STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-WEST 140TH STREET

BRIDGE NO. 208 SLM 0182

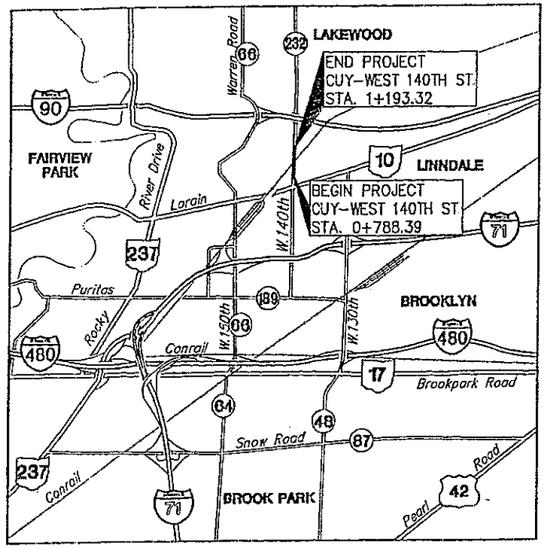
REHABILITATION OF EXISTING SEPARATED CROSSING WITH THE CONSOLIDATED RAIL CORPORATION (CONRAIL) AND GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY (GCRTA)

CITY OF CLEVELAND
CUYAHOGA COUNTY

metric units

PROJECT DESCRIPTION

REHABILITATION OF THE EXISTING STRUCTURE OVER THE CONRAIL AND GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY BY REPLACEMENT OF THE BRIDGE DECK, STRUCTURAL STEEL, REPLACEMENT OF THE EXISTING DECK OF THE CELLULAR ABUTMENTS AND NEW APPROACH SLABS



LOCATION MAP

LATITUDE: N 41° 27' 35" LONGITUDE: W 81° 47' 35"

SCALE IN KILOMETERS
0 1 2 3 4 5 6 7

PORTION TO BE IMPROVED

INTERSTATE, U.S. & STATE ROUTES

OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (1998)	15,410
DESIGN YEAR ADT (2018)	14,360
DESIGN HOURLY VOLUME (2018)	1,280
DIRECTIONAL DISTRIBUTION	50%
TRUCKS (24 HOUR B&C)	5%
DESIGN SPEED	60 KM.P.H.
LEGAL SPEED	25 M.P.H.
FUNCTIONAL CLASSIFICATION	URBAN COLLECTOR

DESIGN EXCEPTIONS
NONE REQUIRED

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

PLAN PREPARED BY:
EUTHENICS INC.
CONSULTING ENGINEERS
975 Keynote Circle, Cleveland Ohio

STATE OF OHIO
DONALD W. KAMINSKI
27899
REGISTERED
PROFESSIONAL ENGINEER

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BOARD OF COMMISSIONERS
CUYAHOGA COUNTY
DATE March 10, 1998

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

APPROVED Thomas J. Natoli P.E., P.S. DATE 2/19/98
COUNTY ENGINEER

APPROVED _____ DATE March 98
DISTRICT DEPUTY DIRECTOR

APPROVED _____ DATE 3-19-98
DIRECTOR, DEPARTMENT OF TRANSPORTATION

STANDARD CONSTRUCTION DRAWINGS

BP-3.1M	10-28-94	TC-41.10M	3-31-94	MT-35.10M	1-30-95	AS-1-81M	10-25-94	HL-10.11M	5-1-95	845	7-17-95
BP-5.1M	10-28-94	TC-41.20M	7-01-94	MT-35.11M	1-30-95	EXJ-2-81M	3-20-95	HL-10.12M	5-1-95	863	9-9-97
BP-7.1M	10-28-94	TC-41.40M	3-31-94	MT-95.31M	4-25-94	EXJ-4-87M	3-20-95	HL-10.13M	5-1-95	953	6-14-95
BP-2.4M	10-28-94	TC-42.20M	3-31-94	MT-95.32M	4-25-94	VPF-1-90M	3-20-95	HL-20.14M	5-1-95	806	9-9-97
RM-4.2M	10-21-97	TC-52.10M	7-29-94	MT-95.41M	4-25-94			HL-30.11M	3-31-95	816	4-21-97
		TC-52.20M	7-29-94	MT-97.10M	4-25-94			HL-30.22M	3-31-95		
				MT-101.60M	4-25-94			HL-30.31M	5-1-95		
				MT-105.10M	4-25-94			HL-30.32M	8-14-96		
				MT-105.11M	4-25-94			HL-50.21M	8-31-95		
				MT-110.20M	3-01-96			HL-60.11M	5-1-95		
				PCB-91M	3-20-95						

SUPPLEMENTAL SPECIFICATIONS

SPECIAL PROVISIONS
OHIO ENVIRONMENTAL PROTECTION AGENCY NOTIFICATION OF DEMOLITION AND RENOVATION
2-27 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT NO. 7224 AND B-NO. 200

FEDERAL PROJECT NO. BHF-96A (3)
PID NO. 10898
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT CONRAIL AND GCRTA
CUY-WEST 140TH STREET
1/98

N

0 20 40
HORIZONTAL SCALE IN METERS

CALCULATED NNB
CHECKED EPS

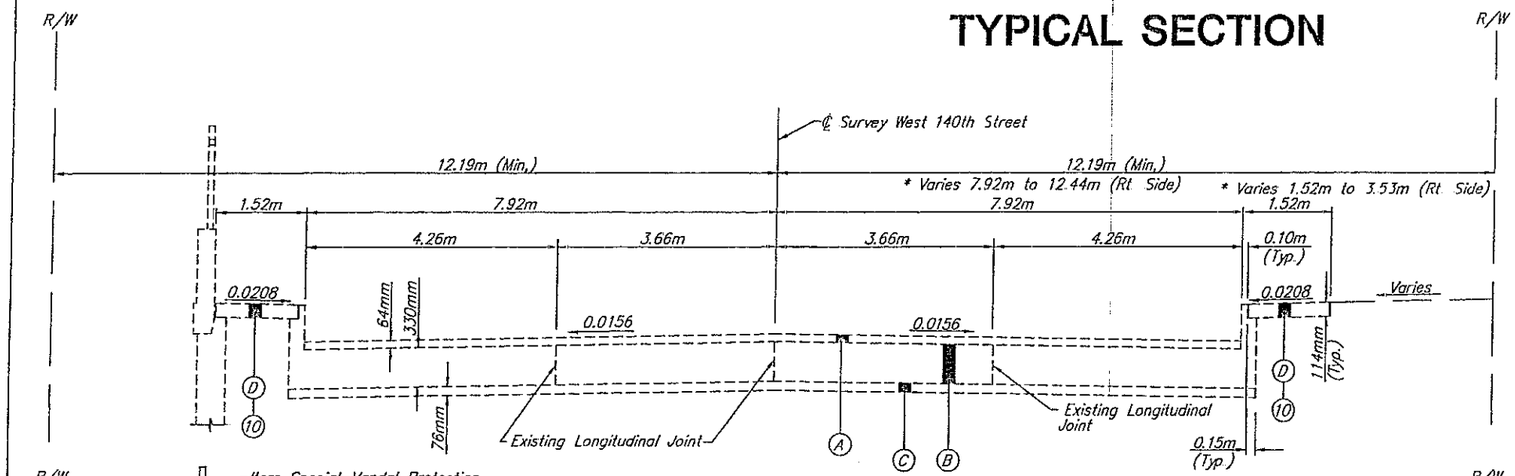
SCHEMATIC PLAN

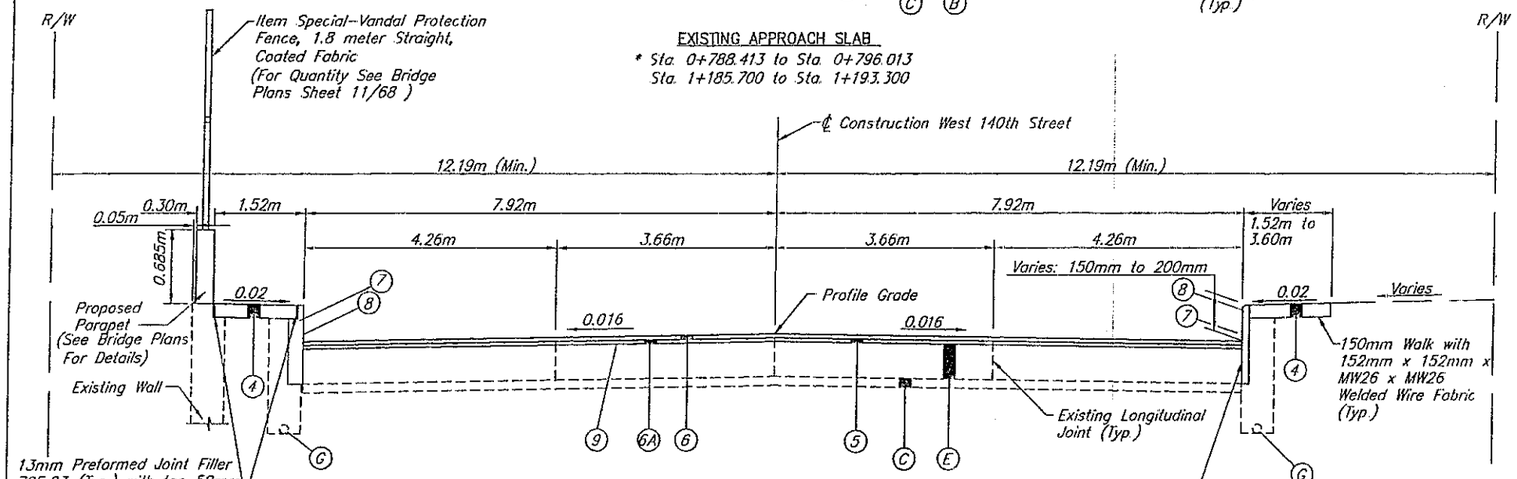
CUY-WEST 140TH STREET

2/98

317/AUSC/317TSC01.PLX 1/13/98 PLOT 100% 1000 METRIC

TYPICAL SECTION

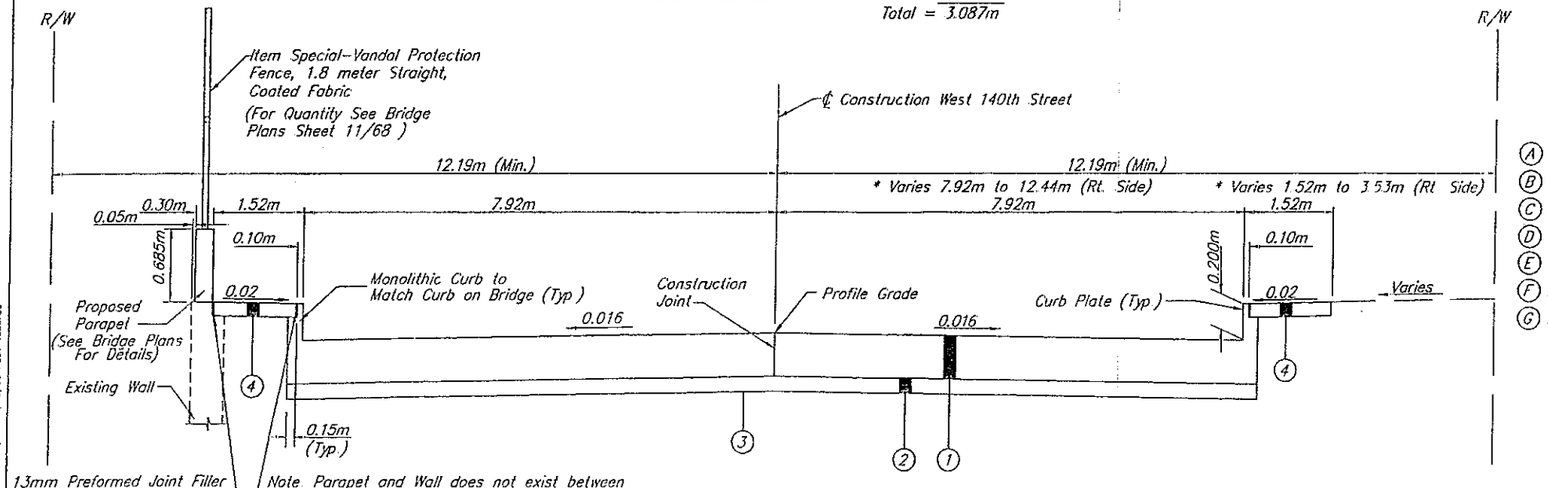




EXISTING APPROACH SLAB
* Sta. 0+788.413 to Sta. 0+796.013
Sta. 1+185.700 to Sta. 1+193.300

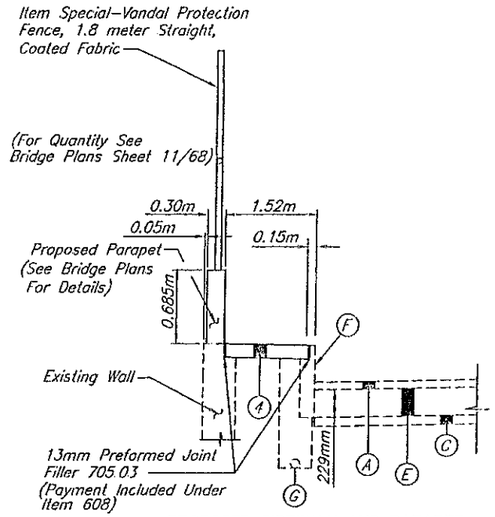
Note Parapet and Wall does not exist between Sta. 0+786.87 and Sta. 0+788.39

TRANSITION SECTION
Sta. 0+786.869 to Sta. 0+788.413 = 1.544m
Sta. 1+193.300 to Sta. 1+194.843 = 1.543m
Total = 3.087m



Note Parapet and Wall does not exist between Sta. 0+788.39 and Sta. 0+796.01

APPROACH SLAB SECTION
*Sta. 0+788.413 to Sta. 0+796.013 = 7.600m
Sta. 1+185.70 to Sta. 1+193.32 = 7.600m
Total = 15.200m



PROPOSED SIDEWALK AND PARAPET
Sta. 1+194.843 Lt. to Sta. 1+211.530 Lt. = 16.687m

LEGEND

EXISTING

- (A) Asphalt Concrete Wearing Course
- (B) Reinforced Concrete Approach Slab
- (C) Subbase
- (D) Concrete Walk
- (E) Reinforced Concrete Pavement
- (F) Stone Curb
- (G) Shallow Pipe Underdrain

PROPOSED

- (1) Item 611 Reinforced Concrete Approach Slab (T = 380mm), As Per Plan
- (2) Item 304 150mm Aggregate Base
- (3) Item 203 Subgrade Compaction
- (4) Item 608 150mm Concrete Walk, As Per Plan
- (5) Item 202 Wearing Course Removed
- (6) Item 448 32mm Asphalt Concrete, Surface Course, Type 1 PG64–22, As Per Plan
- (6A) Item 448 Asphalt Concrete, Intermediate Course, Type 2 PG64–22, As Per Plan (Varies 32mm to 44mm)
- (7) Item 202 Curb Removed
- (8) Item 609 Curb, Type 6
- (9) Item 407 Tack Coat
- (10) Item 202 Walk Removed

CALCULATED NNB
CHECKED EPS

TYPICAL SECTIONS
WEST 140th STREET

CUY-WEST 140th STREET

3
98

(F:/2085/317/TS/317TS01.DWG) PJK 1/15/98 PLOT 1008:50

GENERAL

UNDERGROUND UTILITIES

The locations of the underground utilities shown on the plans are as obtained from the owners of the utility as required by Section 153.64 of the Ohio Revised Code.

UTILITY OWNERSHIP

The following utilities and owners are located within the work limits of this project.

The Cleveland Electric Illuminating Co.
3601 Ridge Road
Cleveland, Ohio 44102
(216) 634-7303

Ameritech
13630 Lorain Ave.
Room 400
Cleveland, Ohio 44111
(216) 476-6142

The Cleveland Division of Water Pollution Control
12302 Kirby Ave.
Cleveland, Ohio 44108
(216) 664-2786

Cox Cable
12221 Plaza Dr.
Parma, Ohio 44130
(216) 676-8300

Jaytel (for LCI)
2666 Lexington Ave.
P.O. Box 3168
Mansfield, Ohio 44904
(419) 884-0400

The Cleveland Public Power
1300 Lakeside Ave.
Cleveland, Ohio 44114
(216) 664-4245

AT &T
3833 Weymouth Rd.
Medina, Ohio 44256
(330) 723-9135

The City of Cleveland
Water Department
1201 Lakeside Ave.
Cleveland, Ohio 44114
(216) 644-2444

The East Ohio Gas Company
1201 E. 55th Street
Cleveland, Ohio 44103
(216) 736-6675

Wiltel
120 Ravine Street
Akron, Ohio 44303
(330) 258-8267

Call Ohio Utilities Protection Service two (2) working days before you dig. Toll Free Telephone. 1-800-362-2764.

Any and all work required for removing, relocating and construction of new facilities for private or public utilities will be done by and at the expense of the respective owners unless otherwise noted on the plans. The Contractor shall coordinate his operations with the work of the utility owners or others who may be making the relocations.

UTILITY LINES

All expense involved in the relocation of the affected utility lines shall be borne by the utilities. The Contractor and the utilities are to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum. The Contractor shall use all precautions to see that these lines are not disturbed during the construction phase.

TYPICAL SECTIONS

Existing typical sections have been taken from the records and are believed to represent the existing pavement, but the State of Ohio does not guarantee the accuracy of the same.

For further information in regard to the existing typical sections the Contractor shall contact District Twelve.

CONTINGENCY QUANTITIES

The Contractor shall not order materials or perform work for plan items set up to be used "as directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used at the Engineer's discretion shall be made a matter of record by incorporation into the final change order governing completion of the project.

ELEVATION DATUM

No U.S.G.S. benchmark used. Benchmarks established from existing plans converted to metric units.

WORK LIMITS

The Work Limits shown on these plans are for physical construction only. The installation and operation of all temporary traffic control and temporary traffic control devices required by these plans shall be provided by the contractor whether inside or outside these work limits.

ITEM 619 - FIELD OFFICE, TYPE B, AS PER PLAN

The field office shall, in addition to the items listed in the construction and material specifications, be furnished with a commercial grade base radio and two commercial grade hand held radio units capable of transmitting and receiving voice communication between the office and/or any areas on the project site, and a fax machine.

ROADWAY

ITEM 203 - EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION AND EMBANKMENT

The following estimated quantities are included in the Contract to be used as directed by the Engineer.

Item 203 - Embankment	10 Cu Meter
Item 203 - Excavation not including Embankment construction	10 Cu Meter

ITEM 608 - 150mm CONCRETE WALK, AS PER PLAN

All concrete walk shall be a minimum of 150mm thick and have a 50mm compacted screenings bed which meets the requirements of 703.10 except that the minimum total percent passing the No. 100 (150 micrometer) sieve shall be five (5) percent. The cost for furnishing and placing the 50mm compacted screenings bed shall be included in the contract unit price bid for Item 608 - 150mm Concrete Walk, As Per Plan. In addition, the walk shall be reinforced with MW 26 x MW 26 welded wire fabric in accordance with Item 509.

PAVEMENT

ITEM 407 - TACK COAT

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 0.34 liters per square meter of tack coat for estimating purposes only.

ITEM 448, PG64-22, AS PER PLAN

The coarse aggregate for any asphalt concrete course shall be crushed carbonate stone or crushed air-cooled slag.

For all intermediate, leveling or bituminous aggregate base courses, up to a maximum of 35 percent reclaimed material may be used; however PG58-28 binder shall be used for mixes containing more than 20 percent reclaimed material.

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

Integral curbs and curb plates shall be constructed as per detail shown on Typical Sections.

Materials, labor and installations shall be included with approach slabs for payment.

DRAINAGE

REVIEW OF DRAINAGE FACILITIES

Before any work is started on the project, and again before final acceptance by the County, representatives of the County and the Contractor, along with representatives of the City/Village, shall make an inspection of the existing sewers within the work limits 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 inspections shall be kept in writing by the County.

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 County.

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 unit price bid for the pertinent items of the Contract.

ITEM 604 - MANHOLE ADJUSTED TO GRADE, AS PER PLAN

The Contractor shall carefully remove existing bridge deck at existing manhole frame and cover over 600 mm water valve at location indicated in the plans so as not to disturb the existing structure.

Existing manhole frame and cover shall be reused and adjusted to grade.

ITEM 604 - MANHOLE FRAME AND COVER, AS PER PLAN

The Contractor shall install new manhole frame and cover in bridge deck over existing 600 mm water valve at location indicated in the plans.

Proposed reinforcing steel around manhole opening shall be cut and additional reinforcing provided as needed.

EROSION CONTROL

ITEM 659 - SEEDING AND MULCHING, AS PER PLAN

When the above item is called for on the plans or in the proposal, all applicable provisions of Item 659 as set forth in the Construction and Material Specifications shall apply unless modified herein.

659.06 Mulching Methods: Upon the approval of the Engineer, other materials processed or manufactured for mulching purposes may be used. Asphalt emulsion shall not be used to prevent displacement of mulching materials.

659.09 Seeding and Mulching: Seeds shall be sown at a rate of 2.0 kg/100m². The mixture of seeds to be used shall be as follows, or as determined by the Engineer in the field for the area concerned.

RESIDENTIAL & URBAN AREAS	ALL OTHER AREAS
40% Kentucky Blue Grass	30% Kentucky Blue Grass
30% Manhattan or Penfine Ryegrass	40% Kentucky 31 Fescue
30% Creeping Red Fescue	30% Perenial Ryegrass

At locations such as intersecting streets, private lawns, or parks, where the project seeding adjoins seeding of a higher type or quality, The Contractor shall shall to the satisfaction of the Engineer, adjust the project seeding to duplicate or match the higher type seeding at no additional cost to the State (County).

The operation of the actual seed sowing will not be permitted at such times as the Engineer deems improper for seeding.

Seeding and mulching shall be applied to all areas of exposed soil between the right-of-way lines, and within the construction limits for areas outside the right-of-way lines covered by work agreement or slope easement.

Payment for this work shall be made at the contract unit price bid for the actually completed and accepted quantities of Item 659 - Seeding and Mulching, As Per Plan Sq. Meters; Item 659 - Agricultural Liming Kilograms and Item 659 - Commercial Fertilizer Kilograms.

The following estimated quantities are carried over to the General Summary for use as directed by the Engineer:

Item 659 - Seeding and Mulching, As Per Plan	100 Sq. Meter
Item 659 - Agricultural Liming	20 Kilogram
Item 659 - Commercial Fertilizer	20 Kilogram

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

The following estimated quantity is to be used as directed by the Engineer for temporary erosion and sediment control measures.

Item 207 - Temporary Seeding and Mulching	20 Sq. Meter

CALCULATED NNB
CHECKED EFS

GENERAL NOTES - WEST 140th STREET

CUY - W. 140th STREET

4
98

(317/GN/317GN03.DWG) PAK 1/15/98 PLOT @ 1:1 IMP. OR 25.4:1 METRIC

CALCULATED EPS
CHECKED MNB

MAINTENANCE OF TRAFFIC GENERAL NOTES

CUY-WEST 140th STREET

MAINTENANCE OF TRAFFIC STANDARD CONSTRUCTION DRAWINGS

References to Item 740.05, Type C and Item 740.05, Type B on the Standard Construction Drawings or elsewhere in these plans shall be considered to read as references to Item 740.06, Type I and Item 740.06 Type II, respectively.

ITEM 614 – MAINTAINING TRAFFIC

A minimum of one lane of traffic in each direction shall be maintained at all times by use of the existing pavement, and/or the completed pavement, as shown on Sheets 8 through 14. Part width construction shall be used to facilitate maintaining two way traffic. Work shall be done in phases as outlined in the sequence of operations and as indicated in the plans.

The Contractor shall maintain safe and satisfactory access to abutting property. The Contractor shall maintain adequate pedestrian walks at all intersections.

The Contractor shall divert traffic from normal channels by plastic drums, flashing arrow panels complying with MT–35.10M, and traffic signs and pavement markings, as shown on Sheets 8 through 14.

All construction traffic control devices used for this project shall conform to the Ohio Manual on Traffic Control Devices for Streets and Highways and shall be furnished, erected, maintained and removed by the Contractor, except as noted below.

The Contractor shall furnish and maintain all necessary safeguards, such as barricades, lighting, flaggers and such other traffic control devices as provided in Item 614, Maintaining Traffic, so as to avoid damage and/or injury to vehicles and persons using the roadway during construction.

Existing traffic control devices (signs and/or traffic signals), located within the work area, which are required for interim or permanent traffic control, shall be relocated to points approved by the Engineer. Appropriate traffic control devices shall be maintained, in compliance with the manual, at all times while traffic is maintained. The cost of relocation, if required, shall be included in the lump sum price bid for Item 614 – Maintaining Traffic.

The length and duration of lane closures and or traffic 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.

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.

ESTIMATED QUANTITIES FOR MAINTAINING TRAFFIC

The following estimated quantities have been included in the General Summary for use as directed by the Engineer for the Maintenance of Traffic.

614 Bituminous Concrete for Maintaining Traffic	20 Cu. Meter

COVERING OF SIGNS

Where the plans call for any existing or proposed permanent sign to be covered, the Contractor shall do so in such a manner as to avoid damaging the permanent sign when the cover is removed. The cover shall be totally opaque. The use of adhesive tape applied directly to any existing or new sign face is strictly prohibited.

ITEM SPECIAL – REPLACEMENT SIGN

Flat sheet signs furnished by the Contractor in accordance with the requirements of the plans, specifications, and proposal which become damaged by traffic for reasons beyond the control of the Contractor shall be replaced in kind when ordered by the Engineer. Replacement signs shall be new. Other materials may be in used but good condition subject to the approval of the the Engineer.

When additional signs are found by the Engineer to be necessary for the safe maintenance of traffic, above and beyond the signing shown in the plans and/or on the standard construction drawings, the Contractor shall furnish, erect, maintain and remove the additional signs under this item, as directed by Engineer.

Payment for the new signs shall be made at the contract price per square meter for Item Special – Replacement Sign, and shall include the cost of removing and disposing of damaged signs, hardware and supports and providing the necessary replacement hardware, supports, etc.

An estimated quantity of ten (10) square meters has been provided in the General Summary.

ITEM 614 – BARRIER REFLECTORS
ITEM 614 – OBJECT MARKERS

The following items are estimated elsewhere in the plans (see Sheet 7) and are included for use as directed by the Engineer. Reflectors, object markers and their mountings shall conform to Item 626. In lieu of 626.03 spacing shall be as shown on Sheet 7.

Item 614 Barrier Reflector, Type B2	Each
Item 614 Object Marker	Each

ITEM 622 – PORTABLE CONCRETE BARRIER

It is anticipated that some barrier will be used in various phases of construction. Movement of the concrete barrier between phases shall be accomplished in one working day. Flaggers shall be utilized for protection of vehicular traffic until movement of the barrier is complete

All costs involved in removing and reinstalling the concrete barrier will be included in the contract price for the pertinent Item 622–Portable Concrete Barrier.

The following items are estimated per phase on Sheet 7 and are included in General Summary.

Item 622 – Portable Concrete Barrier, 813 mm	Meter
Item 622 – Portable Concrete Barrier, 813mm, Bridge Mounted	Meter

DUST CONTROL

The Contractor shall furnish and apply water and calcium chloride for dust control as directed by the Engineer. The following contingency quantities have been included for dust control purposes.

Item 616 – Water	200 Cu. Meter
Item 616 – Calcium Chloride	5 Metric Ton

ITEM 642 – REMOVAL OF PAVEMENT MARKING

This item shall be used to remove existing permanent pavement markings which are in conflict with the temporary or permanent markings as shown on the Traffic Maintenance Plans. Payment shall be based upon the actual length removed. Gaps shall not be included in the meaured length. The following estimated quantity has been included in the General Summary to be used as outlined above:

Item 642 – Removal of Pavement Marking	1300 Meters

ITEM SPECIAL – 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:

a. 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.

b. During the entire advance preparation and closure sequence where complete blockage of traffic is required.

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 City of Cleveland, Phone # (216) 623–5000.

Law enforcement officers (with patrol car) required by the traffic maintenance tasks above shall be paid for on a unit price (hourly) basis under Item 614–Law Enforcement Officer With Patrol Car. The following estimated quantities have been carried to the General Summary:

Item Special – Law Enforcement Officer with Patrol Car	200 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 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.

SEQUENCE OF OPERATIONS

GENERAL

The rehabilitation of West 140th Street (Bridge No. 208) will be accomplished in three roadway maintenance of traffic phases. The first phase will use the two existing northbound lanes to accommodate two–way traffic (one lane northbound, one lane southbound) while closing the two existing southbound lanes to traffic. Phase two will use the two finished southbound lanes to permit two–way traffic while closing the two existing northbound lanes. The third phase will again use the two finished northbound lanes to accommodate two–way traffic while closing the two finished southbound lanes. Pedestrian and two 3.3m minimum width lanes of vehicular traffic shall be maintained at all times.

PHASE 1

Place portable concrete barriers, 813mm, near the centerline of West 140th Street at locations shown in the Plans and maintain traffic on the eastern half of the existing bridge. Barriers placed on the existing bridge deck shall be anchored per PCB–91M.

Remove western half of existing bridge and construct new deck, parapet and walk, excluding latex modified concrete wearing surface.

Place portable concrete barriers, anchored to deck, for Phase 2 construction at locations indicated in the Plans.

PHASE 2

Open western half of rehabilitated bridge to two–way traffic and remove eastern half of existing bridge.

Construct new deck, parapet and walk. Closure pour between the two rehabilitated decks shall occur during this Phase 2 Maintenance of Traffic. Place proposed latex wearing surface to approximately the centerline of West 140th Street to allow room near the portable concrete barriers for the rails to be set for the finishing machine.

Place drums for Phase 3 construction at locations indicated in the plans.

PHASE 3

Maintain two–way traffic on eastern half of rehabilitated bridge. Place proposed latex modified concrete wearing surface on western half of rehabilitated bridge.

The Contractor shall complete the work in Phase 3 within 30 calendar days after completion of Phase 2.

Liquidated damages shall be assessed in accordance with Section 108.07 of the Construction and Material Specifications. The amount set forth in the Schedule in Section 108.07 shall apply to the completion time specified for Phase 3 construction.

NOTIFICATION

The Contractor shall notify, in writing, the following agencies at least one week prior to the start of construction and at least 72 hours before implementing any substantial change in traffic pattern for closing any street to traffic.

ODOT–District 12 Public Information Office
The Cuyahoga County Engineer
The Greater Cleveland Regional Transit Authority
The Cleveland Board of Education, and
The City of Cleveland Commissioner of Traffic Engineering, Police Traffic Commissioner, Commissioner of Emergency Medical Service Commissioner of Engineering and Construction and Fire Chief.

NOTICE OF CONSTRUCTION SIGNS

Notice of construction signs (OC–61A), as detailed in these plans, shall be erected by the Contractor at least one week in advance of the scheduled beginning of construction. The signs shall be erected on the right hand side of the road at Station 0+488 and Station 1+405, facing traffic. They shall be placed so as not to interfere with the visibility of any other traffic control signs.

The Contractor shall insert the scheduled date of the beginning of construction, duration (number of days from the start date to the project completion date) and information phone number on the sign in the proper positions.

TRAFFIC CONTROL DEVICES LOCATED OUTSIDE OF THE LIMITS OF CONSTRUCTION

In addition to the requirements of 614.03 (b) of the CMS, the Contractor shall furnish, erect, maintain, and subsequently remove such additional traffic control devices located outside of the limits of construction as are shown on the plans.

CONSTRUCTION TRAFFIC

All construction traffic shall use acceptable truck routes to access the construction area. Use of local residential streets is strictly prohibited unless allowed in writing by the local enforcement authority.

CONSTRUCTION NOISE

Activities and land use adjacent to this project may be affected by construction noise. In order to minimize any adverse construction noise impacts, any power–operated construction–type device shall not be operated between the hours of 10:00 p.m. and 6:00 a.m.

INSTALLATION OF PAVEMENT MARKINGS

The Contractor may reduce the number of through traffic lanes by 50%, as directed by the Engineer, in order to remove pavement markings, or to install temporary or permanent pavement markings. He shall limit the aforementioned closure to between the hours of 9.00 a.m. and 3:00 p.m., unless otherwise approved by the Engineer.

The temporary pavement markings and signs required for a particular lane closure or traffic pattern shall be installed on a single work day and the corresponding traffic pattern, as detailed on the plans, shall be implemented immediately.

FLASHING ARROW PANELS

When flashing arrow panels are shown on the plans, solar, electric or battery powered equipment shall be exclusively utilized when located within 100 meters of any residence. Diesel or gasoline powered generators will not be permitted in these areas, except when used intermittently for the sole purpose of charging internal batteries which provide the primary power for the equipment.

REQUIREMENTS OF CONRAIL

The Contractor shall cooperate at all times with the local officials of the railroad company. He shall use all reasonable care and diligence in the work in order to avoid accidents, damage or unnecessary delay to, or interference with the trains and other property of the railroad. The Contractor shall notify the local officials of the railroad prior to starting work that may affect railroad property and facilities.

No scaffold, planks or other equipment shall be suspended or erected above or within 4.6 meters of a rail over which trains are operating without prior written approval of the Chief Engineer of the Railroad Company, or his authorized representative.

CALCULATED EPS
CHECKED NNB

MAINTENANCE OF TRAFFIC GENERAL NOTES

CUY-WEST 140th STREET

6
98

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

ITEM 614 – BARRIER REFLECTOR
ITEM 614 – OBJECT MARKER

STATIONING (FROM – TO) (SIDE)	SPACING	TYPE A		TYPE B2		OBJECT MARKERS	REMARKS
		W	Y	W	Y		
0+780 to 1+231 Phase 1 Lt.	7.50				60	59	
0+786 to 1+208 Phase 2 Rt.	7.50				55	54	
TOTALS					115	113	
				115		113	

ITEM 614 MAINTAINING TRAFFIC

	OC-8-1500	OC-61A-1500		OW-6-750	OW-60R-900	OW-60L-900	OW-71-750	OW-122-900*	OW-123-900*	OW-128-900*	OW-138-750		R-1-30	R-75-1200	R-121-600	R-175-750	R-120-600	R-177-600		TYPE A FLASHING ARROW PANEL
PHASE 1	6	2		1	1	1	9	1	1	8	3		1		2	2		2		2
PHASE 2	6	2		1	1	1	6	1	1	8	1		1		2	2	1	2		2
PHASE 3	6	2		1	1	1	8	1	1	8	3			1	2					2

NOTE. QUANTITIES ARE FOR INFORMATION ONLY. PAYMENT TO BE INCLUDED IN LUMP SUM FOR ITEM 614–MAINTAINING TRAFFIC

* INDICATES SIGN WITH TYPE A WARNING LIGHT

ITEM 622 PORTABLE CONCRETE BARRIER, 813 MM

Phase	Station From	Station To	Side	Meter
1	0+780	0+795	℄	15
1	1+195	1+231	Lt.	36
1	0+782	0+791	Lt.	9
1	0+782	–	Lt.	6
2	0+786	0+795	Rt.	12
2	0+786	0+795	℄	9
2	0+786	–	Rt.	18
2	1+195	1+208	℄	13
2	1+208	–	Rt.	6
TOTAL				124

ITEM 622 PORTABLE CONCRETE BARRIER, 813 MM, BRIDGE MOUNTED

Phase	Station From	Station To	Side	Meter
1	0+795	1+195	℄	400
2	0+795	1+195	℄	400
TOTAL				800

TEMPORARY CENTER LINE 740.06, TYPE I

Phase	From	To	Length (Meters)	Subtotal	Applications	Total (Meters)	Total (km)
1	0+615	0+772	157				
1	0+660	0+705	45				
1	1+193	1+379	186				
1	Cayuga Court		15				
1	1+300	1+379	79	482	2	964	
2	0+660	0+772	112				
2	0+660	0+730	70				
2	1+193	1+364	171				
2	Cayuga Court		5				
2	Service Road B		15				
2	1+195	1+267	72	445	2	890	
3	0+615	1+379	764				
3	0+660	0+705	45				
3	1+300	1+379	79	888	1	888	
						2742	2.74

TEMPORARY CENTER LINE, 642 PAINT

Phase	From	To	Length (Meters)	Subtotal	Applications	Total (Meters)	Total (km)
1	0+788	1+193	405	405	2	810	
2	0+788	1+193	405	405	2	810	
						1620	1.62

TEMPORARY LANE LINE, 740.06, TYPE I

Phase	From	To	Length (Meters)	Subtotal	Applications	Total (Meters)	Total (km)
2	1+230	1+372	142				
2	1+290	1+508	218	360	2	720	
3	0+578	0+617	39	39	1	39	
						759	0.76

TEMPORARY EDGE LINE, 642 PAINT

Phase	From	To	Length (Meters)	Subtotal	Applications	Total (Meters)	Total (km)
1	0+788	1+193	405	405	2	810	
2	0+788	1+193	405	405	2	810	
						1620	1.62

TEMPORARY EDGE LINE 740.06, TYPE I

Phase	From	To	Length (Meters)	Subtotal	Applications	Total (Meters)	Total (km)
1	0+660	0+788	128				
1	1+193	1+255	62				
1	1+255	1+270	24				
1	1+278	1+293	24				
1	1+293	1+400	107				
1	1+400	1+415	24				
1	1+446	1+514	68	437	2	874	
2	0+578	0+765	187				
2	0+765	0+780	24	211	2	422	
3	Same Locations as Phase 1		437				
3	0+788	1+193	405	842	1	842	
						2138	2.14

TEMPORARY STOP LINE 740.06, TYPE I

Phase	Location	Length (Meters)	Subtotal	Applications	Total (Meters)
1	Cayuga Court	8	8	2	16
2	Service Road B	9	9	2	18
2	Cayuga Court	4	4	2	8
3	Service Road B	5	5	1	5
3	Cayuga Court	8	8	1	8
					55

CALCULATED JEN CHECKED NNB

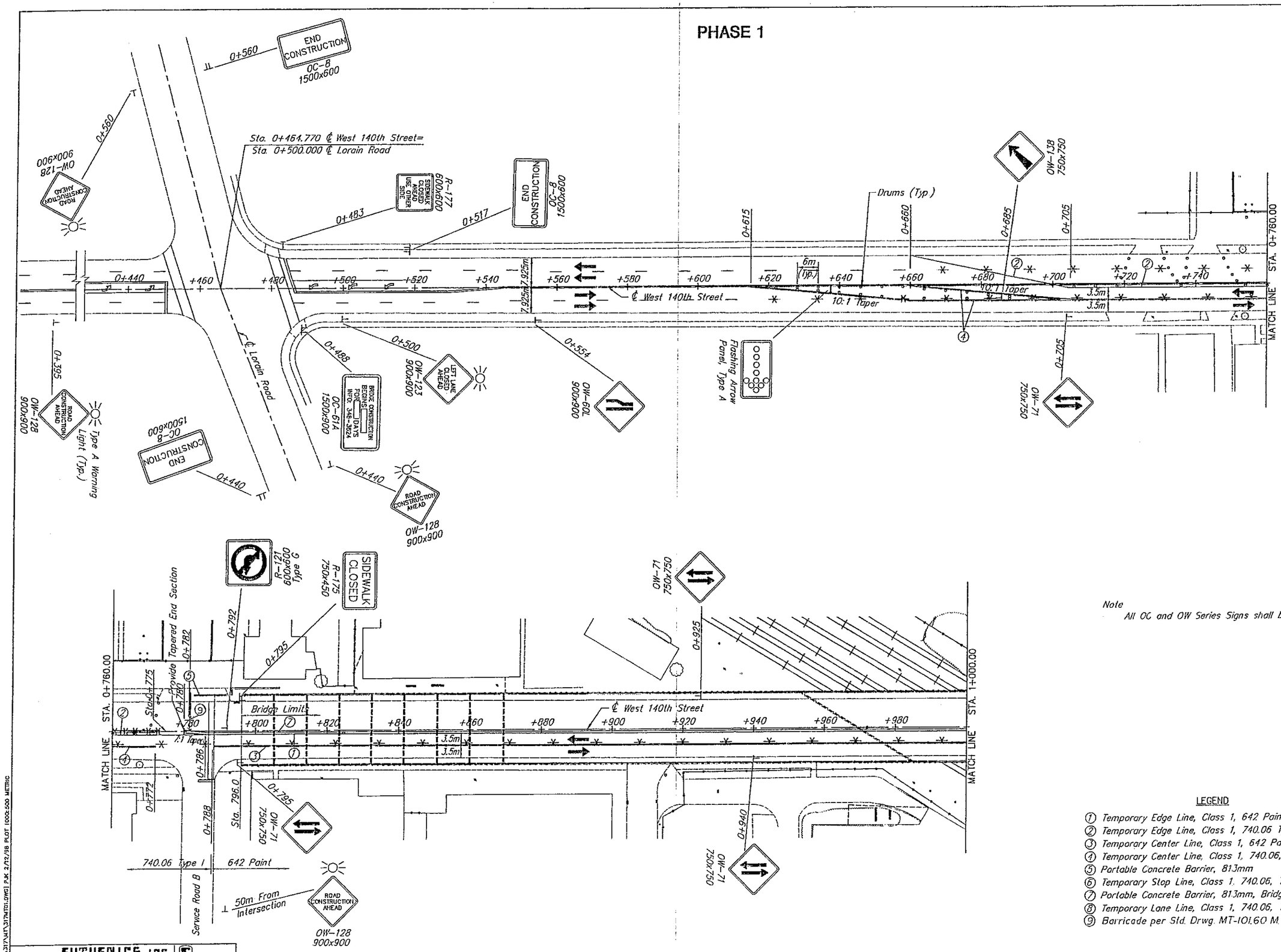
MAINTENANCE OF TRAFFIC SUB-SUMMARY

CUY-WEST 140th STREET

EUTHENICS INC. CONSULTING ENGINEERS CLEVELAND, OHIO

\JOBS\317\MT\317MTSS.DWG] P.K. 2/12/98 PLOT @ 1:1 MP

PHASE 1



Note

All OC and OW Series Signs shall be Type G.

LEGEND

1. *Temporary Edge Line, Class 1, 642 Paint (White)*
2. *Temporary Edge Line, Class 1, 740.06 Type I (White)*
3. *Temporary Center Line, Class 1, 642 Paint*
4. *Temporary Center Line, Class 1, 740.06, Type I*
5. *Portable Concrete Barrier, 813mm*
6. *Temporary Stop Line, Class 1, 740.06, Type I*
7. *Portable Concrete Barrier, 813mm, Bridge Mounted*
8. *Temporary Lane Line, Class 1, 740.06, Type I*
9. *Barricade per Std. Drwg. MT-101.60 M*

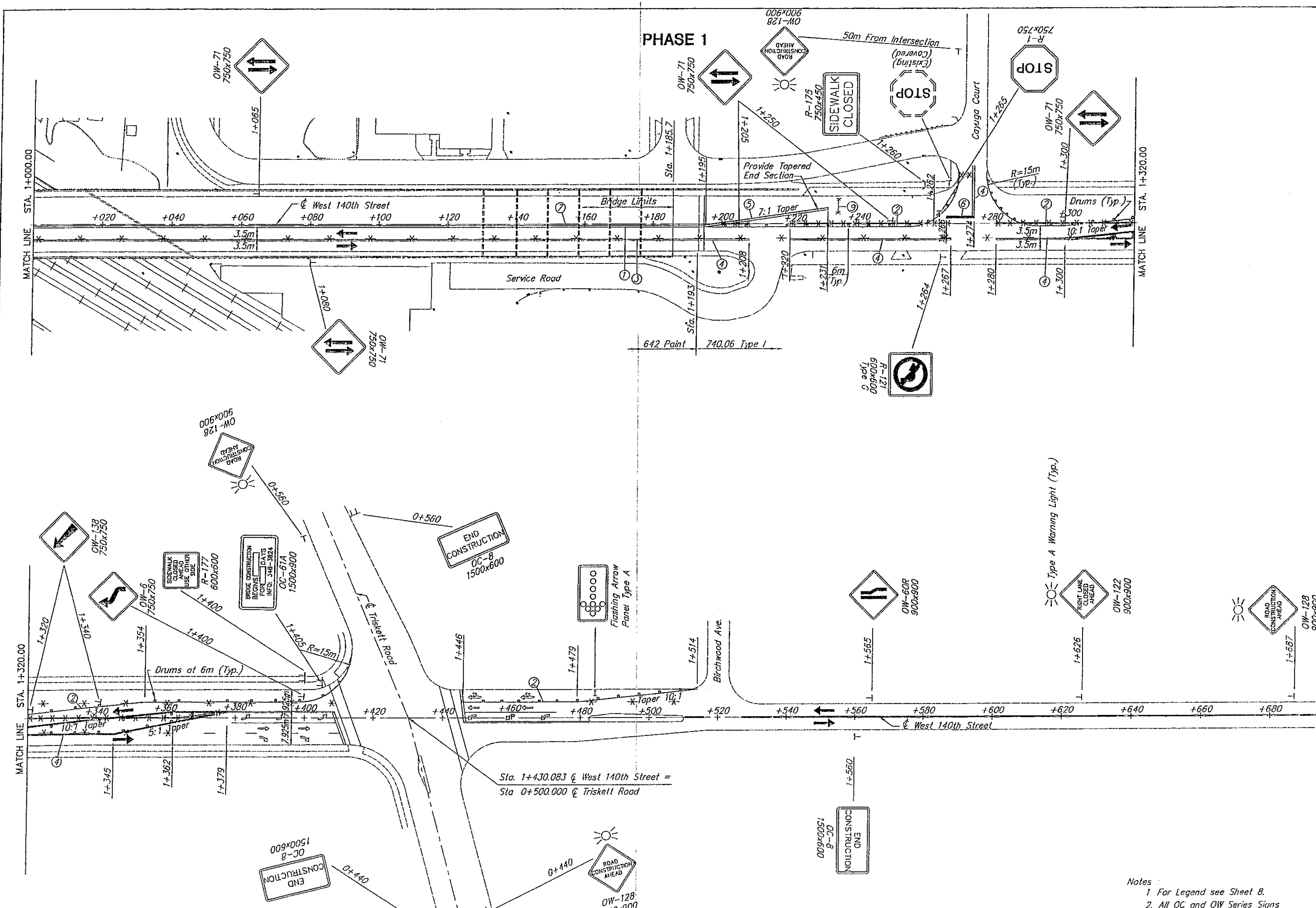
N

0 10 20 SCALE IN METERS

CALCULATED JEN | CHECKED EPS

MAINTENANCE OF TRAFFIC PLAN - PHASE 1
STA. 0+440 TO STA. 1+000
CUY-WEST 140th STREET

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO



Notes

1. For Legend see Sheet 8.
2. All OC and OW Series Signs shall be Type G.

SCALE IN METERS 0 10 20

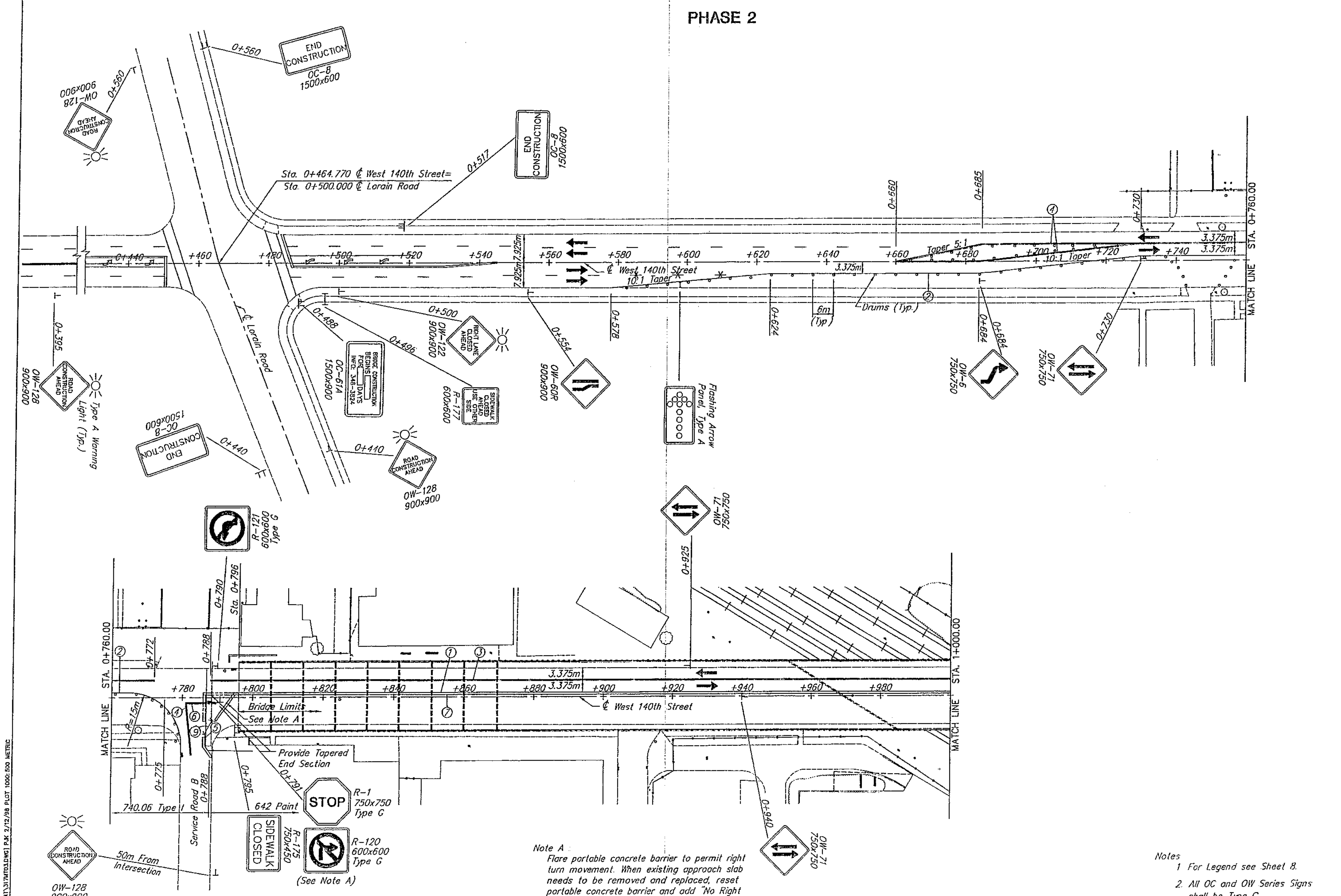
CALCULATED JEN
CHECKED EPS

MAINTENANCE OF TRAFFIC PLAN - PHASE 1
STA. 1+000 TO STA. 1+640

CUY-WEST 140th STREET

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

PHASE 2



Note A:
Flare portable concrete barrier to permit right turn movement. When existing approach slab needs to be removed and replaced, reset portable concrete barrier and add "No Right Turn Sign".

Notes
1. For Legend see Sheet 8.
2. All OC and OW Series Signs shall be Type G.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

SCALE IN METERS 0 10 20

CALCULATED JEN
CHECKED EPS

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 0+440 TO STA. 1+000

CUY-WEST 140th STREET

PHASE 2

MATCH LINE STA. 1+000.00

MATCH LINE STA. 1+320.00

STA. 1+320.00

OW-71 750x750

OW-71 750x750

OW-71 750x750

OW-128 900x900

ROAD CONSTRUCTION AHEAD

50m From Intersection (Existing)

STOP

Flashing Arrow Panel, Type A

Cayuga Court

Sta. 1+165.7

Sta. 1+290

Sta. 1+230

1+065

1+080

1+187

1+193

1+206

1+218

1+227

1+241

1+262

1+280

1+285

3.375m

3.375m

3.66m

3.66m

+020 +040 +060 +080 +100 +120 +140 +160 +180 +200 +220 +240 +260 +280 +300

10:1 Taper

7:1 Taper

10:1 Taper

℄ West 140th Street

Bridge Limits

642 Point

740.06 Type I

SIDEWALK CLOSED R-175 750x450

R-121 600x600 Type G

OW-128 900x900

ROAD CONSTRUCTION AHEAD

END CONSTRUCTION OC-8 1500x600

0+095

0+560

OC-61A 1500x900

BRIDGE CONSTRUCTION BEGINS [ ] DAYS FOR [ ] DAYS INFO: 348-3824

1+405

℄ Triskett Road

Sta. 1+430.083 ℄ W. 140th Street =
Sta. 0+500.000 ℄ Triskett Road

OW-138 750x750

OW-60L 900x900

Type A Warning Light (Typ.)

OW-123 900x900

LEFT LANE CLOSED AHEAD

1+334

1+378

1+395

1+401

1+364

1+372

1+410

+340 +360 +380 +400 +420 +440 +460 +480 +500 +520 +540 +560 +580 +600 +620 +640

7.925m 7.925m

℄ West 140th Street

SIDEWALK CLOSED AHEAD USE OTHER SIDE R-177 600x600

END CONSTRUCTION OC-8 1500x600

1+460

1+456

1+508

Birchwood Ave.

0+440

ROAD CONSTRUCTION AHEAD OW-128 900x900

Notes

1. For Legend see Sheet 8.
2. All OC and OW Series Signs shall be Type G.

N

0 10 20 SCALE IN METERS

CALCULATED JEN

CHECKED EPS

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 1+000 TO STA. 1+640

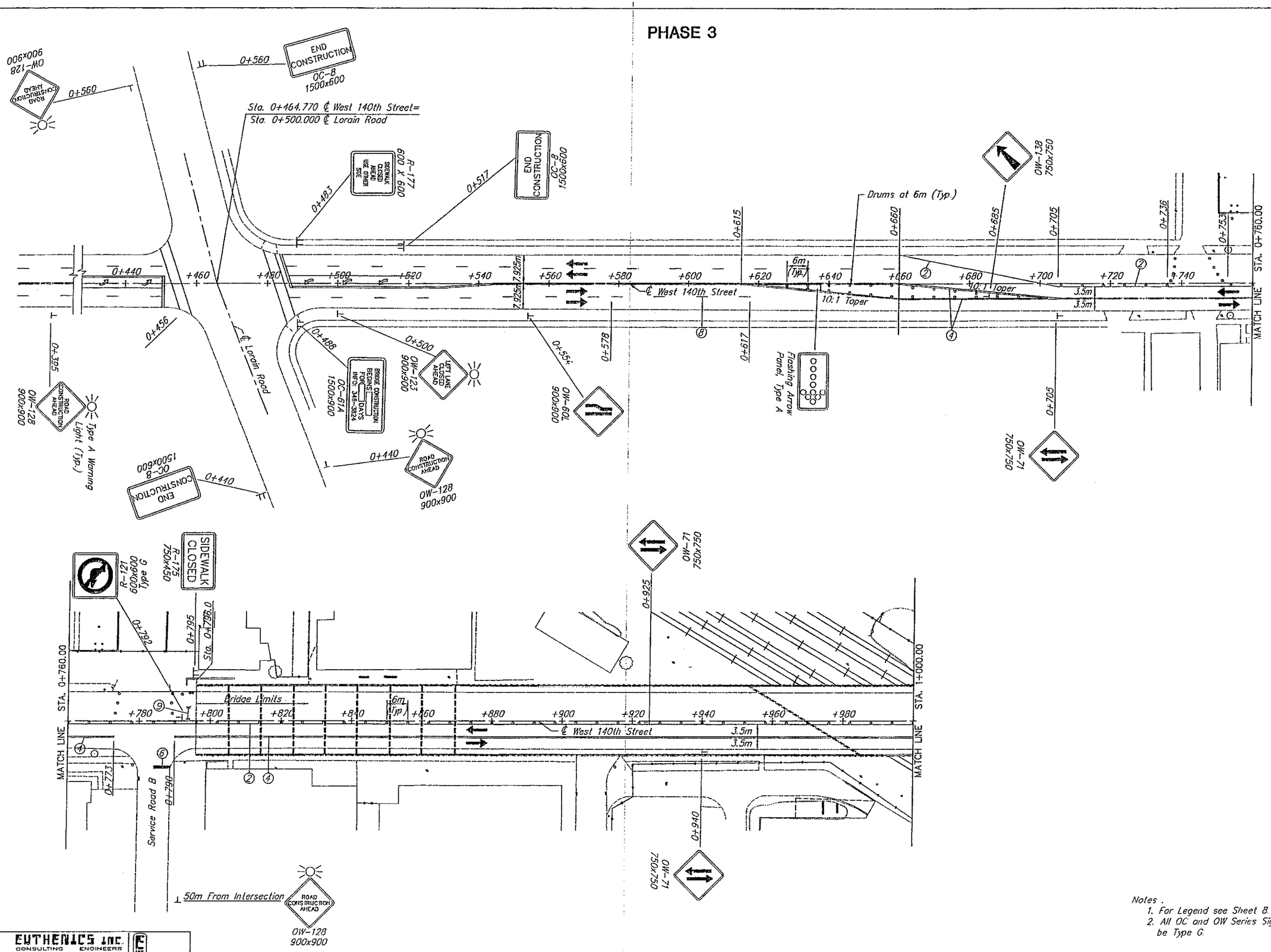
CUY-WEST 140th STREET

11
98

ENTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

\\DGS\JOB\MT\35TM104.DWG 2/13/98 PLOT 1000-500 METRIC

PHASE 3



EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

Notes .
1. For Legend see Sheet 8.
2. All OC and OW Series Signs shall be Type G.

N

0 10 20 SCALE IN METERS

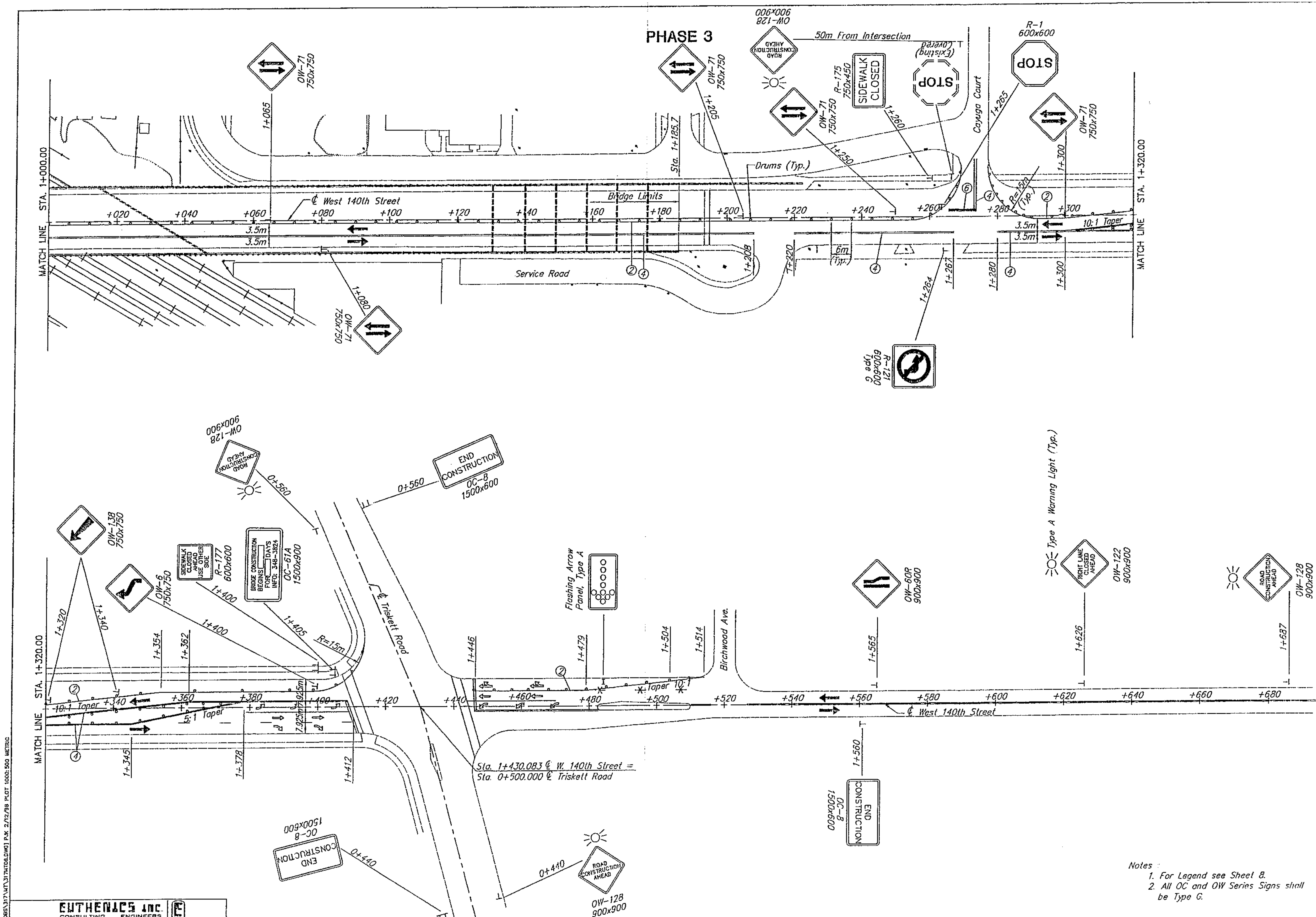
CALCULATED JEN
CHECKED EPS

MAINTENANCE OF TRAFFIC PLAN - PHASE 3
STA. 0+440 TO STA. 1+000

CUY-WEST 140th STREET

12/98

_JOBS\317\MT\317MT05.DWG] PAK 2/12/98 PLOT 1000:500 METRIC


PHASE 3
West 140th Street
Bridge Limits
Service Road
Drums (Typ.)
50m From Intersection
Cayuga Court
Sta. 1+185.7
STA. 1+000.00
STA. 1+320.00
MATCH LINE
OW-71 750x750
OW-128 900x900
R-1 600x600
STOP
(Existing) (Covered)
R-175 750x450
SIDEWALK CLOSED
R-121 600x600 Type G
R=15m (Typ.)
10:1 Taper
5:1 Taper
3.5m
6m (Typ.)
ROAD CONSTRUCTION AHEAD
END CONSTRUCTION
OC-8 1500x600
OW-138 750x750
OW-6 750x750
R-177 600x600
SIDEWALK CLOSED AHEAD USE OTHER SIDE
OC-61A 1500x900
BRIDGE CONSTRUCTION BEGINS ... DAYS INFO. 348-3824
Flashing Arrow Panel, Type A
Type A Warning Light (Typ.)
OW-60R 900x900
OW-122 900x900
RIGHT LANE CLOSED AHEAD
Triskett Road
Birchwood Ave.
R=15m
7.925m
Sta. 1+430.083 ℄ W. 140th Street = Sta. 0+500.000 ℄ Triskett Road
℄ West 140th Street

Notes :
1. For Legend see Sheet 8.
2. All OC and OW Series Signs shall be Type G.

EUTHENICS Inc.
CONSULTING ENGINEERS
CLEVELAND, OHIO

SCALE IN METERS 0 10 20

CALCULATED JEN
CHECKED EPS

MAINTENANCE OF TRAFFIC PLAN - PHASE 3
STA. 1+000 TO STA. 1+640

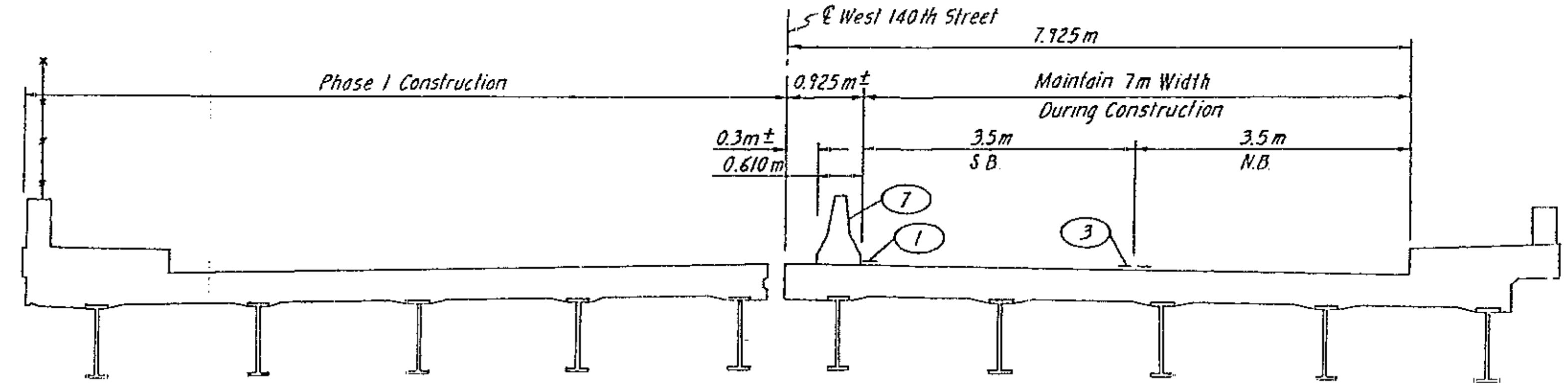
CUY-WEST 140th STREET

NOTES:
1. Pedestrian and two lanes of vehicular traffic shall be maintained on West 140th Street at all times.
2. Two (2) anchors shall be provided for each bridge mounted portable concrete barrier segment. All bridge mounted barrier segments shall be fastened to the bridge deck using M27 high strength through bolts or approved resin anchors. When resin anchors are used they must be embedded a minimum of 165 mm into firm concrete. All anchors shall be placed on traffic side of the barrier with the anchor pattern symmetrical about the center of each segment.
3. The maintenance of traffic phases are as follows:

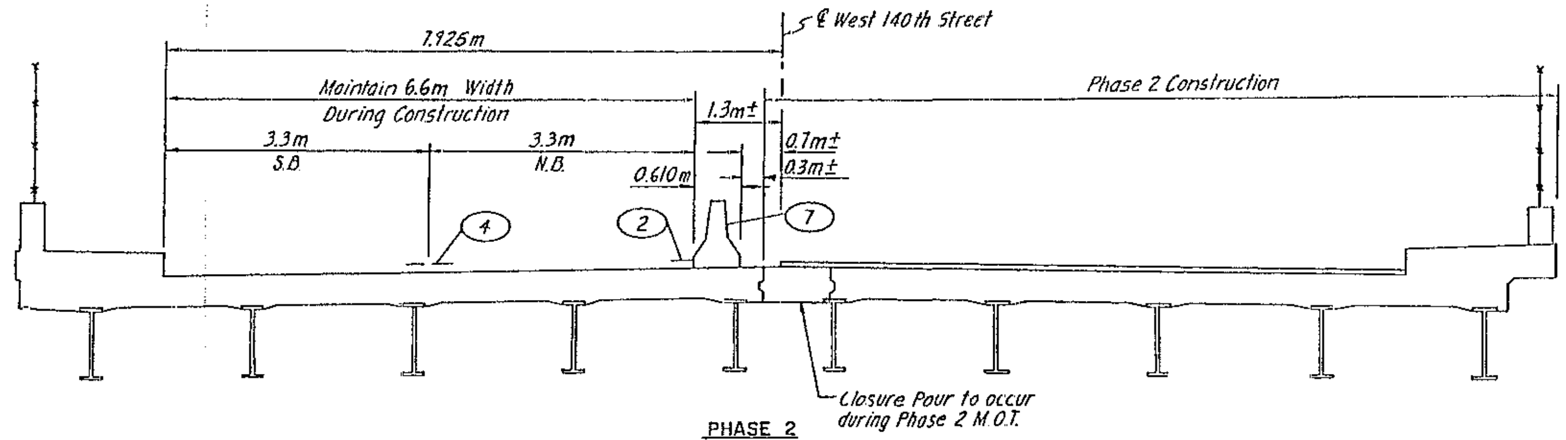
PHASE 1
1. Place portable concrete barriers anchored to deck and maintain traffic on eastern half existing bridge.
2. Remove western half of the existing bridge.
3. Construct new deck, parapet, sidewalk and fence.
4. Place portable concrete barriers for Phase 2 Construction, anchored to deck.

PHASE 2
1. Maintain traffic on western half of the bridge.
2. Remove eastern half of the existing bridge.
3. Construct new deck, parapet, sidewalk and fence.
4. Place new wearing surface to centerline West 140th Street.
5. Place drums for Phase 3 construction.

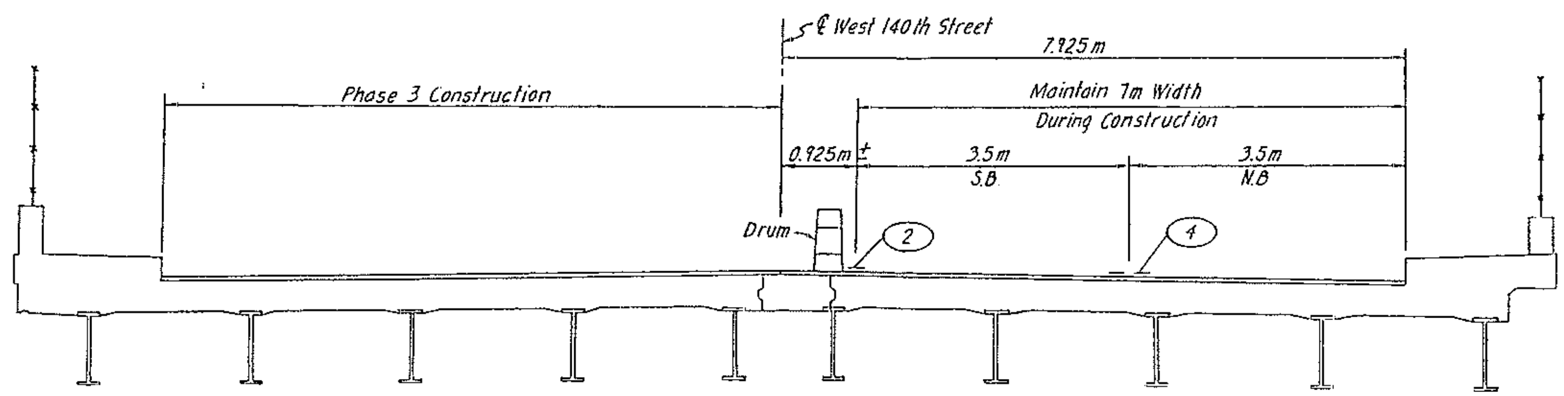
PHASE 3
1. Maintain traffic on eastern half of the bridge.
2. Complete placement of new wearing surface.



PHASE 1



PHASE 2



PHASE 3

(1) Temporary Edge Line, Class 1, 642 Paint (White)
(2) Temporary Edge Line, Class 1, 740.06 Type I (White)
(3) Temporary Center Line, Class 1, 642 Paint
(4) Temporary Center Line, Class 1, 740.06 Type I
(7) Portable Concrete Barrier, 813 mm, Bridge Mounted

EUTHENICS inc.
CONSULTING ENGINEERS
CLEVELAND, OHIO

CALCULATED JEN
CHECKED EPS

MAINTENANCE OF TRAFFIC DETAILS

CUY-WEST 140th STREET

GENERAL SUMMARY - WEST 140th STREET

Sheet 4	Sheet 5	Sheet 7	Sheet 16	Sheet 17	Sheet 21	Cost Participation: Normal Participation	Item	Item Ext.	Grand Total	Unit	Description	As Per Plan Ref. Sheet
											ROADWAY	
			256			256	202	22900	256	SQ. METER	APPROACH SLAB REMOVED	
			59			59	202	23500	59	SQ. METER	WEARING COURSE REMOVED	
				34	75	109	202	30000	109	SQ. METER	WALK REMOVED	
			9	2	21	32	202	32000	32	METER	CURB REMOVED	
					11	11	202	75000	11	METER	FENCE REMOVED	
10						10	203	12000	10	CU. METER	EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION	
10						10	203	20000	10	CU. METER	EMBANKMENT	
			256			256	203	50000	256	SQ. METER	SUBGRADE COMPACTION	
					11	11	SPECIAL	60739900	11	METER	VANDAL PROTECTION FENCE, 1.8 METER STRAIGHT, COATED FABRIC	
			76			76	608	13001	76	SQ. METER	150 MM CONCRETE WALK, AS PER PLAN	3, 4
					35	35	608	53000	35	SQ. METER	CURB RAMP, TYPE 1	
				3		3	608	54000	3	SQ. METER	CURB RAMP, TYPE 2	
				1		1	608	51000	1	EACH	CURB RAMP, TYPE 2	
											EROSION CONTROL	
20						20	207	10000	20	SQ. METER	TEMPORARY SEEDING AND MULCHING	
100						100	659	10001	100	SQ. METER	SEEDING AND MULCHING, AS PER PLAN	4
20						20	659	20000	20	KILOGRAM	COMMERCIAL FERTILIZER	
20						20	659	30000	20	KILOGRAM	AGRICULTURAL LIMING	
											DRAINAGE	
				12	12	24	603	04400	24	METER	300 MM CONDUIT, TYPE B	
				2	2	4	604	01000	4	EACH	CATCH BASIN, CUYAHOGA COUNTY NO. 3C	
					1	1	604	33501	1	EACH	MANHOLE FRAME AND COVER, AS PER PLAN	4
				1		1	604	34501	1	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	4
				1		1	638	10800	1	EACH	VALVE BOX ADJUSTED TO GRADE	
											PAVEMENT	
			39			39	304	20000	39	CU. METER	AGGREGATE BASE	
			20			20	407	10000	20	LITER	TACK COAT	
			3			3	448	46051	3	CU. METER	ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, PG64-22, AS PER PLAN	3, 4
			2			2	448	47021	2	CU. METER	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, PG64-22, AS PER PLAN	3, 4
				16	16	32	SPECIAL	45132000	32	METER	PRESSURE RELIEF JOINT, TYPE C	
			9			9	609	26000	9	METER	CURB, TYPE 6	
			256			256	611	25001	256	SQ. METER	REINFORCED CONCRETE APPROACH SLAB (T = 380mm) AS PER PLAN	4
											MAINTENANCE OF TRAFFIC	
	200					200	614	11100	200	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	5
	10					10	SPECIAL	61412500	10	SQ. METER	REPLACEMENT SIGN	5
	20					20	614	13000	20	CU. METER	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
		115				115	614	13302	115	EACH	BARRIER REFLECTOR, TYPE B2	
		113				113	614	13350	113	EACH	OBJECT MARKER	
		0.76				0.76	614	20200	0.76	KILOMETER	TEMPORARY LANE LINE, CLASS I, 740.06, TYPE I	
		1.62				1.62	614	21100	1.62	KILOMETER	TEMPORARY CENTER LINE, CLASS I, 642 PAINT	
		2.74				2.74	614	21200	2.74	KILOMETER	TEMPORARY CENTER LINE, CLASS I, 740.06, TYPE I	
		1.62				1.62	614	22100	1.62	KILOMETER	TEMPORARY EDGE LINE, CLASS I, 642 PAINT	
		2.14				2.14	614	22200	214	KILOMETER	TEMPORARY EDGE LINE, CLASS I, 740.06, TYPE I	
		55				55	614	26400	55	METER	TEMPORARY STOP LINE, CLASS I, 740.06, TYPE I	
	200					200	616	10000	200	CU. METER	WATER	
	5					5	616	20000	5	METRIC TON	CALCIUM CHLORIDE	
		124				124	622	40020	124	METER	PORTABLE CONCRETE BARRIER, 813 MM	
		800				800	622	40040	800	METER	PORTABLE CONCRETE BARRIER, 813 MM BRIDGE MOUNTED	
	1300					1300	642	30000	1300	METER	REMOVAL OF PAVEMENT MARKING	
											FOR RETAINING WALL, SEE SHEET NO. 30A	
											FOR STRUCTURES OVER 6M SPAN QUANTITIES, SEE SHEET NO. 41	
											FOR TRAFFIC CONTROL, SEE SHEET NO. 22	
											FOR LIGHTING, SEE SHEET NO. 26	
						LUMP	614	11000	LUMP		MAINTAINING TRAFFIC	
						24	806	16011	24	MONTH	FIELD OFFICE, TYPE B, AS PER PLAN	4
						24	806	26000	24	MONTH	COMPUTER EQUIPMENT FOR FIELD OFFICE	
						LUMP	623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
						LUMP	624	10000	LUMP		MOBILIZATION	

CALCULATED JEN CHECKED RDJ

CUY - WEST 140TH STREET

EUTHENICS inc. CONSULTING ENGINEERS CLEVELAND, OHIO

(\CD35\317\MISC\317GS01.DWG) PJK 2/13/98 PLOT 1:1 (IMP)

ITEM 202 – APPROACH SLAB REMOVED

STATION FROM	TO	LENGTH X WIDTH (m^2)	AREA (m^2)
0+788.413	0+796.013	131.56 (Digitized)	131.56 (Digitized)
1+185.700	1+193.300	7.6 x 16.34	124.18
		TOTAL	255.74 USE 256 m^2

ITEM 202 – CURB REMOVED

STATION FROM	TO	SIDE	LENGTH (m)
0+786.869	0+788.413	LT.	1.544
0+789.2±	0+792.2±	RT.	3.000
1+193.300	1+194.843	LT.	1.543
1+193.300	1+196.300	RT.	3.000
		TOTAL	9.09 USE 9 m

ITEM 202 – WEARING COURSE REMOVED

STATION FROM	TO	LENGTH X WIDTH (m^2)	AREA (m^2)
0+786.869	0+788.413	1.544 x 22.20	34.28
1+193.300	1+194.843	1.543 x 15.84	24.44
		TOTAL	58.72 USE 59 m^2

ITEM 203 – SUBGRADE COMPACTION

STATION FROM	TO	LENGTH X WIDTH (m^2)	AREA (m^2)
0+788.413	0+796.013	131.56 (Digitized)	131.56 (Digitized)
1+185.700	1+193.300	7.6 x 16.34	124.18
		TOTAL	255.74 USE 256 m^2

ITEM 304 – 150 mm AGGREGATE BASE

STATION FROM	TO	LENGTH X WIDTH (m^2)	DEPTH (m)	VOLUME (m^3)
0+788.413	0+796.013	131.56 (Digitized)	0.150	19.73
1+185.700	1+193.300	7.6 x 16.34	0.150	18.63
			TOTAL	38.36 USE 39 m^3

ITEM 407 – TACK COAT (Rate of Application 0.34 Liters/Sq. m)

STATION FROM	TO	LENGTH X WIDTH (m^2)	AREA (m^2)
0+786.869	0+788.413	(1.544 x 22.20)	34.3
1+193.360	1+194.843	(1.543 x 15.84)	24.4
		TOTAL	58.7 x 0.34= 19.9 Liters USE 20 Liters

ITEM 448 – 32 mm ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 PG64–22, AS PER PLAN

STATION FROM	TO	LENGTH X WIDTH (m^2)	DEPTH (m)	VOLUME (m^3)
0+786.869	0+788.413	1.544 x 22.20	.032	1.10
1+193.300	1+194.843	1.543 x 15.84	.032	0.78
			TOTAL	1.88 USE 2 m^3

ITEM 448 – ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2 PG64–22, AS PER PLAN (Avg. Thickness 38 mm)

STATION FROM	TO	LENGTH X WIDTH (m^2)	DEPTH (m)	VOLUME (m^3)
0+786.869	0+788.413	1.544 x 22.20	.038	1.30
1+193.300	1+194.843	1.543 x 15.84	.038	0.93
			TOTAL	2.23 USE 3 m^3

ITEM 608 – CONCRETE WALK, AS PER PLAN

STATION FROM	TO	SIDE	LENGTH X WIDTH (m^2)	AREA (m^2)
0+788.413	0+796.013	LT.	7.6 x 1.42	10.79
0+789.2±	0+796.013	RT.	12.90 (Digitized)	12.90
1+185.700	1+211.530	LT.	25.83 x 1.42	36.68
1+185.700	1+196.300	RT.	10.60 x 1.42	15.05
			TOTAL	75.42 USE 76 m^2

ITEM 609 – CONCRETE CURB, TYPE 6

STATION FROM	TO	SIDE	LENGTH (m)
0+786.869	0+788.413	LT.	1.547
0+789.2±	0+792.2±	RT.	3.00
1+193.300	1+196.300	RT.	3.00
1+193.300	1+194.843	LT.	1.543
		TOTAL	9.09 m USE 9 m

ITEM 611 – REINFORCED CONCRETE APPROACH SLABS (T=380 mm), AS PER PLAN

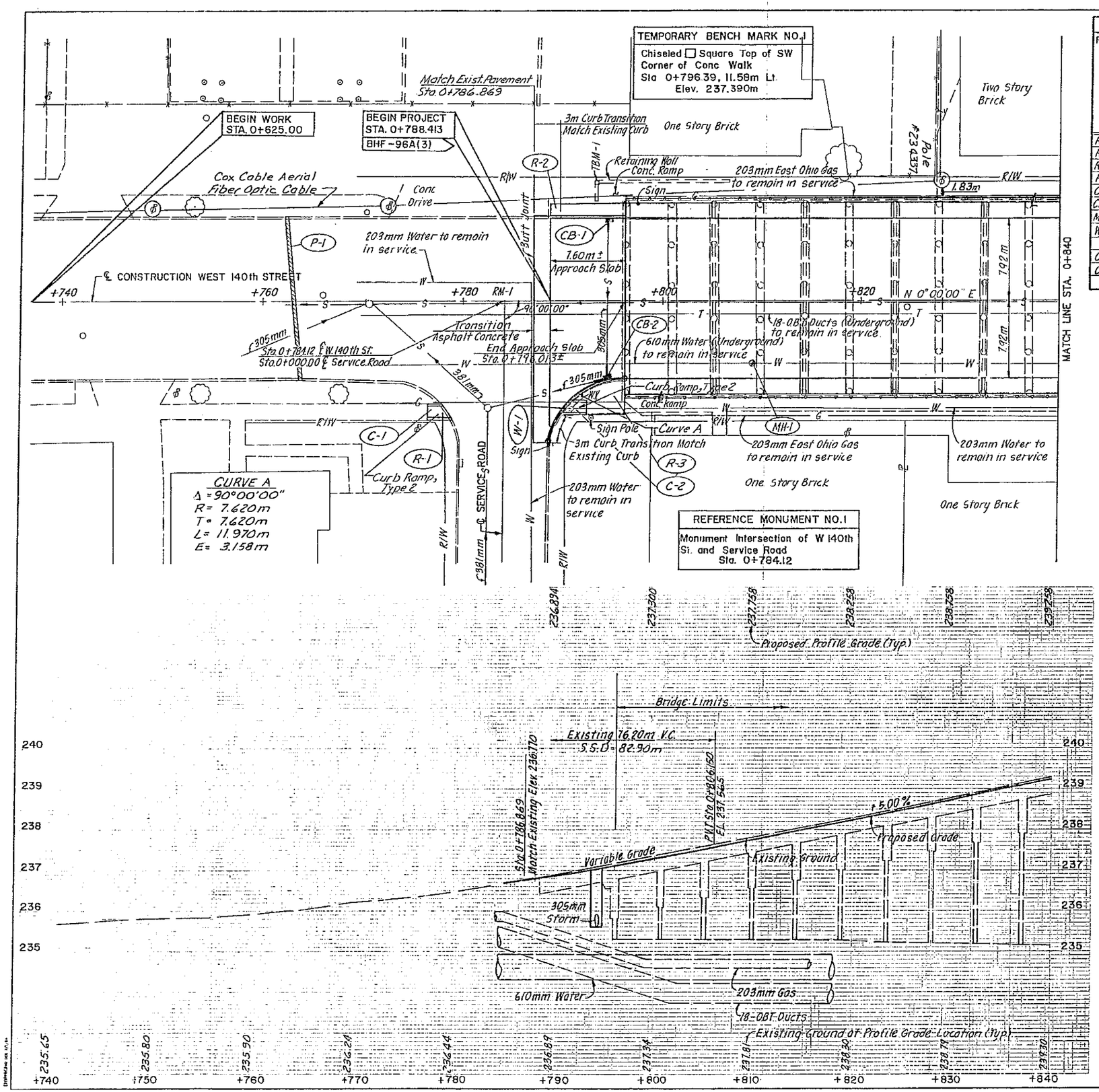
STATION FROM	TO	LENGTH X WIDTH (m^2)	AREA (m^2)
0+788.413	0+796.013	131.56 (Digitized)	131.56 (Digitized)
1+185.700	1+193.300	7.6 x 16.34	124.18
		TOTAL	255.74 USE 256 m^2

EUTHENICS INC. CONSULTING ENGINEERS CLEVELAND, OHIO

CALCULATED NNB CHECKED RDJ

QUANTITY CALCULATIONS - WEST 140th STREET

CUY - W. 140th STREET



ESTIMATED QUANTITIES

REF.	STATION FROM	STATION TO	SIDE	202 CURB REMOVED METER	608 CURB RAMP, TYPE 2 EACH	202 Walk Removed SQ.M.	603 300mm Conduit Type B METER	604 C.B. Cuyahoga County No. 3C EACH	608 Curb Ramp Type 2 SQ.M.	638 Valve Box Adj. To Grade EACH	SPECIAL Pressure Relief Joint, Type C METER	604 Manhole Adjusted To Grade, As Per Plan EACH
R-1	0+776.8	0+778.6	R			3.20						
R-2	0+778.4	0+796.0	L			11.58						
R-3	0+790.0	0+796.0	R			12.90						
P-1	0+763±		L/R								16	
CB-1	0+794.5		L				4	1				
CB-2	0+794.5		R				8	1				
MH-1	0+809±		R									1
W-1	0+790.7		R							1		
C-1	0+778		R	1.8		3.2			3.2			
C-2	0+790		R		1							
TOTALS				1.8	1	34.28	12	2	3.2	1	16	1

EXISTING STRUCTURE

TYPE: Unit 1 and 5 – Reinforced concrete cellular abutments.
Unit 2 and 4 – Continuous steel beam with reinforced concrete deck and substructure.
Unit 3 – Continuous composite steel beam with reinforced concrete deck and substructure

SPANS: Unit 1 – 16 spans at 4.57m±, C/C concrete piers.
Unit 2 and 4 – 14.63m±, 18.29m± 22.86m±, 22.86m±, 20.42m± C/C bearings measured along ℄ W. 140th Street
Unit 3 – 2.44m± Cantilever 27.43m±, 29.57m±, 2.44m± Cantilever C/C bearings.
Unit 5 – 12 spans at 4.57m± C/C concrete piers.

ROADWAY: 15.84m± face to face of curbs with two 1.52m± sidewalks

LOADING: CF=1000 (57)

SKEW: Unit 1 and 5 – 0°±
Unit 2 and 4 – Varies 0°± to 48°21'47 ± Right Forward
Unit 3 – 59°14.37"± Right Forward

WEARING SURFACE: Asphalt Concrete

APPROACH SLABS: 7.62m±

ALIGNMENT: Tangent

CROWN: Normal, 0.016

DATE BUILT: 1959

STRUCTURE FILE NO.: 1833421

PROPOSED STRUCTURE

PROPOSED WORK: Replace existing superstructure, seal joints and repair, modify and seal existing substructure units and retaining walls

TYPE: Unit 1 and 3 – Reinforced concrete cellular abutments.
Unit 2 – Continuous composite welded steel girder. A572 painted with reinforced concrete deck and substructure.

