

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION



**BEL-7-32.276**

CITY OF MARTINS FERRY  
VILLAGE OF BRIDGEPORT  
PEASE TOWNSHIP  
BELMONT COUNTY

PROJECT DESCRIPTION

This project consists of resurfacing of 5.91km of existing pavement, remove existing median, add new median and median underdrains, and concrete barrier. Add pavement widening and underdrain in designated areas. Replace fence, guardrail, signing and lighting. Provide new signal system at Aetna Street. Rehabilitate bridges on S.R. 7 over IR-70, over Center Street, and the pedestrian bridge over S.R. 7.

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

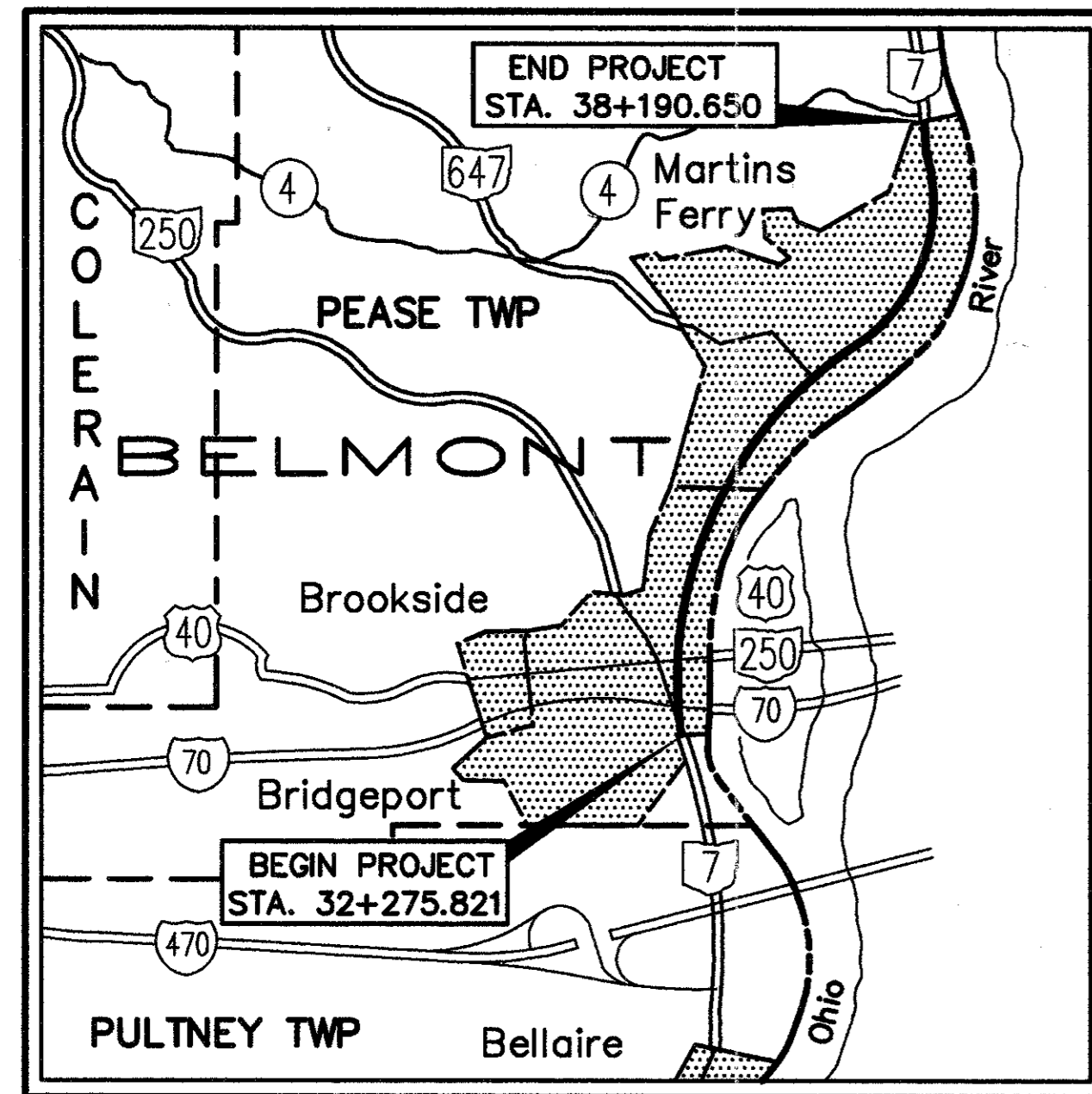
The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

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

Under authority of Section 4511.21, division (l) of the revised code of Ohio, the revised prima facie speed limits as indicated herein are determined to be reasonable and safe, and are hereby established for the duration of this project. The prima facie speed limit or limits hereby established shall become effective when appropriate signs giving notice thereof are erected.

Approved: *[Signature]*  
Date: 4/2/97 District Deputy Director

Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Director, Department of Transportation



LOCATION MAP

LATITUDE: 40°05'25" LONGITUDE: 80°42'30"



Portion To Be Improved \_\_\_\_\_  
State & Federal Routes \_\_\_\_\_  
County Roads \_\_\_\_\_

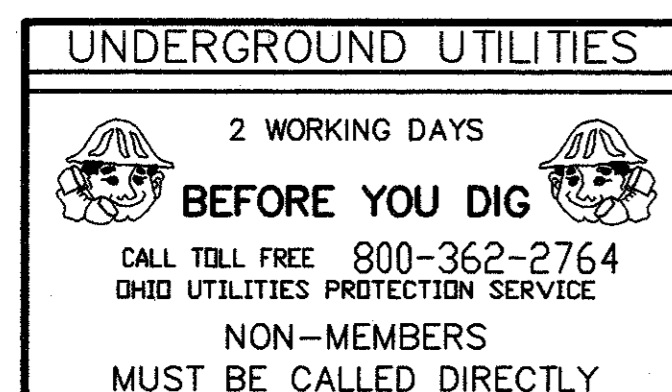
DESIGN DESIGNATION

CURRENT ADT (1995) \_\_\_\_\_ 45890  
DESIGN YEAR ADT (2015) \_\_\_\_\_ 68840  
DESIGN HOURLY VOLUME (2015) \_\_\_\_\_ 6200  
DIRECTIONAL DISTRIBUTION \_\_\_\_\_ 56%  
TRUCKS (24 HOUR B & C) \_\_\_\_\_ 7%  
DESIGN SPEED \_\_\_\_\_ 100 KMH  
LEGAL SPEED \_\_\_\_\_ 80 KMH (50 MPH)  
DESIGN FUNCTIONAL CLASSIFICATION—  
URBAN PRINCIPAL ARTERIAL/EXPRESSWAY

DESIGN EXCEPTIONS

APPROVED

SHOULDER WIDTH JANUARY 13, 1995  
BRIDGE WIDTH JANUARY 13, 1995  
SUPERELEVATION JANUARY 13, 1995  
STOPPING SIGHT DISTANCE JANUARY 13, 1995  
VERTICAL ALIGNMENT JANUARY 13, 1995



Plan Prepared By:  
W. E. QUICKSALL AND ASSOCIATES INC.  
CONSULTING ENGINEERS  
554 West High Ave.  
New Philadelphia, Ohio

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STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS			
BP-2.1M	4-8-97	GR-3.5M	1-3-96	RM-4.2M	6-30-95		TC-52.20M	7-29-94	HL-20.14M	5-1-95			
BP-2.2M	4-8-97	GR-4.1M	11-30-94	RM-4.3M	6-30-95	TC-9.10M	2-1-94	TC-61.10M	3-31-94	HL-20.15M	3-31-95		
BP-2.5M	4-8-97	GR-4.2M	4-21-95	RM-4.4M	6-30-95	TC-9.30M	2-1-94	TC-65.10M	11-1-95	HL-30.11M	3-31-95	815	5-30-96
BP-3.1M	10-28-94			MH-1.1M	9-6-95	TC-12.30M	2-1-94	TC-65.11M	11-1-95	HL-30.21M	5-1-95		
BP-4.1M	10-28-94	CB-2.1M	7-12-95	MH-3.1M	9-6-95	TC-21.20M	12-10-96	TC-65.12M	11-1-95	HL-30.22M	3-31-95	910	4-21-97
BP-5.1M	10-28-94	CB-2.2M	7-12-95	MH-1.2M	9-6-95	TC-21.40M	2-1-94	TC-71.10M	9-1-93	HL-30.31M	5-1-95		
BP-7.1M	10-28-94	CB-3.2M	7-12-95			TC-22.10M	2-1-94	TC-72.20M	9-1-93	HL-30.33M	8-31-94		
		I-1.1M	9-6-95	MT-35.11M	1-30-95	TC-22.20M	2-1-94	TC-81.10M	12-10-96	HL-40.10M	3-31-95		
F-1.1M	4-8-97	I-1.2M	9-6-95	MT-35.10M	1-30-95	TC-31.21M	3-31-94	TC-82.10M	11-24-93	HL-50.11M	3-31-95		
F-3.1M	4-21-95	I-2.1M	4-8-97	MT-95.30M	4-25-94	TC-32.10M	3-31-94	TC-83.10M	11-24-93	HL-50.21M	8-31-94		
F-3.3M	4-21-95	I-2.2M	9-6-95	MT-95.31M	4-25-94			TC-83.20M	11-24-93	HL-60.11M	5-1-95		
F-3.4M	4-8-97			MT-95.40M	4-25-94	TC-41.10M	3-31-94	TC-84.20M	11-24-93	HL-60.12M	3-31-95		
		DM-1.1M	6-30-95	MT-98.12M	6-24-93	TC-41.20M	7-1-94	TC-85.20M	11-24-93	HL-60.31M	3-31-95		
GR-1.1M	11-30-94	DM-1.2M	6-30-95	MT-98.13M	6-24-93	TC-41.40M	3-31-94						
GR-1.2M	1-3-96	DM-4.2M	6-30-95	MT-98.14M	6-24-93	TC-41.41M	3-31-94	HL-10.11M	5-1-95	PCB-91M	3-20-95		
GR-1.3M	11-30-94	DM-4.3M	6-30-95	MT-98.15M	6-24-93	TC-41.50M	7-1-94	HL-10.12M	5-1-95	AS-1-81M	10-25-94		
GR-2.1M	11-30-94	DM-4.4M	6-30-95	MT-98.16M	6-24-93	TC-42.10M	3-31-94	HL-10.13M	5-1-95	VPF-1-90M	3-20-95		
GR-3.1M	11-30-94	RM-1.1M	4-8-97			TC-42.20M	3-31-94	HL-20.11M	3-31-95	EXJ-4-87M	2-18-97		
GR-3.2M	11-30-94	RM-3.1M	6-30-95	MT-99.20M	1-30-95	TC-52.10M	7-29-94	HL-20.13M	1-31-97	SD-1-69	6-12-69		

FEDERAL PROJECT NO.  
**NH-1 (202)**

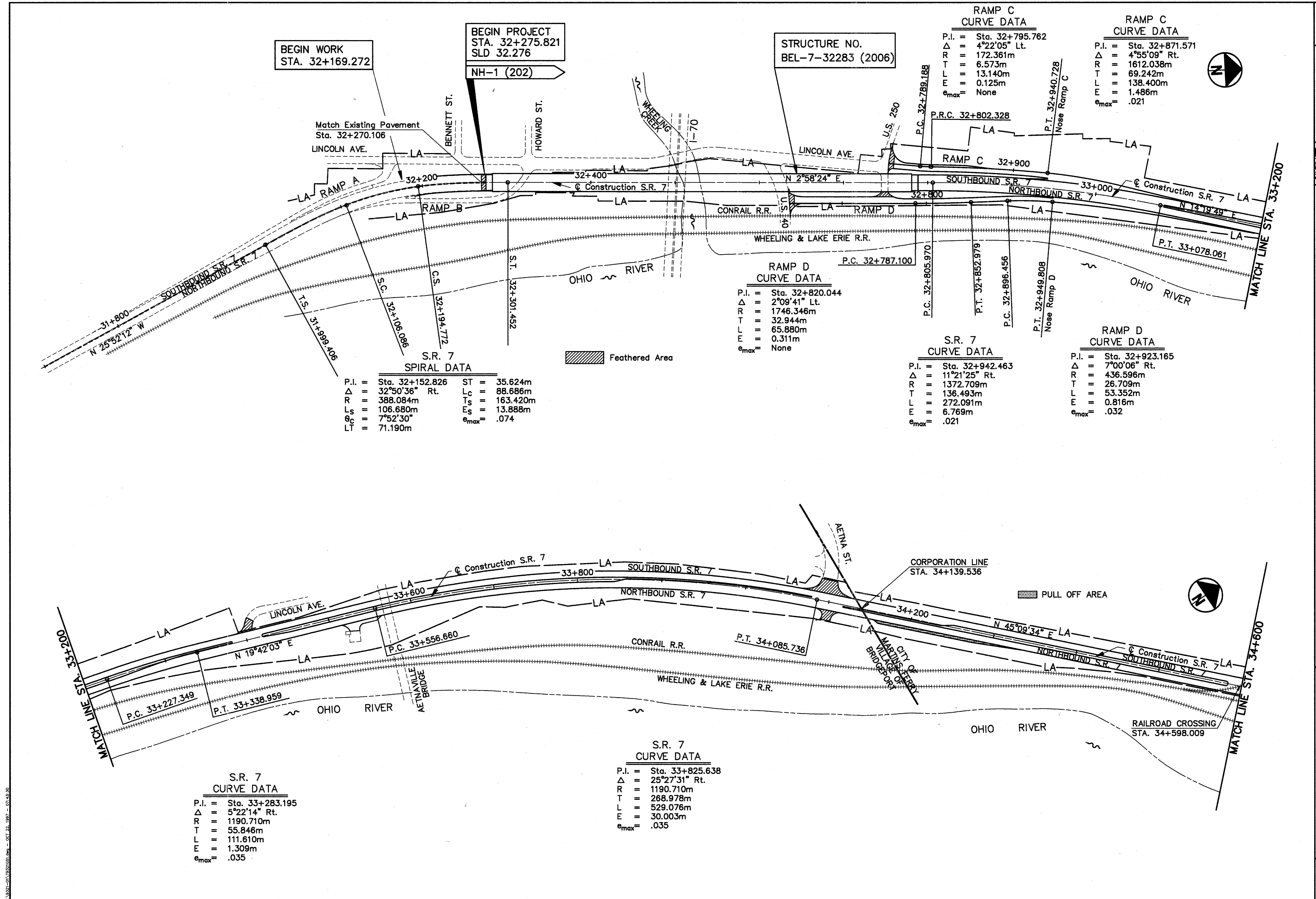
PID NO.  
**11896**

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT  
NONE

**BEL-7-32.276**

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242



**SCHEMATIC PLAN**

**BEL-7-32.276**

**S.R. 7  
CURVE DATA**  
 P.I. = Sta. 34+771.391  
 $\Delta$  = 3°28'04" Lt.  
 R = 1190.710m  
 T = 38.044m  
 L = 72.067m  
 E = 0.545m  
 $e_{max}$  = None

**S.R. 7  
CURVE DATA**  
 P.I. = Sta. 35+843.902  
 $\Delta$  = 14°01'46" Lt.  
 R = 1746.376m  
 T = 214.884m  
 L = 427.618m  
 E = 13.171m  
 $e_{max}$  = .024

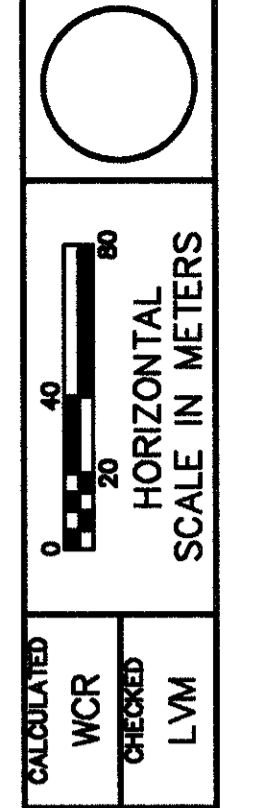
**S.R. 7  
CURVE DATA**  
 P.I. = Sta. 35+438.884  
 $\Delta$  = 4°53'09" Rt.  
 R = 1190.710m  
 T = 50.799m  
 L = 101.536m  
 E = 1.083m  
 $e_{max}$  = .035

**S.R. 7  
CURVE DATA**  
 P.I. = Sta. 37+446.156  
 $\Delta$  = 31°38'17" Lt.  
 R = 1164.250m  
 T = 329.869m  
 L = 642.888m  
 E = 45.829m  
 $e_{max}$  = .036

**S.R. 7  
CURVE DATA**  
 P.I. = Sta. 36+667.639  
 $\Delta$  = 07°18'16" Rt.  
 R = 1193.801m  
 T = 76.200m  
 L = 152.193m  
 E = 2.429m  
 $e_{max}$  = .035

**S.R. 7  
SPIRAL DATA**  
 P.I. = Sta. 37+892.513    ST = 25.406m  
 $\Delta$  = 6°33'49" Lt.        Lc = 88.915m  
 R = 776.167m            Ts = 121.001m  
 Ls = 76.200m            Es = 1.275m  
 $\theta_c$  = 2°48'45"             $e_{max}$  = .053  
 LT = 50.806m

Feathered Area  
 Pull Off Area

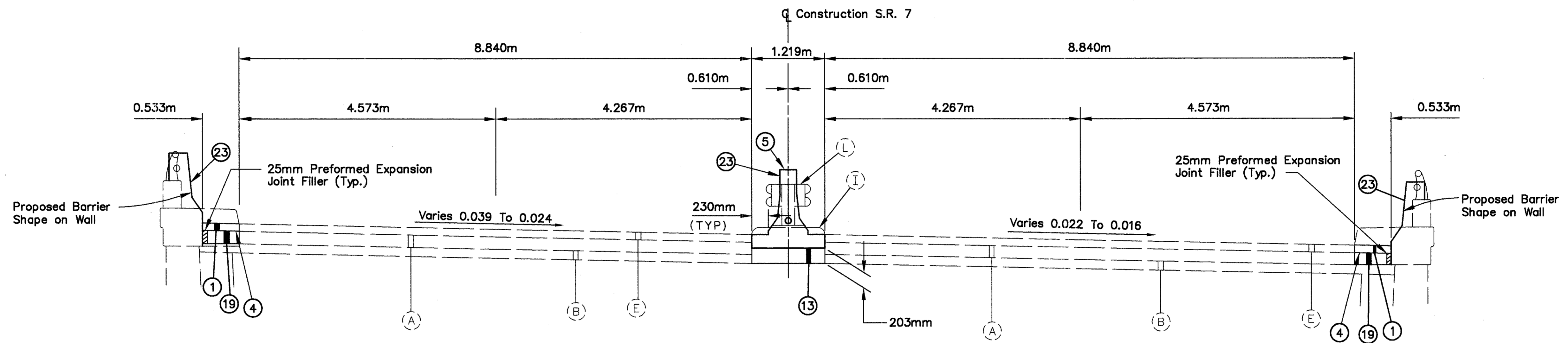


**SCHEMATIC PLAN**

**BEL-7-32.276**

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S.R. 7 TYPICAL SECTION

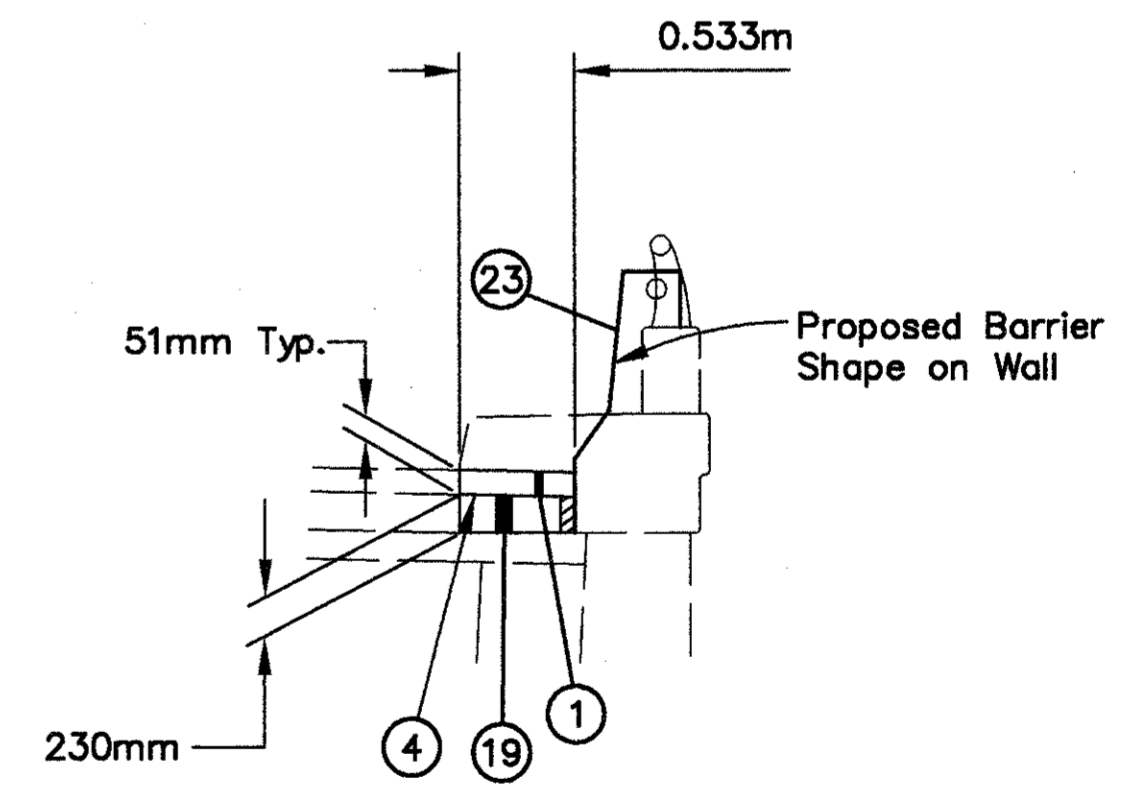


**PROPOSED CONCRETE BARRIER IN MEDIAN**

SECTION APPLIES:

(MEDIAN) STA. 32+235.359 TO STA. 32+275.821 = 48.480m

For Legend See Sheet No. 5



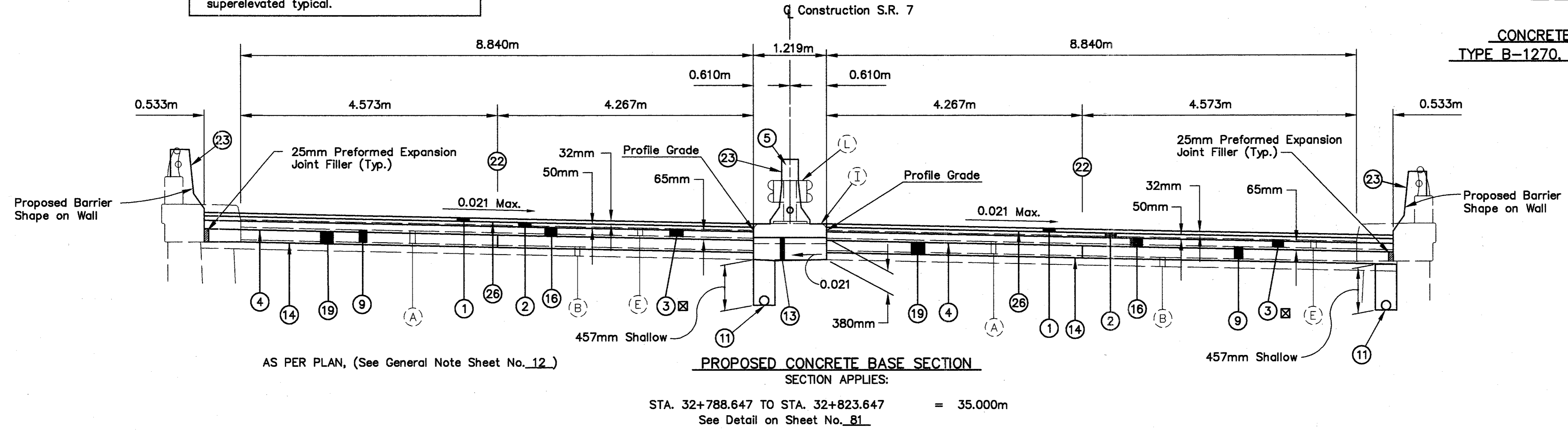
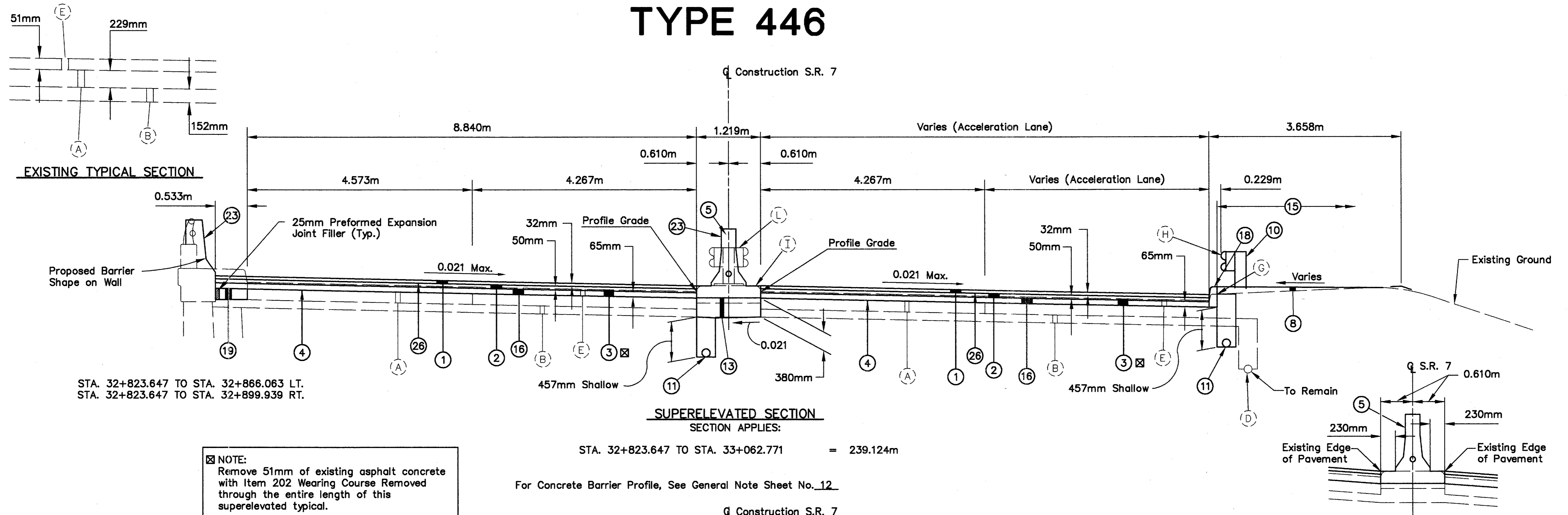
Sta. 32+218.266 to Sta. 32+275.821 Lt. = 57.555m  
Sta. 32+188.031 to Sta. 32+275.821 Rt. = 87.790m  
Total = 152.201m

**PAVEMENT DETAIL AT WALL**

BEL-7-32.276

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# TYPE 446



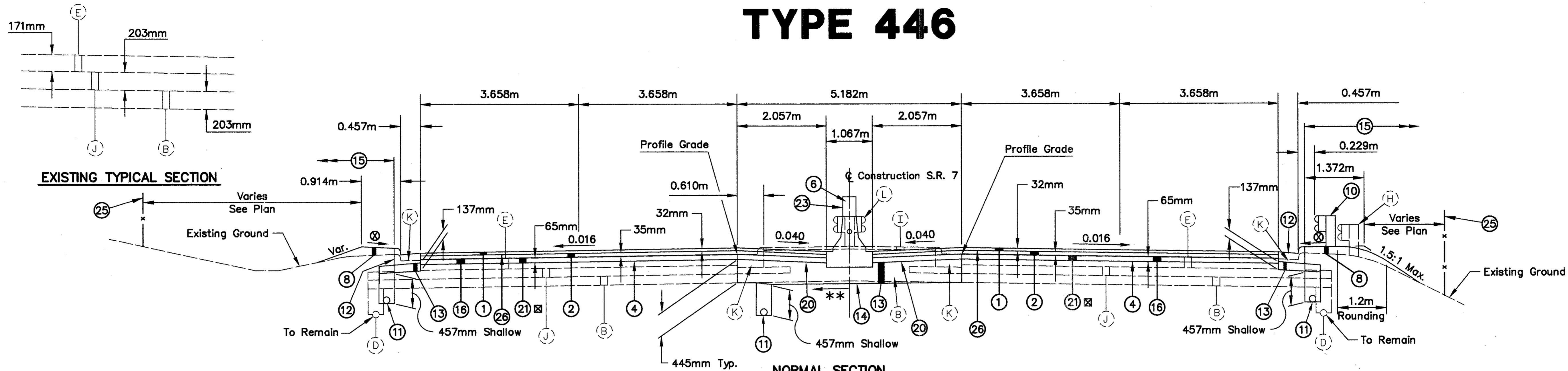
- PROPOSED LEGEND**
- ① ITEM 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28, AS PER PLAN,
  - ② ITEM 446 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28
  - ③ ITEM 202 - WEARING COURSE REMOVED
  - ④ ITEM 407 - TACK COAT
  - ⑤ ITEM 622 - CONCRETE BARRIER, TYPE B-1270, AS PER PLAN
  - ⑥ ITEM 622 - CONCRETE BARRIER, TYPE B-1270
  - ⑦ ITEM 612 - 100mm CONCRETE MEDIAN
  - ⑧ ITEM 203 - LINEAR GRADING
  - ⑨ ITEM 202 - CONCRETE BASE REMOVED
  - ⑩ ITEM 606 - GUARDRAIL, TYPE 5
  - ⑪ ITEM 605 - 100mm SHALLOW PIPE UNDERDRAIN 707.31, AS PER PLAN
  - ⑫ ITEM 609 - COMBINATION CURB AND GUTTER, TYPE 2

- ⑬ ITEM 304 - AGGREGATE BASE
- ⑭ ITEM 203 - SUBGRADE COMPACTION
- ⑮ ITEM 659 - SEEDING AND MULCHING
- ⑯ ITEM 301 - BITUMINOUS AGGREGATE BASE, PG 64-28
- ⑰ ITEM 611 - REINFORCED CONCRETE APPROACH SLAB (T=380mm)
- ⑱ ITEM 609 - CURB, TYPE 2-B, AS PER PLAN
- ⑲ ITEM 305 - 230mm CONCRETE BASE, AS PER PLAN
- ⑳ ITEM 408 - BITUMINOUS PRIME COAT (APPLIED AT THE RATE OF 1.80 LITERS PER SQ. METER)
- ㉑ ITEM 254 - PAVEMENT PLANING, BITUMINOUS
- ㉒ STANDARD LONGITUDINAL JOINT, SEE STANDARD DRAWING BP-2.1M
- ㉓ ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY)
- ㉔ ITEM 622 - CONCRETE BARRIER, TYPE B-1270, AS PER PLAN A
- ㉕ ITEM 607 - FENCE, TYPE 47 CLT
- ㉖ ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

- EXISTING LEGEND**
- (A) EXISTING 229mm REINFORCED CONCRETE PAVEMENT
  - (B) EXISTING SUBBASE
  - (C) EXISTING AGGREGATE BASE
  - (D) EXISTING 152mm PIPE UNDERDRAIN
  - (E) EXISTING ASPHALT CONCRETE
  - (F) EXISTING CONCRETE SIDEWALK
  - (G) EXISTING CONCRETE CURB
  - (H) EXISTING GUARDRAIL
  - (I) EXISTING CONCRETE MEDIAN
  - (J) EXISTING MACADAM BASE COURSE
  - (K) EXISTING CURB & GUTTER
  - (L) EXISTING GUARDRAIL BARRIER DESIGN

CALCULATED WCR CHECKED LVM  
**TYPICAL SECTION**  
**BEL-7-32.276**  
 5  
 242

# TYPE 446



- ⊗ 0.040
- \*\* 0.020
- ⊙ 0.040 or Applicable Superelevation Rate if greater See Sheet No. 7
- ⊠ See Detail Sheet No. 7
- Slope Same As Pavement

### NORMAL SECTION

SECTION APPLIES:

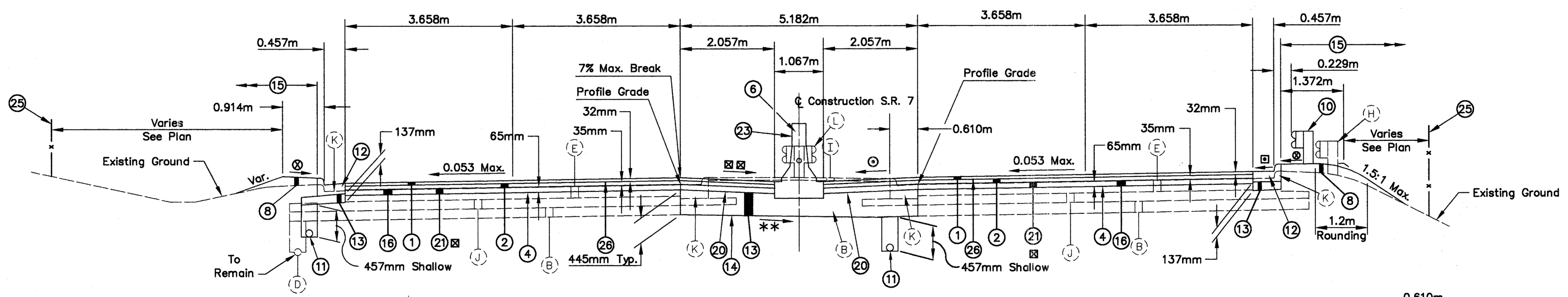
STA. 33+420.911 TO STA. 33+474.251	=	53.340m
STA. 34+167.671 TO STA. 34+647.731	=	480.060m
STA. 34+891.571 TO STA. 35+303.051	=	411.480m
STA. 36+134.273 TO STA. 36+507.653	=	373.380m
STA. 36+827.693 TO STA. 37+033.433	=	205.740m
STA. 38+068.730 TO STA. 38+190.650	=	121.920m
STA. 36+360.679 TO STA. 36+413.897	=	-53.218m
STA. 34+594.815 TO STA. 34+601.283	=	-6.468m
<b>TOTAL</b>	=	<b>1586.234m</b>

**NOTE:**  
Remove 38mm of existing asphalt concrete with Item 254 Pavement Planing, Bituminous through the entire length of these typicals excepting stations 36+129 to 36+199 where removal depth shall be 75mm. (See Detail Sheet No. 90)

For Legend, See Sheet No. 5  
For Concrete Barrier Profile, See General Note Sheet 12

(See Median Detail, Sheet No. 10)

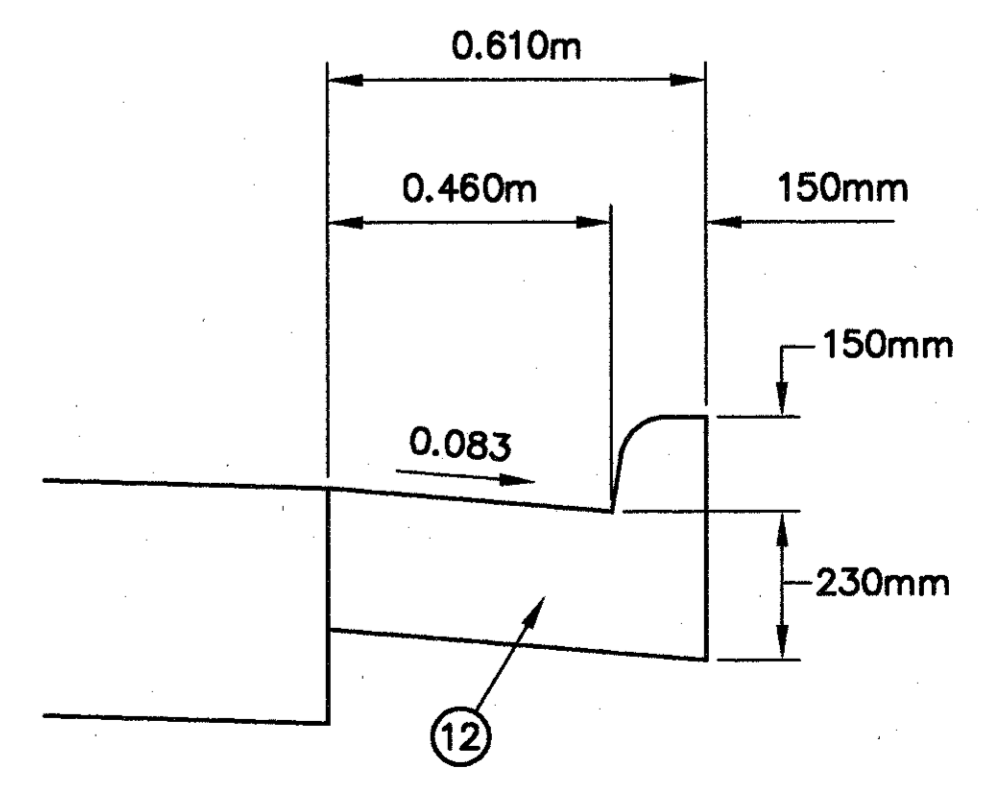
Deduct For Structure & Approach Slabs  
Deduct For R.R. Spur Crossing



### SUPERELEVATED SECTION

SECTION APPLIES:

STA. 33+062.771 TO STA. 33+420.911	=	358.140m
STA. 33+474.251 TO STA. 34+167.671	=	693.420m
STA. 34+647.731 TO STA. 34+891.571	=	243.840m
STA. 35+303.051 TO STA. 36+134.273	=	831.222m
STA. 36+507.653 TO STA. 36+827.693	=	320.040m
STA. 37+033.433 TO STA. 38+068.730	=	1035.297m
STA. 36+675.522 TO STA. 36+806.738	=	-131.216m
<b>TOTAL</b>	=	<b>3350.743m</b>

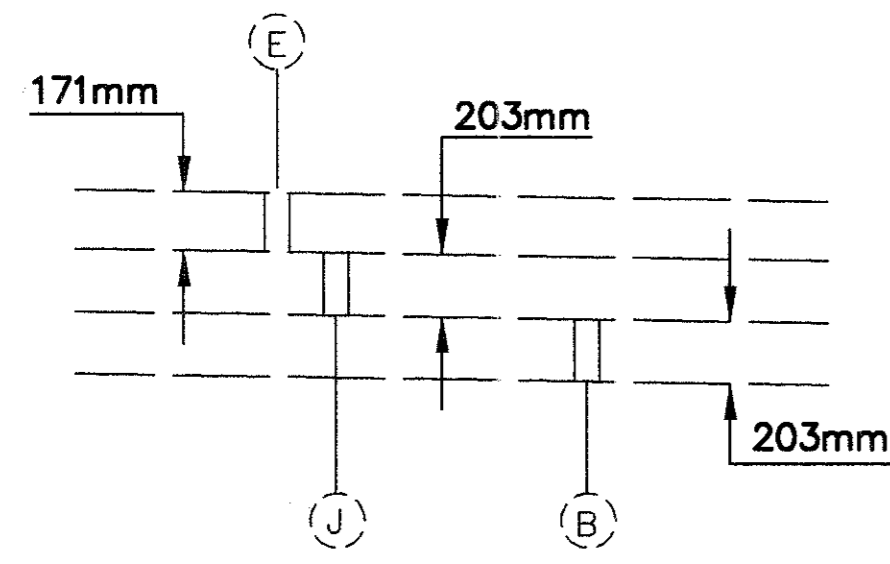


**COMBINATION CURB AND GUTTER, TYPE 2**  
**NORMAL SECTION**

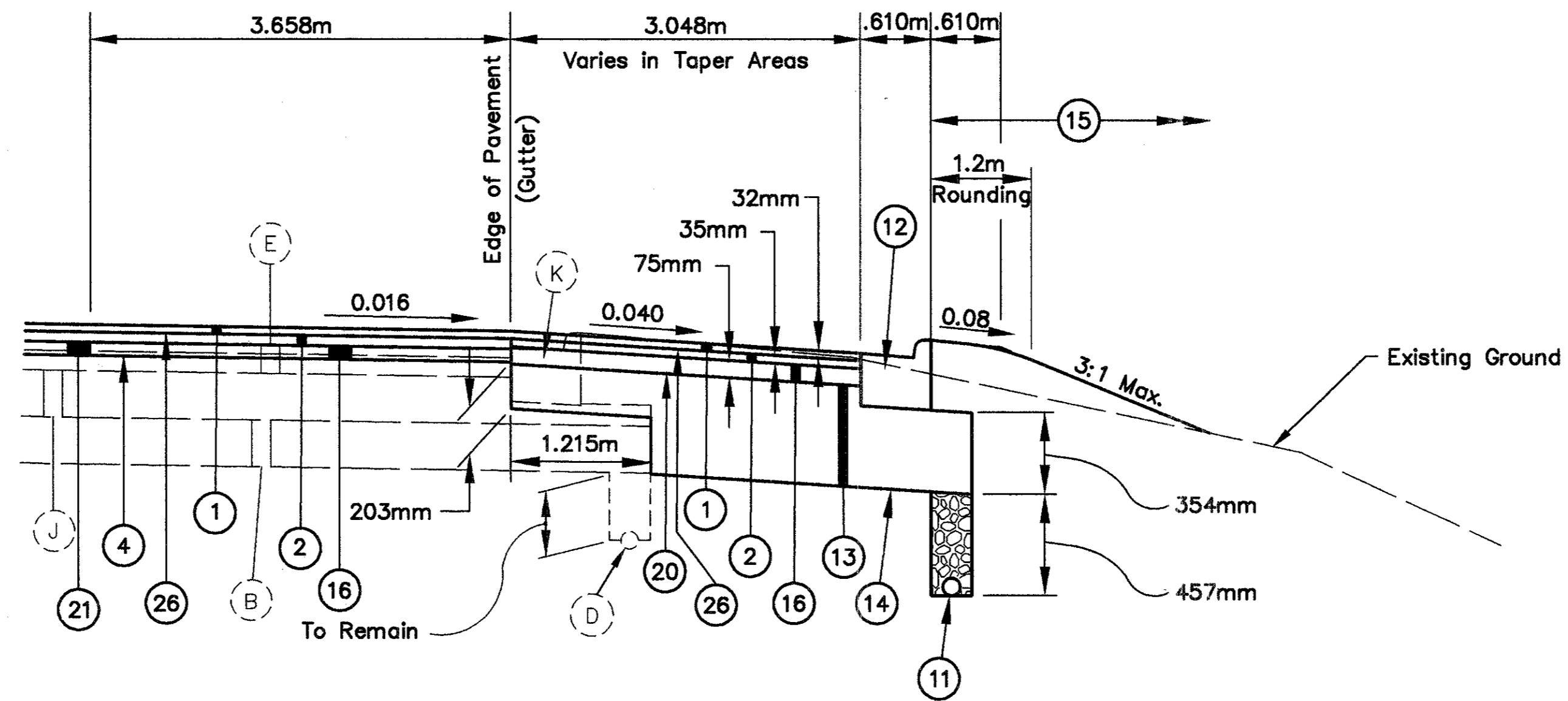
S.R. 7 TYPICAL SECTIONS

BEL-7-32.276

# TYPE 446



**EXISTING TYPICAL SECTION**

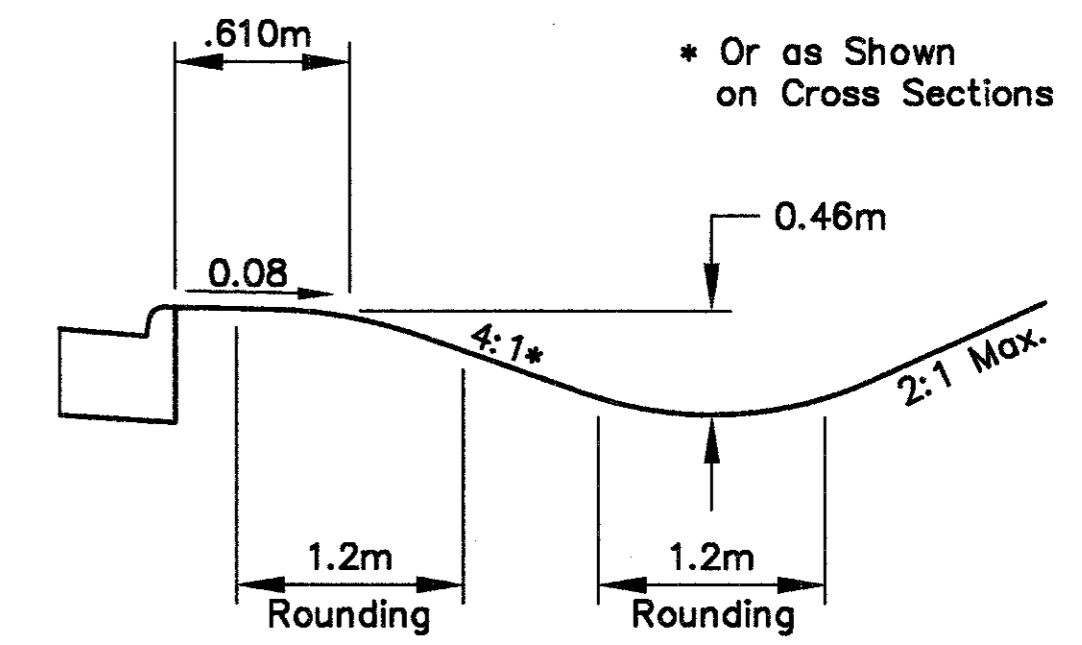


**PAVEMENT WIDENING SECTION**

SECTION APPLIES:

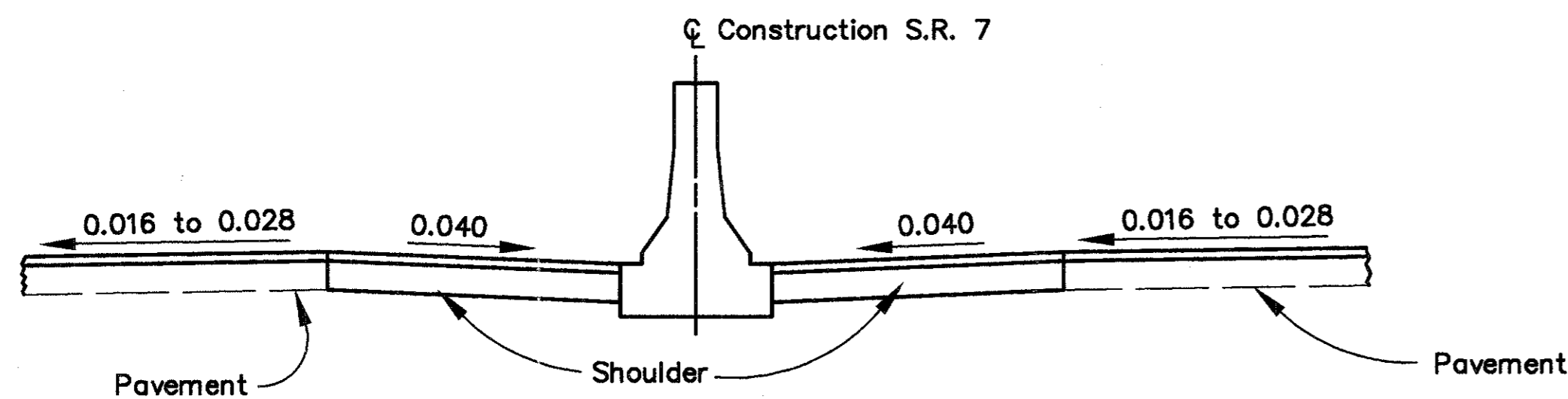
STA. 34+156.000 TO STA. 34+337.040 RT.	=	181.040m
STA. 34+948.000 TO STA. 35+170.040 RT.	=	222.040m
STA. 34+983.960 TO STA. 35+260.000 LT.	=	276.040m
<b>TOTAL</b>		<b>679.120m</b>

For Legend, See Sheet No. 5

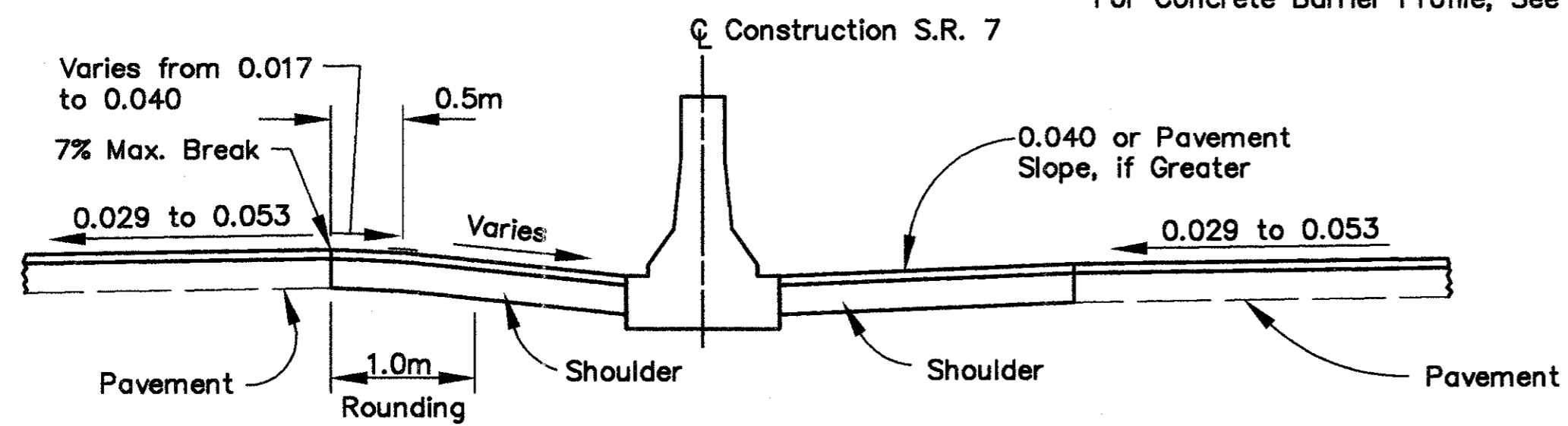


**TYPICAL DITCH SECTION**

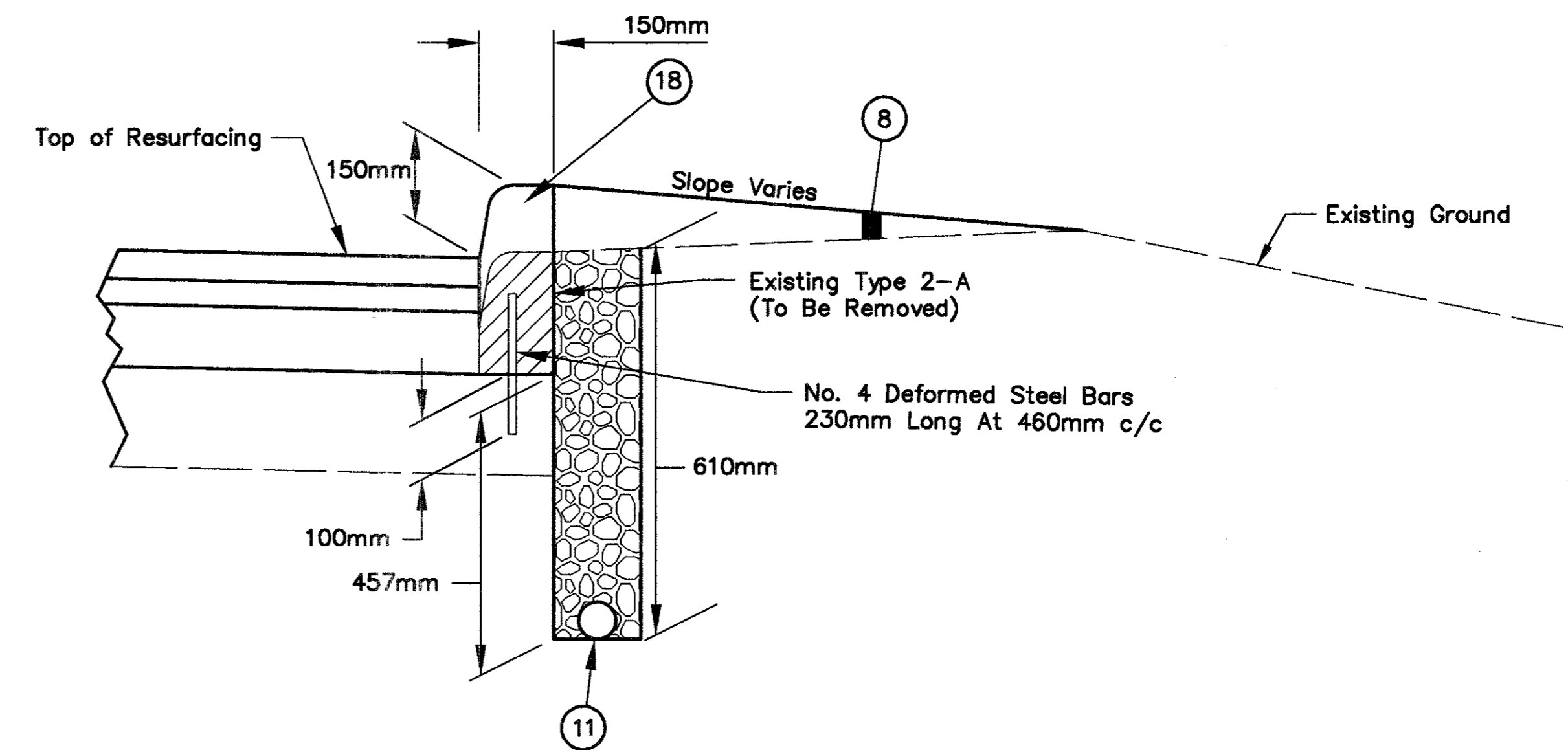
STA. 34+156.000 TO STA. 34+325.000 RT.  
STA. 34+982.000 TO STA. 35+250.000 LT.



For Concrete Barrier Profile, See Sheet No. 12



**SUPERELEVATED S.R. 7 MEDIAN SHOULDER SLOPES**



**CURB REPLACEMENT DETAIL**

See General Note Sheet No. 12

Sta. 32+940.728 To Sta. 33+062.771 Lt.  
Sta. 32+949.808 To Sta. 33+062.771 Rt.

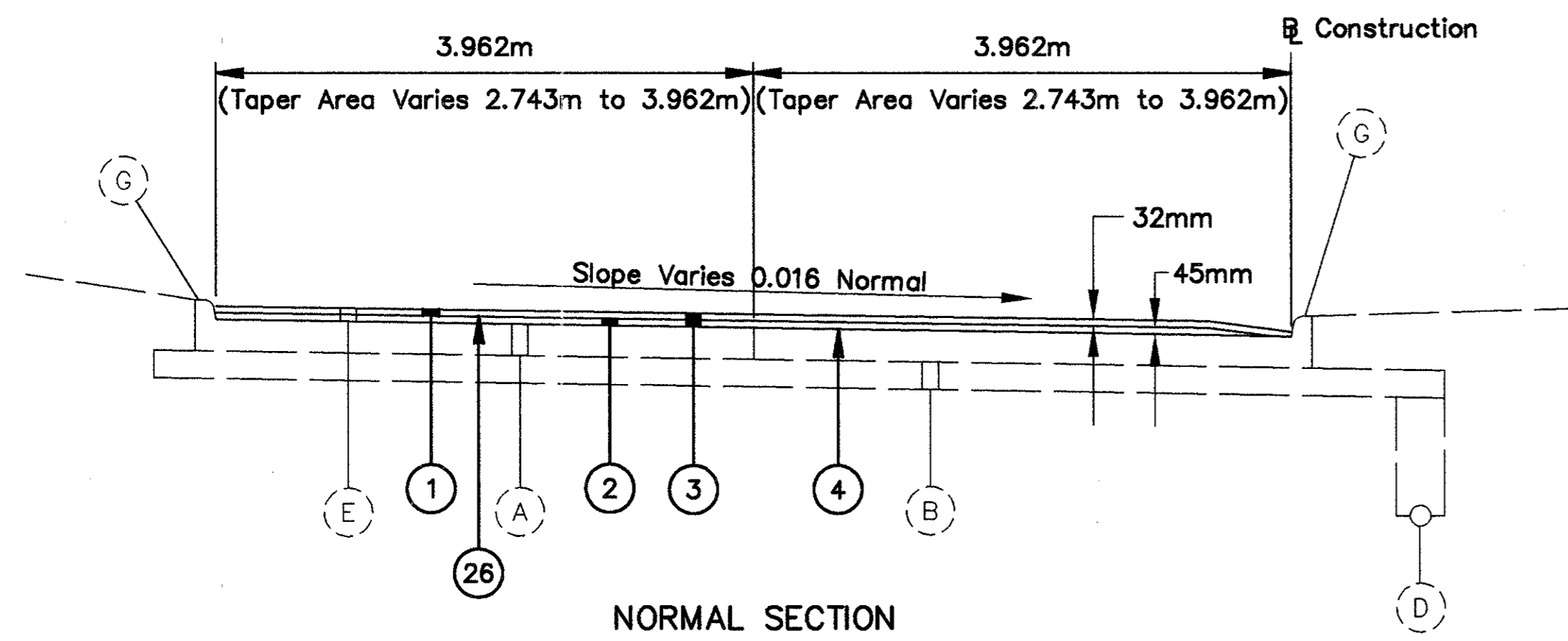
CALCULATED  
WCR  
CHECKED  
LVM

**S.R. 7 TYPICAL SECTIONS**

**BEL-7-32.276**

7  
242

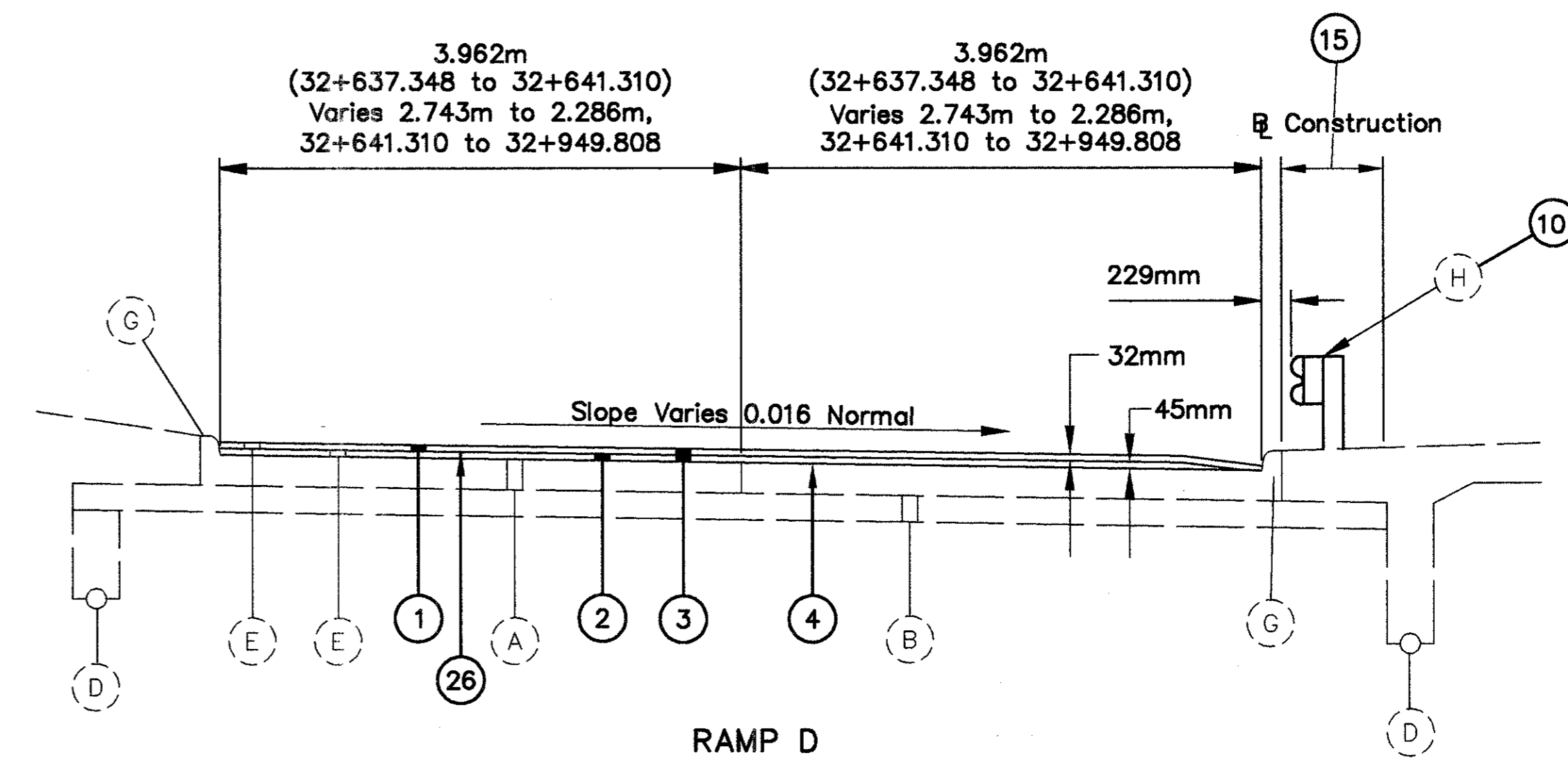
# TYPE 446



**NORMAL SECTION  
RAMP C**

SECTION APPLIES:

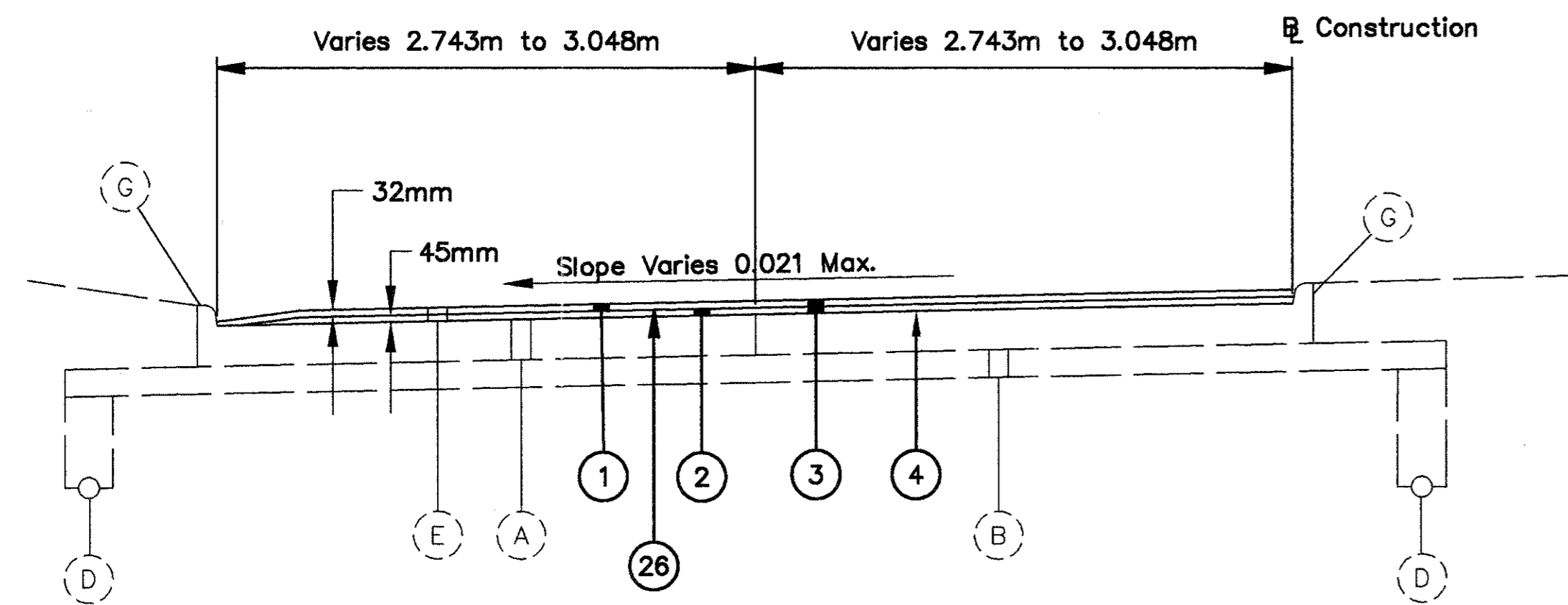
(TAPER AREA) STA. 32+813.260 TO STA. 32+874.220 = 60.960m  
 STA. 32+751.519 TO STA. 32+813.260 = 61.741m  
 TOTAL = 122.701m



**RAMP D  
SECTION APPLIES:**

STA. 32+637.348 TO STA. 32+940.728 = 303.380m

NOTE: Existing Curb on Ramps is to Remain.



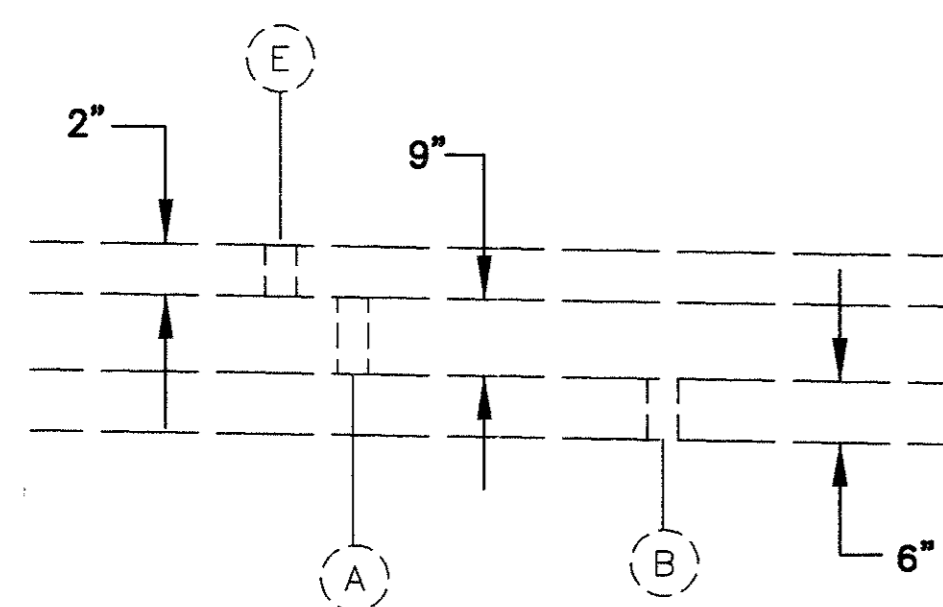
**SUPERELEVATED SECTION  
RAMP C**

SECTION APPLIES:

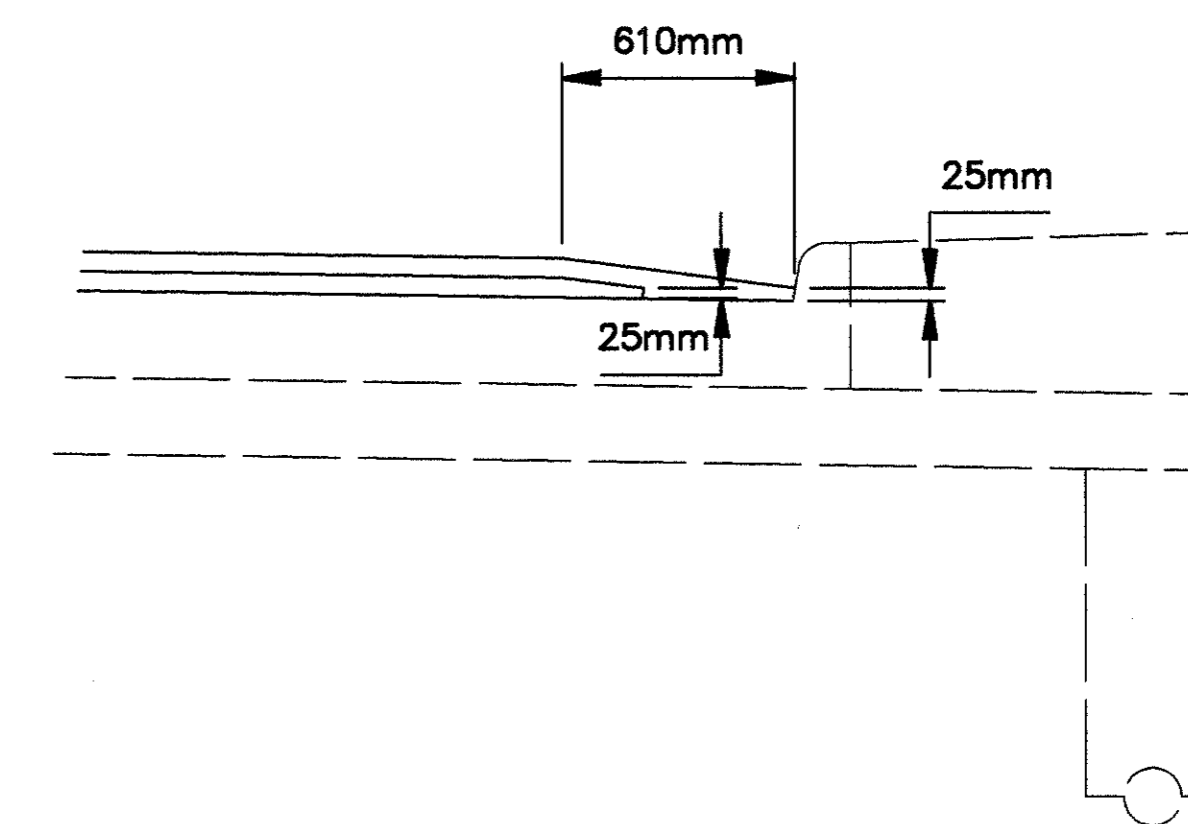
STA. 32+874.220 TO STA. 32+940.728 = 66.508m

NOTE:  
 Remove 51mm of existing asphalt concrete  
 With Item 202 Wearing Course Removed  
 through the entire length of these sections.

For Legend, See Sheet No. 5



**EXISTING TYPICAL SECTION**



**PAVEMENT EDGE TAPER  
AT CURB**

Not To Scale

CALCULATED  
 WCR  
 CHECKED  
 LVM

**RAMP TYPICAL SECTIONS**

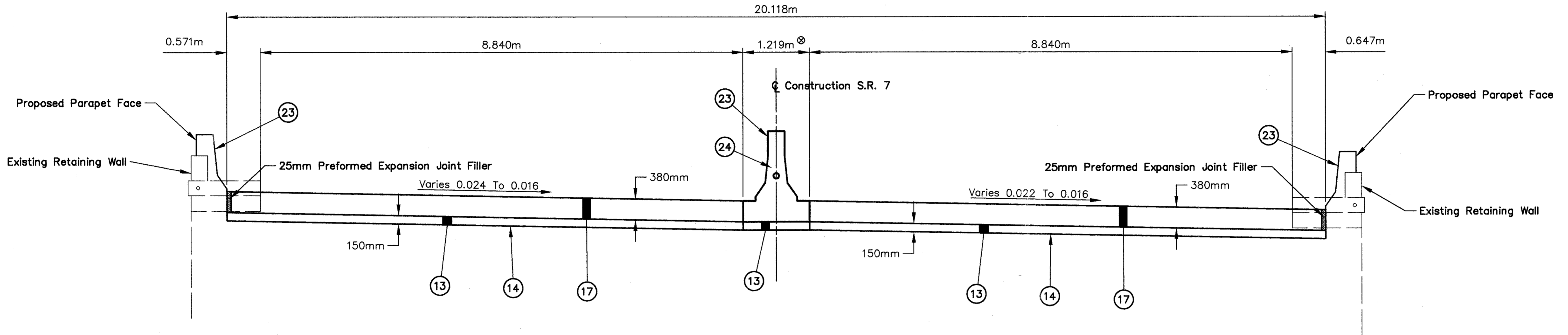
**BEL-7-32.276**

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 242

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# TYPE 611



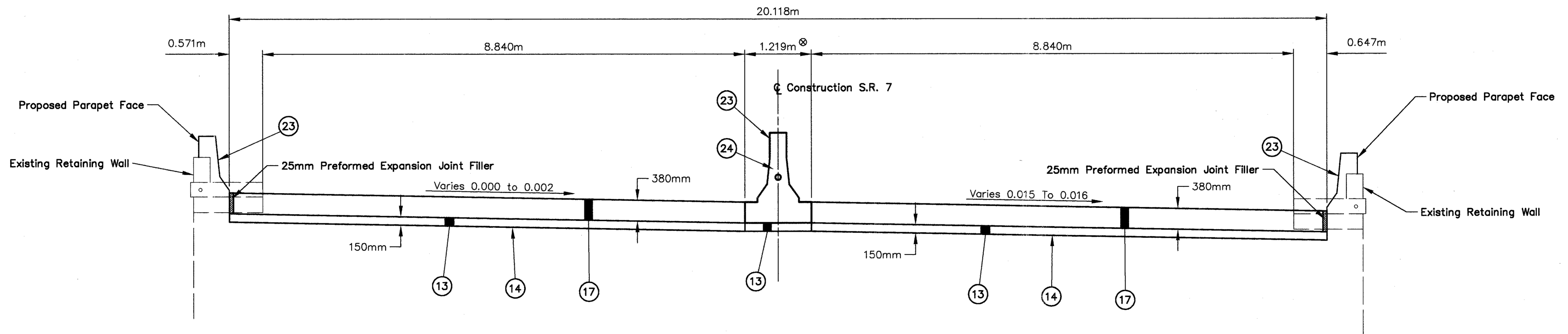
## APPROACH SLAB SECTION

STRUCTURE BEL-7-32283

STA. 32+275.821 TO STA. 32+283.441 = 7.60m

⊗ See Detail on Sheet No. 82

For Legend, See Sheet No. 5



## APPROACH SLAB SECTION

STRUCTURE BEL-7-32283

STA. 32+781.027 TO STA. 32+788.647 = 7.60m

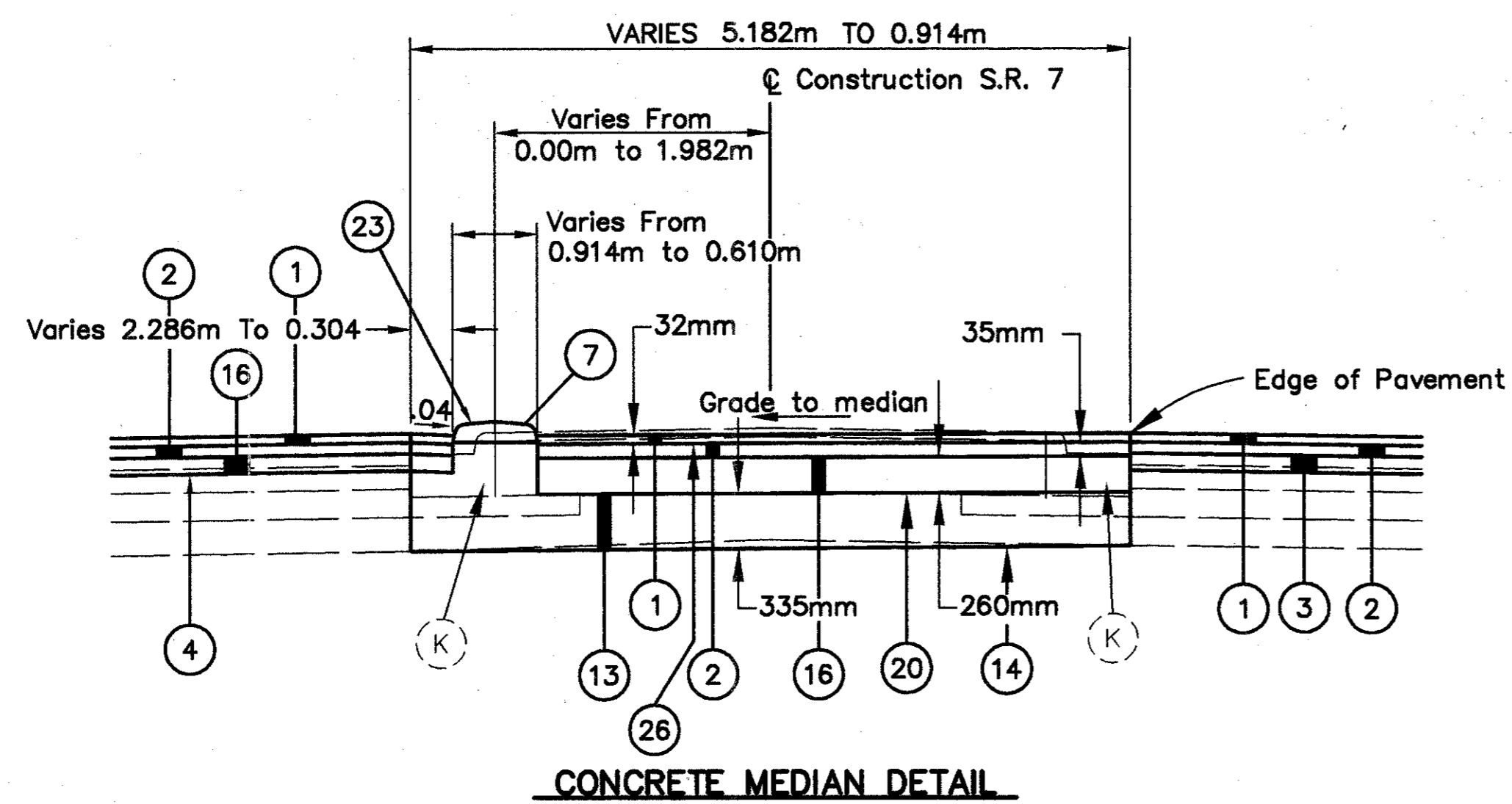
CALCULATED  
WCR  
CHECKED  
FDH

APPROACH SLAB SECTION

BEL-7-32.276

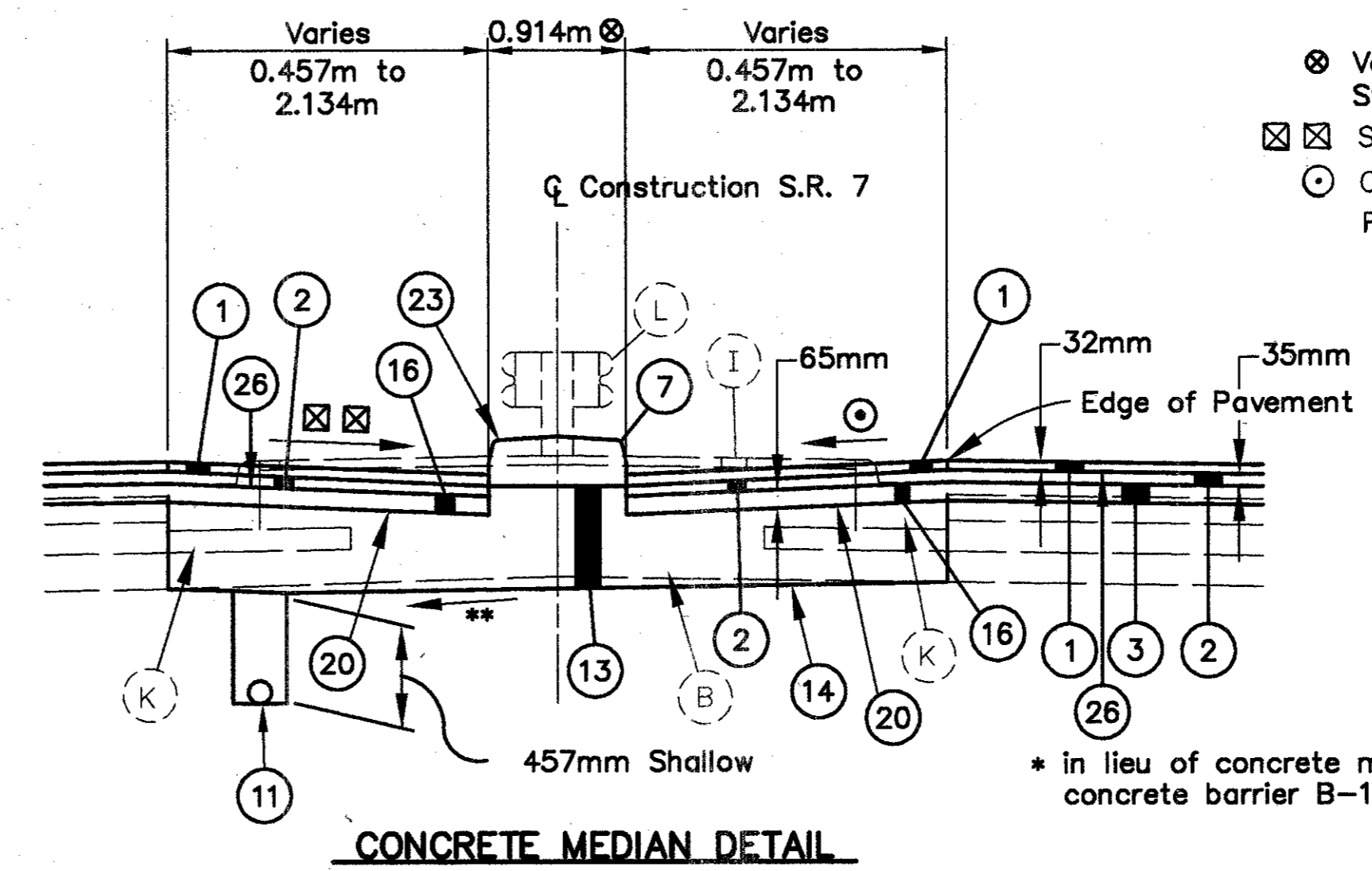
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**CONCRETE MEDIAN DETAIL**

STA. 33+843.400 TO STA. 34+078.705  
 STA. 34+117.695 TO STA. 34+250.300  
 STA. 35+466.700 TO STA. 35+682.005  
 STA. 35+720.795 TO STA. 35+886.100



**CONCRETE MEDIAN DETAIL**

\* STA. 33+148.524 TO STA. 33+381.744  
 STA. 33+419.844 TO STA. 33+450.781  
 STA. 33+834.000 TO STA. 33+843.400  
 STA. 34+250.300 TO STA. 34+346.000  
 STA. 35+437.000 TO STA. 35+466.700  
 STA. 35+886.100 TO STA. 35+953.000  
 STA. 36+673.997 TO STA. 36+675.522  
 STA. 36+799.118 TO STA. 36+926.448  
 STA. 36+956.471 TO STA. 37+304.976  
 STA. 37+335.640 TO STA. 37+659.645  
 STA. 37+688.144 TO STA. 38+007.679  
 STA. 38+036.097 TO STA. 38+067.084

- ⊙ VARIES 0.610m TO 0.914m FROM STA. 33+834 TO STA. 33+834.524
- ⊗ See Detail Sheet No. 7
- ⊙ 0.040 or Applicable Superelevation Rate if greater. See Sheet No. 7

\* in lieu of concrete median, use concrete barrier B-1270

For Legend, See Sheet No. 5

**PROFILE AND ALIGNMENT**

THE PROPOSED PAVEMENT RESURFACING SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. THE EXISTING ALIGNMENT AND PROFILE SATISFY DESIGN CRITERIA.

**PREVIOUS CONSTRUCTION PLANS**

THE FOLLOWING CONSTRUCTION PLANS ARE AVAILABLE FOR REFERENCE BY CONTACTING THE DISTRICT 11 OFFICE IN NEW PHILADELPHIA, OHIO:

- BEL-7-19.86 (1961) ORIGINAL CONSTRUCTION PLAN
- BEL-7-20.64 (1966) ORIGINAL CONSTRUCTION PLAN
- BEL-7-(17.86)(18.87) (1984) SAFETY UPGRADING

**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.

**UNDERGROUND UTILITIES**

THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

**UTILITY OWNERSHIP**

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

COLUMBIA GAS TRANSMISSION CORP.  
DRAWER A  
BROOKVILLE, PENNSYLVANIA 15825  
PHONE (814) 849-0203

AEP OHIO POWER COMPANY  
301 CLEVELAND AVE. S.W.  
CANTON, OHIO 44701-4630  
PH. 330-438-7721

COLUMBIA GAS OF OHIO, INC.  
216 HIGHLAND AVENUE  
P.O. BOX 250  
CAMBRIDGE, OHIO 43725-0250  
PHONE (740) 432-8225

CITY OF MARTINS FERRY  
FIFTH AND WALNUT STREETS  
MARTINS FERRY, OHIO 43935  
PHONE (740) 633-2876

VILLAGE OF BRIDGEPORT  
CITY BUILDING  
301 MAIN ST.  
BRIDGEPORT, OHIO 43912  
PHONE (740) 635-2424

SIGNALS AND LIGHTING  
OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 11  
2201 REISER AVE. S.E.  
NEW PHILADELPHIA, OHIO 44663-1000  
PHONE (330) 339-6633

**ITEM 407. TACK COAT**

**ITEM 407. TACK COAT FOR INTERMEDIATE COURSE**

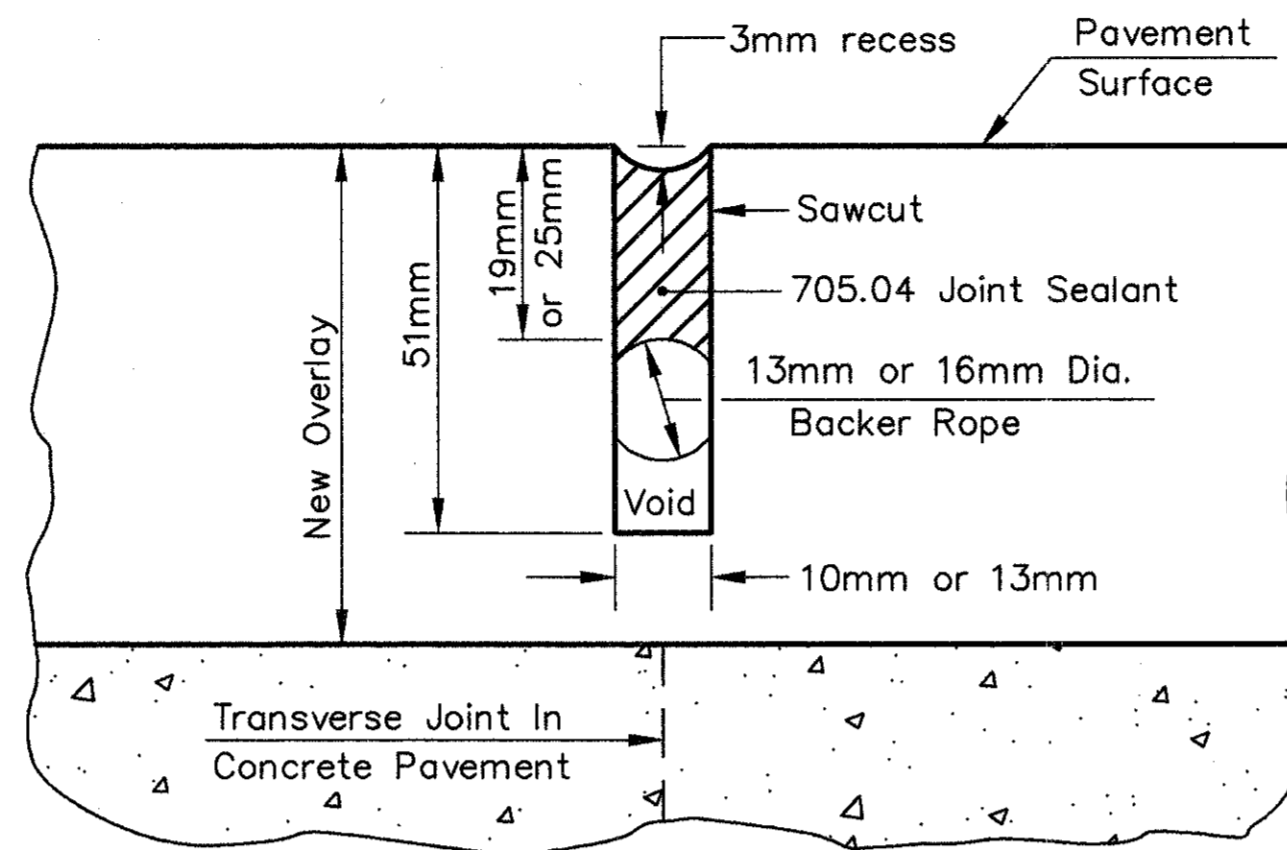
THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.340 LITERS PER SQUARE METER OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

**MONUMENTS**

MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS AS SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS AND AT THE LOCATIONS SHOWN ON SHEET NO. 93

**ITEM 413 - SAWING & SEALING ASPHALT CONCRETE PAVEMENT JOINTS**

THE CONTRACTOR SHALL SAW AND SEAL THE JOINTS ACCORDING TO THE DIMENSIONS SHOWN IN THE DETAIL BELOW. THE JOINTS SHALL BE SAWED WITHIN 24 HOURS AFTER PLACEMENT OF THE SURFACE COURSE.



**DETAIL FOR TRANSVERSE JOINT IN NEW ASPHALT CONCRETE OVERLAY**

**ROUNDING**

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

**ELEVATION DATUM**

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

**ITEM 203 - LINEAR GRADING**

THIS WORK SHALL INCLUDE THE EXCAVATION AND EMBANKMENT REQUIRED TO GRADE BEYOND THE PROPOSED CURB AND GUTTER. VEGETATION, MATERIAL BUILDUP, AND COLLECTED DEBRIS WITHIN THE LINEAR GRADING LIMITS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AS PER SECTION 203.05, OR WASTED OVER FILL SLOPES AT THE DIRECTION OF THE ENGINEER.

THE EXCAVATED MATERIAL SHALL BE REPLACED WITH COMPACTABLE GRANULAR MATERIAL CONFORMING TO SECTION 203.02, PLACED TO GRADE AS SHOWN ON THE TYPICAL SECTIONS, OR AS APPROVED BY THE ENGINEER. THE GRADED AREA SHALL BE SEEDED AS PER 659.

LINEAR GRADING WIDTHS SHOWN ON THE PLAN REPRESENT MINIMUM REQUIREMENTS, AND THE ENGINEER MAY INCREASE THESE WIDTHS AS DETERMINED BY HIS ANALYSIS OF PROJECT CONDITIONS AT NO ADDITIONAL COST TO THE STATE.

THE METHOD OF MEASUREMENT SHALL BE PER METER MEASURED ALONG THE OUTSIDE CURBLINE FOR THE NORTHBOUND AND SOUTHBOUND LANES, AS SHOWN IN THE LINEAR GRADING TABLE ON SHEET NO. 53.

PAYMENT FOR THE ABOVE WORK, EXCEPT FOR ITEM 659, WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 203, METER, LINEAR GRADING, AND SHALL INCLUDE THE COST OF ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS AS NECESSARY TO COMPLETE THE WORK.

**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.

**PART-WIDTH CONSTRUCTION**

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

**FENCE GROUNDING**

ANY RIGHT OF WAY FENCE CROSSING UNDER OVERHEAD ELECTRIC POWER LINES OR TRANSMISSION LINES SHALL BE GROUNDED IN ACCORDANCE WITH STANDARD DRAWING HL-50.11M.

GROUND RODS SHALL BE USED AS DIRECTED BY THE ENGINEER. FOR LOCATIONS AND QUANTITIES SEE SHEET NO. 237.

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

WORK UNDER THIS ITEM SHALL BE WITHIN THE AREA 0.305m FROM TYPE CLT FENCE LIMITS, AS WELL AS THE ADDITIONAL AREAS SHOWN IN THE TABLE BELOW, AND SHALL CONSIST OF THE FOLLOWING:

1. THE REMOVAL OF ALL TREES (WITH THE EXCEPTION OF PINE TREES), STUMPS, AND BRUSH TO GROUND LEVEL.
2. THE REMOVAL OF ALL LITTER.
3. MOWING OF ALL VEGETATION TO A HEIGHT OF BETWEEN 76mm AND 127mm.
4. TREATMENT OF THE REMOVAL AREAS WITH THE FOLLOWING HERBICIDES WITHIN 24 HOURS AFTER VEGETATION IS CUT: 3.8L DOW "TORDON K" COMBINED WITH 1.9L 2, 4 D-AMINE OR AN APPROVED EQUAL IN SUFFICIENT WATER TO MAKE 190L OF TOTAL SPRAY MIX PER HECTARE. AN ESTIMATED AREA OF 5.5± ALONG THE FENCE LINE HECTARES IS TO BE TREATED WITH THE HERBICIDE.

THE CONTRACTOR SHALL BE LICENSED BY THE OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR AND ALL PERSONS INVOLVED IN THE ACTUAL HERBICIDAL SPRAYING SHALL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE CATEGORY. THE CONTRACTOR SHALL FOLLOW LABEL RECOMMENDATIONS CONCERNING APPLICATION METHODS.

ADDITIONAL REMOVAL AREAS	OFFSET FROM CENTERLINE
STA. 33+652.690 TO STA. 33+700 LT.	15m TO FENCE
STA. 35+715.422 TO STA. 35+800 LT.	15m TO FENCE
STA. 36+570 TO STA. 36+680 LT.	GUARDRAIL TO FENCE
STA. 36+800 TO STA. 36+860 LT.	GUARDRAIL TO FENCE

THE AREAS NOTED ABOVE ARE APPROXIMATE AND ARE INCLUDED WITH THE INTENTION OF CLEARING THE RIGHT OF WAY OF TREES AND BRUSH. WORK SHALL BE PERFORMED WITHIN THE LIMITS OF THE RIGHT OF WAY.

THE FOLLOWING IS AN ESTIMATE OF THE NUMBER OF TREES TO BE REMOVED:

SIZE	NO. OF TREES
457mm	24

PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR CLEARING AND GRUBBING, AS PER PLAN.

**GENERAL NOTES**

**BEL-7-32.276**

**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.

**CONNECTIONS BETWEEN EXISTING GUARDRAIL 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 ON STANDARD DRAWING GR-1.1M AND GR-1.2M. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR THE RESPECTIVE GUARDRAIL ITEMS.

**ITEM 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28, AS PER PLAN**

MATERIALS FURNISHED FOR FINE AND COURSE AGGREGATE USED IN THIS ITEM SHALL EXCLUDE ALL STONE AND CRUSHED CARBONATE STONE.

**SAME SEASON COMPLETION OF SURFACE COURSE**

ANY LENGTH OF RESURFACING WORK STARTED IN A CONSTRUCTION SEASON SHALL HAVE THE SURFACE COURSE PLACED THAT SAME SEASON.

**WATERING PERMANENT SEEDED AREAS**

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

659, WATER	-----	330	CU. METER
659, MOWING	-----	8423	SQ. METER

**TEMPORARY SOIL EROSION AND SEDIMENT CONTROL**

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

207, TEMPORARY SEEDING AND MULCHING	-----	6738	SQ. METER
207, STRAW OR HAY BALES	-----	250	EACH
207, FILTER FABRIC FENCE	-----	3695	METER
207, TEMPORARY DITCH PROTECTION	-----	79	SQ. METER
659, MOWING	-----	8423	SQ. METER
659, COMMERCIAL FERTILIZER	-----	1583	KILOGRAM
659, REPAIR SEEDING AND MULCHING	-----	1685	SQ. METER
659, WATER	-----	66	CU. METER

**REMOVAL OF EXISTING BUS STOP**

THIS ITEM SHALL CONSIST OF THE REMOVAL OF TWO EXISTING BUS STOPS ON THE NORTHBOUND SIDE LOCATED AT MACKAY AVE. AND HILL ST.

THE REMOVAL SHALL INCLUDE THE EXISTING STEEL POSTS, FENCE, AND CONCRETE SLAB.

PAYMENT FOR THE ABOVE WILL BE MADE AT THE CONTRACT LUMP SUM PRICE BID FOR ITEM 202 - STRUCTURE REMOVED.

**ITEM 606. ANCHOR ASSEMBLY, TYPE E**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN ET-2000, OPTION "B", GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 216-545-4373).

THE LENGTH OF THE ET-2000 SYSTEM IS CONSIDERED TO BE 15.24m INCLUSIVE OF TWO 7.62m LONG RAIL ELEMENTS.

THE ANCHOR ASSEMBLY SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S CURRENT SPECIFICATIONS AND AT THE LOCATIONS SHOWN IN THE PLANS.

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

**ITEM SPECIAL. IMPACT ATTENUATOR, G.R.E.A.T. TYPE**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN IMPACT ATTENUATOR AS REQUIRED IN THE PLANS, AND SHALL ALSO INCLUDE ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER TO CONSTRUCT A COMPLETE AND FUNCTIONAL G.R.E.A.T. IMPACT ATTENUATOR SYSTEM.

THE ATTENUATOR SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, AND IN REASONABLY CLOSE CONFORMITY AS DETAILED ON SHEET NO. 85. THE ATTENUATOR SHALL BE MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., AND IS DISTRIBUTED BY BALDWIN & SOURS, 5263 TRABUE ROAD, COLUMBUS, OHIO 43228 (TELEPHONE 614-851-8800).

THE CONCRETE MEDIAN BARRIER SHALL BE TRANSITIONED TO A RECTANGULAR SHAPE FOR USE AS A CONCRETE BACKUP FOR THE G.R.E.A.T. SYSTEM. THE MANUFACTURER SHALL PROVIDE ALL DETAILS FOR THE BACKUP SYSTEM WHICH ARE NOT SHOWN IN THE PLAN. THE COST ASSOCIATED WITH CONSTRUCTING THE CONCRETE BACKUP SHALL BE CONSIDERED INCIDENTAL TO, AND INCLUDED WITH THE COST OF THE IMPACT ATTENUATOR.

THE NOSE COVER OF THE ATTENUATOR SHALL BE YELLOW, AND MARKED WITH THREE EVENLY SPACED FOUR INCH WIDE HORIZONTAL STRIPES OF WHITE REFLECTIVE MATERIAL MEETING THE REQUIREMENTS OF 730.19 FOR A PERMANENT INSTALLATION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING, REPAIRING, AND OTHERWISE RESTORING THE ATTENUATOR IN ACCORDANCE WITH THE MANUFACTURER'S MAINTENANCE INSTRUCTIONS WHILE THE ATTENUATOR IS IN USE DURING CONSTRUCTION OF THE PROJECT. IF THE ATTENUATOR GETS DAMAGED BEYOND REPAIR DUE TO VEHICULAR IMPACT PRIOR TO ACCEPTANCE BY THE STATE, IT SHALL BE REPAIRED AS SPECIFIED IN THE PROPOSAL WITHIN 24 HOURS OF THE INCIDENT WHICH CAUSED DAMAGE TO THE ATTENUATOR. IN ADDITION TO ANY EXTRA UNITS SUPPLIED FOR THIS PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL NECESSARY MATERIALS, LABOR, AND EQUIPMENT REQUIRED TO PERFORM THE ABOVE DESCRIBED RESTORATION OF THE ATTENUATOR.

THE ESTIMATED QUANTITY BELOW SHALL BE USED AS DIRECTED BY THE ENGINEER FOR USE IN THE ABOVE MENTIONED RESTORATION ONLY WHEN THE ENGINEER DECIDES THAT MINOR OR MAJOR REPAIRS CANNOT BE PERFORMED WITHIN THE 24 HOUR TIME LIMITATION:

ITEM SPECIAL, REPLACEMENT IMPACT ATTENUATOR, G.R.E.A.T. TYPE - - - - 1 EACH

PERMANENTLY INSTALLED IMPACT ATTENUATORS SHALL BE BID AS ITEM SPECIAL, EACH, IMPACT ATTENUATOR, G.R.E.A.T. TYPE.

THE MODEL NUMBERS OF THE PERMANENT UNIT AND THE REPLACEMENT UNIT SHALL BE 200200SF6, UNI-DIRECTIONAL, AND 206206SF6, UNI-DIRECTIONAL.

PAYMENT FOR THE ABOVE WORK, INCLUDING FURNISHING, INSTALLING, MAINTAINING, AND RESTORING THE ATTENUATOR AFTER EACH VEHICULAR IMPACT, WILL BE MADE AT THE RESPECTIVE CONTRACT PRICE FOR ITEM SPECIAL, EACH, REPLACEMENT IMPACT ATTENUATOR, G.R.E.A.T. TYPE, AND ITEM SPECIAL, EACH, IMPACT ATTENUATOR, G.R.E.A.T. TYPE, AND SHALL INCLUDE THE COST OF ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

**CONCRETE BARRIER PROFILE**

ALTHOUGH THE NORTHBOUND AND SOUTHBOUND PROFILE GRADE POINTS ARE SHOWN TO BE AT THE SAME ELEVATION, THEY MAY ACTUALLY DIFFER BY A SLIGHT AMOUNT. IN SUCH CASE, THE LOWER OF THE TWO PROFILE GRADES SHALL BE SELECTED AS THE REFERENCE ELEVATION, AND THE PAVED SHOULDER ON THE SIDE OF THE REFERENCE ELEVATION SHALL BE SLOPED AS SHOWN ON THE TYPICAL SECTIONS. THE BASE PORTION OF THE CONCRETE BARRIER SHALL BE CONSTRUCTED LEVEL, AND THE RATE OF CROSS SLOPE ON THE OPPOSITE PAVED SHOULDER SHALL VARY AS NECESSARY TO MEET THE OTHER PROFILE GRADE.

**ITEM SPECIAL. SEALING OF CONCRETE SURFACES (EPOXY)**

AN EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE PROPOSED CONCRETE BARRIER AND CONCRETE MEDIAN AS SHOWN IN THE TYPICAL SECTIONS.

THE SEALING OPERATIONS SHALL BE COMPLETED PRIOR TO MOUNTING THE 802 BARRIER REFLECTORS.

REFER TO THE PROPOSAL NOTE FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS, AND APPLICATION PROCEDURES.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO SEAL THE CONCRETE SURFACES AS SPECIFIED ABOVE:

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY) - - - - 11,060 SQ. METER

**ITEM 202. CURB REMOVED, AS PER PLAN**

EXISTING TYPE 2-A CURB SHALL BE REMOVED FLUSH WITH THE SURFACE OF THE EXISTING REINFORCED CONCRETE PAVEMENT.

THE REMOVAL SHALL BE ACCOMPLISHED BY HORIZONTALLY SAWING OR OTHERWISE CUTTING THE CURB IN A MANNER WHICH DOES NOT SPALL OR DAMAGE THE CONCRETE PAVEMENT.

PAYMENT FOR THE ABOVE WORK WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 202, METER, CURB REMOVED, AS PER PLAN, AND SHALL INCLUDE THE COST FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

**ITEM 609. CURB, TYPE 2-B, AS PER PLAN**

THIS ITEM SHALL CONSIST OF CONSTRUCTING TYPE 2-B CURB PER ST'D DWG. BP-5.1M, AND SHALL ALSO INCLUDE THE COST OF FURNISHING AND INSTALLING THE NO. 4 DEFORMED STEEL BARS AS SHOWN ON SHEET NO. 7.

INSTALLING OF THE BAR SHALL INCLUDE THE DRILLING OF A 16mm DIAMETER HOLE VERTICALLY INTO THE EXISTING REINFORCED CONCRETE PAVEMENT, AND ANCHORING THE BAR USING AN EPOXY, POLYESTER, OR VINYLESTER MORTAR.

PAYMENT FOR THE ABOVE WORK WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 609, METER, CURB, TYPE 2-B, AS PER PLAN, AND SHALL INCLUDE THE COST FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

**230mm ITEM 305 CONCRETE BASE, AS PER PLAN**

WHERE THE NEW PAVEMENT BUTTS INTO THE EXISTING PAVEMENT, A DOWELLED TYPE Y JOINT PER BP-2.5M SHALL BE PROVIDED. GROUTING AND DRILLING REQUIREMENTS SHALL BE PER ITEM 255 AND BP-2.5M EXCEPT THE REQUIREMENT THAT THE DRILLING DEVICE SHALL BE CAPABLE OF DRILLING THREE HOLES AT ONE TIME SHALL BE WAIVED. ALL WORK AND MATERIALS REQUIRED TO PROVIDE THESE JOINTS SHALL BE INCIDENTAL TO 230mm ITEM 305 CONCRETE BASE, AS PER PLAN.

**DOWEL BASKET ASSEMBLIES**

WHERE DOWEL BASKET ASSEMBLIES ARE USED BY THE CONTRACTOR, ALL SPACER WIRES (SHIPPING WIRES) SHALL BE REMOVED FROM THE BASKET ASSEMBLIES PRIOR TO PAVING. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THE DOWEL BASKET ASSEMBLIES ARE STABLE AND HELD FIRMLY IN PLACE.

**REVIEW OF DRAINAGE FACILITIES**

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEMS.

**PAVEMENT REPLACEMENT**

EXISTING PAVEMENT REMOVED DURING CONSTRUCTION OF INLETS AND STORM SEWERS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 603 AND SHALL BE REPLACED IN ACCORDANCE WITH THE PAVEMENT REPLACEMENT DETAIL SHOWN ON THE MISCELLANEOUS DETAILS.

PAYMENT FOR REPLACEMENT OF DAMAGED PAVEMENTS SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR ITEM 603.

**INLET RECONSTRUCTED TO GRADE, AS PER PLAN**

WHERE THIS ITEM IS SPECIFIED IN THE PLANS, THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING INLET UPPER BOX AND RECONSTRUCT THE WALLS OF THE LOWER BOX AS SHOWN ON SHEET NO. 120. THE 108mm THICKNESS SHOWN ON THE DETAIL IS ONLY APPROXIMATE. THE ACTUAL THICKNESS REQUIRED TO RAISE THE WALLS SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. IF, IN THE OPINION OF THE ENGINEER, RECONSTRUCTION REVEALS EXCESSIVE WALL FAILURE, THE EXISTING WALLS SHALL BE REMOVED AND REBUILT TO THE DEPTH SPECIFIED BY THE ENGINEER.

AFTER THE WALLS OF THE LOWER BOX HAVE BEEN RECONSTRUCTED, THE CONTRACTOR SHALL INSTALL A NEW INLET UPPER BOX IN ACCORDANCE WITH STANDARD DRAWING I-1.1M. THE INLET TOP SHALL BE PROVIDED WITH LEFT AND RIGHT SIDE OPENINGS AND THE WINDOW ELEVATION SHALL BE DEPRESSED 100mm IN LIEU OF 50mm AS SHOWN ON THE STANDARD DRAWING FOR INLET WINDOW LENGTHS, SEE MISCELLANEOUS DETAILS, SHEET NO. 120.

THE COST OF ALL MATERIALS, LABOR AND EQUIPMENT NEEDED TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604 - INLET RECONSTRUCTED TO GRADE, AS PER PLAN.

**INLET ADJUSTED TO GRADE, AS PER PLAN**

WHERE THIS ITEM IS SPECIFIED IN THE PLANS, THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING INLET UPPER BOX AND RECONSTRUCT THE WALLS OF THE LOWER BOX AS SHOWN ON SHEET NO. 121. THE 108mm THICKNESS SHOWN ON THE DETAIL IS ONLY APPROXIMATE. THE ACTUAL THICKNESS REQUIRED TO RAISE THE WALLS SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. IF, IN THE OPINION OF THE ENGINEER, RECONSTRUCTION REVEALS EXCESSIVE WALL FAILURE, THE EXISTING WALLS SHALL BE REMOVED AND REBUILT TO THE DEPTH SPECIFIED BY THE ENGINEER.

AFTER THE WALLS OF THE LOWER BOX HAVE BEEN RECONSTRUCTED, THE CONTRACTOR SHALL RESET THE EXISTING INLET UPPER BOX.

THE COST OF ALL MATERIALS, LABOR AND EQUIPMENT NEEDED TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604 - INLET ADJUSTED TO GRADE, AS PER PLAN.

**PRECAST INLETS OR CATCH BASINS**

BEFORE ORDERING PRECAST INLETS OR CATCH BASINS, THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT DIMENSIONS.

**SANITARY WORK**

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.42, 707.43, 707.44, 707.45, 707.46, 707.47, 707.51, 707.52, 748.01, 748.02, 706.01, 706.02, OR 706.08 WITH JOINTS AS PER 706.11 OR 706.12

THE PAY ITEM MEASURED PER METER SHALL BE:

ITEM 603, 200 mm CONDUIT, TYPE B, FOR SANITARY

ITEM 603, 450 mm CONDUIT, TYPE B, FOR SANITARY

**ITEM 605, 100mm SHALLOW PIPE UNDERDRAIN 707.31, AS PER PLAN  
ITEM 605, 100mm UNCLASSIFIED PIPE UNDERDRAIN 707.31, AS PER PLAN  
ITEM 605, 150mm UNCLASSIFIED PIPE UNDERDRAIN 707.31, AS PER PLAN**

**DESCRIPTION:** THESE ITEMS SHALL CONSIST OF FURNISHING AND INSTALLING A PIPE UNDERDRAIN SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS, DETAILS AS SHOWN ON STANDARD DRAWING DM-1.2M AND AS DIRECTED BY THE ENGINEER.

**MATERIALS:** THE UNDERDRAIN SHALL BE A PIPE UNDERDRAIN SYSTEM PER ITEM 605

THE SHALLOW PIPE UNDERDRAINS SHALL BE PLACED AT THE DEPTH SPECIFIED ON THE TYPICAL SECTIONS. THE UNCLASSIFIED PIPE UNDERDRAINS SHALL BE PLACED AT THE DEPTH SPECIFIED ON THE UNDERDRAIN QUANTITIES TABLE SHOWN ON SHEETS NO. 104 TO 107.

THE OUTLET FOR THE UNDERDRAIN SYSTEM SHALL BE CONSTRUCTED AS SOON AS POSSIBLE AFTER PLACEMENT OF THE UNDERDRAINS TO DRAIN THE SUBBASE AND SUBGRADE. ALL PIPE BENDS AND BRANCHES NEEDED TO CONNECT THE PROPOSED UNDERDRAIN TO THE PROPOSED OUTLET OR TO AN EXISTING UNDERDRAIN SHALL BE MANUFACTURED FITTINGS.

**METHOD OF MEASUREMENT:** COMPLETED AND ACCEPTED UNDERDRAINS WILL BE MEASURED BY THE METER IN PLACE.

**BASIS OF PAYMENT:** WORK COMPLETED AND ACCEPTED UNDER THESE ITEMS AND MEASURED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER METER FOR ITEM 605, 100mm SHALLOW PIPE UNDERDRAIN 707.31, AS PER PLAN, ITEM 605, 100mm UNCLASSIFIED PIPE UNDERDRAIN 707.31, AS PER PLAN, OR ITEM 605, 150mm UNCLASSIFIED AS PER PLAN. THE PRICE SHALL BE FULL COMPENSATION FOR EXCAVATION AND BACKFILL; FOR FURNISHING MATERIALS, INCLUDING MATERIAL FOR OUTLET FITTINGS, FOR ALL LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

**EROSION CONTROL**

ITEM 670 IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS AND TURF OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE 670. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THESE ITEMS SHALL MEET THE REQUIREMENT OF 108.04.

**CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES**

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

**MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED**

CASTINGS DESIGNATED FOR REMOVAL SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT-OF-WAY FOR SALVAGE BY THE VILLAGE OF BRIDGEPORT AND THE CITY OF MARTINS FERRY.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 202 ITEM.

**ITEM SPECIAL, MISCELLANEOUS METAL**

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL MATERIALS SHALL MEET ITEM 604 OF THE SPECIFICATIONS AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL, MISCELLANEOUS METAL ----- 3500 kg

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL, STORAGE AND REPLACEMENT OF ALL EXISTING CASTINGS. CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTINGS AT THE EXPENSE OF THE CONTRACTOR.

**ITEM SPECIAL, PIPE CLEANOUT**

THIS ITEM SHALL CONSIST OF REMOVING ALL FOREIGN MATERIAL, MATERIAL BUILDUP, AND OBSTRUCTIONS FROM THE INSIDE OF EXISTING CONDUIT. CONDUIT TO BE CLEANED SHALL BE DETERMINED BY THE ENGINEER BY INSPECTION WITH THE CONTRACTOR. THE CLEANOUT SHALL BE ACCOMPLISHED BY USING A HIGH PRESSURE WATER JET, VACU-JET, OR ANY OTHER METHOD AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL DISPOSE OF ALL COLLECTED MATERIAL AND DEBRIS AS PER 203.05.

THE LENGTH TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF METERS OF EXISTING PIPE CLEANED AS DIRECTED BY THE ENGINEER.

PAYMENT FOR THE ABOVE WORK WILL BE MADE AT THE CONTRACT PRICE FOR ITEM SPECIAL, METER, PIPE CLEANOUT, AND SHALL INCLUDE THE COST OF ALL LABOR, TOOLS, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM SPECIAL, PIPE CLEANOUT ----- 2500 METER

**DRAINAGE PAY ITEM DESCRIPTIONS**

THE FOLLOWING DRAINAGE PAY ITEM DESCRIPTIONS HAVE BEEN USED IN THE PLANS:

- INLET, NO. 2-6, AS PER PLAN
- INLET, NO. 2-8, AS PER PLAN
- INLET, NO. 2-10, AS PER PLAN
- INLET, NO. 2-12, AS PER PLAN
- INLET, NO. 3D1270
- INLET, NO. 3D1270, AS PER PLAN
- INLET, NO. 2-A-6
- INLET, NO. 2-A-8

ALL REFERENCES IN THE PLANS TO THOSE ITEM DESCRIPTIONS LISTED ABOVE SHALL BE CONSIDERED TO READ AS FOLLOWS:

- INLET, MEDIAN, 1.8M, AS PER PLAN
- INLET, MEDIAN, 2.4M, AS PER PLAN
- INLET, MEDIAN, 3.0M, AS PER PLAN
- INLET, MEDIAN, 3.6M, AS PER PLAN
- INLET, NO. 3D1270, TYPE B1
- INLET, NO. 3D1270, TYPE B1, AS PER PLAN
- INLET, PAVEMENT, 1.8M
- INLET, PAVEMENT, 2.4M

**MAINTAINING TRAFFIC**

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS AND RAMPS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS AND THE FOLLOWING:

AT LEAST ONE LANE OF TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION ON S.R. 7 AT ALL TIMES, THE LENGTH OF RESTRICTED TRAFFIC LANES SHALL BE KEPT TO A MINIMUM CONSISTENT WITH THE SPECIFICATION REQUIREMENTS FOR THE PROTECTION OF WORK ITEMS WHICH NECESSITATE THE RESTRICTION. THE LIMITS AND DURATION OF LANE CLOSURES SHALL SUBJECT TO THE APPROVAL OF THE ENGINEER.

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

TRAFFIC SHALL BE MAINTAINED AS SPECIFIED BY USE OF THE EXISTING AND/OR RESURFACED PAVEMENT.

CONSTRUCTION WORK SHALL BE PERMITTED ON ONLY ONE SIDE OF THE DIRECTIONAL ROADWAY AT A TIME AND ANY OPEN PAVEMENT TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH BARRICADES, DRUMS OR VERTICAL PANELS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR BE PERMITTED TO HAVE WORK ZONES THAT ALTERNATELY CLOSE BOTH THE PASSING LANE AND THE TRAVEL LANE UNLESS THE DISTANCE BETWEEN THE LANE RESTRICTIONS EXCEEDS 3 km.

ALL LANES SHALL BE OPEN TO TRAFFIC BETWEEN 4:00 PM PRECEDING AND 8:00 AM AFTER A MAJOR LEGAL HOLIDAY INCLUDING HOLIDAY WEEKENDS.

MAJOR LEGAL HOLIDAYS SHALL INCLUDE MEMORIAL DAY, LABOR DAY, THANKSGIVING, AND THE FOURTH OF JULY.

IN ADDITION TO ITEM 108.06, DELAYS CAUSED BY WEATHER OR SEASONAL CONDITIONS SHALL BE ANTICIPATED AND NOT CONSIDERED AS A BASIS FOR EXTENSION OF TIME.

TRAFFIC SHALL NOT BE CROSSED OVER THE MEDIAN AT ANY TIME.

IF THE CONTRACTOR ELECTS TO SUBMIT A REVISED MAINTENANCE OF TRAFFIC PLAN, HE MUST SUBMIT IT TO THE DISTRICT CONSTRUCTION ENGINEER, FOR APPROVAL, SEVEN (7) WORKING DAYS PRIOR TO PUTTING ANY MAINTENANCE OF TRAFFIC DEVICES INTO EFFECT.

THE CONTRACTOR SHALL EMPLOY AN ENGINEER REGISTERED BY THE OHIO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS WITH EXPERIENCE IN MAINTENANCE OF TRAFFIC ON MULTILANE HIGHWAY PROJECTS TO SUPERVISE AND IMPLEMENT THE MAINTENANCE OF TRAFFIC REQUIREMENTS OF THIS PROJECT. THE CONTRACTOR'S ENGINEER SHALL SUBMIT IN WRITING A GENERAL MAINTENANCE OF TRAFFIC PLAN RELATIVE TO HIS PROPOSED WORK SCHEDULE FOR THE ENTIRE PROJECT AT THE PRECONSTRUCTION CONFERENCE. HE/SHE SHALL SUBMIT IN WRITING DETAILED SCHEDULES AND PLANS FOR EXECUTION OF SPECIFIC WORK ACTIVITIES WHICH IMPACT TRAFFIC OPERATIONS. THIS INFORMATION SHALL BE SUBMITTED AT LEAST 28 DAYS PRIOR TO IMPLEMENTATION. ALL MAINTENANCE OF TRAFFIC PLANS WILL BE SUBJECT TO THE APPROVAL OF THE ODOT ENGINEER. HE/SHE SHALL PERSONALLY SUPERVISE THE IMPLEMENTATION OF EACH MAINTENANCE OF TRAFFIC OPERATION. ANY NEEDED ADJUSTMENTS TO THE TRAFFIC CONTROL SHALL BE MADE PROMPTLY. ALL COSTS FOR CONTRACTOR'S ENGINEER SHALL BE INCLUDED IN ITEM 614.

CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OR LANE REDUCTIONS THAT ARE IN OPERATION MORE THAN ONE-HALF HOUR BEFORE SUNRISE. ALL NIGHTTIME LANE RESTRICTIONS OR LANE REDUCTIONS SHALL REQUIRE DRUMS OR BARRICADES AT A MAXIMUM SPACING OF 12 METERS.

A FLASHING ARROW BARRICADE (MT-3510M) SHALL BE USED FOR TRAFFIC CONTROL WHENEVER THERE IS A LANE RESTRICTION, LANE REDUCTION, OR LANE SHIFT OF ALL THROUGH TRAFFIC.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL FLAGS, FLAGGERS, WATCHMEN, BARRICADES, SIGNS, SIGN SUPPORTS AND INCIDENTALS RELATED THERETO. THE ABOVE ITEMS SHALL BE UTILIZED IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION.

IN ADDITION TO THE REQUIREMENTS OF CMS SECTION 614.10 AT THE END OF EACH DAY OF WORK, THE CONTRACTOR SHALL REPLACE (WITH TEMPORARY PAVEMENT MARKINGS) ALL LANE LINES, EDGE LINES CHANNELIZING LINES OR STOP LINES THAT WERE REMOVED OR COVERED DURING THE PAVEMENT REMOVAL OPERATIONS AND/OR PAVING OPERATIONS.

ITEM 622 PORTABLE CONCRETE BARRIER, 813mm AND ITEM 622 PORTABLE CONCRETE BARRIER, 813mm, BRIDGE MOUNTED, SHALL BE FURNISHED, INSTALLED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. THE PORTABLE CONCRETE BARRIER, 813mm SHALL BE USED TO CLOSE ONE LANE OF ROADWAY DURING BRIDGE REPAIR OPERATIONS. SEE SHEETS 32, 33 & 34 FOR ADDITIONAL DETAILS. THE PORTABLE CONCRETE BARRIER, 813mm, BRIDGE MOUNTED, SHALL NOT BE PINNED TO THE DECK. PORTABLE CONCRETE BARRIER SHALL BE USED ON THE BRIDGES LISTED BELOW:

1. BEL-7-3228 LT. & RT.
2. BEL-7-3637 LT. & RT.

THIS ITEM SHALL BE PAID FOR BY THE ACTUAL LINEAR FEET OF ITEM 622 PORTABLE CONCRETE BARRIER, 813mm AND ITEM 622 PORTABLE CONCRETE BARRIER, 813mm, BRIDGE MOUNTED, INSTALLED AT A PARTICULAR LOCATION. PORTABLE CONCRETE BARRIER SHOULD BE INSTALLED ACCORDING TO STANDARD DRAWING PCB-91.

NO FULL DEPTH BRIDGE OR PARAPET REPAIRS SHALL BE PERFORMED OVER AN OPEN LANE OF TRAFFIC. A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE ROADWAY. THE CONTRACTOR SHALL PROVIDE A SAFETY NET OR PLATFORM OF SUITABLE STRENGTH ON THE UNDERSIDE OF THE DECK. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS AND THE APPROVAL OF THE ENGINEER AND SHALL REMAIN IN PLACE UNTIL THE WORK HAS BEEN COMPLETED AND ACCEPTED OR AS DIRECTED BY THE ENGINEER.

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, 615 TEMPORARY PAVEMENT, AND TEMPORARY SURFACES USING 404, 410 AND 616.

IN ADDITION TO CMS SECTION 614.10, "BUMP" AND "MAINTAIN PRESENT LANE" SIGNS SHALL BE SUPPLIED AND USED AS DIRECTED BY THE ENGINEER. THESE SHALL BE PAID FOR AS ITEM 614 EACH WORK ZONE MARKING SIGNS.

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

**MAINTENANCE OF TRAFFIC SEQUENCE OF OPERATION**

PHASE 1 - S.R. 7 TRAFFIC WILL BE MAINTAINED AT ALL TIMES. PLACE TEMPORARY CONCRETE BARRIER AS SHOWN IN PHASE 1 MAINTENANCE OF TRAFFIC DETAILS, AND DIVERT BOTH NORTHBOUND AND SOUTHBOUND S.R. 7 TRAFFIC TO THE OUTSIDE LANES.

REMOVE EXISTING CONCRETE MEDIAN, GUARDRAIL, CURB AND GUTTER, AND INLETS WITHIN THE MEDIAN AREA.

CONSTRUCT PROPOSED CONCRETE BARRIER, CONCRETE MEDIAN, SHOULDERS, INLETS, LIGHTING AND SIGNING WITHIN THE MEDIAN AREA.

CONSTRUCT S.R. 7 PAVEMENT AND SHOULDERS ON THE INSIDE LANE AS SHOWN ON THE TYPICAL SECTIONS.

MAINTAIN TRAFFIC AT THE INTERSECTIONS AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS.

MAINTAIN EXISTING LIGHTING WHEREVER POSSIBLE.

THE CONTRACTOR SHALL NOTIFY THE ODOT DISTRICT TRAFFIC ENGINEER (330-339-6633) AND THE MAYOR OF MARTINS FERRY A MINIMUM OF 14 DAYS PRIOR TO BEGINNING WORK ON THE SIGNALIZED INTERSECTIONS OF S.R. 7 & AETNA ST. AND S.R. 7 & HANOVER ST.

PHASE 2 - RAMPS C AND D WILL BE CLOSED TO TRAFFIC DURING PHASE 2 FOR ONE EVENING PER RAMP BETWEEN THE HOURS OF 8:00 P.M. TO 6:00 A.M. THIS CLOSING WILL BE IN AFFECT FOR TWO CONSECUTIVE EVENINGS DURING THE WEEK, NOT INCLUDING FRIDAY, SATURDAY OR SUNDAY. THE CONTRACTOR SHALL REMOVE THE EXISTING RAMP PAVEMENT WEARING COURSE AND REPLACE THE ASPHALT AS SHOWN ON THE TYPICAL SECTIONS, WITHIN THIS PERIOD.

PLACE TEMPORARY CONCRETE BARRIER AS SHOWN IN PHASE 2 MAINTENANCE OF TRAFFIC DETAILS, AND DIVERT BOTH NORTHBOUND AND SOUTHBOUND S.R. 7 TRAFFIC TO THE NEW PAVEMENT/SHOULDERS ON THE INSIDE LANE.

REMOVE EXISTING CURB AND GUTTER, GUARDRAIL, CATCH BASINS/INLETS, LIGHTING AND SIGNING WITHIN THE WORK AREA ON THE OUTSIDE LANE.

CONSTRUCT PROPOSED CURB AND GUTTER, GUARDRAIL, CATCH BASINS/INLETS, LIGHTING AND SIGNING.

CONSTRUCT S.R. 7 PAVEMENT ON THE OUTSIDE LANE AS SHOWN ON THE TYPICAL SECTIONS. MAINTAIN TRAFFIC AT INTERSECTIONS AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS FOR PHASE 2.

THE CONTRACTOR SHALL NOTIFY THE ODOT DISTRICT TRAFFIC ENGINEER (330-339-6633) AND THE MAYOR OF MARTINS FERRY A MINIMUM OF 14 DAYS PRIOR TO BEGINNING WORK ON THE SIGNALIZED INTERSECTIONS OF S.R. 7 & AETNA ST. AND S.R. 7 & HANOVER ST.

**CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE**

THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC. A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE (1) AMBER FLASHING LIGHT. PAVERS, ROLLERS, AND OTHER EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN PAVEMENT REPAIR OR PAVING OPERATIONS ARE SCHEDULED TO BEGIN WITHIN THE NEXT WORKDAY; OTHERWISE THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA, THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. ALL OTHER EQUIPMENT INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA.

**ITEM 622. PORTABLE CONCRETE BARRIER**

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

**ITEM 614 LAW ENFORCEMENT OFFICER (WITH PATROL CAR)**

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

- FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.
- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING MAINTENANCE OF TRAFFIC AT THE INTERSECTIONS OF S.R. 7 WITH AETNA ST. AND HANOVER ST.
- DURING PEAK HOURS AT THE INTERSECTION OF S.R. 7 AND FIFTH ST. AS DIRECTED BY THE ENGINEER
- AS DIRECTED BY THE ENGINEER TO ENSURE SAFE TRAFFIC OPERATION

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

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH THE OHIO HIGHWAY PATROL, 680 EAST MAIN STREET, COLUMBUS, OHIO, TELEPHONE 614-466-2660, AND/OR VILLAGE OF BRIDGEPORT, 301 MAIN STREET, TELEPHONE 740-635-2424, AND/OR CITY OF MARTINS FERRY, CITY BUILDING, TELEPHONE 740-633-2876.

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

ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR ----- 1500 HOURS

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

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

**ITEM 614. BARRIER REFLECTORS**

REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO ITEM 626 EXCEPT THAT SPACING SHALL BE 7.62m.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN.

BY CLASS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR. THE LIST CURRENTLY CONTAINS CLASS III AND II UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 198m AND 259m RESPECTIVELY.

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

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE HIGH INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 229mm BY 381mm MINIMUM SIZE FACING TRAFFIC.

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

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

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

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

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

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

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

THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGED MESSAGES WILL BE IMPLEMENTED WITHIN HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO SHEET NO. 16 FOR THIS ITEM.

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN ----- 4 EACH

ITEM 614 ADVANCE NOTICE TO PAVE

THE CONTRACTOR SHALL SUBMIT FOR APPROVAL TO THE DISTRICT CONSTRUCTION ENGINEER A DETAILED SCHEDULE 15 DAYS PRIOR TO THE PLACEMENT OF THE OVERLAY COURSES, AND HOW HE PROPOSES TO PROSECUTE THE PAVING OPERATIONS. THE DETAILS SHALL SHOW THE ORDER OF PERFORMANCE OF EACH STAGE (START TO FINISH) OF THE WORK INCLUDING THE MAINTENANCE OF TRAFFIC THAT WILL BE USED.

WINTER TRAFFIC LIMITATIONS

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND APRIL 15. NOVEMBER 15 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH SECTION 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

PLACEMENT OF ASPHALT CONCRETE

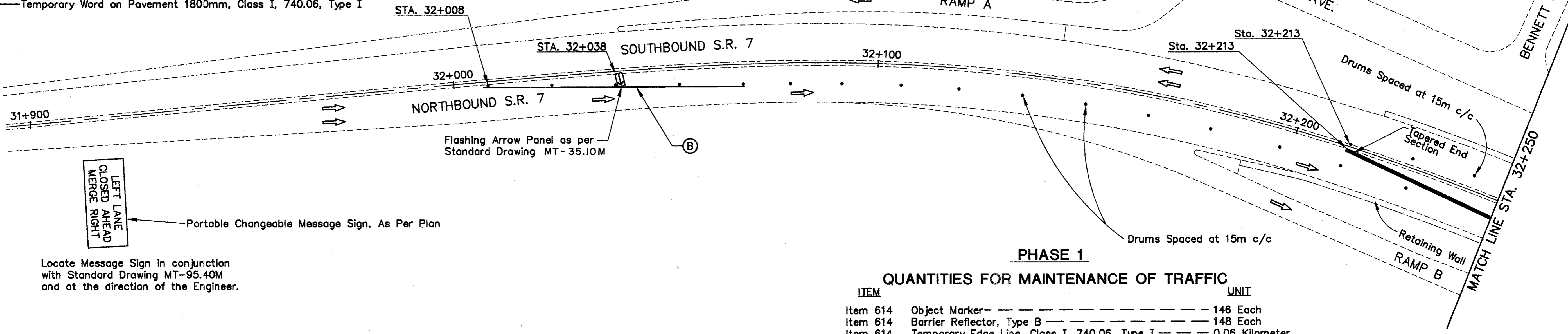
TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.





**TEMPORARY PAVEMENT MARKING LEGEND**

- (A) Temporary Centerline, Class I, 740.06, Type I
- (B) Temporary Edge Line, Class I, 740.06, Type I
- (C) Temporary Channelizing Line, Class I, 740.06, Type I
- (D) Temporary Dotted Line, Class I, 740.06, Type I
- (E) Temporary Stop Line, Class I, 740.06, Type I
- (F) Temporary Lane Arrow, Class I, 740.06, Type I
- (G) Temporary Word on Pavement 1800mm, Class I, 740.06, Type I



Locate Message Sign in conjunction with Standard Drawing MT-95.40M and at the direction of the Engineer.

NOTE: For Location Of Maintenance Of Traffic Signs, See Standard Drawing MT-95.30M

**PHASE 1**

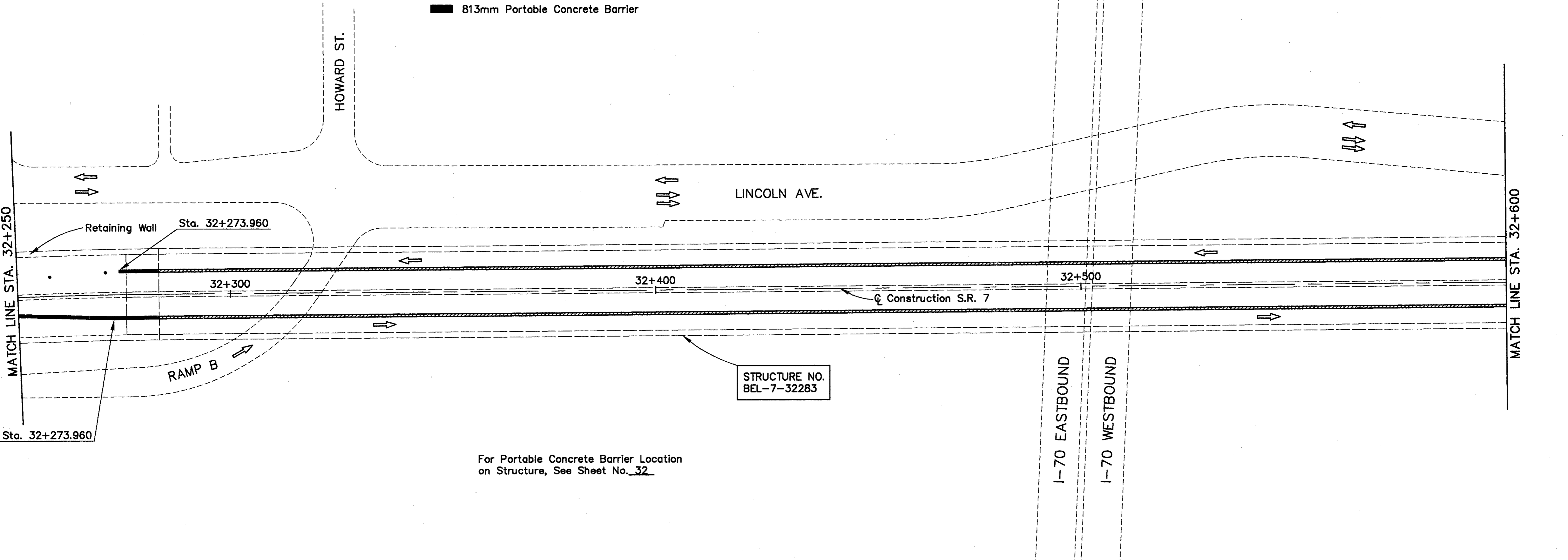
**QUANTITIES FOR MAINTENANCE OF TRAFFIC**

ITEM	UNIT
Item 614 Object Marker	146 Each
Item 614 Barrier Reflector, Type B	148 Each
Item 614 Temporary Edge Line, Class I, 740.06, Type I	0.06 Kilometer
Item 622 Portable Concrete Barrier, 813mm	164.592 Meter
Item 622 Portable Concrete Barrier, 813mm Bridge Mounted	993.648 Meter

QUANTITIES CARRIED TO SHEET NO. 16

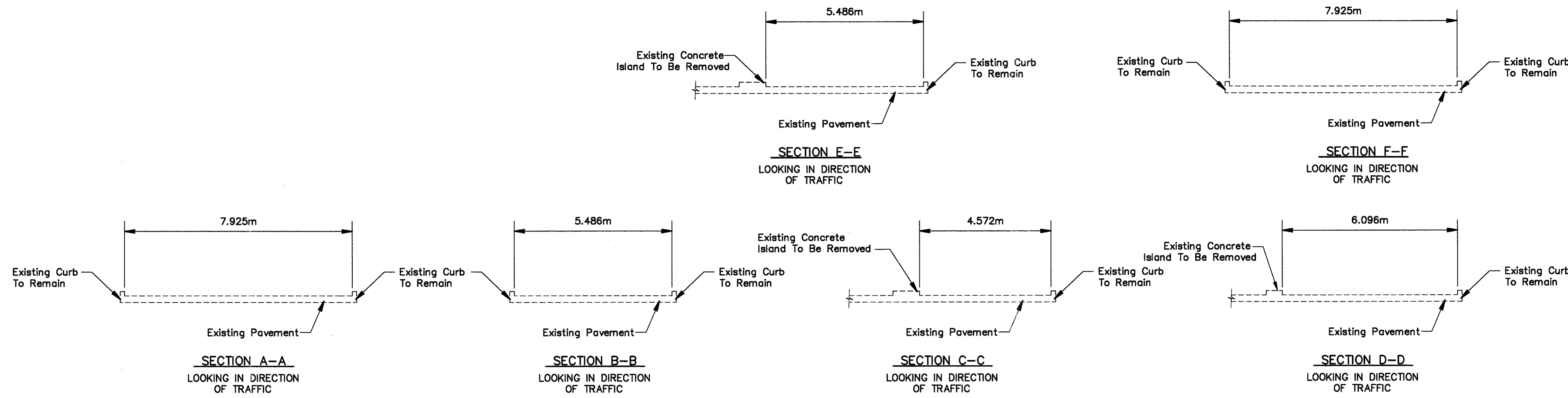
**CONCRETE BARRIER LEGEND**

- 813mm Portable Concrete Barrier, Bridge Mounted (Unanchored)
- 813mm Portable Concrete Barrier



For Portable Concrete Barrier Location on Structure, See Sheet No. 32

H:\327-CIV-MANTENANCE\7832IMP3.dwg - OCT 22, 1997 - 08:56:32

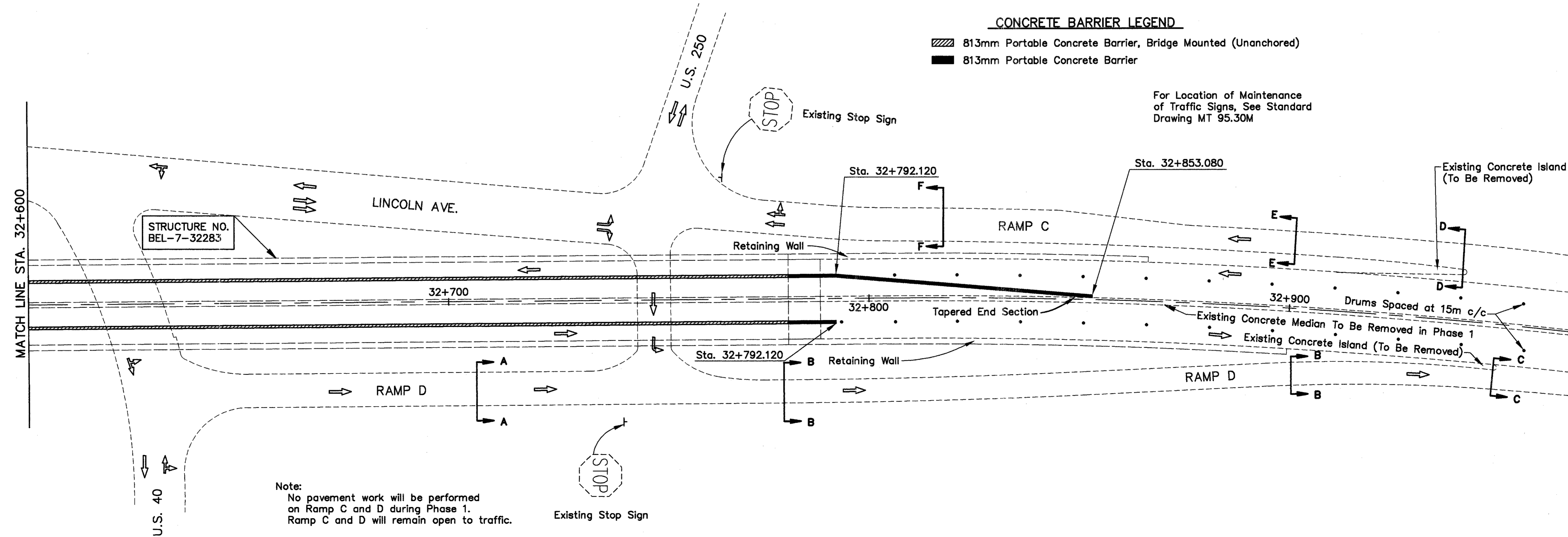


NOTE: Ramp C and D have existing curb to remain.

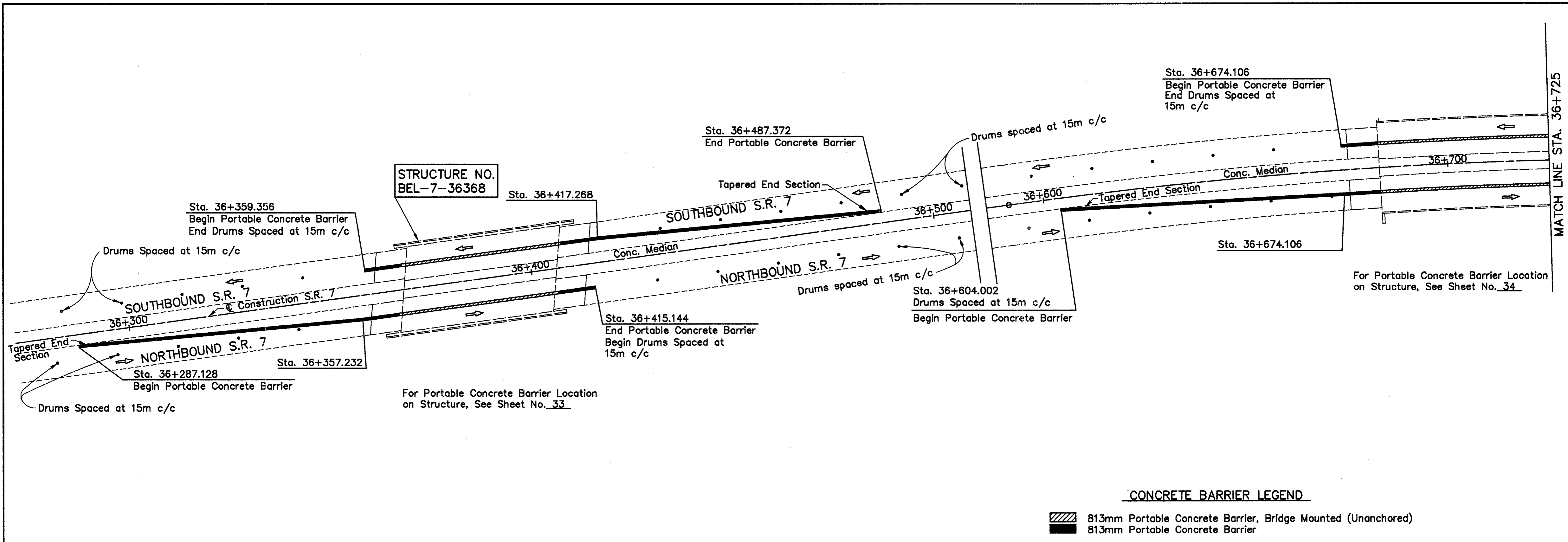
**CONCRETE BARRIER LEGEND**

- 813mm Portable Concrete Barrier, Bridge Mounted (Unanchored)
- 813mm Portable Concrete Barrier

For Location of Maintenance of Traffic Signs, See Standard Drawing MT 95.30M



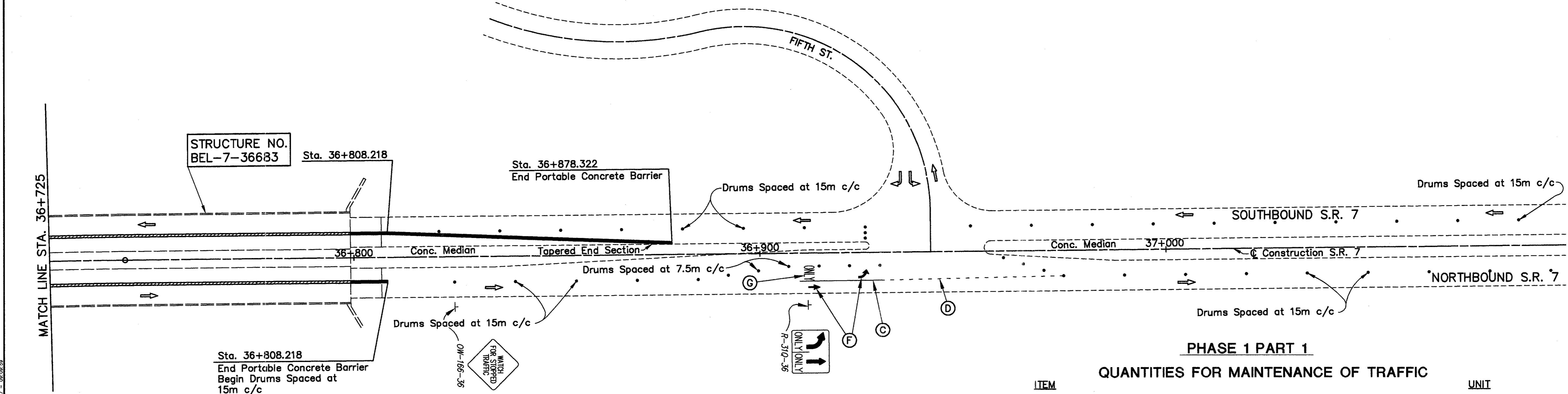
Note:  
No pavement work will be performed on Ramp C and D during Phase 1. Ramp C and D will remain open to traffic.



**CONCRETE BARRIER LEGEND**

- 813mm Portable Concrete Barrier, Bridge Mounted (Unanchored)
- 813mm Portable Concrete Barrier

For Temporary Pavement Marking Legend, See Sheet No. 17



**PHASE 1 PART 1**

**QUANTITIES FOR MAINTENANCE OF TRAFFIC**

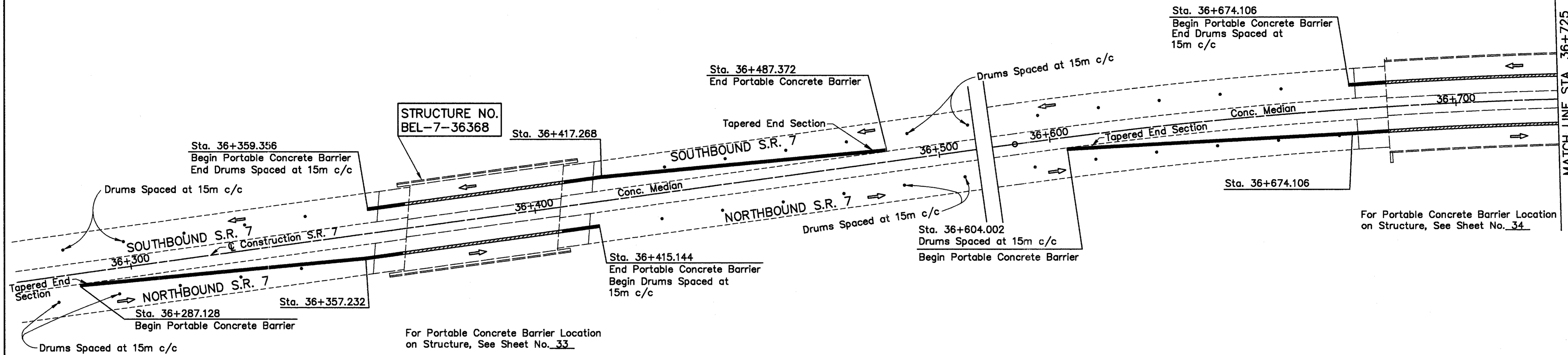
ITEM	UNIT
Item 614	Temporary Dotted Line, Class I, 740.06, Type I
Item 614	Temporary Channelizing Line, Class I, 740.06, Type I
Item 614	Temporary Word On Pavement, 1800mm, Class I, 740.06, Type I
Item 614	Temporary Lane Arrow, Class I, 740.06, Type I
Item 614	Object Marker
Item 614	Barrier Reflector, Type B
Item 622	Portable Concrete Barrier, 813mm
Item 622	Portable Concrete Barrier, 813mm Bridge Mounted

QUANTITIES CARRIED TO SHEET NO. 16

14-3321-CALIFORNIA TRUST INC. - OCT. 22, 1997 - 06:08:59

**MAINTENANCE OF TRAFFIC  
PHASE 1 - PART 2**

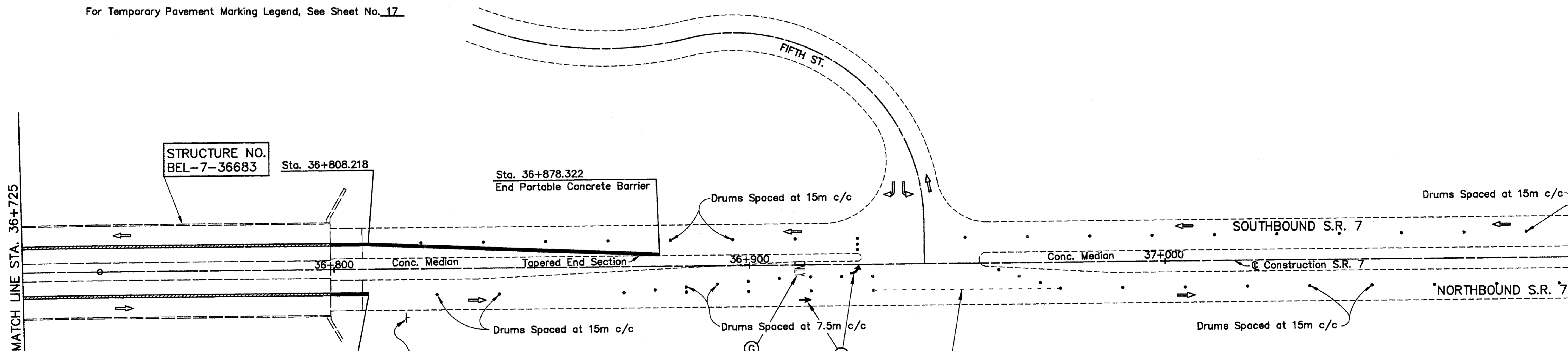
**BEL-7-32.276**



For Temporary Pavement Marking Legend, See Sheet No. 17

CONCRETE BARRIER LEGEND

- 813mm Portable Concrete Barrier, Bridge Mounted (Unanchored)
- 813mm Portable Concrete Barrier



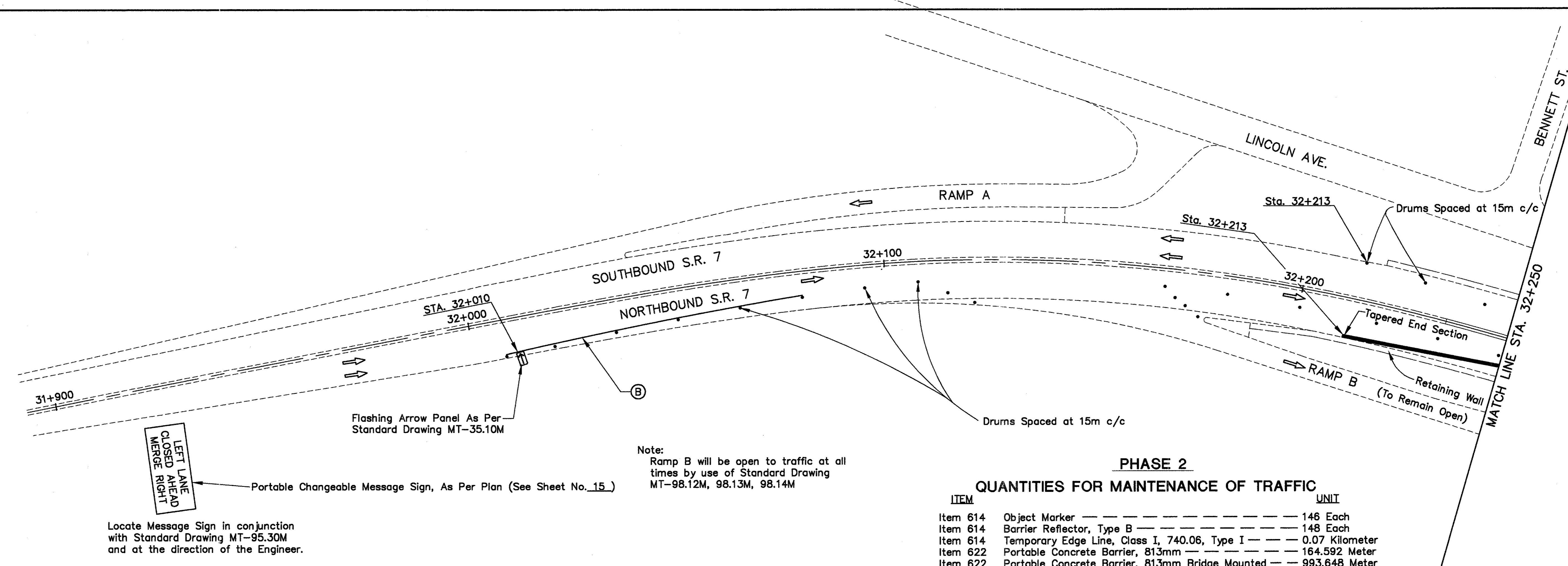
**PHASE 1 PART 2  
QUANTITIES FOR MAINTENANCE OF TRAFFIC**

ITEM	UNIT
Item 614 Temporary Word On Pavement, 1800mm, Class I, 740.06 Type I	1 Each
Item 614 Temporary Lane Arrow, Class I, 740.06, Type I	2 Each

QUANTITIES CARRIED TO SHEET NO. 16

For Portable Concrete Barrier Location on Structure, See Sheet No. 34

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Flashing Arrow Panel As Per Standard Drawing MT-35.10M

Portable Changeable Message Sign, As Per Plan (See Sheet No. 15)

Locate Message Sign in conjunction with Standard Drawing MT-95.30M and at the direction of the Engineer.

Note:  
Ramp B will be open to traffic at all times by use of Standard Drawing MT-98.12M, 98.13M, 98.14M

**PHASE 2  
QUANTITIES FOR MAINTENANCE OF TRAFFIC**

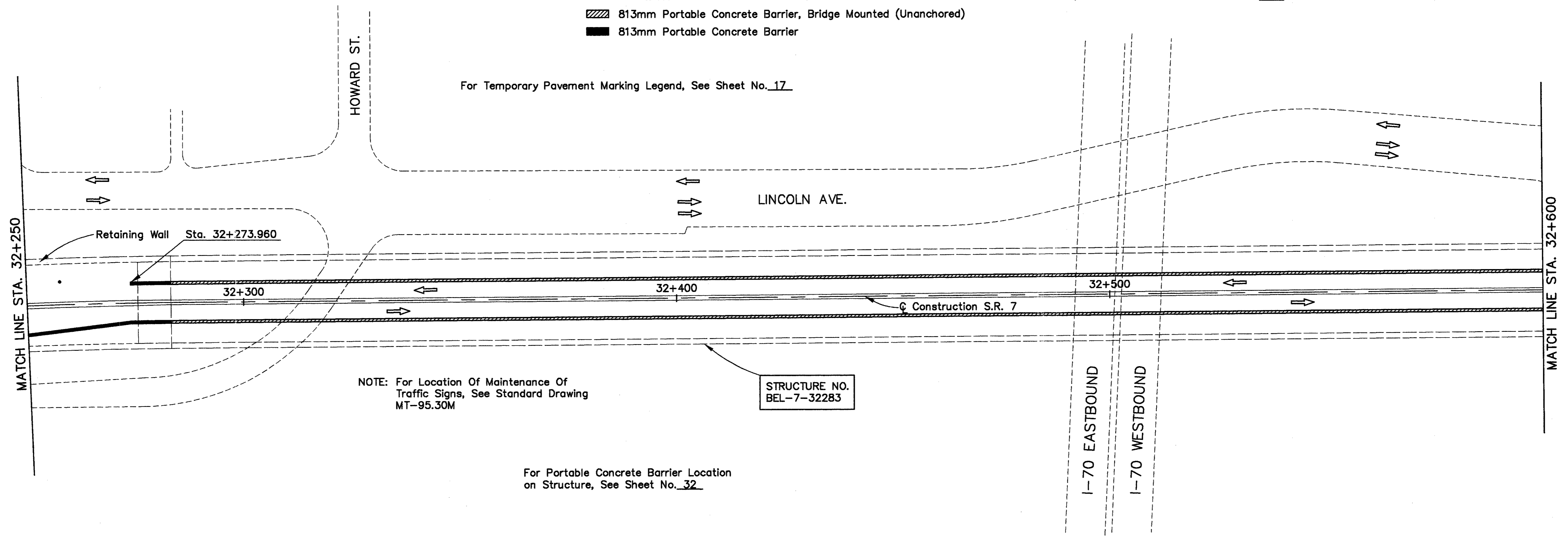
ITEM	UNIT	
Item 614	Object Marker	146 Each
Item 614	Barrier Reflector, Type B	148 Each
Item 614	Temporary Edge Line, Class I, 740.06, Type I	0.07 Kilometer
Item 622	Portable Concrete Barrier, 813mm	164.592 Meter
Item 622	Portable Concrete Barrier, 813mm Bridge Mounted	993.648 Meter

QUANTITIES CARRIED TO SHEET NO. 16

**CONCRETE BARRIER LEGEND**

- 813mm Portable Concrete Barrier, Bridge Mounted (Unanchored)
- 813mm Portable Concrete Barrier

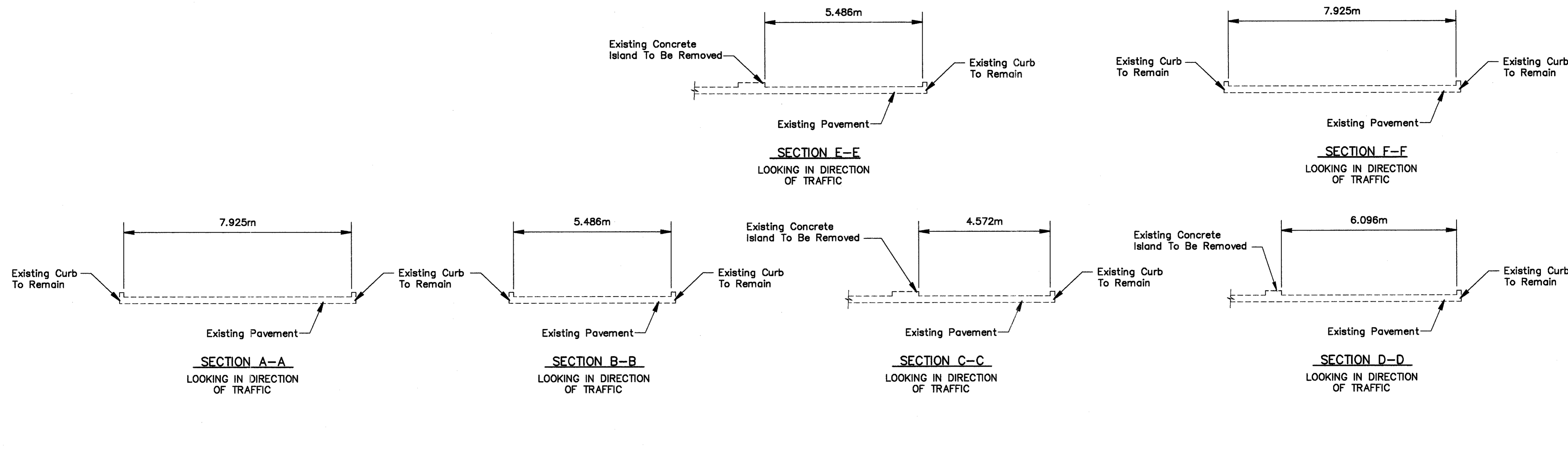
For Temporary Pavement Marking Legend, See Sheet No. 17



NOTE: For Location Of Maintenance Of Traffic Signs, See Standard Drawing MT-95.30M

STRUCTURE NO.  
BEL-7-32283

For Portable Concrete Barrier Location on Structure, See Sheet No. 32



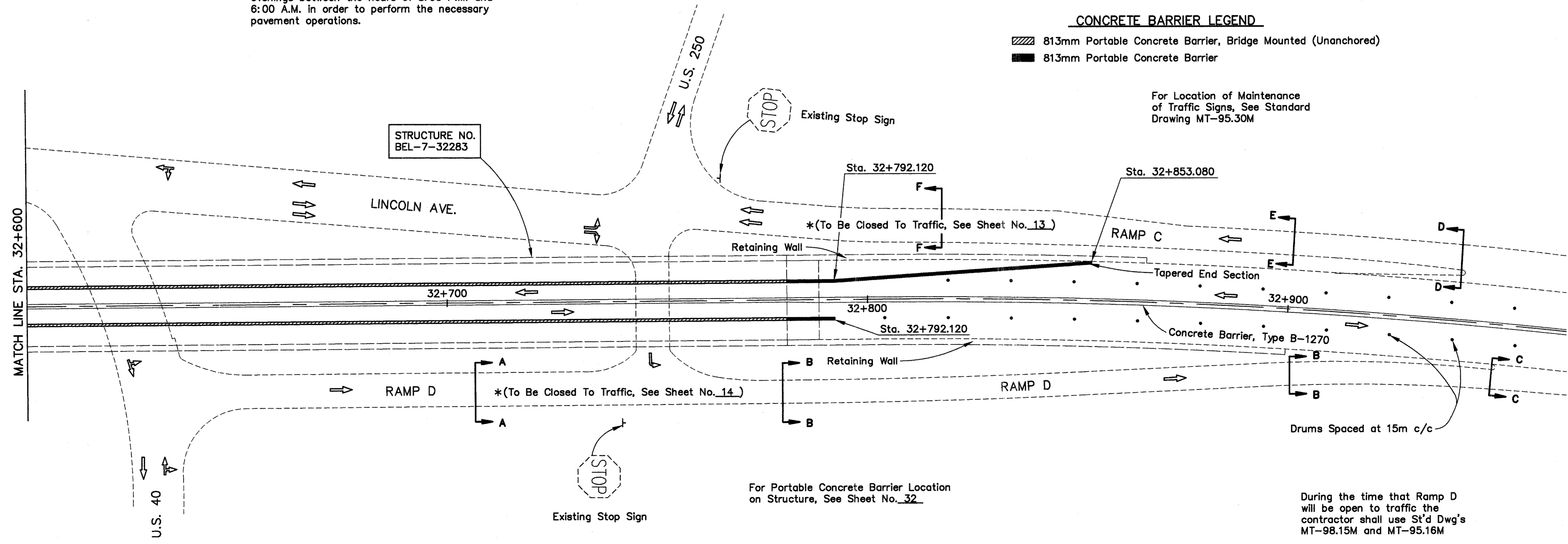
NOTE: Ramp C and D have existing curb to remain.

\*Note:  
Ramp C & D will be closed to traffic for two evenings between the hours of 8:00 P.M. and 6:00 A.M. in order to perform the necessary pavement operations.

**CONCRETE BARRIER LEGEND**

- 813mm Portable Concrete Barrier, Bridge Mounted (Unanchored)
- 813mm Portable Concrete Barrier

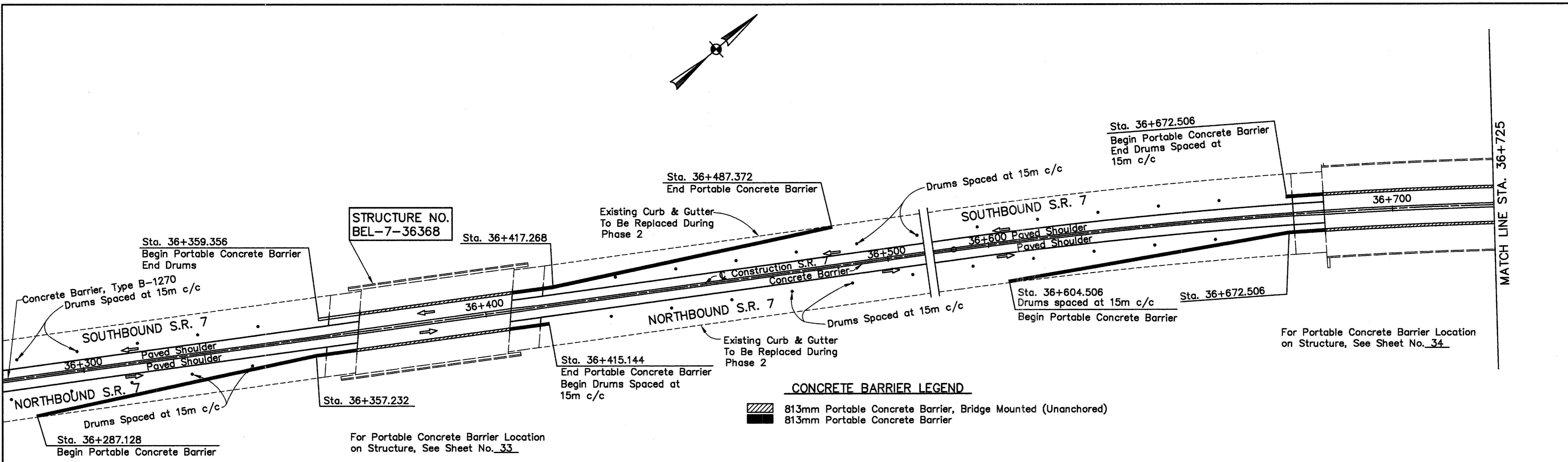
For Location of Maintenance of Traffic Signs, See Standard Drawing MT-95.30M



For Portable Concrete Barrier Location on Structure, See Sheet No. 32

During the time that Ramp D will be open to traffic the contractor shall use St'd Dwg's MT-98.15M and MT-95.16M

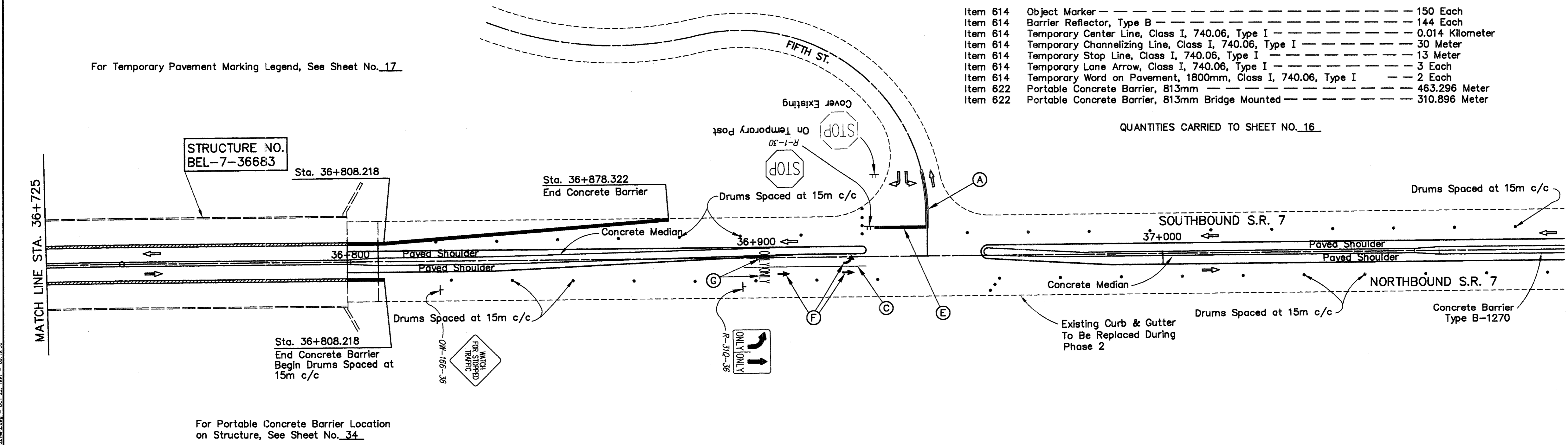
H:\3221-10\MAINTENANCE\32276.dwg - OCT 26, 1997 - 08:13:41



**PHASE 2  
QUANTITIES FOR MAINTENANCE OF TRAFFIC**

ITEM	UNIT
Item 614	Object Marker — — — — — 150 Each
Item 614	Barrier Reflector, Type B — — — — — 144 Each
Item 614	Temporary Center Line, Class I, 740.06, Type I — — — — — 0.014 Kilometer
Item 614	Temporary Channelizing Line, Class I, 740.06, Type I — — — — — 30 Meter
Item 614	Temporary Stop Line, Class I, 740.06, Type I — — — — — 13 Meter
Item 614	Temporary Lane Arrow, Class I, 740.06, Type I — — — — — 3 Each
Item 614	Temporary Word on Pavement, 1800mm, Class I, 740.06, Type I — — — — — 2 Each
Item 622	Portable Concrete Barrier, 813mm — — — — — 463.296 Meter
Item 622	Portable Concrete Barrier, 813mm Bridge Mounted — — — — — 310.896 Meter

QUANTITIES CARRIED TO SHEET NO. 16



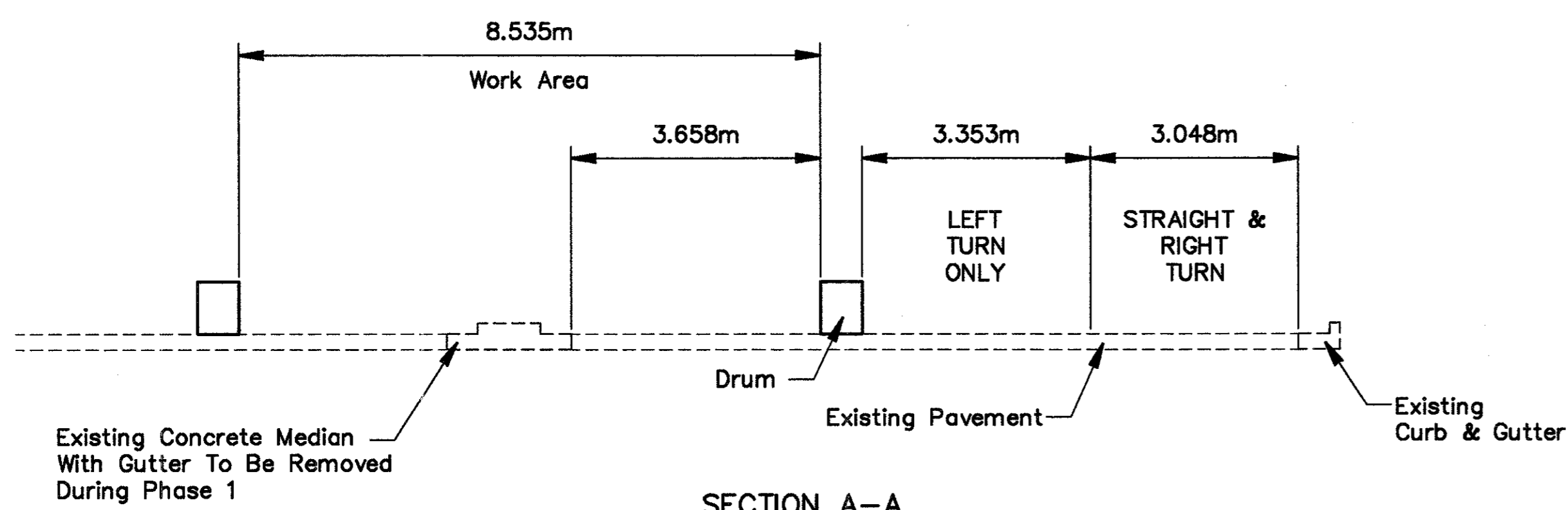
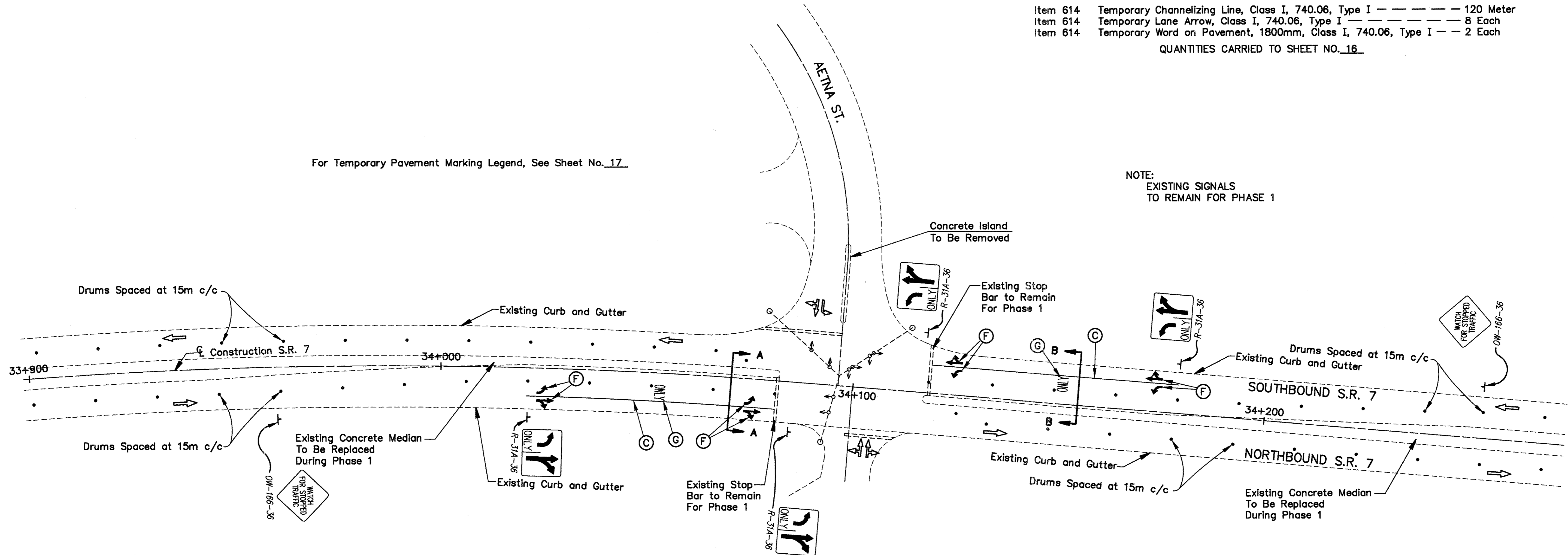
**PHASE 1 PART 1**  
**QUANTITIES FOR MAINTENANCE OF TRAFFIC**

ITEM	UNIT
Item 614 Temporary Channelizing Line, Class I, 740.06, Type I	120 Meter
Item 614 Temporary Lane Arrow, Class I, 740.06, Type I	8 Each
Item 614 Temporary Word on Pavement, 1800mm, Class I, 740.06, Type I	2 Each

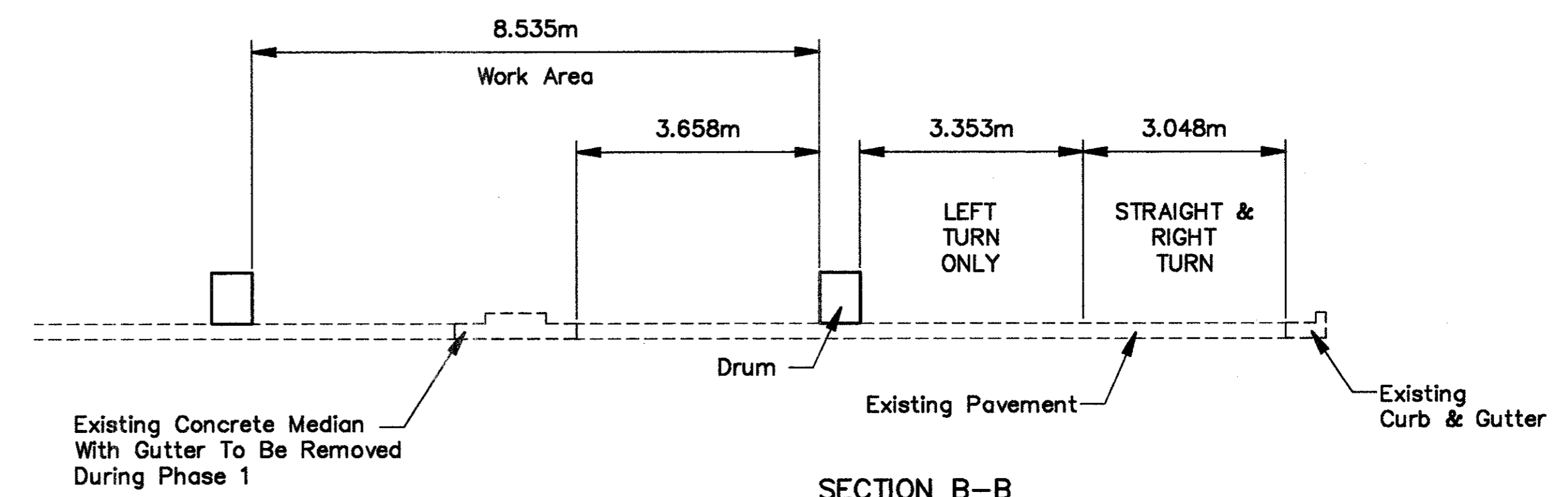
QUANTITIES CARRIED TO SHEET NO. 16

For Temporary Pavement Marking Legend, See Sheet No. 17

NOTE:  
EXISTING SIGNALS  
TO REMAIN FOR PHASE 1



**SECTION A-A**



**SECTION B-B**

**MAINTENANCE OF TRAFFIC**  
**AETNA ST. - PHASE 1 - PART 1**

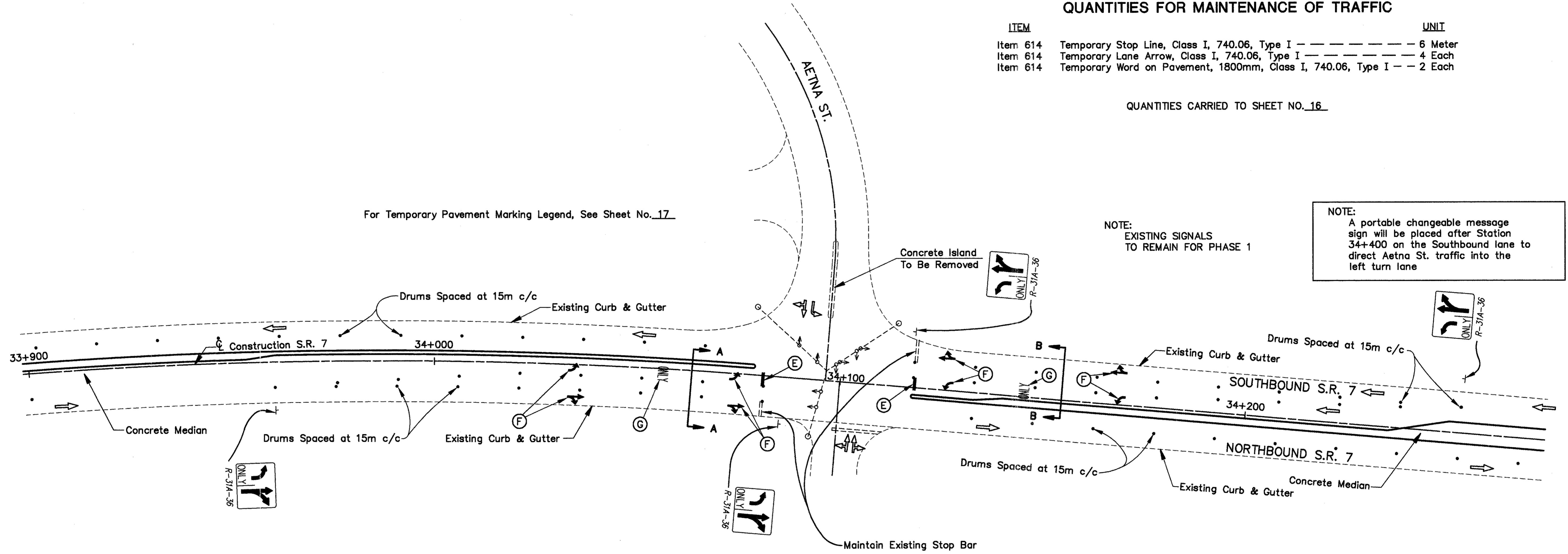
**BEL-7-32.276**



**PHASE 1 - PART 2**  
**QUANTITIES FOR MAINTENANCE OF TRAFFIC**

ITEM	UNIT
Item 614 Temporary Stop Line, Class I, 740.06, Type I	6 Meter
Item 614 Temporary Lane Arrow, Class I, 740.06, Type I	4 Each
Item 614 Temporary Word on Pavement, 1800mm, Class I, 740.06, Type I	2 Each

QUANTITIES CARRIED TO SHEET NO. 16



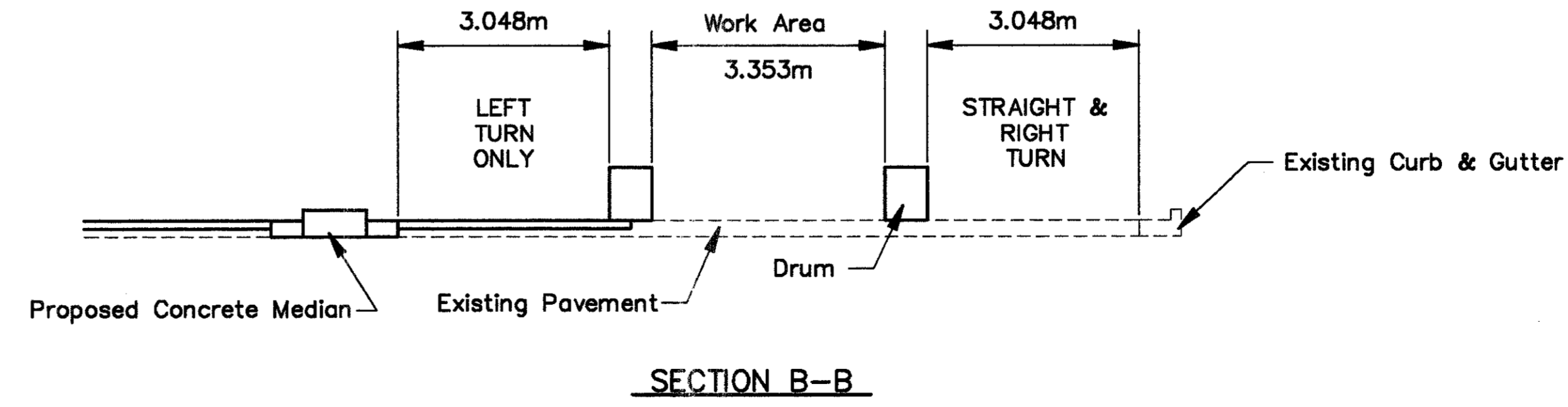
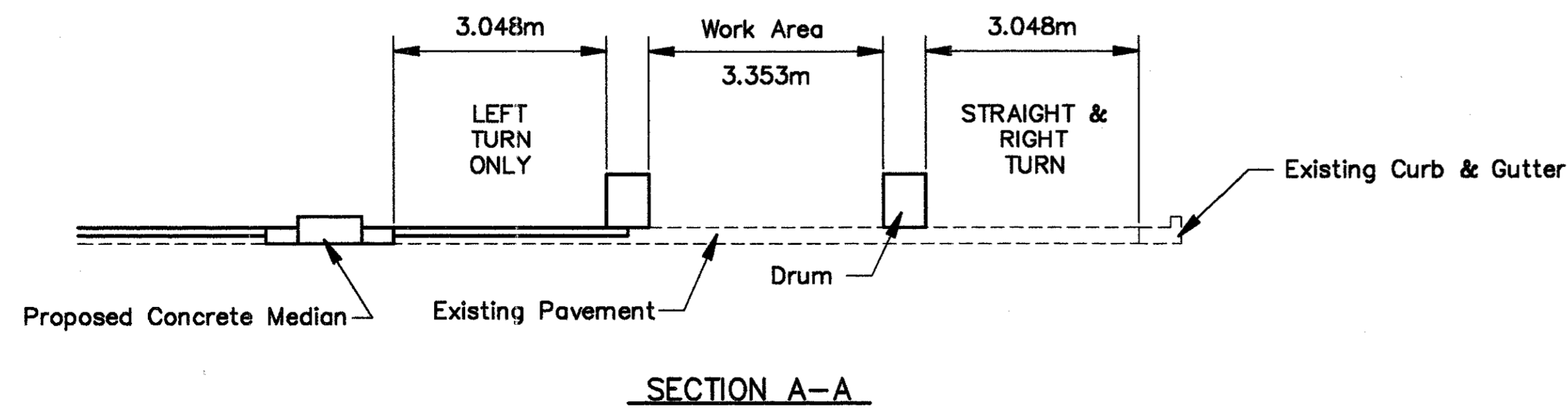
For Temporary Pavement Marking Legend, See Sheet No. 17

NOTE:  
EXISTING SIGNALS  
TO REMAIN FOR PHASE 1

NOTE:  
A portable changeable message sign will be placed after Station 34+400 on the Southbound lane to direct Aetna St. traffic into the left turn lane

NOTE:  
A portable changeable message sign will be placed prior to Station 33+800 on the Northbound lane to direct Aetna St. traffic into the left turn lane

NOTE:  
During Phase 1, the temporary drums will need to be moved around in the work area in order to maintain 3.048m driving lanes



**MAINTENANCE OF TRAFFIC**  
**AETNA ST. - PHASE 1 PART 2**

**BEL-7-32.276**

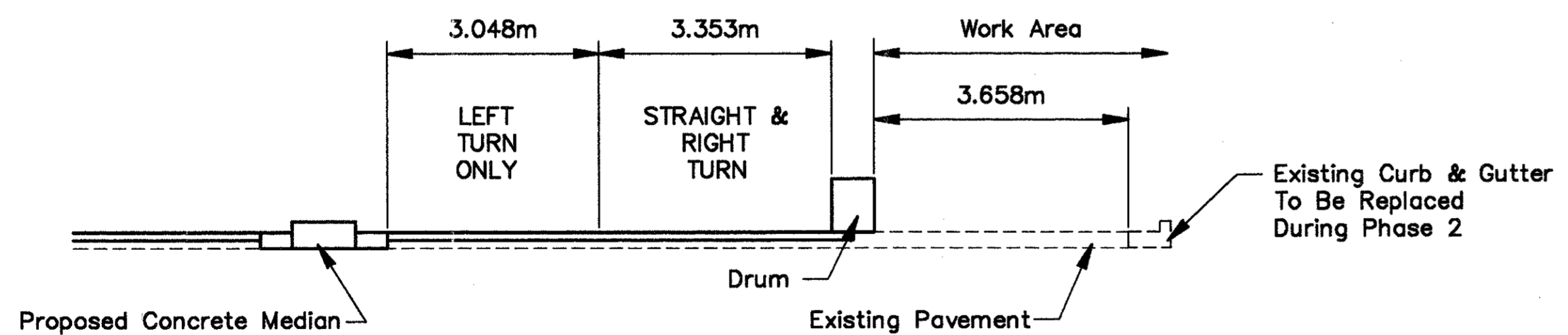
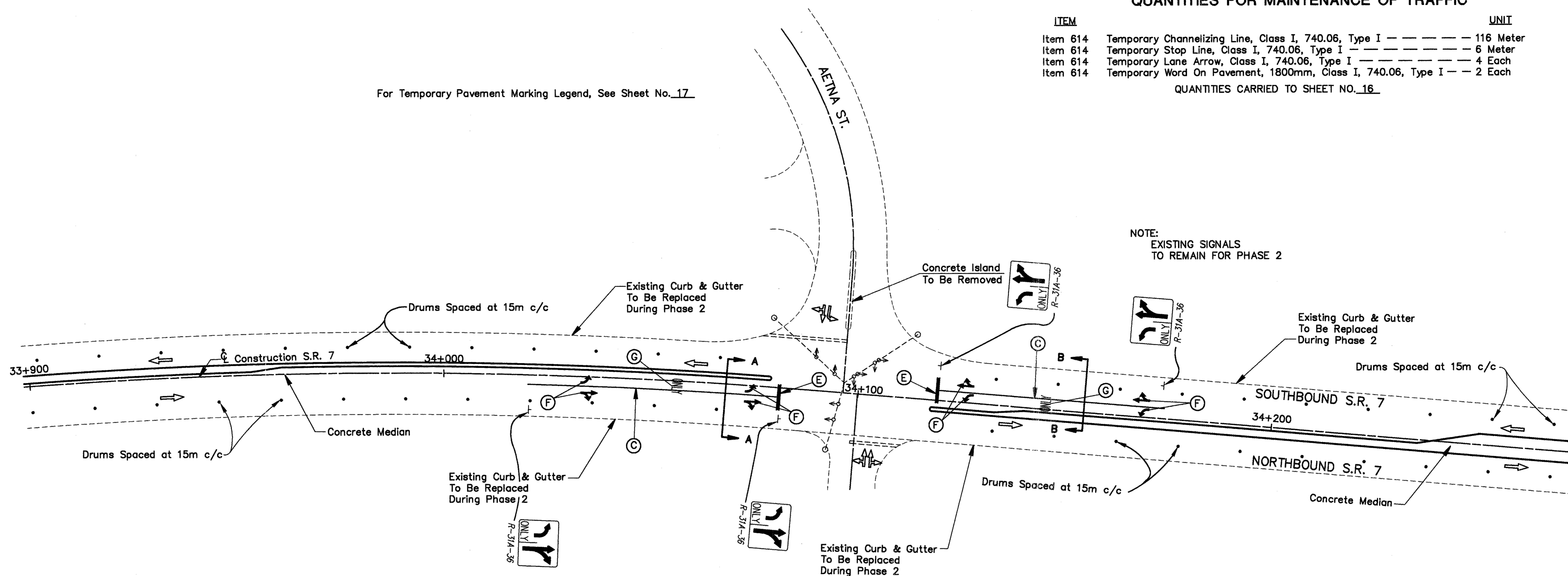
**PHASE 2**

**QUANTITIES FOR MAINTENANCE OF TRAFFIC**

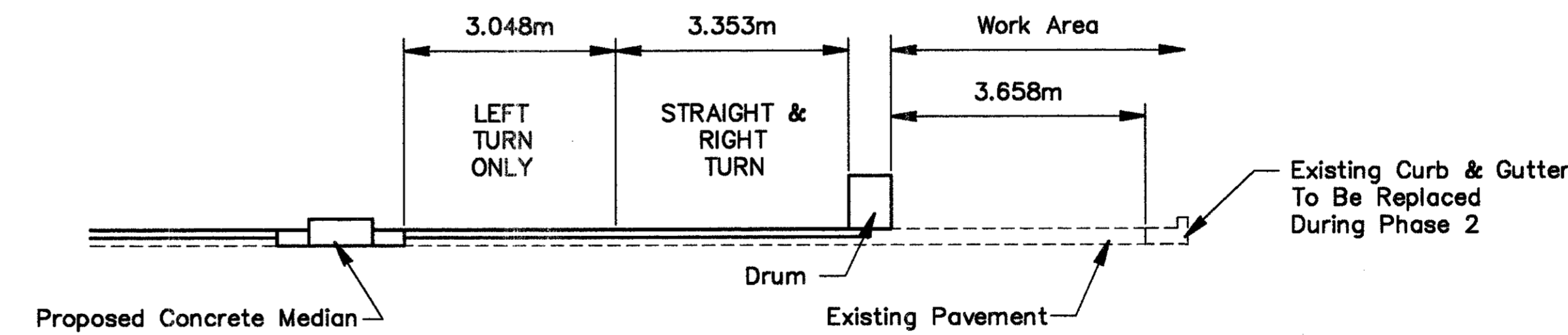
ITEM	UNIT
Item 614 Temporary Channelizing Line, Class I, 740.06, Type I	116 Meter
Item 614 Temporary Stop Line, Class I, 740.06, Type I	6 Meter
Item 614 Temporary Lane Arrow, Class I, 740.06, Type I	4 Each
Item 614 Temporary Word On Pavement, 1800mm, Class I, 740.06, Type I	2 Each

QUANTITIES CARRIED TO SHEET NO. 16

For Temporary Pavement Marking Legend, See Sheet No. 17



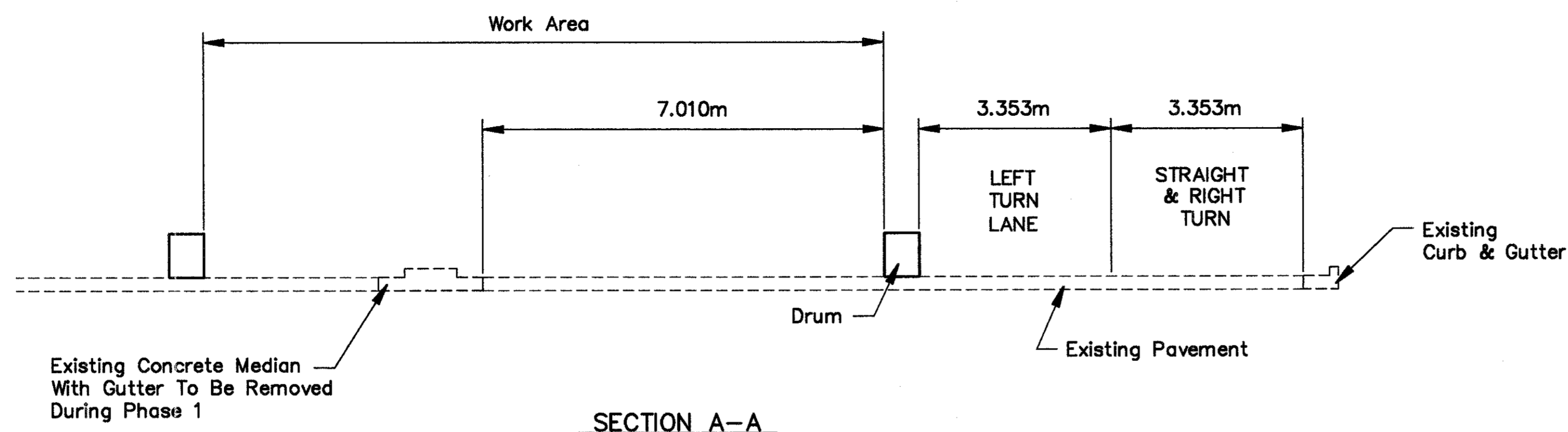
**SECTION A-A**



**SECTION B-B**

**MAINTENANCE OF TRAFFIC  
AETNA ST. - PHASE 2**

**BEL-7-32.276**

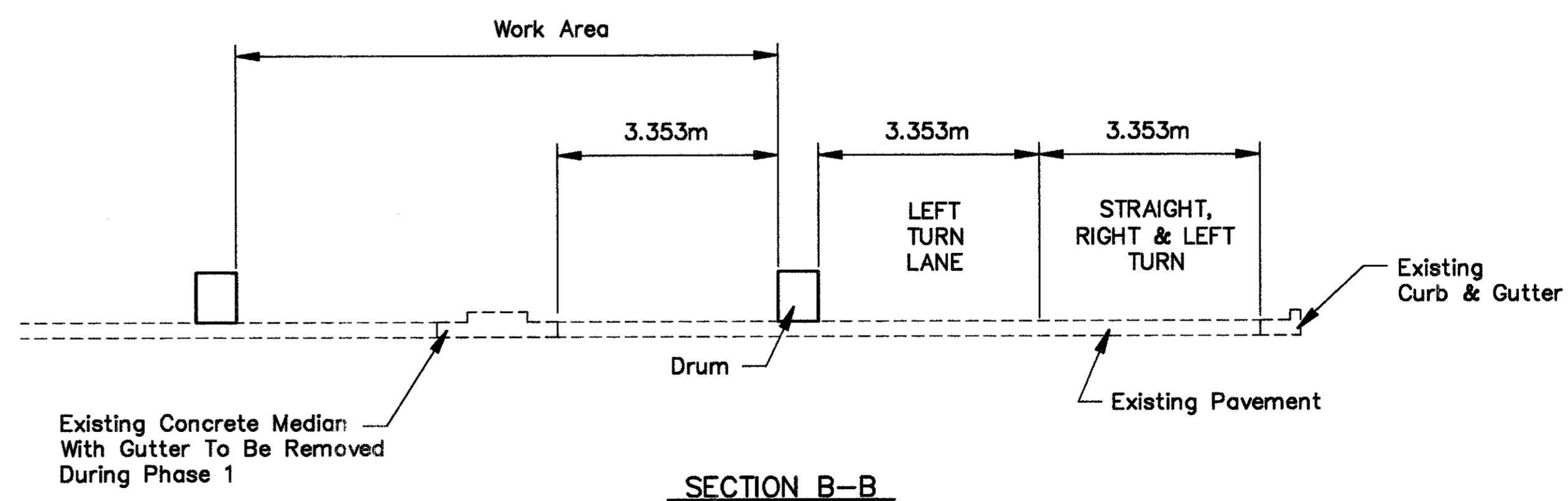
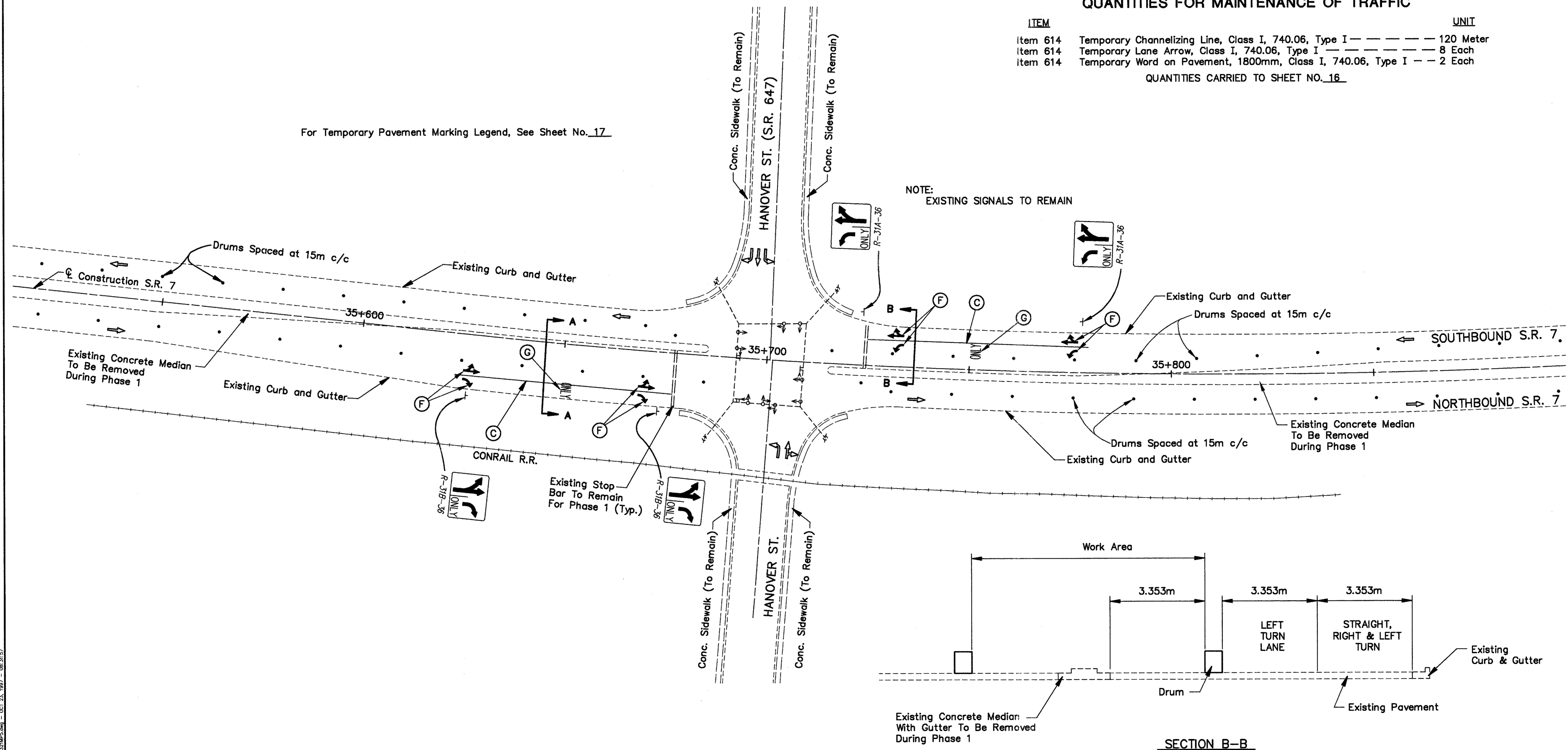


**PHASE 1 - PART 1**  
**QUANTITIES FOR MAINTENANCE OF TRAFFIC**

ITEM	UNIT
Item 614 Temporary Channelizing Line, Class I, 740.06, Type I	120 Meter
Item 614 Temporary Lane Arrow, Class I, 740.06, Type I	8 Each
Item 614 Temporary Word on Pavement, 1800mm, Class I, 740.06, Type I	2 Each

QUANTITIES CARRIED TO SHEET NO. 16

For Temporary Pavement Marking Legend, See Sheet No. 17



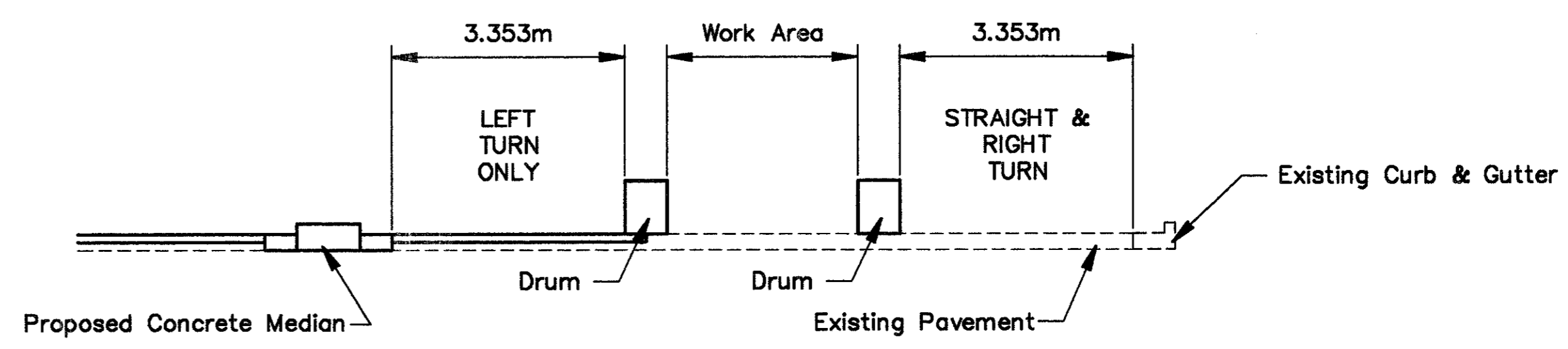
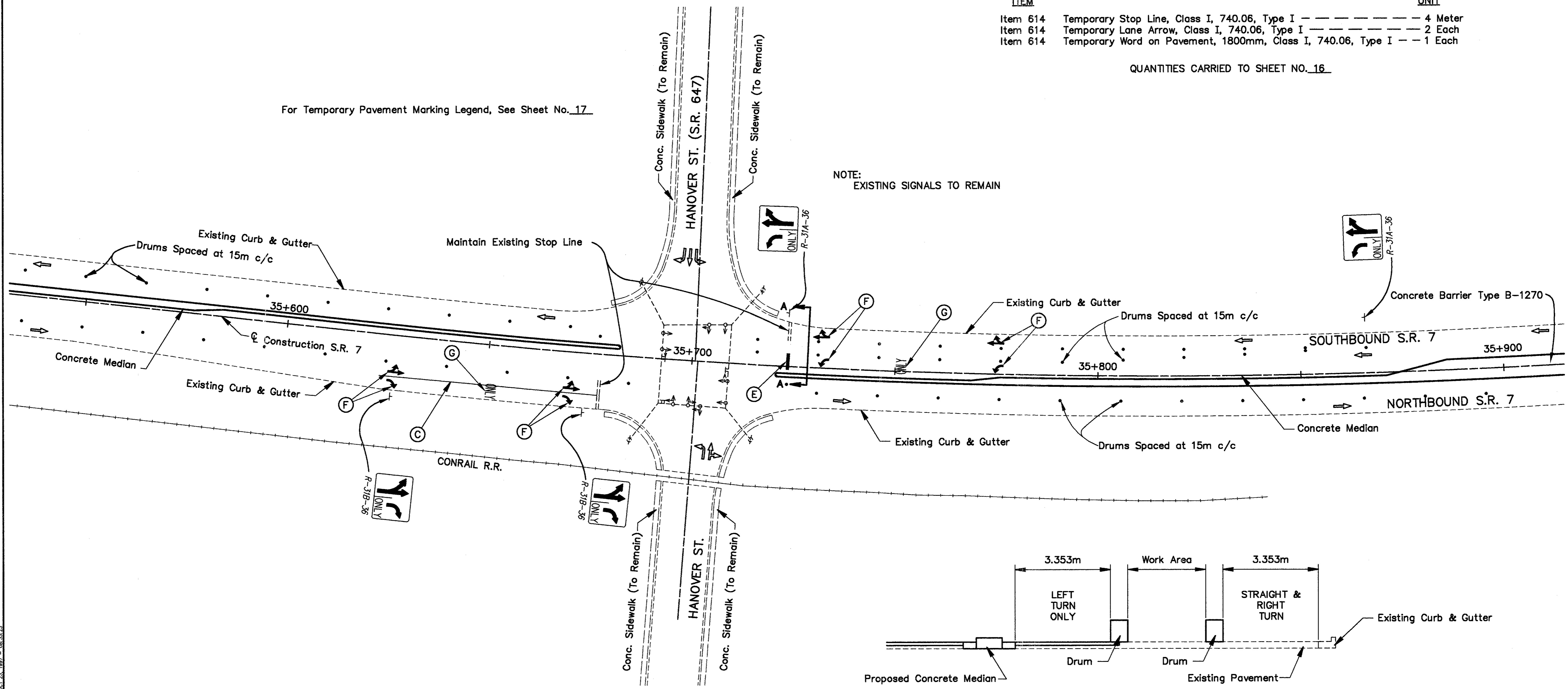
**PHASE 1 - PART 2  
QUANTITIES FOR MAINTENANCE OF TRAFFIC**

ITEM	UNIT
Item 614 Temporary Stop Line, Class I, 740.06, Type I	4 Meter
Item 614 Temporary Lane Arrow, Class I, 740.06, Type I	2 Each
Item 614 Temporary Word on Pavement, 1800mm, Class I, 740.06, Type I	1 Each

QUANTITIES CARRIED TO SHEET NO. 16

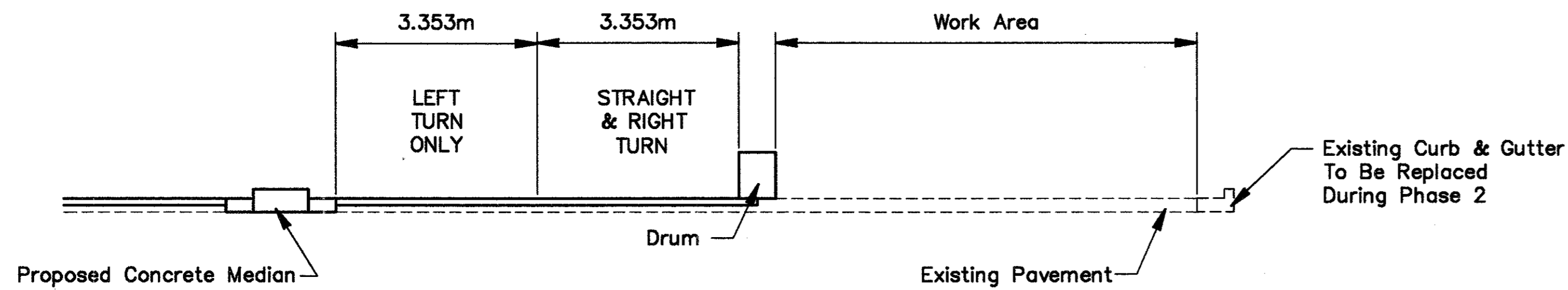
For Temporary Pavement Marking Legend, See Sheet No. 17

NOTE:  
EXISTING SIGNALS TO REMAIN



SECTION B-B

H:\322-01\MAINTENANCE\7321.mxd - OCT 23, 1997 - 08:33:23



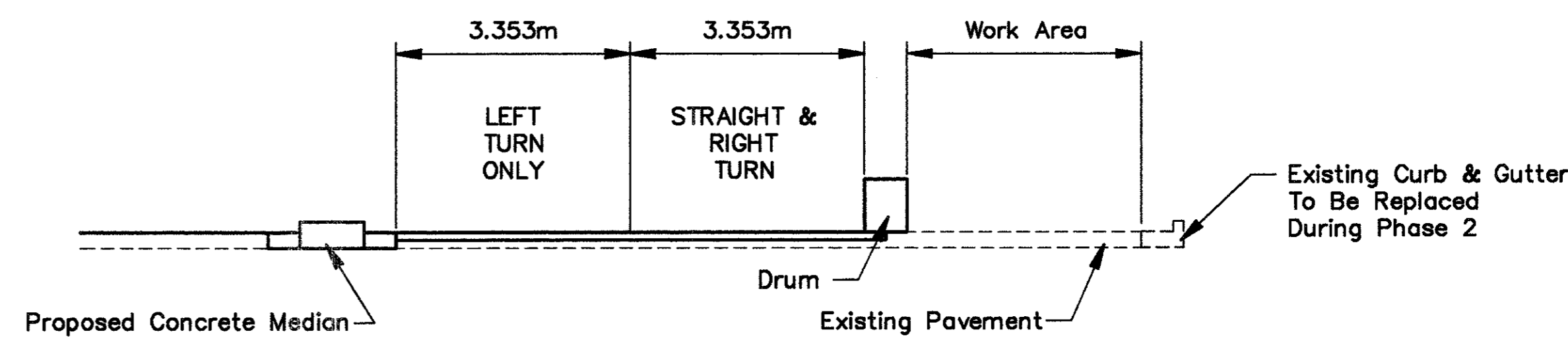
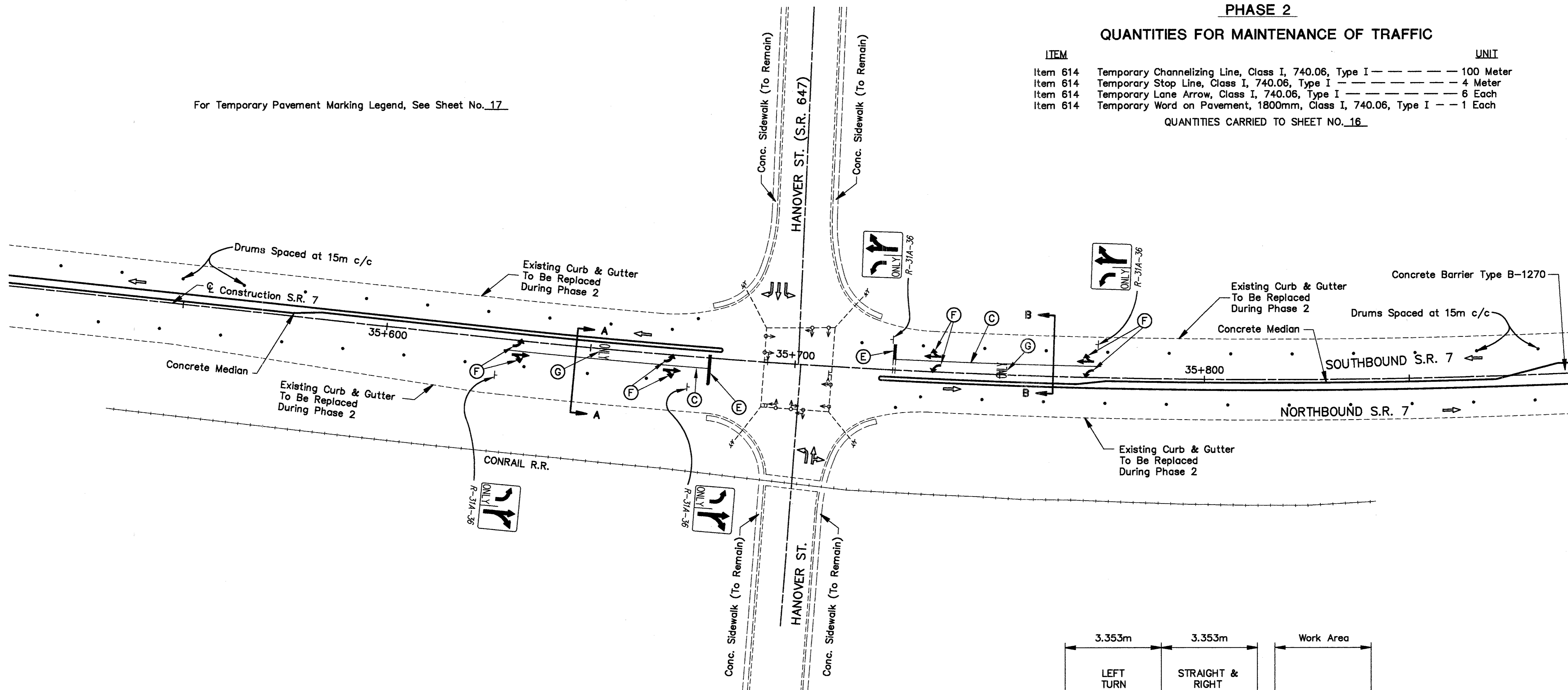
SECTION A-A

For Temporary Pavement Marking Legend, See Sheet No. 17

**PHASE 2**  
**QUANTITIES FOR MAINTENANCE OF TRAFFIC**

ITEM	UNIT
Item 614 Temporary Channelizing Line, Class I, 740.06, Type I	100 Meter
Item 614 Temporary Stop Line, Class I, 740.06, Type I	4 Meter
Item 614 Temporary Lane Arrow, Class I, 740.06, Type I	6 Each
Item 614 Temporary Word on Pavement, 1800mm, Class I, 740.06, Type I	1 Each

QUANTITIES CARRIED TO SHEET NO. 16



SECTION B-B

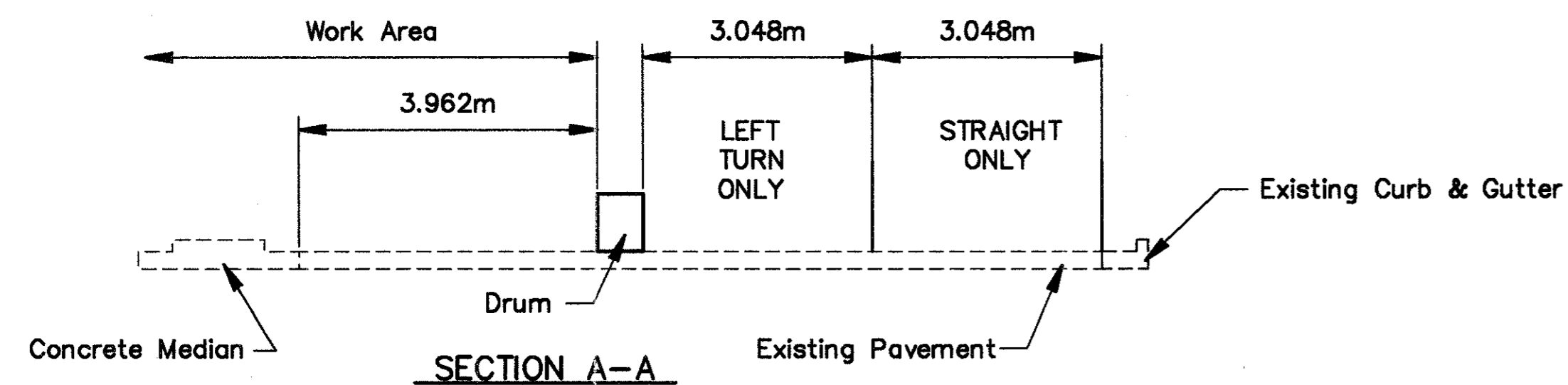
**MAINTENANCE OF TRAFFIC**  
**HANOVER ST. - PHASE 2**

**BEL-7-32.276**

**QUANTITIES FOR MAINTENANCE OF TRAFFIC**

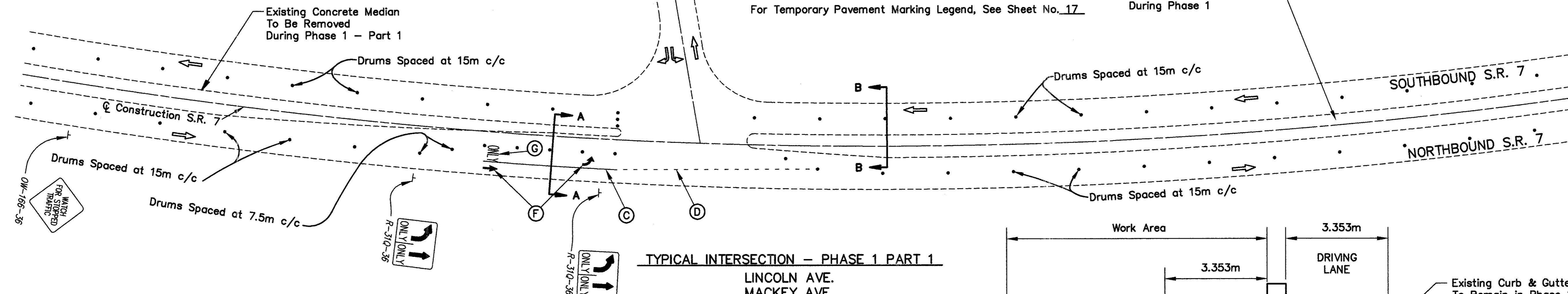
ITEM	DESCRIPTION	UNIT
Item 614	Temporary Channelizing Line, Class I, 740.06, Type I	121 Meter
Item 614	Temporary Dotted Line, Class I, 740.06, Type I	186 Meter
Item 614	Temporary Lane Arrow, Class I, 740.06, Type I	16 Each
Item 614	Temporary Word on Pavement, 1800mm, Class I, 740.06, Type I	8 Each

QUANTITIES CARRIED TO SHEET NO. 16

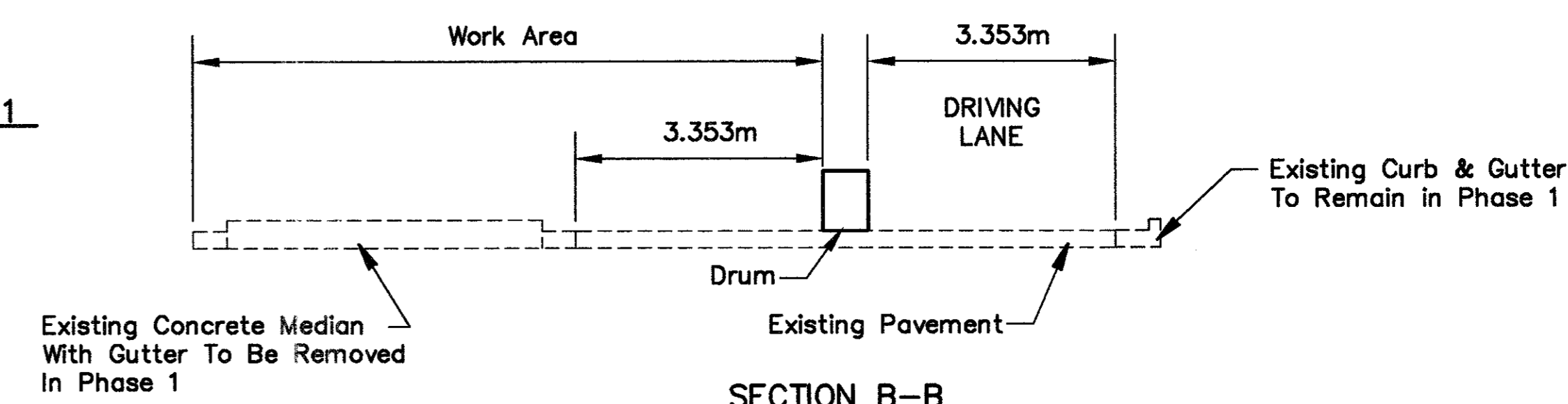


For Temporary Pavement Marking Legend, See Sheet No. 17

Existing Concrete Median  
To Be Removed  
During Phase 1

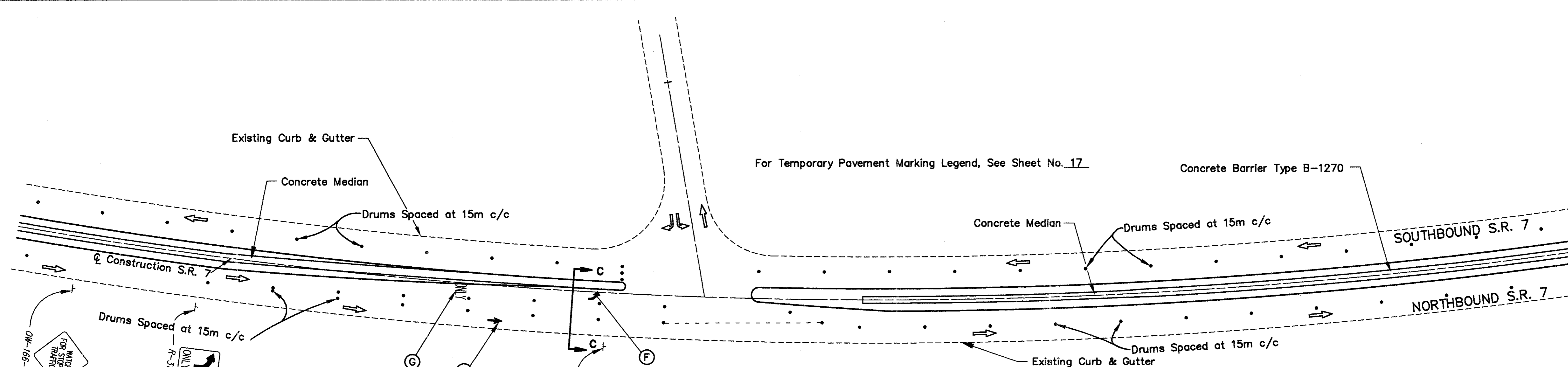


**TYPICAL INTERSECTION - PHASE 1 PART 1**  
LINCOLN AVE.  
MACKEY AVE.  
JEANETTE AVE.  
HILL ST.

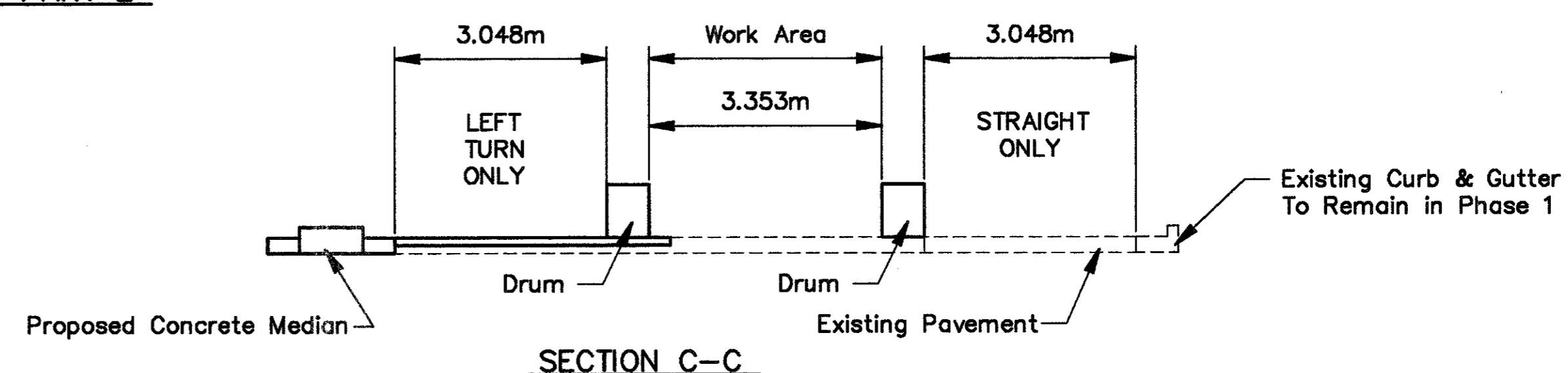


For Temporary Pavement Marking Legend, See Sheet No. 17

Concrete Barrier Type B-1270



**TYPICAL INTERSECTION DETAIL - PHASE 1 PART 2**  
LINCOLN AVE.  
MACKEY AVE.  
JEANETTE AVE.  
HILL ST.

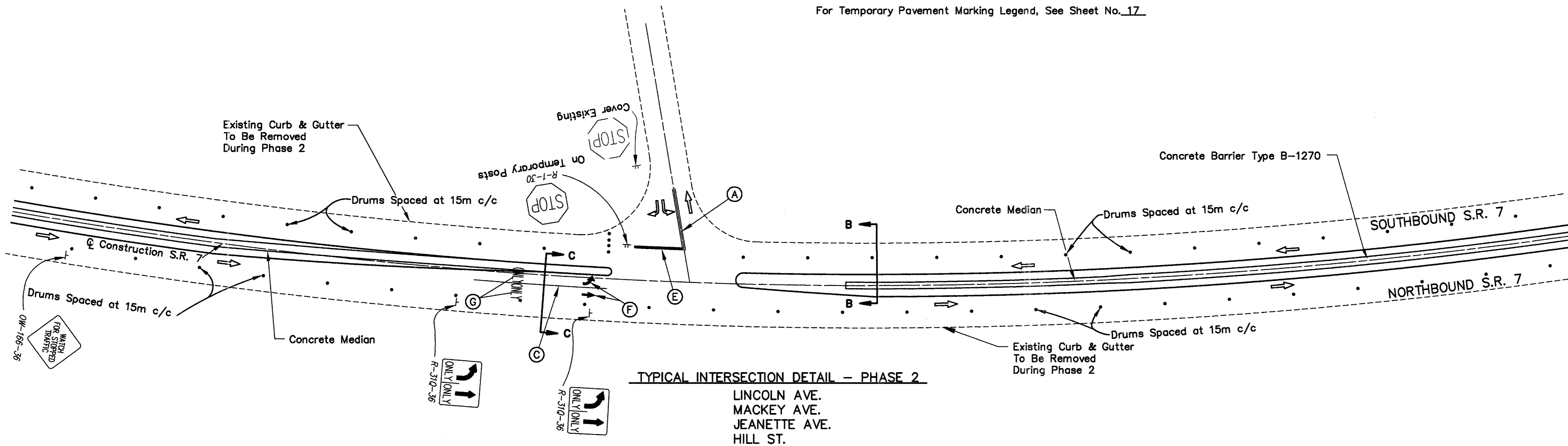


**PHASE 2**  
**QUANTITIES FOR MAINTENANCE OF TRAFFIC**

ITEM	UNIT
Item 614 Temporary Center Line, Class I, 740.06, Type I	0.058 Kilometer
Item 614 Temporary Channelizing Line, Class I, 740.06, Type I	124 Meter
Item 614 Temporary Stop Line, Class I, 740.06, Type I	12 Meter
Item 614 Temporary Lane Arrow, Class I, 740.06, Type I	4 Each
Item 614 Temporary Word on Pavement, 1800mm, Class I, 740.06, Type I	4 Each

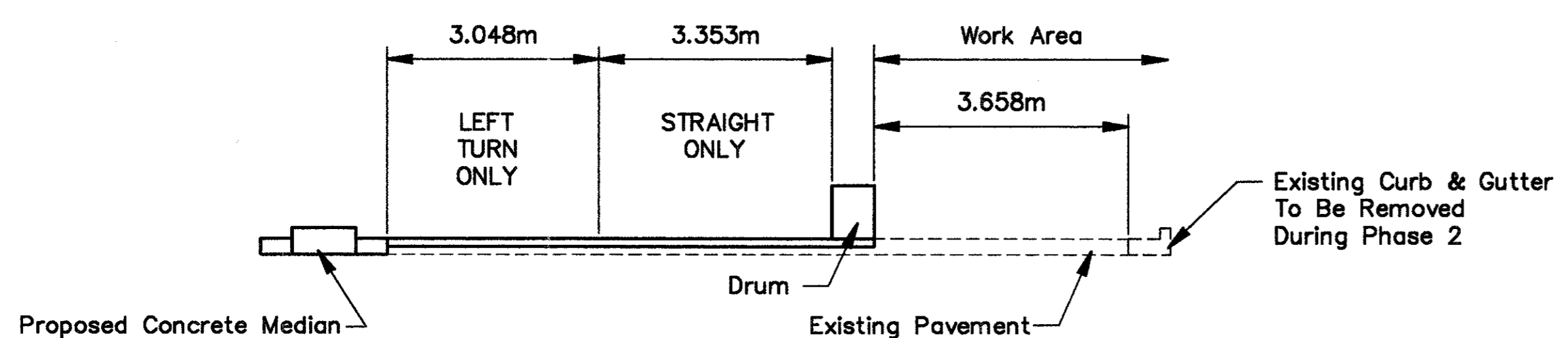
QUANTITIES CARRIED TO SHEET NO. 16

For Temporary Pavement Marking Legend, See Sheet No. 17

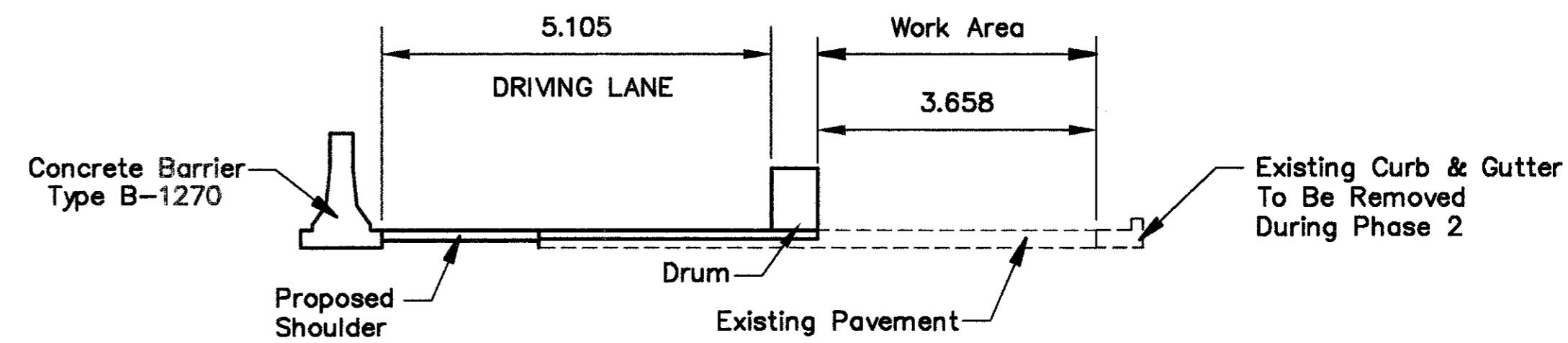


**TYPICAL INTERSECTION DETAIL - PHASE 2**

LINCOLN AVE.  
MACKEY AVE.  
JEANETTE AVE.  
HILL ST.



