (HAPCO B74514)	16
625						6	625	27400	6	EACH	LUMINAIRE, POST TOP, 100 WATT HPS, TYPE III, 240 VOLTS, AS PER PLAN (UNIQUE SOLUTIONS #GV1A100HP48LB3N)	16
TRAFFIC CONTROL												
642						0.08	642	00202	0.20	KILOMETER	LANE LINE, TYPE 2	
642						0.04	642	00302	0.10	KILOMETER	CENTERLINE, TYPE 2	
642						15	642	00502	15.00	METER	STOP LINE, TYPE 2	
642						43	642	00602	43.00	METER	CROSSWALK LINE, TYPE 2	
MAINTENANCE OF TRAFFIC												
614						32	614	11100	32	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
614						12	SPECIAL	61411200	12	hour	LAW ENFORCEMENT OFFICER	
614						7	614	13000	7	CU METER	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
614						37	614	13302	37	EACH	BARRIER REFLECTOR, TYPE B2	
614						37	614	13350	37	EACH	OBJECT MARKER	
614						2	614	18501	2	EACH	PORTABLE CHANGABLE MESSAGE SIGN, CLASS III, AS PER PLAN	5
614						0.14	614	21400	0.14	KILOMETER	TEMPORARY CENTER LINE, CLASS II	
614						2.70	614	98000	2.70	KILOMETER	TEMPORARY PAVEMENT MARKINGS	
622						84	622	40020	84	METER	PORTABLE CONCRETE BARRIER, 813mm	
622						174	622	40040	174	METER	PORTABLE CONCRETE BARRIER, 813mm, BRIDGE MOUNTED	
614							614	11000	LUMP		MAINTAINING TRAFFIC	
619							619	15010	LUMP		FIELD OFFICE, TYPE B	
SPECIAL							SPECIAL	61925010	LUMP		COMPUTER EQUIPMENT FOR TYPE B OFFICE	
623							623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
624							624	10000	LUMP		MOBILIZATION	

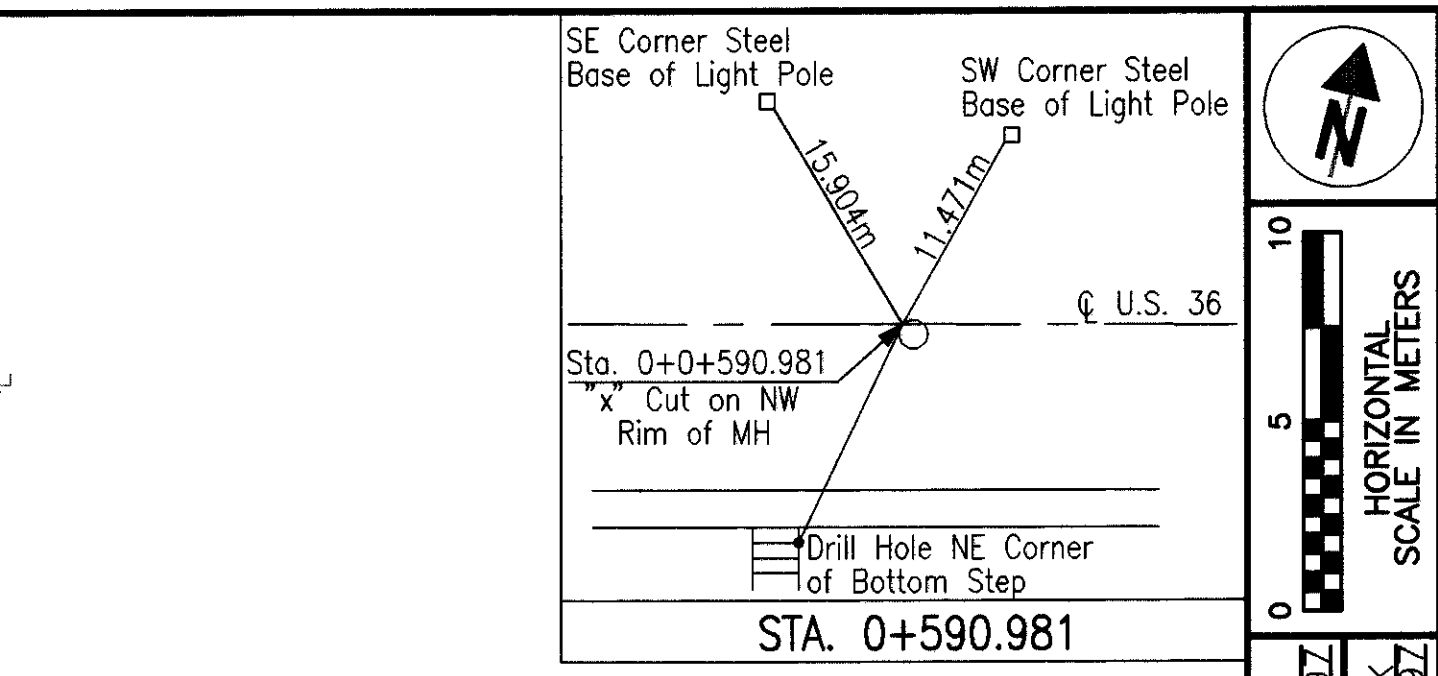
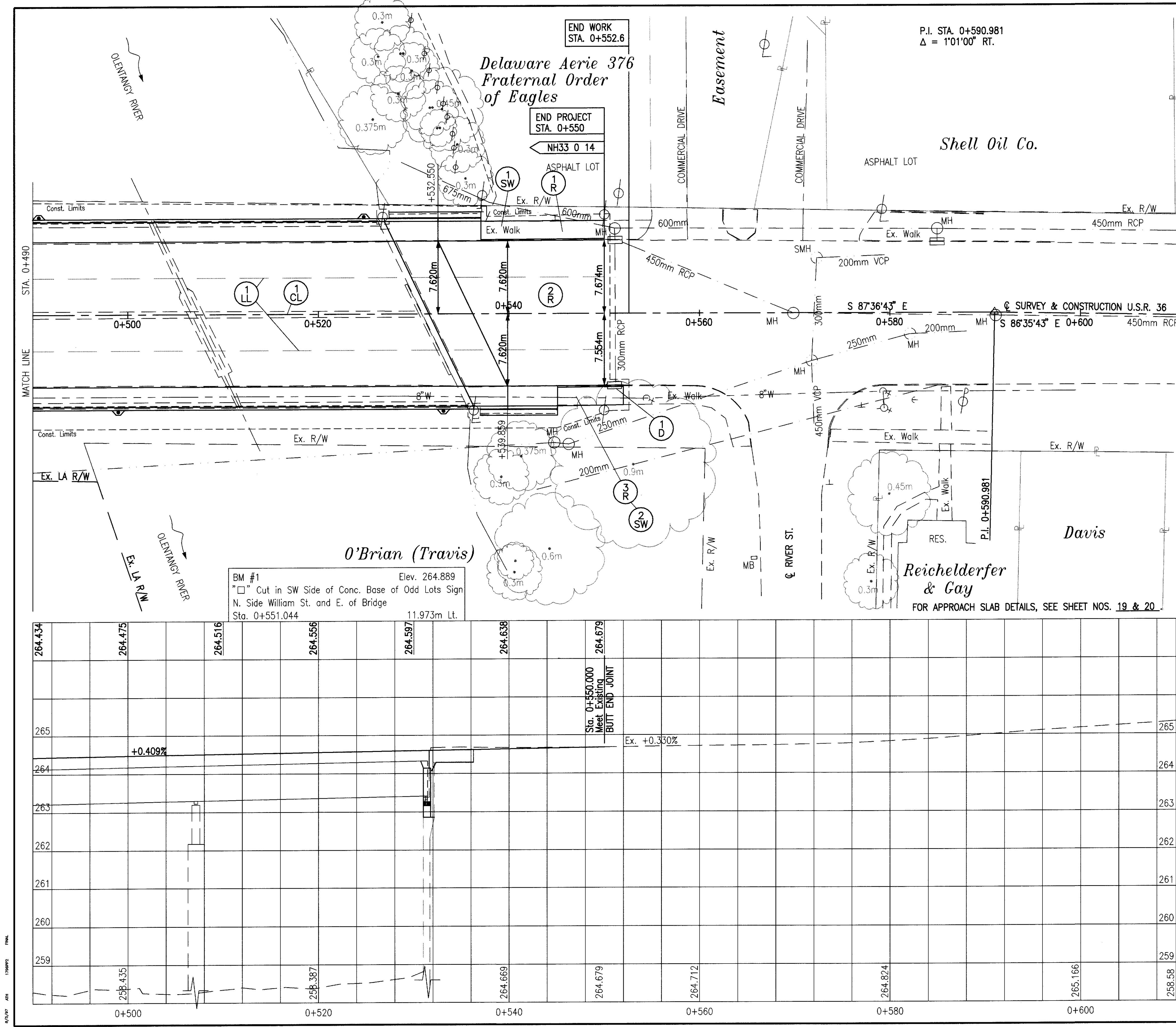
*TEMPORARY PAVEMENT MARKING MISC.:

NOTE: ALL QUANTITIES CARRIED TO THE GENERAL SUMMARY			448				407			448			301			408			304			611		203		
LOCATION	SIDE	LENGTH	SURFACE WIDTH	AREA OF LAYER	32 mm ASPHALT CONCRETE, SURFACE COURSE, TYPE 1H	AREA OF LAYER	TACK COAT FOR INTERMEDIATE COURSE	SURFACE WIDTH	AREA OF LAYER	45 mm ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, PG64-28	SURFACE WIDTH	AREA OF LAYER	230 mm BITUMINOUS AGGREGATE BASE, PG64-28	SURFACE WIDTH	AREA OF LAYER	PRIME COAT @ 1.8 L./S.M.	SURFACE WIDTH	AREA OF LAYER	150 mm AGGREGATE BASE	APPROACH SLAB T = 305 mm	SURFACE WIDTH	AREA OF LAYER	SUBGRADE COMPACTION			
STATION TO STATION																								METER	METER	SQ. M.
U.S.R. 36																										
0+416.000 TO 0+420.762	LT. & RT.	4.762	17.836 AVG.	84.935	2.718	12.943	4.401	17.836 AVG.	84.935	3.822	17.836 AVG.	84.935	19.535	17.836 AVG.	84.935	152.883	17.836 AVG.	84.935	12.740		18.136 AVG.	86.364	86.364			
0+420.762 TO 0+428.000	LT. & RT.	7.238	17.592	127.331	4.075	29.495	10.028	17.592	127.331	5.730	17.592	127.331	29.286	17.592	127.331	229.196	17.592	127.331	19.100		17.892	129.502	129.502			
0+428.000 TO 0+444.219	LT. & RT.	16.219	16.416 AVG.	266.251	8.520	138.186	46.983	16.416	266.251	11.981	16.416	266.251	61.238	16.416	266.251	479.252	16.416	266.251	39.938		16.566	268.684	268.684			
0+444.219 TO 0+453.239	LT. & RT.	9.020	15.240	137.465	4.399	39.679	13.491	15.240	137.465	6.186	15.240	137.465	31.617	15.240	137.465	247.437	15.240	137.465	20.620		15.390	138.818	138.818			
0+453.239 TO 0+457.839	LT. & RT.	4.600		104.606															104.606		104.606	104.606	104.606			
0+457.839 TO 0+531.604	LT. & RT.	73.765	BRIDGE LIMITS																							
0+531.604 TO 0+536.204	LT. & RT.	4.600		115.614															115.614		115.614	115.614	115.614			
0+536.204 TO 0+539.859	LT. & RT.	3.655	15.240	55.702	1.782	6.513	2.214	15.240	55.702	2.507	15.240	55.702	12.812	15.240	55.702	100.264	15.240	55.702	8.355		15.540	56.799	56.799			
0+539.859 TO 0+550.000	LT. & RT.	10.141	15.234 AVG.	154.488	4.944	50.137	17.047	15.234 AVG.	154.488	6.952	15.234 AVG.	154.488	35.532	15.234 AVG.	154.488	278.078	15.234 AVG.	154.488	23.173		15.534 AVG.	157.530	157.530			
RAMP																										
0+428.000 TO 0+457.839	RT.	29.839		73.714	2.359	73.714	25.063		73.714	3.317		73.714	16.954		73.714	132.685		73.714	72.221			75.183	75.183			
				Subtotal =	28.797		119.227			40.495			206.974			1619.795			167.792	220.220			1133.100			
				TOTAL =	29		119			40			207			1620			168	220			1133			



ESTIMATED QUANTITIES	STATION TO STATION	SIDE	TYPE	UNIT	QUANTITY
642	0+416 TO 0+444.297	LT	CROSSWALK LINE, TYPE 2	METER	28
642	0+416 TO 0+444.297	RT	CROSSWALK LINE, TYPE 2	METER	17
642	0+450.688 TO 0+456.914	RT	CROSSWALK LINE, TYPE 2	METER	14
609	0+416 TO 0+427		CURB, TYPE 6	METER	11
608	0+460 TO 0+490		CURB RAMP, TYPE 2	EACH	1
608	0+460 TO 0+490		100mm CONCRETE WALK	SQ.M.	50
604	0+416 TO 0+427		INLET, PAVEMENT, 1.8m	EACH	1
603	0+450.688 TO 0+456.914		300mm CONDUIT, TYPE B	METER	6
642	0+416 TO 0+444.297	LT	LANE LINE, TYPE 2	KM	0.01
604	0+416 TO 0+427	RT	MANHOLE ADJUSTED TO GRADE	EACH	1
202	0+416 TO 0+427		CURB REMOVED	METER	38
202	0+427 TO 0+442		WALK REMOVED	SQ.M.	46
202	0+442 TO 0+457.225		PAVEMENT REMOVED	SQ.M.	69
202	0+457.225 TO 0+460		PAVEMENT REMOVED	SQ.M.	35
202	0+460 TO 0+490		PAVEMENT REMOVED	SQ.M.	772

PLAN AND PROFILE
STA. 0+370 TO STA. 0+490
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REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES
1-D	0+551	RT	
1-R	0+531.386 TO 0+550.000	LT	
2-R	0+532.550 TO 0+550.000	LT&RT	22
3-R	0+539.859 TO 0+555.000	RT	16
1-SW	0+531.386 TO 0+550.000	LT	
2-SW	0+539.859 TO 0+555.000	RT	
1-L	0+490 TO 0+550	LT&RT	
1-CI	0+490 TO 0+550		
642			CENTER LINE, TYPE 2 KM 0.06
642			LANE LINE, TYPE 2 KM 0.12
609			CURB, TYPE 6 METER 20
608			100mm CONCRETE WALK SQ.M. 25 13
604			INLET RECONSTRUCTED TO GRADE EACH 1
202			CURB REMOVED METER 38
202			WALK REMOVED SQ.M. 87
202			PAVEMENT REMOVED SQ.M. 278

DEL-36-16.736
 PLAN AND PROFILE
 STA. 0+490 TO STA. 0+610
 15
 34

ITEM 625 POWER SERVICE

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:
AEP (COLUMBUS SOUTHERN POWER COMPANY)
61 WEST WILLIAM STREET
DELAWARE, OHIO 43015
(614) 363-7410

THE MAINTAINING AGENCY FOR THIS PROJECT IS:
CITY OF DELAWARE, PUBLIC WORKS DEPARTMENT
1 SOUTH SANDUSKY STREET
DELAWARE, OHIO 43015
(614) 368-1631

ELECTRICAL ENERGY FROM POWER SERVICE SHALL CONTINUE TO BE CHARGED TO THE MAINTAINING AGENCY. THE CONTRACTOR SHALL PAY ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICE ESTABLISHED BY THIS PROJECT. UPON COMPLETION OF THIS PROJECT, POWER SERVICE ELECTRICAL ENERGY ACCOUNTS SHALL BE TRANSFERRED TO THE MAINTAINING AGENCY. THIS SHALL INCLUDE NEW POWER SERVICE ESTABLISHED BY THIS PROJECT AS WELL AS REASSIGNMENT OF EXISTING SERVICE DUE TO WORK PERFORMED BY THIS PROJECT.

PULL BOXES:

PULL BOXES SHALL BE LOCATED APPROXIMATELY WHERE SHOWN ON PLANS WITH EXACT LOCATION TO BE DETERMINED IN FIELD AFTER CAREFUL CONSIDERATION HAS BEEN GIVEN TO THE LOCATION OF EXISTING UTILITIES AND ESTABLISHED GRADES.

UNDERDRAINS FOR PULL BOXES:

REFERENCE IS MADE TO STANDARD DRAWING HL-30.11M FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 6 METERS. AN ESTIMATED QUANTITY OF ITEM 603, 100mm CONDUIT, TYPE E IS INCLUDED IN THE LIGHTING SUB-SUMMARY FOR THIS PURPOSE.

CONDUIT INSTALLATION UNDER PAVEMENTS:

ALL CONDUITS PLACED UNDER SIDEWALK, DRIVEWAY AND STREET PAVEMENTS SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF ANY NEW PAVEMENT SUBBASE. PAYMENT FOR TRENCH SHALL BE MADE PER ITEM 625, TRENCH 0.6 M DEEP.

713.14 LAMPS:

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX", PHILLIPS "CERAMALUX", SYLVANIA "LUMALUX", OR EQUAL APPROVED BY THE ENGINEER.

625.07 - 713.11 LUMINAIRES
LUMINAIRES SHALL HAVE SINGLE RATED 240 VOLT, 150 WATT, INTEGRAL REGULATOR BALLAST FOR USE WITH HIGH PRESSURE SODIUM LAMPS.

ALL LUMINAIRES PROVIDED ON THIS PROJECT SHALL HAVE THE METAL HOUSING PAINTED TO MATCH THE COLOR OF THE LIGHT POLES.

INSTALLATION REQUIREMENTS:

FIXTURES MUST BE WIRED AND INSTALLED PER THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), MANUFACTURER'S SPECIFICATIONS.

HEIGHT ABOVE GRADE:

ALL FIXTURES SHALL BE INSTALLED AT 4.65m ABOVE FINISHED GRADE, MEASURED FROM GRADE TO THE CENTER OF THE LAMP ENCLOSED WITHIN THE LUMINAIRE.

POST SUPPORT:

THE LIGHT POST WILL BE ANCHORED TO A REINFORCING STEEL LIGHT POLE PILASTER FOR BRIDGE WITH SIDEWALK RAILING AS SHOWN ON STANDARD DRAWING HL-20.14M.

FIXTURE POST:

THE POST MUST BE A "HAPCO B74514" OR APPROVED EQUAL. COLOR TO BE POWDER COATED NEW ALBANY GREEN PER HERBERTS #PU-8154-LG, FROM HERBERTS POWDER COATING, 4150 LYMAN DR., HILLIARD, OH 43026, (614) 771-7881. FOR WET SPRAY TOUCH-UP PAINT USE "BENJAMIN MOORE" EGGSHELL OIL 108 BASE 5A NEW ALBANY GREEN. THE POST IS A 3.658m (12 FT.) FLUTED ALUMINUM TUBE, 0.102m (4 IN.) IN DIAMETER, WITH A CAST ALUMINUM BASE AND A 0.076m (3 IN.) SLIP FITTER TENON ON TOP. SEE DETAIL, THIS SHEET.

PAINT FINISH PROCESS

CLEANING AND PRETREATMENT

1) IMMERSION CLEANING WITH ALKALINE CLEANER TO REMOVE GREASE, DIRT AND OTHER CONTAMINANTS FOR MINIMUM OF 1 MINUTE AT HIGHER THAN AMBIENT TEMPERATURE.

2) WATER RINSE WHICH IS CONTINUOUSLY OVERFLOWED SO THAT THE MAIN BODY OF RINSE DOES NOT BECOME CONTAMINATED.

LIGHTING NOTES AND DETAILS

- 3) IMMERSION APPLICATION OF IRON PHOSPHATE TO PROVIDE A CLEAN GREASE FREE SURFACE AND A TRANSITION COATING BETWEEN THE BASE METAL AND PAINT.
- 4) WATER RINSE WHICH IS CONTINUOUSLY OVERFLOWED SO THAT THE MAIN BODY OF RINSE DOES NOT BECOME CONTAMINATED.
- 5) A SEALING LAYER OF A NON-CHROME MATERIAL TO BE APPLIED OVER THE IRON PHOSPHATE TO INCREASE CORROSION RESISTANCE OF PAINTED PARTS.
- 6) REVERSE OSMOSIS WATER RINSE WHICH IS CONTINUOUSLY OVERFLOWED.

APPLICATION AND CURING

POLYESTER POWDER TO BE APPLIED ELECTROSTATICALLY WITH POWDER GUNS IN A SPRAY BOOTH. POWDER TO BE CURED PROPERLY IN A CONVECTION OVEN WITH PROPER TIME/TEMPERATURE RATIOS AT APPROXIMATELY 400° F. PARTS TO BE PACKAGED PROPERLY TO PROTECT FINISHES.

TESTING AND SPECIFICATIONS

HARDNESS: MINIMUM HARDNESS OF THE CURED FILM WILL WITHSTAND A 2H PENCIL ACROSS THE COATED SURFACE AT A 45° ANGLE.

IMPACT: TESTED IN ACCORDANCE WITH ASTM TEST D2794

CROSSHATCH: IN ACCORDANCE WITH ASTM D3359

CONICAL MANDREL: IN ACCORDANCE WITH ASTM D522 WITH CONICAL MANDREL NO CRACKING AT 6mm END.

PINHOLE: ELECTRICAL CONTINUITY TEST AND A VISUAL EVALUATION OF THE CURED FILM SHALL NOT REVEAL THE PRESENCE OF PINHOLES ON EXPOSED SURFACES.

SALT SPRAY RESISTANCE

THE CURED FILM SHALL EXHIBIT THE FOLLOWING PERFORMANCE AS EVALUATED IN ACCORDANCE WITH ASTM METHOD B117 FOR AN EXPOSURE OF 1000 HRS.

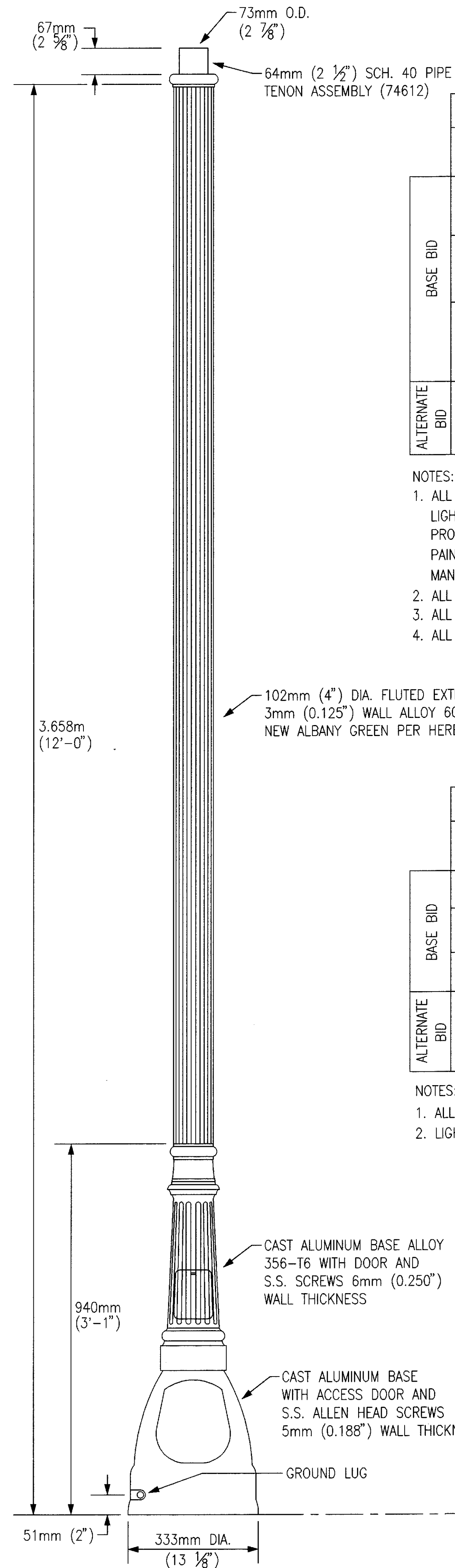
PROPERTY	CAST IRON
AVG. PAINT THICKNESS (mils) 2 - 6	4 - 10
CREEP (300mm AVG. SCRIBE) 0	5mm MAX.
THRU-FILM CORROSION 0	0.1% MAX.

REMOVAL OF EXISTING BRIDGE LIGHTING

THE EXISTING LUMINAIRES AND WIRES FOR THE LIGHTS ON THE BRIDGE ARE THE PROPERTY OF COLUMBUS SOUTHERN POWER COMPANY. THE POLES ARE THE PROPERTY OF THE CITY OF DELAWARE.

THE CONTRACTOR SHALL USE DUE CARE IN REMOVING THESE FIXTURES. THE REMOVAL OF THESE FIXTURES SHALL BE COORDINATED WITH SCOTT GRAUBARD, CITY OF DELAWARE, DIRECTOR OF PUBLIC WORKS, 614-368-1631. THE CONTRACTOR IS TO DELIVER THE REMOVED FIXTURES TO THE CITY OF DELAWARE FACILITY ON CHERRY STREET (APPROXIMATELY 1.5 MILES FROM THE PROJECT).

A LUMP SUM QUANTITY FOR ITEM 625, LIGHTING, MISC.: REMOVAL OF EXISTING LIGHTING, AS PER PLAN HAS BEEN INCLUDED IN THE LIGHTING SUB-SUMMARY.



LUMINAIRE SCHEDULE				
	MANUFACTURER	LUMINAIRE CATALOG NO. 100 W. HPS	LUMINAIRE CATALOG NO. 150 W. HPS	GLOBE MATERIAL
BASE BID	MAIN STREET LIGHTING	K118E - 100 WATT HPS IES TYPE 2	K118E - 150 WATT HPS IES TYPE 2	ACRYLIC
	SPRING CITY ELECTRIC	#118 REFRACTOR GLOBE, WASHINGTON CAST ALUMINUM CASING IES TYPE 2	#118 REFRACTOR GLOBE, WASHINGTON CAST ALUMINUM CASING IES TYPE 2	ACRYLIC
	UNIQUE SOLUTIONS	GV1A100HP48LB3N IES TYPE 2 WITH 3"-7" TENON ADAPTOR, CAT. NO. GVIA-73-B	GV1A100HP48LB3N IES TYPE 2 WITH 3"-7" TENON ADAPTOR, CAT. NO. GVIA-73-B	GLASS
ALTERNATE BID	UNIQUE SOLUTIONS	GV1A100HP48LB3N IES TYPE 2 WITH 3"-7" TENON ADAPTOR, CAT. NO. GVIA-73-B	GV1A100HP48LB3N IES TYPE 2 WITH 3"-7" TENON ADAPTOR, CAT. NO. GVIA-73-B	GLASS

NOTES:

1. ALL LUMINAIRES SHALL BE PAINTED TO MATCH THE SELECTED COLOR AND FINISH OF THE LIGHT POLE. MANUFACTURERS STANDARD PAINT SYSTEM CAN BE UTILIZED AS LONG AS PROPER COLOR AND FINISH MATCH IS ACHIEVED, OTHERWISE THE LUMINAIRE SHALL BE PAINTED WITH THE PAINT SYSTEM AS PROVIDED FOR THE LIGHT POLES. SUBMIT PAINT MANUFACTURERS SPECIFICATIONS AND COLOR CHIP FOR APPROVAL PRIOR TO PAINTING.
2. ALL LUMINAIRES SHALL BE MOUNTED ON A 76mm TENON PROVIDED ON LIGHT POLE.
3. ALL LUMINAIRES MOUNTED ON LIGHT POLES SHALL BE 100 WATT HIGH PRESSURE.
4. ALL LUMINAIRES SHALL BE OPERATED AT 240 VOLTS.

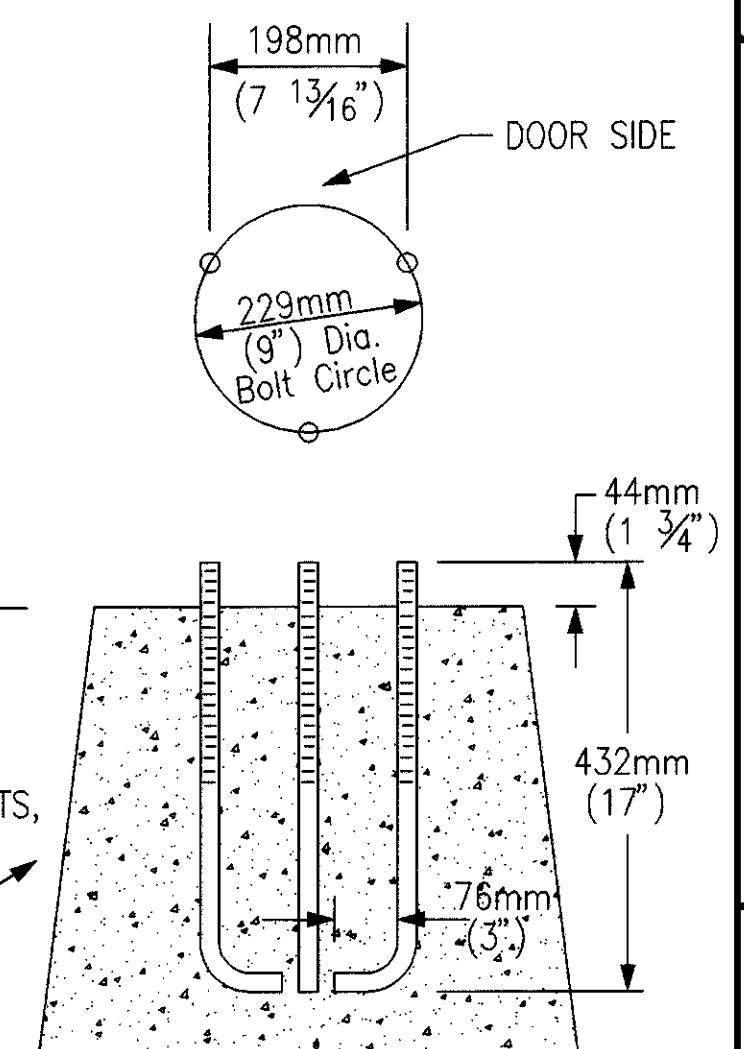
102mm (4") DIA. FLUTED EXTRUDED ALUM. TUBE
3mm (0.125") WALL ALLOY 6061-T6 POWDER COATED
NEW ALBANY GREEN PER HERBERTS #PU-8154-LG

POST TOP LIGHT POLE SCHEDULE			
	MANUFACTURER	MATERIAL OF CONSTRUCTION	LIGHT POLE CATALOG NO.
BASE BID	HAPCO	CAST ALUMINUM	B74514
	SPRING CITY ELECTRIC	CAST ALUMINUM	NORTH HAMPTON POLE
	UNIQUE SOLUTIONS	CAST ALUMINUM	S10/9CA - NEW ALBANY GREEN - US1479
ALTERNATE BID	HAPCO	FIBERGLASS	B74514

NOTES:

1. ALL LIGHT POLES SHALL BE EQUIPPED WITH A 76mm TENON FOR MOUNTING OF LUMINAIRE.
2. LIGHT POLES SHALL BE EXTRUDED AS ONE PIECE.

