



# OHIO DEPARTMENT OF TRANSPORTATION

## RIC-13-17.332 CITY OF MANSFIELD WASHINGTON TOWNSHIP MADISON TOWNSHIP RICHLAND COUNTY

### PROJECT DESCRIPTION

MISCELLANEOUS DRAINAGE AND SAFETY  
UPGRADING WORK INCLUDING  
REHABILITATION OF STRUCTURES.

### LIMITED ACCESS

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

### 1997 SPECIFICATIONS

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

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

### PROJECT DESIGNATION

RIC-13-17.445 APPEARING THROUGHOUT THIS PLAN  
SHALL BE CONSIDERED TO READ RIC-13-17.332

APPROVED  
DATE 1-8-99

*Manjiv D. Dahiya*  
DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED  
DATE 2-20-99

*Gordon Proctor*  
DIRECTOR, DEPARTMENT OF TRANSPORTATION

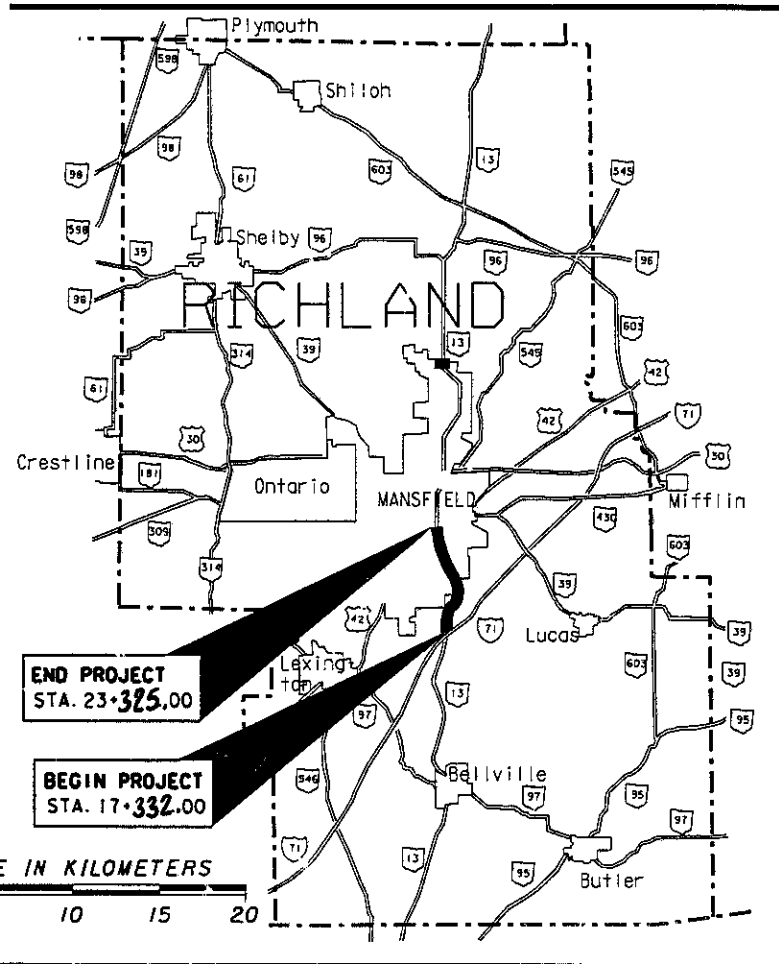
### SPECIAL PROVISIONS

WATERWAY PERMIT NWP#3 DATE: 1-28-98

RIC-13-17.332  
990359  
DIST 03

PID# 16915  
05-19-99

### LOCATION MAP



END PROJECT  
STA. 23+325.00

BEGIN PROJECT  
STA. 17+332.00

SCALE IN KILOMETERS

82° 30' 42" W. LONGITUDE 40° 41' 39" N. LATITUDE

PORTION TO BE IMPROVED  
STATE & FEDERAL ROUTES  
OTHER ROADS

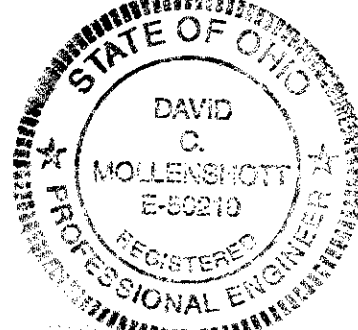
### DESIGN DESIGNATION

CURRENT ADT (1999) 15500  
DESIGN YEAR ADT (2011) 18500  
DESIGN HOURLY VOLUME (2011) 1850  
DIRECTIONAL DISTRIBUTION 50%  
TRUCKS (24 HOUR B&C) 5%  
DESIGN SPEED 100 KPH  
LEGAL SPEED 55 MPH

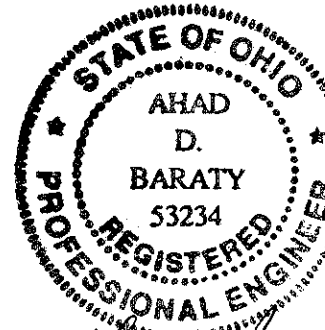
DESIGN FUNCTIONAL CLASSIFICATION - URBAN EXPRESSWAY

ENGINEER'S SEAL FOR  
STRUCTURES OVER 6.1 m

ENGINEER'S SEAL: FOR ENTIRE PLAN  
EXCEPT STRUCTURES OVER 6.1 m



David C. Molleshott  
DATE: 1/11/99



AHAD D. BARATY  
DATE: 1/8/99



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TWO WORKING DAYS  
BEFORE YOU DIG  
Call 800-362-2764  
TOLL FREE  
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS MUST BE CALLED DIRECTLY

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
APPROVED:  
DIVISION ADMINISTRATOR DATE

STANDARD DRAWINGS		STANDARD DRAWINGS		STANDARD DRAWINGS		STANDARD DRAWINGS		STANDARD DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	
BP-2.4M	10-28-94	CB-1.1M	07-12-95			TC-61.10M	03-31-94	MT-97.10M	04-25-94	806	09-09-97
BP-3.1M	10-28-94	CB-2.2M	07-12-95			RM-4.1M	10-21-97	MT-101.60M	04-25-94	814	06-02-98
GR-1.2M	01-03-96	CB-3.2M	07-12-95	TC-41.10M	03-31-94	RM-4.2M	10-21-97	DM-1.1M	10-21-97	815	05-30-96
GR-1.3M	11-30-94	HW-2.1M	07-12-95	TC-41.20M	07-01-94	AS-1-8IM	10-25-94			846	09-09-97
GR-2.1M	04-14-98	HW-2.2M	07-12-95	TC-41.40M	03-31-94	EXJ-4-87M	02-18-97			904	05-05-98
GR-2.2M	10-21-97	MT-95.30M	04-25-94	TC-41.4IM	03-31-94	PCB-9IM	03-20-95			905	04-01-98
GR-3.1M	10-21-97	MT-98.12M	06-24-93	TC-41.50M	07-01-94	MT-35.10M	01-30-95			906	05-05-98
GR-4.2M	10-21-97	MT-98.13M	06-24-93	TC-42.10M	03-31-94	MT-35.11M	01-30-95			910	07-28-98
GR-4.3M	10-21-97	MT-98.14M	06-24-93	TC-42.20M	03-31-94					927	06-14-95
GR-5.1M	04-21-95	MT-98.15M	06-24-93	TC-51.11M	09-30-94	MT-95.40M	04-25-94			954	09-09-97
GR-5.3M	11-30-94	MT-99.10M	01-30-95	TC-51.12M	03-31-94	MT-96.11M	01-30-95			842	01-06-99
GR-6.1M	01-03-96	MT-105.10M	04-25-94	TC-52.10M	07-29-94	MT-96.20M	01-30-95			847	06-30-98
GR-6.2M	01-03-96	MT-105.11M	04-25-94	TC-52.20M	07-29-94	MT-96.25M	01-30-95			899	10-21-98
										830	10-21-98

DESIGN FILE: I:\projects\6915\13111.dgn  
WORKSTATION: sjuzwik DATE: 08 JAN 99

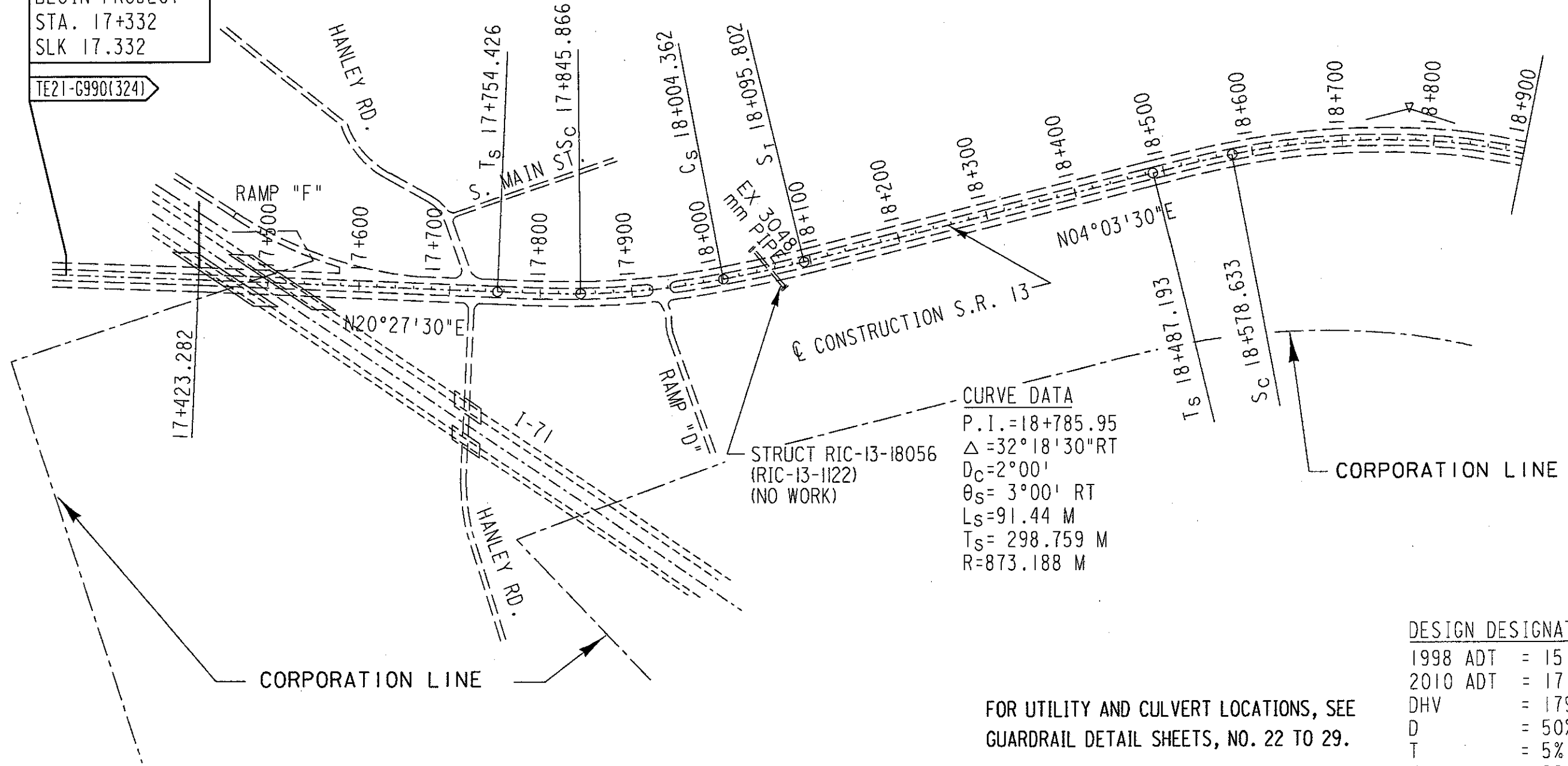
FEDERAL PROJECT NO. 7E21-6990(3)  
PID NO. 16915  
CONSTRUCTION PROJECT NO.  
RAILROAD INVOLVEMENT NONE  
RIC-13-17.332  
1/112



CURVE DATA  
 P.I. = 17+926.029  
 $\Delta = 16^\circ 24' \text{ LT}$   
 $D_C = 2^\circ 00'$   
 $\theta_S = 3^\circ 00' \text{ LT}$   
 $L_S = 91.44 \text{ M}$   
 $T_S = 171.602 \text{ M}$   
 $R = 873.188 \text{ M}$

CITY OF MANSFIELD

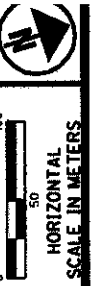
BEGIN PROJECT  
 STA. 17+332  
 SLK 17.332  
 TE21-G990(324)



DESIGN DESIGNATION

1998 ADT	= 15,000
2010 ADT	= 17,900
DHV	= 1790
D	= 50%
T	= 5%
V	= 90 km/hr

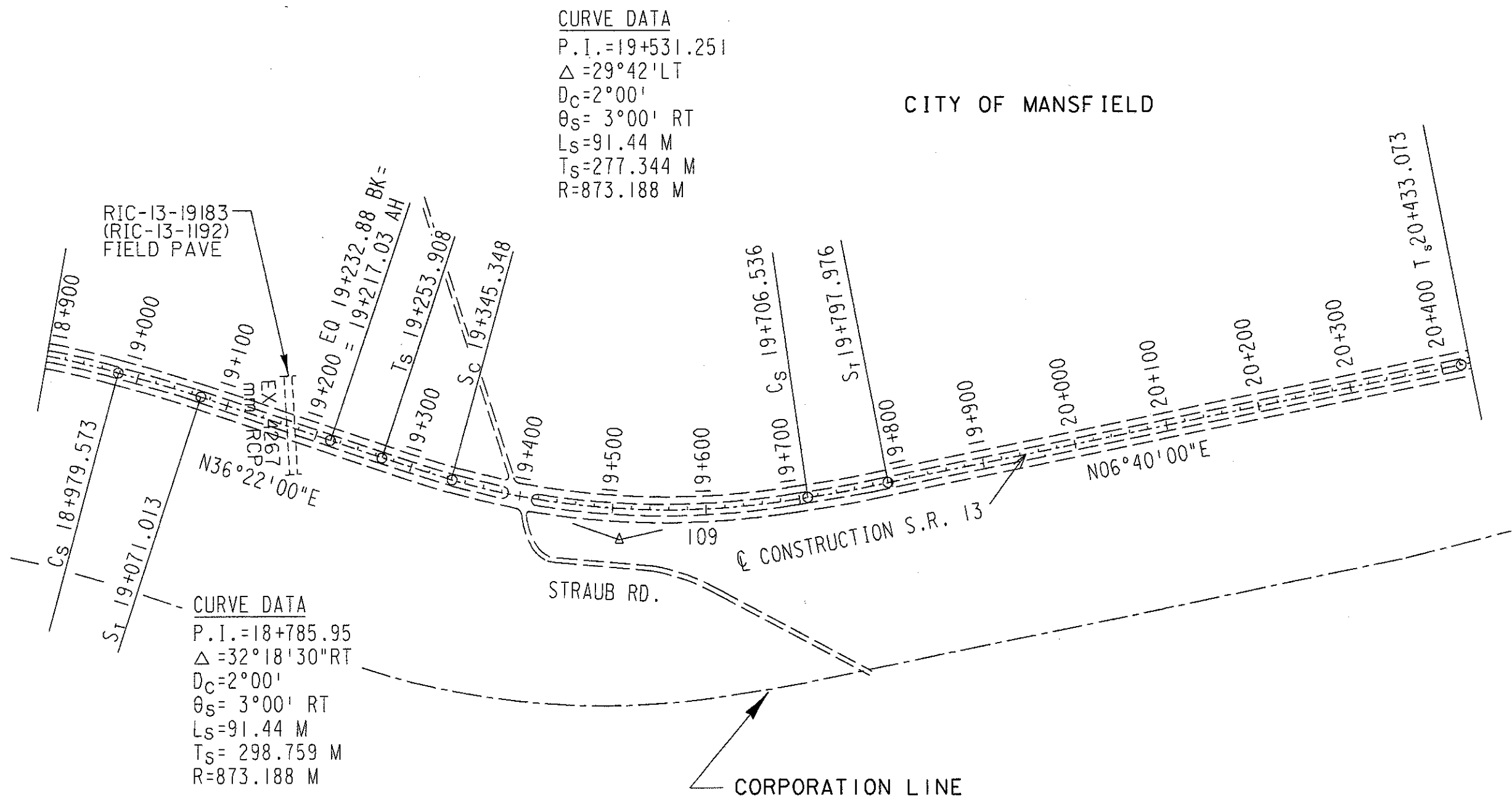
FOR UTILITY AND CULVERT LOCATIONS, SEE  
 GUARDRAIL DETAIL SHEETS, NO. 22 TO 29.



CALCULATED  
 CHECKED

**SCHEMATIC PLAN**

**RIC-13-17.445**



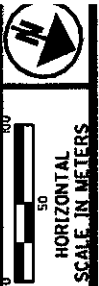
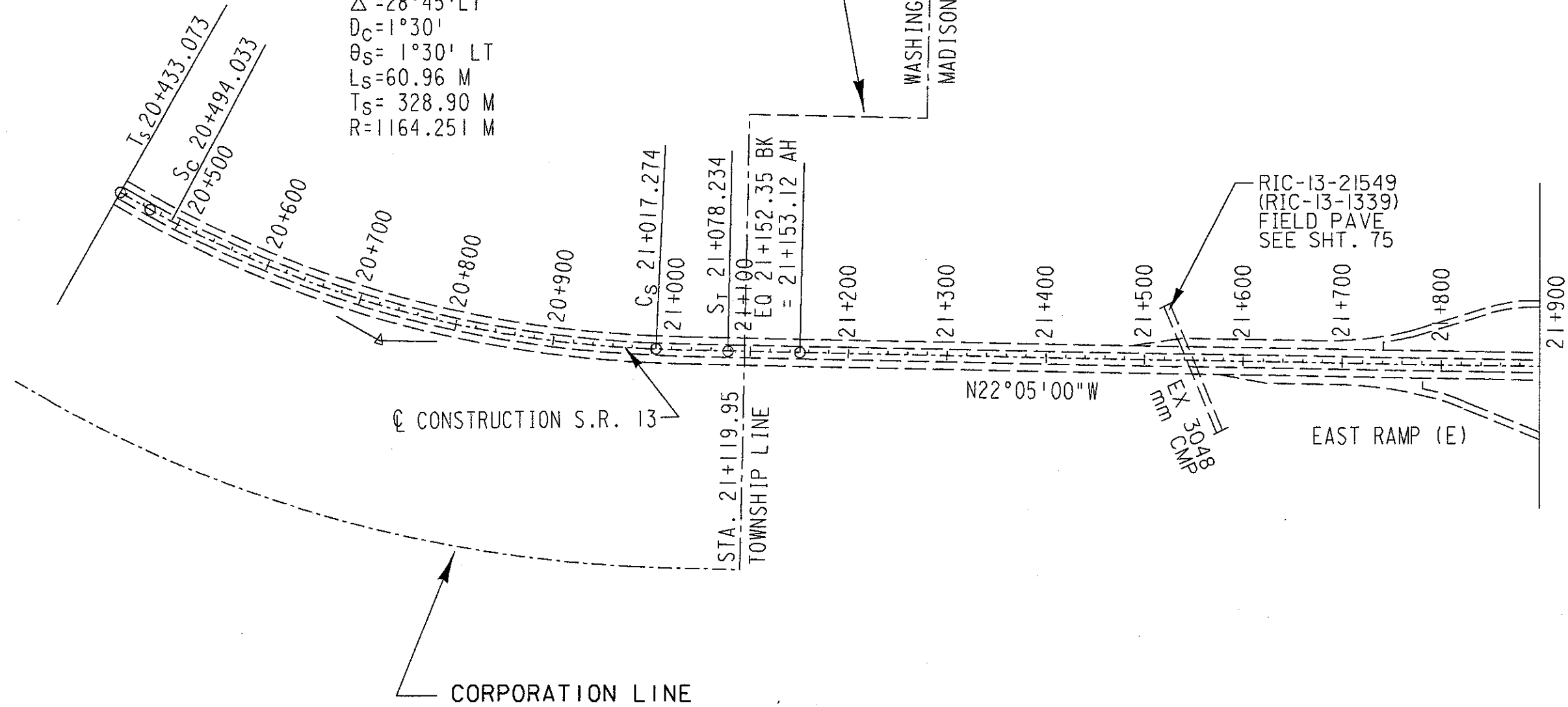
FOR UTILITY AND CULVERT LOCATIONS, SEE  
 GUARDRAIL DETAIL SHEETS, NO. 22 TO 29.

DESIGN FILE: I:\projects\16915\13sch.dgn  
WORKSTATION: mallemar DATE: 10 FEB 99

CITY OF MANSFIELD

CORPORATION LINE

CURVE DATA  
P.I. = 20+761.97  
 $\Delta = 28^{\circ}45'LT$   
 $D_C = 1^{\circ}30'$   
 $\theta_S = 1^{\circ}30' LT$   
 $L_S = 60.96 M$   
 $T_S = 328.90 M$   
 $R = 1164.251 M$



CALCULATED  
CHECKED

SCHEMATIC PLAN

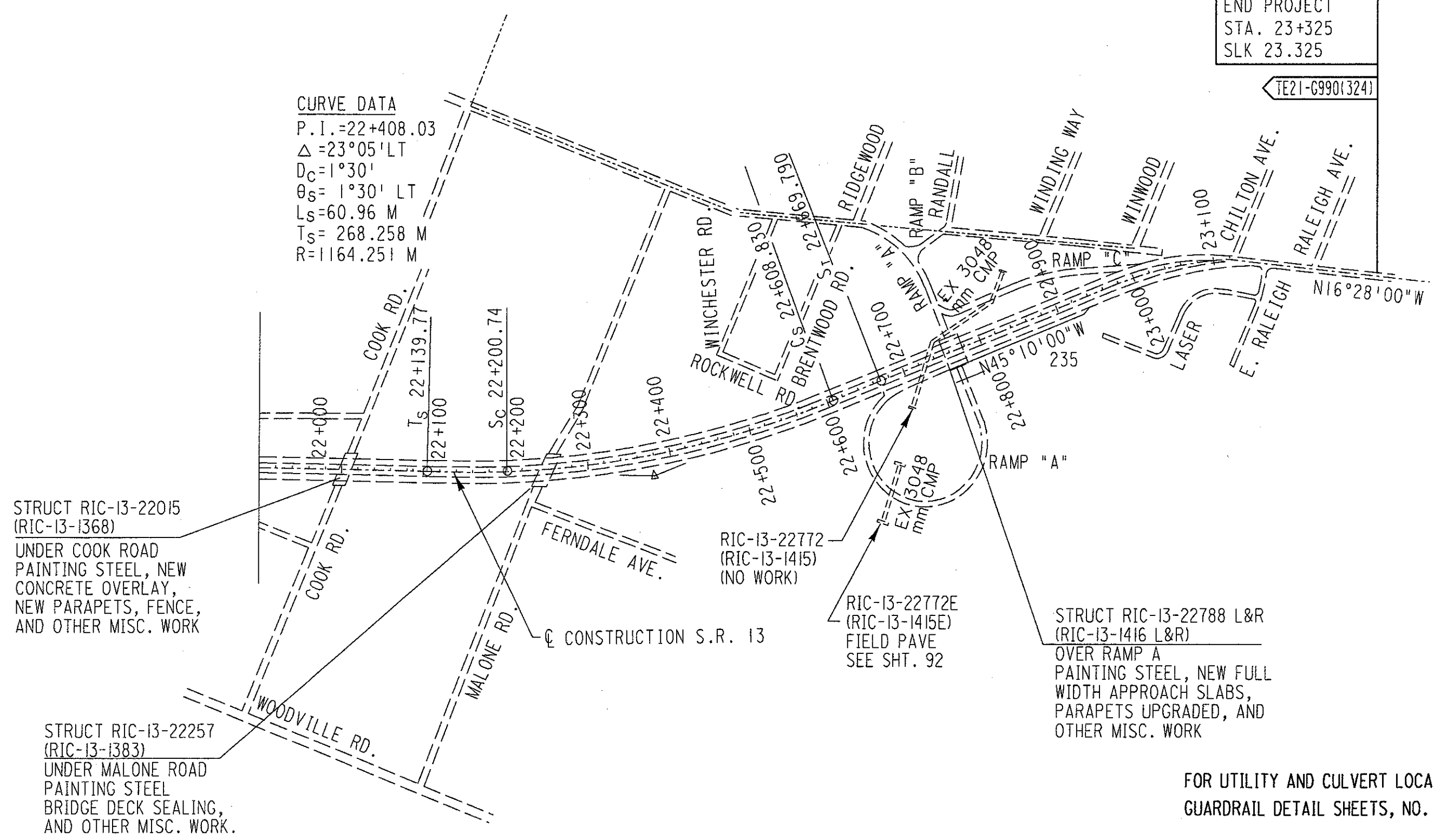
RIC-13-17.445

FOR UTILITY AND CULVERT LOCATIONS, SEE  
GUARDRAIL DETAIL SHEETS, NO. 22 TO 29.

END PROJECT  
STA. 23+325  
SLK 23.325

TE21-G990(324)

**CURVE DATA**  
P.I.=22+408.03  
 $\Delta = 23^{\circ}05'LT$   
 $D_c = 1^{\circ}30'$   
 $\theta_s = 1^{\circ}30' LT$   
 $L_s = 60.96 M$   
 $T_s = 268.258 M$   
 $R = 1164.251 M$



STRUCT RIC-13-22015  
(RIC-13-1368)  
UNDER COOK ROAD  
PAINTING STEEL, NEW  
CONCRETE OVERLAY,  
NEW PARAPETS, FENCE,  
AND OTHER MISC. WORK

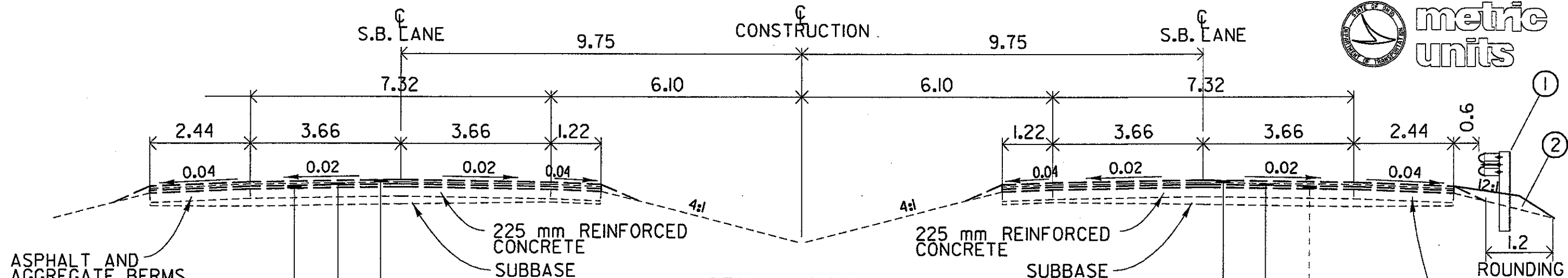
STRUCT RIC-13-22257  
(RIC-13-1383)  
UNDER MALONE ROAD  
PAINTING STEEL  
BRIDGE DECK SEALING,  
AND OTHER MISC. WORK.

RIC-13-22772  
(RIC-13-1415)  
(NO WORK)

RIC-13-22772E  
(RIC-13-1415E)  
FIELD PAVE  
SEE SHT. 92

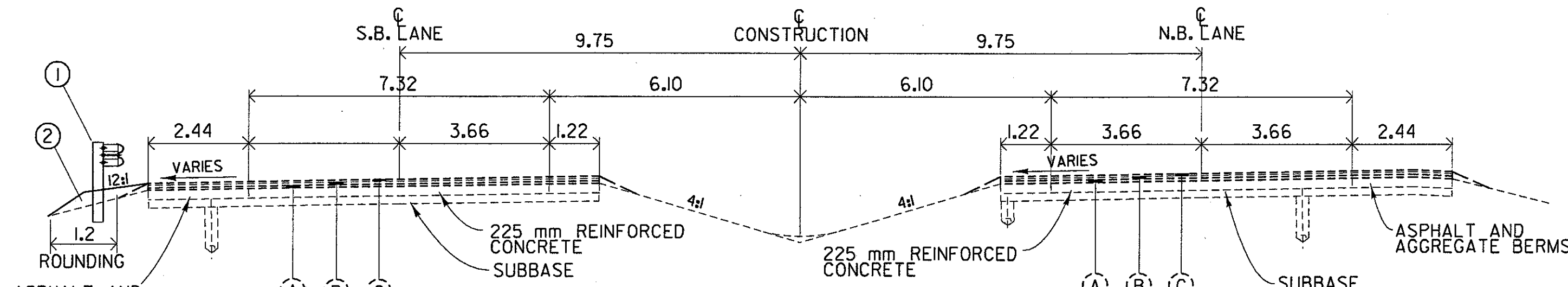
STRUCT RIC-13-22788 L&R  
(RIC-13-1416 L&R)  
OVER RAMP A  
PAINTING STEEL, NEW FULL  
WIDTH APPROACH SLABS,  
PARAPETS UPGRADED, AND  
OTHER MISC. WORK

FOR UTILITY AND CULVERT LOCATIONS, SEE  
GUARDRAIL DETAIL SHEETS, NO. 22 TO 29.



NORMAL SECTION

STA. 17+423 TO 17+732
STA. 18+120 TO 18+463
STA. 19+096 TO 19+233
STA. 19+820 TO 20+414
STA. 21+100 TO 21+120
STA. 21+120 TO 22+121
STA. 22+692 TO 22+774
STA. 22+825 TO 22+913



SUPERELEVATED SECTION

STA. 17+732 TO 18+120
STA. 18+463 TO 19+096
STA. 19+233 TO 19+820
STA. 20+414 TO 21+100
STA. 22+121 TO 22+692
STA. 22+913 TO 23+135

NOTE: ALL DIMENSIONS IN METERS UNLESS STATED OTHERWISE

SEE SHT 36 FOR MEDIAN CROSS OVER TYPICAL

SEE SHT 37A FOR APPROACH SLAB TYPICAL SECTION

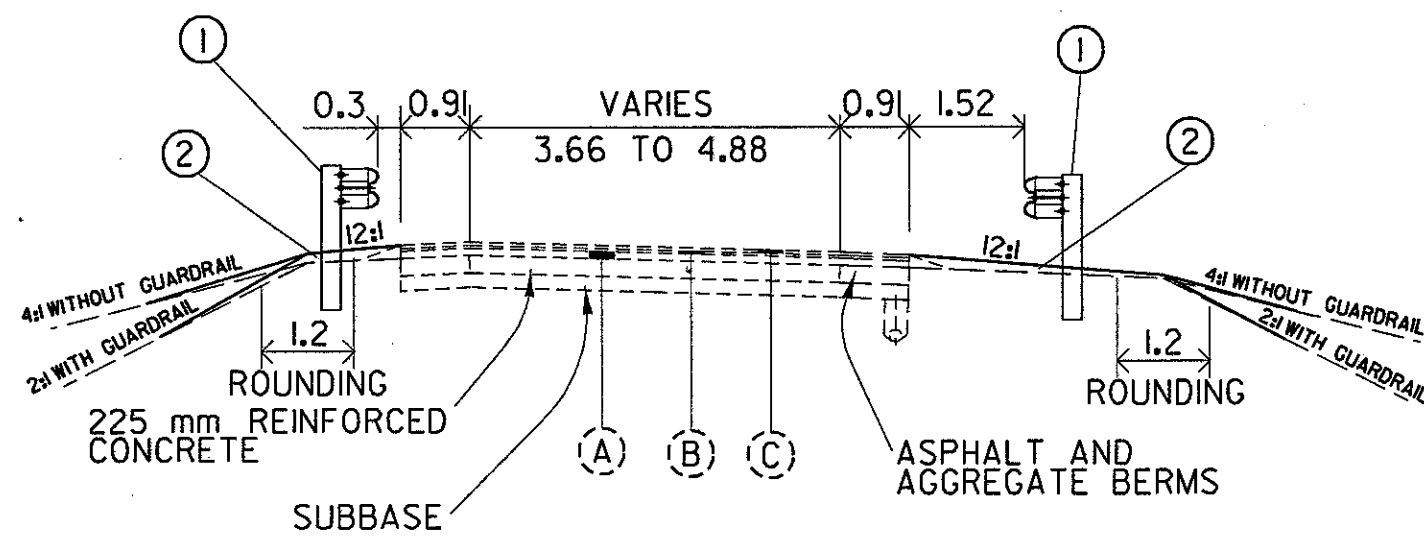
LEGEND

- ① TYPE 5 GUARDRAIL
- ② EMBANKMENT, AS PER PLAN
- (A) 64±mm ASPHALT CONCRETE
- (B) MICROSURFACING LEVELING COURSE
- (C) 38mm 446 ASPHALT CONCRETE SURFACE COURSE, TYPE 1H

DESIGN FILE: I:\projects\16915\13typ.dgn  
WORKSTATION: mallem DATE: 10 FEB 99

TYPICAL SECTIONS

RIC-13-17.445



GUARDRAIL TYPICALS  
RAMPS "A", "C", "E", "W"

- LEGEND**
- ① TYPE 5 GUARDRAIL
  - ② EMBANKMENT, AS PER PLAN
  - (A) 64±mm ASPHALT CONCRETE
  - (B) MICROSURFACING LEVELING COURSE
  - (C) 38mm 446 ASPHALT CONCRETE SURFACE COURSE, TYPE 1H

NOTE: ALL DIMENSIONS IN METERS  
UNLESS STATED OTHERWISE

**ACCURACY OF PLANS**

THE LOCATIONS OF ALL WORK INCLUDED IN THE PLAN ARE APPROXIMATE AND MAY NEED TO BE APPROVED BY THE ENGINEER. GUARDRAIL THAT IS TO REPLACE THE EXISTING GUARDRAIL AT THE SAME LOCATION SHALL UTILIZE THE PORTIONS TO REMAIN AS STARTING POINTS OF REFERENCE. GUARDRAIL THAT IS TO REPLACE ENTIRE RUNS SHALL BE PLACED TO MEET OR EXCEED THE EXISTING TERMINUS POINTS AS SHOWN IN THE PLANS. LENGTHS OF GUARDRAIL GIVEN ARE APPROXIMATE AS THEY WERE OBTAINED IN THE FIELD BY COUNTING THE EXISTING PANELS.

**ROUNDING**

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

**UNDERGROUND UTILITIES**

EXTREME CAUTION SHOULD BE EXERCISED IN AREAS WITH UNDERGROUND WATER LINES, DRAINS, CABLE, SEWERS OR OTHER UTILITIES. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL DAMAGE INFLICTED ON UNDERGROUND UTILITIES. ALL UNDERGROUND UTILITIES AND PIPES ARE SHOWN ON GUARDRAIL DETAIL SHEETS 22-28.

**UTILITIES**

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

CITY OF MANSFIELD WATER DEPT. 30 NORTH DIAMOND STREET MANSFIELD, OHIO 44902 PHONE: (419) 755-9702	ASHLAND/MARATHON PIPE LINE CO. 539 SOUTH MAIN STREET FINDLAY, OHIO 45840-3295 PHONE: (419) 422-2121
COLUMBIA GAS TRANSMISSION CORP. 3151 LINCOLN WAY WEST WOOSTER, OHIO 44691-0753 PHONE: (330) 264-2201	COLUMBIA GAS OF OHIO 1120 W FOURTH STREET MANSFIELD, OHIO 44901 PHONE: (419) 528-1114
RICHLAND COUNTY SANITARY ENGINEER 50 PARK AVENUE EAST MANSFIELD, OHIO 44902 PHONE: (419) 774-5834	ALLTEL TELEPHONE COMPANY 363 THIRD STREET ELYRIA, OHIO 44035 PHONE: (440) 329-4247
TIME WARNER CABLE 1575 LEXINGTON AVE. P.O. BOX 576 MANSFIELD, OHIO 44907 PHONE: (419) 756-3333	SPRINT LOCAL 175 ASHLAND ROAD P.O. BOX 3555 MANSFIELD, OHIO 44907 PHONE: (419) 755-7251

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**

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

**WORK LIMITS**

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

**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.

**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

280 EACH

**EROSION CONTROL**

ITEM 601 ROCK CHANNEL PROTECTION, TYPE C, WITH FILTER IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE THIS ITEM. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THIS ITEM WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THIS ITEM SHALL MEET THE REQUIREMENTS OF 108.04. THE ESTIMATED QUANTITY FOR THIS ITEM IS:

ITEM 601 ROCK CHANNEL PROTECTION, TYPE C, WITH FILTER 3 m<sup>3</sup>

**WATERING PERMANENT SEEDED AREAS**

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH OF THE PERMANENT SEEDED AREAS, AS PER 659.09

(18090 SQ. M.) X (5 CU. M./1000) (2 APPLICATIONS) = 81 CU. METER

659 WATER = 81 CU. METER

**ITEM 659 - COMMERCIAL FERTILIZER**

COMMERCIAL FERTILIZER SHALL BE APPLIED TO SEEDED AREAS AS PER 659.08.

(18090 SQ. M.) X (0.1KG/SQ. M.) = 809 Kilograms

**ITEM 203. DITCH CLEANOUT**

THIS WORK SHALL CONSIST OF RE-ESTABLISHING THE CROSS-SECTION OF AN EXISTING DITCH. SURPLUS OR UNSUITABLE MATERIAL, AS DETERMINED BY THE ENGINEER, SHALL BE DISPOSED OF AS PER 203.05. EMBANKMENT REQUIRED FOR ERODED CONDITIONS SHALL MEET THE REQUIREMENTS OF 203.07 EXCEPT THAT THE COMPACTION REQUIREMENTS ARE WAIVED. IT SHALL ALSO INCLUDE CLEANING OF PAVED GUTTERS TO REMAIN TO THE SATISFACTION OF THE ENGINEER. MEASUREMENT OF THE DITCH CLEANOUT SHALL BE THE ACTUAL meter MEASURED ALONG THE CENTERLINE OF THE DITCH.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203, DITCH CLEANOUT. AN ESTIMATED QUANTITY OF 500 meters IS PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER.

**GUARDRAIL REPLACEMENT**

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING GUARDRAIL, PREPARE THE SITE, AND INSTALL NEW GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

**LOCATION OF GUARDRAIL**

THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

**RESTORATION OF DISTURBED AREAS ASSOCIATED WITH GUARDRAIL AND SIGN WORK**

THE CONTRACTOR SHALL RESTORE ALL SEEDED AND SODDED AREAS AND OTHER DISTURBED AREAS TO A CONDITION EQUAL TO THAT EXISTING BEFORE THIS WORK WAS STARTED. ALL RESTORATION WORK SHALL BE DONE IN ACCORDANCE WITH THE PERTINENT SPECIFICATION ITEM AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR ALL RESTORATION WORK, INCLUDING MATERIALS, EQUIPMENT, LABOR, INCIDENTALS AND DISPOSAL OF SURPLUS MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS 606 AND 630 ITEMS.

**ANCHOR ASSEMBLY REBUILT, TYPE E**

THIS ITEM SHALL CONSIST OF REBUILDING THE EXISTING TYPE E ANCHOR ASSEMBLY. THE TYPE E ANCHOR ASSEMBLY IS THE ET-2000 MANUFACTURED BY SYRO, INC. WHICH SHALL BE REBUILT ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND AT LOCATIONS LISTED IN THE PLANS. THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 450 mm x 450 mm. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED UNDER ITEM 606 - ANCHOR ASSEMBLY REBUILT, TYPE E AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS FOR A COMPLETE AND FUNCTIONAL INSTALLATION.

**CONTRACTOR'S EQUIPMENT OPERATION AND LOCATION**

THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC WHERE PRACTICAL. A FLAGGER SHALL BE USED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S VEHICLES AND EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT.

EQUIPMENT MAY BE PARKED ON THE SIDE BEING CONSTRUCTED WHEN VARIOUS OPERATIONS ARE SCHEDULED TO CONTINUE THE NEXT WORKDAY. ON WEEKENDS OR AT OTHER TIMES OF SUSPENSION OF WORK, THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA OUTSIDE THE CLEAR ZONE. THE LOCATION SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. FOR ADDITIONAL REQUIREMENTS SEE ITEM 614- SECTION 614.03A OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

**CONSTRUCTION EQUIPMENT MEDIAN CROSSINGS**

CONSTRUCTION EQUIPMENT SHALL CROSS THE MEDIAN ONLY AT THE EXISTING INTER-SECTIONS AND U-TURN CROSSOVERS AND AT OTHER ADDITIONAL LOCATIONS APPROVED BY THE ENGINEER. A MAXIMUM OF TWO (2) ADDITIONAL EQUIPMENT CROSSINGS MAY BE ALLOWED.

THE CONTRACTOR SHALL BE RESPONSIBLE, AT HIS EXPENSE, FOR THE RESTORATION OF THE ADDITIONAL EQUIPMENT CROSSINGS TO A CONDITION AT LEAST EQUAL TO THAT EXISTING PRIOR TO HIS WORK OPERATIONS. WHEN THE MEDIAN CROSSINGS ARE BEING USED IN THE AREA OF ONE-LANE TRAFFIC OPERATION, THE CONTRACTOR SHALL PROVIDE AT HIS EXPENSE THE SERVICES OF A LAW ENFORCEMENT OFFICER WITH PATROL CAR TO CONTROL TRAFFIC FLOW.

**WORK WITHIN EXISTING RIGHT-OF-WAY**

ALL WORK SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LOCATIONS ON THIS PROJECT

**ITEM 601 CRUSHED AGGREGATE SLOPE PROTECTION**

THE FOLLOWING QUANTITY HAS BEEN SET UP TO BE USED AS DIRECTED BY THE ENGINEER FOR SLOPE PROTECTION UNDER SCUPPERS ON COOK RD AND MALONE RD BRIDGES.

ITEM 601 80 m<sup>2</sup> CRUSHED AGGREGATE SLOPE PROTECTION

**MAINTENANCE OF TRAFFIC DURING CONSTRUCTION OF GUARDRAIL AROUND PIERS**

DURING THE TIME PERIOD IN WHICH WORK IS BEING DONE TO CONSTRUCT GUARDRAIL AROUND THE OVERHEAD BRIDGE PIERS AT COOK AND MALONE ROADS, THE INSIDE LANE (PASSING LANE) FROM THE BEGINNING OF THE PROPOSED IMPACT ATTENUATOR TO THE OPPOSITE END OF THE OTHER IMPACT ATTENUATOR, SHALL BE CLOSED USING DRUMS AS PER STD DWG MT-95.32M. THE INTENT OF THIS PROCEDURE IS TO PROTECT DRIVERS FROM THE HAZARD OF THE CONCRETE PIERS DURING THE TIME WHEN GUARDRAIL AT THAT LOCATION IS NOT INSTALLED.

**CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL**

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS. WHERE NEW GUARDRAIL IS TO CONNECT TO EXISTING GUARDRAIL, THE NEW GUARDRAIL HEIGHT SHALL BE ADJUSTED IN THE LAST PANEL AND MATCH THE EXISTING GUARDRAIL HEIGHT.

**ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E**

THIS ITEM SHALL CONSIST OF REMOVING THE EXISTING TYPE E ANCHOR ASSEMBLY FOR REUSE WHEN THE PROPOSED GUARDRAIL IS CONSTRUCTED. THE EXIST. TYPE E ANCHOR ASSEMBLY IS THE ET-2000 MANUFACTURED BY SYRO, INC.. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED UNDER ITEM 202 - ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NEEDED TO REMOVE THE ANCHOR ASSEMBLY.



**ITEM 202 - APPROACH SLAB REMOVED, AS PER PLAN:**

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING APPROACH SLABS AT STRUCTURE RIC-13-22788 L&R OVER RAMP "A" AND TO REMOVE ANY ADDITIONAL MATERIAL BOTH BELOW AND NEXT TO THE EXISTING APPROACH SLAB NECESSARY FOR THE INSTALLATION FOR THE PROPOSED APPROACH SLAB. THE REMOVAL OF ADDITIONAL MATERIAL IS INCIDENTAL TO THIS ITEM AND WILL NOT BE PAID FOR SEPARATELY.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER FOR ITEM 202 - APPROACH SLAB REMOVED, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 611 - REINFORCED CONCRETE APPROACH SLAB (T=380 mm), AS PER PLAN**

TWO SEPARATE THICKNESSES OF CLEAR OR OPAQUE POLYETHYLENE FILM, 705.06, SHALL BE PLACED ON THE PREPARED SUBBASE AND WHERE THE APPROACH SLAB IS TO BE CONSTRUCTED. THE POLYETHYLENE FILMS SHALL COMPLETELY COVER THE FULL LENGTH AND WIDTH OF THE SUBBASE BETWEEN THE SIDEWALL FORMS FOR THE APPROACH SLAB. THE REINFORCING STEEL SHALL BE EPOXY COATED.

MATERIALS, LABOR AND INSTALLATION SHALL BE INCLUDED FOR PAYMENT IN THIS ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=380 mm), AS PER PLAN

**CATCH BASIN NO. 5, AS PER PLAN**

THE METHOD OF CONSTRUCTION FOR THESE CATCH BASINS SHALL BE CAST-IN-PLACE OR PRE-CAST. BRICK OR BLOCK CONSTRUCTION SHALL NOT BE USED. SEE SHEET IO FOR ADDITIONAL NOTES AND DETAILS.

**ITEM 608 CONCRETE WALK, AS PER PLAN**

THIS ITEM SHALL INCLUDE REPLACEMENT OF 6.7 METERS OF EXISTING SIDEWALK (LEFT AND RIGHT) ON THE WEST SIDE OF THE COOK RD. BRIDGE, ADDITIONAL EMBANKMENT IN ORDER TO TRANSITION HEIGHT OF EXISTING WALK TO HEIGHT OF WALKS ON THE BRIDGE, FERTILIZER, SEEDING AND MULCHING OF DISTURBED AREAS AND ALL OTHER NECESSARY WORK REQUIRED TO COMPLETE THE TASK.

**ITEM 830 CURB TYPE 6, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF ITEM 609, THIS QUANTITY SHALL INCLUDE TRANSITIONING THE CURB HEIGHT FROM EXISTING SECTION TO CURB HEIGHT AT THE COOK RD. BRIDGE AND ANY OTHER INCIDENTAL ITEMS REQUIRED TO COMPLETE THE WORK.

**ITEM SPECIAL - REMOVAL MISCELLANEOUS: AGGREGATE CROSSOVER REMOVED**

AGGREGATE CROSSOVERS SHALL BE REMOVED AND/OR REGRADED AS DIRECTED BY THE ENGINEER. TOP SOIL REMOVED FROM OTHER AREAS SHALL BE SPREAD ON THESE DESIGNATED MEDIAN LOCATIONS, TO A MINIMUM DEPTH OF 6 INCHES. THE AREA SHALL THEN BE SEEDED AS PER 659. ALL THE ABOVE SHALL BE INCLUDED IN UNIT PRICE BID PER SQUARE METER FOR ITEM SPECIAL, REMOVAL MISCELLANEOUS: AGGREGATE CROSSOVER REMOVED.

THE ESTIMATED QUANTITY FOR THIS ITEM AT 3 LOCATIONS IN THIS PROJECT IS: ITEM SPECIAL - REMOVAL MISCELLANEOUS: AGGREGATE CROSSOVER REMOVED 1000 m<sup>2</sup>

**ITEM 606 IMPACT ATTENUATOR, TYPE 1-98, (UNIDIRECTIONAL OR BIDIRECTIONAL)**

This item shall consist of furnishing and installing either of the following impact attenuators:

1) The C-A-T manufactured by SYRO, Inc., 1170 N. State Street, Girard, Ohio 44420 (Telephone: 330.545.4373). The length of the C-A-T system is considered to be 9525 mm long. Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications as detailed on the following pre-approved shop drawings:

Dwg. # SS245M  
 Drawing Name Crash-Cushion Attenuating Terminal Plan, Elevation & Sections For Use as a Longitudinal Median Barrier Terminal or Crash Cushion Attenuator  
 Dwg./Rev. Date 4/10/97  
 ODOT Approval 3/6/98

Dwg. # SS224M  
 Drawing Name C-A-T Transition to Median Barrier Guardrail Plan, Elevation & Sections  
 Dwg./Rev. Date 4/26/96  
 ODOT Approval 3/6/98

Dwg. # SS226M  
 Drawing Name C-A-T Transition to Vertical Wall or Pier Plan, Elevation & Sections  
 Dwg./Rev. Date 4/26/96  
 ODOT Approval 3/6/98

2) The Brakemaster manufactured by Energy Absorption Systems, Inc., One East Wacker Drive, Chicago, IL 60601 (Telephone: 312.467.6750).

The length of the Brakemaster system is considered to be 9957 mm long. Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications as detailed on the following pre-approved shop drawings:

Dwg. # 92-00-01  
 Drawing Name Brakemaster General Assembly (Unidirectional System)  
 Dwg./Rev. Date 3/6/97  
 ODOT Approval 3/6/98

Dwg. # 92-00-81  
 Drawing Name Brakemaster (Unidirectional) with Foundation Tubes  
 Dwg./Rev. Date 2/9/98  
 ODOT Approval 3/6/98

Dwg. # 92-00-02  
 Drawing Name Brakemaster General Assembly (Bidirectional System)  
 Dwg./Rev. Date 3/10/97  
 ODOT Approval 3/6/98

Dwg. # 92-00-82  
 Drawing Name Brakemaster (Bidirectional) with Foundation Tubes  
 Dwg./Rev. Date 2/9/98  
 ODOT Approval 3/6/98

Dwg. # 9202024-0000  
 Drawing Name Anchor Assembly, Foundation Tube, 6 1/2 ft., BRS  
 Dwg./Rev. Date 6/12/97  
 ODOT Approval 3/6/98

The face of the Type 1-98 impact head shall be covered with a sheet of Type G Reflective Sheeting, per CMS 730.19, approximately 915 mm x 305 mm H. Payment for the above work shall be made at the unit price bid for Item 606, Impact Attenuator, Type 1-98 (Unidirectional or Bidirectional), Each, and shall include all labor, tools, equipment and materials necessary to construct a complete and functional anchor assembly system, including all related transitions, hardware, reflective sheeting and grading, not separately specified, as required by the manufacturer.

**ITEM 606, ANCHOR ASSEMBLY, TYPE B-98**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS

1) THE SRT-350, GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330.545.4373)

THE LENGTH OF THE SRT-350 SYSTEM IS CONSIDERED TO BE 11.43 M, INCLUSIVE OF THREE 3.81 M LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

Dwg. #SS425M  
 Drawing Name: Slotted Rail Terminal SRT-350 Post Layout and Erection Details (12.5, 9 Post)  
 Dwg./Rev. Date: 6/21/97  
 ODOT Approval Date: 3/6/98

2) THE FLEAT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 7631 NEW CASTLE DRIVE, FRANKFORT, IL 60423 (TELEPHONE: 815.464.5917).

THE LENGTH OF THE FLEAT-350 IS CONSIDERED TO BE 11.43 m, INCLUSIVE OF THREE 3.81m LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #FLT-M  
 DRAWING NAME: FLARED ENERGY ABSORBING TERMINAL (FLEAT-350) ASSEMBLY  
 DWG./REV. DATE: 4/16/98  
 ODOT APPROVAL DATE: 7/31/98

GRADING SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING GR-4.3M.

THE FACE OF THE IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19: APPROXIMATELY 915 mm W x 305 mm H FOR THE SRT-350 AND 350 mm W x 500 mm H FOR THE FLEAT.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE B-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**ITEM 606, ANCHOR ASSEMBLY, TYPE E-98**

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

1) THE ET-2000 (1997) MANUFACTURED BY SYRO, INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330.545.4373). THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 15.24 M, INCLUSIVE OF TWO 7.62 M LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #SS265M  
 DRAWING NAME: ET-2000 (1997) PLAN, ELEVATION & SECTIONS  
 DWG./REV. DATE: 6/20/97  
 ODOT APPROVAL DATE: 3/6/98

2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 7631 NEW CASTLE DRIVE, FRANKFORT, IL 60423 (TELEPHONE: 815.464.5917). THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 15.24 M, INCLUSIVE OF FOUR 3.81 M LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #SKT-4M  
 DRAWING NAME: SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES  
 DWG./REV. DATE: 12/11/97  
 ODOT APPROVAL DATE: 3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 450 mm x 450 mm.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, DELINEATORS, HARDWARE AND GRADING NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**ITEM 607 FENCE, TYPE 47, AS PER PLAN**  
**ITEM 607 FENCE, TYPE CLT, AS PER PLAN**

This item shall include removal of all existing right of way fence and associated hardware, clearing of the new fence alignment of trees and brush, furnishing and applying cut stump herbicide and furnishing and erecting new fence and associated hardware in accordance with the plan and current standards. The Contractor is advised to visit the site to determine the correct numbers of individual fence components required to construct the new fence in accord with current standards.

The intent of the plan is to construct the new fence in the same type and location as the existing fence, except where necessary to comply with current standards (e.g. at structures, etc.). Where existing fence is missing and its location cannot be determined from field evidence, the Department will stake the right of way line and new fence shall be located from the right of way line in accordance with current standards. In all cases, current Standard Construction Drawings shall be used to establish the correct configuration and location of the new fence.

The work shall include removal of all of the existing right of way fence and associated hardware and disposal. Corner, end and anchor posts and their associated concrete encasements are to be completely removed. Metal posts shall be removed or driven a minimum of 150 mm below the existing ground surface.

All trees and brush within the area 0.6 m either side of the fence and a sufficient distance inside the fence alignment to permit its construction shall be removed in accordance with Item 201, except that no stump may exceed a height of 50 mm above the existing ground surface. The stumps of all trees and brush shall be treated with an EPA registered herbicide labeled for cut stump treatment. The herbicide shall be applied according to label instructions. The herbicide used for this project shall be shipped in new sealed containers bearing the manufacturer's label. The Contractor shall be licensed by the Ohio Department of Agriculture as a Commercial or Limited Commercial Applicator. All persons applying the cut stump herbicide shall be licensed Commercial or Limited Commercial Applicators or under the direct supervision of same.

The Contractor shall dispose of all fence, tree and brush materials off of the project. Burning is not permitted. Items to be disposed of shall remain outside the clear zone until loaded onto equipment for offsite disposal.

All areas disturbed by the Contractor's operations shall be repaired and seeded according to Item 659 and included in Item 607 for payment.

The following estimated quantities are carried to the General Summary to be used as directed by the Engineer

Item 607 - GATE, TYPE 47, 4.3 METERS	5 each
Item 607 - FENCE, TYPE CLT, AS PER PLAN	3009 meters
Item 607 - GATE, TYPE CLT	5 each
Item 607 - FENCE, TYPE 47, AS PER PLAN	2902 meters
Item 625 - GROUND ROD	18 each
Item 601 - ROCK CHANNEL PROTECTION, TYPE B, WITH FILTER	250 cubic meters

THE COST OF ALL THE ABOVE, EXCEPT ITEM 601, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 607, FENCE, TYPE 47, AS PER PLAN. MEASUREMENTS FOR FINAL QUANTITIES SHALL BE IN ACCORDANCE WITH ITEM 607JO.

THESE QUANTITIES ARE TAKEN FROM PLAN NO. 13915 IN THE VAULT AT DISTRICT 3, 906 NORTH CLARK STREET ASHLAND, AND COPIES ARE AVAILABLE OF THE FENCE SHEETS IN THAT PLAN.

STATION		SIDE	607	607	STATION		SIDE	607	607
FROM	TO		FENCE, TYPE 47 AS PER PLAN	FENCE, TYPE CLT AS PER PLAN	FROM	TO		FENCE, TYPE 47 AS PER PLAN	FENCE, TYPE CLT AS PER PLAN
			METER	METER				METER	METER
18+059	18+749	LT	690		21+275	21+428	LT	153	
19+174	19+263	LT	105 *		21+854	22+017	LT		168
18+166	18+319	RT	153		22+040	22+159	LT		124
18+471	18+711	RT	236		21+283	21+397	RT	116	
18+837	19+172	RT	329		21+671	21+950	RT		292
19+263	19+383	LT	110		21+981	22+074	RT		159
19+412	19+505	LT	93		22+079	22+159	RT		85
19+510	19+675	LT	157		21+159	22+262	LT		110
19+798	20+086	LT	290		22+306	22+771	LT		560
19+980	20+171	RT	193		22+852	22+859	LT		133
20+175	20+359	RT	184		22+877	23+028	LT		156
20+727	20+818	RT	93		22+159	22+228	RT		93
					22+239	22+633	RT		487
					22+649	23+189	RT		642
					TOTAL			2902	3009

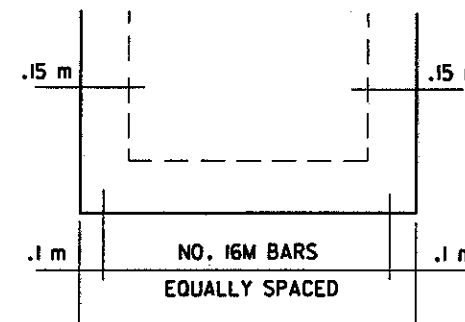
\* INCLUDES EXTRA FOR OLD STA EON



CALCULATE  
SCJ  
CHECKED  
ADB

GENERAL NOTES

**BAR LOCATION DETAIL**  
FOR NO. 5 CB



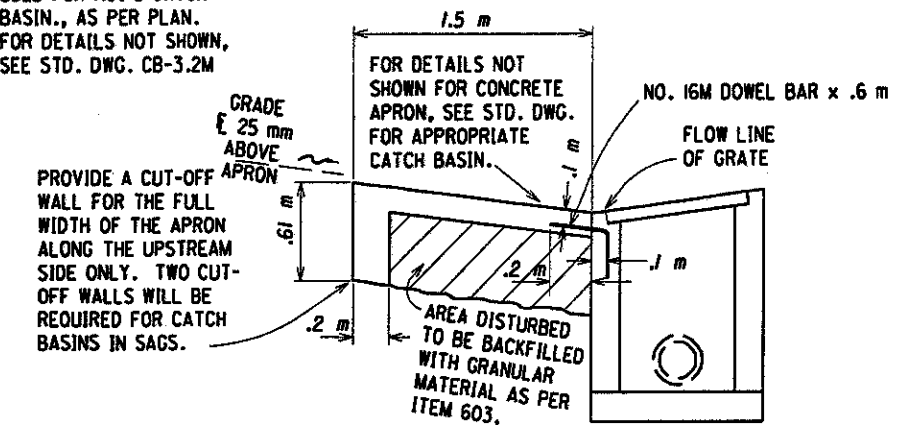
THE NUMBER OF BARS NEEDED ALONG EACH SIDE OF A NO. 5 AND CATCH BASIN WITH A CONCRETE APRON IS 4.

CATCH BASIN NO.	TOTAL # OF BARS FOR	
	STD. APRON	SAG. APRON
5	7	14

THE FURNISHING AND PLACING OF STEEL FOR THE 16M x .6 m DOWEL BARS SHALL BE PER 509 REINFORCING STEEL. THE DOWEL BARS SHALL BE EPOXY COATED PER 509.10. THE DOWEL BARS SHALL BE INSTALLED PER 510 OR CAST INTO THE BASIN. BOLT IN INSERTS MAY BE USED. THE CATCH BASIN SHALL BE PRECAST OR CAST-IN-PLACE CONCRETE. BRICK OR CONCRETE BLOCK WILL NOT BE PERMITTED. THE .15 m CONCRETE APRON SHALL BE REINFORCED PER 601.04(3).

**CATCH BASIN NO. 5, AS PER PLAN**

THIS DETAIL SHALL BE USED FOR NO. 5 CATCH BASIN., AS PER PLAN. FOR DETAILS NOT SHOWN, SEE STD. DWG. CB-3.2M



THE REQUIREMENTS OF ITEM 604 SHALL GOVERN THE REPLACEMENT OF THE EXISTING CATCH BASIN. THE WORK SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING CATCH BASIN AND ITS SUBSEQUENT REPLACEMENT. THE CONCRETE APRON SHALL BE REPLACED AND BACKFILLED AS SHOWN HERE AND IN THE STANDARD DRAWING FOR THE PERTINENT CATCH BASIN.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 604 CATCH BASIN, NO. 5, AS PER PLAN, AND SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT INCIDENTAL TO COMPLETE THIS ITEM OF WORK.

DESIGN FILE: I:\projects\16915\139n.dgn  
WORKSTATION: mal/eman DATE: 09 FEB 99

RIC-13-17.445

**HIGHWAY LIGHTING**

THERE IS HIGHWAY LIGHTING ON THIS PROJECT. PLEASE CALL THE ROADWAY SERVICES MANAGER (419)281-0513 X341 TWO (2) WEEKS PRIOR TO CONSTRUCTION FOR THE LOCATION OF LIGHTING UTILITIES

**MILE MARKER LOCATION**

THE LOCATION OF MILE MARKERS ON THE PLANS ARE APPROXIMATE AND A MORE PRECISE LOCATION WILL BE PROVIDED BY THE DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST THIRTY (30) DAYS IN ADVANCE OF THE PLANNED DATE OF MILE MARKER INSTALLATION. THE ENGINEER WILL CONTACT THE OFFICE OF TECHNICAL SERVICES (614) 466-4224 WHICH WILL LOCATE THE LONGITUDINAL POSITION OF MILE MARKERS BY MEANS OF A PAINT MARK ON THE PAVEMENT EDGE. ALTERNATE MARKS WILL NOT BE PROVIDED ON DIVIDED HIGHWAYS AND THE CONTRACTOR SHALL SET MARKERS FOR THE OPPOSITE ROADWAY ACROSS FROM THE PROVIDED MARK. ANY EXISTING DELINEATORS FALLING WITHIN 15 m OF A MILE MARKER SHALL BE REMOVED. REMOVAL OF ANY DELINEATORS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201- CLEARING AND GRUBBING, AS PER PLAN.

**ITEM 201- CLEARING AND GRUBBING, AS PER PLAN**

CLEARING AND GRUBBING SHALL BE PERFORMED IN AREAS AS DIRECTED BY THE ENGINEER TO PROVIDE ADEQUATE CLEAR SIGHT DISTANCE TO SIGNS ERECTED AS PART OF THIS PLAN. SEE SHEET NO. 38 FOR GUIDE FOR CLEARING AND GRUBBING.

IN ADDITION TO THE REQUIREMENTS OF ITEM 201, ALL VEGETATION REMOVED BY CUTTING OR MOWING SHALL HAVE A CUT STUMP HERBICIDE TREATMENT APPLIED TO EACH INDIVIDUAL REMAINING STUMP WITHIN TWO (2) HOURS OF CUTTING. CARE SHALL BE EXERCISED TO APPLY TREATMENT ONLY TO INDIVIDUAL STUMPS SO AS NOT TO HARM OTHER VEGETATION. THE CUT STUMP TREATMENT SHALL BE GARLON 4 OR PATHFINDER IRTU APPLIED IN ACCORDANCE WITH LABEL DIRECTIONS. APPLICATORS OF THE CUT STUMP TREATMENT SHALL BE CURRENTLY LICENSED OHIO COMMERCIAL APPLICATORS IN THE APPROPRIATE CATEGORY. EVIDENCE OF VALID LICENSES SHALL BE PROVIDED TO THE ENGINEER FOR VERIFICATION.

**ITEM 630 - SIGNS FLAT SHEET, TYPE F, AS PER PLAN**

THE HINGED SIGN W-68-I200 "WATCH FOR ICE ON BRIDGE" SHALL BE PROVIDED BY THE CONTRACTOR AT LOCATIONS SHOWN IN THE PLANS. SEE SHEET NO. 38 FOR NOTES AND DETAILS. IN LIEU OF THE REQUIREMENTS OF 630.04(3), REFLECTIVE SHEETING SHALL BE TYPE F IN ACCORDANCE WITH THE REQUIREMENTS OF 730.18.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE UNIT PRICE BID PER SQUARE METER FOR ITEM 630 - SIGNS, FLAT SHEET, TYPE F, AS PER PLAN AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE, AND MATERIALS NECESSARY TO PERFORM THE WORK.

**SIGN REPLACEMENTS**

WITH RESPECT TO THE REPLACEMENT OF EXISTING SIGNS THE CONTRACTOR SHALL IN NO CASE REMOVE A SIGN UNLESS THE APPLICABLE REPLACEMENT CAN BE ERECTED WITHIN THE SAME WORKING DAY.

**SIGN LAYOUT FOR DESIGNABLE SIGNS**

THE LEVEL, TYPE AND DESIGN LAYOUT FOR DESIGNABLE SIGNS HAVE BEEN PROVIDED TO ASSIST WITH PREPARATION OF WORKING DRAWINGS. THESE SIGNS WERE DESIGNED USING GUIDSIGN 3.1 PRODUCED BY TRANSSOFT SOLUTIONS. DIMENSIONS ARE SPECIFIED TO FIT EXISTING SUPPORTS WHERE SHOWN. ELECTRONIC VERSIONS OF THESE MICROSTATION 95 FILES WILL BE MADE AVAILABLE TO THE SUCCESSFUL BIDDER UPON REQUEST. NATIONAL METRIC STANDARDS AND ROUNDING CONVENTIONS ARE USED IN THESE DESIGNS.

**ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR**

IN ADDITION TO THE REQUIREMENTS OF 614, A UNIFORMED OFF-DUTY STATE HIGHWAY PATROLMAN OR LOCAL LAW ENFORCEMENT OFFICER AND OFFICIAL PATROL CAR WITH EMERGENCY FLASHERS OPERATING, SHALL BE PROVIDED DURING ANY SHORT DURATION CLOSING OF ROADWAY. THIS REQUIREMENT DOES NOT PRECLUDE THE CONTRACTOR'S USE OF LAW ENFORCEMENT OFFICERS (LEO) FOR OTHER PURPOSES IN THE PROJECT AREA. HOWEVER, WHERE OTHER SUCH USAGE IS AT THE OPTION OF THE CONTRACTOR, PAYMENT FOR THE SERVICES OF THE LEOS INVOLVED SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

ARRANGEMENTS AND PAYMENTS FOR THE SERVICES OF THE LEOS WITH PATROL CARS WILL BE MADE BY THE CONTRACTOR. INFORMATION REGARDING THE LEOS MAY BE OBTAINED BY CONTACTING:

THE STATE HIGHWAY PATROL HEADQUARTERS  
660 EAST MAIN STREET  
COLUMBUS, OHIO 43205  
PHONE: (614) 466-2660

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR MAINTAINING TRAFFIC.

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR 16 HOURS

**FREEWAY LOCATION IDENTIFICATION SYSTEM SIGNS**

THESE SIGNS CONSIST OF A MAINLINE MARKER (N-44B) OR A RAMP MARKER (N-43B), ATTACHED TO GUIDE AND DESTINATION SIGNS WITH AN ITEM 630 SIGN BACKING ASSEMBLY IF ATTACHED TO A GROUND-MOUNTED SIGN OR AN ITEM 630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED IF ATTACHED TO THE VERTICAL MEMBER OF AN OVERHEAD SIGN STRUCTURE.

THE CONTRACTOR SHALL DETERMINE THE CORRECT STRAIGHT LINE MILEAGE, IN HUNDRETH'S OF A MILE, FOR EACH SIGN BASED ON THE FINAL LOCATION OF THE SIGN. THE CORRECT MILEAGE SHALL BE DETERMINED ONLY AFTER THE MILE MARKERS HAVE BEEN LOCATED BY THE DEPARTMENT. THE PLAN SHOWS THE ROUTE NUMBER, ROUTE DIRECTION AND THE RAMP CODES (WHERE APPLICABLE). SEE SHEET NO. 40 FOR DETAILS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A RECORD OF THE STRAIGHT LINE MILEAGE FOR EACH FREEWAY LOCATION IDENTIFICATION SYSTEM SIGN.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE METER FOR ITEM 630, SIGN, FLAT SHEET, TYPE F. THE REQUIRED ITEM 630, SIGN BACKING ASSEMBLY OR ITEM 630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED ARE PAID SEPARATELY AS INDICATED.

**ITEM 614 - MAINTAINING TRAFFIC**

THE CONTRACTOR SHALL SUBMIT IN WRITING A SCHEDULE OF OPERATIONS TO THE DISTRICT DEPUTY DIRECTOR AND RECEIVE APPROVAL BEFORE WORK IS STARTED ON THE PROJECT.

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM SPECIAL. TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT AS NOTED HEREIN.

ON HOLIDAYS AND THE FOLLOWING WEEKENDS NO WORK SHALL BE PERFORMED ON THIS PROJECT. ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR SPECIAL WEEKENDS.

MOTHERS DAY	CHRISTMAS
MEMORIAL DAY	NEW YEARS
LABOR DAY	THANKSGIVING
FOURTH OF JULY	
EASTER	

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD.

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THRU 12:00N MONDAY
MONDAY	12:00N FRIDAY THRU 12:00N TUESDAY
TUESDAY	12:00N MONDAY THRU 12:00N WEDNESDAY
WEDNESDAY	12:00N TUESDAY THRU 12:00N THURSDAY
THURSDAY	12:00N WEDNESDAY THRU 12:00N MONDAY
FRIDAY	12:00N THURSDAY THRU 12:00N MONDAY
SATURDAY	12:00N FRIDAY THRU 12:00N MONDAY

PROCEDURES FOR MAINTAINING TRAFFIC SHALL BE IN COMPLIANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION, AND STANDARD CONSTRUCTION DRAWINGS AS LISTED ON THE TITLE SHEET. WORK ON OR BEYOND THE SHOULDER SHALL BE IN ACCORDANCE WITH PLATES C-1 THRU C-13, OMTUCD.

ALL ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHEN THEY ARE NOT APPLICABLE, AS DETERMINED BY THE ENGINEER.

IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS OR WITH PROVISIONS OF THE OMTUCD, AND SUCH FAILURE RESULTS IN A CONDITION AT THE WORK SITE WHICH IS UNSAFE FOR TRAFFIC, THE ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

**RAMP "A" CLOSURE NOTE**

FOR RAMP "A" CLOSURE NOTE AND MAP, SEE SHEET 71 + 71A

**ITEM 620 - DELINEATOR INSTALLED, BY TYPE, BY SUPPORT**

FLEXIBLE POSTS SHALL BE INSTALLED SO THAT THE FACE OF THE REFLECTOR, OTHER THAN RED IS 90 DEGREES TO THE CENTERLINE FACING APPROACHING TRAFFIC AND TO SUCH A DEPTH THAT THE TOPS OF THE INSTALLED REFLECTORS SHALL BE 1220 mm PLUS OR MINUS ABOVE THE ELEVATION OF THE ADJACENT EDGE OF PAVEMENT.

**PROTECTIVE COATING OF OVERHEAD SIGN  
SUPPORT SECTIONS GENERAL**

OVERHEAD SIGN SUPPORTS CAN BE SEPARATED INTO MAJOR SECTIONS SUCH AS END FRAMES, TRUSSES, VERTICAL POLES AND CANTILEVER ARMS. FOR THE IMPLEMENTATION OF THIS WORK ITEM IT WILL BE BENEFICIAL TO REFER TO THE MAJOR SECTIONS OF THE OVERHEAD SIGN SUPPORTS RATHER THAN THE WHOLE SUPPORT. MORE SPECIFIC INSTRUCTIONS AND FLEXIBILITY CAN BE GIVEN BASED UPON THE UNIT OF MEASURE AND PAYMENT PER MAJOR SUPPORT SECTION.

THE PROTECTIVE COATING OF OVERHEAD SIGN SUPPORT SECTIONS SHALL BE A FOUR PART PROCESS TO INCLUDE SURFACE PREPARATION FOLLOWED BY A THREE COAT PAINT SYSTEM. THIS THREE COAT SYSTEM SHALL CONSIST OF AN EPOXY PRIME COAT, AN EPOXY INTERMEDIATE COAT AND A URETHANE TOP COAT, WITH EACH COAT BEING A DIFFERENT COLOR. FOR AN EXPLANATION OF THE MATERIALS TO BE USED SEE NOTE ENTITLED "COATING SYSTEM." THE PURPOSE OF THIS COATING IS TO PROVIDE PROTECTION FOR NEW (UNWEATHERED) AND OLDER (WEATHERED) GALVANIZED STEEL SUPPORT SECTIONS FROM CORROSIVE ELEMENTS IN THE ATMOSPHERE. COATING AND SURFACE PREPARATION OF NEW GALVANIZED SUPPORT SECTIONS SHOULD BE DONE BY THE MANUFACTURER.

IN THE FIELD, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION LAWS, RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL AGENCIES. THE COATING MATERIALS SPECIFIED FOR THE WORK CAN BE HAZARDOUS TO THE HEALTH OF THE APPLICATOR IF NOT APPLIED AS PER MANUFACTURER'S INSTRUCTION. THE CONTRACTOR SHALL FOLLOW THE DATA SHEET AND THE LABEL ON THE PAINT CONTAINERS. THESE PRECAUTIONS SHALL INCLUDE THE USE OF RESPIRATORS AND EYE AND SKIN PROTECTION AS SPECIFIED. THE CONTRACTOR SHALL ALSO INSURE THAT HIS PAINTING OPERATIONS AND LOCATIONS WILL NOT ENDANGER OR ADVERSELY AFFECT THE PUBLIC IN GENERAL.

THE PROPOSED CLEANING AND COATING OPERATIONS SHALL BE PERFORMED ONLY WHEN THE AMBIENT TEMPERATURE IS 50 DEGREES F OR ABOVE. PAINT SHALL NOT BE APPLIED DURING RAIN, FOG OR MIST, OR WHEN THE STEEL SURFACE TEMPERATURE IS LESS THAN 5 DEGREES F ABOVE THE DEW POINT. PAINT SHALL NOT BE APPLIED TO WET OR DAMP SURFACES OR ON FROSTED OR ICE-COATED SURFACES. PAINT SHALL NOT BE APPLIED WHEN THE RELATIVE HUMIDITY IS GREATER THAN 85%. ALL STEEL SURFACES OF TRUSSES AND END FRAMES INCLUDING THE WELDED AREAS, BALLAST ENCLOSURE MOUNTING BRACKET AND BASEPLATE ARE TO BE CLEANED AND COATED. BEFORE EACH COATING IS APPLIED, IT SHALL BE MIXED WITH AN APPROVED POWER MECHANICAL MIXER TO A UNIFORM CONSISTENCY WHICH SHALL BE MAINTAINED DURING ITS APPLICATION. EACH COAT SHALL BE APPLIED IN A WORKMANLIKE MANNER AS A CONTINUOUS FILM OF UNIFORM THICKNESS WHICH IS FREE OF HOLIDAYS, PORES, RUNS OR SAGS. ALL COATS SHALL BE APPLIED BY BRUSH. THINNING OF PAINT IS STRICTLY PROHIBITED. PAINT NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COATING SHALL PENETRATE ALL JOINTS AND CONNECTIONS. THE ENGINEER SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY CLEANING OR COATING OPERATIONS SO THAT INSPECTION SERVICES CAN BE PROVIDED.

**COATING SYSTEM**

THE COATING SYSTEM SHALL CONSIST OF A POLYAMIDE-CURED EPOXY PRIME COAT, A POLYAMIDE-CURED INTERMEDIATE COAT AND AN ALIPHATIC POLYURETHANE TOP COAT. THE COATING MATERIALS USED SHALL BE THOSE AS LISTED FROM ONE OF THE FOLLOWING MANUFACTURERS:

1. AMERON  
210 NORTH BERRY STREET  
BREA, CALIFORNIA 92621  
LOCAL TELEPHONE CONTACT: (216) 896-3602  
PRIME COAT: AMERCOAT 71  
INTERMEDIATE COAT: AMERLOCK 400 (LIGHT GREY)  
TOP COAT: AMERCOAT 450 HS (MED. GREY)
2. THE GLIDDEN COMPANY  
16651 SPRAGUE ROAD  
STRONGSVILLE, OHIO 44136  
LOCAL TELEPHONE CONTACT: (216) 826-5528  
PRIME COAT: GLID-GUARD CORROSION RESISTANT HS EPOXY NO. 5465  
INTERMEDIATE COAT: GLID-GUARD CORROSION RESISTANT HS EPOXY NO 5466  
TOP COAT: GLID-THANE 11 POLYURETHANE NO. 6200 SERIES
3. PORTER PAINT CO.  
400 SOUTH 13TH STREET  
LOUISVILLE, KY. 40201  
LOCAL TELEPHONE CONTACT: (216) 562-6709  
PRIME COAT: PORTER PAINTS MCR 4300  
INTERMEDIATE COAT: PORTER PAINTS MCR 4300 (OFF WHITE)  
TOP COAT: PORTER PAINTS HYTHANE

4. POLY-CARB INC.  
33095 BAINBRIDGE ROAD  
CLEVELAND, OHIO 44139  
LOCAL TELEPHONE CONTACT: (216) 248-1223  
PRIME COAT: MARK-60 ULTRAPOX  
INTERMEDIATE COAT: MARK-60 ULTRAPOX (LIGHT GREY)  
TOP COAT: MARK-73 ULTRAKOTE (MED GREY)

5. SHERWIN WILLIAMS COMPANY  
761 BETA DRIVE  
MAYFIELD VILLAGE, OHIO 44143  
LOCAL TELEPHONE CONTACT: (216) 461-8287  
PRIME COAT: TILE-CLAD 11H-BILD PRIMER  
INTERMEDIATE COAT: HI-SOLIDS CATALYZED EPOXY (PURE WHITE)  
TOP COAT: HI-BILD ALIPHATIC POLYURETHANE ENAMEL (GREY)

ALL THREE COATS SHALL BE MANUFACTURED BY THE SAME COMPANY TO INSURE COMPATIBILITY AMONG COATS.

**SURFACE PREPARATION, EXISTING  
SUPPORT SECTIONS**

EXISTING, WEATHERED GALVANIZED SUPPORT SECTIONS SHOULD HAVE THEIR SURFACE PREPARATION AS WELL AS THEIR PROTECTIVE COATING DONE UNDER CONDITIONS OF TEMPERATURE AND HUMIDITY WITHIN THE SAME RANGE AS SPECIFIED BY THE MANUFACTURER OF THE EPOXY-PRIME COAT MATERIAL TO BE USED IMMEDIATELY AFTER THIS CLEANING OPERATION. THE SUPPORT SECTIONS SHALL BE PREPARED FOR COATING BY SSPC-SPI (SOLVENT CLEANING) FOLLOWED BY SSPC-SP6 (COMMERCIAL BLAST CLEANING). BEFORE THE PREPARED SURFACE DEGRADES FROM THE PRESCRIBED STANDARDS, THE PRIME COAT SHALL BE APPLIED. IN EVERY CASE, THE SURFACE SHALL BE COATED WITH EPOXY PRIME COAT ON THE SAME DAY AS THE SURFACE PREPARATION. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING, OR OTHER DAMAGE TO THE PREPARED SURFACE. PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING, TRANSPORTATION, COSTS AND MATERIAL NECESSARY TO ACCOMPLISH THIS ITEM OF WORK PER MAJOR SUPPORT SECTION.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM 630 - SURFACE PREPARATION, EXISTING SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

**SURFACE PREPARATION, NEW SUPPORT SECTIONS**

NEW, UNWEATHERED GALVANIZED SUPPORT SECTIONS SHOULD HAVE THEIR SURFACE PREPARATION AS WELL AS THEIR PROTECTIVE COATING DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS.

THE SUPPORT SECTIONS SHALL BE PREPARED FOR COATING BY SSPC-SPI (SOLVENT CLEANING) FOLLOWED BY SSPC-SP7 (BRUSH-OFF BLAST). BEFORE THE PREPARED SURFACE DEGRADES FROM THE PRESCRIBED STANDARDS, THE PRIME COAT SHALL BE APPLIED. IN EVERY CASE, THE SURFACE SHALL BE COATED WITH EPOXY PRIME COAT ON THE SAME DAY AS THE SURFACE PREPARATION. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING, OR OTHER DAMAGE TO THE PREPARED SURFACE. PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING, TRANSPORTATION COSTS AND MATERIAL NECESSARY TO ACCOMPLISH THIS ITEM OF WORK PER MAJOR SUPPORT SECTION.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM 630 - SURFACE PREPARATION, NEW SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

**COATING, EPOXY-PRIME COAT, SUPPORT SECTIONS**

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF AN EPOXY PRIMER TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL BE BETWEEN .0381 TO .0508 mm. IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED THICKNESS, THAT COST SHALL BE BORNE BY THE CONTRACTOR. THE COLOR OF THIS COAT SHALL BE NOTICEABLY DIFFERENT FROM THE BASE MATERIAL AND OTHER PROPOSED COATS. THIS COAT SHALL IN ALL CASES BE APPLIED OVER SURFACES THAT WERE PREPARED EARLIER THE SAME DAY. THE THINNING OF THE EPOXY MATERIAL IS STRICTLY PROHIBITED. MATERIAL NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED (.0381 TO .0508 mm), BUT AT LEAST .0381 mm, THE CONTRACTOR BID PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 16 - 2/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 16 - 2/3% (I.E., THE AVERAGE DRY THICKNESS IS LESS THAN .0381 mm) THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RECOATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT AND MATERIAL. THE EPOXY PRIME COAT CHOSEN BY THE CONTRACTOR SHALL BE ONE OF THE FOLLOWING TWO-COMPONENT COMPOSITIONS CONFORMING TO ITS LISTED PROPERTIES:

AMERCOAT 71:  
% SOLIDS BY VOLUME: 47% ± 3%  
POT LIFE: 8 HRS. @ 77 DEGREES F.  
DRYING TIME: 4 HRS @ 77 DEGREES F.

GLID-GUARD CORROSION RESISTANT  
HS EPOXY NO.5465:  
% SOLIDS BY VOLUME: 54% ± 2%  
POT LIFE: 4 HRS. @ 70 DEGREES F.  
DRYING TIME: 1-2 HRS. TO TOUCH, 7 HRS TO RECOAT @ 70 DEGREES F., 50% RELATIVE HUMIDITY  
VISCOSITY: 95 - 100 KU  
% SOLIDS BY WEIGHT: 71% ± 2%

MCR-430 EPOXY PRIMER:  
% SOLIDS BY VOLUME: 48% ± 2%  
POT LIFE: 30 HRS. @ 50-60 DEGREES F 16 HRS. @ 80-100 DEGREES F.  
DRYING TIME: 4-6 HRS @ 50-60 DEGREES F.

MARK-60 ULTRAPOX:  
% SOLIDS BY VOLUME: 50% ± 5%  
% SOLIDS BY WEIGHT: 52% ± 5%  
POT LIFE: 6 HRS. @ 75 DEGREES F  
DRYING TIME: 2-3 HRS @ 75 DEGREES F.  
VISCOSITY: 300-500 CPS @ 75 DEGREES F.

TILE-CLAD 11H-BILD PRIMER:  
% SOLIDS BY VOLUME: 48% ± 2%  
% SOLIDS BY WEIGHT: 63% ± 2%  
POT LIFE: 8 HRS. @ 77 DEGREES F  
DRYING TIME: 1HR. TO TOUCH, 6 HRS. TO RECOAT @ 77 DEGREES F.

FOR NEW SUPPORT SECTIONS THE PRIME COAT SHOULD BE DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS. VERIFICATION BY THE MANUFACTURER OF THE COATING MATERIAL FOR THE PRIME COAT WILL BE REQUIRED. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING, OR OTHER DAMAGE TO THE PRIME COAT. PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING, TRANSPORTATION COSTS AND MATERIAL NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS PRIME COAT SHALL BE MANUFACTURED BY THE COMPANY SUPPLYING THE INTERMEDIATE AND TOP COATS. A PROPERLY CALIBRATED DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM 630 - COATING, EPOXY PRIME COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

**COATING, EPOXY INTERMEDIATE COAT,  
SUPPORT SECTIONS**

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF EPOXY TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL NOT BE LESS THAN (.153mm), IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED THICKNESS, THAT COST SHALL BE BORNE BY THE CONTRACTOR. THINNING OF THE EPOXY MATERIAL IS STRICTLY PROHIBITED. MATERIAL NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COLOR OF THIS COAT SHALL BE LIGHT GREY. WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED (.153mm), BUT IS AT LEAST (.127 mm), THE CONTRACT PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 16-2/3%. IF THE DEFICIENCY OF COATINGS MORE THAN 16-2/3% (I.E. THE AVERAGE DRY FILM THICKNESS IS LESS THAN .127 mm), THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RECOATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT AND MATERIAL. THE EPOXY INTERMEDIATE COAT CHOSEN BY THE CONTRACTOR SHALL BE ONE OF THE FOLLOWING TWO-COMPONENT COMPOSITIONS CONFORMING TO ITS LISTED PROPERTIES:

AMERLOCK 400:  
% SOLIDS BY VOLUME: 83% ± 2%  
POT LIFE: 2-1/2 HRS. 70 DEGREES F.  
DRYING TIME: 20 HRS. @ 70 DEGREES F.

GLID-GUARD CORROSION RESISTANT HS EPOXY  
NO. 5466:  
% SOLIDS BY VOLUME: 54% ± 2%  
POT LIFE: 4 HRS. @ 70 DEGREES F.  
DRYING TIME: 1-2 HRS. TO TOUCH 7 HRS. TO RECOAT AT 70 DEGREES F., 50% RELATIVE HUMIDITY  
VISCOSITY: 95-100 KU  
% SOLIDS BY WEIGHT: 71% ± 2%

**MCR 4361 HIGH BUILD EPOXY:**  
 % SOLIDS BY VOLUME: 49.4% ± 2%  
 POT LIFE: 30 HRS. @ 50-60 DEGREES F. 16 HRS. @ 80-100 DEGREES F.  
 DRYING TIME: 1-2 HRS. @ 60-80 DEGREES F.

**MARK-60 ULTRAPAX:**  
 % SOLIDS BY VOLUME: 50% ± 5%  
 % SOLIDS BY WEIGHT: 52% ± 5%  
 POT LIFE: 6 HRS. @ 75 DEGREES F.  
 DRYING TIME: 2-3 HRS. INITIAL SET @ 75 DEGREES F.  
 VISCOSITY: 300-500 CPS @ 75 DEGREES F.

**H-SOLIDS CATALYZED EPOXY:**  
 % SOLIDS BY VOLUME: 60% ± 2%  
 % SOLIDS BY WEIGHT: 77% ± 2%  
 POT LIFE: 1HR. TO TOUCH, 4 HRS. TACK FREE, 6 HRS. TO RECOAT @ 77 DEGREES F. & 50% R.H.

AT LEAST 24 HOURS BUT NO MORE THAN THREE (3) DAYS SHALL ELAPSE AFTER THE APPLICATION OF THE EPOXY PRIME COAT AND BEFORE THE APPLICATION OF THE EPOXY INTERMEDIATE COAT. SURFACES SHALL IN ALL CASES BE CLEAN BEFORE THE INTERMEDIATE COAT IS APPLIED.