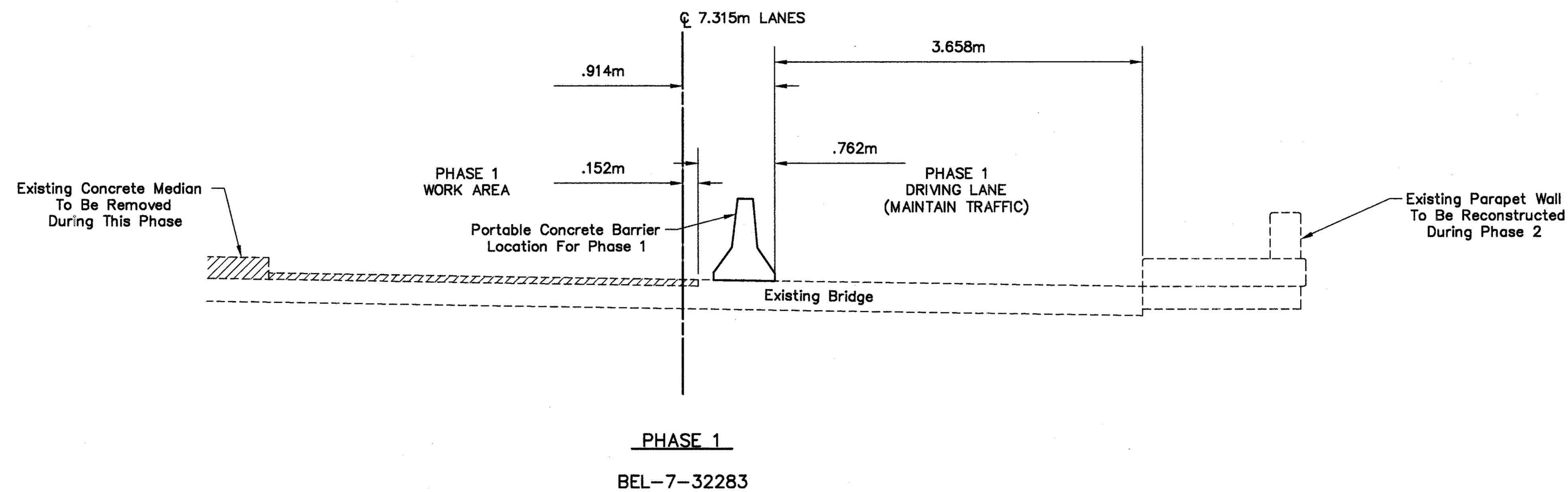
**SECTION C-C**



**SECTION B-B**

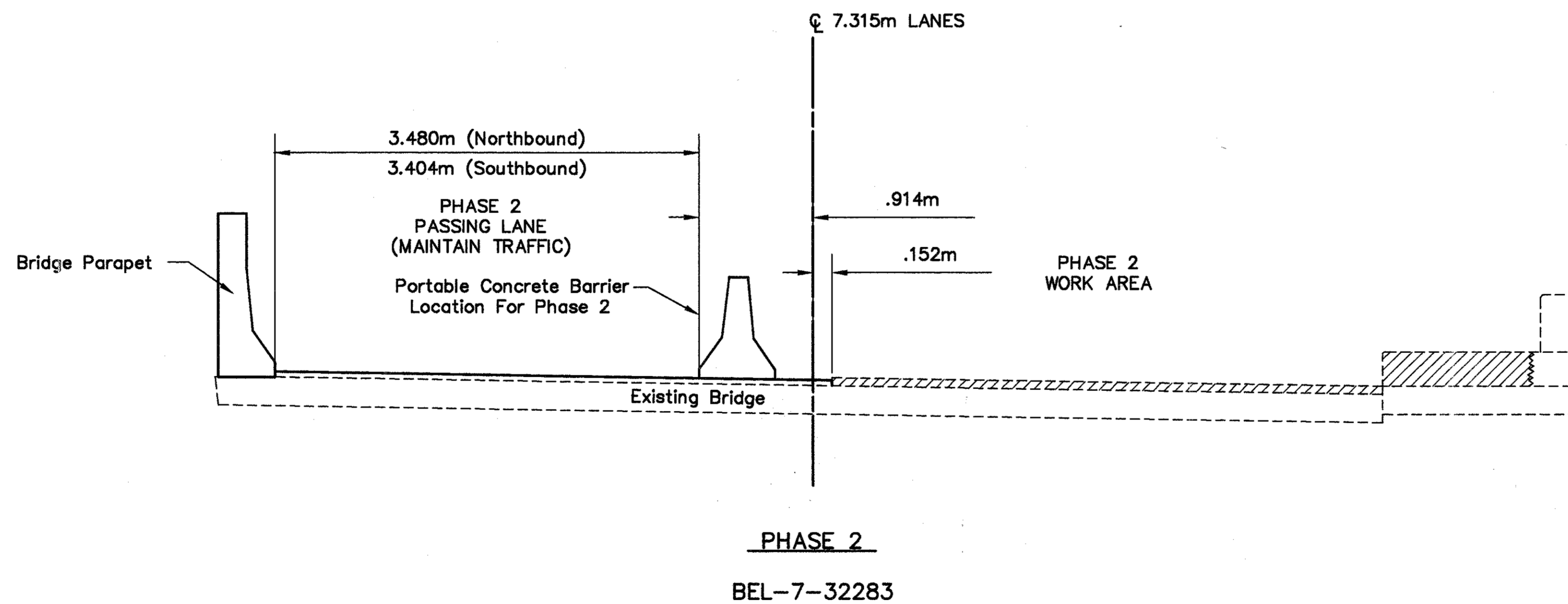
**MAINTENANCE OF TRAFFIC**  
**TYPICAL INTERSECTION DETAILS**

**BEL-7-32.276**

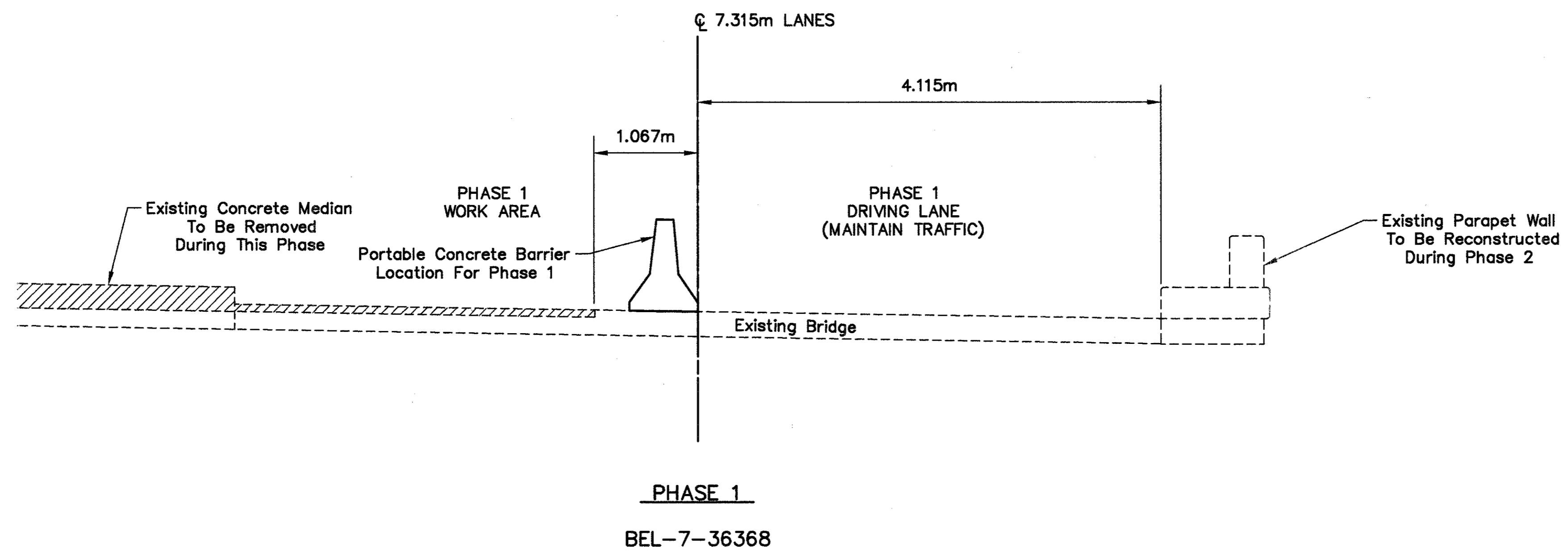


NOTE: Northbound Lanes Shown.  
Typicals Apply To Both Northbound  
And Southbound Lanes

 Material Removed During Work Phase

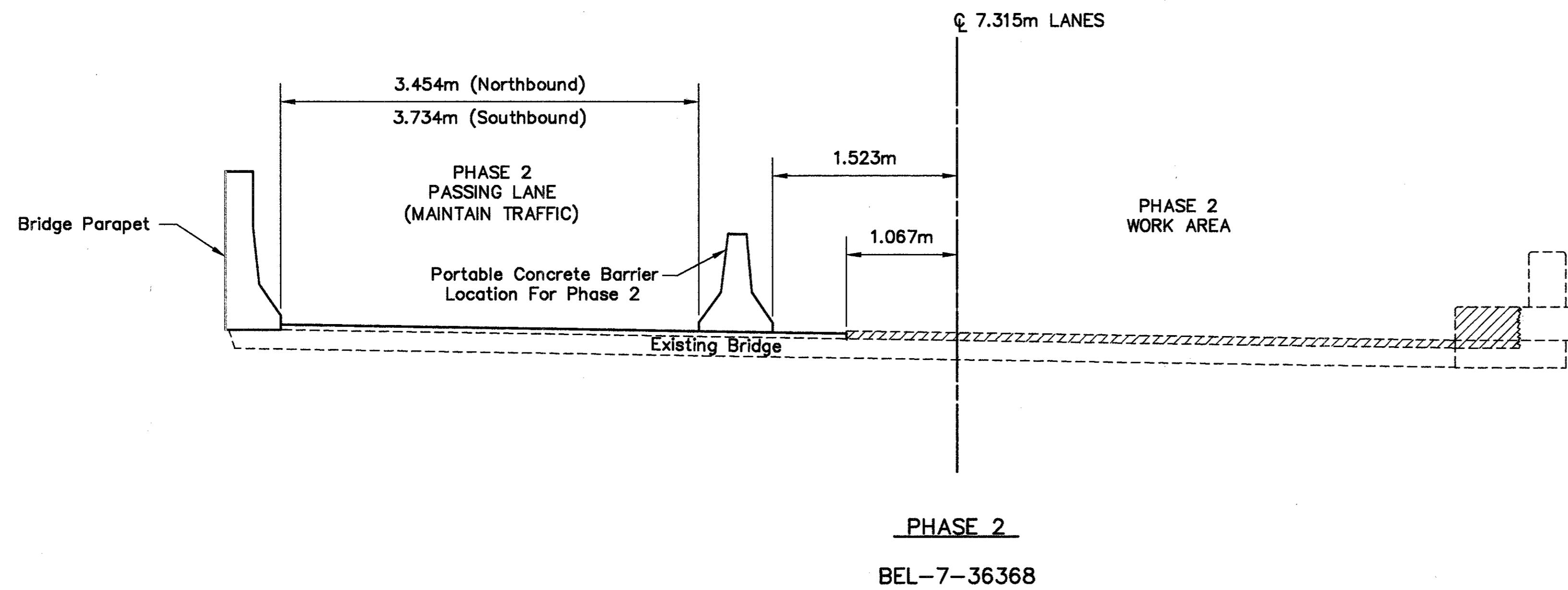


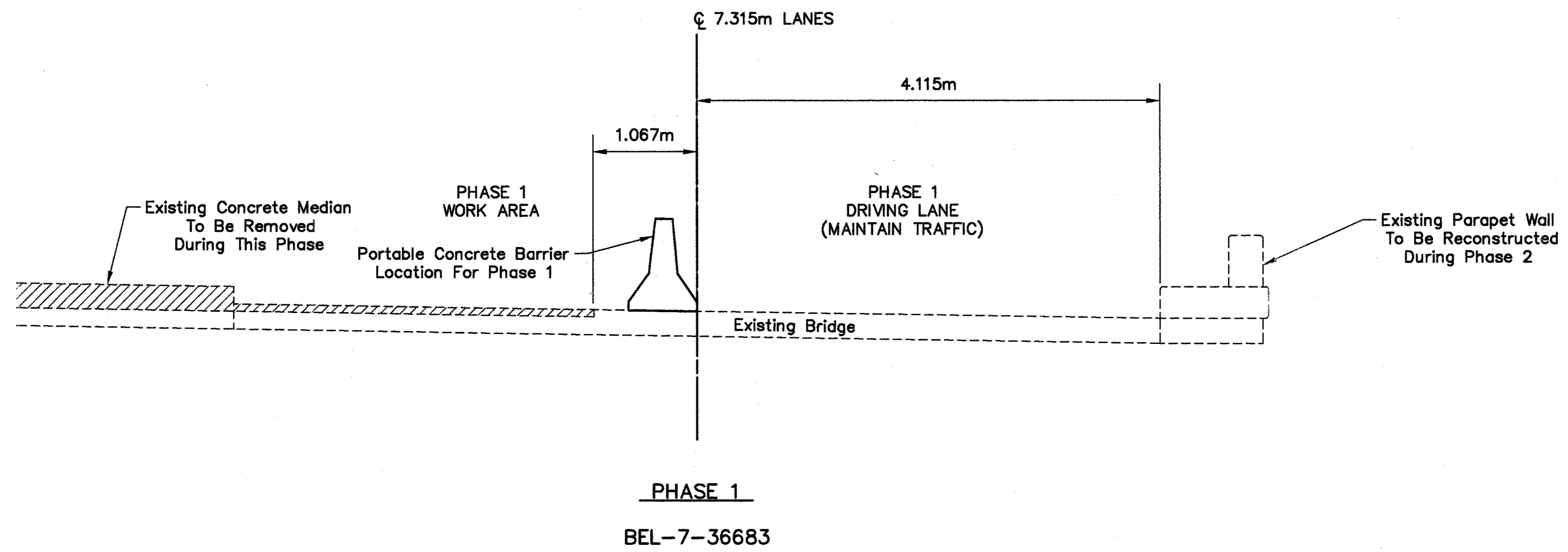




NOTE: Northbound Lane Shown.  
Typicals Apply To Both Northbound  
And Southbound Lanes

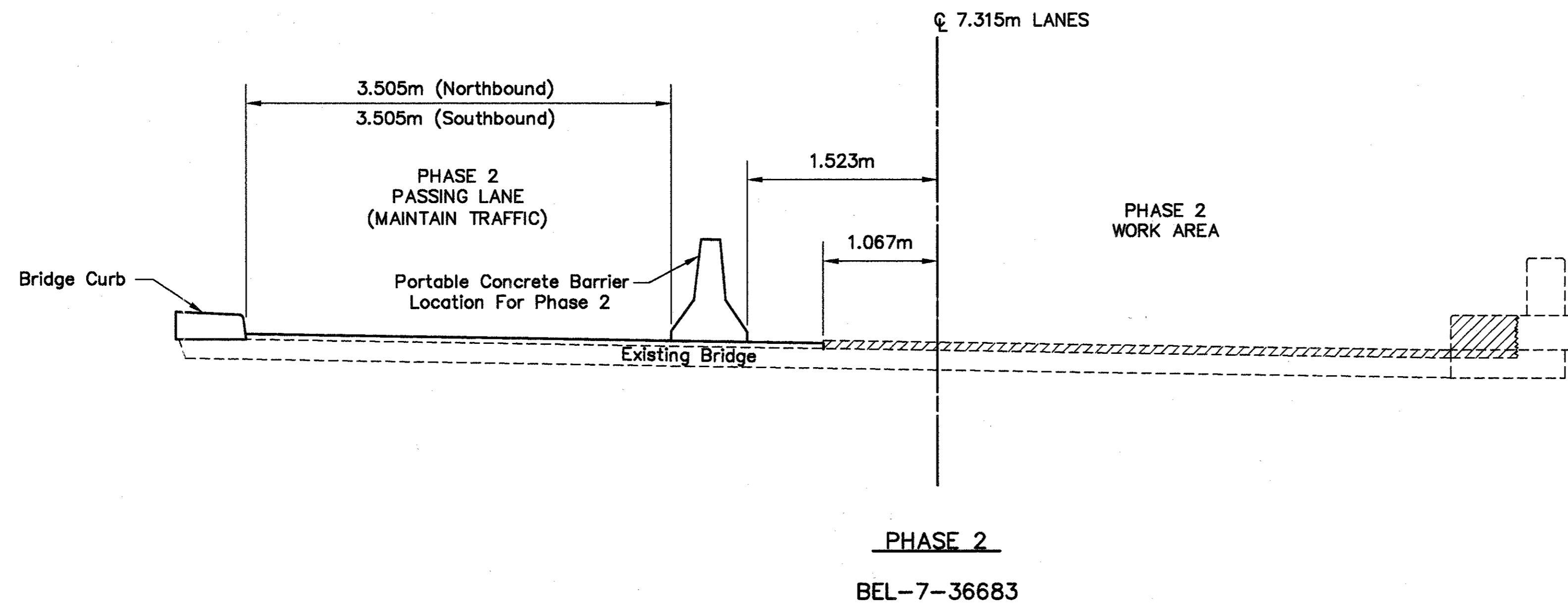
 Material Removed During Work Phase





NOTE: Northbound Lanes Shown.  
Typicals Apply To Both Northbound  
And Southbound Lanes

 Material Removed During Work Phase



# GENERAL SUMMARY

CALCULATED  
WCR  
CHECKED  
BL

FROM SHEET NO.																				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
11	12	13	43	44	45	48	49	50	52	53	54	55	58	92	93	103	108	109	110							237
																									ROADWAY	
	LUMP																				201	11001	LUMP		CLEARING AND GRUBBING, AS PER PLAN	11
		LUMP										274									202	11000	LUMP		STRUCTURE REMOVED	
													274								202	22900	274	SQ. METER	APPROACH SLAB REMOVED	
														236							202	23000	236	SQ. METER	PAVEMENT REMOVED	
			2547	2547												551					202	23500	5645	SQ. METER	WEARING COURSE REMOVED	
			309	309																	202	23900	618	SQ. METER	CONCRETE BASE REMOVED	
																					202	30000	148	SQ. METER	WALK REMOVED	
										16991											202	30600	16991	SQ. METER	CONCRETE MEDIAN REMOVED	
										239											202	32001	239	METER	CURB REMOVED, AS PER PLAN	12
									9116	9473						457					202	32500	19046	METER	CURB AND GUTTER REMOVED	
																	37	86	30		202	35100	153	METER	PIPE REMOVED, 600mm AND UNDER	
												4825									202	38000	4825	METER	GUARDRAIL REMOVED	
											3953										202	38300	3953	METER	GUARDRAIL REMOVED, BARRIER DESIGN	
																	2	2			202	58100	4	EACH	CATCH BASIN REMOVED	
																			1		202	58200	1	EACH	INLET REMOVED	
																	1				202	58500	1	EACH	CATCH BASIN ABANDONED	
																		1	2		202	58700	3	EACH	MANHOLE ABANDONED	
			2500																		SPECIAL 202	70100	2500	METER	PIPE CLEANOUT	
																				3796	202	75000	3796	METER	FENCE REMOVED	
				67	67		10884	885	668				1532								203	12000	14103	CU. METER	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
													261		19						203	20000	280	CU. METER	EMBANKMENT	
				309	309	1718	19936	1875	1351				307								203	50000	25805	SQ. METER	SUBGRADE COMPACTION	
										11442											203	60100	11442	METER	LINEAR GRADING	11
																65					604	40500	65	EACH	REFERENCE MONUMENT	
											4602.463										606	13000	4602.463	METER	GUARDRAIL, TYPE 5	
											29.350										606	15500	29.350	METER	GUARDRAIL, BARRIER DESIGN, TYPE 5	
											3										606	25000	3	EACH	ANCHOR ASSEMBLY, TYPE A	
											7										606	26100	7	EACH	ANCHOR ASSEMBLY, TYPE E	
											11										606	26500	11	EACH	ANCHOR ASSEMBLY, TYPE T	
											4										606	35000	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
											1										606	35004	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN	
											5										606	35100	5	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
																				3894	607	23000	3894	METER	FENCE, TYPE CLT	
																				6	625	32000	6	EACH	GROUND ROD	
										12											SPECIAL 690	10200	12	EACH	IMPACT ATTENUATOR, G.R.E.A.T. TYPE	12
	1																				SPECIAL 690	10410	1	EACH	REPLACEMENT IMPACT ATTENUATOR, G.R.E.A.T. TYPE	12
																									EROSION CONTROL	
		6738																			207	10000	6738	SQ. METER	TEMPORARY SEEDING AND MULCHING	
		3695												4795							207	30000	8490	METER	FILTER FABRIC FENCE	
		79																			207	55500	79	SQ. METER	TEMPORARY DITCH PROTECTION	
		250												831							207	70000	1081	EACH	STRAW OR HAY BALES	
												33690									659	10000	33690	SQ. METER	SEEDING AND MULCHING	
		1685																			659	14000	1685	SQ. METER	REPAIR SEEDING AND MULCHING	
		1583										3369									659	20000	4952	KILOGRAM	COMMERCIAL FERTILIZER	
												8625									659	30000	8625	KILOGRAM	AGRICULTURAL LIMING	
		396										165									659	35000	561	CU. METER	WATER	
		16846																			659	40000	16846	SQ. METER	MOWING	
																		105	209		670	40000	314	SQ. METER	DITCH EROSION PROTECTION	

**GENERAL SUMMARY**

**BEL-7-32.276**

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# GENERAL SUMMARY

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FROM SHEET NO.														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
13	104	105	106	107	108	109	110	111												
																			DRAINAGE	
		156	73.5		134.5	79.5								603	00406	444	METER	100mm CONDUIT, TYPE F		
		3												603	01500	3	METER	150mm CONDUIT, TYPE F		
						46	12	52	73					603	04400	183	METER	300mm CONDUIT, TYPE B		
								15.5						603	04400	16	METER	300mm CONDUIT, TYPE B, 706.02		
						117	211.5	17	95					603	05900	441	METER	375mm CONDUIT, TYPE B		
						3	10.5	12	3					603	07400	29	METER	450mm CONDUIT, TYPE B		
						44.5	4.5							603	08900	49	METER	525mm CONDUIT, TYPE B		
						5	2		2.5					603	10400	10	METER	600mm CONDUIT, TYPE B		
						5								603	16400	5	METER	900mm CONDUIT, TYPE B		
									3					604	00500	3	EACH	CATCH BASIN, NO. 3		
						1								604	00501	1	EACH	CATCH BASIN, NO. 3, AS PER PLAN	120	
							2	1						604	00700	3	EACH	CATCH BASIN, NO. 3A		
						3								604	00701	3	EACH	CATCH BASIN, NO. 3A, AS PER PLAN	120	
									2					604	01600	2	EACH	CATCH BASIN, NO. 5		
						16	12	9	7					604	09000	44	EACH	CATCH BASIN ADJUSTED TO GRADE		
								4	4					604	10901	8	EACH	INLET, MEDIAN, 1.8M, AS PER PLAN	119	
								1	1					604	11301	2	EACH	INLET, MEDIAN, 2.4M, AS PER PLAN	119	
								2	4					604	11701	6	EACH	INLET, MEDIAN, 3.0M, AS PER PLAN	119	
						1								604	12101	1	EACH	INLET, MEDIAN, 3.6M, AS PER PLAN	119	
						6	5	5	1					604	14602	17	EACH	INLET, NO. 3B1270		
						1								604	14603	1	EACH	INLET, NO. 3B1270, AS PER PLAN	121	
						1								604	15200	1	EACH	INLET, NO. 3D1270, TYPE B1		
						4								604	15201	4	EACH	INLET, NO. 3D1270, TYPE B1, AS PER PLAN	121	
							4	1						604	17500	5	EACH	INLET, PAVEMENT, 1.8M		
								2						604	17900	2	EACH	INLET, PAVEMENT, 2.4M		
						4	8	15	16					604	20601	43	EACH	INLET ADJUSTED TO GRADE, AS PER PLAN	13	
									3					604	20801	3	EACH	INLET RECONSTRUCTED TO GRADE, AS PER PLAN	13	
									1					604	31500	1	EACH	MANHOLE, NO. 3		
							3		2					604	34500	5	EACH	MANHOLE ADJUSTED TO GRADE		
								1	1					604	35501	2	EACH	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN	122	
		3500												SPECIAL	604 50000	3500	KILOGRAM	MISCELLANEOUS METAL		
		2729	1444		2564	2364								605	05101	9101	METER	100mm SHALLOW PIPE UNDERDRAIN, AS PER PLAN	13	
		757.5	237.5		556.5	107								605	05201	1659	METER	100mm UNCLASSIFIED PIPE UNDERDRAIN, AS PER PLAN	13	
		28												605	13301	28	METER	150mm UNCLASSIFIED PIPE UNDERDRAIN, AS PER PLAN	13	

GENERAL SUMMARY

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# GENERAL SUMMARY

FROM SHEET NO.																		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
12	43	44	45	48	49	50	52	53	54	55	92	103	109	110										
																						PAVEMENT		
				40217	37762	3482													81461	SQ. METER	PAVEMENT PLANING, BITUMINOUS			
				2346	2524	129	1022	279	266										6566	CU. METER	BITUMINOUS AGGREGATE BASE, PG 64-28			
				46	46	885	10007	545	549		1181		67						13326	CU. METER	AGGREGATE BASE			
				416	381														797	SQ. METER	230mm CONCRETE BASE, AS PER PLAN	12		
				14624	13778	1184							810						30396	LITER	TACK COAT			
				14264	13434	1768	5745	373	380				810						36774	LITER	TACK COAT FOR INTERMEDIATE COURSE			
						3092	28306	1097	1117										33612	LITER	BITUMINOUS PRIME COAT			
											814								814	METER	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS	11		
				1515	1441	213	550	38	39				57						3853	CU. METER	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28			
				1390	1310	166	503	35	36				89						3529	CU. METER	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28 AS PER PLAN	12		
												236							236	SQ. METER	210mm PLAIN CONCRETE PAVEMENT			
			11060																11060	SPECIAL	SEALING OF CONCRETE SURFACES (EPOXY)	12		
													148						148	SQ. METER	100mm CONCRETE WALK			
												4							4	EACH	CURB RAMP, TYPE 1			
												6							6	EACH	CURB RAMP, TYPE 2			
											9471								9923	METER	COMBINATION CURB AND GUTTER, TYPE 2	12		
											239								239	METER	CURB, TYPE 2-B, AS PER PLAN			
												288							288	SQ. METER	REINFORCED CONCRETE APPROACH SLAB (T=380mm)			
												121							121	SQ. METER	APPROACH SLAB, MISCELLANEOUS: WDENING			
											2012								2012	SQ. METER	100mm CONCRETE MEDIAN			
											4								4	METER	CONCRETE BARRIER, TYPE B, REINFORCED	87		
											2104								2104	METER	CONCRETE BARRIER, TYPE B-1270			
											290								290	METER	CONCRETE BARRIER, TYPE B-1270, AS PER PLAN	5		
											15								15	METER	CONCRETE BARRIER, TYPE B-1270, AS PER PLAN A	82		
											15								15	METER	CONCRETE BARRIER, TYPE B-1270, AS PER PLAN B	82		
											91								91	METER	CONCRETE BARRIER, TYPE B-1270, AS PER PLAN C	85		
											156								156	METER	CONCRETE BARRIER, TYPE B-1270, AS PER PLAN D	86		
																					SANITARY SEWER			
															5.5				5.5	METER	200mm CONDUIT, TYPE B, FOR SANITARY	13		
														6.5					6.5	METER	450mm CONDUIT, TYPE B, FOR SANITARY	13		
														1					1	EACH	MANHOLE, NO. 3			
														1	1				1	EACH	MANHOLE, NO. 3, AS PER PLAN	118		

**GENERAL SUMMARY**

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# GENERAL SUMMARY

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FROM SHEET NO.																ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
125	126	127	128	129	130	131	132	148	149												
																621	00100	906	EACH	TRAFFIC CONTROL RAISED PAVEMENT MARKER	
																625	32000	3	EACH	GROUND ROD	
																626	00100	282	EACH	BARRIER REFLECTOR, TYPE A	
																626	00200	275	EACH	BARRIER REFLECTOR, TYPE B	
																630	02100	304.3	METER	GROUND MOUNTED SUPPORT, NO. 2 POST	
																630	03100	243.3	METER	GROUND MOUNTED SUPPORT, NO. 3 POST	
																630	04100	116.1	METER	GROUND MOUNTED SUPPORT, NO. 4 POST	
																630	04101	10.8	METER	GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN	124
																630	06100	9.8	METER	GROUND MOUNTED SUPPORT, NO. 6 POST	
																630	06400	61.6	METER	GROUND MOUNTED SUPPORT, S100x11.5 BEAM	
																630	06500	10.2	METER	GROUND MOUNTED SUPPORT, W150x13.5 BEAM	
																630	07000	13.0	METER	GROUND MOUNTED SUPPORT, W200x26.6 BEAM	
																630	07500	45.1	METER	GROUND MOUNTED SUPPORT, W250x32.7 BEAM	
																630	08004	41.1	METER	ONE WAY SUPPORT, NO. 3 POST	
																630	08100	14.7	METER	ONE WAY SUPPORT, NO. 4 POST	
																630	08500	10	EACH	STREET NAME SIGN SUPPORT	
																630	08501	1	EACH	STREET NAME SIGN SUPPORT, AS PER PLAN	124
																630	09000	20	EACH	BREAKAWAY BEAM CONNECTION	
																630	30200	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-9.30M, DESIGN 2	
																630	30300	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-9.30M, DESIGN 3	
																630	30900	1	EACH	COMBINATION OVERHEAD SIGN SUPPORT, TYPE TC-9.30M, DESIGN 4	
																630	79000	4	EACH	SIGN HANGER ASSEMBLY, SPAN WIRE	
																630	79500	1	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
																630	79600	1	EACH	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED	
																630	80100	5.52	SQ. METER	SIGN, FLAT SHEET	
																630	80102	110.24	SQ. METER	SIGN, FLAT SHEET, TYPE G	
																630	80204	137.31	SQ. METER	SIGN, EXTRUSHEET, TYPE G	
																630	80506	13	EACH	SIGN, DOUBLE FACED, STREET NAME, TYPE G	
																630	82000	12	EACH	SIGN BACKING ASSEMBLY	
																630	84500	24	EACH	GROUND MOUNTED BEAM SUPPORT FOUNDATION	
																630	84510	3	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
																630	84900	103	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
																630	85500	4	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE	
																630	86002	89	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
																630	86204	8	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND STORAGE	
																630	87000	16	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	
																630	87500	52	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
																630	88100	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE TC-12.30 M	
																630	88200	7	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE TC-9.30M	
																631	84000	3	EACH	SIGN SERVICE	
																631	84300	6	EACH	SIGN WIRE	
																631	85304	3	EACH	DISCONNECT SWITCH WITH ENCLOSURE, 15 AMP	
																631	87010	2	EACH	BALLAST, TYPE CMRI-100-240, INTEGRAL	
																631	87206	8	EACH	BALLAST, TYPE CMRI-175-240, INTEGRAL	
																631	89100	2	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21M WITH 100 WATT LAMP	
																631	89200	8	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21M WITH 175 WATT LAMP	
																631	94000	19	EACH	REMOVAL OF LUMINAIRE AND STORAGE	
																631	94300	9	EACH	REMOVAL OF DISCONNECT SWITCH AND STORAGE	
																631	94408	13	EACH	REMOVAL OF SIGN WIRING AND DISPOSAL	
																631	94412	9	EACH	REMOVAL OF SIGN SERVICE AND DISPOSAL	
																643	00100	24.07	KILOMETER	EDGE LINE	
																643	00200	11.68	KILOMETER	LANE LINE	
																643	00300	0.10	KILOMETER	CENTER LINE	
																643	00400	1582.92	METER	CHANNELIZING LINE	
																643	00500	232.21	METER	STOP LINE	
																643	00700	225.90	METER	TRANSVERSE LINE	
																643	00900	32	SQ. METER	ISLAND MARKING	
																643	01000	4	EACH	RAILROAD SYMBOL MARKING	
																643	01300	27	EACH	LANE ARROW	
																643	01410	11	EACH	WORD ON PAVEMENT, 2500mm	

GENERAL SUMMARY

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# GENERAL SUMMARY

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FROM SHEET NO.														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.		
												124	156	156A							
TRAFFIC SIGNALS																					
													270			625	25400	270	METER	CONDUIT, 51mm, 713.04	
													3			625	25500	3	METER	CONDUIT, 76mm, 713.04	
													273			625	29000	273	METER	TRENCH	
													6			625	30700	6	EACH	PULL BOX, 713.08, 450mm	
													1			625	30706	1	EACH	PULL BOX, 713.08, 600mm	
													4			625	32000	4	EACH	GROUND ROD	
													5			632	00301	5	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION, 300mm LENS, 1-WAY, AS PER PLAN	123
													2			632	00501	2	EACH	VEHICULAR SIGNAL HEAD, 5 SECTION, 300mm LENS, 1-WAY, AS PER PLAN	123
													1			632	01251	1	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION 300mm/5 SECTION 300mm LENS, 2-WAY, AS PER PLAN	123
													8			632	25000	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
													8	2		632	26500	10	EACH	DETECTOR LOOP	123
													5			632	27005	5	EACH	LOOP DETECTOR UNIT, AS PER PLAN	
													2			632	27009	2	EACH	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN	123
													72			632	30300	72	METER	MESSENGER WIRE, 7 STRAND, 11mm DIAMETER WITH ACCESSORIES	
													169			632	40500	169	METER	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
													71			632	40700	71	METER	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
													3			632	64000	3	EACH	STRAIN POLE FOUNDATION	
													639			632	65200	639	METER	LOOP DETECTOR LEAD-IN CABLE	
													22			632	67200	22	METER	POWER CABLE, 2 CONDUCTOR, NO. 8 AWG	
													1			632	70000	1	EACH	POWER SERVICE	
													1			632	82700	1	EACH	STRAIN POLE, TYPE TC-81.10M, DESIGN 7	
													1			632	82800	1	EACH	STRAIN POLE, TYPE TC-81.10M, DESIGN 8	
													1			632	82900	1	EACH	STRAIN POLE, TYPE TC-81.10M, DESIGN 9	
													1			632	90102	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION FOR STORAGE	
												LUMP				632	90300	LUMP		SIGNALIZATION MISC.: PERFORMANCE TEST OF MODIFIED EXISTING TRAFFIC CONTROL SYSTEM	124
													1			633	34001	1	EACH	CONTROLLER, ACTUATED, 4 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN	123
													2			633	69900	2	EACH	RELAY, CALLING	
													1.40			633	70000	1.40	CU. METER	CONCRETE FOR CABINET FOUNDATION	
													1.04			633	70500	1.04	SQ. METER	CONTROLLER WORK PAD	
FOR RETAINING WALLS																					
																				FOR STRUCTURE NO. BEL-7-32283 L/R	202
																				FOR STRUCTURE NO. BEL-7-36164	202
																				FOR STRUCTURE NO. BEL-7-36368 L/R	202
																				FOR STRUCTURE NO. BEL-7-36683 L/R	202

**GENERAL SUMMARY**

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# NORTHBOUND S.R. 7 PAVEMENT RESURFACING QUANTITIES

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NOTE:  
For Sidestreet Pavement Quantities, See Sheet No. 103

⊗ COMPUTER AREA

LOCATION	STATION		LENGTH	WIDTH	AREA	202		203		254	301		304	305	407	407	446				REMARKS		
						CONCRETE BASE REMOVED	WEARING COURSE REMOVED	SUBGRADE COMPACTION	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	PAVEMENT PLANING, BITUMINOUS	THICKNESS	BITUMINOUS AGGREGATE BASE, PG 64-28	150mm AGGREGATE BASE	230mm CONCRETE BASE, AS PER PLAN	TACK COAT	TACK COAT FOR INTERMEDIATE COURSE	THICKNESS	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28, AS PER PLAN		THICKNESS		ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28	
																		Sq. Meter	Sq. Meter			Sq. Meter	Cu. Meter
FROM	TO	Meter	Meter	Meter	Sq. Meter	Sq. Meter	Sq. Meter	Cu. Meter	Sq. Meter	mm	Cu. Meter	Cu. Meter	Sq. Meter	Liter	Liter	mm	Cu. Meter	mm	Cu. Meter				
Feathered Area	36+641.322	36+651.582	10.260	7.315	75.052				75.052	50	3.753				25.518	25.518	32	2.402	35	2.627	See Detail on Sheet No. 81		
	36+651.582	36+664.578	12.996	7.315	95.066				95.066					32.322	32.322	32	3.042	51	4.848				
	36+664.578	36+675.522	10.944	7.315	80.055				80.055					27.219		48	3.843						
BEL-7-36683																							
Feathered Area	36+806.738	36+817.682	10.944	7.315	80.055				80.055					27.219		48	3.843			See Detail on Sheet No. 81			
	36+817.682	36+830.678	12.996	7.315	95.066				95.066					32.322	32.322	32	3.042	51	4.848				
	36+830.678	36+834.551	3.873	7.315	28.331				28.331	41	1.162			9.633	9.633	32	0.907	35	0.992				
	36+834.551	36+840.938	6.387	7.456	47.705				47.705	56	2.671			16.220	16.220	32	1.527	35	1.670				
NORTHBOUND	36+840.938	36+910.751	69.813	9.132	637.532				637.532	65	41.440			216.761	216.761	32	20.401	35	22.314				
	36+910.751	36+926.906	16.155	10.668	172.342				172.342	65	5.515			58.596	58.596	32	5.515	35	6.032				
Fifth St.	36+926.906	36+955.253	28.347	12.497	354.252				354.252	65	11.336			120.446	120.446	32	11.336	35	12.399	Includes Area From West Edge Of Median to East Edge of Northbound Pavement			
NORTHBOUND	36+955.253	36+987.409	32.156	8.278	266.187				266.187	65	8.518			90.504	90.504	32	8.518	35	9.317				
	36+987.409	37+213.079	225.670	7.315	1650.776				1650.776	65	52.825			561.264	561.264	32	52.825	35	57.777				
	37+213.079	37+289.279	76.200	8.992	685.190				685.190	65	21.926			232.965	232.965	32	21.926	35	23.982				
	37+289.279	37+305.435	16.156	10.668	172.352				172.352	65	5.515			58.600	58.600	32	5.515	35	6.032				
Mackey Ave.	37+305.435	37+334.420	28.985	12.497	362.226				362.226	65	11.591			123.157	123.157	32	11.591	35	12.678	Includes Area From West Edge Of Median to East Edge of Northbound Pavement			
NORTHBOUND	37+334.420	37+366.577	32.157	8.278	266.196				266.196	65	8.518			90.507	90.507	32	8.518	35	9.317				
	37+366.577	37+567.748	201.171	7.315	1471.566				1471.566	65	47.090			500.332	500.332	32	47.090	35	51.505				
	37+567.748	37+643.948	76.200	8.992	685.190				685.190	65	21.926			232.965	232.965	32	21.926	35	23.982				
	37+643.948	37+660.103	16.155	10.668	172.342				172.342	65	5.515			58.596	58.596	32	5.515	35	6.032				
Jeanette Ave.	37+660.103	37+686.924	26.821	12.497	335.182				335.182	65	10.726			113.962	113.962	32	10.726	35	11.731	Includes Area From West Edge Of Median to East Edge of Northbound Pavement			
NORTHBOUND	37+686.924	37+719.081	32.157	8.278	266.196				266.196	65	8.518			90.507	90.507	32	8.518	35	9.317				
	37+719.081	37+915.782	196.701	7.315	1438.868				1438.868	65	46.044			489.215	489.215	32	46.044	35	50.360				
	37+915.782	37+991.982	76.200	8.992	685.190				685.190	65	21.926			232.965	232.965	32	21.926	35	23.982				
	37+991.982	38+008.136	16.154	10.668	172.331				172.331	65	5.515			58.592	58.592	32	5.515	35	6.032				
Hill St.	38+008.136	38+034.878	26.742	12.497	334.195				334.195	65	10.694			113.626	113.626	32	10.694	35	11.697	Includes Area From West Edge Of Median to East Edge of Northbound Pavement			
NORTHBOUND	38+034.878	38+067.084	32.206	8.278	266.601				266.601	65	8.531			90.644	90.644	32	8.531	35	9.331				
	38+067.084	38+190.650	123.566	7.315	903.885				903.885	65	28.924			307.321	307.321	32	28.924	35	31.636				
Feathered Area	38+190.650	38+210.009	19.359	7.315	141.611									48.148		63	8.921			See Detail on Sheet No. 81			
	38+210.009	38+220.000	9.991	7.315	73.084		73.084							24.849		48	3.508						
TOTAL THIS SHEET						0.000	73.084	0.000	0.000	11799.929	390.179	0.000	0.000	4084.975	3957.540		392.589		410.438				
TOTAL FROM SHEET NO. 42						309.400	2473.777	309.400	66.799	28416.607	1955.945	46.410	415.511	10538.806	10306.916		997.172		1104.247				
S.R. 7 NORTHBOUND TOTALS CARRIED TO GENERAL SUMMARY						309.400	2546.861	309.400	66.799	40216.536	2346.124	46.410	415.511	14623.781	14264.456		1389.761		1514.685				

**S.R. 7 RESURFACING QUANTITIES**

**BEL-7-32.276**

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# RAMP PAVEMENT RESURFACING QUANTITIES

⊗ COMPUTER AREA

LOCATION	STATION		LENGTH	WIDTH	AREA	203	254	301		304		407	407	408	446				REMARKS
						SUBGRADE COMPACTION	PAVEMENT PLANING, BITUMINOUS	THICKNESS	BITUMINOUS AGGREGATE BASE, PG 64-28	COMPUTER END AREA	AGGREGATE BASE	TACK COAT	TACK COAT FOR INTERMEDIATE COURSE	BITUMINOUS PRIME COAT	THICKNESS	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28, AS PER PLAN	THICKNESS	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28	
						Sq. Meter	Sq. Meter	mm	Cu. Meter	Sq. Meter	Cu. Meter	Liter	Liter	Liter	mm	Cu. Meter	mm	Cu. Meter	
FROM	TO	Meter	Meter	Sq. Meter	Sq. Meter	Sq. Meter	mm	Cu. Meter	Sq. Meter	Cu. Meter	Liter	Liter	Liter	mm	Cu. Meter	mm	Cu. Meter		
<b>RAMP C</b>																			
Feathered Area	32+751.519	32+757.519	6.000		128.147⊗		128.147					43.570	43.570		32	4.101	35	4.101	See Detail on Sheet No. 81
Returns	32+757.519	32+772.843	15.329		159.154⊗		159.154					54.112	54.112		32	5.093	35	7.162	
Ramp C Pavement	32+772.848	32+843.740	70.892	7.920	561.465		561.465					190.898	190.898		32	17.967	35	25.266	
	32+843.740	32+874.220	30.480	Avg. 6.706	204.399		204.399					69.496	69.496		32	6.541	35	9.198	
	32+874.220	32+910.243	36.028	5.486	197.650		197.650					67.201	67.201		32	6.325	35	8.894	
	32+910.243	32+940.723	30.480	Avg. 5.030	153.314		153.314					52.127	52.127		32	4.906	35	6.899	
<b>RAMP D</b>																			
Feathered Area	32+637.348	32+643.348	6.000		85.803⊗		85.803					29.173	29.173		32	2.746	35	2.746	See Detail on Sheet No. 81
Returns	32+643.348	32+653.692	10.344		100.877⊗		100.877					34.298	34.298		32	3.228	35	4.539	
Ramp D Pavement	32+653.692	32+760.838	107.146	7.920	848.596		848.596					288.523	288.523		32	27.155	35	38.187	
Feathered Area	32+735.281	32+760.838	25.557		78.726⊗		78.726					26.767	26.767		32	2.519	35	2.519	See Detail on Sheet No. 81
Returns	32+760.838	32+776.965	16.127		36.393⊗		36.393					12.374	12.374		32	1.165	35	1.638	
Ramp D Pavement	32+776.965	32+904.076	127.111	5.486	697.331		697.331					237.093	237.093		32	22.315	35	31.380	
	32+904.076	32+949.808	45.732	Avg. 5.030	230.032		230.032					78.211	78.211		32	7.361	35	10.351	

## PULL OFF AREA QUANTITIES

<b>S.R. 7 ~ RT.</b>																			
Taper Area	34+156.000	34+172.000	16.000	1.524	24.384	24.384		75	1.829	0.713	11.408				32	0.780	35	0.853	See Plan Sheet No. 62
	34+172.000	34+276.040	104.040	3.048	317.114	317.114		75	23.784	1.607	167.192				32	10.148	35	11.099	See Plan Sheet No. 62
Taper Area	34+276.040	34+337.040	61.000	1.524	92.964	92.964		75	6.972	0.713	43.493				32	2.975	35	3.254	See Plan Sheet No. 62
Taper Area	34+948.000	34+964.000	16.000	1.524	24.384	24.384		75	1.829	0.713	11.408				32	0.780	35	0.853	See Plan Sheet No. 63
	34+964.000	35+109.040	145.040	3.048	442.082	442.082		75	33.156	1.607	233.079				32	14.147	35	15.473	See Plan Sheet No. 63
Taper Area	35+109.040	35+170.040	61.000	1.524	92.964	92.964		75	6.972	0.713	43.493				32	2.975	35	3.254	See Plan Sheet No. 63
<b>S.R. 7 ~ LT.</b>																			
Taper Area	34+983.960	35+044.960	61.000	1.524	92.964	92.964		75	6.972	0.713	43.493				32	2.975	35	3.254	See Plan Sheet No. 63
	35+044.960	35+244.000	199.040	3.048	606.674	606.674		75	45.501	1.607	319.857				32	19.414	35	21.235	See Plan Sheet No. 63
Taper Area	35+244.000	35+260.000	16.000	1.524	24.384	24.384		75	1.829	0.713	11.408				32	0.780	35	0.853	See Plan Sheet No. 63
PAVEMENT TOTALS CARRIED TO GENERAL SUMMARY						1717.914	3481.887		128.844		884.831	1183.843	1767.936	3092.243		166.396		213.008	

**RAMP RESURFACING QUANTITIES & PULL OFF AREA QUANTITIES**

**BEL-7-32.276**

CALCULATED  
WCR  
CHECKED  
LVM



# MEDIAN SHOULDER QUANTITIES

LOCATION	STATION		LENGTH Meter	TOTAL SHOULDER WIDTH Meter	TOTAL SHOULDER AREA Sq. Meter	TOTAL MEDIAN WIDTH Meter	TOTAL MEDIAN AREA Sq. Meter	203			301		304		407	408	446			REMARKS				
	FROM	TO						COMPUTER AVERAGE END AREA Sq. Meter	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION Cu. Meter	SUBGRADE COMPACTION Sq. Meter	THICKNESS mm	BITUMINOUS AGGREGATE BASE, PG 64-28 Cu. Meter	COMPUTER AVERAGE END AREA Sq. Meter	AGGREGATE BASE Cu. Meter	TACK COAT FOR INTERMEDIATE COURSE Liter	BITUMINOUS PRIME COAT Liter	THICKNESS mm	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28 AS PER PLAN Cu. Meter	THICKNESS mm		ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28 Cu. Meter			
Median Shoulder	35+311.476	35+314.524	3.048	3.506	10.686	5.182	15.795	2.893	8.8	15.8	65	0.695	2.479	7.556	3.633	19.235	32	0.342	35	0.374				
Median Shoulder	35+314.524	35+326.716	12.192	3.810 Avg.	46.452	5.182	63.179	2.893	35.3	63.2	65	3.019	2.521	30.736	15.794	83.614	32	1.486	35	1.626				
Median Shoulder	35+326.716	35+419.779	93.063	4.114	382.862	5.182	482.252	2.893	269.2	482.3	65	24.886	2.563	238.520	130.173	689.152	32	12.252	35	13.400				
Median Shoulder	35+419.779	35+428.923	9.144	4.192 Avg.	38.332	5.182	47.384	2.893	26.5	47.4	65	2.492	2.570	23.500	13.033	68.998	32	1.227	35	1.342				
Median Shoulder	35+428.923	35+437.000	8.077	3.962	32.002	5.182	41.855	2.063	16.7	41.9	65	2.080	2.071	16.727	10.881	57.604	32	1.024	35	1.120				
Median Shoulder	35+437.000	35+438.524	1.524	4.116 Avg.	6.272	5.182	7.897	2.893	4.4	7.9	65	0.408	2.730	4.161	2.132	11.290	32	0.201	35	0.220				
Median Shoulder	35+438.524	35+466.700	109.495	4.268	467.324	5.182	567.403	2.893	316.8	567.4	65	30.376	2.717	297.498	158.890	841.183	32	14.954	35	16.356				
For Hanover St. Median and Turn Lane Quantities, See Sheet No. 49																								
Median Shoulder	35+886.100	35+951.476	65.376	4.268	279.024	5.182	338.778	2.893	189.1	338.8	65	18.137	2.717	177.627	94.868	502.243	32	8.929	35	9.766				
Median Shoulder	35+951.476	35+953.000	1.524	4.116 Avg.	6.272	5.182	7.897	2.893	4.4	7.9	65	0.408	2.730	4.161	2.132	11.290	32	0.201	35	0.220				
Median Shoulder	35+953.000	35+961.077	8.077	3.962	32.002	5.182	41.855	2.063	16.7	41.9	65	2.080	2.071	16.727	10.881	57.604	32	1.024	35	1.120				
Median Shoulder	35+961.077	35+970.221	9.144	4.192 Avg.	38.332	5.182	47.384	2.893	26.5	47.4	65	2.492	2.563	23.436	13.033	68.998	32	1.227	35	1.342				
Median Shoulder	35+970.221	35+993.284	23.063	4.114	94.082	5.182	119.512	2.893	66.7	119.5	65	6.167	2.563	59.110	31.988	170.788	32	3.036	35	3.321				
Median Shoulder	35+993.284	36+005.476	12.192	3.810 Avg.	46.452	5.182	63.179	2.893	35.3	63.2	65	3.019	2.521	30.736	15.794	83.614	32	1.486	35	1.626				
Median Shoulder	36+005.476	36+008.524	3.048	3.506	10.686	5.182	15.795	2.893	8.8	15.8	65	0.695	2.479	7.556	3.633	19.235	32	0.342	35	0.374				
Median Shoulder	36+008.524	36+020.716	12.192	3.810 Avg.	46.452	5.182	63.179	2.893	35.3	63.2	65	3.019	2.521	30.736	15.794	83.614	32	1.486	35	1.626				
Median Shoulder	36+020.716	36+144.249	123.533	4.114	508.214	5.182	640.148	2.893	357.4	640.1	65	33.034	2.563	316.615	172.793	914.785	32	16.263	35	17.787				
Median Shoulder	36+144.249	36+162.537	18.288	3.582 Avg.	65.508	5.182	94.768	2.893	52.9	94.8	65	4.258	2.463	45.043	22.273	117.914	32	2.096	35	2.293				
Median Shoulder	36+162.537	36+165.585	3.048	3.048	9.290	5.182	15.795	2.893	8.8	15.8	65	0.604	2.430	7.407	3.159	16.722	32	0.297	35	0.325				
Median Shoulder	36+165.585	36+183.873	18.288	3.582 Avg.	65.508	5.182	94.768	2.893	52.9	94.8	65	4.258	2.463	45.043	22.273	117.914	32	2.096	35	2.293				
Median Shoulder	36+183.873	36+360.679	176.806	4.114	727.380	5.182	916.209	2.893	511.5	916.2	65	47.280	2.495	441.131	247.309	1309.284	32	23.276	35	25.458				
Structure BEL-7-36368																								
For Barrier Transition, See Sheet No. 82																								
Median Shoulder	36+413.897	36+521.284	107.387	4.114	441.790	5.182	556.479	2.893	310.7	556.5	65	28.716	2.563	275.233	150.209	795.222	32	14.137	35	15.463				
Median Shoulder	36+521.284	36+533.476	12.192	3.810 Avg.	46.452	5.182	63.179	2.893	35.3	63.2	65	3.019	2.521	30.736	15.794	83.614	32	1.486	35	1.626				
Median Shoulder	36+533.476	36+536.524	3.048	3.506	10.686	5.182	15.795	2.893	8.8	15.8	65	0.695	2.479	7.556	3.633	19.235	32	0.342	35	0.374				
Median Shoulder	36+536.524	36+548.716	12.192	3.810 Avg.	46.452	5.182	63.179	2.893	35.3	63.2	65	3.019	2.521	30.736	15.794	83.614	32	1.486	35	1.626				
Median Shoulder	36+548.716	36+656.776	108.060	4.114	444.558	5.182	559.967	2.893	312.6	560.0	65	28.896	2.563	276.958	151.150	800.204	32	14.226	35	15.560				
Median Shoulder	36+656.776	36+665.920	9.144	4.192 Avg.	38.332	5.182	47.384	2.893	26.5	47.4	65	2.492	2.259	20.656	13.033	68.998	32	1.227	35	1.342				
Median Shoulder	36+665.920	36+673.997	8.077	3.962	32.002	5.182	41.855	2.063	16.7	41.9	65	2.080	2.071	16.727	10.881	57.604	32	1.024	35	1.120				
Median Shoulder	36+673.997	36+675.522	1.525	4.116 Avg.	6.276	5.182	7.903	2.893	4.4	7.9	65	0.408	2.730	4.163	2.134	11.297	32	0.201	35	0.220				
Structure BEL-7-36683																								
Median Shoulder	36+806.738	36+834.551	27.813	4.268	118.706	5.182	144.127	2.893	80.5	144.1	65	7.716	2.409	67.002	40.360	213.671	32	3.799	35	4.155				
Median Shoulder	36+834.551	36+910.751	76.200	2.592 Avg.	197.510	3.506 Avg.	267.157	1.749	133.3	267.2	65	12.838	1.860	141.732	67.153	355.518	32	6.320	35	6.913				
Median Shoulder	36+910.751	36+926.906	16.155	0.914	14.766	1.829	29.547	0.604	9.8	29.5	65	0.960	1.003	16.203	5.020	26.579	32	0.473	35	0.517				
SUB-TOTAL																								
									3017.9	5482.0		280.246		2711.728	1465.627	7760.637		137.966		150.905				
DEDUCT FOR PIERS OF BEL-7-36164																								
												2.1	3.4		1.963									
									3015.8	5478.6		280.246		2709.765	1465.627	7760.637		137.966		150.905				
TOTALS CARRIED TO SHEET NO. 48																								

CALCULATED  
SAH  
CHECKED  
WCR

MEDIAN SHOULDER QUANTITIES

BEL-7-32.276

47  
242

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# MEDIAN SHOULDER QUANTITIES

CALCULATED  
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CHECKED  
WCR

LOCATION	STATION		LENGTH Meter	TOTAL SHOULDER WIDTH Meter	TOTAL MEDIAN AREA Sq. Meter	TOTAL MEDIAN WIDTH Meter	TOTAL SHOULDER AREA Sq. Meter	203			301		304		407	408	446				REMARKS		
	FROM	TO						COMPUTER AVERAGE END AREA Sq. Meter	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION Cu. Meter	SUBGRADE COMPACTION Sq. Meter	THICKNESS mm	BITUMINOUS AGGREGATE BASE, PG 64-28 Cu. Meter	COMPUTER AVERAGE END AREA Sq. Meter	AGGREGATE BASE Cu. Meter	TACK COAT FOR INTERMEDIATE COURSE Liter	BITUMINOUS PRIME COAT Liter	THICKNESS mm	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28, AS PER PLAN Cu. Meter	THICKNESS mm	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28 Cu. Meter			
Fifth St.																						No Median Work	
Median Shoulder	36+955.862	36+987.409	31.547	3.354 Avg.	134.611	4.267 Avg.	105.808	2.276	71.8	134.6	65	6.878	2.275	71.769	45.768	190.454	32	3.386	35	3.703			
Median Shoulder	36+987.409	37+213.079	225.670	4.268	1169.422	5.182	963.160	2.893	652.9	1169.4	65	62.605	2.717	613.145	397.603	1733.688	32	30.821	35	33.711			
Median Shoulder	37+213.079	37+289.279	76.200	2.592 Avg.	267.157	3.506 Avg.	197.510	1.749	133.3	267.2	65	12.838	1.860	141.732	90.833	355.518	32	6.320	35	6.913			
Median Shoulder	37+289.279	37+305.435	16.156	0.914	29.549	1.829	14.766	0.604	9.8	29.5	65	0.960	1.003	16.204	10.047	26.579	32	0.473	35	0.517			
Mackey Ave.																						No Median Work	
Median Shoulder	37+335.030	37+366.577	31.547	3.354 Avg.	134.611	4.267 Avg.	105.808	2.276	71.8	134.6	65	6.878	2.275	71.769	45.768	190.454	32	3.386	35	3.703			
Median Shoulder	37+366.577	37+567.748	201.171	4.268	1042.468	5.182	858.598	2.893	582.0	1042.5	65	55.809	2.717	546.582	354.439	1545.476	32	27.475	35	30.051			
Median Shoulder	37+567.748	37+643.948	76.200	2.592 Avg.	267.157	3.506 Avg.	197.510	1.749	133.3	267.2	65	12.838	1.860	141.732	90.833	355.518	32	6.320	35	6.913			
Median Shoulder	37+643.948	37+660.104	16.156	0.914	29.549	1.829	14.766	0.604	9.8	29.5	65	0.960	1.003	16.204	10.047	26.579	32	0.473	35	0.517			
Jeanette Ave.																						No Median Work	
Median Shoulder	37+687.534	37+719.081	31.547	3.354 Avg.	134.611	4.267 Avg.	105.808	2.276	71.8	134.6	65	6.878	2.275	71.769	45.768	190.454	32	3.386	35	3.703			
Median Shoulder	37+719.081	37+915.782	196.701	4.268	1019.305	5.182	839.520	2.893	569.1	1019.3	65	54.569	2.717	534.437	346.564	1511.136	32	26.865	35	29.383			
Median Shoulder	37+915.782	37+991.982	76.200	2.592 Avg.	267.157	3.506 Avg.	197.510	1.749	133.3	267.2	65	12.838	1.860	141.732	90.833	355.518	32	6.320	35	6.913			
Median Shoulder	37+991.982	38+008.136	16.154	0.914	29.546	1.829	14.764	0.604	9.8	29.5	65	0.960	1.003	16.202	10.046	26.575	32	0.472	35	0.517			
Hill St.																						No Median Work	
Median Shoulder	38+035.537	38+067.084	31.547	3.354 Avg.	134.611	4.267 Avg.	105.808	2.276	71.8	134.6	65	6.878	2.275	71.769	45.768	190.454	32	3.386	35	3.703			
Median Shoulder	38+067.084	38+068.608	1.524	4.116 Avg.	7.897	5.182	6.272	2.893	4.4	7.9	65	0.408	2.730	4.161	2.685	11.290	32	0.201	35	0.220			
Median Shoulder	38+068.608	38+076.685	8.077	3.962	41.855	5.182	32.002	2.063	16.7	41.9	65	2.080	2.071	16.727	14.231	57.604	32	1.024	35	1.120			
Median Shoulder	38+076.685	38+085.829	9.144	4.192 Avg.	47.384	5.182	38.332	2.893	26.5	47.4	65	2.492	2.563	23.436	16.111	68.998	32	1.227	35	1.342			
Median Shoulder	38+085.829	38+190.650	104.821	4.114	543.182	5.182	431.234	2.893	303.2	543.2	65	28.030	2.563	268.656	184.682	776.221	32	13.799	35	15.093			
Median Shoulder	38+190.650	38+220.000	29.350	1.728	152.092	5.182	50.716	2.151	63.1	152.1	65	3.297	2.063	60.549	51.711	91.289	32	1.623	35	1.775			
SUB-TOTAL									2934.4	5452.2		278.196		2828.575	1853.737	7703.805		136.957		149.797			
SUB-TOTAL FROM SHEET NO. 46									4933.8	9005.1		463.722		4468.833	2425.614	12841.488		228.295		249.699			
SUB-TOTAL FROM SHEET NO. 47									3015.8	5478.6		280.246		2709.765	1465.627	7760.637		137.966		150.905			
TOTAL CARRIED TO GENERAL SUMMARY									10884.0	19935.9		1022.164		10007.173	5744.978	28305.930		503.218		550.401			

MEDIAN SHOULDER QUANTITIES

BEL-7-32.276

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# MEDIAN SHOULDER AND PAVEMENT TURN LANE QUANTITIES

CALCULATED  
SAH  
CHECKED  
WCR

LOCATION	STATION		LENGTH Meter	TOTAL PAVEMENT WIDTH Meter	TOTAL PAVEMENT AREA Sq. Meter	TOTAL MEDIAN WIDTH Meter	TOTAL MEDIAN AREA Sq. Meter	203			301		304		407	408	446				REMARKS
	FROM	TO						COMPUTER AVERAGE END AREA Sq. Meter	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION Cu. Meter	SUBGRADE COMPACTION Sq. Meter	THICKNESS mm	BITUMINOUS AGGREGATE BASE, PG 64-28 Cu. Meter	COMPUTER AVERAGE END AREA Sq. Meter	AGGREGATE BASE Cu. Meter	TACK COAT FOR INTERMEDIATE COURSE Liter	BITUMINOUS PRIME COAT Liter	THICKNESS mm	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28, AS PER PLAN Cu. Meter	THICKNESS mm	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28 Cu. Meter	
Concrete Median Transition	33+834.000	33+835.524	1.524	4.268 Avg.	6.504	5.182	7.897	2.893	4.4	7.9	65	0.423	2.558 Avg.	3.898	2.211	6.504	32	0.208	35	0.228	
	33+835.524	33+843.400	7.876	4.572	36.009	5.182	40.813	2.893	22.8	40.8	65	2.341	2.709	21.336	12.243	36.009	32	1.152	35	1.260	
Lt. Shoulder				1.295 Avg.	19.425						65	3.195			6.605	19.425	32	0.622	35	0.680	
Rt. Full Depth Pavement Subbase	33+843.400	33+858.400	15.000	3.277 Avg.	49.155	5.182	77.730	2.893	43.4	77.7	260	12.780			16.713	49.155	32	1.573	35	1.720	
													2.042 Avg.	30.630							
Lt. Shoulder	33+858.400	34+078.705	220.305	0.304	66.973						65	4.353			22.771	66.973	32	2.143	35	2.344	
Rt. Full Depth Pavement Subbase	33+858.400	33+944.101	85.701	4.268	365.772	5.182	444.103	2.893	247.9	444.1	260	95.101		2.054	176.030	365.772	32	11.705	35	12.802	
Rt. Full Depth Pavement Subbase	33+944.101	34+020.301	76.200	2.591 Avg.	197.434	3.505	267.081	1.690 Avg.	128.8	267.1	260	51.333		1.425 Avg.	108.585	197.434	32	6.318	35	6.910	
Rt. Full Depth Pavement Subbase	34+020.301	34+078.705	58.404	0.914	53.381	1.828	106.763	0.486	28.4	106.8	260	13.879		0.795	46.431	53.381	32	1.708	35	1.868	
Full Depth Pavement	34+078.705	34+082.175	3.470	1.828	6.343	1.828	6.343	0.486	1.7	6.3	260	1.649	0.602	2.089	2.157	6.343	32	0.203	35	0.222	
Full Depth Pavement	34+117.075	34+117.695	0.620	1.828	1.133	1.828	1.133	0.486	0.3	1.1	260	0.295	0.602	0.373	0.385	1.133	32	0.036	35	0.040	
Rt. Shoulder	34+117.695	34+235.300	117.605	0.304	35.752						65	2.324			12.156	35.752	32	1.144	35	1.251	
Lt. Full Depth Pavement Subbase	34+117.695	34+170.299	52.604	0.914	48.080	1.828	96.160	1.466	25.6	96.2	260	38.330		0.795 Avg.	41.820	48.080	32	1.539	35	1.683	
Lt. Full Depth Pavement Subbase	34+170.299	34+235.300	65.001	2.268 Avg.	147.422	3.182	206.833	1.466 Avg.	95.3	206.8	260	38.330		1.295 Avg.	84.176	147.422	32	4.718	35	5.160	
Rt. Shoulder				1.195 Avg.	16.104						65	2.652			5.475	16.104	32	0.515	35	0.564	
Lt. Full Depth Pavement Subbase	34+235.300	34+248.776	13.475	3.028 Avg.	40.805	4.832	206.833	1.466 Avg.	95.3	206.8	260	10.609		1.938 Avg.	26.116	40.805	32	1.306	35	1.428	
Rt. Shoulder				2.106 Avg.	2.510						65	0.180			0.853	2.510	32	0.080	35	0.088	
Lt. Full Depth Pavement Subbase	34+248.776	34+249.968	1.192	2.324 Avg.	2.770	5.156	206.833	1.466 Avg.	95.3	206.8	260	0.720		2.129 Avg.	2.538	2.770	32	0.089	35	0.097	
Rt. Shoulder				2.130 Avg.	0.707						65	0.047			0.240	0.707	32	0.023	35	0.025	
Lt. Full Depth Pavement Subbase	34+249.968	34+250.300	0.332	2.174 Avg.	0.722	5.182	206.833	1.466 Avg.	95.3	206.8	260	0.188		2.175	0.722	0.722	32	0.023	35	0.025	
TOTAL CARRIED TO GENERAL SUMMARY									884.5	1875.2		278.729		544.744	372.980	1097.001		35.105		38.395	

MEDIAN SHOULDER AND PAVEMENT QUANTITIES

BEL-7-32.276

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# MEDIAN SHOULDER AND PAVEMENT QUANTITIES

CALCULATED  
SAH  
CHECKED  
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LOCATION	STATION		LENGTH Meter	TOTAL PAVEMENT WIDTH Meter	TOTAL PAVEMENT AREA Sq. Meter	TOTAL MEDIAN WIDTH Meter	TOTAL MEDIAN AREA Sq. Meter	203			301		304		407	408	446			REMARKS	
								COMPUTER AVERAGE END AREA Sq. Meter	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION Cu. Meter	SUBGRADE COMPACTION Sq. Meter	THICKNESS mm	BITUMINOUS AGGREGATE BASE, PG 64-28 Cu. Meter	COMPUTER AVERAGE END AREA Sq. Meter	AGGREGATE BASE Cu. Meter	TACK COAT FOR INTERMEDIATE COURSE Liter	BITUMINOUS PRIME COAT Liter	THICKNESS mm	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28, AS PER PLAN Cu. Meter	THICKNESS mm		ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28 Cu. Meter
Lt. Shoulder				2.136 Avg.	3.255						65	0.212			1.107	3.255	32	0.104	35	0.114	
Rt. Full Depth Pavement Subbase	35+466.700	35+468.224	1.524	2.284 Avg.	3.481						260	0.905			1.184	3.481	32	0.111	35	0.122	
						5.182	7.897	2.893	4.4	7.9			2.411 Avg.	3.6744							
Lt. Shoulder				1.084 Avg.	14.608						65	2.935			4.967	14.608	32	0.467	35	0.511	
Rt. Full Depth Pavement Subbase	35+468.224	35+481.700	13.476	3.351 Avg.	45.158						260	11.741			15.354	45.158	32	1.445	35	1.581	
						5.182	69.833	2.893	39.0	69.8			2.079 Avg.	28.017							
Lt. Shoulder	35+481.700	35+682.005	200.305	0.304	60.893						65	3.958			20.704	60.893	32	1.949	35	2.131	
Rt. Full Depth Pavement Subbase	35+481.700	35+548.019	66.319	4.268	283.049						260	73.593			96.237	283.049	32	9.058	35	9.907	
						5.182	343.665	2.893	191.9	343.7			2.054	136.219							
Rt. Full Depth Pavement Subbase	35+548.019	35+624.219	76.200	2.591 Avg.	197.434						260	51.333			67.128	197.434	32	6.318	35	6.910	
						3.505 Avg.	267.081	1.690 Avg.	128.8	267.1			1.425 Avg.	108.585							
Rt. Full Depth Pavement Subbase	35+624.219	35+682.005	57.786	0.914	52.816						260	13.732			17.957	52.816	32	1.690	35	1.849	
						1.828	105.633	0.486	28.1	105.6			0.795	45.940							
Rt. Full Depth Pavement	35+682.005	35+685.455	3.450	1.828	6.307	1.828	6.307	0.486	1.7	6.3	260	1.640	0.602	2.077	2.144	6.307	32	0.202	35	0.221	
Lt. Full Depth Pavement	35+715.143	35+720.695	5.552	1.828	10.149	1.828	10.149	0.486	22.7	10.1	260	2.639	0.602	3.342	3.451	10.149	32	0.325	35	0.355	
Rt. Shoulder	35+720.695	35+877.100	156.405	0.304	47.547						65	3.091			16.166	47.547	32	1.522	35	1.664	
Lt. Full Depth Pavement Subbase	35+720.695	35+777.017	56.332	0.914	51.478						260	13.384			17.503	51.478	32	1.647	35	1.802	
						1.828	102.957	0.486	27.4	103.0			0.795	44.776							
Lt. Full Depth Pavement Subbase	35+777.017	35+853.217	76.200	2.591 Avg.	197.434						260	51.333			67.128	197.434	32	6.318	35	6.910	
						3.505 Avg.	267.081	1.690 Avg.	128.8	267.1			1.425 Avg.	108.585							
Lt. Full Depth Pavement Subbase	35+853.217	35+877.100	23.883	4.268	101.933						260	26.502			34.657	101.933	32	3.262	35	3.568	
						5.182	123.762	2.893	69.1	123.8			2.054	49.056							
Rt. Shoulder				1.221 Avg.	9.128						65	1.628			3.104	9.128	32	0.292	35	0.319	
Rt. Full Depth Pavement Subbase	35+877.100	35+884.576	7.476	3.351 Avg.	25.052						260	6.514			8.518	25.052	32	0.802	35	0.877	
						5.182	38.741	2.893	21.6	38.7			2.079 Avg.	15.543							
Rt. Shoulder				2.136 Avg.	3.255						65	0.226			1.107	3.255	32	0.104	35	0.114	
Rt. Full Depth Pavement Subbase	35+884.576	35+886.100	1.524	2.284 Avg.	3.481						260	0.905			1.184	3.481	32	0.111	35	0.122	
						5.182	7.897	2.893	4.4	7.9			2.104	3.206							
TOTAL CARRIED TO GENERAL SUMMARY									667.9	1351.0		266.271		549.020	379.600	1116.458		35.727		39.077	

**MEDIAN SHOULDER AND PAVEMENT QUANTITIES**

**BEL-7-32.276**

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⊗ Quantity represents total length of barrier or median after deduction for inlets

CALCULATED  
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### CONCRETE BARRIER AND MEDIAN QUANTITIES

PLAN SHEET NO.	REF. NO.	S.R. 7 STATION		SIDE	612		622					SPECIAL		FOR DETAIL SEE SHEET NO.	
					CONCRETE MEDIAN	CONCRETE BARRIER TYPE B-1270	CONCRETE BARRIER TYPE B-1270, AS PER PLAN	CONCRETE BARRIER TYPE B-1270, AS PER PLAN A	CONCRETE BARRIER TYPE B-1270, AS PER PLAN C	CONCRETE BARRIER TYPE B-1270, AS PER PLAN D	IMPACT ATTENUATOR, G.R.E.A.T. TYPE				
													Sq. Meter		Meter
59	1-M	32+181.761	32+188.031	Rt.	7.088									83	
59	1-AT	32+181.761	32+188.005	Rt.							1			83	
60	2-AT	32+866.063	32+873.302	Lt.							1			84	
59	1-B	32+235.359	32+275.821	☺			40.462								
59	2-B	32+275.821	32+283.441	☺				7.620						82	
60	3-B	32+781.027	32+788.647	☺				7.620						82	
60	4-B	32+788.647	33+062.771	☺			⊗ 249.740								
60	5-B	33+062.771	33+364.066	☺		⊗ 276.911								74	
61	6-B	33+364.066	33+373.210	☺					9.144					74	
61	3-AT	33+373.210	33+381.287	☺							1			85	
61	7-B	33+419.844	33+450.781	☺	28.289									74	
61	4-AT	33+450.781	33+458.858	☺							1			85	
61	8-B	33+458.858	33+468.002	☺					9.144					74	
61	9-B	33+468.002	33+553.276	☺		85.274								74	
61	10-B	33+553.276	33+587.190	☺						33.914				86	
61	11-B	33+587.190	33+816.779	☺		⊗ 205.205								75	
61	12-B	33+816.779	33+825.923	☺					9.144					75	
61	5-AT	33+825.923	33+834.000	☺							1			85	
61	13-B	33+834.000	34+081.718	☺	⊗ 224.282										
62	14-B	34+117.532	34+346.000	☺	208.911										
62	6-AT	34+346.000	34+354.077	☺							1			85	
62	15-B	34+354.077	34+363.221	☺					9.144						
62	16-B	34+363.221	34+564.779	☺		⊗ 195.462									
62	17-B	34+564.779	34+573.923	☺					9.144					76	
62	7-AT	34+573.923	34+582.000	☺							1			76	
62	8-AT	34+612.000	34+620.077	☺							1			76	
62	18-B	34+620.077	34+629.221	☺					9.144					76	
62	19-B	34+629.221	35+299.284	☺		⊗ 639.583									
63	20-B	35+299.284	35+326.716	☺						27.432				86	
63	21-B	35+326.716	35+419.779	☺		93.063									
64	22-B	35+419.779	35+428.923	☺					9.144						
64	9-AT	35+428.923	35+437.000	☺							1			77	
64	23-B	35+437.000	35+684.998	☺	⊗ 218.408									77	
64	24-B	35+715.600	35+953.000	☺	⊗ 210.947									77	
64	10-AT	35+953.000	35+961.077	☺							1			85	
TOTALS CARRIED TO SHEET NO. 52					897.925	1495.498	290.202	15.240		64.008	61.346		10		

CONCRETE BARRIER AND MEDIAN QUANTITIES

BEL-7-32.276

51  
242

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⊗ Quantity represents total length of barrier or median after deduction for inlets

### MEDIAN REMOVAL QUANTITIES

⊙ Quantity represents total length after deduction for existing inlets.

PLAN SHEET NO.	REF. NO.	S.R. 7 STATION		SIDE	LENGTH	WIDTH	202		
		FROM	TO				CONCRETE MEDIAN REMOVED	CURB AND GUTTER REMOVED	
		Meter	Meter				Sq. Meter	Meter	
59	1-R	32+179.294	32+188.005	RT.	8.711	2.256 AVG.	19.652		
59	2-R	32+235.359	32+283.441	℄	48.082	1.219	58.612		
60	3-R	32+781.027	33+082.080	℄	301.053	1.219	366.984		
60	4-R	33+082.080	33+205.951	℄	123.871	2.438 AVG.	⊙ 293.929	247.742	
60	5-R	33+205.951	33+244.128	℄	38.177	3.962	⊙ 134.350	76.354	
60	6-R	33+244.128	33+320.328	℄	76.200	2.286 AVG.	174.193	152.400	
61	7-R	33+320.328	33+382.201	℄	61.873	1.829	113.166		
61	8-R	33+419.235	33+450.781	℄	31.546	3.048 AVG.	96.152	63.092	
61	9-R	33+450.781	33+944.101	℄	493.320	3.962	⊙ 1925.551	986.634	
61	10-R	33+944.101	34+020.301	℄	76.200	2.286 AVG.	174.193	152.406	
62	11-R	34+020.301	34+082.174	℄	61.873	1.829	⊙ 106.476		
62	12-R	34+117.075	34+173.920	℄	56.845	1.829	103.970		
62	13-R	34+173.920	34+249.968	℄	76.048	2.286 AVG.	173.846	152.096	
62	14-R	34+249.968	34+583.636	℄	333.668	3.962	1321.993	667.336	
62	15-R	34+610.389	35+548.019	℄	937.630	3.962	⊙ 3678.662	1875.260	
64	16-R	35+548.019	35+624.219	℄	76.200	2.286 AVG.	174.193	152.400	
64	17-R	35+624.219	35+685.456	℄	61.237	1.829	⊙ 106.427	122.474	
64	18-R	35+715.144	35+777.017	℄	61.873	1.829	⊙ 109.821		
64	19-R	35+777.017	35+853.217	℄	76.200	2.286 AVG.	⊙ 165.832	152.400	
64	20-R	35+853.217	36+368.299	℄	515.082	3.962	⊙ 2028.679	1030.164	
65	21-R	36+406.277	36+683.142	℄	276.865	3.962	⊙ 1072.787	553.730	
66	22-R	36+799.118	36+834.551	℄	35.433	3.962	140.386	70.866	
66	23-R	36+834.551	36+910.751	℄	76.200	2.286 AVG.	174.193	152.400	
66	24-R	36+910.751	36+926.906	℄	16.155	1.829	29.547		
66	25-R	36+955.862	36+987.409	℄	31.547	2.286 AVG.	72.116	63.094	
66	26-R	36+987.409	37+213.079	℄	225.670	3.962	894.105	451.340	
66	27-R	37+213.079	37+289.279	℄	76.200	2.286 AVG.	⊙ 167.225	152.400	
66	28-R	37+289.279	37+305.435	℄	16.155	1.829	⊙ 26.202		
66	29-R	37+335.030	37+366.577	℄	31.547	2.286 AVG.	72.116	63.094	
66	30-R	37+366.577	37+567.748	℄	201.171	3.962	⊙ 784.964	402.342	
67	31-R	37+567.748	37+643.948	℄	76.200	2.286 AVG.	⊙ 167.225	152.400	
67	32-R	37+643.948	37+660.104	℄	16.156	1.829	29.549		
67	33-R	37+687.534	37+719.081	℄	31.547	2.286 AVG.	⊙ 67.935	63.094	
67	34-R	37+719.081	37+915.782	℄	196.701	3.962	⊙ 769.668	393.402	
67	35-R	37+915.782	37+991.932	℄	76.200	2.286 AVG.	⊙ 168.619	152.400	
67	36-R	37+991.982	38+008.136	℄	16.154	1.829	⊙ 26.201		
67	37-R	38+035.537	38+067.084	℄	31.547	2.286 AVG.	72.116	63.094	
67	38-R	38+067.084	38+190.650	℄	123.566	3.962	489.568	247.132	
66	39-R	38+190.650	38+220.000	℄	29.350	4.270	125.325		
60	55-R	32+866.063	32+941.332	LT.	76.200	2.286 AVG.	174.193	152.400	
62	58-R	AETNA ST.		℄	16.154	1.829	29.546		
60	70-R	32+899.939	32+950.423	RT.	50.484	2.185 AVG.	110.308	152.400	
TOTAL CARRIED TO GENERAL SUMMARY							16990.575	9116.346	

### CONCRETE BARRIER AND MEDIAN QUANTITIES

PLAN SHEET NO.	REF. NO.	S.R. 7 STATION		SIDE	612	622						SPECIAL	FOR DETAIL SEE SHEET NO.	
		FROM	TO		CONCRETE MEDIAN	CONCRETE BARRIER TYPE B-1270	CONCRETE BARRIER TYPE B-1270, AS PER PLAN	CONCRETE BARRIER TYPE B-1270, AS PER PLAN A	CONCRETE BARRIER TYPE B-1270, AS PER PLAN B	CONCRETE BARRIER TYPE B-1270, AS PER PLAN C	CONCRETE BARRIER TYPE B-1270, AS PER PLAN D	CONCRETE BARRIER TYPE B, REINFORCED		IMPACT ATTENUATOR G.R.E.A.T. TYPE
		Meter	Meter		Sq. Meter	Meter	Meter	Meter	Meter	Meter	Meter	Meter		Each
64	25-B	35+961.077	35+970.221	℄							9.144		77	
64	26-B	35+970.221	35+986.284	℄		⊗ 9.967								
64	27-B	35+986.284	36+013.716	℄							27.432		86	
64	28-B	36+013.716	36+144.249	℄		130.533								
64	29-B	36+144.249	36+183.873	℄							39.624		86	
64	30-B	36+183.873	36+360.679	℄		176.806								
65	31-B	36+360.679	36+368.299	℄					7.620				82	
65	32-B	36+406.277	36+413.897	℄					7.620				82	
65	33-B	36+413.897	36+521.284	℄		⊗ 101.291								
65	34-B	36+521.284	36+548.716	℄							27.432		86	
65	35-B	36+548.716	36+656.776	℄		⊗ 95.868								
65	36-B	36+656.776	36+665.920	℄						9.144			78	
65	11-AT	36+665.920	36+673.997	℄								1	85	
65	37-B	36+673.997	36+683.142	℄	8.358									
64	38-B	36+799.118	36+926.448	℄	⊗ 113.086								78	
64	39-B	36+956.471	37+304.976	℄	⊗ 313.099								78	
64	40-B	37+335.640	37+659.645	℄	⊗ 287.909								79	
67	41-B	37+688.144	38+007.679	℄	⊗ 285.492								79	
67	42-B	38+036.097	38+068.608	℄	29.728								76	
67	12-AT	38+068.608	38+076.685	℄								1	85	
67	43-B	38+076.685	38+085.829	℄						9.144			76	
67	44-B	38+085.829	38+186.383	℄		⊗ 94.458							76	
68	45-B	38+186.383	38+190.650	℄							4.267		87	
68	46-B	38+190.650	38+220.000	℄	76.040								76	
SUB-TOTAL THIS SHEET					1113.712	608.923			15.240	27.432	94.488	4.267	2	
SUB-TOTAL FROM SHEET NO. 51					897.925	1495.498	290.202	15.240		64.008	61.346		10	
TOTAL CARRIED TO GENERAL SUMMARY					2011.637	2104.421	290.202	15.240	15.240	91.44	155.834	4.267	12	

CONCRETE BARRIER AND MEDIAN QUANTITIES

BEL-7-32.276

CALCULATED  
SAH  
CHECKED  
WCR

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### LINEAR GRADING

PLAN SHEET NO.	LOCATION		203		COMMENTS
	FROM	TO	LINEAR GRADING	METER	
NORTHBOUND S.R. 7					
60-62	32+949.808	34+114.698		1165.160	
62	34+114.698	34+568.631		453.933	Includes Aetna St. East
62-64	34+595.864	35+730.388		1948.523	
64-65	35+730.388	36+366.193		637.657	Includes Hanover St. East
65	36+404.171	36+683.142		278.273	
66-68	36+799.118	38+190.650		1399.109	
60	32+637.612	32+739.556		110.677	Ramp D Lt.
60	32+662.245	32+949.808		321.070	Ramp D Rt.
SOUTHBOUND S.R. 7					
59	32+169.272	32+218.266		48.994	
60-61	32+940.728	33+410.658		486.927	Includes Lincoln Ave.
61-62	33+410.658	34+131.035		721.732	Includes Aetna St. West
62	34+131.035	34+600.068		467.427	
62-64	34+617.225	35+733.736		1112.518	Includes Hanover St. West
64-65	35+733.736	36+370.404		634.837	
65	36+408.382	36+683.142		275.520	
66	36+799.118	37+116.288		160.129	Includes Fifth St.
66	37+116.288	37+339.098		385.731	Includes Mackey Ave.
66-67	37+339.098	37+716.185		353.758	Includes Jeanette Ave.
67	37+716.185	38+037.999		327.076	Includes Hill St.
67-68	38+037.999	38+190.650		152.651	
TOTAL CARRIED TO GENERAL SUMMARY				11441.702	

⊗ Quantity represents total length of curb after deductions for inlets.

### S.R. 7 CURB QUANTITIES

\* Aggregate Base Under Curb

INTERSECTION	PLAN SHEET NO.	S.R. 7 STATION		SIDE	202		304	609		
		FROM	TO		CURB AND GUTTER REMOVED	CURB REMOVED, AS PER PLAN	*AGGREGATE BASE	COMBINATION CURB AND GUTTER, TYPE 2	CURB, TYPE 2-B AS PER PLAN	
					Meter	Meter	Cu. Meter	Meter	Meter	
SOUTHBOUND S.R. 7										
	60	32+940.728	33+062.771	LT.		123.654			123.654	
To Lincoln Ave.	60-61	33+062.771	33+387.271	LT.	325.614		40.594	325.614		
Lincoln Ave. To Aetna St.	61-62	33+410.658	34+061.936	LT.	⊗651.824		81.263	⊗651.824		
Aetna St. To Railroad	62	34+131.035	34+600.068	LT.	⊗462.937		57.714	⊗462.937		
Railroad To Hanover St.	62-63	34+617.225	35+666.253	LT.	⊗1033.212		128.811	⊗1028.945		
Hanover St. To BEL-7-36368	64-65	35+733.736	36+362.784	LT.	⊗612.587		76.371	⊗612.587		
BEL-7-36368 To BEL-7-36683	65	36+416.002	36+675.522	LT.	⊗257.169		32.061	⊗257.169		
BEL-7-36683 To Fifth St.	66	36+806.738	36+917.071	LT.	⊗107.284		13.375	⊗107.284		
Fifth St. To Mackey Ave.	66	36+960.281	37+297.373	LT.	⊗328.236		40.921	⊗328.236		
Mackey Ave. To Jeanette Ave.	66-67	37+339.098	37+654.267	LT.	⊗308.830		38.502	⊗308.830		
Jeanette Ave. To Hill St.	67	37+716.185	38+008.593	LT.	⊗285.059		35.538	⊗285.059		
Hill St. To End Project	67-68	38+037.722	38+220	LT.	⊗182.278		22.725	⊗182.278		
NORTHBOUND S.R. 7										
	60	32+949.808	33+062.771	RT.		111.742			111.742	
To Aetna St.	60-62	33+062.771	34+084.486	RT.	⊗1118.134		139.398	⊗1118.134		
Aetna St. To Railroad	62	34+114.698	34+568.631	RT.	⊗450.885		56.212	⊗448.447		
Railroad To Hanover St.	62-64	34+595.864	35+678.893	RT.	⊗1068.019		133.150	⊗1072.286		
Hanover St. To BEL-7-36368	64-65	35+730.388	36+358.573	RT.	⊗626.379		78.091	⊗626.379		
BEL-7-36368 To BEL-7-36683	65	36+411.791	36+675.522	RT.	⊗255.718		31.880	⊗255.718		
BEL-7-36683 To End Project	66-68	36+806.738	38+220	RT.	⊗1398.824		174.394	⊗1398.824		
	59	RAMP B at NOSE				2.000			2.000	
	60	RAMP C at END WALL				2.000			2.000	
TOTAL CARRIED TO GENERAL SUMMARY					9472.989	239.396	1181.000	9470.551	239.396	

MISCELLANEOUS ROADWAY QUANTITIES

BEL-7-32.276

# GUARDRAIL SUMMARY

CALCULATED  
SAH  
CHECKED  
WCR

ITEM 413 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS	
<b>MAINLINE</b>	
Sta. 32+788.647 to Sta. 33+062.771 = 274.124m	
14.630m x 2 Cuts/Joint = 29m/Joint	
274.124m ÷ 18.288m = 15 joints	
15 Joints x 29m =	435 Meter
<b>RAMP C</b>	
Sta. 32+751.519 to Sta. 32+874.220 = 122.701m	
Sta. 32+874.220 to Sta. 32+940.728 = 66.508m	
7.924m x 2 Cuts/Joint = 16m/Joint	
5.994m x 2 Cuts/ Joint = 12m/Joint	
122.701m ÷ 18.288 = 7 Joints	
66.508m ÷ 18.288 = 4 Joints	
7 Joints x 16m =	112
4 Joints x 12m =	48
	160 Meter
<b>RAMP D</b>	
Sta. 32+637.348 to Sta. 32+770 = 132.652	
Sta. 32+770 to Sta. 32+895.008 = 125.008	
Sta. 32+895.008 to Sta. 32+949.808 = 54.800m	
7.924m x 2 Cuts/Joint = 16m/Joint	
5.486m x 2 Cuts/Joint = 11m/Joint	
5.029m x 2 Cuts/ Joint = 10m/Joint	
132.652m ÷ 18.288 = 7 joints	
125.008m ÷ 18.288 = 7 Joints	
54.800m ÷ 18.288 = 3 Joints	
7 Joints x 16m =	112
7 Joints x 11m =	77
3 Joints x 10m =	30
	219 Meter
<b>TOTAL CARRIED TO THE GENERAL SUMMARY = 814 Meter</b>	

PLAN SHEET NO.	REF. NO.	STATION ( ± )		SIDE	202			606								
					GUARDRAIL REMOVED	GUARDRAIL REMOVED BARRIER DESIGN	GUARDRAIL, TYPE 5	GUARDRAIL, BARRIER DESIGN, TYPE 5	ANCHOR ASSEMBLY, TYPE			BRIDGE TERMINAL ASSEMBLY, TYPE		BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN		
									E	A	T	1	2			
									EA.	EA.	EA.	EA.	EA.		EACH	
FROM		TO		Meter	Meter	Meter	Meter									
		S.R. 7														
59	1-GR	32+172.546	32+218.266	LT.	45.762		41.910				1		1			
59	40-R	32+179.595	32+188.031	RT.	8.436											
59	41-R	32+235.359	32+283.441	CL		48.082										
60	42-R	32+781.027	33+252.196	CL		471.169										
60	43-R	32+866.069	32+896.477	LT.	30.408											
60	44-R	32+974.119	33+011.897	LT.	37.778											
60	2-GR	32+949.808	33+376.528	RT.	425.683		422.910				1					
61	45-R	33+443.691	33+944.101	CL		500.410										
62	3-GR	34+011.663	34+068.813	LT.	53.845		38.100		1		1					
62	46-R	34+250.000	34+578.205	CL		328.205										
62	4-GR	34+339.083	34+552.443	RT.	210.109		194.310		1		1					
62	5-GR	34+580.334	34+946.094	RT.	365.624		346.710		1		1					
62	47-R	34+615.689	35+549.095	CL		933.406										
63	6-GR	35+181.031	35+676.331	RT.	506.730		487.680		1		1					
64	7-GR	35+710.785	36+362.238	RT.	657.952		653.415				1	1				
64&97	8-GR	35+709.442	35+791.879	LT.	100.041		76.200		1	1	1					
64	48-R	35+851.593	36+368.299	CL		516.706										
65	9-GR	36+252.676	36+366.976	LT.	110.730		110.490				1		1			
65	49-R	36+406.277	36+683.142	CL		276.865										
65	10-GR	36+407.575	36+683.783	RT.	275.509		276.208					1	1			
65	11-GR	36+412.979	36+452.984	LT.	37.780		24.765		1			1				
65	12-GR	36+561.832	36+683.752	LT.	121.692		118.110				1		1			
66	50-R	36+799.118	36+842.083	CL		42.965										
66	13-GR	36+798.477	36+857.532	LT.	57.389		43.815		1			1				
66	14-GR	36+798.508	38+192.968	RT.	1387.921		1394.460						1			
66	51-R	36+979.876	37+219.969	CL		240.093										
66	52-R	37+358.379	37+579.376	CL		220.997										
67	53-R	37+711.310	37+925.027	CL		213.717										
67	54-R	38+059.650	38+220.000	CL		160.350										
68	15-GR	38+190.650	38+220.000	CL							29.350					1
<b>RAMP D</b>																
60	16-GR	32+637.612	32+787.057	LT.	106.280		95.250		1		1					
60	17-GR	32+664.058	32+949.808	RT.	285.702		278.130		1							
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>					<b>4825.371</b>	<b>3952.965</b>	<b>4602.463</b>	<b>29.350</b>	<b>7</b>	<b>3</b>	<b>11</b>	<b>4</b>	<b>5</b>			<b>1</b>

**MISCELLANEOUS ROADWAY QUANTITIES**

**BEL-7-32.276**

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<b>ITEM 611 - REINFORCED CONCRETE APPROACH SLAB (T=380mm)</b>	
<b>STRUCTURE NO. BEL-7-32283</b>	
STA. 32+275.821 TO STA. 32+283.441	
7.620m X (9.411m + 9.487m)	= 144.003 Sq. Meter
STA. 32+781.027 TO STA. 32+788.647	
7.620m X (9.411m + 9.487m)	= 144.003 Sq. Meter
<b>TOTAL CARRIED TO GENERAL SUMMARY = 288.006 Sq. Meter</b>	

<b>ITEM 611 - APPROACH SLAB, MISCELLANEOUS: WIDENING</b>	
<b>STRUCTURE NO. BEL-7-36368 (PARTIAL WIDENING)</b>	
STA. 36+360.679 TO STA. 36+368.299	
7.620m X 0.355m (LT. OUTSIDE)	= 2.705 Sq. Meter
3.560m X 0.150m (INTEGRAL CURB)	= 0.534 Sq. Meter
7.620m X 1.474m (LT. INSIDE)	= 11.232 Sq. Meter
7.620m X 1.753m (RT. INSIDE)	= 13.358 Sq. Meter
7.620m X 0.355m (RT. OUTSIDE)	= 2.705 Sq. Meter
3.480m X 0.150m (INTEGRAL CURB)	= 0.522 Sq. Meter
STA. 36+406.277 TO STA. 36+413.897	
7.620m X 0.355m (LT. OUTSIDE)	= 2.705 Sq. Meter
3.486m X 0.150m (INTEGRAL CURB)	= 0.523 Sq. Meter
7.620m X 1.753m (LT. INSIDE)	= 13.358 Sq. Meter
7.620m X 1.474m (RT. INSIDE)	= 11.232 Sq. Meter
7.620m X 0.355m (RT. OUTSIDE)	= 2.705 Sq. Meter
3.613m X 0.150m (INTEGRAL CURB)	= 0.542 Sq. Meter

<b>STRUCTURE NO. BEL-7-36683 (PARTIAL WIDENING)</b>	
STA. 36+675.522 TO STA. 36+683.142	
7.620m X 0.237m (LT. OUTSIDE)	= 1.806 Sq. Meter
7.470m X 0.150m (INTEGRAL CURB)	= 1.121 Sq. Meter
7.620m X 1.525m (LT. INSIDE)	= 11.621 Sq. Meter
7.620m X 1.524m (RT. INSIDE)	= 11.613 Sq. Meter
7.620m X 0.251m (RT. OUTSIDE)	= 1.913 Sq. Meter
7.470m X 0.150m (INTEGRAL CURB)	= 1.121 Sq. Meter
STA. 36+799.118 TO STA. 36+806.738	
7.620m X 0.254m (LT. OUTSIDE)	= 1.935 Sq. Meter
7.468m X 0.150m (INTEGRAL CURB)	= 1.120 Sq. Meter
7.620m X 1.525m (LT. INSIDE)	= 11.621 Sq. Meter
7.620m X 1.524m (RT. INSIDE)	= 11.613 Sq. Meter
7.620m X 0.254m (RT. OUTSIDE)	= 1.935 Sq. Meter
7.468m X 0.150m (INTEGRAL CURB)	= 1.120 Sq. Meter

**TOTAL CARRIED TO GENERAL SUMMARY = 120.660 Sq. Meter**

<b>ITEM 203 - SUBGRADE COMPACTION</b>	
<b>STRUCTURE NO. BEL-7-32283</b>	
STA. 32+275.821 TO STA. 32+283.441	
7.620m X 20.118m	= 153.299 Sq. Meter
STA. 32+781.027 TO STA. 32+788.647	
7.620m X 20.118m	= 153.299 Sq. Meter
<b>TOTAL CARRIED TO GENERAL SUMMARY = 306.598 Sq. Meter</b>	

<b>ITEM 304 - 150mm AGGREGATE BASE</b>	
<b>STRUCTURE NO. BEL-7-32283</b>	
STA. 32+275.821 TO STA. 32+283.441	
7.620m X 9.411m X 0.150m	= 10.757 Cu. Meter
7.620m X 9.487m X 0.150m	= 10.844 Cu. Meter
7.620m X 1.219m X 0.305m	= 2.833 Cu. Meter
STA. 32+781.027 TO STA. 32+788.647	
7.620m X 9.411m X 0.150m	= 10.757 Cu. Meter
7.620m X 9.487m X 0.150m	= 10.844 Cu. Meter
7.620m X 1.219m X 0.305m	= 2.833 Cu. Meter

<b>STRUCTURE NO. BEL-7-36368 (PARTIAL WIDENING)</b>	
STA. 36+360.679 TO STA. 36+368.299	
7.620m X 0.355m X 0.150m	= 0.406 Cu. Meter
3.560m X 0.152m X 0.150m	= 0.081 Cu. Meter
7.620m X 1.474m X 0.150m	= 1.685 Cu. Meter
7.620m X 1.753m X 0.150m	= 2.004 Cu. Meter
7.620m X 0.355m X 0.150m	= 0.406 Cu. Meter
3.480m X 0.152m X 0.150m	= 0.079 Cu. Meter
STA. 36+406.277 TO STA. 36+413.897	
7.620m X 0.355m X 0.150m	= 0.406 Cu. Meter
3.486m X 0.152m X 0.150m	= 0.079 Cu. Meter
7.620m X 1.753m X 0.150m	= 2.004 Cu. Meter
7.620m X 1.474m X 0.150m	= 1.685 Cu. Meter
7.620m X 0.355m X 0.150m	= 0.406 Cu. Meter
3.613m X 0.152m X 0.150m	= 0.082 Cu. Meter

<b>STRUCTURE NO. BEL-7-36683 (PARTIAL WIDENING)</b>	
STA. 36+675.522 TO STA. 36+683.142	
7.620m X 0.237m X 0.150m	= 0.271 Cu. Meter
7.470m X 0.152m X 0.150m	= 0.170 Cu. Meter
7.620m X 1.525m X 0.150m	= 1.743 Cu. Meter
7.620m X 1.524m X 0.150m	= 1.742 Cu. Meter
7.620m X 0.251m X 0.150m	= 0.287 Cu. Meter
7.470m X 0.152m X 0.150m	= 0.170 Cu. Meter
STA. 36+799.118 TO STA. 36+806.738	
7.620m X 0.254m X 0.150m	= 0.290 Cu. Meter
7.468m X 0.152m X 0.150m	= 0.170 Cu. Meter
7.620m X 1.525m X 0.150m	= 1.743 Cu. Meter
7.620m X 1.524m X 0.150m	= 1.742 Cu. Meter
7.620m X 0.254m X 0.150m	= 0.290 Cu. Meter
7.468m X 0.152m X 0.150m	= 0.170 Cu. Meter
<b>TOTAL CARRIED TO GENERAL SUMMARY = 66.979 Cu. Meter</b>	

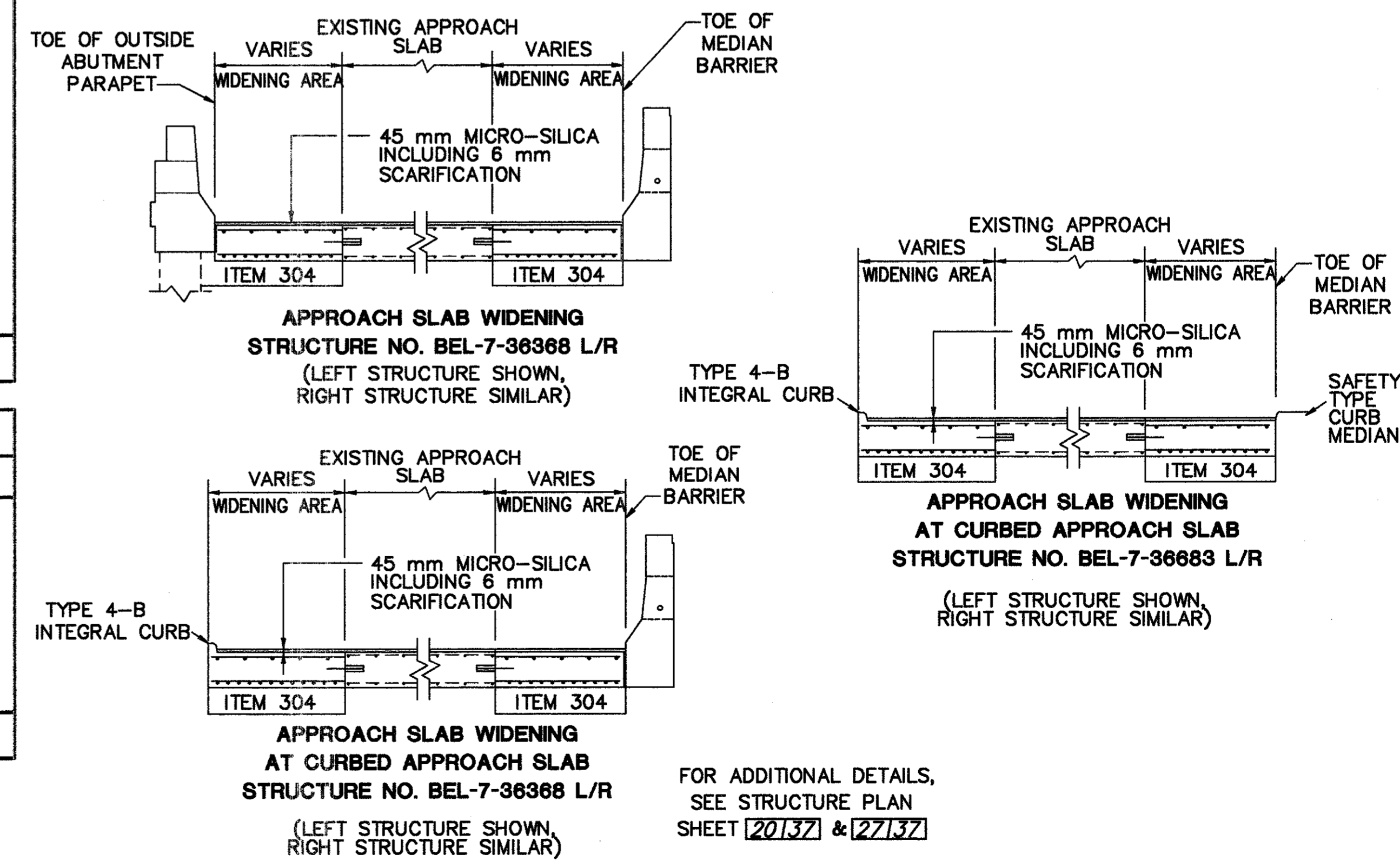
<b>ITEM 202 - APPROACH SLAB REMOVED</b>	
<b>STRUCTURE NO. BEL-7-32283</b>	
STA. 32+275.821 TO STA. 32+283.441	
7.620m X (8.991m + 8.991m)	= 137.023 Sq. Meter
STA. 32+781.027 TO STA. 32+788.647	
7.620m X (8.991m + 8.991m)	= 137.023 Sq. Meter
<b>TOTAL CARRIED TO GENERAL SUMMARY = 274.046 Sq. Meter</b>	

ALL QUANTITIES CARRIED TO THE GENERAL SUMMARY.

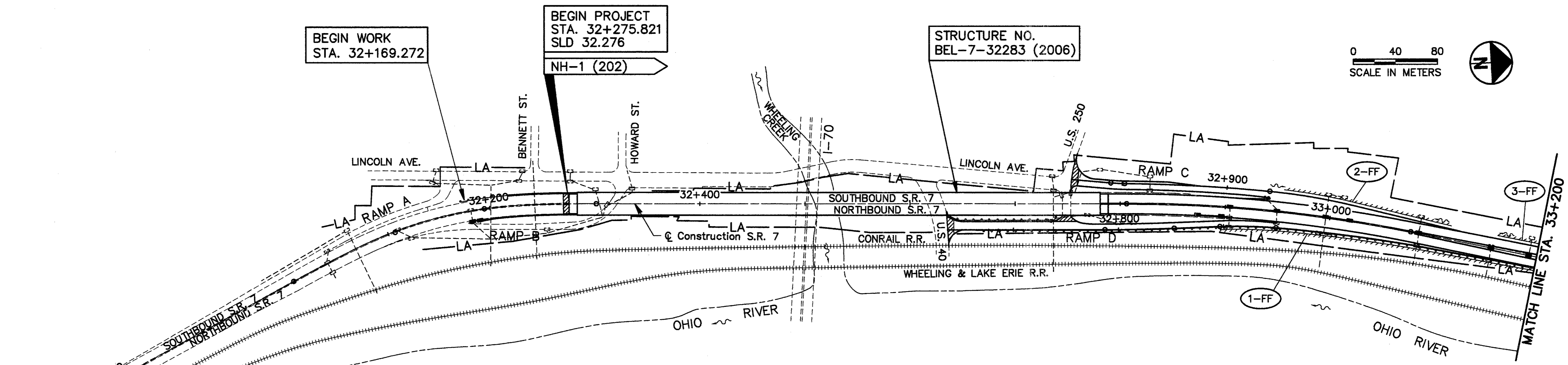
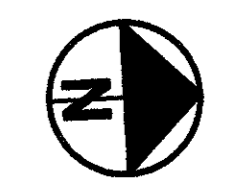
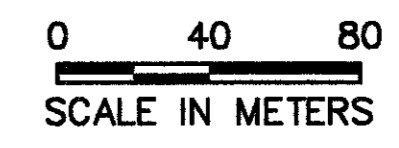
<b>ITEM 659</b>	
<b>SEEDING &amp; MULCHING</b>	
TOTAL S.R. 7 CURB LENGTH MINUS WIDENING AREAS	
9085.724 x 3m	= 27,257 Sq. Meter
<b>WIDENING AREAS</b>	= 5138 Sq. Meter
<b>RAMP D GUARDRAIL LENGTH</b>	
431.747 x 3m	= 1295 Sq. Meter
<b>TOTAL</b>	= 33,690 Sq. Meter
<b>COMMERCIAL FERTILIZER</b>	
33,690 Sq. Meter x 0.1kg/Sq. Meter	= 3369 Kilogram
<b>AGRICULTURAL LIMING</b>	
33,690 Sq. Meter x 256kg/1000 Sq. Meter x 2.20	= 8625 Kilogram
<b>WATER</b>	
33,690 Sq. Meter x 489L	= 164.74 Cu. Meter
100 x 1000	

<b>ITEM 203 IN PAVEMENT WIDENING AREAS</b>			
STATION TO STATION	SIDE	EXCAVATION Cu. Meter	EMBANKMENT Cu. Meter
34+156 TO 34+337.040	RT.	376	51
34+156 TO 34+337.040	RT.	319	125
34+156 TO 34+337.040	LT.	777	85

<b>ITEM 203 IN APPROACH SLAB WIDENING AREAS</b>			
STATION TO STATION	SIDE	EXCAVATION Cu. Meter	
BEL-7-36368	L&R	34	
BEL-7-36683	L&R	26	
<b>TOTAL</b>		1532	261



14-0321-01/32283/027.6m - OCT. 27, 1997 - 18:42:53



**PROJECT INFORMATION**

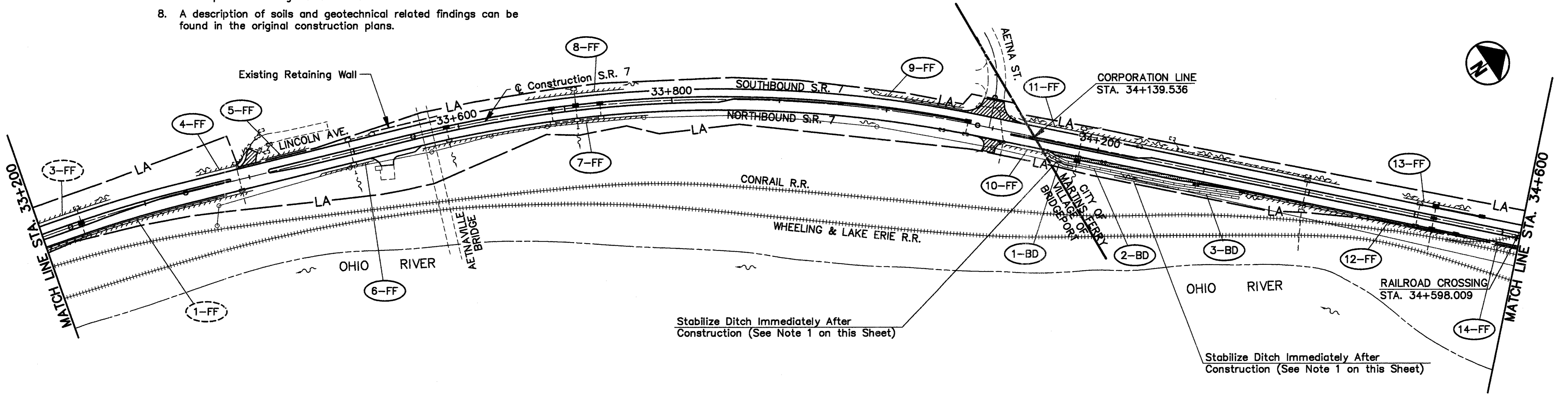
1. The project consists of resurfacing 5.91km of existing pavement, remove existing median, add new median and median underdrains, and concrete barrier. Add pavement widening and underdrain in designated areas. Replace fence, guardrail, signing, and lighting. Provide new signal system at Aetna St. and Hanover St. Rehabilitate bridges on S.R. 7 under S.R. 7, over Center St., over W & L.E. R.R., and pedestrian bridge over S.R. 7
2. U.S.G.S. Quadrangle: Wheeling W.Va - Ohio
3. Latitude: 40°05'26" Longitude: 80°42'30"
4. Total Area of Project Right-of-way is 31.45 Hectares  
Total Right-of-way to be Graded is 16.23 Hectares
5. Approximate average runoff coefficient in project limits  
Pre-Construction = 0.55, Post-Construction = 0.55
6. Potential water quality of any discharge from the site is unknown.
7. Subsequent Receiving Stream: OHIO RIVER
8. A description of soils and geotechnical related findings can be found in the original construction plans.



**NOTES:**

1. THE DITCH OR CHANNEL SHALL BE STABILIZED IMMEDIATELY FOLLOWING CONSTRUCTION BY INSTALLING THE PERMANENT LINING AND CONSTRUCTING A STRAW BALE DIKE BETWEEN THE DISTURBED PROJECT AREA AND THE STABILIZED DITCH AT THE LOCATION SHOWN IN THE PLANS.

**LEGEND**



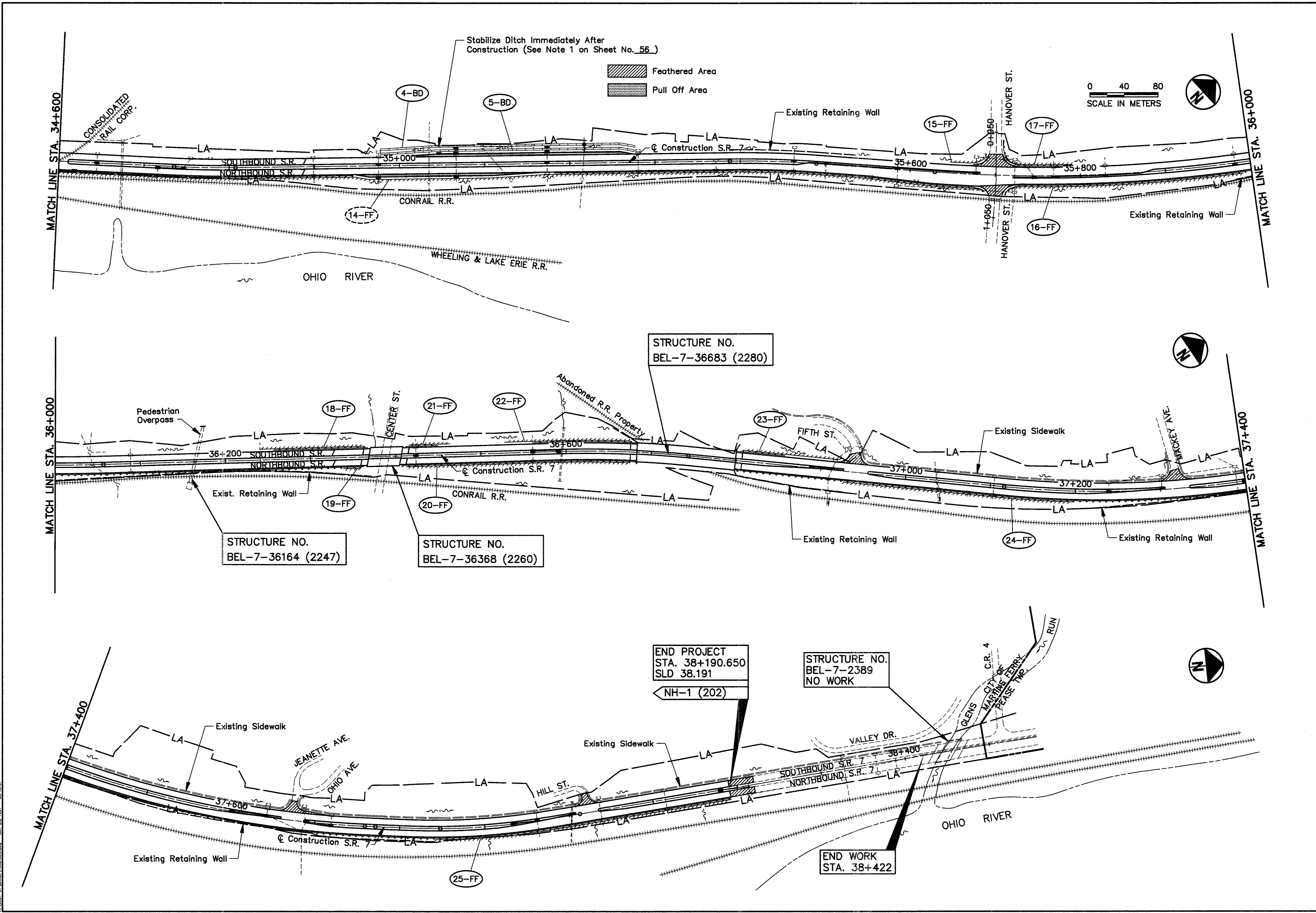
**STORM WATER POLLUTION PREVENTION PLAN**

**BEL-7-32.276**

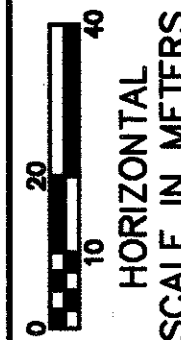
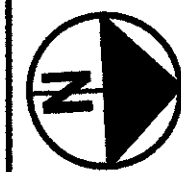


**STORM WATER POLLUTION PREVENTION PLAN**

**BEL-7-32.276**



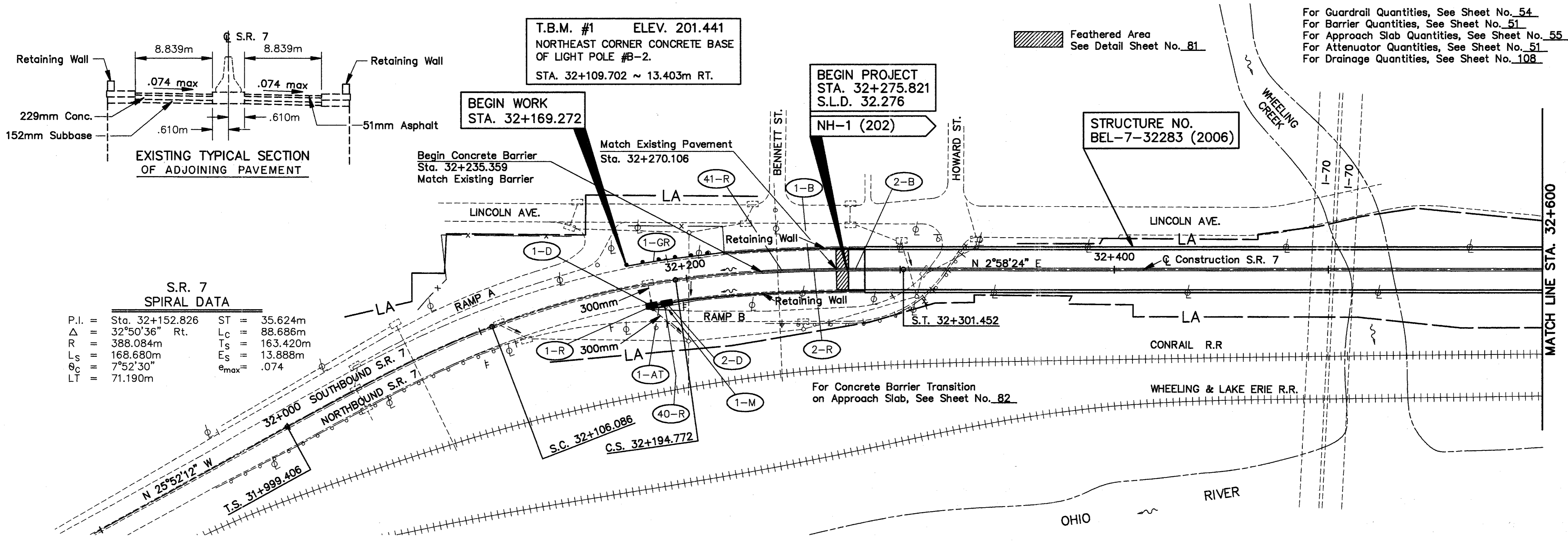




CALCULATED  
SAH  
CHECKED  
WCR

**PLAN SHEET STA. 32+169.272 TO 32+600**

**BEL-7-32.276**



**S.R. 7  
SPIRAL DATA**

P.I. =	Sta. 32+152.826	ST =	35.624m
Δ =	32°50'36" Rt.	Lc =	88.686m
R =	388.084m	Ts =	163.420m
Ls =	168.680m	Es =	13.888m
θc =	7°52'30"	emax =	.074
LT =	71.190m		

14.6321-0178321EL.dwg - OCT 20, 1997 - 11:58:12



0 10 20 30 40  
HORIZONTAL  
SCALE IN METERS

CALCULATED  
SAH  
CHECKED  
WCR

PLAN SHEET STA. 32+600 TO STA. 33+300

BEL-7-32.276

60  
242

T.B.M. #2 ELEV. 200.931  
SOUTHEAST CORNER CONCRETE BASE  
OF LIGHT POLE #B-14.  
STA. 32+620.778 ~ 20.392m RT.

**RAMP C  
CURVE DATA**  
P.I. = Sta. 32+795.762  
 $\Delta$  = 4°22'05" Lt.  
R = 172.361m  
T = 6.573m  
L = 13.140m  
E = 0.125m  
e<sub>max</sub> = None

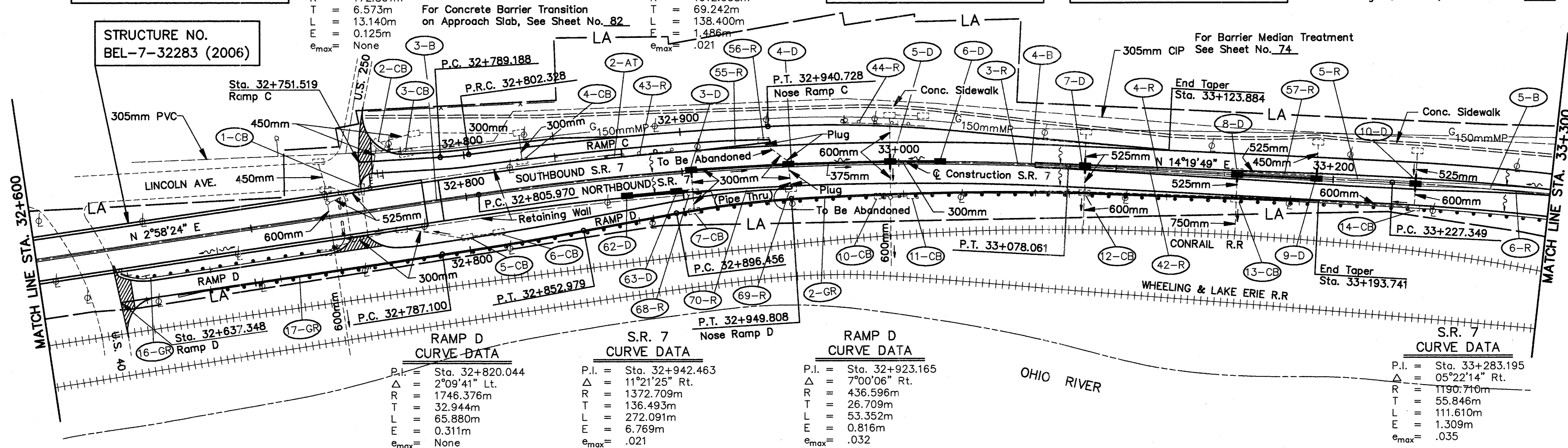
**RAMP C  
CURVE DATA**  
P.I. = Sta. 32+871.571  
 $\Delta$  = 4°55'09" Rt.  
R = 1612.038m  
T = 69.242m  
L = 138.400m  
E = 1.486m  
e<sub>max</sub> = .021

T.B.M. #3 ELEV. 202.211  
NORTHEAST CORNER CONCRETE BASE  
OF LIGHT POLE #A-28.  
STA. 32+889.448 ~ 21.997m LT.

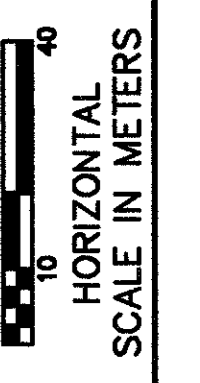
T.B.M. #4 ELEV. 202.346  
NORTHEAST CORNER CONCRETE BASE  
OF LIGHT POLE #A-32.  
STA. 33+143.446 ~ 12.759m LT.

For Guardrail Quantities, See Sheet No. 54  
For Barrier Quantities, See Sheet No. 51  
For Approach Slab Quantities, See Sheet No. 55  
For Attenuator Quantities, See Sheet No. 51  
For Drainage Quantities, See Sheet No. 108

STRUCTURE NO.  
BEL-7-32283 (2006)



A.9321-DIVISION 2-04 - OCT. 23, 1997 - 08:50:19



CALCULATED  
SAH  
CHECKED  
WCR

PLAN SHEET STA. 33+300 TO STA. 34+000

BEL-7-32.276

61  
242

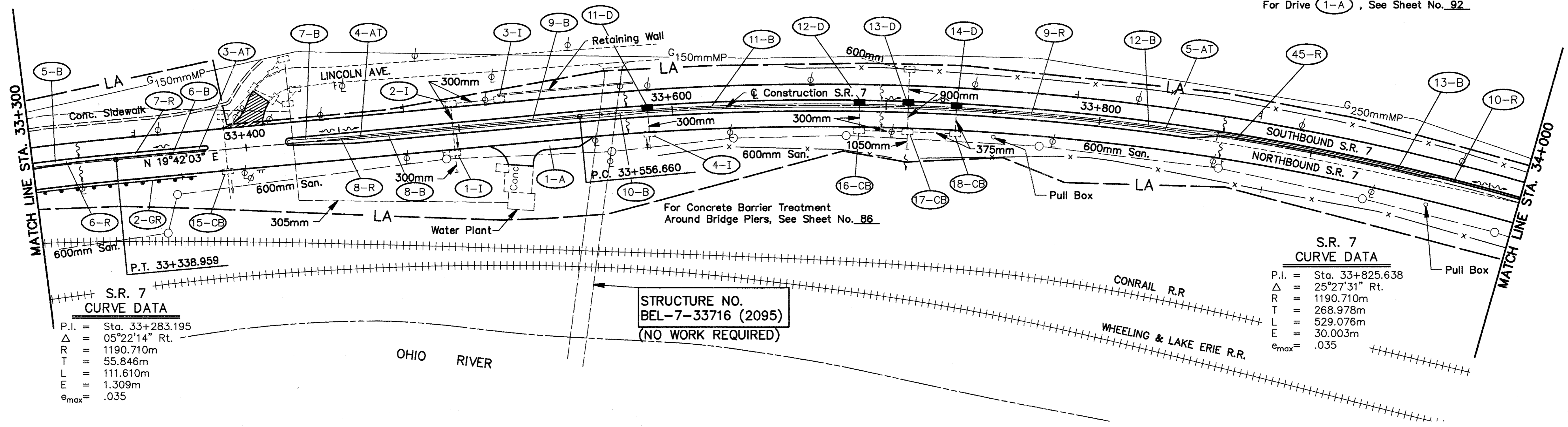
T.B.M. #5 ELEV. 203.311  
NORTHEAST CORNER CONCRETE BASE  
OF LIGHT POLE #J-6  
STA. 33+474.339 ~ 11.877m RT.

T.B.M. #6 ELEV. 202.461  
SOUTHEAST CORNER CONCRETE BASE  
OF LIGHT POLE #G-6  
STA. 33+855.288 ~ 15.073m RT.

Feathered Area  
See Detail Sheet No. 81  
For Lincoln Ave. Intersection Detail, See Sheet No. 94

For Barrier Median Treatment  
See Sheet No. 74

For Guardrail Quantities, See Sheet No. 54  
For Barrier Quantities, See Sheet No. 51  
For Attenuator Quantities, See Sheet No. 51  
For Drainage Quantities, See Sheet No. 108  
For Drive (1-A), See Sheet No. 92



S.R. 7  
CURVE DATA  
P.I. = Sta. 33+283.195  
 $\Delta$  = 05°22'14" Rt.  
R = 1190.710m  
T = 55.846m  
L = 111.610m  
E = 1.309m  
 $e_{max}$  = .035

S.R. 7  
CURVE DATA  
P.I. = Sta. 33+825.638  
 $\Delta$  = 25°27'31" Rt.  
R = 1190.710m  
T = 268.978m  
L = 529.076m  
E = 30.003m  
 $e_{max}$  = .035

STRUCTURE NO.  
BEL-7-33716 (2095)  
(NO WORK REQUIRED)

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0 10 20 30 40  
HORIZONTAL  
SCALE IN METERS

CALCULATED  
SAH  
CHECKED  
WCR

PLAN SHEET STA. 34+000 TO STA. 34+700

BEL-7-32.276

62  
242

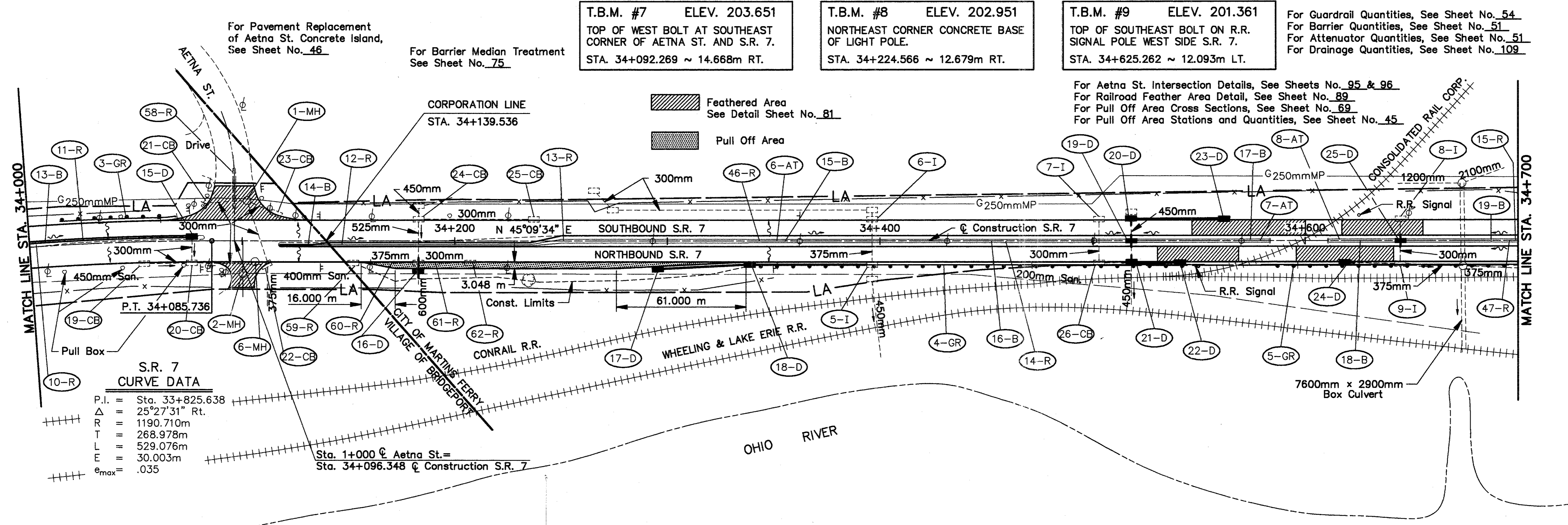
T.B.M. #7 ELEV. 203.651  
TOP OF WEST BOLT AT SOUTHEAST  
CORNER OF AETNA ST. AND S.R. 7.  
STA. 34+092.269 ~ 14.668m RT.

T.B.M. #8 ELEV. 202.951  
NORTHEAST CORNER CONCRETE BASE  
OF LIGHT POLE.  
STA. 34+224.566 ~ 12.679m RT.

T.B.M. #9 ELEV. 201.361  
TOP OF SOUTHEAST BOLT ON R.R.  
SIGNAL POLE WEST SIDE S.R. 7.  
STA. 34+625.262 ~ 12.093m LT.

For Guardrail Quantities, See Sheet No. 54  
For Barrier Quantities, See Sheet No. 51  
For Attenuator Quantities, See Sheet No. 51  
For Drainage Quantities, See Sheet No. 109

For Aetna St. Intersection Details, See Sheets No. 95 & 96  
For Railroad Feather Area Detail, See Sheet No. 89  
For Pull Off Area Cross Sections, See Sheet No. 69  
For Pull Off Area Stations and Quantities, See Sheet No. 45



S.R. 7  
CURVE DATA

P.I.	=	Sta. 33+825.638
$\Delta$	=	25°27'31" Rt.
R	=	1190.710m
T	=	268.978m
L	=	529.076m
E	=	30.003m
$e_{max}$	=	.035

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0 10 20  
HORIZONTAL  
SCALE IN METERS

CALCULATED  
SAH  
CHECKED  
WCR

PLAN SHEET STA. 34+700 TO STA. 35+400

BEL-7-32.276

63  
242

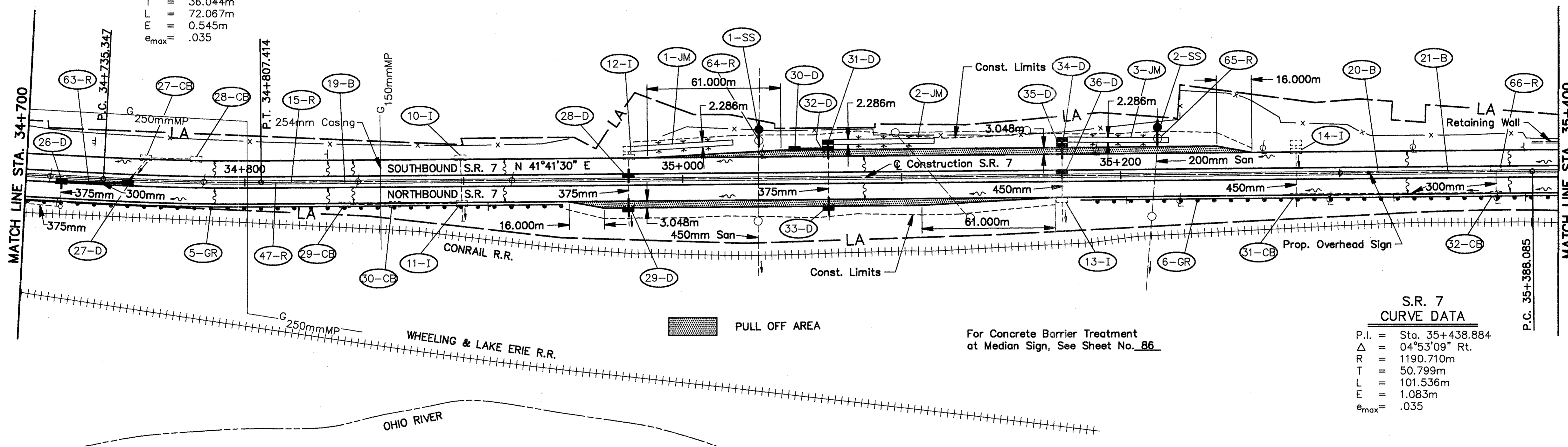
**S.R. 7  
CURVE DATA**

P.I. = Sta. 34+771.391  
 $\Delta$  = 03°28'04" Lt.  
 R = 1190.710m  
 T = 36.044m  
 L = 72.067m  
 E = 0.545m  
 e<sub>max</sub> = .035

**T.B.M. #10 ELEV. 202.641**  
 TOP OF NORTHWEST BOLT OF SIGN  
 POLE.  
 STA. 34+910.981 ~ 11.747m RT.

**T.B.M. #11 ELEV. 203.781**  
 NORTHWEST CORNER CONCRETE BASE  
 OF LIGHT POLE #A-6  
 STA. 35+265.060 ~ 11.901m LT.

For Guardrail Quantities, See Sheet No. 54  
 For Barrier Quantities, See Sheet No. 51  
 For Drainage Quantities, See Sheet No. 109  
 For Pull Off Area Cross Sections, See Sheet No. 70 to 73  
 For Pull Off Area Stations and Quantities, See Sheet No. 45



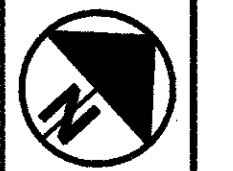
PULL OFF AREA

For Concrete Barrier Treatment  
 at Median Sign, See Sheet No. 86

**S.R. 7  
CURVE DATA**

P.I. = Sta. 35+438.884  
 $\Delta$  = 04°53'09" Rt.  
 R = 1190.710m  
 T = 50.799m  
 L = 101.536m  
 E = 1.083m  
 e<sub>max</sub> = .035

H:\321-01\321P&S.dwg - OCT 23, 1997 - 08:54:33



HORIZONTAL SCALE IN METERS

CALCULATED  
SAH  
CHECKED  
WCR

PLAN SHEET STA. 35+400 TO STA. 36+100

BEL-7-32.276

64  
242

T.B.M. #12 ELEV. 204.341  
SOUTHWEST CORNER CONCRETE BASE  
OF LIGHT POLE #C-3.  
STA. 35+485.758 ~ 11.812m LT.

T.B.M. #13 ELEV. 203.136  
SOUTHWEST CORNER CONCRETE BASE  
OF SIGNAL POLE AT SOUTHWEST  
CORNER OF HANOVER ST. AND S.R. 7.  
STA. 35+681.403 ~ 15.273m LT.

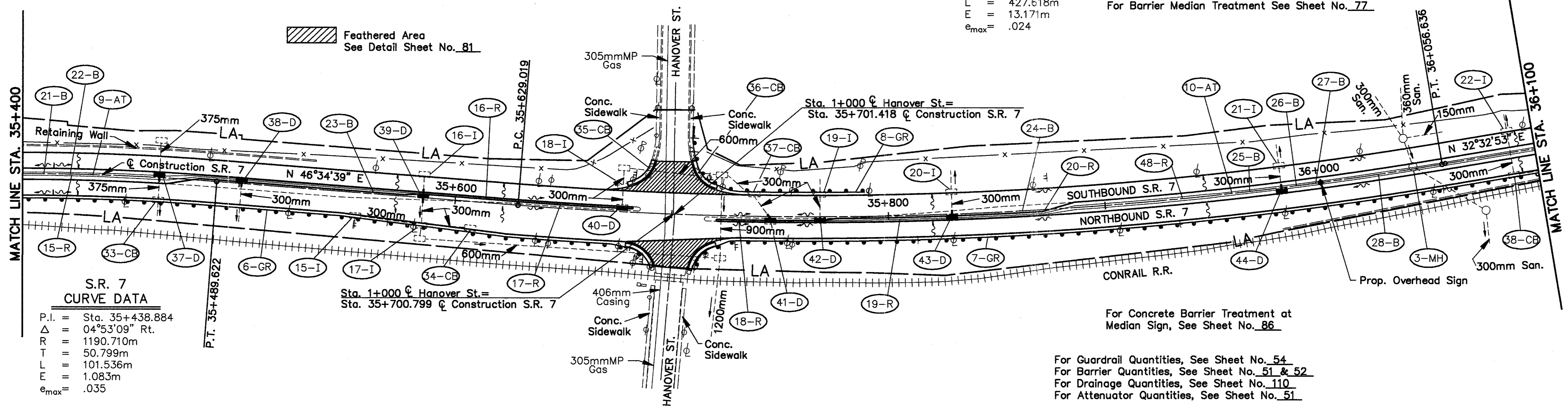
S.R. 7  
CURVE DATA  
P.I. = Sta. 35+843.902  
 $\Delta$  = 14°01'46" Lt.  
R = 1746.376m  
T = 214.884m  
L = 427.618m  
E = 13.171m  
 $e_{max}$  = .024

T.B.M. #14 ELEV. 204.701  
SOUTHWEST CORNER CONCRETE BASE  
OF LIGHT POLE #C-11.  
STA. 36+019.914 ~ 11.958m LT.

For Hanover St. Intersection Details, See Sheet No's. 97 & 98  
For Barrier Median Treatment See Sheet No. 77

For Concrete Barrier Treatment at  
Median Sign, See Sheet No. 86

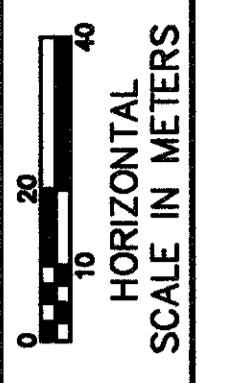
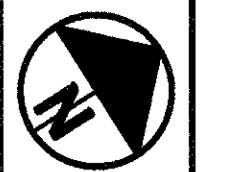
For Guardrail Quantities, See Sheet No. 54  
For Barrier Quantities, See Sheet No. 51 & 52  
For Drainage Quantities, See Sheet No. 110  
For Attenuator Quantities, See Sheet No. 51



S.R. 7  
CURVE DATA  
P.I. = Sta. 35+438.884  
 $\Delta$  = 04°53'09" Rt.  
R = 1190.710m  
T = 50.799m  
L = 101.536m  
E = 1.083m  
 $e_{max}$  = .035

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CALCULATED  
SAH  
CHECKED  
WCR

PLAN SHEET STA. 36+100 TO STA. 36+750

BEL-7-32.276

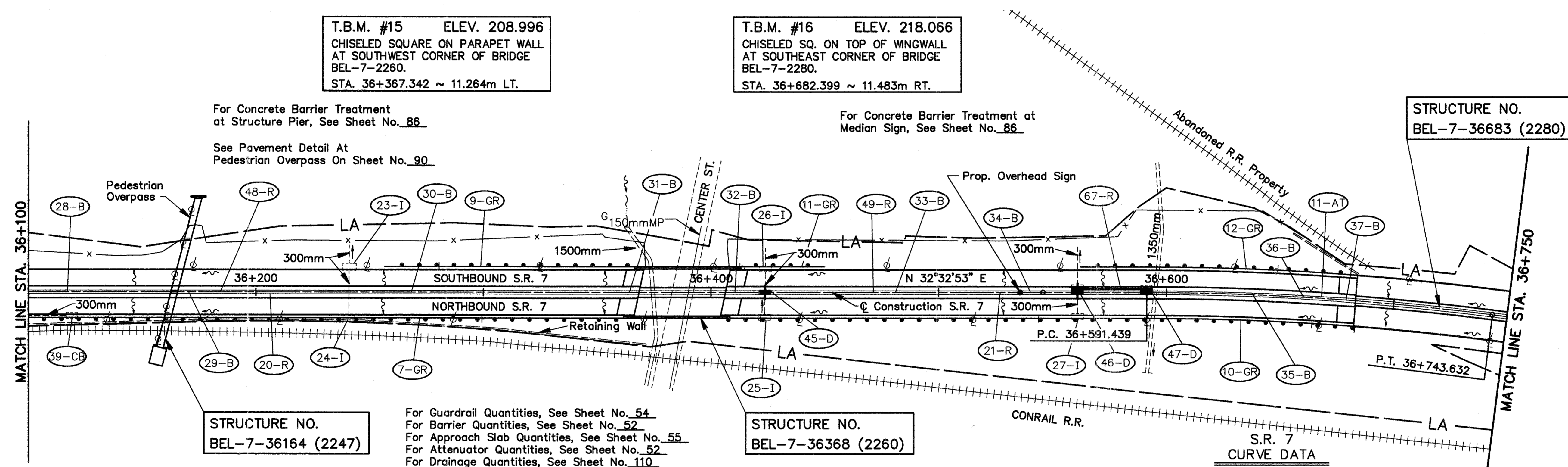
T.B.M. #15 ELEV. 208.996  
CHISELED SQUARE ON PARAPET WALL  
AT SOUTHWEST CORNER OF BRIDGE  
BEL-7-2260.  
STA. 36+367.342 ~ 11.264m LT.

T.B.M. #16 ELEV. 218.066  
CHISELED SQ. ON TOP OF WINGWALL  
AT SOUTHEAST CORNER OF BRIDGE  
BEL-7-2280.  
STA. 36+682.399 ~ 11.483m RT.

For Concrete Barrier Treatment  
at Structure Pier, See Sheet No. 86  
  
See Pavement Detail At  
Pedestrian Overpass On Sheet No. 90

For Concrete Barrier Treatment at  
Median Sign, See Sheet No. 86

STRUCTURE NO.  
BEL-7-36683 (2280)

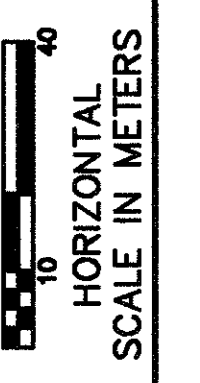


STRUCTURE NO.  
BEL-7-36164 (2247)

STRUCTURE NO.  
BEL-7-36368 (2260)

For Guardrail Quantities, See Sheet No. 54  
For Barrier Quantities, See Sheet No. 52  
For Approach Slab Quantities, See Sheet No. 55  
For Attenuator Quantities, See Sheet No. 52  
For Drainage Quantities, See Sheet No. 110  
For Concrete Barrier Transition on Approach Slab, See Sheet No. 82  
For Curb and Guardrail Transition at Structures, See Sheet No. 91  
For Pavement Feather Detail at Bridge, See Sheet No. 81

S.R. 7  
CURVE DATA  
P.I. = Sta. 36+667.639  
 $\Delta$  = 07°18'16" Rt.  
R = 1193.801m  
T = 76.200m  
L = 152.193m  
E = 2.429m  
 $e_{max}$  = .035



CALCULATED  
SAH  
CHECKED  
WCR

T.B.M. #17 ELEV. 213.836  
SOUTHEAST CORNER CONCRETE BASE  
OF LIGHT POLE #E-5.  
STA. 37+048.895 ~ 12.111m RT.

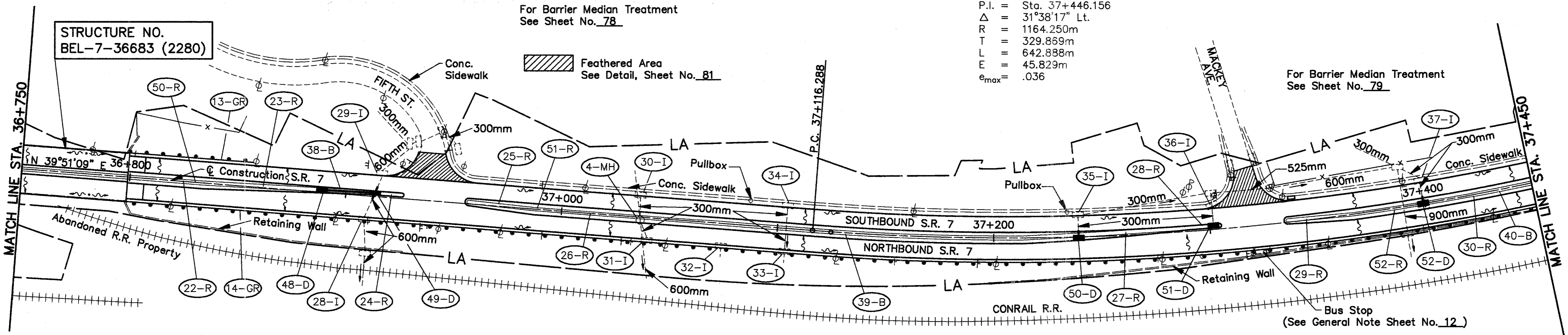
T.B.M. #18 ELEV. 206.741  
CHISELED SQ. ON TOP OF RETAINING  
WALL BESIDE LIGHT POLE #F-2.  
STA. 37+429.682 ~ 12.918m RT.

For Fifth St. Intersection Detail, See Sheet No. 99  
For Mackey Ave. Intersection Detail, See Sheet No. 100

S.R. 7  
CURVE DATA  
P.I. = Sta. 37+446.156  
 $\Delta$  = 31°38'17" Lt.  
R = 1164.250m  
T = 329.869m  
L = 642.888m  
E = 45.829m  
 $e_{max}$  = .036

For Barrier Median Treatment  
See Sheet No. 78

For Barrier Median Treatment  
See Sheet No. 79



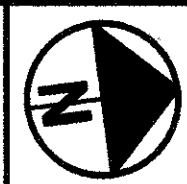
For Guardrail Quantities, See Sheet No. 54  
For Barrier Quantities, See Sheet No. 52  
For Drainage Quantities, See Sheet No. 111

PLAN SHEET STA. 36+750 TO STA. 37+450

BEL-7-32.276

66  
242

HA 032-0113201P&S - OCT. 23, 1997 - 1324-47



0 10 20 40  
HORIZONTAL  
SCALE IN METERS

CALCULATED  
SAH  
CHECKED  
WCR

PLAN SHEET STA. 37+450 TO STA. 38+100

BEL-7-32.276

67  
242

**S.R. 7  
CURVE DATA**

P.I. = Sta. 37+446.156  
Δ = 31°38'17" Lt.  
R = 1164.250m  
T = 329.869m  
L = 642.888m  
E = 45.829m  
e<sub>max</sub> = .036

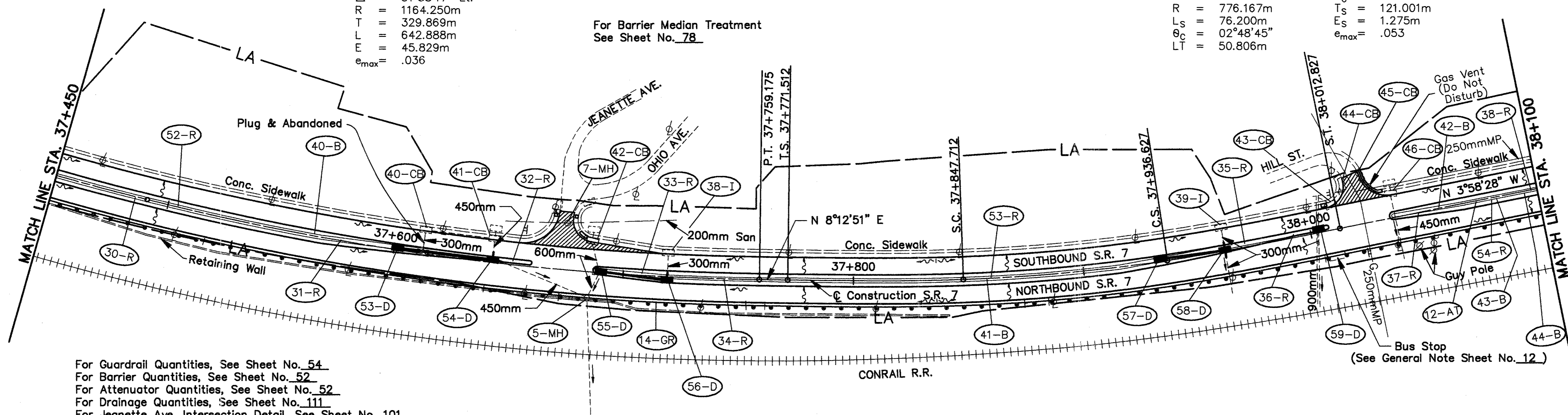
 Feathered Area  
See Detail, Sheet No. 81

For Barrier Median Treatment  
See Sheet No. 78

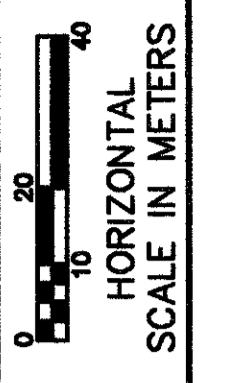
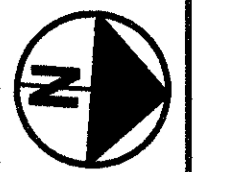
T.B.M. #19 ELEV. 203.416  
CHISELED SQ. ON TOP OF RETAINING  
WALL BELOW LIGHT POLE #B-8.  
STA. 37+809.701 ~ 15.830m RT.

**S.R. 7  
SPIRAL DATA**

P.I. = Sta. 37+892.513 ST = 25.406m  
Δ = 06°33'49" Lt. L<sub>c</sub> = 88.915m  
R = 776.167m T<sub>s</sub> = 121.001m  
L<sub>s</sub> = 76.200m E<sub>s</sub> = 1.275m  
θ<sub>c</sub> = 02°48'45" e<sub>max</sub> = .053  
LT = 50.806m



For Guardrail Quantities, See Sheet No. 54  
For Barrier Quantities, See Sheet No. 52  
For Attenuator Quantities, See Sheet No. 52  
For Drainage Quantities, See Sheet No. 111  
For Jeanette Ave. Intersection Detail, See Sheet No. 101  
For Hill St. Intersection Detail, See Sheet No. 102

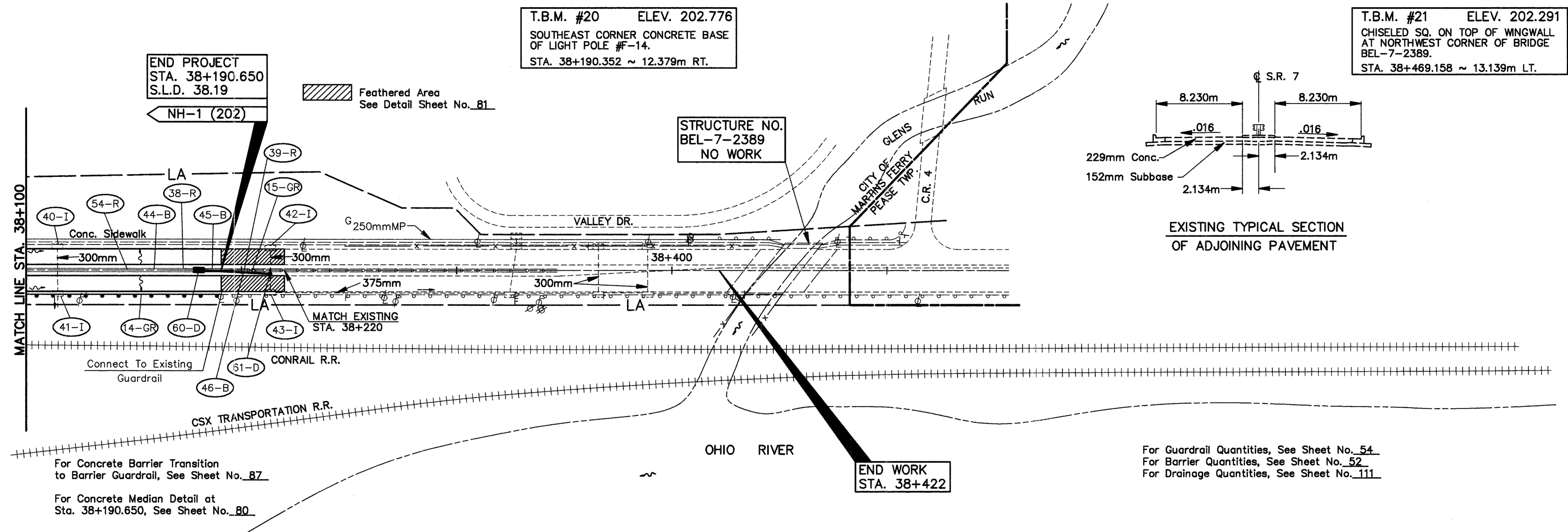


CALCULATED  
SAH  
CHECKED  
WCR

PLAN SHEET STA. 38+100 TO STA. 38+422

BEL-7-32.276

68  
242



END PROJECT  
STA. 38+190.650  
S.L.D. 38.19

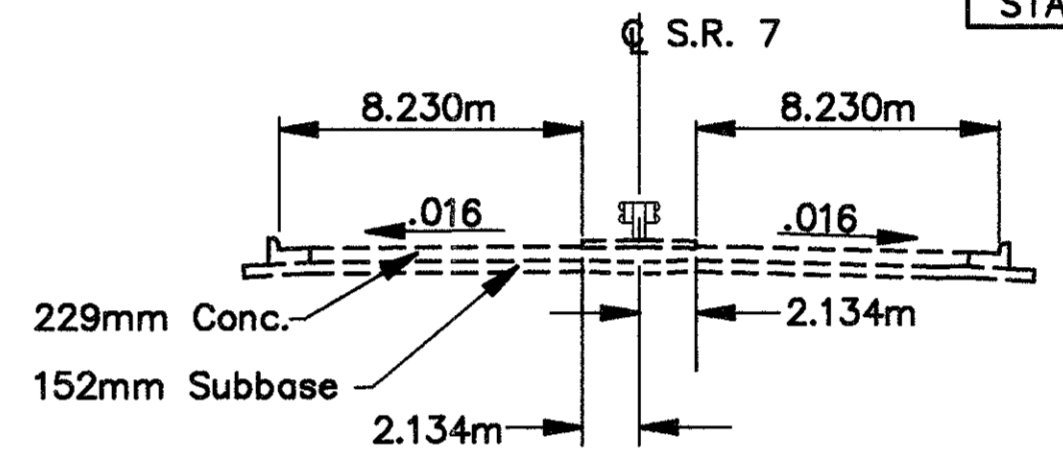
NH-1 (202)

Feathered Area  
See Detail Sheet No. 81

T.B.M. #20 ELEV. 202.776  
SOUTHEAST CORNER CONCRETE BASE  
OF LIGHT POLE #F-14.  
STA. 38+190.352 ~ 12.379m RT.

STRUCTURE NO.  
BEL-7-2389  
NO WORK

T.B.M. #21 ELEV. 202.291  
CHISELED SQ. ON TOP OF WINGWALL  
AT NORTHWEST CORNER OF BRIDGE  
BEL-7-2389.  
STA. 38+469.158 ~ 13.139m LT.

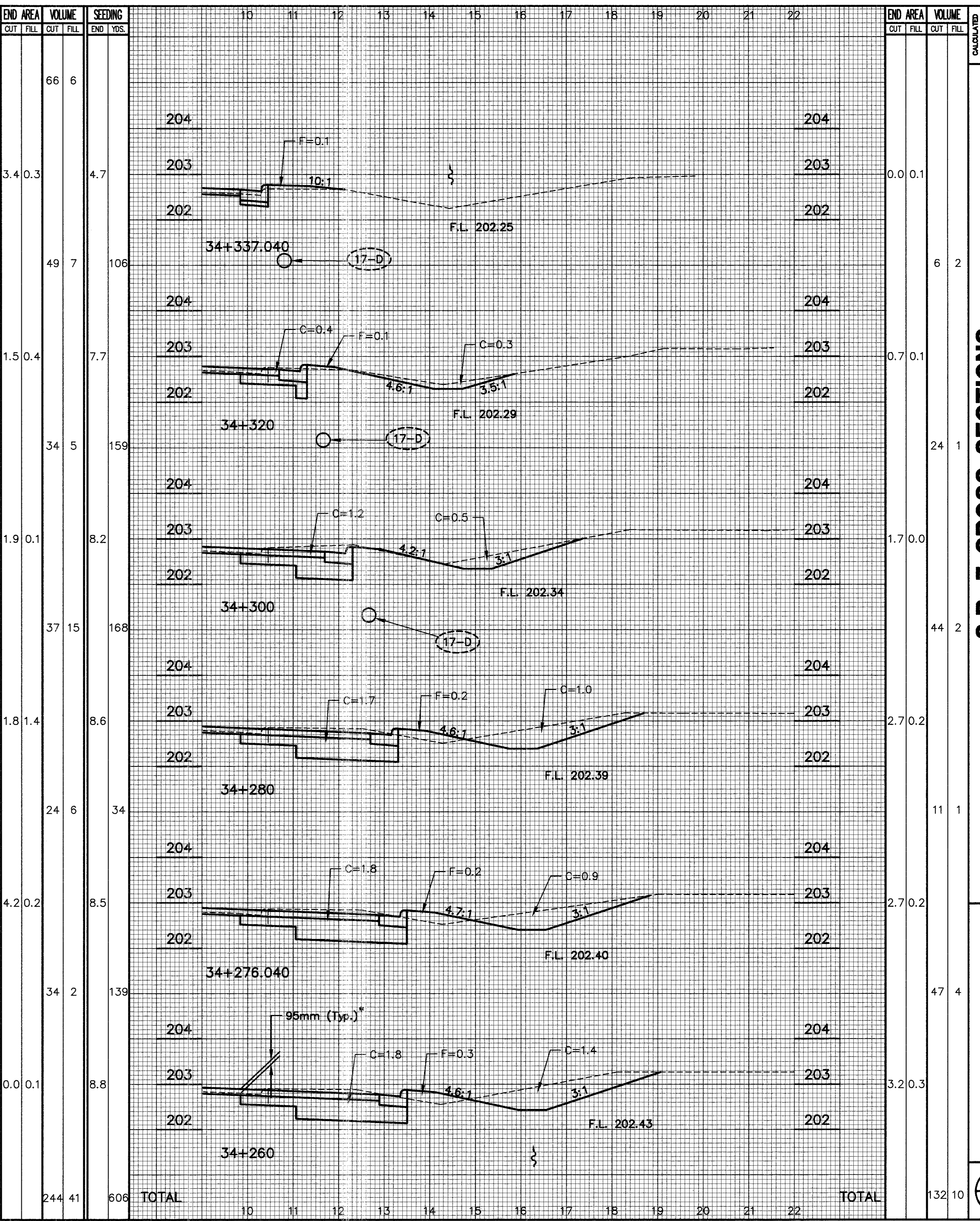
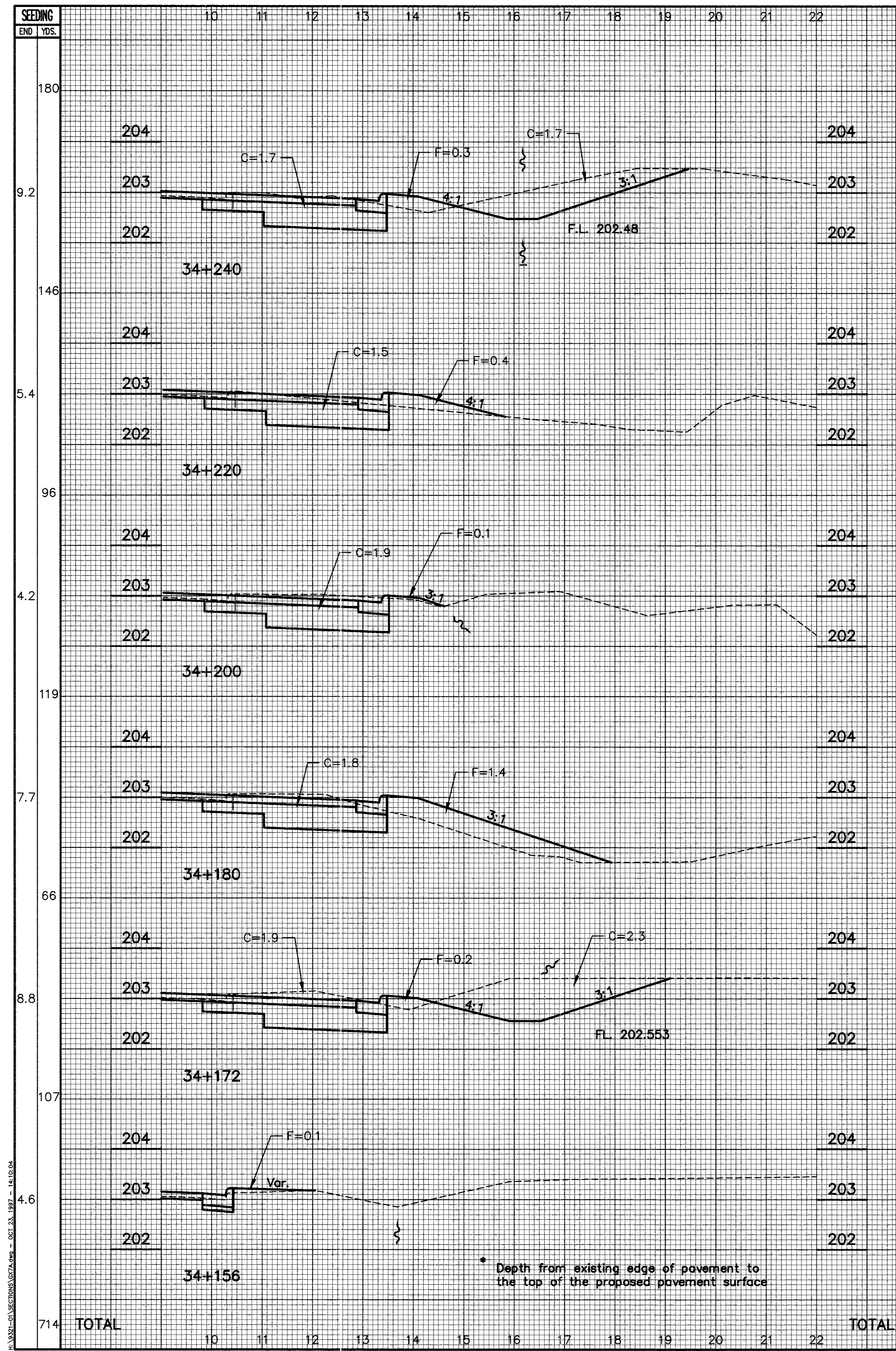


EXISTING TYPICAL SECTION  
OF ADJOINING PAVEMENT

For Concrete Barrier Transition  
to Barrier Guardrail, See Sheet No. 87  
For Concrete Median Detail at  
Sta. 38+190.650, See Sheet No. 80

For Guardrail Quantities, See Sheet No. 54  
For Barrier Quantities, See Sheet No. 52  
For Drainage Quantities, See Sheet No. 111

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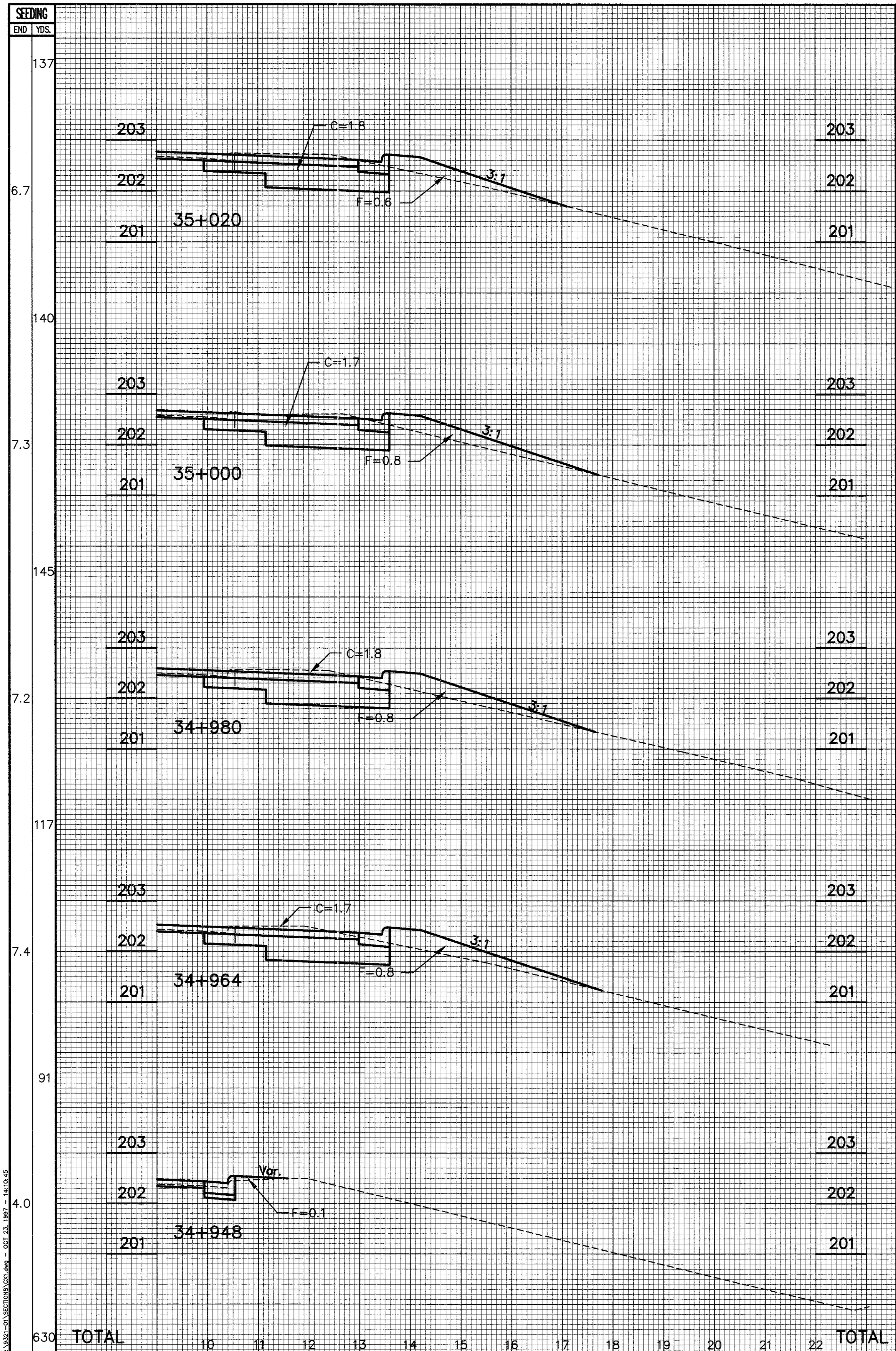


END AREA	VOLUME		CALCULATED LVM	CHECKED BL
	CUT	FILL		
			6	2
			24	1
			44	2
			11	1
			47	4
132	10			

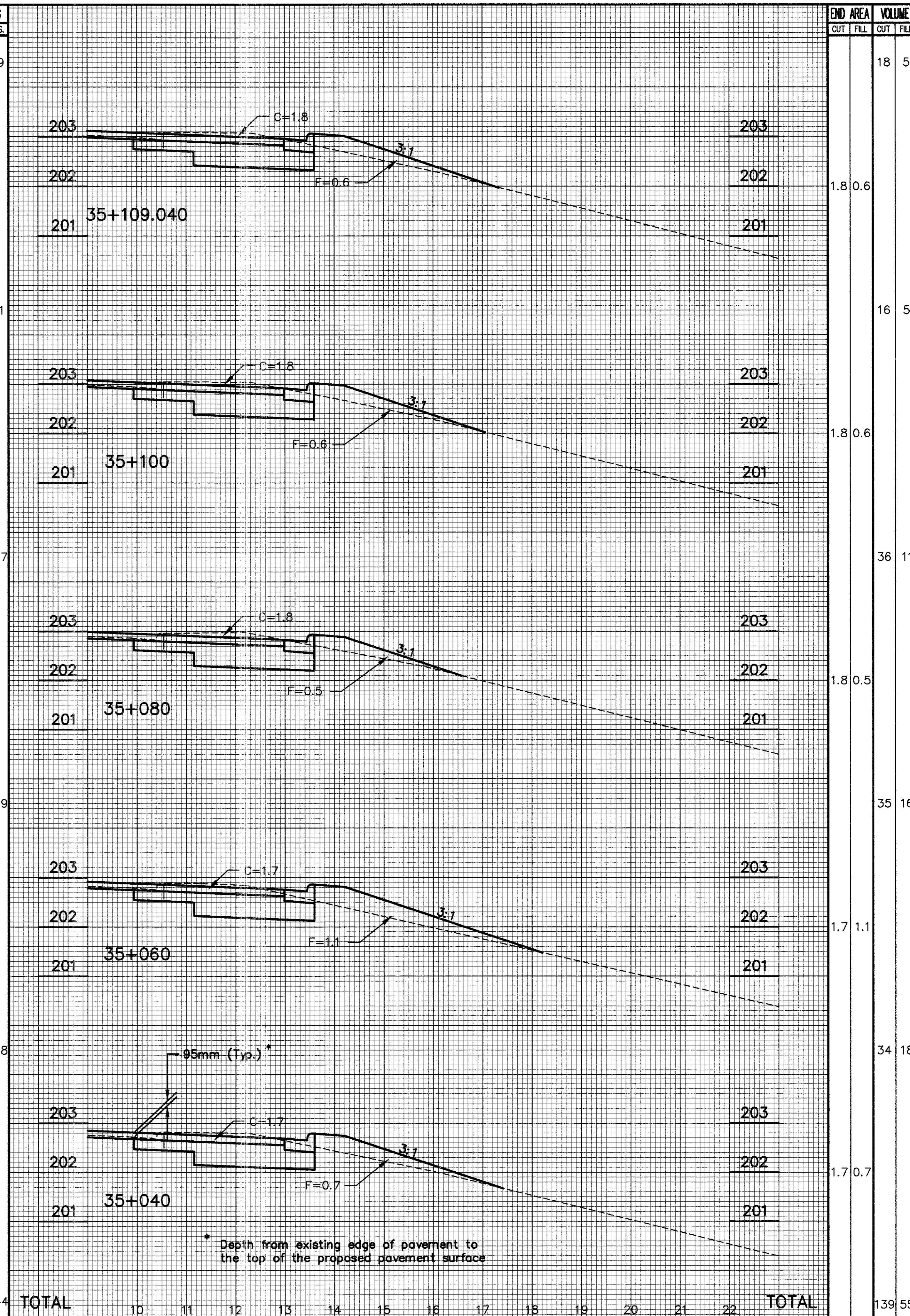
**S.R. 7 CROSS SECTIONS  
 STA. 34+156 TO STA. 34+337.040 RT.**

**BEL-7-32.276**

69  
 242



END AREA	VOLUME		SEEDING END YDS.
	CUT	FILL	
35	13	69	69
1.8	0.6	6.9	6.9
35	14	61	61
1.7	0.8	6.6	6.6
35	16	127	127
1.8	0.8	6.1	6.1
28	13	139	139
1.7	0.8	7.8	7.8
14	7	148	148
0.0	0.1	7.0	7.0
147	63	544	544



END AREA	VOLUME		SEEDING END YDS.
	CUT	FILL	
18	5	5	5
1.8	0.6	6.6	6.6
16	5	5	5
1.8	0.6	6.6	6.6
36	11	11	11
1.8	0.5	6.1	6.1
35	16	16	16
1.7	1.1	11.1	11.1
34	18	18	18
1.7	0.7	11.7	11.7
139	55	55	55

**S.R. 7 CROSS SECTIONS**  
**STA. 34+948 TO STA. 35+109.040 RT.**

**BEL-7-32.276**

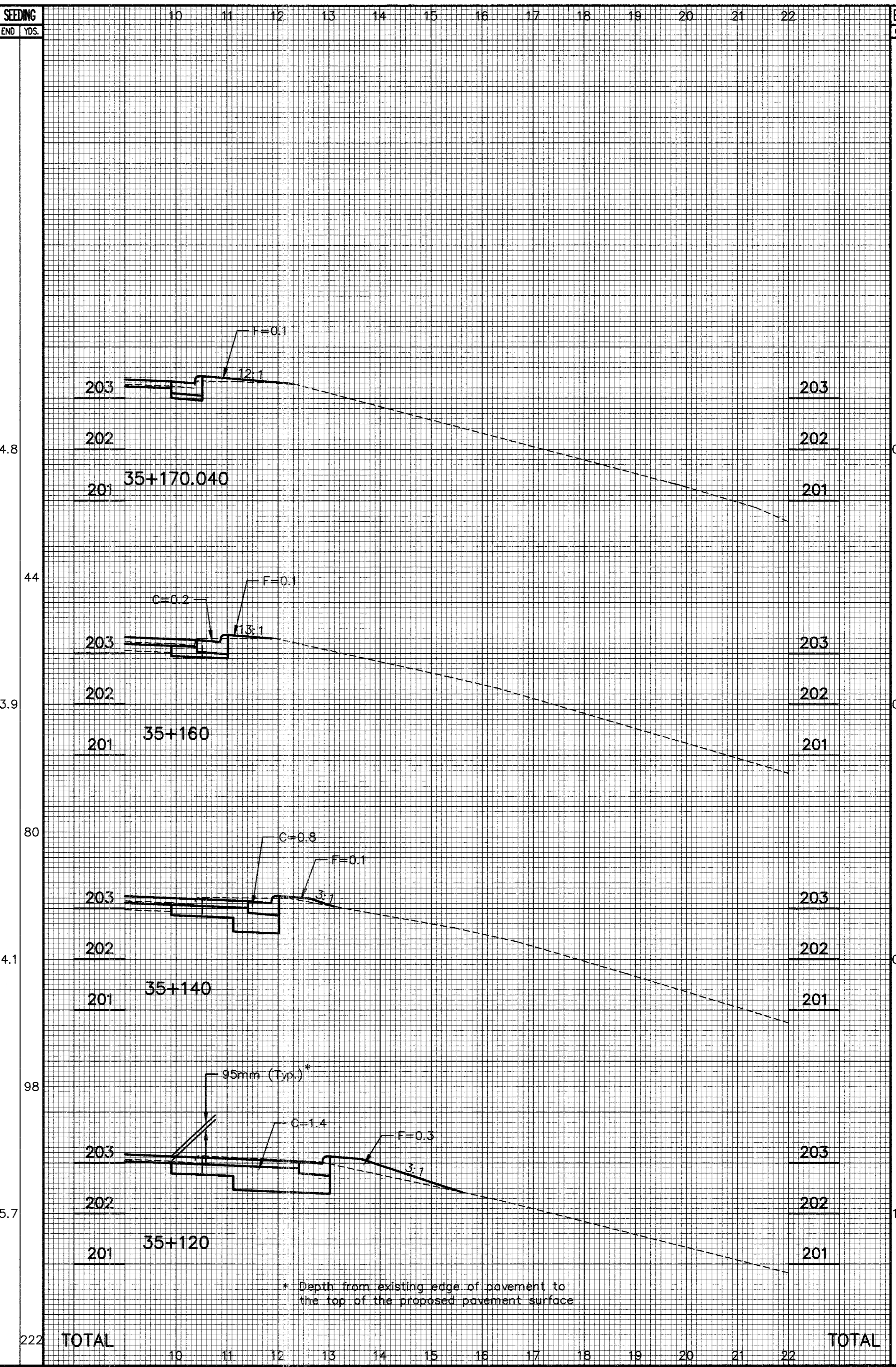
70  
 242

SEEDING  
END | YDS.

END AREA VOLUME SEEDING  
CUT | FILL CUT | FILL END | YDS.

END AREA VOLUME  
CUT | FILL CUT | FILL

CALCULATED  
LVM  
CHECKED  
BL

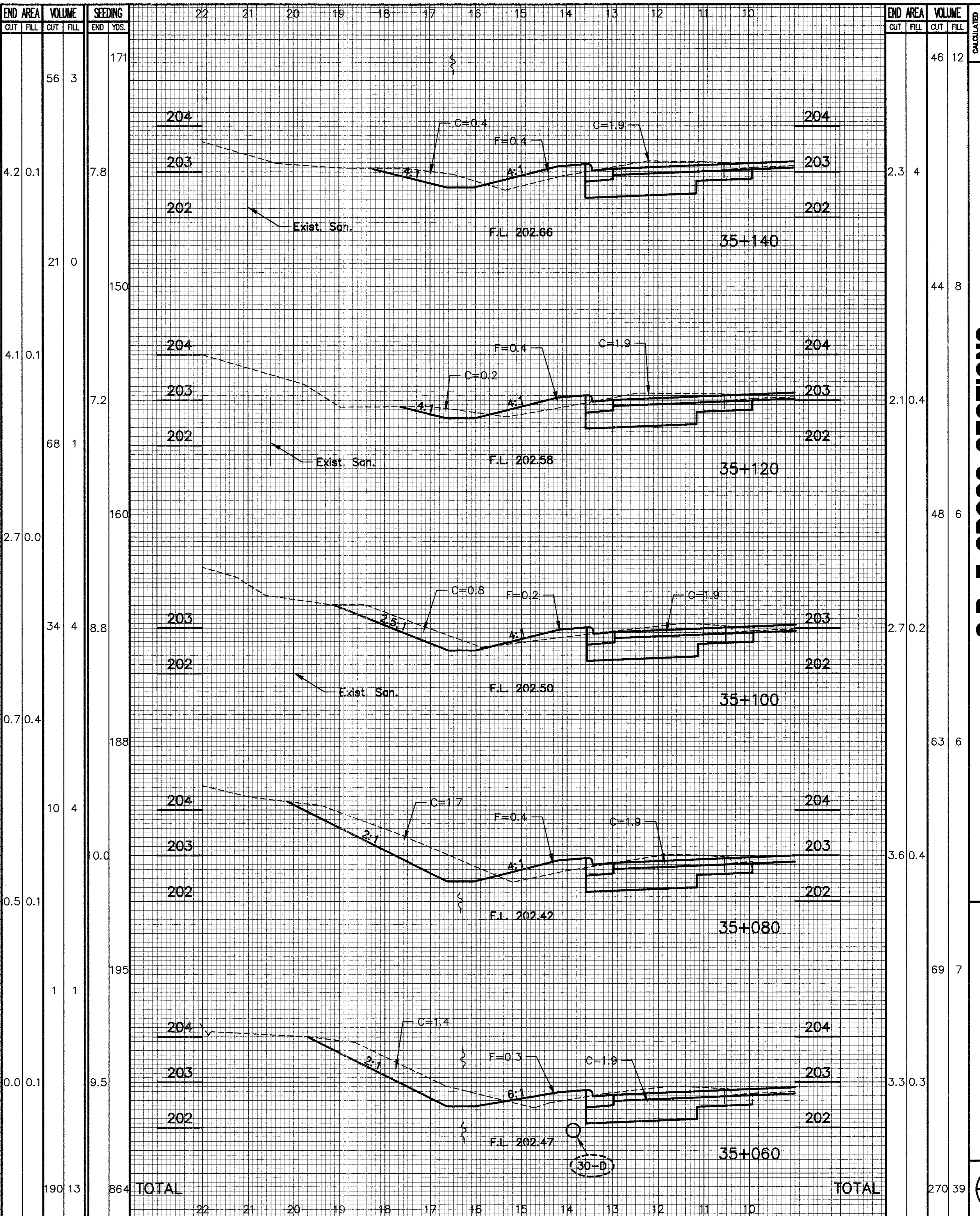
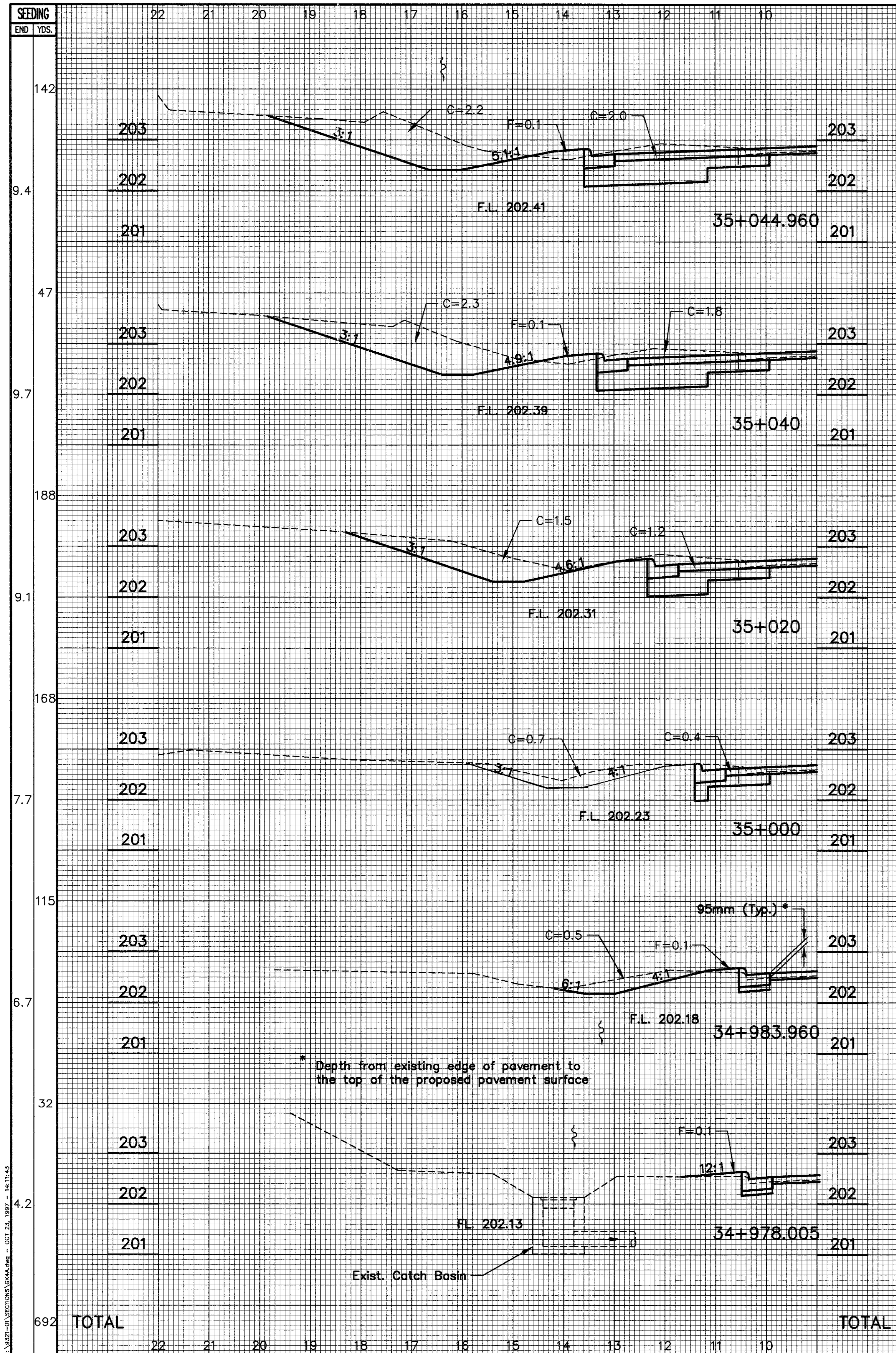


S.R. 7 CROSS SECTIONS  
STA. 35+120 TO STA. 35+170.040 RT.

BEL-7-32.276

71  
242

11/23/20 - 201 SECTIONS (02.dwg) - OCT 23, 1997 - 14:11:13

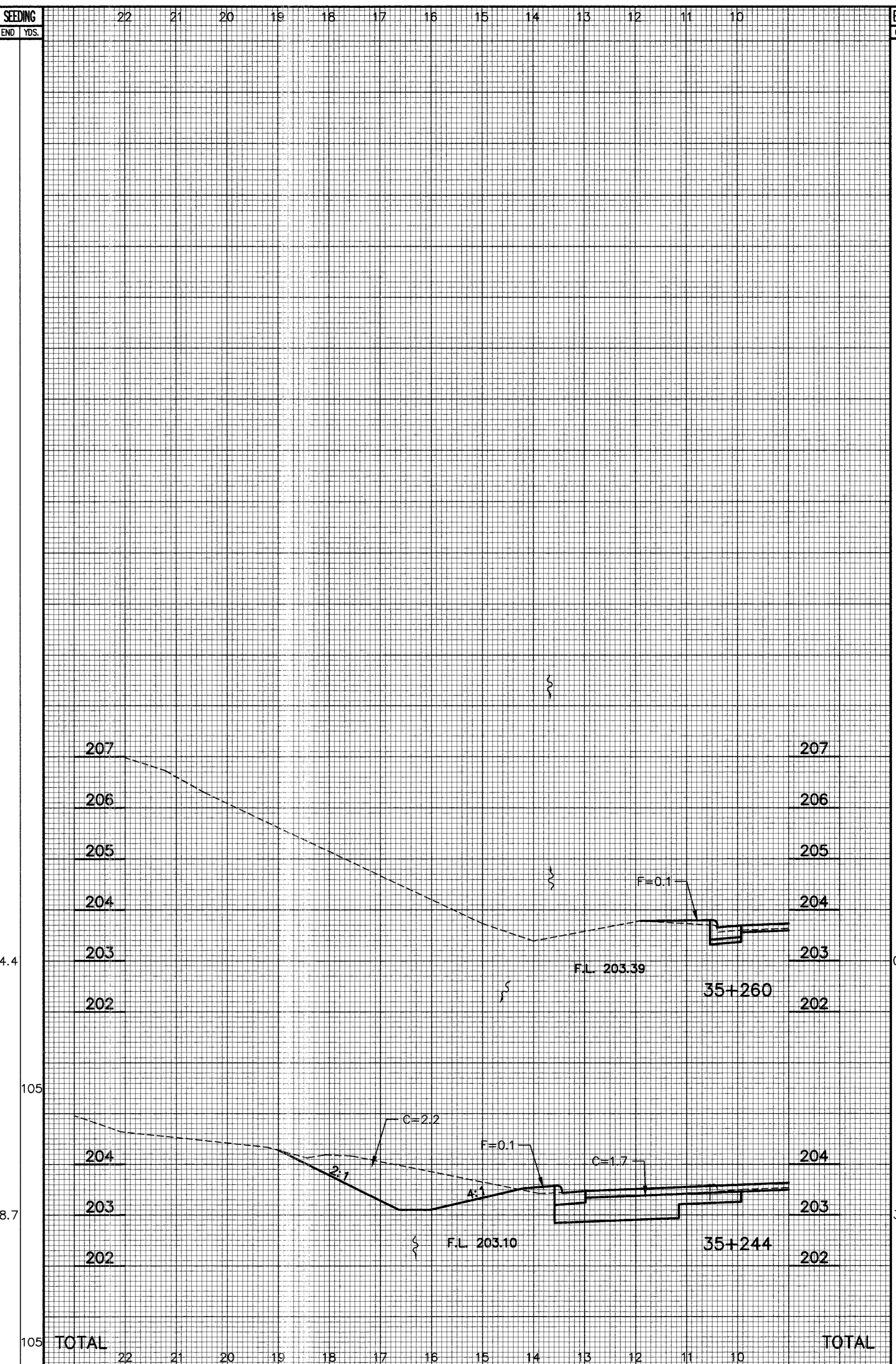
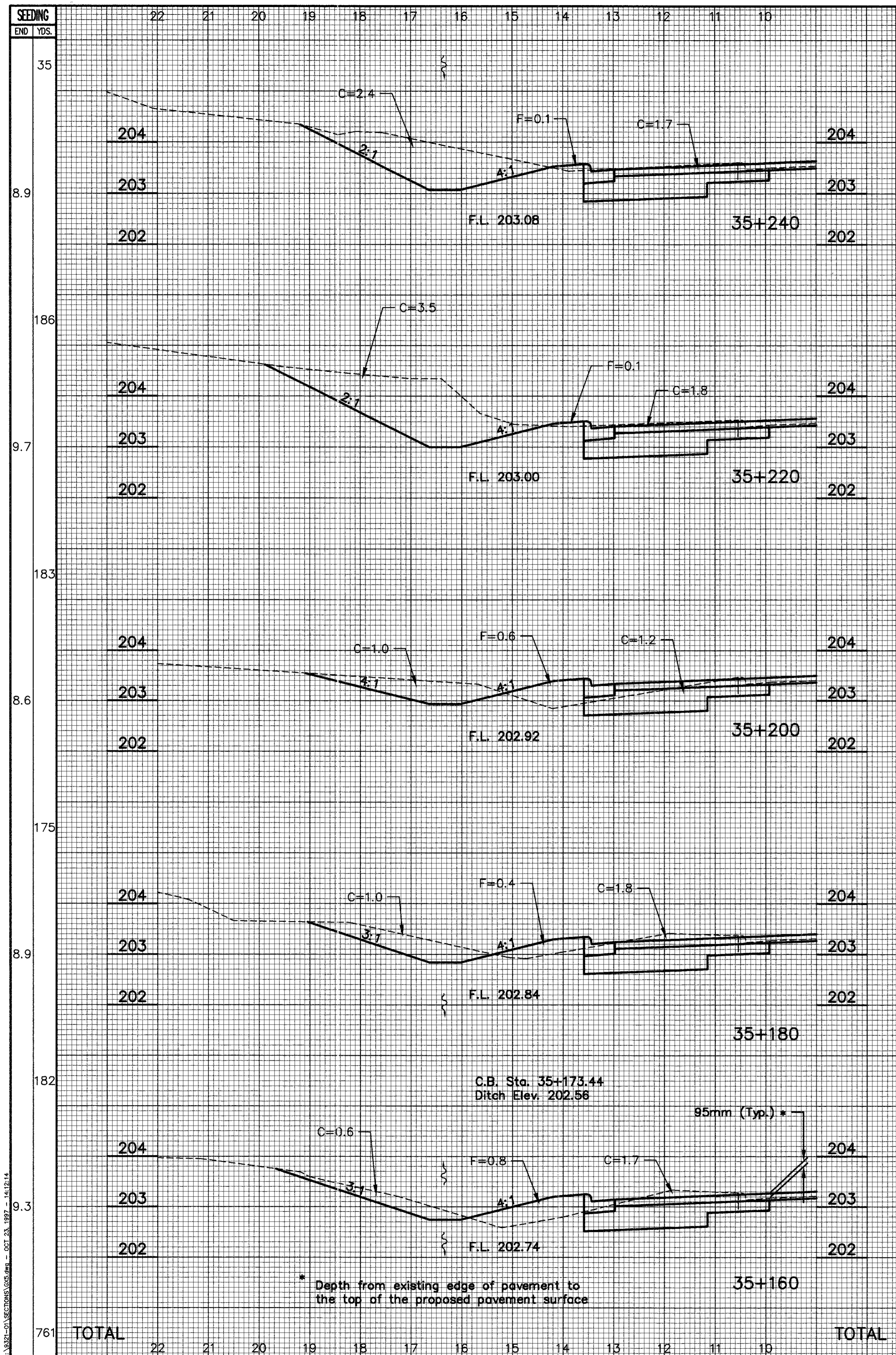


**S.R. 7 CROSS SECTIONS  
STA. 34+978.005 TO STA. 35+140 LT.**

**BEL-7-32.276**

72  
242

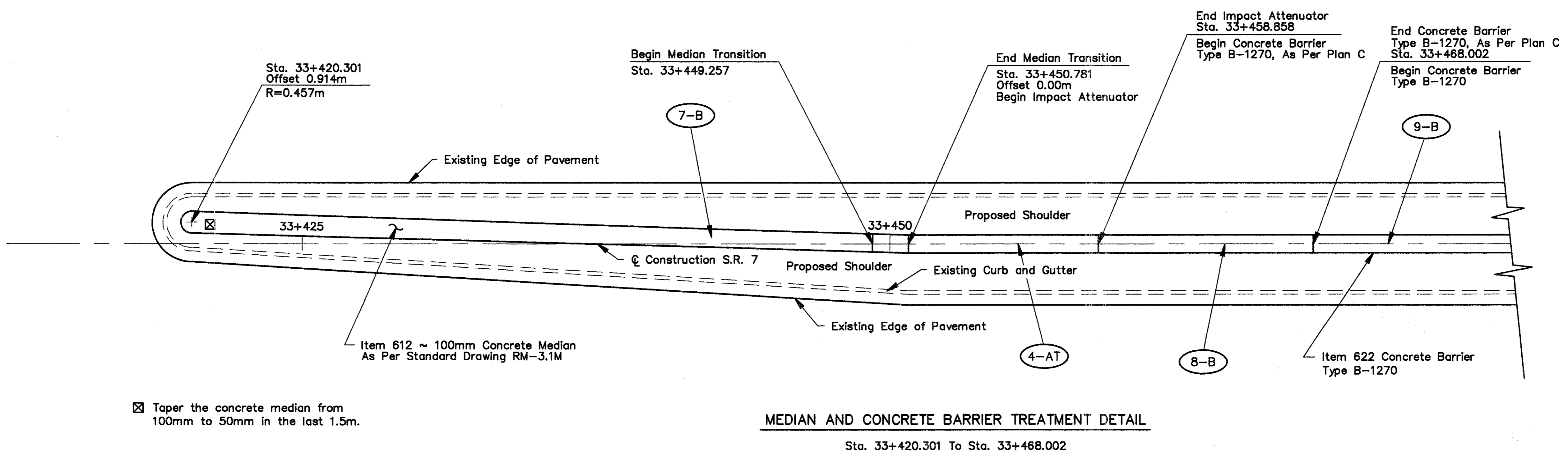
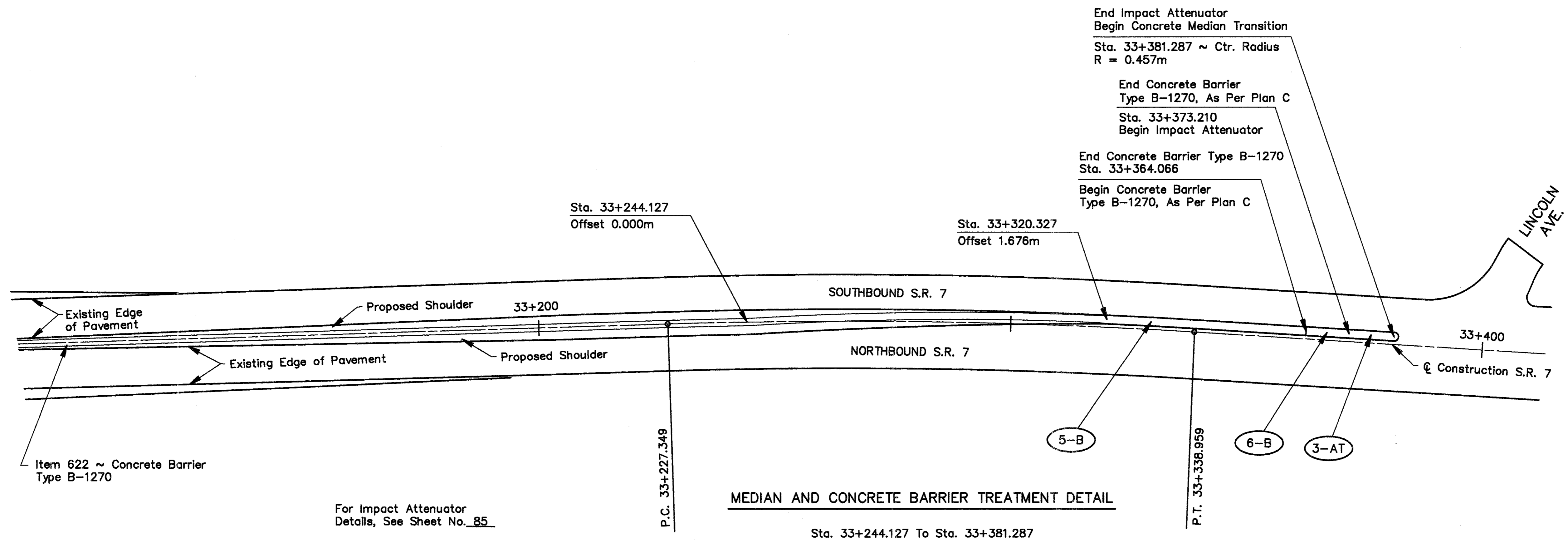




S.R. 7 CROSS SECTIONS  
STA. 35+160 TO STA. 35+260 LT.

BEL-7-32.276

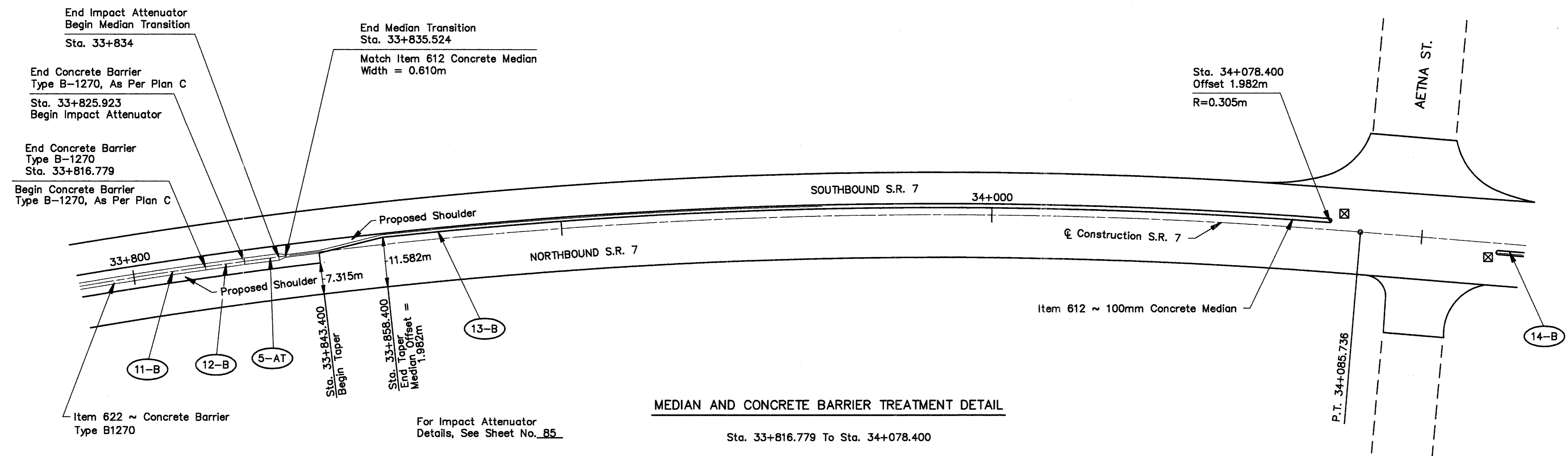
73  
242



☒ Taper the concrete median from 100mm to 50mm in the last 1.5m.

MEDIAN DETAILS

BEL-7-32.276

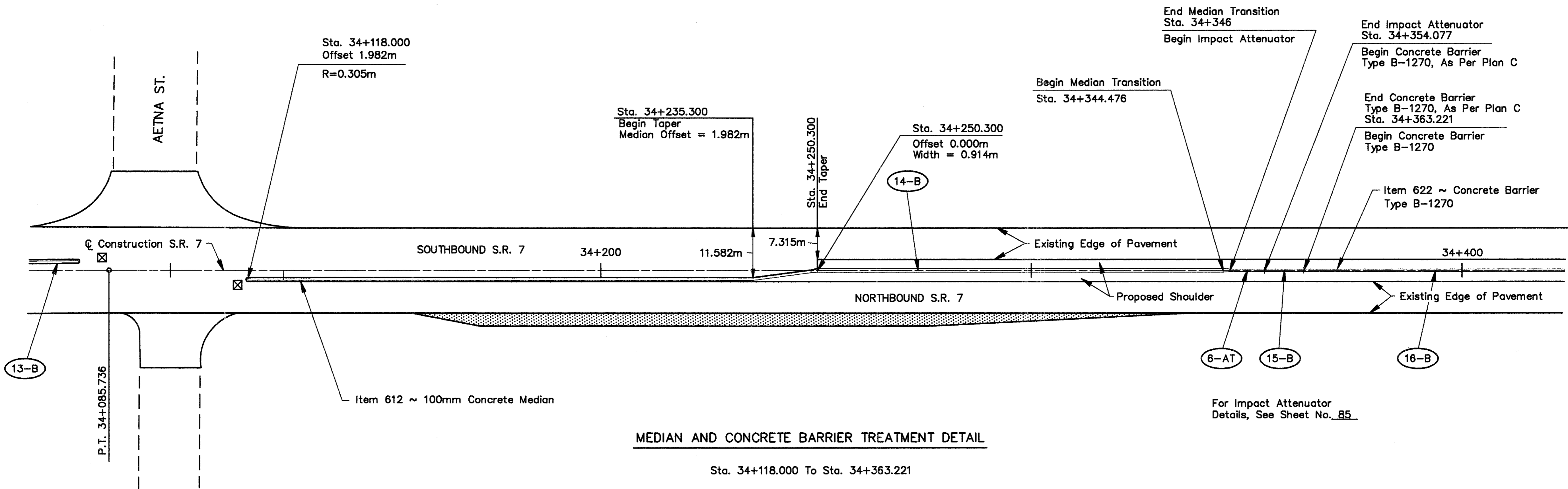


**MEDIAN AND CONCRETE BARRIER TREATMENT DETAIL**

Sta. 33+816.779 To Sta. 34+078.400

☒ Taper the concrete median from 100mm to 50mm in the last 1.5m.

NOTE:  
All station and offsets shown are to the center of the 100mm Concrete Median or Concrete Barrier.