- (3) 19mm(3/4")-10NC GALV. STL. ANCHOR BOLTS, AASHTO M314-90 GRADE 55, 254mm(10") OF THREADED END GALV. PER ASTM A153.
- (3) 19mm(3/4")-10NC GALV. STL. HEX. NUTS
- (3) 19mm(3/4") GALV. STL. LOCKWASHERS
- (3) 19mm(3/4") GALV. STL. FLATWASHERS



LIGHTING PLAN

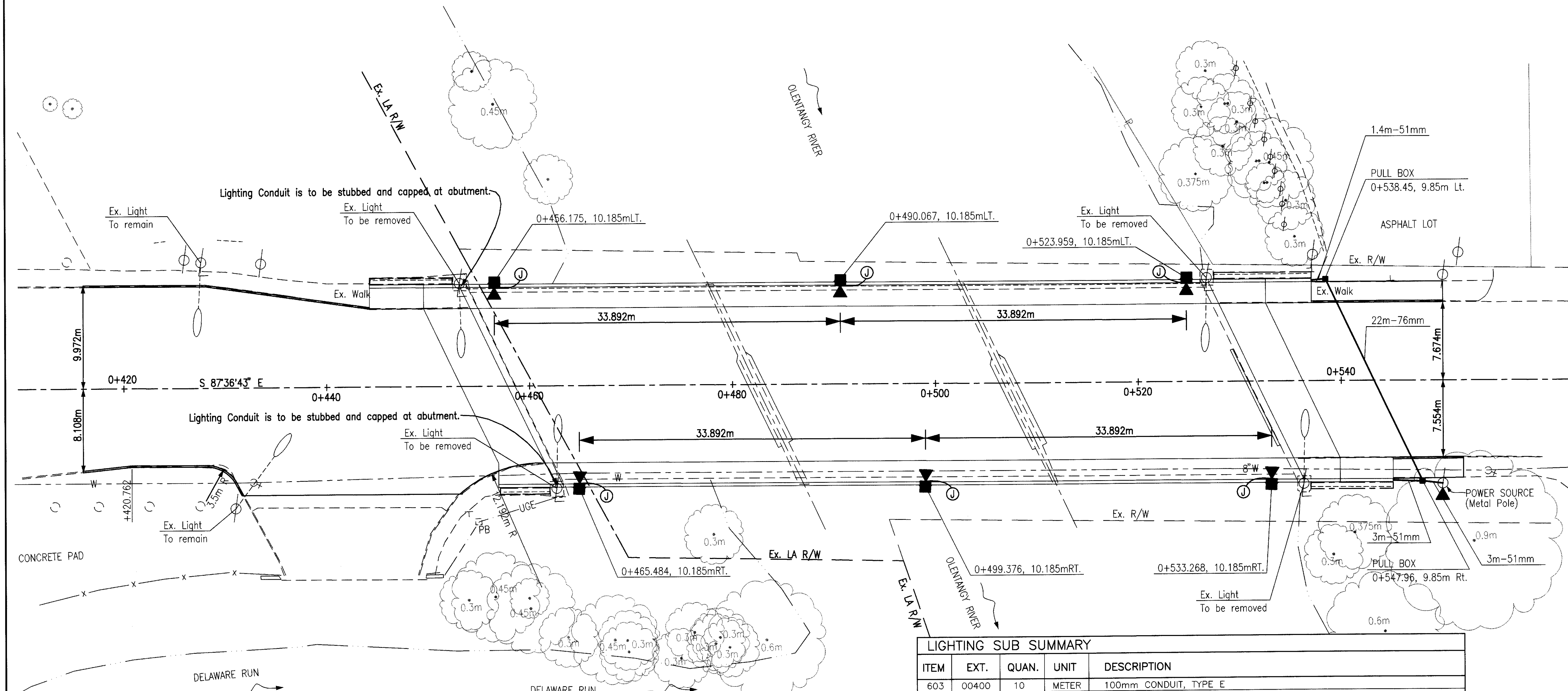
CALC. VJK
 BY: DATE: 10/26
 CHKD. ATH
 DATE: 4/97



LIGHTING PLAN

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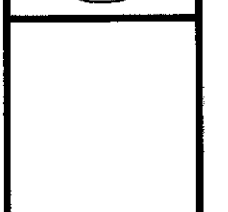
LIGHTING SUB SUMMARY					
ITEM	EXT.	QUAN.	UNIT	DESCRIPTION	
603	00400	10	METER	100mm CONDUIT, TYPE E	
625	00500	6	EACH	CONNECTOR KIT, TYPE II	
625	00600	6	EACH	CONNECTOR KIT, TYPE III	
625	10500	6	EACH	LIGHT POLE, MISC: AON3.658, AS PER PLAN	
625	10620	18	EACH	LIGHT POLE ANCHOR BOLTS, MISC: ON STRUCTURE	
625	23302	396	METER	NO. 6 AWG, 5000 VOLT DISTRIBUTION CABLE	
625	23410	58	METER	NO. 12 AWG POLE AND BRACKET CABLE	
625	25400	167	METER	CONDUIT, 51mm, 713.04	
625	25500	22	METER	CONDUIT, 76mm, 713.04	
625	25802	7.4	METER	CONDUIT, CONCRETE ENCASED, 51mm, 713.07	
625	27400	6	EACH	LUMINAIRE, POST TOP, 100 WATT HPS, TYPE III, 240 VOLTS, AS PER PLAN	
625	29002	29.4	METER	TRENCH, 0.6 M DEEP	
625	29900	6	EACH	JUNCTION BOX	
625	30700	2	EACH	PULL BOX, 713.08, 450mm	
625	32000	1	EACH	GROUND ROD	
625	33000	1	EACH	STRUCTURE GROUNDING SYSTEM	
625	34000	1	EACH	POWER SERVICE	
625	38000	LUMP		HIGH VOLTAGE TEST	
625	98200	LUMP		LIGHTING, MISC.: REMOVAL OF EXISTING LIGHTING, AS PER PLAN	
ALTERNATE BID ITEMS					
625	10500	6	EACH	LIGHT POLE, MISC: AON3.658, AS PER PLAN (HAPCO B74514)	
625	27400	6	EACH	LUMINAIRE, POST TOP, 100 WATT HPS, TYPE III, 240 VOLTS, AS PER PLAN (UNIQUE SOLUTIONS #GV1A100HP48LB3N)	

- Existing Light
- Junction Box
- Proposed Post Top Light
- Power Service
- Pullbox

For Lighting Details and Notes, See Sheet No. 16.

FINAL
1796LGT
ATH
8/5/97

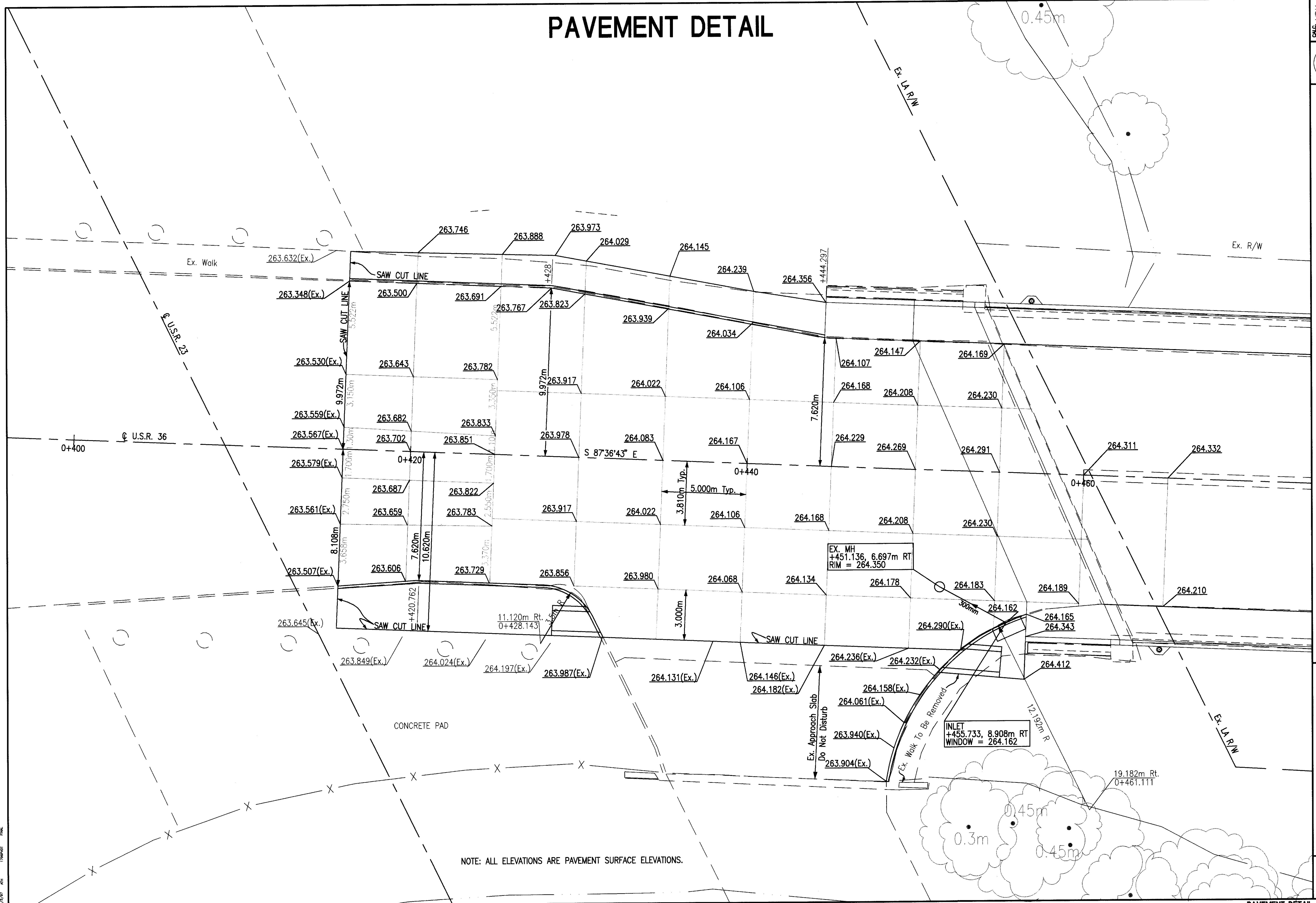
PAVEMENT DETAIL



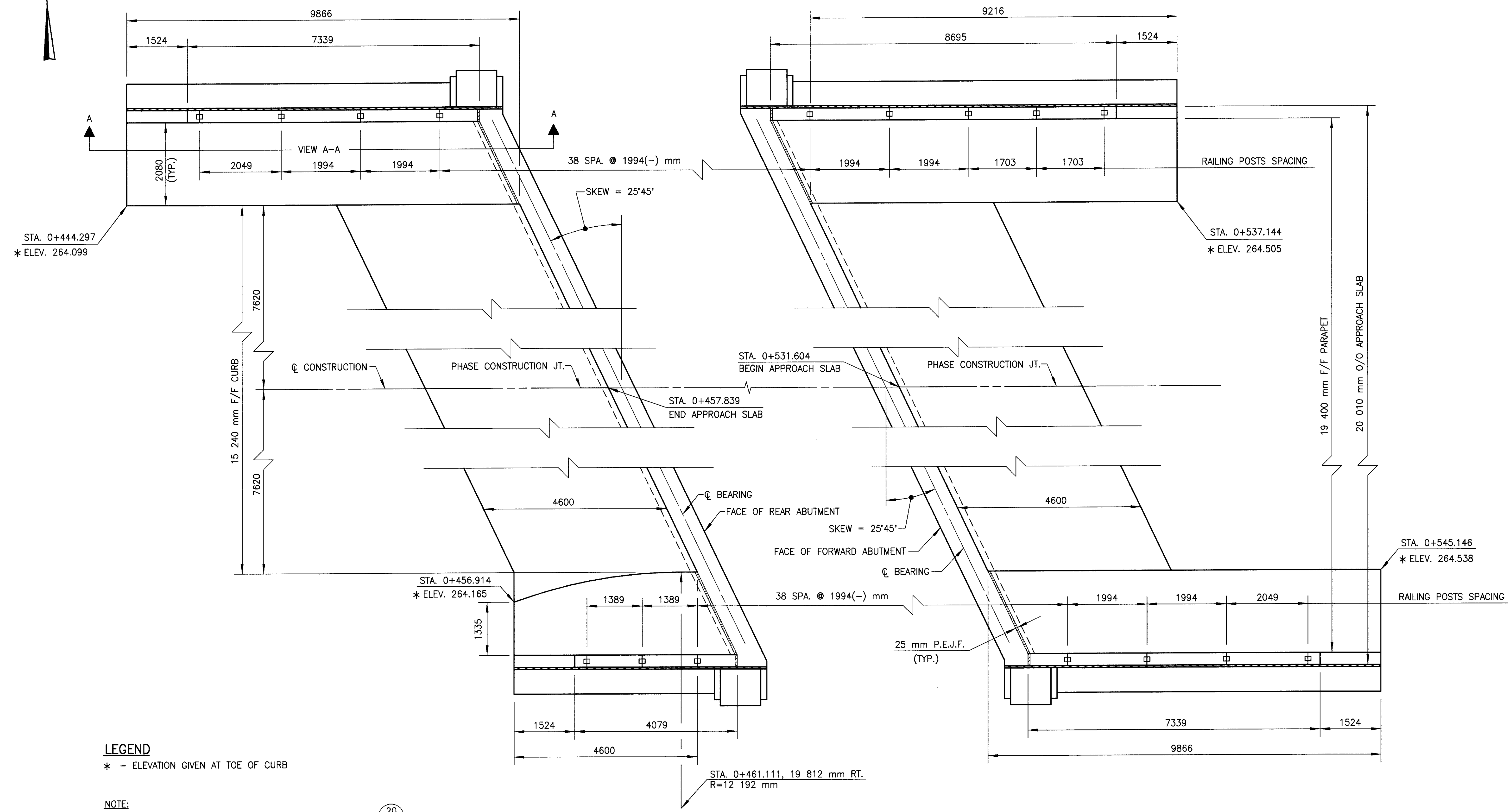
PAVEMENT DETAIL

DEL-36-16.736

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NOTE: ALL ELEVATIONS ARE PAVEMENT SURFACE ELEVATIONS.



NOTE:
 FOR SECTIONS, NOTES AND ADDITIONAL DETAILS SEE SHEET 20
34

ALL DIMENSIONS ARE IN MILLIMETERS
 AND ALL ELEVATIONS ARE IN METERS
 UNLESS OTHERWISE SHOWN.

**PLAN OF APPROACH SLAB
 AT REAR ABUTMENT**

**PLAN OF APPROACH SLAB
 AT FORWARD ABUTMENT**

DEL-36-16.736	APPROACH SLAB DETAILS BRIDGE NO. DEL-36-16736 OVER OLENTANGY RIVER	STICKLEN - BELSHEIM & ASSOCIATES 1050 KINGSMILL PARKWAY COLUMBUS, OHIO 43229
19 34	DATE 4/25/97	REVIEWED G.E.D. STRUCTURE FILE NUMBER 2100878
DESIGNED LYH CHECKED G.T.	DRAWN LYH REVISED	DATE 4/25/97

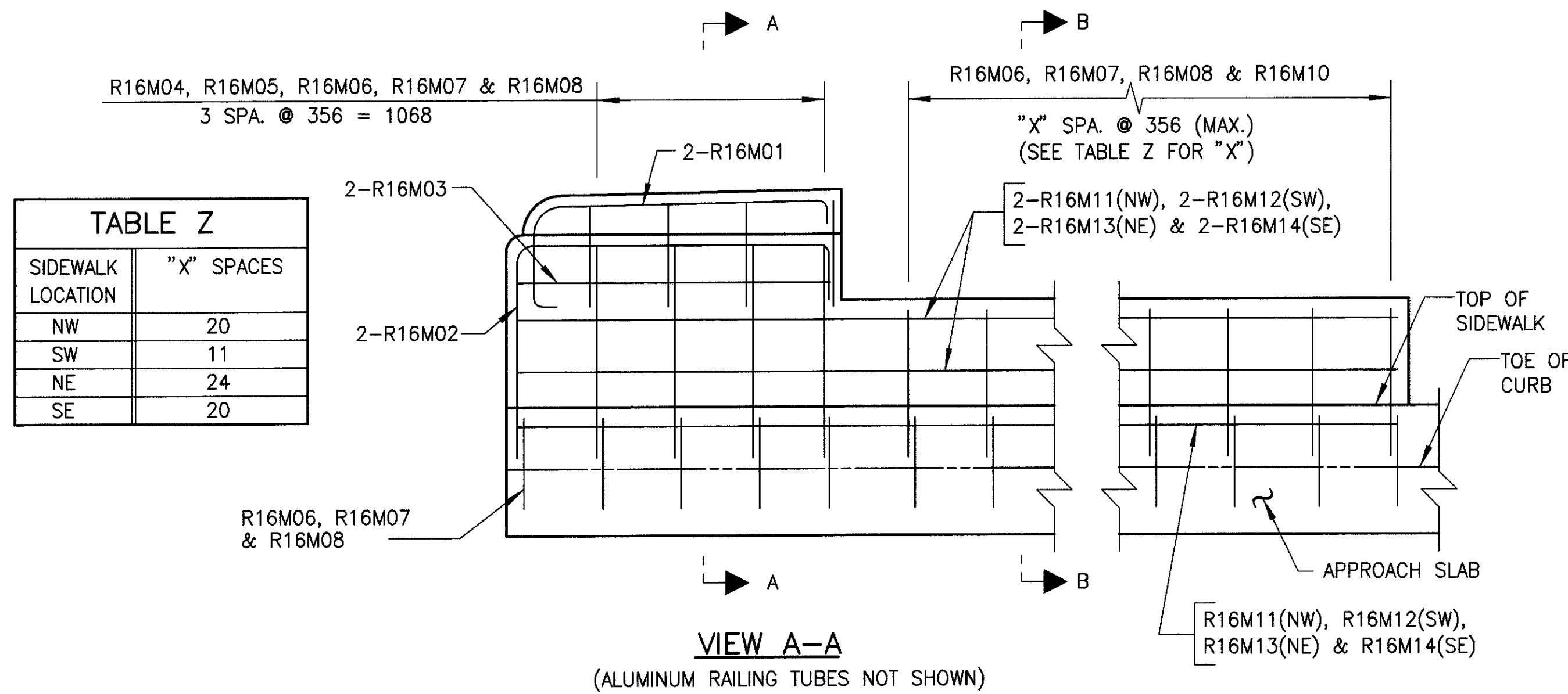
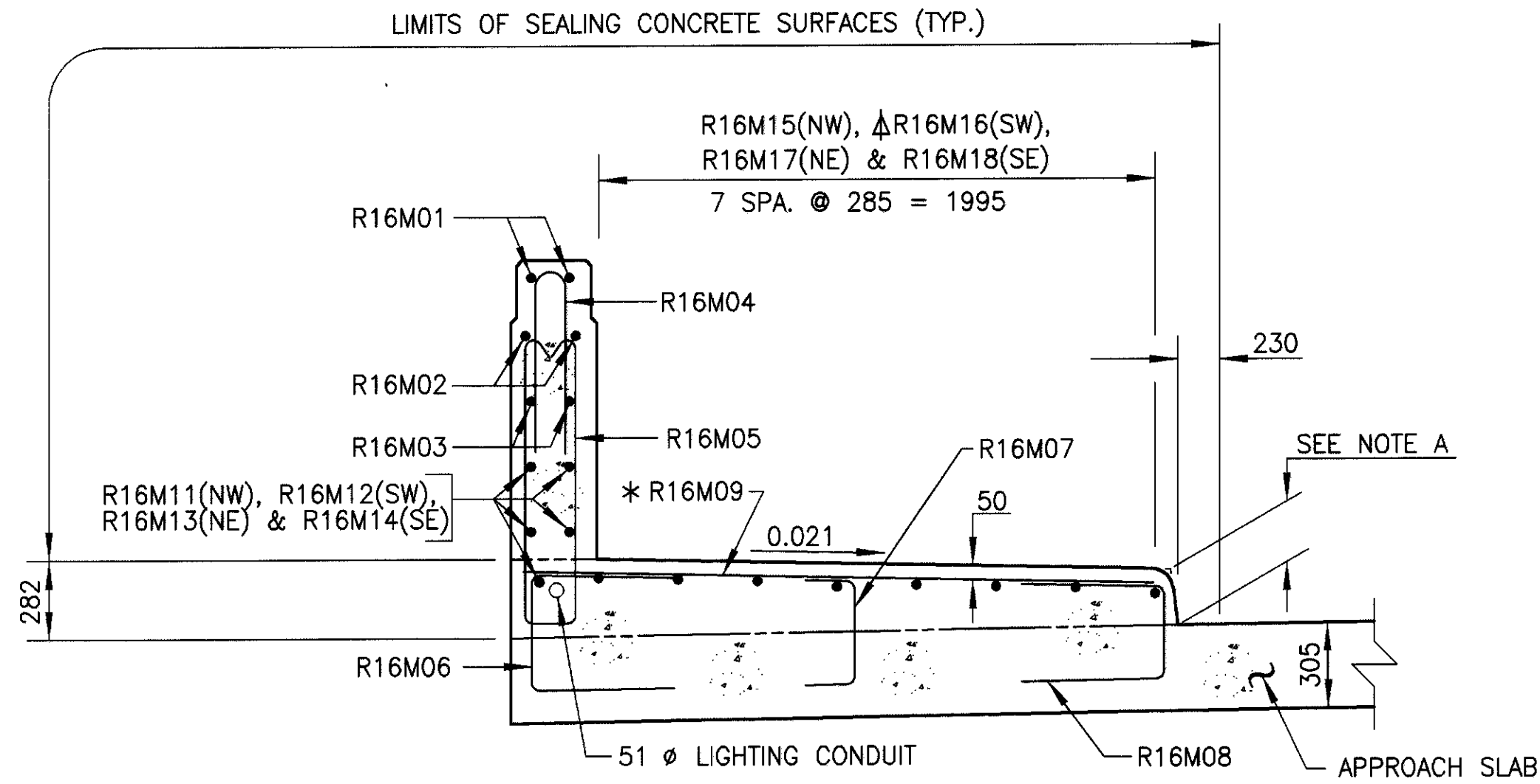
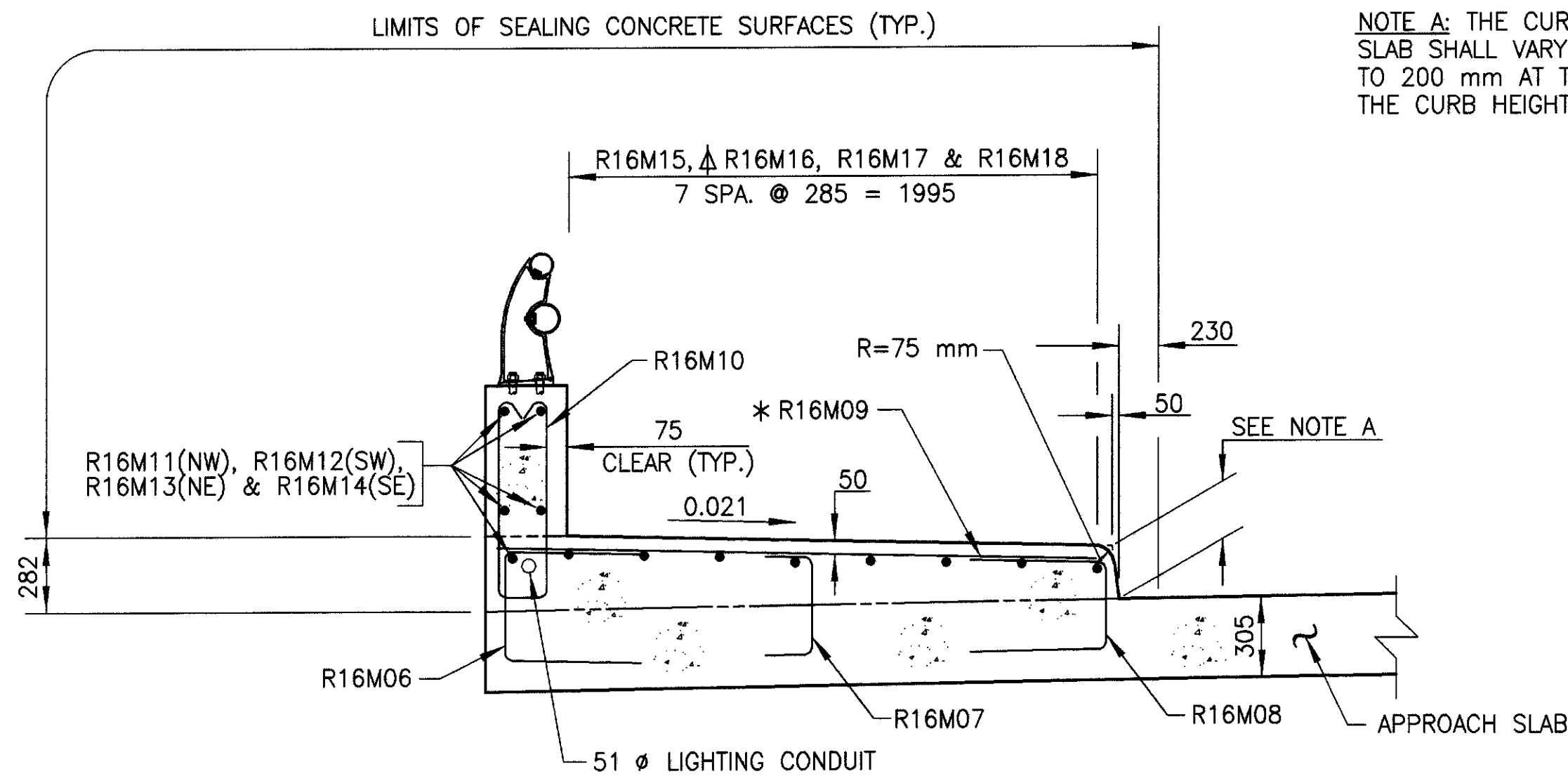


TABLE Z	
SIDEWALK LOCATION	"X" SPACES
NW	20
SW	11
NE	24
SE	20



SECTION A-A



SECTION B-B

NOTE A: THE CURB HEIGHT AT THE RIGHT REAR APPROACH SLAB SHALL VARY FROM 150 mm AT STATION 0+456.914 TO 200 mm AT THE ABUTMENT. AT EVERY OTHER LOCATION THE CURB HEIGHT SHALL BE 200 mm.

APPROACH SLAB PARAPET & SIDEWALK REINFORCING STEEL LIST

MARK	APPROACH SLAB PARAPET & SIDEWALK					LENGTH (mm)	WEIGHT (kg)	TYPE	DIMENSIONS (mm)						
	NW	SW	NE	SE	TOTAL				A	B	C	D	E	R	INC.
R16M01	2	2	2	2	8	2005	25	4	1345	1220	460	125	25	110	
R16M02	2	2	2	2	8	2720	34	92	1065	1420					
R16M03	2	2	2	2	8	1425	18	ST							
R16M04	4	4	4	4	16	955	24	2	455	115					
R16M05	4	4	4	4	16	2460	61	93	180	1040	1040				
R16M06	26	17	30	26	99	870	134	5	410	270	270				
R16M07	26	17	30	26	99	830	128	5	370	270	270				
R16M08	26	17	30	26	99	790	121	5	330	270	270				
R16M09	26	17	30	26	99	2225	342	ST							
R16M10	21	12	25	21	79	1840	226	93	180	730	730				
R16M11	5				5	8730	68	ST							
R16M12		5			5	5480	43	ST							
R16M13			5		5	10 095	78	ST							
R16M14				5	5	8735	68	ST							
	1				1	8730									
R16M15	SERIES OF 8				SERIES OF 8	TO 9675	114	ST							135
		1			1	4505									
R16M16	SERIES OF 8				SERIES OF 8	TO 5450	62	ST							135
						9125									
R16M17			SERIES OF 8		SERIES OF 8	TO 10 070	119	ST							135
						8645									
R16M18			SERIES OF 8	SERIES OF 8	TO 9590		113	ST							135
						TOTAL =	1778								

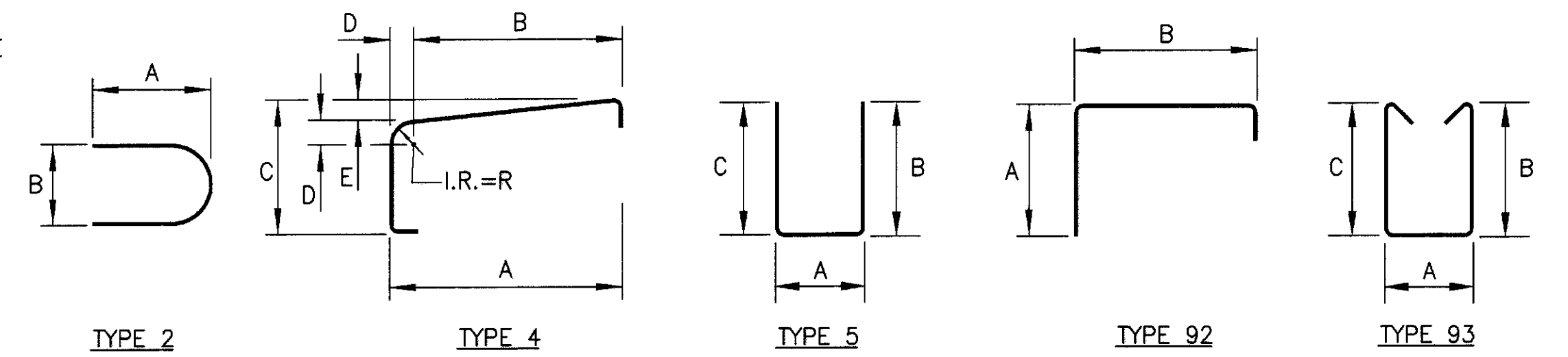
BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED

"R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED

"ST" WRITTEN IN THE TYPE COLUMN INDICATES A STRAIGHT BAR.