FOR NEW SUPPORT SECTIONS, THIS INTERMEDIATE COAT SHOULD BE DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS. VERIFICATION BY THE MANUFACTURER FOR THE INTERMEDIATE COAT WILL BE REQUIRED. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, WARRING OR OTHER SURFACE DAMAGE TO THE INTERMEDIATE COAT.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COST AND MATERIAL NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS INTERMEDIATE COAT SHALL BE MANUFACTURED BY THE SAME COMPANY SUPPLYING THE PRIME AND TOP COATS. A PROPERLY CALIBRATED DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:  
 ITEM 630 - COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

**COATING, URETHANE TOP COAT, SUPPORT SECTIONS**

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF URETHANE TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL NOT BE LESS THAN .038mm. IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED THICKNESS, THAT COST SHALL BE BORNE BY THE CONTRACTOR. THINNING OF THE URETHANE MATERIAL IS STRICTLY PROHIBITED. MATERIAL NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COLOR OF THE COAT SHALL BE MEDIUM GREY.  
 WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED .038mm BUT IS AT LEAST .0254mm, THE CONTRACT PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 33-1/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 33-1/3%, I.E. THE AVERAGE DRY FILM THICKNESS IS LESS THAN .0254mm, THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RECOATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT AND MATERIAL. THE URETHANE TOP COAT CHOSEN BY THE CONTRACTOR SHALL BE ONE OF THE FOLLOWING MATERIALS CONFORMING TO ITS LISTED PROPERTIES:

**AMERLACK 400:**  
 % SOLIDS BY VOLUME: 66% ± 3%  
 POT LIFE: 4 HRS. @ 70 DEGREES F.  
 DRYING TIME: 8 HRS. @ 70 DEGREES F. DRY-THROUGH

**GLD-THANE IPOLYURETHANE NO. 6200:**  
 % SOLIDS BY VOLUME: 40.3% ± 2%  
 POT LIFE: 8 HRS.  
 DRYING TIME: 1HR. TO TOUCH, 3 HRS. TO RECOAT AT 77 DEGREES F., 50% RELATIVE HUMIDITY

% SOLIDS BY WEIGHT: 57.8% ± 2%  
**HYTHEN 460 ALIPHATIC POLYURETHANE:**  
 % SOLIDS BY VOLUME: 43.4% ± 2%  
 POT LIFE: 12 HRS. @ 75 DEGREES F.  
 DRYING TIME: 3/4 HRS. TO TOUCH @ 75 DEGREES F.

**MARK-73 ULTRAKOTE:**  
 % SOLIDS BY VOLUME: 50%  
 POT LIFE: 5 HRS. @ 75 DEGREES F.  
 DRYING TIME: 4-5 HRS. @ 75 DEGREES F. TACK FREE  
 VISCOSITY: 1000-1500 CPS @ 75 DEGREES F.  
 % SOLIDS BY WEIGHT: 64%

**H1-8ILD ALIPHATIC POLYURETHANE ENAMEL:**  
 % SOLIDS BY VOLUME: 40% ± 2%  
 % SOLIDS BY WEIGHT: 48% ± 2%  
 POT LIFE: 6 HRS. @ 77 DEGREES F.  
 DRYING TIME: 30 MIN. TO TOUCH, 4 HRS. TACK FREE, 18 HRS. MINIMUM, 72 HRS. MAXIMUM TO RECOAT.

AT LEAST 24 HOURS BUT NO MORE THAN THREE (3) DAYS SHALL ELAPSE AFTER THE APPLICATION OF THE EPOXY INTERMEDIATE COAT AND BEFORE THE APPLICATION OF THE URETHANE TOP COAT. SURFACES SHALL IN ALL CASES BE CLEAN BEFORE THE TOP COAT IS APPLIED.

FOR NEW SUPPORT SECTIONS, THIS TOP COAT SHOULD BE DONE BY THE MANUFACTURER OF THE SUPPORT SECTIONS. VERIFICATION BY THE MANUFACTURER FOR THE TOP COAT WILL BE REQUIRED. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, WARRING OR OTHER SURFACE DAMAGE TO THE TOP COAT.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COSTS AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS TOP COAT SHALL BE MANUFACTURED BY THE SAME COMPANY SUPPLYING THE PRIME AND INTERMEDIATE COATS. A PROPERLY CALIBRATED, DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM 630 - COATING, URETHANE TOP COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

**PREQUALIFICATION**

PRIOR TO USE, THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR COPIES OF THE MANUFACTURER'S CERTIFIED TEST DATA SHOWING THAT THE MATERIAL COMPLES WITH THE REQUIREMENTS OF THIS SPECIFICATION. THE TEST DATA SHALL INCLUDE THE BRAND NAME OF THE PAINT, NAME OF MANUFACTURER, NUMBER OF THE LOT TESTED AND DATE OF MANUFACTURE. WHEN THE PAINT HAS BEEN APPROVED BY THE DIRECTOR, FURTHER PERFORMANCE TESTING BY THE MANUFACTURER WILL NOT BE REQUIRED UNLESS THE FORMULATION OF MANUFACTURING PROCESS HAS BEEN CHANGED. IN WHICH CASE NEW CERTIFIED TEST RESULTS WILL BE REQUIRED.

**ACCEPTANCE**

THE MANUFACTURER SHALL SUBMIT CERTIFIED TEST DATA IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION. THE STATE RESERVES THE RIGHT TO SAMPLE AND TEST DELIVERED LOTS FOR COMPLIANCE.

SIGN NO.	STATION	END FRAMES	VERTICAL POLES	TRUSSES	CANTILEVER ARM
22A	17+617.44, S.B. S.R. 13	2			
130	23+036.19, S.B. S.R. 13	2			

THE TOTAL NUMBER OF MAJOR SUPPORT SECTIONS THAT SHALL RECEIVE PROTECTING COATING= 4

PAYMENT WILL BE MADE UNDER:

TOTAL	ITEM	EXT.	UNIT	DESCRIPTION
4	630	09100	EACH	SURFACE PREP, EXISTING SUPPORT SECTION
4	630	09104	EACH	COATING, EPOXY PRIME COAT, SUPPORT SECTION
4	630	09106	EACH	COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTION
4	630	09108	EACH	COATING, URETHANE TOP COAT, SUPPORT SECTION

**ITEM 630 - LAMINATED WOODEN BEAMS, BY TYPE**

REFER TO DETAIL ON PAGE 39.

- 1) LAY OUT LOCATION FOR BEAMS. REFER TO SUPPORT SPACING CHART ON STANDARD CONSTRUCTION DRAWING TC-42.10M.
- 2) AUGER HOLES TO REQUIRED DEPTH. USE A 457.200 MM DIA HOLE FOR TYPE "M" (200.025 mm x 200.025 mm) BEAMS AND A 609.600 mm DIA HOLE FOR TYPE "L" (377.825 mm x 200.025 mm) BEAMS.
- 3) CUT BEAMS TO REQUIRED LENGTH AS NECESSARY.
- 4) SET AND PLUMB THE FIRST BEAM.
- 5) BACKFILL WITH SUITABLE BACKFILL MATERIAL. NORMALLY THE SOIL REMOVED FROM THE HOLE IS SUITABLE FOR BACKFILLING. AS THE HOLE IS BEING BACKFILLED, TAMP THE SOIL FIRMLY AROUND THE BEAM WITH A HYDRAULIC OR PNEUMATIC POLE TAMPER. THE BEAM SHOULD BE CHECKED OCCASIONALLY TO VERIFY THAT IT REMAINS PLUMB. EXCESS SOIL SHALL BE MOUNDED UP AROUND THE BEAM TO ACCOUNT FOR SETTLING
- 6) INSTALL THE SECOND (AND THIRD, IF NECESSARY) BEAM IN THE SAME MANNER.
- 7) ATTACH DRIVE POSTS TO THE FRONT FACE OF THE WOODEN BEAMS WITH LAG SCREWS AS PER DETAIL ON SHEET NO. 39. ONE 7.938 mm DIAMETER LAG SCREW SHOULD BE USED FOR EACH 3.048 SQUARE METERS OF SIGN. SCREWS SHOULD BE 38.100 mm TO 50.800 mm LONG. 4.763 mm PILOT HOLES ARE RECOMMENDED TO EASE INSTALLATION OF SCREWS. THE DRIVE POSTS CAN EXTEND ABOVE THE TOP OF THE WOODEN BEAMS A SMALL AMOUNT AS NECESSARY TO ACHIEVE THE REQUIRED SIGN HEIGHT AND FACILITATE LEVELING OF THE SIGN.
- 8) ATTACH SIGN USING EXTRUSHEET SIGN CLIPS.
- 9) INSTALL BREAKAWAY FEATURE AS SHOWN BY DRILLING 25.4 mm DIAMETER HOLES AND CONNECTING THE HOLES WITH A SAW CUT. A RECIPROCATING SAW WORKS WELL FOR MAKING THE SAW CUT. THIS BREAKAWAY FEATURE MUST BE INSTALLED ON THE SAME DAY THAT THE BEAMS ARE SET IN THE HOLES.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE UNIT BID PER LINEAR METER AND SHALL INCLUDE BUT IS NOT LIMITED TO, WOOD STABILIZERS, LAG BOLTS, NO. 3 STEEL DRIVE POSTS, CONCRETE BLOCK, AND ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PERFORM WORK.

# GENERAL SUMMARY



SCJ  
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ADB

QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	QUANTITIES FROM SHEET	ITEM	TEXT	GRAND TOTAL	UNIT	DESCRIPTION	REF
8	9	10	11	21	27A	30	31	34	36	37A					<i>ROADWAY ITEMS</i>	
			lump								201	11001	lump		CLEARING AND GRUBBING, AS PER PLAN	11
										278	202	22901	278	square meter	APPROACH SLAB REMOVED, AS PER PLAN	9
					16						202	30000	16	square meter	WALK REMOVED	
					13						202	32000	13	meter	CURB REMOVED	
				5976.01							202	38000	5976.01	meter	GUARDRAIL REMOVED	
				110.49							202	38300	110.49	meter	GUARDRAIL REMOVED, BARRIER DESIGN	
				2							202	42000	2	each	ANCHOR ASSEMBLY REMOVED, TYPE A	
				8							202	42810	8	each	ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E	8
	1000										SPECIAL	20298300	1000	square meter	REMOVAL MISC.: AGGREGATE CROSSOVER REMOVED	9
							224		136	150	203	12000	510	cubic meter	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
				280			11	207	126		203	20000	624	cubic meter	EMBANKMENT	
				89							203	20001	89	cubic meter	EMBANKMENT, AS PER PLAN	22
									439	445	203	50000	884	square meter	SUBGRADE COMPACTION	
500										182	203	55000	682	meter	DITCH CLEANOUT	
				5575.94							606	13000	5575.94	meter	GUARDRAIL, TYPE 5	
				53.34							606	13050	53.34	meter	GUARDRAIL, TYPE 5A	
				175.26							606	15500	175.26	meter	GUARDRAIL, BARRIER DESIGN, TYPE 5	
				8							606	27850	8	each	ANCHOR ASSEMBLY REBUILT, TYPE E	8
				110							606	18500	110	each	GUARDRAIL POST, 2.75 METER	
				6							606	22000	6	each	ANCHOR ASSEMBLY, TYPE B-98	9
				15							606	22010	15	each	ANCHOR ASSEMBLY, TYPE E-98	9
				18							606	26500	18	each	ANCHOR ASSEMBLY, TYPE T	
				12							606	35000	12	each	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
				2							606	35100	2	each	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
				6							606	60010	6	each	IMPACT ATTENUATOR, TYPE I-98 (BI-DIRECTIONAL)	9
		2902									607	15001	2902	meter	FENCE, TYPE 47, AS PER PLAN	10
		3009									607	23001	3009	meter	FENCE, TYPE CLT, AS PER PLAN	10
		5									607	40500	5	each	GATE, TYPE 47: 4.3 METER	
		5									607	61200	5	each	GATE, TYPE CLT	
					16						608	10001	16	square meter	100 mm CONCRETE WALK, AS PER PLAN	8
				47							622	24000	47	meter	CONCRETE BARRIER, TYPE D	
		18									625	32000	18	each	GROUND ROD	
				255							626	00100	255	each	BARRIER REFLECTOR, TYPE A	
				2							626	00200	2	each	BARRIER REFLECTOR, TYPE B	
				5781							SPECIAL	60650000	5781	meter	RESHAPING BERM	

PLAN NO.

**GENERAL SUMMARY**

**RIC-13-17.445**

17  
112

DESIGN FILE: i:\projects\16915\13qs.dgn  
WORKSTATION: malleman DATE: 10 FEB 99

# GENERAL SUMMARY



SCJ  
ADB

QUANTITIES FROM SHEET 8	QUANTITIES FROM SHEET 9	QUANTITIES FROM SHEET 10	QUANTITIES FROM SHEET 21	QUANTITIES FROM SHEET 30	QUANTITIES FROM SHEET 31	QUANTITIES FROM SHEET 33	QUANTITIES FROM SHEET 34	QUANTITIES FROM SHEET 35	QUANTITIES FROM SHEET 36	QUANTITIES FROM SHEET 37A	I T E M	I T E M T E X T	GRAND TOTAL	UNIT	DESCRIPTION	REF
<i>EROSION CONTROL</i>																
280											207	70000	280	each	STRAW OR HAY BALES	
80											601	20000	80	square meter	CRUSHED AGGREGATE SLOPE PROTECTION	
		250					13				601	32100	263	cubic meter	ROCK CHANNEL PROTECTION, TYPE B, WITH FILTER	
							5	8			601	32200	13	cubic meter	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
			7314	55	3577				270		659	10000	11216	square meter	SEEDING AND MULCHING	
809											659	20000	809	kilogram	COMMERCIAL FERTILIZER	
81											659	35000	81	cubic meter	WATER	
<i>DRAINAGE</i>																
					0.05		1.98	0.32			602	20000	2.35	cubic meter	CONCRETE MASONRY	
						47.5					603	01500	47.5	meter	150 mm CONDUIT, TYPE F	
							7.5				603	04400	7.5	meter	300 mm CONDUIT, TYPE B	
						10					603	04600	10	meter	300 mm CONDUIT, TYPE C	
					102						603	04600	102	meter	300 mm CONDUIT, TYPE C: 707.45	
								50			603	05200	50	meter	300 mm CONDUIT, TYPE F, 707.05, TYPE C	
							7.5				603	05900	7.5	meter	375 mm CONDUIT, TYPE B	
			9		72.5						603	06100	81.5	meter	375 mm CONDUIT, TYPE C	
					5						603	07600	5	meter	450 mm CONDUIT, TYPE C	
					17.5						603	09100	17.5	meter	525 mm CONDUIT, TYPE C	
					5						603	10600	5	meter	600 mm CONDUIT, TYPE C	
					5	5					603	13600	10	meter	750 mm CONDUIT, TYPE C	
						5					603	16400	5	meter	900 mm CONDUIT, TYPE B	
								2			604	00800	2	each	CATCH BASIN, NO.3A	
				1	1	29					604	01601	31	each	CATCH BASIN, NO. 5, AS PER PLAN	9
											604	02000	1	each	CATCH BASIN, NO. 6	
											604	04500	1	each	CATCH BASIN, NO. 2-2B	
											604	09500	1	each	CATCH BASIN RECONSTRUCTED TO GRADE	
											604	33500	1	each	MANHOLE FRAME AND COVER	
										72	605	31100	72	meter	AGGREGATE DRAIN	
<i>PAVEMENT ITEMS</i>																
									60		301	46000	60	cubic meter	BITUMINOUS AGGREGATE BASE, PG64-22	
									44	68	304	20000	112	cubic meter	AGGREGATE BASE	

PLAN NO.

**GENERAL SUMMARY**

**RIC-13-17.445**

18  
112

DESIGN FILE: I:\projects\16915\13gs.dgn  
WORKSTATION: malleman DATE: 10 FEB 99

# GENERAL SUMMARY



CONCRETE  
SCJ  
checked  
ADB

QUANTITIES FROM SHEET			QUANTITIES FROM SHEET			QUANTITIES FROM SHEET		QUANTITIES FROM SHEET		QUANTITIES FROM SHEET		QUANTITIES FROM SHEET		I T E M	I T E M T E X T	GRAND TOTAL	UNIT	DESCRIPTION	REF		
11	13	27A	35	36	37A	38	50	51	52	53	54	55	56							57	58
<b>PAVEMENT ITEMS</b>																					
				75											407	10000	75	liter	TACK COAT		
				297											408	10000	297	liter	BITUMINOUS PRIME COAT		
				14											448	50000	14	cubic meter	ASPHALT CONCRETE SURFACE COURSE, TYPE IH		
						37									SPECIAL	45134000	37	meter	PRESSURE RELIEF JOINT: AS PER PLAN	37A	
				7											830	26000	7	meter	CURB, TYPE 6		
		13													830	26000	13	meter	CURB, TYPE 6, AS PER PLAN	8	
						445									611	25000	445	square meter	REINFORCED CONCRETE APPROACH SLAB (T=380mm), AS PER PLAN	9	
				14											617	98300	14	metric ton	SHOULDER RECONDITIONING MISC.: COMPACTED AGGREGATE		
<b>TRAFFIC CONTROL</b>																					
16															614	11100	16	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR	11	
							188								620	10300	188	each	DELINEATOR, TYPE C, POST MOUNTED		
							188								620	31200	188	each	DELINEATOR, REMOVED FOR DISPOSAL		
												2			620	40300	2	each	REFLECTOR, TYPE D, AS PER PLAN		
							6.2	2.4	2.4	2.4	4.8	2.4	2.4		630	02100	23.0	meter	GROUND MOUNTED SUPPORT, NO. 2 POST		
															630	03100	862.2	meter	GROUND MOUNTED SUPPORT, NO. 3 POST		
							85.6	97.8	115.1	86.1	80.6	84.8	42.7	163.3	106.2	630	06400	47.9	meter	GROUND MOUNTED SUPPORT, 100X11.5 BEAM	
							9.2					9.9	28.8		630	06500	87.4	meter	GROUND MOUNTED SUPPORT, W150X13.5 BEAM		
							10.7	11.5			30.4		13.8	21.0	630	08004	56.4	meter	ONE WAY SUPPORT, NO. 3 POST		
								4.7	14.1	28.2	9.4				630	09000	26	each	BREAKAWAY BEAM CONNECTION		
							4	2			6	2	8	4	630	09100	4	each	SURFACE PREPARATION, EXISTING SUPPORT SECTION	13	
															630	09104	4	each	COATING, EPOXY PRIME COAT, SUPPORT SECTION	13	
															630	09106	4	each	COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTION	13	
															630	09108	4	each	COATING, URETHANE TOP COAT, SUPPORT SECTION	13	
													1		630	79500	1	each	SIGN SUPPORT ASSEMBLY POLE MOUNTED		
							13.5	10.0	10.8	9.4	9.6	16.8	6.5	15.8	7.1	630	80100	99.5	square meter	SIGN, FLAT SHEET	
															2.8	630	80101	2.8	square meter	SIGN, FLAT SHEET, AS PER PLAN (HINGED)	11
							2.5	6.1	10	4.5	2.2	3.2	2.7	7.1	630	80102	38.3	square meter	SIGN, FLAT SHEET, TYPE G		
							19.2	12.9	7.6	5	21.9	9.0	25.5	8.6	630	80204	109.7	square meter	SIGN, EXTRUSHEET, TYPE G		
							6	3	1	1	5	4	5	4	630	82000	29	each	SIGN BACKING ASSEMBLY		
							4	2			6	2	8	4	630	84500	26	each	GROUND MOUNTED BEAM SUPPORT FOUNDATION		
							18	21	20	9	12	20	22	23	25	630	84900	170	each	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
							2	1	1	1	2	1		1	630	85400	9	each	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL		

PLAN NO.

**GENERAL SUMMARY**

**RIC-13-17.445**

19  
112

DESIGN FILE: i:\projects\16915\13gs.dgn  
WORKSTATION: malleman DATE: 10 FEB 99



# GENERAL SUMMARY



SCJ  
ADD

QUANTITIES FROM SHEET 50	QUANTITIES FROM SHEET 51	QUANTITIES FROM SHEET 52	QUANTITIES FROM SHEET 53	QUANTITIES FROM SHEET 54	QUANTITIES FROM SHEET		QUANTITIES FROM SHEET		QUANTITIES FROM SHEET 85	QUANTITIES FROM SHEET 109	I T E M	I T E M T E X T	GRAND TOTAL	UNIT	DESCRIPTION	REF
					55	56	57	58								
<b>TRAFFIC CONTROL</b>																
15	26	24	13	13	15	12	19	17			630	86002	154	each	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
4	2		2	4	2	2	3				630	86102	19	each	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	
						2					630	87400	2	each	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
13.9	14.1										630	97900	28	meter	SIGNING, MISC.: GROUND MOUNTED SUPPORT, TYPE L WOOD BEAM	
11.8	14.2	12.3	14.4	27.3	36.2						630	97900	116.2	meter	SIGNING, MISC.: GROUND MOUNTED SUPPORT, TYPE M WOOD BEAM	
<b>MAINTENANCE OF TRAFFIC</b>																
									500		614	12800	500	each	TEMPORARY RAISED PAVEMENT MARKER	
									84		614	13200	84	each	BARRIER REFLECTOR, TYPE A	
									104		614	13300	104	each	BARRIER REFLECTOR, TYPE B	
									30		614	13302	30	each	BARRIER REFLECTOR, TYPE B2	
									32	92	614	13350	124	each	OBJECT MARKER	
									0.10		614	21000	0.10	kilometer	TEMPORARY CENTER LINE, CLASS I	
									0.03	2.4	614	22000	2.43	kilometer	TEMPORARY EDGE LINE, CLASS I	
									10		614	26000	10	meter	TEMPORARY STOP LINE, CLASS I	
									60	366	622	40020	426	meter	PORTABLE CONCRETE BARRIER, 813 mm	
									138	216	622	40040	354	meter	PORTABLE CONCRETE BARRIER, 813 mm, BRIDGE MOUNTED	
<b>STRUCTURE QUANTITIES</b>																
															FOR RIC-13-19183 slk (RIC-13-1192 slm) SFN 7000367, SEE SHEET 74	
															FOR RIC-13-21549 slk (RIC-13-1339 slm) SFN 7000383, SEE SHEET 75	
															FOR RIC-13-22015 slk (RIC-12-1368 slm) SFN 7000391, SEE SHEET 76	
															FOR RIC-13-22257 slk (RIC-13-1383 slm) SFN 7000421, SEE SHEET 87	
															FOR RIC-13-22772 slk (RIC-13-1415 slm) SFN 7000472/464 SEE SHEET 92	
															FOR RIC-13-22788L&R slk (RIC-13-1416L&R slm) SFN 7000456/480, SEE SHEET 93	
											614	11000	lump		MAINTAINING TRAFFIC	
											623	10000	lump		CONSTRUCTION LAYOUT STAKES	
											624	10000	lump		MOBILIZATION	
											806	16010	6	month	FIELD OFFICE, TYPE B	

PLAN NO.

**GENERAL SUMMARY**

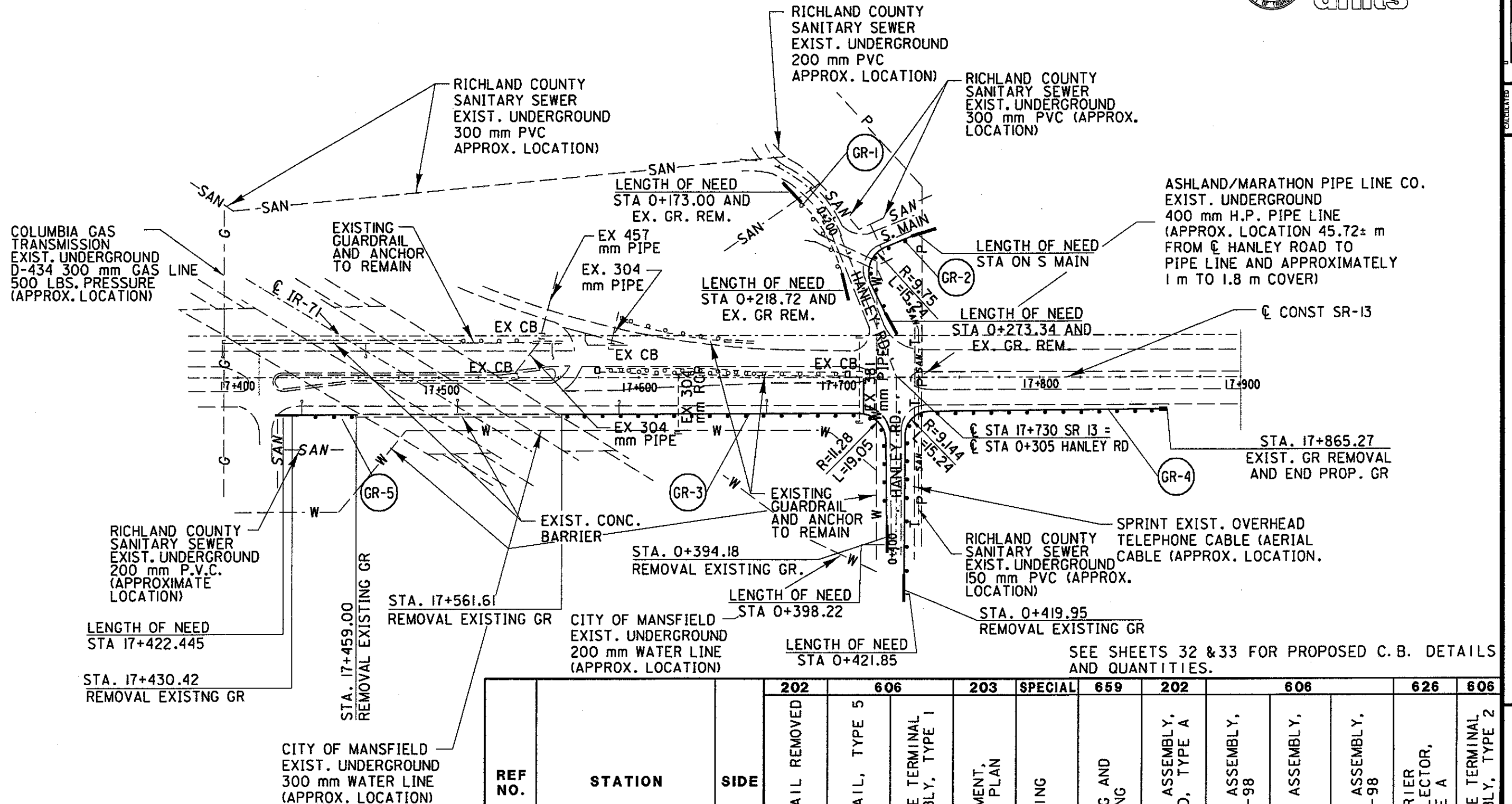
**RIC-13-17.445**

**20  
112**

DESIGN FILE: i:\projects\16915\13gs.dgn  
WORKSTATION: mallemar DATE: 10 FEB 99

SHEET NO.	202	606	202	202	606	606	606	606	606	606	202	606	606	606	606	626		626	659	203	622	203	SPECIAL
	ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E	ANCHOR ASSEMBLY REBUILT, TYPE E	GUARDRAIL REMOVED, BARRIER DESIGN	GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	BRIDGE TERMINAL ASSEMBLY, TYPE 2	GUARDRAIL POST, 2.75 METER	ANCHOR ASSEMBLY, TYPE E-98	ANCHOR ASSEMBLY, TYPE T	ANCHOR ASSEMBLY, TYPE B-98	ANCHOR ASSEMBLY REMOVED, TYPE A	BRIDGE TERMINAL ASSEMBLY, TYPE I	GUARDRAIL, TYPE 5A	IMPACT ATTENUATOR, TYPE I-98, BI-DIRECTIONAL	GUARDRAIL, BARRIER DESIGN, TYPE 5	Y	W	Y	W	SEEDING AND MULCHING	EMBANKMENT	CONCRETE BARRIER, TYPE D	EMBANKMENT, AS PER PLAN
	each	each	meter	meter	meter	each	each	each	each	each	each	each	each	meter	each	meter	each	each	m <sup>2</sup>	m <sup>3</sup>	meter	m <sup>3</sup>	meter
22				539.13	501.015	1		2	1	5	2	1					26		447			6.85	447
23				281.94	266.70			1	1								11		282			4.3	282
24	2	2		368.98	365.17				1								15		309			4.8	309
25	1	1		873.08	865.46				2								33		901			13.8	901
27A	1	1	76.2	2026.92	1916.43		110	6	5			4	30.48	2	45.72	19	64		1991			30.6	1991
28A (QUANT. FROM SHT'S. 28 & 29)	4	4	34.29	1885.960	1661.160	1		6	8	1		7	22.86	4	129.54	31	56	2	3384	280	47.24	28.9	1851
<b>TOTAL</b>	8	8	110.49	5976.010	5575.935	2	110	15	18	6	2	12	53.34	6	175.26	50	205	2	7314	280	47.24	89.25	5781

DESIGN AGENCY: DISTRICT THREE  
 DATE: \_\_\_\_\_  
 REVIEWED: \_\_\_\_\_  
 DRAWN: GTS  
 CHECKED: SCJ  
 GUARDRAIL SUBSUMMARY  
 RIC-13-17.445  
 21/112



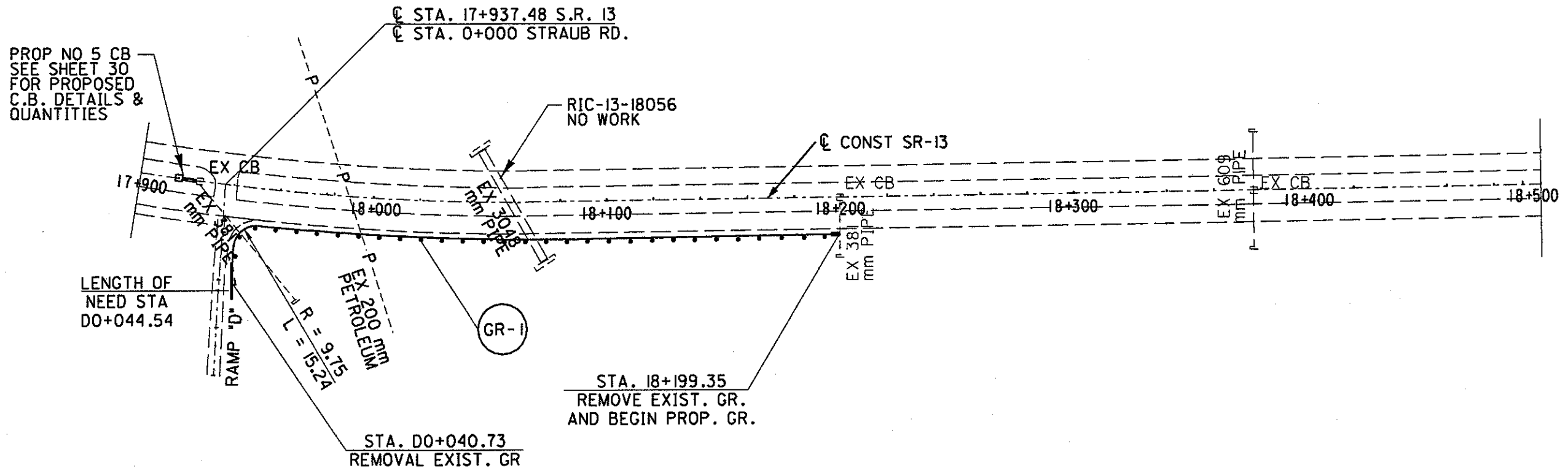
ALL DIMENSIONS ARE IN METERS,  
UNLESS NOTED OTHERWISE

REF NO.	STATION		SIDE	202		606		203	SPECIAL	659	202	606		626		606
	FROM	TO		GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	BRIDGE TERMINAL ASSEMBLY, TYPE 1	EMBANKMENT, AS PER PLAN	RESHAPING BERM	SEEDING AND MULCHING	ANCHOR ASSEMBLY, REMOVED, TYPE A	ANCHOR ASSEMBLY, TYPE E-98	ANCHOR ASSEMBLY, TYPE T	ANCHOR ASSEMBLY, TYPE B-98	BARRIER REFLECTOR, TYPE A	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
				METER		EACH	m <sup>2</sup>	METER	m <sup>2</sup>	EACH						
GR-1	0+169.19	0+222.53	RT								2			2		2
GR-2	0+277.15	S MAIN ST	LT	55.25	34.29		.85	56	56				2		3	
GR-3	17+561.00	0+402.30	RT	228.60	224.79		2.5	164	164						9	1
GR-4	17+865.27	0+425.66	RT	226.70	213.36		3.5	227	227						9	
GR-5	17+418.635	17+459.64	RT	28.58	28.575	1									3	
<b>TOTALS CARRIED TO SHEET NO. 21</b>				539.13	501.015	1	6.85	447	447	2	2	1	5	26	1	

DESIGN FILE: \$\$\$\$.DGNFILESPECIFICATIONS\$\$\$  
WORKSTATION: \$TERMINAL\$ DATE: \$\$\$DATE\$\$\$

GUARDRAIL DETAIL

RIC-13-17.445



STA. 18+199.35  
REMOVE EXIST. GR.  
AND BEGIN PROP. GR.

STA. D0+040.73  
REMOVAL EXIST. GR

LENGTH OF  
NEED STA  
D0+044.54

PROP NO 5 CB  
SEE SHEET 30  
FOR PROPOSED  
C.B. DETAILS &  
QUANTITIES

SEE SHEETS 32 & 33 FOR PROPOSED C. B. DETAILS  
AND QUANTITIES.

ALL DIMENSIONS ARE IN METERS,  
UNLESS NOTED OTHERWISE

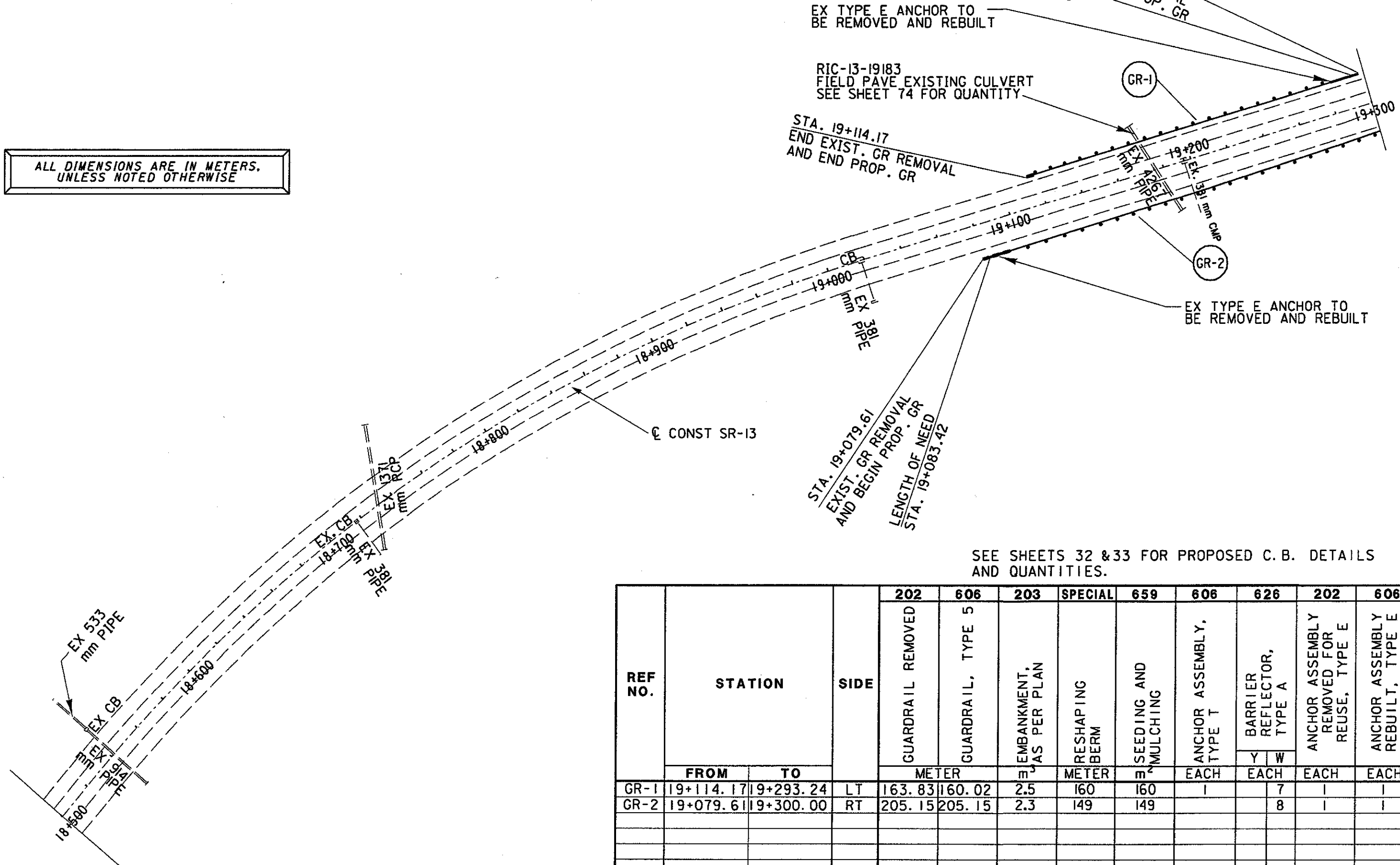
REF NO.	STATION		SIDE	202	606	203	SPECIAL	659	606		626	
	FROM	TO		GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	EMBANKMENT, AS PER PLAN	RESHAPING BERM	SEEDING AND MULCHING	ANCHOR ASSEMBLY, TYPE E-98	ANCHOR ASSEMBLY, TYPE T	BARRIER REFLECTOR, TYPE A	
			METER		M <sup>3</sup>	METER	M <sup>2</sup>	EACH				
GR-1	D0+048.35	18+199.35	RT	281.94	266.7	4.3	282	282				
TOTALS CARRIED TO SHEET NO. 21				281.94	266.7	4.3	282	282				

GUARDRAIL DETAIL

RIC-13-17.445

DESIGN FILE: \$\$\$DGNFILESPECIFICATIONS\$\$\$  
 WORKSTATION: \$TERMINAL\$ DATE: \$\$\$DATE\$\$\$

ALL DIMENSIONS ARE IN METERS,  
 UNLESS NOTED OTHERWISE



SEE SHEETS 32 & 33 FOR PROPOSED C. B. DETAILS  
 AND QUANTITIES.

REF NO.	STATION		SIDE	202	606	203	SPECIAL	659	606	626	202	606
	FROM	TO		GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	EMBANKMENT, AS PER PLAN	RESHAPING BERM	SEEDING AND MULCHING	ANCHOR ASSEMBLY, TYPE T	BARRIER REFLECTOR, TYPE A	ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E	ANCHOR ASSEMBLY REBUILT, TYPE E
			METER	M	M	METER	M	EACH	Y W	EACH	EACH	EACH
GR-1	19+114.17	19+293.24	LT	163.83	160.02	2.5	160	160	1	7	1	1
GR-2	19+079.61	19+300.00	RT	205.15	205.15	2.3	149	149		8	1	1
TOTALS CARRIED TO SHEET NO.12				368.98	365.17	4.8	309	309	1	15	2	2

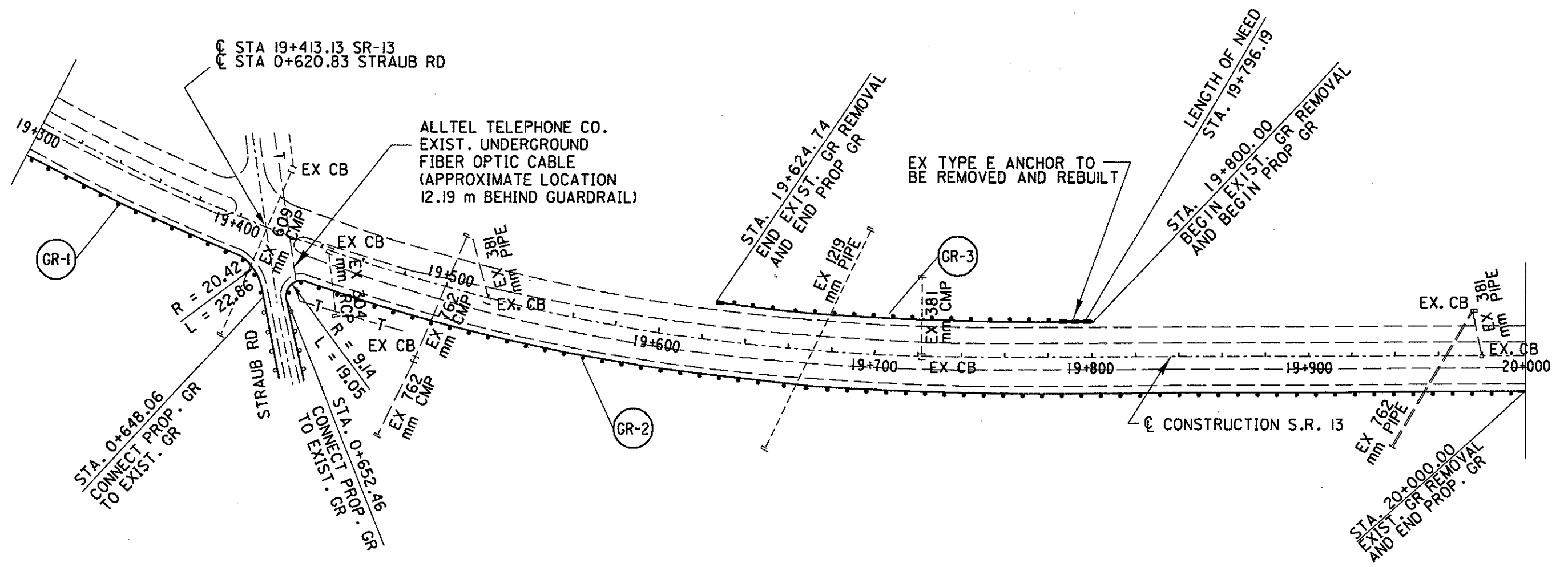
metric units



DESIGNED BY: GTS  
 CHECKED BY: SCJ

GUARDRAIL DETAIL

RIC-13-17.445



SEE SHEETS 32 & 33 FOR PROPOSED C.B. DETAILS AND QUANTITIES.

ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE

REF NO.	STATION		SIDE	202	606	203	SPECIAL	659	606	626	202	606
				GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	EMBANKMENT, AS PER PLAN	RESHAPING BERM	SEEDING AND MULCHING	ANCHOR ASSEMBLY, TYPE T	ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E	ANCHOR ASSEMBLY REBUILT, TYPE E	
				METER	METER	METER	METER	METER	EACH			EACH
GR-1	19+300.00	0+648.06	RT	126.32	126.32	2.4	157	157		5		
GR-2	0+652.46	20+000.00	RT	586.74	582.93	9	587	587	1	21		
GR-3	19+624.74	19+800.00	LT	160.02	156.21	2.4	157	157	1	7	1	1
<b>TOTALS CARRIED TO SHEET NO. 21</b>				873.08	865.46	13.8	901	901	2	33	1	1

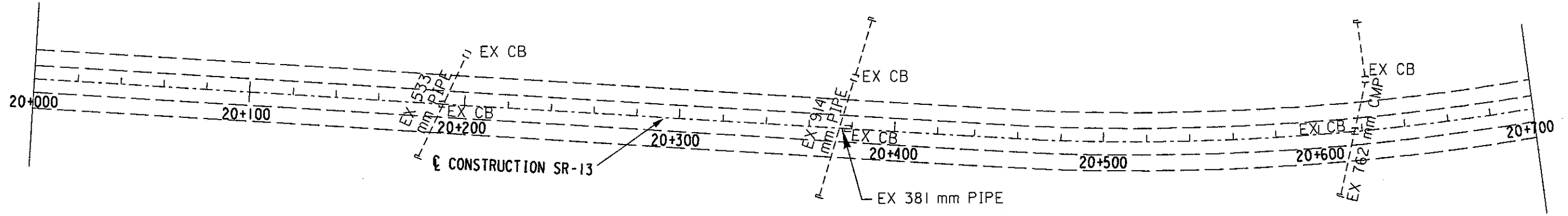
DESIGN FILE: \$\$\$\$.DGNFILESPECIFICATIONS\$\$\$\$  
 WORKSTATION: \$TERMINAL\$ DATE: \$\$\$DATE\$\$\$\$

NOTE: NO GUARDRAIL WORK IN THESE SECTIONS, THEY ARE SHOWN FOR REFERENCE ONLY



CALCULATED  
GTS  
CHECKED  
SCJ

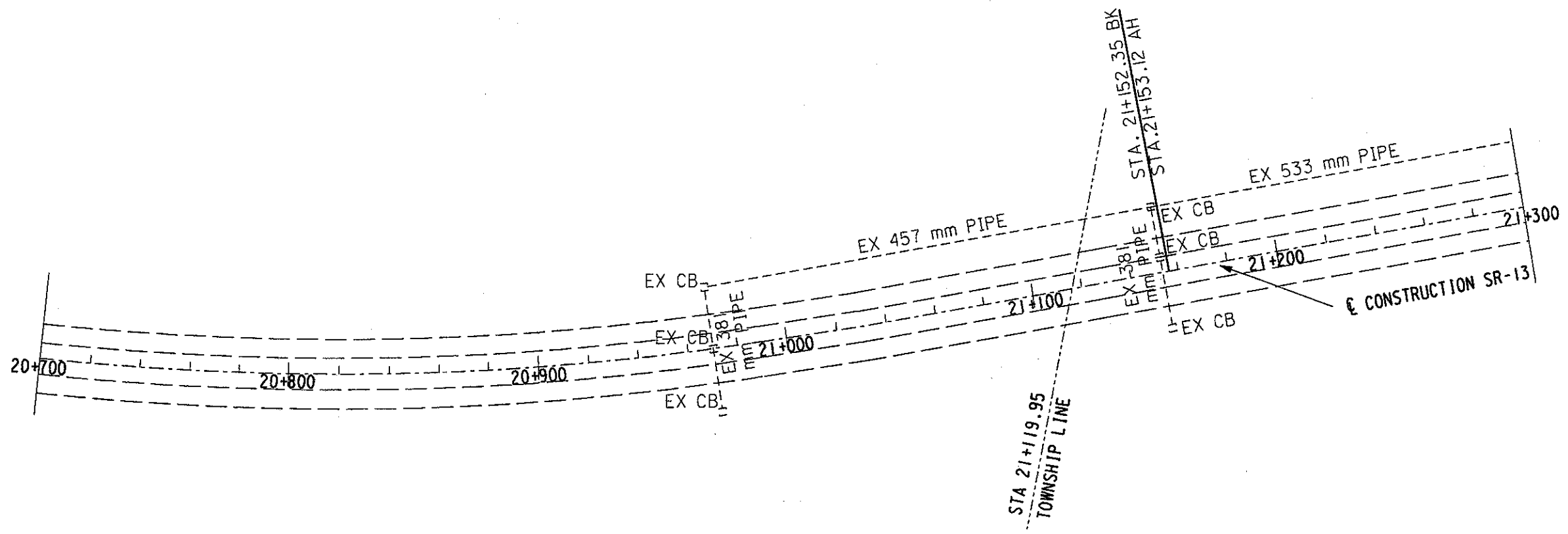
SCALE IN METERS  
HORIZONTAL  
0 50 100



SEE SHEETS 32 & 33 FOR PROPOSED C. B. DETAILS AND QUANTITIES.



GUARDRAIL DETAIL



DESIGN FILE: I:\projects\16915\13gr.dgn  
WORKSTATION: mallemann DATE: 05 FEB 99

RIC-13-17.445



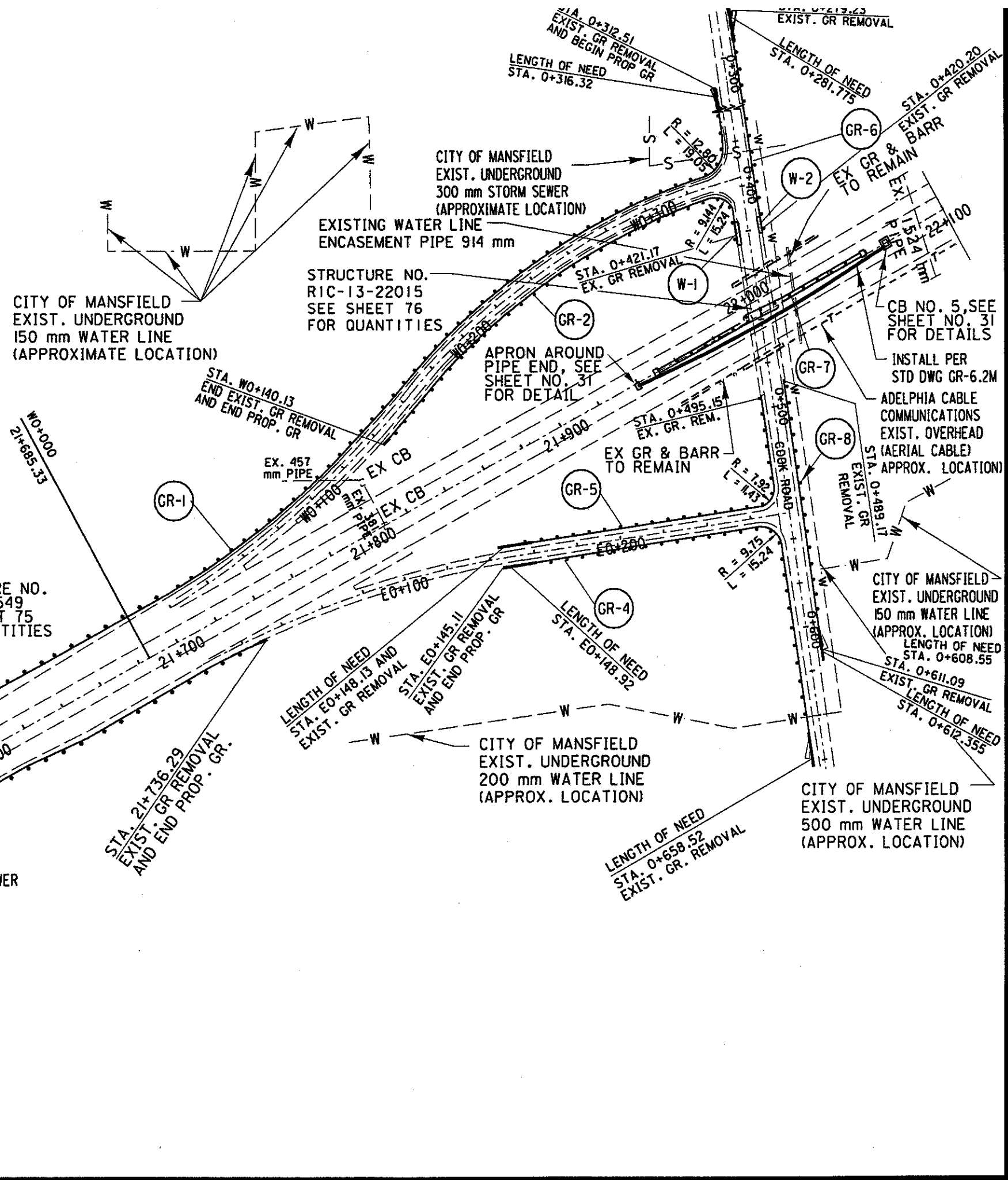
metric units

FOR GUARDRAIL AND EARTHWORK QUANTITIES SEE SHEET 27A

SEE SHEETS 32 & 33 FOR PROPOSED C. B. DETAILS AND QUANTITIES.

SEE SHEET 31 FOR MEDIAN GUARDRAIL AT PIERS UNDER COOK ROAD

ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE



CALCULATED GTS CHECKED SCJ

GUARDRAIL DETAIL

RIC-13-17.445

DESIGN FILE: \$\$\$\$DCNFILESPECIFICATIONS\$\$\$\$ WORKSTATION: #TERMINAL# DATE: #####DATE####



DESIGN FILE: \$\$\$\$.DGNFILESPECIFICATIONS\$\$\$  
 WORKSTATION: #TERMINAL\$ DATE: \$\$\$DATE\$\$\$

REF NO.	LOCATION	SIDE	202		830	608
			WALK REMOVED M <sup>2</sup>	CURB REMOVED METER	CURB TYPE 6 AS PER PLAN METER	100 mm CONCRETE WALK, AS PER PLAN, M <sup>2</sup>
W-1	COOK RD W OF BRIDGE	LT	8.2	6.7	6.7	8.2
W-2	COOK RD W OF BRIDGE	RT	8.2	6.7	6.7	8.2
TOTALS CARRIED TO GENERAL SUMMARY			16.4	13.4	13.4	16.4



\* TYPE 5A GUARDRAIL PER STD-DWG GR-2.IM WITH 0.95m POST SPACING AND 1.07m CLEARANCE TO PIERS

REF NO.	STATION		SIDE	202	606		203	SPECIAL	659	606	606		626	202	606	202				
	FROM	TO		GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	GUARDRAIL, BARRIER DESIGN, TYPE 5	GUARDRAIL, TYPE 5A *	ANCHOR ASSEMBLY, TYPE E-98	EMBANKMENT, AS PER PLAN	RESHAPING BERM	SEEDING AND MULCHING	IMPACT ATTENUATOR, TYPE I-98, BI-DIRECTIONAL	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE I	GUARDRAIL POST, 2.75 M	BARRIER REFLECTOR, TYPE A	ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E	ANCHOR ASSEMBLY REBUILT, TYPE E	GUARDRAIL, REMOVED, BARRIER DESIGN	
				METER		EACH	m <sup>2</sup>	METER	m <sup>2</sup>	EACH				EACH	EACH	METER				
GR-1	21+391.12	0+312.51	LT	712.47	697.23			1	10.8	705	705		1		110					
GR-2	W0+140.13	0+424.28	RT	220.98	219.075				3.2	210	210		1	1		6	2			
GR-3	21+321.00	21+736.29	RT	400.05	396.24				5.8	366	366		1				1	1		
GR-4	E0+145.11	0+662.33	RT	228.60	201.93			2	3.2	210	210									
GR-5	E0+144.32	0+494.050	LT	171.45	161.925			1	2.6	168	168			1		5	2			
GR-6	0+420.84	0+277.965	LT	140.97	127.635			1	1.9	126	126			1			6			
GR-7	21+962.30	22+049.16	MED	30.48		45.72	30.48		1.5	99	99	2	2			8		76.2		
GR-8	0+488.53	0+616.165	LT	121.92	112.395			1	1.6	107	107			1			5			
TOTALS CARRIED TO SHEET NO. 21				2026.92	1916.43	45.72	30.48	6	30.6	1991	1991	2	5	4	110	19	64	1	1	76.2

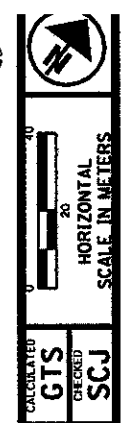
GUARDRAIL QUANTITIES

RIC-13-17.445





metric units



SEE SHEET 28 FOR GUARDRAIL DETAILS

\* TYPE 5A GUARDRAIL PER STD-DWG GR-2.1M WITH 0.95m POST SPACING AND 1.07m CLEARANCE TO PIERS

REF NO.	STATION		SIDE	202	606			203	SPECIAL	659	606			690	626		659	203	202	606	202
				GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	GUARDRAIL, BARRIER DESIGN, TYPE 5	GUARDRAIL, TYPE 5A	EMBANKMENT, AS PER PLAN	RESHAPING BERM	SEEDING AND MULCHING	ANCHOR ASSEMBLY, TYPE E-98	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE I	IMPACT ATTENUATOR, TYPE I-98, BI-DIRECTIONAL	BARRIER REFLECTOR, TYPE A	SEEDING AND MULCHING	EMBANKMENT	ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E	ANCHOR ASSEMBLY, REBUILT, TYPE E	GUARDRAIL REMOVED, BARRIER REMOVED	
	FROM	TO		METER			METER	METER	EACH			Y	W	METER							EACH
GR-1	22+267.06	22+333.735	LT.	49.53	51.435			0.8	50	50					3						
GR-2	22+203.97	22+293.07	MED	106.68		53.34	22.86	3.1	199	199			2	6							
GR-3	22+161.645	22+228.32	RT.	49.53	51.435			0.8	50	50					3	1400	250				
GR-4	22+627.435	22+781.13	LT.	150.50	142.875			2.2	142	142					6						
GR-5	22+767.795	22+781.13	MED.	13.335				0.1	4	4											
GR-6	22+528.41	22+673.19	RT.	129.54	125.73			1.9	119	119					6						
GR-7	A0+599.875	22+781.13	RT.	276.225	276.225			2.5	164	164					11	133	30				
GR-8	22+703.56	22+781.13	MED.	24.765	22.86	38.10		0.9	54	54					4						15.24
GR-9	A0+605.31	A0+792.00	LT.	179.07	167.64			2.9	187	187					7						
TOTALS CARRIED TO SHEET NO. 21				979.175	838.200	91.44	22.86	15.2	969	969	2	5	4	3	17	29	1533	280	3	3	15.24

REF NO.	STATION		SIDE	202	606			203	SPECIAL	659	622	606			626		202	202	606	606	606	626	
				GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	GUARDRAIL, BARRIER DESIGN, TYPE 5	EMBANKMENT, AS PER PLAN	RESHAPING BERM	SEEDING AND MULCHING	CONCRETE, BARRIER TYPE D	IMPACT ATTENUATOR, TYPE I-98, BI-DIRECTIONAL	ANCHOR ASSEMBLY, TYPE E-98	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE I	BARRIER REFLECTOR, TYPE A	GUARDRAIL REMOVED, BARRIER DESIGN	ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E	ANCHOR ASSEMBLY, REBUILT, TYPE E	ANCHOR ASSEMBLY, TYPE B-98	BRIDGE TERMINAL ASSEMBLY, TYPE 2	BARRIER REFLECTOR, TYPE B		
	FROM	TO		METER			METER	METER	EACH			Y	W	METER								EACH	EACH
GR-1	CO+045.5	CO+182.66	LT	129.54	118.11			2	130	130					6								
GR-2	A0+317.75	S23+137.87	RT	358.14	346.71			5.5	359	359					14								
GR-3	22+816.75	22+978.24	LT	144.78	139.065			2.1	134	134					6								
GR-4	A0+296.675	A0+429.00	RT	87.63	70.485			1.4	92	92	47.24				4							2	
GR-5	A0+359.85	A0+436.05	LT	72.39	57.15			1.2	77	77					4								
GR-6	22+816.95	22+830.285	MED	13.335				0.1	4	4													
GR-7	22+816.95	22+894.49	MED	22.86	22.86	38.10		0.4	23	23					4								
GR-8	22+816.95	22+896.32	RT	78.11	68.58			1	63	63					3	19.05							
TOTALS CARRIED TO SHEET NO 21				906.785	822.960	38.10	13.7	882	882	47.24	1	4	3	3	14	27	19.05	1	1	1	1		2

SEE SHEET 29 FOR GUARDRAIL DETAILS

DESIGN FILE: i:\projects\16915\13gr.dgn  
WORKSTATION:malleman DATE: 10 FEB 99

GUARDRAIL QUANTITIES

RIC-13-17.445



metric units

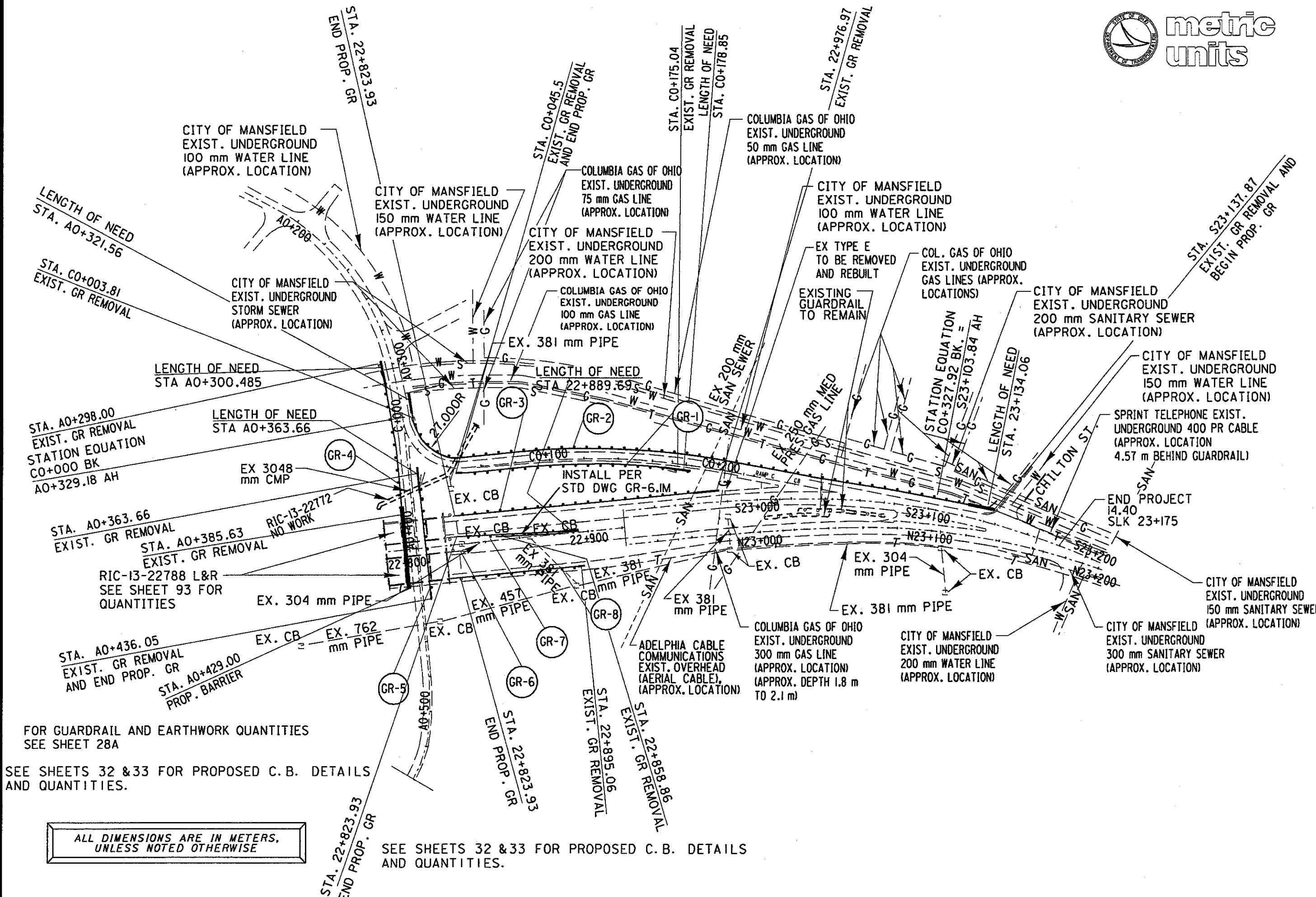


CALCULATED  
GTS  
CHECKED  
SCJ

GUARDRAIL DETAIL

RIC-13-17.445

29  
112



DESIGN FILE: I:\projects\16915\13gr.dgn  
WORKSTATION: malleman DATE: 10 FEB 99

FOR GUARDRAIL AND EARTHWORK QUANTITIES  
SEE SHEET 28A

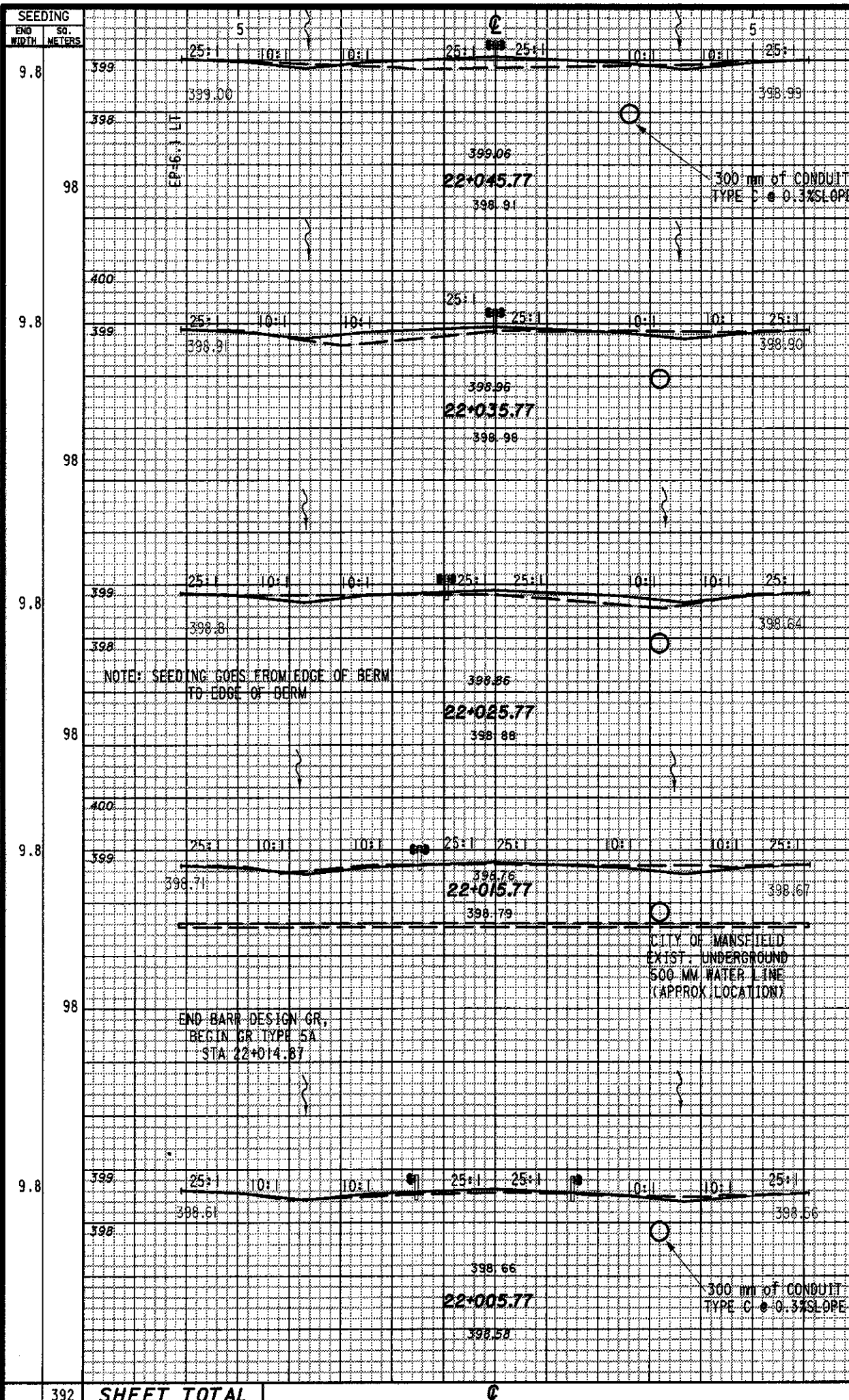
SEE SHEETS 32 & 33 FOR PROPOSED C. B. DETAILS  
AND QUANTITIES.

ALL DIMENSIONS ARE IN METERS,  
UNLESS NOTED OTHERWISE

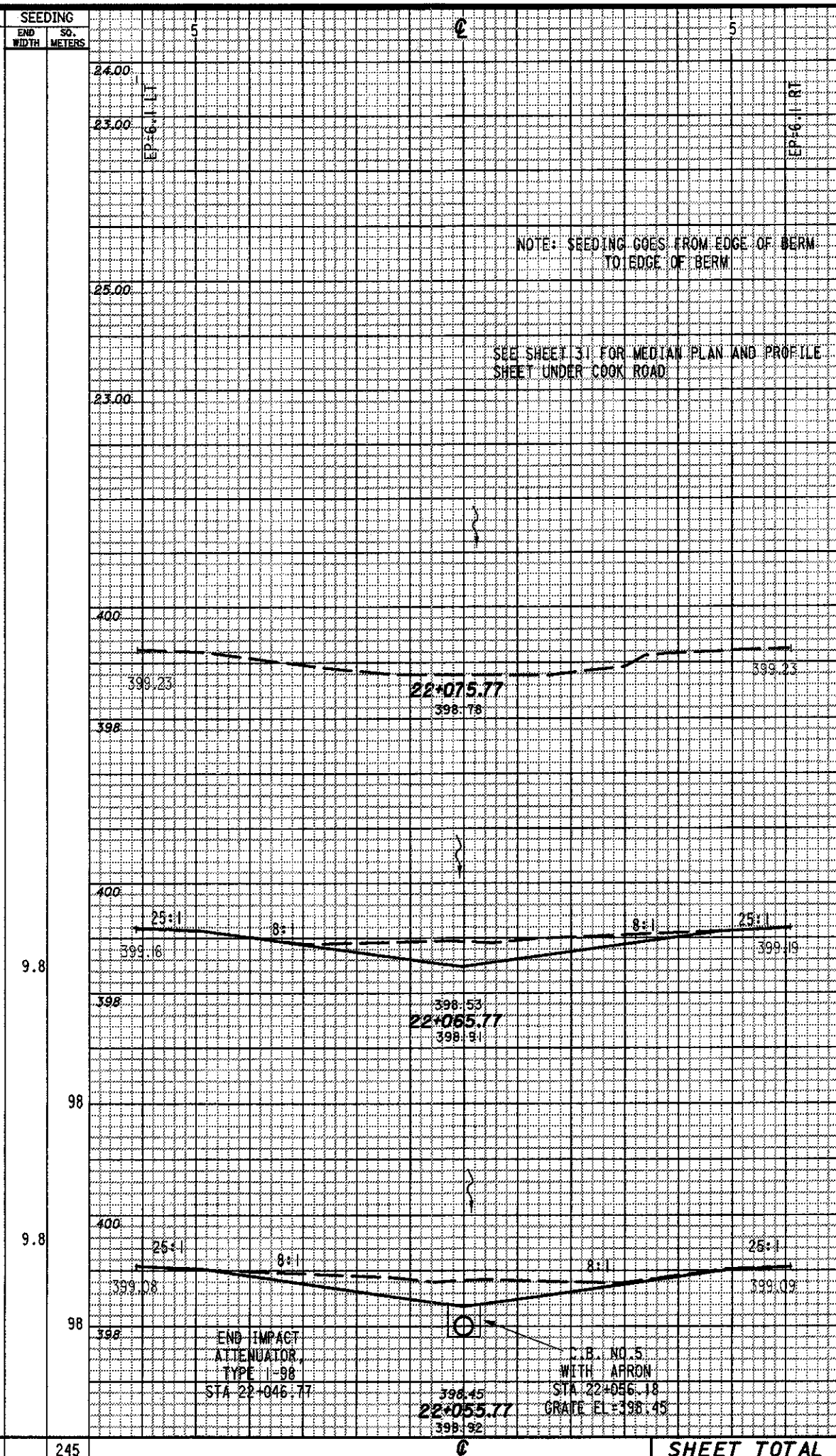
SEE SHEETS 32 & 33 FOR PROPOSED C. B. DETAILS  
AND QUANTITIES.



DESIGN FILE: I:\projects\16915\16915\3xsec3.dgn  
 WORKSTATION: mallemar DATE: 10 FEB 99



END AREA	VOLUME	SEEDING	
		CUT	FILL
.23	.70		
2.15	6.5		
.20	0.6		
1.75	5.9		
.15	.58		
2.6	2.9		
.37	0		
2.6	1.1		
.15	.22		
<b>9.1</b>	<b>16.4</b>		



END AREA	VOLUME	SEEDING	
		CUT	FILL
0	0		
7.5	0		
1.5	0		
17	0		
1.75	0		
9.9	3.5		
<b>34.4</b>	<b>3.5</b>		

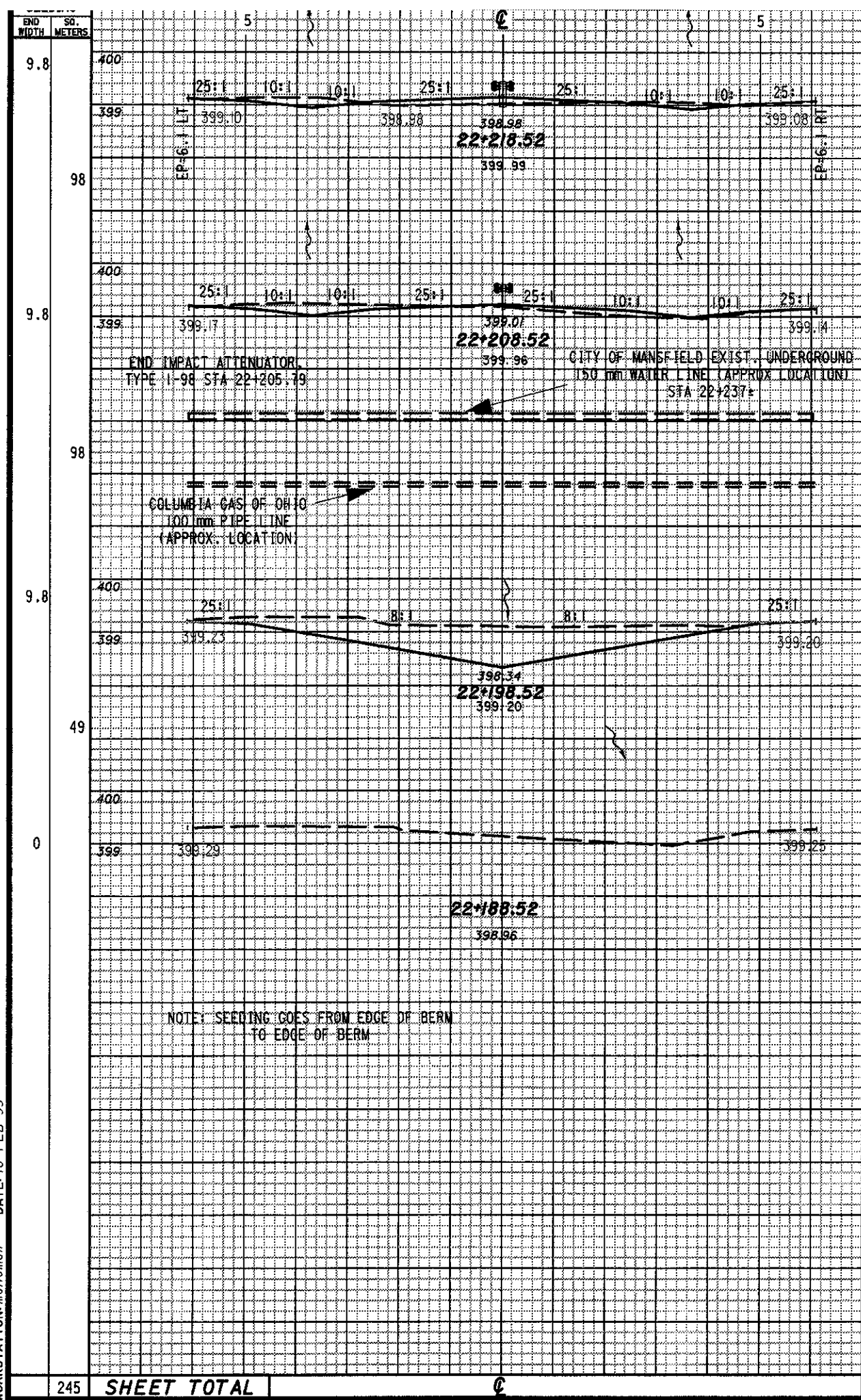
NOTE: SEEDING GOES FROM EDGE OF BERM TO EDGE OF BERM

SEE SHEET 31 FOR MEDIAN PLAN AND PROFILE SHEET UNDER COOK ROAD

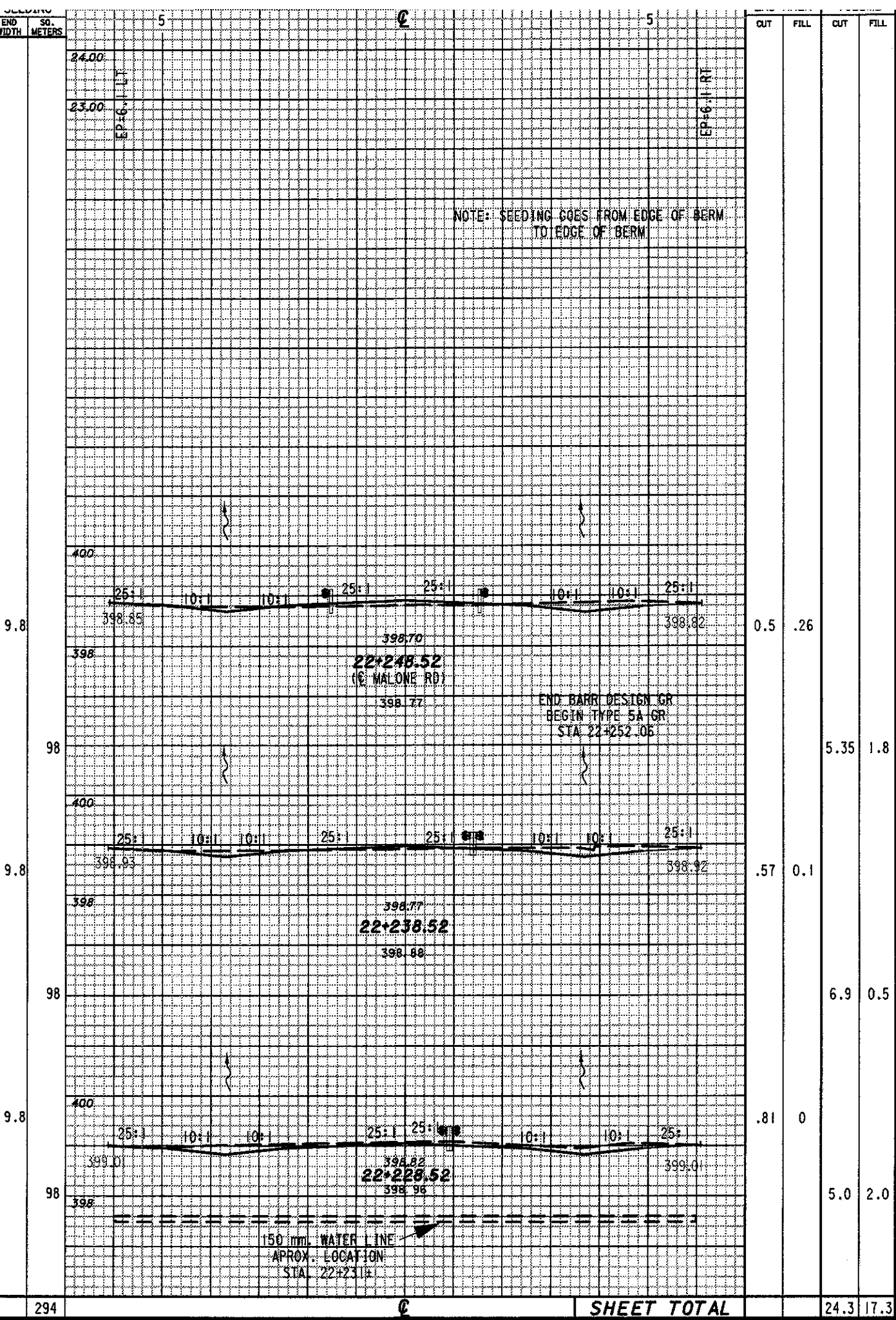
CALCULATED SCJ CHECKED MGA  
**CROSS SECTIONS IN MEDIAN UNDER COOK RD.**  
 RIC-13-17.445  
 29B  
 98

392 SHEET TOTAL 9.1 16.4 245 SHEET TOTAL 34.4 3.5

DESIGN FILE: I:\projects\16915\13xsec3.dgn  
 WORKSTATION: malleman DATE: 10 FEB 99



STATION	CUT	FILL	STATION	CUT	FILL
22+188.52	0	0	22+198.52	4.1	0
22+198.52	0	0	22+208.52	0.5	0.3
22+208.52	1.3	3.5	22+218.52	0.20	0.4
<b>SHEET TOTAL</b>	<b>45</b>	<b>5</b>			



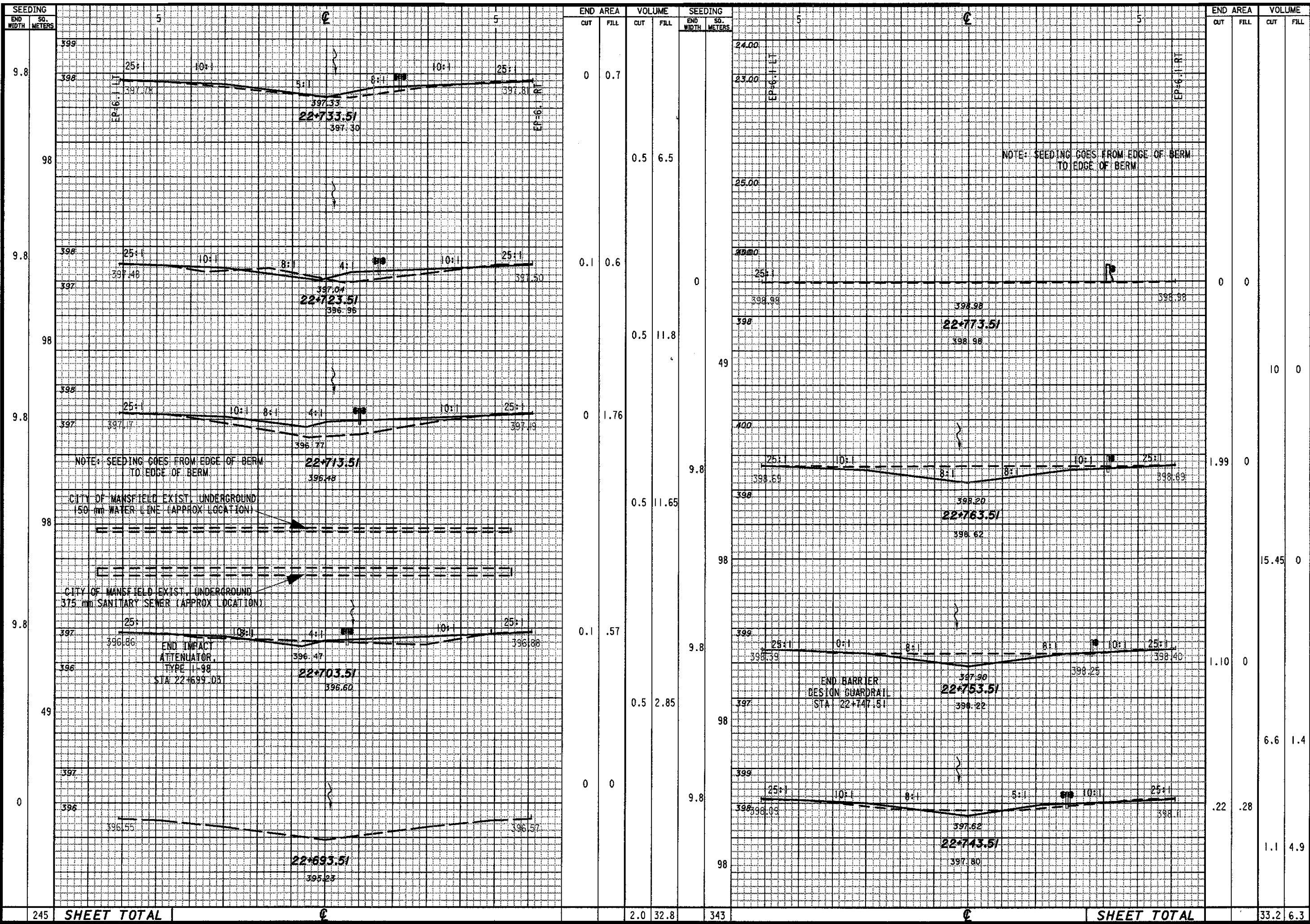
STATION	CUT	FILL	STATION	CUT	FILL
22+228.52	0	0	22+238.52	0.57	0.1
22+238.52	0.81	0	22+248.52	0.5	0.26
22+248.52	5.35	1.8			
<b>SHEET TOTAL</b>	<b>24.3</b>	<b>17.3</b>			

CROSS SECTIONS IN MEDIAN UNDER MALONE RD.  
 CALCULATE SCJ CHECKED MGA  
 RIC-13-17.445  
 29C  
 98





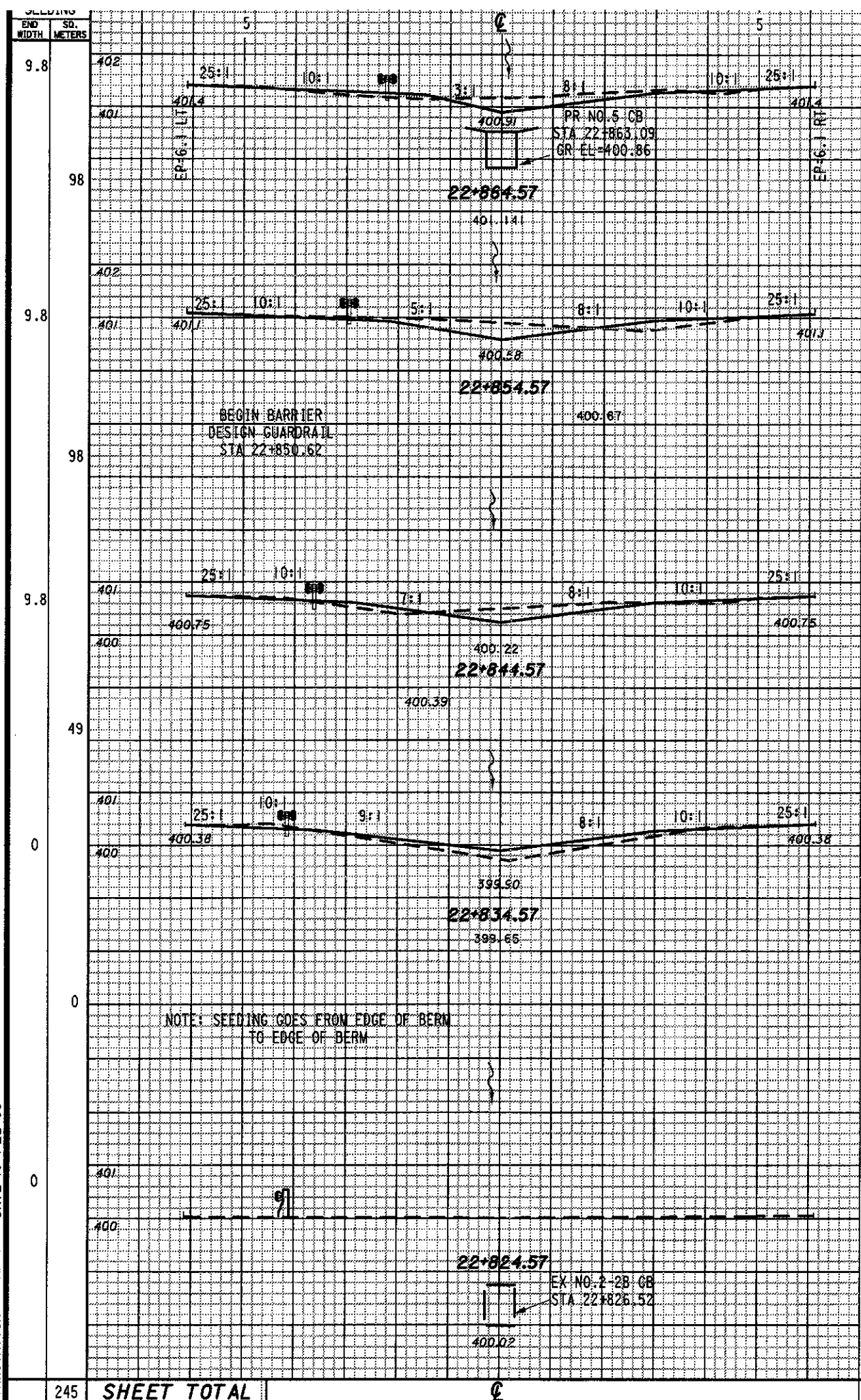
DESIGN FILE: I:\projects\16915\13\secc3.dgn  
 WORKSTATION: mallemann DATE: 10 FEB 99



