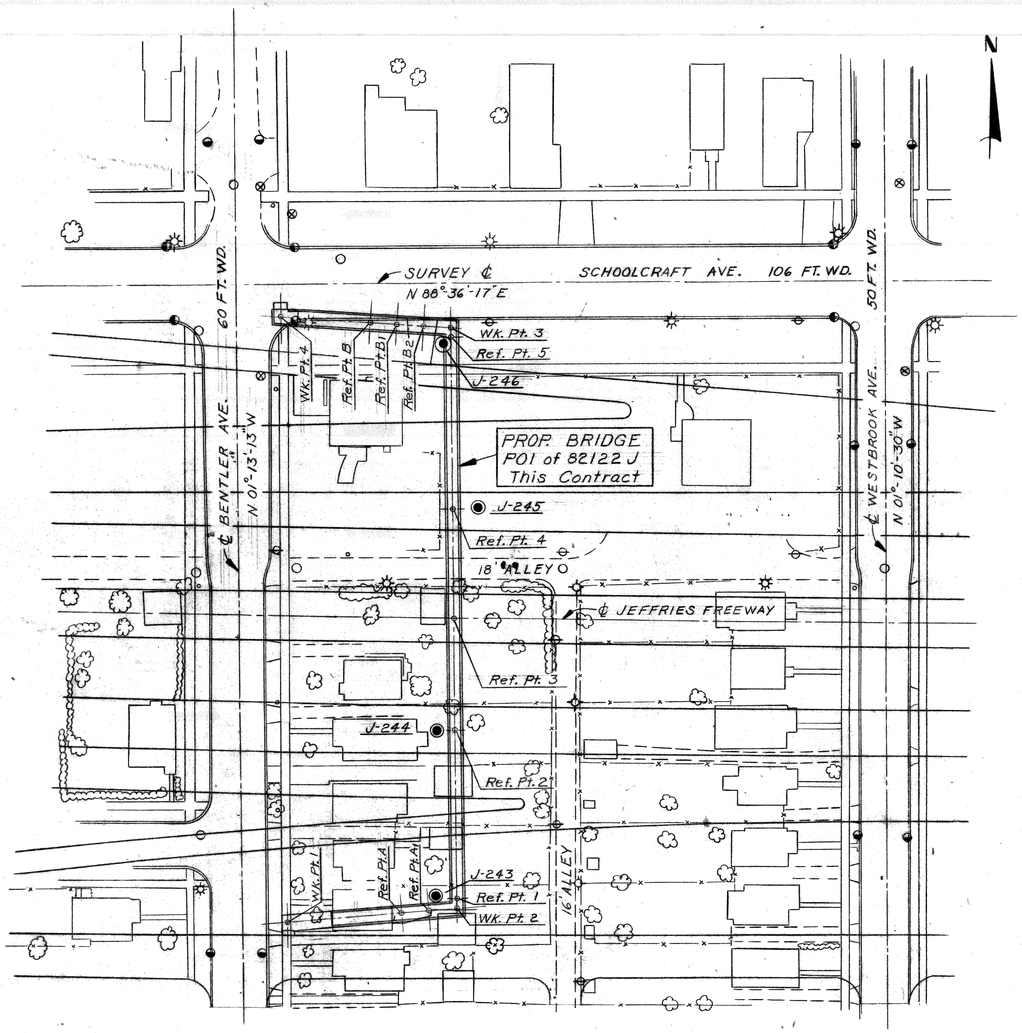


SITUATION PLAN

Scale 1" = 40'

LEGEND

- Tree
- Fence
- Sewer Manhole
- Sewer Inlet or Catch Basin
- Water Gatewell and Valve
- P.L.C. Cable Manhole
- P.L.C. Lightpole
- M.B.T. Pole
- D.E. Pole
- Test Hole for Soil Profile

NOTES:

The topography shown represents conditions existing at the time the field survey was made. These conditions may have been materially altered by the operations of others before this work has been started.

The work covered by these plans includes the construction of the proposed bridge.

All other work is included in the road plans which are a part of this contract.

Removal of fences and buildings is not a part of this contract.

Bench Marks are referenced to the City of Detroit Datum.

LOG OF SOIL BORINGS

J 243

Pier #1 Bot. Ftg El. 140.00

146.6

* N = 3-5		Topsoil.
	140	Moderately compact brown sand, heavy trace of clay.
* N = 3-5		Firm gray and brown mottled silty clay, trace of sand.
S = 408	130	Firm gray slightly mottled clay, trace of sand.
S = 204		Firm gray silty clay, trace of sand, occasional pebble, silt partings.
S = 180	120	
S = 300		Plastic gray mottled silty clay, trace of sand, occasional pebble.
S = 276	110	
S = 240		End of boring.
	100	Water level below ground after completion (uncased) 1 hr. 0.5 ft.; 24 hr. 4.2 ft.

J-244

Pier #2 Bot. Ftg El. 129.70

146.7

* N = 4-5		Fill (sand, cinders, gravel).
		Topsoil.
* N = 4-5	140	Moderately compact brown medium sand.
		Firm brown and gray mottled clay, trace of sand.
S = 288	130	Firm brown and gray mottled silty clay, trace of sand.
S = 204		Firm gray silty clay, trace of sand, occasional pebble, silt partings.
S = 240	120	
S = 192		Plastic gray mottled silty clay, trace of sand, occasional pebble, silt partings.
S = 300	110	
* N = 2-3		Soft gray silty clay, trace of sand, occasional pebble.
* N = 1-2		Moderately compact medium sand, fine and medium gravel.
	100	Stiff gray silty clay, trace of sand, occasional pebble.
* N = 11-18		Hard gray silty clay, trace of sand, occasional pebble.
* N = 23		Compact silt and fine sand.
	90	
		End of boring.
	80	Water level below ground after completion (uncased) 1 hr. 1 ft.; 24 hr. 3.5 ft.