ALL REINFORCING STEEL TO BE EPOXY COATED.

FIELD BEND BARS WHERE NECESSARY.



BENDING DIAGRAMS

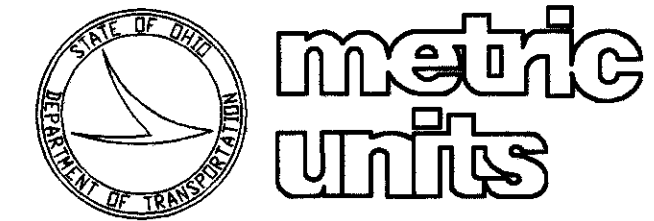
LEGEND

- * - FAN BARS TO FIT EACH END OF SIDEWALK AT ABUTMENTS
- △ - FAN BARS TO FIT CURVED SIDEWALK AT RIGHT REAR ABUTMENT.
- NW - NORTHWEST
- SW - SOUTHWEST
- NE - NORTHEAST
- SE - SOUTHEAST

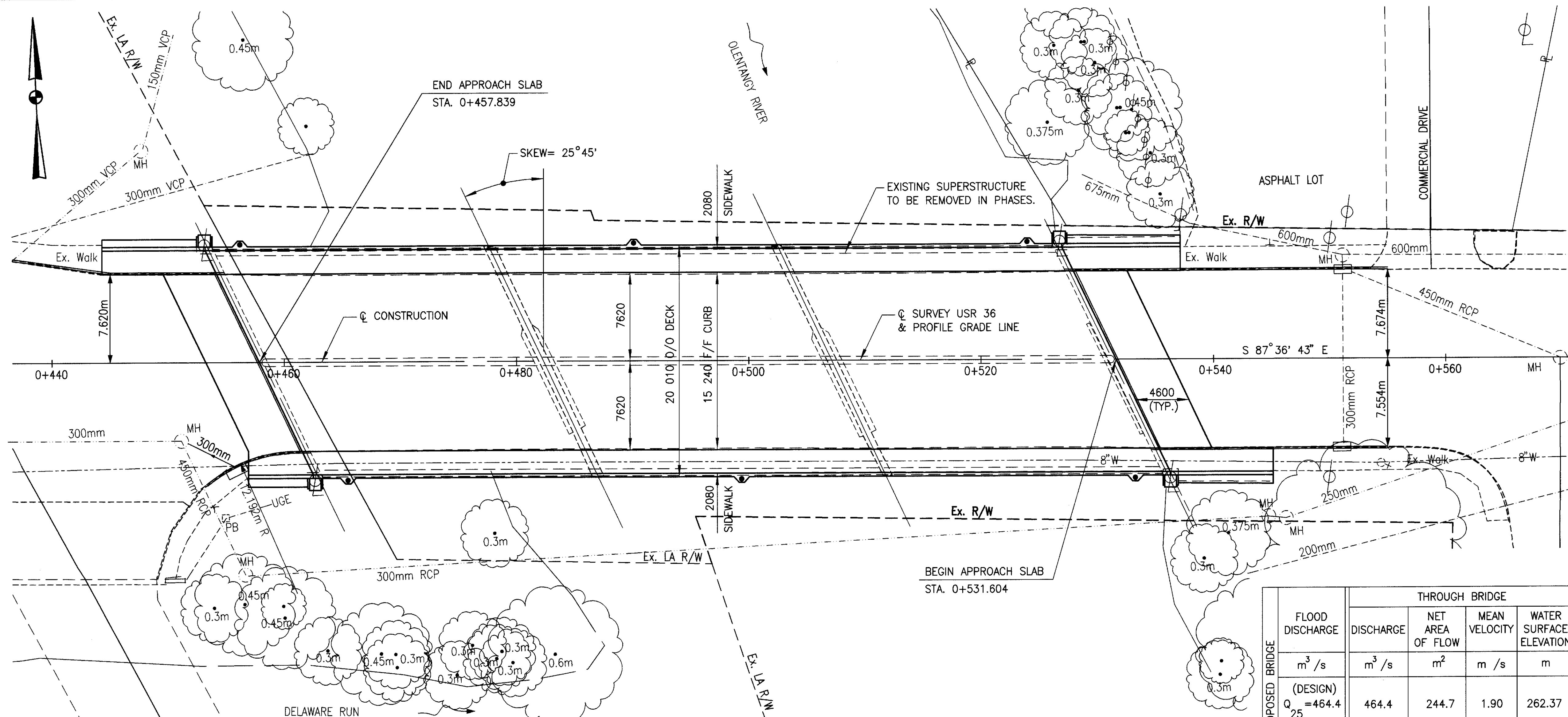
NOTE: SEE STD. DWG. AS-1-81M FOR ADDITIONAL APPROACH SLAB REINFORCING STEEL REQUIRED.

REFERENCE: FOR ADDITIONAL NOTES AND DETAILS SEE STD. DWG. BR-2-82M.

PAYMENT: CONCRETE AND REINFORCEMENT FOR PARAPETS AND SIDEWALK SHALL BE INCLUDED WITH APPROACH SLAB QUANTITIES FOR PAYMENT.



ALL DIMENSIONS ARE IN MILLIMETERS AND ALL ELEVATIONS ARE IN METERS UNLESS OTHERWISE SHOWN.



PLAN

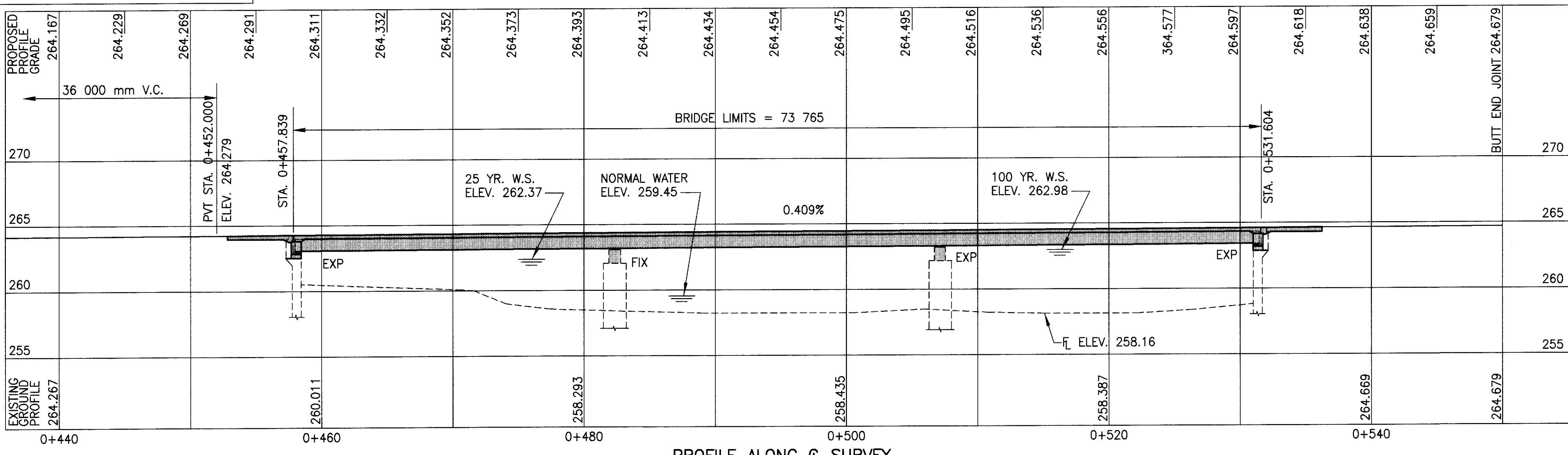
BENCH MARK #1, ELEV. 264.889
 "D" CUT ON SW SIDE CONC. BASE OF ODD LOTS SIGN N. SIDE WILLIAM ST. & EAST OF BRIDGE
 STA. 0+551.044, 11.973 m LT.

TRAFFIC: 2017 ADT = 30660
 ADTT = 2453

DRAINAGE AREA = 1002.3 km²

PROPOSED BRIDGE	FLOOD DISCHARGE m ³ /s	THROUGH BRIDGE			OVER ROADWAY		UPSTREAM BACKWATER ELEVATION m
		DISCHARGE m ³ /s	NET AREA OF FLOW m ²	MEAN VELOCITY m/s	WATER SURFACE ELEVATION m	DISCHARGE m ³ /s	
(DESIGN) Q ₂₅ = 464.4	464.4	244.7	1.90	262.37	0	0	262.50
Q ₁₀₀ = 569.2	569.2	284.5	2.00	262.98	0	0	263.09

THE LOWEST ELEVATION OF THE BOTTOM OF THE SUPERSTRUCTURE CLEARS Q25 DESIGN YEAR WATER SURFACE ELEVATION BY 0.57 M.



PROFILE ALONG C SURVEY

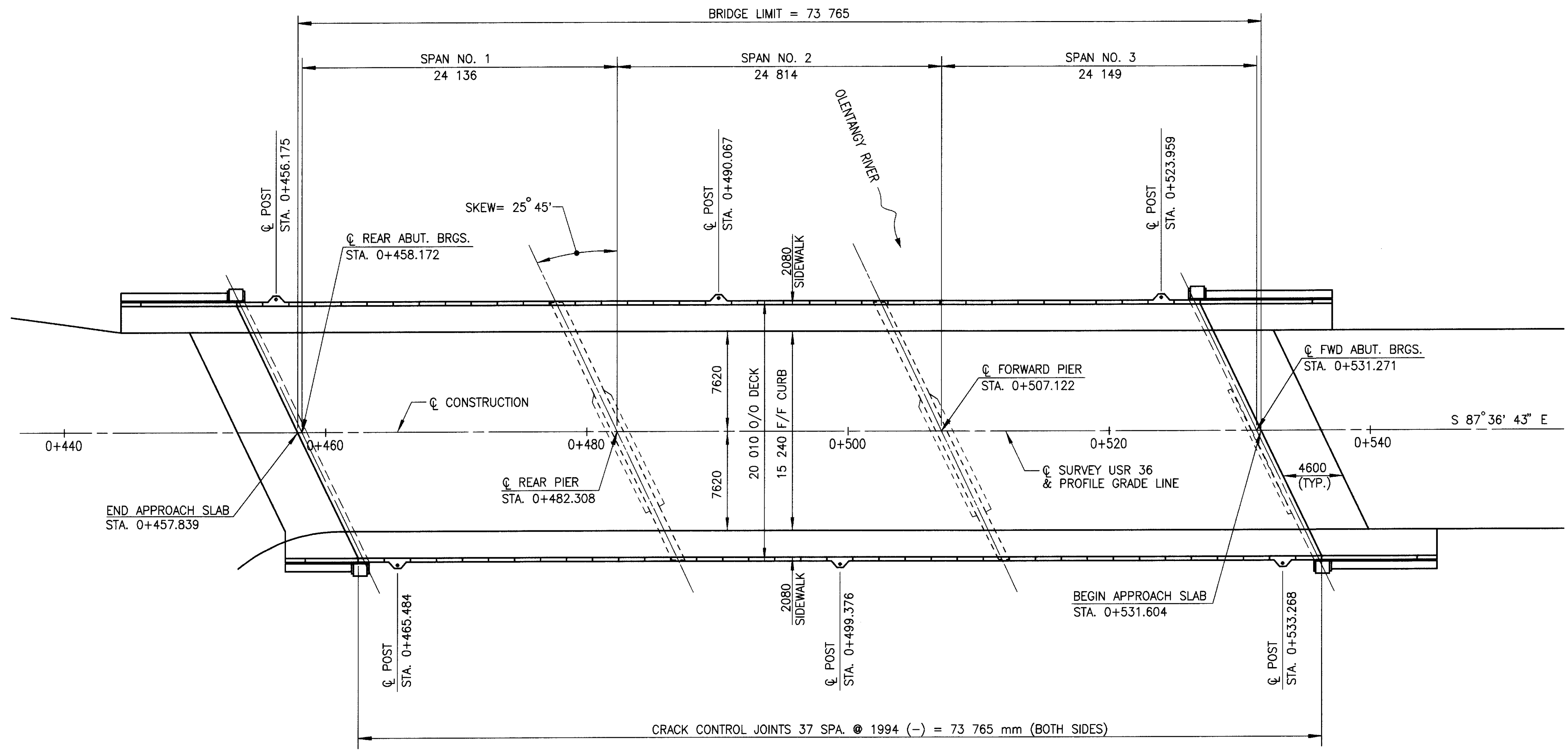
EXISTING STRUCTURE

TYPE: 3 SPAN CONTINUOUS STEEL BEAM WITH CONCRETE DECK AND CONCRETE/STONE SUBSTRUCTURE UNITS
 SPANS: 24 136± - 24 814± - 24 149± C/C BEARINGS
 ROADWAY: 15 240 F/F CURBS INCLUDING 610 mm MEDIAN
 SIDEWALKS: 1829 (BOTH SIDES)
 SKEW: 25° 45' RIGHT FORWARD
 LOADING: S-20-46
 DECK: CONCRETE
 WEARING SURFACE: ASPHALT CONCRETE
 APPROACH SLABS: LENGTH UNKNOWN
 ALIGNMENT: TANGENT
 DATE BUILT: 1952
 STRUCTURE FILE NUMBER: 2100878

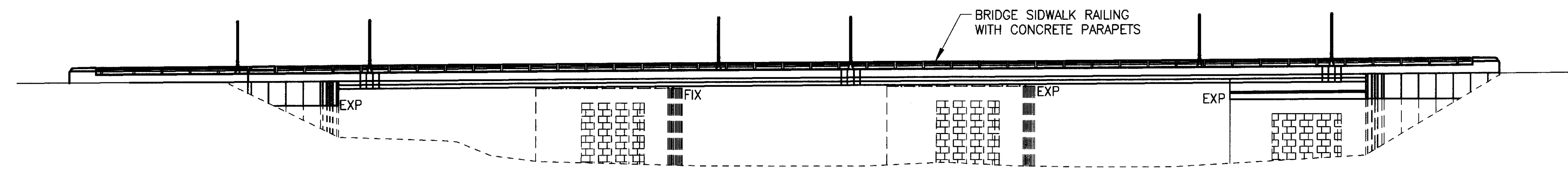
PROPOSED STRUCTURE

PROPOSED WORK: NEW 3 SPAN CONTINUOUS COMPOSITE STEEL BEAM WITH REINFORCED CONCRETE DECK & MODIFIED EXISTING CONCRETE/STONE SUBSTRUCTURE UNITS.
 SPANS: 24 136 - 24 814 - 24 149 C/C BEARINGS
 ROADWAY: 15 240 F/F CURBS
 SIDEWALKS: 2080 (BOTH SIDES)
 SKEW: 25° 45' RIGHT FORWARD
 LOADING: MS18 (CASE II) AND THE ALTERNATE MILITARY LOADING
 WEARING SURFACE: MONOLITHIC CONCRETE
 APPROACH SLABS: AS-1-81M (4600 mm LONG)
 ALIGNMENT: TANGENT
 CROWN: 0.016
 QUADRANGLE: DELAWARE
 LATITUDE: 40° 17' 54"
 LONGITUDE: 83° 03' 43"

STICKLEN - BELSHEIM & ASSOCIATES
 1050 KINGSMILL PARKWAY
 COLUMBUS, OHIO 43229
 DATE: 4/25/97
 REVIEWED: G.E.D. 4/25/97
 STRUCTURE FILE NUMBER: 2100878
 DRAWN: BKJ
 DESIGNED: BKJ/G.T.
 CHECKED: G.T.
 DELAWARE COUNTY
 STA. 0+457.839
 STA. 0+531.604
 SITE PLAN
 BRIDGE NO. DEL-36-16736
 OVER O'LEARY RIVER
 DEL-36-16.736
 1/14
 21/34



PLAN



ELEVATION

DESIGNED		LYH	CHECKED	G.T.
DRAWN		LYH	REVISED	
REVIEWED	G.E.D.	STRUCTURE FILE NUMBER		2100878
DATE	4/25/97			
STICKLEN - BELSHEIM & ASSOCIATES 1050 KINGSMILL PARKWAY COLUMBUS, OHIO 43229				
GENERAL PLAN & ELEVATION BRIDGE NO. DEL-36-16736 OVER OLENTANGY RIVER				
DEL-36-16.736				
2 / 14				
22 34				

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81M DATED 10-25-94
 BR-2-82M DATED 11-01-82
 BS-1-93M DATED 12-15-94

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING: MS18, CASE II AND THE ALTERNATE MILITARY LOADING.

DESIGN DATA:

CONCRETE CLASS S - COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)
 CONCRETE CLASS C - COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)
 REINFORCING STEEL - ASTM A615M, A616M OR A617M
 GRADE 420 MINIMUM YIELD STRENGTH 420 MPa.
 STRUCTURAL STEEL - ASTM A588M - YIELD STRENGTH 350 MPa

HIGH STRENGTH BOLTS - ASTM A-325M
 - DESIGN SLIP RESISTANCE = 145 MPa
 (DESIGN SLIP RESISTANCE IS BASED ON THE AASHTO CLASS A MINIMUM SLIP COEFFICIENT OF 0.33)

DECK PROTECTION METHOD:

- 65 mm CONCRETE COVER
- EPOXY COATED REINFORCING STEEL
- SEALING OF CONCRETE SURFACES
- CLASS S CONCRETE

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

EXISTING STRUCTURE PLANS: PLANS PERTAINING TO THE EXISTING STRUCTURE MAY BE OBTAINED OR VIEWED BY INTERESTED PARTIES AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 6 OFFICE IN DELAWARE, OHIO.

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, PORTIONS OF THE EXISTING STRUCTURE SHALL BE REMOVED ACCORDING TO THE PHASE CONSTRUCTION DETAILS.
 THE REAR ABUTMENT SHALL BE REMOVED TO ELEVATION 262.368 ±.
 THE REAR PIER SHALL BE REMOVED TO ELEVATION 262.530 ±.
 THE FORWARD PIER SHALL BE REMOVED TO ELEVATION 262.280 ±.
 THE FORWARD ABUTMENT SHALL BE REMOVED TO ELEVATION 262.667 ±.

REMOVALS OVER WATER: REASONABLE CARE SHALL BE USED BY THE CONTRACTOR TO PREVENT REMOVED MATERIALS FROM FALLING INTO THE WATER. ANY MATERIALS DROPPED SHALL BE IMMEDIATELY RECOVERED AND DISPOSED AWAY FROM THE SITE.

PORTIONS OF STRUCTURE REMOVED, OVER 6 METER SPAN, AS PER PLAN

DESCRIPTION: THIS WORK SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION 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 41 KILOGRAM CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

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

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVAL 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS WHERE SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND 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, 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.

SUBSTRUCTURE CONCRETE 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 16 KILOGRAM FOR REMOVAL WITHIN 450 mm OF PORTIONS TO BE PRESERVED. OUTSIDE THE 450 mm LIMIT, A HAMMER HEAVIER THAN 16 KILOGRAM, BUT NOT TO EXCEED 41 KILOGRAM, MAY BE USED AT 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.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN: UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 GRANULAR MATERIAL PLACED IN 150 mm LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

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 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

REPLACEMENT OF EXISTING REINFORCING STEEL: ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT THE CONTRACTOR'S COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. NEW STEEL SHALL BE PAID FOR UNDER THE APPROPRIATE ITEM 511, CLASS C CONCRETE.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). 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.

CONCRETE PARAPETS: AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25 mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE RAILING. THE SAWCUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE RAILING, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE SIDEWALK. THE SAWCUTS SHALL BE PLACED AS SHOWN ON GENERAL PLAN, SHEET [2/714]. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE 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, A NOMINAL WIDTH OF 6 mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25 mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E TO A MINIMUM DEPTH OF 25 mm. THE BOTTOM 13 mm OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

IF THE CONTRACTOR CHOOSES TO USE SLIPFORM CONSTRUCTION METHODS, ALL THE ABOVE SHALL STILL BE APPLICABLE IN ADDITION TO CMS 511.081 WHICH REQUIRES A 40 mm DEEP CONTROL JOINT.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK ARE INCLUDED UNDER ITEM 517, RAILING.

PROTECTION OF CONCRETE AND STONE SURFACES: AFTER THE STEEL BEAMS ARE ERECTED AND PRIOR TO THE PLACEMENT OF THE CONCRETE DECK, THE CONCRETE AND STONE SUBSTRUCTURES ARE SUSCEPTIBLE TO STAINING BY WATER RUNOFF FROM THE A588M WEATHERING STEEL BEAMS AND CROSSFRAMES. THE CONTRACTOR SHALL PROVIDE A METHOD ACCEPTABLE TO THE ENGINEER TO PREVENT WATER RUNOFF FROM STAINING THE SUBSTRUCTURES. PAYMENT SHALL BE INCLUDED WITH ITEM 513 - STRUCTURAL STEEL, (AISC CATEGORY I), AS PER PLAN (ASTM A588M).

MAINTENANCE OF TRAFFIC: FOR FURTHER DETAILS SEE SHEET $\frac{4}{34}$ TO $\frac{11}{34}$.

ITEM 520, PNEUMATICALLY PLACED MORTAR, AS PER PLAN (TUCK-POINTING) IN ADDITION TO THE REQUIREMENTS IN CMS 520, THE FOLLOWING SHALL ALSO APPLY. TUCK-POINTING SHOULD BE ACCOMPLISHED ONLY ABOVE THE WATER LINE. IT IS RECOMMENDED TO EXECUTE THE WORK AT PERIODS OF LOW FLOW TO GAIN MAXIMUM ACCESS. THE PROCEDURE SHOULD BE ACCOMPLISHED BY AN EXPERIENCED PNEUMATIC EQUIPMENT OPERATOR TO AVOID INEFFECTIVE MORTAR PLACEMENT AND FINISHING. CURING SHOULD BE ACCOMPLISHED AT TEMPERATURES ABOVE 10 DEGREES CELSIUS.

CONSTRUCTION PROCEDURE

1. THOROUGHLY CLEAN THE HORIZONTAL AND VERTICAL MASONRY JOINTS OF ALL LOOSE AND UNSOUND MORTAR OR FOREIGN MATERIAL.
2. SATURATE THE JOINT SURFACES WITH CLEAN WATER BEFORE APPLYING MORTAR.
3. FILL ALL THE VOIDS WITH MORTAR, MAKING THE SURFACE FLUSH WITH THE ADJACENT FACE OF THE STONE.
4. CURE ALL NEW MORTAR WITH WET BURLAP OR CLEAR CURING COMPOUND.
5. CLEAN THE FACE OF THE MASONRY.

THE METHOD OF MEASUREMENT SHALL BE THE ACTUAL LENGTH OF JOINTS SEALED IN METERS.

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

NEOPRENE PLACEMENT
 INSTALL A 900 mm WIDE STRIP, 2.5 mm THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLANS. SECURE THE 900 mm WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 32 x 3.0 mm (LENGTH x SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 25 mm OUTSIDE DIAMETER, 3 mm GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 225 mm. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 150 mm (+/-) FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 150 mm (+/-) FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF THE ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 150 mm CENTER TO CENTER ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST 300 mm IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, 150 mm IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS. THE HORIZONTAL STRIPS SHALL EXTEND A MINIMUM OF 450 mm BEYOND THE VERTICAL PHASE CONSTRUCTION/CONTRACTION JOINT.

THE NEOPRENE SHEETING SHALL BE 2.5 mm THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E. I. DUPONT DE NUMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

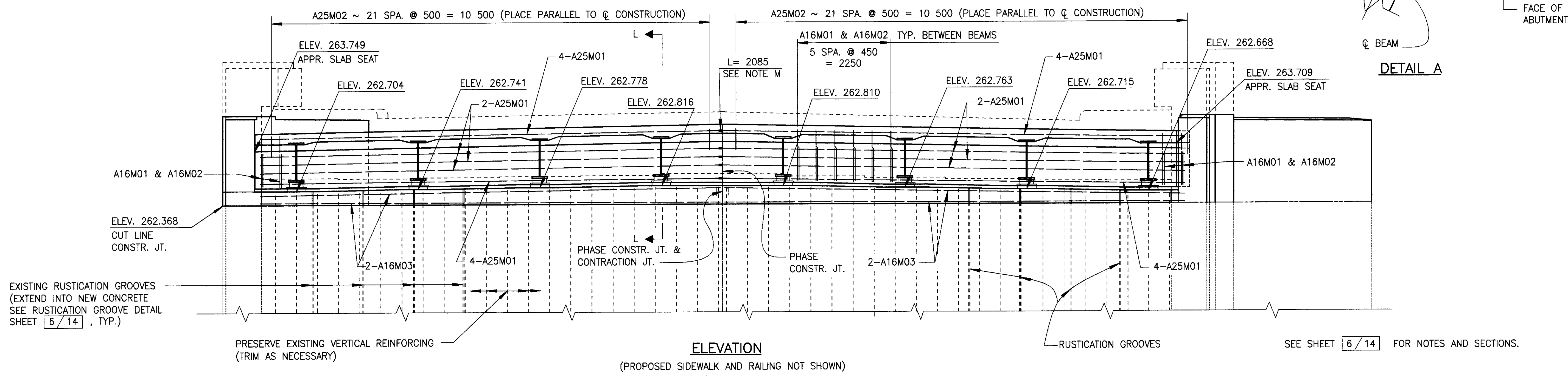
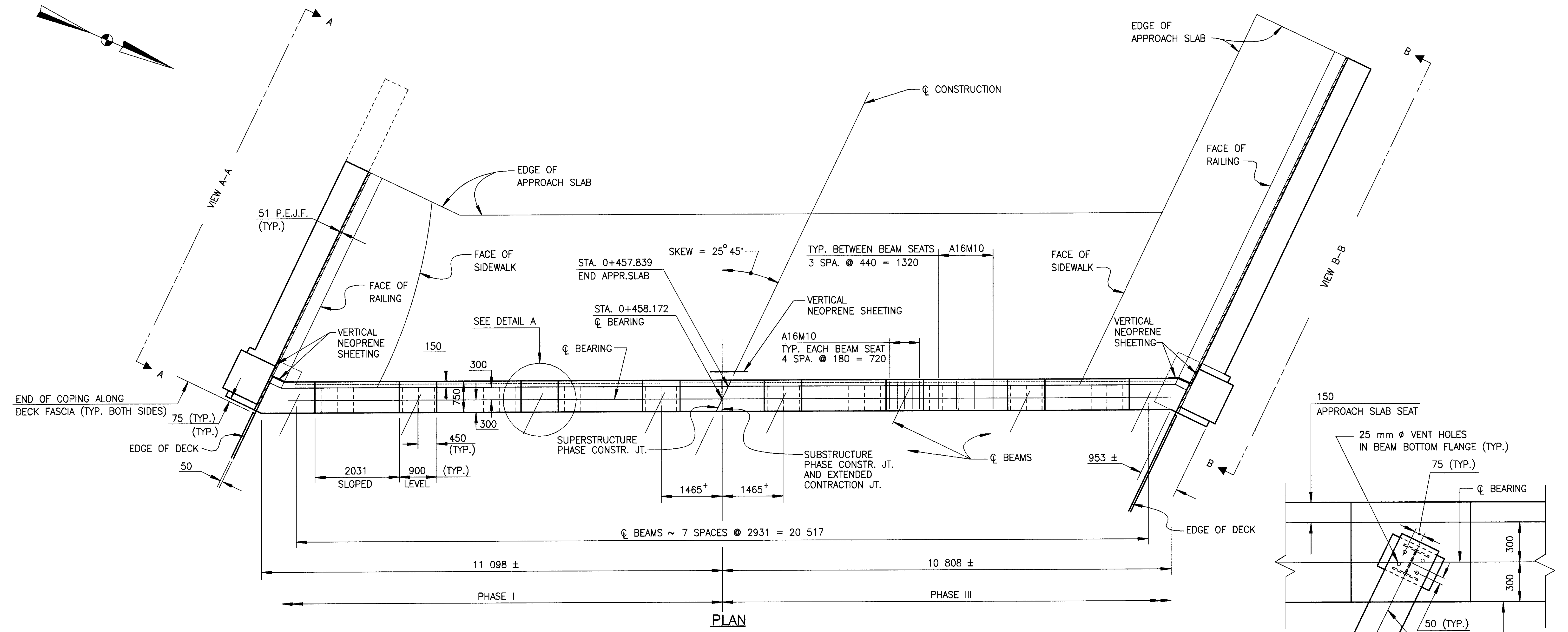
DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, mm	D751	2.5 +/- 0.25
BREAKING STRENGTH, GRAB WXF, N, MINIMUM	D751	3130 x 3130
ADHESIVE 25 mm STRIP, 50 mm MINIMUM, N MINIMUM	D751	27
BURST STRENGTH (MULLEN) MPa, MINIMUM	D751	9.65
HEAT AGING 70 HOURS T 100°C, 180° BEND WITHOUT CRACKING	D2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLINESS 1 HOUR AT -40°C, BEND AROUND 6 mm MANDREL	D2136	NO CRACKING OF COATING