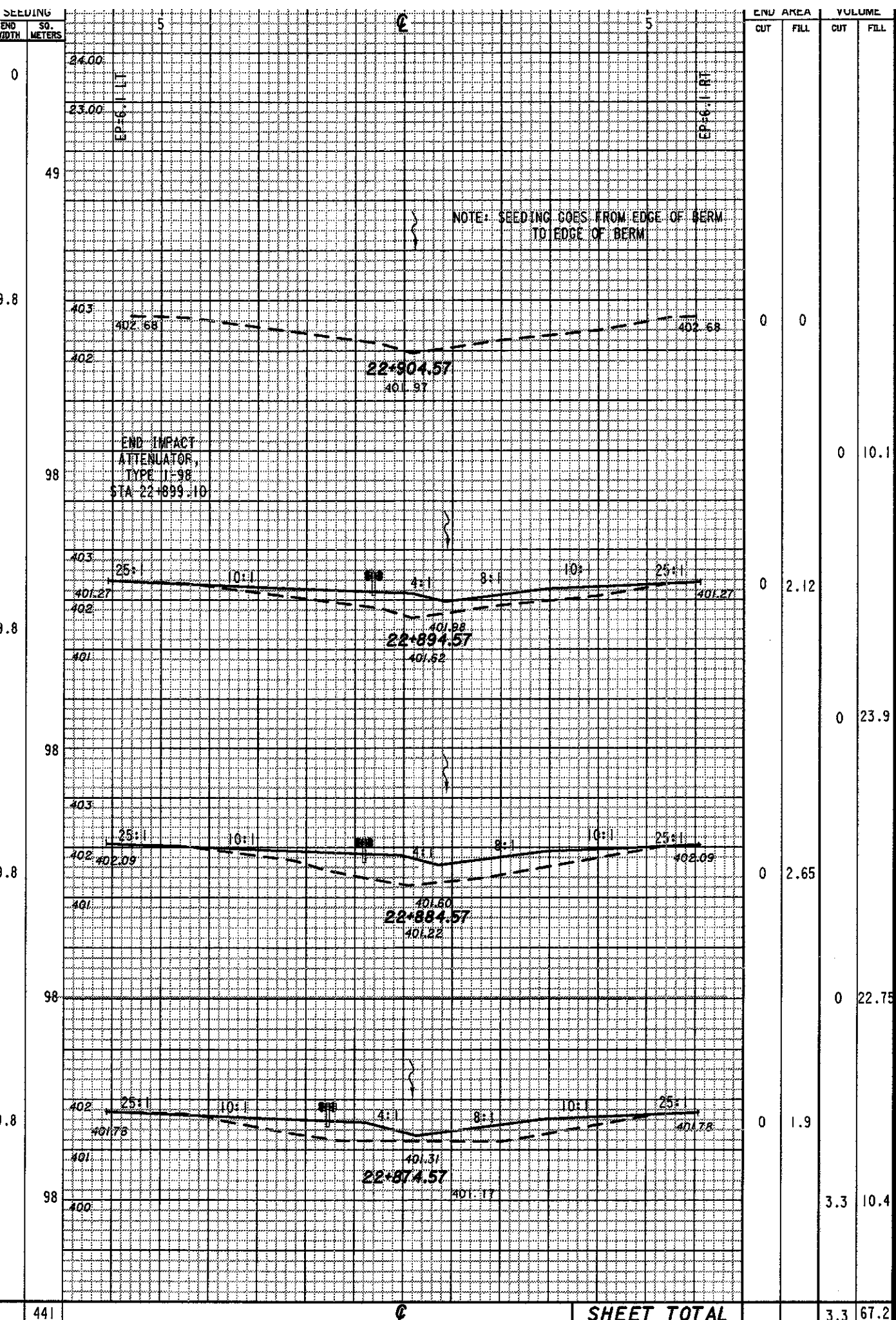
CROSS SECTIONS IN MEDIAN UNDER RIC-13-22788 L&R

RIC-13-17.445

DESIGN FILE: I:\Projects\16915\13xsec3.dgn  
 WORKSTATION: mallem DATE: 10 FEB 99



END AREA	VOLUME	SEEDING	
		CUT	FILL
.66	.18	0	0
7.3	2.45	49	49
.80	.31	9.8	9.8
7.3	2.9	98	98
.66	.27	9.8	9.8
3.8	4.85	49	49
.1	.80	0	0
0.5	4.0	0	0
0	0	0	0
18.9	14.2	441	441



END AREA	VOLUME	SEEDING	
		CUT	FILL
0	0	0	0
0	0	0	0
0	10.1	0	10.1
0	2.12	0	2.12
0	23.9	0	23.9
0	2.65	0	2.65
0	22.75	0	22.75
0	1.9	0	1.9
3.3	10.4	3.3	10.4
3.3	67.2	3.3	67.2

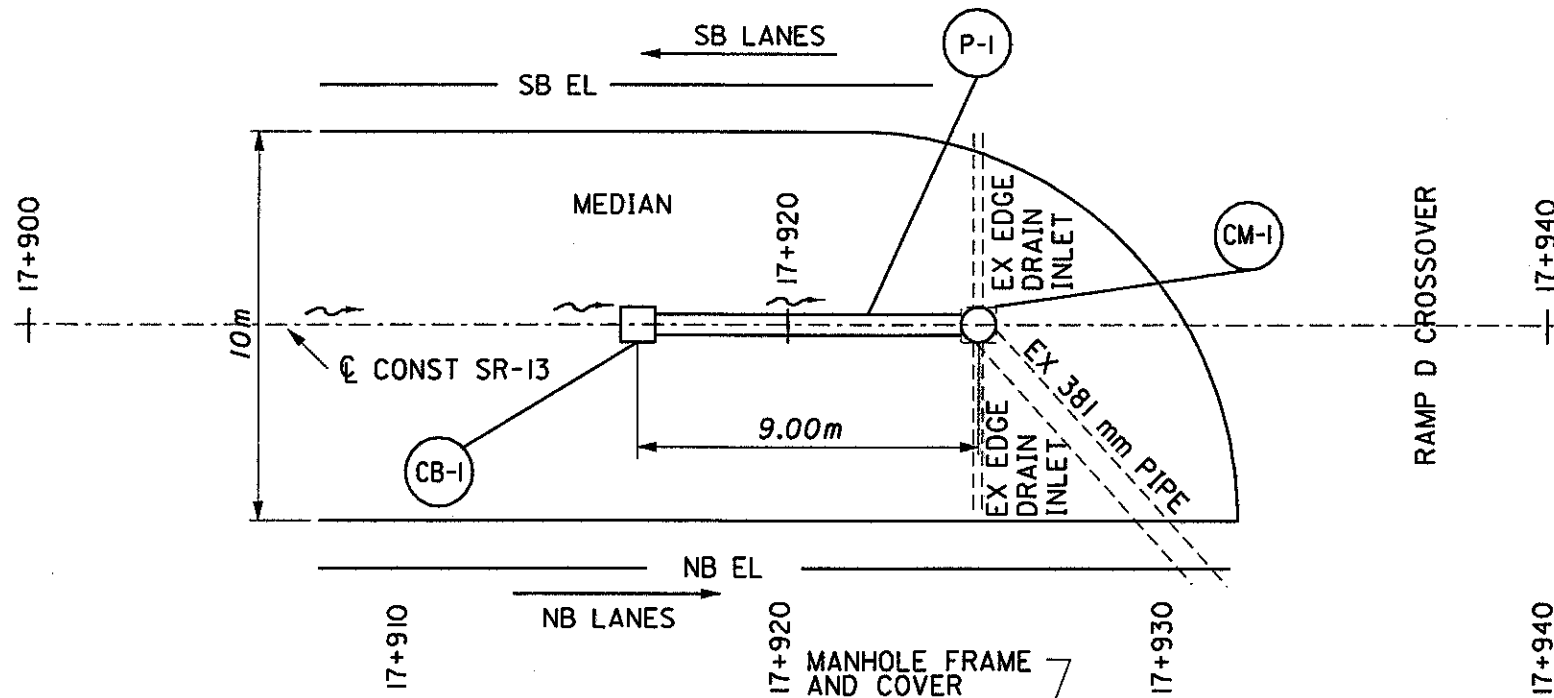
245 SHEET TOTAL

SHEET TOTAL

CROSS SECTIONS IN MEDIAN UNDER RIC-13-22788 L&R

RIC-13-17.445

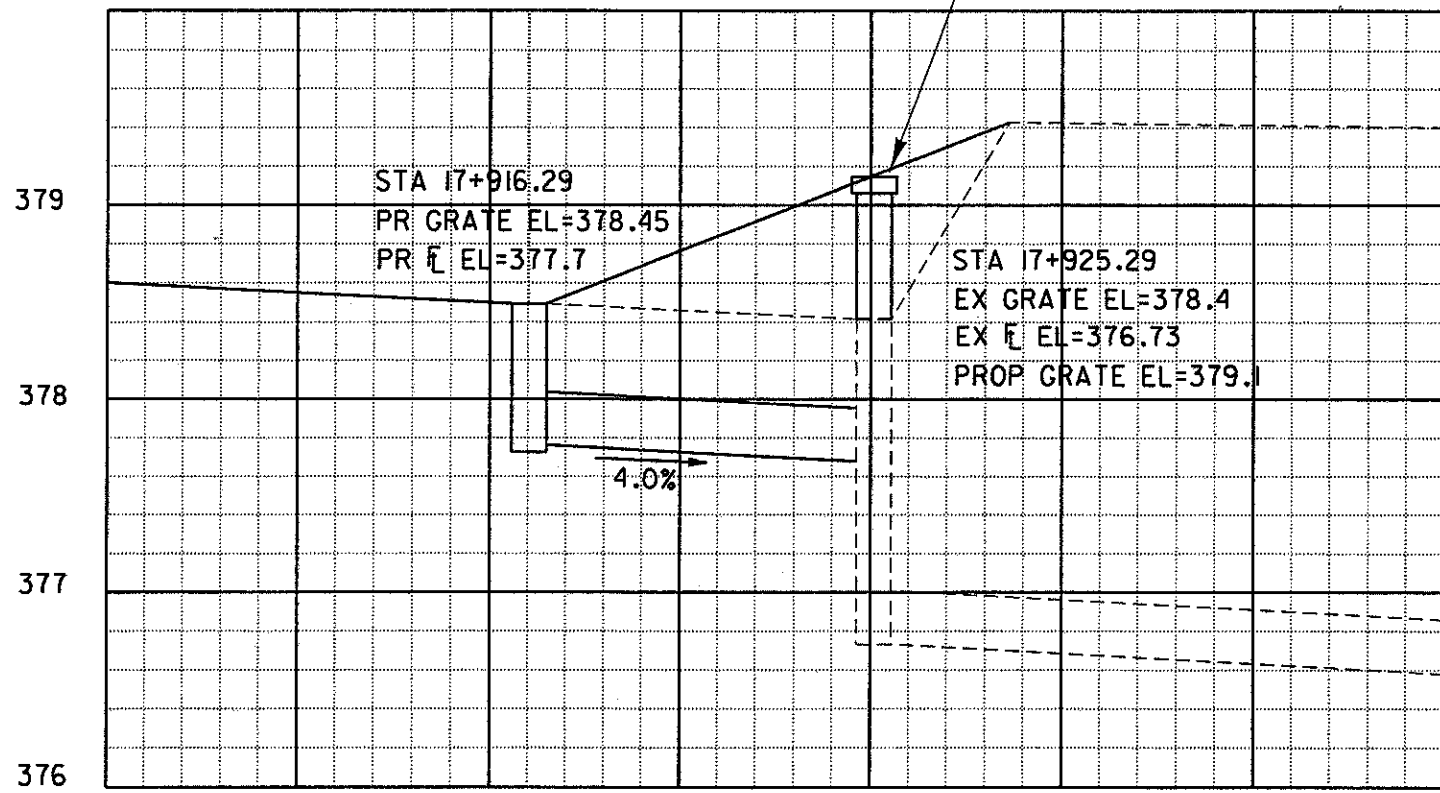
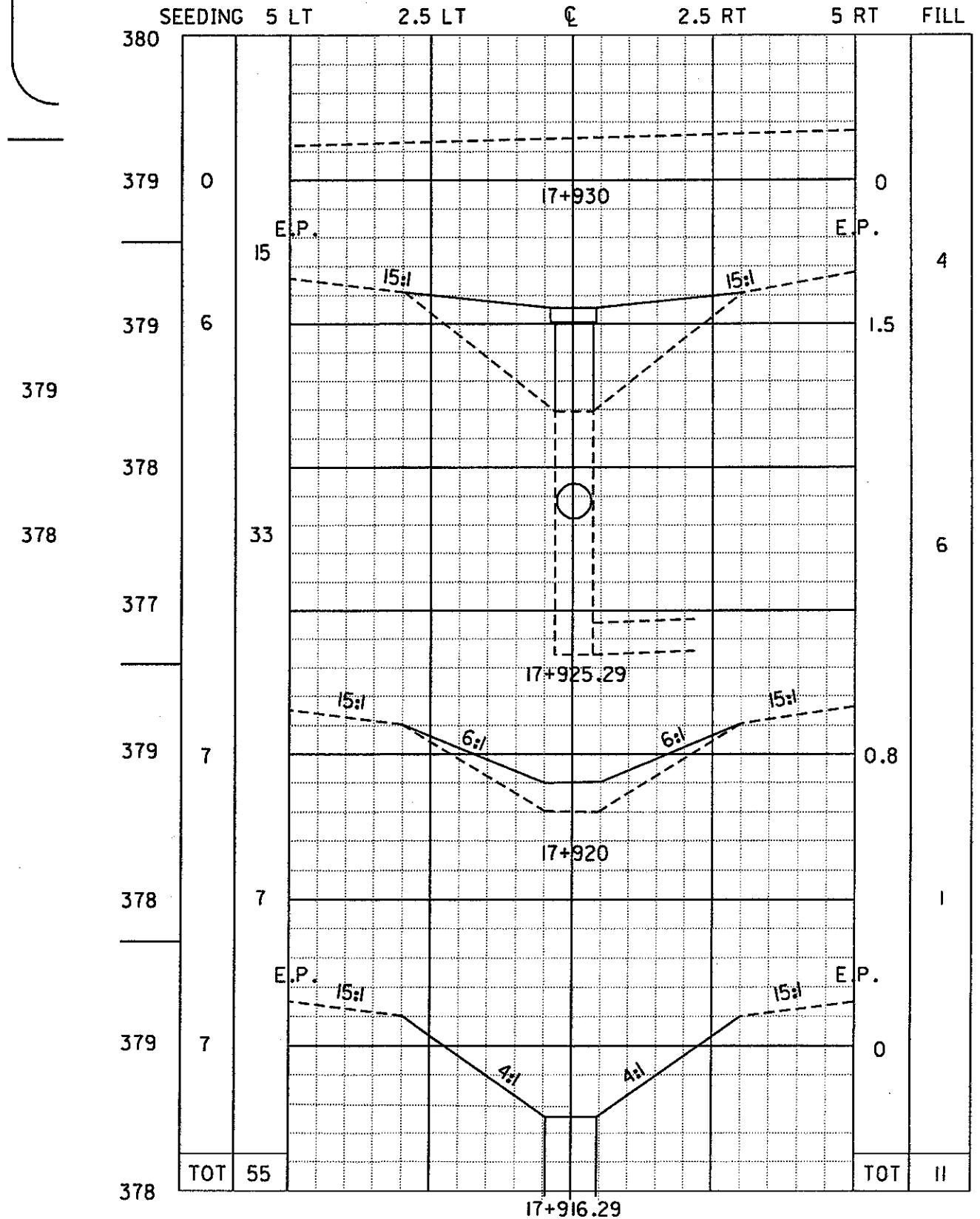
DESIGN FILE: \$\$\$\$.DGNFILESPECIFICATIONS\$\$\$\$  
 WORKSTATION: \$TERMINAL\$ DATE: \$\$\$DATE\$\$\$



NOTE: THE INTENT IS TO MOVE THE DRAINAGE INLET 9 m ± SOUTH AND MAINTAIN POSITIVE DRAINAGE TO THAT POINT. THE PROPOSED CONDUIT IS TO BE CONNECTED INTO THE EXISTING CATCH BASIN AND GROUTED. THE EXISTING CATCH BASIN IS TO BE RECONSTRUCTED WITH A NEW MANHOLE FRAME AND COVER TO PROPOSED GRADE AND OLD GRATE DISPOSED OF. ALL AREAS DISTURBED SHALL BE FERTILIZED, SEEDED, & MULCHED. CATCH BASIN NO. 5 SHALL BE AS PER CB-3.2M.



**CROSS SECTIONS**



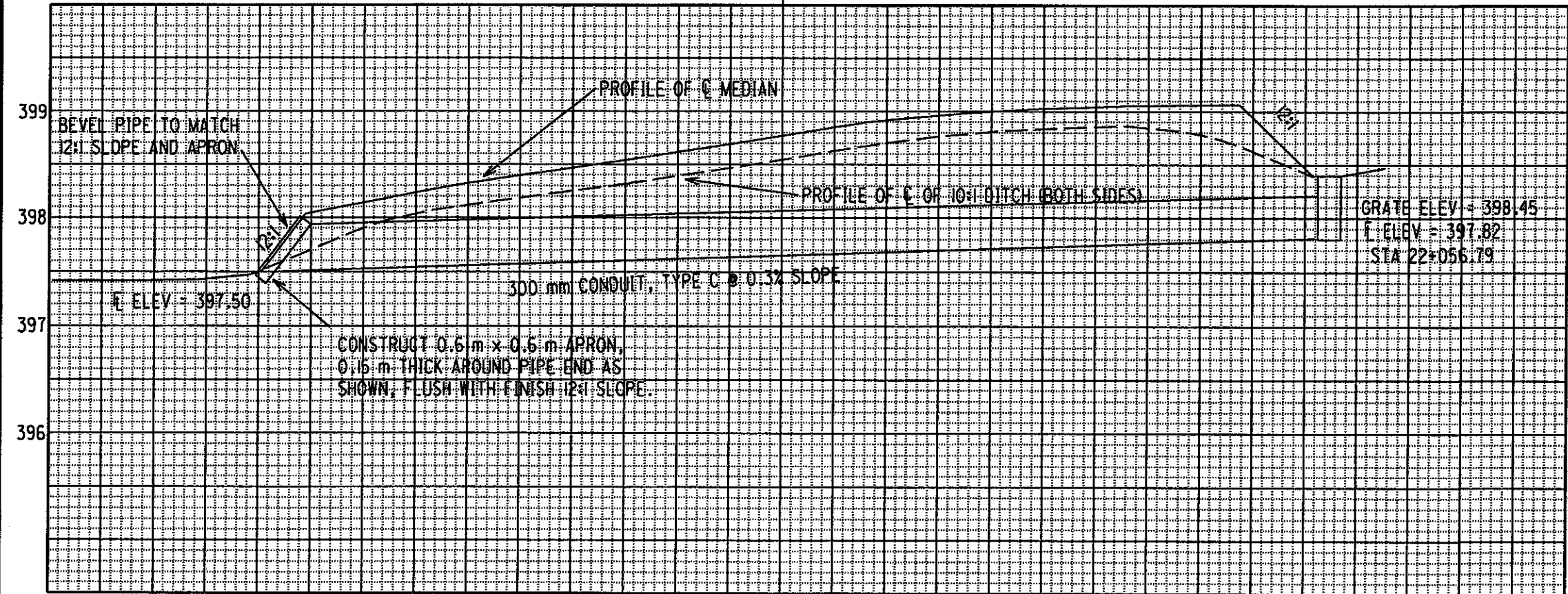
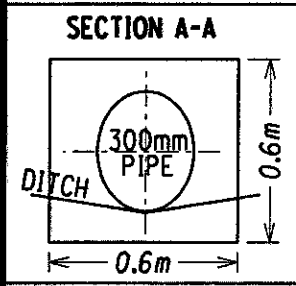
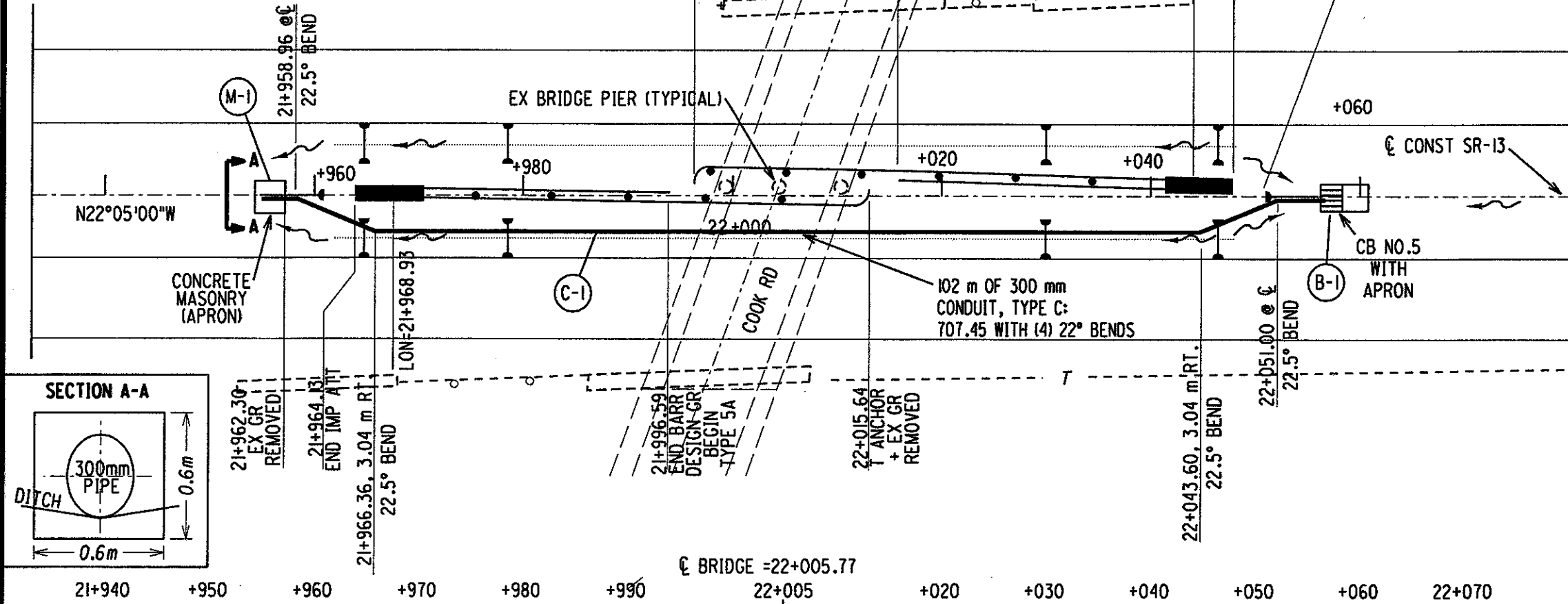
REF NO.	STATION		SIDE	603	604	203	659	604
	FROM	TO		375 mm CONDUIT, TYPE C METER	CATCH BASIN, NO. 5, AS PLAN EACH	EMBANKMENT m	SEEDING AND MULCHING SQ. M.	CATCH BASIN RECONSTRUCTED TO GRADE EACH
CB-1	17+916.29		MED					
P-1	17+916.29	17+925.29	MED	9.00				
CM-1	17+925.29		MED					
FROM CROSS SECTIONS						11	55	1
TOTALS CARRIED TO GENERAL SUMMARY				9.00	1	11	55	1

MEDIAN DRAINAGE PLAN AND PROFILE AT IR-71 RAMP "D"

RIC-13-17.445

NOTE: FOR GUARDRAIL PLACEMENT AND GRADING DETAILS, SEE STD DWG GR-6.2M

FOR MEDIAN GUARDRAIL QUANTITIES UNDER COOK ROAD, SEE SHEET 27A

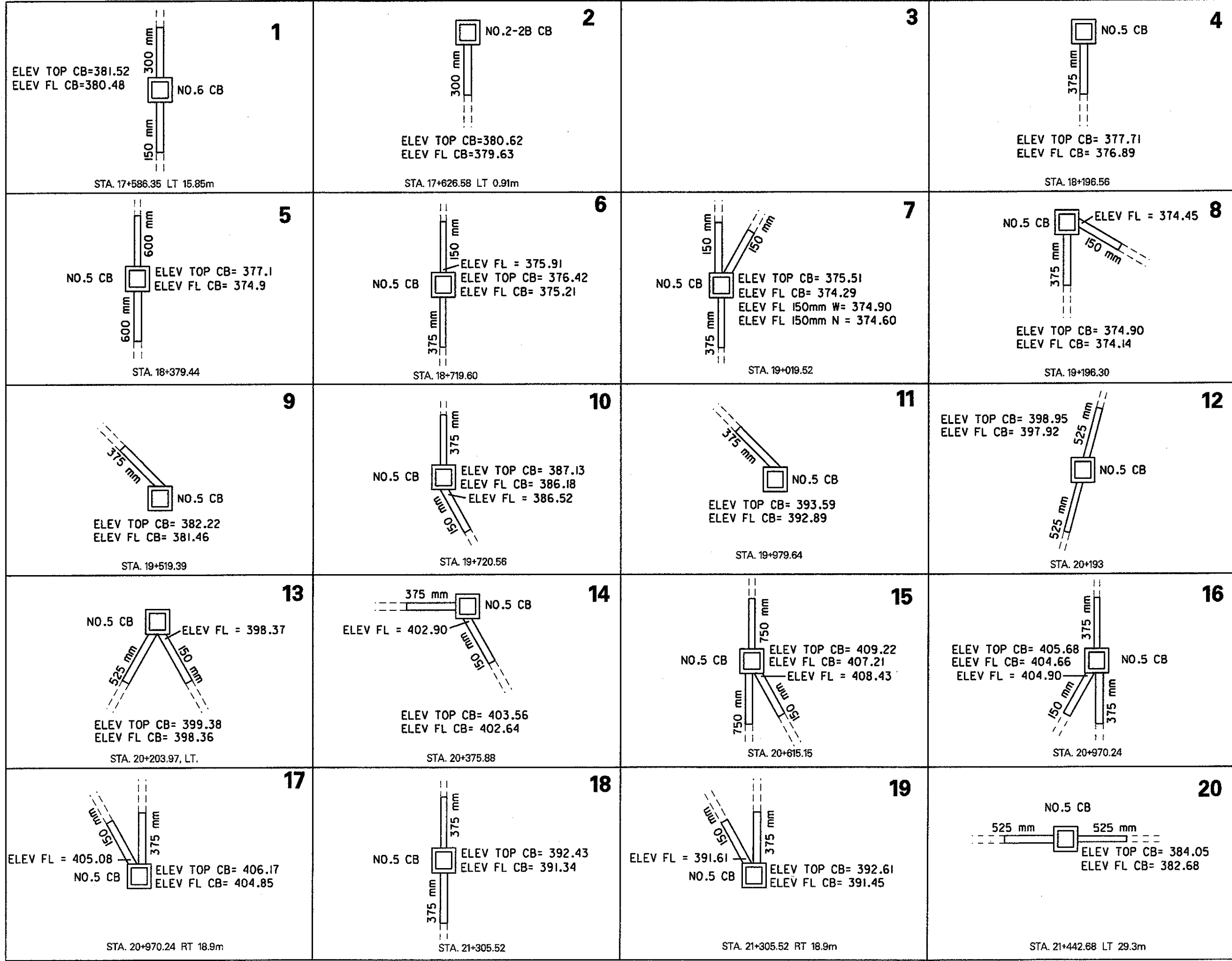


REF NO.	STATION		SIDE	DESCRIPTION	UNIT	QUANTITY	REMARKS
	FROM	TO					
B-1	22+056.79±		MED	CATCH BASIN NO. 5, AS PER PLAN	each	1	
C-1	21+955.00±	22+056.38±	MED	300 mm CONDUIT, TYPE C	meter	102	
M-1	21+955.00		MED	CONCRETE MASONRY	m³	0.05	
SH 29A-F	21+945.77	22+075.77	MED	EMBANKMENT EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	m³	207	
SH 29A-F	21+945.77	22+075.77	MED	SEEDING AND MULCHING	m²	3577	
SH 29A-F	21+945.77	22+075.77	MED	JOINTS AND BENDS 22.5°	each	4	
TOTALS CARRIED TO GENERAL SUMMARY							

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 DESIGN FILE: /PROJECTS/16915/R13/CBDET.DGN  
 WORKSTATION: CADD 231 DATE: 3-26-98



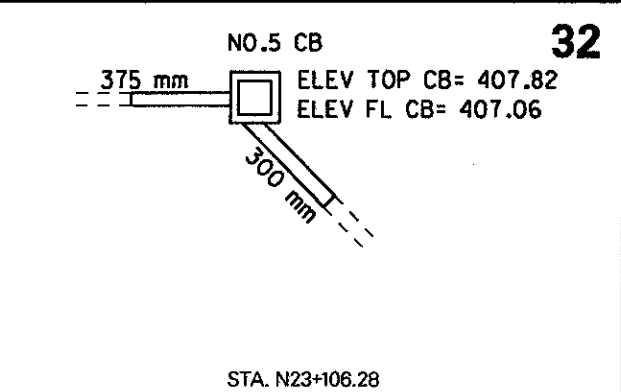
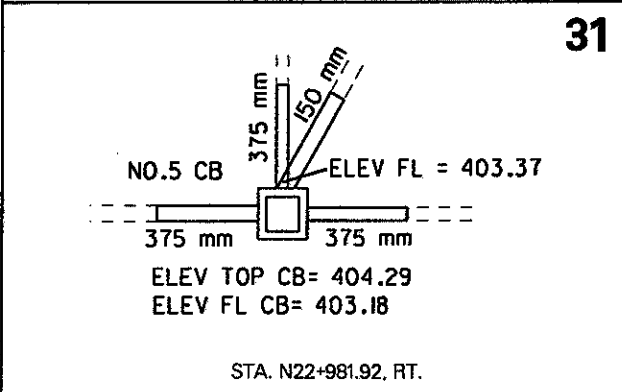
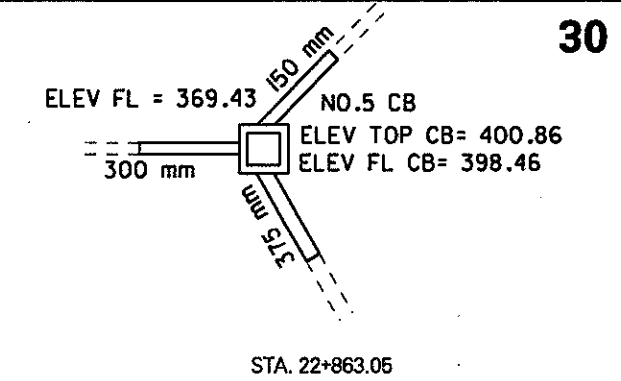
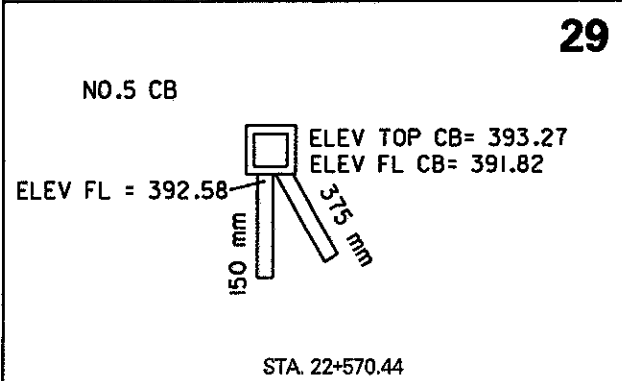
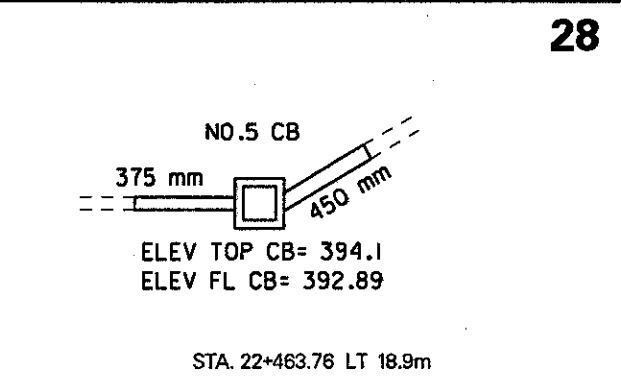
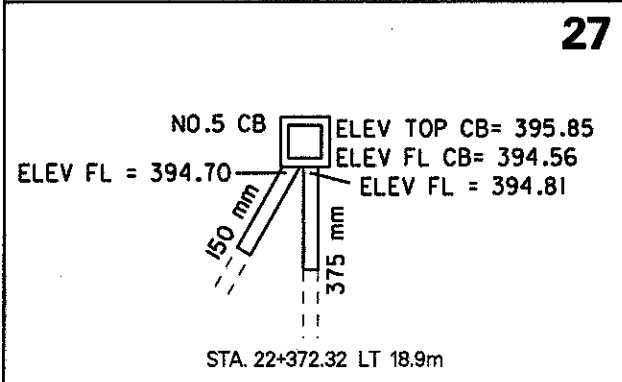
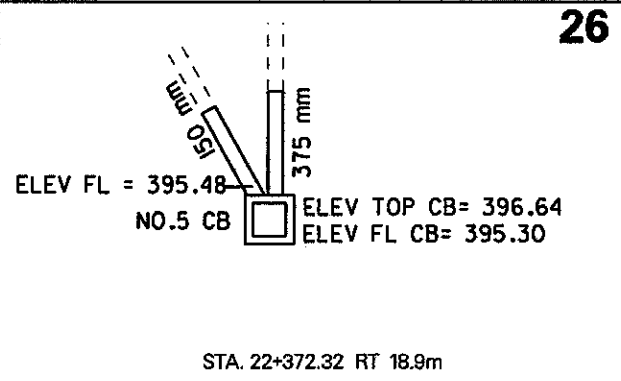
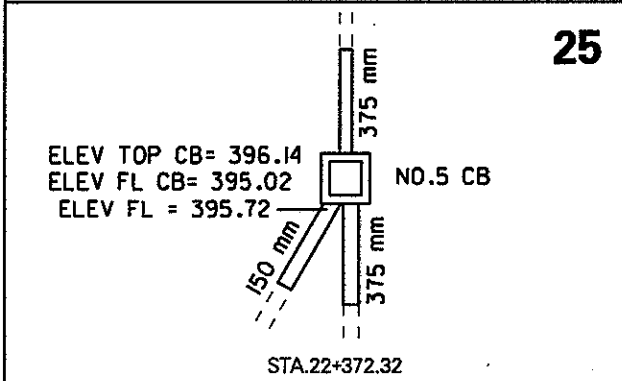
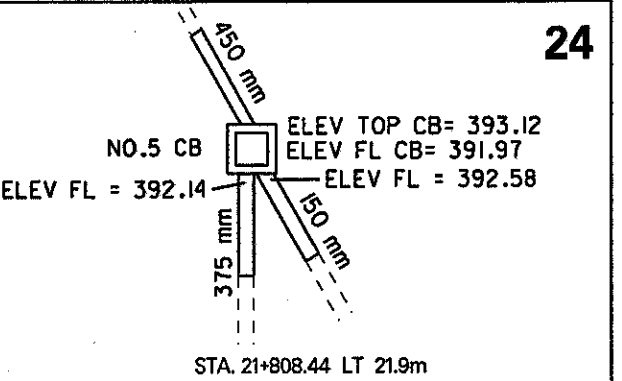
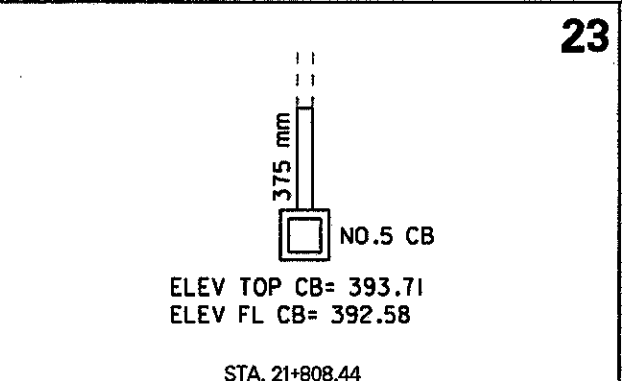
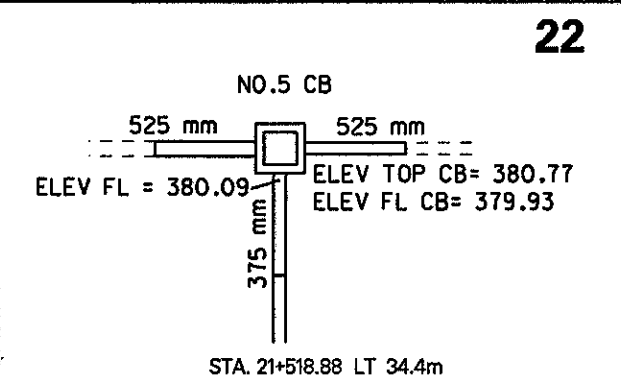
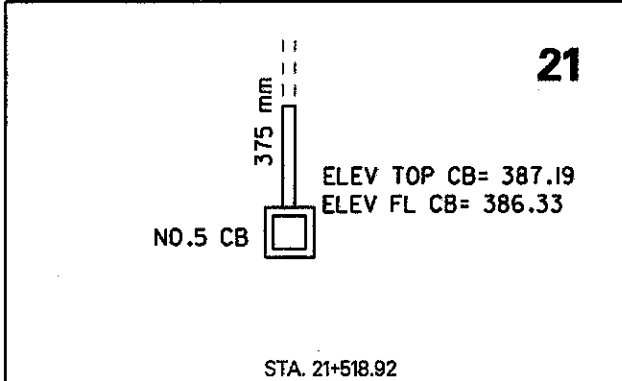
CALCULATE  
 SCJ  
 CHECKED  
 ADB



NOTE: CATCH BASIN ELEVATIONS OBTAINED FROM OLD PLAN. CONTRACTOR MAY NEED TO VERIFY AND/OR ADJUST THE ELEVATIONS TO MAINTAIN A POSITIVE DRAINAGE INTO THE NEW CATCH BASINS.

CATCH BASIN REPLACEMENT DETAILS

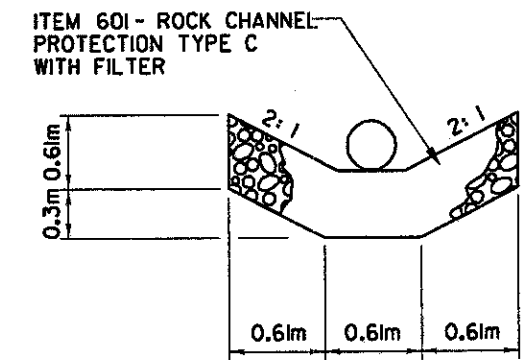
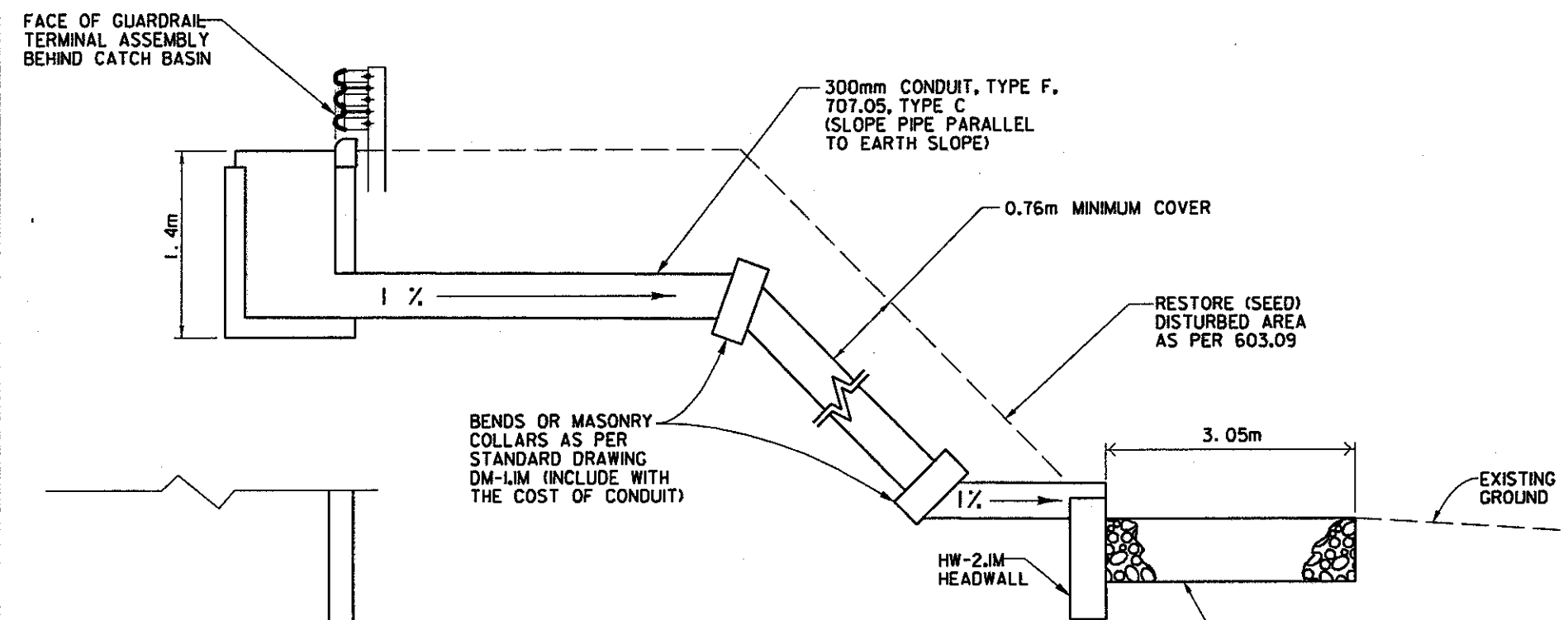
RIC-13-17.445



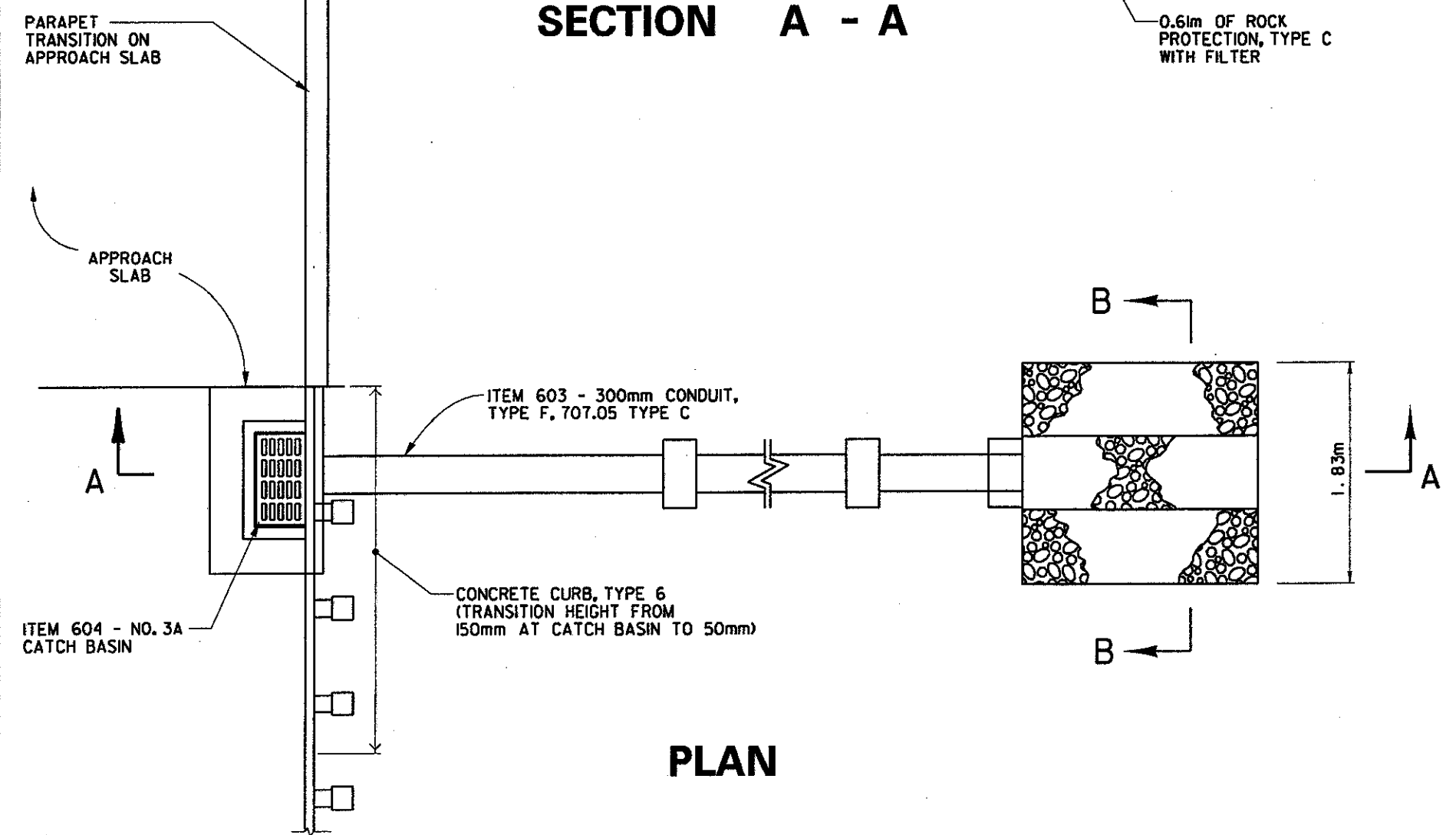
REF NO.	603							604		
	150mm CONDUIT, TYPE F	300mm CONDUIT, TYPE C	375 mm CONDUIT, TYPE C	450mm CONDUIT, TYPE C	525mm CONDUIT, TYPE C	600mm CONDUIT, TYPE C	750mm CONDUIT, TYPE C	CATCH BASIN NO.2-2B	CATCH BASIN NO.5, AS PER PLAN	CATCH BASIN NO.6
	meter							each		
1	2.5	2.5								
2		2.5								
3										
4			2.5							
5						5				
6	2.5		2.5							
7	5		2.5							
8	2.5		2.5							
9			2.5							
10	2.5		2.5							
11			2.5							
12						5.0				
13	2.5				2.5					
14	2.5		2.5							
15	2.5						5			
16	2.5		5							
17	2.5		2.5							
18			5							
19	2.5		2.5							
20						5				
21			2.5							
22			2.5 *		5					
23			2.5							
24	2.5		2.5	2.5						
25	2.5		5							
26	2.5		2.5							
27	2.5		2.5							
28			2.5	2.5						
29	2.5		2.5							
30	2.5	2.5	2.5							
31	2.5		7.5							
32		2.5	2.5							
	47.5	10	72.5	5	17.5	5	5	1	29	1

\* MAY REQUIRE LONGER LENGTH TO REPLACE RUSTED SECTIONS OF THE PIPE, AS DIRECTED BY THE ENGINEER





SECTION B - B



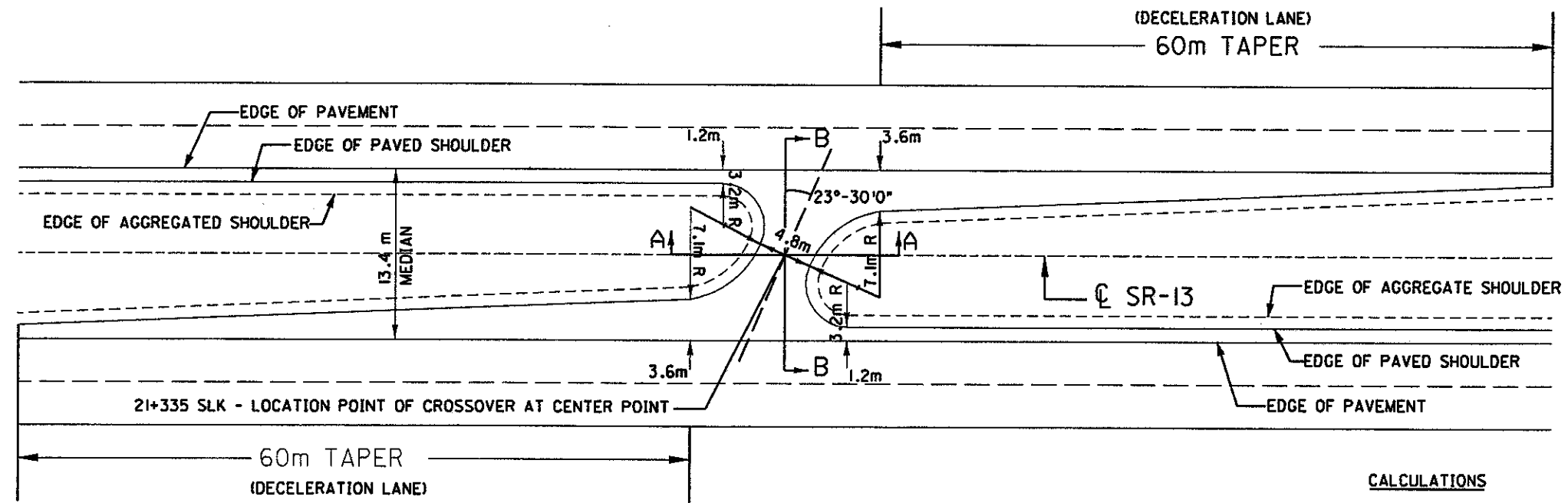
PLAN

NRA = NORTHBOUND REAR APPROACH  
SRA = SOUTHBOUND REAR APPROACH

STRUCTURE	601	602	603	604	830		
	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	CONCRETE MASONRY	300 mm CONDUIT, TYPE F, 707.05, TYPE C	CATCH BASIN NO. 3A	CURB, TYPE 6		
	cubic meter	meter	meter	each	meter		
RIC-13-22788 RT OVER RAMP A	NRA RT 17.1	4	0.16	25	1	3.6	
RIC-13-22788 LT OVER RAMP A	SRA LT 13.5	4	0.16	25	1	3.6	
TOTALS ( TO SHEETS 18 & 19)		8	0.32	50	2	7.2	



STA. 21+335 = SLK 21.335



- 126 m<sup>3</sup> - ITEM 203, EMBANKMENT
- 439 m<sup>2</sup> - ITEM 203, SUBGRADE COMPACTION
- 136 m<sup>3</sup> - ITEM 203, EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
- 75 L - ITEM 407, TACK COAT
- 297 L - ITEM 408, BITUMINOUS PRIME COAT
- 60 m<sup>3</sup> - ITEM 301, BITUMINOUS AGGREGATE BASE, PG64-22
- 14 m<sup>3</sup> - ITEM 448, ASPHALT CONCRETE SURFACE COURSE, TYPE IH, (38 mm AVG. THICKNESS)
- 14 m. ton - ITEM 617, SHOULDER RECONDITIONING MISC.: COMPACTED AGGREGATE
- 44 m<sup>3</sup> - ITEM 304, AGGREGATE BASE
- 270 m<sup>2</sup> - ITEM 659, SEEDING AND MULCHING

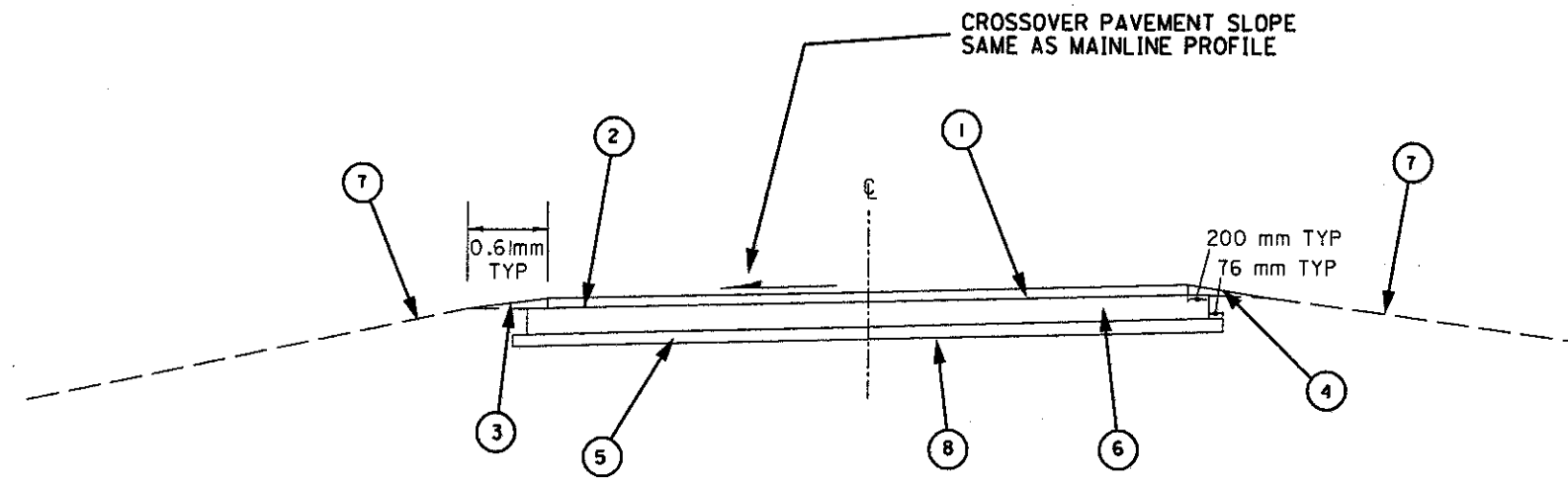
**CALCULATIONS**

AREA: TAPERS = 2 X 60 X 2.4 X 2 = 288 m<sup>2</sup>  
 CENTER = 4.8 X 9.75 = 47 m<sup>2</sup>  
 LG RAD SECT = 2 X .5 X SIN 23.5 X 2.4 X COS 23.5 X 2.4  
 + 2 X .5 X SIN 23.5 X 2.4 X ( 9.75 X COS 23.5 - 2.4 X COS 23.5 ) = 8.55 m<sup>2</sup> OR 9 m<sup>2</sup>  
 SM RAD SECT = 2 X .5 X ( 2 X .87 + .5 X 3.2 X 2 ) = 8.2 m<sup>2</sup> OR 8 m<sup>2</sup>  
 EXTRA FOR 301 = 2 X ( 60 X 60 + 4.8 ) X .2 = 50 m<sup>2</sup>  
 EXTRA FOR 304 = 2 X ( 60 X 60 + 4.8 ) X .15 = 37 m<sup>2</sup>

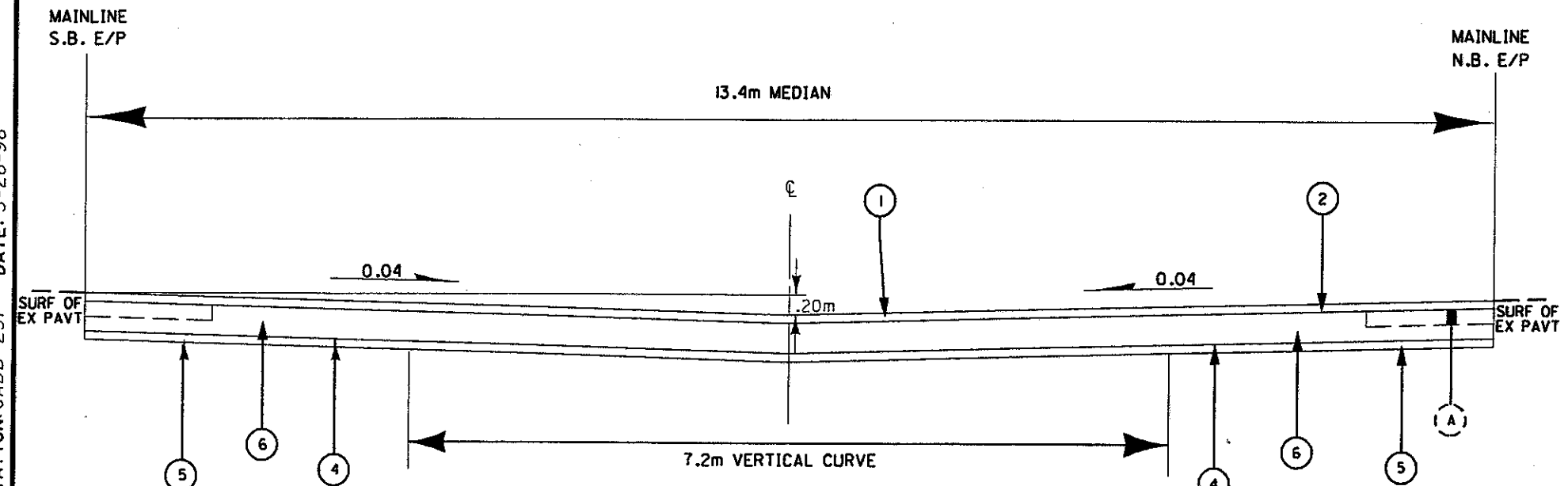
ITEM 203, SUBGRADE COMPACTION = 288 + 47 + 9 + 8 + 50 + 37 = 439 m<sup>2</sup>  
 ITEM 304, AGGREGATE BASE = 439 X .10 = 44 m<sup>3</sup>  
 ITEM 301, BITUMINOUS AGGREGATE BASE, PG64-22 = ( 439 - 37 ) X .15 = 60 m<sup>3</sup>  
 ITEM 448, ASPHALT CONCRETE SURFACE COURSE, TYPE IH = ( 439 - 37 - 50 ) X .038 = 14 m<sup>3</sup>  
 ITEM 407, TACK COAT = ( 439 - 37 - 50 ) X .22 = 75 LITERS  
 ITEM 617, SHOULDER RECONDITIONING MISC.: COMPACTED AGGREGATE  
 = ( 60 X 4 + 8 X 2 ) X .61 X .051 X 1.78 = 14 METRIC TONS  
 ITEM 203, EXCAVATION = 439 X 0.31 = 136 m<sup>3</sup>  
 ITEM 203, EMBANKMENT = ( 2 X 60 + 15 ) X 2 X 0.31 X 1.5 = 126 m<sup>3</sup>  
 ITEM 659, SEEDING AND MULCHING = ( 2 X 60 + 15 ) X 2 = 270 m<sup>2</sup>  
 ITEM 408, BITUMINOUS PRIME = ( 2 X 60 + 15 ) X 2 X 0.61 X 1.8 = 297 liter

**LEGEND**

- ① ITEM 448, ASPHALT CONCRETE SURFACE COURSE, TYPE IH, (38mm)
- ② ITEM 407, TACK COAT APPLIED AFTER 301 COURSE AT .22 L/m<sup>2</sup>
- ③ ITEM 617, SHOULDER RECONDITIONING, MISC.: COMPACTED AGGREGATE, (51mm AVERAGE THICKNESS)
- ④ ITEM 408, BITUMINOUS PRIME COAT @ 1.8 L/m<sup>2</sup>
- ⑤ ITEM 304, AGGREGATE BASE, (100mm AVERAGE THICKNESS)
- ⑥ ITEM 301, BITUMINOUS AGGREGATE BASE, PG64-22, (150mm AVERAGE THICKNESS)
- ⑦ ITEM 659, SEEDING AND MULCHING
- ⑧ ITEM 203, SUBGRADE COMPACTION
- (A) EXISTING ASPHALT SHOULDER



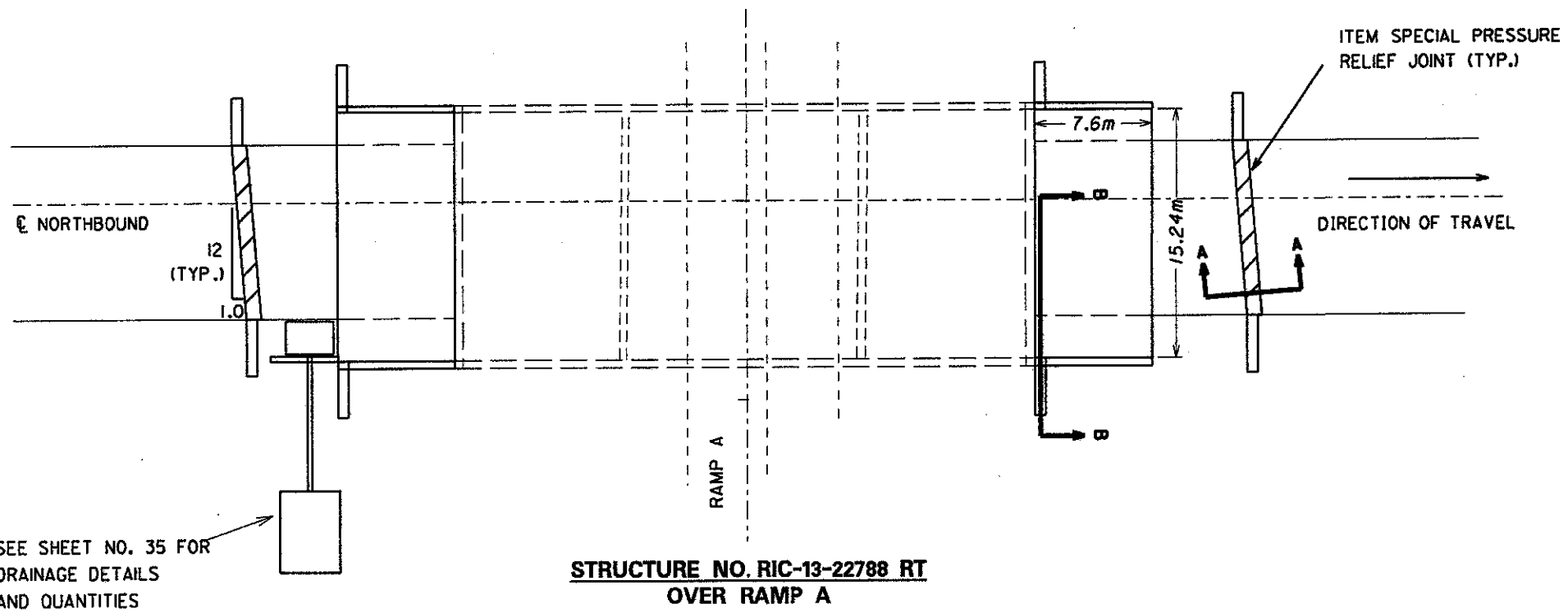
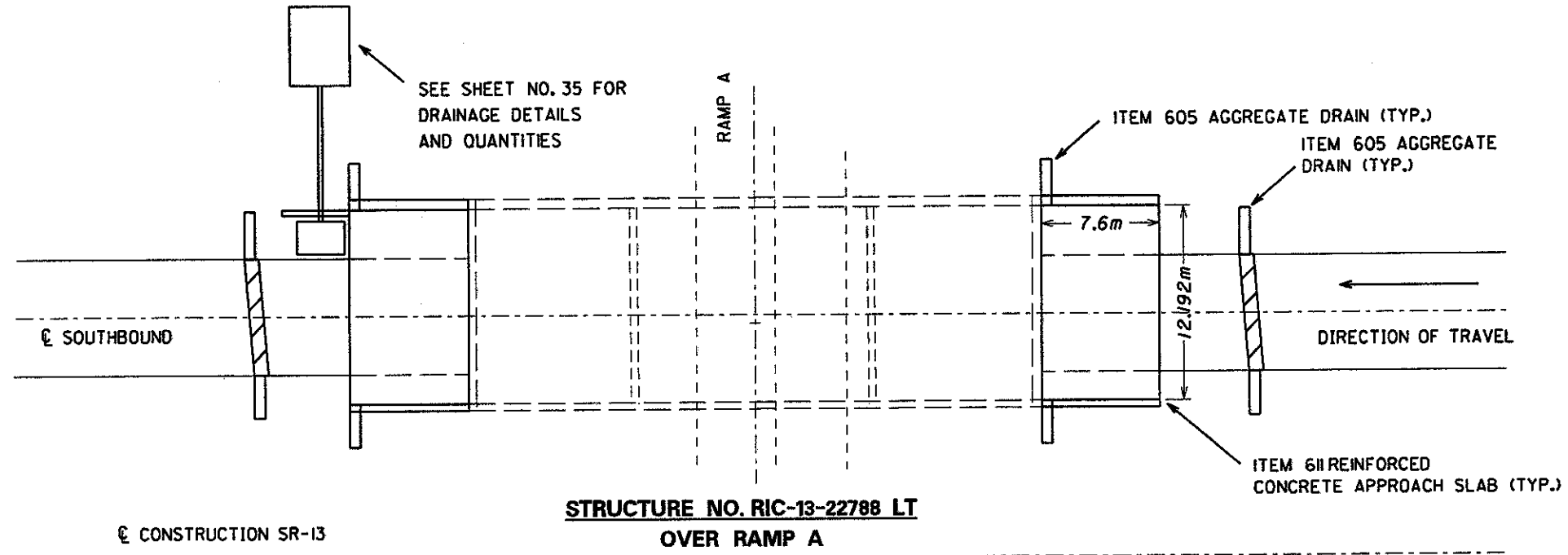
SECTION A-A



SECTION B-B

 DESIGN FILE: /PROJECT/16915/R13MEDX0.DGN  
 WORKSTATION: CADD 231 DATE: 3-26-98

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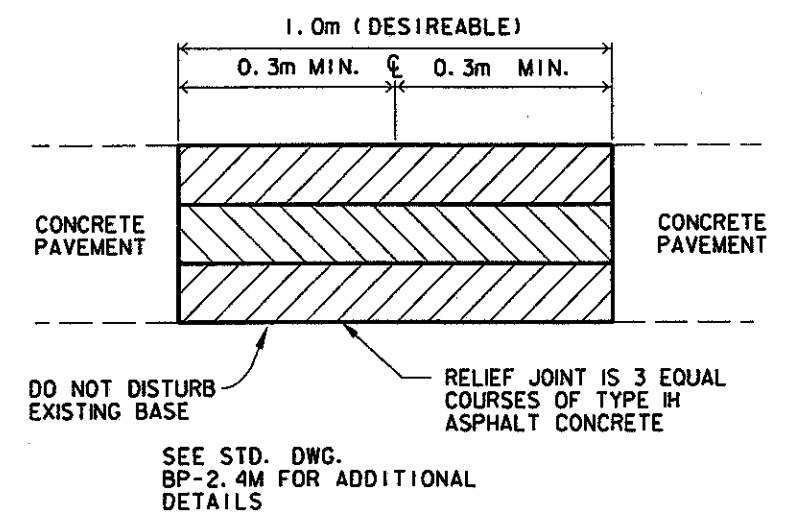


CALCULATED  
SCJ  
CHECKED  
ADB

APPROACH SLAB DETAIL

RIC-13-17.445

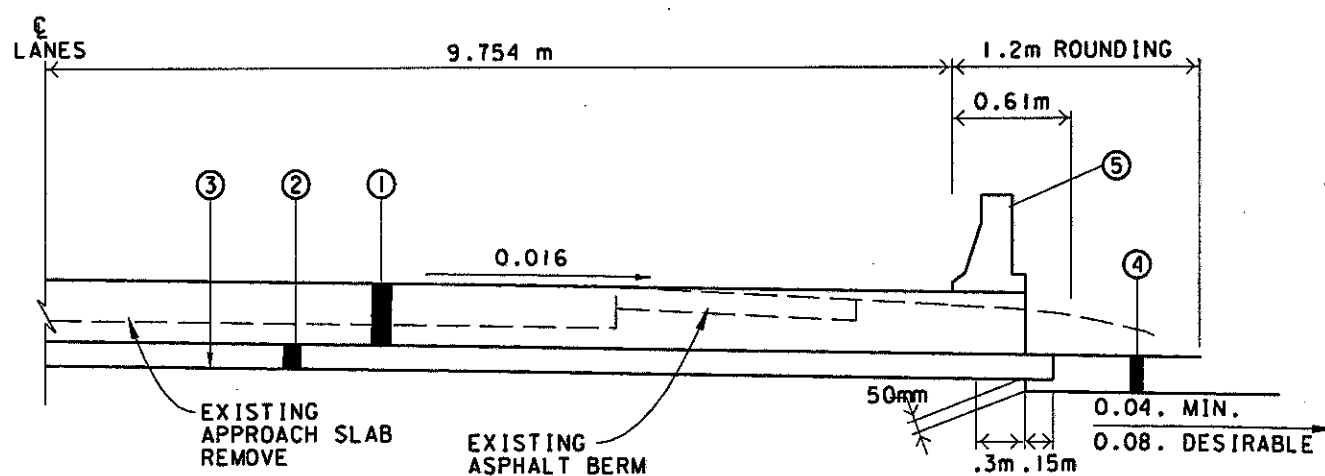
**CALCULATIONS**



**SECTION A-A**  
PRESURE RELIEF JOINT  
AS PER PLAN

ITEM SPECIAL - PRESSURE RELIEF JOINT, AS PER PLAN

PRESSURE RELIEF JOINT, AS PER PLAN SHALL BE CONSTRUCTED AS PER DETAIL ON THIS SHEET AND SHALL INCLUDE FULL DEPTH SAWING, REMOVAL AND DISPOSAL OF EXISTING AND PLACEMENT OF NEW IH ASPHALT CONCRETE MATERIAL.



**SECTION B-B**  
**APPROACH SLAB TYPICAL SECTION**

**LEGEND**

- ① 611 - REINFORCED CONCRETE APPROACH SLAB, (T=380mm) AS PER PLAN
  - ② 150mm 304 - AGGREGATE BASE
  - ③ 203 - SUBGRADE COMPACTION
  - ④ 605 - AGGREGATE DRAIN
  - ⑤ 517 - RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN \*
- \* SEE SHEET 70 FOR RAILING NOTE  
SEE SHEETS 104-107 FOR RAILING DETAILS

202 - APPROACH SLAB REMOVED, AS PER PLAN

$(7.6 \text{ m})(7.3 \text{ m})(2) = 110.96 \text{ SQ. M. LT.}$   
 $(7.6 \text{ m})(10.97 \text{ m})(2) = 166.74 \text{ SQ. M. RT.}$

611 - REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN

$(7.6 \text{ m})(13.104 \text{ m})(2) = 199.18 \text{ SQ. M. LT.}$   
 $(7.6 \text{ m})(16.154 \text{ m})(2) = 245.54 \text{ SQ. M. RT.}$

304 - 150 mm AGGREGATE BASE

$(0.15 \text{ m})(7.6 \text{ m})(13.404 \text{ m})(2) = 30.56 \text{ CU. M. LT.}$   
 $(0.15 \text{ m})(7.6 \text{ m})(16.454 \text{ m})(2) = 37.52 \text{ CU. M. RT.}$

203 - SUBGRADE COMPACTION

$(7.6 \text{ m})(13.104 \text{ m})(2) = 199.18 \text{ SQ. M. LT.}$   
 $(7.6 \text{ m})(16.154 \text{ m})(2) = 245.54 \text{ SQ. M. RT.}$

203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION

$(13.404 \text{ m})(7.6 \text{ m})(0.53 \text{ m})(2) \text{ LT. (PROP. APPR. SLAB AND 304) -}$   
 $36.1 \text{ CU. M. LT. (AREA FOR EXIST. APPR. SLAB TO BE REMOVED)}$   
 $= 71.9 \text{ CU. M.}$

$(16.454 \text{ m})(7.6 \text{ m})(0.53 \text{ m})(2) \text{ RT. (PROP. APPR. SLAB AND 304) -}$   
 $54.2 \text{ CU. M. RT. (AREA FOR EXIST. APPR. SLAB TO BE REMOVED)}$   
 $= 78.4 \text{ CU. M.}$

605 - AGGREGATE DRAIN

$(9 \text{ m})(4) = 36 \text{ m LT.}$   
 $(9 \text{ m})(4) = 36 \text{ m RT.}$

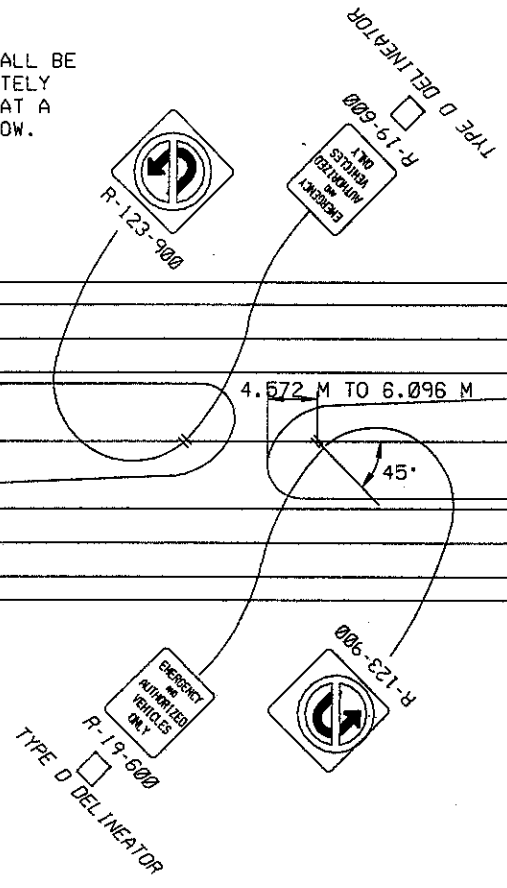
STRUCTURE	202	203	203	304	605	611	SPECIAL
	APPROACH SLAB REMOVED, AS PER PLAN	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	SUBGRADE COMPACTION	AGGREGATE BASE (150mm)	AGGREGATE DRAIN	REINFORCED CONCRETE APPROACH SLAB (T=380mm), AS PER PLAN	PRESSURE RELIEF JOINT, AS PER PLAN
	m <sup>2</sup>	m <sup>3</sup>	m <sup>2</sup>	m <sup>3</sup>	meter	m <sup>2</sup>	meter
RIC-13-22788 LT	111.0	71.9	199.2	30.6	36	199.2	15
RIC-13-22788 RT	166.7	78.4	245.5	37.5	36	245.5	22
TOTALS (TO SHEETS 18 & 19)	277.7	150.3	444.7	68.1	72	444.7	37

APPROACH SLAB DETAIL

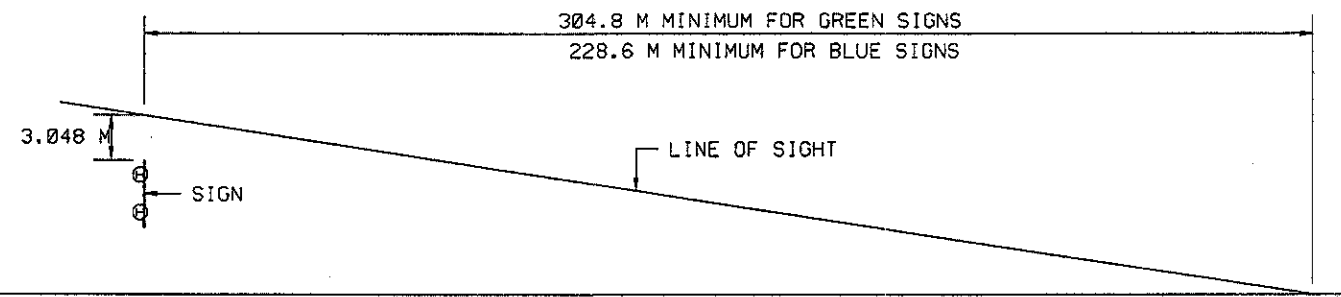
RIC-13-17.445

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NOTE: THE R-19 AND R-123 SIGNS SHALL BE ERECTED BACK TO BACK AT APPROXIMATELY THE MIDPOINT OF THE MEDIAN WIDTH AT A 45 DEGREE ANGLE TO THE TRAFFIC FLOW.



STANDARD SIGNING FOR U-TURN MEDIAN CROSSOVER



GUIDE FOR CLEARING AND GRUBBING

**620 DELINEATOR, TYPE C,  
POST MOUNTED**

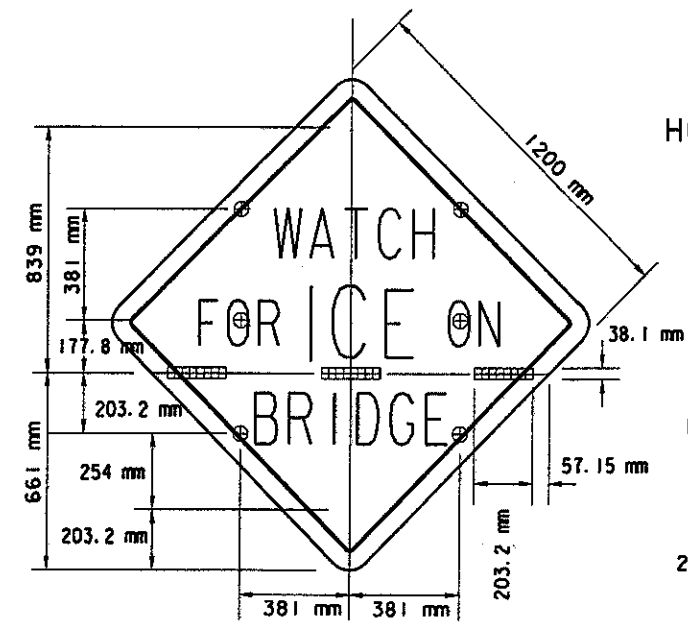
BEGIN PROJECT = 17+445.00  
END PROJECT = 23+175.00  
5730.00 m

5730.00 m / 60.96 m = 94 (2) = 188 EACH

**620 DELINEATOR, REMOVED FOR DISPOSAL**

= 188 EACH

DELINEATOR QUANTITIES CARRIED TO GENERAL SUMMARY SHEET 19



HOLES DRILLED AS PER TC-52.10M

1) THE SIGN SHALL BE JOINED WITH AN 203.2 mm LONG BY 25.4-38.1 mm WIDE HINGE WHICH IS RIVETED TO EACH SECTION OF THE SIGN AND THEN COVERED WITH YELLOW REFLECTIVE SHEETING (TYPE F-730.18) TO MATCH THE BACKGROUND OF THE SIGN. USE STAINLESS STEEL HINGES.

2) TO FOLD THE SIGN DOWN, REMOVE THE TOP TWO BOLTS, FOLD THE UPPER PART OF THE SIGN DOWN AND INSERT A BOLT THROUGH THE LOWEST HOLE IN THE SIGN AND INTO THE POST. FASTEN THE BOLT TO PREVENT THE SIGN FROM FLOPPING IN THE WIND AND SUSTAINING DAMAGE.

3) MOUNT ON TWO NO. 3 SIGN SUPPORTS.