J-245

Pier #4 Bot. Ftg El. 129.70

146.3

* N = 4-5		Topsoil.
	140	Moderately compact brown fine sand.
S = 480		Firm gray and brown mottled sandy silty clay.
S = 360	130	
S = 336		Plastic gray mottled silty clay, trace of sand, occasional pebble silt partings.
S = 240	120	
S = 288		End of boring.
S = 264	110	Water level below ground after completion (uncased) 1 hr. 1.5 ft.; 24 hr. 4 ft.
	100	

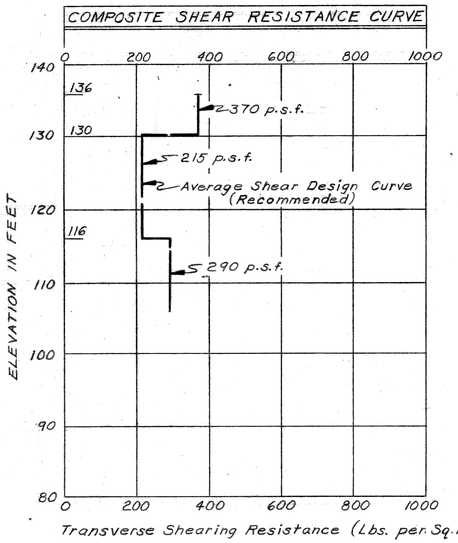
J-246

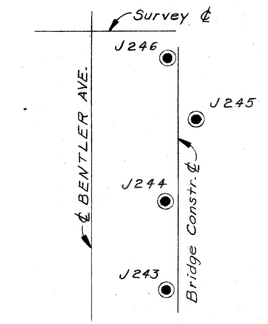
Pier #5 Bot. Ftg El. 133.40

145.5

* N = 4-4		Topsoil.
	140	Firm gray and brown mottled clay, trace of sand, wet at 3 feet.
S = 288		Firm gray silty clay, trace of sand, occasional pebble.
S = 408	130	Plastic gray silty clay, trace of sand, occasional pebble, silt partings.
S = 120		Coarse gray sand and gravel.
S = 192	120	
S = 336		Plastic gray silty clay, trace of sand, occasional pebble.
S = 324	110	End of boring.
		Water level below ground after completion (uncased) 2 ft.
	100	

COMPOSITE SHEAR RESISTANCE CURVE





SOIL BORING LOCATION SKETCH

(No Scale)

NOTES:

N Indicates the number of blows required to drive the sampler 6" (or as noted) using a 140 lbs. hammer falling 30". Where blow count is not shown, sampler was levered, pushed or hand driven.

S Indicates Transverse Shearing Resistance in Lbs. per Sq. Ft. as determined by M.D.S.H. Standard Test.

* Indicates no sample.

All elevations are based on City of Detroit Datum.

Water level below ground indicated for these soil borings may be residual wash boring water and not true water table.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990(20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF SITE

CITY OF DETROIT

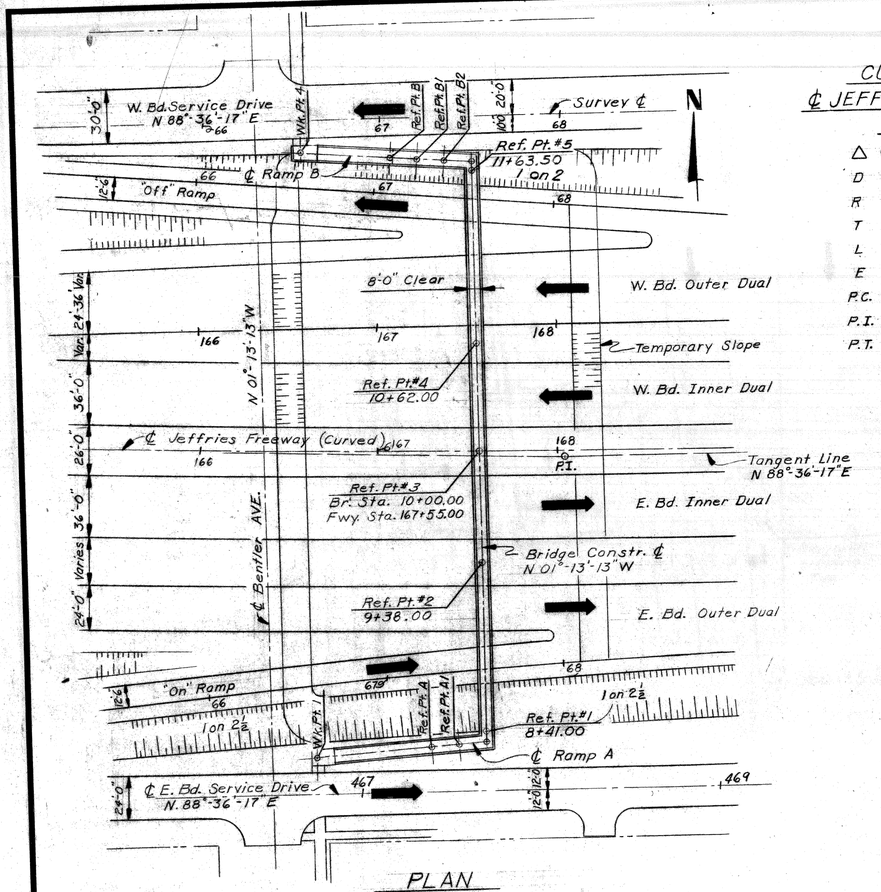
SQUAD BOSS	McGuire	8-69
DRAWN BY	Rosik	7-69
TRACED BY		
CHECKED BY	R.H.	8-69

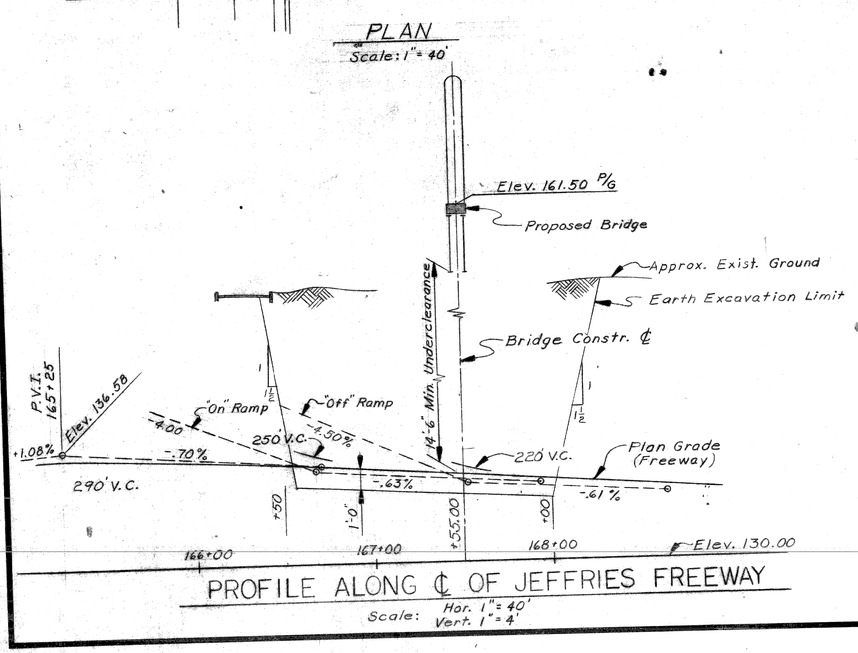
SHEET 2 OF 6

APPROVED _____ SUPERVISOR – DESIGN

APPROVED _____ ENGINEER – DESIGN SECTION I

POI of 82122 J





PROFILE ALONG ℄ OF JEFFRIES FREEWAY

Scale: Hor. 1" = 40'
Vert. 1" = 4'