SPANS: Unit 1 – 16 spans at 4.57m±, C/C concrete piers
Unit 2 – 14.63m± 18.29m± 3 spans @ 22.86m±, 27.43m± 3 spans @ 22.86m±, 18.29m± and 14.63m± C/C bearings along ℄ W. 140th Street

ROADWAY: 15.84m face to face of curbs with two 1.52m sidewalks.

LOADING: MS18-44 Case II and the Alternate Military Loading

SKEW: Unit 1 and 3 – 0°±
Unit 2 – Varies 0°± to 59°14.37 ± Right Forward

WEARING SURFACE: 32mm Latex Modified Concrete

APPROACH SLABS: AS-1-81M(7600)

ALIGNMENT: Tangent

CROWN: Normal, 0.016

N

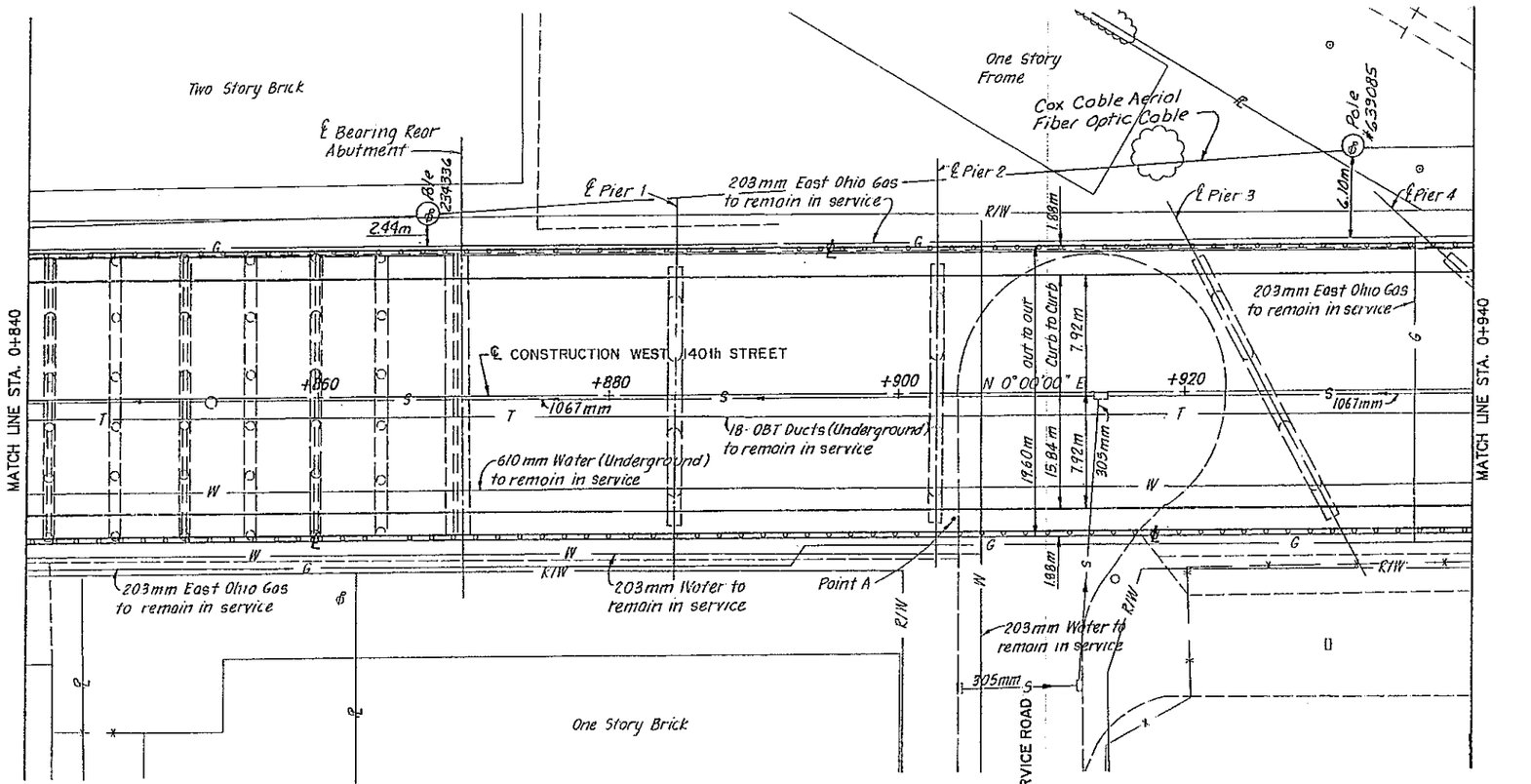
HORIZONTAL RATIO 1:200
VERTICAL RATIO 1:50

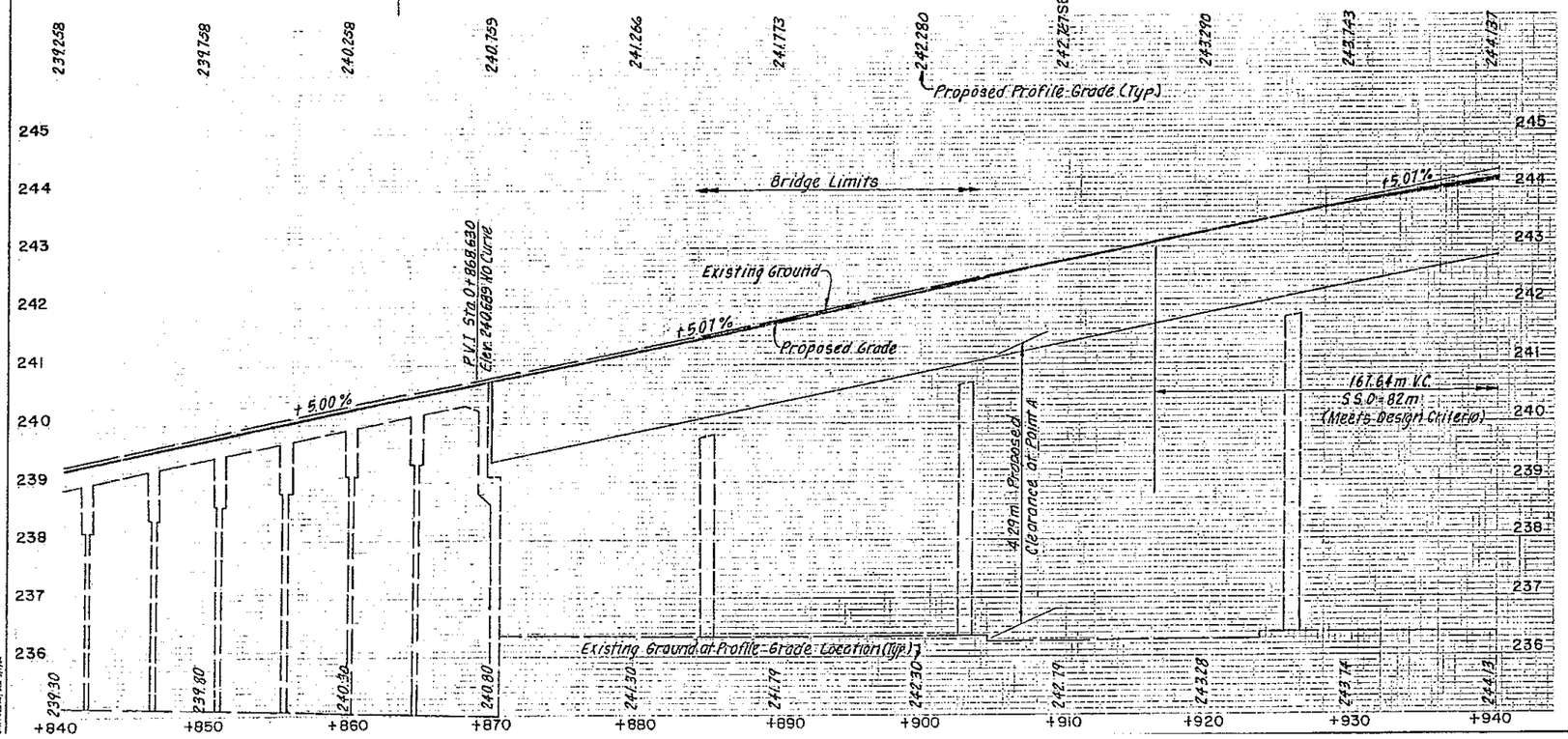
CALCULATED NNB
CHECKED E.P.S

PLAN AND PROFILE - WEST 140th STREET
STA. 0+760 TO STA. 0+840

CUY-WEST 140th STREET

17
98





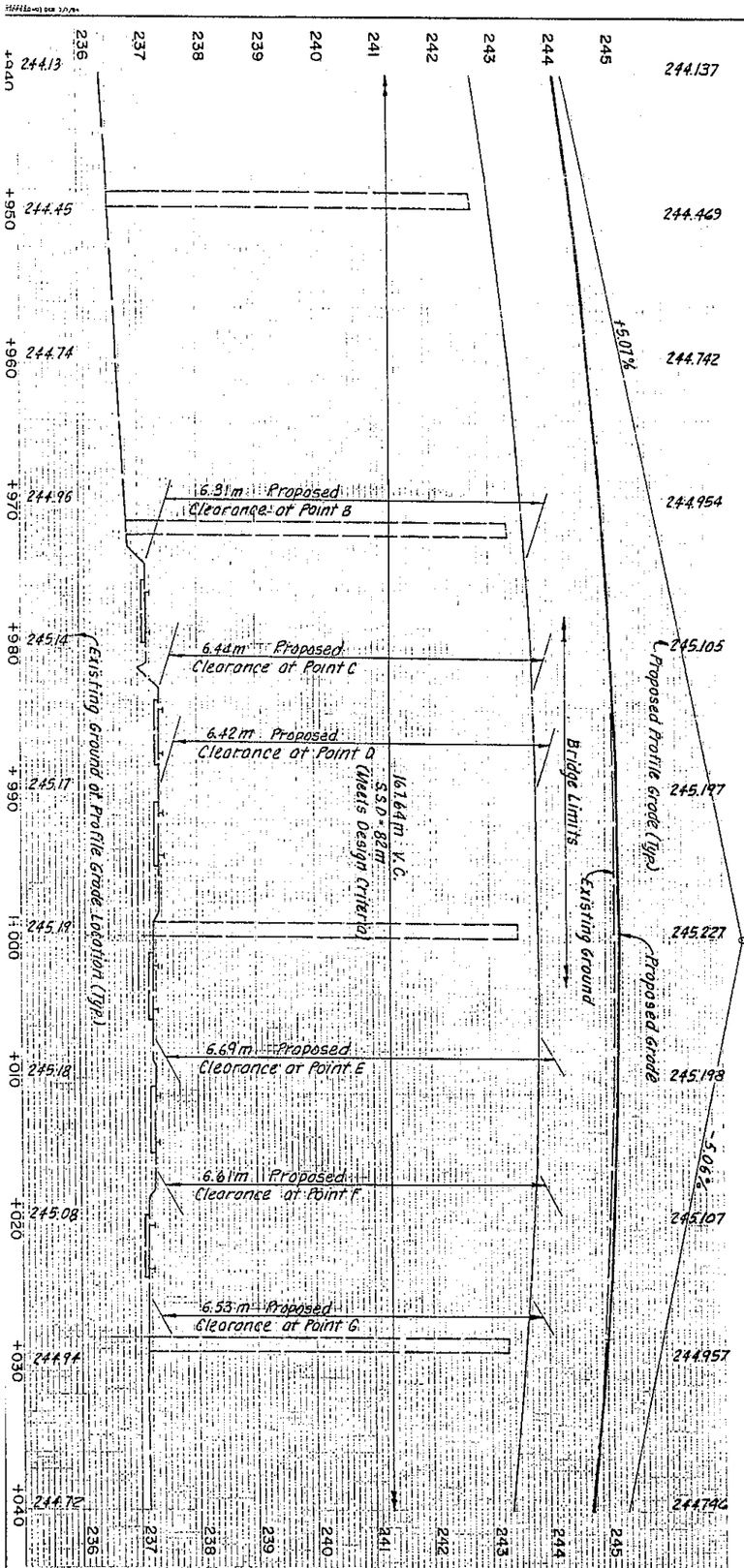
HORIZONTAL RATIO 1:200
VERTICAL RATIO 1:50

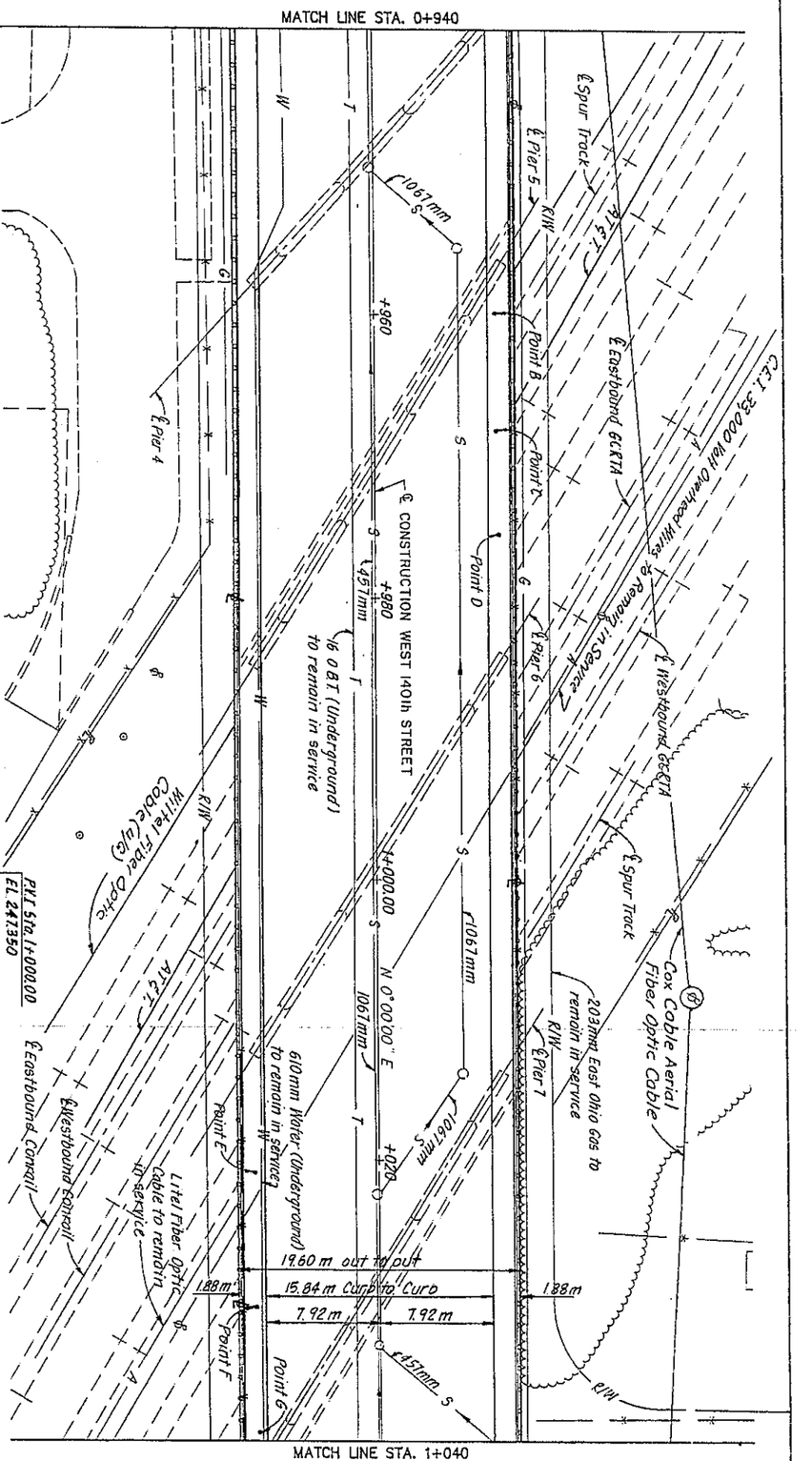
CALCULATED NNB
CHECKED EPS

PLAN AND PROFILE - WEST 140th STREEET
STA. 0+840 TO STA. 0+940

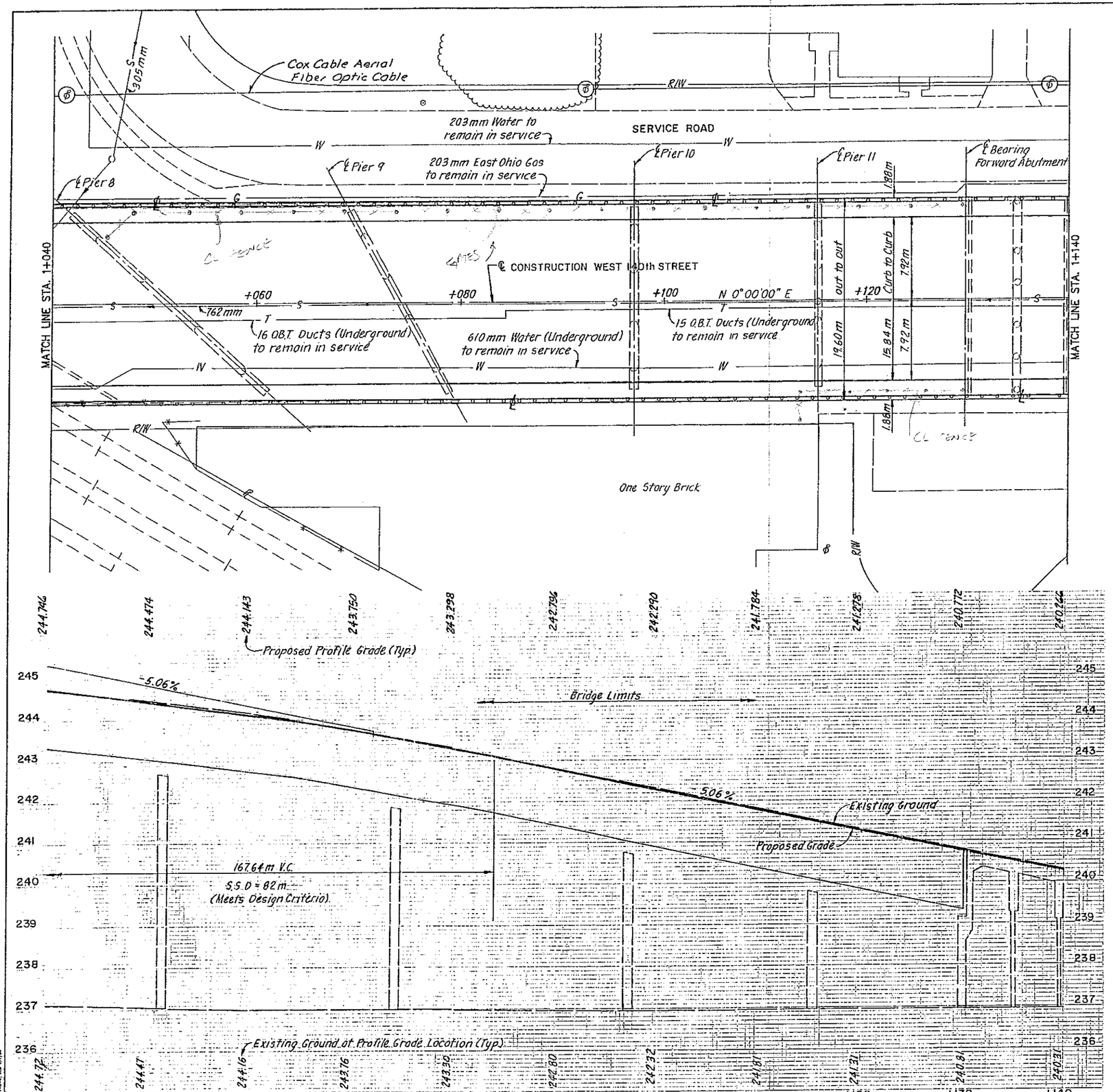
CUY-WEST 140th STREET

18
98





98 / 61	CUY-WEST 140th STREET	PLAN AND PROFILE - WEST 140th STREET STA. 0+940 TO STA. 1+040	CALCULATED NNB CHECKED EPS	HORIZONTAL RATIO 1:200 VERTICAL RATIO 1:50	N



N

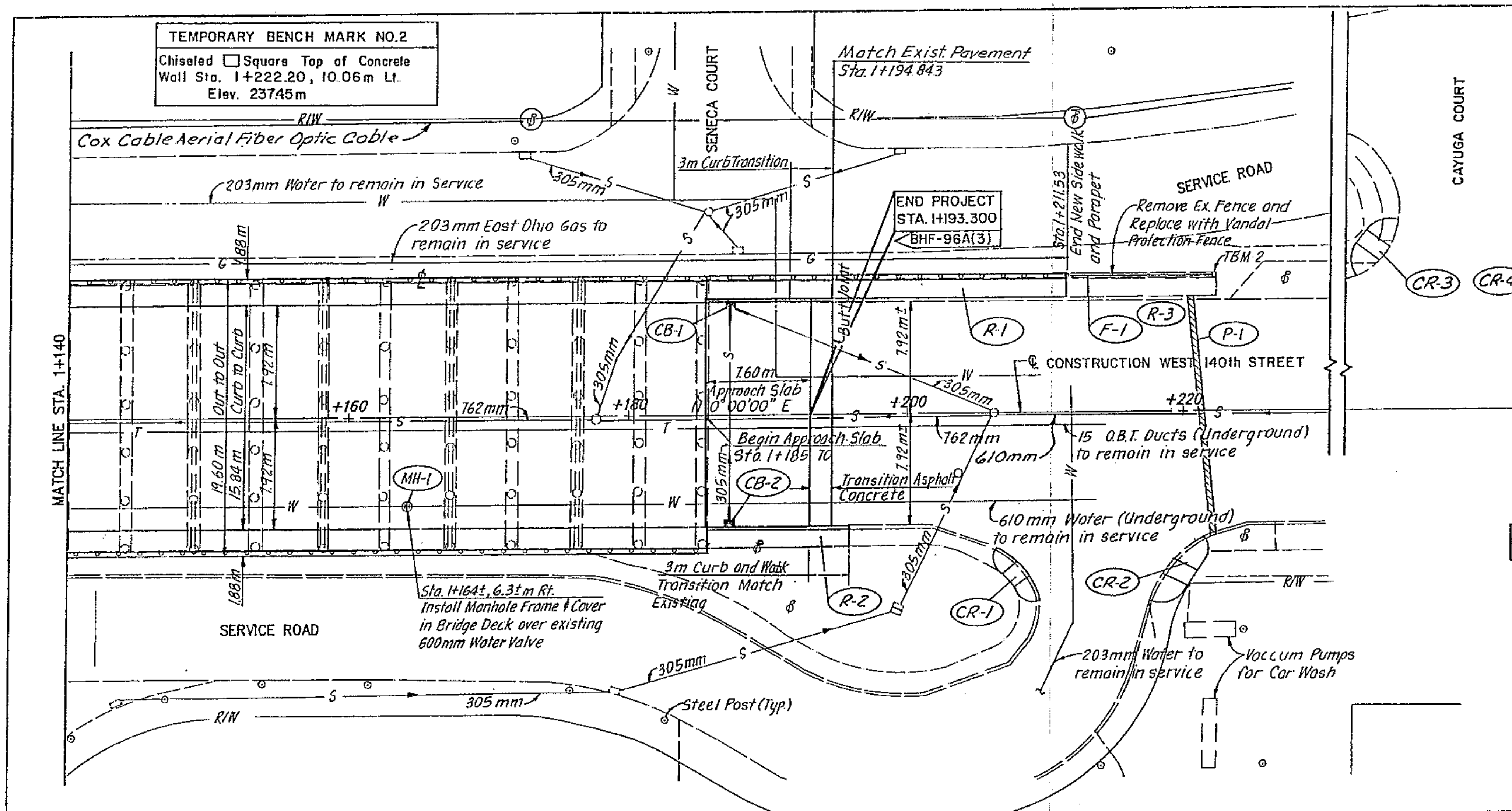
HORIZONTAL RATIO 1:200
VERTICAL RATIO 1:50

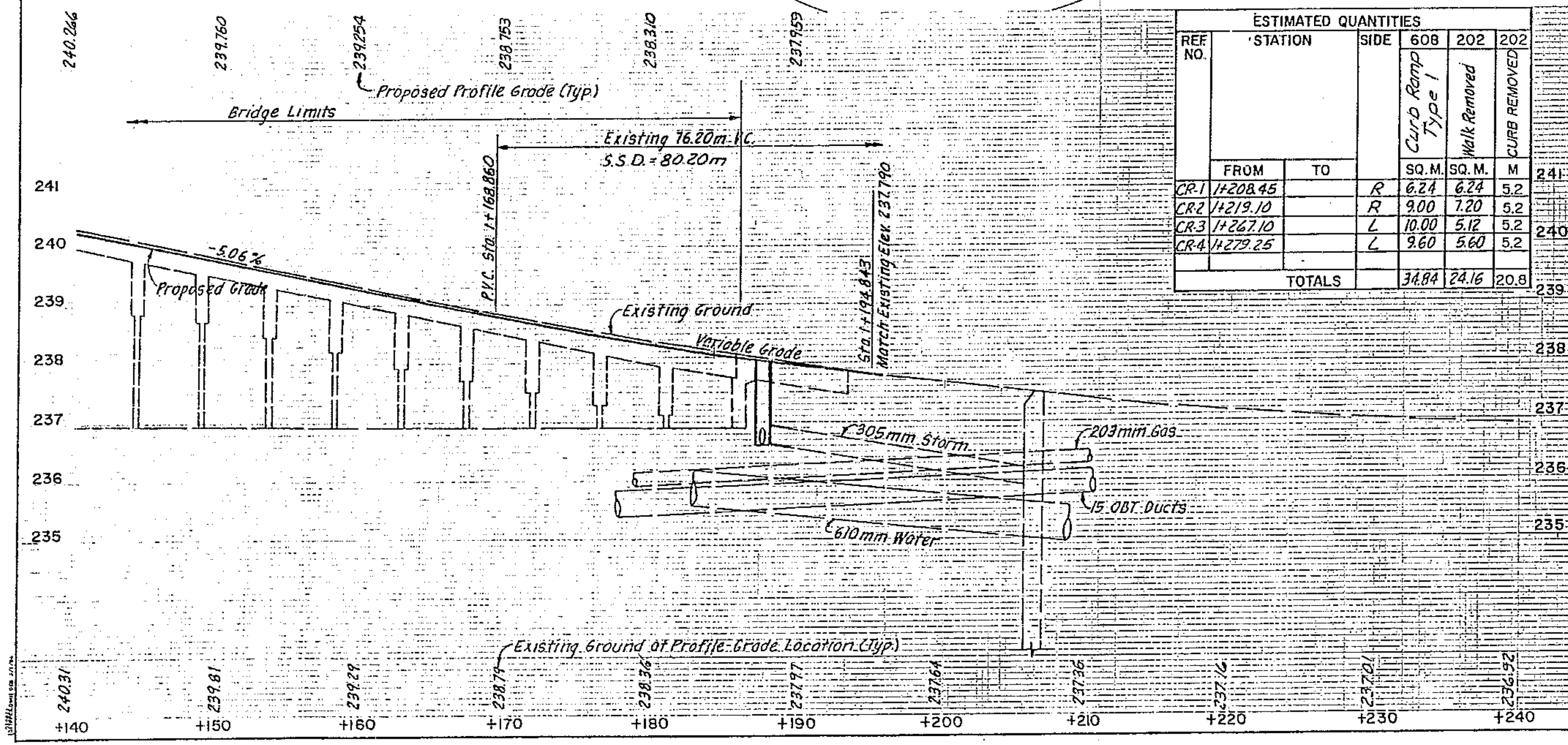
CALCULATED NNB
CHECKED E.P.S

PLAN AND PROFILE - WEST 140th STREET STA. 1+040 TO STA. 1+140

CUY-WEST 140th STREET

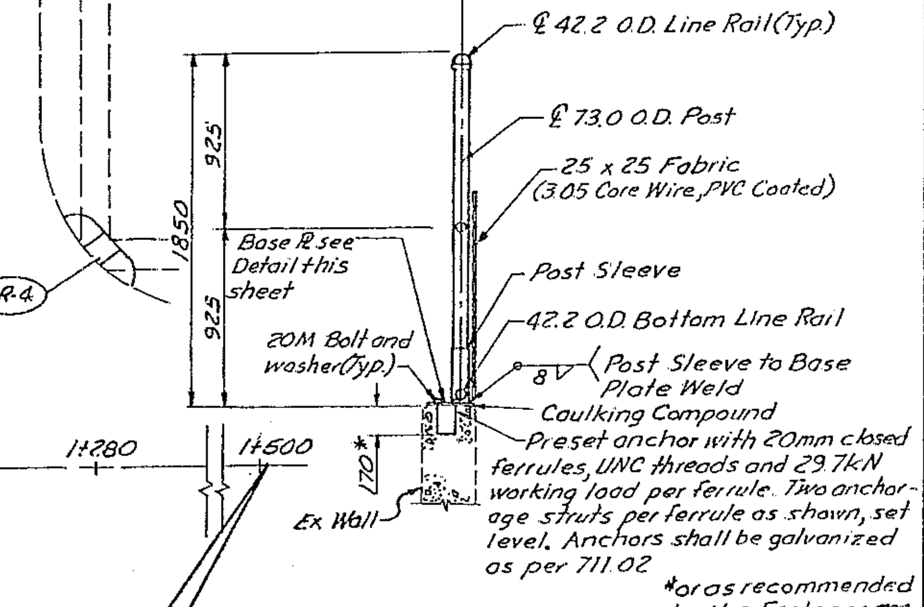
20
98


TEMPORARY BENCH MARK NO.2
Chiseled □ Square Top of Concrete Wall Sta. 1+222.20, 10.06m Lt.
Elev. 237.45m
Cox Cable Aerial Fiber Optic Cable
203mm Water to remain in Service
203mm East Ohio Gas to remain in service
SENECA COURT
3m Curb Transition
Match Exist. Pavement
Sta. 1+194.843
END PROJECT
STA. 1+193.300
BHF-96A(3)
Sta. 1+211.53
End New Sidewalk and Parapet
SERVICE ROAD
Remove Ex. Fence and Replace with Vandal Protection Fence
TBM 2
CAYUGA COURT
MATCH LINE STA. 1+140
Out to Out
Curb to Curb
Approach Slab
Begin Approach Slab
Sta. 1+185.70
Butt Joint
CONSTRUCTION WEST 140th STREET
15 O.B.T. Ducts (Underground) to remain in service
610mm Water (Underground) to remain in service
Transition Asphalt Concrete
3m Curb and Walk Transition Match Existing
Sta. 1+164±, 6.3±m Rt.
Install Manhole Frame & Cover in Bridge Deck over existing 600mm Water Valve
SERVICE ROAD
203mm Water to remain in service
Vaccum Pumps for Car Wash
Steel Post (Typ)
END WORK
STA. 1+504.00
Ex Wall

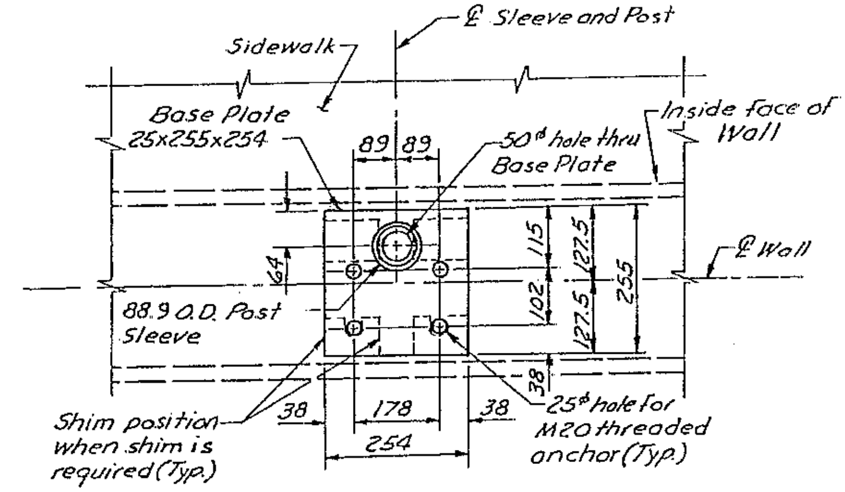

Proposed Profile Grade (Typ)
Bridge Limits
Existing 76.20m V.C.
S.S.D. = 80.20m
P.I.C. Sta. 1+168.860
Sta. 1+194.843
Match Existing Elev. 237.790
-5.06%
Proposed Grade
Existing Ground
Variable Grade
305mm Storm
203mm Gas
15 OBT Ducts
610mm Water
Existing Ground at Profile Grade Location (Typ)

ESTIMATED QUANTITIES

REF. NO.	STATION FROM	STATION TO	SIDE	608 Curb Ramp Type 1 (SQ.M.)	202 Walk Removed (SQ.M.)	202 CURB REMOVED (M)
CR-1	1+208.45		R	6.24	6.24	5.2
CR-2	1+219.10		R	9.00	7.20	5.2
CR-3	1+267.10		L	10.00	5.12	5.2
CR-4	1+279.25		L	9.60	5.60	5.2
TOTALS				34.84	24.16	20.8


℄ 42.2 O.D. Line Rail (Typ)
℄ 73.0 O.D. Post
25 x 25 Fabric (3.05 Core Wire, PVC Coated)
Post Sleeve
42.2 O.D. Bottom Line Rail
Post Sleeve to Base Plate Weld
Caulking Compound
Preset anchor with 20mm closed ferrules, UNC threads and 29.7kN working load per ferrule. Two anchorage struts per ferrule as shown, set level. Anchors shall be galvanized as per 711.02
*or as recommended by the fastener manufacturer.
Base ℗ see Detail this sheet
20M Bolt and washer (Typ.)
925
1850
170*

POST SECTION
(1850 mm Straight Fence)
(No Scale)
Sta 1+211.53 to Sta 1+222.53



BASE PLATE DETAIL
(No Scale)

VANDAL PROTECTION FENCE
(All dimensions in mm, except as noted)
For additional detail see Std. Dwg. VPF-1 90M

ESTIMATED QUANTITIES

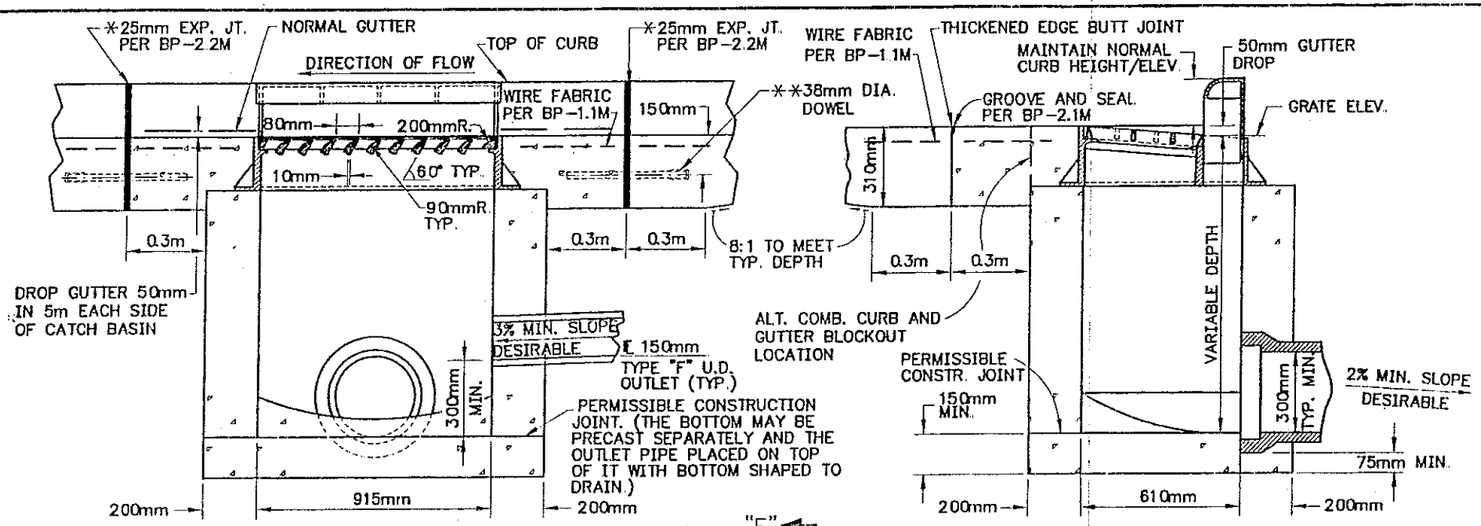
REF. NO	STATION FROM	STATION TO	SIDE	202 Walk Removed (SQ. M.)	202 Fence Removed (METER)		603 300mm Conduit Type B (METER)	604 Catch Basin Cuyahoga County No. 3C (EACH)	604 Manhole Frame and Cover, As Per Plan (EACH)	SPECIAL Vandal Protection Fence, 1.8 Meter Straight, Coated Fab. (METER)	SPECIAL Pressure Relief Joint, Type C (METER)	
R-1	1+185.70	1+211.53	L	36.68								
R-2	1+185.70	1+195.90	R	14.48								
R-3	1+211.53	1+222.53	L		11.00							
P-1	1+221±		L/R								16	
CB-1	1+187.20		L				8	1				
CB-2	1+187.20		R				4	1				
MH-1	1+164±		R						1			
F-1	1+211.53	1+222.53	L							11.00		
TOTALS				51.16	11.00		12	2	1	11.00	16	

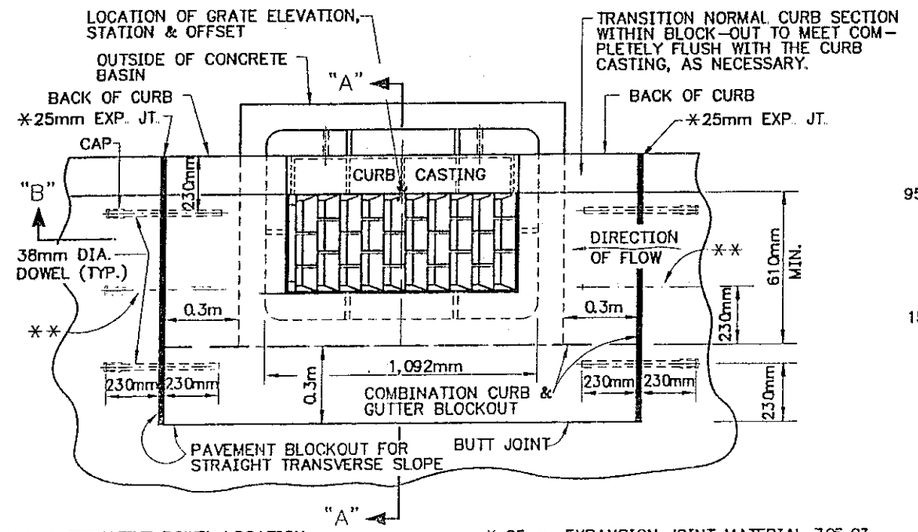
HORIZONTAL RATIO 1:200
VERTICAL RATIO 1:50

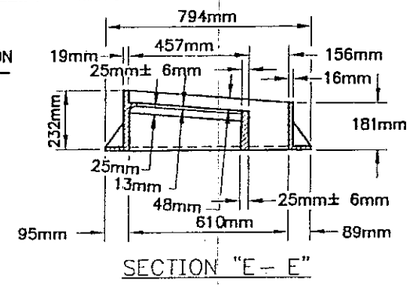
CALCULATED NNB
CHECKED EPS

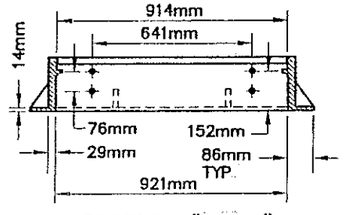
PLAN AND PROFILE - WEST 140th STREET
STA. 1+140 TO STA. 1+240

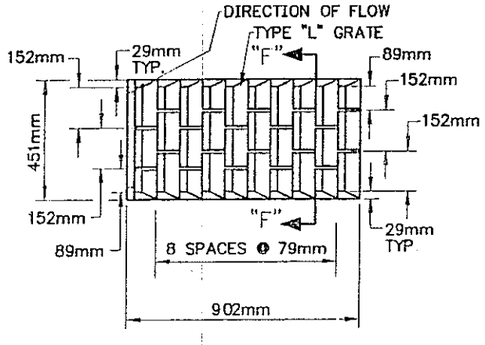
CUY-WEST 140th STREET

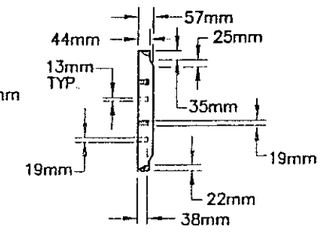












NOTES

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF 604-711.12, A.S.T.M. A 48, CLASS 35 GRAY IRON OR 711.13 DUCTILE IRON. AFTER ACCEPTANCE, EXPOSED PARTS OF CURB CASTING TO BE THOROUGHLY CLEANED AND GIVEN ONE COAT OF ASPHALT VARNISH OR COAL TAR PITCH PAINT, AT THE SITE.

MINIMUM FRAME WEIGHT = 150 kg
MINIMUM GRATE WEIGHT = 59 kg
MINIMUM CURB CASTING WEIGHT = 47 kg
TOTAL MINIMUM ASSEMBLY WEIGHT = 256 kg

SUBJECT TO THE ABOVE, THE FOLLOWING OR APPROVED EQUAL CASTINGS ARE ACCEPTED:
NEENAH No. R-3246- CL. AND EAST JORDAN No. 7035 WITH M6 GRATE.

BEARING AREAS OF FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE GRATE IN THE FRAME. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING. EACH FRAME AND GRATE SHALL BE FITTED, MATCHED AND MARKED BEFORE DELIVERY TO THE PROJECT.

DOWELS: FOUR (4) 38mm x 460mm DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT. SEE BP-2.2M FOR DOWEL DETAILS.

BRICK OR CONCRETE BLOCK SIDE WALLS, WHEN USED IN LIEU OF PRECAST CONCRETE, SHALL BE 200mm NOMINAL THICKNESS.

PRECAST CONSTRUCTION IS PERMITTED, (EXCEPT FOR THE BLOCK-OUT PAVEMENT) AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13 WITH SIX PLUS OR MINUS TWO PERCENT (6±2%) AIR VOID CONTENT IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 150mm AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

BLOCKOUT: WHERE EITHER SIDE OF THE CATCH BASIN BLOCKOUT IS ALIGNED WITH A CONTRACTION JOINT (AS IS TYPICALLY DESIRABLE), THE CONTRACTION JOINT SHALL BE THICKENED AND CONTINUED IN KIND WITHIN THE LIMITS OF THE BLOCKOUT. EXCEPT AS SPECIFIED ABOVE, BLOCKOUTS SHALL BE LOCATED NO CLOSER THAN 1.5m FROM THE NEAREST PAVEMENT JOINT.

WHERE THE SPECIFIED CATCH BASIN WORK REQUIRES THE CONSTRUCTION/RECONSTRUCTION OF BLOCKOUTS IN EXISTING PAVEMENT, THE BLOCKOUTS SHALL CONFORM, AS CLOSELY AS POSSIBLE, TO THE DETAILS SHOWN HEREON EXCEPT THAT THE DOWELS SHALL BE PLACED/REPLACED IN ACCORDANCE WITH THE "SECTION-TYPE X" JOINT, PER CUYAHOGA COUNTY CONSTRUCTION DRAWING BP-2.5C ("SECTION-TYPE Y" JOINT WHERE BLOCKOUT JOINT IS AT AN EXISTING CONTRACTION OR HINGE JOINT LOCATION). PAYMENT SHALL BE INCLUDED IN THE ITEM 604-CATCH BASIN, CUYAHOGA COUNTY 3-C WORK SPECIFIED; AND/OR AS DIRECTED BY THE ENGINEER.

A CLASS "C" CONCRETE APRON, THE SIZE OF THE 610mm MINIMUM GUTTER BLOCKOUT, SHALL BE CAST IN PLACE IN FLEXIBLE PAVEMENT AND NO DOWELS ARE REQUIRED.

ANY/ALL EXTRA MATERIAL, LABOR AND EQUIPMENT REQUIRED TO CONSTRUCT THE PAVEMENT, CURB, SUBBASE, SUBGRADE AND BACKFILL WITHIN THE BLOCKOUT AREAS, IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL BE INCLUDED IN THE UNIT PRICE BID, PER EACH, FOR THE ITEM 604-CATCH BASIN, CUYAHOGA COUNTY NO. 3C WORK SPECIFIED.

THIS CATCH BASIN IS NOT INTENDED FOR USE WITH MOUNTABLE TYPE CURBS NOR SHOULD IT BE LOCATED WITHIN A DRIVE APRON. (SEE O.D.O.T. STANDARD CONSTRUCTION DRAWING No. CB-6M)

CUYAHOGA COUNTY ENGINEER

CATCH BASIN

CONSTRUCTION DRAWING CB-3C (METRIC VERSION)

DATE
7-15-80
5-5-87
2-8-88
3-9-92
5-22-95

CUY-WEST 140TH STREET

21A
98

SHEET NUMBER	COST PARTICIPATION NORMAL PARTICIPATION	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF. SHEET
23						TRAFFIC CONTROL	
10.9	10.9	630	02100	10.9	METER	GROUND MOUNTED SUPPORT, NO.2 POST	
15	15	630	79500	15	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
0.5625	0.6	630	80100	0.6	SQ. METER	SIGN, FLAT SHEET	
2.025	2.0	630	80101	2.0	SQ. METER	SIGN, FLAT SHEET, AS PER PLAN	24
0.54	0.5	630	80102	0.5	SQ. METER	SIGN, FLAT SHEET, TYPE G	
10	10	630	85000	10	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	
1.792	1.79	642	00202	1.79	KILOMETER	LANE LINE, TYPE 2	
0.905	0.91	642	00302	0.91	KILOMETER	CENTER LINE, TYPE 2	
56	56	644	00400	56	METER	CHANNELIZING LINE	
33	33	644	00500	33	METER	STOP LINE	
159	159	644	00600	159	METER	CROSSWALK LINE	
14	14	644	01300	14	EACH	LANE ARROW	

CALCULATED NNB
CHECKED JEN

GENERAL SUMMARY - WEST 140th STREET

CUY - WEST 140TH STREET

22
98

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

\JOBS\317\MISC\317GSD2.DWG) PJK 2/12/98 PLOT 1:1 (BP)

(1)

ITEM 642 – CENTER LINE (SOLID DOUBLE)				
STATION		SIDE	CALCULATION	METER
FROM	TO			
WEST 140TH STREET				
0+578	1+483	℄	1483–0578	905.0
TOTAL			0.905 KILOMETER = 905.0 METER	

(2)

ITEM 642 – LANE LINE				
STATION		SIDE	CALCULATION	METER
FROM	TO			
WEST 140TH STREET				
0+578	1+409	LT./RT.	(1409–0578)x 2	1662.0
1+378	1+508	LT.	1508–1378	130.0
TOTAL			1.792 KILOMETER = 1792.0 METER	

(3)

ITEM 644 – CROSSWALK LINE				
STATION		SIDE	CALCULATION	METER
FROM	TO			
WEST 140TH STREET (SERVICE ROAD)				
0+784		RT.	12.9+11.0	23.9
WEST 140TH STREET (SERVICE ROAD)				
1+214		RT.	12.7+9.8	22.5
WEST 140TH STREET (CAYUGA COURT)				
1+276		LT.	13.4+11.6	25.0
WEST 140TH STREET				
1+412	1+414	LT./RT.	19.0+21.0	40.0
1+441	1+443	LT./RT.	26.0+21.0	47.0
TOTAL			158.4 USE 159.0 METER	

(4)

ITEM 644 – STOP LINE				
STATION		SIDE	CALCULATION	METER
FROM	TO			
WEST 140TH STREET (SERVICE ROAD)				
0+784	0+788	RT.	1 x 4.0	4.0
WEST 140TH STREET (SERVICE ROAD)				
1+214	1+218	RT.	1 x 4.0	4.0
WEST 140TH STREET (CAYUGA COURT)				
1+268	1+272	LT.	1 x 4.0	4.0
WEST 140TH STREET				
1+409		RT.	1 x 11.0	11.0
1+446		LT.	1 x 10.0	10.0
TOTAL				33.0 METER

(5)

ITEM 644 – CHANNELIZING LINE				
STATION		SIDE	CALCULATION	METER
FROM	TO			
WEST 140TH STREET				
1+379	1+409	RT.	1409--1379	30.0
1+446	1+472	LT.	1472–1446	26.0
TOTAL				56.0 METER

(6)

ITEM 644 – LANE ARROW				
STATION		SIDE	CALCULATION	EACH
FROM	TO			
WEST 140TH STREET				
1+384		RT.	1 x 1	1
1+390		RT.	1 x 2	2
1+395		RT.	1 x 1	1
1+406		RT.	1 x 3	3
1+448		LT.	1 x 3	3
1+459		LT.	1 x 1	1
1+463		LT.	1 x 2	2
1+469		LT.	1 x 1	1
TOTAL				14 EACH

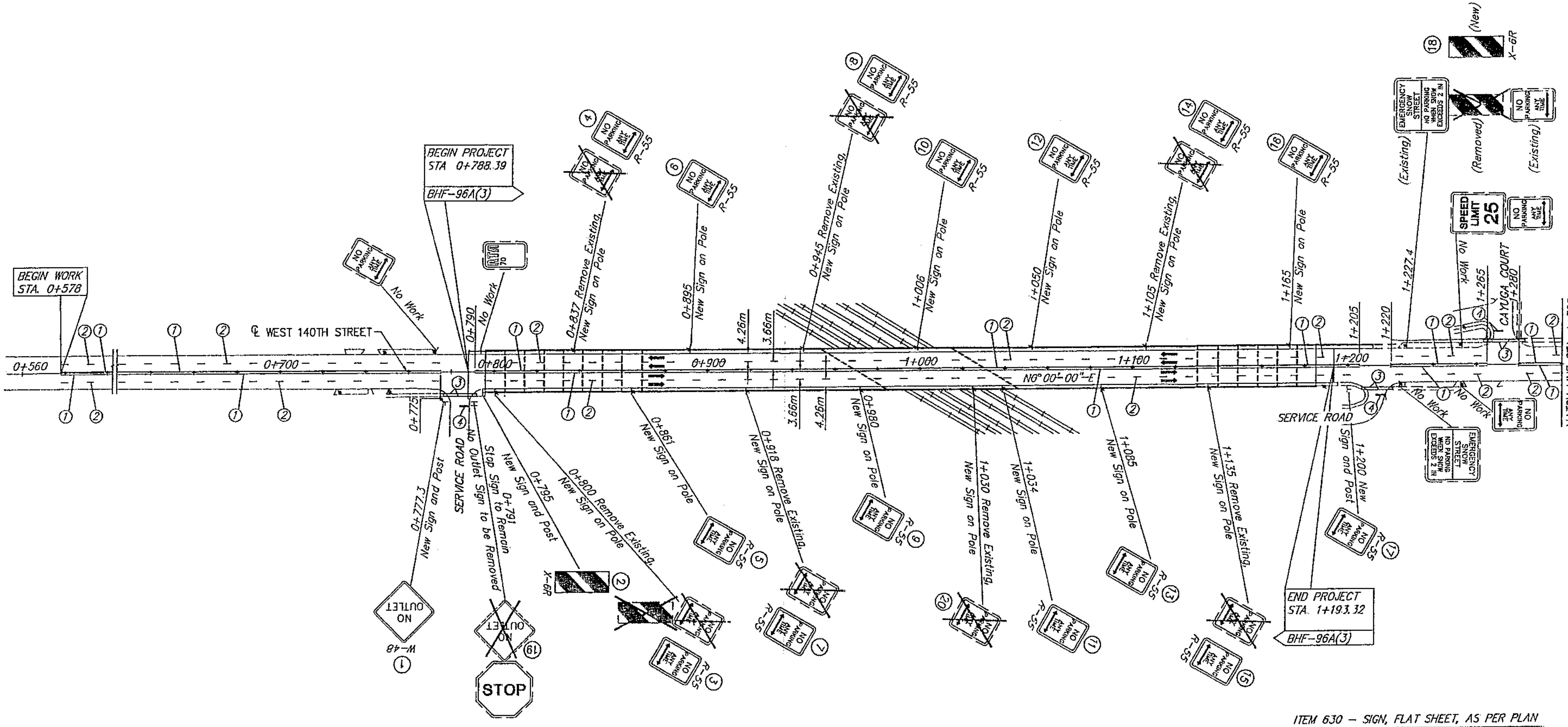
SIGN NUMBER	STATION	SIDE	CODE AND SIZE						ITEM 630					
			X–6R 300mm x 900mm		W–48 750mm x 750mm		R–55 300mm x 450mm		Sign, Flat Sheet Sq. Meter	Sign, Flat Sheet, As Per Plan Sq. Meter	Ground Mounted Support, No. 2 Post Meter	Sign, Flat Sheet, Type G Sq. Meter	Sign Support Assembly Pole Mounted Each	Removal of Ground Mounted Sign and Storage Each
1	0+777.3 WEST 140TH STREET	RT.			1				0.5625		4.3			
2	0+795 WEST 140TH STREET	RT.	1								3.3	0.270		
3	0+800 WEST 140TH STREET	RT.					1			0.135			1	2
4	0+837 WEST 140TH STREET	LT.					1			0.135			1	1
5	0+861 WEST 140TH STREET	RT.					1			0.135			1	
6	0+895 WEST 140TH STREET	LT.					1			0.135			1	
7	0+918 WEST 140TH STREET	RT.					1			0.135			1	1
8	0+945 WEST 140TH STREET	LT.					1			0.135			1	1
9	0+980 WEST 140TH STREET	RT.					1			0.135			1	
10	1+006 WEST 140TH STREET	LT.					1			0.135			1	
11	1+034 WEST 140TH STREET	RT.					1			0.135			1	
12	1+050 WEST 140TH STREET	LT.					1			0.135			1	
13	1+085 WEST 140TH STREET	RT.					1			0.135			1	
14	1+105 WEST 140TH STREET	LT.					1			0.135			1	1
15	1+135 WEST 140TH STREET	RT.					1			0.135			1	1
16	1+165 WEST 140TH STREET	LT.					1			0.135			1	
17	1+200 WEST 140TH STREET	RT.					1			0.135			1	
18	1+227.4 WEST 140TH STREET	LT.	1								3.3	0.270		1
19	0+791 WEST 140TH STREET	RT.												1
20	1+030 WEST 140TH STREET	RT.												1
	TOTALS		2		1		15		0.5625	2.025	10.9	0.540	15	10

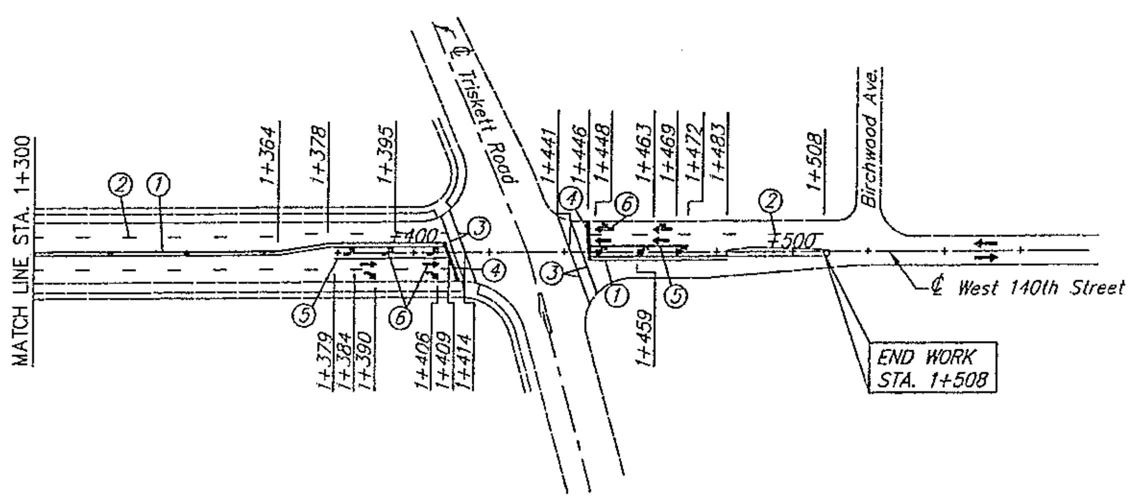
CALCULATED N.N.B.
CHECKED R.D.J.

SIGNING AND PAVEMENT MARKING QUANTITIES

CUY - WEST 140TH STREET

23
98





SIGN LEGEND

Symbol	Description
New	New Sign
Existing, To Remain	No Work
Existing, To be Removed	Remove Existing
Ground Mounted Support-Single	⊥
Ground Mounted Support-Back to Back	=
Banded to Pole	◻

ITEM 630 – SIGN, FLAT SHEET, AS PER PLAN

R-55-300 Signs Supplied Under this Item shall meet the Requirements of 630, Except that Reflective Sheeting will not be used. The Background Color of the Sign shall be White Paint Applied to the Flat Sheet Material.

The Contractor shall Contact the City of Cleveland, Divisinn of Traffic Engineering Sign Shop, 4150 East 49th Street, Bldg. 5 Cuyahoga Heights, Ohio 44105 (216-420-8280), to Obtain a Sample of the Lettering Sizes and Fonts to be used.

LEGEND

1. Item 642 – Center Line (Solid Double)
2. Item 642 – Lane Line
3. Item 644 – Crosswalk Line
4. Item 644 – Stop Line
5. Item 644 – Channelizing Line
6. Item 644 – Lane Arrow

Note Mounting Height for signs on bridge retaining wall or parapet shall be 0.60m above top of fence.

See Sheet 23 for metric sign sizes.

0 20 40 HORIZONTAL SCALE IN METERS

CALCULATED N.N.B. CHECKED R.D.J.

TRAFFIC CONTROL PLAN

CUY-WEST 140TH STREET

317/MISC/317TC001 PJK 2/12/98 PLOT 1000:1000 METRIC

SPECIFICATION

These notes are supplemental to Items 625 and 713 of the State of Ohio Department of Transportation Construction and Material Specifications.
Reference shall be made to Standard Construction Drawings listed on the title sheet of these plans

625.03 – GENERAL

The power supplying agency for the highway lighting on this project is:
Cleveland Electric Illuminating Company
3601 Ridge Road
Cleveland, Ohio 44102
Phone: (216) 634-7303

Power for the West 140th street lighting circuit "EX-17" will be provided by tapping into the existing power pole (#234320) to the right side around Sta. 1+120±.
The contractor shall contact CEI for additional information as to exact time periods for making the tap-in. The proposed lighting on West 140th street will be serviced by the 240 volts, three wire, grounded neutral line.

EXISTING LIGHTING

The existing highway overhead lighting circuit is EX-17. Power is supplied by the CEI from existing pole with transformer number #23420 on right side and #234336 on the left side. The existing lighting system consist of eighteen foot high bridge mounted steel poles and ten feet bracket arms with 400 watt HPS lamps.

UNDERDRAINS FOR PULL BOXES

Reference is made to the 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 of "40 meters of Item 603, 100mm conduits, Type E" is included in the Lighting General Summary for this purpose.

EXISTING LIGHT POLES ON STRUCTURE

The existing light pole installations, including bracket arms, luminaires, lamps, poles, pole and bracket wiring and bases on structure CUY-WEST 140th STREET shall be removed, existing bridge lighting circuits shall be disconnected and paid under the lump sum price bid in the bridge quantity "Structures Removed Over 6 Meter Span, As Per Plan". The existing bracket arms, luminaires and lamps shall become property of the Contractor.

ITEM 625 – POWER SERVICE, AS PER PLAN

The Contractor shall connect the electrical cables to the power source at location and detail shown in the plans. The cost of removing and reusing existing aerial wire, the Power Connection, Supporting existing wire to the side of the parapet with eye bolts, grounding of cable, Conduit, Cable Splicing Kit in Structure Junction Box, and other equipment needed to complete the work is incidental and shall be included in the unit price bid per each of Item 625 –Power Service, As Per Plan

ITEM 625 – STRUCTURE GROUNDING SYSTEM, AS PER PLAN

The Contractor shall include the work required to ground the bridge fence as per detail shown in the plans, in addition to the requirements of 625.20 Structure Grounds

625.07 – 713.11 LUMINAIRES

Style B Luminaires shall have single rated 240 volt, 400 watt, Constant Wattage, Isolation type with photocell. Ballasts for use with high pressure sodium and shall be General Electric M400, Crouse-Hinds OVM, American 35/26, or equal Approved by the Engineer.

713.14 – LAMPS

High pressure sodium lamps shall be General Electric "Lucalox", Phillips "Ceramalux", Sylvania "Lumolux", or equal approved by the Engineer.

CONDUIT ON STRUCTURE

Expansion fittings for conduits on structures shall be OZ Type AX, Crouse Hinds Type XJ-4, Appleton Type XJ-4, or equal approved by the Engineer. Each expansion fitting shall have a Copper External Bonding Jumper. At cellular abutment expansion joints the Contractor may use expansion/deflection fitting as shown on Standard Construction Drawing HL-30.32M.
The spare conduit is provided at the request of the City of Cleveland.
The cost of spare conduit shall be borne by the City of Cleveland.

SHEET NUMBER 25	SHEET NUMBER 27	SHEET NUMBER 28	SHEET NUMBER 29	SHEET NUMBER 30	100% LOCAL PARTICIPATION CITY OF CLEVELAND	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF. SHEET
										LIGHTING	
40						603	00400	40	METER	100mm CONDUIT, TYPE E	
	4	8	10	6		625	00500	28	EACH	CONNECTOR KIT, TYPE II	
	3					625	01500	3	EACH	CABLE SPLICING KIT	
	2	4	5	3		625	10500	14	EACH	LIGHT POLE, MISC: A3.0 B5.5 STYLE IIA (BRIDGE MOUNTED)	
	8	16	20	12		625	10600	56	EACH	LIGHT POLE ANCHOR L-BOLTS	
	507	756	756	309		625	23200	2,328	METER	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	
	34.0	68.0	85.0	51.0		625	23400	238	METER	NO. 10 AWG POLE AND BRACKET CABLE	
	268	480	480	394	811	625	25400	1,622	METER	CONDUIT, 51mm, 713.04	
	40				20	625	25802	40	METER	CONDUIT, CONCRETE ENCASED, 76mm, 713.07	
	2	4	5	3		625	26250	14	EACH	LUMINAIRE, CONVENTIONAL STYLE B, TYPE III, 400 WATT HIGH PRESSURE SODIUM, 713.11, 240 VOLT WITH PHOTOCELL	
	6			1		625	29002	7	METER	TRENCH IN 0.6 M DEEP	
	20					625	29010	20	METER	TRENCH 0.8 M DEEP	
	2	4	6	3		625	29920	15	EACH	STRUCTURE JUNCTION BOX	
	2			2		625	31110	4	EACH	PULL BOX, 713.081, 250mm X 350mm	
			1			625	33001	1	EACH	STRUCTURE GROUNDING SYSTEM, AS PER PLAN	25
			1			625	34001	1	EACH	POWER SERVICE, AS PER PLAN	25, 30

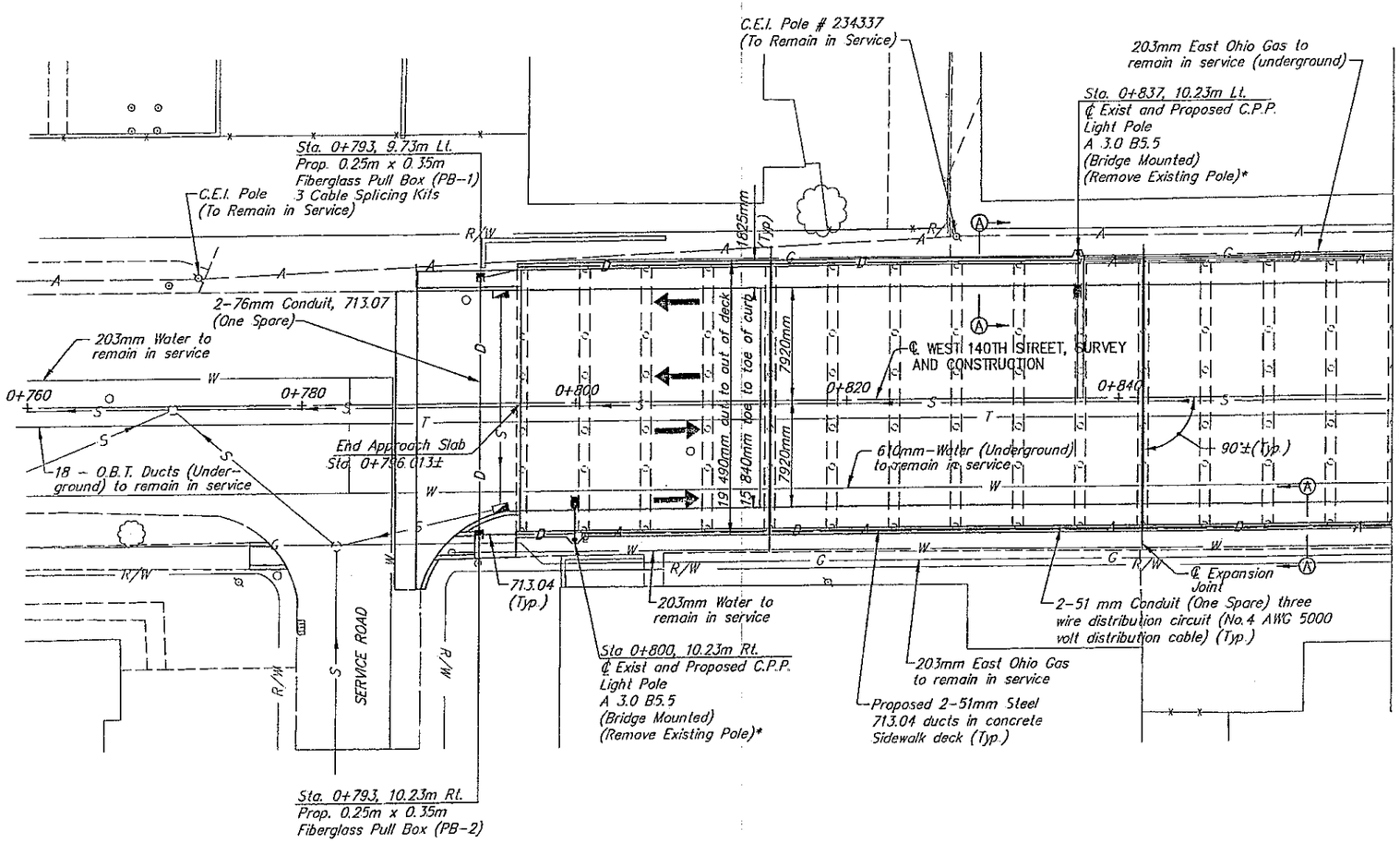
CALCULATED NNB CHECKED EPS

GENERAL SUMMARY - WEST 140th STREET

CUY - WEST 140TH STREET

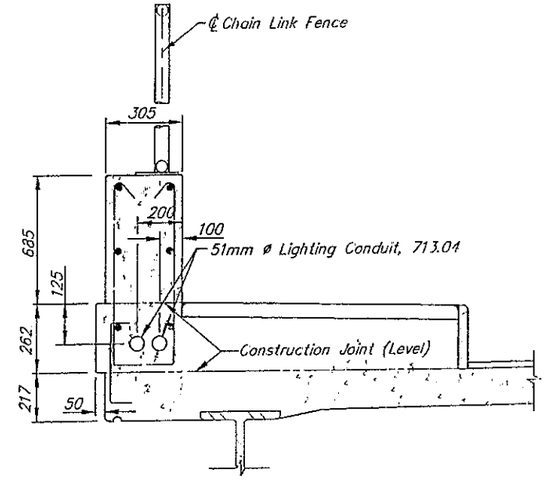
EUTHENICS INC. CONSULTING ENGINEERS CLEVELAND, OHIO

\JOBS\317\LTG\317LGS01.DWG) PJK 1/8/98 PLOT 1:1 (IMP)



*Note.
Payment for removal to be included with unit price bid per lump sum of structure (See Bridge Quantities)

STATION		SIDE	625 PullBox 713.081 250mmx 350mm	625 Conduit, 51mm, 713.04	625 Light Pole, Misc. A3.0 B5.5, Style IIA (Bridge Mounted)	625 Light Pole, Anchor L-Bolts (For Structure)	625 Luminaire Conventional Style B Type III 400 Watt High Pressure Sodium 713.11, 240 Volt with Photocell	625 No. 4 AWG 5000 Volt Distribution Cable (3 Required)	625 No. 10 AWG Pole and Bracket Cable	625 Connector Kit, Type II	625 Structure Junction Box	625 Conduit Concrete Encased, 76mm, 713.07	625 Trench, 0.6m Deep	625 Trench, 0.8m Deep	625 Cable Splicing Kit
From	To		Each	Meter	Each	Each	Each	Meter	Meter	Each	Each	Meter	Meter	Meter	Each
0+793	0+837	Lt.	1	88				141					3		
0+837	0+860	Lt.		46	1	4	1	78	17.0	2	1				
0+793	0+800	Rt.	1	14				30					3		
0+800	0+860	Rt.		120	1	4	1	189	17.0	2	1				
0+793		Lt./Rt.						69				40		20	3
Total			2	268	2	8	2	507	34.0	4	2	40	6	20	3



SECTION A-A
No Scale

LEGEND

- ℗ LIGHT POLE
- —A— EXISTING AERIAL WIRES (POWER OR LIGHT)
- —D— PROPOSED LIGHTING CONDUITS
- PROPOSED LIGHT POLE
- C.P.P. CLEVELAND PUBLIC POWER
- C.E.I. CLEVELAND ELECTRICAL ILLUMINATING COMPANY
- PULL BOX

N

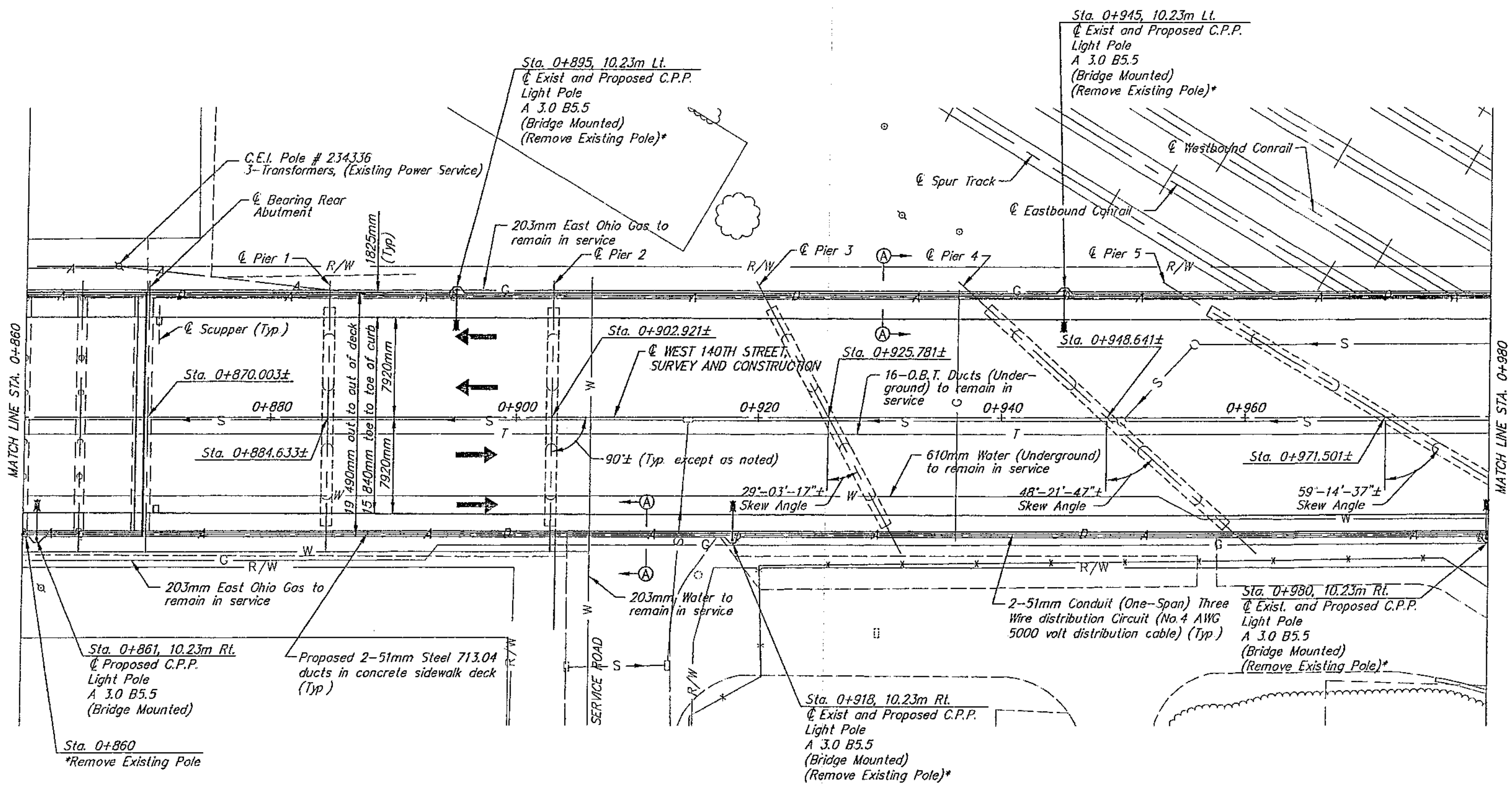
0 5 10 HORIZONTAL SCALE IN METERS

CALCULATED NNB
CHECKED EPS

LIGHTING PLAN
STA. 0+760.000 TO STA. 0+860.000

CUY-WEST 140th STREET

27/98



	STATION		SIDE	625 Conduit, 51mm 713.04	625 Light Pole Misc.: A3.0 B5.5, Style IIA (Bridge Mounted)	625 Light Pole, Anchor L-Bolts (For Structure)	625 Luminaire Conventional Style B Type III 400 Watt High Pressure Sodium 713.11; 240 Volt with Photocell	625 No. 4 AWG 5000 Volt Distribution Cable (3 Required)	625 No. 10 AWG Pole and Bracket Cable	625 Connector Kit, Type II	625 Structure Junction Box
	From	To		Meter	Each	Each	Each	Meter	Meter	Each	Each
	0+860	0+895	Lt.	70				105			
	0+895	0+945	Lt.	100	1	4	1	159	17.0	2	1
	0+945	0+980	Lt.	70	1	4	1	114	17.0	2	1
	0+860	0+861	Rt.	2				3			
	0+861	0+918	Rt.	114	1	4	1	180	17.0	2	1
	0+918	0+980	Rt.	124	1	4	1	195	17.0	2	1
Total				480	4	16	4	756	68.0	8	4

Note:

1. For Legend and Section A-A see Sheet 27.

*2. Payment for removal to be included with unit price bid per lump sum of structures (See Bridge Quantities)

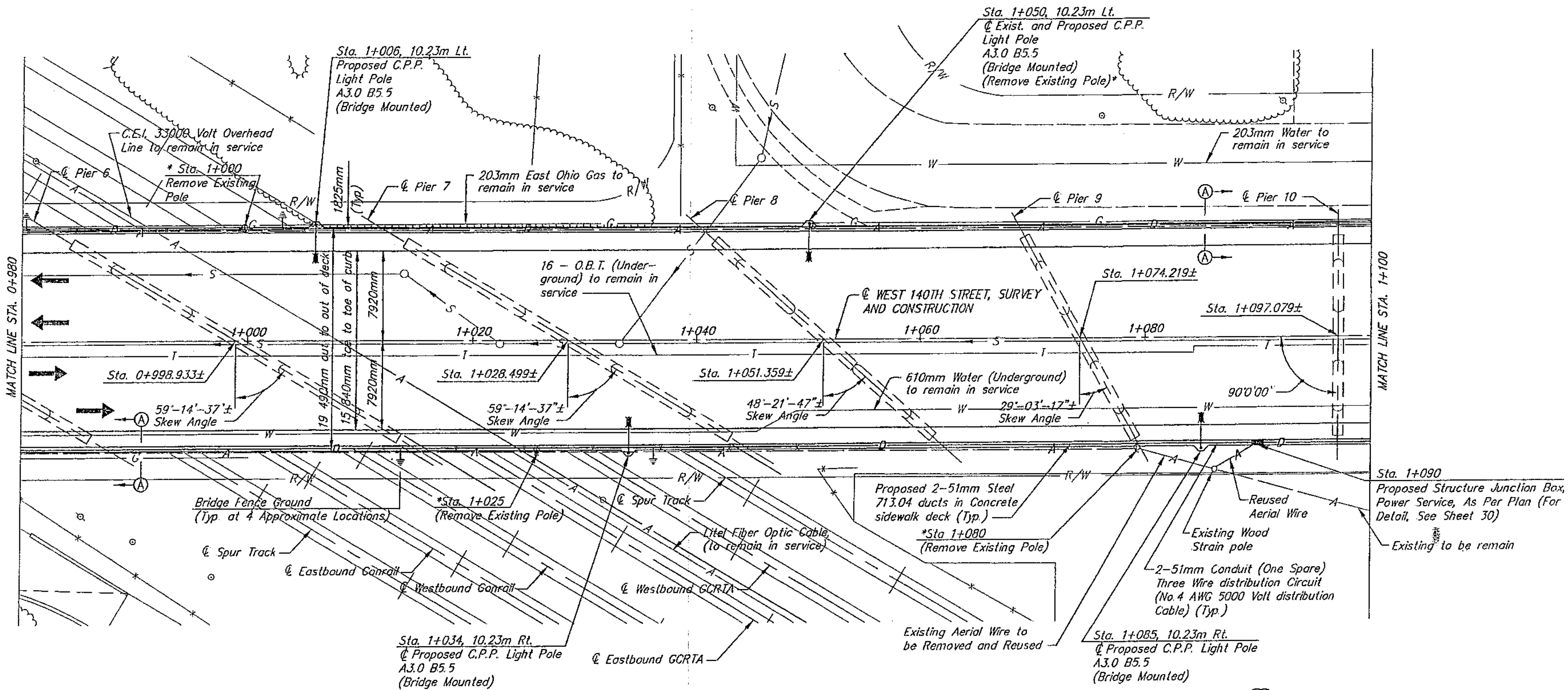
0 5 10 HORIZONTAL SCALE IN METERS

CALCULATED NNB CHECKED EPS

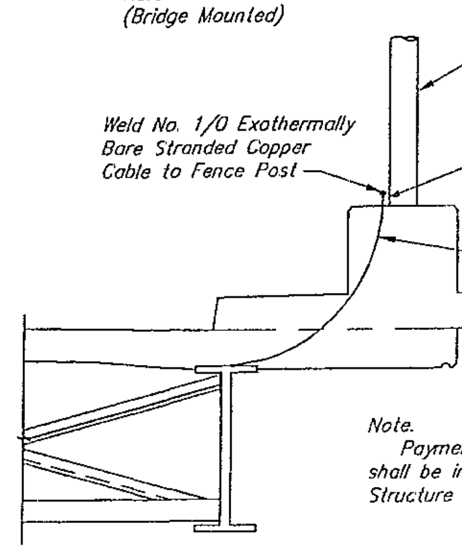
LIGHTING PLAN STA. 0+860.000 TO STA. 0+980.000

CUY-WEST 140th STREET

\JOBS\317\LIGHTING\317LP02.DWG) P.vk 1/5/99 PLOT 1000:300 METRIC



	STATION		SIDE	625	625	625	625	625	625	625	625	625	625
				Conduit, 51mm, 713.04	Light Pole, Misc. A3.0 B5.5, Style IIA (Bridge Mounted)	Light Pole, Anchor L–Bolts (For Structure)	Luminaire Conventional Style B Type III 400 Watt High Pressure Sodium 713.11, 240 Volt with Photocell	No. 4 AWG 5000 Volt Distribution Cable (3 Required)	No. 10 AWG Pole and Bracket Cable	Connector Kit, Type II	Structure Junction Box	Structure Grounding System, As Per Plan	Power Service, As Per Plan
	From	To		Meter	Each	Each	Each	Meter	Meter	Each	Each	Each	Each
	0+980	1+006	Lt.	52				78					
	1+006	1+050	Lt.	88	1	4	1	141	17.0	2	1		
	1+050	1+100	Lt.	100	1	4	1	159	17.0	2	1		
	0+980	1+034	Rt.	108	1	4	1	162	17.0	2	1		
	1+034	1+085	Rt.	102	1	4	1	162	17.0	2	1		
	1+085	1+100	Rt.	30	1	4	1	54	17.0	2	1		
	1+008±		Lt./Rt.									1	
	1+090		Rt.								1		1
Total				480	5	20	5	756	85	10	6	1	1



Note.
Payment for bridge fence grounding shall be included under Item 625, Structure Grounding System, As Per Plan

BRIDGE FENCE GROUNDING DETAIL
No Scale
(4 Locations)

Note.

1. For Legend and Section A–A See Sheet 27.

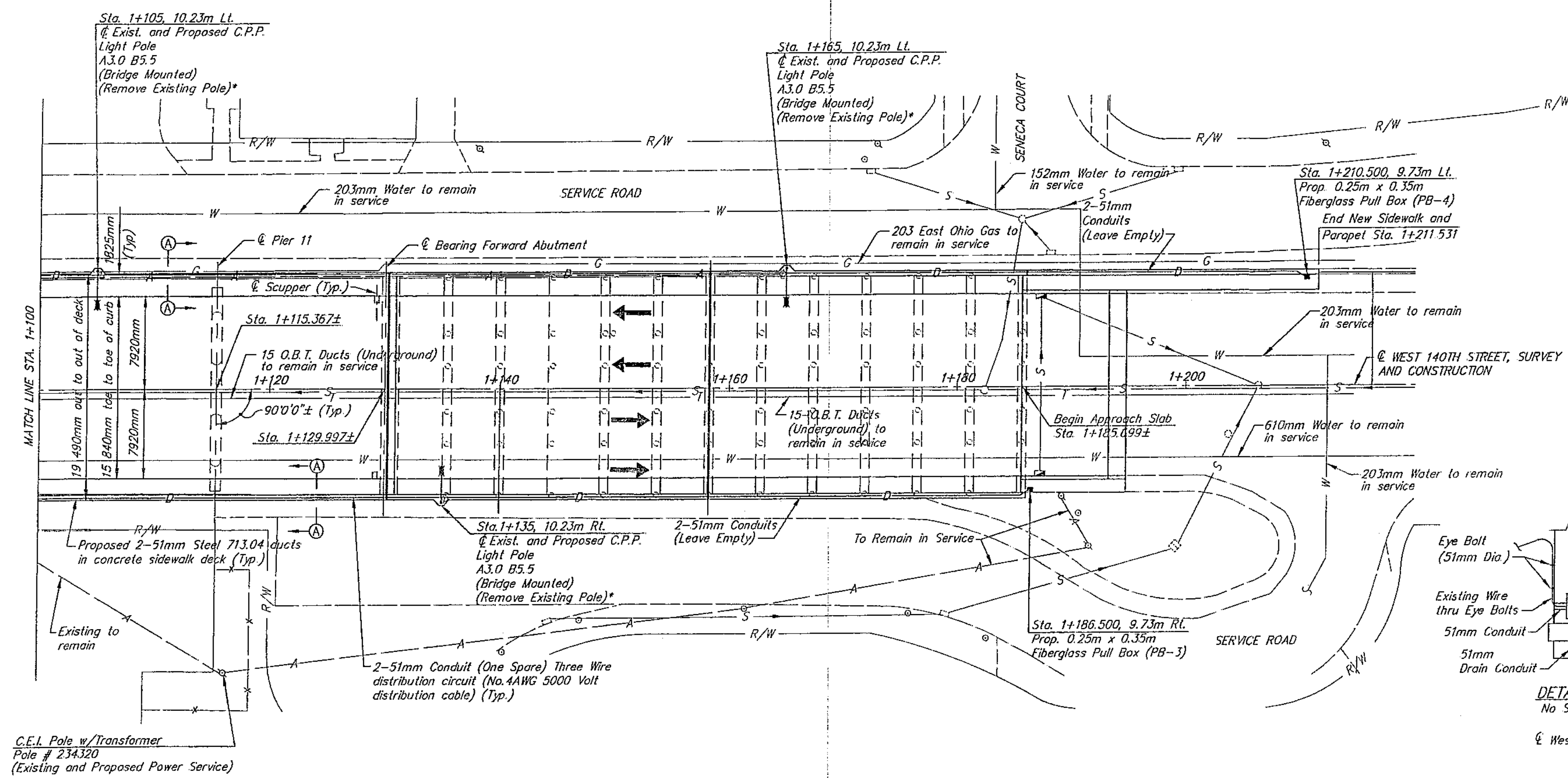
*2. Payment for removal to be included with unit price bid for Lump Sum of structures (See Bridge Quantities)

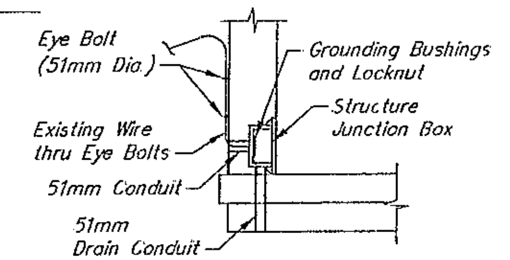
0 5 10 HORIZONTAL SCALE IN METERS

CALCULATED NNB CHECKED EPS

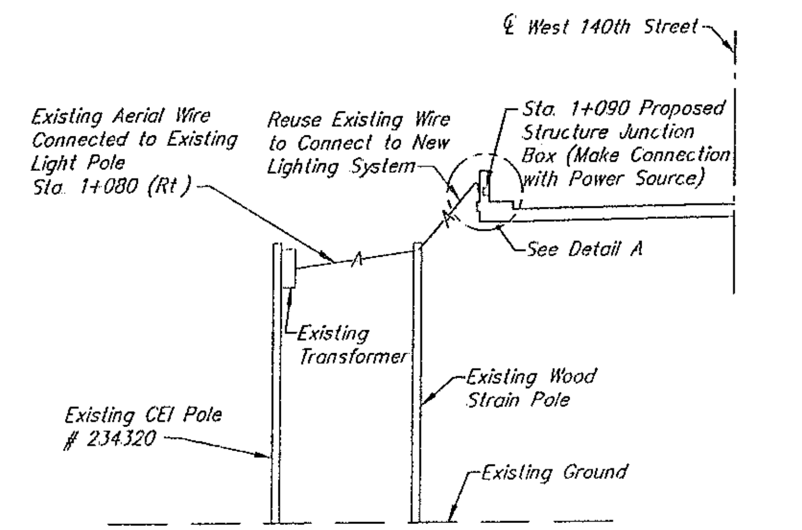
LIGHTING PLAN
STA. 0+980.000 TO STA. 1+100.000

CUY-WEST 140th STREET





DETAIL A
No Scale



POWER SERVICE, AS PER PLAN
No Scale

STATION		SIDE	625 PullBox 713.081 250mm x 350mm	625 Conduit, 51mm, 713.04	625 Light Pole, Misc. A3.0 B5.5, Style IIA (Bridge Mounted)	625 Light Pole, Anchor L-Bolts (For Structure)	625 Luminaire Conventional Style B Type III 400 Watt High Pressure Sodium 713.11, 240 Volt with Photocell	625 No. 4 AWG 5000 Volt Distribution Cable (3 Required)	625 No. 10 AWG Pole and Bracket Cable	625 Connector Kit, Type II	625 Structure Junction Box	625 Trench 0.6m Deep
From	To		Each	Meter	Each	Each	Each	Meter	Meter	Each	Each	Meter
1+100	1+105	Lt.		10				15				
1+105	1+165	Lt.		120	1	4	1	189	17.0	2	1	
1+165	1+210.50	Lt.	1	91	1	4	1		17.0	2	1	
1+100	1+135	Rt.		70				105				
1+135	1+186.50	Rt.	1	103	1	4	1		17.0	2	1	1
Total			2	394	3	12	3	309	51.0	6	3	1

Note

1. For Legend and Section A-A See Sheet 27.

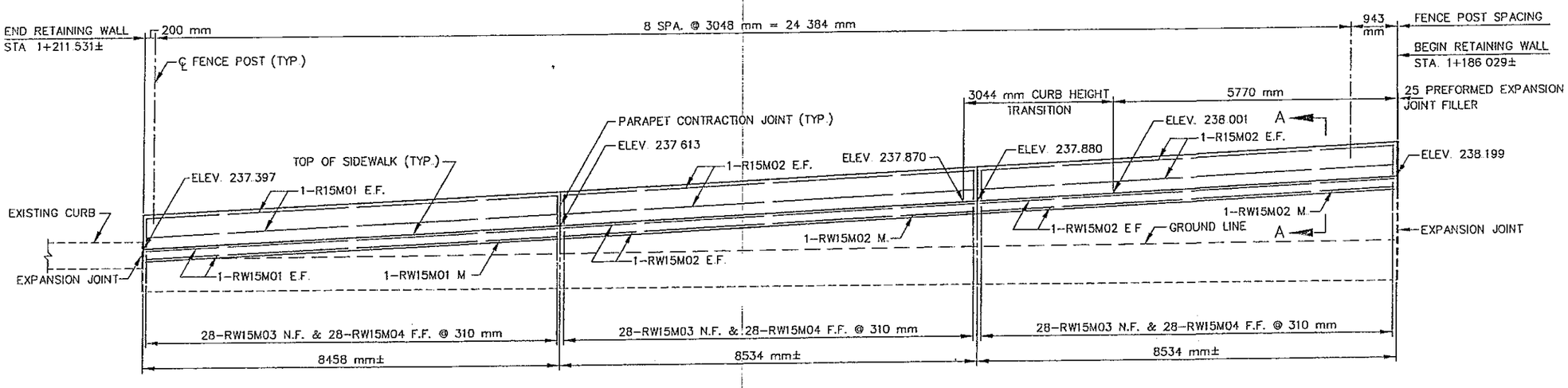
*2. Payment for removal to be included with unit price bid per lump sum of structures (See Bridge Quantities).