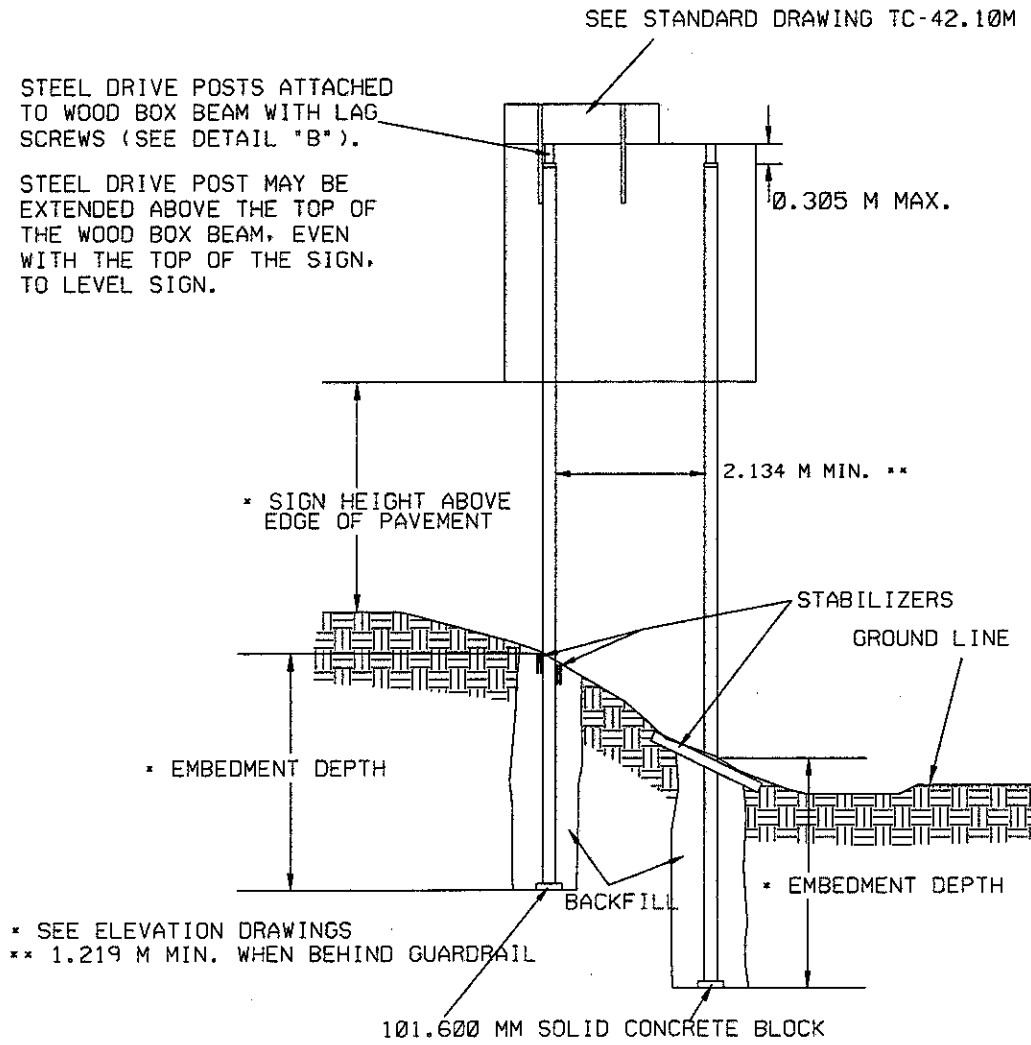
W-68-1200 HINGED SIGN DETAIL

DETAIL

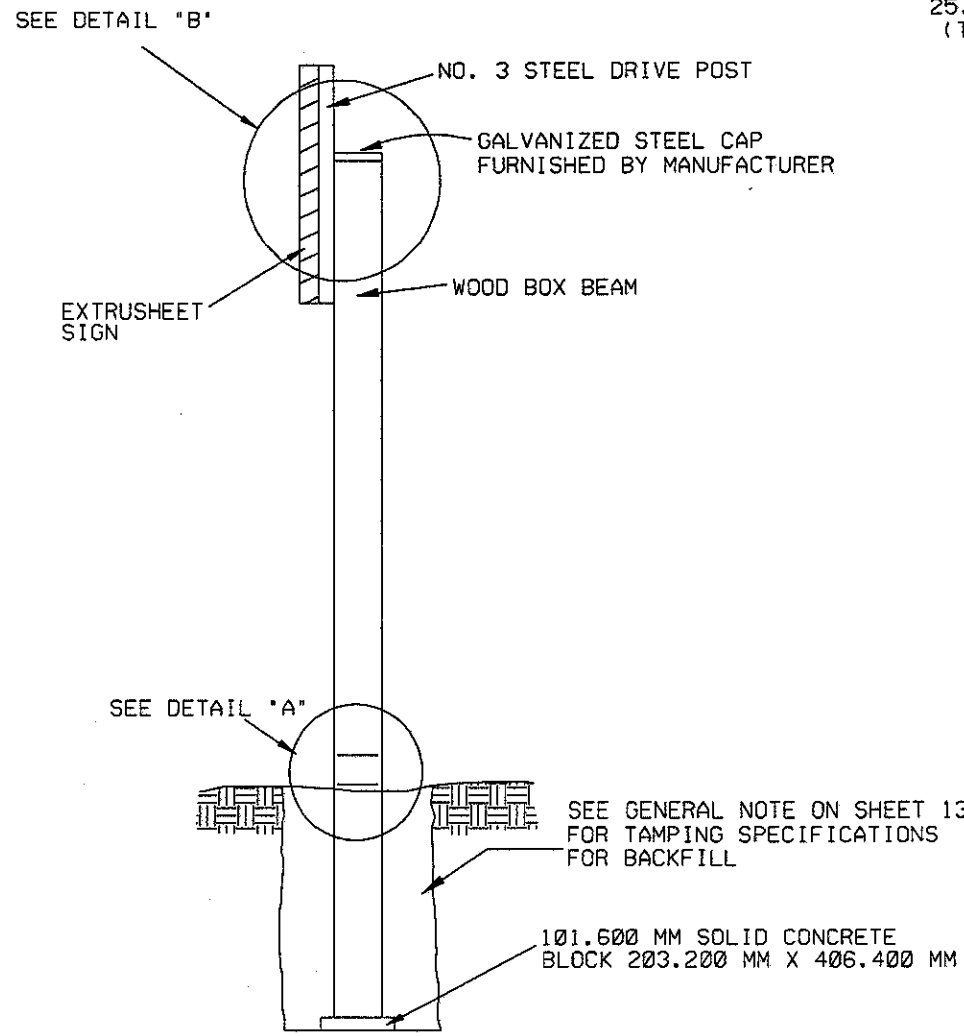
MISC SIGNING DETAILS AND DELINEATOR QUANTITIES

RIC-13-17.445

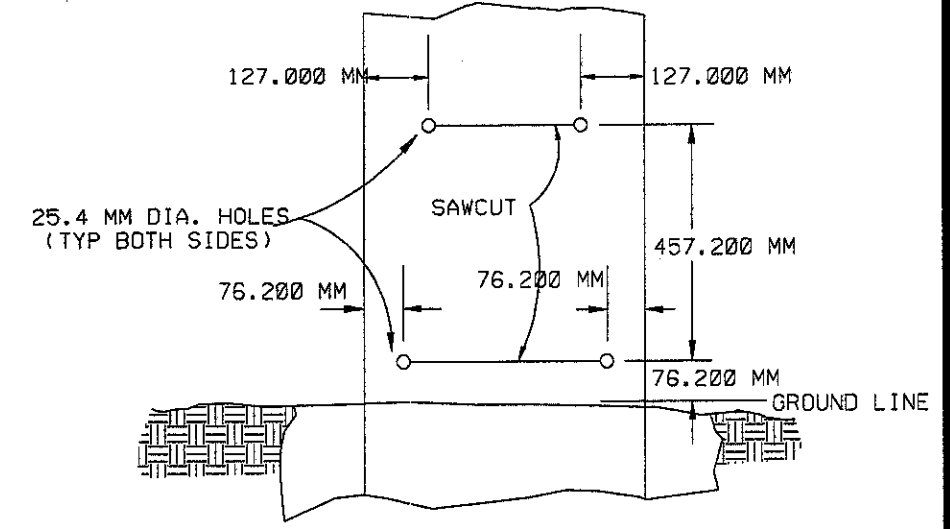
# TYPICAL WOOD BOX BEAM INSTALLATION



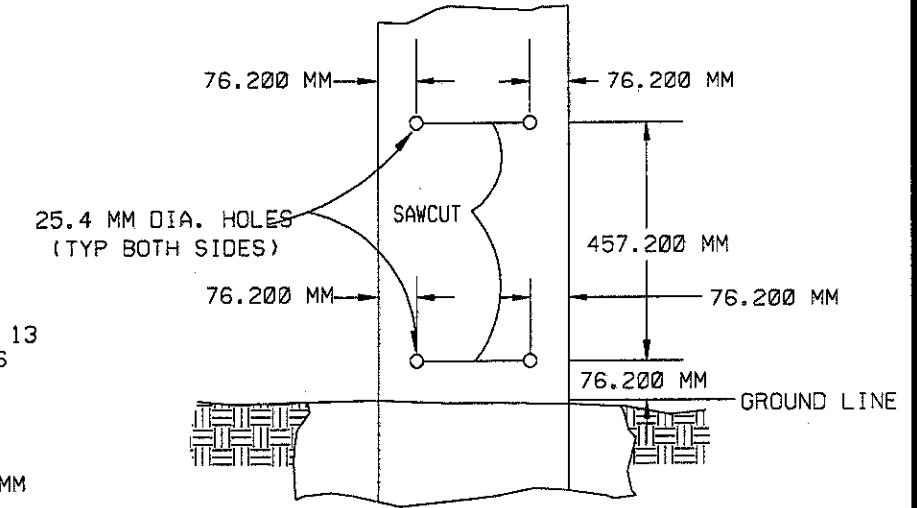
ELEVATION (REAR VIEW)



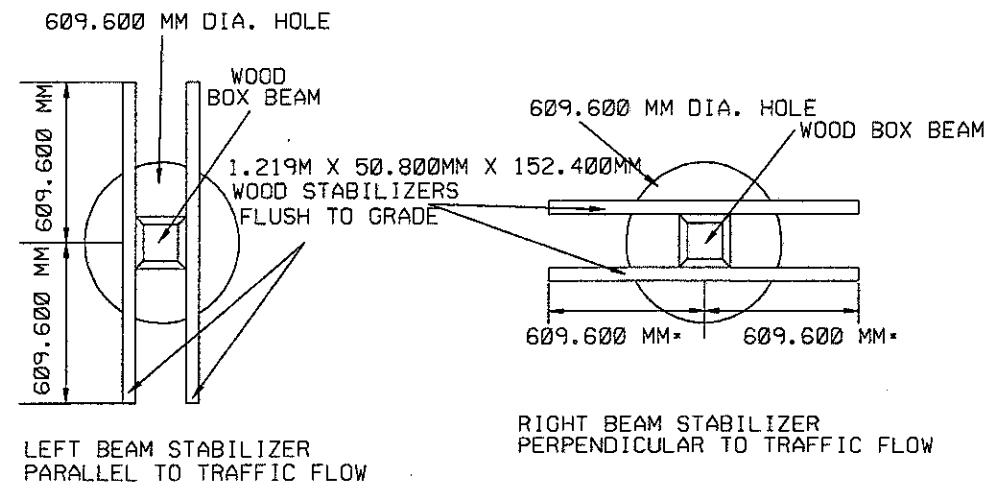
SIDE VIEW



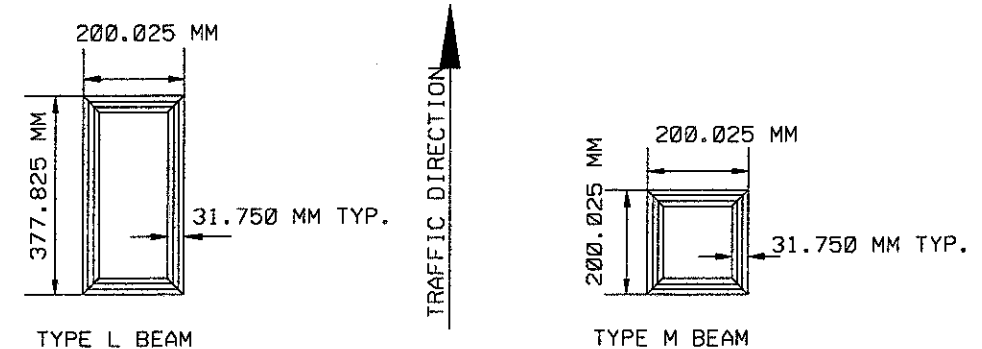
DETAIL "A" (TYPE L BEAM)



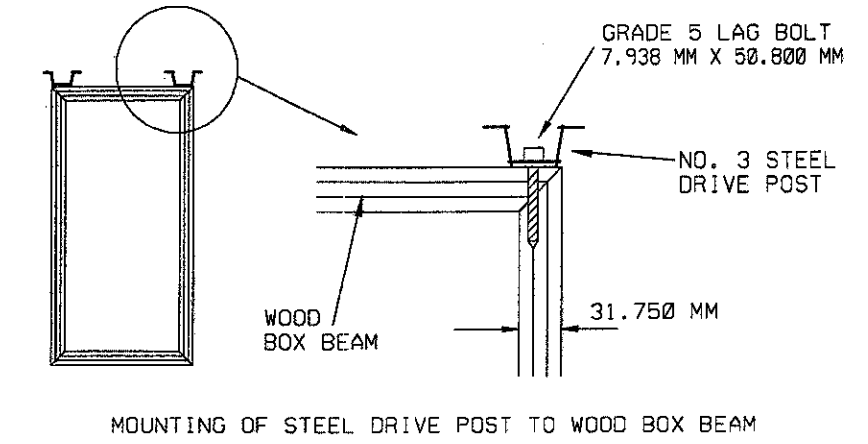
DETAIL "A" (TYPE M BEAM)



WOOD STABILIZERS



PLACEMENT OF BOX BEAMS



DETAIL "B"

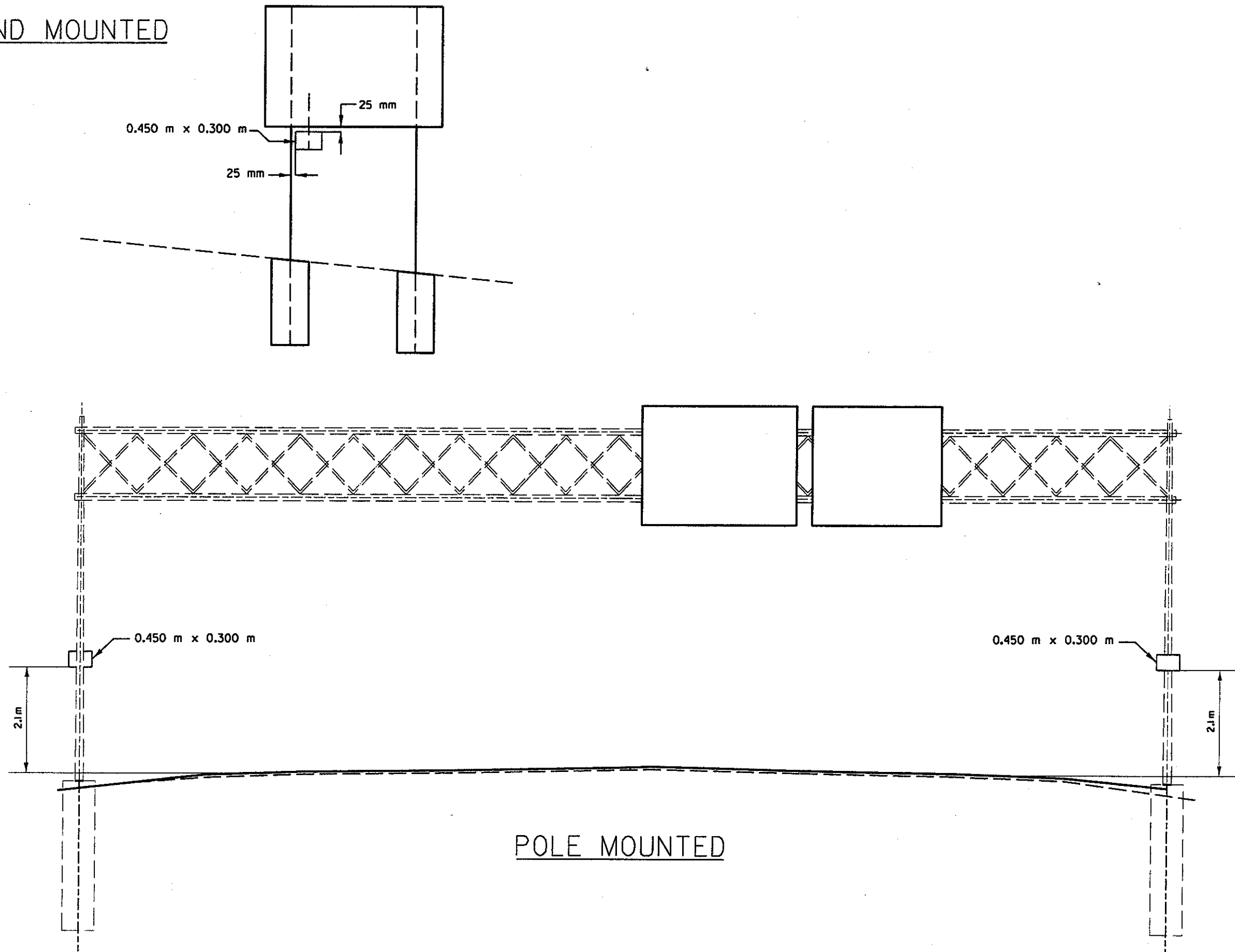
DESIGN FILE: I:\projects\16915\signcd\1.dgn  
WORKSTATION: mellem DATE: 09 FEB 99

WOOD BOX BEAM INSTALLATION DETAIL

RIC-13-17.445

# FREEWAY LOCATION IDENTIFICATION SYSTEM SIGN DETAIL

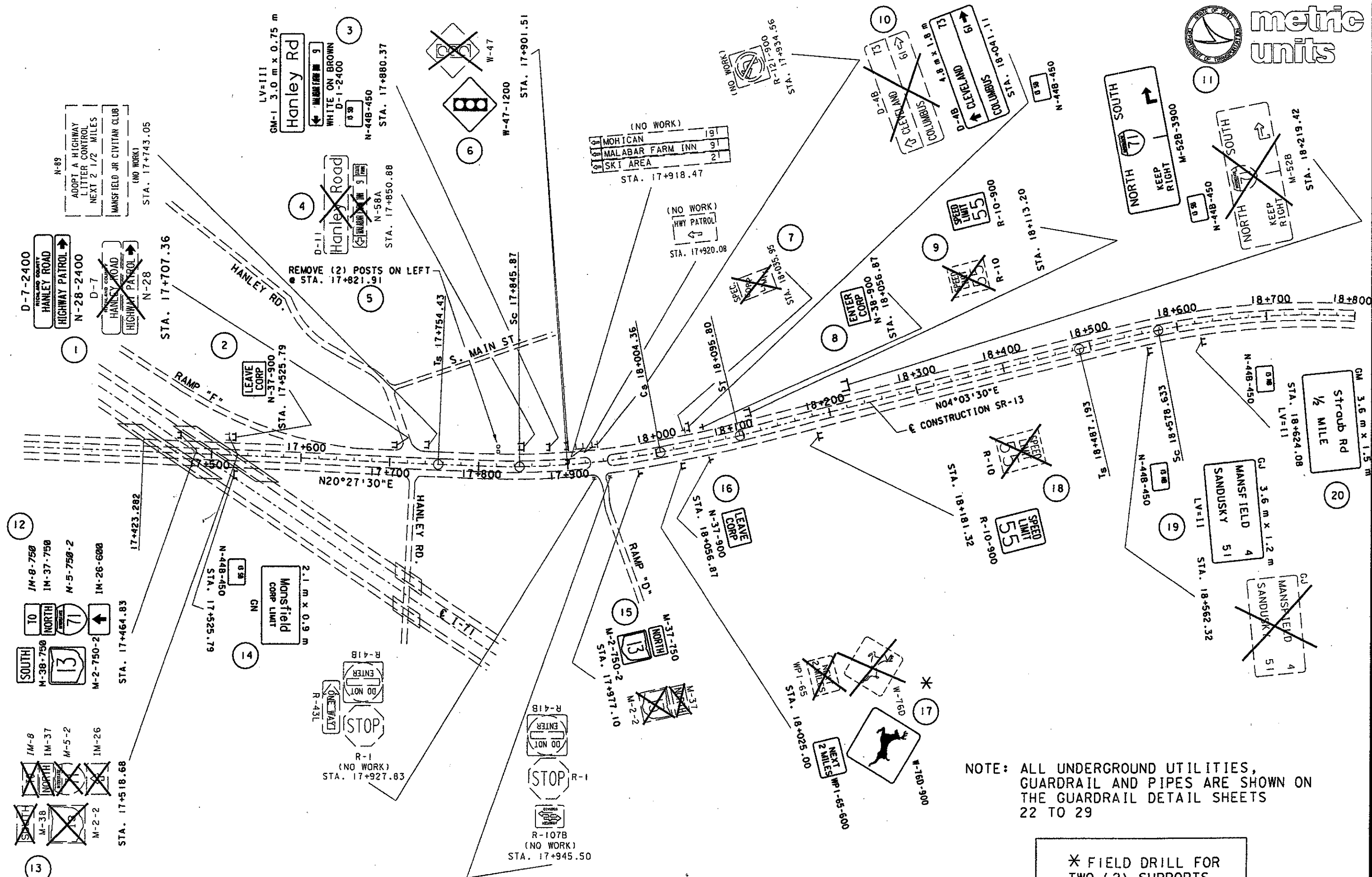
GROUND MOUNTED



DESIGN FILE: i:\projects\6995\sign\H.dgn  
WORKSTATION: mallem DATE: 08 SEP 98

LOCATION IDENTIFICATION SIGN DETAIL

RIC-13-17.445

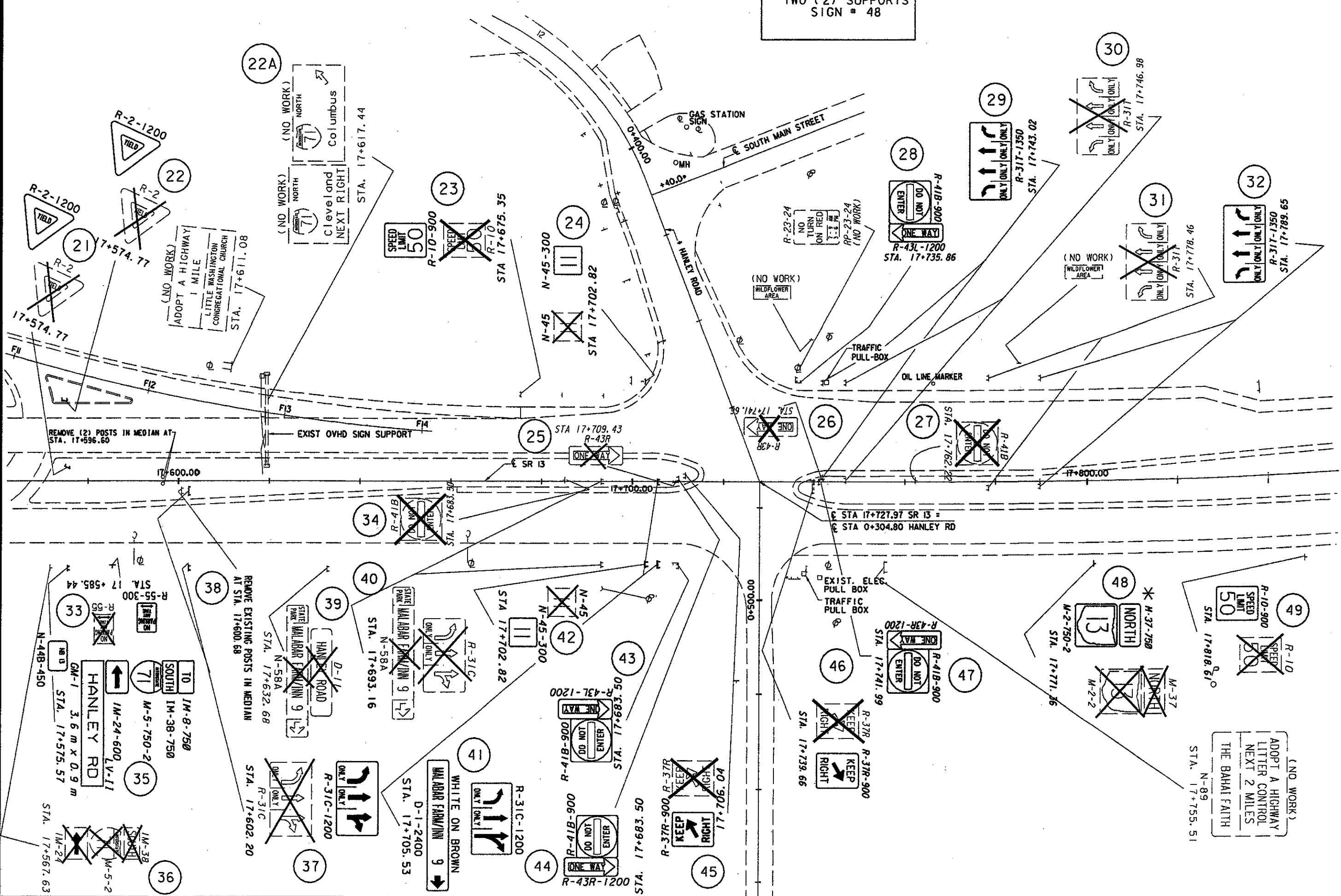


**SIGNING PLAN**

**RIC-13-17.445**

\* FIELD DRILL FOR TWO (2) SUPPORTS SIGN # 48

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(NO WORK)  
 ADAPT A HIGHWAY  
 1 MILE  
 LITTLE WASHINGTON  
 CONGREGATIONAL CHURCH  
 STA. 17+611.08

(NO WORK)  
 NORTH  
 Columbus  
 STA. 17+617.44

(NO WORK)  
 NORTH  
 Cleveland  
 NEXT RIGHT  
 STA. 17+617.44

REMOVE (2) POSTS IN MEDIAN AT  
 STA. 17+596.60

EXIST OVHD SIGN SUPPORT

TO  
 SOUTH  
 1M-8-750  
 1M-38-750  
 HANLEY RD  
 3.6 m x 0.9 m  
 1M-24-600  
 LV-11  
 1M-5-750-2  
 GM-1  
 STA. 17+575.57

REMOVE EXISTING POSTS IN MEDIAN  
 AT STA. 17+600.68

STATE MALABAR FARM/INN 9  
 STA. 17+632.68

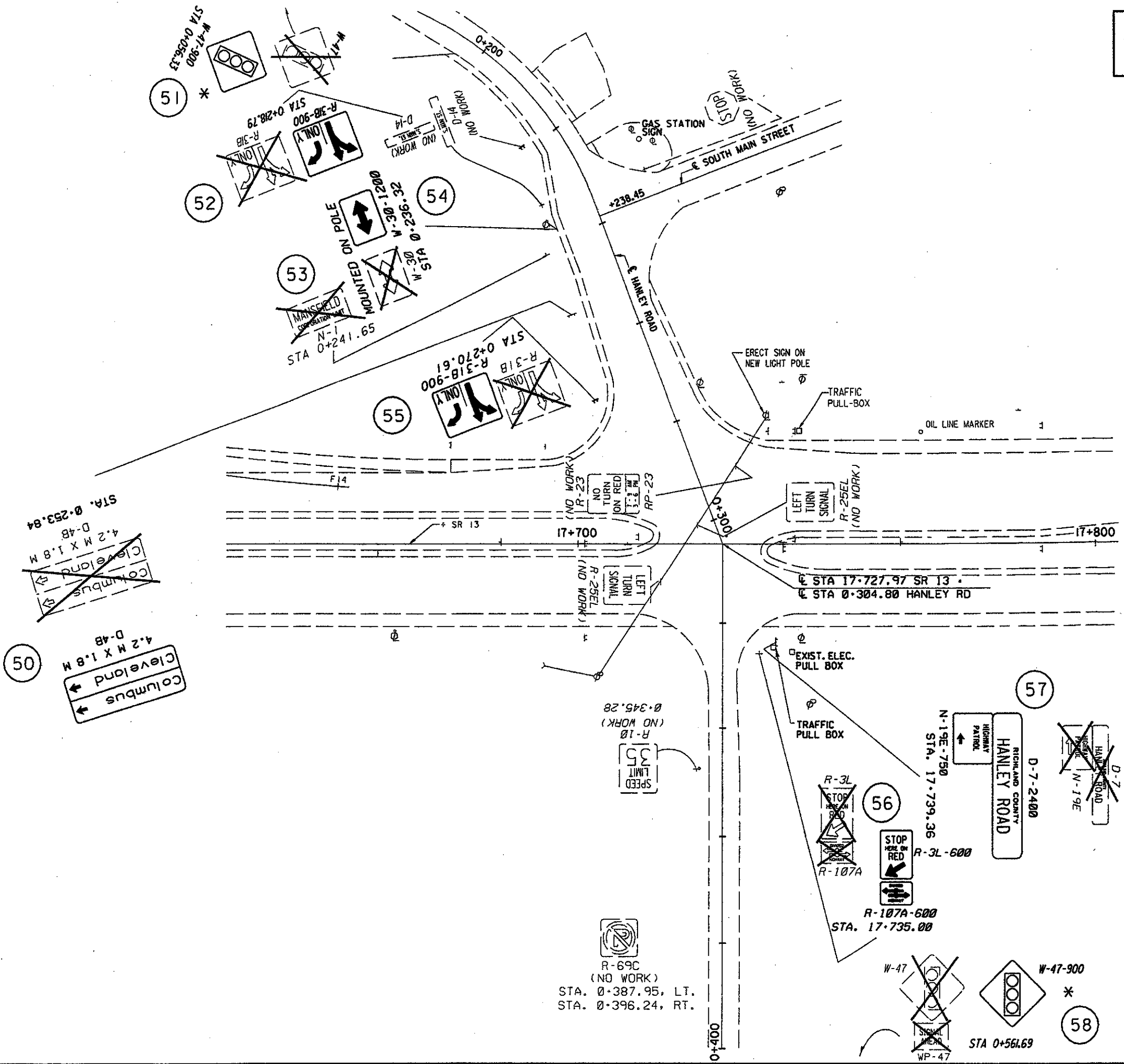
STATE MALABAR FARM/INN 9  
 N-58A  
 STA. 17+693.16

WHITE ON BROWN  
 MALABAR FARM/INN 9  
 D-1-2400  
 STA. 17+705.53




(NO WORK)  
 ADAPT A HIGHWAY  
 LITTER CONTROL  
 NEXT 2 MILES  
 THE BAHAI FAITH  
 N-89  
 STA. 17+755.51

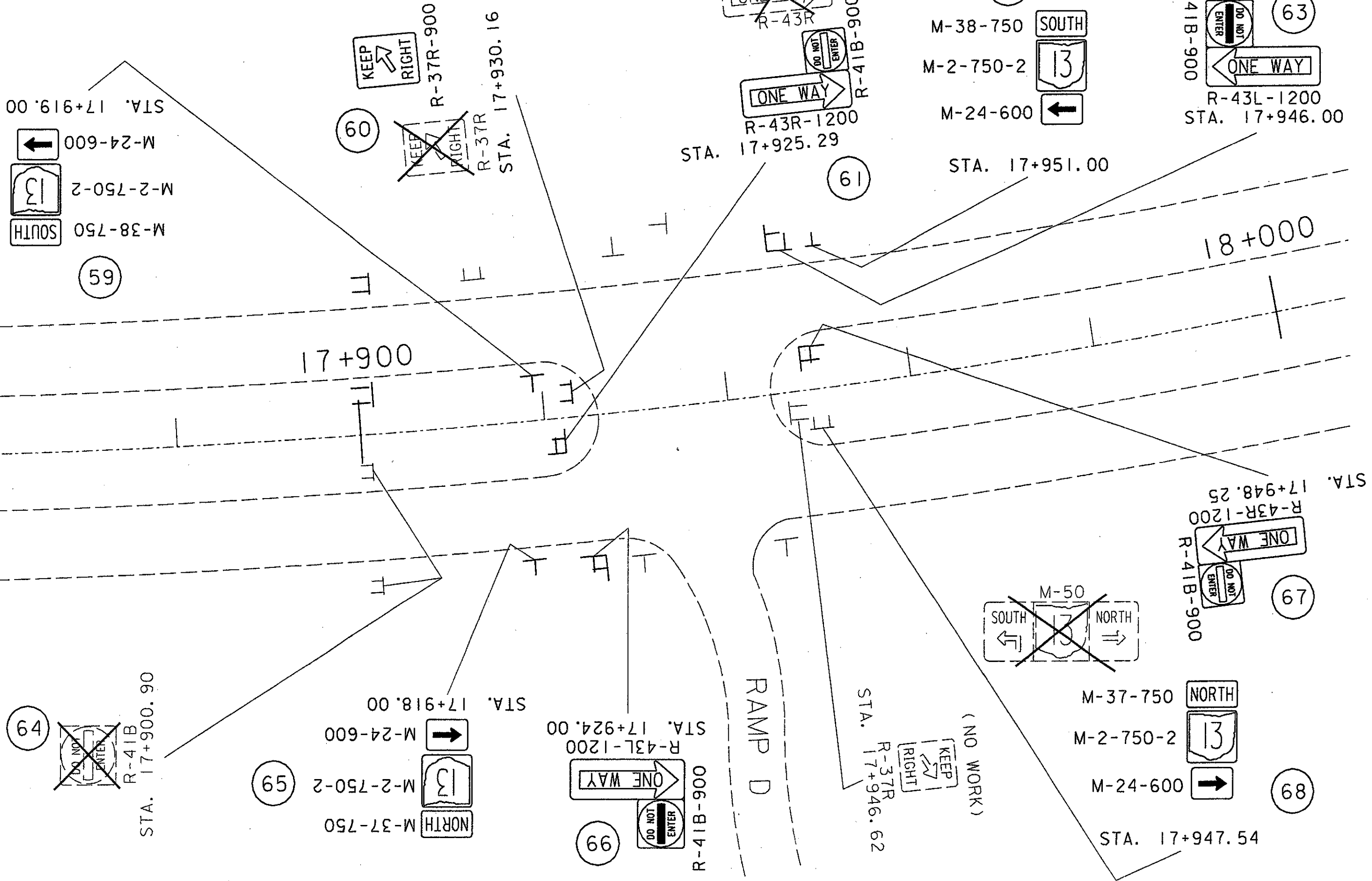


FIELD DRILL FOR  
TWO (2) SUPPORTS  
SIGNS #51 & 58



**LEGEND**

-  PROP. SIGN
-  EXISTING SIGN TO REMAIN, NO WORK
-  EXISTING SIGN TO BE REMOVED

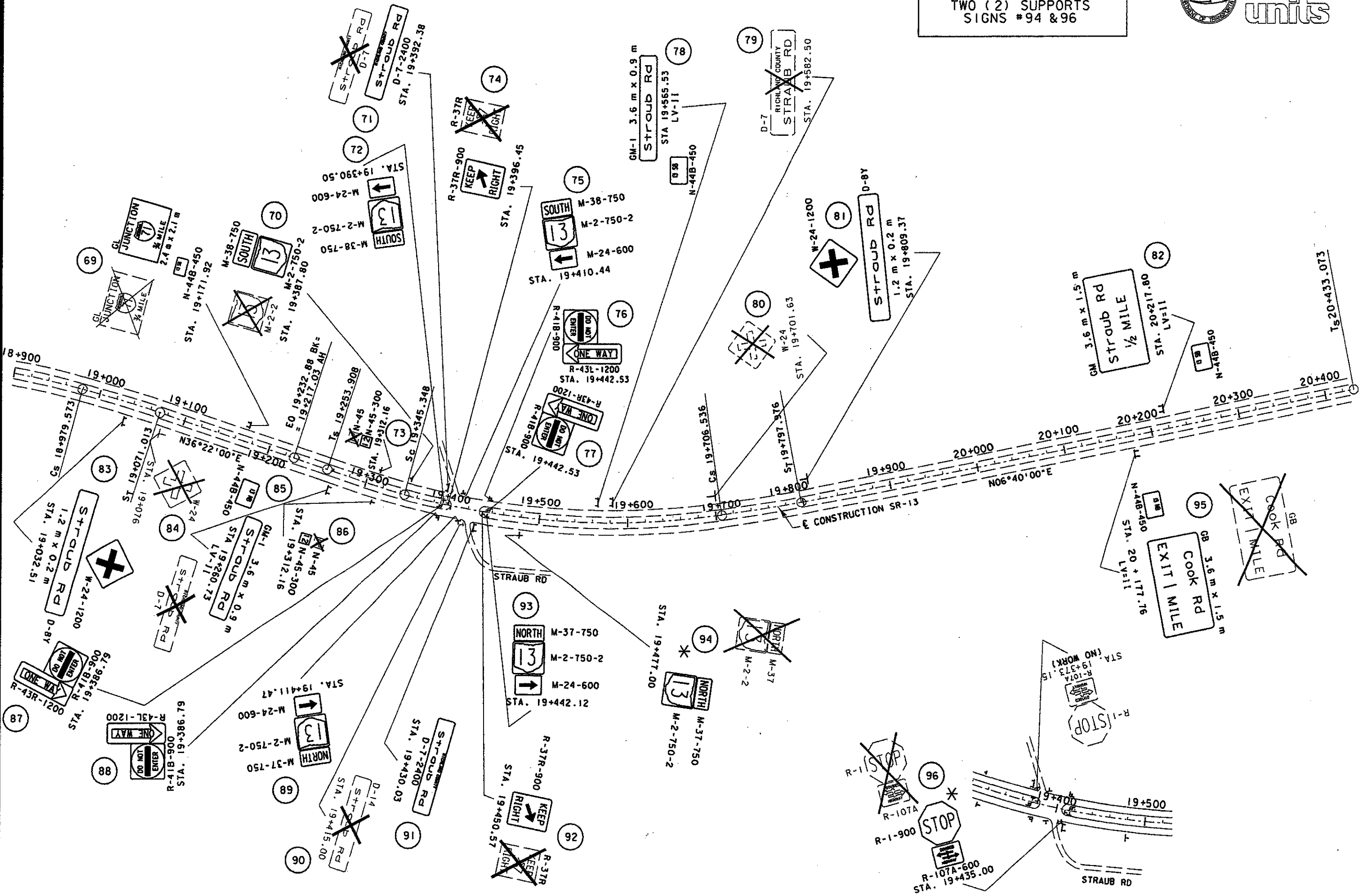


DESIGN FILE: i:\projects\16915\signing.dgn  
 WORKSTATION: mallemann DATE: 08 SEP 98

SIGNING PLAN

RIC-13-17.445

\* FIELD DRILL FOR  
TWO (2) SUPPORTS  
SIGNS #94 & 96



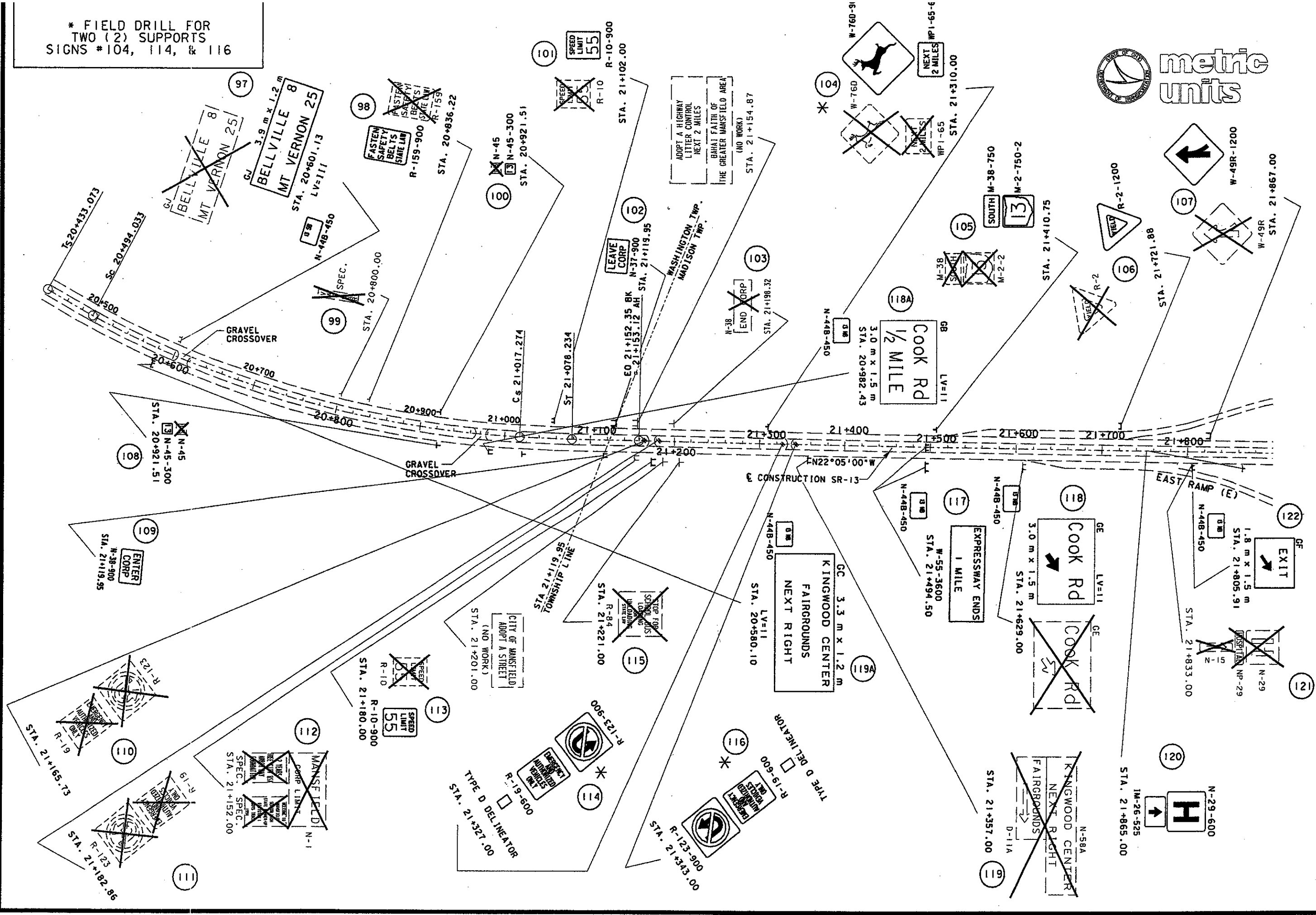
SIGNING PLAN

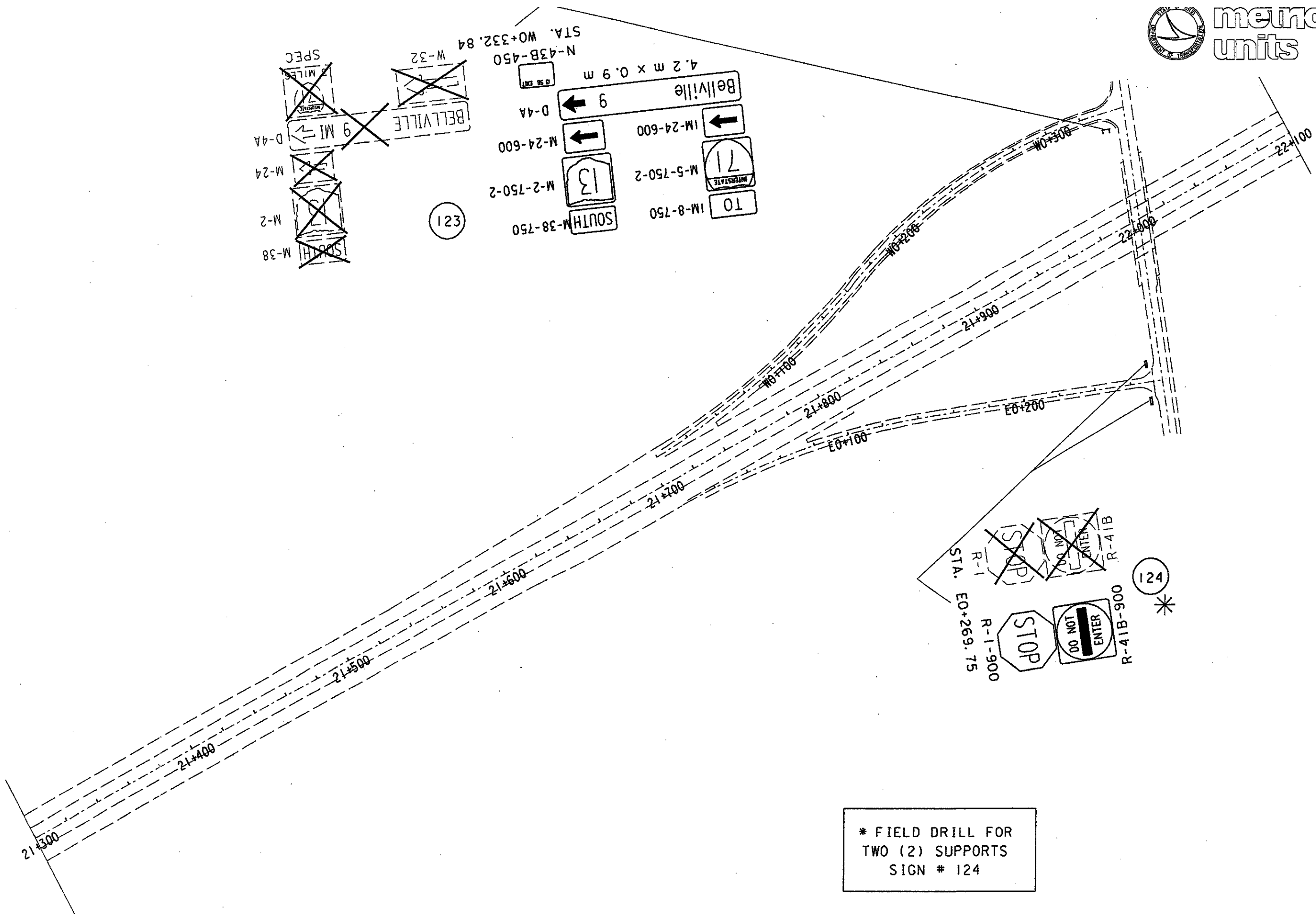
RIC-13-17.445

\* FIELD DRILL FOR TWO (2) SUPPORTS SIGNS #104, 114, & 116



DESIGN FILE: i:\projects\16915\signing.dgn  
 WORKSTATION: mallemann DATE: 08 SEP 98



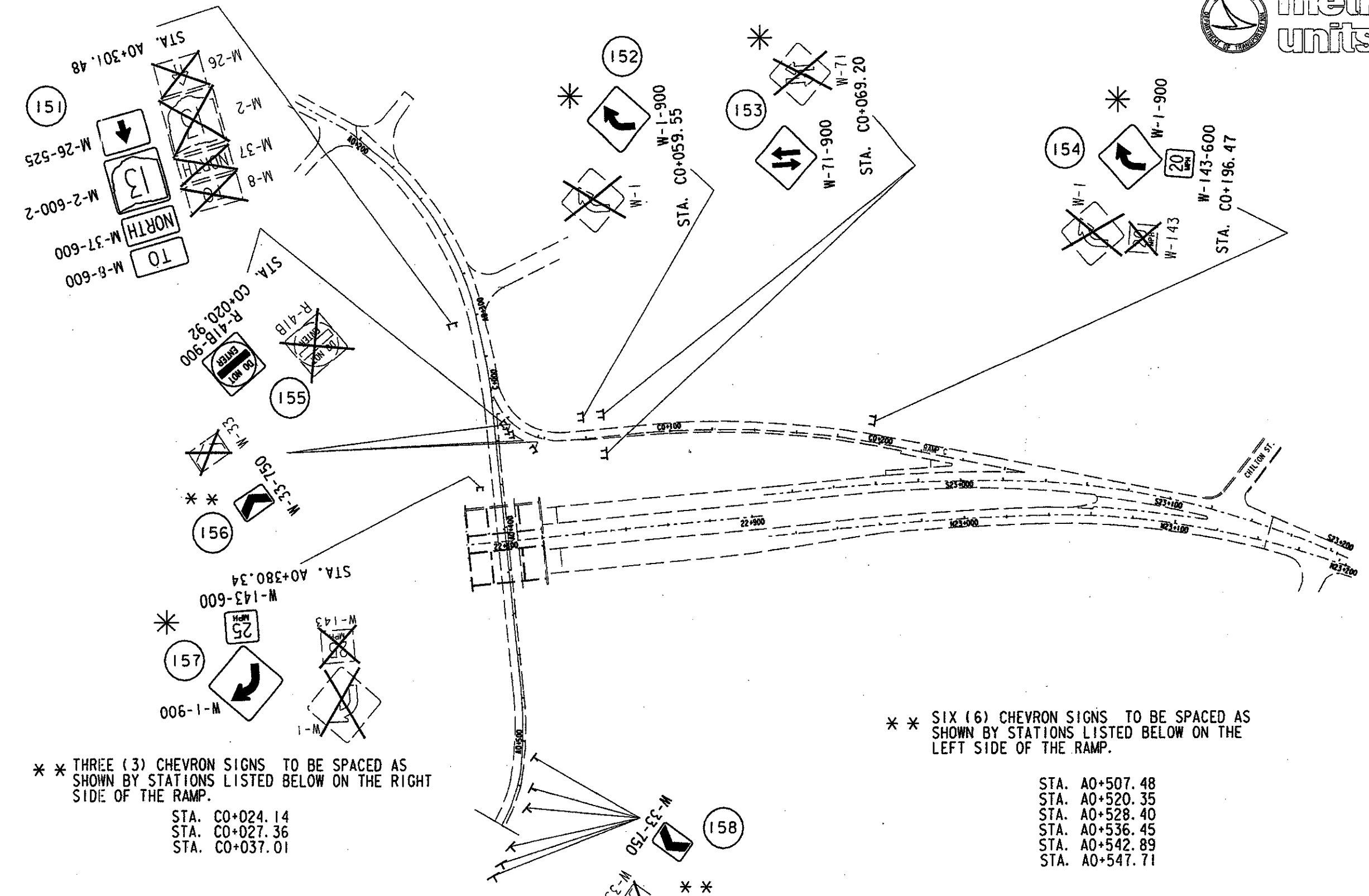


CALCULATED  
 CHECKED

SIGNING PLAN

RIC-13-17.445





\* \* THREE (3) CHEVRON SIGNS TO BE SPACED AS SHOWN BY STATIONS LISTED BELOW ON THE RIGHT SIDE OF THE RAMP.

- STA. CO+024.14
- STA. CO+027.36
- STA. CO+037.01

\* \* SIX (6) CHEVRON SIGNS TO BE SPACED AS SHOWN BY STATIONS LISTED BELOW ON THE LEFT SIDE OF THE RAMP.

- STA. AO+507.48
- STA. AO+520.35
- STA. AO+528.40
- STA. AO+536.45
- STA. AO+542.89
- STA. AO+547.71

\* FIELD DRILL FOR TWO (2) SUPPORTS  
 SIGN # 152, 153, 154, & 157













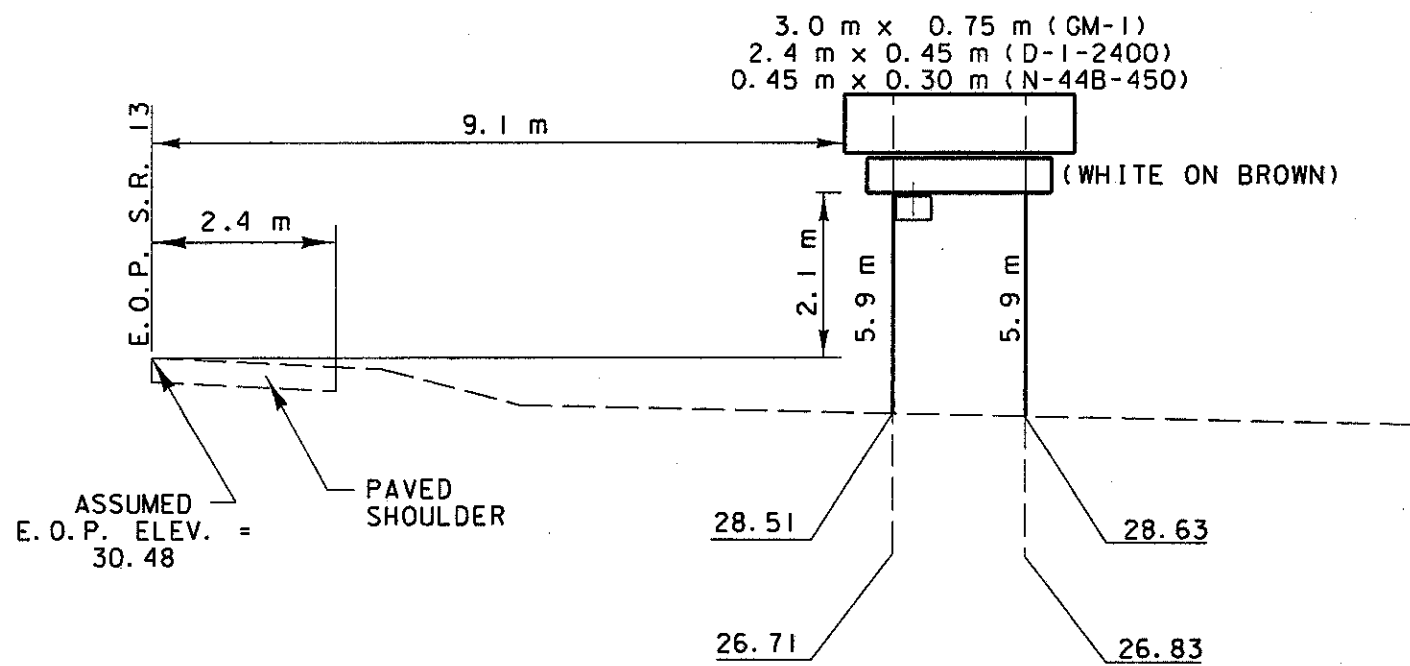




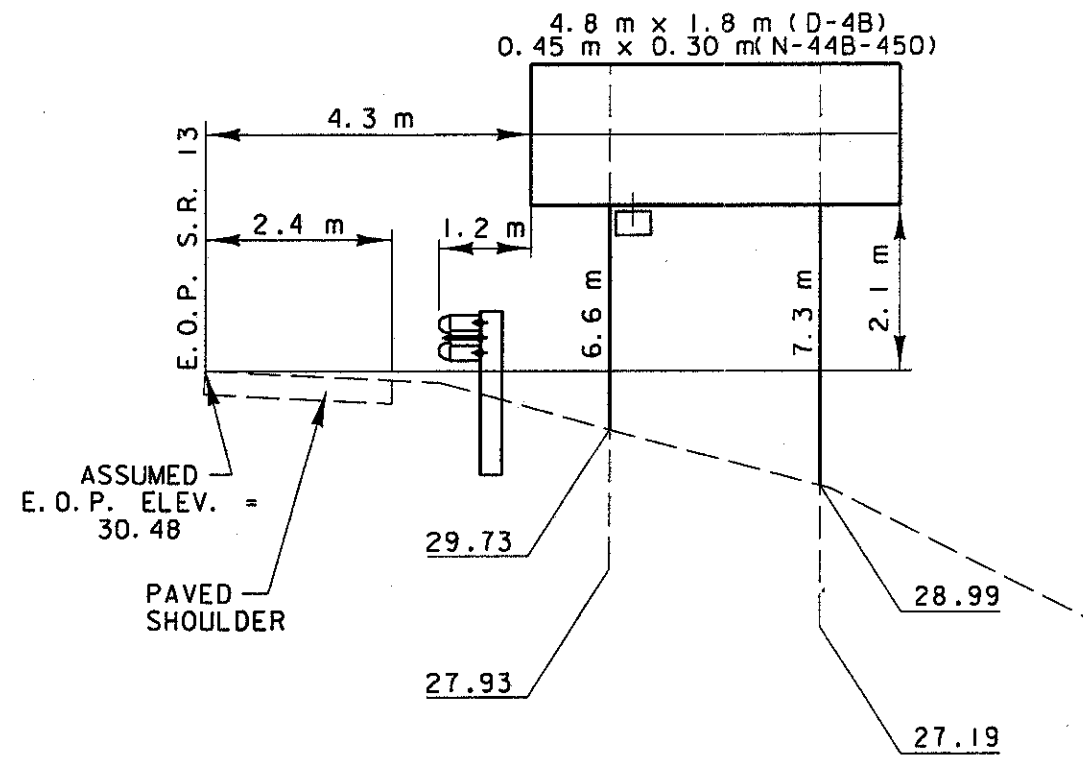




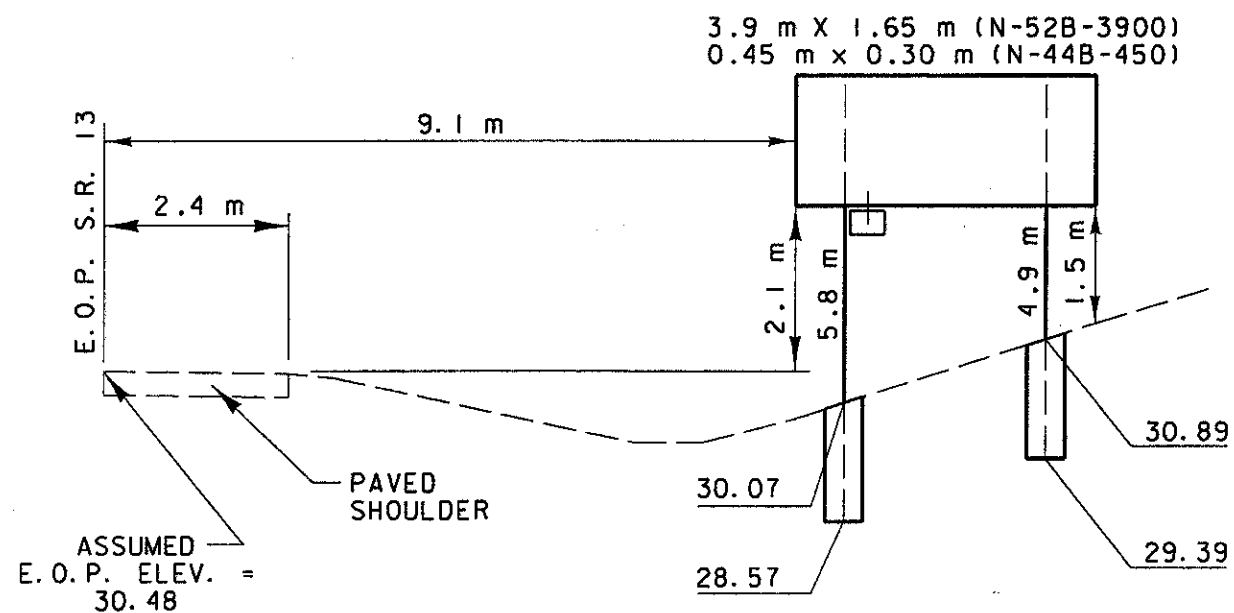
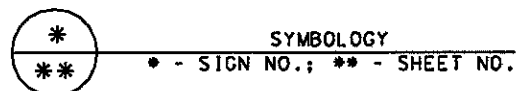




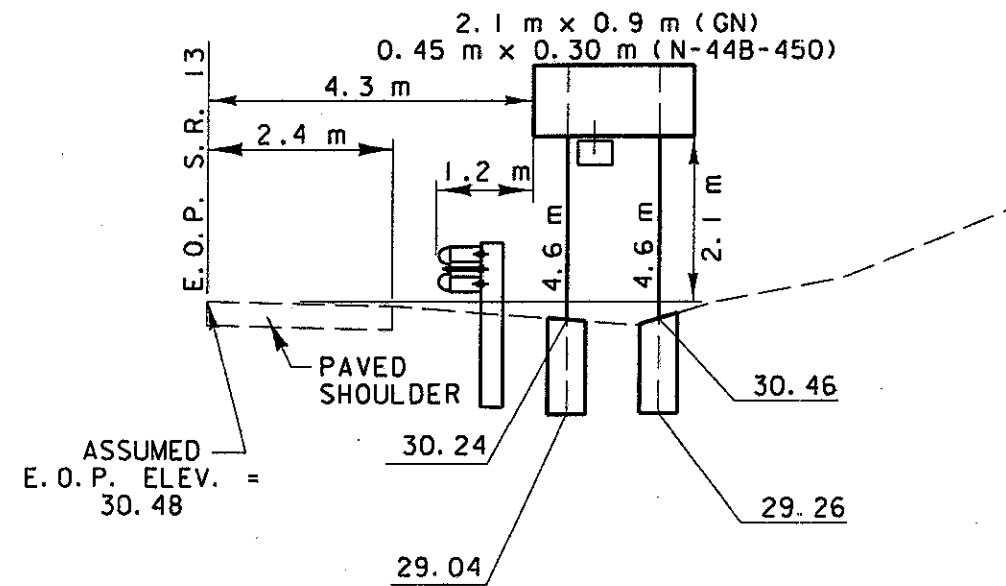
3 STA. 17+880.37, RT S.R. 13, SB  
41 TYPE M, EMBEDMENT DEPTH 1.8 m



10 STA. 18+041.11, RT S.R. 13, SB  
41 TYPE L, EMBEDMENT DEPTH 1.8 m

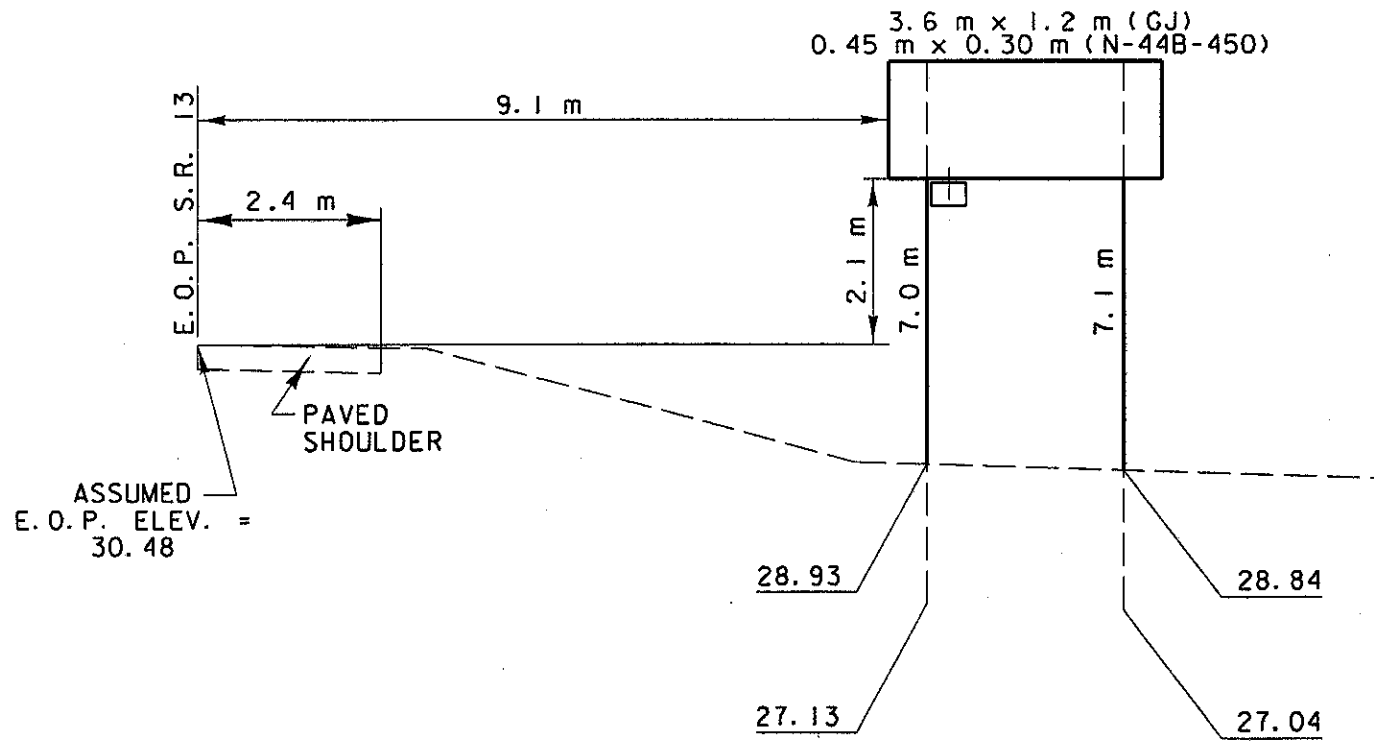


11 STA. 18+219.42 RT S.R. 13, S.B.  
41 TYPE W150 x 13.5

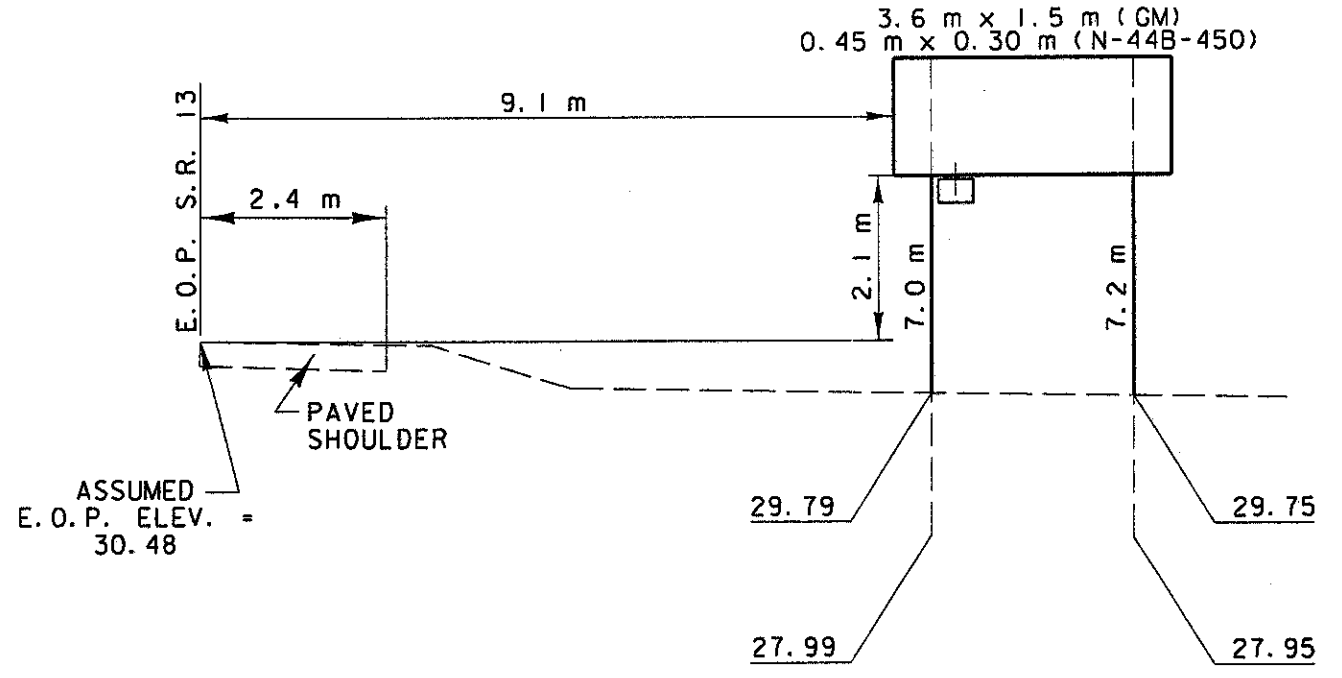


14 STA. 17+525.79, RT S.R. 13, NB  
41 TYPE S100 x 11.5

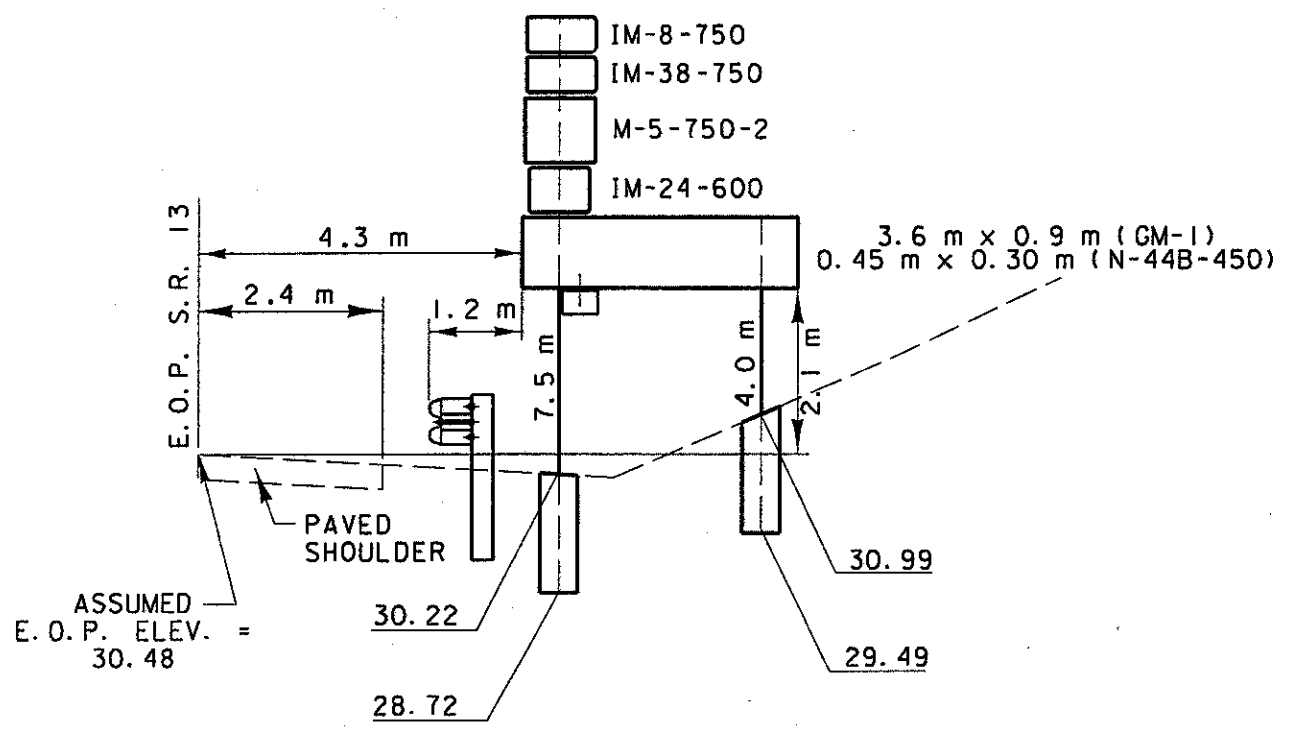
DESIGN FILE: i:\projects\16915\elev.dgn  
 WORKSTATION: mol/eman DATE: 08 SEP 98



19 STA. 18+562.32, RT S.R. 13, NB  
 41 TYPE L, EMBEDMENT DEPTH 1.8 m

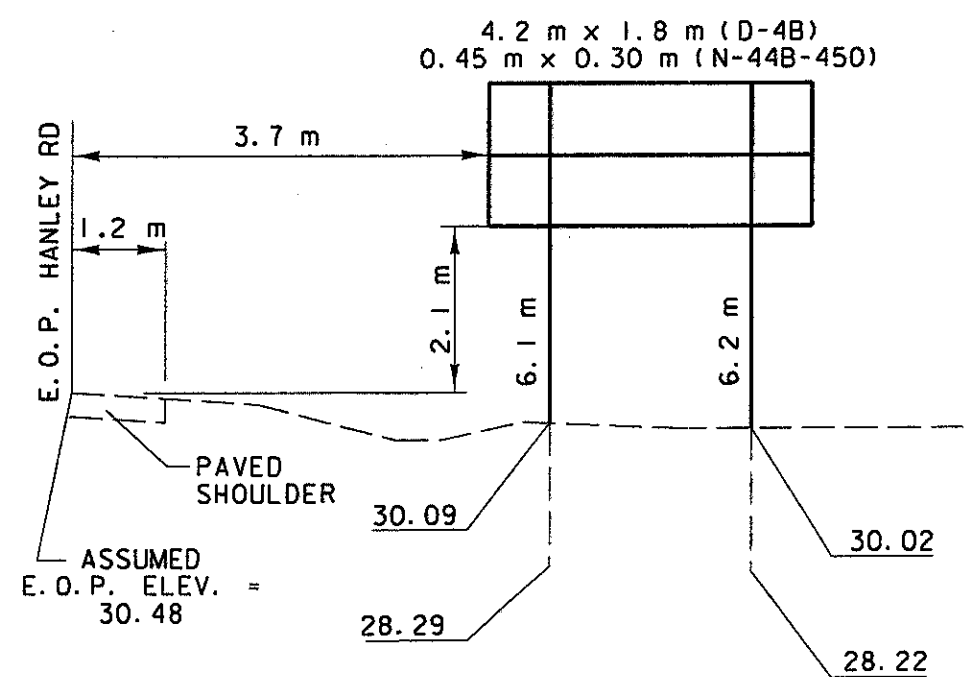


20 STA. 18+624.08, RT S.R. 13, NB  
 41 TYPE M, EMBEDMENT DEPTH 1.8 m



35 STA. 17+575.57 RT S.R. 13, N.B.  
 42 TYPE W150 x 13.5

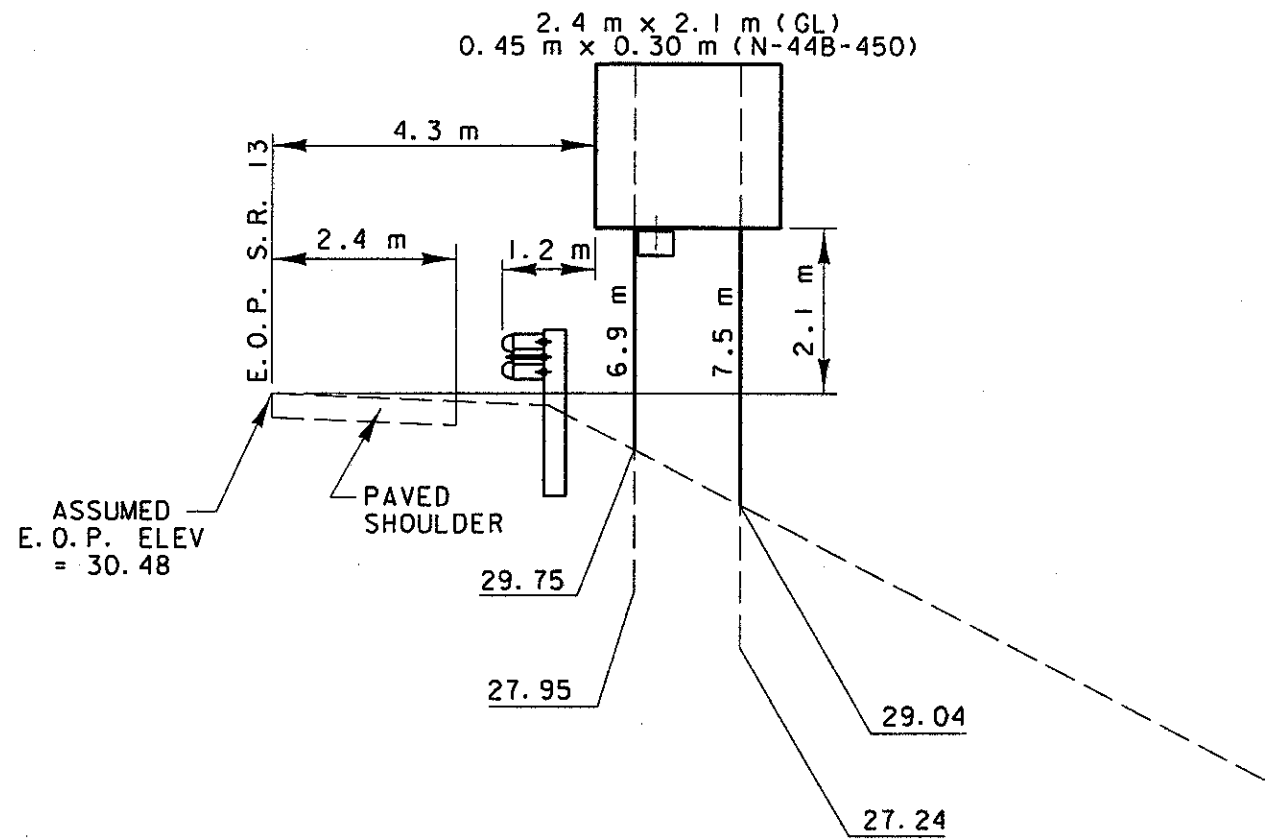
\* - SIGN NO.; \*\* - SHEET NO.



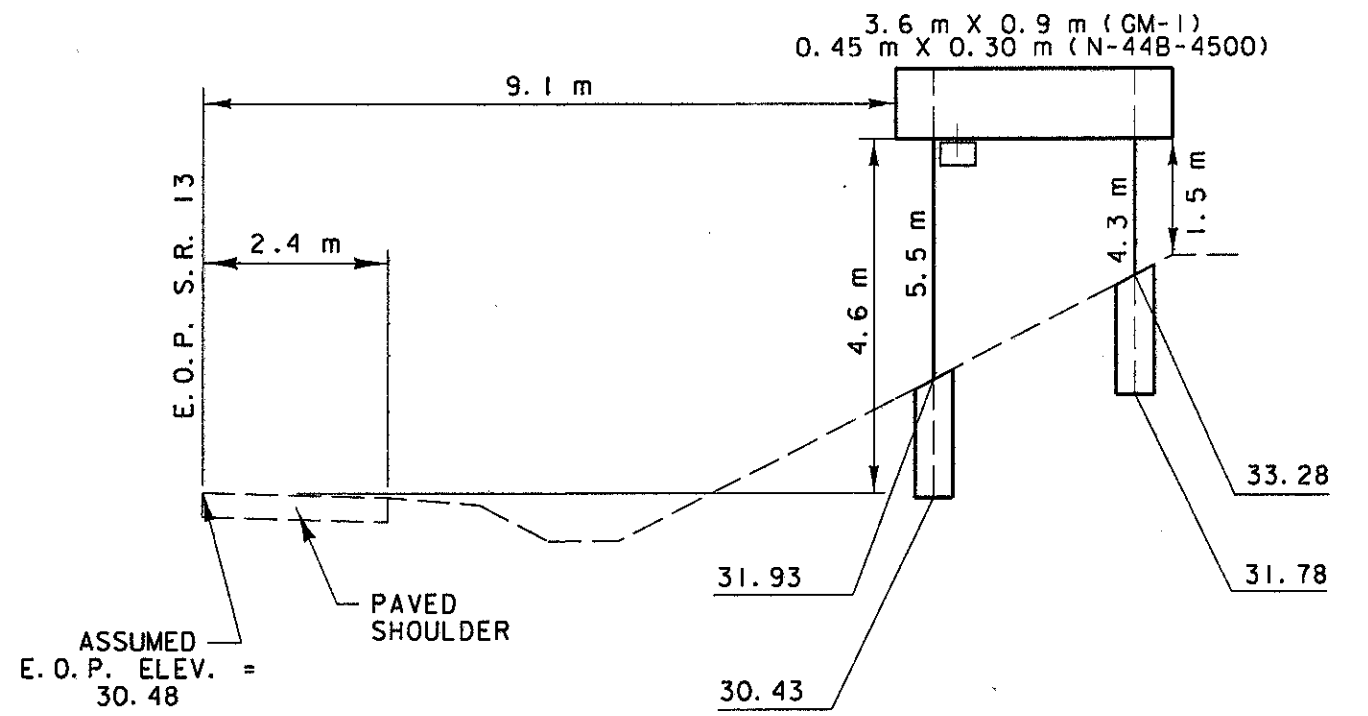
50 STA. 0+253.84, RT, HANLEY ROAD  
 43 TYPE M, EMBEDMENT DEPTH 1.8 m

CALCULATED  
 CHECKED  
 SIGN ELEVATIONS  
 RIC-13-17.445  
 60  
 112

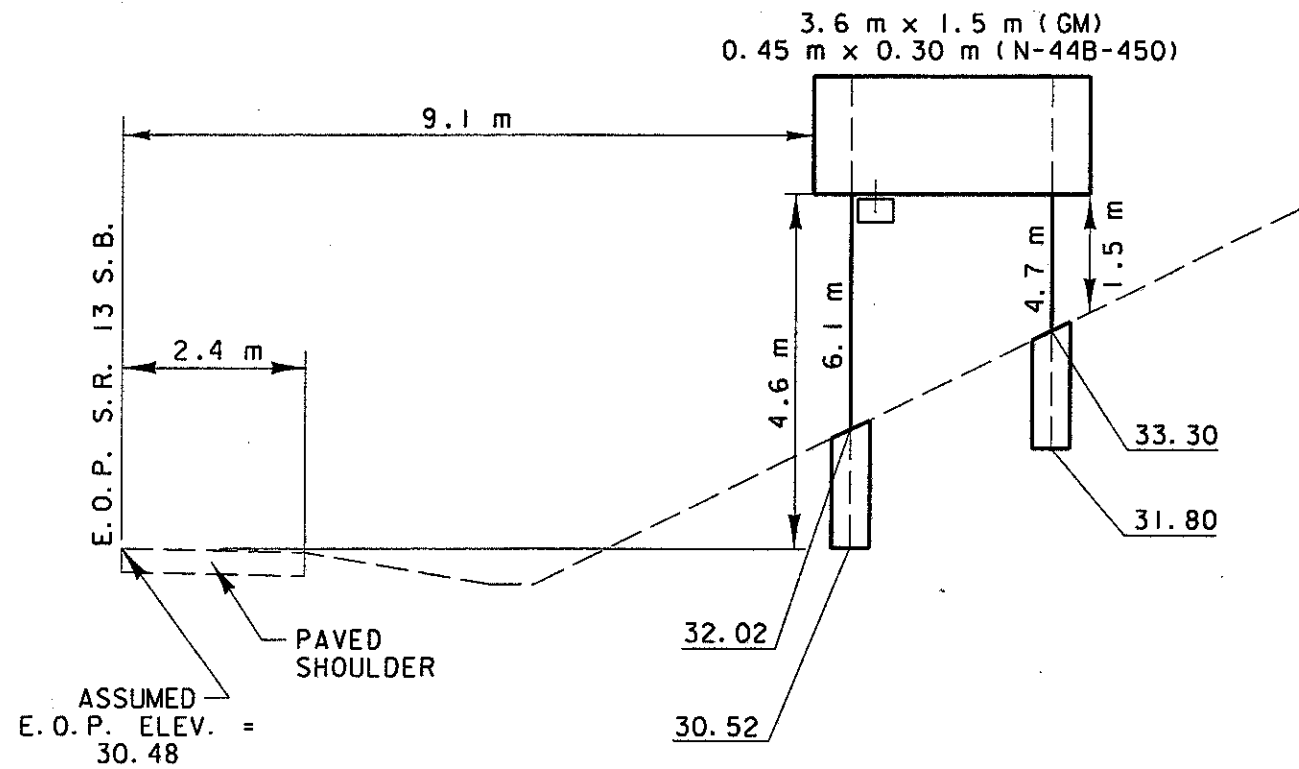
DESIGN FILE: i:\projects\16915\elev.dgn  
 WORKSTATION: mallem  
 DATE: 08 SEP 98



69 STA. 19+171.92 RT. S.R. 13, S.B.  
 45 TYPE M, EMBEDMENT DEPTH 1.8 m

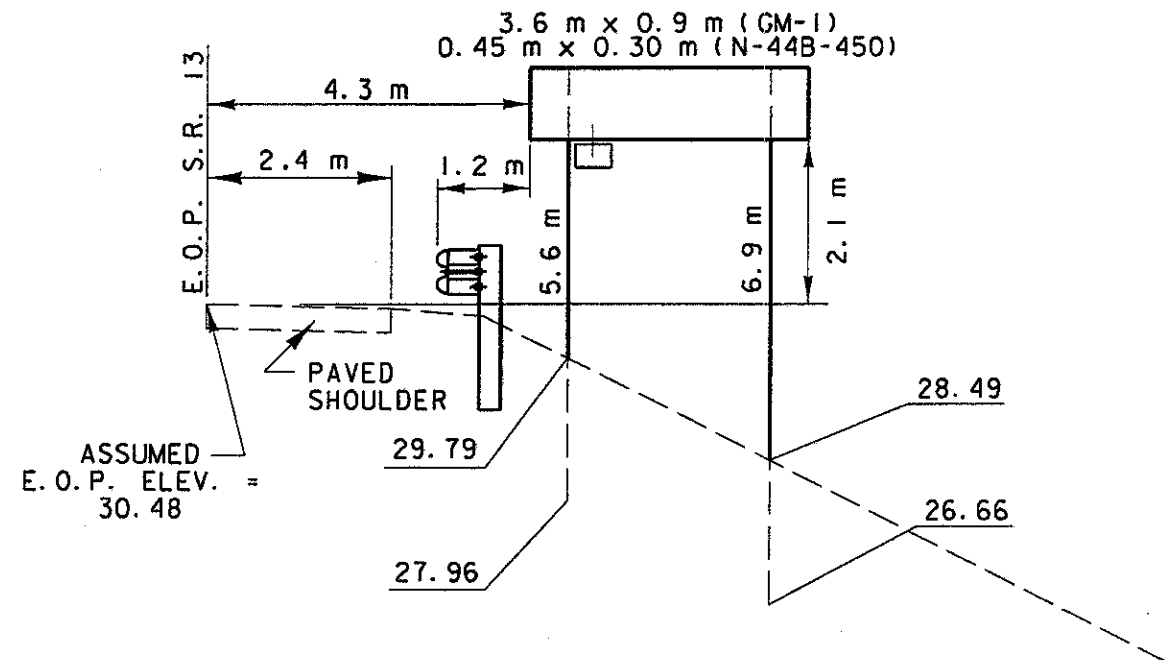


78 STA. 19+565.53 RT S.R. 13, S.B.  
 45 TYPE W150 x 13.5



82 STA. 20+217.80 RT. S.R. 13, S.B.  
 45 TYPE W150 x 13.5

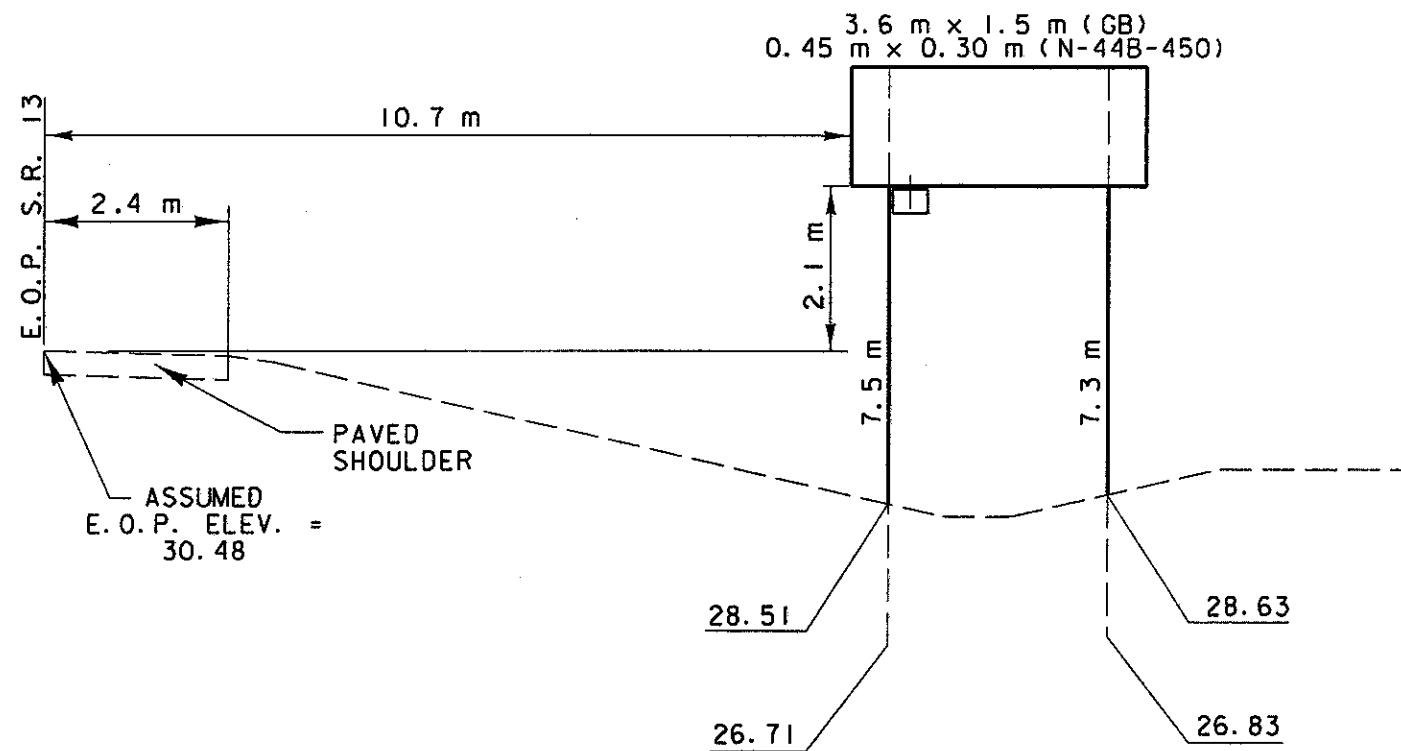
\* SYMBOLOGY  
 \*\* \* - SIGN NO.; \*\* - SHEET NO.



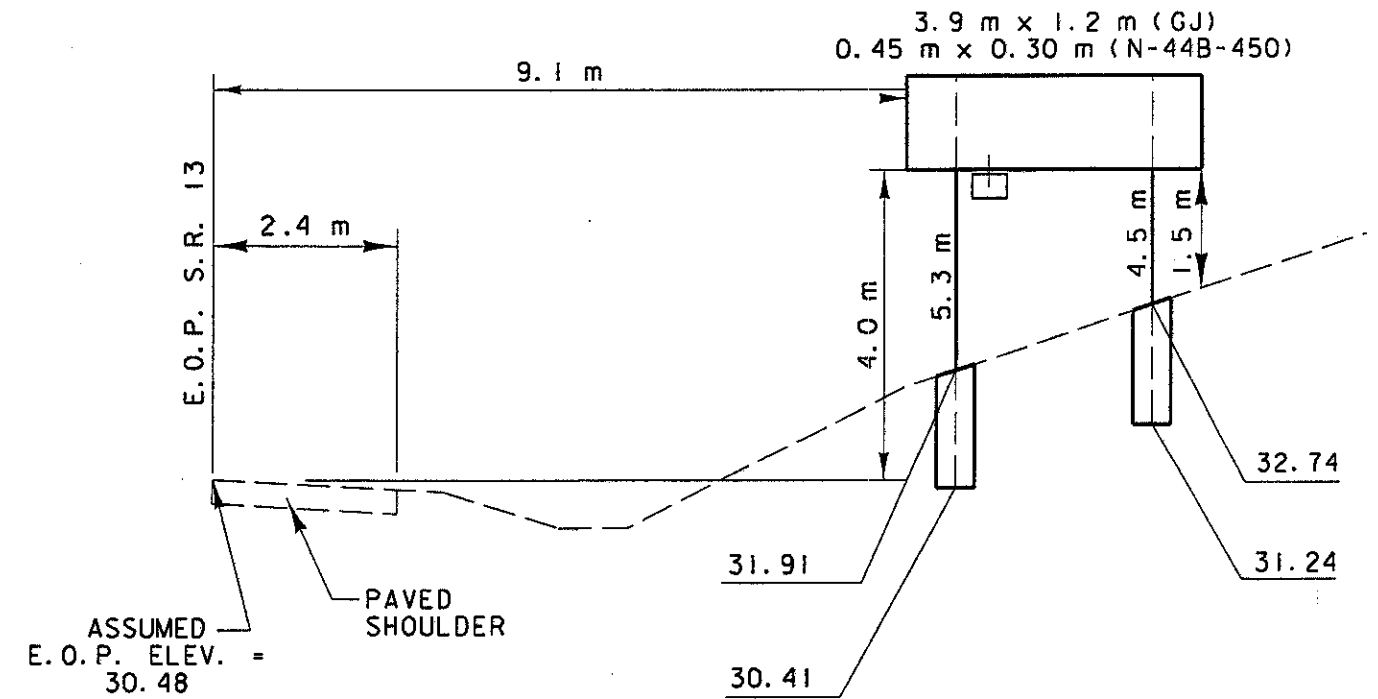
85 STA. 19+260.73, RT S.R. 13, NB  
 45 TYPE M, EMBEDMENT DEPTH 1.8 m

CALCULATED  
 CHECKED  
 SIGN ELEVATIONS  
 RIC-13-17.445  
 61  
 112

DESIGN FILE: I:\projects\16915\elev.dgn  
 WORKSTATION: mol/jaman DATE: 08\_SEP\_98

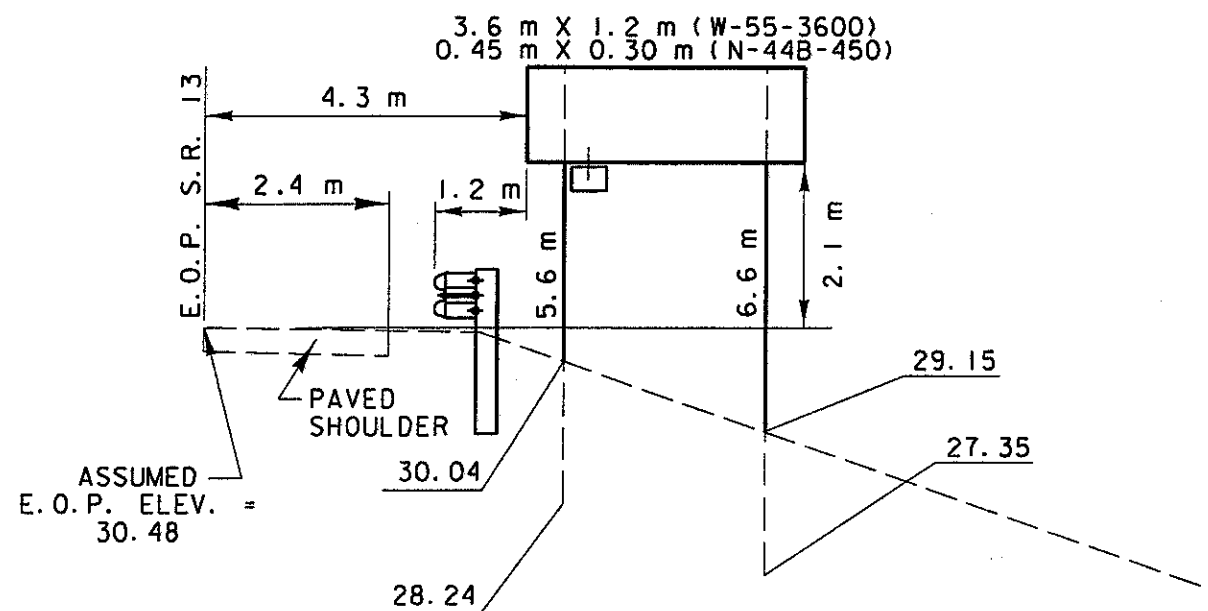


95 STA. 20+177.76, RT S.R. 13, NB  
 45 TYPE M, EMBEDMENT DEPTH 1.8 m

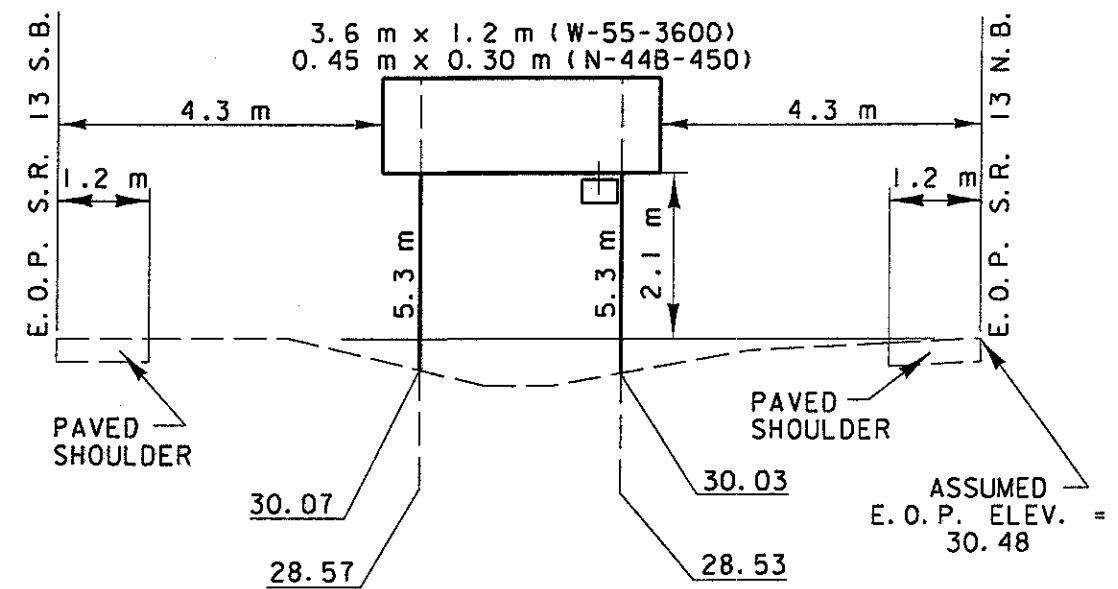


97 STA. 20+601.13 RT S.R. 13, S.B.  
 46 TYPE W150 x 13.5

SYMBOLY  
 \* - SIGN NO.; \*\* - SHEET NO.