CURVE DATA
℄ JEFFRIES FREEWAY
CURVE #5

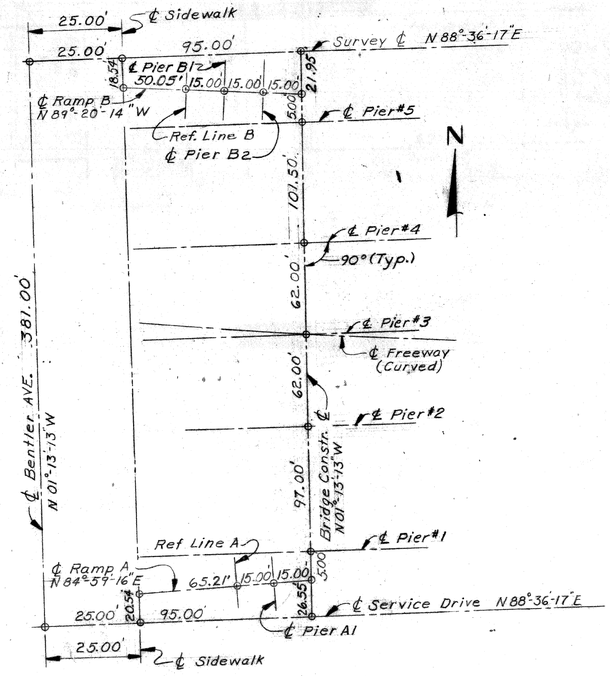
- △ = 2°-00'-35"
- D = 0°-20'-00"
- R = 17,188.73'
- T = 301.49'
- L = 602.92'
- E = 2.64'
- P.C. = Sta. 165+01.33
- P.I. = Sta. 168+02.82
- P.T. = Sta. 171+04.25

BENCH MARKS

B.M. #21 Arrow on Hydront on N.E. Corner of Bentler and Schoolcraft, Elev. 148.64

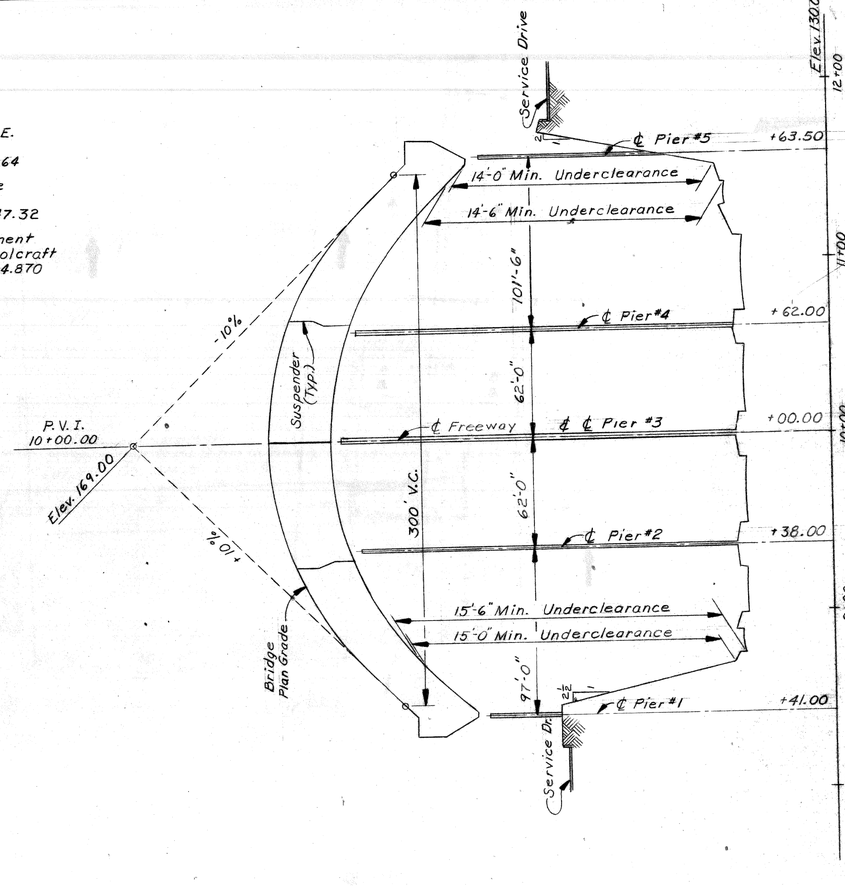
B.M. #21A B.M. Cap in 14" Maple west of Bentler near House #13563, Elev. 147.32

P.B.M. #112-253 City of Detroit Monument on N.E. Corner of Schoolcraft and Burt Road, Elev. 144.870



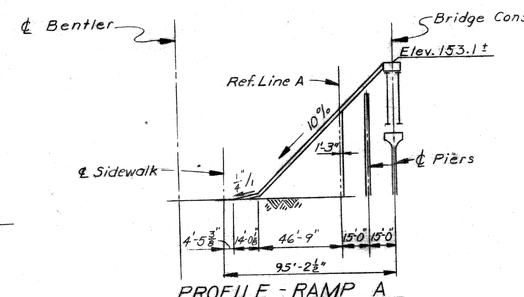
ALIGNMENT DIAGRAM

No. Scale



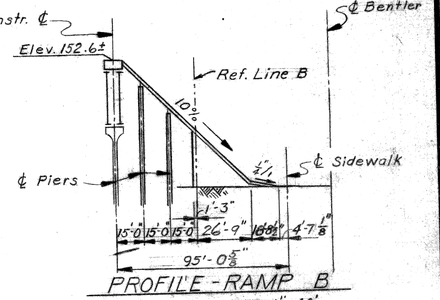
PROFILE ALONG BRIDGE CONSTRUCTION ℄

Scale: Hor. 1" = 40'
Vert. 1" = 4'



PROFILE - RAMP A

Scale: Hor. 1" = 40'
Vert. 1" = 4'



PROFILE - RAMP B

Scale: Hor. 1" = 40'
Vert. 1" = 4'