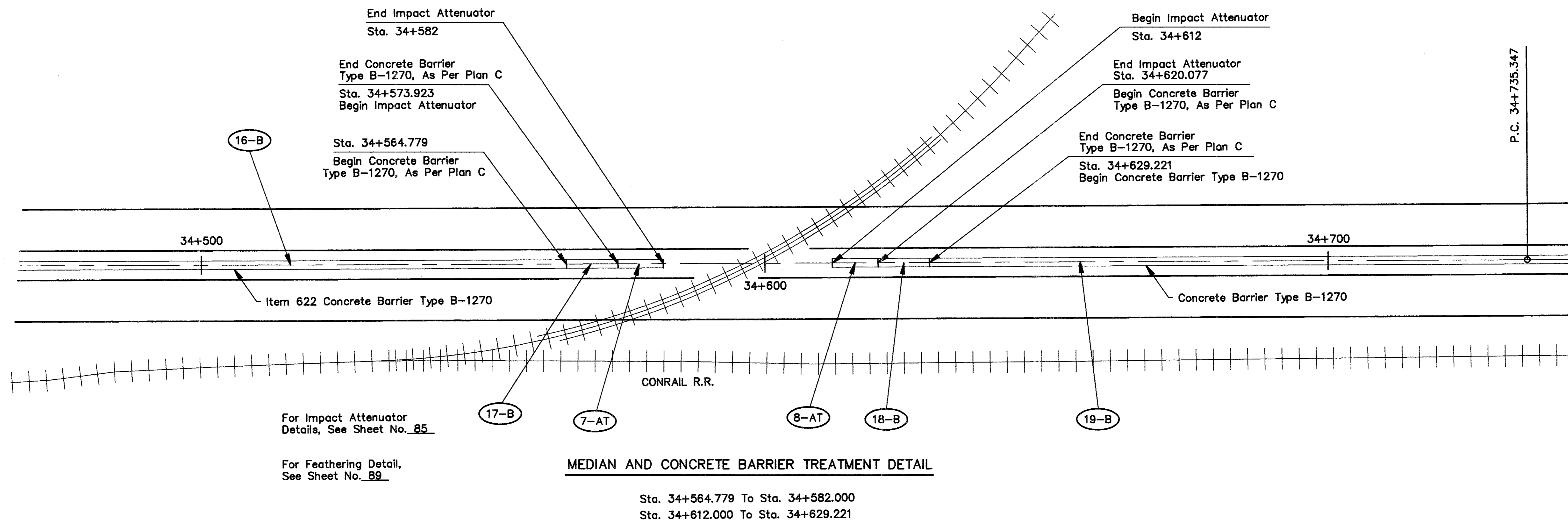


**MEDIAN AND CONCRETE BARRIER TREATMENT DETAIL**

Sta. 34+118.000 To Sta. 34+363.221

For Impact Attenuator Details, See Sheet No. 85

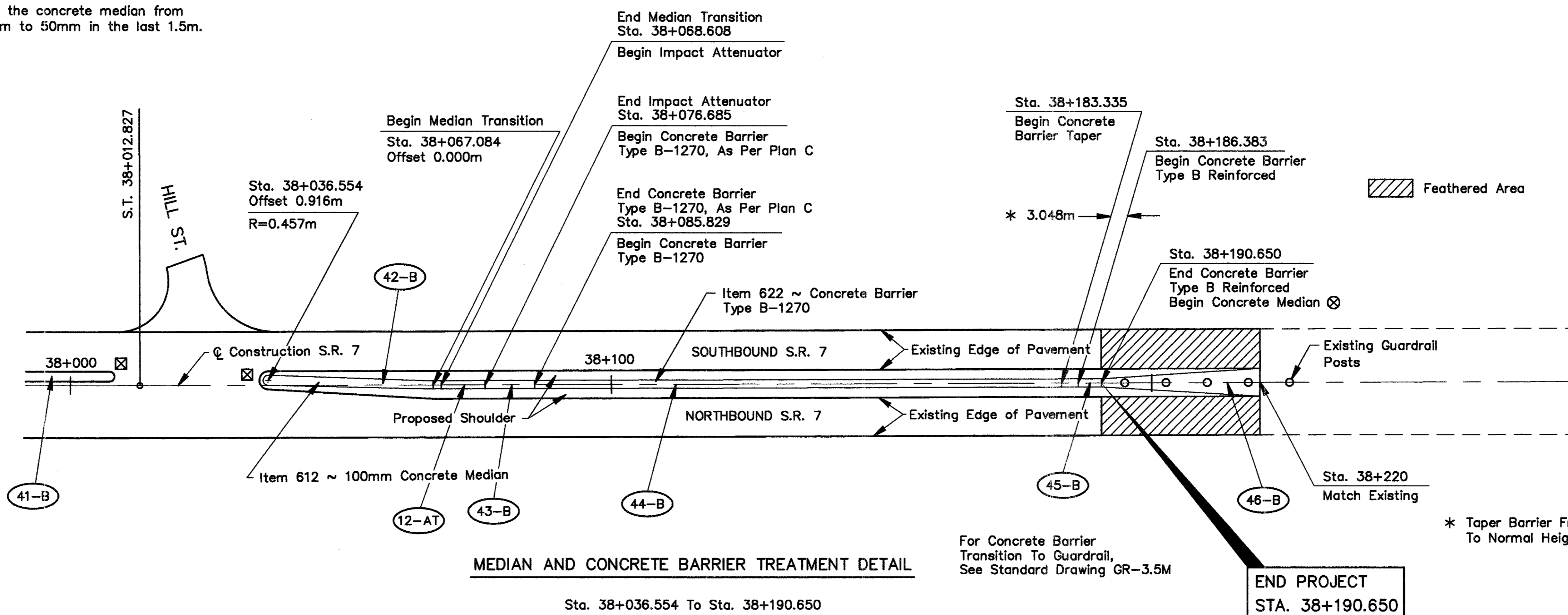
14.0322-01.133213.046 - OCT. 24, 1997 - 10.26.01



**MEDIAN AND CONCRETE BARRIER TREATMENT DETAIL**

Sta. 34+564.779 To Sta. 34+582.000  
Sta. 34+612.000 To Sta. 34+629.221

☒ Taper the concrete median from 100mm to 50mm in the last 1.5m.



**MEDIAN AND CONCRETE BARRIER TREATMENT DETAIL**

Sta. 38+036.554 To Sta. 38+190.650

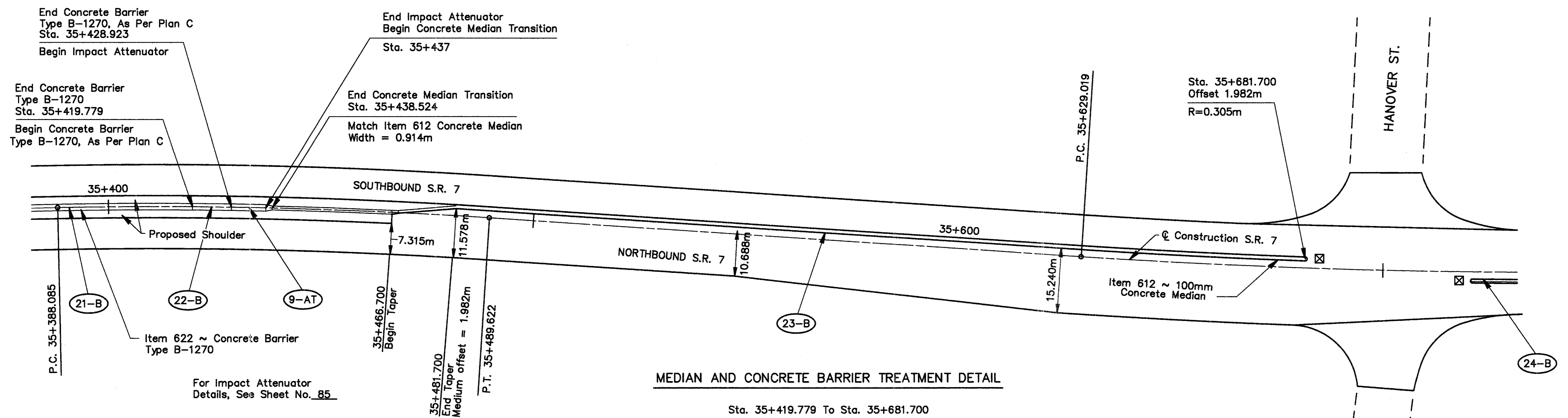
**END PROJECT  
STA. 38+190.650**

\* Taper Barrier From B-1270 To Normal Height Barrier

☒ See Detail on Sheet No. 80

**MEDIAN DETAILS**

**BEL-7-32.276**

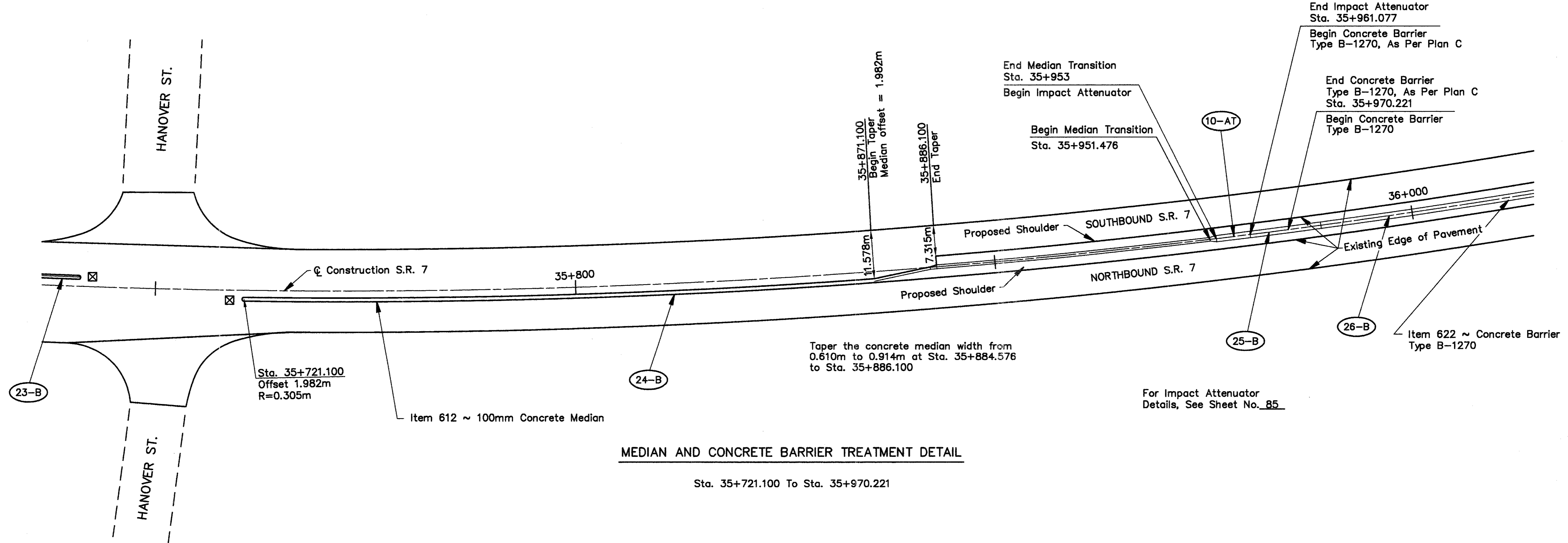


**MEDIAN AND CONCRETE BARRIER TREATMENT DETAIL**

Sta. 35+419.779 To Sta. 35+681.700

Note:  
All stations and offsets shown are to the center of the 100mm Concrete Median or Barrier.

☒ Taper the concrete median from 100mm to 50mm in the last 1.5m.



**MEDIAN AND CONCRETE BARRIER TREATMENT DETAIL**

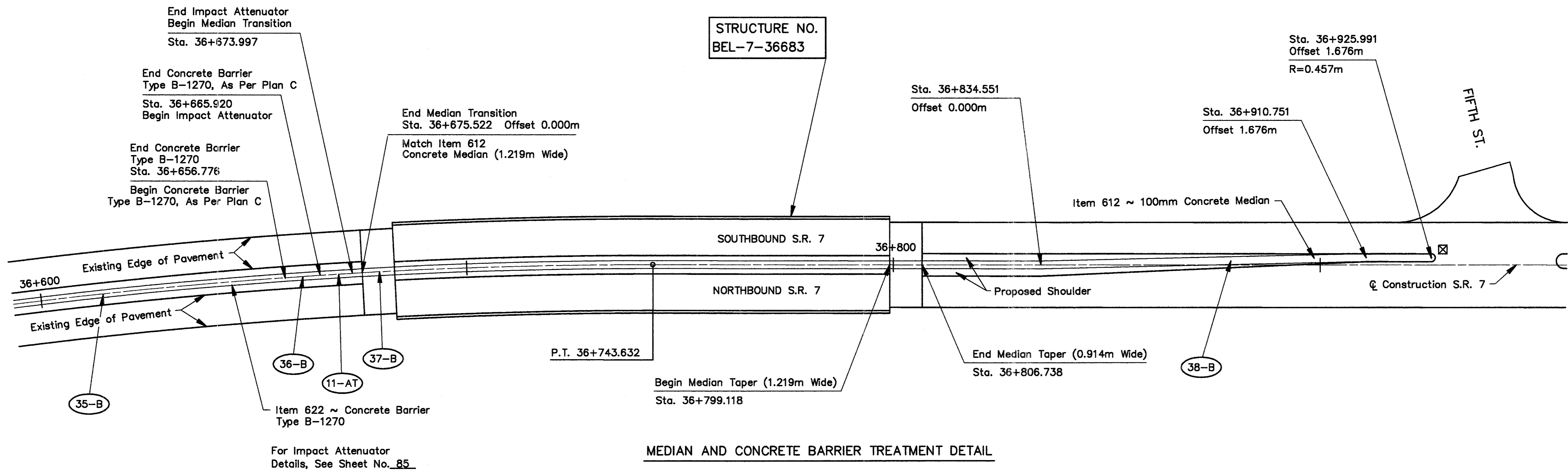
Sta. 35+721.100 To Sta. 35+970.221

For Impact Attenuator  
Details, See Sheet No. 85

**MEDIAN DETAILS**

**BEL-7-32.276**

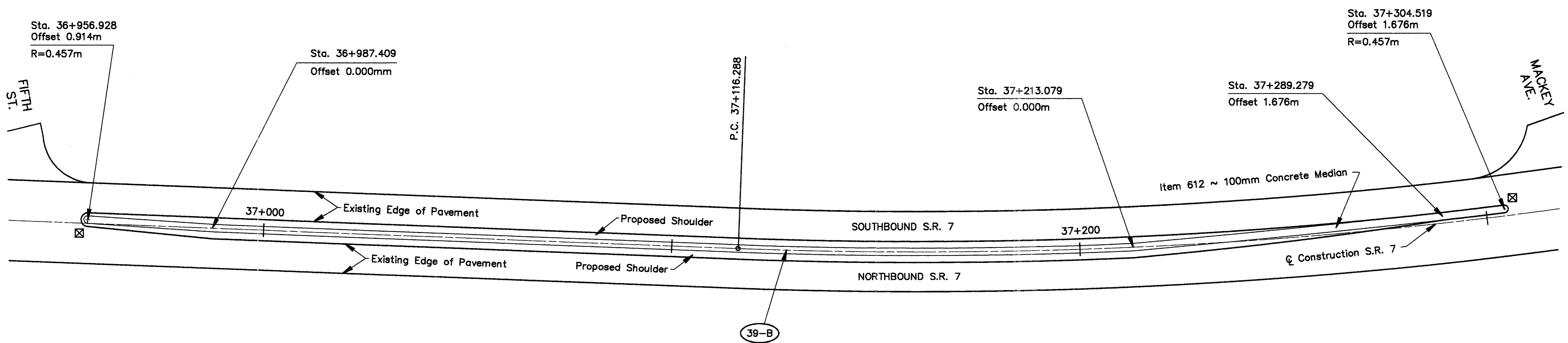
H:\327-01\32702\266 - OCT. 23, 1997 - 14.96.57



**MEDIAN AND CONCRETE BARRIER TREATMENT DETAIL**

Sta. 36+656.776 To Sta. 36+925.991

☒ Taper the concrete median from 100mm to 50mm in the last 1.5m.

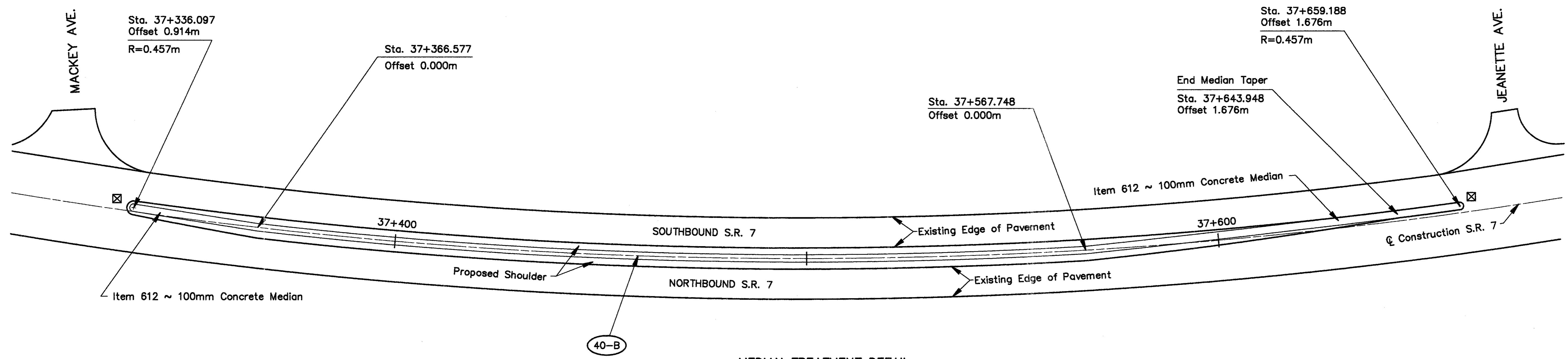


**MEDIAN TREATMENT DETAIL**

Sta. 36+956.928 To Sta. 37+304.519

**MEDIAN DETAILS**

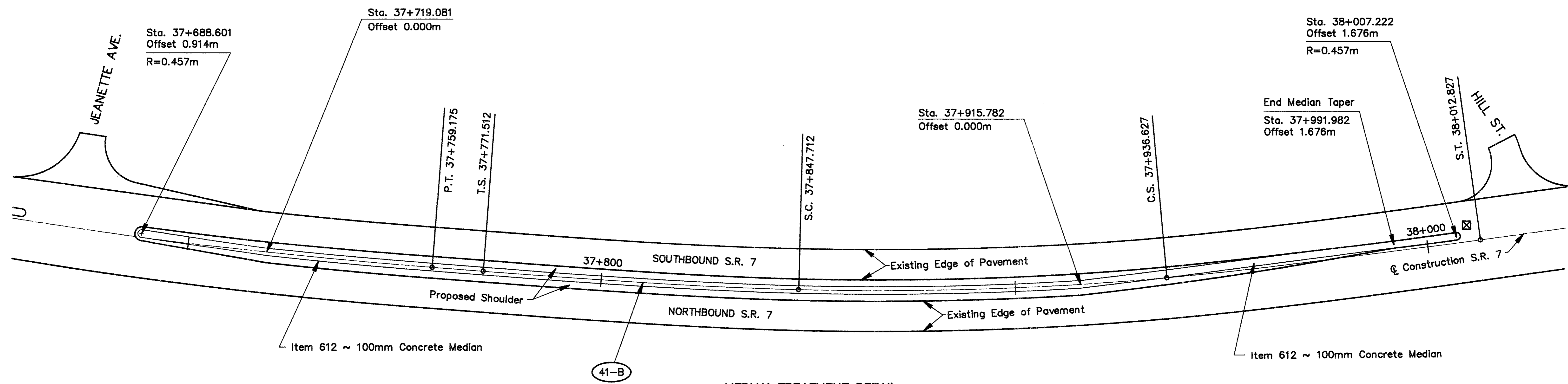
**BEL-7-32.276**



**MEDIAN TREATMENT DETAIL**

Sta. 37+336.097 To Sta. 37+659.188

☒ Taper the concrete median from 100mm to 50mm in the last 1.5m.



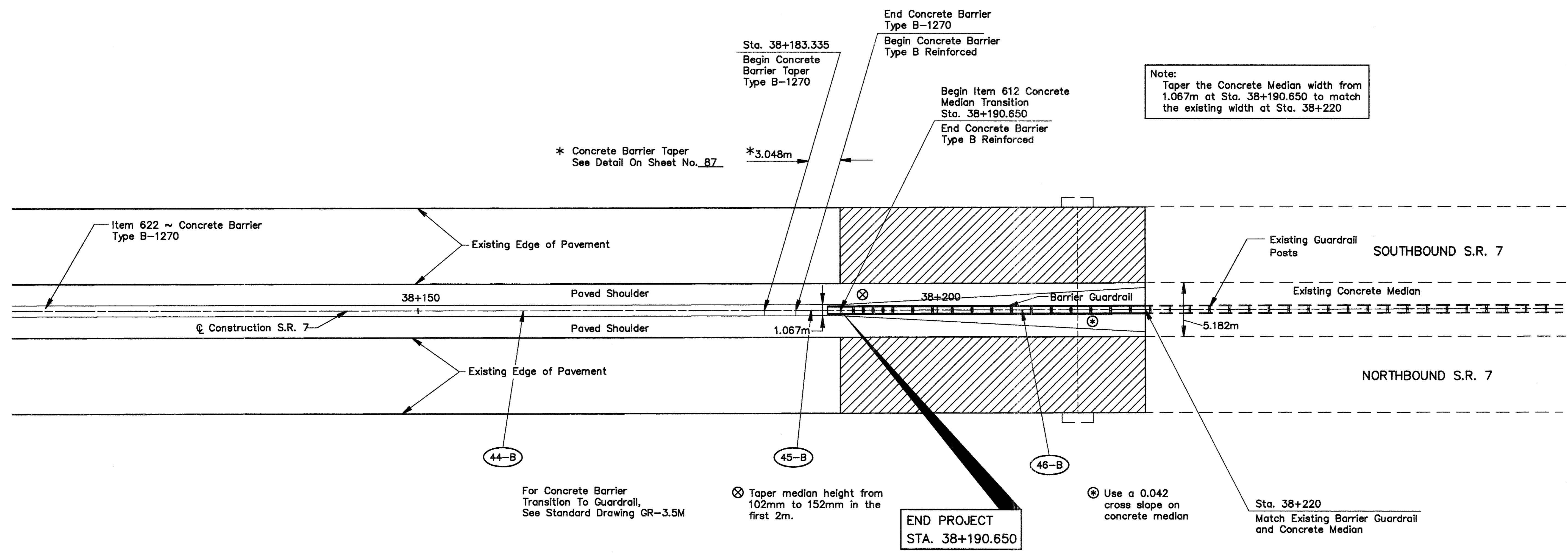
**MEDIAN TREATMENT DETAIL**

Sta. 37+688.601 To Sta. 38+007.222

**MEDIAN DETAILS**

**BEL-7-32.276**

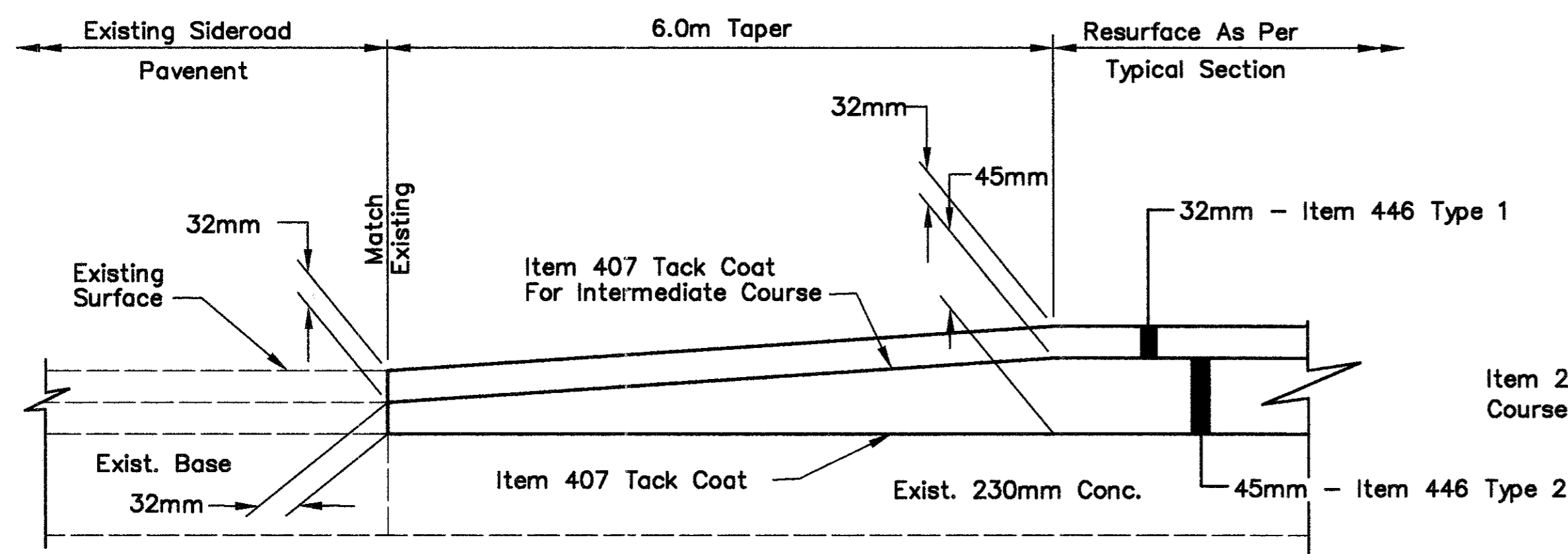
H:\322-01\322104.dwg - OCT 23, 1997 - 14:57:04



MEDIAN AND CONCRETE BARRIER TREATMENT DETAIL

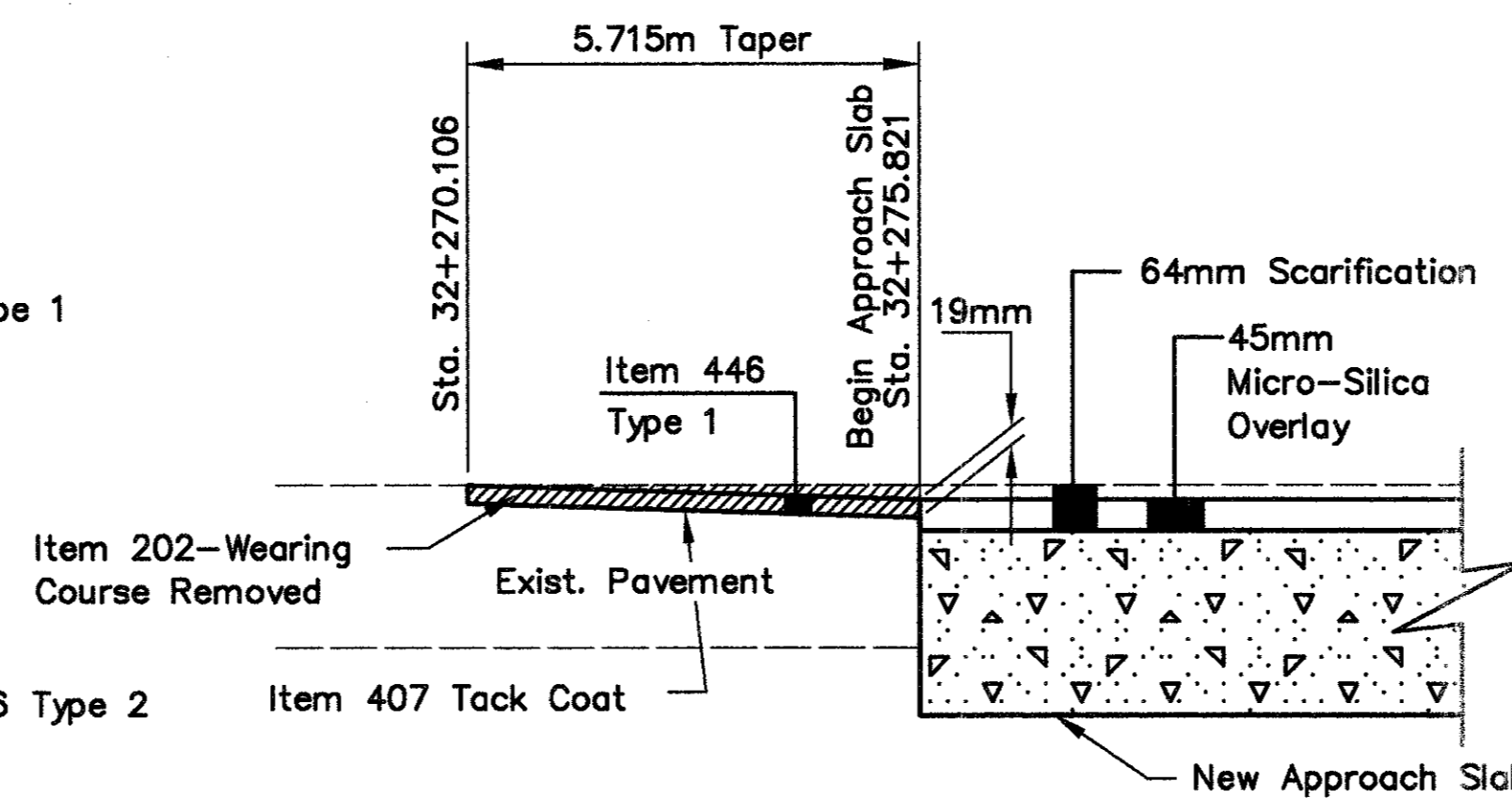
H:\322-01\322011.dwg - OCT 23, 1997 - 14:52:21





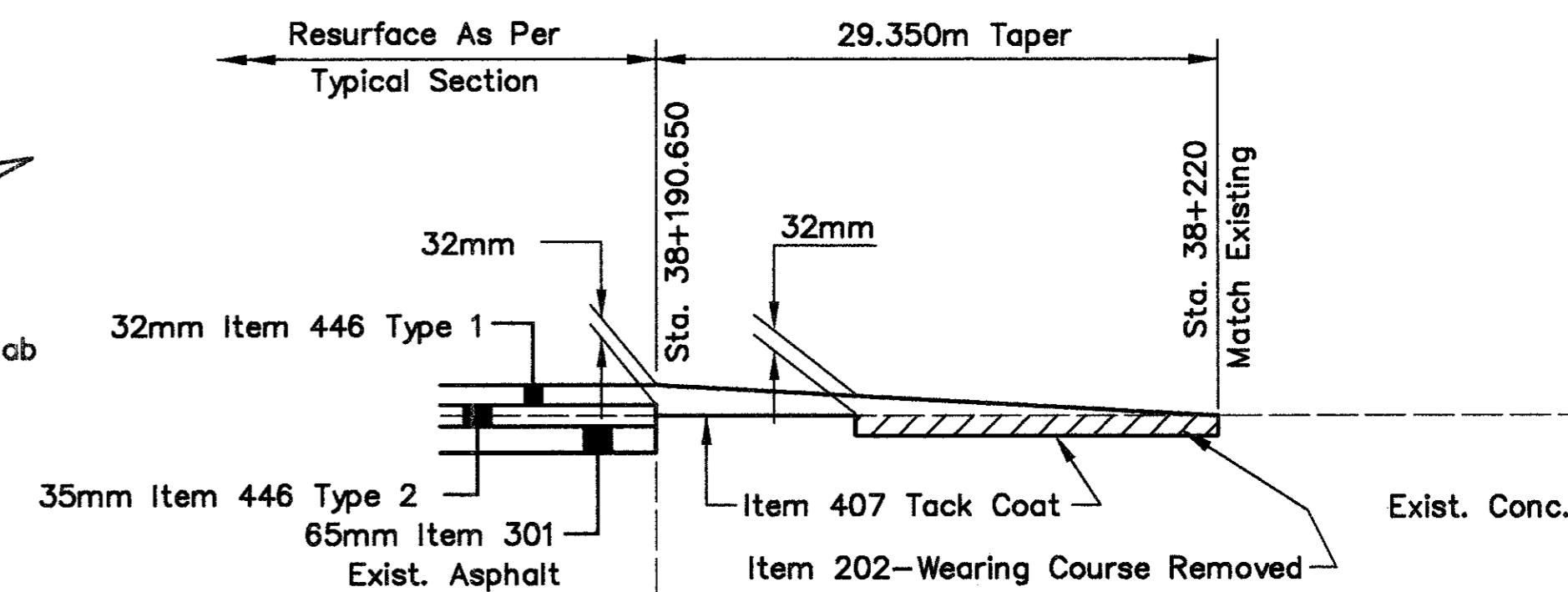
**RAMP INTERSECTION FEATHER DETAIL**

See Standard Drawing BP-3.1M



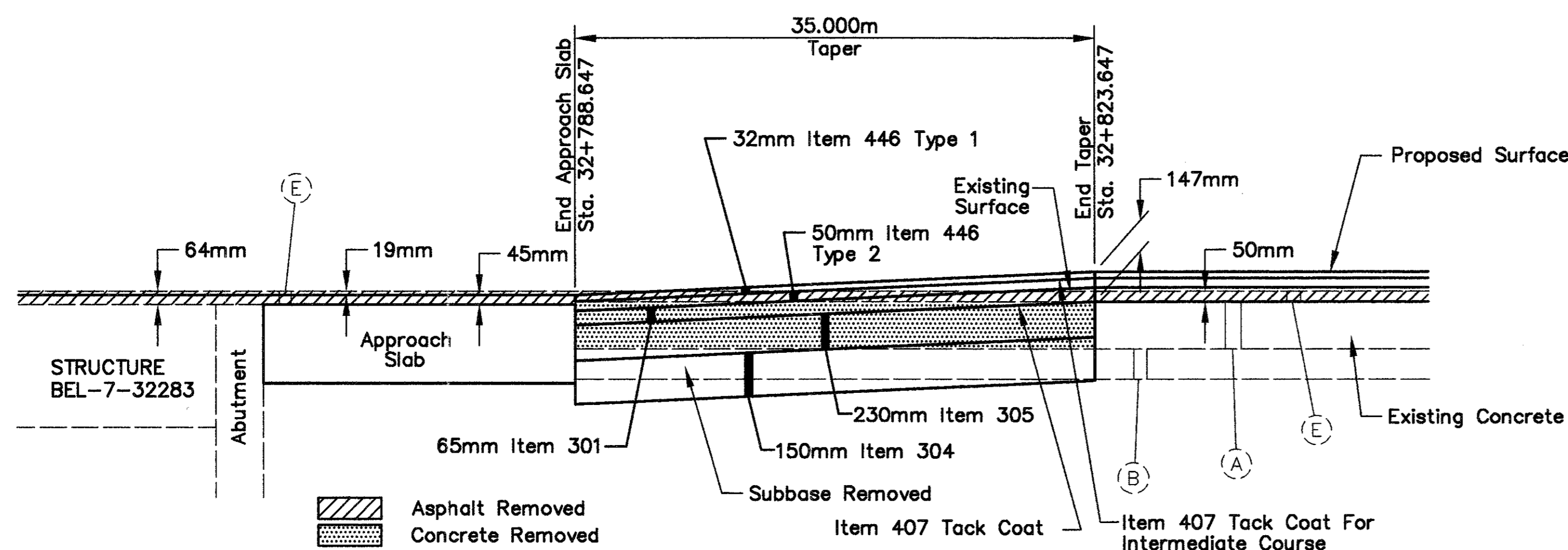
**PAVEMENT TRANSITION AT STRUCTURE BEL-7-32283**

See Standard Drawing BP-3.1M



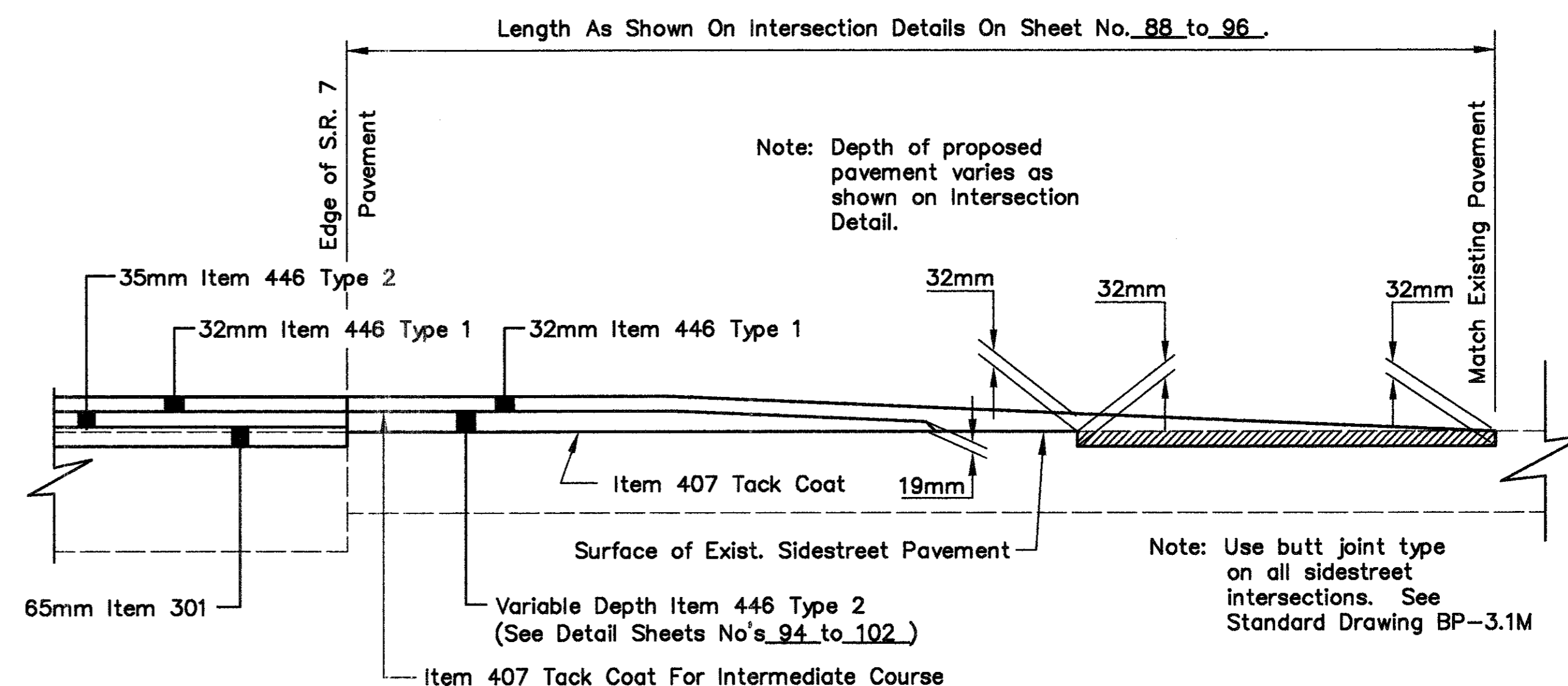
**PAVEMENT TRANSITION AT NORTH END OF S.R. 7**

See Standard Drawing BP-3.1M



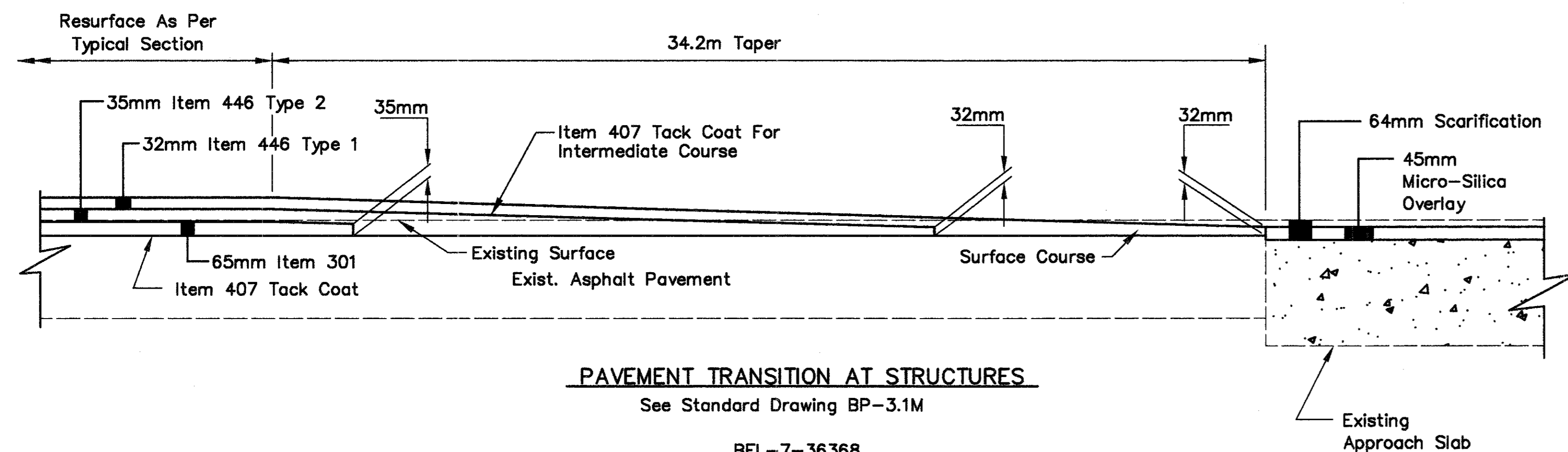
**S.R. 7 PAVEMENT PROFILE**

Not To Scale



**TYPICAL SIDESTREET FEATHER DETAIL**

See Standard Drawing BP-3.1M



**PAVEMENT TRANSITION AT STRUCTURES**

See Standard Drawing BP-3.1M

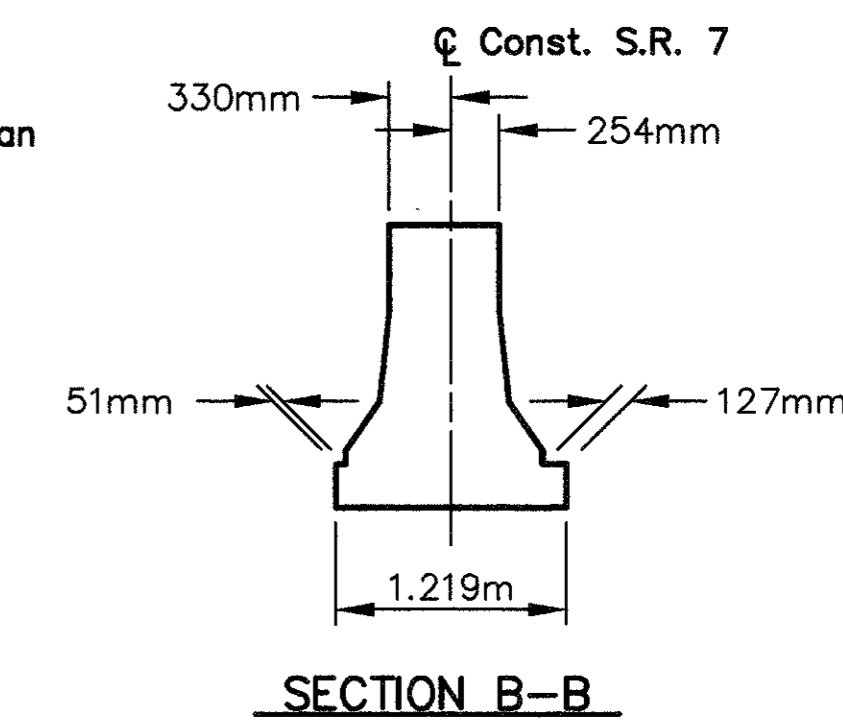
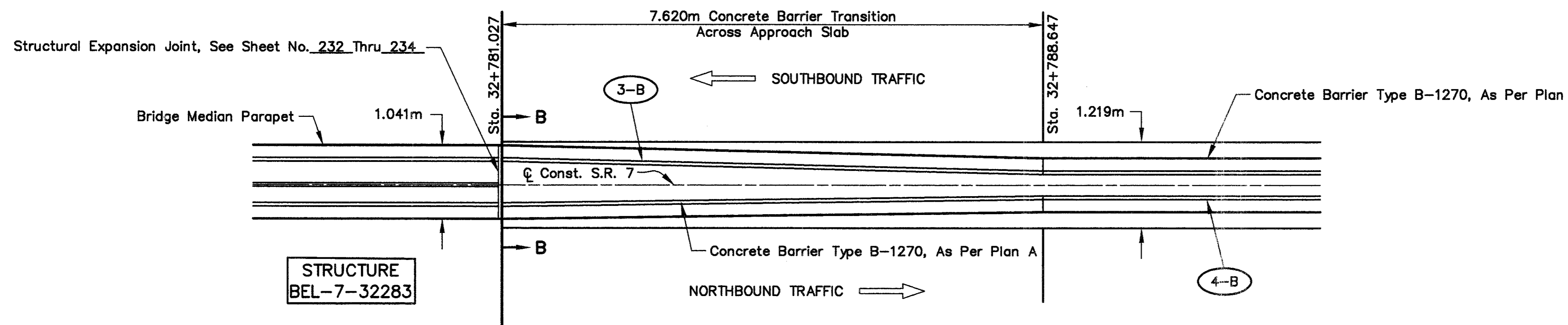
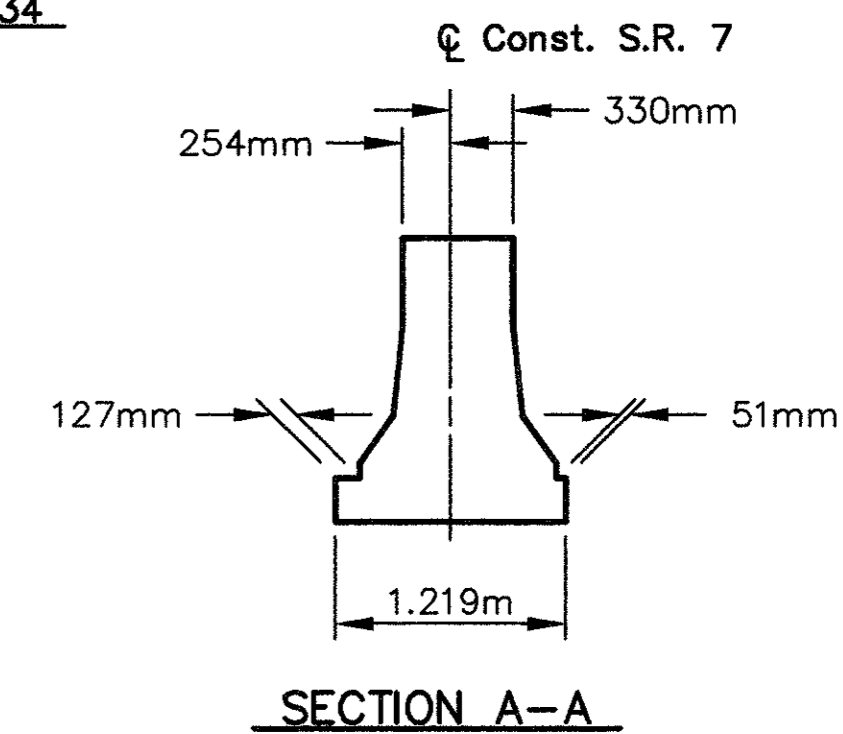
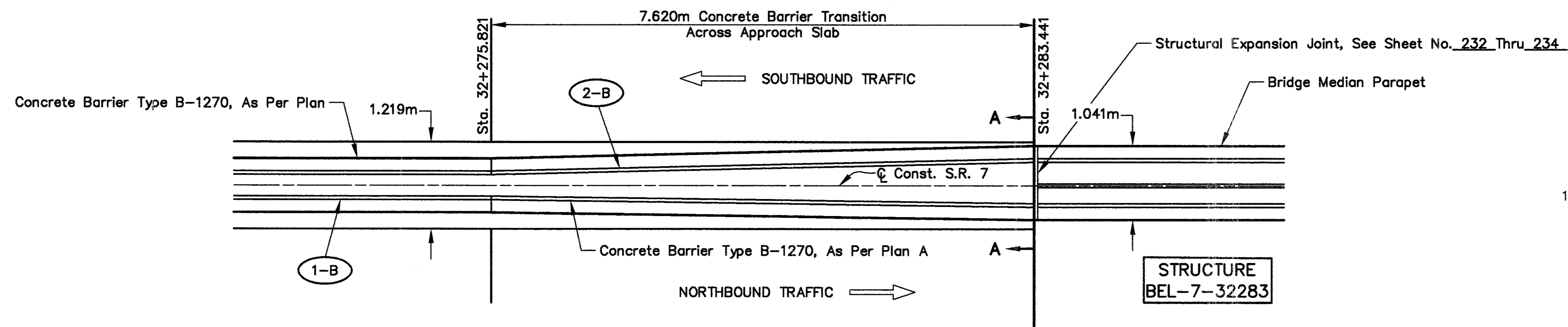
BEL-7-36368  
BEL-7-36683

(Applies to Both Ends of the Structure)

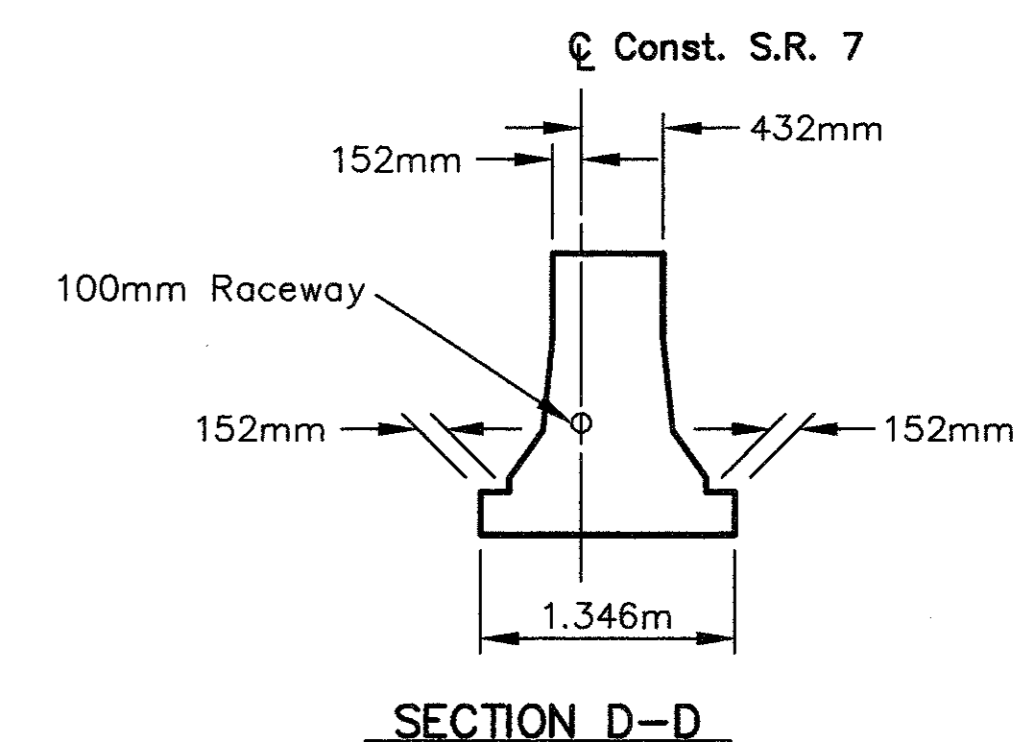
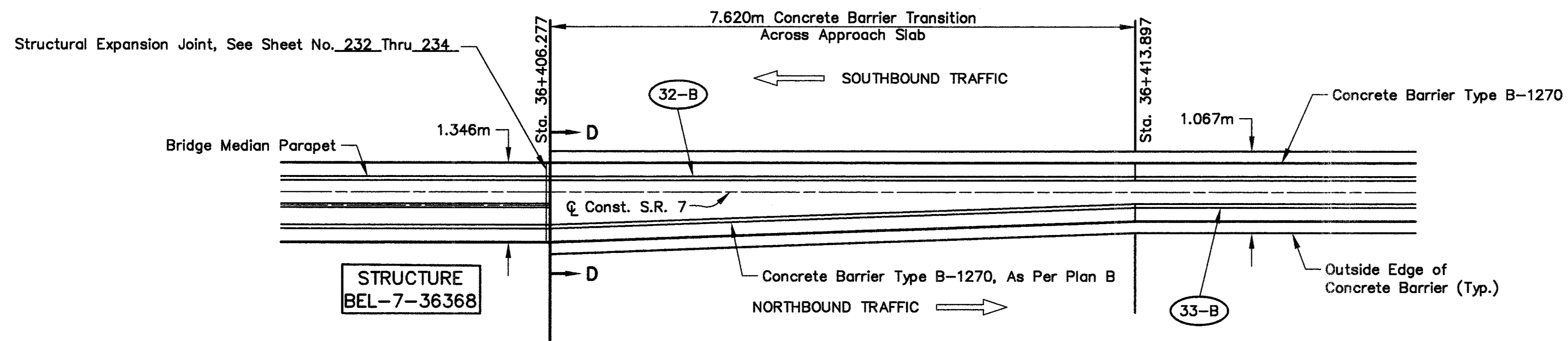
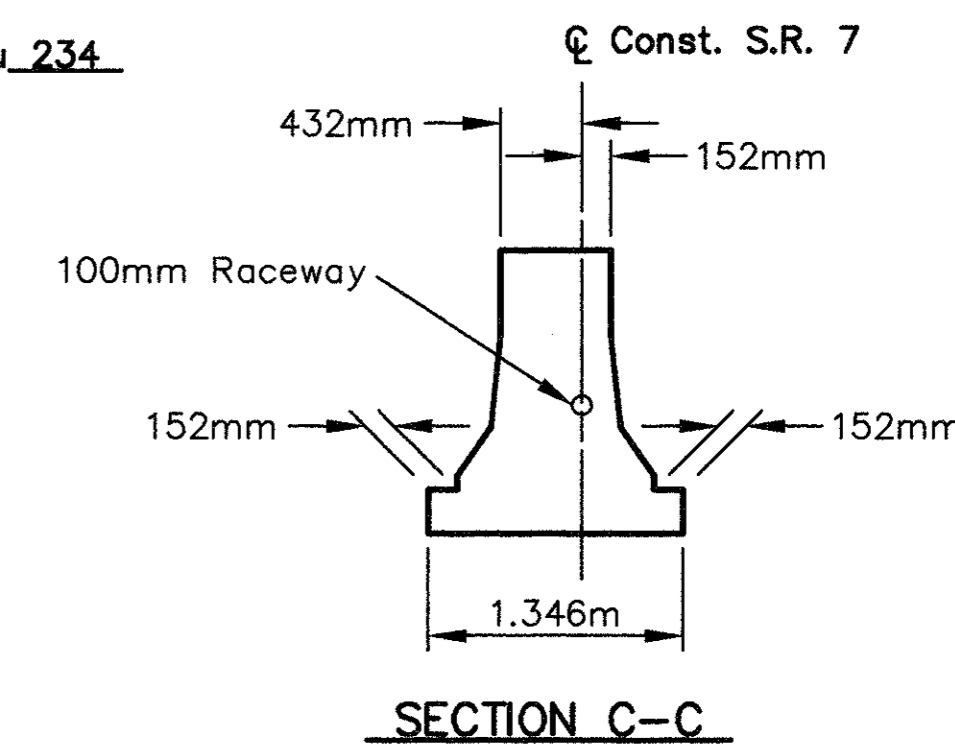
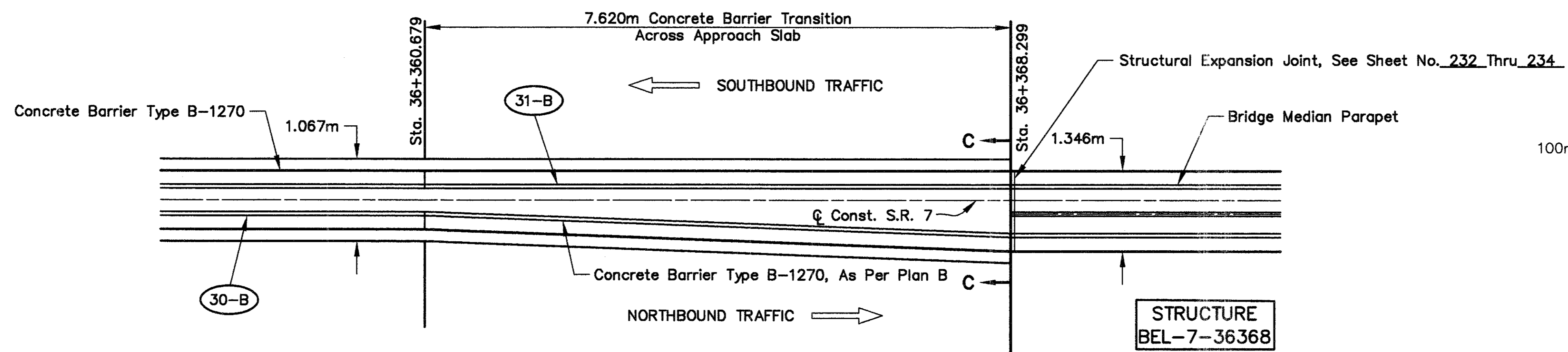
Note: All Drawings Not To Scale

MISCELLANEOUS DETAILS:  
FEATHERING

BEL-7-32.276

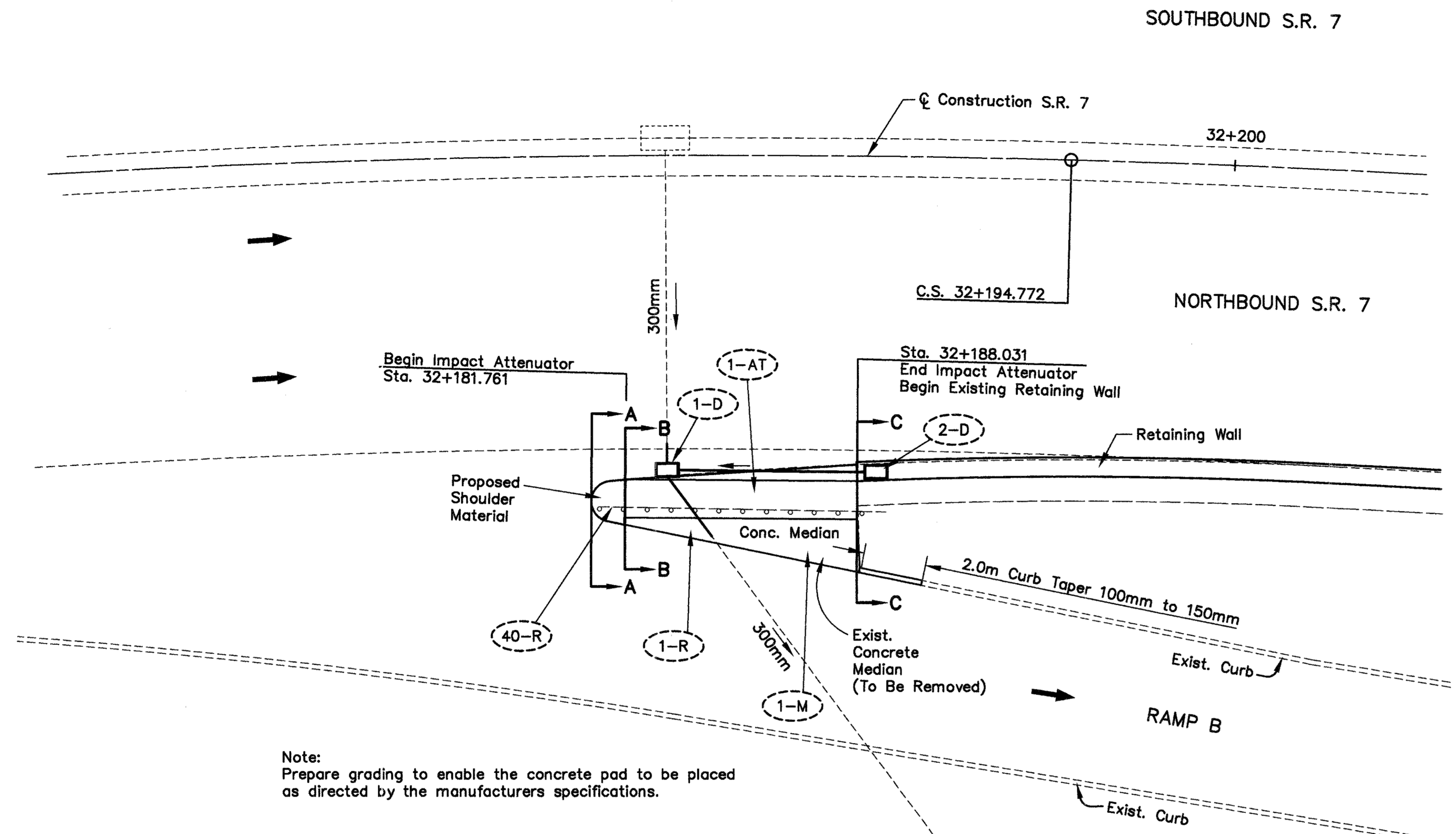


NOTE:  
All Concrete Barrier will  
retain the same safety  
shape as shown on  
Standard Drawing RM-4.3M

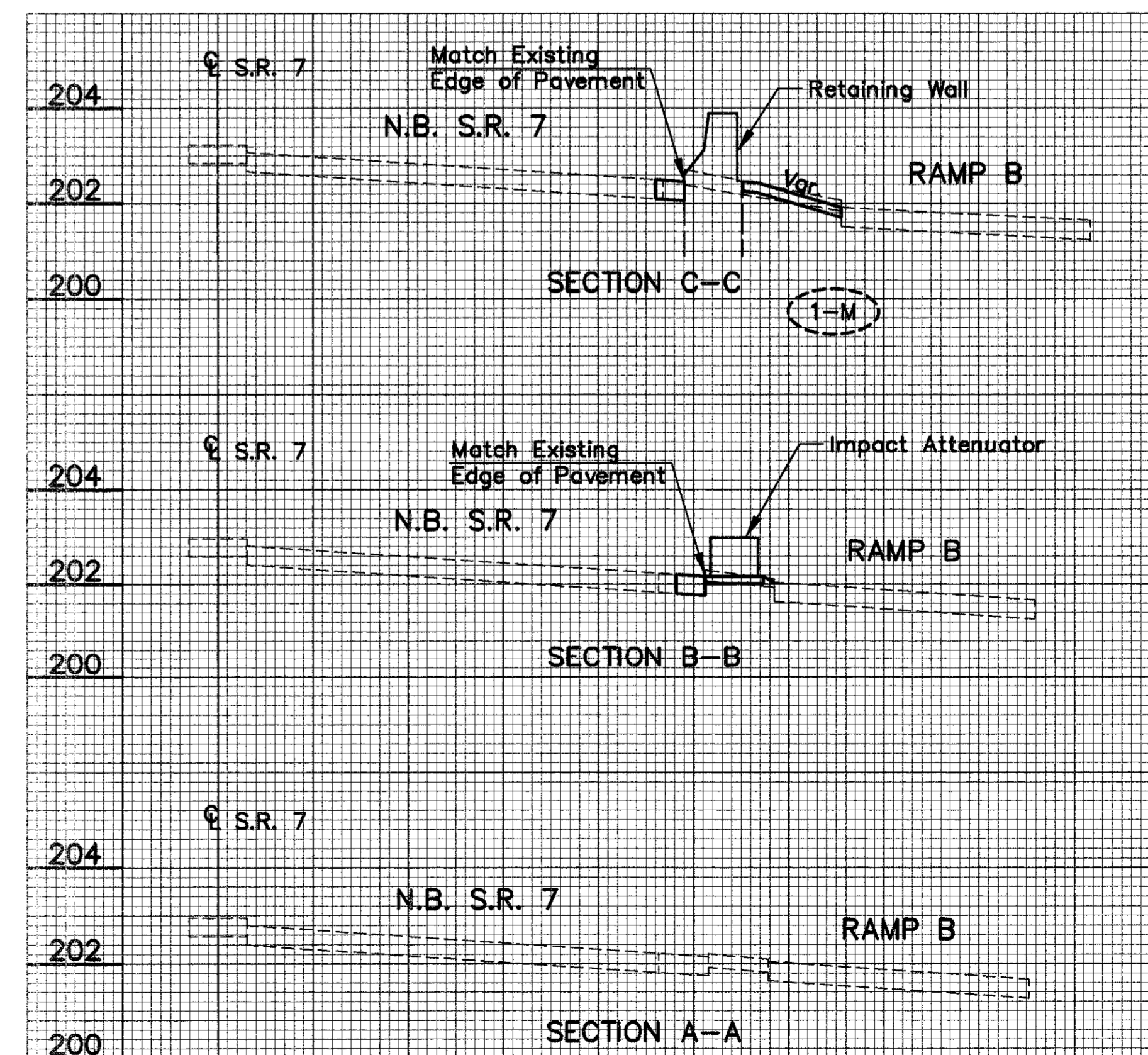


MISCELLANEOUS DETAILS:  
APPROACH SLAB BARRIER TRANSITION

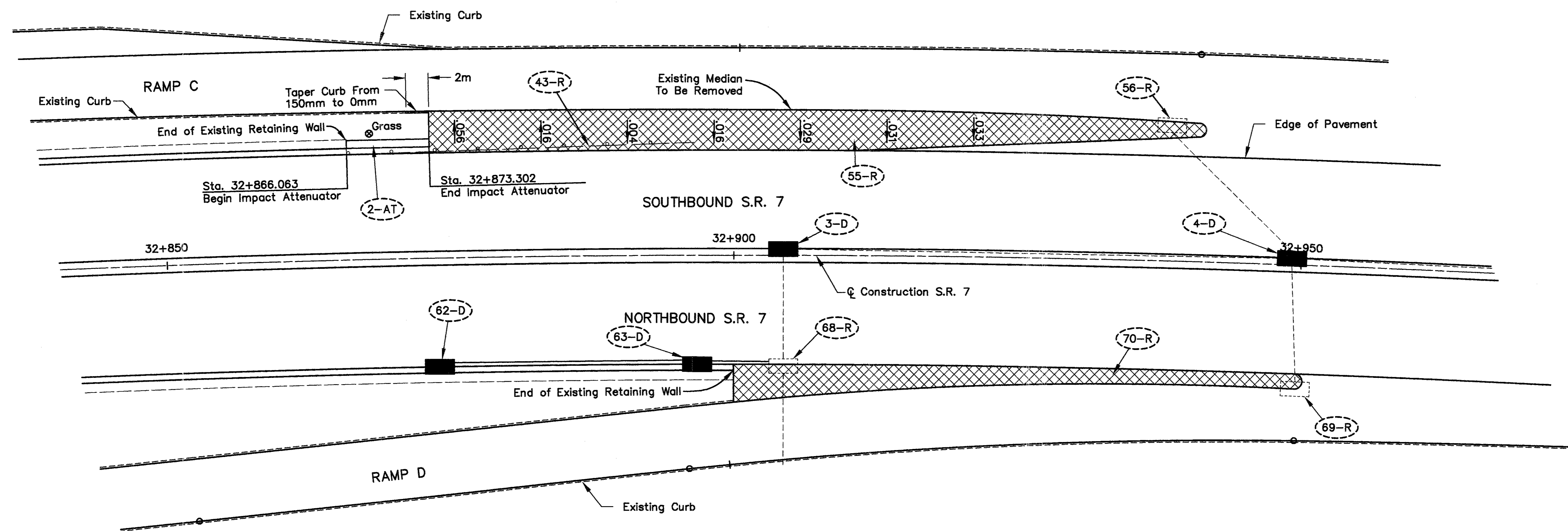
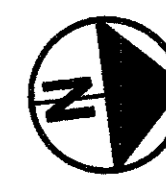
BEL-7-32.276



Note:  
Prepare grading to enable the concrete pad to be placed  
as directed by the manufacturers specifications.



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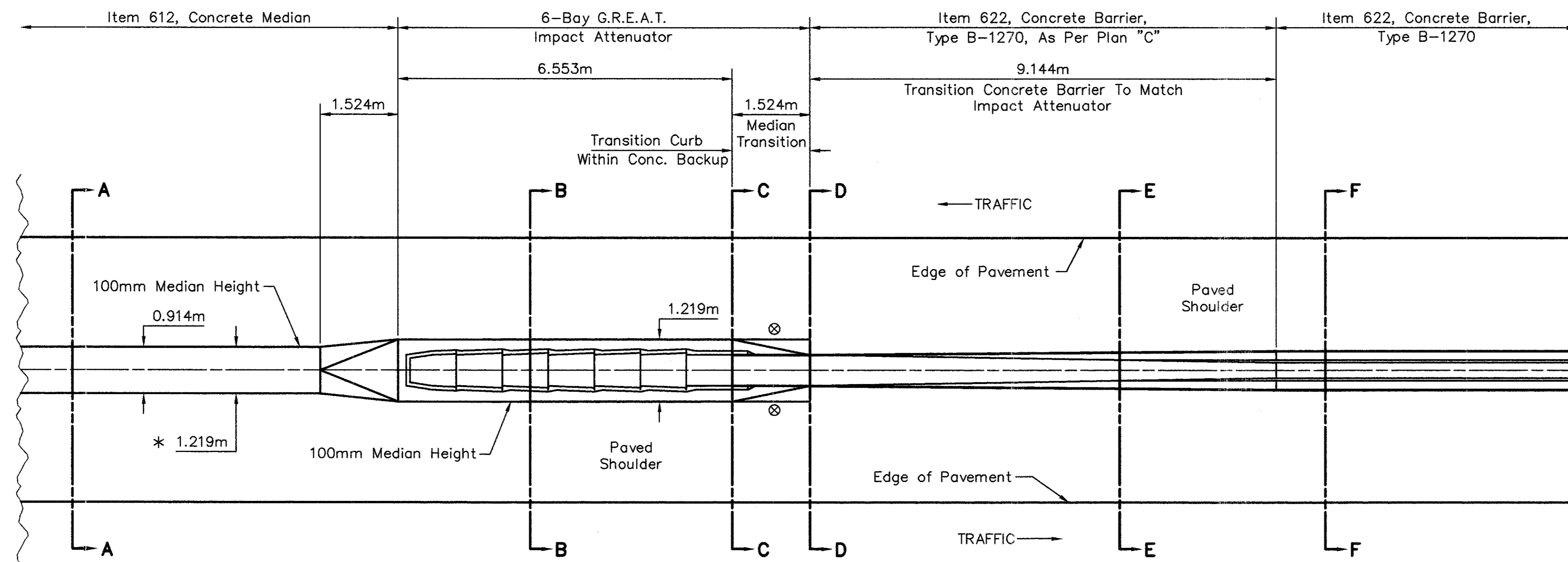
⊗ Prepare grading to enable the concrete pad to be placed as directed by the manufacturers specifications.

- ⊗ 32mm - Item 446 Asphalt Concrete Surface Course, Type 1, PG 64-28
- ⊗ 50mm - Item 446 Asphalt Concrete Intermediate Course, Type 2, PG 64-28
- ⊗ 65mm - Item 301 Bituminous Aggregate Base, PG 64-28
- ⊗ 150mm - Item 304 Aggregate Base
- Item 407 Tack Coat For Intermediate Course
- Item 408 Prime Coat

**MISCELLANEOUS DETAIL:  
CONCRETE MEDIAN REMOVED**

**BEL-7-32.276**

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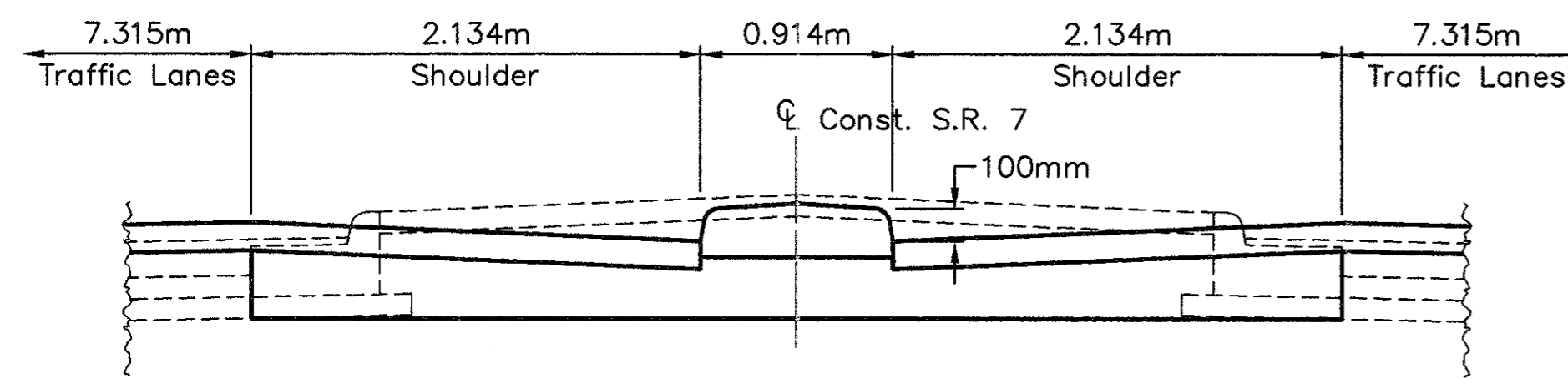


\* FOR STRUCTURE BEL-7-36683 (2280)

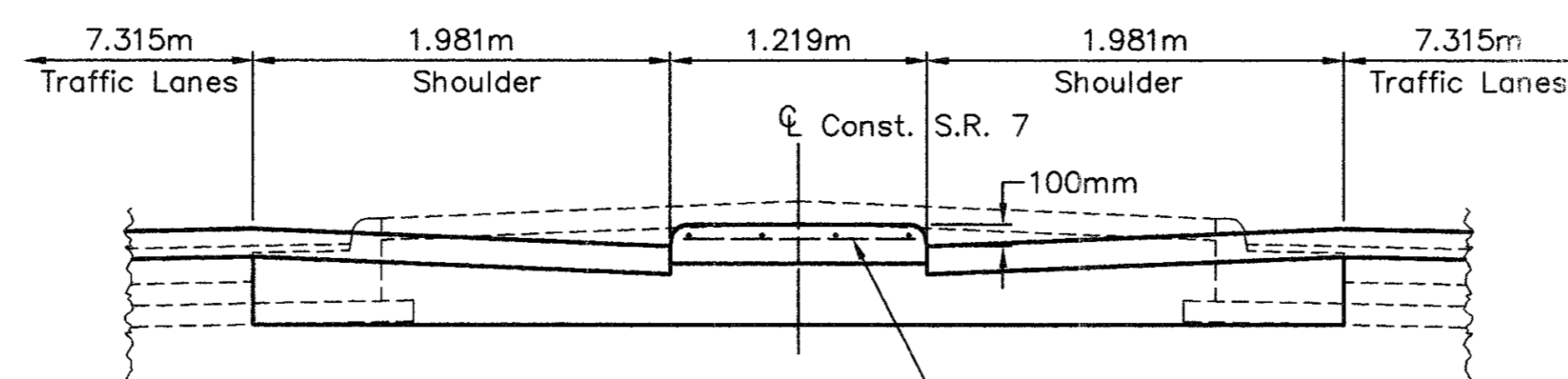
**TRANSITION DETAIL**

- 3-AT Sta. 33+373.210 To Sta. 33+381.287
- 4-AT Sta. 33+450.781 To Sta. 33+458.858
- 5-AT Sta. 33+825.923 To Sta. 33+834.000
- 6-AT Sta. 34+346.000 To Sta. 34+354.077
- 7-AT Sta. 34+573.923 To Sta. 34+582.000
- 8-AT Sta. 34+612.000 To Sta. 34+620.077
- 9-AT Sta. 35+428.923 To Sta. 35+437.000
- 10-AT Sta. 35+953.000 To Sta. 35+961.077
- 11-AT Sta. 36+665.920 To Sta. 36+673.997
- 12-AT Sta. 38+068.608 To Sta. 38+076.685

⊗ Taper to match proposed 0.610 width median at Sta. 33+834 to Sta. 33+835.524

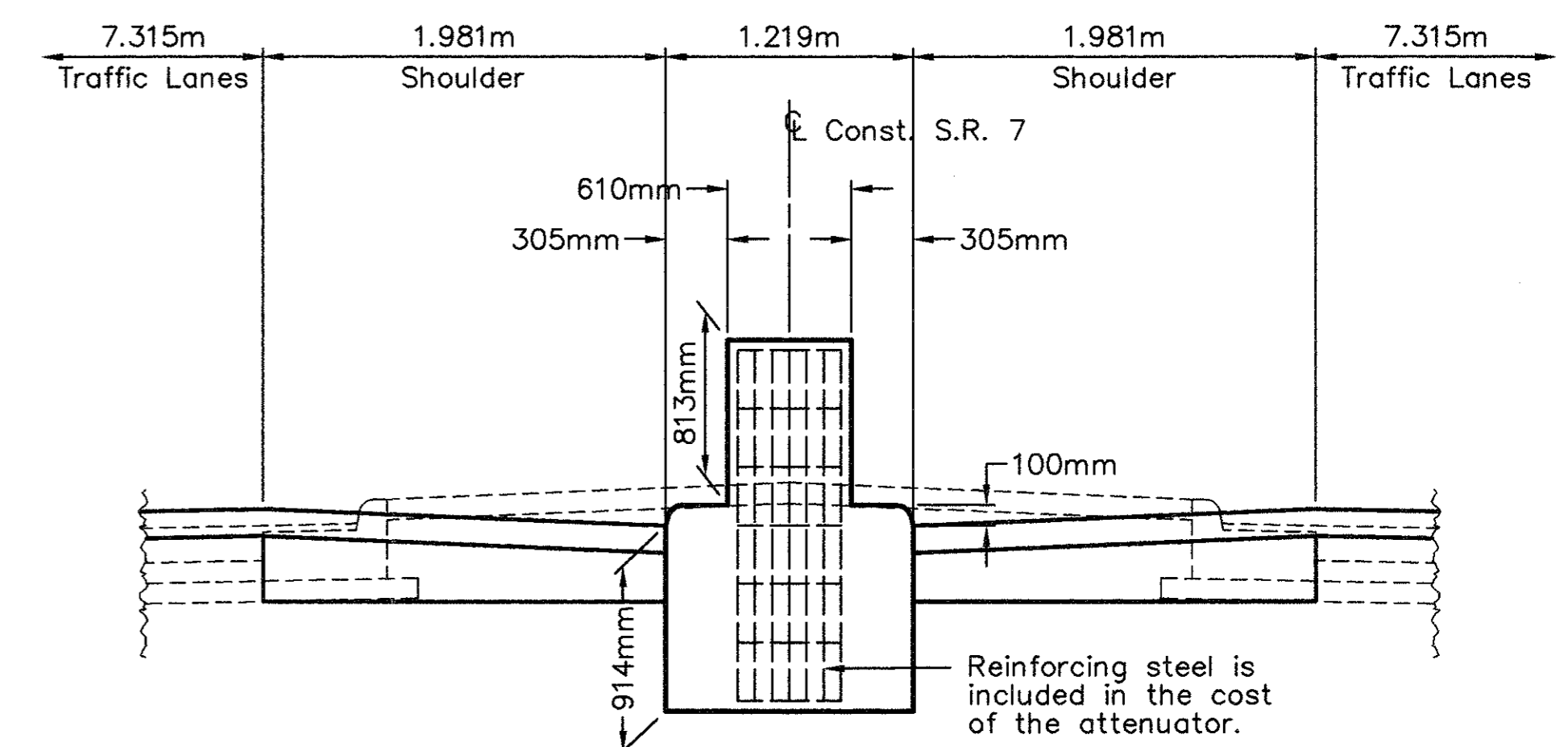


Sec A-A



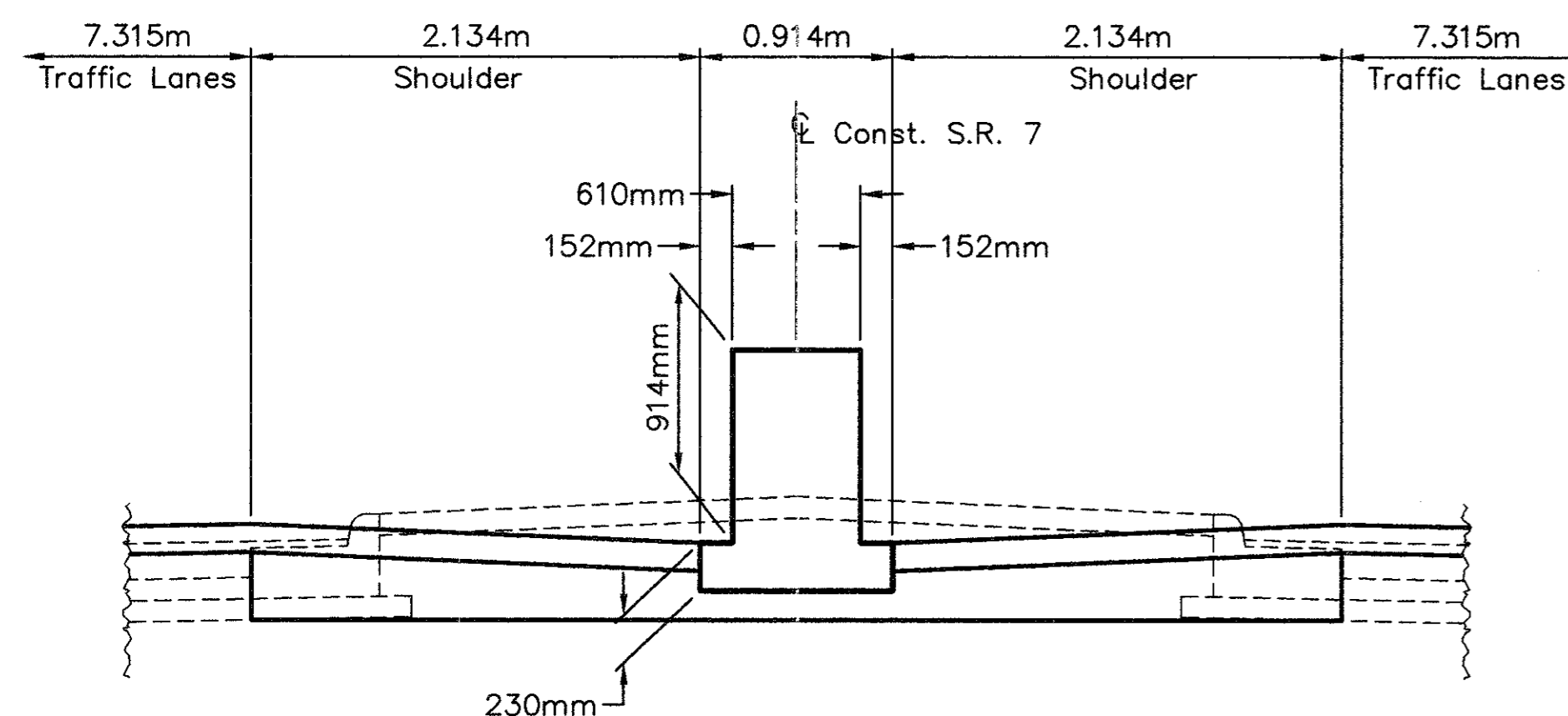
Sec B-B

Reinforcing steel is included in the cost of the attenuator.

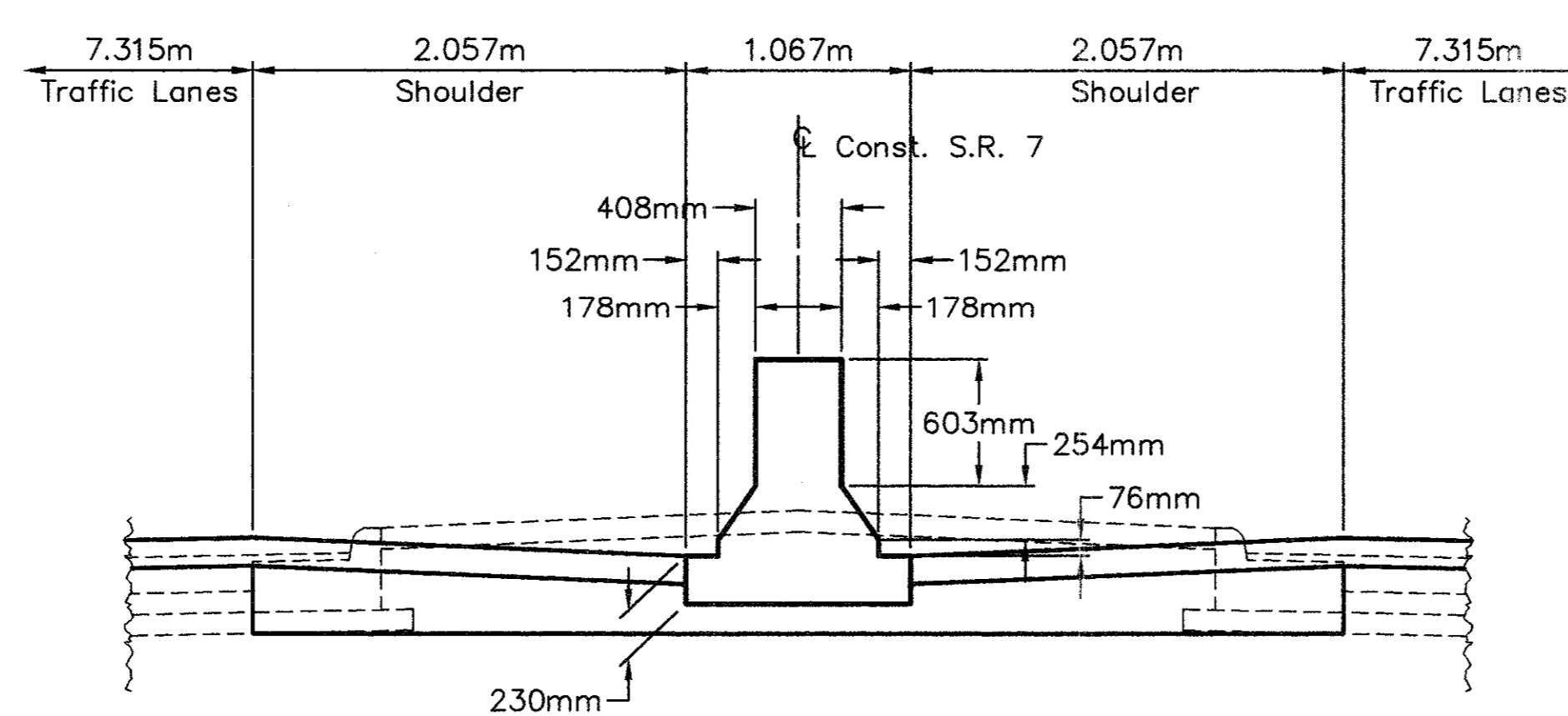


Sec C-C

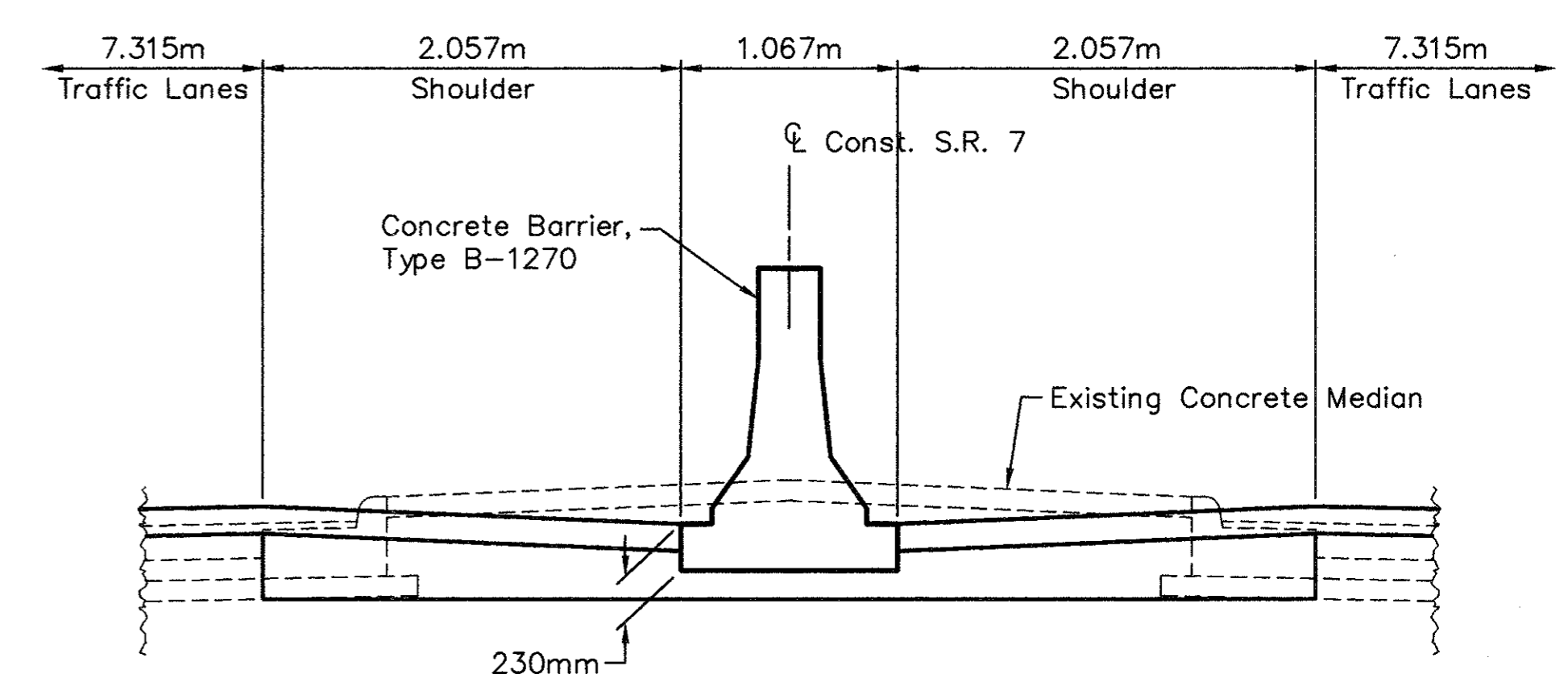
Reinforcing steel is included in the cost of the attenuator.



Sec D-D



Sec E-E



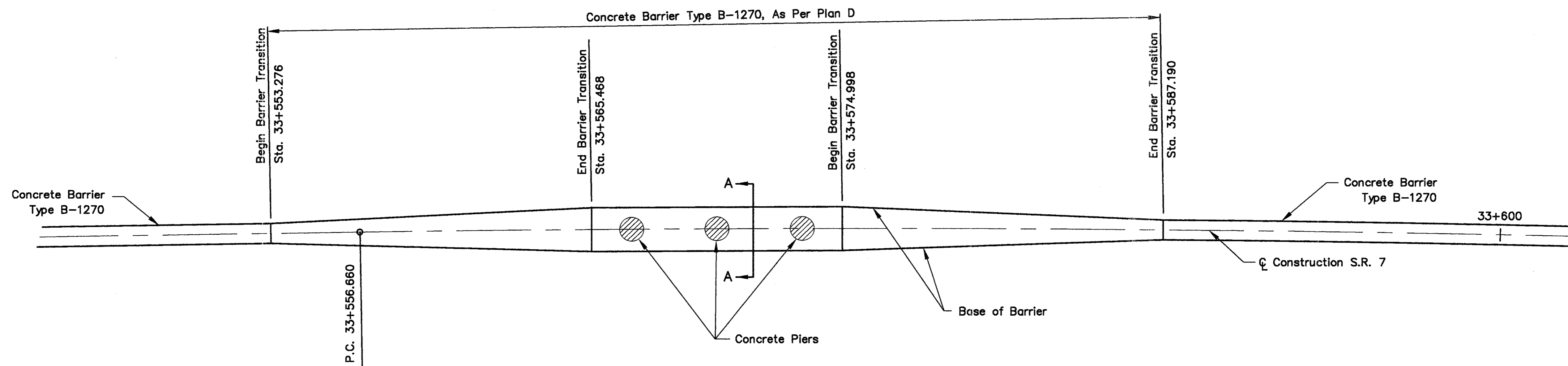
Sec F-F

CALCULATED  
SAH  
CHECKED  
WCR

**MISCELLANEOUS DETAILS:  
IMPACT ATTENUATOR**

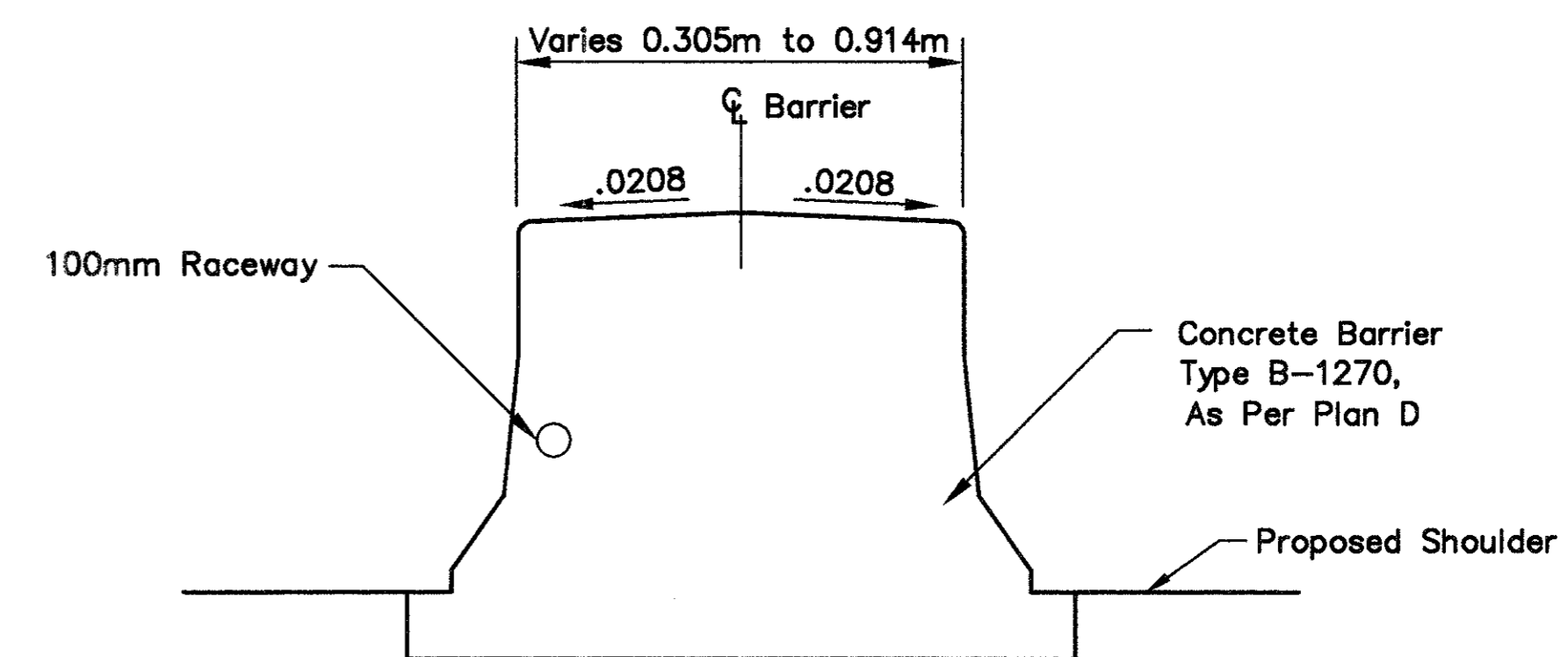
**BEL-7-32.276**

85  
242

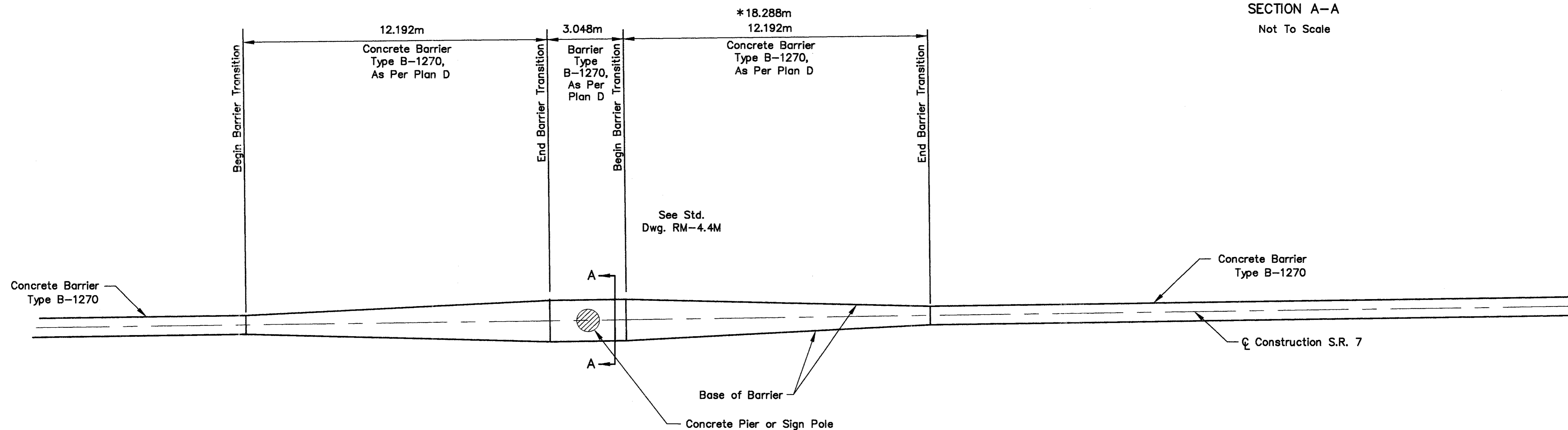


BRIDGE PIER TRANSITION  
10-B STA. 33+553.276 TO STA. 33+587.190

NOTE: For Additional Information on Concrete Barrier Transitions See Standard Drawing RM-4.4M



SECTION A-A  
Not To Scale



BRIDGE PIER OR SIGN TRANSITION

- 20-B SIGN STA. 35+299.284 TO STA. 35+326.716
- 27-B SIGN STA. 35+986.284 TO STA. 36+013.716
- 29-B PIER STA. 36+144.249 TO STA. 36+183.873 \*
- 34-B SIGN STA. 36+521.284 TO STA. 36+548.716

Concrete Barrier Type B-1270

Concrete Barrier Type B-1270

Concrete Barrier Type B Reinforced

3.048m

4.267m

1.270m

Sta. 38+183.335  
Begin Barrier Taper

Cost Of The Concrete Barrier Taper Is  
Included For Payment With Item 622  
Concrete Barrier Type B-1270.

Sta. 38+186.383  
End Barrier Taper

For Additional Details, See St'd Dwg. GR-3.5M

Sta. 38+190.650  
End Barrier Taper

Guardrail, Type 5, Barrier Design

.813m

CONCRETE BARRIER TRANSITION TO BARRIER GUARDRAIL

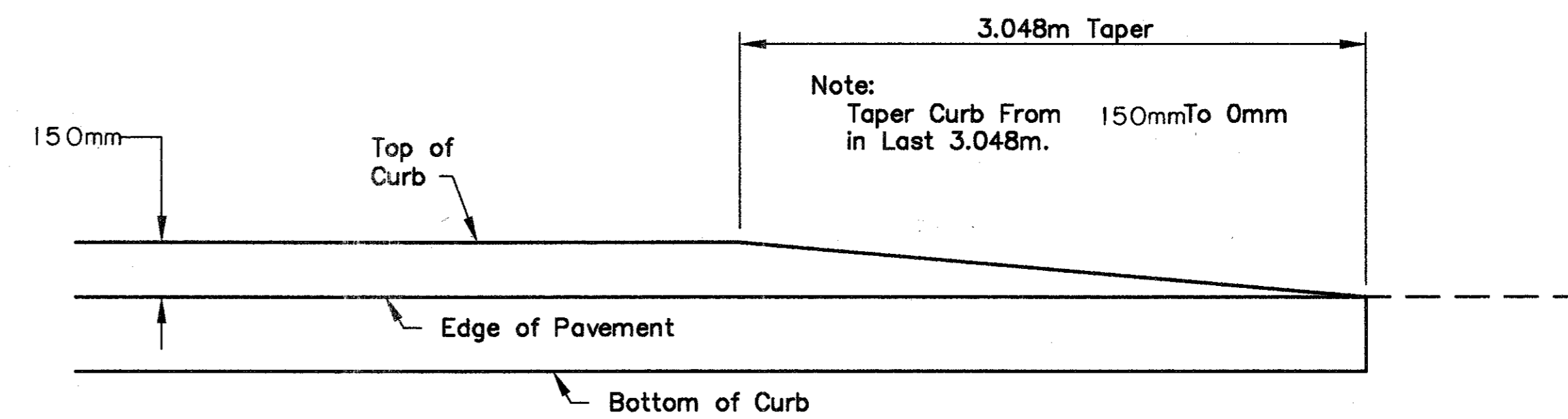
CALCULATED  
SAH

CHECKED  
WCR

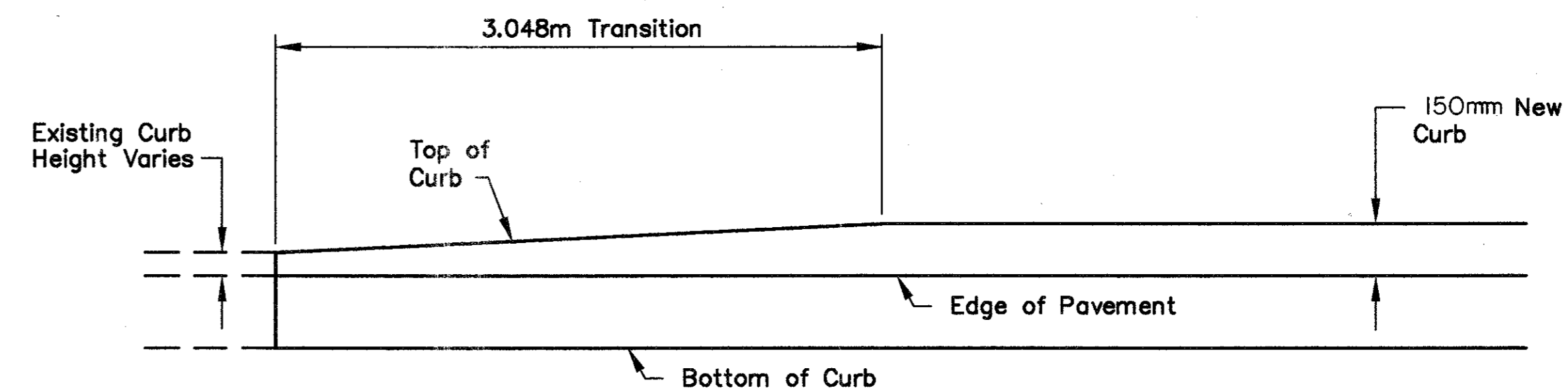
**MISCELLANEOUS DETAIL:  
CONCRETE BARRIER TRANSITION**

**BEL-7-32.276**

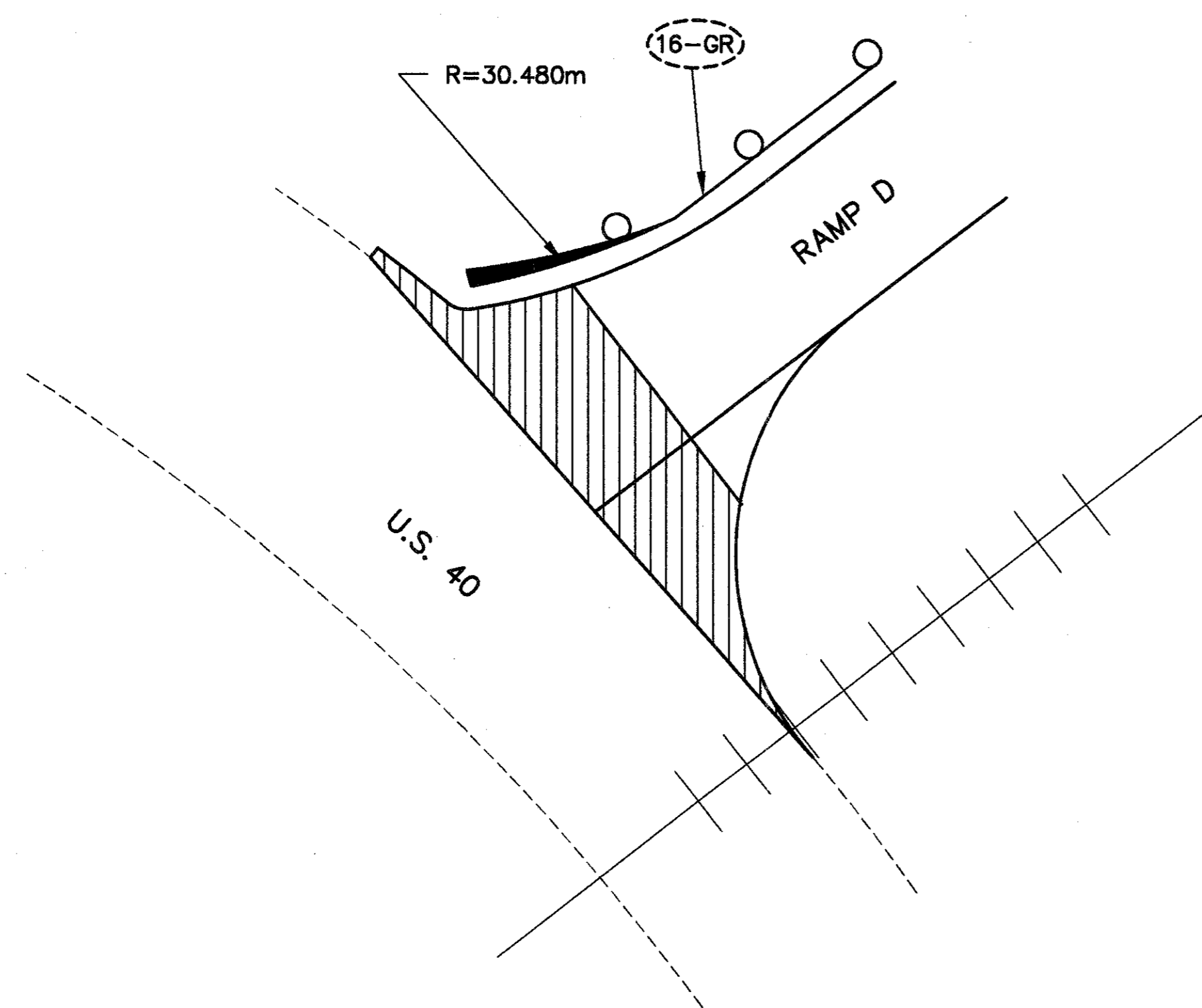
87  
242



**CURB TAPER DETAIL**  
Not To Scale

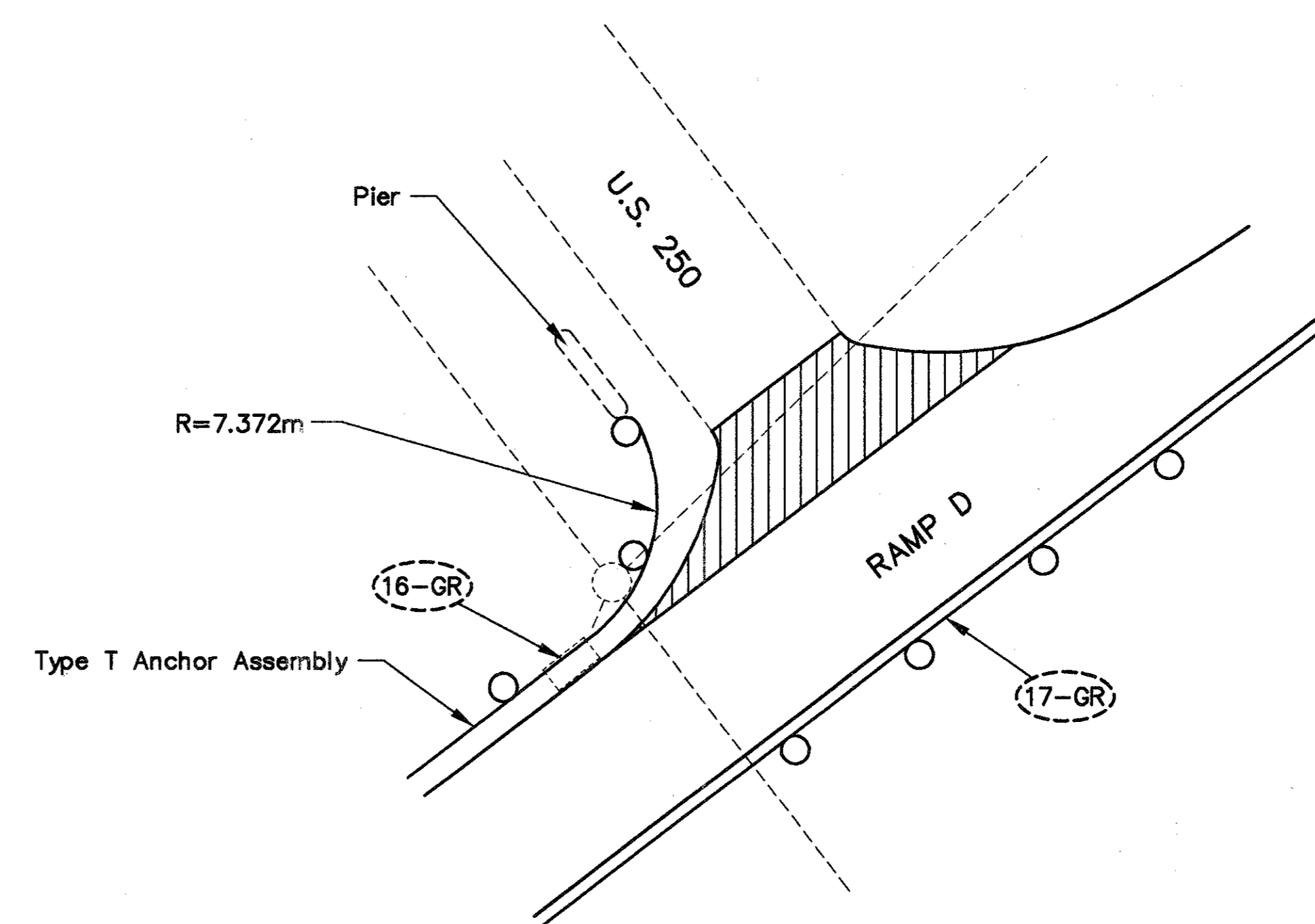


**CURB TRANSITION DETAIL**  
Not To Scale



For Plan, See Sheet No. 59

**GUARDRAIL DETAIL FOR RAMP D AT U.S. 40**

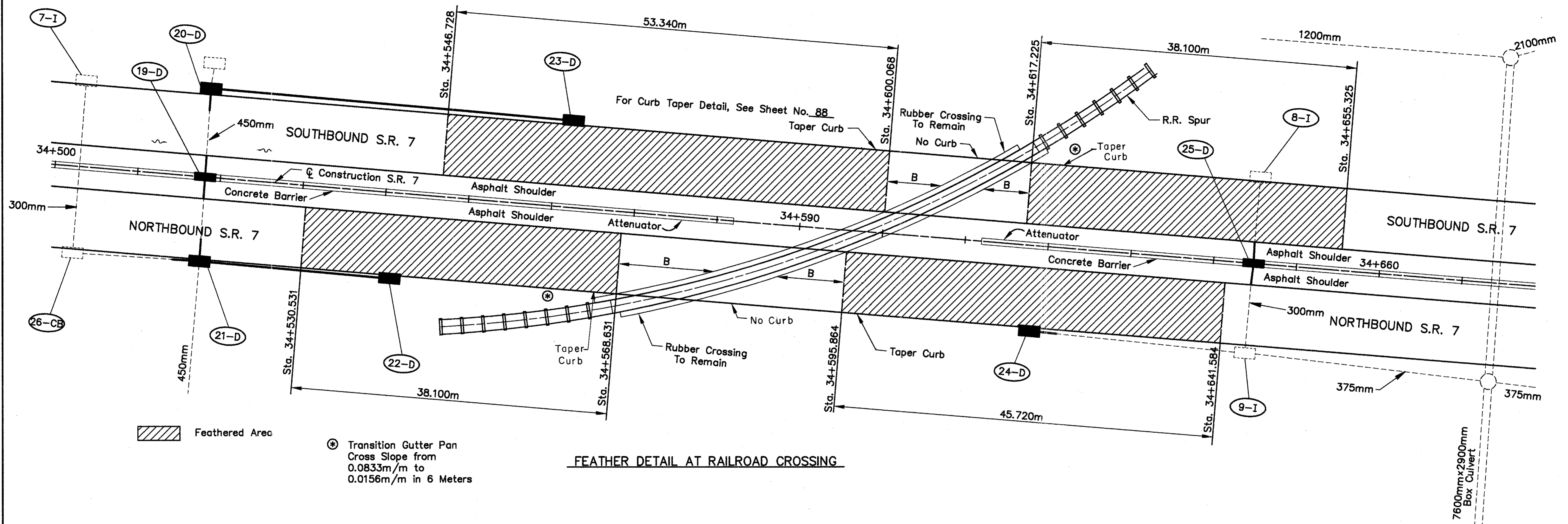



FEATHERED AREA

For Plan, See Sheet No. 59

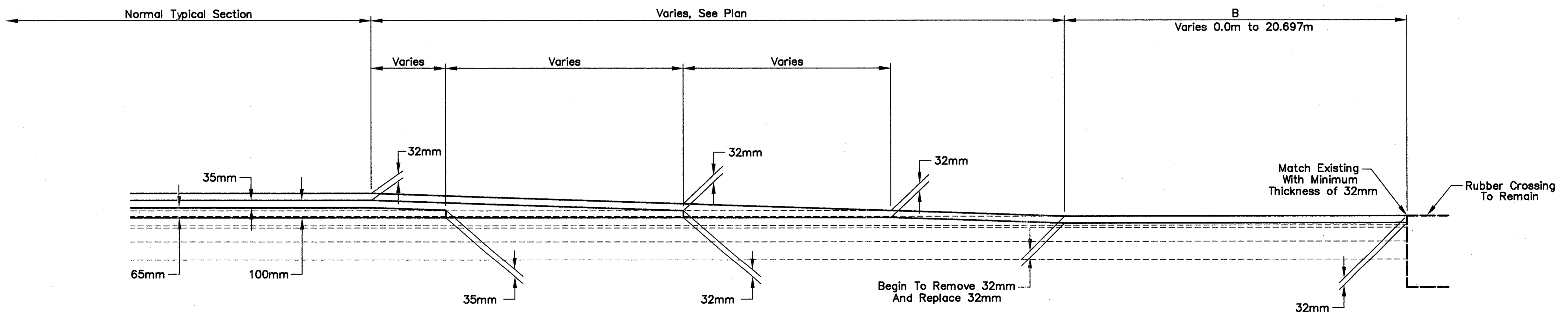
**GUARDRAIL DETAIL FOR RAMP D AT U.S. 250**





 Feathered Area  
 ⊕ Transition Gutter Pan  
 Cross Slope from  
 0.0833m/m to  
 0.0156m/m in 6 Meters

**FEATHER DETAIL AT RAILROAD CROSSING**

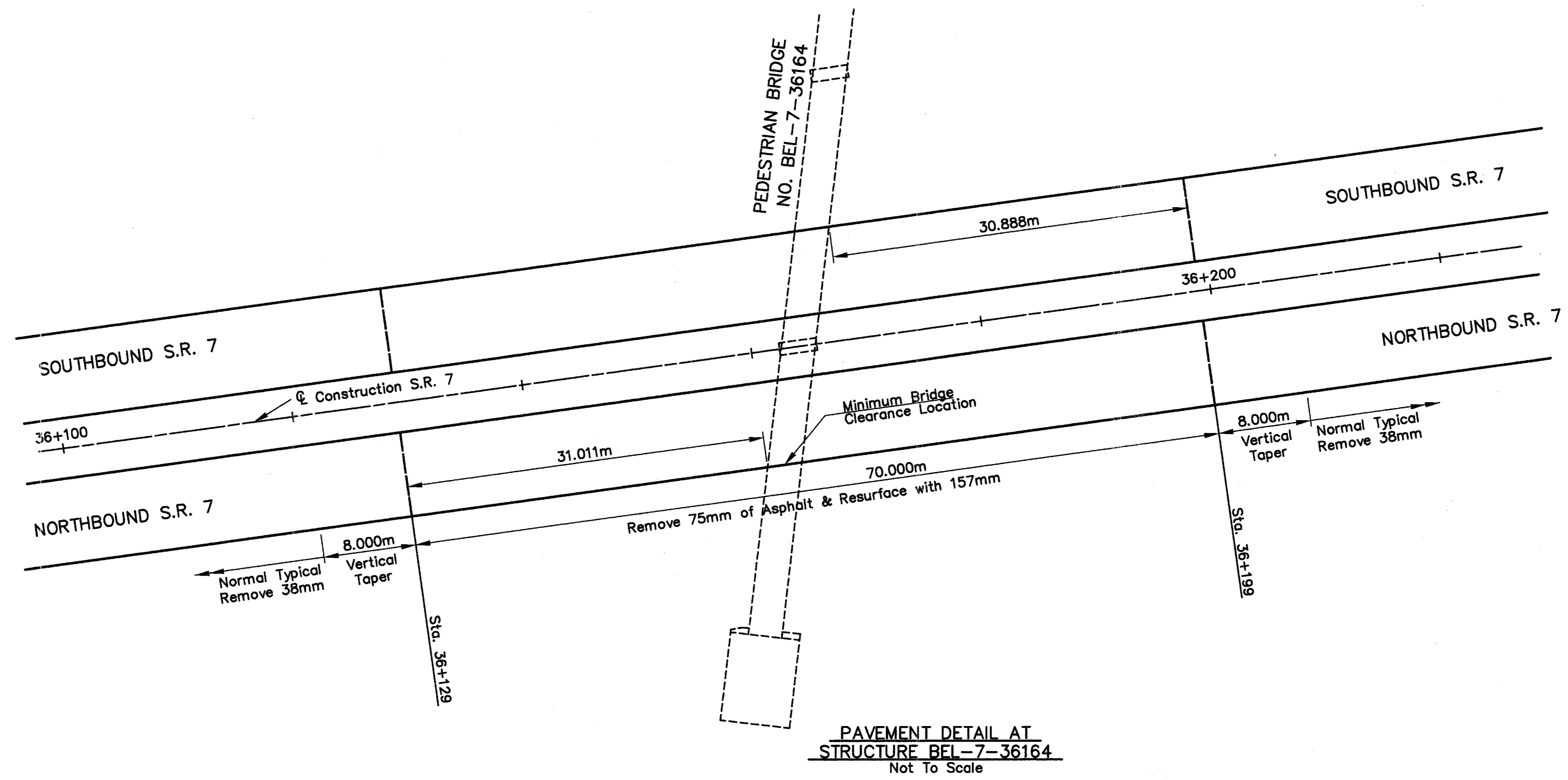


**TYPICAL PROFILE**  
Applies to both sides of Rubber Crossing

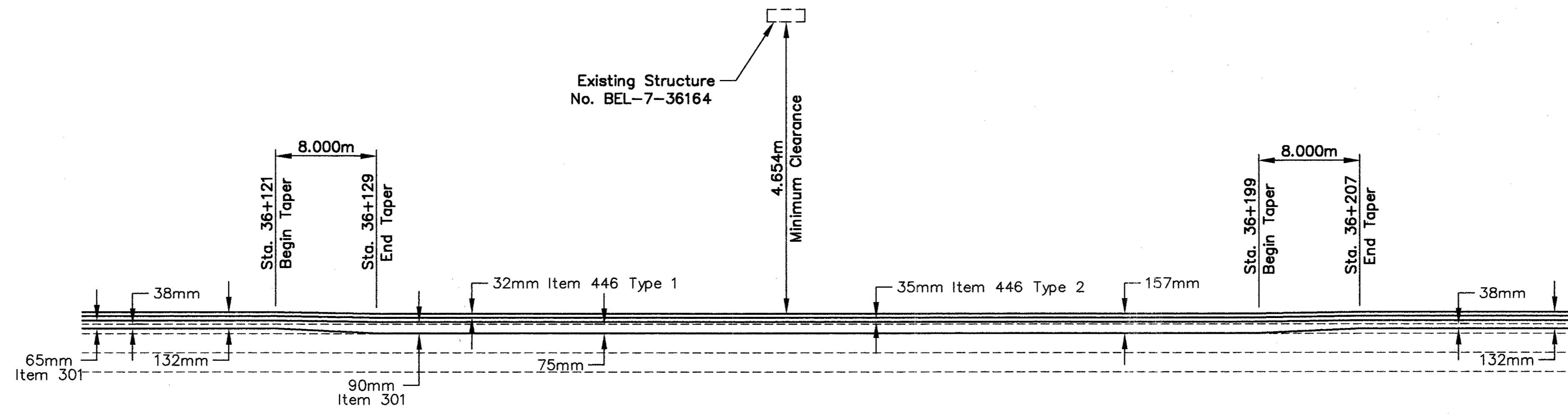
**MISCELLANEOUS DETAILS:  
RAILROAD FEATHER**

**BEL-7-32.276**

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**PAVEMENT DETAIL AT  
STRUCTURE BEL-7-36164**  
Not To Scale

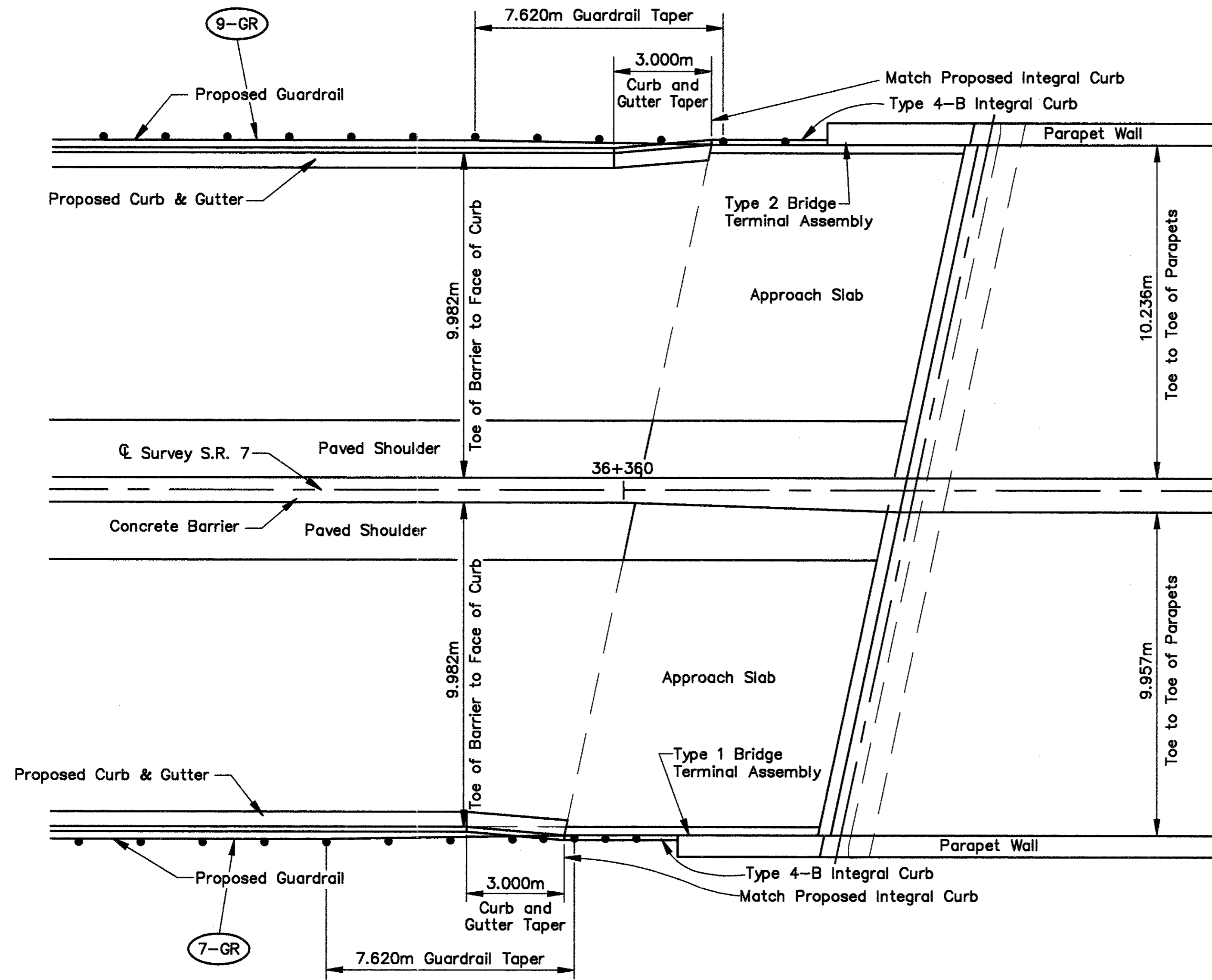


**PAVEMENT PROFILE  
NORTHBOUND RIGHT EDGE OF PAVEMENT**  
Not To Scale

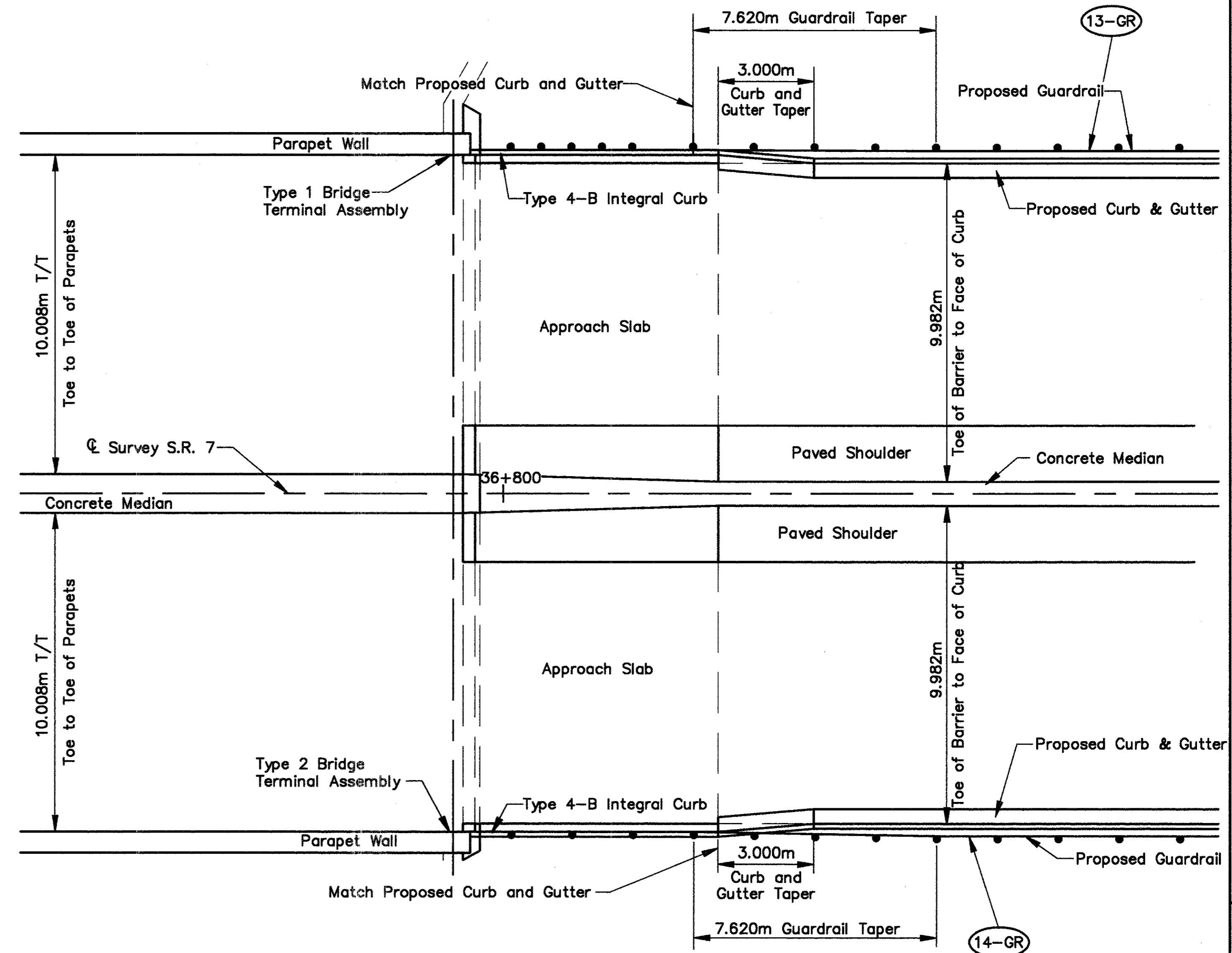
**MISCELLANEOUS DETAILS:  
PROFILE AT STRUCTURE**

**BEL-7-32.276**

H:\322-01\322186.dwg - OCT 24, 1997 - 08:46:34



TYPICAL CURB AND GUARDRAIL TRANSITION AT STRUCTURE BEL-7-36368  
(DETAIL APPLIES TO BOTH ENDS OF THE STRUCTURE)

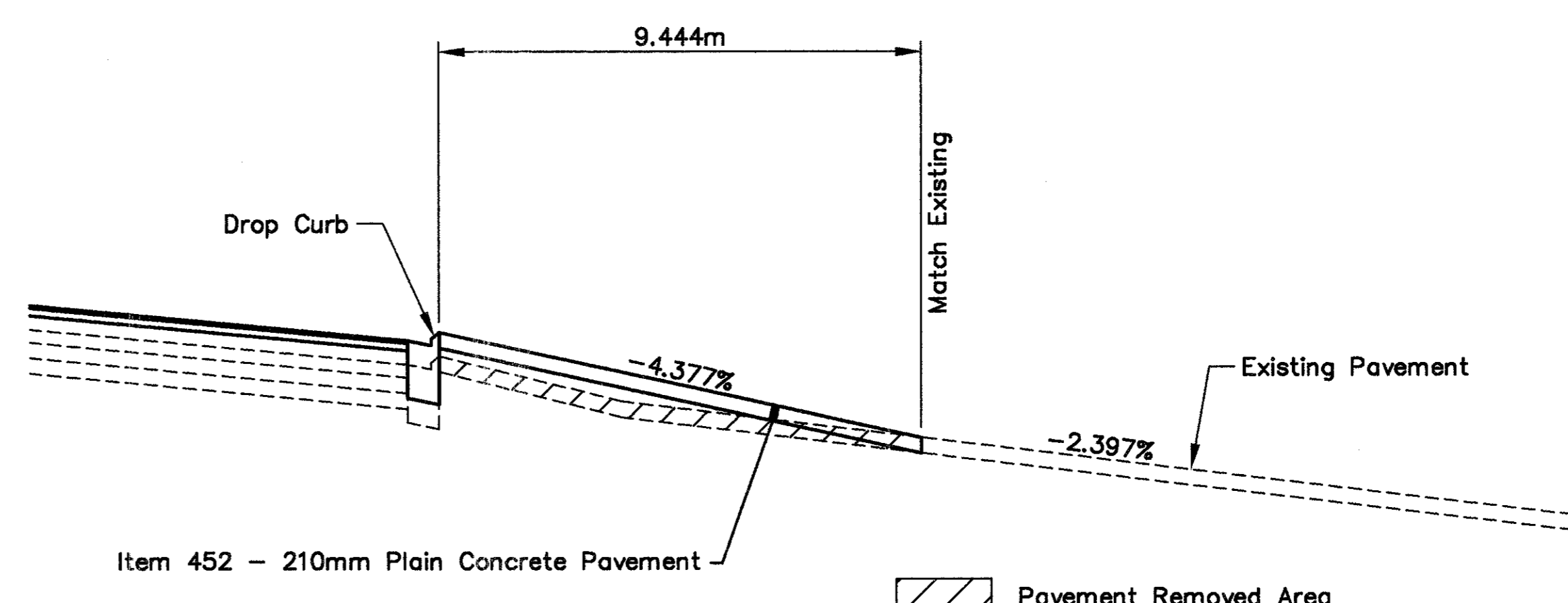
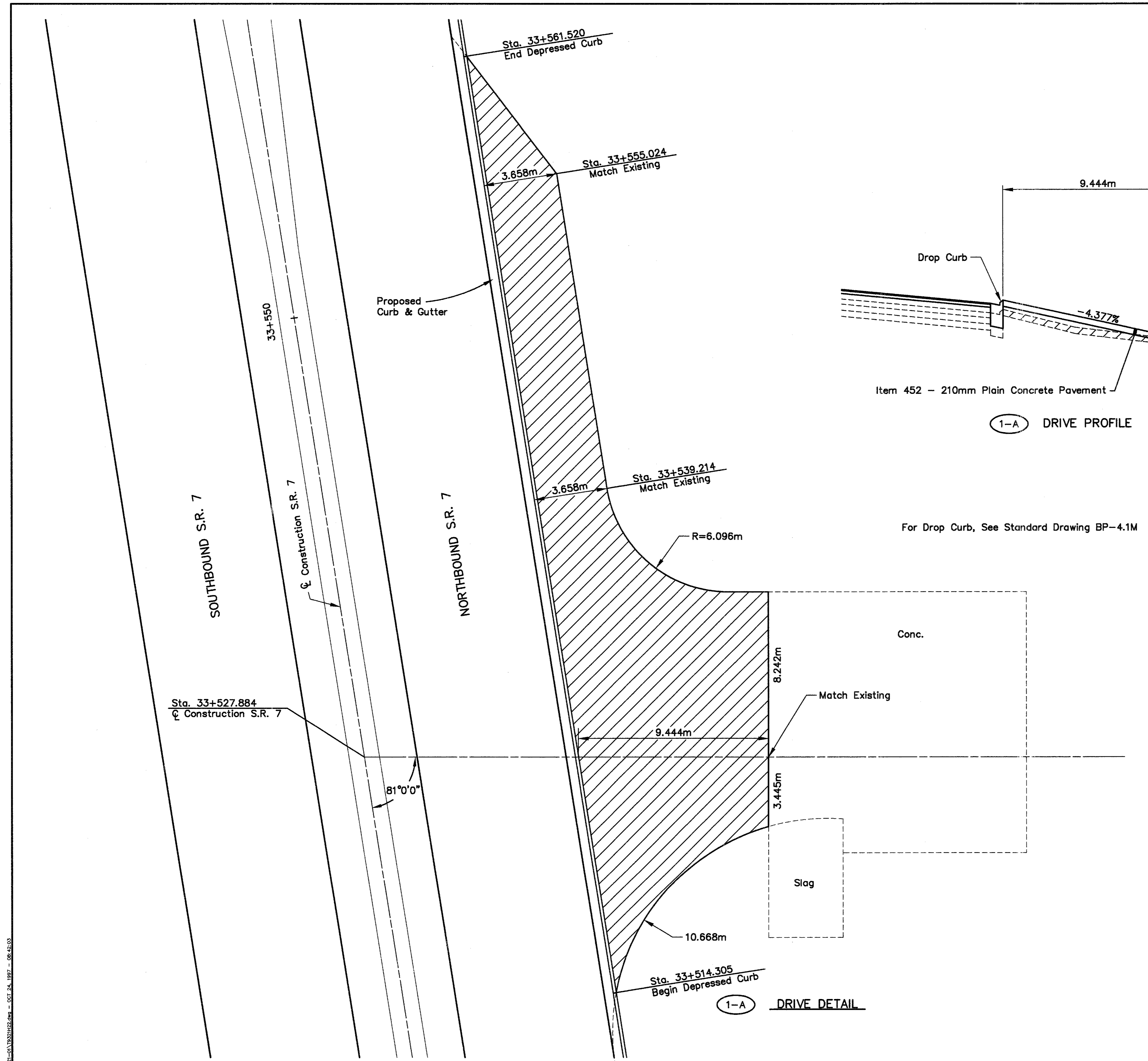


TYPICAL CURB AND GUARDRAIL TRANSITION AT STRUCTURE BEL-7-36683  
(DETAIL APPLIES TO BOTH ENDS OF THE STRUCTURE)

MISCELLANEOUS DETAILS:  
CURB AND GUARDRAIL TAPERS

BEL-7-32.276

H:\322-01\3221012.dwg - OCT 24, 1997 - 08:41:34



For Drop Curb, See Standard Drawing BP-4.1M

**QUANTITIES**

Item 202	Pavement Removed ⊗	236.0	Sq. Meter
Item 203	Embankment	19.0	Cu. Meter
Item 452	210mm Plain Concrete Pavement ⊗	236.0	Sq. Meter

Quantities Carried to General Summary

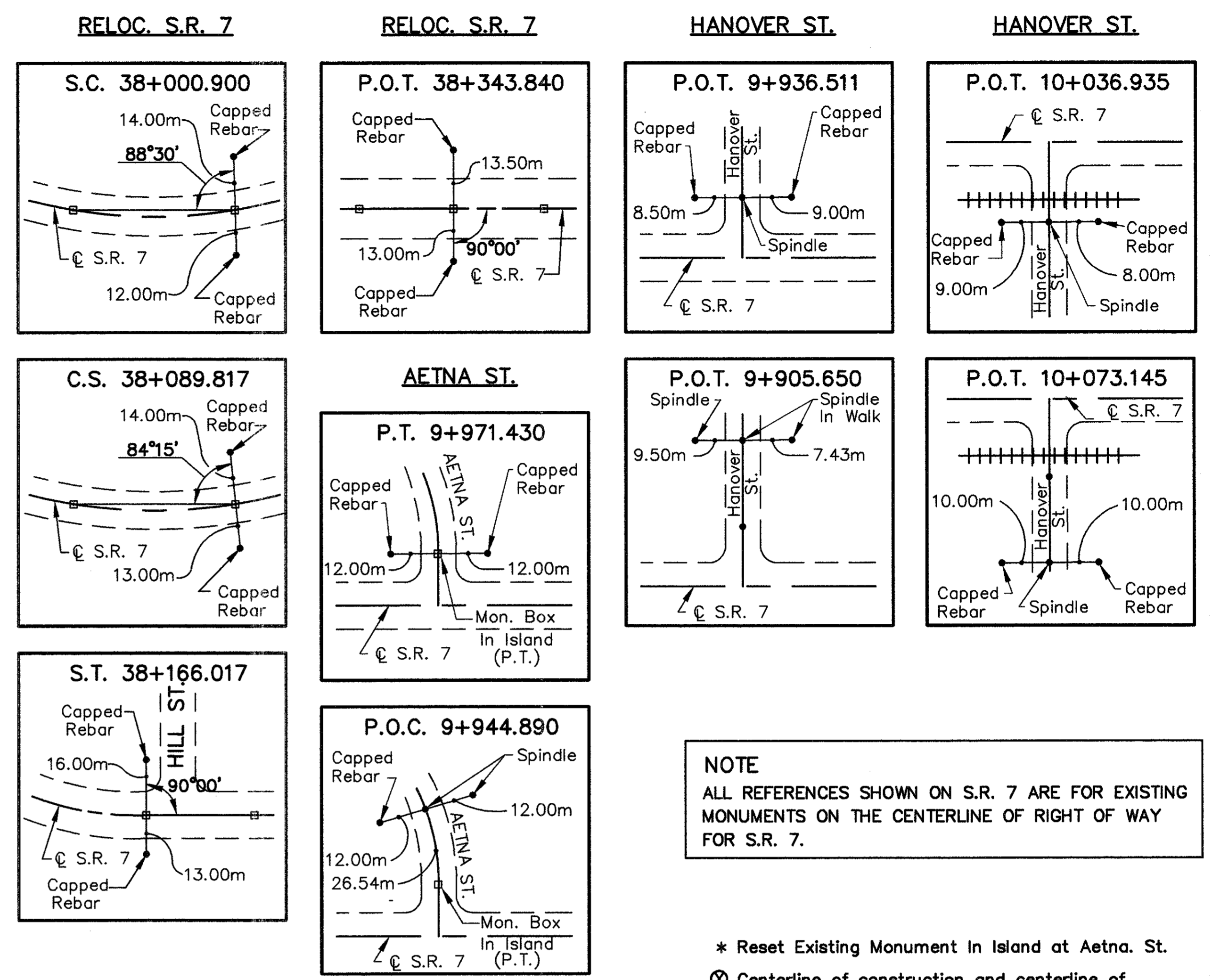
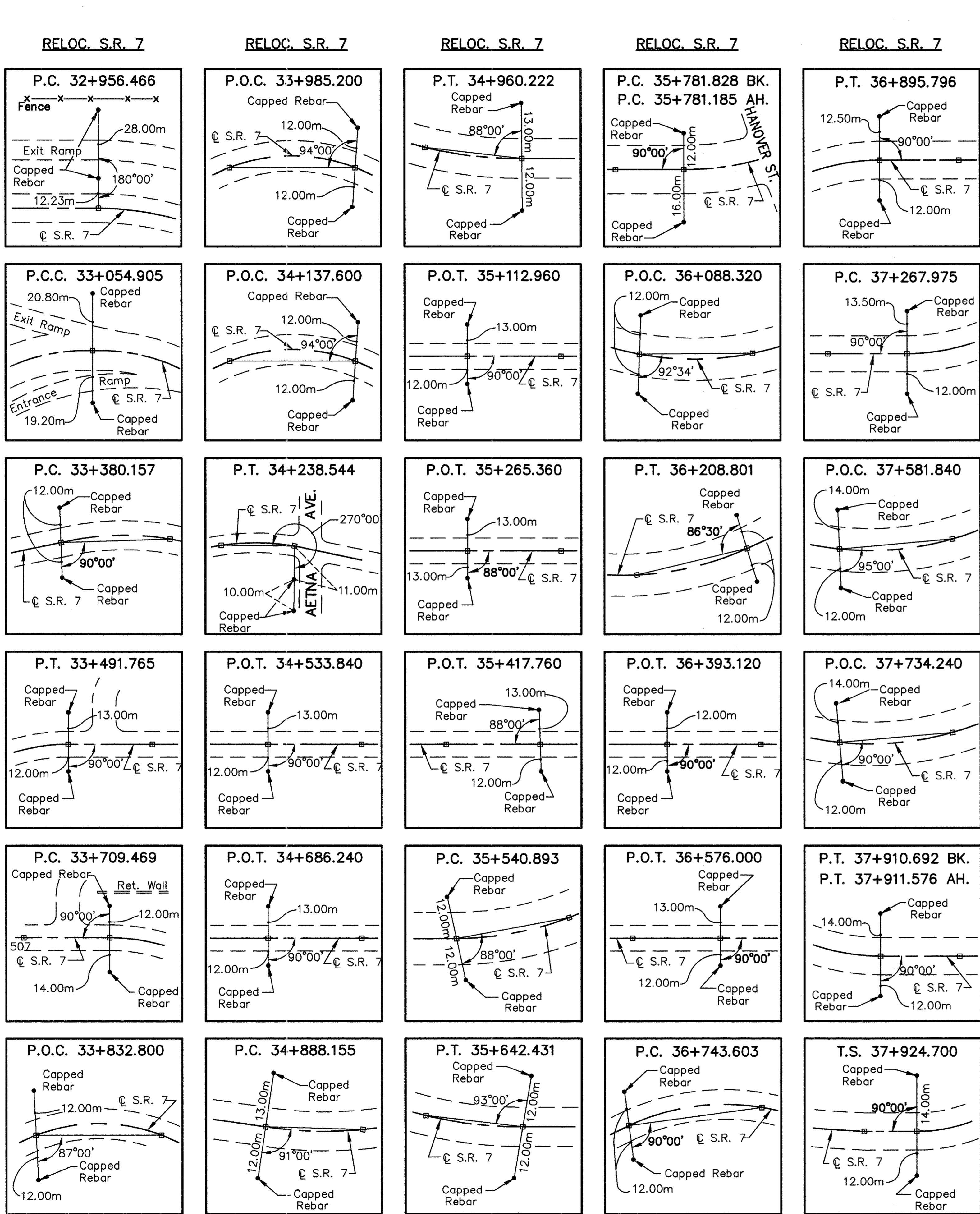
⊗ Computer Area

**ITEM 203 EMBANKMENT**

3.5m x 47m x 0.095m =	15.669	Cu. Meter
5.6m x 13.5m x 0.048m =	<u>3.591</u>	Cu. Meter
	19.260	Cu. Meter

1-A DRIVE DETAIL

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**NOTE**  
ALL REFERENCES SHOWN ON S.R. 7 ARE FOR EXISTING MONUMENTS ON THE CENTERLINE OF RIGHT OF WAY FOR S.R. 7.

\* Reset Existing Monument In Island at Aetna. St.  
⊗ Centerline of construction and centerline of right of way are at the same location.

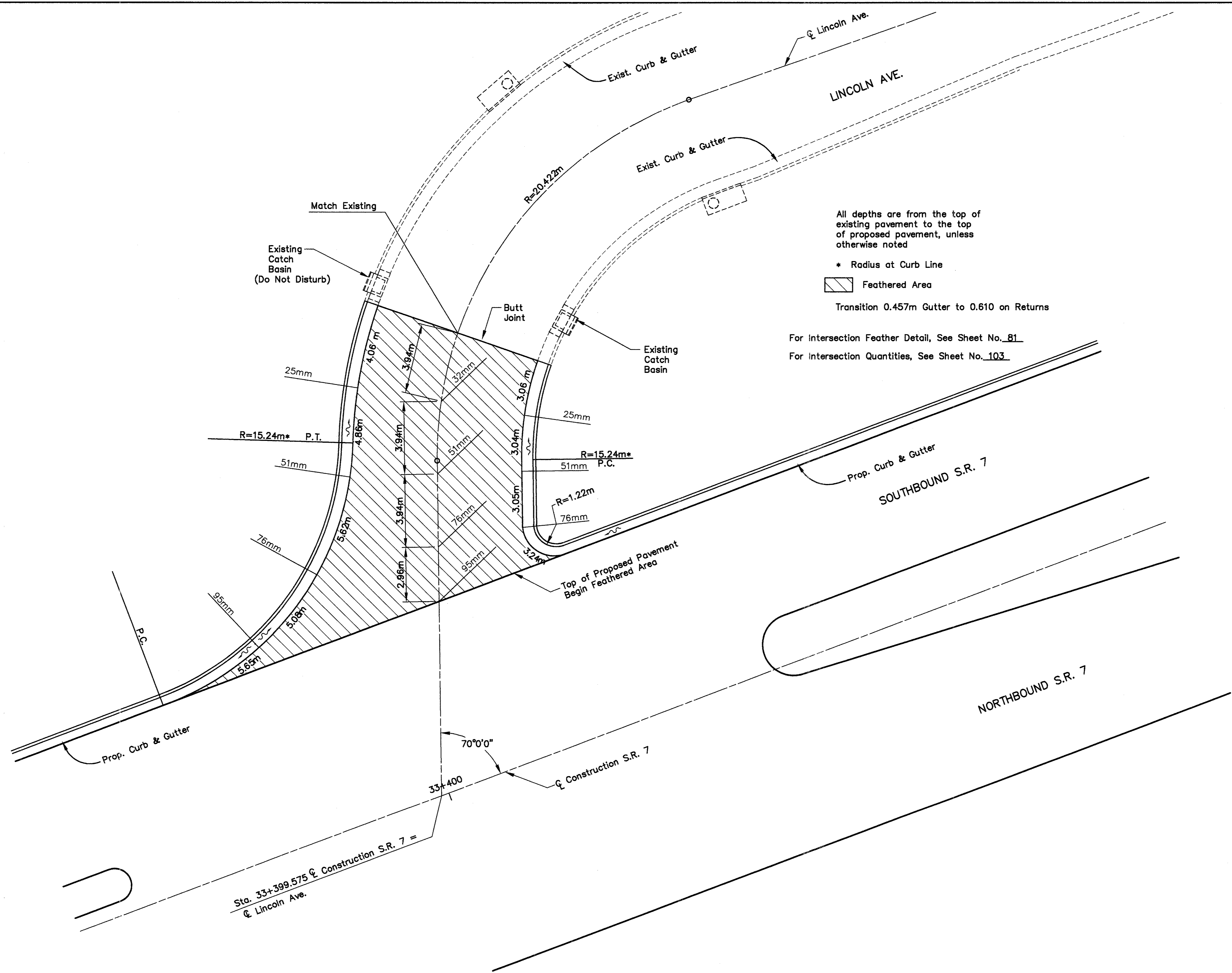
EXISTING RECORD LOCATIONS		EXISTING MONUMENT LOCATIONS		ITEM 604 MONUMENTS			
☉ R/W METRIC STATION	☉ R/W ENGLISH STATION	☉ CONSTRUCTION STATION	OFFSET TO EXIST. MONUMENT		☉ CONSTRUCTION STATION	OFFSET TO REFERENCE MON.	
			LT.	RT.		LT.	RT.
P.C. 32+956.466	176+20.20	32+804.184					
P.C.C. 33+054.905	179+43.16	32+902.175					
P.C. 33+380.157	1095+14.95	33+227.319	0.075		33+227.319	11.075	11.750
P.T. 33+491.765	1098+81.12	33+338.978	0.088		33+338.978	11.088	11.750
P.C. 33+709.469	1105+95.37	33+556.627	0.040		33+556.627	11.040	14.500
P.O.C. 33+832.800	1110+00.00	33+679.933	0.052		33+679.933	11.052	11.000
P.O.C. 33+985.200	1115+00.00	33+832.348	0.028		33+832.348	11.028	11.000
P.O.C. 34+137.600	1120+00.00	33+984.766	0.015		33+984.766	11.015	11.000
P.T. 34+238.544	1123+31.18	34+085.736	⊗		34+085.736		11.000
P.O.T. 34+533.840	1133+00.00	34+380.938	0.002		34+380.938	11.002	11.500
P.O.T. 34+686.240	1138+00.00	34+533.349		0.034	* 9+971.430	10.000	11.500
P.C. 34+888.155	1144+62.45	34+735.272		⊗	34+533.349	11.034	11.784
P.T. 34+960.222	1146+98.89	34+807.342		0.046	34+735.272	11.000	11.750
P.O.T. 35+112.960	1152+00.00	34+960.119		0.060	34+807.342	11.046	11.796
P.O.T. 35+265.360	1157+00.00	35+112.543		0.054	34+960.119	11.060	13.060
P.O.T. 35+417.760	1162+00.00	35+264.959		0.034	35+112.543	13.534	13.554
P.C. 35+540.893	1166+03.98	35+388.117		0.044	35+264.959	11.034	11.784
P.T. 35+642.431	1169+37.11	35+489.533		0.042	35+388.117	11.044	11.794
P.C. 35+781.828 BK = 35+781.185 AH.	1173+94.45 BK = 1173+92.34 AH.	35+628.971		0.046	35+489.533	11.042	11.792
P.O.C. 36+088.320	1184+00.00	35+936.173	0.008		35+628.971	11.046	11.796
P.T. 36+208.801	1187+95.28	36+056.648	0.015		35+936.173	11.008	11.750
P.O.T. 36+393.120	1194+00.00	36+240.860	0.011		36+056.648	11.015	11.750
P.O.T. 36+576.000	1200+00.00	36+423.776	⊗	0.034	36+240.860	11.011	11.750
P.C. 36+743.603	1205+49.88	36+591.333	0.034		36+423.776	11.000	11.784
P.T. 36+895.796	1210+49.20				36+591.333	11.034	11.750
P.C. 37+267.975	1222+70.26	37+115.711	⊗				
P.O.C. 37+581.840	1233+00.00	37+429.533	0.079		37+115.711	11.000	11.750
P.O.C. 37+734.240	1238+00.00	37+582.010	0.114		37+429.533	11.079	11.750
P.T. 37+910.692 BK = 37+911.576 AH.	1243+78.91 BK = 1243+81.81 AH.	37+758.371	0.135		37+582.010	11.114	11.750
T.S. 37+924.700	1244+24.87	37+771.505	0.137		37+758.371	11.135	11.750
S.C. 38+000.900	1246+74.87	37+847.718	0.096		37+771.505	11.137	11.750
C.S. 38+089.817	1249+66.59	37+936.676	0.054		37+847.718	11.096	11.750
S.T. 38+166.017	1252+16.59	38+012.826	⊗		37+936.676	11.054	11.750
P.O.T. 38+343.840	1258+00.00	38+190.731	⊗		38+012.826	11.500	11.750
					TOTAL ITEM 604 CARRIED TO GENERAL SUMMARY		65

**LINCOLN AVE.  
INTERSECTION DETAIL**

CALCULATED  
BL  
CHECKED  
WCR

**BEL-7-32.276**

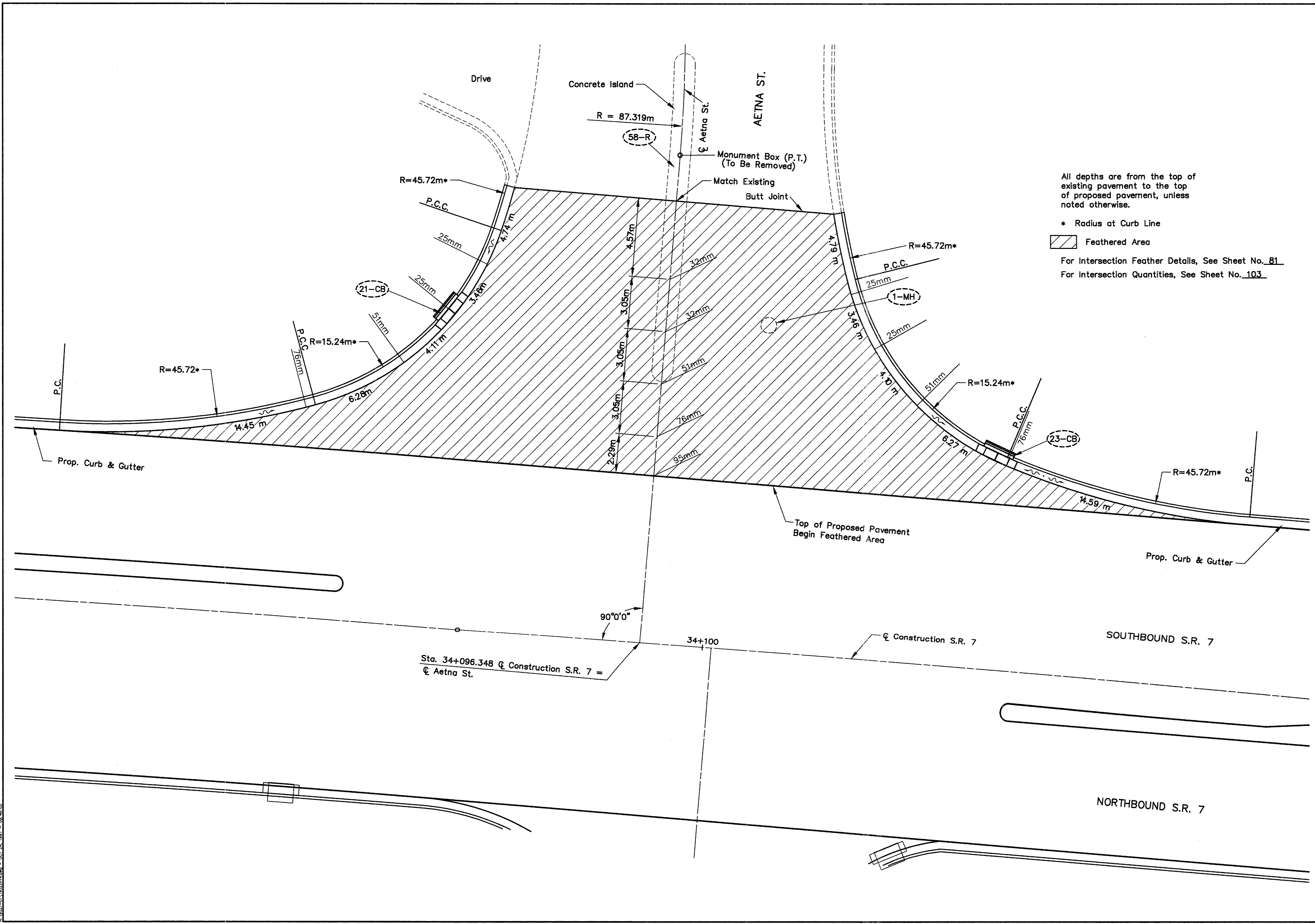
94  
242



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**AETNA ST.  
INTERSECTION DETAIL**

**BEL-7-32.283**



All depths are from the top of existing pavement to the top of proposed pavement, unless noted otherwise.

\* Radius at Curb Line

Feathered Area

For Intersection Feather Details, See Sheet No. 81

For Intersection Quantities, See Sheet No. 103

H:\32-101\3221014.dwg - OCT 24, 1997 - 08:46:03

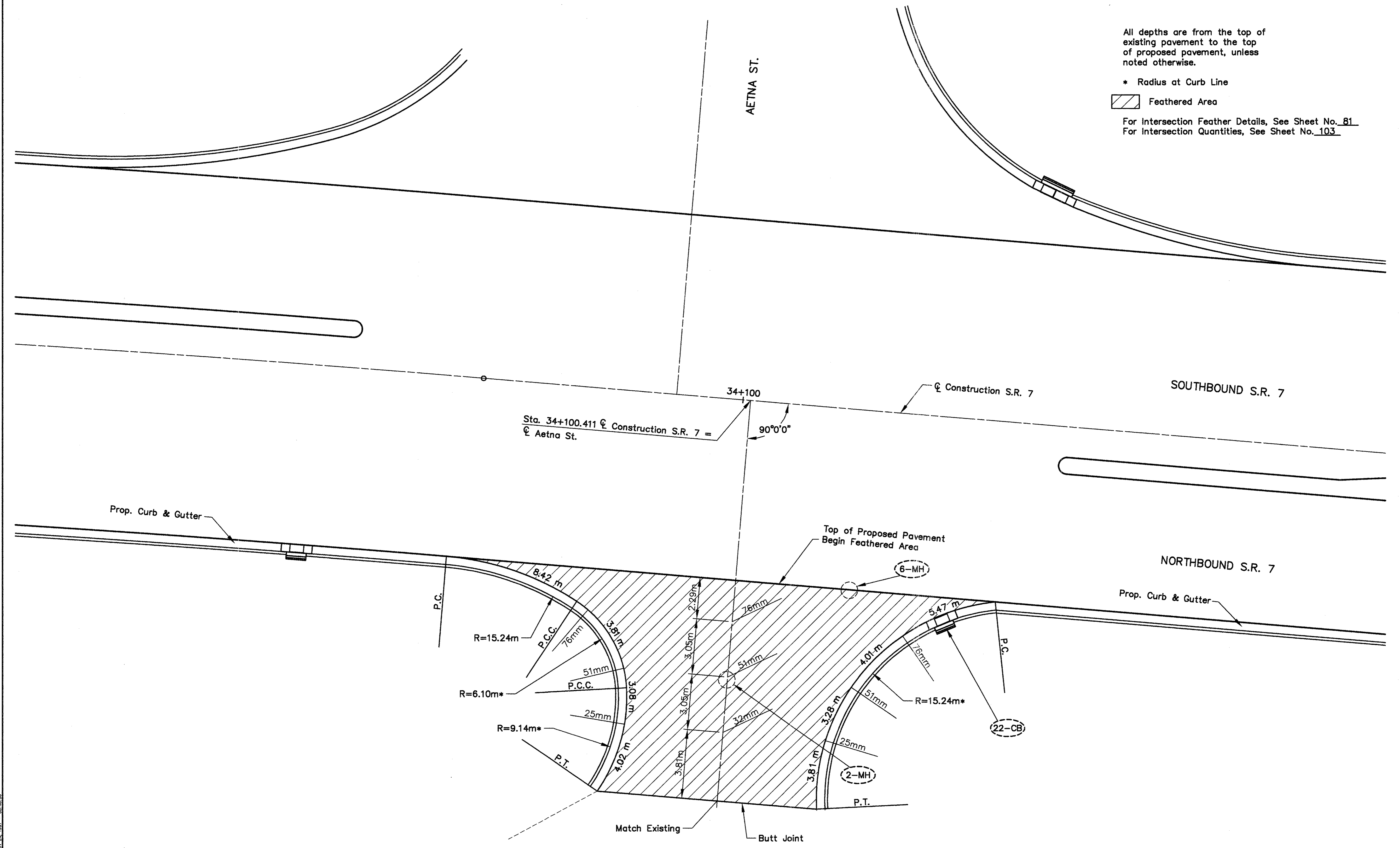
All depths are from the top of existing pavement to the top of proposed pavement, unless noted otherwise.

\* Radius at Curb Line

 Feathered Area

For Intersection Feather Details, See Sheet No. 81  
For Intersection Quantities, See Sheet No. 103

**AETNA ST.  
INTERSECTION DETAIL**



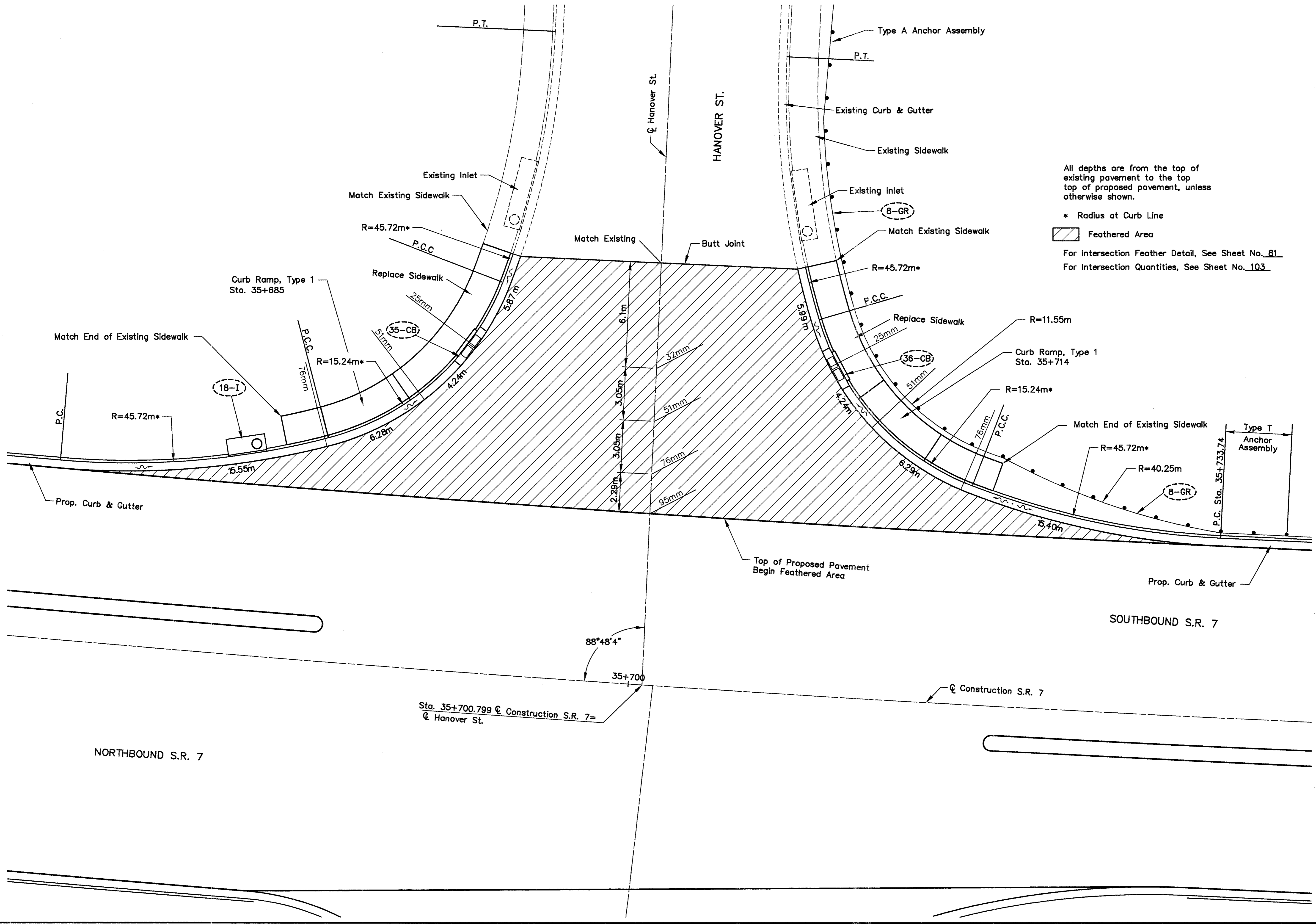
**BEL-7-32.276**

H:\322-01\322115.dwg - OCT 24, 1997 - 08:46:35



**HANOVER ST.  
INTERSECTION DETAIL**

**BEL-7-32.276**



All depths are from the top of existing pavement to the top top of proposed pavement, unless otherwise shown.

\* Radius at Curb Line

Feathered Area

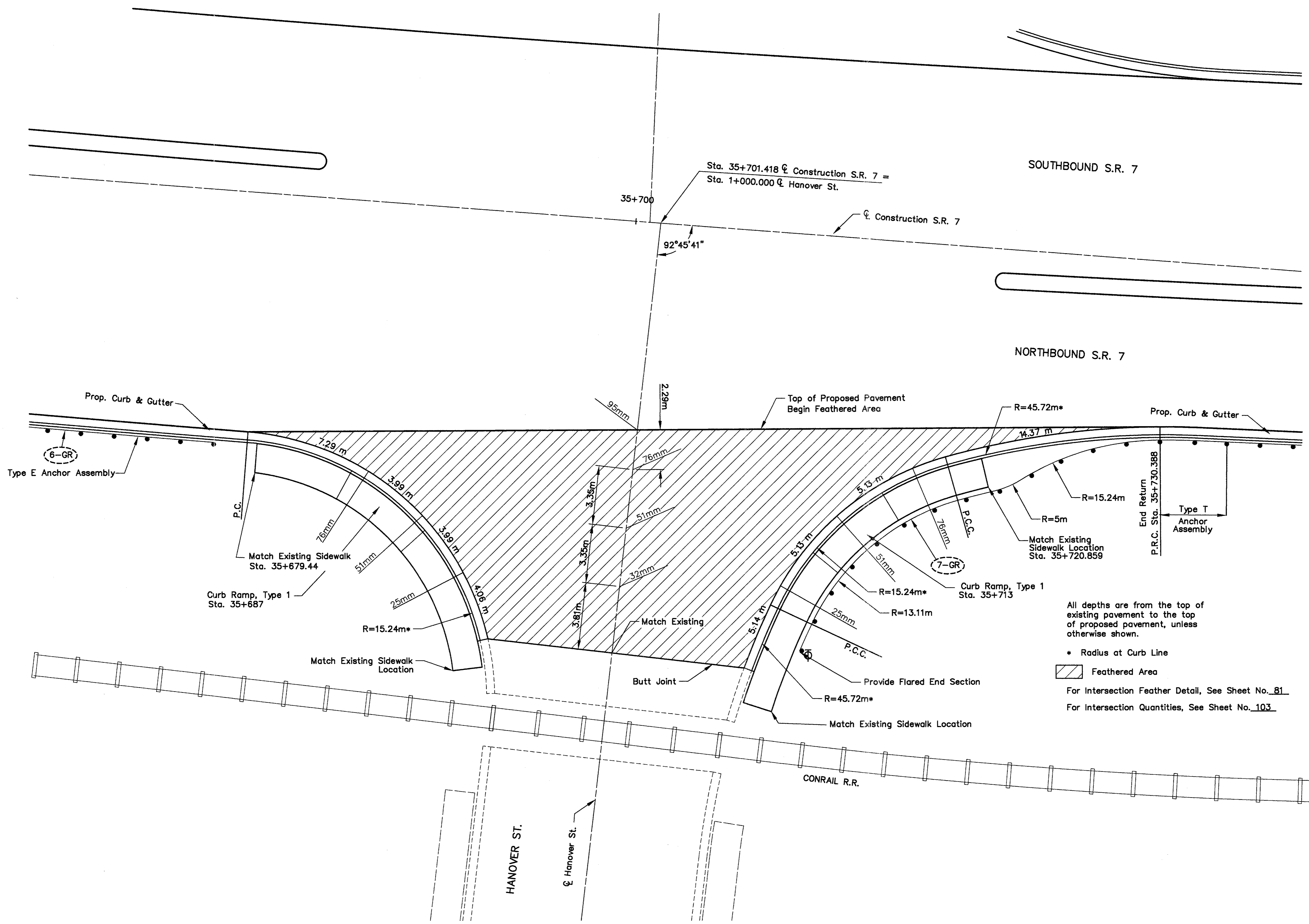
For Intersection Feather Detail, See Sheet No. 81

For Intersection Quantities, See Sheet No. 103

H:\322-01\322118.dwg - OCT 24, 1997 - 08:46:54

**HANOVER ST.  
INTERSECTION DETAIL**

**BEL-7-32.276**



All depths are from the top of existing pavement to the top of proposed pavement, unless otherwise shown.

\* Radius at Curb Line

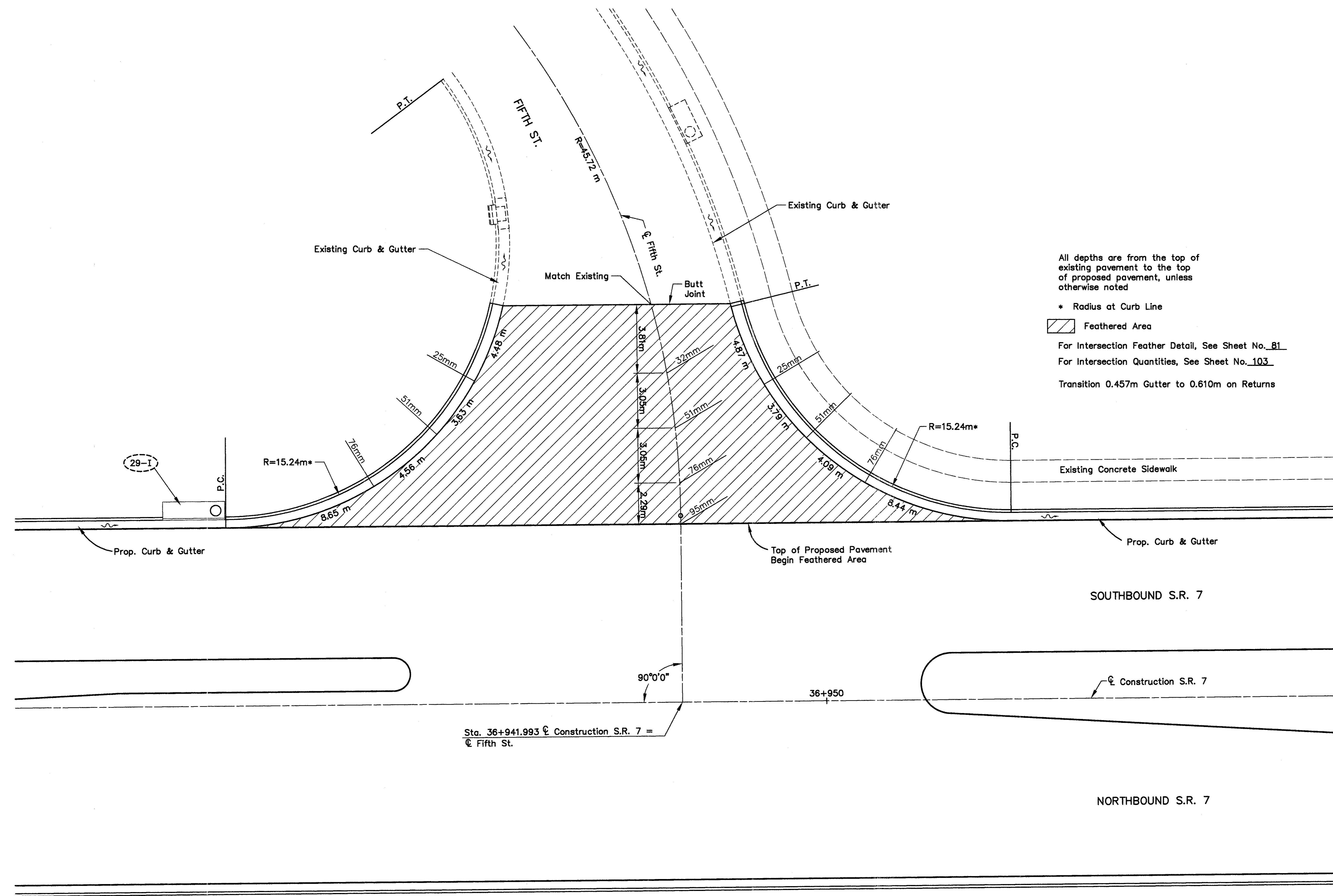
Feathered Area

For Intersection Feather Detail, See Sheet No. 81

For Intersection Quantities, See Sheet No. 103

H:\327-01\3271017.dwg - DEC. 05, 1995 - 10:43:14

**FIFTH ST.  
INTERSECTION DETAIL**



All depths are from the top of existing pavement to the top of proposed pavement, unless otherwise noted

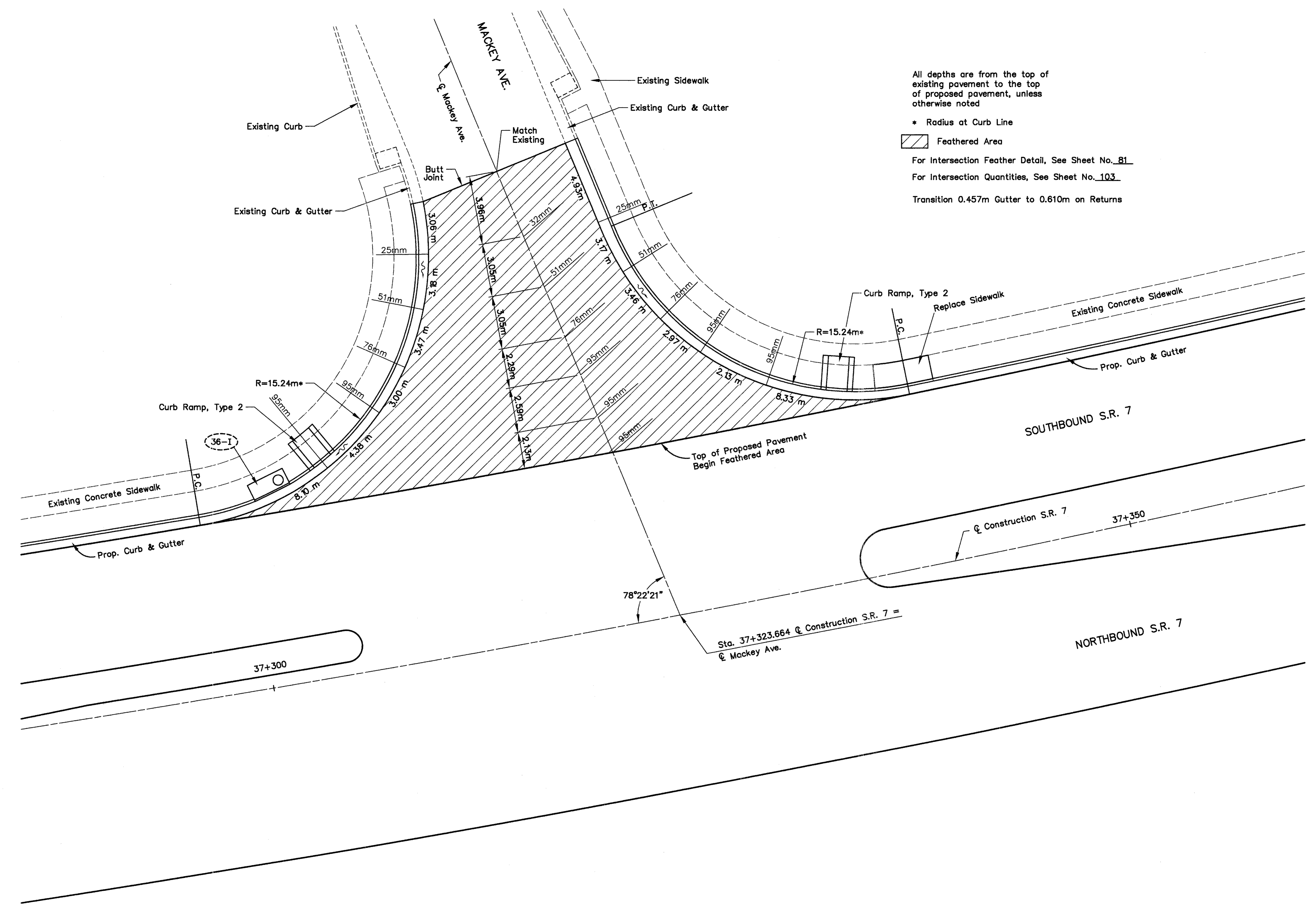
\* Radius at Curb Line

▨ Feathered Area

For Intersection Feather Detail, See Sheet No. B1

For Intersection Quantities, See Sheet No. 103

Transition 0.457m Gutter to 0.610m on Returns



All depths are from the top of existing pavement to the top of proposed pavement, unless otherwise noted

\* Radius at Curb Line

Feathered Area

For Intersection Feather Detail, See Sheet No. 81

For Intersection Quantities, See Sheet No. 103

Transition 0.457m Gutter to 0.610m on Returns

**MACKEY AVE.  
INTERSECTION DETAIL**

**BEL-7-32.276**

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All depths are from the top of existing pavement to the top of proposed pavement, unless otherwise noted

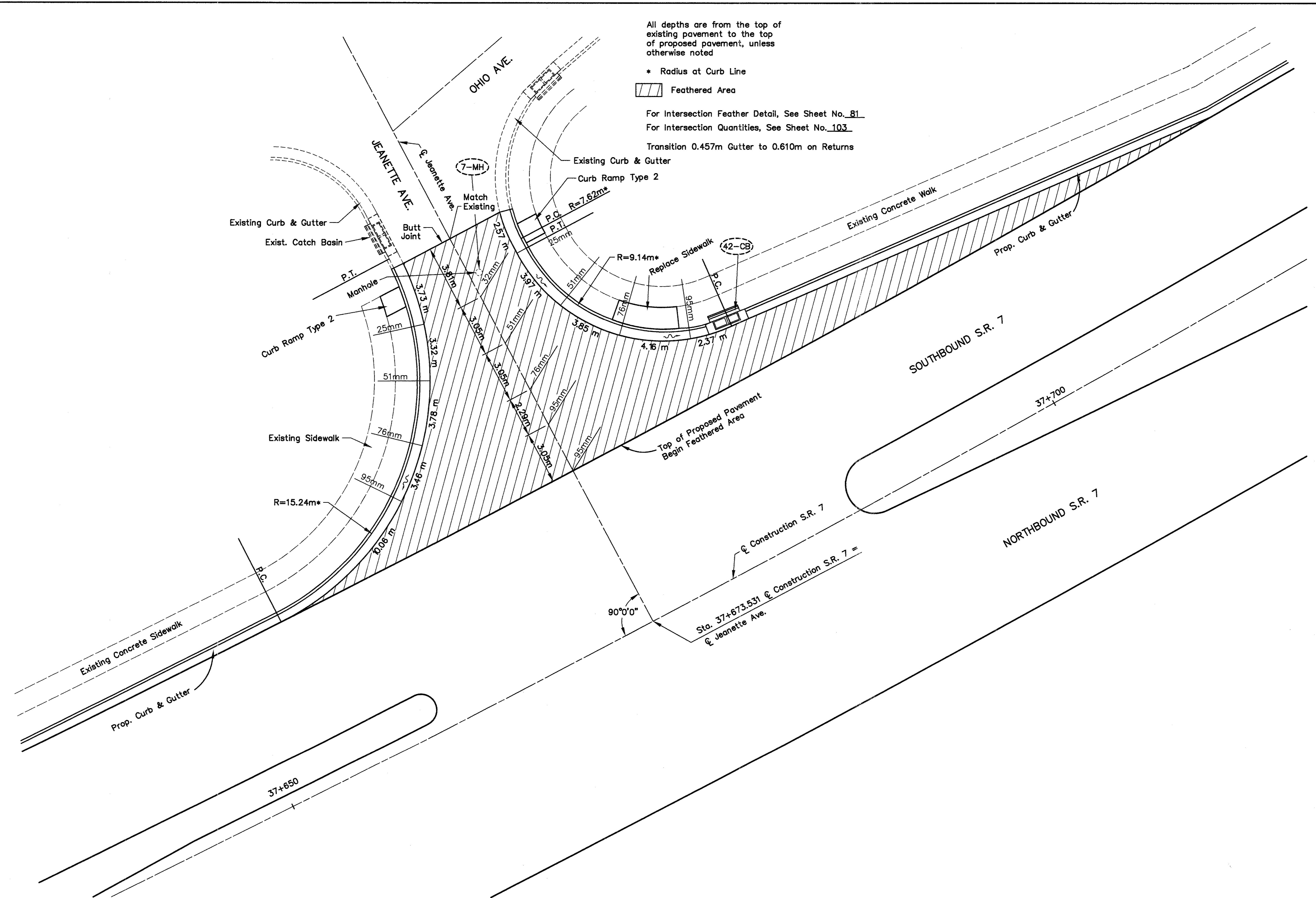
\* Radius at Curb Line

 Feathered Area

For Intersection Feather Detail, See Sheet No. 81

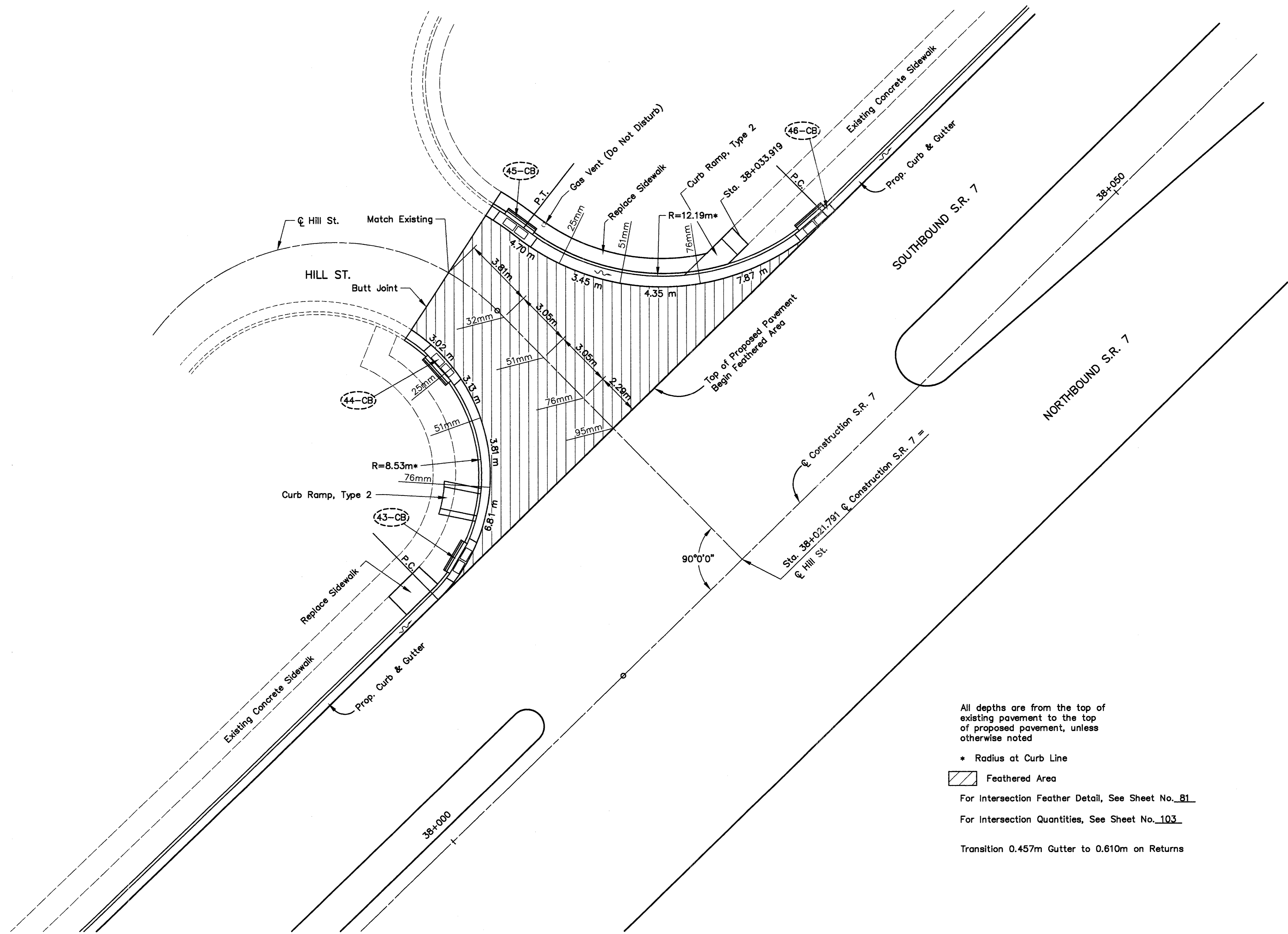
For Intersection Quantities, See Sheet No. 103

Transition 0.457m Gutter to 0.610m on Returns




**JEANETTE AVE.  
INTERSECTION DETAIL**

**BEL-7-32.276**



All depths are from the top of existing pavement to the top of proposed pavement, unless otherwise noted

\* Radius at Curb Line

 Feathered Area

For Intersection Feather Detail, See Sheet No. 81

For Intersection Quantities, See Sheet No. 103

Transition 0.457m Gutter to 0.610m on Returns

**HILL ST.  
INTERSECTION DETAIL**

**BEL-7-32.276**

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# INTERSECTION ROADWAY QUANTITIES

⊗ CALCULATED FROM COMPUTER AREA  
\* SEE DETAIL ON SHEET NO. 81

CALCULATED  
WCR  
CHECKED  
SAH

FROM SHEET NO.	LOCATION	SIDE	PAVEMENT AREA	202			407	407	446			608			609							
				WEARING COURSE REMOVED	CURB AND GUTTER REMOVED	WALK REMOVED	TACK COAT	TACK COAT FOR INTERMEDIATE COURSE	MINIMUM THICKNESS	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AS PER PLAN	AVERAGE DEPTH	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AS PER PLAN	CURB RAMP, TYPE 1	CURB RAMP, TYPE 2	100mm CONCRETE WALK	COMBINATION CURB AND GUTTER, TYPE 2						
				Sq. Meter	Sq. Meter	Meter	Sq. Meter	Liter	Liter	mm	Cu. Meter	mm	Cu. Meter	Each	Each	Sq. Meter	Meter					
88	Lincoln Ave.	☉	156.941	35.057	38.204				32	5.927	41	3.154									38.204	
89	Aetna St.	LT.	461.807	159.538	66.234				32	18.111	41	9.027									66.234	
90	Aetna St.	RT.	172.389	43.035	35.941				32	6.541	41	3.853									35.941	
91	Hanover St.	LT.	387.439	104.386	63.859	56.952			32	14.778	41	8.543	2			56.952					61.624	
92	Hanover St.	RT.	301.094	65.110	49.087	63.638			32	11.340	41	6.893	2			63.638					49.087	
93	Fifth St.	☉	249.886	56.392	42.514				32	9.404	41	5.824									42.514	
94	Mackey St.	☉	268.516	36.638	52.277	4.507			32	9.488	41	8.274		2		4.507					50.042	
95	Jeannette Ave.	☉	242.853	22.144	71.770	7.585			32	8.360	41	8.137		2		7.585					71.770	
96	Hill St.	☉	141.622	28.803	36.858	15.390			32	5.255	41	3.540		2		15.390					36.858	
TOTALS CARRIED TO SHEET GENERAL SUMMARY				551.103	456.744	148.072				810.064	810.064	89.204	57.245	4	6	148.072	452.274					

INTERSECTION ROADWAY QUANTITIES

BEL-7-32.276





- NOTES:  
 1. EXISTING OUTLET LOCATION  
 2. CONNECT TO EXISTING UNDERDRAIN  
 3. OUTLET INTO CATCH BASIN  
 4. OUTLET INTO EXISTING STORM DRAIN

- \* 3.05m TO BE USED IN PLACE OF 605 UNDERDRAIN PIPE WHERE PROPOSED UNDERDRAIN SPANS AN EXISTING CULVERT OR ENCASMENT PIPE.  
 \*\* OUTSIDE EDGE OF PAVEMENT  
 \*\*\* CONDUIT LENGTH TO BE USED IN PLACE OF 605 UNDERDRAIN PIPE WHERE UNDERDRAIN OUTLETS INTO A PROPOSED CATCH BASIN, INLET, MANHOLE, OR STORM DRAIN.

# UNDERDRAIN QUANTITIES

STATION		PIPE SLOPE	SIDE	603		605		UNCLASSIFIED UNDERDRAINS				OUTLET STATION	PLUG STATION	OUTLET FITTINGS					SEE NOTE NO.	REMARKS						
				100mm *** CONDUIT TYPE F	Meter	100mm SHALLOW PIPE UNDERDRAIN 707.31, AS PER PLAN	100mm UNCLASSIFIED PIPE UNDERDRAIN 707.31, AS PER PLAN	BEGIN STATION	TRENCH DEPTH OF BEGIN STATION	END STATION	TRENCH DEPTH OF END STATION			100mm 1 1/4" BEND	100mm 2 1/2" BEND	100mm 45° BEND	100mm END CAP									
																		FROM			TO	FROM	Meter	TO	Meter	Each
36+088.540	36+119.020	+0.94	Lt.	3.05			27.43	36+088.540	0.61	36+119.020	0.56	36+088.540								4						
36+119.020	36+238.039		Lt.		119.02							36+238.039									4					
36+239.258	36+269.738	+1.46	Lt.	3.05			27.43	36+239.258	0.69	36+269.738	0.56	36+239.258									4					
36+269.738	36+360.679		Lt.		90.94							36+360.679										3				
36+423.277	36+559.608		Lt.	3.05	133.28							36+423.277	36+559.608		1							3				
36+560.878	36+590.088		Lt.	3.05	26.16							36+560.878	36+590.088			1						3				
36+591.358	36+675.522		Lt.	3.05	81.11							36+591.358	36+675.522			1						3				
36+806.738	36+888.501		Lt.	3.05	78.71							36+806.738	36+888.501		1							3				
36+889.771	36+912.881		Lt.	3.05	20.06							36+889.771	36+912.881		1							3				
36+956.928	37+036.541		Lt.	6.10	75.07							37+036.541	36+956.928				1						3	OUTLET INTO MANHOLE		
37+037.541	37+073.521		Lt.		35.98								37+037.541													
37+073.521	37+104.001	-3.92	Lt.	3.05			27.43	37+073.521	0.56	37+104.001	1.07	37+104.001											4			
37+105.220	37+238.079		Rt.	3.05	129.81							37+238.079	37+105.220			1							3			
37+239.349	37+300.511		Rt.	3.05	58.11							37+300.511	37+239.349		1								3			
37+336.097	37+398.064		Rt.	3.05	58.92							37+398.064	37+336.097				1						3			
37+399.334	37+601.279		Rt.	3.05	198.90							37+601.279	37+399.334			1							3			
37+602.549	37+641.805	-0.45	Rt.	3.05			36.21	37+602.549	0.56	37+641.805	0.56	37+641.805	37+602.549		1								3			
37+689.845	37+718.748		Rt.	3.05	25.85							37+689.845	37+718.748		1								3			
37+720.018	37+790.503		Rt.	3.05	67.45							37+720.018					1						3			
37+790.503	37+836.223	+0.27	Rt.				45.72	37+790.503	0.56	37+836.223	0.56														HIGH POINT @ STA. 37+836.223	
37+836.223	37+881.943	-0.27	Rt.				45.72	37+836.223	0.56	37+881.943	0.56															HIGH POINT @ STA. 37+836.223
37+881.943	37+931.625		Rt.	3.05	46.63							37+931.625						1						3		
37+932.895	37+961.191		Rt.	3.05	25.25							37+961.191	37+932.895		1									3		
37+962.461	38+003.058		Rt.	3.05	37.55							38+003.058	37+962.461		1									3		
38+036.554	38+084.097		Lt.		47.54							38+036.554														
38+084.097	38+114.577	-0.94	Lt.	3.05			27.43	38+084.097	0.56	38+114.577	0.66													4		
38+115.796	38+180.287		Lt.	3.05	61.44							38+180.287	38+115.796			1								3		
38+181.557	38+213.500		Lt.	6.10	25.84							38+213.500	38+181.557				1								3	OUTLET INTO MANHOLE
TOTAL CARRIED TO GENERAL SUMMARY					73.5																					
							1444			237.5																

CALCULATED  
BL  
CHECKED  
WCR

## UNDERDRAIN QUANTITIES

BEL-7-32.276

- NOTES:  
 1. EXISTING OUTLET LOCATION  
 2. CONNECT TO EXISTING UNDERDRAIN  
 3. OUTLET INTO CATCH BASIN  
 4. OUTLET INTO EXISTING STORM DRAIN
- \* 3.05m TO BE USED IN PLACE OF 605 UNDERDRAIN PIPE WHERE PROPOSED UNDERDRAIN SPANS AN EXISTING CULVERT OR ENCASEMENT PIPE.  
 \*\* OUTSIDE EDGE OF PAVEMENT  
 \*\*\* CONDUIT LENGTH TO BE USED IN PLACE OF 605 UNDERDRAIN PIPE WHERE UNDERDRAIN OUTLETS INTO A PROPOSED CATCH BASIN, INLET, MANHOLE, OR STORM DRAIN.

# UNDERDRAIN QUANTITIES

STATION		PIPE SLOPE %	SIDE	603		605		UNCLASSIFIED UNDERDRAINS				OUTLET STATION	PLUG STATION	OUTLET FITTINGS				SEE NOTE NO.	REMARKS
FROM	TO			100mm *** CONDUIT TYPE F	Meter	100mm SHALLOW PIPE UNDERDRAIN 707.31, AS PER PLAN	Meter	BEGIN STATION	TRENCH DEPTH OF BEGIN STATION	END STATION	TRENCH DEPTH OF END STATION			100mm 11 1/4" BEND	100mm END CAP	Each	Each		
32+791.866	32+823.870		Rt.**		32.00							32+791.866		1					
32+823.870	32+873.857	-2.43	Rt.**	3.05		46.94	32+823.870	0.83	32+873.857	0.60	32+875.686	32+896.717	1				3		
32+875.686	32+896.717		Rt.**	3.05	17.98						32+875.686		1				3		
32+949.889	32+991.037	-0.40	Rt.**	3.05		38.10	32+949.889	0.60	32+991.037	0.50	32+991.037	32+949.889	1				3		
33+006.396	33+062.878	+0.24	Rt.**	3.05		53.43	33+006.396	0.81	33+062.878	0.83	33+006.396		1				3		
33+062.878	33+084.120		Rt.**		21.24							33+084.120		1					
33+086.020	33+154.072		Rt.**	3.05	68.05						33+086.020	33+154.072	1				3		
33+155.901	33+236.178	+0.72	Rt.**	3.05		77.23		0.83		0.68	33+155.901	33+236.178	1				3		
33+238.007	33+388.602		Rt.**	3.05	147.55						33+238.007	33+388.602	1				3		
33+390.431	33+420.911		Rt.**	3.05	30.48						33+390.431		1				3		
33+420.911	33+451.391	+0.45	Rt.**			30.48	33+420.911	0.83	33+451.391	0.76								High Point @ Sta. 33+451.391	
33+451.391	33+481.871	-0.77	Rt.**			30.48	33+451.391	0.76	33+481.871	0.83								High Point @ Sta. 33+451.391	
33+481.871	33+497.066		Rt.**	3.05	15.20						33+497.066		1				3		
33+499.025	33+588.636		Rt.**	3.05	89.61						33+588.636	33+499.025	1				3		
33+590.661	33+687.587		Rt.**	3.05	96.93						33+687.587	33+590.661	1				3		
33+689.415	33+710.401	-0.71	Rt.**	3.05		17.94	33+689.415	0.75	33+710.401	0.83	33+710.401	33+689.415	1				3		
33+710.401	33+731.110	+0.71	Rt.**	3.05		17.66	33+710.401	0.83	33+731.110	0.75	33+710.401	33+731.110	1				3		
33+732.939	33+938.679		Rt.**	3.05	205.74						33+732.939		1				3		
33+938.679	33+984.399	+0.62	Rt.**			45.72	33+938.679	0.83	33+984.399	0.76								High Point @ Sta. 33+984.399	
33+984.399	34+014.879	-0.42	Rt.**			30.48	33+984.399	0.76	34+014.879	0.83								High Point @ Sta. 33+984.399	
34+014.879	34+053.735		Rt.**	3.05	38.86						34+053.735		1				3		
34+055.259	34+076.201		Rt.**	3.05	17.89						34+076.201	34+055.259	1				3		
34+111.317	34+150.725	+0.24	Rt.**	3.05		36.36	34+111.317	1.05	34+150.725	0.83	34+111.317	34+150.725	1				3		
34+131.292	34+183.108		Lt.**	3.05	48.77								1						
34+184.632	34+237.401		Lt.**	3.05	49.72						34+237.401	34+184.632	1				3		
34+238.998	34+396.275		Lt.**	3.05	154.23						34+396.275	34+238.998	1				3		
34+398.104	34+502.951		Lt.**	3.05	101.80						34+502.951	34+398.104	1				3		
34+504.780	34+518.023		Lt.**	3.05	10.19						34+518.023	34+504.780	1				3		
34+561.613	34+609.162		Lt.**	3.05	44.50						34+561.613	34+609.162	1				3		
34+621.780	34+644.640	-0.37	Lt.**	3.05		19.81	34+621.780	0.83	34+644.640	1.01	34+644.640	34+621.780	1				3		
34+644.640	34+752.634		Lt.**	3.05	104.94						34+644.640	34+752.634	1				3		
34+339.851	34+396.239		Rt.**	3.05	53.34						34+396.239	34+339.851	1				3		
34+398.057	34+502.908		Rt.**	3.05	101.80						34+502.908	34+398.057	1				3		
34+541.067	34+565.451		Rt.**	3.05	21.33						34+541.067	34+565.451	1				3		
34+644.641	34+697.980		Rt.**	3.05	50.29						34+644.641	34+697.980	1				3		
34+777.607	34+897.174		Lt.**	3.05	116.52						34+777.607	34+897.174	1				3		
34+899.003	34+973.568		Lt.**	3.05	71.52						34+899.003	34+973.568	1				3		
35+279.995	35+356.195		Lt.**	3.05	73.15						35+279.995	35+356.195	1				3		
34+899.003	34+947.771		Rt.**	3.05	45.72						34+899.003	34+947.771	1				3		
35+173.159	35+278.315		Rt.**	3.05	102.11						35+173.159	35+278.315	1				3		
35+280.184	35+371.319		Rt.**	3.05	88.09						35+280.184	35+371.319	1				3		
35+371.468	35+409.568	+0.24	Rt.**	3.05		35.05	35+371.468	0.99	35+409.568	0.83	35+371.468		1				3	High Point @ Sta. 35+409.568	
35+409.568	35+463.119	-0.40	Rt.**	3.05		50.50	35+409.568	0.83	35+463.119	0.95	35+463.119		1				3	High Point @ Sta. 35+409.568	
35+464.915	35+554.526		Rt.**	3.05	86.56						35+554.526	35+464.915	1				3		
35+516.330	35+584.910		Lt.**	3.05	65.53						35+584.910	35+516.330	1				3		
35+586.739	35+677.082		Lt.**	3.05	87.29						35+677.082	35+586.739	1				3		
35+738.044	35+767.305	+0.40	Lt.**	3.05		26.21	35+738.044	0.91	35+767.305	0.83	35+738.044	35+767.305	1				3		
35+769.067	35+827.893		Lt.**	3.05	55.78						35+769.067	35+827.893	1				3		
35+829.381	35+979.955		Lt.**	3.05	147.52						35+829.381	35+979.955	1				3		
35+981.784	36+086.635		Lt.**	3.05	101.80						35+981.784	36+086.635	1				3		
TOTAL CARRIED TO GENERAL SUMMARY					134.5														
					2564		556.5												

- NOTES:  
 1. EXISTING OUTLET LOCATION  
 2. CONNECT TO EXISTING UNDERDRAIN  
 3. OUTLET INTO CATCH BASIN  
 4. OUTLET INTO EXISTING STORM DRAIN

- \* 3.05m TO BE USED IN PLACE OF 605 UNDERDRAIN PIPE WHERE PROPOSED UNDERDRAIN SPANS AN EXISTING CULVERT OR ENCASMENT PIPE.  
 \*\* OUTSIDE EDGE OF PAVEMENT  
 \*\*\* CONDUIT LENGTH TO BE USED IN PLACE OF 605 UNDERDRAIN PIPE WHERE UNDERDRAIN OUTLETS INTO A PROPOSED CATCH BASIN, INLET, MANHOLE, OR STORM DRAIN.

# UNDERDRAIN QUANTITIES

STATION		PIPE SLOPE	SIDE	603		605		UNCLASSIFIED UNDERDRAINS				OUTLET STATION	PLUG STATION	OUTLET FITTINGS				SEE NOTE NO.	REMARKS
				100mm *** CONDUIT TYPE F	Meter	100mm SHALLOW PIPE UNDERDRAIN 707.31, AS PER PLAN	100mm UNCLASSIFIED PIPE UNDERDRAIN 707.31, AS PER PLAN	BEGIN STATION	TRENCH DEPTH OF BEGIN STATION	END STATION	TRENCH DEPTH OF END STATION			100mm 1 1/4" BEND	100mm END CAP				
																FROM	TO		
36+088.540	36+238.806		Lt.**	3.05		147.22						36+088.540	36+238.806	1		1	3		
36+240.782	36+360.264		Lt.**	3.05		116.43						36+240.782	36+360.264	1		1	3		
36+423.828	36+559.159		Lt.**	3.05		132.28						36+423.828	36+559.159	1		1	3		
36+118.986	36+238.772		Rt.**	3.05		116.74						36+118.986	36+238.772	1		1	3		
36+240.782	36+355.996		Rt.**	3.05		112.16						36+240.782	36+355.996	1		1	3		
36+423.429	36+559.065		Rt.**	3.05		132.59						36+423.429	36+560.894	1		1	3		
36+560.878	36+672.740		Rt.**	3.05		108.81						36+560.878	36+672.740	1		1	3		
36+809.122	36+916.107		Lt.**	3.05		103.94						36+916.107	36+809.122	1		1	3		
36+961.204	37+035.880		Lt.**	3.05		71.63						37+035.880	36+961.204	1		1	3		
37+037.555	37+104.001		Lt.**	3.05		63.40						37+104.001	37+037.555	1		1	3		
37+105.660	37+239.162		Lt.**	3.05		130.45						37+239.162	37+105.660	1		1	3		
37+241.075	37+301.730		Lt.**	3.05		57.60						37+301.730	37+241.075	1		1	3		
37+342.296	37+399.294		Lt.**	3.05		53.95						37+399.294	37+342.296	1		1	3		
37+401.376	37+612.602		Lt.**	3.05		208.18						37+612.602	37+401.376	1		1	3		
36+809.220	36+909.499		Rt.**	3.05		97.23						36+909.499	36+809.220	1		1	3		
36+911.196	37+040.126		Rt.**	3.05		125.88						37+040.126	36+911.196	1		1	3		
37+041.935	37+074.549		Rt.**	3.05		29.56						37+074.549	37+041.935	1		1	3		
37+614.640	37+642.986		Lt.**	3.05		25.30						37+642.986	37+614.640	1		1	3		
37+719.247	37+765.738		Lt.**	3.05		43.44						37+719.247		1			3		
37+765.738	37+803.838	+0.36	Lt.**				38.10	37+765.738	0.83	37+803.838	0.83							High Point @ Sta. 37+803.838	
37+803.838	37+872.418	-0.26	Lt.**	3.05			68.58	37+803.838	0.83	37+872.418	0.83							High Point @ Sta. 37+803.838	
37+872.418	37+962.084		Lt.**	3.05		86.62						37+962.084		1			3		
37+963.982	38+010.921		Lt.**	3.05		43.89						38+010.921	37+963.982	1		1	3		
38+039.291	38+114.577		Lt.**	3.05		72.24						38+114.577	38+039.291	1		1	3		
38+015.379	38+114.744		Rt.**	3.05		96.32						38+114.744	38+015.379	1		1	3		
38+116.589	38+213.515		Lt.**	3.05		93.88						38+213.515	38+112.931	1		1	3		
38+116.573	38+213.500		Rt.**	3.05		93.88						38+213.500	38+116.573	1		1	3		
TOTAL CARRIED TO GENERAL SUMMARY					79.5		2364		107										

CALCULATED  
BL  
CHECKED  
WCR

## UNDERDRAIN QUANTITIES

BEL-7-32.276



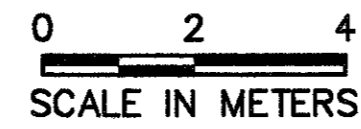
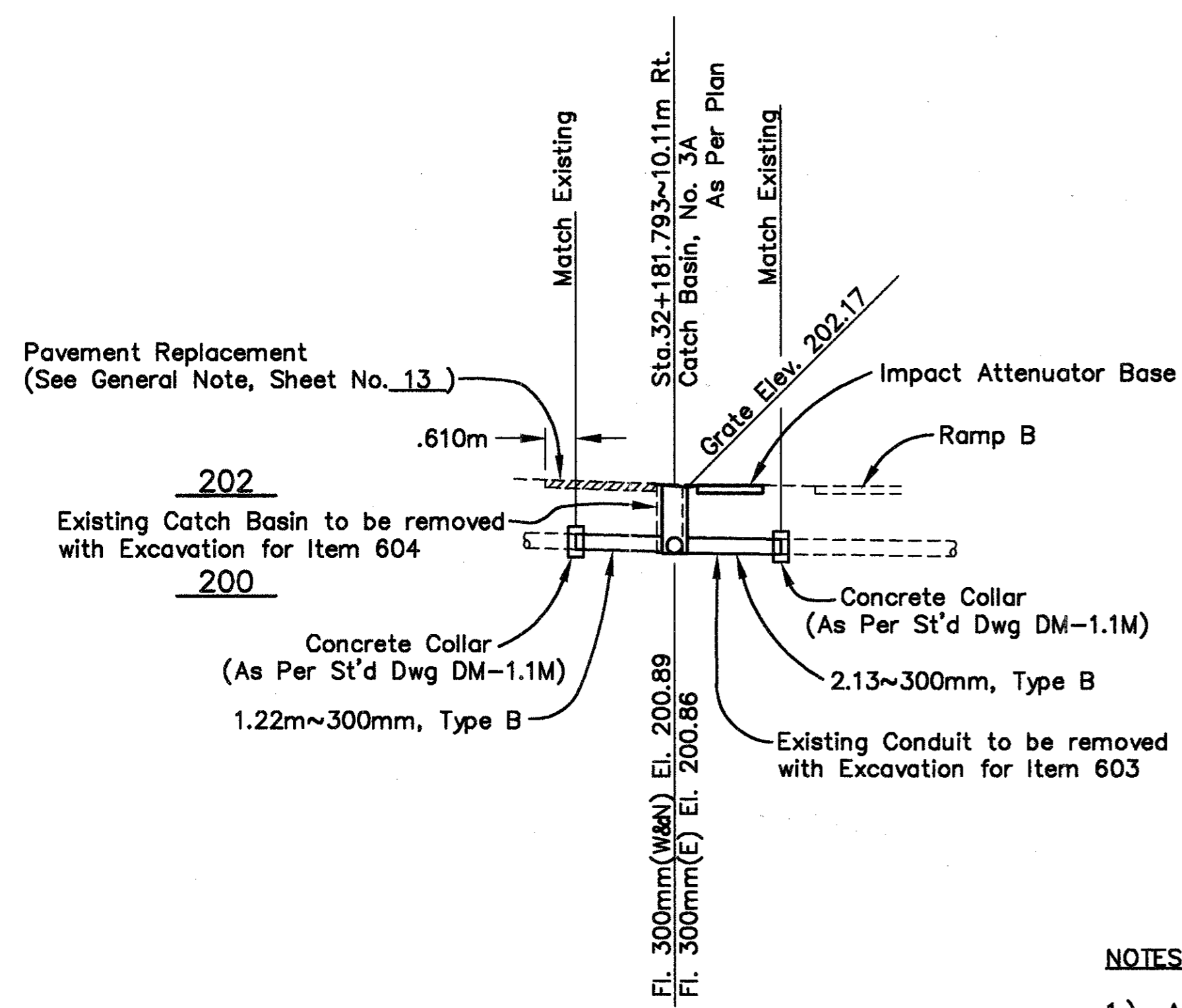






30-D Quantities carried to Sheet No. 110

1-D Quantities carried to Sheet No. 108



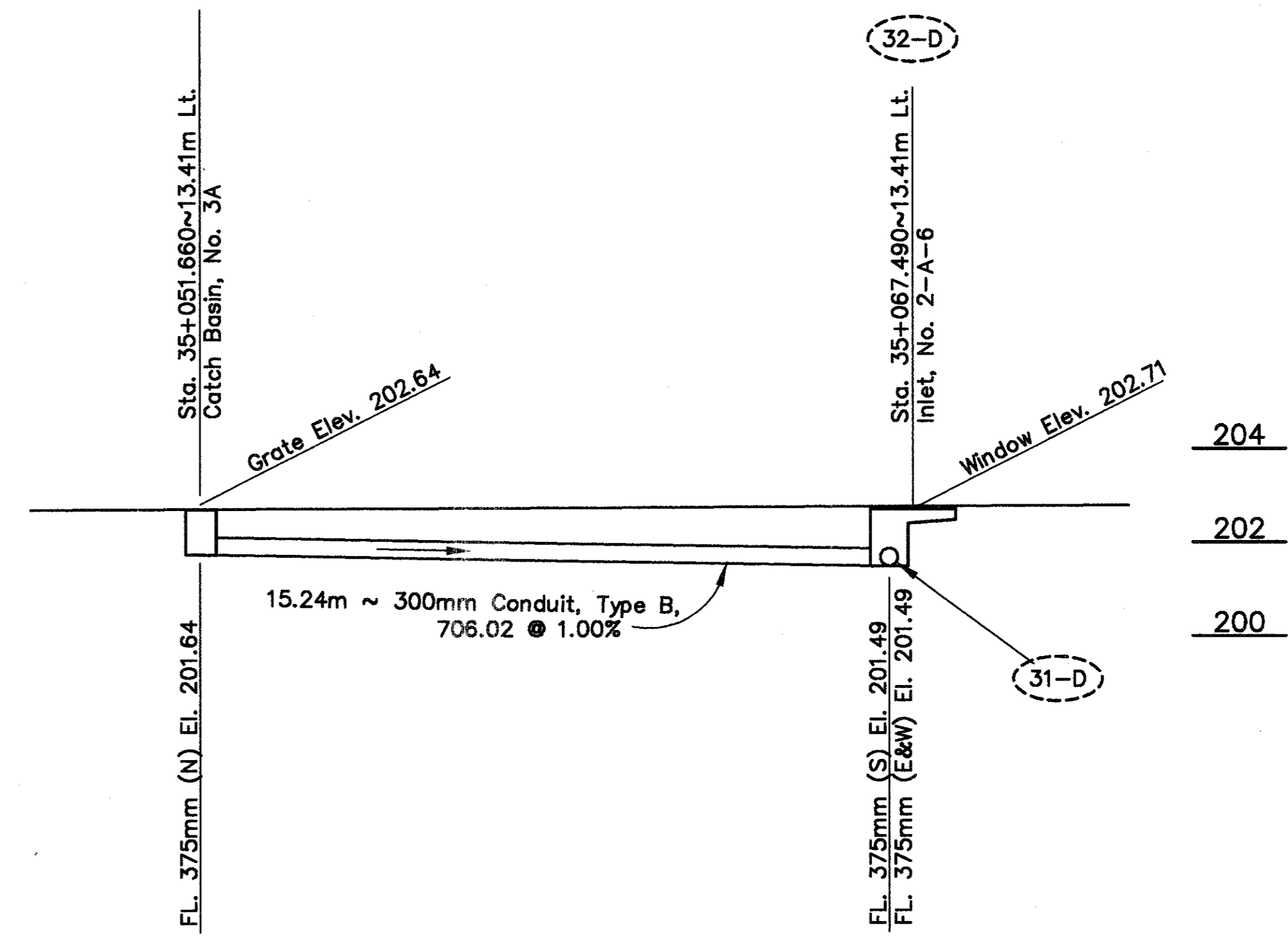
NOTES:

- 1.) All elevations are approximate. Final elevations shall be determined at the time of construction.

204

202

200



32-D

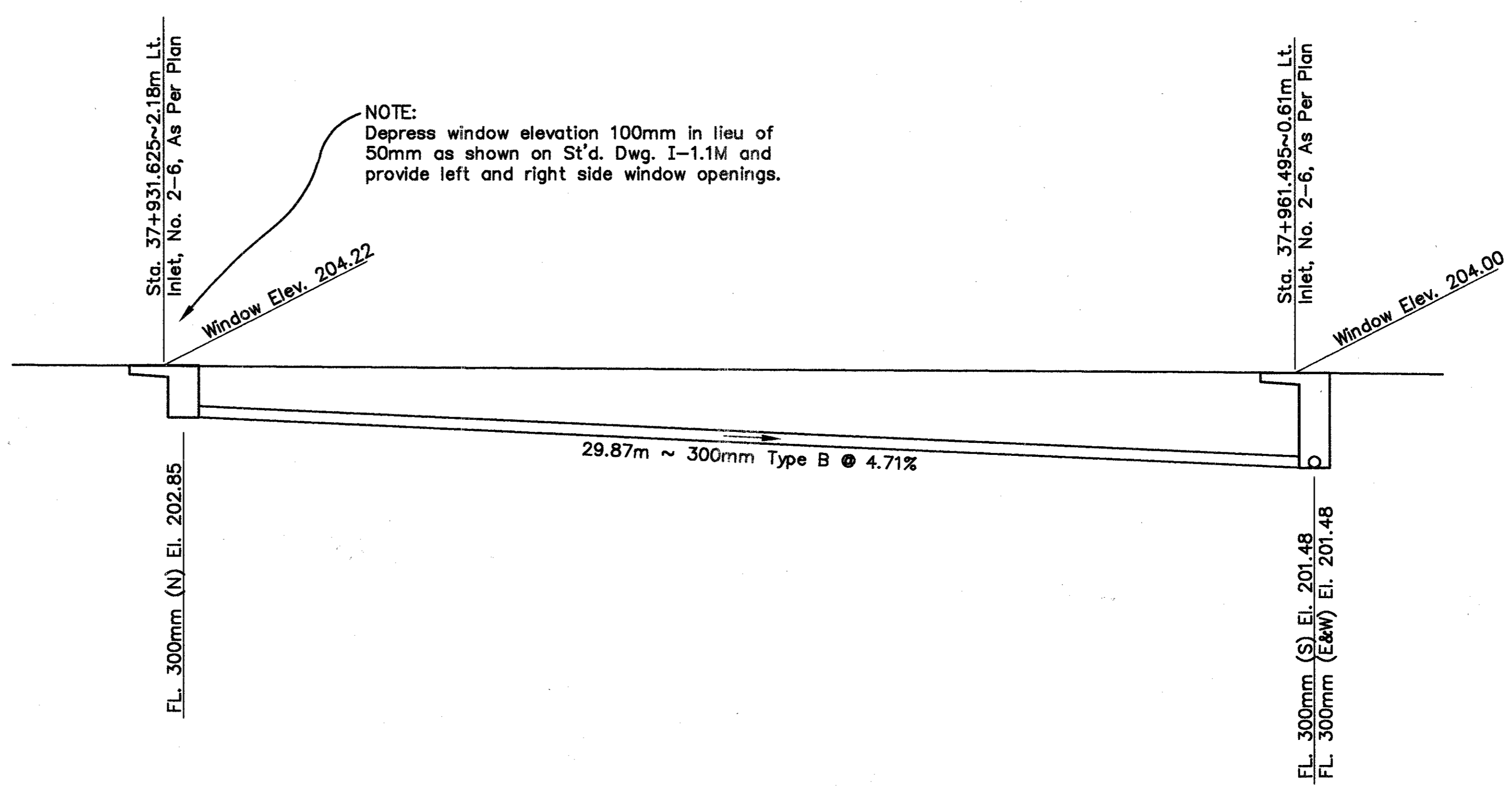
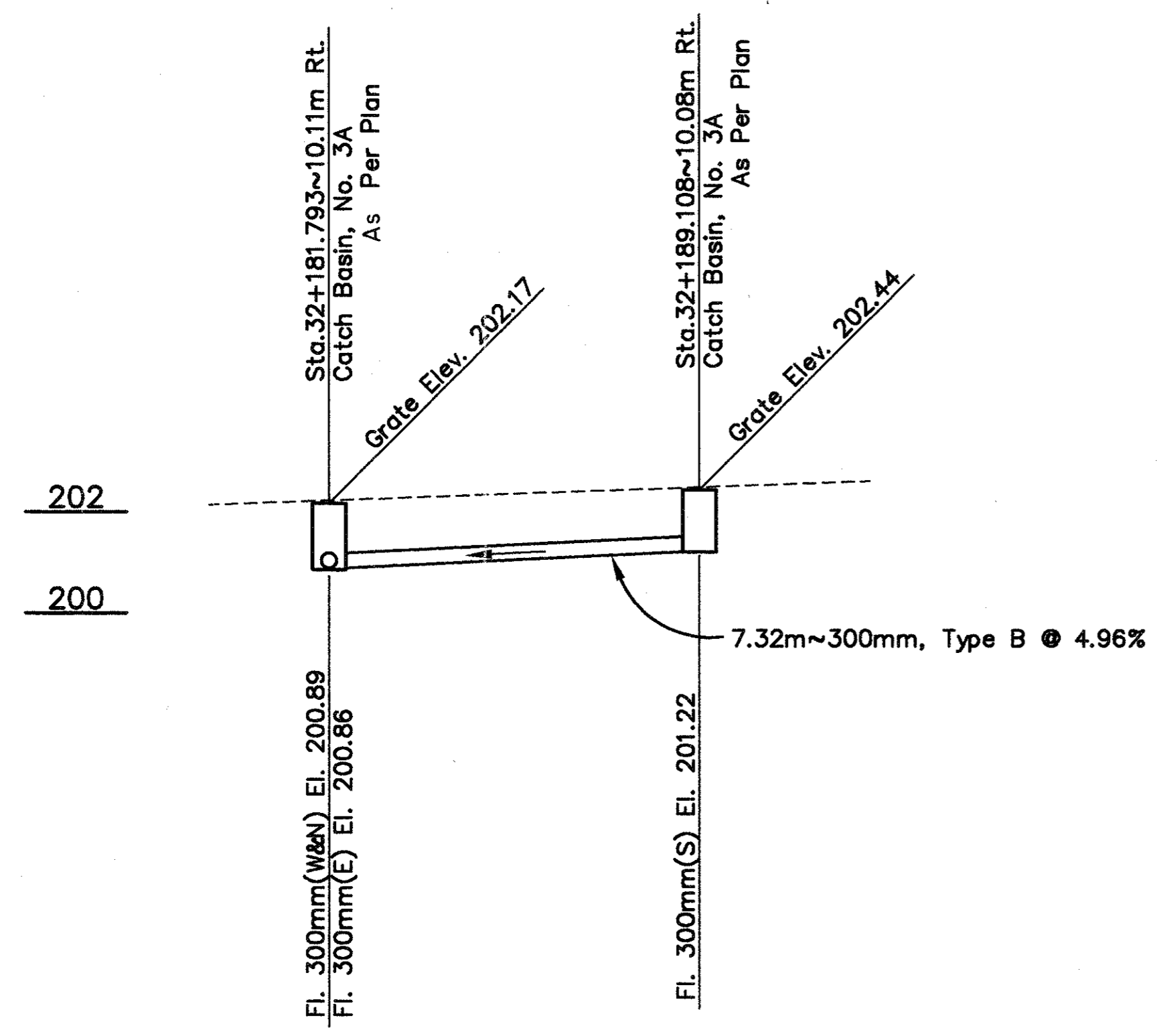
31-D

1-D

2-D Quantities carried to Sheet No. 108

57-D Quantities carried to Sheet No. 111

58-D



NOTE:  
Depress window elevation 100mm in lieu of 50mm as shown on St'd. Dwg. I-1.1M and provide left and right side window openings.