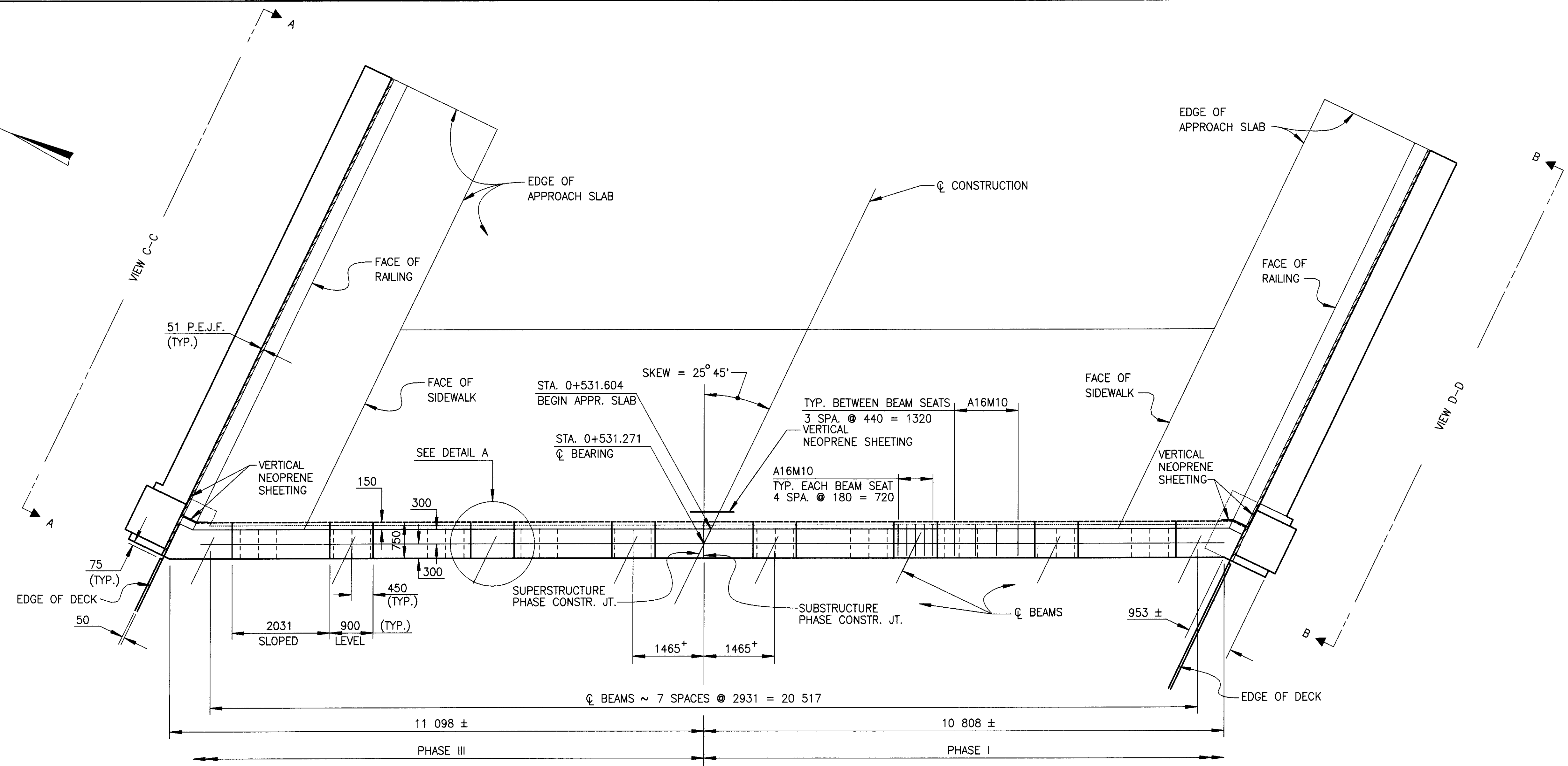
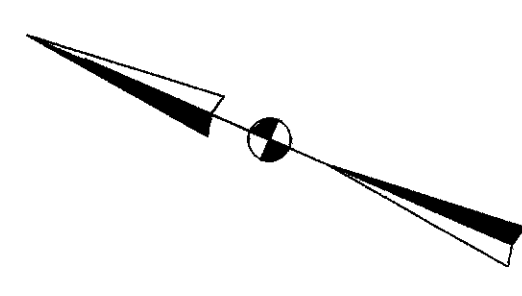
PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 511, CLASS C CONCRETE, ABUTMENT, AS PER PLAN.

QUANTITIES CALCULATED BY: BKJ - APRIL 9, 1997					ESTIMATED QUANTITIES				QUANTITIES CHECKED BY: LYH - APRIL 23, 1997			
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENT	PIER	SUPERSTR.	GENERAL	ABUTMENT	PIER	SUPERSTR.	GENERAL
202	11203	LUMP	SUM	PORTIONS OF STRUCTURE REMOVED, OVER 6 METER SPAN, AS PER PLAN								
503	21301	LUMP	SUM	UNCLASSIFIED EXCAVATION, AS PER PLAN								
511	31504	600.0	CU METER	CLASS S CONCRETE, SUPERSTRUCTURE			600.0					
511	43200	23.5	CU METER	CLASS C CONCRETE, PIER		23.5						
511	45701	69.0	CU METER	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	69.0							
SPECIAL	51267500	696	SQ METER	SEALING OF CONCRETE SURFACES **			696					
SPECIAL	51267502	592	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY) **	283	309						
SPECIAL	51273000	88.5	SQ METER	TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN **			88.5					
513	16111	LUMP	SUM	STRUCTURAL STEEL, (AISC CATEGORY I), AS PER PLAN (ASTM A588M)			LUMP					
513	20000	6672	EACH	WELDED STUD SHEAR CONNECTOR			6672					
516	13600	5	SQ METER	25 MM PREFORMED EXPANSION JOINT FILLER	5							
516	13900	22	SQ METER	51 MM PREFORMED EXPANSION JOINT FILLER	22							
516	44101	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (55.8mm x 535mm x 305mm ELASTOMERIC PAD WITH 50mm x 685mm x 331mm STEEL LOAD PLATE), AS PER PLAN **		8						
516	44101	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (51.6mm x 535mm x 345mm ELASTOMERIC PAD WITH 50mm x 561mm x 371mm STEEL LOAD PLATE), AS PER PLAN **		8						
516	44101	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (74.2mm x 405mm x 240mm ELASTOMERIC PAD WITH 38mm x 431mm x 266mm STEEL LOAD PLATE), AS PER PLAN **	16							
517	71501	174.5	METER	RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL), AS PER PLAN **			174.5					
518	21200	42	CU METER	POROUS BACKFILL WITH FILTER FABRIC	42							
519	11101	6.5	SQ METER	PATCHING CONCRETE STRUCTURE, AS PER PLAN	4.5	2.0						
SPECIAL	51912600	10.0	METER	CONCRETE REPAIR BY EPOXY INJECTION **	10.0							
520	11201	585	METER	PNEUMATICALLY PLACED MORTAR, AS PER PLAN	85	500						

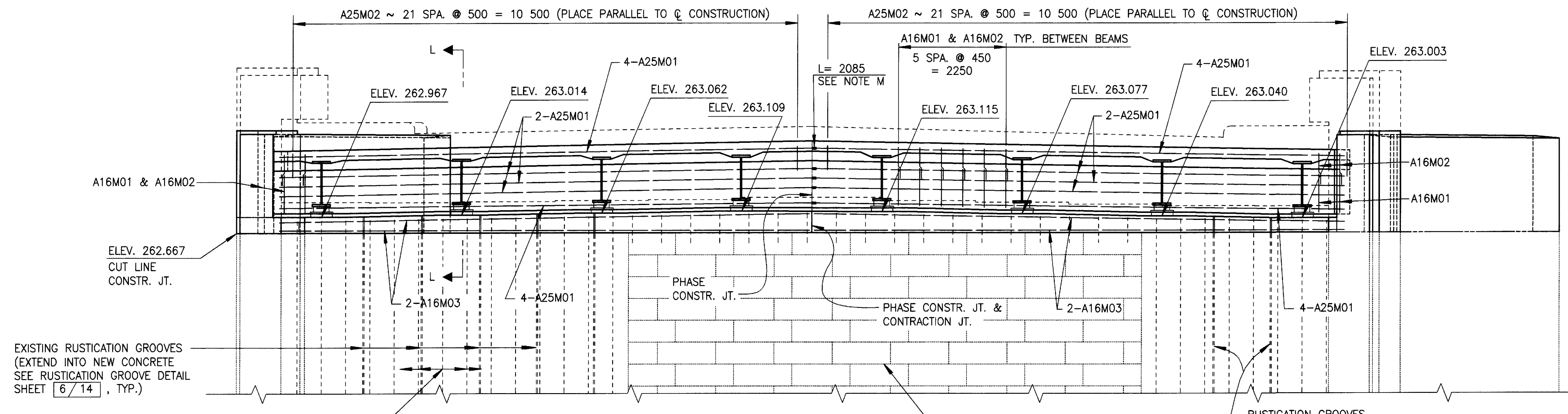
** - SEE PROPOSAL NOTE

GENERAL NOTES & ESTIMATED QUANTITIES
 BRIDGE NO. DEL-36-16736
 OVER OLENTANGY RIVER
 DEL-36-16.736
 3/14
 23/34
 STICKLEN - BELSHEIM & ASSOCIATES
 1050 KINGSMILL PARKWAY
 COLUMBUS, OHIO 43229
 DATE 4/25/97
 G.E.D.
 STRUCTURE FILE NUMBER 2100878
 DRAWN BKJ
 DESIGNED BKJ
 CHECKED G.T./LYH
 REVIEWED
 REVISIONS





PLAN

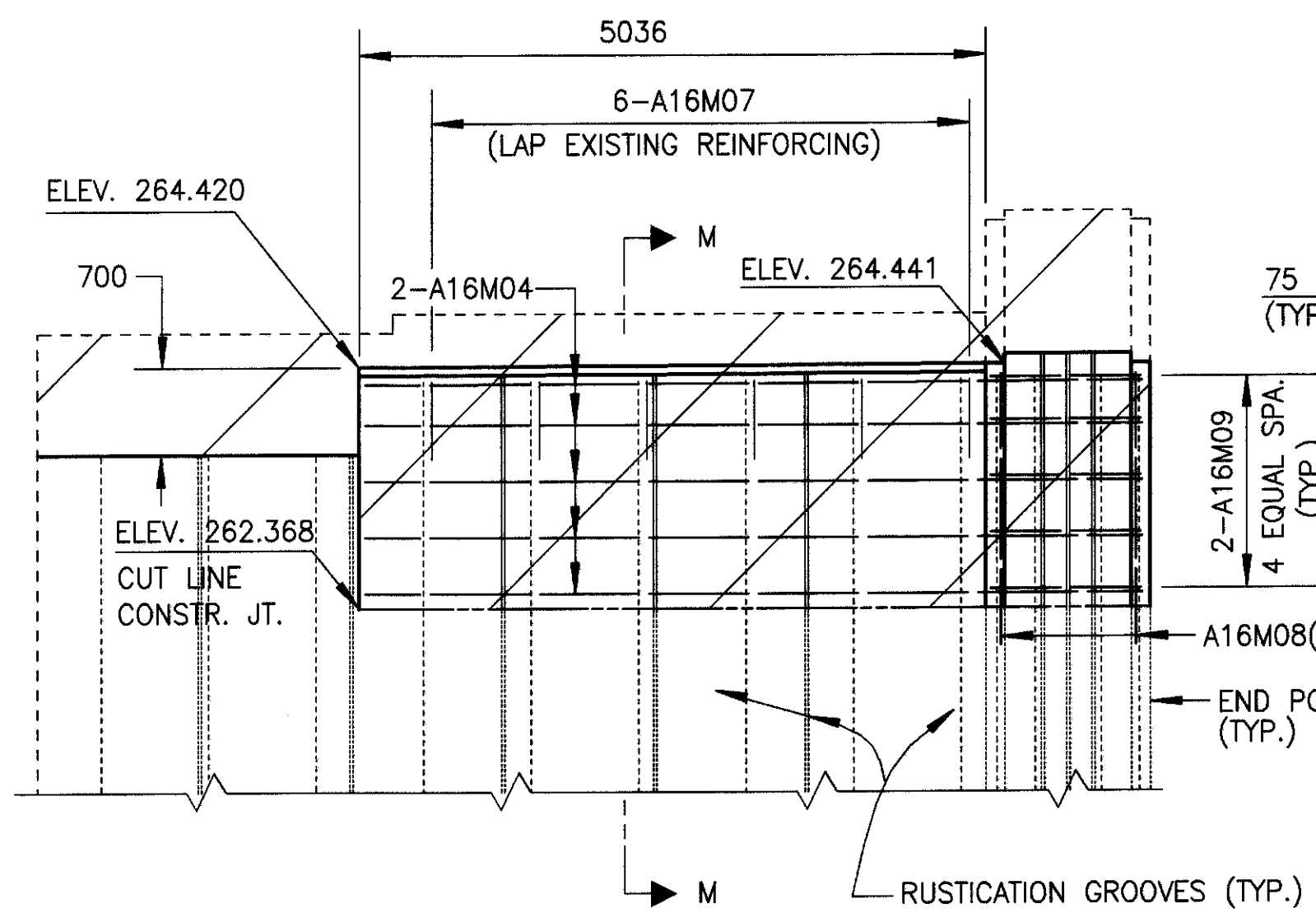


ELEVATION

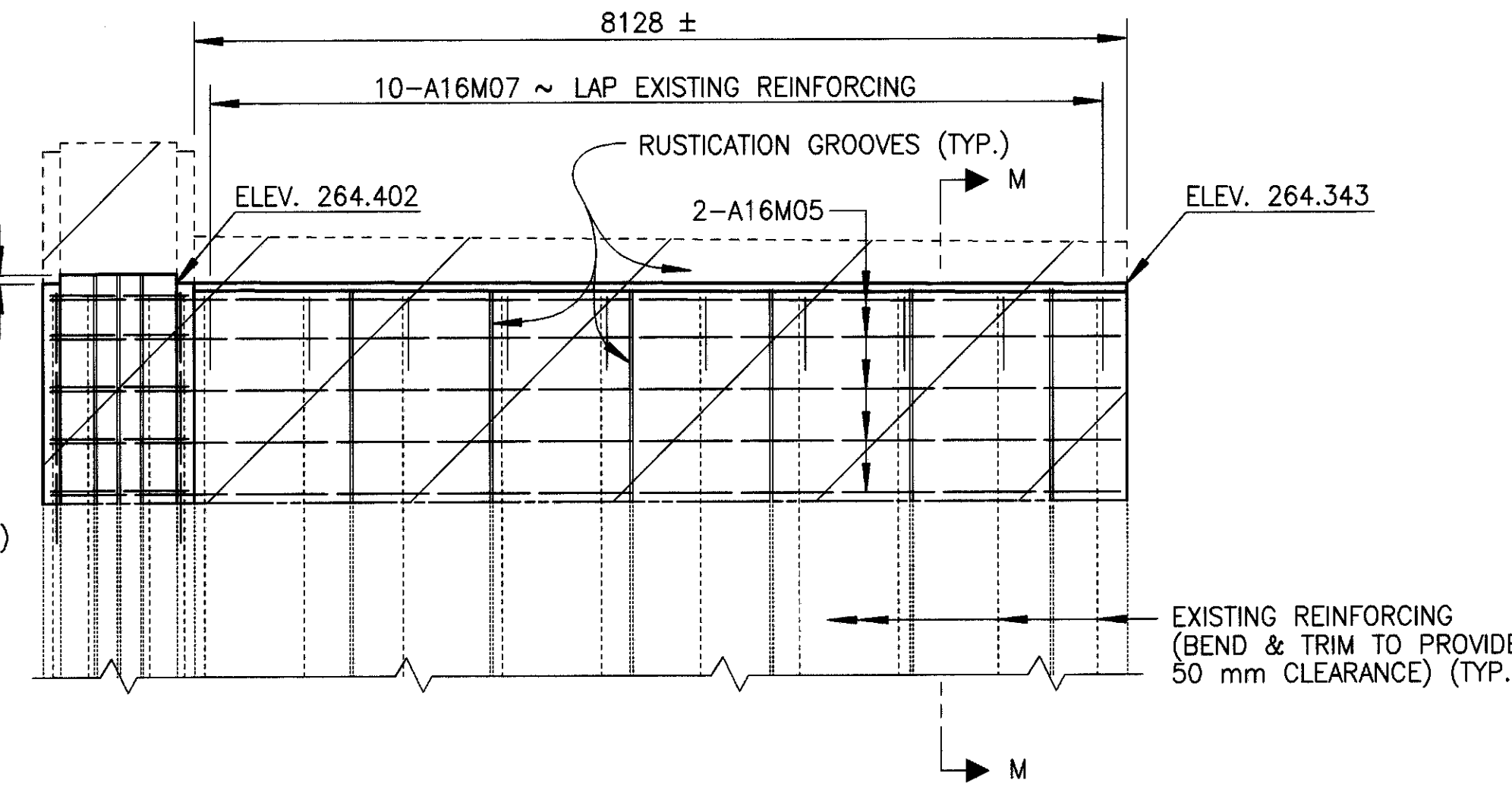
(PROPOSED SIDEWALK AND RAILING NOT SHOWN)

SEE SHEET 6/14 FOR NOTES AND SECTIONS.
SEE SHEET 4/14 FOR DETAIL A.

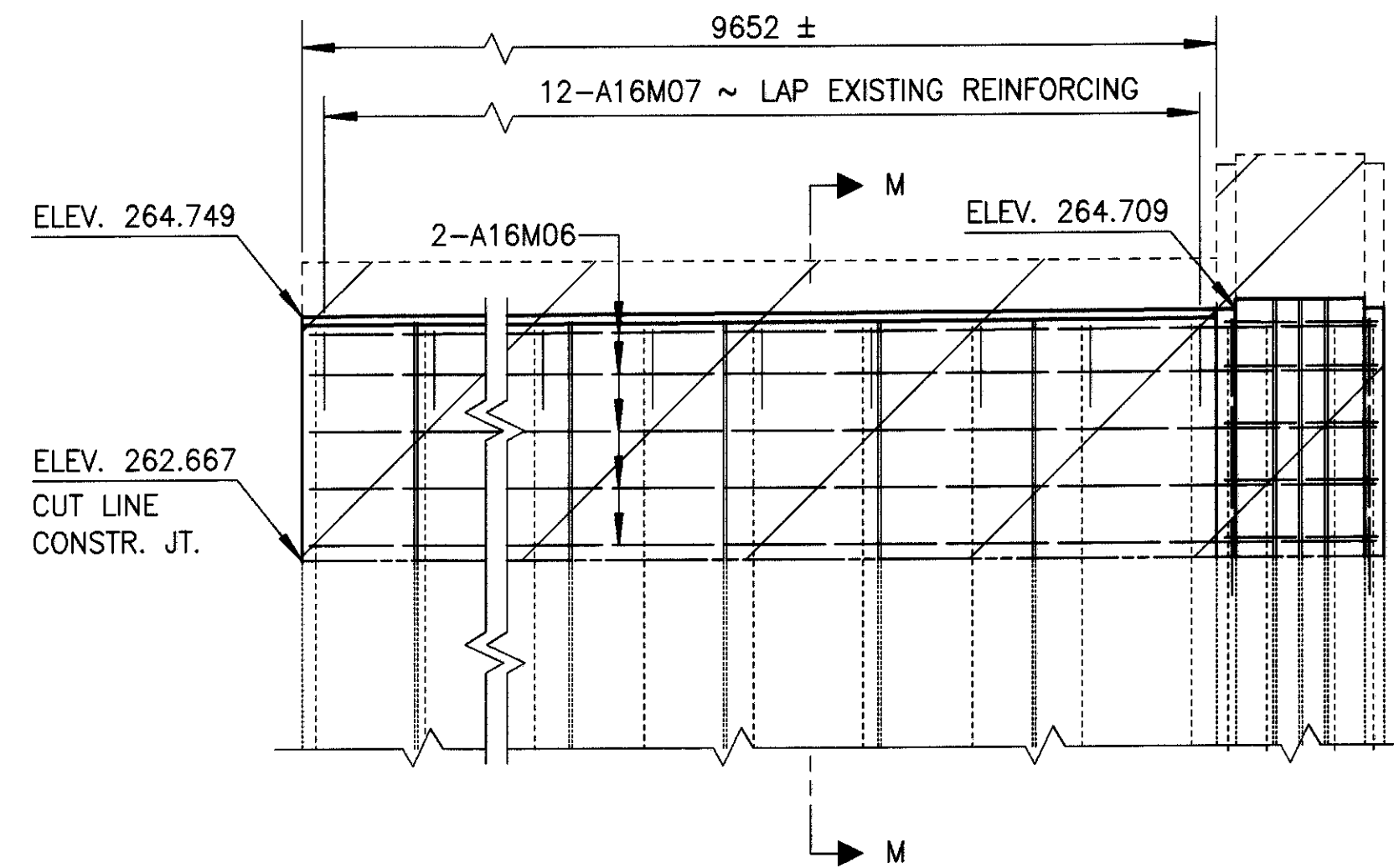
DESIGNED	BKJ	CHECKED	G.T.
DRAWN	BKJ	REVISIONS	
REVIEWED	G.E.D.	DATE	4/25/97
		STRUCTURE FILE NUMBER	2100878
STICKLEN - BELSHEIM & ASSOCIATES 1050 KINGSHILL PARKWAY COLUMBUS, OHIO 43229			
FORWARD ABUTMENT DETAILS BRIDGE NO. DEL-36-16736 OVER OLENTANGY RIVER			
DEL-36-16.736			
5/14			
25/34			



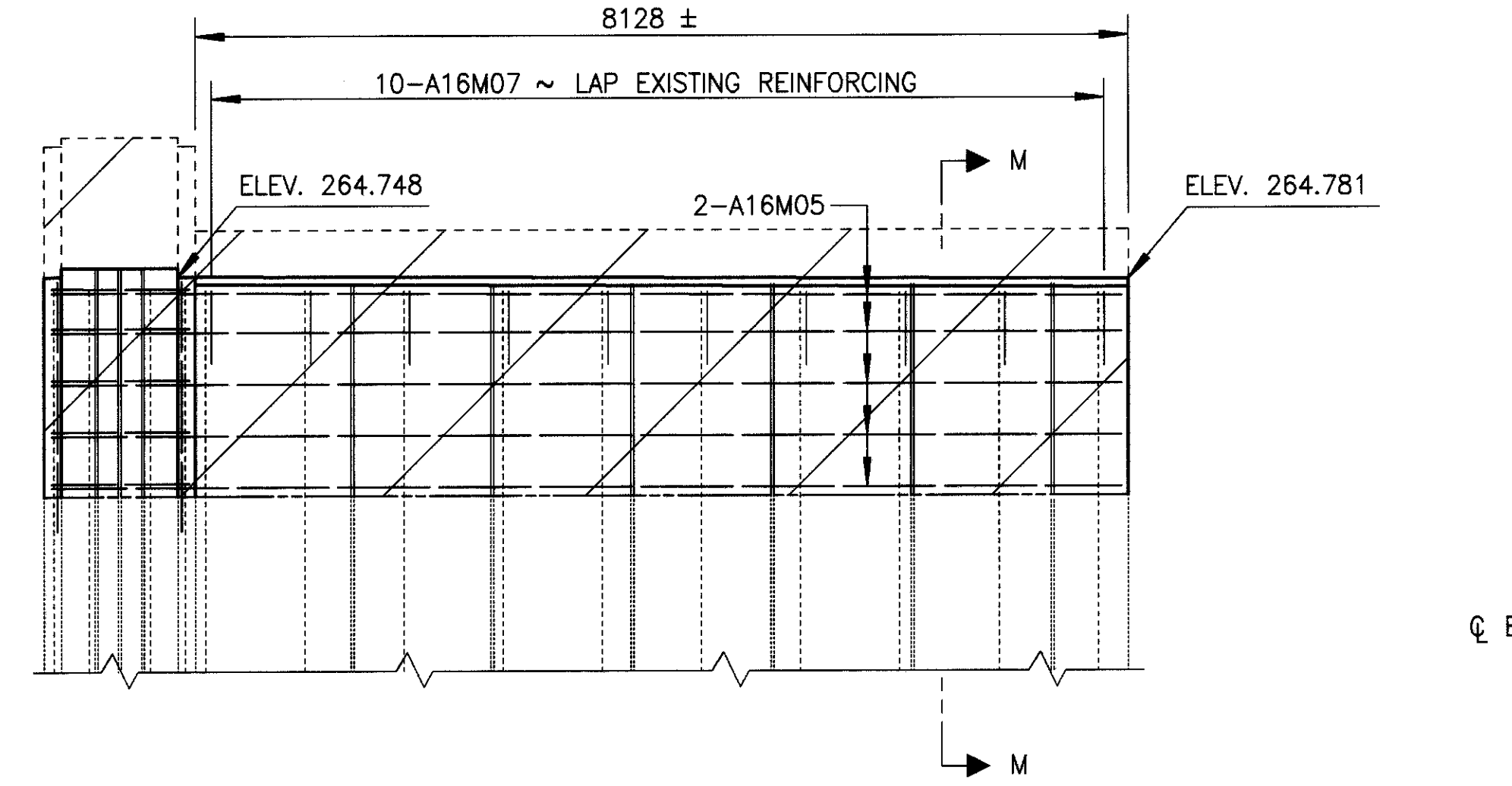
WINGWALL ELEVATION (VIEW A-A REAR ABUTMENT)



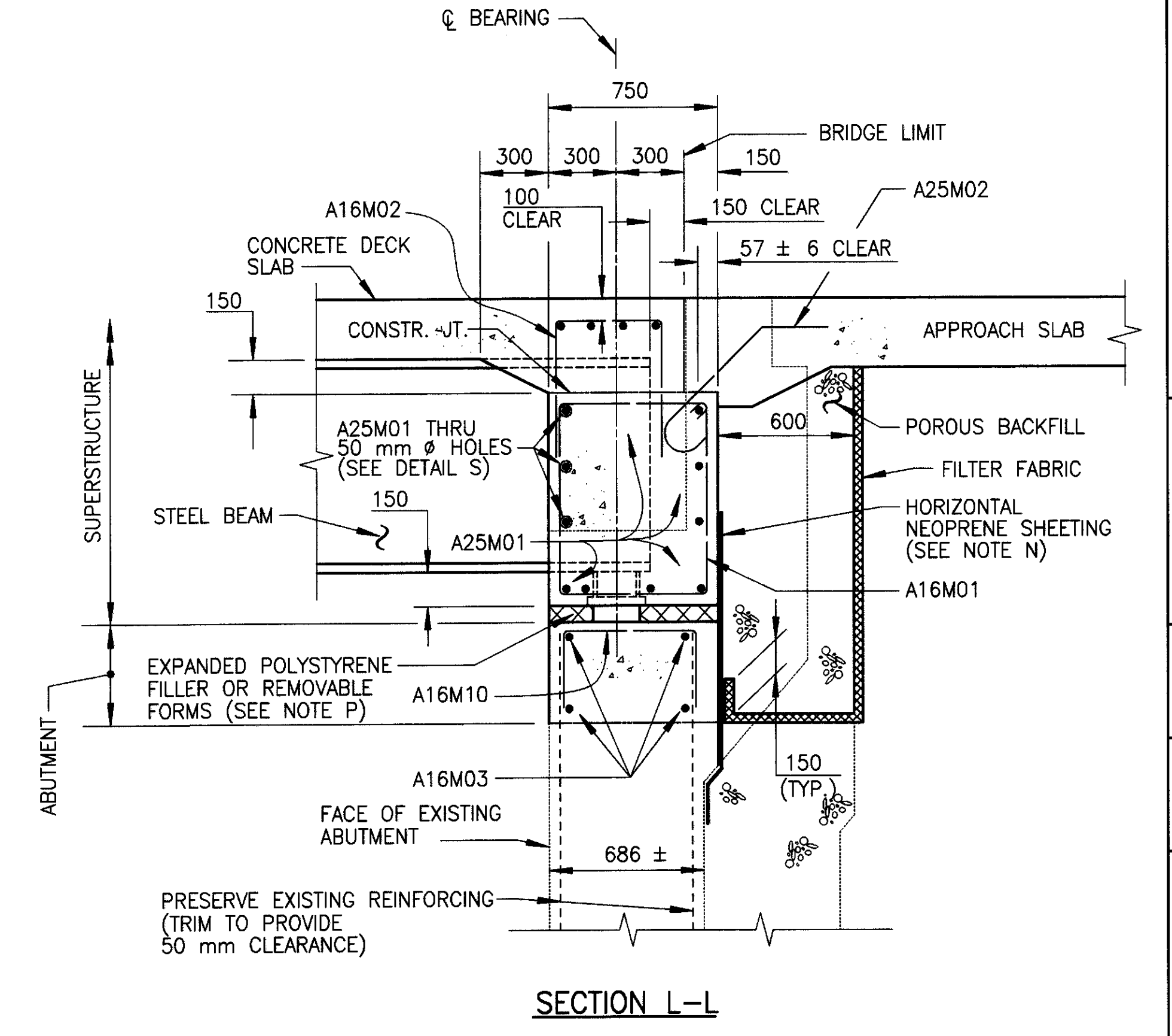
WINGWALL ELEVATION (VIEW B-B REAR ABUTMENT)