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

APPROVED _____ SUPERVISOR - DESIGN

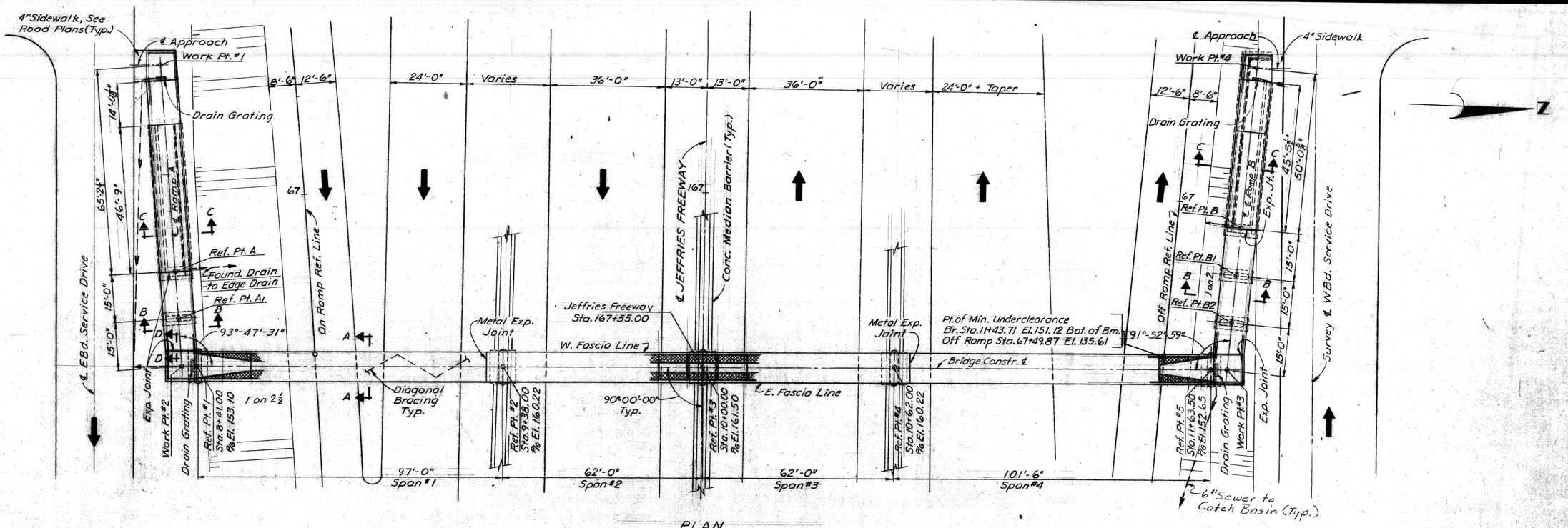
APPROVED _____ ENGINEER - DESIGN SECTION I

CITY OF DETROIT

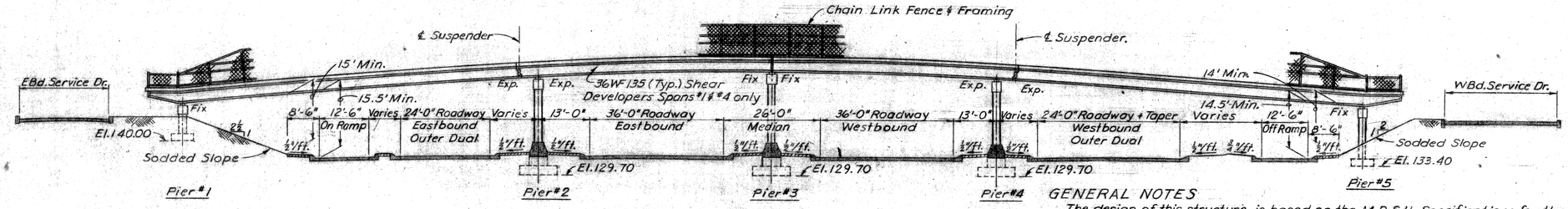
SQUAD BOSS	M. Guiro	8-69
DRAWN BY	Rosik	7-69
TRACED BY		
CHECKED BY	R.H. V.N.	8-69

SHEET 3 OF 6

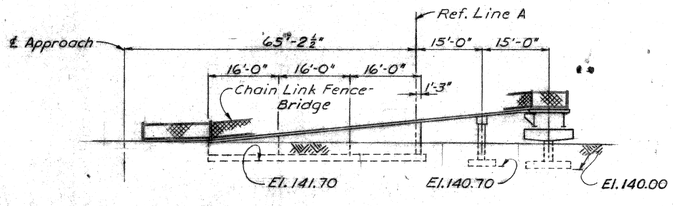
P01 of 82122J



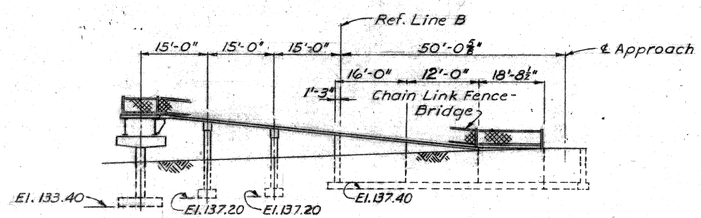
PLAN
Scale: 1/16" = 1'-0"



ELEVATION
Scale: 1/16" = 1'-0"



RAMP A - ELEVATION
Scale: 1/16" = 1'-0"



RAMP B - ELEVATION
Scale: 1/16" = 1'-0"

GENERAL NOTES

The design of this structure is based on the M.D.S.H. Specifications for the Design of Highway Bridges, 1958 edition and current A.A.S.H.O. Standard Specifications for Highway Bridges.

Live Load

Concrete Slab	85 p.s.f.
Beams	85 p.s.f.
Alternate Live Loading	One 5 Ton Truck plus impact

The top of slab is parallel to the vertical curve and its tangents.

Tamped Clay and Selected Excavated Material are incidental to Unclassified Excavation. Granular Material - Class I is incidental to Foundation Drain.

The design is based on a maximum average foundation pressure of 2900 p.s.f. at Abuts. & 1600 p.s.f. at Piers based on D.L. only and a maximum foundation pressure of 3500 p.s.f. at Abuts. & 2500 p.s.f. at Piers based on D.L. and L.L.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990(20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF STRUCTURE

CITY OF DETROIT

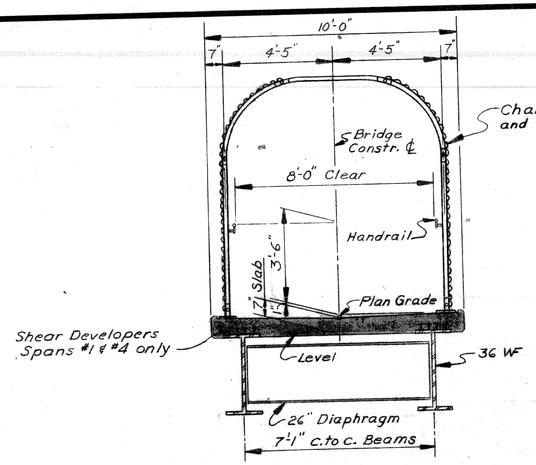
SQUAD BOSS	M. Bourc	8-69
DRAWN BY	R. Harris	8-69
TRACED BY		
CHECKED BY	J.M.	8-69