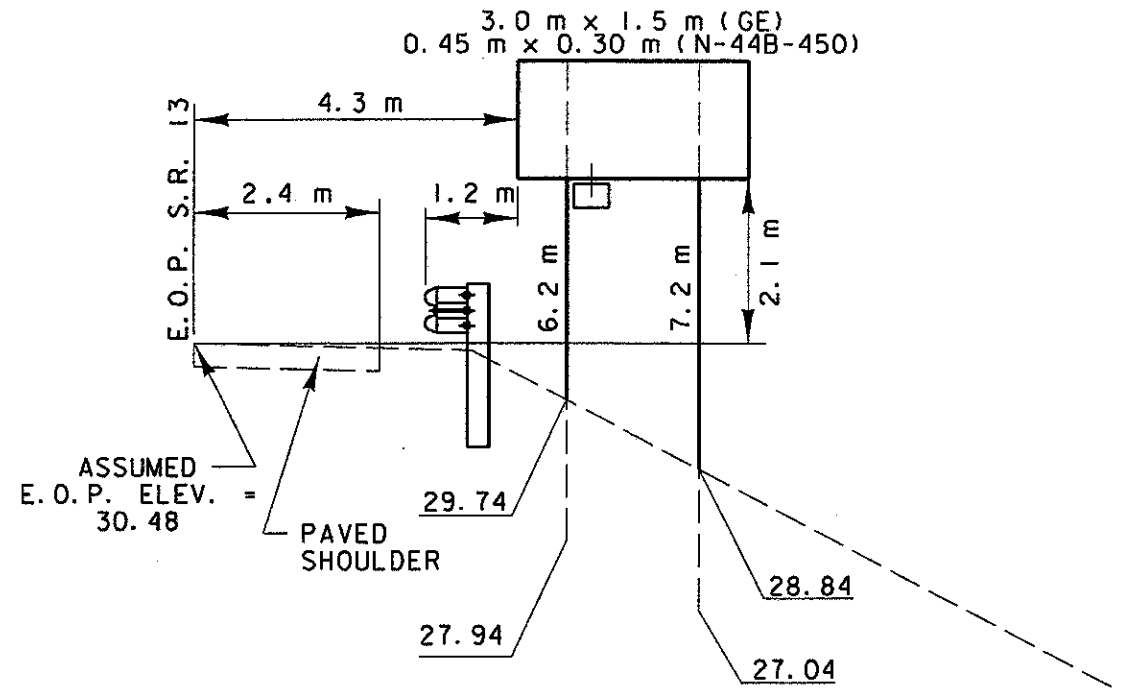
117 STA. 21+494.50, RT S.R. 13, NB  
 46 TYPE M, EMBEDMENT DEPTH 1.8 m



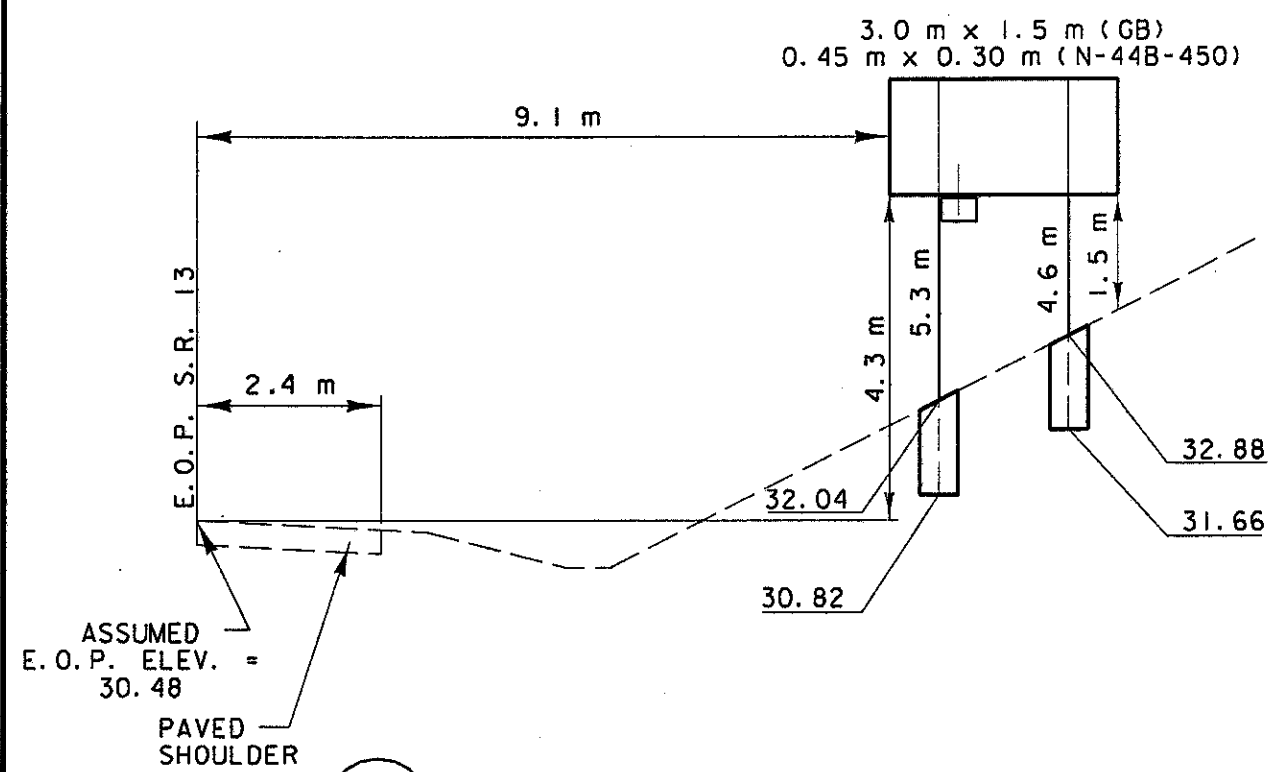
117 STA. 21+494.50 MED S.R. 13, N.B.  
 46 TYPE M, EMBEDMENT DEPTH 1.8 m

CALCULATE  
 CHECKED  
 SIGN ELEVATIONS

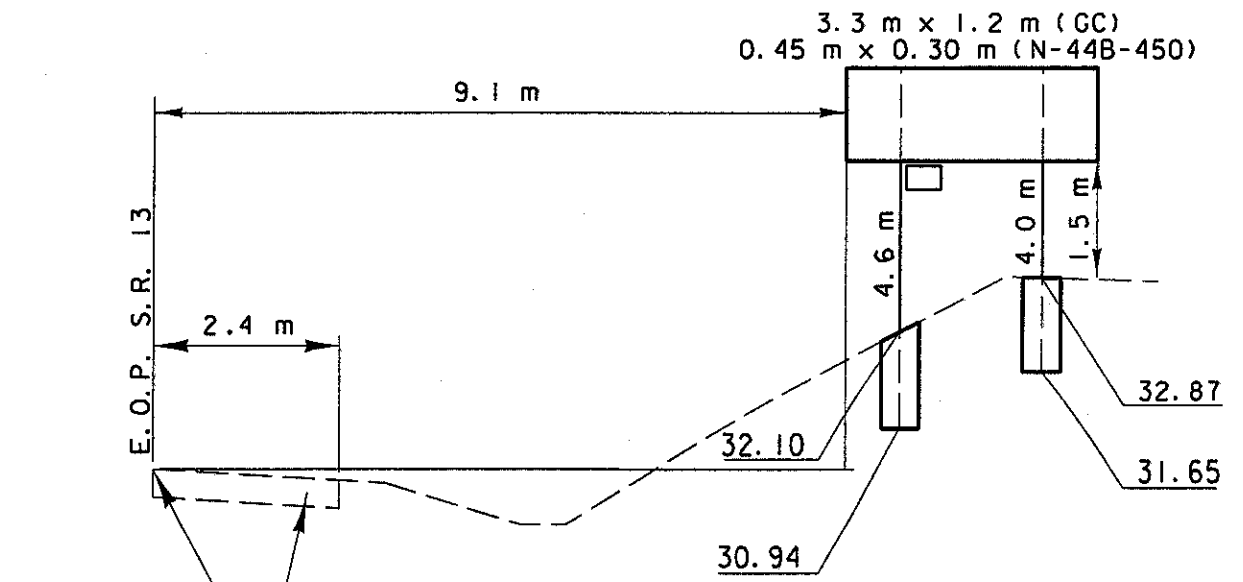
RIC-13-17.445



118 STA. 21+629.00 RT. S.R. 13, N.B.  
46 TYPE M, EMBEDMENT DEPTH 1.8 m

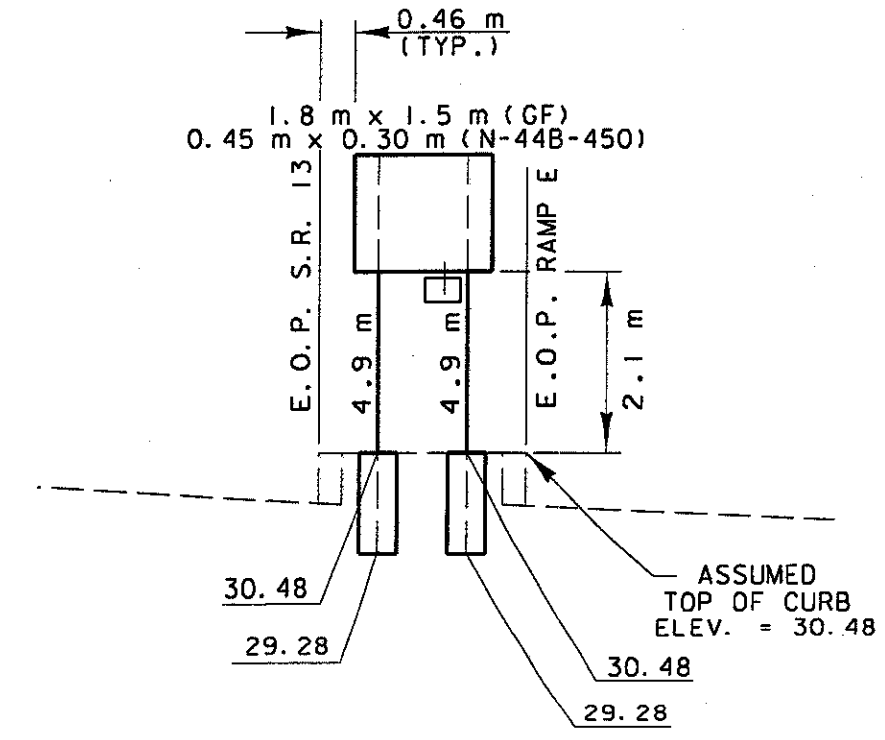


118A STA. 20+982.43, RT S.R. 13, NB  
46 TYPE S100 x 11.5



119A STA. 20+580.10, RT S.R. 13, NB  
46 TYPE S100 x 11.5

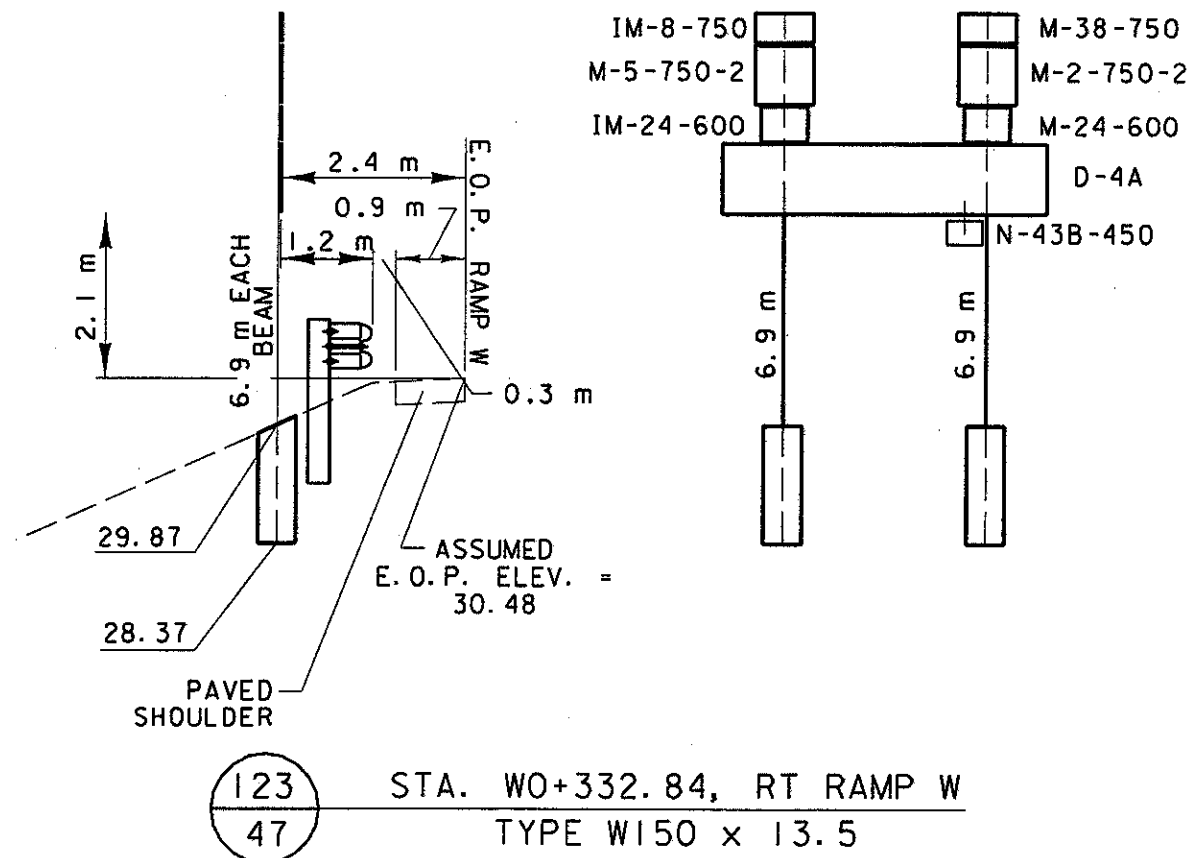
SYMBOLOLOGY  
\* - SIGN NO.; \*\* - SHEET NO.



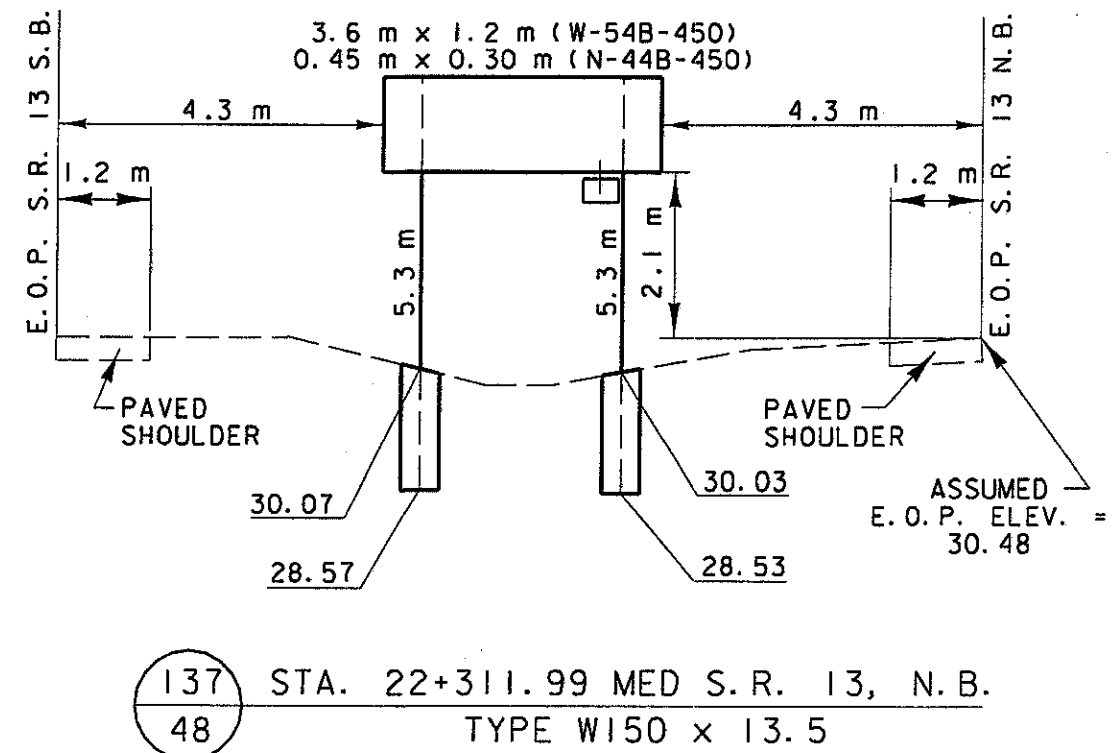
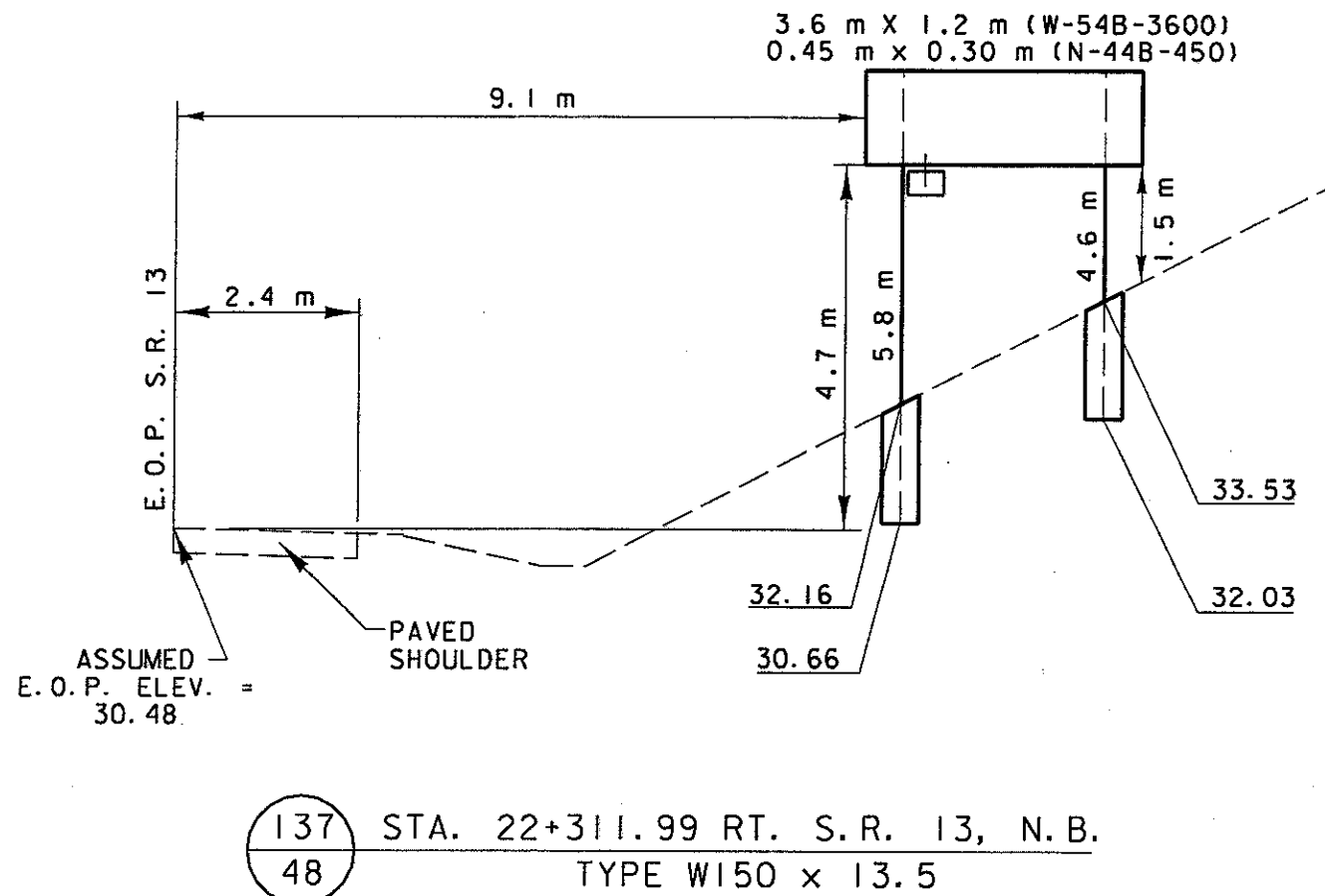
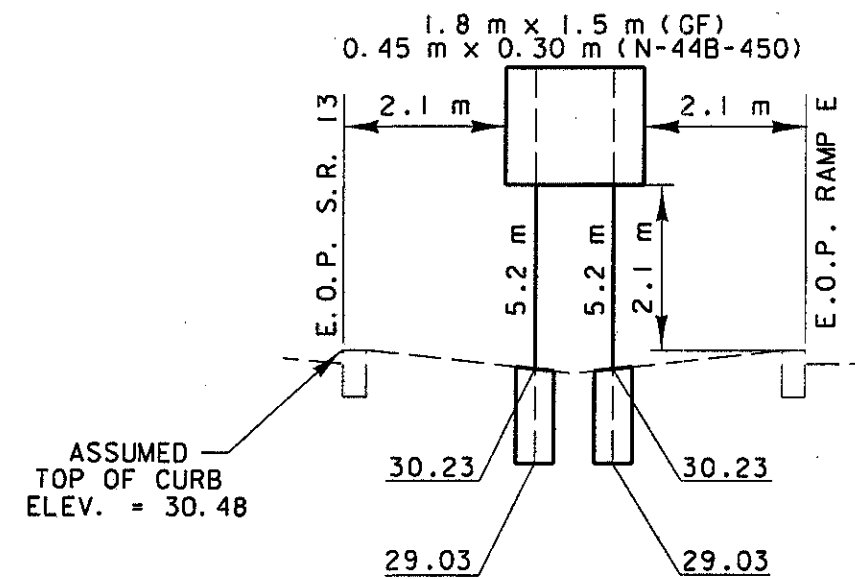
122 STA. 21+805.91 RT. S.R. 13, N.B.  
46 TYPE S100 x 11.5

DESIGN FILE: I:\projects\16915\elev.dgn  
WORKSTATION: mal/eman DATE: 08 SEP 98

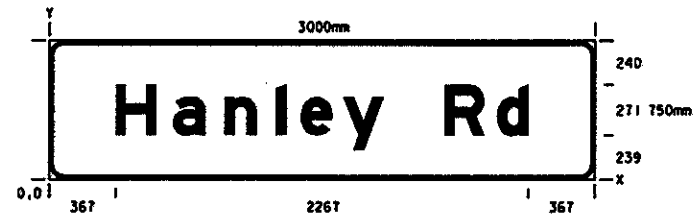
ALONG RAMP W AS SHOWN BELOW, ALSO PLACE  
SIGN 1.2 m. BEHIND GUARDAIL ALONG COOK ROAD.



SYMBOLGY  
\* - SIGN NO.; \*\* - SHEET NO.



**SIGN DETAIL**  
 SCALE 1:25



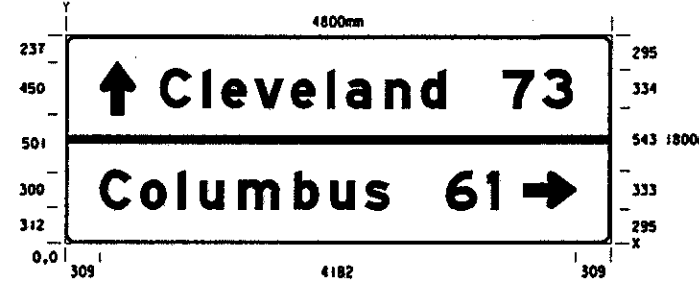
SIGN NUMBER	SIGN 3
WIDTH x HEIGHT	3000mm x 750mm
BORDER WIDTH	25
CORNER RADIUS	76
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID

DIMENSIONS IN mm COORDINATES ARE TO LOWER LEFT CORNERS

Y	LETTER POSITIONS (X)										HT
FONT	H	a	n	l	e	y	R	d			LEN
239											3625
EM	367	681	950	1240	1376	1608	2169	2460			

**SIGN DETAIL**  
 SCALE 1:40



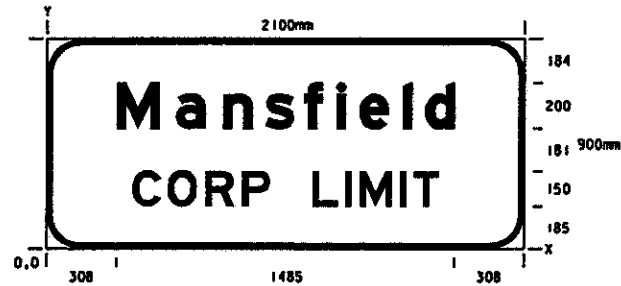
SIGN NUMBER	SIGN 10
WIDTH x HEIGHT	4800mm x 1800mm
BORDER WIDTH	25
CORNER RADIUS	75
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT
ARD4B	310	1113	300	450
ARD4B,270deg	4041	312	450	300

DIMENSIONS IN mm COORDINATES ARE TO LOWER LEFT CORNERS

Y	LETTER POSITIONS (X)										HT	
FONT	C	l	e	v	e	l	a	n	d	7	3	LEN
1171												333
EM	835	1216	1383	1668	1988	2308	2475	2819	3136	3850	4190	3625
295												333
EM	309	669	995	1189	1532	2020	2337	2646	3359	3716		3507

**SIGN DETAIL**  
 SCALE 1:20



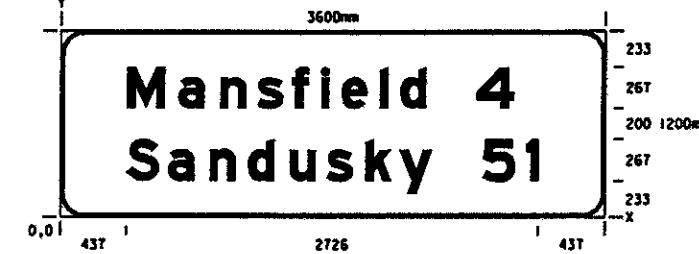
SIGN NUMBER	SIGN 14
WIDTH x HEIGHT	2100mm x 900mm
BORDER WIDTH	25
CORNER RADIUS	150
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT

DIMENSIONS IN mm COORDINATES ARE TO LOWER LEFT CORNERS

Y	LETTER POSITIONS (X)										HT
FONT	M	a	n	s	f	i	e	l	d		LEN
516											200
EM	308	565	771	956	1126	1271	1372	1564	1664		1485
185											150
E	378	531	696	856	1165	1308	1374	1553	1611		1345

**SIGN DETAIL**  
 SCALE 1:30



SIGN NUMBER	SIGN 19
WIDTH x HEIGHT	3600mm x 1200mm
BORDER WIDTH	25
CORNER RADIUS	150
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT

DIMENSIONS IN mm COORDINATES ARE TO LOWER LEFT CORNERS

Y	LETTER POSITIONS (X)										HT
FONT	M	a	n	s	f	i	e	l	d	4	LEN
700											267
EM	441	783	1058	1305	1532	1726	1860	2116	2250	2754	2562
233											267
EM	437	716	991	1245	1520	1767	2021	2245	2798	3083	2726





**SIGN DETAIL**  
SCALE 1:10

SIGN NUMBER	SIGN 83
WIDTH x HEIGHT	1200mm x 200mm
BORDER WIDTH	19
CORNER RADIUS	38
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: YELLOW
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: BLACK/WHITE

SYMBOL	X	Y	WID	HT

Y	LETTER POSITIONS (X)										HT
FONT											LEN
50	S	T	R	A	U	B	R	D			100
D	197	284	365	453	557	649	843	935			207

DIMENSIONS IN mm      COORDINATES ARE TO LOWER LEFT CORNERS

**SIGN DETAIL**  
SCALE 1:30

SIGN NUMBER	SIGN 95
WIDTH x HEIGHT	3600mm x 1500mm
BORDER WIDTH	51
CORNER RADIUS	152
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT

Y	LETTER POSITIONS (X)										HT
FONT											LEN
874	C	o	o	k	R	d					339
EM	669	1055	1357	1689	2330	2693					2221
310	E	X	I	T	M	I	L	E			254
EM	435	677	953	1057	2313	2617	2733	2976			2731
247	1										381
EM	1723										114

DIMENSIONS IN mm      COORDINATES ARE TO LOWER LEFT CORNERS

**SIGN DETAIL**  
SCALE 1:30

SIGN NUMBER	SIGN 97
WIDTH x HEIGHT	3900mm x 1200mm
BORDER WIDTH	25
CORNER RADIUS	150
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT

Y	LETTER POSITIONS (X)										HT
FONT											LEN
700	B	e	l	l	v	i	l	l	e	8	267
EM	414	707	963	1118	1245	1524	1679	1834	1968	3139	2940
233	M	t	V	e	r	n	o	n	2	5	267
EM	414	751	1220	1513	1769	1965	2219	2480	2984	3269	3071

DIMENSIONS IN mm      COORDINATES ARE TO LOWER LEFT CORNERS

**SIGN DETAIL**  
SCALE 1:40

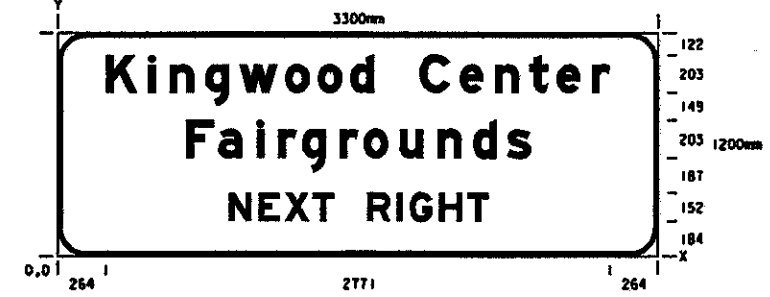
SIGN NUMBER	SIGN 118
WIDTH x HEIGHT	3000mm x 1500mm
BORDER WIDTH	51
CORNER RADIUS	152
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT
AR45	1289	225	421	421

Y	LETTER POSITIONS (X)										HT
FONT											LEN
874	C	o	o	k	R	d					339
EM	389	755	1057	1389	2030	2393					2221

DIMENSIONS IN mm      COORDINATES ARE TO LOWER LEFT CORNERS

**SIGN DETAIL**  
 SCALE 1:25



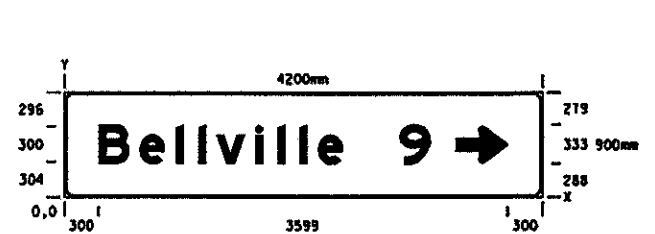
SIGN NUMBER	SIGN 29A
WIDTH x HEIGHT	3300mm x 1200mm
BORDER WIDTH	25
CORNER RADJUS	152
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT

DIMENSIONS IN mm COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)													HT			
EM														LEN			
875	K	I	N	G	W	O	O	D	C	E	N	T	E	R			203
EM	264	494	612	805	995	1243	1423	1603	1987	2207	2401	2590	2739	2934			2771
523	F	A	I	R	G	R	O	U	N	D	S						203
EM	702	879	1088	1206	1338	1547	1679	1877	2087	2280	2468						1897
184	N	E	X	T	R	I	G	H	T								152
EM	936	1098	1243	1398	1701	1864	1933	2096	2251								1429

**SIGN DETAIL**  
 SCALE 1:40



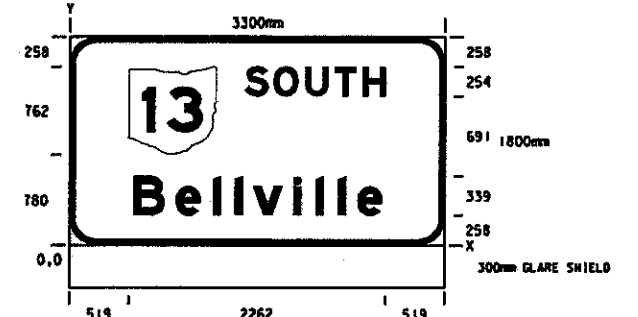
SIGN NUMBER	SIGN 123
WIDTH x HEIGHT	4200mm x 900mm
BORDER WIDTH	25
CORNER RADIUS	75
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT
ARD4B,270deg	3450	304	450	300

DIMENSIONS IN mm COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)													HT			
EM														LEN			
288	B	E	L	L	V	I	L	L	I	E	9						333
EM	300	665	985	1179	1338	1686	1880	2074	2241	2955							2924

**SIGN DETAIL**  
 SCALE 1:40



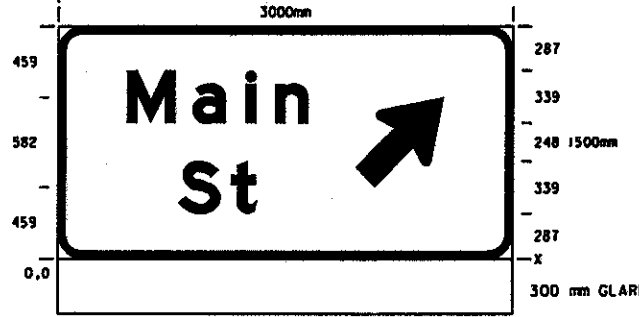
SIGN NUMBER	SIGN30
WIDTH x HEIGHT	3300mm x 1800mm
BORDER WIDTH	51
CORNER RADIUS	229
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT
MI.T.2	519	780	762	762

DIMENSIONS IN mm COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)													HT			
EM														LEN			
1288	S	O	U	T	H												254
EM	1535	1794	2074	2333	2575												1246
258	B	E	L	L	V	I	L	L	E								339
EM	561	932	1258	1455	1616	1971	2168	2365	2535								254
																	2192

**SIGN DETAIL**  
 SCALE 1:30



SIGN NUMBER	SIGN30
WIDTH x HEIGHT	3000mm x 1500mm
BORDER WIDTH	51
CORNER RADIUS	152
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT
AR45	1965	459	581	581

DIMENSIONS IN mm COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)													HT			
EM														LEN			
874	M	A	I	N													339
EM	454	889	1238	1435													254
287	S	T															339
EM	793	1140															254
																	2192



**REFERENCES SHALL BE MADE TO STANDARD DRAWINGS:**

BP-3. 1M	DATED	10/28/94	MT-35. 10M	DATED	1/30/95
RM-4. 2M	DATED	10/21/97	MT-35. 11M	DATED	1/30/95
DM-1. 1M	DATED	10/21/97	MT-95. 30M	DATED	4/25/94
AS-1-81M	DATED	10/25/94	MT-95. 40M	DATED	4/25/94
EXJ-4-87M	DATED	2/18/97	MT-96. 11M	DATED	1/30/95
PCB-91M	DATED	3/20/95	MT-96. 20M	DATED	1/30/95
			MT-96. 25M	DATED	1/30/95
			MT-97. 10M	DATED	4/25/94
			MT-101. 60M	DATED	4/25/94

**AND TO SUPPLEMENTAL SPECIFICATIONS:**

815	DATED	5/30/96
842	DATED	1/6/99
846	DATED	9/9/97
847	DATED	6/30/98
899	DATED	10/21/98
910	DATED	7/28/98
927	DATED	6/14/95
954	DATED	9/9/97

**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 OBSERVATION 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. THE ORIGINAL CONSTRUCTION PLANS OF THE EXISTING BRIDGE ARE AVAILABLE UPON REQUEST AT THE DISTRICT 3 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, ASHLAND, OHIO.

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

**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 DATA:**

CONCRETE CLASS C - COMPRESSIVE STRENGTH 27.5 MPa

CONCRETE CLASS S - COMPRESSIVE STRENGTH 31.0 MPa

REINFORCING STEEL - ASTM A615M, A616M, A617M - GRADE 400 MINIMUM YIELD STRENGTH 400 MPa

STRUCTURAL STEEL - ASTM A36M - YIELD STRENGTH 250 MPa (UNLESS NOTED OTHERWISE)

**EXISTING PAINT SYSTEM:**

THE EXISTING PAINT SYSTEM ON THE STRUCTURES TO BE PAINTED CONTAINS LEAD AND CHROMIUM

**PROPOSED PAINT COLOR:**

THE COLOR OF THE URETHANE GLOSS FINISH COAT SHALL BE BLUE, MEETING FEDERAL STANDARD NUMBER 15065

**PROTECTION OF TRAFFIC:**

PRIOR TO DEMOLITION OF ANY PORTION OF THE SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC UNDER THE STRUCTURE TO THE ENGINEER FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:**

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE EXISTING CURBS AND ABUTMENTS ON STRUCTURE RIC-13-22788 L&R (S. L. K.)

THE REMOVAL LINES SHALL BE SAWCUT 25 mm DEEP.

THE CONCRETE SHALL BE REMOVED BY A HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND A HYDRAULIC SPLITTER USED AS PER MANUFACTURER'S RECOMMENDATIONS. SIXTEEN (16) kg AND SEVEN (7) kg JACKHAMMERS SHALL BE USED FOR THE FINAL FINISH WORK. A HOE RAM, CONCRETE CRUSHER, OR OTHER SIMILAR DEVICES SHALL NOT BE PERMITTED TO DO ANY OF THE WORK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL TO BE PRESERVED. IF THE EXISTING REINFORCING STEEL DESIGNATED FOR PRESERVATION IS DAMAGED DURING REMOVAL OPERATIONS, DOWELED REINFORCING STEEL SHALL BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 202 - REMOVAL MISC.: ROCKER:**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO REMOVE THE EXISTING R-340 ROCKER ASSEMBLIES, EXCEPT FOR THE TOP PLATES, AT THE REAR AND FORWARD ABUTMENTS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 202 - REMOVAL MISC.: ROCKER WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 202 - REMOVAL MISC.: SLIDING BEARING:**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO REMOVE THE EXISTING SLIDING BEARINGS AT THE REAR AND FORWARD ABUTMENTS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 202 - REMOVAL MISC.: SLIDING BEARING WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 202 - REMOVAL MISC.: STRIP SEAL:**

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING ELASTOMERIC STRIP SEAL AT THE EXPANSION JOINTS INDICATED IN THE PLAN.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 202 - REMOVAL MISC.: STRIP SEAL WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 842 - CLASS C CONCRETE, MISC.: PIER ENCASEMENT:**
**ITEM 842 - CLASS C CONCRETE, ABUTMENT, AS PER PLAN:**

THESE ITEMS SHALL BE USED AT THE ABUTMENTS AND PIERS AS DETAILED IN THE PLAN.

THESE ITEMS SHALL INCLUDE ALL CONCRETE, REINFORCEMENT, DOWEL HOLES, AND ALL INCIDENTALS NECESSARY TO COMPLETE THE DETAILS IN THE PLAN.

THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE. REINFORCING STEEL SHALL BE GRADE 400, EPOXY COATED. DOWEL HOLES SHALL BE AS PER 510 EXCEPT THE HOLES SHALL BE CORE DRILLED AND EPOXY MORTAR SHALL BE USED.

NOT MORE THAN 48 HOURS PRIOR TO PLACING THE CONCRETE, ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND, INCLUDING EXPOSED REINFORCING AND STRUCTURAL STEEL SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

IMMEDIATELY BEFORE THE CONCRETE IS PLACED ALL ADJACENT CONCRETE SURFACES SHALL BE COVERED WITH A THIN LAYER OF BONDING GROUT. THE BONDING GROUT SHALL CONSIST OF EQUAL PARTS BY VOLUME OF PORTLAND CEMENT AND SAND, MIXED WITH ENOUGH WATER TO FORM A SLURRY OF PAINT-LIKE CONSISTENCY WHICH SHALL BE SUCH AS TO ALLOW IT TO BE APPLIED WITH A STIFF BRUSH OR BROOM TO EXISTING CONCRETE SURFACES IN A THIN EVEN COATING THAT WILL NOT RUN OR PUDDLE. THE GROUT SHALL BE APPLIED FOR A SHORT DISTANCE IN ADVANCE OF THE PLACEMENT OF THE CONCRETE AND SHALL NOT BE DRY.

CURING SHALL BE IN ACCORDANCE WITH SS 842.14, METHOD A WATER CURING.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 842 WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

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

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE THE EXISTING STRUCTURES FOR REPLACEMENT OF THE ABUTMENT BEARINGS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTED JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25 mm, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

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SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF A BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25 mm OR LESS.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FROM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE 'CONCRETE REPAIR BY EPOXY INJECTION'. COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516- JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

**ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS:**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO INSTALL A NEW ELASTOMERIC STRIP SEAL IN THE EXISTING STEEL RETAINERS AT THE EXPANSION JOINTS INDICATED IN THE PLANS.

THE INTERNAL PORTION OF THE EXISTING STEEL RETAINERS SHALL BE ABRASIVE BLASTED PRIOR TO INSTALLATION OF THE NEW STRIP SEAL.

THE PROPOSED STRIP SEAL SHALL BE THE SAME SIZE AND TYPE AND SHALL BE FROM THE SAME MANUFACTURER AS THE EXISTING SEAL.

SEE STANDARD DRAWING EXJ-4-87M (SHEET 5/5) FOR ADDITIONAL NOTES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER METER FOR ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL:**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO INSTALL A NEW STEEL RETAINER AND ELASTOMERIC STRIP SEAL TO THE LIMITS SPECIFIED IN THE PLAN. NEW STEEL ANGLES, BARS, AND PLATES REQUIRED TO CONSTRUCT THE EXPANSION JOINT AS SHOWN IN THE PLAN ARE INCLUDED IN THIS ITEM.

THE PROPOSED STEEL RETAINER AND STRIP SEAL SHALL BE THE SAME SIZE AND TYPE AND SHALL BE FROM THE SAME MANUFACTURER AS THE EXISTING STEEL RETAINER AND STRIP SEAL.

SEE STANDARD DRAWING EXJ-4-87M (SHEET 5/5) FOR ADDITIONAL NOTES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER METER FOR ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 516 - BEARING DEVICE, MISC.: ROCKER:**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO INSTALL NEW R-340 ROCKER ASSEMBLIES AT THE REAR AND FORWARD ABUTMENTS, AS PER DETAILS IN THE PLAN AND STANDARD DRAWING RB-1-55M.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 516 - BEARING DEVICE, MISC.: ROCKER WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 516 - BEARING DEVICE, MISC.: SLIDING BEARING:**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO INSTALL NEW SLIDING BEARINGS AT THE REAR AND FORWARD ABUTMENTS, AS PER DETAILS IN THE PLAN AND THE SUPPLEMENTAL SPECIFICATION.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 516 - BEARING DEVICE, MISC.: SLIDING BEARING WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 517 - RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL), AS PER PLAN:**

THIS ITEM SHALL BE USED ON STRUCTURE RIC-13-22015 (S.L.K.) TO CONSTRUCT NEW BRIDGE RAILING AS PER DETAILS IN THE PLAN.

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO CONSTRUCT ITEM 517 -RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL), AS PER PLAN. THIS ITEM ALSO INCLUDES ALL SURFACE PREPARATION, REINFORCEMENT, CONCRETE, DOWEL HOLES, DEFLECTION JOINT SAWCUTS, CAULKING MATERIAL, AND ALL INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

REINFORCING STEEL SHALL BE GRADE 400, EPOXY COATED. DOWEL HOLES SHALL BE AS PER 510 EXCEPT THE HOLES SHALL BE CORE DRILLED AND EPOXY MORTAR SHALL BE USED. CONCRETE SHALL BE CLASS S CONCRETE AS PER CMS 511 USING THE MIX DESIGN AND PLACEMENT SPECIFICATIONS IN THE GENERAL NOTE BELOW.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER METER FOR ITEM 517 - RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL), AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN:  
ITEM 517 - RAILING FACED, AS PER PLAN:**

**I. GENERAL**

THESE ITEMS SHALL BE USED ON STRUCTURE RIC-13-22788 L&R (S.L.K.)

THESE ITEMS SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO CONSTRUCT ITEM 517 -RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN AND ITEM 517 -RAILING FACED, AS PER PLAN. THESE ITEMS ALSO INCLUDE ALL SURFACE PREPARATION, REINFORCEMENT, CONCRETE, DOWEL HOLES, DEFLECTION JOINT SAWCUTS, CAULKING MATERIAL, AND ALL INCIDENTALS NECESSARY TO COMPLETE THE ITEMS.

REINFORCING STEEL SHALL BE GRADE 400, EPOXY COATED. DOWEL HOLES SHALL BE AS PER 510 EXCEPT THE HOLES SHALL BE CORE DRILLED AND EPOXY MORTAR SHALL BE USED. CONCRETE SHALL BE CLASS S CONCRETE AS PER SS 842 USING THE MIX DESIGN BELOW.

**SLIPFORMING SHALL NOT BE PERMITTED.**

FOR ITEM 517 - RAILING FACED, AS PER PLAN:

NOT MORE THAN 48 HOURS PRIOR TO PLACING THE CONCRETE, ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND, INCLUDING EXPOSED REINFORCING AND STRUCTURAL STEEL SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

IMMEDIATELY BEFORE THE CONCRETE IS PLACED ALL ADJACENT CONCRETE SURFACES SHALL BE COVERED WITH A THIN LAYER OF BONDING GROUT. THE BONDING GROUT SHALL CONSIST OF EQUAL PARTS BY VOLUME OF PORTLAND CEMENT AND SAND, MIXED WITH ENOUGH WATER TO FORM A SLURRY OF PAINT-LIKE CONSISTENCY WHICH SHALL BE SUCH AS TO ALLOW IT TO BE APPLIED WITH A STIFF BRUSH OR BROOM TO EXISTING CONCRETE SURFACES IN A THIN EVEN COATING THAT WILL NOT RUN OR PUDDLE. THE GROUT SHALL BE APPLIED FOR A SHORT DISTANCE IN ADVANCE OF THE PLACEMENT OF THE CONCRETE AND SHALL NOT BE DRY.

IF DURING PLACEMENT OF THE PARAPET, THE CONCRETE DECK OVERLAY IS DAMAGED, IT SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER.

ALL OTHER PROVISIONS OF SUPPLEMENTAL SPECIFICATION 842 SHALL REMAIN IN EFFECT EXCEPT AS NOTED BELOW.

**II. PROPORTIONING**

IN LIEU OF THE PROPORTIONING SPECIFIED IN SS 899 AND SS 842, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC METER FOR CONCRETE. THE COARSE AGGREGATE SHALL BE #8 LIMESTONE. (QUANTITIES ARE PER CUBIC METER):

FINE	AGGREGATE COARSE	TOTAL	CEMENT CONTENT	WATER/CEMENT RATIO
944 kg	669 kg	1613 kg	424 kg	0.40

AIR CONTENT IS 8% PLUS OR MINUS 2%.

**III. CEMENT**

THE CEMENT SHALL MEET ASTM C 150 TYPE II.

**IV. GENERAL PROVISIONS**

A HIGH RANGE WATER REDUCER (SUPERPLASTICIZER) SHALL BE USED. THE DOSAGE RATE WILL BE DETERMINED BY THE CONTRACTOR BASED ON THE MANUFACTURER'S RECOMMENDATION TO ACHIEVE THE DESIRED WORKABILITY LEVEL.

THE HIGH RANGE WATER REDUCER SHALL CONFORM TO CMS 705.12, ASTM C 494 TYPE F AND SHALL NOT CONTAIN CALCIUM CHLORIDE.

TYPE A OR D CHEMICAL ADMIXTURE CONFORMING TO CMS 705.12, ASTM C 494 AND NOT CONTAINING CALCIUM CHLORIDE SHALL BE ADDED TO THE CONCRETE AT THE PLANT.

ALL ADDITIVES INCLUDING AIR ENTRAINMENT, SHALL BE MANUFACTURED BY THE SAME COMPANY AND CERTIFIED AS COMPATIBLE BY THE MANUFACTURING COMPANY.

THE CEMENT CONTENT SHALL BE MAINTAINED AND A MAXIMUM WATER-CEMENT RATIO OF 0.40 SHALL NOT BE EXCEEDED. THE SLUMP OF THE UNPLASTICIZED CONCRETE DELIVERED TO THE JOB SITE SHALL BE 38 mm PLUS OR MINUS 13 mm.

THE SUPERPLASTICIZING ADMIXTURE SHALL BE ADDED AT THE JOB SITE AND MIXED A MINIMUM OF FIVE (5) MINUTES. AFTER THE SUPERPLASTICIZER HAS BEEN ADDED, THE SLUMP SHALL BE 150 mm PLUS OR MINUS 25 mm. THE CONTRACTOR SHALL FURNISH A VOLUMERIC DISPENSER FOR THE SUPER-PLASTICIZER.

CONCRETE MIXTURES CONTAINING A HIGH RANGE WATER REDUCER SHALL MEET THE SAME REQUIREMENTS FOR ENTRAINED AIR CONTENT, MINIMUM STRENGTH, AND MAXIMUM WATER-CEMENT RATIO AS REQUIRED FOR THE RESPECTIVE GRADE OF CONCRETE WITHOUT A HIGH RANGE WATER REDUCER.

SAMPLING AND TESTING FOR ENTRAINED AIR CONTENT AND MAXIMUM STRENGTH SHOULD BE TAKEN FROM THE CONCRETE THAT HAS BEEN TREATED WITH A HIGH RANGE WATER REDUCER.

ALL INITIAL TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THESE TESTS SHALL BE PERFORMED BY AN EXPERIENCED CONCRETE TECHNICIAN. THIS INFORMATION SHALL BE PROVIDED TO THE PROJECT ENGINEER. THE PROJECT ENGINEER SHALL MAKE ONLY THE FINAL TESTS AS THE CONCRETE IS PLACED.

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STRUCTURAL GENERAL NOTES

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V. PLACEMENT

IF PLACEMENT OF THE CLASS S CONCRETE IS TO BE MADE AT NIGHT, THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR THE WORK AREA AT LEAST FIFTEEN (15) CALENDAR DAYS IN ADVANCE AND RECEIVE WRITTEN APPROVAL FROM THE ENGINEER BEFORE PLACING THE CONCRETE. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

VI. CURING

CURING SHALL BE IN ACCORDANCE WITH SS 842.14, METHOD A WATER CURING.

VII. BASIS OF PAYMENT

PAYMENT FOR ALL OF THE ABOVE WORK SHALL BE AT THE UNIT PRICE BID PER METER FOR ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN OR ITEM 517 - RAILING FACED, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:**

THE POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.

EXCAVATION AND BACKFILL REQUIRED FOR THIS ITEM SHALL BE INCIDENTAL TO THIS ITEM.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE PRICE BID PER LUMP SUM FOR ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 519 - PATCHING CONCRETE STRUCTURE:**

THIS ITEM SHALL BE USED ON STRUCTURES RIC-13-22015 (S.L.K.), RIC-13-22257 (S.L.K.), RIC-13-22772E (S.L.K.), AND RIC-13-22788 L&R (S.L.K.).

WITHIN TWENTY-FOUR (24) HOURS BEFORE PLACING CONCRETE, THE EXISTING SURFACES AGAINST WHICH THE CONCRETE SHALL BE PLACED, AND EXISTING REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING. ABRASIVE BLASTING SHALL BE AT LEAST EQUAL TO SA2 "THOROUGH BLAST CLEANING" AS OUTLINED IN ASTM D-2200 OR SSPC-SP6. ALL LOOSE AND DETERIORATED CONCRETE AND CALCIUM DEPOSITS SHALL BE REMOVED WITH HAND TOOLS BEFORE ABRASIVE BLASTING.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER FOR ITEM 519- PATCHING CONCRETE STRUCTURE WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 614 - MAINTAINING TRAFFIC:**

**FOR STRUCTURE RIC-13-22015 (S.L.K.):**

THE CONTRACTOR MAY CLOSE ONE LANE UNDER THE STRUCTURE AS PER STANDARD DRAWING MT-95.30M.

THE CONTRACTOR MAY CLOSE ONE LANE ON THE STRUCTURE AS PER STANDARD DRAWING MT-97.10M.

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL OTHER TIMES EXCEPT THAT THROUGH TRAFFIC ON THIS STRUCTURE SHALL HAVE A SIGNALIZED CLOSURE AS SHOWN ON SHEET NO. 85, 86 FOR A MAXIMUM OF 90 CONSECUTIVE CALENDAR DAYS (TOTAL BOTH PHASES). THE 90 CONSECUTIVE DAYS SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE (SECTION 108) AND FOR EACH CALENDAR DAY BEYOND THE 90 CALENDAR DAYS THAT THE HIGHWAY REMAINS IN A SIGNALIZED CLOSURE, THE CONTRACTOR WILL BE ASSESSED LIQUIDATED DAMAGES AS PER 108.07.

THE LOCATION OF THE TRANSITION TAPER AND THE ADVANCE WARNING SIGNS SHOULD BE ADJUSTED TO PROVIDE FOR ADEQUATE SIGHT DISTANCE FOR THE EXISTING VERTICAL AND HORIZONTAL ROADWAY ALIGNMENT.

THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 61 METERS CLEARANCE TO EXISTING SIGNS.

THE EXISTING CONFLICTING PAVEMENT MARKINGS AND REFLECTORS FROM THE RAISED PAVEMENT MARKERS (RPM'S) SHALL BE REMOVED AND THE APPROPRIATE COLOR TEMPORARY EDGE LINES SHALL BE APPLIED ALONG THE TAPER. TEMPORARY EDGE LINES WHICH WOULD CONFLICT WITH FINAL TRAFFIC LANES SHALL BE REMOVABLE (740.06 TYPE I) TAPE. AFTER COMPLETION OF THE WORK, TEMPORARY MARKINGS SHALL BE REMOVED IN ACCORDANCE WITH 641.10 AND THE ORIGINAL MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS SHALL BE RESTORED.

NO EQUIPMENT OR MATERIAL SHALL BE LOCATED OTHER THAN BEHIND THE PORTABLE CONCRETE BARRIER.

THERE SHALL BE NO LANE CLOSURES UNLESS WORK IS CURRENTLY BEING DONE THAT WARRANTS SUCH A CLOSURE.

**FOR STRUCTURE RIC-13-22257 (S.L.K.):**

THE CONTRACTOR MAY CLOSE ONE LANE UNDER THE STRUCTURE AS PER STANDARD DRAWING MT-95.30M.

THE CONTRACTOR MAY CLOSE ONE LANE ON THE STRUCTURE AS PER STANDARD DRAWING MT-97.10M.

THERE SHALL BE NO LANE CLOSURES UNLESS WORK IS CURRENTLY BEING DONE THAT WARRANTS SUCH A CLOSURE.

**FOR STRUCTURE RIC-13-22788 L&R (S.L.K.):**

THE CONTRACTOR MAY CLOSE ONE LANE ON THE STRUCTURES AS PER STANDARD DRAWING MT-95.40M AND THE DETAILS IN THE PLAN.

THE LOCATION OF THE TRANSITION TAPER AND THE ADVANCE WARNING SIGNS SHOULD BE ADJUSTED TO PROVIDE FOR ADEQUATE SIGHT DISTANCE FOR THE EXISTING VERTICAL AND HORIZONTAL ROADWAY ALIGNMENT.

THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 61 METERS CLEARANCE TO EXISTING SIGNS.

THE EXISTING CONFLICTING PAVEMENT MARKINGS AND REFLECTORS FROM THE RAISED PAVEMENT MARKERS (RPM'S) SHALL BE REMOVED AND THE APPROPRIATE COLOR TEMPORARY EDGE LINES SHALL BE APPLIED ALONG THE TAPER. TEMPORARY EDGE LINES WHICH WOULD CONFLICT WITH FINAL TRAFFIC LANES SHALL BE REMOVABLE (740.06 TYPE I) TAPE. AFTER COMPLETION OF THE WORK, TEMPORARY MARKINGS SHALL BE REMOVED IN ACCORDANCE WITH 641.10 AND THE ORIGINAL MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS SHALL BE RESTORED.

NO EQUIPMENT OR MATERIAL SHALL BE LOCATED OTHER THAN BEHIND THE PORTABLE CONCRETE BARRIER.

THERE SHALL BE NO LANE CLOSURES UNLESS WORK IS CURRENTLY BEING DONE THAT WARRANTS SUCH A CLOSURE.

RAMP TRAFFIC (UNDER THE STRUCTURES) SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT THROUGH TRAFFIC ON THE RAMP WILL BE DETOURED AS SHOWN ON SHEET NO. 71A DURING PHASE A AND PHASE B AND DURING THE BRIDGE PAINTING. THE DETOUR SHALL BE FOR A MAXIMUM OF 90 CONSECUTIVE CALENDAR DAYS. THE 90 CONSECUTIVE DAYS SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE (SECTION 108) AND FOR EACH CALENDAR DAY BEYOND THE 90 CALENDAR DAYS THAT THE RAMP REMAINS CLOSED TO TRAFFIC, THE CONTRACTOR WILL BE ASSESSED LIQUIDATED DAMAGES AS PER 108.07.

THE CONTRACTOR SHALL NOTIFY THE O. D. O. T. DISTRICT THREE ROADWAY SERVICES MANAGER AND THE MANSFIELD CITY ENGINEER IN WRITING A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE OF WHEN THE DETOUR IS PLACED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE GATES AND BARRICADES SEE STANDARD DRAWING MT-101.60M FOR DETAILS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMUTCD. PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

**ITEM 614 - TEMPORARY CENTER LINE, CLASS I:  
ITEM 614 - TEMPORARY EDGE LINE, CLASS I:  
ITEM 614 - TEMPORARY STOP LINE, CLASS I:**

THE CONTRACTOR SHALL BE REQUIRED TO INSTALL VARIOUS TYPES OF PAVEMENT MARKINGS. TEMPORARY PAVEMENT MARKINGS SHALL BE 740.06 TYPE I PREFORMED MATERIAL.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER KILOMETER OR METER FOR THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 614 - BARRIER REFLECTOR, TYPE A (OR A2):  
ITEM 614 - BARRIER REFLECTOR, TYPE B (OR B2):**

REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO ITEM 626 EXCEPT THAT THE SPACING SHALL BE AS SHOWN IN THE PLAN.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 846 - TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN:**

THIS ITEM SHALL BE USED ON STRUCTURES RIC-13-22257 (S.L.K.) AND RIC-13-22788 L&R (S.L.K.).

SEE THE SUPPLEMENTAL SPECIFICATIONS FOR APPLICATION RATES, MATERIALS REQUIRED, AND APPLICATION PROCEDURES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER FOR ITEM 846 - TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM SPECIAL - STRUCTURE, MISC.: REPLACEMENT REINFORCING STEEL:**

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS, SHALL BE REPLACED WITH THE NEW STEEL AT HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL.

AN ALLOWANCE OF:

10 KILOGRAMS FOR STRUCTURE RIC-13-22788 L (S.L.K.) AND 10 KILOGRAMS FOR STRUCTURE RIC-13-22788 R (S.L.K.) IS INCLUDED FOR THIS PURPOSE.

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STRUCTURAL GENERAL NOTES

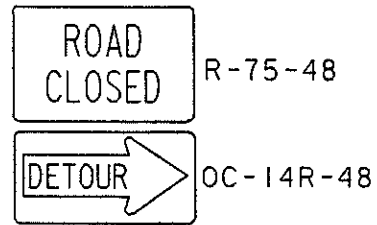
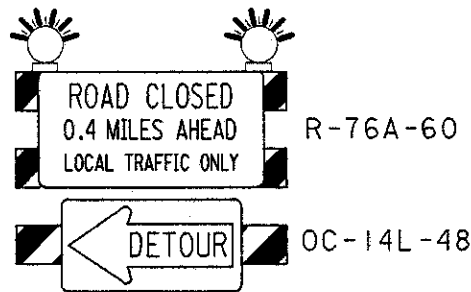
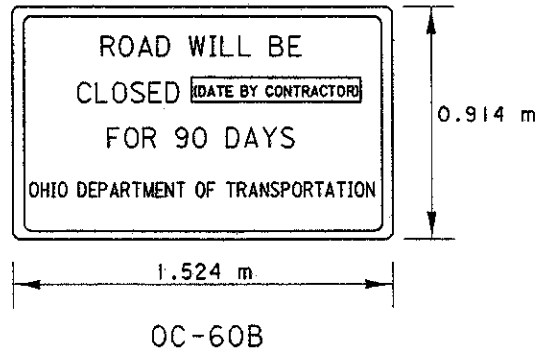
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**NOTICE OF CLOSURE SIGNS**

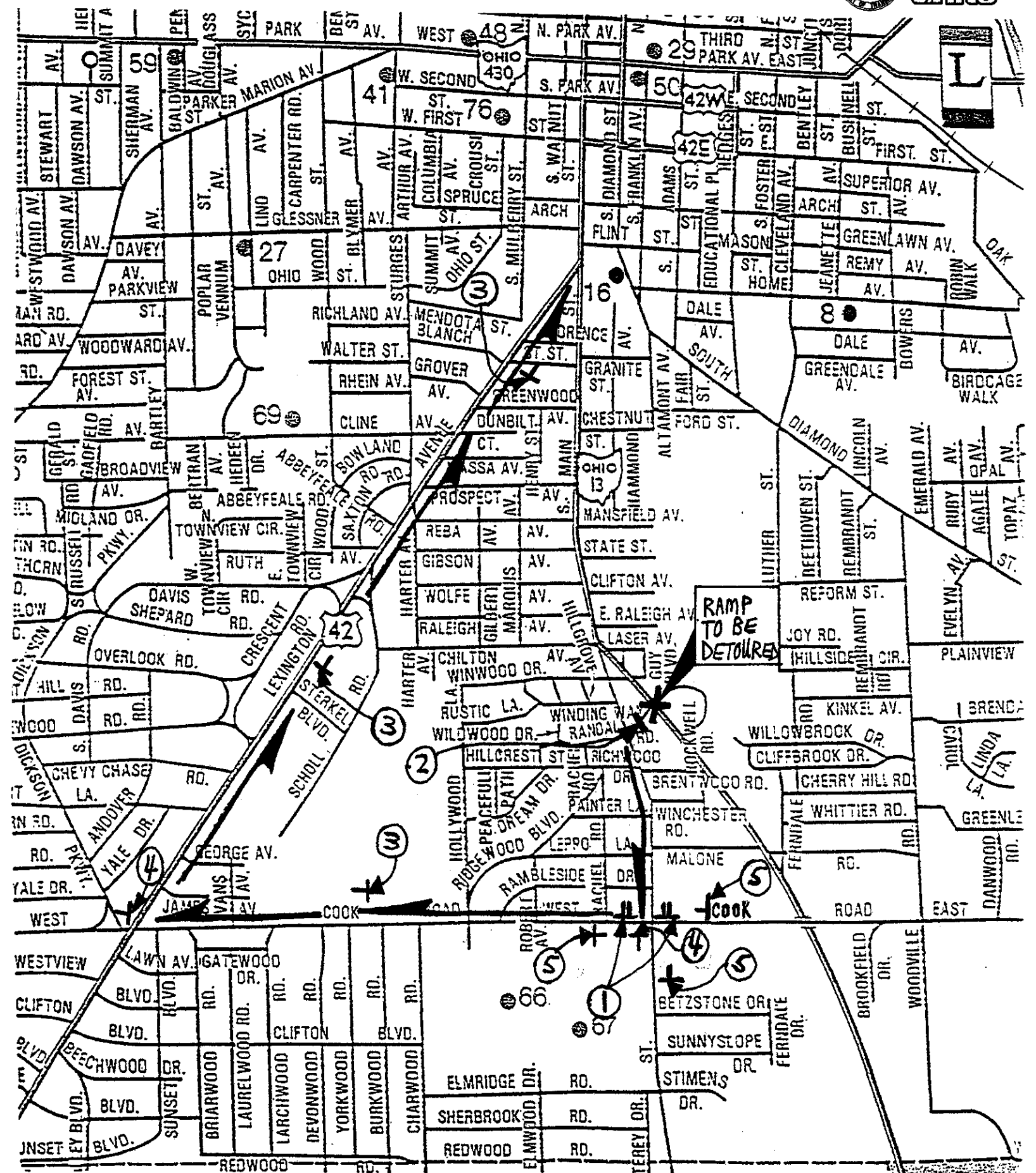
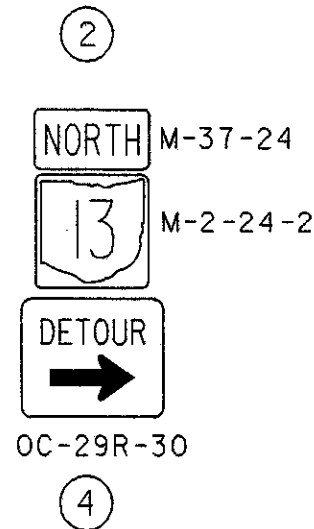
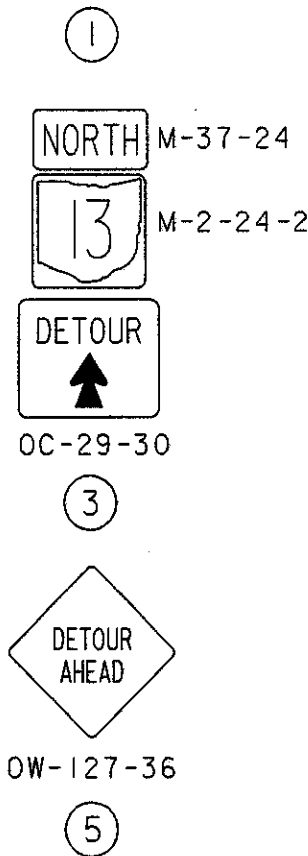
THESE SIGNS SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE FOR THE SR 13 RAMP. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE LOCATED IN THE FIELD SO AS NOT TO INTERFERE WITH ANY PERMANENT SIGNS. ON THIS PROJECT THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC AND SHALL INCLUDE FURNISHING, ERECTING, MAINTAINING AND REMOVING THE SIGNS INCLUDING SUPPORTS.



TYPE III BARRICADE WITH FLASHING YELLOW LIGHTS

GATES AND BARRICADES



**RAMP DETOUR**



DESIGN FILE: I:\projects\16915\struct\gnote.dgn WORKSTATION: eglover DATE: 25 JAN 99

DISTRICT THREE

DESIGNED: E.J.G. 1-99 CHECKED: J.S.S. 1-99 DRAWN: E.J.G. 1-99 REVISION: DATE: 1/99

STRUCTURAL GENERAL NOTES

RIC-13-17.445

71A 112

**ITEM SPECIAL - TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN:**

THIS ITEM SHALL BE USED ON STRUCTURES RIC-13-22015 (S.L.K.), RIC-13-22257 (S.L.K.), AND RIC-13-22788 L&R (S.L.K.).

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT NEEDED FOR SURFACE PREPARATION, MIXING, AND PLACING THE SEAL ON TO THE CONSTRUCTION JOINT FORMED ALONG NEW PATCHES, EXISTING UNSEALED OVERLAY JOINTS, AND CRACKS IN THE EXISTING CONCRETE OVERLAY. THE JOINT SEAL SHALL BE AS PER PROPOSAL NOTE "TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN".

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER FOR ITEM SPECIAL - TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM SPECIAL - SEALING OF CONCRETE SURFACES (NON-EPOXY):**

THE SIDEWALKS SHALL BE SEALED WITH A TINTED NON-EPOXY SEALER AS PER THE DETAILS IN THE PLAN. SEE PROPOSAL NOTE "SEALING OF CONCRETE SURFACES" FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS, AND APPLICATION PROCEDURES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER FOR ITEM SPECIAL - SEALING OF CONCRETE SURFACES (NON-EPOXY) WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):**

EPOXY-URETHANE SHALL BE THE "BUFF" COLOR MEETING FEDERAL COLOR STANDARD NO. 37722 AS PER THE DETAILS IN THE PLAN. SEE PROPOSAL NOTE "SEALING OF CONCRETE SURFACES" FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS, AND APPLICATION PROCEDURES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER FOR ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK WITH QSC:**
**A. DESCRIPTION**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPAIR CONCRETE BRIDGE DECKS, INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, CONCRETE PATCHES, SURFACE PREPARATION, SAW CUTTING, BONDING COAT AND THE STRENGTH TESTING OF ALL THE PATCHES AS DIRECTED BY THE ENGINEER.

**B. REMOVAL OF UNSOUND CONCRETE**

THE ENGINEER SHALL VISUALLY INSPECT THE ENTIRE DECK, BACKWALL AND APPROACH SLAB, AND OUTLINE THE AREAS TO BE REMOVED.

THE PERIMETER OF THE REMOVAL AREAS SHALL BE SAWED TO A DEPTH OF 13 mm TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. AT EACH CORNER OF THE PATCH THE SAW CUTS SHALL COME TOGETHER WITHOUT ANY OVERCUTTING WITH THE SAW. THE CORNERS SHALL BE CHIPPED DOWN TO SAW MARKS. ADDITIONAL SAWCUTS MAY BE REQUIRED TO FACILITATE REMOVAL WITHOUT ANY OVERCUTTING. COOLING WATER FROM WET SAWING AND DUST FROM SAWING SHALL BE IMMEDIATELY REMOVED FROM THE EXPOSED PATCH HOLES BEFORE ANY DRYING CAN OCCUR.

UN SOUND CONCRETE INCLUDING ALL PATCHES OTHER THAN SOUND PORTLAND CEMENT CONCRETE, AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NORMAL 16 kg CLASS AND SHALL BE OPERATED AT AN ANGLE LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL. WHERE THE BOND BETWEEN THE CONCRETE AND A REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 19 mm CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE. REINFORCEMENT WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. ALL REMOVED ASPHALT AND CONCRETE SHALL BE DISPOSED OF PROPERLY OUTSIDE THE RIGHT OF WAY.

**C. SURFACE PREPARATION**

CLEANING SHALL CLOSELY PRECEDE APPLICATIONS OF THE BONDING GROUT OR THE PATCHING MATERIAL. WITHIN 24 HOURS PRIOR TO PATCHING THE DECK, THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING (SILICA SAND SHALL NOT BE USED) FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED BY PLACEMENT OF A CLEAN 100 MICROMETER POLYETHYLENE SHEET (OR ANY OTHER COVERING AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING.

WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORTS FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE MIXER, OR SHALL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER TO THE PATCH LOCATIONS.

FOR PATCHES WHICH DO NOT USE WATER AS THE ACTIVATOR, THE PREPARED SURFACE SHALL BE SURFACE DRY. FOR PATCHES WHICH REQUIRE WATER AS THE ACTIVATOR, THE PREPARED SURFACE SHALL BE LEFT IN THE CONDITION AS RECOMMENDED BY THE MANUFACTURER. ANY ADDITIONAL SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE PATCHING MATERIAL WHICH IS USED. NO COATING OF THE REINFORCING STEEL IS REQUIRED.

**D. MATERIALS, PLACING AND CURING**

THE BRIDGE DECK OR OVERLAY SHALL BE PATCHED WITH QUICK SET CONCRETE (QSC) WHICH SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

COARSE AGGREGATE (NO. 8)	703.02
QUICK SETTING CONCRETE MORTAR, TYPE 2	705.21
WATER	899.02

QSC PATCHES SHALL BE BONDED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. PROPORTIONING AND PLACING OF QSC PATCHES SHALL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONCRETE SHALL BE MIXED AND PLACED AS PER MANUFACTURER'S RECOMMENDATIONS WITH AMBIENT TEMPERATURE ABOVE 7 DEGREES C. COARSE AGGREGATE, WHICH HAS BEEN CLEANED, DRIED AND BAGGED, SHALL BE ADDED AT A RATE OF 15 kg OF AGGREGATE PER 25 kg OF DRY QSC MORTAR. THE MAXIMUM TEMPERATURE OF ANY WATER USED IN MORTAR MIX SHALL BE 21 DEGREES C.

QSC PATCHES SHALL BE CURED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR WILL SUPPLY A PROPERLY CALIBRATED IMPACT REBOUND HAMMER TO VERIFY THAT THE PATCHES HAVE REACHED 21 MPa COMPRESSIVE STRENGTH PRIOR TO OPENING TO TRAFFIC. THE IMPACT HAMMER SHALL BE THE MODEL C-7311 H-METER AND THE FIELD CALIBRATOR SHALL BE THE MODEL C-7312 TEST ANVIL AS MANUFACTURED BY JAMES INSTRUMENTS, INC. 4048 ROCKWELL ST. CHICAGO, ILLINOIS 60618; PHONE: (312) 463-6500.

**E. PLACING**

WHEN NIGHT WORK IS USED THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR THE WORK AREA. THE PLAN SHALL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

THE PATCHING MATERIAL SHALL BE PLACED, CONSOLIDATED AND FINISHED TO THE EXISTING GRADE AND ELEVATION. PATCHES GREATER THAN 5 SQUARE METERS IN AREA SHALL HAVE TEMPORARY BULKHEADS INSTALLED TO FACILITATE PLACEMENT AND FINISHING. THE TEMPORARY BULKHEADS SHALL GO AS DEEP AS THE PATCH AND BE PULLED PRIOR TO THE CONCRETE SETTING. PATCHES EXCEEDING 5 SQUARE METERS SHALL BE STRUCK OFF WITH A SCREED. SMALLER PATCHES THAT ARE UNDER 3 METERS IN LENGTH SHALL BE SCREED LONGITUDINALLY. FOR PATCHES OVER 3 METERS IN LENGTH, THE SCREED SHALL BE PLACED PERPENDICULAR TO THE BRIDGE CENTERLINE.

THE CONTRACTOR SHALL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SURFACES BY USE OF A THREE METER STRAIGHTEDGE. FOR PATCHES THREE METERS OR LESS IN LENGTH, THE STRAIGHTEDGE SHALL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE BRIDGE CENTERLINE WITH ENDS RESTING ON THE EXISTING WEARING SURFACE AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 3 mm IN 3 m SHALL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE SHALL BE RECHECKED.

**F. FINISHING**

AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED, THEY SHALL BE TEXTURED IN ACCORDANCE TO SECTION 451.09 OF THE CMS.

AFTER TEXTURING A 3 mm GROOVE SHALL BE PLACED AROUND THE PERIMETER OF THE PATCH TO FACILITATE THE PLACEMENT OF THE JOINT SEAL.

**G. INSPECTION, SOUNDING AND REPAIR OF CONCRETE PATCHES**

AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS SHALL BE INSPECTED AND SOUNDED. ALL DELAMINATED AREAS SHALL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE.

ALL CRACKS IN BONDED PATCHES SHALL BE SEALED WITH AN APPROVED HIGH MOLECULAR WEIGHT METHACRYLATE SEALER ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND THE HMMW PROPOSAL NOTE.

ALL REPLACEMENT OF REJECTED AREAS AND SEALING OF CRACKS IN NEW BONDED PATCHES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

**H. METHOD OF MEASUREMENT**

THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE METERS OF THE EXPOSED SURFACE OF ALL PATCHES, IRRESPECTIVE OF THE DEPTH OF THE PATCH, COMPLETE, IN PLACE AND ACCEPTED.

**I. BASIS OF PAYMENT**

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE METER	PATCHING CONCRETE BRIDGE DECK WITH QSC

DATE	1/97
REVIEWED	RCM
STRUCTURE FILE NUMBER	
DRAWN	CTM/K
REVISION	
DESIGNED	EJG
CHECKED	JRC

STRUCTURAL GENERAL NOTES

RIC-13-17.445

 DESIGN FILE: I:\projects\16915\struct\gnote.dgn  
 WORKSTATION: eglover  
 DATE: 27 JAN 99





ITEM 847- MICRO SILICA MODIFIED CONCRETE OVERLAY  
(63 mm THICK):

ITEM 847- MICRO SILICA MODIFIED CONCRETE OVERLAY  
(VARIABLE THICKNESS):

THESE ITEMS SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

SEE THE SUPPLEMENTAL SPECIFICATION (BRIDGE DECK REPAIR AND OVERLAY  
WITH CONCRETE USING SCARIFICATION AND CHIPPING) FOR DETAILS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER  
SQUARE METER OR CUBIC METER FOR THE ABOVE ITEMS WHICH SHALL  
INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS  
NECESSARY TO COMPLETE THE ABOVE WORK.

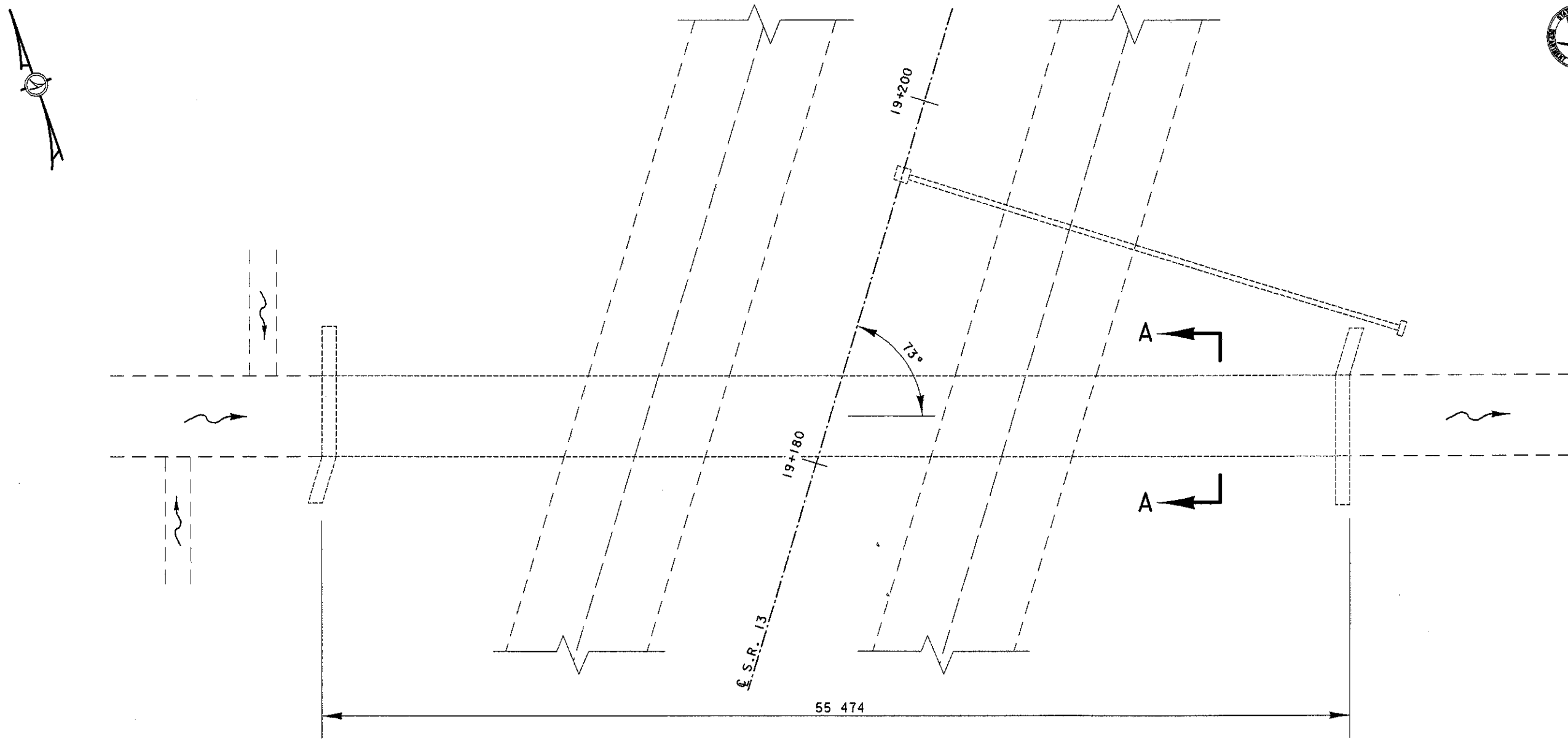
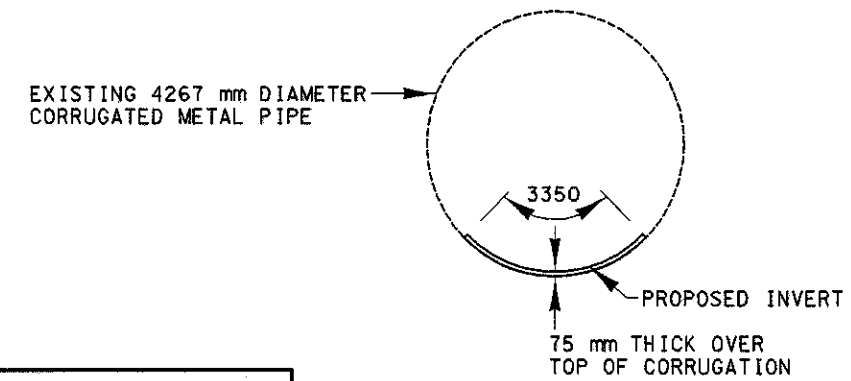
**ITEM SPECIAL- BRIDGE DECK GROOVING:**

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

SEE THE PROPOSAL NOTE FOR DETAILS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER  
SQUARE METER FOR ITEM SPECIAL- BRIDGE DECK GROOVING WHICH SHALL  
INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS  
NECESSARY TO COMPLETE THE ABOVE WORK.