HORIZONTAL SCALE IN METERS 0 5 10

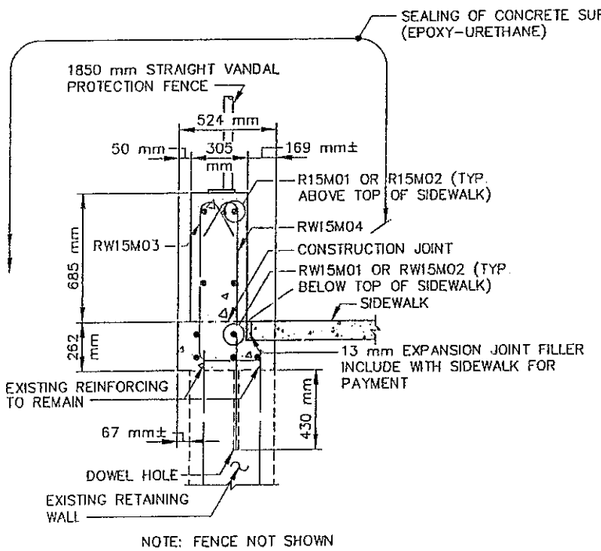
CALCULATED NNB CHECKED EPS

LIGHTING PLAN
STA. 1+100.000 TO STA. 1+200.000

CUY-WEST 140th STREET



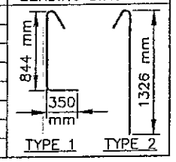
EXISTING LEFT FORWARD RETAINING WALL - ELEVATION



SECTION A-A

RETAINING WALL REINFORCING SCHEDULE

MARK	NO.	LENGTH	TYPE	WEIGHT	BENDING DIAGRAMS
RW15M01	5	8357 mm	STR	66 kg	
RW15M02	10	8433 mm	STR	132 kg	
RW15M03	84	1336 mm	1	176 kg	
RW15M04	84	1506 mm	2	199 kg	
TOTAL WEIGHT				573 kg	



RAILING REINFORCING SCHEDULE

MARK	NO.	LENGTH	TYPE
R15M01	4	8357 mm	STR
R15M02	8	8433 mm	STR

NOTE:

1. REMOVE EXISTING RAILING AND A PORTION OF THE EXISTING RETAINING WALL AS REQUIRED. PAYMENT INCLUDED IN ITEM 202, PORTION OF STRUCTURE REMOVED
2. STRUCTURE EXCAVATION NECESSARY TO REMOVE PORTIONS OF THE EXISTING RETAINING WALL, AND ALL NECESSARY BACKFILL IS INCLUDED IN THE LUMP SUM BID FOR ITEM 503, UNCLASSIFIED EXCAVATION FOR PAYMENT.
3. FOR NOTES AND DETAILS OF VANDAL PROTECTION FENCE SEE SHEET 97 OF 98
4. SEE SITE PLAN SHEET 37 OF 98 FOR LOCATION OF RETAINING WALL
5. REINFORCING STEEL WEIGHTS ARE GIVEN FOR INFORMATION ONLY.

RETAINING WALL ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	RET. WALL
202	11200	LUMP	LUMP	PORTION OF STRUCTURE REMOVED	LUMP
503	21300	LUMP	LUMP	UNCLASSIFIED EXCAVATION	LUMP
511	46000	9	Cu. M.	CLASS C CONCRETE	9
SPECIAL	51267510	78	Sq. M.	SEALING OF CONCRETE SURFACES (EPOXY–URETHANE)(SEE PROPOSAL NOTE)	78
516	13600	1	Sq. M.	25 mm PREFORMED EXPANSION JOINT FILLER	1
517	75300	26	M.	RAILING, CONCRETE PARAPET WITH CHAIN LINK FENCE	26

DESIGNED BMG
CHECKED HSS

RETAINING WALL DETAILS

CUY-WEST 140th STREET

JOHN E. FOSTER AND ASSOCIATES, INC.
2999 PAYNE AVENUE
CLEVELAND, OHIO 44114

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200

GENERAL NOTES - STRUCTURE

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS

AS-1-81M	DATED	10-25-94
EXJ-2-81M	DATED	3-20-95
EXJ-4-87M	DATED	3-20-95
VPF-1-90M	DATED	3-20-95

AND TO SUPPLEMENTAL SPECIFICATIONS

816	DATED	4-21-97
845	DATED	7-17-95
863	DATED	9- 9-95
953	DATED	6-14-95
910	DATED	4-21-97

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 O.D.O.T. BRIDGE DESIGN MANUAL.

THE DESIGN DATA IS AS FOLLOWS:

DESIGN LOADING	– MS18 CASE II AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S	– COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)
CONCRETE CLASS C	– COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)
REINFORCING STEEL	– ASTM A615M, A616M OR A617M GRADE 400, MINIMUM YIELD STRENGTH 400 MPa
STRUCTURAL STEEL	– ASTM A572M – YIELD STRENGTH 350 MPa
DECK PROTECTION METHOD	– EPOXY COATED REINFORCING STEEL LATEX MODIFIED CONCRETE OVERLAY 75mm CONCRETE COVER
MONOLITHIC WEARING SURFACE	– MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25mm THICK

PROPOSED WORK

THE WORK TO BE DONE UNDER THIS CONTRACT IS AS SHOWN ON THE CONSTRUCTION PLANS AND, IN GENERAL, INCLUDES THE FOLLOWING:

1. THE EXISTING RAILING, SIDEWALKS, STRUCTURAL STEEL, ABUTMENT AND SUPERSTRUCTURE CONCRETE DECKS SHALL BE REMOVED IN STAGES FOR MAINTENANCE OF TRAFFIC.
2. MODIFY AND PATCH EXISTING SUBSTRUCTURE UNITS AND RETAINING WALLS.
3. ERECT NEW STRUCTURAL STEEL AND MODULAR EXPANSION JOINTS.
4. CONSTRUCT NEW ELASTOMERIC COMPRESSION SEALS IN ABUTMENT DECKS.
5. CONSTRUCT NEW ABUTMENT AND SUPERSTRUCTURE CONCRETE DECKS, SIDEWALKS, PARAPETS AND FENCE.
6. PAINT NEW STRUCTURAL STEEL.
7. SEAL CONCRETE SURFACES.

CONSTRUCTION SEQUENCE

THE STRUCTURE WILL BE REHABILITATED IN STAGES IN ORDER TO MAINTAIN PEDESTRIAN AND VEHICULAR TRAFFIC. THE LEFT HALF OF THE STRUCTURE WILL BE REHABILITATED FOLLOWED BY THE RIGHT HALF. THE CONTRACTOR SHALL PERFORM ALL SUPERSTRUCTURE REMOVALS AND RECONSTRUCTION FROM THE DECK LEVEL. IF IT IS NECESSARY TO PERFORM WORK DURING EVENING AND NIGHT TIME HOURS, THE CONTRACTOR SHALL ADHERE TO ALL RESTRICTIONS IMPOSED BY THE CITY OF CLEVELAND.

THE CONSTRUCTION SEQUENCE IS AS FOLLOWS:

1. ANCHOR PORTABLE CONCRETE BARRIERS TO THE EXISTING DECK FOR MAINTENANCE OF TRAFFIC ON THE RIGHT HALF OF THE STRUCTURE.
2. REMOVE LEFT HALF OF THE SUPERSTRUCTURE, INCLUDING THE REINFORCED CONCRETE DECK OF THE CELLULAR ABUTMENTS.
3. REMOVE PORTIONS OF THE CELLULAR ABUTMENT WALLS AND APPROACH SLABS.
4. PATCH EXISTING SUBSTRUCTURE UNITS AND PLACE NEW REINFORCED CONCRETE CAP ON PIERS.
5. ERECT STRUCTURAL STEEL, EXPANSION JOINT ARMOR AND DRAINAGE SYSTEM.
6. PLACE NEW REINFORCED CONCRETE DECK, SIDEWALKS, CURBS AND PARAPETS ON GIRDERS. DO NOT PLACE LATEX MODIFIED CONCRETE OVERLAY.
7. INSTALL NEW LOUVERS AND DOORS AND PLACE CELLULAR ABUTMENT WALLS.
8. PLACE EXPANSION JOINT ARMOR, REINFORCED CONCRETE DECK, SIDEWALKS, CURBS, AND PARAPETS ON THE CELLULAR ABUTMENTS. DO NOT PLACE LATEX MODIFIED CONCRETE OVERLAY.
9. PLACE APPROACH SLABS, INSTALL LIGHTS AND FENCE.
10. ANCHOR PORTABLE CONCRETE BARRIER TO THE NEW DECK AND DIVERT TRAFFIC TO THE LEFT HALF OF THE STRUCTURE.
11. REPEAT STEPS 2 THRU 9 FOR THE RIGHT HALF OF THE STRUCTURE.
12. INSTALL NEW CROSSFRAMES BETWEEN LEFT AND RIGHT HALVES AND PLACE DECK CLOSURE POUR.
13. PLACE LATEX MODIFIED OVERLAY ON RIGHT HALF OF STRUCTURE.
14. PLACE LATEX MODIFIED CONCRETE OVERLAY ON THE LEFT HALF OF STRUCTURE.
15. PAINT STRUCTURAL STEEL AND SEAL CONCRETE SURFACES.
16. INSTALL ELASTOMERIC COMPRESSION SEALS AND NEOPRENE SEALS FOR MODULAR EXPANSION JOINTS.
17. OPEN NEW STRUCTURE TO TRAFFIC.

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

DESCRIPTION:

THIS WORK SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 41 KILOGRAM CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

THE EXISTING LIGHT POLE INSTALLATIONS, INCLUDING BRACKET ARMS, LUMINAIRES, LAMPS, POLES, POLE AND BRACKET WIRING AND BASES SHALL BE REMOVED, EXISTING BRIDGE LIGHTING CIRCUITS SHALL BE DISCONNECTED. THE EXISTING BRACKET ARMS, LUMINAIRES AND LAMPS SHALL BECOME PROPERTY OF THE CONTRACTOR.

PROTECTION OF TRAFFIC:

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

PAYMENT:

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

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25mm 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIALS BY USE OF WATER, AIR UNDER PRESSURE OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

SUBSTRUCTURE CONCRETE REMOVAL

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 16 KILOGRAMS FOR REMOVAL WITHIN 450mm OF PORTIONS TO BE PRESERVED. OUTSIDE THE 450mm LIMIT, A HAMMER HEAVIER THAN 16 KILOGRAMS, BUT NOT TO EXCEED 41 KILOGRAMS, 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.

MAINTENANCE OF TRAFFIC

ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON WEST 140TH STREET.

ONE LANE OF TRAFFIC WITH A MINIMUM HORIZONTAL WIDTH OF 3600mm AND A MINIMUM VERTICAL CLEARANCE OF 4200mm SHALL BE MAINTAINED ON THE SERVICE ROAD AT ALL TIMES.

A MINIMUM HORIZONTAL WIDTH OF 2000mm FROM CENTERLINE OF TRACK AND A MINIMUM VERTICAL CLEARANCE OF 4900mm ABOVE THE TOP OF RAIL SHALL BE MAINTAINED ON THE GCRTA TRACKS AT ALL TIMES.

NO SCAFFOLD PLANKS OR OTHER EQUIPMENT SHALL BE SUSPENDED OR ERECTED ABOVE OR WITHIN 4600mm OF A CONRAIL OR SPUR TRACK RAIL.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN IN THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02.

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

EXISTING STRUCTURE PLANS ARE AVAILABLE FOR REFERENCE FROM:

CUYAHOGA COUNTY ENGINEER'S OFFICE
1370 ONTARIO STREET #1926
CLEVELAND, OHIO 44113

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 OR ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. THE COST OF ALL LABOR, MATERIAL AND INSTALLATION SHALL BE INCLUDED IN THE APPROPRIATE 511 ITEM.

CONCRETE PARAPETS

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 SIDEWALK. THE SAWCUT SHALL BE PLACED AS SHOWN ON SHEET 62 OF 68. 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.

ITEM 519 – PATCHING CONCRETE STRUCTURES, AS PER PLAN

WHERE THE DEPTH OF A PATCH EXCEEDS 150mm, ITEMS 519 SHALL BE USED FOR REPAIR. A QUANTITY OF 50 SQUARE METERS HAS BEEN INCLUDED FOR THIS PURPOSE.

ITEM 516 – MODULAR EXPANSION JOINT, AS PER PLAN

DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A MODULAR EXPANSION JOINT DEVICE, INCLUDING JOINT ARMOR, TEMPORARY SUPPORTS, SIDEWALK, PARAPET AND CURB COVER PLATES (HEREINAFTER REFEREED TO AS THE EXPANSION JOINT) OF THE SIZE SPECIFIED. IN ACCORDANCE WITH THESE SPECIFICATIONS AND WITHIN REASONABLY CLOSE CONFORMITY TO THE LINES, ELEVATIONS, LOCATIONS, DETAILS AND NOTES SHOWN ON THE PLANS.

THE MODULAR EXPANSION JOINT SHALL BE AS FOLLOWS:

1. "WABO-MODULAR JOINT SYSTEM" AS MANUFACTURED BY THE WATSON BOWMAN ACME CORPORATION, 95 PINEVIEW DRIVE, AMHERST, N.Y. 14228-2166
2. BROWN/MAURER 'D' SYSTEM AS MANUFACTURED BY THE D.S. BROWN COMPANY, 300 EAST CHERRY STREET, NORTH BALTIMORE, OHIO 45872.

OR APPROVED EQUAL.

THE EXPANSION JOINTS SHALL BE DESIGNED TO SUPPORT, IN ALL POSITIONS, A HIGHWAY LOADING OF CLASS MS-18 AS DEFINED AND ESTABLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES PLUS 100 PERCENT IMPACT. THE EXPANSION JOINT SHALL ALSO CONFORM TO THE APPLICABLE FATIGUE DESIGN REQUIREMENTS.

THE EXPANSION JOINT SHALL BE OF THE TYPE THAT WILL SEAL THE DECK SURFACE, GUTTERS AND CURBS TO PREVENT WATER AND OTHER CONTAMINANTS FROM DESCENDING ONTO THE SUBSTRUCTURE. THE ANCHORAGE SYSTEM FOR THE EXPANSION JOINT SHALL BE AS DETAILED ON THE PLANS. THERE SHALL BE NO APPRECIABLE CHANGE IN THE DECK SURFACE DUE TO EXPANSION AND CONTRACTION MOVEMENT OF THE EXPANSION JOINT.

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS
DESIGNED BMG | CHECKED KRD | DRAWN BMG | REVISED | REVIEWED RAB | DATE 9-96 | STRUCTURE FILE NUMBER 1833421

GENERAL NOTES
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

[\JOBS\317\BRIDGE\317GNS01.DWG] JT 1/30/98 PLOT @ 1000:1 METRIC

GENERAL NOTES - STRUCTURE

EXPANSION AND CONTRACTION MOVEMENTS OF THE BRIDGE DECK SHALL BE TAKEN ENTIRELY BY DEFORMATION OF THE NEOPRENE SEAL ELEMENT. THE NEOPRENE SEAL ELEMENT SHALL BE RECESSED AND DESIGNED TO BE SELF-CLEANING AND POSITIVELY GRIPPED BY THE EXTRUDED STEEL SECTIONS THROUGHOUT THE RANGE OF THE ANTICIPATED MOVEMENT. THE SEAL ELEMENT SHALL BE FURNISHED AND INSTALLED IN ONE PIECE AND PROVIDED WITH AN END PLUG.

THE EXPOSED SURFACES OF THE SIDEWALK, PARAPET AND CURB COVER PLATES SHALL BE PAINTED IN ACCORDANCE WITH ITEM 816 – FIELD PAINTING OF NEW STEEL, SYSTEM IZEU.

MATERIALS

A GENERAL

ALL PARTS AND ELEMENTS SHALL BE OF THE MATERIAL AND DESIGN INDICATED IN THE MANUFACTURER'S CATALOG EXCEPT AS OTHERWISE SPECIFIED IN THESE SPECIFICATIONS OR ON THE PLANS. THE CONTRACTOR SHALL FURNISH A GENERAL CERTIFICATION STATING THAT THE MATERIALS FURNISHED CONFORM TO THE REQUIREMENTS OF THESE SPECIFICATIONS.

B METALS

ALL METALS USED IN FABRICATION OF THE EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 863.

THE EXTRUDED STEEL SECTIONS AND THE SUPPORT BARS SHALL BE FABRICATED FROM SOLID HIGH-STRENGTH LOW ALLOY STRUCTURAL STEEL MEETING THE REQUIREMENTS OF ASTM A572, GRADE 350.

STAINLESS STEEL SHEETS FOR THE SLIDING SURFACES OF THE SUPPORT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A240, ALLOY 304 .508 MICROMETERS RMS FINISH. MINIMUM THICKNESS OF THE STAINLESS STEEL SHEETS SHALL BE 7 mm.

ANCHOR BOLTS FOR SUPPORT BOXES SHALL CONFORM TO ASTM A-307. THE MANUFACTURER SHALL SUPPLY THE ANCHOR BOLTS AND A TEMPLATE FOR SPACING ANCHOR BOLTS FOR EACH JOINT.

ALL OTHER STEEL PLATES, BARS AND SHAPES SHALL BE FABRICATED FROM HIGH STRENGTH, LOW ALLOY STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A 572, GRADE 350.

BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325.

THE METAL SURFACES IN DIRECT CONTACT WITH THE NEOPRENE SEAL ELEMENTS SHALL BE ABRASIVE BLASTED AND AN ADHESIVE USED TO PROVIDE A HIGH STRENGTH BOND BETWEEN THE NEOPRENE SEAL AND THE MATING METAL SURFACE.

ALL WELDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 863. SHOP OR FIELD WELDS SPLICING MAIN BEAMS, OR CONNECTIONS TO THE MAIN BEAMS SHALL BE FULL PENETRATION WELDED AND 100 PERCENT NON-DESTRUCTIVELY TESTED IN ACCORDANCE WITH AWS D1.5 BRIDGE WELDING CODE.

STEEL FABRICATION SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 863. FABRICATORS OF MODULAR EXPANSION JOINTS SHALL BE CERTIFIED. FOR LEVEL FOUR (4) FABRICATION.

C. NEOPRENE SEAL

THE NEOPRENE SEAL ELEMENTS SHALL CONFORM TO ASTM DESIGNATION D2628M, EXCEPT AS NOTED HEREIN:

PROPERTY	REQUIREMENTS	ASTM METHODS
HARDNESS, TYPE A DUROMETER (MODIFIED) EXCLUDE RECOVERY TEST REQUIREMENTS	60 ± 7	D2240

D SUPPORT BAR BEARINGS

SUPPORT BAR BEARINGS SHALL BE FABRICATED FROM SOLID URETHANE BONDED TO A STEEL SUBSTRATE, TO WHICH IS BONDED A TFE SHEET CONFORMING TO MANUFACTURER'S SPECIFICATIONS AND THE REQUIREMENTS LISTED HEREIN.

METHODS AND MATERIALS USED IN BONDING AND BEARING COMPONENTS TOGETHER SHALL BE THE MANUFACTURER'S STANDARD AND SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL.

URETHANE

URETHANE SHALL MEET THE FOLLOWING PROPERTIES

PROPERTY	ASTM TEST METHOD	
SPECIFIC GRAVITY:	D792	1.25
TENSILE STRENGTH:	D638	21.4 MPa
TEAR RESISTANCE :	D638	9.7 MPa
COMPRESSION SET:		
24 HR. AT 20C	D695	20 PERCENT
24 HR. AT 70C	D695	25 PERCENT
24 HR. AT 100C	D695	40 PERCENT
ELONGATION:		
100 PERCENT ELONGATION	D638	7.6 MPa
300 PERCENT ELONGATION	D638	13.8 MPa
ELONGATION AT BREAK	D638	25 PERCENT

TFE

FILLED OR UNFILLED PTFE SHEETS SHALL BE MANUFACTURED FROM VIRGIN PTFE (POLYTETRAFLUOROETHYLENE) RESIN. TFE RESIN SHALL MEET THE FOLLOWING REQUIREMENTS:

PROPERTY	ASTM TEST METHOD	
SPECIFIC GRAVITY:	D792	2.13 – 2.19
MELTING POINT:	D1457	328 °C ± 1
TENSILE STRENGTH (MIN):	D638	19.3 MPa
ELONGATION (MIN):	D638	200 PERCENT

FILLER MATERIAL, WHEN USED, SHALL BE MILLED GLASS FIBERS, CARBON, OR OTHER APPROVED INSERT FILLER MATERIAL.

FINISHED TFE SHEET CONTAINING GLASS FIBER OR CARBON SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

MECHANICAL	ASTM METHOD	15% GLASS FIBERS	25% CARBON
TENSILE STRENGTH (MIN):	D1457	13.8 MPa	9.0 MPa
ELONGATION (MIN):	D1457	150 PERCENT	75 PERCENT

PHYSICAL	ASTM METHOD	15% GLASS FIBERS	25% CARBON
SPECIFIC GRAVITY (MIN):	D792	2.20	2.10
MELTING POINT:	D1457	327°C ±10 °C	327°C ±10°C

E CONTROL SPRINGS, COMPRESSION SPRINGS, AND PLASTIC MOLDINGS

CONTROL SPRINGS, COMPRESSION SPRINGS AND PLASTIC MOLDINGS SHALL BE THE MANUFACTURER'S STANDARD SUBJECT TO ENGINEER'S APPROVAL.

F. ADHESIVE

ADHESIVE SHALL BE SIKASTIX 360, FEL-POXY FP-101 OR AN APPROVED ALTERNATE.

PREPARATIONS FOR INSTALLATION: TO AVOID THE SUBSEQUENT CONTAMINATION OF PREPARED SURFACES, ALL SURFACES OF ELASTOMERIC STRIP SEALS SHALL BE CLEANED WITH METHYL ETHYL KETONE (MEK) TOLUNE (T) OR OTHER APPROVED SOLVENT USING CLEAN DISPOSABLE CLOTHS. THEN NOT MORE THAN SEVEN DAYS PRIOR TO THE SEAL INSTALLATION, A THIN COATING OF CYCLIZING PASTE SHALL BE APPLIED TO THE BONDING SURFACES (BULBED EDGES). AFTER 25 TO 40 MINUTES, THE PASTE SHALL BE WASHED FROM THE SURFACE WITH CLEAN WATER.

CYCLIZING PASTE IS A MIXTURE OF ONE KILOGRAM OF PITTSBURGH PLATE GLASS INDUSTRIES' HISIL 223 OR AN APPROVED ALTERNATE AND SIX KILOGRAMS OF CONCENTRATED SULFURIC ACID (18 MOLARO). TO MIX THE PASTE, ADD HISIL TO ACID SLOWLY WHILE STIRRING MIXTURE TO ACHIEVE A SMOOTH VISCOUS PAST. NOTE: SINCE CONCENTRATED SULFURIC ACID IS VERY CORROSIVE AND HISIL IS AN EXTREMELY FINE NON-TOXIC POWDER, RUBBER GLOVES AND GLASSES SHOULD BE USED BY THOSE USING THE PASTE WHILE GLOVES, GLASSES AND A RESPIRATOR SHOULD BE USED BY THOSE MIXING THE PASTE.

THE BONDING SURFACES OF THE STEEL EXTRUSION (THE INTERIOR OF THE ANCHOR GROOVES) SHALL BE PREPARED TO GRADE SA 3, ASTM D2200. PREPARATION SHALL BE ACCOMPLISHED NOT MORE THAN 24 HOURS PRIOR TO ADHESIVE BONDING.

INSTALLATION: IMMEDIATELY PRIOR TO ADHESIVE APPLICATION BONDING SURFACES SHALL BE CLEAN, DRY AND WARMER THAN 7°C, AND THEY SHALL BE MAINTAINED AT OR ABOVE THE TEMPERATURE UNTIL THE ADHESIVE HAS CURED. ADHESIVE SHALL BE APPLIED LIBERALLY TO BOTH STEEL AND ELASTOMERIC BONDING SURFACES USING A STIFF BRUSH IF NECESSARY TO ACHIEVE A COMPLETE AND RELATIVELY UNIFORM COAT. THEN THE BULBED EDGES OF THE ELASTOMERIC SEAL SHALL BE INSERTED INTO THE ANCHOR GROOVES. AFTER INSTALLATION, EXCESS ADHESIVE SHALL BE REMOVED FROM THE EXPOSED SEAL SURFACES.

JOINT CLASSIFICATIONS

THE MOVEMENT CLASSIFICATION OF THE EXPANSION JOINT SHALL BE BASED ON APPROXIMATELY 145 mm.

THE EXPANSION JOINT, WHEN FULL EXPANDED OR COMPRESSED, SHALL NOT EXERT A FORCE GREATER THAN 400kg /m ONTO THE CONCRETE DECK. TOLERANCE OF MAXIMUM 5 PERCENT WILL BE PERMITTED.

CONSTRUCTION REQUIREMENTS

THE CONTRACTOR SHALL FURNISH SHOW DRAWINGS IN CONFORMANCE WITH THE REQUIREMENT OF SECTION 501.05 OF THE STANDARD SPECIFICATIONS. THE SHOP DRAWINGS SHALL INDICATE ALL MATERIAL SPECIFICATIONS AND DIMENSIONS AND ANY ADDITIONAL DETAILS NOT SHOWN ON THE PLANS, THE CONTRACTOR SHALL FURNISH ALONG WITH THE SHOP DRAWINGS, DESIGN CALCULATIONS SHOWING THAT THE JOINTS ARE DESIGNED TO SUPPORT IN BOTH THE TRANSVERSE AND LONGITUDINAL DIRECTIONS AND UNDER TEMPERATURE CONDITIONS, A HIGHWAY LOADING CLASS MS-18, AS DESCRIBED PREVIOUSLY IN THESE SPECIFICATIONS. APPROVAL OF THE DESIGN CALCULATIONS AND THE SHOP DRAWINGS BY THE ENGINEER SHALL BE REQUIRED PRIOR TO FABRICATION AND INSTALLATION OF THE EXPANSION JOINT.

A REPRESENTATIVE OF THE JOINT SEAL MANUFACTURER SHALL BE PRESENT PRIOR TO AND DURING INITIAL SEAL INSTALLATION TO FURNISH TECHNICAL ASSISTANCE AND GUIDANCE TO THE CONTRACTOR AND ENGINEER. HE SHALL REMAIN ON THE PROJECT UNTIL HE IS SATISFIED THAT THE INSTALLATION OF THE SEALS IS BEING ACCOMPLISHED TO HIS SATISFACTION. WHERE SPECIAL INSTRUCTIONS ARE NOT CONTAINED HEREIN, DIRECTION FOR THE INSTALLATION SHALL BE ACCORDING TO THE RECOMMENDATIONS OF THIS REPRESENTATIVE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE MANUFACTURER'S REPRESENTATIVE OF THE DATE OF THE JOINT SEAL ADJUSTMENT AND INSTALLATION AND HE SHALL COORDINATE THE WORK AS NECESSARY TO ENSURE THAT THIS REPRESENTATIVE WILL BE AT THE SITE TO GIVE DIRECTION FOR THIS PHASE OF THE WORK. ALL JOINT ADJUSTMENTS MADE PRIOR TO INSTALLATION AND DURING FINAL ATTACHMENT OF THE JOINT SEAL TO THE STRUCTURE SHALL BE UNDER THE DIRECT SUPERVISION OF THIS REPRESENTATIVE.

THE EXPANSION JOINT SHALL BE SET AND CAREFULLY SHIMMED TO LINE AND GRADE UNTIL JOINTS UPPERMOST PLANE IS 6 mm BELOW THE FINISHED ROADWAY SURFACE AND MATCHES THE ROADWAY GRADIENT.

ALL REINFORCING STEEL AND ANCHORS FORMING PARTS OF THE ANCHORING SYSTEM SHALL BE INSTALLED.

THE SUPPORT BOXES SHALL BE POSITIVELY FIXED IN POSITION TO PREVENT ANY DISPLACEMENT OR MOVEMENT DURING OR AFTER THE CONCRETING PROCESS. THE GAP BETWEEN THE SUPPORT BOXES BOTTOM PLATE AND CONCRETE SHALL BE TOTALLY FILLED WITH POURABLE NON-SHRINKING GROUT.

DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

DATE 9-96 | STRUCTURE FILE NUMBER 1833421

REVIEWED RAB | DRAWN BMG | REVISED | DESIGNED BMG | CHECKED KRD

GENERAL NOTES
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

GENERAL NOTES - STRUCTURE

THE JOINT SEAL GLANDS SHALL BE FABRICATED FULL WIDTH OF THE ROADWAY DECK AND SIDEWALKS (I.E., TRANSVERSE JOINTS IN THE SEAL GLANDS WILL NOT BE PERMITTED) THE JOINT SEAL RETAINING ELEMENTS SHALL BE FIELD SPLICED AS SHOWN IN THE PLANS FOR MAINTENANCE OF TRAFFIC. JOINTS IN RETAINING ELEMENTS SHALL HAVE WATERTIGHT, PARTIAL PENETRATION BUTT WELDS COMPLETELY AROUND THE OUTER PERIPHERY OF THE ABUTTING SURFACES WELDS IN CONTACT WITH THE JOINT SEAL GLAND SHALL BE GROUND SMOOTH

THE EXPANSION JOINT SHALL BE FABRICATED, FULLY SHOP ASSEMBLED, AND SHIPPED WITH A JOINT SETTING DIMENSION AS SHOWN ON THE PLANS AND THE APPROVED SHOP DRAWINGS, ONCE IN PLACE, THE SETTING DIMENSION SHALL BE ADJUSTED TO THE PROPER AMBIENT TEMPERATURE DIMENSION BY MEANS OF PRESTRESSING DEVICES FURNISHED BY THE MANUFACTURER WHICH SHALL ACCOMPANY THE EXPANSION JOINT ASSEMBLY TO THE JOB SITE

THE EXPANSION JOINT INSTALLATION SHALL BE ADEQUATELY PROTECTED TO ENSURE THAT IT IS NOT DAMAGED DURING THE PLACEMENT AND FINISHING OF THE CONCRETE, THE BARRIERS OR ANY OTHER SUBSEQUENT CONSTRUCTION

METHOD OF MEASUREMENT

MEASUREMENT FOR PAY PURPOSES SHALL BE BASED ON THE LINEAR METERS OF SEALED JOINT SYSTEM, MEASURED HORIZONTALLY ALONG THE CENTERLINE AND BETWEEN THE OUTER LIMITS OF THE FABRICATED JOINT

BASIS OF PAYMENT

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR METER OF ITEM 516 – MODULAR EXPANSION JOINT, AS PER PLAN WHICH SHALL CONSTITUTE FULL COMPENSATION FOR ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM ACCORDING TO THESE SPECIFICATIONS NO EXTRA PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE SIDEWALK AND CURB COVER PLATES AND PAINTING, BUT THE COST THEREOF SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR METER FOR ITEM 516 MODULAR EXPANSION JOINT AS PER PLAN

ITEM 511 – CLASS S CONCRETE, MISC.: SIDEWALK WEARING COURSE

GENERAL

THIS WORK SHALL CONFORM WITH ALL APPLICABLE PROVISIONS OF ITEM 511 EXCEPT AS MODIFIED HEREIN

DESCRIPTION

THIS WORK SHALL CONSIST OF CONSTRUCTING A REINFORCED CONCRETE SIDEWALK WEARING COURSE IN REASONABLY CLOSE CONFORMITY WITH LINES, GRADES, AND DIMENSIONING SHOWN ON THE PLANS OR ESTABLISHED BY THE ENGINEER.

MATERIAL

THE MATERIALS SHALL CONFORM TO THE FOLLOWING:

CONCRETE (CLASS S)	499	CURING MATERIALS	451 02
REINFORCING STEEL	709.10 AND 709.00	PRIMER COAT	512 04
JOINT SEALER	705.04	TYPE A WATERPROOFING	512.05 AS MODIFIED BELOW

PLACING AND FINISHING

THE CONCRETE SHALL BE DEPOSITED IN A SINGLE LAYER. IT SHALL BE STRUCK OFF WITH A TEMPLATE AND SMOOTHED WITH A FLOAT TO PRODUCE A SANDY TEXTURE. NO PLASTERING WILL BE PERMITTED. THE SURFACE SHALL BE DIVIDED INTO EQUALLY SPACED BLOCKS WITH TRANSVERSE JOINTS APPROXIMATELY 1500mm ON CENTER. ALL TRANSVERSE AND LONGITUDINAL JOINTS SHALL BE CONSTRUCTED AS DETAILED ON THE DRAWINGS AND SHALL BE FILLED WITH JOINT SEALER IN ACCORDANCE WITH 516.04 THE REINFORCING SHALL BE 150mm x 150mm – W18.7mm^2 x W18.7mm^2 EPOXY COATED WELDED WIRE FABRIC IN ACCORDANCE WITH 509

CURING

EXPOSED SURFACES OF THE CONCRETE SIDEWALK WEARING COURSE SHALL BE CURED AS REQUIRED IN 451.10, USING THE CURING MATERIALS SPECIFIED ABOVE. WHEN THE WEATHER CONDITIONS ARE SUCH THAT IT IS IMPRACTICAL TO USE THE CURING COMPOUND, OTHER ACCEPTABLE MEANS FOR CURING THE CONCRETE MAY BE USED. HOWEVER, AFTER CONDITIONS BECOME FAVORABLE THE CURING COMPOUND SHALL BE APPLIED RESIN CURING COMPOUND WILL NOT BE PERMITTED.

WATERPROOFING

THE CONCRETE SUBSTRATE UNDER THE CONCRETE SIDEWALK WEARING COURSE SHALL BE WATERPROOFED AS REQUIRED IN 512 EXCEPT THAT ONLY ONE COAT OF TYPE A WATERPROOFING OF NOT LESS THAN 1.6 LITERS OF ASPHALT OR PITCH PER SQUARE METER SHALL BE APPLIED OVER THE PRIMER COAT.

METHOD OF MEASUREMENT

THE SIDEWALK WEARING COURSE WILL BE MEASURED BY THE SQUARE METERS OF FINISHED SURFACE, COMPLETE AND ACCEPTED IN PLACE. ALL LABOR AND MATERIALS INCLUDING REINFORCING STEEL, JOINTS MATERIALS, CURING COMPOUNDS, WATERPROOFING AND OTHER RELATED MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED WITH THE CONCRETE SIDEWALK WEARING COURSE FOR PAYMENT

ITEMS NOT INCLUDED IN BRIDGE PLANS

THE FOLLOWING ITEMS ARE NOT INCLUDED IN THE BRIDGE PLANS. SEE ROADWAY PLANS.

(A) LIGHTING AND SIGNING PLANS
(B) APPROACH SLAB DETAILS

REQUIREMENTS OF GCRTA

DESCRIPTION

A. THE WORK MUST BE CARRIED OUT ON AN OPERATING TRANSIT SYSTEM. RTA WILL MAINTAIN REVENUE SERVICE ON THE AFFECTED PORTION OF THE LINE THROUGHOUT THE DURATION OF THE CONTRACT. THE CURRENT SCHEDULED REGULAR OPERATING HOURS AND TRACK AVAILABILITY PERIODS ARE AS FOLLOWS:

AREA	DATE	DAYS	REGULAR OPERATING HOURS	TRACK AVAILABILITY HOURS
RED LINE:	9/14–5/14	7 DAYS A WEEK	3:30AM TO 10:30PM	10:30PM TO 3:00AM
	5/15–9/13	SUN. THRU THUR.	3:30AM TO 10:30PM	10:30PM TO 3:00AM
	5/15–9/13	FRI AND SAT.	24 HOURS A DAY	NONE

GENERALLY OPERATING HOURS ARE EXTENDED DURING SPECIAL EVENTS FOR 1-1/2 HOURS AFTER THE CONCLUSION OF THE EVENT. A SPECIAL EVENT IS DEFINED AS AN EVENT THAT IS LIKELY TO EXTEND BEYOND 9:00PM AND IS EXPECTED TO DRAW 10,000 PARTICIPANTS TO AN AREA LOCATED WITHIN 400 METERS OF AN RTA RAIL STATION.

B. CONTRACTOR MUST NOT INTERFERE WITH THE NORMAL TRANSIT OPERATIONS. WORK MAY ONLY BE PERFORMED BY PERMIT AS DELINEATED IN THIS NOTE.

C. THE OWNER RETAINS AUTHORITY OVER ALL RAIL TRAFFIC OPERATIONS. IN THE EVENT OF A CONFLICT, THE ENGINEER SHALL BE THE SOLE JUDGE OF THE ADEQUACY OF THE CONTRACTOR'S PROTECTIVE MEASURES TO ASSURE CONTINUITY OF THE AUTHORITY OPERATIONS.

D. ADDITIONAL SINGLE TRACKING OR STOPPING OF TRAIN TRAFFIC DURING THE ABOVE REGULAR OPERATING HOURS MAY BE PERMITTED. HOWEVER, IT IS NOT GUARANTEED AND THE CONTRACTOR MAY NOT RELY ON HAVING ACCESS TO TRACK AREAS DURING REGULAR OPERATING HOURS. WHEN PERMITTED, IT MAY BE ALLOWED UNDER THE FOLLOWING:

1. THE CONTRACTOR HAS JUSTIFIED WHY A SINGLE TRACKING REQUEST IS NEEDED
2. THE CONTRACTOR HAS INDICATED THE TIME FRAMES IN THE ORIGINAL CONSTRUCTION SCHEDULE
3. THE REQUESTED TIME FRAME DOES NOT CONFLICT WITH THE FOLLOWING:
   A) THE RTA SPECIAL EVENTS CALENDAR
   B) RTA SYSTEM MAINTENANCE AND/OR EMERGENCY WORK
   C) OTHER ONGOING CONSTRUCTION PROJECTS
   D) WEATHER WHERE SNOWFALL EXCEEDS OR IS FORECAST TO EXCEED 127mm (5 INCHES)

RESTRICTIONS BY GCRTA

A. THE CONTRACTOR MUST RECEIVE A PERMIT PRIOR TO STARTING WORK THAT MAY AFFECT GCRTA PROPERTY AND FACILITIES. EACH CONTRACTOR MUST SUBMIT REQUESTS THROUGH THE E & C PROJECT MANAGER FOR PRIOR AUTHORITY APPROVAL FOR OCCUPYING THE RAIL RIGHT-OF-WAY. THESE REQUESTS WILL BE OF THREE TYPES:

1. RAIL RIGHT-OF-WAY OCCUPANCY PERMIT-REQUIRED FOR ALL WORK PERFORMED ON THE RAIL RIGHT-OF-WAY.
2. TRACK OUTAGE PERMIT-REQUIRED FOR ANY SINGLE TRACKING OPERATION WHERE ONE TRACK IS TAKEN OUT OF SERVICE.
3. POWER OUTAGE PERMIT-REQUIRED FOR ANY WORK ON THE RAIL RIGHT-OF-WAY THAT IS WITHIN 1.5 METERS OF THE CONDUCTOR WIRE.

ALL REQUESTS MUST BE SUBMITTED IN WRITING TO THE DIRECTOR OF ENGINEERING AND CONSTRUCTION SUPPORT BY NO LATER THAN 12:00 NOON OF THE PRECEDING WEDNESDAY FOR CONSIDERATION BY THE SUPERINTENDENT OF RAIL OPERATIONS. DUE TO OTHER ONGOING CONSTRUCTION AND MAINTENANCE PROJECTS, THERE IS NO GUARANTEE THAT ANY REQUEST WILL BE APPROVED ALL REQUEST WILL BE APPROVED OR DISAPPROVED IN WRITING

B. IN THE EVENT OF A REVERSAL BY EITHER GCRTA OR THE CONTRACTOR OF ANY TRACK OR POWER OUTAGE PERMIT, A GOOD FAITH EFFORT MUST BE MADE TO NOTIFY THE OTHER PARTY PRIOR TO THE SCHEDULED OUTAGE. FAILURE TO CANCEL 12 HOURS PRIOR TO THE SCHEDULED OUTAGE WILL RESULT IN THE CONTRACTOR BEING ASSESSED LIQUIDATED DAMAGES IN THE AMOUNT OF $500 FOR EACH OCCURRENCE. RTA WILL MAKE A GOOD FAITH EFFORT TO NOTIFY THE CONTRACTOR 12 HOURS PRIOR TO ANY CANCELLATION. HOWEVER IT IS UNDERSTOOD THAT EMERGENCIES MAY OCCUR WHICH MAY PREVENT RTA FROM CANCELING WITHIN THIS TIMEFRAME

C. POWER OUTAGES WILL NOT BE ALLOWED DURING THE FOLLOWING CONDITIONS:

1. ON HOLIDAYS OR DURING SPECIAL EVENTS.
2. WHERE WEATHER CONDITIONS ARE SUCH THAT ICING OF THE CATENARY MAY OCCUR. RTA HAS EXPERIENCED ICING CONDITIONS WHEN THE TEMPERATURE IS BETWEEN –4° C (25° F) AND 2° C (35° F) DEGREES WITH A CHANCE OF PRECIPITATION.

TO CONFIRM WHETHER WEATHER CONDITIONS WILL BE AFFECTING RAIL OPERATIONS, THE CONTRACTOR MAY CALL EITHER THE TOWER AT 575-3918 OR THE LOAD DISPATCHER AT 575-3901

D. ANY UNEXPECTED EFFECTS UPON OPERATIONS OF SCHEDULED/UNSCHEDULED TRAIN MOVEMENTS SHALL BE IMMEDIATELY CALLED INTO THE TOWER DISPATCHER AT 575-3918.

E. THE CONTRACTOR MUST RECEIVE A RIGHT-OF-WAY OCCUPANCY PERMIT PRIOR TO LIFTING ANY BRIDGE SPAN OVER TRACKS. GCRTA RAIL PERSONNEL SHALL BE PRESENT IN THE AREA TO ENSURE A SAFE AND CLEAR AREA AFTER SPAN LIFT. DEMOLITION WORK SHALL STOP WHEN TRAINS PASS THROUGH A DEMOLITION AREA OR TRAINS SHALL BE STOPPED AT A SAFE DISTANCE IF IMMINENT DANGER IS SHOWN.

F. ALL WORK OVER GCRTA TRACKS SHALL BE DONE WITH THE OVERHEAD POWER OFF UNLESS AUTHORIZED BY BOTH DIRECTOR OF RAIL OPERATIONS AND DIRECTOR OF ENGINEERING AND CONSTRUCTION SUPPORT. IF THE CONTRACTOR REQUIRES THE DE-ENERGIZATION OF THE OVERHEAD POWER TO THE CATENARY SYSTEM, A POWER OUTAGE PERMIT MUST BE APPROVED.

RESUMPTION OF REVENUE SERVICE

A. THE TRACK MUST BE RETURNED TO THE AUTHORITY ONE HALF HOUR BEFORE THE START OF SCHEDULED REVENUE SERVICE. AT THE COMPLETION OF THE WEEK NIGHT SHIFT AND THE COMPLETION OF WEEKEND WORK, THE CONTRACTOR IS TO INSPECT AND SUBSEQUENTLY RELEASE THE WORK ZONE BACK TO THE AUTHORITY FOR THE RESUMPTION OF REVENUE SERVICE. THIS WILL REQUIRE THE CONTRACTOR TO ADHERE TO THE FOLLOWING PROCEDURES:

1. PRIOR TO RELEASE OF WORK ZONE, THE CONTRACTOR IS TO CLEAR HIS EQUIPMENT, MANPOWER AND MATERIALS FROM THE RIGHT-OF-WAY, AN AREA DEFINED AS 3 METERS FROM THE CENTERLINE OF EACH TRACK.
2. THE CONTRACTOR, ALONG WITH ENGINEER WILL INSPECT THE ENTIRE WORK ZONE TO ASSURE THAT THE WORK COMPLETED COMPLIES WITH THE REQUIREMENTS OF THE AUTHORITY FOR THE RESUMPTION OF REVENUE SERVICE WITHIN THE WORK ZONE. THE CONSTRUCTION, AT A MINIMUM, MUST COMPLY WITH FRA CLASS 4 SAFETY STANDARDS FOR TRACK OR COMPLIANCE WITH THESE CONSTRUCTION TOLERANCES.
3. OTHER REQUIREMENTS MAY BE IMPOSED BY THE AUTHORITY BASED ON AREA CONSTRUCTION TOLERANCES, PROCEDURES AND OR PRACTICES. IMPOSITION OF SLOW ORDERS AND OTHER MEANS CAN BE REQUESTED BY THE CONTRACTOR IN ORDER TO ASSURE THE RESUMPTION OF SAFE REVENUE OPERATIONS.
4. WHEN EACH ITEM ABOVE HAS BEEN COMPLETED, THE ENGINEER SHALL NOTIFY THE TOWER DISPATCHER OF THE RELEASE OF THE WORK ZONE BACK TO THE AUTHORITY.
5. AT THE COMPLETION OF EACH NIGHT SHIFT AND WEEKEND WORK, THE CONTRACTOR MUST INSPECT WORK SITE AND RELEASE IT TO RTA IN AN AESTHETICALLY PLEASING MANNER AS DETERMINED BY THE ENGINEER.

B. THE CONTRACTOR MUST COMPLY WITH THE PROVISIONS OF THESE NOTES AS REPRESENTING AN INTEGRAL PART OF HIS LEGAL OBLIGATION UNDER HIS CONTRACT.

TEMPORARY FALSE WORK AND PROTECTIVE STRUCTURES

A. IN ORDER TO PROTECT GCRTA TRAFFIC AGAINST DAMAGE FROM FALLING MATERIAL AND DEBRIS DURING ANY DEMOLITION OR CONSTRUCTION OVERHEAD, THE CONTRACTOR SHALL FURNISH AND ERECT AN ELECTRICALLY INSULATED RIGID TEMPORARY STRUCTURE UNDER THE SPANS THAT ARE DIRECTLY OVER THE GCRTA TRACKS.

B. THE FLOORING AND SIDING OF THE TEMPORARY STRUCTURE SHALL HAVE NO CRACKS OR OPENINGS THROUGH WHICH PARTICLES MAY FALL. AS A MINIMUM ONE LAYER OF 19mm PLYWOOD WITH LAPPED JOINTS OR AN EQUIVALENT DESIGN SHALL BE PLACED BETWEEN THE LOWER FLANGES OF THE STRUCTURAL STEEL BEAMS ABOVE THE TRACK BED AND THE SHOULDERS OF THE GCRTA TRACKS.

C. THE TEMPORARY FALSE WORK SHALL BE SUITABLE FOR ATTACHMENT OF THE LIVE CATENARY WIRE SYSTEM, AND ALL SIGNAL, POWER AND COMMUNICATION CABLES. THE FALSE WORK SHALL BE REMOVED BY THE CONTRACTOR WHEN WORK IS COMPLETED.

D. DETAILS OF THE TEMPORARY FALSE WORK AND PROTECTIVE STRUCTURES INCLUDING THE PROPOSED TEMPORARY UNDER CLEARANCES TO THE GCRTA TRACKS, SHALL BE PREPARED BY A PROFESSIONAL ENGINEER FOR APPROVAL BY GCRTA DIRECTOR OF ENGINEERING AND CONSTRUCTION SUPPORT PRIOR TO STARTING DEMOLITION OR CONSTRUCTION WORK

E. THIS PROTECTIVE WORK SHALL BE PERFORMED AT THE CONTRACTOR'S COST.

F. BEFORE STARTING THE WORK OF ERECTING THE TEMPORARY FALSEWORK, THE CONTRACTOR MUST CONTACT LITEL COMMUNICATIONS SYSTEMS, INC., AT (216) 948-1884 FOR THE PURPOSE OF MAKING ARRANGEMENTS TO PROTECT AND REATTACH THE FIBER OPTIC CABLE

SPECIAL GCRTA REQUIREMENTS

A. OVERHEAD PROPULSION POWER CABLES (600 VOLTS, DC) SHALL ALWAYS BE CONSIDERED ENERGIZED. THE CONTRACTOR MUST NOT ASSUME THE POWER IS SHUT OFF UNTIL ACTUALLY CONFIRMED BY GCRTA ON A DAILY BASIS THAT SHUT DOWN HAS ACTUALLY BEEN ACCOMPLISHED. DESPITE POWER SHUT OFF, THE OVERHEAD PROPULSION CABLES ARE ALWAYS TO BE CONSIDERED HOT.

B. RTA AERIAL LINES ON GCRTA PROPERTY CAN BE RELOCATED BY GCRTA PERSONNEL IF NOTED AS SUCH ON THE PLANS. OTHERWISE RESPONSIBILITY FALLS TO THE CONTRACTOR WITH RTA APPROVAL. THE CONTRACTOR SHALL USE ALL PRECAUTIONS NECESSARY TO SEE THE LINES TO ARE NOT DISTURBED DURING THE CONSTRUCTION STAGE AND SHALL COOPERATE WITH THE GCRTA IN THE RELOCATION OF THESE LINES. THE COST OF THE RELOCATION SHALL BE PAID BY THE CONTRACTOR.

C. NO EQUIPMENT OR MATERIAL SHALL BE SUSPENDED OR ERECTED ABOVE. WITHIN 4.9 METERS VERTICALLY OR HIGHER BASED ON EXISTING CATENARY HEIGHTS, OR WITHIN 2.3 METERS HORIZONTALLY FROM THE CENTER OF THE TRACK OVER WHICH TRAINS ARE OPERATING UNLESS OTHERWISE APPROVED BY GCRTA.

D. TRACK BALLAST MUST BE PROTECTED FROM CONTAMINATION DURING DEMOLITION AND CONSTRUCTION. SIGNAL EQUIPMENT MUST ALSO BE PROTECTED. THE CONTRACTOR MUST FURNISH DETAILS ON HOW HE PLANS TO PROTECT BOTH ITEMS

*Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
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KRD		1833421	

GENERAL NOTES
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

GENERAL NOTES - STRUCTURE

E. NO EXCAVATION, REMOVAL OF EXISTING PIER FOUNDATIONS OR CONSTRUCTING NEW FOUNDATIONS ADJACENT TO GCRTA TRACKS SHALL BEGIN WITHOUT APPROVAL OF GCRTA. SHEETING MAY BE REQUIRED TO PREVENT UNDERMINING OF TRACK. IF SHEETING IS REQUIRED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AND INSTALL SUCH SHEETING. PROPOSED SHEETING SHALL BE PREPARED BY A PROFESSIONAL ENGINEER FOR APPROVAL BY GCRTA DIRECTOR OF ENGINEERING AND CONSTRUCTION SUPPORT PRIOR TO STARTING ANY DEMOLITION WORK.

F. IF PROPOSED CONSTRUCTION IS IN THE VICINITY OF A RAPID STATION, PEDESTRIAN TRAFFIC TO THE GCRTA STATION SHALL BE MAINTAINED AT ALL TIMES BY THE CONTRACTOR. STRUCTURALLY SOUND FENCING, BARRICADES, AND/OR SHELTERS SHALL BE PROVIDED TO PROTECT GCRTA USERS AT THE STATION ENTRANCES AND PLATFORMS. THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROTECTION SYSTEM FOR GCRTA'S APPROVAL BEFORE DEMOLITION IS STARTED.

G. NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE WITHIN GCRTA CONSTRUCTION CLEARANCE LIMITS WHILE TRACK IS ACTIVE EXCEPT WITH FLAGGERS AND A RAIL RIGHT-OF-WAY OCCUPANCY PERMIT. DURING COMPLETE SHUTDOWN, CONTRACTOR IS CAUTIONED TO THE POSSIBILITY OF TRACK UTILIZATION BY RTA WORK TRAINS AND OTHER SERVICE EQUIPMENT.

H. NO AT GRADE CROSSING OF GCRTA TRACK IS PERMITTED BY VEHICLES OR EQUIPMENT, WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT OF RAIL OPERATIONS.

I. THE CONTRACTOR SHALL PROVIDE, INSTALL, ERECT AND MAINTAIN SUITABLE LIGHTING AND PROTECTIONS FOR SAFE AND EFFICIENT PROGRESS AND FOR ANY WORK THAT IS TO BE PERFORMED AFTER DAYLIGHT HOURS.

J. FLAGGERS SHALL BE PROVIDED BY THE CONTRACTOR, EITHER THROUGH COMPANIES WHO SUPPLY CERTIFIED FLAGGER (OBTAIN LIST FROM GCRTA) OR BY TRAINING AND CERTIFYING THEIR OWN EMPLOYEES THROUGH GCRTA. FOR FLAGGING PROCEDURES, FLAGGER TRAINING, AND SET-UP OF WORK ZONES, SEE SECTION 01502 - STANDARD RAIL FLAGGING PROCEDURES.

K. ANY VIOLATION TO GCRTA CONSTRUCTION RESTRICTIONS BY THE CONTRACTOR MAY RESULT IN IMMEDIATE SHUTDOWN OF CONSTRUCTION ACTIVITIES UNTIL VIOLATION IS CORRECTED.

L. THESE PROCEDURES ARE APPLICABLE WHENEVER ANY PERSONNEL OR EQUIPMENT OF ANY CONTRACTOR ARE ON AUTHORITY RAIL PROPERTY AND/OR MORE SPECIFICALLY, WITHIN A DISTANCE OF 10 FEET FROM THE CENTERLINE OF EACH TRACK, INCLUDING ANY AND ALL WORK PERFORMED OVER TRACKS INCLUDING WORK BEING PERFORMED ON OVERHEAD HIGHWAY STRUCTURES.

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE SUBJECT BRIDGE SCHEDULED FOR REHABILITATION WAS COMPLETED IN DECEMBER, 1996 BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE EXISTING PLANS INDICATE APPROXIMATELY 1170 LINEAL METERS OF 51 mm ASBESTOS-CEMENT CONDUIT AND APPROXIMATELY 65 SQUARE METERS OF 6 mm SHEET ASBESTOS PACKING (SEE SHEET 13 OF 68 FOR LOCATION). THE REMOVAL AND DISPOSAL OF THE CONDUIT AND PACKING DURING THE REHABILITATION OF THE BRIDGE MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM WITH SECTIONS I-VII AND XVI COMPLETED IS INCLUDED WITH THIS BID PACKAGE. A COPY OF THIS FORM SIGNED BY THE BRIDGE OWNER WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE SECTION VIII-XIII OF THE SIGNED FORM AND SUBMIT THE COMPLETED FORM TO THE APPROPRIATE OEPA DISTRICT OFFICE OR THE LOCAL AIR AUTHORITY AT LEAST TEN (10) DAYS PRIOR TO REHABILITATION OF THE BRIDGE. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER.

THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF NESHAP THAT WILL BE ON-SITE DURING THE REMOVAL OF THE CONDUIT AND PACKING.

BASIS OF PAYMENT

THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE, SUBMIT, AND COMPLY WITH THE OEPA NOTIFICATION FORM AND TO REMOVE TRANSPORT AND DISPOSE OF THE CONDUIT AND PACKING CONTAINING CATEGORY I NONFRIABLE ASBESTOS MATERIAL. PAYMENT OF THIS WORK SHALL BE INCLUDED WITH ITEM SPECIAL-ASBESTOS ABATEMENT

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DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

GENERAL NOTES
BRIDGE NO. 208
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*Cuyahoga County Engineer
Cleveland, Ohio
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GENERAL NOTES - STRUCTURE

ITEM 516 – STEEL POT BEARINGS

1 DESCRIPTION

1.1 THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIALS, SERVICES, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO DESIGN, FABRICATE, TEST AND INSTALL POT BEARINGS IN ACCORDANCE WITH THE PLANS AND THIS SPECIFICATION.

THE PROPOSAL NOTE 516, 517, 518 FABRICATED MEMBERS SHALL NOT APPLY TO THIS ITEM. SHOP DRAWINGS ARE REQUIRED FOR STEEL POT BEARINGS

1.2 THE POT BEARING SHALL CONSIST OF THE FOLLOWING PARTS:

(1) RECTANGULAR SOLE PLATE – TOP SIDE BEVELED TO THE SLOPE OF THE GIRDER AND FIELD WELDED TO THE GIRDER FLANGE. BOTTOM SIDE LEVEL AND FACED WITH STAINLESS STEEL FOR EXPANSION BEARINGS. ON GUIDED BEARINGS, SOLE PLATE SHALL HAVE A GUIDE BAR. SOLE PLATE RIDES ON PISTON.

(2) CIRCULAR PISTON – TOP FACED WITH PTFE FOR EXPANSION BEARINGS. ON GUIDED BEARINGS, PISTON IS TO HAVE RECESS FOR GUIDE BAR WITH VERTICAL SIDES FACED WITH PTFE. PISTON SITS IN STEEL POT ON LUBRICATING AND ELASTOMERIC DISCS.

(3) COMBINED RECTANGULAR SOLE PLATE – CIRCULAR PISTON (FOR FIXED BEARINGS) – TOP SIDE BEVELED TO THE SLOPE OF THE GIRDER AND WELDED TO THE GIRDER FLANGE. BOTTOM SIDE LEVEL AND SITS IN STEEL POT ON LUBRICATING AND ELASTOMERIC DISCS.

(4) ELASTOMERIC DISC – CONFINED WITHIN POT FOR THE PURPOSE OF PROVIDING ROTATION AND SUPPORT OF THE PISTON. LUBRICATING DISCS ARE PROVIDED ABOVE AND BELOW THE ELASTOMERIC DISC. THE DISC IS SEALED WITH BRASS SEALING RINGS.

(5) SEALING RINGS – SEAL BETWEEN POT AND PISTON USED TO CONTAIN THE ELASTOMERIC DISC

(6) GUIDE BAR (FOR GUIDED BEARINGS) – ATTACHED TO OR INTEGRAL WITH SOLE PLATE FOR PURPOSE OF GUIDING EXPANSION BEARINGS AND TRANSMITTING LATERAL LOADS TO THE POT.

(7) CIRCULAR POT – CONTAINMENT FOR THE ELASTOMERIC DISC AND TRANSMISSION OF VERTICAL AND LATERAL LOADS TO MASONRY PLATES. FIELD WELDED TO MASONRY PLATES.

(8) MASONRY PLATE – DISTRIBUTE VERTICAL AND HORIZONTAL FORCES FROM THE STEEL POT TO THE CONCRETE BRIDGE SEAT. MASONRY PLATE SITS ON A BEARING PAD AND IS CONNECTED TO THE CONCRETE WITH ANCHOR BOLTS

1.3 BEARING HEIGHT

(1) THE TOTAL BEARING HEIGHT SHOWN IN THE PLANS SHALL BE MET BY INCREASING THE SOLE PLATE THICKNESS OR POT BASE THICKNESS OR MASONRY PLATE THICKNESS OR ADDING A MAKE-UP PLATE BETWEEN THE POT AND MASONRY PLATE OR A COMBINATION THEREOF.

(2) IF A MAKE-UP PLATE IS USED IT SHALL HAVE A MINIMUM THICKNESS OF 13 MM, AN OUTSIDE DIAMETER OF 32 MM GREATER THAN THE POT AND BE SHOP WELDED TO THE POT BY A 8 MM FILLET WELD

2. DESIGN AND MATERIALS REQUIREMENTS

2.1 THE DESIGN CRITERIA AND MATERIALS REQUIREMENTS SHALL BE GOVERNED BY THESE PROVISIONS AND ALL APPLICABLE SECTIONS OF AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION I, SECTION 19 AND DIVISION II, SECTION 18.3

2.2 SOLE PLATE

(1) ASTM A588M OR A572M GRADE 350 STEEL WITH STAINLESS STEEL SLIDING SURFACE ON UNDER SIDE. TOP SIDE BEVELED TO THE SLOPE OF THE GIRDER. BOTTOM SIDE LEVEL

(2) STAINLESS STEEL SHEET SURFACE SHALL CONFORM TO ASTM A167 OR A240 TYPE 304. THE MINIMUM THICKNESS SHALL BE 2 MM. STAINLESS STEEL IN CONTACT WITH PTFE SHALL HAVE A .508 MICRO-METER RMS FINISH OR BETTER. THE SURFACE SHALL BE MECHANICALLY POLISHED. MATERIAL AND FINISH SHALL BE SUCH THAT THE REQUIREMENTS OF A 4.2(2) ARE MET

(3) RECTANGULAR OR SQUARE IN PLAN.

(4) MINIMUM PLAN DIMENSIONS SHALL BE POT DIAMETER PLUS TWICE THE ONE WAY DESIGN MOVEMENT SHOWN IN THE PLANS PLUS 50 MM.

(5) MINIMUM THICKNESS SHALL BE 19 MM.

(6) FOR GUIDED EXPANSION BEARING GUIDE BAR IN SOLE PLATE, SEE 2.7.

2.3 PISTON

(1) ASTM A572M GRADE 350 OR A588M STEEL.

(2) DIAMETER IF PISTON SHALL BE 0.76 MM LESS THAN THE INSIDE DIAMETER OF THE POT.

(3) PISTON THICKNESS SHALL BE SUFFICIENT TO PROVIDE A CLEARANCE OF (0.02 X POT O.D. + 3) MM BETWEEN THE TOP OF THE POT WALL AND SURFACE ABOVE (GUIDE BAR IF GUIDED OR BOTTOM OF SOLE PLATE) THE POT WALL WHEN THE PISTON IS IN AN UNROTATED POSITION.

ON GUIDED EXPANSION BEARINGS, THE PISTON THICKNESS SHALL BE SUFFICIENT TO TRANSMIT A LATERAL LOAD EQUAL TO 10% OF THE VERTICAL LOADS SHOWN IN THE PLANS FROM THE GUIDE BAR TO THE POT WALL WITHOUT DEFLECTION/DISTORTION.

(4) PISTON WALLS SHALL BE TAPERED INWARD, TOWARD THE TOP, TO PRESENT BINDING AGAINST THE POT WALLS DURING ROTATION, AND THE BOTTOM EDGE SHALL BE ROUNDED WITH A MACHINED 3 MM RADIUS.

(5) THE PISTON SHALL BE MACHINED FROM A SINGLE PIECE OF STRUCTURAL STEEL.

(6) ON GUIDED BEARINGS, THE BOTTOM OF THE RECESS SHALL BE A MINIMUM OF 10 MM CLEAR TO GUIDE BAR IN SOLE PLATE

(7) THE THICKNESS OF THE PISTON SHALL ENSURE THAT THE BOTTOM OF THE PISTON SHALL BE ENTIRELY BELOW THE TOP OF THE POT UP TO 200 PERCENT OF MAXIMUM DESIGN ROTATION.

(8) THE TOP OF THE PISTON AND THE SIDES OF GUIDE BAR RECESS ON GUIDED BEARINGS USED FOR EXPANSION BEARING S SHALL BE FACED WITH PTFE. THE PTFE SURFACE SHALL CONSIST OF FINISHED UNFILLED PTFE SHEET MADE FROM VIRGIN PTFE RESIN OR 100 PERCENT PTFE FABRIC MADE FROM VIRGIN PTFE MULTI-FILAMENT FIBER. MATERIAL AND FINISH SHALL BE SUCH THAT THE REQUIREMENTS OR 4.2(2) ARE MET

(9) PTFE FABRIC FIBERS SHALL CONFORM TO THE FOLLOWING:

A. THE RESIN FROM WHICH THE FIBERS ARE PRODUCED SHALL BE 100 PERCENT PTFE CONFORMING AS ASTM D1457.

B. TENSILE STRENGTH – ASTM D2256 – 165 MPA (MINIMUM).

C. ELONGATION – ASTM D2256 – 75 PERCENT (MINIMUM).

D THE TFE FABRIC SHALL HAVE A MINIMUM THICKNESS OF 1.59 MM (COMPRESSED) MAXIMUM THICKNESS SHALL BE 3.18 MM (COMPRESSED).

(10) FINISHED UNFILLED PTFE SHEET SHALL BE MADE FROM 100 PERCENT VIRGIN PTFE RESIN AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

A. TENSILE STRENGTH D1457 19.3 MPA (MINIMUM).

B ELONGATION ASTM D1457 – 200 PERCENT (MINIMUM)

C. SPECIFIC GRAVITY – ASTM D1457 – 2.13 (MINIMUM)

D MELTING POINT – ASTM D1457 – 327 DEG C + 10

E. MINIMUM THICKNESS SHALL BE 4.75 MM. SHEET SHALL BE RECESSED ONE HALF ITS THICKNESS INTO STEEL SUBSTRATE.

F. PTFE SHEET SHALL BE COMMERCIALLY ETCHED ON ITS BONDING SIDE.

2.4 COMBINED SOLE PLATE AND PISTON

(1) ALL APPLICABLE PROVISIONS OF 2.2 AND 2.3 SHALL APPLY.

(2) THE PISTON THICKNESS SHALL BE SUFFICIENT TO TRANSMIT A LOAD EQUAL TO 10% OF THE VERTICAL LOAD SHOWN IN THE PLANS TO THE POT WALL WITHOUT DEFLECTION/DISTORTION.

2.5 ELASTOMERIC DISC

(1) THE ELASTOMERIC DISC SHALL MEET THE FOLLOWING AVERAGE COMPRESSIVE STRESS REQUIREMENTS

A MAXIMUM OF 24.13 MPA WHEN THE BEARING VERTICAL DESIGN CAPACITY SPECIFIED IN THE PLAN IS APPLIED TO THE AREA OF THE DISC

B MINIMUM OF 4.83 MPA WHEN THE LESSOR OF THE DEAD LOAD OR 20% OF THE BEARING VERTICAL DESIGN CAPACITY SPECIFIED IN THE PLAN IS APPLIED TO THE AREA OF THE DISC.

(2) MINIMUM DISC THICKNESS SHALL BE 0.067 X DISC DIAMETER.

(3) THE ELASTOMERIC DISC SHALL CONSIST OF 100 PERCENT VIRGIN POLYCHLOROPRENE (NEOPRENE) MEETING THE REQUIREMENTS OF CMS ITEM 711.23 OR 100 PERCENT VIRGIN NATURAL POLYISOPRENE (NATURAL RUBBER) MEETING THE REQUIREMENTS OF THE CURRENT AASHTO M251.

(4) HARDNESS SHALL BE 50 DUROMETER +/– 10.

(5) THE DISC SHALL CONSIST OF ONE SOLID PIECE OF ELASTOMER.

(6) THE ELASTOMERIC DISC SHALL BE LUBRICATED BY MEANS OF 0.38 MM THICK UNFILLED PTFE DISC THE SAME INSIDE DIAMETER AS THE POT, ONE LOCATED ABOVE AND ONE BELOW THE ELASTOMERIC DISC OR BY A LUBRICANT RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE DIRECTOR.

(7) TWO FLAT BRASS SEALING RINGS SHALL BE USED TO SEAL THE DISC. THE UPPER EDGE OF THE DISC SHALL BE RECESSED TO RECEIVE THE SEALING RINGS SO THAT THEY SIT FLUSH WITH THE UPPER SURFACE OF THE TOP LUBRICATING DISC.

2.6 SEALING RING

(1) RINGS SHALL BE FLAT AND MADE OF BRASS CONFORMING TO THE REQUIREMENTS OF ASTM B36, HALF HARD.

(2) MINIMUM WIDTH SHALL BE 10 MM

(3) MINIMUM THICKNESS SHALL BE 1.3 MM

(4) THE RINGS SHALL HAVE A SMOOTH FINISH OF 1.60 MICRO-METER (RMS) OR LESS

(5) TWO RINGS ARE REQUIRED.

(6) THE RINGS SHALL BE SPLIT AND SNUGLY FIT THE RECESS IN THE ELASTOMERIC DISC AS WELL AS THE INSIDE DIAMETER OF THE POT. THE ENDS OF THE RINGS AT THE SPLIT SHALL BE CUT AT 45 DEGREES TO THE VERTICAL. THE MAXIMUM GAP SHALL BE 1.27 MM WHEN INSTALLED. THE RINGS SHALL BE ARRANGED TO HAVE THE SPLITS STAGGERED A MINIMUM OF 90 DEGREES RELATIVE TO ONE ANOTHER.

2.7 GUIDE BARS

(1) ASTM A36M, A472M GRADE 350 OR A588M FACED WITH STAINLESS STEEL.

(2) GUIDE BARS MAY BE INTEGRAL BY MACHINING FROM A SOLID SOLE PLATE OR THEY MAY BE ATTACHED TO THE SOLE PLATE BY PRESS FIT INTO RECESS AND WELDING THE ENDS. THE SIDE SURFACES OF THE GUIDE BARS SHALL BE FACES WITH STAINLESS STEEL, SEE 2.2(2). WELDING OF GUIDE BARS TO THE SOLE PLATE SHALL BE PERFORMED PRIOR TO WELDING OF STAINLESS STEEL TO THE

DESIGN AGENCY: EUTHEMICS INC. CONSULTING ENGINEERS

DESIGNED KRD | DRAWN PJK | REVIEWED RAB | DATE 2-98

CHECKED GFH | REVISED | STRUCTURE FILE NUMBER 1833421

GENERAL NOTES
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

3B / 68

338 / 98

*Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No 200

GENERAL NOTES - STRUCTURE

SOLE PLATE OR GUIDE BARS.

(3) THE TOTAL SPACE (BOTH SIDES) BETWEEN THE GUIDE BARS AND GUIDED MEMBERS SHALL BE 3 18 MM MINUS 0, PLUS 1 59 MM.

(4) THE GUIDE BARS SHALL BE DESIGNED FOR NO LESS THAN A LATERAL HORIZONTAL FORCE EQUAL TO 10% OF THE VERTICAL FORCE.

(5) GUIDING ARRANGEMENTS SHALL BE DESIGNED SO THAT THE GUIDED MEMBER IS ALWAYS WITHIN THE GUIDES AT ALL POINTS OF TRANSLATION AND ROTATION OF THE BEARING.

(6) SEE 2 3(6).

2 8 POT

(1) A572M GRADE 350 OR A588M STEEL.

(2) THE POT SHALL CONSIST OF A SOLID PLATE INTO WHICH A CIRCULAR RECESS HAS BEEN MACHINED.

(3) DEPTH OF THE CIRCULAR RECESS SHALL BE EQUAL TO OR GREATER THAN ((.02 + R)XD/2 + 2.54 MM + THICKNESS OF THE ELASTOMERIC AND LUBRICATING DISCS) WHERE R = DESIGN ROTATION; D = ELASTOMER DIAMETER.

(4) THE POT INSIDE DIAMETER SHALL BE THE SAME AS THE ELASTOMERIC DISC, SEE 2 5.

(5) THE OUTSIDE OF THE POT SHALL BE CIRCULAR

(6) THE THICKNESS OF THE POT WALL SHALL BE SUFFICIENT TO TRANSMIT A LATERAL HORIZONTAL FORCE EQUAL TO 10% OF THE VERTICAL LOAD SHOWN IN THE PLANS TO THE POT BASE WITH THE LOAD APPLIED AT A POINT CONTACT AT TWO TIMES THE DESIGN ROTATION WITHOUT CAUSING DEFLECTION/DISTORTION TO THE POT WALL OR BASE.

(7) THE MINIMUM THICKNESS OF THE POT BENEATH THE ELASTOMER FOR A BEARING DIRECTLY ON A MASONRY PLATE SHALL BE THE GREATER OR MORE OF THE 0 045 X POT I.D. OR 13 MM AND MEET THE REQUIREMENT OF 2.8(6)

2.9 MAKE-UP PLATE

(1) ASTM A572M GRADE 350 OR A588M STEEL.

2 10 MASONRY PLATE

(1) ASTM A572M GRADE 350 OR A588M STEEL.

2 11 BEARING PAD SHEET LEAD SHALL CONFORM TO ASTM B-29

3 FABRICATION

3 1 ATTACHMENT OF SHEET PTFE TO SUBSTRATE.

(1) PTFE SHEET SHALL BE RECESSED INTO AND BONDED TO A STEEL SUBSTRATE

(2) PTFE SHALL BE RECESSED FOR ONE HALF ITS THICKNESS.

(3) THE BONDING SURFACE OF THE STEEL SHALL BE CLEANED OF RUST, SCALE, OIL AND GREASE BY BLAST CLEANING AND THEN WIPED CLEAN WITH A CLEANING SOLVENT. BLAST CLEANING SHALL BE PERFORMED WITHIN A MAXIMUM OF FOUR HOURS PRIOR TO BONDING.

(4) THE ADHESIVE MATERIAL AND THE BONDING PROCEDURES TO BE USED SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL PRIOR TO PERFORMANCE OF THE BONDING OPERATION. THE BONDING OPERATION SHALL THEN BE PERFORMED UNDER CONTROLLED CONDITIONS AND IN ACCORDANCE WITH THESE APPROVED PROCEDURES.

(5) AFTER COMPLETION OF THE BONDING OPERATION, THE PTFE SURFACE SHALL BE SMOOTH AND FREE FROM BUBBLES.

3 2 ATTACHMENT OF PTFE FABRIC TO SUBSTRATE

(1) PTFE FABRIC SHALL BE MECHANICALLY INTERLOCKED AND BONDED TO THE STEEL SUBSTRATE.

(2) THE BONDING SURFACE OF THE STEEL SHALL BE CLEANED OF RUST, SCALE, OIL AND GREASE BY BLAST CLEANING AND THEN CLEANED WITH A SOLVENT. BLAST CLEANING SHALL BE PERFORMED WITHIN A MAXIMUM OF FOUR HOURS PRIOR TO BONDING.

(3) THE MECHANICAL INTERLOCK AND ADHESIVE BONDING MATERIAL AND PROCEDURES SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL PRIOR TO PERFORMANCE OF THE BONDING OPERATION. THE BONDING OPERATION SHALL THEN BE PERFORMED UNDER CONTROLLED CONDITIONS AND IN ACCORDANCE WITH THESE APPROVED PROCEDURES AS APPROVED BY THE DIRECTOR

(4) MIGRATION OF EPOXY THROUGH THE FABRIC WILL NOT BE PERMITTED.

(5) FABRIC SHALL BE FURNISHED IN ONE PIECE. EDGES SHALL BE OVERSEWN OR RECESSED SO THAT NO CUT FABRIC EDGES ARE EXPOSED.

3.3 ATTACHMENT OF SHEET STAINLESS STEEL

(1) STAINLESS STEEL SHALL BE ATTACHED TO ITS STEEL SUBSTRATE WITH AN APPROVED EPOXY TO ENSURE COMPLETE CONTACT, AND THEN SEAL WELDED. SEAL WELDS SHALL BE CONTINUOUS FOR THE ENTIRE PERIPHERY OF THE STAINLESS OVERLAY. THE ENTIRE STAINLESS STEEL SURFACE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 2.2(2) AFTER WELDING.

3 4 CORROSION PROTECTION

(1) ALL STEEL SURFACES (INCLUDING A588M STEEL) EXPOSED TO THE ATMOSPHERE, EXCEPT STAINLESS STEEL SURFACES, SHALL BE SHOP PRIME COATED IN ACCORDANCE WITH ITEM 514, SYSTEM IZEU.

3 5 WELDING

(1) WELDING AS A MEANS OF ATTACHMENT SHALL BE DONE IN A CONTROLLED MANNER AND SHALL CONFORM TO CMS ITEM 513. WELDING TO A STEEL PLATE WHICH HAS BONDED TFE SURFACE MAY BE PERMITTED PROVIDING WELDING PROCEDURES ARE ESTABLISHED WHICH RESTRICT THE MAXIMUM TEMPERATURE REACHED BY TIE BOND AREA TO LESS THAN 150 DEGREES (C), AS DETERMINED BY TEMPERATURE INDICATING PENCILS, OR OTHER SUITABLE MEANS.

3 6 TOLERANCES

(1) GENERAL FLATNESS CRITERIA

A. FLATNESS TOLERANCES SHALL BE DEFINED AS:

1 CLASS A TOLERANCE = 0.0005 X NOMINAL DIMENSION.

2. CLASS B TOLERANCE = 0.001 X NOMINAL DIMENSION.

3. CLASS C TOLERANCE = 0.002 X NOMINAL DIMENSION.

4. NOMINAL DIMENSION SHALL BE DEFINED AS THE ACTUAL DIMENSION OF THE PLATE IN INCHES, SPANNED BY THE STRAIGHTEDGE

B. FLATNESS SHALL BE DETERMINED BY PLACING A STRAIGHTEDGE, LONGER THAN THE NOMINAL DIMENSION TO BE MEASURED, IN CONTACT WITH THE SURFACE TO BE MEASURED OR AS PARALLEL TO IT AS POSSIBLE. SELECT A FEELER GAUGE HAVING A TOLERANCE OF + OR - 0.025 MM AND ATTEMPT TO INSERT IT UNDER THE STRAIGHTEDGE. (THE SMALLEST NUMBER OF BLADES SHALL BE USED.) FLATNESS IS ACCEPTABLE IF THE FEELER DOES NOT PASS UNDER THE STRAIGHTEDGE. THE STRAIGHTEDGE MAY BE LOCATED AT ANY POSITION ON THE SURFACE AND NOT NECESSARILY AT 90 DEGREES TO THE EDGES.

C. TOLERANCES - SOLE PLATE

1 PLAN DIMENSIONS OVER 762 MM: -0 MM + 6 MM

2 PLAN DIMENSIONS UNDER 762 MM: -0 MM + 5 MM

3. FLATNESS OF SURFACE IN CONTACT WITH BEAM OR GIRDER - CLASS B

4. FLATNESS OF BACKING SURFACE FOR STAINLESS STEEL - CLASS A (EXPANSION BEARINGS).

5. THICKNESS: -0.80 MM X + 3.18 MM

D. TOLERANCES - PISTON

1. DIAMETERS GREATER THAN 508 MM, + 0.18 MM

2. DIAMETERS LESS THAN 508 MM: + 0.13 MM

3. FOR EXPANSION BEARINGS WHERE UPPER SIDE IS FACED WITH PTFE, FLATNESS OF UPPER SIDE SHALL BE CLASS A.

4. FLATNESS OF LOWER SIDE: CLASS B.

E. TOLERANCES - SOLE PLATE/PISTON

1. ALL APPLICABLE PROVISIONS OF C AND D

F. TOLERANCES - ELASTOMERIC DISC

1. DIAMETERS GREATER THAN 508 MM: + 2.38 MM

2. DIAMETERS LESS THAN 508 MM: + 1.59 MM

3. THICKNESS: -0 MM, + 3.18 MM

G TOLERANCES - GUIDE BAR

1 LENGTH (UNLESS INTEGRAL): + 3.18 MM

2. FLATNESS OF BACKING SURFACE FOR STAINLESS STEEL: CLASS A

3. INSIDE OF BAR TO INSIDE OF BAR: NOMINAL DIMENSION + OR - 0.80 MM

4 GUIDE BARS SHALL BE NOT MORE THAN 0.80 MM OUT OF PARALLEL

5 CROSS SECTIONAL DIMENSIONS: + 1.59 MM

H TOLERANCES - POT

1 THE INSIDE DIAMETER SHALL BE MACHINED TO A TOLERANCE OF + 0.13 MM UP TO 508 MM DIAMETER AND + 0.18 MM OVER 508 MM DIAMETER.

2 POT UNDERSIDE SHALL BE MACHINED PARALLEL TO THE INSIDE TO A CLASS TOLERANCE

I. TOLERANCES - PTFE SUBSTRATES

1 SUBSTRATE FLATNESS: CLASS A

J. TOLERANCE OF STEEL (NOT STAINLESS) IN CONTACT WITH STEEL (NOT STAINLESS): CLASS B

K. THE EDGES OF ALL PARTS SHALL BE BROKEN BY GRINDING SO THAT THERE ARE NO SHARP EDGES

L. TOLERANCES - OVERALL HEIGHTS OF BEARING: -1.59 MM, AND 3.18 MM

M. TOLERANCE - MAKE-UP PLATE

1 PLAN DIMENSION: -0 MM, + 6.35 MM

2. THICKNESS: - 0.80 MM + 3.18 MM

3. FLATNESS: CLASS B TOP AND BOTTOM

N. TOLERANCES - MASONRY PLATE

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EUTHEMIES INC.
CONSULTING ENGINEERS

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
GFH		1833421	

GENERAL NOTES
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

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D:\JOBS\317\BRIDGE\317GNS2C.DWG PJK 2/23/98 PLOT D 1002:1 METRIC

GENERAL NOTES - STRUCTURE

1. PLAN DIMENSIONS: -0 MM, + 6.35 MM
2. THICKNESS: - 0.80 MM, + 3.18 MM
3. FLATNESS - CLASS C FOR THE UNDERSIDE, CLASS B FOR THE UPPERSIDE

4 TESTING

4.1 GENERAL

(1) TESTS SHALL BE PERFORMED BY THE MANUFACTURER OR BY AN INDEPENDENT TESTING LABORATORY. THE TESTING AGENT CHOSEN BY THE CONTRACTOR WILL BE SUBJECT TO APPROVAL BY THE DIRECTOR. APPROVAL WILL BE BASED ON 1) THE ABILITY OF THE TESTING FACILITY TO PERFORM THE REQUIRED TEST - POSSESSION OF PROPER TESTING EQUIPMENT AND TRAINED PERSONNEL, AND 2) SUBMITTAL OF A REPORT DESCRIBING THE TESTING PROCEDURES TO BE USED INCLUDING SETUP OF TESTING APPARATUS, STEPS TO BE FOLLOWED IN THE TESTING APPARATUS, STEPS TO BE FOLLOWED IN THE TESTING PROCEDURES, READINGS CONVERSION OF READINGS TO FINAL DATA, AND SAMPLE CALCULATIONS SHOWING HOW FINAL RESULTS ARE OBTAINED FROM RAW DATA.

(2) SAMPLING

A. ONE GUIDED EXPANSION BEARING AND ONE FIXED BEARING SHALL BE CHOSEN, SELECTED AT RANDOM, FROM EACH APPLICABLE LOT OF COMPLETED BEARINGS.

1. ONE LOT SHALL CONSIST OF NO MORE THAN 25 BEARINGS OF ONE LOAD CATEGORY.
2. ONE LOAD CATEGORY SHALL CONSIST OF BEARINGS HAVING VERTICAL LOAD CAPACITY WITHIN A RANGE OF NO MORE THAN 890 kN.

4.2 FRICTION TEST SHALL BE PERFORMED ON EXPANSION BEARING SAMPLES CHOSEN AS DESCRIBED IN SECTION 4.1(2) ABOVE.

(1) THE TEST SHALL BE CONDUCTED AT THE MAXIMUM WORKING STRESS FOR THE BEARING WITH THE LOAD APPLIED CONTINUOUSLY FOR 12 HOURS PRIOR TO MEASURING THE FRICTION. MAXIMUM WORKING STRESS SHALL BE DETERMINED BY DIVIDING THE MAXIMUM VERTICAL FORCE (OBTAINED FROM THE PLANS) BY THE AREAS OF PTFE USED ON TOP OF THE PISTON.

(2) THE STATIC AND DYNAMIC COEFFICIENT OF FRICTION SHALL BE DETERMINED. A SLIDING SPEED OF LESS THAN 25 MM PER MINUTE SHALL BE USED. THE COEFFICIENT OF FRICTION THUS DETERMINED SHALL NOT EXCEED 0.04.

4.3 PROOF LOAD TEST SHALL BE PERFORMED ON BEARING SAMPLES CHOSEN AS DESCRIBED IN SECTION 4.1(2) ABOVE. THE EXPANSION BEARING MAY BE THE ONES USED FOR THE FRICTION TEST DESCRIBED IN 4.2 ABOVE.