CALCULATED  
LVM  
CHECKED  
BL

STORM SEWER PROFILES

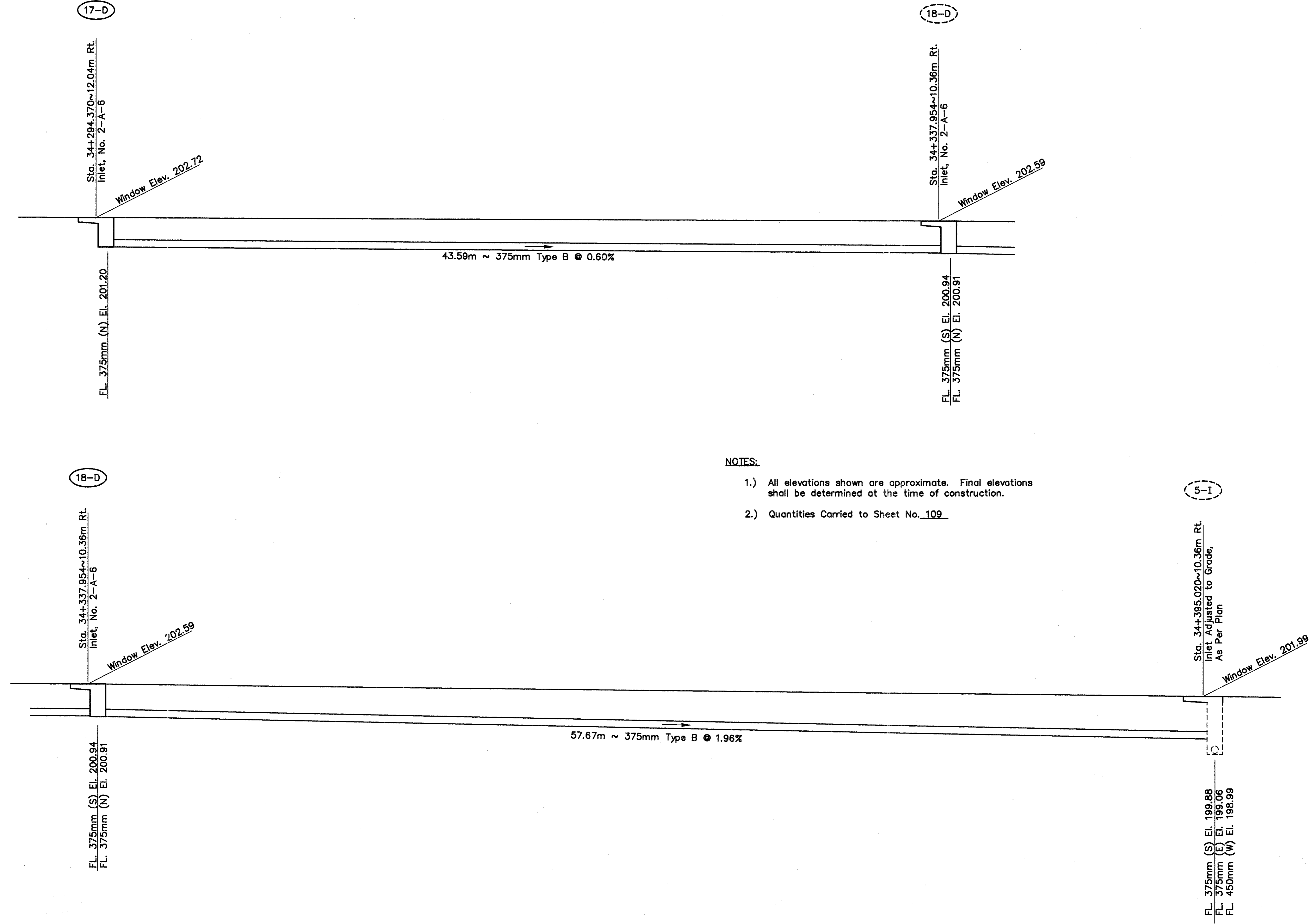
BEL-7-32.276

112  
242

H:\322-01\DRAWING\322006.dwg - OCT 23, 1997 - 15:08:58



H:\322-01\DRAWING\3221005.dwg - OCT 23, 1997 - 13:08:41



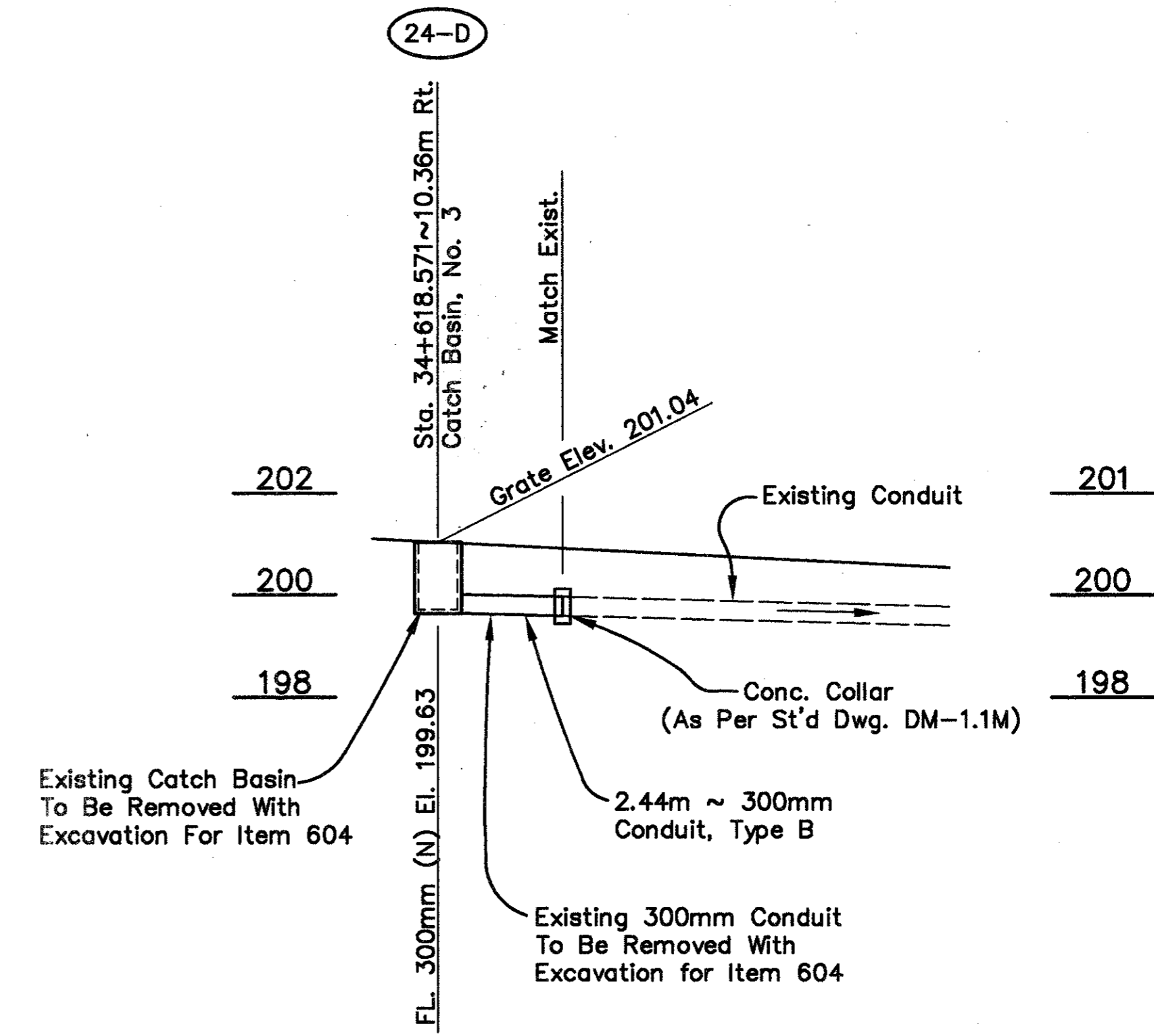
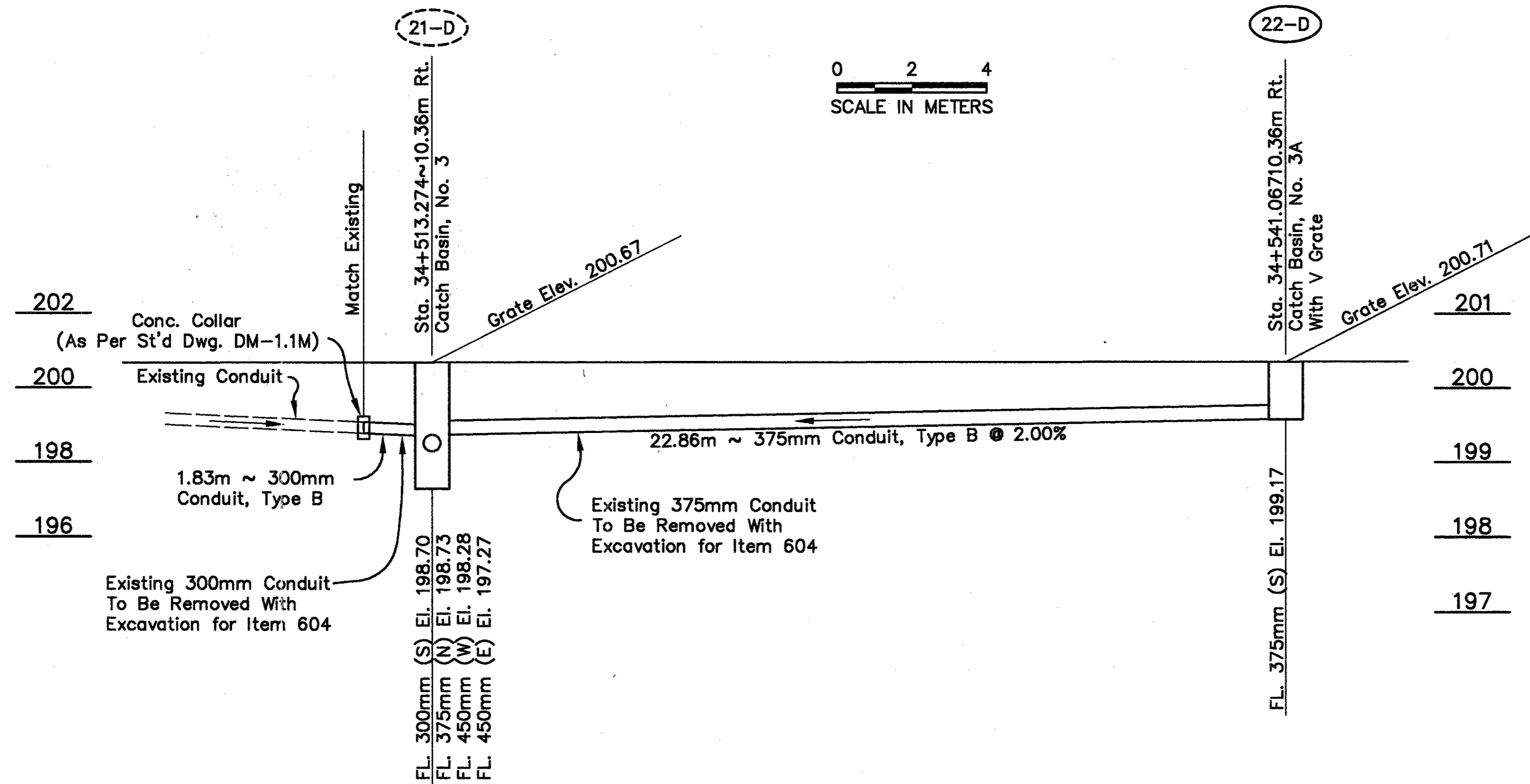
**NOTES:**

- 1.) All elevations shown are approximate. Final elevations shall be determined at the time of construction.
- 2.) Quantities Carried to Sheet No. 109

CALCULATED	BL
CHECKED	LVM

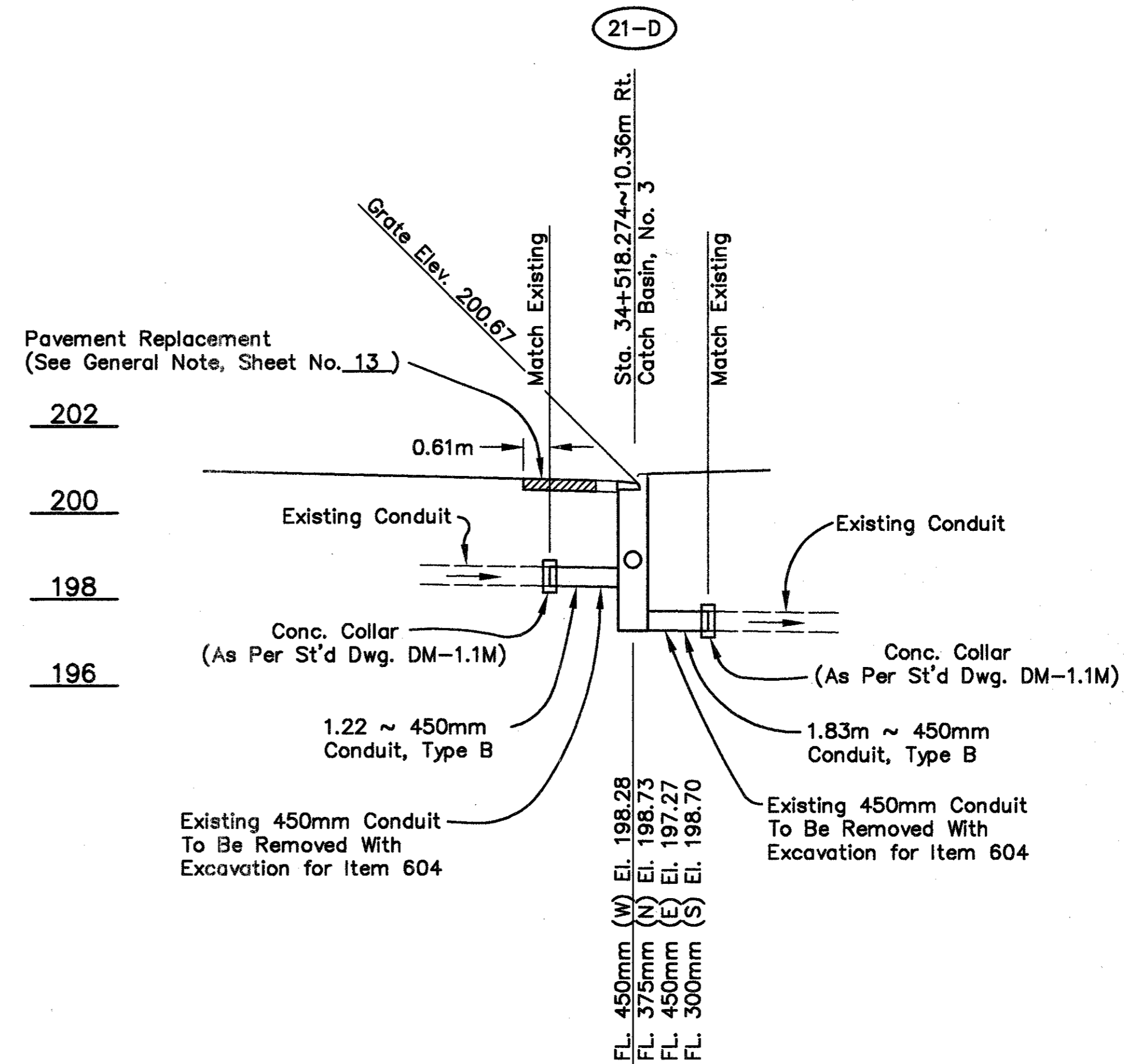
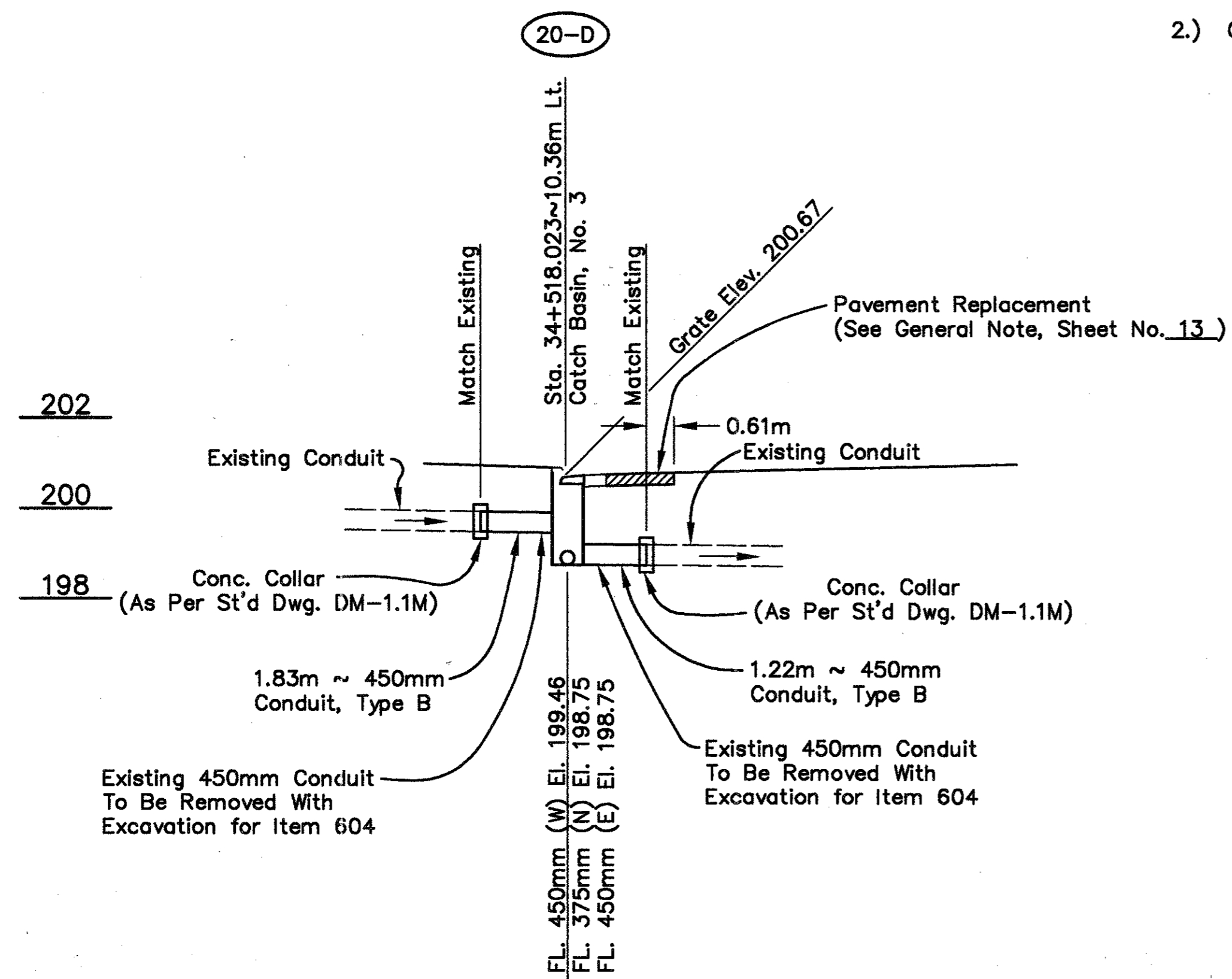
**STORM SEWER PROFILES**

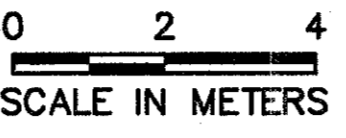
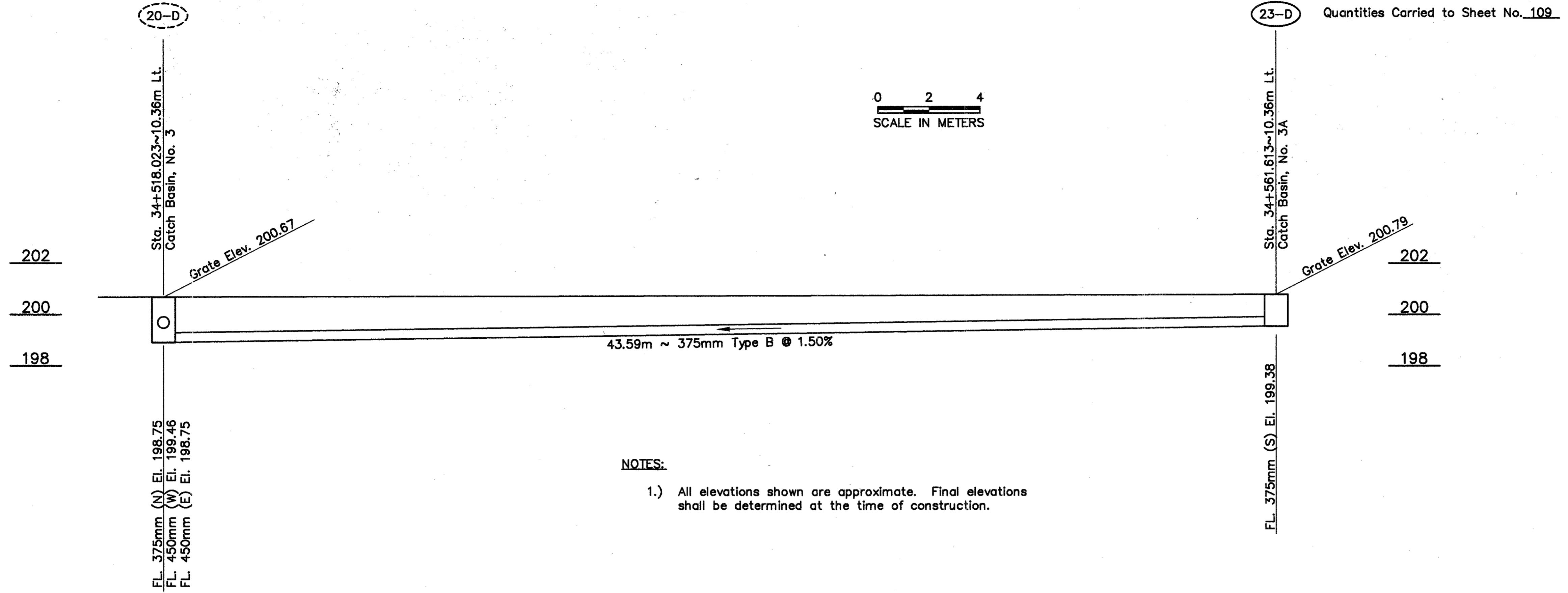
**BEL-7-32.276**



**NOTES:**

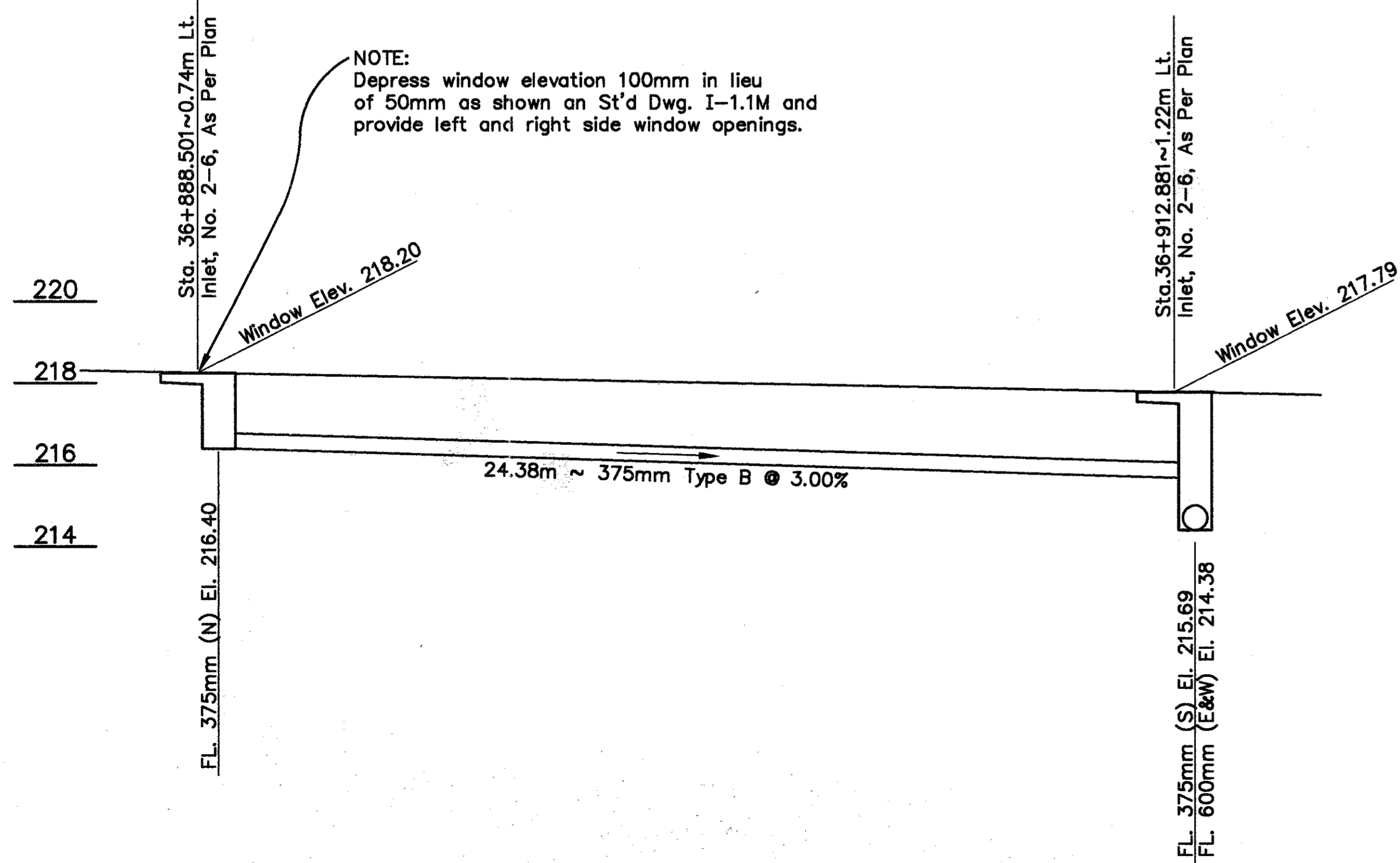
- 1.) All elevations shown are approximate. Final elevations shall be determined at the time of construction.
- 2.) Quantities Carried to Sheet No. 109



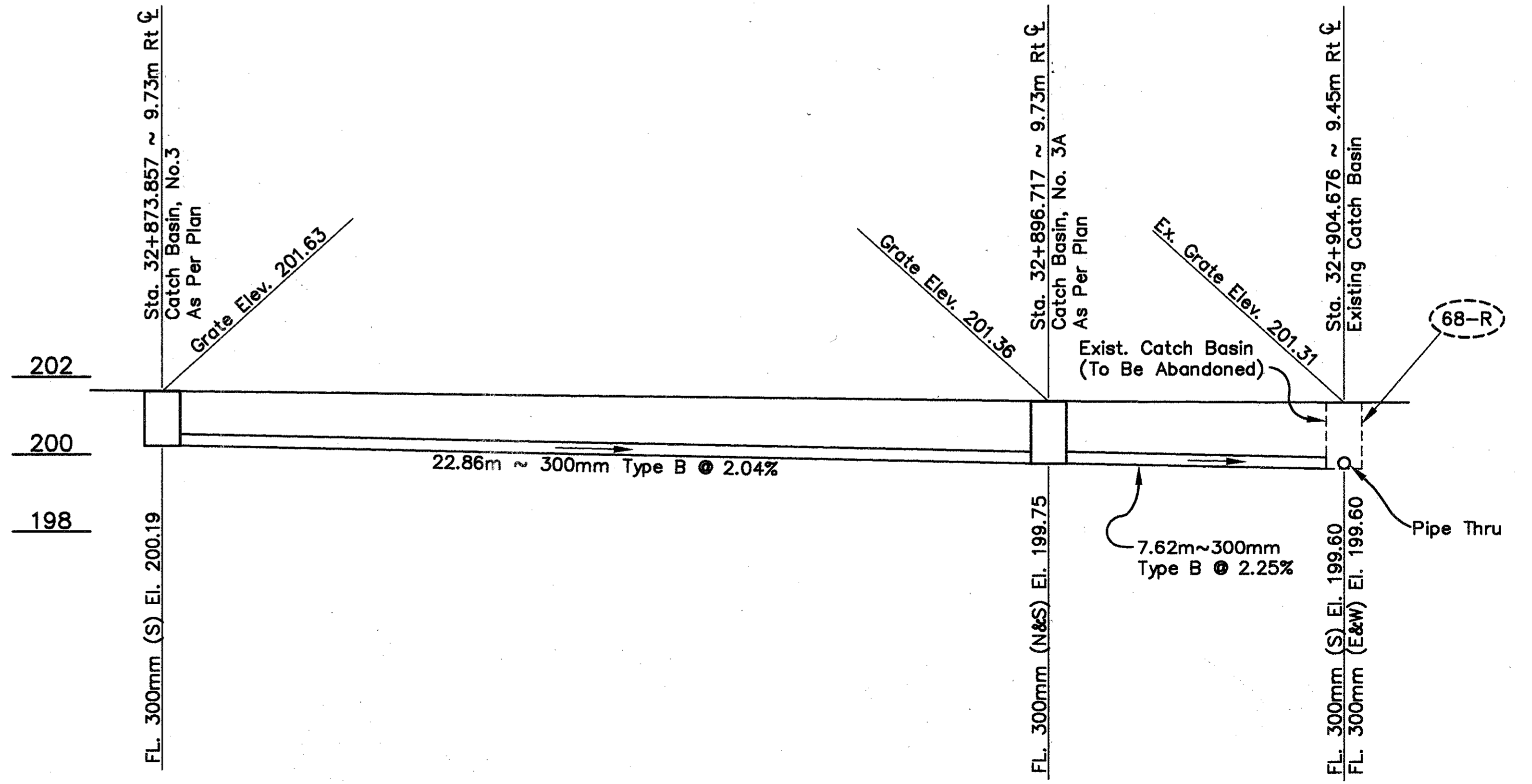


- NOTES:**
- 1.) All elevations shown are approximate. Final elevations shall be determined at the time of construction.

48-D Quantities Carried to Sheet No. 111



62-D Quantities Carried to Sheet No. 108

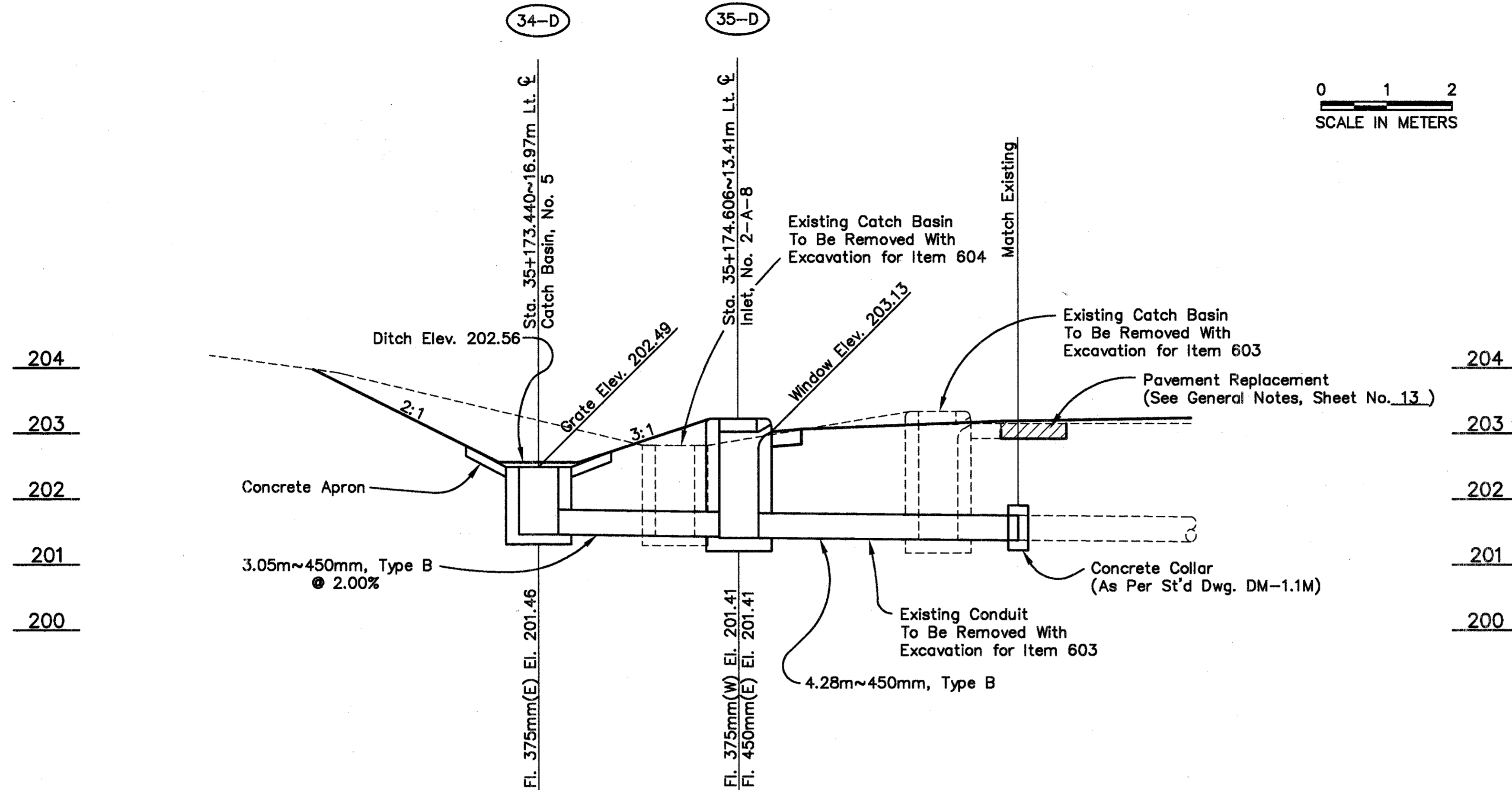


**STORM SEWER PROFILES**

**BEL-7-32.276**

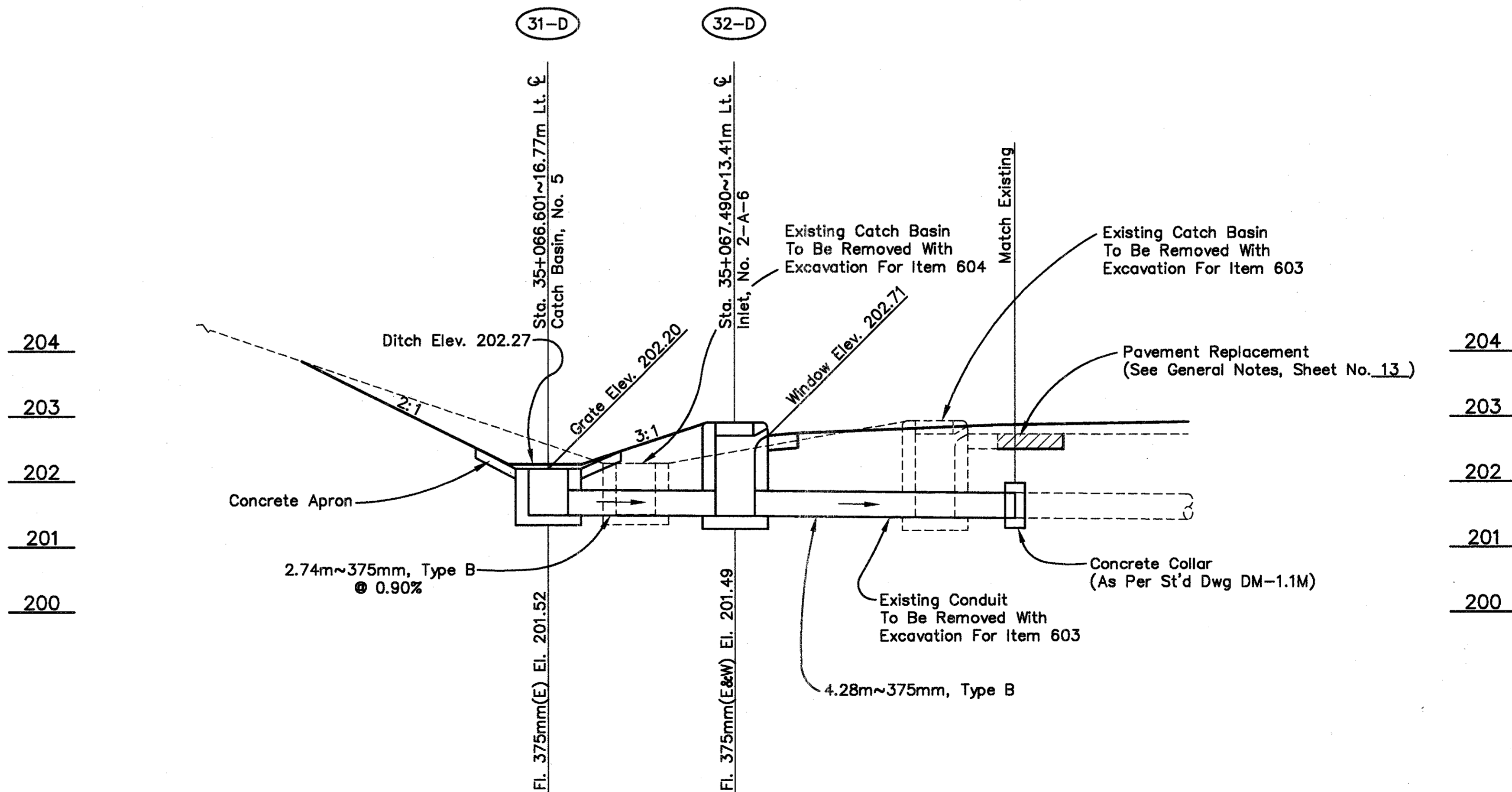
**STORM SEWER PROFILES**

**BEL-7-32.276**



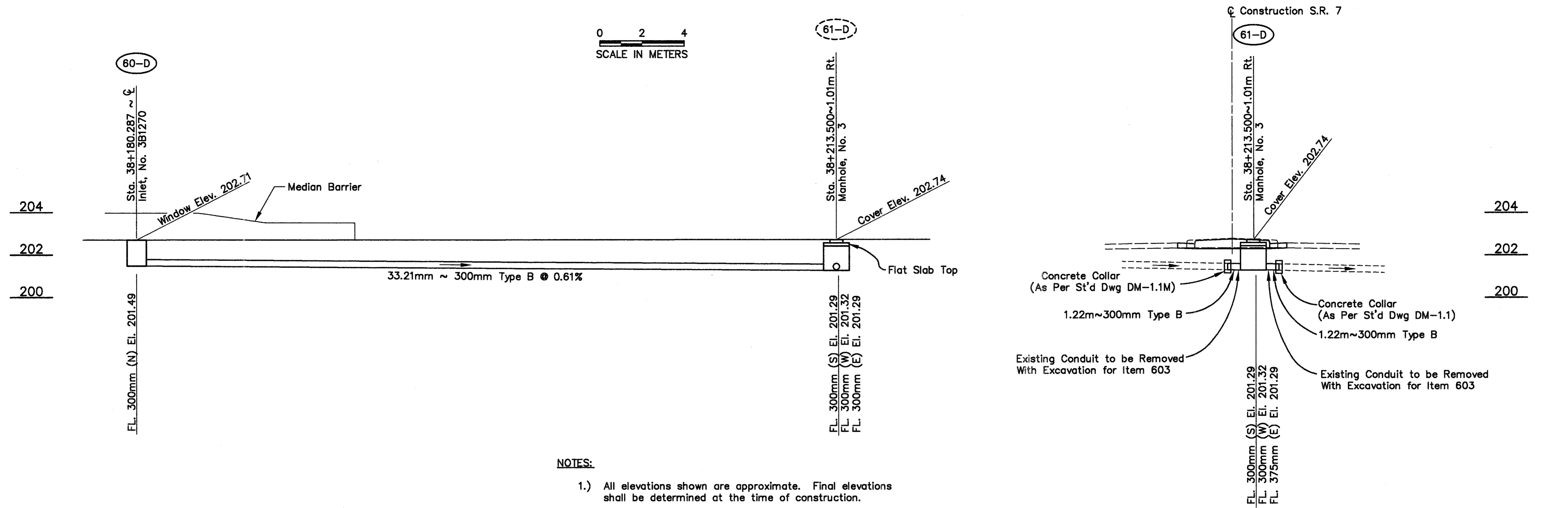
**NOTES:**

- 1.) All elevations shown are approximate. Final elevations shall be determined at the time of construction.
- 2.) Quantities Carried to Sheet No. 110



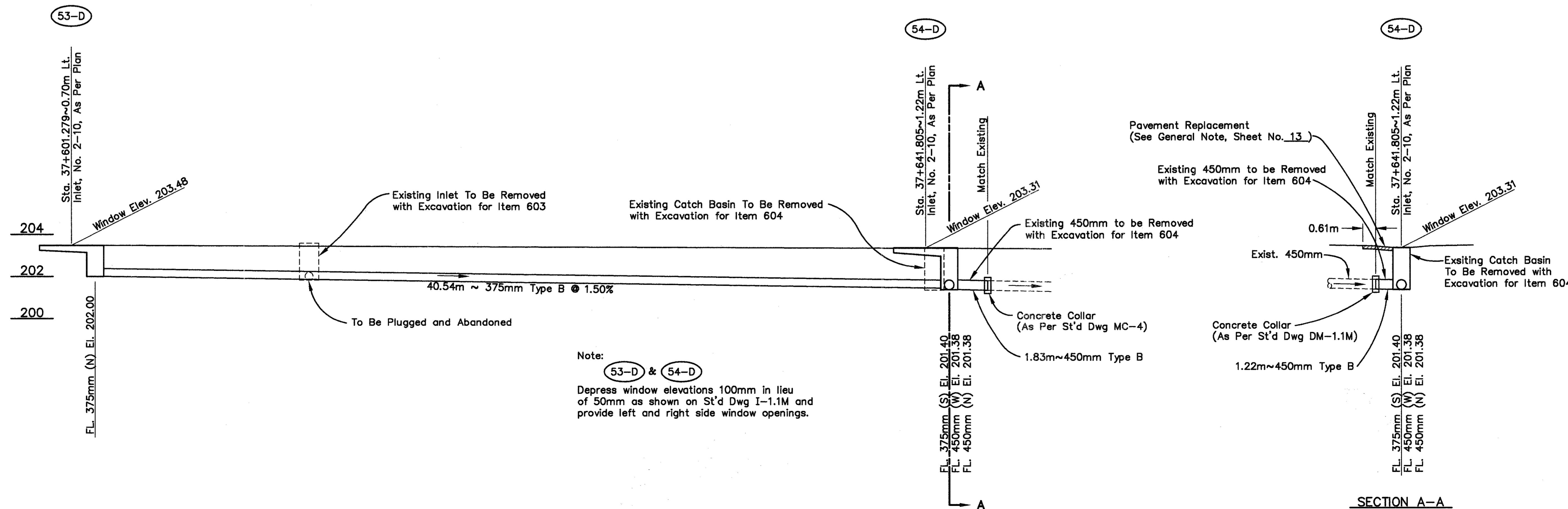
**STORM SEWER PROFILES**

**BEL-7-32.276**



**NOTES:**

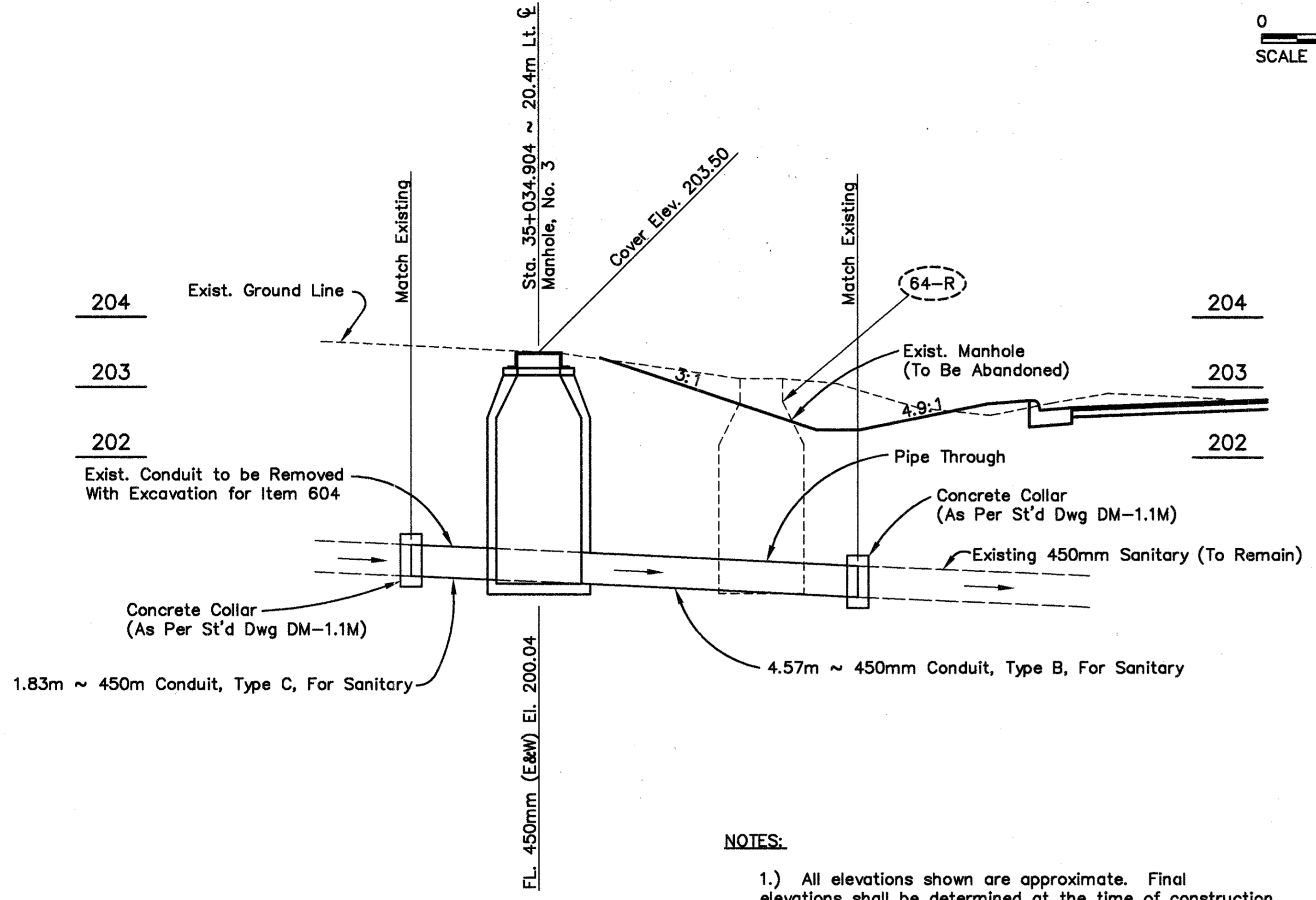
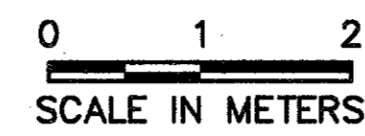
- 1.) All elevations shown are approximate. Final elevations shall be determined at the time of construction.
- 2.) Quantities Carried to Sheet No. 111



**Note:**

53-D & 54-D  
Depress window elevations 100mm in lieu of 50mm as shown on St'd Dwg I-1.1M and provide left and right side window openings.

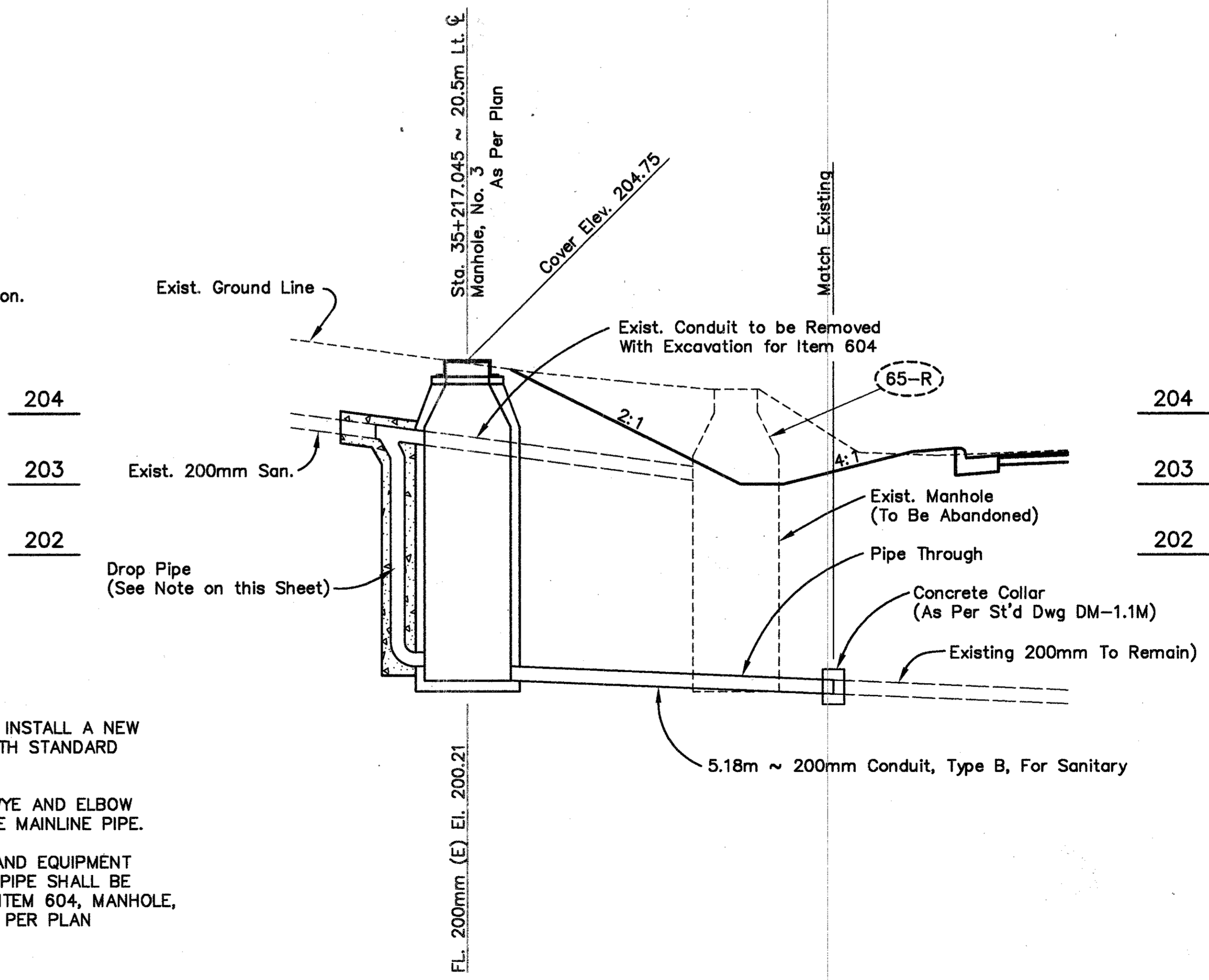
1-SS Quantities Carried to Sheet No. 109



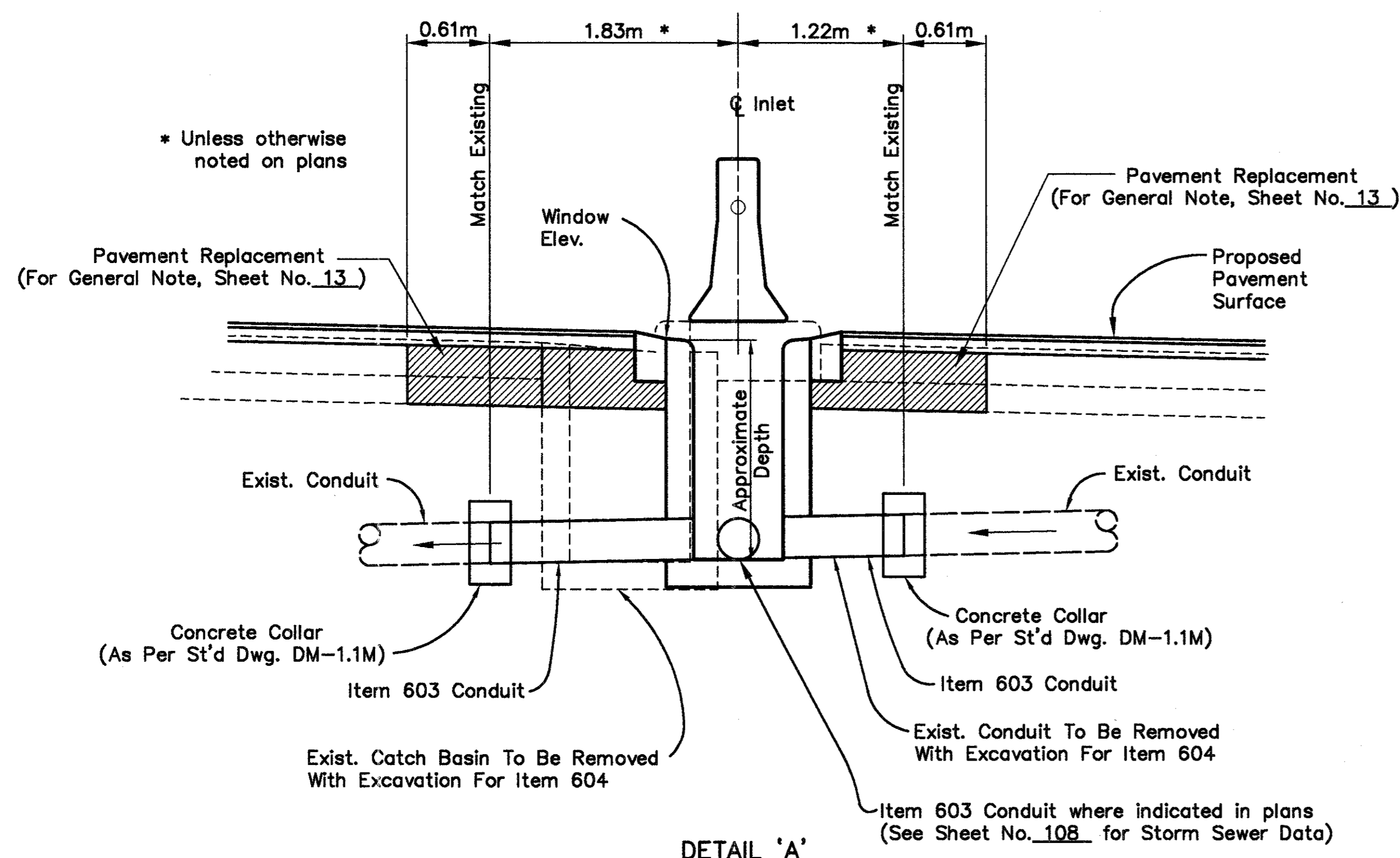
NOTES:  
1.) All elevations shown are approximate. Final elevations shall be determined at the time of construction.

**DROP PIPE**  
THE CONTRACTOR SHALL FURNISH AND INSTALL A NEW 200mm DROP PIPE IN ACCORDANCE WITH STANDARD DRAWING MH-1.2M.  
ALL MATERIALS FOR THE DROP PIPE, WYE AND ELBOW SHALL BE THE SAME AS USED FOR THE MAINLINE PIPE.  
THE COST OF ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO CONSTRUCT THE DROP PIPE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604, MANHOLE, No. 3 AS PER PLAN

2-SS Quantities Carried to Sheet No. 110



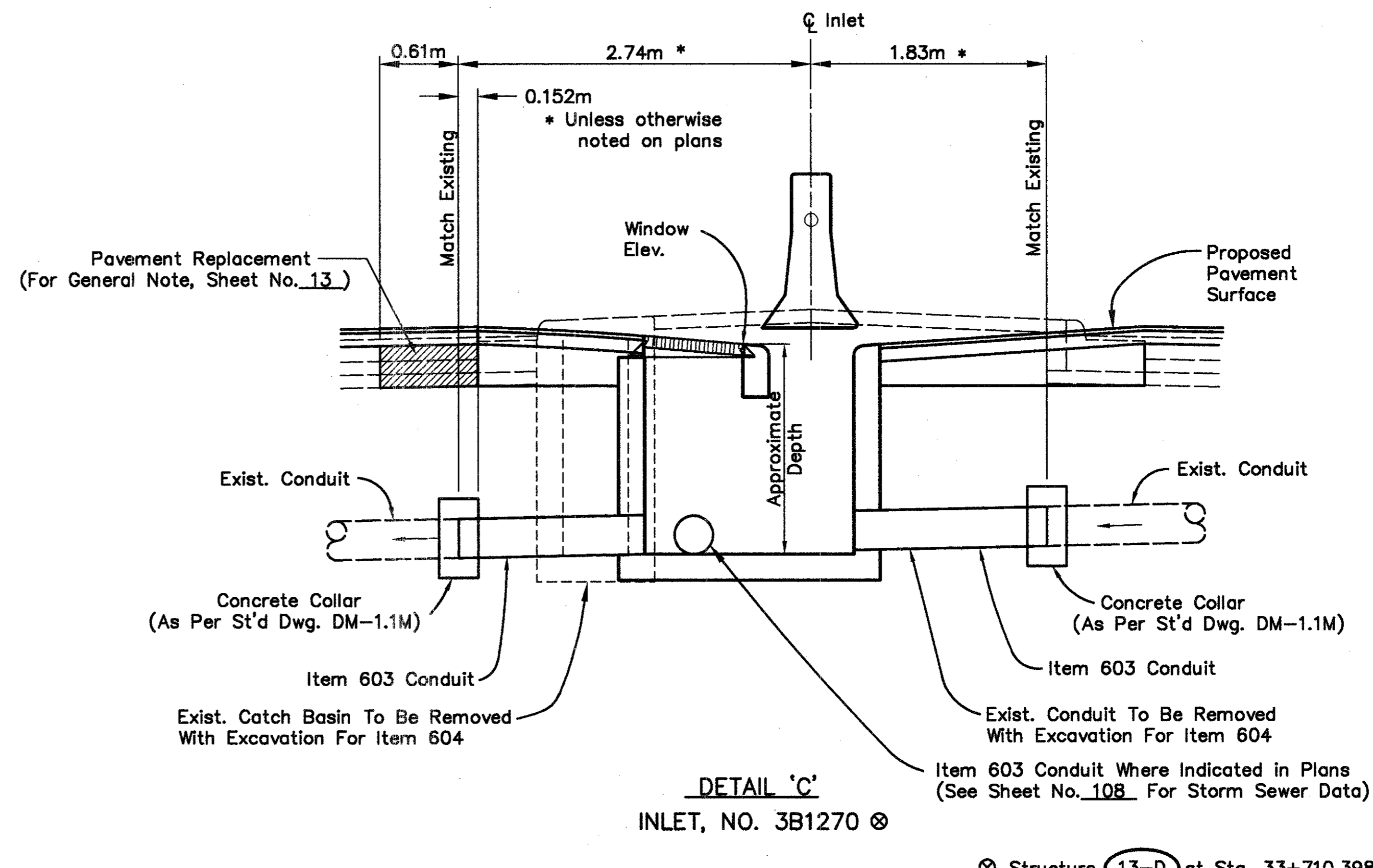
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**DETAIL 'A'**  
**7-D INLET, NO. 3D1270**

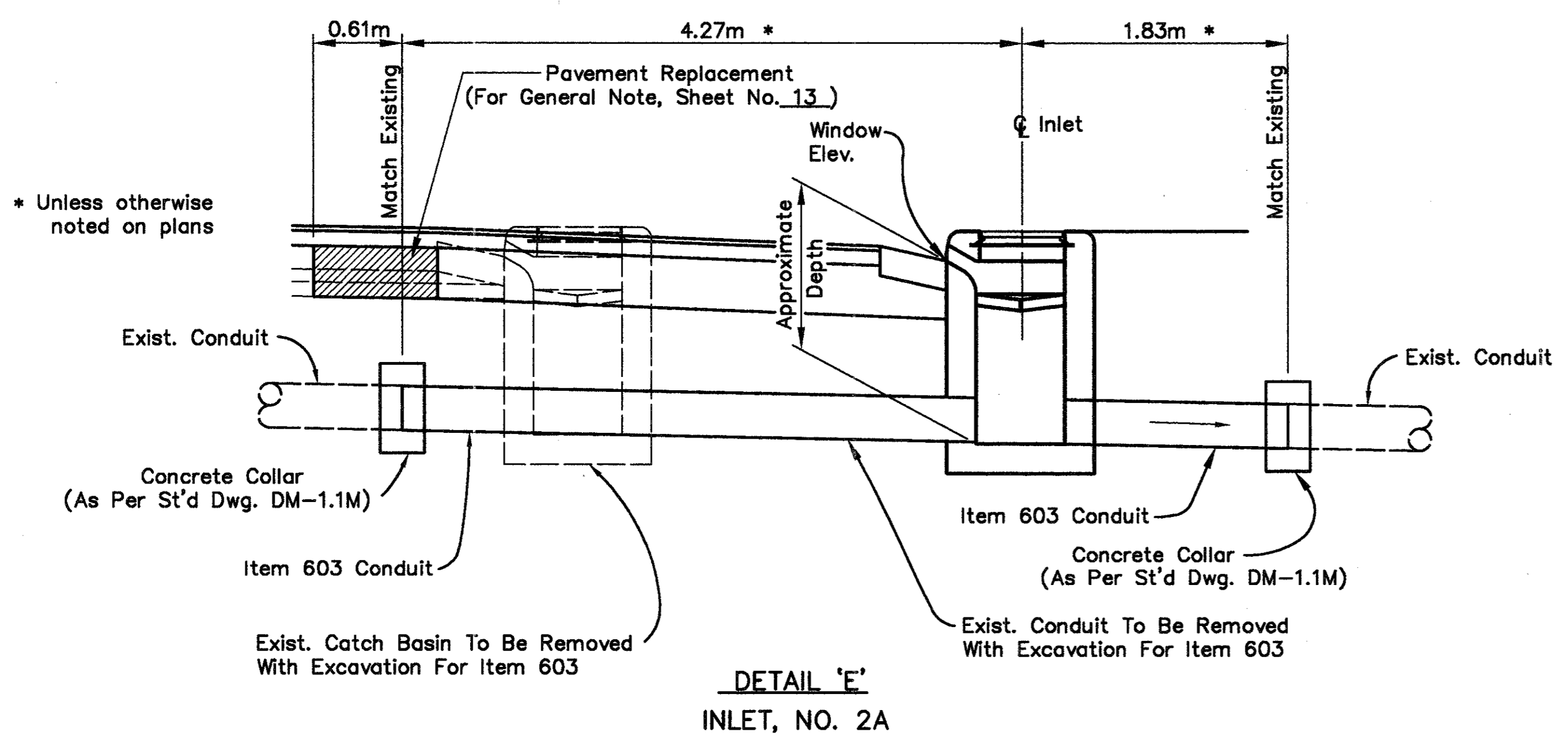
The structures at the following locations shall be constructed using an INLET, NO. 3D1270, AS PER PLAN as shown on Sheet No. 121.

- |                     |                     |
|---------------------|---------------------|
| 3-D Sta. 32+904.348 | 5-D Sta. 32+995.955 |
| 4-D Sta. 32+949.198 | 6-D Sta. 33+019.120 |

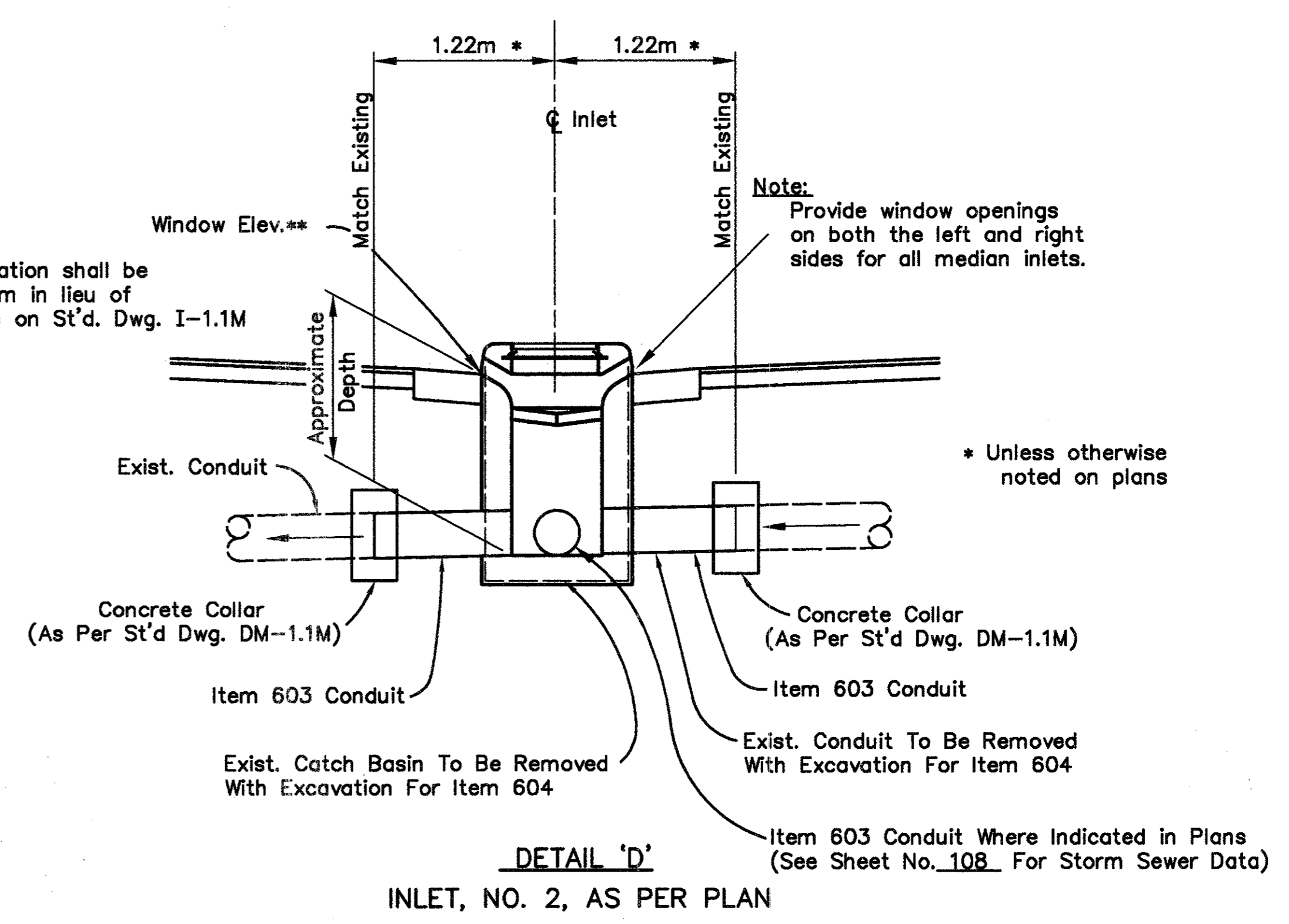


**DETAIL 'C'**  
**INLET, NO. 3B1270**

Structure 13-D at Sta. 33+710.398 shall be constructed to accept a 900mm diameter conduit. See Detail on Sheet No. 121.



**DETAIL 'E'**  
**INLET, NO. 2A**

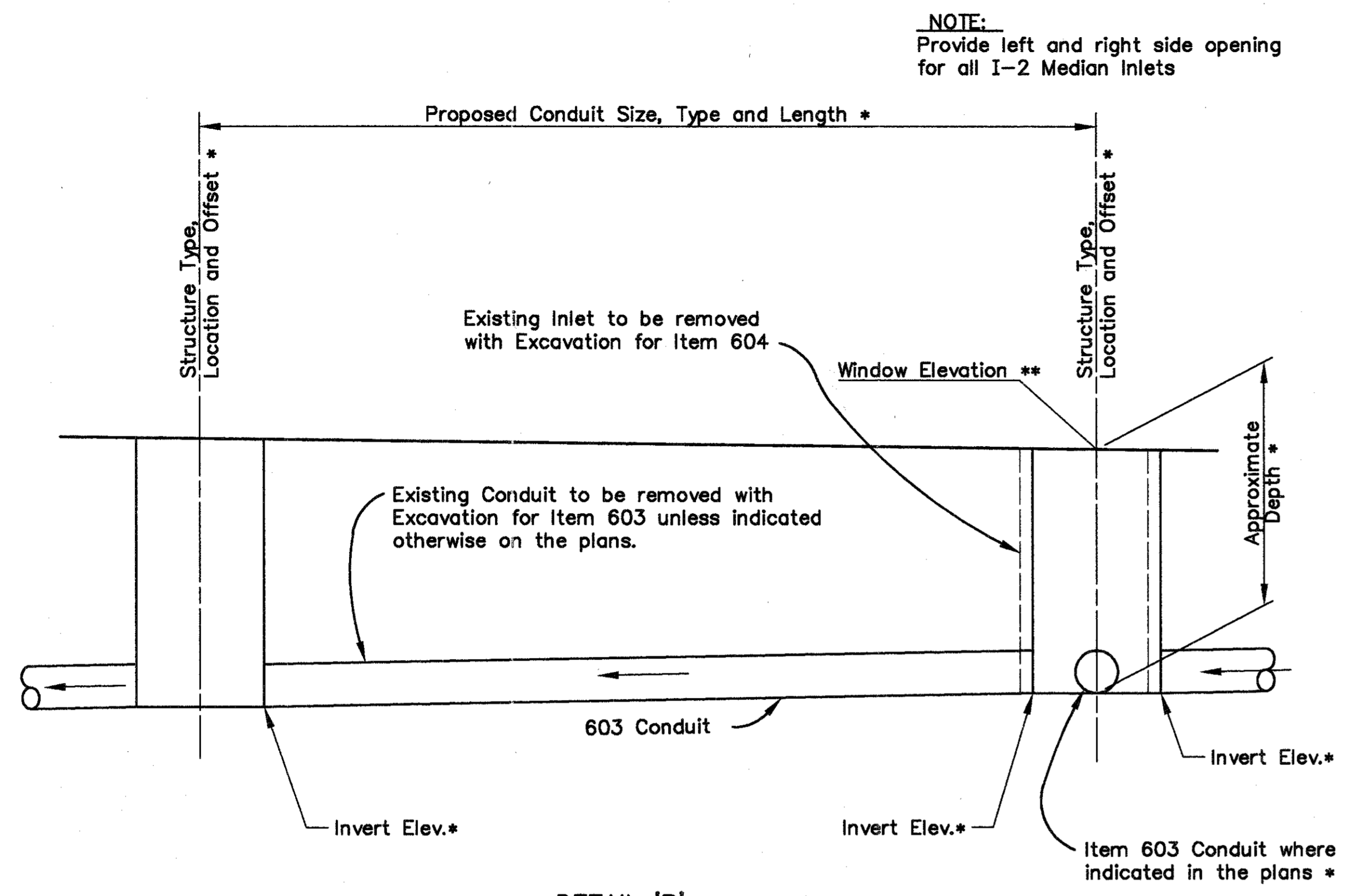


**DETAIL 'D'**  
**INLET, NO. 2, AS PER PLAN**

\*\* The window elevation shall be depressed 100mm in lieu of 50mm as shown on St'd Dwg. I-1.1M

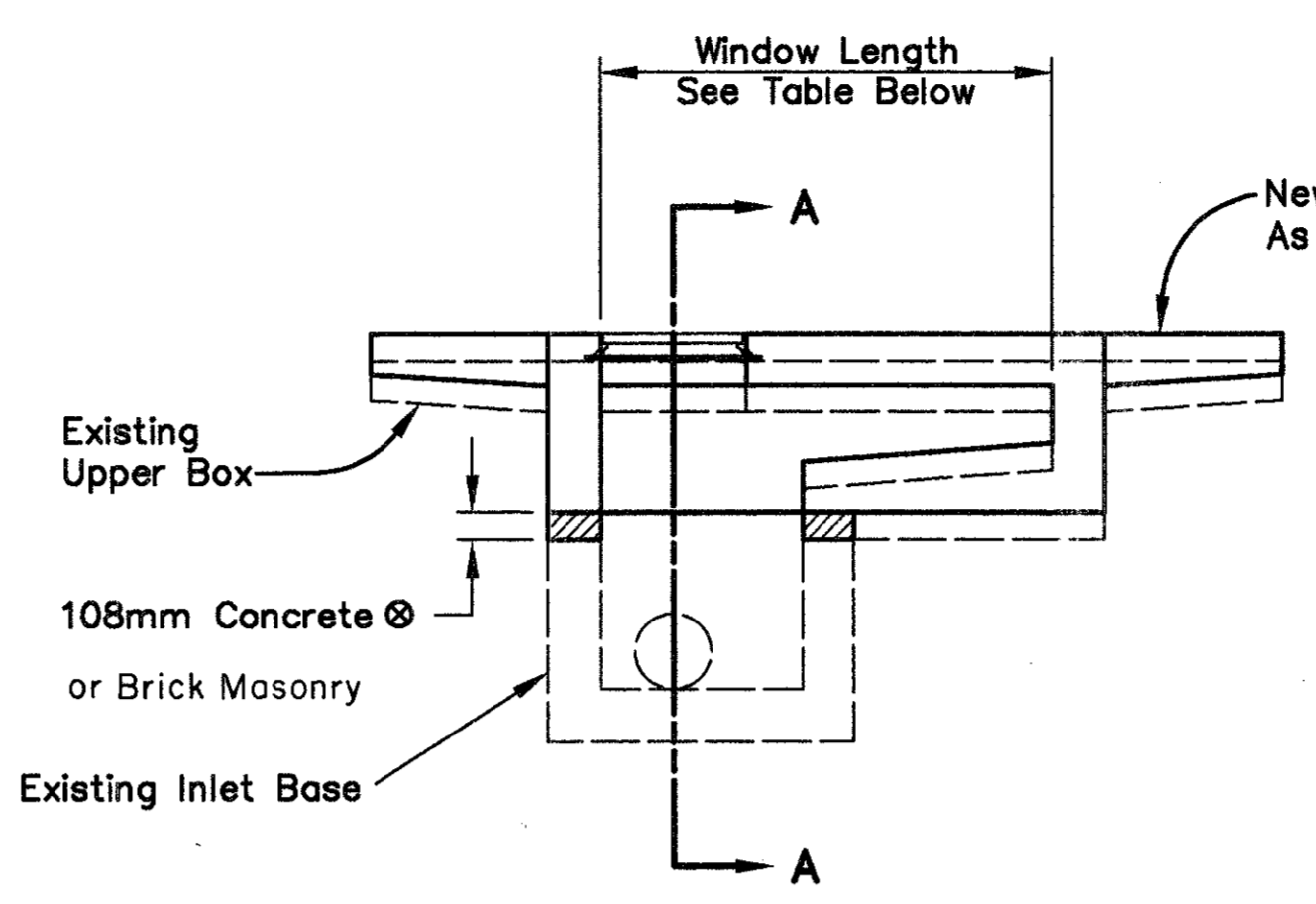
Note: Provide window openings on both the left and right sides for all median inlets.

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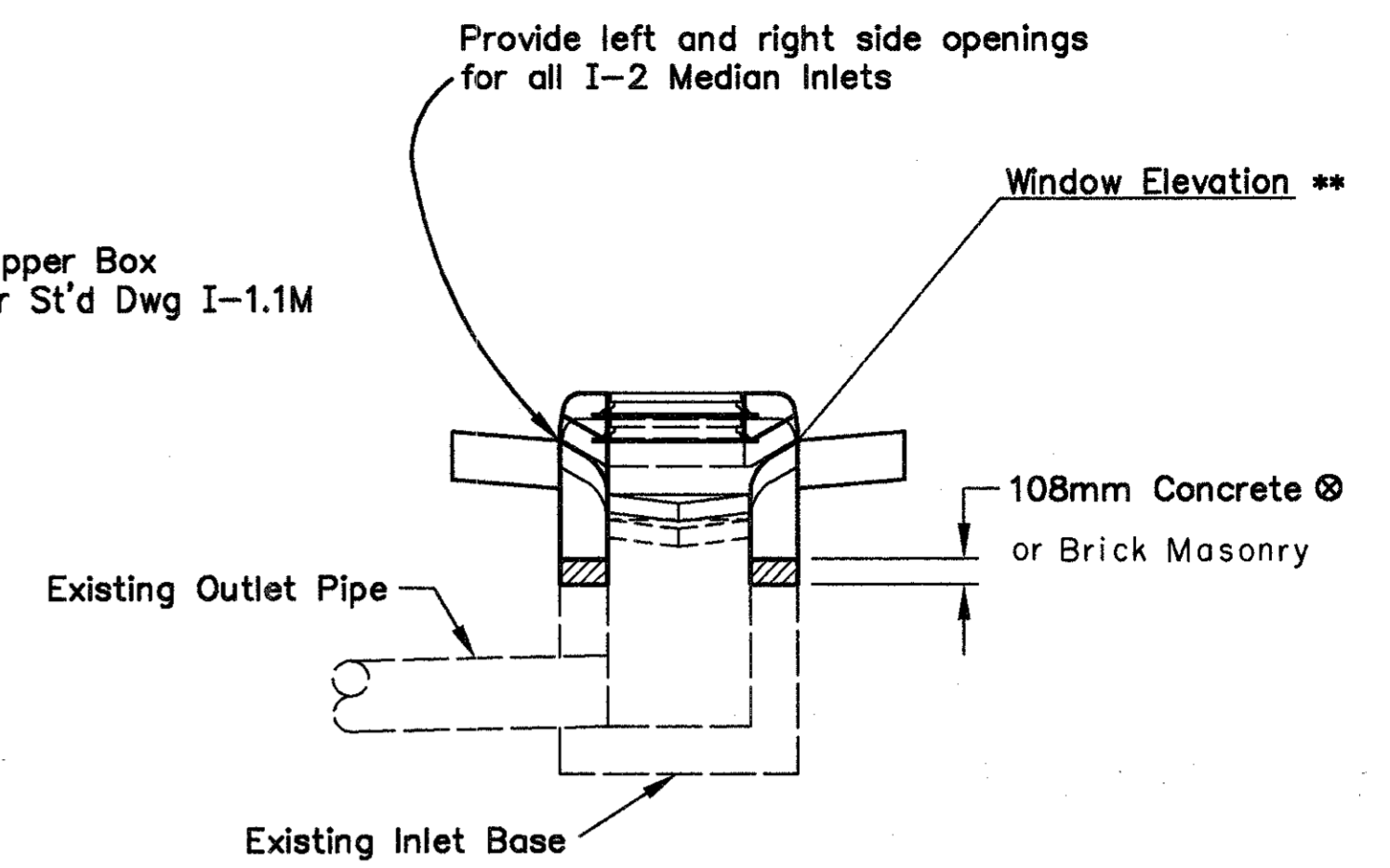
**DETAIL 'B'**

\* See Sheet No. 108 For Pertinent Storm Sewer Data  
 \*\* The Window elevation shall be depressed 100mm in lieu of 50mm as shown on St'd Dwg. I-1.1M

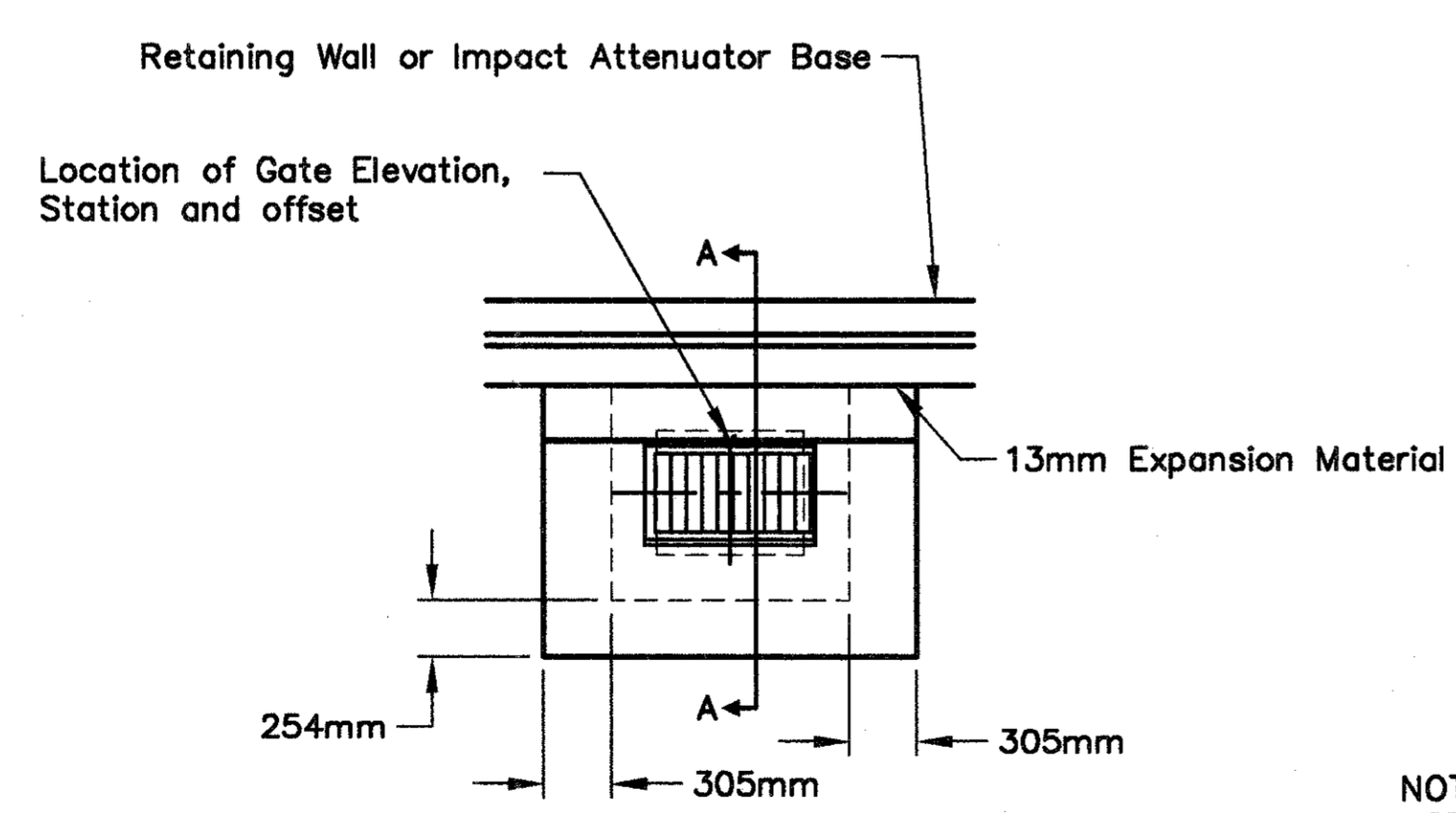


**DETAIL 'F'**  
**INLET RECONSTRUCTED TO GRADE,**  
**AS PER PLAN**

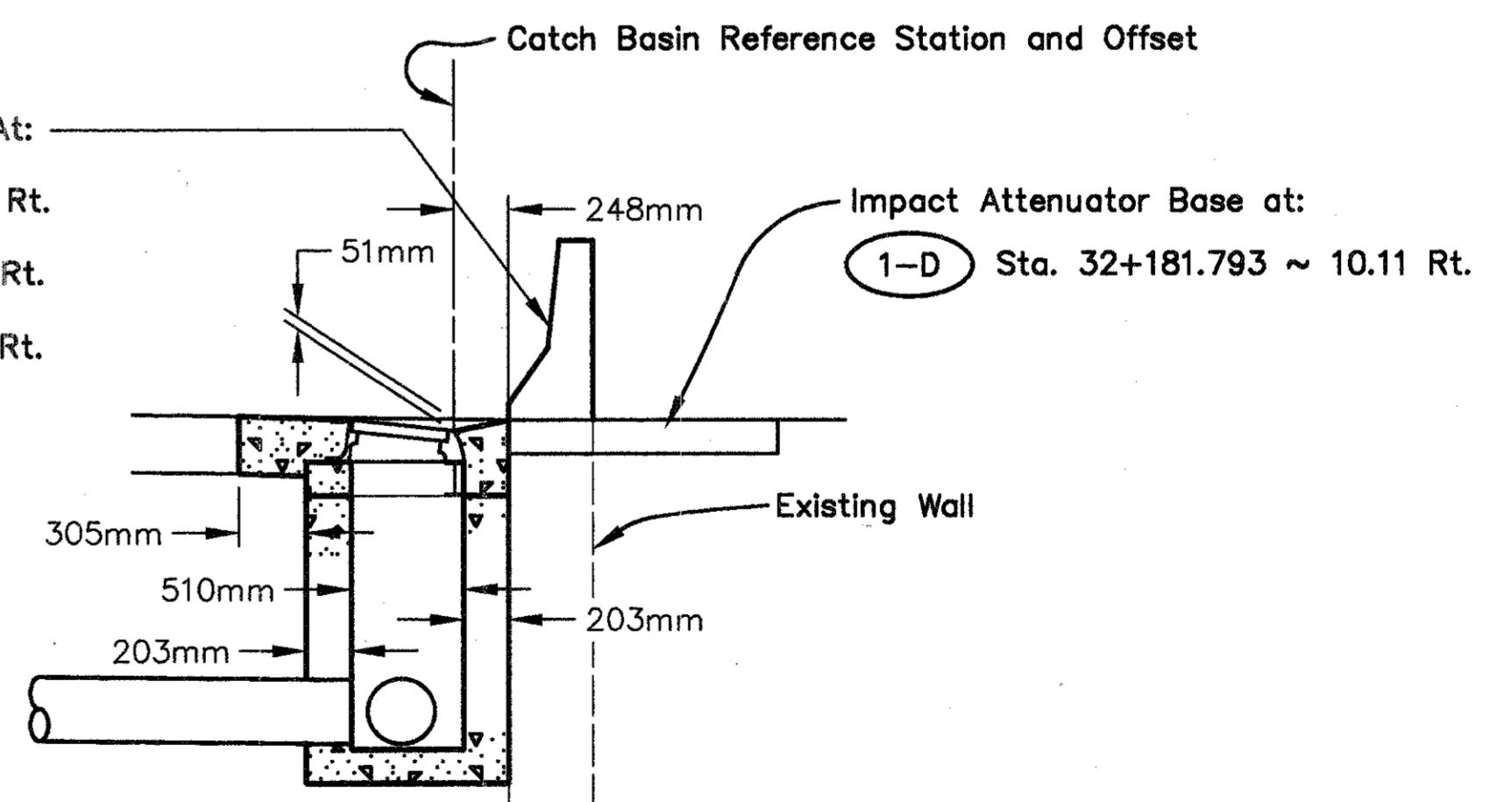
Ref. No.	Location	Window Length
15-D	34+074.890 ~ 2.13m Lt.	2.44m
40-D	35+675.910 ~ 1.22m Lt.	3.05m
42-D	35+769.067 ~ 2.13m Rt.	1.83m
51-D	37+300.511 ~ 1.22m Lt.	3.05m
55-D	37+689.845 ~ 0.46m Rt.	1.83m
59-D	38+003.058 ~ 1.22m Lt.	1.83m



**NOTE:** For General Notes, See Sheet No. 13.  
 ⊗ Cast in place concrete shall be Class 'C'  
 \*\* The Window elevation shall be depressed 100mm in lieu of 50mm as shown on St'd Dwg. I-1.1M



- Proposed Face of Retaining Wall At:
- 2-D Sta. 32+189.108 ~ 10.08m Rt.
  - 62-D Sta. 32+873.857 ~ 9.73m Rt.
  - 63-D Sta. 32+896.717 ~ 9.73m Rt.



**NOTE:**  
 SEE ST'D. DWG. NO. CB-2.1M AND  
 CB-2.2M FOR FURTHER DETAILS.

**CATCH BASIN, NO. 3, AS PER PLAN**  
**CATCH BASIN, NO. 3A, AS PER PLAN**  
 (Not To Scale)

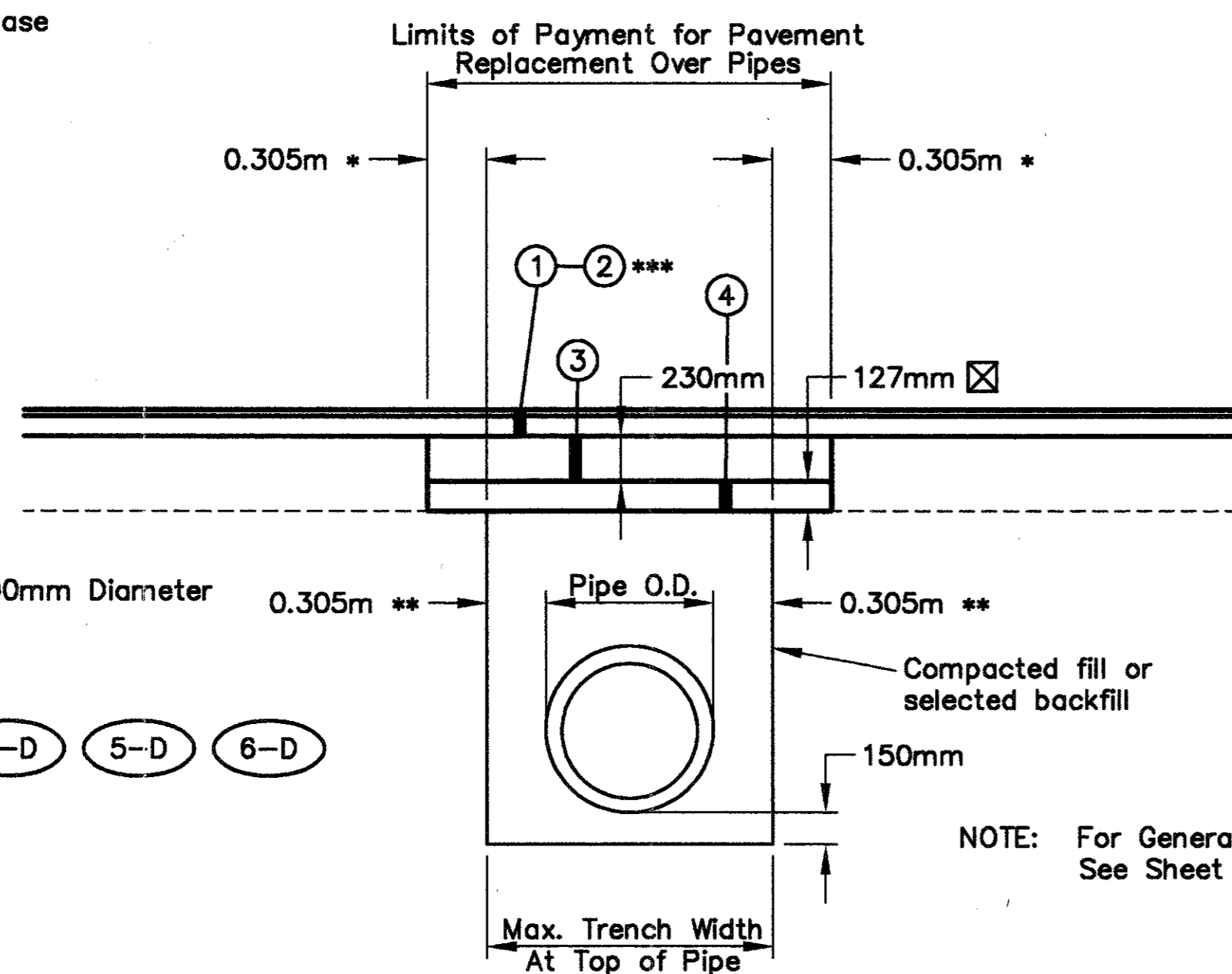


**LEGEND**

- ① ITEM 446 - 32mm Asphalt Concrete Surface Course, Type 1, PG 64-28
- ② ITEM 446 - 50mm Asphalt Concrete Intermediate Course, Type 2, PG 64-28
- ③ Item 305 - 230mm Concrete Base
- ④ Item 304 - Aggregate Base

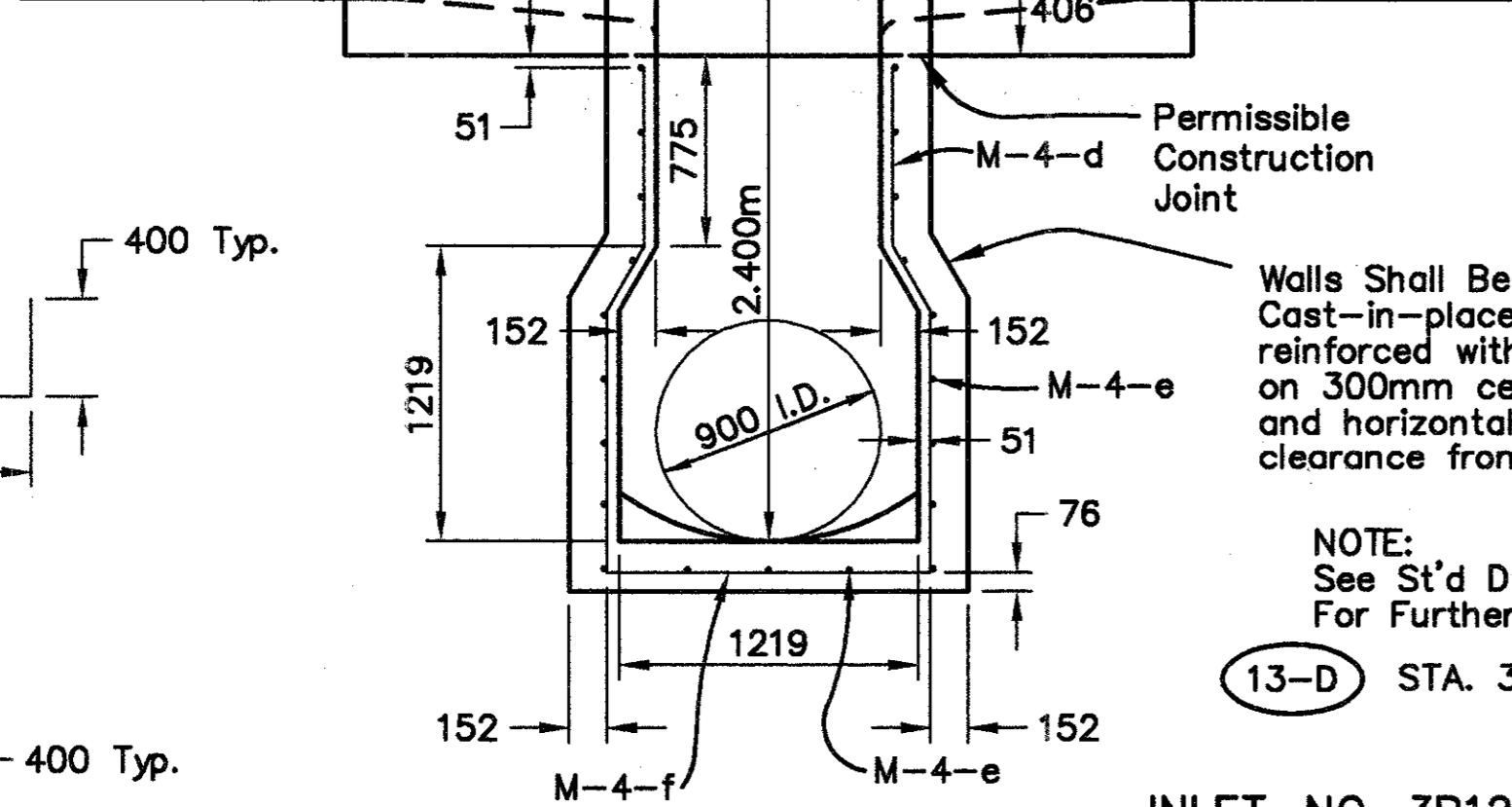
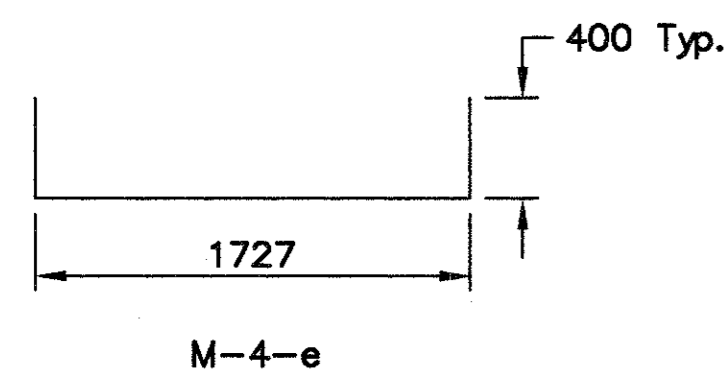
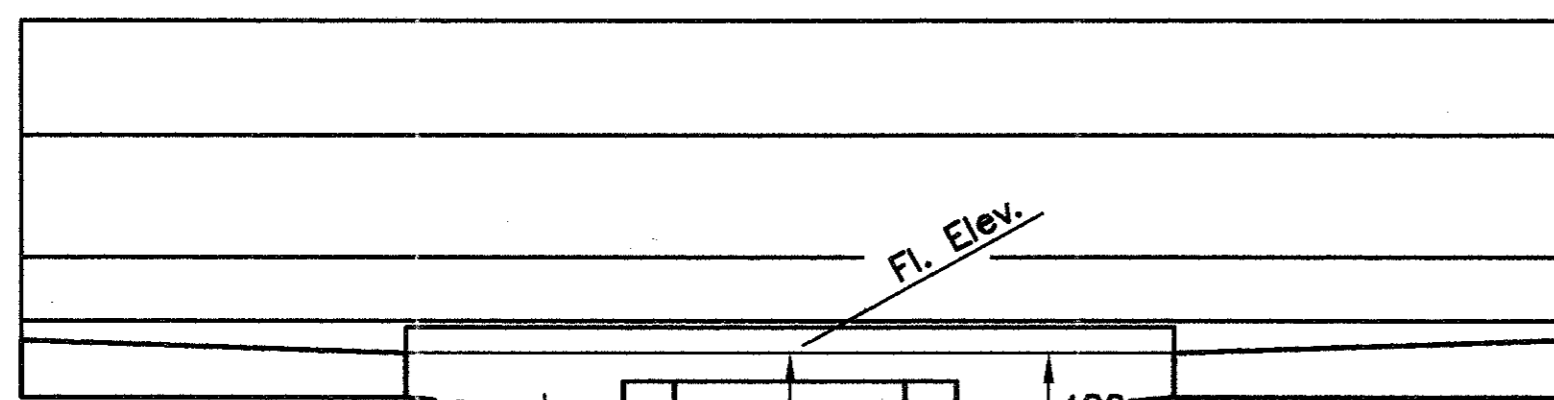
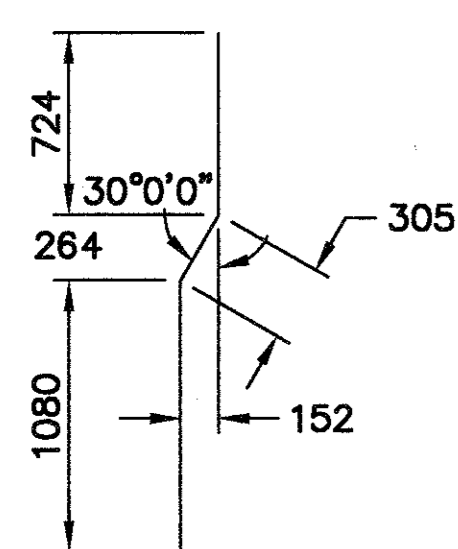
\* Bearing on undisturbed soil  
 \*\* 0.381m for Conduit larger than 600mm Diameter  
 \*\*\* ① ② Carried with Pavement

☒ Depth = 153mm for: (3-D) (4-D) (5-D) (6-D)



**PAVEMENT REPLACEMENT DETAIL FOR STORM DRAINS**  
(No Scale)

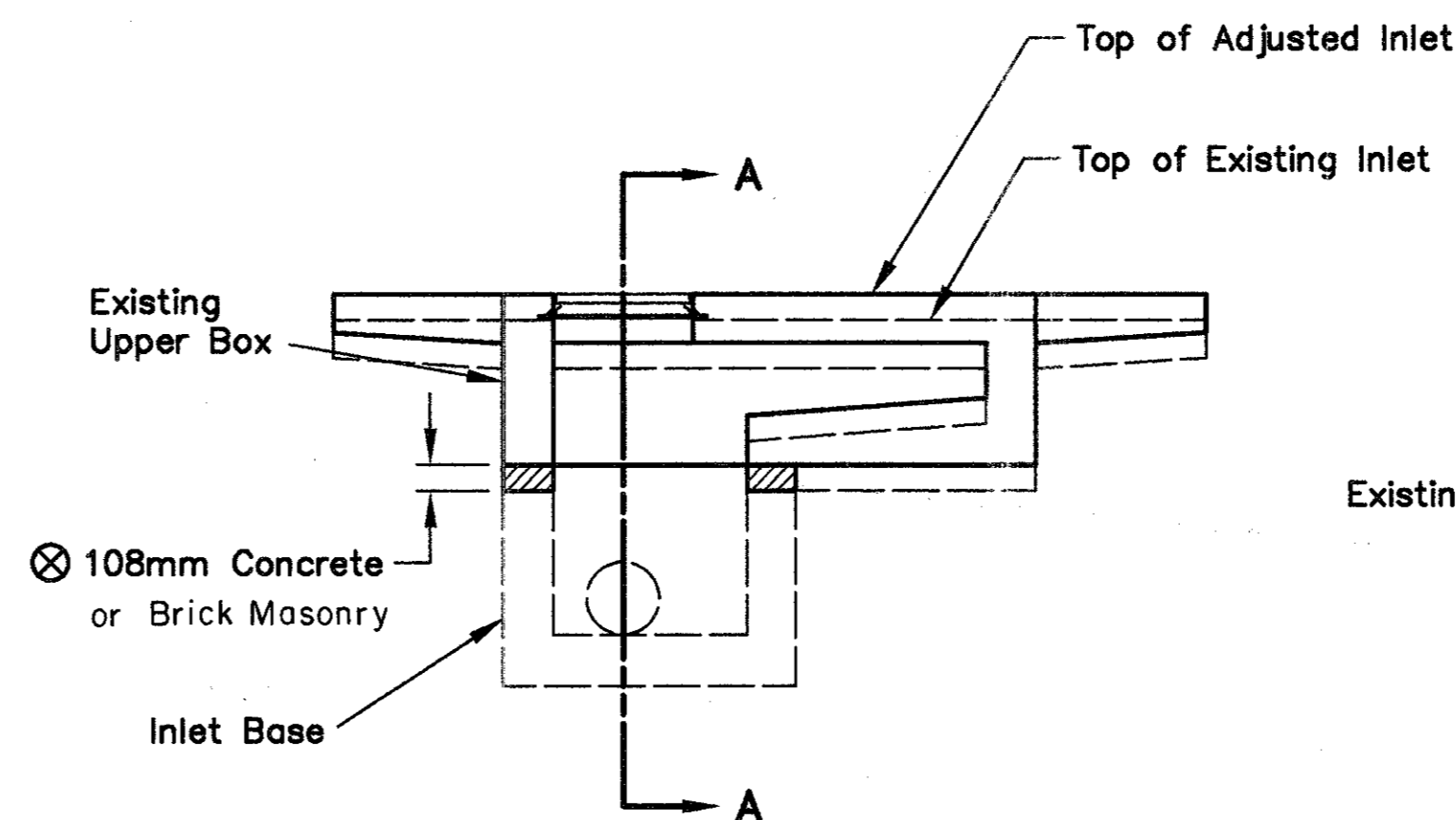
M-4-d		M-4-e		M-4-f	
No.	Meter	No.	Meter	No.	Meter
18	2104	21	2527	7	2121



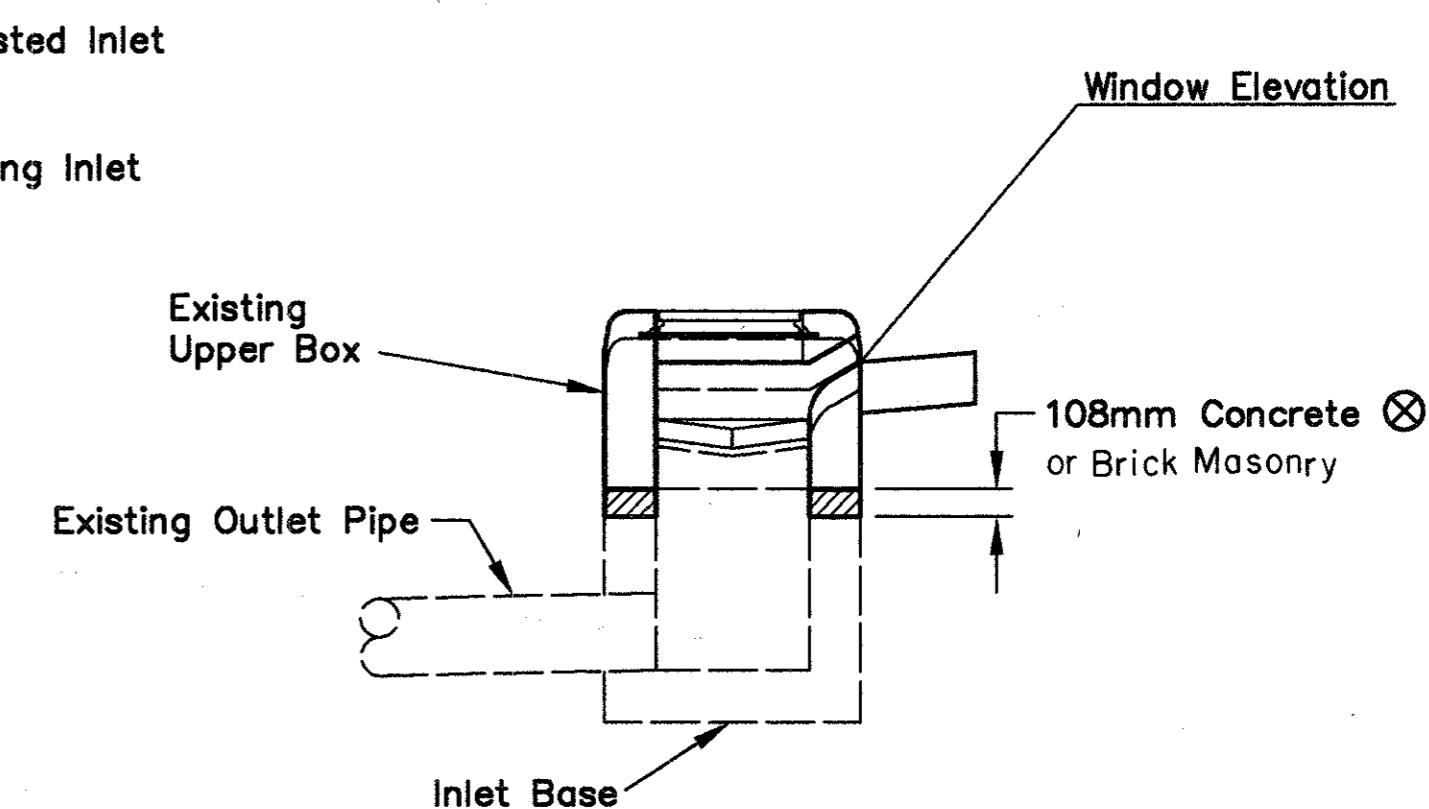
NOTE: See St'd Dwg. No. I-2.1M For Further Details  
 (13-D) STA. 33+710.398

**INLET NO. 3B1270 AS PER PLAN**  
(Not To Scale)

Unless otherwise noted, all dimensions shown in millimeters (mm)



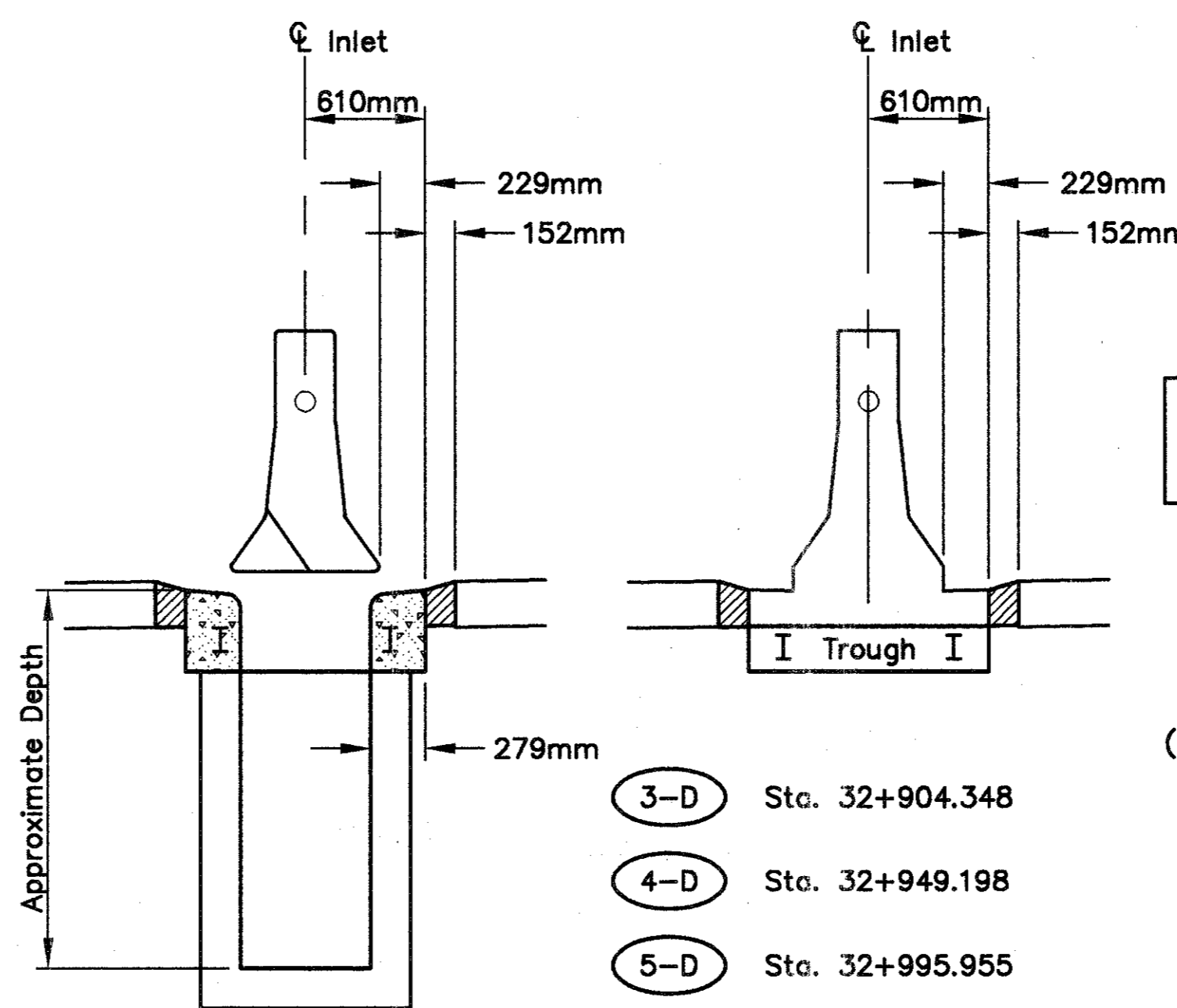
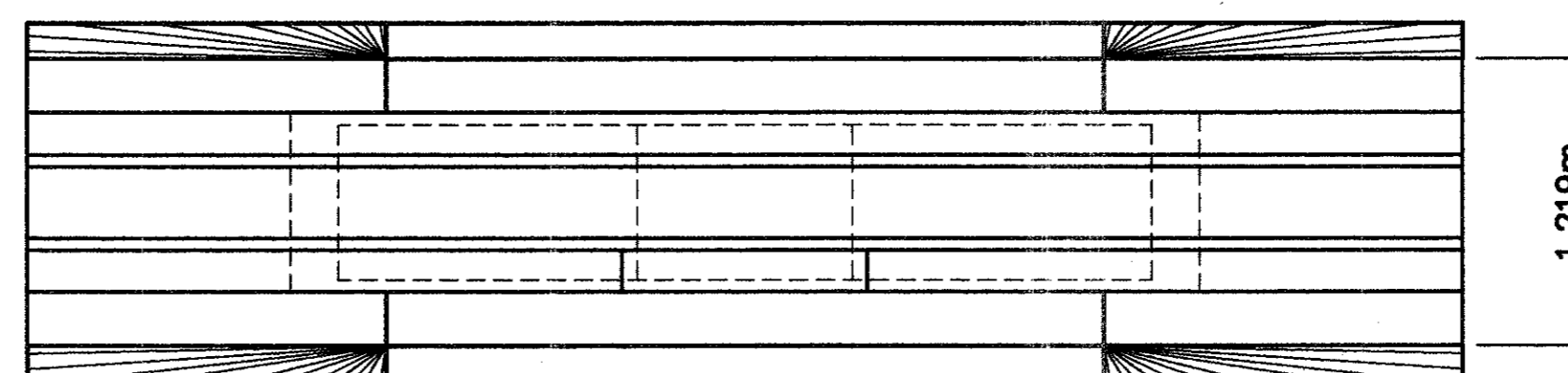
**INLET ADJUSTED TO GRADE AS PER PLAN**



**SECTION A-A**

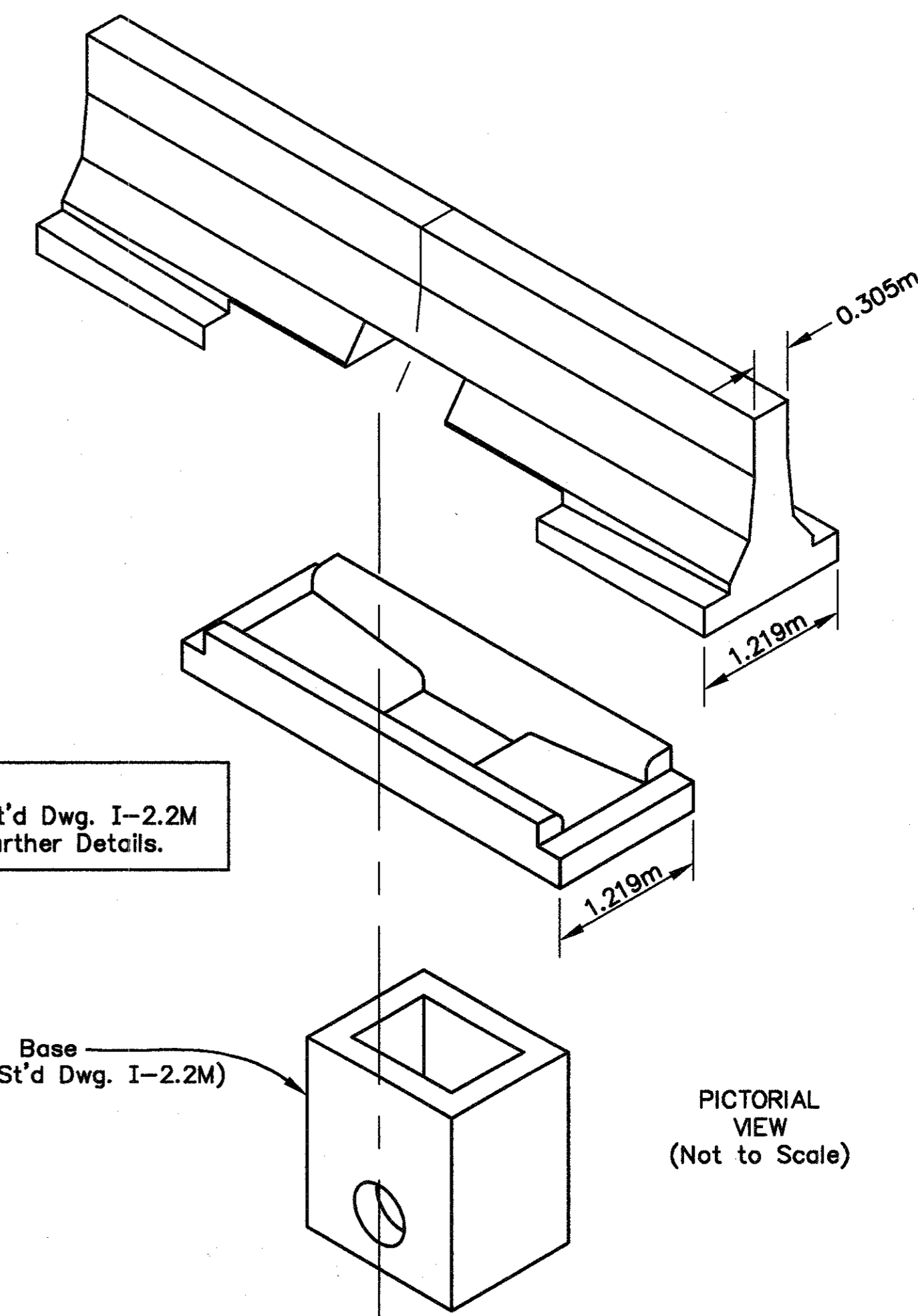
NOTE: For General Notes, See Sheet No. 13.

☒ Cast in place concrete shall be Class 'C'



- (3-D) Sta. 32+904.348
- (4-D) Sta. 32+949.198
- (5-D) Sta. 32+995.955
- (6-D) Sta. 33+019.120

**INLET NO. 3D1270 AS PER PLAN**  
(Not To Scale)



NOTE: See St'd Dwg. I-2.2M For Further Details.

Base (As Per St'd Dwg. I-2.2M)

PICTORIAL VIEW (Not to Scale)

CALCULATED  
SAH  
CHECKED  
BL

**DRAINAGE DETAILS**

**BEL-7-32.276**

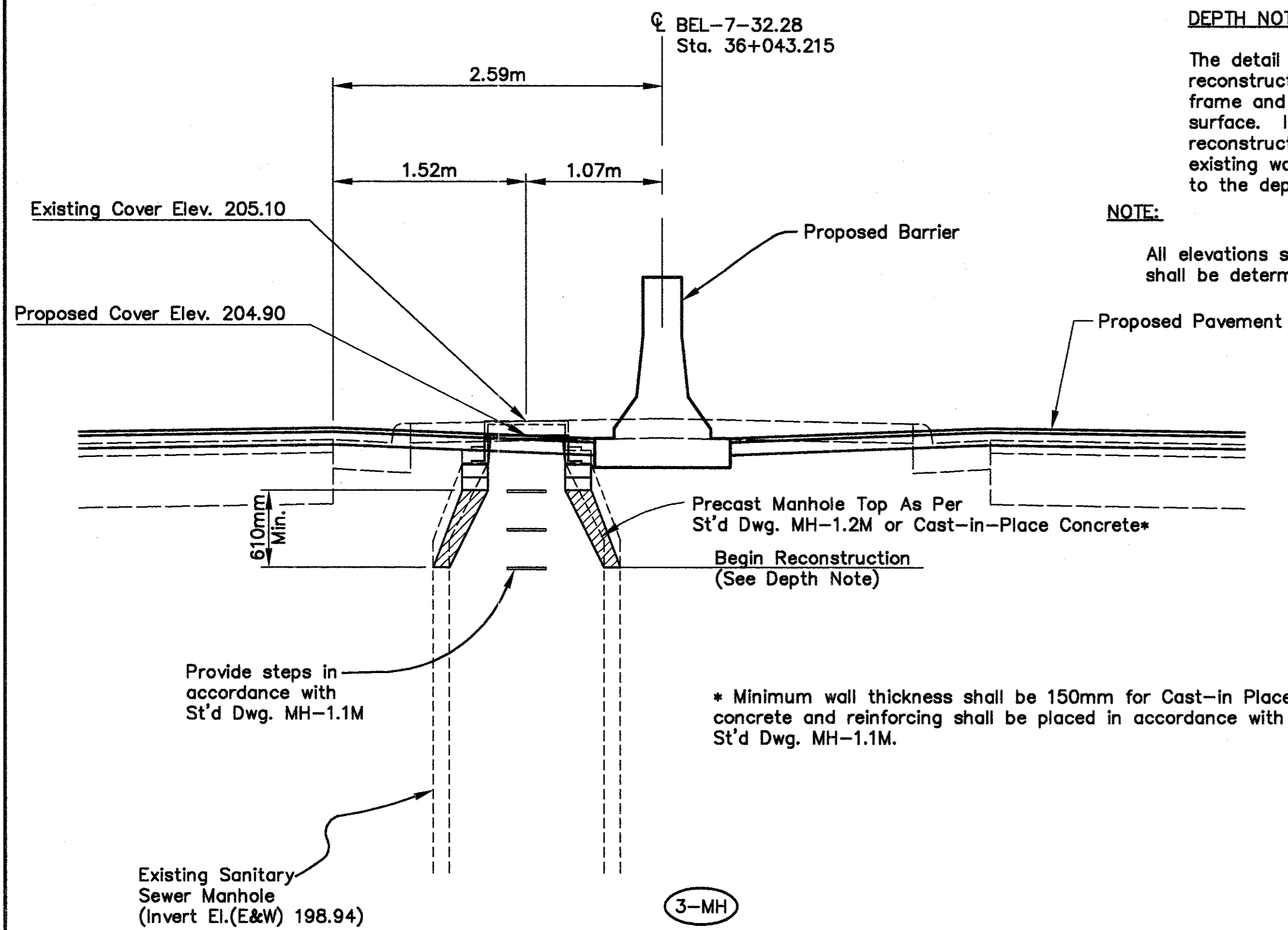
121  
242

**DEPTH NOTE**

The detail as shown represents the minimum reconstruction necessary to lower the manhole frame and cover to the proposed shoulder surface. If, in the opinion of the Engineer, reconstruction reveals excessive wall failure, existing walls shall be removed and rebuilt to the depth specified by the Engineer

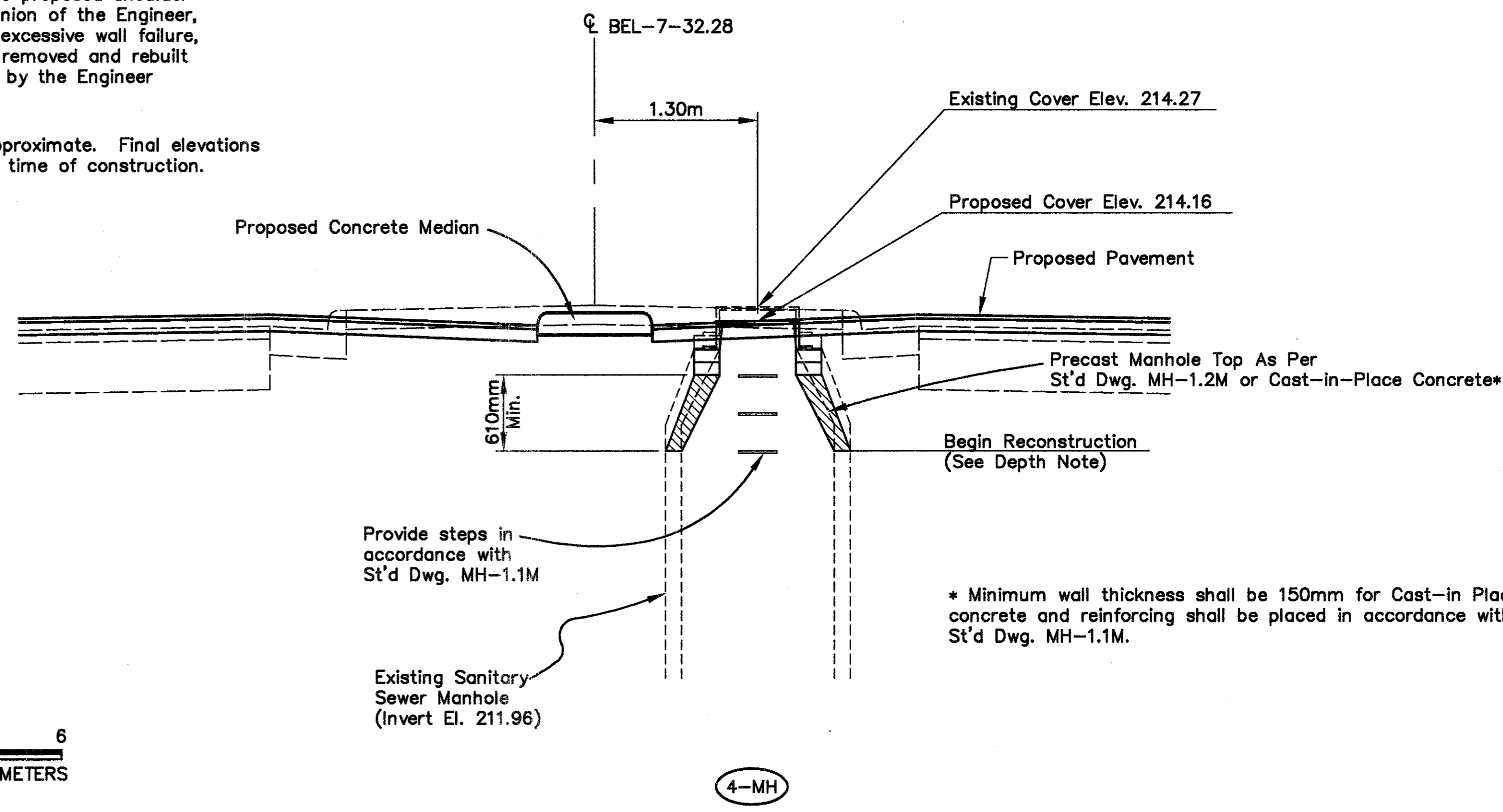
**NOTE:**

All elevations shown are approximate. Final elevations shall be determined at the time of construction.



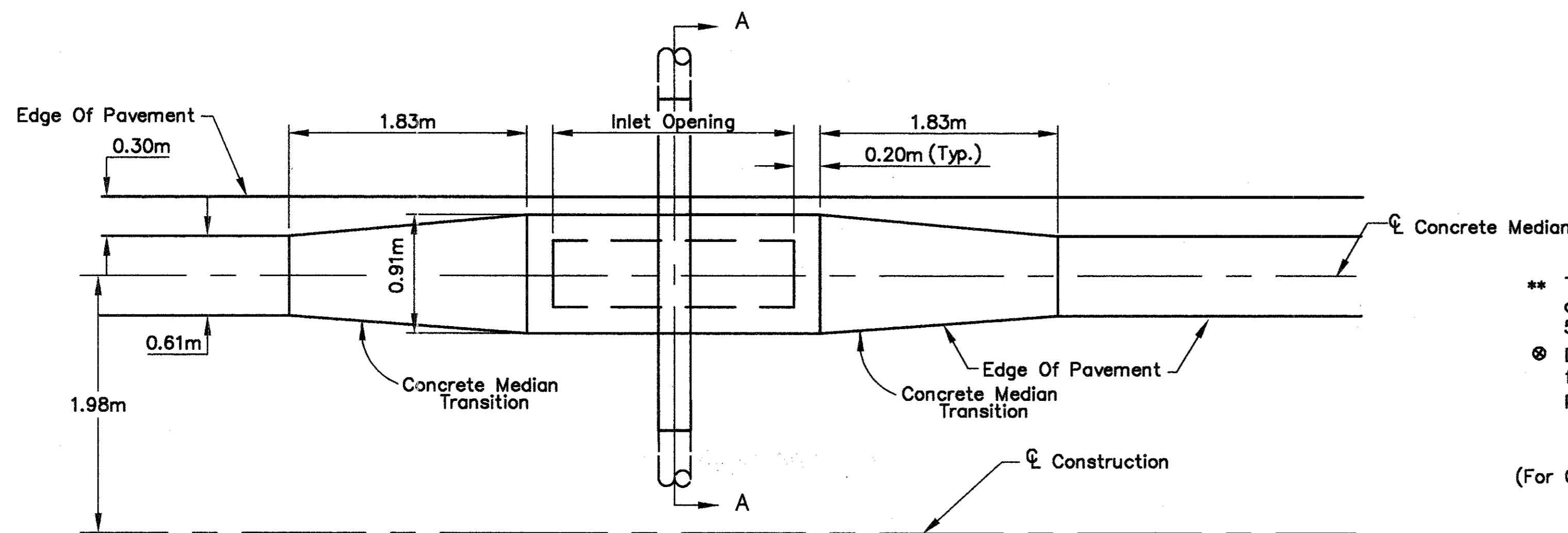
STA. 36+043.215 ~ 1.07m Lt.

**MANHOLE RECONSTRUCTED TO GRADE. AS PER PLAN**



STA. 37+036.541 ~ 1.30m Rt.

**MANHOLE RECONSTRUCTED TO GRADE. AS PER PLAN**



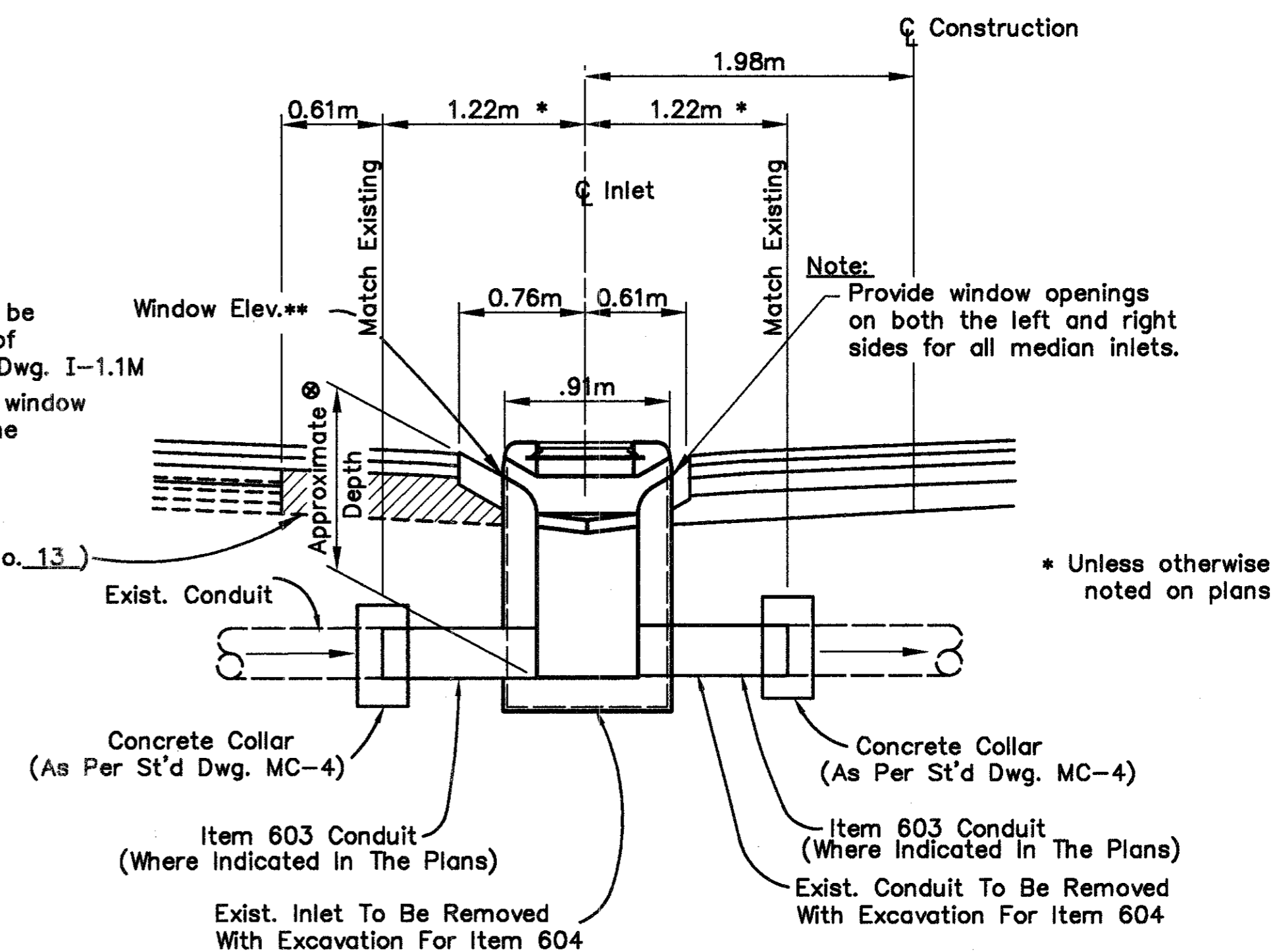
**DETAIL 'G' - PLAN**  
Not To Scale

Detail 'G' applies to the following structures:

- 15-D Sta. 34+074.890 ~ 2.44m Lt.
- 38-D Sta. 35+500.182 ~ 2.44m Lt.
- 39-D Sta. 35+584.306 ~ 2.44m Lt.
- 40-D Sta. 35+676.310 ~ 2.44m Lt.
- 41-D Sta. 35+746.178 ~ 2.44m Lt.
- 42-D Sta. 35+769.067 ~ 2.44m Lt.
- 43-D Sta. 35+830.878 ~ 2.44m Lt.

- \*\* The window elevation shall be depressed 100mm in lieu of 50mm as shown on St'd Dwg. I-1.1M
- ⊙ Depth measured from the window flowline to the invert of the proposed conduit.

Pavement Replacement  
(For General Note, See Sheet No. 13)



**Section A - A**  
Not To Scale

### STRAIN POLE FOUNDATION ELEVATIONS

ELEVATIONS SHOWN IN THE STRAIN POLE FABRICATION INFORMATION TABLE ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TC-21.20M.

### POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED AT THE LOCATIONS INDICATED ON THE PLANS, FROM

AEP OHIO POWER COMPANY  
301 CLEVELAND AVE SW  
CANTON, OHIO 44701-4630  
PHONE 330-438-7721

POWER SUPPLY SHALL BE 120 VOLTS.

### ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION FOR STORAGE

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, CABINET, CONTROLLER, ETC., SHALL BE REMOVED IN ACCORDANCE WITH 632.25 AND AS INDICATED ON THE PLANS. REMOVED ITEMS SHALL BE STORED ON THE PROJECT FOR SALVAGE BY STATE FORCES, IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

AT S.R. 7 / AETNA ST. STORE FOR SALVAGE BY STATE  
8 - SIGNAL HEADS  
1 - CONTROLLER WITH CABINET AND CONTENTS

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE ARE NOT REMOVED; THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT.

### MILE MARKER LOCATION

THE LOCATION OF MILE MARKERS ON THE PLAN ARE APPROXIMATE AND A MORE PRECISE LOCATION WILL BE PROVIDED BY THE DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 30 DAYS IN ADVANCE OF THE PLANNED DATE OF MARKER INSTALLATION. THE ENGINEER WILL CONTACT THE BUREAU OF TECHNICAL SERVICES WHICH WILL LOCATE THE LONGITUDINAL POSITION OF MILE MARKERS BY MEANS OF 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 MARKER. DELINEATORS WHOSE NORMAL POSITION FALLS WITHIN 15m OF A MILE MARKER SHALL BE OMITTED.

### SIGNAL ERECTION PROCEDURE

UNLESS OTHER TEMPORARY SIGNAL ARRANGEMENTS HAVE BEEN APPROVED THE CONTRACTOR SHALL ADHERE TO THE FOLLOWING SEQUENCE:

1. LOWER THE ATTACHMENT(S) OF THE EXISTING MESSENGER CABLE TO BRING THE LOWEST HEAD TO 5m CLEARANCE FROM THE PAVEMENT.
2. ERECT THE PROPOSED MESSENGER CABLE WITH SIGNAL CABLE ATTACHED PLACING ATTACHMENT TO POLES AT THE "TEMPORARY SPAN WIRE ATTACHMENT HEIGHT" AS SHOWN IN THE TABLE OF STRAIN POLE DETAILS.
3. ERECT PROPOSED SIGNAL HEADS (COVERED; 632.24) KEEPING MESSENGER TAUT ENOUGH TO KEEP PROPOSED HEADS AT LEAST 0.3m CLEAR OF (ABOVE) THE EXISTING MESSENGER.
4. COMPLETE CONSTRUCTION OF THE PROPOSED INSTALLATION. TEST OPERATION IN ACCORDANCE WITH 632.27.
5. TRANSFER TRAFFIC CONTROL TO THE NEW INSTALLATION KEEPING COVERED EXISTING HEADS IN PLACE UNTIL THE 10 DAY PERFORMANCE TEST, INCLUDING MONITORING OF ANY REPLACEMENTS, IS COMPLETED AND APPROVED BY THE ENGINEER.
6. REMOVE EXISTING HEADS AND MESSENGER
7. LOWER MESSENGER ATTACHMENTS TO FINAL POSITION WITH TENSION ADJUSTED TO BRING SAG AT THE LOWEST HEAD TO 2.1m BELOW THE HIGHEST ATTACHMENT ELEVATION AT POLE. (SEE NOTE 6 TC-85.20M)

### 632 VEHICULAR SIGNAL HEAD, ...SECTION, 305mm LENS, ...WAY, AS PER PLAN

THIS ITEM SHALL CONFORM TO ITEM 632 EXCEPT THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SEPARATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.

### TEMPORARY MAINTENANCE OF EXISTING SIGNALS

INCIDENTAL TO THE REQUIREMENTS FOR MAINTAINING TRAFFIC IN ACCORDANCE WITH 614.03, EXISTING TRAFFIC SIGNALS AT THE INTERSECTIONS OF AETNA ST. SHALL BE TEMPORARILY MAINTAINED UNTIL THE NEW TRAFFIC SIGNAL INSTALLATION IS IN OPERATION. SEE THE NOTE MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATIONS.

AT AETNA ST. AND AT HANOVER ST. IMMEDIATELY BEFORE TRAFFIC IS DIVERTED TO PHASE 1 INTERIM PATHS, ODOT WILL CONVERT SIGNAL TIMING TO PRETIMED AND DISCONNECT THE DETECTOR LEAD-IN CABLES AT THE CONTROLLER CABINET. TIMINGS WILL BE SET BY ODOT.

THE CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE ENGINEER, 7 CALENDAR DAYS OR MORE IN ADVANCE, OF ANY LANE USE SHIFT AT EITHER INTERSECTION. THIS IS TO ALLOW COORDINATION OF SIGNAL OPERATION CHANGE WHICH MAY BE NECESSARY OR DESIRABLE TO ACCOMMODATE CHANGES OF TRAFFIC PATTERN(S).

REMOVAL OF THE EXISTING SIGNALS SHALL CONFORM TO 632.25 AND THE PLAN NOTES 614 - MAINTAINING TRAFFIC AND SIGNAL ERECTION PROCEDURE.

### 632 LOOP DETECTOR UNITS, BY TYPE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632 AND 732.07 OR 732.08, LOOP DETECTOR UNITS SHALL HAVE THE FOLLOWING REQUIREMENTS OR FEATURES:

THE OUTPUT DEVICE SHALL BE A RELAY, AND ALL CONTACTS SHALL BE IN THE WRING HARNESS.

THE UNIT SHALL BE SELF TUNING.

THE UNIT'S ELECTRICAL CONNECTION PLUGS OR WRING HARNESS SHALL ALLOW READY REPLACEMENT WITH A SINGLE CHANNEL AMPLIFIER AS DESCRIBED IN THE FINAL PARAGRAPH OF 732.07.

### 633 CONTROLLER, ACTUATED, 4 PHASE, SOLID STATE DIGITAL, AS PER PLAN

- AT AETNA ST.

THE OVERLAP PROGRAMMING SHALL BE BY USE OF AN INTERCHANGEABLE PLUGIN PRINTED CIRCUIT BOARD ASSEMBLY AS DESCRIBED IN PART 14 OF TS-1-1989. IN ADDITION TO NEMA REQUIREMENTS, THE CONFLICT MONITOR SHALL HAVE EXTENDED MONITORING IN ACCORDANCE WITH 733.04 PART 3B. THE MONITOR SHALL ALSO HAVE THE CAPABILITY OF MONITORING EACH LOAD SWITCH SEPARATELY. IN ADDITION TO THE REQUIREMENTS OF 733.04 THE CABINET SHALL BE WIRED SO THAT CONTROLLER PIN CONNECTIONS ASSOCIATED WITH A GIVEN PHASE NUMBER SHALL MATCH THE PHASE NUMBER ASSIGNED TO THE SPECIFIED TRAFFIC MOVEMENT AS SHOWN ON THE PLANS. CONTROLLER CABINET SHALL BE KEYPED TO THE STATE MASTER. THE CONTROLLER CABINET SIZE SHALL COMPLY TO THE REQUIREMENTS OF NEMA TS-1 SECTION 14. PRINTED CIRCUIT BOARD TYPE BACK PANELS OF THE CONTROLLER CABINET WILL NOT BE ACCEPTABLE. SOLDERED CONNECTIONS WILL BE PERMITTED FOR WRING ON THE BACK SIDE OF THE BACK PANEL. ALL CONTROLLER MEMORIES SHALL BE NONVOLATILE AND SHALL NOT REQUIRE BATTERIES OR OTHER SOURCES OF ENERGY TO RETAIN DATA WHILE POWER IS REMOVED FROM THE CONTROLLER. THE DESIGN OF THE MONITOR SHALL USE MICROPROCESSOR ARCHITECTURE AND LIQUID CRYSTAL DISPLAYS. THE MONITOR SHALL INDICATE THE EXACT LOAD SWITCH CHANNEL IN WHICH THE FAILURE OCCURRED. THE CONFLICT MONITOR SHALL HAVE AN EVENT LOGGING MEMORY. A MINIMUM OF NINE (9) EVENTS SHALL BE LOGGED. EXAMPLES OF EVENTS INCLUDE: POWER OUTAGES, CONFLICTS, CONTROLLER VOLTAGE MONITOR ETC. EVENTS SHALL BE DISPLAYED ON THE CONFLICT MONITOR'S LIQUID CRYSTAL DISPLAY WHEN INTERROGATED. PAYMENT FOR ITEM 633 CONTROLLER, BY TYPE, SOLID STATE DIGITAL, MICROPROCESSOR AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

### MAINTENANCE OF EXISTING LOOP DETECTOR WIRE AT HANOVER ST.

THE CONTRACTOR SHALL EXERCISE CARE TO MAINTAIN THE EXISTING LOOP DETECTOR WIRE AT HANOVER ST.

THE CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ANY DAMAGE TO THE LOOP DETECTOR WIRE THAT IS INCURRED, AND WILL RESTORE FULL OPERATION OF THE EXISTING LOOPS IN CONJUNCTION WITH THE PERFORMANCE TESTING OF ITEM 632 SIGNALIZATION, MISC.: PERFORMANCE TEST OF MODIFIED EXISTING TRAFFIC CONTROL SYSTEM.

### MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

- A) EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATION FIRST DISTURBS THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.
- B) NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CONTACT THE ODOT DISTRICT TRAFFIC ENGINEER A MINIMUM OF 7 DAYS PRIOR TO ASSUMING MAINTENANCE OF THE AETNA ST. SIGNAL.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION, THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE A DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO OR CANNOT RESPOND TO AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISION OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE FOR POLICE SERVICES AND MAINTENANCE SERVICES BY VILLAGE FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE TO THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISION TO THE SIGNAL SYSTEM.

IF A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL BE ON A WEEKDAY ONLY AND BETWEEN THE HOURS OF 9:00 AND 11:30 AM OR 1:30 AND 3:30 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED BY OFF-DUTY VILLAGE OF BRIDGEPORT OR CITY OF MARTINS FERRY POLICE, HIRED BY THE CONTRACTOR:

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.24.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

CALCULATED  
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WCR

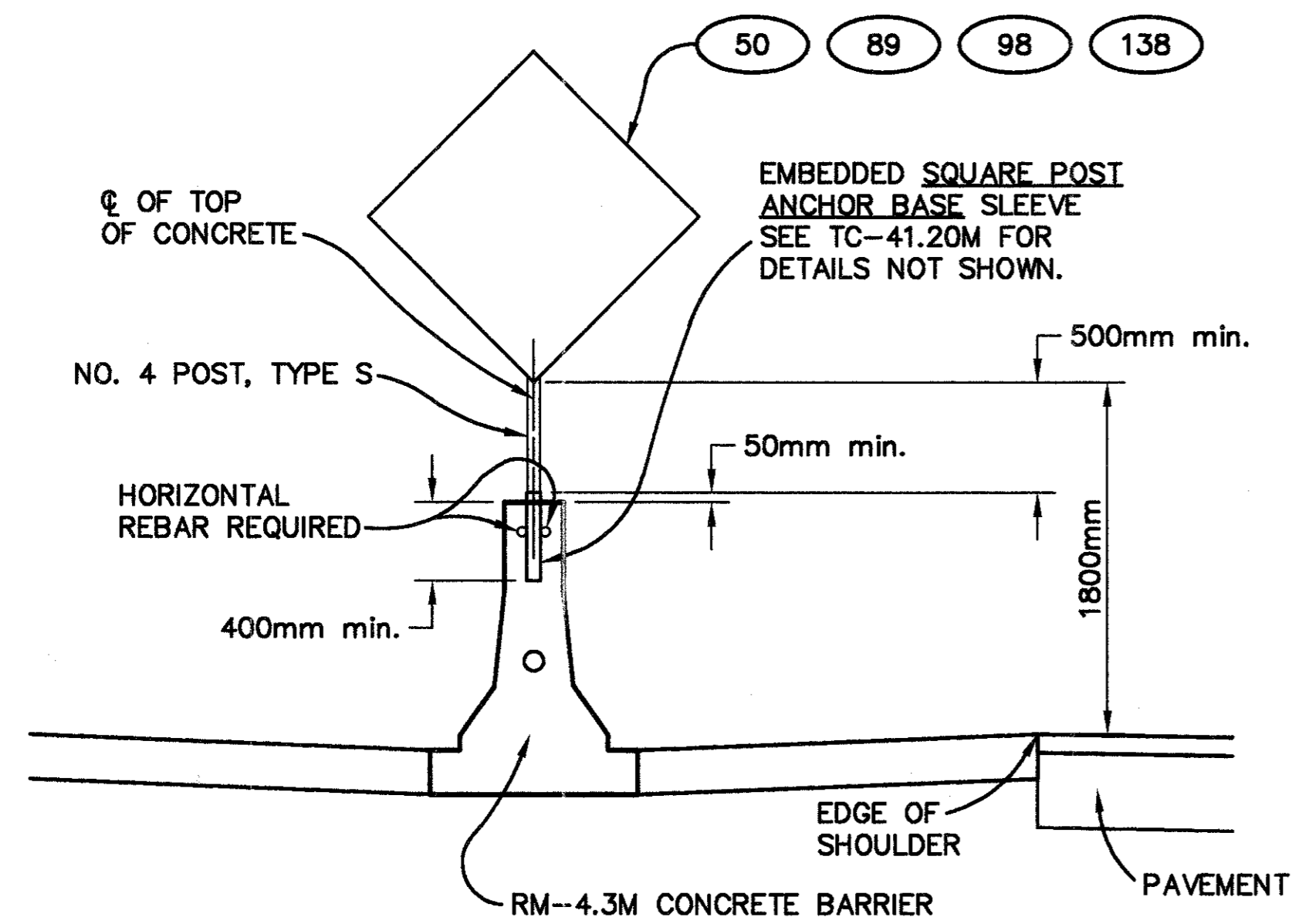
TRAFFIC CONTROL GENERAL NOTES

BEL-7-32.276

123  
242

**630 GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN**

THIS WORK SHALL CONSIST OF TYPE S YIELDING POST WITH SQUARE POST ANCHOR BASE EMBEDDED INTO RM-4.3M CONCRETE BARRIER IN ACCORDANCE WITH THE DETAIL BELOW.



NOTE:  
THE HORIZONTAL REBAR NEAR THE TOP OF THE BARRIER SHALL BE DEFLECTED JUST ENOUGH TO ALLOW PLACEMENT OF THE POST ANCHOR BASE ON THE CENTERLINE OF THE TOP OF CONCRETE SURFACE. A SUPPLEMENTAL REBAR OF MATCHING WEIGHT AND 1 METER LENGTH SHALL BE PLACED ON THE OTHER SIDE OF THE ANCHOR BASE, PARALLEL TO THE MAIN THROUGH REBAR WITH ENDS AT EQUAL DISTANCES FROM THE ANCHOR BASE.

BARRIER MOUNTING OF YIELDING POST SIGN SUPPORT

**630 STREET NAME SIGN SUPPORT, AS PER PLAN**

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING THE SIGN-TO-POST BRACKET AS PORTRAYED ON TC-41.40M FOR STREET NAME SIGN SUPPORT. THE POST CAP SHALL BE MANUFACTURED TO FIT A TYPE S YIELDING POST (SEE TC-41.20M), OF THE SIZE SPECIFIED IN THE PLANS. NO POST OR CONCRETE FOUNDATION IS REQUIRED FOR THIS ITEM OF WORK.

**632 SIGNALIZATION MISC.: PERFORMANCE TEST OF MODIFIED EXISTING TRAFFIC CONTROL SYSTEM**

THE CONTRACTOR SHALL PERFORM A "PERFORMANCE TEST" [632.27(6)] OF THE ENTIRE TRAFFIC CONTROL SYSTEM AT HANOVER STREET AFTER LOOPS L-1 AND L-2 ARE INSTALLED, FINAL PAVEMENT WORK IS COMPLETED, AND TRAFFIC IS FLOWING IN THE FINAL PATTERN OF OPERATION. THE ENGINEER WILL PROVIDE TO THE CONTRACTOR A COPY OF "AS BUILT" HANOVER STREET SIGNAL DATA FROM PROJECT BEL-7-35.567 (DISPLAY, OPERATION, TIMING) FOR THE CONTRACTORS USE DURING THIS WORK.

BEFORE ANY WORK IS PERFORMED OR TRAFFIC PATTERN IS ALTERED AT HANOVER STREET THE CONTRACTOR SHALL, WITH THE ENGINEER, OBSERVE THE OPERATION OF THE EXISTING INSTALLATION, INCLUDING RAILROAD PREEMPTION OPERATION. THE CONTRACTOR SHALL PRESENT TO THE ENGINEER A WRITTEN DESCRIPTION OF ANY DAMAGE TO OR MALFUNCTION OF THE INSTALLATION, REQUESTING THAT CORRECTIONS OF OBSERVED FAULTS BE COMPLETED BY THE MAINTAINING AGENCY BEFORE THE SCHEDULE DATE OF THE PERFORMANCE TEST.

THE CONTRACTOR SHALL SATISFY HIMSELF THAT CORRECTIONS HE REQUESTED HAVE BEEN PROPERLY PERFORMED BEFORE HE COMMENCES THE PERFORMANCE TEST. THE CONTRACTOR SHALL CORRECT TO THE SATISFACTION OF THE ENGINEER ANY MALFUNCTION OF FAILURE OF ANY PART OF THE ENTIRE SYSTEM WHICH OCCURS DURING THE TEST.

THE FOLLOWING HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR PAYMENT OF THE ABOVE WORK.

632 LUMP SIGNALIZATION MISC.: PERFORMANCE TEST OF MODIFIED EXISTING TRAFFIC CONTROL SYSTEM.

### 626 BARRIER REFLECTOR QUANTITIES

LOCATION	S.R. 7 STATION		SIDE	626					
	FROM	TO		BARRIER REFLECTOR TYPE A	BARRIER REFLECTOR TYPE B				
				Each	Each				
Southbound	32+172.546	32+873.302	Lt.	3	22				
Southbound	34+011.663	34+068.813	Lt.	3					
Southbound	35+708.598	35+791.805	Lt.	4					
Southbound	36+252.676	36+451.079	Lt.	6	2				
Southbound	36+561.832	36+857.532	Lt.	8	3				
Northbound	32+181.761	32+899.939	Rt.	1	24				
Ramp D Rt.									
to Northbound	32+664.058	33+376.528	Rt.	25					
Northbound	34+339.083	34+552.443	Rt.	8					
Northbound	34+580.334	34+946.094	Rt.	13					
Northbound	35+181.031	35+687.761	Rt.	18					
Northbound	35+711.571	38+190.650	Rt.	178	18				
Ramp D Lt.	32+637.612	32+741.195	Lt.	13					
Median Barrier	32+235.359	33+381.287	☉		42				
Median Barrier	33+450.781	33+834	☉		28				
Median Barrier	34+346	34+562	☉		18				
Median Barrier	34+612	35+437	☉		58				
Median Barrier	35+953	36+673.997	☉		48				
Median Barrier	38+068.608	38+190.650	☉		12				
Median G.R.	38+190.650	38+220	☉	2					
TOTAL CARRIED TO GENERAL SUMMARY				282	275				

CALC. BY: SAH DATE: 4-3-95  
CHKD. BY: WCR DATE: 4-4-95

### 621 RAISED PAVEMENT MARKERS

	STATION	SPACING	QUANTITY
<b>2-WAY WHITE &amp; RED</b>			
Northbound Lane (Lane Line)	32+918 to 33+374	24m	20 Each
	33+625 to 33+937	24m	14 Each
	33+949 to 34+069	12m	11 Each
	35+230 to 35+542	24m	14 Each
	35+554 to 35+674	12m	11 Each
	36+446 to 36+926	24m	21 Each
	36+963 to 37+299	24m	15 Each
	37+344 to 37+656	24m	14 Each
	37+692 to 38+004	24m	14 Each
Southbound Lane (Lane Line)	33+427 to 33+883	24m	20 Each
	34+130 to 34+262	12m	12 Each
	34+286 to 34+580	24m	14 Each
	35+728 to 35+741	12m	12 Each
	36+169 to 35+884	24m	14 Each
	36+963 to 37+299	24m	15 Each
	37+344 to 37+656	24m	14 Each
	37+692 to 38+004	24m	14 Each
	38+049 to 38+217	24m	8 Each
SUB-TOTAL 257 Each			
<b>1-WAY YELLOW</b>			
Ramp C	32+887 to 32+899	12m	2 Each
Ramp D	32+870 to 32+894	12m	3 Each
SUB-TOTAL 5 Each			
<b>1-WAY WHITE</b>			
Northbound Lane	32+270 to 32+894	24m	27 Each
	32+870 to 32+954	(Rt) 12m	8 Each
	33+432 to 33+601	24m	8 Each
	33+841 to 33+937	(Lt & Rt) 24m	10 Each
	33+949 to 34+009	(Lt & Rt) 12m	12 Each
	34+021 to 34+075	(Chnl) 6m	10 Each
	34+021 to 34+075	(Lt & Rt) 6m	20 Each
	34+121 to 34+175	(Lt & Rt) 6m	20 Each
	34+127 to 34+559	24m	19 Each
	34+606 to 35+206	24m	26 Each
	35+446 to 35+542	(Lt & Rt) 24m	10 Each
	35+554 to 35+614	(Lt & Rt) 12m	12 Each
	35+626 to 35+680	(Lt & Rt) 6m	20 Each
	35+626 to 35+680	(Chnl) 6m	10 Each
	35+720 to 35+780	(Lt & Rt) 6m	22 Each
	35+726 to 36+422	24m	30 Each
	38+049 to 38+217	24m	8 Each
Ramp D	32+906 to 32+942	12m	4 Each
Southbound Lane	32+270 to 33+374	24m	47 Each
	32+887 to 32+911	(Rt) 12m	3 Each
	32+917 to 33+025	(Rt) 6m	19 Each
	33+907 to 33+075	24m	8 Each
	34+021 to 34+075	(Lt & Rt) 6m	20 Each
	34+118 to 34+166	(Rt & Lt) 6m	18 Each
	34+118 to 34+166	(Chnl) 6m	9 Each
	34+178 to 34+250	(Lt & Rt) 12m	14 Each
	34+262 to 34+358	(Lt & Rt) 24m	10 Each
	34+624 to 35+680	24m	45 Each
	35+626 to 35+686	(Lt & Rt) 6m	22 Each
	35+722 to 35+776	(Lt & Rt) 6m	20 Each
	35+626 to 35+680	(Chnl) 6m	10 Each
	35+788 to 35+848	(Lt & Rt) 12m	12 Each
	35+860 to 35+956	(Lt & Rt) 24m	10 Each
	36+916 to 36+220	24m	30 Each
Ramp C	32+754 to 32+838	(Lt & Rt) 6m	30 Each
	32+754 to 32+838	(Chnl) 6m	15 Each
	32+850 to 32+874	(Lt) 12m	3 Each
	32+898 to 32+970	(Lt) 24m	4 Each
	32+917 to 32+911	(Rt) 6m	19 Each
SUB-TOTAL 644 Each			
☉ On Lane Line			
TOTAL CARRIED TO GENERAL SUMMARY			906 Each

CALCULATED  
SAH  
CHECKED  
WCR

TRAFFIC CONTROL QUANTITIES

BEL-7-32.276

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# SIGN QUANTITIES

CALC. BY: SAH DATE: 4-4-95  
CHKD. BY: WCR DATE: 4-6-95

\* USE TYPE S YIELD POST ONLY, SEE STD DWG TC-41.20M

CALCULATED  
SAH  
CHECKED  
AEH

630

REF. NO.	STATION (S.R. 7 Unless Otherwise Noted)	SIDE	CODE	SIZE			GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, NO. 4 POST						ONE WAY SUPPORT, NO. 3 POST	ONE WAY SUPPORT, NO. 4 POST				SIGN, FLAT SHEET	SIGN, FLAT SHEET, TYPE G		SIGN BACKING ASSEMBLY	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL		REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL		
							Meter	Meter	Meter						Meter	Meter				Meter	Sq. Meter		Sq. Meter	Each	Each		Each	Each	
1	32+639 Ramp D	Lt.	REMOVAL IM-8-24 M-5-24 IM-26-21 M-40-24 M-1-24-3 M-19-21 M-50-66	600mmx300mm 600mmx600mm 525mmx375mm 600mmx300mm 750mmx600mm 525mmx375mm 1650mmx600mm				9.8*													0.18 0.36 0.20 0.18 0.45 0.20 0.99		2		8	2			
2	32+642 Ramp D	Lt.	REMOVAL N-29-24 N-15-24	600mmx600mm 600mmx150mm			3.8														0.36 0.09			2		1			
3	32+699 Ramp D	Rt.	M-37-24 M-2-24	600mmx300mm 600mmx600mm			3.9														0.18 0.36								
4	32+702 Ramp D	Rt.	REMOVAL																								2		
5	32+739 Ramp D	Lt.	REMOVAL R-1-36 R-121-36	900mmx900mm 900mmx900mm					4.8													0.81 0.81			2	2			
6	32+740 Ramp D	Rt.	REMOVAL R-1-36 R-121-36	900mmx900mm 900mmx900mm					4.8													0.81 0.81			1	1			
7	32+745 Ramp D	Lt.	REMOVAL R-41B-36 R-120-36 R-43R-36	900mmx900mm 900mmx900mm 900mmx300mm										4.1								0.81 0.81 0.27			2	1			
8	32+752 Ramp D	Rt.	N-29-24 N-15-24	600mmx600mm 600mmx150mm			3.8														0.36 0.09								
9	32+753 Ramp D	Rt.	REMOVAL M-37-24 M-2-24 M-24-21	600mmx300mm 600mmx600mm 525mmx375mm				4.4														0.18 0.36 0.20			5	1			
10	32+756 Ramp C	Rt.	REMOVAL N-29-24 N-15-24	600mmx600mm 600mmx150mm			3.8														0.36 0.09			3	1				
11	32+756 Ramp C	Rt.	REMOVAL M-37-30 M-2-30 M-24-24	750mmx375mm 750mmx750mm 600mmx450mm				4.6*														0.28 0.56 0.27			3	1			
12	32+756 Ramp C	Rt.	REMOVAL M-40-30 M-1-30-3 M-24-24	750mmx375mm 937mmx750mm 600mmx450mm				4.6*														0.28 0.70 0.27			3	1			
13	32+760 Ramp C	Rt.	REMOVAL																					2	1				
14	32+760 Ramp D	Lt.	REMOVAL R-41B-36 R-43R-36	900mmx900mm 900mmx300mm				4.2						4.2								0.81 0.27			1	1			
15	32+762 Ramp C	Rt.	REMOVAL R-43L-48 R-43R-48 R-41B-36 R-1-48 R-22A-36	1200mmx450mm 1200mmx450mm 900mmx900mm 1200mmx1200mm 900mmx900mm				5.2*						5.3*								0.54 0.54 0.81 1.44 0.81			2	2			
16	32+766 Ramp C	Lt.	REMOVAL R-43L-48 R-43R-48 R-41B-36 R-1-48 R-22A-36	1200mmx450mm 1200mmx450mm 900mmx900mm 1200mmx1200mm 900mmx900mm				5.3*						5.3*								0.54 0.54 0.81 1.44 0.81			3	2			
17	32+771 Ramp C	Lt.	REMOVAL																						2	1			
TOTALS CARRIED TO GENERAL SUMMARY							15.3	8.6	39.1						4.2	14.7						1.35	20.69		2	39	18		2

**TRAFFIC CONTROL SIGN QUANTITIES**

**BEL-7-32.276**

126  
242



# SIGN QUANTITIES

\* USE TYPE S YIELD POST ONLY, SEE STD DWG TC-41.20M

REF. NO.	STATION (S.R. 7 Unless Otherwise Noted)	SIDE	CODE	SIZE	630																	631									
					GROUND MOUNTED BEAM SUPPORT FOUNDATION	GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, NO. 4 POST	GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN	GROUND MOUNTED SUPPORT, S100x11.5 BEAM	GROUND MOUNTED SUPPORT, W200x26.6 BEAM	GROUND MOUNTED SUPPORT, W250x32.7 BEAM	ONE WAY SUPPORT, NO. 3 POST	STREET NAME SIGN SUPPORT	BREAKAWAY BEAM CONNECTION	SIGN HANGER ASSEMBLY, SPAN WIRE	SIGN, FLAT SHEET, TYPE G	SIGN, EXTRUSHEET, TYPE G	SIGN, DOUBLE FACED, STREET NAME, TYPE G	SIGN BACKING ASSEMBLY	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND STORAGE	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE TC-12.30	REMOVAL OF LUMINAIRE AND STORAGE	REMOVAL OF DISCONNECT SWITCH AND STORAGE	REMOVAL OF SIGN WIRING AND DISPOSAL	REMOVAL OF SIGN SERVICE AND DISPOSAL
					Each	Meter	Meter	Meter	Meter	Meter	Meter	Meter	Meter	Each	Each	Each	Sq. Meter	Sq. Meter	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each
57	33+874	Lt.	REMOVAL																												
58	33+946	Rt.	GM-1	2.100m x 0.900m	2					8.7						2						1			2						
59	33+976	Rt.	R-31C-48	1200mm x 750mm		7.6																									
60	34+034	Lt.	REMOVAL																												
61	34+038	Lt.	M-38-30 M-2-30	750mm x 375mm 750mm x 750mm				4.2																	2						
62	34+062	Lt.	REMOVAL																												
63	34+075	Lt.	REMOVAL																												
64	34+078	Lt.	D-14 R-37R-24 R-43R-36	600mm x 750mm 900mm x 300mm								4.1																			
65	34+080	Lt.	R-107A-24	600mm x 450mm		3.5																									
66	34+081	Rt.	REMOVAL																												
			R-31C-48	1200mm x 750mm		7.6																									
67	0+982 Aetna St.	Rt.	REMOVAL																												
68	34+085	Rt.	REMOVAL																												
			M-50-66	1650mm x 600mm		7.8																									
69	34+085	Lt.	REMOVAL																												
70	34+087	Lt.	R-25ER-24	600mm x 750mm																											
71	34+089	Lt.	R-27A-30	750mm x 900mm																											
72	34+090	Rt.	REMOVAL																												
73	34+094	Rt.	R-25F-24	600mm x 750mm																											
74	34+099	Lt.	R-26A-30	750mm x 900mm																											
75	34+100	Lt.	REMOVAL																												
76	34+109	Lt.	REMOVAL																												
77	34+115	Rt.	D-14																												
78	34+115	Rt.	R-107A-24	600mm x 450mm		3.5																									
79	34+120	Lt.	R-31C-48	1200mm x 750mm		8.3																									
80	34+121	Rt.	R-43R-36 R-37R-24	900mm x 300mm 600mm x 750mm								4.1																			
81	34+137	Lt.	REMOVAL																												
			GN	2.400m x 0.900m	2					8.0																					
82	34+137	Rt.	REMOVAL																												
			GN	2.700m x 0.900m	2					8.9																					
83	34+170	Lt.	R-31C-48	1200mm x 750mm		8.3																									
84	34+246	Lt.	GM	2.100m x 0.900m	2					8.7																					
85	34+250	Rt.	M-37-30 M-2-30	750mm x 375mm 750mm x 750mm				5.0*																							
86	34+350	Rt.	REMOVAL																												
87	34+359	Rt.	W-94-36	900mm x 900mm				4.2																							
88	34+362	Lt.	REMOVAL																												
			Q																												
89	34+450	Lt.	W-47-48	1200mm x 1200mm					2.7																						
			W-47-48	1200mm x 1200mm				9.7																							
90	34+680	Rt.	R-10-36	900mm x 1200mm		8.7																									
91	34+724	Lt.	GB	4.800m x 3.150m	2																										
92	34+731	Lt.	REMOVAL																												
93	34+820	Lt.	R-10-36	900mm x 1200mm		8.5																									
94	34+838	Lt.	REMOVAL																												
95	34+870	Rt.	GL	3.900m x 2.550m	2																										
96	34+900	Lt.	W-94-36	900mm x 900mm				3.9																							
97	34+911	Rt.	REMOVAL																												
98	35+220	Q	W-47-48	1200mm x 1200mm					2.7																						
			W-47-48	1200mm x 1200mm				9.8																							
TOTALS CARRIED TO GENERAL SUMMARY					12	63.8	31.8	5.0	5.4	34.3	13.0	15.0	8.2	2	10	4	20.05	33.44	2	2	13	4	14	8	4	2	1	2	1	1	1

CALCULATED  
SAH  
CHECKED  
AEH

TRAFFIC CONTROL SIGN QUANTITIES

BEL-7-32.276

128  
242

14-0321-01 (REVISED) 12/23/2010 - OCT 26, 1997 - 11:50:27





# SIGN QUANTITIES

CALCULATED  
SAH  
CHECKED  
AEH

REF. NO.	STATION	SIDE	CODE	SIZE	630													625			631											
					RIGID OVERHEAD SIGN SUPPORT FOUNDATION	GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN	OVERHEAD SIGN SUPPORT, TYPE TC-9.30M, DESIGN 3	COMBINATION OVERHEAD SIGN SUPPORT, TYPE TC-9.30M, DESIGN 4	SIGN, FLAT SHEET	SIGN, FLAT SHEET, TYPE G	SIGN, EXTRUSHEET, TYPE G	SIGN BACKING ASSEMBLY	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE TC-9.30	GROUND ROD	SIGN SERVICE	SIGN WIRED	DISCONNECT SWITCH WITH ENCLOSURE, 15 AMP	BALLAST TYPE CMRI 100-240, INTEGRAL	BALLAST TYPE CMRI 175-240, INTEGRAL	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21M WITH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21M WITH	REMOVAL OF LUMINAIRE AND STORAGE	REMOVAL OF DISCONNECT SWITCH AND STORAGE	REMOVAL OF SIGN WIRING AND DISPOSAL	REMOVAL OF SIGN SERVICE AND DISPOSAL	
Each	Meter	Meter		Meter	Each	Each	Sq. Meter	Sq. Meter	Sq. Meter	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each			
127	35+752	Rt.	REMOVAL																													
128	35+755	Rt.	M-2-30 M-37-30	750mmx750mm 750mmx375mm		4.3		0.56 0.28																								
129	35+828	Rt.	REMOVAL																													
130	35+874	Lt.	REMOVAL										1	2																		
131	35+900	Lt.	N-29-24 IM-19-24	600mmx600mm 600mmx450mm		4.3	0.36 0.27																									
132	35+908	Rt.	R-10-36	900mmx1200mm		8.7		1.08																								
133	36+007	☉	GD	5.400m x 1.800m	1					1			9.72					1	1	1	1			2				2				
134	36+007	☉	GB	3.900m x 2.700m									10.53										2					2				
135	36+021	Lt.	REMOVAL																													
136	36+058	☉	REMOVAL																													
137	36+058	☉	REMOVAL																													
138	36+120	☉	W-47-48	1200mm x 1200mm			2.7		1.44		1																					
139	36+478	Lt.	REMOVAL	1200mm x 1200mm		9.9			1.44																							
140	36+535	☉	GM	1.800m x 1.050m	1					1			1.89					1	1	1	1	1		1								
141	36+535	☉	GB	3.900m x 2.700m									10.53																			
142	36+546	☉	REMOVAL																													
143	36+546	☉	REMOVAL																													
144	36+650	Lt.	R-10-36	900mm x 1200mm		8.7		1.08																								
145	36+665	Rt.	R-10-36	900mm x 1200mm		8.7		1.08																								
146	36+819	Rt.	REMOVAL																													
147	36+859	Lt.	REMOVAL																													
148	36+885	Lt.	M-38-30 M-2-30	750mm x 375mm 750mm x 750mm		4.6		0.28 0.56																								
149	36+909	Lt.	REMOVAL																													
150	36+911	Rt.	R-31FF-48	1200mm x 750mm		8.0		0.90																								
TOTALS CARRIED TO GENERAL SUMMARY					2	8.0	49.2	2.7	1	1	0.63	8.70	32.67	1	2	4	4	9	2	2	2	4	2	1	6	1	6	6	2	4	2	

TRAFFIC CONTROL SIGN QUANTITIES

BEL-7-32.276

# SIGN QUANTITIES

\* USE TYPE S YIELD POST ONLY, SEE STD DWG TC-41.20M

CALCULATED  
SAH  
CHECKED  
AEH

TRAFFIC CONTROL SIGN QUANTITIES

BEL-7-32.276

131

242

REF. NO.	STATION	SIDE	CODE	SIZE	630													631											
					GROUND MOUNTED BEAM SUPPORT FOUNDATION	GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, NO. 4 POST	GROUND MOUNTED SUPPORT, NO. 6 POST	GROUND MOUNTED SUPPORT, 100x11.5 BEAM	ONE WAY SUPPORT, NO. 3 POST	STREET NAME SIGN SUPPORT	STREET NAME SIGN SUPPORT, AS PER PLAN	BREAKAWAY BEAM CONNECTION	SIGN, FLAT SHEET	SIGN, FLAT SHEET, TYPE G	SIGN, EXTRUSHEET, TYPE G	SIGN, DOUBLE FACED, STREET NAME, TYPE G	SIGN BACKING ASSEMBLY	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE TC-9.30	REMOVAL OF LUMINAIRE AND STORAGE	REMOVAL OF DISCONNECT SWITCH AND STORAGE	REMOVAL OF SIGN WIRING AND DISPOSAL	REMOVAL OF SIGN SERVICE AND DISPOSAL	
					Each	Meter	Meter	Meter	Meter	Meter	Meter	Each	Each	Each	Sq. Meter	Sq. Meter	Sq. Meter	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each
151	36+929	Lt.	R-1-48 D-14	1200mmx1200mm				9.5*						1.44															
152	36+939	Rt.	R-107B-24 REMOVAL D-14	600mmx450mm																									
153	36+940	Rt.	REMOVAL M-50-66	1650mmx600mm																									
154	36+960	Lt.	R-43R-36 R-37R-24 REMOVAL	900mmx300mm 600mmx750mm		7.8							4.1				0.99												
155	36+971	Rt.	REMOVAL																										
156	36+990	Rt.	N-45-12	300mmx450mm		3.5																							
157	36+990	Lt.	REMOVAL N-45-12	300mmx450mm		3.5								0.14															
158	36+992	Rt.	REMOVAL																										
159	37+010	Rt.	M-37-30 M-2-30 R-10-36	750mmx375mm 750mmx750mm 900mmx1200mm				9.5						0.28															
160	37+028	Rt.	REMOVAL																										
161	37+113	Rt.	GM	2.700m x 0.900m				9.3																					
162	37+113	Lt.	GM	1.800m x 0.900m			8.5																						
163	37+125	☉	REMOVAL																										
164	37+125	☉	REMOVAL																										
165	37+193	Rt.	REMOVAL																										
166	37+200	Lt.	R-10-36	900mmx1200mm				9.2						1.08															
167	37+272	Lt.	M-38-30 M-2-30	750mmx375mm 750mmx750mm				4.5						0.28															
168	37+289	Rt.	R-31FF-48	1200mmx750mm		7.6								0.90															
169	37+307	Lt.	REMOVAL D-14																										
170	37+311	Lt.	REMOVAL R-1-48 R-107B-24	1200mmx1200mm 600mmx450mm																									
171	37+316	Rt.	REMOVAL D-14																										
172	37+326	Rt.	REMOVAL M-50-66	1650mmx600mm																									
173	37+339	Lt.	R-43R-36 R-37R-24	900mmx300mm 600mmx750mm										4.1															
174	37+352	Rt.	REMOVAL																										
175	37+380	Rt.	R-10-36 M-2-30 M-38-30	900mmx1200mm 750mmx750mm 750mmx375mm				9.5						1.08															
176	37+491	☉	REMOVAL																										
177	37+500	Rt.	GM	2.700m x 1.200m					9.8																				
178	37+500	Lt.	R-10-36	900mmx1200mm				9.2						1.08															
179	37+500	Lt.	GM	2.700m x 0.900m	2																								
180	37+545	Lt.	REMOVAL																										
181	37+620	Lt.	REMOVAL																										
182	37+624	Lt.	M-38-30 M-2-30	750mmx375mm 750mmx750mm				4.5						0.28															
TOTAL CARRIED TO GENERAL SUMMARY					2	30.2	45.9	37.8	9.8	8.6	8.2	3	1	2	0.28	15.42	9.72	4	2	11	13	3	9	2	5	2	3	2	

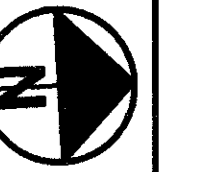
# SIGN QUANTITIES

REF. NO.	STATION	SIDE	CODE	SIZE	630												631																					
					GROUND MOUNTED BEAM SUPPORT FOUNDATION	GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, NO. 4 POST		GROUND MOUNTED SUPPORT, W150x13.5 BEAM	ONE WAY SUPPORT, NO. 3 POST	STREET NAME SIGN SUPPORT	BREAKAWAY BEAM CONNECTION	SIGN, FLAT SHEET, TYPE G	SIGN, EXTRUSHEET, TYPE G	SIGN, DOUBLE FACED, STREET NAME, TYPE G		REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE TC-9.30	REMOVAL OF LUMINAIRE AND STORAGE	REMOVAL OF DISCONNECT SWITCH AND STORAGE	REMOVAL OF SIGN WIRING AND DISPOSAL	REMOVAL OF SIGN SERVICE AND DISPOSAL												
					Each	Meter	Meter	Meter		Meter	Meter	Each	Each	Sq. Meter	Sq. Meter	Each		Each	Each	Each	Each	Each	Each	Each	Each	Each	Each											
183	37+657	Lt.	REMOVAL D-14									1														2	2											
184	37+660	Rt.	R-31FF-48	1200mmx750mm		7.6									0.90																							
185	37+668	Lt.	R-1-48 R-107B-24	1200mmx1200mm 600mmx450mm			10.0								1.44 0.27																							
186	37+669	Lt.	REMOVAL																									1	1									
187	37+670	Rt.	D-14									1																									1	
188	37+673	Rt.	REMOVAL																																		2	
189	37+678	Rt.	REMOVAL																																		1	
190	37+694	Lt.	M-50-66 R-37R-24	1650mmx600mm 600mmx750mm		7.8					4.1				0.99 0.45																							
191	37+722	Rt.	R-43R-36 M-37-30	900mmx300mm 750mmx375mm			4.3								0.27 0.28																							
192	37+733	Rt.	M-2-30	750mmx750mm											0.56																						2	
193	37+754	Rt.	REMOVAL																																		2	
194	37+793	Rt.	R-10-36	900mmx1200mm		8.4									1.08																							
195	37+809	Rt.	REMOVAL																																		1	
196	37+826	Lt.	GM	2.700m x 1.200m	2					10.2																												2
197	37+872	Rt.	GM	1.500m x 0.900m			9.3																															
198	37+874	Rt.	REMOVAL																																			
199	37+970	Lt.	M-38-30 M-2-30	750mmx375mm 750mmx750mm			4.5								0.28 0.56																							
200	38+002	Lt.	REMOVAL																																			
201	38+008	Rt.	R-31FF-48	1200mmx750mm		7.9									0.90																						2	
202	38+012	Lt.	REMOVAL D-14									1																										
203	38+015	Lt.	R-1-48 R-107B-24	1200mmx1200mm 600mmx450mm			10.0								1.44 0.27																							
204	38+023	Rt.	REMOVAL D-14									1																										
205	38+038	Lt.	R-43R-36 R-37R-24	900mmx300mm 600mmx750mm							4.1				0.27 0.45																							
206	38+070	Rt.	M-37-30 M-2-30	750mmx375mm 750mmx750mm			4.2								0.28 0.56																							
207	38+105	Lt.	R-10-36	900mmx1200mm			9.2								1.08																							
208	38+130	Rt.	GM	3.300m x 0.900m					9.2																													
209	38+172	Lt.	GM	1.500m x 0.900m		8.4																																
210	38+186	Rt.	R-10-36	900mmx1200mm		8.5									1.08																							
211	38+189	Rt.	REMOVAL																																			
212	38+206	Q	REMOVAL																																			
213	1+025 Hanover St.	Lt.	R-85-30	750mmx750mm		3.9									0.56												1			1						1		1
TOTALS CARRIED TO GENERAL SUMMARY						2	52.5	51.5	9.2						10.2	8.2	4	2	13.97	8.91	6							12	13	1	6			1	1	1	1	1

TRAFFIC CONTROL SIGN QUANTITIES

**BEL-7-32.276**

CALCULATED  
SAH  
CHECKED  
AEH



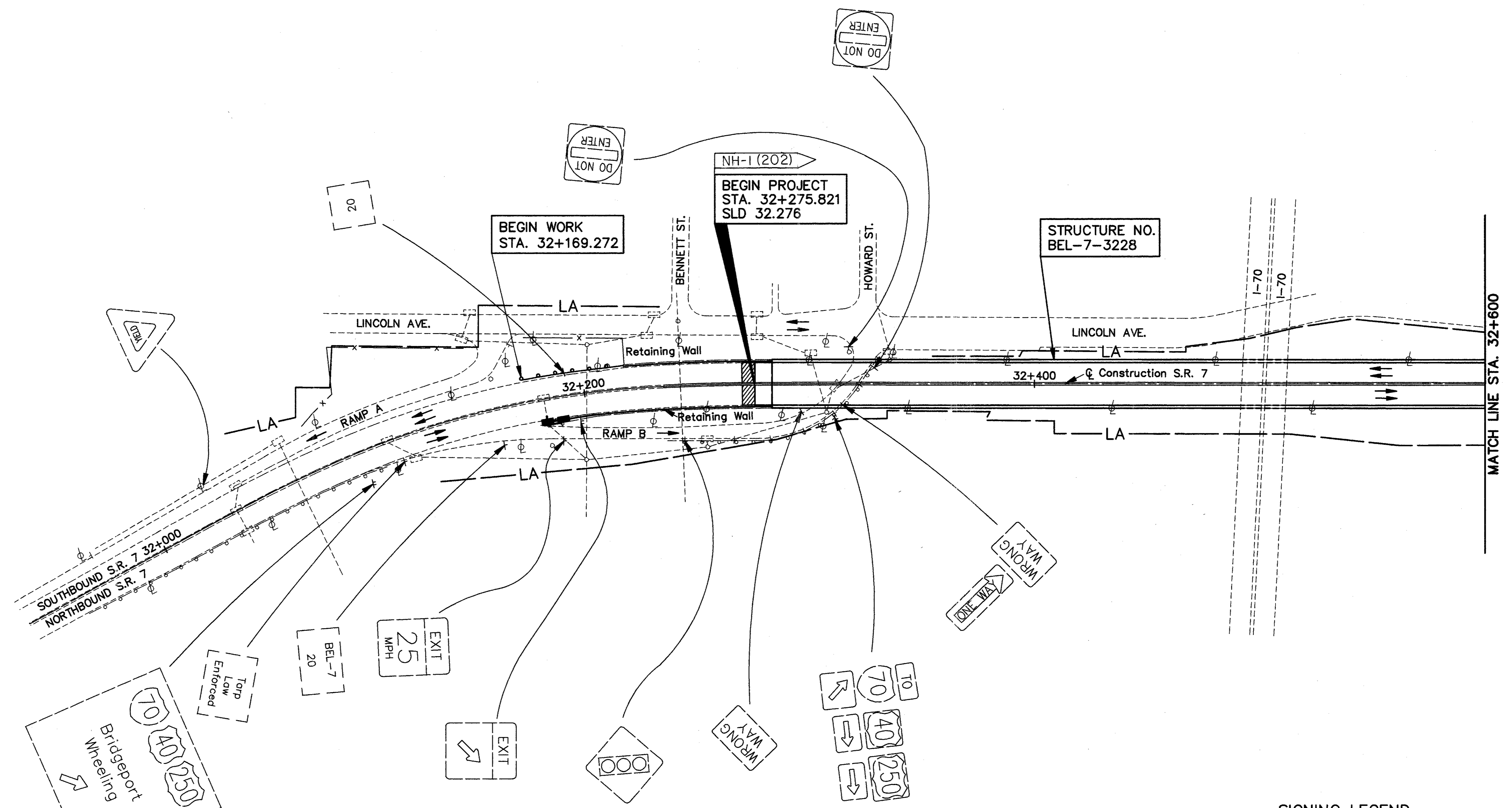
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HORIZONTAL  
SCALE IN METERS

CALCULATED  
SAH  
CHECKED  
WCR

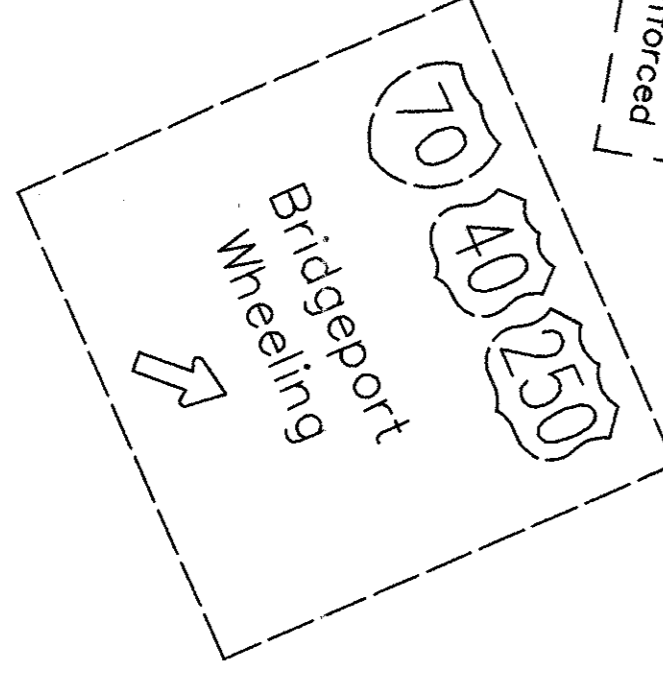
# SIGNING PLAN STA. 32+169.272 TO STA. 32+600

## BEL-7-32.276

133  
242



- SIGNING LEGEND**
- ⊥ OR ⊥ EXISTING SIGN SUPPORT
  - ⊥ OR ⊥ PROPOSED SIGN SUPPORT
  - EXISTING SIGN TO REMAIN
  - PROPOSED SIGN
  - ⊗ EXISTING SIGN REMOVED
  - PROPOSED OVERHEAD SIGN IN BARRIER
  - EXISTING OVERHEAD SIGN IN MEDIAN





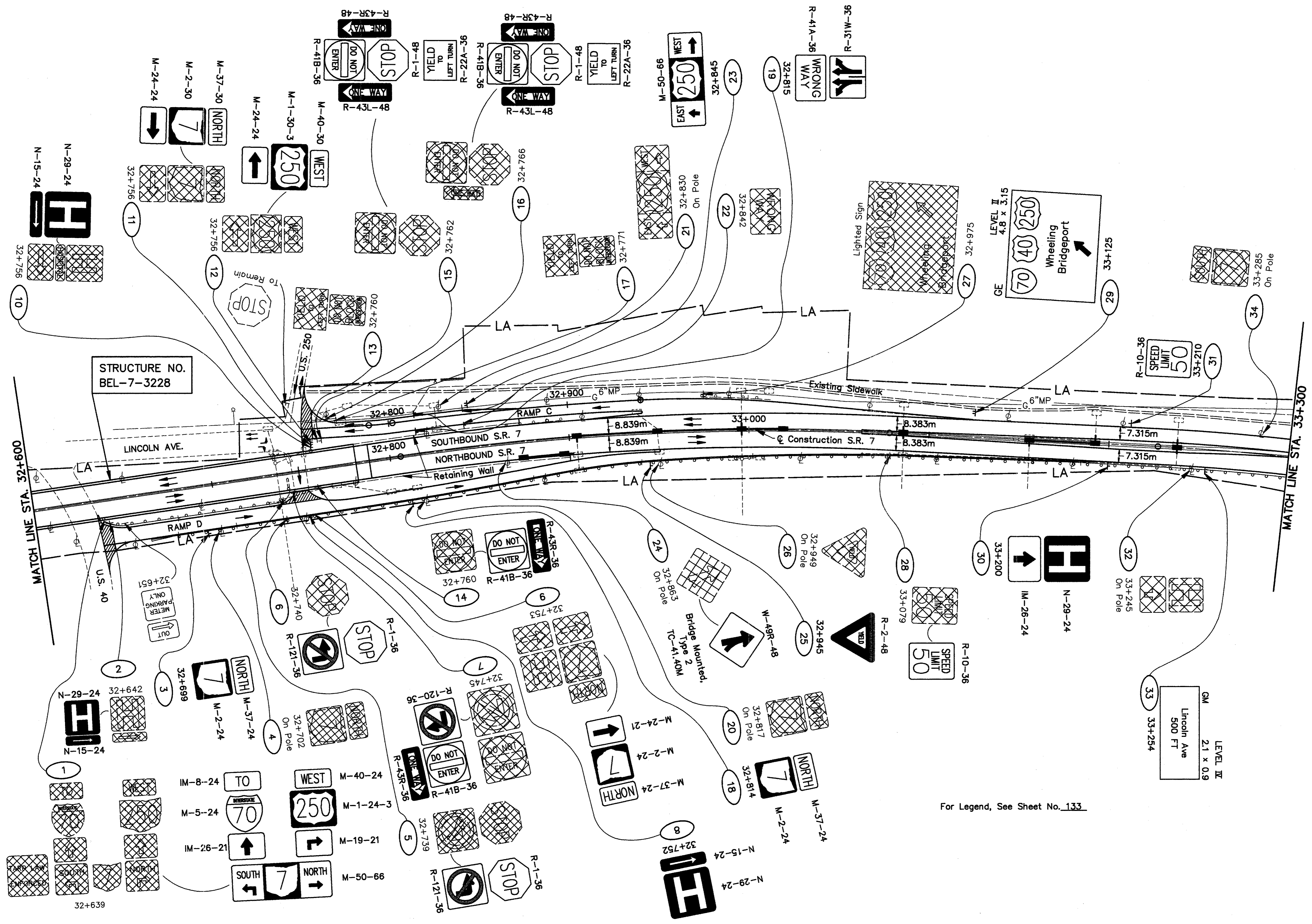
HORIZONTAL SCALE IN METERS  
0 10 20 40

CALCULATED SAH  
CHECKED WCR

# SIGNING PLAN STA. 32+600 TO STA. 33+300

## BEL-7-32.276

134  
242



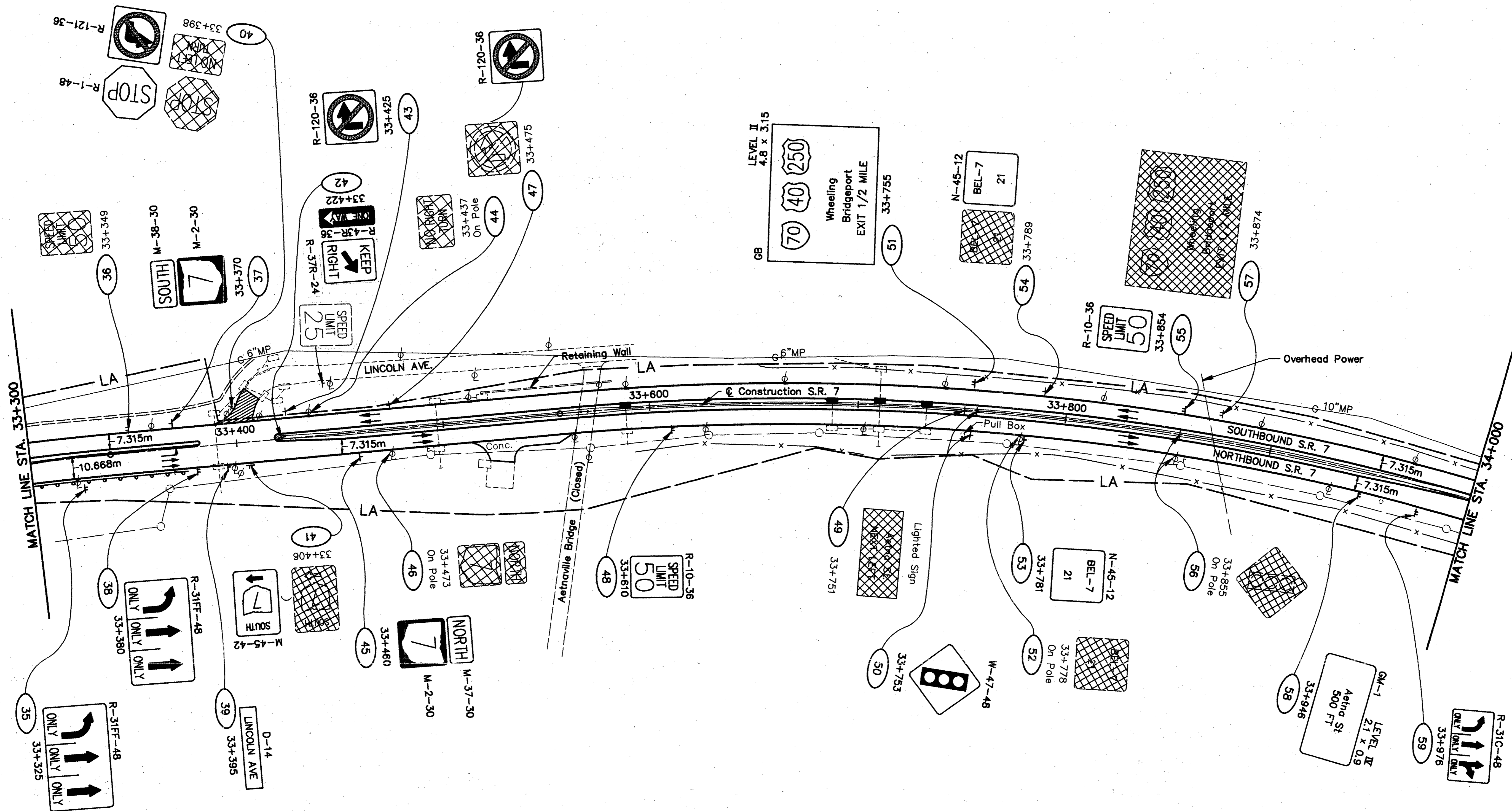
STRUCTURE NO. BEL-7-3228

LEVEL II  
4.8 x 3.15  
GE  
  
 Wheeling Bridgeport

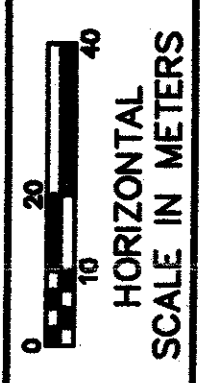
LEVEL IX  
2.1 x 0.9  
GM  
 Lincoln Ave  
500 FT  
 33+254

For Legend, See Sheet No. 133

10/23/97 10:56:03 AM



For Legend, See Sheet No. 133



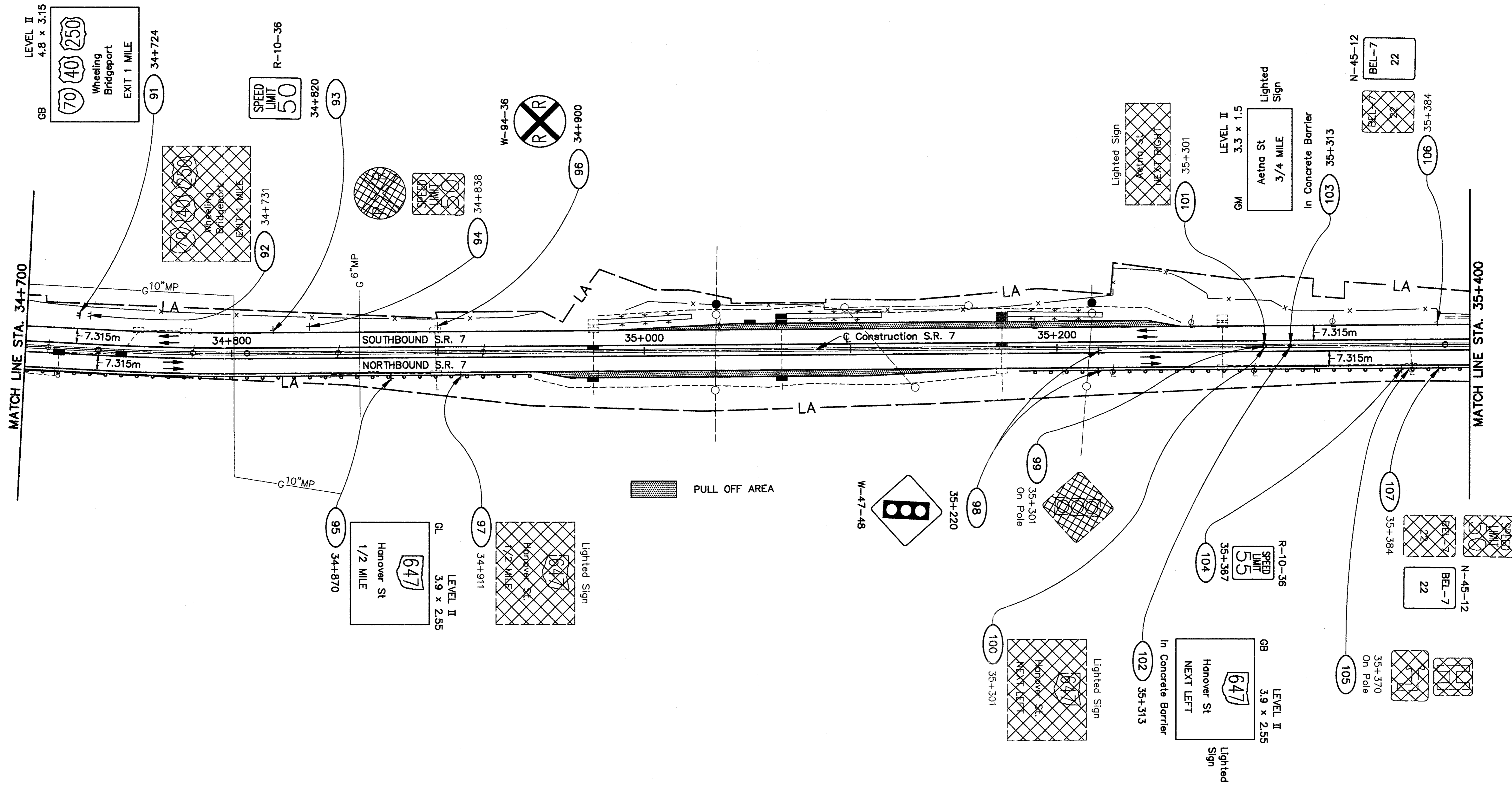
CALCULATED	SAH	CREATED	WCR
------------	-----	---------	-----

**SIGNING PLAN**  
**STA. 33+300 TO STA. 34+000**

**BEL-7-32.276**







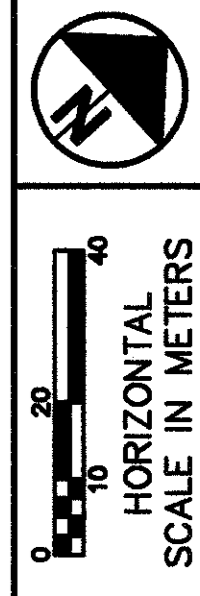
For Legend, See Sheet No. 133.