SHEET 6 OF 6

APPROVED _____ SUPERVISOR - DESIGN

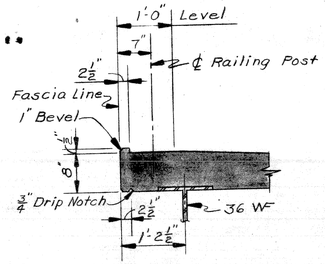
APPROVED _____ ENGINEER - DESIGN SECTION I

P01 of 82122J



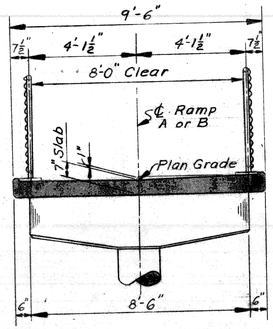
SECTION A-A

Scale $\frac{3}{8}$" = 1'-0"



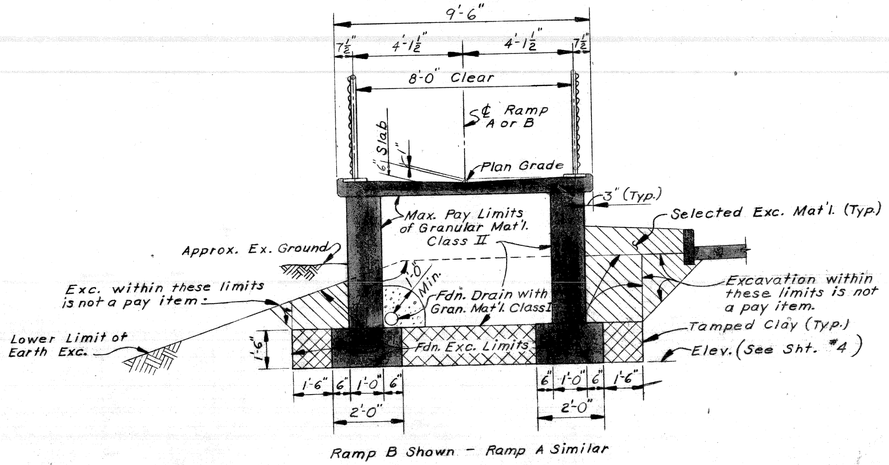
FASCIA DETAIL

Scale $\frac{3}{4}$" = 1'-0"



SECTION B-B

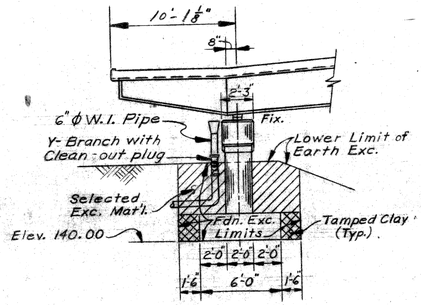
Scale $\frac{3}{8}$" = 1'-0"

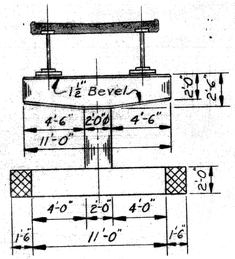


Ramp B Shown - Ramp A Similar

SECTION C-C

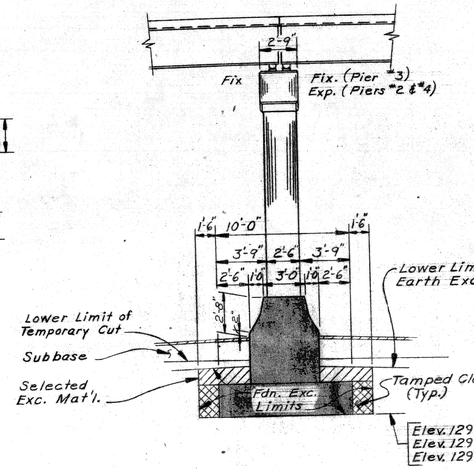
Scale $\frac{3}{8}$" = 1'-0"





PIER #1

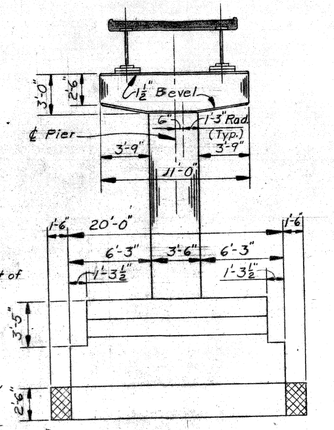
Scale $\frac{3}{16}$" = 1'-0"



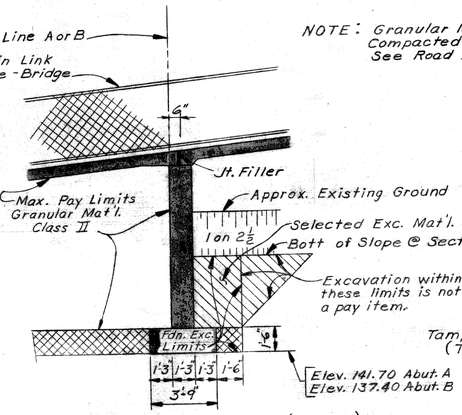
PIERS #2 #3 - #4

Pier 3 (Shown)

Scale $\frac{3}{16}$" = 1'-0"



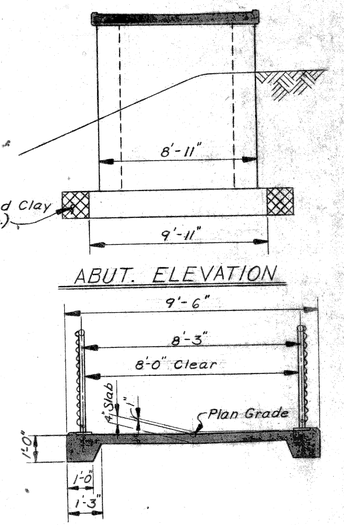
NOTE: Granular Material Class III Compacted in Place is Cu. Yds. See Road Plans.