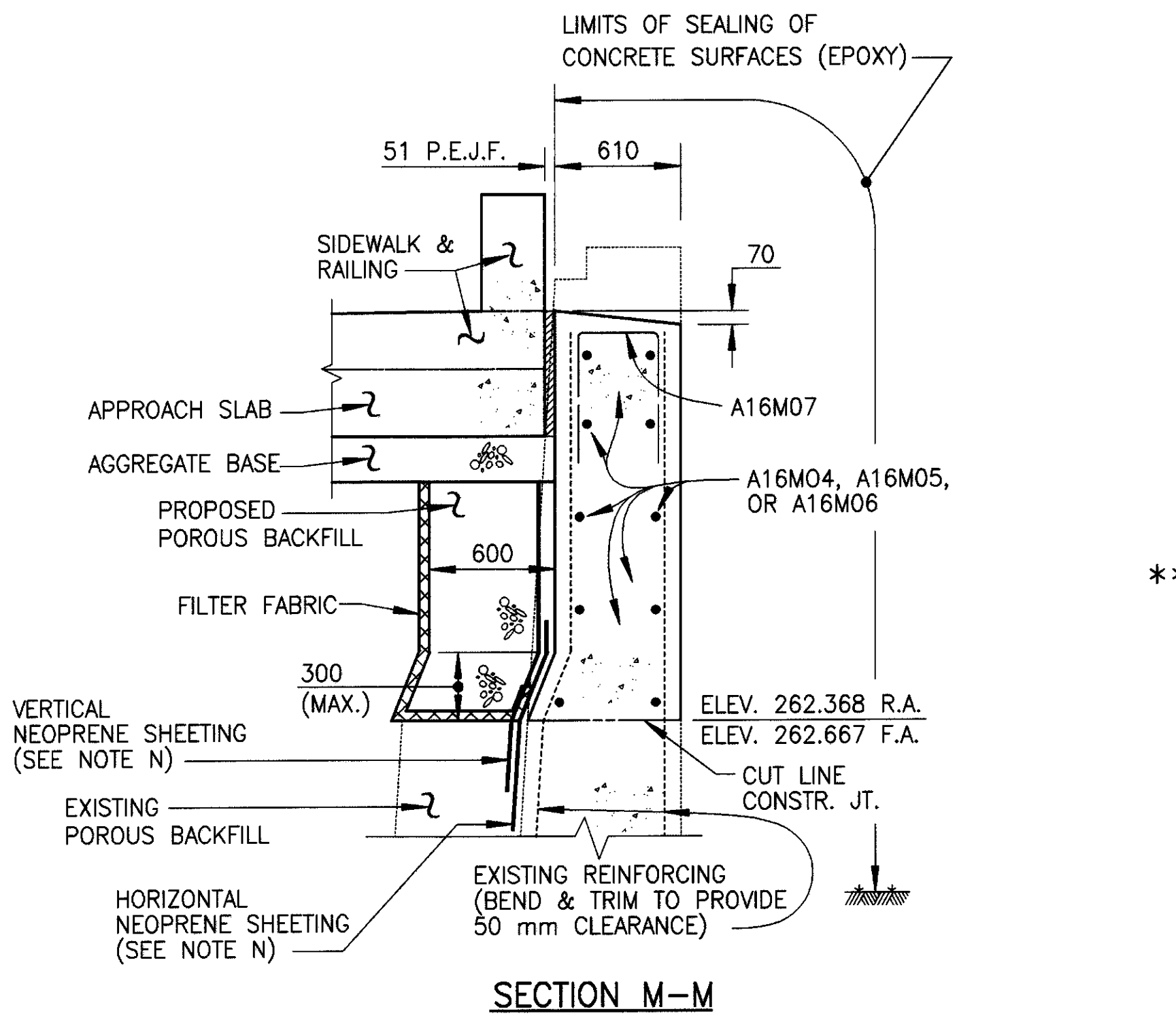
WINGWALL ELEVATION (VIEW C-C FORWARD ABUTMENT)



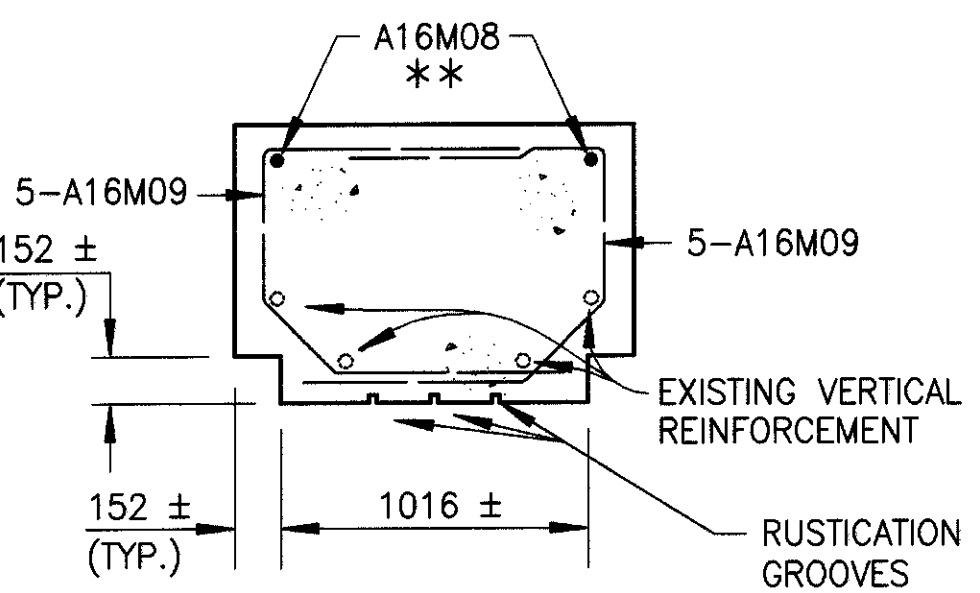
WINGWALL ELEVATION (VIEW D-D FORWARD ABUTMENT)



SECTION L-L

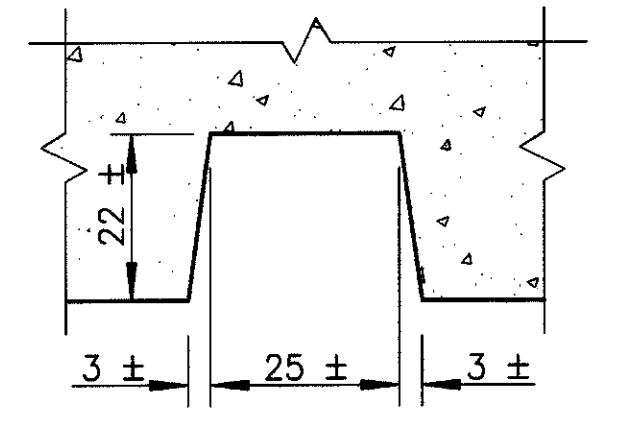


SECTION M-M



TYPICAL SECTION THROUGH NEW END POST

** - DOWEL REBAR INTO EXISTING ABUTMENT 300 mm.



RUSTICATION GROOVE (EXTEND ALL EXISTING RUSTICATION GROOVES THROUGH PROPOSED ABUTMENT)

- LEGEND**
- F.S. - FAR SIDE
 - R.A. - REAR ABUTMENT
 - F.A. - FORWARD ABUTMENT
 - P.E.J.F. - PREFORMED EXPANSION JOINT FILLER

- PORTION OF EXISTING CONCRETE TO BE REMOVED

NOTE P:
EXPANDED POLYSTYRENE FILLER OR REMOVABLE FORMS SHALL BE USED IN FORMING TO PROVIDE THE CLEARANCE REQUIRED BETWEEN THE ABUTMENT AND SUPERSTRUCTURE AND SHALL BE INCLUDED WITH THE SUPERSTRUCTURE CONCRETE FOR PAYMENT.

NOTE N:
NEOPRENE SHEETING, 900 mm WIDE, SHALL BE PLACED BEHIND THE ABUTMENT, FULL LENGTH AND CENTERED ABOUT THE BEAM SEAT JOINT WHERE THE POLYSTYRENE FILLER IS LOCATED, ALONG THE VERTICAL JOINT WHERE THE 51 mm P.E.J.F. IS LOCATED AND ALONG PROPOSED CUT LINE CONSTRUCTION JOINTS WHERE PROPOSED CONCRETE MEETS EXISTING CONCRETE (WINGWALL AND ABUTMENT BREASTWALL) AND VERTICALLY ALONG THE PHASE CONSTRUCTION/CONTRACTION JOINT.

POROUS BACKFILL SHALL EXTEND UPWARD TO THE PLANE OF THE SUBGRADE TO 300 mm (MIN.) BELOW PROPOSED GROUND SURFACE AND Laterally TO THE ENDS OF THE WINGWALLS. EXCAVATION IN EXCESS OF THAT REQUIRED FOR THE CONSTRUCTION OF THE ABUTMENTS SHALL BE INCLUDED WITH THE UNIT PRICE FOR POROUS BACKFILL WITH FABRIC FILTER FOR PAYMENT.

A CONCRETE EPOXY SEALER SHALL BE APPLIED TO THE FRONT FACE OF THE ABUTMENT (INCLUDING STONE SURFACES AND BETWEEN BEAMS) FROM TOP, DOWN TO THE GROUNDLINE OR WATERLINE AND THE ENTIRE EXPOSED SURFACES OF WINGWALLS. PAYMENT SHALL BE INCLUDED IN ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY).

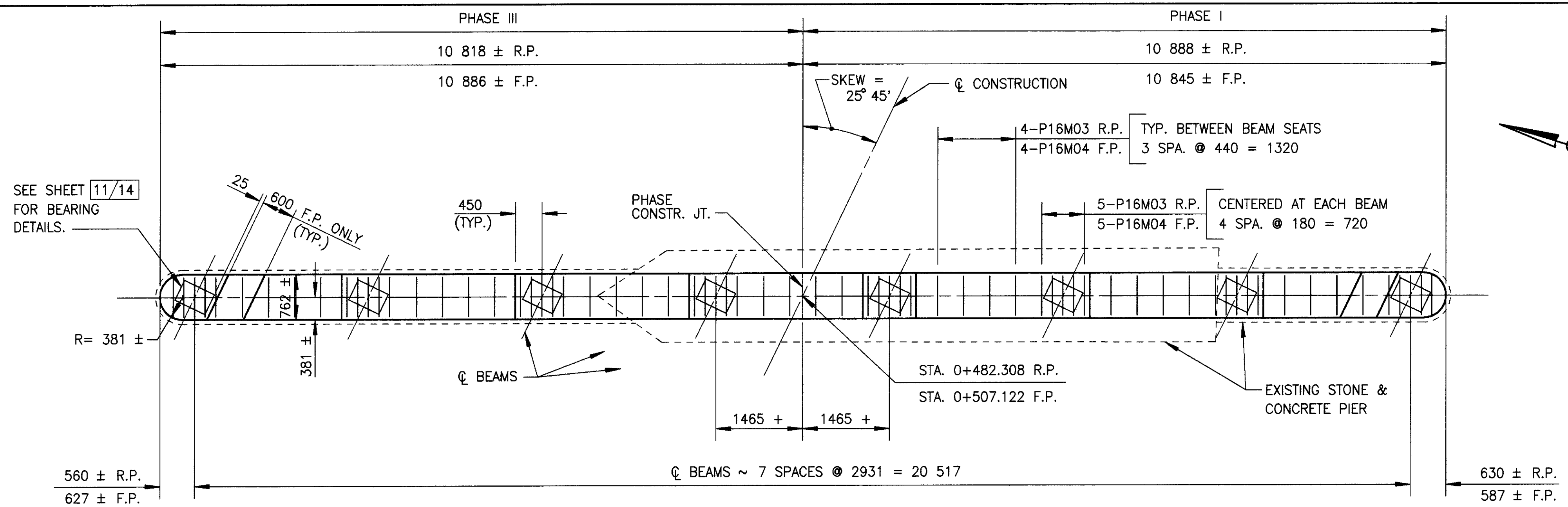
NOTE M:
MECHANICAL CONNECTORS: AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" 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 WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

REINFORCING BAR LENGTHS SHOWN IN THE "REINFORCING STEEL LIST" ARE BASED ON A THREADED, NON-PROTRUDING TYPE OF MECHANICAL CONNECTOR. CONNECTORS AND DOWEL BAR EXTENSIONS SHALL BE INCLUDED WITH THE APPROPRIATE ITEM 511 UNDER EITHER SUPERSTRUCTURE OR PIERS FOR PAYMENT.

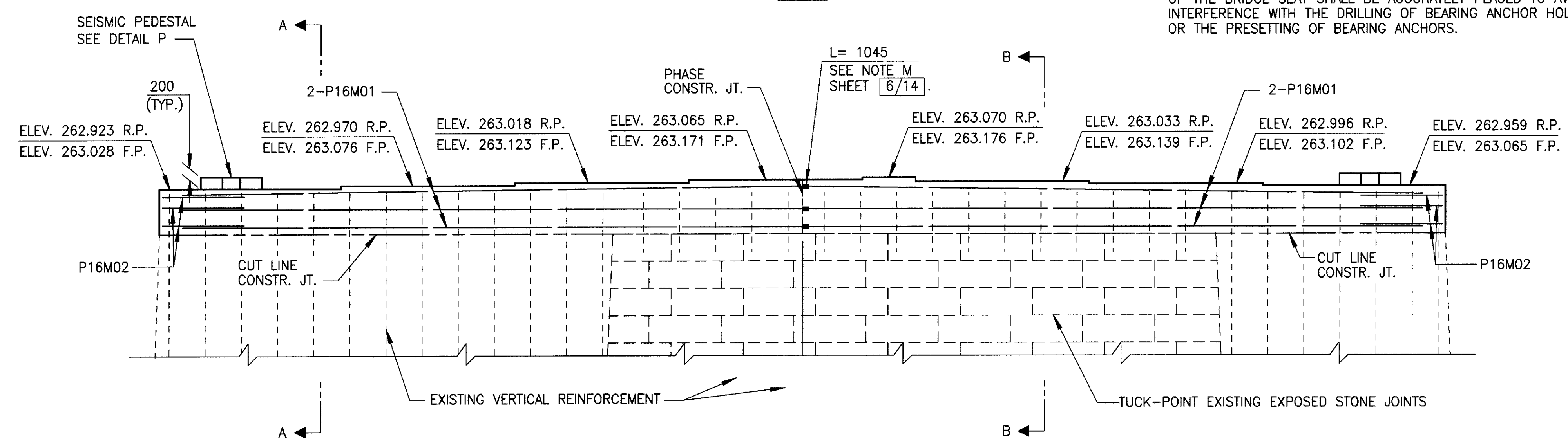
DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER SECTIONS SUPPORTED IN SEMI-INTEGRAL AND INTEGRAL TYPE ABUTMENTS SHALL BE PLACED AT LEAST 48 HOURS BEFORE THE ACTUAL DECK CONCRETE IS PLACED.

STICKLEN - BELSHEIM & ASSOCIATES	DATE	4/25/97
1050 KINGSMILL PARKWAY	G.E.D.	2100878
COLUMBUS, OHIO 43229	STRUCTURE FILE NUMBER	
	DESIGNED	G.T.
	DRAWN	B.K.J.
	CHECKED	G.T.
	REVIEWED	B.K.J.
	DATE	4/25/97
	REVISION	
	FILE NUMBER	2100878
	PROJECT	ABUTMENT DETAILS
	BRIDGE NO.	DEL-36-16736
	OVER	OLENTANGY RIVER
	PROJECT NO.	DEL-36-16.736
	SHEET	6/14
	NO.	26/34

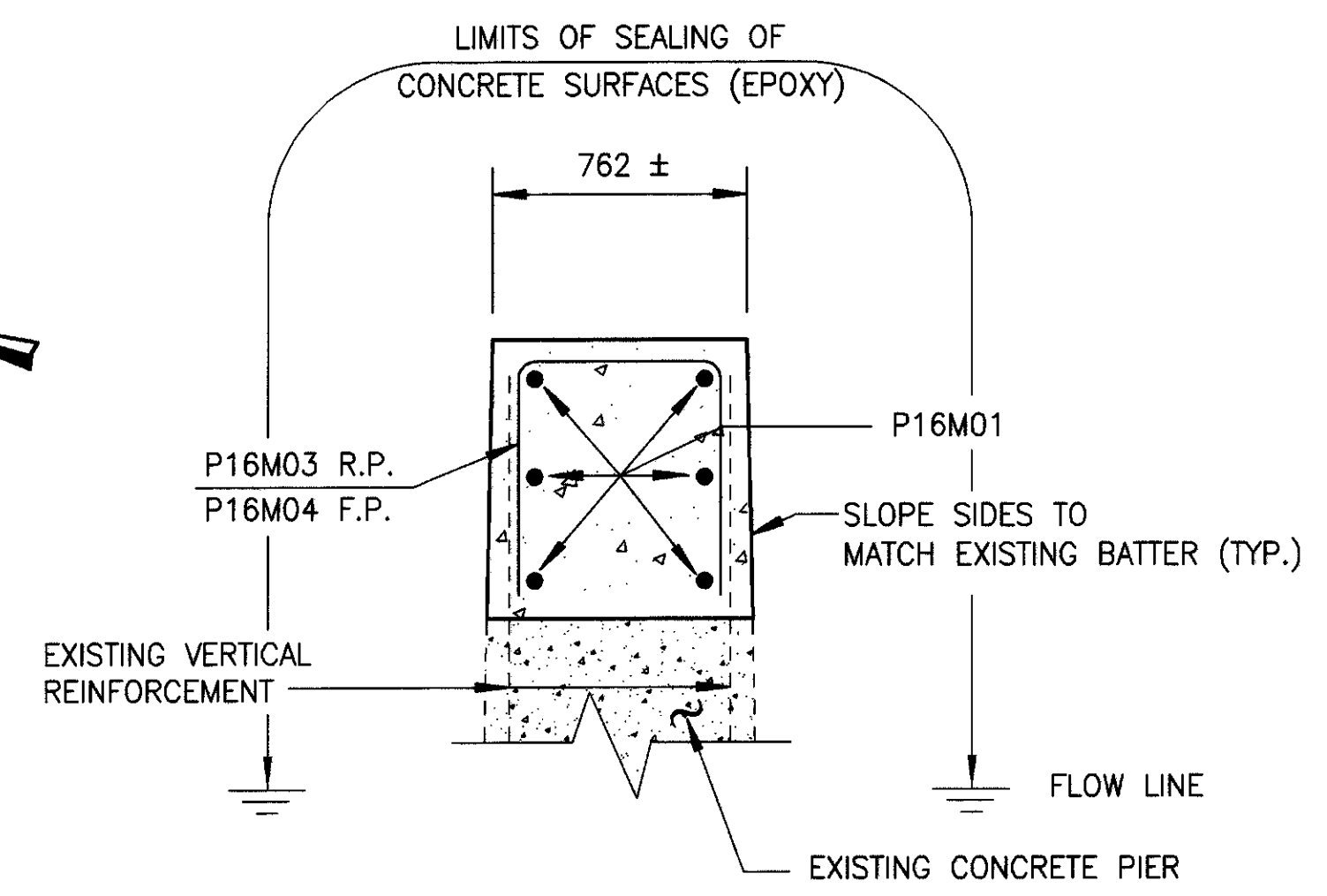


PLAN

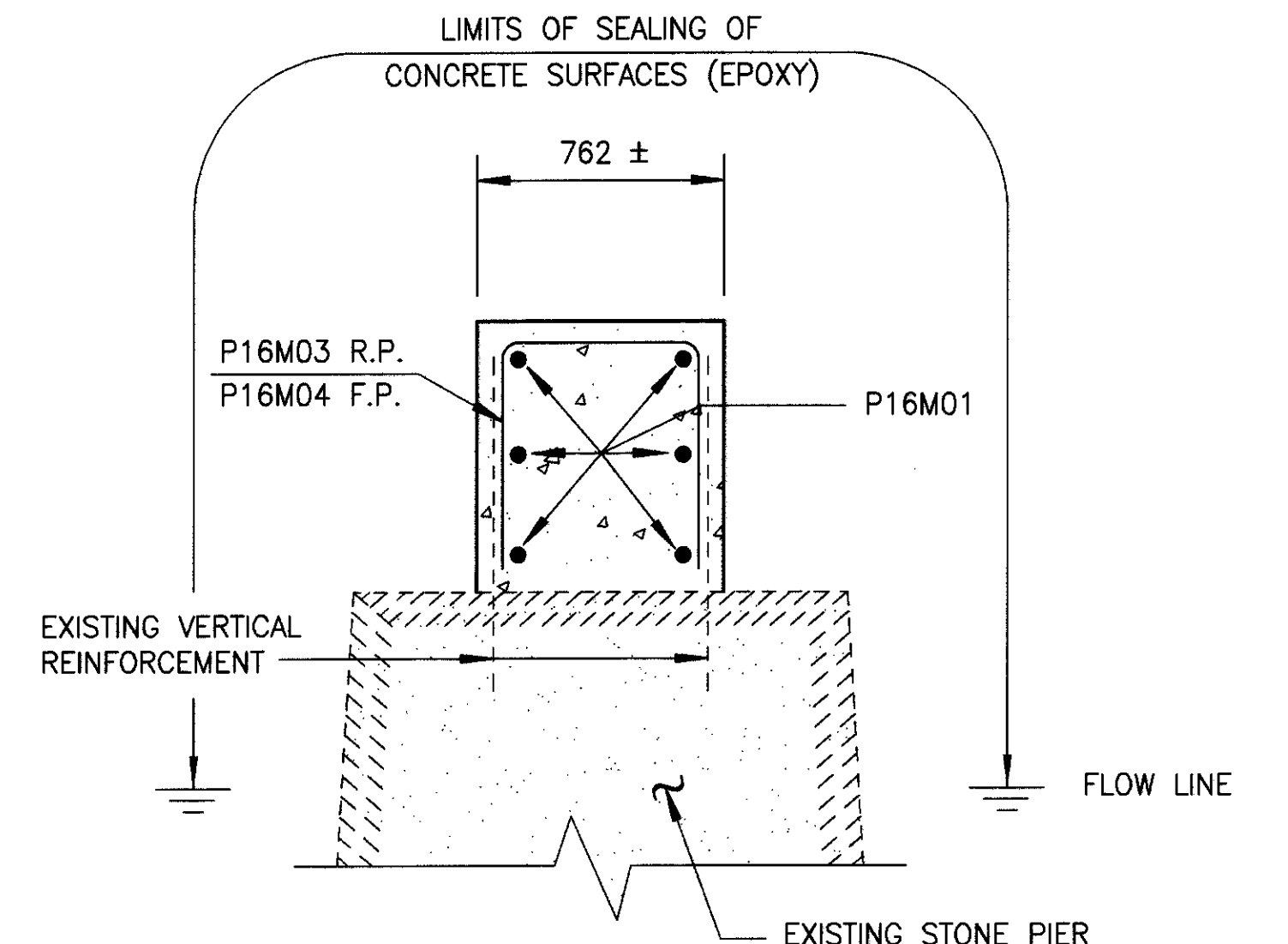
BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRESETTING OF BEARING ANCHORS.



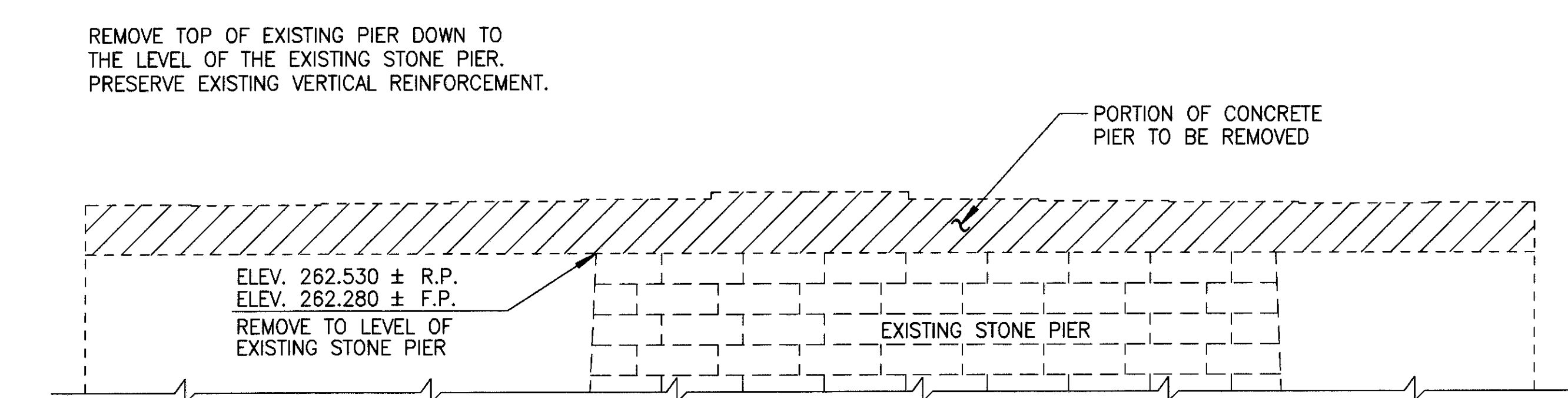
ELEVATION



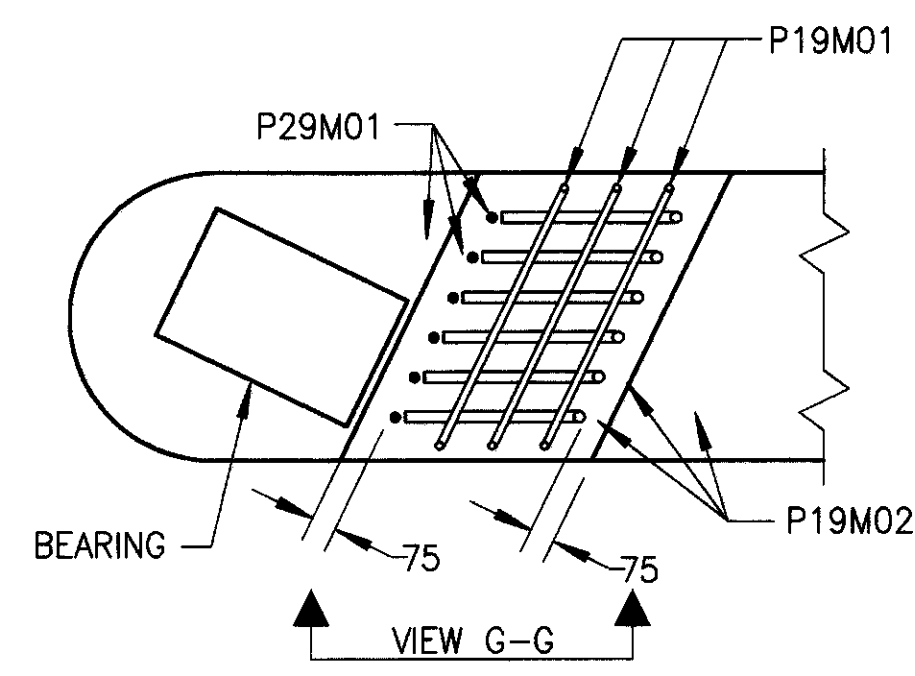
SECTION A-A



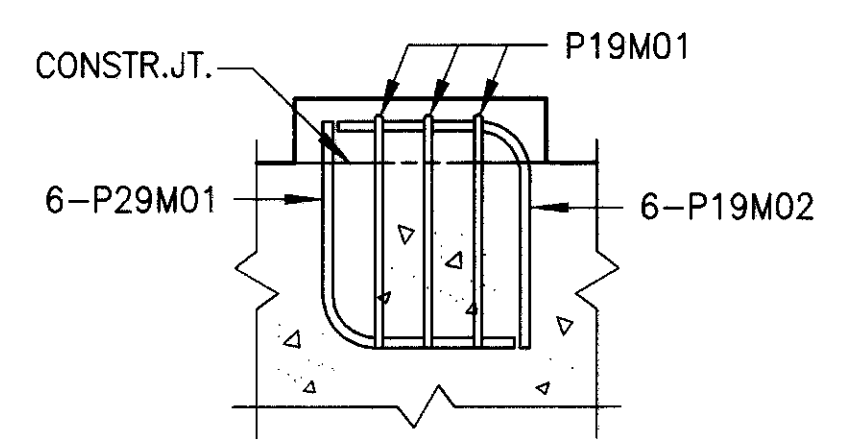
SECTION B-B



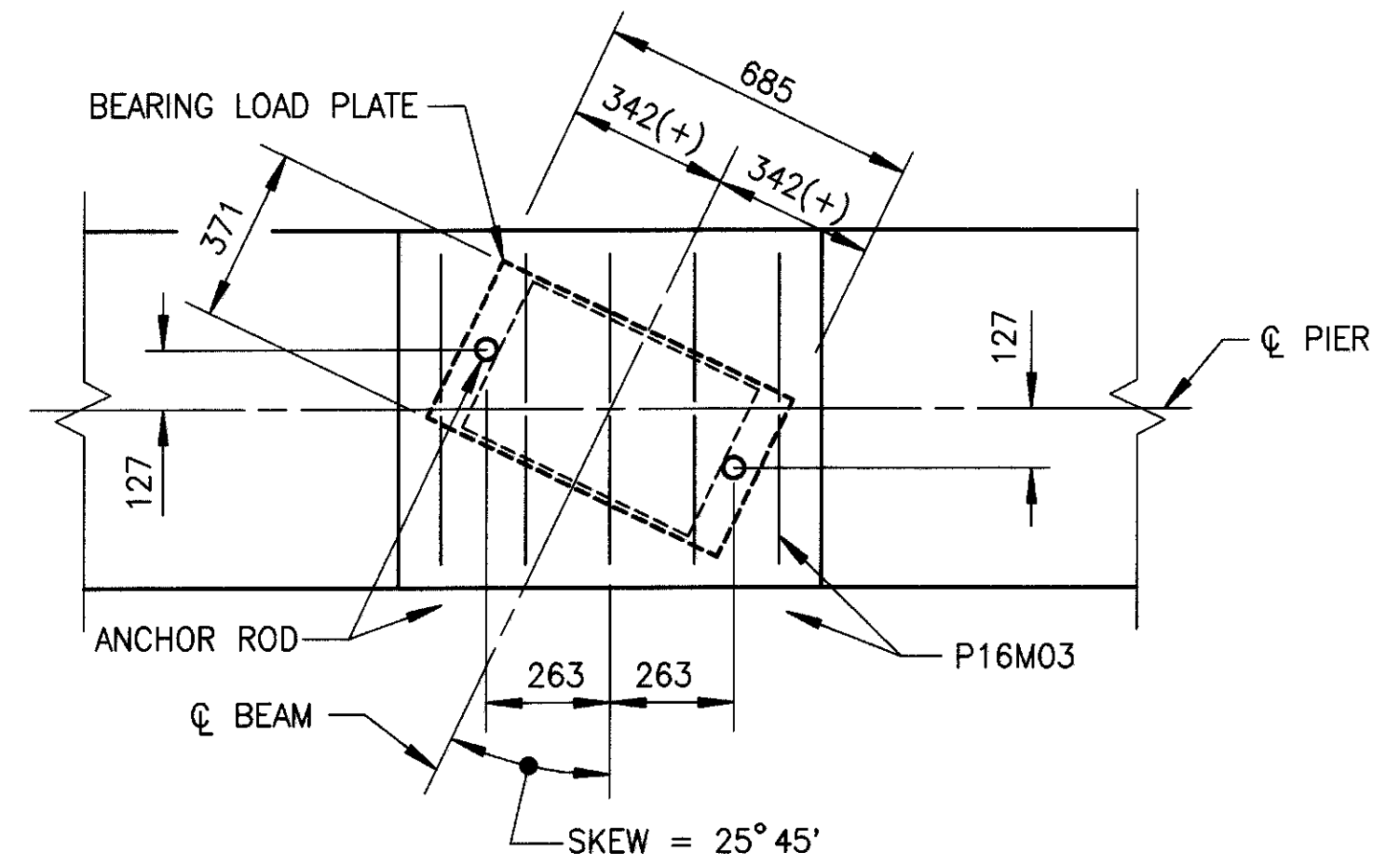
EXISTING PIER CONCRETE REMOVAL



DETAIL P
(SEISMIC PEDESTALS SHALL BE PLACED ON THE FORWARD PIER ONLY.)