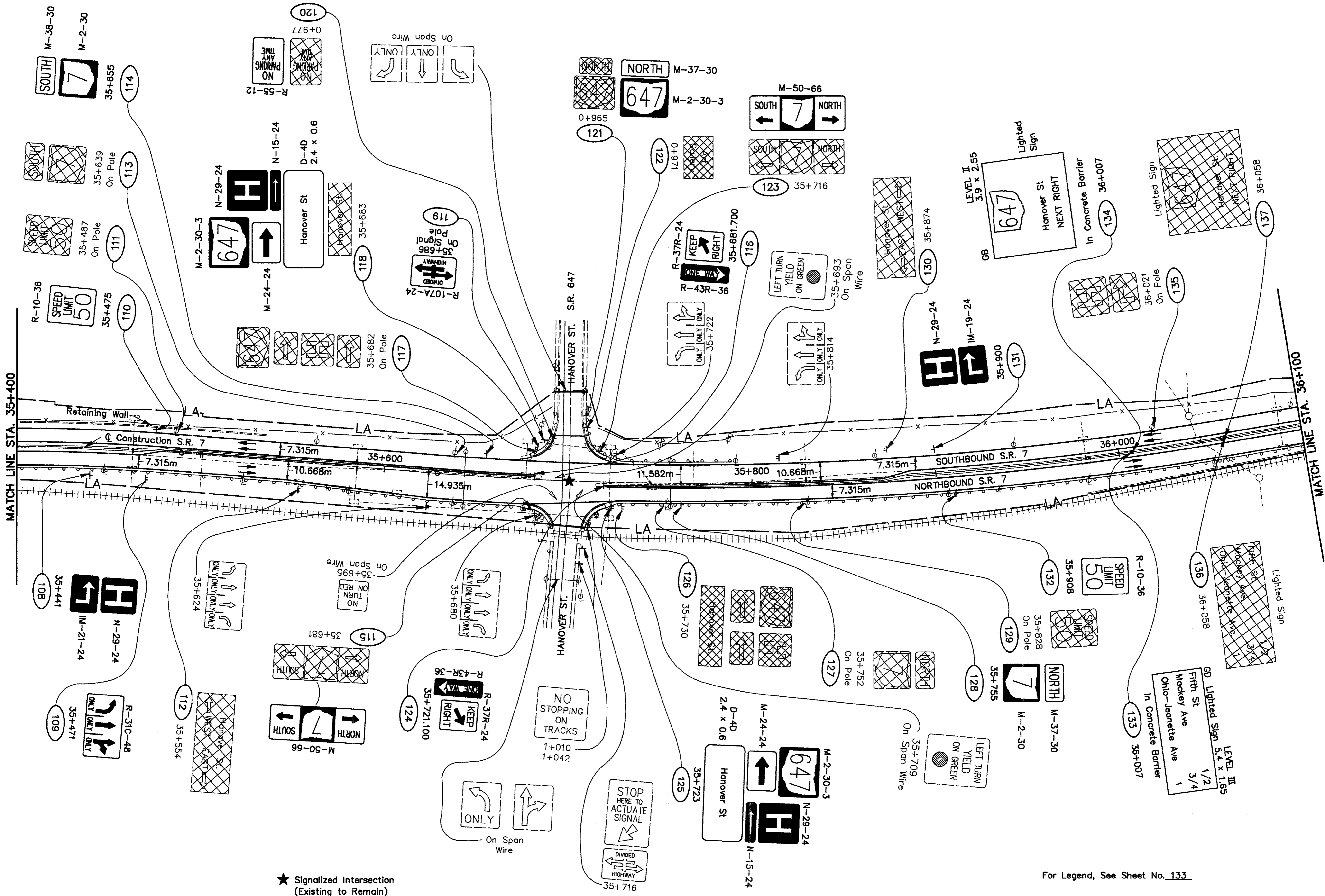
CALCULATED  
SAH  
CHECKED  
WOR

**SIGNING PLAN**  
**STA. 34+700 TO STA. 35+400**

**BEL-7-32.276**

137  
242





★ Signalized Intersection  
(Existing to Remain)

For Legend, See Sheet No. 133

CALCULATED  
SAH  
CHECKED  
WCR

HORIZONTAL SCALE IN METERS

**SIGNING PLAN**  
**STA. 35+400 TO STA. 36+100**

**BEL-7-32.276**



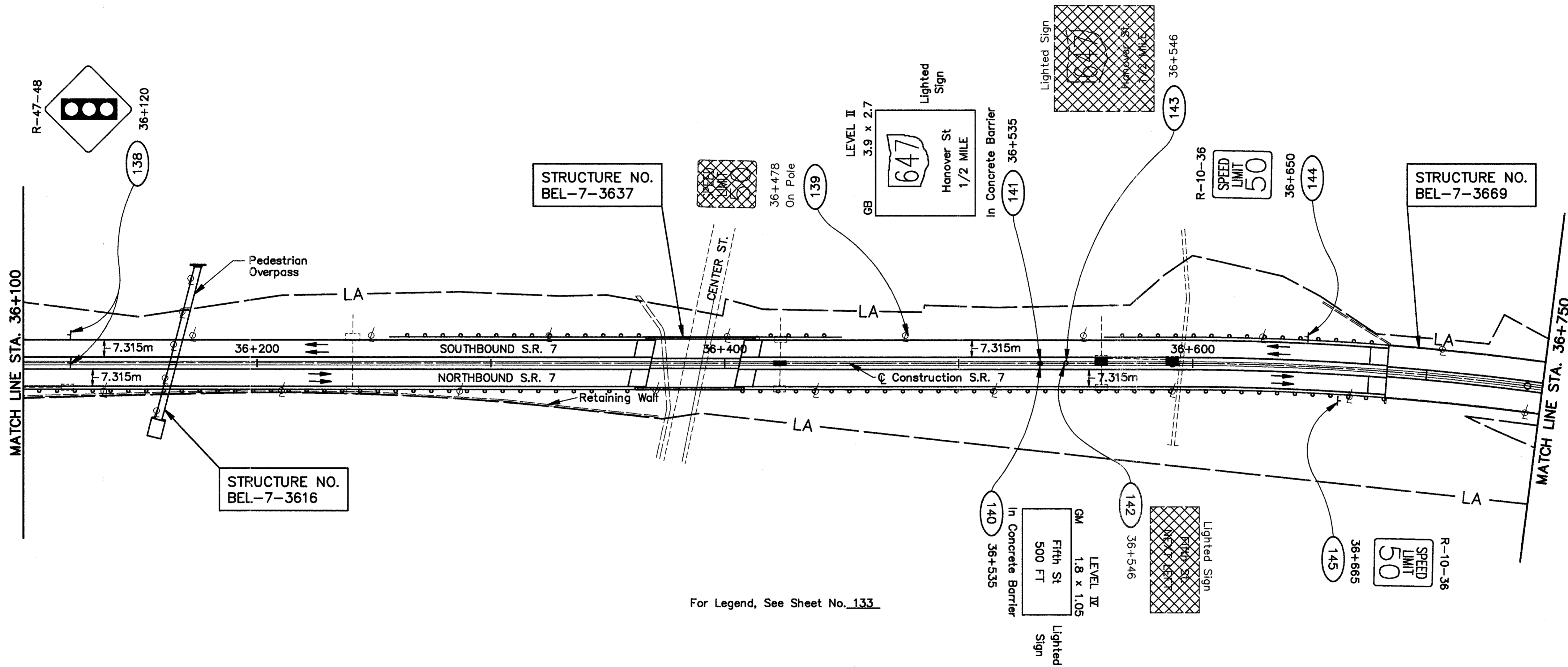
0 10 20 40  
HORIZONTAL  
SCALE IN METERS

CALCULATED  
SAH  
CHECKED  
WCR

# SIGNING PLAN STA. 36+100 TO STA. 36+750

BEL-7-32.276

139  
242



For Legend, See Sheet No. 133



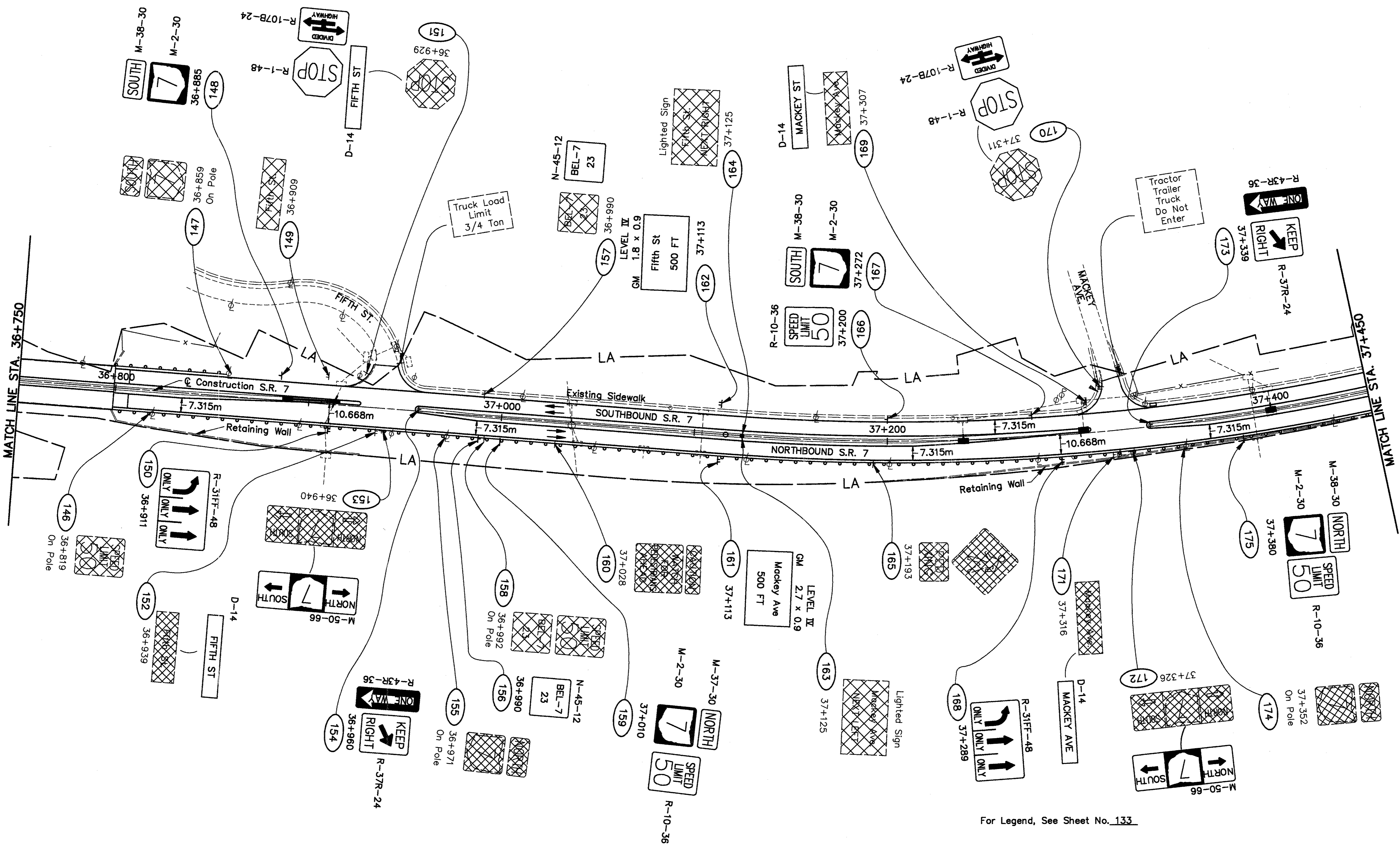
HORIZONTAL SCALE IN METERS  
 0 10 20 40

CALCULATED  
 CHECKED  
 WCR

**SIGNING PLAN  
 STA. 36+750 TO STA. 37+450**

**BEL-7-32.276**

140  
 242



For Legend, See Sheet No. 133

140  
 242



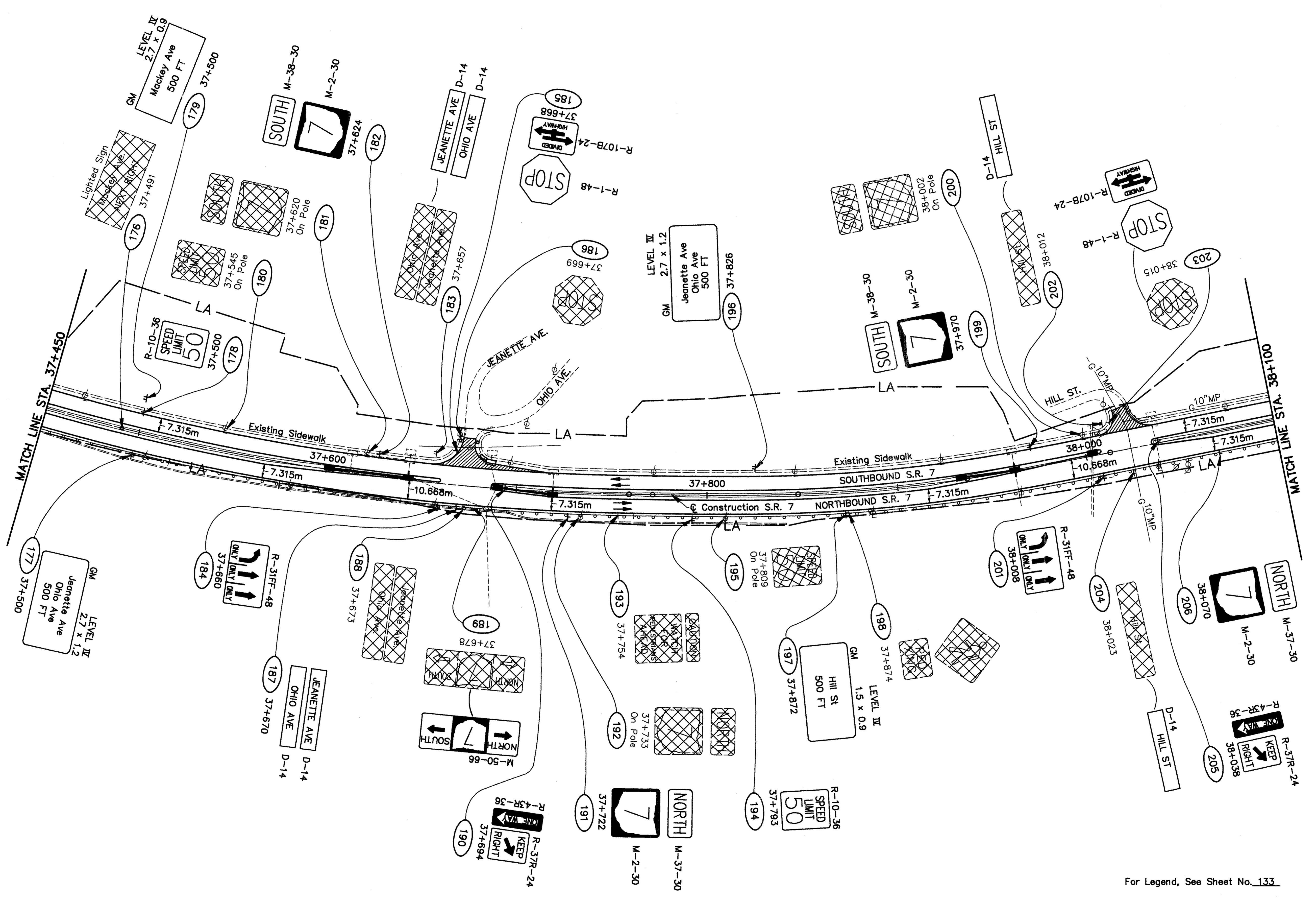
0 10 20 40  
HORIZONTAL  
SCALE IN METERS

CALCULATED	SAH
CHECKED	WCR

**SIGNING PLAN  
STA. 37+450 TO STA. 38+100**

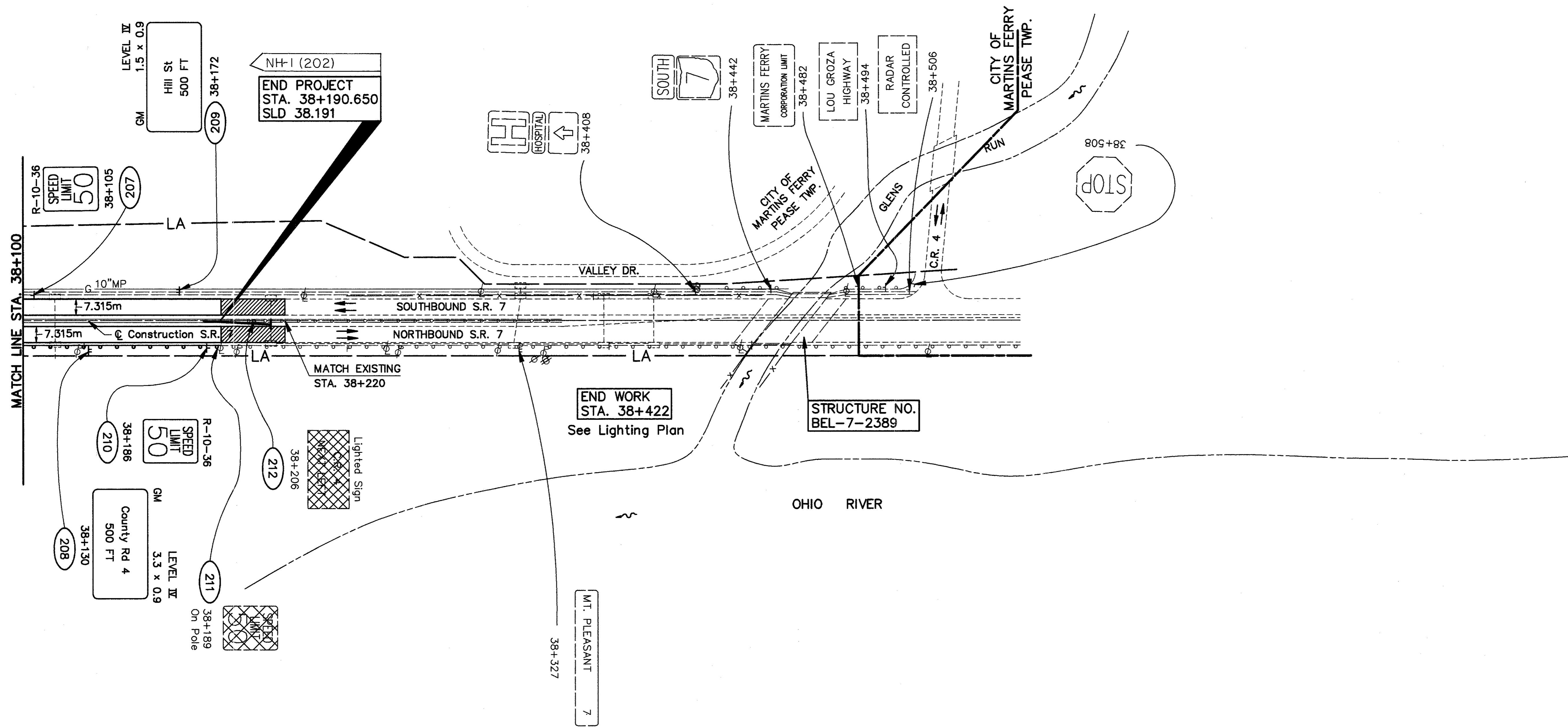
**BEL-7-32.272**

141  
242

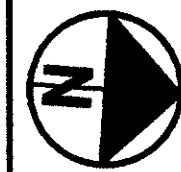


For Legend, See Sheet No. 133

H:\327-01\SIGNING\32701.TPA.dwg - 03/28/1997 - 15:24:28



For Legend, See Sheet No. 133



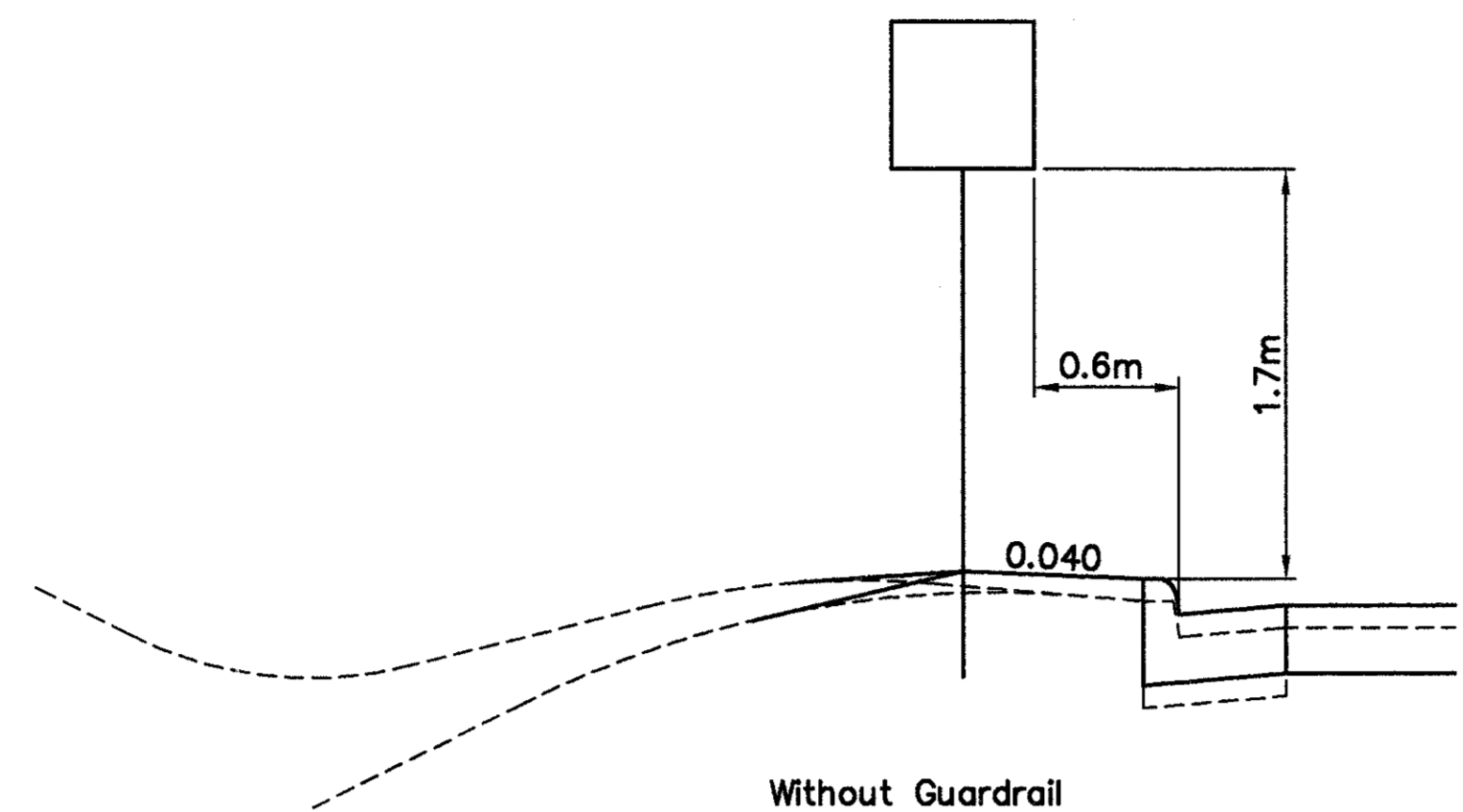
0 10 20 40  
HORIZONTAL  
SCALE IN METERS

CALCULATED  
SAH  
CHECKED  
WCR

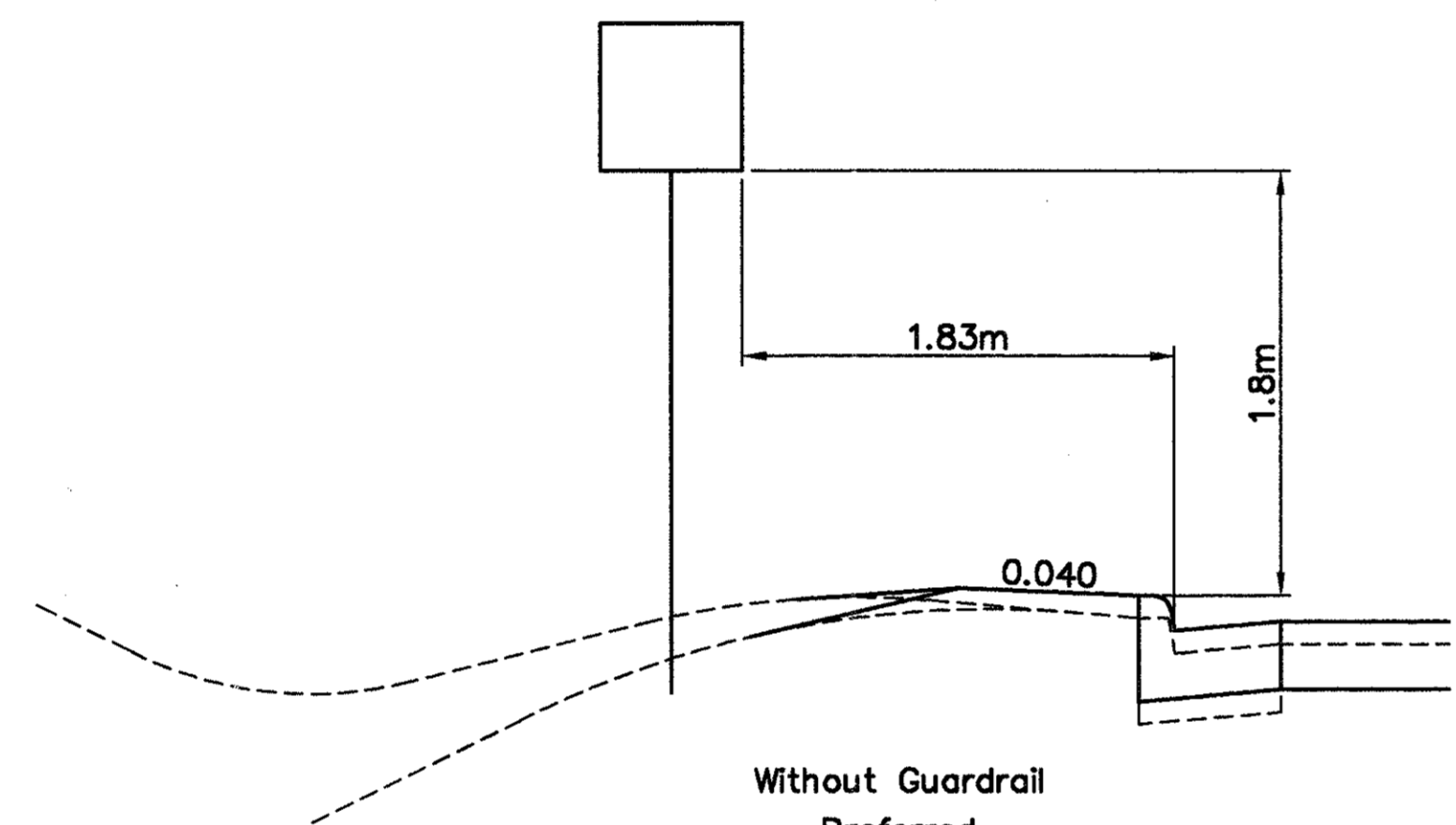
**SIGNING PLAN  
STA. 38+100 TO STA. 38+422**

**BEL-7-32.276**

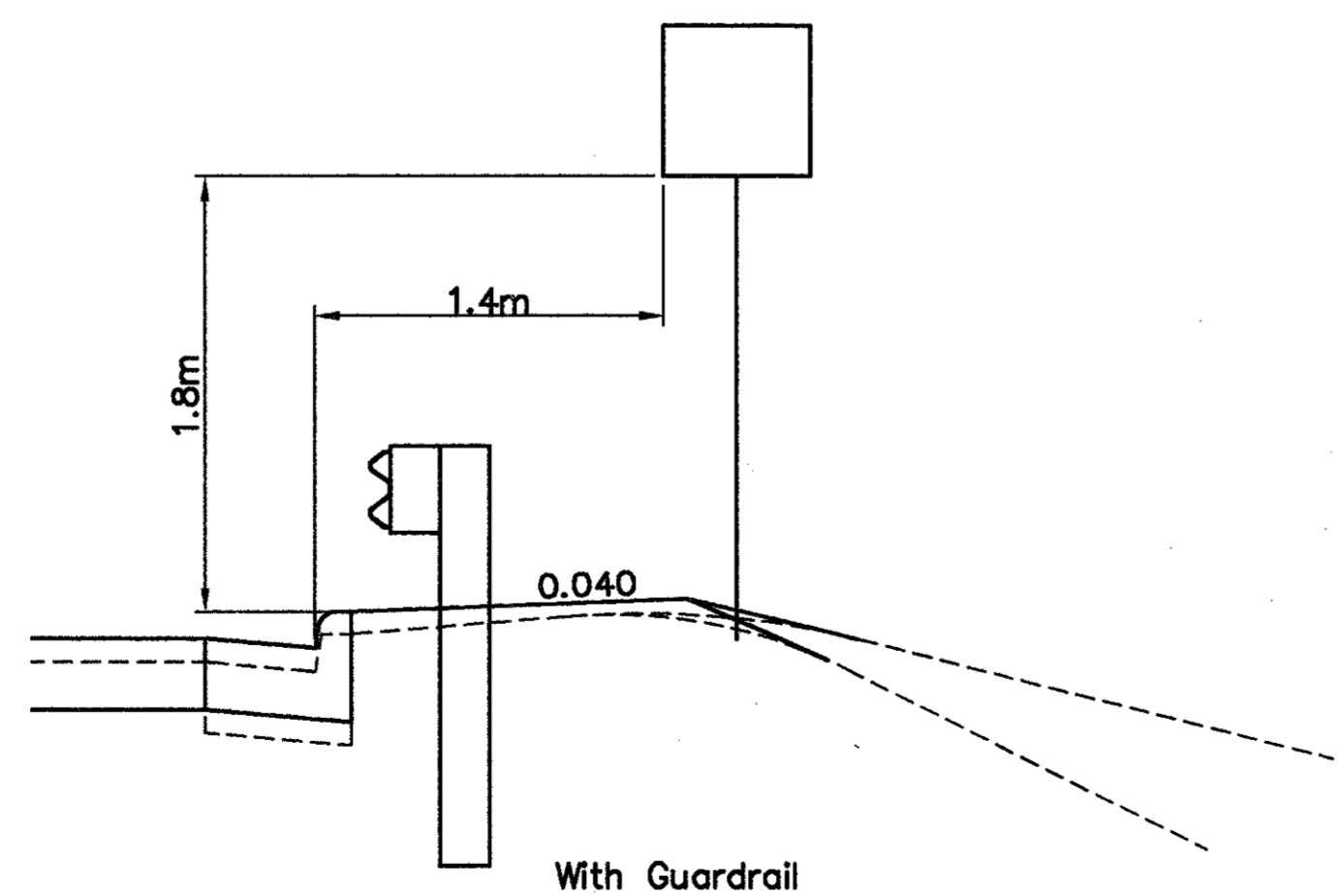
142  
242



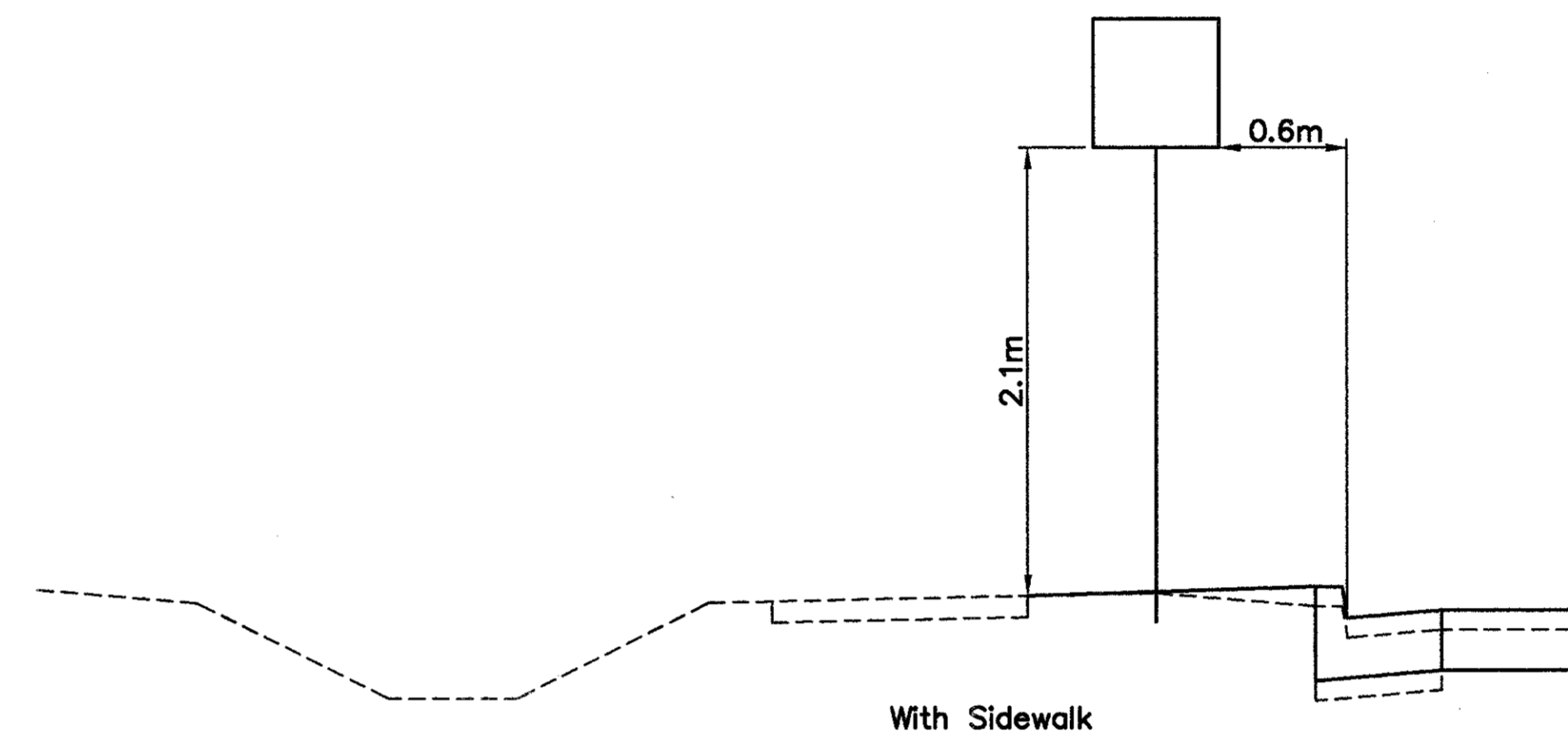
Without Guardrail  
To avoid ditch or obstructed view



Without Guardrail  
Preferred

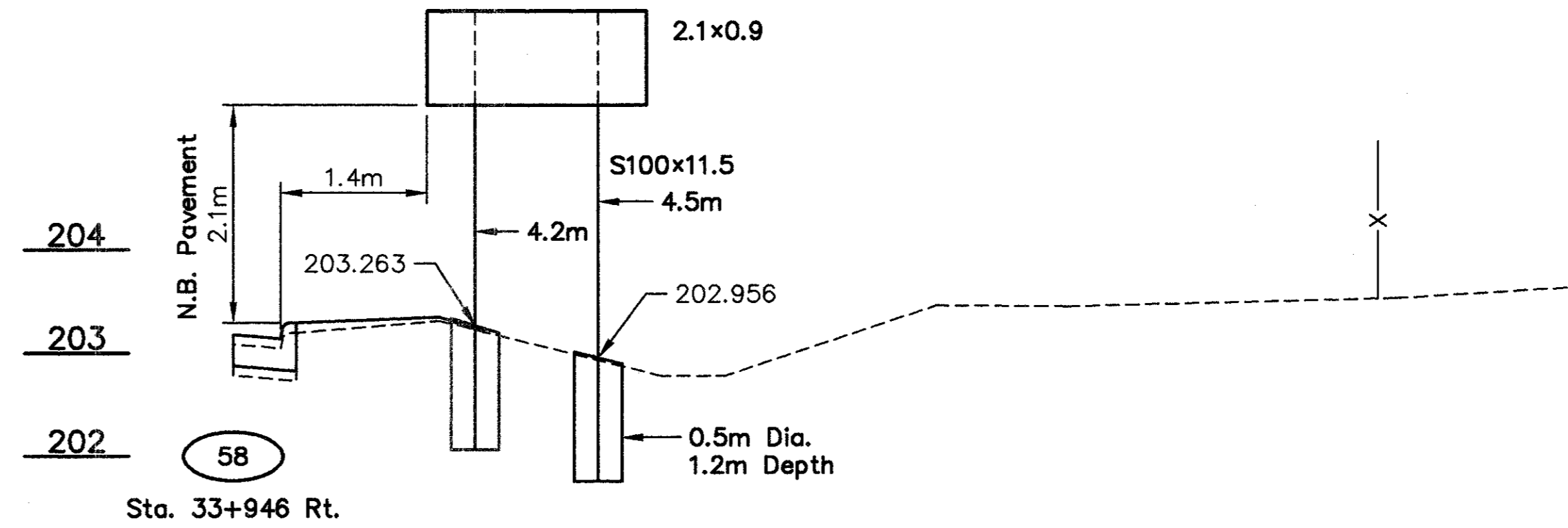
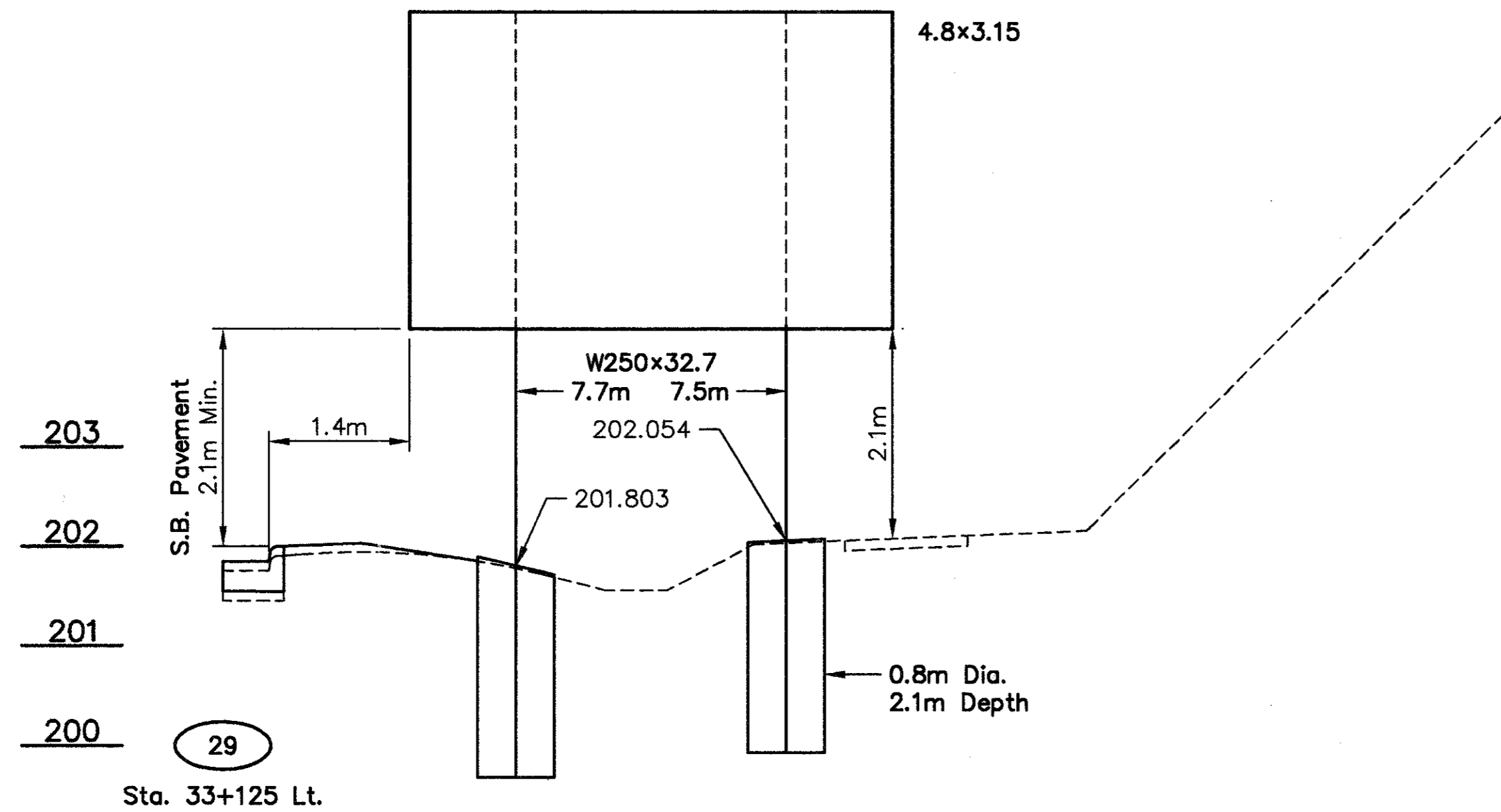
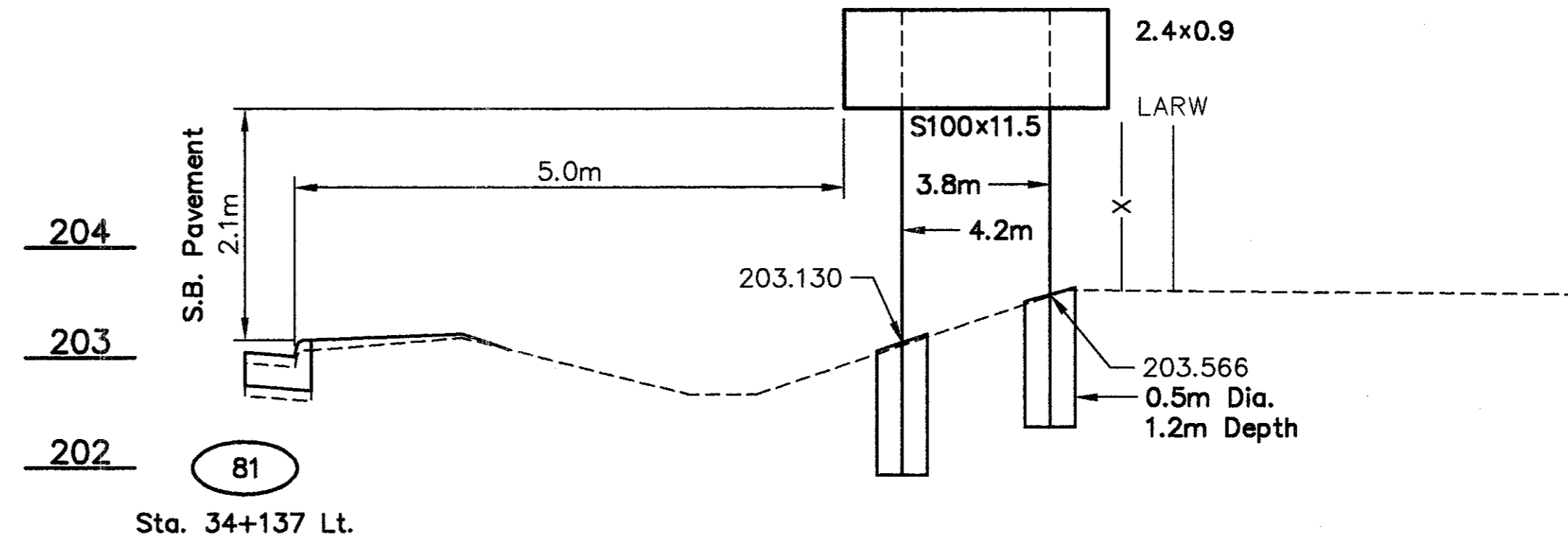
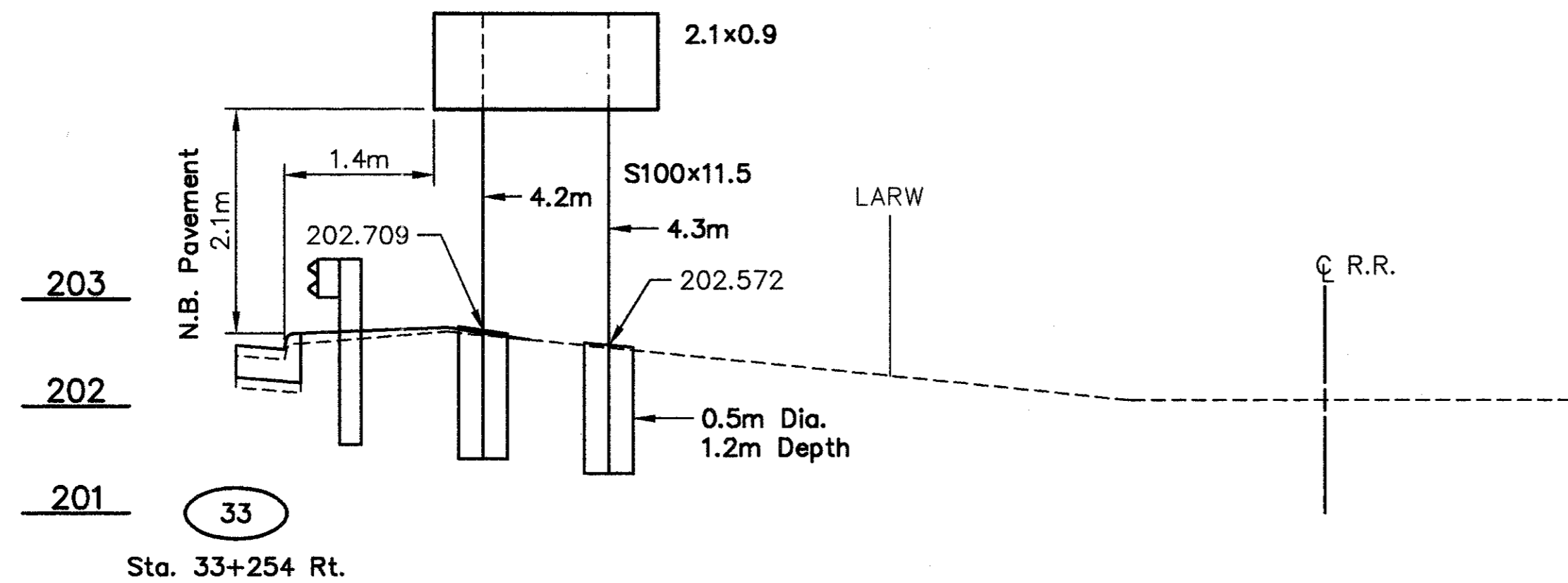
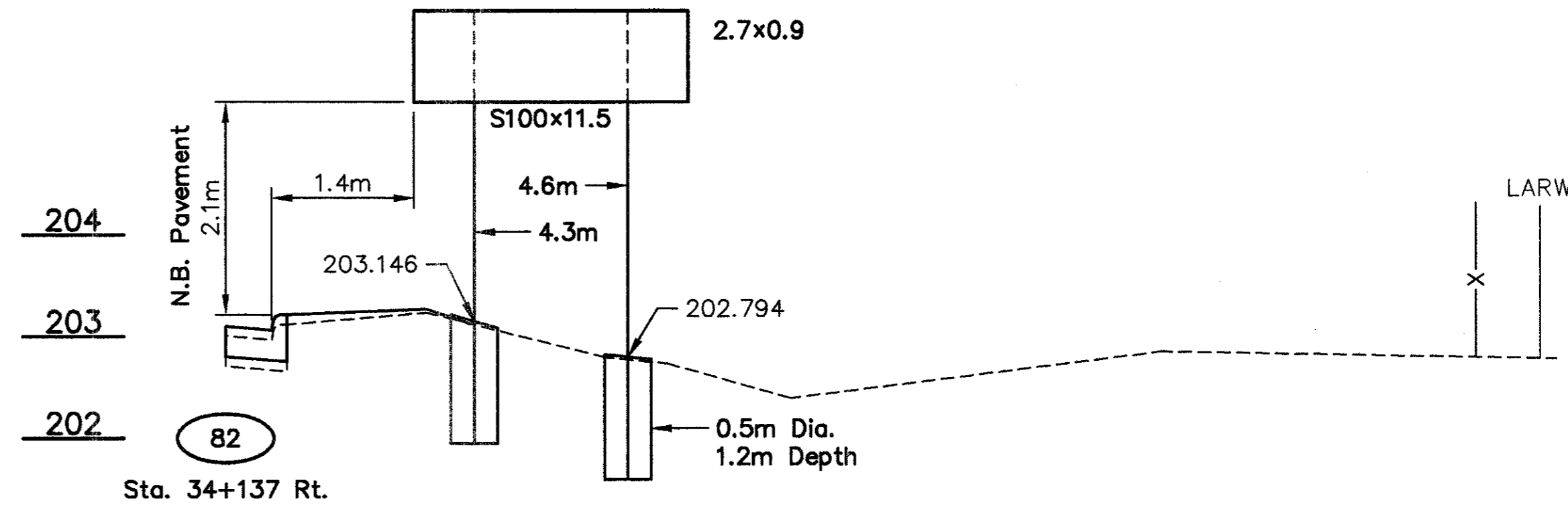
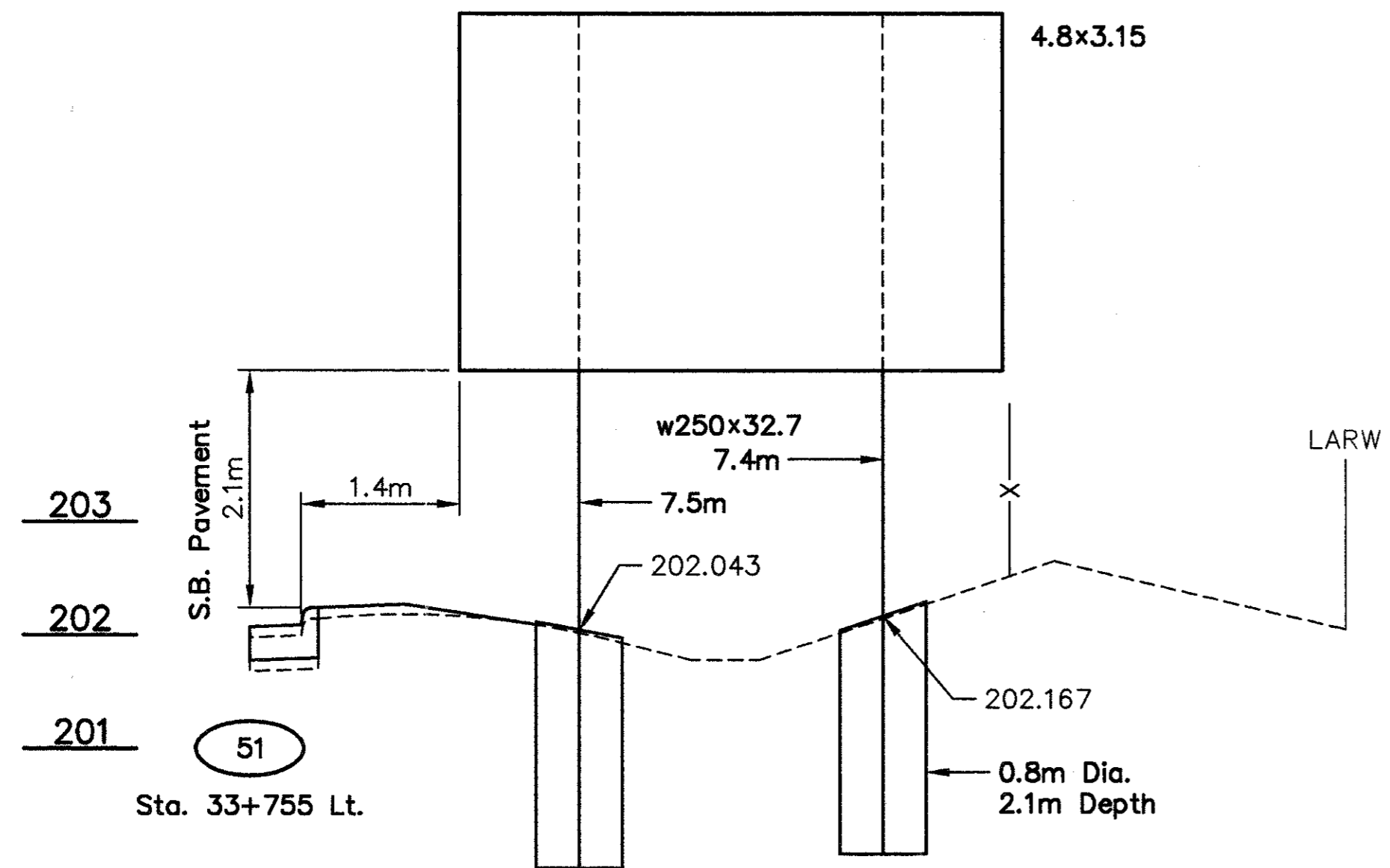


With Guardrail



With Sidewalk

TYPICAL SIGN PLACEMENT  
REGULATORY, WARNING, AND ROUTE MARKER SIGNS

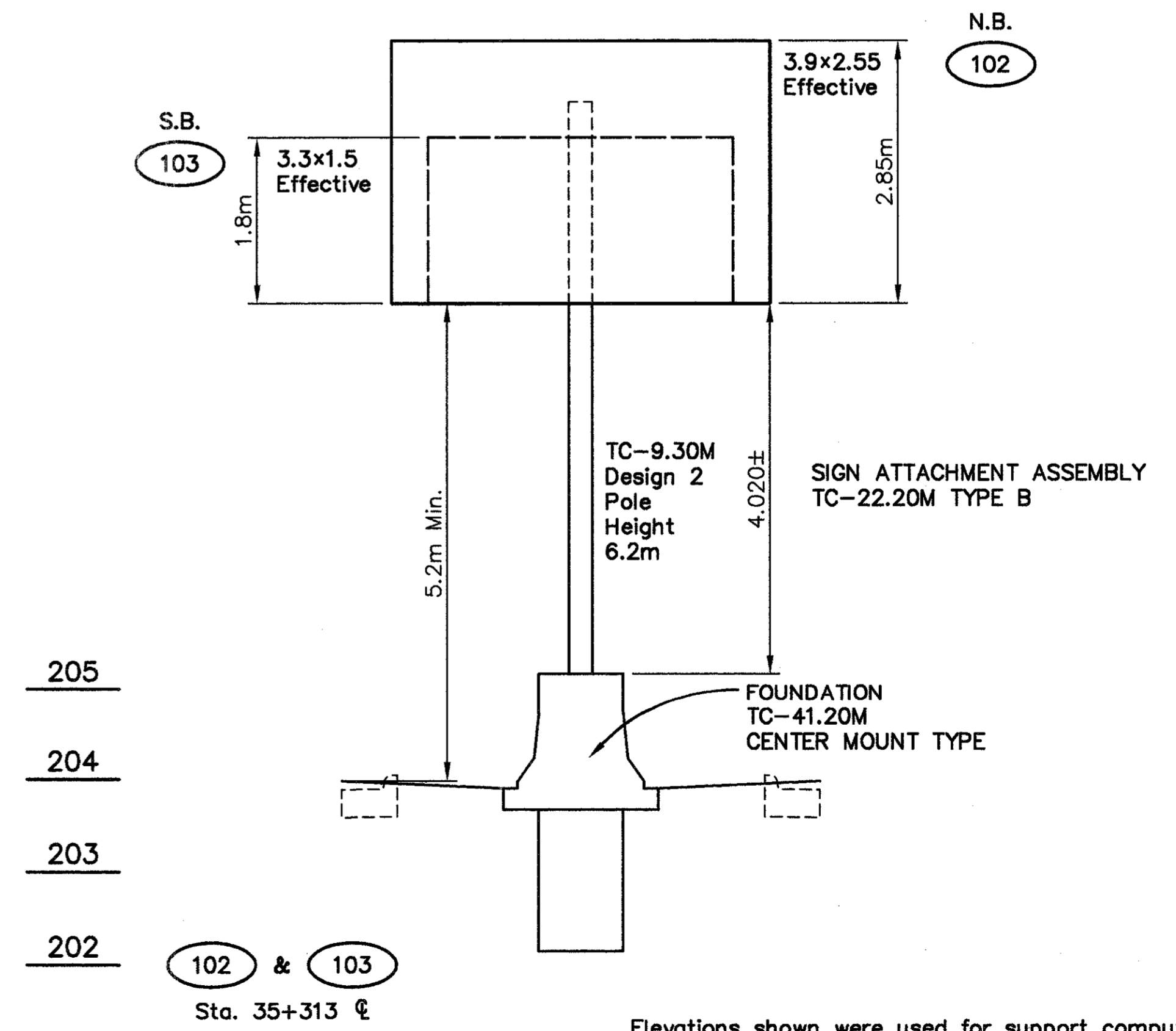
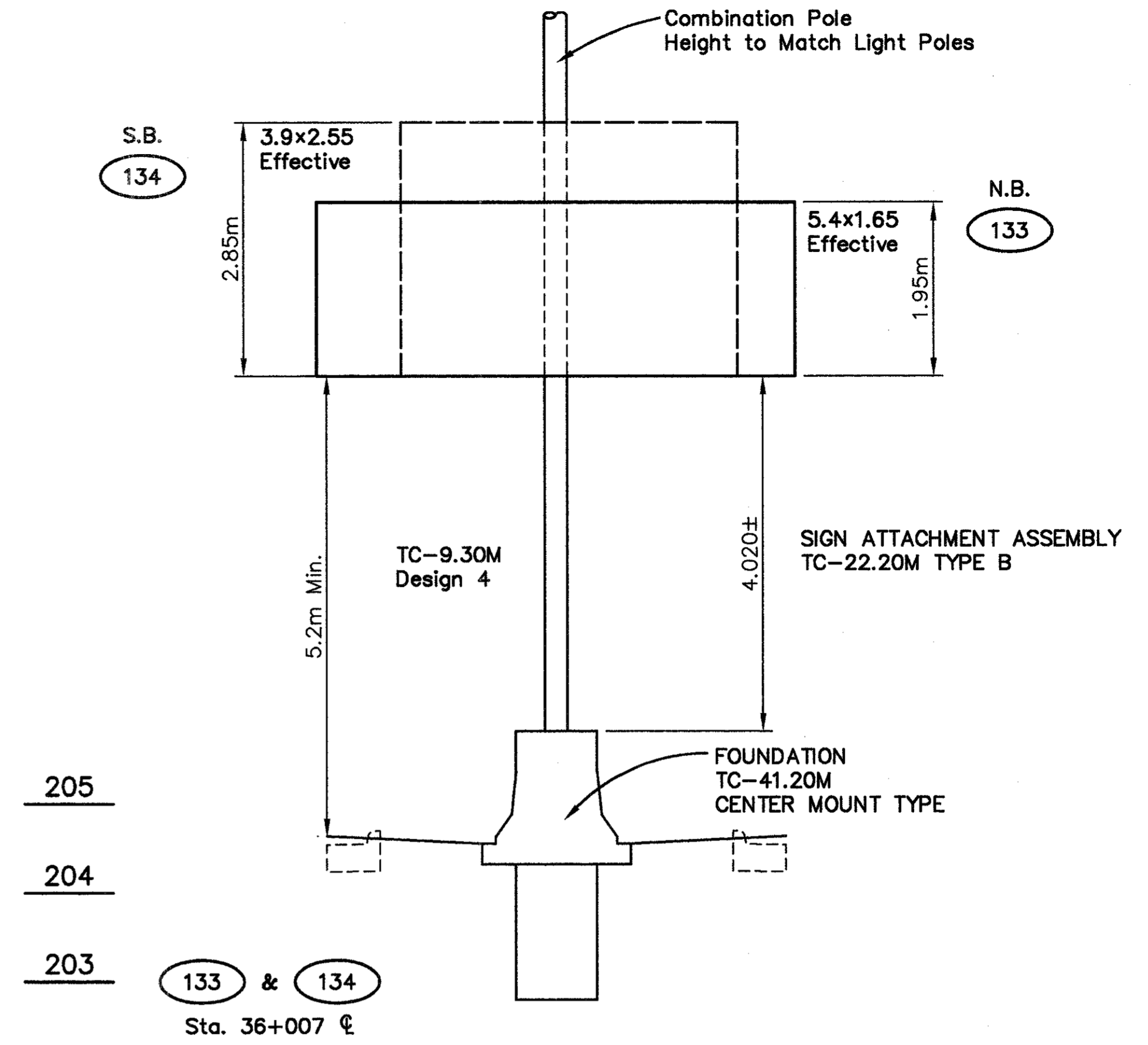
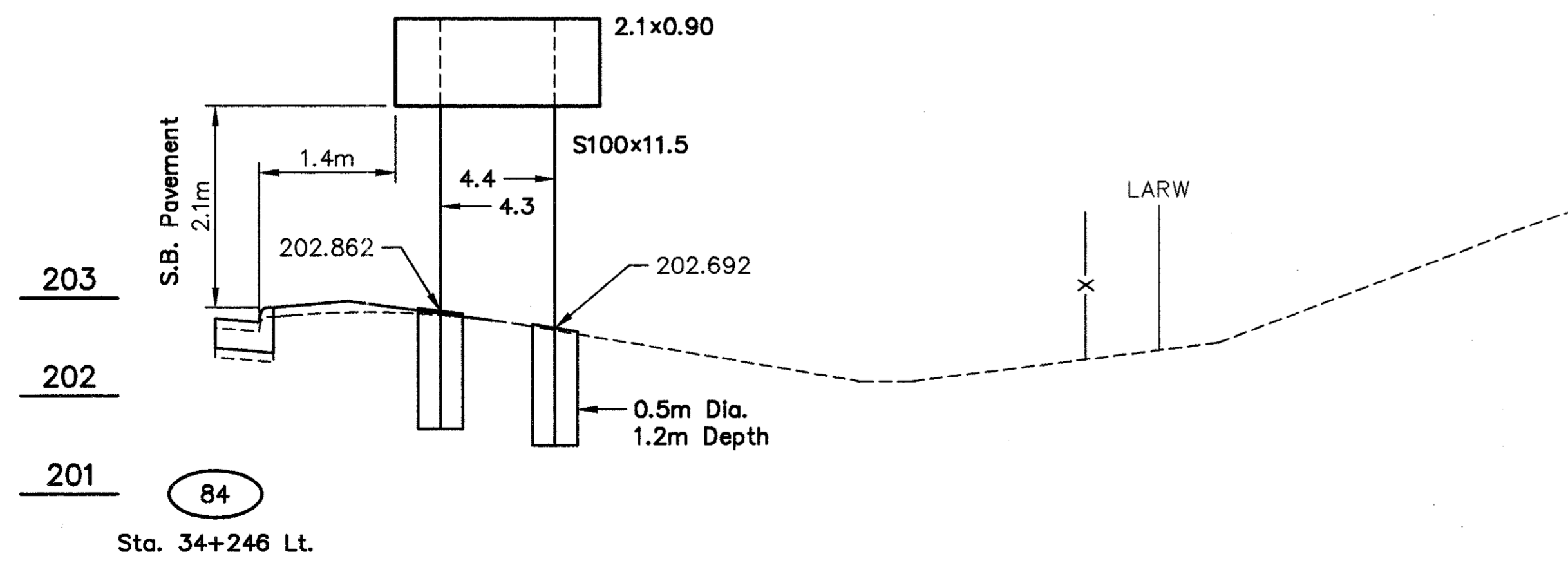
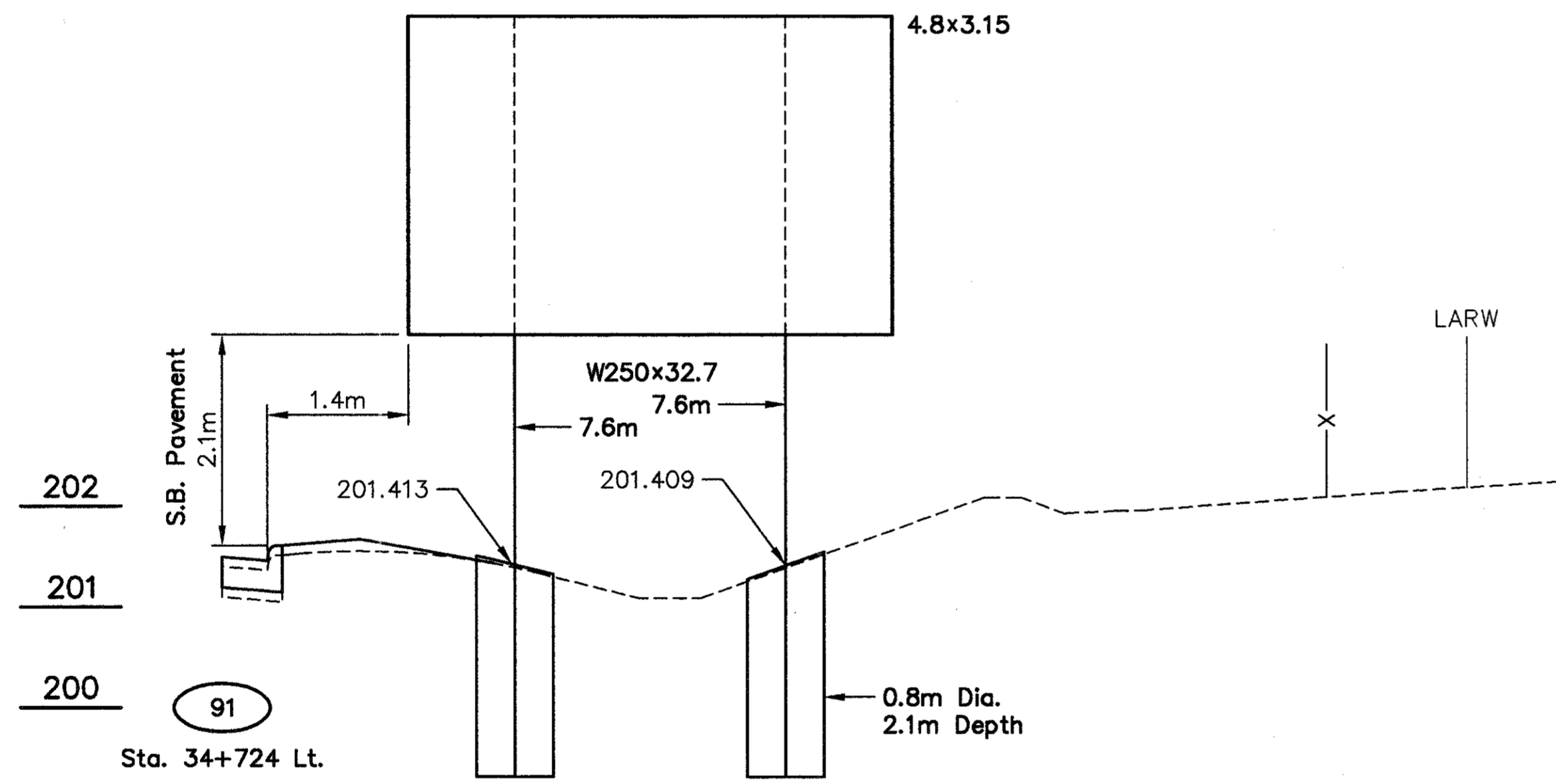
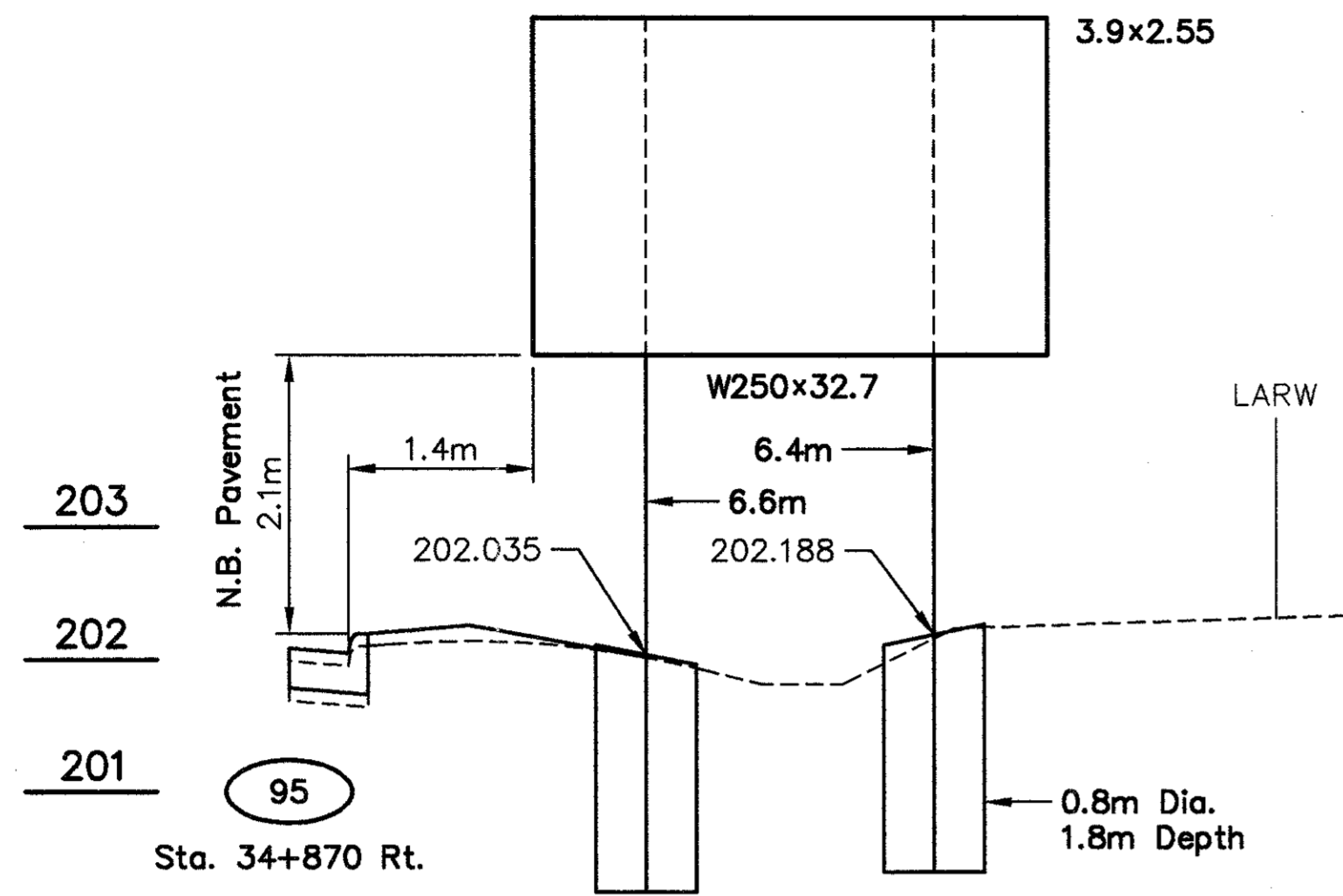


Elevations shown were used for support computations. Actual elevations shall be adjusted if necessary to conform to Std. Dwg. TC-41.10M

ELEVATION DETAILS

BEL-7-32.276





Elevations shown were used for support computations. Actual elevations shall be adjusted if necessary to conform to Std. Dwg. TC-41.10M

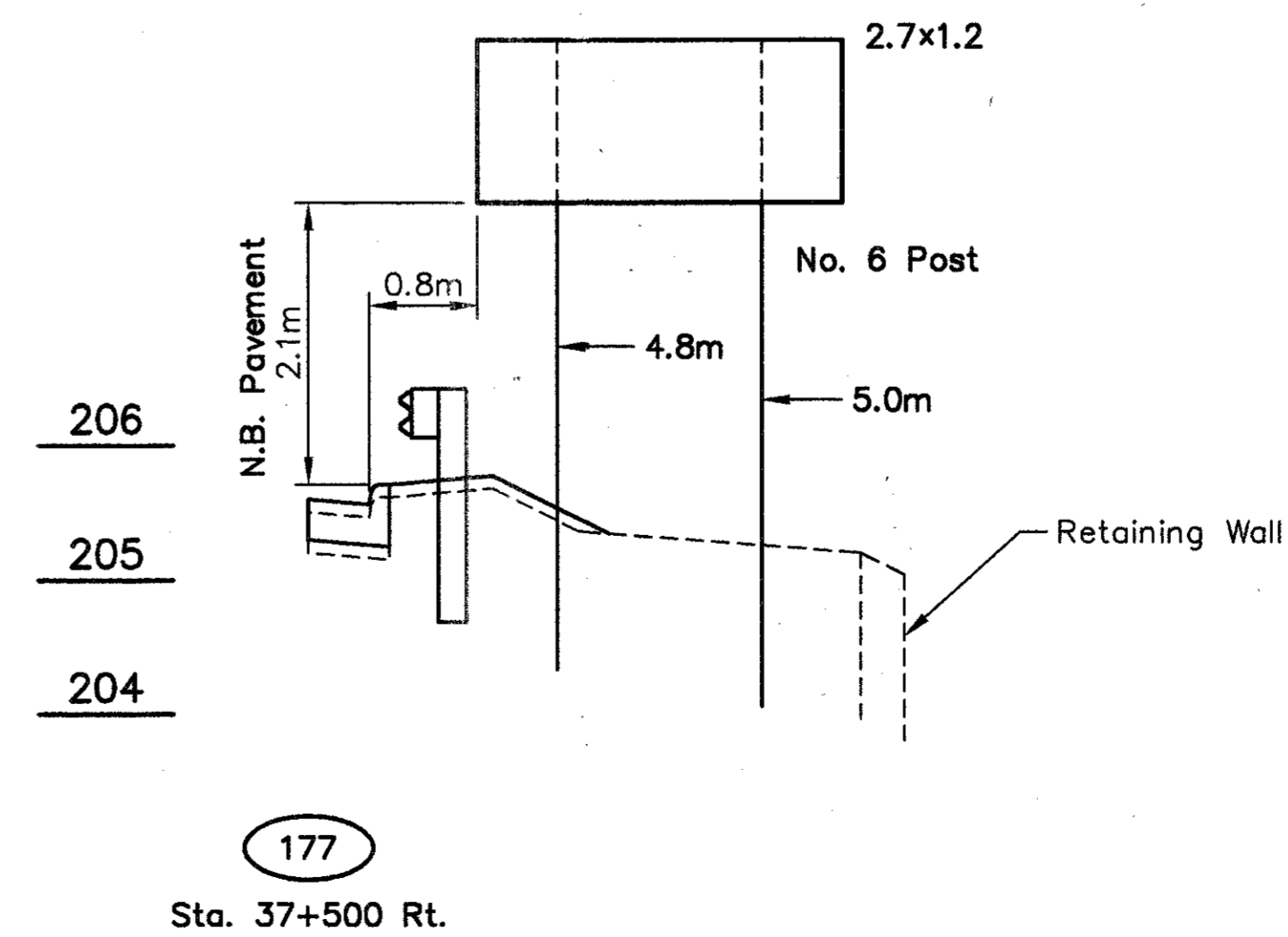
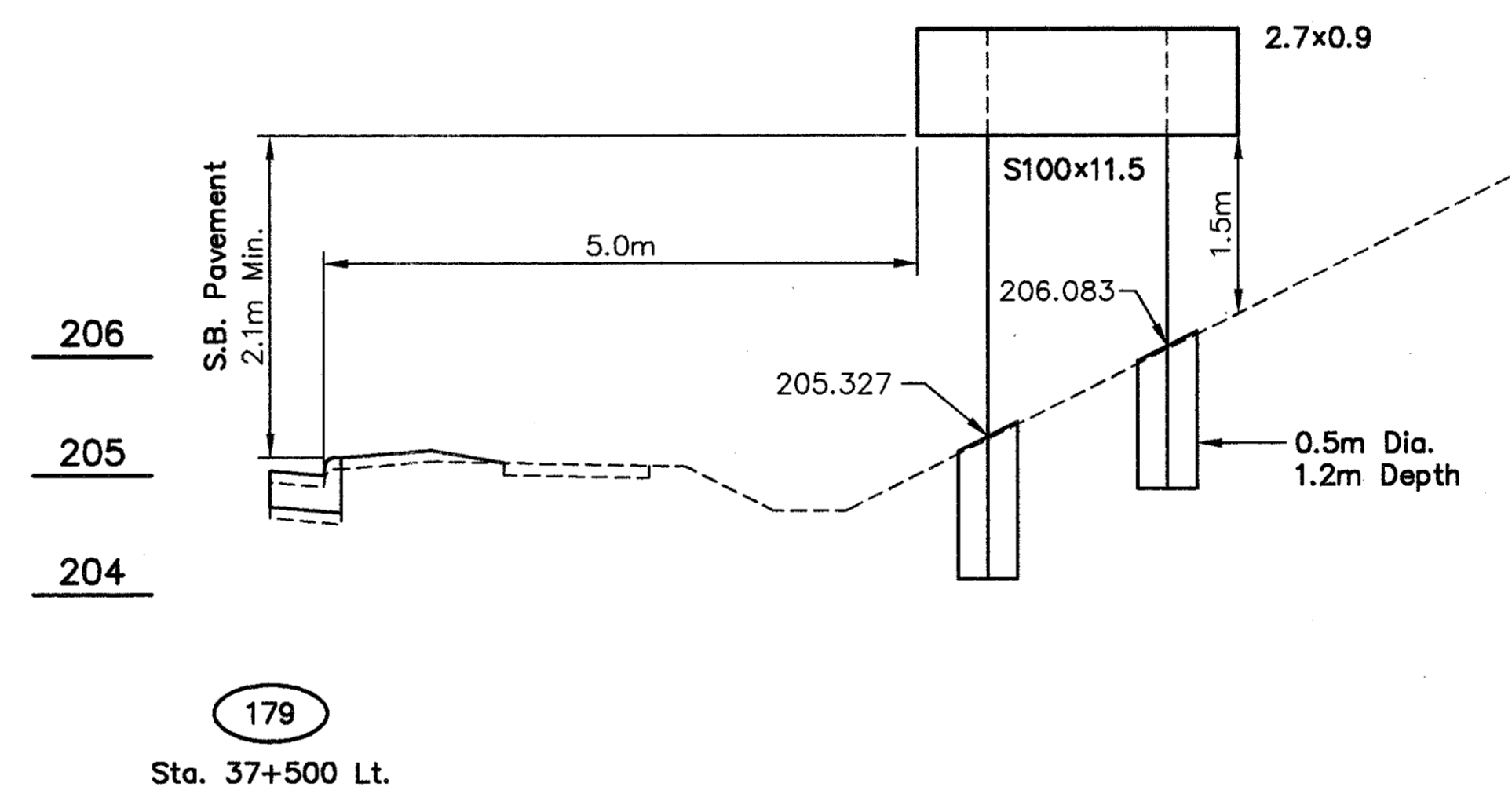
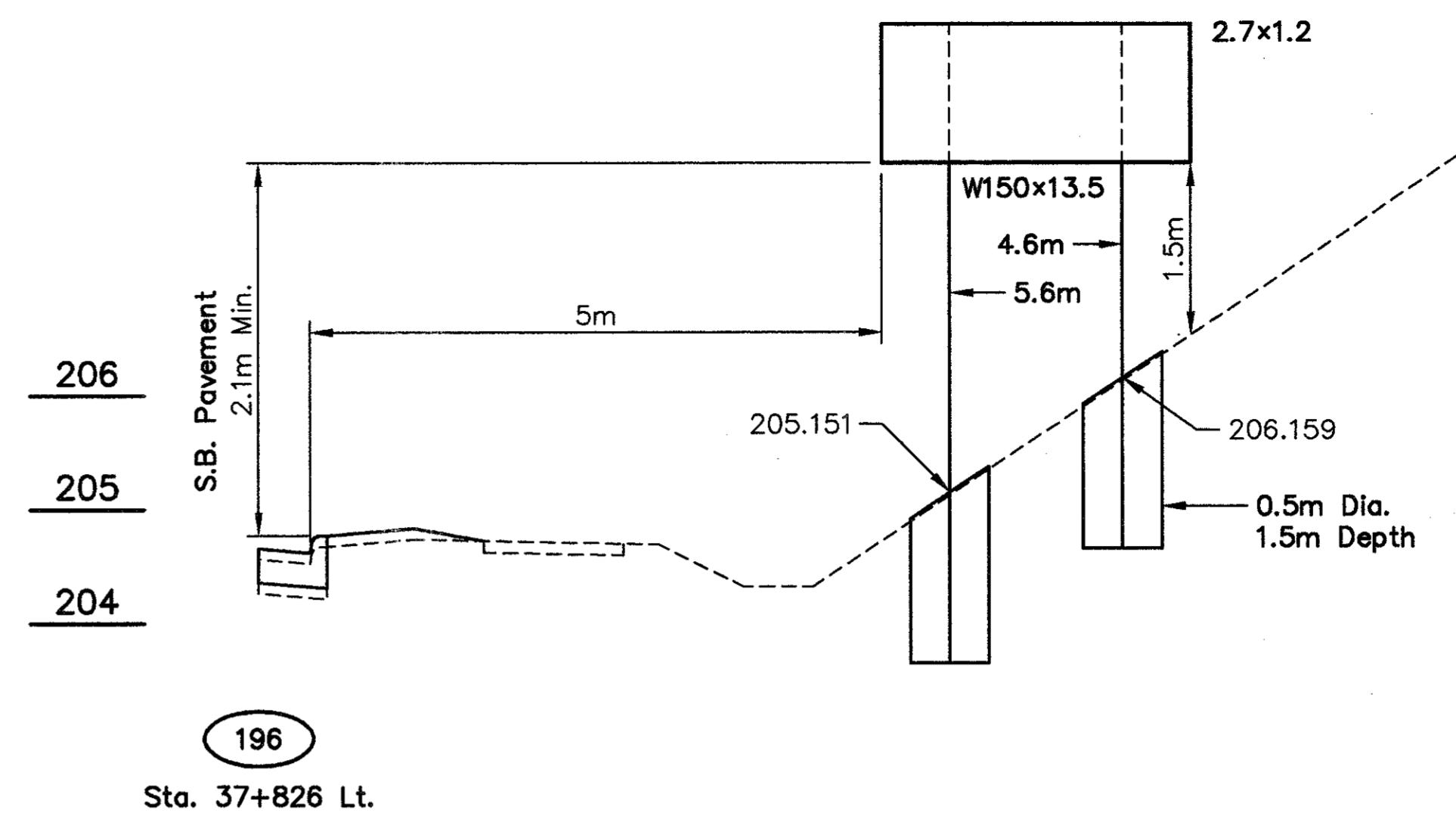
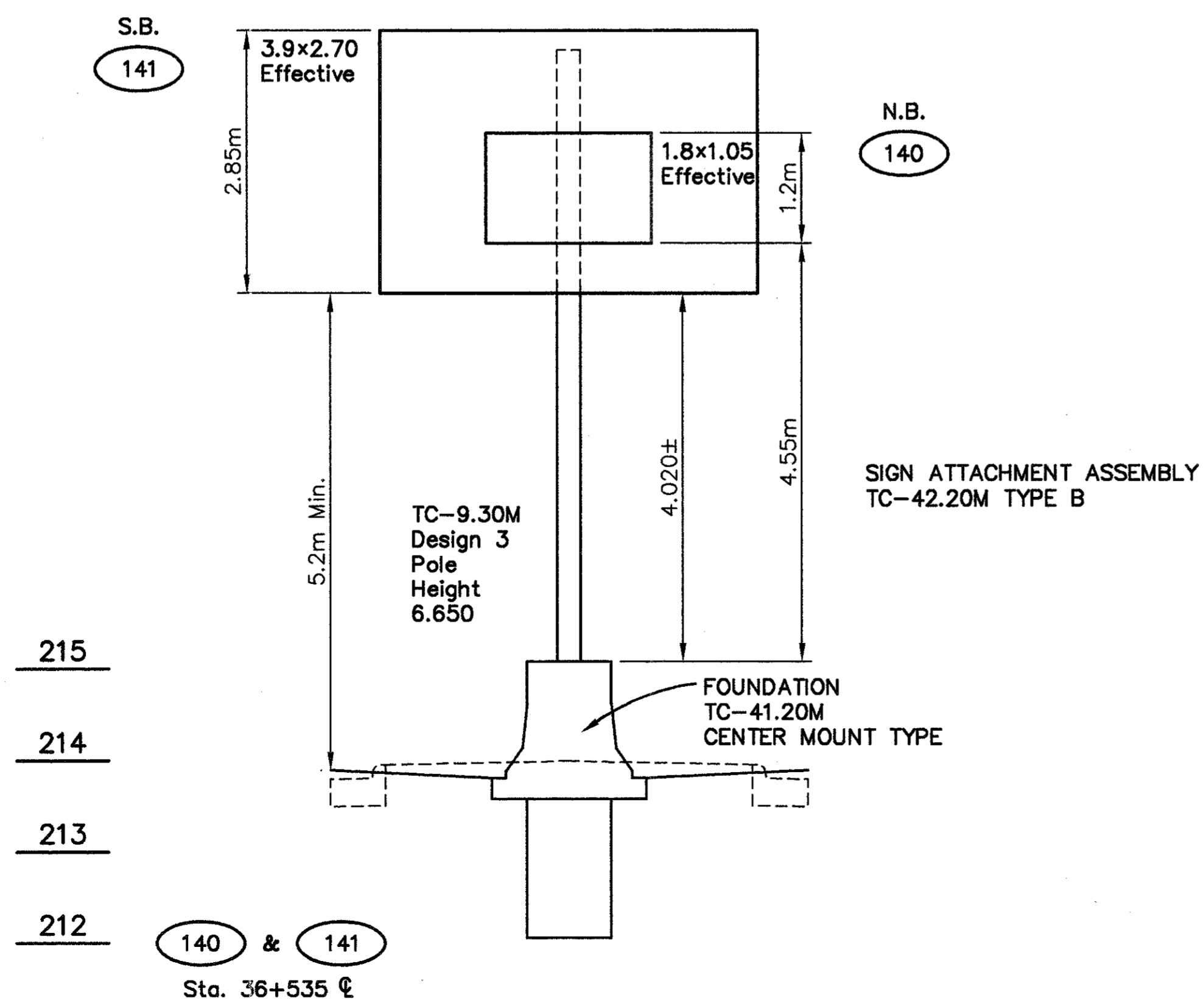
ELEVATION DETAILS

BEL-7-32.276

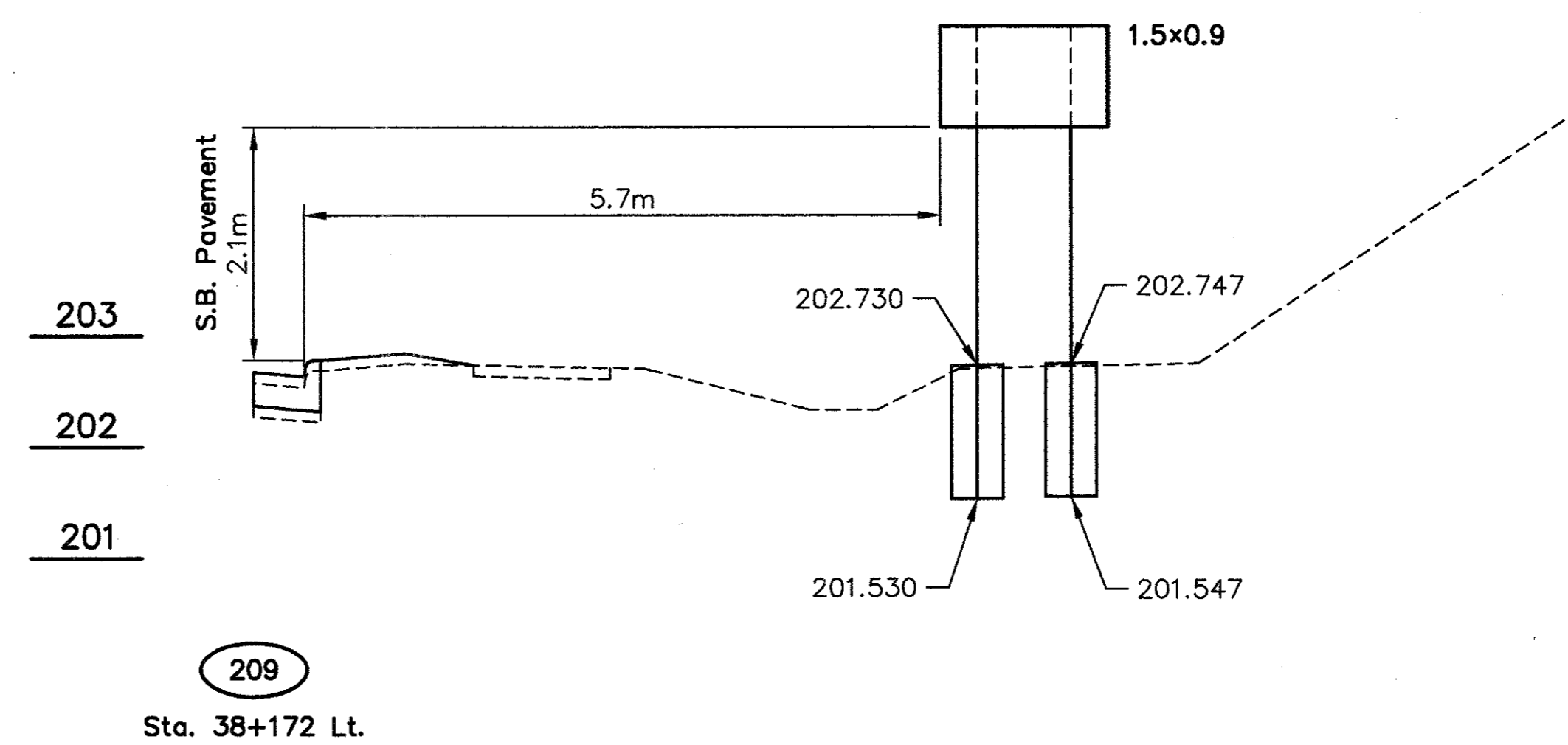
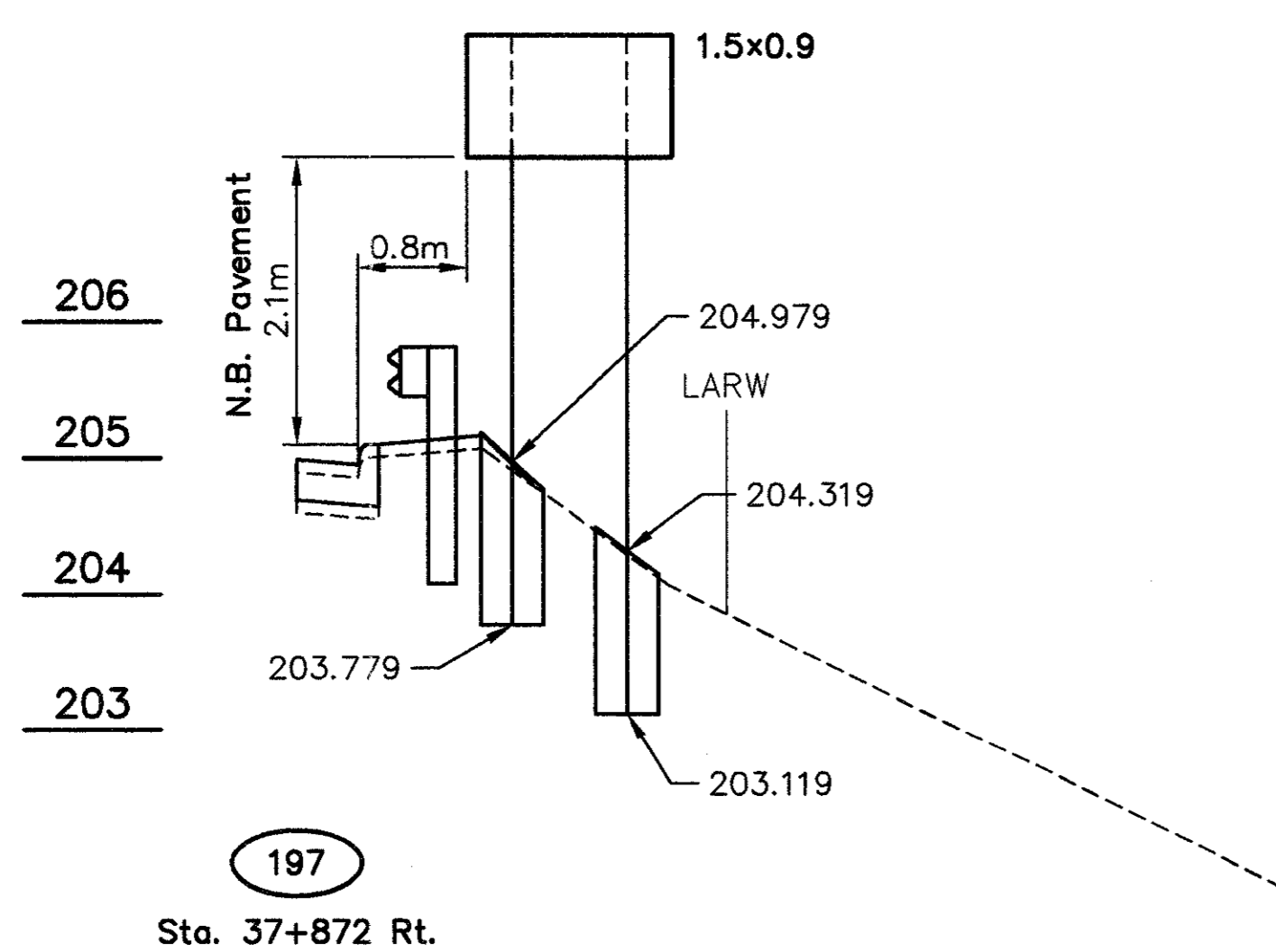
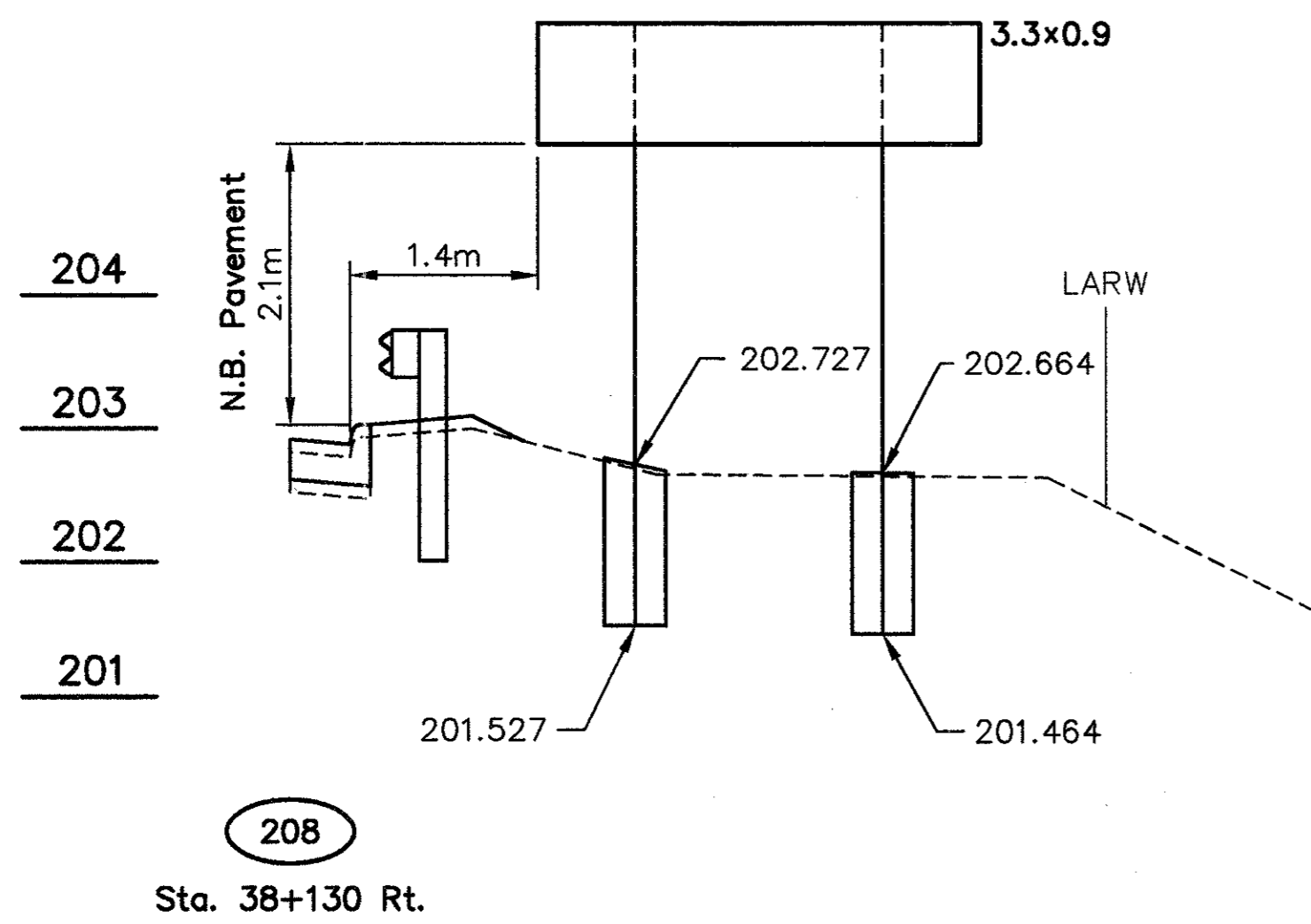
CALCULATED  
SAH  
CHECKED  
AEH

ELEVATION DETAILS

BEL-7-32.276



**ELEVATION DETAILS**

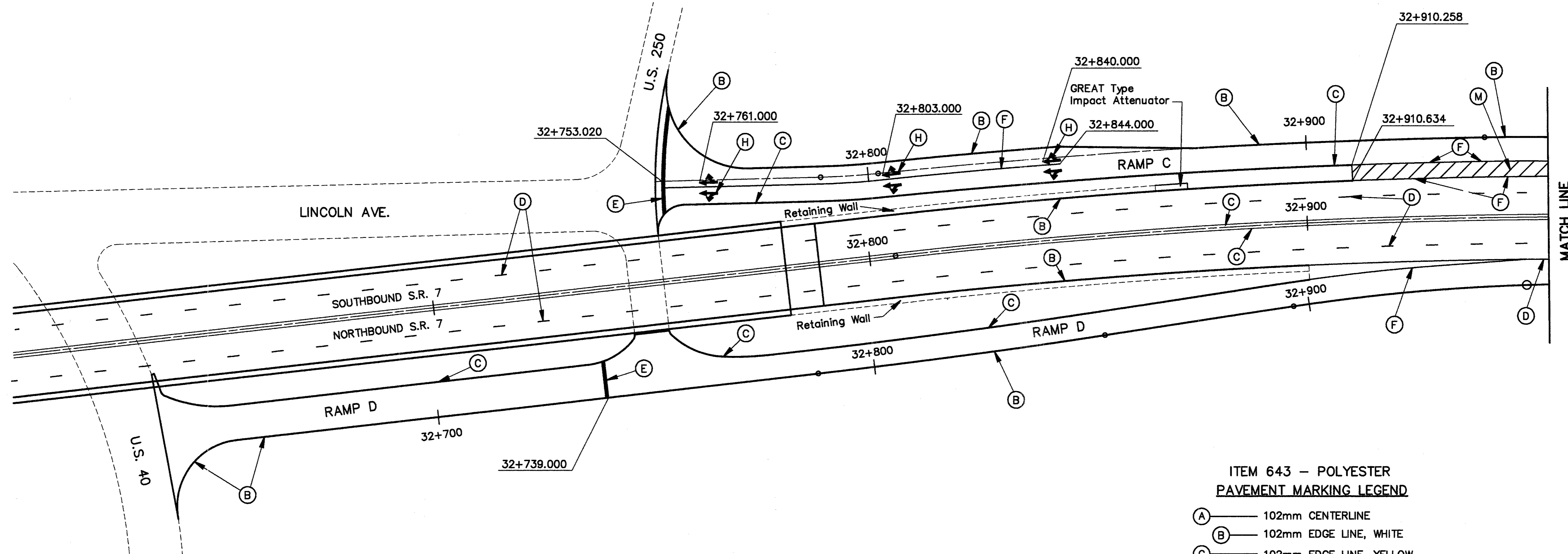




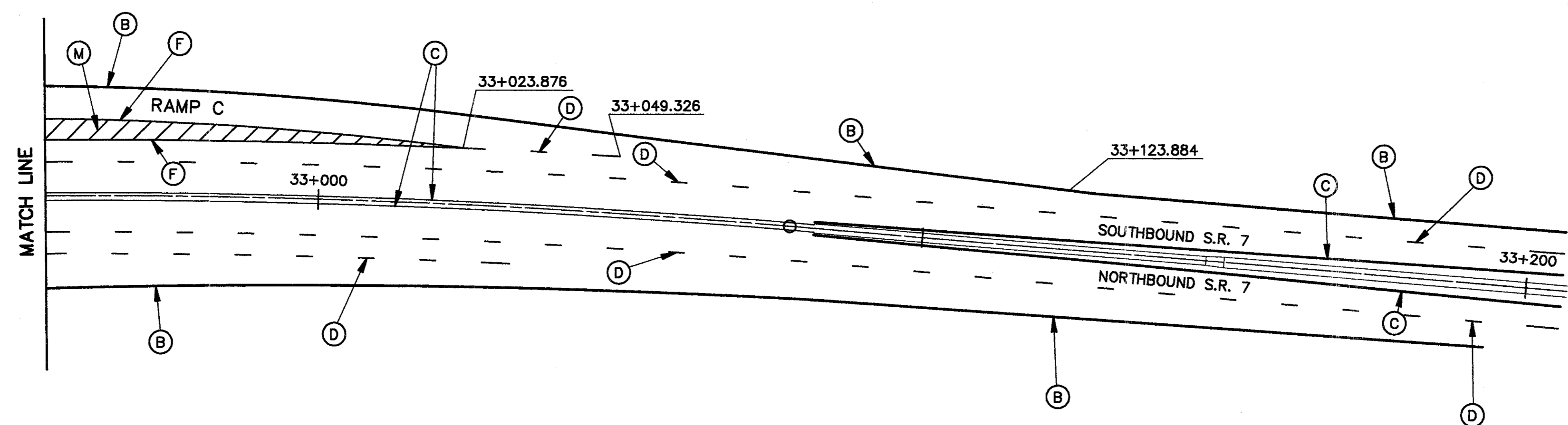
**PAVEMENT MARKING SUMMARY**

**BEL-7-32.276**

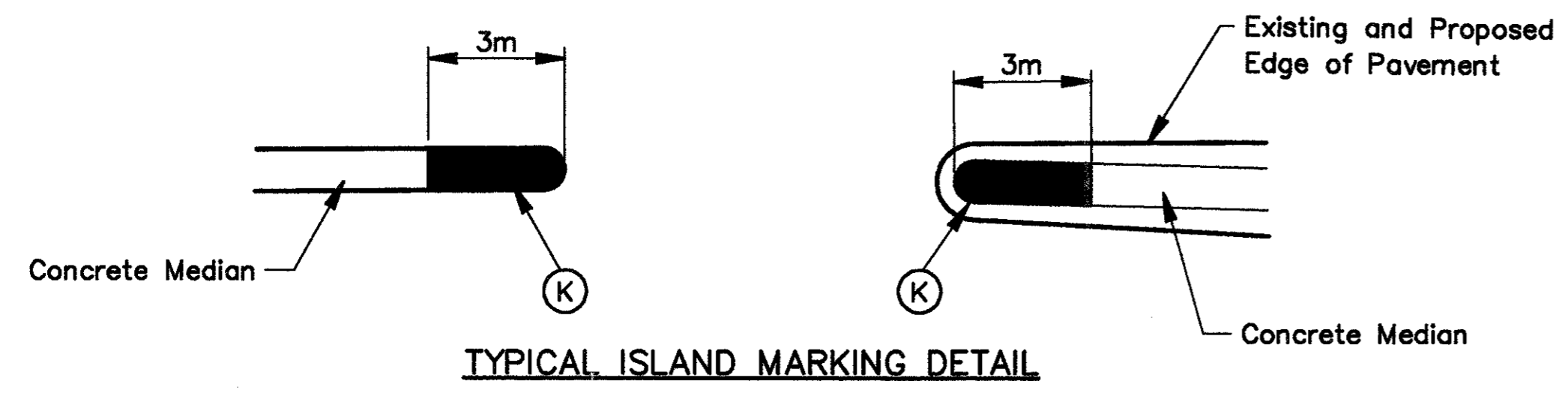
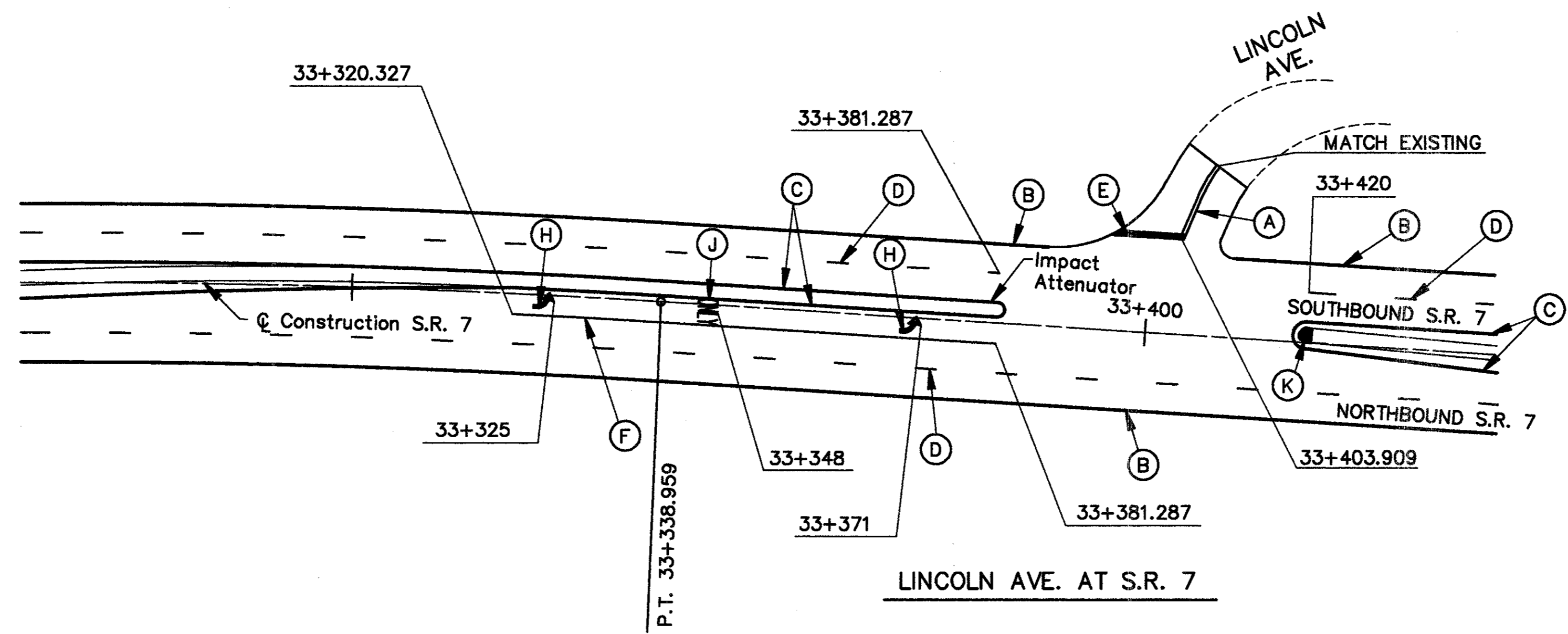
LOCATION	SIDE	STATION		ITEM 643											
		FROM	TO	EDGE LINE, YELLOW	EDGE LINE, WHITE	CHANNELIZING LINE	STOP LINE	LANE ARROW	TRANSVERSE LINE	CENTER LINE	WORD ON PAVEMENT 2500mm				
		Kilometer	Kilometer	Meter	Meter	Meter	Meter	Each	Meter	Kilometer	Each				
Ramp C	Lt. & Rt.	32+753.020					25.324								
Ramp C	Rt.	32+751.276	32+910.258	0.159											
Ramp C	Lt.	32+754.878	33+023.876		0.269										
Ramp C	Rt.	32+761								2					
Ramp C	Rt.	32+803								2					
Ramp C	Rt.	32+844								2					
Ramp C	Rt.	32+910.258	33+023.876			113.618									
Ramp C	Rt.	32+910.258	33+023.876								120.646				
Ramp C	Rt.	32+753.630	32+844			90.370									
Ramp D	Lt.	32+637.348	32+746.558	0.109											
Ramp D	Rt.	32+637.348	32+900		0.263										
Ramp D	Lt.	32+754.483	32+900	0.146											
Ramp D		32+739					8.386								
Lincoln Ave.	SR 7 Lt.	33+403.909					8.983								
Lincoln Ave.	SR 7 Lt.	33+403.909	Match Exist.									0.012			
Aetna St.	Rt.	0+980.400					13.587								
Aetna St.	€	0+964.562	0+979.790									0.015			
Aetna St.	Rt.	0+964.562	0+979.790			15.228									
Aetna St.	Rt.	0+968												1	
Aetna St.	Rt.	0+975.400								1					
Aetna St.	Lt. & Rt.	1+015					9.734								
Aetna St.	Rt.	1+015	Match Exist.									0.007			
Aetna St.	Rt.	1+014.390	Match Exist.			6.407									
Aetna St.	€	1+016								1					
Hanover St.	Lt. & Rt.	0+987.043					18.605								
Hanover St.	Lt.	0+975.600	0+987.043									0.010			
Hanover St.	Rt.	0+975.600	0+986.433			10.833									
Hanover St.	Rt.	0+973.500	0+986.433			12.933									
Hanover St.	Lt. & Rt.	0+981.043								3					
Fifth St.	SR 7 Lt.	36+941.967					16.500								
Fifth St.	SR 7 Lt.	36+941.357	Match Exist.									0.015			
Mackey Ave.	SR 7 Lt.	37+321.188					15.869								
Mackey Ave.	SR 7 Lt.	37+320.578	Match Exist.									0.012			
Jeanette Ave.	SR 7 Lt.	37+673.513					10.987								
Jeanette Ave.	SR 7 Lt.	37+672.903	Match Exist.									0.012			
Hill St.	SR 7 Lt.	38+021.791					7.246								
Hill St.	SR 7 Lt.	38+021.181	Match Exist.									0.012			
TOTAL CARRIED TO GENERAL SUMMARY				0.946		249.389	135.221		11	120.646	0.095	1			



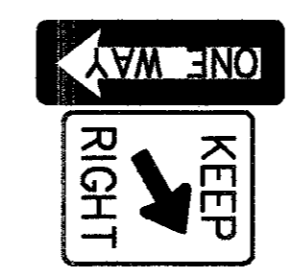
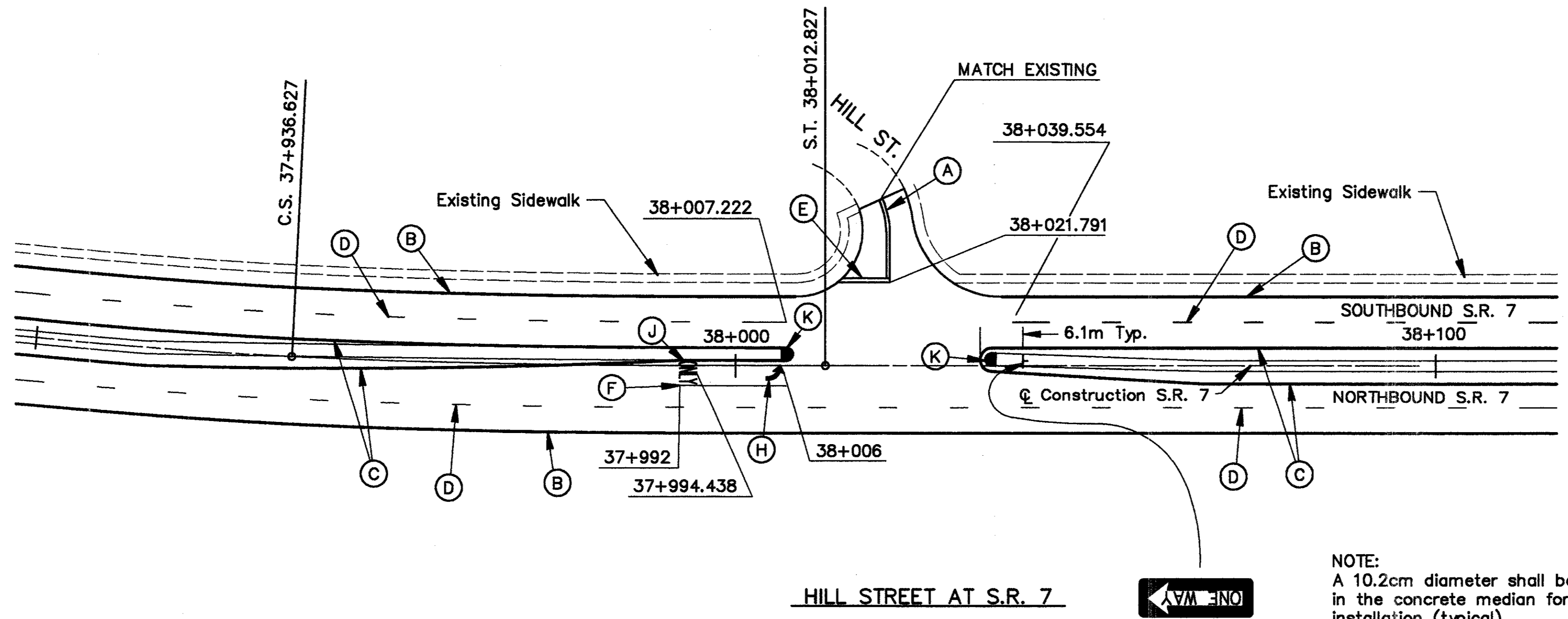
- ITEM 643 - POLYESTER  
PAVEMENT MARKING LEGEND
- (A) 102mm CENTERLINE
  - (B) 102mm EDGE LINE, WHITE
  - (C) 102mm EDGE LINE, YELLOW
  - (D) 102mm LANE LINE
  - (E) 610mm STOP LINE
  - (F) 203mm CHANNELIZING LINE
  - (G) 610mm TRANSVERSE LINES, 3.7m SPACING, YELLOW
  - (H) LANE ARROW
  - (J) WORD ON PAVEMENT, 2500mm
  - (K) ISLAND MARKING
  - (L) RAILROAD SYMBOL MARKING
  - (M) 610mm TRANSVERSE LINES, 3.7m SPACING, WHITE



14.0322-01.10301005.dwg - OCT 27, 1997 - 11:27:55

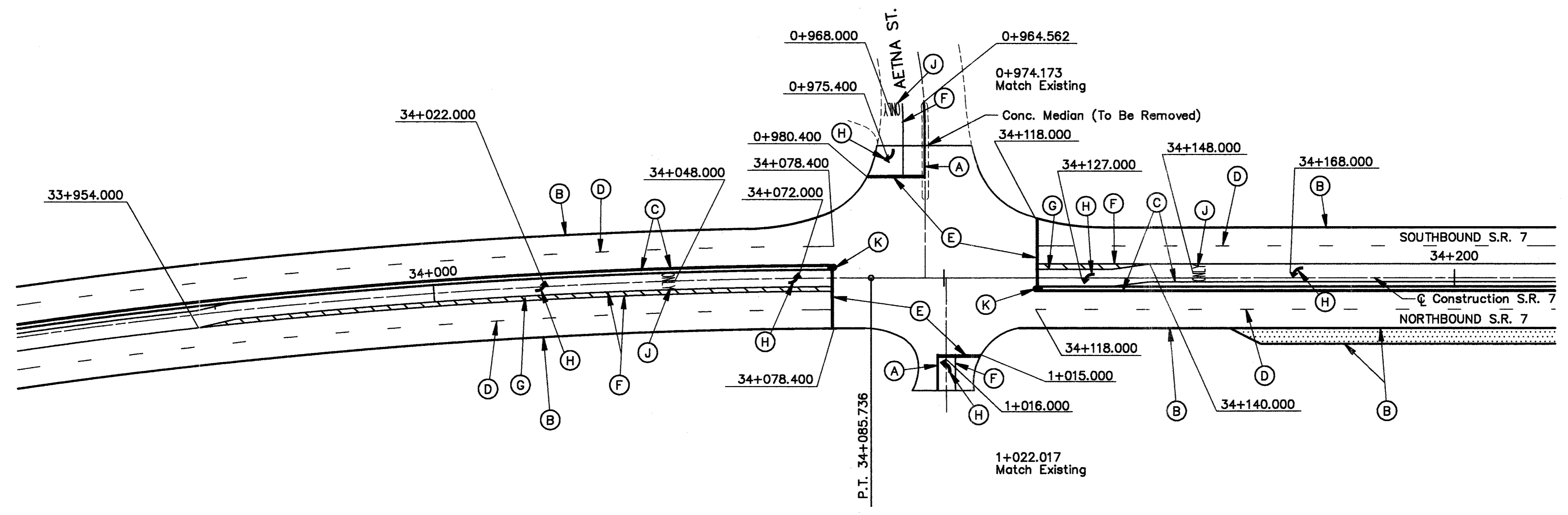


For Legend, See Sheet No. 150

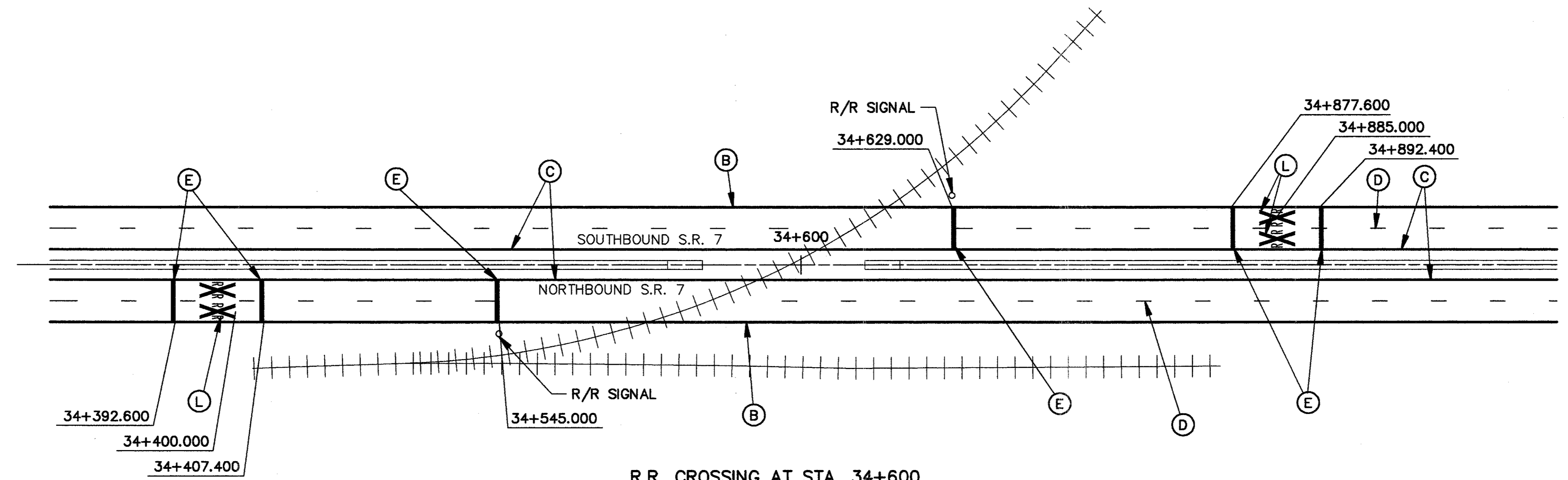


NOTE:  
A 10.2cm diameter shall be formed in the concrete median for sign post installation (typical)

H:\322-01\322101.dwg - OCT 27, 1997 - 08:42:11



**AETNA STREET AT S.R. 7**



**R.R. CROSSING AT STA. 34+600**  
(NOT TO SCALE)

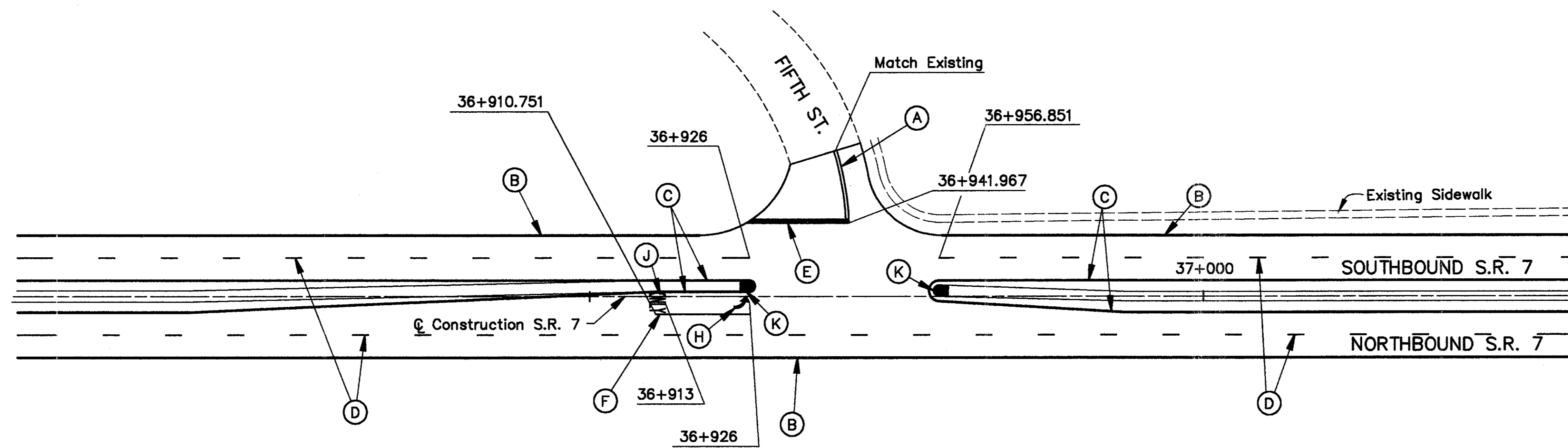
For Legend, See Sheet No. 150  
For Island Marking Detail, See Sheet No. 151

**PAVEMENT MARKING DETAILS**

**BEL-7-32.276**

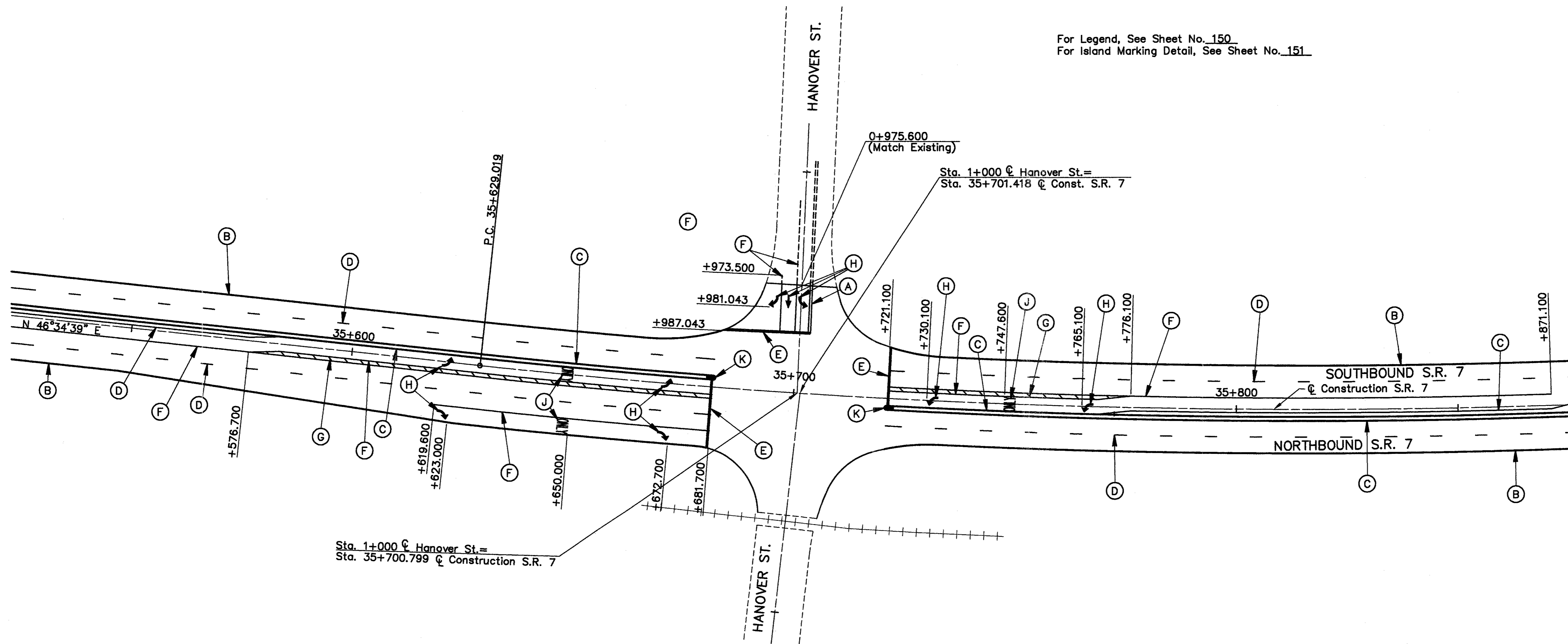
H:\322-01\322\10321\10321.dwg - OCT 28, 1997 - 15:16:52





FIFTH ST. AT S.R. 7

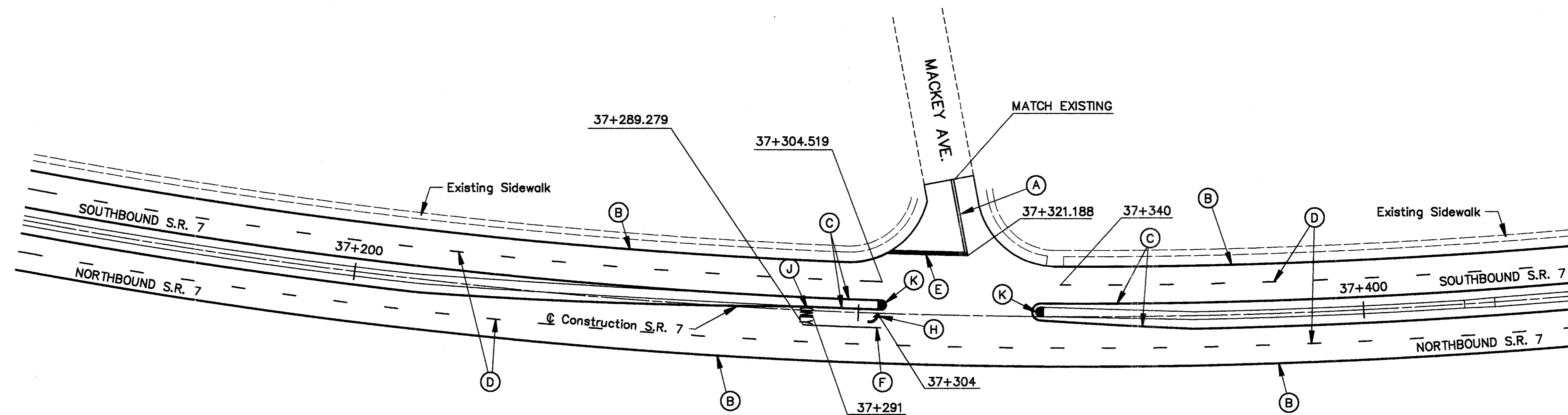
For Legend, See Sheet No. 150  
For Island Marking Detail, See Sheet No. 151



HANOVER STREET AT S.R. 7

PAVEMENT MARKING DETAILS

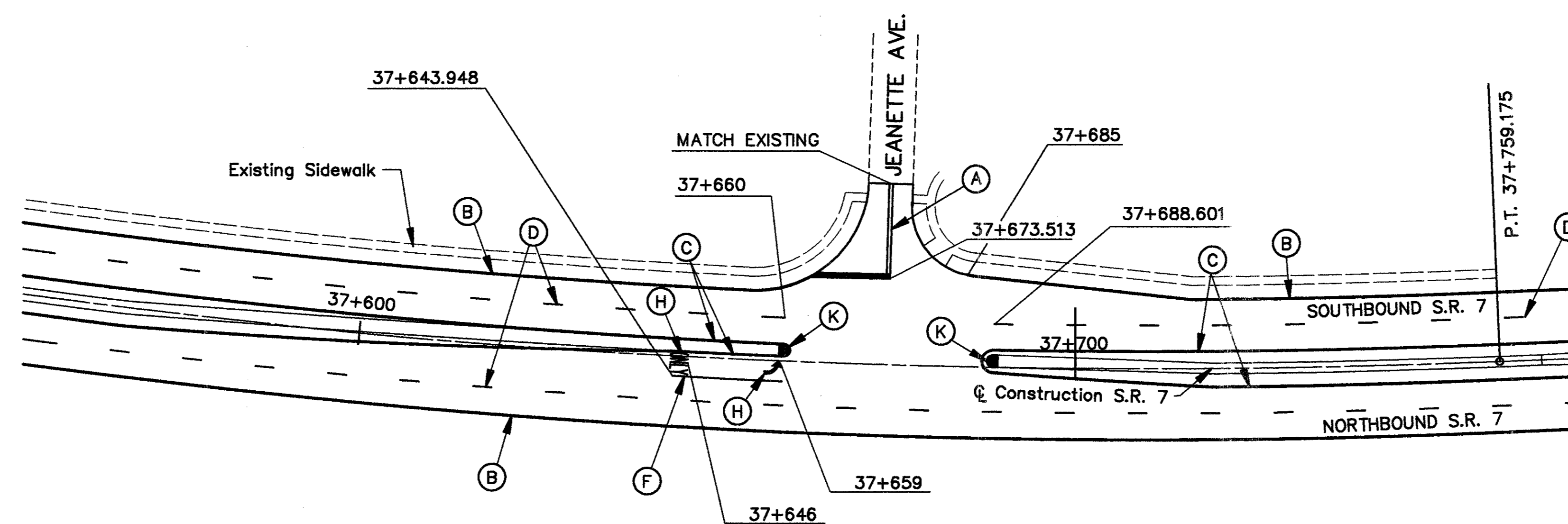
BEL-7-32.276



MACKEY AVE. AT S.R. 7

FOR LEGEND, SEE SHEET NO. 150

FOR ISLAND MARKING DETAIL, SEE SHEET NO. 151



JEANETTE AVE. AT S.R. 7

**PAVEMENT MARKING DETAILS**

**BEL-7-32.276**



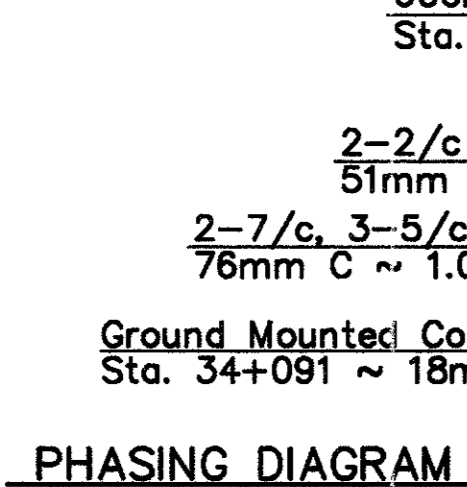
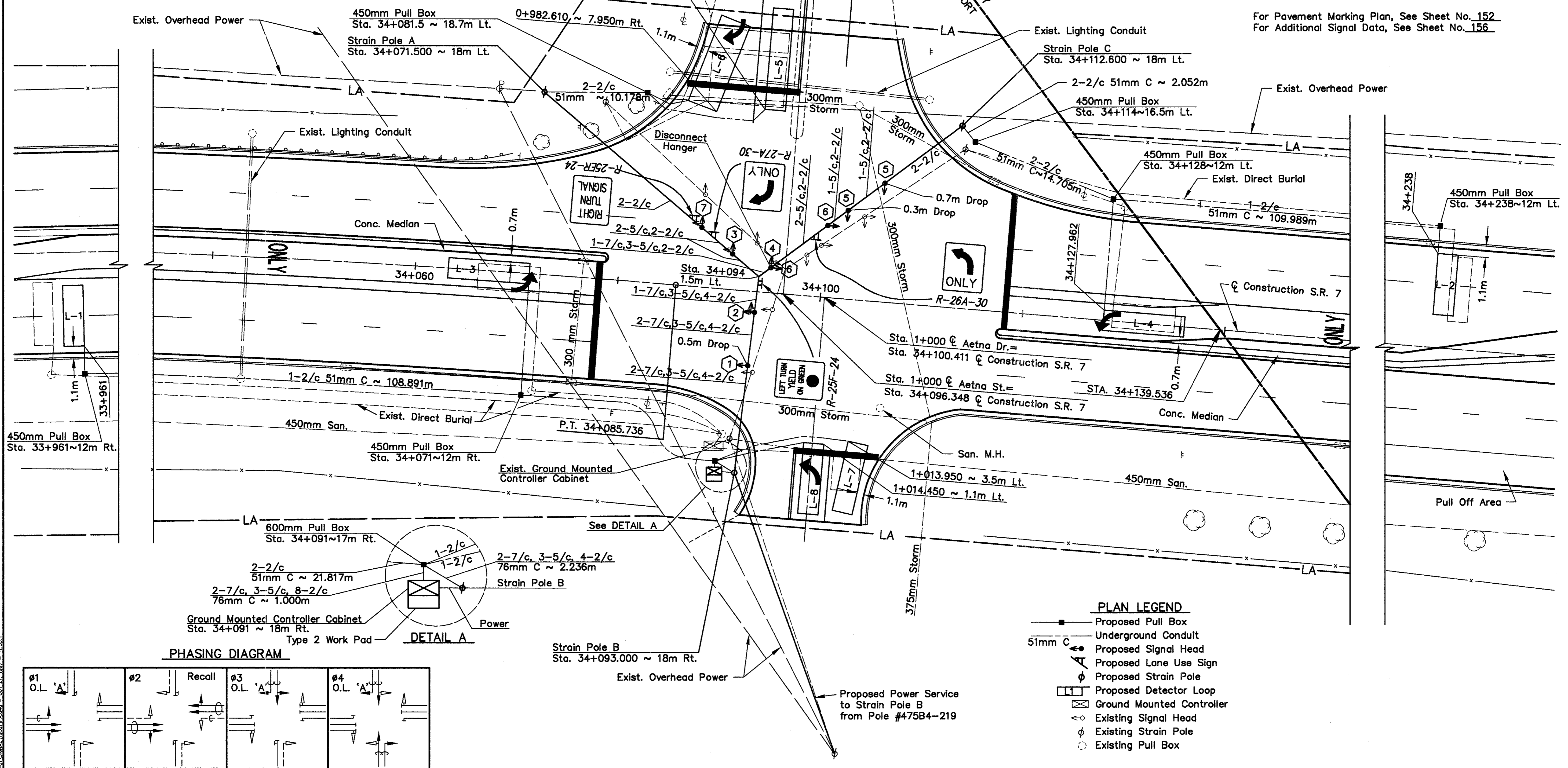
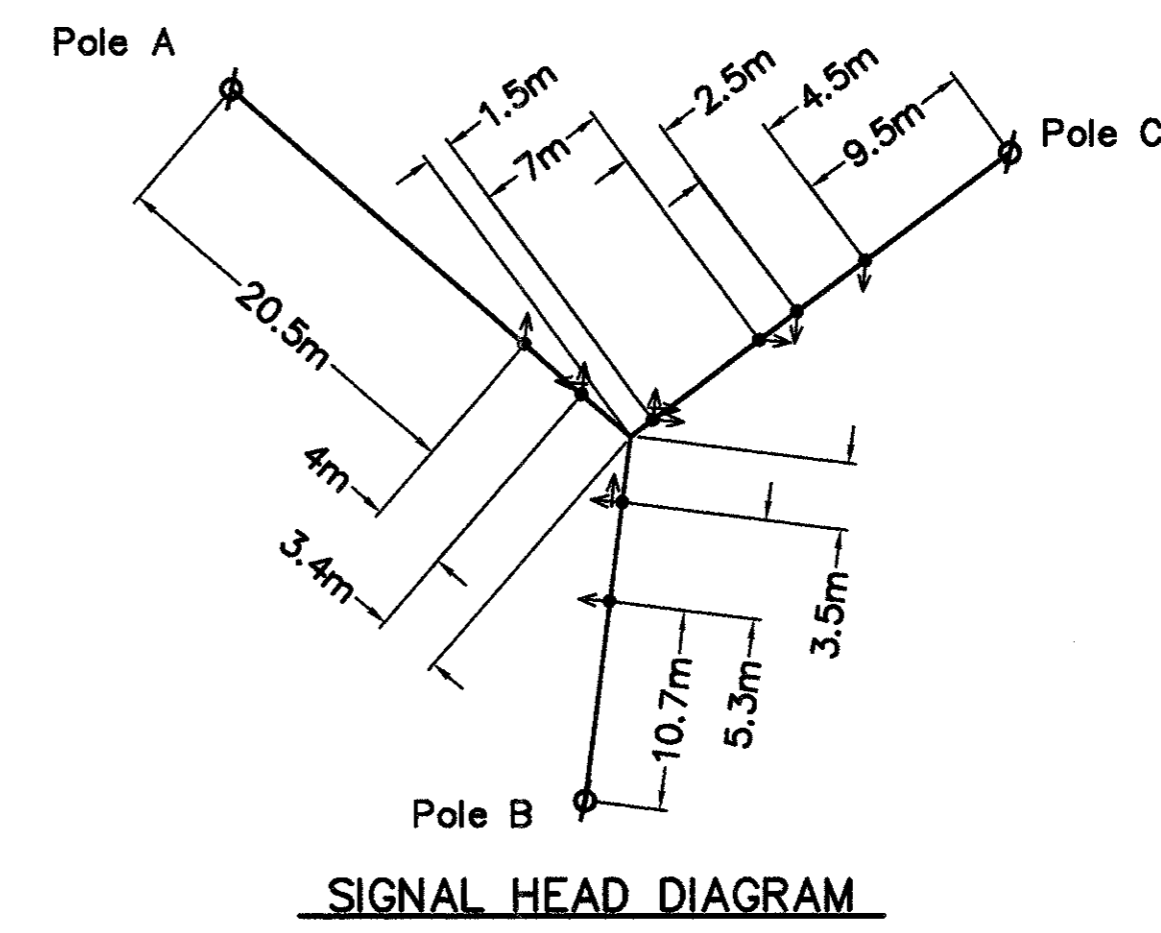
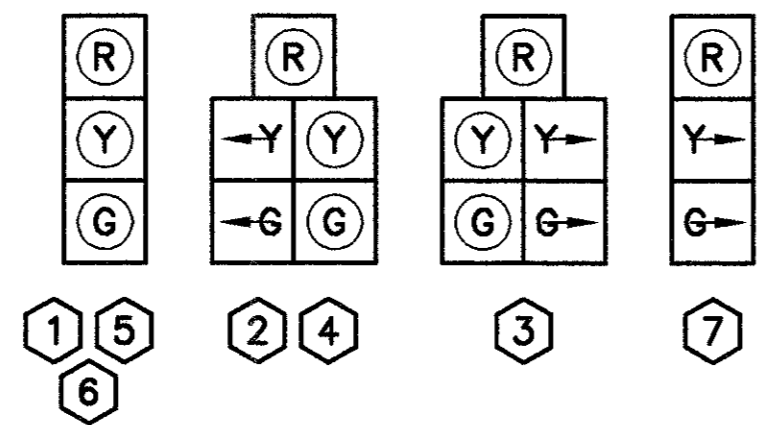
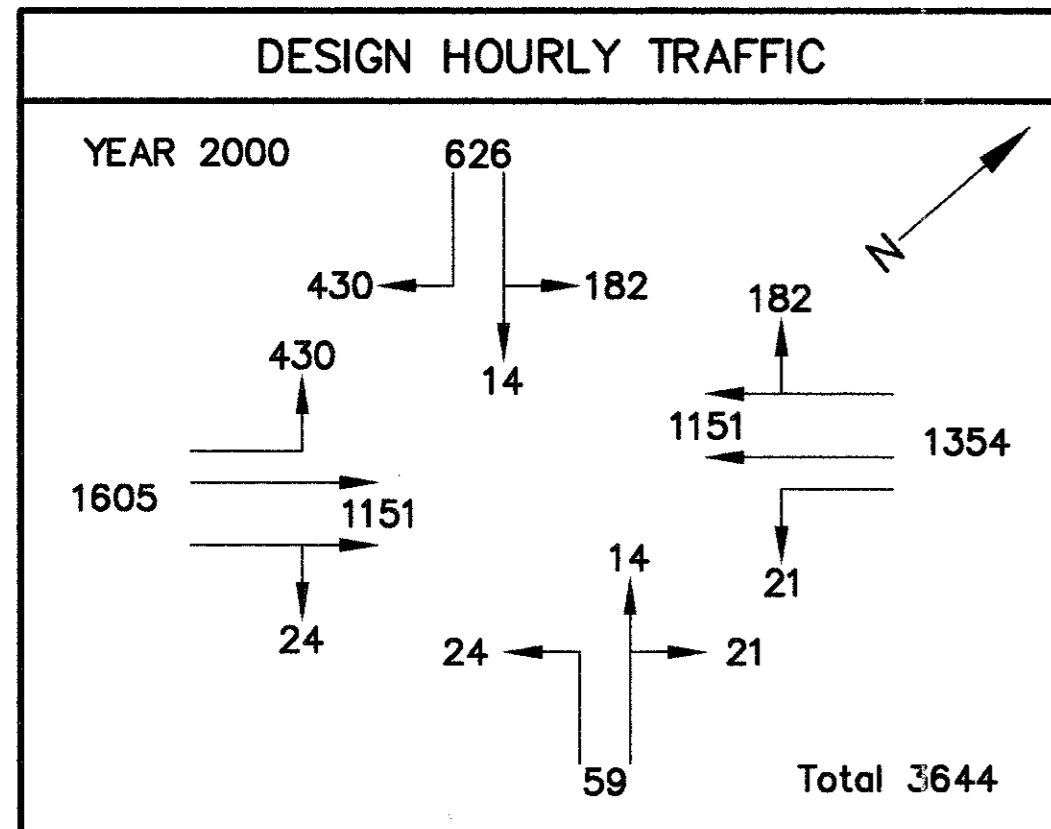
HORIZONTAL SCALE IN METERS

CALCULATED  
CHECKED  
SAH  
AEH

# AETNA ST. SIGNAL PLAN

## BEL-7-32.276

155  
242

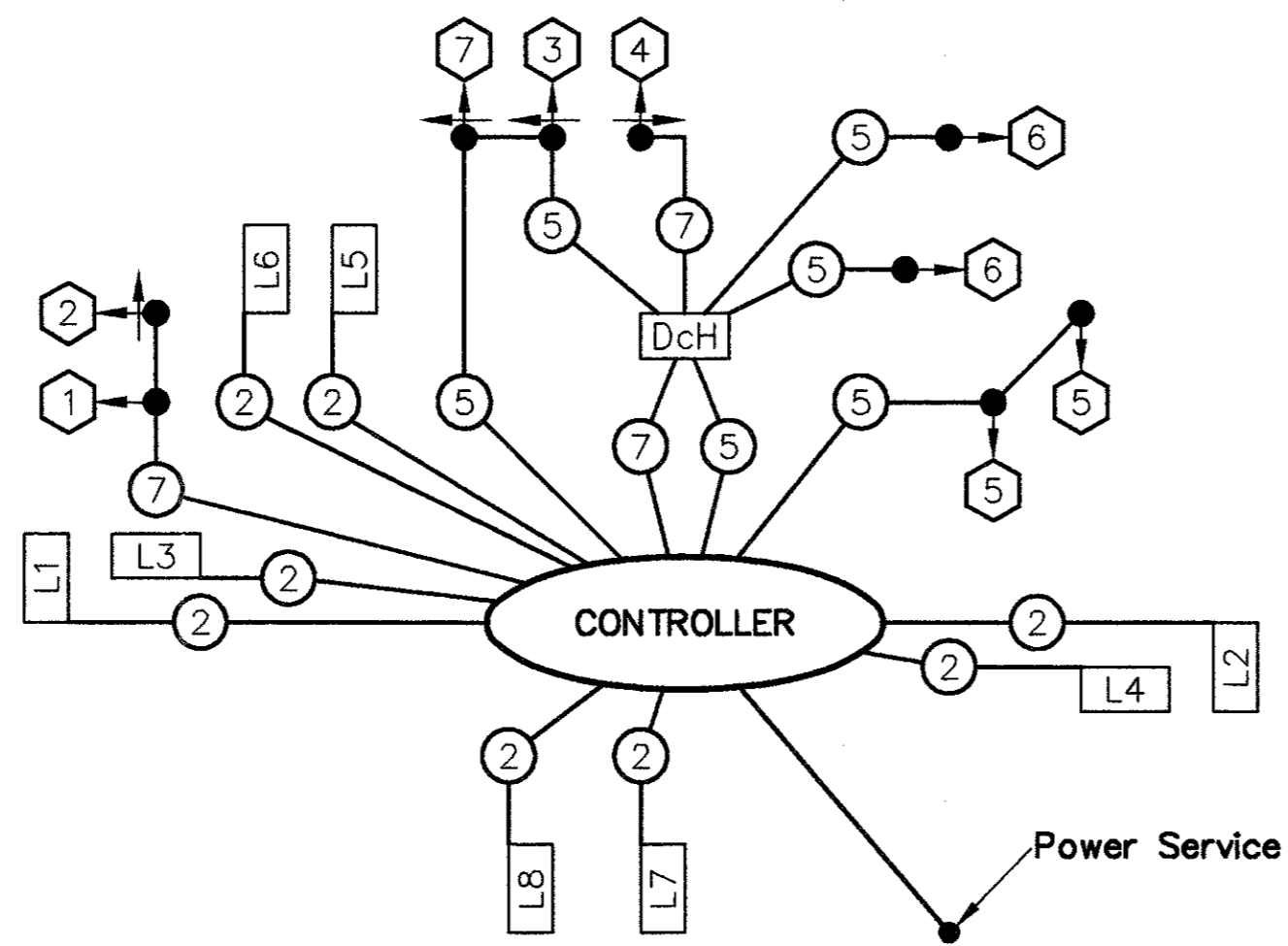


- ### PLAN LEGEND
- Proposed Pull Box
  - Underground Conduit
  - Proposed Signal Head
  - Proposed Lane Use Sign
  - Proposed Strain Pole
  - Proposed Detector Loop
  - Ground Mounted Controller
  - Existing Signal Head
  - Existing Strain Pole
  - Existing Pull Box

SIGNAL DISPLAY										
Movement	Phase	Interval	Signal Face					7		
			1	2	3	4	5		6	
→	Ø1	G	G	G/G	R/G	R	R	R	⊖	
			YC	G	G/Y	R/Y				
			RC	G	G	R				R
↗	Ø2	G	G	G					G	
			YC	Y	Y					
			RC	R	R	R	R			R
↑	Ø3	G			G/G	G/G			⊖	
			YC			Y/G	Y/G			
			RC			R	R			R
↖	Ø4	G			G/G	G	G			
			YC			Y/G	Y	Y		
			RC	R	R	R/G	R	R		R
Flash			Y	Y	R	R	R	Y	R	

G - Green  
YC - Yellow Change  
RC - Red Clearance

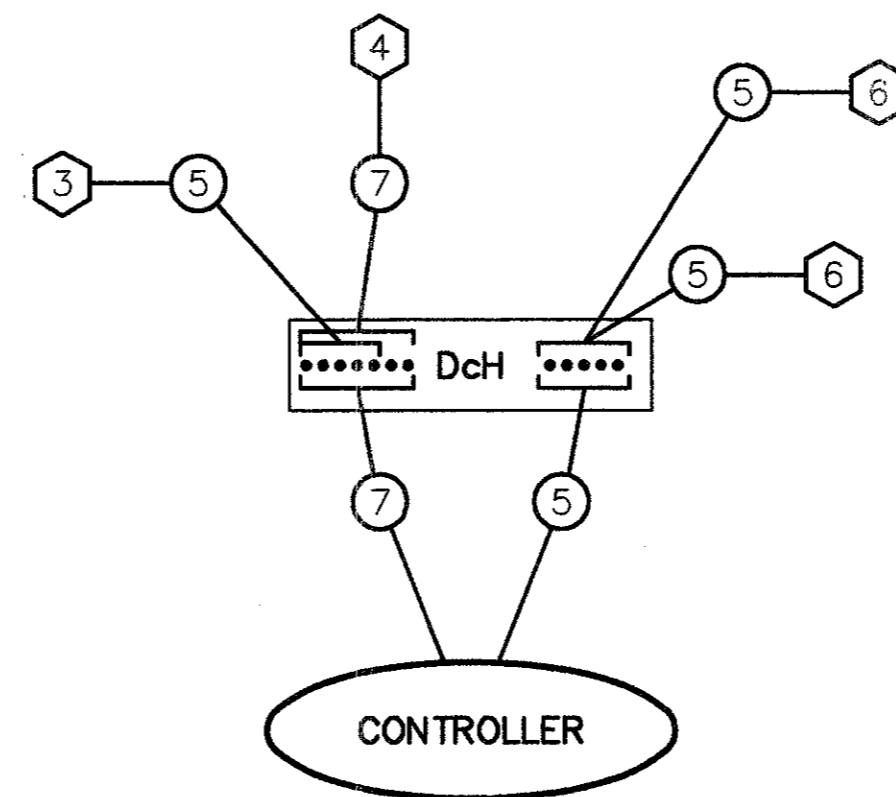
G - Circular Green  
⊖ - Green Arrow  
Y - Circular Yellow  
Y - Yellow Arrow  
R - Circular Red



WIRING DIAGRAM

WIRING LEGEND

- Proposed Signal Head
- Signal Cable, No. of Conductors as Shown
- Loop Detector Lead in Cable
- #8 AWG Power Cable
- Disconnect Hanger
- Proposed Detector Loop



DISCONNECT HANGER WIRING DETAIL

CONTROLLER TIMING CHART				
START UP START IN: Y/R FLASH ⊖; ALL RED ⊖ TIME FOR FLASH 10 SEC. FIRST PHASE Ø2 COLOR DISPLAYED: GREEN ⊖; YELLOW ⊖	DUAL ENTRY ⊖ REST IN RED: RING 1 ⊖; RING 2 ⊖			
	OVERLAP	A	B	C
	PHASES	3,4,1		
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.			
	Ø1	Ø2	Ø3	Ø4
Minimum Green (Sec.)	7	15	7	10
Added Initial (Sec./Actuation)	-	1.5	-	-
Passage Time (Preset Gap) (Sec.)	2	5	2	2
Time Before Reduction (Sec.)	-	30	-	-
Minimum Gap (Sec.)	-	2	-	-
Time to Reduce (Sec.)	-	30	-	-
Maximum Green I (Sec.)	35	60	15	20
Maximum Green II (Sec.)	35	60	15	20
Yellow Change (Sec.)	4	5	4	4
All Red Clearance (Sec.)	1.5	1.0	1.5	1.5
Walk (Sec.)	1.0	1.0	1.0	5
Pedestrian Clearance (Sec.)	1.0	1.0	1.0	15
Recall	Maximum (On/Off)	Off	Off	Off
	Minimum (On/Off)	Off	On	Off
	Pedestrian (On/Off)	Off	Off	Off
Memory	Off	On	Off	Off
Call to Non-Actuated	No. 1			
	No. 2			

Volume Density Controls

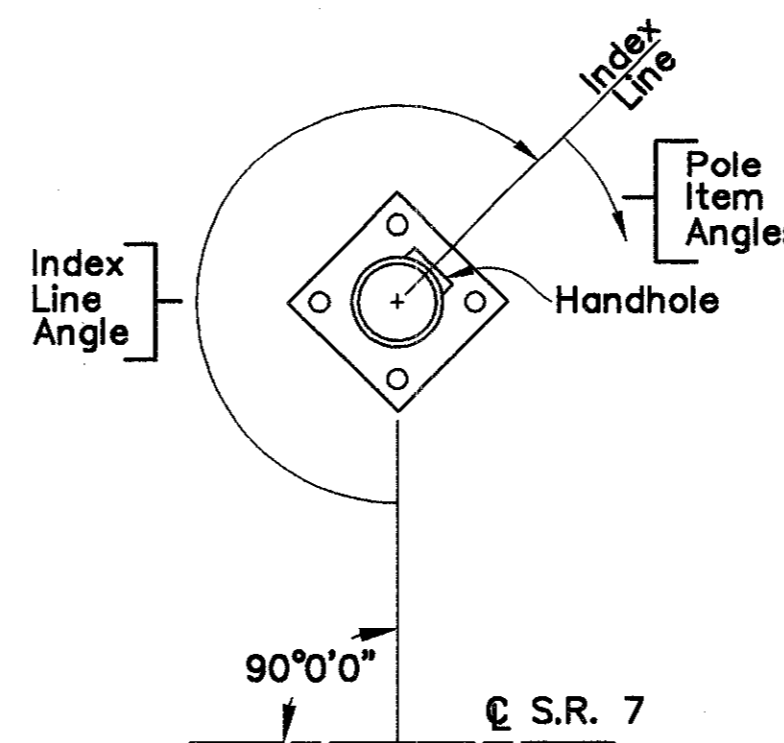
QUANTITIES				
ITEM	REF	DESCRIPTION	QUANT	UNIT
625		Conduit, 51mm, 713.04	270	Meter
625		Conduit, 76mm, 713.04	3	Meter
625		Trench	273	Meter
625		Pull Box, 713.08, 450mm	6	Each
625		Pull Box, 713.08, 600mm	1	Each
625		Ground Rod	4	Each
632	1,5,6,7	Vehicular Signal Head, 3 Section, 300mm Lens, 1-Way, As Per Plan	5	Each
632	2,3	Vehicular Signal Head, 5 Section, 300mm Lens, 1-Way, As Per Plan	2	Each
632	4/6	Vehicular Signal Head, 3 Section, 300mm / 5 Section, 300mm Lens, 2-Way, As Per Plan	1	Each
632		Covering of Vehicular Signal Head	8	Each
632	1,2,3,4,7	Loop Detector Unit, As Per Plan	5	Each
632	5,6	Loop Detector Unit, Delay and Extension Type, As Per Plan	2	Each
632		Messenger Wire, 7 Strand, 11mm Diameter With Accessories	72	Meter
632		Signal Cable, 5 Conductor, No. 14 AWG	169	Meter
632		Signal Cable, 7 Conductor, No. 14 AWG	71	Meter
632		Detector Loop	8	Each
632		Loop Detector Lead-In Cable	639	Meter
632		Power Cable, 2 Conductor, No. 8 AWG	22	Meter
632		Power Service	1	Each
632		Strain Pole Foundation	3	Each
632	A	Strain Pole, Type TC-81.10M, Design 7 (Pole Hgt. = 9.1m)	1	Each
632	C	Strain Pole, Type TC-81.10M, Design 8 (Pole Hgt. = 9.1m)	1	Each
632	B	Strain Pole, Type TC-81.10M, Design 9 (Pole Hgt. = 9.1m)	1	Each
632		Removal of Traffic Signal Installation For Storage	1	Each
633		Controller, Actuated, 4 Phase, Solid State Digital Microprocessor, As Per Plan	1	Each
633	5,6	Relay, Calling	2	Each
633		Concrete For Cabinet Foundation	1.40	Cu. Meter
633		Controller Work Pad (Type 2 TC-83.20M)	1.04	Sq. Meter
Quantities Carried To General Summary				

TRAFFIC DETECTORS									
Loop Designation	Size (Meter)	Number of Turns (See TC-82.10M)	Shape	Pulse or Presence	Calling Relay	Delay or Extension (Sec.)	Override Phase	Connect to Detector Unit #	Associated Controller Phase
L-2	2 x 6	2	Std.	Pulse	-	-	-	1	Ø2
L-3	8 x 2	2	Rectangle	Presence	-	-	-	2	Ø1
L-4	8 x 2	2	Rectangle	Presence	-	-	-	3	Ø2
L-5	8 x 2	2	Rectangle	Presence	✓	-	-	4	Ø3 *
L-6	9 x 3	2-4-2	Fig-8	Presence	✓	10 delay	Ø3&Ø4	5	Ø3 *
L-7	7 x 2	2	Rectangle	Presence	-	10 delay	Ø4	6	Ø4
L-8	7 x 2	2	Rectangle	Presence	-	-	-	7	Ø4

\* Extend Ø4 during Ø4 Green

NOTES:

- All Angles Measured Clockwise
- Index Line Goes Through The Center Of The Handhole



TYPE TC-81.10M STRAIN POLE											
Pole No.	Design No.	Pole Height (m)	** Top of Foundation Elevation	'D' (m) of TC-21.20M	Span Wire Attachment Height (m)		Index Line Angle (Deg.)	Angles (Deg.) From Index Line			
					Temp.	** Final		Disconnect Switch	Signal Cable Entrance	Angle	Distance From Top
A	7	9.1	203.500	3.1	9.050	8.550	270	-	45	0.8	
B	9	9.1	203.500	3.1	9.050	8.550	240	0	120	0.8	
C	8	9.1	203.500	3.1	9.050	8.550	315	-	90	0.8	

\*\* See Note "Strain Pole Foundation Elevations" In The Traffic Control General Notes Sheet No. 123



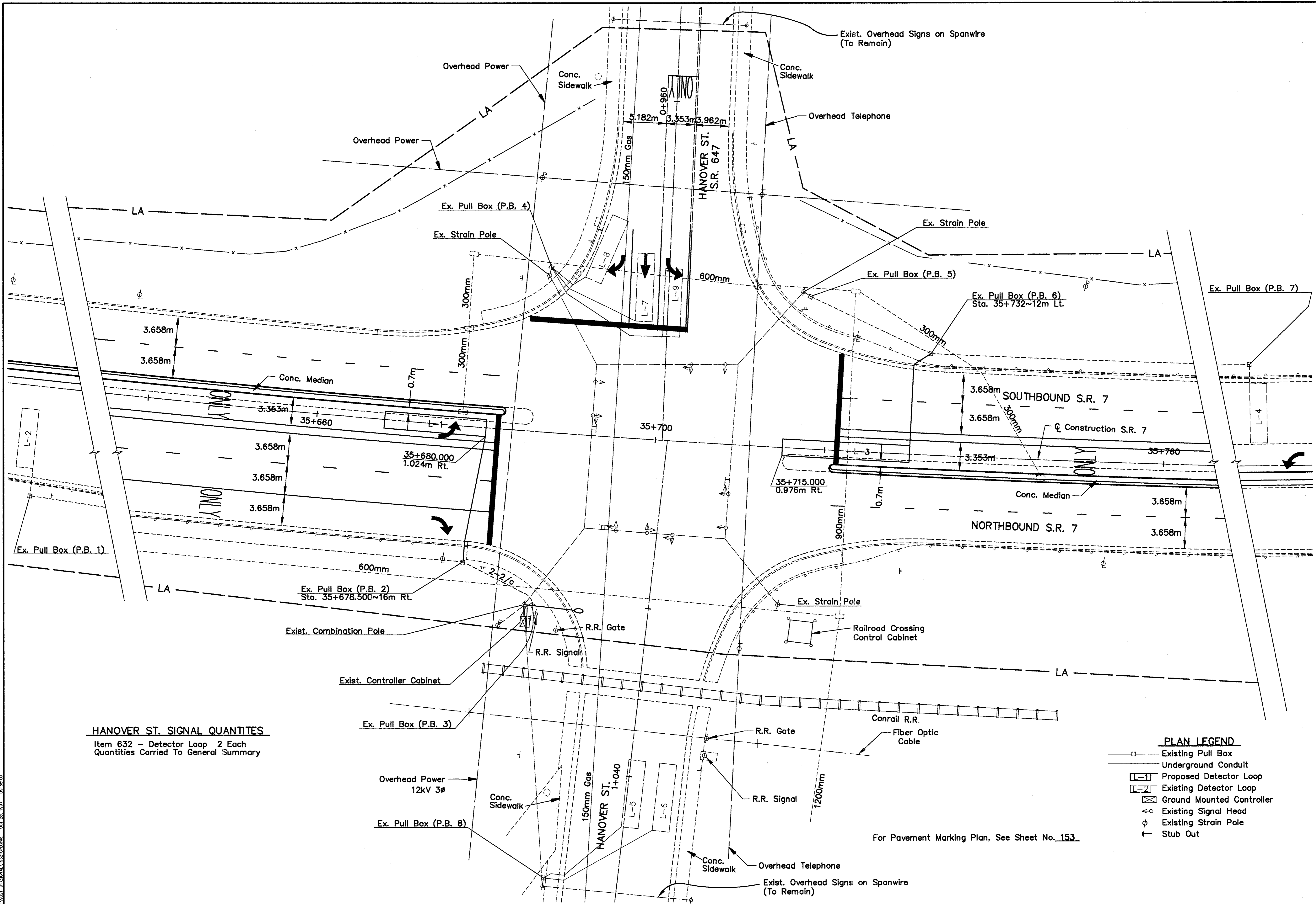
HORIZONTAL SCALE IN METERS

CALCULATED BY AEH  
CHECKED BY SAH

**HANOVER ST. SIGNAL PLAN**

**BEL-7-35.567**

156A  
242

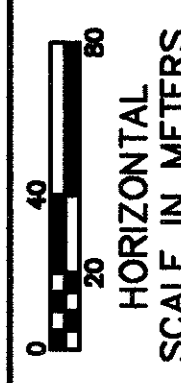
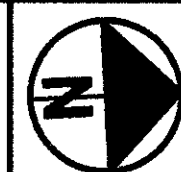


**HANOVER ST. SIGNAL QUANTITIES**  
Item 632 - Detector Loop 2 Each  
Quantities Carried To General Summary

- PLAN LEGEND**
- Existing Pull Box
  - Underground Conduit
  - Proposed Detector Loop
  - Existing Detector Loop
  - Ground Mounted Controller
  - Existing Signal Head
  - Existing Strain Pole
  - Stub Out

For Pavement Marking Plan, See Sheet No. 153

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SAH

**LIGHTING SCHEMATIC  
STA. 32+227 TO STA. 33+300**

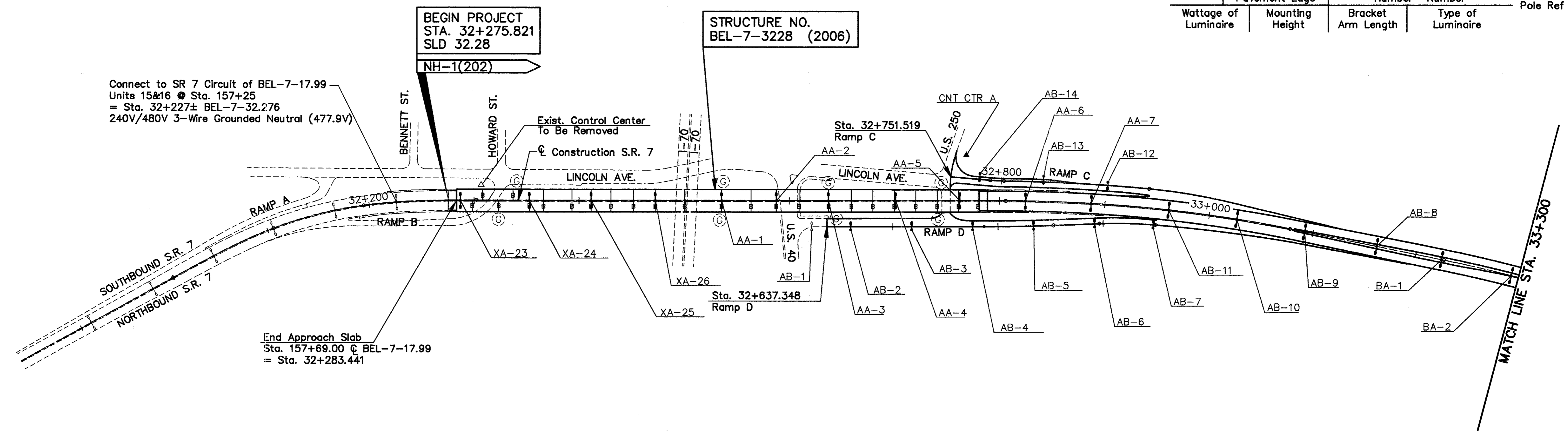
**BEL-7-32.276**

157  
242

**LEGEND**

- Proposed 2 Arm Light Pole Atop B1270 Concrete Barrier
- Proposed Light Pole
- Control Center
- Pull Box/Junction Box
- Existing Light Pole (To Remain) W/Proposed Lamp
- Proposed Duct Cable
- Conduit (Size as Dimensioned)
- Distribution Cable in Median Raceway (3-Wire Shown)
- Circuit Stub and Cap
- Proposed Catch Basin, Pipe, and Headwall
- Underpass Lighting Unit
- Guardrail, Type 5
- Existing Cable (To Be Abandoned)
- Existing Structure Ground  
( See Structure Grounding System, As Per Plan, General Notes Sheet No. )
- Existing Light Pole to Remain
- Existing Light Pole to be Removed
- Existing Bridge Pier Bearing Line

Station	Offset from Pavement Edge	Circuit Number	Pole Number	Pole Ref No.
Wattage of Luminaire	Mounting Height	Bracket Arm Length	Type of Luminaire	



Connect to SR 7 Circuit of BEL-7-17.99  
Units 15&16 @ Sta. 157+25  
= Sta. 32+227± BEL-7-32.276  
240V/480V 3-Wire Grounded Neutral (477.9V)

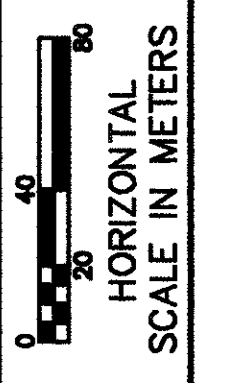
**BEGIN PROJECT  
STA. 32+275.821  
SLD 32.28**

**STRUCTURE NO.  
BEL-7-3228 (2006)**

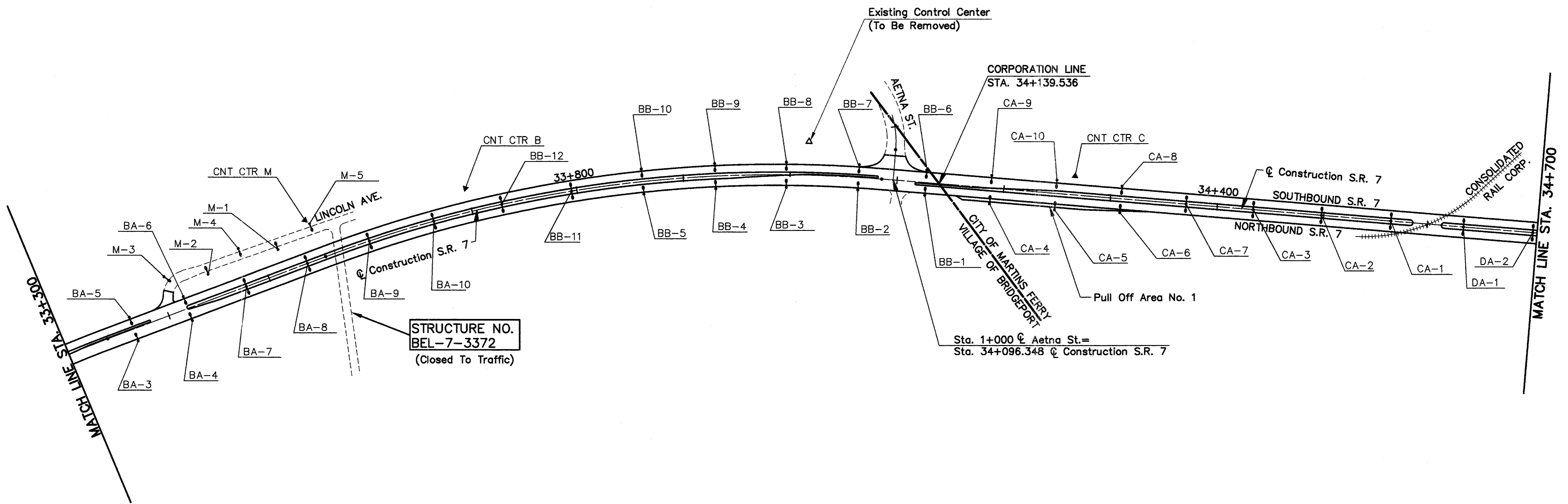
End Approach Slab  
Sta. 157+69.00 @ BEL-7-17.99  
= Sta. 32+283.441

Lighting for the area through  
Sta. 32+227± and Ramp B was constructed  
in part of Project BEL-7-17.99 PID 9632

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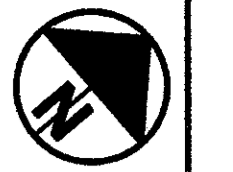


**LIGHTING SCHEMATIC**  
**STA. 33+300 TO STA. 34+700**

**BEL-7-32.276**

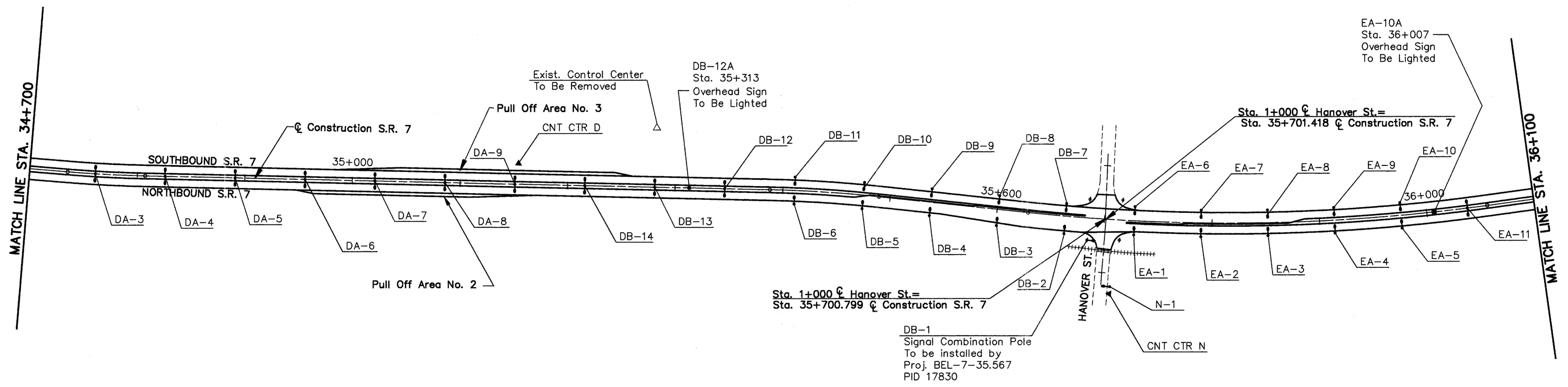
For Legend, See Sheet No. 157

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0 20 40 60  
HORIZONTAL  
SCALE IN METERS

CALCULATED	AEH
CHECKED	SAH



**LIGHTING SCHEMATIC  
STA. 34+700 TO STA. 36+100**

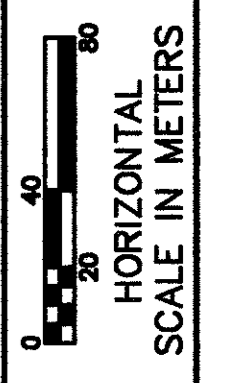
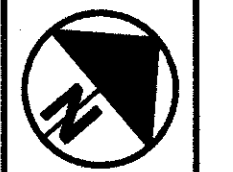
**BEL-7-32.276**

For Legend, See Sheet No. 157

159  
242

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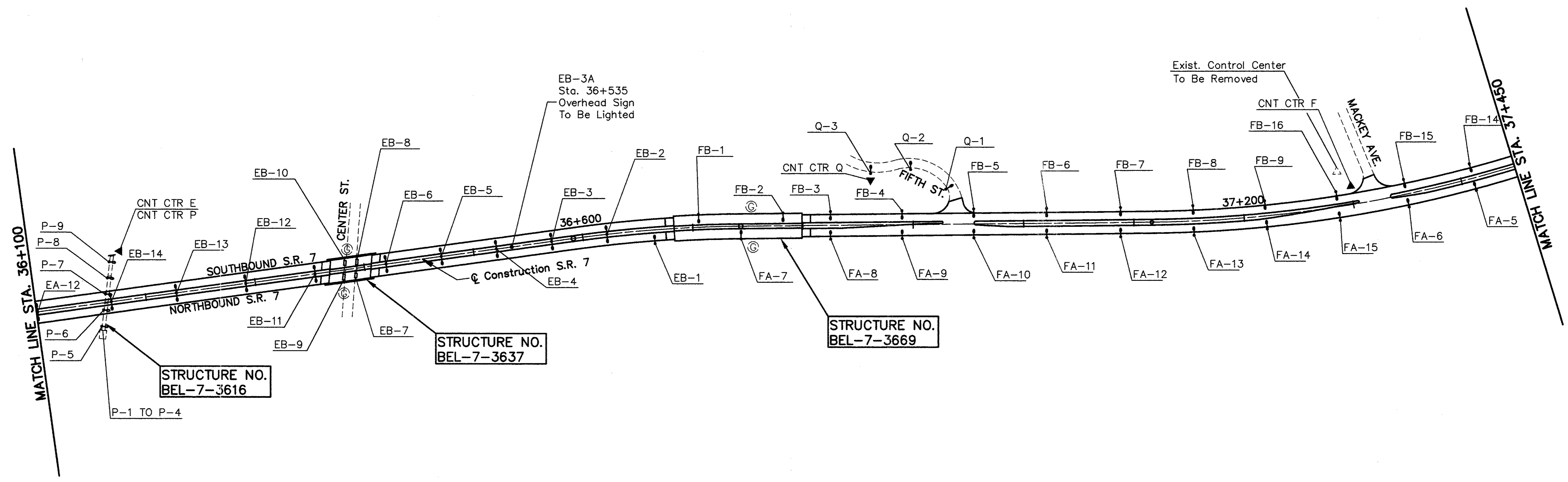


CALCULATED	AEH
CHECKED	SAH

**LIGHTING SCHEMATIC**  
**STA. 36+100 TO STA. 37+450**

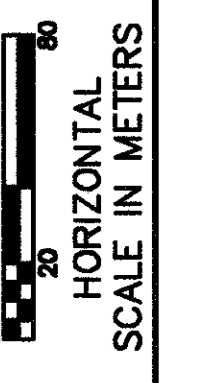
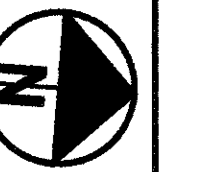
**BEL-7-32.276**

160  
242



For Legend, See Sheet No. 157

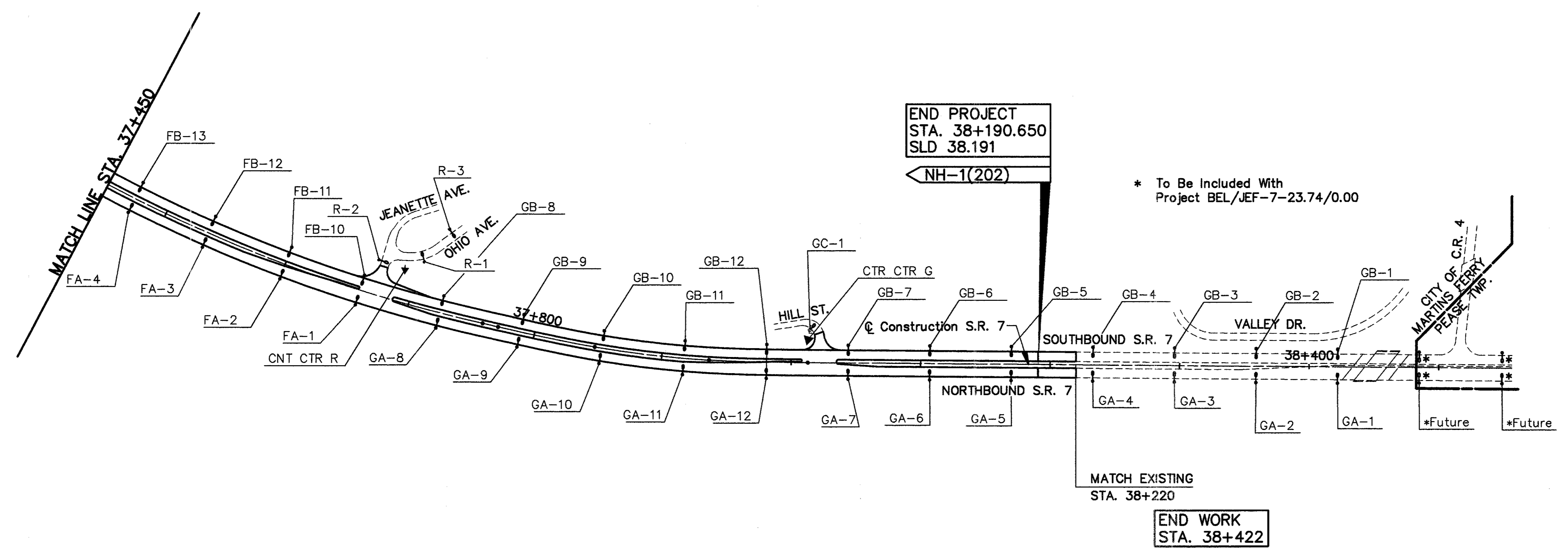
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CALCULATED	AEH
CHECKED	SAH

**LIGHTING SCHEMATIC**  
**STA. 37+450 TO STA. 38+422**

**BEL-7-32.276**



For Legend, See Sheet No. 157.

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# LIGHTING GENERAL NOTES

CALCULATED  
AEH  
CHECKED  
SAH

LIGHTING GENERAL NOTES

BEL-7-32.276

162  
242

## 625.03 - POWER SERVICE

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

PUBLIC PROJECTS COORDINATOR  
AEP OHIO POWER COMPANY  
1 RIVERSIDE PLAZA  
COLUMBUS, OHIO 43215-2373  
PHONE (614) 223-1579

ELECTRICAL ENERGY FROM EXISTING POWER SERVICES SHALL CONTINUE TO BE CHARGED TO THE MAINTAINING AGENCY. THE CONTRACTOR SHALL PAY ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICE ESTABLISHED BY THIS PROJECT. UPON COMPLETION OF THIS PROJECT, POWER SERVICE ELECTRICAL ENERGY ACCOUNT SHALL BE TRANSFERRED TO THE MAINTAINING AGENCY. THE STATE OF OHIO SERVES AS THE MAINTAINING AGENCY FOR CONTROL CENTERS A, B, M, AND "SR7 CIRCUIT" ON PROJECT BEL-7-17.99 WHICH IS EXTENDED AS "XA" UNITS ON THIS PROJECT. THE VILLAGE OF BRIDGEPORT SERVES AS THE MAINTAINING AGENCY FOR CONTROL CENTER M. THE CITY OF MARTINS FERRY WILL SERVE AS THE MAINTAINING AGENCY FOR CONTROL CENTERS C, D, E, F, G, N, P, Q AND R.

THE PROJECT WILL RECEIVE 120/240 VOLT, 3-WIRE GROUNDED NEUTRAL SERVICE AT SOME LOCATIONS AND 480 VOLT 2-WIRE GROUNDED NEUTRAL AT OTHERS. (SEE THE PLANS AND HL-40.10M & HL-60.31M). EXISTING LIGHTING SERVICE IS 480 VOLT. THE CONTRACTOR SHALL CONTACT THE OHIO POWER CO. TO ASCERTAIN HOOK-UP FEES HE MUST PAY FOR THE PROPOSED SERVICE.

## 625.07 - 713.11 - LUMINAIRES

STYLE B LUMINAIRES SHALL HAVE SINGLE RATED 240 VOLT, 250 WATT, INTEGRAL REGULATOR BALLASTS FOR USE WITH HIGH PRESSURE SODIUM LAMPS EXCEPT UNITS OF CONTROL CENTERS A, B, & CIRCUIT XA SHALL HAVE SINGLE RATED 480 VOLT, 250 WATT. THE LUMINAIRES SHALL BE GENERAL ELECTRIC M400, COOPER OVV, AMERICAN 25/26 OR EQUAL APPROVED BY THE ENGINEER.

## POST TOP LUMINAIRES

POST TOP LUMINAIRES SHALL HAVE SINGLE RATED 240 VOLT, 100 WATT, INTEGRAL REGULATOR BALLASTS FOR USE WITH HIGH PRESSURE SODIUM, AND SHALL BE GENERAL ELECTRIC PM 17, COOPER TW, HOLOPHANE CRESTWOOD, OR EQUAL APPROVED BY THE ENGINEER. FOR DETAILS, SEE SHEET NO. 198.

## 625.07 - 713.13 LUMINAIRES FOR UNDER PASSES

UNDER PASS LUMINAIRES SHALL HAVE SINGLE RATED 240 VOLT, 100 WATT, INTEGRAL REGULATOR BALLASTS FOR USE WITH HIGH PRESSURE SODIUM LAMP ON THE PEDESTRIAN BRIDGE STAIRS. FOR THE CENTER STREET UNDER PASS UNITS BALLASTS SHALL BE SINGLE RATED 240 VOLT, 150 WATT. UNDER PASS LUMINAIRES SHALL BE GENERAL ELECTRIC WALL MOUNT 175, COOPER WPK, HOLOPHANE WALLPACK II, OR EQUAL APPROVED BY THE ENGINEER. FOR DETAILS, SEE SHEET NO. 198.

## 713.14 - LAMPS

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

## CONDUIT ON STRUCTURE

EXPANSION FITTINGS FOR CONDUIT ON STRUCTURES SHALL BE OZ TYPE AX, CROUSE-HINDS TYPE JX-4, APLETON XJ-4, OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL HAVE A COPPER EXTERNAL BONDING JUMPER.

## UNDERDRAIN FOR PULL BOXES

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

## PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNAN 660A, AND SHALL BE KEYED IN ACCORDANCE WITH SPECIFICATION 631.08, PARAGRAPH 3. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

## ITEM 202 - LIGHT POLE REMOVED FOR STORAGE

THIS ITEM OF WORK SHALL CONSIST OF CAREFULLY REMOVING AN EXISTING LIGHT POLE INCLUDING THE BRACKET ARM AND TRANSFORMER BASE (IF USED), AND STORING THE REMOVED MATERIALS ON THE PROJECT FOR SALVAGE BY THE CITY OF MARTINS FERRY.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM 202 LIGHT POLE REMOVED FOR STORAGE.

## ITEM 202 - LUMINAIRE REMOVED FOR STORAGE

THIS ITEM OF WORK SHALL CONSIST OF CAREFULLY REMOVING AN EXISTING LUMINAIRE AND STORING IT ON THE PROJECT FOR SALVAGE BY THE CITY OF MARTINS FERRY.

PAYMENT WILL BE MADE FOR EACH ITEM 202 LUMINAIRE REMOVED FOR STORAGE.

## ITEM 202 - POWER SERVICE REMOVED, AS PER PLAN

THIS ITEM OF WORK INCLUDES THE REMOVAL OF THOSE PORTIONS OF THE EXISTING POWER SERVICE NOT BEING REUSED. EXISTING UNDERGROUND CONDUIT AND WIRING MAY BE ABANDONED IN PLACE. POLES AND PULL BOXES SHALL BE REMOVED TO AT LEAST 0.3m BELOW GROUND LINE WITH BACKFILLING AND RESTORATION OF SURFACES IN ACCORDANCE WITH 603.09. REMOVED MATERIALS NOT CLAIMED BY THE POWER COMPANY SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE.

THIS ITEM WILL ALSO COMPENSATE THE CONTRACTOR FOR COORDINATING WITH THE POWER COMPANY TO INSURE THAT THEY DISCONNECT AND REMOVE ANY OF THEIR ITEMS THAT ARE A PART OF THE POWER SERVICE. IT ALSO INCLUDES RETURNING TO THE POWER COMPANY ANY ITEM BELONGING TO THEM THAT WERE REMOVED BY THE CONTRACTOR, SUCH AS THE METER BASE.

THE CONTROL CENTERS AT CLAY AVE. (APPROX STA 35+290, LEFT) AND AT MACKEY AVE. INCLUDE A TRANSFORMER (37 1/2 KVA 4000V PRIMARY; 480V SECONDARY PER OLD PLAN) WHICH SHALL BE REMOVED AND DISPOSED OF BY AEP/OHIO POWER COMPANY. THE CONTROL CENTER NEAR AETNA ST. (APPROX STA 34+043, LEFT) IS THE PROPERTY OF AEP/OHIO POWER AND WILL BE REMOVED BY OHIO POWER COMPANY. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH AEP/OHIO POWER FOR REMOVAL OF ALL TRANSFORMERS.

AT THE OPTION OF THE POWER CO., THE EXISTING CONTROL CENTER POLE AT MACKEY AVE. MAY BE LEFT IN PLACE FOR USE BY THE POWER CO. FOR THEIR POWER DROP.

PAYMENT WILL BE MADE FOR EACH ITEM POWER SERVICE REMOVED, AS PER PLAN AND SHALL BE FULL COMPENSATION INCLUDING ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THE REMOVAL AND RESTORATION IN A SATISFACTORY WORKMAN-LIKE MANNER.

## ITEM 625 STRUCTURE GROUNDING SYSTEM, AS PER PLAN

A STRUCTURE GROUND PER 625.20 AND THE FOLLOWING INSTRUCTIONS SHALL BE PROVIDED FOR EACH OF THESE STRUCTURES:

VIADUCT	STRUCTURE BEL-7-32283
PEDESTRIAN BRIDGE	STRUCTURE BEL-7-36164
CENTER STREET OVERPASS	STRUCTURE BEL-7-36368
FORMER R/R OVERPASS	STRUCTURE BEL-7-36683

EACH EXISTING GROUNDING SYSTEM SHALL BE VISUALLY INSPECTED BY THE LIGHTING CONTRACTOR. ANY SIGNIFICANT DETERIORATION OBSERVED SHALL BE REVIEWED WITH THE ENGINEER AND FAULTY ELEMENTS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER. EACH GROUNDING SYSTEM SHALL BE DISCONNECTED FROM THE EXISTING GROUND ROD AND LOW RESISTANCE CONTINUITY TO EACH LIGHTING UNIT GROUNDING CABLE DEMONSTRATED TO THE SATISFACTION OF THE ENGINEER. WHEREVER RESISTANCE OF 5 OHM OR MORE IS FOUND, THE CONTRACTOR SHALL DEVISE AND PROVIDE A REMEDY SATISFACTORY TO THE ENGINEER.

A NEW GROUND ROD (RODS OR GRID) SHALL BE INSTALLED IN ACCORDANCE WITH 625.10 AND 625.20 IN THE LOCATION INDICATED IN THE PLANS.

AT HIS OPTION, THE CONTRACTOR MAY ABANDON ANY OR ALL EXISTING GROUND SYSTEMS AND PROVIDE A NEW STRUCTURE GROUNDING SYSTEM APPROVED BY THE ENGINEER.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE ABOVE DESCRIBED WORK:

ITEM 625 STRUCTURE GROUNDING SYSTEM, AS PER PLAN 4 EACH

## ITEM 625 HIGH VOLTAGE TEST

HIGH VOLTAGE TESTS SHALL BE PERFORMED AS PER 625.22.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE ABOVE DESCRIBED WORK:

ITEM 625 HIGH VOLTAGE TEST ----- LUMP

## 625.04 625.05 LIGHT POLE, DESIGN AON4.6, AS PER PLAN

THE CONTRACTOR SHALL FIELD CHECK EXACT SIZE AND SPACING OF EXISTING ANCHOR BOLTS ON PILASTERS OF STRUCTURE NO. BEL-7-36164. WORKING DRAWINGS SHALL SHOW BASE PLATE HOLE SIZE AND LOCATION SPECIFICALLY FOR EACH POLE TO BE MOUNTED ONTO EXISTING PILASTERS. POLES SHALL BE FABRICATED TO FIT THE EXISTING ANCHOR BOLTS WITHOUT FIELD MODIFICATIONS. NEW LEVELING AND TOP NUTS SHALL BE FURNISHED. GALVANIZING OF ANCHOR BOLTS SHALL BE REPAIRED PER 711.02 IF DIRECTED BY ENGINEER. POLE FOR P-9 SHALL HAVE BLIND HALF COUPLING FOR CONDUIT AS DETAILED ON SHEET NO. 198.

## ITEM SPECIAL - MAINTAIN EXISTING LIGHTING

WHEREVER POSSIBLE THE EXISTING LIGHTING SHALL BE KEPT IN OPERATION UNTIL THE PROPOSED LIGHTING IS IN PLACE AND TESTED. WITH ONLY THESE EXCEPTIONS NOTED BELOW. THIS ITEM ALSO INCLUDES THE CONTRACTOR LOCATING THE EXISTING UNDERGROUND LIGHTING CABLE AS NEEDED TO CONSTRUCT THIS PROJECT. ODOT AND THE CITY OF MARTINS FERRY WILL PROVIDE WHATEVER ELECTRICAL INFORMATION IS AVAILABLE UPON REQUEST.

AT VARIOUS LOCATIONS THE PLACEMENT OF PROPOSED DUCT CABLE AND CONDUITS AS LOCATED ON THE PLANS WILL CROSS EXISTING DUCT CABLE. POLE FOUNDATIONS MAY BE OVER OR CLOSE TO EXISTING CIRCUIT CABLE. BEFORE ANY POLE FOUNDATION OR TRENCH EXCAVATION IS BEGUN, THE CONTRACTOR SHALL STAKE THE PROPOSED LOCATION OF POLES AND PULL BOXES AND OF EXISTING PULL BOXES. HE THEN SHALL REVIEW THE ENTIRE LIGHTING PROJECT ON THE GROUND WITH THE ENGINEER TO DETERMINE HOW TO MAINTAIN OPERATION OF THE EXISTING SYSTEM DURING CONSTRUCTION.

EXCEPTION 1: AT STRUCTURE BEL-7-36683 THE EXISTING STRUCTURE MOUNTED LIGHTING MUST BE REMOVED TO ALLOW THE PROPOSED LIGHTING TO BE MOUNTED ON THE EXISTING PILASTERS. A TEMPORARY CONNECTION BETWEEN EXISTING PULL BOXES OR BETWEEN EXISTING POLES MAY BE USED TO MAINTAIN EXISTING CIRCUITS.

EXCEPTION 2: MEDIAN UNITS IN MARTINS FERRY TO STA. 34+922 WILL BE REMOVED TO ALLOW MEDIAN RECONSTRUCTION. IF OPERATING PER ORIGINAL PLAN, THESE AND THE OUTSIDE UNITS NEAR STA. 34+160 AND STA. 34+225 CONSTITUTE THE ENTIRE LOAD OF CIRCUIT 'D' AT THE EXISTING CONTROL CENTER NEAR STA. 35+290 LT. AND NO TEMPORARY CONNECTION WILL BE REQUIRED FOR THIS CIRCUIT D.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL "MAINTAIN EXISTING LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO LOCATE THE EXISTING UNDERGROUND HIGHWAY LIGHTING CABLE, AND MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN. ALL WORK SHALL BE AT THE DIRECTION OF THE ENGINEER

## LOCATION OF POLES ON STRUCTURE BEL-7-32283L

THE LOCATION OF LIGHT POLES TO BE MOUNTED ON THE MEDIAN BARRIER OF STRUCTURE NO. BEL-7-32283L SHALL BE ADJUSTED, IF NECESSARY, TO PLACE THE CENTERLINE OF THE POLE AT LEAST 3.0m FROM AN EXPANSION JOINT AND 1.0m FROM A CRACK CONTROL JOINT IN THE BARRIER. WHEN FIRST LAYING OUT THE BARRIER CONSTRUCTION, THE CONTRACTORS SHALL MARK ON THE STRUCTURE HIS PROPOSED LOCATION OF BARRIER JOINTS AND SAW CUTS. HE SHALL ALSO MARK THE LIGHT POLE LOCATIONS AS SHOWN ON PLAN SHEET'S NO. 164 & 165. THE CONTRACTOR SHALL THEN REVIEW THE LOCATION MARKINGS WITH THE ENGINEER. BARRIER JOINT AND/OR POLE LOCATIONS SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER.

## ELECTRICAL SERVICE FOR ILLUMINATED SIGNS

THE PAY ITEMS IN THE LIGHTING GENERAL SUMMARY INCLUDE THE RACEWAY JUNCTION BOX ADJACENT TO EACH LIGHTED SIGN CONDUIT AND CABLE FOR ELECTRICAL SERVICE FROM THE CONNECTION IN THE PULL BOX OR JUNCTION BOX TO THE SIGN, INCLUDING THE CABLE CONNECTORS, ARE INCLUDED IN ITEM 625 SIGN SERVICE IN THE TRAFFIC CONTROL GENERAL SUMMARY.

## ITEM 625 LIGHTING MISC.: COORDINATION FOR CONNECTION OF CIRCUIT EXTENSION

THIS WORK SHALL CONSIST OF ALL NECESSARY ARRANGEMENTS WITH THE MAINTAINING AGENCY OF THE "S.R. 7 CC ODOT" CONTROL CENTER LIGHTING OF PROJECT BEL-7-19.99 TO ACHIEVE:

1. SECURE DE-ENERGIZING OF THE CONTROL CENTER OF THE EXISTING CIRCUIT WHILE MAKING CONNECTION OF THE PROPOSED "CIRCUIT XA" AT THE JUNCTION BOX FOR THE EXISTING POLE AT STA. 32+227±.
2. COOPERATION DURING APPLICABLE ELECTRICAL TESTS OF 625.22 FOR CIRCUIT XA.

THE PERIOD OF DE-ENERGIZING SHALL BEGIN AT LEAST ONE HOUR AFTER SUNRISE AND SHALL END AT LEAST TWO HOURS BEFORE SUNSET OF THE DAY THE CONNECTION IS PERFORMED.

THE OHIO DEPARTMENT OF TRANSPORTATION ACTS AS MAINTAINING AGENCY FOR THE S.R. 7 LIGHTING INVOLVED. THE CONTRACTOR MAY REQUEST THEIR COOPERATION BY WAY OF WRITTEN NOTICE TO THE ENGINEER AT LEAST 2 WEEKS BEFORE THE CIRCUIT CONNECTION.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE SUMMARY FOR THE ABOVE DESCRIBED WORK:

ITEM 625 - LIGHTING MISC.: COORDINATION FOR CONNECTION OF CIRCUIT EXTENSION --- LUMP

# LIGHTING GENERAL NOTES

CALCULATED  
AEH  
CHECKED  
SAH

## REDUCTION OF CABLE SPLICES, PULL BOXES AND/OR CONDUIT

AT VARIOUS LOCATIONS IT IS PROPOSED TO AVOID CABLE SPLICES BY STRIPPING DUCT-CABLE AND USING THE CONDUCTORS IN LIEU OF DISTRIBUTION CABLE. GENERALLY THIS OCCURS AT CONTROL CENTERS WHERE CONDUIT CONNECTS THE CONTROL CENTER TO THE ADJACENT PULL BOX AND CIRCUITS ARE CARRIED AS DUCT-CABLE BEYOND THE PULL BOX. IN THESE SITUATIONS THE PLAN QUANTITIES PAY FOR DUCT CABLE TO THE CONTROL CENTER, INCLUDING SLACK AND CONNECTION ALLOWANCES, AND NO CABLE SPLICING OR DISTRIBUTION CABLE IS REQUIRED OR PAID.

DUCT-CABLE STRIPPING ALSO OCCURS ON CIRCUIT AA WHERE THE AB-12 TRANSFORMER BASE SERVES IN LIEU OF A PULL BOX FOR CIRCUIT AA. A SINGLE CONDUIT, JACKED UNDER PAVEMENT, CARRIES BOTH CIRCUIT AA AND CIRCUIT AB. THE DUCT CABLE OF CIRCUIT AA FROM THE CONTROL CENTER SHALL ENTER AB-12 FOUNDATION VIA A SEPARATE CONDUIT ELBOW AND SHALL CONTINUE, STRIPPED OF THE DUCT, FROM THE TRANSFORMER BASE THROUGH THE JACKED CONDUIT, THROUGH JUNCTION BOX NO. A2 TO POLE AA-7 WITHOUT SPLICE. CIRCUIT AA IS PAID AS DUCT CABLE FROM THE CONTROL CENTER TO POLE AA-7.

THE ADDITIONAL CONDUIT ELBOW REQUIRED IN FOUNDATION AB-12 IS COMPARABLE TO FOUNDATIONS WHERE CIRCUITS BRANCH IN A TRANSFORMER BASE; IT IS INCLUDED WITH THE FOUNDATION FOR PAYMENT. SEE NOTE 4 AND SECTION B-B OF ST'D. DWG. HL-20.11M. THREE CONDUIT ELBOWS ARE REQUIRED AT AB-12; CA-10; FA-15; FA-16; GA-12 AND GB-12.

## 625 - LIGHT POLE, DESIGN A2.4B9.1, AS PER PLAN

THE CONTRACTOR SHALL FIELD CHECK EXACT SIZE AND SPACING OF EXISTING ANCHOR BOLTS ON PILASTERS OF STRUCTURE BEL-7-36683. WORKING DRAWINGS SHALL SHOW BASE PLATE HOLE SIZE AND LOCATION SPECIFICALLY FOR EACH POLE TO BE MOUNTED ONTO EXISTING PILASTERS. POLES SHALL BE FABRICATED TO FIT THE EXISTING ANCHOR BOLTS WITHOUT FIELD MODIFICATIONS. NEW LEVELING AND TOP NUTS SHALL BE FURNISHED. GALVANIZING OF ANCHOR BOLTS SHALL BE REPAIRED PER 711.02 IF DIRECTED BY ENGINEER.

## 625 - LIGHT POLE, DESIGN A1.8B9.9, AS PER PLAN

THIS LIGHT POLE REPLACES THE POLE MISSING FROM THE EXISTING POLE FOUNDATION AT M-3 OF THE LINCOLN AVE. LIGHTING. THE CONTRACTOR SHALL VERIFY THE STYLE (HL-10.11M ANCHOR BASE STYLE), BRACKET ARM LENGTH AND SHAPE, UPSWEEP, SHAFT LENGTH, DIAMETER AND TAPER BY FIELD MEASURE OF EXISTING POLE M-2. THE M-3 POLE SHALL BE STEEL FABRICATED TO MATCH THE APPEARANCE OF POLE M-2 AS MEASURED AND THE ANCHOR BOLT SIZE AND LOCATION OF THE EXISTING FOUNDATION AT M-3. THE POLE SHALL BE GALVANIZED PER 713.01.8 AND FACTORY COATED WITH A PRIME COATING SUITABLE TO ACCEPT EPOXY INTERMEDIATE AND URETHANE FINISH COATINGS THAT ARE TO BE FIELD APPLIED WHEN THE EXISTING LINCOLN AVE. POLES ARE COATED.

## 625 - LIGHTING MISC.: FIELD PAINTING OF STEEL LIGHT POLE, AS PER PLAN

AT LINCOLN AVE. EXISTING POLES M-1, M-2, M-4, M-5 ARE TO BE REUSED IN PLACE FOR THE PROPOSED LIGHTING. EXISTING LUMINAIRES SHALL BE REMOVED FOR STORAGE UNDER SEPARATE PAYMENT. THE POLES, INCLUDING BRACKET ARMS, SHALL BE CLEANED AND COATED PER THE NOTE IN THE PROPOSAL. PROPOSED NEW POLE M-3 SHALL BE FACTORY PRIME COATED AND SHALL BE FIELD PAINTED WITH INTERMEDIATE AND FINISH COATS WITH THE SAME MATERIAL AND IN THE SAME MANNER AS THE REUSED POLES.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE ABOVE WORK:

ITEM 625- LIGHTING MISC.: FIELD PAINTING OF STEEL LIGHT POLE,  
AS PER PLAN ----- 5 EACH

## ITEM 625 - DISCONNECT EXISTING CIRCUIT

THIS WORK CONSISTS OF LABOR, MATERIALS AND COORDINATION NECESSARY TO DISCONNECT EXISTING LIGHTING CIRCUITS AND REMOVE EXISTING CABLE AND CONNECTORS AT THE FOLLOWING LOCATIONS:

- POLE AB-1 AT RAMP D - REMOVE EXISTING CABLE THAT RUNS TO POLE THAT IS TO BE REMOVED NEAR STA. 32+648
- EXISTING CIRCUIT K BRANCH AT LINCOLN AVE. - REMOVE CABLE FROM S.R. 7 MAINLINE TO POLE K-8 ON THE CLOSED AETNAVILLE BRIDGE.
- EXISTING CIRCUIT D POLE D-23 TO BE REMOVED - AT AETNA. ST. REMOVE CABLE TO THE EXISTING S.R. 7 CIRCUIT.
- EXISTING POLE B-7 (PROPOSED N-1) AT HANOVER ST. - CURRENTLY DISCONNECTED; REMOVE ANY CABLE TO S.R. 7 LIGHTING.
- AT FIFTH ST. AND MACKAY AVE. - REMOVE CABLE BETWEEN ALL POLES BEING REMOVED AND CONNECTIONS AT S.R. 7
- AT JEANETTE AVE./OHIO AVE. - REMOVE CABLE BETWEEN EXISTING POLES (PROPOSED R-1, R-2, R-3) AND TO CONNECTION AT S.R. 7
- AT HILL ST. - REMOVE EXISTING CABLE BETWEEN PROPOSED POLE GC-1 AND EXISTING S.R. 7 MAINLINE CIRCUIT.

ALL EXISTING CABLE OF THE S.R. 7 LIGHTING SYSTEM THAT IS NOT REMOVED INCIDENTALLY WITH SEPARATELY PAID 202 OR 203 REMOVAL OR THE ABOVE LISTING SHALL BE REMOVED AND DISPOSED UNDER THIS ITEM UNLESS OTHERWISE APPROVED BY THE ENGINEER.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE ABOVE WORK:

ITEM 625 - DISCONNECT EXISTING CIRCUIT ----- LUMP

## ITEM SPECIAL, PLASTIC CAUTION TAPE

THE LOCATION OF UNDERGROUND CONDUIT AND BURIED ELECTRICAL CABLES SHALL BE MARKED BY USING A CONTINUOUS IDENTIFYING TAPE BURIED IN THE TRENCH ABOVE THE CONDUIT AND CABLES. THE IDENTIFYING TAPE SHALL BE AN INERT MATERIAL, APPROXIMATELY 150mm WIDE, COMPOSED OF POLYETHYLENE PLASTIC HIGHLY RESISTANT TO ALKALIS, ACIDS, OR OTHER CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS.

THE TAPE SHALL BE BRIGHT SAFETY RED WITH IDENTIFYING PRINTING "ELECTRIC" IN BLACK LETTERS, ONE SIDE ONLY. THE TAPE SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERING REPEATED THE ENTIRE LENGTH OF THE OF THE TAPE.

THE CONTRACTOR SHALL BURY THE IDENTIFYING TAPE ABOVE THE CONDUIT AND CABLES AT AN APPROXIMATE DEPTH OF 150mm TO 250mm BELOW THE FINISHED GRADE. THE TAPE SHALL BE PLACED WITH THE PRINTED SIDE UP, AND SHALL BE ESSENTIALLY PARALLEL WITH THE FINISHED SURFACE.

THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO NOT PULL, DISTORT, OR OTHERWISE MISPLACE THE TAPE WHEN COMPLETING THE BACKFILL. THE TAPE SHALL BE PAID FOR PER METER OF ITEM SPECIAL, PLASTIC CAUTION TAPE, COMPLETE IN PLACE.

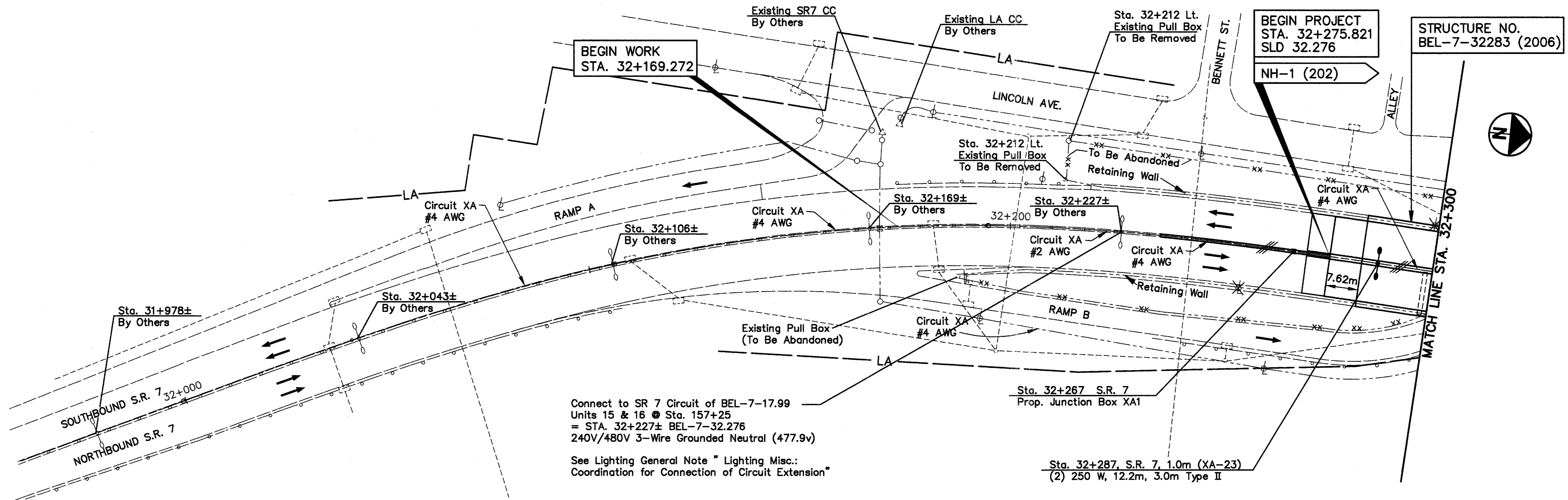
LIGHTING CONTROL CENTER DATA

Control Center	Service Type	Connected Load (KVA)	Service Entrance Conductor Size (AWG)	Enclosure	Circuit #	Circuit Load (Amps)	Circuit Fuse Size (Amps)	Maintaining Agency	Remarks
A	480 2-Wire Grounded Neutral	10.8	#4	SC-60	AA	9.8	30	"ODOT"	
					AB	12.6	30		
B	480 2-Wire Grounded Neutral	10.1	#4	SC-60	BA	11.2	30	"ODOT"	
					BB	9.8	30		
C	120/240 3-Wire Grounded Neutral	4.6	#4	SC-60	CA	19.2	30	Martins Ferry	
D	120/240 3-Wire Grounded Neutral	12.1	#4	SC-100	DA	24.7	60	Martins Ferry	
					DB	25.7	60		
E	120/240 3-Wire Grounded Neutral	13.8	#4	SC-100	EA	22.8	60	Martins Ferry	
					EB	32.0	60		
F	120/240 3-Wire Grounded Neutral	10.2	#4	SC-60	FA	20.6	60	Martins Ferry	
					FB	21.9	60		
G	120/240 3-Wire Grounded Neutral	8.2	#4	SC-60	GA	16.4	30	Martins Ferry	
					GB	16.4	30		
					GC	1.4	30		
M	120/240 3-Wire Grounded Neutral	1.7	#4	SC-60	M	6.9	30	Bridgeport	Lincoln
N	120/240 3-Wire Grounded Neutral	0.3	#4	SC-60	N	1.4	30	Martins Ferry	Hanover
P	120/240 3-Wire Grounded Neutral	1.3	#4	SC-60	P	5.6	30	Martins Ferry	Ped. Br.
Q	120/240 3-Wire Grounded Neutral	1.0	#4	SC-60	Q	4.1	30	Martins Ferry	Fifth
R	120/240 3-Wire Grounded Neutral	1.0	#4	SC-60	R	4.1	30	Martins Ferry	Jeanette
Existing SR7 CC	240/480 3-Wire Grounded Neutral	11.4	#4	Existing	XA	23.7	60	"ODOT"	Existing

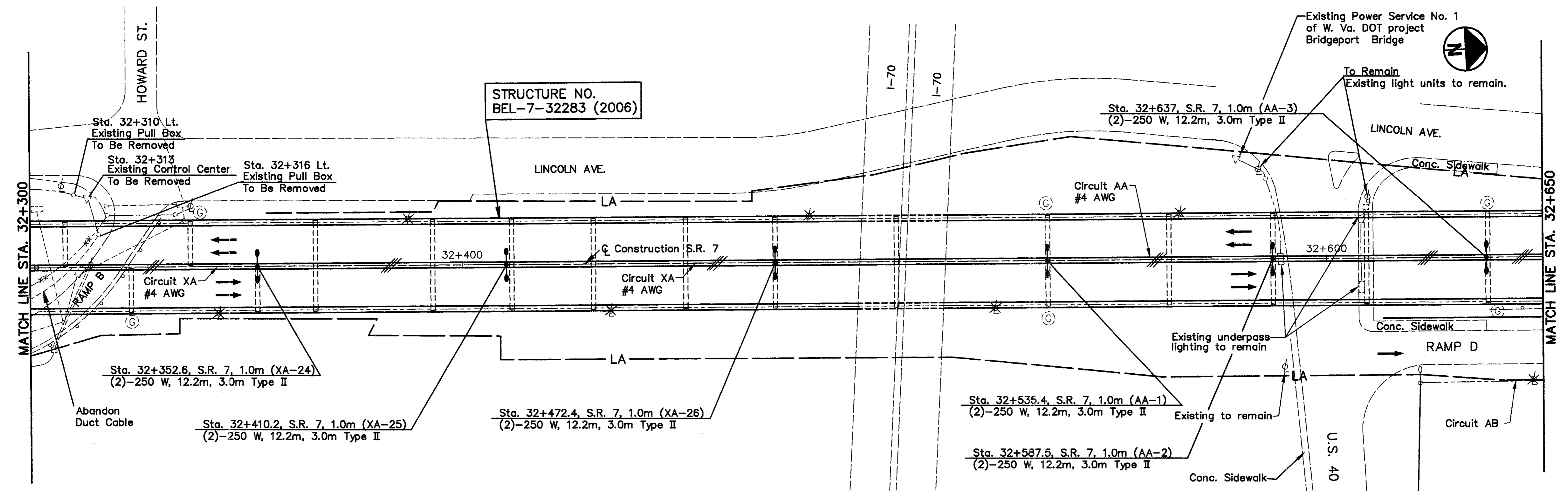
LIGHTING GENERAL NOTES

BEL-7-32.276

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Connect to SR 7 Circuit of BEL-7-17.99  
 Units 15 & 16 @ Sta. 157+25  
 = STA. 32+227± BEL-7-32.276  
 240V/480V 3-Wire Grounded Neutral (477.9v)  
 See Lighting General Note "Lighting Misc.:  
 Coordination for Connection of Circuit Extension"

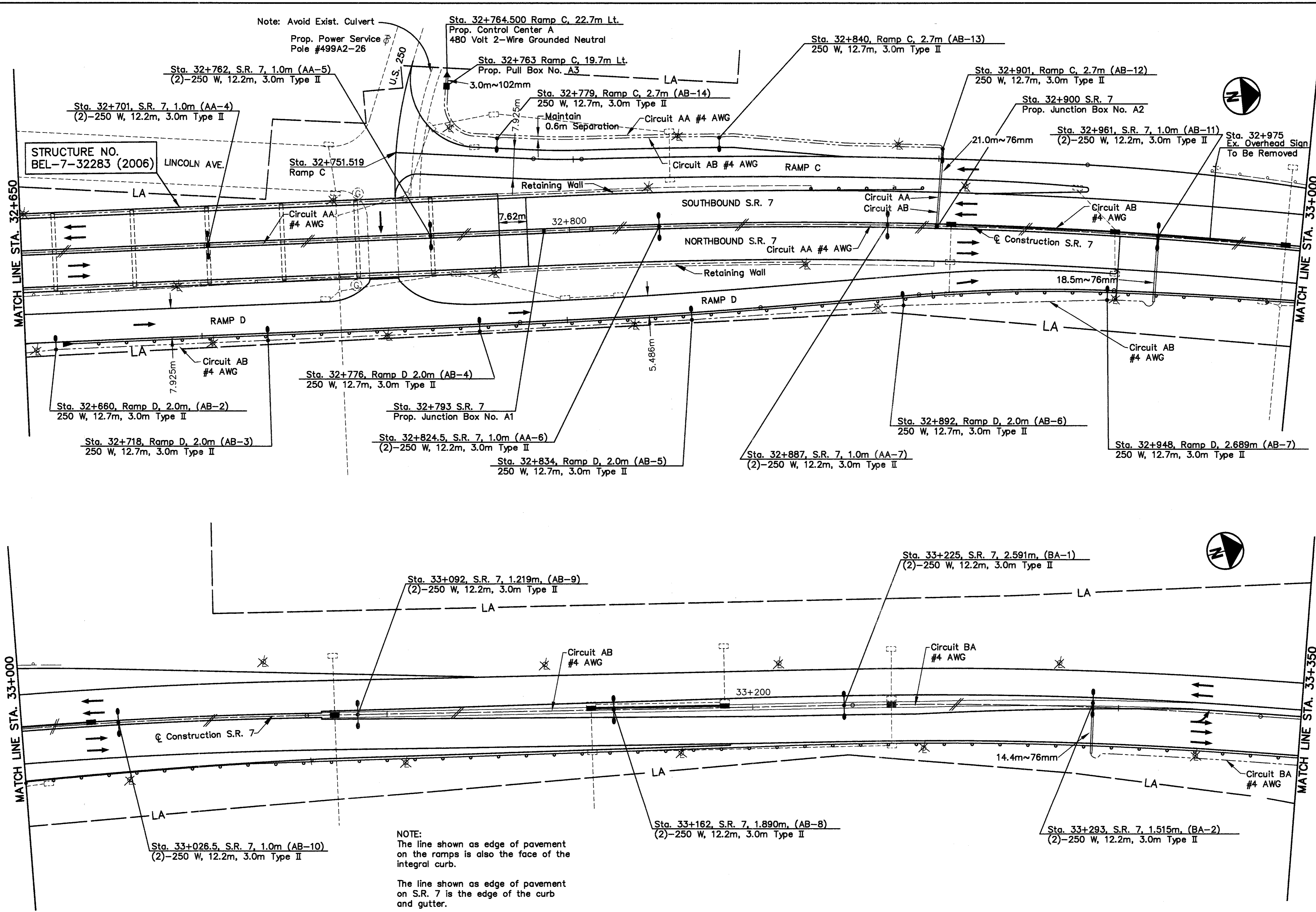


For Legend, See Sheet No. 157  
 For Quantities, See Sheet No. 182-184  
 For Circuit Diagrams, See Sheet No. 174 & 175



CALCULATED SAH CHECKED AEH  
**LIGHTING PLAN - S.R. 7**  
**STA. 32+169.272 TO STA. 32+650**

**BEL-7-32.276**



Note: Avoid Exist. Culvert  
 Prop. Power Service Pole #499A2-26

Sta. 32+764.500 Ramp C, 22.7m Lt.  
 Prop. Control Center A  
 480 Volt 2-Wire Grounded Neutral

Sta. 32+840, Ramp C, 2.7m (AB-13)  
 250 W, 12.7m, 3.0m Type II

Sta. 32+901, Ramp C, 2.7m (AB-12)  
 250 W, 12.7m, 3.0m Type II

Sta. 32+900 S.R. 7  
 Prop. Junction Box No. A2

Sta. 32+961, S.R. 7, 1.0m (AB-11)  
 (2)-250 W, 12.2m, 3.0m Type II

Sta. 32+975  
 Ex. Overhead Sign  
 To Be Removed

STRUCTURE NO.  
 BEL-7-32283 (2006)  
 LINCOLN AVE.

Sta. 32+751.519  
 Ramp C

Sta. 32+763 Ramp C, 19.7m Lt.  
 Prop. Pull Box No. A3

Sta. 32+779, Ramp C, 2.7m (AB-14)  
 250 W, 12.7m, 3.0m Type II

Sta. 32+776, Ramp D, 2.0m (AB-4)  
 250 W, 12.7m, 3.0m Type II

Sta. 32+793 S.R. 7  
 Prop. Junction Box No. A1

Sta. 32+824.5, S.R. 7, 1.0m (AA-6)  
 (2)-250 W, 12.2m, 3.0m Type II

Sta. 32+834, Ramp D, 2.0m (AB-5)  
 250 W, 12.7m, 3.0m Type II

Sta. 32+887, S.R. 7, 1.0m (AA-7)  
 (2)-250 W, 12.2m, 3.0m Type II

Sta. 32+892, Ramp D, 2.0m (AB-6)  
 250 W, 12.7m, 3.0m Type II

Sta. 32+948, Ramp D, 2.689m (AB-7)  
 250 W, 12.7m, 3.0m Type II

Sta. 32+660, Ramp D, 2.0m, (AB-2)  
 250 W, 12.7m, 3.0m Type II

Sta. 32+718, Ramp D, 2.0m (AB-3)  
 250 W, 12.7m, 3.0m Type II

Sta. 33+092, S.R. 7, 1.219m, (AB-9)  
 (2)-250 W, 12.2m, 3.0m Type II

Sta. 33+225, S.R. 7, 2.591m, (BA-1)  
 (2)-250 W, 12.2m, 3.0m Type II

Sta. 33+162, S.R. 7, 1.890m, (AB-8)  
 (2)-250 W, 12.2m, 3.0m Type II

Sta. 33+293, S.R. 7, 1.515m, (BA-2)  
 (2)-250 W, 12.2m, 3.0m Type II

Sta. 33+026.5, S.R. 7, 1.0m (AB-10)  
 (2)-250 W, 12.2m, 3.0m Type II

NOTE:  
 The line shown as edge of pavement  
 on the ramps is also the face of the  
 integral curb.

The line shown as edge of pavement  
 on S.R. 7 is the edge of the curb  
 and gutter.

All proposed guardrail is Type 5.  
 Guardrail flares on the approach  
 end will be Type E, trailing end  
 will be Type T.

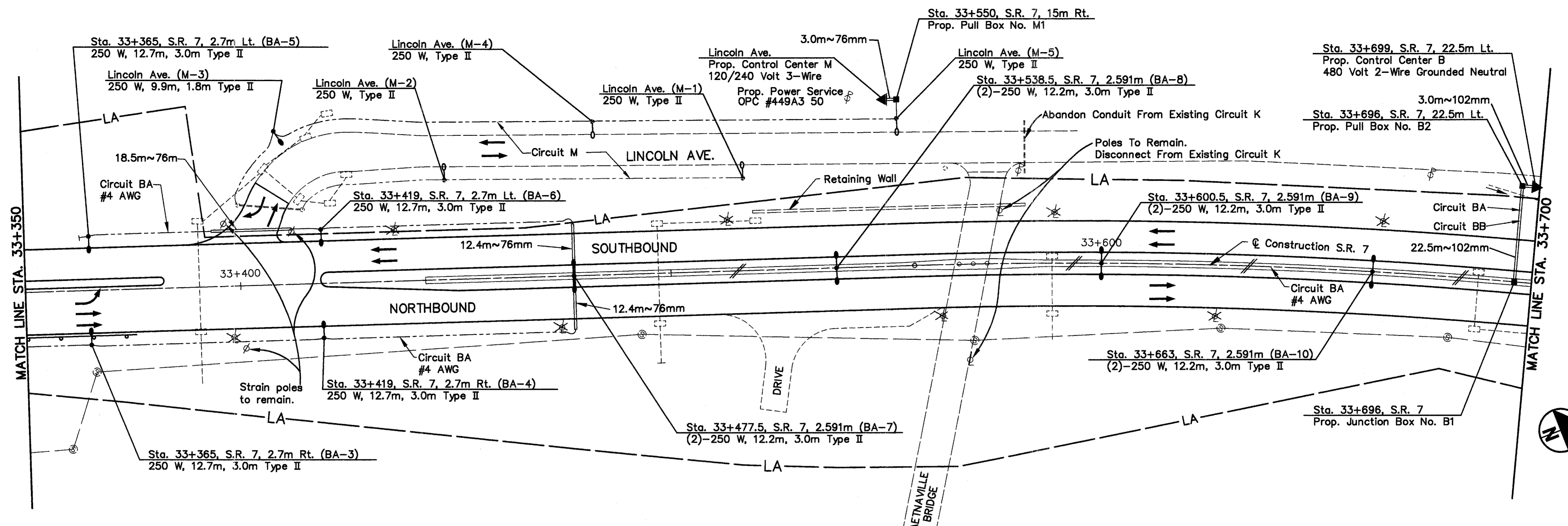
For Legend, See Sheet No. 157  
 For Quantities, See Sheet No. 182-185  
 For Circuit Diagrams, See Sheet No. 175-176

CALCULATED SAH  
 CHECKED AEH

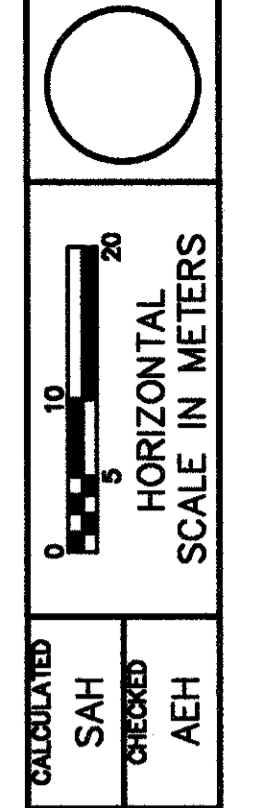
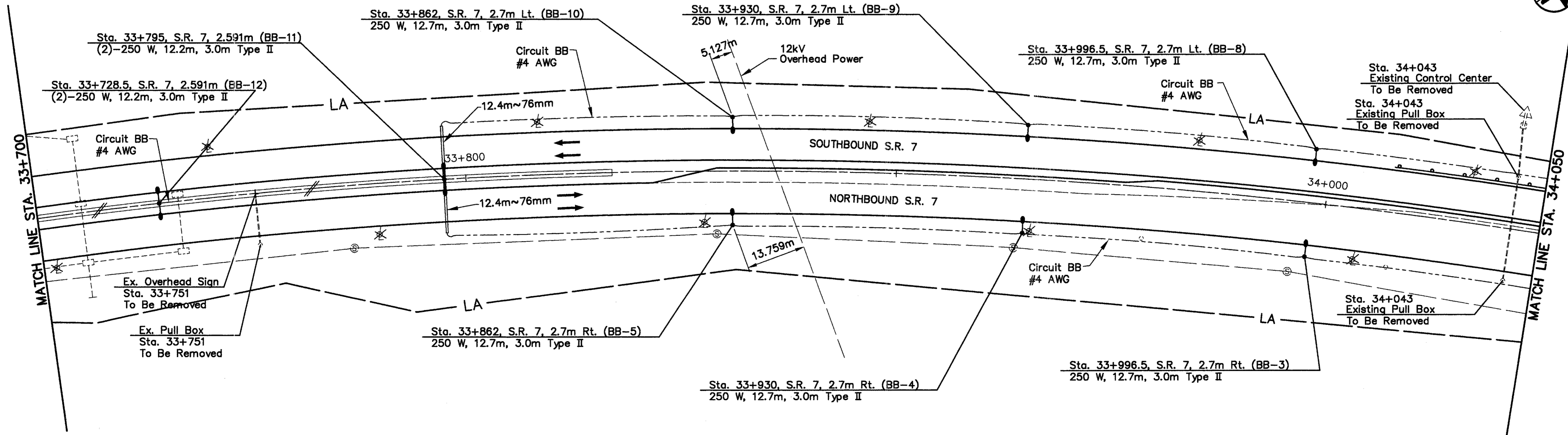
HORIZONTAL SCALE IN METERS

**LIGHTING PLAN - S.R. 7  
 STA. 32+650 TO STA. 33+350**

**BEL-7-32.276**



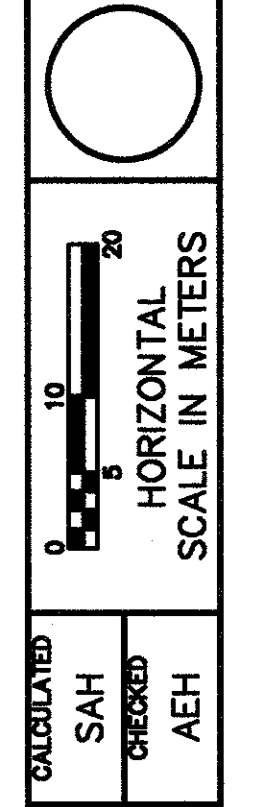
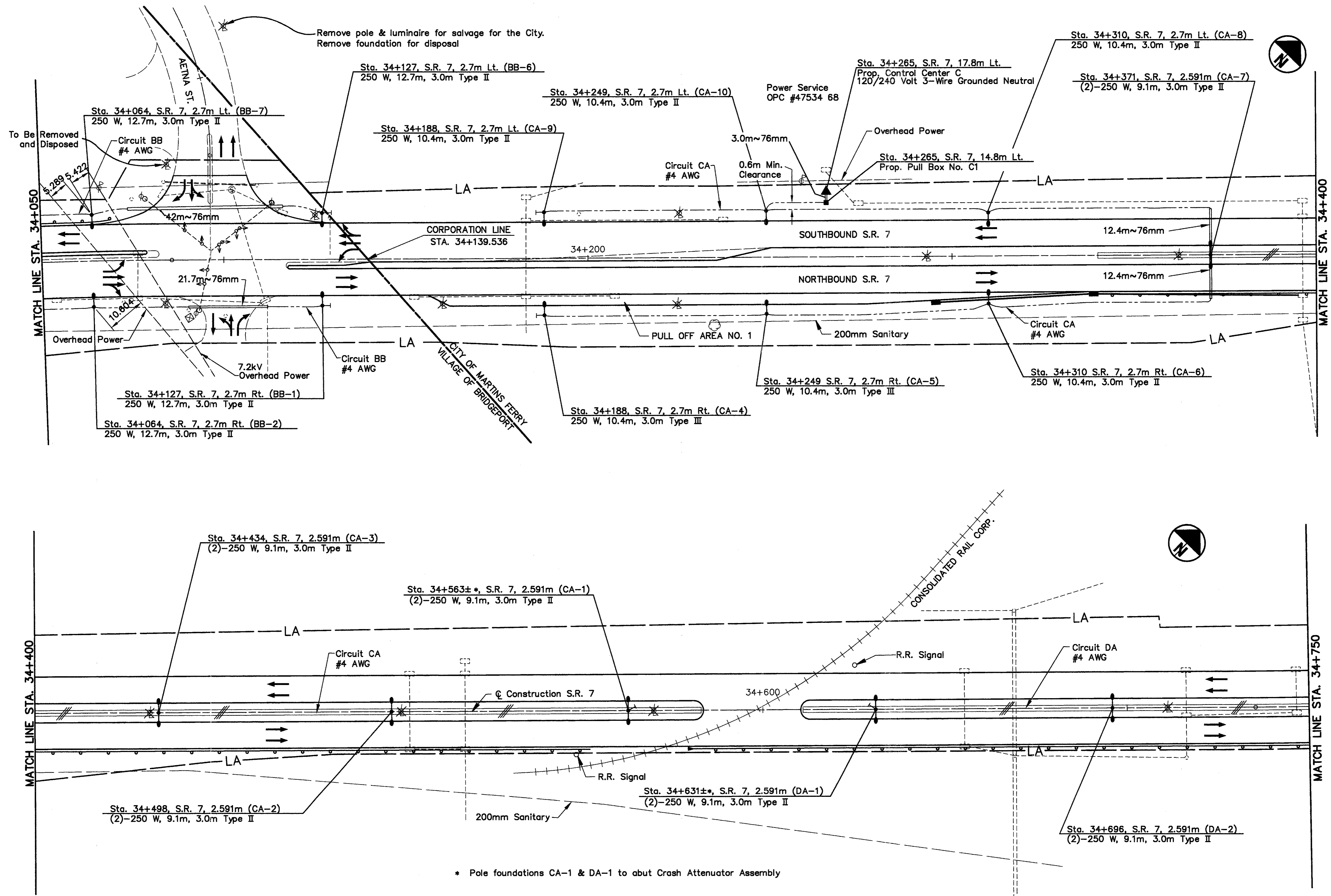
Lincoln Ave. work (Circuit M)  
 - M-3: Provide new pole on existing foundation. See lighting general notes 625 LIGHT POLE DESIGN A1.8B9.9, AS PER PLAN  
 - M-1, M-2, M-4, M-5: See lighting general notes 625 CLEANING AND COATING EXISTING STEEL LIGHT POLES  
 - All Units: Provide new luminaire; provide new connector kits to connect new pole and bracket cable to new duct cable (No. 4 AWG); Remove existing pole & bracket cable.



**LIGHTING PLAN - S.R. 7  
 STA. 33+350 TO STA. 34+050**

**BEL-7-32.276**

For Legend, See Sheet No. 157  
 For Quantities, See Sheet No. 182, 185-186  
 For Circuit Diagrams, See Sheet No. 176

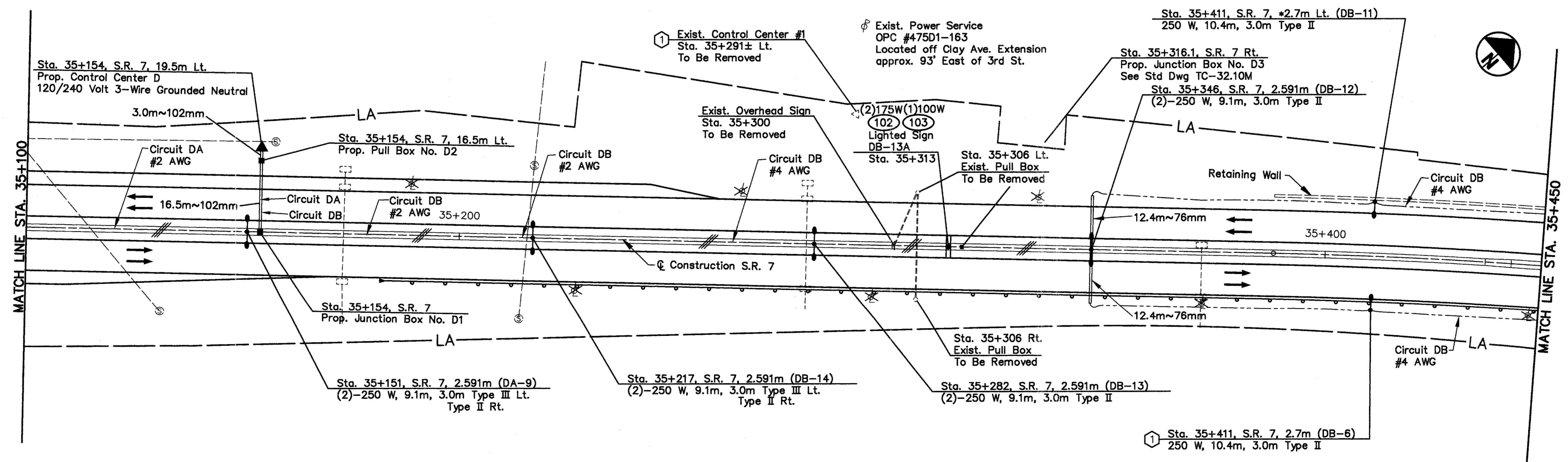
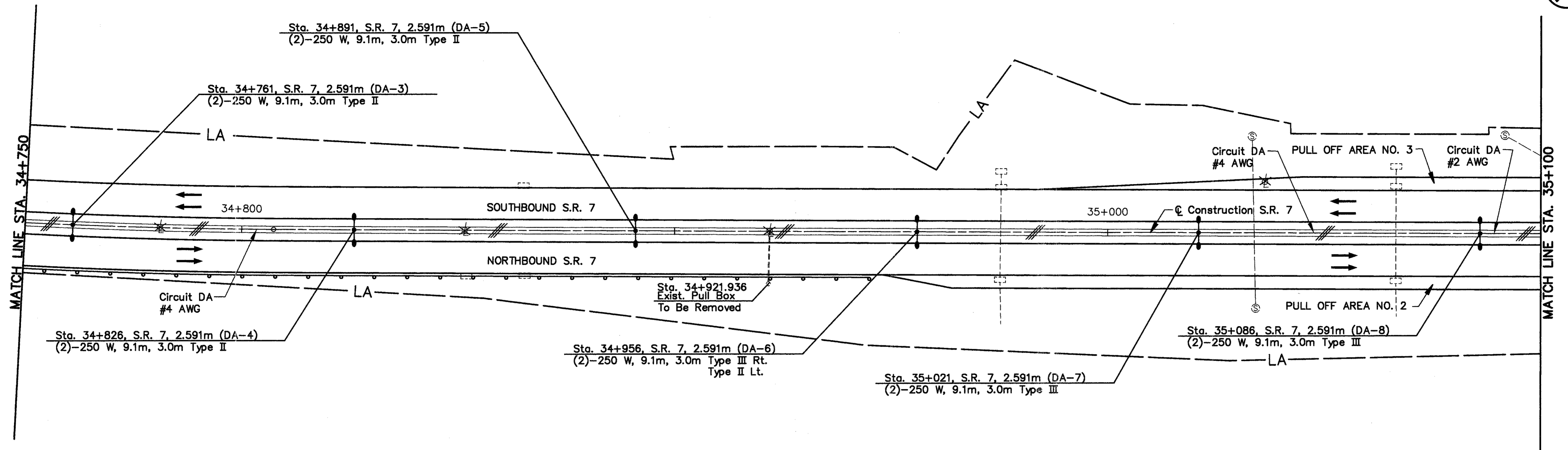
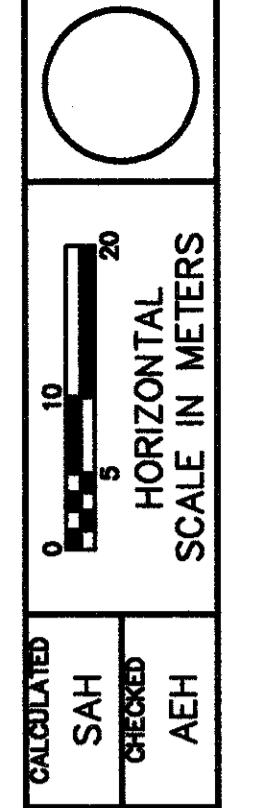


**LIGHTING PLAN - S.R. 7  
STA. 34+050 TO STA. 34+750**

**BEL-7-32.276**

For Legend, See Sheet No. 157.  
For Quantities, See Sheet No. 182, 186-187.  
For Circuit Diagrams, See Sheet No. 176-177.  
For Aetna St. Signal Plan, See Sheet No. 155.