(1) A TEST BEARING SHALL BE LOADED TO 150 PERCENT OF THE BEARING'S RATED DESIGN CAPACITY AND SIMULTANEOUSLY SUBJECT TO A ROTATIONAL RANGE OF 0.02 RADIANS (1.146°) OR DESIGN ROTATION, WHICHEVER IS GREATER, FOR A PERIOD OF ONE (1) HOUR. THE BEARING WILL BE VISUALLY EXAMINED BOTH DURING THE TEST AND UPON DISASSEMBLY AFTER THE TEST. ANY RESULTANT VISUAL DEFECTS, SUCH AS EXTRUDED OR DEFORMED ELASTOMER, POLYETHER URETHANE OR TFE, DAMAGED SEALS OR LIMITED RINGS, OR CRACKED STEEL, SHALL BE CAUSE FOR REJECTION OF THE LOT.

(2) DURING THE TEST, FOR POT BEARINGS THE STEEL BEARING PLATE AND STEEL PISTON SHALL MAINTAIN CONTINUOUS AND UNIFORM CONTACT FOR THE DURATION OF THE TEST. ANY OBSERVED LIFT-OFF WILL BE CAUSE FOR REJECTION OF THE LOT. BEARINGS NOT DAMAGED DURING TESTING MAY BE USED IN THE WORK.

4.4 ADHESION BETWEEN THE PTFE AND SUBSTRATE SHALL BE TESTED ON A TEST SPECIMEN IN ACCORDANCE WITH ASTM D429, METHOD B. THE MINIMUM PEEL STRENGTH SHALL BE 4.4 kN PER MM. THIS TEST IS IN ADDITION TO ADHESION DETERMINED UNDER 4.2 AND 4.3 ABOVE.

4.5 TEST RESULTS SHALL BE PRESENTED IN A REPORT SHOWING RAW TEST DATA, REDUCED TEST DATA, SAMPLE CALCULATIONS, AND FINAL RESULTS ALONG WITH PHOTOGRAPHS AND CONCLUSIONS.

4.6 CERTIFIED TEST DATA FOR ALL STAINLESS STEEL, A36M, A572M OR A588M STEEL AND PTFE SHALL BE FURNISHED TO THE DIRECTOR SHOWING COMPLIANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION.

4.7 THE DIRECTOR MAY REQUIRE ADDITIONAL BEARINGS TO BE TESTED EVEN THOUGH REQUIRED BEARING TESTS HAVE BEEN ACCEPTABLE. SUCH ADDITIONAL TESTS WILL BE PAID FOR UNDER ITEM SPECIAL, ADDITIONAL BEARING TESTS, POT BEARINGS.

5. SHIPPING AND PACKING

5.1 BEARINGS SHALL BE SECURELY BANDED TOGETHER AS UNITS SO THAT THEY MAY BE SHIPPED TO THE JOB SITE AND STORED WITHOUT RELATIVE MOVEMENT OF THE BEARING PARTS OR DISASSEMBLY AT ANY TIME. THIS REQUIREMENT DOES NOT APPLY TO THE MASONRY PLATE OR 3 MM SHEET LEAD WHICH SHALL BE SHIPPED FOR SEPARATE INSTALLATION. BEARINGS SHALL BE WRAPPED IN MOISTURE PROOF AND DUST PROOF MATERIAL TO PROTECT AGAINST SHIPPING AND JOB SITE CONDITIONS.

5.2 CARE SHALL BE TAKEN TO ENSURE THAT BEARINGS AT THE JOB SITE ARE STORED IN A DRY, SHELTERED AREA FREE FROM DIRT OR DUST UNTIL INSTALLATION.

5.3 CENTERLINES SHALL BE MARKED ON APPROPRIATE BEARING PARTS FOR CHECKING ALIGNMENT IN THE FIELD AND BE SHOWN ON SHOP DRAWINGS.

5.4 EACH BEARING, MASONRY PLATE AND PAD SHALL HAVE A MARK NUMBER AND THE MARK NUMBER AND PLACEMENT LOCATION SHALL BE SHOWN ON THE SHOP DRAWINGS.

6. INSTALLATION

6.1 FIELD WELDING OF BEARING TO MASONRY PLATE SHALL MEET THE REQUIREMENT OF 3.5(1).

6.2 BEARING SHALL BE EVENLY SUPPORTED OVER THEIR UPPER AND LOWER SURFACES UNDER ALL ERECTION AND SERVICE CONDITIONS.

6.3 ALIGN THE CENTERLINES OF THE BEARING ASSEMBLY WITH THOSE OF THE SUBSTRUCTURE AND SUPERSTRUCTURE OR ON GUIDED BEARINGS, ALIGN THE BEARINGS TO ALLOW FOR THE DESIGNATED EXPANSION DIRECTING OF THE STRUCTURE.

6.4 ERECTION BARS SHALL BE FASTENED TO THE BEAM FLANGE TO ACCURATELY POSITION THE GIRDER ONTO THE SOLE PLATE OF THE BEARING. THE GUIDE BAR ON GUIDED BEARINGS MUST BE IN PARALLEL WITH THE GIRDER. TOLERANCE IN SETTING THE GUIDE BAR SHALL BE 0.80 MM IN THE LENGTH OF THE BAR OUT OF PARALLEL.

6.5 BEARING STRAPS OR RETAINING CLAMPS SHALL BE LEFT IN PLACE AS LONG AS POSSIBLE TO ENSURE PARTS OF BEARINGS ARE NOT INADVERTENTLY DISPLACED RELATIVE TO EACH OTHER.

6.6 SET OFFSETS OF UPPER AND LOWER BEARING PARTS TO COMPENSATE FOR AMBIENT TEMPERATURE AND AS REQUIRED BY PLANS.

6.7 CONCRETE BEARING SEATS SHALL BE PREPARED AT THE CORRECT ELEVATION AND SHALL BE LEVEL WITHIN 1:200.

6.8 FIELD PAINT EXPOSED STEEL IN ACCORDANCE WITH ITEM 514, SYSTEM IZEU.

7. METHOD OF MEASUREMENT

7.1 THE QUANTITY SHALL BE THE ACTUAL NUMBER OF POT BEARINGS FURNISHED WITHIN THE CATEGORIES LISTED BELOW. A COMPLETE AND ACCEPTABLE BEARING SYSTEM FURNISHED AND INSTALLED INCLUDING BEARING, MASONRY PLATE, BEARING PAD AND ANCHOR BOLTS WILL BE MEASURED ON AN EACH BASIS. NO DISTINCTION WILL BE MADE BETWEEN FIXED OR EXPANSION BEARINGS. THE CATEGORY OF EACH BEARING IS DETERMINED BY THE MAXIMUM VERTICAL REACTION LISTED IN THE CONSTRUCTION DRAWINGS.

7.2 ADDITIONAL BEARING TESTS, IF REQUIRED BY THE DIRECTOR, WILL BE MEASURED ON AN EACH BASIS FOR A SUCCESSFULLY TESTED AND ACCEPTED BEARING. TESTS RESULTING IN A REJECTED BEARING WILL NOT BE MEASURED AND PAID FOR.

8. BASIS OF PAYMENT

8.1 PAYMENT FOR POT BEARINGS WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH LISTED UNDER: ITEM 516 - STEEL POT BEARINGS

8.2 NO SEPARATE PAYMENT WILL BE MADE FOR THE WORK LISTED UNDER TESTING AND ACCEPTANCE OF THIS SPECIFICATION. THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE BEARINGS.

DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

DATE: 2-98 | STRUCTURE FILE NUMBER: 1833421

DESIGNED: KRD | DRAWN: PJK | REVIEWED: RAB | CHECKED: GFH | REVISED:

GENERAL NOTES
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

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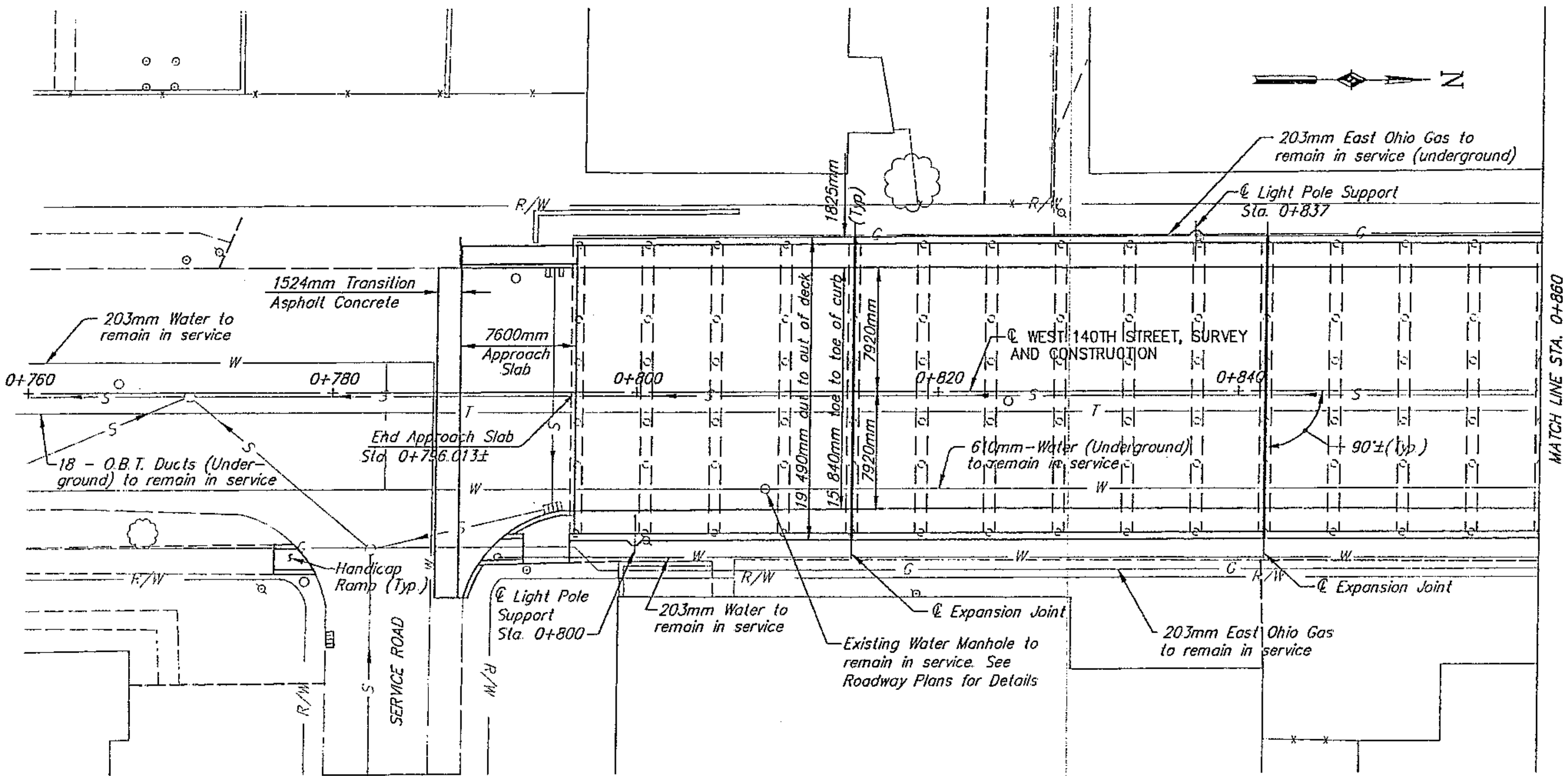
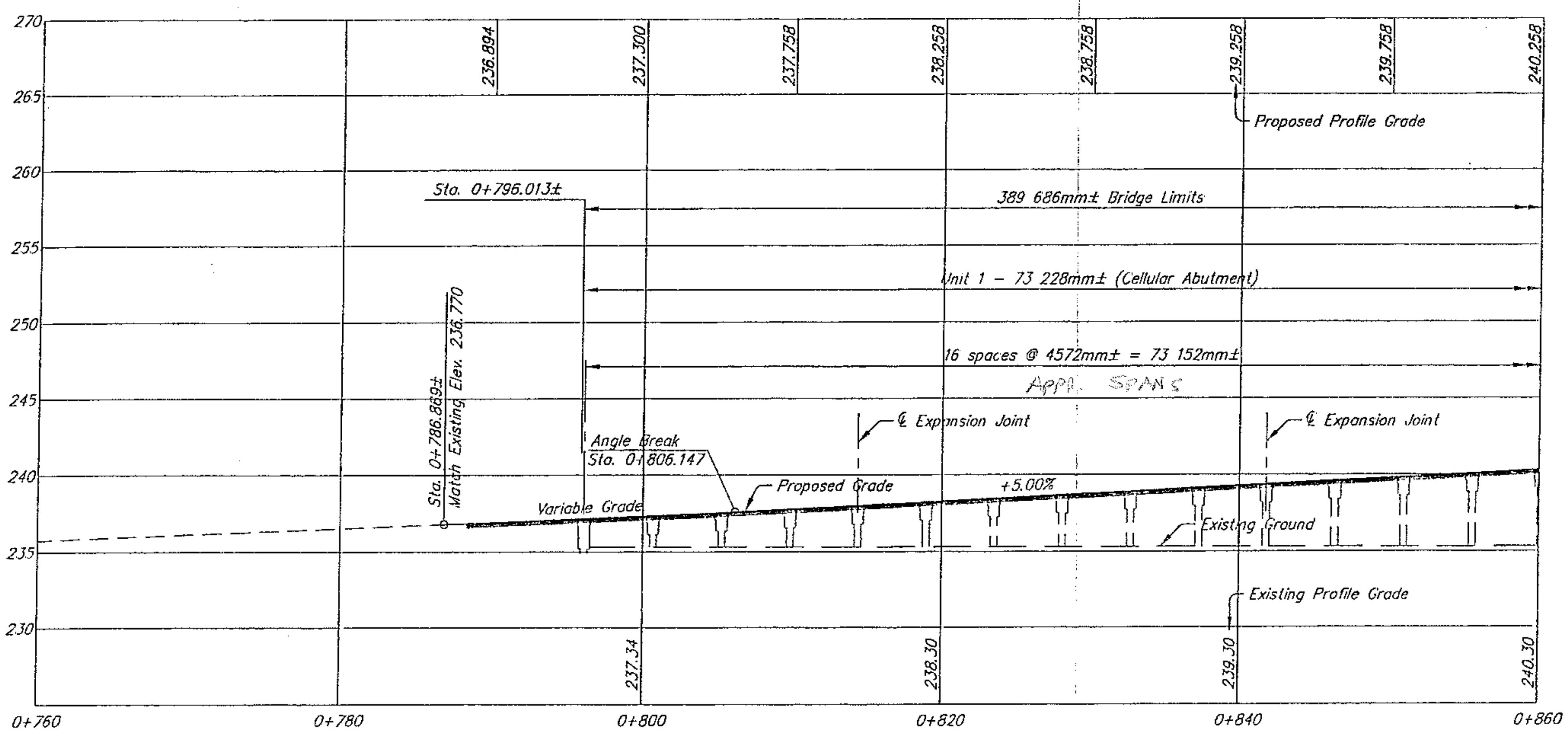
Cleveland, Ohio
Report No. 7224 and B-No. 200*



PLAN



SECTION ON CENTERLINE - WEST 140TH STREET

TEMPORARY BENCH MARK
Chisled ☐ Square top of SW Corner of Conc. Walk
Sta. 0+796.39, 11.58m Lt.
Elev. 237.390m

TRAFFIC DATA - WEST 140 STREET

1997	A.D.T.	15,460
1997	A.D.T.T.	387
2017	A.D.T.	14,410
2017	A.D.T.T.	360

EXISTING STRUCTURE

TYPE: Unit 1 and 5 - Reinforced concrete cellular abutments.
Unit 2 and 4 - Continuous steel beam with reinforced concrete deck and substructure
Unit 3 - Continuous composite steel beam with reinforced concrete deck and substructure.

SPANS: Unit 1 - 16 spans at 4572mm±, C/C concrete piers
Unit 2 and 4 - 14 630mm±, 18 288mm±, 22 860mm±, 22 860mm±, 20 422mm± C/C bearings measured along ℄ West 140th St.
Unit 3 - 2438mm± Cantilever, 27 432mm±, 29 576mm±, 2438mm± Cantilever C/C bearings
Unit 5 - 12 spans at 4572mm± C/C concrete piers

ROADWAY: 15 850mm± toe to toe of curbs with two 1524mm± sidewalks

LOADING: CF=1000 (57)

SKEW: Unit 1 and 5 - 0°±
Unit 2 and 4 - Varies 0° ± to 48°-21'-47"± Right Forward
Unit 3 - 59°-14'-37' ± Right Forward

WEARING SURFACE: Asphalt Concrete
APPROACH SLABS: 7620mm±
ALIGNMENT: Tangent
CROWN: Normal, 0.016
DATE BUILT: 1959
STRUCTURE FILE NO.: 1833421

PROPOSED STRUCTURE

PROPOSED WORK: Replace existing superstructure, seal joints and repair, modify and seal existing substructure units and retaining walls

TYPE: Unit 1 and 3 - Reinforced concrete cellular abutments.
Unit 2 - Continuous composite welded steel girder, A572 painted, with reinforced concrete deck and substructure.

SPANS: Unit 1 - 16 spans at 4572mm± C/C concrete piers.
Unit 2 - 14 630mm±, 18 288mm±, 3 spans @ 22 860mm± 27 432mm± 29 566mm±, 3 spans @ 22 860mm±, 18 288mm± and 14 630mm± C/C bearings measured along ℄ W 140th St.
Unit 3 - 12 spans at 4572mm± C/C concrete piers

ROADWAY: 15 840mm toe to toe of curbs with two 1520mm sidewalks

LOADING: MS18-44, Case II and the Alternate Military Loading

SKEW: Unit 1 and 3 - 0°±
Unit 2 - Varies, 0° ± to 59°-14'-37" Right Forward

WEARING SURFACE: 32mm Latex Modified Concrete
APPROACH SLABS: AS-1-81M (7600)
ALIGNMENT: Tangent
CROWN: Normal, 0.016

Note.
For approach slab details see Roadway Plans
The following clearances, unless otherwise approved by the railroads. shall be maintained during construction on tracks which trains are operating.

	GCRTA	Conrail
Vertical	4.9m	Existing
Horizontal	2.3m	3.0m

Cuyahoga County Engineer
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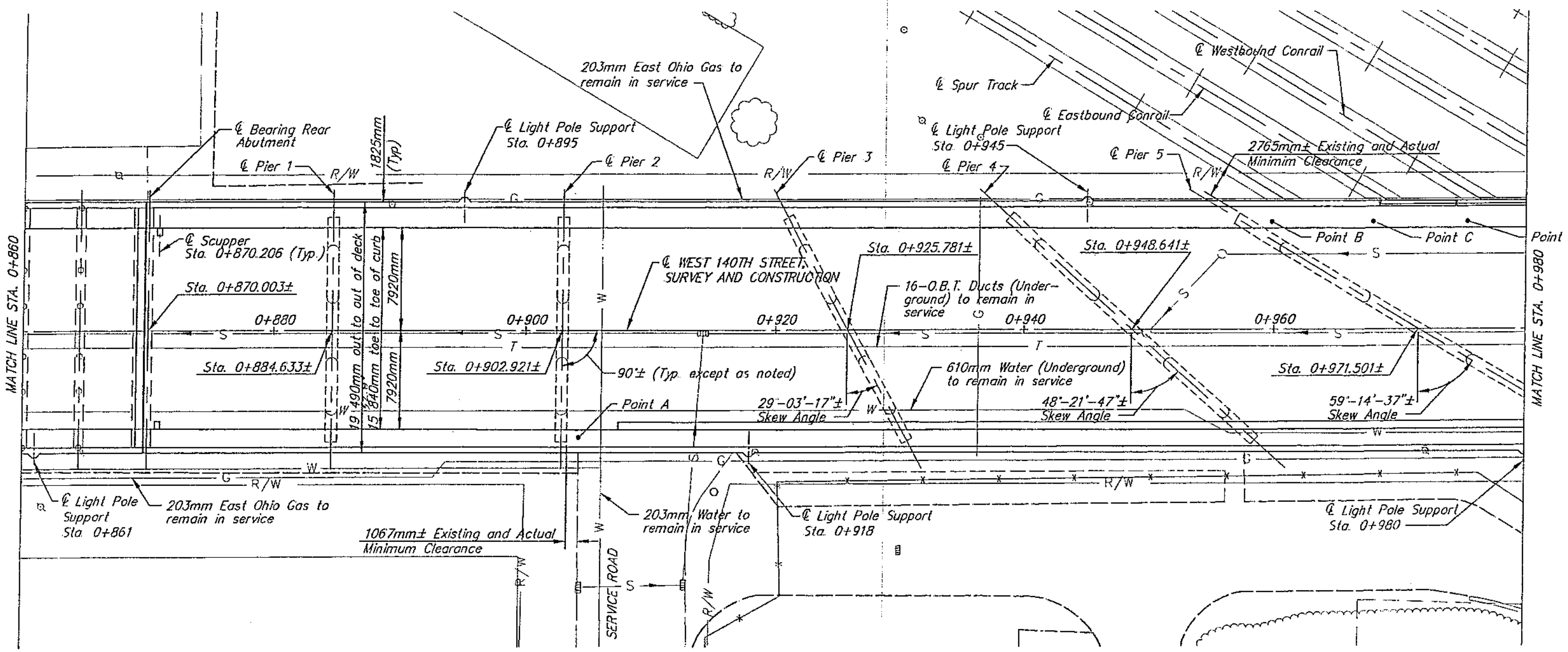
DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS
DESIGNED RSY | CHECKED KRD | DRAWN RSY | REVISED | REVIEWED RAB | DATE 9-96 | STRUCTURE FILE NUMBER 1833421

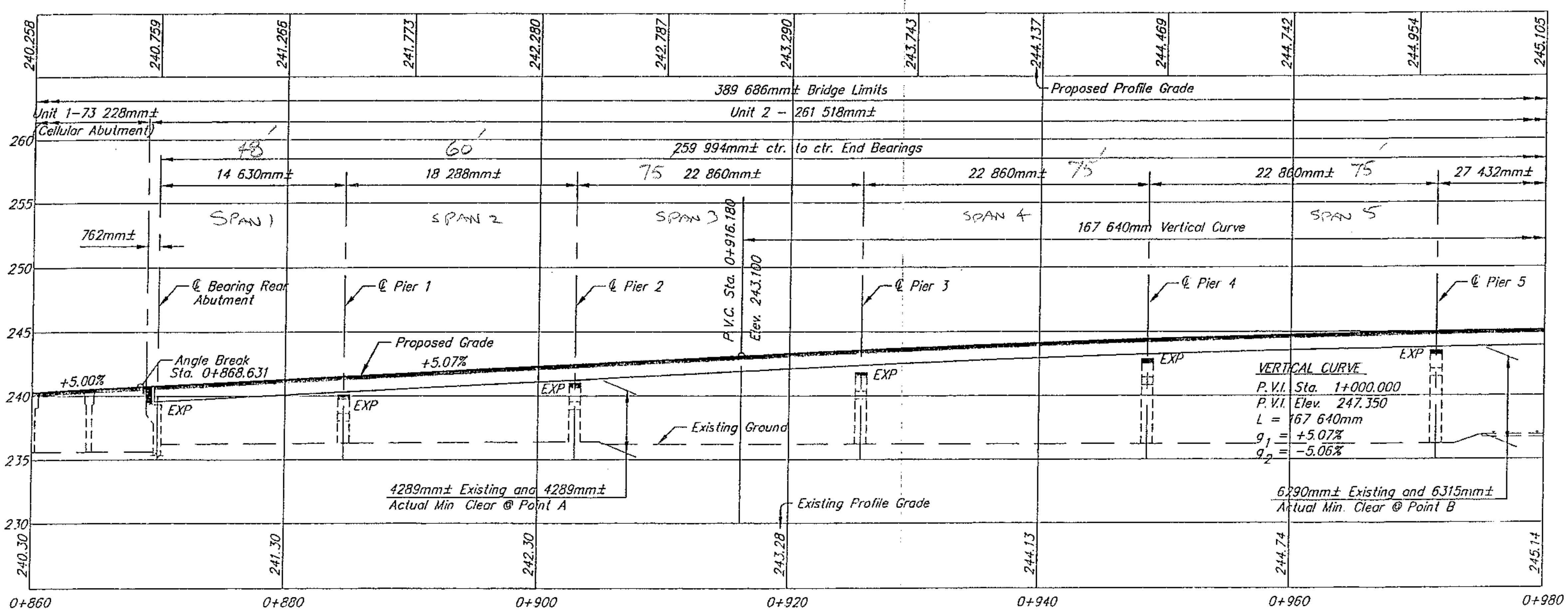
CUYAHOGA COUNTY STA. 0+796.013± to STA. 1+185.699±

SITE PLAN
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET



PLAN



SECTION ON CENTERLINE - WEST 140TH STREET

Note.

Actual minimum vertical clearance at Point A occurs at the intersection of the South curb line of the Service Road and the East edge of the East exterior girder.

Actual minimum vertical clearance at Point B, C and D occur 2000mm South of the centerline of track at the West edge of the West exterior girder.

For vertical clearances at Points C and D see Sheet 6 / 68.

Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No 200

DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

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RSY	KRD	RSY		RAB	9-96	1833421

CUYAHOGA COUNTY
STA. 0+796.013± to STA. 1+185.699±

SITE PLAN
BRIDGE NO. 208
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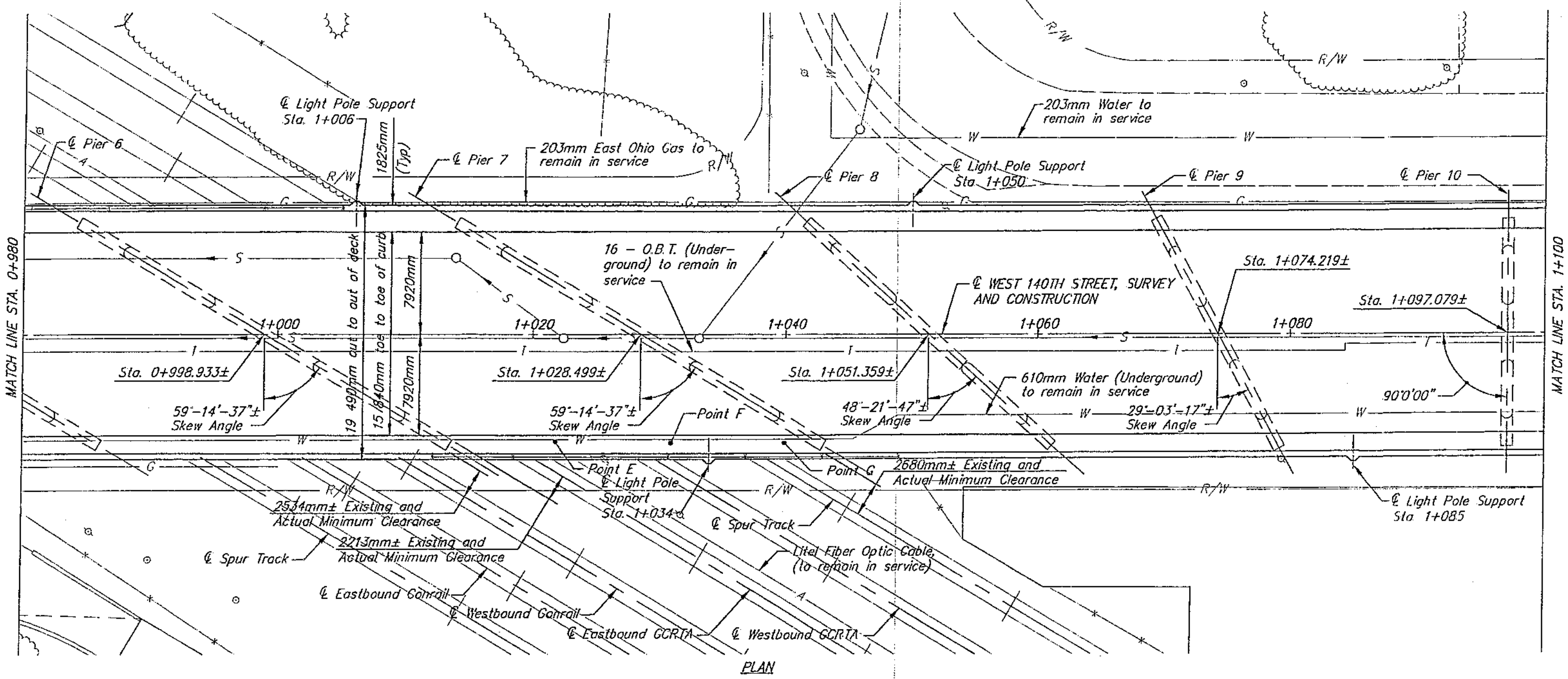
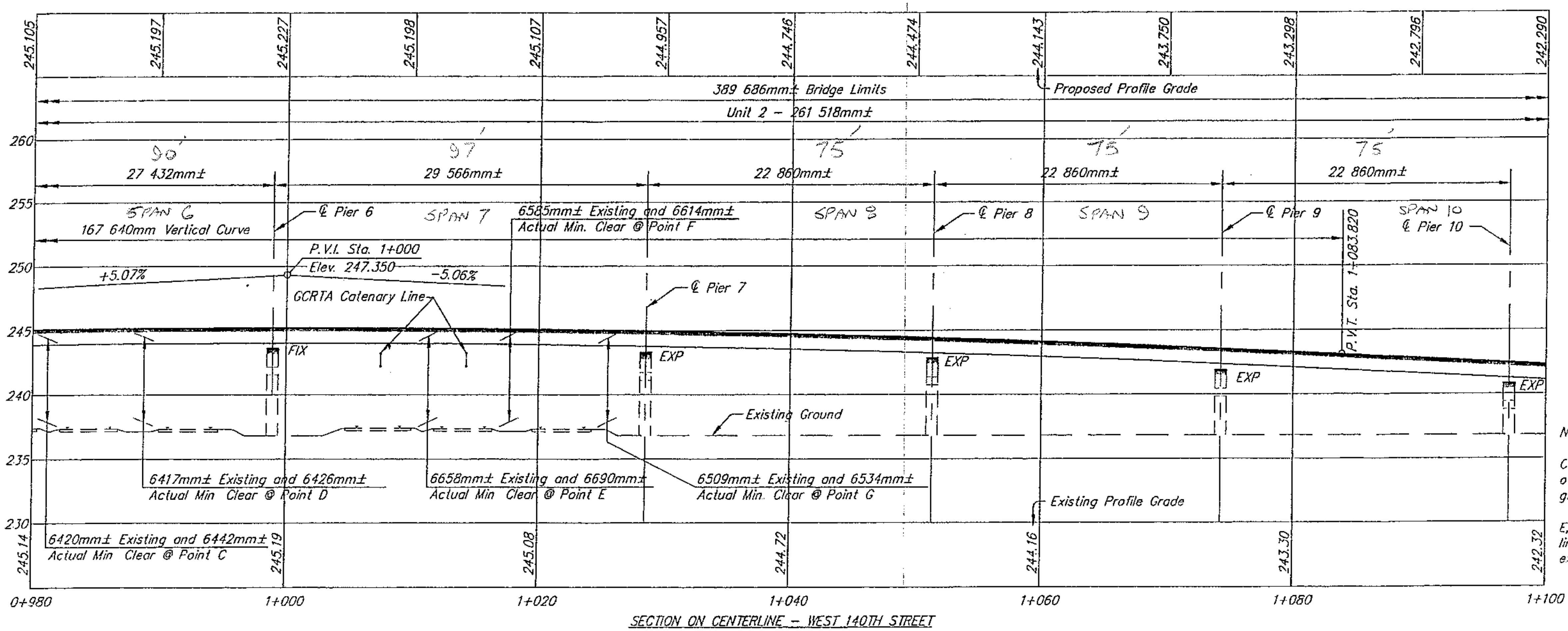
CUY-WEST 140th STREET





Note:
Actual minimum vertical clearance at Points C and D occurs 2000mm South of the centerline of track at the West edge of the West exterior girder.
Actual minimum vertical clearance at Points E, F and G occurs 2000mm North of the centerline of track at the East edge of the East exterior girder.

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DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

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KRD		1833421	

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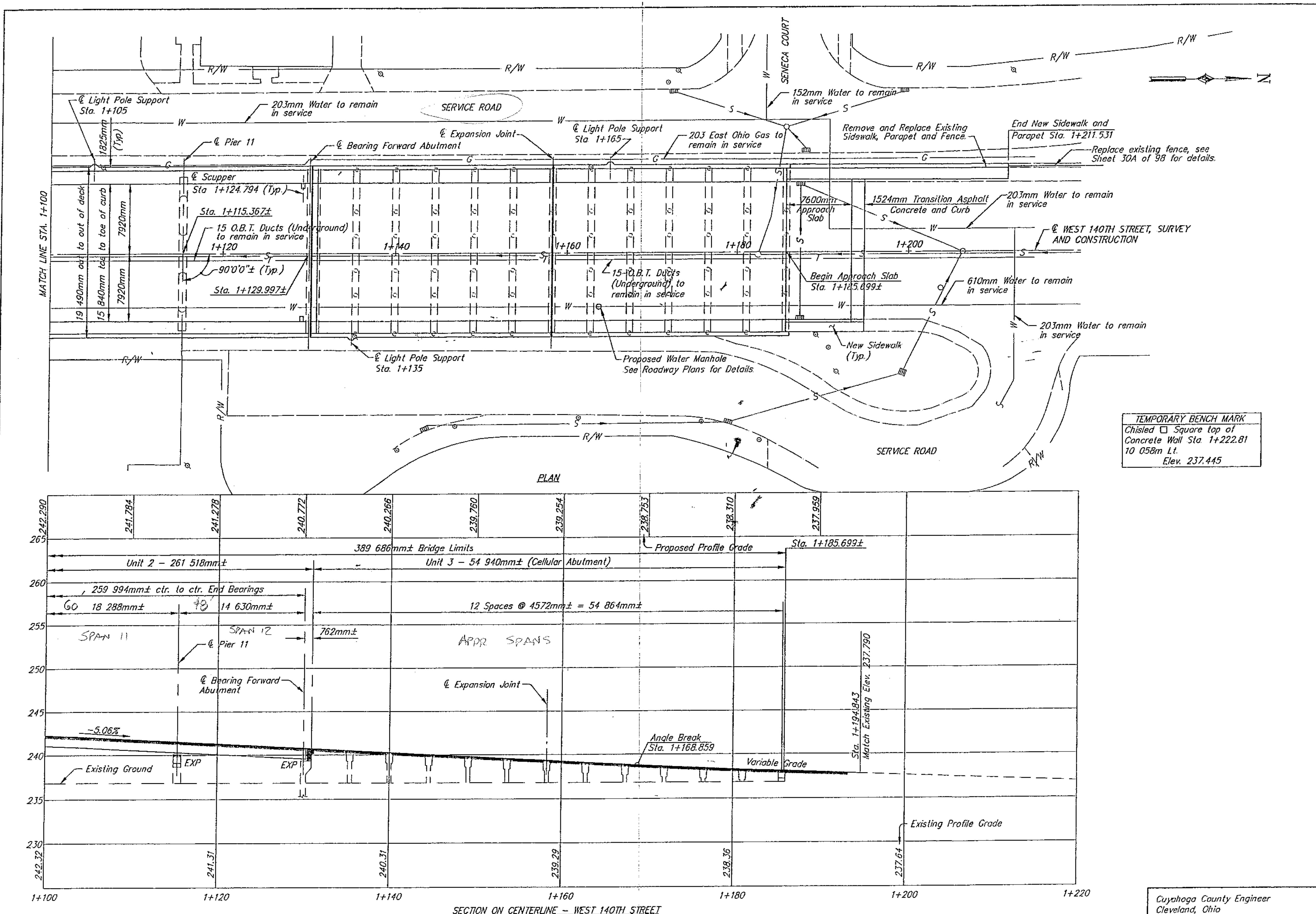
SITE PLAN
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

6/68

36/98

J:\JOBS\317\BRIDGE\317SP03.DWG1 PJK 12/31/97 PLOT 1000:200 METRIC



DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
RSY	RSY	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		1833421	

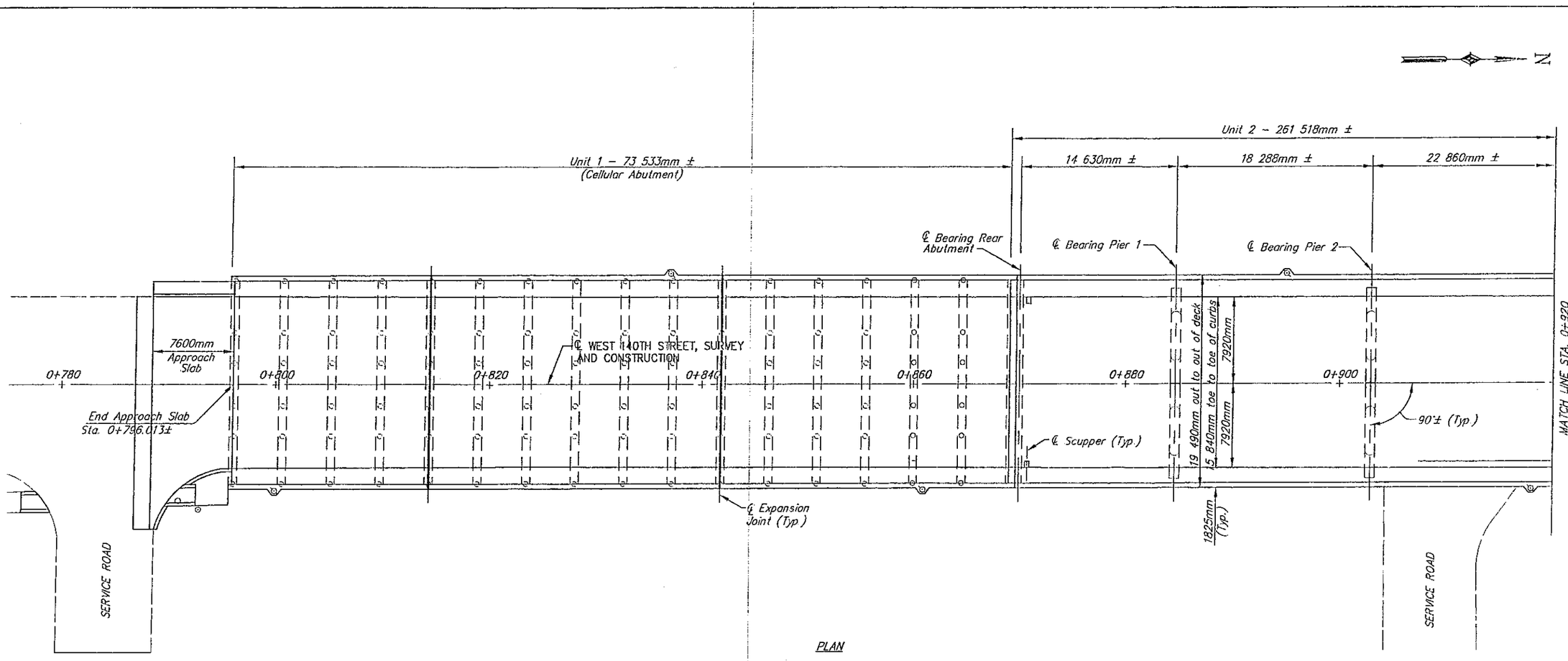
CUYAHOGA COUNTY
STA. 0+796.013± to STA. 1+185.699±

SITE PLAN
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

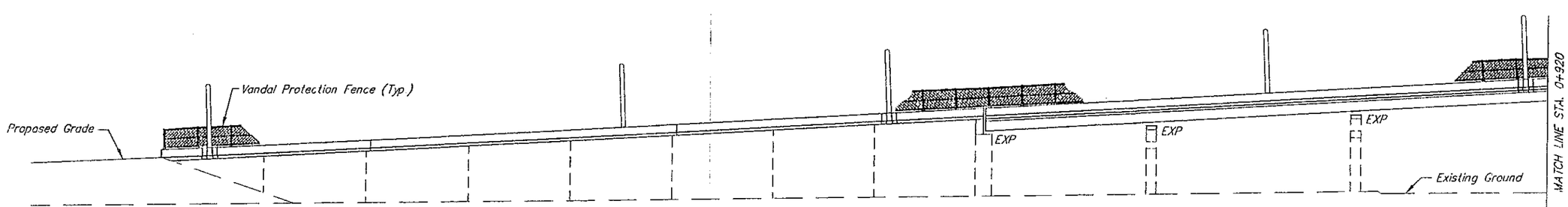
CUY-WEST 140th STREET

7 / 68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No 200



PLAN



ELEVATION

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B–No. 200

DESIGN AGENCY
EUTHEMES INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	CHECKED	REVISED	REVIEWED	DATE
BMG	RM	KRD		RAB	9–96

STRUCTURE FILE NUMBER 1833421

GENERAL PLAN AND ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

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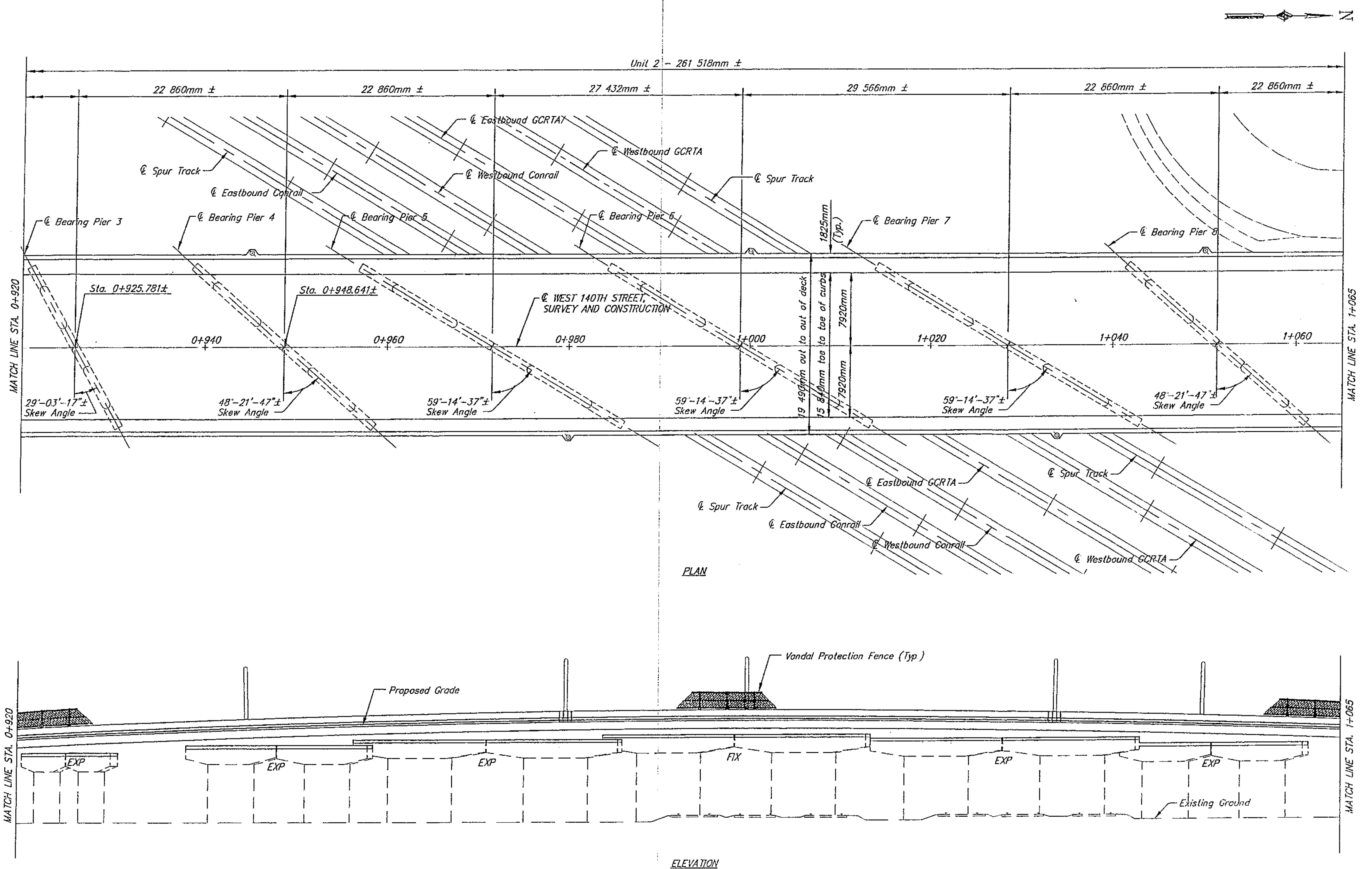
[\\DGS\317\BRIDGE\317GP01.DWG] RM 10/15/96 PLOT 100@.200 METRIC



DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
RSY	RSY	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		1833421	

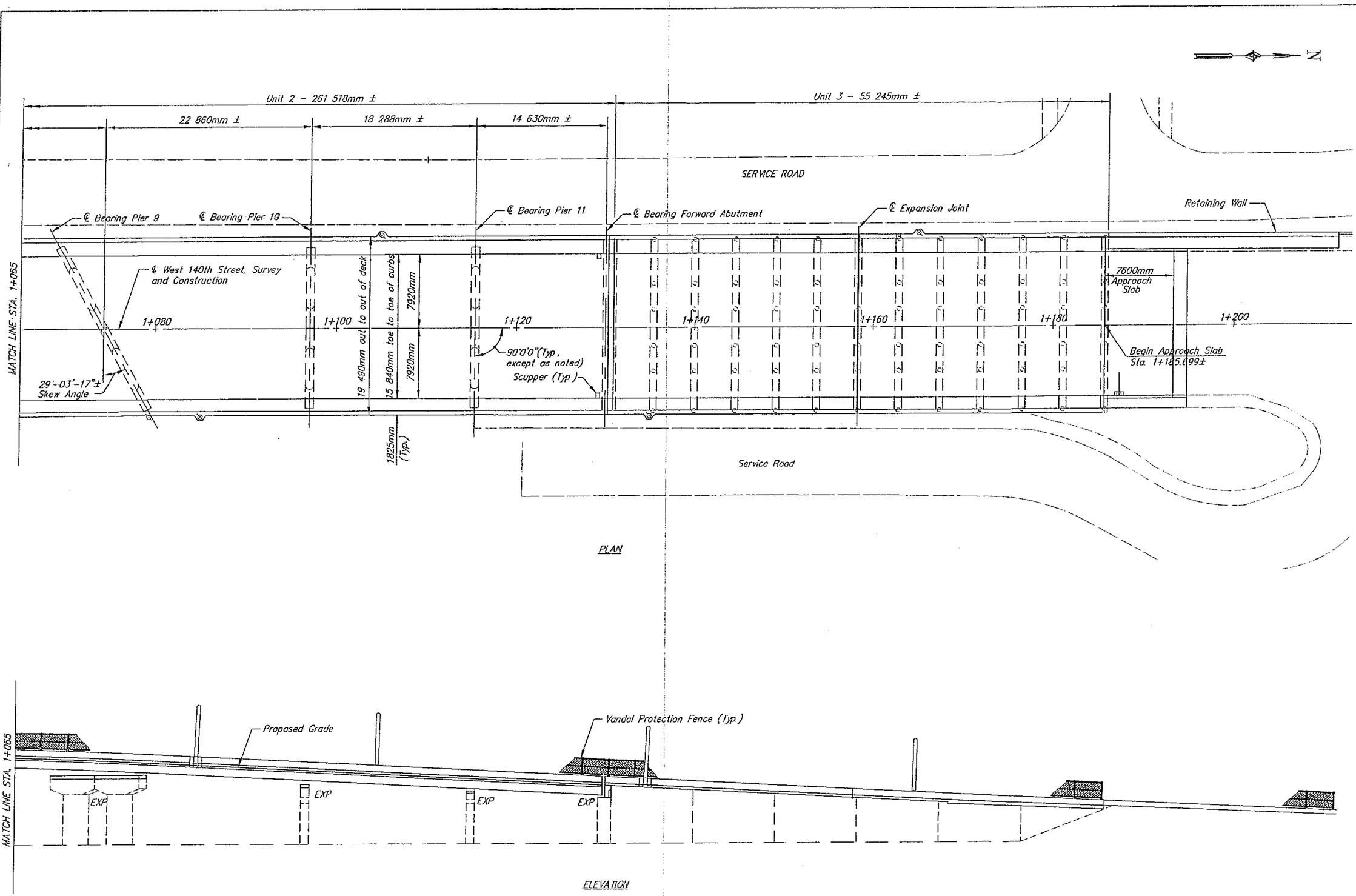
GENERAL PLAN AND ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

9 / 68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

39 / 98



DESIGN AGENCY
EUTHENICS INC. CONSULTING ENGINEERS

DESIGNED RSY | DRAWN RSY | CHECKED KRD | REVISED | REVIEWED RAB | DATE 9-96

STRUCTURE FILE NUMBER 1833421

GENERAL PLAN AND ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

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Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

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C:\17\085\BRIDGE\317P03.DWG| JT 2/2/98 PLOT 1000:203 METRIC

CALC BY: BMG DATE: 3-96 — ESTIMATED QUANTITIES — CHK'D BY: KRD DATE: 8-96

ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION	SHEET NUMBERS	ABUT-MENTS	PIER	SUPER-STRUCTURE	GENERAL
202	11203	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED, OVER 6 METER SPAN, AS PER PLAN	1/68				LUMP
SPECIAL	6907/000	LUMP	LUMP	ASBESTOS ABATEMENT	3A/68	LUMP			
511	31504	1246	CU. M.	CLASS S CONCRETE, SUPERSTRUCTURE				1246	
511	32200	686	CU. M.	CLASS S CONCRETE, SUPERSTRUCTURE		686			
*511	33404	1932	CU. M	CLASS S CONCRETE, SUPERSTRUCTURE (USING SHRINKAGE COMPENSATING CEMENT) (SEE PROPOSAL NOTE) 701.08		686		1246	
*511	33410	LUMP	LUMP	CLASS S CONCRETE, USING SHRINKAGE COMPENSATING CEMENT, FOR PRE-PLACEMENT TESTING (SEE PROPOSAL NOTE) 701.08		LUMP		LUMP	
511	34440	1171	SQ. M.	CLASS S CONCRETE, MISC.: SIDEWALK WEARING COURSE	3/68	386		785	
511	43200	45	CU. M.	CLASS C CONCRETE, PIER			45		
511	45700	27	CU. M.	CLASS C CONCRETE, ABUTMENT		27			
SPECIAL	51267504	1171	SQ. M.	SEALING OF CONCRETE SURFACES (NON-EPOXY) (SEE PROPOSAL NOTE)		386		785	
SPECIAL	51267510	5340	SQ. M.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (SEE PROPOSAL NOTE)		1327	2126	1887	
SPECIAL	51267520	199	SQ. M.	SEALING OF CONCRETE SURFACES WITH TINTED SILANE (SEE PROPOSAL NOTE)			199		
816	00600	LUMP	LUMP	FIELD PAINTING OF NEW STEEL, INTERMEDIATE AND FINISH COAT, SYSTEM IZEU				LUMP	
516	10500	59	M.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL		59			
516	14600	38	M.	MODULAR EXPANSION JOINT, AS PER PLAN	1/68			38	
516	13600	2	SQ. M.	25MM PREFORMED EXPANSION JOINT FILLER		2			
516	45000	130	EACH	STEEL POT BEARING	58,3C,30/68	20	110		
517	75300	780	M.	RAILING, CONCRETE PARAPET WITH CHAIN LINK FENCE		259		521	
518	12301	4	EACH	SCUPPER, INCLUDING SUPPORTS, AS PER PLAN	67/68			4	
518	63300	LUMP	LUMP	STRUCTURE DRAINAGE, MISC.: ABUTMENT DRAINAGE SYSTEM		LUMP			
519	11101	50	SQ. M.	PATCHING CONCRETE STRUCTURES, AS PER PLAN	1/68				50
SPECIAL	51912600	2	M.	CONCRETE REPAIR BY EPOXY INJECTION			2		
520	11100	413	SQ. M.	PNEUMATICALLY PLACED MORTAR		192	221		
**845	10200	6149	SQ. M.	LATEX MODIFIED CONCRETE OVERLAY (32 mm THICK) (SEE PROPOSAL NOTE)		2026		4123	
863	10000	LUMP	LUMP	STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION		LUMP			
863	10080	LUMP	LUMP	STRUCTURAL STEEL MEMBERS, LEVEL FOUR (4) FABRICATION (A572-50)				LUMP	
863	20000	17 436	EACH	WELDED STUD SHEAR CONNECTORS				17 436	
SPECIAL	10000300	LUMP	LUMP	PREMIUM ON RAILROAD'S PROTECTIVE PUBLIC LIABILITY AND PROPERTY DAMAGE LIABILITY INSURANCE					LUMP

* Alternate Bid Item: These two items constitute one alternate bid to both Class S Concrete, Superstructure Items. The additional cost for shrinkage compensating cement and the pre-placement test are funded 100% by Cuyahoga County

** Funded 100% by Cuyahoga County

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS

DESIGNED BMG | CHECKED KRD
DRAWN BMG | REVISED
REVIEWED RAB | DATE 9-96
STRUCTURE FILE NUMBER 1833421

ESTIMATED QUANTITIES
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

11 / 68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

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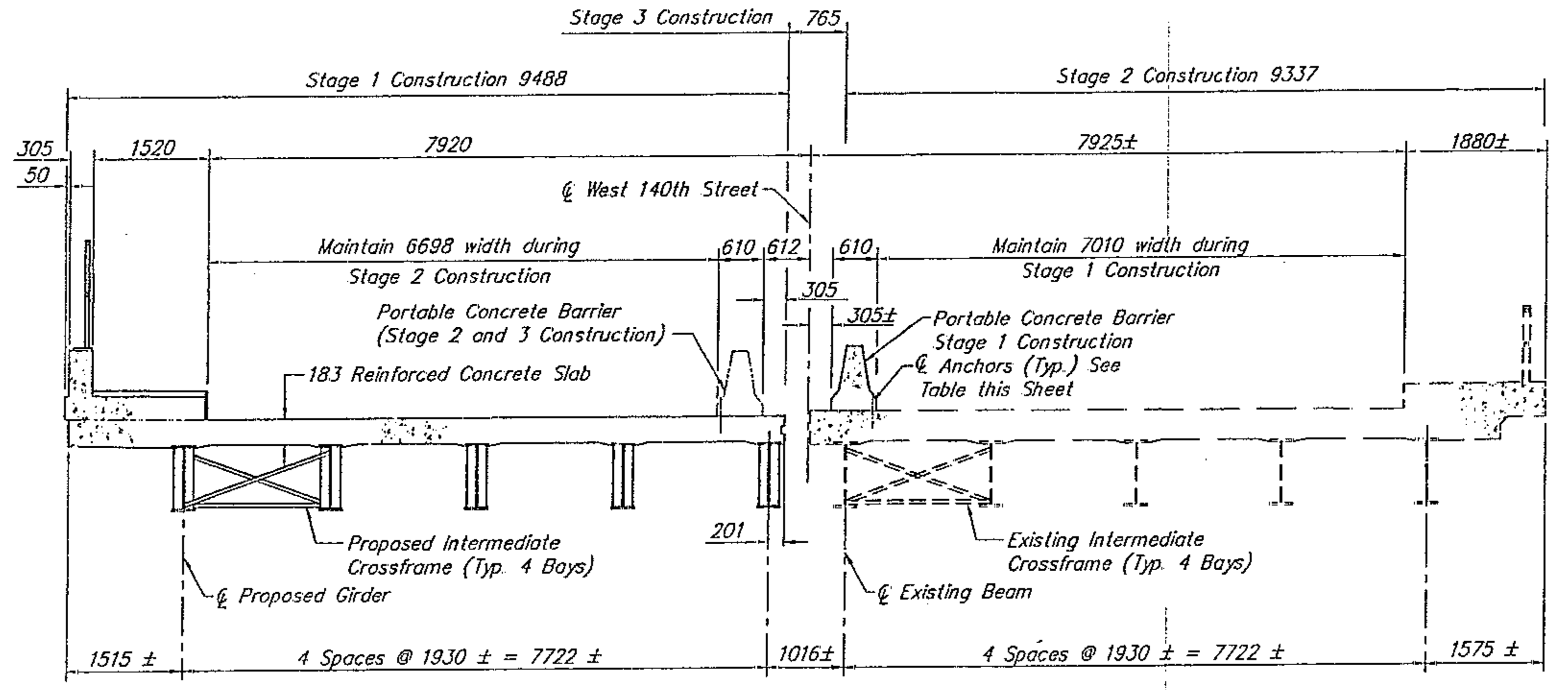
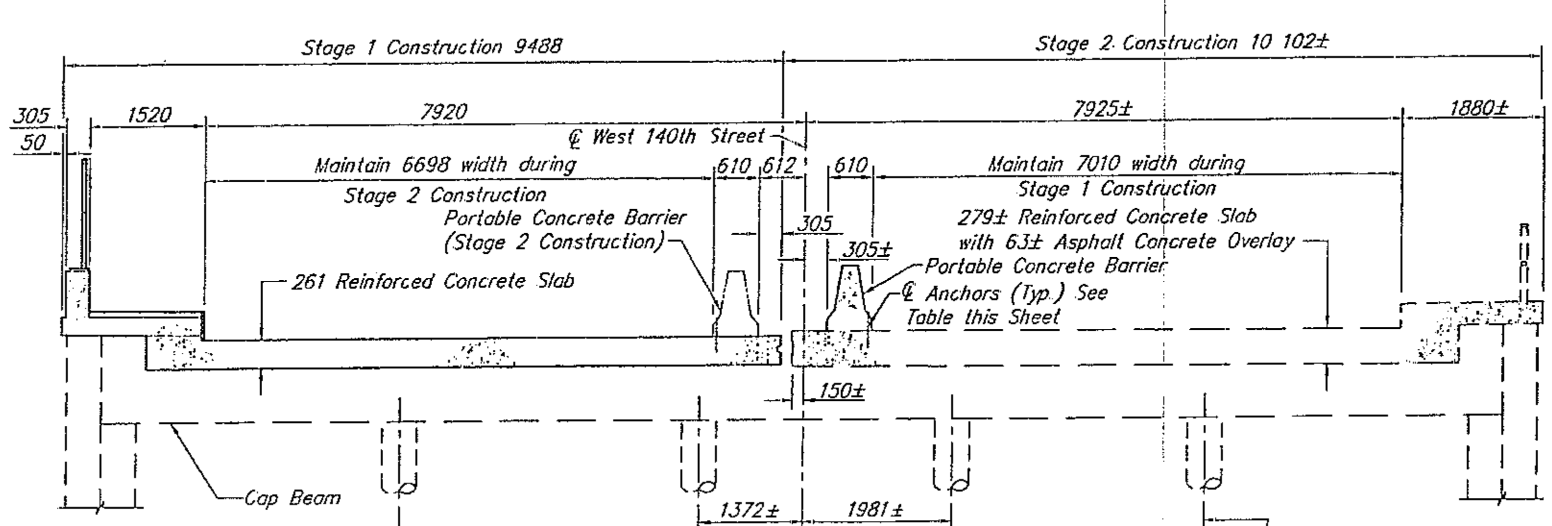


TRANSVERSE SECTION
Stage Construction



CELLULAR ABUTMENT TRANSVERSE SECTION
Stage Construction

813 mm BRIDGE MOUNTED, PORTABLE CONCRETE BARRIER ANCHORS	
STAGE	NO. ANCHORS/3050 mm SECTION
1	2
2	2

Note:
The Latex Modified Concrete Overlay shall not be placed during Stage 1 Construction. Traffic for Stage 2 and 3 Construction shall be maintained on the reinforced concrete deck without the overlay.
After Stage 3 construction and the new concrete deck has cured for 28 days, the overlay shall be placed on the right half of the bridge. The overlay shall be placed on the left half of the bridge during Stage 4 Construction.
See sheet 60/68 for details of construction joints.

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No 200

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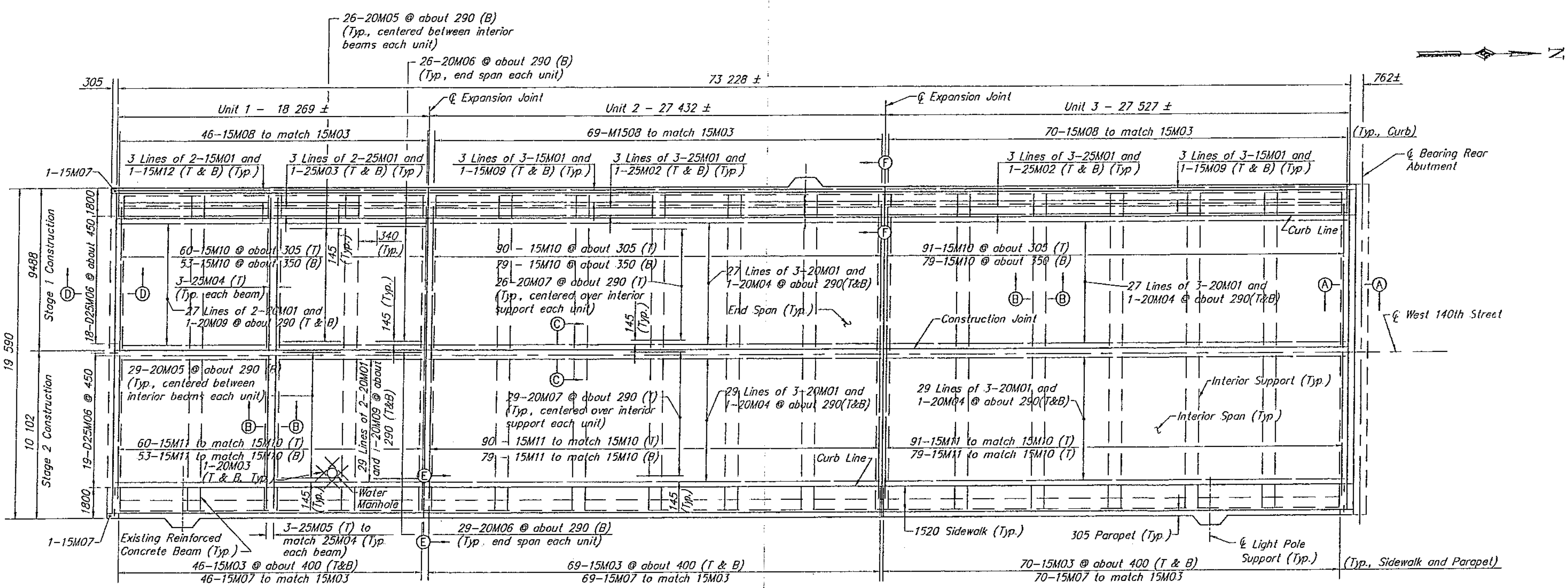
STAGE CONSTRUCTION
BRIDGE NO. 208
West 140th Street over Conrail AND GCRTA

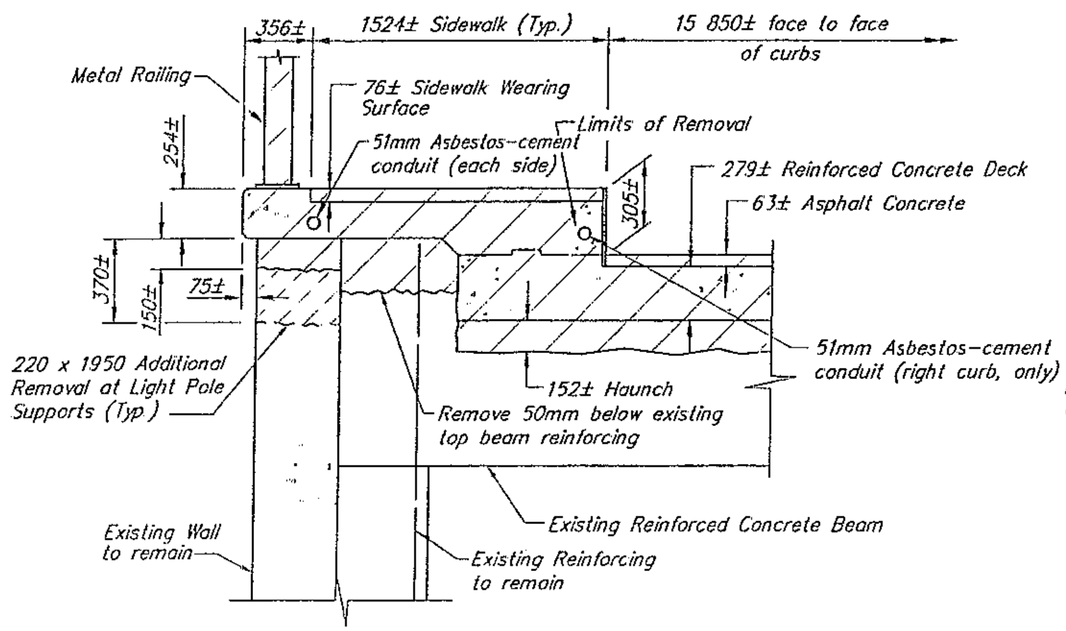
CUY-WEST 140th STREET



SLAB PLAN

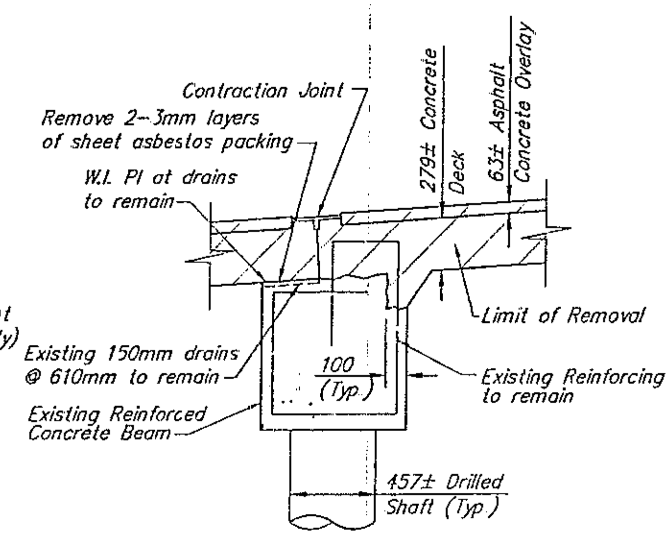
Note.
20M05 and 20M06 shown in Unit 1 are typical for Units 2 and 3. 20M07 shown in Unit 2 are typical for Units 1 and 3.

MINIMUM LAP LENGTHS		
15M Bars	=	580 mm
20M Bars	=	1150 mm
25M Bars	=	2070 mm



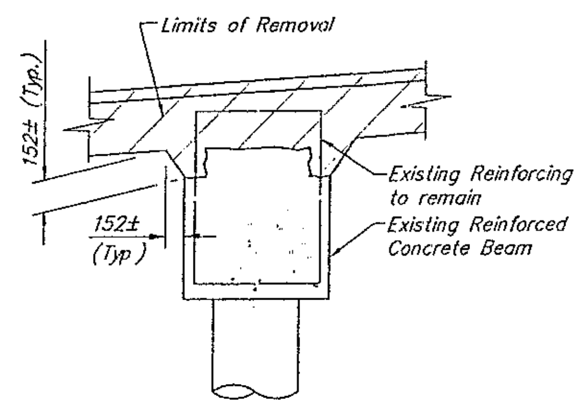
EXISTING TRANSVERSE SECTION

Note:
Existing 51 mm asbestos cement conduits extend the full length of the bridge. Sheet asbestos packing extends full width at each existing expansion or contraction joint in the cellular abutments.



EXISTING CONTRACTION JOINT
(Expansion joint similar)

PORTIONS OF CELLULAR ABUTMENTS REMOVED



EXISTING INTERMEDIATE SUPPORT

For cross sections through cellular abutments showing patching limits on existing interior support beams see sheets 18/68 through 26/68.

Notes:
All dimensions are in millimeters, unless otherwise noted.

For location of light pole supports see sheet 4/68
For details of light pole supports see sheet 66/68

Cut reinforcing as required at water manhole. For additional location see sheet 14/68.

For Sections A-A see sheet 31/68.

For Sections B-B thru D-D see sheet 14/68.

For Proposed Cellular Abutment Transverse Section, Cellular Abutment Expansion Joint Details, Section E-E and Section F-F see sheet 15/68.

For parapet elevation and reinforcing see sheets 29/68 and 30/68.

All reinforcing bars shall be prefixed S = Superstructure except as noted.

Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No. 200

DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

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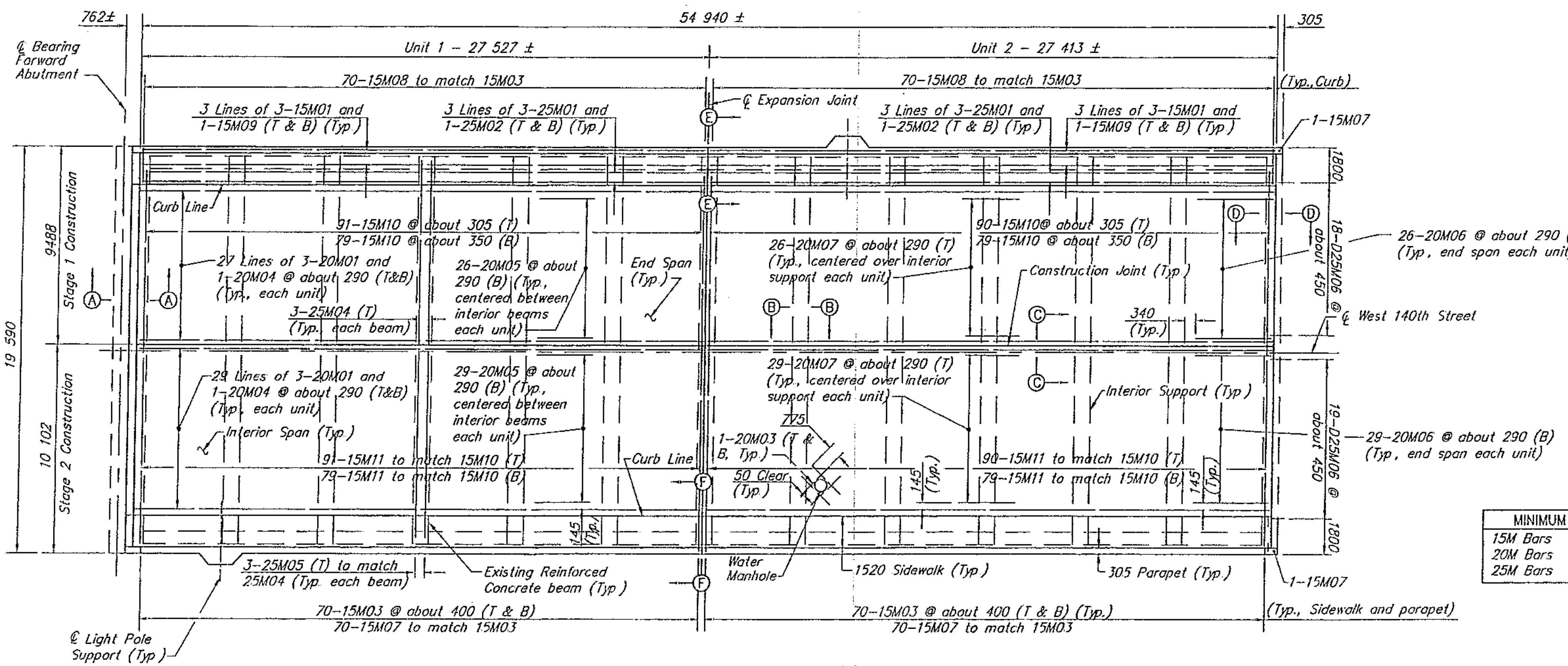
REAR CELLULAR ABUTMENT - SLAB

BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

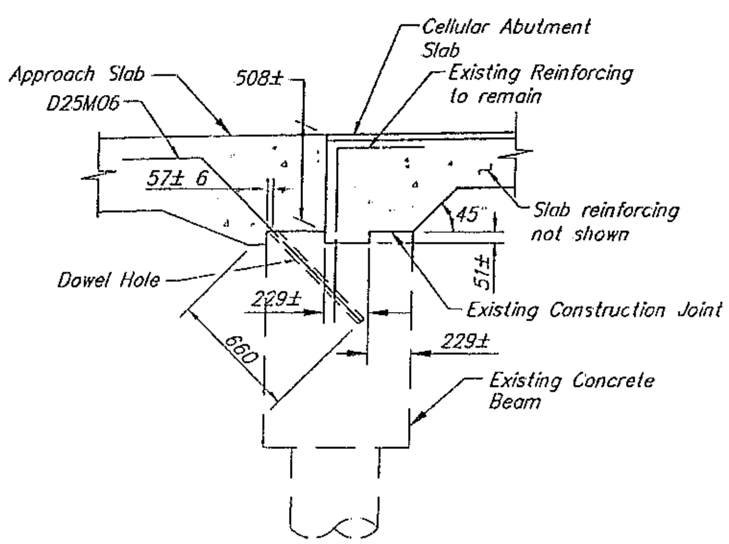
J:\CUY\317\BRIDGE\317RCA01.DWG JT 2/2/98 PLOT 1000:125 METRIC



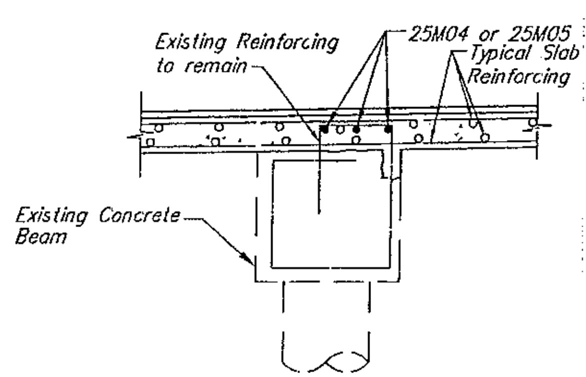
SLAB PLAN

MINIMUM LAP LENGTHS		
15M Bars	=	580 mm
20M Bars	=	1150 mm
25M Bars	=	2070 mm

Note.
20M01, 20M04 and 20M05 shown in Unit 1 are typical for Unit 2, 20M06 and 20M07 shown in Unit 2 are typical for Unit 1

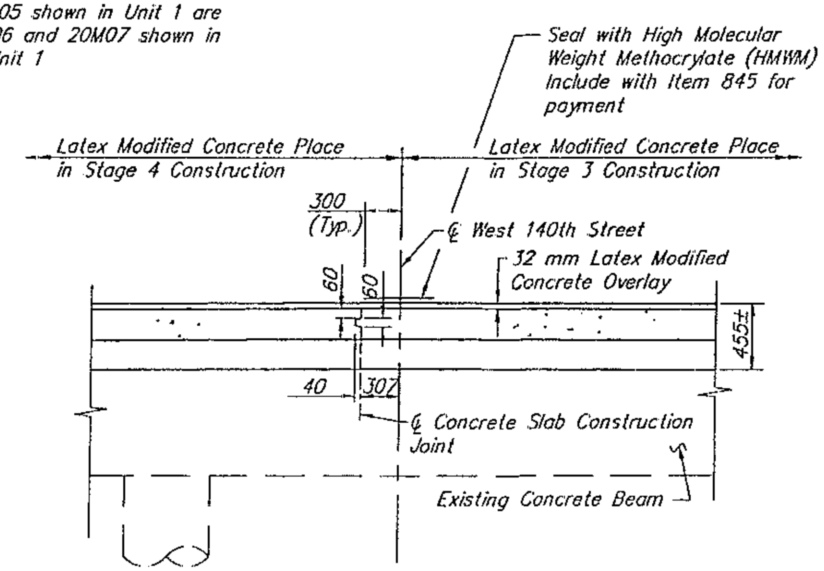


SECTION D-D



SECTION B-B

(Section shown at existing contraction joint section at existing intermediate support similar)



SECTION C-C

Notes:
For parapet elevation and reinforcing see sheets 32/68 and 33/68.

For locations of light pole supports see sheet 7/68. For details of light pole supports see sheet 66/68

For additional notes and details see sheet 13/68.

Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No 200

DESIGN AGENCY
EUTHENICS INC. CONSULTING ENGINEERS

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FORWARD CELLULAR ABUTMENT - SLAB
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

14 / 68

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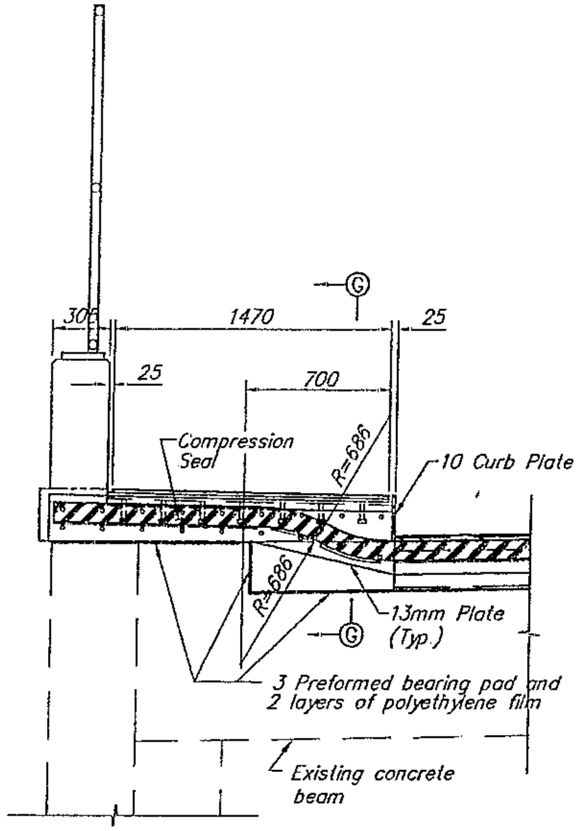
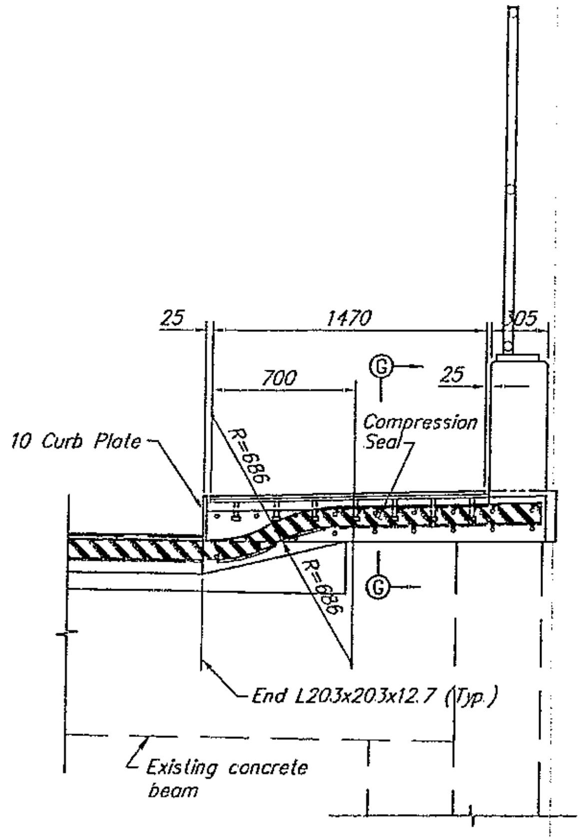
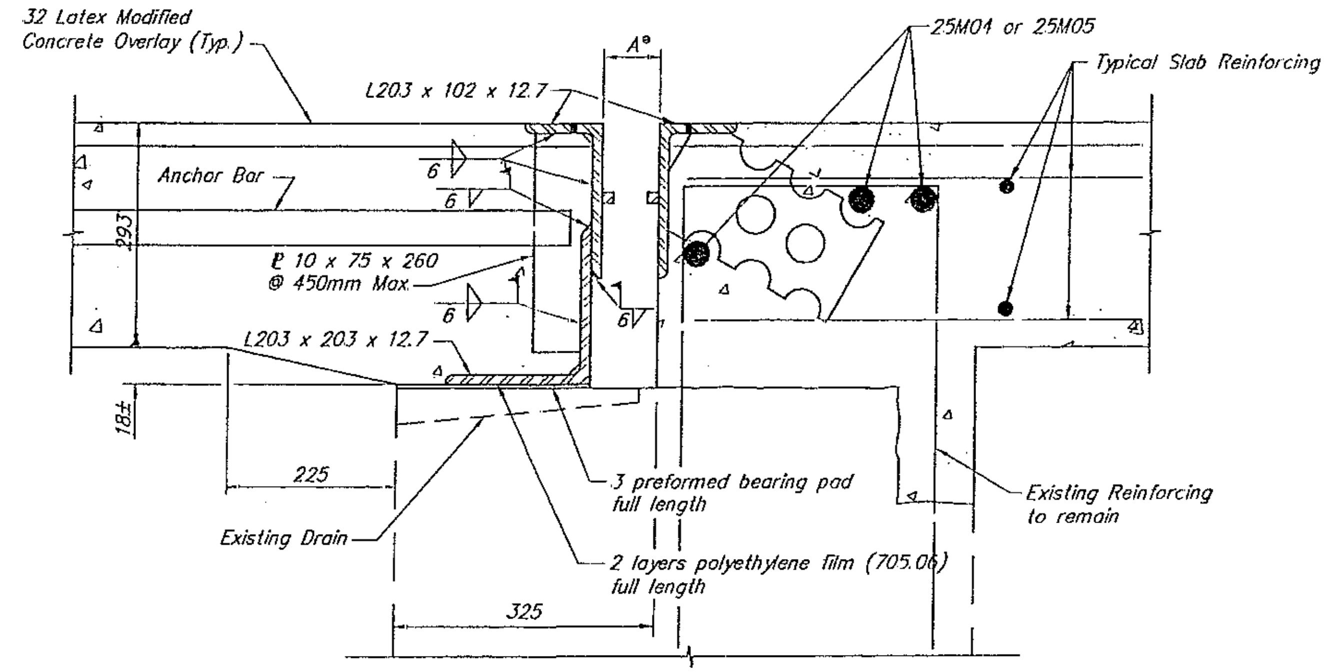
[JOBS\317\BRIDGE\317FCA01.DWG] JT 2/2/98 PLOT 1000:125 METRIC



SECTION F-F

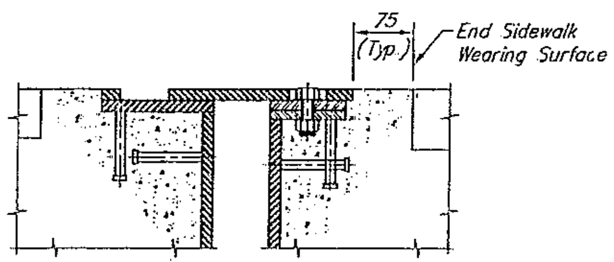


SECTION E-E



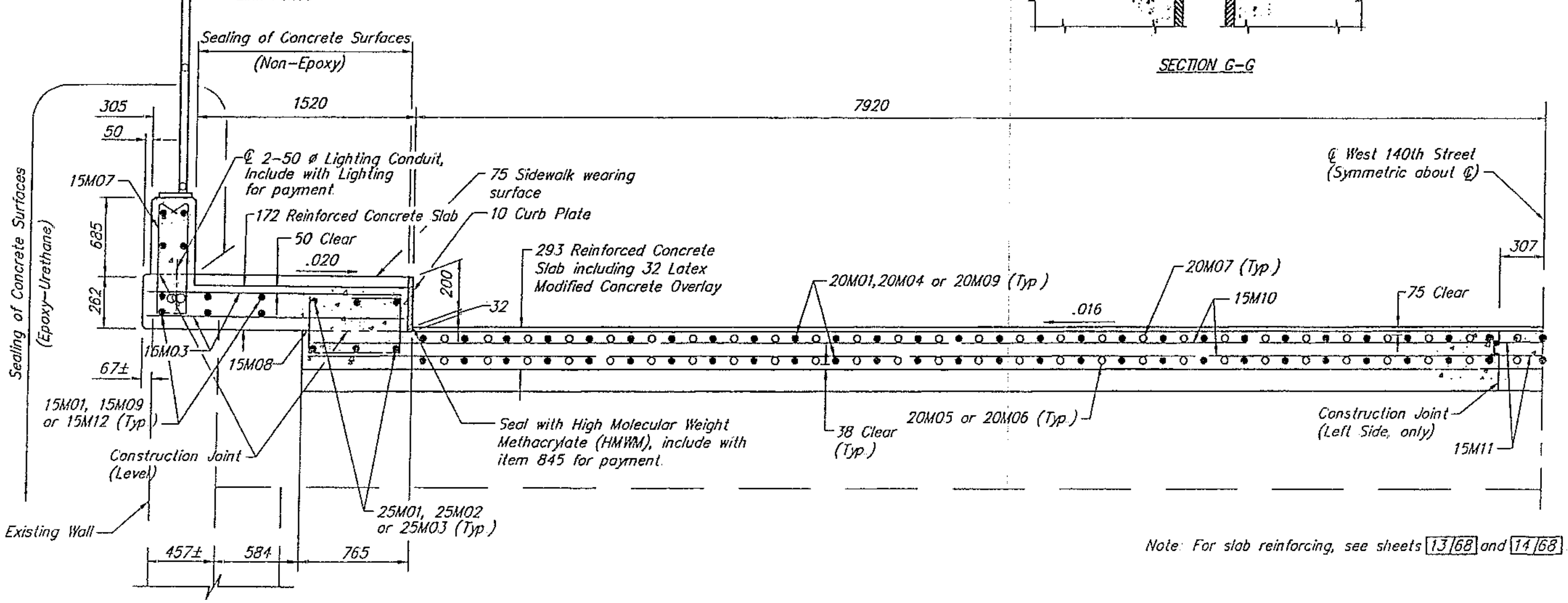
PROPOSED CELLULAR ABUTMENTS EXPANSION JOINT

For location see shees 4/68 and 7/68



SECTION G-G

DIMENSION "A" FOR EXPANSION JOINT ON CELLULAR ABUTMENTS	
°C	mm
35	69
30	70
25	72
20	73
15	75
10	76
5	78
0	79



Note: For slab reinforcing, see sheets 13/68 and 14/68

TRANSVERSE SECTION

Notes:

3 mm preformed bearing pad and 2 layers of polyethylene film shall be included with Item 511, Class S Concrete, Superstructure.

For additional notes and details, see Ohio Standard Drawing EXJ-2-81M, sheets 1 thru 3 of 3.

For details of sidewalk wearing surface and curb plate details see sheet 67/68.

For location of Sections E-E and F-F see sheets 13/68 and 14/68.

For parapet reinforcing see sheets 29/68, 30/68, 32/68 and 33/68.

For details of vandel protection fence see sheet 67/68.

All dimensions are in millimeters, unless noted otherwise.