VIEW G-G



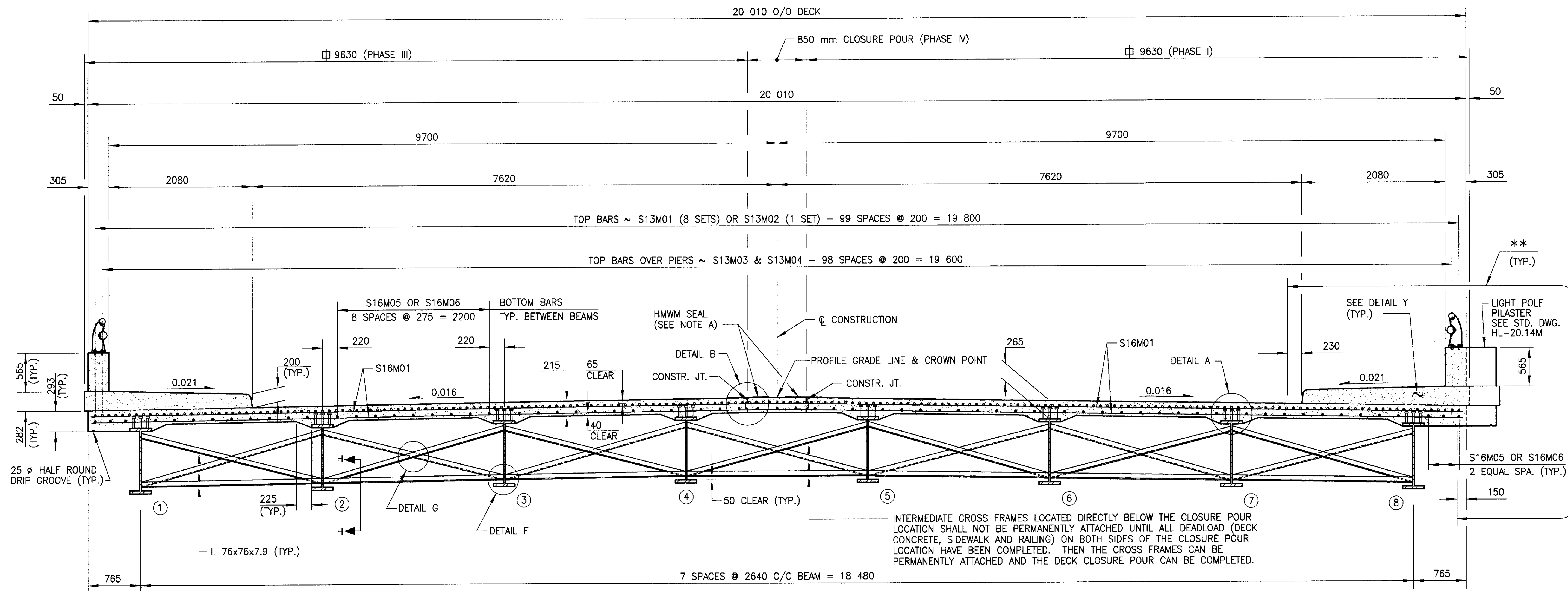
FIXED BEARING & ANCHOR ROD LAYOUT
(REAR PIER SHOWN - ORIENTATION IS SIMILAR FOR FORWARD PIER EXPANSION BEARINGS)

LEGEND

R.P. = REAR PIER
F.P. = FORWARD PIER

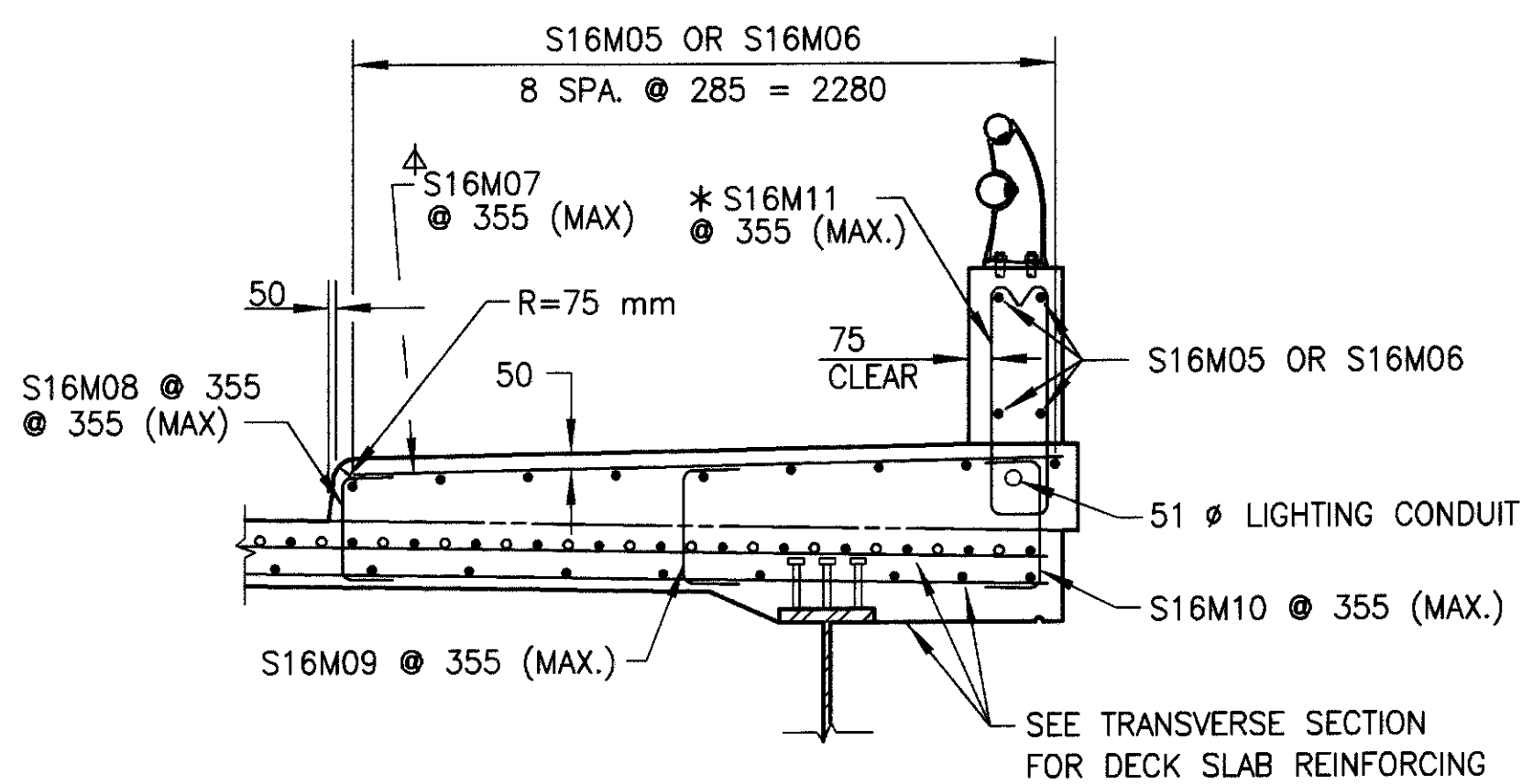
MINIMUM REINFORCING BAR SLICE LAP LENGTH
NO. 16 BAR = 1045

STICKLEN - BELSHEIM & ASSOCIATES 1650 KINGSBILL PARKWAY COLUMBUS, OHIO 43229
DATE: 4/25/97 REVIEWED: G.E.D. DRAWN: BKJ DESIGNED: BKJ
STRUCTURE FILE NUMBER: 2100878 CHECKED: G.T.
PIER DETAILS BRIDGE NO. DEL-36-16736 OVER OLENTANGY RIVER
DEL-36-16.736
7/14
27/34



TRANSVERSE SECTION

FOR INTERMEDIATE CROSS FRAME DETAILS, SEE SHEET 11/14.

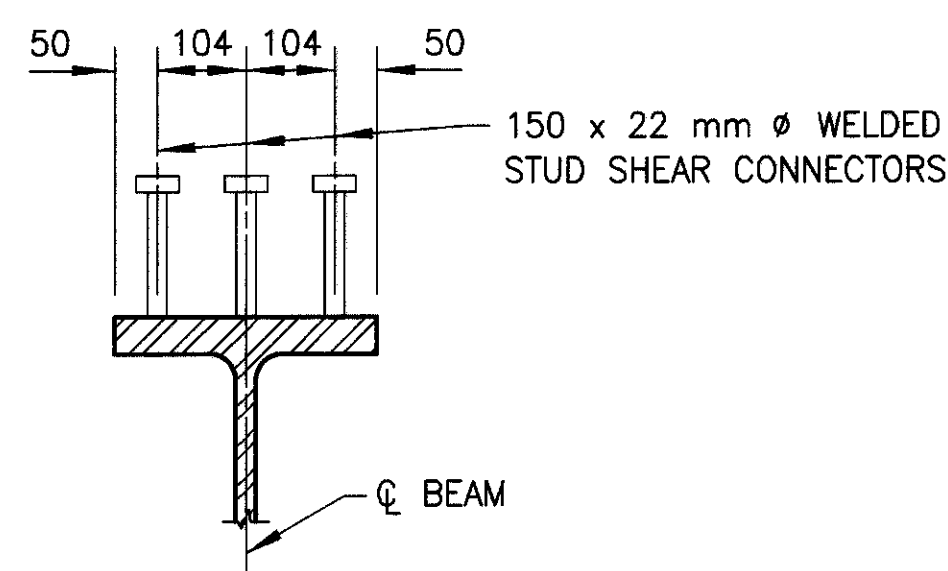


DETAIL Y

- ▲ - FAN BARS TO FIT AT EACH END OF SUPERSTRUCTURE
- * - S16M11 BAR SHALL BE PLACED TO CLEAR THE CRACK CONTROL JOINT BY 50 mm.

DECK SLAB DEPTH: THE DISTANCE SHOWN FROM TOP OF DECK SLAB TO TOP OF STEEL BEAM IS THE THEORETICAL DESIGN DIMENSION INCLUDING THE DESIGN HAUNCH THICKNESS OF 50 mm THE QUANTITY OF THE DECK CONCRETE TO BE PAID FOR SHALL BE BASED ON THIS DEMENSION, MINUS THE DESIGN HAUNCH THICKNESS. EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE.

A HAUNCH WIDTH OF 225 mm INCHES SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE IN THE HAUNCH. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 150 AND 300 mm INCHES.



DETAIL A

LEGEND

- ④ - BEAM LINE NUMBER
- ** - LIMITS OF SEALING CONCRETE SURFACES
- ☒ SEE PHASE CONSTRUCTION DETAILS, SHEET 13/14.

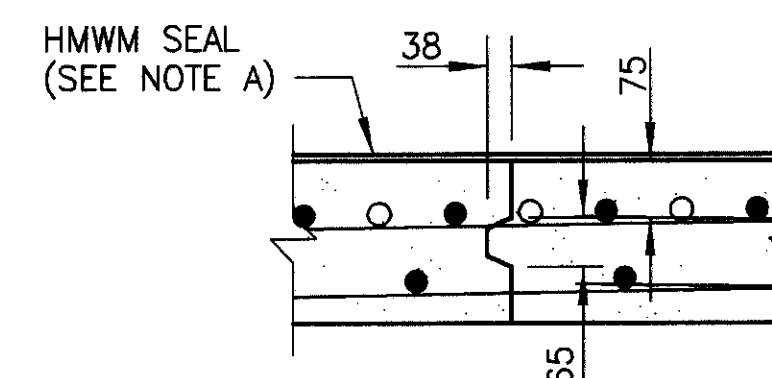
MINIMUM REINFORCING BAR SPLICE LAP LENGTH

NO.13 BAR = 585 mm
NO.16 BAR = 740 mm

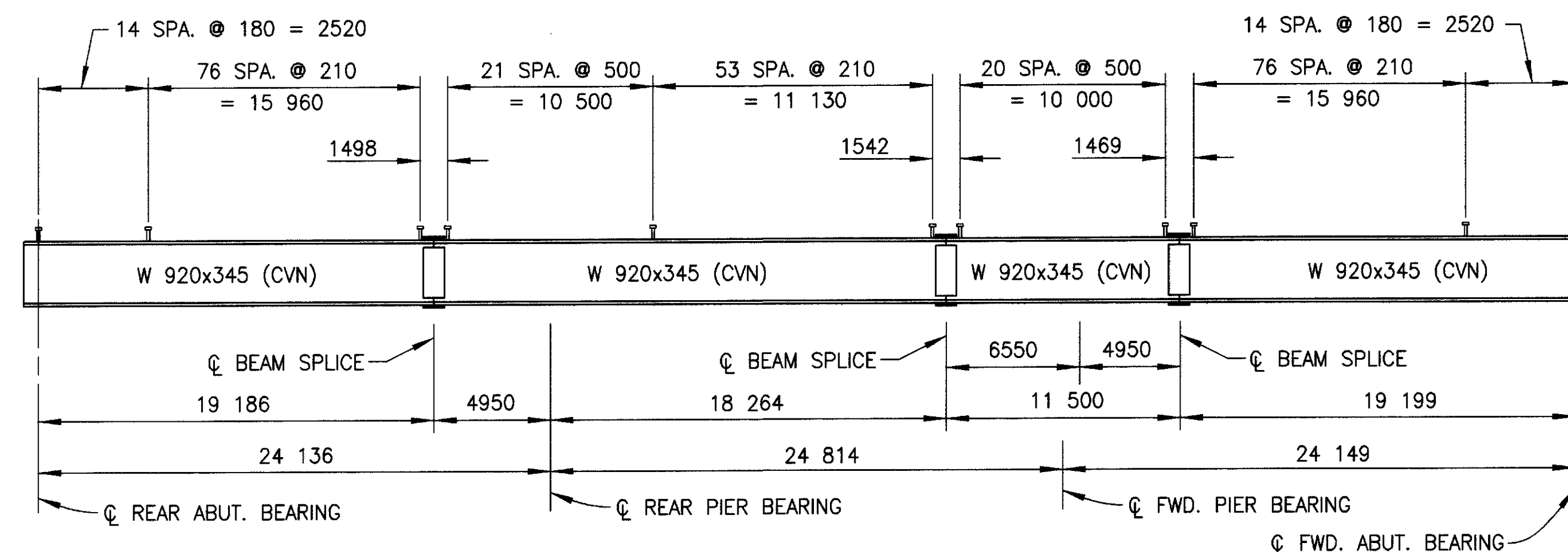
FOR STAGGER OF S13M03 & S13M04 SEE SHEET 10/14.

FOR TRANSVERSE REINFORCING BARS LAYOUT SEE SHEET 10/14.

NOTE A:
THE TWO CONSTRUCTION JOINTS CREATED BY THE CONCRETE CLOSURE POUR SHALL BE SEALED WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM). THE SEALING WIDTH SHALL BE 600 mm, CENTERED ON THE CONSTRUCTION JOINTS.



DETAIL B

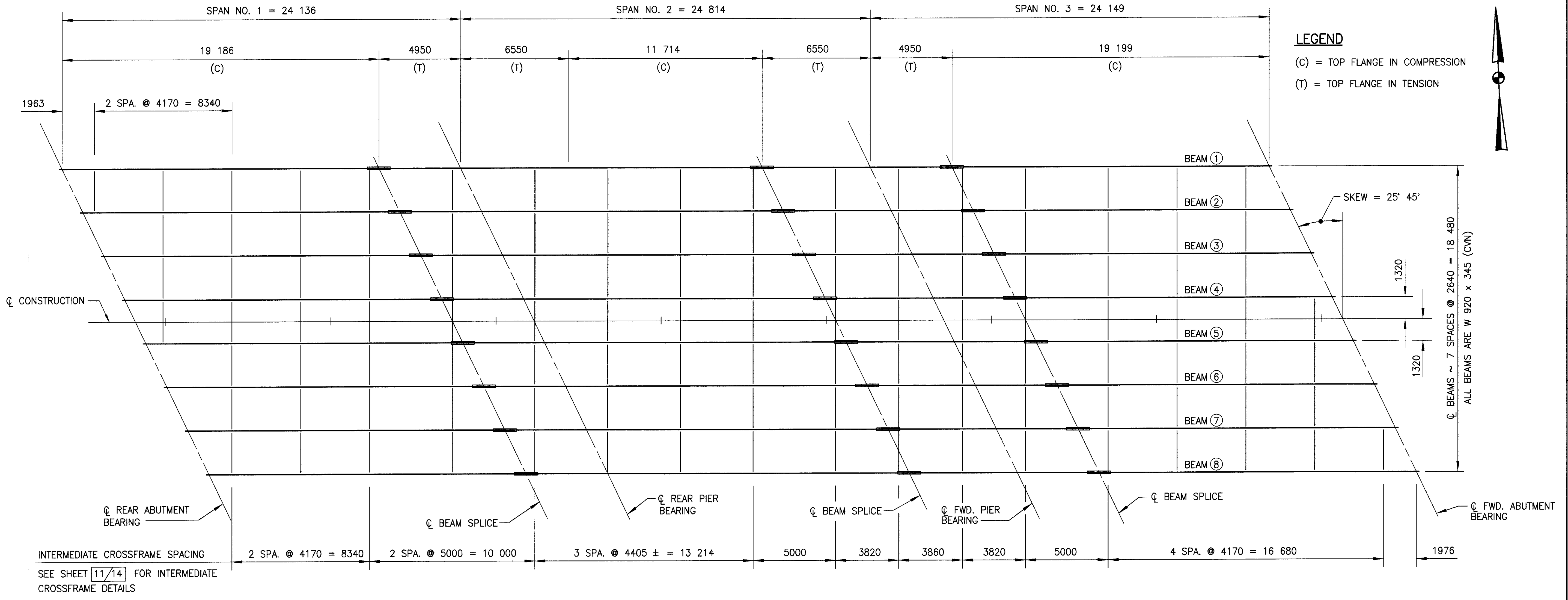
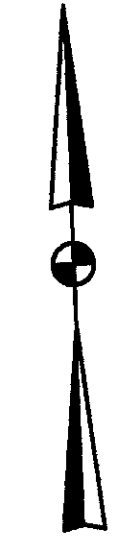


BEAM ELEVATION SHOWING SHEAR CONNECTOR SPACING

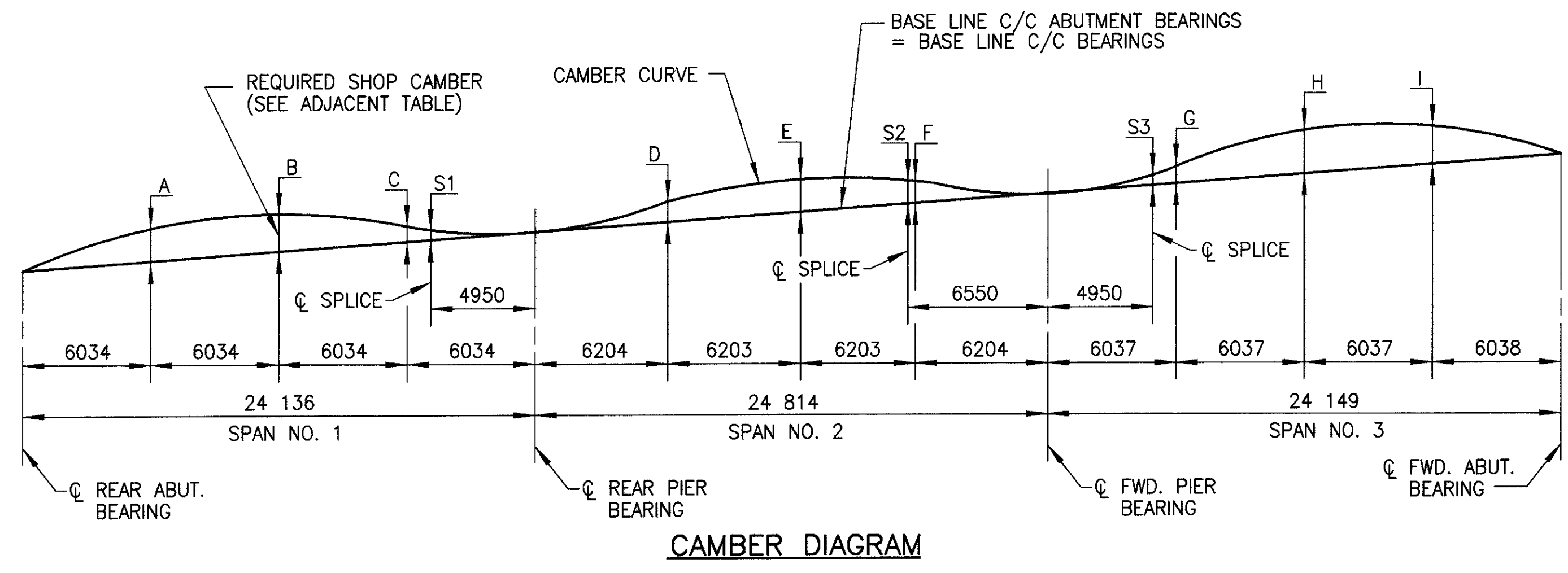
FOR BEAM SPLICE DETAILS, SEE SHEET 9/14.

LEGEND

(C) = TOP FLANGE IN COMPRESSION
(T) = TOP FLANGE IN TENSION



STEEL FRAMING PLAN



CAMBER DIAGRAM

NOTES:

THE STEEL FASCIA BEAM SHALL HAVE THE OUTSIDE SURFACES AND BOTTOM SURFACES OF THE BOTTOM FLANGES ABRASIVELY BLAST CLEANED TO GRADE SA2 IN THE FABRICATION SHOP. SEE CMS 513.221 FOR FINAL FIELD CLEANING REQUIREMENTS. PAYMENT SHALL BE INCLUDED IN ITEM 513.

WHERE A SHAPE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.

WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET 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.

DEFLECTION & CAMBER (IN MILLIMETERS)

LOCATION	SPAN NO. 1				SPAN NO. 2				SPAN NO. 3			
	A	B	C	S1	D	E	S2	F	S3	G	H	I
DEFLECTION DUE TO WEIGHT OF STEEL	5	7	4	3	1	1	1	1	3	4	7	5
DEFLECTION DUE TO WEIGHT OF CONCRETE SLAB	20	26	14	11	1	4	1	1	11	14	26	20
DEFLECTION DUE TO REMAINING DEAD LOAD	5	5	3	2	0	1	0	0	2	3	5	5
REQUIRED SHOP CAMBER	30	38	21	16	2	6	2	2	16	21	38	30

BEAM SPLICE DETAILS

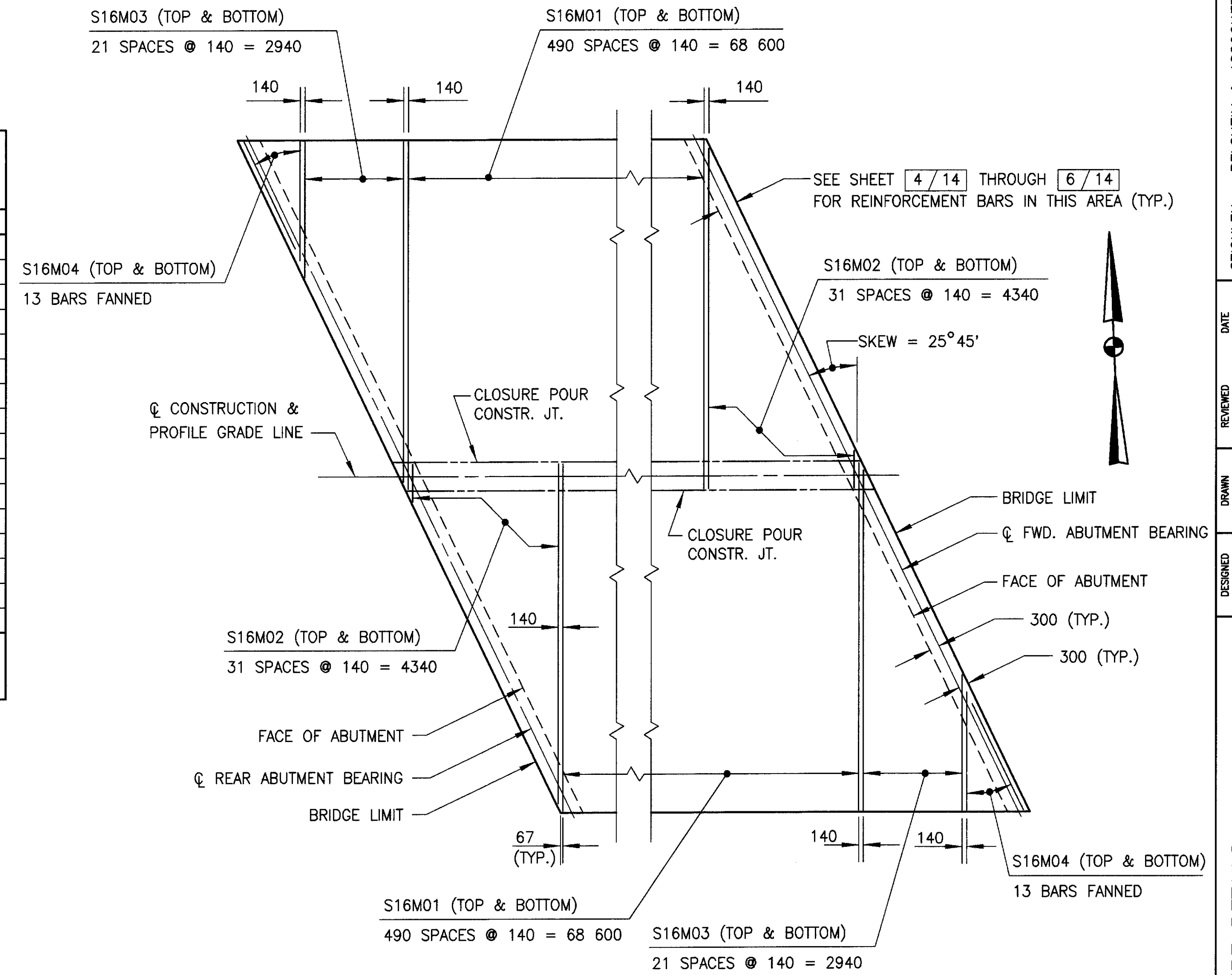
(FOR ADDITIONAL DETAILS, SEE STD.DWG BS-1-93M, SHEET 1 & 3)

BEAM	TYPE	FLANGE PLATES		FLANGE BOLTS			WEB SPLICE			WEIGHT OF SPLICE MATERIAL kg			
		OUTSIDE 2 REQUIRED	INSIDE 4 REQUIRED	NUM.	N SPA.	PITCH	A	B	C		TYPE	WEB PLATES 2 REQUIRED	WEB BOLTS NO.
		W 920x345	A	300x18x1220	110x18x1220	56	6	85	60		-	188	C