SECTION @ ABUT. B (Shown)

SECTION @ ABUT. A (Opp. Hand)

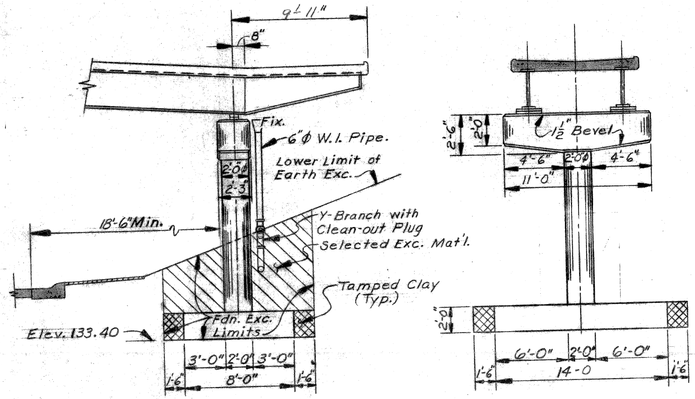
Scale $\frac{1}{4}$" = 1'-0"



ABUT. ELEVATION

DETAIL THRU SIDEWALK

Scale $\frac{3}{4}$" = 1'-0"



PIER #5

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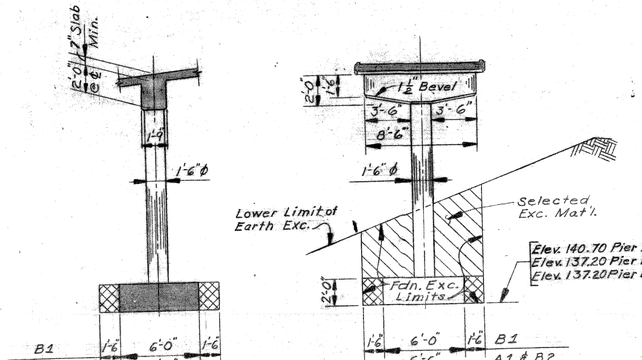
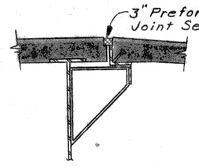


PIERS A1-B1-B2

Scale $\frac{3}{16}$" = 1'-0"



SECTION D-D

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

GENERAL PLAN OF STRUCTURE

CITY OF DETROIT

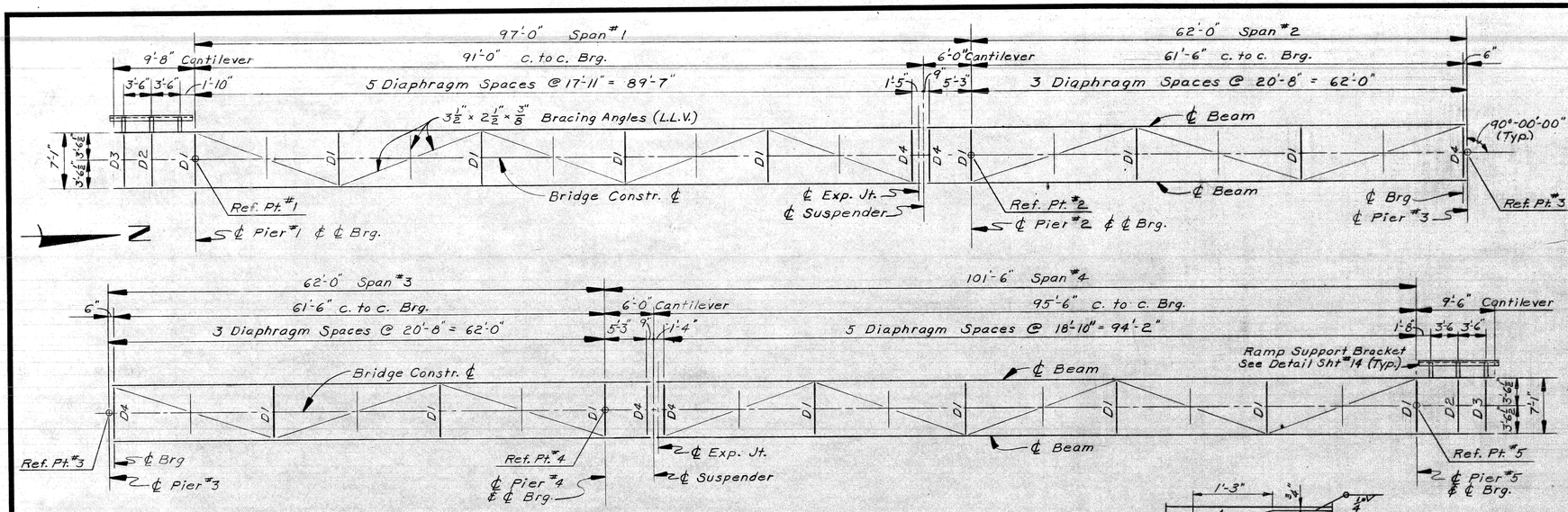
SQUAD BOSS	M. Cuvic	8-69
DRAWN BY	Kosik	8-69
TRACED BY		
CHECKED BY	R.H. Jm	8-69