\* If necessary adjust foundation offset to clear wall footing

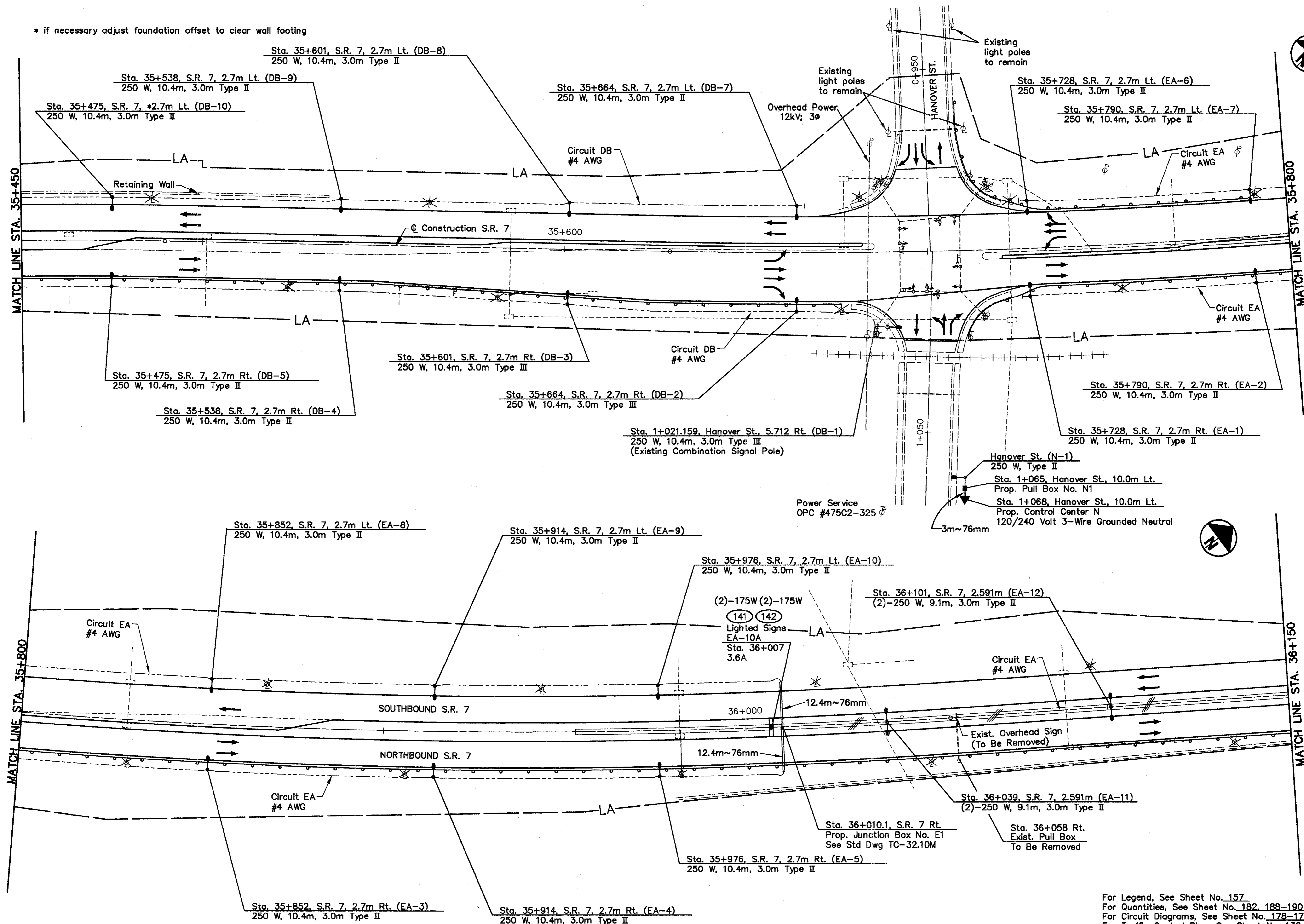
**LIGHTING PLAN - S.R. 7  
STA. 34+750 TO STA. 35+450**

**BEL-7-32.276**

168  
242

For Legend, See Sheet No. 157  
For Quantities, See Sheet No. 182, 188-189  
For Circuit Diagrams, See Sheet No. 178

\* if necessary adjust foundation offset to clear wall footing

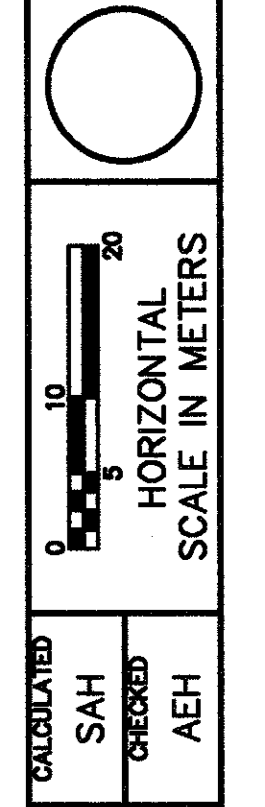
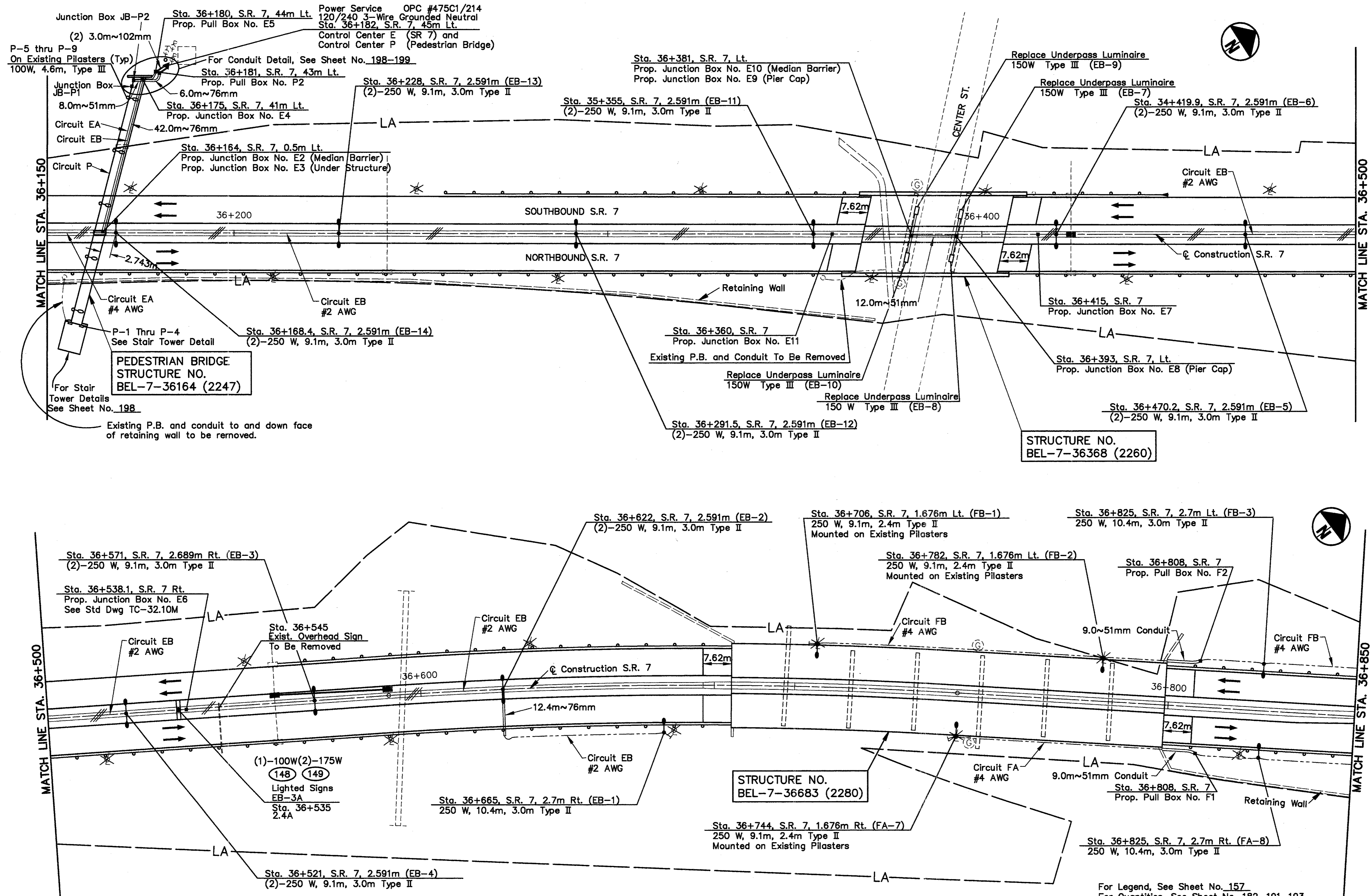


CALCULATED  
SAH  
CHECKED  
AEH

**LIGHTING PLAN - S.R. 7  
STA. 35+450 TO STA. 36+150**

**BEL-7-32.276**

For Legend, See Sheet No. 157  
 For Quantities, See Sheet No. 182, 188-190  
 For Circuit Diagrams, See Sheet No. 178-179  
 For Traffic Control Plan, See Sheet No. 138  
 For Hanover St. Signal Plan, See Sheet No. 156A

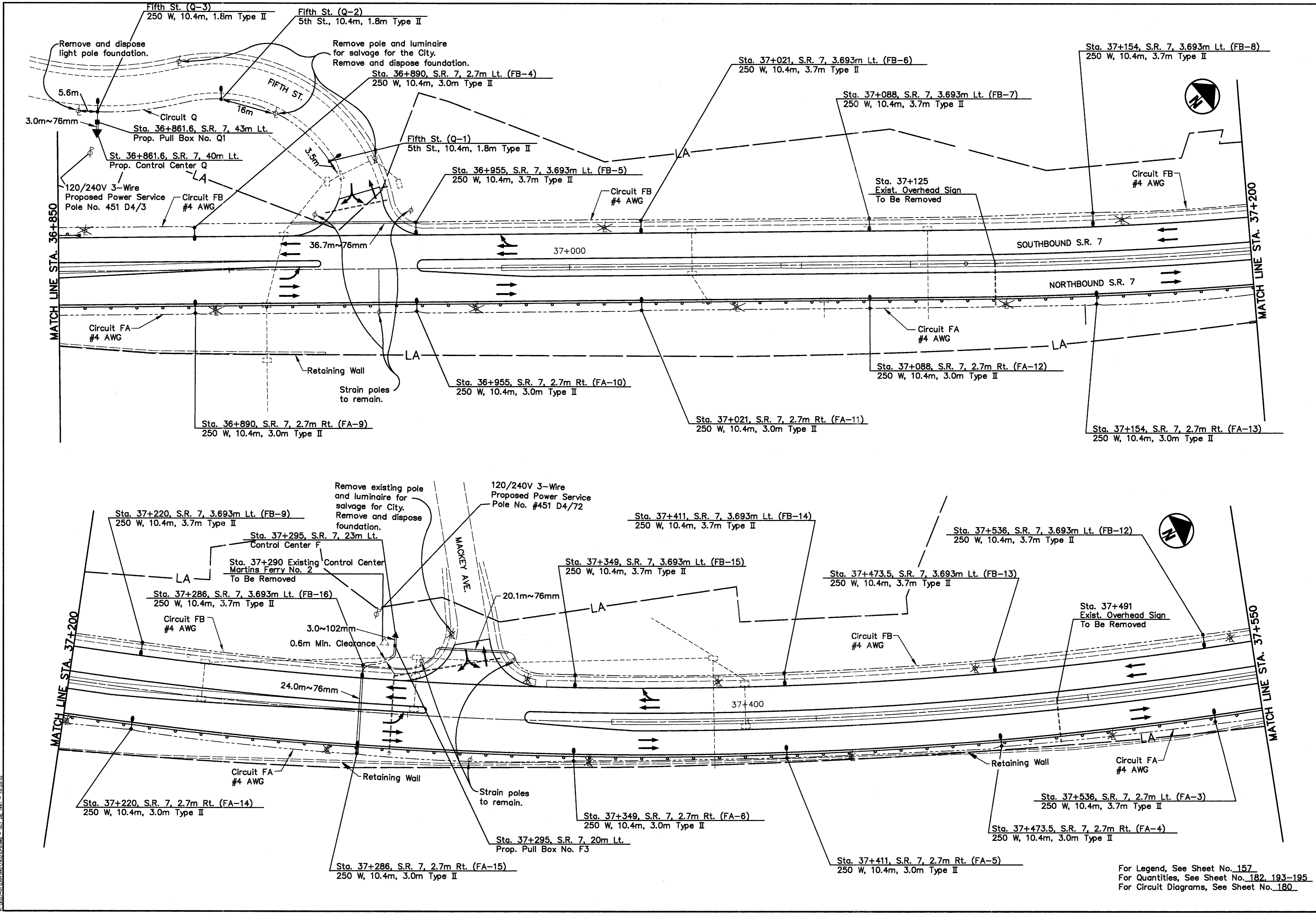


CALCULATED  
SAH  
CHECKED  
AEH

**LIGHTING PLAN - S.R. 7  
STA. 36+150 TO STA. 36+850**

**BEL-7-32.276**

For Legend, See Sheet No. 157  
 For Quantities, See Sheet No. 182, 191-193  
 For Traffic Control Plan, See Sheet No. 139  
 For Circuit Diagrams, See Sheet No. 179-180  
 For Underpass Luminaire and  
 Associated Conduit Details See Sheet No. 198  
 For Pedestrian Bridge Luminaire Details and  
 Associated Conduit Details See Sheet No. 198-199

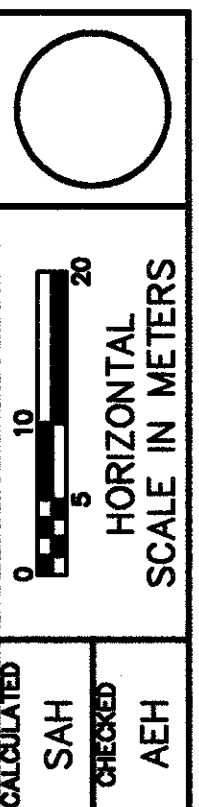
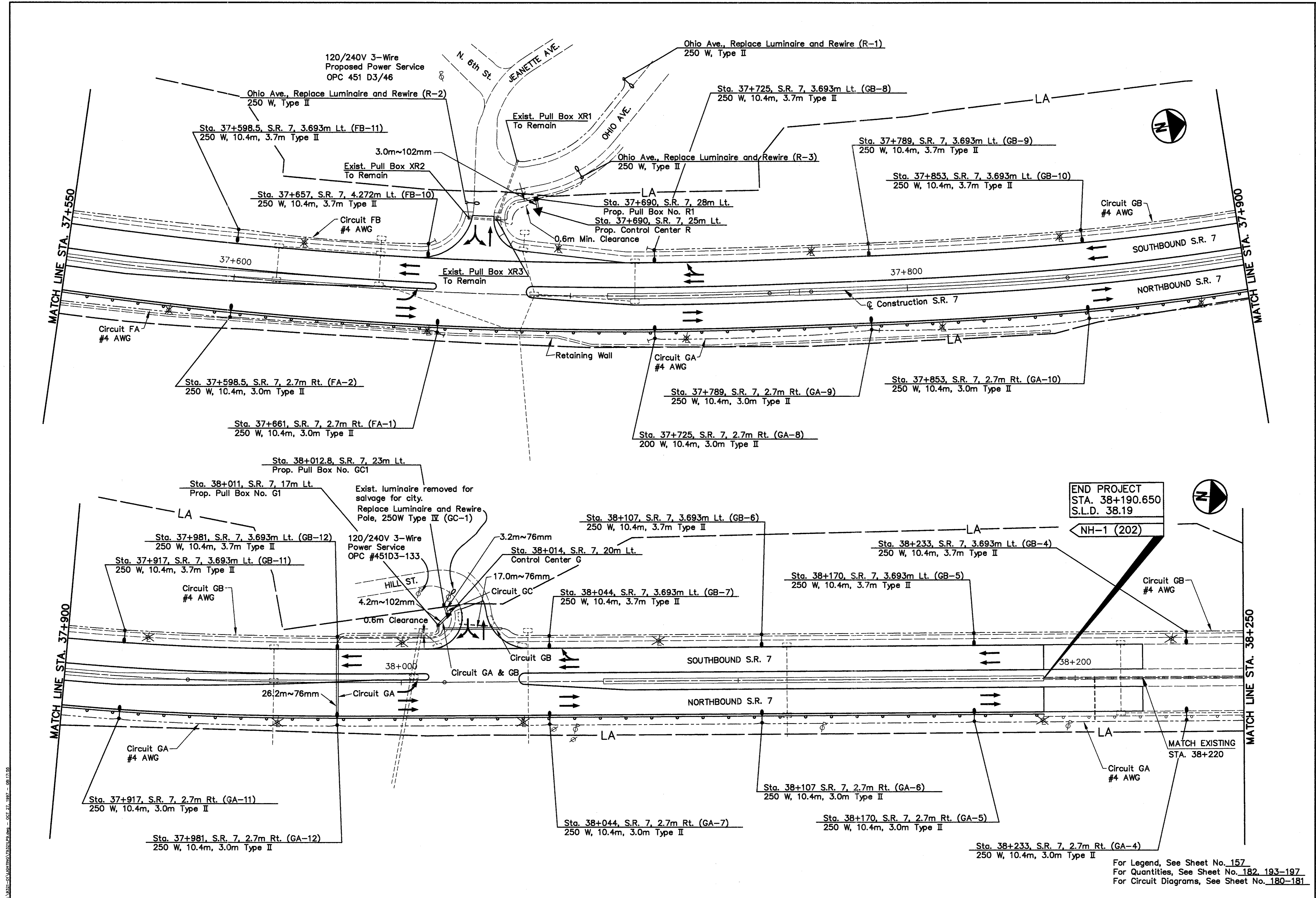


CALCULATED  
 SAID  
 CHECKED  
 AEF

**LIGHTING PLAN - S.R. 7**  
**STA. 36+850 TO STA. 37+550**

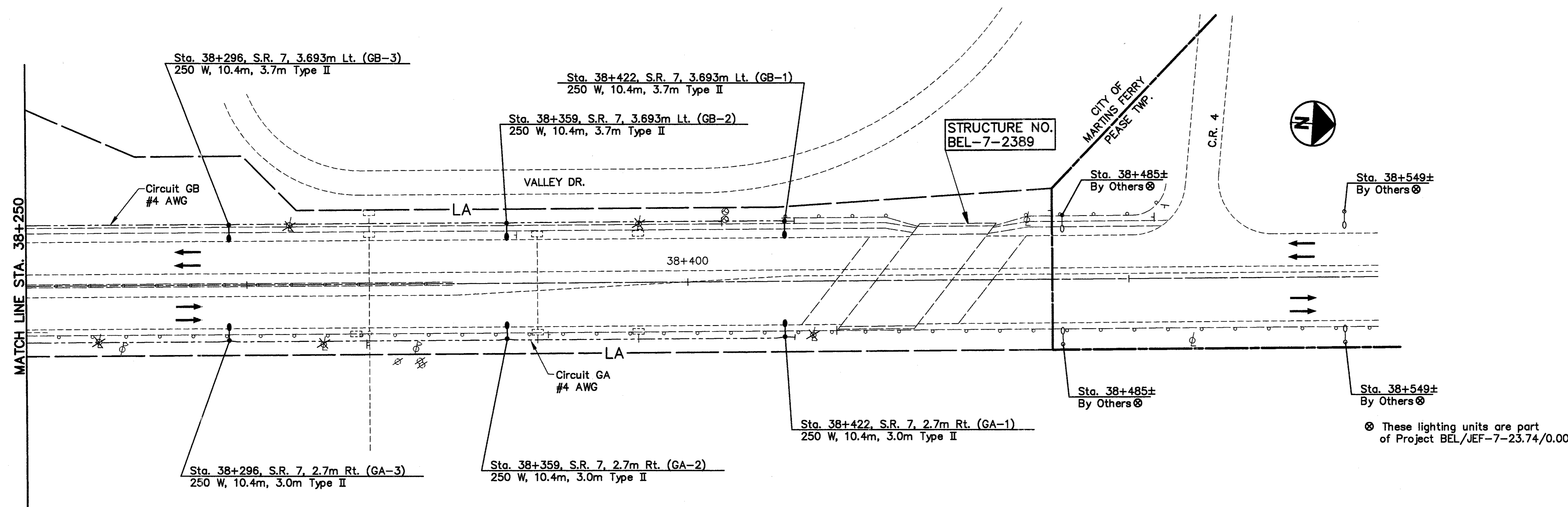
**BEL-7-32.276**


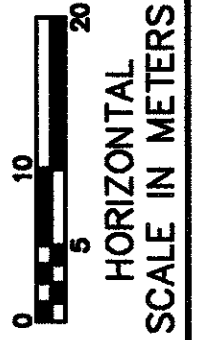
For Legend, See Sheet No. 157  
 For Quantities, See Sheet No. 182, 193-195  
 For Circuit Diagrams, See Sheet No. 180



CALCULATED SAH CHECKED AEH  
**LIGHTING PLAN - S.R. 7**  
**STA. 37+550 TO STA. 38+250**

**BEL-7-32.276**  
 For Legend, See Sheet No. 157  
 For Quantities, See Sheet No. 182, 193-197  
 For Circuit Diagrams, See Sheet No. 180-181



	
	
CALCULATED	CHECKED
SAH	AEH

**LIGHTING PLAN - S.R. 7  
STA. 38+250 TO STA. 38+422**

**BEL-7-32.276**

173
242

For Legend See Sheet No. 157  
 For Quantities, See Sheet No. 182, 196-197  
 For Circuit Diagrams, See Sheet No. 181

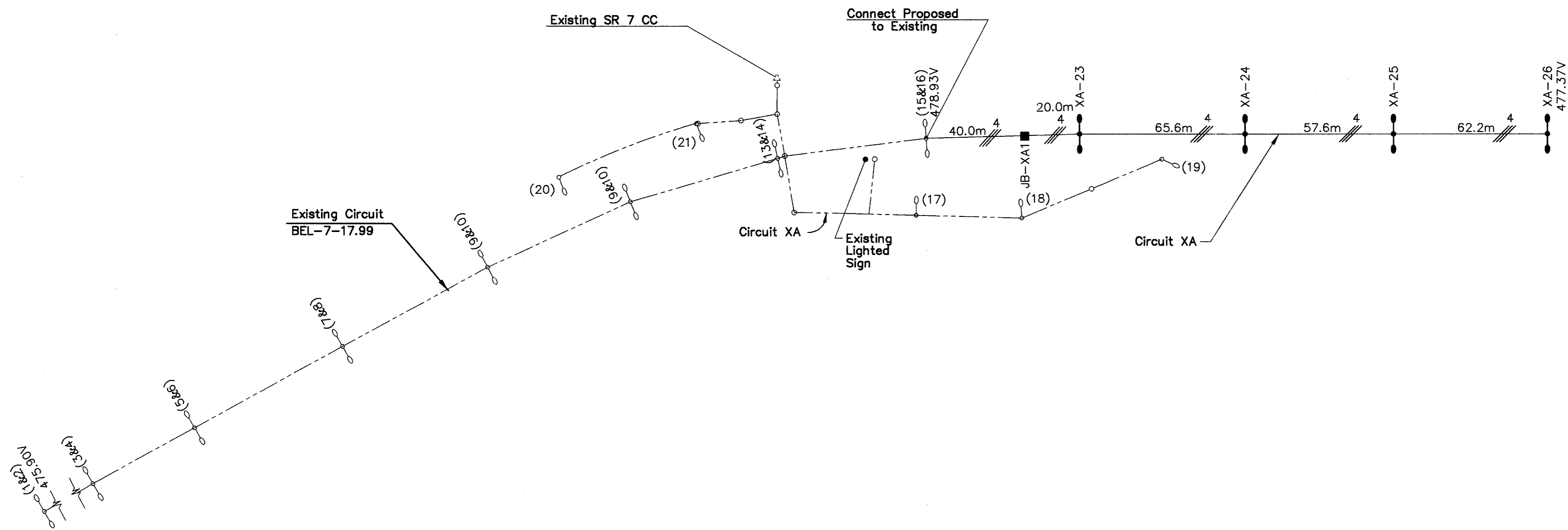


**TABULATION OF CIRCUIT LOADS**

POWER: 240/480 3-Wire Grounded Neutral

CIRCUIT XA:

Extension 8 - 250W HPS Lamps @ 0.7A = 5.6A  
 Existing 21 - 250W HPS @ 0.7A = 14.7A  
 Existing Sign = 3.4A  
 23.7A  
 % Drop = 0.55% at XA-26  
 % Drop = 0.85% at Existing 1&2



**CIRCUIT DIAGRAM**  
 EXIST. CONTROL CENTER SR 7  
 CIRCUIT XA

**CIRCUIT DIAGRAM**  
**CIRCUIT XA**

**BEL-7-32.276**

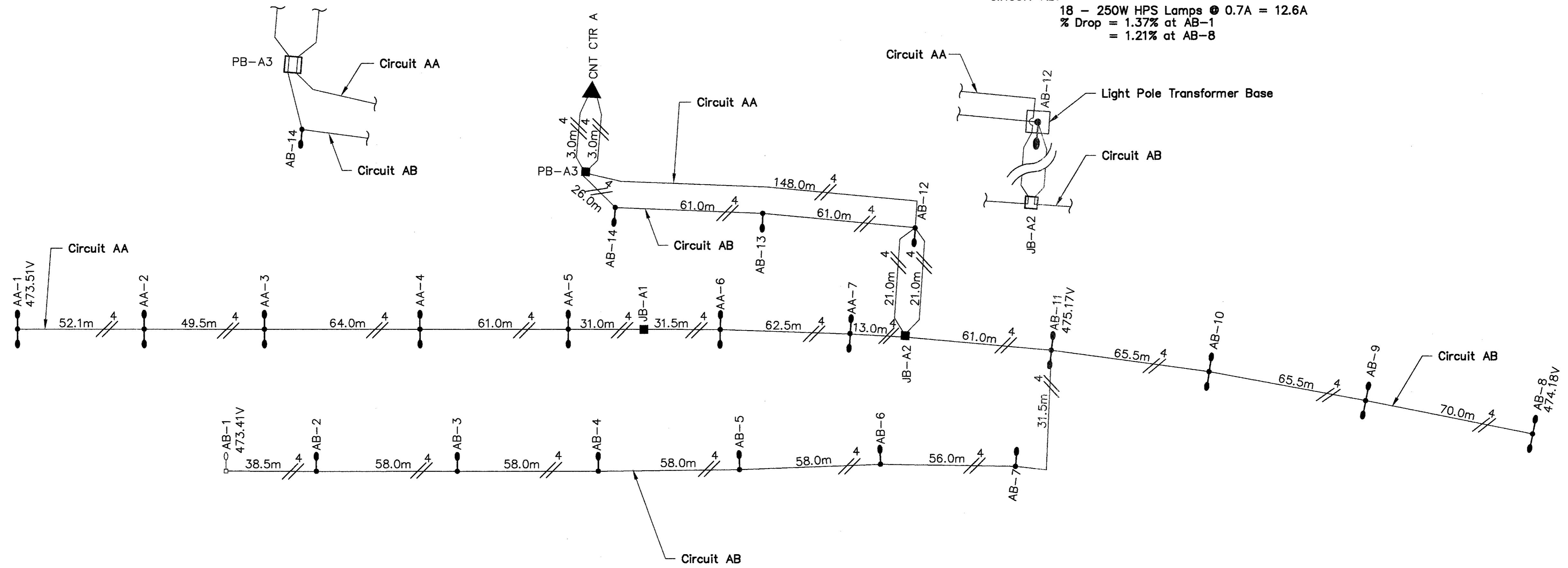
For Additional Conduit Details  
 And Circuitry Information  
 Refer To Plan BEL-7-17.99, Project 412(96)

**TABULATION OF CIRCUIT LOADS**

POWER: 480 Volt 2-Wire Grounded Neutral

CIRCUIT AA:  
14 - 250W HPS Lamps @ 0.7A = 9.8A  
% Drop = 1.35% at AA-1

CIRCUIT AB:  
18 - 250W HPS Lamps @ 0.7A = 12.6A  
% Drop = 1.37% at AB-1  
= 1.21% at AB-8



**CIRCUIT DIAGRAM  
CONTROL CENTER A**

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**TABULATION OF CIRCUIT LOADS**

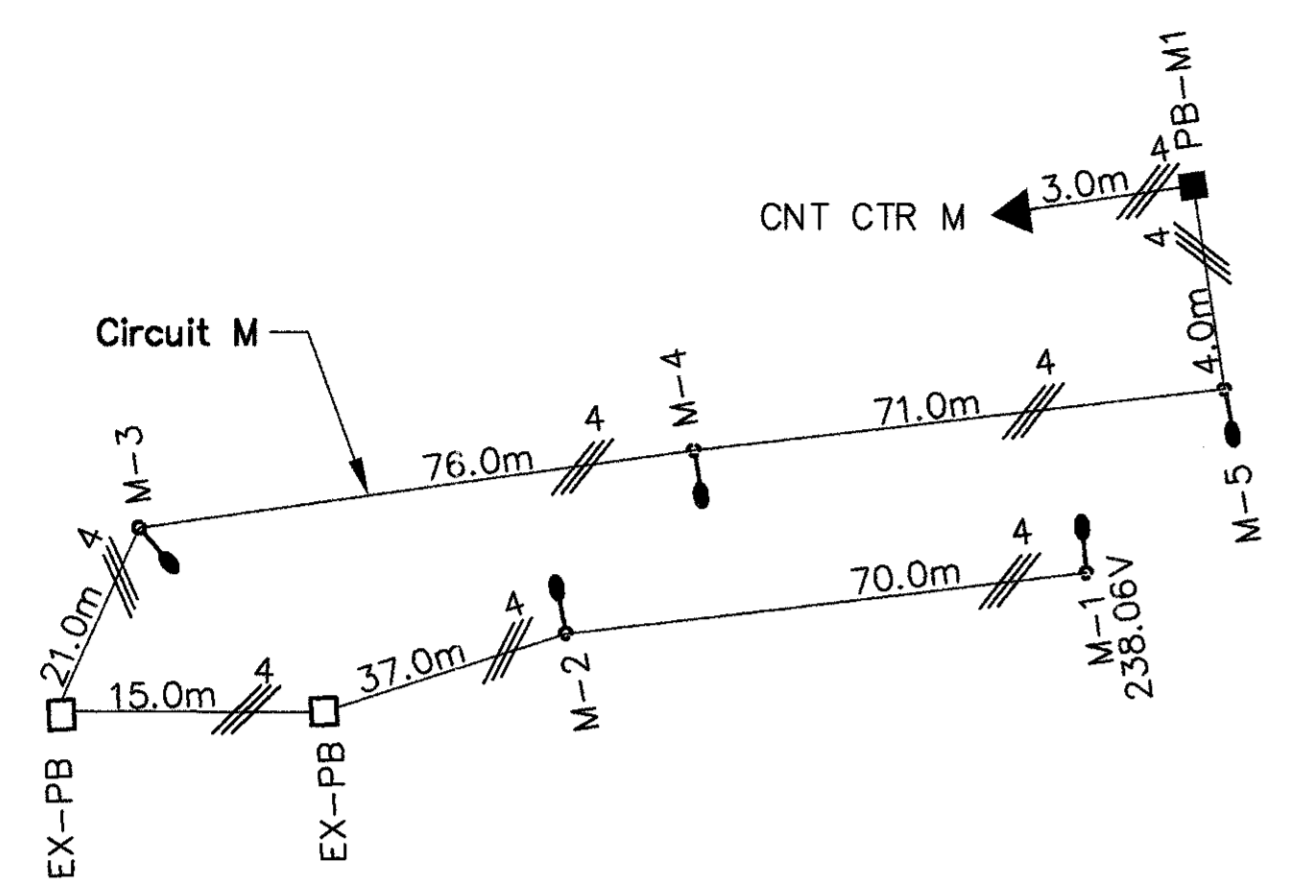
POWER: 480V 2-Wire Grounded Neutral

CIRCUIT BA:  
 16 - 250W HPS Lamps @ 0.7A = 11.2A  
 % Drop = 1.15% at BA-1  
 % Drop = 0.90% at BA-5

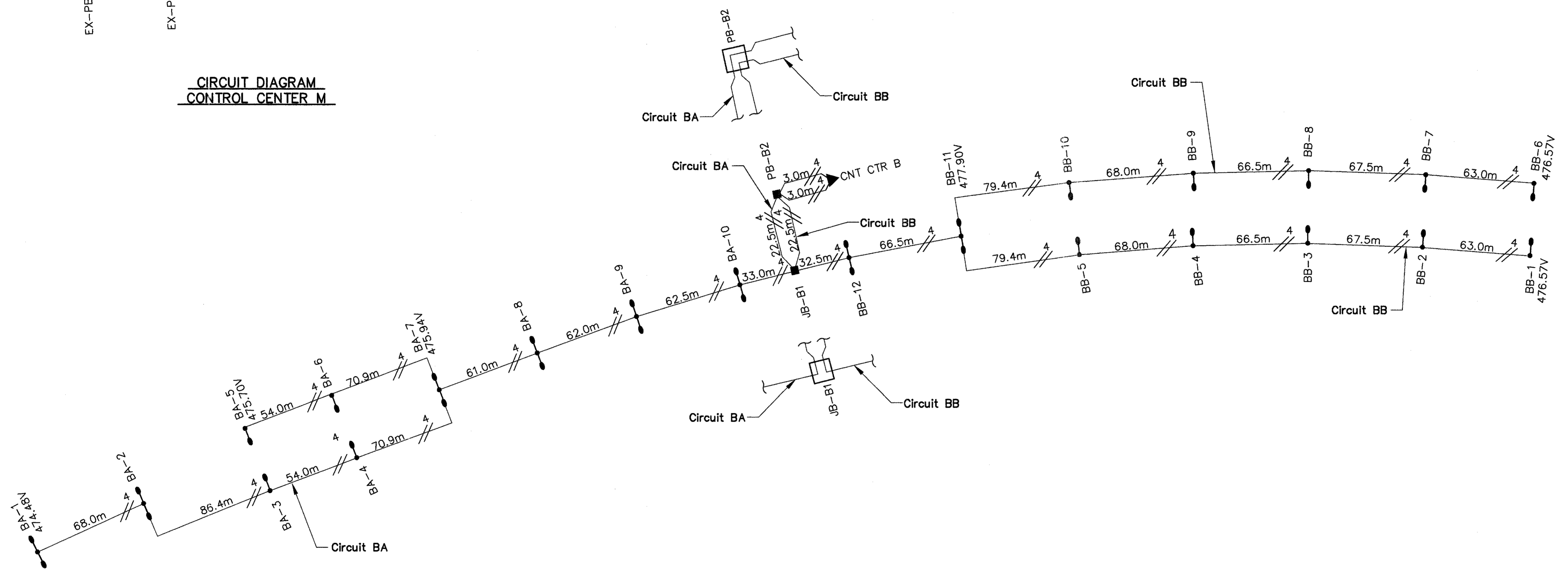
CIRCUIT BB:  
 14 - 250W HPS Lamps @ 0.7A = 9.8A  
 % Drop = 0.71% at BB-1 & BB-6

POWER: 120/240V 3-Wire Grounded Neutral

CIRCUIT M:  
 5 - 250W HPS Lamps @ 1.37A = 6.9A  
 % Drop = 0.81 at M1



**CIRCUIT DIAGRAM  
CONTROL CENTER M**



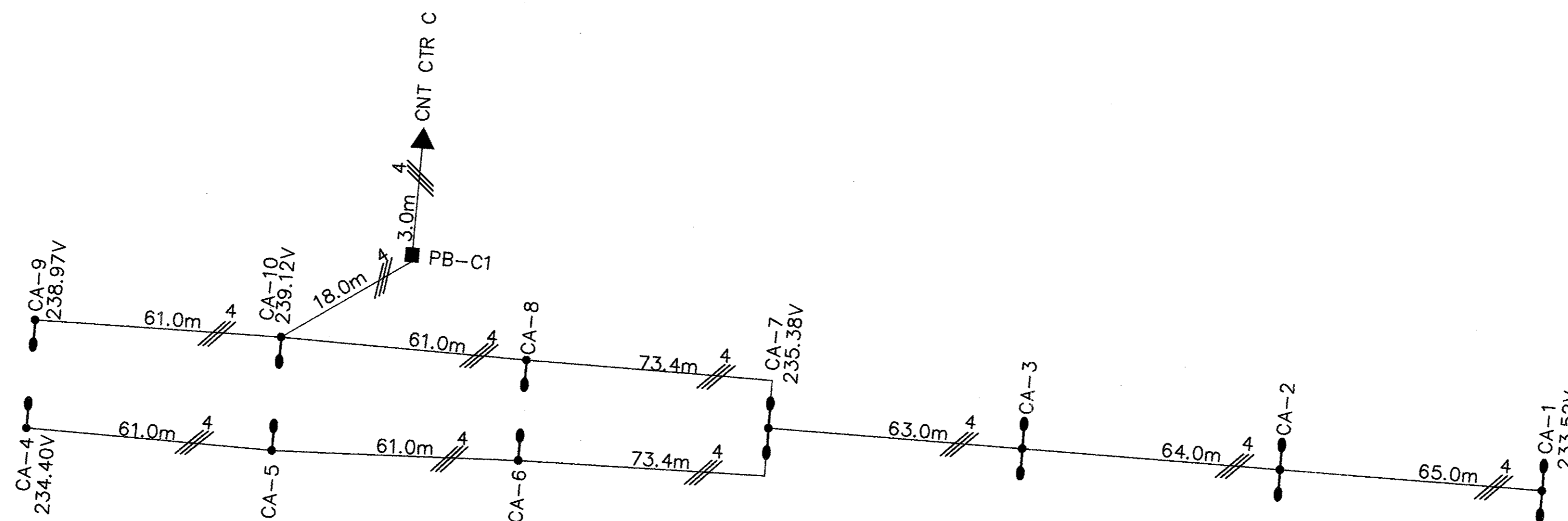
**CIRCUIT DIAGRAM  
CONTROL CENTER B**

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**TABULATION OF CIRCUIT LOADS**

POWER: 120/240V 3-Wire Grounded Neutral

CIRCUIT CA:  
 14 - 250W HPS Lamps @ 1.37A = 19.2A  
 % Drop = 2.70% at CA-1  
 = 2.33% at CA-4  
 = 0.43% at CA-9



**CIRCUIT DIAGRAM  
 CONTROL CENTER C**

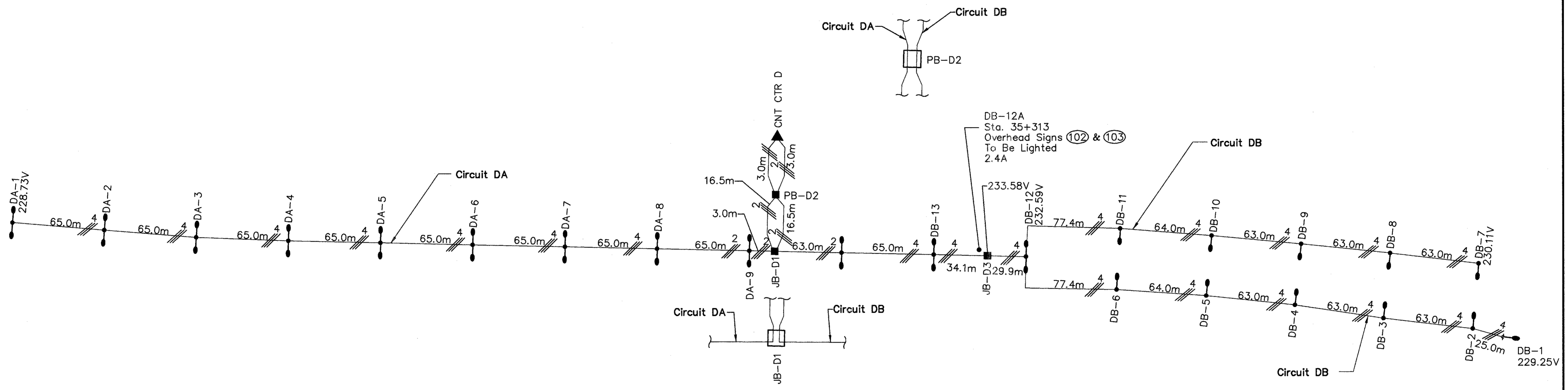
**TABULATION OF CIRCUIT LOADS**

POWER: 120/240V 3-Wire Grounded Neutral

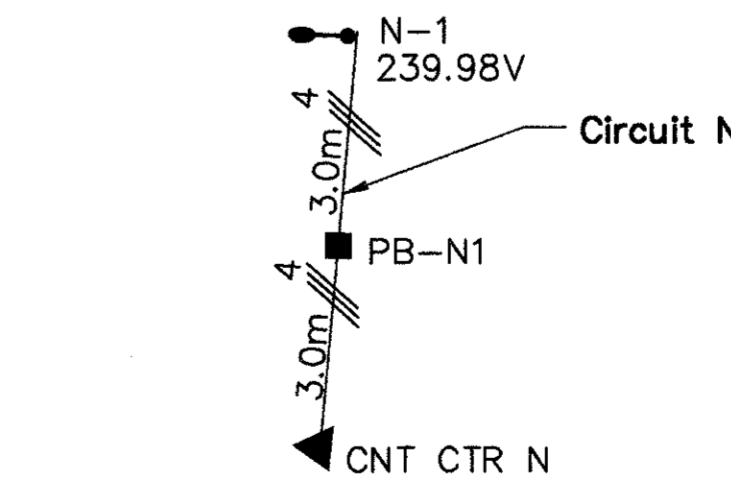
CIRCUIT DA:  
18 - 250W HPS @ 1.37A = 24.7A  
% Drop = 4.70% at DA-1

CIRCUIT DB:  
17 - 250W HPS @ 1.37A = 23.3A  
Sign (102) (2) - 175W Hg @ 0.9A = 1.8A  
Sign (103) (1) - 100W Hg @ 0.6A = 0.6A  
25.7A  
% Drop = 4.48% at DB-1  
= 4.12% at DB-7

CIRCUIT N:  
1 - 250W HPS @ 1.37A = 1.4A  
% Drop = 0.01%



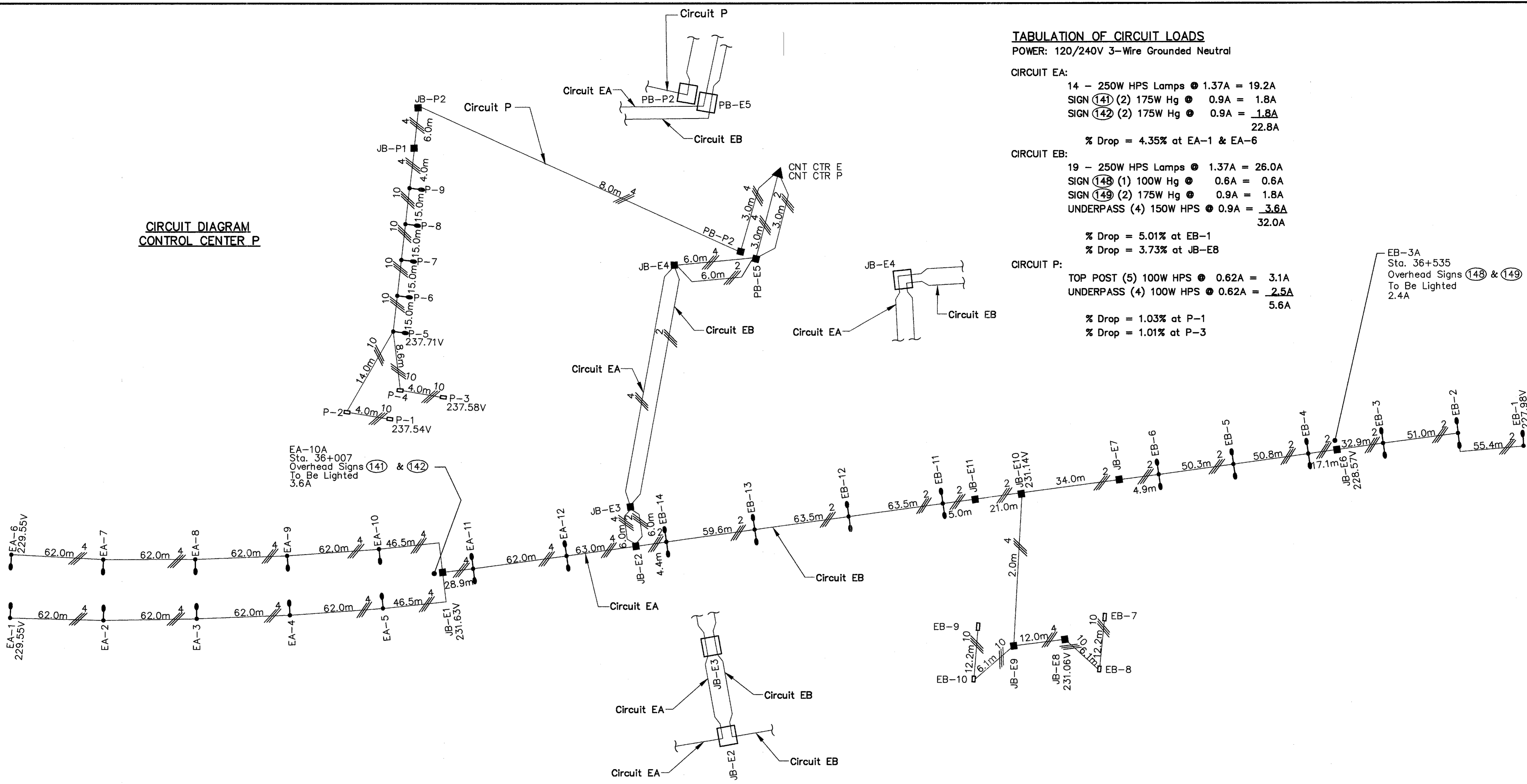
**CIRCUIT DIAGRAM  
CONTROL CENTER D**



**CIRCUIT DIAGRAM  
CONTROL CENTER N**

P:\321-CALIGHTING\BEL732.276.dwg - OCT. 27, 1997 - 08:24:27

**CIRCUIT DIAGRAM  
CONTROL CENTER P**



**TABULATION OF CIRCUIT LOADS**  
POWER: 120/240V 3-Wire Grounded Neutral

- CIRCUIT EA:**  
 14 - 250W HPS Lamps @ 1.37A = 19.2A  
 SIGN (141) (2) 175W Hg @ 0.9A = 1.8A  
 SIGN (142) (2) 175W Hg @ 0.9A = 1.8A  
 22.8A  
 % Drop = 4.35% at EA-1 & EA-6
- CIRCUIT EB:**  
 19 - 250W HPS Lamps @ 1.37A = 26.0A  
 SIGN (148) (1) 100W Hg @ 0.6A = 0.6A  
 SIGN (149) (2) 175W Hg @ 0.9A = 1.8A  
 UNDERPASS (4) 150W HPS @ 0.9A = 3.6A  
 32.0A  
 % Drop = 5.01% at EB-1  
 % Drop = 3.73% at JB-EB
- CIRCUIT P:**  
 TOP POST (5) 100W HPS @ 0.62A = 3.1A  
 UNDERPASS (4) 100W HPS @ 0.62A = 2.5A  
 5.6A  
 % Drop = 1.03% at P-1  
 % Drop = 1.01% at P-3

**CIRCUIT DIAGRAM  
CONTROL CENTER E**

**CIRCUIT DIAGRAM  
CONTROL CENTER E & CONTROL CENTER P**

**BEL-7-32.276**

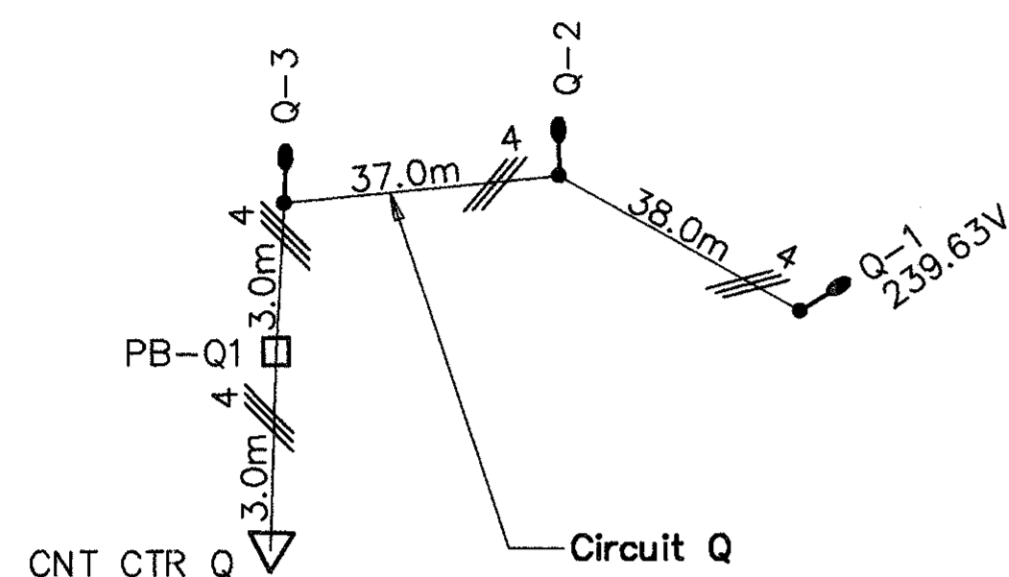
**TABULATION OF CIRCUIT LOADS**

POWER: 120/240 Volt 3-Wire Grounded-Neutral

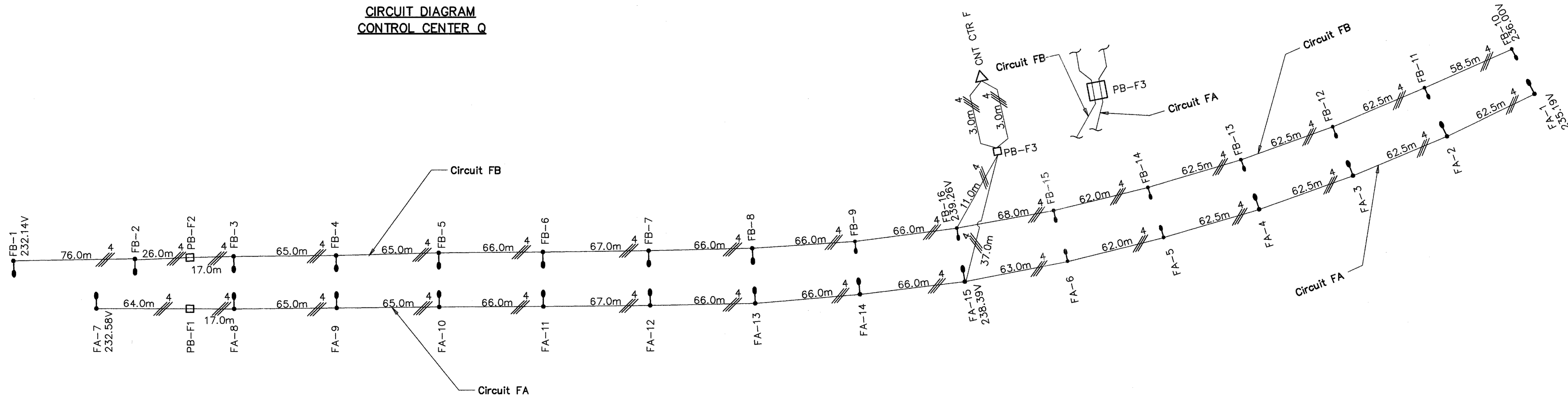
CIRCUIT FA: 15 - 250W HPS Lamps @ 1.37A = 20.6A  
% Drop = 3.09% at FA-7  
= 2.00% at FA-1

CIRCUIT FB: 16 - 250W HPS Lamps @ 1.37A = 21.9A  
% Drop = 3.28% at FB-1  
= 1.67% at FB-10

CIRCUIT Q: 3 - 250W HPS Lamps @ 1.37A = 4.1A  
% Drop = 0.15% at Q-1



**CIRCUIT DIAGRAM  
CONTROL CENTER Q**



**CIRCUIT DIAGRAM  
CONTROL CENTER F**

**CIRCUIT DIAGRAM  
CONTROL CENTER F & CONTROL CENTER Q**

**BEL-7-32.276**

**TABULATION OF CIRCUIT LOADS**

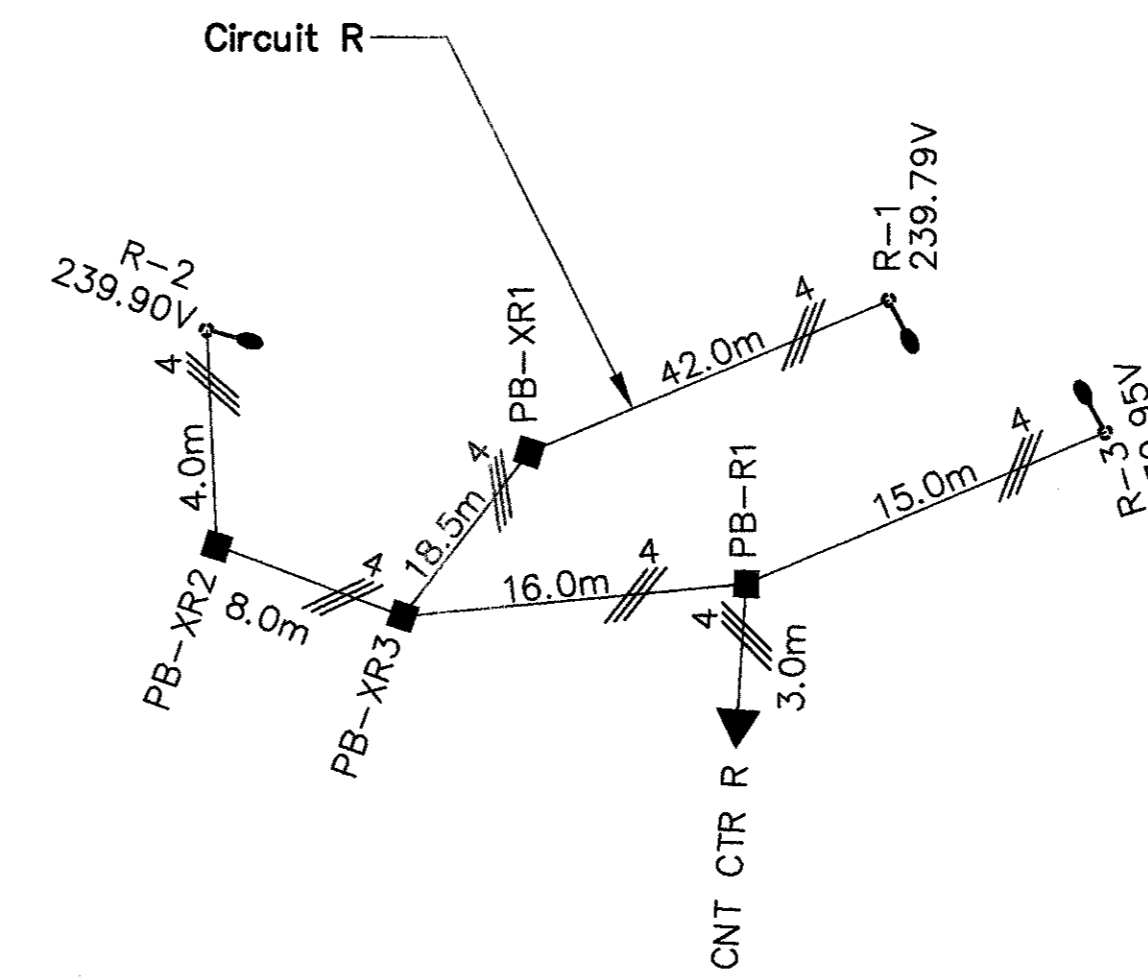
POWER: 120/240V 3-Wire Grounded Neutral

CIRCUIT GA:  
 12 - 250W HPS @ 1.37A = 16.4A  
 % Drop = 2.58% at GA-1  
 = 1.44% at GA-8

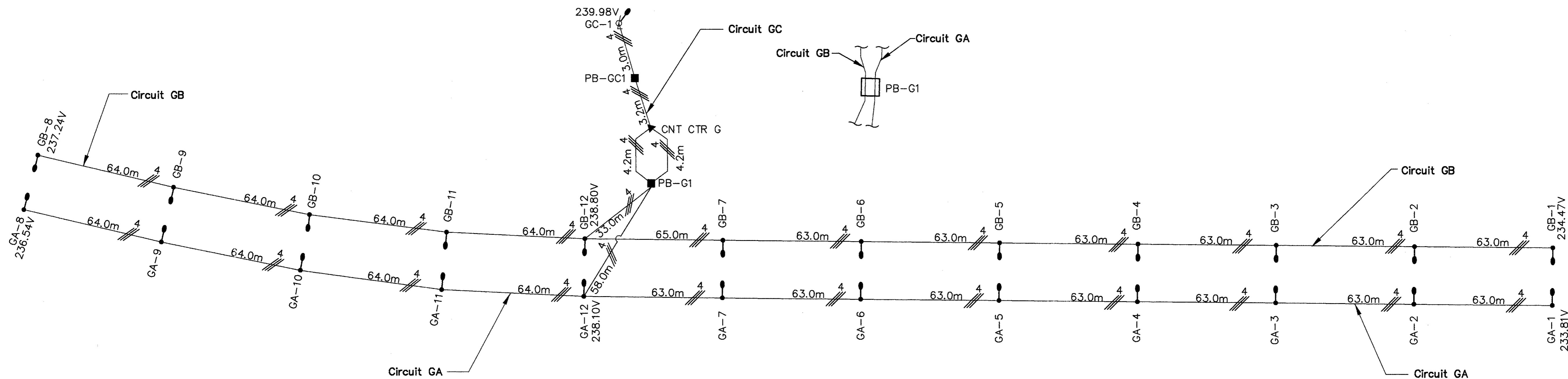
CIRCUIT GB:  
 12 - 250W HPS @ 1.37A = 16.4A  
 % Drop = 2.30% at GB-1  
 = 1.15% at GB-8

CIRCUIT GC:  
 1 - 250W HPS @ 1.37A = 1.4A  
 % Drop = 0.01% at GC-1

CIRCUIT R:  
 3 - 250W HPS @ 1.37A = 4.1A  
 % Drop = 0.09% at R-1  
 = 0.04% at R-2  
 = 0.02% at R-3



**CIRCUIT DIAGRAM  
CONTROL CENTER R**



**CIRCUIT DIAGRAM  
CONTROL CENTER G**

CALCULATED  
SAH  
CHECKED  
AEH

**CIRCUIT DIAGRAM  
CONTROL CENTER G & CONTROL CENTER R**

**BEL-7-32.276**

181  
242



REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		603										625										SPECIAL		
						FROM	TO	100mm CONDUIT, TYPE E	CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE III	LIGHT POLE, DESIGN A3.0BB12.2	LIGHT POLE ANCHOR L-BOLTS	NO. 10 AWG POLE AND BRACKET CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	38mm DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES	CONDUIT, 102mm, 713.04	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 480 VOLTS	TRENCH, 0.6m DEEP	PULL BOX, 713.08, 600mm	TRENCH IN PAVED AREA, TYPE A	GROUND ROD	TRANSITION JUNCTION BOX	MEDIAN LIGHT POLE FOUNDATION, 3.0m DEEP	JUNCTION BOX		POWER SERVICE	PLASTIC CAUTION TAPE
						METER	EACH	EACH	EACH	EACH	METER	METER	METER	METER	METER	EACH	METER	EACH	METER	EACH	EACH	EACH	EACH	EACH	EACH		EACH	EACH
<b>CIRCUIT AA</b>																												
AA-1	17	CL	SR7	32+535.4																								
AA-1/2	17	CL	SR7	32+535.4	32+587.5																							
AA-2	17	CL	SR7	32+587.5																								
AA-2/3	17	CL	SR7	32+587.5	32+637																							
AA-3	17	CL	SR7	32+637																								
AA-3/4	17/18	CL	SR7	32+637	32+701																							
AA-4	18	CL	SR7	32+701																								
AA-4/5	18	CL	SR7	32+701	32+762																							
AA-5	18	CL	SR7	32+762																								
AA-5/JB-A1	18	CL	SR7	32+762	32+793																							
JB-A1	18	CL	SR7	32+793																								
JB-A1/AA-6	18	CL	SR7	32+793	32+824.5																							
AA-6	18	CL	SR7	32+824.5																								
AA-6/7	18	CL	SR7	32+824.5	32+887																							
AA-7	18	CL	SR7	32+887																								
AA-7/JB-A2	18	CL	SR7	32+887	32+900																							
JB-A2	18	CL	SR7	32+900																								
JB-A2/AB-12	18	LT.	SR7	32+900	32+901																							
(AB-12)	18	LT.	SR7	32+901																								
AB-12/PB-A3	18	LT.	SR7	32+901	32+763																							
PB-A3	18	LT.	SR7	32+763																								
PB-A3/CC-A	18	LT.	SR7	32+763	32+764.5																							
CC-A	18	LT.	SR7	32+764.5																								
<b>CIRCUIT XA</b>																												
15-16/JB-XA1	17	CL	SR7	32+227	32+267																							
JB-XA1	17	CL	SR7	32+267																								
JB-XA1/XA-23	17	CL	SR7	32+267	32+287																							
XA-23	17	CL	SR7	32+287																								
XA-23/24	17	CL	SR7	32+287	32+352.6																							
XA-24	17	CL	SR7	32+352.6																								
XA-24/25	17	CL	SR7	32+352.6	32+410.2																							
XA-25	17	CL	SR7	32+410.2																								
XA-25/26	17	CL	SR7	32+410.2	32+472.4																							
XA-26	17	CL	SR7	32+472.4																								
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						6	15	7	11	36	528	1560	181	3	21	22	149	1	2	3	2	2	12	1		151		

**LIGHTING QUANTITIES**

**BEL-7-32.276**



REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		625																		SPECIAL	
						CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE III	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VII C	LIGHT POLE, DESIGN A3.0BB12.2	LIGHT POLE, DESIGN AT3.0B12.7	NO. 10 AWG POLE AND BRACKET CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	38mm DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 480 VOLTS	TRENCH, 0.6m DEEP	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 2.4m DEEP	MEDIAN LIGHT POLE FOUNDATION, 3.0m DEEP	JUNCTION BOX	PLASTIC CAUTION TAPE			
						EACH	EACH	EACH	EACH	EACH	EACH	METER	METER	METER	METER	EACH	METER	EACH	EACH	EACH	EACH	METER			
<b>CIRCUIT AB</b>																									
AB-1	17	RT.	SR7	32+621.5		1	1																		
AB-1/2	17/18	RT.	SR7	32+621.5	32+660								42											38.5	
AB-2	18	RT.	SR7	32+660		1	1			1	35				1				1	1					
AB-2/3	18	RT.	SR7	32+660	32+718																			58	
AB-3	18	RT.	SR7	32+718		1	1			1	35				1				1	1					
AB-3/4	18	RT.	SR7	32+718	32+776																			58	
AB-4	18	RT.	SR7	32+776		1	1			1	35				1				1	1					
AB-4/5	18	RT.	SR7	32+776	32+834																			58	
AB-5	18	RT.	SR7	32+834		1	1			1	35				1				1	1					
AB-5/6	18	RT.	SR7	32+834	32+892																			58	
AB-6	18	RT.	SR7	32+892		1	1			1	35				1				1	1					
AB-6/7	18	RT.	SR7	32+892	32+948																			56	
AB-7	18	RT.	SR7	32+948		1	1			1	35				1				1	1					
AB-7/11	18	RT.	SR7	32+948	32+961																			12.5	
AB-8	18	CL	SR7	33+162		1	1			1	48				2				1		1				
AB-8/9	18	CL	SR7	33+162	33+092								146												
AB-9	18	CL	SR7	33+092		1	1			1	48				2				1		1	1			
AB-9/10	18	CL	SR7	33+092	33+026.5								137												
AB-10	18	CL	SR7	33+026.5		1	1			1	48				2				1		1	1			
AB-10/11	18	CL	SR7	33+026.5	32+961								137												
AB-11	18	CL	SR7	32+961		1	1	1	1	1	48				2				1		1	1			
AB-11/JB-A2	18	CL	SR7	32+961	32+900								128												
(JB-A2)	18	CL	SR7	32+900																					
JB-A2/AB-12	18	LT.	SR7	32+900	32+901																				
AB-12	18	LT.	SR7	32+901		1	1			1	35				1				1	1					
AB-12/13	18	LT.	SR7	32+901	32+840																			61	
AB-13	18	LT.	SR7	32+840		1	1			1	35				1				1	1					
AB-13/14	18	LT.	SR7	32+840	32+779																			61	
AB-14	18	LT.	SR7	32+779		1	1			1	35				1				1	1					
AB-14/PB-A3	18	LT.	SR7	32+779	32+763																			26	
(PB-A3)	18	LT.	SR7	32+763																					
PB-A3/CC A	18	LT.	SR7	32+763	32+764.5																				
(CCA)	18	LT.	SR7	32+764.5																					
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						14	14	1	1	4	9	507	548	566		18.5	17	487			13	9	4	4	487

**LIGHTING QUANTITIES**

**BEL-7-32.276**

CALCULATED  
FDH  
CHECKED  
SAH

184  
242

REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		202		603		625																		SPECIAL						
						LUMINAIRE REMOVED	REMOVAL MIS.: POLE AND BRACKET CABLE REMOVED	100mm CONDUIT, TYPE E	CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE III	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VII C	LIGHT POLE, DESIGN A3.0BB12.2	LIGHT POLE, DESIGN A3.0B12.7	LIGHT POLE, DESIGN A1.8B9.9, AS PER PLAN	NO. 10 AWG POLE AND BRACKET CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	38mm DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES	38mm DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	CONDUIT, 102mm, 713.04	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 480 VOLTS	TRENCH, 0.6m DEEP	PULL BOX, 713.08, 600mm	CONDUIT, 76mm, 713.04	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 240 VOLTS	GROUND ROD		LIGHT POLE FOUNDATION, 610mm x 2.4m DEEP	MEDIAN LIGHT POLE FOUNDATION, 3.0m DEEP	CONDUIT CLEANED AND CABLES REMOVED	JUNCTION BOX	TRENCH IN PAVED AREA, TYPE A	POWER SERVICE
FROM	TO	EACH	METER	METER	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EA.	EACH	EACH	EACH	EACH	EACH	EACH	EACH		
				<b>CIRCUIT BA</b>																														
BA-1	18	CL	SR7	33+225					1	1					48					2					1			1						
BA-1/2	18	CL	SR7	33+225	33+293											142																		
BA-2	18	CL	SR7	33+293					1	1										2					1			1						
BA-2/3	18/19	CL/RT.	SR7	33+293	33+365												90		14.4			72										72		
BA-3	19	RT.	SR7	33+365					1	1					35						1				1	1						54		
BA-3/4	19	RT.	SR7	33+365	33+419																											54		
BA-4	19	RT.	SR7	33+419					1	1					35						1				1	1						58.5		
BA-4/7	19	RT./CL	SR7	33+419	33+477.5															12.4			58.5									35.5		
BA-5	19	LT.	SR7	33+365					1	1					35						1				1	1								
BA-5/6	19	LT.	SR7	33+365	33+419																													
BA-6	19	LT.	SR7	33+419					1	1					35						1				1	1						58.5		
BA-6/7	19	LT./CL	SR7	33+419	33+477.5												74		12.4			58.5												
BA-7	19	CL	SR7	33+477.5					1	1	1	1	1		48						2				1		1		1					
BA-7/8	19	CL	SR7	33+477.5	33+538.5																													
BA-8	19	CL	SR7	33+538.5					1	1					48										1		1		1					
BA-8/9	19	CL	SR7	33+538.5	33+600.5																													
BA-9	19	CL	SR7	33+600.5					1	1					48										1		1		1					
BA-9/10	19	CL	SR7	33+600.5	33+663																													
BA-10	19	CL	SR7	33+663					1	1					48										1		1		1					
BA-10/JB-B1	19	CL	SR7	33+663	33+696																													
JB-B1	19	CL	SR7	33+696																														
JB-B1/PB-B2	19	CL/LT.	SR7	33+696	33+696												51		10.1	12.4			10.1									10.1		
PB-B2	19	LT.	SR7	33+696				6																										
PB-B2/CC-B	19	LT.	SR7	33+696	33+699												12		3				3									3		
CC-B	19	LT.	SR7	33+699																														
				<b>CIRCUIT M</b>																														
M-1	19	LT.	SR7				1	18.6		2					27																			
M-1/2	19	LT.	SR7																															
M-2	19	LT.	SR7				1	18.6		2					27																			
M-2/EX-PB	19	LT.	SR7																															
EX-PB	19	LT.	SR7	(NO WORK)																														
EX-PB/EX-PB	19	LT.	SR7																															
EX-PB	19	LT.	SR7	(NO WORK)																														
EX-PB/M-3	19	LT.	SR7																															
M-3	19	LT.	SR7							2					27																			
M-3/4	19	LT.	SR7																															
M-4	19	LT.	SR7				1	18.6		2					27																			
M-4/5	19	LT.	SR7																															
M-5	19	LT.	SR7				1	18.6		2					27																			
M-5/PB-M1	19	LT.	SR7																															
PB-M1	19	LT.	SR7							6																								
PB-M1/CC-M	19	LT.	SR7																															
CC-M	19	LT.	SR7																															
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						4	74.4	12	20	10	1	1	6	4	1	563	666	352	321	13.1	70.1	16	571.6	2	3	5	13	4	6	18	7	2	2	573.6

**LIGHTING QUANTITIES**

**BEL-7-32.276**

REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		625																	SPECIAL		
						CONNECTOR KIT, TYPE I	CONNECTOR KIT, TYPE III	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VII C	LIGHT POLE, DESIGN A3.0BB12.2	LIGHT POLE, DESIGN A13.0B12.7	NO. 10 AWG POLE AND BRACKET CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	38mm DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 480 VOLTS	TRENCH, 0.6m DEEP	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 2.4m DEEP	MEDIAN LIGHT POLE FOUNDATION, 3.0m DEEP	JUNCTION BOX	PLASTIC CAUTION TAPE			
						EACH	EACH	EACH	EACH	EACH	EACH	METER	METER	METER	METER	EACH	METER	EACH	EACH	EACH	EACH	METER			
<b>CIRCUIT BB</b>																									
BB-1	20	RT.	SR7	34+127		1	1			1	35					1			1	1					
BB-1/2	20	RT.	SR7	34+127	34+064										21.7				1	1				41.3	
BB-2	20	RT.	SR7	34+064		1	1			1	35					1			1	1					
BB-2/3	19/20	RT.	SR7	34+064	33+996.5																			67.5	
BB-3	19	RT.	SR7	33+996.5		1	1			1	35					1			1	1					
BB-3/4	19	RT.	SR7	33+996.5	33+930																			66.5	
BB-4	19	RT.	SR7	33+930		1	1			1	35					1			1	1					
BB-4/5	19	RT.	SR7	33+930	33+862																			68	
BB-5	19	RT.	SR7	33+862		1	1			1	35					1			1	1					
BB-5/11	19	RT./CL	SR7	33+862	33+795										12.4									67	
BB-6	20	LT.	SR7	34+127		1	1			1	35					1			1	1					
BB-6/7	20	LT.	SR7	34+127	34+064										42									21	
BB-7	20	LT.	SR7	34+064		1	1			1	35					1			1	1					
BB-7/8	19/20	LT.	SR7	34+064	33+996.5																			67.5	
BB-8	19	LT.	SR7	33+996.5		1	1			1	35					1			1	1					
BB-8/9	19	LT.	SR7	33+996.5	33+930																			66.5	
BB-9	19	LT.	SR7	33+930		1	1			1	35					1			1	1					
BB-9/10	19	LT.	SR7	33+930	33+862																			68	
BB-10	19	LT.	SR7	33+862		1	1			1	35					1			1	1					
BB-10/11	19	CL	SR7	33+862	33+795										12.4									67	
BB-11	19	CL	SR7	33+795		1	1	1	1	1	48					2			1		1	1			
BB-11/12	19	CL	SR7	33+795	33+728.5							139													
BB-12	19	CL	SR7	33+728.5		1	1			1	48					2			1		1	1			
BB-12/JB-B1	19	CL	SR7	33+728.5	33+696																				
(JB-B1)	19	CL	SR7	33+696)																					
JB-B1/PB-B2	19	CL/LT.	SR7	33+696	33+696																				
(PB-B2)	19	LT.	SR7	33+696)																					
PB-B2/CC B	19	LT.	SR7	33+696	33+699																				
(CC B)	19	LT.	SR7	33+699)																					
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						12	12	1	1	2	10	446	273	722		88.5	14	600.3			12	10	2	2	600.3

**LIGHTING QUANTITIES**

**BEL-7-32.276**

CHECKED  
SAH

186  
242

W. E. QUICKSALL AND ASSOCIATES INC. CONSULTING ENGINEERS

REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		603											625											SPECIAL
						100mm CONDUIT, TYPE E	CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VII C	LIGHT POLE, MISC.: DESIGN A3.0BB9.1	LIGHT POLE, DESIGN AT3.0B10.4	NO. 10 AWG POLE AND BRACKET CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	38mm DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	CONDUIT, 76mm, 713.04	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 240 VOLTS	LUMINAIRE, CONVENTIONAL STYLE B, TYPE III, 250 WATT HPS, 713.11, 240 VOLTS	TRENCH, 0.6m DEEP	PULL BOX, 713.08, 600mm	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 1.8m DEEP	MEDIAN LIGHT POLE FOUNDATION, 3.0m DEEP	JUNCTION BOX	POWER SERVICE	PLASTIC CAUTION TAPE		
						FROM	TO	EACH	EACH	EACH	EACH	EACH	EACH	METER	METER	METER	METER	METER	EACH	EACH	METER	EACH	EACH	EACH	EACH	EACH	EACH	EACH
<b>CIRCUIT CA</b>																												
CA-1	20	☉	SR7	34+563																								
CA-1/2	20	☉	SR7	34+563	34+498																							
CA-2	20	☉	SR7	34+498																								
CA-2/3	20	☉	SR7	34+498	34+434																							
CA-3	20	☉	SR7	34+434																								
CA-3/7	20	☉	SR7	34+434	34+371																							
CA-4	20	RT.	SR7	34+188																								
CA-4/5	20	RT.	SR7	34+188	34+249																							
CA-5	20	RT.	SR7	34+249																								
CA-5/6	20	RT.	SR7	34+249	34+310																							
CA-6	20	RT.	SR7	34+310																								
CA-6/7	20	RT./☉	SR7	34+310	34+371																							
CA-7	20	☉	SR7	34+371																								
CA-7/8	20	☉/LT.	SR7	34+371	34+310																							
CA-8	20	LT.	SR7	34+310																								
CA-8/10	20	LT.	SR7	34+310	34+249																							
CA-9	20	LT.	SR7	34+188																								
CA-9/10	20	LT.	SR7	34+188	34+249																							
CA-10	20	LT.	SR7	34+249																								
CA-10/PB-C1	20	LT.	SR7	34+249	34+265																							
PB-C1	20	LT.	SR7	34+265																								
PB-C1/CC-C	20	LT.	SR7	34+265	34+265																							
CC-C	20	LT.	SR7	34+265																								
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						6	20	4	2	4	6	344	603	437	3	24.8	12	2	387	1	11	6	4	4	1	387		

**LIGHTING QUANTITIES**

**BEL-7-32.276**

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REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		202	603	625																		SPECIAL
						LUMINAIRE REMOVED, FOR STORAGE	100mm CONDUIT, TYPE E	CONNECTOR KIT, TYPE II	LIGHT POLE, MISC.: DESIGN A3.0BB9.1	NO. 10 AWG POLE AND BRACKET CABLE	38mm DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	NO. 2 AWG 5000 VOLT DISTRIBUTION CABLE	CONDUIT, 76mm, 713.04	CONDUIT, 102mm, 713.04	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 102mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 240 VOLTS	LUMINAIRE, CONVENTIONAL STYLE B, TYPE III, 250 WATT HPS, 713.11, 240 VOLTS	TRENCH, 0.6m DEEP	PULL BOX, 713.08, 600mm	PULL BOX, 713.08, 450mm	GROUND ROD	MEDIAN LIGHT POLE FOUNDATION, 3.0m DEEP	JUNCTION BOX	POWER SERVICE	PLASTIC CAUTION TAPE
						FROM	TO	EACH	METER	EACH	EACH	METER	METER	METER	METER	METER	EACH	EACH	METER	EACH	EACH	EACH	EACH	EACH	EACH	METER
<b>CIRCUIT DA</b>																										
DA-1	20	☉	SR7	34+631																						
DA-1/2	20	☉	SR7	34+631	34+696			2	1	41																
DA-2	20	☉	SR7	34+696				2	1	41																
DA-2/3	20/21	☉	SR7	34+696	34+761																					
DA-3	21	☉	SR7	34+761				2	1	41																
DA-3/4	21	☉	SR7	34+761	34+826																					
DA-4	21	☉	SR7	34+826				2	1	41																
DA-4/5	21	☉	SR7	34+826	34+891																					
DA-5	21	☉	SR7	34+891				2	1	41																
DA-5/6	21	☉	SR7	34+891	34+956																					
DA-6	21	☉	SR7	34+956				2	1	41																
DA-6/7	21	☉	SR7	34+956	35+021																					
DA-7	21	☉	SR7	35+021				2	1	41																
DA-7/8	21	☉	SR7	35+021	35+086																					
DA-8	21	☉	SR7	35+086				2	1	41																
DA-8/9	21	☉	SR7	35+086	35+151																					
DA-9	21	☉	SR7	35+151				2	1	41																
DA-9/JB-D1	21	☉	SR7	35+151	35+154																					
JB-D1	21	☉	SR7	35+154																						
JB-B1/PB-D2	21	☉/LT.	SR7	35+154	35+154																					
PB-D2	21	LT.	SR7	35+154																						
PB-D2/CC-D	21	LT.	SR7	35+154	35+154		6																			
CC-D	21	LT.	SR7	35+154																						
<b>CIRCUIT N</b>																										
N-1	22	RT.	SR7			1		2		28																
N-1/PB-N1	22	RT.	SR7																							
PB-N1	22	RT.	SR7				6																			
PB-N1/CC-N	22	RT.	SR7																							
CC-N	22	RT.	SR7																							
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						1	12	20	9	397	12	1428	299	3	3	16.5	13	6	9	1	1	11	9	10	2	9

**LIGHTING QUANTITIES**

**BEL-7-32.276**

CALCULATED  
FDH  
CHECKED  
SAH

REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		625																		SPECIAL
						CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VII C	LIGHT POLE, MISC.: DESIGN A3.0BB9.1	LIGHT POLE, DESIGN A13.0B10.4	NO. 10 AWG POLE AND BRACKET CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	NO. 2 AWG 5000 VOLT DISTRIBUTION CABLE	38mm DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 240 VOLTS	LUMINAIRE, CONVENTIONAL STYLE B, TYPE III, 250 WATT HPS, 713.11, 240 VOLTS	TRENCH, 0.6m DEEP	BRACKET ARM, 3 METERS	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 1.8m DEEP	MEDIAN LIGHT POLE FOUNDATION, 3.0m DEEP	JUNCTION BOX	
				FROM	TO	EACH	EACH	EACH	EACH	EACH	METER	METER	METER	METER	METER	EACH	EACH	METER	EACH	EACH	EACH	EACH	EACH	
<b>CIRCUIT DB</b>																								
DB-1	22	RT.	SR7	1+021.159		2				30						1			1					
DB-1/2	22	RT.	SR7	1+021.159	35+664										28									25
DB-2	22	RT.	SR7	35+664		2			1	30										1		1		63
DB-2/3	22	RT.	SR7	35+664	35+601										66									63
DB-3	22	RT.	SR7	35+601		2			1	30										1		1		63
DB-3/4	22	RT.	SR7	35+601	35+538										66									63
DB-4	22	RT.	SR7	35+538		2			1	30						1					1	1		63
DB-4/5	22	RT.	SR7	35+538	35+475										66									63
DB-5	22	RT.	SR7	35+475		2			1	30											1	1		64
DB-5/6	21/22	RT.	SR7	35+475	35+411										67									64
DB-6	21	RT.	SR7	35+411		2			1	30											1	1		65
DB-6/12	21	RT./C	SR7	35+411	35+346										81	12.4								65
DB-7	22	LT.	SR7	35+664		2			1	30											1	1		63
DB-7/8	22	LT.	SR7	35+664	35+601										66									63
DB-8	22	LT.	SR7	35+601		2			1	30											1	1		63
DB-8/9	22	LT.	SR7	35+601	35+538										66									63
DB-9	22	LT.	SR7	35+538		2			1	30											1	1		63
DB-9/10	22	LT.	SR7	35+538	35+475										66									63
DB-10	22	LT.	SR7	35+475		2			1	30											1	1		64
DB-10/11	21/22	LT.	SR7	35+475	35+411										67									64
DB-11	21	LT.	SR7	35+411		2			1	30											1	1		65
DB-11/12	21	LT./C	SR7	35+411	35+346										81	12.4								65
DB-12	21	C	SR7	35+346		2	2	1	1	41						2					1		1	65
DB-12/JB-D3	21	C	SR7	35+346	35+316.1										99									
JB-D3	21	C	SR7	35+316.1																			1	
JB-D3/DB-13	21	C	SR7	35+316.1	35+282										112									
DB-13	21	C	SR7	35+282		2			1	41						2					1		1	
DB-13/14	21	C	SR7	35+282	35+217										204									
DB-14	21	C	SR7	35+217		2			1	41											1		1	
DB-14/JB-D1	21	C	SR7	35+217	35+154																			198
(JB-D1)	21	C	SR7	35+154)																				
JB-D1/PB-D2	21	C/LT.	SR7	35+154	35+154																			59
(PB-D2)	21	LT.	SR7	35+154)																				
PB-D2/CC-D	21	LT.	SR7	35+154	35+154																			18
(CC-D)	21	LT.	SR7	35+154)																				
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						28	2	1	3	10	453	415	275	720	24.8	13	4	661	1	13	10	3	4	661

CALCULATED: FDH  
 CHECKED: SAH  
**LIGHTING QUANTITIES**  
**BEL-7-32.276**  
 189  
 242

REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		603													625										SPECIAL
						FROM	TO	100mm CONDUIT, TYPE E	CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE VII C	LIGHT POLE, MISC.: DESIGN A.3.OB89.1	LIGHT POLE, DESIGN AT3.OB10.4	NO. 10 AWG POLE AND BRACKET CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	38mm DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II 250 WATT HPS, 713.11, 240 VOLTS	TRENCH, 0.6m DEEP	PULL BOX, 713.08, 600mm	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	CONDUIT, 76mm, 713.04	CONDUIT, 102mm, 713.04	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 1.8m DEEP	MEDIAN LIGHT POLE FOUNDATION, 3.0m DEEP	JUNCTION BOX	POWER SERVICE	PLASTIC CAUTION TAPE		
						METER	EACH	EACH	EACH	EACH	METER	METER	METER	EACH	METER	EACH	METER	METER	METER	EACH	EACH	EACH	EACH	EACH	EACH	EACH	METER	METER	
<b>CIRCUIT EA</b>																													
EA-1	22	RT.	SR7	35+728			2		1	30			1						1	1									
EA-1/2	22	RT.	SR7	35+728	35+790								65		62											62			
EA-2	22	RT.	SR7	35+790			2		1	30			1							1	1								
EA-2/3	22	RT.	SR7	35+790	35+852								65		62											62			
EA-3	22	RT.	SR7	35+852			2		1	30			1							1	1								
EA-3/4	22	RT.	SR7	35+852	35+914								65		62											62			
EA-4	22	RT.	SR7	35+914			2		1	30			1							1	1					62			
EA-4/5	22	RT.	SR7	35+914	35+976								65		62											62			
EA-5	22	RT.	SR7	35+976			2		1	30			1							1	1								
EA-5/JB-E1	22	RT./LT.	SR7	35+976	36+010.1								50		35		12.4									35			
EA-6	22	LT.	SR7	35+728			2		1	30			1							1	1					62			
EA-6/7	22	LT.	SR7	35+728	35+790								65		62											62			
EA-7	22	LT.	SR7	35+790			2		1	30			1							1	1								
EA-7/8	22	LT.	SR7	35+790	35+852								65		62											62			
EA-8	22	LT.	SR7	35+852			2		1	30			1							1	1								
EA-8/9	22	LT.	SR7	35+852	35+914								65		62											62			
EA-9	22	LT.	SR7	35+914			2		1	30			1							1	1								
EA-9/10	22	LT.	SR7	35+914	35+976								65		62											62			
EA-10	22	LT.	SR7	35+976			2		1	30			1							1	1								
EA-10/JB-E1	22	LT.	SR7	35+976	36+010.1								50		35		12.4									35			
JB-E1	22	RT.	SR7	36+010.1				3																					
JB-E1/EA-11	22	RT./LT.	SR7	36+010.1	36+039								96																
EA-11	22	LT.	SR7	36+039			2		1	41				2						1		1							
EA-11/12	22	LT.	SR7	36+039	36+101								195																
EA-12	22	LT.	SR7	36+101			2		1	41				2						1		1							
EA-12/JB-E2	22/23	LT.	SR7	36+101	36+164								198																
JB-E2	23	LT.	SR7	36+164																									
JB-E2/E3	23	LT.	SR7	36+164	36+164								27				6												
JB-E3	23	LT.	SR7	36+164																									
JB-E3/E4	23	LT.	SR7	36+164	36+175								135				42												
JB-E4	23	RT.	SR7	36+175																									
JB-E4/PB-E5	23	RT./LT.	SR7	36+175	36+180								27		6		6									6			
PB-E5	23	LT.	SR7	36+180			6																						
PB-E5/CC-E	23	LT.	SR7	36+180	36+182								18		3				3							3			
CC-E	23	LT.	SR7	36+182																1									
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						6	24	3	2	10	382	696	620	14	575	1	24.8	54	3	13	10	2	6	1		575			

**LIGHTING QUANTITIES**

**BEL-7-32.276**

CALCULATED  
 CHECKED  
 SAH

190  
 242

REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		603											625											SPECIAL
				FROM	TO	100mm CONDUIT, TYPE E	CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VI	LIGHT POLE, MISC.: DESIGN AON4.6, AS PER PLAN	NO. 10 AWG POLE AND BRACKET CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	NO. 10 AWG 600 VOLT DISTRIBUTION CABLE	LUMINAIRE, POST TOP TYPE III, 100 WATT HPS, 240 VOLTS	TRENCH, 0.6m DEEP	TRENCH IN PAVED AREA, TYPE A	LUMINAIRE, UNDERPASS TYPE III, 100 WATT HPS, 713.13, 240 VOLTS	CONDUIT, 51mm, 713.04	POWER SERVICE	GROUND ROD	PULL BOX, 713.08, 450mm	JUNCTION BOX	PLASTIC CAUTION TAPE					
				METER			EACH	EACH	EACH	EACH	METER	METER	METER	EACH	METER	METER	EACH	METER	EACH	EACH	EACH	EACH		METER				
CIRCUIT P																												
P-1	23	RT.	SR7																									
P-1/2	23	RT.	SR7				2																					
P-2	23	RT.	SR7				2																					
P-2/5	23	RT.	SR7																									
P-3	23	RT.	SR7				2																					
P-3/4	23	RT.	SR7																									
P-4	23	RT.	SR7				2																					
P-4/5	23	RT.	SR7																									
P-5	23	RT.	SR7				2	3	4	1	13																	
P-5/6	23	RT./LT.	SR7																									
P-6	23	LT.	SR7				2			1	13																	
P-6/7	23	LT.	SR7																									
P-7	23	LT.	SR7				2			1	13																	
P-7/8	23	LT.	SR7																									
P-8	23	LT.	SR7				2			1	13																	
P-8/9	23	LT.	SR7																									
P-9	23	LT.	SR7				2			1	13																	
P-9/JB-P1	23	LT.	SR7																									
JB-P1	23	LT.	SR7																									
JB-P1/P2	23	LT.	SR7																									
JB-P2	23	LT.	SR7																									
JB-P2/PB-P2	23	LT.	SR7																									
PB-P2	23	LT.	SR7																									
PB-P2/CC P	23	LT.	SR7																									
CC P	23	LT.	SR7																									
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						6	18	3	4	5	65	99	344		5	8	3	4	21	1	1	1	2	11				

**LIGHTING QUANTITIES**

**BEL-7-32.276**



REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		625																						SPECIAL			
						CONNECTOR KIT, TYPE I	CONNECTOR KIT, TYPE III	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VII C	CONNECTOR KIT, TYPE IX	CONNECTOR KIT, TYPE XI	LIGHT POLE, MISC.: DESIGN A3.0BB9.1	LIGHT POLE, DESIGN AT3.0BT0.4	NO. 10 AWG 600 VOLT DISTRIBUTION CABLE	NO. 10 AWG POLE AND BRACKET CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	NO. 2 AWG 5000 VOLT DISTRIBUTION CABLE	38mm DUCT CABLE WITH THREE NO. 2 AWG 5000 VOLT CABLES	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 240 VOLTS	LUMINAIRE, UNDERPASS, TYPE III, 713.13, 240 VOLTS	TRENCH, 0.6m DEEP	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	CONDUIT, 51mm, 713.04	CONDUIT, 38mm, 713.04	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 1.8m DEEP	MEDIAN LIGHT POLE FOUNDATION, 3.0m DEEP		JUNCTION BOX	TRANSITION JUNCTION BOX	PLASTIC CAUTION TAPE
						EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	METER	METER	METER	METER	METER	EACH	EACH	METER	METER	METER	METER	EACH	EACH	EACH		EACH	EACH	EACH
<b>CIRCUIT EB</b>																															
EB-1	23	LT.	SR7	36+665		2						1		30																	
EB-1/2	23	LT.	SR7	36+665	36+622													59		43	12.4								43		
EB-2	23	LT.	SR7	36+622		2						1		41																	
EB-2/3	23	LT.	SR7	36+622	36+571																										
EB-3	23	LT.	SR7	36+571		2								41																	
EB-3/JB-E6	23	LT.	SR7	36+571	36+538.1																										
JB-E6	23	LT.	SR7	36+538.1																											
JB-E6/EB-4	23	LT.	SR7	36+538.1	36+521																										
EB-4	23	LT.	SR7	36+521		2								41																	
EB-4/5	23	LT.	SR7	36+521	36+470.2																										
EB-5	23	LT.	SR7	36+470.2		2								41																	
EB-5/6	23	LT.	SR7	36+470.2	34+419.9																										
EB-6	23	LT.	SR7	34+419.9		2								41																	
EB-6/JB-E7	23	LT.	SR7	34+419.9	36+415																										
JB-E7	23	LT.	SR7	36+415																											
JB-E7/E10	23	LT.	SR7	36+415	36+381																										
EB-7	23	LT.	SR7																												
EB-7/8	23	LT.	SR7											46																	
EB-8	23	LT.	SR7																												
EB-8/JB-E8	23	LT.	SR7		36+393																										
JB-E8	23	RT.	SR7	36+393																											
JB-E8/E9	23	RT./LT.	SR7	36+393	36+381																										
EB-9	23	LT.	SR7																												
EB-9/10	23	LT.	SR7											46																	
EB-10	23	LT.	SR7																												
EB-10/JB-E9	23	LT.	SR7		36+381																										
JB-E9	23	LT.	SR7	36+381		2	1																								
JB-E9/E10	23	LT.	SR7	36+381	36+381																										
JB-E10	23	LT.	SR7	36+381																											
JB-E10/E11	23	LT.	SR7	36+381	36+360																										
JB-E11	23	RT.	SR7	36+360																											
JB-E11/EB-11	23	RT./LT.	SR7	36+360	36+355																										
EB-11	23	LT.	SR7	36+355		2								41																	
EB-11/12	23	LT.	SR7	36+355	36+291.5																										
EB-12	23	LT.	SR7	36+291.5		2								41																	
EB-12/13	23	LT.	SR7	36+291.5	36+228																										
EB-13	23	LT.	SR7	36+228		2								41																	
EB-13/14	23	LT.	SR7	36+228	36+168.4																										
EB-14	23	LT.	SR7	36+168.4		2								41																	
EB-14/JB-E2	23	LT.	SR7	36+168.4	36+164																										
(JB-E2	23	RT.	SR7	36+164)																											
JB-E2/E3	23	RT./LT.	SR7	36+164	36+164																										
(JB-E3	23	LT.	SR7	36+164)																											
JB-E3/E4	23	LT.	SR7	36+164	36+175																										
(JB-E4	23	LT.	SR7	36+175)																											
JB-E4/E5	23	LT.	SR7	36+175	36+180																										
(JB-E5	23	LT.	SR7	36+180)																											
JB-E5/CC E	23	LT.	SR7	36+180	36+182																										
(CC E	23	LT.	SR7	36+182)																											
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						22	1	2	1	1	2	9	1	148	399	60	1704	59	19	4	43	12.4	14.0	36.6	10	1	9	13	2	43	

**LIGHTING QUANTITIES**

**BEL-7-32.276**

CHECKED  
SAH

192  
242

A-3321-D:\LIGHTING\B3315E.dwg - OCT 28 1997 - 09:58:48

REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		603										625										SPECIAL
						FROM	TO	100mm CONDUIT, TYPE E	CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VII C	LIGHT POLE, DESIGN A13.0B10.4	LIGHT POLE, DESIGN A2.4B9.1, AS PER PLAN	NO. 10 AWG POLE AND BRACKET CABLE	38mm DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	CONDUIT, 51mm, 713.04	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 240 VOLTS	TRENCH, 0.6m DEEP	PULL BOX, 713.08, 600mm	PULL BOX, 713.08, 450mm	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 1.8m DEEP	POWER SERVICE	TRENCH IN PAVED AREA, TYPE A	PLASTIC CAUTION TAPE
						METER			EACH	EACH	EACH	EACH	EACH	METER	METER	METER	METER	EACH	METER	EACH	EACH	EACH	EACH	EACH	EACH	METER
<b>CIRCUIT FA</b>																										
FA-1	25	RT.	SR7	37+661																						
FA-1/2	25	RT.	SR7	37+661	37+598.5																					
FA-2	25	RT.	SR7	37+598.5																						
FA-2/3	25	RT.	SR7	37+598.5	37+536																					
FA-3	24	RT.	SR7	37+536																						
FA-3/4	24	RT.	SR7	37+536	37+473.5																					
FA-4	24	RT.	SR7	37+473.5																						
FA-4/5	24	RT.	SR7	37+473.5	37+411																					
FA-5	24	RT.	SR7	37+411																						
FA-5/6	24	RT.	SR7	37+411	37+349																					
FA-6	24	RT.	SR7	37+349																						
FA-6/15	24	RT.	SR7	37+349	37+286																					
FA-7	23	RT.	SR7	36+744																						
FA-7/PB-F1	23	RT.	SR7	36+744	36+808																					
PB-F1	23	RT.	SR7	36+808																						
PB-F1/FA-8	23	RT.	SR7	36+808	36+825	6																				
FA-8	23	RT.	SR7	36+825																						
FA-8/9	24	RT.	SR7	36+825	36+890																					
FA-9	24	RT.	SR7	36+890																						
FA-9/10	24	RT.	SR7	36+890	36+955																					
FA-10	24	RT.	SR7	36+955																						
FA-10/11	24	RT.	SR7	36+955	37+021																					
FA-11	24	RT.	SR7	37+021																						
FA-11/12	24	RT.	SR7	37+021	37+088																					
FA-12	24	RT.	SR7	37+088																						
FA-12/13	24	RT.	SR7	37+088	37+154																					
FA-13	24	RT.	SR7	37+154																						
FA-13/14	24	RT.	SR7	37+154	37+220																					
FA-14	24	RT.	SR7	37+220																						
FA-14/15	24	RT.	SR7	37+220	37+286																					
FA-15	24	RT.	SR7	37+286																						
FA-15/PB-F3	24	RT./LT.	SR7	37+286	37+295																					
PB-F3	24	LT.	SR7	37+295																						
PB-F3/CC-F	24	LT.	SR7	37+295	37+295	6																				
CC-F	24	LT.	SR7	37+295																						
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						12																				

**LIGHTING QUANTITIES**

**BEL-7-32.276**

REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		603																	625																	SPECIAL	CALCULATED FDH	CHECKED SAH
				FROM	TO	100mm CONDUIT, TYPE E				CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VII C	LIGHT POLE, DESIGN AT3.7B10.4	LIGHT POLE, DESIGN AT3.0B10.4	LIGHT POLE, DESIGN A2.4B9.1, AS PER PLAN	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	NO. 10 AWG POLE AND BRACKET CABLE	38mm DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	CONDUIT, 51mm, 713.04	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 240 VOLTS	TRENCH, 0.6m DEEP	PULL BOX, 713.0B, 450mm	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 1.8m DEEP			PLASTIC CAUTION TAPE														
				METER	METER	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	METER										
<b>CIRCUIT FB</b>																																										
FB-1	23	LT.	SR7	36+706																																						
FB-1/2	23	LT.	SR7	36+706	36+782																																					
FB-2	23	LT.	SR7	36+782																																						
FB-2/PB-F2	23	LT.	SR7	36+782	36+808																																					
PB-F2	23	LT.	SR7	36+808		6																																				
PB-F2/FB-3	23	LT.	SR7	36+808	36+825																																					
FB-3	23	LT.	SR7	36+825																																						
FB-3/4	24	LT.	SR7	36+825	36+890																																					
FB-4	24	LT.	SR7	36+890																																						
FB-4/5	24	LT.	SR7	36+890	36+955																																					
FB-5	24	LT.	SR7	36+955																																						
FB-5/6	24	LT.	SR7	36+955	37+021																																					
FB-6	24	LT.	SR7	37+021																																						
FB-6/7	24	LT.	SR7	37+021	37+088																																					
FB-7	24	LT.	SR7	37+088																																						
FB-7/8	24	LT.	SR7	37+088	37+154																																					
FB-8	24	LT.	SR7	37+154																																						
FB-8/9	24	LT.	SR7	37+154	37+220																																					
FB-9	24	LT.	SR7	37+220																																						
FB-9/16	24	LT.	SR7	37+220	37+286																																					
FB-10	24	LT.	SR7	37+657																																						
FB-10/11	24	LT.	SR7	37+657	37+598.5																																					
FB-11	24	LT.	SR7	37+598.5																																						
FB-11/12	24	LT.	SR7	37+598.5	37+536																																					
FB-12	24	LT.	SR7	37+536																																						
FB-12/13	24	LT.	SR7	37+536	37+473.5																																					
FB-13	24	LT.	SR7	37+473.5																																						
FB-13/14	24	LT.	SR7	37+473.5	37+411																																					
FB-14	24	LT.	SR7	37+411																																						
FB-14/15	24	LT.	SR7	37+411	37+349																																					
FB-15	24	LT.	SR7	37+349																																						
FB-15/16	24	LT.	SR7	37+349	37+286																																					
FB-16	24	LT.	SR7	37+286																																						
FB-16/PB-F3	24	LT.	SR7	37+286	37+295																																					
(PB-F3)	24	LT.	SR7	37+295)																																						
PB-F3/CC-F	24	LT.	SR7	37+295	37+295																																					
(CC-F)	24	LT.	SR7	37+295)																																						
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						6				32	2	1	12	2	2	237	496	947	9	56.8	16	817.2	1	14	14					817.2												

**LIGHTING QUANTITIES**

**BEL-7-32.276**

REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		202		603	625															SPECIAL
						REMOVAL MISC.: POLE CLEANED AND BRACKET CABLE REMOVED	LUMINAIRE REMOVED FOR STORAGE	100mm CONDUIT, TYPE E	CONNECTOR KIT, TYPE II	LIGHT POLE, DESIGN AT1.88T0.4	NO. 10 AWG POLE AND BRACKET CABLE	38mm DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	CONDUIT, 102mm, 713.04	CONDUIT, 76mm, 713.04	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 240 VOLTS	TRENCH, 0.6m DEEP	PULL BOX, 713.08, 600mm	PULL BOX, 713.08, 450mm	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 1.8m DEEP	POWER SERVICE	TRENCH IN PAVED AREA, TYPE A	CONDUIT CLEANED AND CABLE REMOVED	PLASTIC CAUTION TAPE
						FROM	TO	METER	EACH	METER	EACH	EACH	METERS	METER	METER	METER	EACH	METER	EACH	EACH	EACH	EACH	EACH	METER
<b>CIRCUIT Q</b>																								
Q-1	24	LT.	SR7						2	1	28				1			1	1					
Q-1/2	24	LT.	SR7																			38		
Q-2	24	LT.	SR7						2	1	28				1			1	1					
Q-2/3	24	LT.	SR7																			37		
Q-3	24	LT.	SR7						2	1	28				1			1	1					
Q-3/PB-Q1	24	LT.	SR7																			3		
PB-Q1	24	LT.	SR7					6																
PB-Q1/CC-Q	24	LT.	SR7																			3		
CC-Q	24	LT.	SR7																	1				
<b>CIRCUIT R</b>																								
R-1	25	LT.	SR7	EX. UNIT		23	1		2		26			1										
R-1/PB-XR1	25	LT.	SR7	EX. UNIT	EX. BOX							45						42				42		
PB-XR1/PB-XR3	25	LT.	SR7	EX. BOX	EX. BOX							22									18.5			
R-2	25	LT.	SR7	EX. UNIT		23	1		2		26			1										
R-2/PB-XR2	25	LT.	SR7	EX. UNIT	EX. BOX							7						4				4		
PB-XR2/PB-XR3	25	LT.	SR7	EX. BOX	EX. BOX							11										8		
PB-XR3/PB-R1	25	LT.	SR7	EX. BOX	37+690							38						28			4	32		
R-3	25	LT.	SR7	EX. UNIT		23	1		2		26			1										
R-3/PB-R1	25	LT.	SR7	EX. UNIT	37+690							18						15				15		
PB-R1	25	LT.	SR7	37+690				6																
PB-R1/CC-R	25	LT.	SR7	37+690	37+690							18	3					3				3		
CC-R	25	LT.	SR7	37+690																1	1			
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						69	3	12	12	3	162	252	3	3	6	173	1	1	5	3	2	4	26.5	177

**LIGHTING QUANTITIES**

**BEL-7-32.276**

CALCULATED  
FDH  
CHECKED  
SAH

195  
242



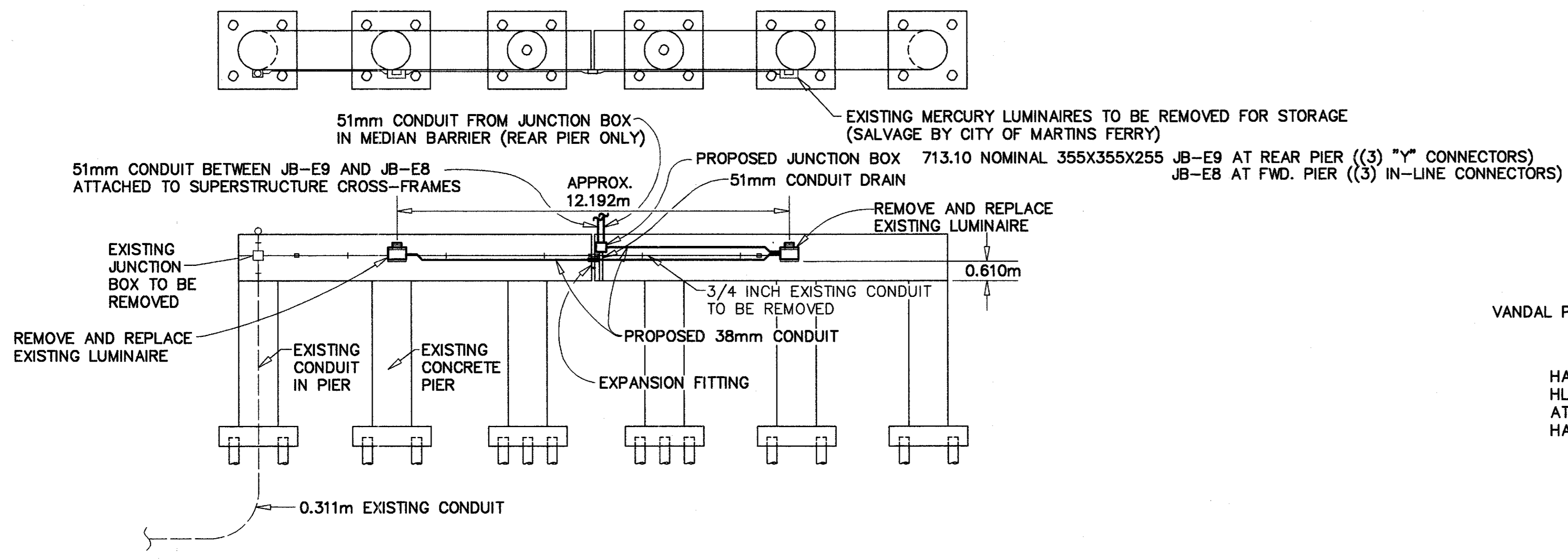
REFERENCE NUMBER	SHEET NO.	SIDE	ROADWAY	STATION		202		603	625															SPECIAL	
						LUMINAIRE REMOVED FOR STORAGE	REMOVAL MISC. POLE AND BRACKET CABLE REMOVED	100mm CONDUIT, TYPE E	CONNECTOR KIT, TYPE I	CONNECTOR KIT, TYPE VII B	CONNECTOR KIT, TYPE VII C	LIGHT POLE, DESIGN AT3.7B10.4	NO. 10 AWG POLE AND BRACKET CABLE	38mm DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES	CONDUIT, 76mm, 713.04	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 76mm	LUMINAIRE, CONVENTIONAL STYLE B, TYPE II, 250 WATT HPS, 713.11, 240 VOLTS	LUMINAIRE, CONVENTIONAL STYLE B, TYPE IV, 250 WATT HPS, 713.11, 240 VOLTS	TRENCH, 0.6m DEEP	PULL BOX, 713.08, 450mm	GROUND ROD	LIGHT POLE FOUNDATION, 610mm x 1.8m DEEP	TRENCH IN PAVED AREA, TYPE A	PLASTIC CAUTION TAPE	
						EACH	METER	METER	EACH	EACH	EACH	EACH	METER	METER	METER	METER	EACH	EACH	METER	EACH	EACH	EACH	EACH	METER	METER
<b>CIRCUIT GB</b>																									
GB-1	26	LT.	SR7	38+422																					
GB-1/2	26	LT.	SR7	38+422	38+359				2																
GB-2	26	LT.	SR7	38+359					2																
GB-2/3	26	LT.	SR7	38+359	38+296																				
GB-3	26	LT.	SR7	38+296					2																
GB-3/4	25	LT.	SR7	38+296	38+233																				
GB-4	25	LT.	SR7	38+233					2																
GB-4/5	25	LT.	SR7	38+233	38+170																				
GB-5	25	LT.	SR7	38+170					2																
GB-5/6	25	LT.	SR7	38+170	38+107																				
GB-6	25	LT.	SR7	38+107					2																
GB-6/7	25	LT.	SR7	38+107	38+044																				
GB-7	25	LT.	SR7	38+044					2																
GB-7/12	25	LT.	SR7	38+044	37+981										17								4		
GB-8	25	LT.	SR7	37+725					2																
GB-8/9	25	LT.	SR7	37+725	37+789																				
GB-9	25	LT.	SR7	37+789					2																
GB-9/10	25	LT.	SR7	37+789	37+853																				
GB-10	25	LT.	SR7	37+853					2																
GB-10/11	25	LT.	SR7	37+853	37+917																				
GB-11	25	LT.	SR7	37+917					2																
GB-11/12	25	LT.	SR7	37+917	37+981																				
GB-12	25	LT.	SR7	37+981					2	2	1	1													
GB-12/PB-G1	25	LT.	SR7	37+981	38+011																				
(PB-G1)	25	LT.	SR7	38+011)																					
PB-G1/CC-G	25	LT.	SR7	38+011	38+014																				
(CC-G)	25	LT.	SR7	38+014)																					
<b>CIRCUIT GC</b>																									
GC-1	25	LT.	SR7	EX. POLE		1	23																		
GC-1/PB-GC1	25	LT.	SR7	EX. POLE	38+012.8																				
PB-GC1	25	LT.	SR7	38+012.8				6																	
PB-GC1/CC-G	25	LT.	SR7	38+012.8	38+014																				
CC-G	25	LT.	SR7	38+014																					
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>						1	23	6		26	2	1	12	410	789	3.2	17	12	1	717.2	1	12	12	4	721.2

**LIGHTING QUANTITIES**

**BEL-7-32.276**

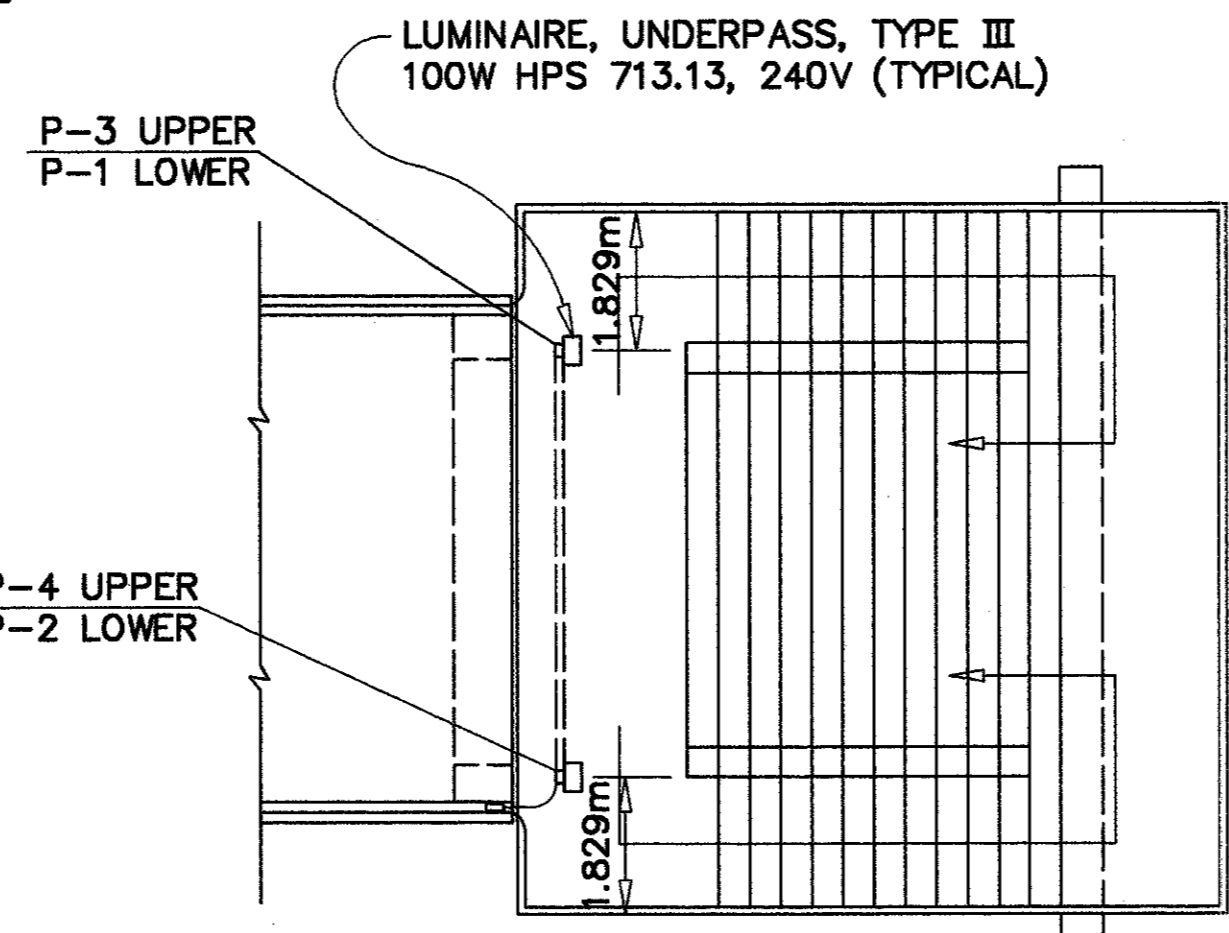
CALCULATED  
FDH  
CHECKED  
SAH

197  
242

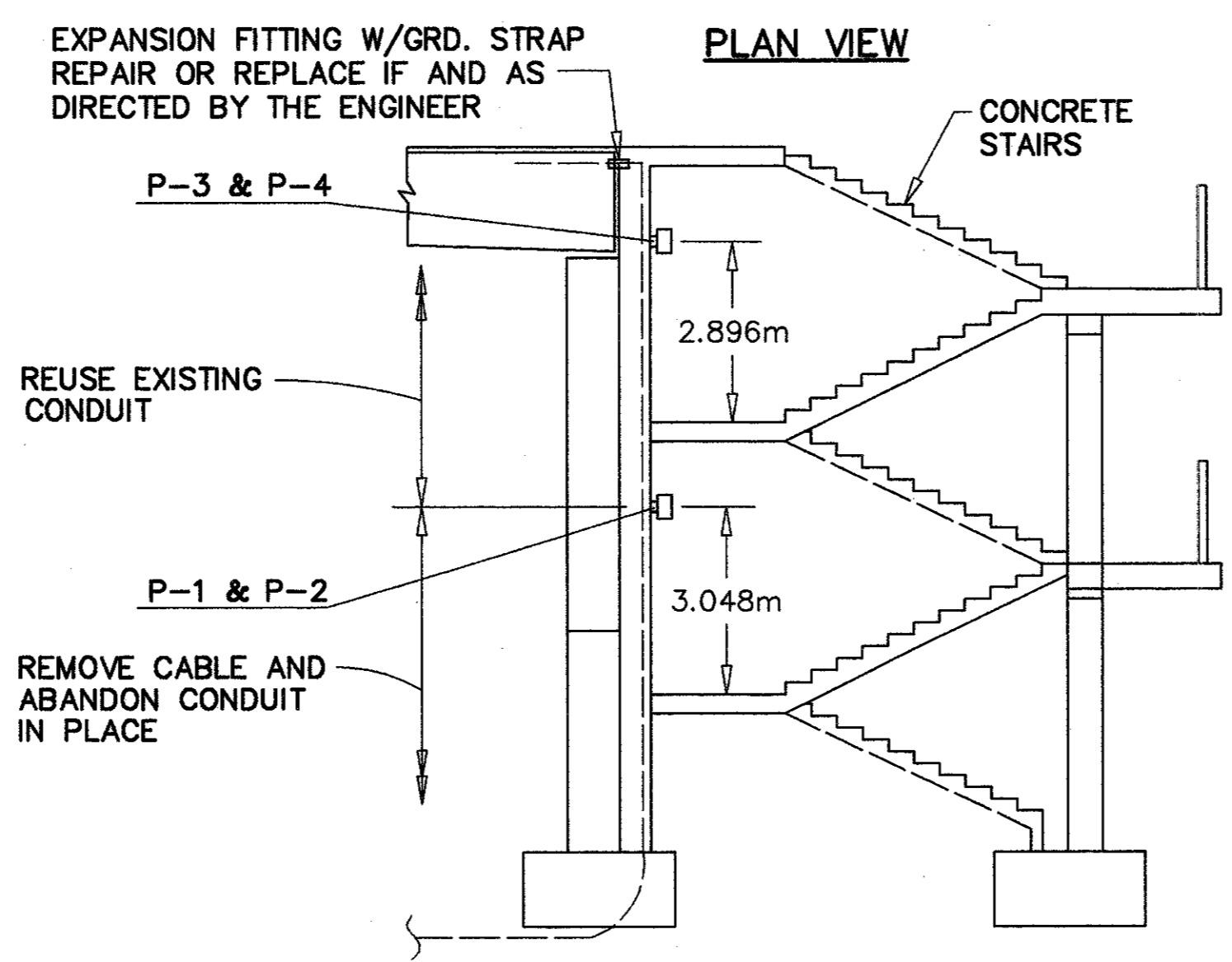


**DETAIL UNDERPASS LIGHTING**  
STRUCT. NO. BEL-7-36368 OVER CENTER ST.  
NOT TO SCALE

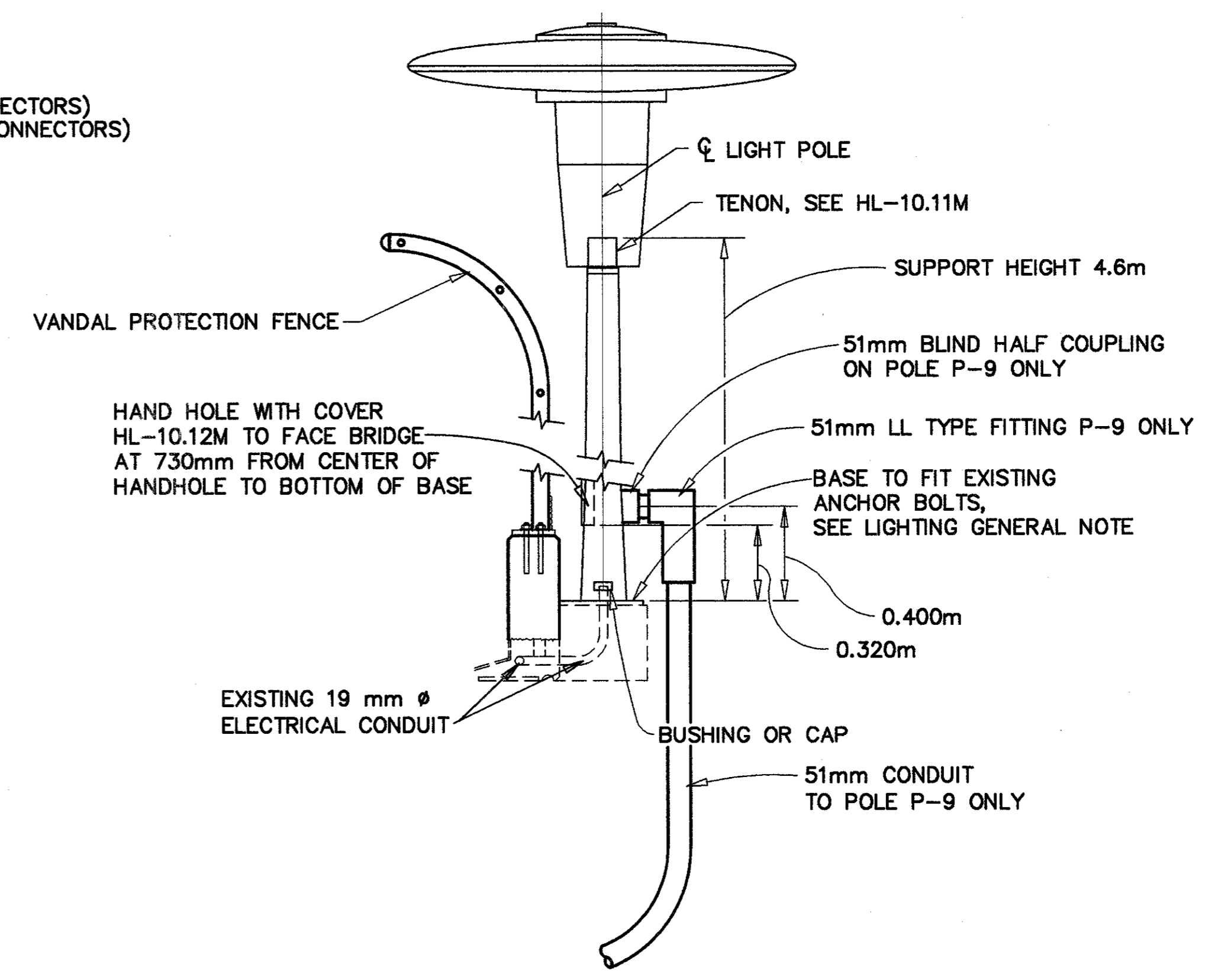
REAR PIER SHOWN, LOOKING SOUTH  
FORWARD PIER LOOKING FORWARD IS MIRROR IMAGE



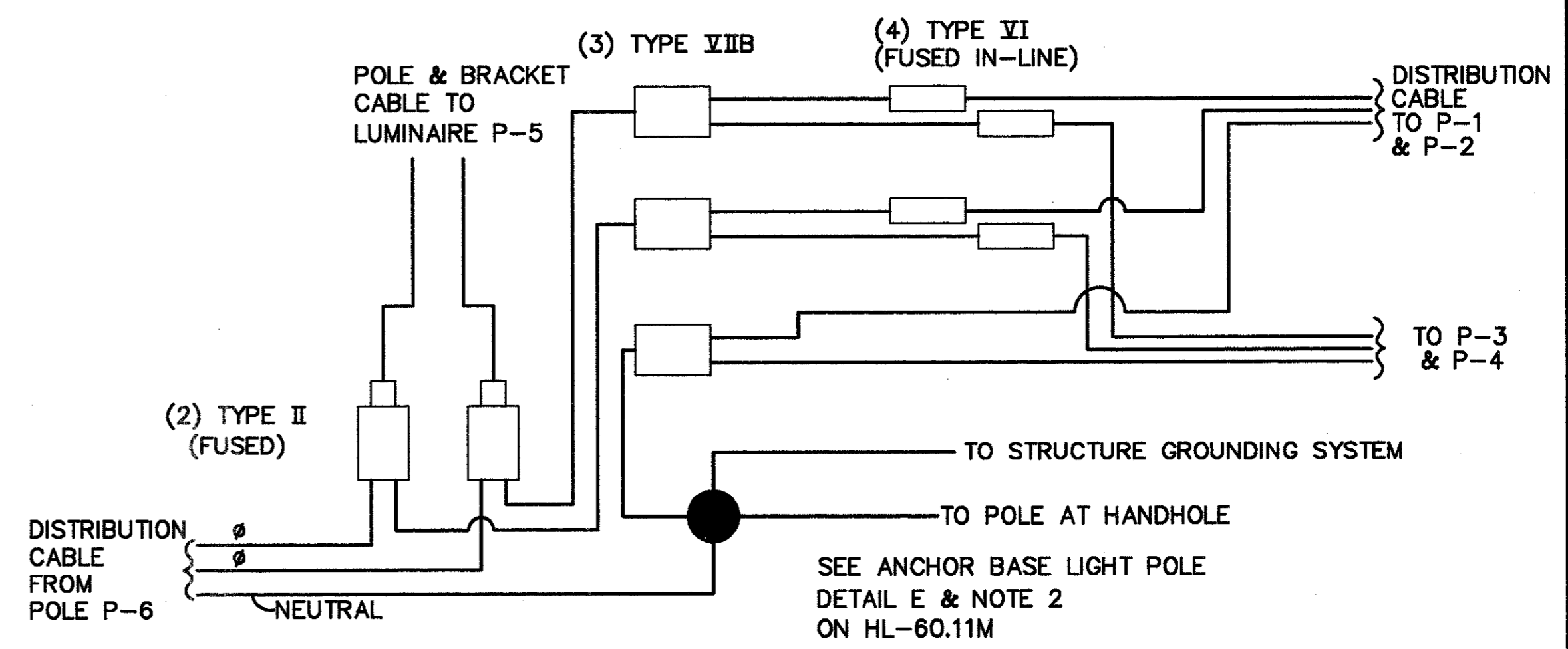
**PLAN VIEW**



**PEDESTRIAN OVER-PASS  
STAIR TOWER LIGHTING**  
NOT TO SCALE

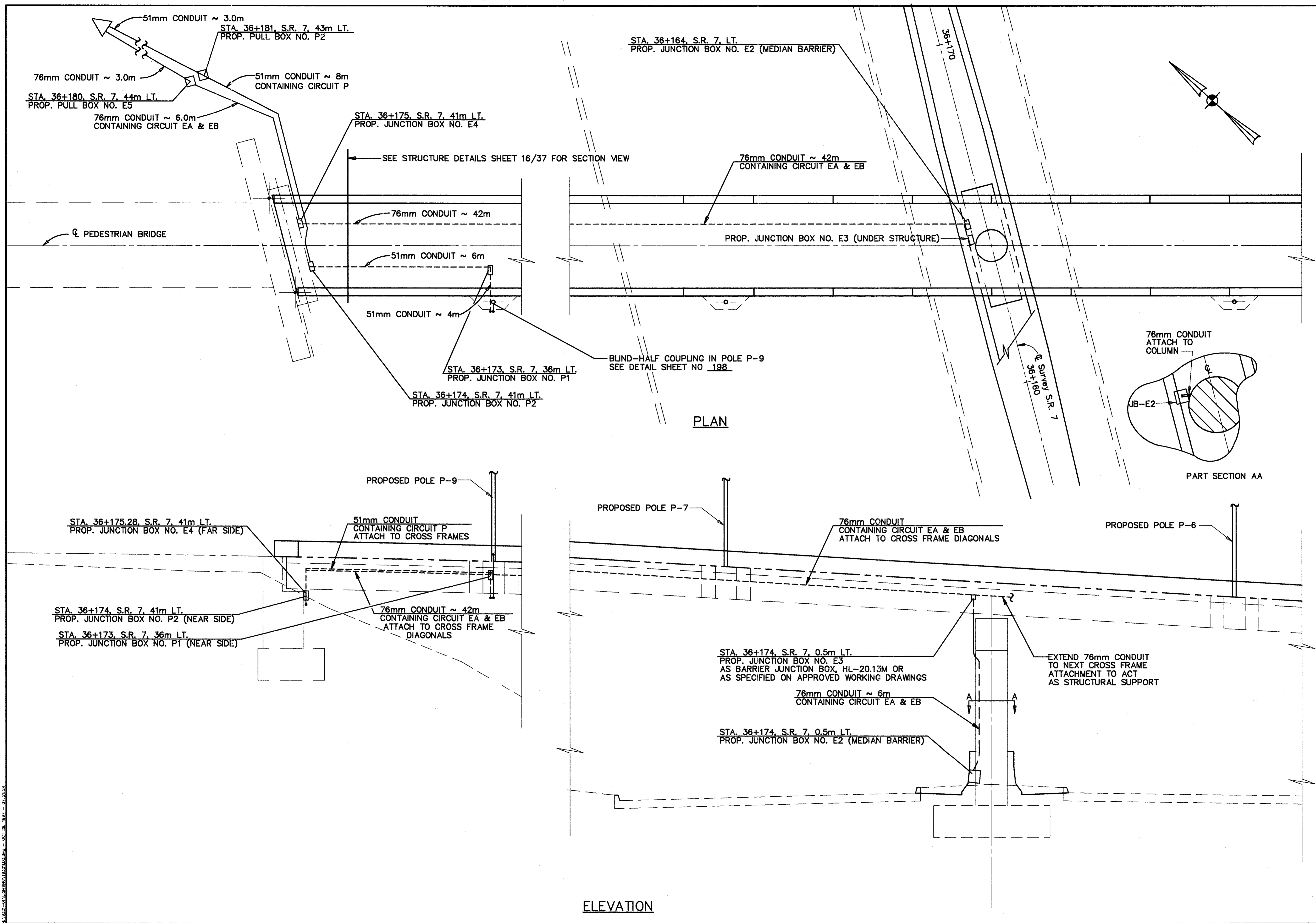


**LIGHT POLE MISC.:**  
DESIGN AON4.6, AS PER PLAN  
ANCHOR BASE LIGHT POLE  
FOR PEDESTRIAN BRIDGE  
STYLE V HL-10.11M  
NOT TO SCALE



**WIRING AT POLE P-5**  
ALL NO. 10 AWG  
NOT TO SCALE

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## BRIDGE GENERAL NOTES

### 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

HIGH PERFORMANCE CONCRETE: COMPRESSIVE STRENGTH 31.0 MPa  
(SUPERSTRUCTURE ENDS AND PARAPETS)  
CONCRETE CLASS 'C': COMPRESSIVE STRENGTH 28.0 MPa  
(SUBSTRUCTURE)  
REINFORCING STEEL: ASTM A615M, A616M, OR A617M - GRADE 400 MINIMUM  
YIELD STRENGTH 400 MPa  
STRUCTURAL STEEL: ASTM A36M - YIELD STRENGTH 250 MPa

### DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL WITH 64 mm  
CONCRETE COVER, WHERE APPLICABLE.  
45 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY (BRIDGE NOS.  
BEL-7-32283L/R, BEL-7-36368L/R, & BEL-7-36683L/R.)  
6 mm EPOXY OVERLAY (BRIDGE NO. BEL-7-36164 ONLY).

### REFERENCE SHALL BE MADE TO:

STANDARD DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	
AS-1-81M	DATED 10-25-94	815	DATED 5-30-96
VPF-1-90M	DATED 3-20-95	910	DATED 4-21-97
EXJ-4-87M	REVISED 2-18-97		
SD-1-69	DATED 6-12-69		

### REINFORCING STEEL SPLICES

SUPPLEMENTAL TO 509.08, UNLESS SHOWN OTHERWISE, SPLICES SHOWN ON THE PLAN SHALL BE MADE BY OVERLAPPING THE ENDS OF THE BARS NOT LESS THAN SHOWN IN THE FOLLOWING TABLE:

BAR SIZE	LAP LENGTH
#15M	480
#20M	730
#25M	1180

### DIMENSIONS

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

### REPLACEMENT OF EXISTING 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 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 170 kg IS INCLUDED FOR THIS PURPOSE, LISTED IN THE REINFORCING BAR SCHEDULE. PAYMENT SHALL BE INCLUDED IN THE BID PRICE FOR THE CORRESPONDING 511 ITEM.

### MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, UNLESS SHOWN OTHERWISE ON THE PLAN, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE ADEQUATE TO PROVIDE THE FOLLOWING MINIMUM LAP LENGTHS:

BAR SIZE	LAP LENGTH
15M	630 mm
20M	950 mm
25M	1540 mm

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

CONNECTORS AND DOWEL BAR EXTENSIONS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED IN THE BID PRICE FOR THE CORRESPONDING 511 ITEM.

### EXISTING STRUCTURE PLANS

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 11 OFFICE, 2201 REISER AVE., NEW PHILADELPHIA, OHIO. PHONE: (330) 339-6633. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE DRAWINGS.

### EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURES AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02.

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

### REMOVED MATERIALS

ALL REMOVED MATERIALS EXCEPT AS NOTED ELSEWHERE IN THE PLANS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY HIM FROM THE JOB SITE.

### CAUTION

ELECTRICAL CONDUIT AND/OR SIGNAL CABLE MAY BE PRESENT IN EXISTING DECKS, SAFETY CURBS, OR PARAPETS. IF ELECTRICAL OR SIGNAL CABLE IS PRESENT IN ELECTRICAL CONDUIT OR DUCT, THE CONTRACTOR SHALL MAKE PROVISIONS WITH THE OHIO DEPARTMENT OF TRANSPORTATION AND THE UTILITY FOR TEMPORARY CONTINUANCE OF ELECTRICAL AND SIGNAL POWER DURING REPAIR, REMOVAL OR REPLACEMENT OF ELECTRICAL AND/OR SIGNAL CABLE AND DURING CONSTRUCTION OF PARAPETS AND MEDIAN AS CALLED FOR IN THESE PLANS.

### STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN

THE INTERMEDIATE JOINTS ONLY ON BRIDGE BEL-7-32283 L/R AND ALL JOINTS ON BRIDGE NOS. BEL-7-36368 L/R AND BEL-7-36683 L/R SHALL CONFORM TO THE NON-STANDARD DETAILS AND INSTALLATION PROCEDURES NOTED ON SHEETS 34/37 & 35/37.

### STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSS FRAMES, AS PER PLAN

STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE OFFICE OF STRUCTURAL ENGINEERING. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE OFFICE OF STRUCTURAL ENGINEERING FOR INFORMATION. PAY WEIGHTS SHALL BE COMPUTED IN COMPLIANCE WITH 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND SUBMITTED TO THE ENGINEER FOR HIS REVIEW AND APPROVAL. THE FABRICATOR SHALL FURNISH A 35 MILLIMETER MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

### LOCATION OF POLES ON STRUCTURE BEL-7-32283L

THE LOCATION OF LIGHT POLES TO BE MOUNTED ON THE MEDIAN BARRIER OF STRUCTURE NO. BEL-7-32283L SHALL BE ADJUSTED, IF NECESSARY, TO PLACE THE CENTERLINE OF THE POLE AT LEAST 3.0m FROM AN EXPANSION JOINT AND 1.0m FROM A CRACK CONTROL JOINT IN THE BARRIER. WHEN FIRST LAYING OUT THE BARRIER CONSTRUCTION, THE CONTRACTOR SHALL MARK ON THE STRUCTURE HIS PROPOSED LOCATION OF BARRIER JOINTS AND SAW CUTS. HE SHALL ALSO MARK THE LIGHT POLE LOCATIONS AS SHOWN ON LIGHTING PLAN SHEETS. THE CONTRACTOR SHALL THEN REVIEW THE LOCATION MARKINGS WITH THE ENGINEER. BARRIER JOINT AND/OR POLE LOCATIONS SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER.

### ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE THE REMOVAL OF CONCRETE DECK, CONCRETE CURB, CURB PLATES, BULB ANGLE VERTICAL LEG DOWN TO CONCRETE DECK, RAILINGS AND POSTS, WHICH ARE NOT INCLUDED WITH ITEM 517 RAILING FACED, AS PER PLAN. ONE OF THE FOLLOWING METHODS SHALL BE USED TO REMOVE THE MEDIAN CURB OR OUTSIDE CURB AND RAILING.

#### METHOD A: (PLAN DETAILED)

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 PER MANUFACTURER'S RECOMMENDATIONS.

CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATION OR DAMAGING OF EXISTING REINFORCING STEEL TO BE PRESERVED. IF EXISTING REINFORCING STEEL DESIGNATED FOR PRESERVATION IS DAMAGED DURING THE REMOVAL OPERATION, DOWELED REINFORCING STEEL SHALL BE ADDED AT THE CONTRACTOR'S EXPENSE. THE LENGTH INTO THE DECK SHALL BE 150 mm. ALL DOWEL HOLES SHALL BE PER CMS SECTION 510 USING NONSHRINK, NONMETALLIC GROUT, AND BE INCLUDED IN THE BID PRICE FOR THE CORRESPONDING 511 OR 517 ITEM.

#### METHOD B: (OPTIONAL)

THE CONCRETE SHALL BE REMOVED BY SAW CUTTING. THE WATER FROM THE SAW CUTTING OPERATION SHALL BE IMMEDIATELY WASHED FROM THE STRUCTURE. FOR THE REINFORCING STEEL MARKED FOR PRESERVATION THAT IS CUT OFF, THE CONTRACTOR SHALL PROVIDE EXTRA DOWEL BARS ADDED AT THE CONTRACTOR'S EXPENSE. THESE BARS SHALL BE DOWELED INTO THE DECK 150 mm DEEP. ALL DOWEL HOLES SHALL BE PER CMS SECTION 510 USING NONSHRINK, NONMETALLIC GROUT, AND BE INCLUDED IN THE BID PRICE FOR THE CORRESPONDING 511 OR 517 ITEM.

#### BOTH METHODS:

THE FINAL REMOVAL SHALL BE PERFORMED USING 16 kg AND 7 kg JACK HAMMERS. A HOE RAM, CONCRETE CRUSHER OR SIMILAR TYPE IMPACTIVE DEVICE WILL NOT BE PERMITTED FOR ANY OF THE REMOVAL WORK. EXISTING SMOOTH CONSTRUCTION JOINTS OR SAW CUTS SHALL BE MECHANICALLY SCARIFIED 6 mm DEEP TO INSURE BONDING OF THE NEW CONCRETE.

#### EXISTING BULB ANGLES:

- WHERE THERE ARE EXISTING BULB ANGLES INVOLVED WITH THE REMOVAL OF EXISTING CURB, THE EXISTING BULB ANGLES ARE TO REMAIN IN PLACE AND SHALL HAVE THE VERTICAL LEG IN THE CURB CUT 45 mm BELOW THE PROPOSED PAVEMENT SURFACE.
- WHERE DECK ENDS ARE REMOVED FOR EXPANSION JOINT REPLACEMENT THE BULB ANGLE SHALL ALSO BE REMOVED THRU THIS AREA.

#### PAINTING OF STRUCTURAL STEEL

NEW STEEL SHALL BE PROVIDED WITH PRIME COAT ONLY, AS PAID FOR WITH ITEM 513. FOR PURPOSES OF FIELD PAINTING, NEWLY ERECTED STEEL SHALL BE CONSIDERED EXISTING STEEL AND SHALL BE PREPARED AND PAINTED IN CONFORMANCE WITH SUPPLEMENTAL SPECIFICATION 815 ~ "FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU." COST OF CLEANING AND PAINTING OF NEW AND EXISTING STEEL WITH THE OZEU PAINT SYSTEM SHALL BE INCLUDED IN THE SEVERAL OZEU ITEMS.

#### UTILITY LINES

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

#### STRUCTURE EXCAVATION

STRUCTURE EXCAVATION IN ADDITION TO THAT NECESSARY TO REMOVE PORTIONS OF THE EXISTING STRUCTURE AND ALL NECESSARY BACKFILL IS INCLUDED IN THE LUMP SUM BID ITEM, "UNCLASSIFIED EXCAVATION," FOR PAYMENT.

For Continuation of General Notes,  
See Sheet 2/37.

DESIGN AGENCY  
W.E. QUICKSALL & ASSOCIATES INC.  
554 WEST HIGH AVE.  
NEW PHILADELPHIA, OHIO  
CONSULTING ENGINEERS

DATE  
10/97

REVISED  
wda

DRAWN  
CFD

DESIGNED  
FDH

CHECKED  
ZRD

GENERAL NOTES  
BRIDGE REPAIR  
STATE ROUTE 7 BELMONT COUNTY

BEL-7-32.276

1/37

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242

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## BRIDGE GENERAL NOTES

### ITEM 202 - PORTIONS OF STRUCTURE REMOVED, ABUTMENTS, AS PER PLAN

SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE MASS OF THE HAMMER SHALL NOT BE MORE THAN 16 kg FOR REMOVAL WITHIN 450 mm OF PORTIONS TO BE PRESERVED. OUTSIDE THE 450 mm LIMIT, A HAMMER HEAVIER THAN 16 kg, BUT NOT TO EXCEED 41 kg, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

### ITEM 517 - RAILING FACED, AS PER PLAN (OUTSIDE RAILING)

THIS ITEM OF WORK SHALL CONSIST OF FACING CURB STYLE PARAPETS, USING CAST IN PLACE CONCRETE, TO OBTAIN THE DEFLECTOR SHAPE AS SHOWN IN THE PLANS.

#### REMOVAL:

THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING ALUMINUM RAILING, POSTS, CURB PLATES, EXISTING CONCRETE CURB AND BULB ANGLE GUTTER. ALL LOOSE OR UNSOUND CONCRETE SHALL BE REMOVED. ALSO TO BE REMOVED SHALL BE ANY SOUND CONCRETE NECESSARY TO OBTAIN A MINIMUM 100 mm THICKNESS OF NEW CONCRETE.

COMPLETE REMOVAL OF EXISTING OUTSIDE RAILING CURB-STYLE PARAPETS WITHIN THE LIMITS OF THE EXPANSION JOINT REMOVALS SHALL BE PAID FOR PER METER OF ITEM 202 ~ BRIDGE RAILING REMOVED.

#### DOWEL HOLES AND REINFORCING STEEL:

DOWEL HOLES SHALL BE DRILLED WHERE SHOWN IN THE PLANS. ALL DOWELS SHALL BE PER CMS SECTION 509, ALL DOWEL HOLES SHALL BE PER CMS SECTION 510 USING NONSHRINK NONMETALLIC GROUT. ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE DOWEL HOLE SHALL BE LOCATED WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER) PRIOR TO DRILLING THE HOLES. IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, THE DOWEL HOLE SHALL BE MOVED TO EITHER SIDE OF THE EXISTING BAR. ALL REINFORCING STEEL, DOWEL HOLES AND GROUTING SHALL BE INCLUDED WITH THIS ITEM 517 FOR PAYMENT.

#### SURFACE PREPARATION:

THE PARAPET SURFACE NEXT TO THE REFACING SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. USE OF HAND TOOLS MAY BE NECESSARY TO REMOVE SCALE FROM ANY EXPOSED REINFORCING STEEL. THE SURFACE SHALL BE MADE FREE FROM SPALLS, LAITENCE, AND ALL TRACES OF FOREIGN MATERIAL. DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING AS NECESSARY TO ENSURE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

#### MATERIALS:

REINFORCING STEEL - CMS 509, GRADE 400, EPOXY COATED; CONCRETE: SPECIAL - HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET).

#### SHRINKAGE CRACK CONTROL JOINTS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25 mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE INTO THE COMPLETE PERIMETER OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE CONTROL JOINT SAW CUTS SHALL BE PLACED IN THE NEW CONCRETE AT THE SAME LOCATION AS THE EXISTING DEFLECTION JOINTS AND SHALL BE MADE AT RIGHT ANGLES TO THE DECK BY SAWING TO MATCH ALIGNMENT OF EXISTING DEFLECTION JOINTS. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO ENSURE THAT THE CUT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 6 mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25 mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E.

#### METHOD OF MEASUREMENT:

THE QUANTITY SHALL BE THE ACTUAL LENGTH OF RAILING FACED AS MEASURED FROM END OF WINGWALL TO END OF WINGWALL, INCLUDING ALL SHORT, COMPLETE-REPLACEMENT PARAPET END SECTIONS. THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS WORK. ALL COSTS OF REMOVAL, DOWEL HOLES, REINFORCING STEEL, CONCRETE AND SHRINKAGE CONTROL JOINTS COMPLETE AND IN PLACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 517 - RAILING FACED, AS PER PLAN.

### CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN, THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

### ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY (45 mm THICK)

THIS ITEM SHALL INCLUDE THE 6 mm SCARIFICATION AND THE 45 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY ON THE DECK ONLY ON BRIDGE NO. BEL-7-32283L/R.

THIS ITEM SHALL INCLUDE THE 6 mm SCARIFICATION AND THE 45 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY ON THE DECK AND THE APPROACH SLABS ON BRIDGE NOS. BEL-7-36368L/R AND BEL-7-36683L/R.

PAYMENT FOR THE ABOVE SHALL BE PER SQUARE METERS FOR ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY (45 mm THICK).

### ESTIMATED QUANTITIES

AN ESTIMATED AMOUNT OF MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) HAS BEEN INCLUDED IN THE ESTIMATED QUANTITIES SUMMARY FOR BIDDING PURPOSES, BUT FINAL QUANTITIES SHALL BE DETERMINED BY ACTUAL FIELD MEASUREMENTS AT THE COMPLETION OF THE WORK.

### CONCRETE PARAPETS (MEDIAN BARRIER AND BEL-7-36164 PARAPET)

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT A MINIMUM OF 2000mm AND A MAXIMUM OF 3000mm (MEDIAN BARRIER), OR AS DETAILED ON THE PLANS (BEL-7-36164 PARAPET). 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 6mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E TO A MINIMUM DEPTH OF 25mm. INCLUDE WITH THE UNIT PRICE BID FOR ITEM SPECIAL-HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET).

### DECK EXPANSION JOINTS

THE DECK EXPANSION JOINTS WHICH ARE TO BE REPLACED OR RETROFITTED SHALL BE SEALED WITH ELASTOMERIC STRIP SEALS. SEE SHEETS 34/37 & 35/37.

ELASTOMERIC STRIP SEALS FOR EACH JOINT TO BE REPLACED OR RETROFITTED SHALL BE INSTALLED IN ONE CONTINUOUS PIECE.

### HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK)

THIS ITEM SHALL BE IN ACCORDANCE WITH THE PROPOSAL NOTE EXCEPT THAT THE CONCRETE SHALL CONSIST OF MIX 4.

### HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPETS)

THIS ITEM SHALL BE IN ACCORDANCE WITH THE PROPOSAL NOTE EXCEPT THAT THE CONCRETE SHALL CONSIST OF MIX 4.

### RAISED CONCRETE MEDIAN BARRIER SEAL

DESCRIPTION: THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING ELASTOMERIC SHEETING AT THE BRIDGE MEDIAN JOINT IN THE FORM OF A SEAL FOR DRAINAGE PROTECTION.

SHEETING SHALL BE FURNISHED IN ONE CONTINUOUS PIECE UNLESS A VULCANIZED (WITH HEAT AND PRESSURE) SHOP OR FIELD SPLICE, OR AN UNBONDED FIELD BUTT JOINT IS INDICATED ON THE PLANS OR APPROVED BY THE DIRECTOR.

MATERIALS: ELASTOMERIC SHEETING SHALL BE 2.4 mm THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003" AS MANUFACTURED BY E.I. DUPONT DE NEMOURS AND COMPANY, INCORPORATED, "WINGPRENE" AS MANUFACTURED BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED EQUAL. SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, MILLIMETERS	D751	2.4± 0.2
BREAKING STRENGTH, GRAB WXF kg, MINIMUM	D751	318 x 318
ADHESIVE, 25 mm STRIP 50 mm MINIMUM, kg MINIMUM	D751	4
BURST STRENGTH (MULLEN) kPa, MINIMUM	D751	9650 kPa MINIMUM
HEAT AGING 70 HOURS AT 100° C, 180 BEND	D2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HOUR AT -40° C. BEND AROUND 6 mm MANDREL	D2136	NO CRACKING OF COATING

CONNECTIONS FOR SHEETING INCLUDING ALL CLAMP BARS AND NAILS SHALL BE GALVANIZED ACCORDING TO 711.02. FIELD HOLES IN SHEETING SHALL BE DRILLED AND ALL CUTS MADE IN THE FIELD SHALL BE SAWN. ANY GALVANIZED COATING WHICH HAS BEEN CUT OR DAMAGED IN ANY WAY SUCH THAT BASE METAL IS EXPOSED SHALL BE REPLACED WITH A COLD GALVANIZING COMPOUND SUCH AS THAT MANUFACTURED BY Z.R.C. PRODUCT COMPANY OF QUINCY, MASSACHUSETTS, "GALVICON" BY KENCO DIVISION OF SOUTHERN COATING, INCORPORATED OF SUMTER, SOUTH CAROLINA, OR AN APPROVED EQUAL, APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SAMPLING AND TESTING: EACH LOT OF SHEETING SHALL BE TESTED BY AN INDEPENDENT LABORATORY TO ENSURE COMPLIANCE WITH THESE PROVISIONS. TWO CERTIFIED COPIES OF THE QUALIFICATION TEST DATA INDICATING THAT THE TESTED MATERIALS COMPLY WITH THESE PROVISIONS SHALL BE SUBMITTED TO THE ODOT TESTING LABORATORY. SAMPLING, WHEN REQUESTED, SHALL BE IN ACCORDANCE WITH 106.03 EXCEPT THAT WHERE SHEETING IS TO BE FABRICATED ACCORDING TO PLAN REQUIREMENTS, SAMPLES SHALL BE MADE AVAILABLE PRIOR TO FABRICATION. THE SAMPLE FROM EACH LOT AND FOR EACH PROJECT SHALL BE ONE PIECE, 1 METER LONG.

MATERIAL ACCEPTANCE WILL BE BASED UPON ODOT TESTING LABORATORY EVALUATION OF CERTIFIED TEST DATA, LABORATORY TESTS OF SAMPLED MATERIAL, OR THE EVALUATION OF BOTH CERTIFIED TEST DATA AND TESTED SAMPLES.

BASIS OF PAYMENT: UNLESS OTHERWISE SPECIFIED ON THE PROJECT PLANS, PAYMENT FOR ALL MATERIAL AND LABOR FOR THE JOINT SEAL INCLUDING GALVANIZED CLAMP BARS AND NAILS SHALL BE MADE AT THE CONTRACT PRICE FOR:

ITEM	EXTENSION	UNIT	DESCRIPTION
516	14600	METER	STRUCTURAL JOINT OR JOINT SEALER, MISC.: CONCRETE MEDIAN BARRIER SEAL

For Phase Construction Sequence, Notes and Details, See Roadway Sheets 14 Thru 34

DESIGN AGENCY  
W.E. QUICKSALL & ASSOCIATES INC.  
554 WEST HIGH AVE.  
NEW PHILADELPHIA, OHIO  
CONSULTING ENGINEERS

DATE  
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DRAWN  
CFD  
DESIGNED  
FDH  
CHECKED  
ZRD

GENERAL NOTES  
BRIDGE REPAIR  
STATE ROUTE 7 BELMONT COUNTY

BEL-7-32.276

2/37

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242

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ESTIMATED QUANTITIES

CALC. BY: FDH, PMZ, CFD, JMG, ZRD DATE 6/94 REV. BY: DIST. II/SAL  
 CHKD. BY: ZRD, FDH, WDA DATE 12/5/97

MAJOR BRIDGE FUNDING - NH-4BU7				RESURFACING FUNDING - NH-4BH7						MAJOR BRIDGE FUNDING NH-4BU7	RESURFACING FUNDING NH-4BH7	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
RETAINING WALLS		BRIDGES		BRIDGES														
32283 L	32283 R	32283 L	32283 R	36164	36368 L	36368 R	36683 L	36683 R										
		4390	4390			304	304		946	946	8780	2500	202	23500	11 280	SQUARE METER	WEARING COURSE REMOVED	
		67	67			14	12		37	44	134	107	202	11301	241	CUBIC METER	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	1/37
		4	4			5	5				8	10	202	38500	18	METER	BRIDGE RAILING REMOVED	
					137						--	137	202	75000	137	METER	FENCE REMOVED	
		21	21								42	--	202	98200	42	METER	REMOVAL MISCELLANEOUS: EXPANSION JOINT REMOVED	
					4						--	4	202	98500	4	CUBIC METER	REMOVAL MISCELLANEOUS: PORTIONS OF STRUCTURE REMOVED, CURB	
		19	18			6	6		3	2	37	17	202	98500	54	CUBIC METER	REMOVAL MISCELLANEOUS: PORTIONS OF STRUCTURE REMOVED, ABUTMENTS, AS PER PLAN	2/37
		LUMP	LUMP			LUMP	LUMP				LUMP	LUMP	503	21300	LUMP		UNCLASSIFIED EXCAVATION	
		18	18			9	8		3	2	36	22	511	45700	58	CUBIC METER	CLASS C CONCRETE, ABUTMENT	
		3	3								6	--	SPECIAL	51148000	6	CUBIC METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK) *	
		236	187		14	18	14		9	18	423	73	SPECIAL	51148020	496	CUBIC METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET) *	
		LUMP	LUMP		LUMP	LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	SPECIAL	51149000	LUMP		HIGH PERFORMANCE CONCRETE, TRIAL MIX *	
		LUMP	LUMP		LUMP	LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	SPECIAL	51149010	LUMP		HIGH PERFORMANCE CONCRETE TESTING *	
		2	2								4	--	512	44400	4	SQUARE METER	TYPE B WATERPROOFING	
492	693	4393	4432		219	275	273		617	663	10010	2047	SPECIAL	51267502	12 057	SQUARE METER	SEALING OF CONCRETE SURFACES (EPOXY) *	
					166						--	166	SPECIAL	51272000	166	SQUARE METER	EPOXY WATERPROOFING OVERLAY (6 mm THICK) *	
					LUMP						--	LUMP	SPECIAL	51272500	LUMP		TEST PATCH *	
		854	853								1707	--	513	15901	1707	KILOGRAM	STRUCTURAL STEEL, REPLACEMENT OF DETERIORATED END CROSS FRAMES, AS PER PLAN	1/37
		854	853								1707	--	513	16590	1707	KILOGRAM	STRUCTURAL STEEL MISCELLANEOUS: STRUCTURAL STEEL REMOVED FOR RE-USE	
		LUMP	LUMP								LUMP	--	513	21200	LUMP		TRIMMING OF BEAM END	
		21	21								42	--	516	11210	42	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL	
		42	42			23	22		23	23	84	91	516	11211	175	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN	1/37
		1	1								2	--	516	13600	2	SQUARE METER	25 mm PREFORMED EXPANSION JOINT FILLER	
		498				37			115		498	152	516	14600	650	METER	STRUCTURAL JOINT OR JOINT SEALER, MISC.: CONCRETE MEDIAN BARRIER SEAL	
149	209	497	497			37	37		115	115	1352	304	517	76201	1656	METER	RAILING FACED, AS PER PLAN	2/37
		19	15		6	3	3		10	10	34	32	518	12801	66	EACH	SCUPPER MODIFICATION, AS PER PLAN	33/37
		7	8			3	3		10	10	15	26	518	12900	41	EACH	SCUPPER, LENGTHENING	
		18	18			1	1				36	2	518	21200	38	CUBIC METER	POROUS BACKFILL WITH FILTER FABRIC	
		4872	4911			545	530		1313	1313	9783	3701	SPECIAL	51922006	13 484	SQUARE METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (45 mm THICK) *	
		63	99			8	10		18	20	162	56	SPECIAL	51922100	218	CUBIC METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) *	
		LUMP	LUMP			LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	SPECIAL	51922300	LUMP		TEST SLAB *	
					135						--	135	SPECIAL	60739920	135	METER	VANDAL PROTECTION FENCE, 3.0 m CURVED, COATED FABRIC	
		LUMP	LUMP			LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	815	00100	LUMP		SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	
		LUMP	LUMP			LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	815	00200	LUMP		FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	
		LUMP	LUMP			LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	815	00300	LUMP		FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU	
		LUMP	LUMP			LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	815	00400	LUMP		FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	
		25	26			3	3		9	9	51	24	815	00500	75	METER	CAULKING	
		244	244			18	18		62	62	488	160	815	00504	648	MAN HOUR	GRINDING FINS, TEARS, SLIVERS	

\* SEE PROPOSAL NOTE.

For General Notes, See Sheets 1/37 & 2/37

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 W.E. QUICKSALL & ASSOCIATES INC.  
 554 WEST HIGH AVE.  
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DATE  
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 STRUCTURE FILE NUMBER

DRAWN  
 CFD  
 REVISED

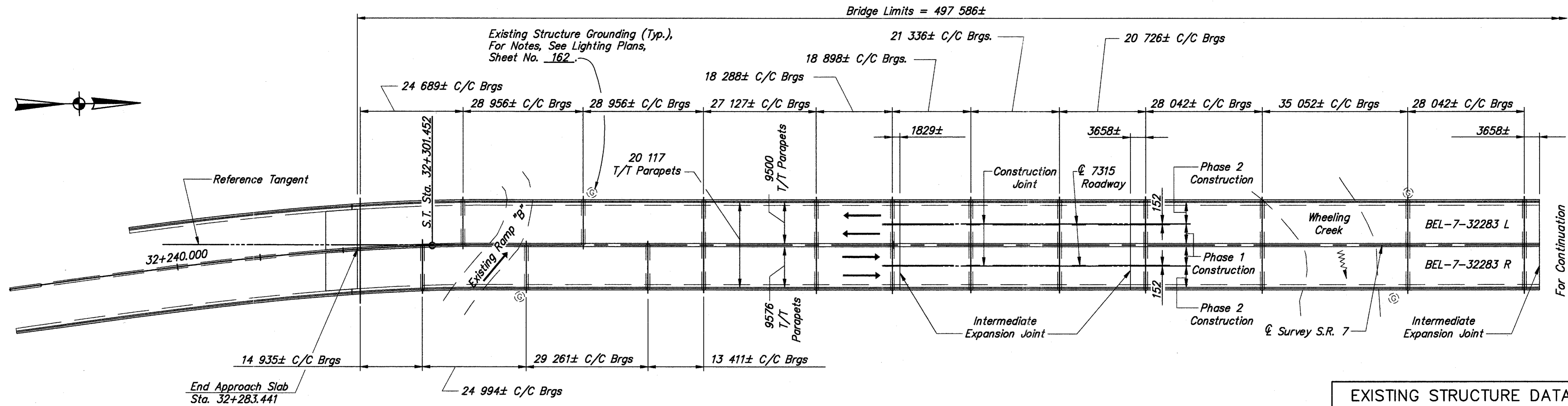
DESIGNED  
 CHECKED

ESTIMATED QUANTITIES  
 BRIDGE REPAIR  
 STATE ROUTE 7 BELMONT COUNTY

BEL-7-32.276

3/37

202  
 242



**PLAN**

**S.R. 7  
CURVE DATA**

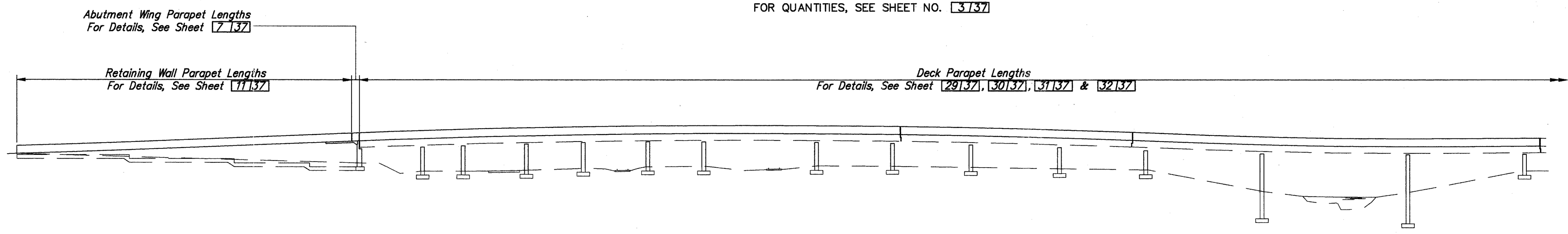
P.I. = Sta. 32+152.826	ST = 35.624m
$\Delta = 32^{\circ}50'36''$ Rt.	Lc = 88.686m
R = 388.084m	Ts = 163.420m
Ls = 168.680m	Ec = 13.888m
$\theta_c = 7^{\circ}52'30''$	$e_{max} = .074$
LT = 71.190m	

**PROPOSED WORK**

- REPLACE EXISTING ASPHALT CONCRETE WEARING SURFACE WITH 45 mm THICKNESS OF MICRO-SILICA OVERLAY.
- REFACE OUTSIDE RAILING WITH DEFLECTOR-TYPE SHAPE. REPLACE CURB IN MEDIAN WITH DEFLECTOR-TYPE BARRIER.
- REPLACE BACKWALLS TO BEAM SEATS AND PROVIDE ELASTOMERIC STRIP SEAL JOINTS.
- PROVIDE ELASTOMERIC STRIP SEAL JOINTS WITH EXTENSIONS AT THE INTERMEDIATE EXPANSION JOINTS.
- REPLACE APPROACH SLABS AND PROVIDE PRESSURE RELIEF JOINTS.
- CLEAN AND PAINT STRUCTURAL STEEL, USING SYSTEM OZEU.
- EXTEND SCUPPERS 200 mm MINIMUM BELOW BEAMS.
- EPOXY SEAL PIERS, PARAPETS, MEDIAN BARRIER, ABUTMENTS AND WALLS.
- REMOVE EXISTING LIGHTING, PROVIDE MEDIAN LIGHTING. (SEE HIGHWAY PLANS)

FOR QUANTITIES, SEE SHEET NO. **3137**

<b>EXISTING STRUCTURE DATA</b>	
TYPE: CONTINUOUS ROLLED BEAM AND WELDED GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE	
SPANS: VARY, SEE PLAN	
ROADWAY: 18 898± mm F/F CURB	
LOADING: C.F. 2000 (57)	
SKEW: NONE	
WEARING SURFACE: 74± mm ASPHALT CONC. ON 25 mm MONOLITHIC CONC.	
APPROACH SLABS: AS-1-54, 7620± mm LG.	
ALIGNMENT: VARIES	
SUPERELEVATION: VARIES	
<b>REHABILITATED STRUCTURE</b>	
ROADWAY: 20 117 mm T/T PARAPETS	
WEARING SURFACE: 45 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY	
APPROACH SLABS: AS-1-81M, 7620 mm LONG	

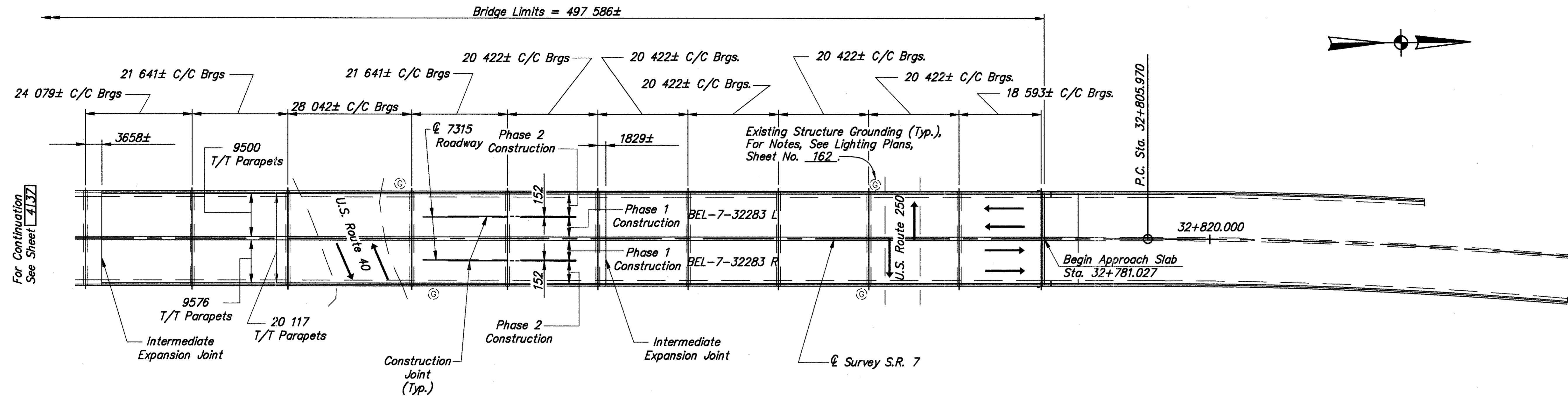


**ELEVATION**

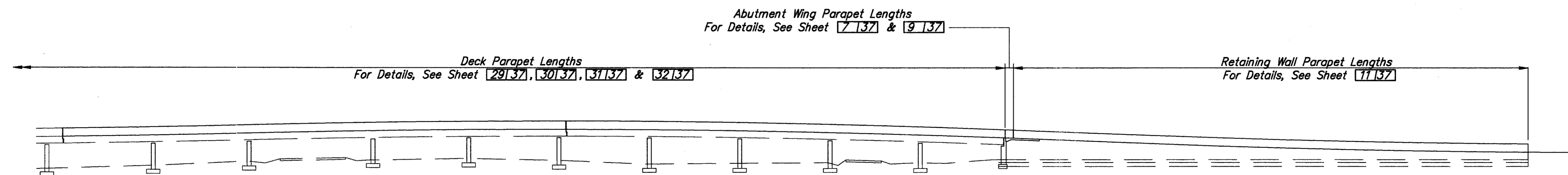
For Continuation See Sheet **3137**

DESIGNED FDH	CHECKED ZRP	DRAWN PMZ	REVIEWED wdr	DATE 10/19/97	DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS
BELMONT COUNTY				STA. 32+283.441	GENERAL PLAN & ELEVATION BRIDGE NO. BEL-7-32283 L/R S.R. 7 OVER U.S. 40, U.S. 250, WHEELING CREEK AND UNDER I.R. 70
TYPE: CONTINUOUS ROLLED BEAM AND WELDED GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE				STA. 32+781.027	
BEL-7-32.276					
4 / 37					
203 242					

10/15/97 - 09:15:08



PLAN



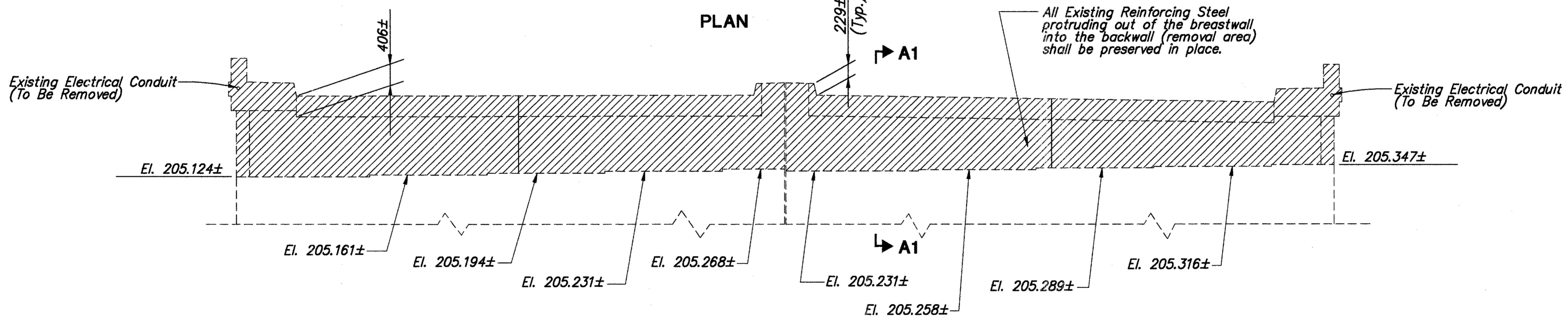
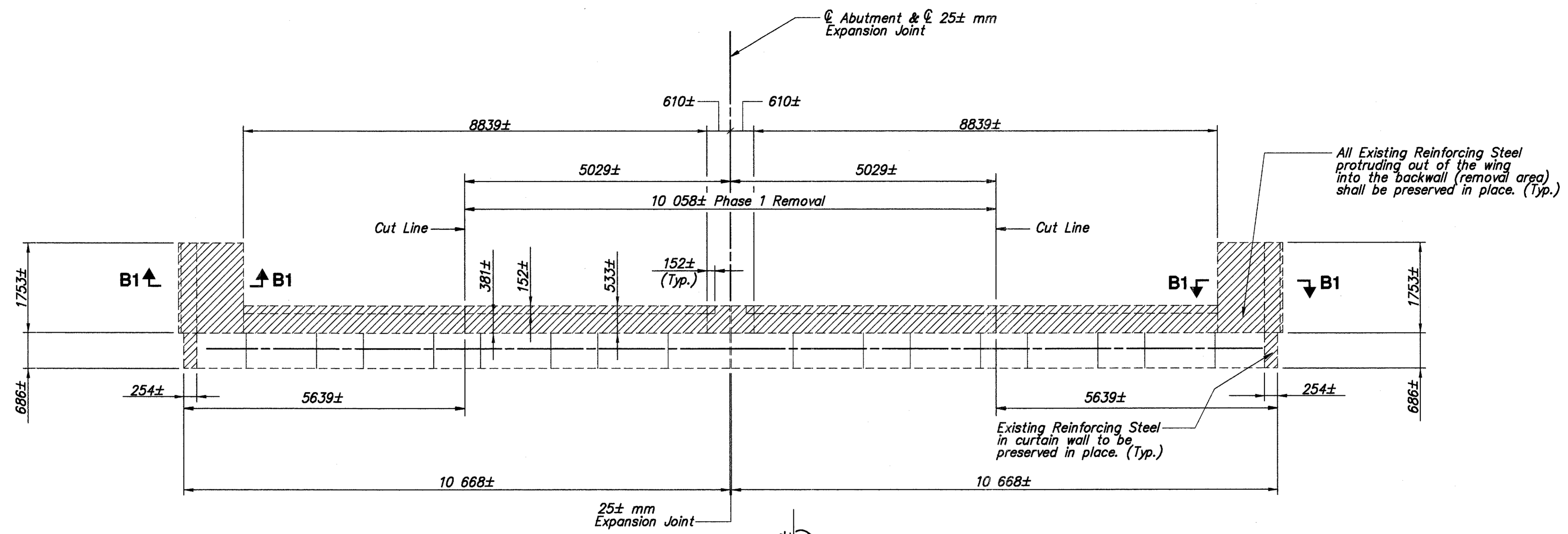
ELEVATION

For Continuation  
See Sheet 4 137

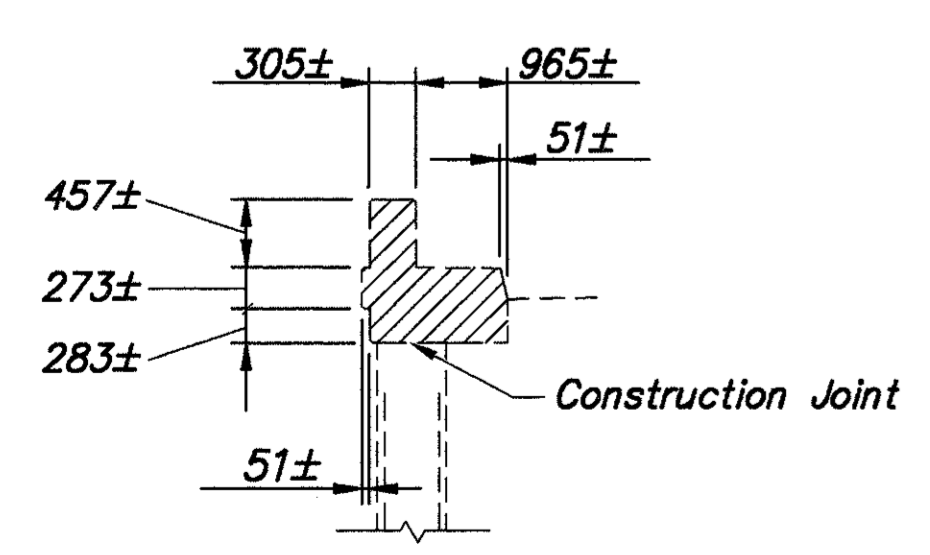


DESIGNED FDH	CHECKED ZRP	DRAWN PMZ	REVIEWED wda	DATE 10/19/77	STRUCTURE FILE NUMBER 0700541	DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES INC. 354 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS
BELMONT COUNTY STA. 32+283.441 STA. 32+781.027			GENERAL PLAN & ELEVATION BRIDGE NO. BEL-7-32283 L/R S.R. 7 OVER U.S. 40, U.S. 250, WHEELING CREEK AND UNDER I.R. 70			
BEL-7-32.276			5 / 37			
204 242						

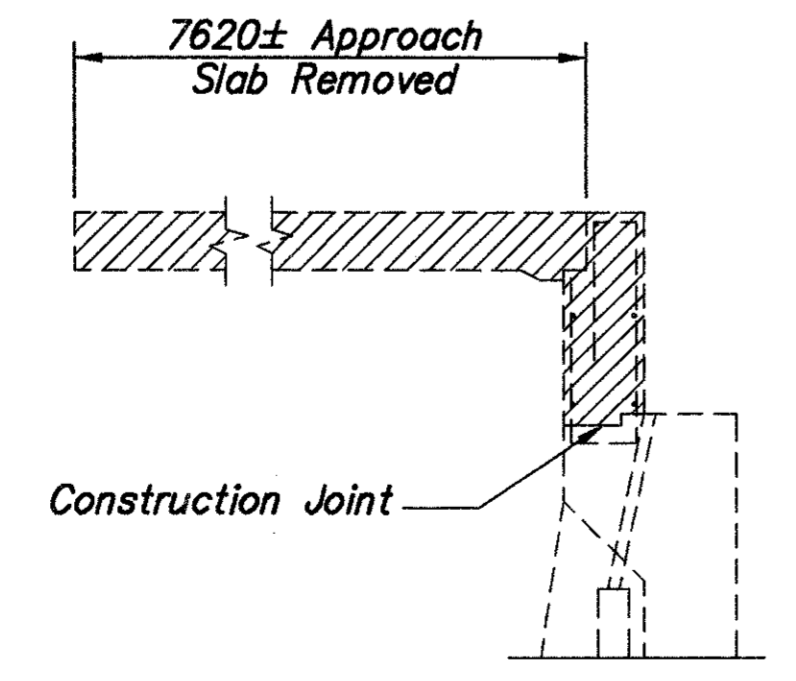
L:\921-01\921021.dwg - OCT 22, 1987 - 08:16:31



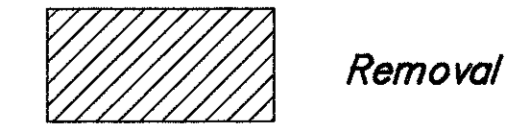
Railing removal to be included with Item 202 Removal Miscellaneous: Portions of Structure Removed, Abutments, As Per Plan. (Typ.) (Railing not shown)



SECTION B1-B1



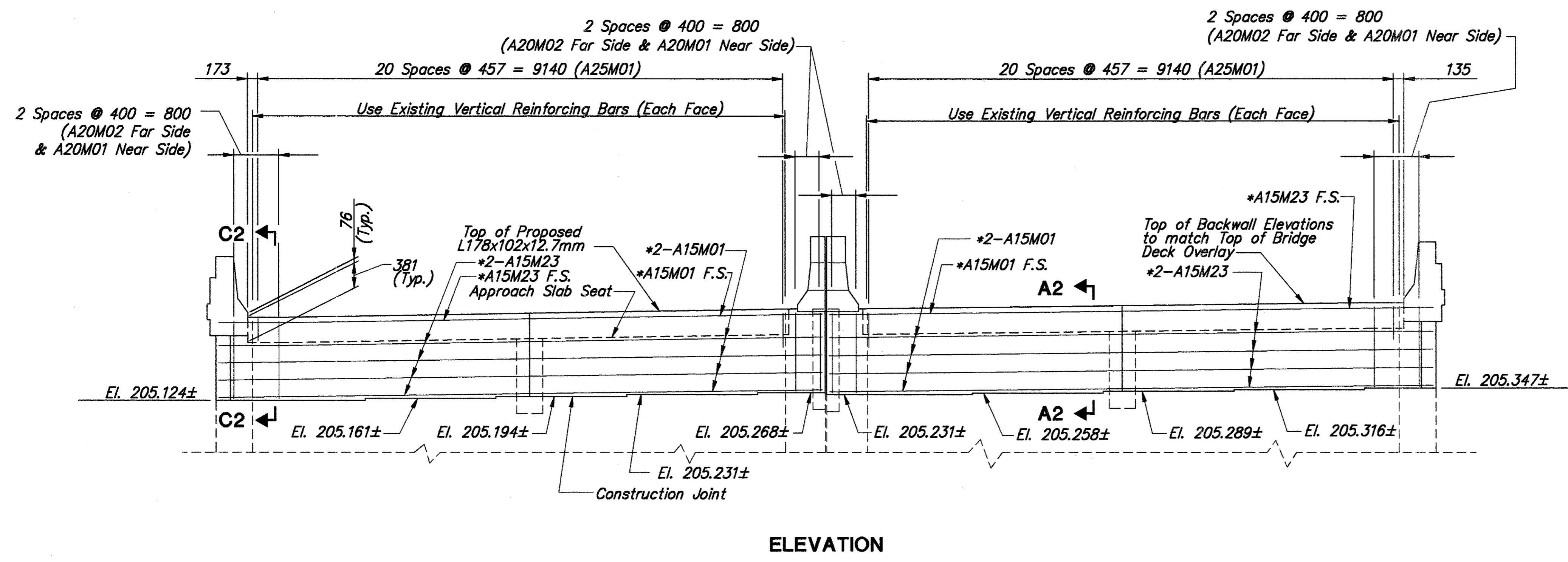
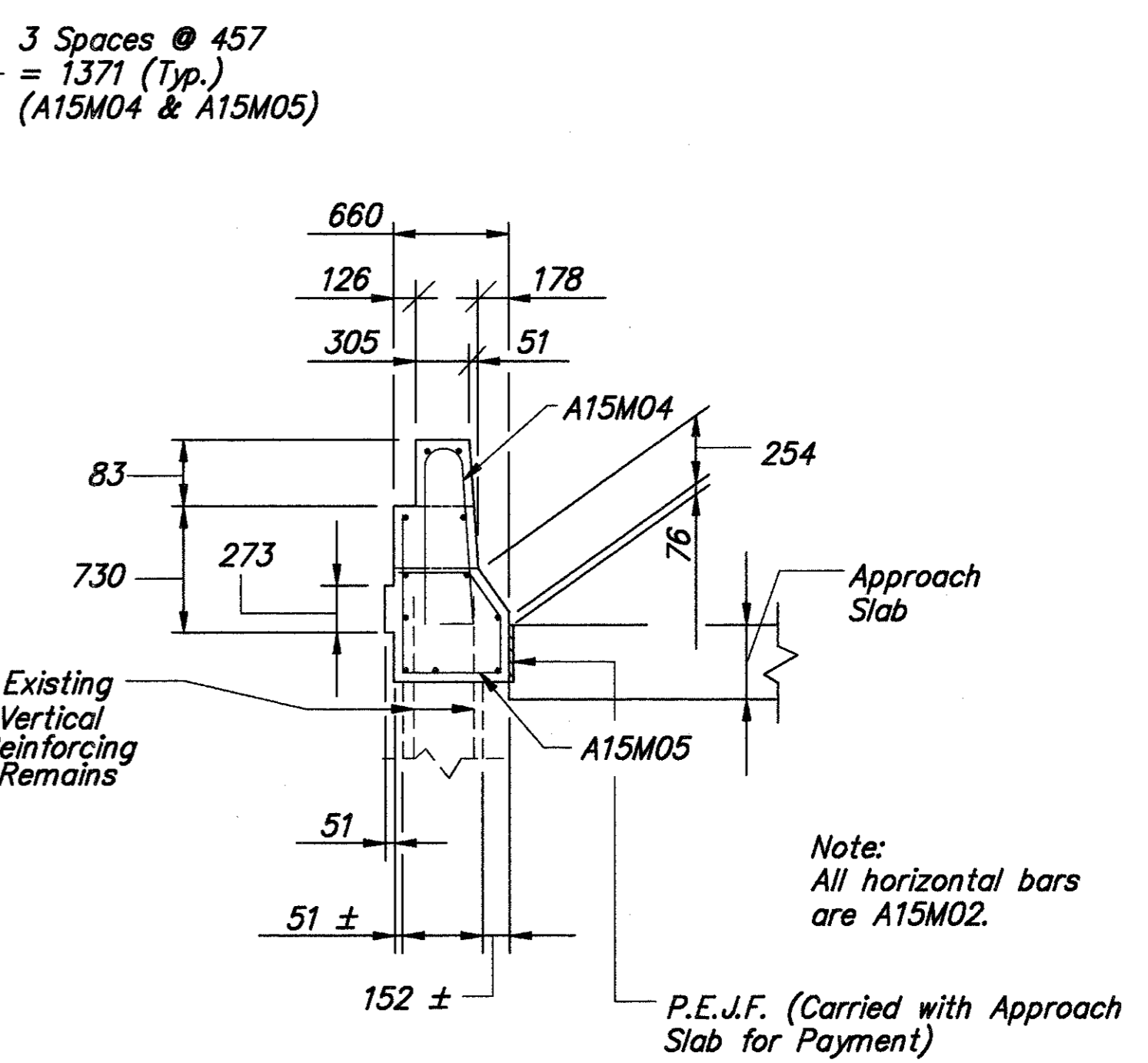
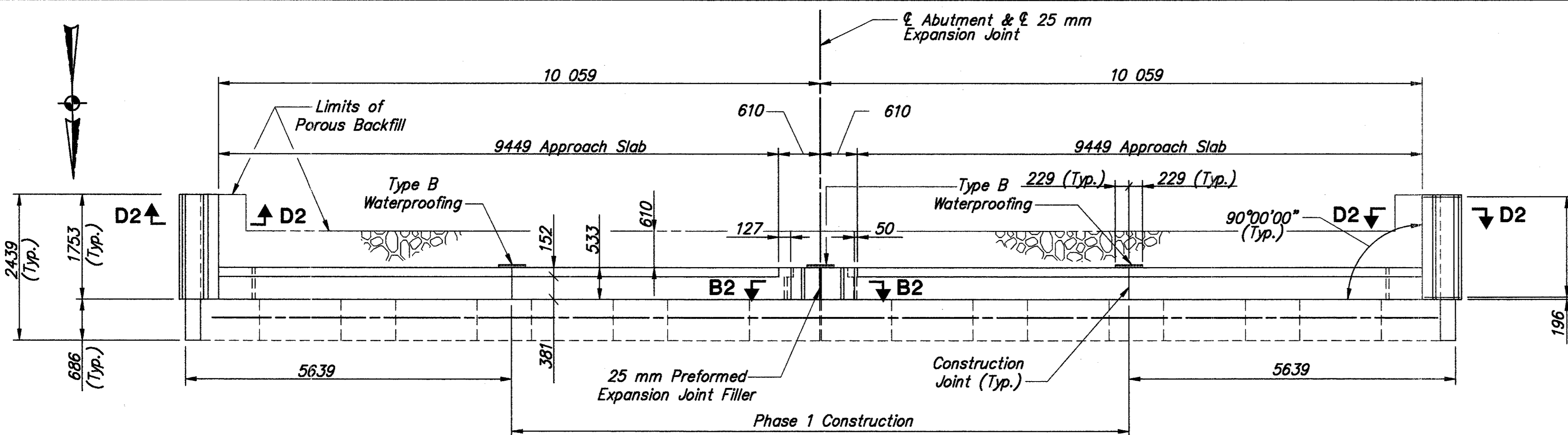
SECTION A1-A1



Note:  
Reinforcing Steel to be removed to the Construction Joint, unless noted otherwise.  
All Existing Expansion Joint Anchors embedded in the backwall shall be removed and paid for with Item 202 Removal Miscellaneous: Portions of Structure Removed, Abutments, As Per Plan.

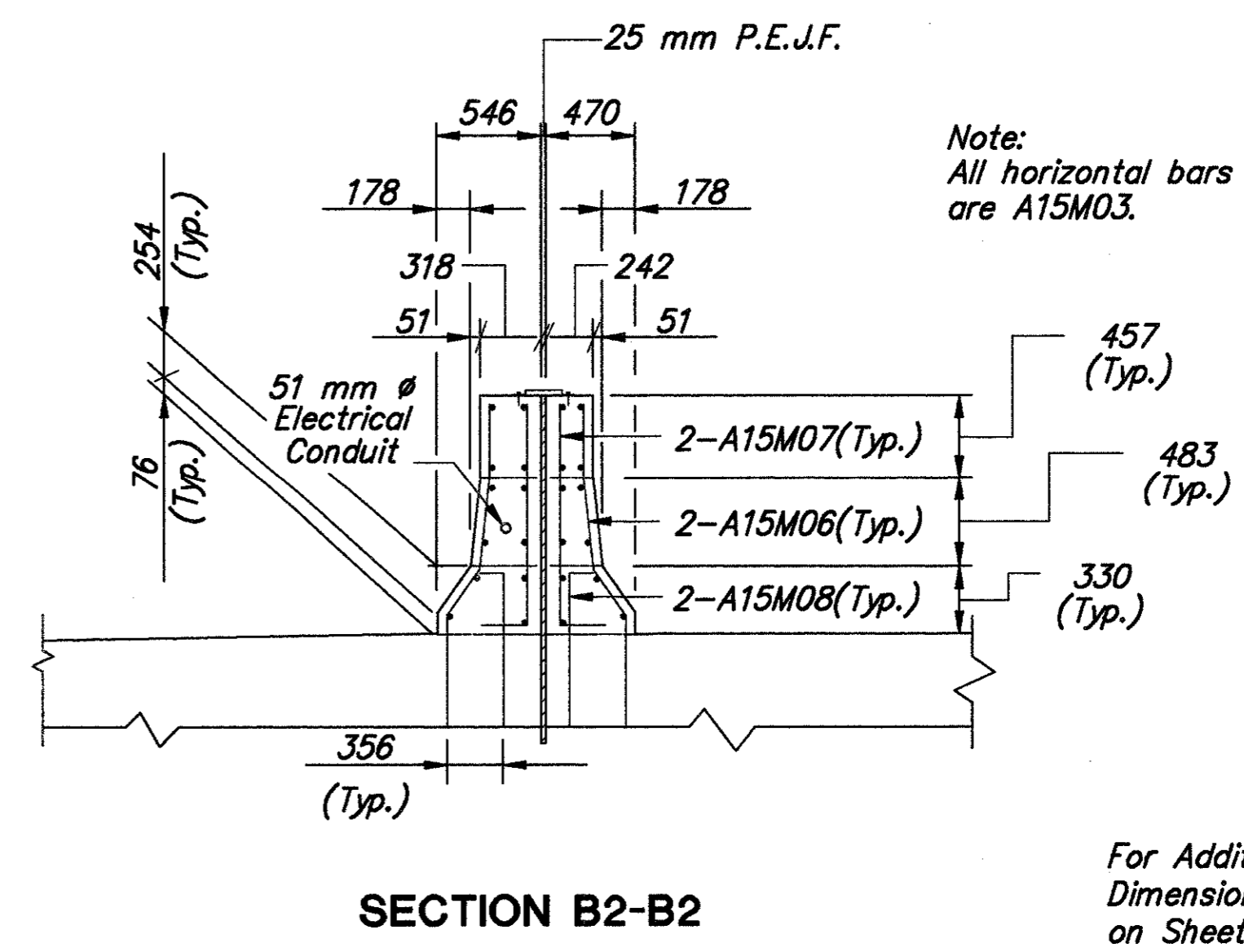
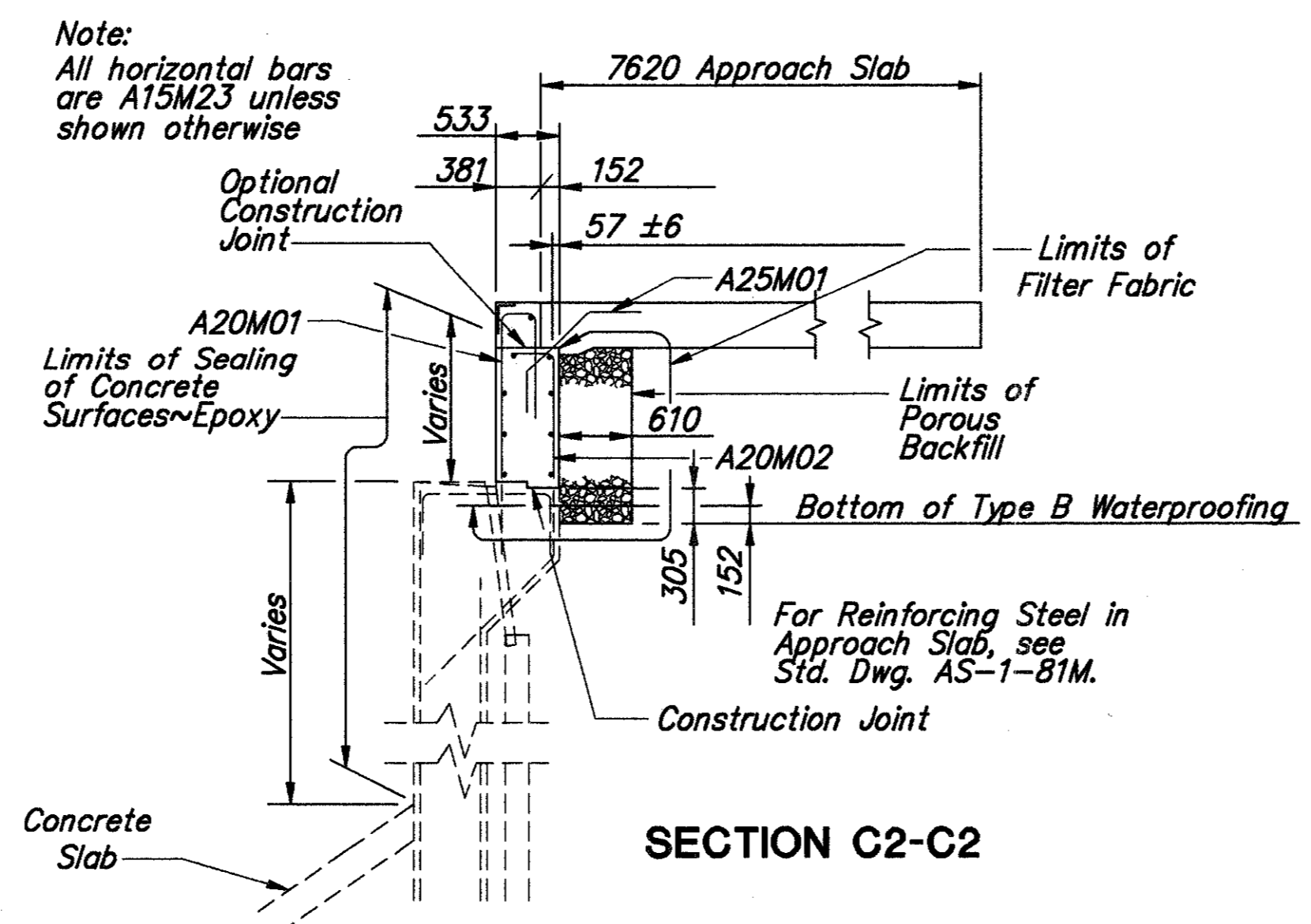
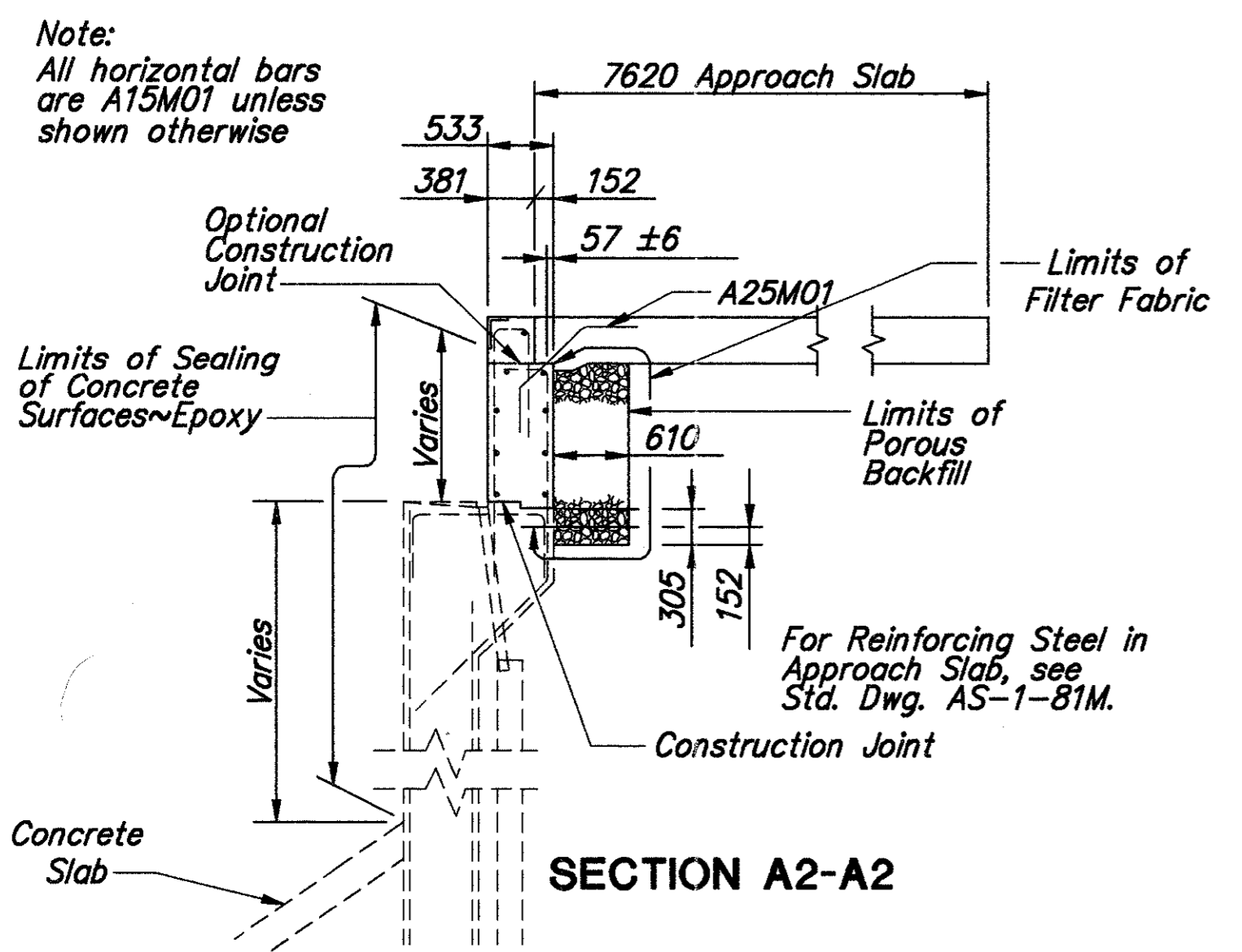
DESIGNED	FDH	CHECKED	ZRP
DRAWN	PMZ	REVIEWED	
REVIEWED	Wda	DATE	10/19/97
STRUCTURE FILE NUMBER	0700541	DESIGN AGENCY	W.E. QUICKSALL & ASSOCIATES INC. 554 WEST HIGH AVE NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS
REAR ABUTMENT DETAILS			
BRIDGE NO. BEL-7-32283 L/R S.R. 7 OVER U.S. 40, U.S. 250, WHEELING CREEK AND UNDER I.R. 70			
BEL-7-32-276			
6 / 37			
205 242			

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Notes:  
 \* - Denotes Mechanically Connected Reinforcing  
 F.S. - Denotes Far Side  
 P.E.J.F. - Denotes Preformed Expansion Joint Filler

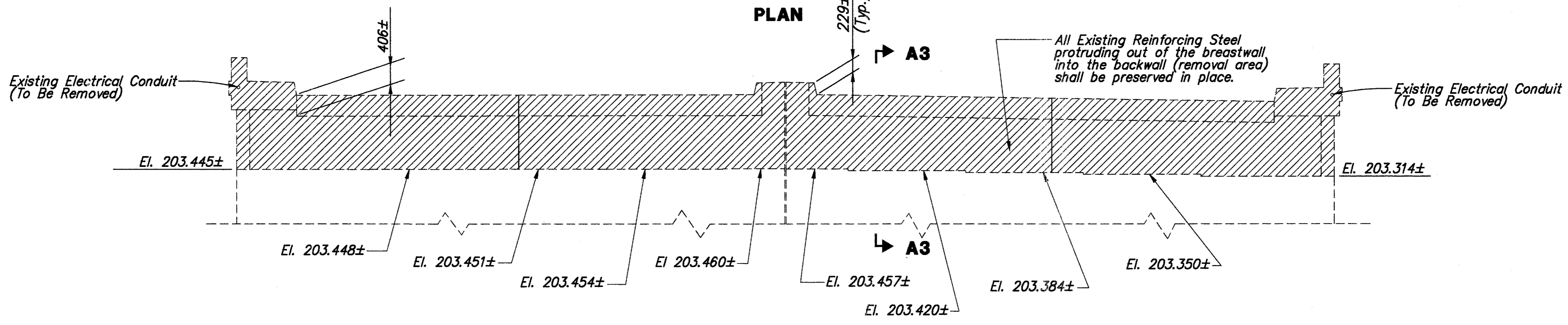
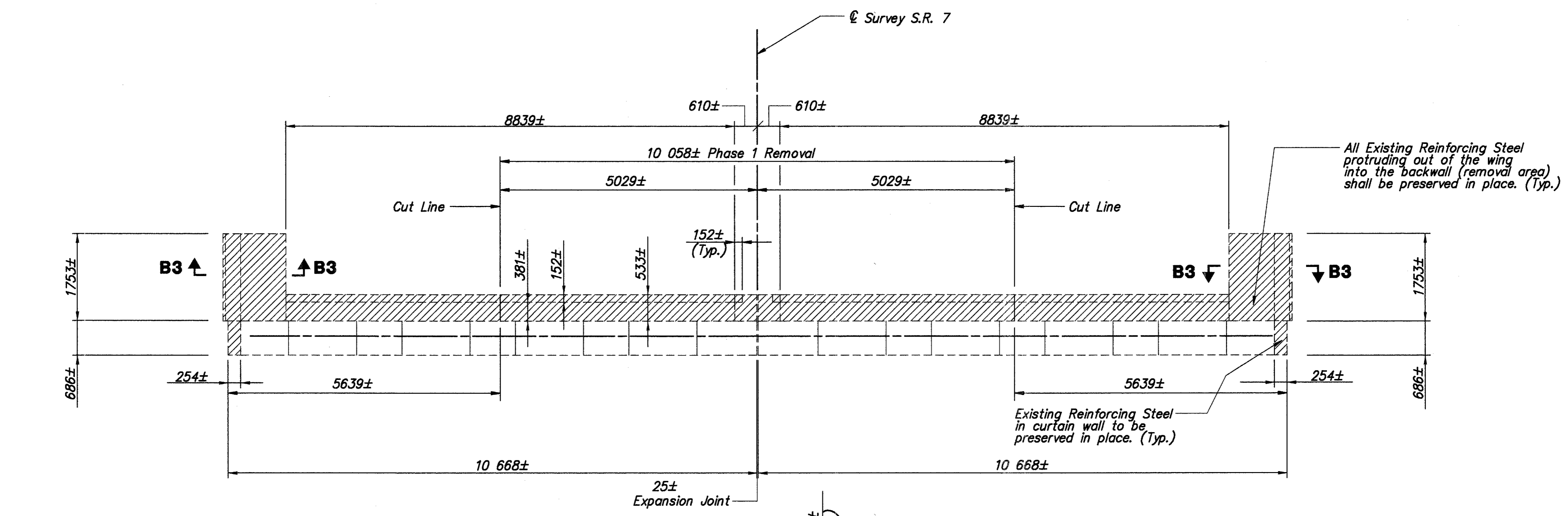
Maintain 51 mm Minimum Cover Over Existing Steel When Placing New Concrete



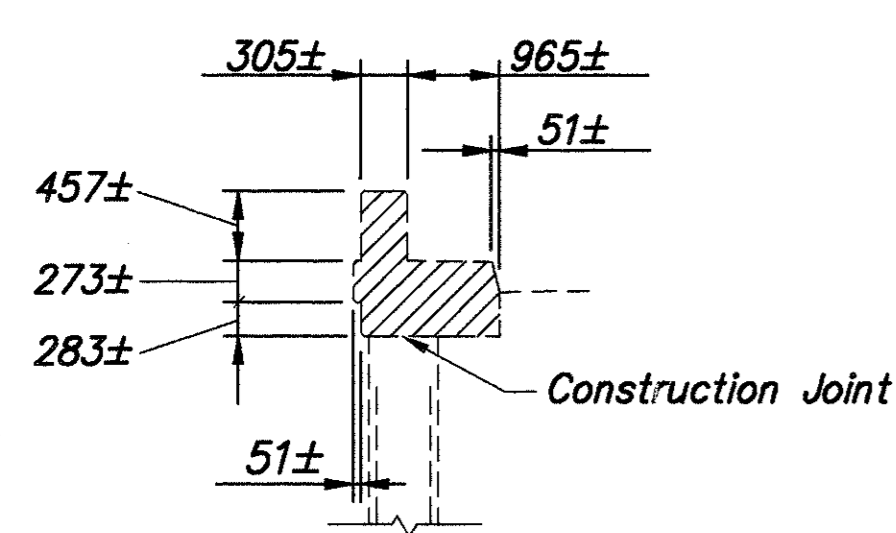
For Additional Median Barrier Dimensions, See Section E-E on Sheet 32137

DESIGNED	FDH	CHECKED	ZRP
DRAWN	PMZ	REVIEWED	
REVIEWED	Wda	STRUCTURE FILE NUMBER	0700541
DATE	10/9/91		
DESIGN AGENCY	W.E. QUICKSALL & ASSOCIATES INC. 504 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS		
REAR ABUTMENT DETAILS			
BRIDGE NO. BEL-7-32283 L/R			
S.R. 7 OVER U.S. 40, U.S. 250, WHEELING CREEK AND UNDER I.R. 70			
BEL-7-32-276			
7 / 37			
206 242			

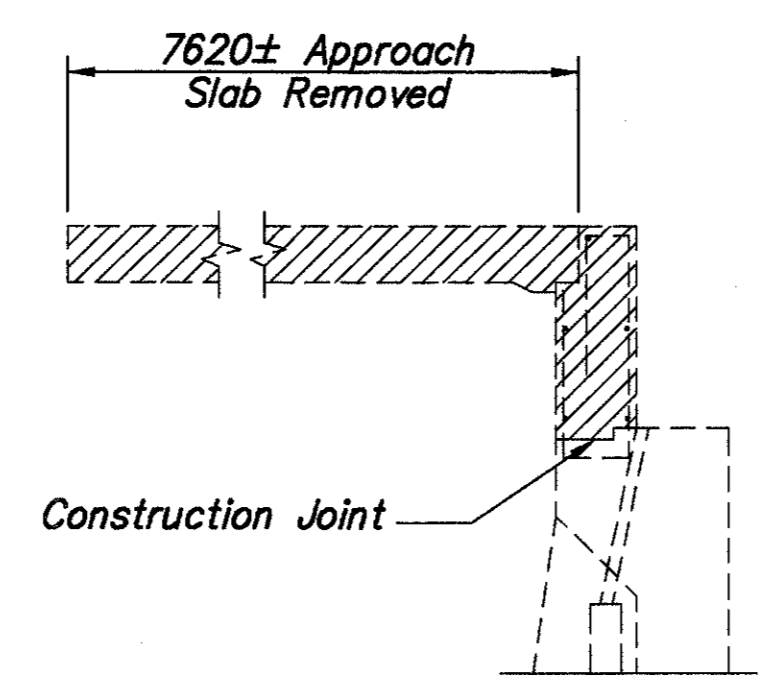
13821-01 (REV. 10/88) - OCT. 22, 1987 - 08:18:15



Railing removal to be included with Item 202 Removal Miscellaneous: Portions of Structure Removed, Abutments, As Per Plan. (Typ.) (Railing not shown)

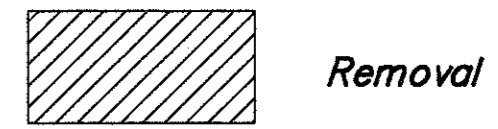


SECTION B3-B3



SECTION A3-A3

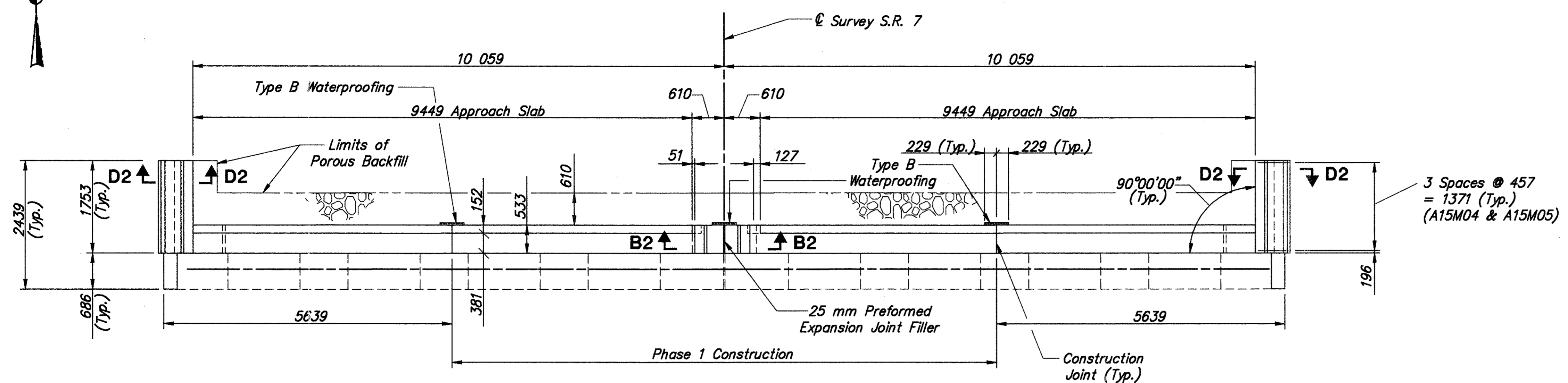
Note:  
Reinforcing Steel to be removed to the Construction Joint, unless noted otherwise.  
All Existing Expansion Joint Anchors embedded in the backwall shall be removed and paid for with Item 202 Removal Miscellaneous: Portions of Structure Removed, Abutments, As Per Plan.