DESIGN AGENCY		DISTRICT THREE	
DATE	REVIEWED	STRUCTURE FILE NUMBER	
1/199	2/6/99		
DRAWN	REVISOR		
C. TO K			
DESIGNED	CHECKED		
E. JG	MRC		
STRUCTURAL GENERAL NOTES			
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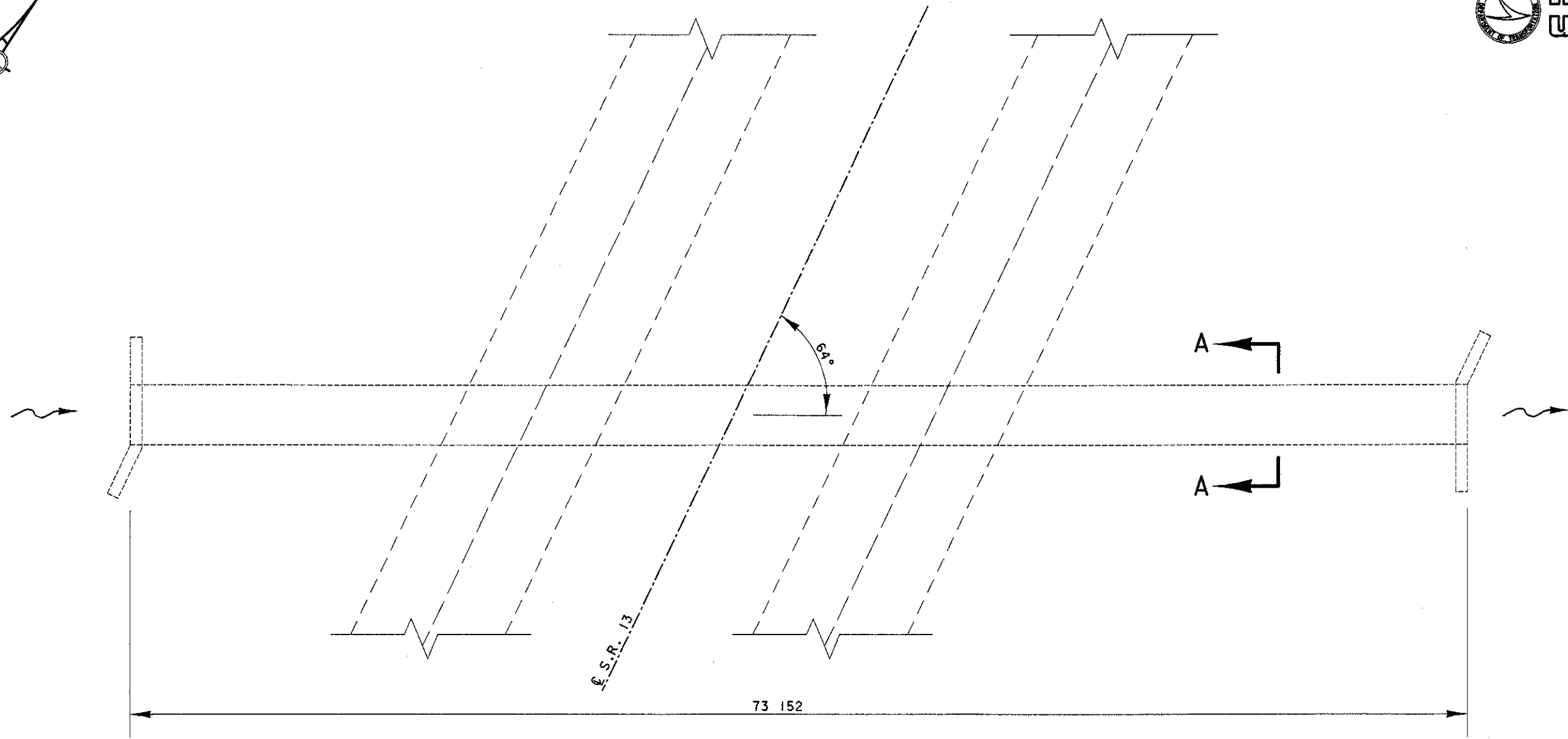
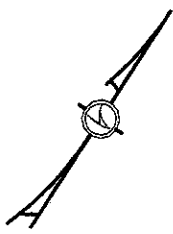

**PLAN VIEW**

**SECTION A-A**
**NOTES:**

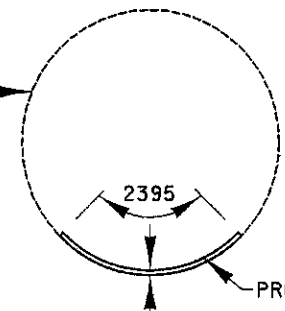
1) THE EXISTING GUARDRAIL IS NOT SHOWN. FOR GUARDRAIL DETAILS, SEE SHEET NO. 24

**GENERAL SUMMARY**

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING
603	96550	56	meter	CONDUIT, FIELD PAVING OF EXISTING PIPE (TYPE A, 4267 mm)

 ALL DIMENSIONS ARE IN MILLIMETERS,  
 UNLESS NOTED OTHERWISE


**PLAN VIEW**

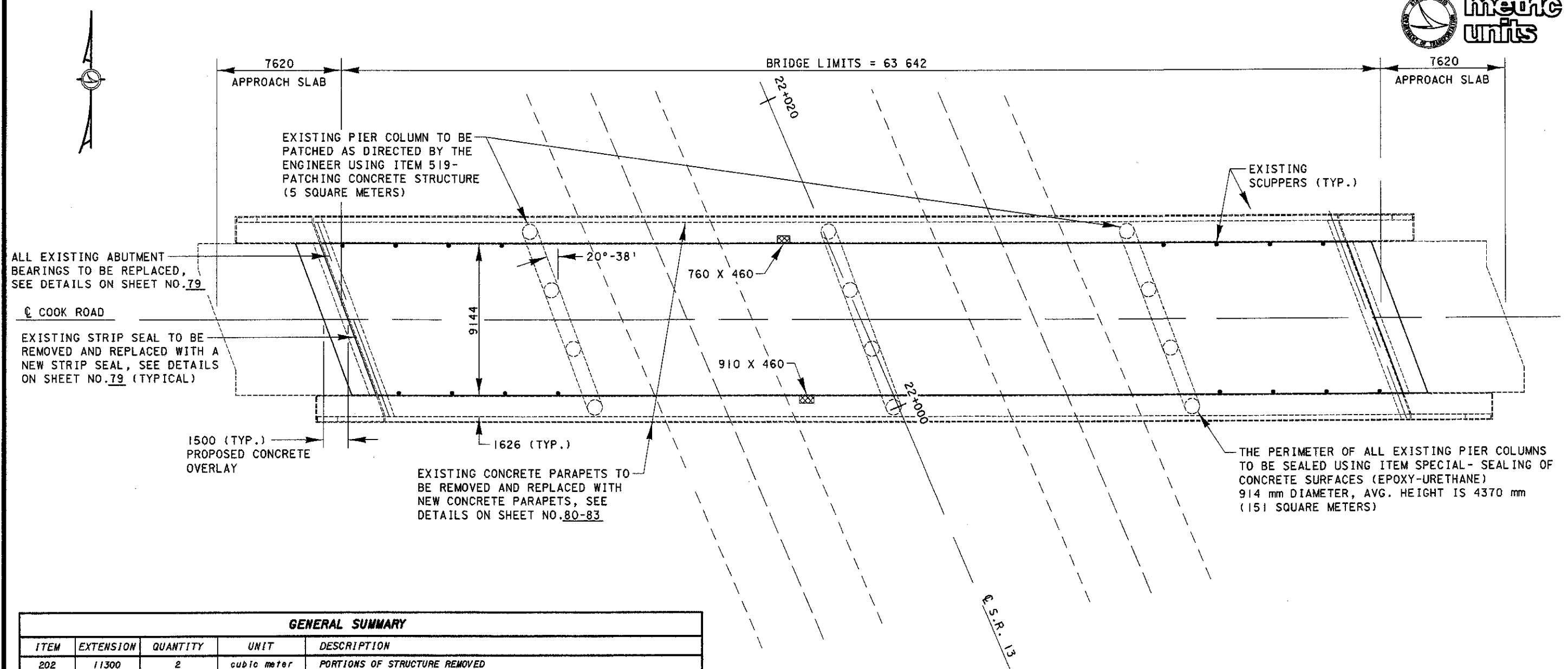
 EXISTING 3048 mm DIAMETER  
 CORRUGATED METAL PIPE

**SECTION A-A**
**NOTES:**

 1) THE EXISTING GUARDRAIL IS NOT SHOWN. FOR GUARDRAIL  
 DETAILS, SEE SHEET NO. 27.

**GENERAL SUMMARY**

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING
603	96550	74	meter	CONDUIT, FIELD PAVING OF EXISTING PIPE (TYPE A, 3048 mm)

 ALL DIMENSIONS ARE IN MILLIMETERS,  
 UNLESS NOTED OTHERWISE



PLAN VIEW

## GENERAL SUMMARY

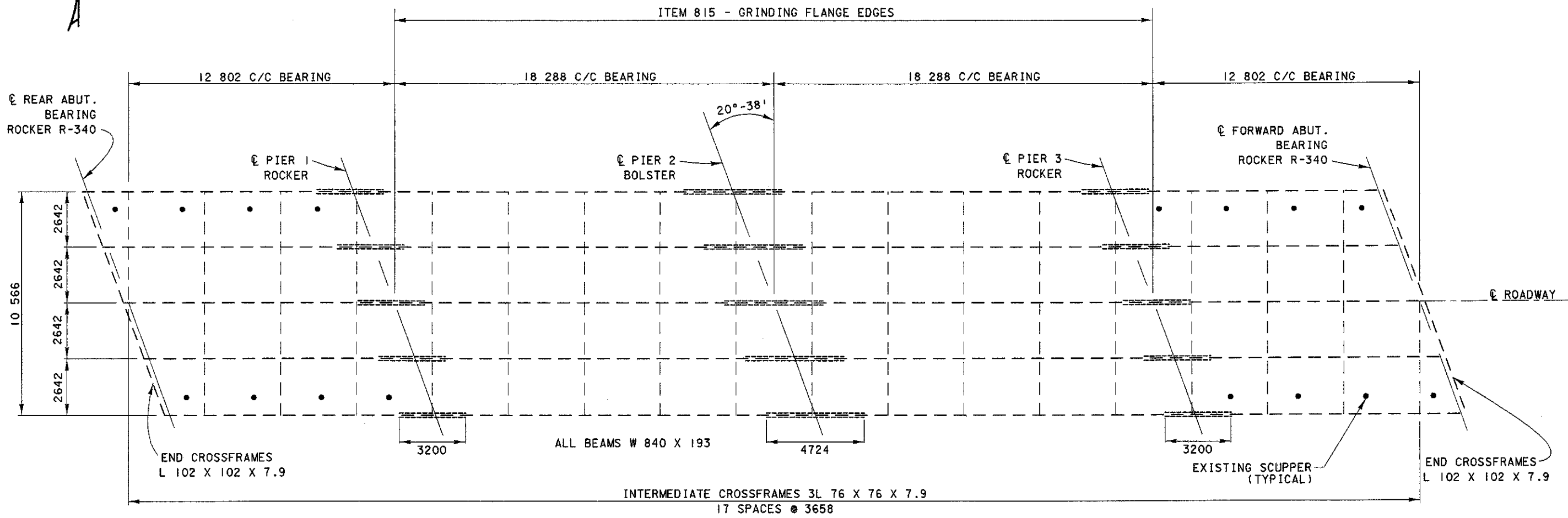
ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
202	11300	2	cubic meter	PORTIONS OF STRUCTURE REMOVED
202	38504	143	meter	BRIDGE RAILING REMOVED, CONCRETE
202	98100	10	each	REMOVAL MISC.: ROCKER
202	98100	2	each	REMOVAL MISC.: STRIP SEAL
SPECIAL	51267504	255	square meter	SEALING OF CONCRETE SURFACES (NON-EPOXY)
SPECIAL	51267510	546	square meter	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
516	01300	24	meter	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS
516	10000	20	meter	PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL (705.11)
516	46900	10	each	BEARING DEVICE, MISC.: ROCKER
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN
517	71501	143	meter	RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL), AS PER PLAN
519	11100	10	square meter	PATCHING CONCRETE STRUCTURE
SPECIAL	60739930	135	meter	VANDAL PROTECTION FENCE, 3.6 METER CURVED, COATED FABRIC
815	00050	970	square meter	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815	00056	970	square meter	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU
815	00060	970	square meter	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU
815	00066	970	square meter	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815	00504	100	man hour	GRINDING FINS, TEARS, SLIVERS
815	00508	732	meter	GRINDING FLANGE EDGES
847	10000	604	square meter	MICRO SILICA MODIFIED CONCRETE OVERLAY (63 MM THICK)
847	20000	10	cubic meter	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)
847	30000	LUMP		TEST SLAB
847	30400	582	square meter	EXISTING CONCRETE OVERLAY REMOVED (57 MM THICK)
SPECIAL	85050070	604	square meter	BRIDGE DECK GROOVING

☒ PORTIONS OF STRUCTURE TO BE PATCHED USING ITEM 519- PATCHING CONCRETE STRUCTURE (1 SQUARE METER)

## NOTES:

- 1) THE ENTIRE EXISTING CONCRETE OVERLAY (BETWEEN THE CURBS) SHALL BE REMOVED USING ITEM 847- EXISTING CONCRETE OVERLAY REMOVED (57 MM THICK)
- 2) THE ENTIRE BRIDGE DECK (BETWEEN THE CURBS) AND 1500 mm OF THE APPROACH SLABS (INCLUDING THE TOP OF THE BACKWALL) SHALL BE OVERLAYED WITH MICRO-SILICA MODIFIED CONCRETE
- 3) THE PROPOSED CONCRETE OVERLAY SHALL BE TEXTURED USING ITEM SPECIAL- BRIDGE DECK GROOVING
- 4) THE PROPOSED VANDAL PROTECTION FENCE IS NOT SHOWN, SEE DETAILS ON SHEET NO. 84
- 5) THE EXISTING GUARDRAIL IS NOT SHOWN. FOR GUARDRAIL DETAILS, SEE SHEET NO. 27

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE



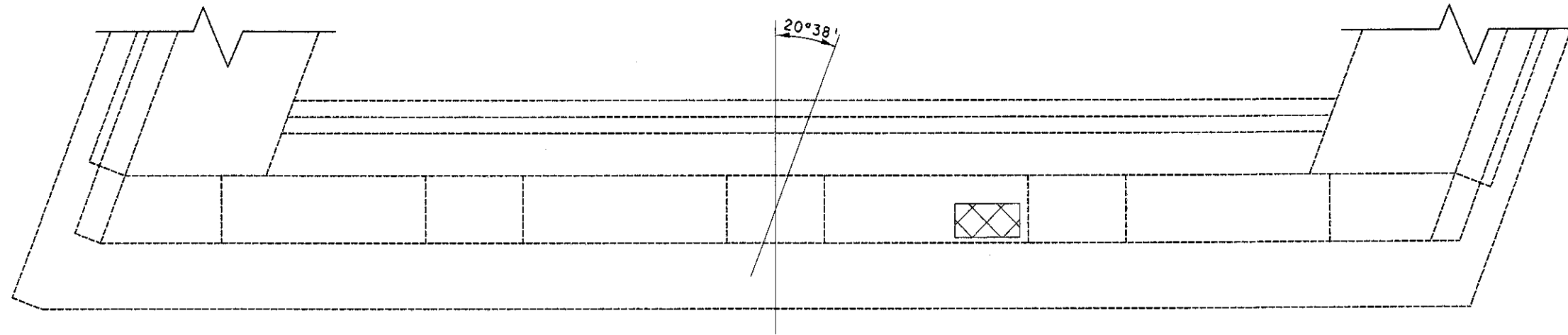
PLAN VIEW

NOTES:

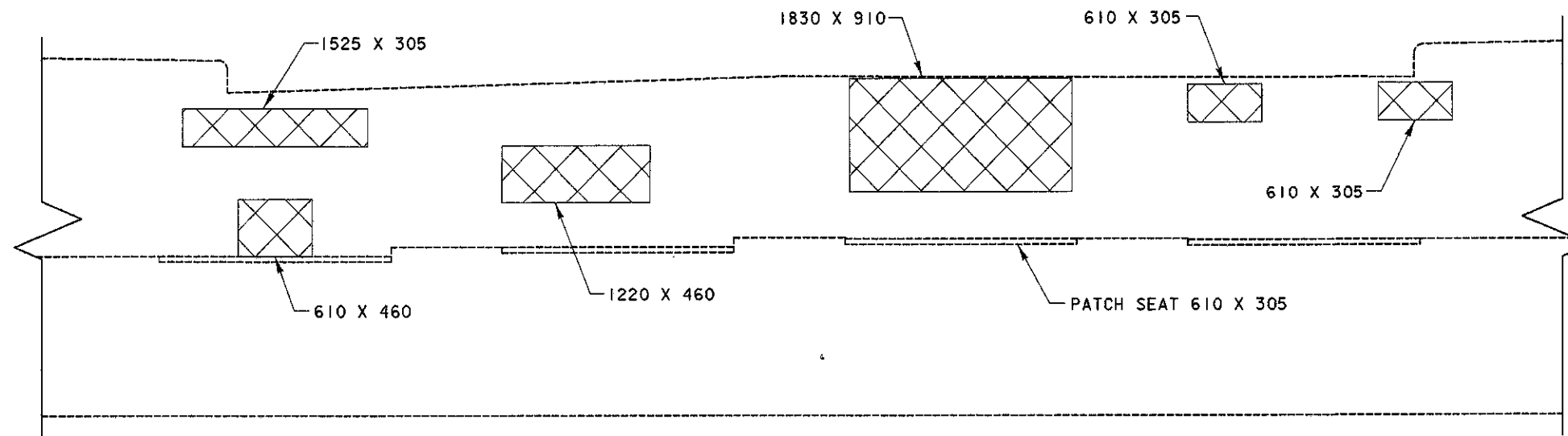
- 1) ALL STEEL SHALL BE PAINTED USING SYSTEM OZEU

ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE


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WORKSTATION: eglover DATE: 19 JAN 99



PLAN VIEW  
REAR ABUTMENT



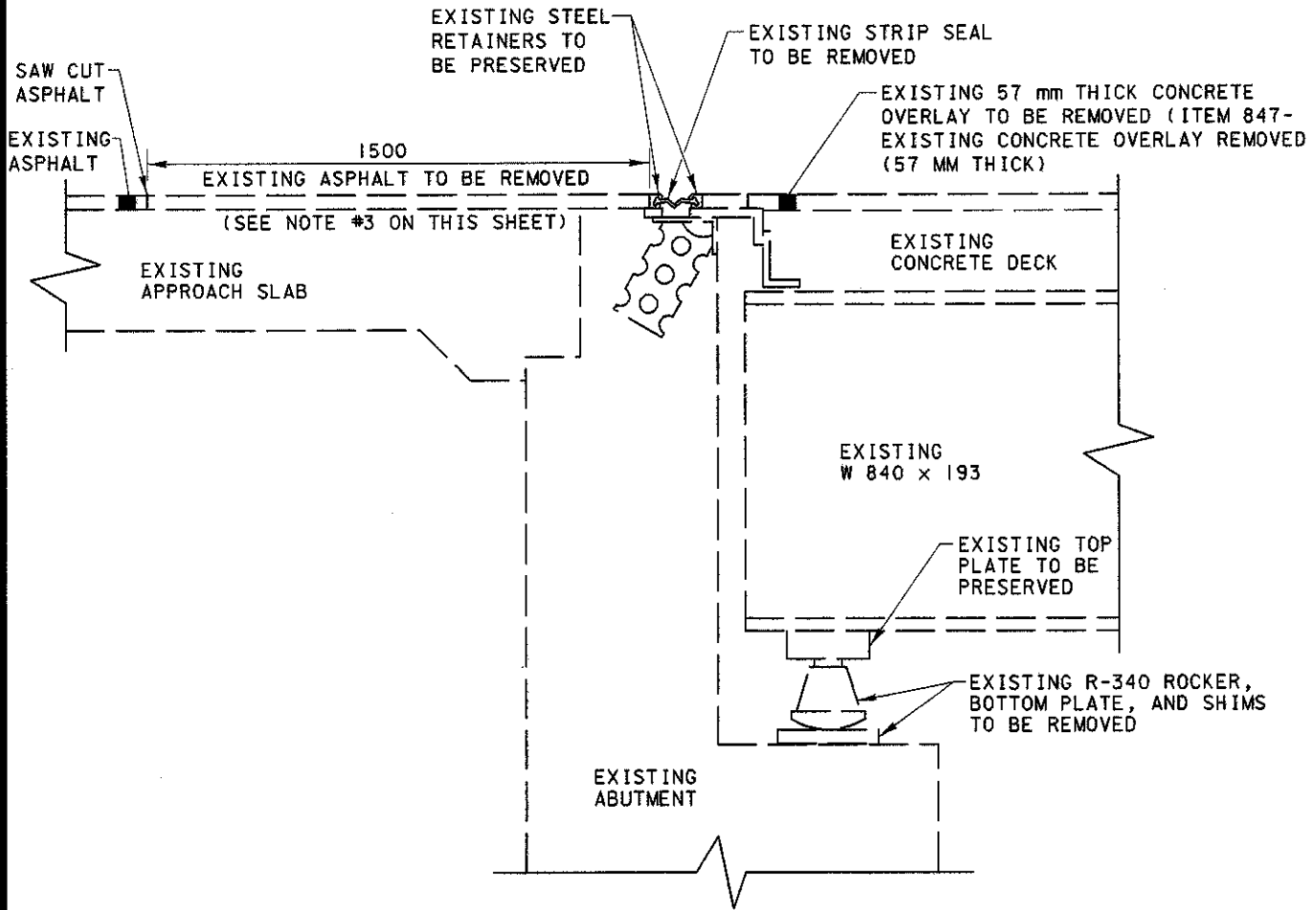
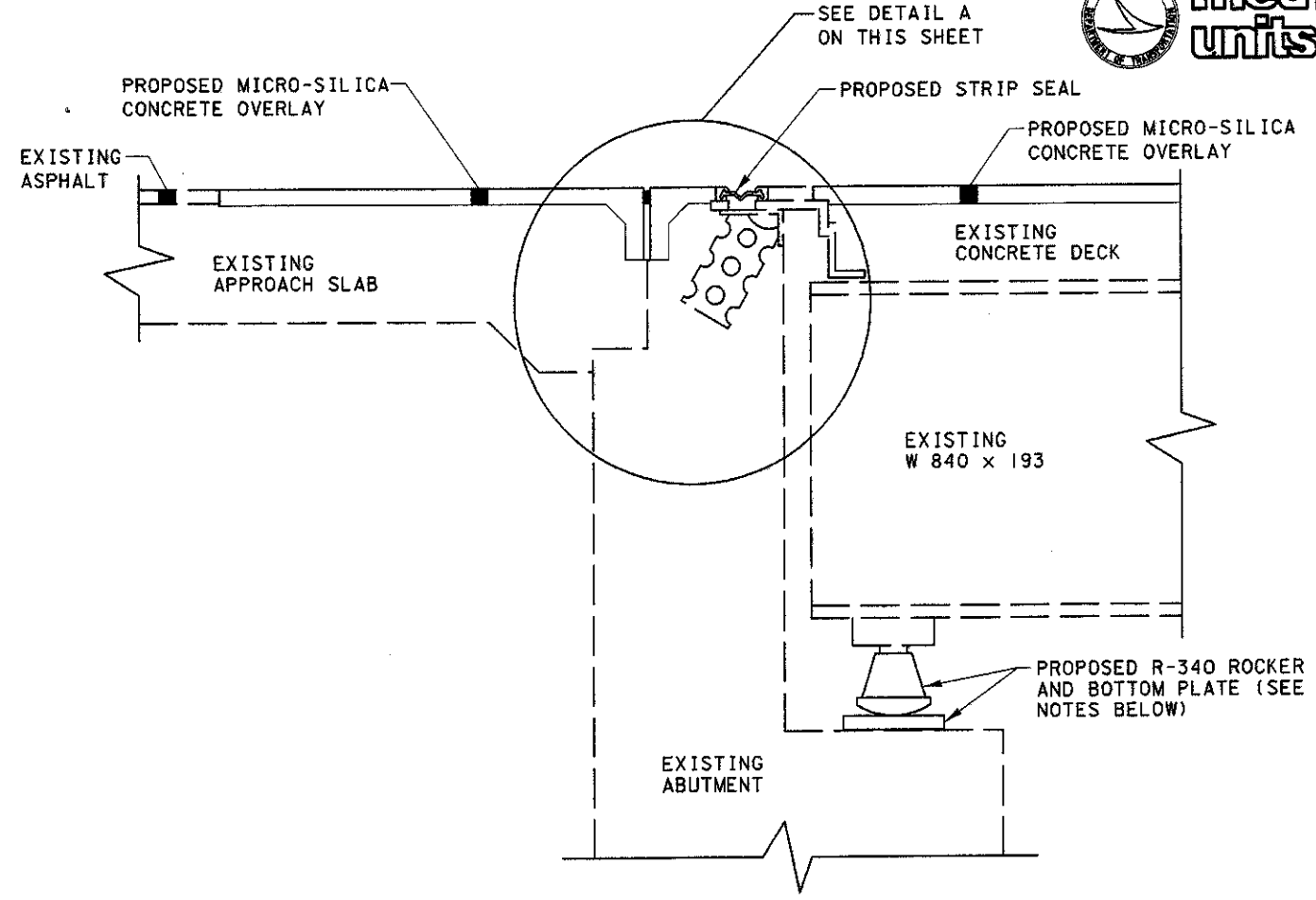
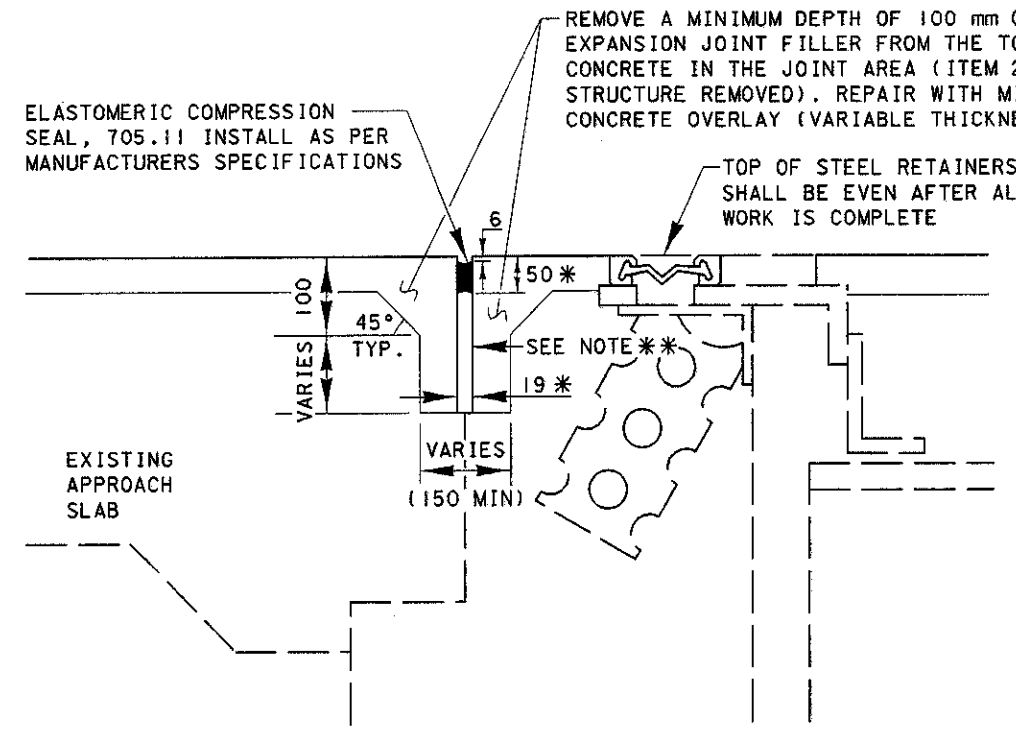
ELEVATION VIEW  
REAR ABUTMENT

 PORTIONS OF STRUCTURE TO BE PATCHED USING ITEM 519- PATCHING CONCRETE STRUCTURE (4 SQUARE METERS)

**NOTES:**

- 1) NO PATCHING NEEDED ON FORWARD ABUTMENT

ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE


**EXISTING SECTION  
VIEW AT ABUTMENTS**

**PROPOSED SECTION  
VIEW AT ABUTMENTS**

**DETAIL A**

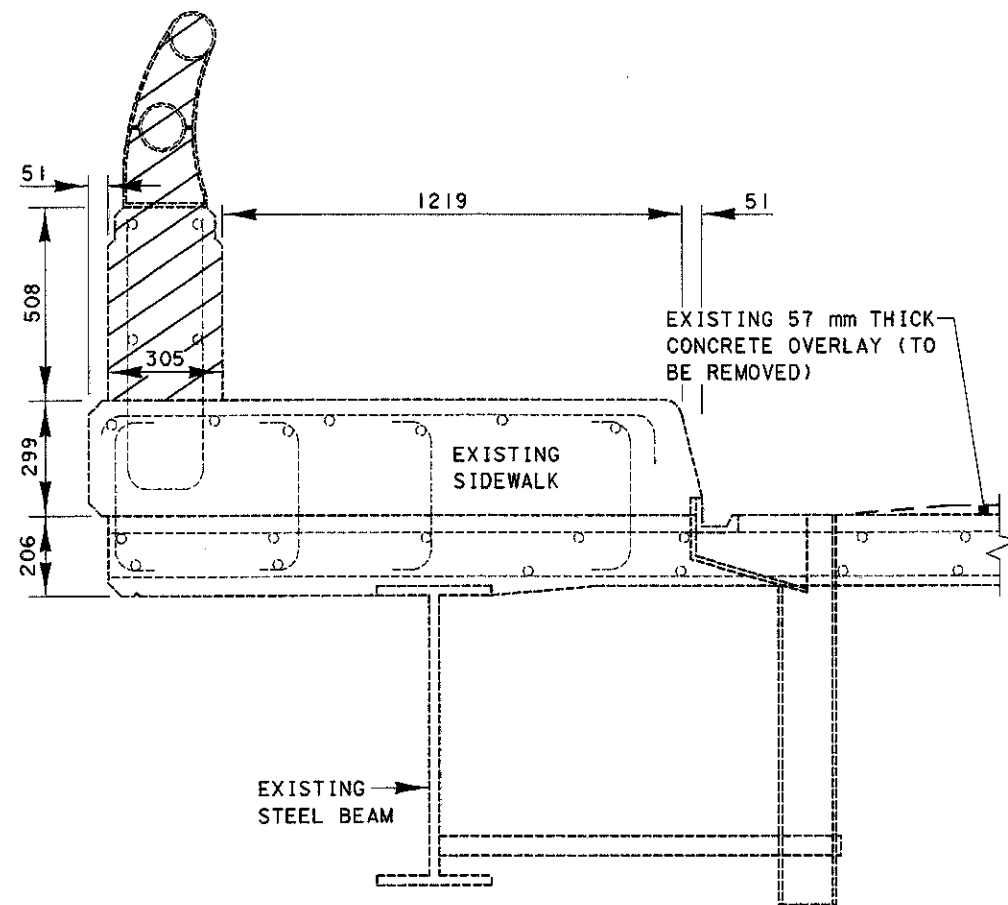
**NOTE:**  
 THE COMPRESSION SEAL SHALL BE ONE CONTINUOUS PIECE AND SHALL SEAL THE JOINT THE FULL WIDTH OF THE APPROACH SLAB


- \* DIMENSIONS ARE FOR WATSON BOWMAN ACME INC. WJ-125, STRUCTURAL ACCESSORIES SA1250 OR D.S. BROWN H-1250. USE ANY OF THE ABOVE OR APPROVED EQUAL AS PER 705.11
  - \*\* GLUE 13 mm EXPANDED POLYSTYRENE BETWEEN TWO PIECES OF 3 mm MASONITE, INSTALL TOTAL DEPTH OF REPAIRED AREA. THE MASONITE AND POLYSTYRENE SHALL BE IN PLACE BEFORE ANY CONCRETE IS PLACED; AND SHALL BE BELOW THE FINAL ROADWAY GRADE TO FACILITATE FINISHING OF THE CONCRETE ON BOTH SIDES OF THE JOINT
- IF THE CONCRETE ON BOTH SIDES OF THE JOINT IS NOT FINISHED TO THE SAME HEIGHT, THE JOINT SURFACE SHALL BE GROUND SMOOTH AS DIRECTED BY THE ENGINEER
- SAW OUT ENOUGH MASONITE AND POLYSTYRENE TO INSTALL THE COMPRESSION SEAL AFTER THE JOINT HAS BEEN REPAIRED
- PAYMENT FOR ALL MATERIALS, EXCEPT CONCRETE, AND LABOR TO REPAIR THE JOINT AS PER DETAILS ON THIS SHEET SHALL BE INCLUDED IN THE UNIT PRICE BID PER METER OF ITEM 516- PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL (705.11)

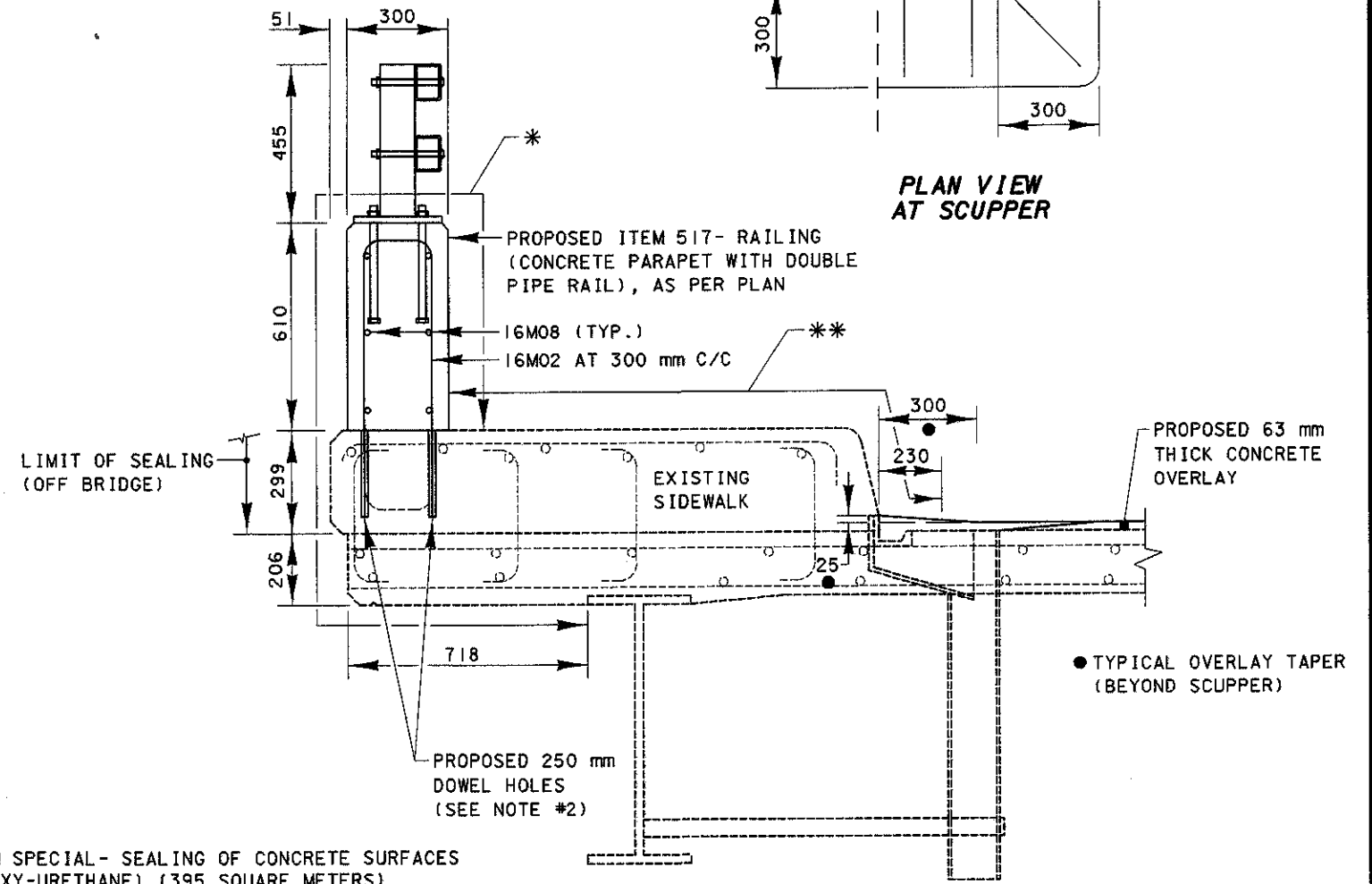
- NOTES:**
- 1) SEE STANDARD DRAWING RB-1-55M FOR ROCKER DETAILS
  - 2) NEW STEEL SHIMS HAVING THE SAME WIDTH AND LENGTH OF THE BOTTOM PLATE AT THE ROCKERS SHALL BE USED TO OBTAIN THE PROPER ELEVATION OF THE STEEL RETAINERS AS SHOWN IN THE TYPICAL SECTION VIEW ON THIS SHEET. THE STEEL SHIMS AND SHEET LEAD OR PREFORMED BEARING PADS ARE INCIDENTAL TO ITEM 516- BEARING DEVICE, MISC.: ROCKER
  - 3) REMOVAL OF THE EXISTING ASPHALT IS INCIDENTAL TO ITEM 847- EXISTING CONCRETE OVERLAY REMOVED (57 MM THICK)

ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE

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 WORKSTATION: eglover  
 DATE: 21 JAN 99


**EXISTING SECTION VIEW**

 EXISTING CONCRETE PARAPET WITH ALUMINUM RAIL TO BE REMOVED USING ITEM 202- BRIDGE RAILING REMOVED, CONCRETE. SAW CUTTING MAY BE USED


**PROPOSED SECTION VIEW**

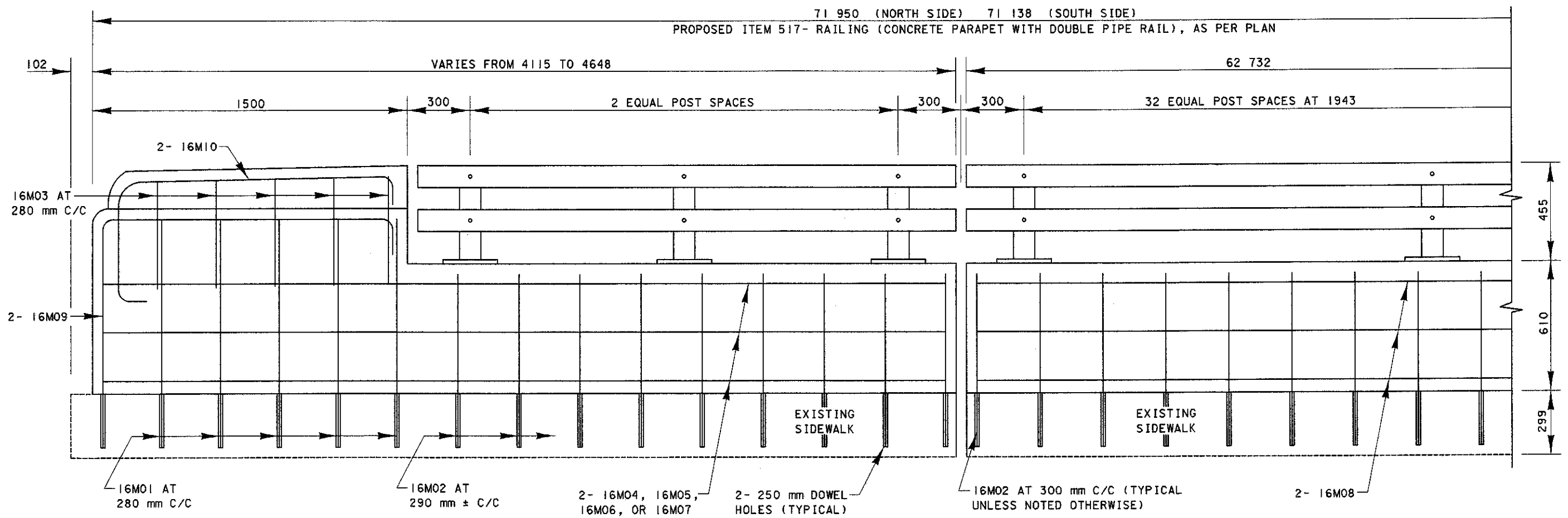
- \* ITEM SPECIAL- SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (395 SQUARE METERS)
- \*\* ITEM SPECIAL- SEALING OF CONCRETE SURFACES (NON-EPOXY) (255 SQUARE METERS)

**NOTES:**

- 1) FOR ADDITIONAL DETAILS, SEE SHEET NO. 81-83
- 2) THE DOWEL HOLES SHALL BE AS PER 510 OF THE CMS, EXCEPT THE HOLES SHALL BE CORE DRILLED AND EPOXY MORTAR SHALL BE USED. THIS ITEM IS INCIDENTAL TO ITEM 517- RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL), AS PER PLAN
- 3) THE PROPOSED VANDAL PROTECTION FENCE IS NOT SHOWN, SEE SHEET NO. 84 FOR DETAILS

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE





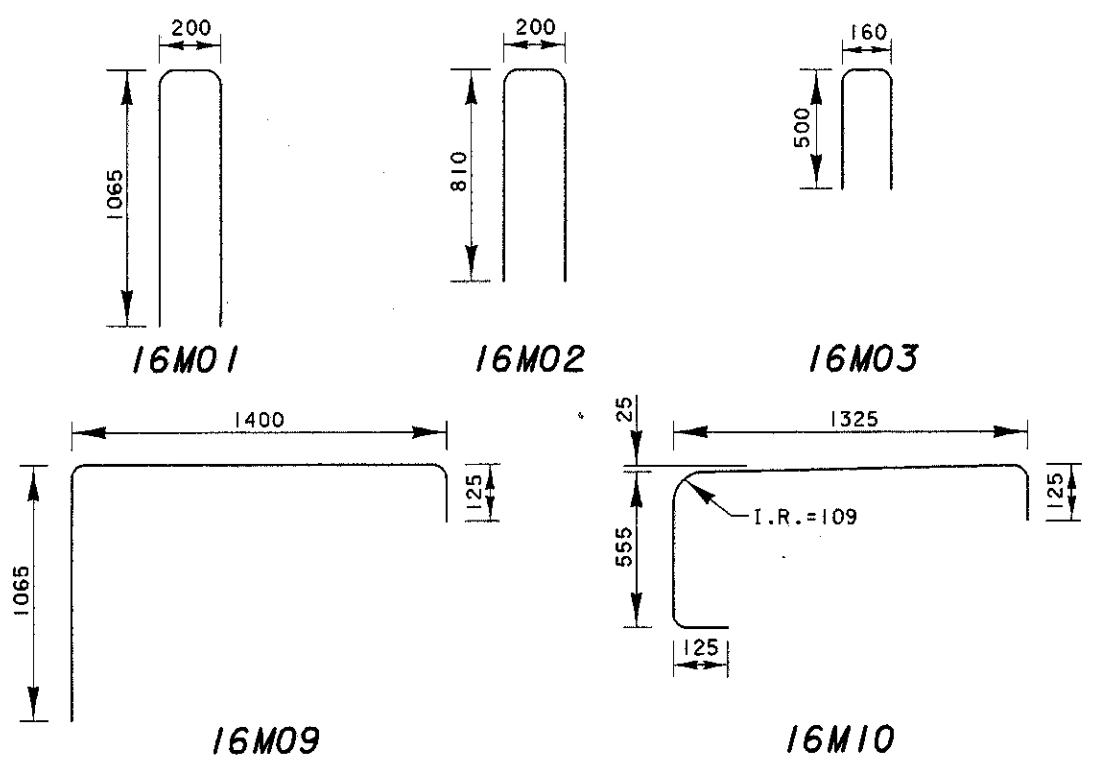
PROPOSED ELEVATION VIEW

EPOXY COATED REINFORCING STEEL, GRADE 400

MARK	SHAPE	LENGTH (mm)	QUANTITY	MASS (kg)*
16M01	BENT	2250	20	70
16M02	BENT	1740	459	1240
16M03	BENT	1080	20	34
16M04	STRAIGHT	4015	6	37
16M05	STRAIGHT	4091	6	38
16M06	STRAIGHT	4370	6	41
16M07	STRAIGHT	4548	6	42
16M08	STRAIGHT	11180	72	1249
16M09	BENT	2510	8	31
16M10	BENT	2010	8	25
TOTAL			2807	

\*FOR INFORMATIONAL PURPOSES ONLY

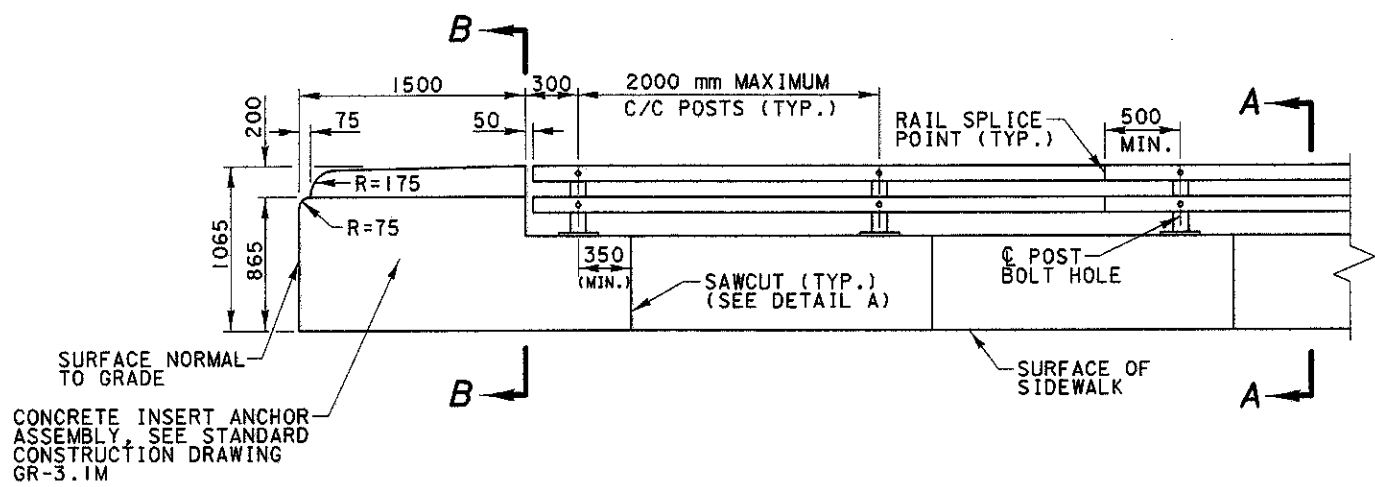
VERTICAL BARS SHALL BE SPACED AT 300 mm MAX.  
 THE MIN. LAP LENGTH FOR 16M BARS IS 890 mm  
 FIELD BEND AND TRIM WHERE NECESSARY



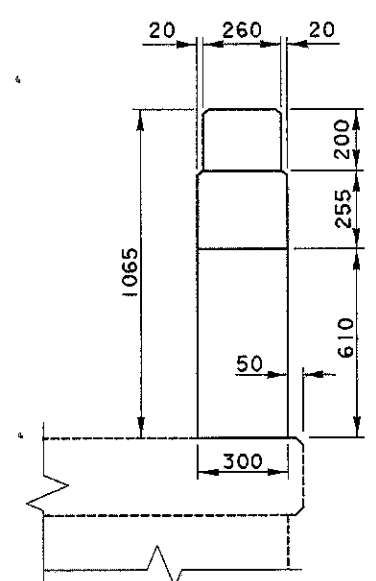
NOTES:

- 1) THE LENGTH OF THE PROPOSED BRIDGE RAILING IS THE SAME AS THE EXISTING BRIDGE RAILING
- 2) THE PROPOSED VANDAL PROTECTION FENCE IS NOT SHOWN, SEE SHEET NO. 84 FOR DETAILS

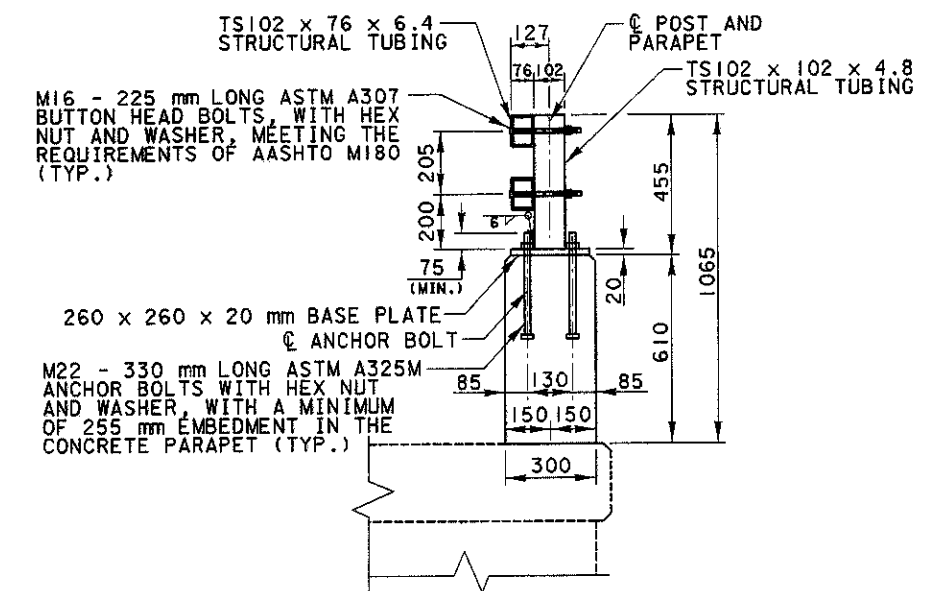
ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE



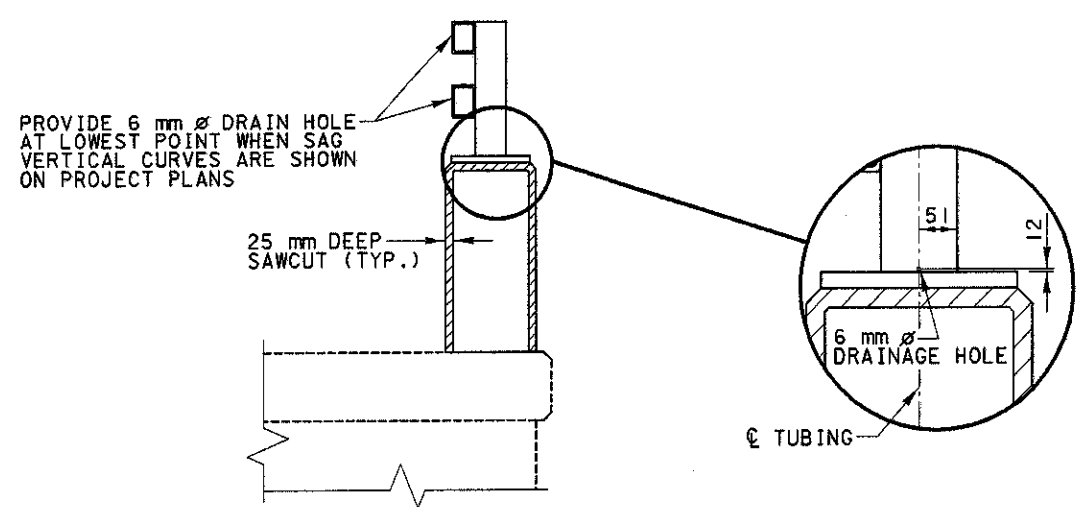
**BRIDGE SIDEWALK RAILING  
TYPE PL-2**



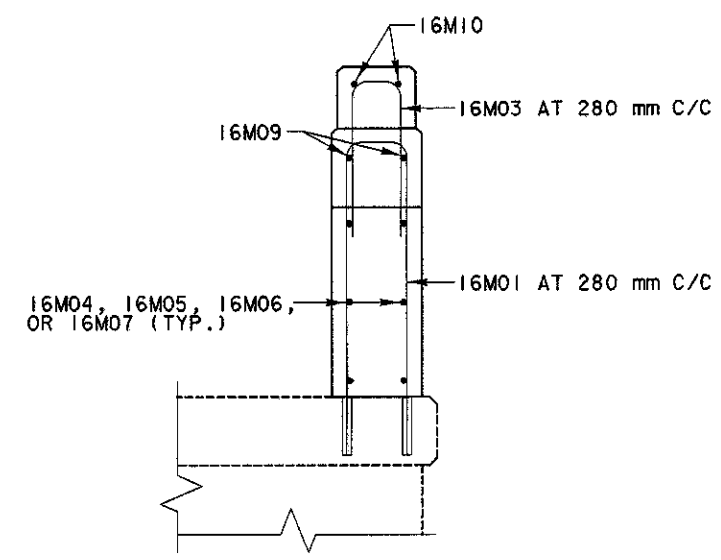
**SECTION B-B**



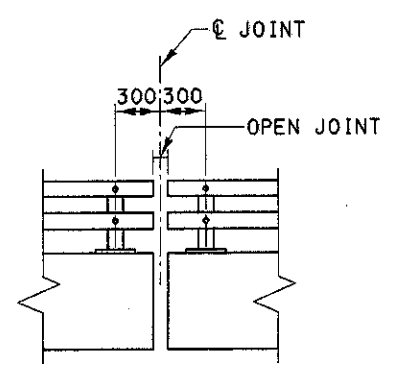
**SECTION A-A**



**DETAIL A  
(SECTION THROUGH SAWCUT)**



**SECTION B-B  
(SHOWING REINFORCING)**



**RAILING DETAIL  
(AT DECK EXPANSION JOINT)**

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE

DESIGN FILE: I:\projects\18915\struct\1368\parapet.dgn  
 WORKSTATION: sglover DATE: 19 JAN 99

THE CONCRETE SHALL BE CLASS S

DESIGN DATA: SHAPED STRUCTURAL TUBING ASTM A500 GRADE B  
 $F_y = 400 \text{ MPa}$ . BASE PLATES AND THE INNER SLEEVE SPLICE  
 PLATES SHALL BE ASTM A36M  $F_y = 250 \text{ MPa}$ .

TUBE SPLICES ARE TO BE LOCATED SO THAT EACH TUBE  
 SEGMENT SHALL BE CONNECTED TO NOT LESS THAN TWO POSTS.

MATERIAL: SHAPED STRUCTURAL TUBING SHALL BE AS PER ODOT  
 CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) ITEM  
 707.10. REINFORCING STEEL SHALL BE AS PER ITEM 709.00.  
 STEEL FOR PLATES SHALL BE AS PER ITEM 711.01.

GALVANIZING: ALL SHAPED STRUCTURAL TUBES, PLATES, HARD-  
 WARE AND ACCESSORIES SHALL BE GALVANIZED IN ACCORDANCE  
 WITH ASTM A123 OR ASTM A153.

SHIMS SHALL BE PROVIDED UNDER RAILING POST, WHERE  
 NECESSARY, TO PROVIDE FOR THE VERTICAL ADJUSTMENT OF  
 THE POST. SHIMS SHALL BE ALUMINUM ALLOY, 2 mm THICK,  
 CUT AS SHOWN. WHERE MORE ADJUSTMENT OF THE POST IS  
 REQUIRED FOR PLUMB ALIGNMENT THAN CAN BE CORRECTED BY  
 ONE SHIM, THE POST SHALL BE REMOVED AND THE CONCRETE  
 SURFACE CORRECTED BY GRINDING. SHIMS SHALL BE AS PER  
 CMS 517.05

CONTROL JOINTS FOR CONCRETE PARAPETS: THE JOINTS SHALL  
 BE CONSTRUCTED BY SAWING 25 mm DEEP ALONG THE PERIMETER  
 OF THE PARAPET AS SOON AS THE SAW CAN BE OPERATED  
 WITHOUT DAMAGING THE CONCRETE.

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 WITH A CAULKING MATERIAL TO A MINIMUM DEPTH OF  
 25 mm CONFORMING TO FEDERAL SPECIFICATION TT-S-00227 E.  
 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.

SAWCUTS SHALL BE PLACED AT A MINIMUM OF 1800 mm AND  
 MAXIMUM OF 3050 mm ON CENTERS. SAWCUTS SHALL NOT BE  
 CONSTRUCTED LESS THAN 350 mm FROM THE CENTER OF THE  
 POSTS.

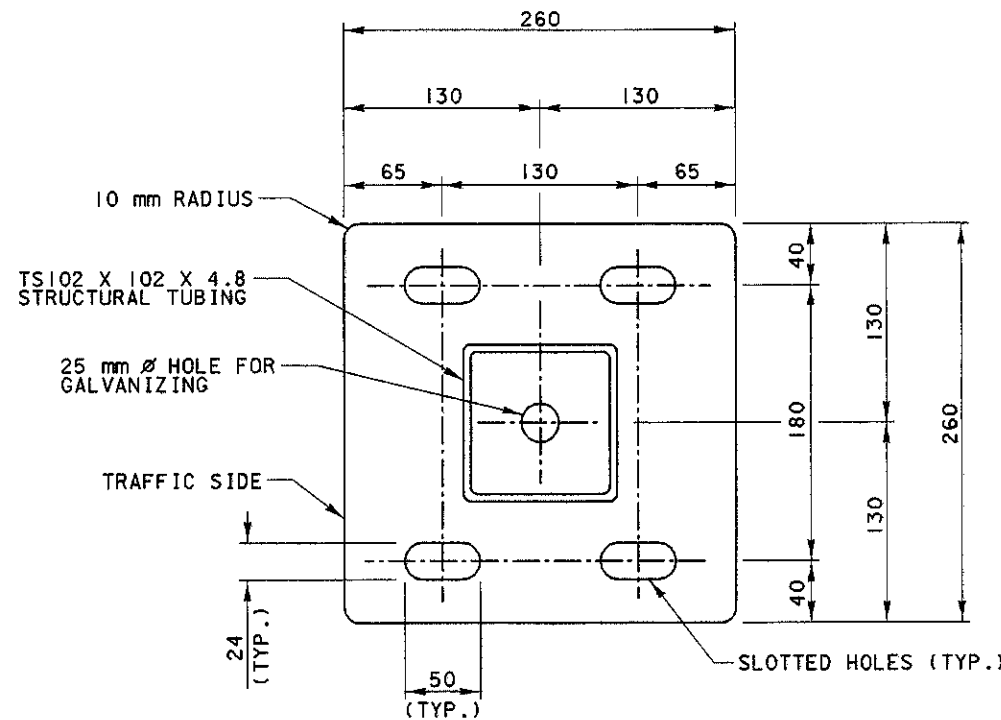
FOR BRIDGE TERMINAL ASSEMBLIES SEE STANDARD CONSTRUCTION  
 DRAWING GR-3.1M

REINFORCING STEEL: THE DETAILING AND PLACEMENT OF THE  
 VERTICAL REINFORCING STEEL IS TO BE COORDINATED WITH  
 THE LOCATION OF THE CRACK CONTROL JOINT SAWCUT.

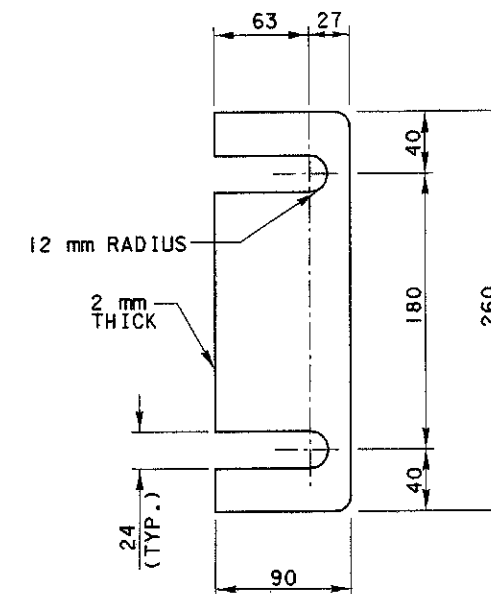
ALL EXPOSED STRUCTURAL TUBING ENDS SHALL BE POUNDED.

HOLES FOR BOLTS SHALL BE AS PER CMS 513.4, UNLESS  
 OTHERWISE NOTED.

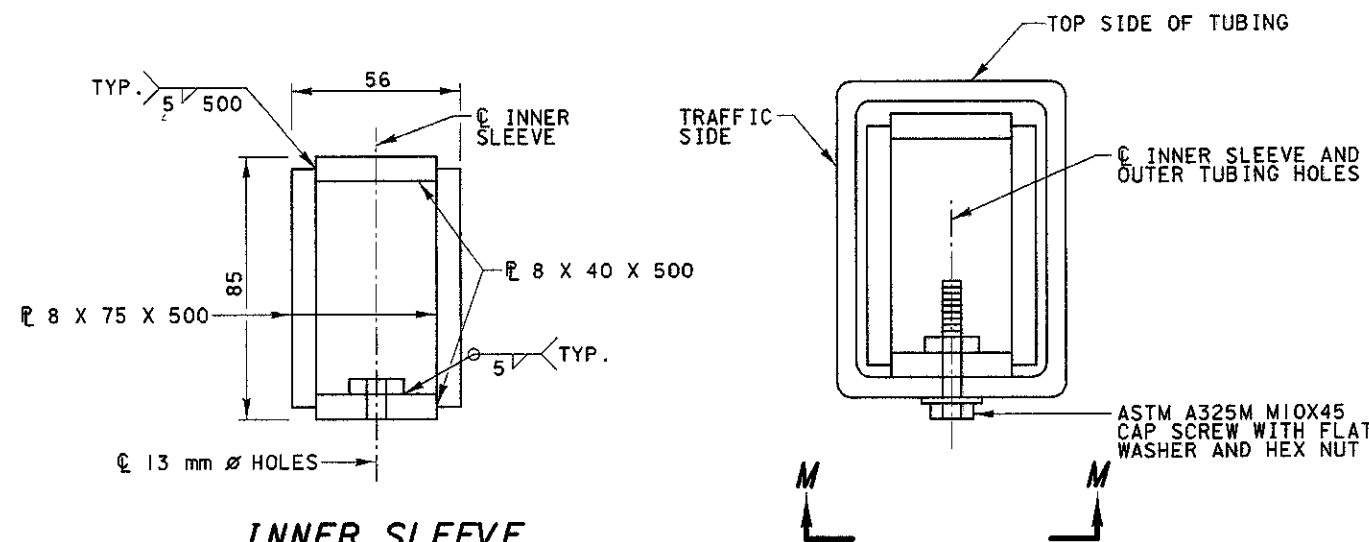
BOLTS IN SLOTTED HOLES SHALL NOT BE DRAWN UP SO TIGHT  
 AS TO PREVENT SLIDING BETWEEN THE OUTER TUBE AND THE  
 INNER SLEEVE.



BASE PLATE DETAIL

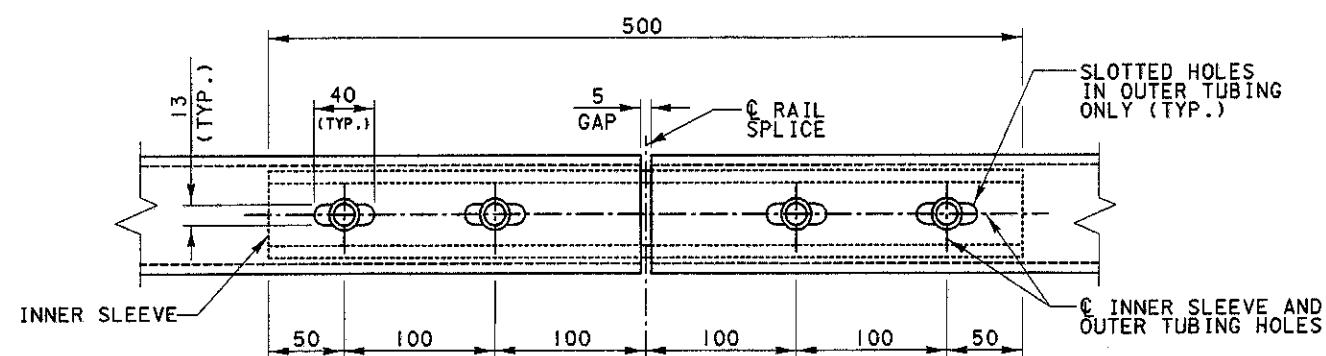


POST SHIM PLATE



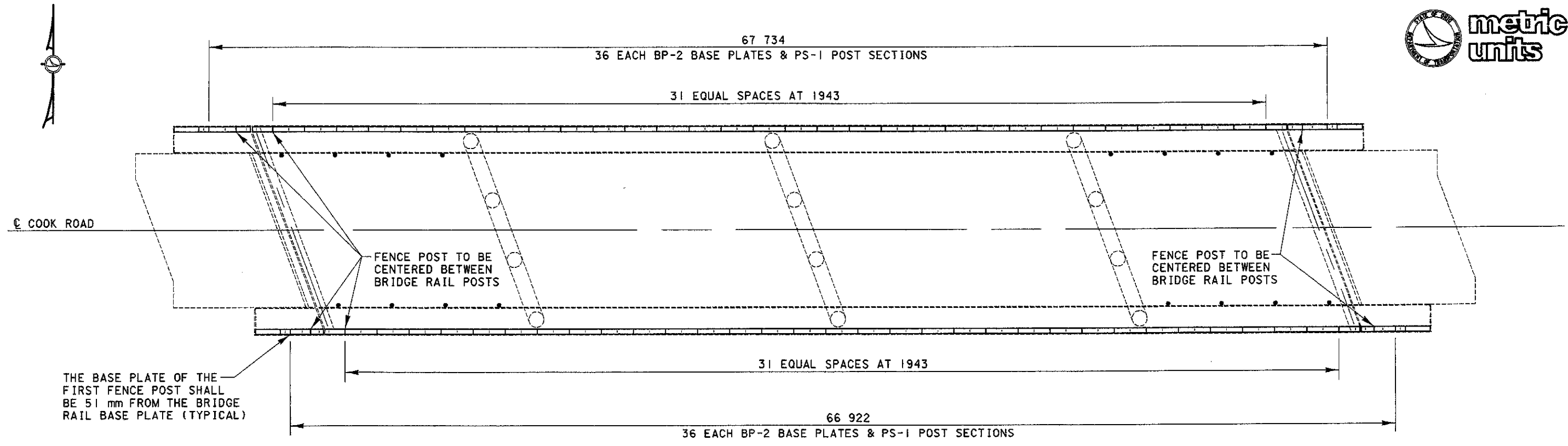
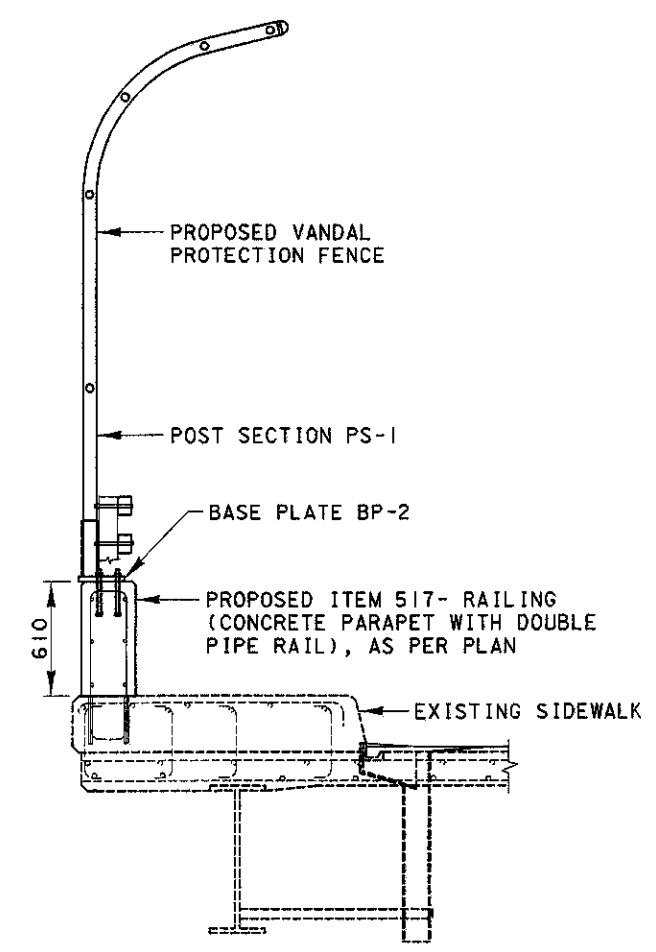
INNER SLEEVE  
 (FINISHED DIMENSIONS)

INTERNAL SPLICE



VIEW M-M  
 RAIL SPLICE DETAILS

ALL DIMENSIONS ARE IN MILLIMETERS,  
 UNLESS NOTED OTHERWISE


**PLAN VIEW**

**TYPICAL SECTION VIEW AT CURB AND PARAPET**
**VANDAL PROTECTION FENCE QUANTITY**

LOCATION	LENGTH
NORTH PARAPET	67.734 m
SOUTH PARAPET	66.922 m
<b>TOTAL</b>	<b>134.656 m</b>

**NOTES:**

- 1) ITEM SPECIAL- VANDAL PROTECTION FENCE, 3.6 METER CURVED, COATED FABRIC SHALL BE INSTALLED ON BOTH SIDES OF THE STRUCTURE
- 2) SEE STANDARD DRAWING VPF-1-90M FOR POST, BASE PLATE AND ADDITIONAL FENCE DETAILS
- 3) PVC COATING SHALL BE CLASS 2B
- 2) FOR PARAPET DETAILS, SEE SHEET NO. 80-83

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE

 DESIGN FILE: I:\projects\16915\struct\1368\parapet.dgn  
 WORKSTATION: sgl/over DATE: 19 JAN 99

# SIGNAL TIMING

A TWO PHASE CONTROLLER WITH CABINET CAPABLE OF BEING SET WITH THE FOLLOWING SPLITS SHALL BE FURNISHED

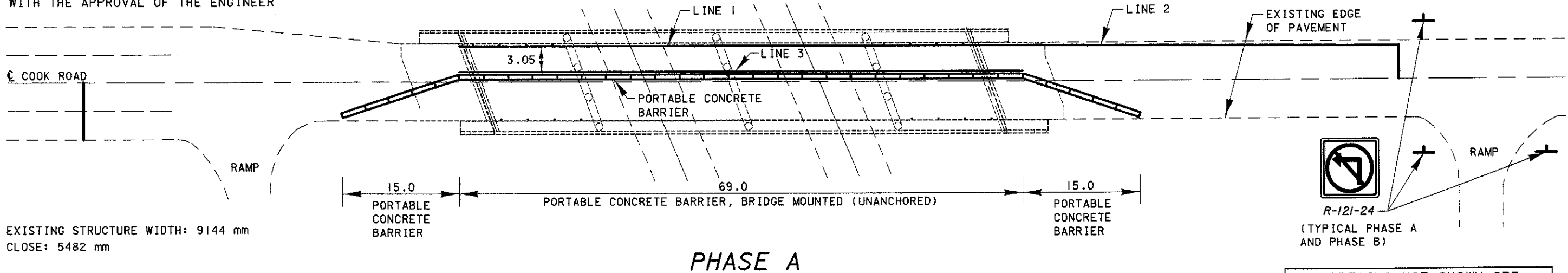
CYCLE LENGTH: 90 SECONDS

	GREEN	AMBER	RED
PHASE A	30	5	10
PHASE B	30	5	10

THE ABOVE TIMING MAY BE CHANGED WITH THE APPROVAL OF THE ENGINEER

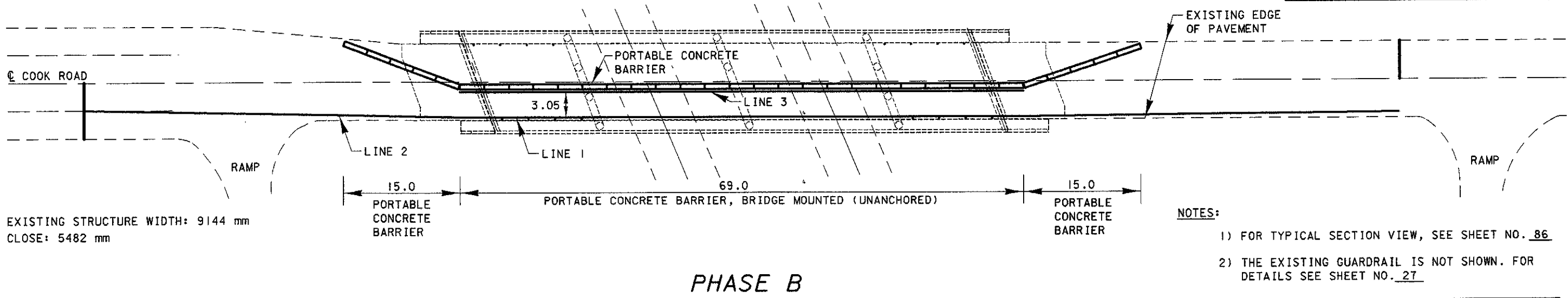


DESIGN AGENCY  
DISTRICT THREE



## PHASE A

FOR DETAILS NOT SHOWN SEE STANDARD DRAWINGS MT-96.11M, MT-96.20M, AND MT-96.25M



## PHASE B

- NOTES:
- 1) FOR TYPICAL SECTION VIEW, SEE SHEET NO. 86
  - 2) THE EXISTING GUARDRAIL IS NOT SHOWN. FOR DETAILS SEE SHEET NO. 27

### ESTIMATED QUANTITIES

ITEM	QUANTITY (PHASE A)	QUANTITY (PHASE B)	TOTAL	UNIT	DESCRIPTION
614	219	281	500	each	TEMPORARY RAISED PAVEMENT MARKER
614	15	15	30	each	BARRIER REFLECTOR, TYPE B2
614	16	16	32	each	OBJECT MARKER
614	0.10		0.10	kilometer	TEMPORARY CENTER LINE, CLASS I
614	0.015	0.015	0.03	kilometer	TEMPORARY EDGE LINE, CLASS I
614	10		10	meter	TEMPORARY STOP LINE, CLASS I
622	30	30	60	meter	PORTABLE CONCRETE BARRIER, 813 MM
622	69	69	138	meter	PORTABLE CONCRETE BARRIER, 813 MM, BRIDGE MOUNTED

### TEMPORARY RAISED PAVEMENT MARKERS (TYPE A)

	SPACING	QUANTITY (WHITE)	QUANTITY (YELLOW)
PHASE A			
LINE 1 = 69.0 m	1.5 m	47	47
LINE 2 = 46.0 m	1.5 m	31	
LINE 3 = 69.0 m	1.5 m	47	47
PHASE B			
LINE 1 = 115.0 m	1.5 m	78	78
LINE 2 = 46.0 m	1.5 m	31	
LINE 3 = 69.0 m	1.5 m	47	47
<b>TOTAL</b>		<b>281</b>	<b>219</b>

ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE

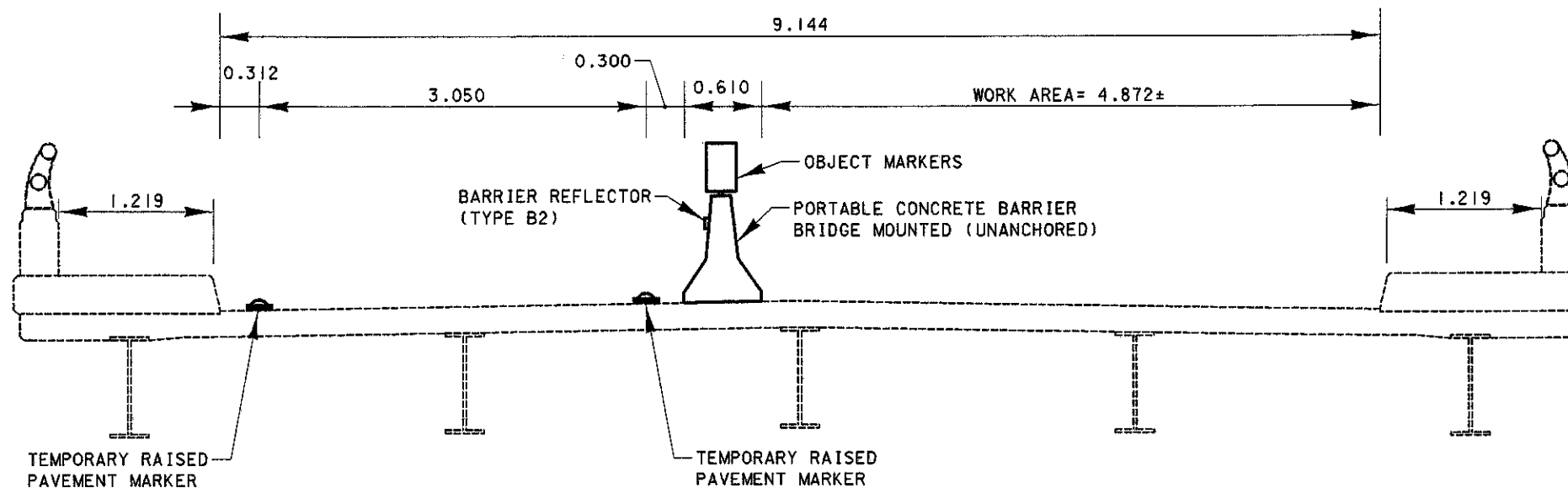
ALL QUANTITIES CARRIED TO GENERAL SUMMARY, SHEET NO. 20

DESIGN FILE: I:\projects\16915\struct\1368\misc.dgn  
WORKSTATION: egl/over DATE: 19 JAN 99

MAINTENANCE OF TRAFFIC  
RIC-13-22015 S.L.K. (RIC-13-1368 S.L.M.)  
UNDER COOK ROAD

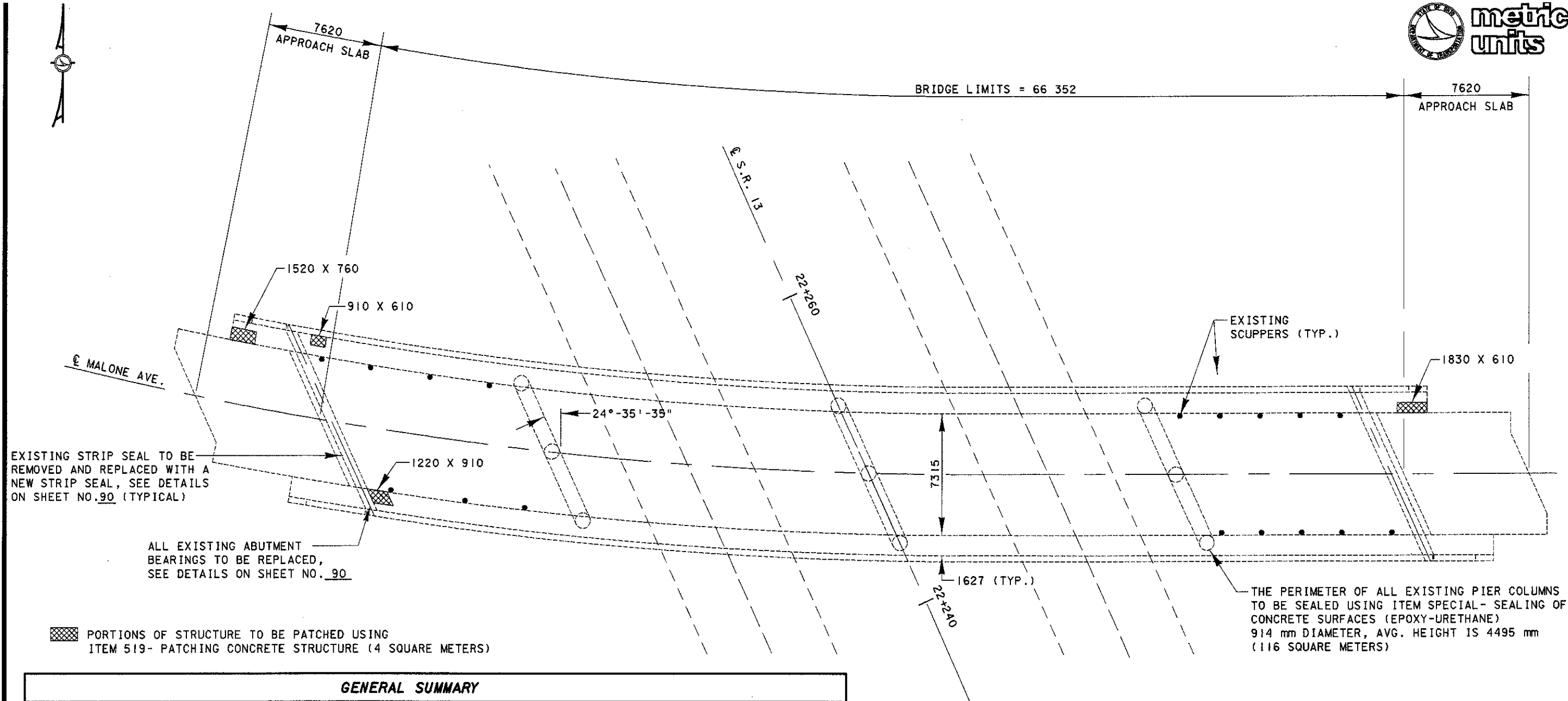
RIC-13-17.445

85  
112



TYPICAL SECTION ON BRIDGE  
(PHASE A SHOWN)

BRIDGE LIMITS = 66 352



PLAN VIEW

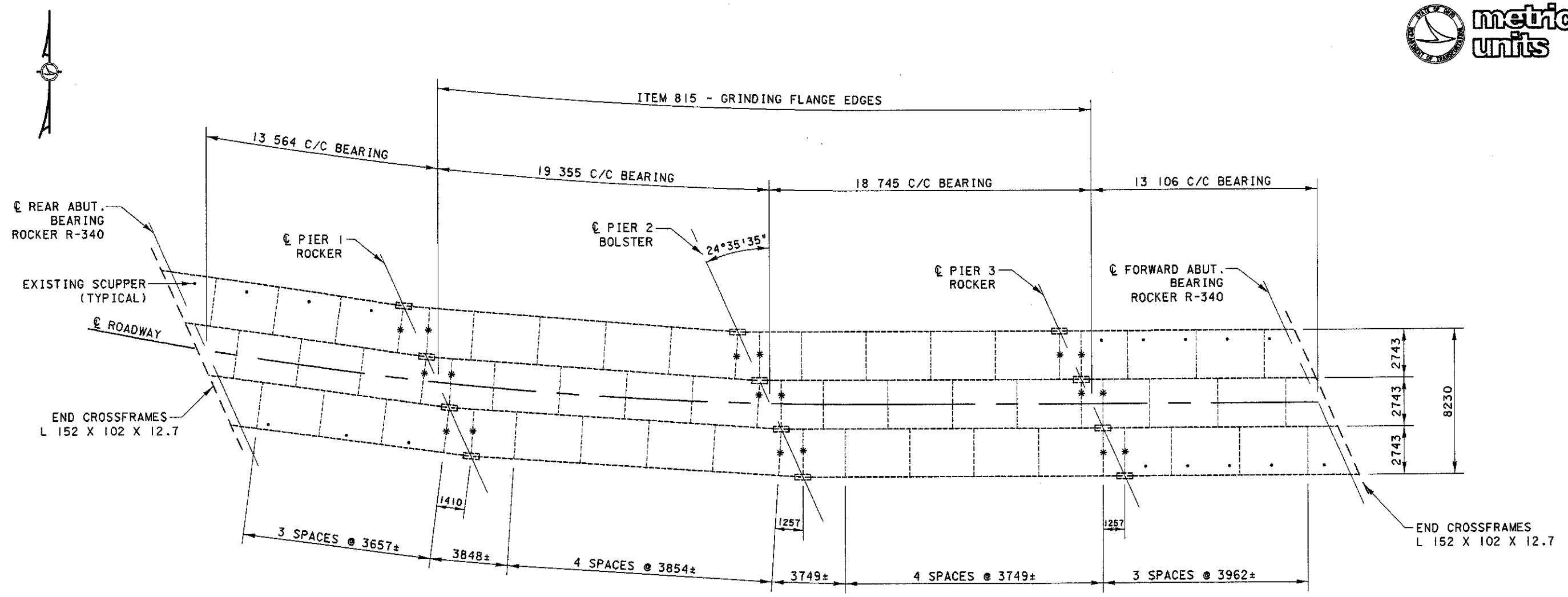
**GENERAL SUMMARY**

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
202	98100	8	each	REMOVAL MISC.: ROCKER
202	98100	2	each	REMOVAL MISC.: STRIP SEAL
SPECIAL	51267504	230	square meter	SEALING OF CONCRETE SURFACES (NON-EPOXY)
SPECIAL	51267510	516	square meter	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
SPECIAL	51273500	25	square meter	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN
516	01300	16	meter	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS
516	46900	8	each	BEARING DEVICE, MISC.: ROCKER
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN
519	11100	9	square meter	PATCHING CONCRETE STRUCTURE
SPECIAL	51911550	2	square meter	PATCHING CONCRETE BRIDGE DECK WITH QSC
815	00050	880	square meter	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815	00056	880	square meter	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU
815	00060	880	square meter	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU
815	00066	880	square meter	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815	00504	100	man hour	GRINDING FINS, TEARS, SLIVERS
815	00508	610	meter	GRINDING FLANGE EDGES
846	73000	486	square meter	TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN

**NOTES:**

- 1) THE EXISTING GUARDRAIL IS NOT SHOWN
- 2) THE EXISTING VANDAL PROTECTION FENCE IS NOT SHOWN
- 3) A QUANTITY OF 2 SQUARE METERS HAS BEEN SET UP TO BE USED AS DIRECTED BY THE ENGINEER FOR DECK PATCHING (ITEM SPECIAL- PATCHING CONCRETE BRIDGE DECK WITH QSC)
- 4) THE CONSTRUCTION JOINTS AND CRACKS IN THE EXISTING CONCRETE OVERLAY AND THE PERIMETER OF THE PROPOSED DECK PATCHES SHALL BE SEALED USING ITEM SPECIAL- TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN (SEAL SHALL BE APPLIED 50 mm ON EACH SIDE OF JOINT/ CRACK)
- 5) THE ENTIRE BRIDGE DECK SHALL BE SEALED USING ITEM 846- TREATING CONCRETE BRIDGE WITH HMWM RESIN

 ALL DIMENSIONS ARE IN MILLIMETERS,  
 UNLESS NOTED OTHERWISE



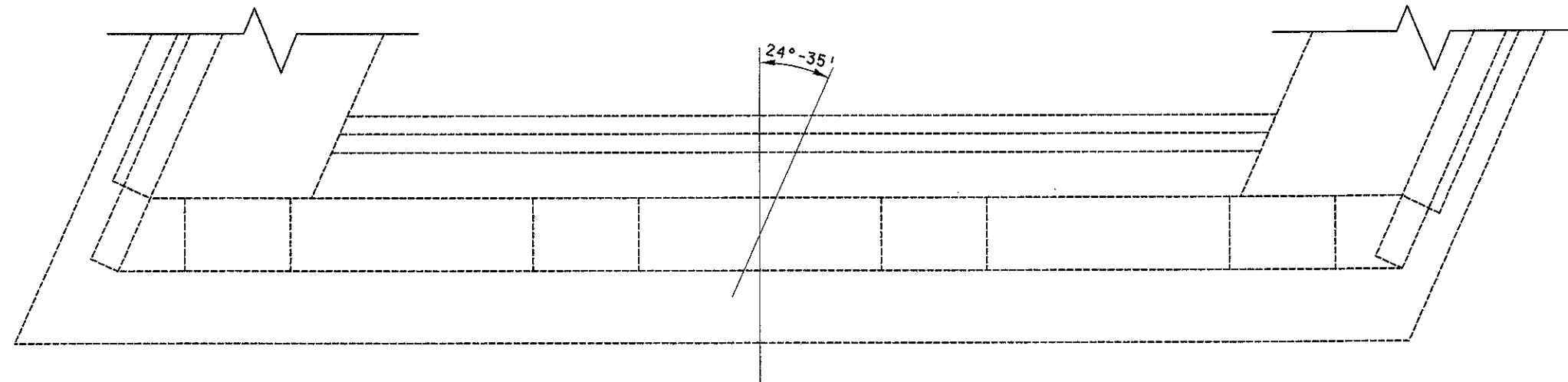
ALL BEAMS: W 920 X 223  
 INTERMEDIATE CROSSFRAMES: 3L 76 X 76 X 7.9  
 \* INTERMEDIATE CROSSFRAMES: 4L 76 X 76 X 7.9

PLAN VIEW

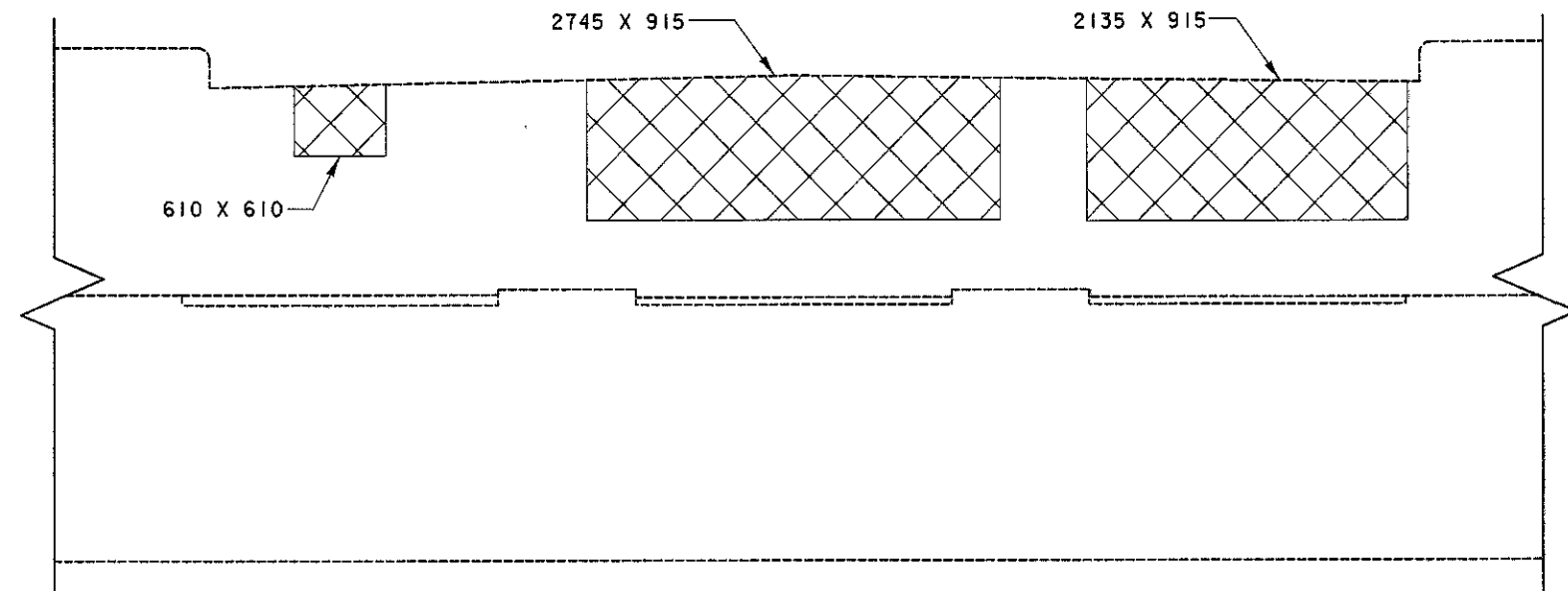
- NOTES:
- 1) ALL STEEL SHALL BE PAINTED USING SYSTEM OZEU

ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE






PLAN VIEW  
FORWARD ABUTMENT



ELEVATION VIEW  
FORWARD ABUTMENT

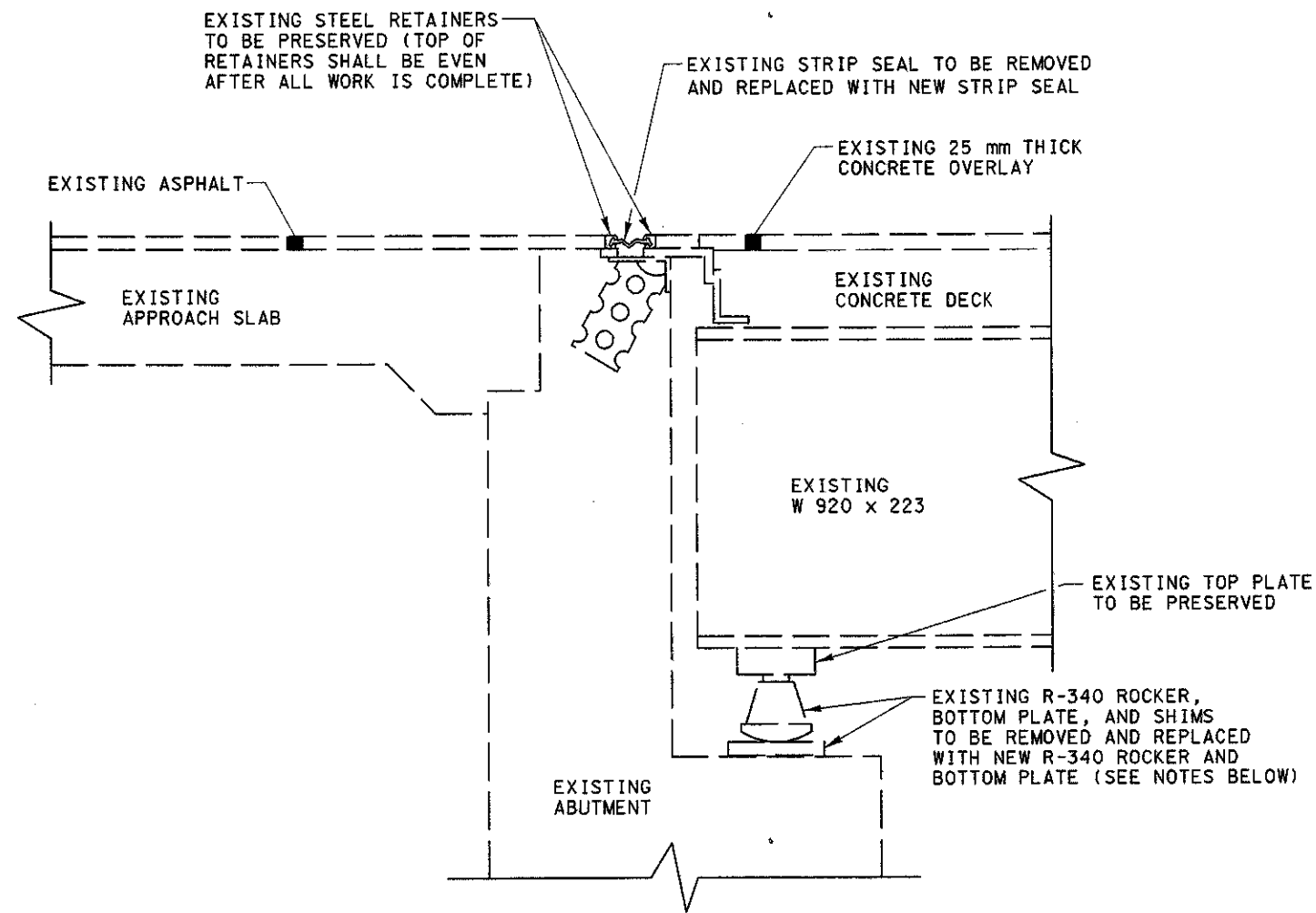
 PORTIONS OF STRUCTURE TO BE PATCHED USING  
ITEM 519- PATCHING CONCRETE STRUCTURE  
(5 SQUARE METERS)

NOTES:  
1) NO PATCHING NEEDED ON REAR ABUTMENT

ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE

DESIGN FILE: I:\projects\16915\struct\1383\misc.dgn  
WORKSTATION: eglover DATE: 19 JAN 99

DESIGN AGENCY DISTRICT THREE
DATE 1/99
REVIEWED QC/PK
STRUCTURE FILE NUMBER 7000421
DRAWN C.M.K.
CHECKED N.R.C.
DESIGNED E.J.G.
DATE 2-98
ABUTMENT DETAILS RIC-13-22257 S.L.K. (RIC-13-1383 S.L.M.) UNDER MALONE AVE.
RIC-13-17.445
89 112

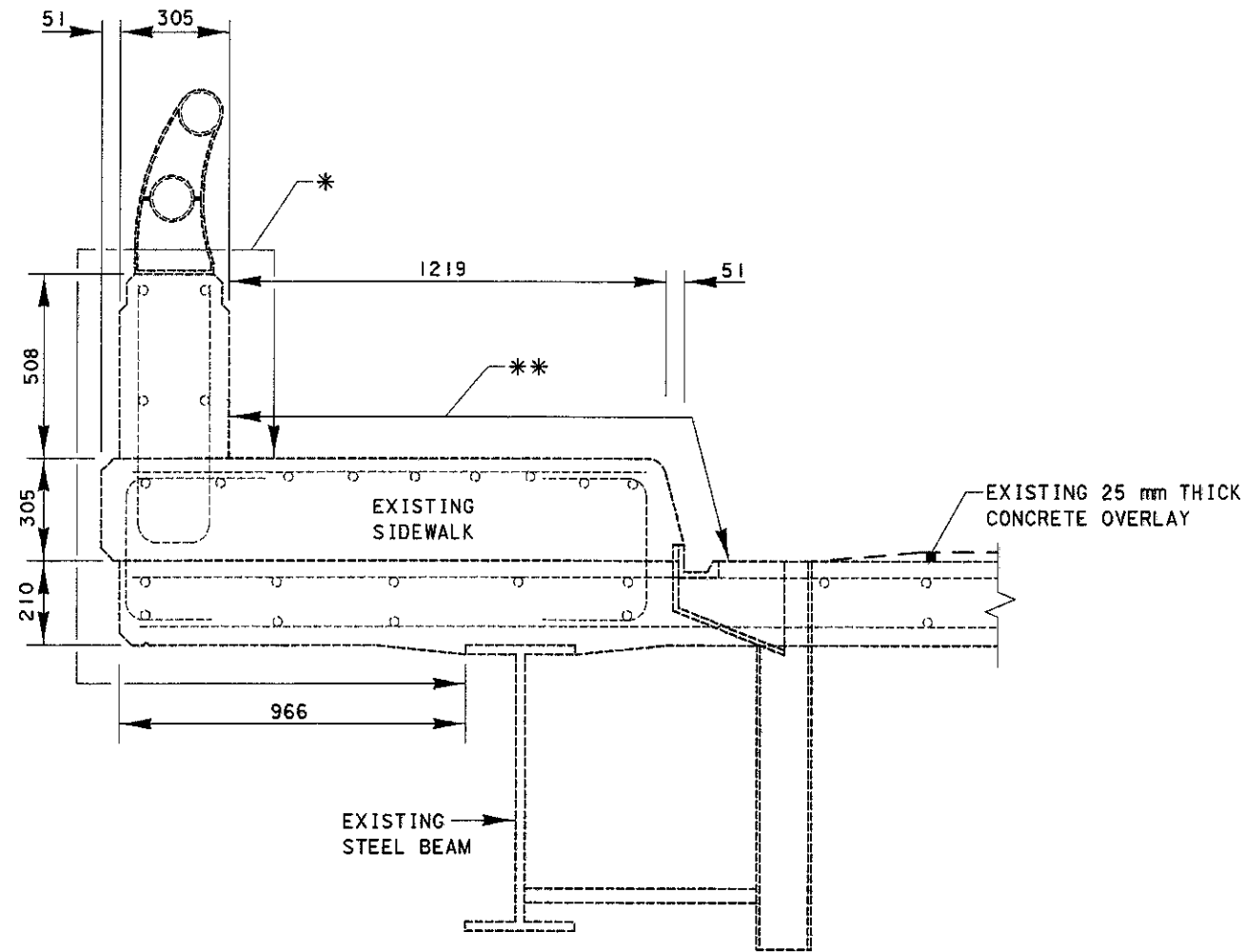


TYPICAL SECTION VIEW  
AT ABUTMENTS

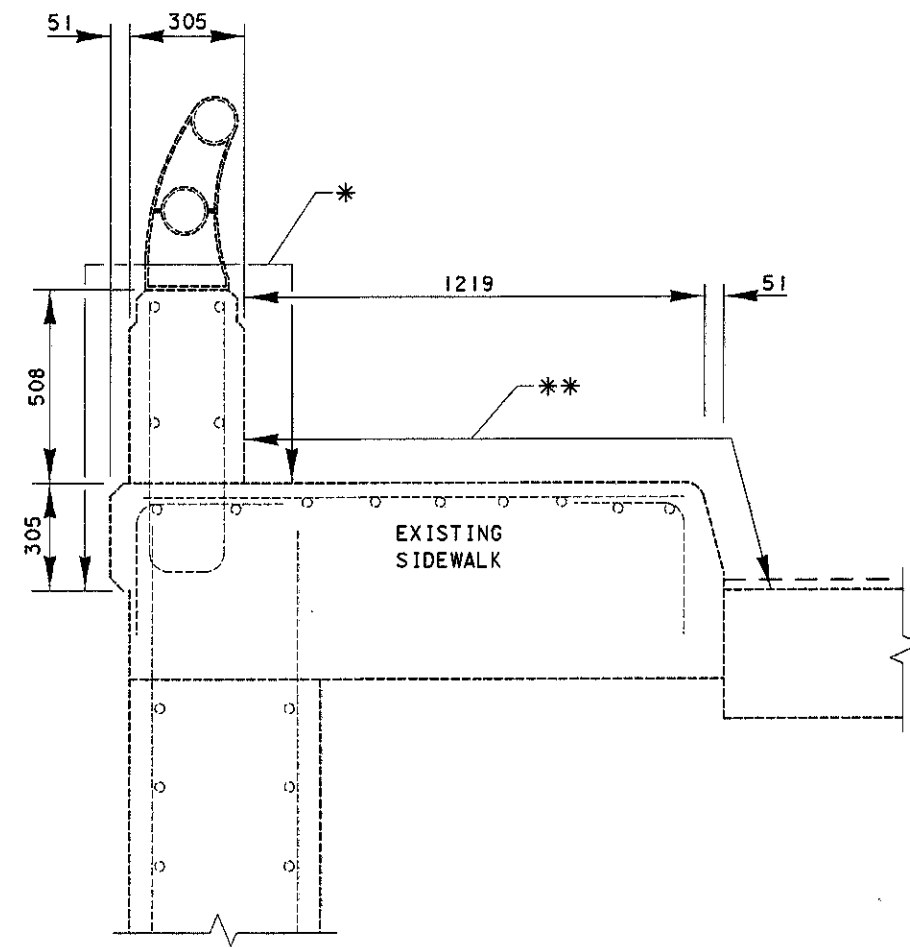
NOTES:

- 1) SEE STANDARD DRAWING RB-1-55M FOR ROCKER DETAILS
- 2) NEW STEEL SHIMS HAVING THE SAME WIDTH AND LENGTH OF THE BOTTOM PLATE AT THE ROCKERS SHALL BE USED TO OBTAIN THE PROPER ELEVATION OF THE STEEL RETAINERS AS SHOWN IN THE TYPICAL SECTION VIEW ON THIS SHEET. THE STEEL SHIMS AND SHEET LEAD OR PREFORMED BEARING PADS ARE INCIDENTAL TO ITEM 516- BEARING DEVICE, MISC.: ROCKER

ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE



TYPICAL SECTION  
VIEW ON BRIDGE



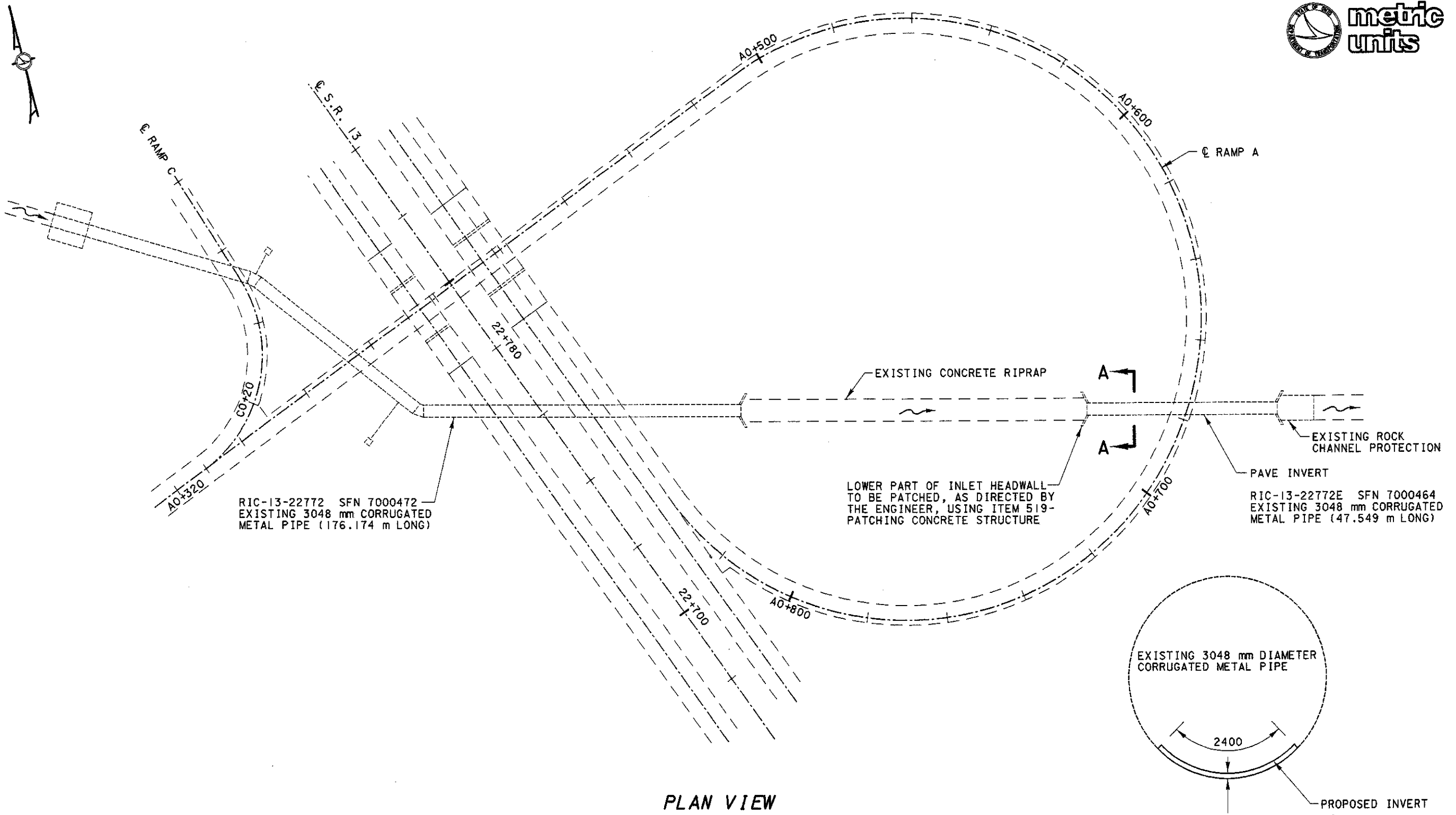
TYPICAL SECTION  
VIEW OFF BRIDGE

- \* ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (400 SQUARE METERS)
- \*\* ITEM SPECIAL - SEALING OF CONCRETE SURFACES (NON-EPOXY) (230 SQUARE METERS)

NOTES:

- 1) THE EXISTING VANDAL PROTECTION FENCE IS NOT SHOWN

ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE

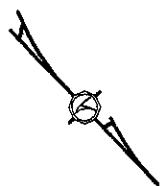

**PLAN VIEW**
**SECTION A-A**

- NOTES:**
- EXISTING GUARDRAIL NOT SHOWN. FOR GUARDRAIL DETAILS, SEE SHEET NO. 28.

**GENERAL SUMMARY**

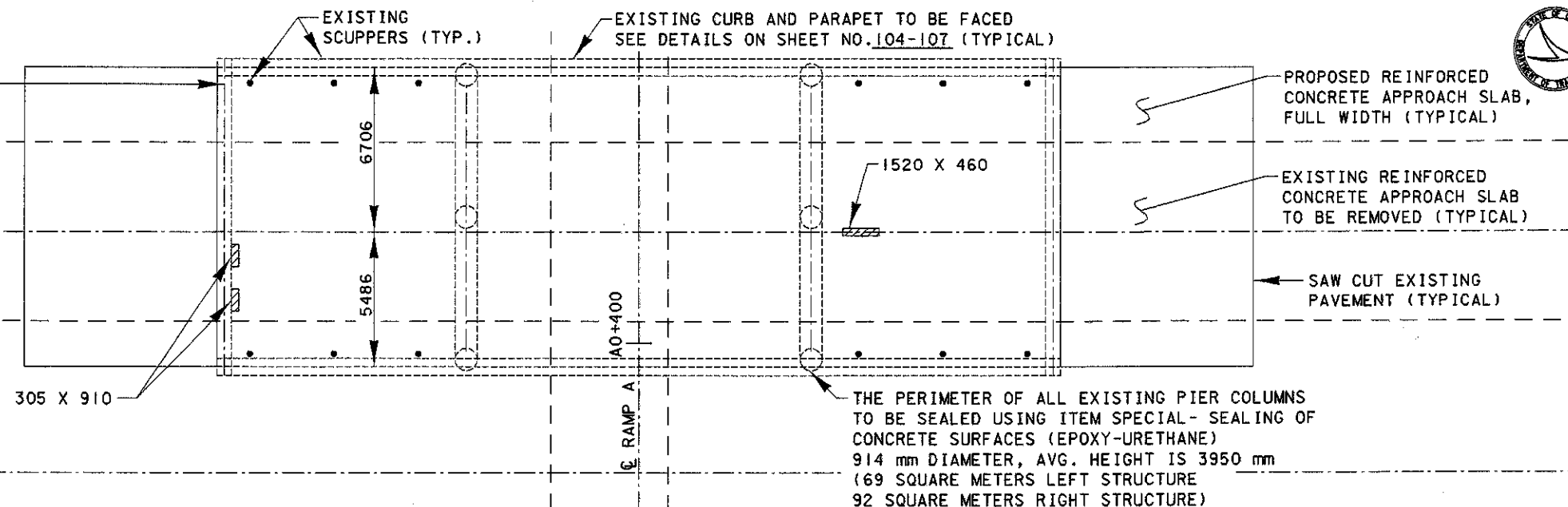
ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING
519	11100	1	square meter	PATCHING CONCRETE STRUCTURE
603	96550	48	meter	CONDUIT, FIELD PAVING OF EXISTING PIPE (TYPE A, 3048 mm)

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE

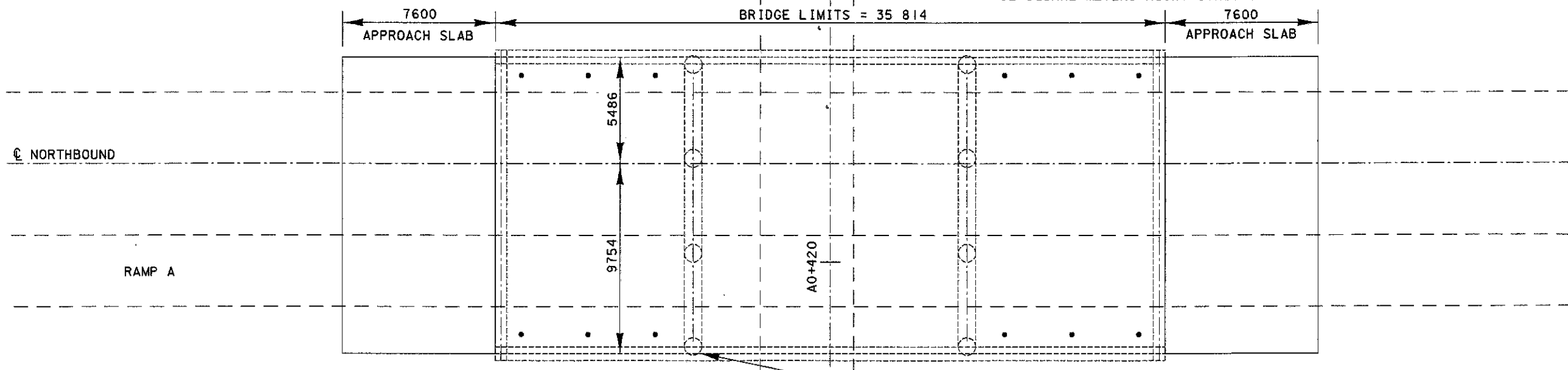


ALL EXISTING ABUTMENT BEARINGS TO BE REPLACED, SEE DETAILS ON SHEET NO. 96,97 (TYPICAL)


SOUTHBOUND



S.R. 13



EXISTING PIER COLUMN TO BE ENCASED SEE DETAILS ON SHEET NO. 108


 PORTIONS OF BRIDGE DECK TO BE PATCHED USING ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK WITH QSC

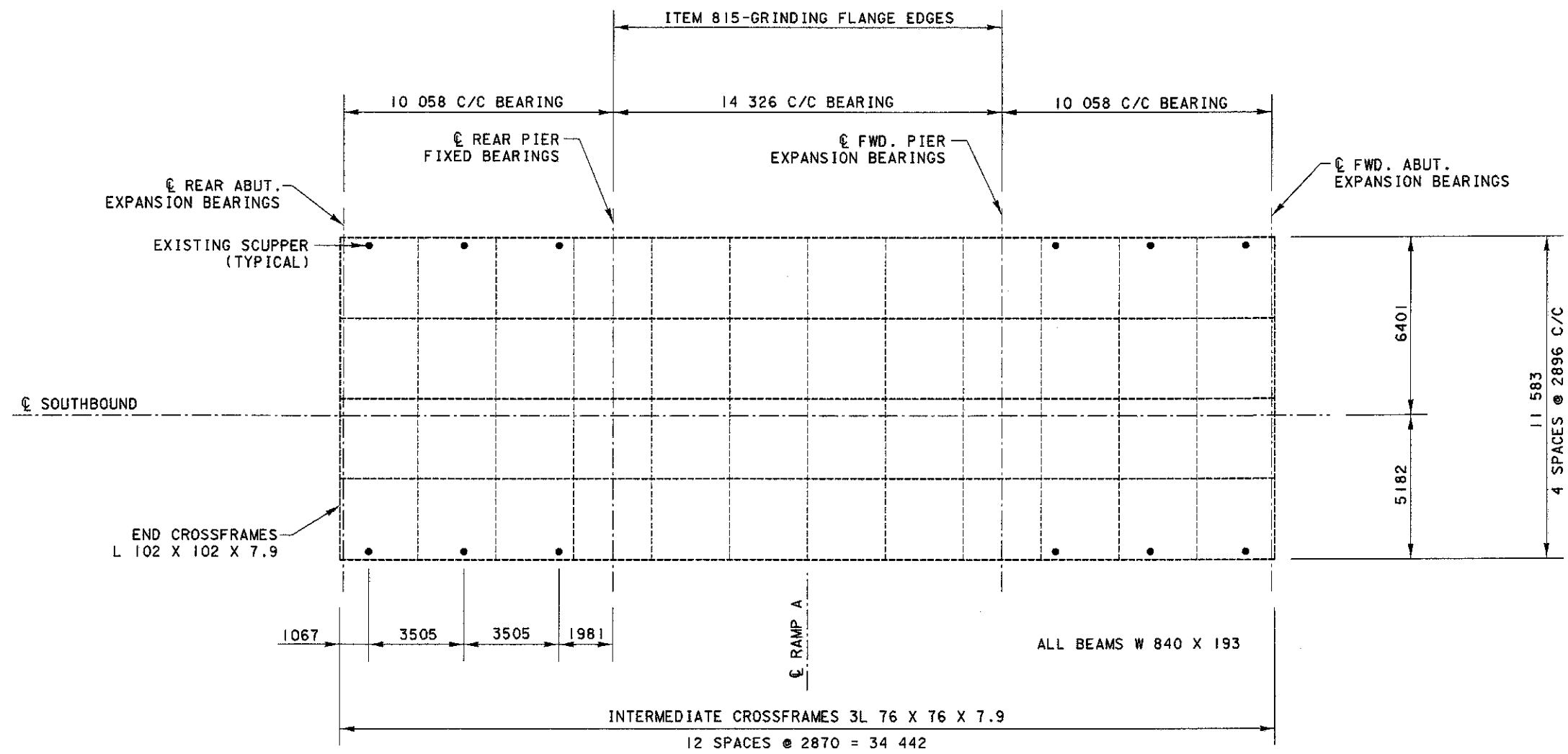
**PLAN VIEW**
**NOTES:**

- 1) THE EXISTING GUARDRAIL IS NOT SHOWN. FOR GUARDRAIL DETAILS SEE SHEET NO. 28,29
- 2) THE CONSTRUCTION JOINTS AND CRACKS IN THE EXISTING CONCRETE OVERLAYS AND THE PERIMETER OF THE PROPOSED DECK PATCHES SHALL BE SEALED USING ITEM SPECIAL - TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN (SEAL SHALL BE APPLIED 50 mm ON EACH SIDE OF JOINT/ CRACK)
- 3) THE ENTIRE BRIDGE DECKS SHALL BE SEALED USING ITEM 846- TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN
- 4) REMOVAL OF EXISTING MATERIAL ADJACENT TO AND BELOW THE EXISTING APPROACH SLABS IS INCIDENTAL TO ITEM 202- APPROACH SLAB REMOVED, AS PER PLAN
- 5) SAW CUTTING OF THE EXISTING PAVEMENT IS INCIDENTAL TO ITEM 202- APPROACH SLAB REMOVED, AS PER PLAN

**GENERAL SUMMARY**

ITEM	EXTENSION	LEFT	RIGHT	TOTAL	UNIT	DESCRIPTION
202	11301	25	28	53	cubic meter	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	98100	10	12	22	each	REMOVAL MISC., SLIDING BEARING
SPECIAL	51267510	389	412	801	square meter	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
SPECIAL	51273500	20	25	45	square meter	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN
516	11210	26	32	58	meter	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL
516	46900	10	12	22	each	BEARING DEVICE, MISC., SLIDING BEARING
516	47001	LUMP	LUMP	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN
517	73201	32	32	64	meter	RAILING (DEFLECTOR PARAPET TYPE), AS PER PLAN
517	76201	70	70	140	meter	RAILING FACED, AS PER PLAN
518	21231	LUMP	LUMP	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN
518	40000	18	21	39	meter	150 mm PERFORATED CORRUGATED PLASTIC PIPE
519	11100	10	5	15	square meter	PATCHING CONCRETE STRUCTURE
SPECIAL	51911550	2		2	square meter	PATCHING CONCRETE BRIDGE DECK WITH QSC
SPECIAL	53000300	10	10	20	kilogram	STRUCTURE, MISC., REPLACEMENT REINFORCING STEEL
815	00050	580	700	1280	square meter	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815	00056	580	700	1280	square meter	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU
815	00060	580	700	1280	square meter	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU
815	00066	580	700	1280	square meter	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815	00504	75	75	150	man hour	GRINDING FINS, TEARS, SLIVERS
815	00508	287	344	631	meter	GRINDING FLANGE EDGES
842	45701	19	23	42	cubic meter	CLASS C CONCRETE, ABUTMENT, AS PER PLAN
842	51100		2	2	cubic meter	CLASS C CONCRETE, MISC., PIER ENCASEMENT
846	73000	412	521	933	square meter	TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE

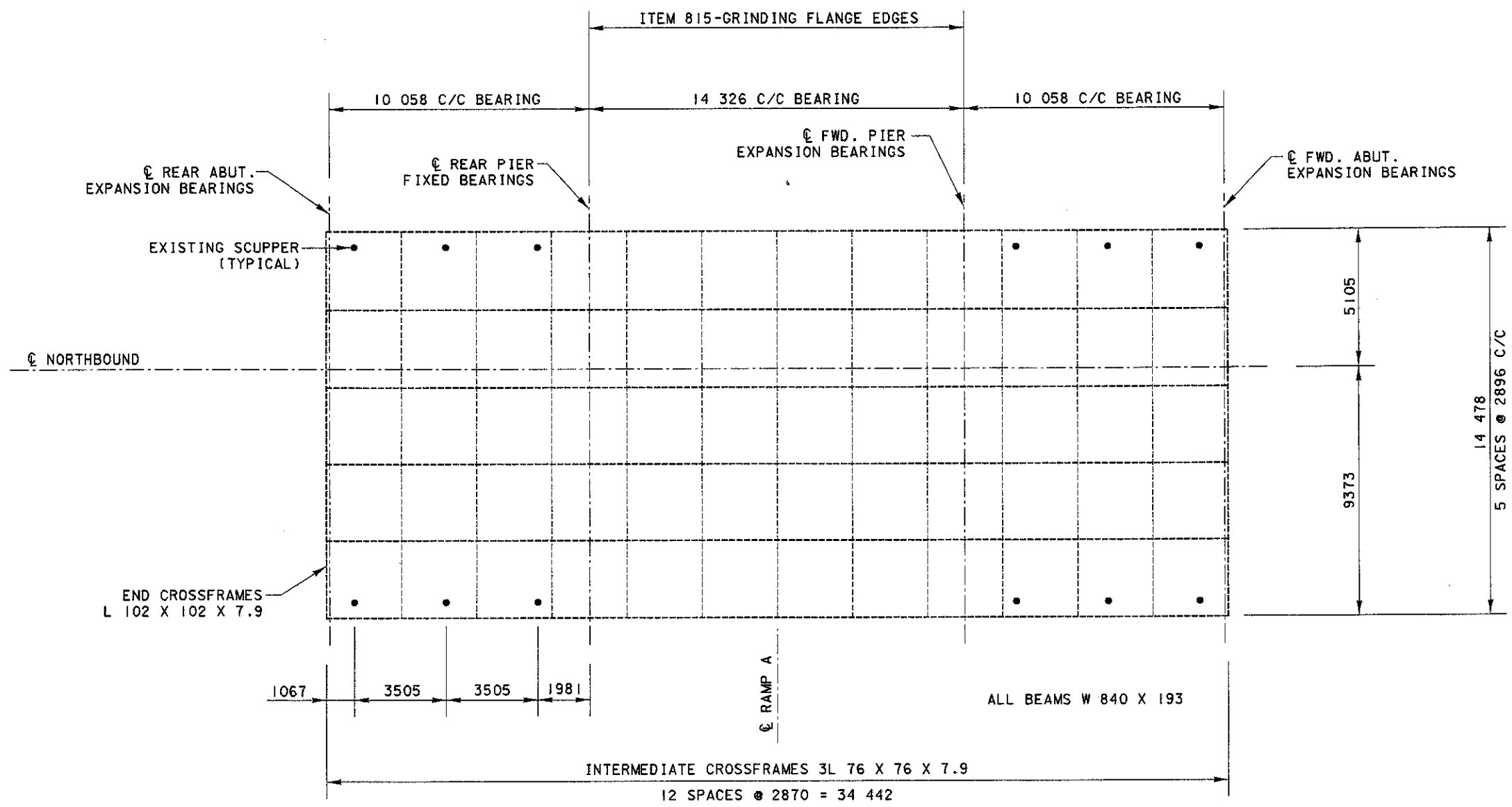
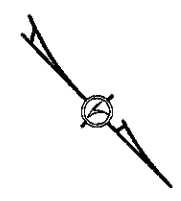


PLAN VIEW

NOTES:  
 1) ALL STEEL SHALL BE PAINTED USING SYSTEM OZEU

ALL DIMENSIONS ARE IN MILLIMETERS,  
 UNLESS NOTED OTHERWISE

DESIGN FILE: I:\projects\16915\struct\1416\Framing.dgn  
 WORKSTATION: eglover DATE: 19 JAN 99

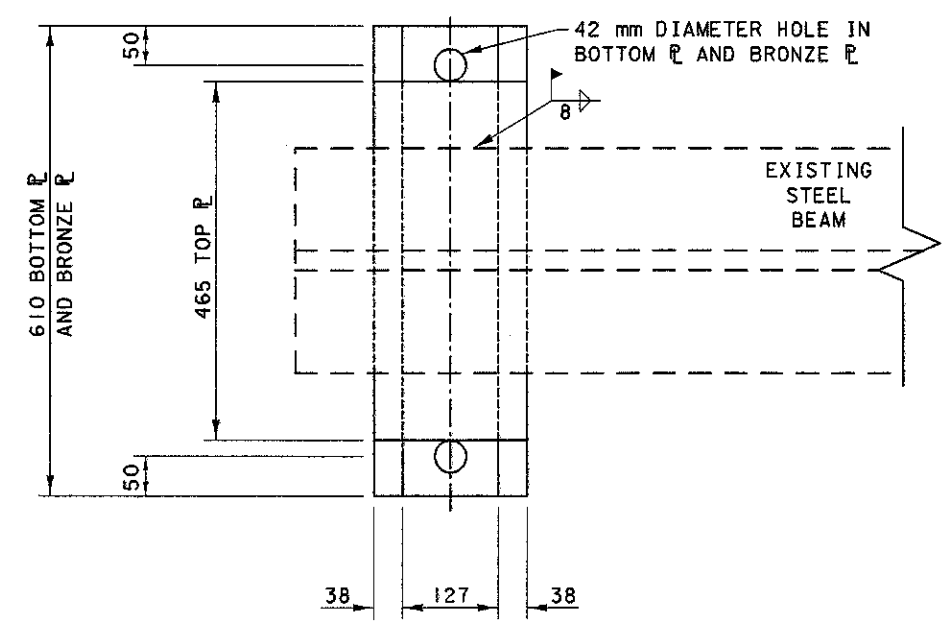


PLAN VIEW

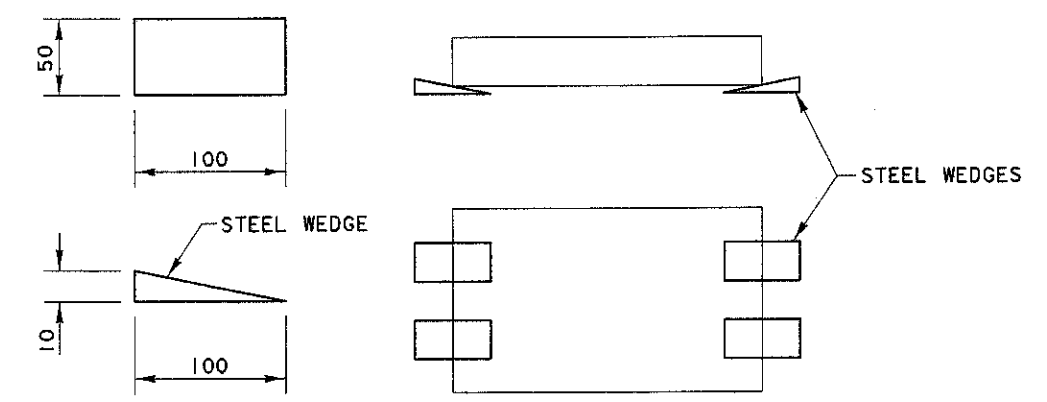
NOTES:  
1) ALL STEEL SHALL BE PAINTED USING SYSTEM OZEU

ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE

DESIGN FILE: I:\projects\16315\struct\file\framing.dgn  
WORKSTATION: eglover DATE: 19 JAN 99



PLAN VIEW

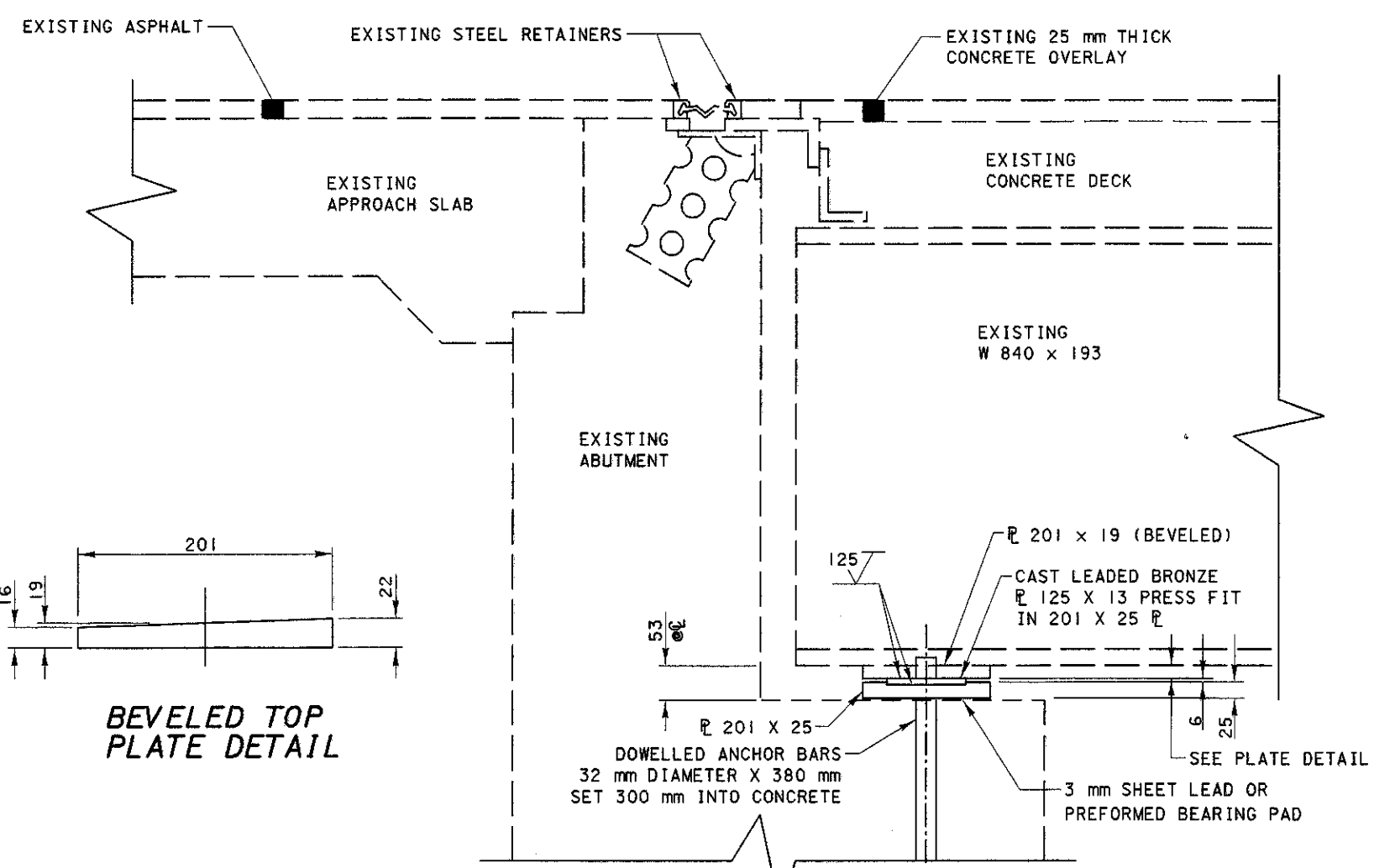


FOUR STEEL WEDGES SHALL BE INSERTED UNDER BEARING PLATE UNTIL BEARING IS ACHIEVED BY JACKING. THEN EPOXY SHALL BE INJECTED BETWEEN THE STEEL BEARING PLATE AND THE CONCRETE BEARING SURFACE IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". AFTER EPOXY HAS CURED, REMOVE STEEL WEDGES AND FILL VOIDS WITH EPOXY

## STEEL BEARING PLATE ADJUSTMENT

## NOTES:

- 1) ALL EXISTING SLIDING BEARINGS AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH NEW SLIDING BEARINGS
- 2) THE TOP AND BOTTOM PLATE SHALL BE STAINLESS STEEL, AISI 400 SERIES, AS PER DESIGNATION A240-89B
- 3) THE BRIDGE SHALL BE JACKED AS PER THE GENERAL NOTE AND THE EXISTING BEARINGS SHALL BE REMOVED. THE EXISTING ANCHOR BARS SHALL BE REMOVED TO THE SURFACE OF THE ABUTMENT SEAT
- 4) NEW ANCHOR BARS SHALL BE DOWELLED INTO THE EXISTING ABUTMENTS AT LOCATIONS SHOWN IN THE DETAILS. THE DOWEL HOLES SHALL BE AS PER 510 OF THE CMS, EXCEPT THE HOLES SHALL BE CORE DRILLED AND EPOXY MORTAR SHALL BE USED. THIS ITEM IS INCIDENTAL TO ITEM 516- BEARING DEVICE, MISC.: SLIDING BEARING
- 5) FOR NEW BEARINGS THAT ARE NOT COMPLETELY IN CONTACT WITH THE ABUTMENT SEATS, REFER TO THE DETAIL ABOVE. BEARING PLATE ADJUSTMENTS ARE INCIDENTAL TO ITEM 516- BEARING DEVICE, MISC.: SLIDING BEARING
- 6) NEW STEEL SHIMS HAVING THE SAME WIDTH AND LENGTH OF THE BOTTOM PLATE AT THE SLIDING BEARINGS SHALL BE USED TO OBTAIN THE PROPER ELEVATION OF THE STEEL RETAINERS AS SHOWN IN THE TYPICAL SECTION VIEW ON THIS SHEET. THE STEEL SHIMS AND SHEET LEAD OR PREFORMED BEARING PADS ARE INCIDENTAL TO ITEM 516- BEARING DEVICE, MISC.: SLIDING BEARING



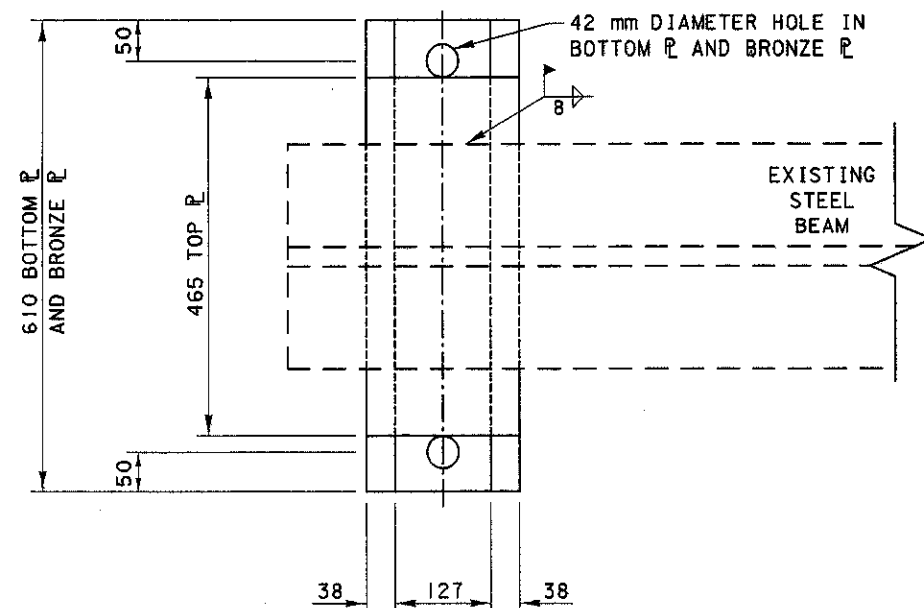
ELEVATION VIEW

## PROPOSED SLIDING BEARINGS

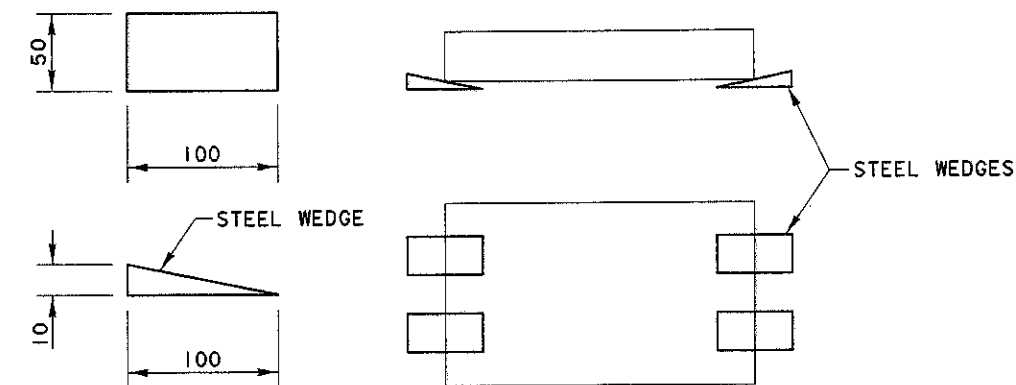
ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE

 DESIGN FILE: I:\projects\16915\struct\1416\bearing.dgn  
 WORKSTATION: eglover  
 DATE: 19 JAN 99



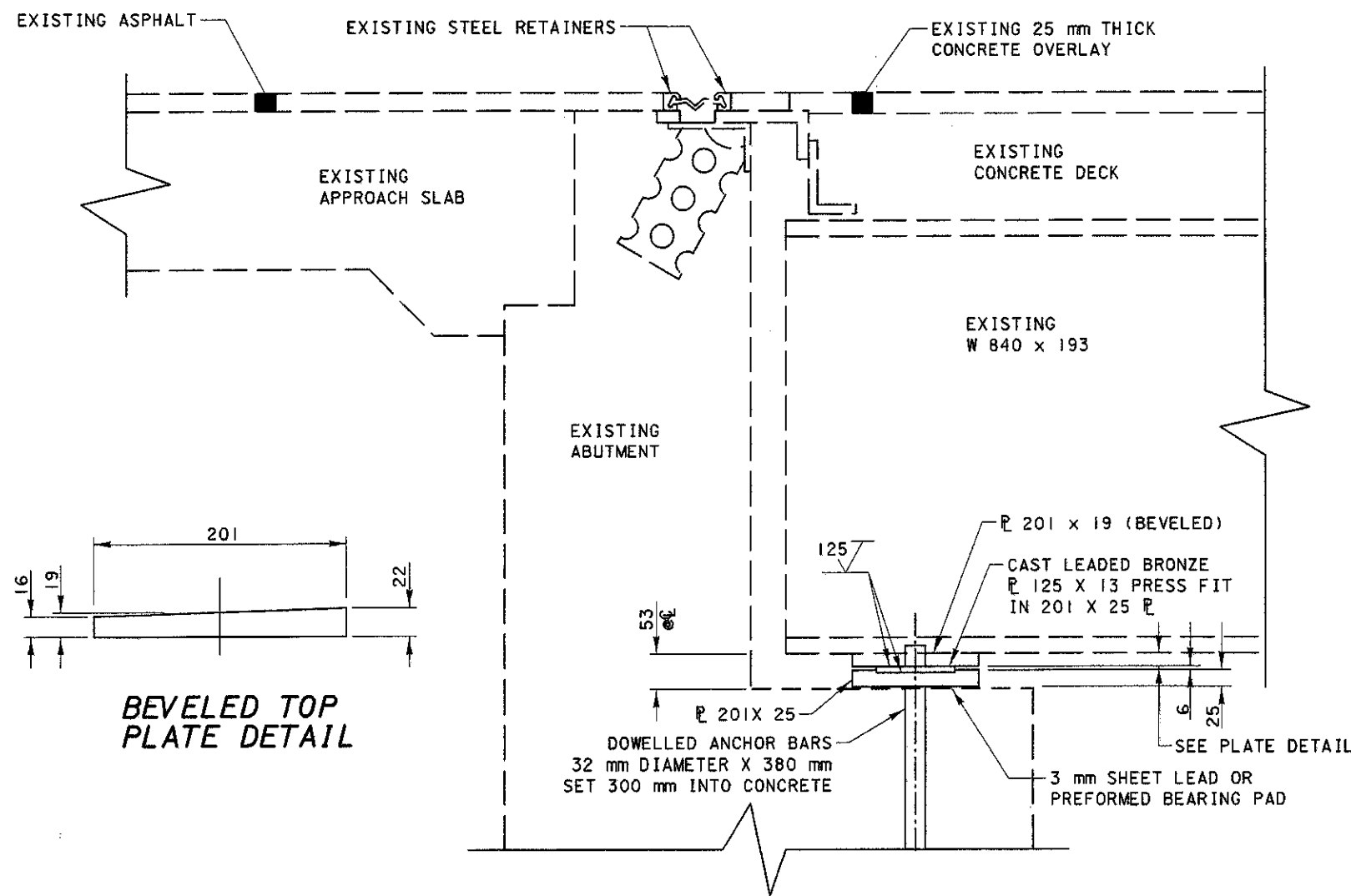


PLAN VIEW



FOUR STEEL WEDGES SHALL BE INSERTED UNDER BEARING PLATE UNTIL BEARING IS ACHIEVED BY JACKING. THEN EPOXY SHALL BE INJECTED BETWEEN THE STEEL BEARING PLATE AND THE CONCRETE BEARING SURFACE IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". AFTER EPOXY HAS CURED, REMOVE STEEL WEDGES AND FILL VOIDS WITH EPOXY

## STEEL BEARING PLATE ADJUSTMENT



ELEVATION VIEW

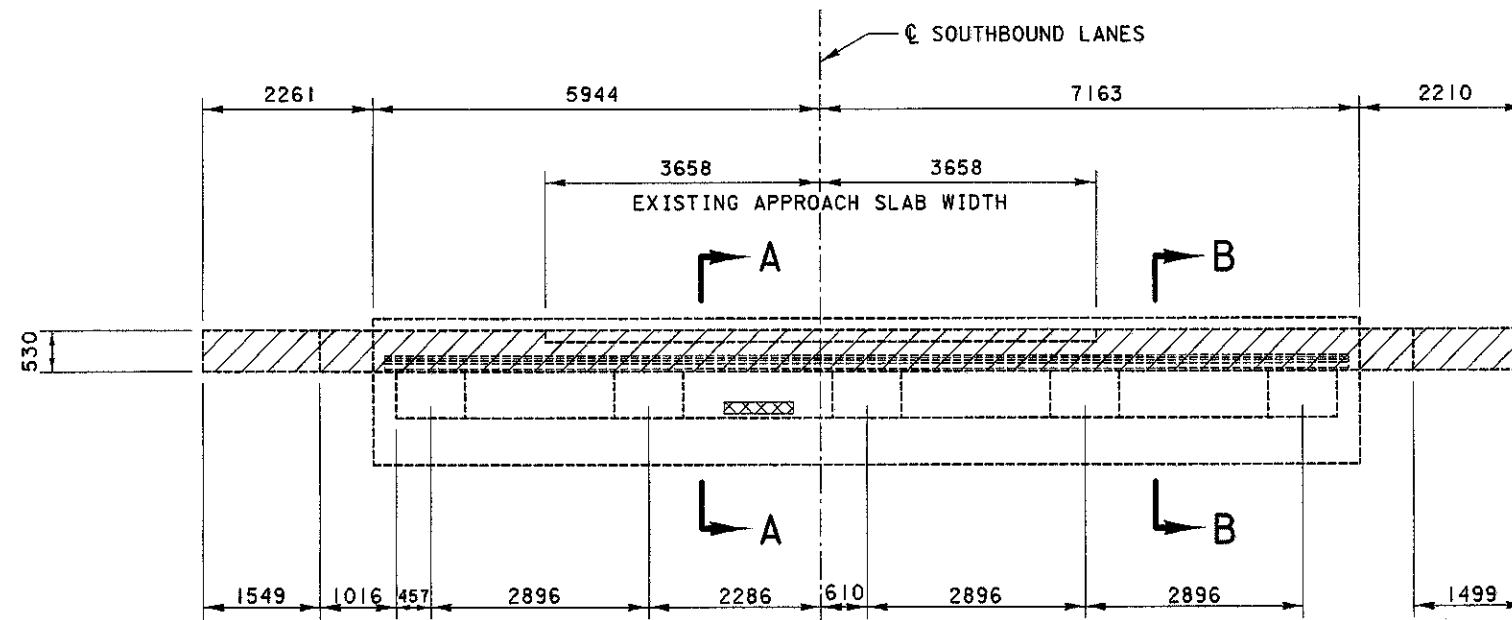
 BEVELED TOP  
PLATE DETAIL

## NOTES:

- 1) ALL EXISTING SLIDING BEARINGS AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH NEW SLIDING BEARINGS
- 2) THE TOP AND BOTTOM PLATE SHALL BE STAINLESS STEEL, AISI 400 SERIES, AS PER DESIGNATION A240-89B
- 3) THE BRIDGE SHALL BE JACKED AS PER THE GENERAL NOTE AND THE EXISTING BEARINGS SHALL BE REMOVED. THE EXISTING ANCHOR BARS SHALL BE REMOVED TO THE SURFACE OF THE ABUTMENT SEAT
- 4) NEW ANCHOR BARS SHALL BE DOWELLED INTO THE EXISTING ABUTMENTS AT LOCATIONS SHOWN IN THE DETAILS. THE DOWEL HOLES SHALL BE AS PER 510 OF THE CMS, EXCEPT THE HOLES SHALL BE CORE DRILLED AND EPOXY MORTAR SHALL BE USED. THIS ITEM IS INCIDENTAL TO ITEM 516- BEARING DEVICE, MISC.: SLIDING BEARING
- 5) FOR NEW BEARINGS THAT ARE NOT COMPLETELY IN CONTACT WITH THE ABUTMENT SEATS, REFER TO THE DETAIL ABOVE. BEARING PLATE ADJUSTMENTS ARE INCIDENTAL TO ITEM 516- BEARING DEVICE, MISC.: SLIDING BEARING
- 6) NEW STEEL SHIMS HAVING THE SAME WIDTH AND LENGTH OF THE BOTTOM PLATE AT THE SLIDING BEARINGS SHALL BE USED TO OBTAIN THE PROPER ELEVATION OF THE STEEL RETAINERS AS SHOWN IN THE TYPICAL SECTION VIEW ON THIS SHEET. THE STEEL SHIMS AND SHEET LEAD OR PREFORMED BEARING PADS ARE INCIDENTAL TO ITEM 516- BEARING DEVICE, MISC.: SLIDING BEARING

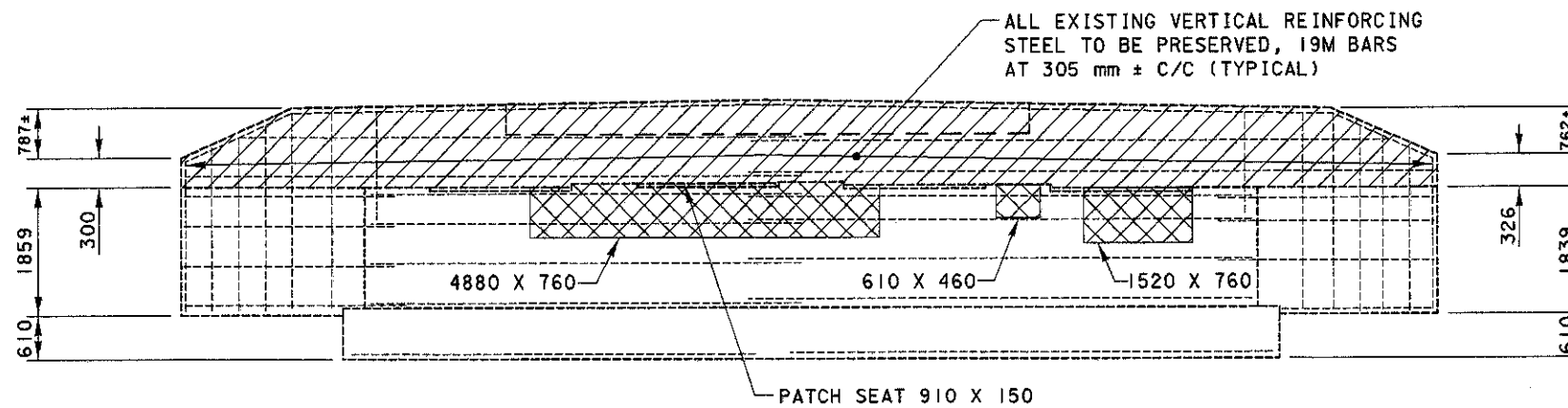
## PROPOSED SLIDING BEARINGS

 ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE

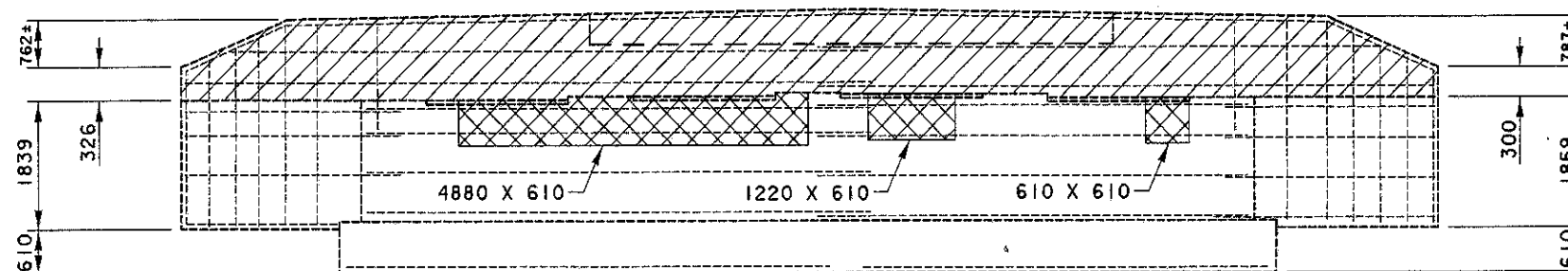


**EXISTING PLAN VIEW**

(REAR ABUTMENT SHOWN  
FORWARD ABUTMENT OPPOSITE HAND)



**EXISTING ELEVATION VIEW  
(REAR ABUTMENT)**



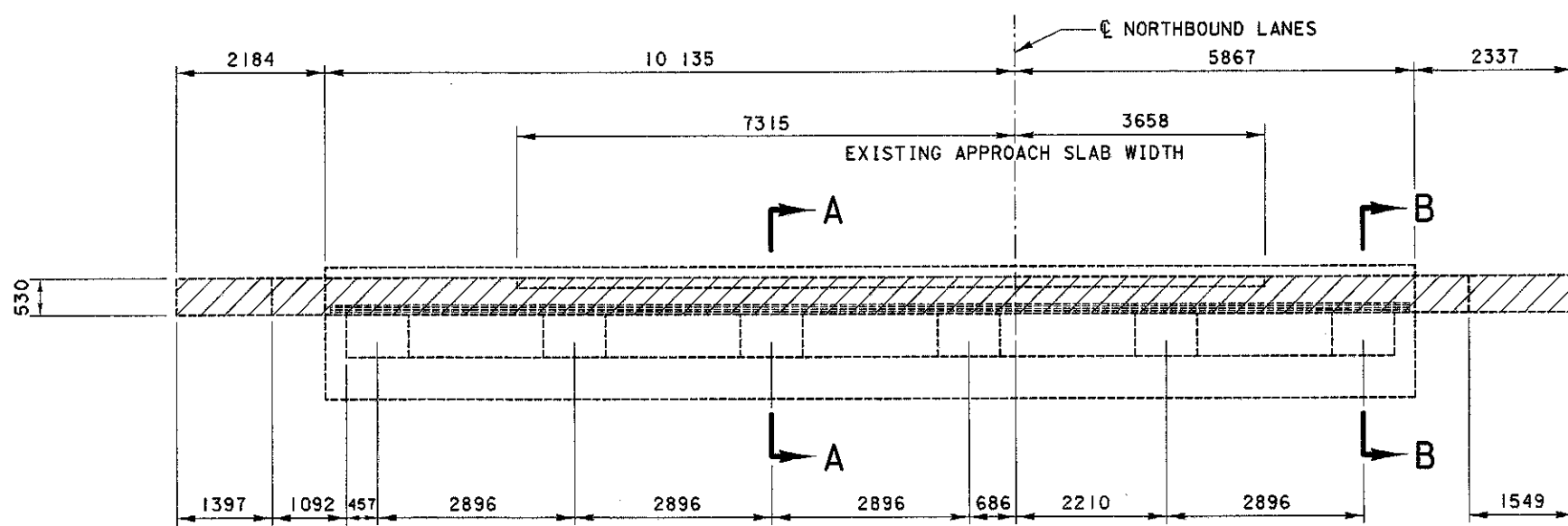
**EXISTING ELEVATION VIEW  
(FORWARD ABUTMENT)**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (20 CUBIC METERS)
- PORTIONS OF STRUCTURE TO BE PATCHED USING ITEM 519 - PATCHING CONCRETE STRUCTURE

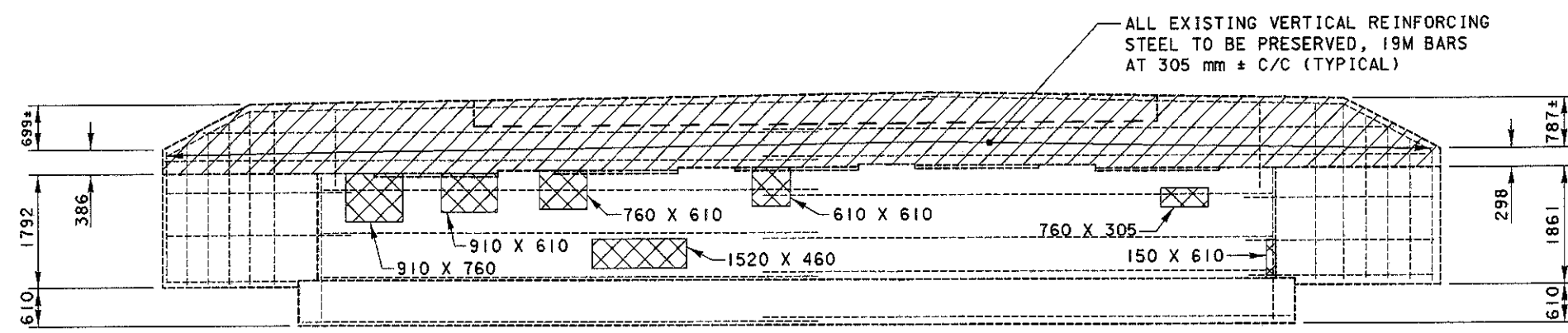
**NOTES:**

- 1) SOME EXISTING REINFORCING STEEL IS NOT SHOWN
- 2) FOR SECTIONS A-A AND B-B, SEE SHEET NO. 102

ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE

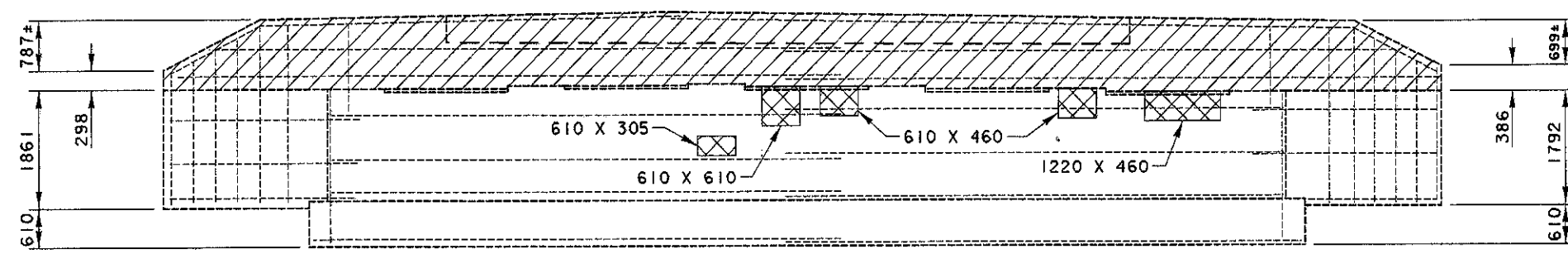


**EXISTING PLAN VIEW**  
(REAR ABUTMENT SHOWN  
FORWARD ABUTMENT OPPOSITE HAND)



**EXISTING ELEVATION VIEW**  
(REAR ABUTMENT)

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (23 CUBIC METERS)
- PORTIONS OF STRUCTURE TO BE PATCHED USING ITEM 519 - PATCHING CONCRETE STRUCTURE



**EXISTING ELEVATION VIEW**  
(FORWARD ABUTMENT)

**NOTES:**

- 1) SOME EXISTING REINFORCING STEEL IS NOT SHOWN
- 2) FOR SECTIONS A-A AND B-B, SEE SHEET NO. 103

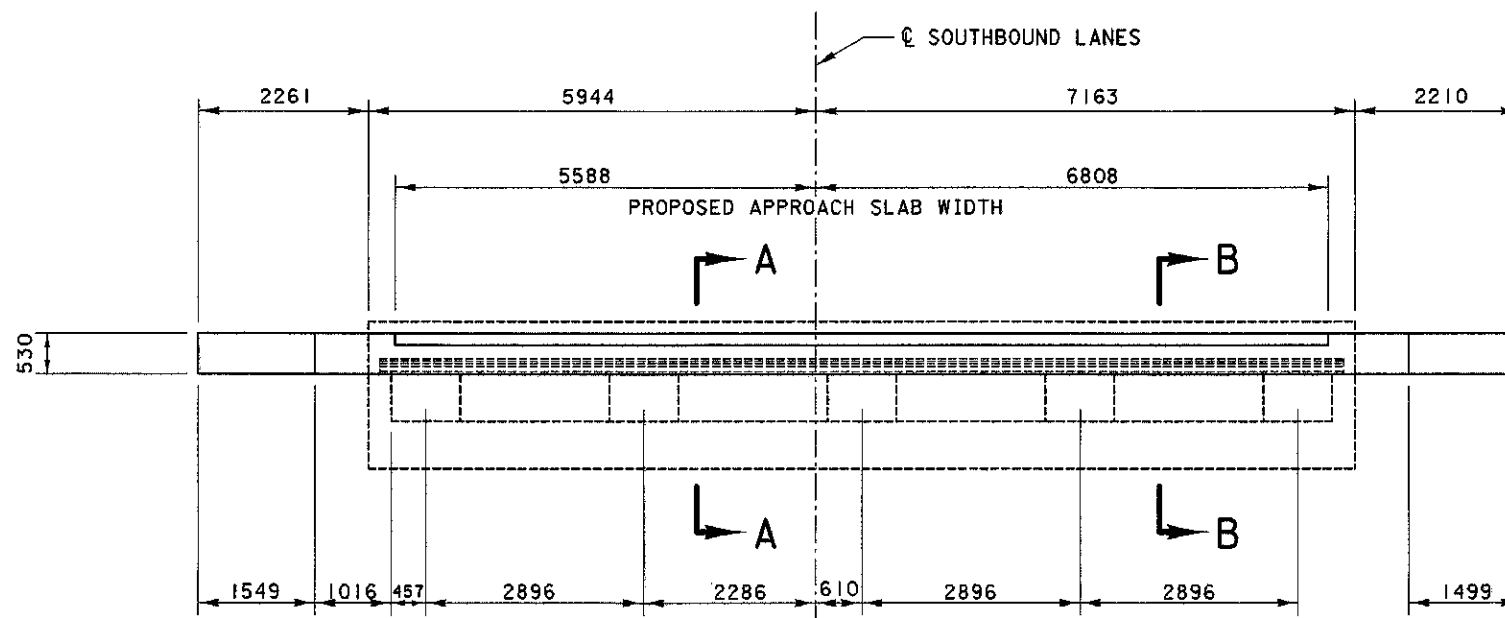
ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE

DESIGN FILE: i:\projects\16915\struct\116\abutmnt.dgn  
WORKSTATION: egl/over DATE: 19 JAN 99

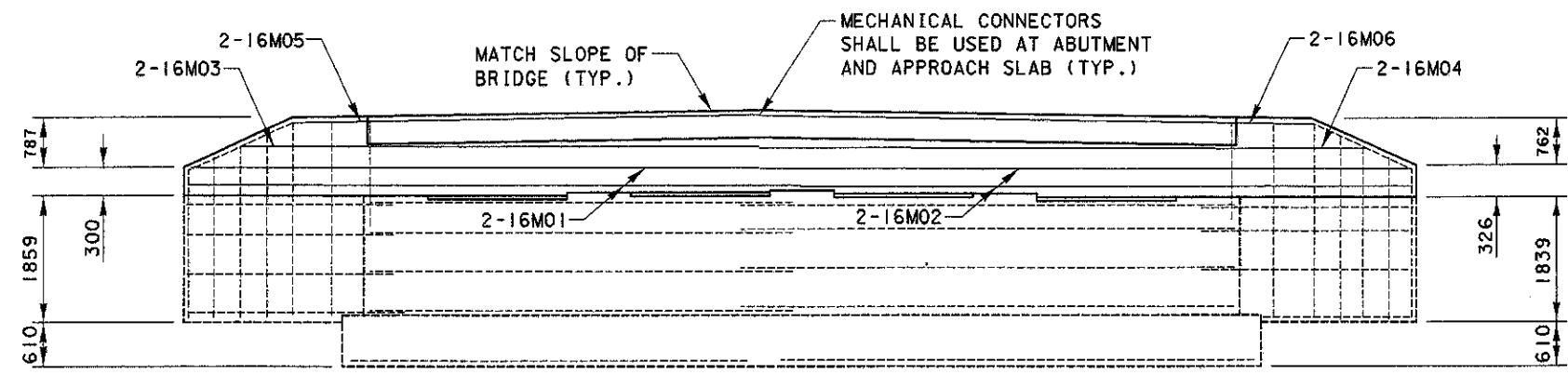
DESIGNED E.J.G. 2-98	DRAWN C.K.	REVIEWED R.Q.	DATE 1194
CHECKED M.C.	REVISIONS	STRUCTURE FILE NUMBER 7000480	

ABUTMENT DETAILS  
RIC-13-22788R S.L.K. (RIC-13-1416R S.L.M.)  
OVER RAMP A

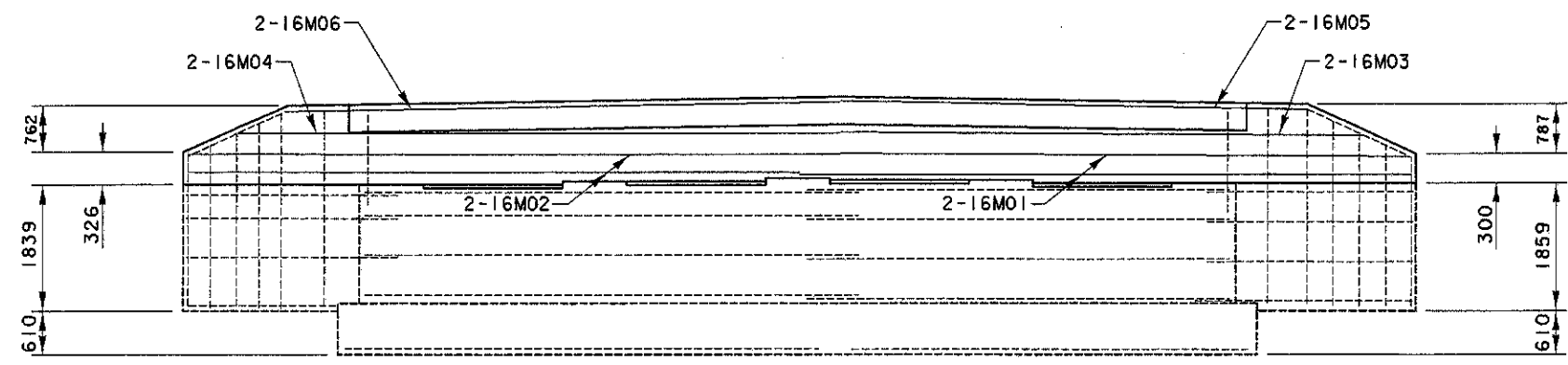
RIC-13-17.445



**PROPOSED PLAN VIEW**  
 (REAR ABUTMENT SHOWN  
 FORWARD ABUTMENT OPPOSITE HAND)



**PROPOSED ELEVATION VIEW**  
 (REAR ABUTMENT)

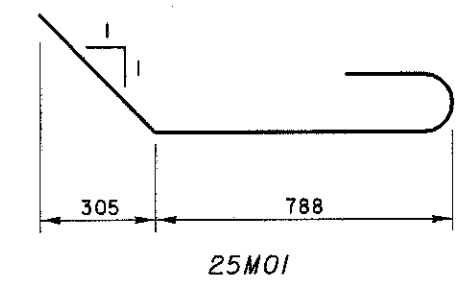


**PROPOSED ELEVATION VIEW**  
 (FORWARD ABUTMENT)

**EPOXY COATED  
 REINFORCING STEEL, GRADE 400**

MARK	SHAPE	LENGTH (mm)	QUANTITY	MASS (kg)*
16M01	STRAIGHT	8155	8	101
16M02	STRAIGHT	9320	8	116
16M03	STRAIGHT	7510	4	47
16M04	STRAIGHT	8780	4	55
16M05	STRAIGHT	6785	4	42
16M06	STRAIGHT	8025	4	50
25M01	BENT	1490	58	344
			<b>TOTAL</b>	<b>755</b>

\* FOR INFORMATIONAL PURPOSES ONLY



DESIGNED	DATE
CHKD	1/199
REVIEWED	06/02
DRAWN	STRUCTURE FILE NUMBER
CHKD	7000456
REVIEWED	

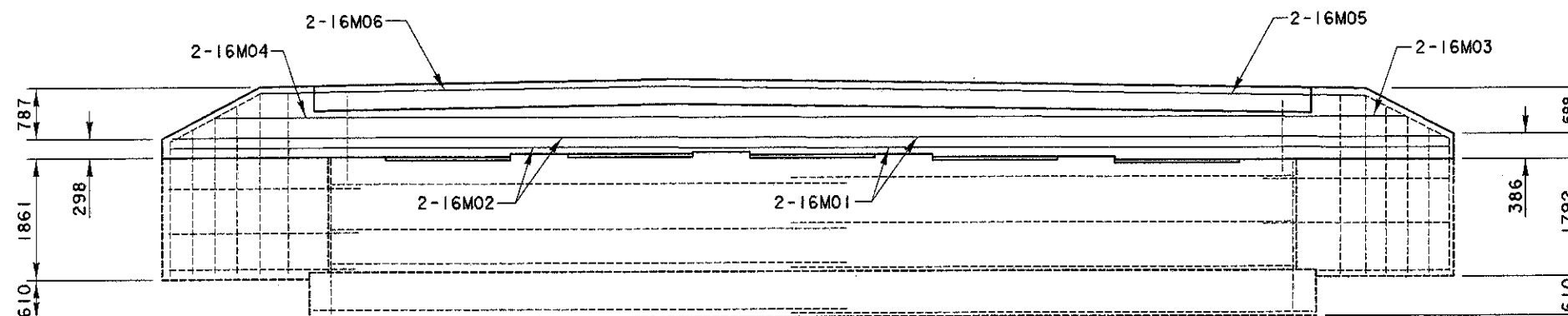
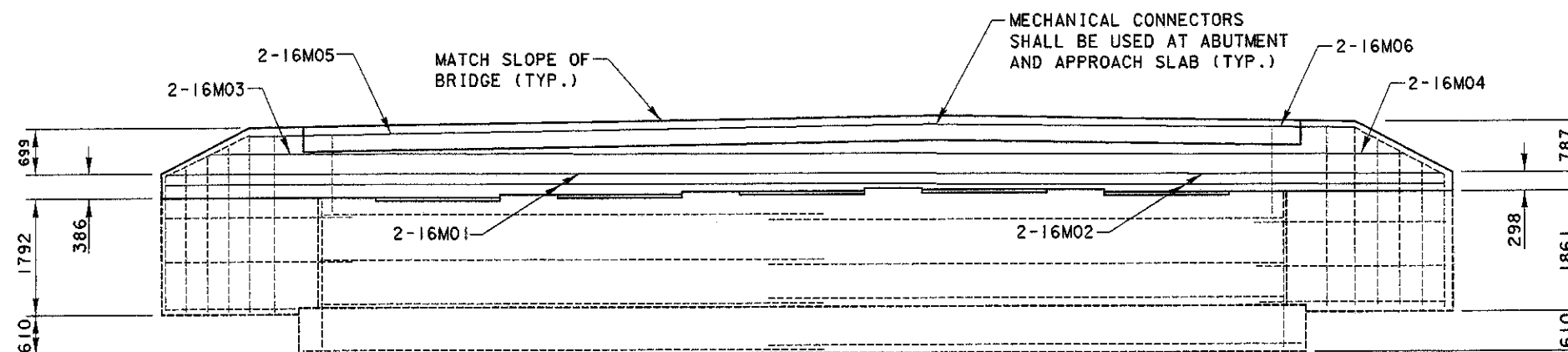
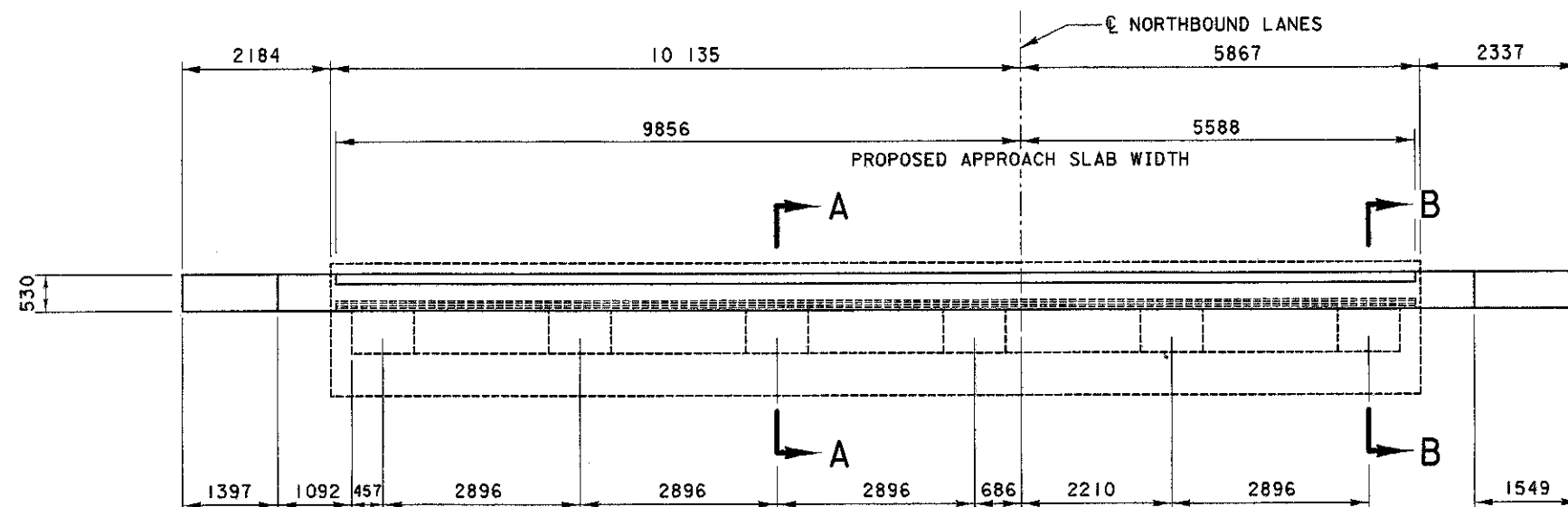
**ABUTMENT DETAILS**  
 RIC-13-22788L S.L.K. (RIC-13-1416L S.L.M.)  
 OVER RAMP A

**NOTES:**

- 1) SOME EXISTING REINFORCING STEEL IS NOT SHOWN
- 2) FOR SECTIONS A-A AND B-B, SEE SHEET NO. 102

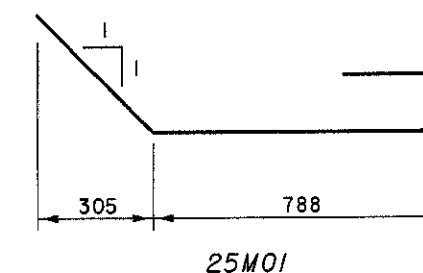
ALL DIMENSIONS ARE IN MILLIMETERS,  
 UNLESS NOTED OTHERWISE

RIC-13-17.445



EPOXY COATED  
REINFORCING STEEL, GRADE 400

MARK	SHAPE	LENGTH (mm)	QUANTITY	MASS (kg)*
16M01	STRAIGHT	12 250	8	152
16M02	STRAIGHT	8150	8	101
16M03	STRAIGHT	11 675	4	73
16M04	STRAIGHT	7595	4	47
16M05	STRAIGHT	11 140	4	69
16M06	STRAIGHT	6810	4	42
25M01	BENT	1490	72	427
* FOR INFORMATIONAL PURPOSES ONLY			TOTAL	911


 REVIEWED DATE 1/19/99  
 STRUCTURE FILE NUMBER 7000480

 DRAWN BY CTRK  
 CHECKED BY

 DESIGNED BY E.J.G.  
 CHECKED BY NRC

 ABUTMENT DETAILS  
 RIC-13-22788R S.L.K. (RIC-13-1416R S.L.M.)  
 OVER RAMP A

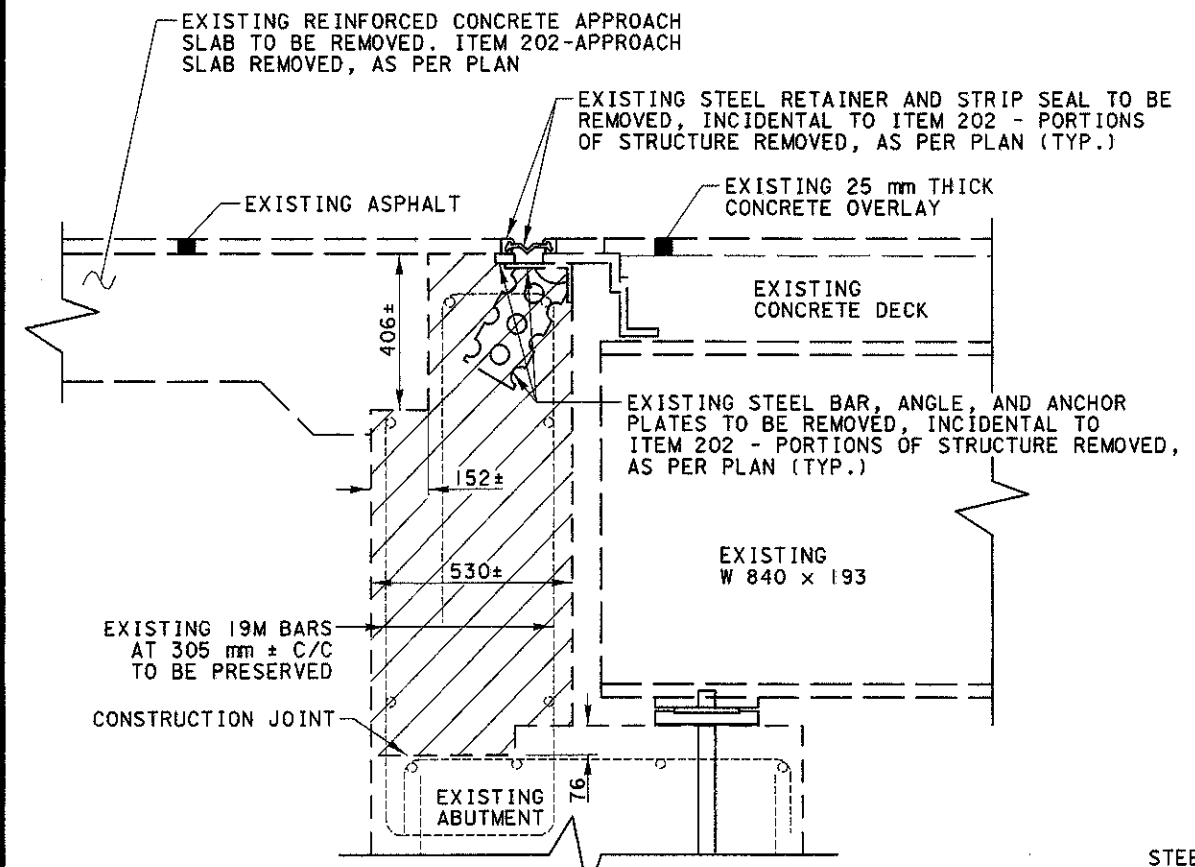
RIC-13-17.445

## NOTES:

- SOME EXISTING REINFORCING STEEL IS NOT SHOWN
- FOR SECTIONS A-A AND B-B, SEE SHEET NO. 103

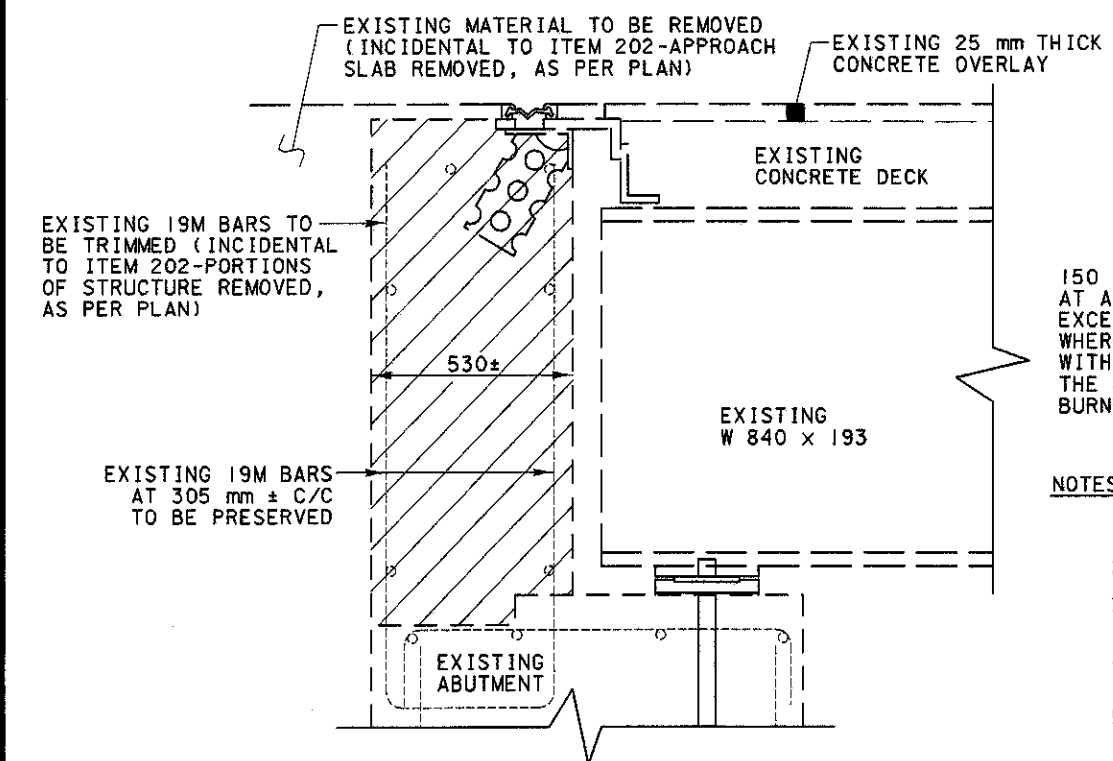
 ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE

 101  
112

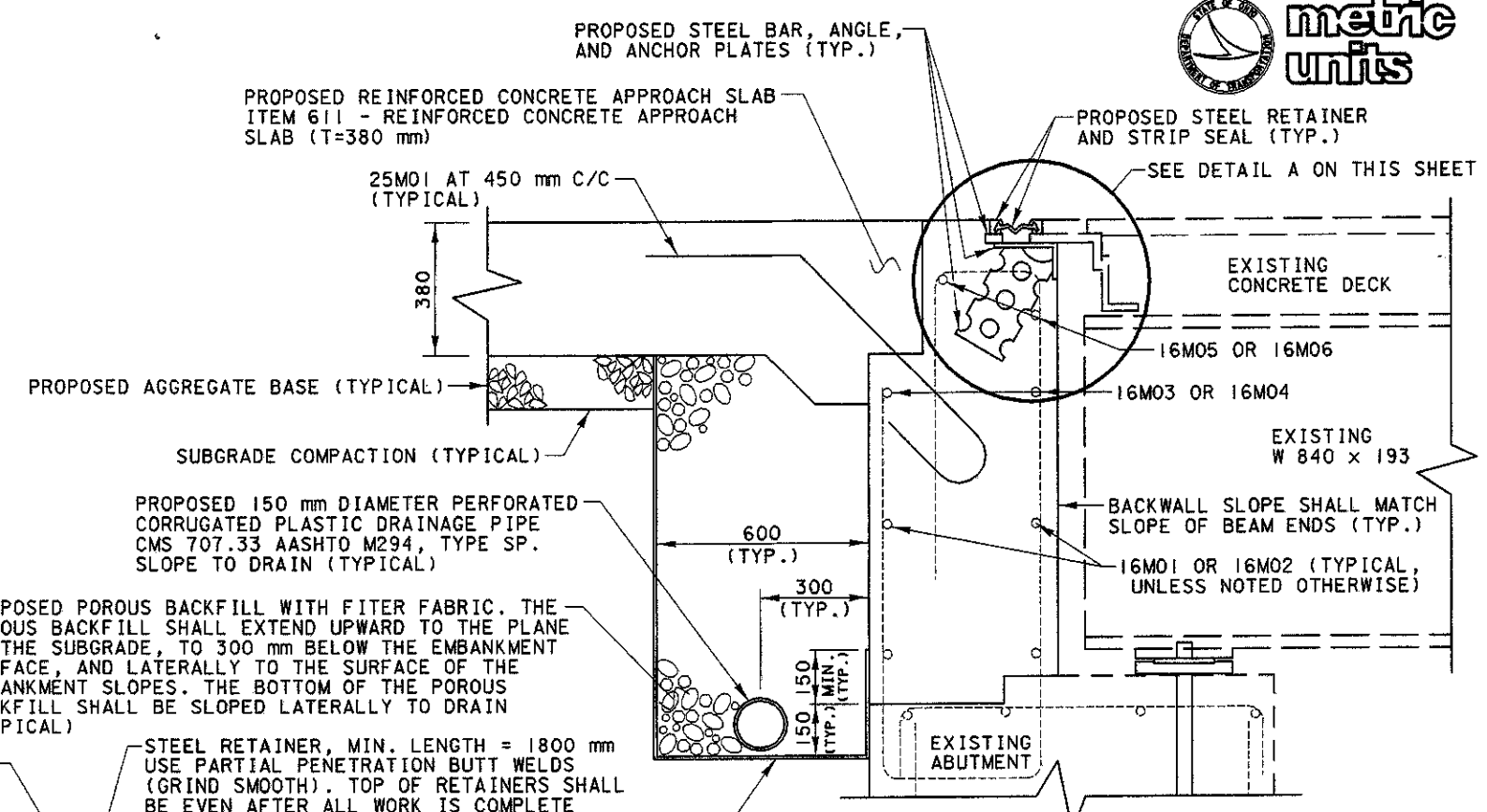


**EXISTING SECTION A-A**

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

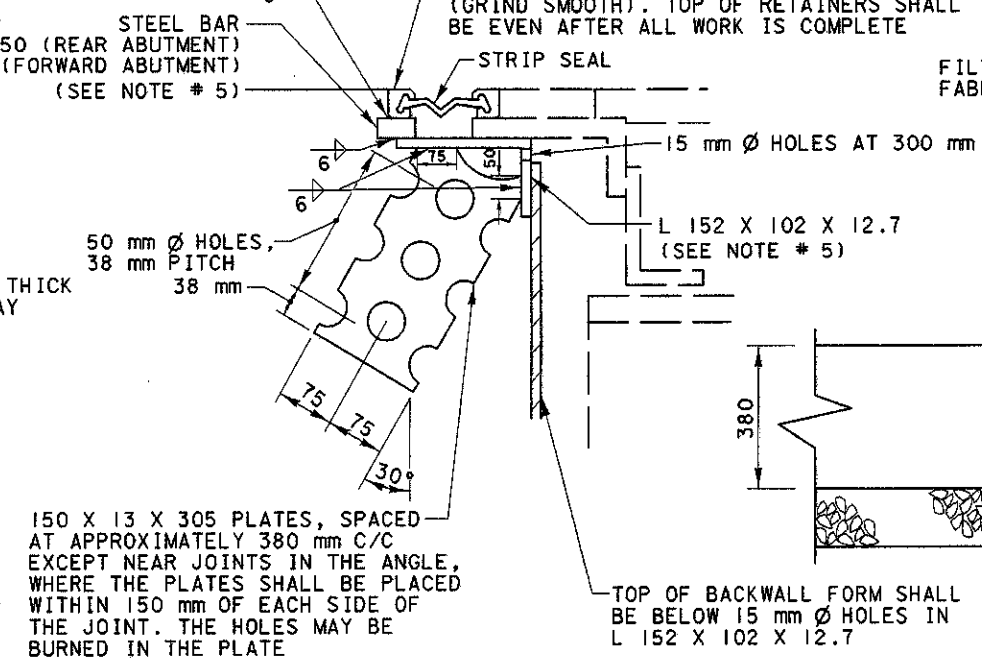


**EXISTING SECTION B-B**



**PROPOSED SECTION A-A**

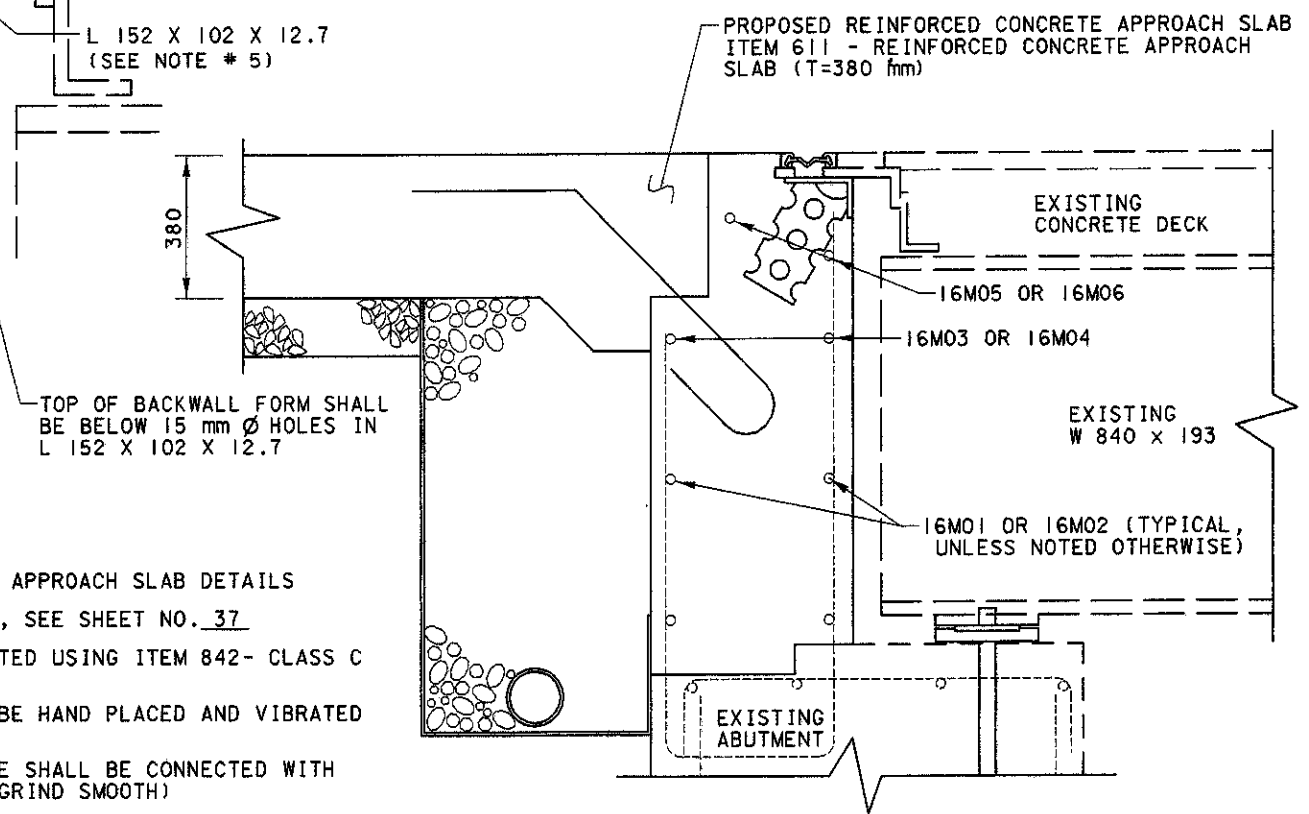
STEEL BAR  
 25 X 50 (REAR ABUTMENT)  
 32 X 50 (FORWARD ABUTMENT)  
 (SEE NOTE # 5)



**DETAIL A**

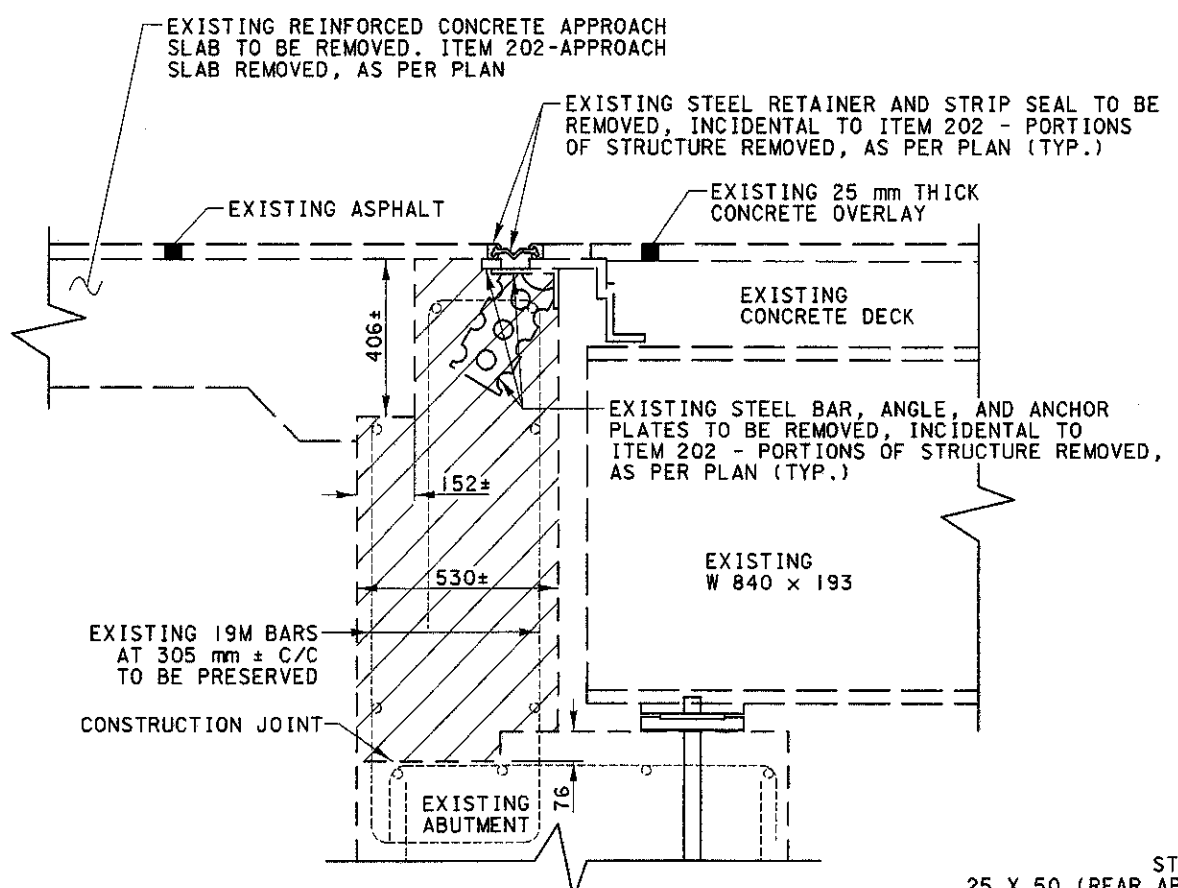
**NOTES:**

- 1) SEE STANDARD DRAWING AS-1-81M FOR APPROACH SLAB DETAILS
- 2) FOR APPROACH SLAB TYPICAL SECTION, SEE SHEET NO. 37
- 3) THE BACKWALLS SHALL BE RECONSTRUCTED USING ITEM 842- CLASS C CONCRETE, ABUTMENT, AS PER PLAN
- 4) CONCRETE UNDER JOINT ARMOR SHALL BE HAND PLACED AND VIBRATED TO ACHIEVE SOLID FILLING
- 5) SECTIONS OF THE STEEL BAR OR ANGLE SHALL BE CONNECTED WITH COMPLETE PENETRATION BUTT WELDS (GRIND SMOOTH)
- 6) ALL ITEMS REQUIRED TO CONSTRUCT THE PROPOSED EXPANSION JOINT, AS SHOWN IN THESE DETAILS, SHALL BE INCLUDED IN ITEM 516- STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL
- 7) ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLETS OF THE DRAINAGE PIPES. SEE STANDARD DRAWING DM-1.1M FOR DETAILS. THIS ITEM IS INCIDENTAL TO ITEM 518- 150 mm PERFORATED CORRUGATED PLASTIC PIPE



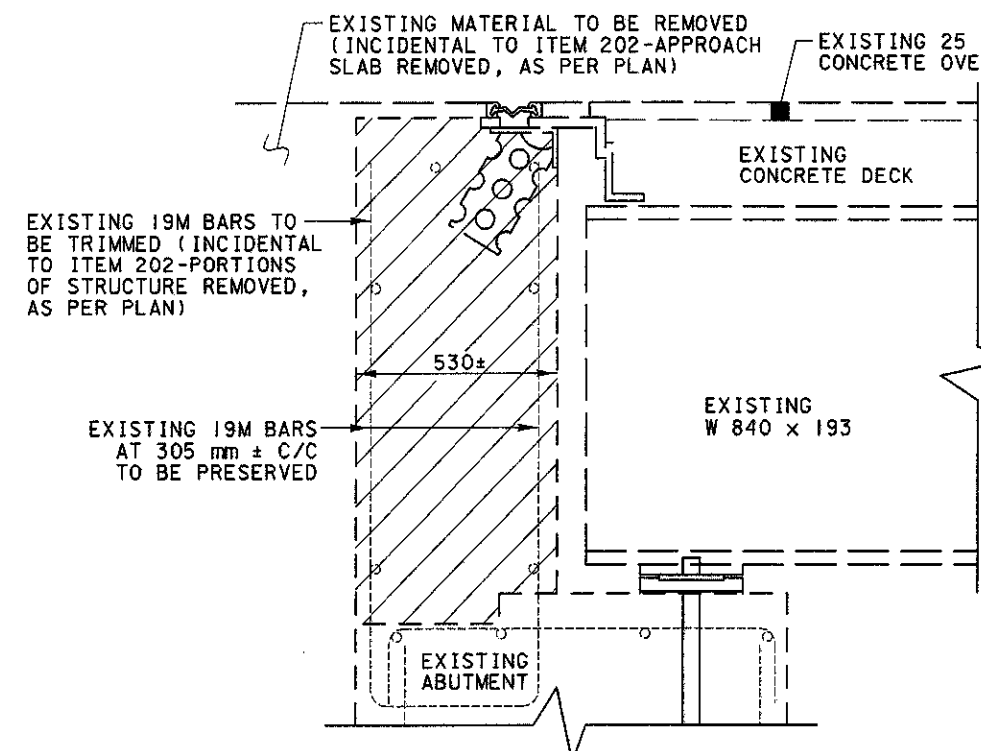
**PROPOSED SECTION B-B**

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE

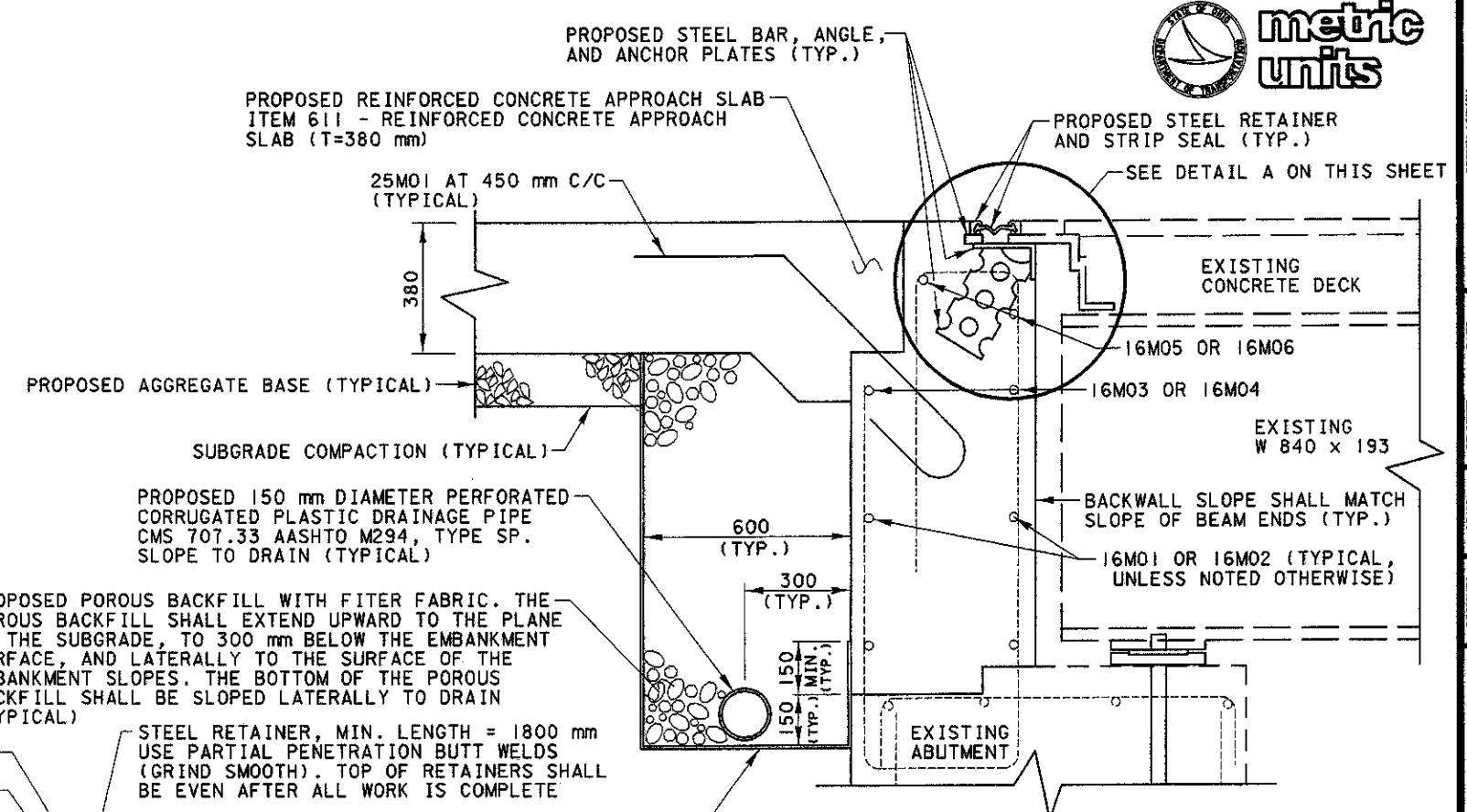


**EXISTING SECTION A-A**

EXISTING MATERIAL TO BE REMOVED (INCIDENTAL TO ITEM 202-APPROACH SLAB REMOVED, AS PER PLAN)

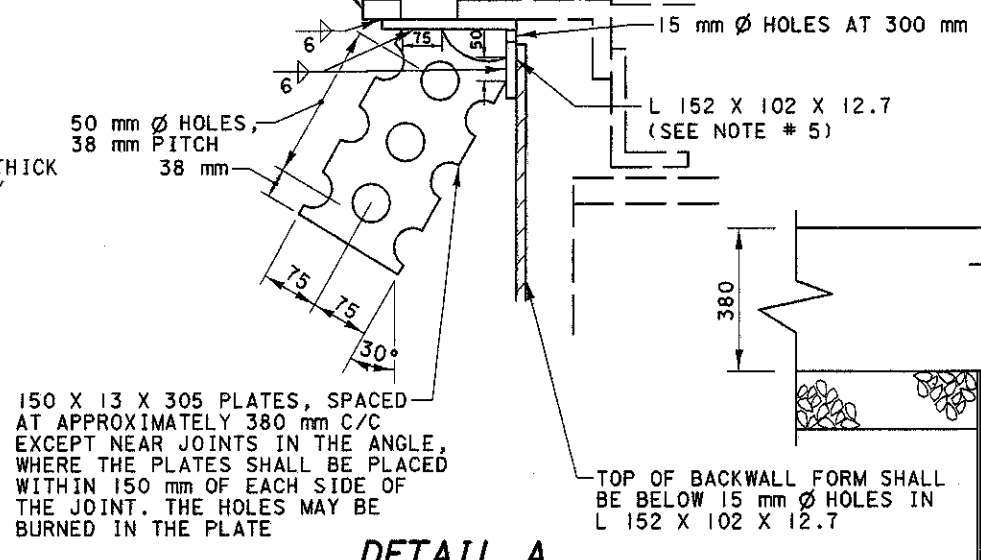


**EXISTING SECTION B-B**



**PROPOSED SECTION A-A**

STEEL BAR  
 25 X 50 (REAR ABUTMENT)  
 32 X 50 (FORWARD ABUTMENT)  
 (SEE NOTE # 5)



**DETAIL A**

**NOTES:**

- 1) SEE STANDARD DRAWING AS-1-81M FOR APPROACH SLAB DETAILS
- 2) FOR APPROACH SLAB TYPICAL SECTION, SEE SHEET NO. 37
- 3) THE BACKWALLS SHALL BE RECONSTRUCTED USING ITEM 842- CLASS C CONCRETE, ABUTMENT, AS PER PLAN
- 4) CONCRETE UNDER JOINT ARMOR SHALL BE HAND PLACED AND VIBRATED TO ACHIEVE SOLID FILLING
- 5) SECTIONS OF THE STEEL BAR OR ANGLE SHALL BE CONNECTED WITH COMPLETE PENETRATION BUTT WELDS (GRIND SMOOTH)
- 6) ALL ITEMS REQUIRED TO CONSTRUCT THE PROPOSED EXPANSION JOINT, AS SHOWN IN THESE DETAILS, SHALL BE INCLUDED IN ITEM 516- STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL
- 7) ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLETS OF THE DRAINAGE PIPES. SEE STANDARD DRAWING DM-1.1M FOR DETAILS. THIS ITEM IS INCIDENTAL TO ITEM 518- 150 mm PERFORATED CORRUGATED PLASTIC PIPE

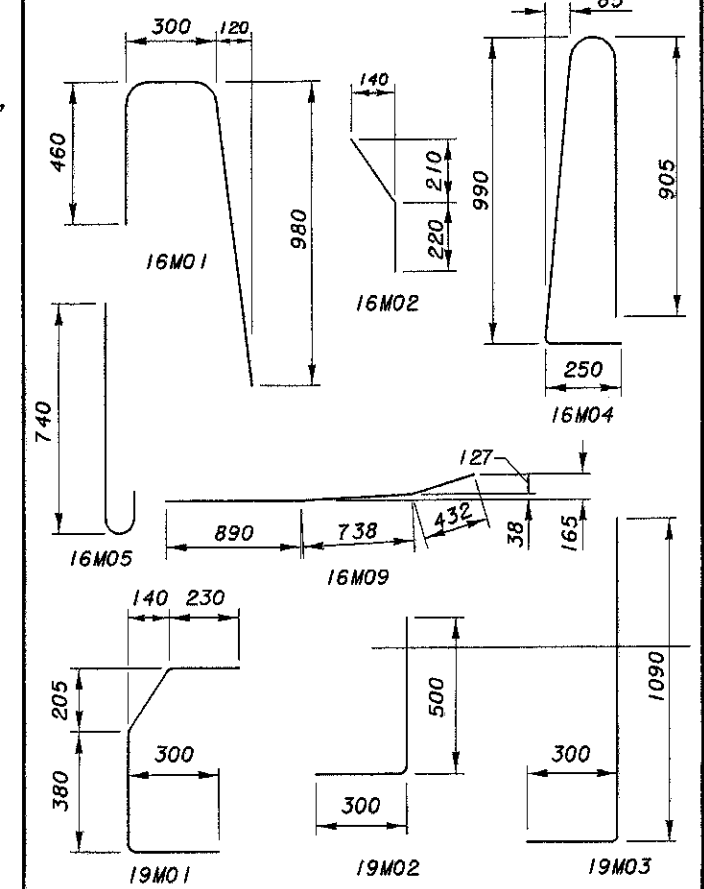
**PROPOSED SECTION B-B**

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE

**EPOXY COATED REINFORCING STEEL, GRADE 400**

MARK	SHAPE	LENGTH (mm)	QUANTITY	MASS (kg)*
16M01	BENT	1670	240	622
16M02	BENT	470	240	175
16M03	STRAIGHT	9500	48	708
16M04	BENT	2200	48	164
16M05	BENT	920	44	63
16M06	STRAIGHT	4500	16	112
16M07	STRAIGHT	7700	16	191
16M08	STRAIGHT	3000	16	75
16M09	BENT	2060	8	26
16M10	STRAIGHT	2060	8	26
19M01	BENT	1100	92	226
19M02	BENT	750	48	81
19M03	BENT	1340	76	228
<b>TOTAL</b>				<b>2697</b>

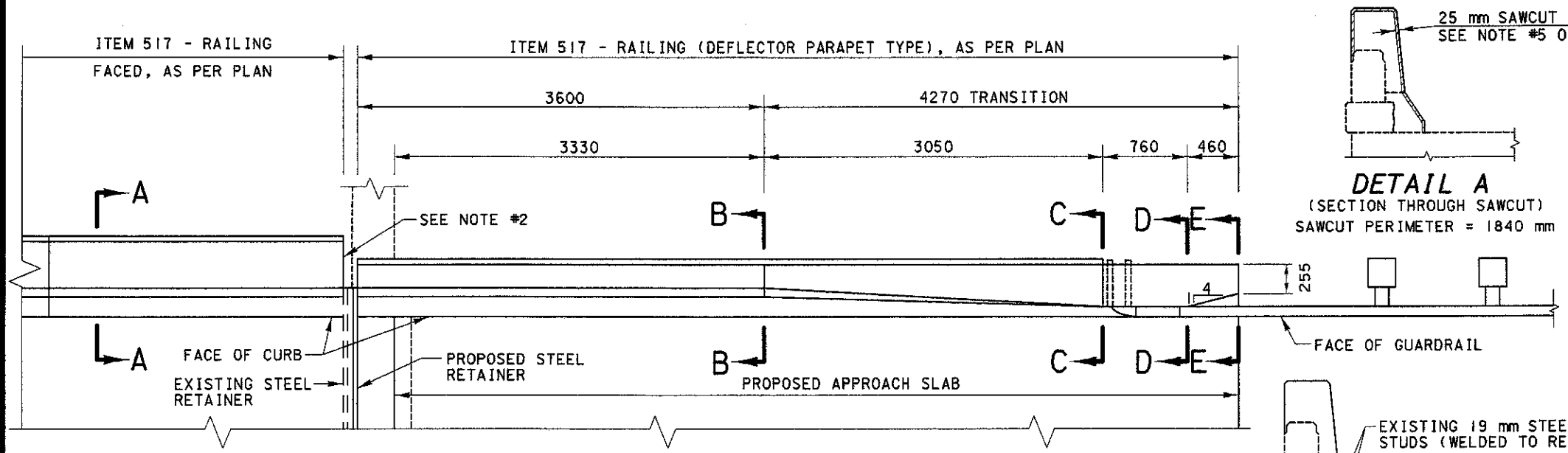
\* FOR INFORMATIONAL PURPOSES ONLY



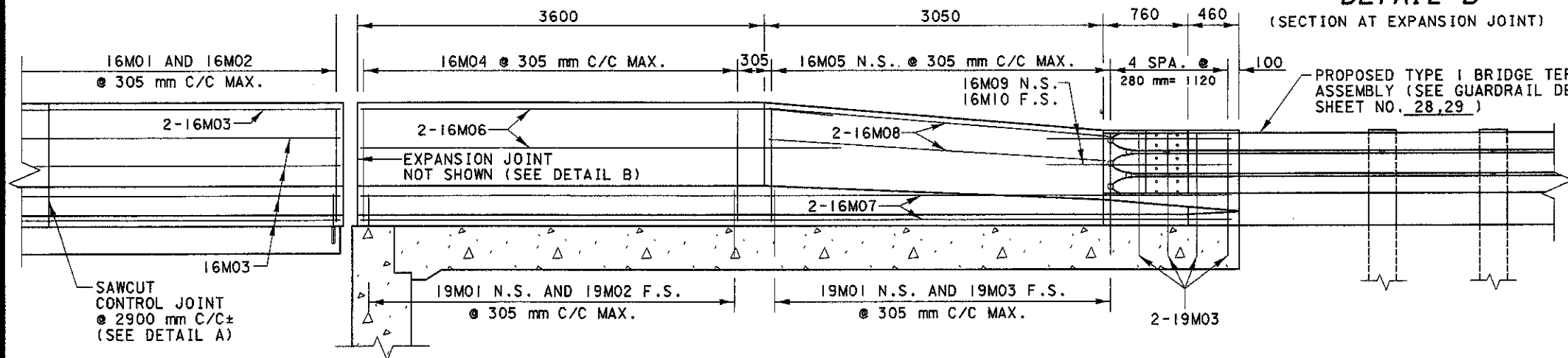
THE MINIMUM LAP LENGTH FOR 16M BARS IS 890 mm  
FIELD BEND AND TRIM WHERE NECESSARY  
N.S. = NEAR SIDE F.S. = FAR SIDE

- NOTES:
- FOR SECTION A-A, SEE SHEET NO. 106
  - A SMALL AMOUNT OF CONCRETE AT THE END OF THE EXISTING CURBS SHALL BE REMOVED (ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN)
  - FOR APPROACH SLAB TYPICAL SECTION, SEE SHEET NO. 37

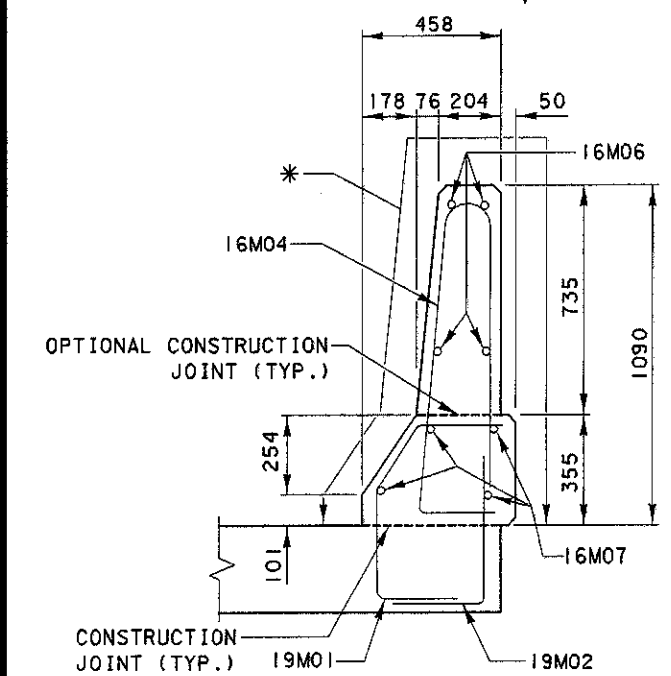
ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE



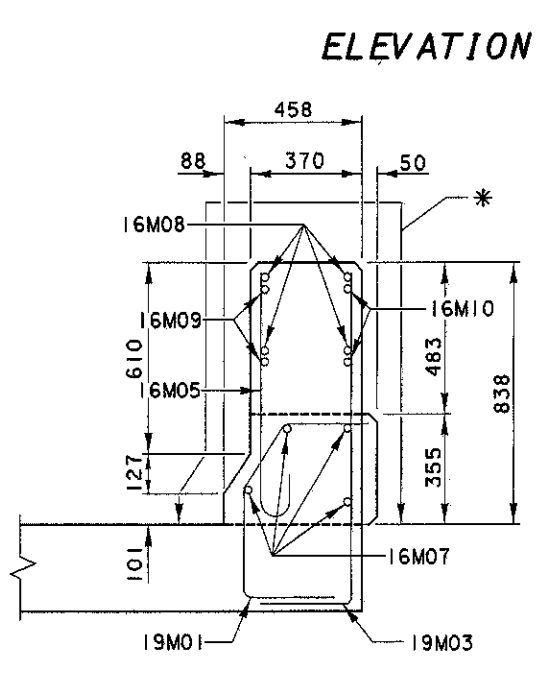
**PLAN VIEW**



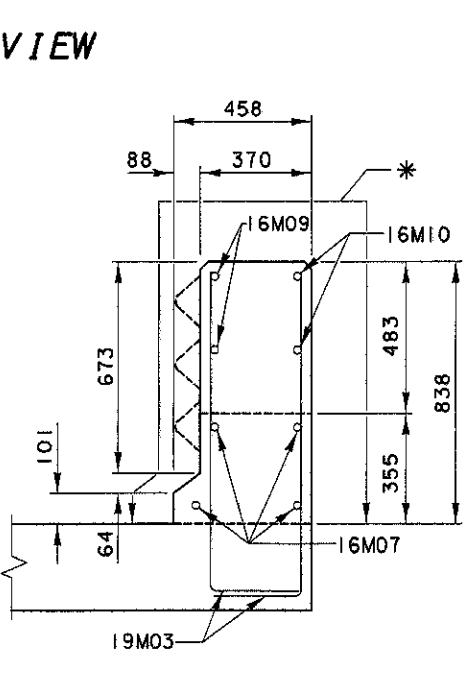
**ELEVATION VIEW**



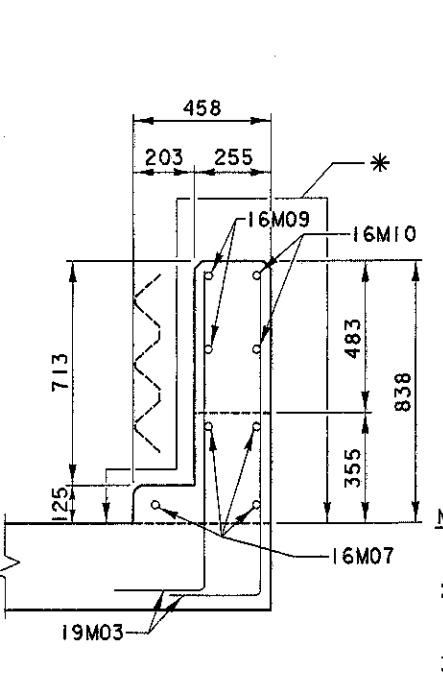
**SECTION B-B**



**SECTION C-C**



**SECTION D-D**



**SECTION E-E**

\* ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (75 SQUARE METERS)

DESIGN FILE: I:\projects\16915\struct\1416\misc.dgn WORKSTATION: eglover DATE: 19 JAN 99

DATE: 1/99  
REVIEWED: [Signature]  
DRAWN: CTK  
DESIGNED: [Signature]  
CHECKED: MKC

PARAPET TYPICAL SECTIONS  
RIC-13-22788L S.L.K. (RIC-13-146L S.L.M.)  
OVER RAMP A

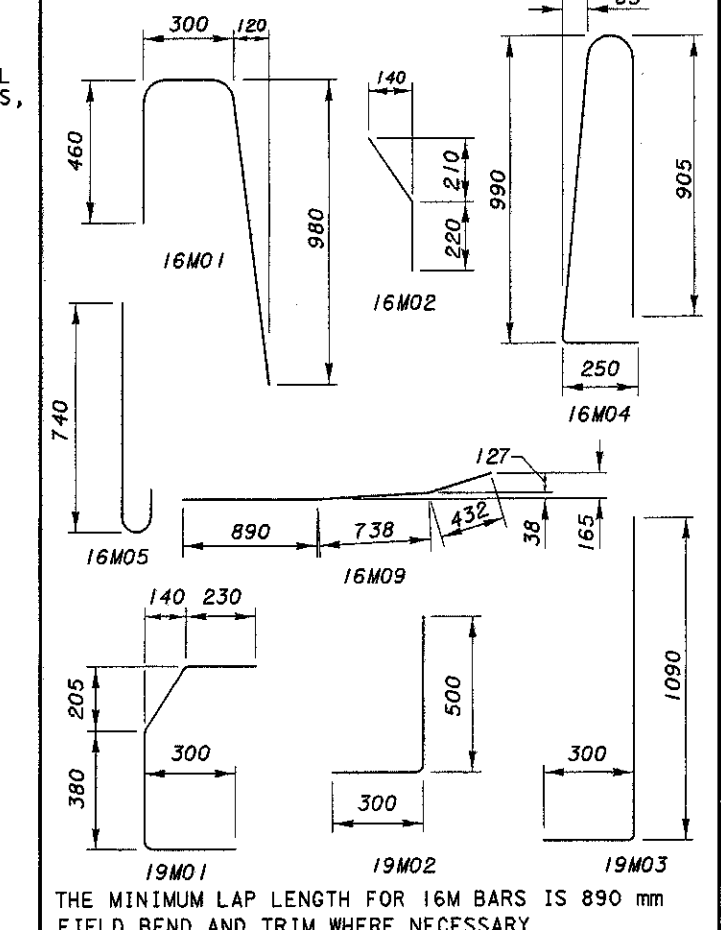
RIC-13-17.445



**EPOXY COATED  
REINFORCING STEEL, GRADE 400**

MARK	SHAPE	LENGTH (mm)	QUANTITY	MASS (kg)*
16M01	BENT	1670	240	622
16M02	BENT	470	240	175
16M03	STRAIGHT	9500	48	708
16M04	BENT	2200	48	164
16M05	BENT	920	44	63
16M06	STRAIGHT	4500	16	112
16M07	STRAIGHT	7700	16	191
16M08	STRAIGHT	3000	16	75
16M09	BENT	2060	8	26
16M10	STRAIGHT	2060	8	26
19M01	BENT	1100	92	226
19M02	BENT	750	48	81
19M03	BENT	1340	76	228
TOTAL				2697

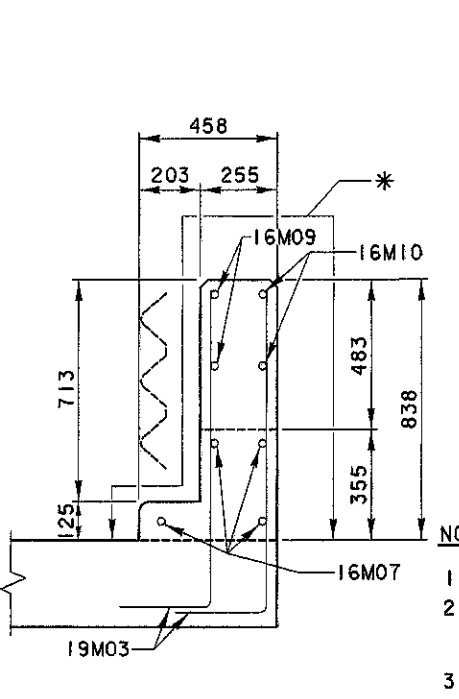
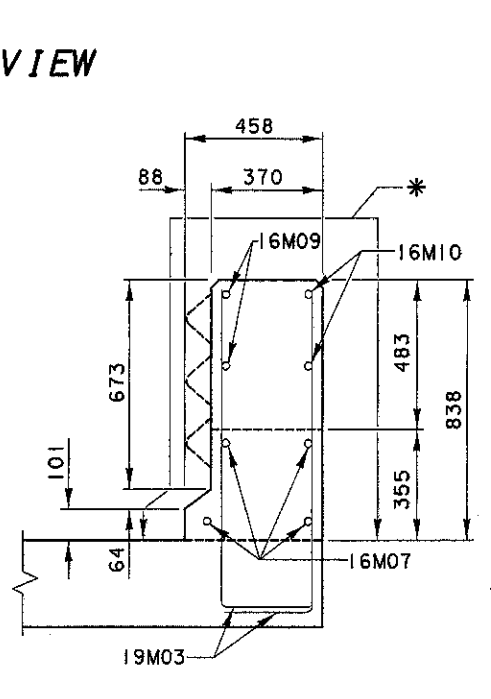
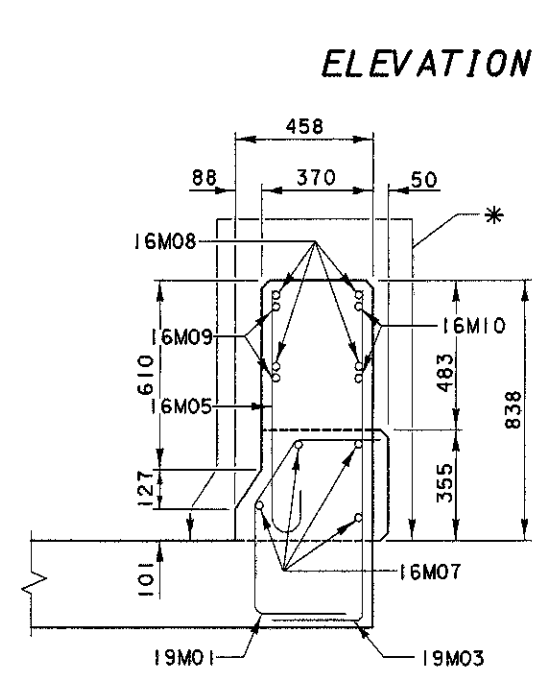
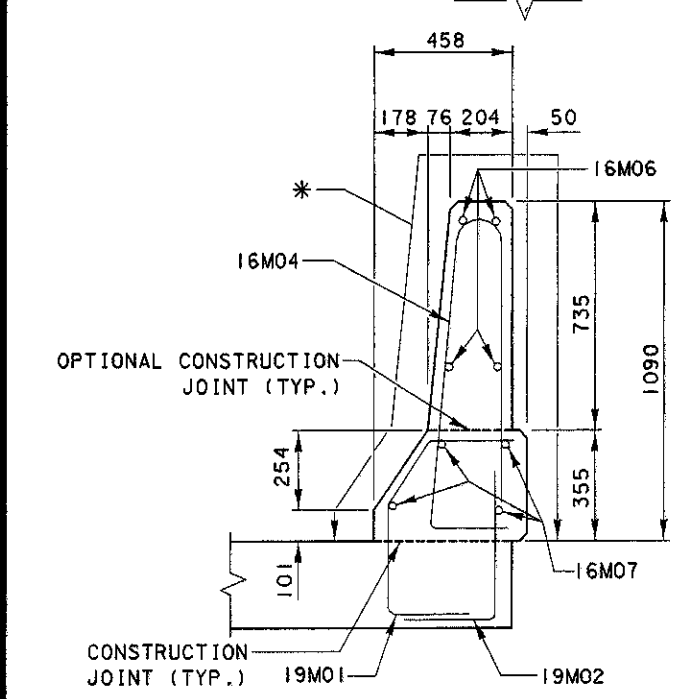
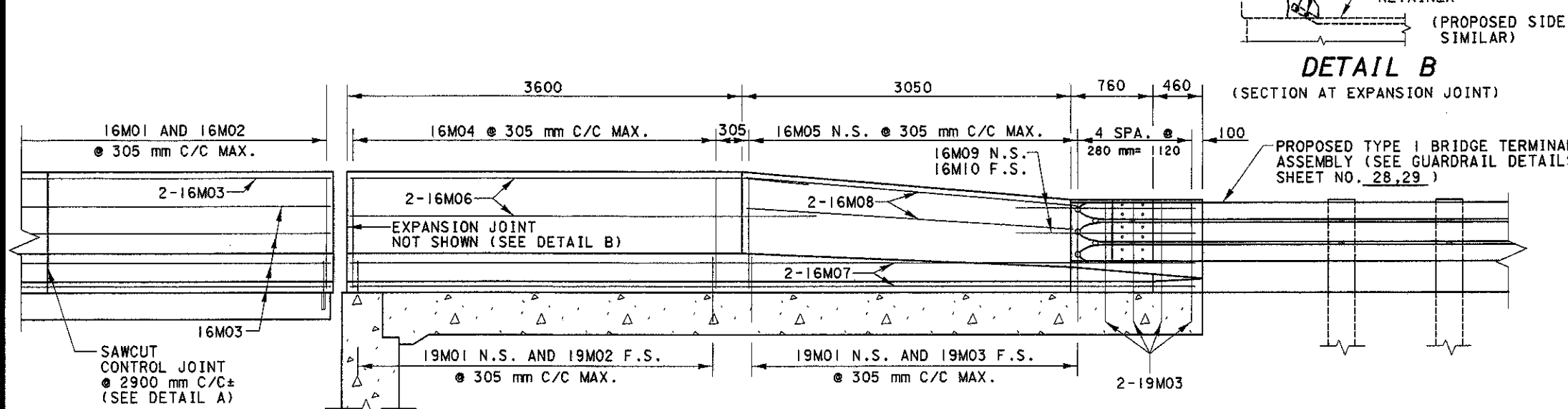
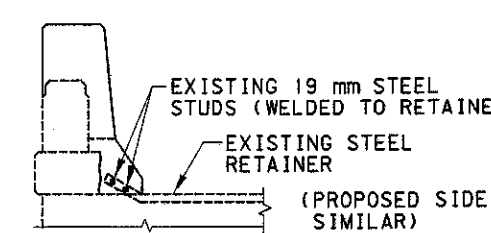
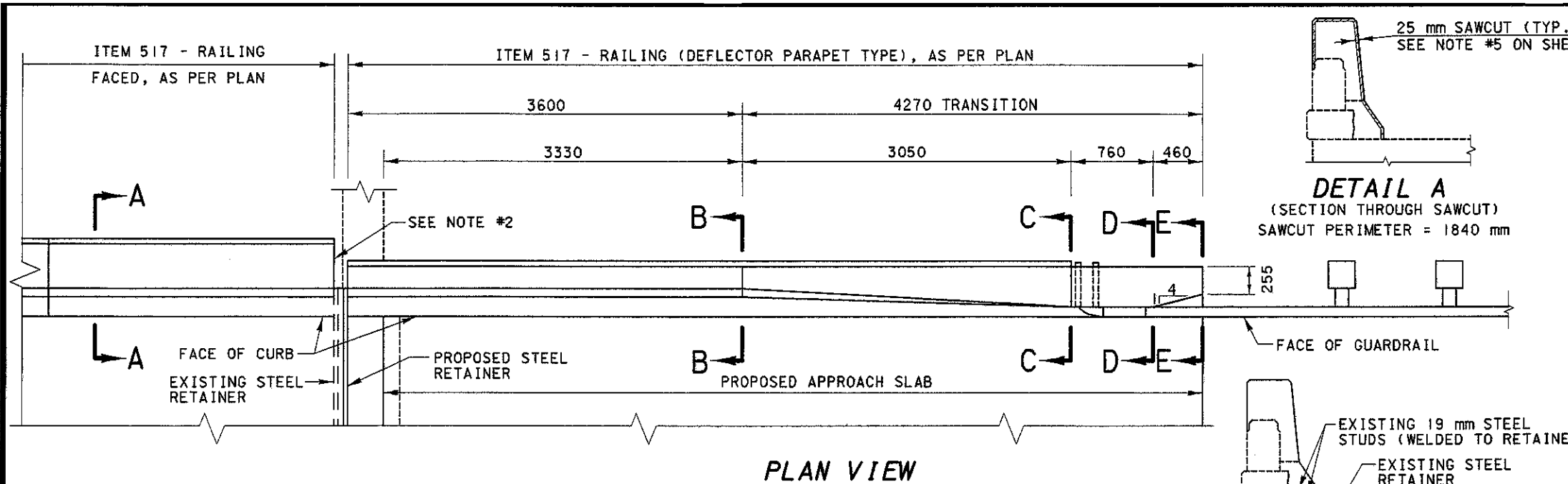
\* FOR INFORMATIONAL PURPOSES ONLY



THE MINIMUM LAP LENGTH FOR 16M BARS IS 890 mm  
FIELD BEND AND TRIM WHERE NECESSARY

- NOTES:
- 1) FOR SECTION A-A, SEE SHEET NO. 107
  - 2) A SMALL AMOUNT OF CONCRETE AT THE END OF THE EXISTING CURBS SHALL BE REMOVED (ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN)
  - 3) FOR APPROACH SLAB TYPICAL SECTION, SEE SHEET NO. 37

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE



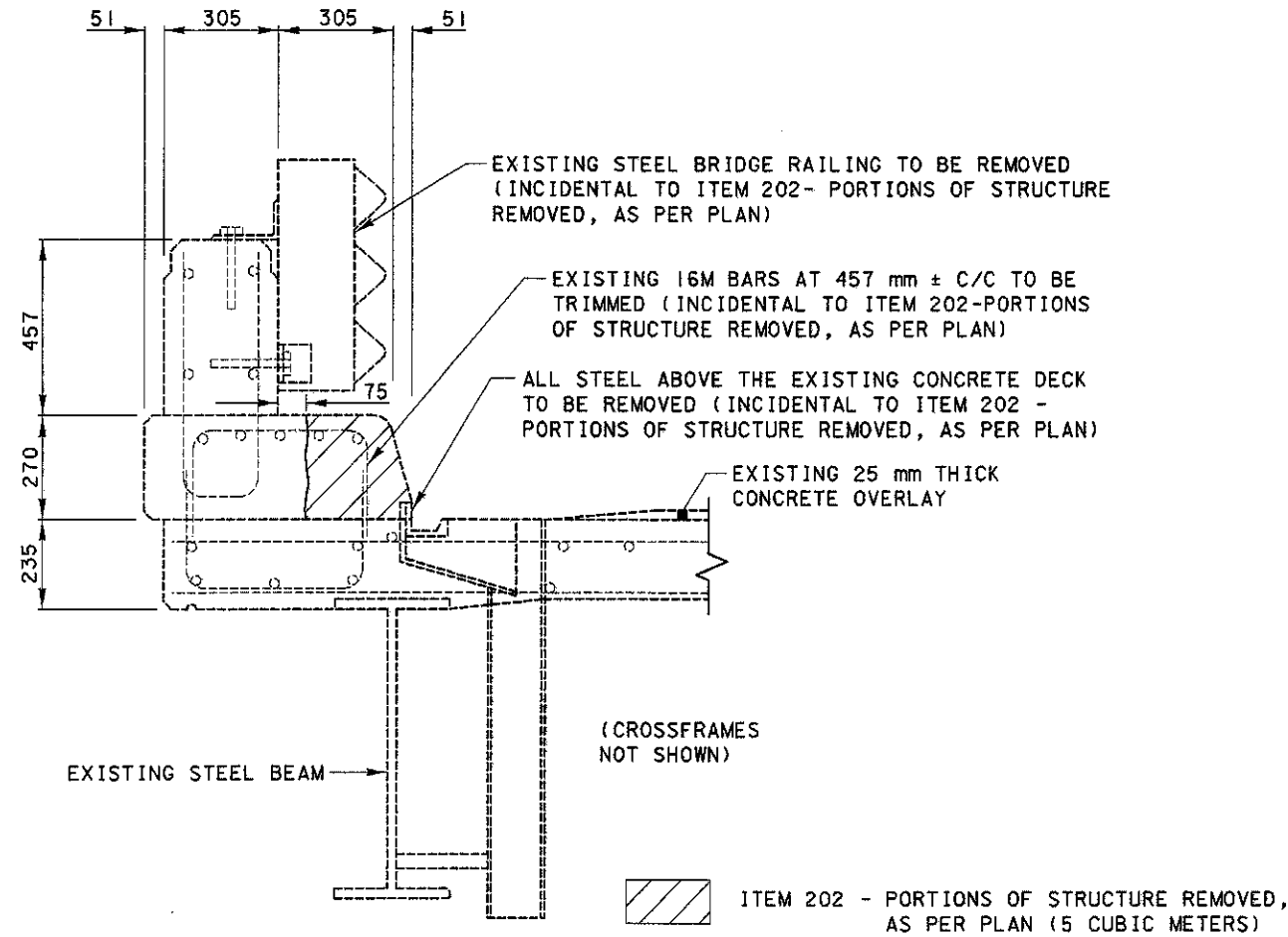
\*ITEM SPECIAL- SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (75 SQUARE METERS)

DESIGN FILE: i:\projects\16915\struct\146\misc.dgn  
WORKSTATION: eglover DATE: 19 JAN 99

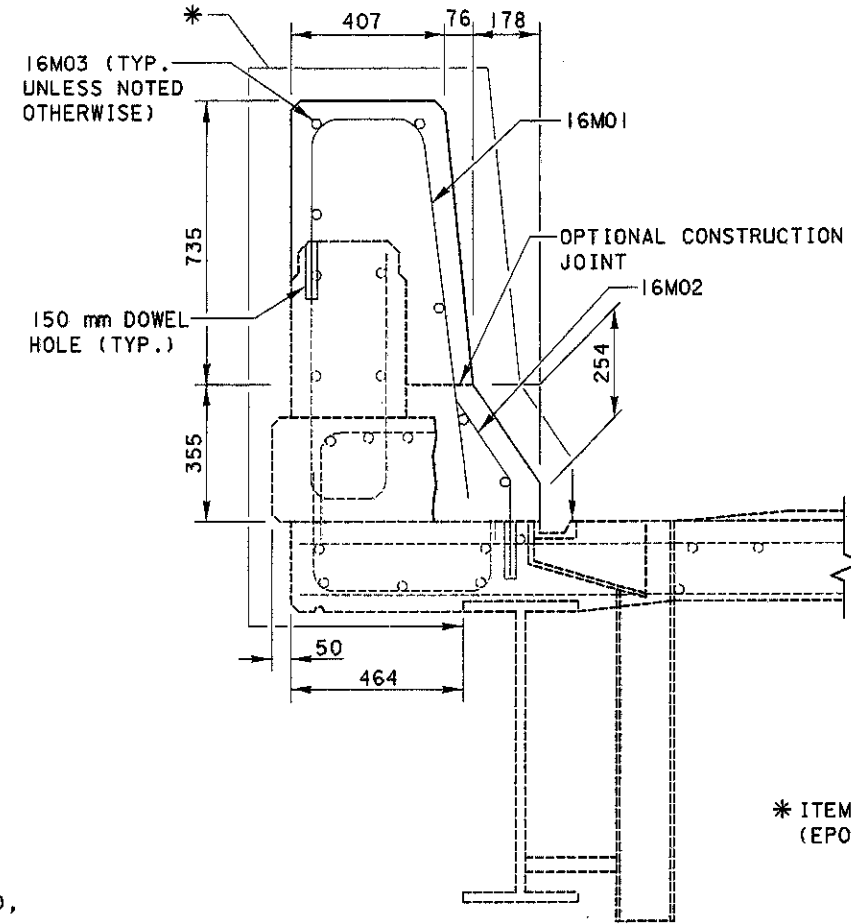
DATE: 11/99  
REVIEWED: P.C.M.  
DRAWN: C.M.K.  
CHECKED: M.R.C.

PARAPET TYPICAL SECTIONS  
RIC-13-22788R S.L.K. (RIC-13-1416R S.L.M.)  
OVER RAMP A

RIC-13-17.445



EXISTING SECTION A-A



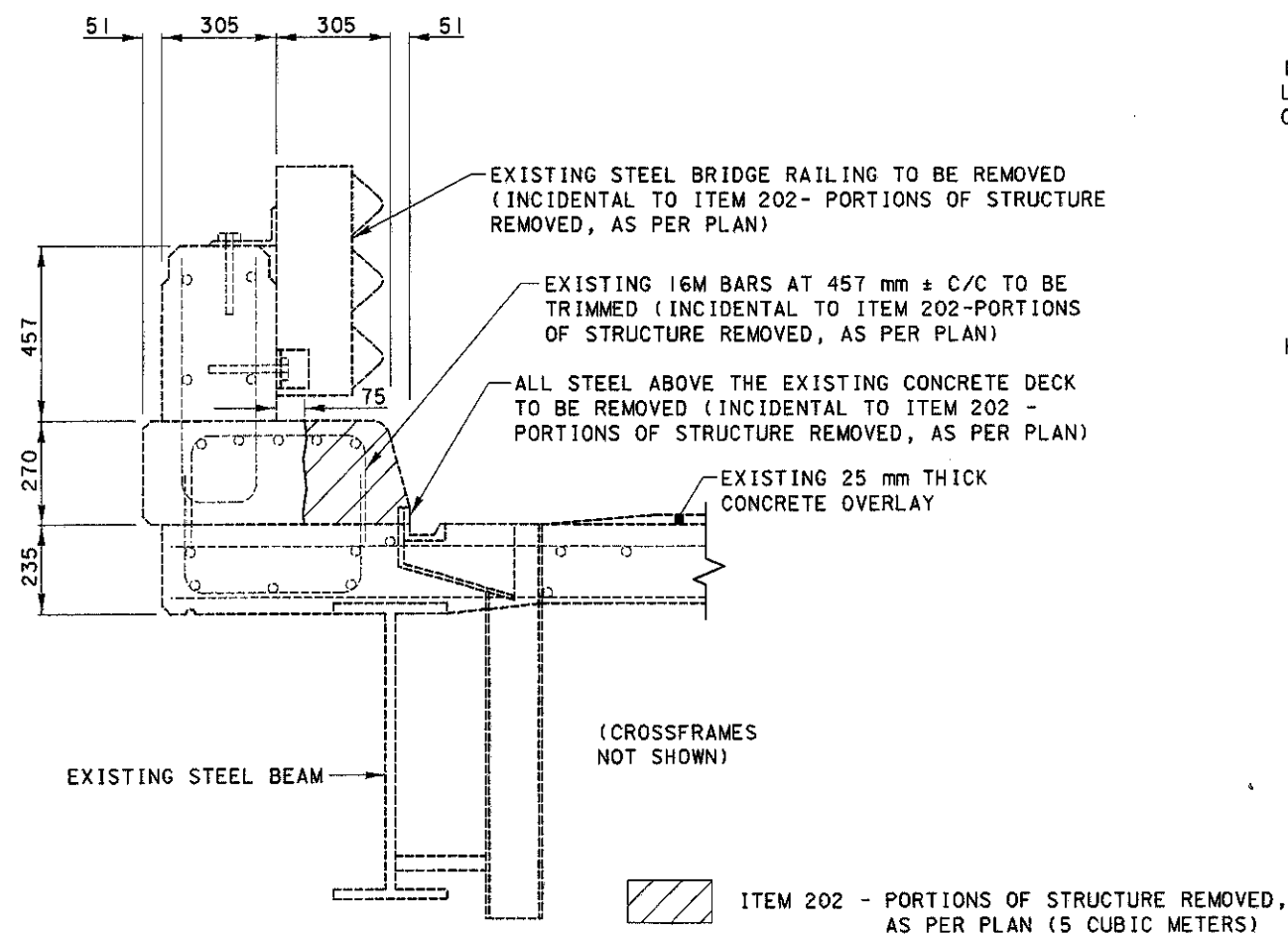
PROPOSED SECTION A-A

## NOTES:

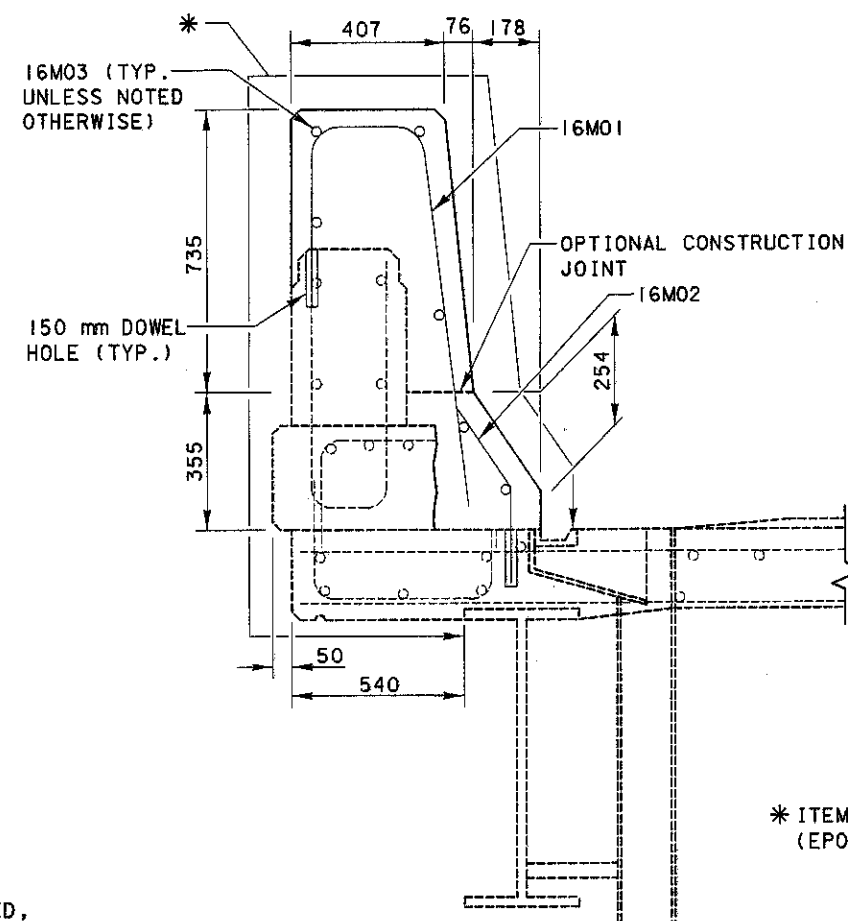
- 1) FOR GUARDRAIL DETAILS, SEE SHEET NO. 28,29
- 2) THE EXISTING CURB AND PARAPET SHALL BE FACED AS SHOWN IN THE DETAILS (ITEM 517- RAILING FACED, AS PER PLAN)
- 3) DOWEL HOLES SHALL BE AS PER 510 EXCEPT THE HOLES SHALL BE CORE DRILLED AND EPOXY MORTAR SHALL BE USED
- 4) FOR ADDITIONAL DETAILS, SEE SHEET NO. 104
- 5) CONTROL JOINTS SHALL BE CONSTRUCTED BY SAWING 25 mm DEEP ALONG THE PERIMETER OF THE PARAPET AS SOON AS THE SAW CAN BE OPERATED WITHOUT DAMAGING THE CONCRETE (SEE DETAIL A ON SHEET NO. 104 )  
 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 WITH A CAULKING MATERIAL TO A MINIMUM DEPTH OF 25 mm CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E. 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

 ALL DIMENSIONS ARE IN MILLIMETERS,  
 UNLESS NOTED OTHERWISE



EXISTING SECTION A-A

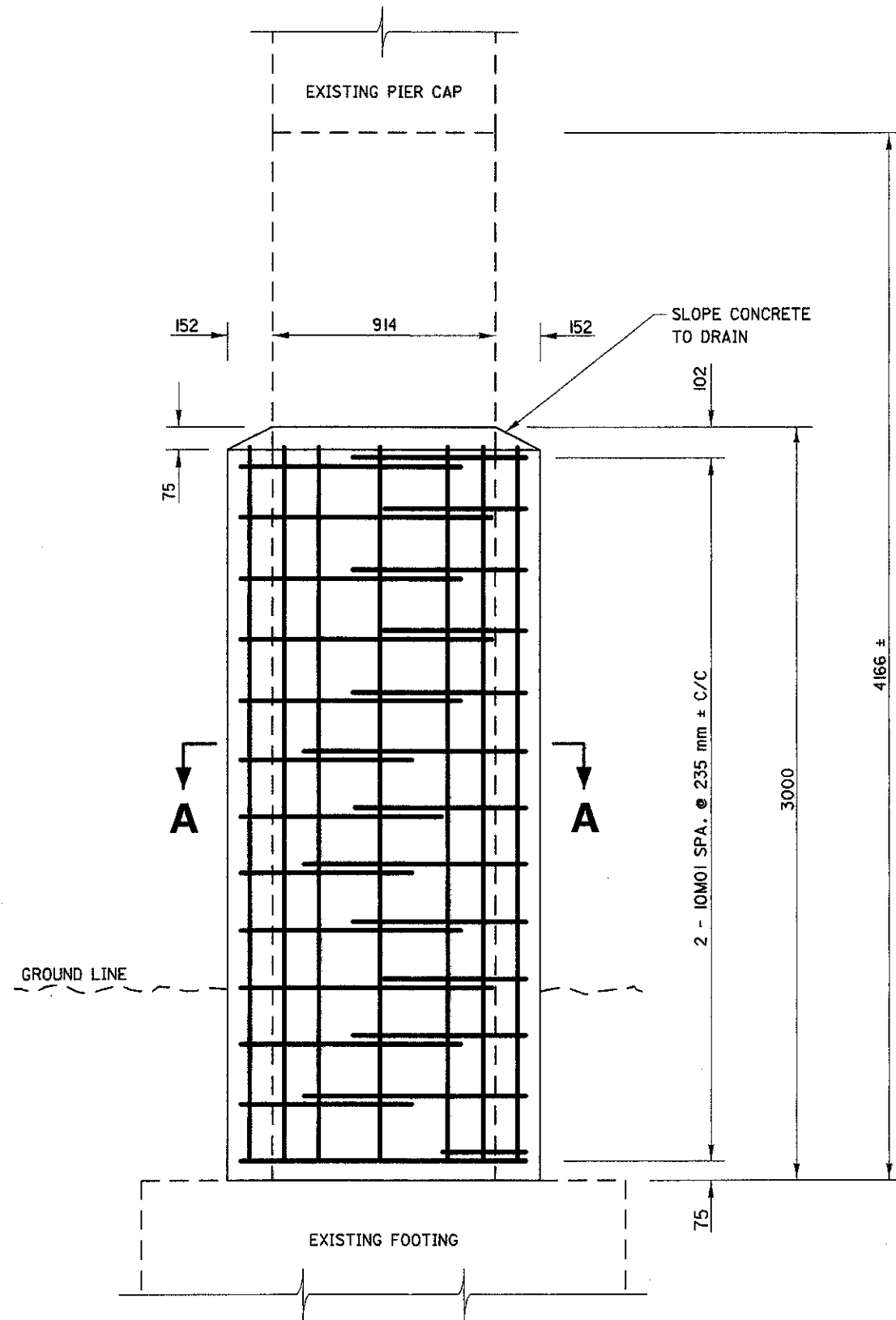
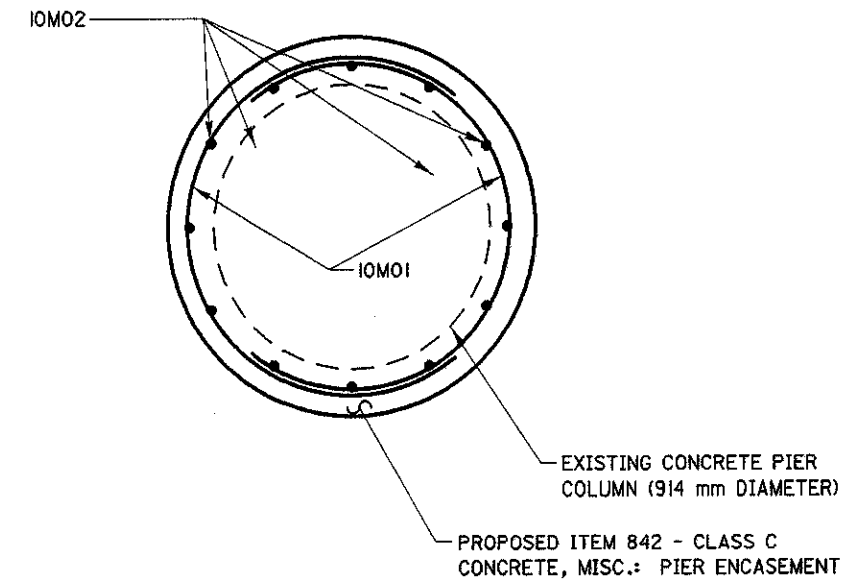


PROPOSED SECTION A-A

## NOTES:

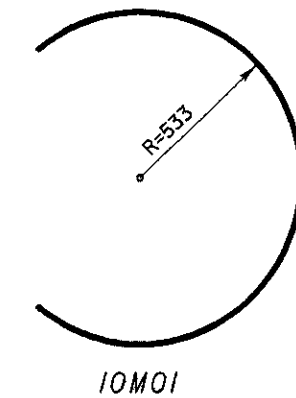
- 1) FOR GUARDRAIL DETAILS, SEE SHEET NO. 28,29
- 2) THE EXISTING CURB AND PARAPET SHALL BE FACED AS SHOWN IN THE DETAILS (ITEM 517- RAILING FACED, AS PER PLAN)
- 3) DOWEL HOLES SHALL BE AS PER 510 EXCEPT THE HOLES SHALL BE CORE DRILLED AND EPOXY MORTAR SHALL BE USED
- 4) FOR ADDITIONAL DETAILS, SEE SHEET NO. 105
- 5) CONTROL JOINTS SHALL BE CONSTRUCTED BY SAWING 25 mm DEEP ALONG THE PERIMETER OF THE PARAPET AS SOON AS THE SAW CAN BE OPERATED WITHOUT DAMAGING THE CONCRETE (SEE DETAIL A ON SHEET NO. 105 )  
 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 WITH A CAULKING MATERIAL TO A MINIMUM DEPTH OF 25 mm CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E. 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

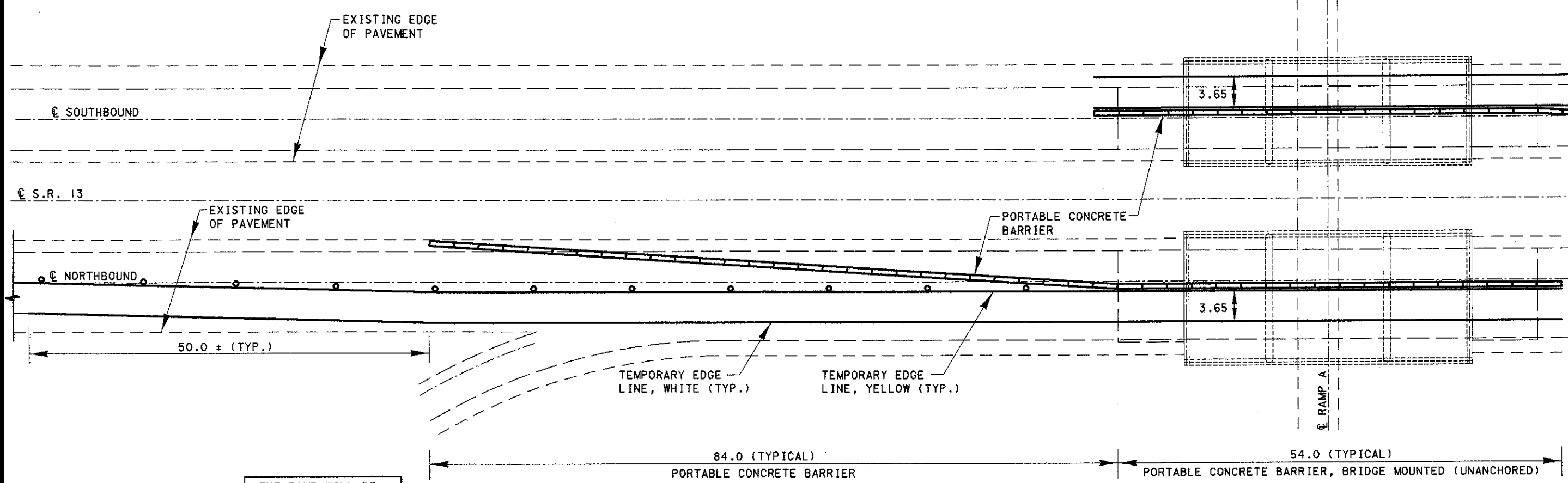
 ALL DIMENSIONS ARE IN MILLIMETERS,  
 UNLESS NOTED OTHERWISE


**PIER COLUMN ENCASEMENT**

**SECTION A-A**
**EPOXY COATED  
REINFORCING STEEL, GRADE 400**

MARK	SHAPE	LENGTH (mm)	QUANTITY	MASS (kg)*
IOM01	BENT	2400	26	35
IOM02	STRAIGHT	2850	12	19
			<b>TOTAL</b>	<b>54</b>

\* FOR INFORMATIONAL PURPOSES ONLY


 ALL DIMENSIONS ARE IN MILLIMETERS,  
UNLESS NOTED OTHERWISE



THE RAMP WILL BE CLOSED TO TRAFFIC SEE SHEET NO. \_\_\_\_\_

### PHASE A

FOR DETAILS NOT SHOWN SEE STANDARD DRAWING MT-95.40M

**NOTES:**

- 1) FOR TYPICAL SECTION VIEW, SEE SHEET NO. 111, 112
- 2) THE EXISTING GUARDRAIL IS NOT SHOWN. FOR GUARDRAIL DETAILS SEE SHEET NO. 28, 29

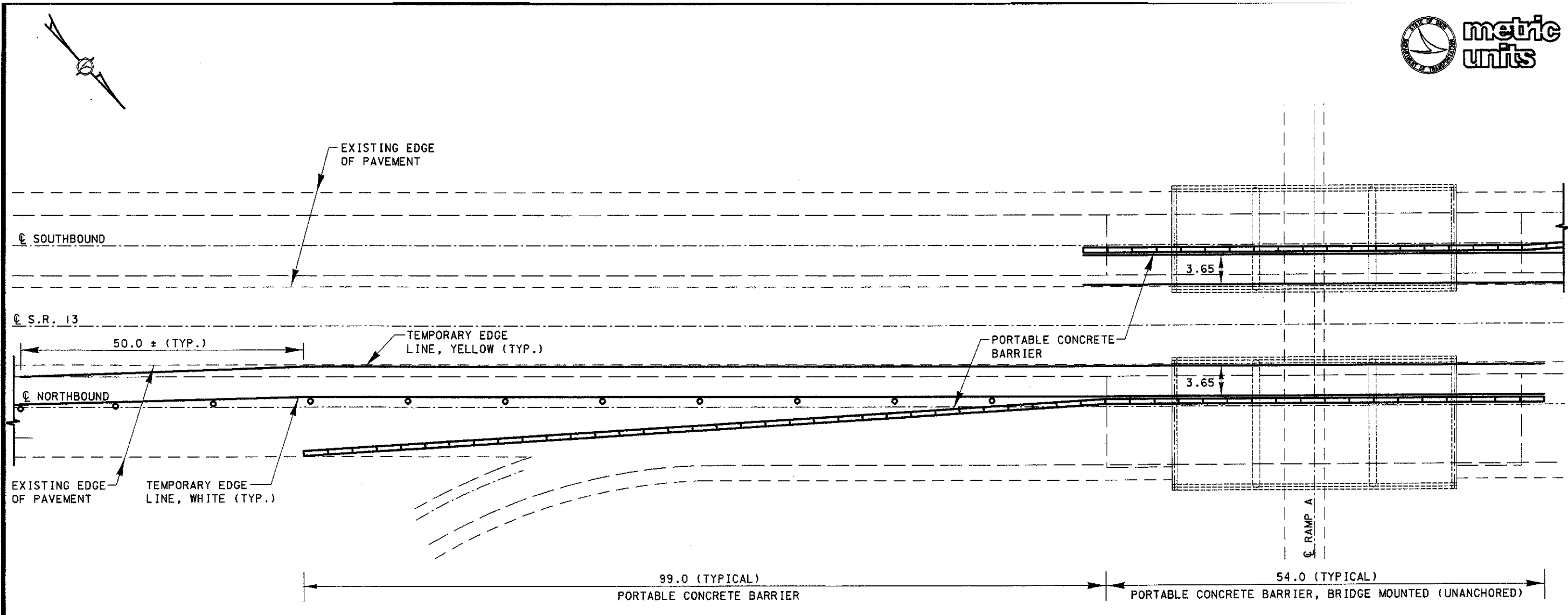
**ESTIMATED QUANTITIES**

ITEM	LEFT (PHASE A)	LEFT (PHASE B)	RIGHT (PHASE A)	RIGHT (PHASE B)	TOTAL	UNIT	DESCRIPTION
614	20	22	20	22	84	each	BARRIER REFLECTOR, TYPE A
614	21	31	21	31	104	each	BARRIER REFLECTOR, TYPE B
614	22	24	22	24	92	each	OBJECT MARKER
614	0.6	0.6	0.6	0.6	2.4	kilometer	TEMPORARY EDGE LINE, CLASS 1
622	84	99	84	99	366	meter	PORTABLE CONCRETE BARRIER, 813 MM
622	54	54	54	54	216	meter	PORTABLE CONCRETE BARRIER, 813 MM, BRIDGE MOUNTED

ALL QUANTITIES CARRIED TO GENERAL SUMMARY, SHEET NO. 20

ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE

DESIGN FILE: I:\projects\16915\struct\1416\misc.dgn  
 WORKSTATION: eglover DATE: 19 JAN 99



THE RAMP WILL BE CLOSED TO TRAFFIC SEE SHEET NO. \_\_\_\_\_

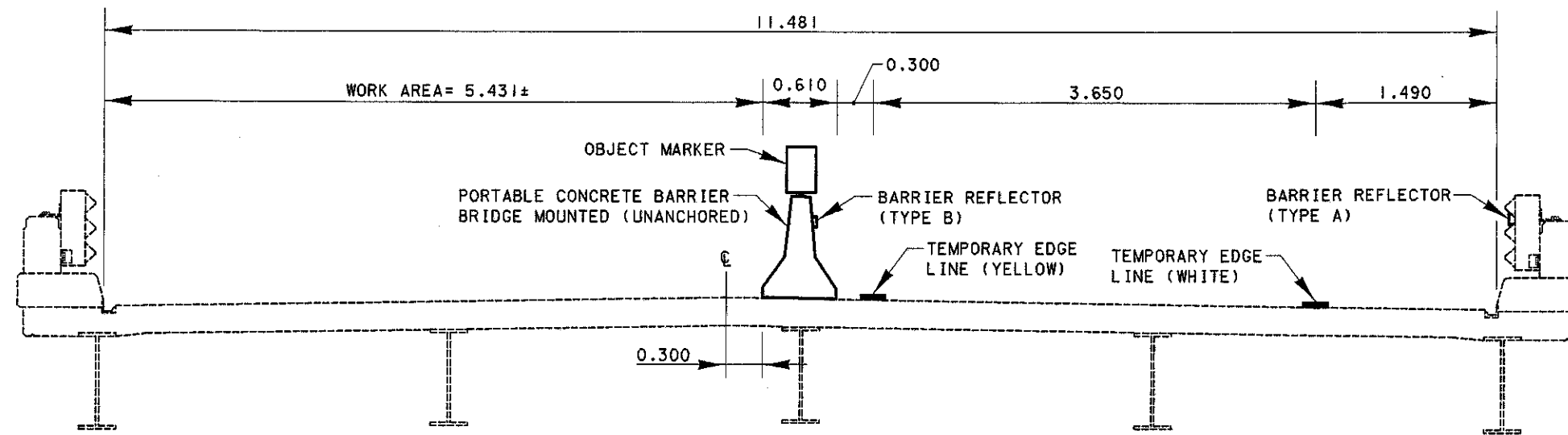
PHASE B

FOR DETAILS NOT SHOWN SEE STANDARD DRAWING MT-95.40M

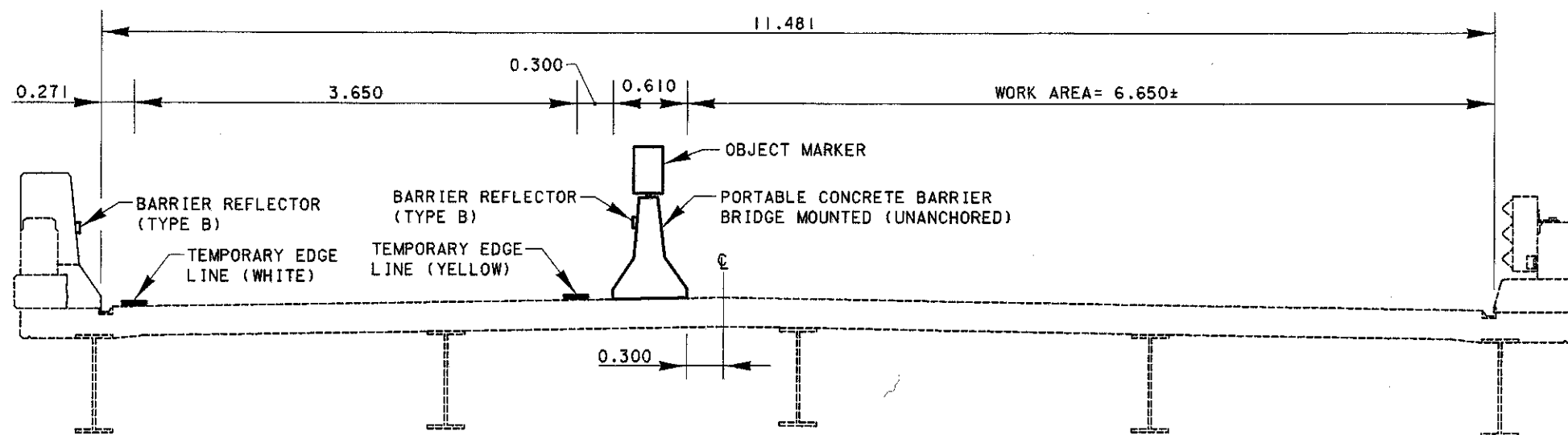
NOTES:

- 1) FOR TYPICAL SECTION VIEW, SEE SHEET NO. 111, 112
- 2) THE EXISTING GUARDRAIL IS NOT SHOWN. FOR GUARDRAIL DETAILS SEE SHEET NO. 28, 29

ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE

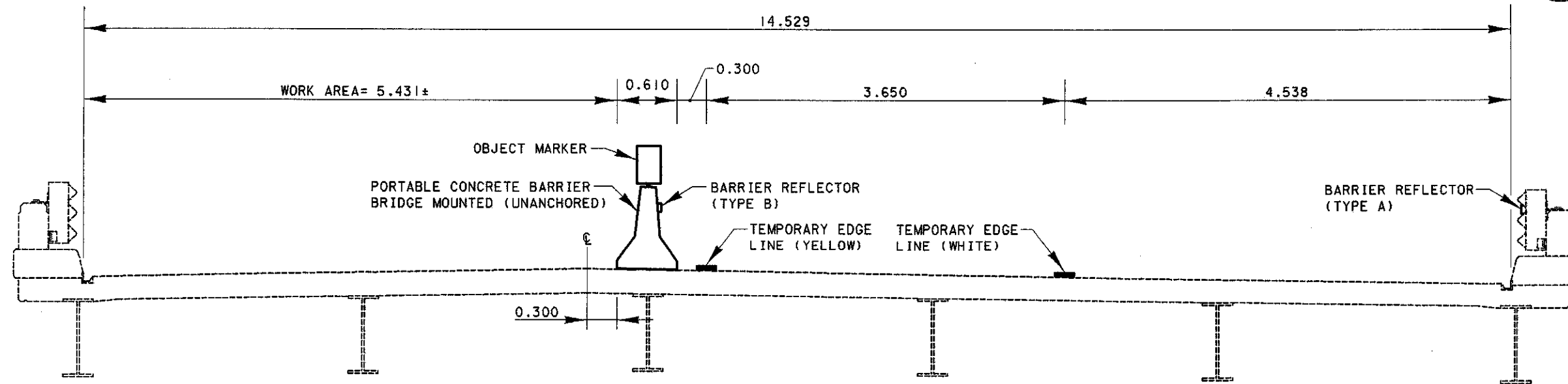


TYPICAL SECTION ON BRIDGE  
(PHASE A)

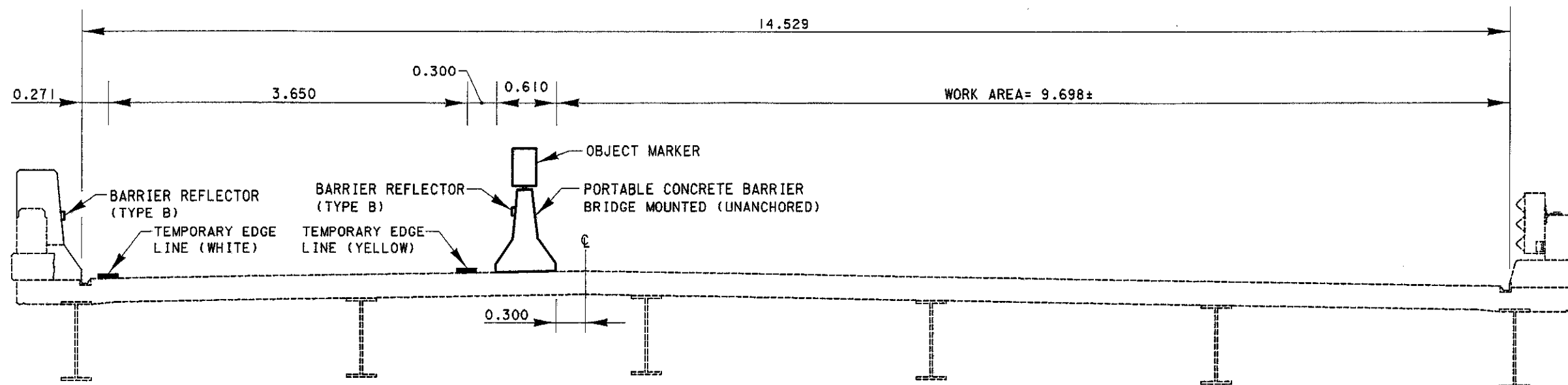


TYPICAL SECTION ON BRIDGE  
(PHASE B)

ALL DIMENSIONS ARE IN METERS,  
UNLESS NOTED OTHERWISE



TYPICAL SECTION ON BRIDGE  
(PHASE A)



TYPICAL SECTION ON BRIDGE  
(PHASE B)

DATE	1/19/99
REVIEWED	REVISOR
STRUCTURE FILE NUMBER	7000480

DRAWN	E.J.G.
CHECKED	REVISED

DESIGNED	E.J.G.
CHECKED	M.C.

MAINTENANCE OF TRAFFIC  
RIC-13-22788 R S.L.K. (RIC-13-1416 R S.L.M.)  
OVER RAMP A

RIC-13-17.445

ALL DIMENSIONS ARE IN METERS,  
UNLESS NOTED OTHERWISE