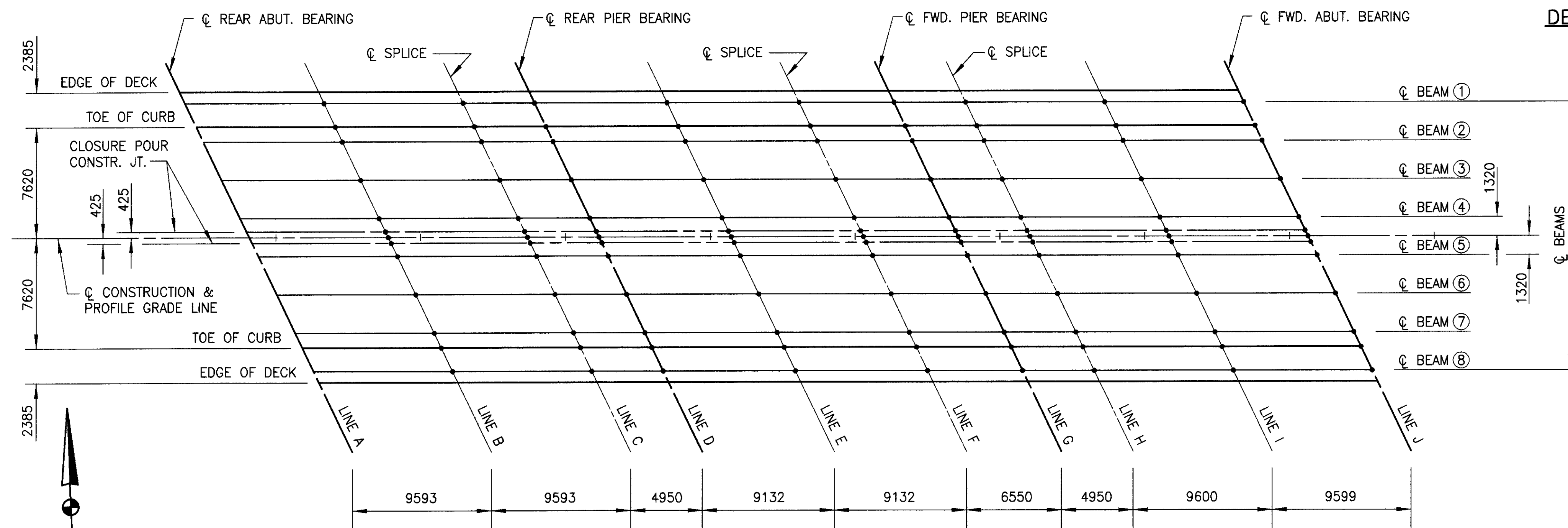
SCREED ELEVATION TABLE

LOCATION	LINE									
	A	B	C	D	E	F	G	H	I	J
CL BEAM ①	264.138	264.208	264.230	264.237	264.277	264.313	264.338	264.372	264.429	264.437
LEFT SIDEWALK CURB LINE (TOE OF CURB)	264.167	264.238	264.259	264.266	264.306	264.342	264.367	264.401	264.458	264.466
CL BEAM ②	264.186	264.256	264.277	264.284	264.325	264.360	264.386	264.419	264.476	264.485
CL BEAM ③	264.233	264.303	264.325	264.332	264.372	264.407	264.433	264.467	264.524	264.532
CL BEAM ④	264.281	264.351	264.372	264.379	264.420	264.455	264.481	264.514	264.571	264.579
LEFT CLOSURE POUR CONSTR. JT.	264.297	264.367	264.388	264.395	264.436	264.471	264.497	264.530	264.587	264.596
CL CONSTRUCTION	264.304	264.375	264.396	264.403	264.443	264.479	264.504	264.538	264.595	264.603
RIGHT CLOSURE POUR CONSTR. JT.	264.298	264.369	264.390	264.397	264.437	264.473	264.498	264.532	264.589	264.597
CL BEAM ⑤	264.286	264.356	264.377	264.384	264.425	264.460	264.486	264.519	264.576	264.585
CL BEAM ⑥	264.249	264.319	264.340	264.347	264.388	264.423	264.449	264.482	264.539	264.548
CL BEAM ⑦	264.212	264.282	264.303	264.310	264.351	264.386	264.412	264.445	264.502	264.511
RIGHT SIDEWALK CURB LINE (TOE OF CURB)	264.197	264.268	264.289	264.296	264.336	264.372	264.398	264.431	264.488	264.496
CL BEAM ⑧	264.175	264.245	264.266	264.273	264.314	264.349	264.375	264.408	264.465	264.474

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



DECK TRANSVERSE REINFORCING STEEL LAYOUT



LAYOUT OF SCREED ELEVATION LINES

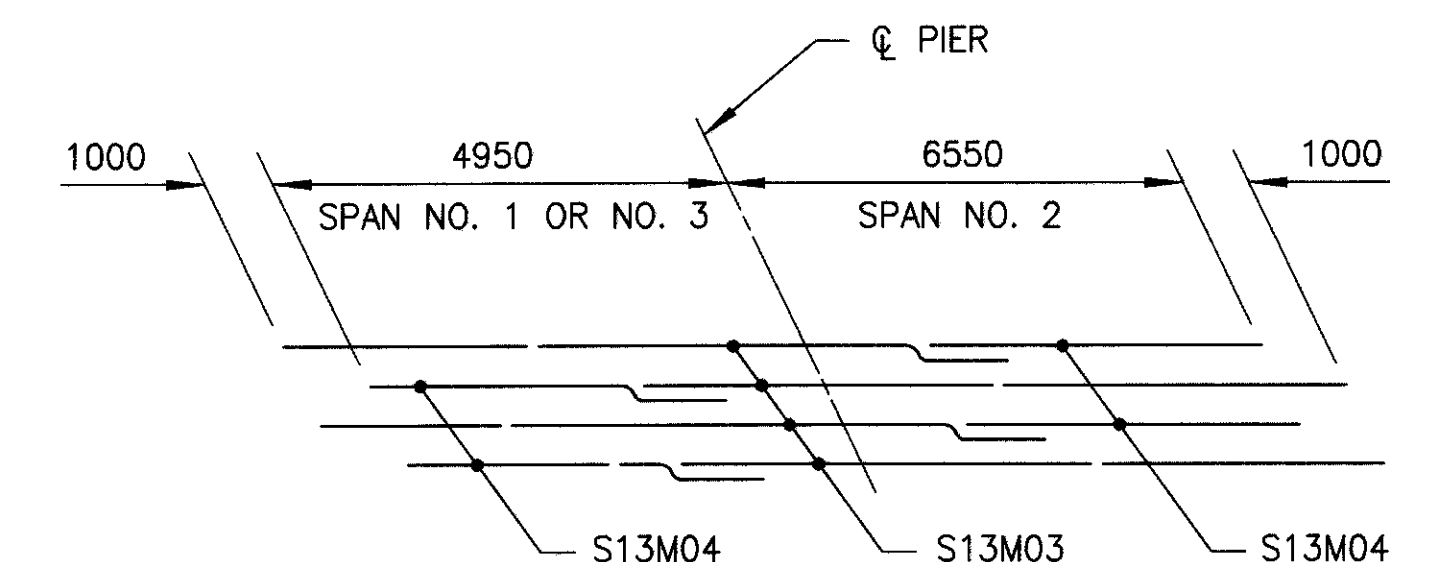


DIAGRAM SHOWING STAGGER OF S13M03 & S13M04 BARS OVER PIERS

MINIMUM REINFORCING BAR SPLICE LAP LENGTH
 NO.13 BAR = 585 mm
 NO.16 BAR = 740 mm

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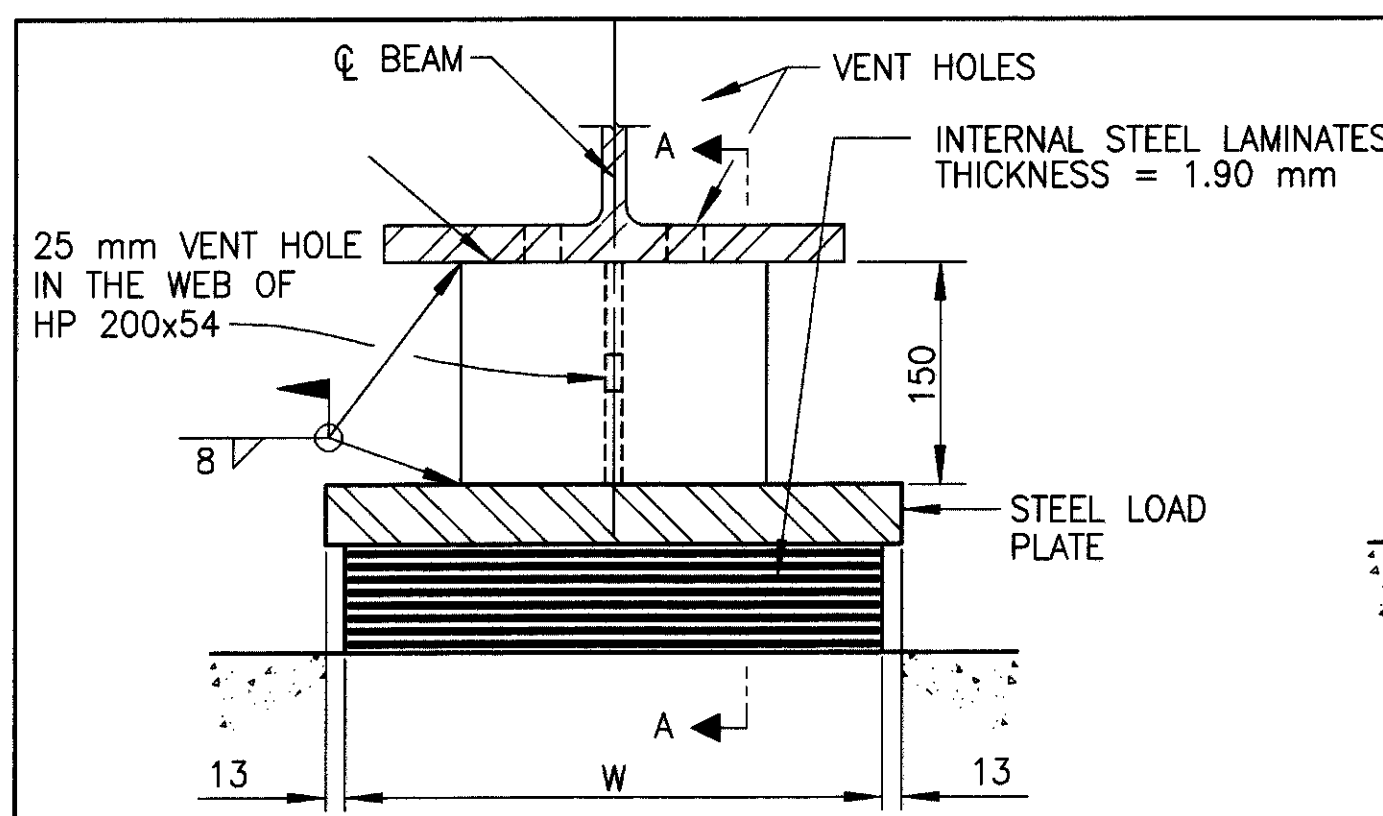
REVIEWED: BKJ
 REVISED: G.T.

SUPERSTRUCTURE DETAILS
 BRIDGE NO. DEL-36-16736
 OVER OLENTANGY RIVER

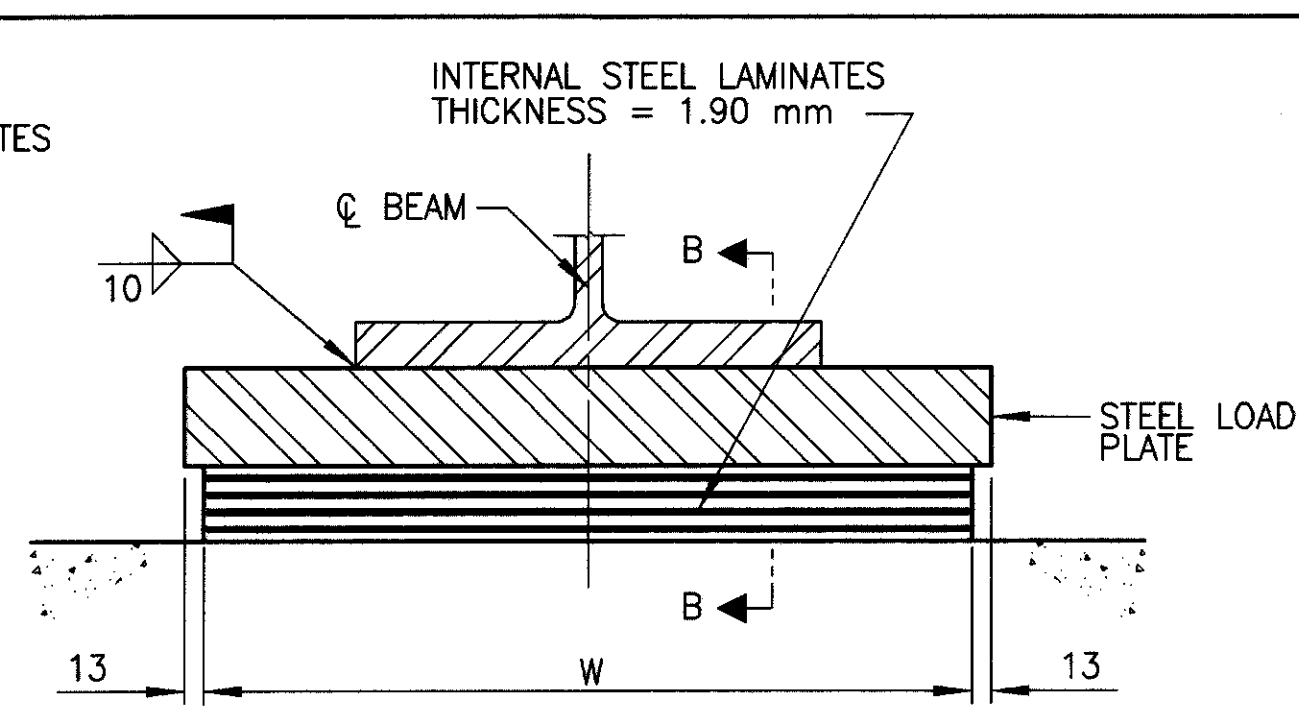
DEL-36-16.736

10/14

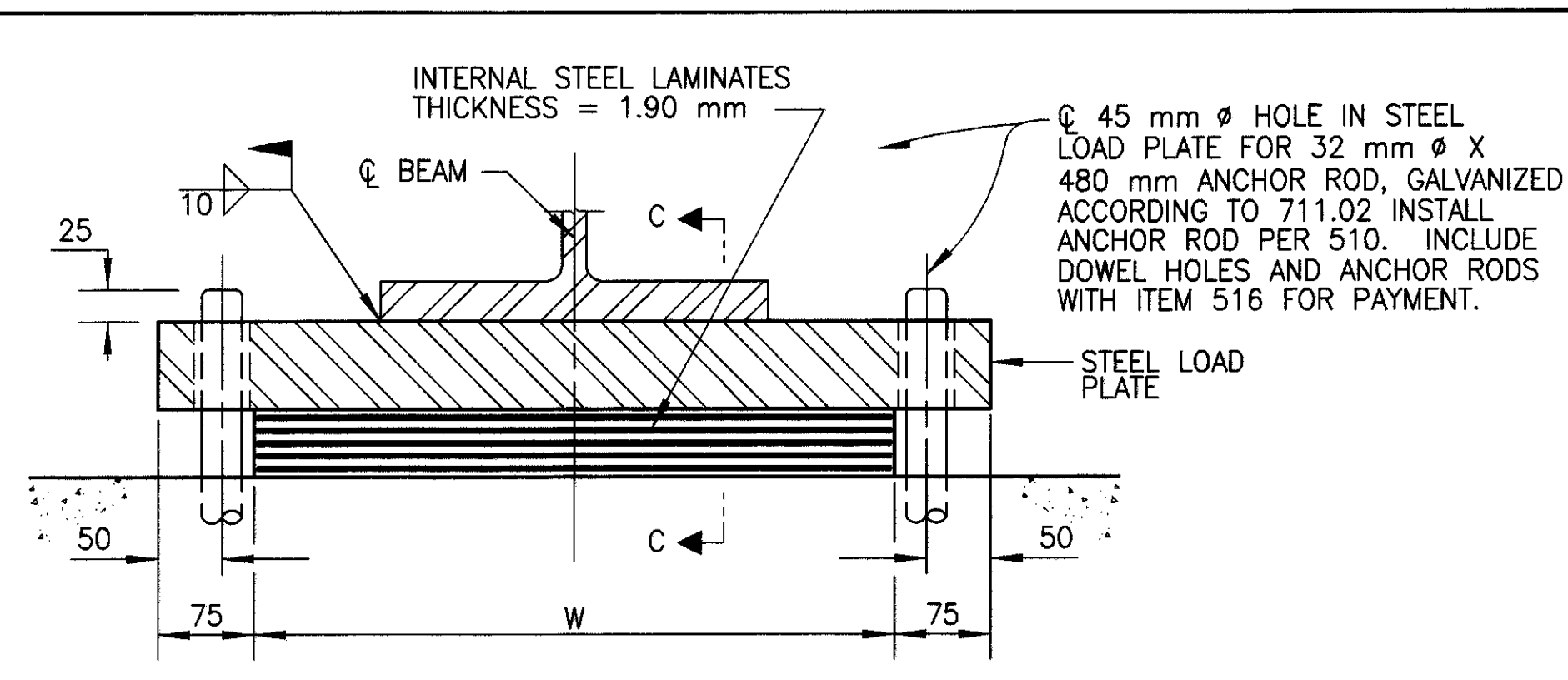
30
34



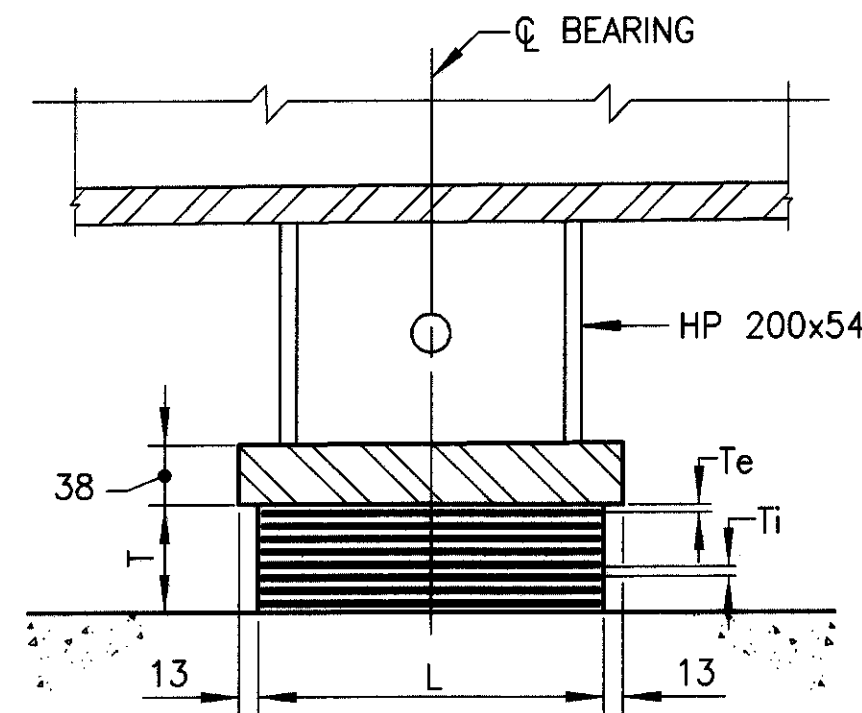
TYPE A BEARING



TYPE B BEARING

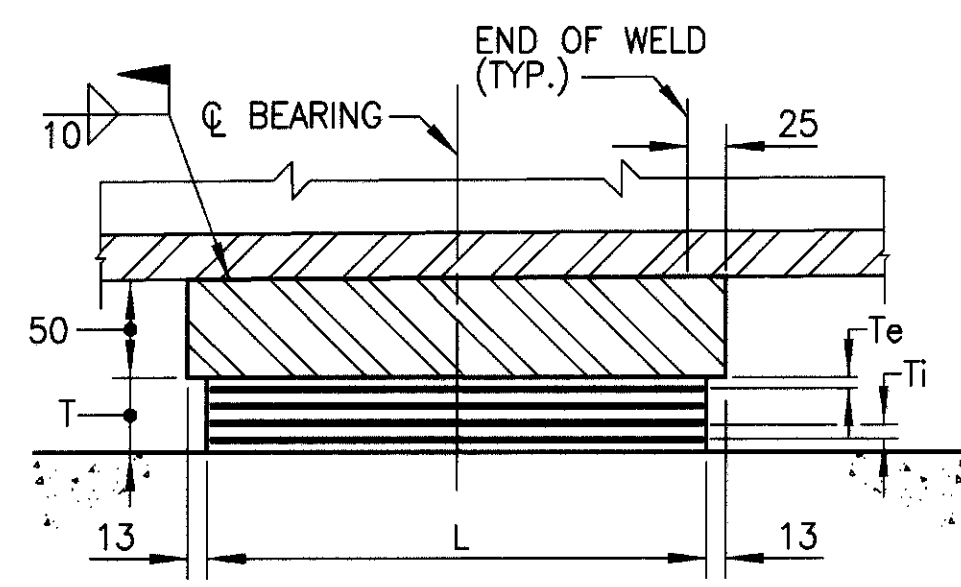


TYPE C BEARING

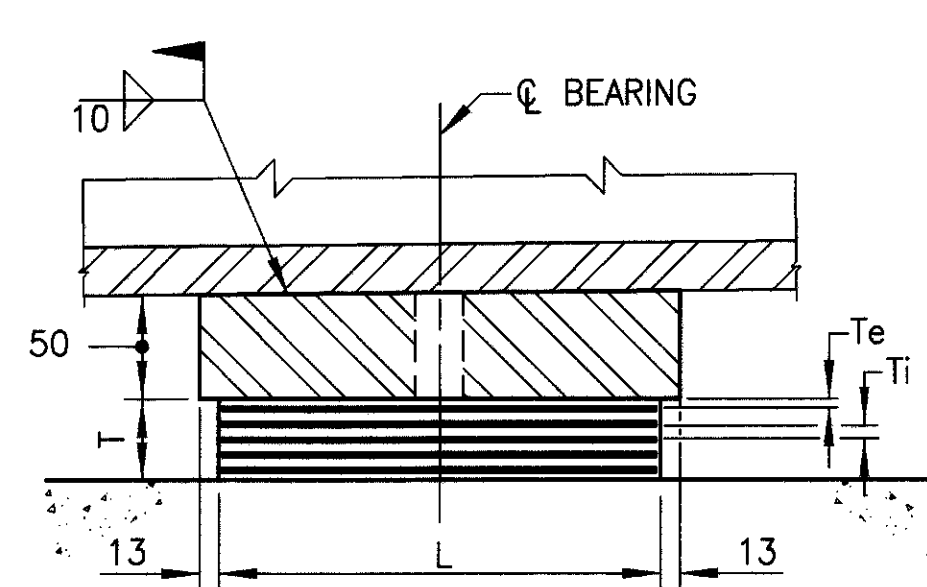


SECTION A-A

NOTE:
HP 200x54 INCLUDED WITH ITEM 516
ELASTOMERIC BEARING FOR PAYMENT.



SECTION B-B



SECTION C-C
(ANCHOR ROD NOT SHOWN)

BEARING DATA TABLE (ALL DIMENSIONS IN MILLIMETERS) (50 DUROMETER)

LOCATION	BEARING TYPE	T	W	L	Te	Ti	NUMBER OF STEEL LAMINATES	LOAD PLATE SIZE (W X L)	REMARKS	OVERALL BEARING HEIGHT
REAR ABUTMENT	A	74.2	405	240	5.0	7 LAYERS @ 7.0	8	431 x 266		112.2
REAR PIER	C	55.8	535	305	6.0	4 LAYERS @ 8.5	5	685 x 331	FIXED BEARING, 45 mm Ø HOLE IN STEEL LOAD PLATE.	105.8
FORWARD PIER	B	51.6	535	345	7.0	3 LAYERS @ 10.0	4	561 x 371		101.6
FORWARD ABUTMENT	A	74.2	405	240	5.0	7 LAYERS @ 7.0	8	431 x 266		112.2

LOAD PLATE: THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. THE STEEL LOAD PLATE SHALL BE ASTM A588M.

WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 150°C AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

BEARING ANCHOR RODS: AT THE OPTION OF THE CONTRACTOR, THE BEARING ANCHOR RODS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST-IN-PLACE.

BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 27°C OR LOWER THAN 4°C AND THE BEARING SHEAR DEFLECTION EXCEEDS ONE-SIXTH OF THE BEARING HEIGHT AT 15°C ± 5°C, THE BEAMS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 15°C ± 5°C.

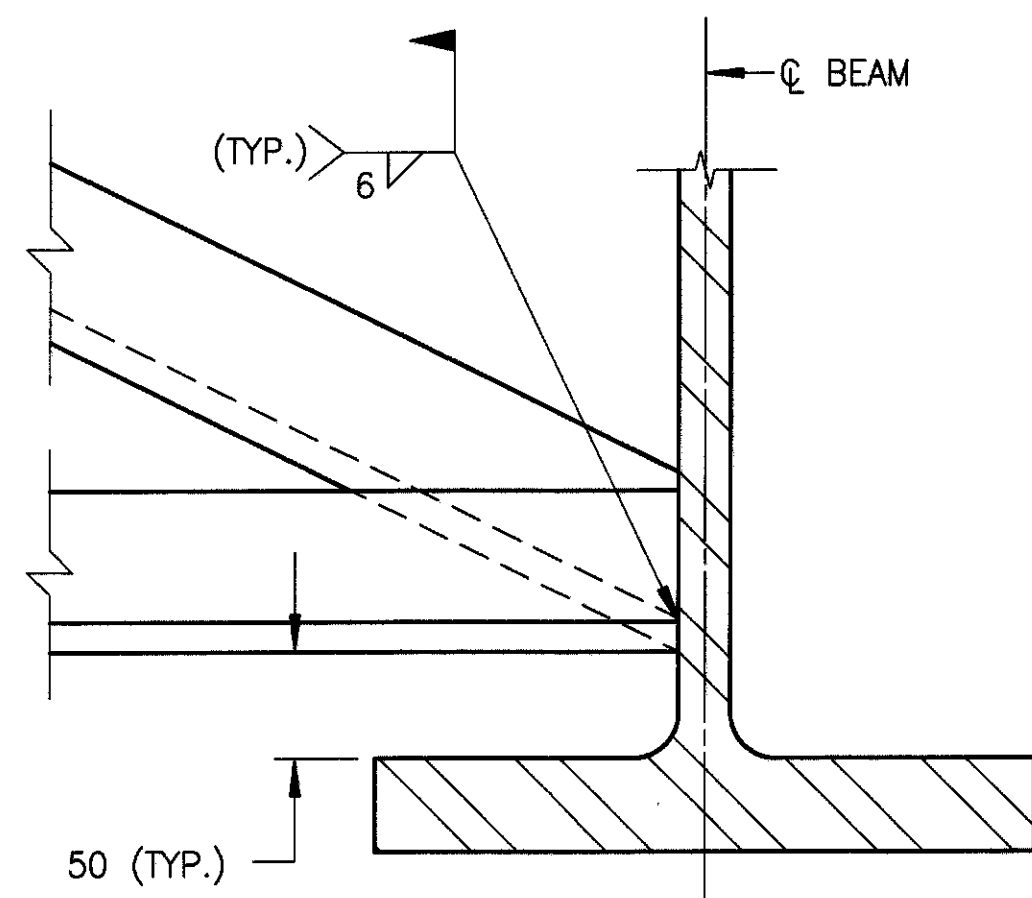
ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND, ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE BEARINGS, EACH.

BASIS OF PAYMENT: THE UNIT BID PRICE 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 ITEM 516, EACH.