SHEET 5 OF 6

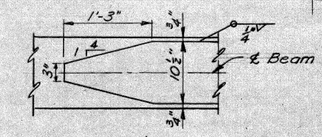
APPROVED _____ SUPERVISOR - DESIGN

APPROVED _____ ENGINEER - DESIGN SECTION I

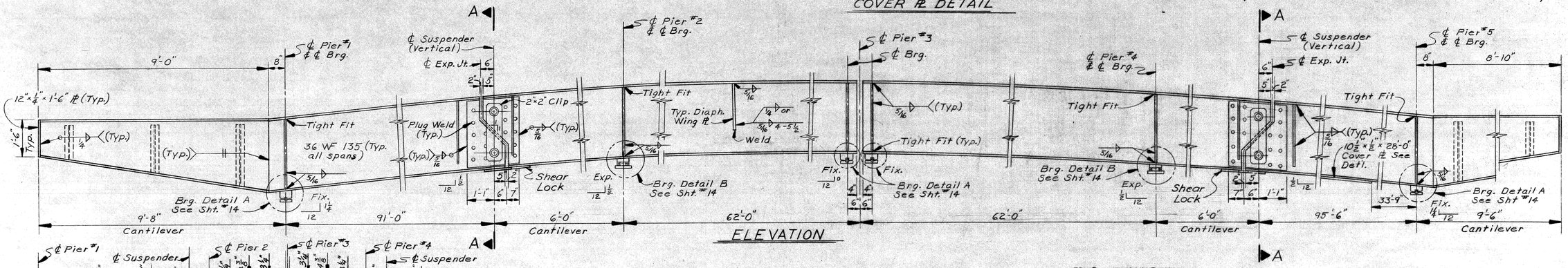
P01 of 82122J



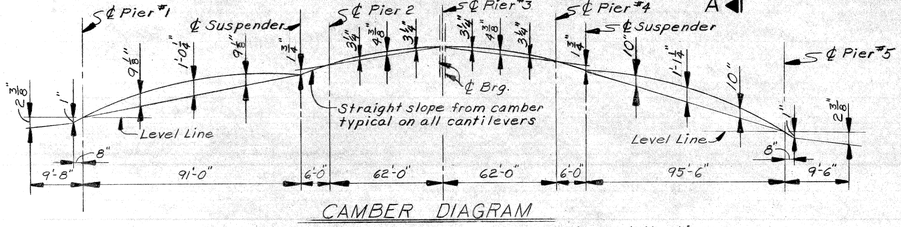
FRAMING PLAN



COVER PL DETAIL

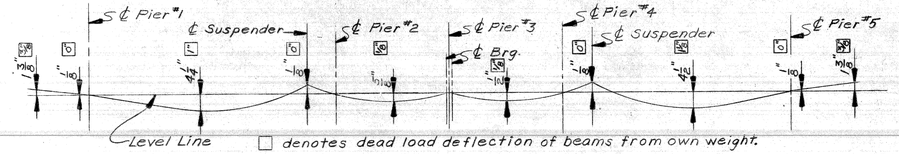


ELEVATION



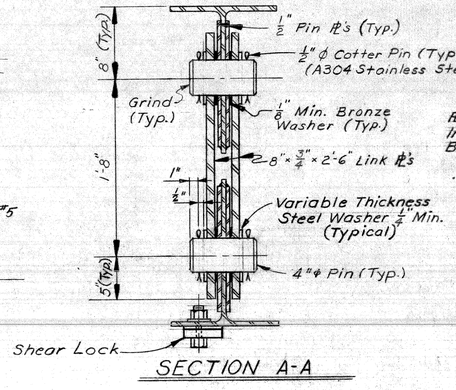
CAMBER DIAGRAM

Camber Ordinates allow for vertical curve and D.L. deflections.
Parabolic camber ordinates are given at ¼ pts.

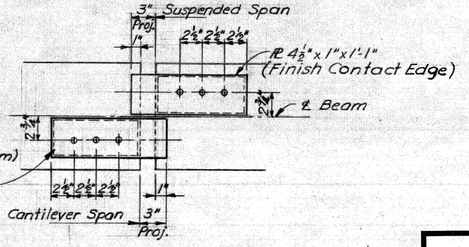


DEFLECTION DIAGRAM

Deflection Ordinates include allowance for deflection due to weight of structural steel, slab, re-bars, and fence.



SECTION A-A



SHEAR LOCK DETAIL

STRUCTURAL STEEL NOTES

DESIGN : Michigan Department of State Highways Specifications for the Design of Highway Bridges-1958 edition and current AASHO Standard Specifications for Highway Bridges. (Live Load 85p.s.f. for Slab, Floor Beam and Main Beam.

FABRICATION : Michigan Department of State Highways Standard Specifications for Highway Construction-1970 edition.

SHOP CONNECTIONS : Shall be Welded as shown on the plans.

FIELD CONNECTIONS : Shall be bolted with ¾" High Strength Bolts except as noted.

CAMBER : The beams are to be cambered as shown on the camber diagram. Camber is to be measured with the beam lying on it's side. Allowable camber tolerance for rolled beams is ± ¼". Heating is to be used, if necessary, to assure camber permanency within the above tolerance.

GALVANIZE : Anchor Bolts (including nuts and washers) shall be galvanized in accordance with ASTM Designation A153.
All steel material used for bearings, with the exception of portion welded to beams, shall be galvanized in accordance with ASTM Designation A123. Galvanizing shall be applied after fabrication of bearing. Mill scale and foreign material shall be removed prior to galvanizing.

WELDING : Magnetic particle inspection of welds is required and shall consist of 100% inspection of not less than one fabricated section selected at random.

STEEL : All structural steel shall be unpainted ASTM Designation A588. Steel in anchor bolts may be ASTM designation A307. Anchor bolt length shown are min. Bolts longer may be used at no additional cost.

BRONZE : Bronze for washers shall be ASTM B100 or ASTM B22.

QUANTITIES

Gray Iron Castings or Ductile Iron Castings	700 Lbs.
Structural Steel	108715 Lbs.
Bronze	85 Lbs.
Total Structural Steel - Furnishing ℄ Fab. (A588 Rolled)	109500 Lbs.
Total Structural Steel - Erection (A588 Rolled)	109500 Lbs.
Shear Developers	Lump Sum

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

STRUCTURAL STEEL DETAILS

CITY OF DETROIT

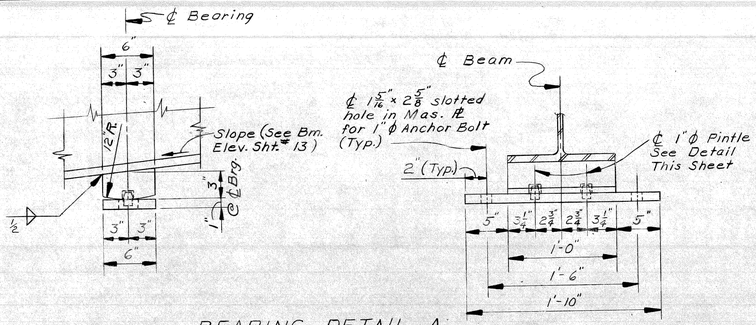
SQUAD BOSS	M. Calvie	8/70
DRAWN BY	R Rozik	8/69
TRACED BY	J.M.	10-69
CHECKED BY	J.K.S.	10-69