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

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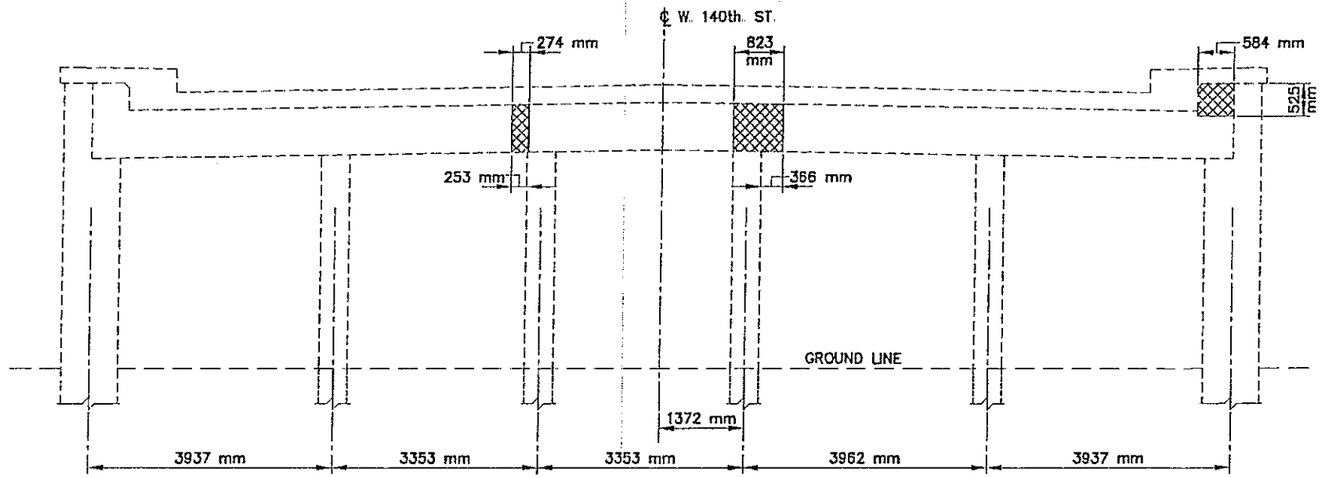
KRD		1833421	

ABUTMENT EXPANSION JOINT DETAILS

BRIDGE NO. 208

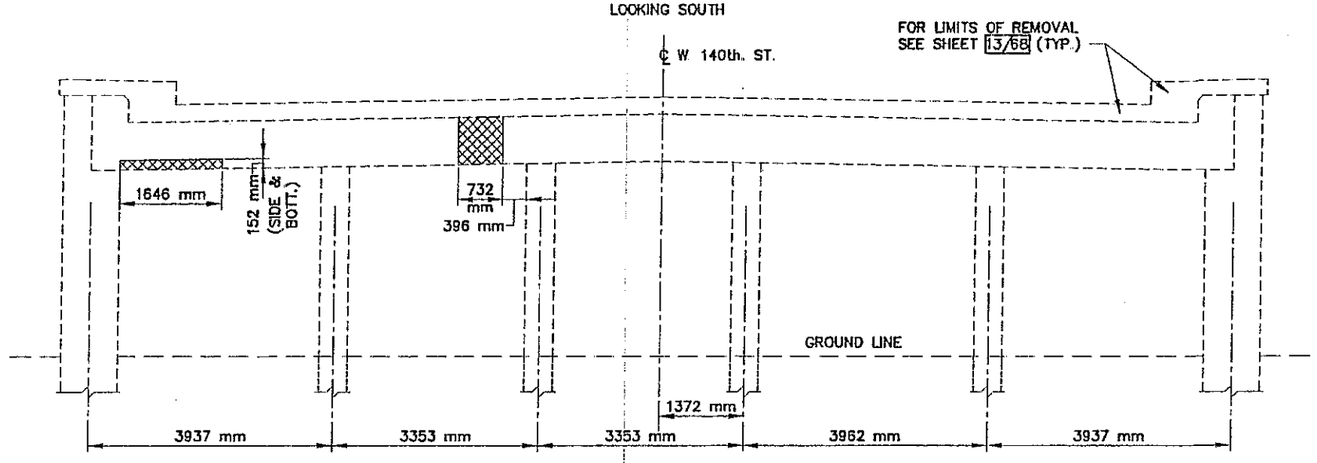
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET



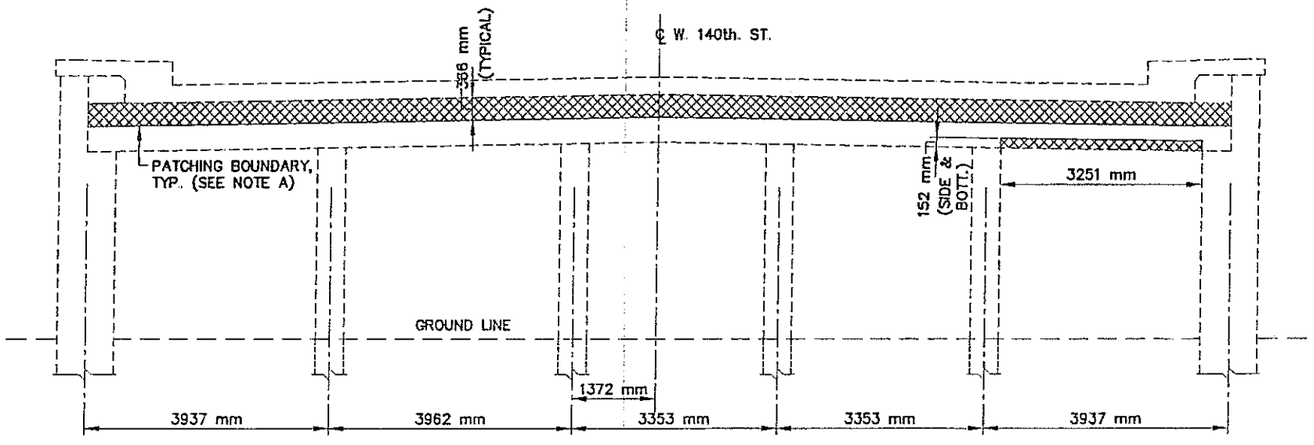
EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+864.669

LOOKING SOUTH



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+860.021

LOOKING SOUTH



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+860.021

LOOKING NORTH

Note A : Provide patches with straight boundaries to encompass the irregular deteriorated areas.

⊠ – Item 520, Pneumatically Placed Mortar, as per plan.

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200

DESIGN AGENT
JOHN E. FOSTER AND ASSOCIATES, INC.
8999 PAYNE AVENUE
CLEVELAND, OHIO 44114

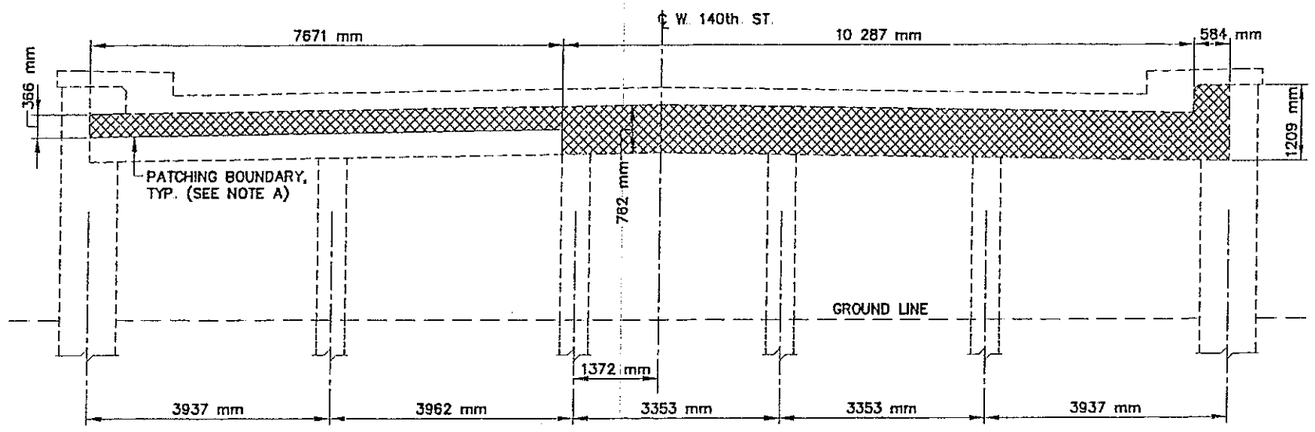
DESIGNED B.M.G. | DRAWN D.M.T. | REMOVED R.A.B. | DATE 9-96
CHECKED H.S.S. | REVISED | STRUCTURE FILE NUMBER 1833421

EXISTING REAR CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140TH. ST.

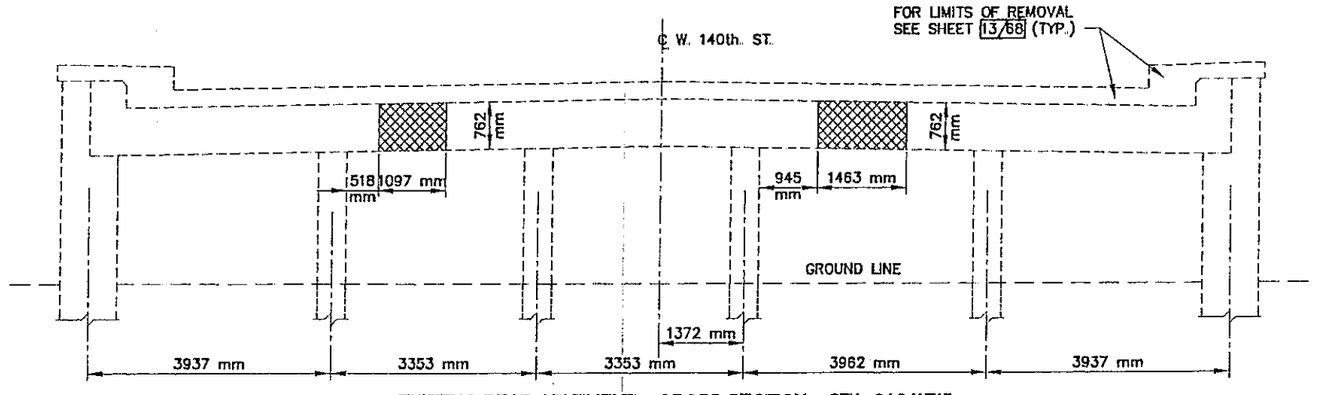
16 / 68

46 / 98



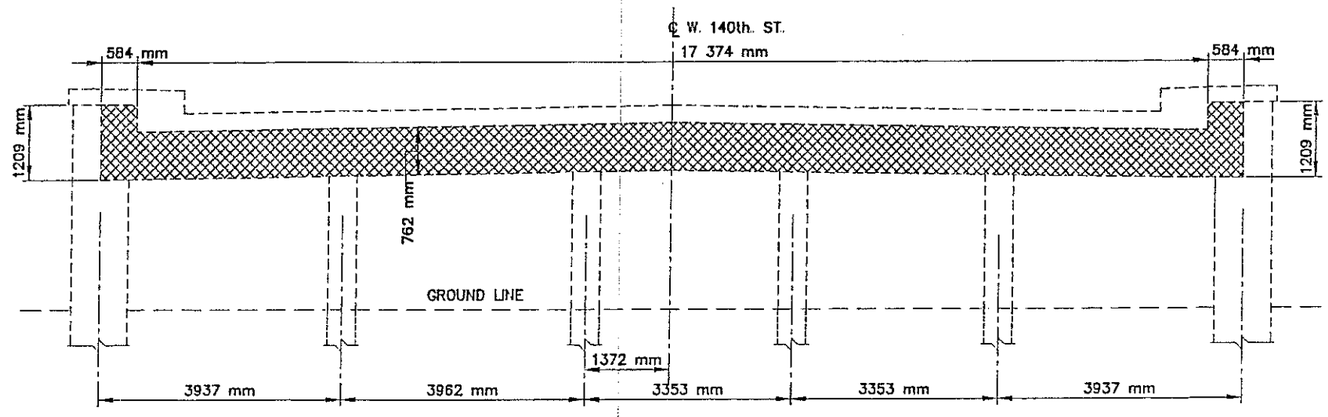
EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+850.877

LOOKING NORTH



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+841.715

LOOKING SOUTH



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+841.715

LOOKING NORTH

NOTE
FOR ADDITIONAL NOTES SEE SHEET 16/68

DESIGN AGENT
JOHN E. FOSTER AND ASSOCIATES, INC.
2999 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGNED B.M.G. | DRAWN D.M.T. | CHECKED H.S.S. | REVISED R.A.B. | DATE 9-96

STRUCTURE FILE NUMBER 1833421

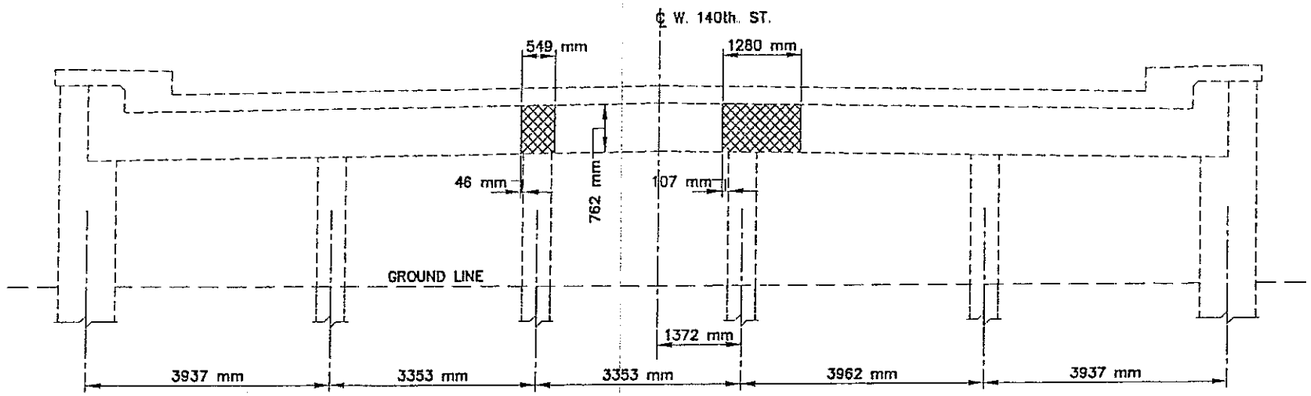
EXISTING REAR CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

17 / 68

47 / 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200



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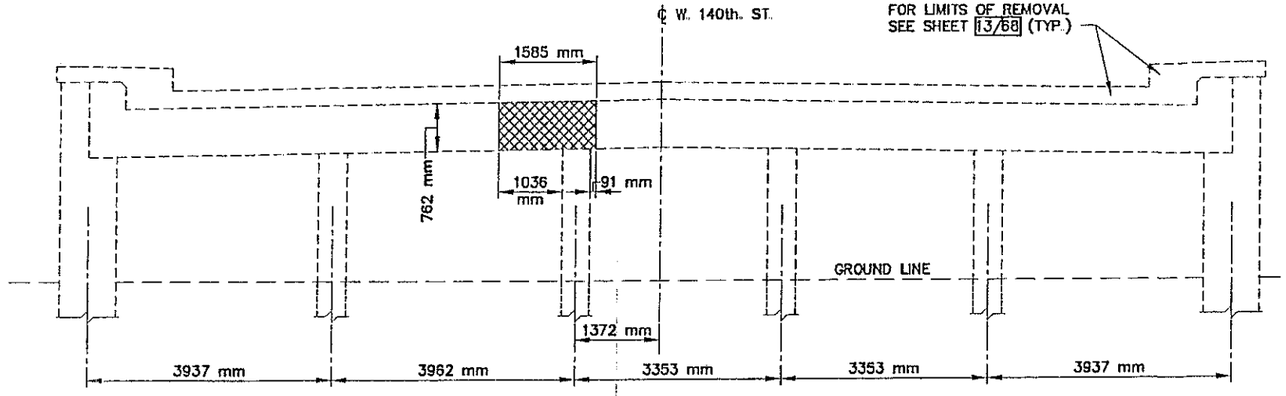
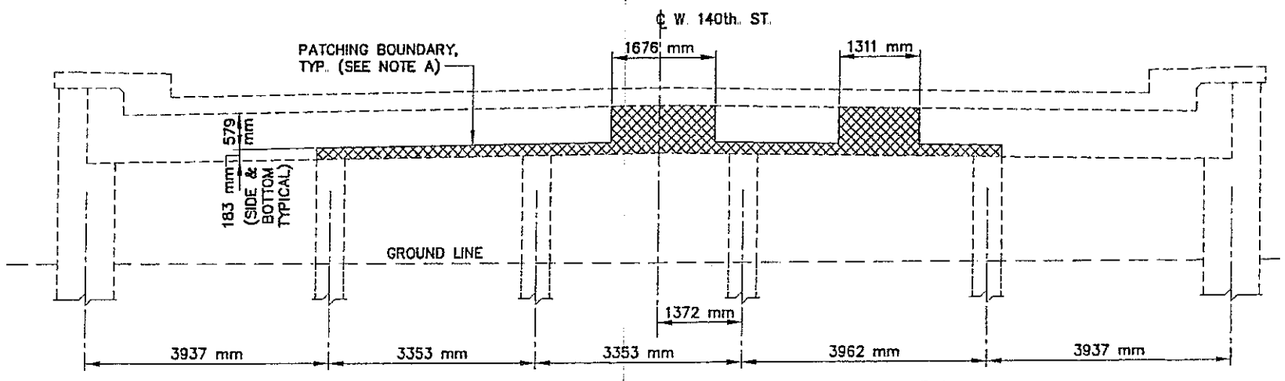
LOOKING SOUTH



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+837.152

LOOKING NORTH



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+832.589

LOOKING SOUTH

NOTE
FOR ADDITIONAL NOTES SEE SHEET 16/68

DESIGN AGENT
JOHN E. FOSTER AND ASSOCIATES, INC.
2999 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGNED B.M.G.
DRAWN D.M.T.
CHECKED H.S.S.
REVISED R.A.B.
DATE 9-96
STRUCTURE FILE NUMBER 1833421

EXISTING REAR CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

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CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200

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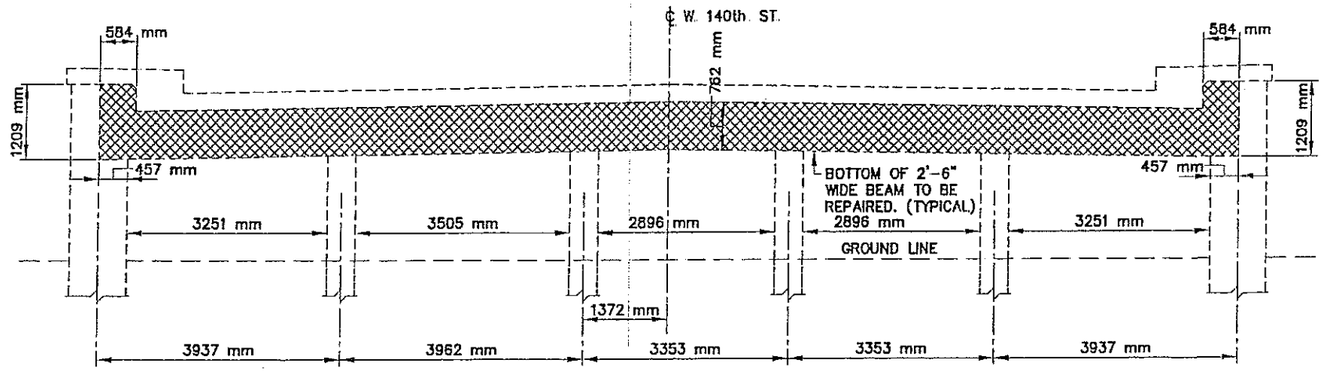
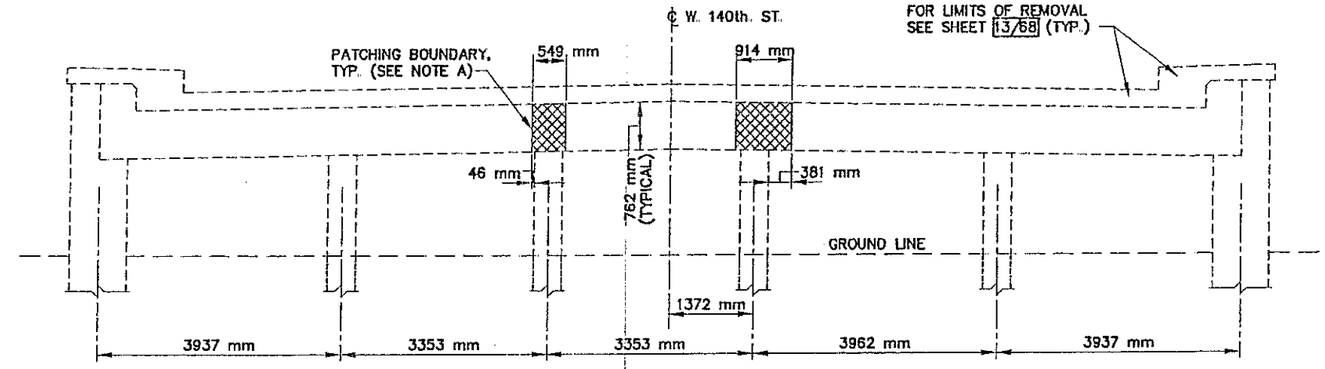


EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+832.589

LOOKING NORTH



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+828.017

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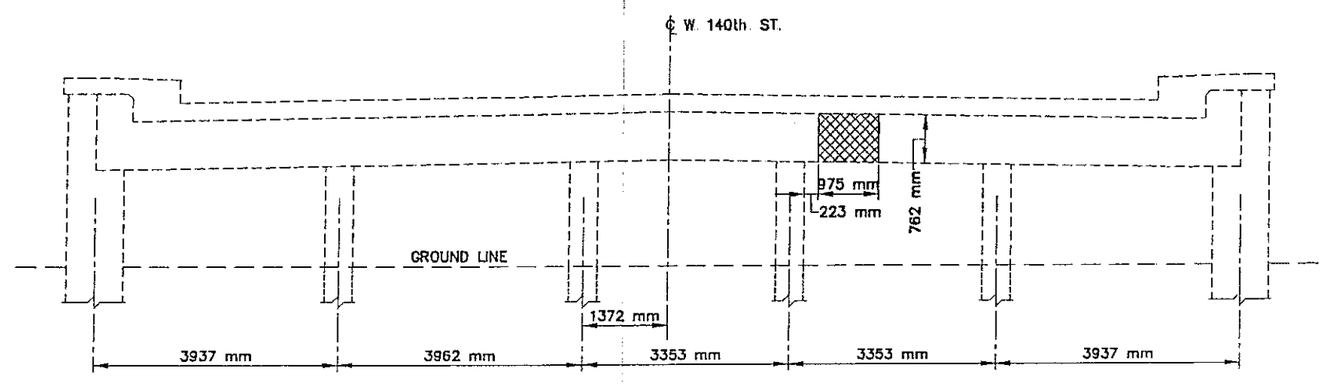


EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+828.017

LOOKING NORTH

NOTE
FOR ADDITIONAL NOTES SEE SHEET 16/68 .

DESIGN AGENCY
JOHN E. FOSTER AND ASSOCIATES, INC
2999 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
B.M.G.	D.M.T.	R.A.B.	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
H.S.S.		1833421	

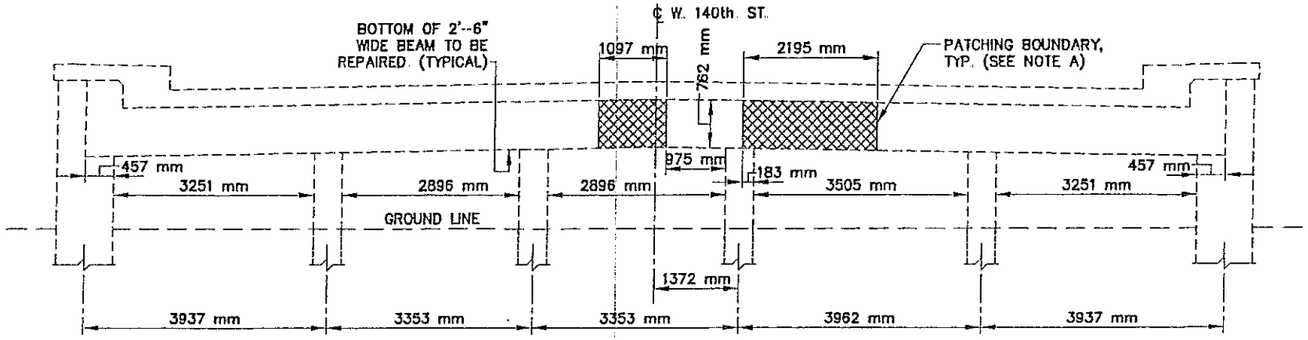
EXISTING REAR CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

19 / 68

49 / 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+823.445

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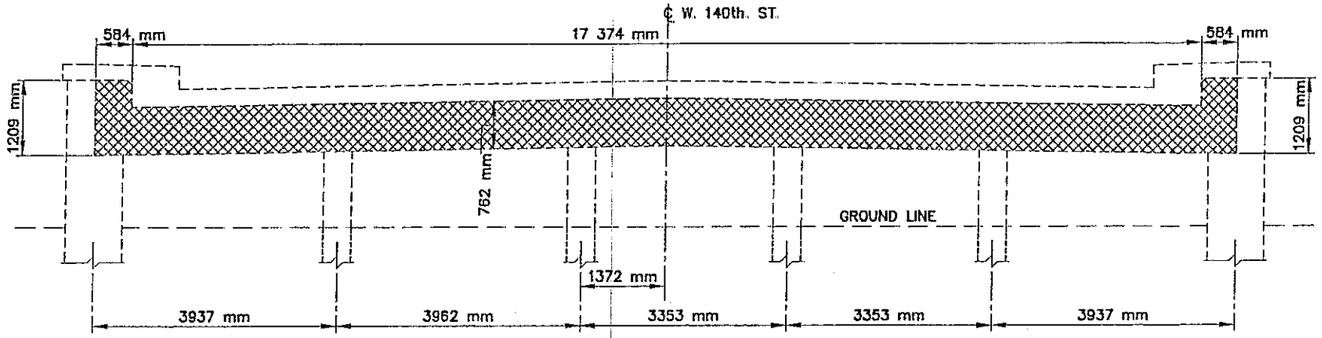

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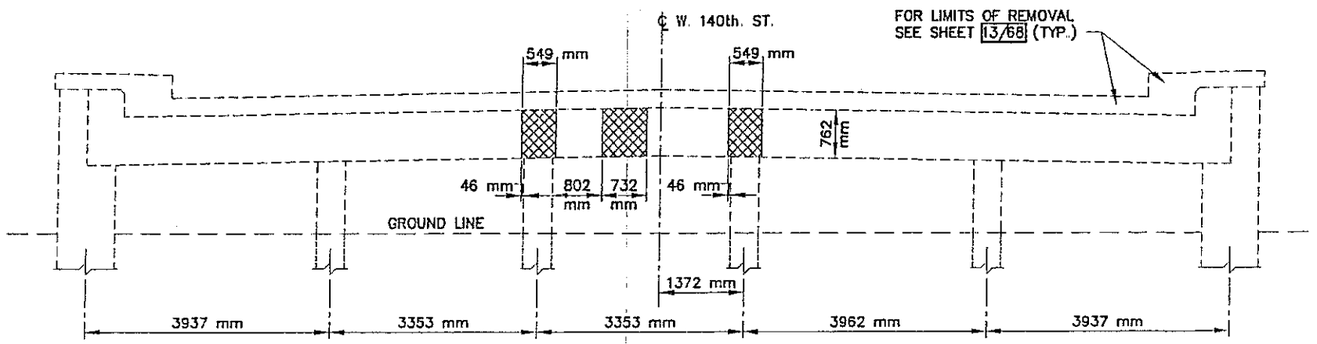

EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+818.873

LOOKING SOUTH

NOTE
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2000 PAYNE AVENUE
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REVISED
REVIEWED R.A.B.
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EXISTING REAR CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

20 / 68

CUYAHOGA COUNTY ENGINEER
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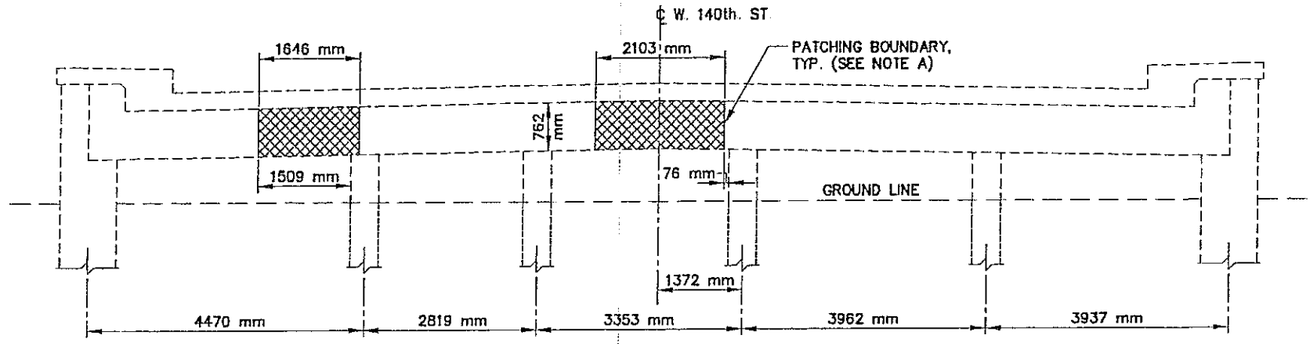
REPORT No 7224 AND B-No 200

50
98



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+814.283

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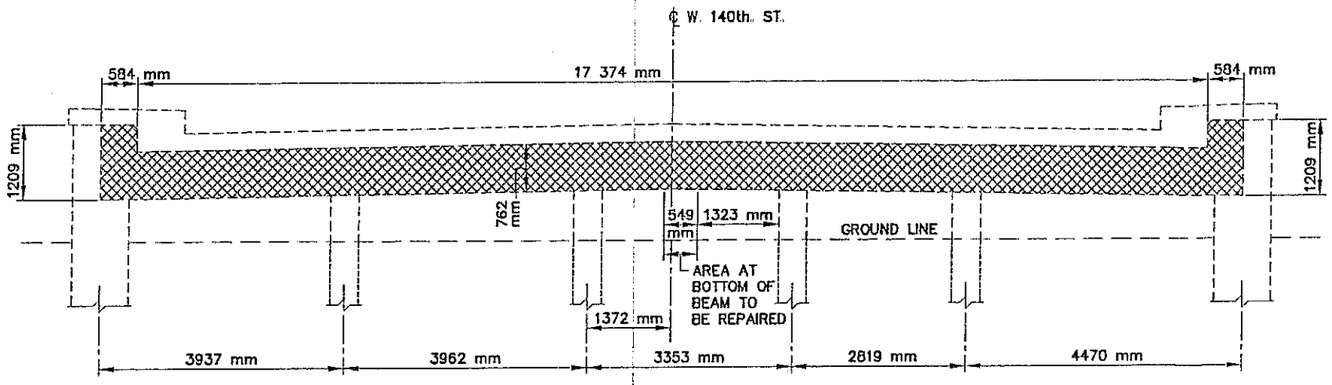

EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+814.283

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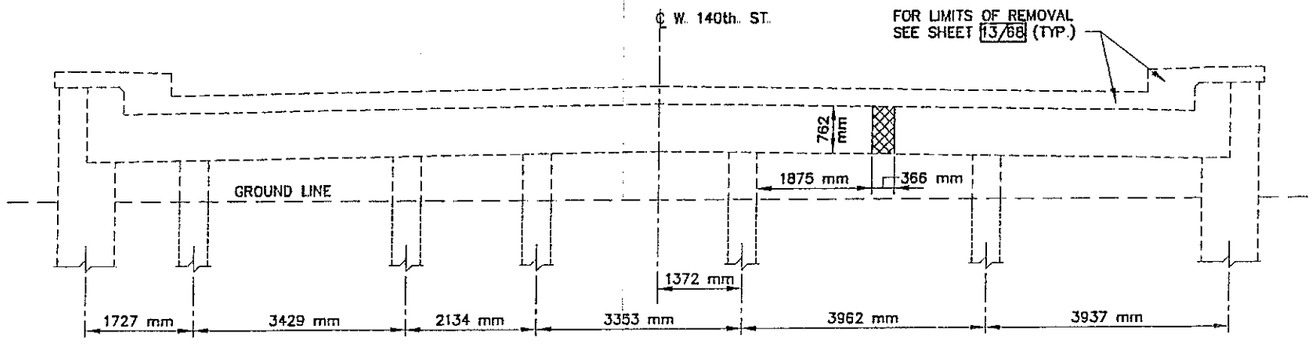

EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+809.806

LOOKING SOUTH

NOTE
FOR ADDITIONAL NOTES SEE SHEET 16/68

JOHN E. FOSTER AND ASSOCIATES, INC.
2099 PAYNE AVENUE
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EXISTING REAR CELLULAR ABUTMENT - CROSS SECTIONS

BRIDGE No. 208
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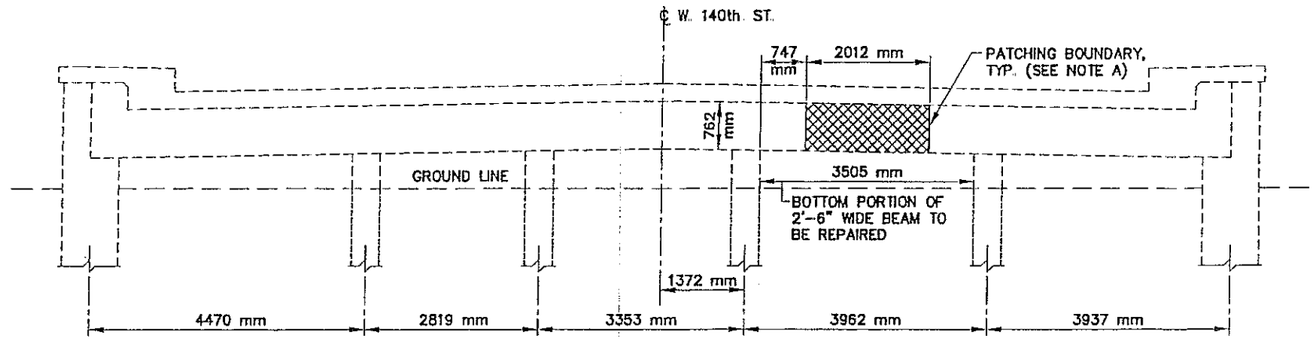
CUY-WEST 140th STREET

21 / 68

51 / 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No 200



EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+805.158

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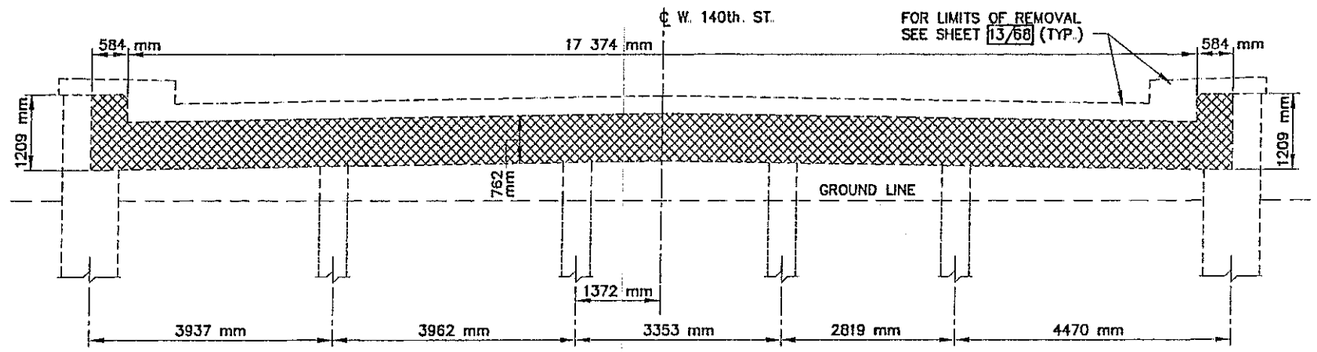

EXISTING REAR ABUTMENT - CROSS SECTION - STA. 0+805.158

LOOKING NORTH

NOTE
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DESIGNED B.M.G. | DRAWN D.M.T. | CHECKED H.S.S. | REVISED R.A.B. | DATE 9-96

STRUCTURE FILE NUMBER 1833421

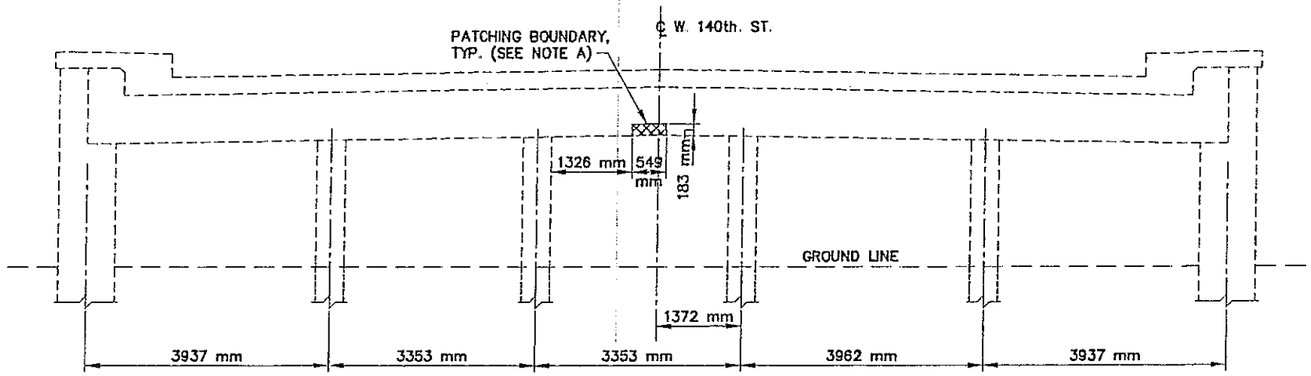
EXISTING REAR CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

22 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No 200

52
98



EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+135.331

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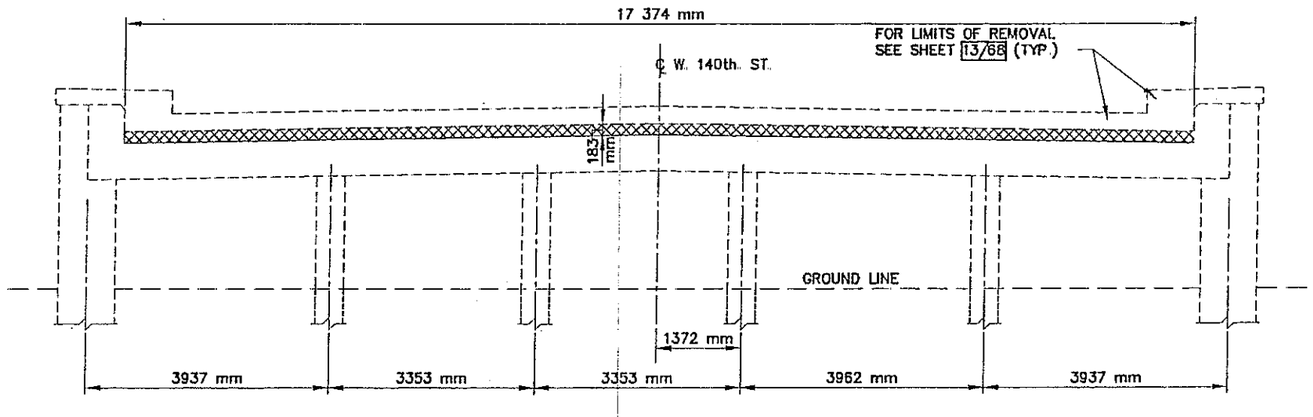

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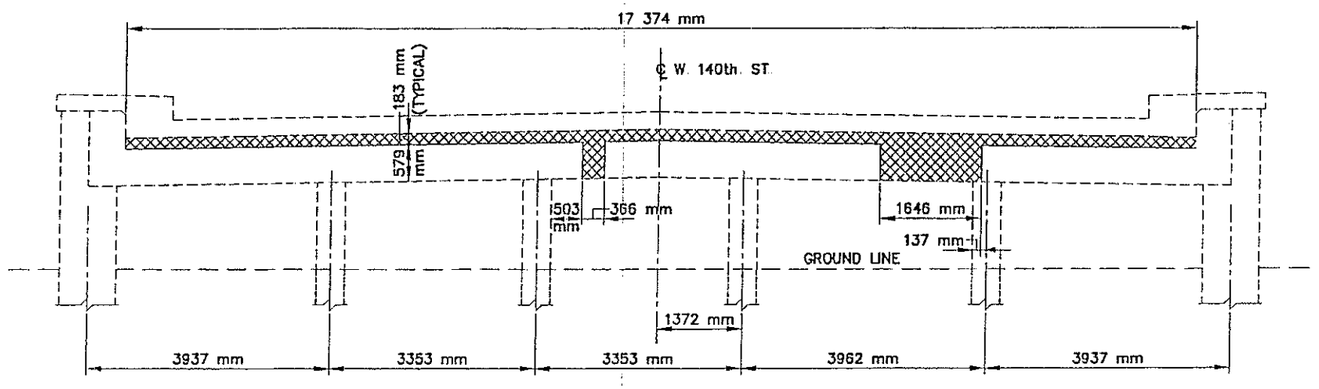

EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+149.123

LOOKING SOUTH

NOTE
FOR ADDITIONAL NOTES SEE SHEET 16/68 .

DESIGN AGENT
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3999 PAYNE AVENUE
CLEVELAND, OHIO 44114

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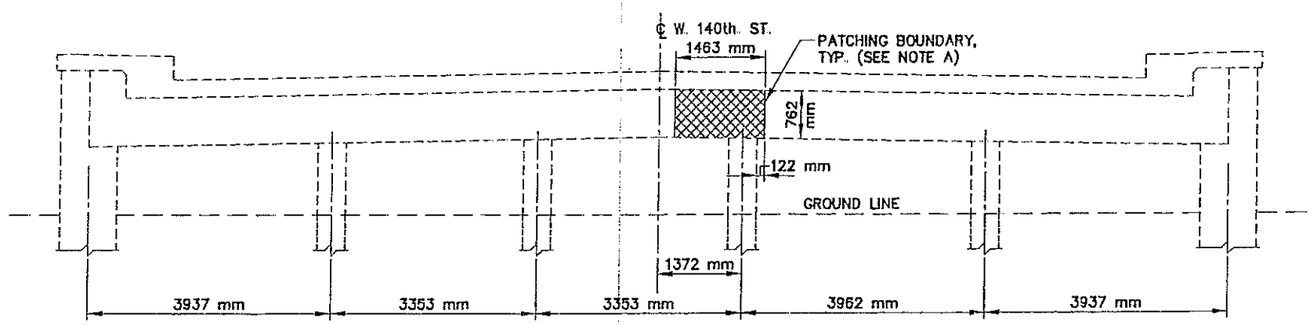
EXISTING FORWARD CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

23 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No 7224 AND B-No 200

53
98



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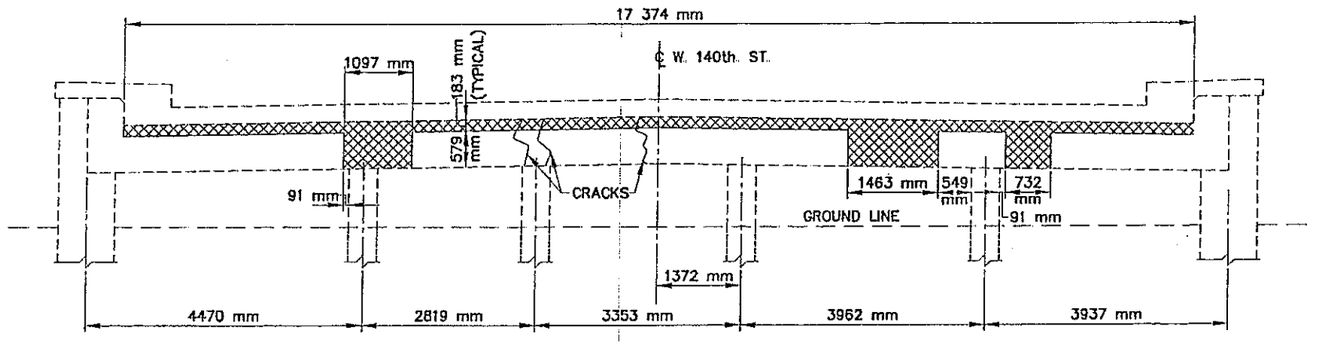

EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+158.267

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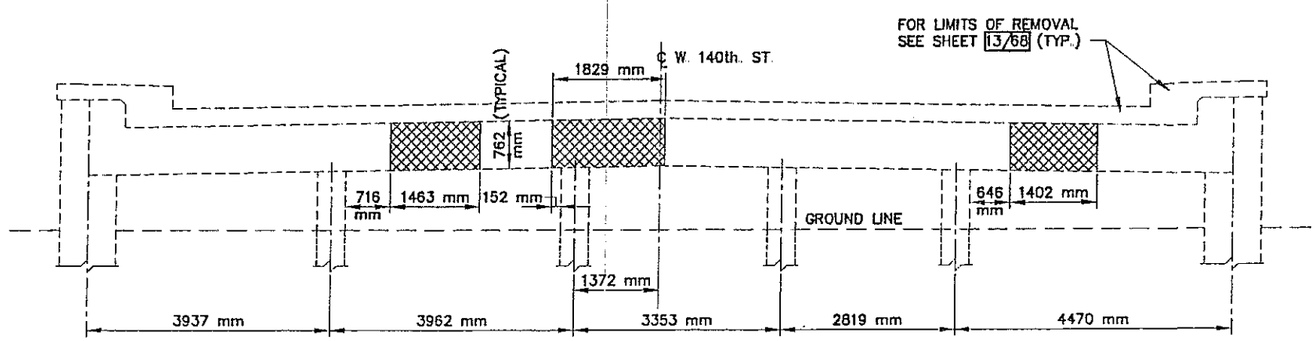

EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+158.267

LOOKING NORTH

NOTE
FOR ADDITIONAL NOTES SEE SHEET 16/68

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JOHN R. FOSTER AND ASSOCIATES, INC.
2000 PAYNE AVENUE
CLEVELAND, OHIO 44114

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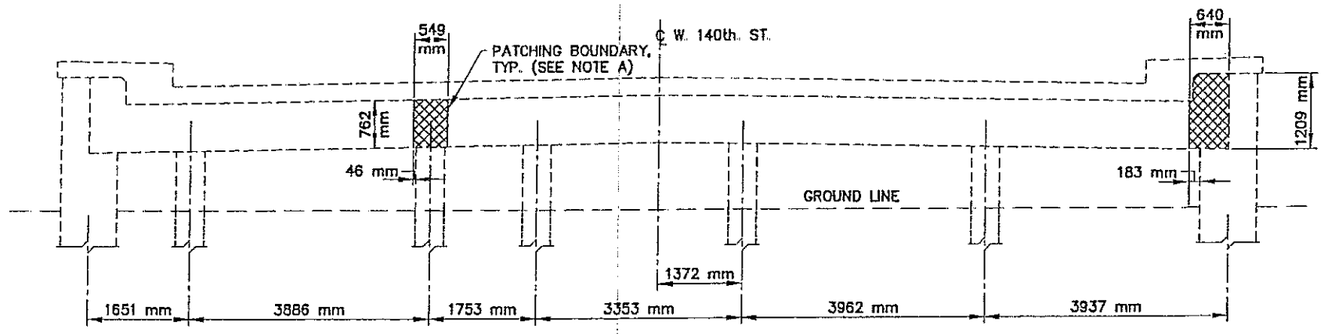
EXISTING FORWARD CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

24 / 68

54 / 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No 7224 AND B-No. 200



EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+162.839

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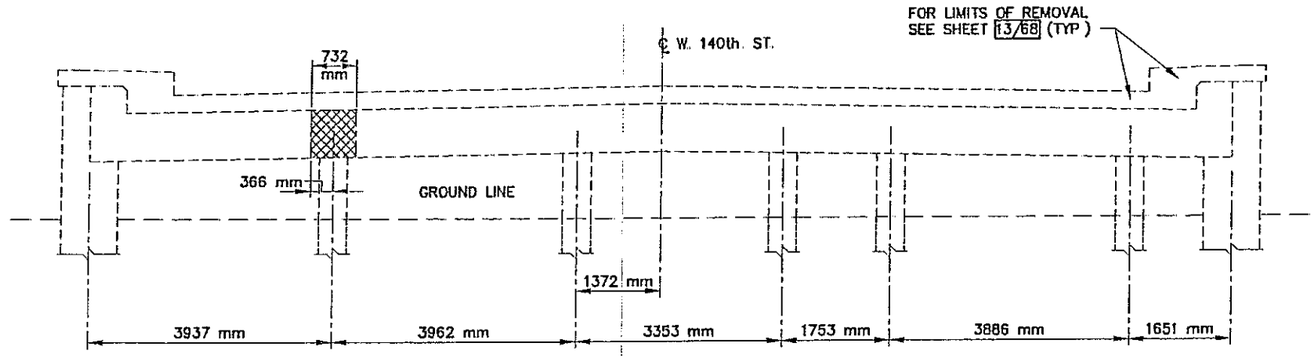
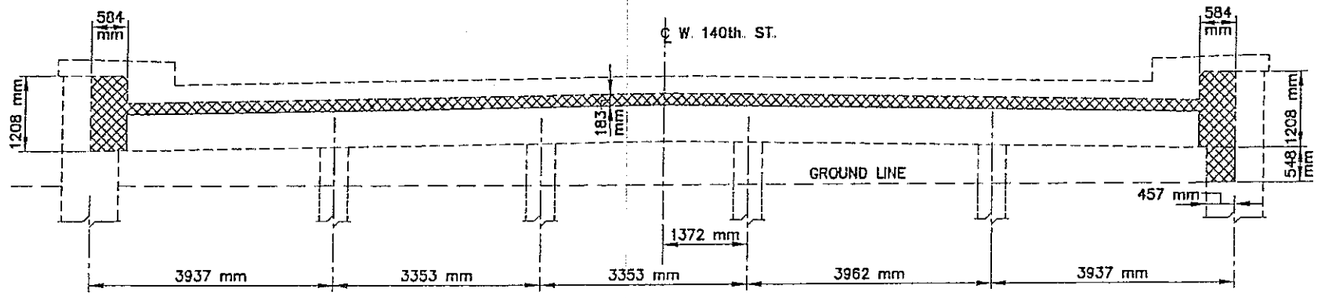


EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+162.839

LOOKING NORTH



EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+167.411

LOOKING SOUTH

NOTE
FOR ADDITIONAL NOTES SEE SHEET 16/68

DESIGN AGENCY
JOHN E. FOSTER AND ASSOCIATES, INC.
9999 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
B.M.G.	D.M.T.	R.A.B.	9/98
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H.S.S.		1833421	

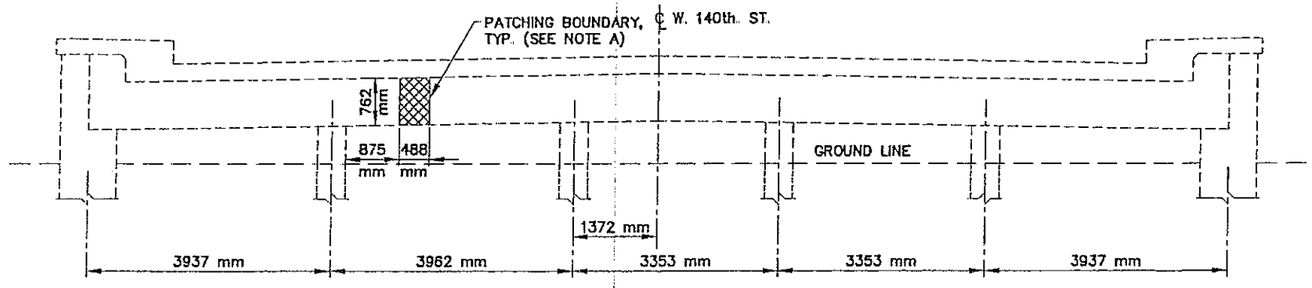
EXISTING FORWARD CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

25 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200

55
98



EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+167.411

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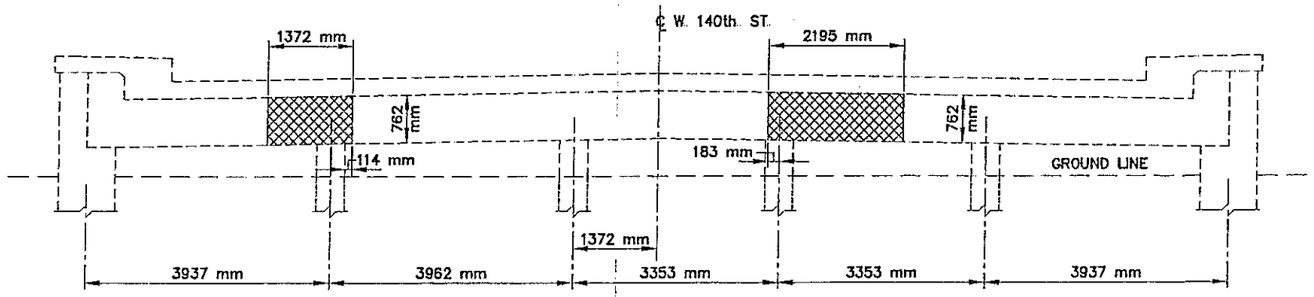

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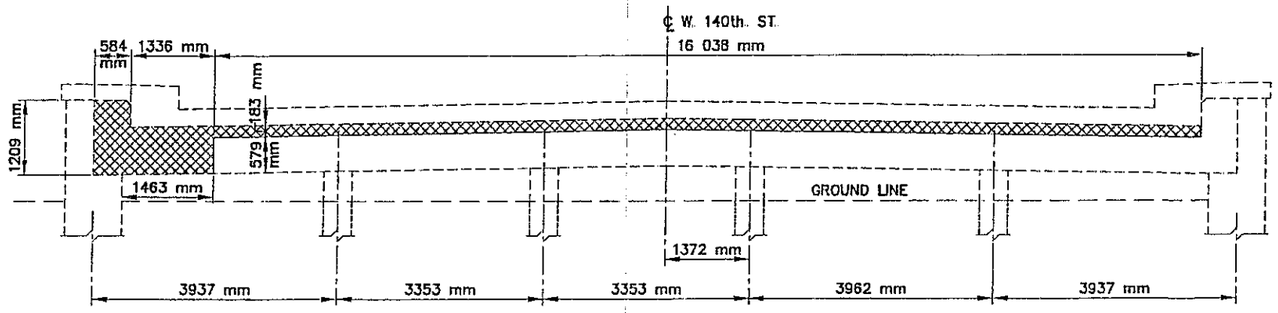
LOOKING NORTH



EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+176.555

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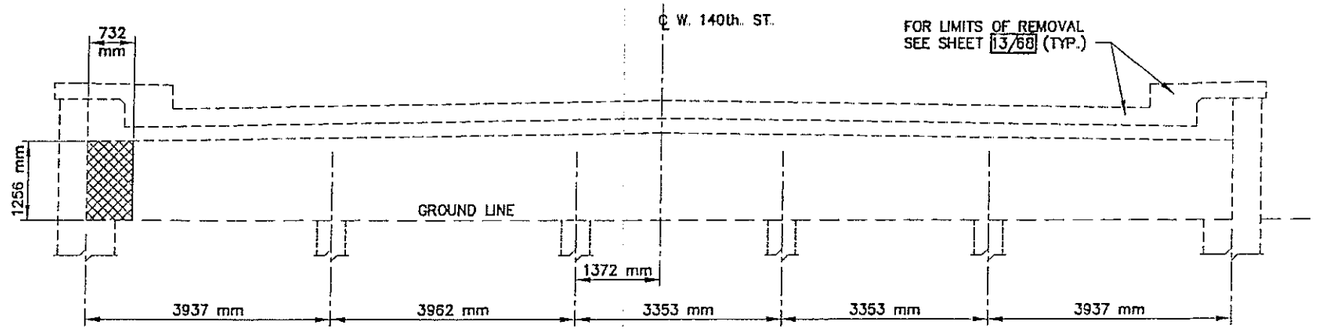

EXISTING FORWARD ABUTMENT - CROSS SECTION - STA. 1+185.699

LOOKING NORTH

NOTE
FOR ADDITIONAL NOTES SEE SHEET 16/68

DESIGN AGENCY
JOSEPH E. FOSTER AND ASSOCIATES, INC.
2249 PAYNE AVENUE
CLEVELAND, OHIO 44114

DATE 9-96
REVISED R.A.B.
STRUCTURE FILE NUMBER 1833421
DRAWN D.M.T.
REVISED
DESIGNED B.M.G.
CHECKED H.S.S.

EXISTING FORWARD CELLULAR ABUTMENT - CROSS SECTIONS
BRIDGE No. 208
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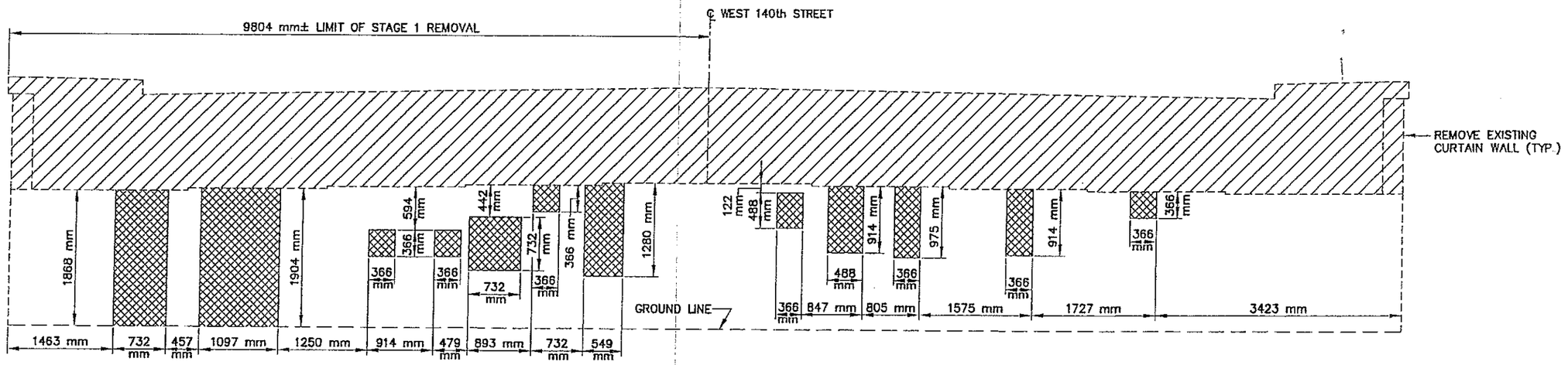
CUY-WEST 140th STREET

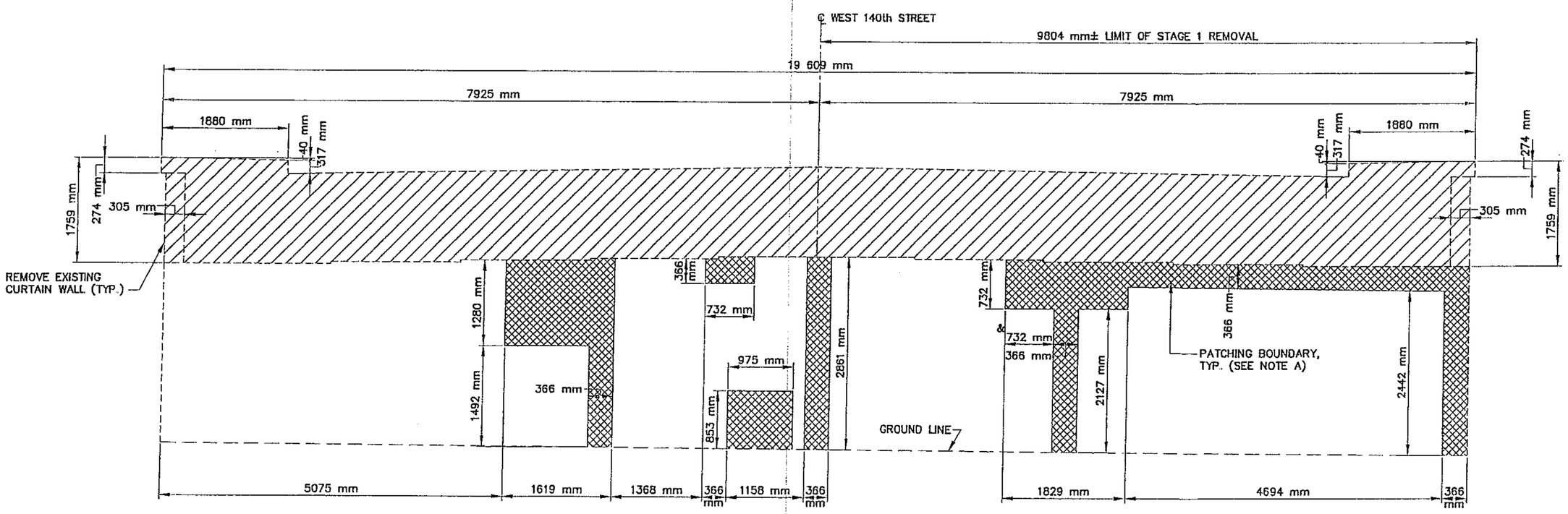
26 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200

56 / 98



EXISTING FORWARD ABUTMENT BREASTWALL ELEVATION



EXISTING REAR ABUTMENT BREASTWALL ELEVATION

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS.

NOTE B: STATIONS AND ELEVATIONS ARE GIVEN IN METERS UNLESS OTHERWISE NOTED.

▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR.

▨ – ITEM 202 PORTION OF STRUCTURE REMOVED, OVER 6 METER SPAN, AS PER PLAN.

ABBREVIATIONS

C.J.	=	CONSTRUCTION JOINT
ELEV.	=	ELEVATION
E.F.	=	EACH FACE
F.F.	=	FAR FACE
L	=	LENGTH
M.	=	MIDDLE
M.C.	=	MECHANICAL CONNECTOR
N.F.	=	NEAR FACE
SPA.	=	SPACES
TYP.	=	TYPICAL

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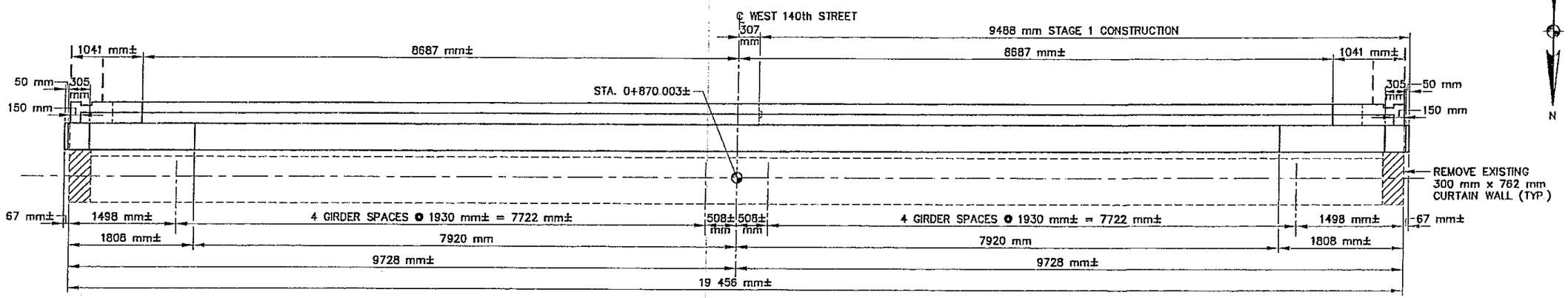
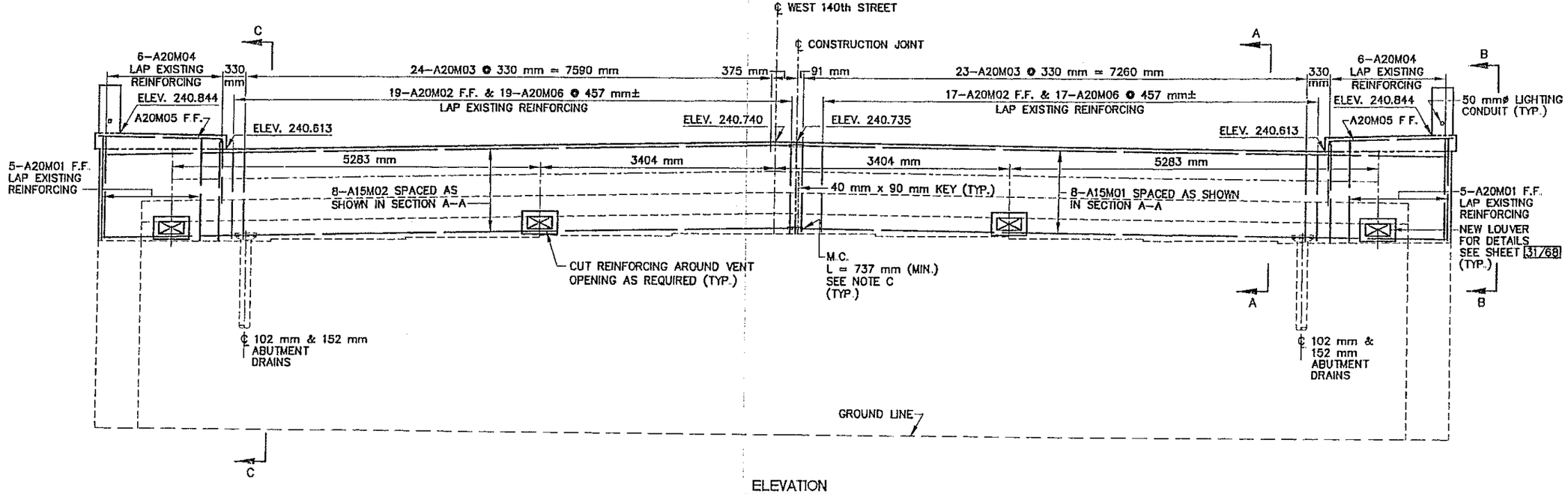
EXISTING ABUTMENTS - BREASTWALL ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET



PLAN



ELEVATION

NOTE A: STATIONS AND ELEVATIONS ARE GIVEN IN METERS UNLESS OTHERWISE NOTED.

NOTE B: BACKWALL ELEVATIONS ARE GIVEN TO THE TOP OF THE JOINT ARMOR.

NOTE C: MECHANICAL CONNECTOR: AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" SHOWN ON THE PLANS.

CONNECTORS AND DOWEL BARS 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 BAR EXTENSIONS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED IN THE BID PRICE FOR ITEM 511, Class C Concrete Abutment.

NOTE D: FOR SECTION A – A AND SECTION B – B SEE SHEET 31/68.

NOTE E: FOR SECTION C – C SEE SHEET 67/68.

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EXISTING REAR ABUTMENT PLAN AND ELEVATION
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

28 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
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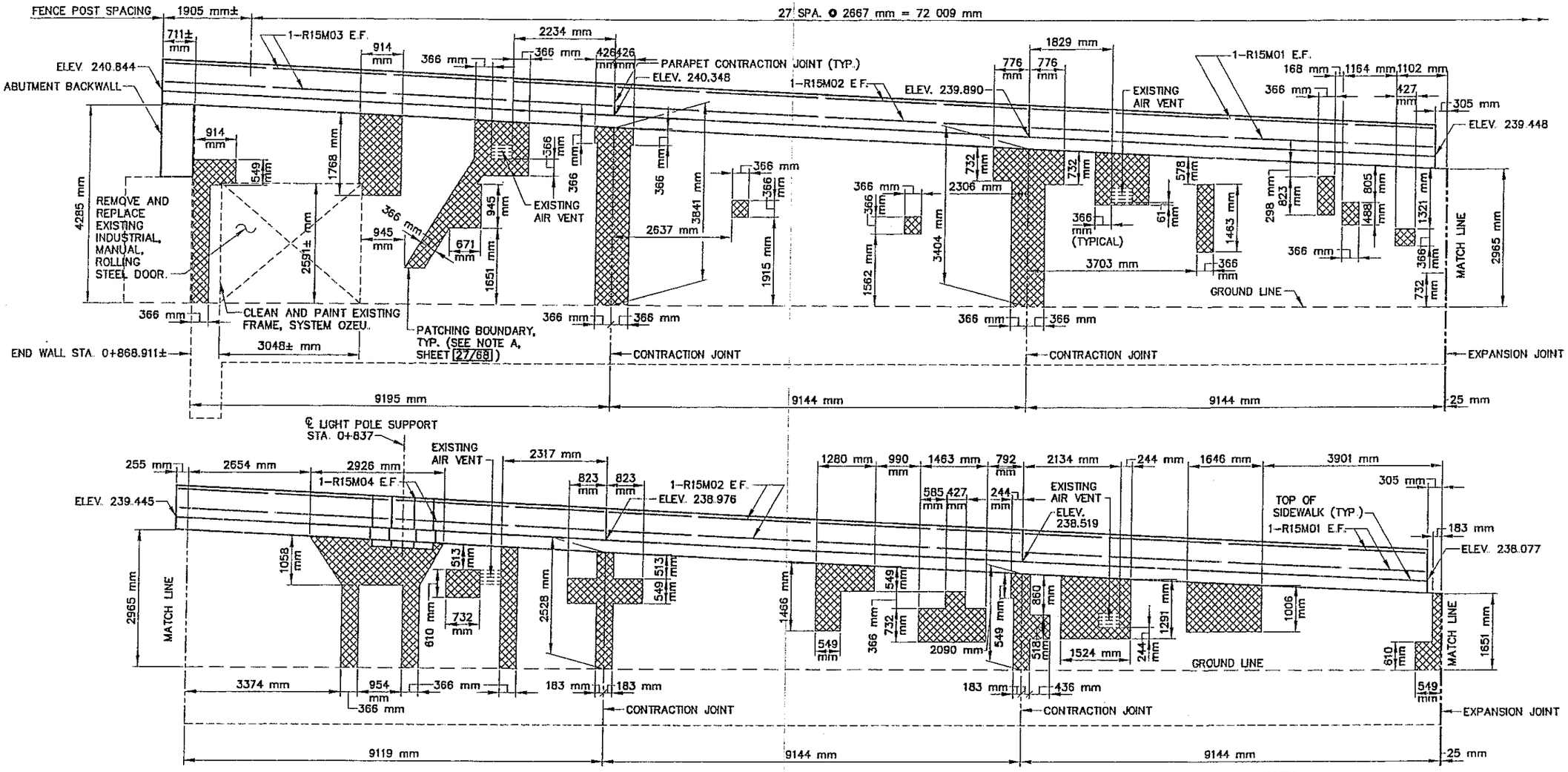
58 / 98



EXISTING REAR ABUTMENT - LEFT WINGWALL ELEVATIONS

NOTES

1. FOR RAILING REINFORCING SCHEDULE SEE SHEET 32/68.
2. FOR DETAIL OF CONCRETE PARAPET SEE THE TRANVERSE SECTION ON SHEET 15/68.
3. FOR NOTES AND DETAILS OF VANDAL PROTECTION FENCE SEE SHEET 67/68.
4. FOR PARAPET CONTRACTION JOINT DETAIL SEE SHEET 30/68.
5. NEW FORMED METAL STATIONARY LOUVERS SHALL BE 100 mm DEEP, 16 GAUGE GALVANIZED STEEL. LOUVERS SHALL BE FITTED WITH 13 mm MESH, 16 GAUGE GALVANIZED STEEL BIRD SCREENS. LOUVERS TO BE FASTENED TO THE CONCRETE WITH 4–6 mm EXPANSION BOLTS.

PAYMENT FOR REMOVALS, PAINT, DOORS, LOUVERS, SCREENS AND EXPANSION BOLTS SHALL BE INCLUDED WITH ITEM 863, STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION.

6. FOR DETAILS OF LIGHT POLE SUPPORT SEE SHEET 66/68.

▨ – ITEM 520, PNEUMATICALLY PLACED MORTAR.

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EXISTING REAR ABUTMENT - LEFT WINGWALL ELEVATION
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

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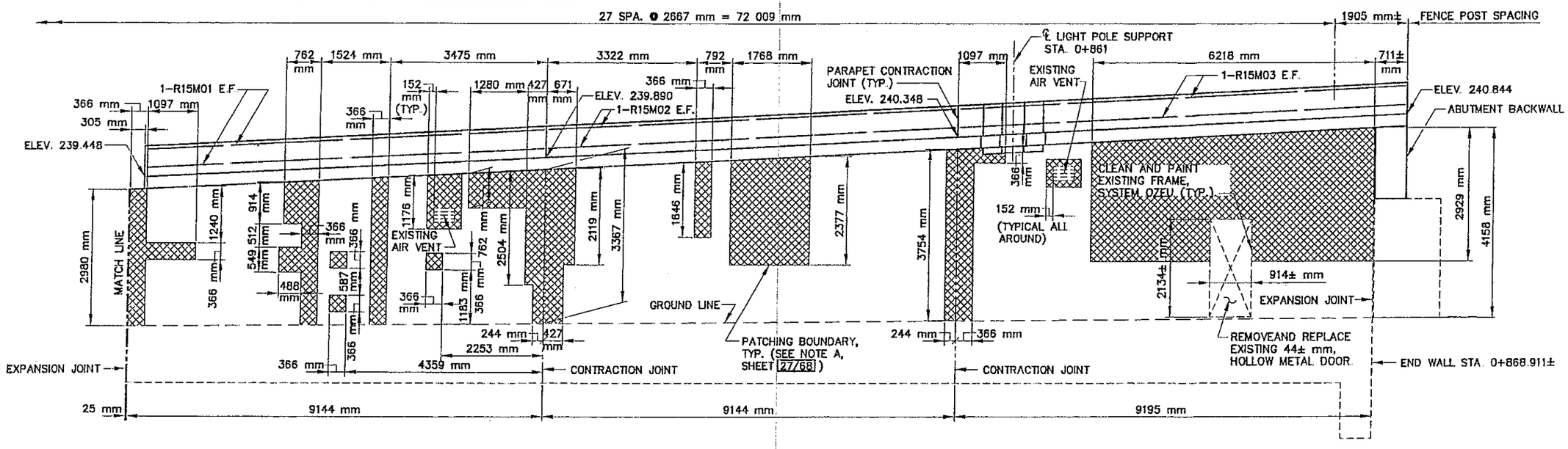
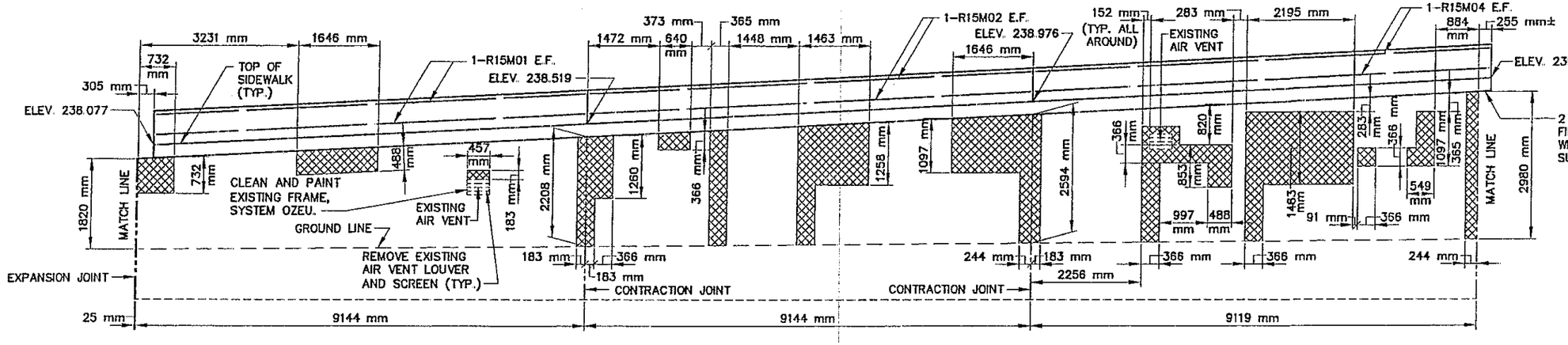
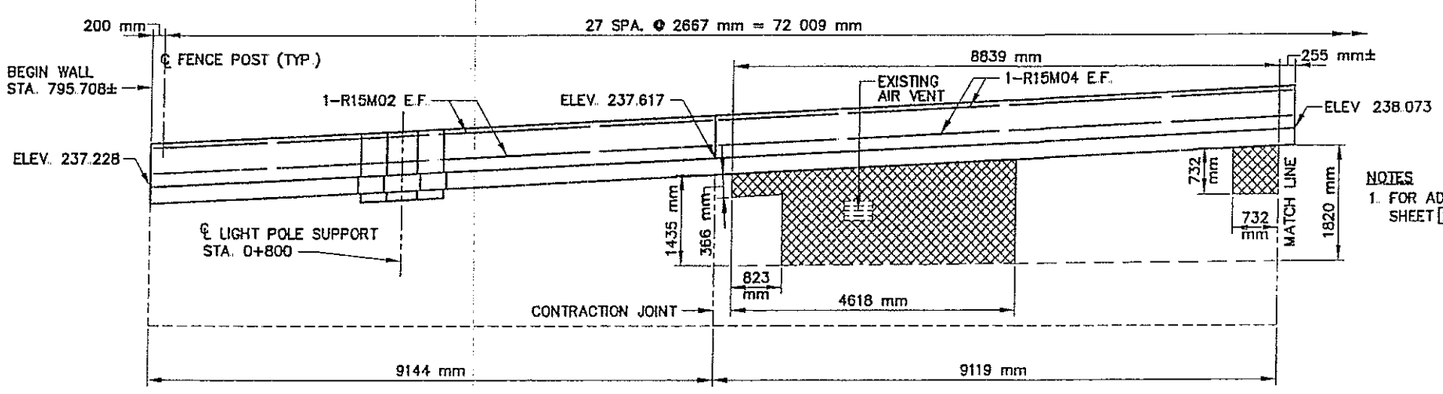
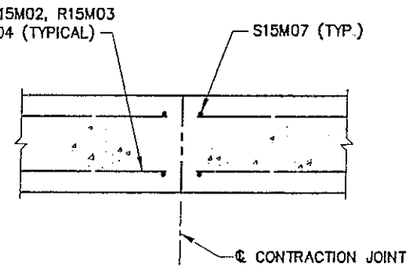
59 / 98









PARAPET CONTRACTION JOINT DETAIL

EXISTING REAR ABUTMENT - RIGHT WINGWALL ELEVATIONS

NOTES
1. FOR ADDITIONAL NOTES SEE SHEET 29/68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200

DESIGN AGENCY
JOSEPH E. POSTER AND ASSOCIATES, INC.
2990 PAYNE AVENUE
CLEVELAND, OHIO 44114

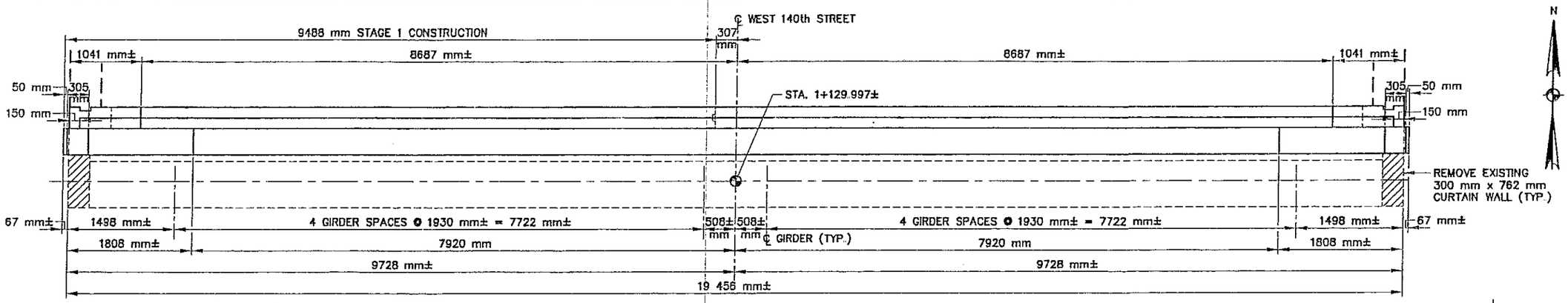
DATE 9-96
REVISED R.A.B.
DRAWN D.M.T.
REVISED
DESIGNED B.M.G.
CHECKED H.S.S.
STRUCTURE FILE NUMBER 1833421

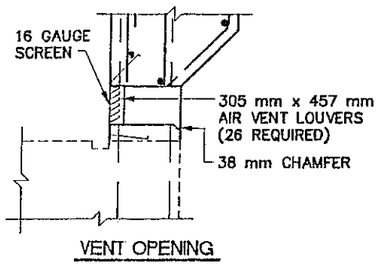
EXISTING REAR ABUTMENT - RIGHT WINGWALL ELEVATION
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

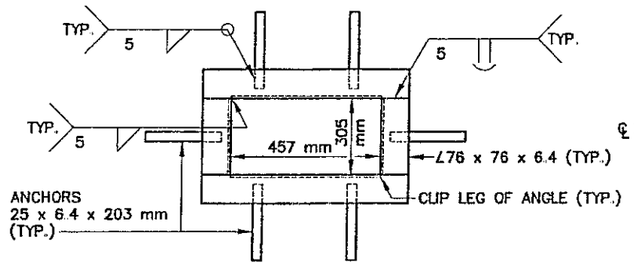
30 / 68

60 / 98





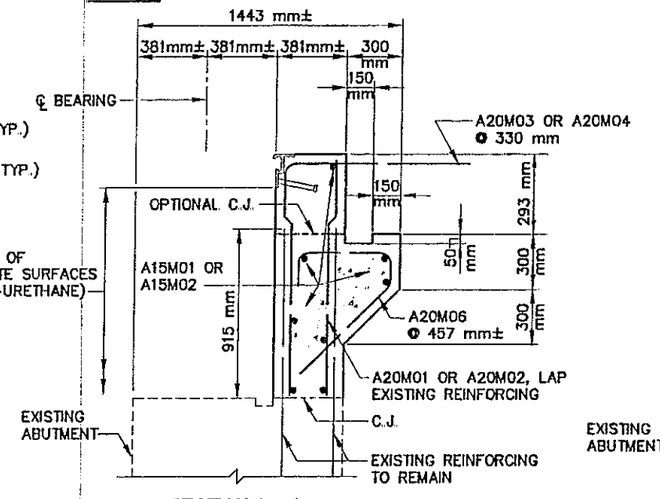
VENT OPENING



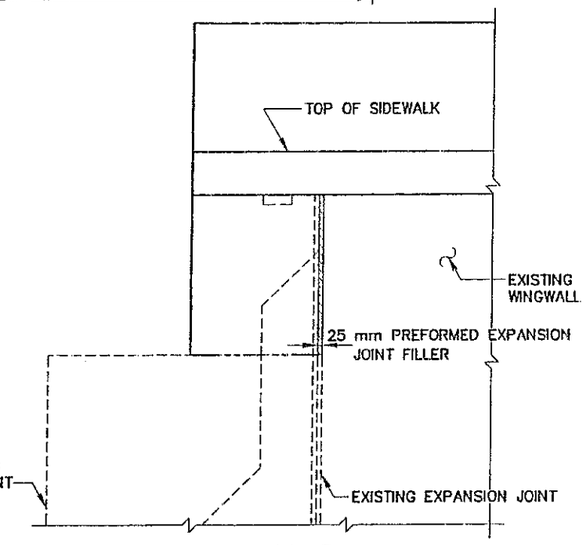
LOUVER FRAME ELEVATION
(8 REQUIRED)

NOTE:
LOUVER FRAMES SHALL BE PAINTED WITH SYSTEM IZEU. PAYMENT FOR THE LOUVER FRAME AND PAINTING SHALL BE INCLUDED WITH ITEM 863, STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION.

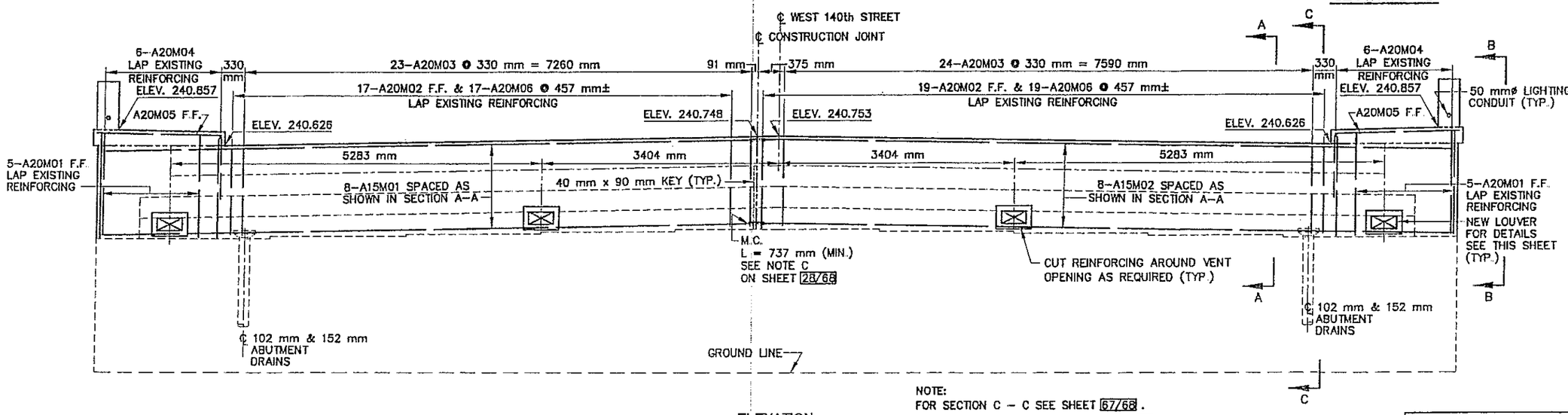
PLAN



SECTION A - A



SECTION B - B



ELEVATION

NOTE:
FOR SECTION C - C SEE SHEET 67/68.
FOR ADDITIONAL NOTES SEE SHEET 28/68.