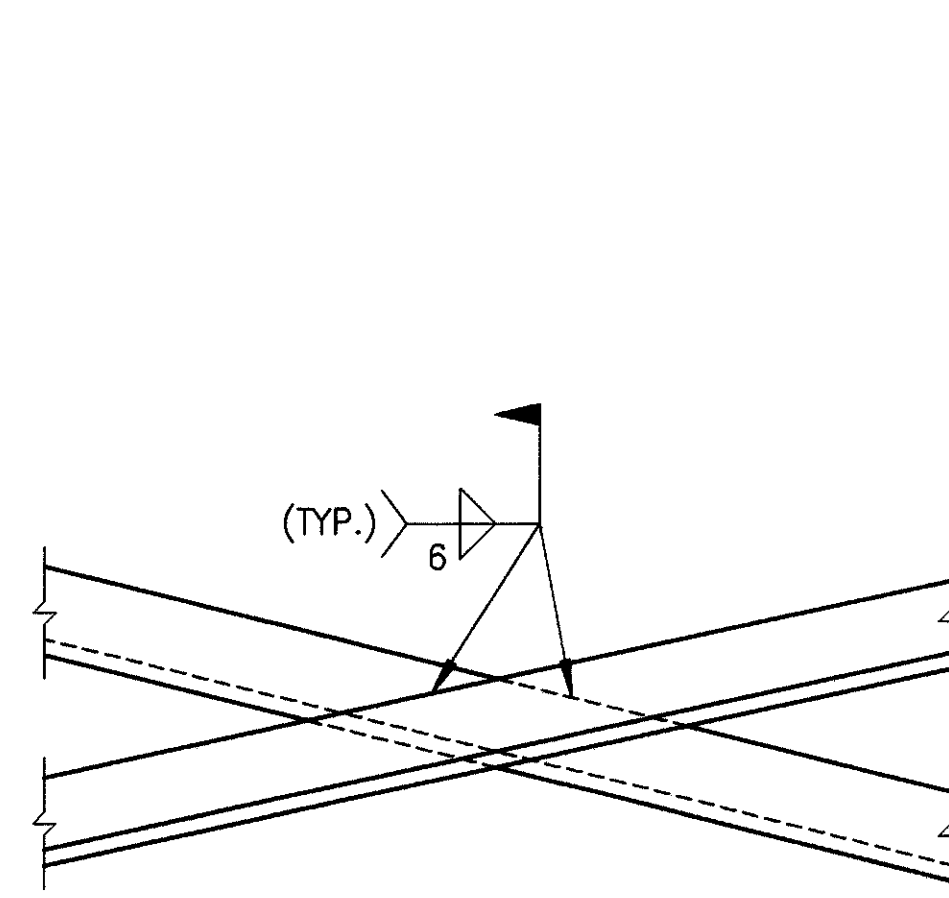
LEGEND:

Te = THICKNESS OF EXTERNAL ELASTOMER LAYER
Ti = THICKNESS OF INTERNAL ELASTOMER LAYER

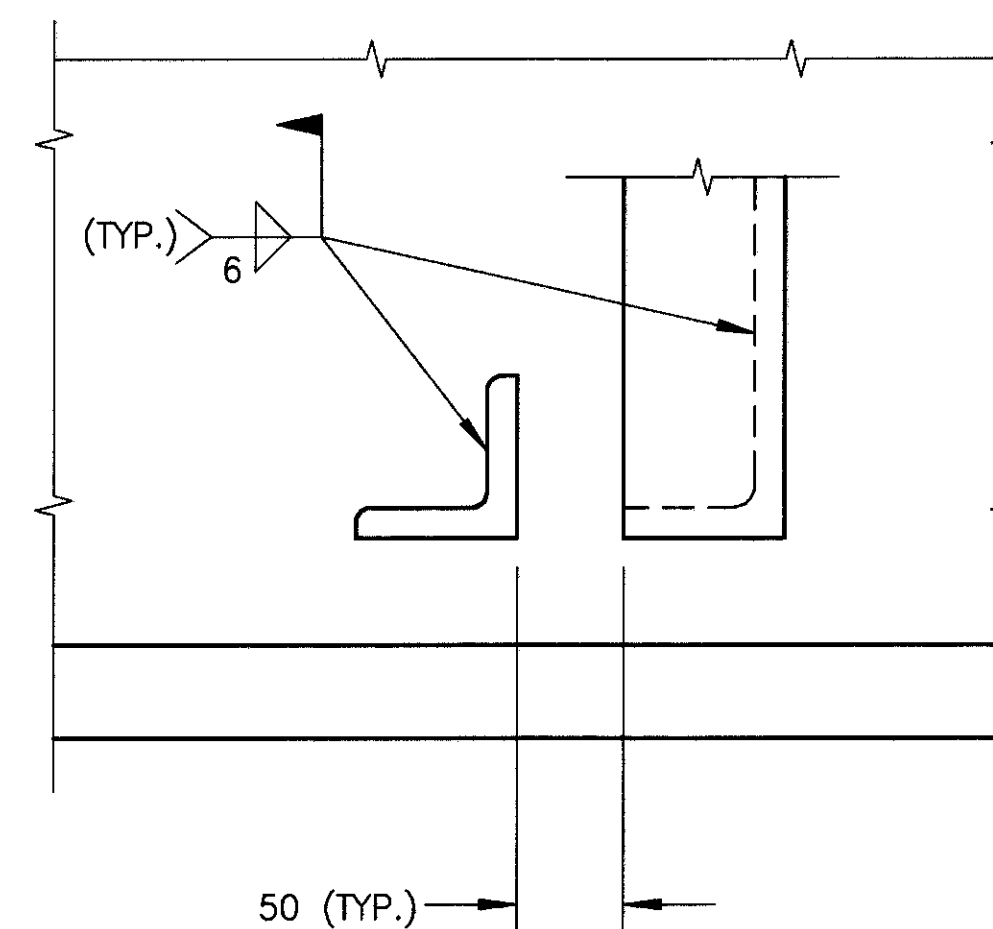
BEARING LOADS	LOCATION	ABUTMENTS	PIERS
DEAD LOAD REACTION		345 kN	827 kN
LIVE LOAD REACTION (WITHOUT IMPACT)		234 kN	307 kN
TOTAL		579 kN	1134 kN



DETAIL F

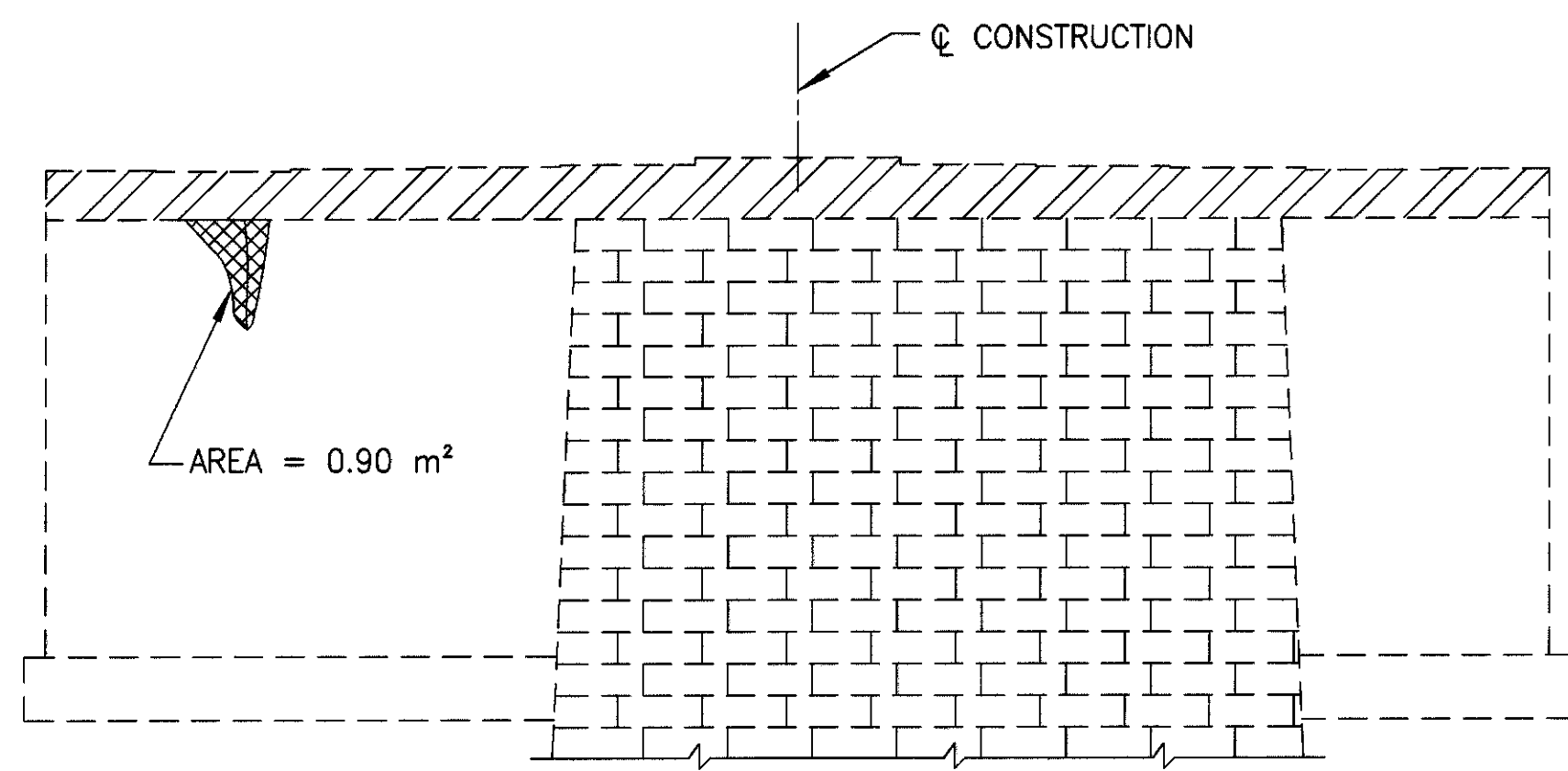


DETAIL G

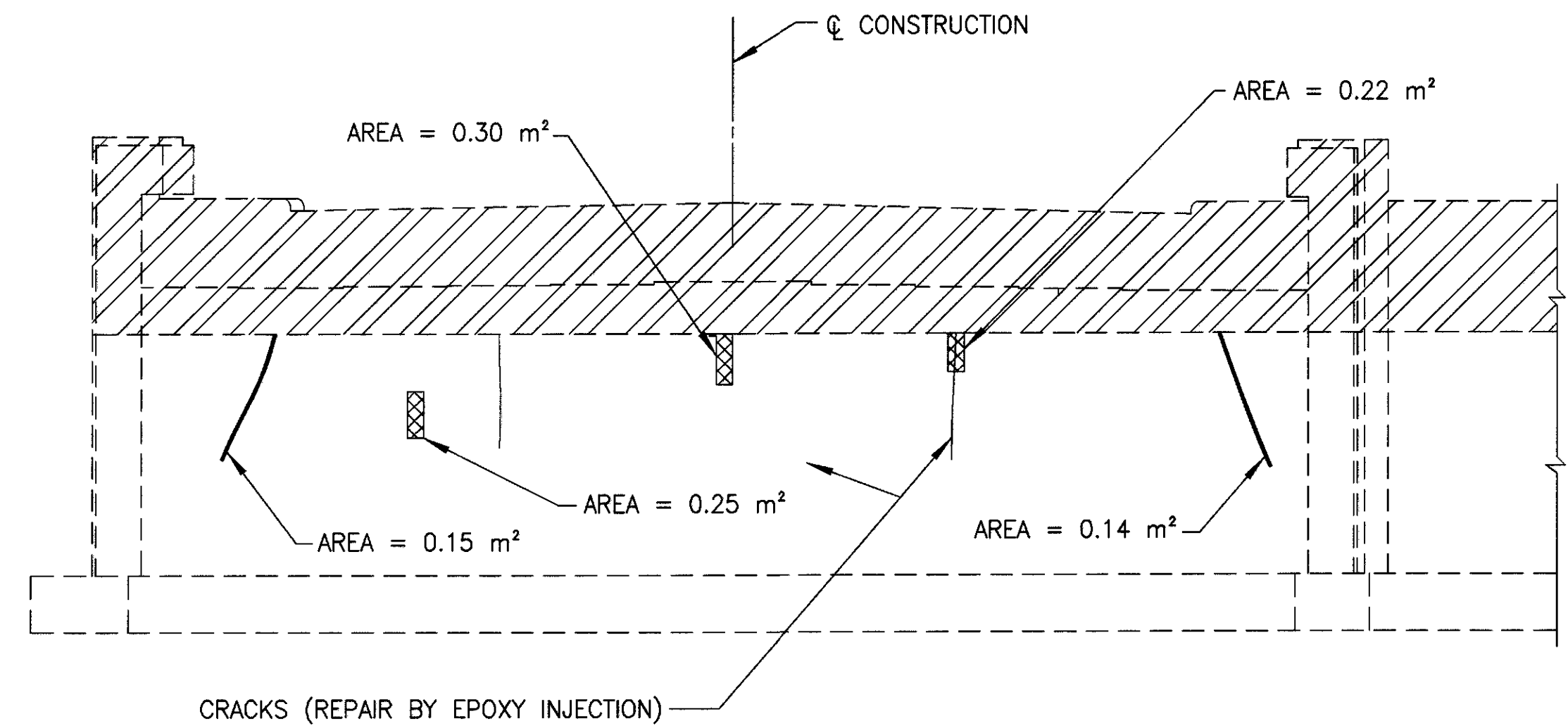


SECTION H-H

CROSSFRAME DETAILS

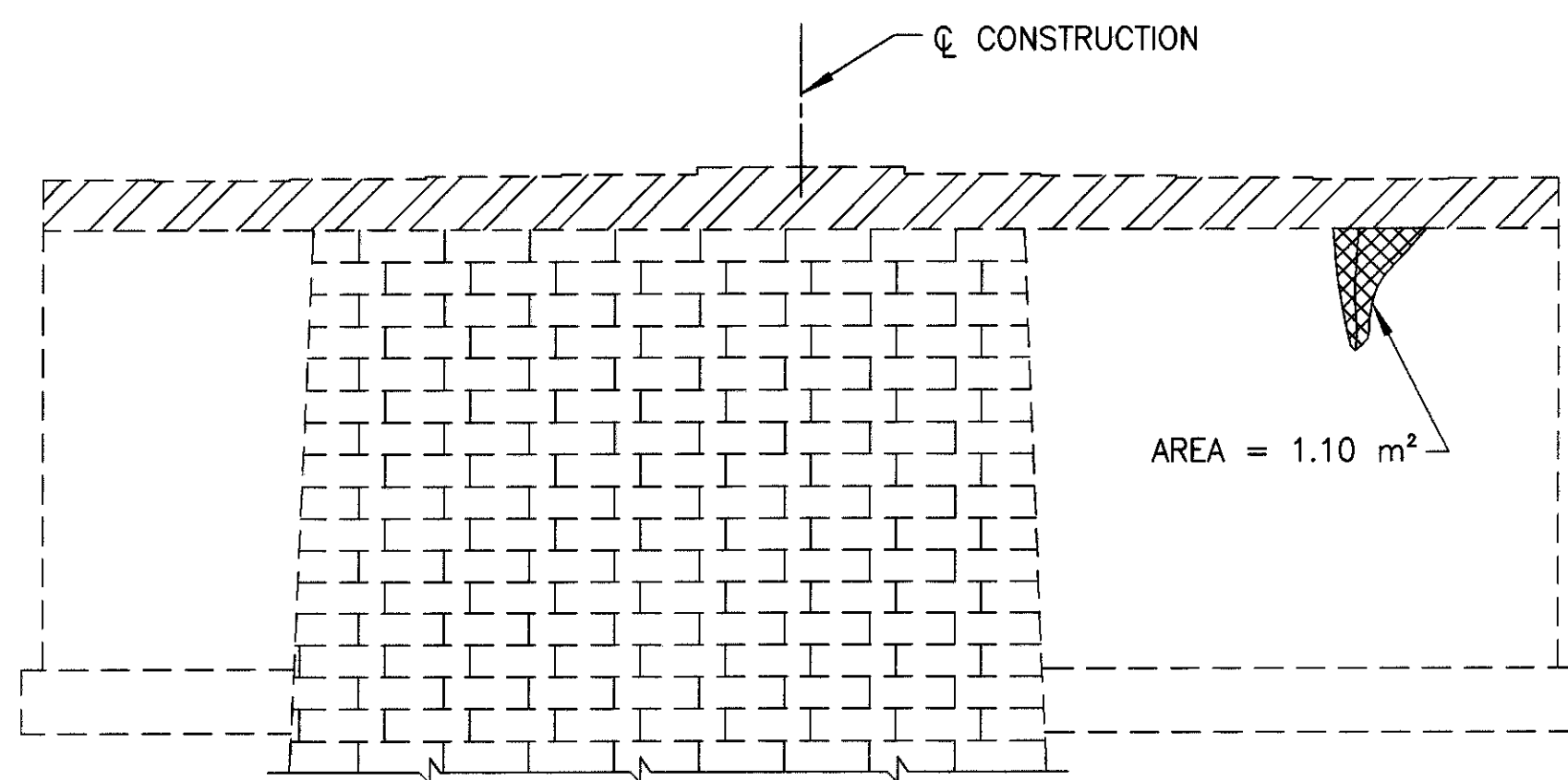


REAR PIER LOOKING EAST

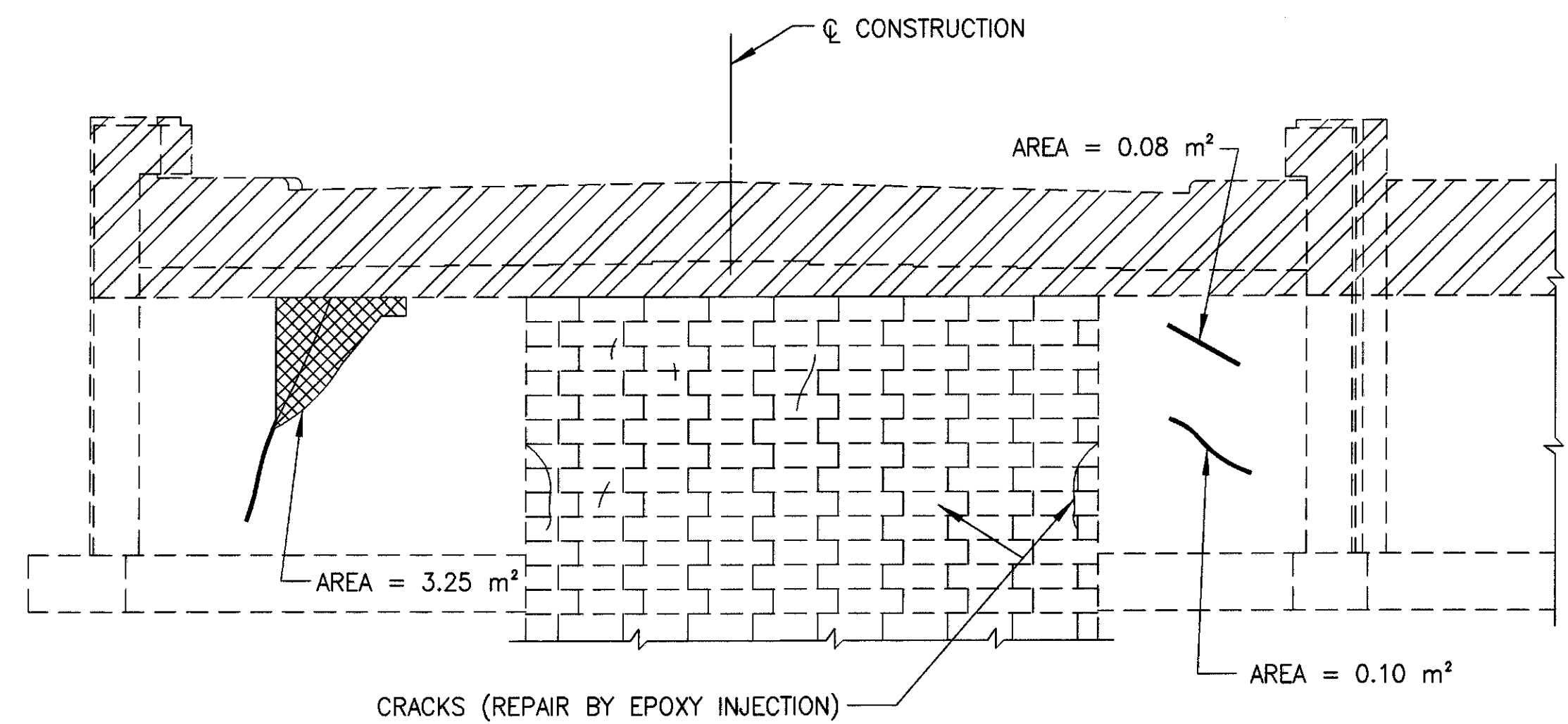


REAR ABUTMENT

(EXISTING ABUTMENT SHOWN)



REAR PIER LOOKING WEST



FORWARD ABUTMENT

(EXISTING ABUTMENT SHOWN)

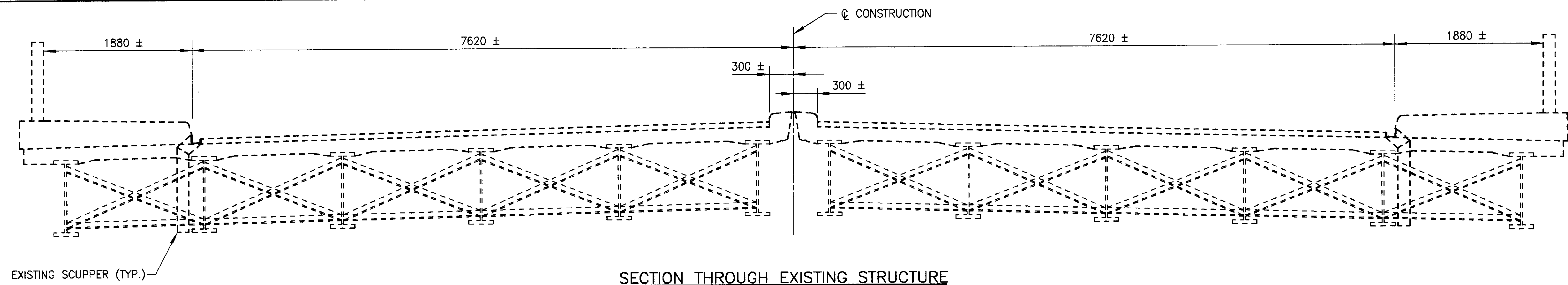
PATCHING CONCRETE STRUCTURES

IN ADDITION TO THE REQUIREMENTS OF CMS 519, THE FOLLOWING IS ALSO REQUIRED:

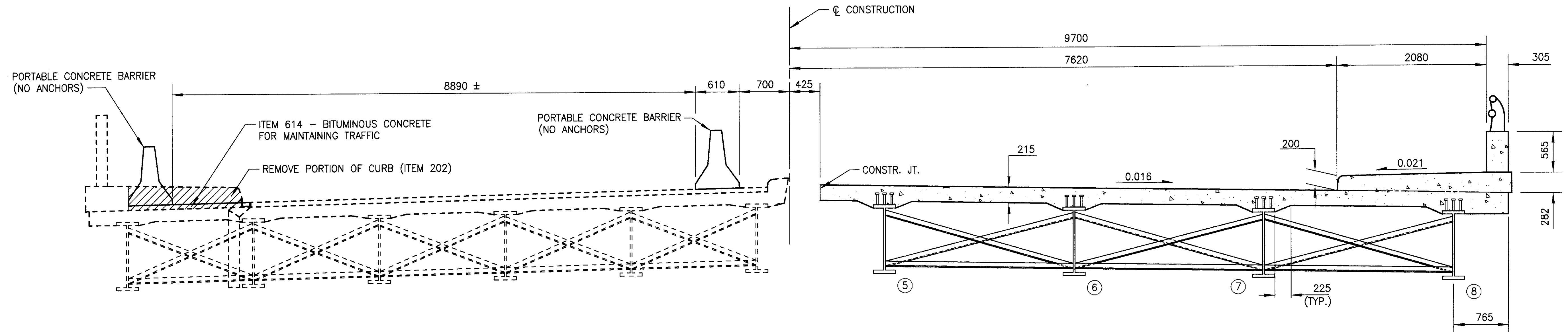
ALL SURFACES TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WITHIN SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING PRIOR TO THE CLEANING SPECIFIED BY 519.04. CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS.

LEGEND:

- PORTIONS OF CONCRETE TO BE REMOVED
- AREAS OF CONCRETE TO BE PATCHED



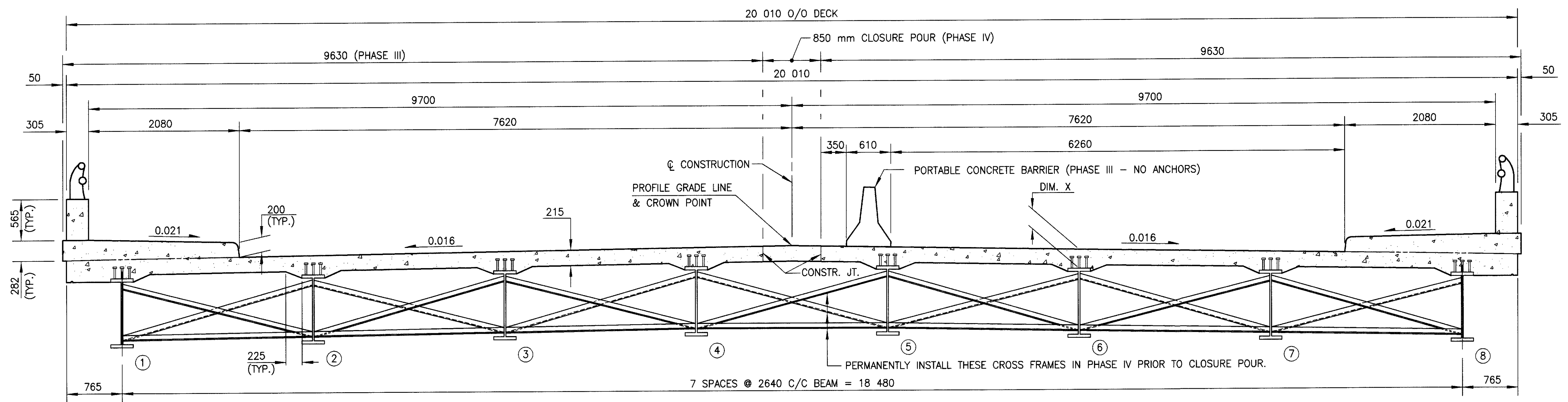
SECTION THROUGH EXISTING STRUCTURE



SECTION SHOWING PHASE I CONSTRUCTION

NOTES:

FOR ADDITIONAL NOTES AND DETAILS, SEE MAINTENANCE OF TRAFFIC PLAN SHEETS 4/34 TO 11/34.



SECTION SHOWING PHASE III & PHASE IV CONSTRUCTION

DATE	4/25/97
REVIEWED	G.E.D.
STRUCTURE FILE NUMBER	2100878
DRAWN	BKJ/GT
REVIS	GT
DESIGNED	BKJ/GT
CHECKED	GT

PHASE CONSTRUCTION DETAILS
BRIDGE NO. DEL-36-16736
OVER OLENTANGY RIVER

DEL-36-16.736

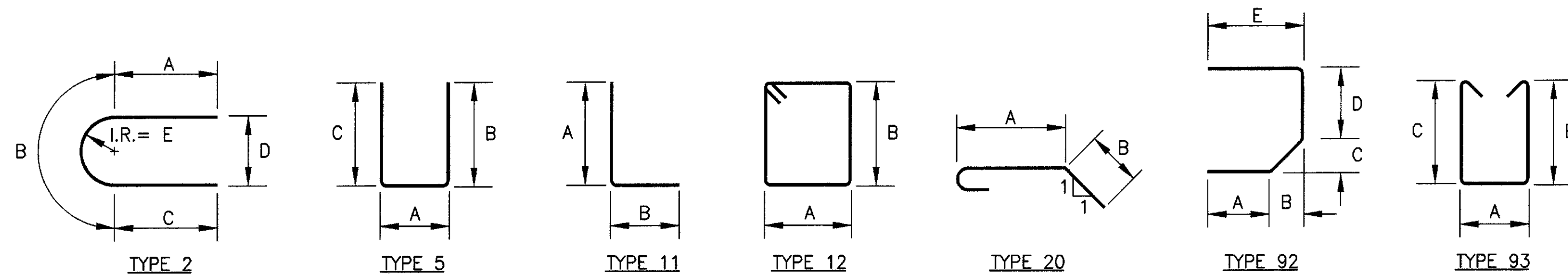
13/14

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REINFORCING STEEL LIST

MARK	NUMBER			LENGTH (mm)	WEIGHT (kg)	TYPE	DIMENSIONS (mm)					
	REAR	FWD.	TOTAL				A	B	C	D	E	R
A B U T M E N T S												
* A25M01	28	28	56	10 935	2433	ST						
A25M02	44	44	88	1640	573	20	930	430				
A16M01	46	46	92	3220	460	12	650	880				
A16M02	46	46	92	1820	260	5	400	750	750			
A16M03	8	8	16	10 850	269	ST						
A16M04	10		10	6250	97	ST						
A16M05	10	10	20	9300	289	ST						
A16M06	10	10	20	10 800	168	ST						
A16M07	16	22	38	1720	101	5	500	650	650			
A16M08	4	4	8	2280	28	ST						
A16M09	20	20	40	2540	158	92	600	300	300	500	900	
A16M10	68	68	136	1060	224	5	580	280	280			
				TOTAL =	5060							
P I E R S												
P29M01		12	12	1160	70	11	720	525				
P19M01		6	6	2115	28	5	730	740	740			
P19M02		12	12	1200	32	11	720	525				
* P16M01	12	12	24	10 430	388	ST						
P16M02	6	6	12	3570	66	2	1265	1040	1265	660	315	
P16M03	68		68	1260	133	5	660	340	340			
P13M04		68	68	1980	209	5	660	700	700			
				TOTAL =	926							

MARK	NUMBER			LENGTH (mm)	WEIGHT (kg)	TYPE	DIMENSIONS (mm)					
	REAR	FWD.	TOTAL				A	B	C	D	E	R
S U P E R S T R U C T U R E												
S16M01			1964	10 330	31 487	ST						
			4	1115								
S16M02			SERIES OF	TO	1114	ST						290
			32	10 105								
			4	4010								
S16M03			SERIES OF	TO	1270	ST						220
			29	10 100								
S16M04			52	3500	282	ST						
S16M05			760	9145	10 787	ST						
S16M06			95	6415	946	ST						
S16M07			416	2275	1469	ST						
S16M08			416	785	507	5	325	270	270			
S16M09			416	820	529	5	360	270	270			
S16M10			416	855	356	5	395	270	270			
S16M11			416	1840	1188	93	180	730	730			
				TOTAL =	60 296							
S13M01			800	9145	7272	ST						
S13M02			100	5175	514	ST						
S13M03			198	9145	1800	ST						
S13M04			198	3940	775	ST						



BENDING DIAGRAMS

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED.

"ST" IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

* - INDICATES THREADED END BARS

THE REINFORCING STEEL LIST IS FOR INFORMATION ONLY.

STICKLEN - BELSHEIM & ASSOCIATES
1090 KINGSBILL PARKWAY
COLUMBUS, OHIO 43229

DATE 4/25/97
REVIEWED G.E.D.
STRUCTURE FILE NUMBER 2100878

DRAWN BKJ
REVIS

DESIGNED BKJ
CHECKED G.T.

REINFORCING STEEL LIST
BRIDGE NO. DEL-36-16736
OVER OLENTANGY RIVER

DEL-36-16.736

14/14

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