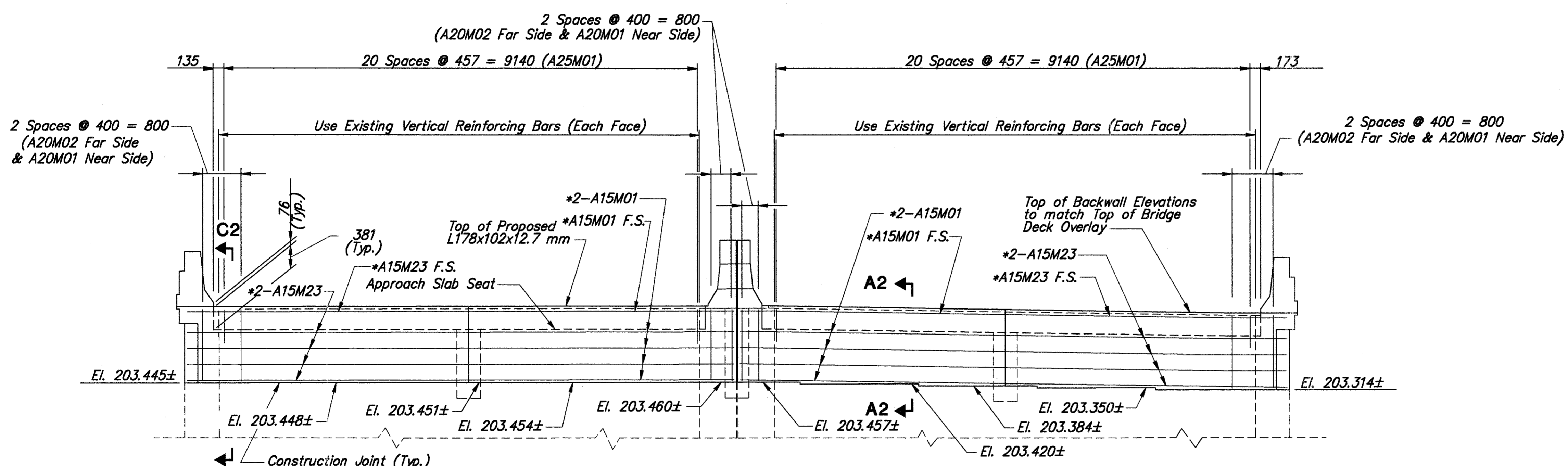
DESIGNED FDH	CHECKED ZRP	DRAWN PMZ	REVIEWED wda	DATE 10/97	STRUCTURE FILE NUMBER 0700541	DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS
FORWARD ABUTMENT DETAILS						BRIDGE NO. BEL-7-32283 L/R S.R. 7 OVER U.S. 40, U.S. 250, WHEELING CREEK AND UNDER I.R. 70
BEL-7-32.276						
8 / 37						
207 242						

1:32.276-01.03214892.dwg - OCT. 23, 1997 - 08:21:53





PLAN

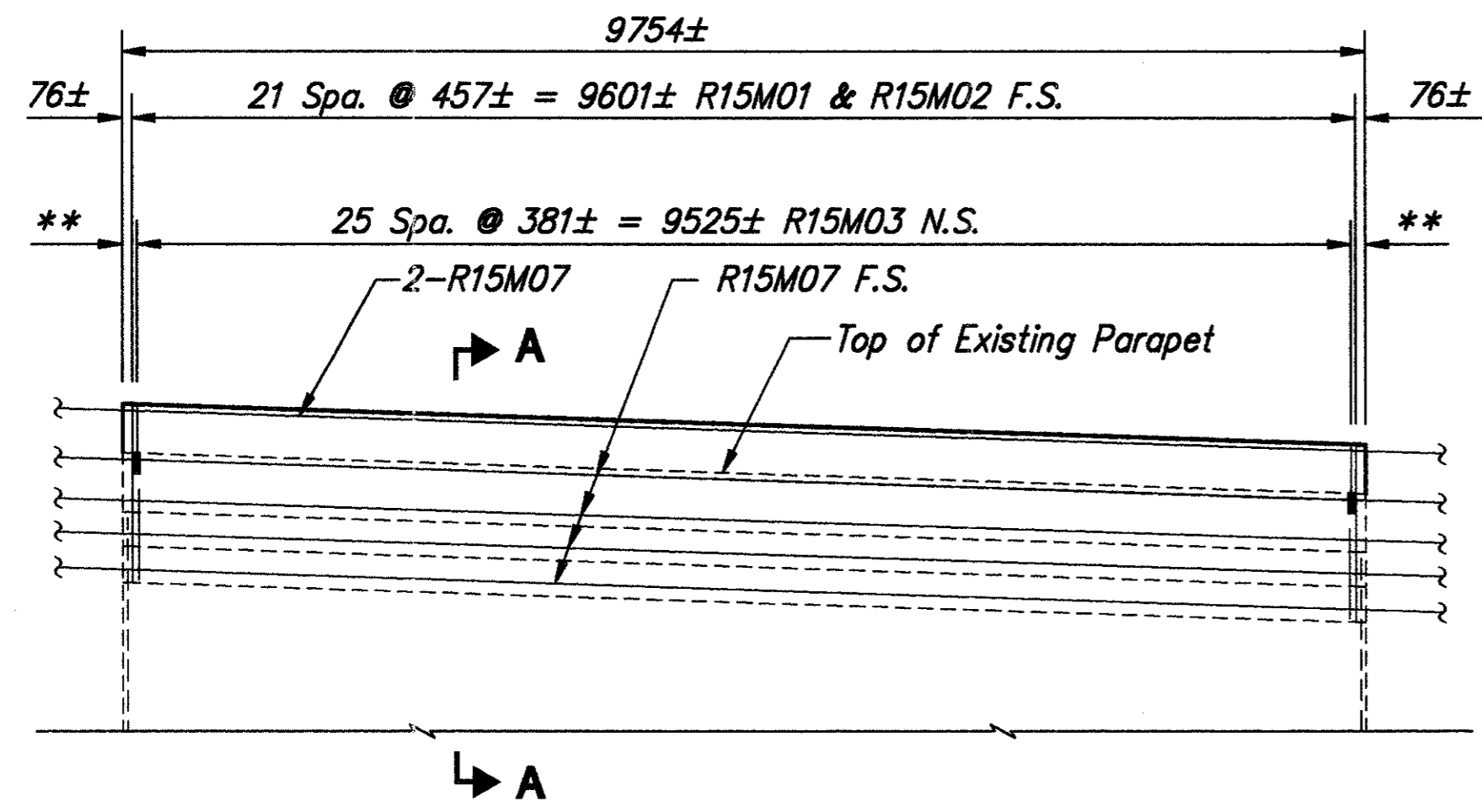


ELEVATION

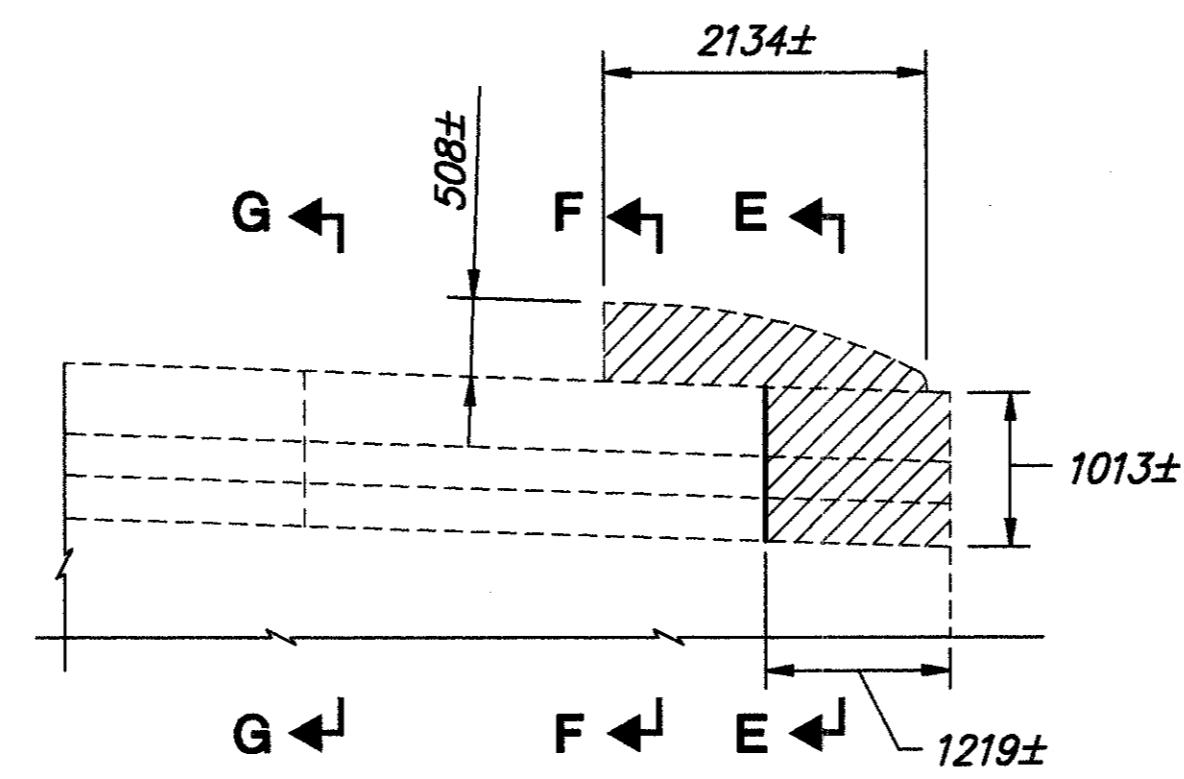
Notes:  
 \* - Denotes Mechanically Connected Reinforcing  
 F.S. - Denotes Far Side  
 Maintain 51 mm Minimum Cover Over Existing Steel When Placing New Concrete.  
 For Sections A2-A2, B2-B2, C2-C2 & D2-D2, See Sheet 7137

DESIGNED	FDH	CHECKED	ZRP
DRAWN	PMZ	REVISION	
REVIEWED	WJG	STRUCTURE FILE NUMBER	0700541
DATE	10/18/77		
DESIGN AGENCY	W.E. QUICKSALL & ASSOCIATES INC. 504 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS		
<b>FORWARD ABUTMENT DETAILS</b>			
BRIDGE NO. BEL-7-32283 L/R S.R. 7 OVER U.S. 40, U.S. 250, WHEELING CREEK AND UNDER I.R. 70			
BEL-7-32.276			
9 / 37			
208 242			

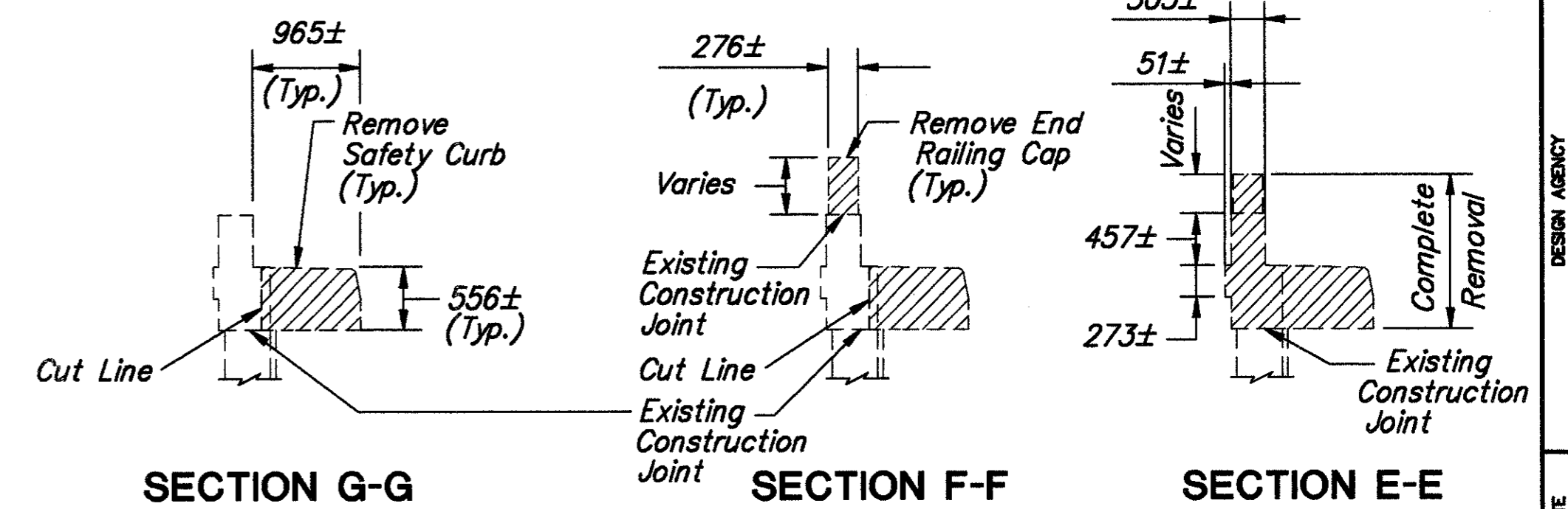
13321-01/32142.dwg - OCT 22, 1997 - 09:23:35



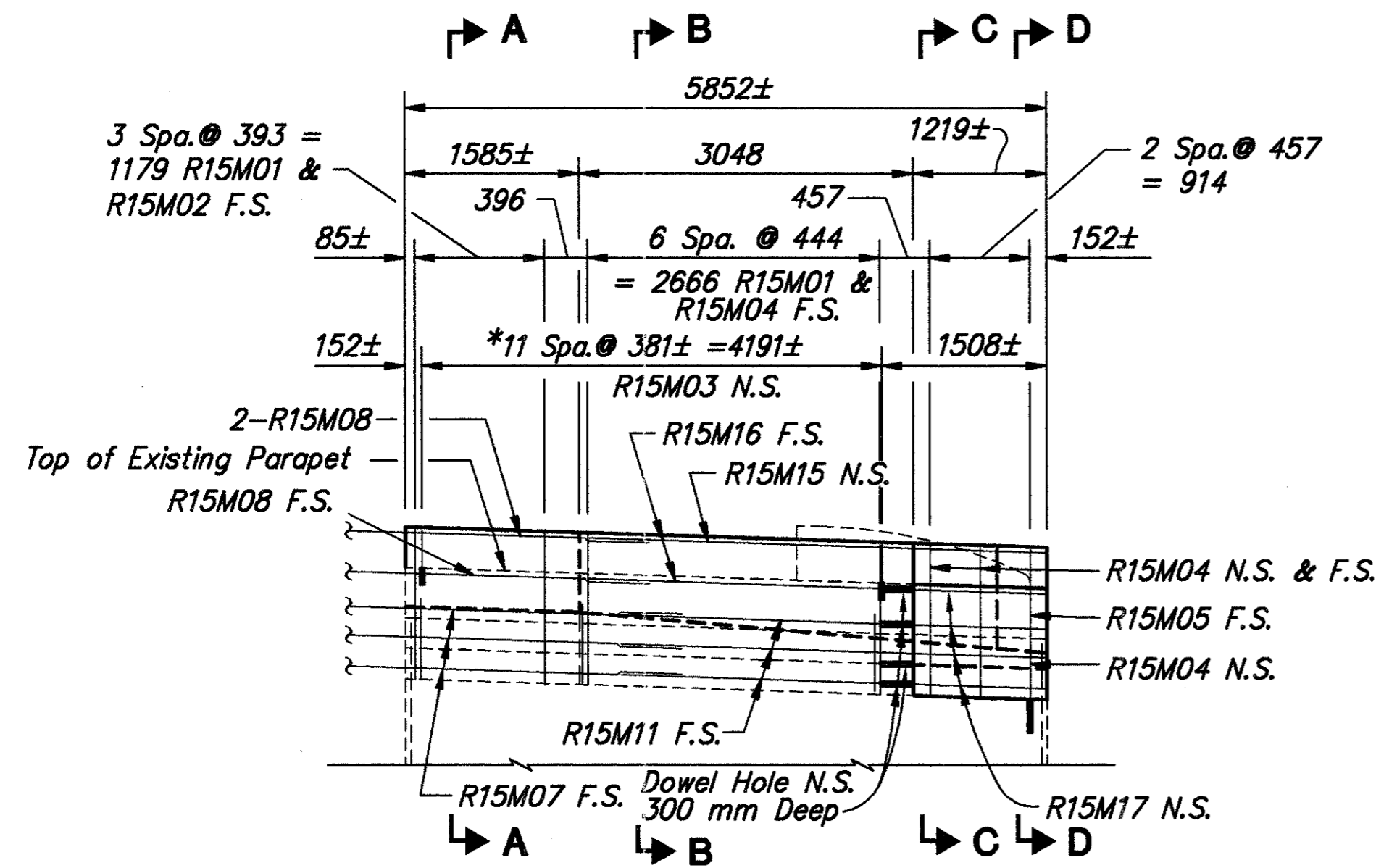
TYPICAL RETAINING WALL DETAIL G  
9754 PARAPET PANEL ELEVATION



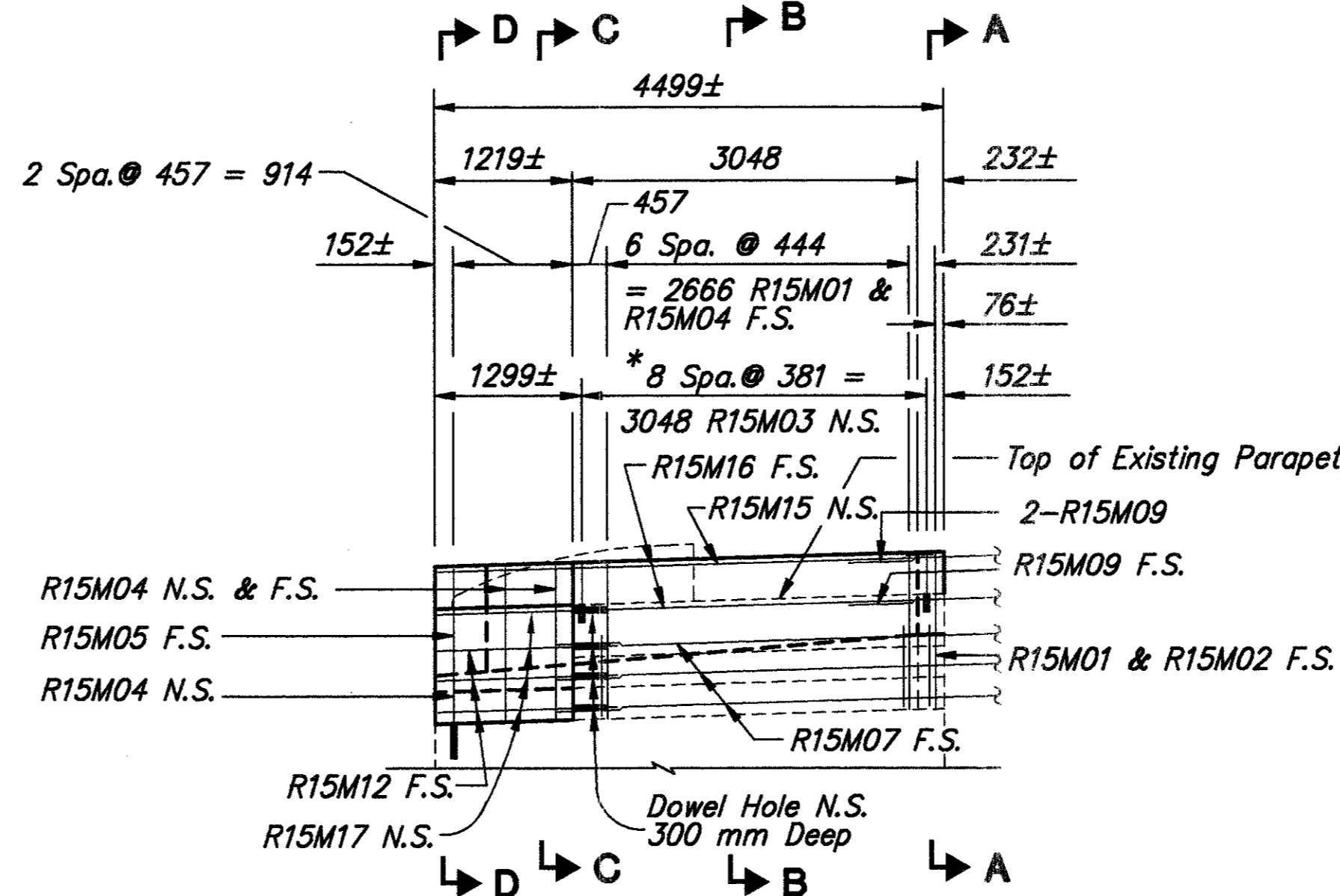
TYPICAL RETAINING WALL  
PARAPET END PANEL REMOVAL



TYPICAL RETAINING WALL  
PARAPET REMOVAL AREAS



DETAIL H - S.W. RETAINING WALL  
END PARAPET PANEL ELEVATION



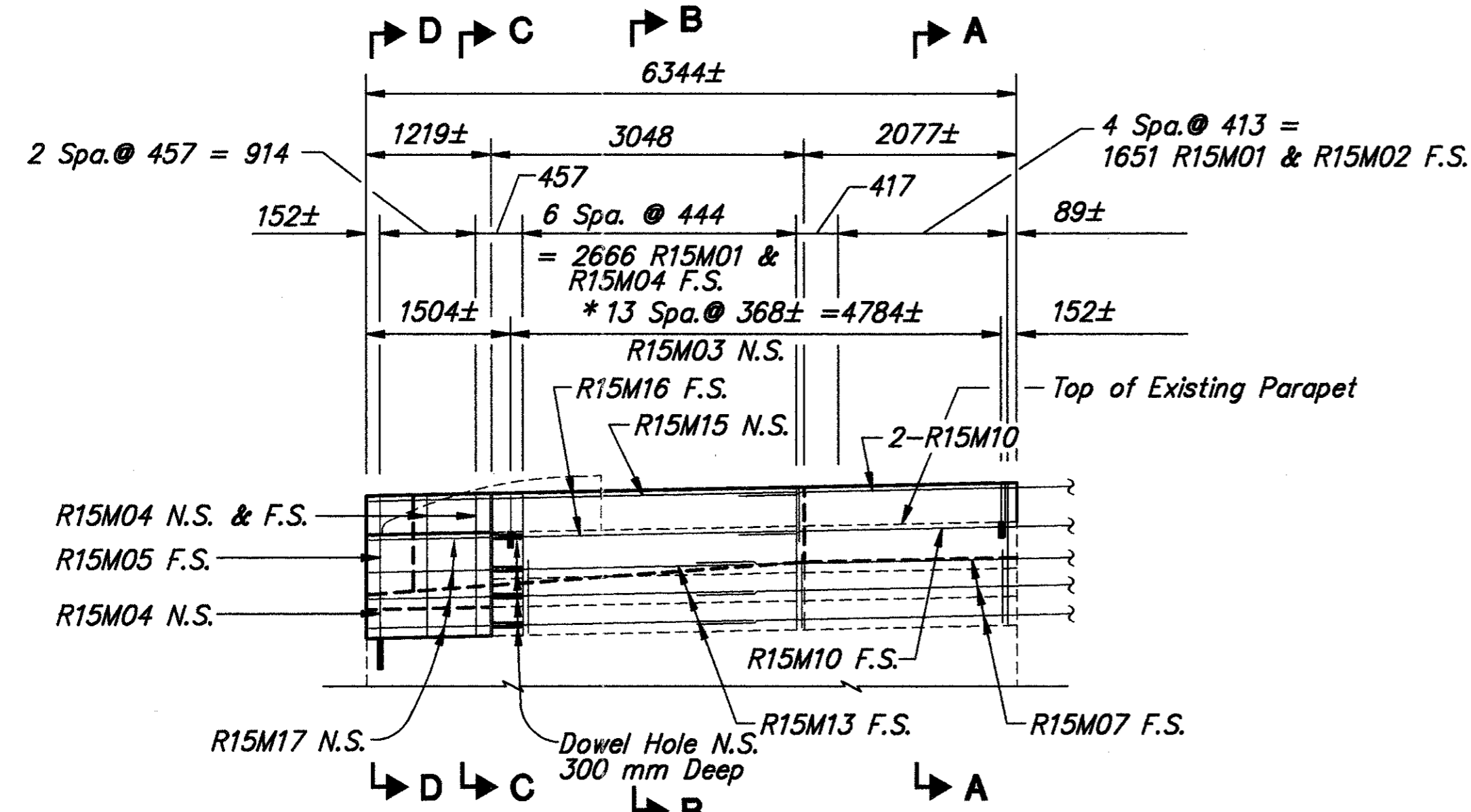
DETAIL J - S.E. RETAINING WALL  
END PARAPET PANEL ELEVATION

Note:  
\* Horizontal placement of vertical reinforcing may be adjusted where necessary to clear existing reinforcing where doweling occurs, and to clear existing or new parapet joints by 76 mm minimum.  
\*\* All vertical doweled reinforcing to clear parapet joints by 76 mm (Min.). Spacing to be adjusted as required to clear joints.

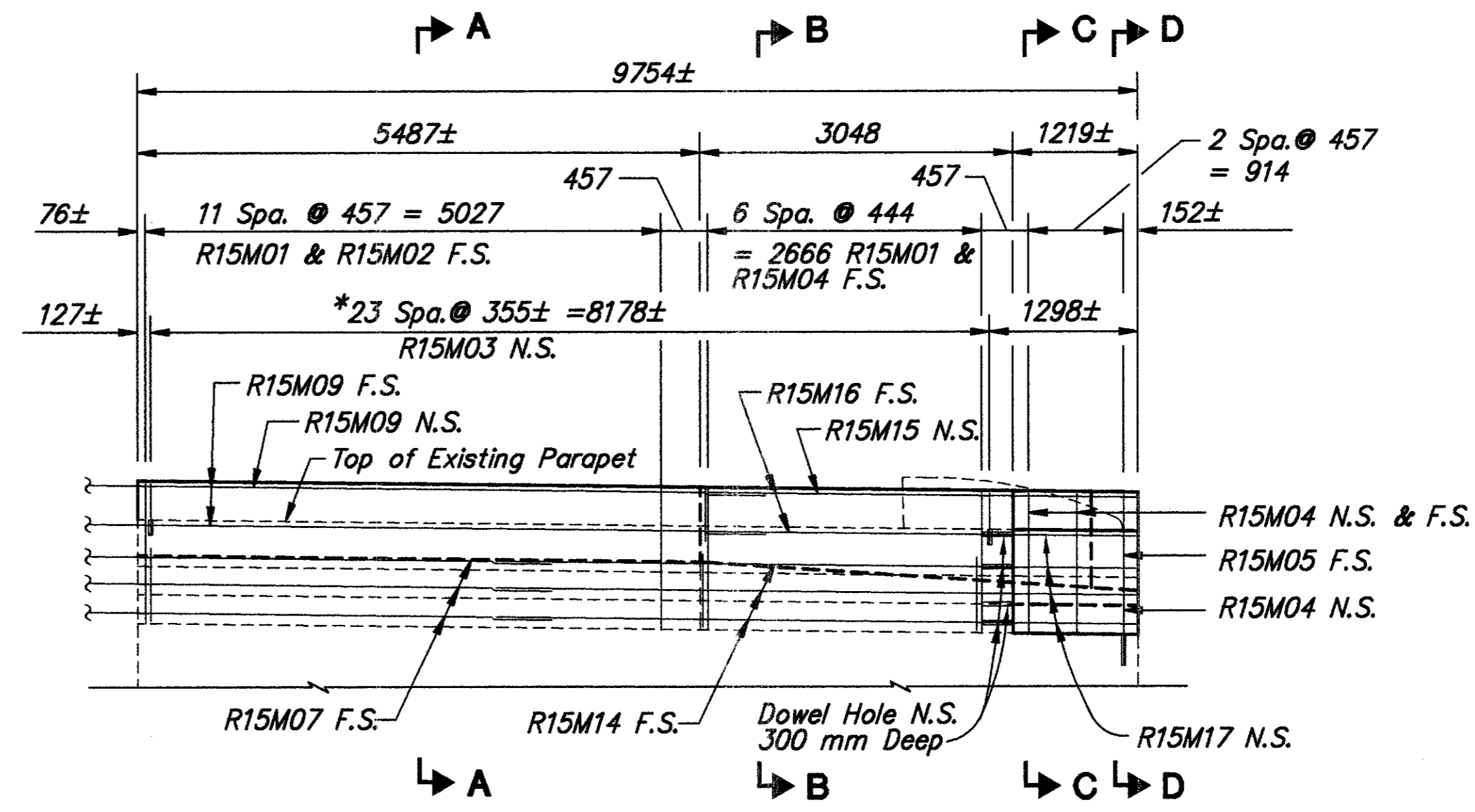
For Parapet Details, See Sheets 31/37 & 32/37

For Location of Retaining Wall Parapet Details, See Sheet 11/37

N.S. ~ denotes Near Side  
F.S. ~ denotes Far Side



DETAIL K - N.W. RETAINING WALL  
END PARAPET PANEL ELEVATION



DETAIL L - N.E. RETAINING WALL  
END PARAPET PANEL ELEVATION

DESIGN AGENCY  
W.E. QUICKSALL & ASSOCIATES INC.  
554 WEST HIGH AVE.  
NEW PHILADELPHIA, OHIO  
CONSULTING ENGINEERS

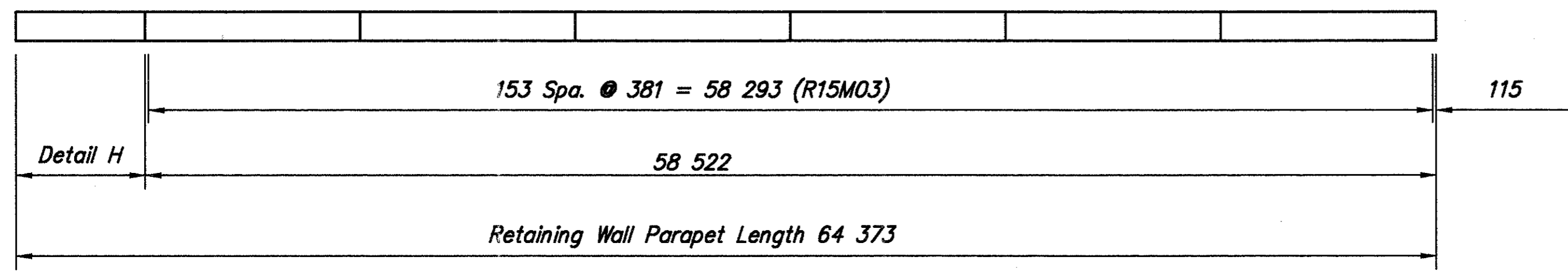
DATE 10/97  
REVIEWED wcd  
DRAWN CFD  
DESIGNED FDH  
CHECKED ZRD  
STRUCTURE FILE NUMBER 0700541

EXISTING RETAINING WALL RAILING REFACING DETAILS  
BRIDGE NO. BEL-7-32283 L/R  
S.R. 7 OVER U.S. 40, U.S. 250, WHEELING CREEK AND UNDER I.R. 70

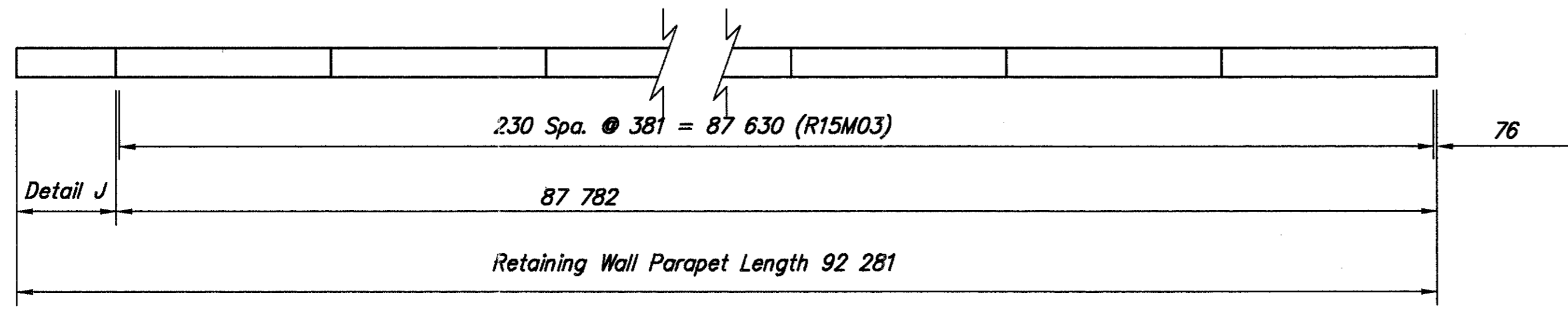
BEL-7-32.276

10/37  
209  
242

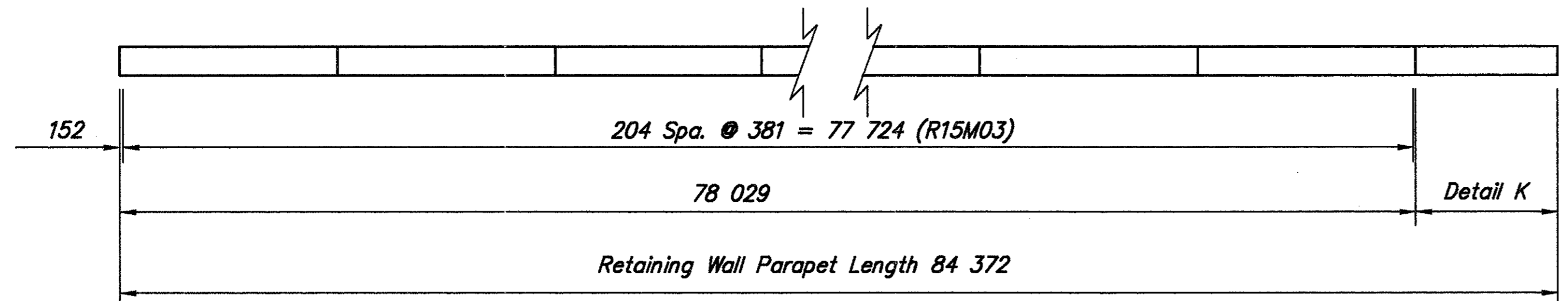
1:32283-01 (3/27/96) - OCT 22, 1997 - 05:26:31



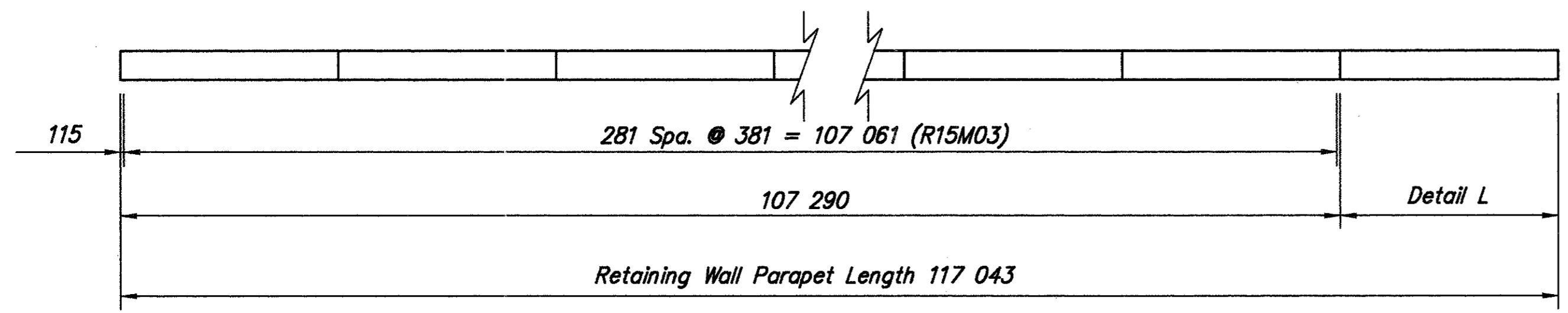
**SOUTHWEST RETAINING WALL PARAPET**



**SOUTHEAST RETAINING WALL PARAPET**



**NORTHWEST RETAINING WALL PARAPET**



**NORTHEAST RETAINING WALL PARAPET**

**BEL-7-32283 RETAINING WALL PARAPET ELEVATIONS**

**RETAINING WALL PARAPET LENGTHS BEL-7-32283**

PARAPET LOCATION	DETAIL H	DETAIL J	DETAIL K	DETAIL L
SOUTHWEST	5852			
SOUTHEAST		4499		
NORTHWEST			6344	
NORTHEAST				9754

For Detail H, J, K & L, See Sheet **10/37**

Notes:  
 Spacing as noted for R15M03 doweled bars only.  
 All vertical doweled reinforcing to clear parapet joints by 76 mm (Min.). Spacing to be adjusted as required to clear joints.

A:\8321-01\32283.dwg - 001.22.1897 - 08.26.93

DESIGN AGENCY  
**W.E. QUICKSALL & ASSOCIATES INC.**  
 554 WEST HIGH AVE.  
 NEW PHILADELPHIA, OHIO  
 CONSULTING ENGINEERS

DATE 10/97  
 REVIEWED wcd  
 STRUCTURE FILE NUMBER 0700541

DRAWN CFD  
 CHECKED ZRD

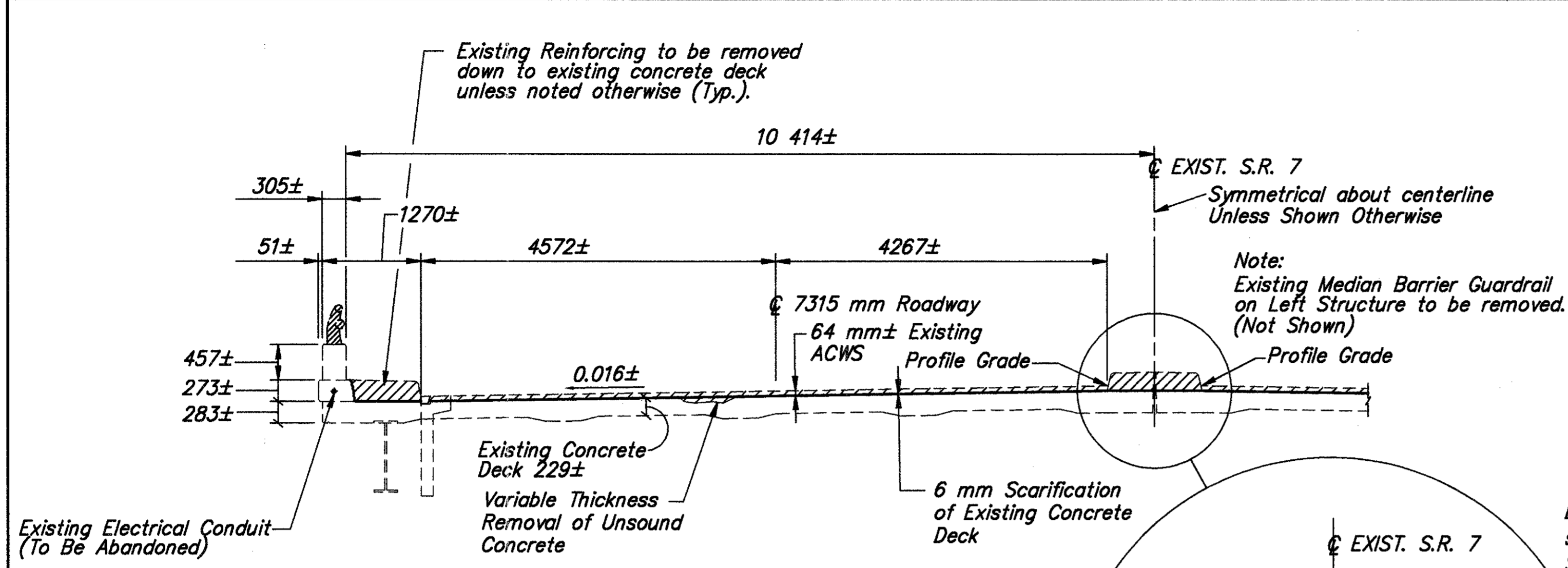
**RETAINING WALL PARAPET ELEVATIONS**  
 BRIDGE NO. BEL-7-32283 L/R  
 S.R. 7 OVER U.S. 40, U.S. 250, WHEELING CREEK AND UNDER I.R. 70

**BEL-7-32.276**

11/37

210  
 242

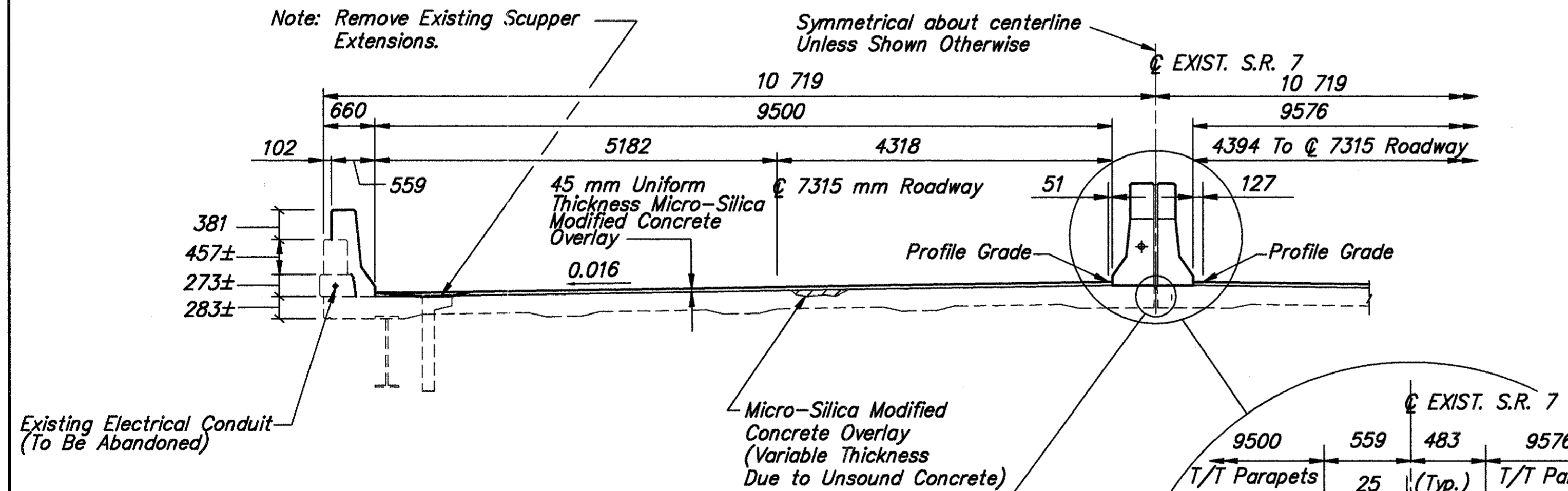
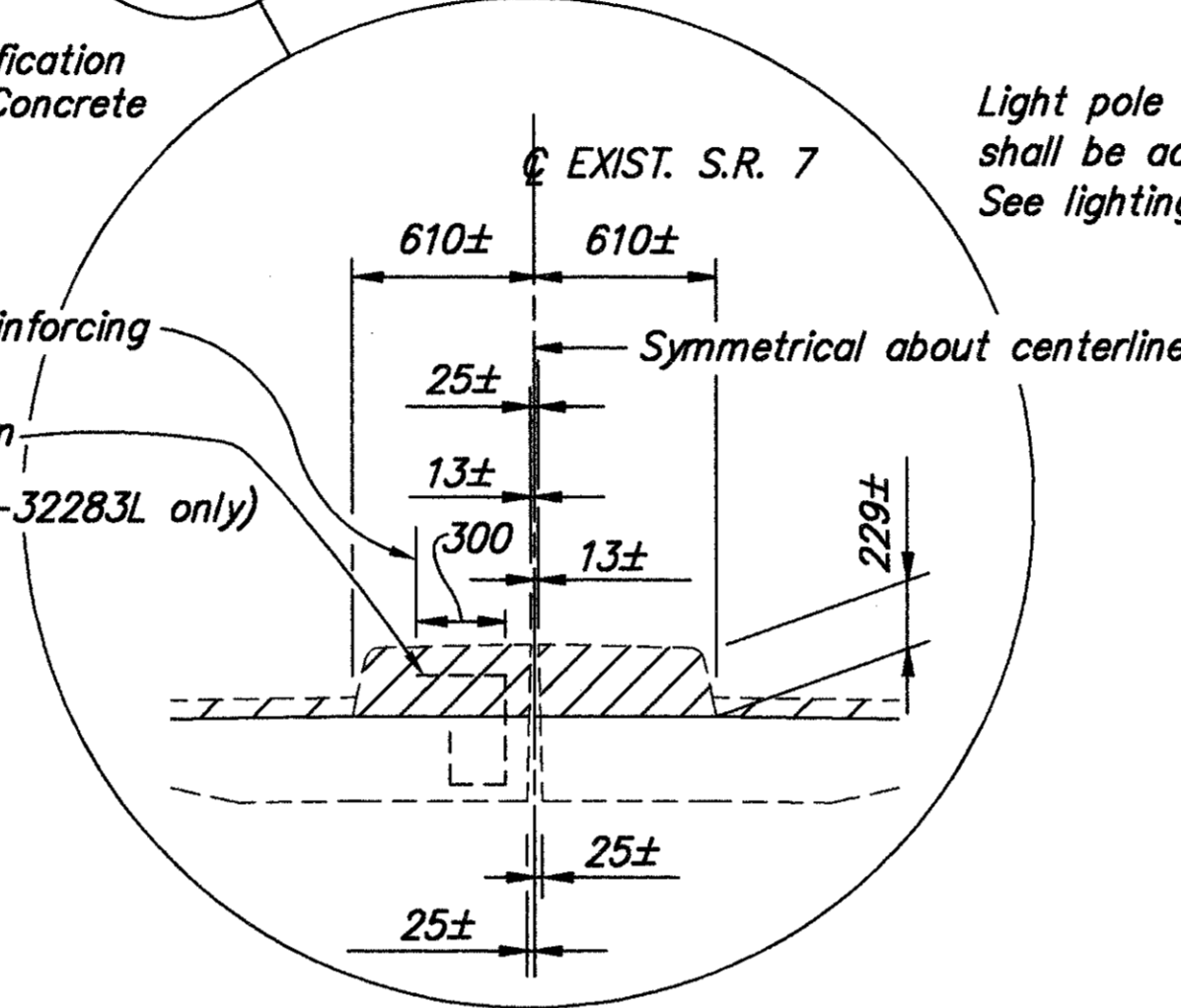
13321-01 3/23/2014 - OCT. 21, 1997 - 08:30:49



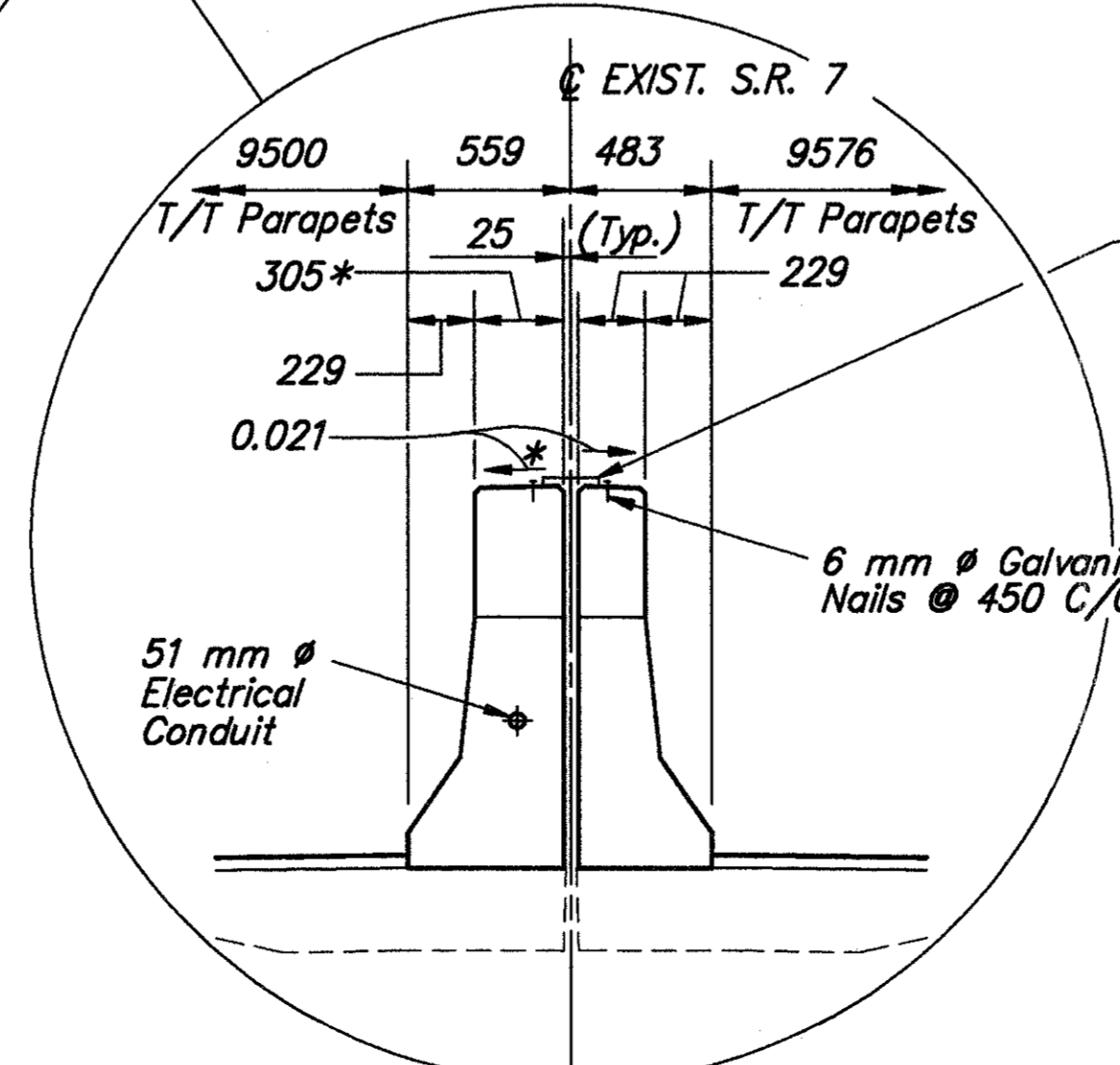
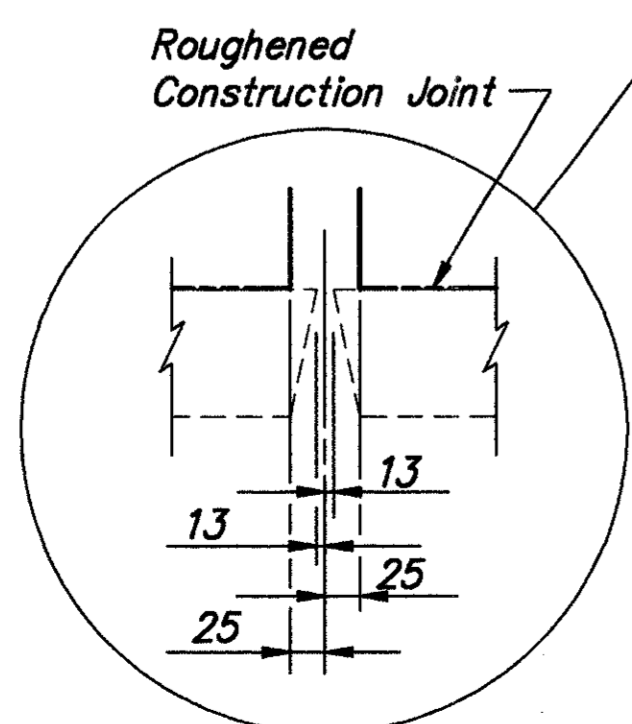
**EXISTING NORMAL TRANSVERSE SECTION**

Denotes Removal

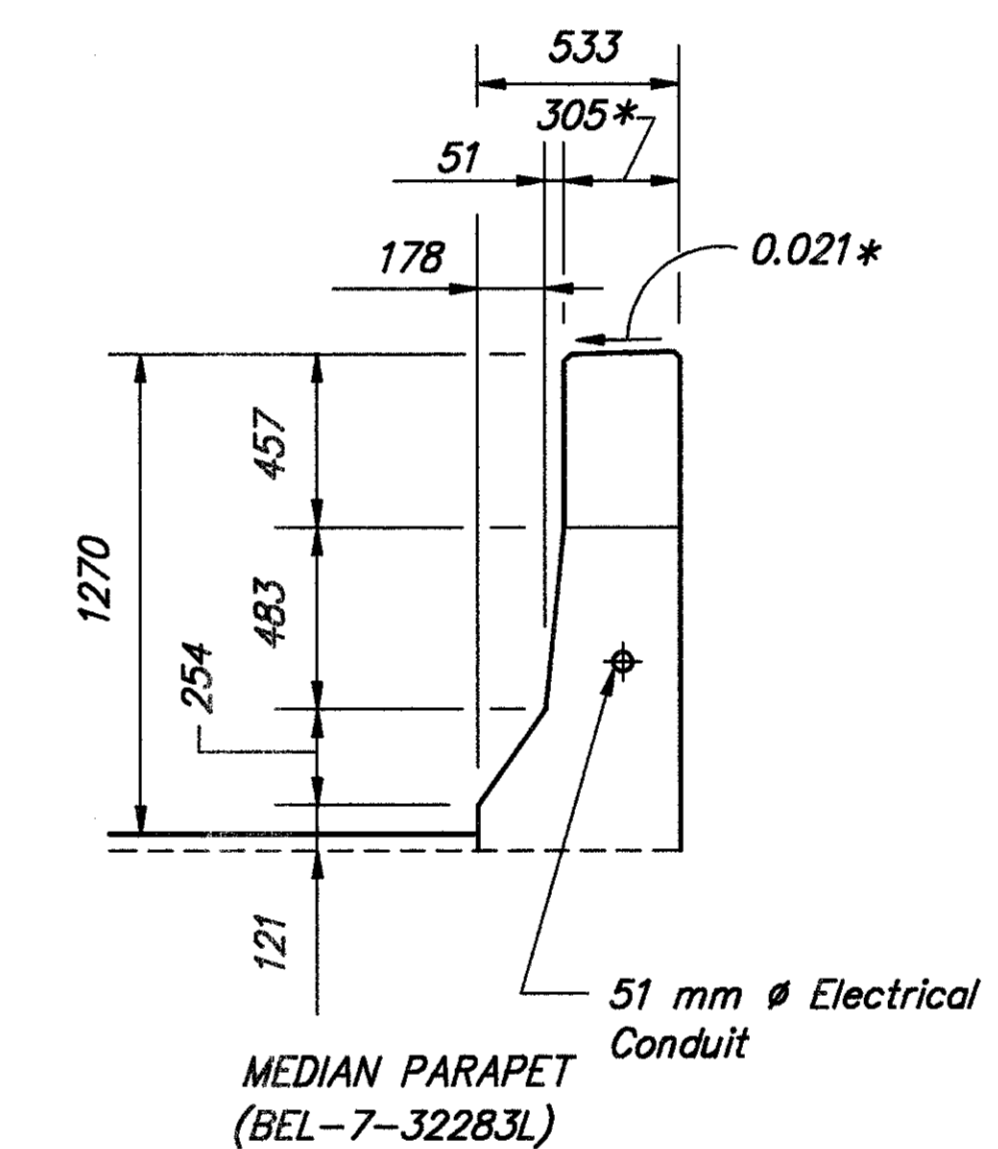
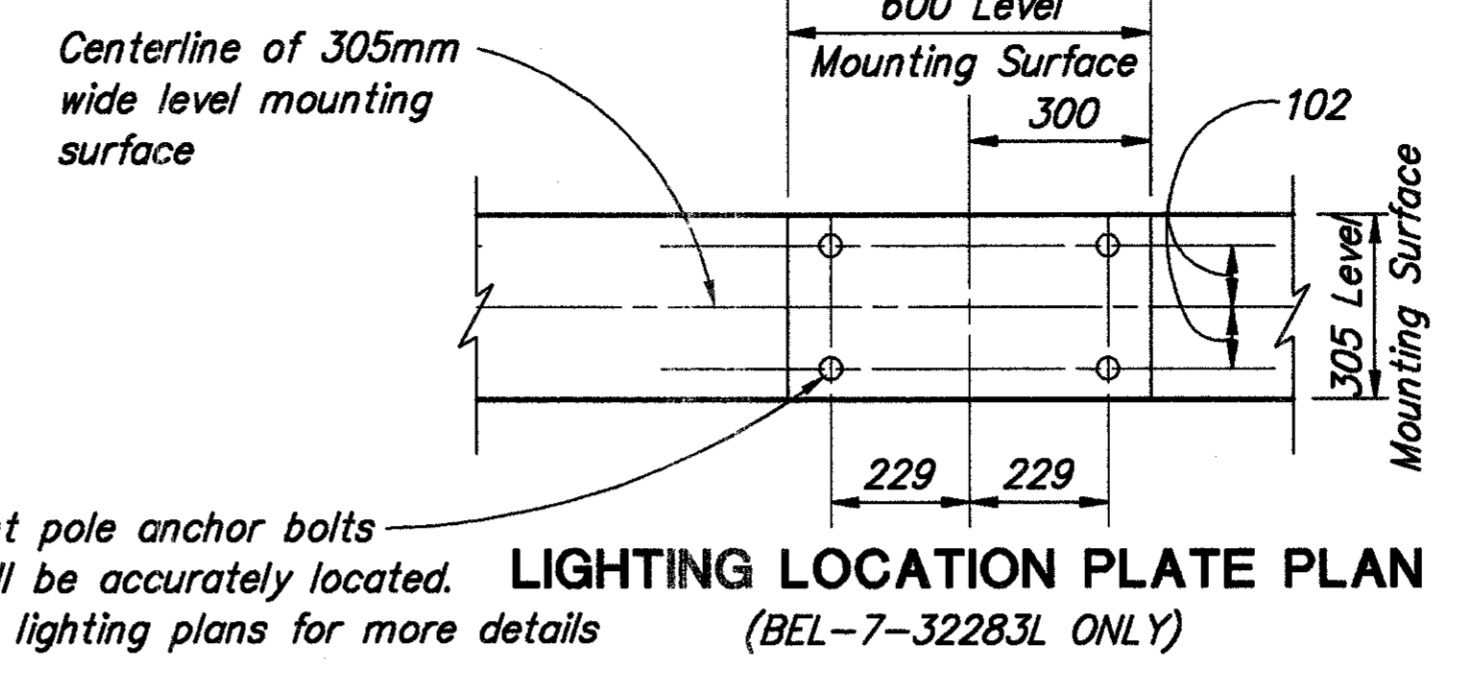
Existing Reinforcing to be preserved in place within 5000mm each direction from centerline of each proposed median mounted light pole only (BEL-7-32283L only)  
 All other reinforcing in this removal area shall be removed to the construction joint.



**PROPOSED NORMAL TRANSVERSE SECTION**

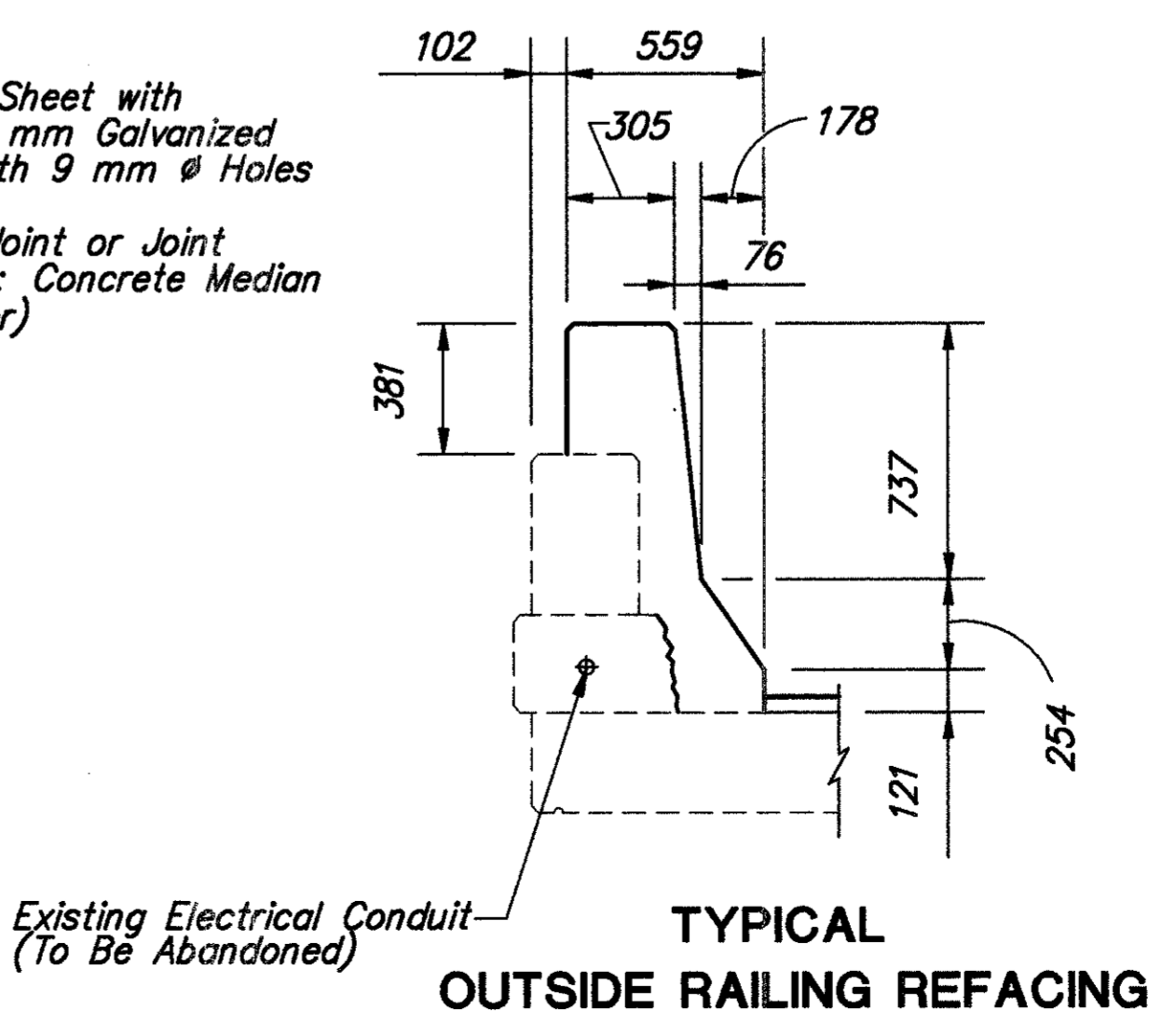
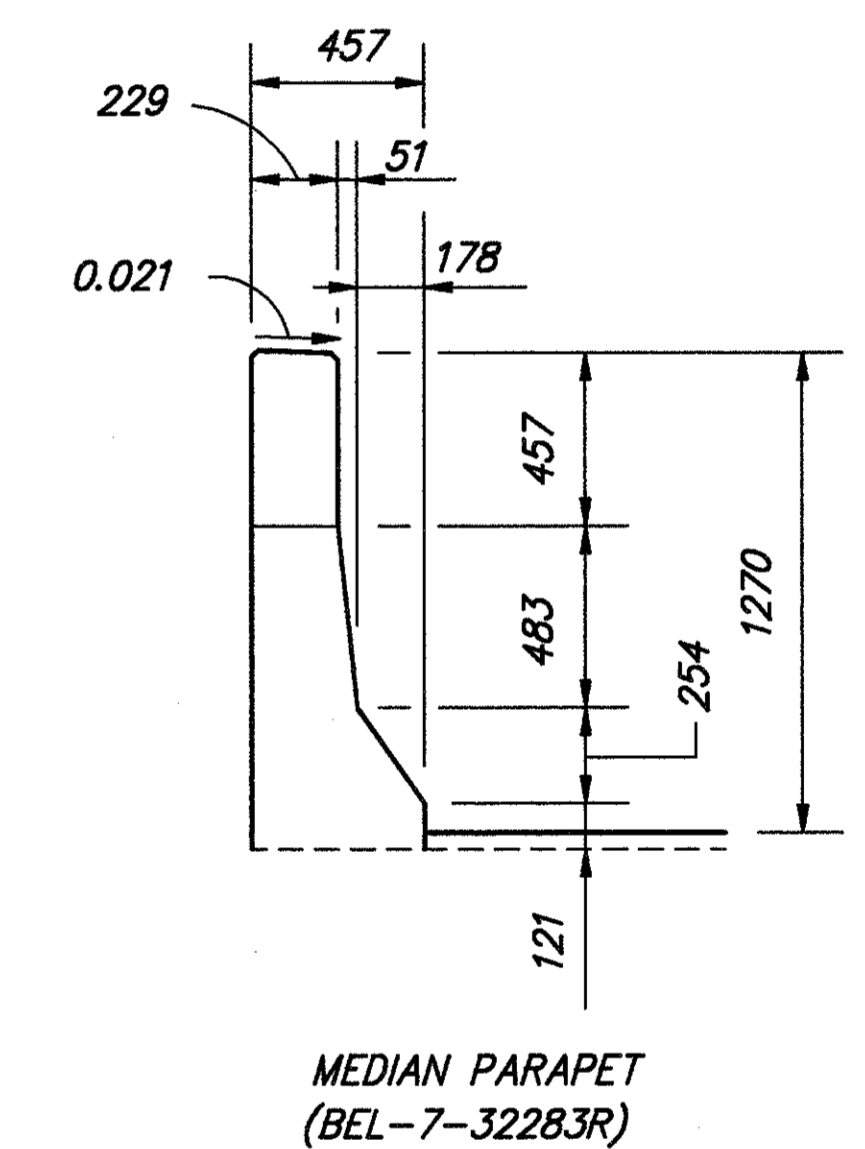
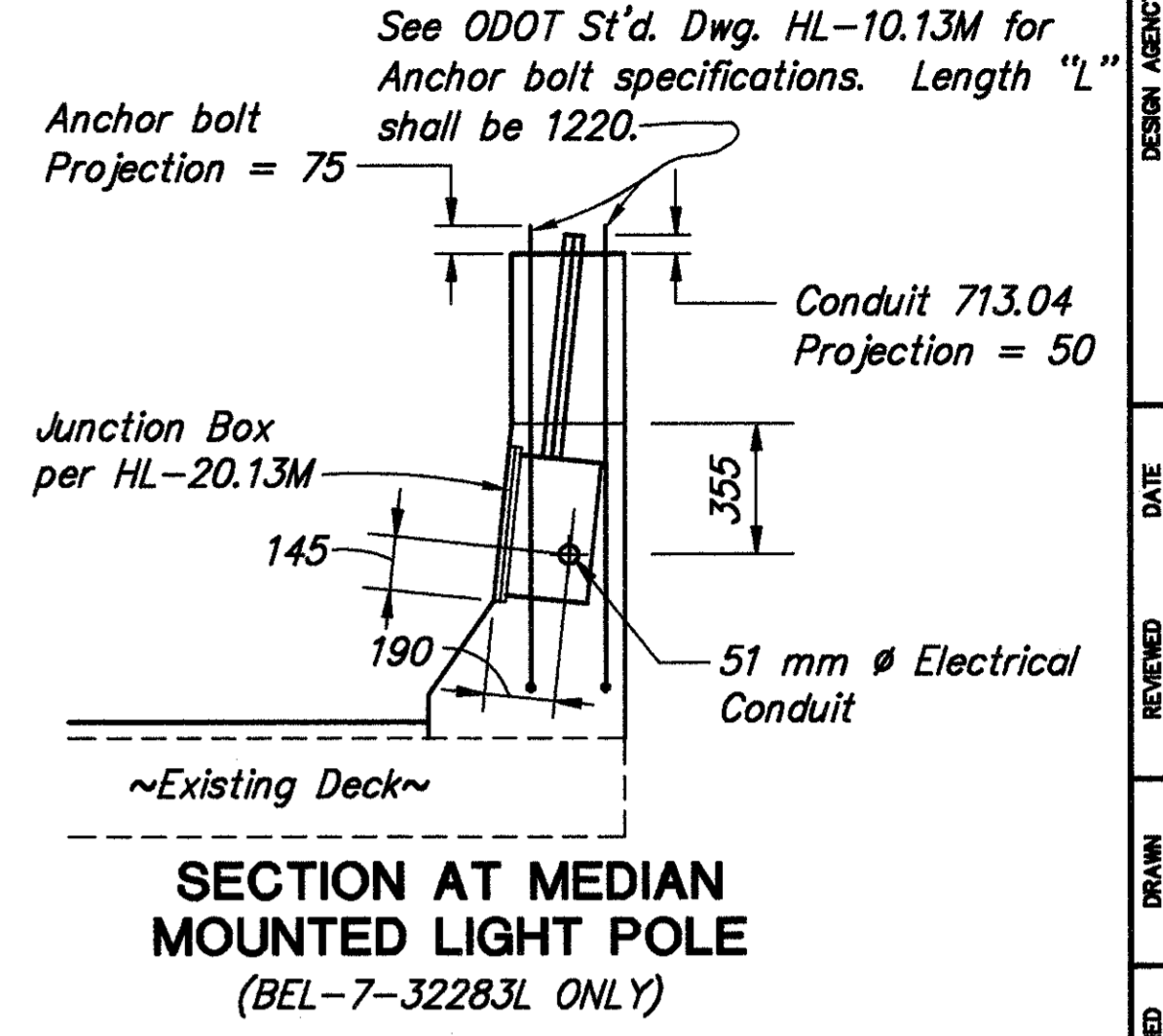


\* At median mounted light pole locations, provide a 305mm wide flat, smooth, and level mounting surface by eliminating the top of barrier slope and chamfers. Grind surface, if required, to make concrete level. The length of this level mounting surface shall be 600mm, centered on the pole centerline. For median mounted light pole locations, see lighting plans and sheet 1/37.



**BRIDGE MEDIAN PARAPET DETAILS**

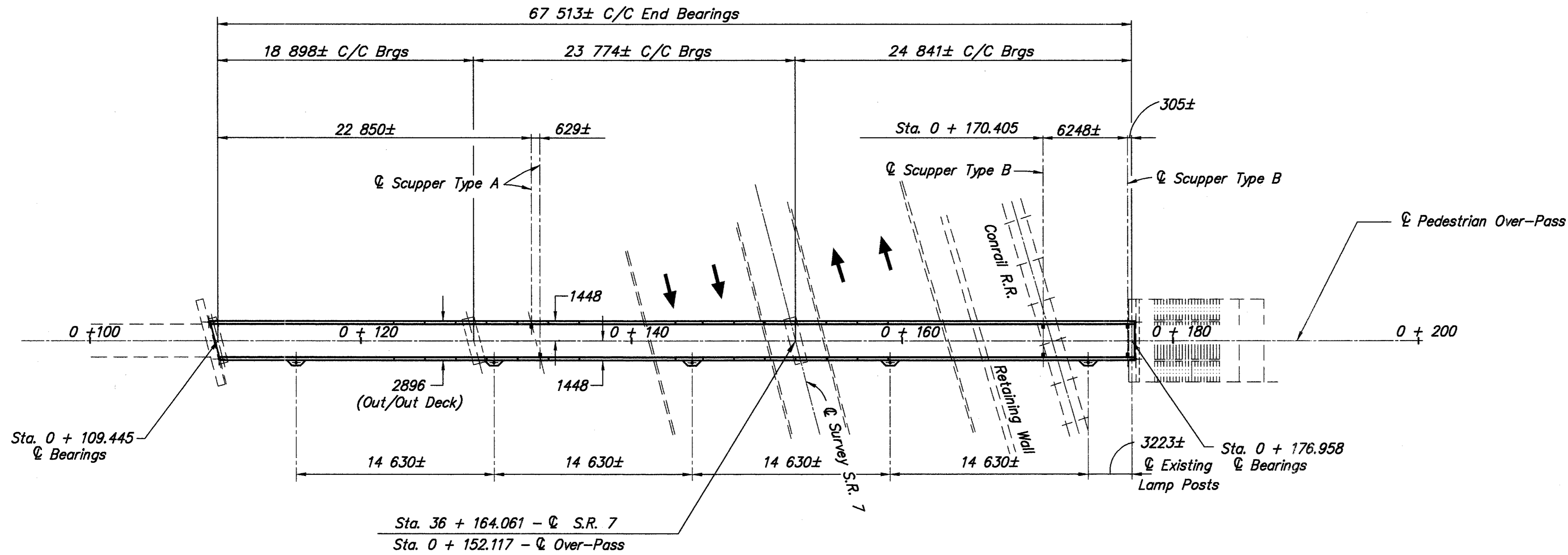
Note: Transition from regular roadway median parapet to bridge median parapets occurs thru the approach slab area. (Typical for BEL-7-32283 & BEL-7-36368)



For Scupper Details And Notes, See Sheet 33/37

For Parapet and Median Barrier Reinforcing Details, See Sheets 29/37, 30/37, 31/37 & 32/37

DESIGN AGENCY <b>W.E. QUICKSALL &amp; ASSOCIATES INC.</b> 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS	
DATE 10/19/97	STRUCTURE FILE NUMBER 0700541
REVIEWED WJG	CHECKED ZRD
DRAWN CFD	REVISIONS
<b>SUPERSTRUCTURE DETAILS</b> BRIDGE NO. BEL-7-32283 L/R S.R. 7 OVER U.S. 40, U.S. 250, WHEELING CREEK AND UNDER I.R. 70	
BEL-7-32.276	
12/37	
211 242	



PLAN

For Left Side Parapet & Fence details see sheet **14/37**

For Right Side Parapet & Fence details see sheet **15/37**

For Existing and Proposed Transverse Section details see sheet **16/37**

For General Notes see sheet **1/37** & **2/37**

EXISTING STRUCTURE DATA

TYPE: CONTINUOUS STEEL BEAM WITH REINF. CONCRETE DECK AND SUBSTRUCTURE

SPANS: 1890 mm±, 2377 mm± AND 2484 mm± C/C Brgs.

WALKWAY: 2438 mm± Face/Face Curbs

LOADING: 415 kg/m²

SKEW: 14°28'00"± R.F.

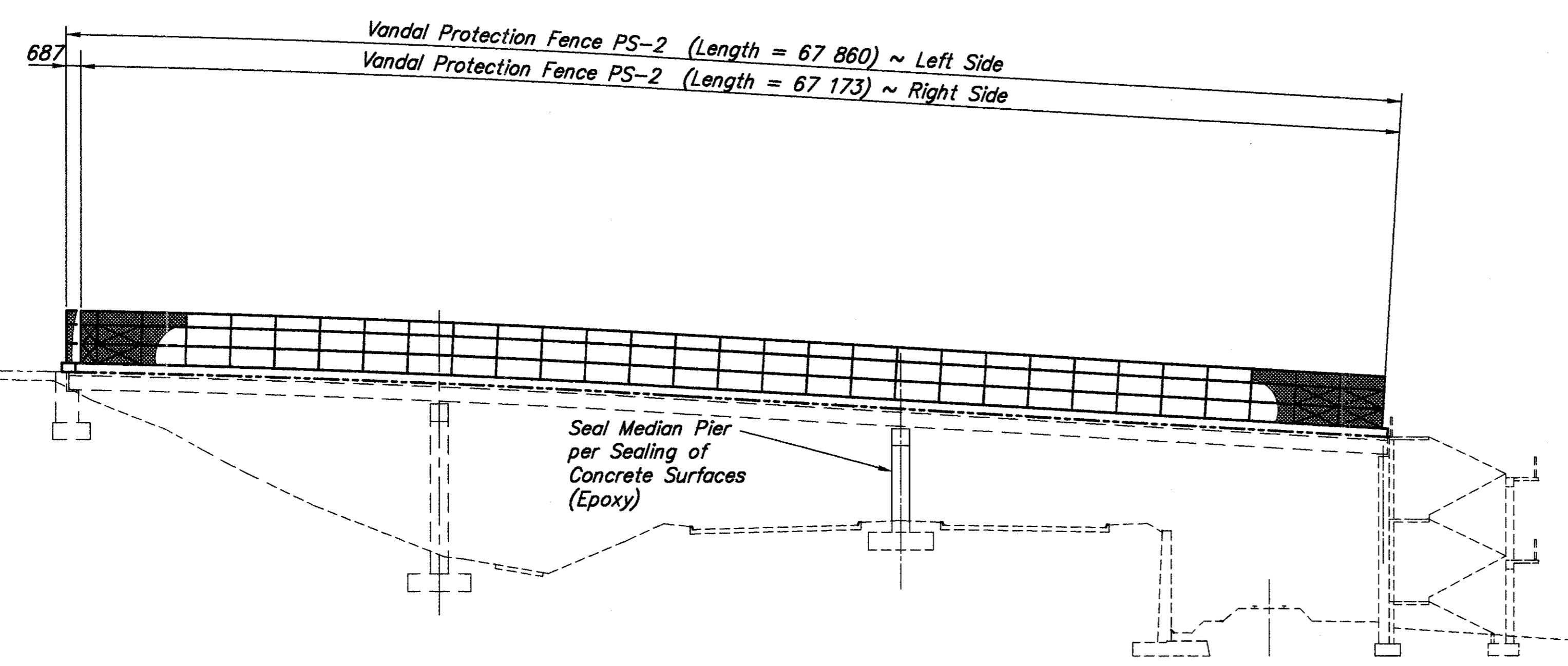
WEARING SURFACE: 13 mm± MONOLITHIC CONCRETE

ALIGNMENT: TANGENT

PROPOSED WORK

- a. EPOXY OVERLAY DECK, 6 mm THICK.
- b. REPLACE DECK CURB WITH NEW PARAPET.
- c. REPLACE FENCING WITH VANDAL PROTECTION FENCE.
- d. CLEAN AND PAINT STRUCTURAL STEEL, USING SYSTEM OZEU.
- e. REPAIR SCUPPERS AND REPLACE DRAINAGE SYSTEM.
- f. EPOXY SEAL MEDIAN PIER, DECK EDGE, AND NEW PARAPETS.

FOR QUANTITIES, SEE SHEET NO. **3/37**



ELEVATION

DESIGN AGENCY  
W.E. QUICKSALL & ASSOCIATES INC.  
554 WEST HIGH AVE.  
NEW PHILADELPHIA, OHIO  
CONSULTING ENGINEERS

DATE 10/19/97  
REVISIONS  
WGL  
STRUCTURE FILE NUMBER 0700630  
DRAWN JMG  
CHECKED ZRD

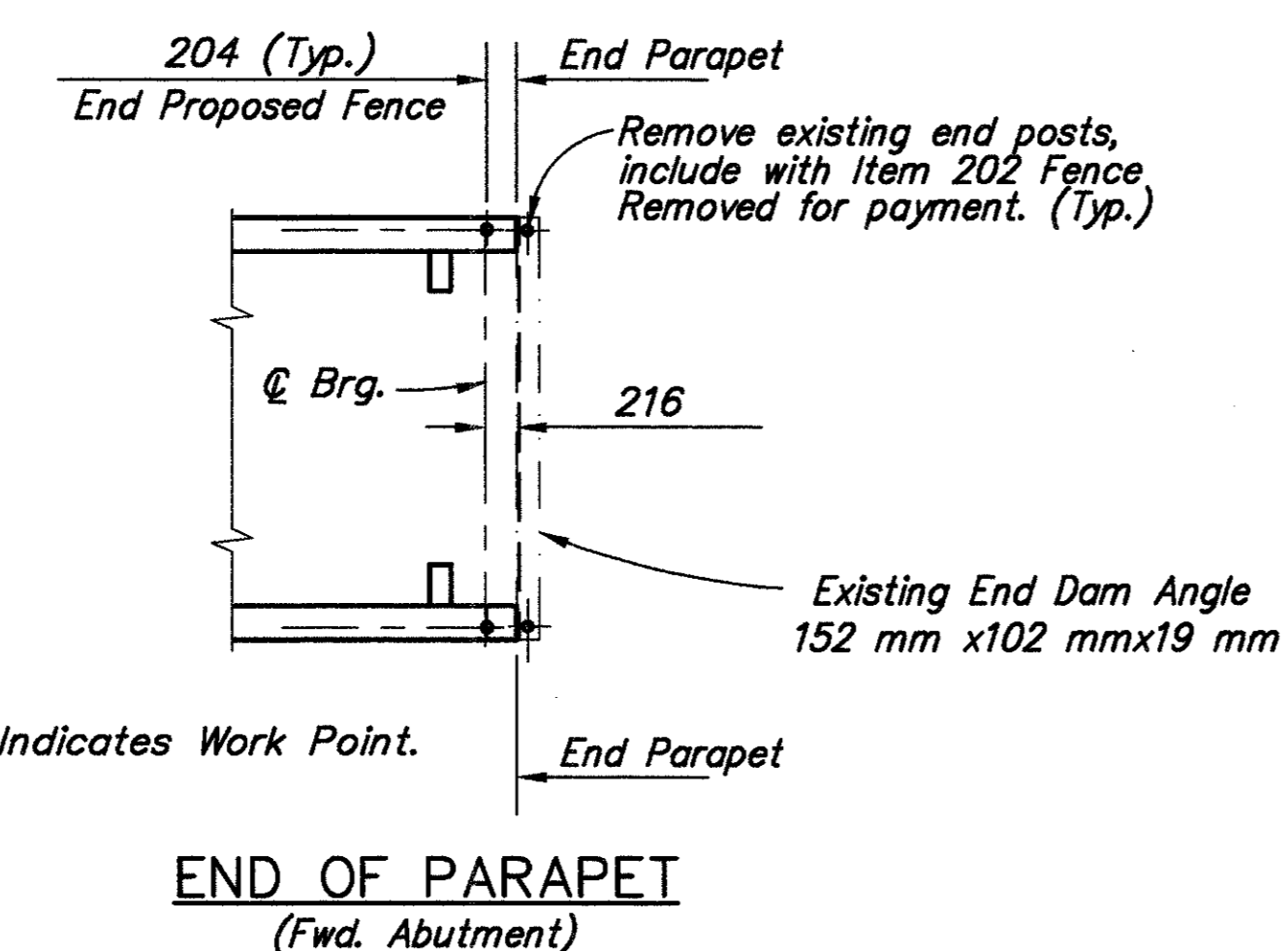
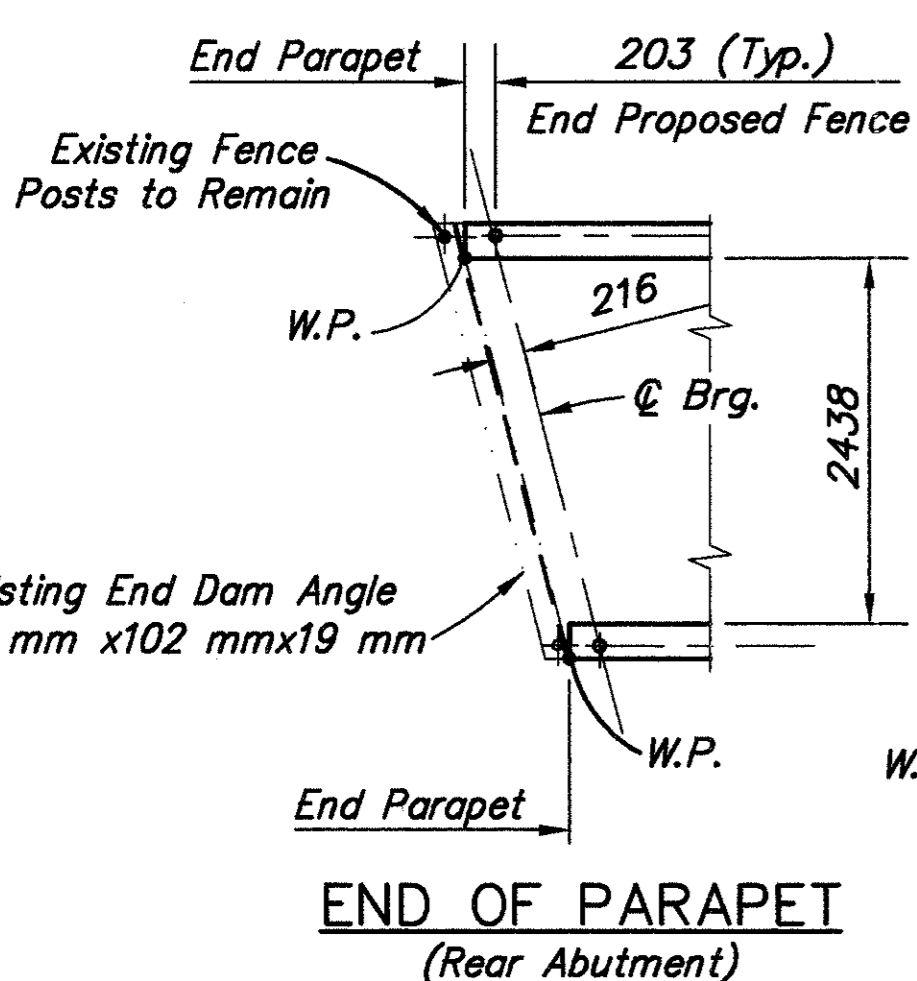
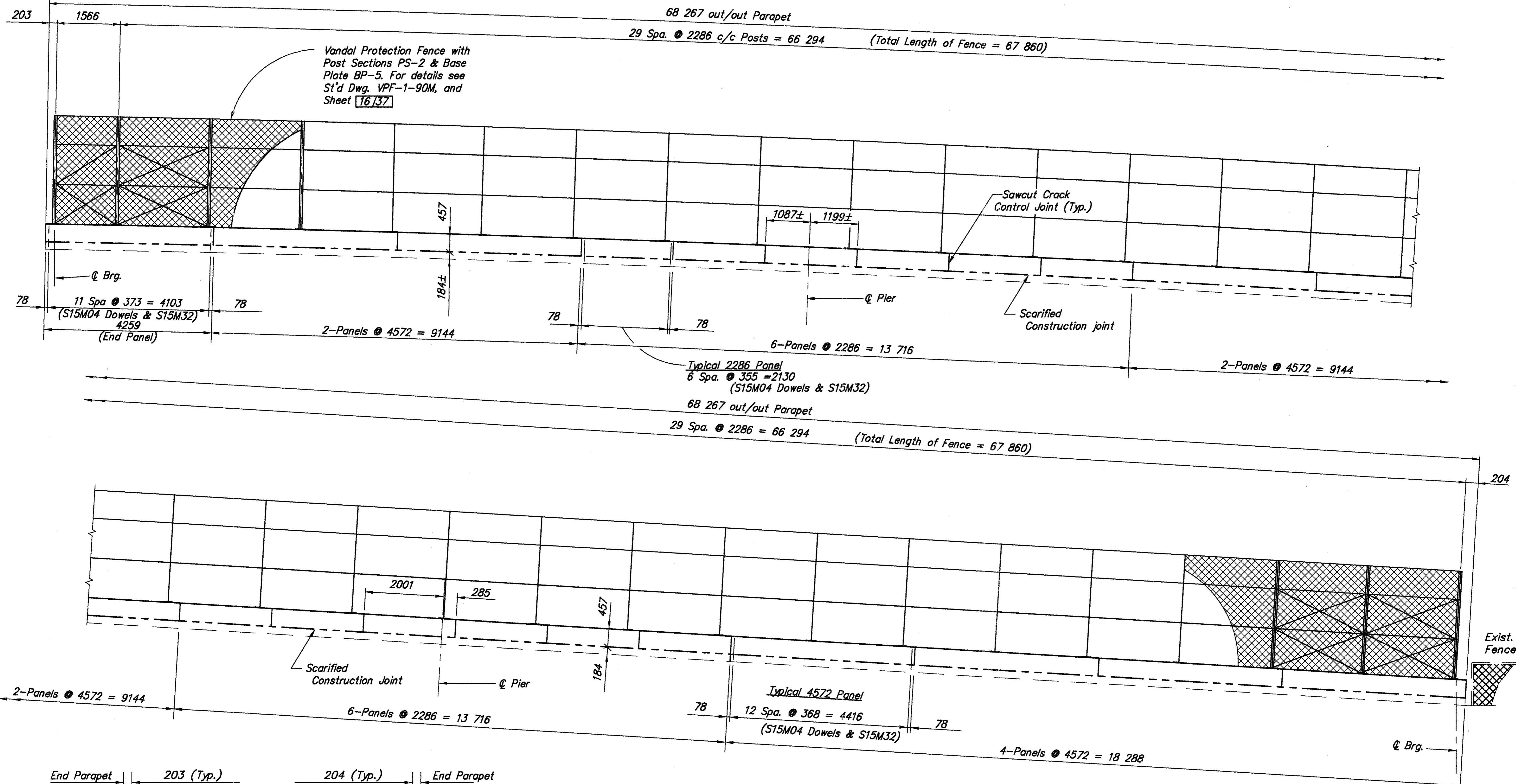
BELMONT COUNTY  
STA. 36+164.061  
STA. 36+164.061

GENERAL PLAN & ELEVATION  
BRIDGE NO. BEL-7-36164  
PEDESTRIAN BRIDGE OVER S.R. 7

BEL-7-32.276

13/37  
212  
242

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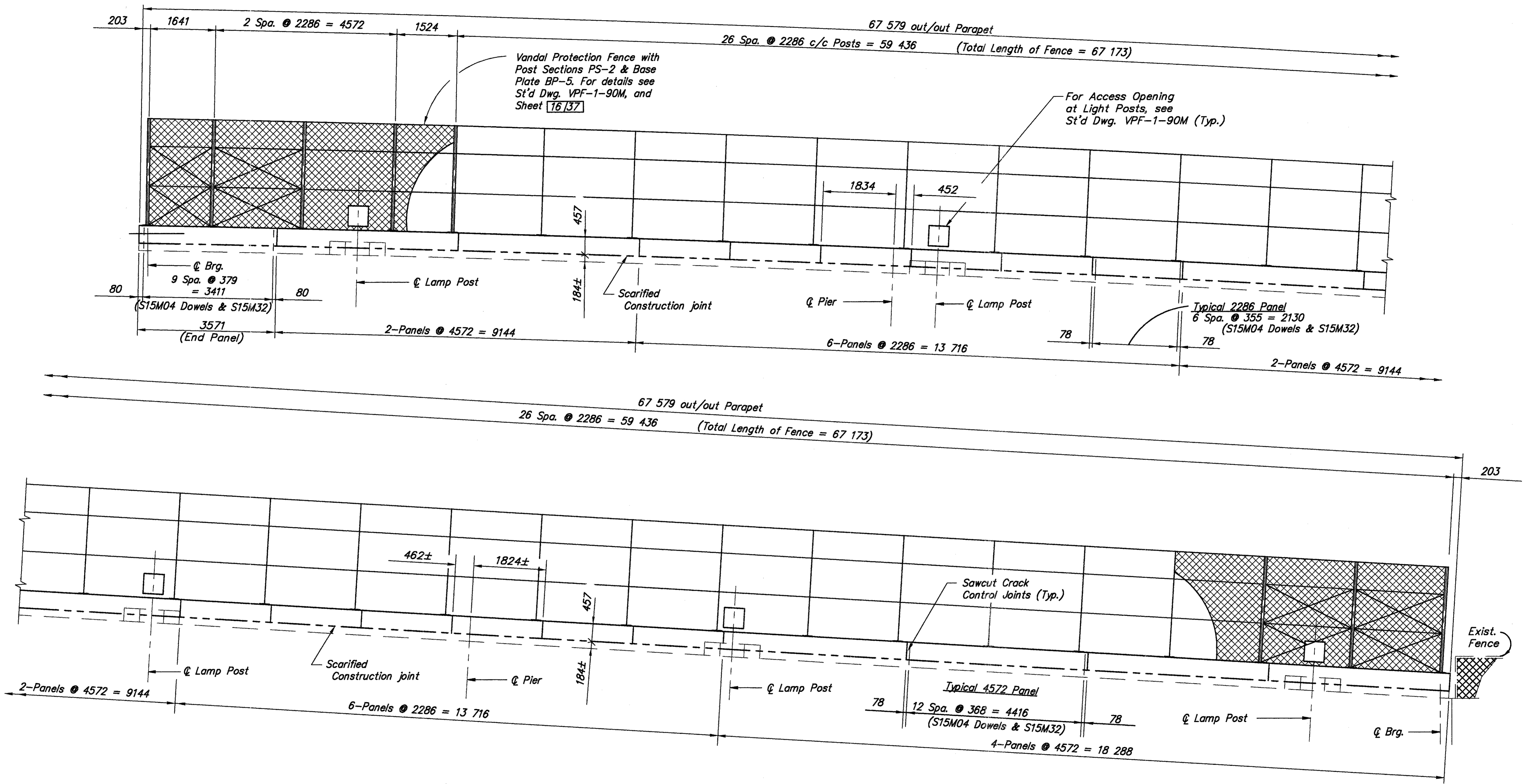


**LEFT SIDE PARAPET & FENCE**

NOTE: All horizontal distances measured along deck fascia.  
Spacing of S15M04 & S15M32 bars shall be adjusted to clear fence post anchor bolts.

For General Plan see sheet 13/37  
For Existing and Proposed Transverse Section details see sheet 16/37  
For General Notes see sheet 1/37 & 2/37  
For Sawcut Crack Control Joint notes, see Concrete Parapets note on sheet 2/37

DESIGNED	FDH	CHECKED	ZRD
DRAWN	JMG	REVISED	
REVISION	Wda	DATE	10/19/97
STRUCTURE FILE NUMBER	0700630	DESIGN AGENCY	W.E. QUICKSALL & ASSOCIATES INC. 55 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS
<b>PARAPET &amp; FENCE DETAILS</b> BRIDGE NO. BEL-7-36164 PEDESTRIAN BRIDGE OVER S.R. 7			
<b>BEL-7-32.276</b>			
14 / 37			
(213 / 242)			



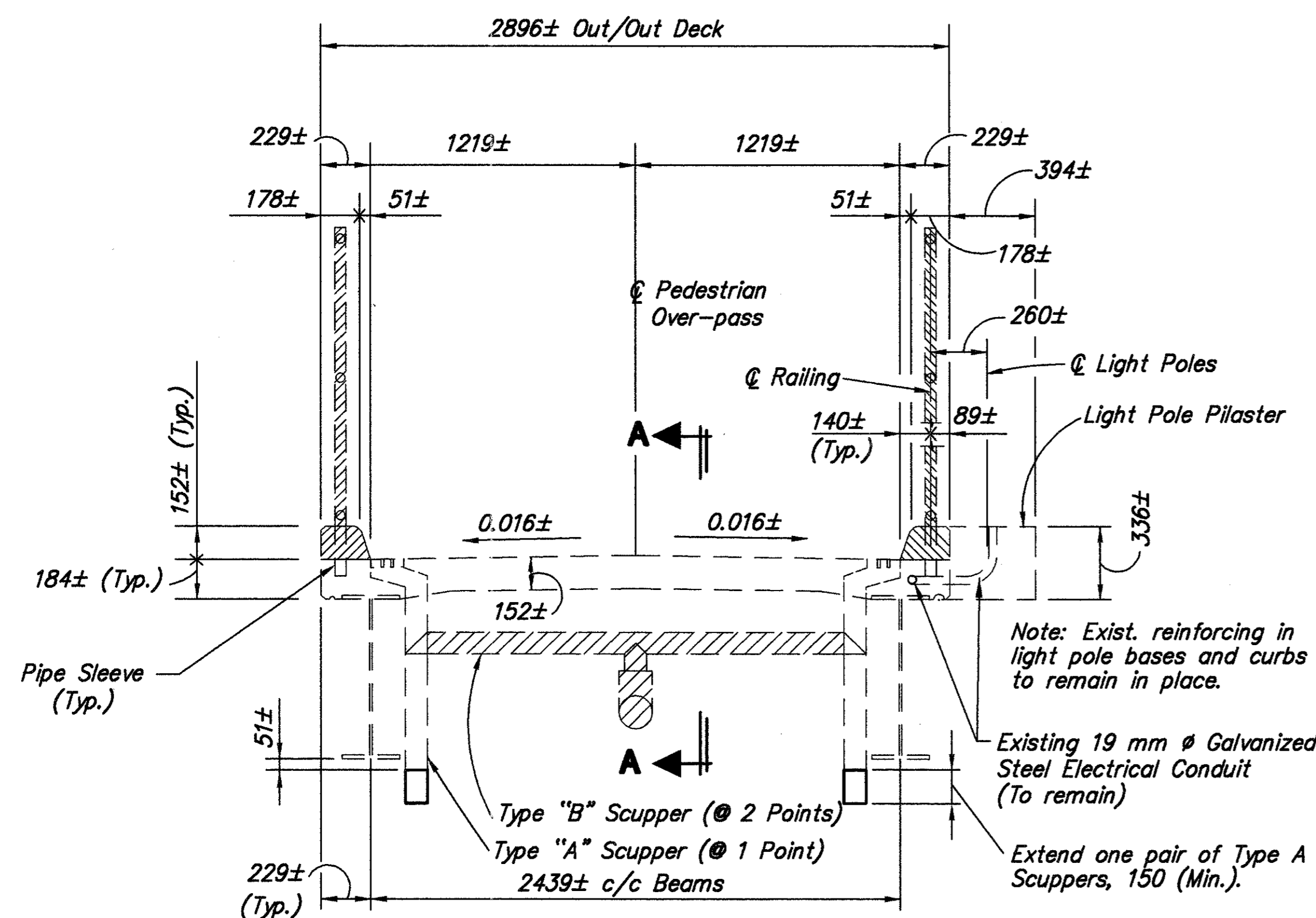
**RIGHT SIDE PARAPET & FENCE**

NOTE: All horizontal distances measured along deck fascia.

Spacing of S15M04 & S15M32 bars shall be adjusted to clear fence post anchor bolts.

For General Plan see sheet 13/37  
 For End of Parapet Details see sheet 14/37  
 For Existing and Proposed Transverse Section details see sheet 16/37  
 For General Notes see sheet 1/37 & 2/37  
 For Sawcut Crack Control Joint notes, see Concrete Parapets note on sheet 2/37

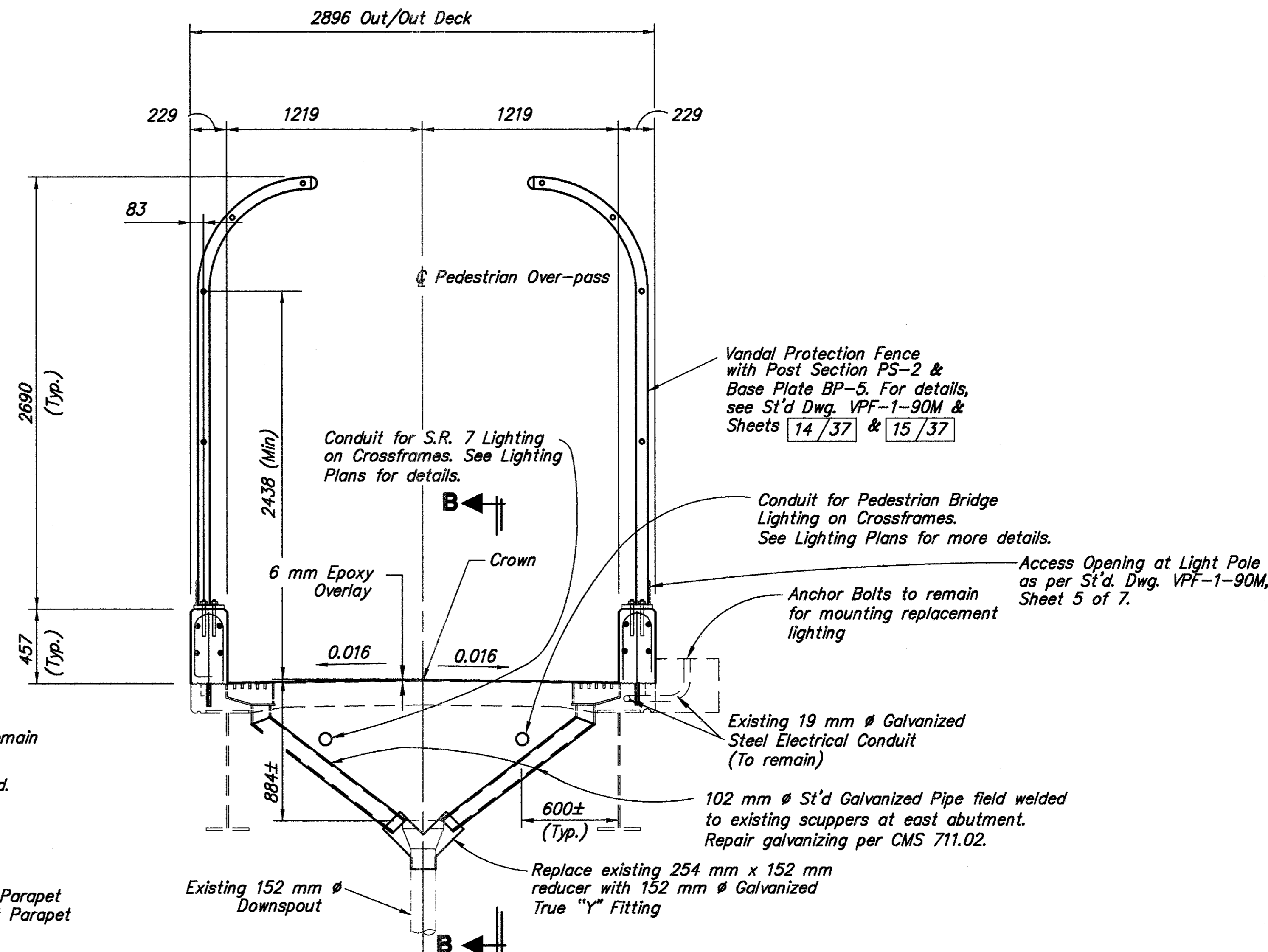
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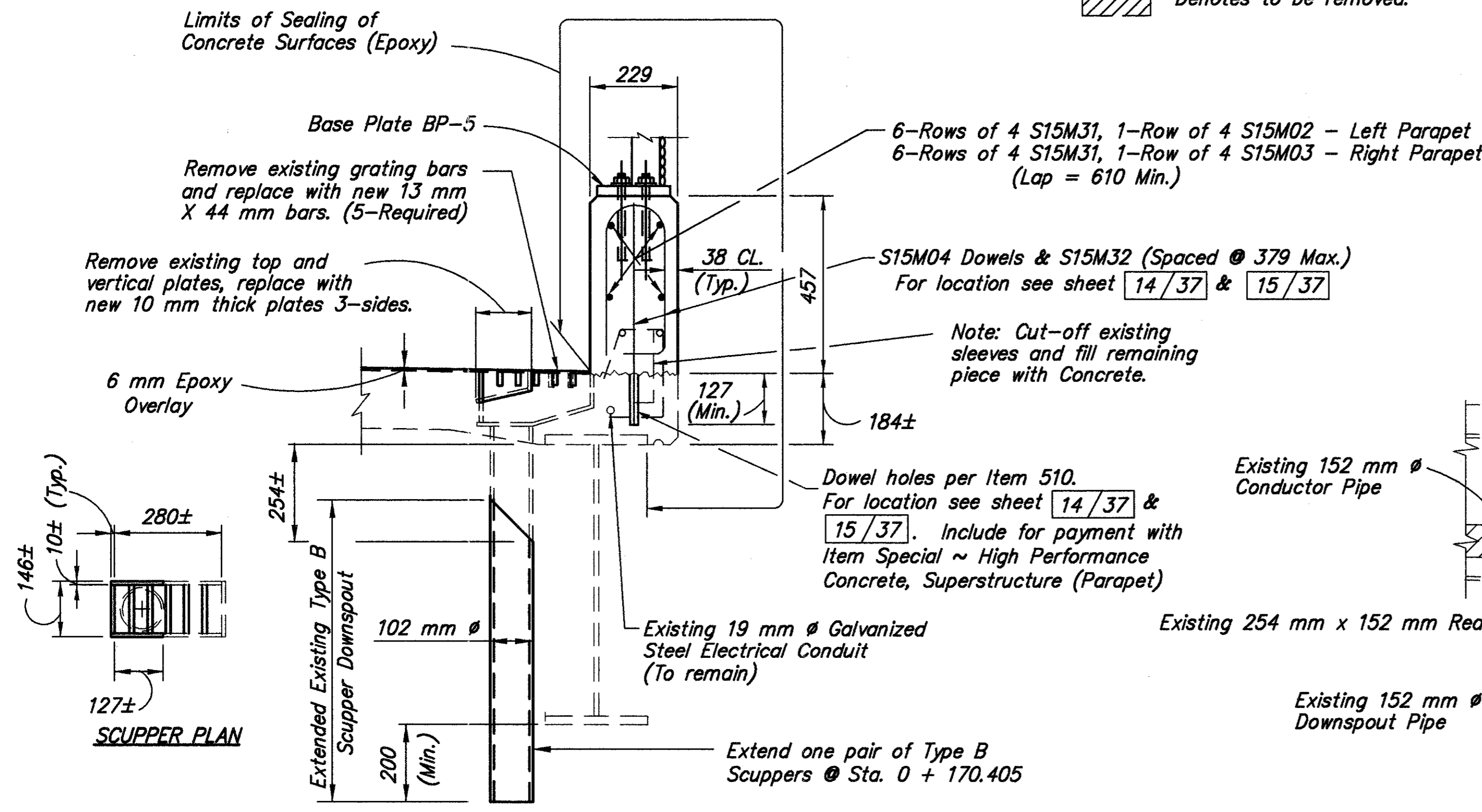
EXISTING NORMAL TRANSVERSE SECTION

LEGEND

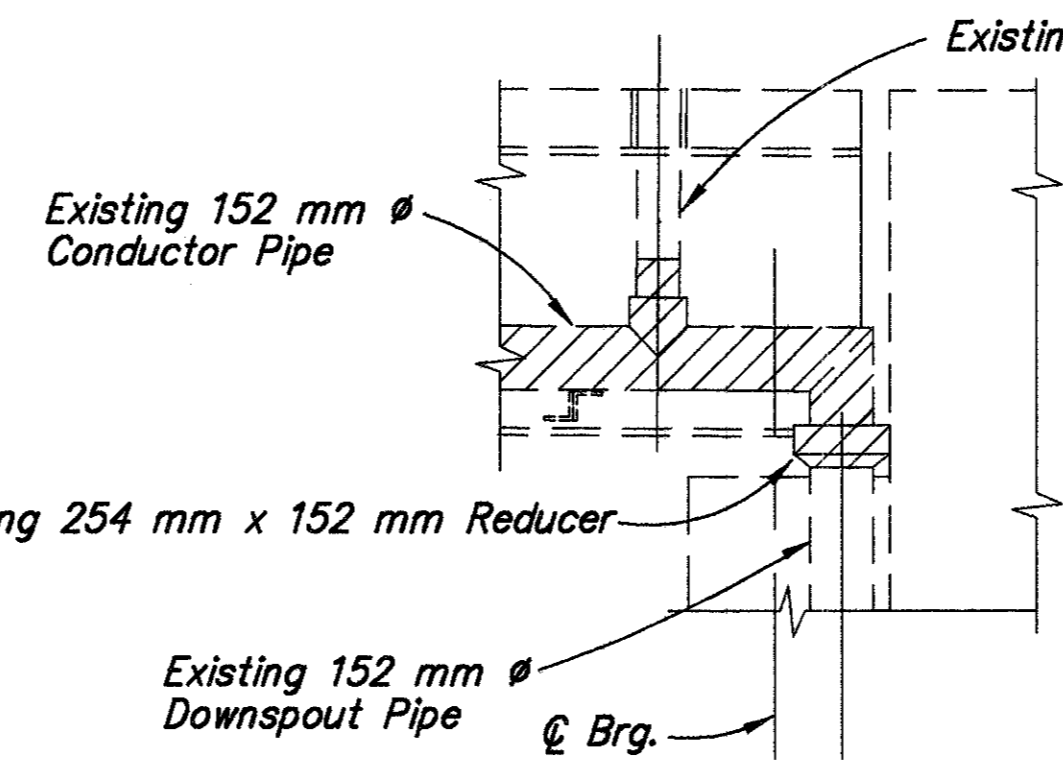
- Denotes Existing To Remain
- ▨ Denotes to be removed.



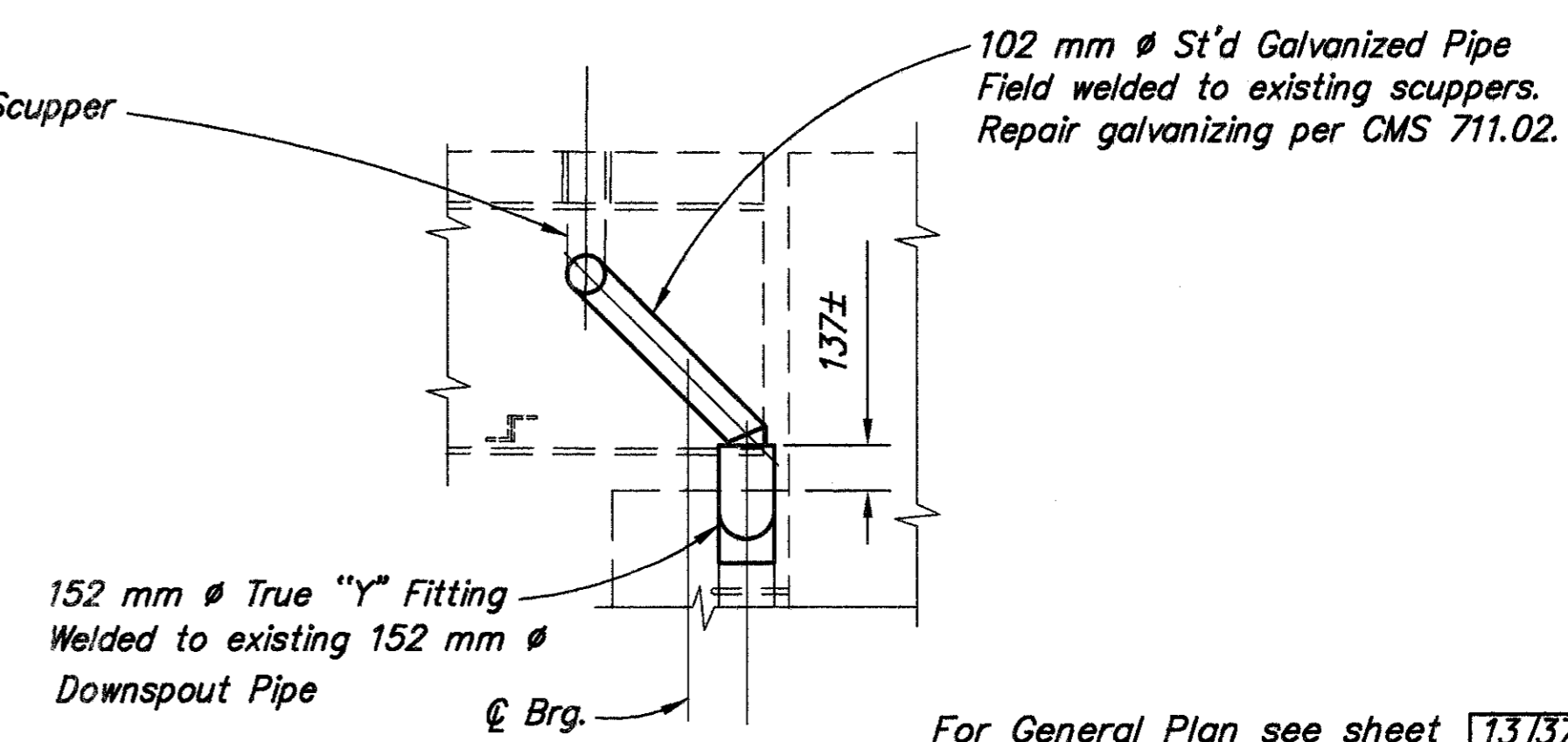
PROPOSED NORMAL TRANSVERSE SECTION (LOOKING TOWARD EAST ABUTMENT)



PROPOSED TYPICAL PARAPET & DRAINAGE SECTION RIGHT & LEFT PARAPET



SECTION A-A



SECTION B-B

For General Plan see sheet 13/37

For additional Parapet & Fence Details see sheets 14/37 & 15/37

For General Notes see sheet 1/37 & 2/37

All materials, labor and equipment necessary to modify the scuppers shall be paid for under the unit price bid for Item 518 - Scupper Modification, As Per Plan.

DESIGN AGENCY  
W.E. QUICKSALL & ASSOCIATES INC.  
554 WEST HIGH AVE.  
NEW PHILADELPHIA, OHIO  
CONSULTING ENGINEERS

DATE 10/97

REVIEWED wldg

STRUCTURE FILE NUMBER 0700630

DRAWN JMG

CHECKED ZRP

DESIGNED FDH

SUPERSTRUCTURE DETAILS

BRIDGE NO. BEL-7-36164

PEDESTRIAN BRIDGE OVER S.R. 7

BEL-7-32.276

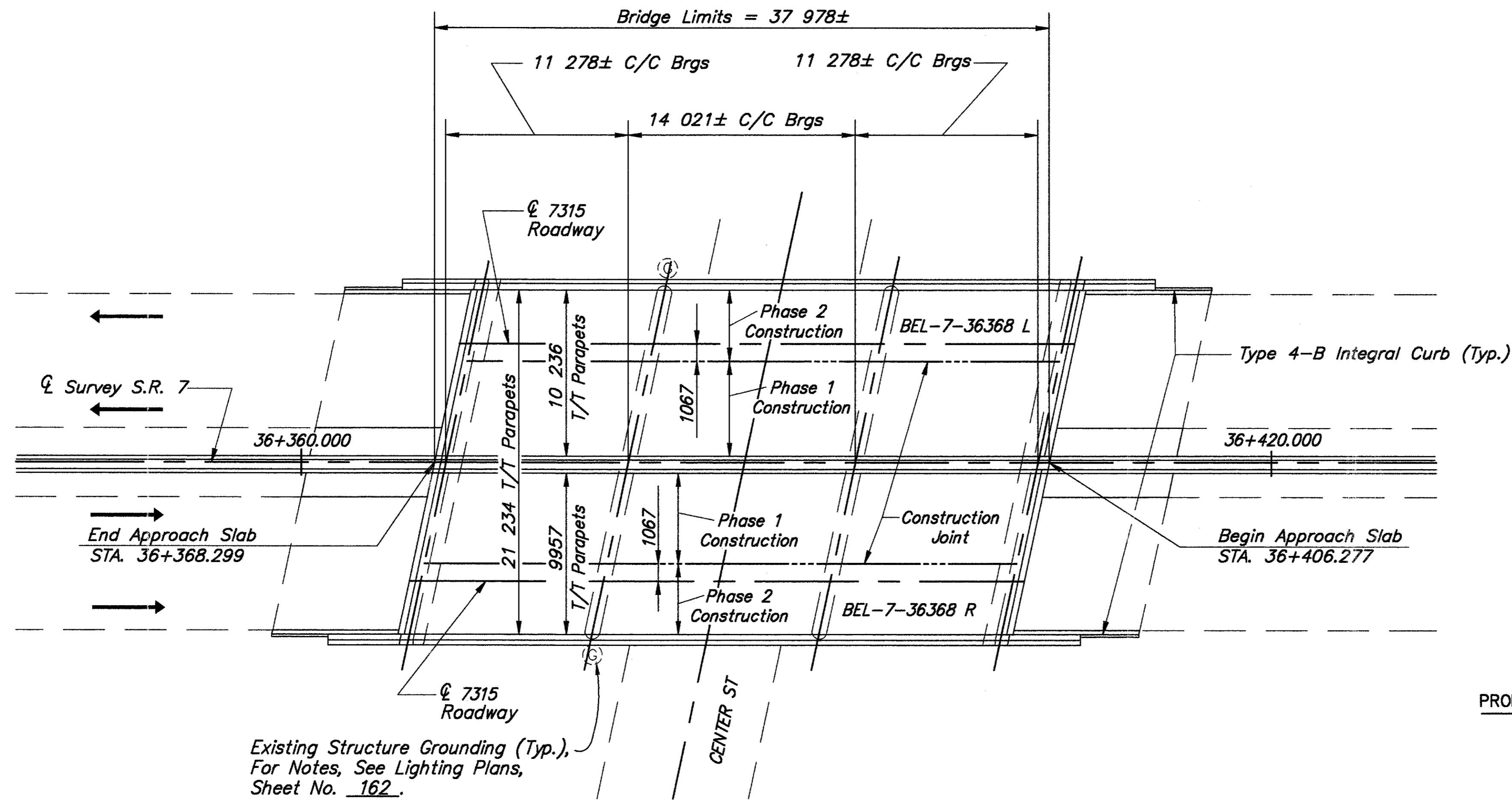
16/37

215

242

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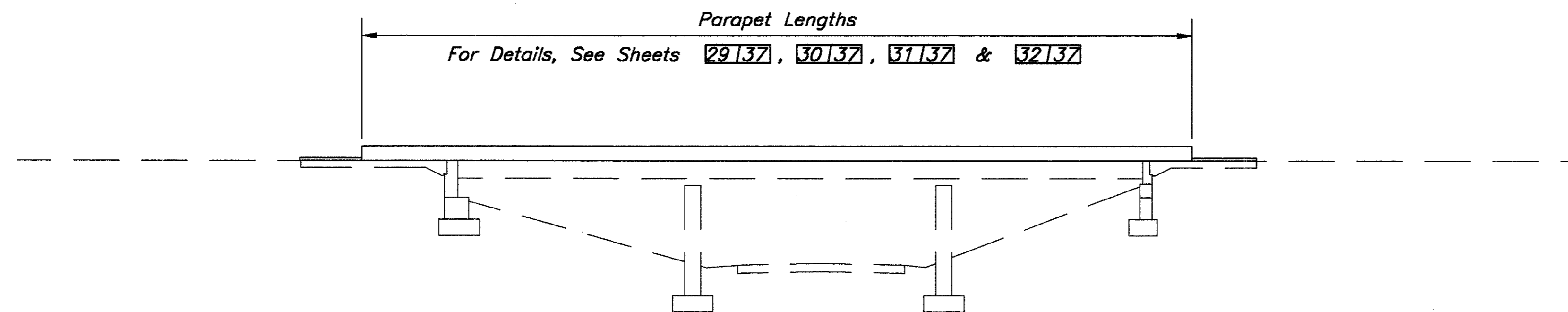
Existing Structure Grounding (Typ.),  
For Notes, See Lighting Plans,  
Sheet No. 162.

PLAN

PROPOSED WORK

- REPLACE EXISTING ASPHALT CONCRETE WEARING SURFACE WITH 45 mm THICKNESS OF MICRO-SILICA OVERLAY.
- REFACE OUTSIDE RAILING WITH DEFLECTOR-TYPE SHAPE.
- REPLACE CURBED MEDIAN WITH DEFLECTOR-TYPE BARRIER.
- PROVIDE ELASTOMERIC STRIP SEAL JOINTS WITH EXTENSIONS AT ABUTMENTS.
- CLEAN AND PAINT STRUCTURAL STEEL, USING SYSTEM OZEU.
- EXTEND SCUPPERS 200 mm MINIMUM BELOW BEAMS.
- EPOXY SEAL ABUTMENT BACKWALLS AND SEATS, MEDIAN BARRIER AND PARAPETS.
- REMOVE EXISTING LIGHTING, PROVIDE MEDIAN LIGHTING. (SEE HIGHWAY PLANS)

FOR QUANTITIES, SEE SHEET NO. 3737



ELEVATION

EXISTING STRUCTURE DATA

TYPE: CONTINUOUS STEEL BEAM WITH REINF.  
CONCRETE DECK AND SUBSTRUCTURE  
SPANS: 11 278± mm, 14 021± mm AND  
11 278± mm C/C Brgs.  
ROADWAY: 20 726± mm F/F SAFETY CURBS  
LOADING: C.F. 2000 (57)  
SKEW: 12° L.F.  
WEARING SURFACE: 80± mm ASPHALT  
CONCRETE  
APPROACH SLABS: AS-1-54, 7620± mm  
LONG  
ALIGNMENT: TANGENT  
CROWN: 0.016±

REHABILITATED STRUCTURE

ROADWAY: 21 234 mm T/T PARAPETS  
WEARING SURFACE: 45 mm MICRO-SILICA  
MODIFIED CONCRETE OVERLAY

DESIGN AGENCY  
W.E. QUICKSALL & ASSOCIATES INC.  
554 WEST HIGH AVE.  
NEW PHILADELPHIA, OHIO  
CONSULTING ENGINEERS

DATE  
10/97  
REVISION  
wda  
STRUCTURE FILE NUMBER  
0700665

DRAWN  
PMZ  
REVISION

DESIGNED  
FDH  
CHECKED  
ZRP

BELMONT COUNTY  
STA. 36+368.299  
STA. 36+406.277

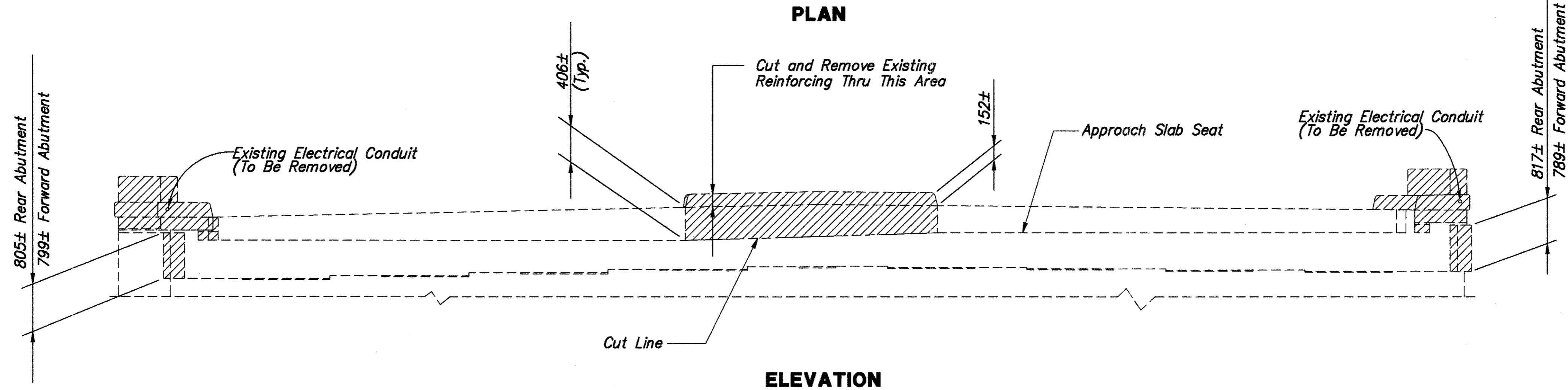
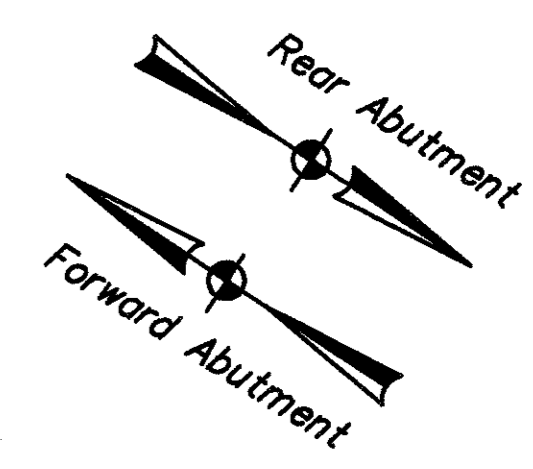
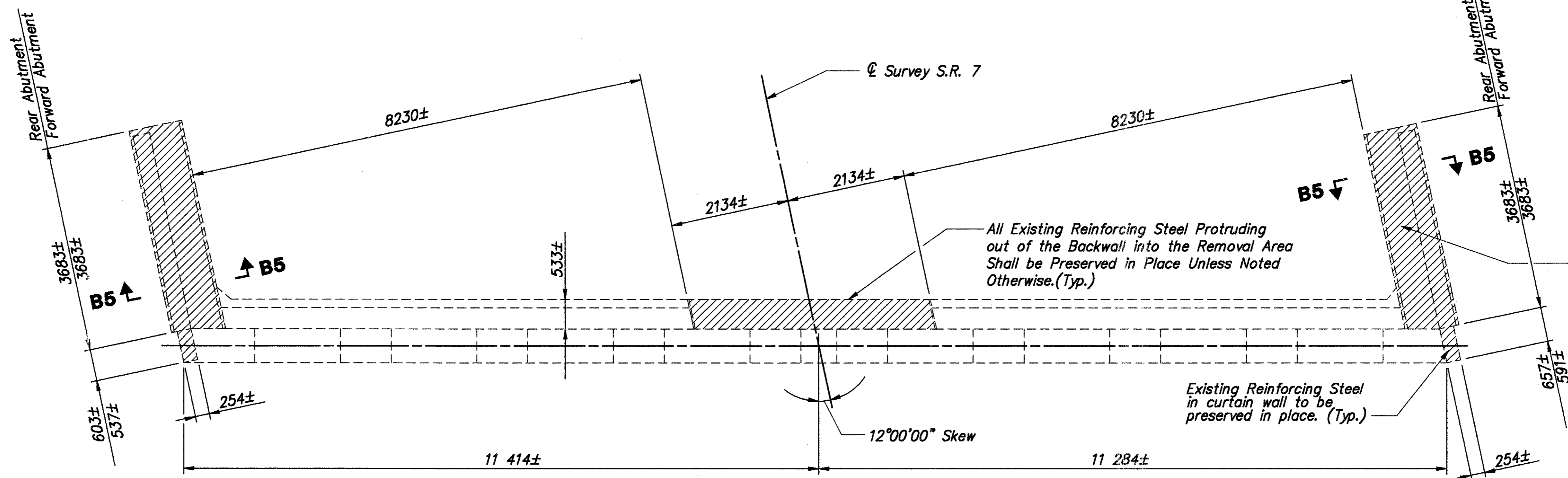
GENERAL PLAN & ELEVATION  
BRIDGE NO. BEL-7-36368 L/R  
S.R. 7 OVER CENTER ST.

BEL-7-32.276

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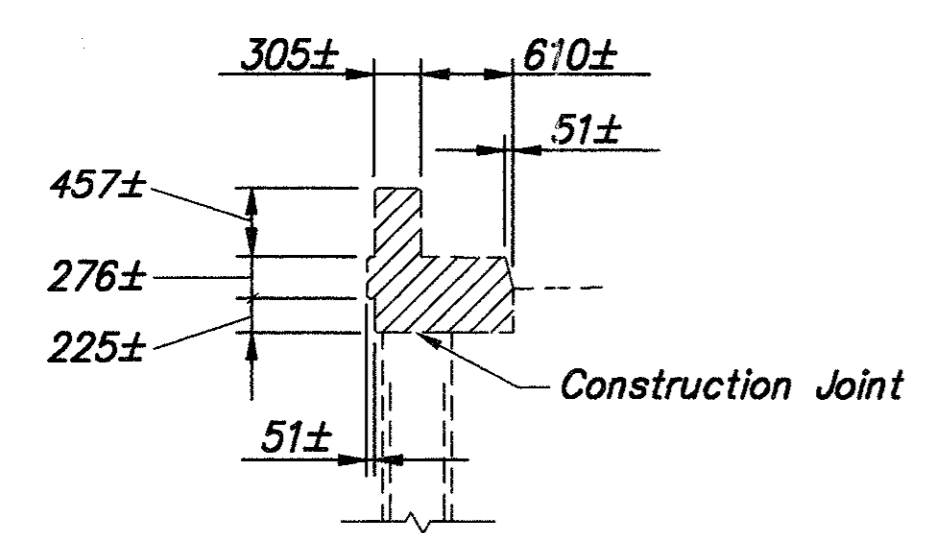
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242

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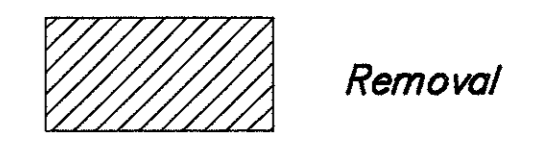


Railing removal to be included with Item 202 Removal Miscellaneous: Portions of Structure Removed, Abutments, As Per Plan. (Railing not shown)

Note:  
Reinforcing Steel to be removed to the Construction Joint, unless noted otherwise.



SECTION B5-B5



DESIGN AGENCY  
W.E. QUICKSALL & ASSOCIATES INC.  
554 WEST HIGH AVE  
NEW PHILADELPHIA OHIO  
CONSULTING ENGINEERS

DATE	10/19/97
REVIEWED	WJG
STRUCTURE FILE NUMBER	0700665
DRAWN	PMZ
CHECKED	ZRP

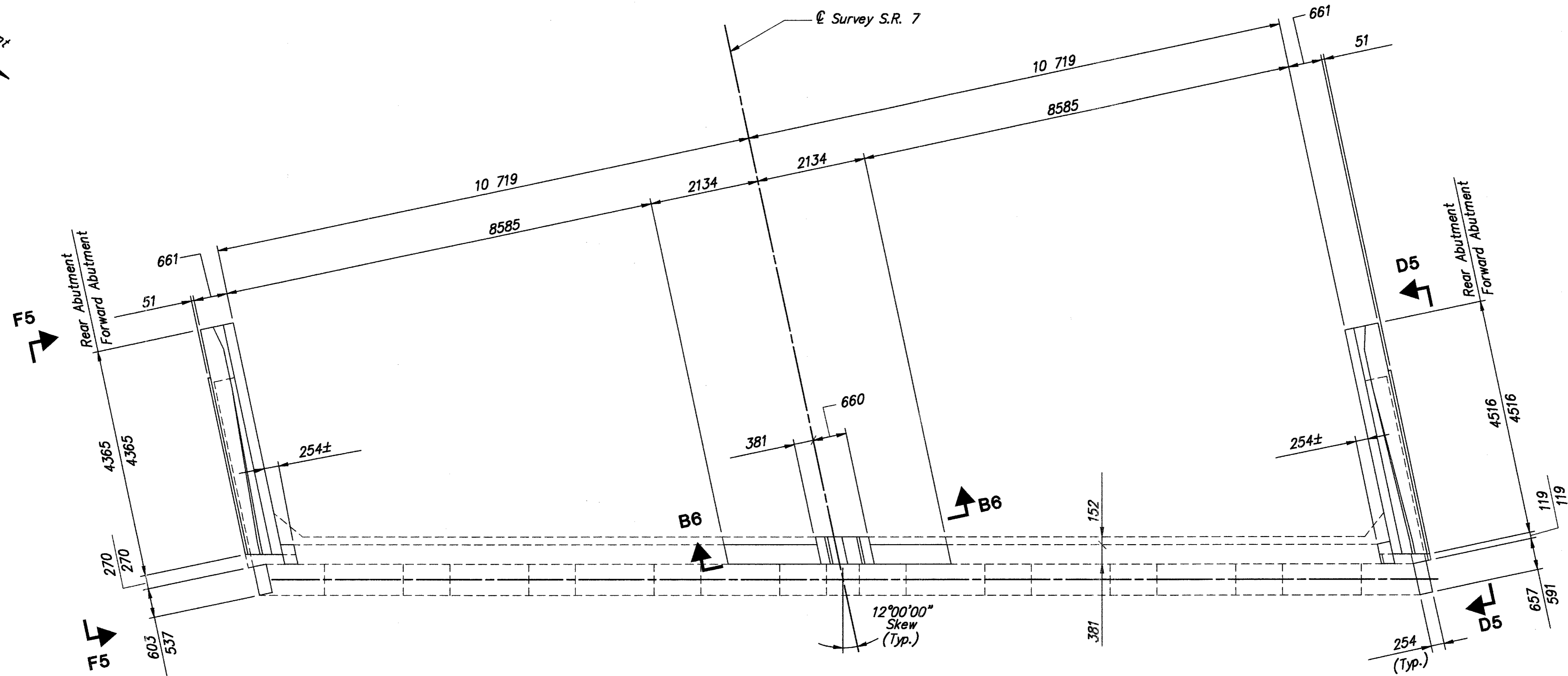
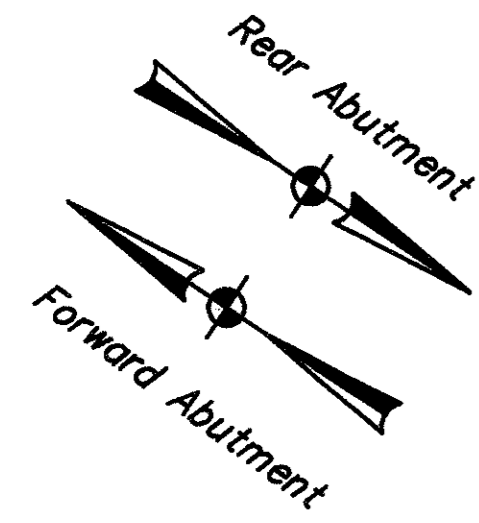
**REAR & FORWARD ABUTMENT DETAILS**  
BRIDGE NO. BEL-7-36368 L/R  
S.R. 7 OVER CENTER STREET

BEL-7-32-276

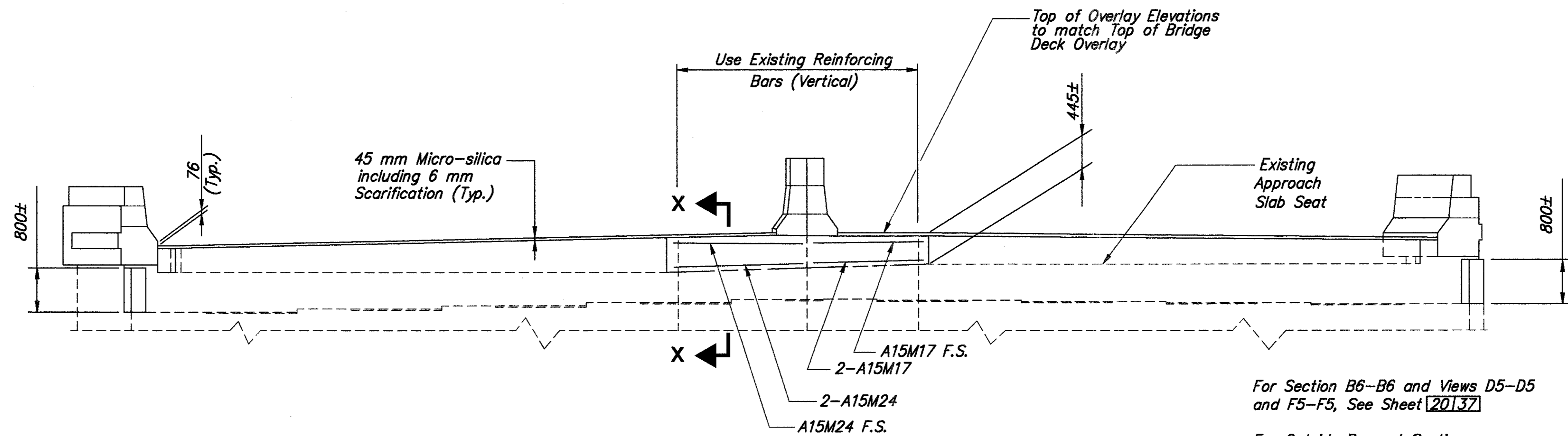
18 / 37

217  
242

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**FORWARD ABUTMENT PLAN**  
(Rear Abutment Similar)



**FORWARD ABUTMENT ELEVATION**  
(Rear Abutment Similar)

For Section B6-B6 and Views D5-D5 and F5-F5, See Sheet **20137**

For Outside Parapet Sections, See Sheet **31137**

For Section X-X, See Sheet **20137**

DESIGN AGENCY  
**W.E. QUICKSALL & ASSOCIATES INC.**  
554 WEST HIGH AVE  
NEW PHILADELPHIA, OHIO  
CONSULTING ENGINEERS

DESIGNED	DATE	REVIEWED	DATE
FDH	10/97	Wdc	10/97
CHECKED	STRUCTURE FILE NUMBER	DRAWN	DATE
ZRD	0700665	PMZ	REVIEWED

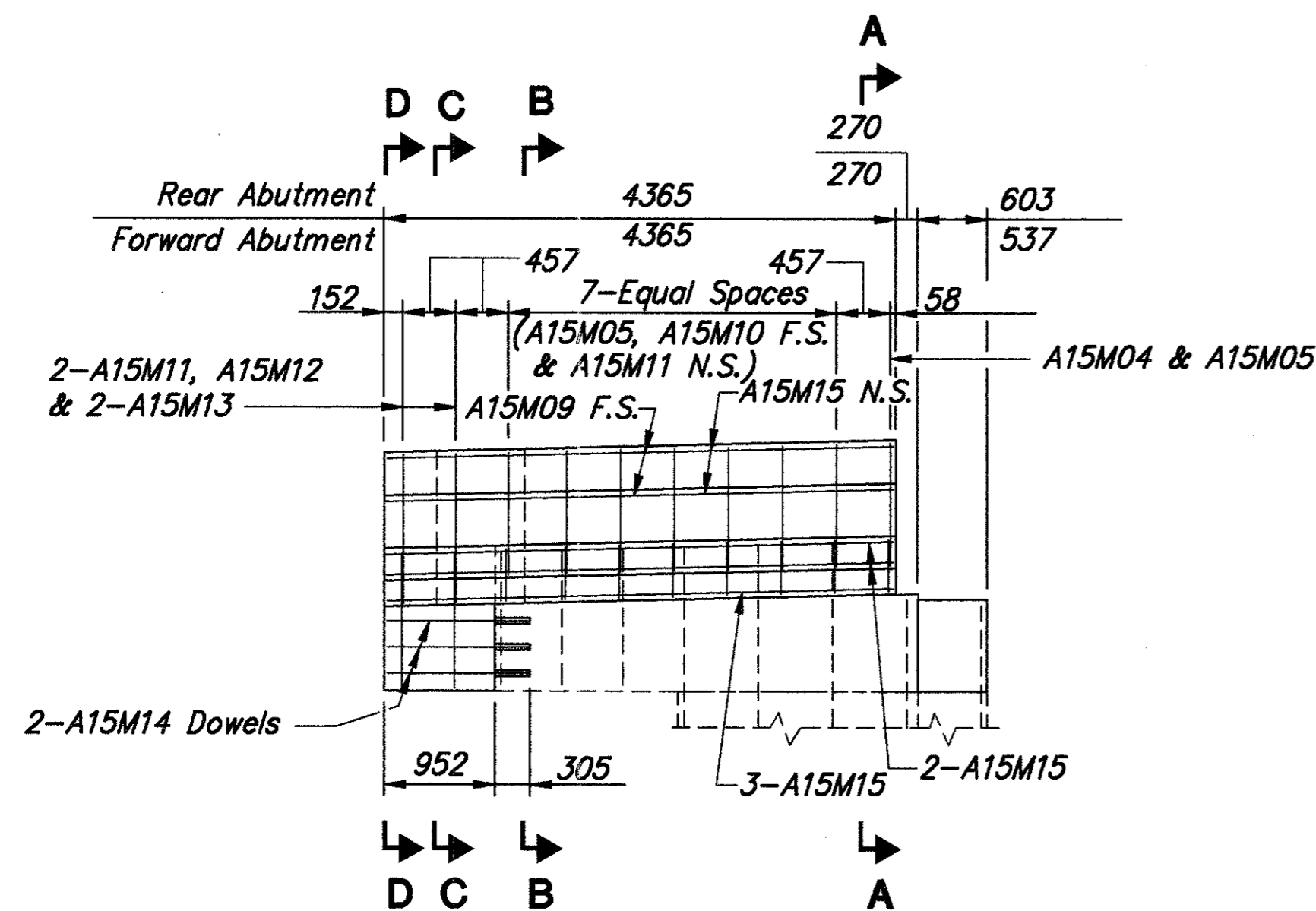
**REAR & FORWARD ABUTMENT DETAILS**

BRIDGE NO. BEL-7-36368 L/R  
S.R. 7 OVER CENTER STREET

**BEL-7-32.276**

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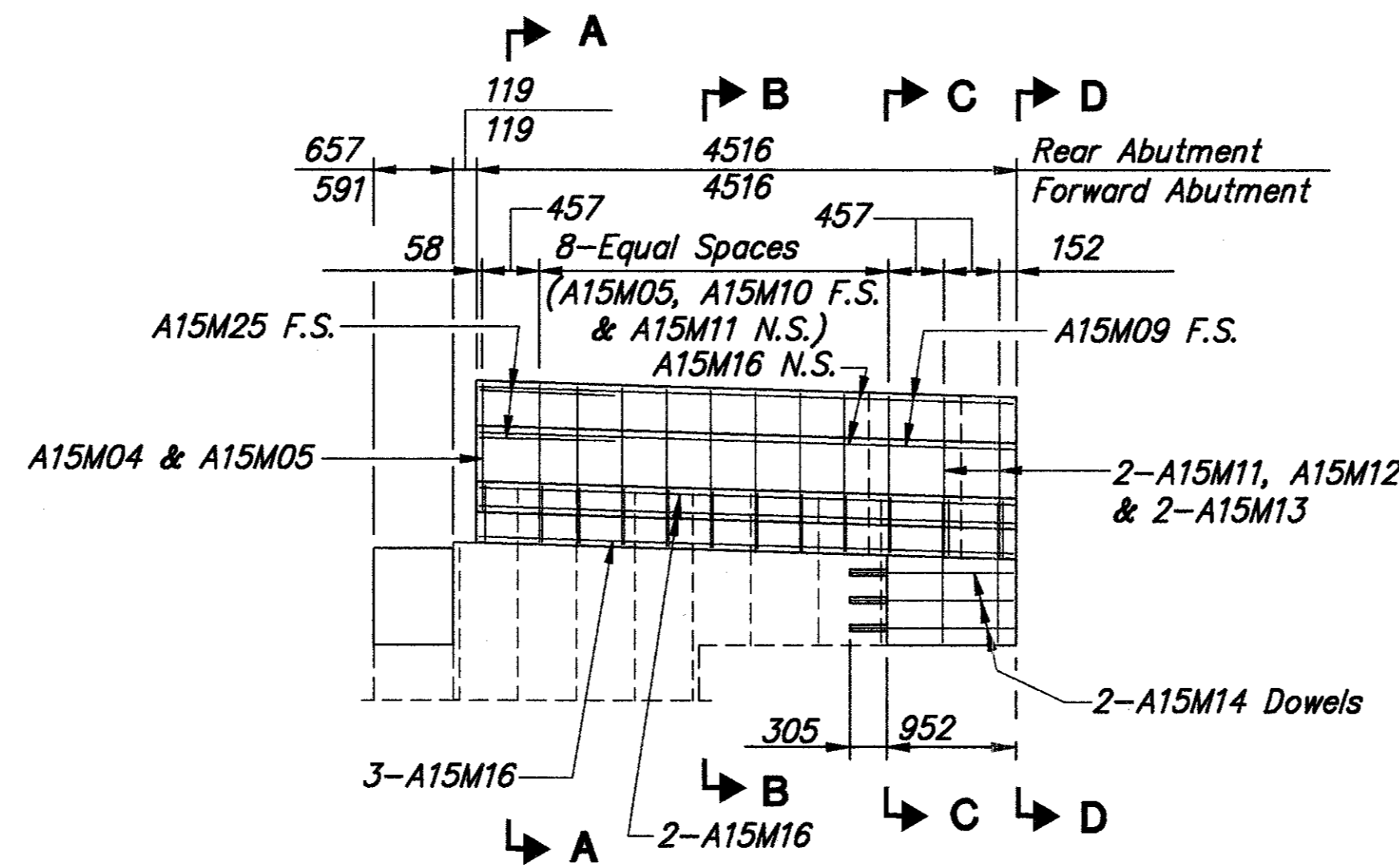
218  
242



**VIEW F5-F5**  
(Left Forward & Right Rear)

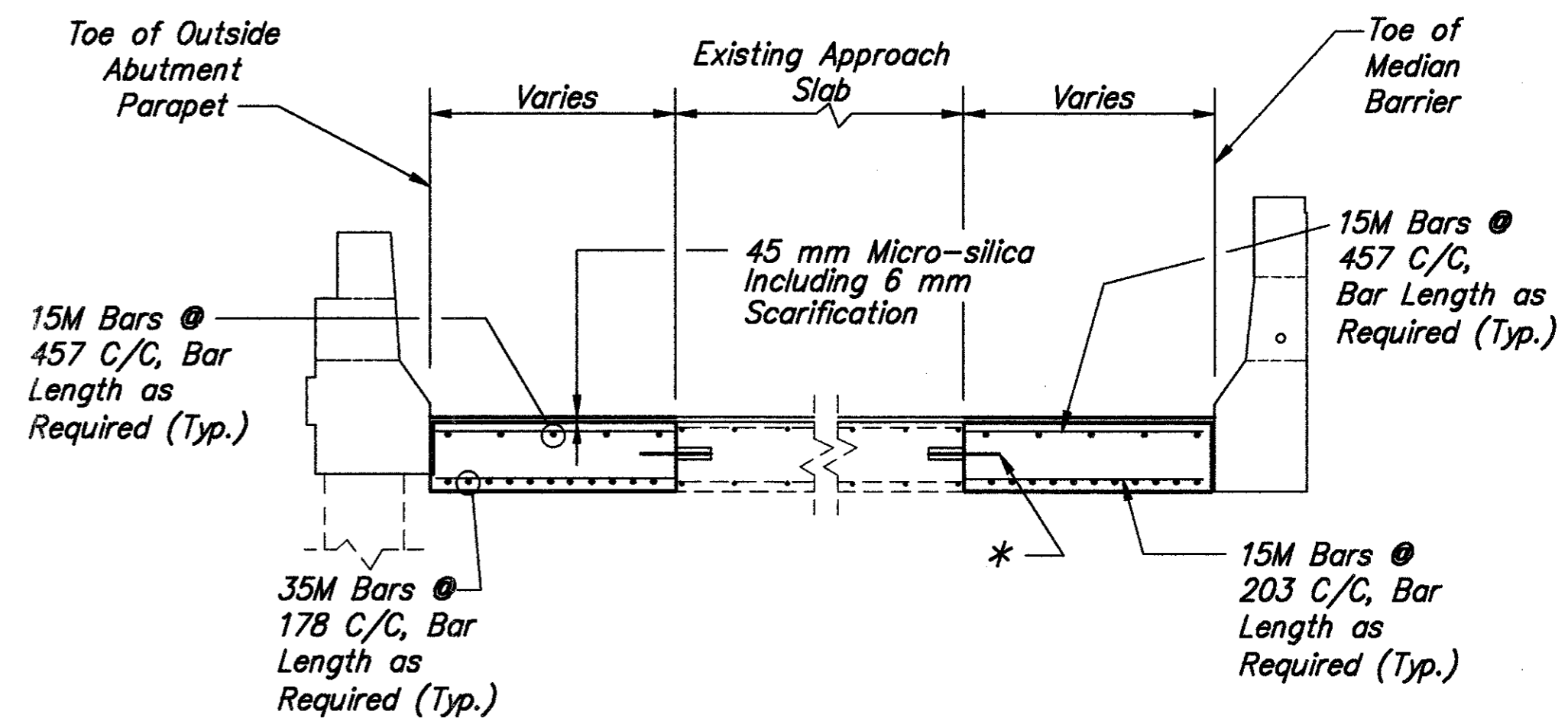
For Details not Shown,  
See Sheet **31.37**

See Normal Parapet Ending  
Detail on Sheet **32.37**



**VIEW D5-D5**  
(Right Forward & Left Rear)

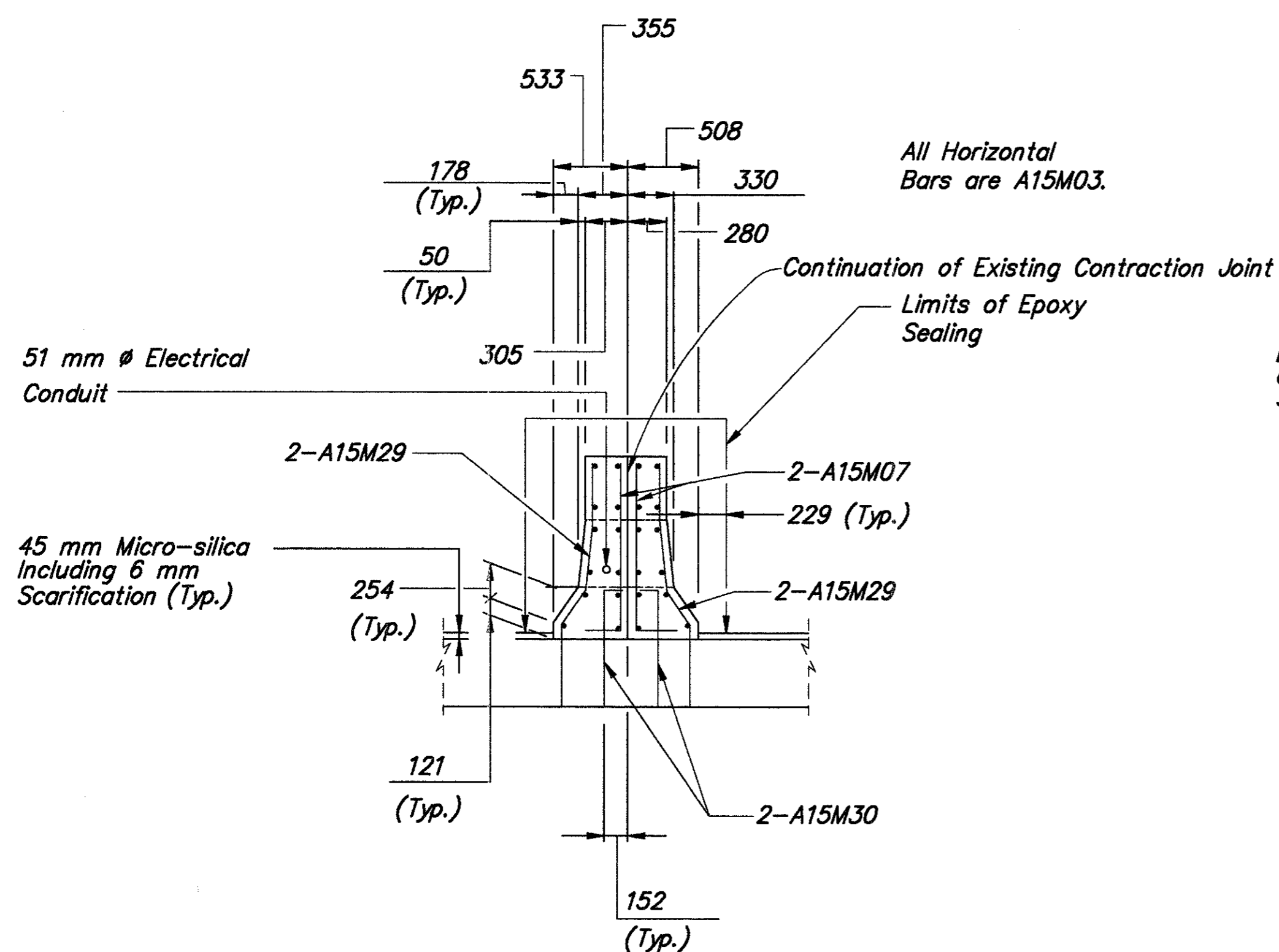
For Outside Parapet Sections,  
See Sheet **31.37**



**APPROACH SLAB WIDENING  
DETAIL AT ABUTMENT**

(Left Structure Shown,  
Right Structure Similar)

For details and notes not shown,  
see St'd Dwg. AS-1-81M

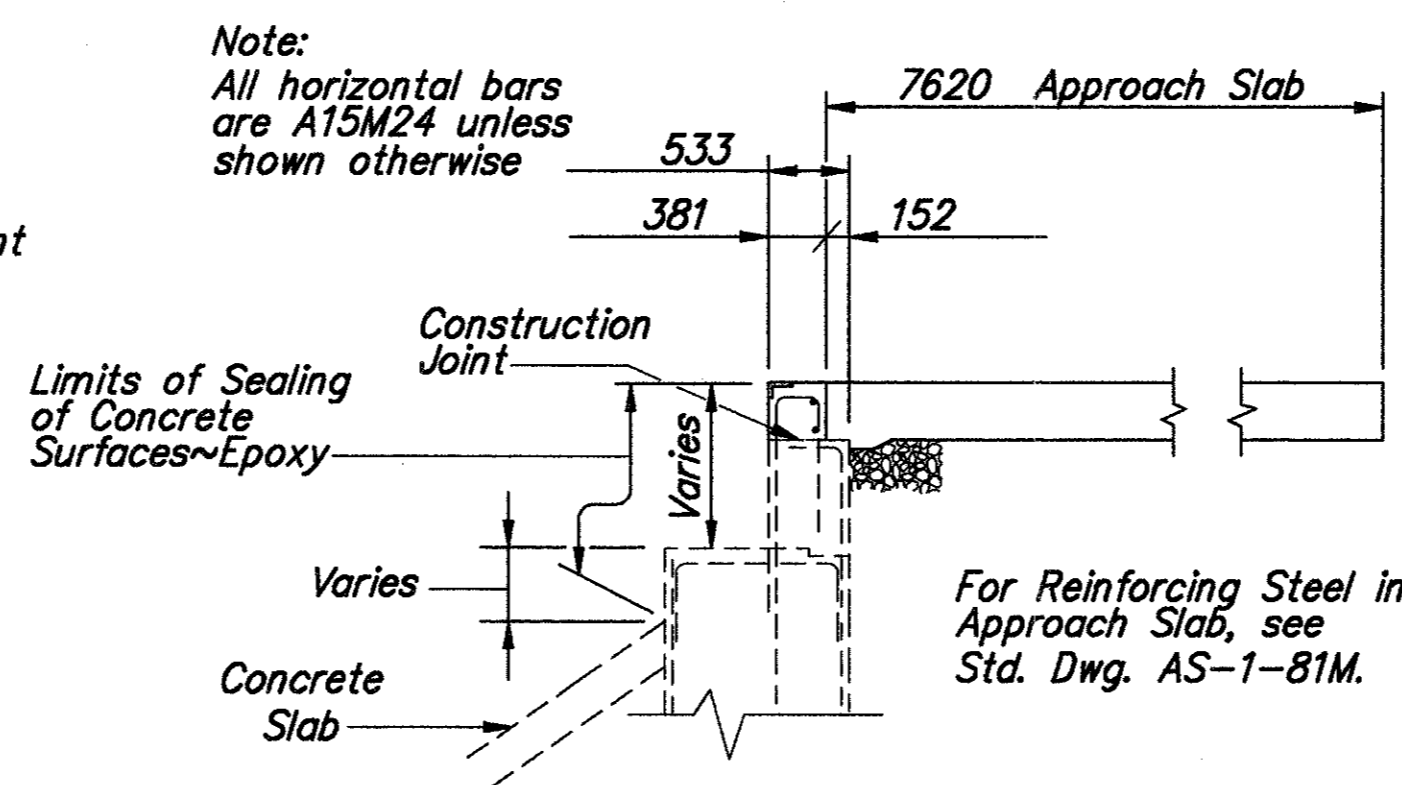


**SECTION B6-B6**  
(Looking Upstation)

Note:

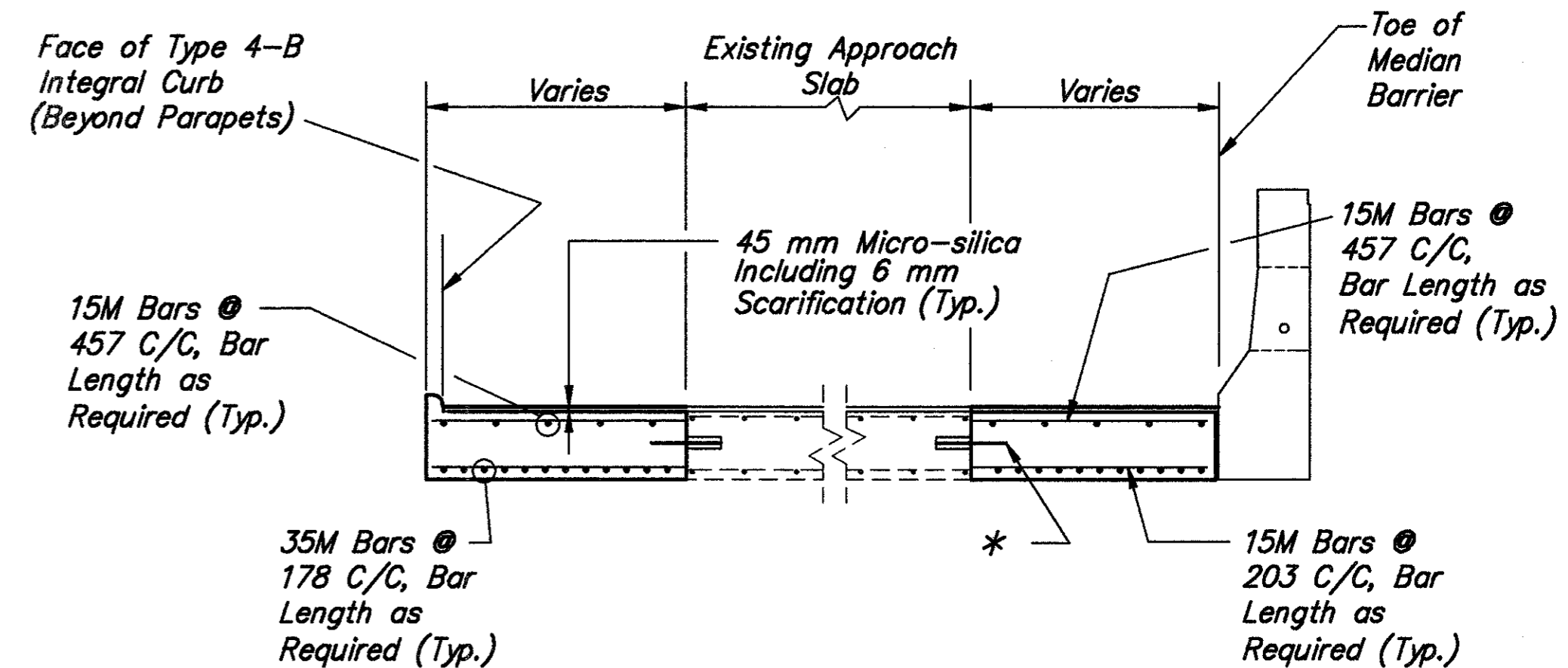
See Sheet **21.37** for  
Location of  $\mathcal{C}$  Survey S.R. 7.

For Additional Median Barrier Dimensions,  
See Sheet **32.37**



**SECTION X-X**  
(Section Thru Widened Approach Slab)

For Reinforcing Steel in  
Approach Slab, see  
Std. Dwg. AS-1-81M.



**APPROACH SLAB WIDENING  
DETAIL AT CURBED APPROACH SLAB**

(Left Structure Shown,  
Right Structure Similar)

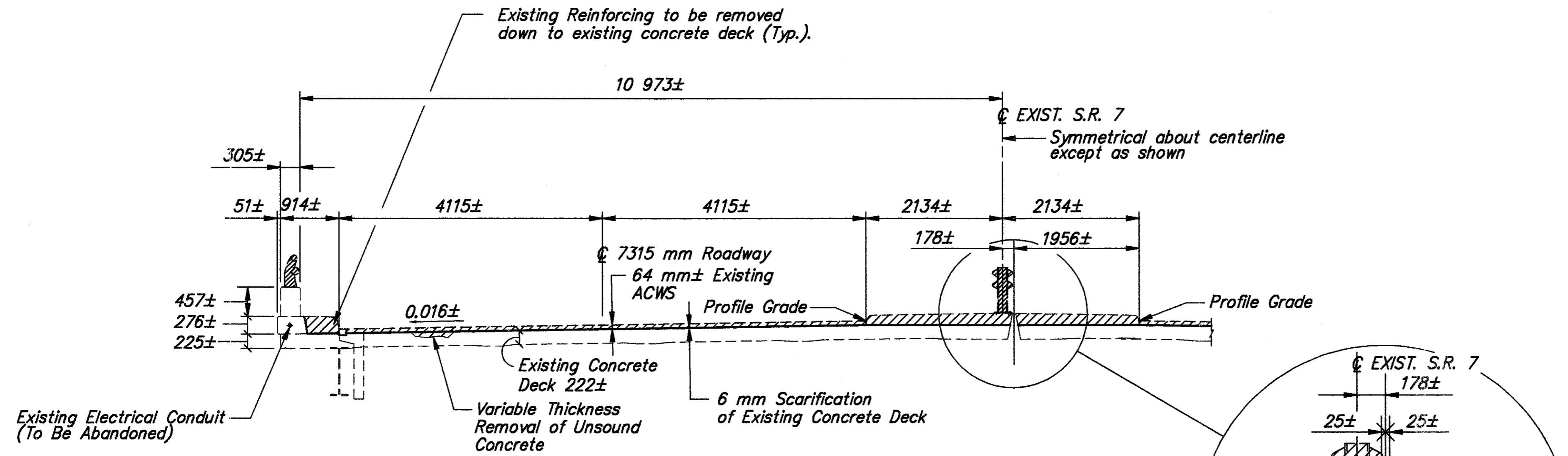
For details and notes not shown,  
see St'd Dwg. AS-1-81M

\* Longitudinal Joint shall be constructed per  
Standard Drawing BP-2.1M. Spacing of the tie bars  
or hook bolts shall be no more than 762 nor  
less than 610.

Notes:

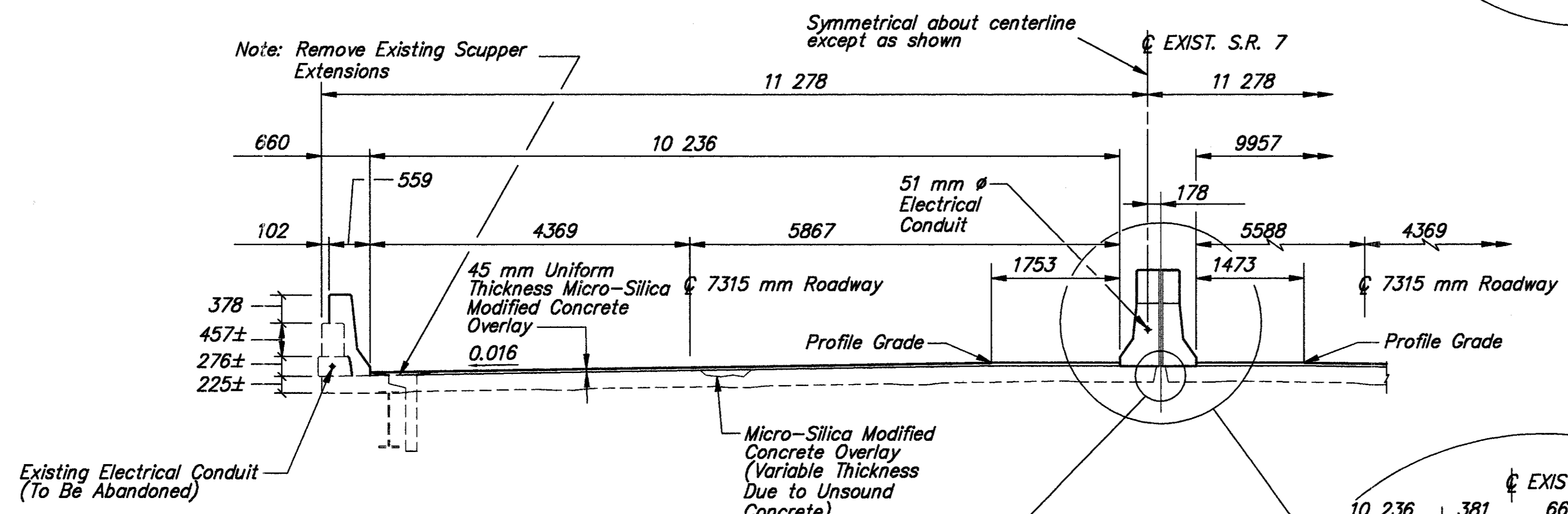
N.S. Denotes Near Side  
F.S. Denotes Far Side

For Abutment Plan and Elevation,  
See Sheet **19.37**

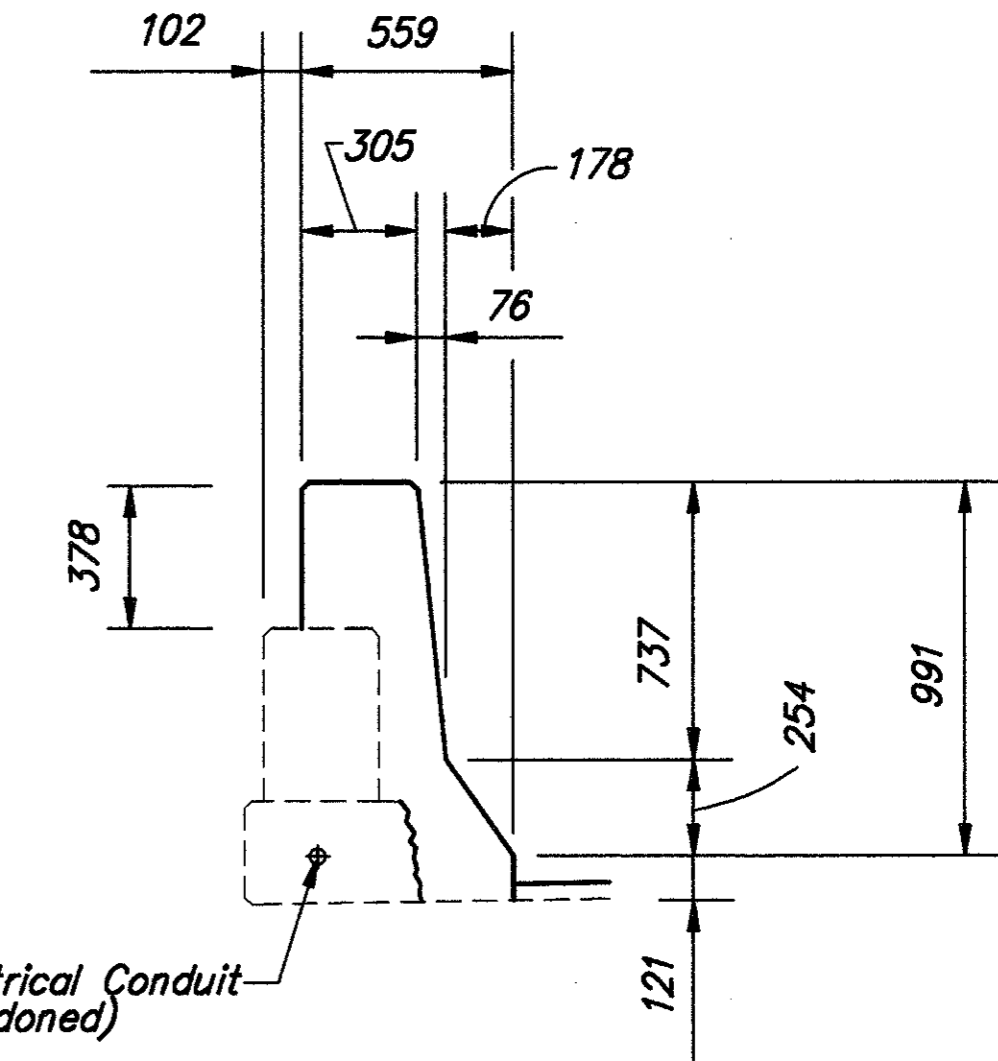


**EXISTING NORMAL TRANSVERSE SECTION**

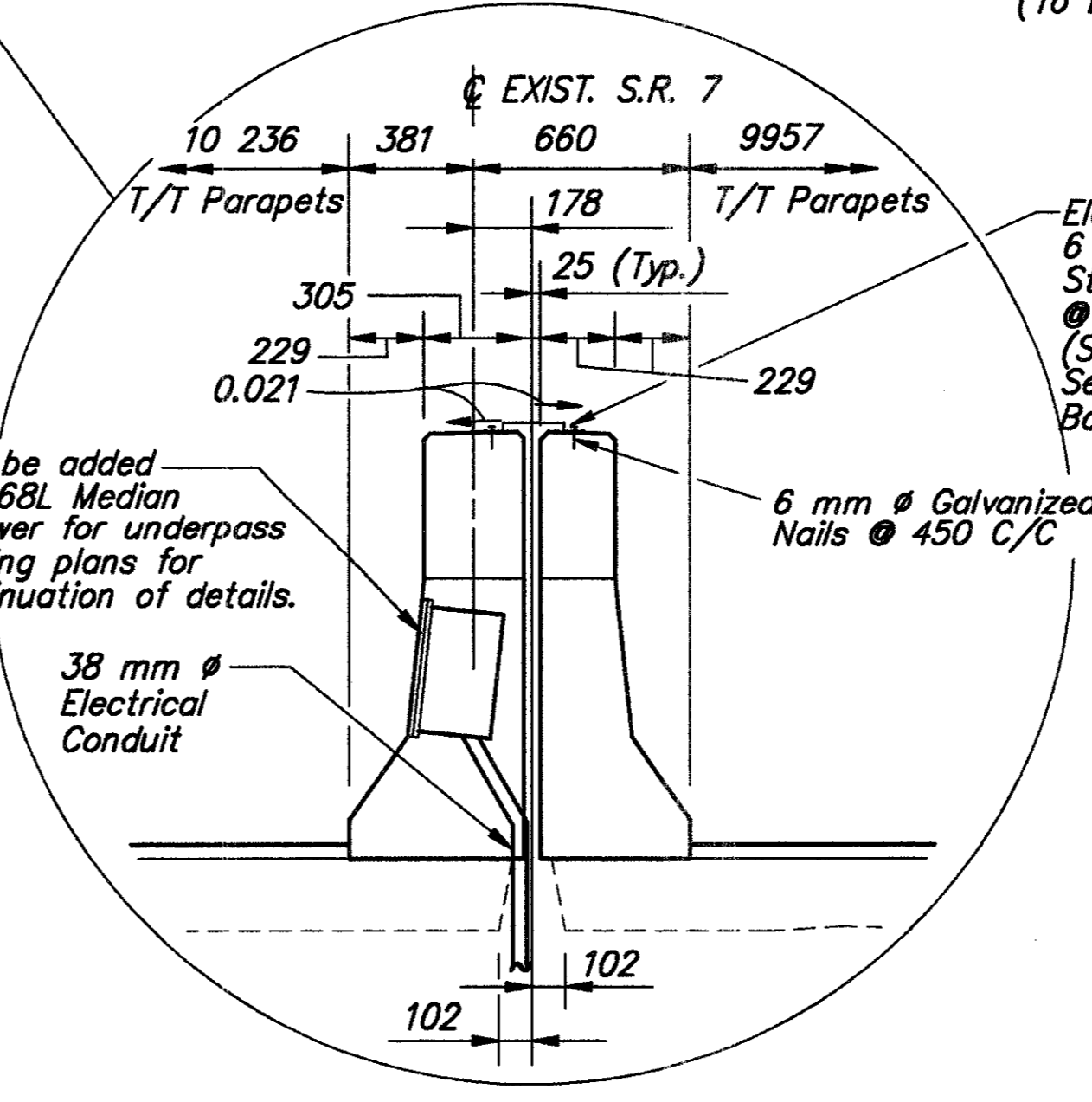
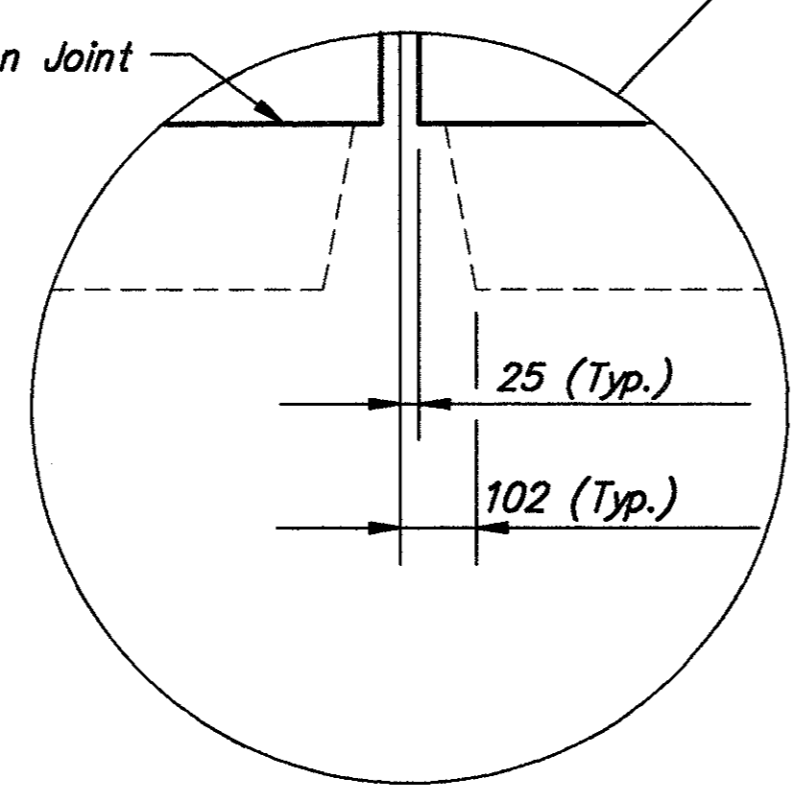
Denotes Removal



**PROPOSED NORMAL TRANSVERSE SECTION**



**TYPICAL OUTSIDE RAILING REFACING**

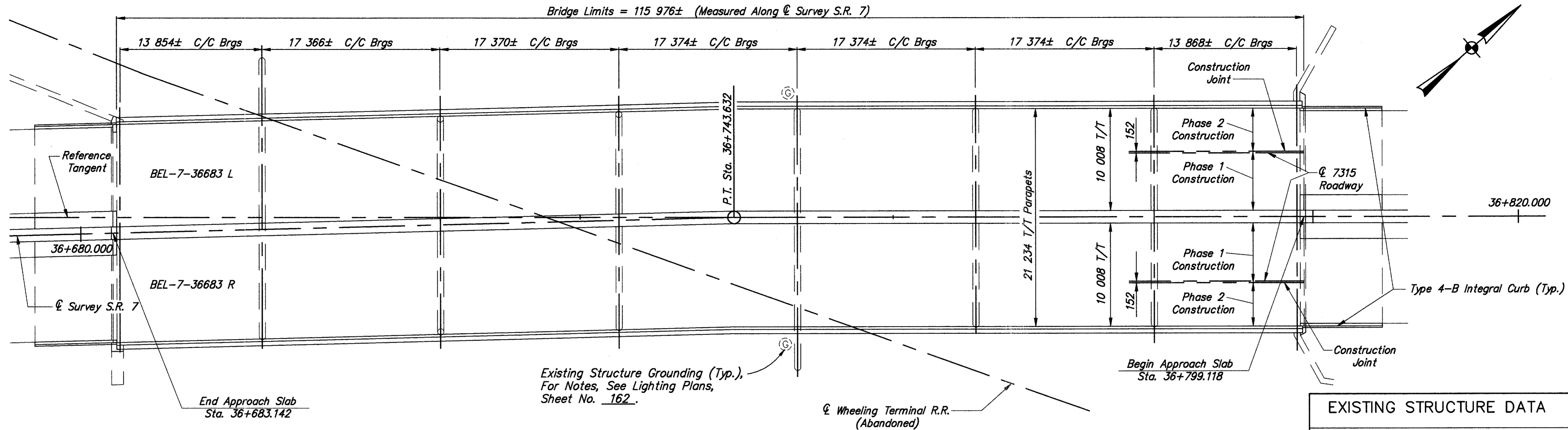


For Scupper Details And Notes, See Sheet **33/37**

For Parapet and Median Barrier Reinforcing Details, See Sheets **29/37**, **30/37**, **31/37** & **32/37**

DESIGN AGENCY <b>W.E. QUICKSALL &amp; ASSOCIATES INC.</b> 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS	DATE <b>10/97</b>	DESIGNED <b>FDH</b>	DRAWN <b>CFD</b>	REVIEWED <b>wda</b>	STRUCTURE FILE NUMBER <b>0700665</b>
<b>SUPERSTRUCTURE DETAILS</b> BRIDGE NO. BEL-7-36368 L/R S.R. 7 OVER CENTER STREET					
<b>BEL-7-32.276</b>					
21 / 37					
220 242					

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**S.R. 7  
CURVE DATA**

P.I. = Sta. 36+667.639  
 $\Delta$  = 07°18'16" Rt.  
 R = 1193.801m  
 T = 76.200m  
 L = 152.193m  
 E = 2.429m  
 $e_{max}$  = .035m

**PLAN**

**PROPOSED WORK**

- REPLACE EXISTING ASPHALT CONCRETE WEARING SURFACE WITH 45 mm THICKNESS OF MICRO-SILICA OVERLAY.
- REFACE OUTSIDE RAILING WITH DEFLECTOR-TYPE SHAPE.
- REPLACE EXISTING CURBED MEDIAN WITH NEW CURBED MEDIAN.
- PROVIDE ELASTOMERIC STRIP SEAL JOINTS WITH EXTENSIONS AT ABUTMENTS.
- CLEAN AND PAINT STRUCTURAL STEEL, USING SYSTEM OZEU.
- EXTEND SCUPPERS 200 mm MINIMUM BELOW BEAMS.
- EPOXY SEAL ABUTMENT BACKWALLS AND SEATS, MEDIAN CURB AND PARAPETS.
- REPLACE EXISTING LIGHTING. (SEE HIGHWAY PLANS)

FOR QUANTITIES, SEE SHEET NO. **3137**

**EXISTING STRUCTURE DATA**

TYPE: CONTINUOUS STEEL BEAM WITH REINF. CONCRETE DECK AND SUBSTRUCTURE  
 SPANS: 13 854± mm, 5 SPANS @ 17 370± mm AND 13 868± mm C/C BRGS ALONG  $\odot$   
 ROADWAY: 20 726± mm T/T CURBS  
 LOADING: C.F. 2000 (57)  
 SKEW: NONE TO REFERENCE TANGENT  
 WEARING SURFACE: 72± mm ASPHALT CONC. ON 25± mm MONOLITHIC CONCRETE  
 APPROACH SLABS: AS-1-54, 7620± mm LG  
 ALIGNMENT: 1°28' CURVE RT. & TANGENT  
 SUPERELEVATION: VARIES

**REHABILITATED STRUCTURE**

ROADWAY: 21 234 mm T/T PARAPETS  
 WEARING SURFACE: 45mm MICRO-SILICA MODIFIED CONCRETE OVERLAY

DESIGN AGENCY  
**W.E. QUICKSALL & ASSOCIATES INC.**  
 554 WEST HIGH AVE.  
 NEW PHILADELPHIA, OHIO  
 CONSULTING ENGINEERS

DATE  
 10/97

REVIEWED  
 wde

STRUCTURE FILE NUMBER  
 0700754

DRAWN  
 PMZ

DESIGNED  
 FDH

CHECKED  
 ZRP

BELMONT COUNTY  
 STA. 36+683.142  
 STA. 36+799.118

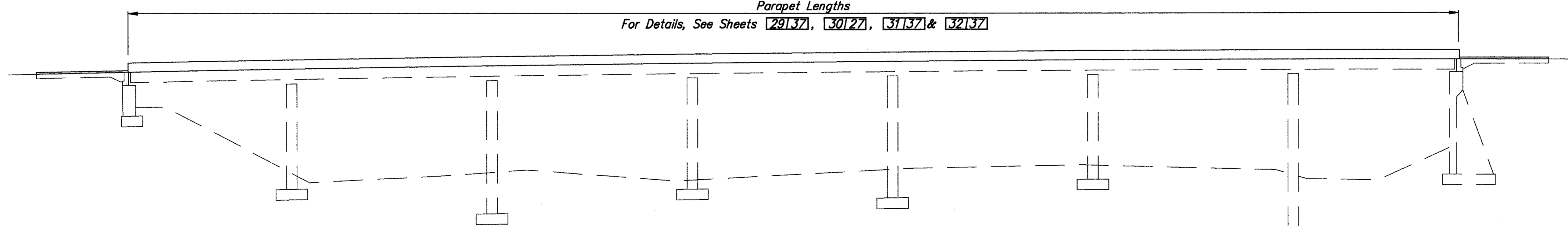
**GENERAL PLAN & ELEVATION**  
 BRIDGE NO. BEL-7-36683 L/R  
 S.R. 7 OVER WHEELING TERMINAL R.R.

**BEL-7-32.276**

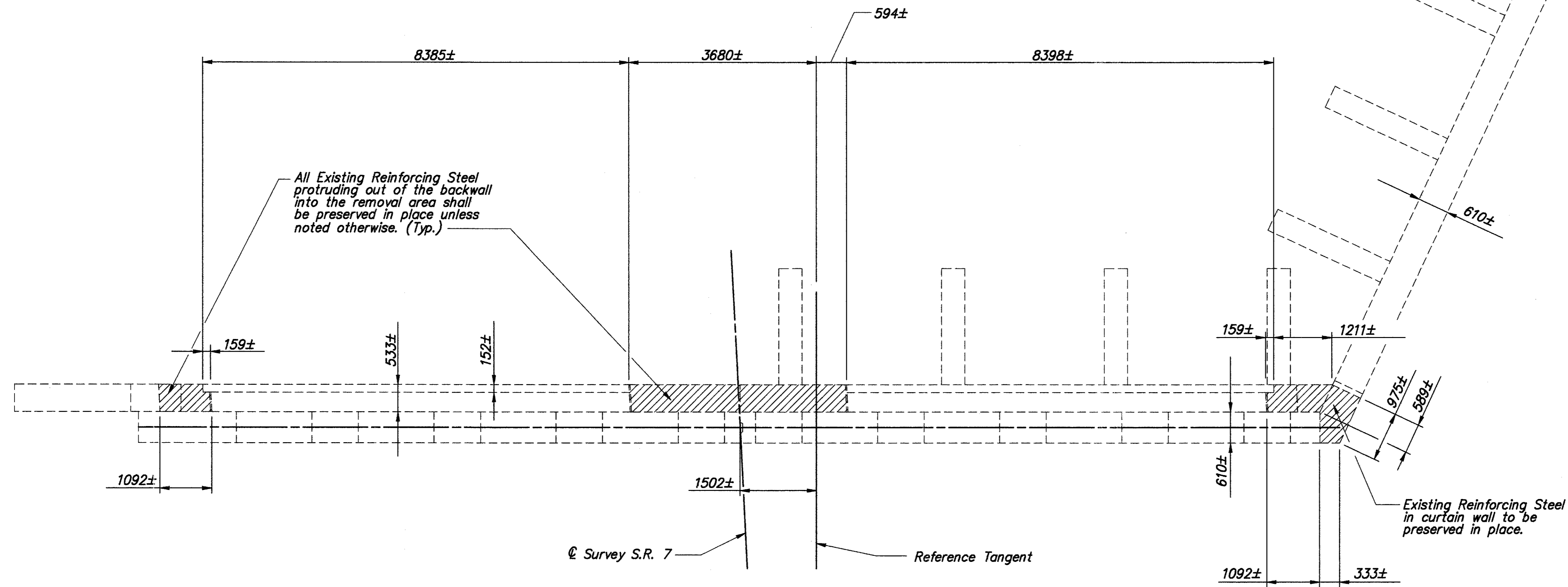
22 / 37

221  
 242

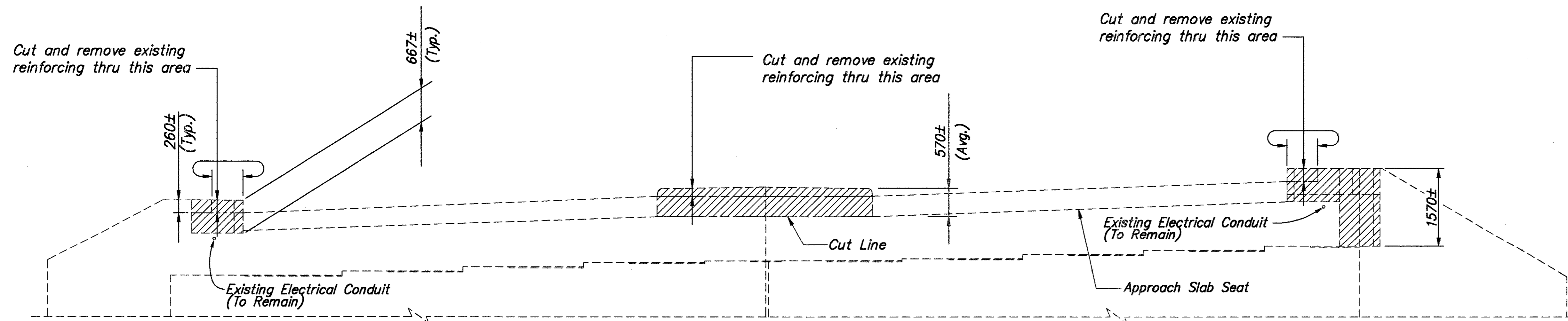
Parapet Lengths  
 For Details, See Sheets **29137**, **30127**, **31137** & **32137**



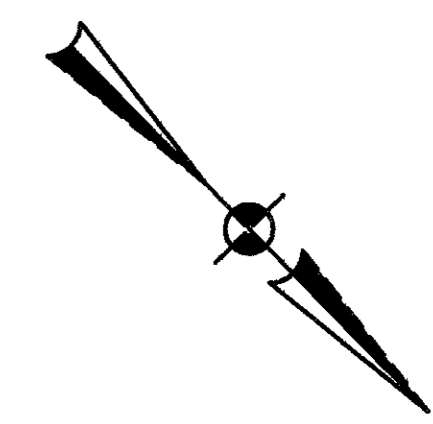
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PLAN



ELEVATION



DESIGN AGENCY  
 W.E. QUICKSALL & ASSOCIATES INC.  
 554 WEST HIGH AVE  
 NEW PHILADELPHIA OHIO  
 CONSULTING ENGINEERS

DATE	10/19/97
REVIEWED	wdc
STRUCTURE FILE NUMBER	0700754
DRAWN	PMZ
CHECKED	ZRP

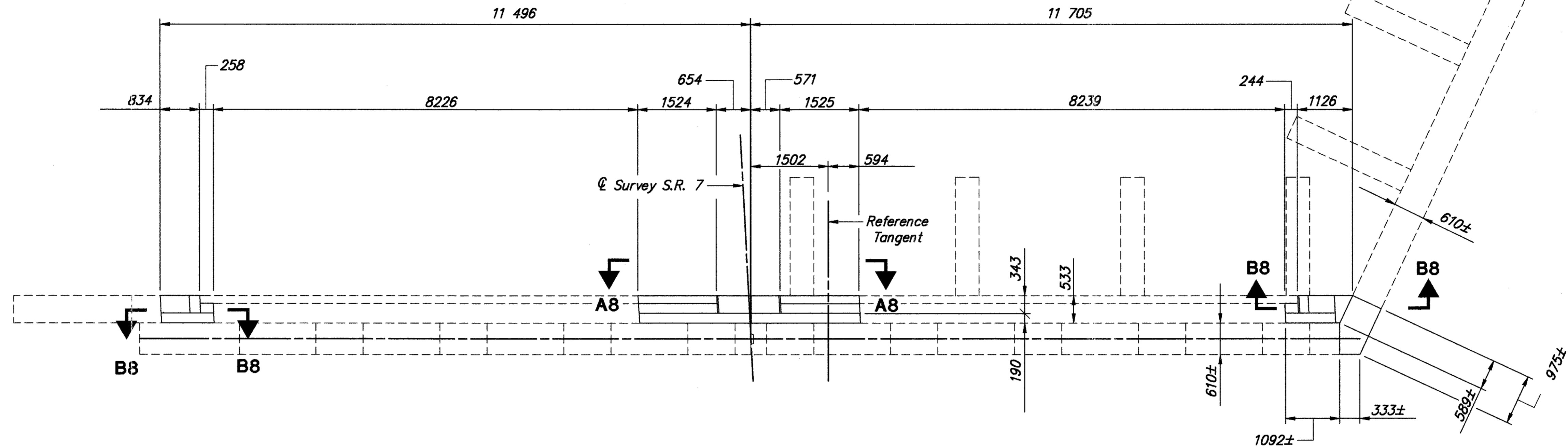
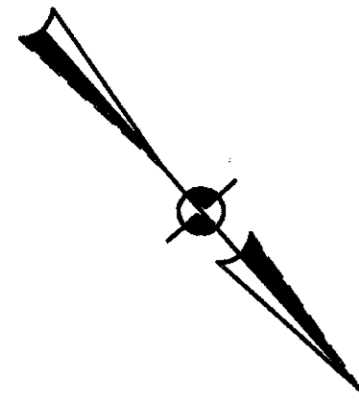
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 BRIDGE NO. BEL-7-36883 L/R  
 S.R. 7 OVER WHEELING TERMINAL R.R.

BEL-7-32.276

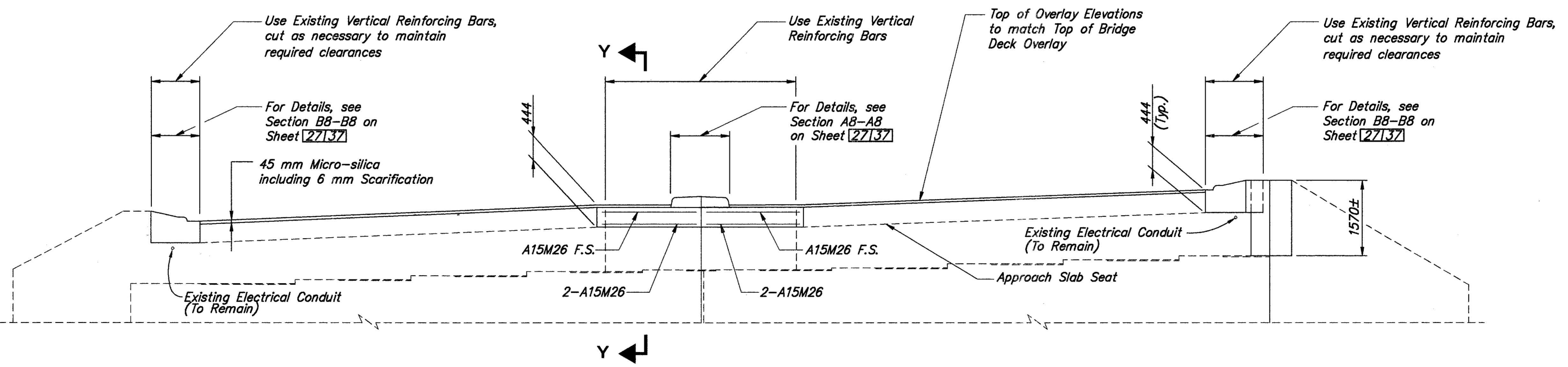
23/37

222  
 242

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PLAN



ELEVATION

DESIGN AGENCY  
 W.E. QUICKSALL & ASSOCIATES INC.  
 554 WEST HIGH AVE.  
 NEW PHILADELPH, OHIO  
 CONSULTING ENGINEERS

DATE  
 10/97  
 REVIEWED  
 wda  
 STRUCTURE FILE NUMBER  
 0700754

DRAWN  
 PMZ  
 REVISIONS

DESIGNED  
 FDH  
 CHECKED  
 ZRP

REAR ABUTMENT DETAILS  
 BRIDGE NO. BEL-7-36683 L/R  
 S.R. 7 OVER WHEELING TERMINAL R.R.

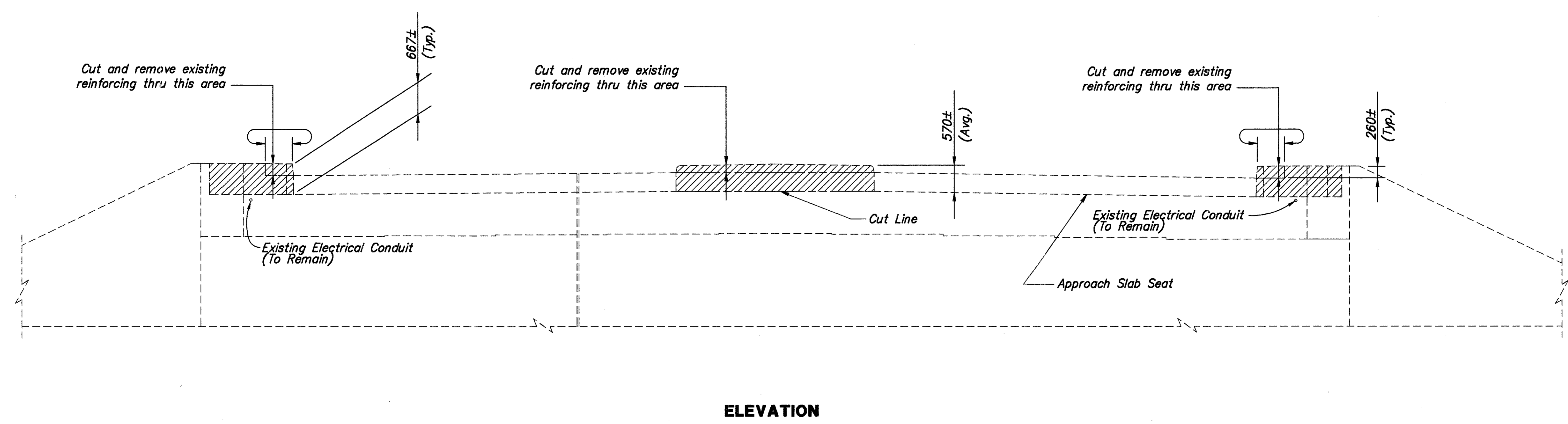
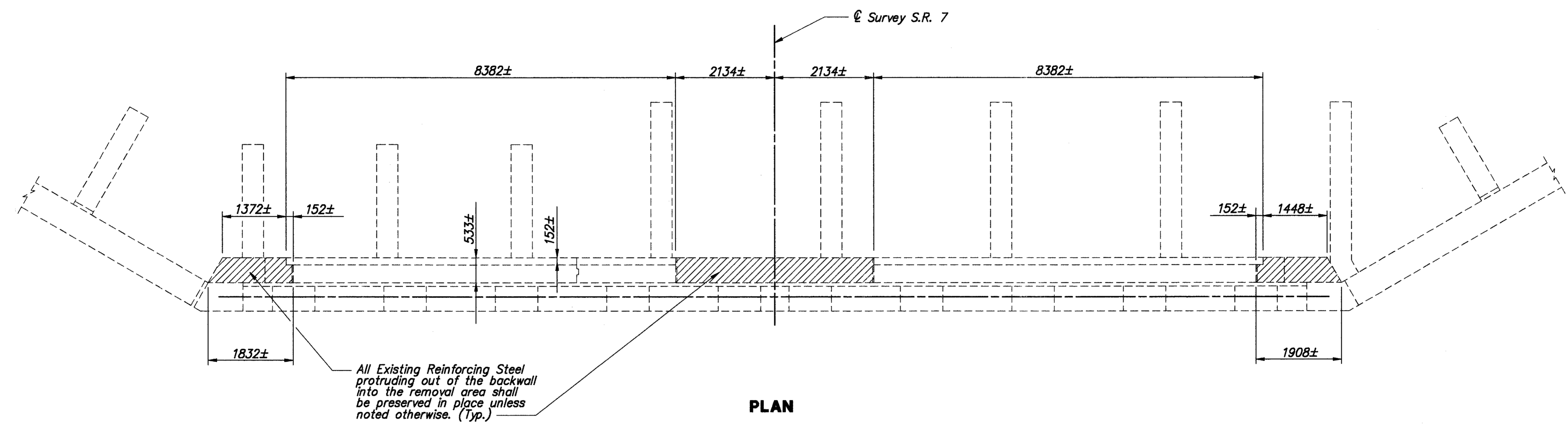
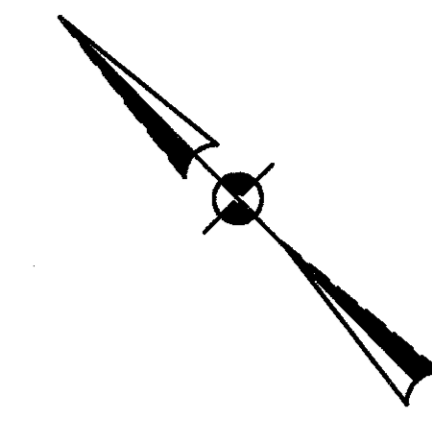
BEL-7-32.276

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223  
 242

15/01/2000 10:00 AM





DESIGN AGENCY  
**W.E. QUICKSALL & ASSOCIATES INC.**  
 554 WEST HIGH AVE.  
 NEW PHILADELPHIA, OHIO  
 CONSULTING ENGINEERS

DATE	10/19/77
REVIEWED	WJD
STRUCTURE FILE NUMBER	0700754
DRAWN	PMZ
DESIGNED	FDH
CHECKED	ZRP

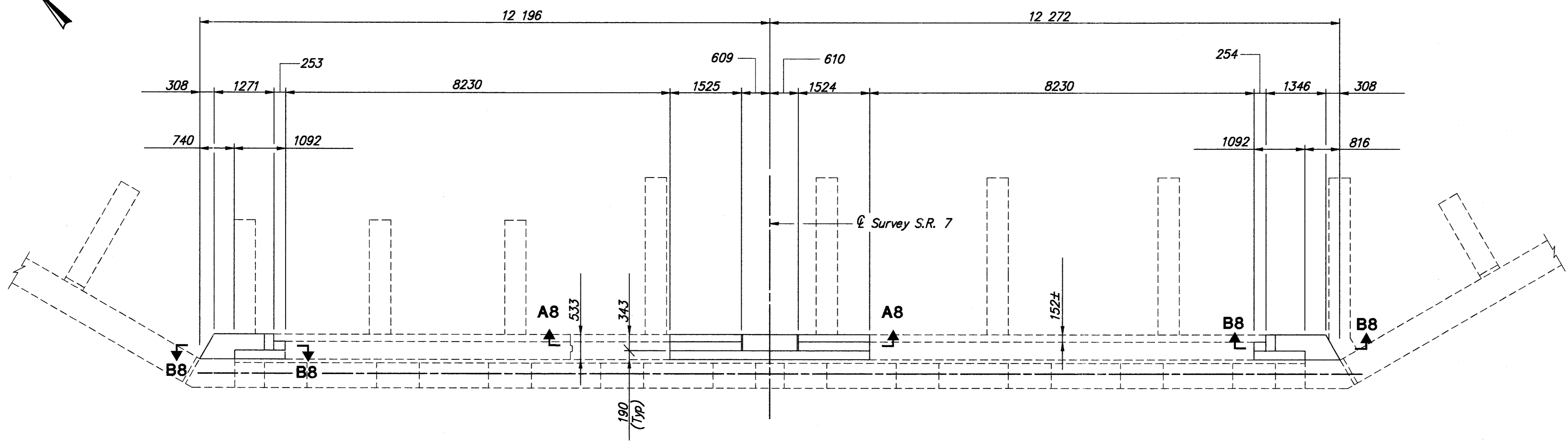
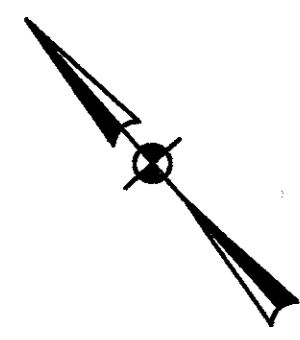
**FORWARD ABUTMENT DETAILS**  
 BRIDGE NO. BEL-7-36683 L/R  
 S.R. 7 OVER WHEELING TERMINAL R.R.

**BEL-7-32.276**

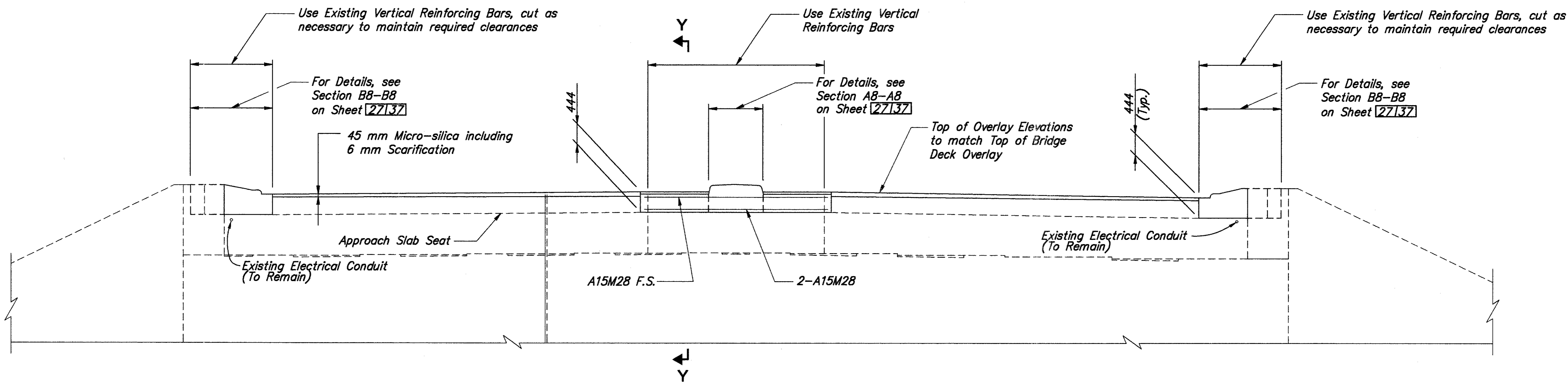
25 / 37

224  
242

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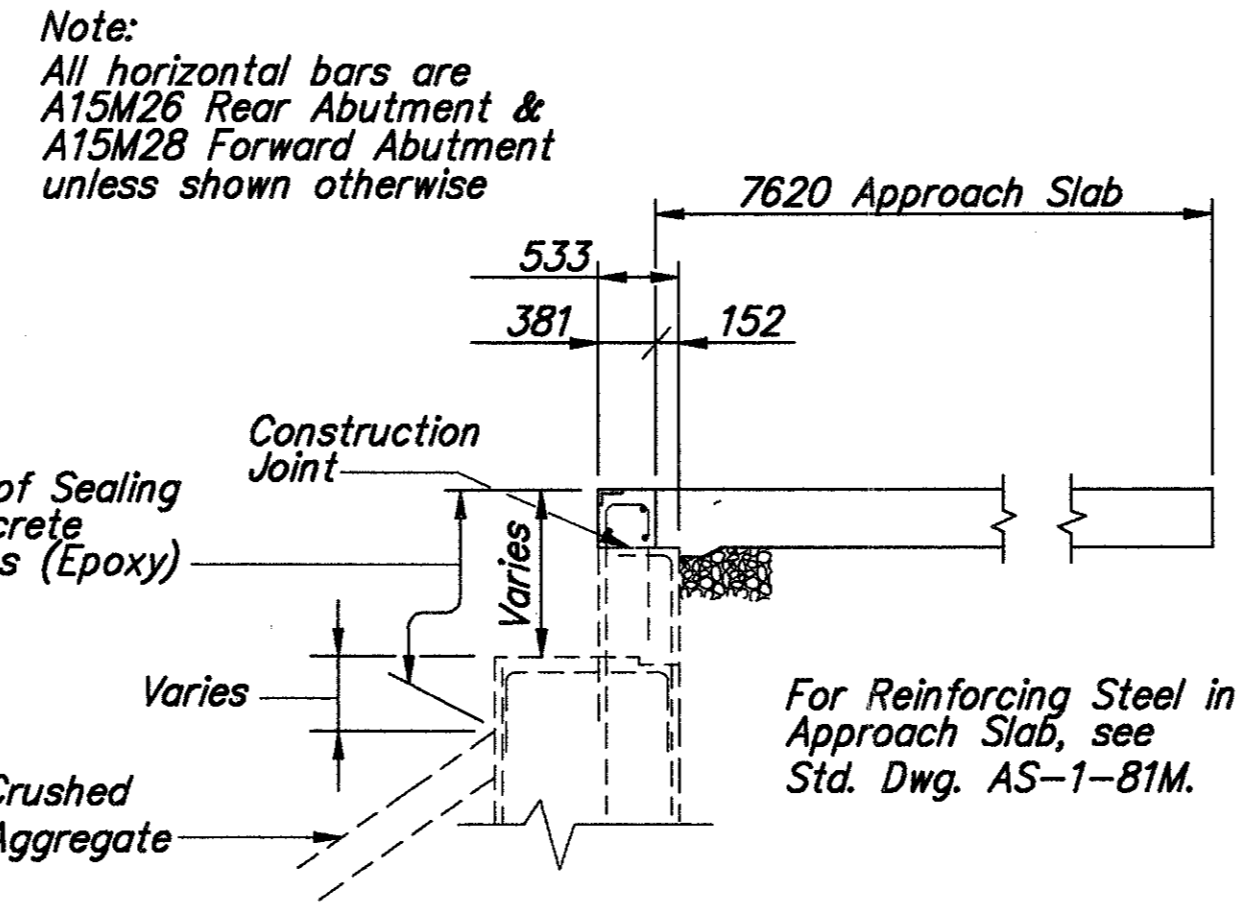
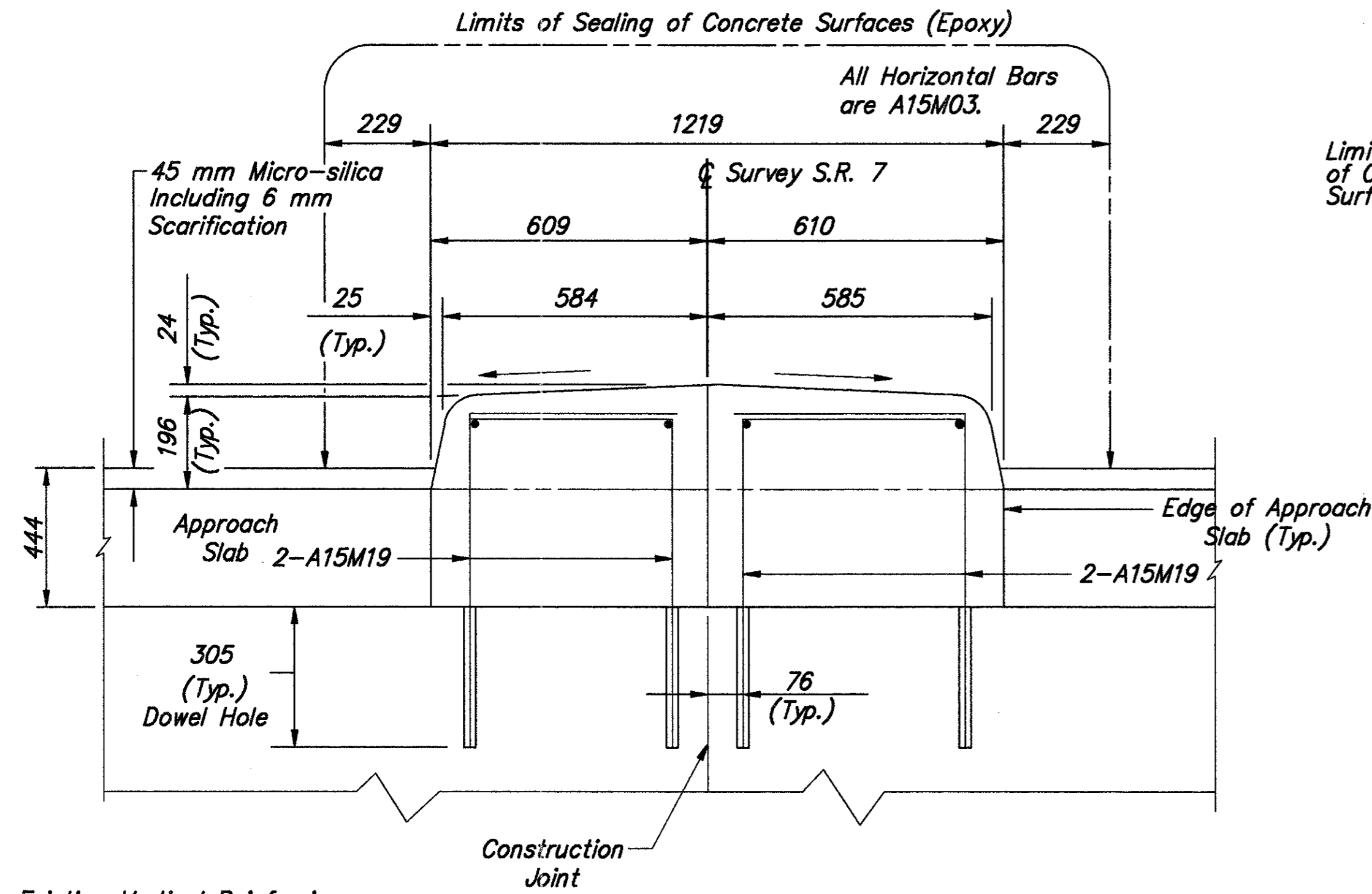
PLAN



ELEVATION

DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS	
DATE 10/97	STRUCTURE FILE NUMBER 0700754
REVIEWED WJG	CHECKED ZRP
DRAWN PMZ	REVISIONS
<b>FORWARD ABUTMENT DETAILS</b> BRIDGE NO. BEL-7-36683 L/R S.R. 7 OVER WHEELING TERMINAL R.R.	
<b>BEL-7-32.276</b>	
26 / 37	
225 242	

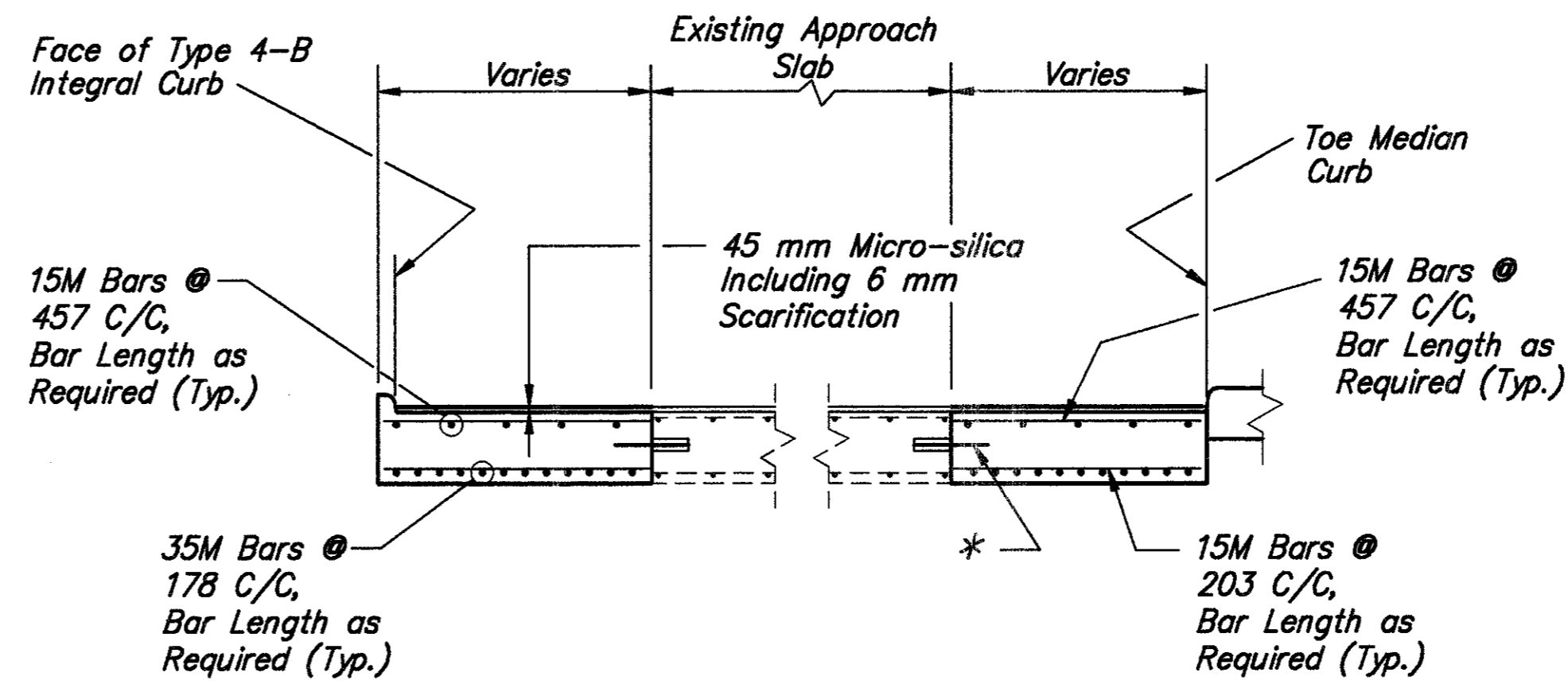
\S225-20\225276.dwg - 05/22/97 - 10:58:38



**SECTION Y-Y**  
(Section Thru Widened Approach Slab)

Existing Vertical Reinforcing to Remain in Place, Cut as Required to Maintain Clearances

**LEFT STRUCTURE      RIGHT STRUCTURE**  
**SAFETY TYPE CURB MEDIAN**  
**NORMAL SECTION A8-A8**

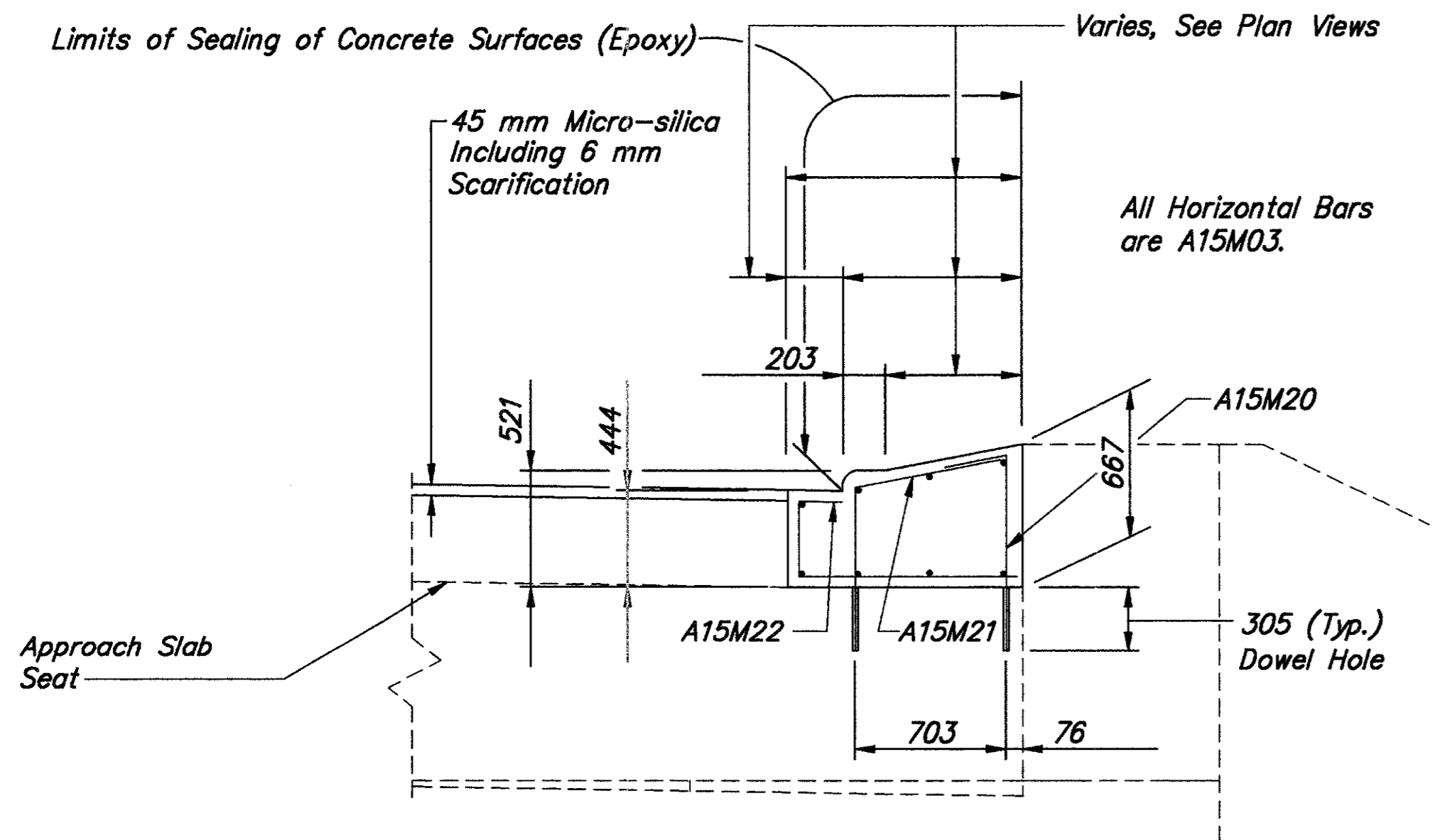


**APPROACH SLAB WIDENING**  
**DETAIL AT CURBED APPROACH SLAB**

(Left Structure Shown, Right Structure Similar)

For details and notes not shown, see St'd Dwg. AS-1-81M

\* Longitudinal Joint shall be constructed per Standard Drawing BP-2.1M. Spacing of the tie bars or hook bolts shall be no more than 762 nor less than 610.



**SECTION B8-B8**

Existing Vertical Reinforcing to Remain in Place, Cut as Required to Maintain Clearances

For Rear Abutment Plan and Elevation, See Sheet **241.37**

For Forward Abutment Plan and Elevation, See Sheet **261.37**

DESIGN AGENCY  
**W.E. QUICKSALL & ASSOCIATES INC.**  
554 WEST HIGH AVE  
NEW PHILADELPHIA, OHIO  
CONSULTING ENGINEERS

DATE  
10/97  
REVIEWED  
wda  
STRUCTURE FILE NUMBER  
0700754

DRAWN  
PMZ  
CHECKED  
ZED

**ABUTMENT DETAILS**  
BRIDGE NO. BEL-7-3683 L/R  
S.R. 7 OVER WHEELING TERMINAL R.R.

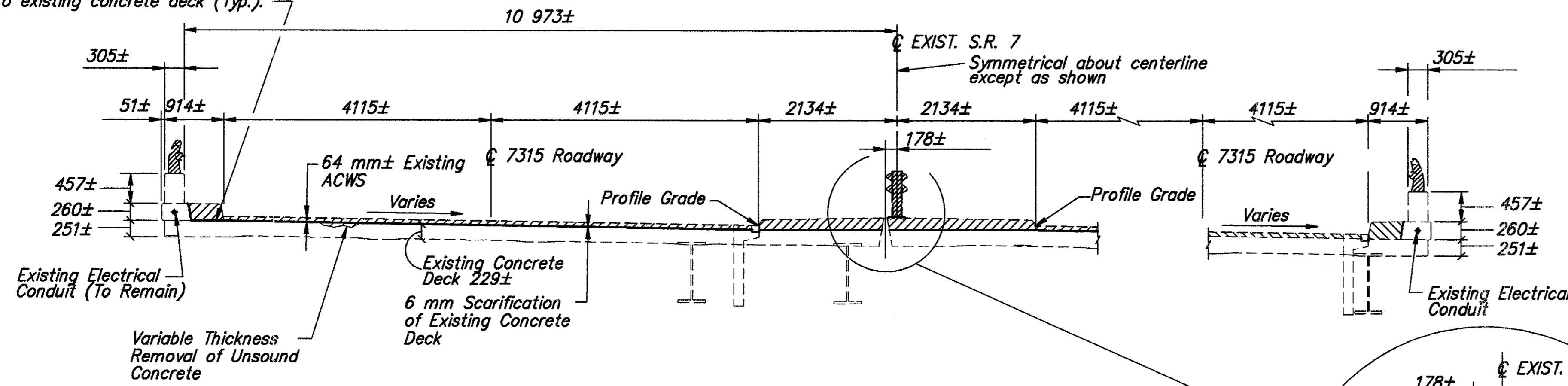
**BEL-7-32.276**

27/37

226  
242

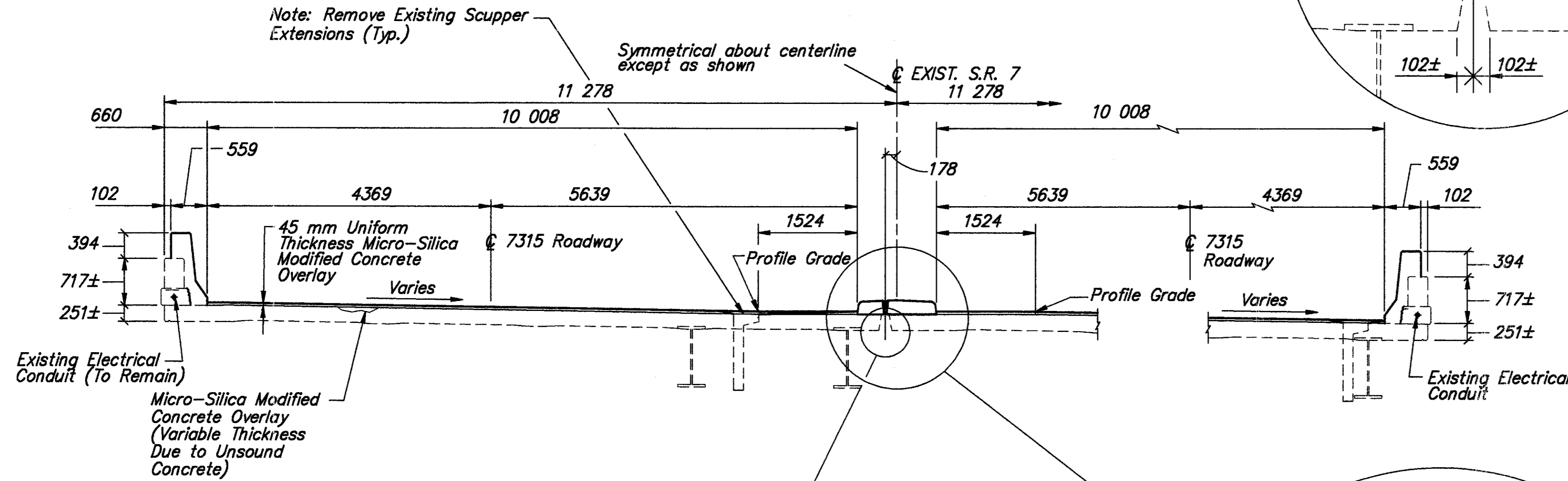
E:\3321-01\3321AB07.dwg - OCT 22, 1997 - 10:26:23

Existing Reinforcing to be removed down to existing concrete deck (Typ.).