DESIGN AGENCY
JOHN E. FOSTER AND ASSOCIATES, INC.
6699 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
B.M.G.	D.M.T.	H.S.S.	R.A.B.	9-96

REVISED
STRUCTURE FILE NUMBER 1833421

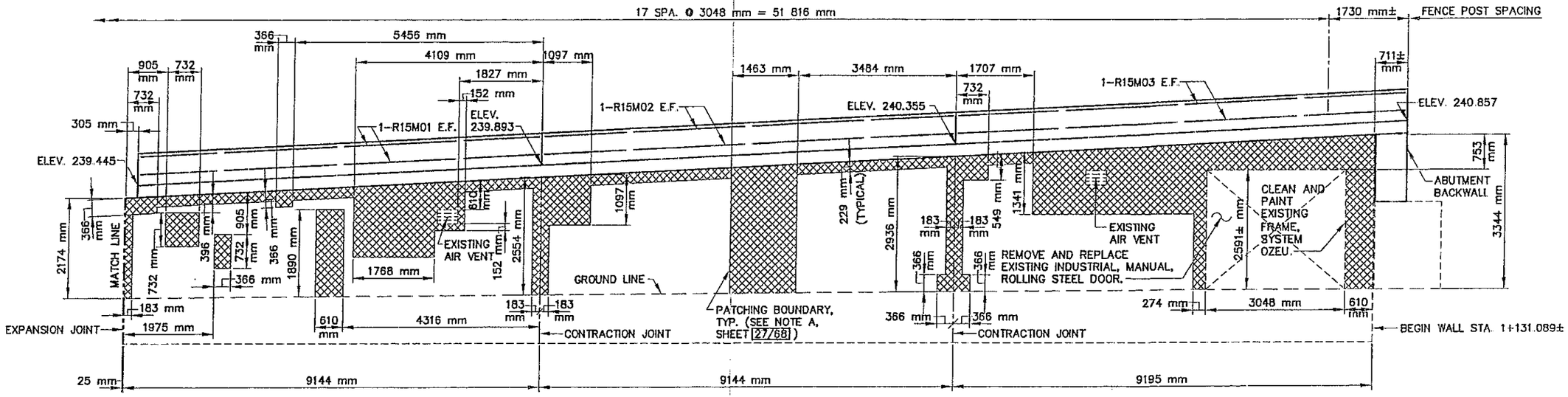
EXISTING FORWARD ABUTMENT PLAN AND ELEVATION
BRIDGE No. 208
OVER CONRAIL AND GCRTA

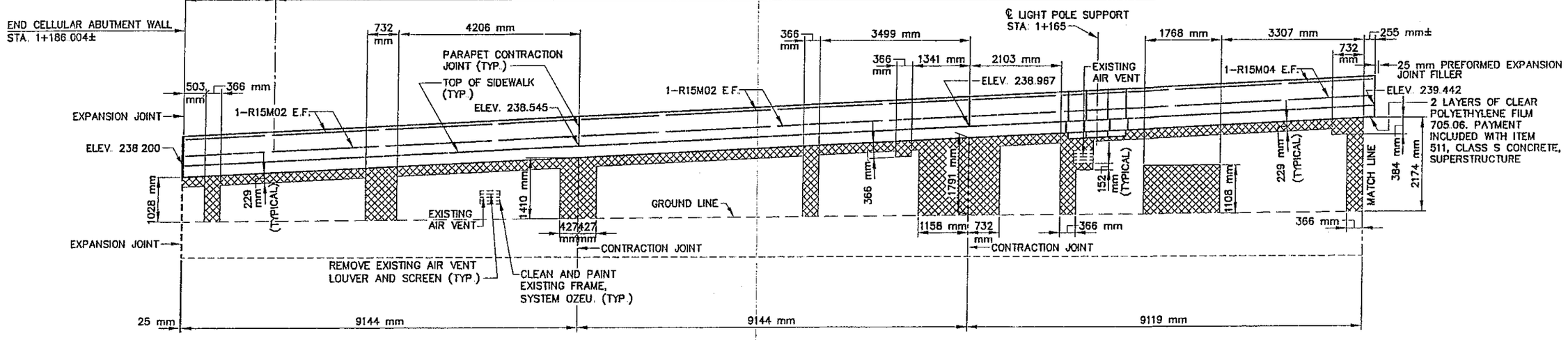
CUY-WEST 140th STREET

31 / 68

61 / 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No 7224 AND B-No 200





RAILING REINFORCING SCHEDULE			
MARK	NO.	LENGTH	TYPE
R15M01	24	8750 mm	STR
R15M02	48	9055 mm	STR
R15M03	16	9818 mm	STR
R15M04	24	9285 mm	STR

NOTES
1. FOR ADDITIONAL NOTES SEE SHEET 29/68.

EXISTING FORWARD ABUTMENT - LEFT WINGWALL ELEVATIONS

DESIGN AGENCY
JOHN E. FOSTER AND ASSOCIATES, INC.
2999 PAYNE AVENUE CLEVELAND, OHIO 44114

DATE 9-96
REVISED R.A.B.
DRAWN D.M.T.
REVISED
DESIGNED B.M.G.
CHECKED H.S.S.
STRUCTURE FILE NUMBER 1833421

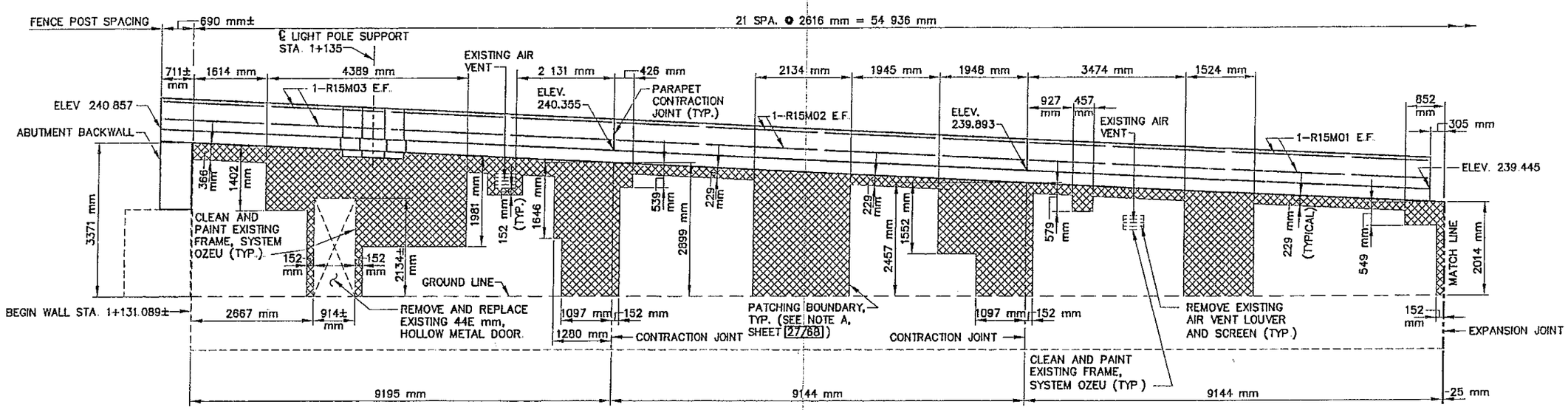
EXISTING FORWARD ABUTMENT - LEFT WINGWALL ELEVATION
BRIDGE No. 208
OVER CONRAIL AND GCRTA

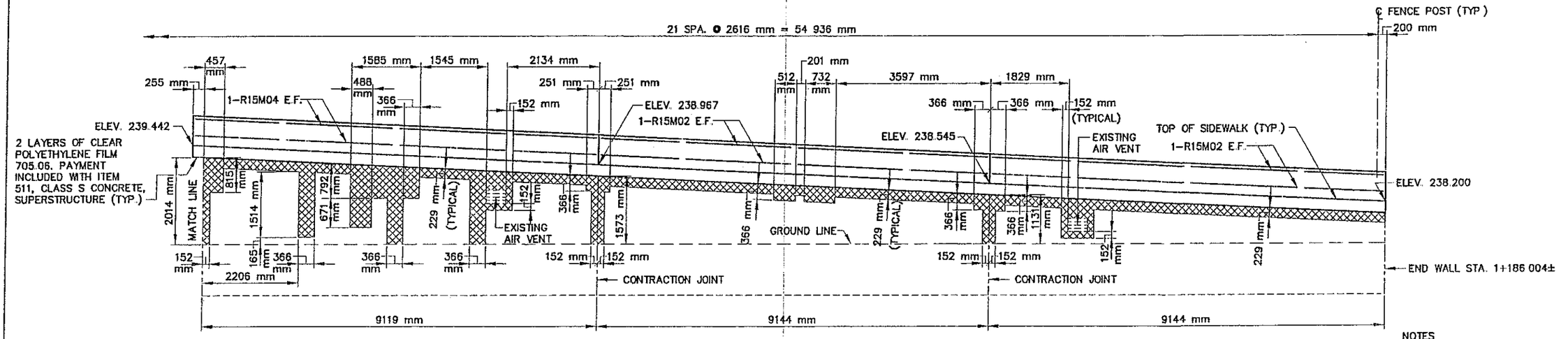
CUY-WEST 140th STREET

32 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND OHIO
REPORT No 7224 AND B-No 200

62 / 98





NOTES
1. FOR ADDITIONAL NOTES SEE SHEET 29/68.

EXISTING FORWARD ABUTMENT - RIGHT WINGWALL ELEVATIONS

DESIGN AGENCY
JOHN E. FOSTER AND ASSOCIATES, INC.
2900 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGNED B.M.G.
DRAWN D.M.T.
CHECKED H.S.S.
REVIEWED R.A.B.
REVISED
DATE 9-96
STRUCTURE FILE NUMBER 1833421

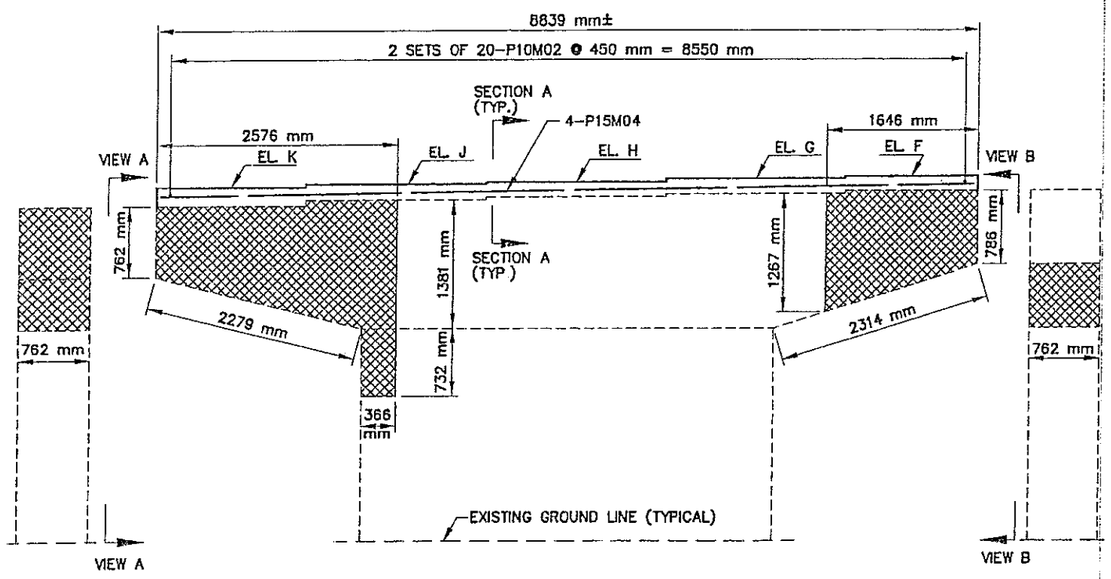
EXISTING FORWARD ABUTMENT - RIGHT WINGWALL ELEVATION
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

33 / 68

63 / 98

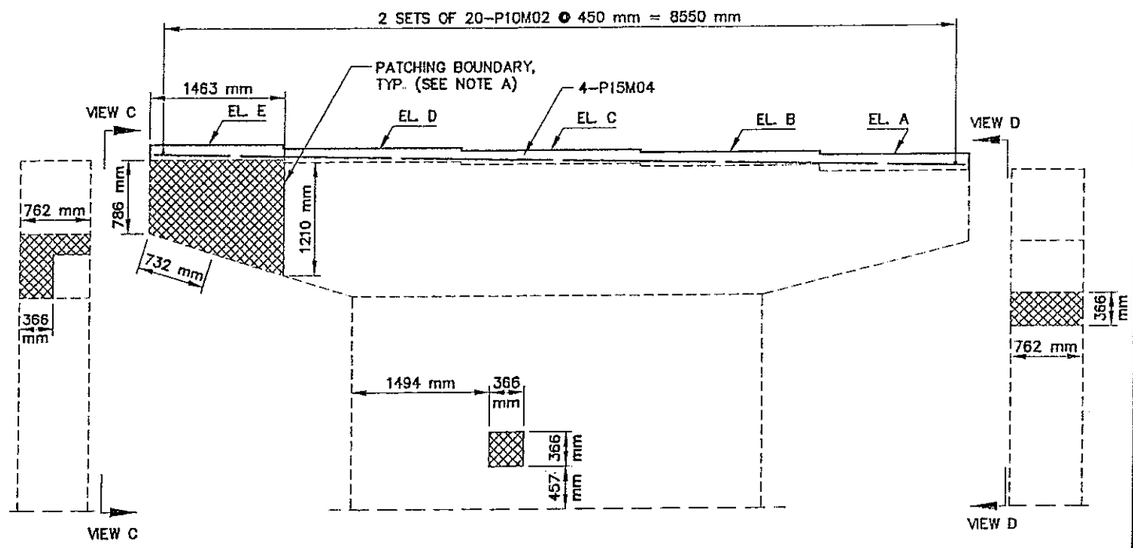
CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200



VIEW A - A

NORTH ELEVATION
LOOKING SOUTH

VIEW B - B



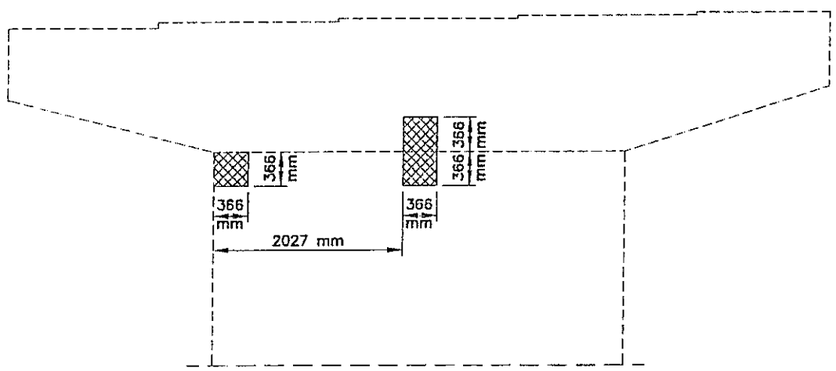
VIEW C - C

NORTH ELEVATION
LOOKING SOUTH

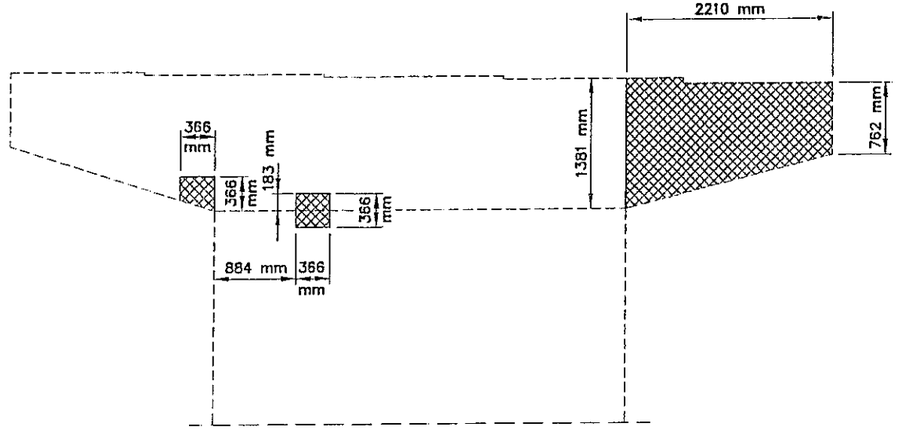
VIEW D - D

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ - ITEM 520 PNEUMATICALLY PLACED MORTAR



SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

NOTE:
FOR ELEVATIONS SEE SHEET 45/68
FOR SECTION A-A SEE SHEET 45/68

EXISTING PIER No. 1 ELEVATIONS

DESIGN AGENCY
JOHN E. FOSTER AND ASSOCIATES, INC.
2949 FAIRMONT AVENUE
CUYAHOGA FALLS, OHIO 44221

DESIGNED B.M.G. | DRAWN D.M.T. | CHECKED H.S.S. | REVISED R.A.B. | DATE 9-96

STRUCTURE FILE NUMBER 1833421

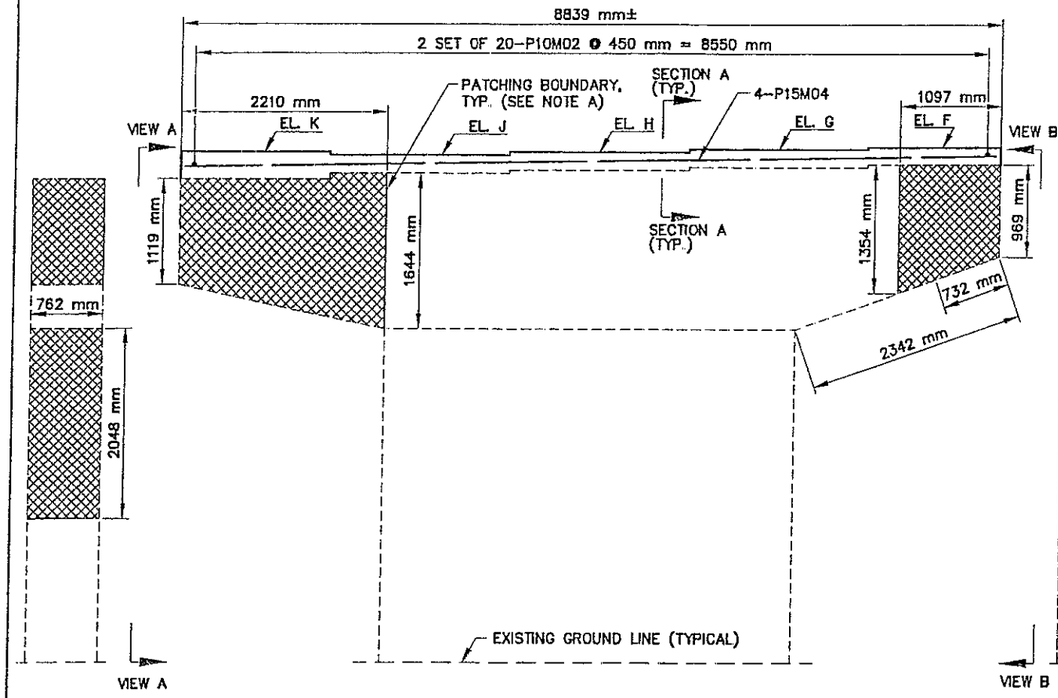
EXISTING PIER 1 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

34 / 68

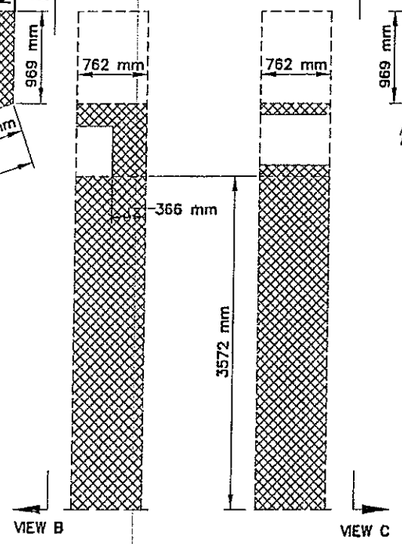
64 / 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No 7224 AND B-No 200



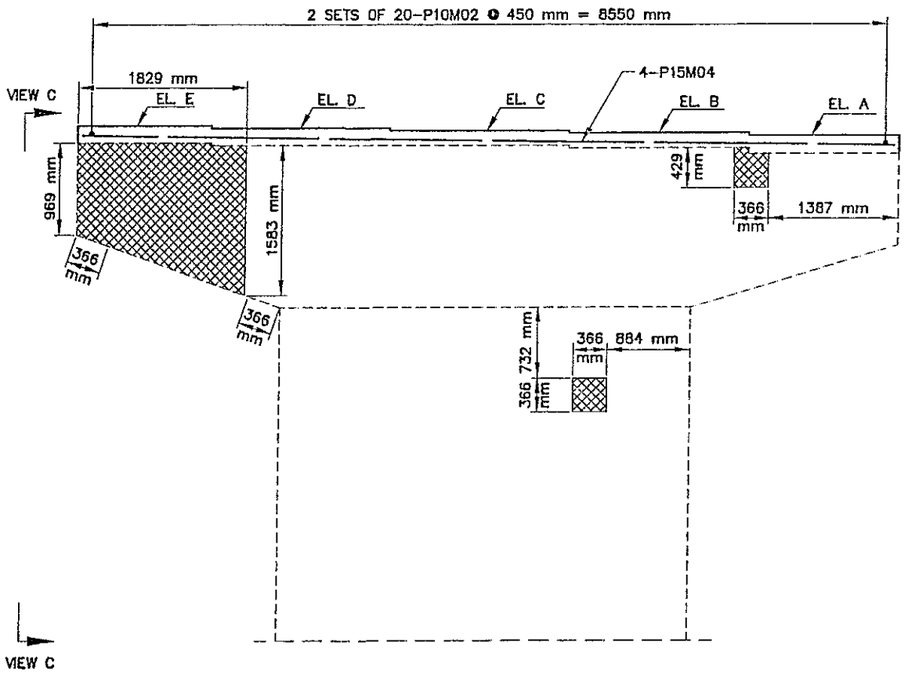
VIEW A - A

NORTH ELEVATION
LOOKING SOUTH



VIEW B - B

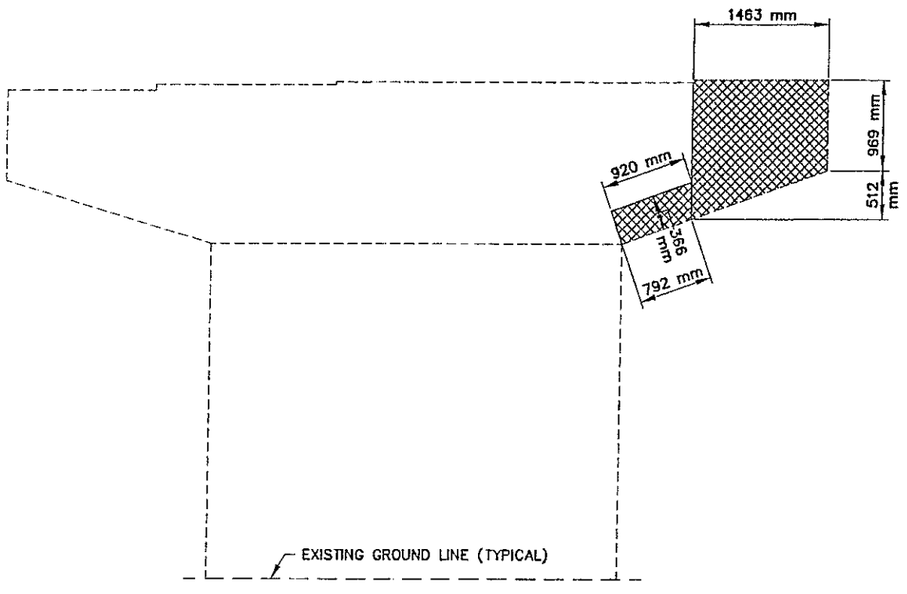
VIEW C - C



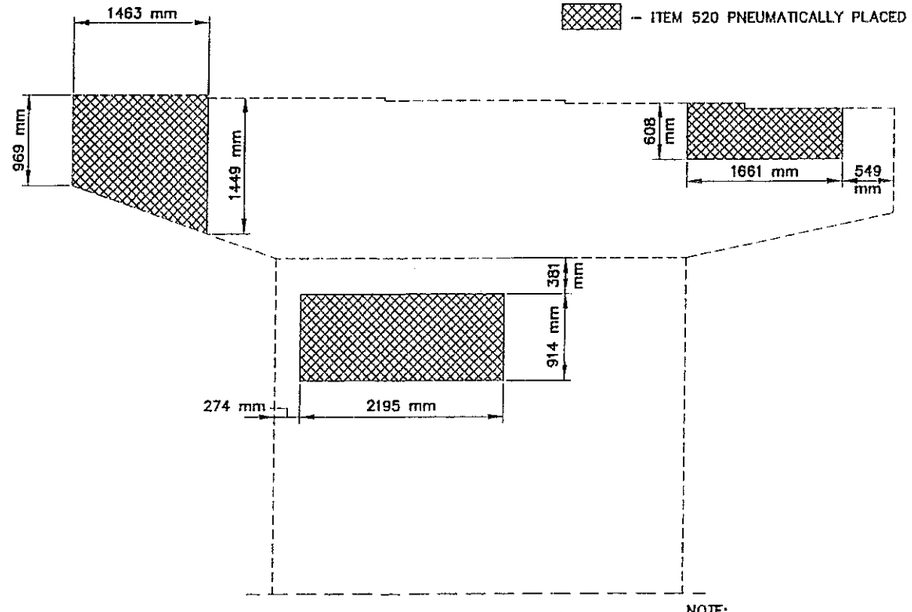
NORTH ELEVATION
LOOKING SOUTH

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR



SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

NOTE:
FOR ADDITIONAL NOTES SEE SHEET 34/68

EXISTING PIER No. 2 ELEVATIONS

JOHN E. FOSTER AND ASSOCIATES, INC.
DESIGN AGENCY
3999 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGNED B.M.G.
DRAWN D.M.T.
CHECKED H.S.S.
REVISED
REVISED R.A.B.
DATE 9-96
STRUCTURE FILE NUMBER 1833421

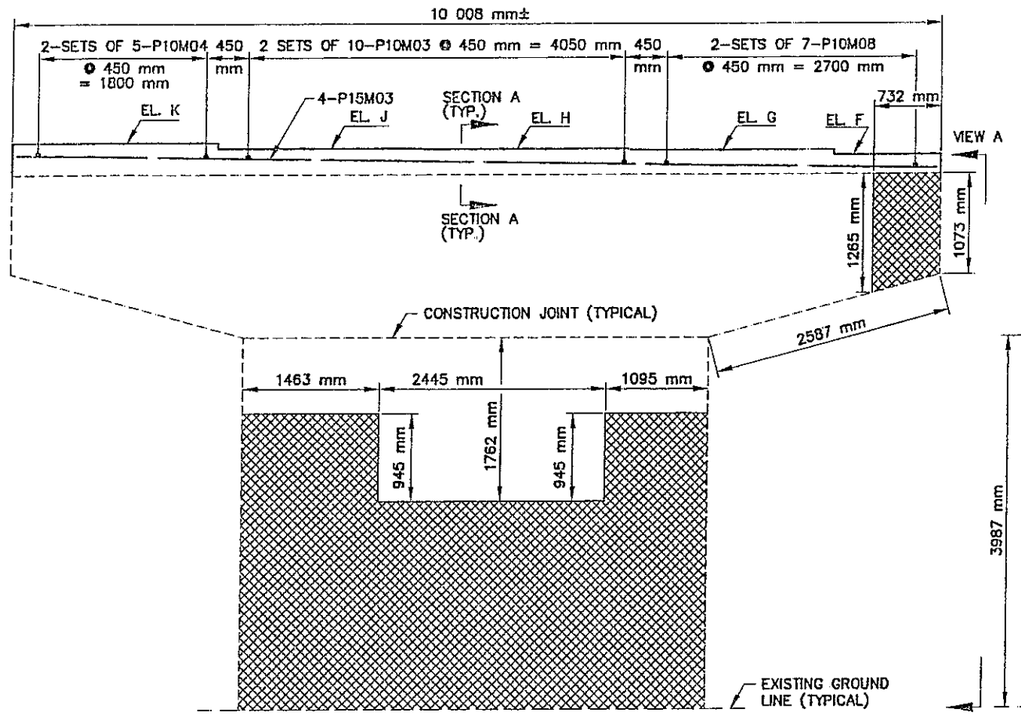
EXISTING PIER 2 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

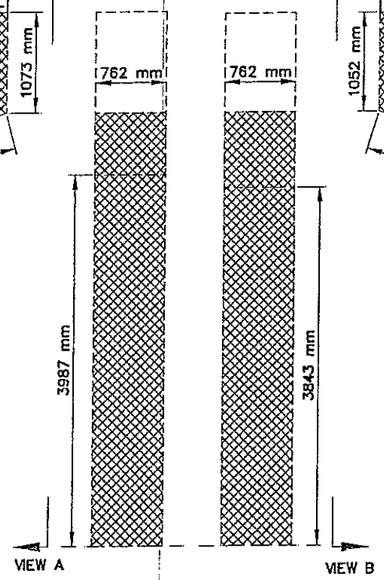
35 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B-No. 200

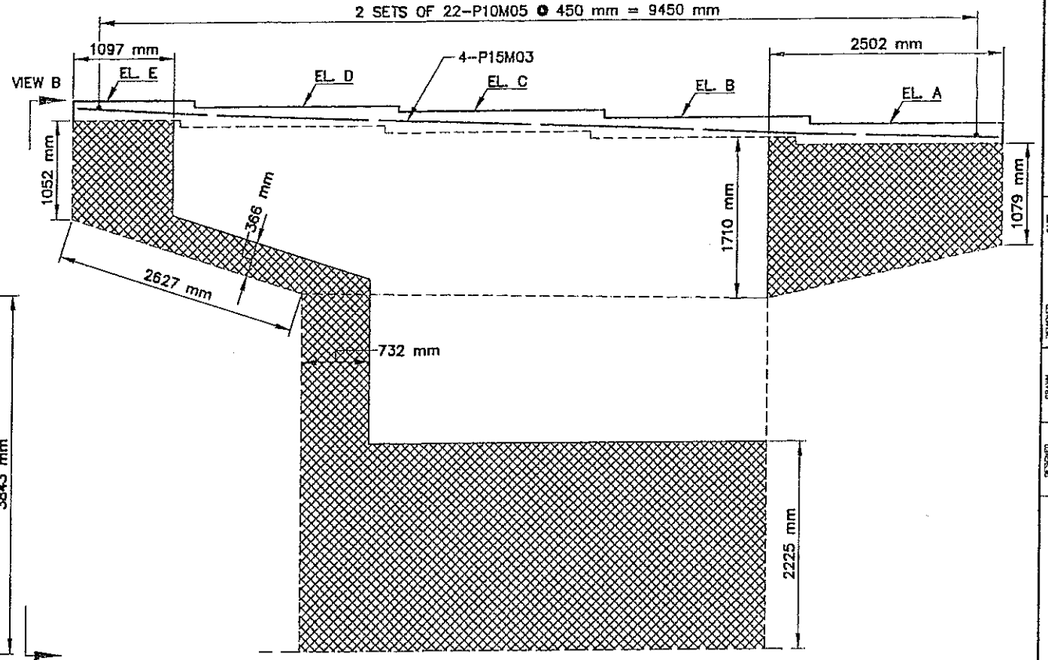
65 / 98



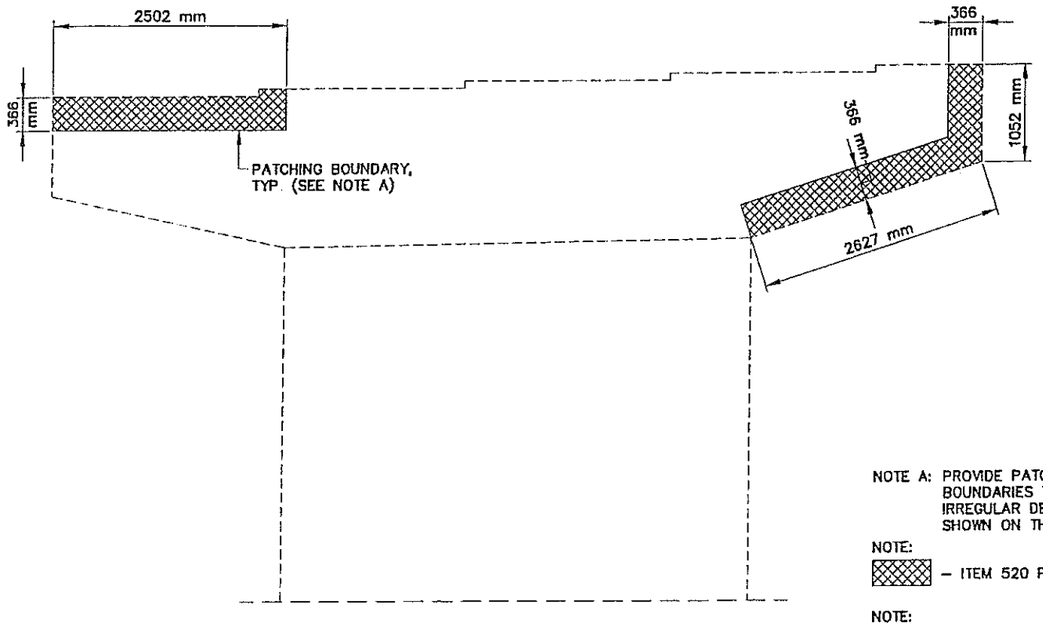
NORTH ELEVATION
LOOKING SOUTH



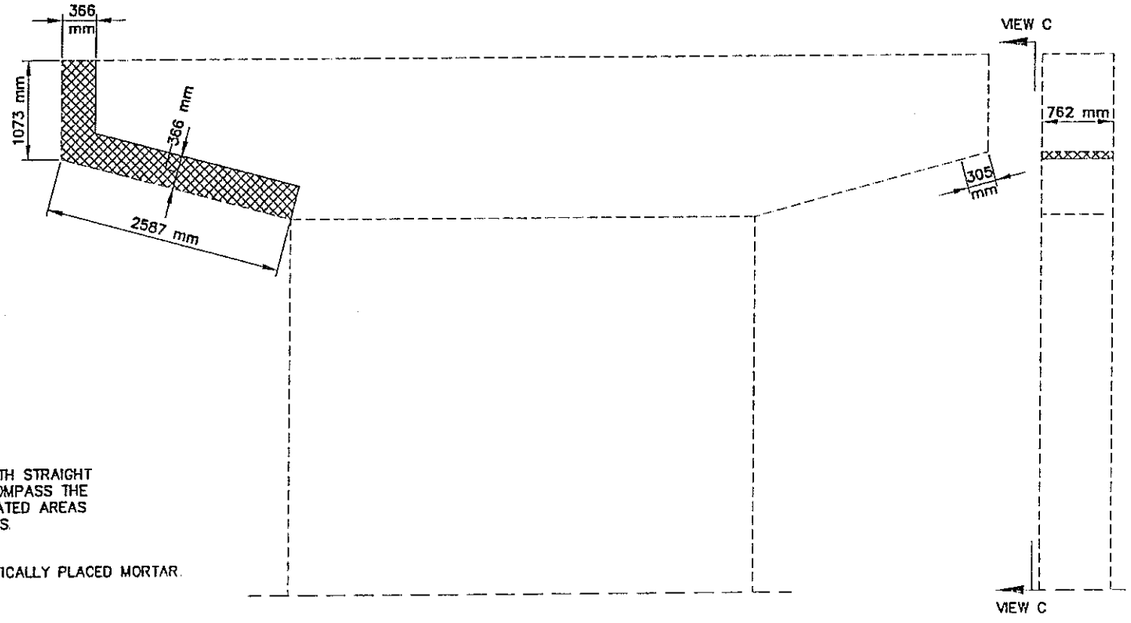
VIEW A – A VIEW B – B



NORTH ELEVATION
LOOKING SOUTH



SOUTH ELEVATION
LOOKING NORTH



VIEW C – C

SOUTH ELEVATION
LOOKING NORTH

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR.

NOTE:
FOR ADDITIONAL NOTES SEE SHEET 34/68

EXISTING PIER No. 3 ELEVATIONS

JOHN E. FOSTER AND ASSOCIATES, INC.
2900 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGN AGENCY

DESIGNED	DRAWN	REVIEWED	DATE
B.M.G.	D.M.T.	R.A.B.	9–96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
H.S.S.		1833421	

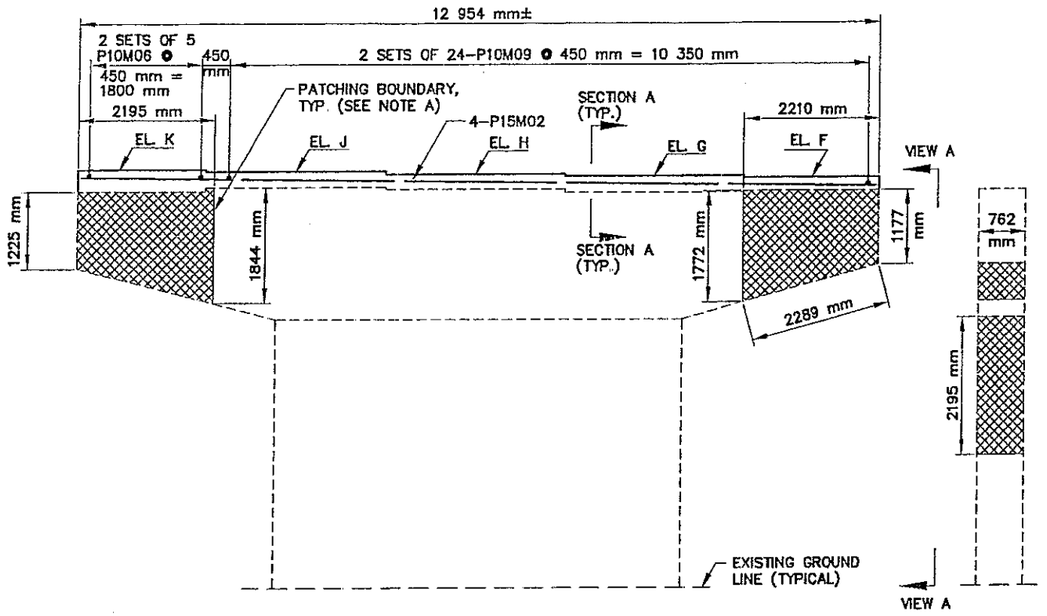
EXISTING PIER 3 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY–WEST 140th STREET

36 / 68

66 / 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND OHIO
REPORT No. 7224 AND B–No. 200



NORTH ELEVATION
LOOKING SOUTH

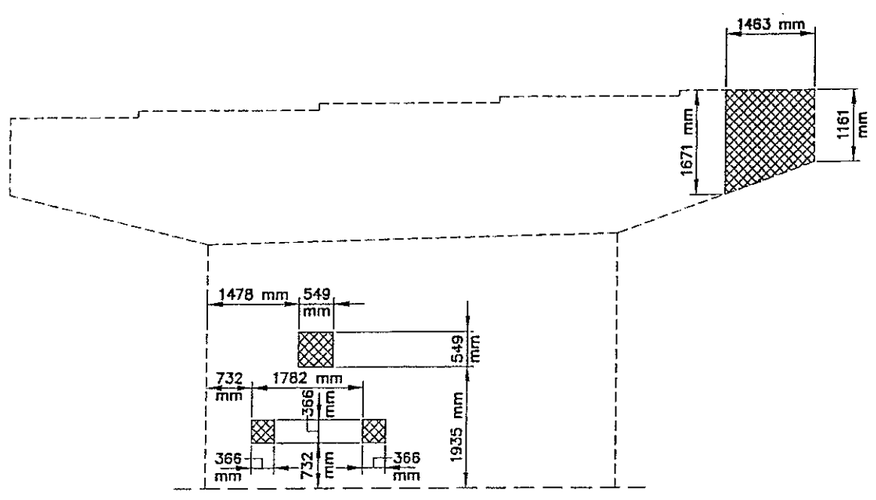
VIEW A – A

VIEW B – B

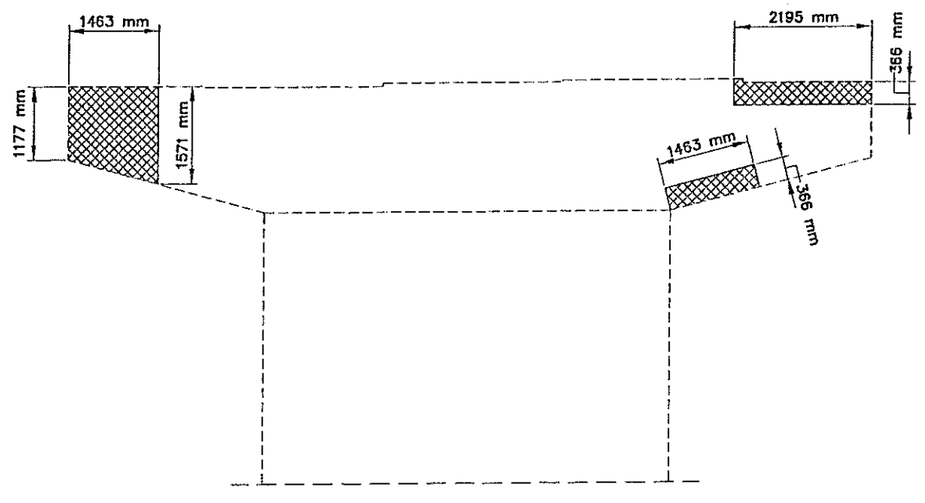
NORTH ELEVATION
LOOKING SOUTH

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR



SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

NOTE:
FOR ADDITIONAL NOTES SEE SHEET 34/68

EXISTING PIER No. 4 ELEVATIONS

JOSEPH E. FOSTER AND ASSOCIATES, INC.
8999 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGN AGENCY
DESIGNED B.M.G.
DRAWN D.M.T.
CHECKED H.S.S.
REVIEWED R.A.B.
DATE 9-96
REVISED
STRUCTURE FILE NUMBER 1833421

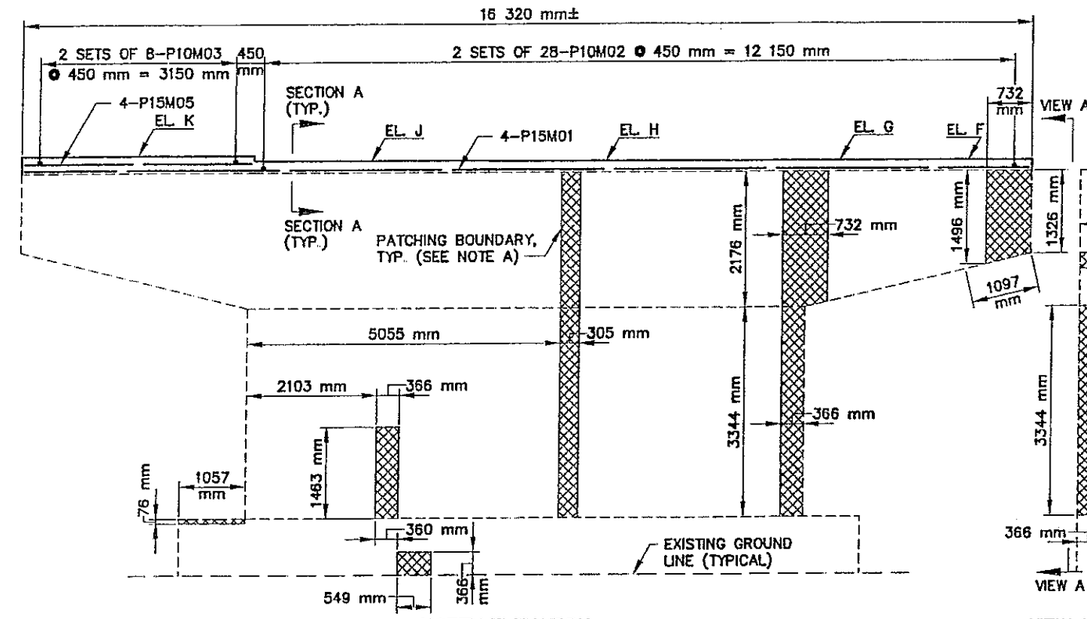
EXISTING PIER 4 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

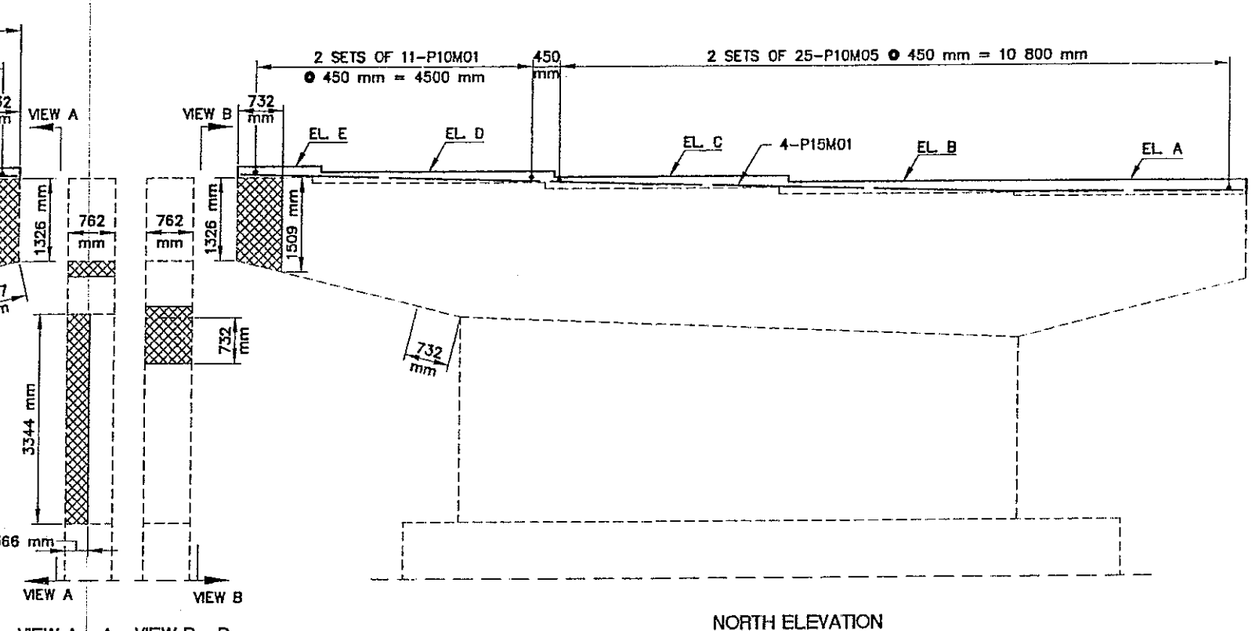
37 / 68

67 / 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B–No. 200



NORTH ELEVATION
LOOKING SOUTH

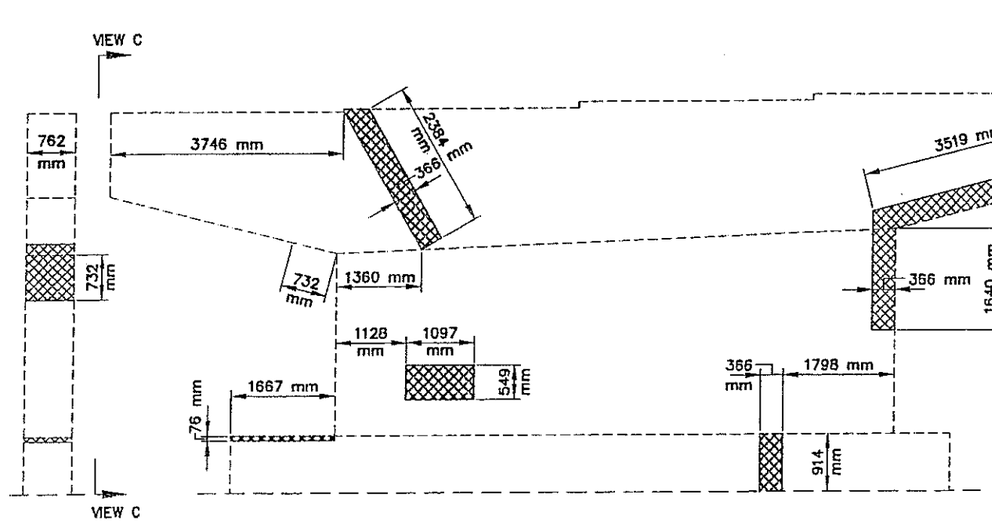


NORTH ELEVATION
LOOKING SOUTH

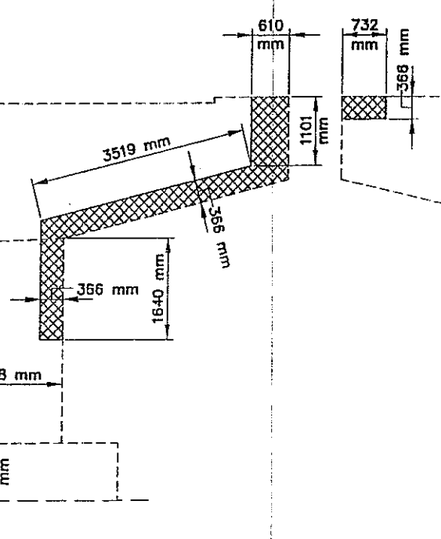
VIEW A – A VIEW B – B

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

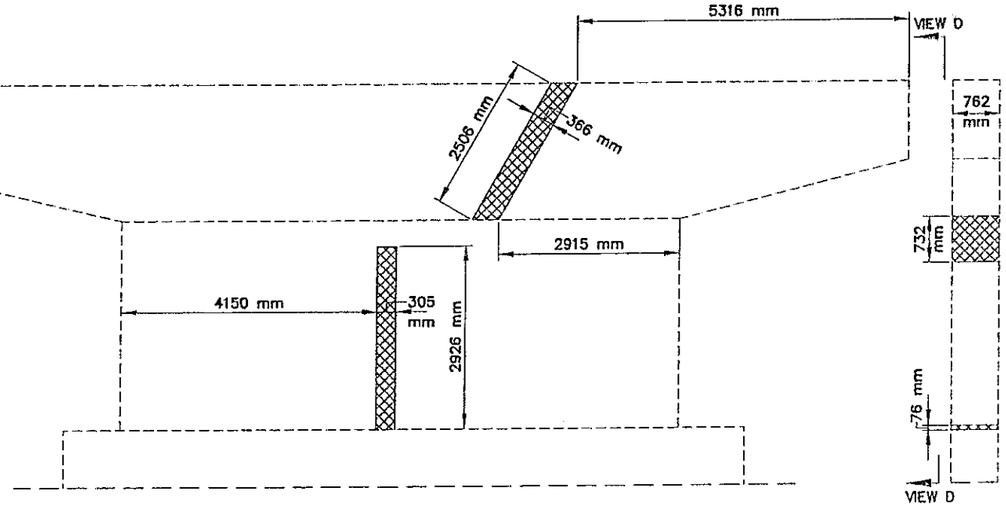
NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR



VIEW C – C



SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

VIEW D – D

NOTE:
FOR ADDITIONAL NOTES SEE SHEET 34/68

EXISTING PIER No. 5 ELEVATIONS

JOHN E. FOSTER AND ASSOCIATES, INC.
BRIDGE AGENCY
2222 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGNED B.M.G.
DRAWN D.M.T.
CHECKED H.S.S.
REVISED
REVISED R.A.B.
DATE 9-96
STRUCTURE FILE NUMBER 1833421

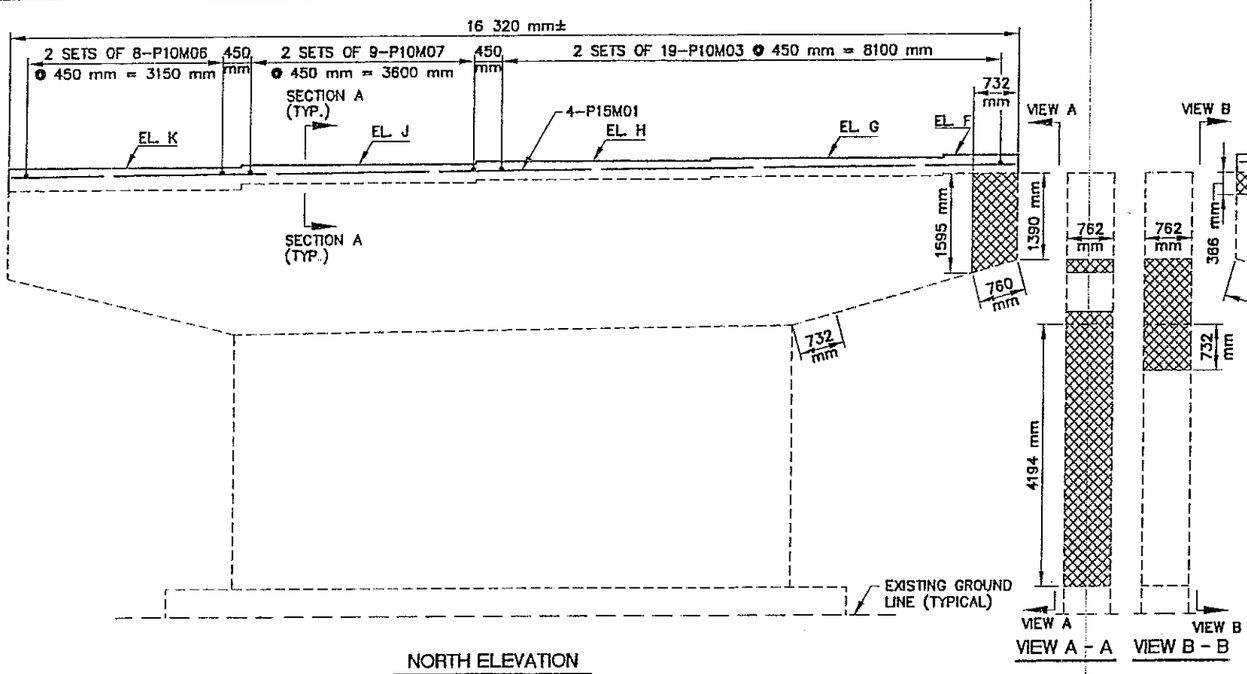
EXISTING PIER 5 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140TH. ST.

38 / 68

68 / 98

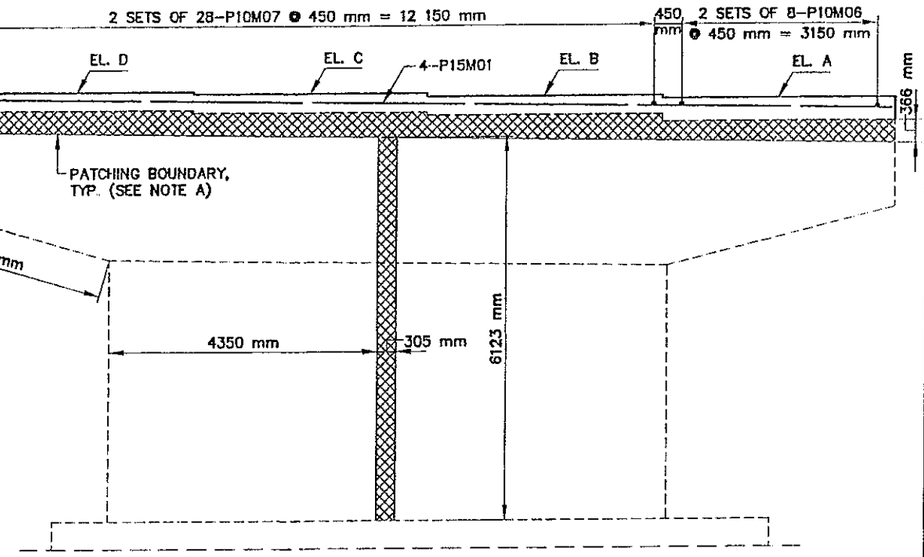
CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B–No 200



NORTH ELEVATION
LOOKING SOUTH

VIEW A – A

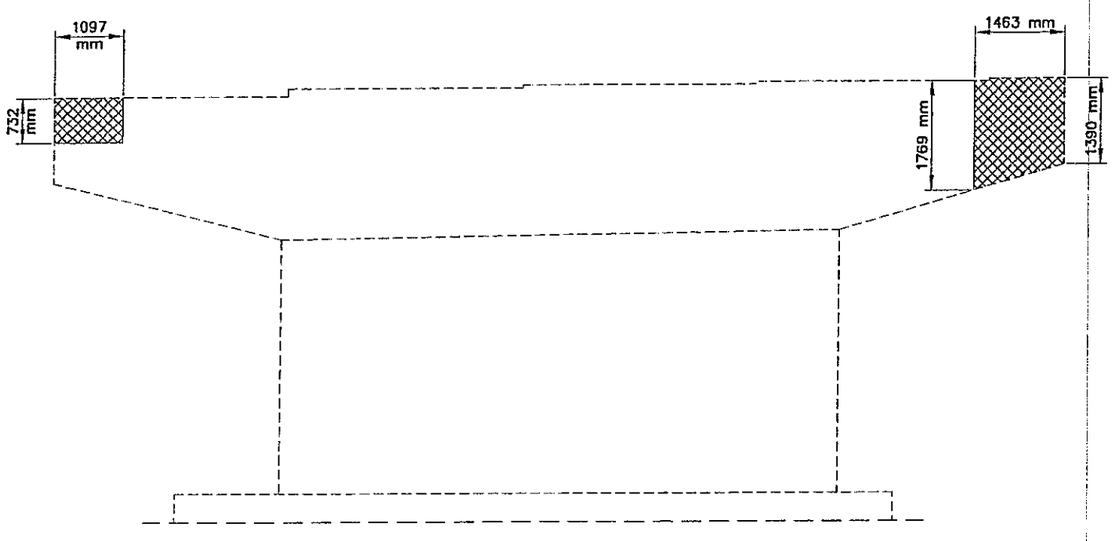
VIEW B – B



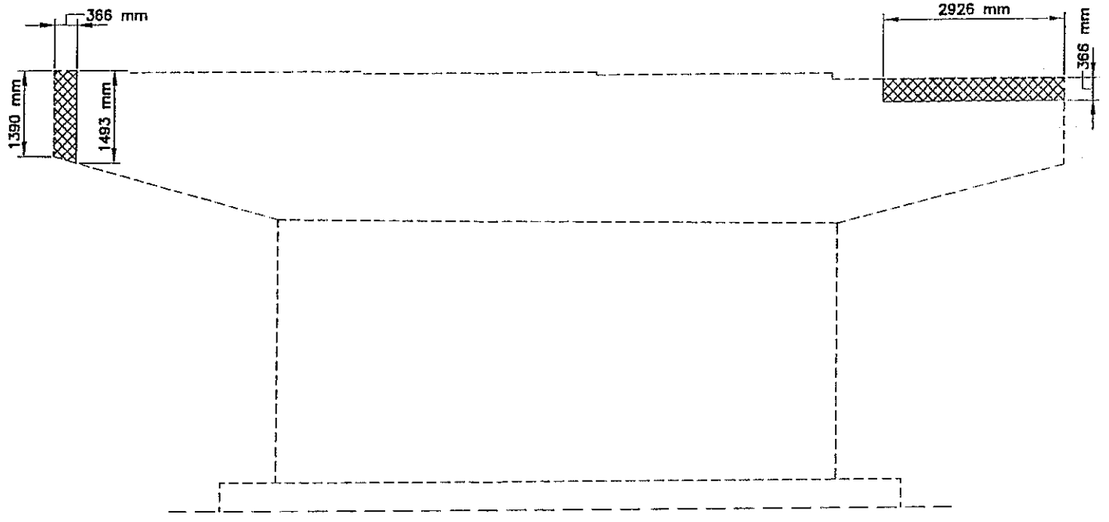
NORTH ELEVATION
LOOKING SOUTH

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR.



SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

NOTE:
FOR ADDITIONAL NOTES SEE SHEET 34/68

EXISTING PIER No. 6 ELEVATIONS

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B–No. 200

JOHN E. FOSTER AND ASSOCIATES, INC.
2949 PAYNE AVENUE
CLEVELAND, OHIO 44114

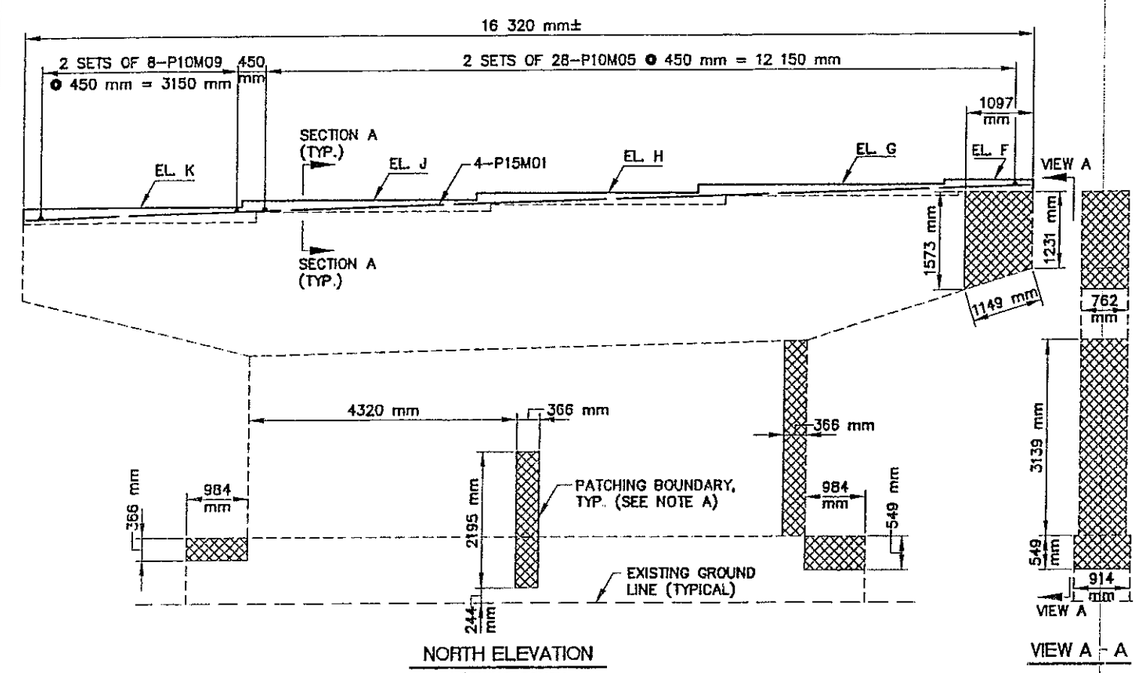
DESIGN AGENCY
DESIGNED B.M.G.
DRAWN D.M.T.
CHECKED H.S.S.
REVISED R.A.B.
DATE 9–96
STRUCTURE FILE NUMBER 1833421

EXISTING PIER 6 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY–WEST 140th STREET

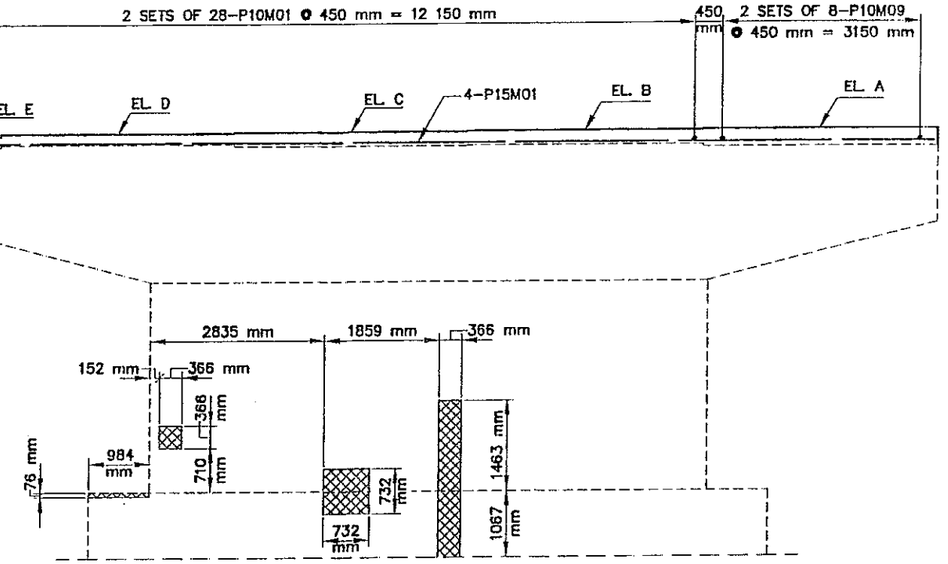
39 / 68

69 / 98



NORTH ELEVATION
LOOKING SOUTH

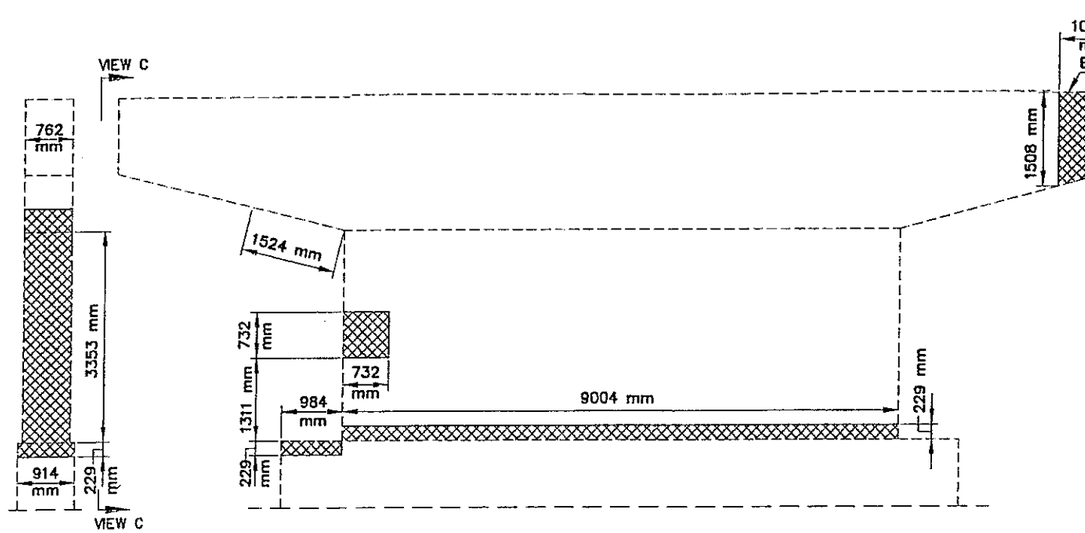
VIEW A – A VIEW B – B



NORTH ELEVATION
LOOKING SOUTH

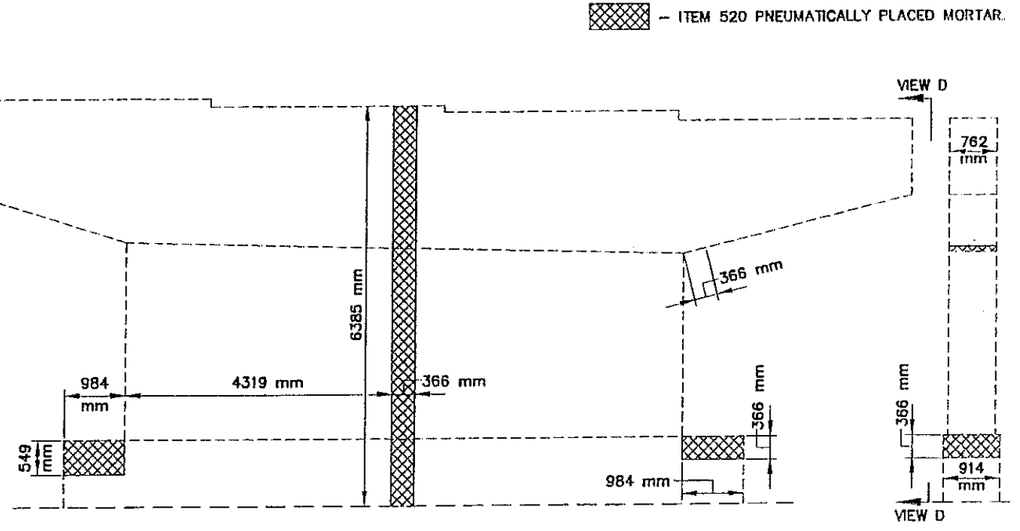
NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR.



VIEW C – C

SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

VIEW D – D

NOTE
FOR ADDITIONAL NOTES SEE SHEET 34/68 .

EXISTING PIER No. 7 ELEVATIONS

JOHN E. FOSTER AND ASSOCIATES, INC.
2999 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGN AGENCY
DATE 9-96
REVIEWED R.A.B.
STRUCTURE FILE NUMBER 1833421
DRAWN D.M.T.
REVISED
QUANTITIES B.M.G.
CHECKED H.S.S.

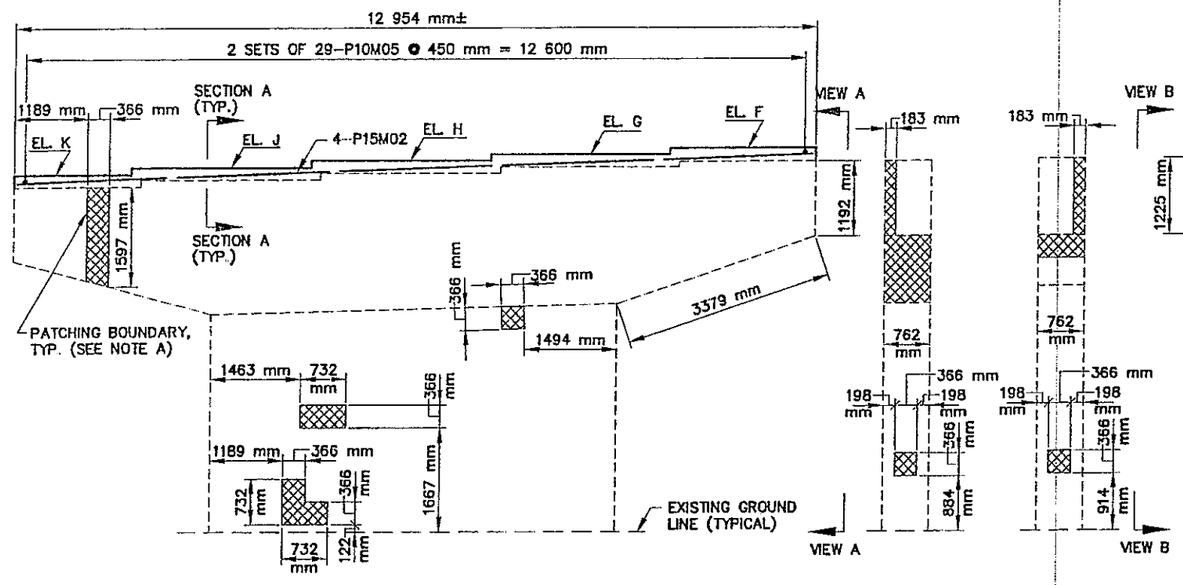
EXISTING PIER 7 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

40 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B–No. 200

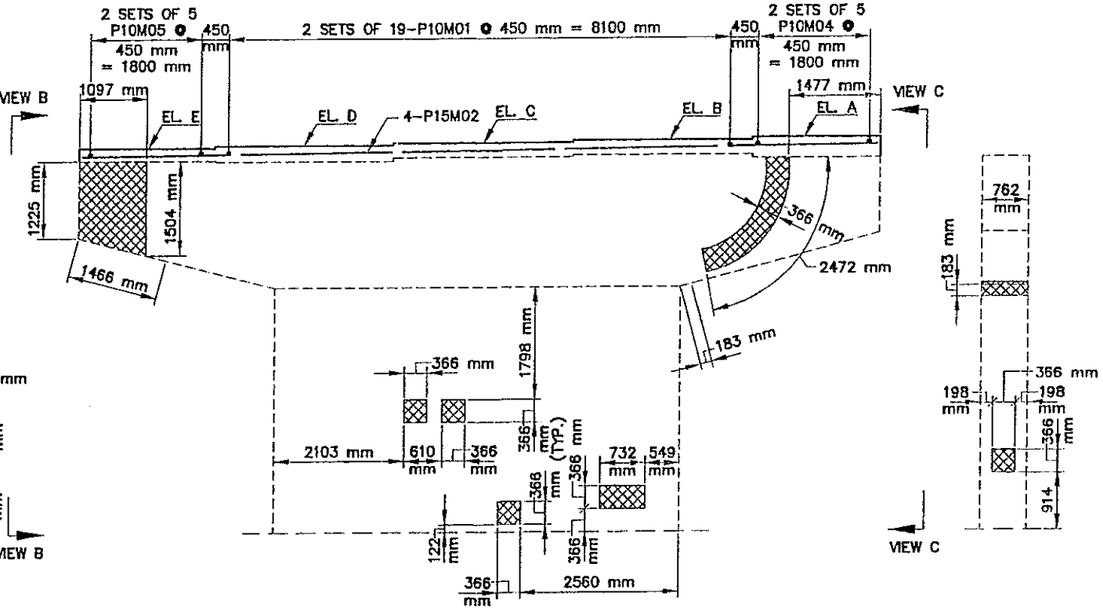
70 / 98



NORTH ELEVATION
LOOKING SOUTH

VIEW A – A

VIEW B – B

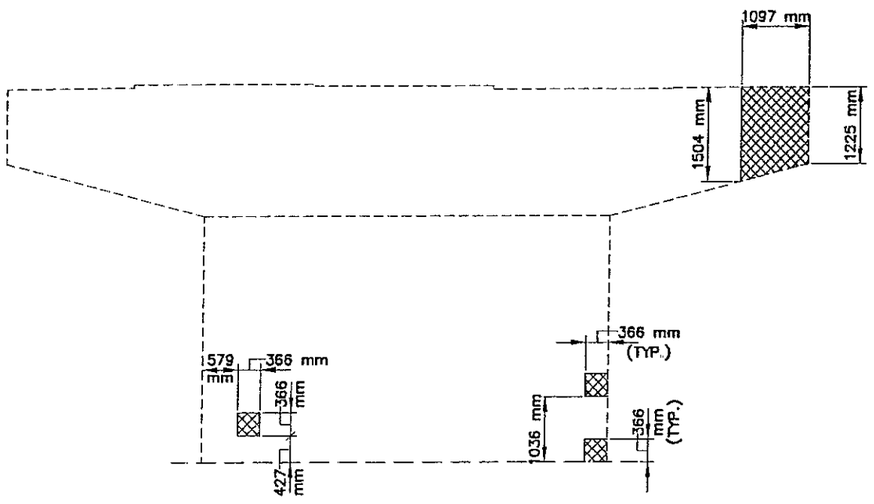


NORTH ELEVATION
LOOKING SOUTH

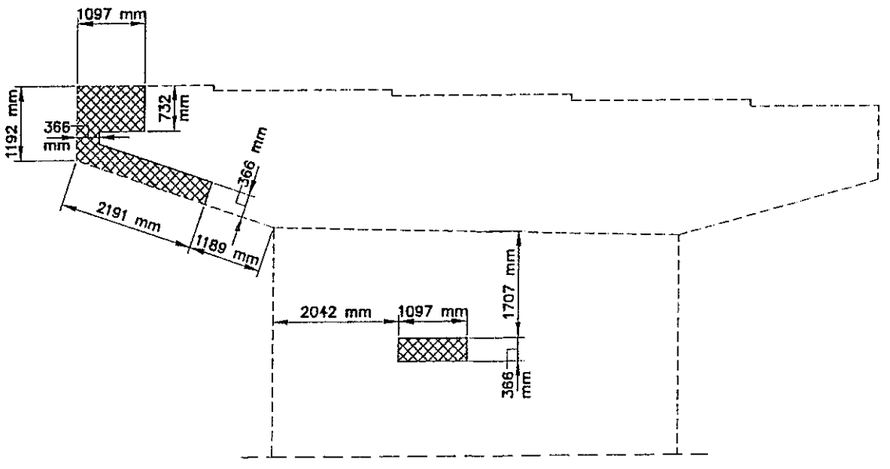
VIEW C – C

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR.



SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

NOTE:
FOR ADDITIONAL NOTES SEE SHEET 34/68

EXISTING PIER No. 8 ELEVATIONS

JOHN E. FOSTER AND ASSOCIATES, INC.
DESIGN AGENCY
2999 PAYNE AVENUE, CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
B.M.G.	D.M.T.	R.A.B.	9–96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
H.S.S.		1833421	

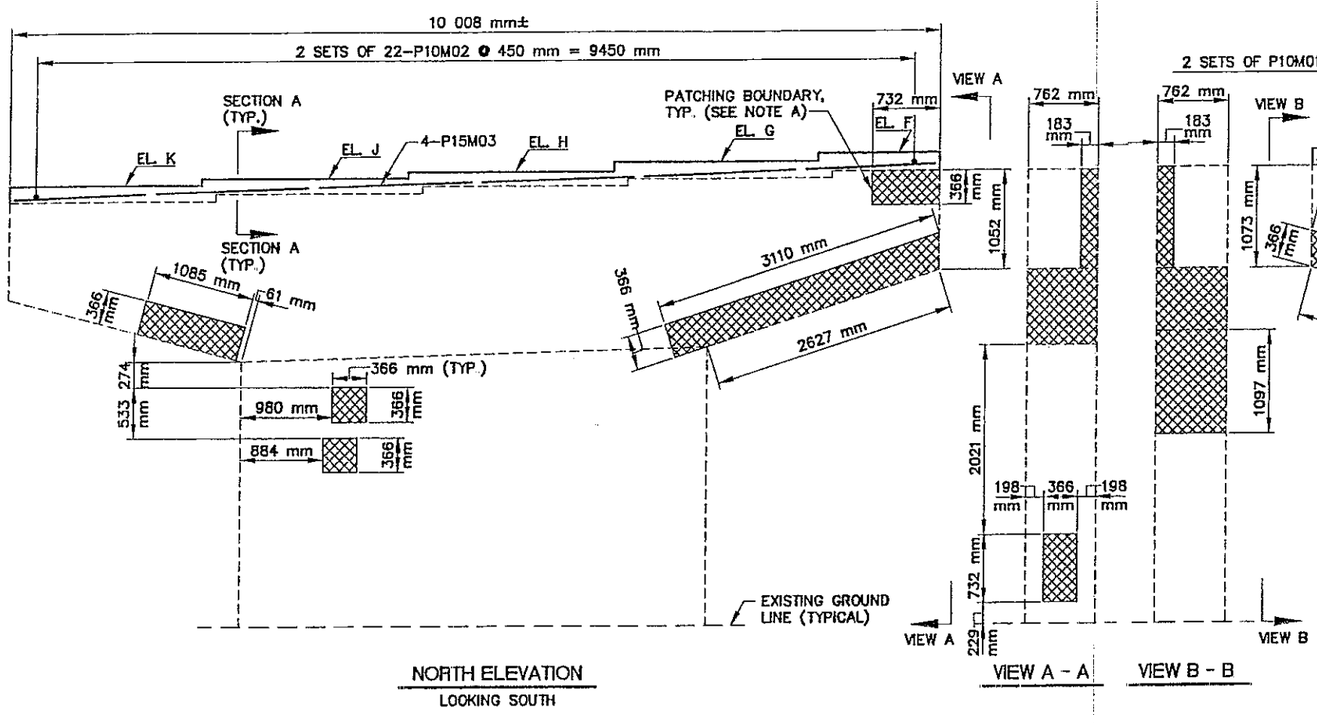
EXISTING PIER 8 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

41 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B–No. 200

71 / 98

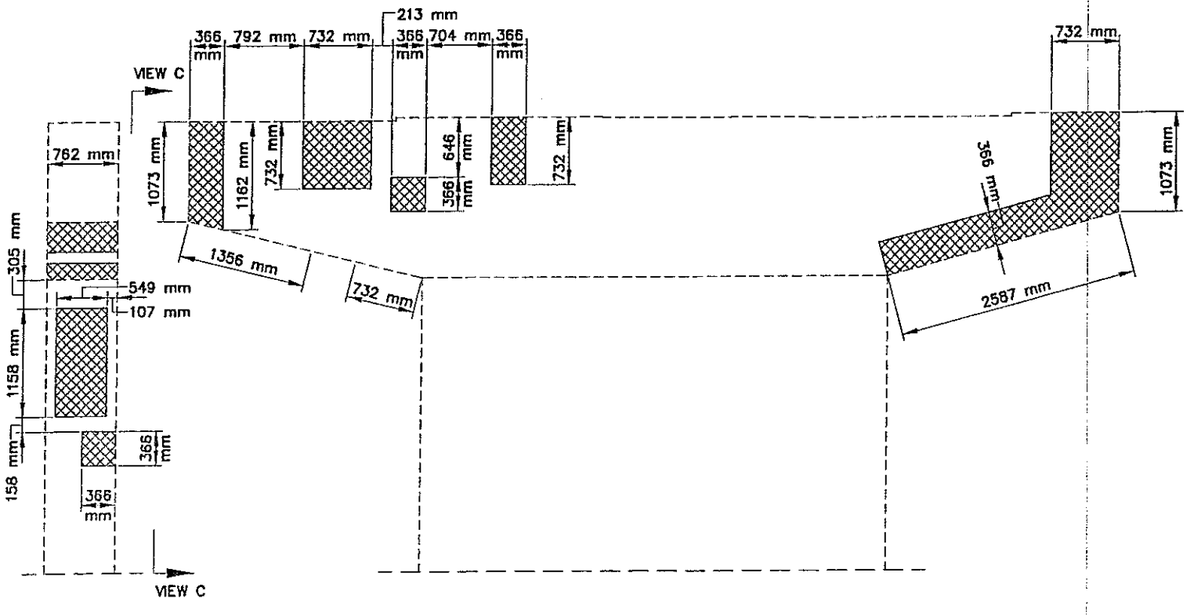


NORTH ELEVATION
LOOKING SOUTH

NORTH ELEVATION
LOOKING SOUTH

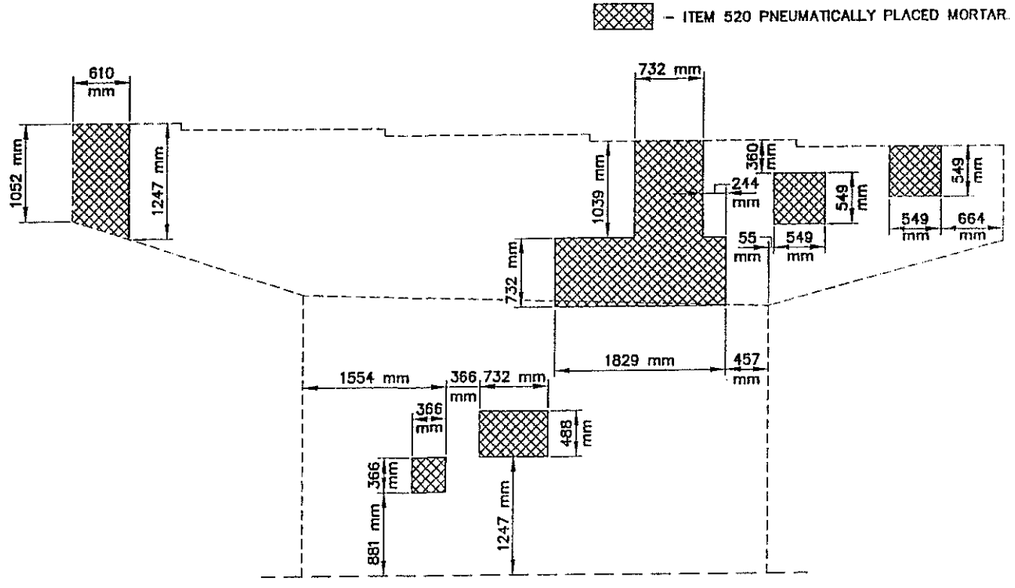
NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR.



VIEW C – C

SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

NOTE:
FOR ADDITIONAL NOTES SEE SHEET 34/68

EXISTING PIER No. 9 ELEVATIONS

JOHN E. FOSTER AND ASSOCIATES, INC.
2999 PAYNE AVENUE
CLEVELAND, OHIO 44114

DESIGN AGENCY
DATE 9–96
REVIEWED R.A.B.
DRAWN D.M.T.
DESIGNED B.M.G.
CHECKED H.S.S.
STRUCTURE FILE NUMBER 1833421

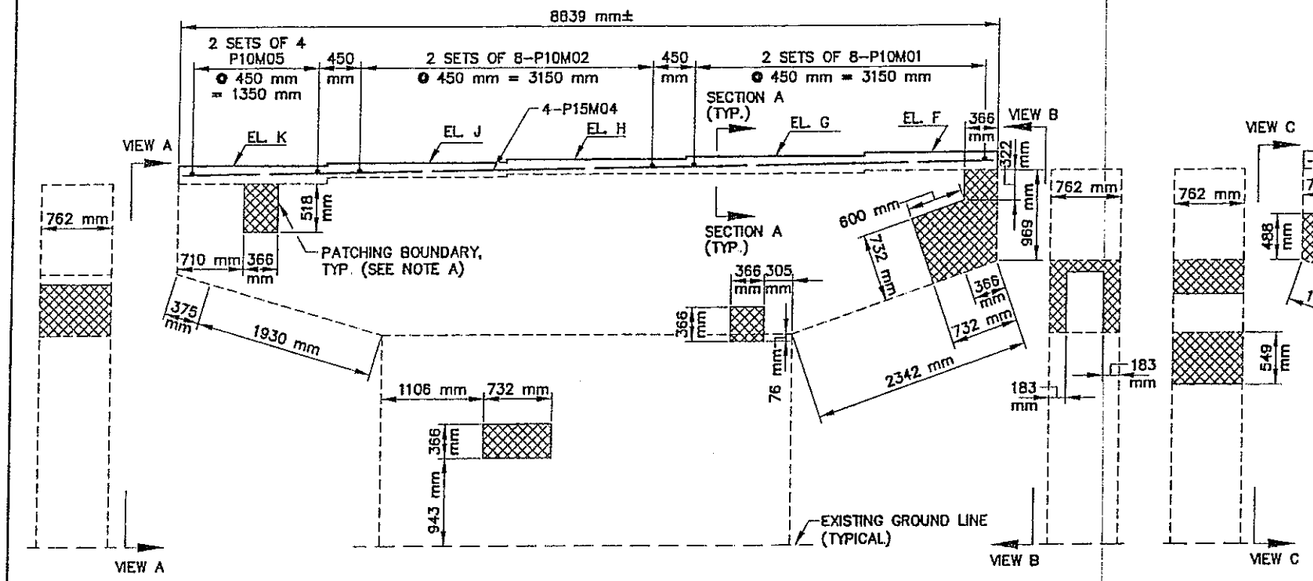
EXISTING PIER 9 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND CCRTA

CUY-WEST 140th STREET

42 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No. 7224 AND B–No. 200

72 / 98

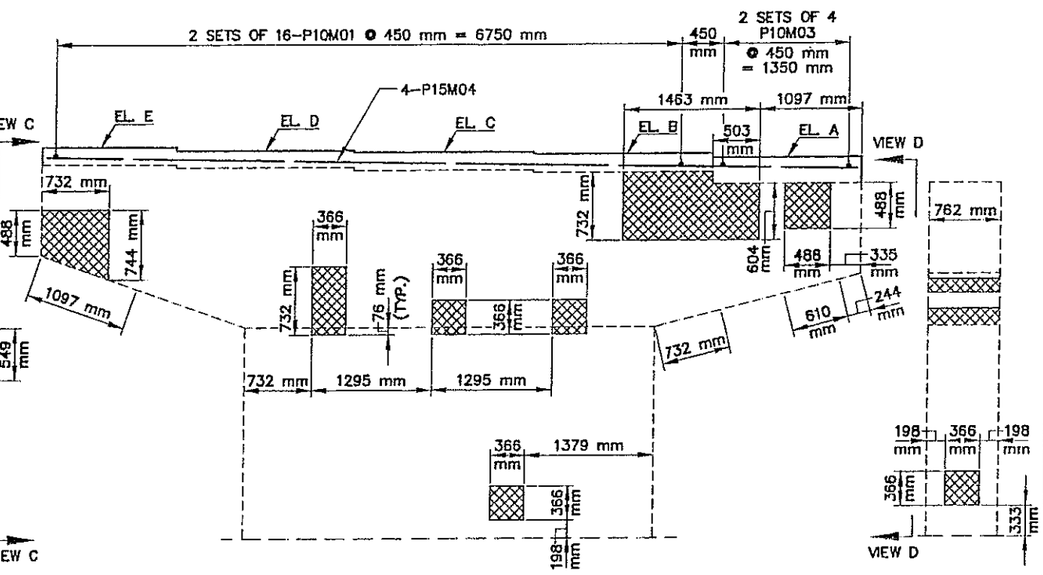


VIEW A - A

NORTH ELEVATION
LOOKING SOUTH

VIEW B - B

VIEW C - C

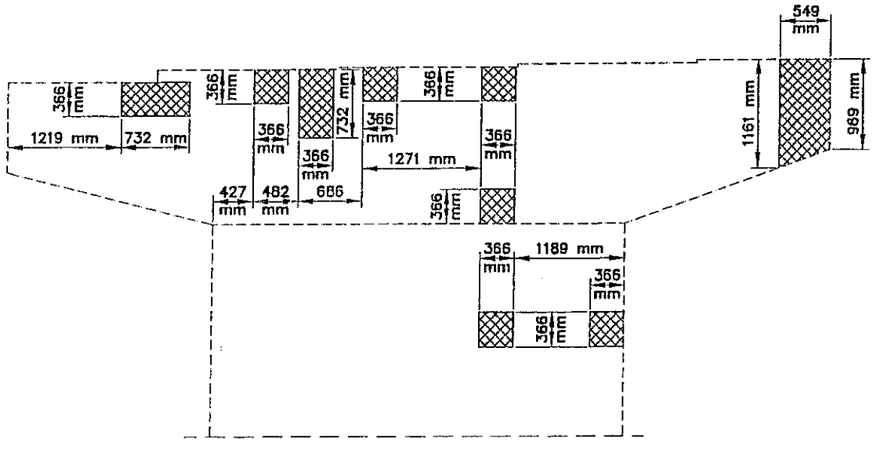


NORTH ELEVATION
LOOKING SOUTH

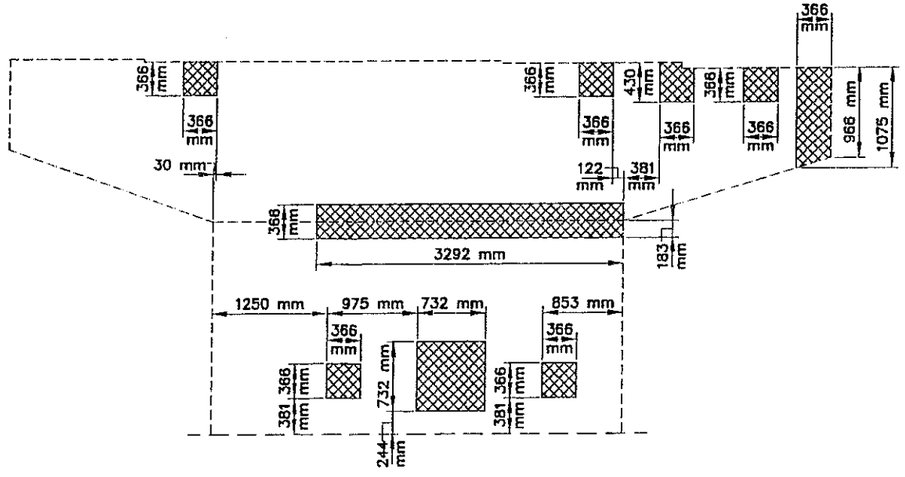
VIEW D - D

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR.



SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

NOTE:
FOR ADDITIONAL NOTES SEE SHEET 34/68

EXISTING PIER No. 10 ELEVATIONS

JOHN E. FOSTER AND ASSOCIATES, INC.
DESIGN AGENCY
2999 PAYNE AVENUE CLEVELAND, OHIO 44114

DATE 9-96
REVISED R.A.B.
DRAWN D.M.T.
REVISED
DESIGNED B.M.G.
CHECKED H.S.S.
STRUCTURE FILE NUMBER 1833421

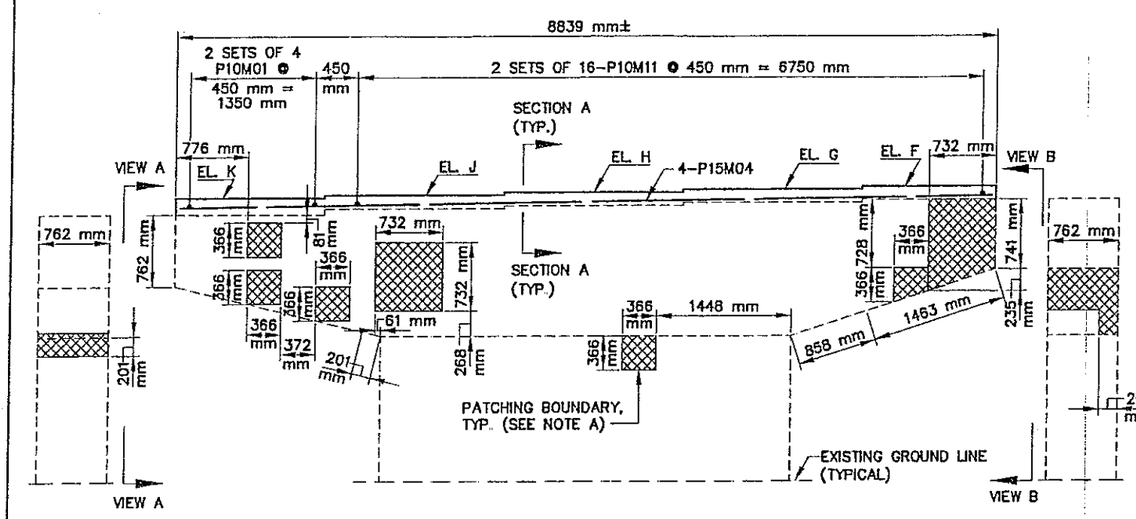
EXISTING PIER 10 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

43 / 68

CUYAHOGA COUNTY ENGINEER
CLEVELAND, OHIO
REPORT No 7224 AND B--No. 200

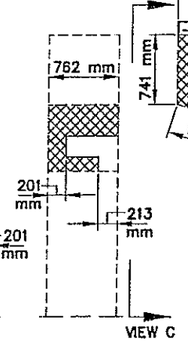
73 / 98



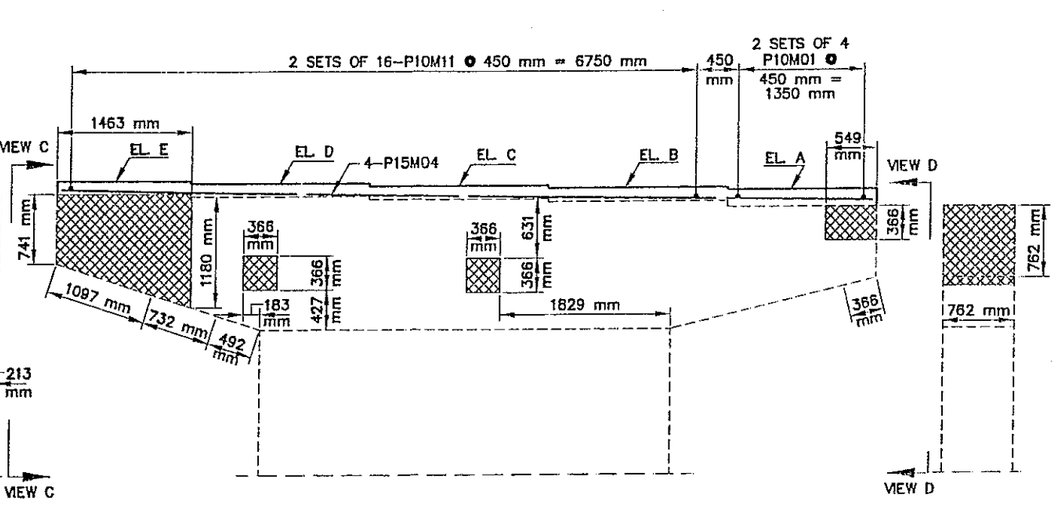
VIEW A - A

NORTH ELEVATION
LOOKING SOUTH

VIEW B - B



VIEW C - C

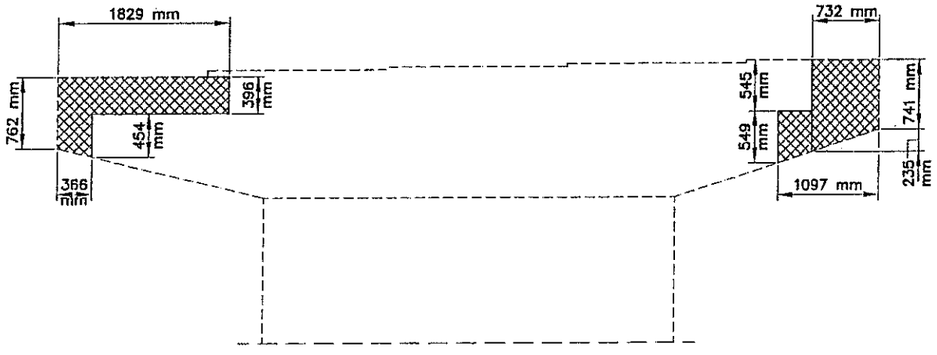


NORTH ELEVATION
LOOKING SOUTH

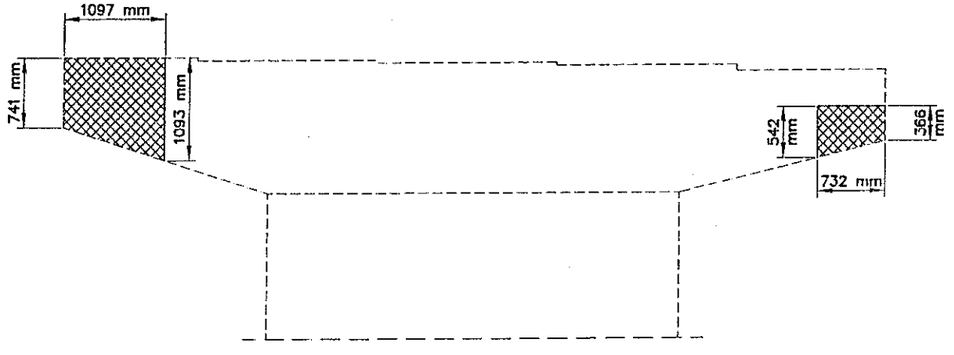
VIEW D - D

NOTE A: PROVIDE PATCHES WITH STRAIGHT BOUNDARIES TO ENCOMPASS THE IRREGULAR DETERIORATED AREAS SHOWN ON THE PLANS.

NOTE:
▨ – ITEM 520 PNEUMATICALLY PLACED MORTAR.



SOUTH ELEVATION
LOOKING NORTH



SOUTH ELEVATION
LOOKING NORTH

NOTE:
FOR ADDITIONAL NOTES SEE SHEET 34/68

EXISTING PIER No. 11 ELEVATIONS

JOSEPH E. FOSTER AND ASSOCIATES, INC.
ARCHITECTS AND ENGINEERS
CLEVELAND, OHIO 44114

DESIGN AGENCY

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
B.M.G.	D.M.T.	H.S.S.	R.A.B.	9-96

STRUCTURE FILE NUMBER 1833421

REVISED

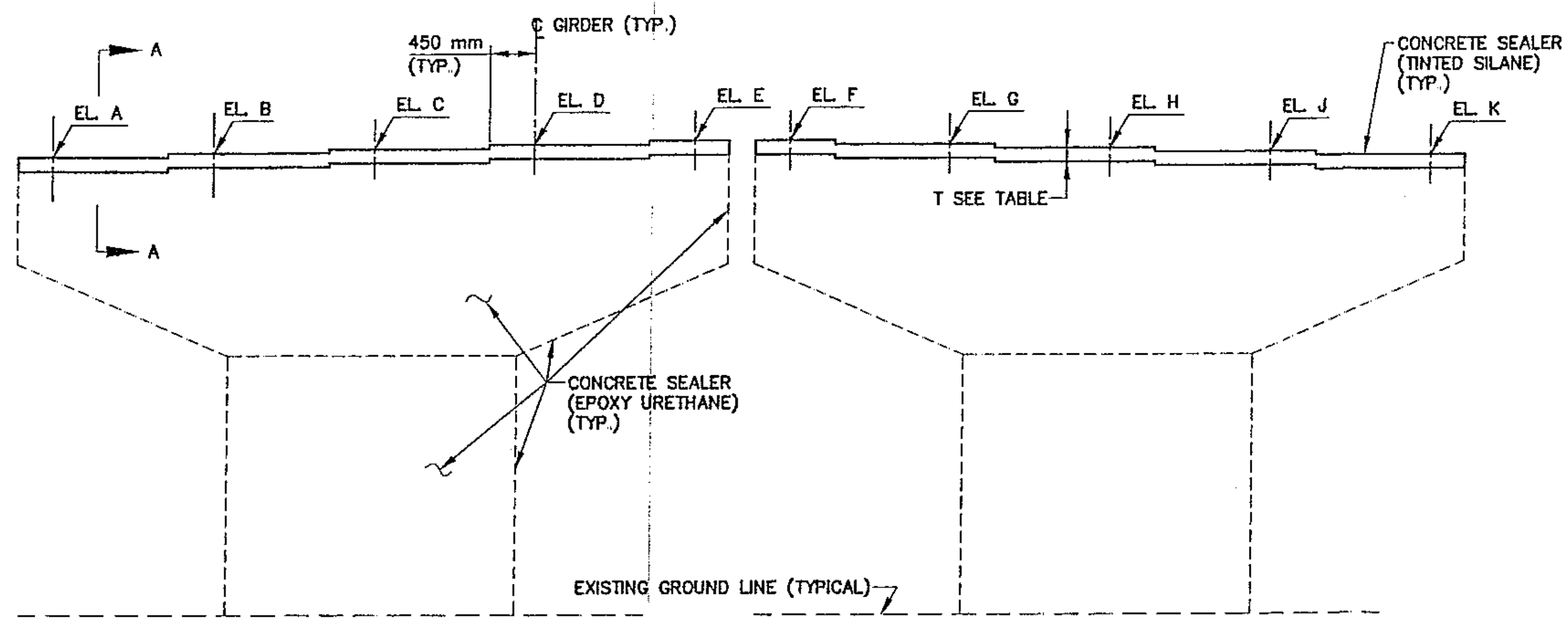
EXISTING PIER 11 ELEVATIONS
BRIDGE No. 208
OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

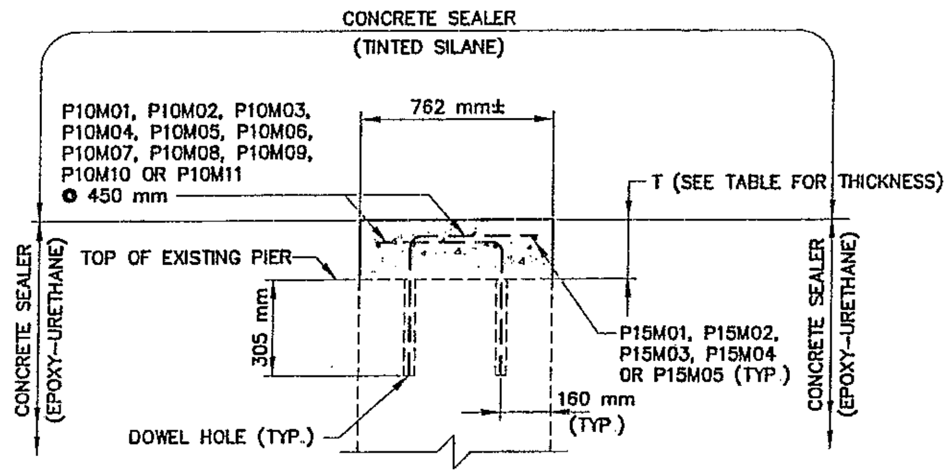
44 / 68

74 / 98

CUYAHOGA COUNTY ENGINEER
CLEVELAND OHIO
REPORT No. 7224 AND B-No. 200



ELEVATION
(PIERS 1 THRU 11)



SECTION A-A

T± (THICKNESS OF PROPOSED CONCRETE OVER EXISTING PIERS)(mm)											
GIRDER	℄ BEARING PIER 1	℄ BEARING PIER 2	℄ BEARING PIER 3	℄ BEARING PIER 4	℄ BEARING PIER 5	℄ BEARING PIER 6	℄ BEARING PIER 7	℄ BEARING PIER 8	℄ BEARING PIER 9	℄ BEARING PIER 10	℄ BEARING PIER 11
A	175	190	219	214	237	372	268	329	300	278	182
B	149	159	215	205	192	300	225	232	235	196	145
C	150	153	223	214	186	307	222	231	238	196	142
D	147	179	206	218	178	295	177	252	222	181	142
E	160	180	204	218	177	292	171	199	180	185	137
F	154	179	201	211	174	303	196	213	192	189	140
G	162	188	256	263	174	292	188	199	177	182	142
H	156	190	270	237	178	293	190	200	152	156	142
J	168	190	276	255	187	297	187	192	163	153	142
K	199	281	336	348	272	361	242	194	170	190	179

TOP OF MASONRY ELEVATIONS (m)											
ELEV.	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7	PIER 8	PIER 9	PIER 10	PIER 11
A	240.018	240.945	214.859	242.625	243.191	243.660	243.652	243.189	242.260	240.951	240.030
B	240.049	240.976	241.940	242.734	243.302	243.718	243.651	243.163	242.246	240.982	240.061
C	240.080	241.007	242.021	242.840	243.406	243.768	243.644	243.135	242.230	241.013	240.092
D	240.111	241.038	242.102	242.944	243.504	243.813	243.630	243.103	242.214	241.044	240.123
E	240.141	241.069	242.181	243.044	243.596	243.851	243.610	243.069	242.198	241.075	240.154
F	240.141	241.065	242.190	243.064	243.614	243.852	243.595	243.050	242.189	241.079	240.154
G	240.111	241.034	242.207	243.098	243.634	243.818	243.504	242.949	242.109	241.048	240.123
H	240.080	241.003	242.223	243.130	243.648	243.778	243.406	242.846	242.029	241.017	240.092
J	240.049	240.972	242.239	243.159	243.655	243.732	243.302	242.740	241.948	240.986	240.061
K	240.018	240.941	242.253	243.185	243.657	243.680	243.191	242.631	241.867	240.955	240.030

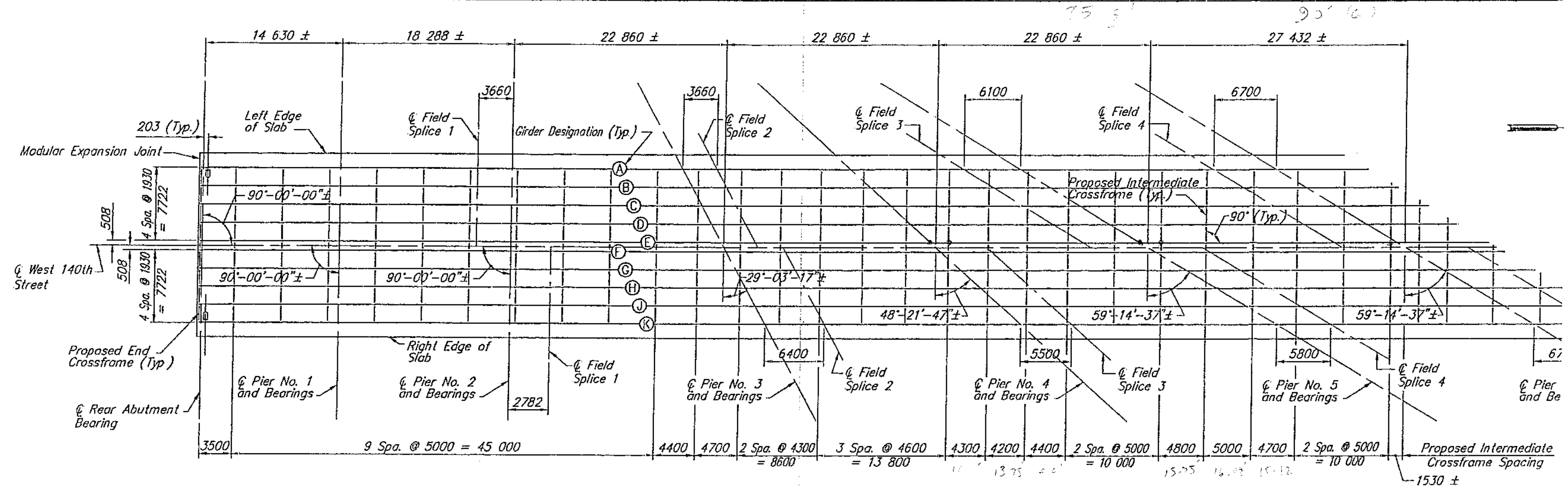
JOHN E. FOSTER AND ASSOCIATES, INC.

DESIGNED B.M.G. DRAWN D.M.T. REVIEWED R.A.B. DATE 9-96 CHECKED H.S.S. STRUCTURE FILE NUMBER 1833421

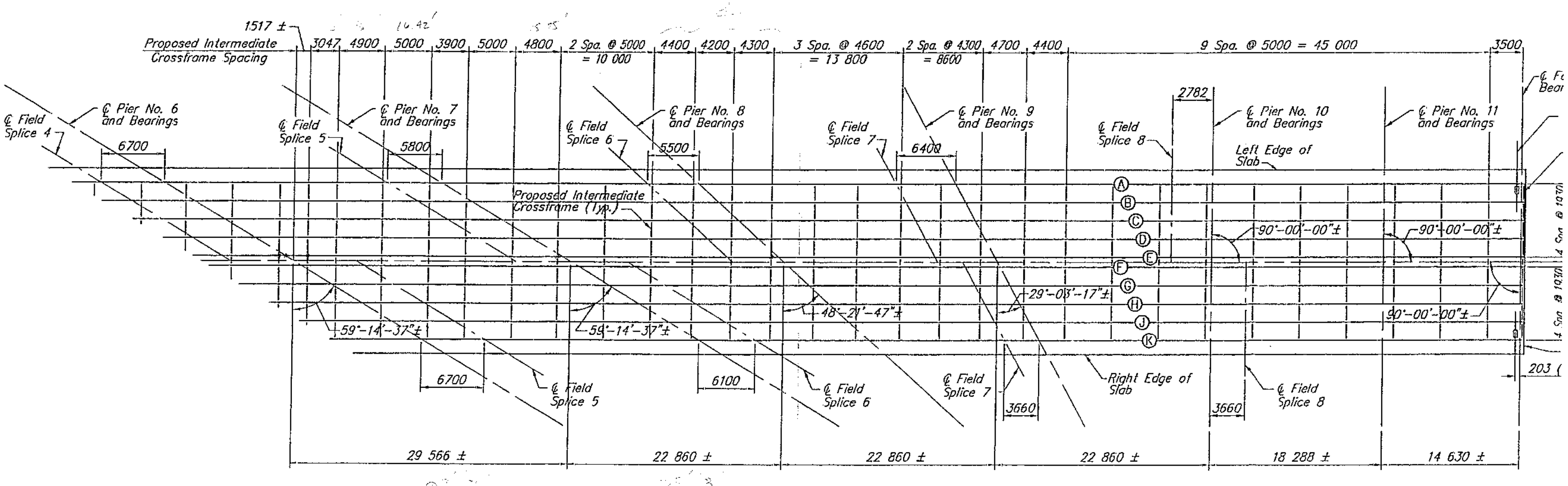
PIER MODIFICATION DETAILS
BRIDGE No. 208
WEST 140th STREET OVER CONRAIL AND GCRTA

CUY-WEST 140th STREET

45 / 68



FRAMING PLAN



FRAMING PLAN

Notes:
All dimension are in millimeters, unless o
For details of proposed end crossframes
and Ohio Standard Drawing EXJ-4-87M s
For proposed intermediate crossframe detail
For details of modular expansion joints see
For scupper details see sheet 67/68
The following abbreviations are used:
(Typ.) = Typical Spa. = Spaces

Cuya
Cleve
Repo

[redacted]

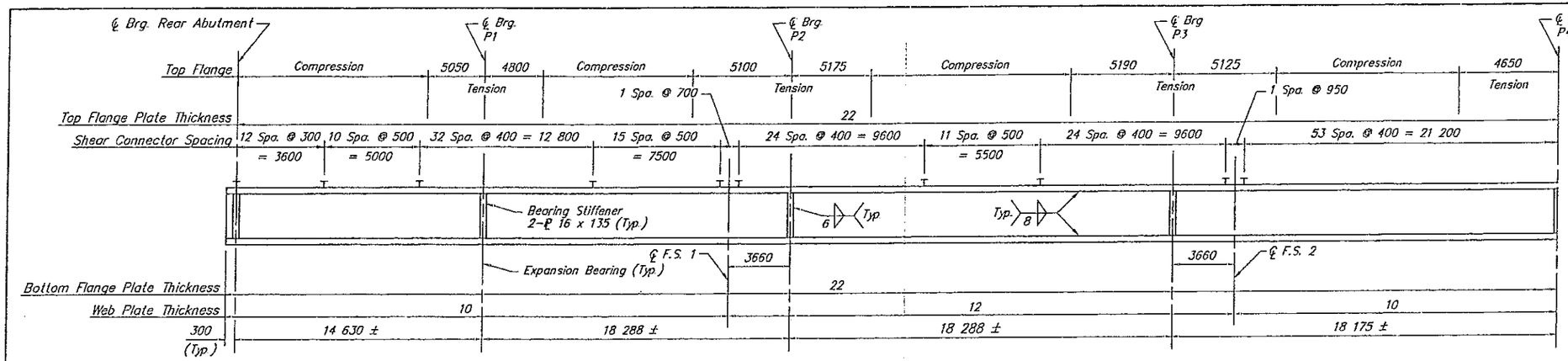
DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		1833421	

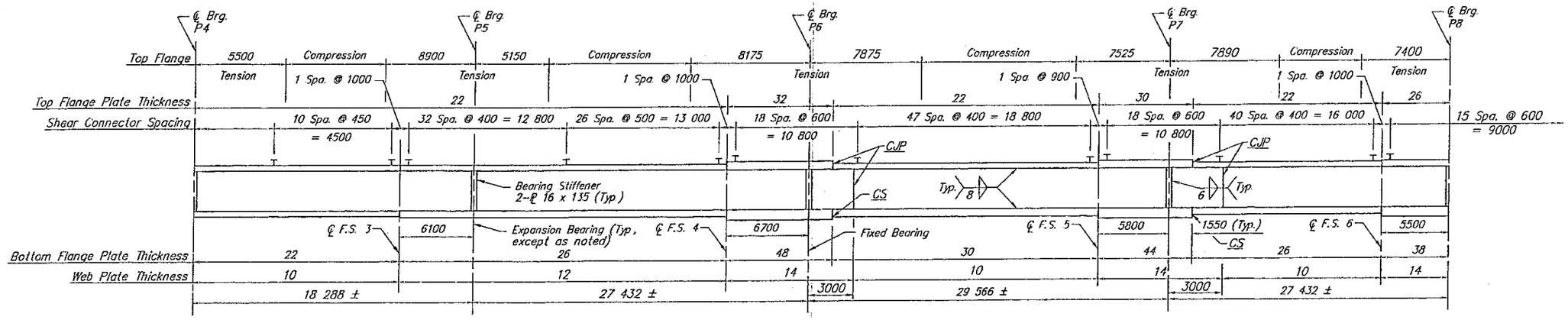
FRAMING PLAN
BRIDGE NO. 152
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

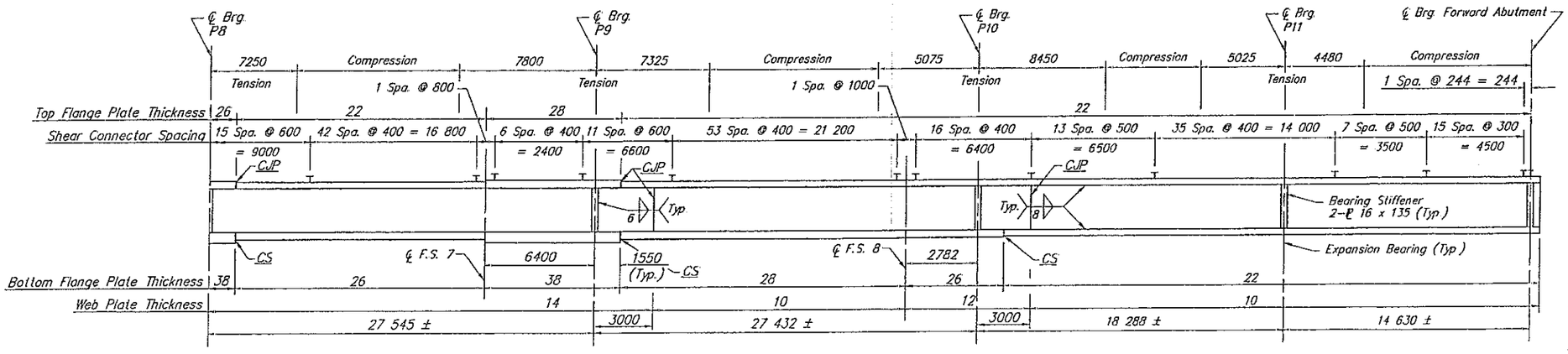
J:\JOBS\3171\BRIDGE\3171FP01.DWG] PJK 1/5/98 PLOT 1000:250 METRIC



GIRDER A
(Spans 1 thru 4)



GIRDER A
(Spans 5 thru 8)



GIRDER A
(Spans 9 thru 12)

Notes.

All dimension are in millimeter, unless otherwise noted.

All flange and web plates shall be CVN material and shall meet the specified minimum notch toughness requirements as specified in 711.01

All flange plates shall have a width of 300 mm

All web plates shall have a depth of 850 mm

Welded attachment of supports for concrete deck finishing machine may be made to areas of the facia girder flanges designated "Compression". Attachments shall not be made to areas designated 'Tension". Fillet welds to compression flanges shall be not closer than 25 mm from edge of flange, be not more than 50 mm long, and be not smaller than the minimum size required by AASHTO.

For bearing details, see sheet 65/68

For field splice and shear connection details, see sheet 57/68

CS – indicates butt weld subject to compressive stresses only

CJP – indicates complete joint penetration groove welds

The following abbreviations are used:

Typ. = Typical — Brg = Bearing

℄ = Plate — Spa. = Spaces

F.S. = Field Splice

DESIGN AGENCY
EUTHEMICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KPD		1833421	

GIRDER A ELEVATION

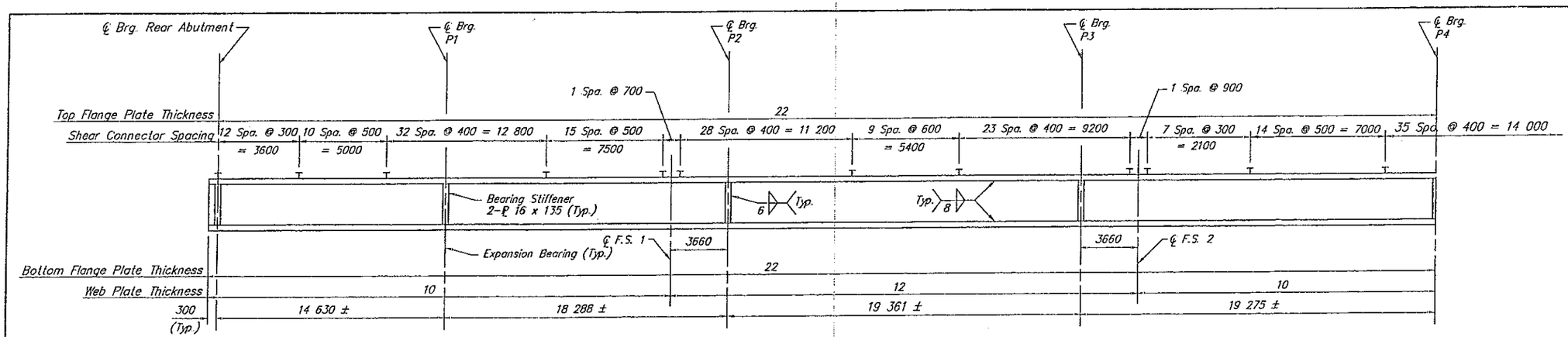
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

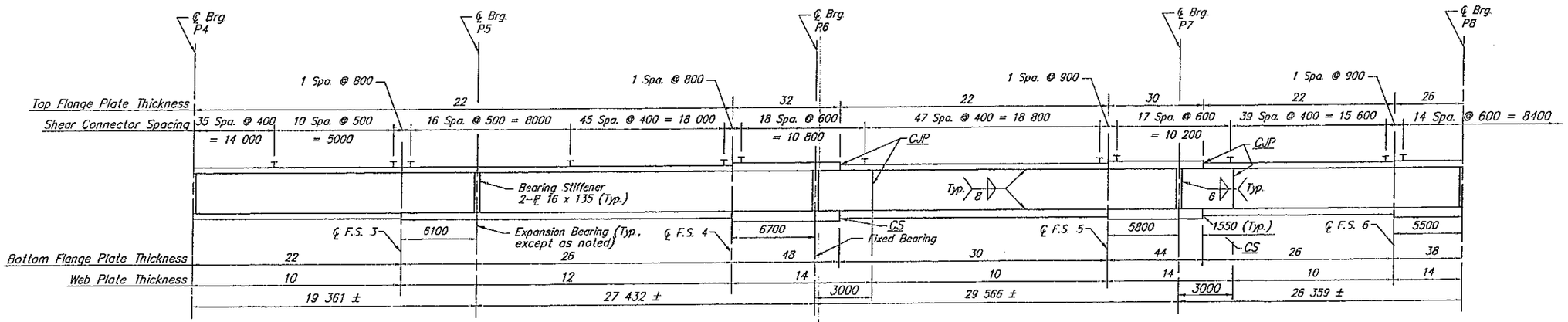
47/68

77/98

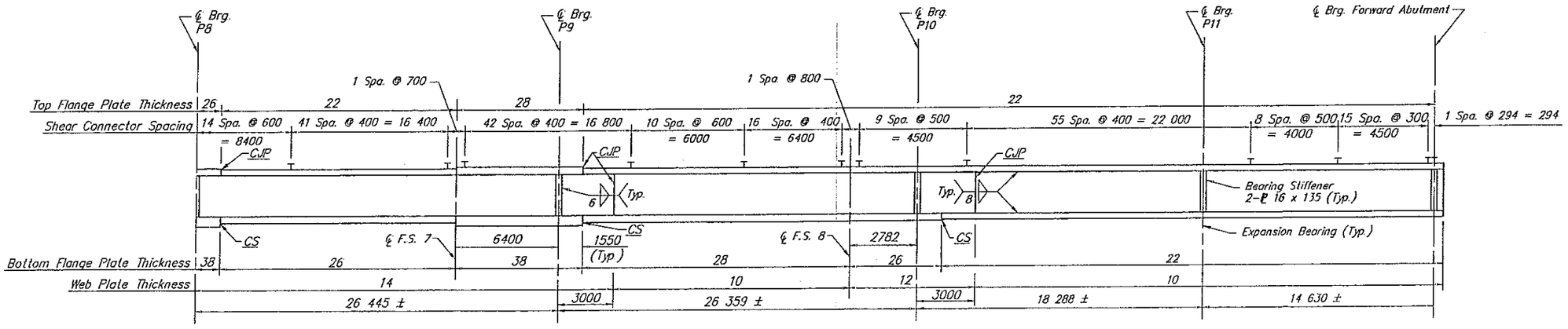
Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No 200



GIRDER B
(Spans 1 thru 4)



GIRDER B
(Spans 5 thru 8)



GIRDER B
(Spans 9 thru 12)

Notes:

For additional notes, see sheet 47 of 68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY
EUTHEMES INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		18334421	

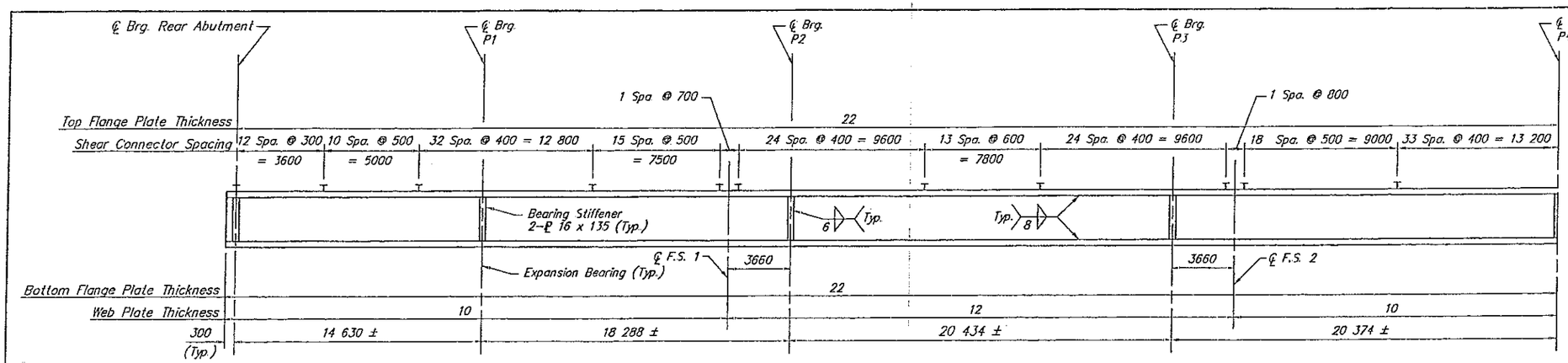
GIRDER B ELEVATION

BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

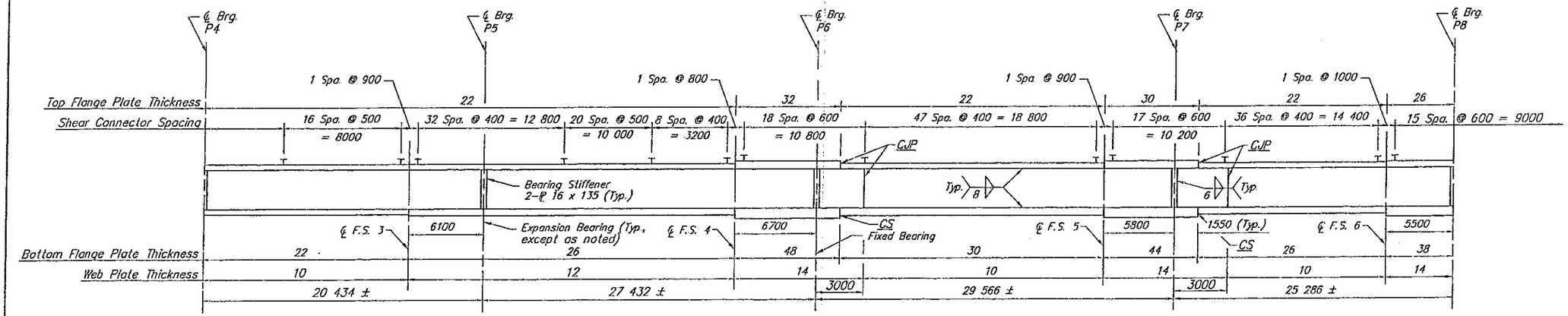
CUY-WEST 140th STREET

48 / 68

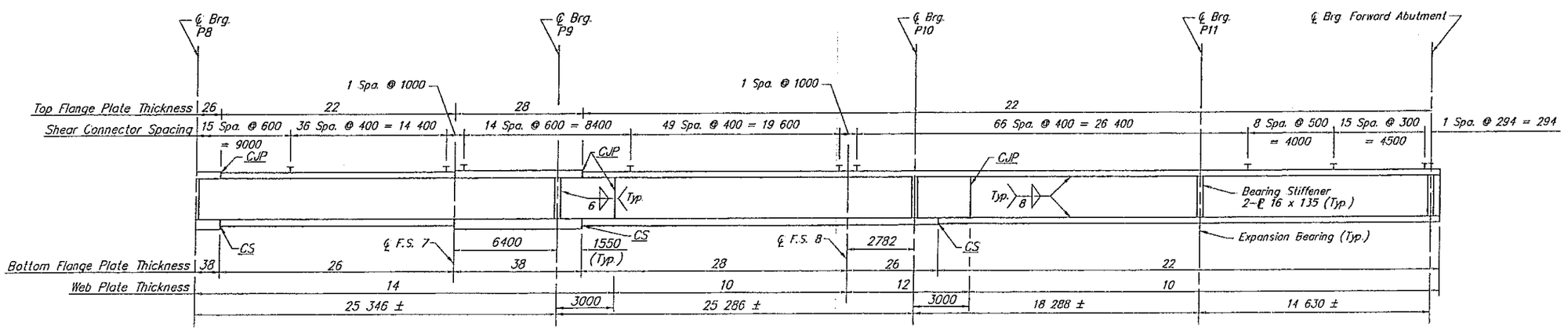
78 / 98



GIRDER C
(Spans 1 thru 4)



GIRDER C
(Spans 5 thru 8)



GIRDER C
(Spans 9 thru 12)

Notes:
For additional notes, see sheet 17 of 68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY
EUTHEMES INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		1833421	

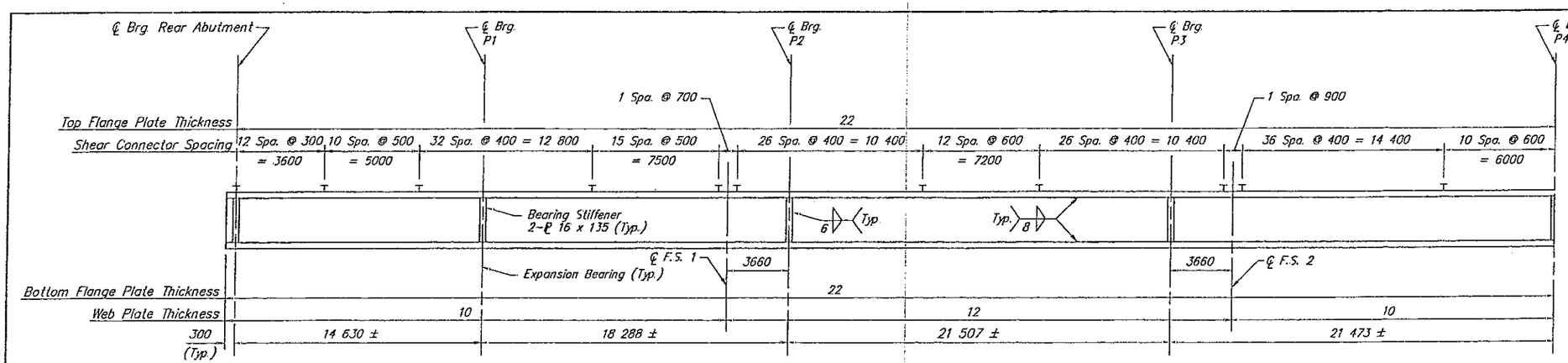
GIRDER C ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

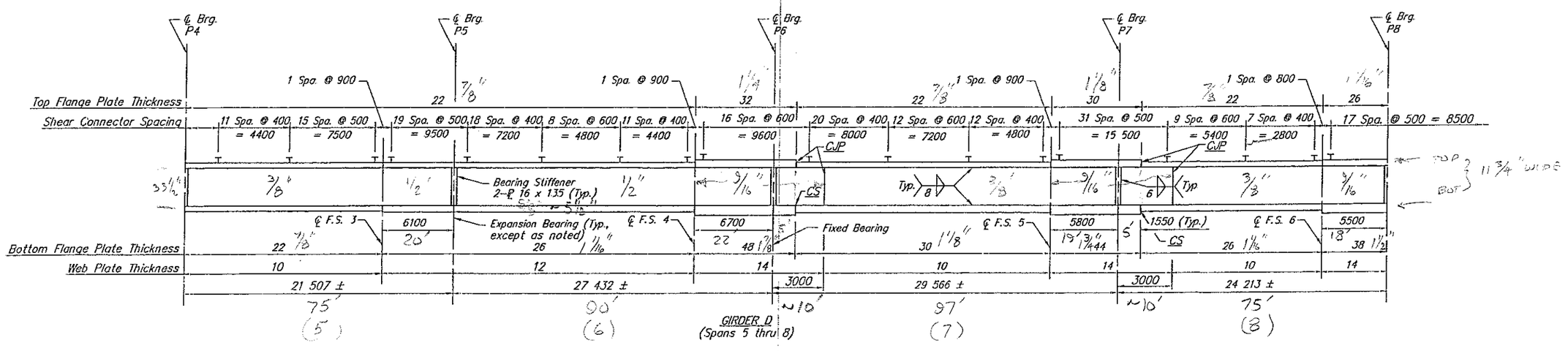
49 / 68

79 / 98

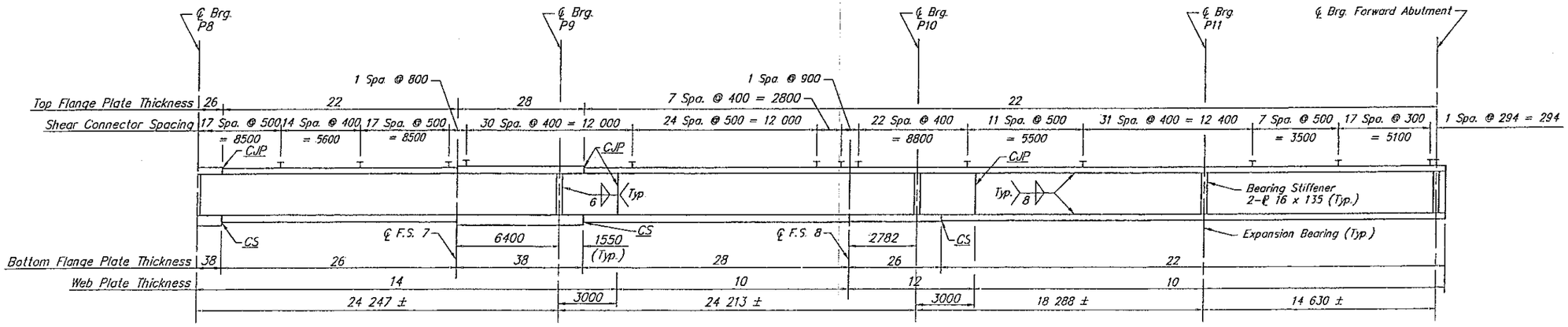
[JOBS\317\BRIDGE\317BE03.DWG] RM 10/15/96 PLOT 1000.400 METRIC



GIRDER D
(Spans 1 thru 4)



GIRDER D
(Spans 5 thru 8)



GIRDER D
(Spans 9 thru 12)

Notes:

For additional notes, see sheet 47/68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY
EUTHENIES INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		1833421	

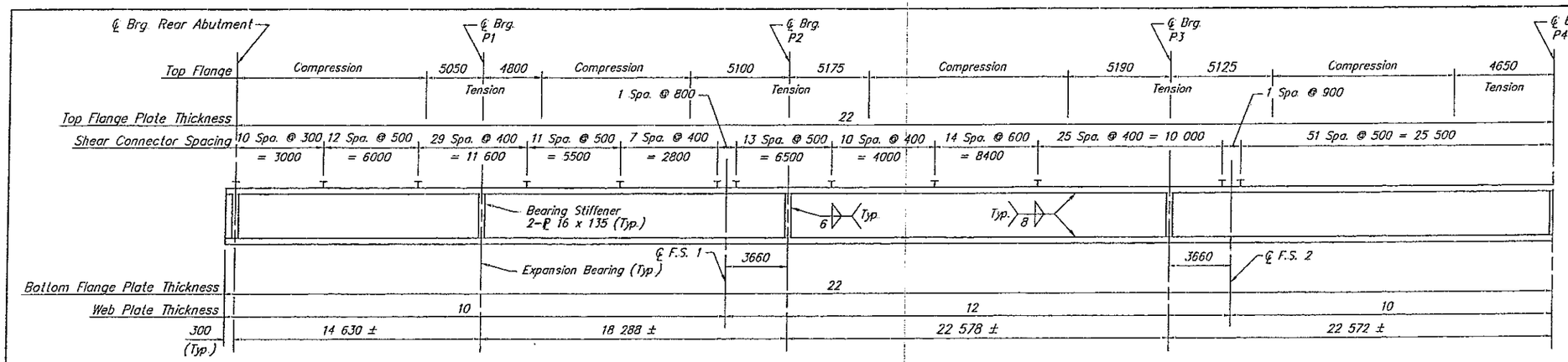
GIRDER D ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

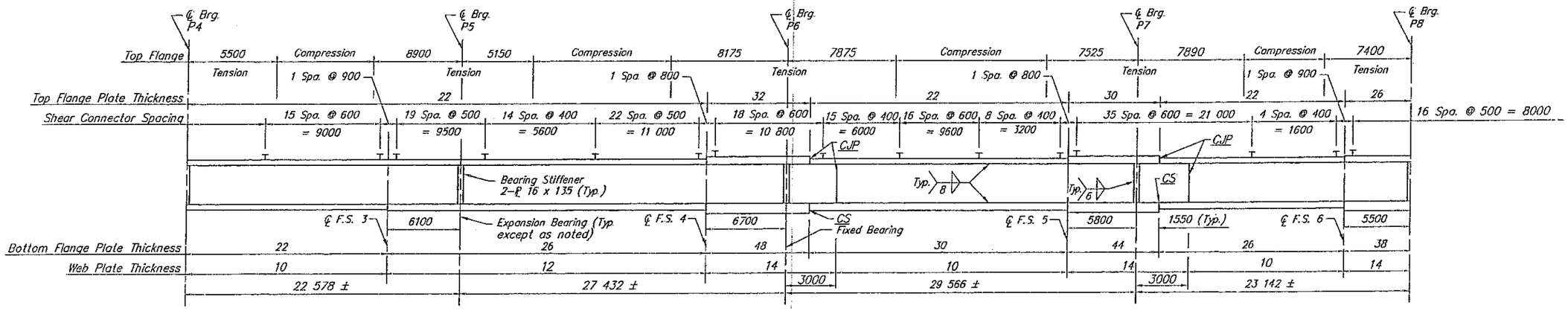
50 / 68

80 / 98

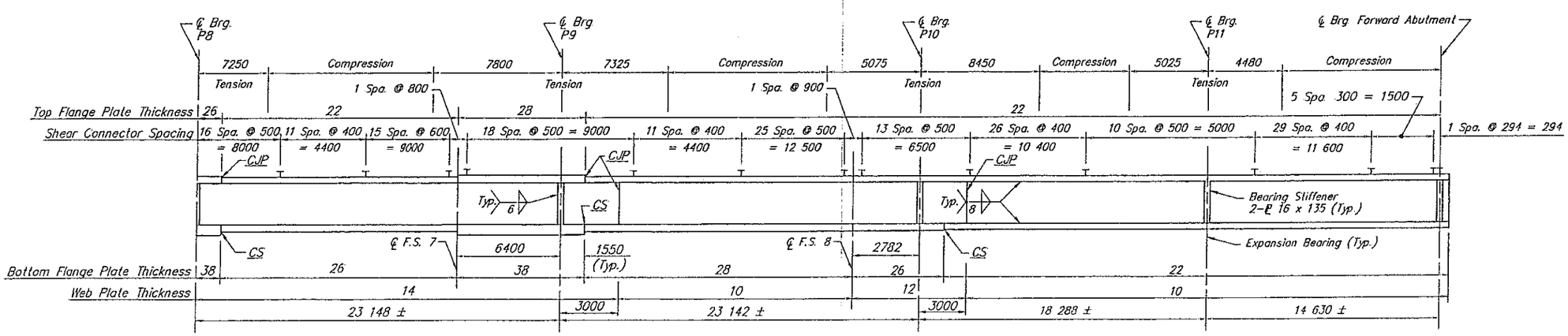
[JOBS\317\BRIDGE\317E04.DWG] RM 10/15/96 PLOT 1000-400 METRIC



GIRDER E
(Spans 1 thru 4)



GIRDER E
(Spans 5 thru 8)



GIRDER E
(Spans 9 thru 12)

Notes.
For additional notes, see sheet 47/68

Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No. 200

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED BMG
DRAWN BMG
CHECKED KRD
REVIEWED RAB
REVISED
DATE 9-96
STRUCTURE FILE NUMBER 1833421

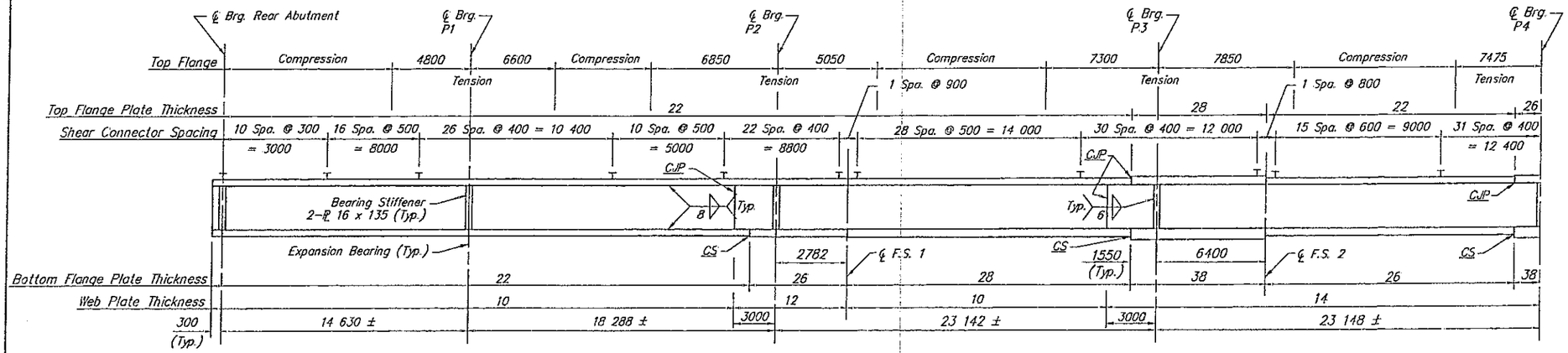
GIRDER E ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

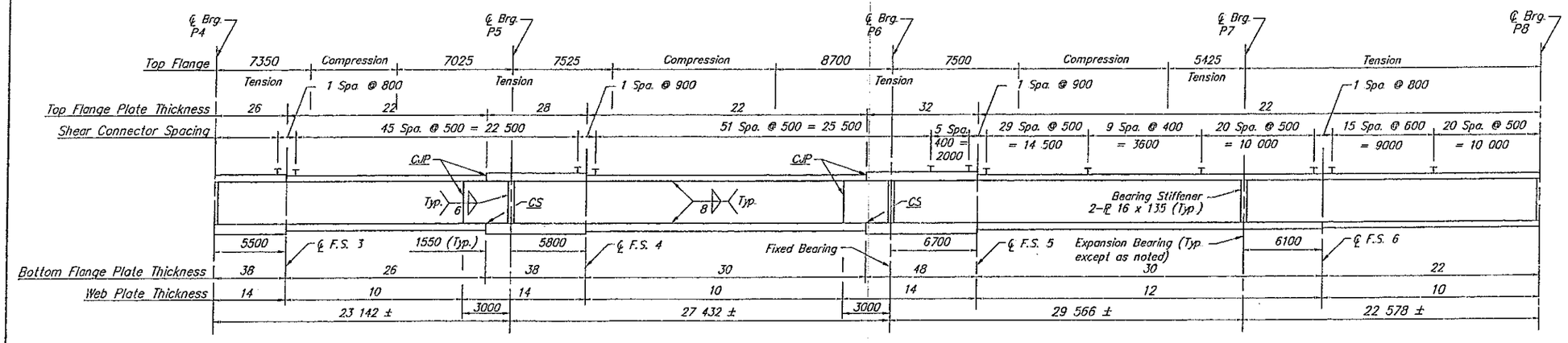
51/68

81/98

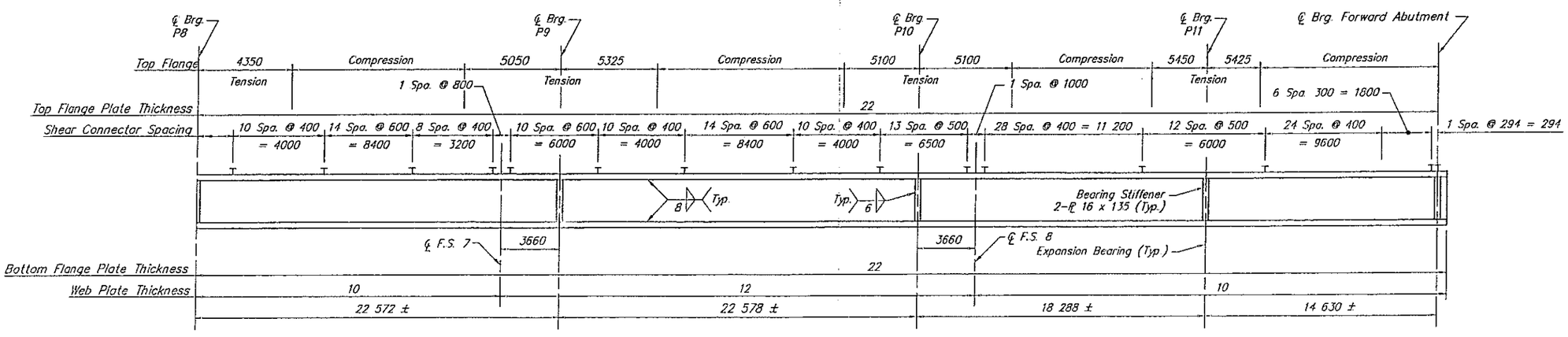
LJOBS\417\BRIDGE\1372605.DWG1 Rd 10/15/96 PLOT 1000-400 METRIC



GIRDER F
(Spans 1 thru 4)



GIRDER F
(Spans 5 thru 8)



GIRDER F
(Spans 9 thru 12)

Notes.

For additional notes, see sheet 47 68

DESIGN AGENCY
EUTHEMIES INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

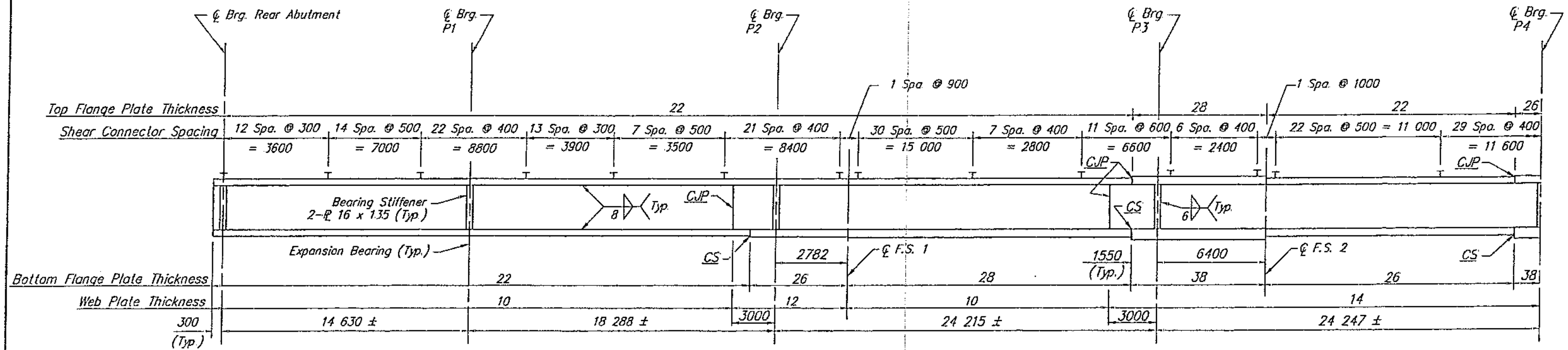
DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		18.33421	

GIRDER F ELEVATION

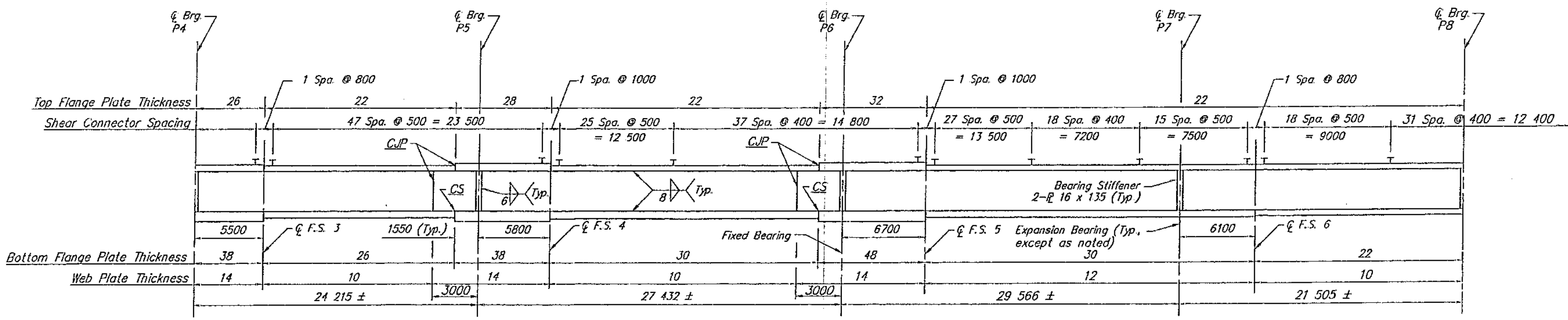
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

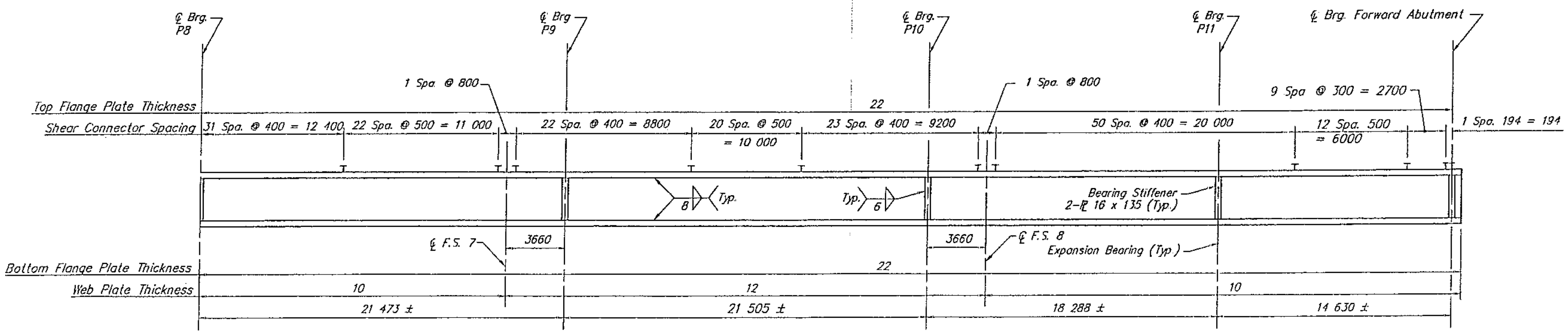
Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No. 200



GIRDER G
(Spans 1 thru 4)



GIRDER G
(Spans 5 thru 8)



GIRDER G
(Spans 9 thru 12)

Notes:
For additional notes, see sheet 47/68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

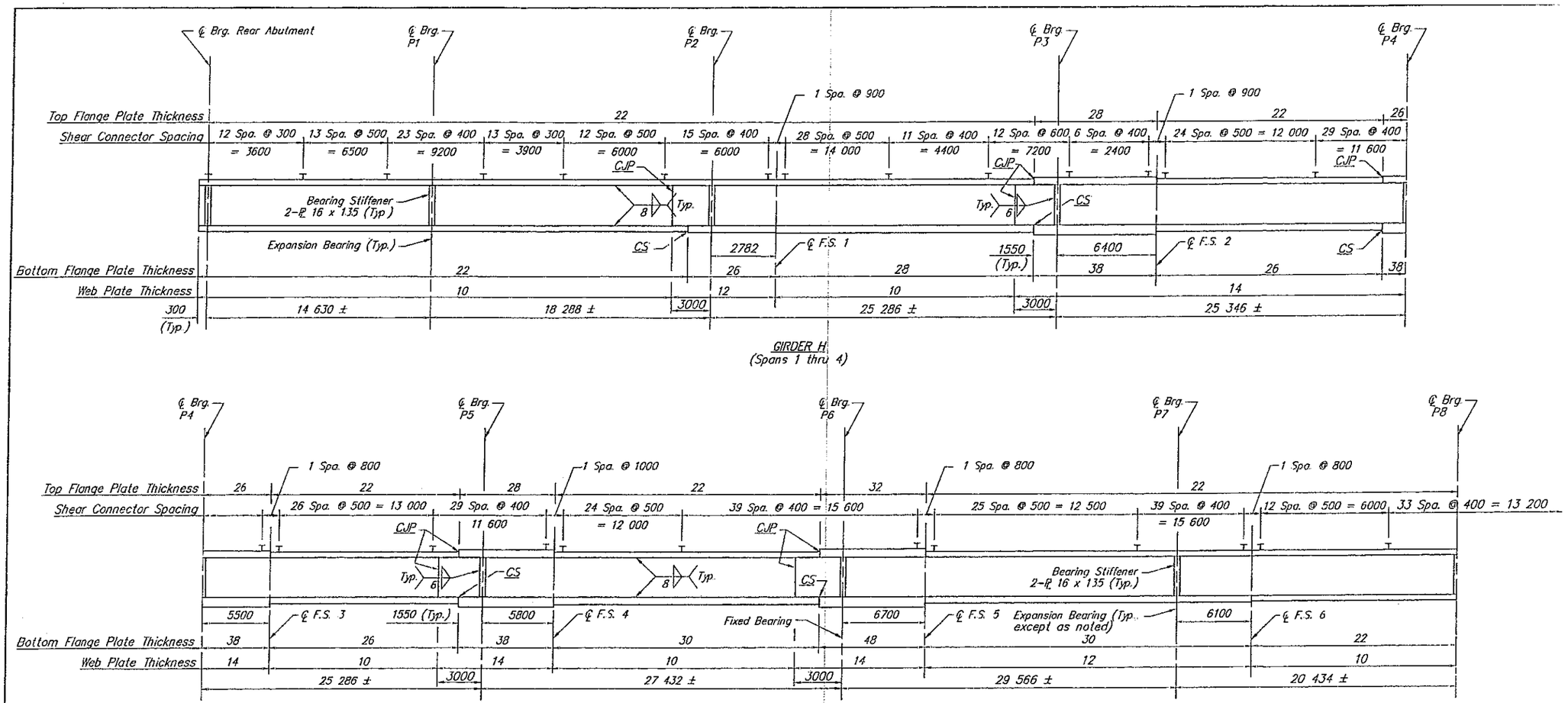
DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
BMG	KRD	BMG		RAB	9-96	1833421

GIRDER G ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

53/68

83/98



Notes:

For additional notes, see sheet 47/68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMG	BMG	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		1833421	

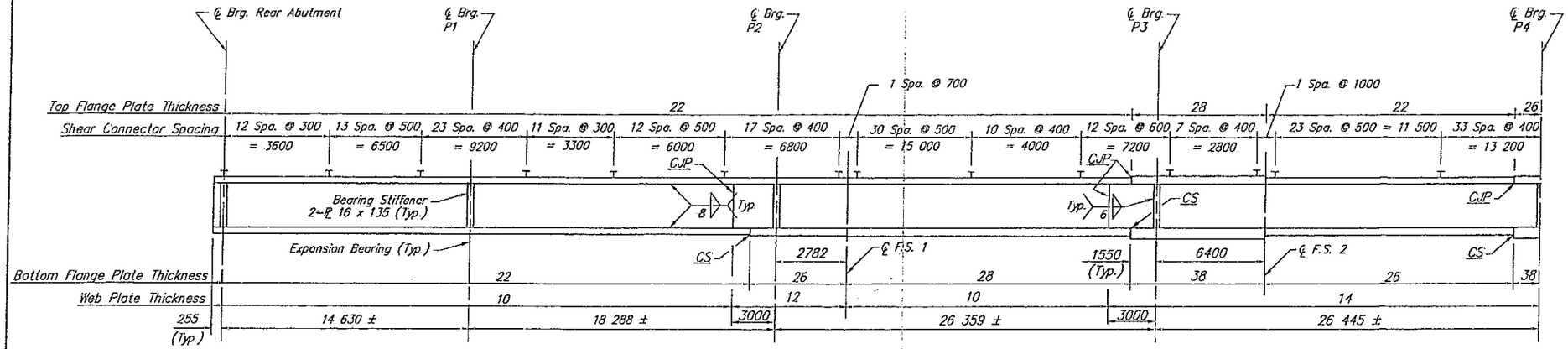
GIRDER H ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

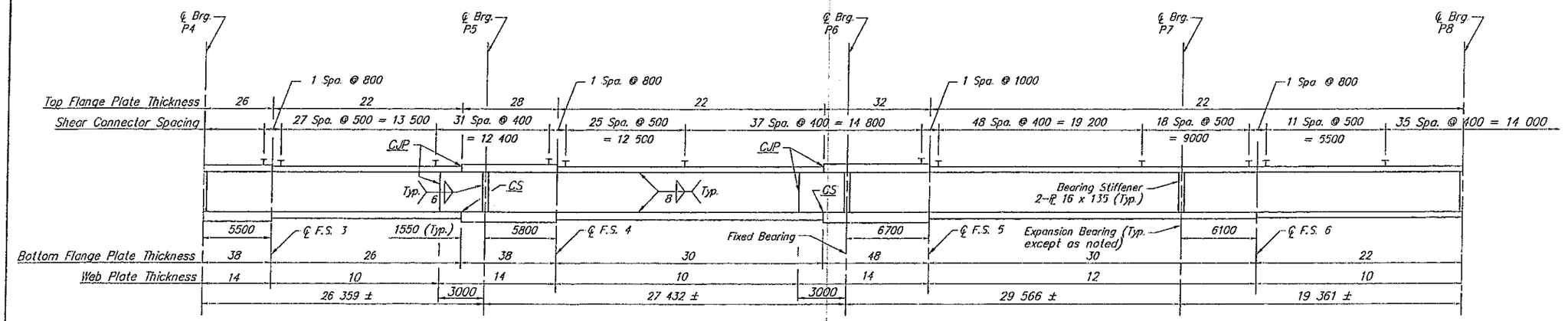
54/68

84/98

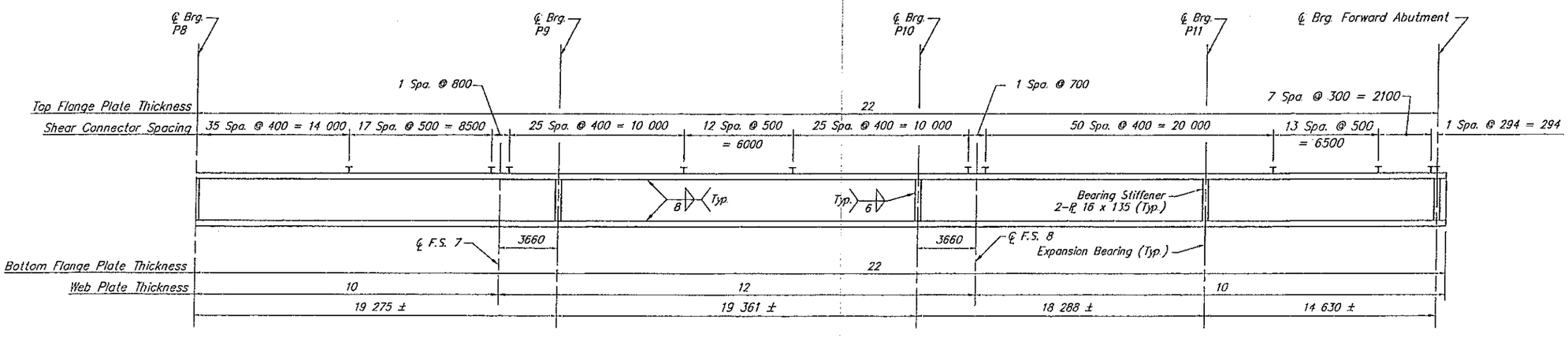
[JOBS\317\BRIDGE\317BG08.DWG] RM 10/15/96 PLOT 1000x400 METRIC



GIRDER J
(Spans 1 thru 4)



GIRDER J
(Spans 5 thru 8)



GIRDER J
(Spans 9 thru 12)

Notes:
For additional notes, see sheet 47/68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

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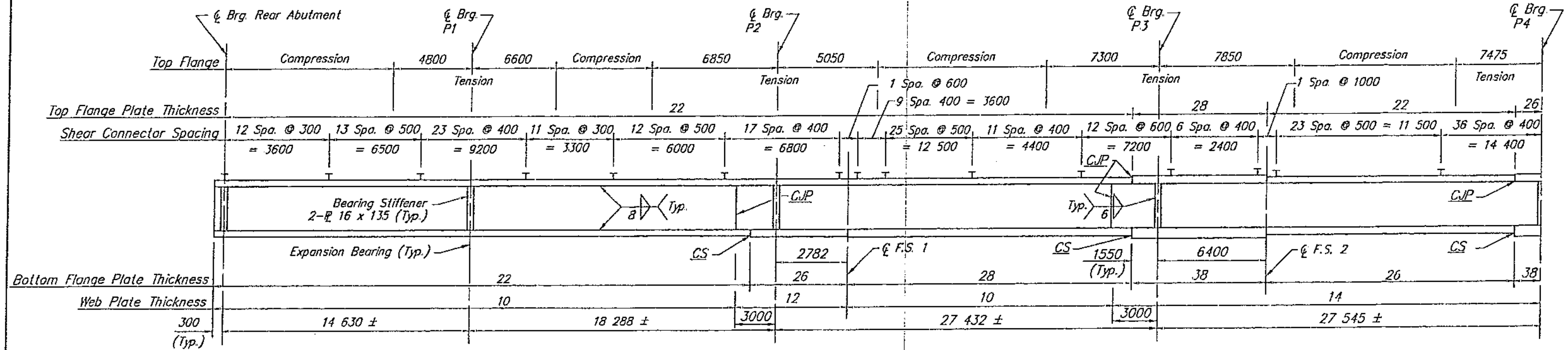
BMG	BMG	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		1833421	

GIRDER J ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

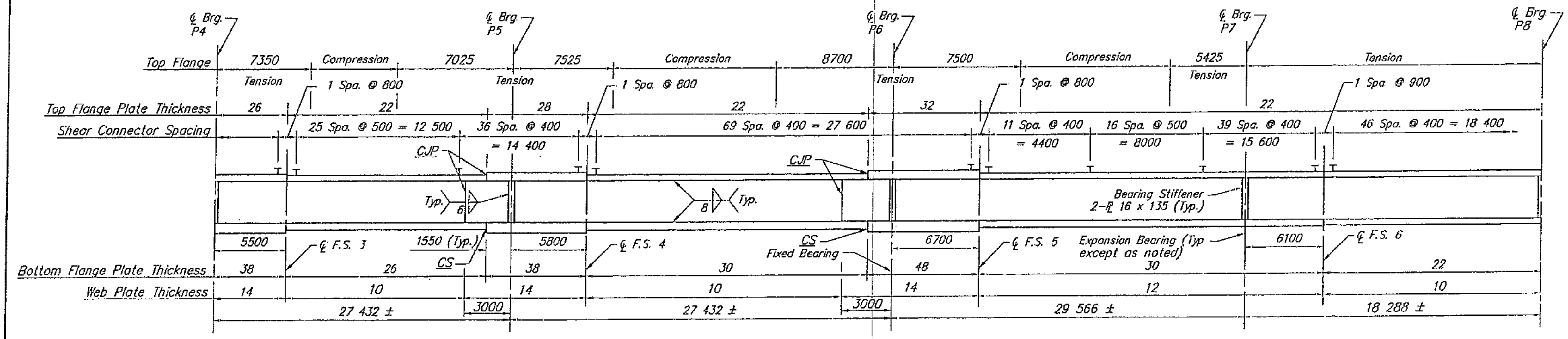
CUY-WEST 140th STREET

55/68

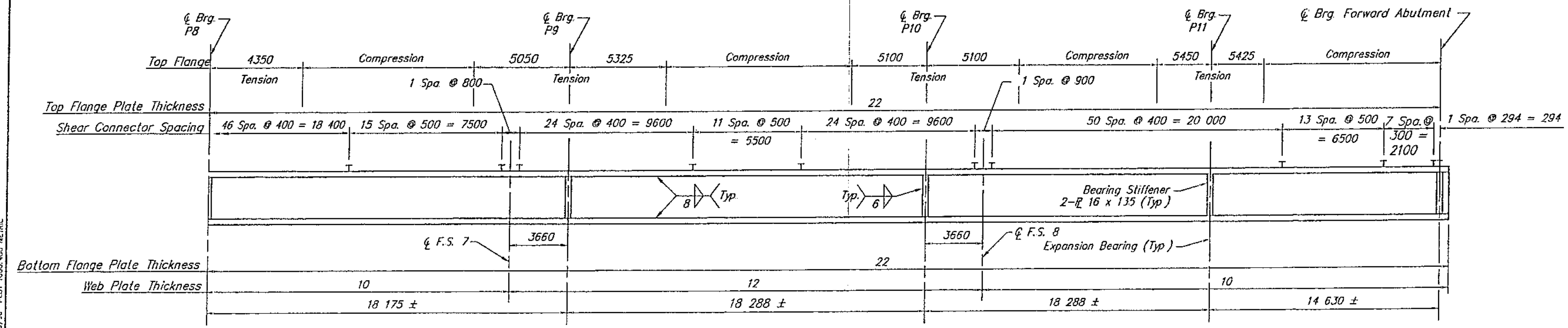
85/98



GIRDER K
(Spans 1 thru 4)



GIRDER K
(Spans 5 thru 8)



GIRDER K
(Spans 9 thru 12)

Notes:
For additional notes see sheet 47/68

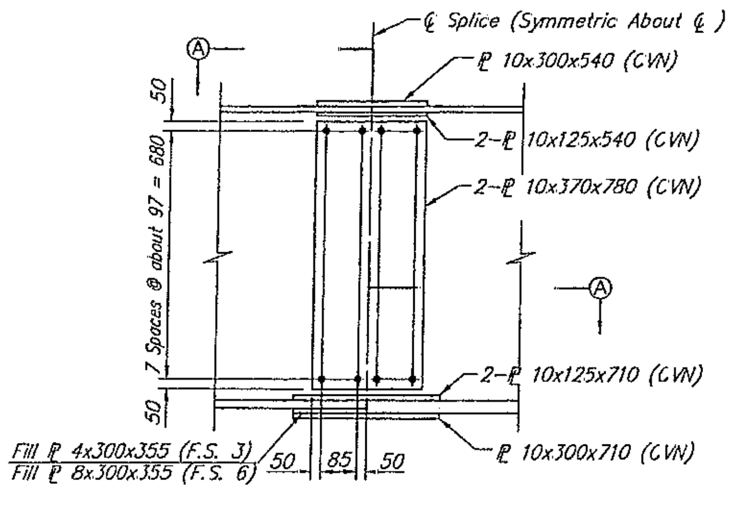
Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No. 200

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

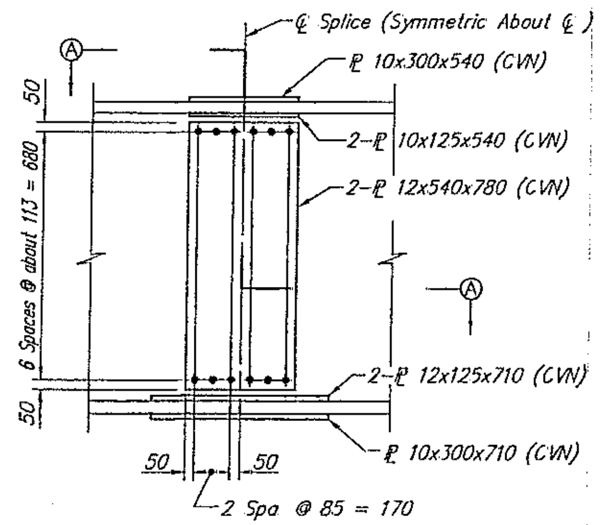
DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	RAB	9-96
CHECKED KRD	REVISED	STRUCTURE FILE NUMBER 1833421	

GIRDER K ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

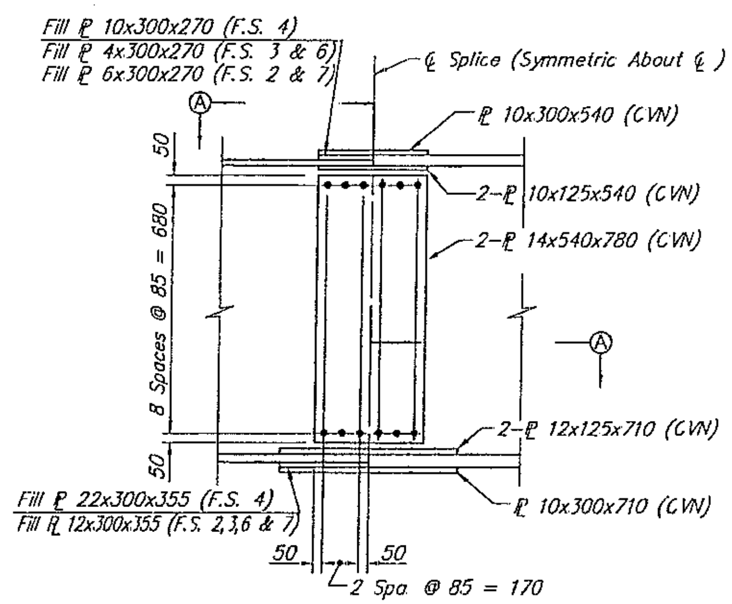
CUY-WEST 140th STREET



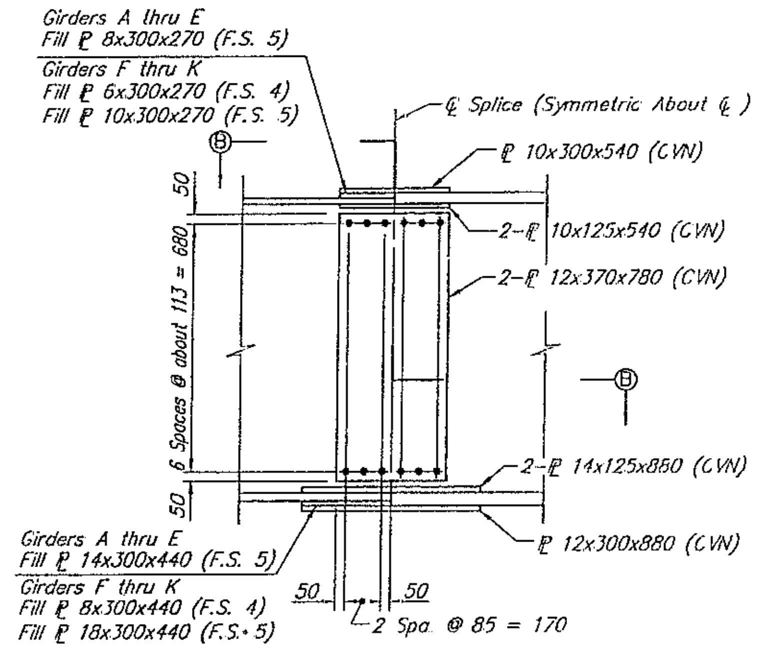
GIRDER FIELD SPLICE 1, 2 & 3 (Girders A thru E)
GIRDER FIELD SPLICE 6, 7 & 8 (Girders F thru K)



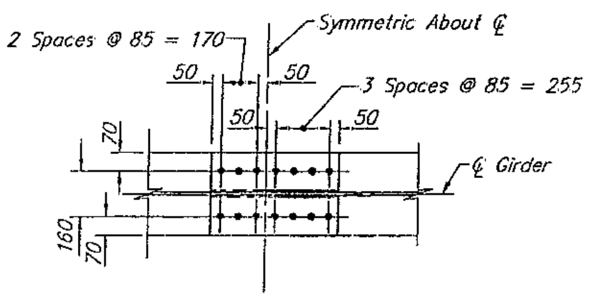
GIRDER FIELD SPLICE 8 (Girders A thru E)
GIRDER FIELD SPLICE 1 (Girders F thru K)



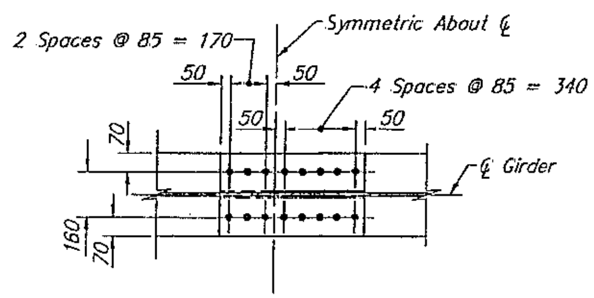
GIRDER FIELD SPLICE 4, 6 & 7 (Girders A thru E)
GIRDER FIELD SPLICE 2 & 3 (Girders F thru K)



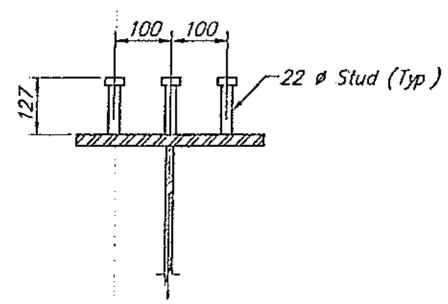
GIRDER FIELD SPLICE 5 (Girders A thru E)
GIRDER FIELD SPLICE 4 & 5 (Girders F thru K)



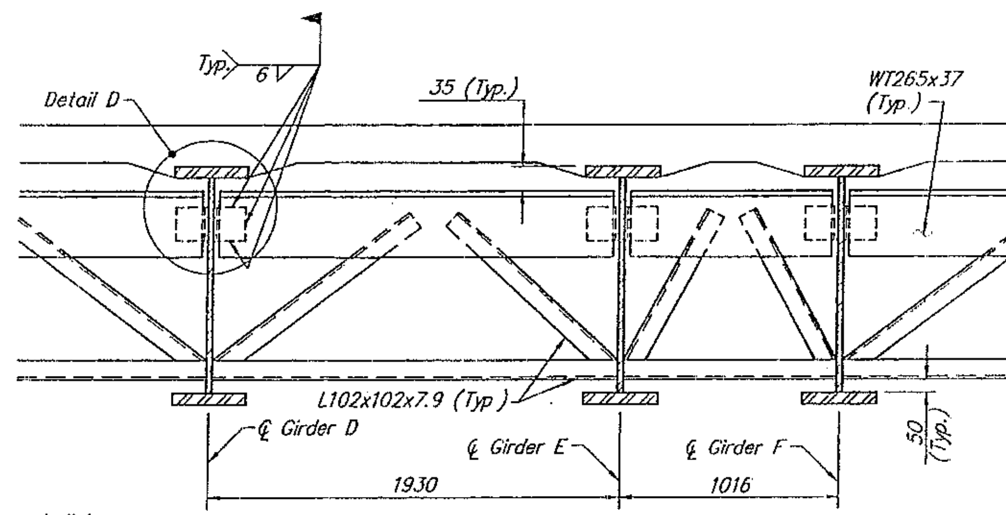
SECTION A-A



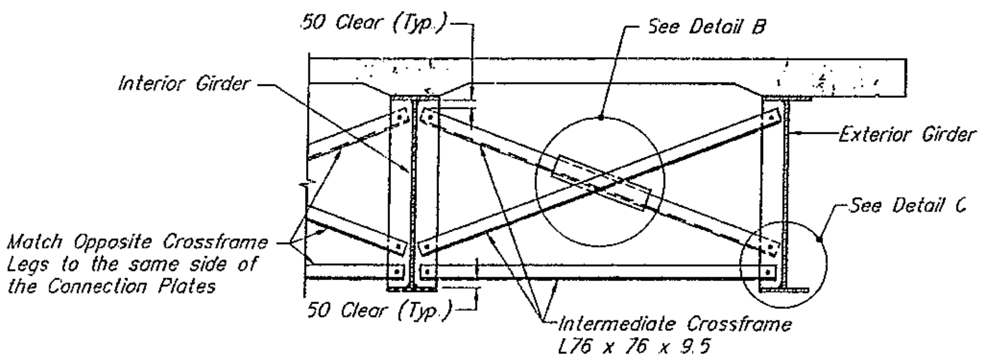
SECTION B-B



SHEAR CONNECTOR DETAIL



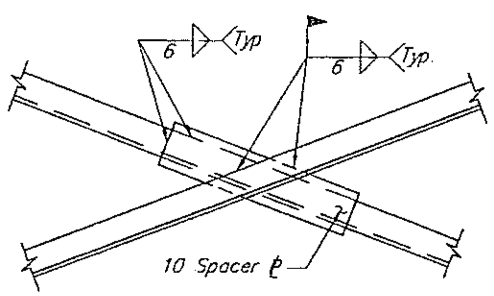
END CROSSFRAMES



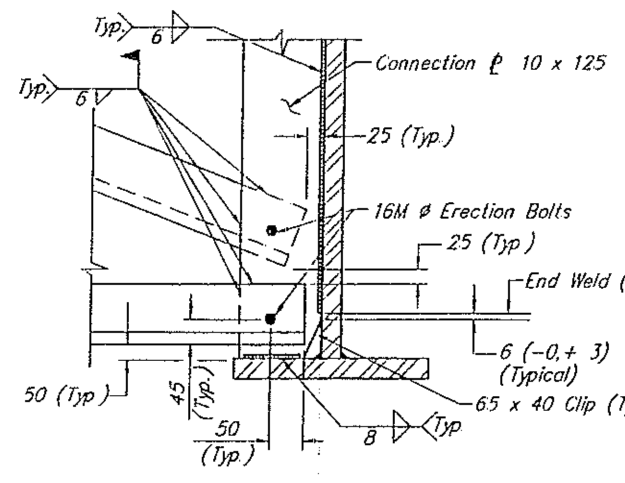
INTERMEDIATE CROSSFRAME

ERECTION BOLTS: The hole diameter in the crossframes and girder stiffeners shall be 5 mm larger than the diameter of the erection bolts. Unless replaced by permanent high strength bolts, erection bolts shall remain in place. Lock washers shall be furnished for other than fully torqued high strength erection bolts. Bolts shall be furnished as part of Item 863.