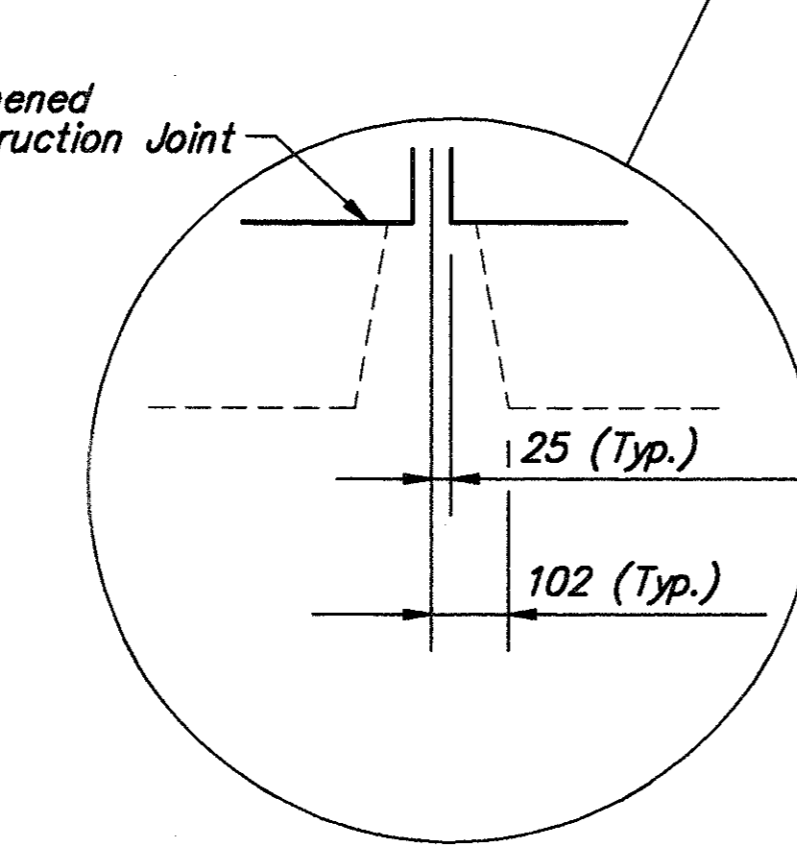
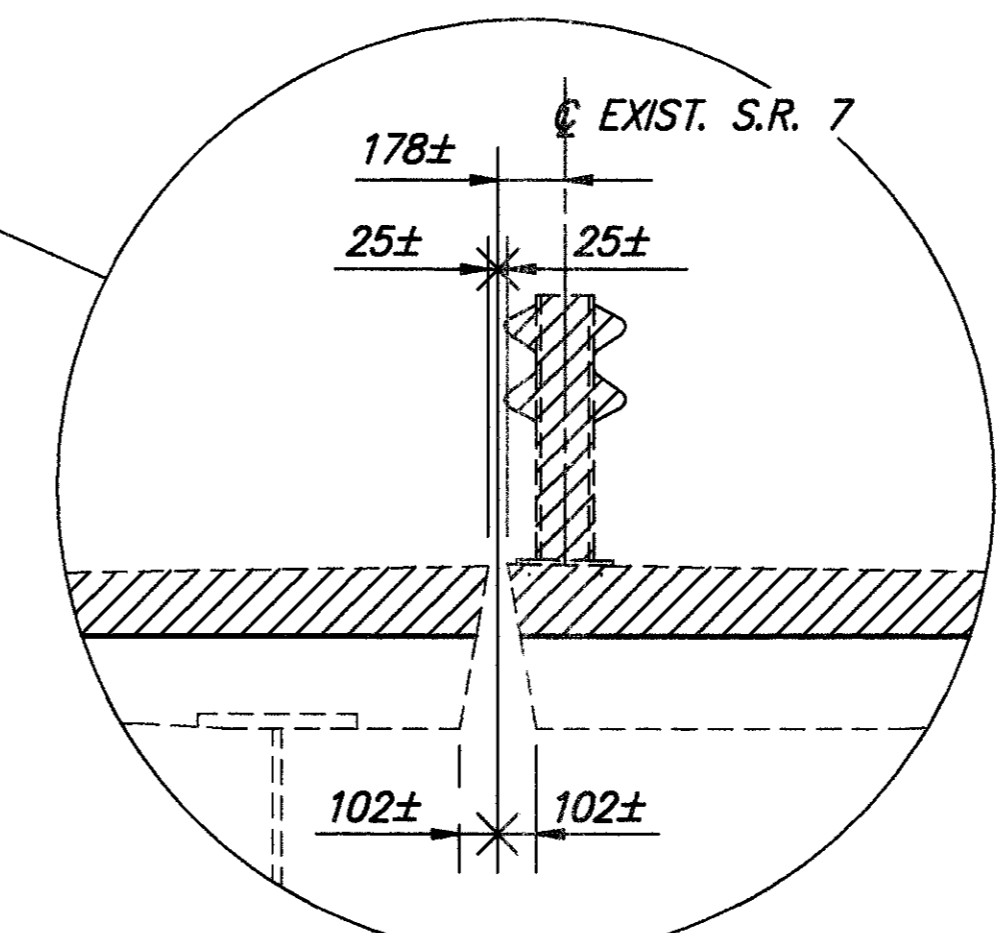


EXISTING TRANSVERSE SECTION

Denotes Removal

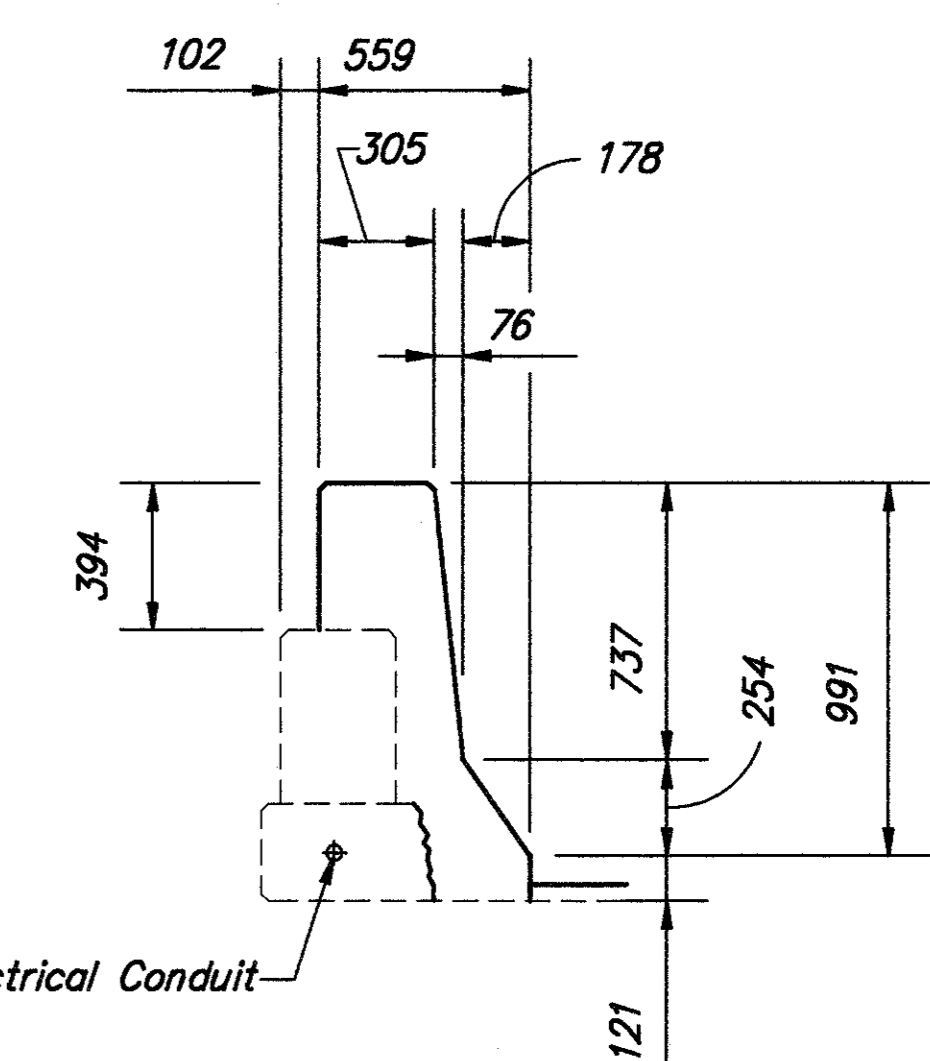
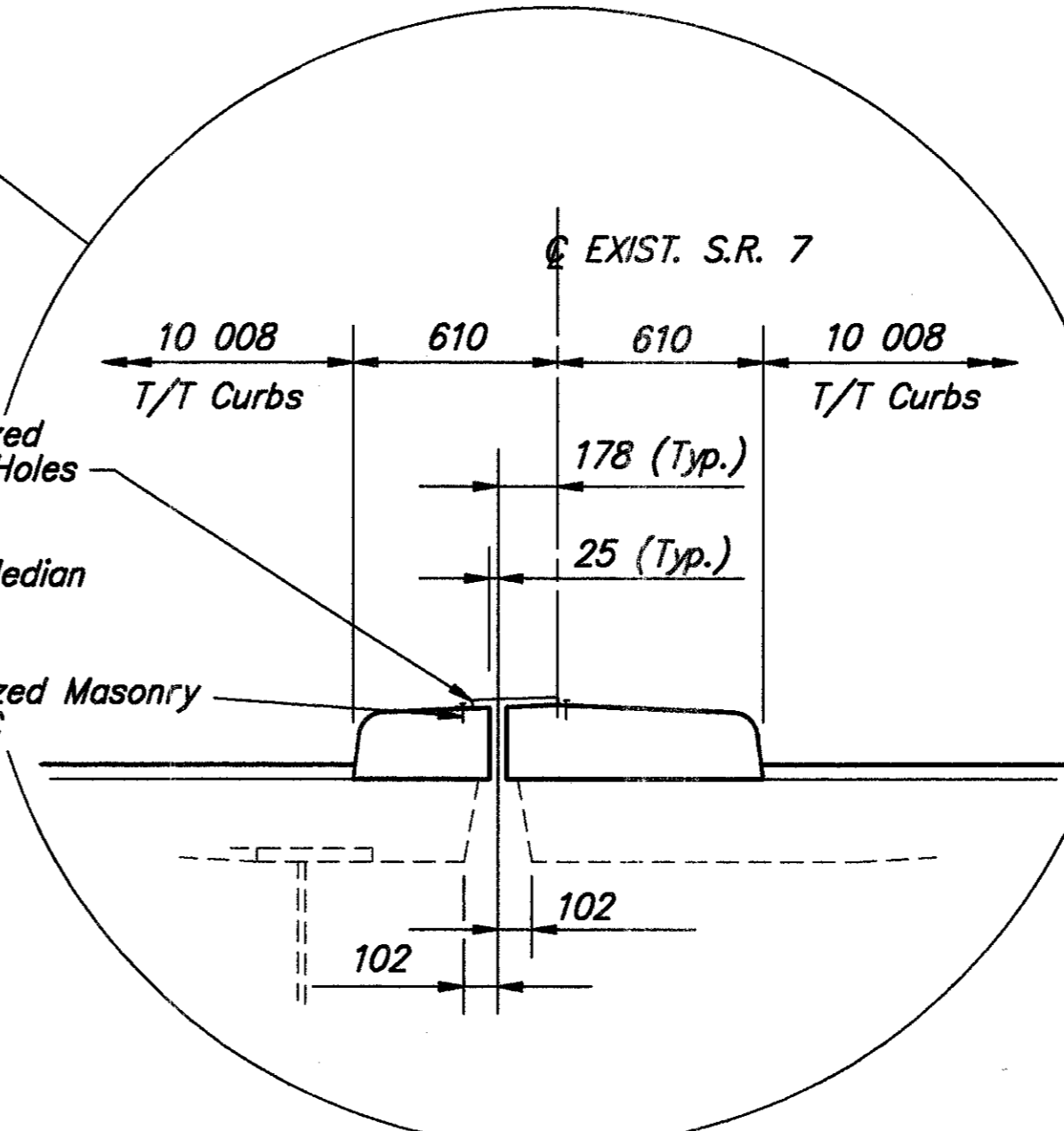


PROPOSED TRANSVERSE SECTION



Elastomeric Sheet with 6 mm x 76 mm Galvanized Steel Bar with 9 mm Ø Holes @ 450 C/C (Structural Joint or Joint Sealer, Misc.: Concrete Median Barrier Sealer)

6 mm Ø Galvanized Masonry Nails @ 450 C/C



TYPICAL OUTSIDE RAILING REFACING

For Scupper Details And Notes, See Sheet 33/37

For Parapet & Median Curb Reinforcing Details, See Sheets 29/37, 30/37, 31/37 & 32/37

DESIGN AGENCY  
**W.E. QUICKSALL & ASSOCIATES INC.**  
 554 WEST HIGH AVE.  
 NEW PHILADELPHIA, OHIO  
 CONSULTING ENGINEERS

DATE: 10/97  
 REVIEWED: wdc  
 DRAWN: CFD  
 DESIGNED: FDH  
 CHECKED: ZRP

STRUCTURE FILE NUMBER: 0700754

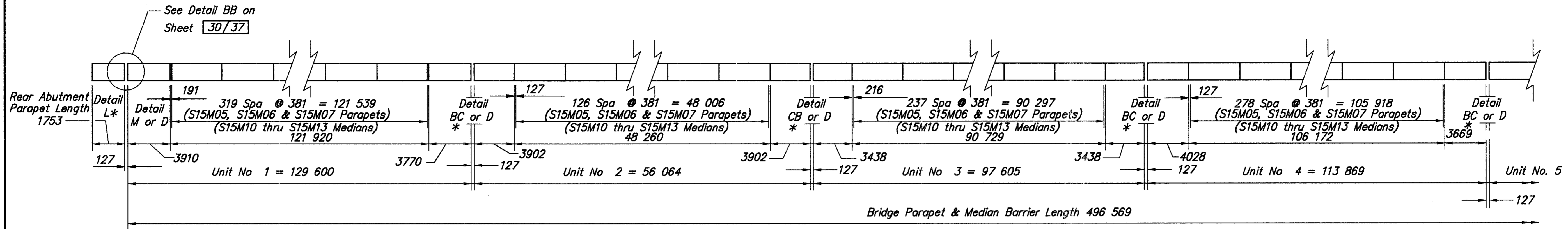
**SUPERSTRUCTURE DETAILS**  
 BRIDGE NO. BEL-7-36883 L/R  
 S.R. 7 OVER WHEELING TERMINAL R.R.

**BEL-7-32.276**

28/37

227  
 242

1:0321-01/S021TR.dwg - OCT 22, 1997 - 10:27:48

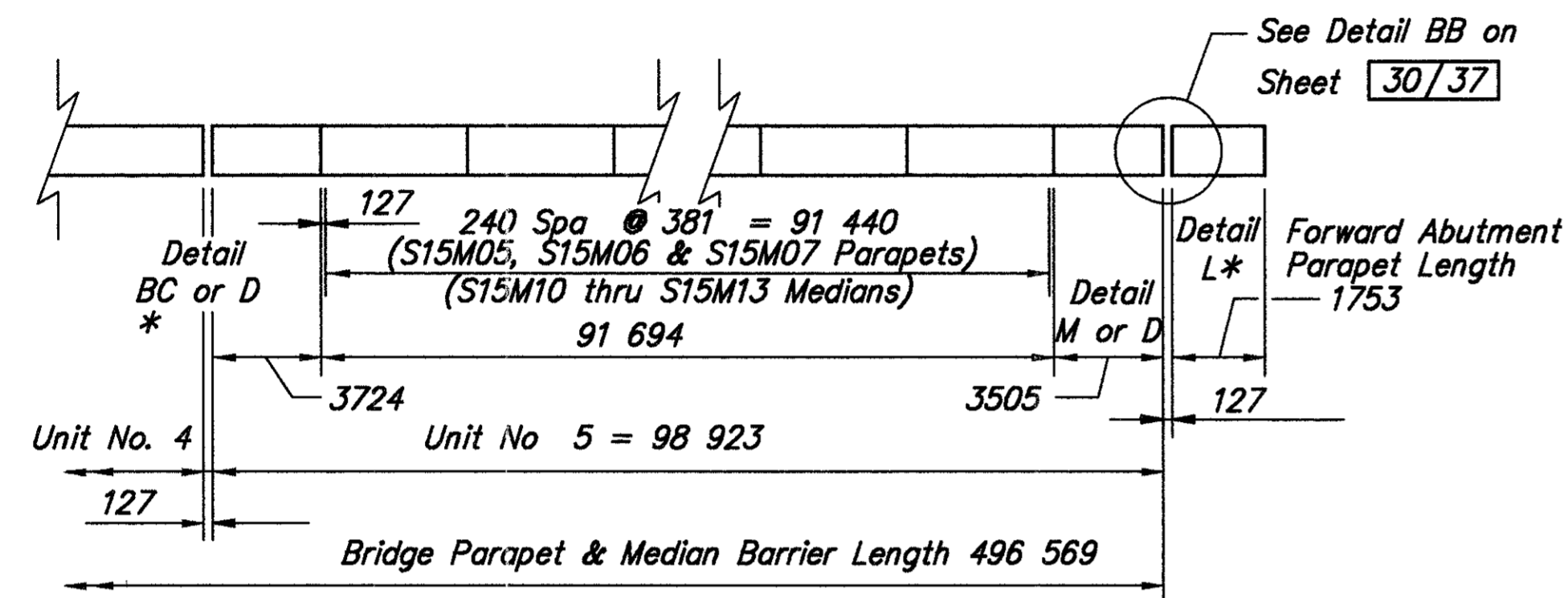


**BEL-7-32283 L/R**

(Exterior Parapets & Center Median Barrier)

For Abutment Details, See Sheets **7/37** & **9/37**

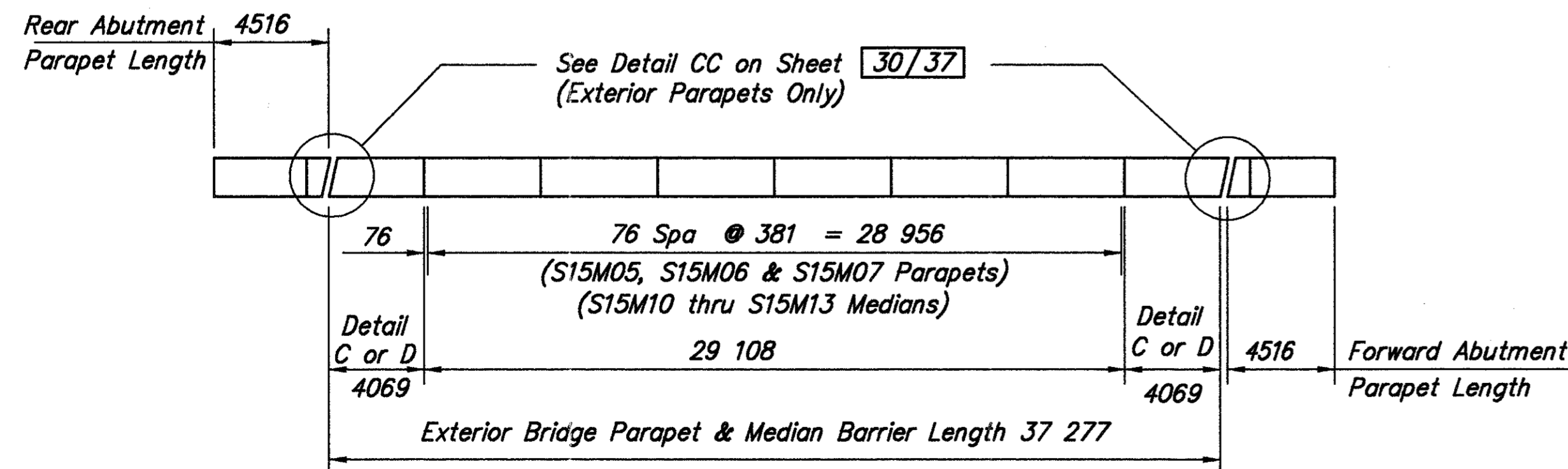
For Light Pole Anchor Locations, See Sheet **1/37**



For BEL-7-36164 Parapet Details and Notes,  
See Sheets **14/37**, **15/37**, **16/37** & **32/37**

\*(Exterior Parapets Only)

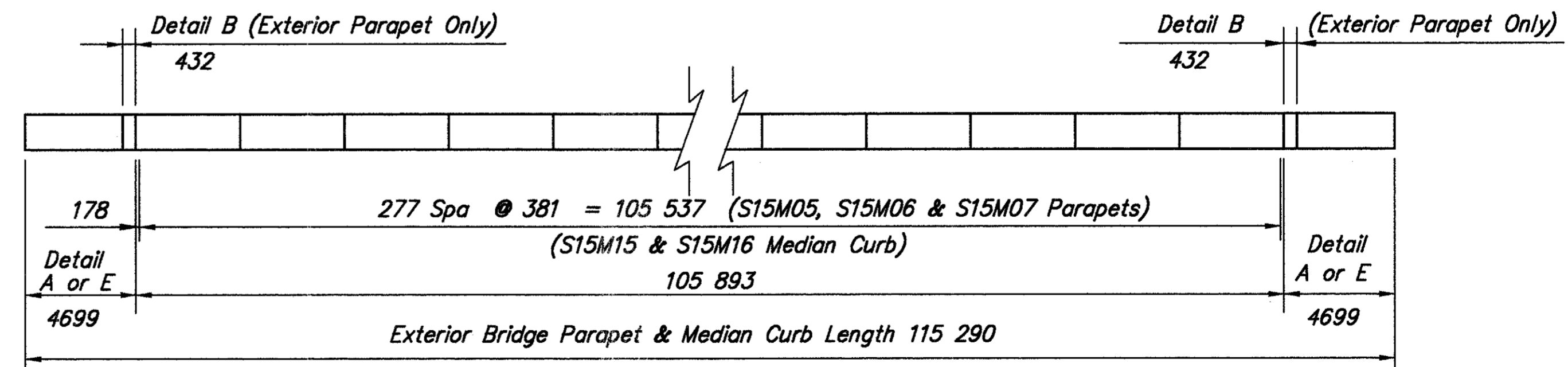
Shrinkage Control Joints shall be placed in the new concrete at the same location as the existing deflection joints and shall be made at right angles to the deck by sawing to match alignment of existing deflection joints.



**BEL-7-36368 L/R**

(Exterior Parapets & Center Median Barrier)

For Abutment Details, See Sheets **19/37** & **20/37**



**BEL-7-36683 L/R**

(Exterior Parapets & Center Median Curb)

For Median Details, See Sheet **32/37**

For Parapet Sections, See Sheets **31/37** & **32/37**

For Detail A, B, C, M, BC, & CB,  
See Sheet **30/37**

DESIGN AGENCY  
W.E. QUICKSALL & ASSOCIATES INC.  
554 WEST HIGH AVE.  
NEW PHILADELPHIA, OHIO  
CONSULTING ENGINEERS

DATE  
10/97

REVISION  
wcd

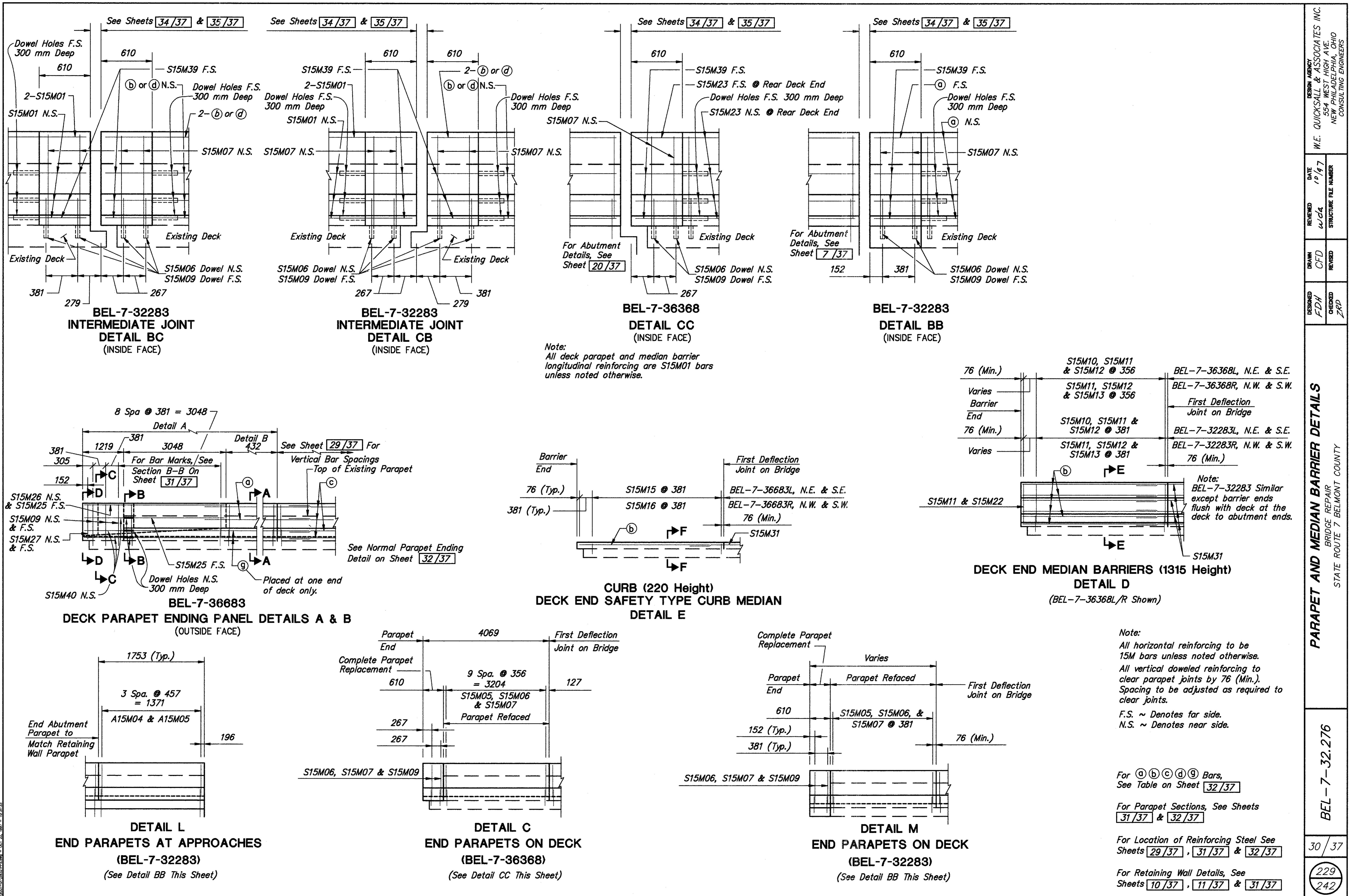
DESIGNED  
FDH

PARAPET AND MEDIAN BARRIER DETAILS  
BRIDGE REPAIR  
STATE ROUTE 7 BELMONT COUNTY

BEL-7-32.276

29/37

228  
242



DESIGN AGENCY  
**W. E. QUICKSALL & ASSOCIATES INC.**  
 554 WEST HIGH AVE.  
 NEW PHILADELPHIA, OHIO  
 CONSULTING ENGINEERS

DATE  
 10/97

REVIEWED  
 wda

STRUCTURE FILE NUMBER

DRAWN  
 CFD

DESIGNED  
 FDH

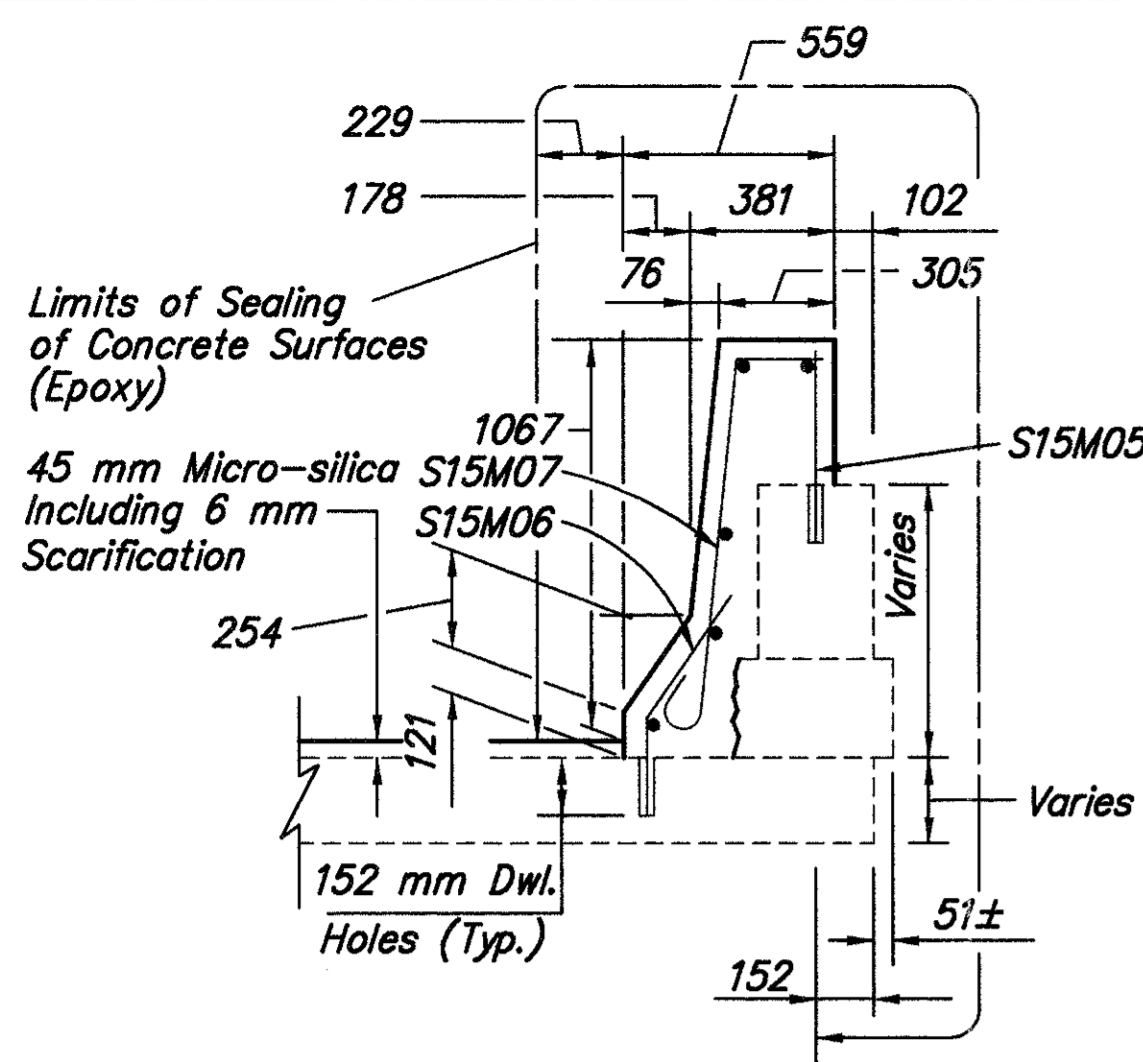
CHECKED  
 ZRP

**PARAPET AND MEDIAN BARRIER DETAILS**  
 BRIDGE REPAIR  
 STATE ROUTE 7 BELMONT COUNTY

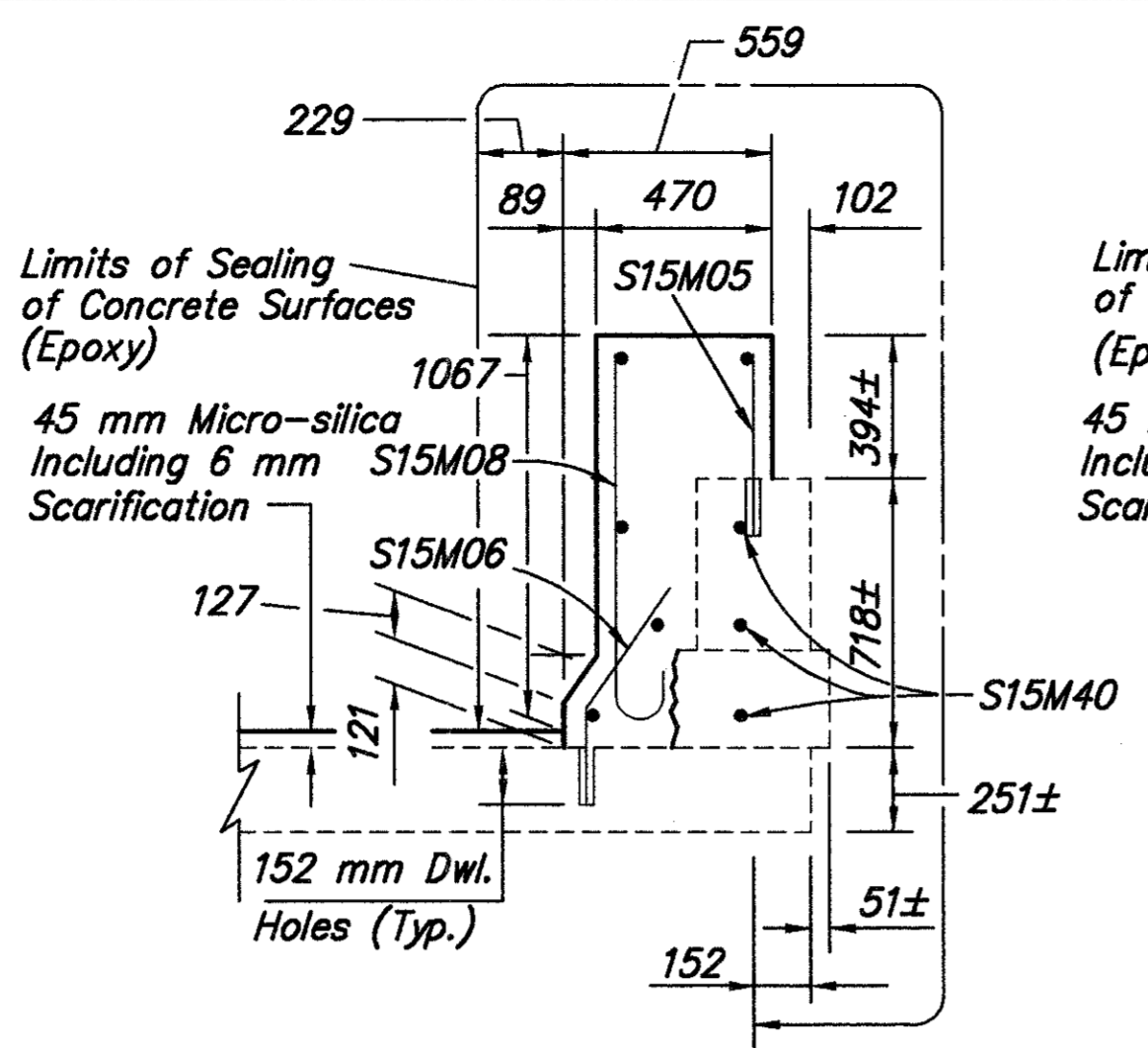
**BEL-7-32.276**

30/37

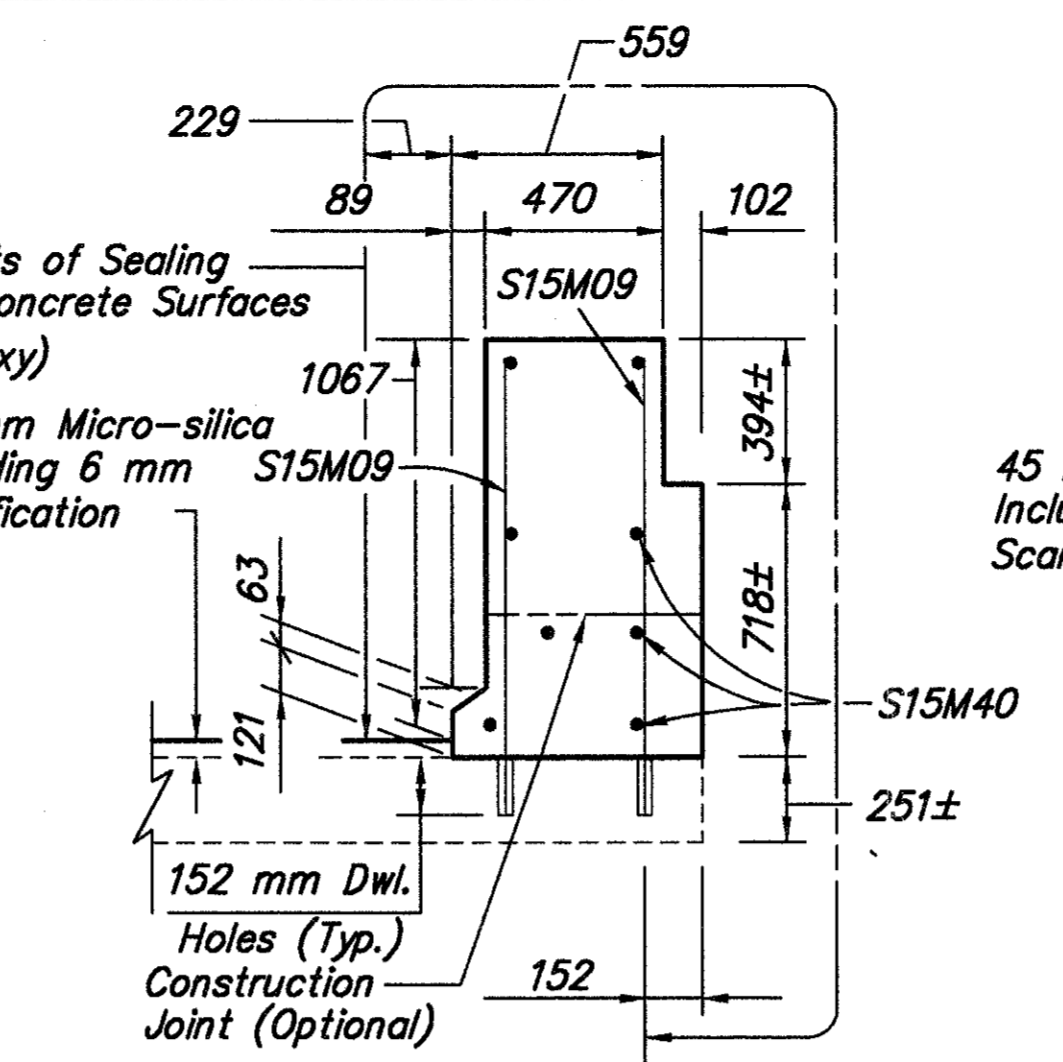
229  
 242



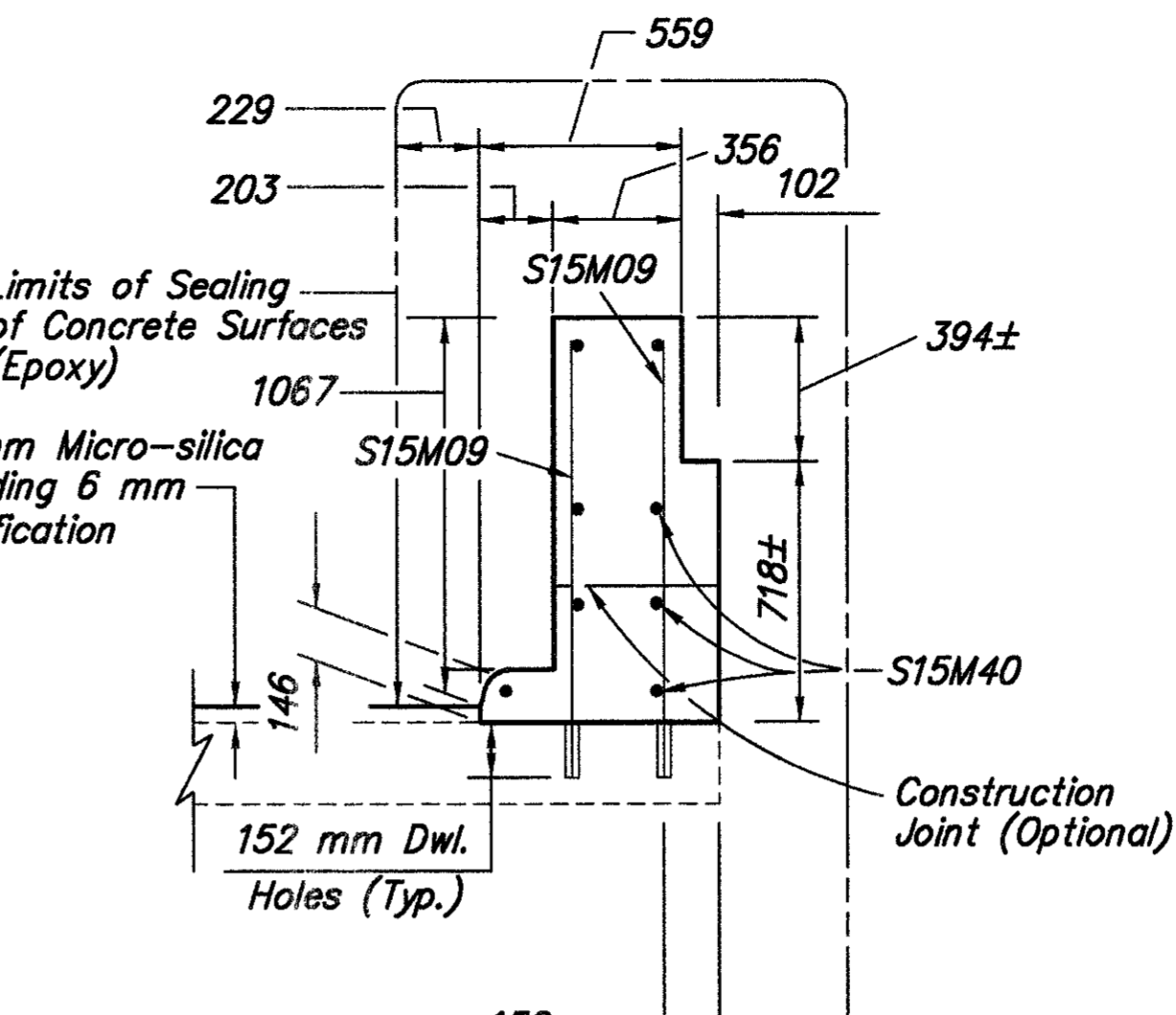
**SECTION A-A**  
(Typical Refacing Section)



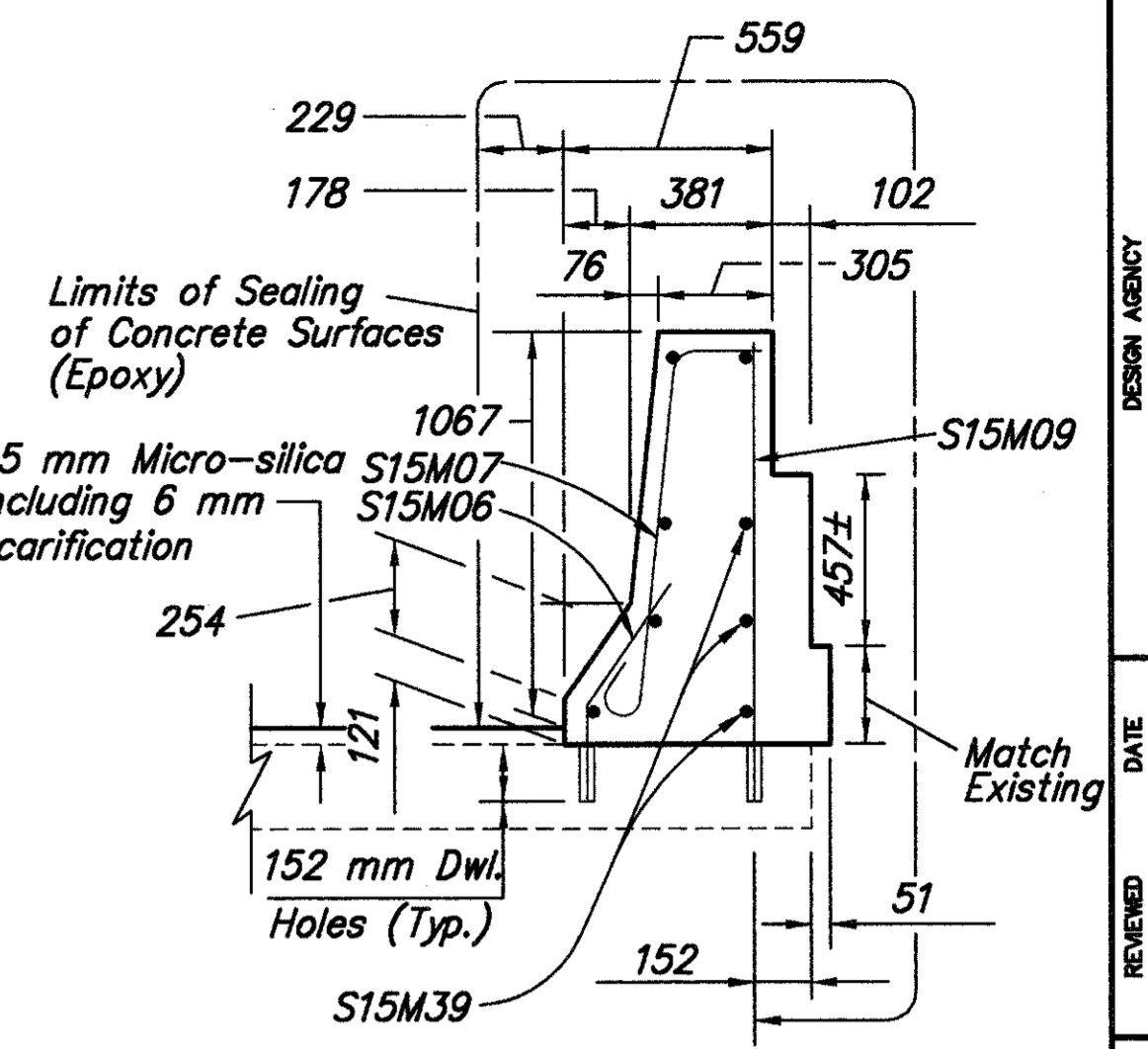
**SECTION B-B**  
(BEL-7-36683 Only)



**\*\* SECTION C-C**  
(BEL-7-36683 Only)

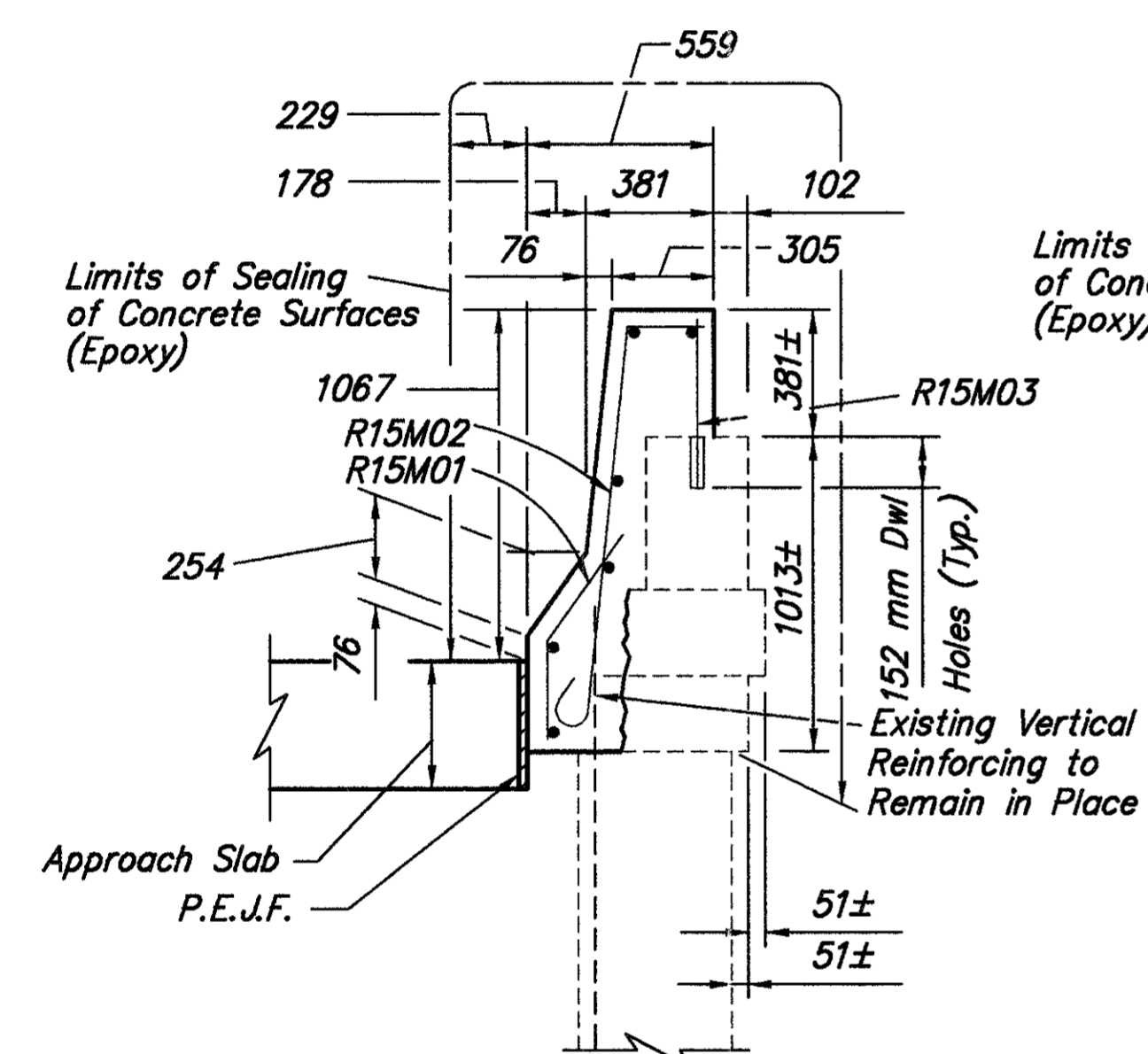


**\*\* SECTION D-D**  
(BEL-7-36683 Only)

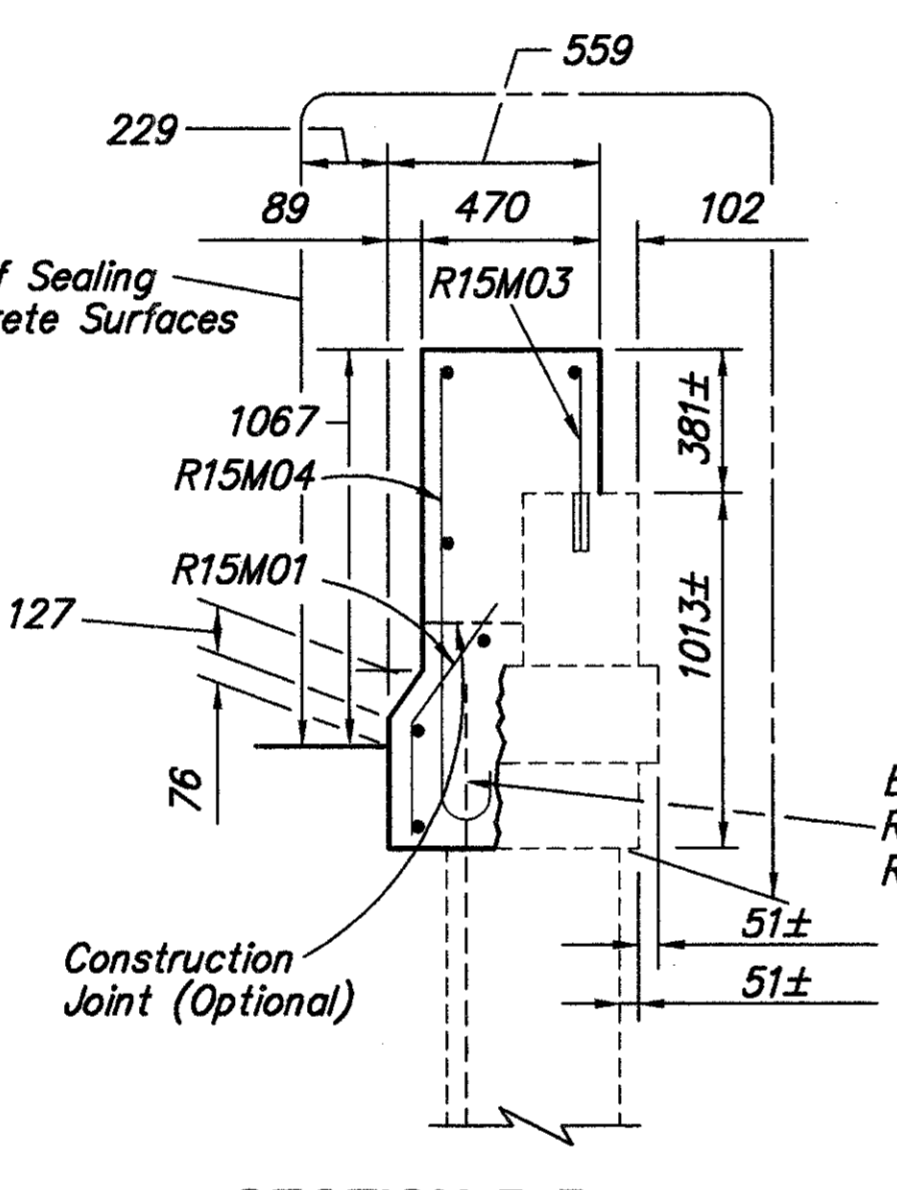


**(610 mm) REPLACEMENT SECTION AT DECK ENDS**  
(BEL-7-32283 & BEL-7-36368)

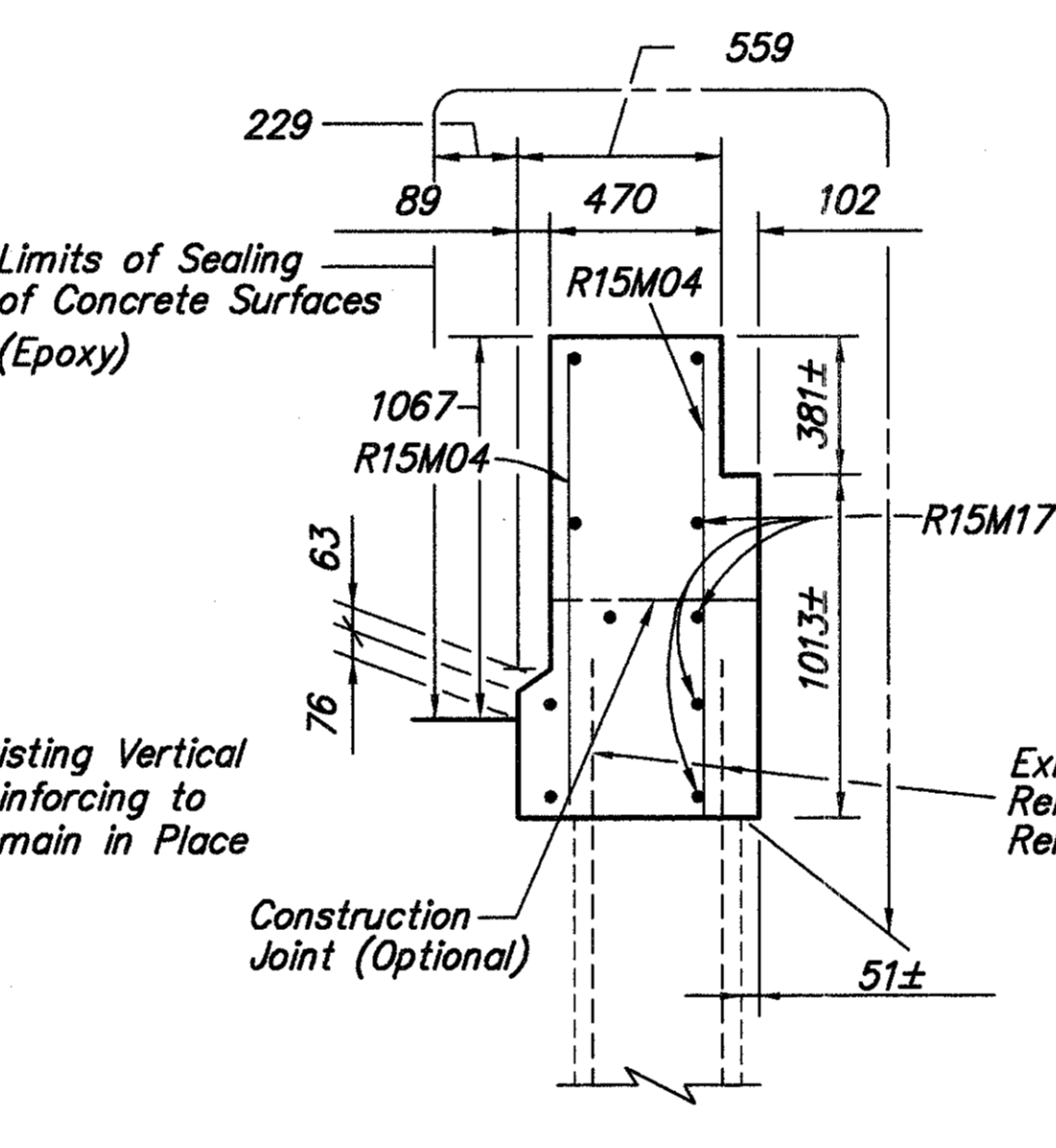
**DECK OUTSIDE PARAPET REFACING**



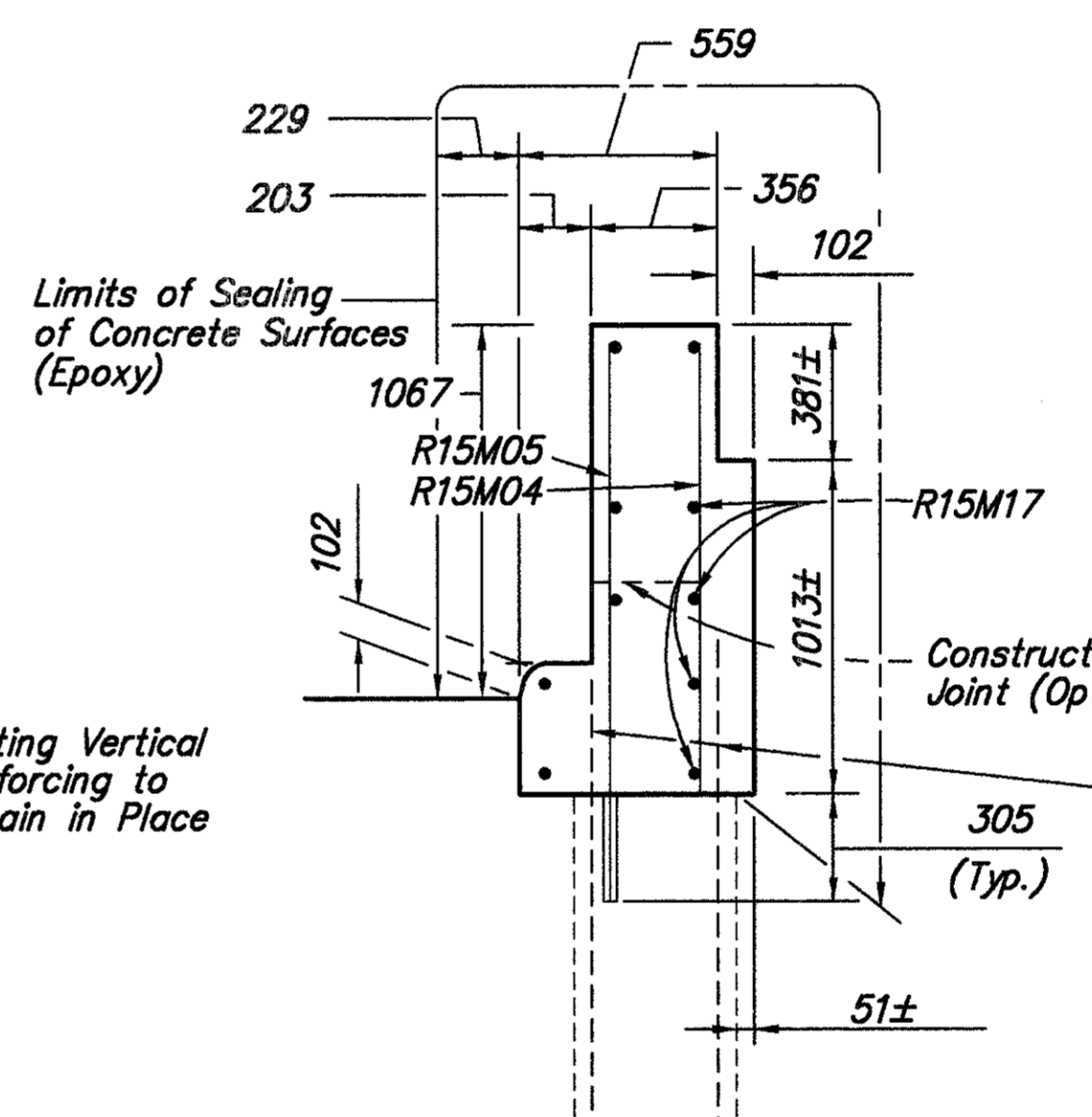
**SECTION A-A**



**SECTION B-B**  
**RETAINING WALL OUTSIDE PARAPET REFACING (BEL-7-32283 ONLY)**



**\*\* SECTION C-C**



**\*\* SECTION D-D**

Note:  
All horizontal reinforcing bars to be 15M bars unless noted otherwise.  
For Additional Retaining Wall parapet Details, See Sheets 10/37, 11/37 & 32/37

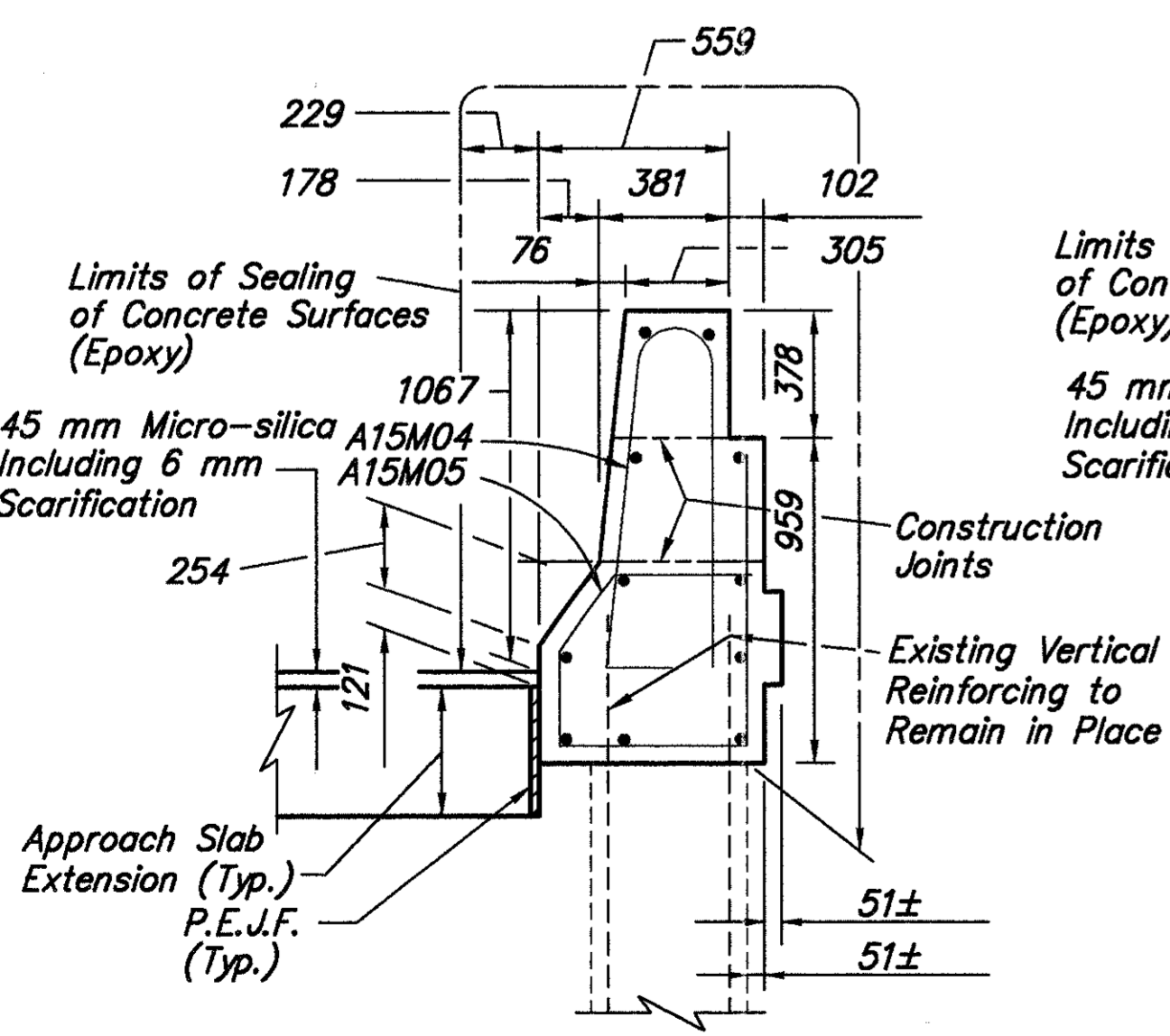
BEL-7-32283:  
For Additional Parapet Details, See Sheets 7/37, 9/37, 29/37, 30/37 & 32/37

BEL-7-36368:  
For Additional Parapet Details, See Sheets 19/37, 20/37, 29/37, 30/37 & 32/37

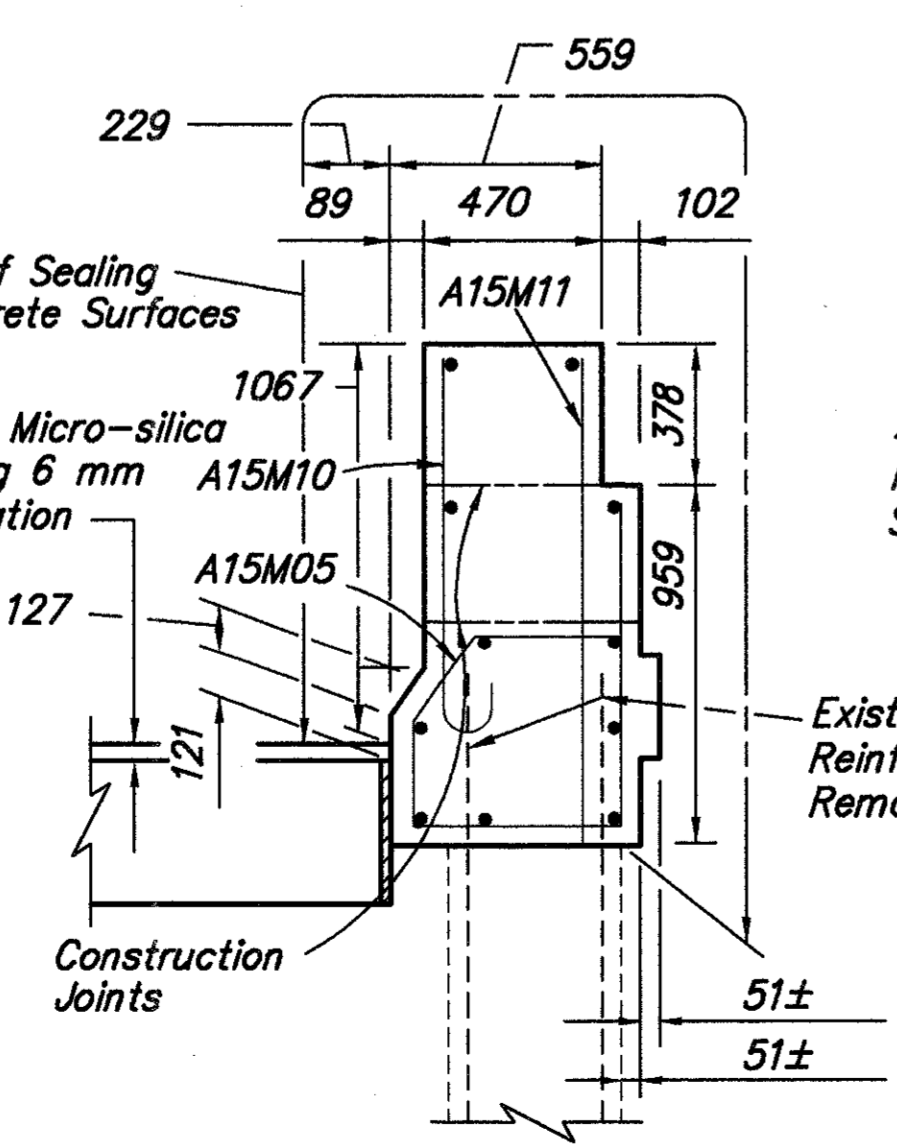
BEL-7-36683:  
For Additional Parapet Details, See Sheets 29/37, 30/37 & 32/37

For Median Barrier & Median Curb Sections, See Sheets 32/37

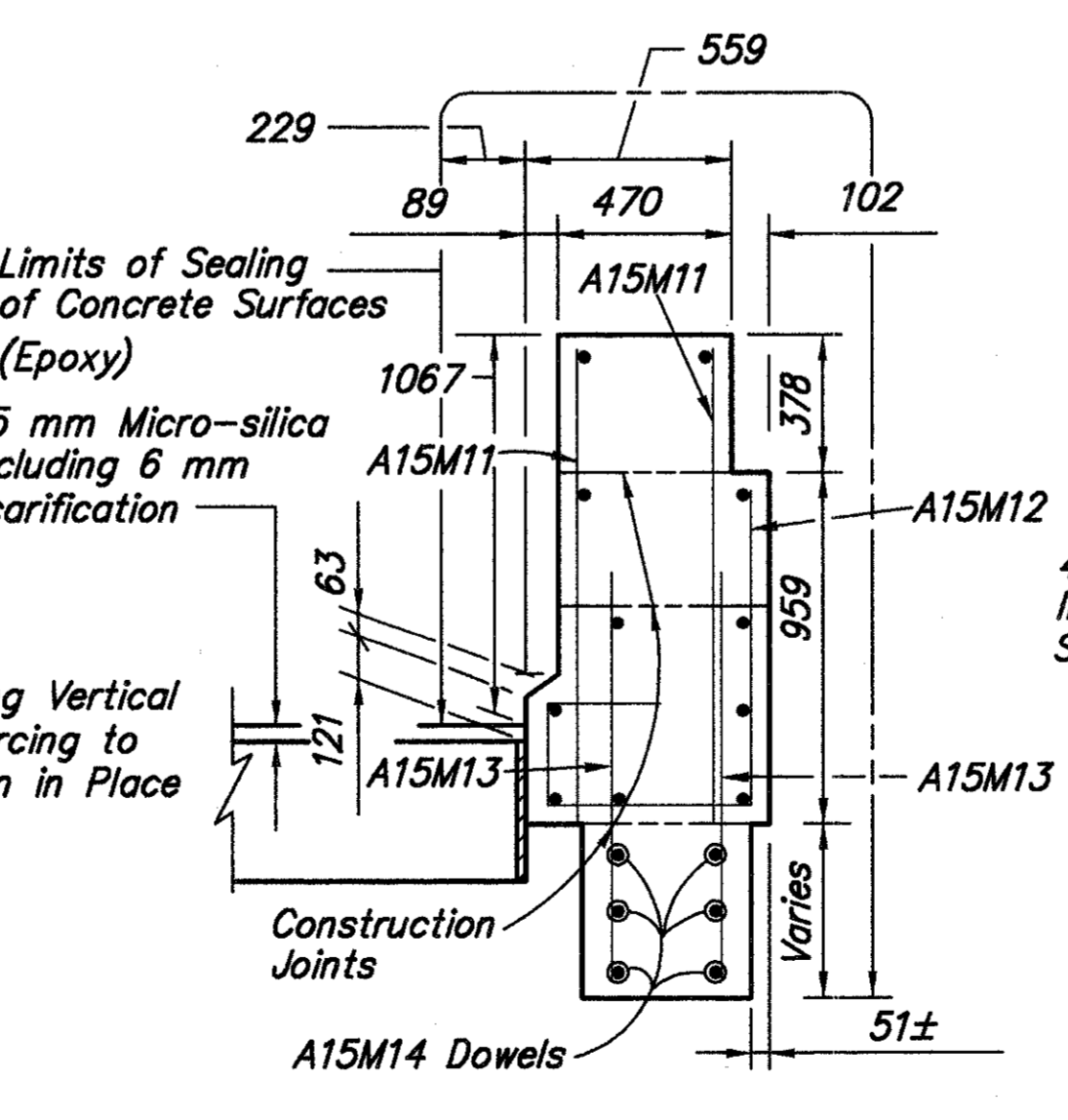
Dwl. Denotes Dowel Bars.  
\*\* Denotes complete parapet replacement, not refacing.



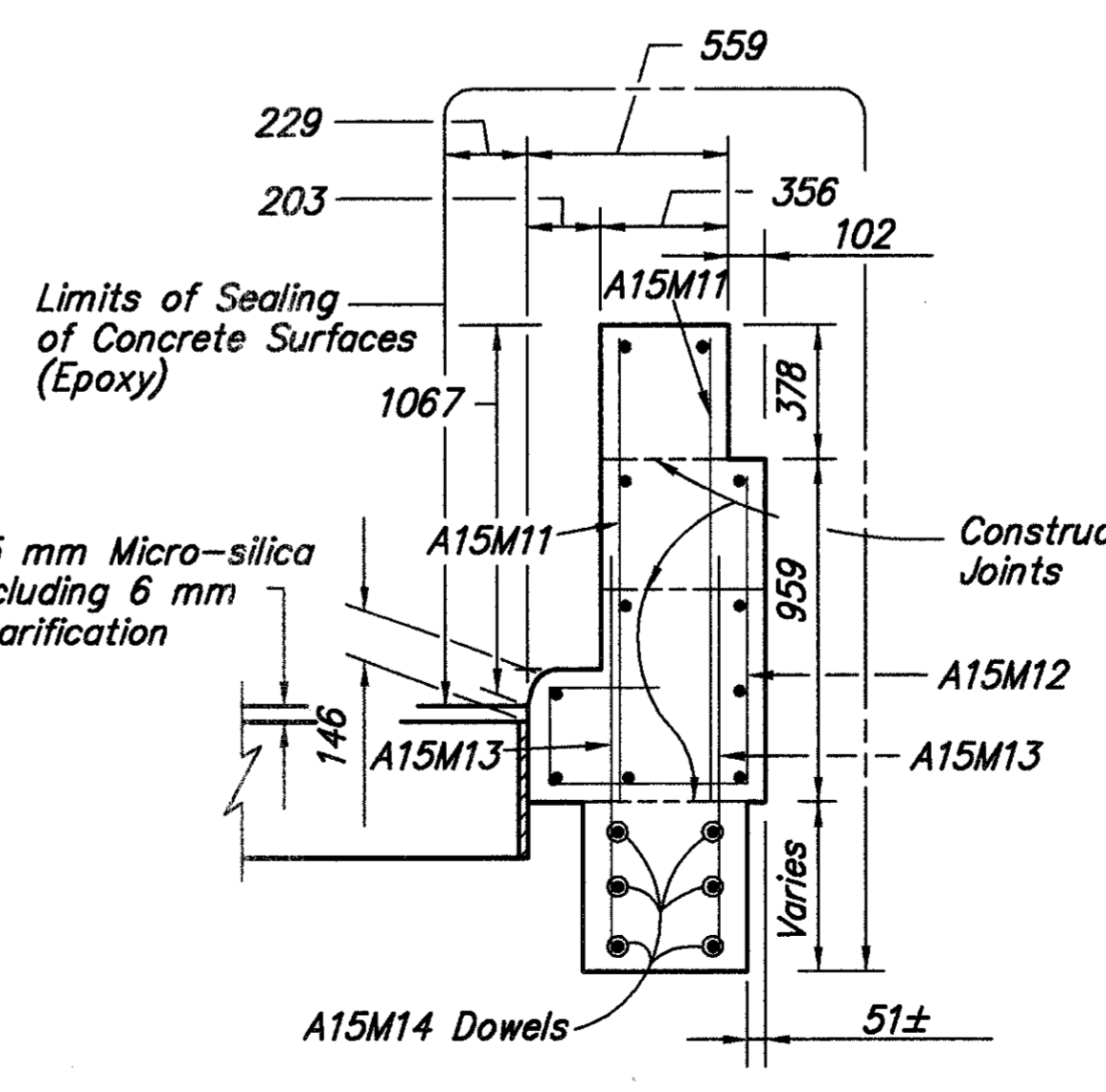
**SECTION A-A**  
(BEL-7-32283 & BEL-7-36368)



**SECTION B-B**  
(BEL-7-36368 Only)



**SECTION C-C**  
(BEL-7-36368 Only)

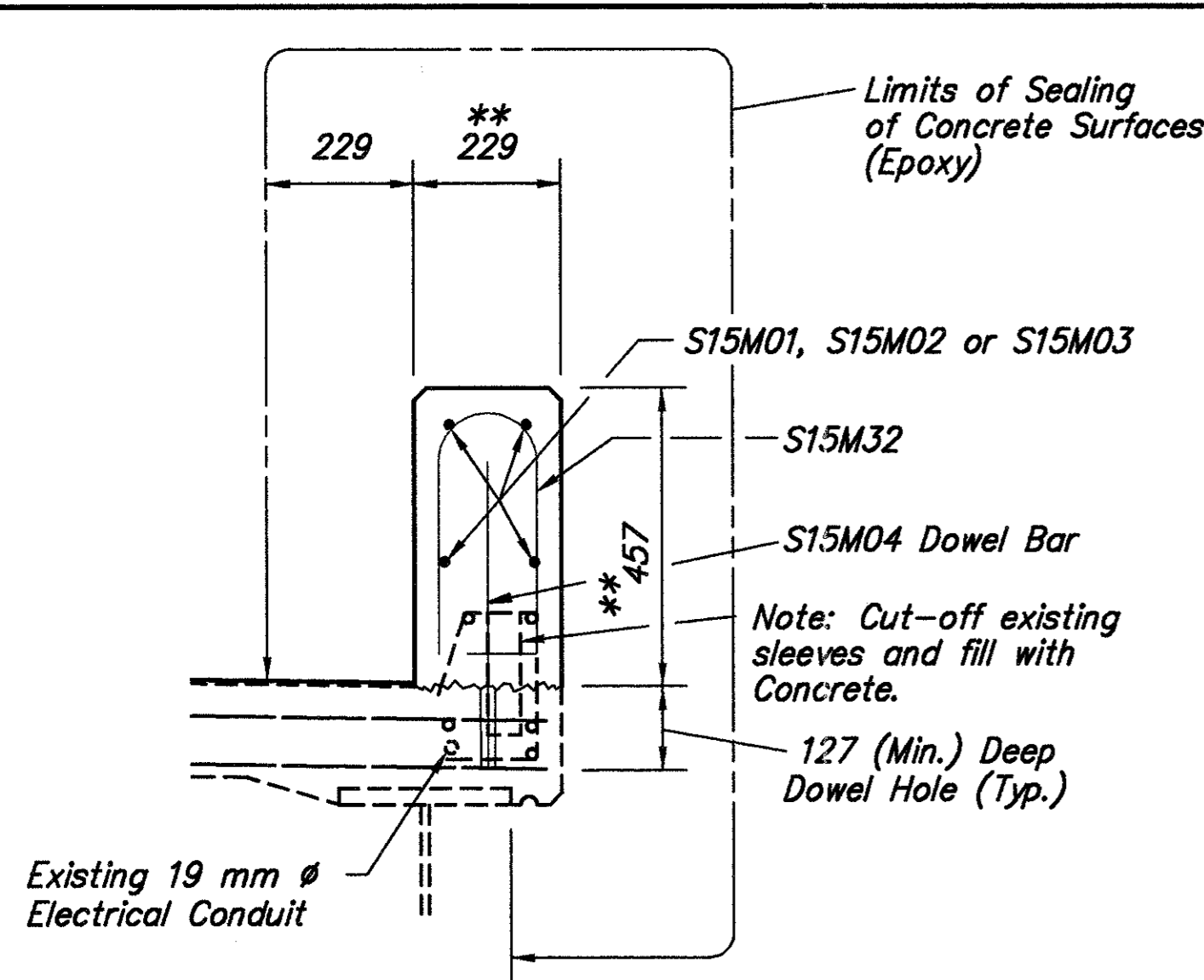


**SECTION D-D**  
(BEL-7-36368 Only)

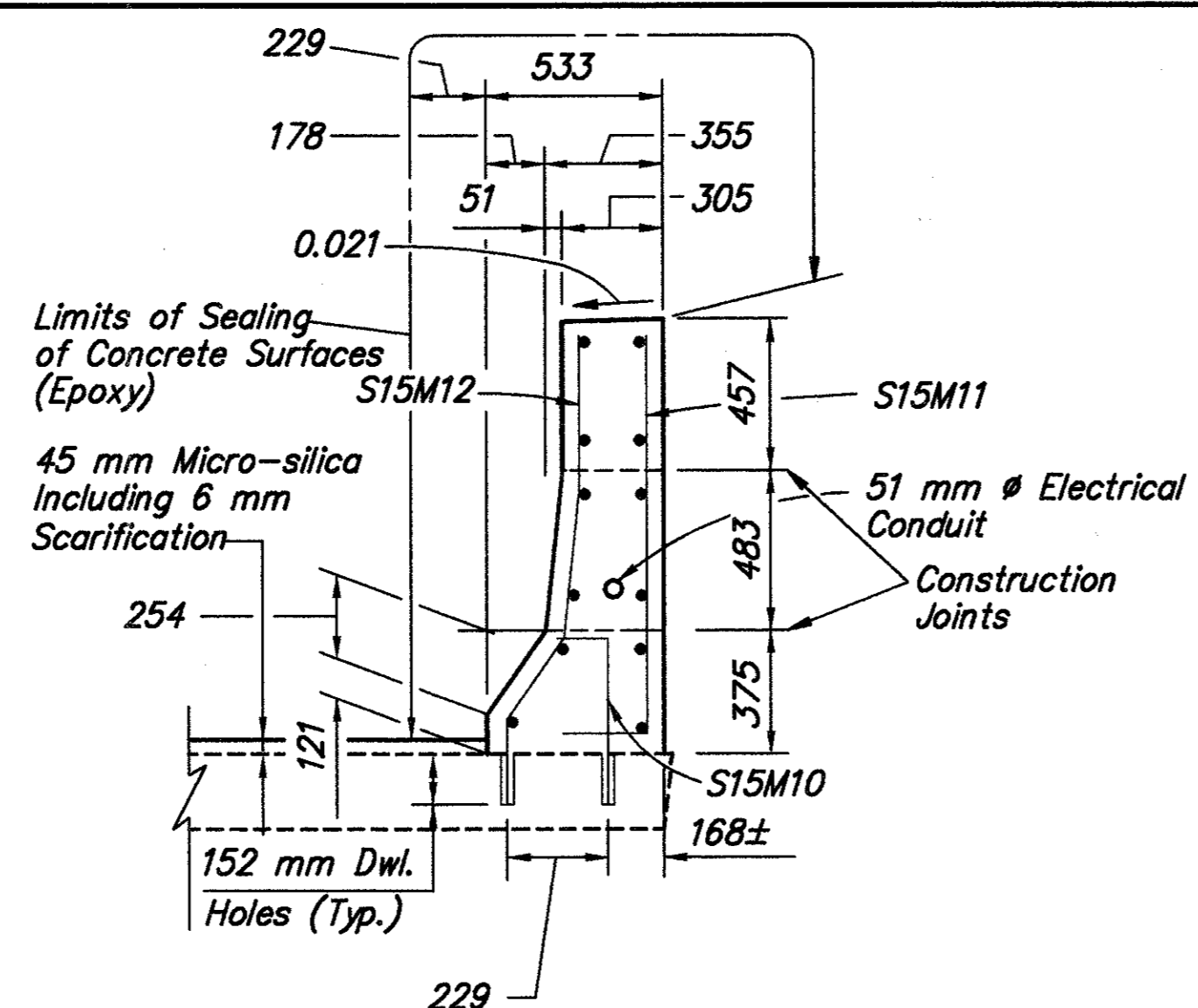
**\*\* ABUTMENT WING OUTSIDE PARAPET REPLACEMENT**

13321-01/321PP2.dwg - OCT 22, 1987 - 10,34,07

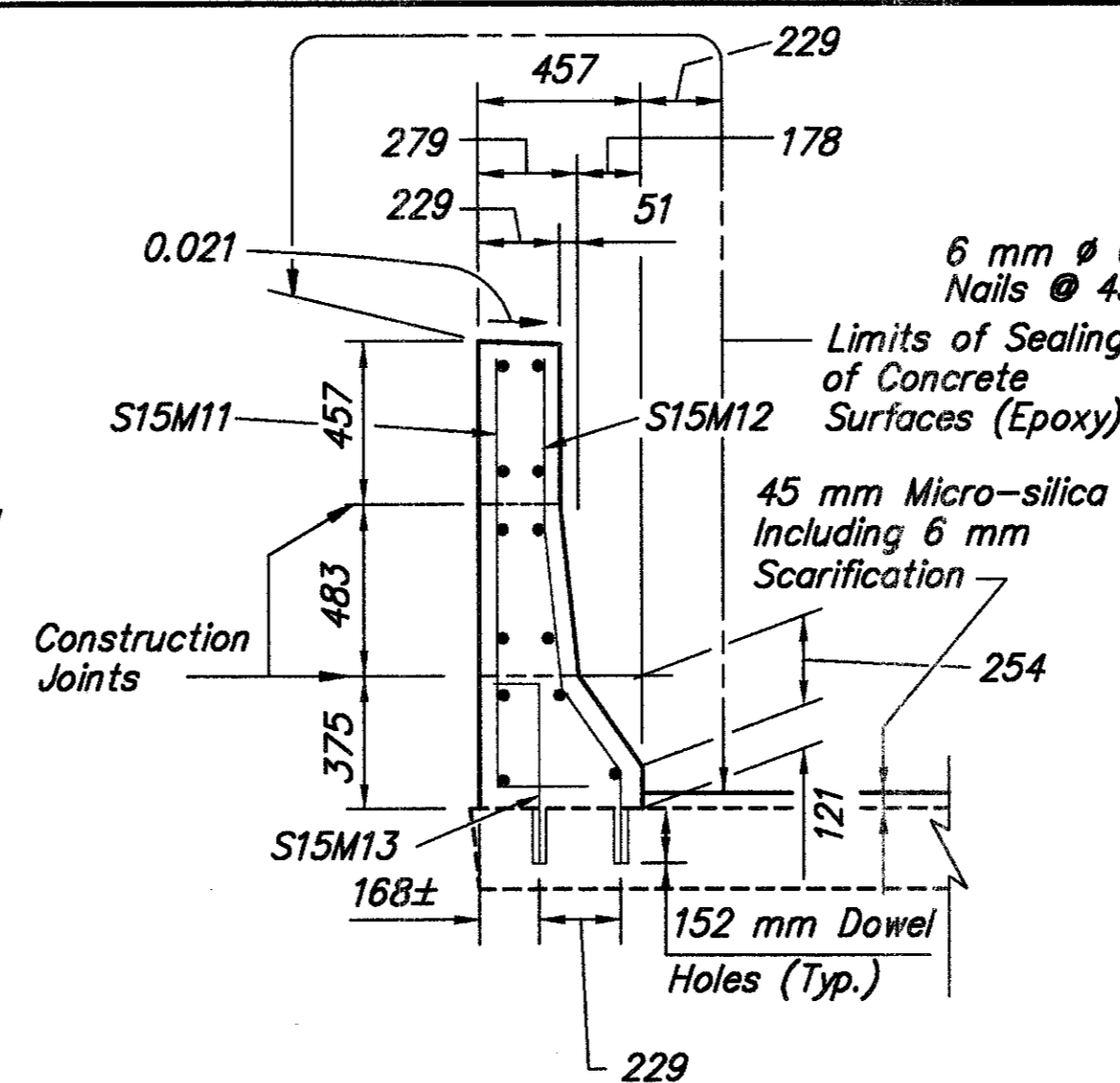
DESIGN AGENCY: W.E. QUICKSALL & ASSOCIATES INC.  
 554 WEST HIGH AVE.  
 NEW PHILADELPHIA, OHIO  
 CONSULTING ENGINEERS  
 DATE: 10/97  
 DRAWN: WEA  
 CHECKED: ZRD  
 DESIGNED: FDH  
 REVISIONS: CDF, REVISED  
 STRUCTURE FILE NUMBER:  
**PARAPET DETAILS**  
 BRIDGE REPAIR  
 STATE ROUTE 7 BELMONT COUNTY  
 BEL-7-32.276  
 31/37  
 230  
 242



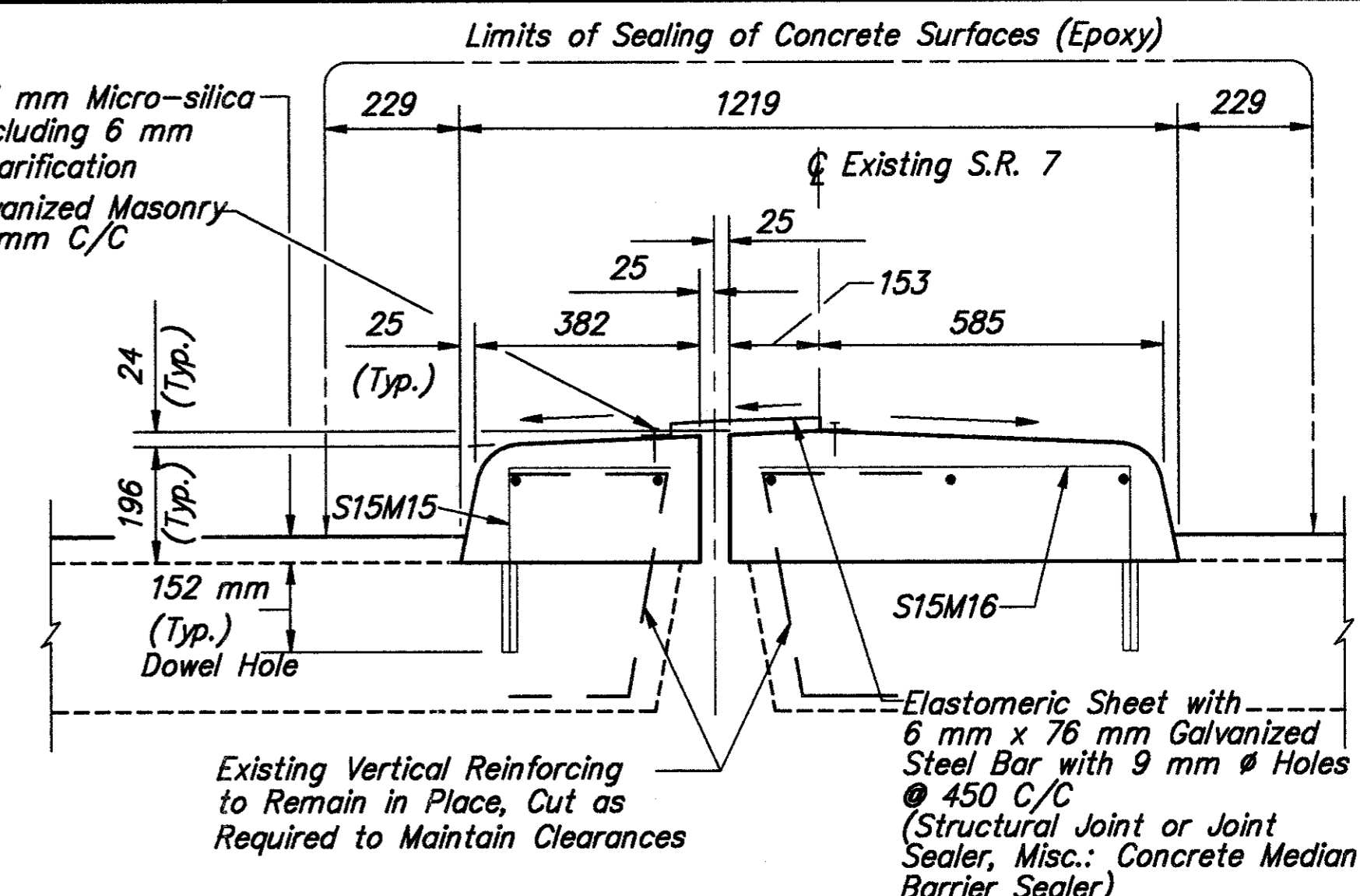
**SECTION F-F  
DECK-RAILING REPLACEMENT  
(BEL-7-36164 SUPERSTRUCTURE ONLY)**



**SUPERSTRUCTURE MEDIAN BARRIER  
NORMAL SECTION E-E**



**SUPERSTRUCTURE MEDIAN BARRIER  
NORMAL SECTION E-E**

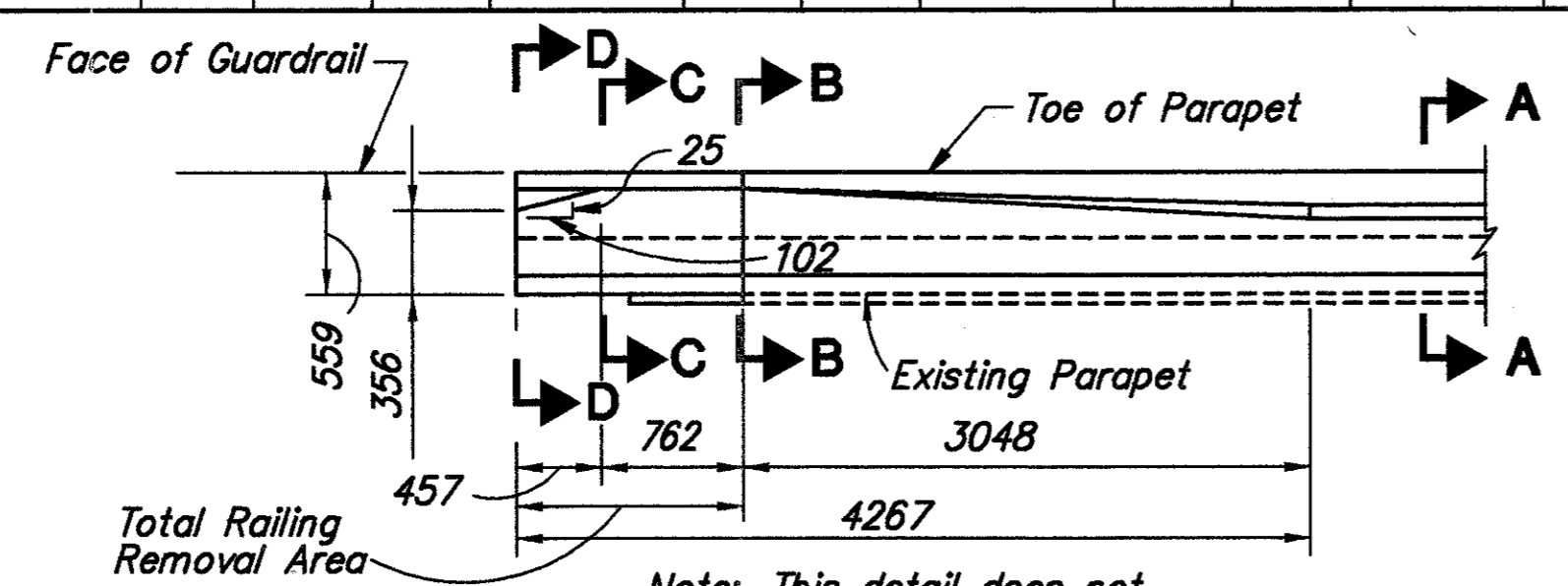


**LT. STRUCTURE SAFETY TYPE CURB MEDIAN  
NORMAL SECTION F-F  
(BEL-7-36683 L/R SUPERSTRUCTURES ONLY)**

**LOCATION OF REINFORCING STEEL**

BRIDGE NO.	DET. A	DETAIL B		DETAIL C		DETAIL D		DETAIL E		DETAIL BC or CB		DETAIL G		DETAIL H		DETAIL J		DETAIL K		DETAIL L		DETAIL M		S. END	N. END
		WEST PAR.	EAST PAR.	WEST PAR.	EAST PAR.	WEST BARR.	EAST BARR.	WEST BARR.	EAST BARR.	WEST PAR.	EAST PAR.	WEST PAR.	EAST PAR.	WEST PAR.	EAST PAR.	WEST PAR.	EAST PAR.	WEST PAR.	EAST PAR.	WEST PAR.	EAST PAR.	WEST PAR.	EAST PAR.		
BEL-7-32283L	(g)			(a)	(d)																		S15M17	5	-
																							S15M21	-	5
N. RET. WALL	R15M13	3	-																				S15M17	5	-
S. RET. WALL	R15M11	3	-																				S15M21	-	5
BEL-7-32283R																									
N. RET. WALL	R15M14	-	3																						
S. RET. WALL	R15M12	-	3																						
BEL-7-36368L						S15M23	-	5	S15M38	12	-														
BEL-7-36368R						S15M23	5	-	S15M38	-	12														
BEL-7-36683L	S15M28	3	-	S15M29	3	-						S15M28	-	2											
				S15M30	3	-																			
BEL-7-36683R	S15M28	-	3	S15M29	-	3						S15M28	3	-											
				S15M30	-	3																			

Note: In the above table,  
S. Denotes South  
N. Denotes North  
PAR. Denotes Parapet  
RET. Denotes RETAINING WALL  
BAR. Denotes Barrier or Curbed Median



**PLAN - NORMAL PARAPET ENDING  
(OUTSIDE RAILING REFACING)**

Notes:  
\* All parapets with skewed endings on decks shall have last set of vertical bars skewed to match parapet ends where required to fit.  
\*\* To be complete railing replacement, not refacing.

Continuous bar runs shall consist of 10 668 mm long bars and one odd length bar to finish run between deck joints.  
In existing median removal areas, cut existing curb reinforcing and bulb angle vertical leg at surface of deck.

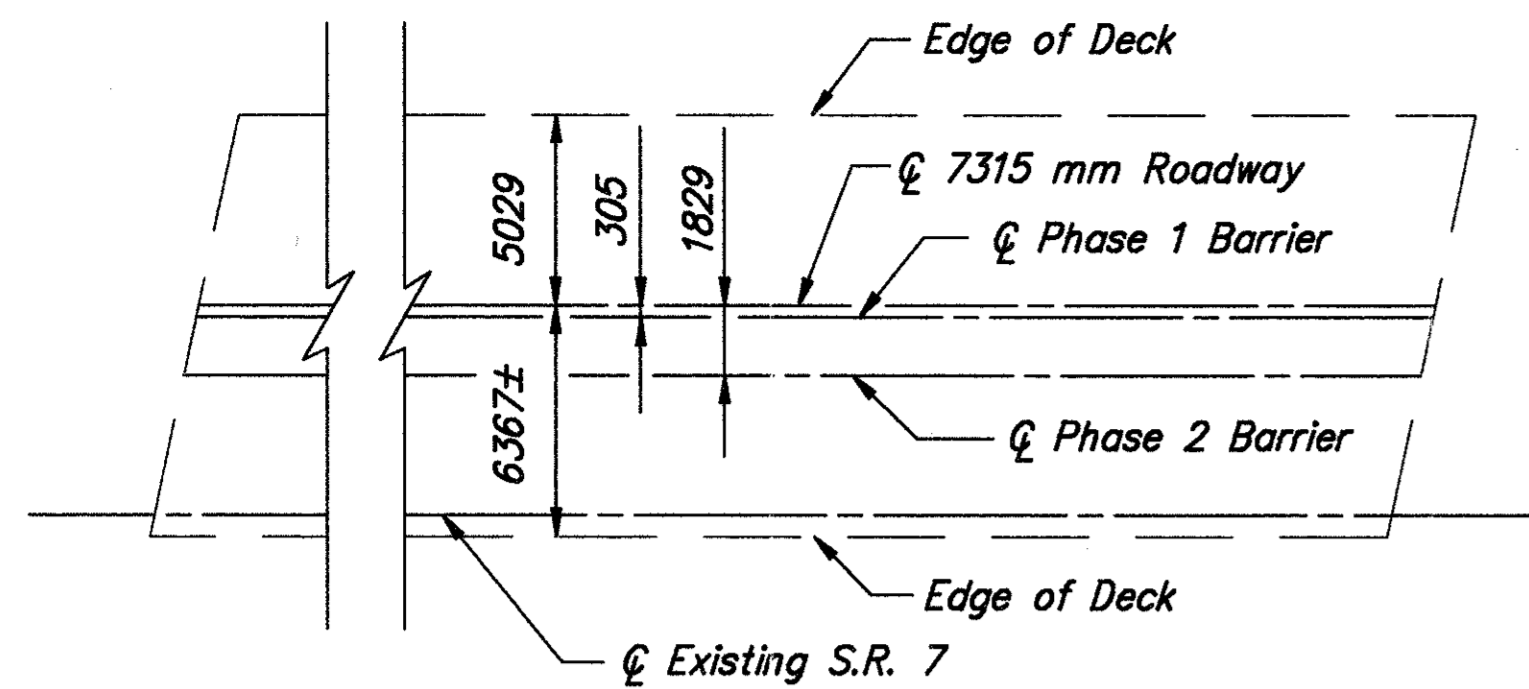
All horizontal reinforcing to be 15M bars unless noted otherwise.

For Additional Parapet Details,  
See Sheet 31/37

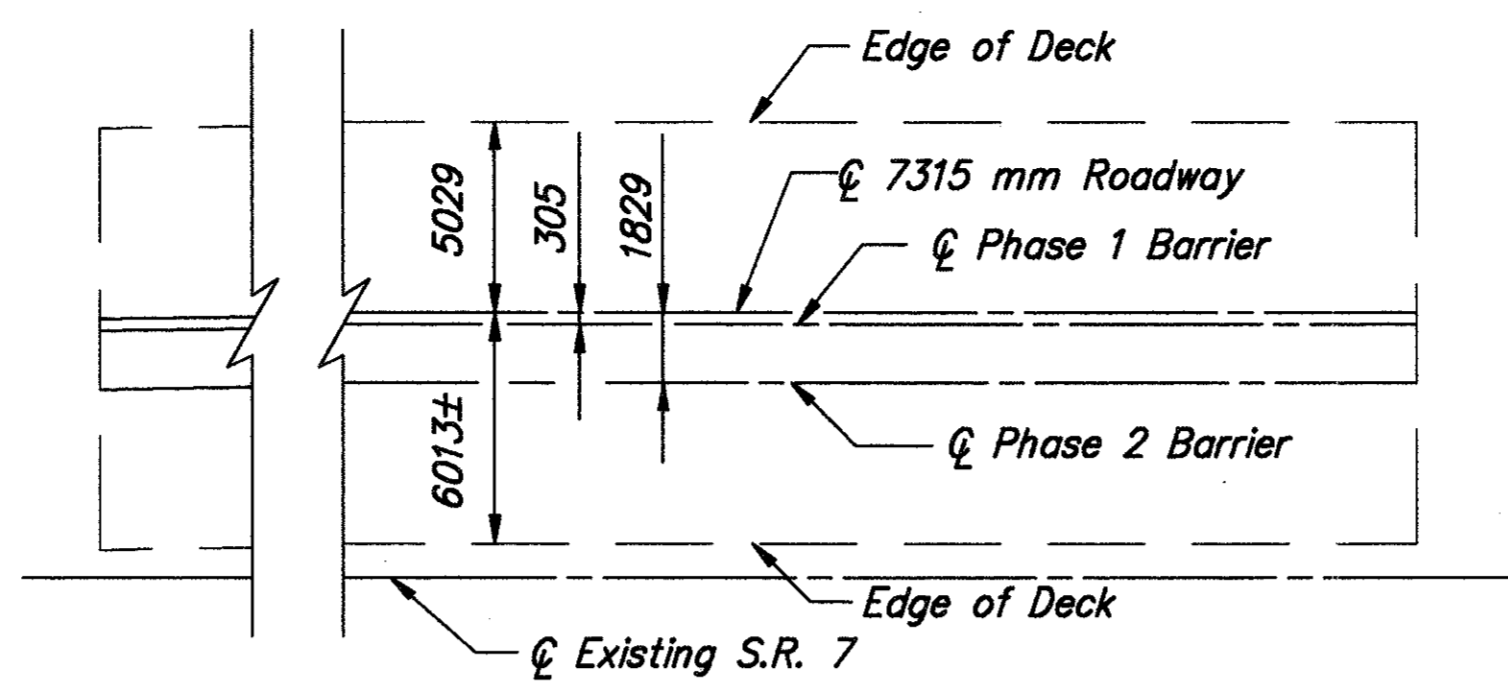
Caution, electrical conduit and/or signal cable present in existing parapets. Check for live cable before removal of safety curbs and other portions of parapets. See General Notes.

DESIGN AGENCY: W.E. QUICKSALL & ASSOCIATES INC.  
 554 WEST HIGH AVE.  
 NEW PHILADELPHIA, OHIO  
 CONSULTING ENGINEERS  
 DATE: 10/97  
 DRAWN: WEA  
 CHECKED: CFJ  
 DESIGNED: FDH  
 STRUCTURE FILE NUMBER:  
**PARAPET AND MEDIAN BARRIER DETAILS**  
 BRIDGE REPAIR  
 STATE ROUTE 7 BELMONT COUNTY  
**BEL-7-32.276**  
 32/37  
 231  
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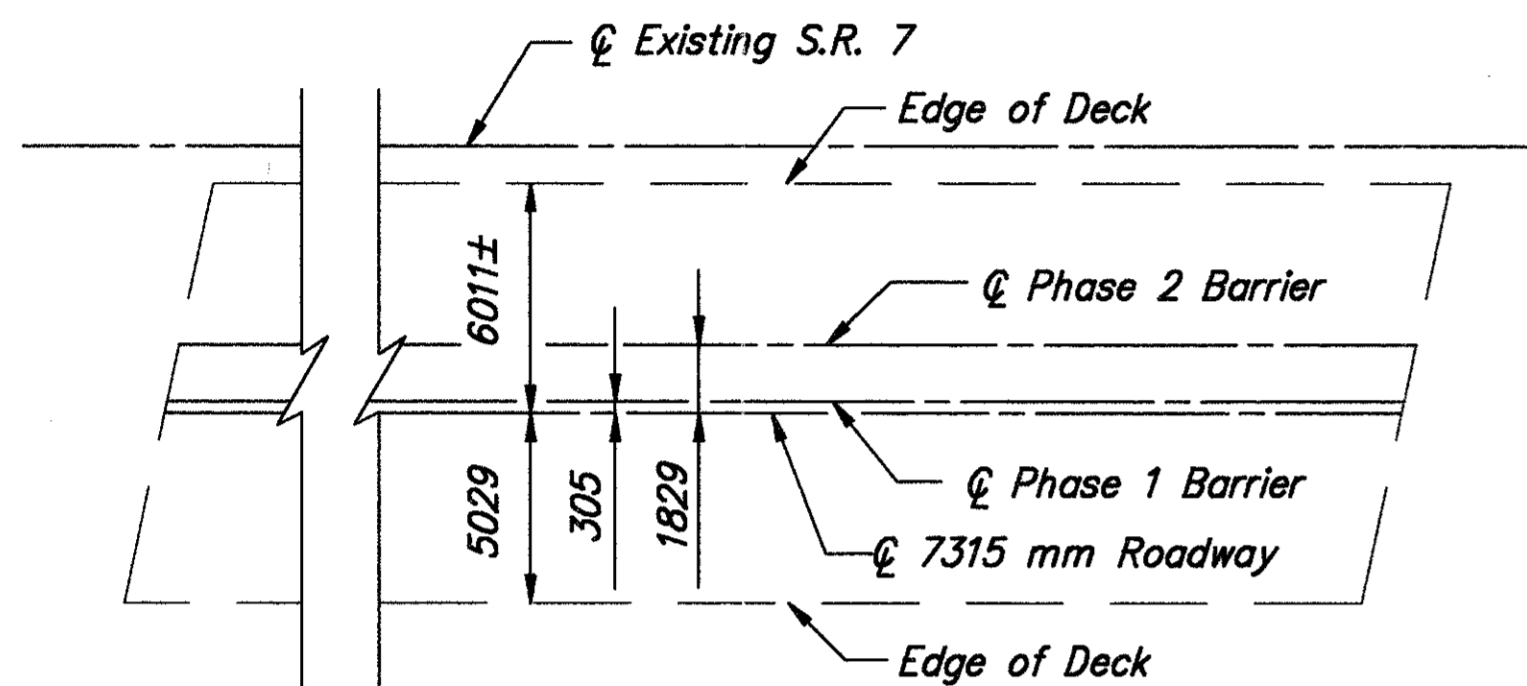




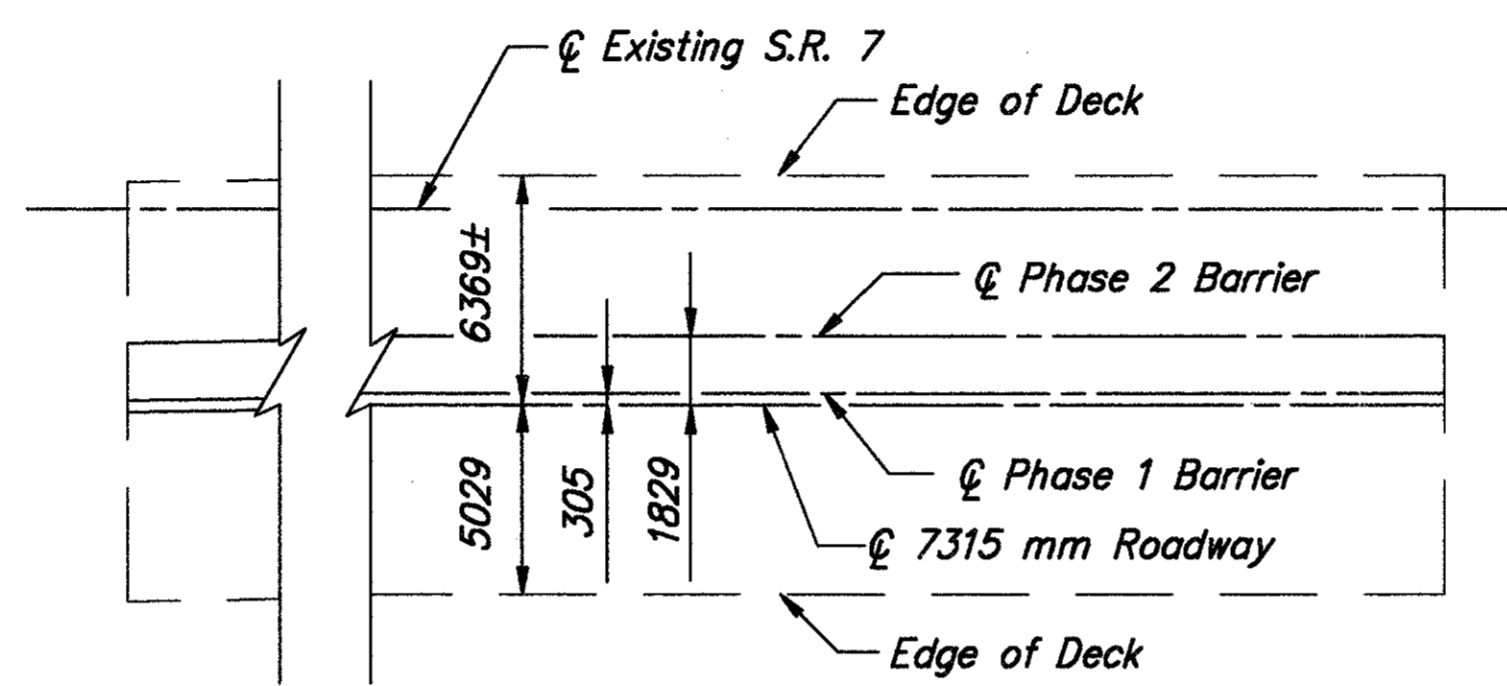
BEL-7-36368 L



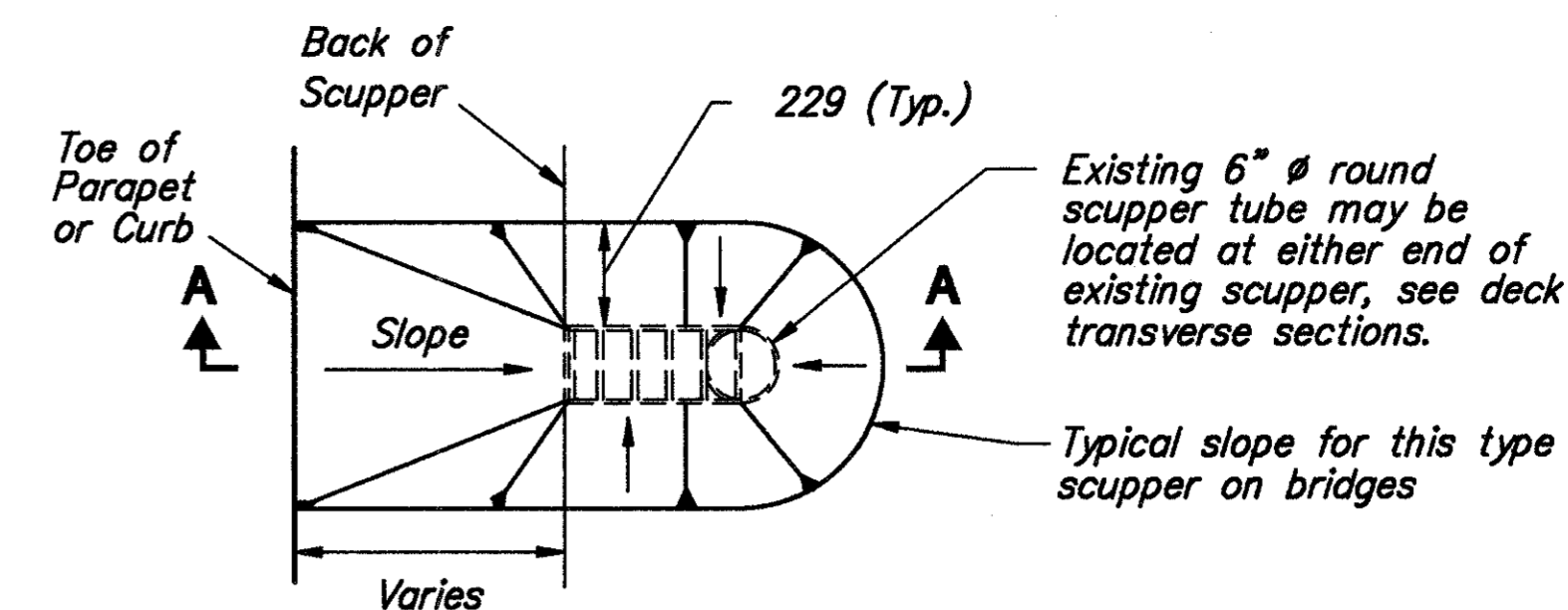
BEL-7-36683 L



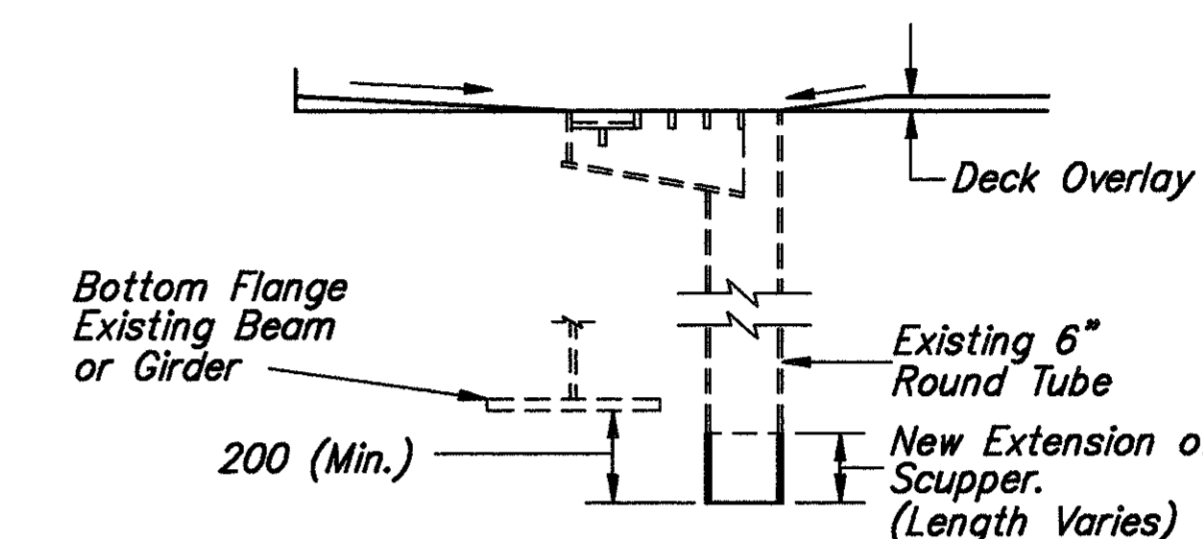
BEL-7-36368 R



BEL-7-36683 R



TYPICAL PLAN VIEW OF OVERLAY TREATMENT AT SCUPPERS



SECTION A-A

BRIDGE NO.	SCUPPER LENGTHENING	SCUPPER MODIFICATION
BEL-7-32283 L	7	19
BEL-7-32283 R	8	15
BEL-7-36164	-	**
BEL-7-36368 L	3	3
BEL-7-36368 R	3	3
BEL-7-36683 L	10	10
BEL-7-36683 R	10	10
TOTAL	41	60

\*\* Modification of scuppers & drain system. For plans and details, see sheets 13/37 & 16/37

For Details not shown, See St'd Dwg. SD-1-69.

SCUPPER NOTES

THE FOLLOWING WORK SHALL BE PERFORMED ON THE BRIDGES SPECIFIED IN THE TABLE ON THIS SHEET.

ITEM 518 - SCUPPER, LENGTHENING

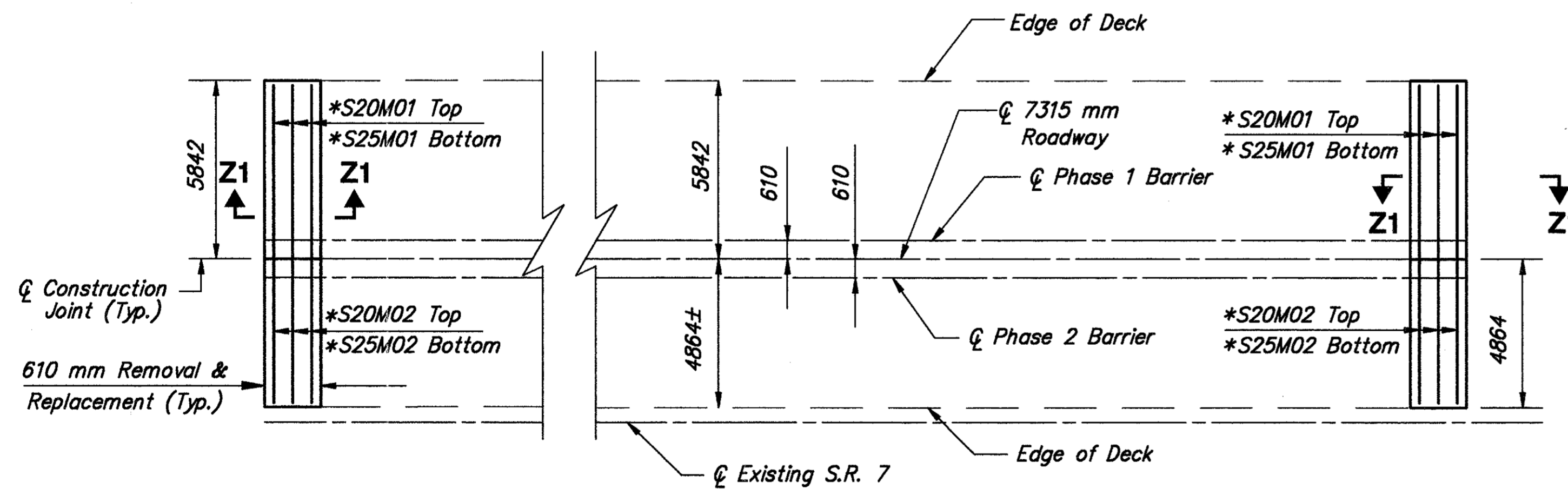
THE CONTRACTOR SHALL REMOVE A MINIMUM OF 152 mm OF THE BOTTOM OF EACH SCUPPER DOWNSPOUT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL THEN WELD AN EXTENSION TO THE EXISTING SCUPPER DOWNSPOUT. THE DOWNSPOUT EXTENSION SHALL BE IN ACCORDANCE WITH 518 AND SHALL EXTEND A MINIMUM OF 200 mm BELOW THE BOTTOM FLANGE OF THE ADJACENT BEAM OR GIRDER. THE MATERIAL AND SIZE OF THE EXTENSION SHALL BE THE SAME AS THAT OF THE EXISTING SCUPPER DOWNSPOUT. THE COST FOR ALL MATERIAL, LABOR AND INCIDENTALS NECESSARY FOR THE ABOVE WORK SHALL BE INCLUDED UNDER ITEM 518 - SCUPPER, LENGTHENING.

ITEM 518 - SCUPPER MODIFICATION, AS PER PLAN

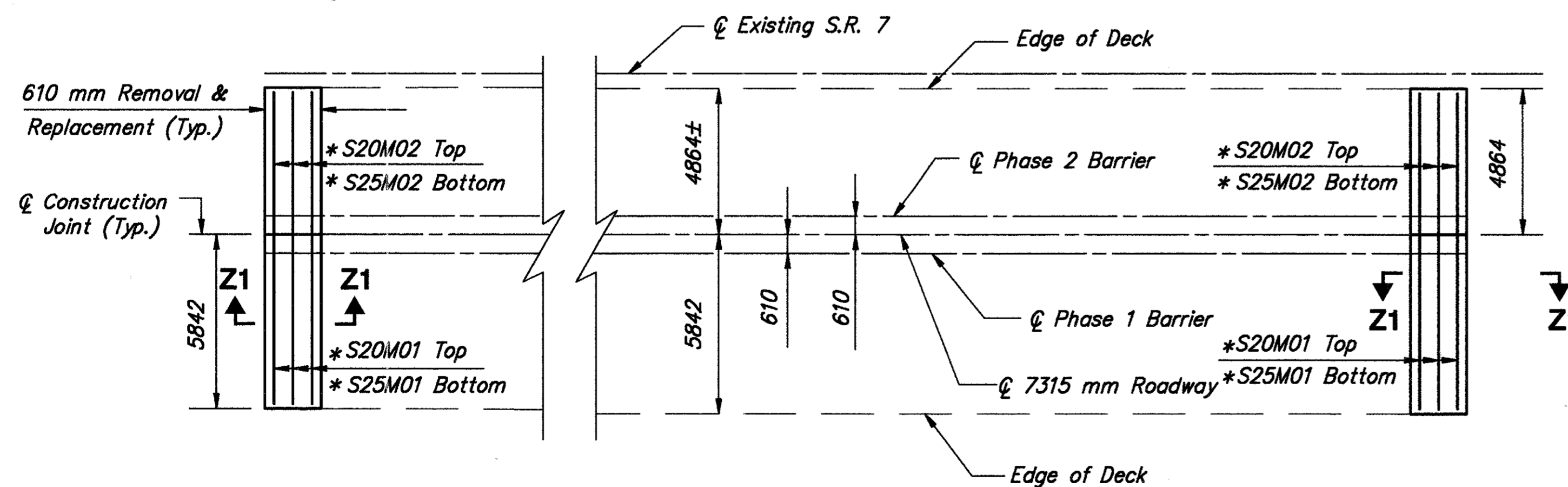
THE CONTRACTOR SHALL REMOVE EXISTING SCUPPER TOP EXTENSIONS AS REQUIRED TO MATCH EXISTING CONCRETE DECK SURFACE. THE COST FOR ALL MATERIAL, LABOR AND INCIDENTALS NECESSARY FOR THE ABOVE WORK SHALL BE INCLUDED UNDER ITEM 518 - SCUPPER MODIFICATION, AS PER PLAN.

BEL-7-36164: THE CONTRACTOR SHALL MODIFY EXISTING SCUPPERS AND THEIR DRAIN SYSTEM AS NOTED AND SHOWN IN THE PLANS FOR THIS BRIDGE. SEE SHEET 16/37.

BEL-7-32283L/R, BEL-7-36368L/R AND BEL-7-36683L/R: AFTER REMOVAL OF EXISTING SCUPPER EXTENSION, THE CONTRACTOR SHALL INSTALL NEW SCUPPER BARS AT EXISTING CONCRETE DECK SURFACE. PLACEMENT AND SIZE OF BARS SHALL BE PER ST'D DWG. SD-1-69.



BEL-7-32283 L



BEL-7-32283 R

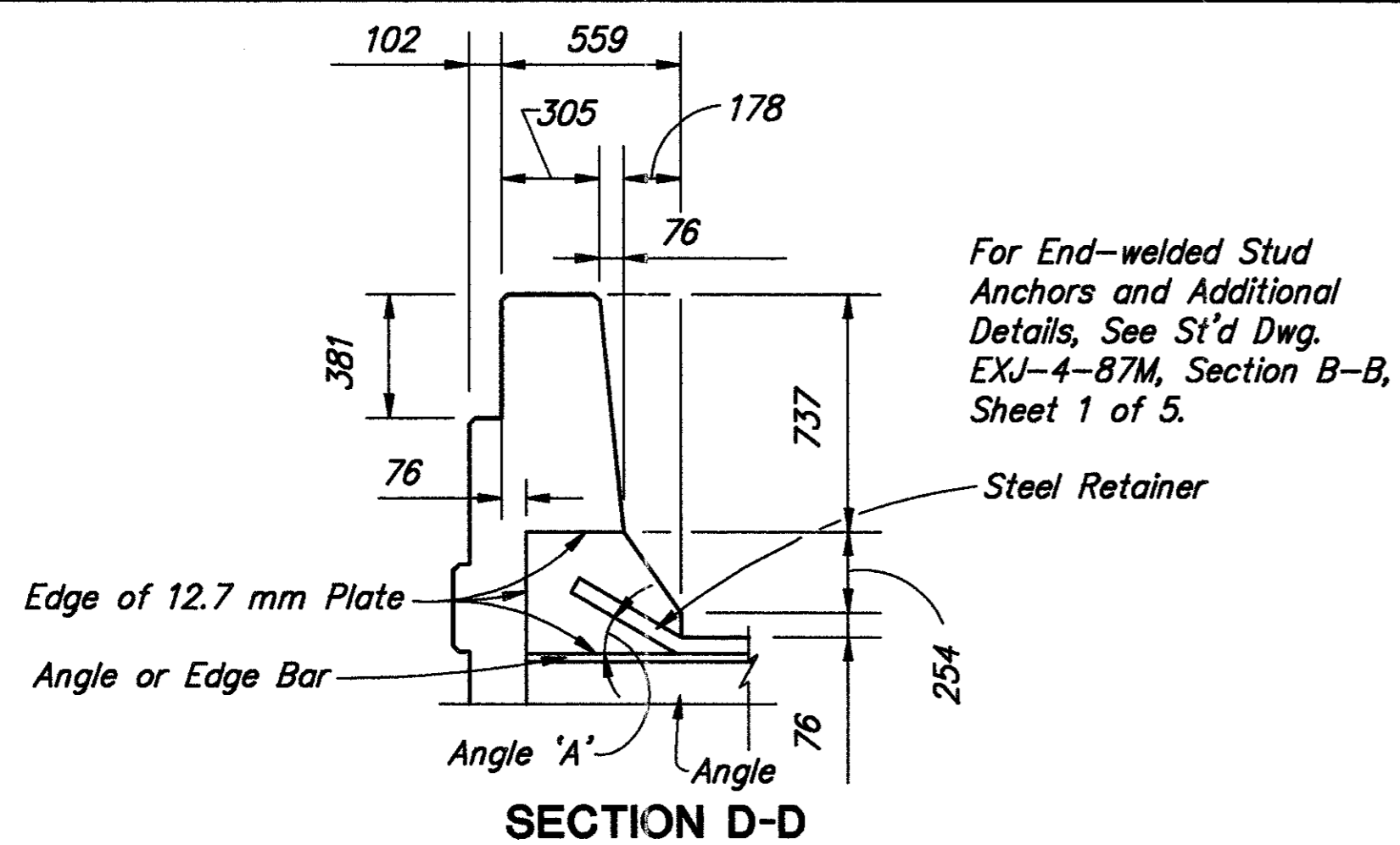
\* Denotes mechanically connected reinforcing bars.

610 mm Removal & Replacement (Typ.)

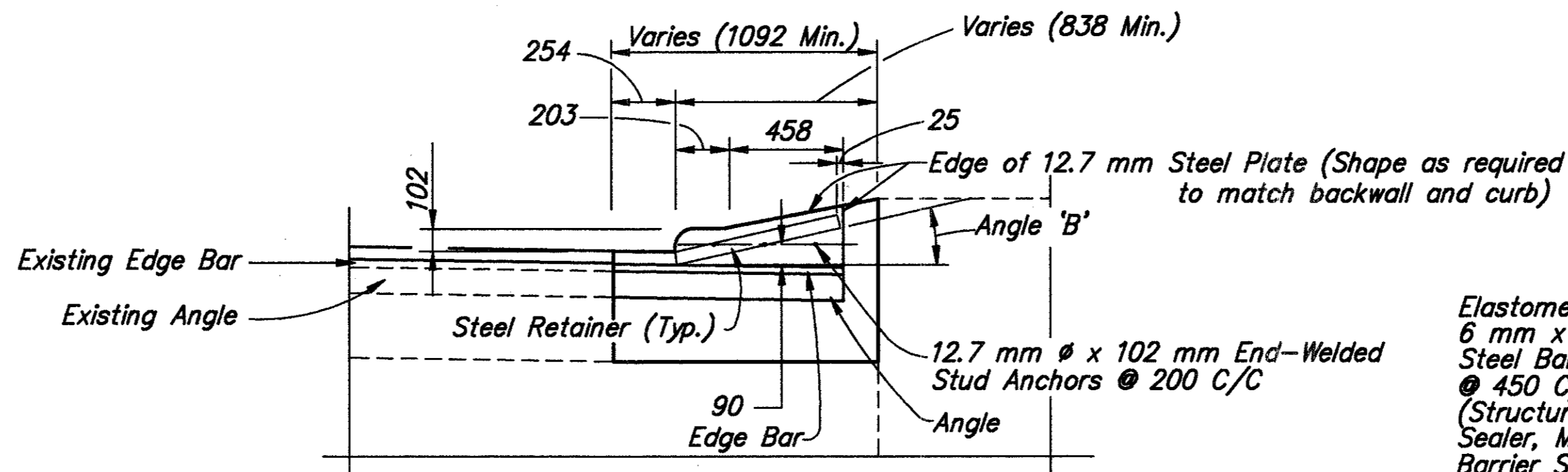
610 mm Removal & Replacement (Typ.)

For Strip Seal Expansion Joint Details, See Sheets 34/37 & 35/37

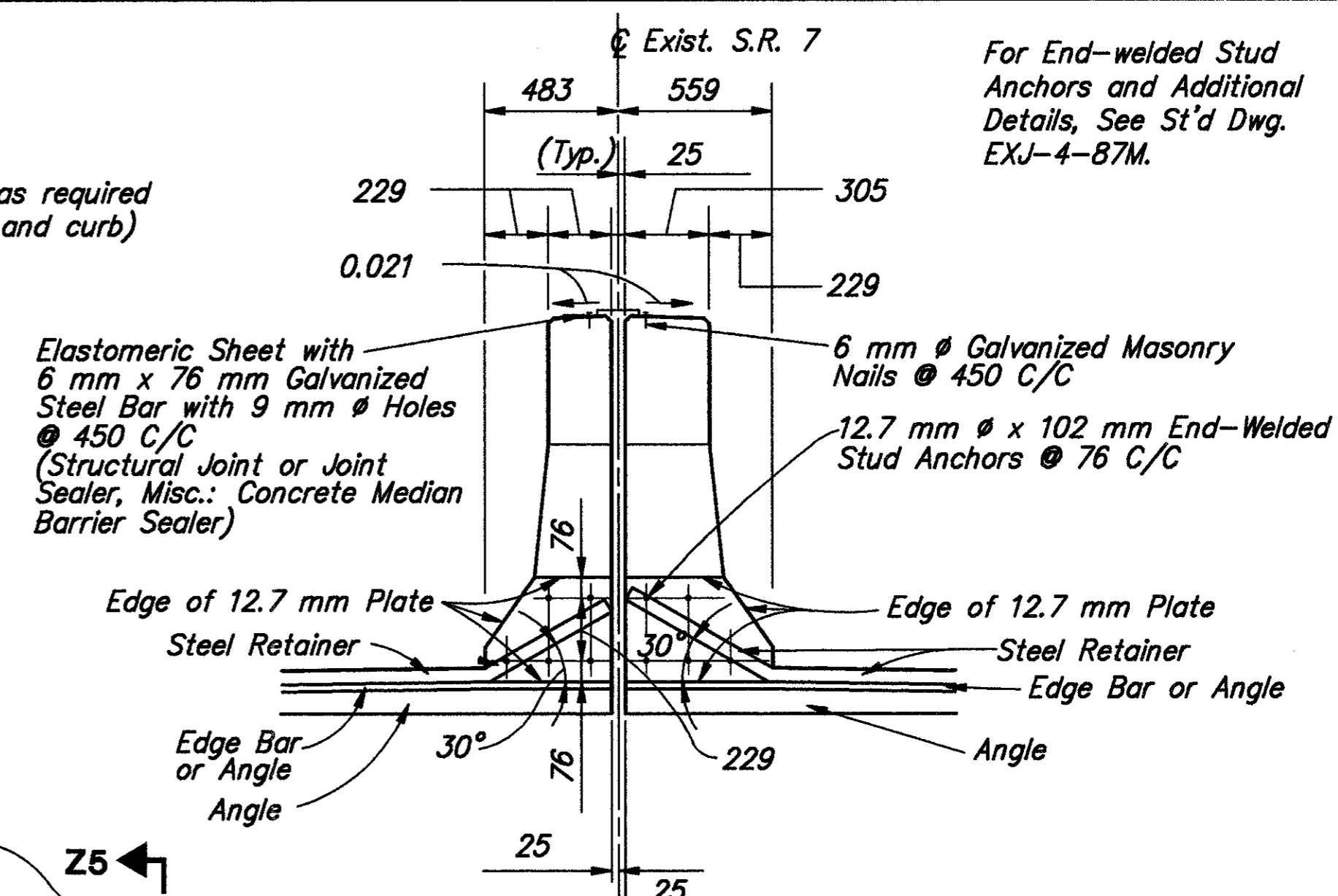
For Section Z1-Z1, See Sheet 35/37



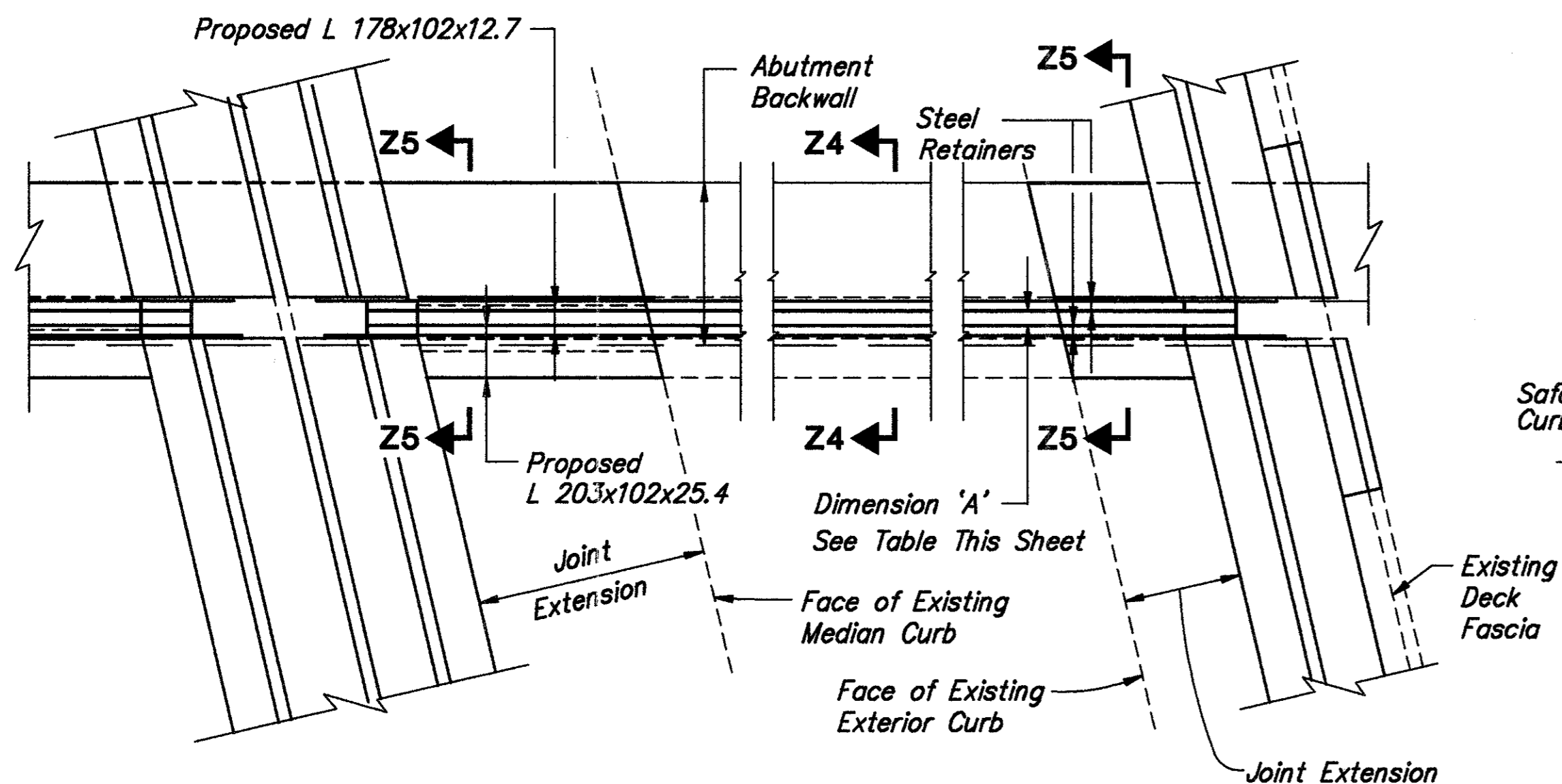
For End-welded Stud Anchors and Additional Details, See St'd Dwg. EXJ-4-87M, Section B-B, Sheet 1 of 5.



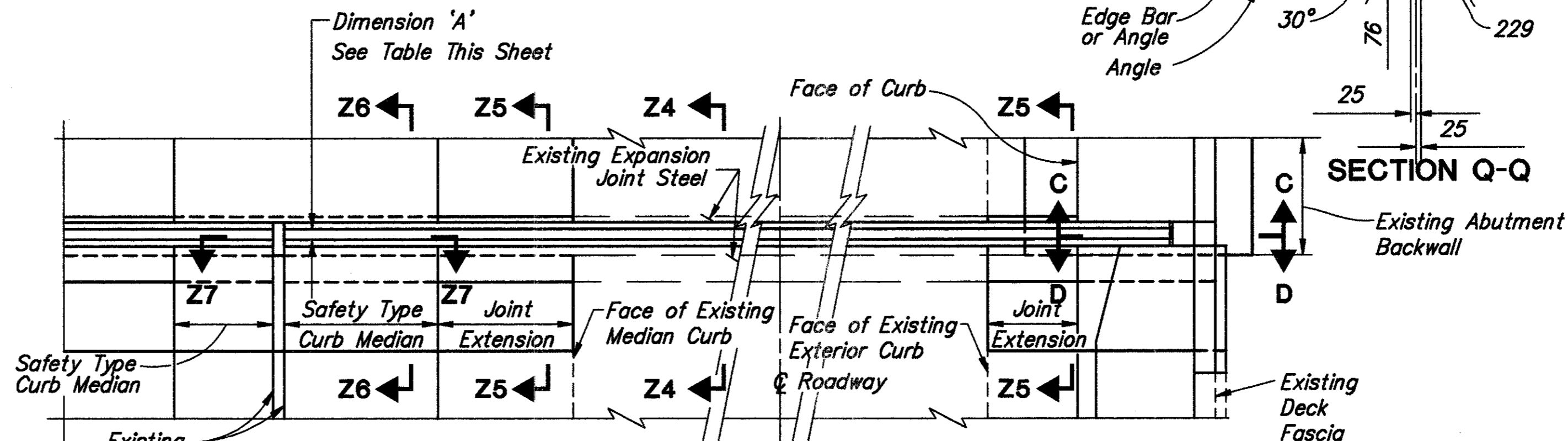
SECTION C-C Note: Parapet Joint Retainer Angle to match backwall joint Retainers. Plate and Stud Anchor size as required.



For End-welded Stud Anchors and Additional Details, See St'd Dwg. EXJ-4-87M.



BEL-7-36368 R EXPANSION JOINT EXTENSION PLAN (LEFT STRUCTURE SIMILAR ABOUT CENTERLINE)



BEL-7-36683 R EXPANSION JOINT EXTENSION PLAN (LEFT STRUCTURE SIMILAR ABOUT CENTERLINE)

Notes: For Strip Seal Expansion Joint Notes and Construction Procedures, See St'd Dwg. EXJ-4-87M.

For Additional Details & Welds, See St'd Dwg. EXJ-4-87M.

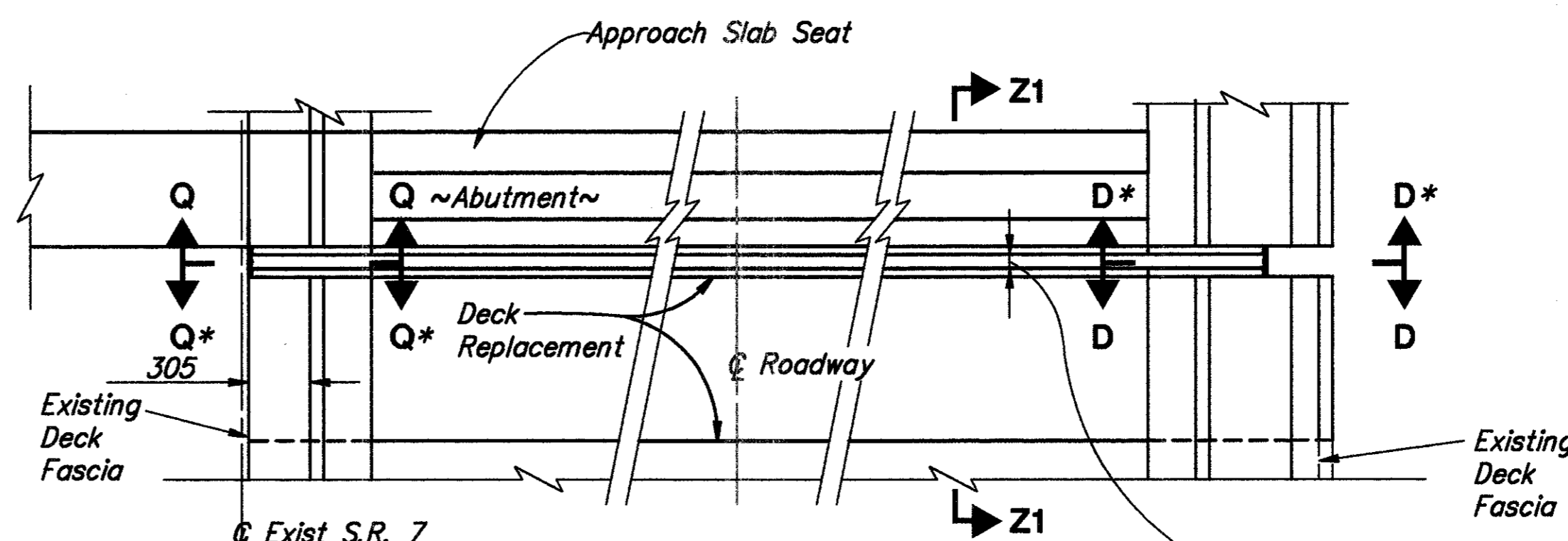
Where required, expansion joints shall be constructed in phases which correspond with phase construction work on the decks and abutments. The Contractor shall verify the actual lengths of expansion joint required for each phase of construction, as well as the actual total length.

BRIDGE NO.	ANGLE REAR ABUTMENT	ANGLE INTERMEDIATE EXP. JOINT	ANGLE FORWARD ABUTMENT	ANGLE 'A'	ANGLE 'B'	EXPANSION JOINT PAY LENGTH L.T. STRUCTURE	EXPANSION JOINT PAY LENGTH RT. STRUCTURE
BEL-7-32283 L/R	0°	0°	0°	30°		63 156 mm	63 156 mm
BEL-7-36368 L/R	12°-00'-00"	-	12°-00'-00"	30°		23 009 mm	22 281 mm
BEL-7-36683 L/R	2°-54'-38"	-	0°				
LEFT REAR	-	-	-	12°-16'-25"	12°-16'-25"	22 660 mm	23 372 mm
RIGHT REAR	-	-	-	12°-35'-19"	12°-35'-19"	-	-
LEFT FWD.	-	-	-	10°-39'-44"	10°-39'-44"	-	-
RIGHT FWD.	-	-	-	14°-30'-00"	14°-30'-00"	-	-
TOTAL						108 825 mm	108 809 mm

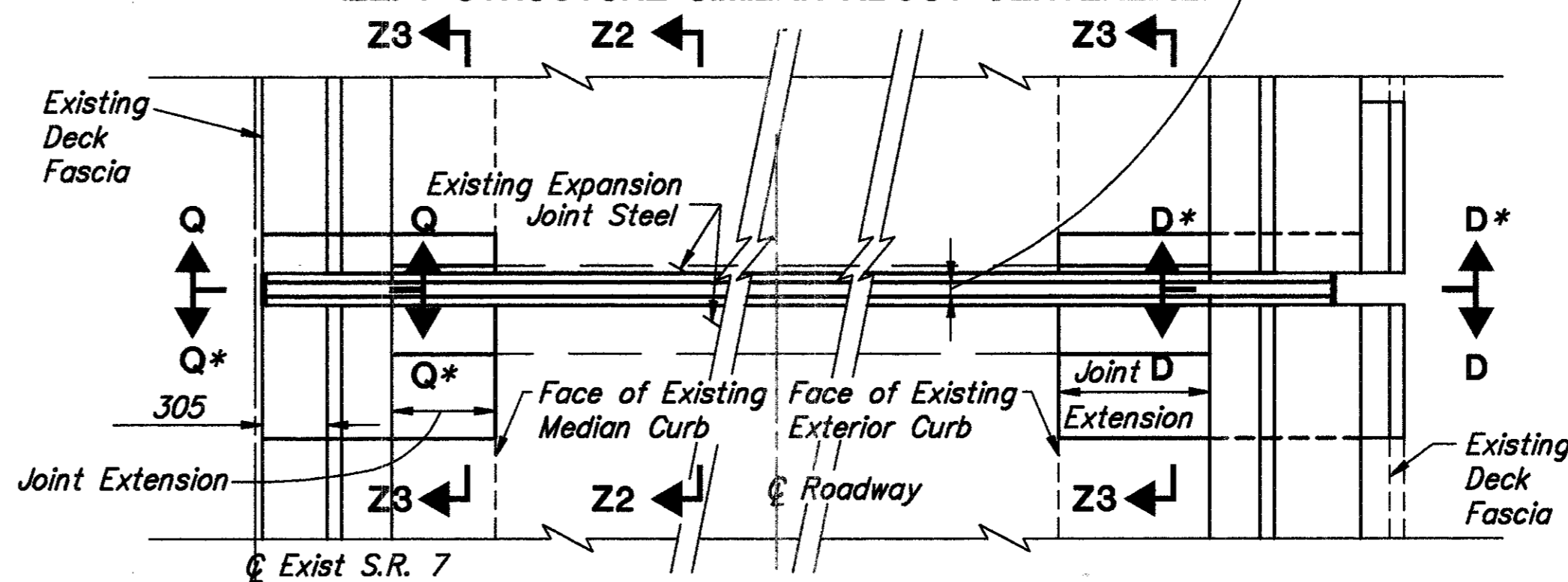
Estimated lengths: Contractor shall verify actual lengths needed in the field as directed by the Engineer.  
Quantities Carried to Sheet **3/37**

AMBIENT TEMP. °C	DIMENSION 'A'									
	BEL-7-32283L/R		BEL-7-32283L/R				BEL-7-36368L/R		BEL-7-36683L/R	
	REAR	FWD.	UNIT 1-2	UNIT 2-3	UNIT 3-4	UNIT 4-5	REAR	FWD.	REAR	FWD.
-1.1 °C	60	58	83	84	83	84	53	56	64	60
4.4 °C	57	56	77	77	77	77	52	54	59	57
10.0 °C	54	53	70	70	70	70	52	52	55	54
15.6 °C	51	51	64	64	64	64	51	51	51	51
21.1 °C	48	48	57	57	57	57	50	49	47	48
26.7 °C	45	46	51	50	50	50	49	48	42	44
32.2 °C	42	43	44	43	44	43	49	46	38	41

Dimension 'A' measured normal to @ Bearings.



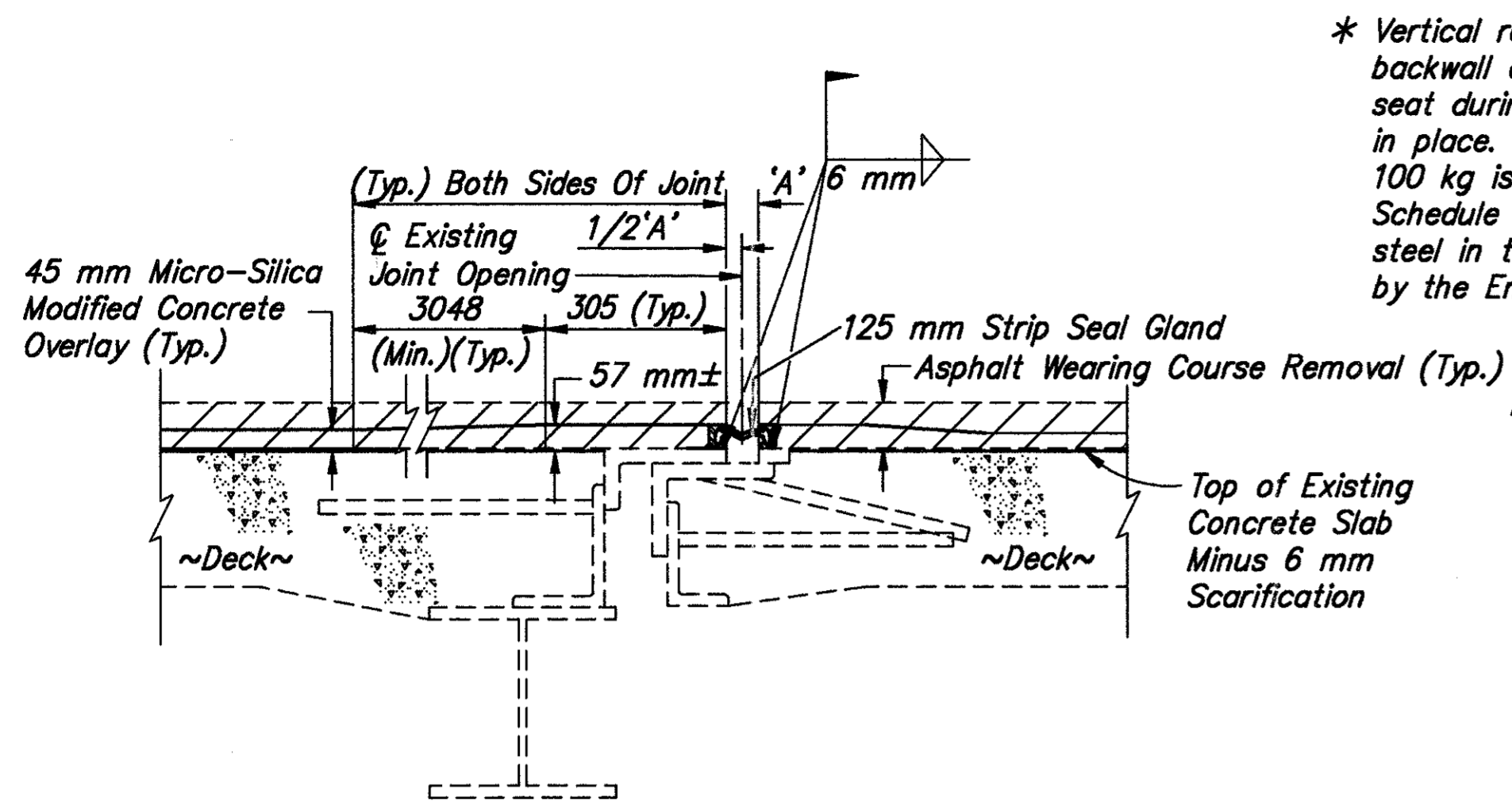
BEL-7-32283 R EXPANSION JOINT AT ABUTMENTS (LEFT STRUCTURE SIMILAR ABOUT CENTERLINE)



BEL-7-32283 R EXPANSION JOINT EXTENSION PLAN AT INTERMEDIATE JOINTS (LEFT STRUCTURE SIMILAR ABOUT CENTERLINE)

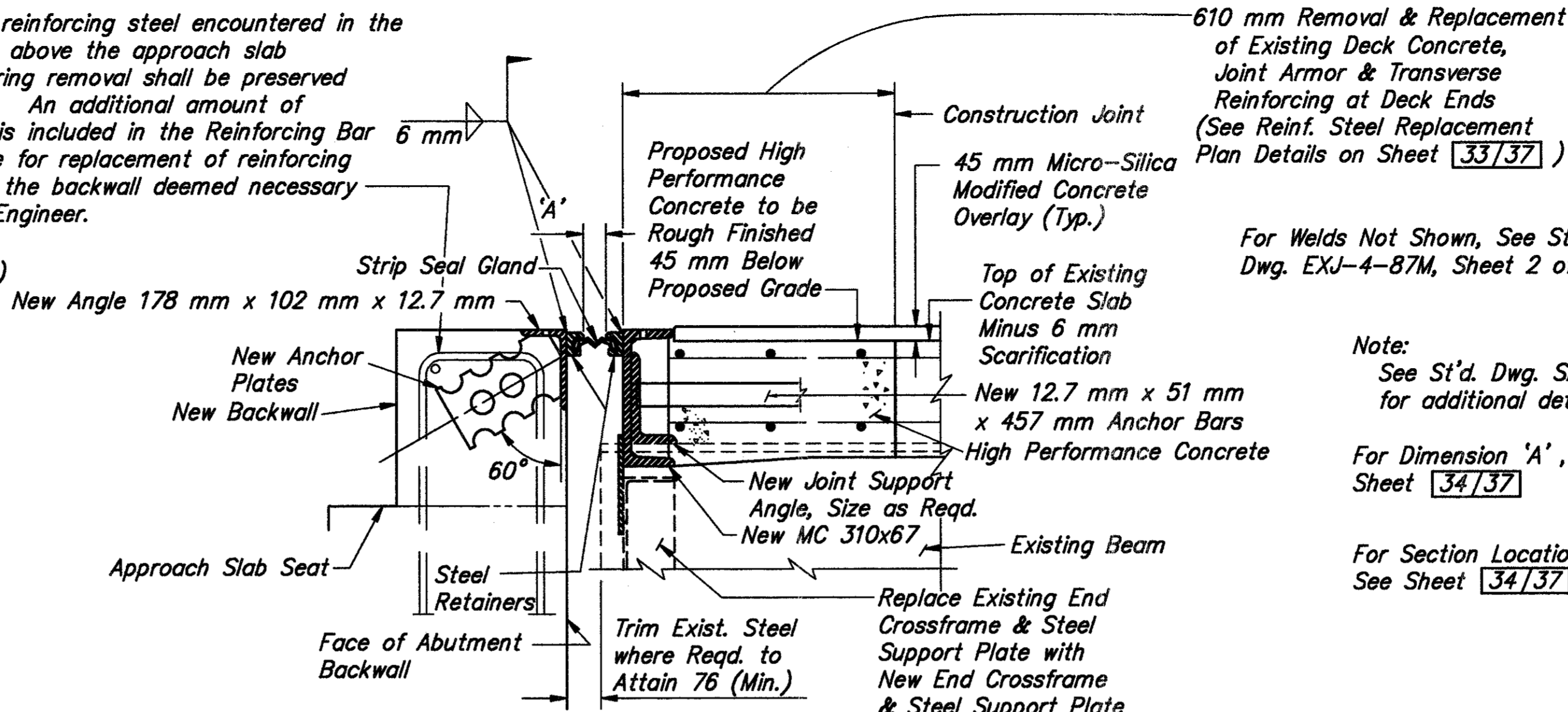
\* Opposite Hand

For Sections Z1-Z1 thru Z7-Z7, See Sheet **35/37**.



**BEL-7-32283 L/R INTERMEDIATE JOINT SECTION Z2-Z2**

\* Vertical reinforcing steel encountered in the backwall above the approach slab seat during removal shall be preserved in place. An additional amount of 100 kg is included in the Reinforcing Bar Schedule for replacement of reinforcing steel in the backwall deemed necessary by the Engineer.



**BEL-7-32283 DECK END & EXPANSION JOINT SECTION Z1-Z1**

610 mm Removal & Replacement of Existing Deck Concrete, Joint Armor & Transverse Reinforcing at Deck Ends (See Reinf. Steel Replacement Plan Details on Sheet 33/37)

Notes: For Strip Seal Expansion Joint Notes and Construction Procedures, See St'd Dwg. EXJ-4-87M.

For Additional Welding And Installation Details For Expansion Joints, See St'd Dwg. EXJ-4-87M.

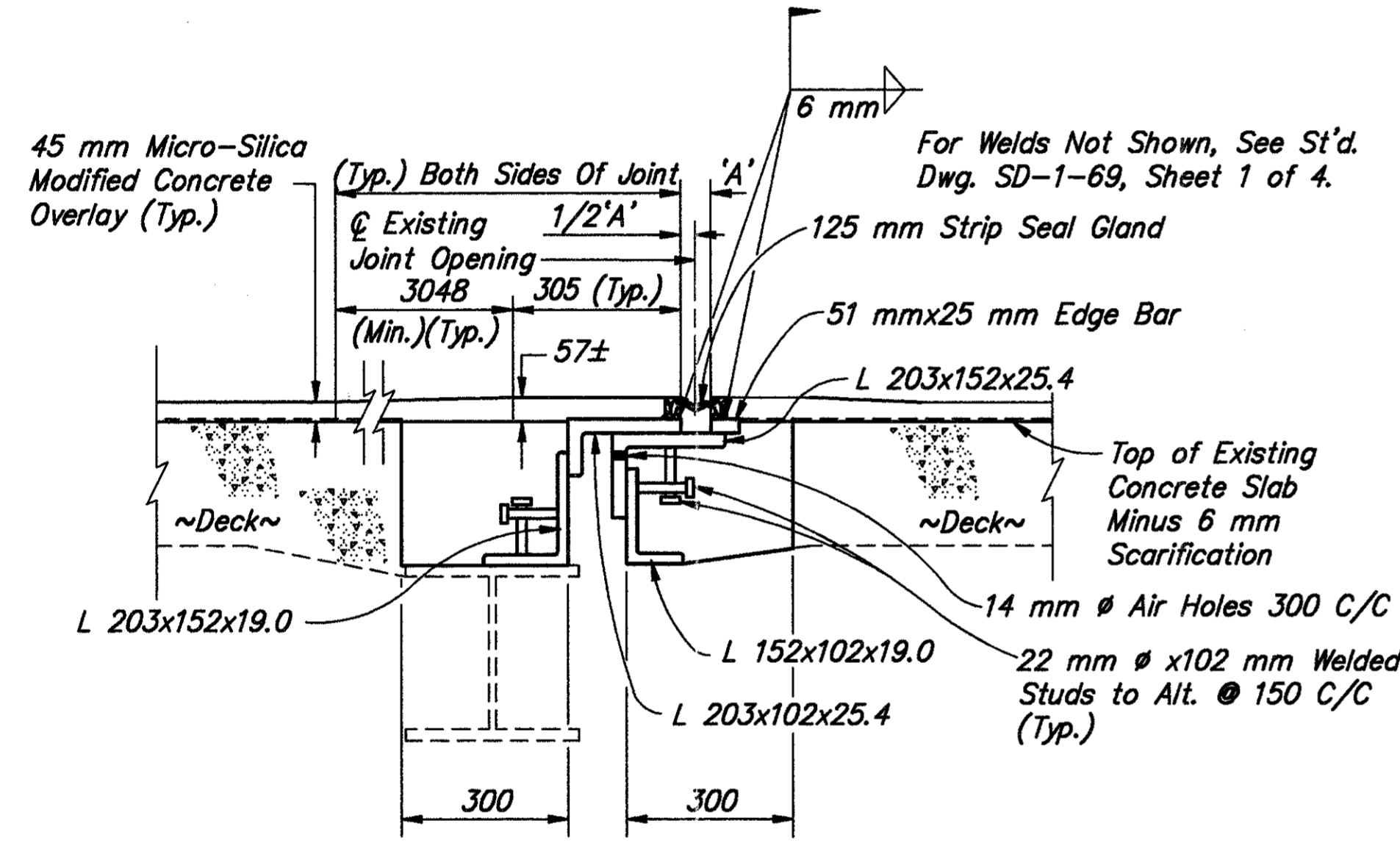
Existing top & bottom longitudinal deck reinforcing shall remain in place. Cut reinforcing at deck ends as required to maintain clearances.

BEL-7-32283  
When removing the existing expansion joints at abutments, care shall be taken in the removal of the existing angles, plates and gusset plates so as not to damage the top flange of the existing beams or girders. Plates shall be removed by flame cutting and the surface of the flange shall be left smooth of any irregularities so that the new expansion joint shall be properly installed. The above work shall be included for payment with Item 202 Removal Miscellaneous: Expansion Joint Removed.

Existing end crossframe angles and gusset plates shall be removed and reset, or replaced as deemed necessary by the Engineer, to allow new expansion joint armor to be installed. Placement of crossframes and gusset plates shall be as per St'd Dwg. EXJ-4-87M (New Members) and SD-1-69 (Existing Members).

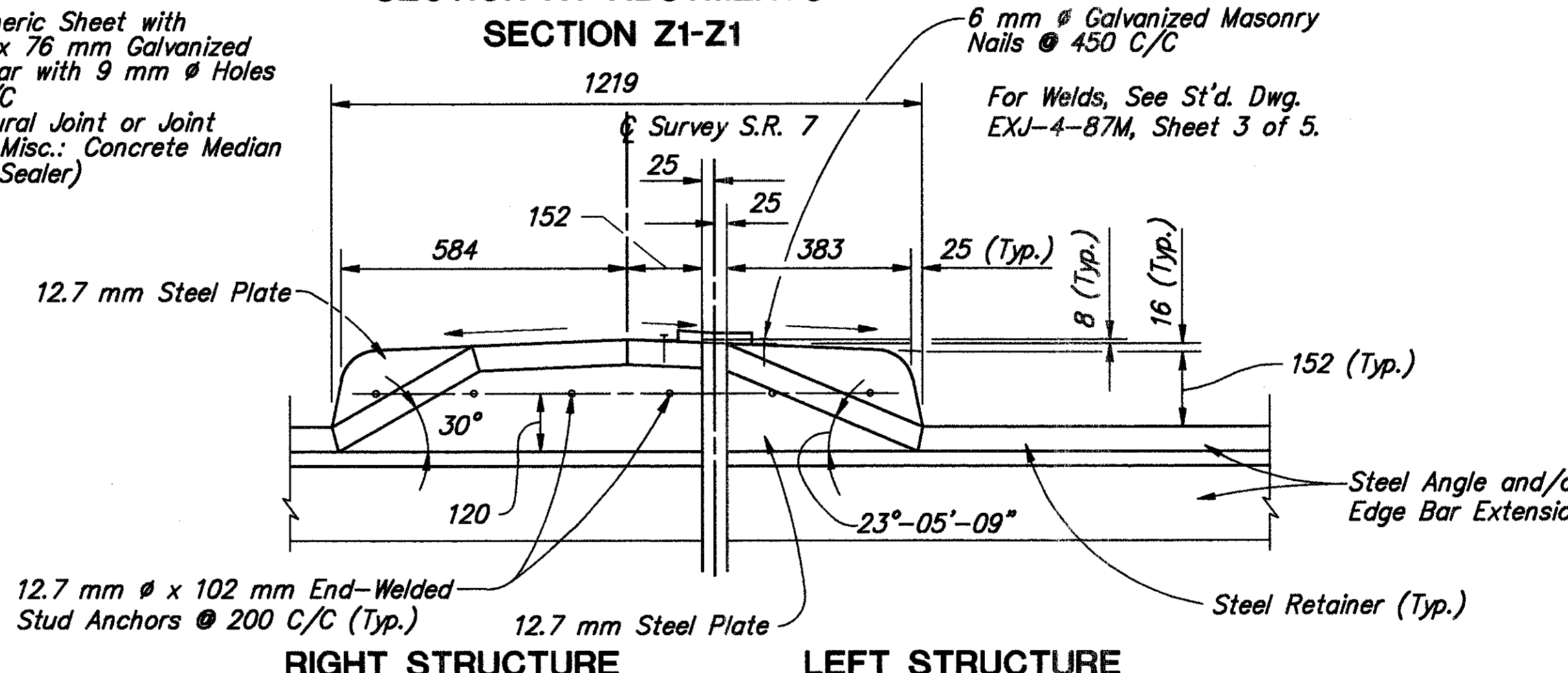
An estimated amount of 1707 kg of Item 513 Structural Steel and 1707 kg of Item 513 Structural Steel Removed For Re-Use has been included in the Estimated Quantities Summary.

All steel shall be field painted with the three coat OZEU paint system. Allowance has been made for these painting quantities to be carried with and paid for under Field Painting of Existing Steel, System OZEU.



**BEL-7-32283 L/R INTERMEDIATE JOINT SECTION Z3-Z3**

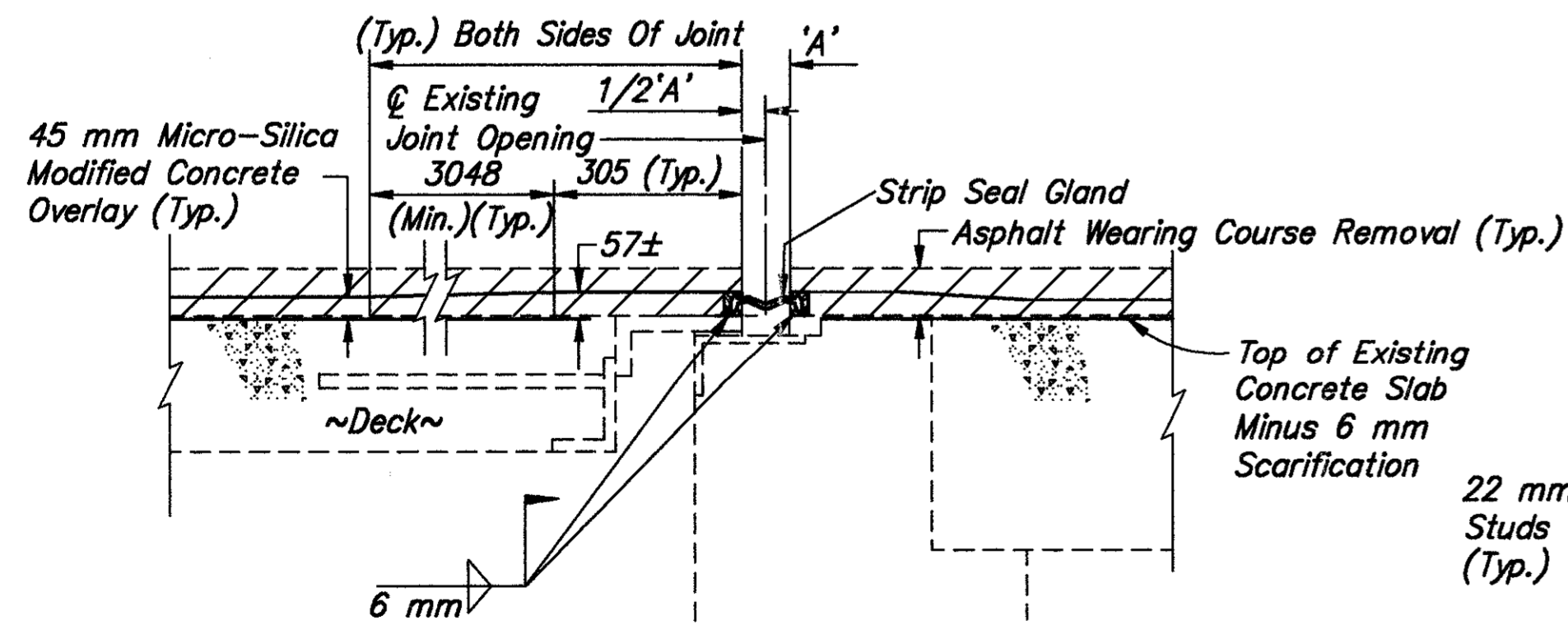
Elastomeric Sheet with 6 mm x 76 mm Galvanized Steel Bar with 9 mm Holes 450 C/C (Structural Joint or Joint Sealer, Misc.: Concrete Median Barrier Sealer)



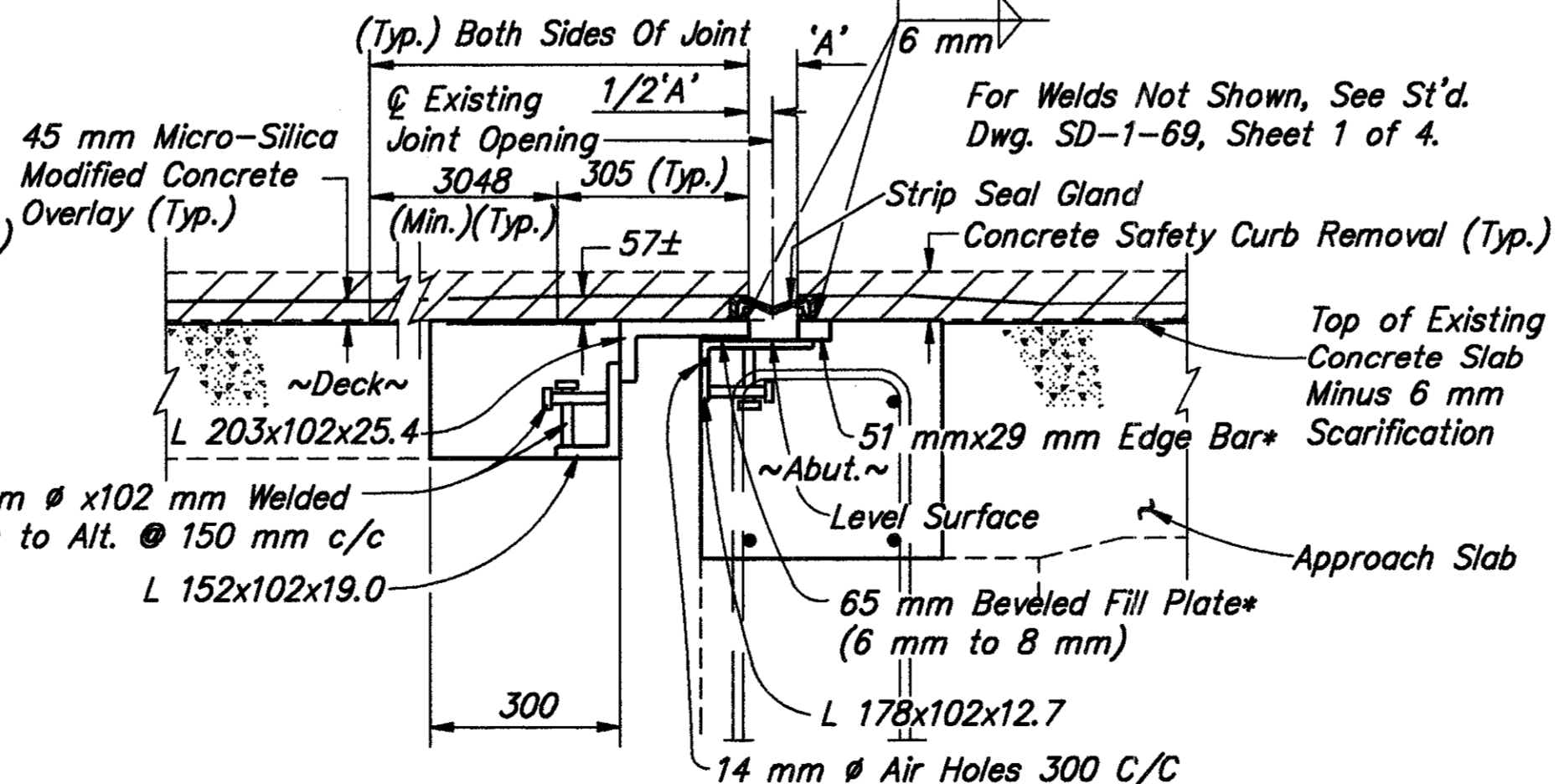
**BEL-7-36683 SAFETY TYPE CURB MEDIAN JOINT NORMAL SECTION Z7-Z7 (ABUTMENT JOINT SIMILAR)**

6 mm Galvanized Masonry Nails @ 450 C/C  
For Welds, See St'd Dwg. EXJ-4-87M, Sheet 3 of 5.

For Welds Not Shown, See St'd Dwg. SD-1-69, Sheet 1 of 4.

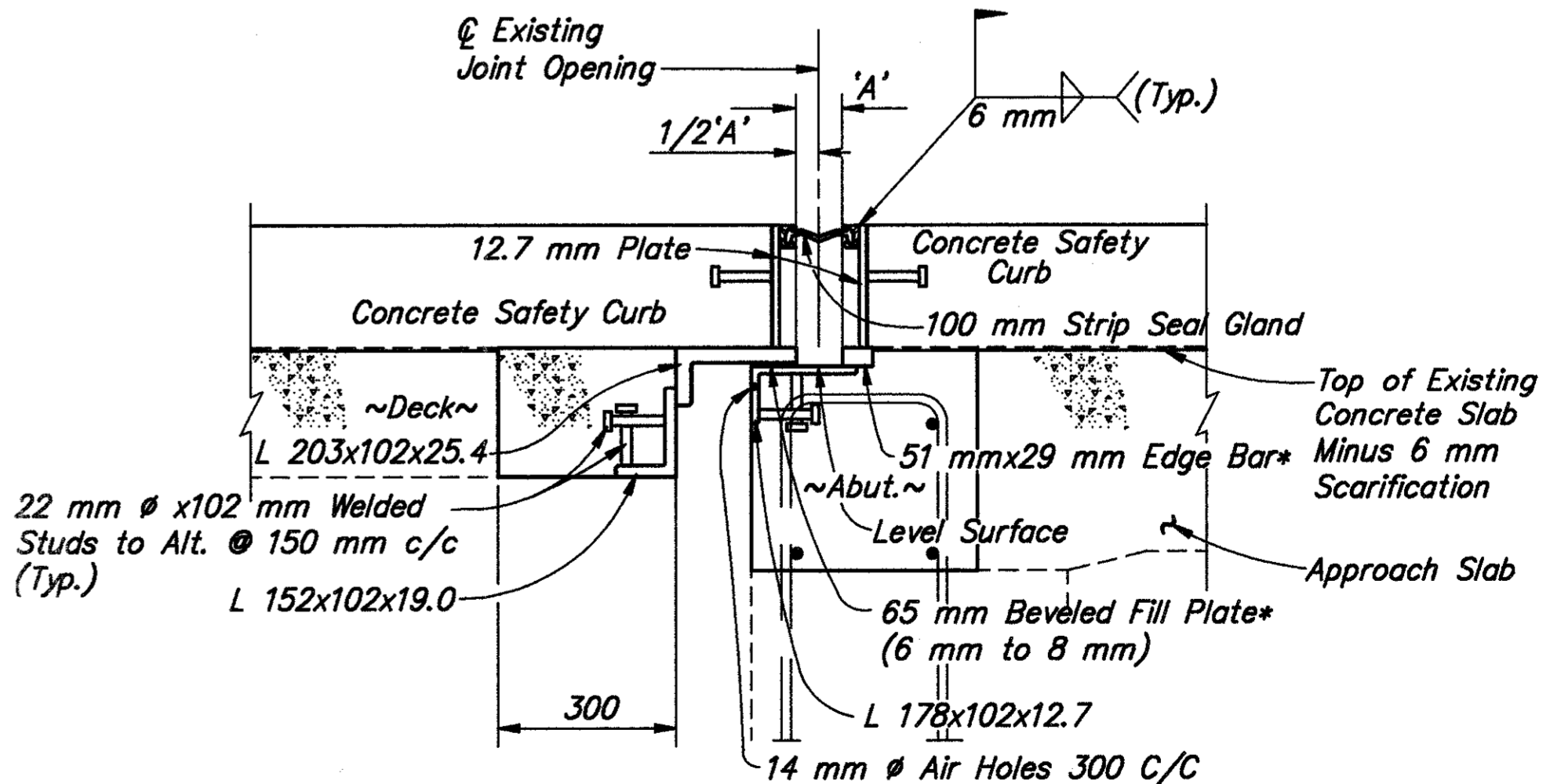


**BEL-7-36368 L/R ABUTMENT JOINT SECTION Z4-Z4**



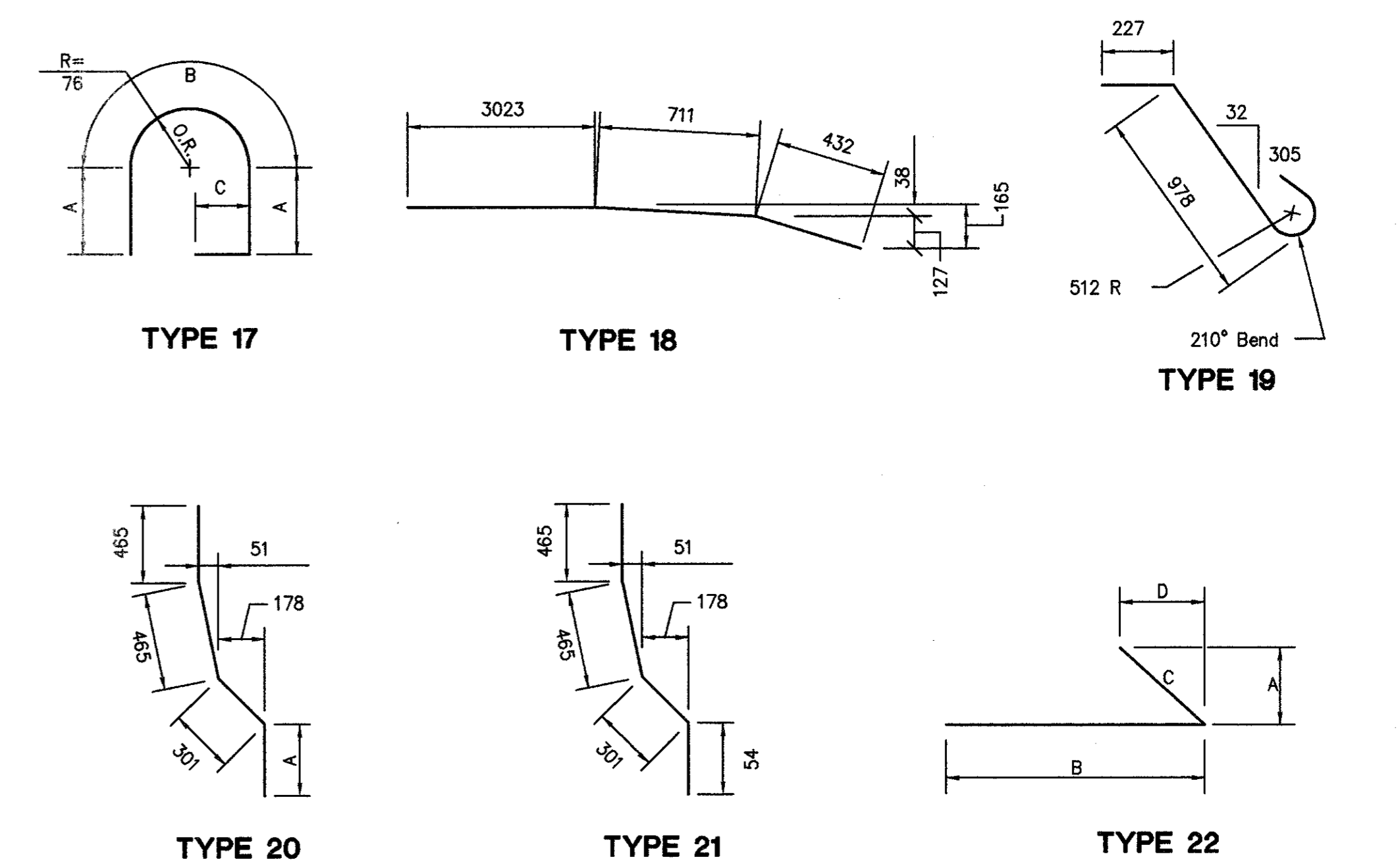
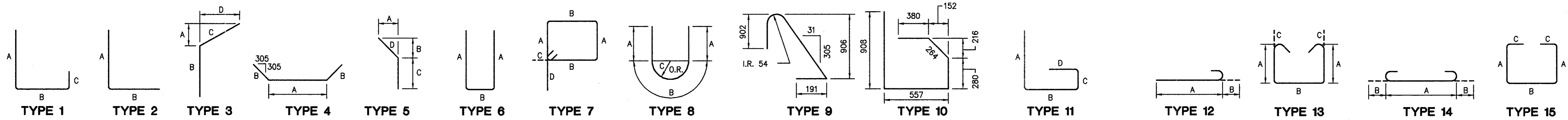
**BEL-7-36368 L/R ABUTMENT JOINT SECTION Z5-Z5**

\*To Match Existing Size



**BEL-7-36683 L/R ABUTMENT JOINT SECTION Z6-Z6**

DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CONSULTING ENGINEERS	DATE 10/97	REVISION Luda	STRUCTURE FILE NUMBER
DESIGNED FDH	CHECKED ZRD	DRAWN FDH	REVISION
<b>EXPANSION JOINT DETAILS</b>			
BRIDGE REPAIR STATE ROUTE 7 BELMONT COUNTY			
<b>BEL-7-32-276</b>			
35 / 37			
234 242			



SUPERSTRUCTURE						NUMBER								TOTAL	LENGTH mm	WEIGHT kg		
MARK	TYPE	A	B	C	D	E	BEL-7-32283L/R		BEL-7-36164	BEL-7-36368L/R		BEL-7-36683L/R						
							LEFT	RIGHT		LEFT	RIGHT	LEFT	RIGHT					
**	S25M01	ST					6	6						12	5791	273		
**	S25M02	ST					6	6						12	4813	227		
															SUBTOTAL	500		
**	S20M01	ST					6	6						12	5791	164		
**	S20M02	ST					6	6						12	4813	136		
															SUBTOTAL	300		
***	S15M01	ST					230	230				15	15	53	53	596	10 668	9982
	S15M02	ST							4						4	6900	43	
	S15M03	ST							4						4	6212	39	
	S15M04	ST							398						398	546	341	
***	S15M05	ST					1292	1292			97	97	296	296	3370	501	2651	
***	S15M06	5	225	321	257	392	1312	1312			101	101	298	298	3422	649	3487	
***	S15M07	19	See Detail					1312	1312			101	101	280	280	3386	1343	7139
***	S15M08	12	968	178									18	18	36	1146	65	
***	S15M09	ST					20	20			4	4	12	12	72	1197	135	
	S15M10	2	505	152			1312	-			101	-			1413	616	1367	
	S15M11	2	1213	245			1312	1312			101	101			2826	1417	6287	
	S15M12	20	257	See Detail				1312	1312			101	101		2826	1488	6602	
	S15M13	2	505	127			-	1312			-	101			1413	591	1311	
	S15M15	2	314	273							303	-			303	545	259	
	S15M16	2	314	629							-	303			303	901	429	
***	S15M17	ST					5	5							10	8802	138	
***	S15M18	ST					5	5							10	5672	89	
***	S15M19	ST					5	5							10	6981	110	
***	S15M20	ST					5	5							10	3129	49	
***	S15M21	ST					5	5							10	8299	130	
***	S15M22	21	See Detail					4	4						8	1285	16	
***	S15M23	ST									5	5			10	7072	111	
***	S15M25	18	See Detail									4	4		8	4166	52	
***	S15M26	ST									2	2		4	4166	26		
***	S15M27	ST									4	4		8	994	12		
***	S15M28	ST									5	6		11	4447	77		
***	S15M29	ST									3	3		6	891	8		
***	S15M30	ST									3	3		6	7112	67		
	S15M31	ST					552	552	48	36	36	22	33	1279	10 668	21 422		
	S15M32	17	318	239	102				398					398	939	587		
	S15M33	ST					12	12						24	5672	214		
	S15M34	ST					12	12						24	6981	263		
	S15M35	ST					12	12						24	3129	118		
	S15M36	ST					12	12						24	8802	332		
	S15M37	ST					12	12						24	8299	313		
	S15M38	ST					12	12						24	7072	266		
***	S15M39	ST					30	30			6	6		72	860	97		
***	S15M40	ST											6	6	12	1470	28	
															SUBTOTAL	64 662		

**NOTES**

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A15M01 IS A 15M BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

UNLESS NOTED OTHERWISE, PAYMENT SHALL BE INCLUDED IN THE CONTRACT BID PRICES FOR THE CORRESPONDING 511 ITEMS.

ALL LENGTHS ARE IN mm.

FOR ABUTMENT & RETAINING WALL REINFORCING BAR SCHEDULE, SEE SHEET 37/37

ALL REINFORCING STEEL TO BE EPOXY COATED.

ST IN THE TYPE COLUMN INDICATES A STRAIGHT BAR.

\*\* REINFORCING MECHANICALLY CONNECTED, SEE GENERAL NOTE.

\*\*\* INCLUDED WITH ITEM 517 - RAILING FACED, AS PER PLAN FOR PAYMENT.

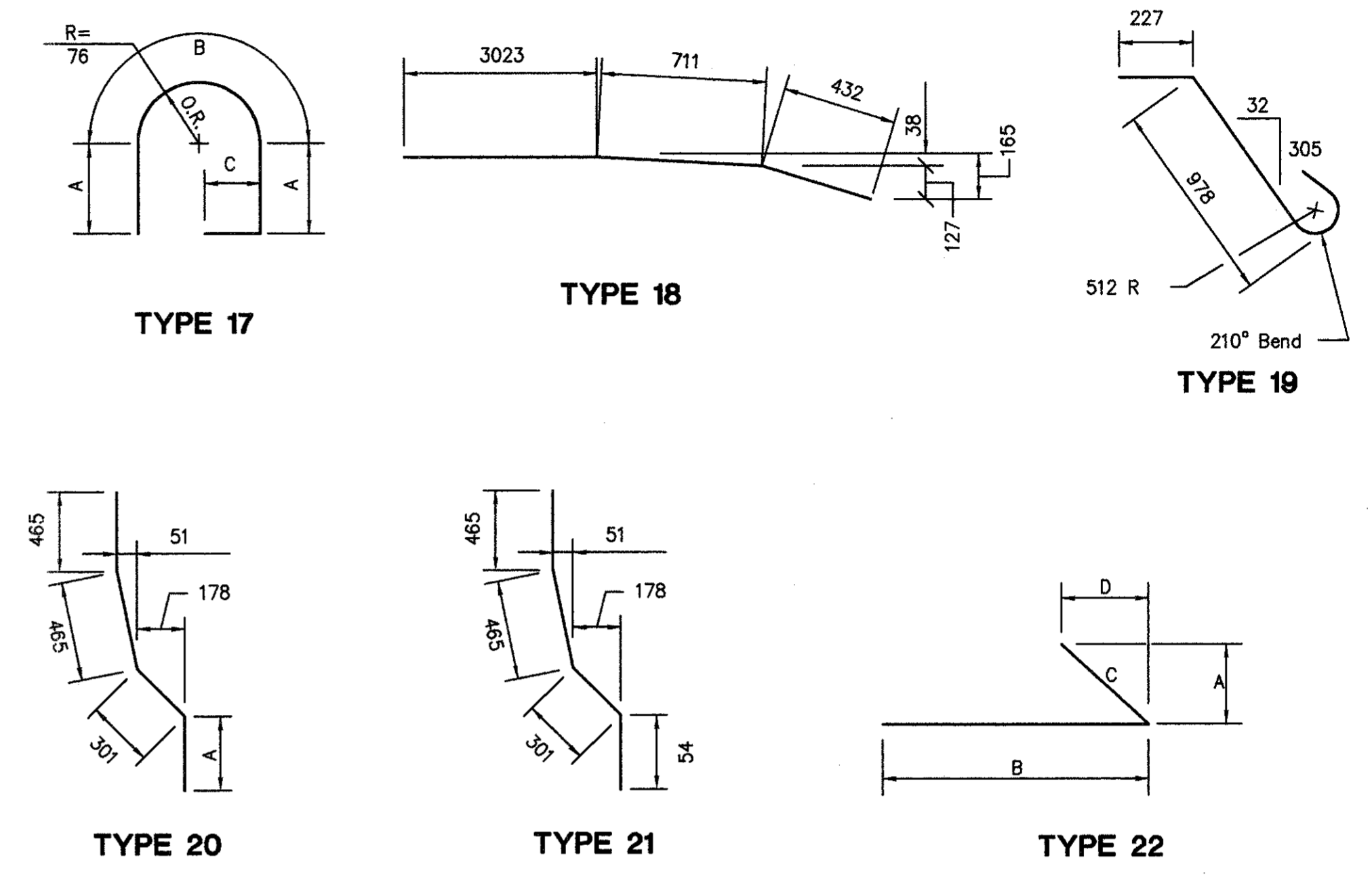
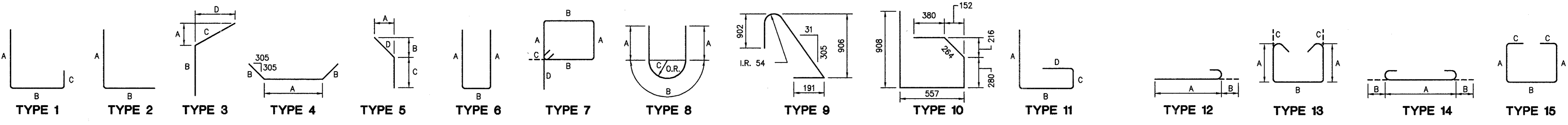
DESIGN AGENCY  
**W.E. QUICKSALL & ASSOCIATES INC.**  
 554 WEST HIGH AVE.  
 NEW PHILADELPHIA, OHIO  
 CONSULTING ENGINEERS

DATE: 10/97  
 REVIEWED: WCH  
 DRAWN: CFD  
 DESIGNED: FDH  
 CHECKED: ZRP

**REINFORCING BAR SCHEDULE**  
 BRIDGE REPAIR  
 STATE ROUTE 7 BELMONT COUNTY

**BEL-7-32.276**

36/37  
 235  
 242



ABUTMENTS						NUMBER						TOTAL	LENGTH mm	WEIGHT kg	
MARK	TYPE	A	B	C	D	E	BEL-7-32283L/R		BEL-7-36368L/R		BEL-7-36683L/R				
							LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT			
A25M01	4	712	431				42	42					84	1511	498
														SUBTOTAL	498
A20M01	1	1394	279	894			10	10					20	2472	116
A20M02	2	1059	348				10	10					20	1360	64
														SUBTOTAL	180
* A15M01	ST						18	18					36	5126	290
A15M02	ST						22	22					44	1662	115
A15M03	ST						24	24	24	24	22	22	140	432	95
A15M04	9			See Detail			8	8	2	2			20	2158	68
A15M05	10			See Detail			8	8	19	19			54	2269	192
A15M06	20	508		See Detail			4	4					8	1739	22
A15M07	2	1168	246				4	4	4	4			16	1373	34
A15M08	2	793	126				4	4					8	878	11
A15M09	18			See Detail					4	4			8	4166	52
A15M10	12	984	203						17	17			34	1187	63
A15M11	ST								25	25			50	1286	101
A15M12	11	856	559	272	305		4	4	4	4			8	1869	23
A15M13	ST								8	8			16	1270	32
A15M14	ST								12	12			24	1206	45
A15M15	ST								9	9			18	4264	121
A15M16	ST								9	9			18	4415	125
A15M17	ST								-	8			8	1871	23
A15M18	2	895	279								4	4	8	1133	14
A15M19	2	895	508								-	4	4	1362	9
A15M20	22	286	901	291	54				4	4	4	4	8	1182	15
A15M21	3	127	771	684	673				4	4	4	4	8	1414	18
A15M22	1	991	343	153					4	4	4	4	8	1405	18
* A15M23	ST						18	18					36	5429	307
A15M24	ST								4	-			4	2130	13
A15M25	ST								2	2			4	1219	8
A15M26	ST										6	3	9	2077	29
A15M27	2	895	432						4	-			4	1286	8
A15M28	ST										-	3	3	4165	20
A15M29	20	393		See Detail					4	4			8	1624	20
A15M30	2	796	126						4	4			8	881	11
														SUBTOTAL	1902
RETAINING WALL PARAPETS															
*** R15M01	5	225	321	293	392		331	467					798	685	858
*** R15M02	19			See Detail			317	453					770	1343	1624
*** R15M03	ST						390	553					943	483	715
*** R15M04	12	1242	178				24	24					48	1420	107
*** R15M05	ST						2	2					4	1623	10
*** R15M07	ST						84	120					204	10 668	3417
*** R15M08	ST						3	-					3	9765	46
*** R15M09	ST						-	6					6	6452	61
*** R15M10	ST						3	-					3	10 258	48
*** R15M11	ST						3	-					3	3923	18
*** R15M12	ST						-	3					3	1657	8
*** R15M13	ST						3	-					3	3806	18
*** R15M14	ST						-	3					3	6303	30
*** R15M15	ST						2	2					4	4166	26
*** R15M16	18			See Detail			4	4					8	4166	52
*** R15M17	ST						8	8					16	1470	37
														SUBTOTAL	7075
														*TOTAL	75 117

**NOTES**

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A15M01 IS A 15M BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

UNLESS NOTED OTHERWISE, PAYMENT SHALL BE INCLUDED IN THE CONTRACT BID PRICES FOR THE CORRESPONDING 511 ITEMS.

ALL LENGTHS ARE IN mm.

FOR SUPERSTRUCTURE REINFORCING BAR SCHEDULE, SEE SHEET 36/37

ALL REINFORCING STEEL TO BE EPOXY COATED.

ST IN THE TYPE COLUMN INDICATES A STRAIGHT BAR.

\* THIS TOTAL REPRESENTS THE TOTAL REINFORCING QUANTITY WHICH SHALL BE PAID FOR WITH THE VARIOUS 511 & 517 ITEMS. THIS TOTAL INCLUDES 170 kg FROM SHEET 27/37 AND 100 kg FROM SHEET 35/37.

\*\* REINFORCING MECHANICALLY CONNECTED, SEE GENERAL NOTE.

\*\*\* INCLUDED WITH ITEM 517 - RAILING FACED, AS PER PLAN FOR PAYMENT.

DESIGN AGENCY: W.E. QUICKSALL & ASSOCIATES INC.  
 554 WEST HIGH AVE.  
 NEW PHILADELPHIA, OHIO  
 CONSULTING ENGINEERS

DATE: 10/19/97  
 REVIEWED: J.W.D.  
 DRAWN: C.F.D.  
 DESIGNED: F.D.H.  
 CHECKED: Z.R.D.

**REINFORCING BAR SCHEDULE**  
 BRIDGE REPAIR  
 STATE ROUTE 7 BELMONT COUNTY

BEL-7-32.276  
 37/37  
 236  
 242

# FENCE SUMMARY

FROM SHEET NO.	REF. NO.	STATION		DIRECTION	202		607						625	
					FENCE REMOVED	FENCE, TYPE CLT	POST ASSEMBLY			FENCE TERMINAL	GROUND ROD			
					Meter	Meter	ⓐ	ⓑ	ⓒ	ⓓ	ⓔ	Each	Each	
		TO	FROM			Each	Each	Each					Each	
238	1-F	32+177.660	32+218.821	LT.	56.11	56.11	1	1				1		
238	2-F	32+761.327	32+845.572	LT.	84.24	84.24		2						
239	3-F	33+592.065	33+703.296	RT.	108.00	108.00	1	2	1					1
239	4-F	33+652.690	34+085.780	LT.	415.00	420.00	2	1	3			1		2
239	5-F	33+717.037	34+070.000	RT.	359.00	359.00	2	2	1					2
239	6-F	34+123.542	34+612.522	LT.	489.00	489.00		2	1					
239	7-F	34+118.000	34+349.952	RT.	181.95	231.95	1	2						
239 & 240	8-F	34+648.522	35+689.926	LT.	993.20	1035.96	23	2	7					1
240 & 241	9-F	35+715.422	36+371.149	LT.	673.75	673.75	15	1	5			1		
241	10-F	36+407.031	36+658.776	LT.	282.36	282.36	4		1			2		
241	11-F	36+801.896	36+851.600	LT.	68.47	68.47	2	1				1		
241	12-F	37+329.360	37+406.746	LT.	85.00	85.00	1	2						
<b>TOTALS</b>					<b>3796.08</b>	<b>3893.84</b>	<b>52</b>	<b>18</b>	<b>19</b>			<b>6</b>		<b>6</b>
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>					<b>3796.08</b>	<b>3893.84</b>								<b>6</b>

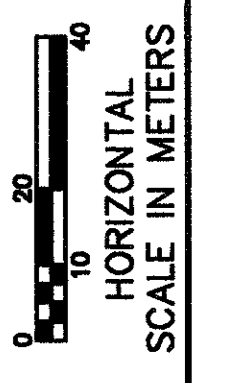
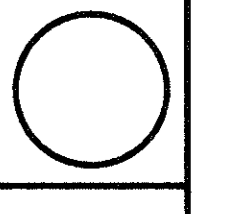
FENCE LEGEND

- ⓐ - CORNER POST ASSEMBLY
- ⓑ - END POST ASSEMBLY
- ⓒ - INTERMEDIATE ANCHOR POST ASSEMBLY
- ⓓ - ABUTMENT CONNECTION
- ↑ - GROUND ROD

FOR DETAILS, SEE STANDARD DRAWINGS F-1.1M, F-3.1M, and F-3.3M

**FENCE SUMMARY**

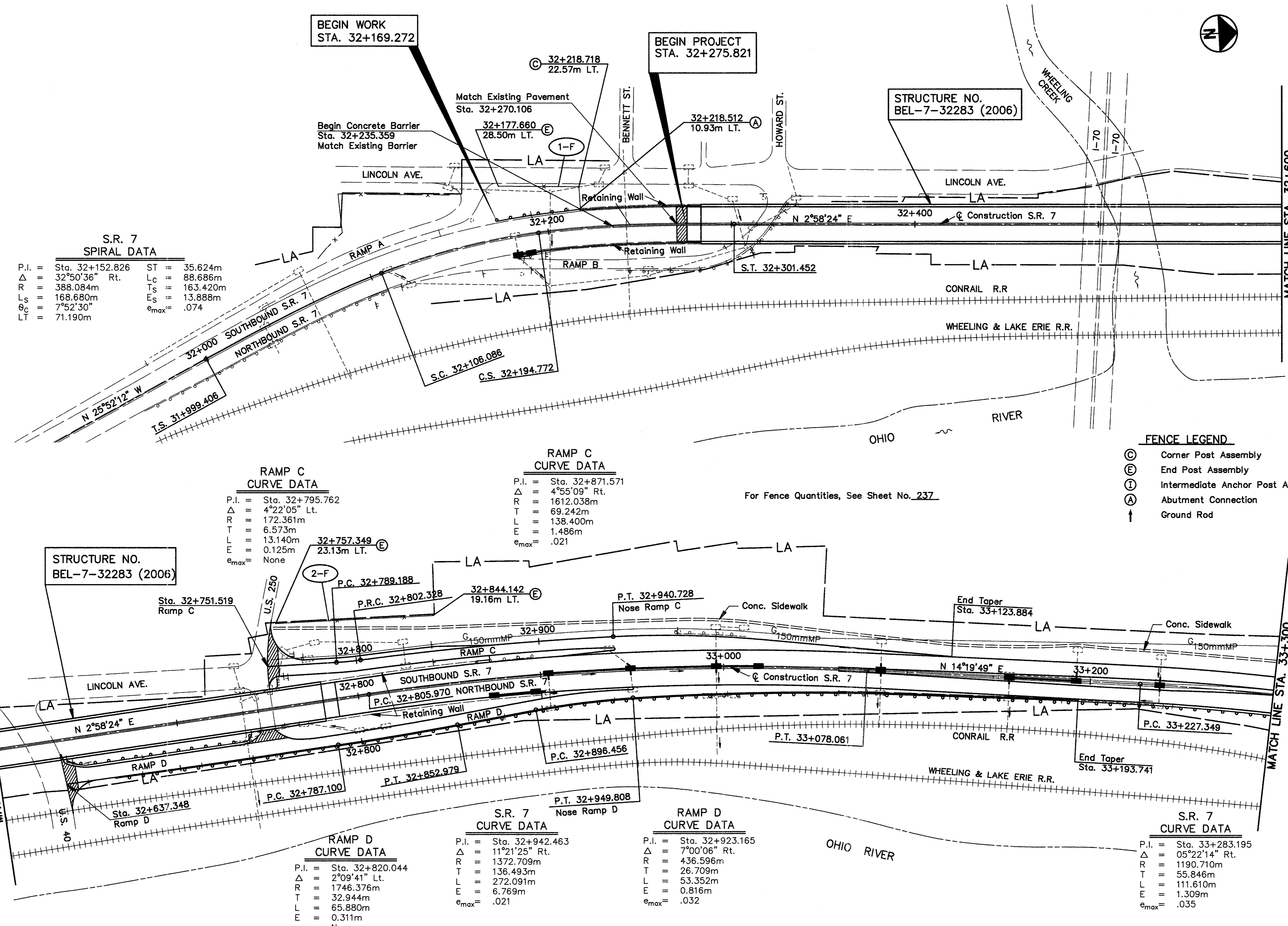
**BEL-7-32.276**



CALCULATED  
WCR  
CHECKED  
SAH

**FENCING PLAN**  
**STA. 32+169.272 TO 33+300**

**BEL-7-32.276**



**S.R. 7 SPIRAL DATA**

P.I.	=	Sta. 32+152.826	ST	=	35.624m
$\Delta$	=	32°50'36" Rt.	Lc	=	88.686m
R	=	388.084m	Ts	=	163.420m
Ls	=	168.680m	Es	=	13.888m
$\theta_c$	=	7°52'30"	e <sub>max</sub>	=	.074
LT	=	71.190m			

**RAMP C CURVE DATA**

P.I.	=	Sta. 32+795.762
$\Delta$	=	4°22'05" Lt.
R	=	172.361m
T	=	6.573m
L	=	13.140m
E	=	0.125m
e <sub>max</sub>	=	None

**RAMP C CURVE DATA**

P.I.	=	Sta. 32+871.571
$\Delta$	=	4°55'09" Rt.
R	=	1612.038m
T	=	69.242m
L	=	138.400m
E	=	1.486m
e <sub>max</sub>	=	.021

**RAMP D CURVE DATA**

P.I.	=	Sta. 32+820.044
$\Delta$	=	2°09'41" Lt.
R	=	1746.376m
T	=	32.944m
L	=	65.880m
E	=	0.311m
e <sub>max</sub>	=	None

**S.R. 7 CURVE DATA**

P.I.	=	Sta. 32+942.463
$\Delta$	=	11°21'25" Rt.
R	=	1372.709m
T	=	136.493m
L	=	272.091m
E	=	6.769m
e <sub>max</sub>	=	.021

**RAMP D CURVE DATA**

P.I.	=	Sta. 32+923.165
$\Delta$	=	7°00'06" Rt.
R	=	436.596m
T	=	26.709m
L	=	53.352m
E	=	0.816m
e <sub>max</sub>	=	.032

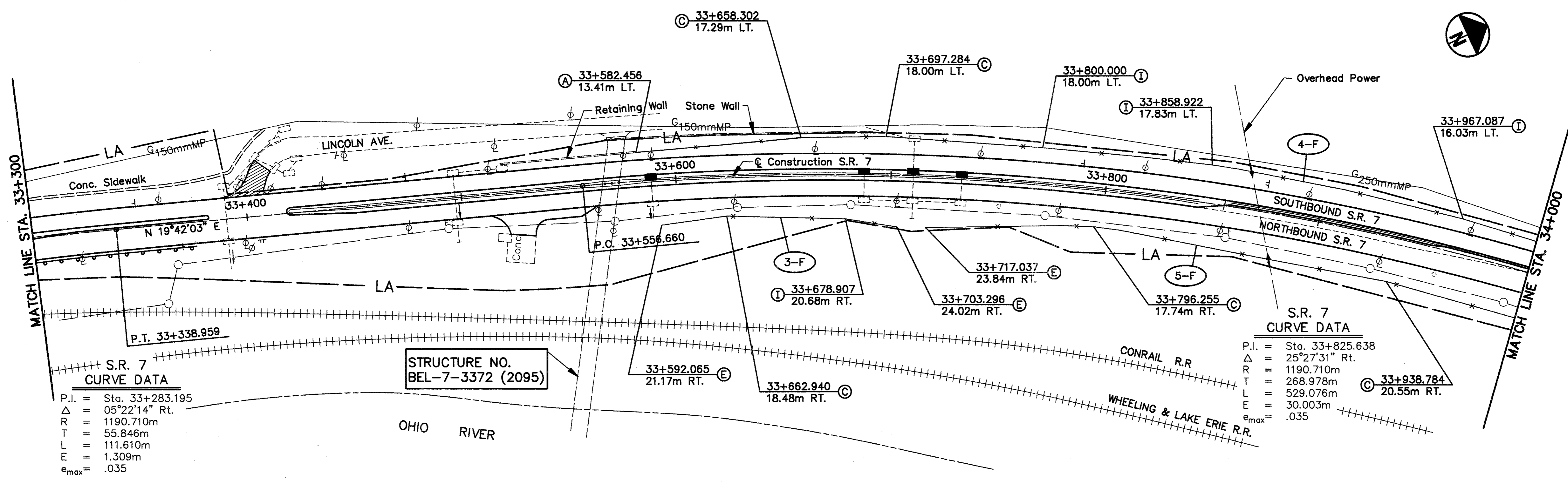
**S.R. 7 CURVE DATA**

P.I.	=	Sta. 33+283.195
$\Delta$	=	05°22'14" Rt.
R	=	1190.710m
T	=	55.846m
L	=	111.610m
E	=	1.309m
e <sub>max</sub>	=	.035

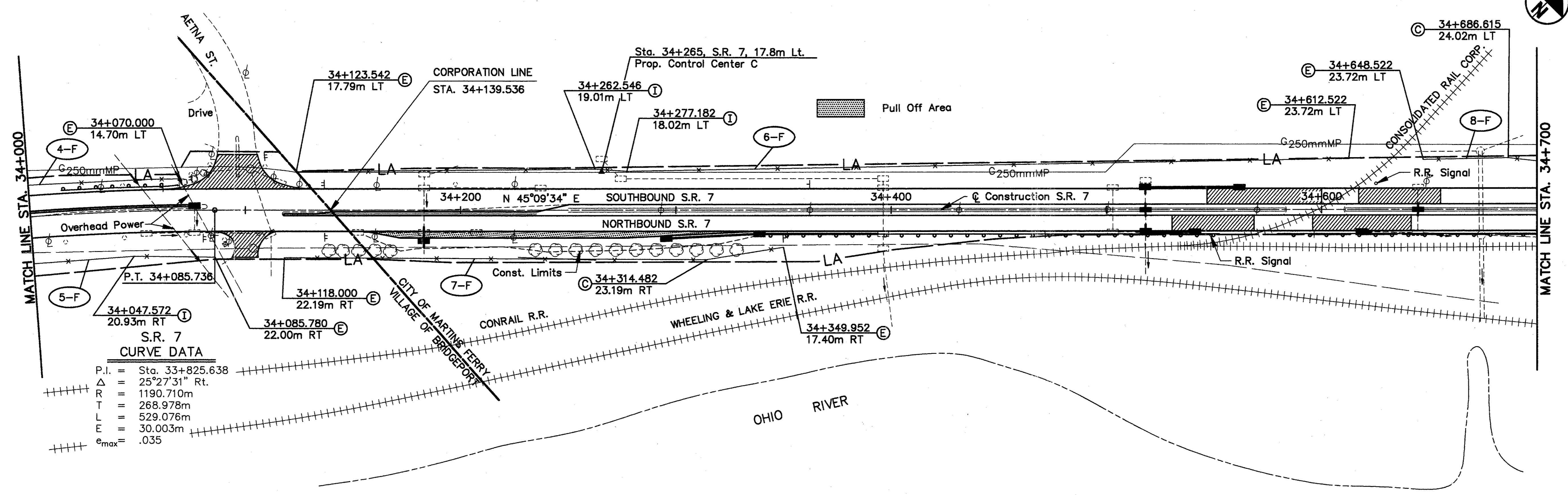
For Fence Quantities, See Sheet No. 237.

- FENCE LEGEND**
- ⊙ Corner Post Assembly
  - ⊕ End Post Assembly
  - ⊖ Intermediate Anchor Post Assembly
  - ⊗ Abutment Connection
  - ↑ Ground Rod

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For Fence Legend and Quantities, See Sheet No. 237.



**FENCING PLAN**  
**STA. 33+300 TO 34+700**

**BEL-7-32.283**

239

242

SCALE IN METERS

HORIZONTAL

VERTICAL

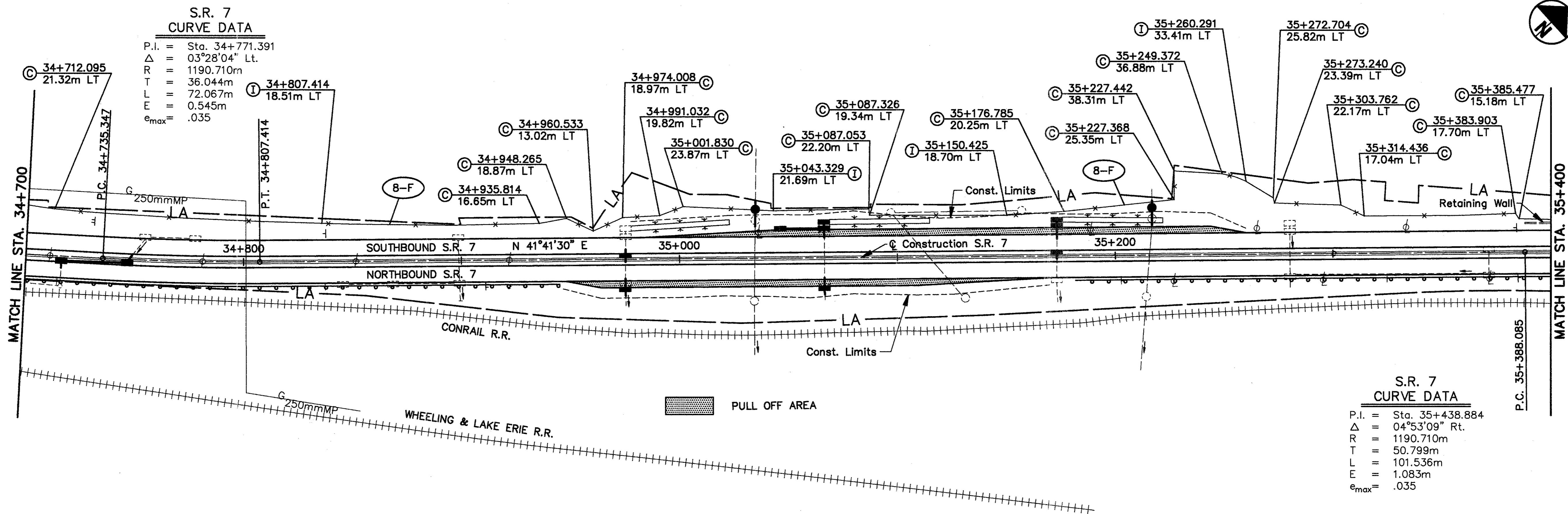
SAH

WCR

CRK

SAH

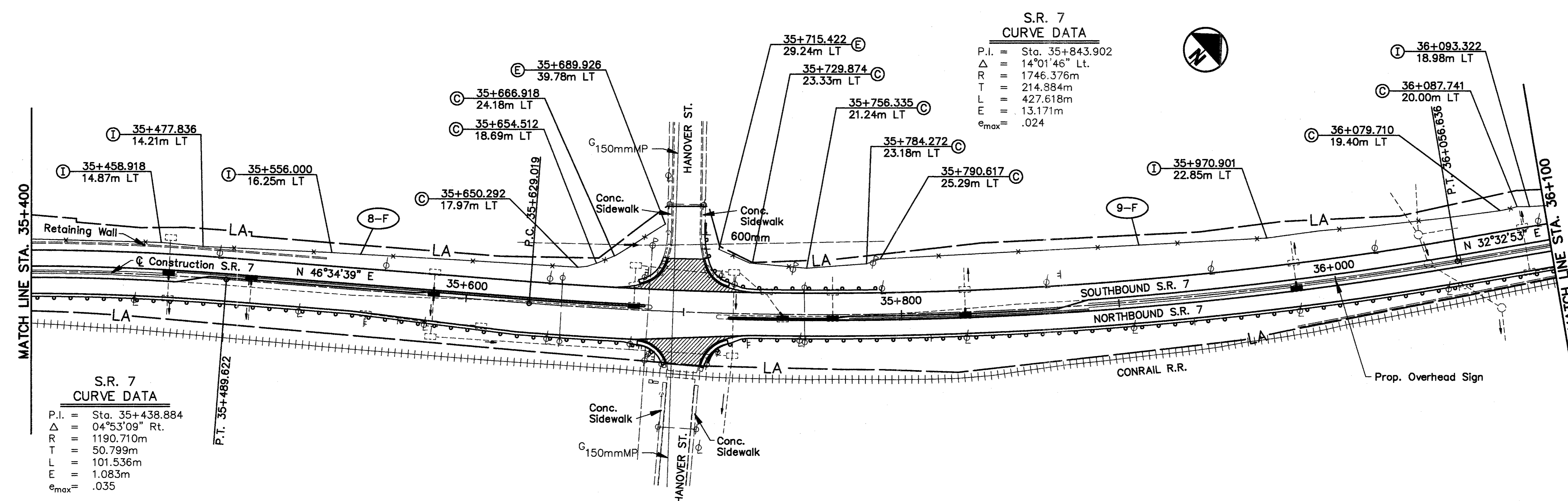




**S.R. 7  
CURVE DATA**  
 P.I. = Sta. 34+771.391  
 $\Delta$  = 03°28'04" Lt.  
 R = 1190.710m  
 T = 36.044m  
 L = 72.067m  
 E = 0.545m  
 $e_{max}$  = .035

**S.R. 7  
CURVE DATA**  
 P.I. = Sta. 35+438.884  
 $\Delta$  = 04°53'09" Rt.  
 R = 1190.710m  
 T = 50.799m  
 L = 101.536m  
 E = 1.083m  
 $e_{max}$  = .035

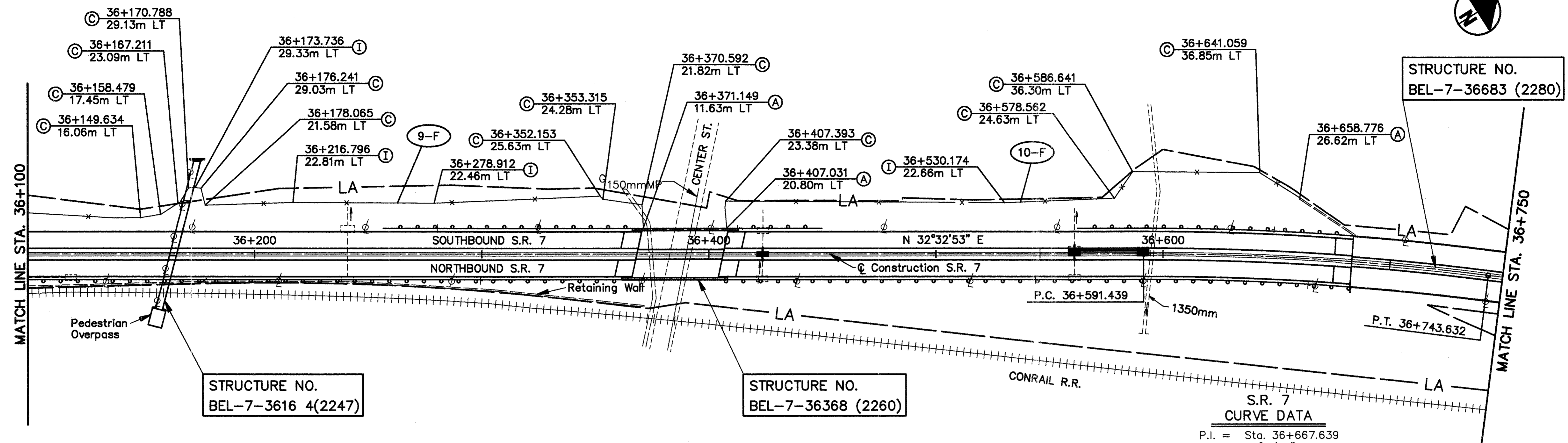
For Fence Legend and Quantities, See Sheet No. 237



**S.R. 7  
CURVE DATA**  
 P.I. = Sta. 35+438.884  
 $\Delta$  = 04°53'09" Rt.  
 R = 1190.710m  
 T = 50.799m  
 L = 101.536m  
 E = 1.083m  
 $e_{max}$  = .035

**S.R. 7  
CURVE DATA**  
 P.I. = Sta. 35+843.902  
 $\Delta$  = 14°01'46" Lt.  
 R = 1746.376m  
 T = 214.884m  
 L = 427.618m  
 E = 13.171m  
 $e_{max}$  = .024

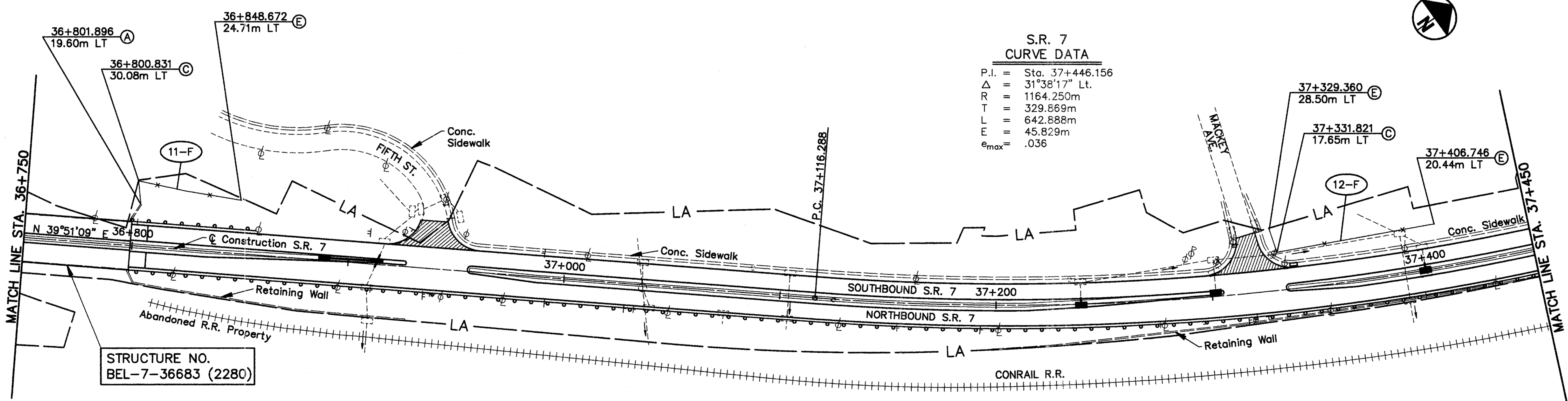
  HORIZONTAL SCALE IN METERS
CALCULATED WCR CHECKED SAH
FENCING PLAN STA. 34+700 TO 36+100
BEL-7-32.276
240 242



**S.R. 7 CURVE DATA**

P.I.	= Sta. 36+667.639
$\Delta$	= 07°18'16" Rt.
R	= 1193.801m
T	= 76.200m
L	= 152.193m
E	= 2.429m
$e_{max}$	= .035

For Fence Legend and Quantities, See Sheet No. 237.



**S.R. 7 CURVE DATA**

P.I.	= Sta. 37+446.156
$\Delta$	= 31°38'17" Lt.
R	= 1164.250m
T	= 329.869m
L	= 642.888m
E	= 45.829m
$e_{max}$	= .036

**FENCING PLAN**

**STA. 36+100 TO 37+450**

**BEL-7-32.276**

241

242

SCALE IN METERS

HORIZONTAL

VERTICAL

**S.R. 7  
CURVE DATA**

P.I. = Sta. 37+446.156  
 $\Delta$  = 31°38'17" Lt.  
R = 1164.250m  
T = 329.869m  
L = 642.888m  
E = 45.829m  
 $e_{max}$  = .036

**S.R. 7  
SPIRAL DATA**

P.I. = Sta. 37+892.513 ST = 25.406m  
 $\Delta$  = 06°33'49" Lt. Lc = 88.915m  
R = 776.167m Ts = 121.001m  
Ls = 76.200m Es = 1.275m  
 $\theta_c$  = 02°48'45"  $e_{max}$  = .053  
LT = 50.806m



CALCULATED  
WCR  
CHECKED  
SAH

**FENCING PLAN  
STA. 37+450 TO 38+422**

**BEL-7-32.276**