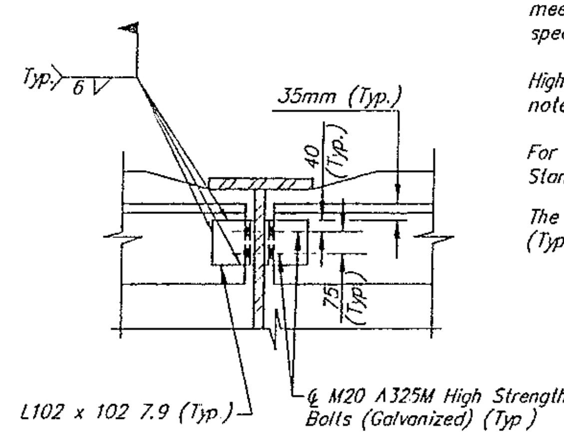
In lieu of erection bolts and at the option of the Contractor, alternative means of temporary bracing may be used subject to the approval of the Director.



DETAIL B



DETAIL C



DETAIL D

Notes:

All dimension are in millimeters, unless otherwise noted.

Where a shape or plate is designated (CVN) the material shall meet the specified minimum notch toughness requirements as specified in 711.01

High strength bolts shall be 27mm diameter A325M unless otherwise noted.

For additional end crossframe details and notes see Ohio Standard Drawing EXJ-4-87M.

The following abbreviations are used.
(Typ.) = Typical ℘ = Plate

Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No 200

DESIGN AGENCY	EUTHENICS INC. CONSULTING ENGINEERS
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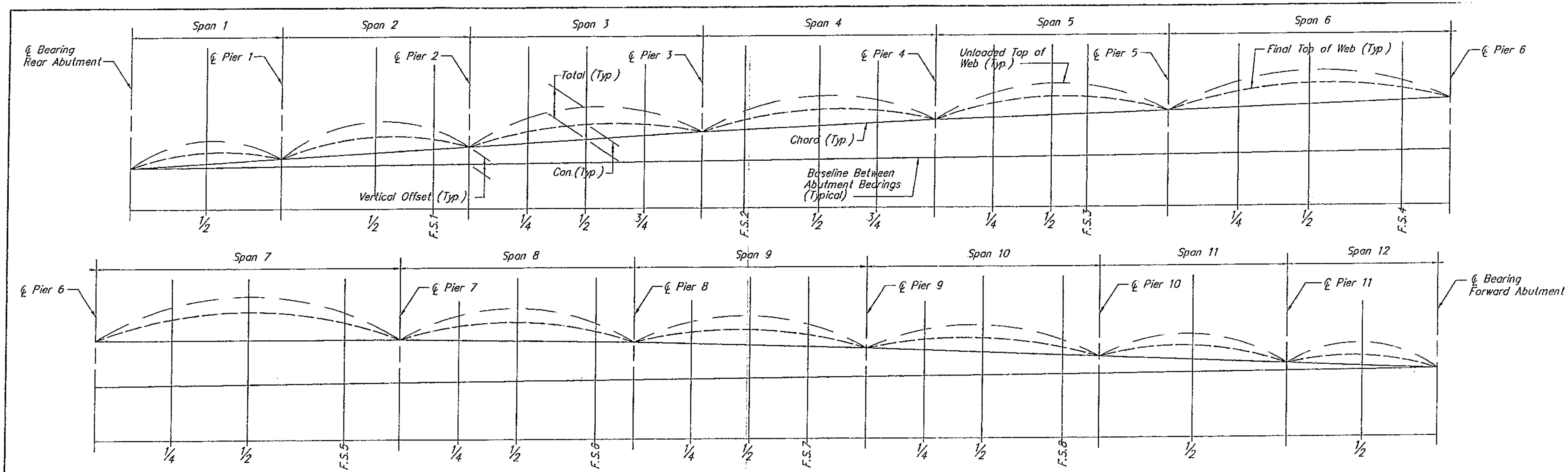
REVIEWED RAB	DATE 9-96
STRUCTURE FILE NUMBER	1833421

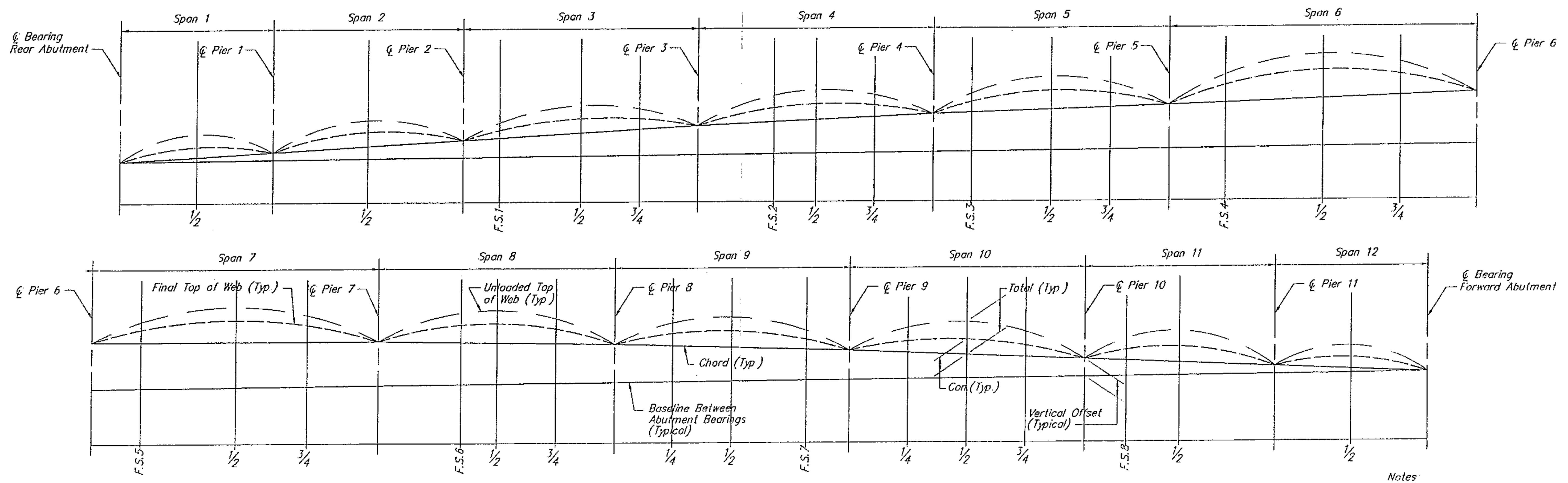
GIRDER SPLICE DETAILS
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

J:\JOBS\317\BRIDGE\317MED02.DWG] JT 2/3/98 PLOT @ 1000:10 METRIC



CAMBER DIAGRAM
(Girders A thru E)



CAMBER DIAGRAM
(Girders F thru K)

Notes:
For dead load deflection and vertical offset tables see sheet 59/68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

DESIGN AGENCY
EUTHENICS inc.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	RAB	9/96
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KRD		1833421	

CAMBER DIAGRAM
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

58/68

88/98

DEAD LOAD DEFLECTION AND CAMBER

Span	1				2								3												4							
Location	1/2				1/2				Field Splice #1				Field Splice #1				1/4				1/2				3/4				Field Splice #2				1/2				3/4			
	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.
Girder A	1	6	0	7	1	8	0	9	0	3	0	3	–	–	–	–	1	4	2	7	1	7	4	12	1	3	6	10	0	4	16	20	1	9	25	35	1	6	19	26
Girder B	1	4	0	5	1	5	0	6	0	2	0	2	–	–	–	–	1	4	3	8	1	7	6	14	1	3	8	12	0	3	17	20	1	7	28	36	1	5	21	27
Girder C	1	4	0	5	1	4	0	5	0	1	0	1	–	–	–	–	1	6	4	11	2	9	8	19	1	5	10	16	1	3	18	22	2	9	31	42	1	5	24	30
Girder D	1	4	0	5	1	4	0	5	0	1	0	1	–	–	–	–	1	7	5	13	2	11	10	23	1	6	13	20	1	3	20	24	2	10	35	47	1	6	26	33
Girder E	1	3	0	4	1	3	0	4	0	1	0	1	–	–	–	–	1	7	7	15	2	10	13	25	1	6	16	23	1	2	21	24	2	9	38	49	1	5	29	35
Girder F	1	4	0	5	0	3	0	3	–	–	–	–	1	3	4	8	–	–	–	–	3	10	15	28	2	6	17	25	1	5	32	38	3	9	40	52	1	5	30	36
Girder G	1	5	0	6	0	3	0	3	–	–	–	–	1	4	4	9	–	–	–	–	3	16	18	37	2	9	20	31	1	7	35	43	3	12	44	59	1	7	33	41
Girder H	1	5	0	6	0	2	0	2	–	–	–	–	1	5	5	11	–	–	–	–	4	20	22	46	2	11	23	36	1	7	37	45	3	14	49	66	1	8	36	45
Girder J	1	5	0	6	0	1	0	1	–	–	–	–	1	6	5	12	–	–	–	–	5	23	26	54	3	12	26	41	2	8	39	49	3	16	53	72	2	9	40	51
Girder K	1	7	0	8	0	1	0	1	–	–	–	–	1	9	6	16	–	–	–	–	6	40	30	76	3	21	29	53	2	12	41	55	3	26	57	86	2	14	43	59

Span	5																6															
Location	Field Splice #3				1/4				1/2				Field Splice #3				3/4				Field Splice #4				1/4				1/2			
	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.
Girder A	–	–	–	–	0	1	19	20	0	1	25	26	0	-1	22	21	–	–	–	–	–	–	–	–	3	24	43	70	5	36	57	98
Girder B	–	–	–	–	0	2	21	23	0	3	28	31	0	1	24	25	–	–	–	–	–	–	–	–	3	16	43	62	5	24	57	86
Girder C	–	–	–	–	1	3	24	28	1	5	32	38	1	2	26	29	–	–	–	–	–	–	–	–	3	15	43	61	4	23	57	84
Girder D	–	–	–	–	1	4	26	31	1	7	35	43	1	3	28	32	–	–	–	–	–	–	–	–	3	15	43	61	4	23	57	84
Girder E	–	–	–	–	1	5	29	35	1	7	39	47	1	3	30	34	–	–	–	–	–	–	–	–	3	11	43	57	4	18	57	79
Girder F	1	5	29	35	–	–	–	–	2	7	40	49	–	–	–	–	1	3	30	34	2	8	38	48	–	–	–	–	3	15	57	75
Girder G	1	7	31	39	–	–	–	–	2	12	44	58	–	–	–	–	1	6	33	40	2	9	38	49	–	–	–	–	3	17	57	77
Girder H	1	8	33	42	–	–	–	–	3	16	48	66	–	–	–	–	1	8	36	45	2	8	38	48	–	–	–	–	3	15	57	75
Girder J	2	9	35	46	–	–	–	–	3	19	52	73	–	–	–	–	2	11	39	52	1	7	38	46	–	–	–	–	3	14	57	74
Girder K	2	15	36	53	–	–	–	–	4	34	57	95	–	–	–	–	2	19	43	64	1	8	38	47	–	–	–	–	3	18	57	78

Span	6																			
Location	3/4				Field Splice #4															
	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.
Girder A	–	–	–	–	3	36	57	96	–	–	–	–	2	18	42	62				
Girder B	–	–	–	–	3	24	57	86	–	–	–	–	2	12	42	56				
Girder C	–	–	–	–	3	15	43	61	4	23	57	84	–	–	–	–	2	11	42	55
Girder D	–	–	–	–	3	15	43	61	4	23	57	84	–	–	–	–	2	11	42	55
Girder E	–	–	–	–	3	11	43	57	4	18	57	79	–	–	–	–	2	8	42	52
Girder F	3	15	57	75	1	6	43	50	–	–	–	–	–	–	–	–				
Girder G	3	17	57	77	1	7	43	51	–	–	–	–	–	–	–	–				
Girder H	3	15	57	75	1	6	43	50	–	–	–	–	–	–	–	–				
Girder J	3	14	57	74	1	5	43	49	–	–	–	–	–	–	–	–				
Girder K	3	18	57	78	1	6	43	50	–	–	–	–	–	–	–	–				

Span	7																8															
Location	Field Splice #5				1/4				1/2				3/4				Field Splice #5				1/4				Field Splice #6				1/2			
	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.
Girder A	–	–	–	–	3	19	50	72	6	38	66	110	–	–	–	–	3	17	42	62	1	12	43	56	–	–	–	–	3	26	57	86
Girder B	–	–	–	–	3	14	50	67	6	28	66	100	–	–	–	–	3	13	42	58	1	6	39	46	–	–	–	–	2	14	52	68
Girder C	–	–	–	–	4	15	50	69	7	29	66	102	–	–	–	–	3	14	42	59	0	4	36	40	–	–	–	–	2	11	48	61
Girder D	–	–	–	–	4	16	50	70	7	31	66	104	–	–	–	–	3	15	42	60	0	2	33	35	–	–	–	–	1	7	44	52
Girder E	–	–	–	–	4	13	50	67	7	26	66	99	–	–	–	–	3	13	42	58	0	0	30	30	–	–	–	–	1	3	40	44
Girder F	4	16	46	66	–	–	–	–	8	29	66	103	5	19	50	74	–	–	–	–	–	–	–	–	-1	0	30	29	0	4	39	43
Girder G	4	20	46	70	–	–	–	–	8	37	66	111	5	24	50	79	–	–	–	–	–	–	–	–	-1	0	28	27	0	3	35	38
Girder H	4	20	46	70	–	–	–	–	8	37	66	111	5	24	50	79	–	–	–	–	–	–	–	–	-1	-1	26	24	0	1	32	33
Girder J	4	20	46	70	–	–	–	–	8	38	66	112	5	25	50	80	–	–	–	–	–	–	–	–	-1	-2	24	21	-1	0	28	27
Girder K	4	30	46	80	–	–	–	–	8	56	66	130	5	37	50	92	–	–	–	–	–	–	–	–	-1	-5	22	16	-1	-3	25	21

Span	8																			
Location	3/4				Field Splice #6															
	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.
Girder A	–	–	–	–	1	11	36	48												
Girder B	–	–	–	–	1	6	35	42												
Girder C	–	–	–	–	1	5	33	39												
Girder D	–	–	–	–	1	4	31	36												
Girder E	–	–	–	–	1	2	29	32												
Girder F	0	4	39	43	0	2	29	31	–	–	–	–								
Girder G	0	3	35	38	0	2	26	28	–	–	–	–								
Girder H	0	1	32	33	0	1	24	25	–	–	–	–								
Girder J	-1	0	28	27	0	0	21	21	–	–	–	–								
Girder K	-1	-3	25	21	0	-1	19	18	–	–	–	–								

Span	9												10																11				12			
Location	1/4				1/2				Field Splice #7				1/4				1/2				3/4				Field Splice #8				Field Splice #8				1/2				1/2			
	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot.	Stl.	Rem D.L.	Con.	Tot	Stl.	Rem D.L.	Con.	Tot	Stl.	Rem D.L.	Con.	Tot
Girder A	2	16	43	61	4	28	57	89	2	13	41	56	3	21	29	53	5	39	30	74	–	–	–	–	1	9	6	16	–	–	–	–	0	1	0	1	1	7	0	8
Girder B	2	10	40	52	4	17	53	74	2	9	39	50	3	12	26	41	4	23	26	53	–	–	–	–	1	6	5	12	–	–	–	–	0	1	0	1	1	5	0	6
Girder C	2	9	36	47	3	15	49	67	2	8	37	47	2	10	23	35	4	19	22	45	–	–	–	–	1	5	5	11	–	–	–	–	0	2	0	2	1	5	0	6
Girder D	2	8	33	43	3	13	44	60	2	8	35	45	2	8	20	30	3	16	18	37	–	–	–	–	1	4	4	9	–	–	–	–	0	3	0	3	1	5	0	6
Girder E	2	6	30	38	3	9	40	52	2	5	32	39	2	5	17	24	3	10	15	28	–	–	–	–	1	2	3	6	–	–	–	–	0	3	0	3	1	4	0	5
Girder F	1	6	29	36	2	10	38	50	0	3	21	24	1	6	15	22	2	10	13	25	1	7	7	15	–	–	–	–	0	1	0	1	1	3	0	4	1	3	0	4
Girder G	1	7	26	34	2	11	35	48	0	4	20	24	1	6	13	20	2	11	11	24	1	7	5	13	–	–	–	–	0	1	0	1	1	4	0	5	1	4	0	5
Girder H	1	6	24	31	2	10	31	43	0	4	18	22	1	5	10	16	2	9	8	19	1	5	4	10	–	–	–	–	0	1	0	1	1	4	0	5	1	4	0	5
Girder J	1	5	21	27	1	8	28	37	1	3	17	21	1	3	8	12	1	6	6	13	1	4	3	8	–	–	–	–	0	2	0	2	1	5	0	6	1	4	0	5
Girder K	1	6	19	26	1	10	25	36	1	4	16	21	1	3	6	10	1	6	4	11	1	3	2	6	–	–	–	–	0	3	0	3	1	8	0	9	1	6	0	7

Note: Negative values for deflections indicate deflections above the chord line.
Deflections and convexities are given to the nearest millimeter.
The following abbreviations are used:
Stl. = Dead load deflection due to weight of steel
Rem D.L = Remaining dead load deflection
Con. = Convexity
Tot. = Total required camber

VERTICAL OFFSET (mm)

	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	Pier 6	Pier 7	Pier 8	Pier 9	Pier 10	Pier 11
Girder A	741	1667	2586	3351	3919	4394	4396	3925	2995	1667	741
Girder B	741	1667	2636	3429	3999	4420	4364	3869	2950	1667	741
Girder C	741	1667	2686	3504	4073	4440	4326	3809	2904	1667	741
Girder D	741	1667	2736	3577	4140	4453	4281	3747	2857	1667	741
Girder E	741	1667	2784	3647	4201	4460	4230	3682	2809	1667	741
Girder F	741	1667	2810	3682	4230	4461	4201	3646	2784	1667	741
Girder G	741	1667	2857	3747	4282	4459	4140	3577	2736	1667	741
Girder H	741	1667	2904	3810	4326	4450	4073	3505	2686	1667	741
Girder J	741	1667	2951	3870	4365	4434	4000	3429	2636	1667	741
Girder K	741	1667	2996	3926	4397	4413	3921	3351	2586	1667	741

Notes

For camber diagram see sheet 58|68

Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No 200

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS

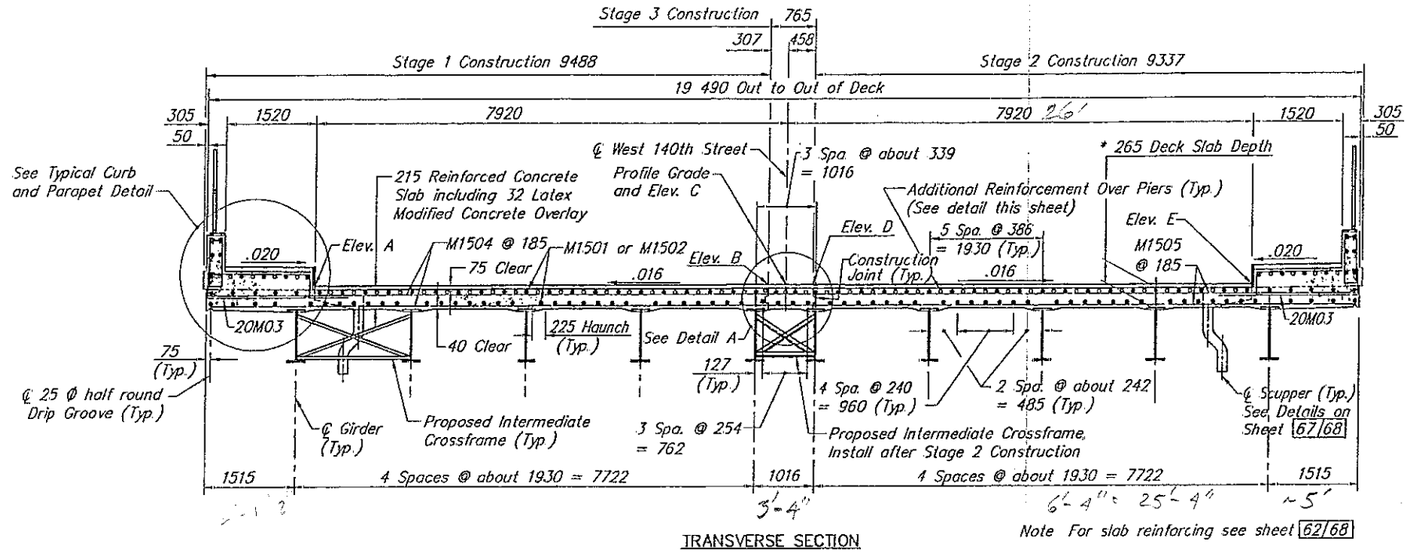
DESIGNED BMG
DRAWN BMG
CHECKED KRD
REVIEWED R.A.B
DATE 9-96
REVISED
STRUCTURE FILE NUMBER 1833421

DEAD LOAD DEFLECTION AND CAMBER
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

59 / 68

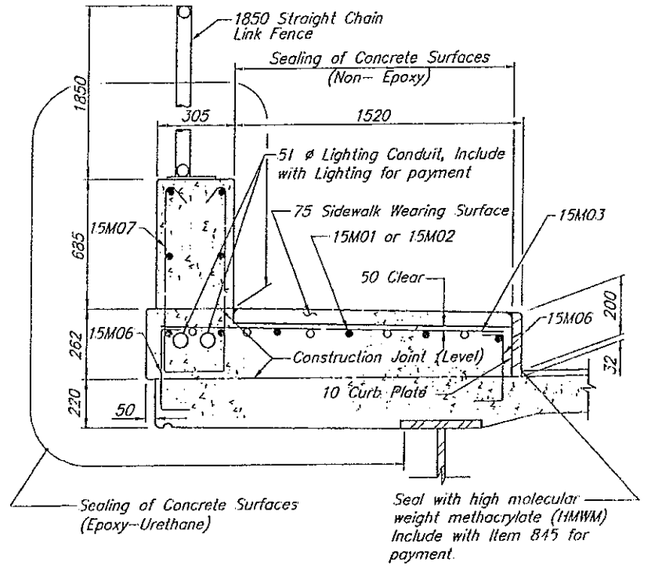
89 / 98



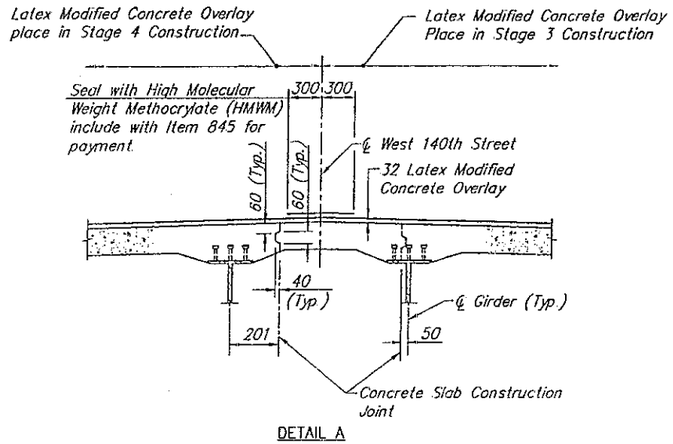
TRANSVERSE SECTION

Note For slab reinforcing see sheet 62/68

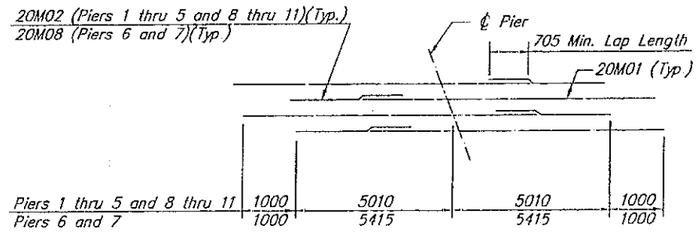
* DECK SLAB DEPTH: The distance shown from top of the portland cement concrete deck slab to bottom of top flange is the theoretical design dimension including the design haunch thickness of 50 mm. The quantity of deck concrete to be paid for shall be based on this dimension, minus the design haunch thickness, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates. At girders A and K this dimension is measured from the extended top of portland cement concrete deck slab



TYPICAL CURB AND PARAPET DETAIL



DETAIL A



ADDITIONAL REINFORCEMENT OVER PIERS

Notes:
A haunch width of 225 mm shall be used for computing quantity of concrete. However, the haunch width may vary between 150 mm and 300 mm

All dimensions in millimeters except for stations and elevations, which are given in meters, unless otherwise noted.

All reinforcing bar marks shall be prefixed by S.

For Elevations A thru E See Sheet 61/68.

For reinforcing schedule see sheet 68/68

For sidewalk and parapet reinforcing see sheet 62/68

For curb plate and sidewalk details see sheet 66/68

For location of lighting conduit in parapet see Roadway Plans

The following abbreviations are used.
Elev. = Elevation Typ. = Typical

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	RAB	9-96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		1833421	

TRANSVERSE SECTION AND DETAILS
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

60 / 68

Cuyahoga County Engineer
Cleveland, Ohio
Report No 7224 and B-No 200

90
98

[317/BRIDGE/317TSX01.DWG] JT 2/2/98 PLOT @ 1000:10 METRIC

DECK SCREED ELEVATIONS

	Span 1			Span 2			Span 3						Span 4				Span 5						Span 6					
Elev.	℄ Bearing Rear Abutment	1/2	℄ Bearing Pier 1	1/2	Field Splice # 1	℄ Bearing Pier 2	Field Splice # 1	1/4	1/2	3/4	℄ Bearing Pier 3	Field Splice # 2	1/2	3/4	℄ Bearing Pier 4	Field Splice # 3	1/4	1/2	Field Splice # 3	3/4	℄ Bearing Pier 5	Field Splice # 4	1/4	1/2	3/4	Field Splice # 4	℄ Bearing Pier 6
A	240.600	240.977	241.342	241.813	242.087	242.269	–	242.507	242.744	242.974	243.197	243.371	243.617	243.800	243.968	–	244.131	244.280	244.371	–	244.538	–	244.720	244.862	–	244.950	245.005
B	240.722	241.096	241.464	241.930	242.206	242.391	–	242.685	242.976	243.255	243.514	243.677	243.995	244.198	244.380	–	244.552	244.703	244.819	–	244.934	–	245.052	245.137	–	245.177	245.189
C	240.727	241.102	241.469	241.935	–	242.396	242.539	–	242.985	243.266	243.527	243.808	244.010	244.213	244.395	244.562	–	244.718	–	244.843	244.948	245.046	–	245.145	245.182	–	245.195
D	240.719	241.094	241.461	241.928	–	242.388	242.532	–	242.984	243.268	243.531	243.810	244.016	244.221	244.404	244.569	–	244.726	–	244.850	244.954	245.049	–	245.143	245.178	–	245.188
E	240.600	240.978	241.342	241.806	–	242.269	242.419	–	242.997	243.310	243.592	243.861	244.137	244.345	244.522	244.668	–	244.848	–	244.939	244.998	245.049	–	245.084	245.066	–	245.024
Girder																											
A	240.600	240.977	241.342	241.813	242.087	242.269	–	242.505	242.740	242.967	243.189	243.363	243.606	243.788	243.955	–	244.117	244.266	244.356	–	244.525	–	244.710	244.855	–	244.944	245.000
B	240.626	241.001	241.368	241.836	242.112	242.295	–	242.544	242.793	243.034	243.265	243.436	243.697	243.887	244.059	–	244.225	244.376	244.476	–	244.631	–	244.795	244.922	–	245.003	245.053
C	240.657	241.032	241.399	241.866	242.141	242.326	–	242.591	242.853	243.107	243.346	243.515	243.796	243.989	244.165	–	244.335	244.487	244.594	–	244.735	–	244.885	244.999	–	245.066	245.103
D	240.688	241.063	241.430	241.897	242.172	242.357	–	242.636	242.913	243.178	243.427	243.593	243.893	244.090	244.269	–	244.440	244.593	244.705	–	244.833	–	244.969	245.070	–	245.124	245.148
E	240.719	241.093	241.460	241.927	242.203	242.388	–	242.681	242.970	243.248	243.506	243.669	243.985	244.187	244.369	–	244.541	244.693	244.808	–	244.925	–	245.044	245.130	–	245.172	245.186
F	240.719	241.094	241.460	241.927	–	242.388	242.531	–	242.984	243.269	243.531	243.810	244.017	244.222	244.405	244.570	–	244.727	–	244.850	244.955	245.049	–	245.142	245.177	–	245.187
G	240.688	241.064	241.430	241.896	–	242.357	242.502	–	242.987	243.279	243.548	243.825	244.050	244.257	244.439	244.599	–	244.763	–	244.880	244.975	245.059	–	245.138	245.158	–	245.153
H	240.657	241.033	241.399	241.864	–	242.326	242.472	–	242.987	243.289	243.564	243.837	244.080	244.289	244.471	244.624	–	244.794	–	244.904	244.989	245.061	–	245.123	245.131	–	245.113
J	240.626	241.002	241.368	241.832	–	242.295	242.442	–	242.986	243.297	243.580	243.849	244.108	244.318	244.500	244.647	–	244.819	–	244.923	244.996	245.056	–	245.103	245.097	–	245.067
K	240.600	240.978	241.342	241.806	–	242.269	242.420	–	243.004	243.317	243.599	243.868	244.148	244.355	244.531	244.676	–	244.857	–	244.946	245.002	245.052	–	245.086	245.064	–	245.020

DECK SCREED ELEVATIONS

	Span 7					Span 8						Span 9				Span 10						Span 11			Span 12	
Elev.	Field Splice # 5	1/4	1/2	3/4	Field Splice # 5	℄ Bearing Pier 7	1/4	Field Splice # 6	1/2	3/4	Field Splice # 6	℄ Bearing Pier 8	1/4	1/2	Field Splice # 7	℄ Bearing Pier 9	1/4	1/2	3/4	Field Splice # 8	℄ Bearing Pier 10	Field Splice # 8	1/2	℄ Bearing Pier 11	1/2	℄ Bearing Forward Abutment
A	–	245.071	245.104	–	245.058	244.999	244.934	–	244.843	–	244.667	244.526	244.352	244.145	243.868	243.599	243.318	243.004	–	242.429	242.279	–	241.818	241.354	240.991	240.614
B	–	245.193	245.164	–	245.055	244.955	244.848	–	244.724	–	244.568	244.406	244.225	244.021	243.817	243.537	243.275	242.994	–	242.544	242.401	–	241.941	241.476	241.110	240.736
C	245.202	–	245.167	245.079	–	244.951	–	244.836	244.719	244.570	–	244.401	244.220	244.017	243.697	243.534	243.274	242.994	242.702	–	242.406	242.222	241.946	241.481	241.115	240.740
D	245.192	–	245.154	245.063	–	244.930	–	244.812	244.696	244.546	–	244.377	244.197	243.995	243.679	243.516	243.258	242.981	242.692	–	242.399	242.215	241.939	241.473	241.106	240.733
E	244.989	–	244.902	244.747	–	244.542	–	244.372	244.281	244.134	–	243.974	243.807	243.625	243.378	243.205	242.982	242.752	242.516	–	242.279	242.097	241.825	241.354	240.990	240.614
Girder																										
A	–	245.070	245.106	–	245.062	245.004	244.941	–	244.852	–	244.676	244.535	244.362	244.156	243.876	243.606	243.325	243.012	–	242.430	242.279	–	241.818	241.354	240.991	240.614
B	–	245.102	245.119	–	245.063	244.998	244.920	–	244.818	–	244.648	244.504	244.324	244.115	243.856	243.587	243.304	242.995	–	242.452	242.305	–	241.844	241.380	241.015	240.640
C	–	245.140	245.142	–	245.068	244.991	244.902	–	244.793	–	244.625	244.476	244.295	244.087	243.844	243.571	243.295	242.995	–	242.482	242.336	–	241.876	241.411	241.046	240.671
D	–	245.171	245.159	–	245.067	244.977	244.879	–	244.762	–	244.600	244.444	244.263	244.057	243.833	243.555	243.286	242.996	–	242.512	242.367	–	241.907	241.442	241.077	240.701
E	–	245.191	245.163	–	245.057	244.957	244.851	–	244.727	–	244.571	244.410	244.229	244.024	243.818	243.539	243.276	242.993	–	242.540	242.398	–	241.938	241.473	241.106	240.732
F	245.190	–	245.152	245.061	–	244.928	–	244.809	244.694	244.544	–	244.375	244.194	243.993	243.677	243.514	243.256	242.979	242.691	–	242.398	242.214	241.938	241.473	241.105	240.732
G	245.148	–	245.098	244.989	–	244.837	–	244.706	244.593	244.443	–	244.274	244.097	243.900	243.601	243.434	243.186	242.922	242.646	–	242.367	242.183	241.908	241.442	241.076	240.701
H	245.095	–	245.029	244.906	–	244.739	–	244.595	244.487	244.338	–	244.171	243.996	243.804	243.523	243.354	243.115	242.862	242.600	–	242.336	242.152	241.878	241.411	241.045	240.671
J	245.035	–	244.955	244.817	–	244.635	–	244.478	244.378	244.229	–	244.065	243.893	243.705	243.444	243.273	243.042	242.801	242.554	–	242.305	242.122	241.848	241.380	241.014	240.640
K	244.985	–	244.896	244.738	–	244.529	–	244.357	244.267	244.121	–	243.961	243.795	243.614	243.370	243.196	242.976	242.748	242.514	–	242.279	242.097	241.825	241.354	240.990	240.614

Notes

Deck screed elevations are given to the top of the portland cement concrete deck and are those which are required before concrete is placed. Proper allowances have been made for the dead load deflections caused by the weight of the concrete.

Elevation C at field splices shown for the extension of Girder F field splice locations.

For location of Elevations A thru E see Sheet 60 of 68

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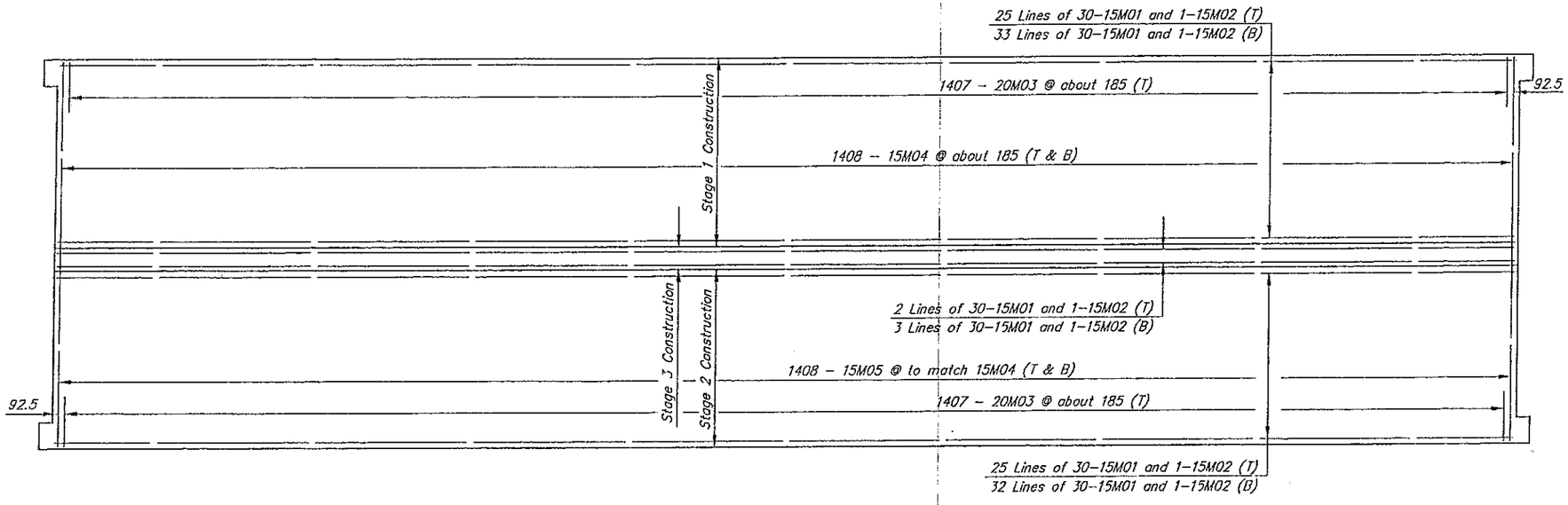
STRUCTURE FILE NUMBER 133421

DECK SCREED ELEVATIONS
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

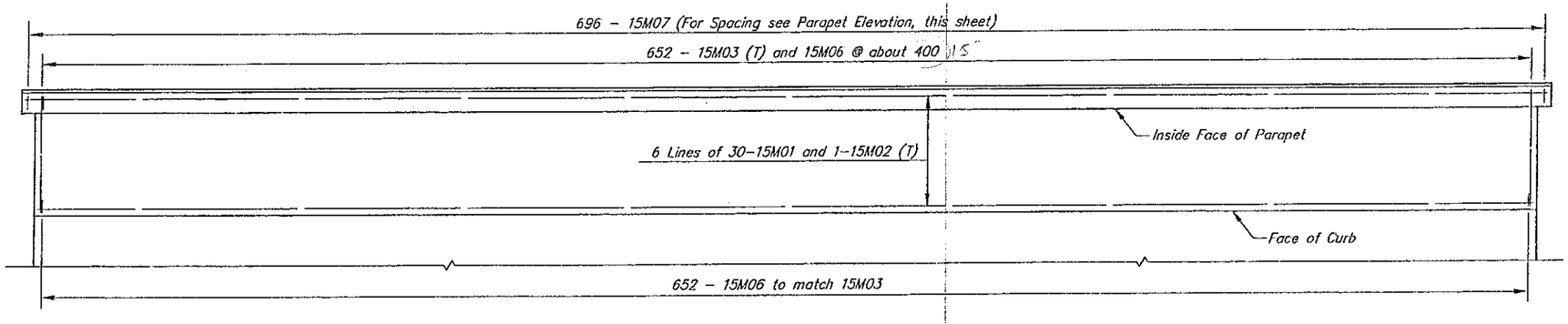


SLAB PLAN

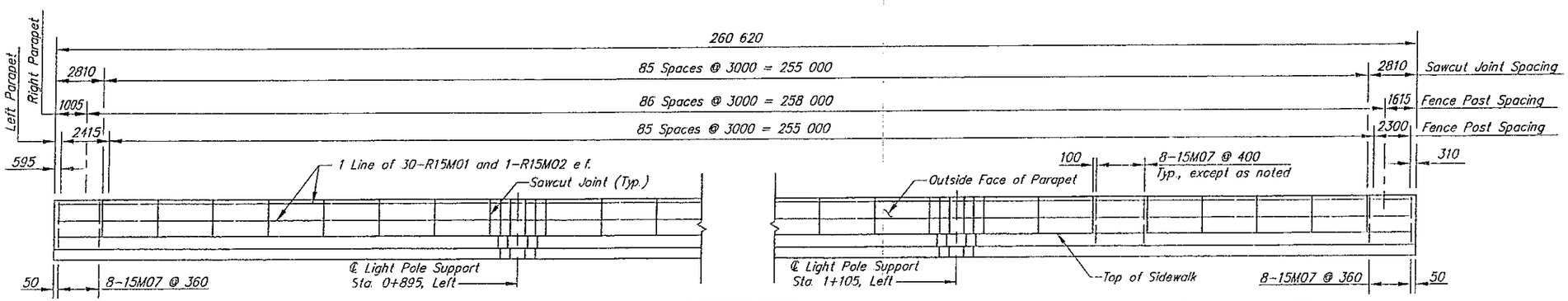
N

MINIMUM LAP LENGTHS	
No. 15M Bar	= 580

Note: For location of 15M01 and 15M02 bars see Transverse Section on Sheet 60168



SIDEWALK PLAN
(Typical both sidewalks)



PARAPET ELEVATION
(Typical both parapets, except as noted)

Note.
9 Light Pole Supports required on parapets, for locations see sheets 5168 thru 7168

RAILING REINFORCEMENT SCHEDULE			
MARK	NO	LENGTH	TYPE
R15M01	240	9150	Str.
R15M02	8	3420	Str.

Notes

All dimensions are in millimeters, unless noted otherwise.
For concrete parapet note, see General Notes see sheet 1168
All Reinforcing bar marks shall be Prefixed by S, unless noted otherwise.
Reinforcing bars at scuppers shall be field cut as required.
For placement of Additional Reinforcing over Piers see sheet 60168.
For details of Vandal Protection Fence, see sheet 67168
For Light Support detail see sheet 66168

The following abbreviations are used.
T = Top Typ = Typical
B = Bottom e.f. = Each face

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KRD		1833421	

SLAB PLAN AND PARAPET ELEVATION
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

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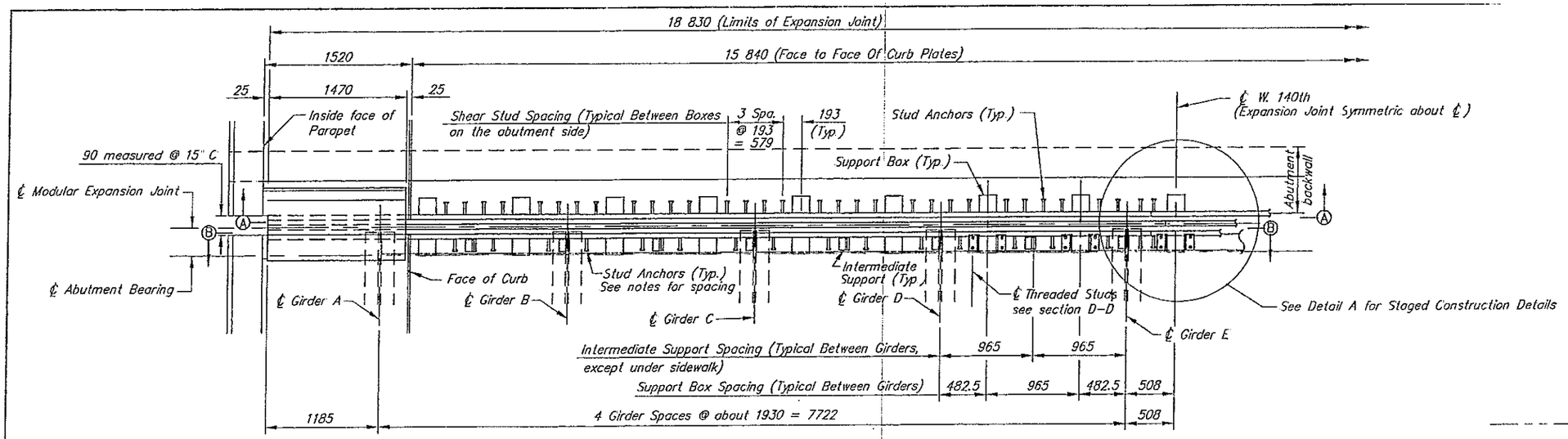
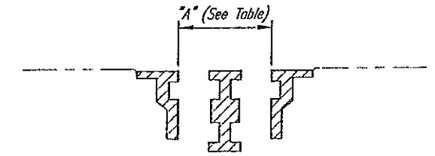
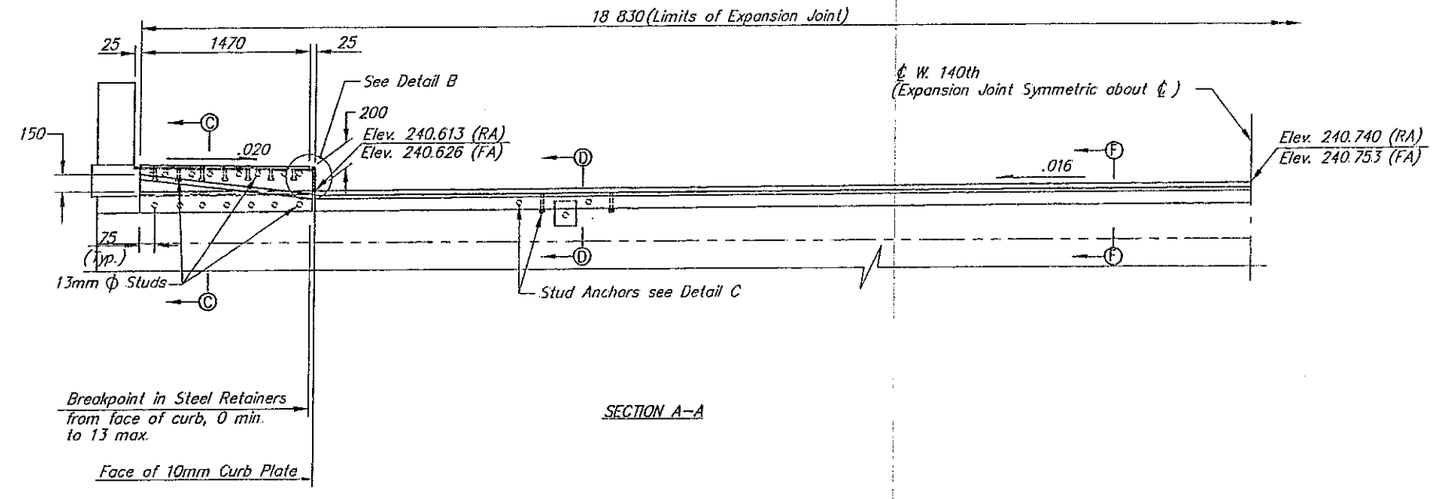
J:\JOBS\317\BRIDGE\317SLB01.DWG] JT 2/4/98 PLOT @ 1000:200 METRIC



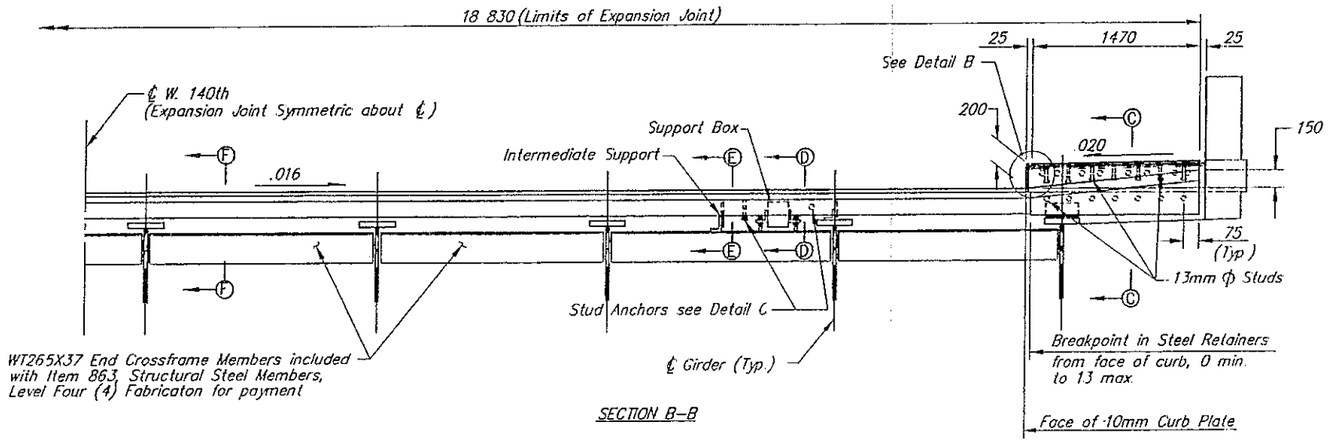
PARTIAL PLAN



SETTING SECTION F–F



SECTION A–A



SECTION B–B

DIMENSION "A" FOR MODULAR EXPANSION JOINT AT ABUTMENTS	
℃	mm
35	118
30	126
25	134
20	142
15	150
10	158
5	166
0	174

Notes.

All dimension are in millimeters except for elevations, which are given in meters unless otherwise noted.

The Modular Expansion Joint at each Abutments shall have a movement rating of 160mm

Stud anchors on the Superstructure side shall be placed between the intermediate supports and support boxes, see Detail C on sheet 64|68.

Elevations shown are given to the top of the edge beam of the expansion joint along the front face of the backwall.

For Section C–C, D–D, E–E, Details A, B, C and Curb Plate Detail see sheet 64|68.

For Additional Notes see Structure General Notes

The following abbreviations are used:
RA – Rear Abutment
FA – Forward Abutment
Typ. – Typical

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MODULAR EXPANSION JOINT DETAILS
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

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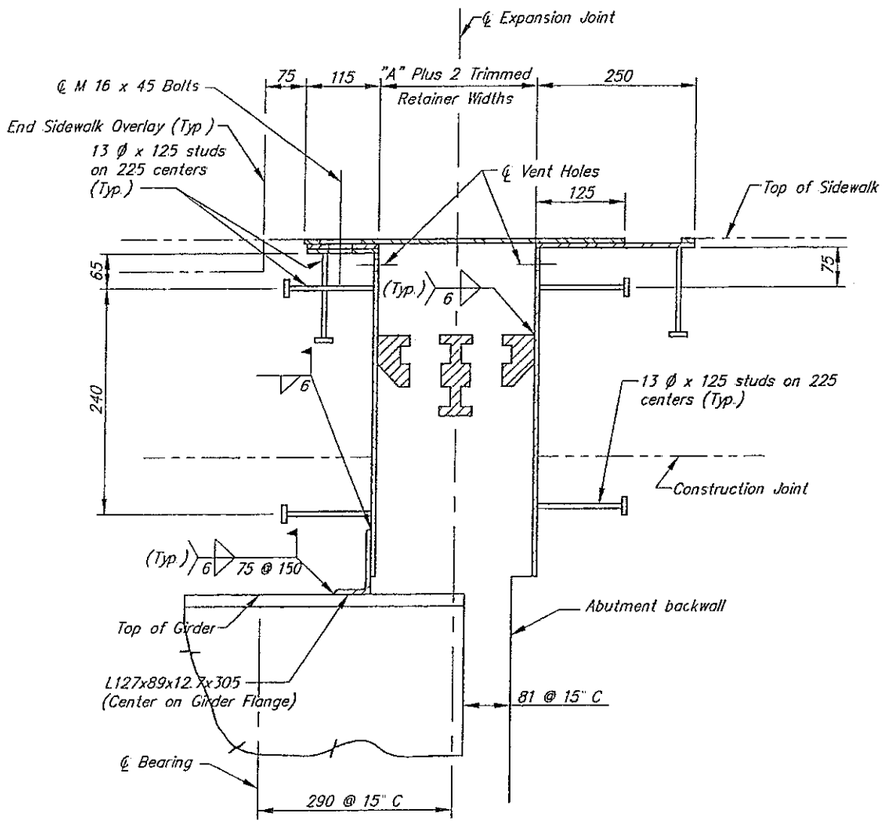
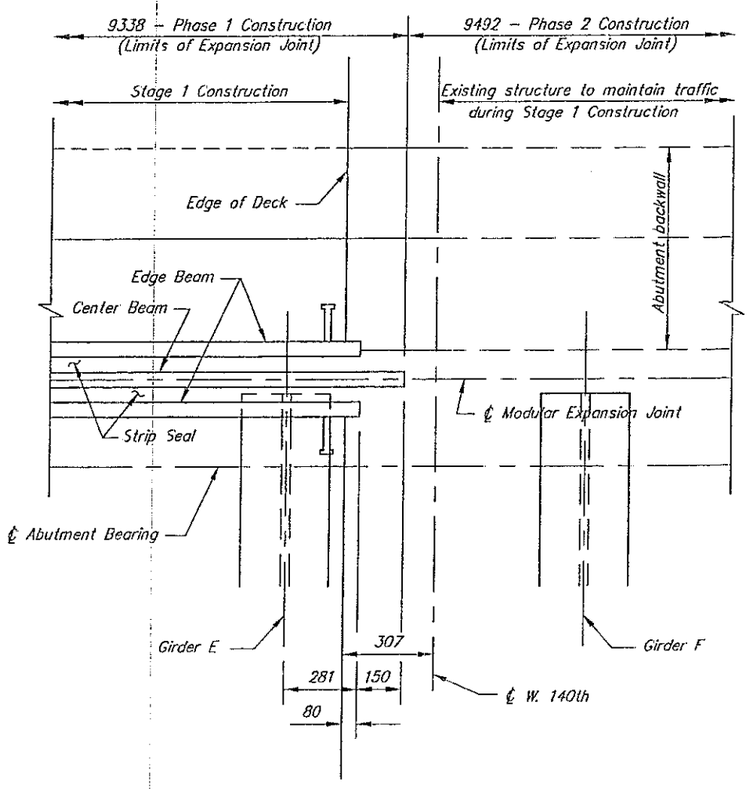
93 / 98

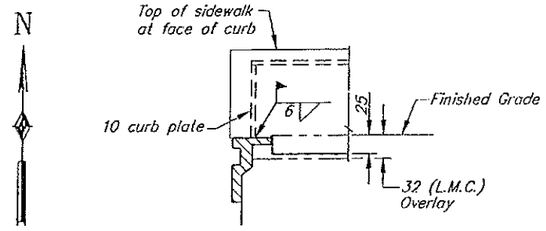


SECTION C–C

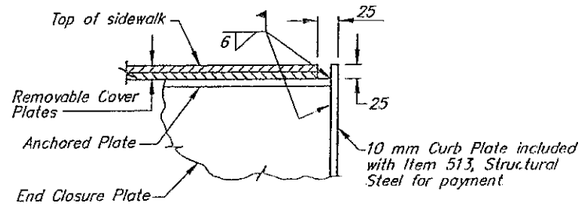


DETAIL A

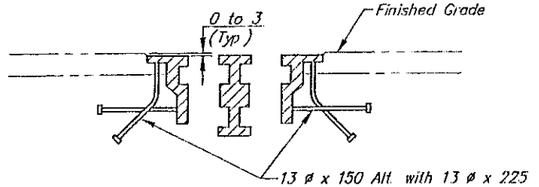
Forward Abutment shown,
Rear Abutment opposite hand.)



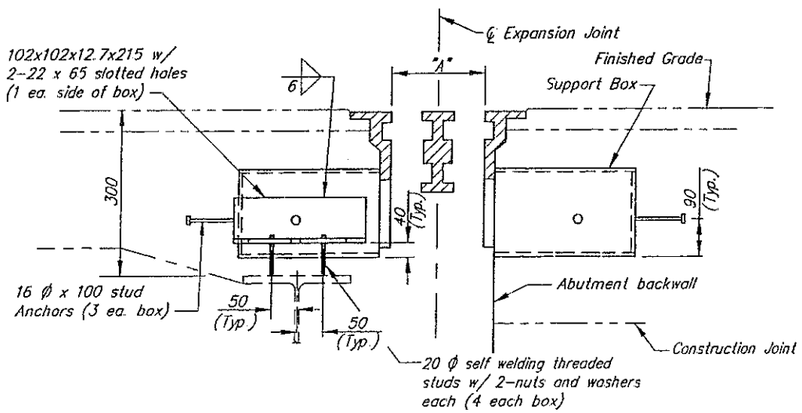
CURB PLATE DETAIL



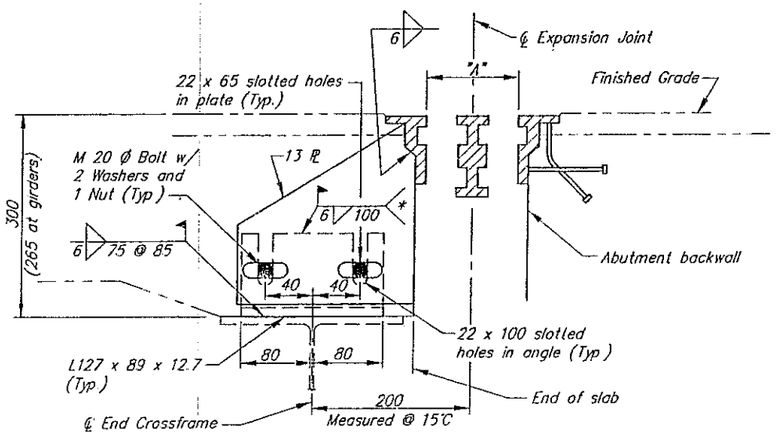
DETAIL B



DETAIL C



SECTION D–D



SECTION E–E

Intermediate support at end crossframe shown,
attachment at ℄ girders similar, except as noted.
* Denotes: This weld not to be made until final vertical and horizontal adjustments are made

Notes:

Sidewalk cover plates are to be similar to the details shown in the Ohio Department of Transportation Standard Drawings EXJ–4–87M, Sheets 3 & 4 of 5 and as shown here. Sidewalk joint armor and cover plates shall be included with Item 516, Modular Expansion Joint, As Per Plan.

For locations of sections C–C, D–D and E–E, Details A, B, and C and additional notes see sheet 63/68.

All dimensions are in millimeters, unless otherwise noted.

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MODULAR EXPANSION JOINT DETAILS
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

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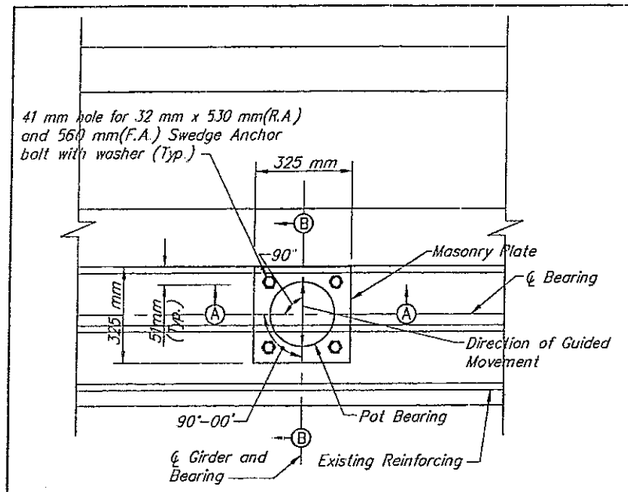
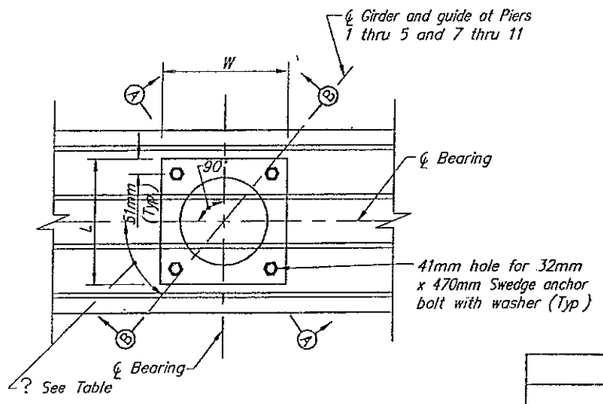
Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

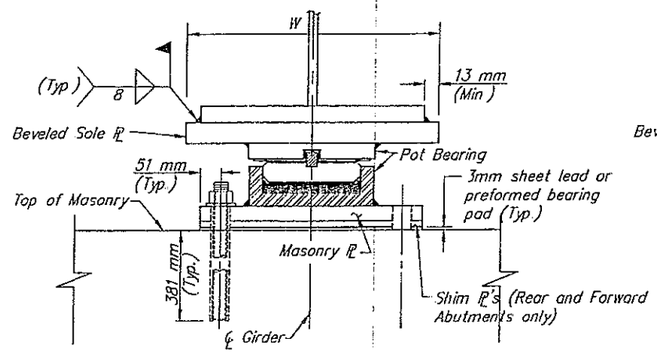


TYPICAL ABUTMENT POT BEARING DETAIL

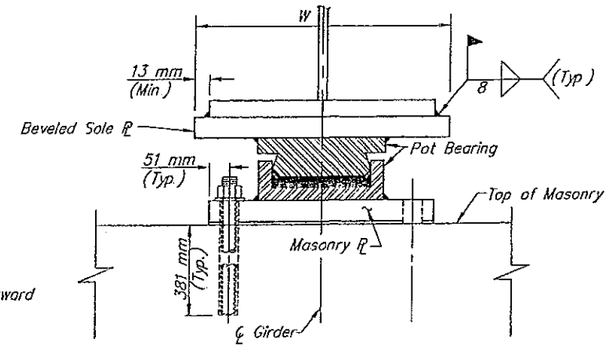


TYPICAL PIER POT BEARING DETAIL

"H" BEARING HEIGHT (mm)		
Girder	℄ Bearing Rear Abutment	℄ Bearing Forward Abutment
A thru E	218	257
F thru K	225	250

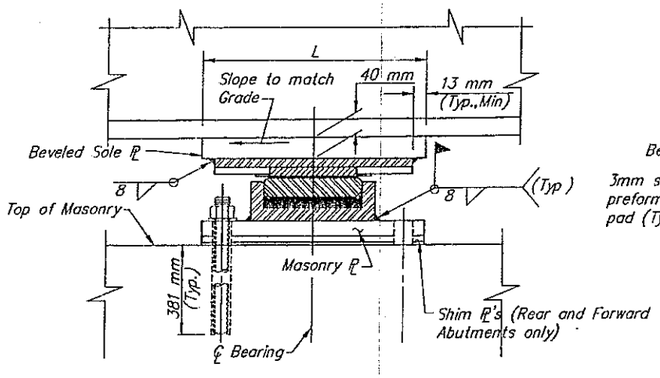


GUIDED

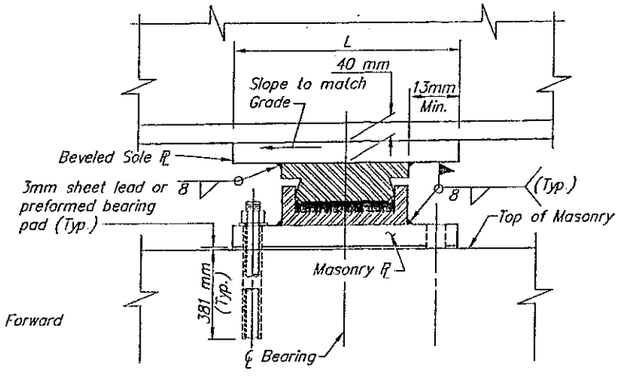


FIXED BEARING

SECTION A–A



GUIDED



FIXED BEARING

SECTION B–B

BEARING REQUIREMENTS												
LOCATION	TYPE	VERTICAL DEAD LOAD (kN)	VERTICAL LIVE LOAD (kN)	VERTICAL LOAD TOTAL (kN)	MASONRY PLATE (mm) (L x W x T)	SOLE PLATE (mm) (L x W x T)	MAX. DESIGN ROTATION (RADIANS)	ONE WAY DESIGN MOVEMENT (mm)	5°C TEMP. MOVEMENT (mm)	BEARING HEIGHT (SEE NOTE A) (mm)	MIN. LATERAL CAPACITY (kN)	? (DEGREES)
REAR ABUTMENT	GUIDED EXPANSION	114	210	324	325 x 325 x 40	440 x 330 x 40	0.002	84	8	"H" SEE TABLE	32	–
PIER 1	GUIDED EXPANSION	445	169	614	400 x 400 x 50	490 x 330 x 40	0.001	75	7	182	90	0°-00'-00"±
PIER 2	GUIDED EXPANSION	572	212	784	420 x 420 x 50	490 x 330 x 40	0.002	64	6	182	115	0°-00'-00"±
PIER 3	GUIDED EXPANSION	711	242	953	440 x 440 x 50	485 x 350 x 40	0.002	48	5	188	142	29°-03'-17"±
PIER 4	GUIDED EXPANSION	682	243	925	440 x 440 x 50	455 x 350 x 40	0.002	32	3	188	136	48°-21'-47"±
PIER 5	GUIDED EXPANSION	664	242	906	440 x 440 x 50	420 x 350 x 40	0.002	16	2	188	133	59°-14'-47"±
PIER 6	FIXED	749	251	1000	440 x 440 x 50	350 x 350 x 40	0.002	0	0	172	150	59°-14'-47"±
PIER 7	GUIDED EXPANSION	713	249	962	440 x 440 x 50	420 x 350 x 40	0.002	17	2	188	143	59°-14'-47"±
PIER 8	GUIDED EXPANSION	669	242	911	440 x 440 x 50	455 x 350 x 40	0.002	33	3	188	134	48°-21'-47"±
PIER 9	GUIDED EXPANSION	714	242	956	440 x 440 x 50	485 x 350 x 40	0.002	49	5	188	143	29°-03'-17"±
PIER 10	GUIDED EXPANSION	574	212	786	420 x 420 x 50	490 x 330 x 40	0.002	66	7	182	115	0°-00'-00"±
PIER 11	GUIDED EXPANSION	454	175	629	400 x 400 x 50	490 x 330 x 40	0.001	76	8	182	91	0°-00'-00"±
FORWARD ABUTMENT	GUIDED EXPANSION	116	210	326	325 x 325 x 40	440 x 330 x 40	0.001	85	8	"H" SEE TABLE	33	–

NOTE A.
THE BEARING HEIGHT SPECIFIED IS THE DISTANCE FROM THE TOP OF MASONRY TO THE BOTTOM OF THE BOTTOM FLANGE OF THE GIRDER (INCLUDES 3mm LEAD SHEET).

Notes:
Anchor bolt locations are based on existing plans and may be adjusted to avoid drilling anchor bolt holes through existing reinforcing steel. Install anchor bolts per Item 510.

The bearing devices, masonary plates, sole plates, anchor bolts, nuts, washers and bearing pads shall be included for payment in the contract price bid for item 516, Steel Pot Bearings.

For additional Pot Bearing requirements see proposal note.

The following abbreviations are used.

Typ. = Typical Min. = Minimum

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POT BEARINGS
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

65 / 68

Cuyahoga County Engineer
Cleveland, Ohio
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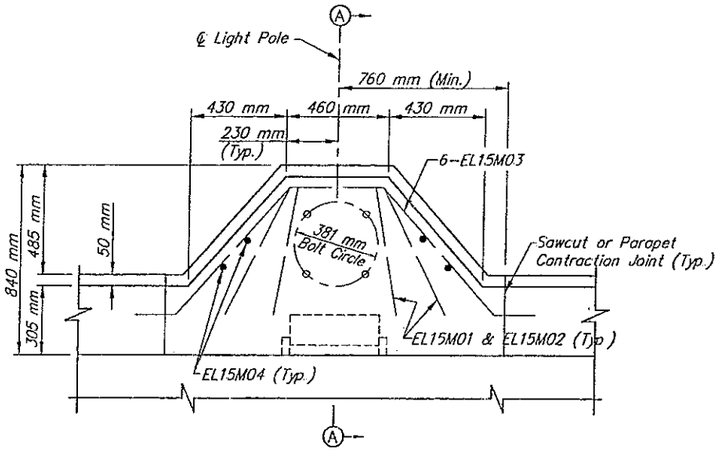
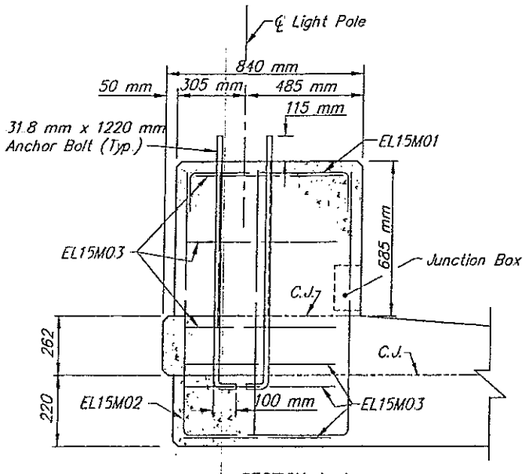
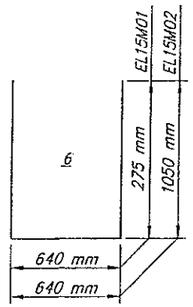
[JOBS\317\BRIDGE\317BR01.DWG] RM 10/15/98 PLOT @ 1000-10

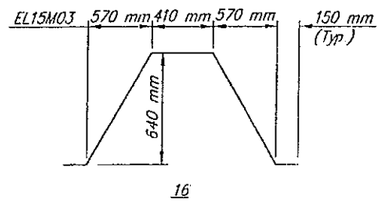


LIGHT POLE PILASTER PLAN



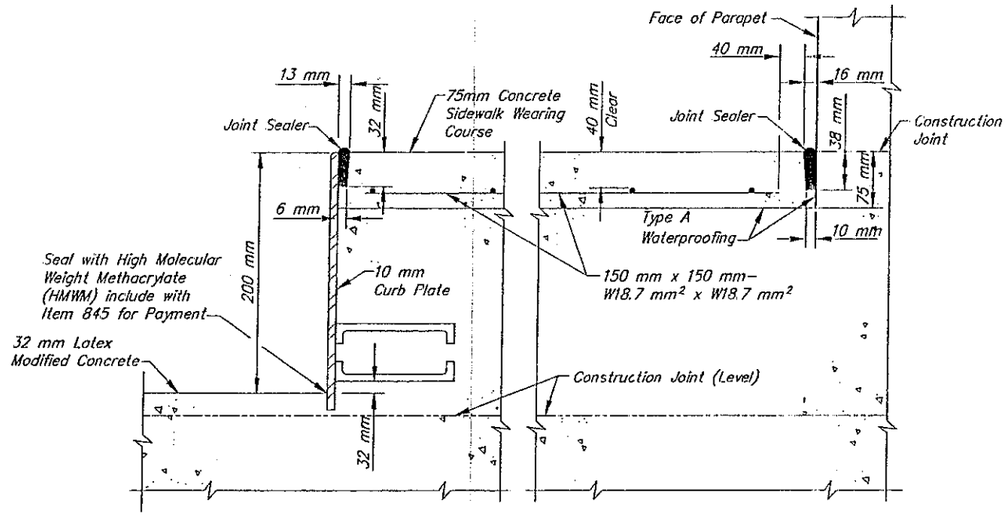
SECTION A-A
(Superstructure section shown, abutment section similar)



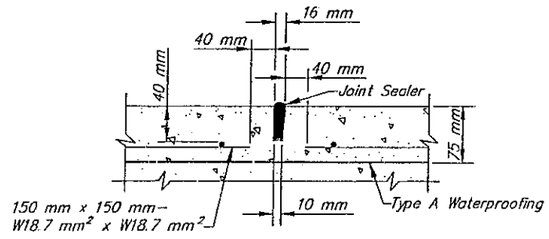


BENDING DIAGRAMS

REINFORCEMENT SCHEDULE LIGHT POLE SUPPORT					
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (kg)
EL 1501	4	1110 mm	6		7
EL 1502	4	2660 mm	6		17
EL 1503	6	2384 mm	16		22
EL 1504	4	1050 mm	Str.		7
FOR ONE LIGHT POLE SUPPORT TOTAL WEIGHT EPOXY COATED				=	53

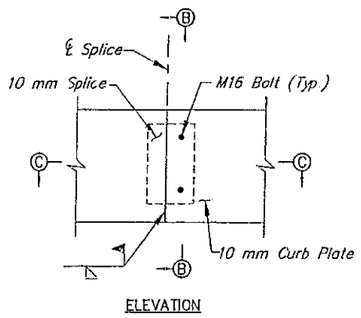


TYPICAL SECTION

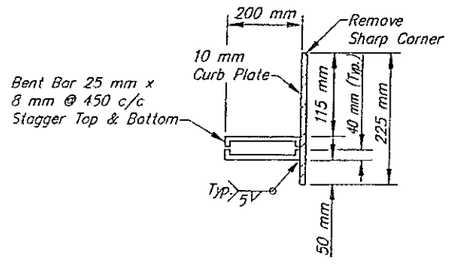


TRANSVERSE SIDEWALK JOINT

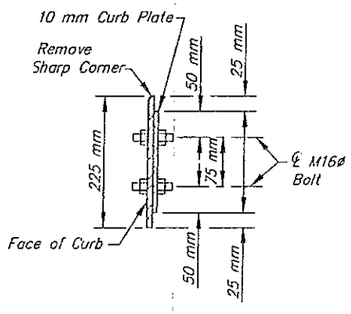
SIDEWALK DETAILS



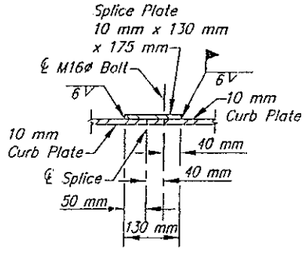
ELEVATION



ANCHORAGE DETAIL



SECTION B-B



SECTION C-C

CURB PLATE DETAILS

SPLICE DETAILS

Notes:

Payment for the 75mm concrete sidewalk wearing course shall be made at the contract unit price bid Item 511, Class S Concrete, Misc. Sidewalk Wearing Course. This shall include Welded Wire Fabric, Joint Sealer and Type A Waterproofing.

Joint Sealer shall be hot applied bridge deck waterproofing material, which also meets the requirements of 705.04.

For estimating purposes splices have been figured at 6100 mm maximum spacing.

Remove M16 bolts after field welds have been completed, plug and weld holes flush with curb plate.

Payment for the curb plate shall be included with Item 863, Structural Steel Members, Miscellaneous Level Fabrication.

The following abbreviations are used.
(Typ.) = Typical ℄ = Plate

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MISCELLANEOUS DETAILS
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

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Report No. 7224 and B-No. 200

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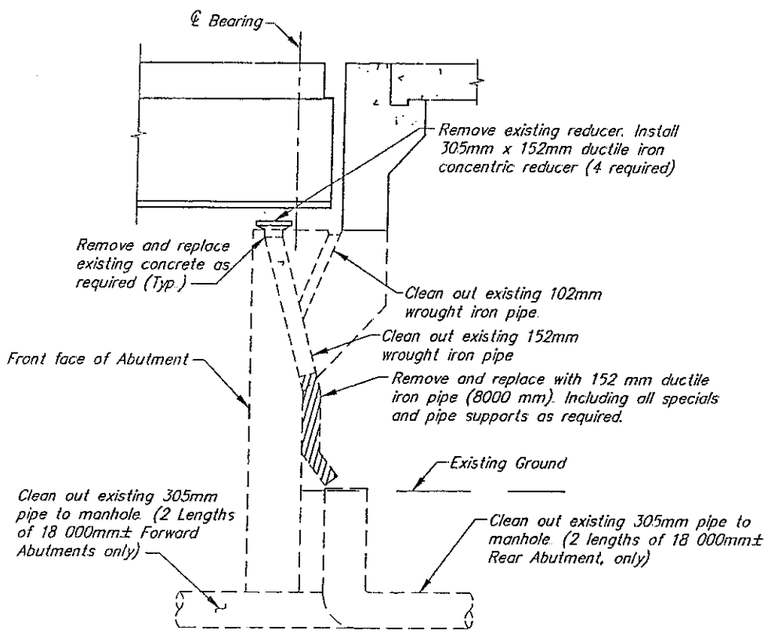
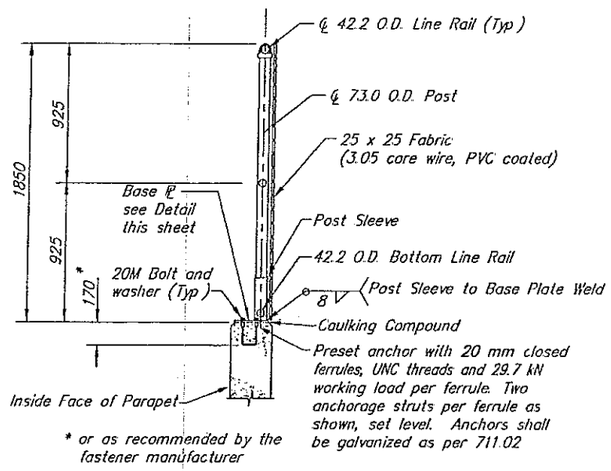
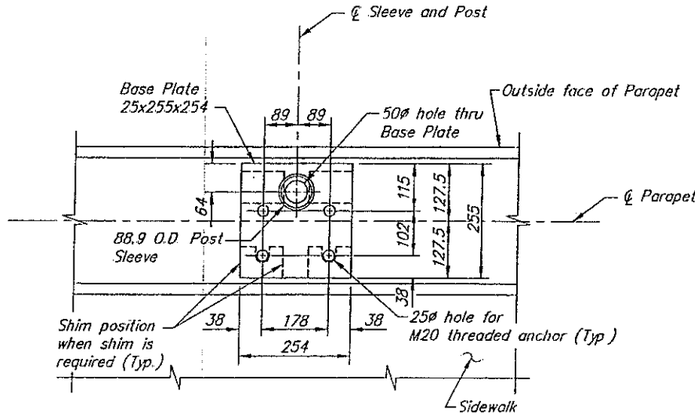


SECTION C–C

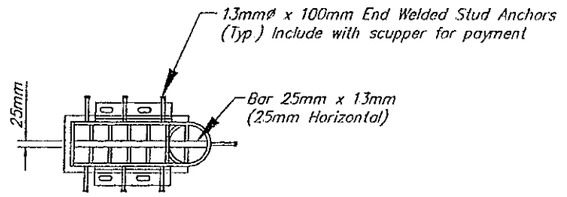
Note:
Payment for removals, cleaning, 152 mm ductile iron pipe and reducers shall be included with Item 518, Structure Drainage Misc., Abutment Drainage System

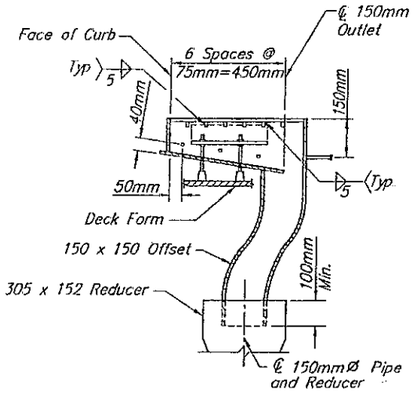


POST SECTION
(1850 mm Straight Fence)



BASE PLATE DETAIL
(BP–2)





SCUPPER DETAILS

Notes:
Payment for the vandel protection fence on the superstructure shall be made at the unit price bid for Item 517, Railing, Concrete parapet with chain link fence. This price shall include all parapet concrete, longitudinal reinforcing steel, preset anchors, all fence material, caulking and all labor, equipment and incidentals necessary to complete the parapet and fencing.

For additional fence details and notes see Ohio Standard Construction Drawing VPF–1–90M sheets 1, 3, 5 and 6 of 7.

For location of Section C–C see Sheet 28/68 and 31/68.

Scuppers shall be in accordance with Standard Drawing SD–1–69, except as noted.

For scupper locations see Framing Plan on Sheet 46/68.

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS

DESIGNED	DRAWN	REVIEWED	DATE
BMG	RM	RAB	9–96
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRD		1833421	

MISCELLANEOUS DETAILS
BRIDGE NO. 208
West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

67 / 68

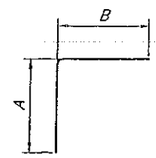
Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B–No. 200

97/98

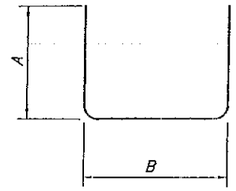
[317/BRIDGE/317a8003.dwg] JT 2/4/98 PLOT @ 1006.20 METRIC

MARK	NO.	LENGTH (mm)	TYPE	A	B	C	D	SER. INCR.	WEIGHT (kg)
ABUTMENTS									
A15M01	16	9372	Str.						236
A15M02	16	9986	Str.						251
A20M01	20	1455	Str.						69
A20M02	72	1220	Str.						207
A20M03	94	2173	1	1223	1000				481
A20M04	24	2405	1	1455	1000				136
A20M05	4	2633	1	914	1769				25
A20M06	72	1509	2	176	580	176	677		256
								TOTAL–ABUTMENTS	1661
PIERS									
P10M01	184	946	1	419	552				946
P10M02	276	927	1	400	552				927
P10M03	96	1039	1	512	552				1039
P10M04	30	1072	1	545	552				1072
P10M05	226	959	1	432	552				959
P10M06	42	1113	1	586	552				1113
P10M07	74	1054	1	527	552				1054
P10M08	72	972	1	445	552				972
P10M09	100	983	1	456	552				983
P10M10	20	1003	1	476	552				1003
P10M11	64	907	1	380	552				907
P15M01	24	16 205	Str.						611
P15M02	16	12 852	Str.						323
P15M03	16	9906	Str.						249
P15M04	32	8738	Str.						439
P15M05	4	3646	Str.						23
								TOTAL–PIERS	2548
SUPERSTRUCTURE									
S15M01	4128	9150	Str.						59 301
S15M02	134	3200	Str.						673
S15M03	2604	1775	Str.						7257
S15M04	2816	9385	3	9385					41 492
S15M05	2816	10 000	4	10 000					44 211
S15M06	2608	740	5	258	300				3030
S15M07	2046	2105	6	850	205				6762
S15M08	650	1740	7	314	580	650			1776
S15M09	48	1680	Str.						127
S15M10	791	8330	3	8330					10 345
S15M11	791	8940	4	8940					11 102
S15M12	12	1000	Str.						19
S20M01	2129	9150	Str.						45 876
S20M02	459	2575	Str.						2783
S20M03	2830	2155	Str.						14 362
S20M04	448	3425	Str.						3614
S20M05	990	3135	Str.						7309
S20M06	550	3855	Str.						4993
S20M07	1265	1600	Str.						4767
S20M08	102	3385	Str.						813
S20M09	112	2280	Str.						601
S25M01	168	9150	Str.						6034
S25M02	48	6180	Str.						1164
S25M03	12	4120	Str.						194
S25M04	78	8910	3	8910					2728
S25M05	78	9525	4	9525					2916
D25M06	74	1355	8	435	930				393
14 Light Pole Supports									742
								TOTAL–SUPERSTRUCTURE	285,384

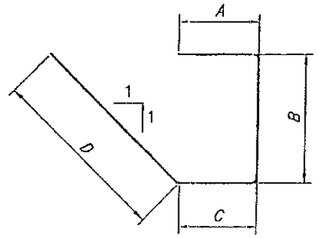
BENDING DIAGRAMS



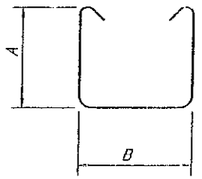
TYPE 1



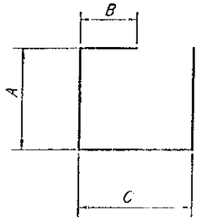
TYPE 5



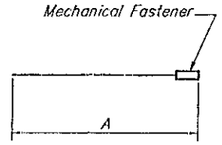
TYPE 2



TYPE 6

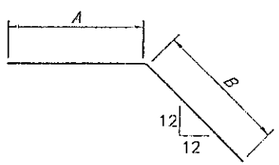


TYPE 7



TYPE 3

TYPE 4



TYPE 8

Notes

All dimensions are in millimeters, unless otherwise noted.

All bars shall be epoxy coated bars.

All dimensions are out to out.

Reinforcing Steel weights are given for information only.

DESIGN AGENCY: EUTHENICS INC. CONSULTING ENGINEERS

DESIGNED BMG | DRAWN BMG | CHECKED KRD | REVISED

REVIEWED RAB | DATE 9-96 | STRUCTURE FILE NUMBER 18334421

REINFORCEMENT SCHEDULE

BRIDGE NO. 208

West 140th Street over Conrail and GCRTA

CUY-WEST 140th STREET

68 / 68

Cuyahoga County Engineer
Cleveland, Ohio
Report No. 7224 and B-No. 200

98 / 98

[JOBS\117\BRIDGE\117RSCH.DWG] JT 2/4/98 PLOT @ 1:1 METRIC