SHEET 13 OF 18

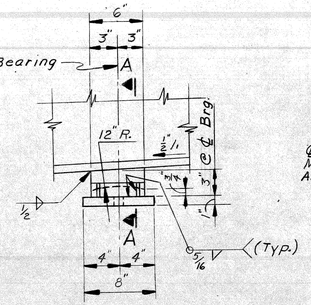
REVISIONS

NO.	DESCRIPTION	DATE	BY

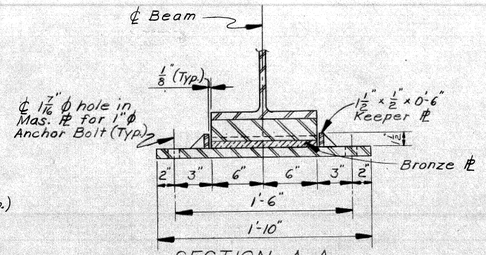
P01 of 82122J



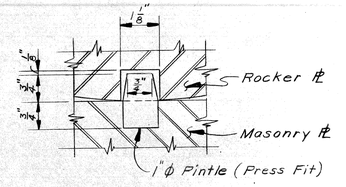
BEARING DETAIL A



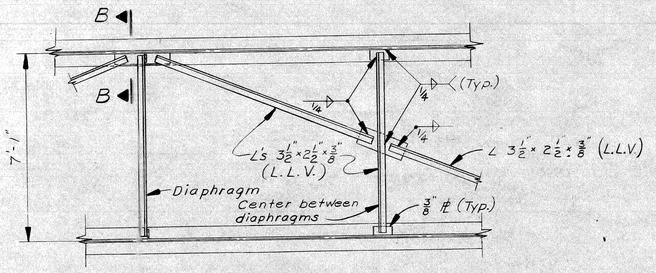
BEARING DETAIL B



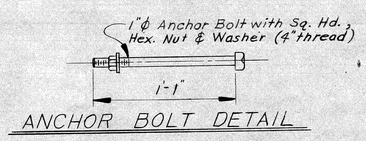
SECTION A-A



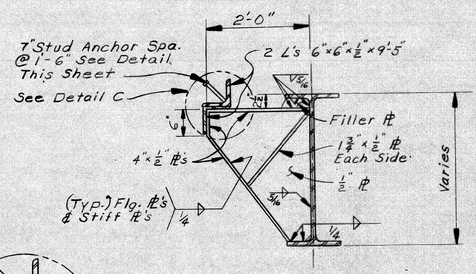
PINTLE DETAIL

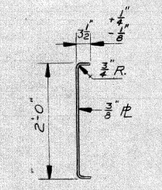


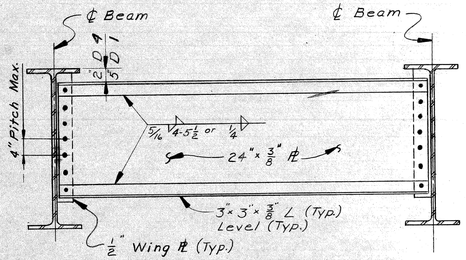
LATERAL BRACING DETAIL



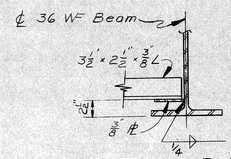
ANCHOR BOLT DETAIL







DIAPHRAGM D1 & D4



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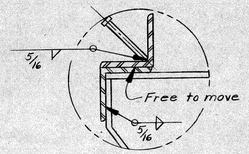
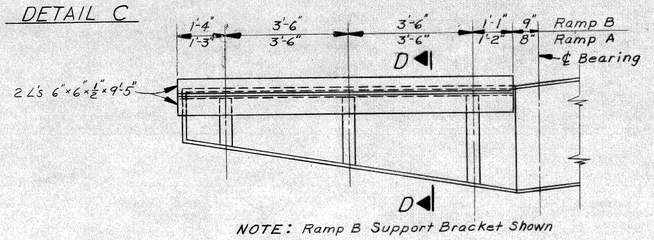
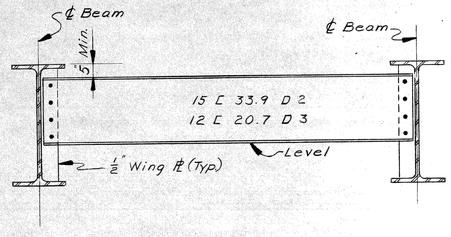


DETAIL C

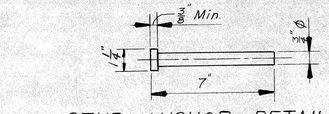
SECTION D-D



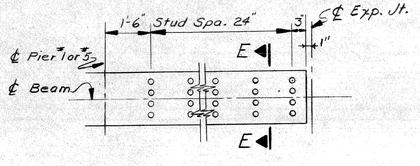
ELEVATION RAMP SUPPORT BRACKETS



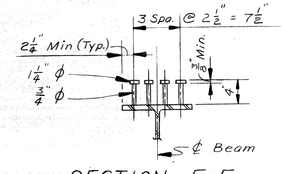
DIAPHRAGMS D2 & D3



STUD ANCHOR DETAIL



PLAN OF STUDS



SECTION E-E

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURE ENGINEER

JOB NO. PW -2007

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

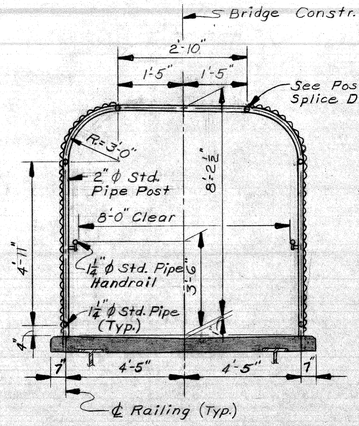
STRUCTURAL STEEL DETAILS

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	M. Coyne	8/70
DRAWN BY	R. Rosik	8/69
TRACED BY	J.M.	9/69
CHECKED BY	W.E.S.	9/69

SHEET 14 OF 18

P01 of 82122J



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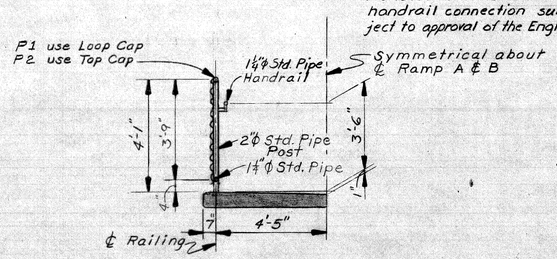
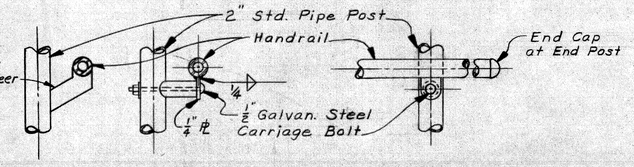


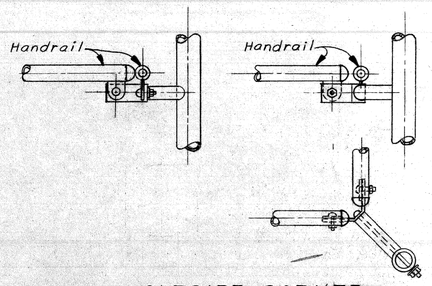
P1 or P2

CHAIN LINK FENCE BRIDGE

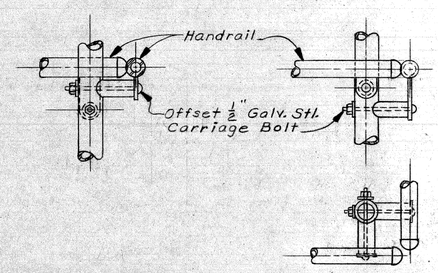


ALT.

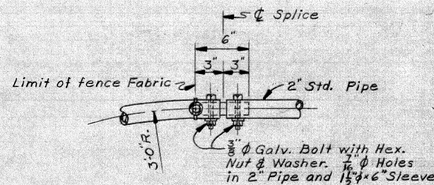
STANDARD HANDRAIL DETAILS



OUTSIDE CORNER

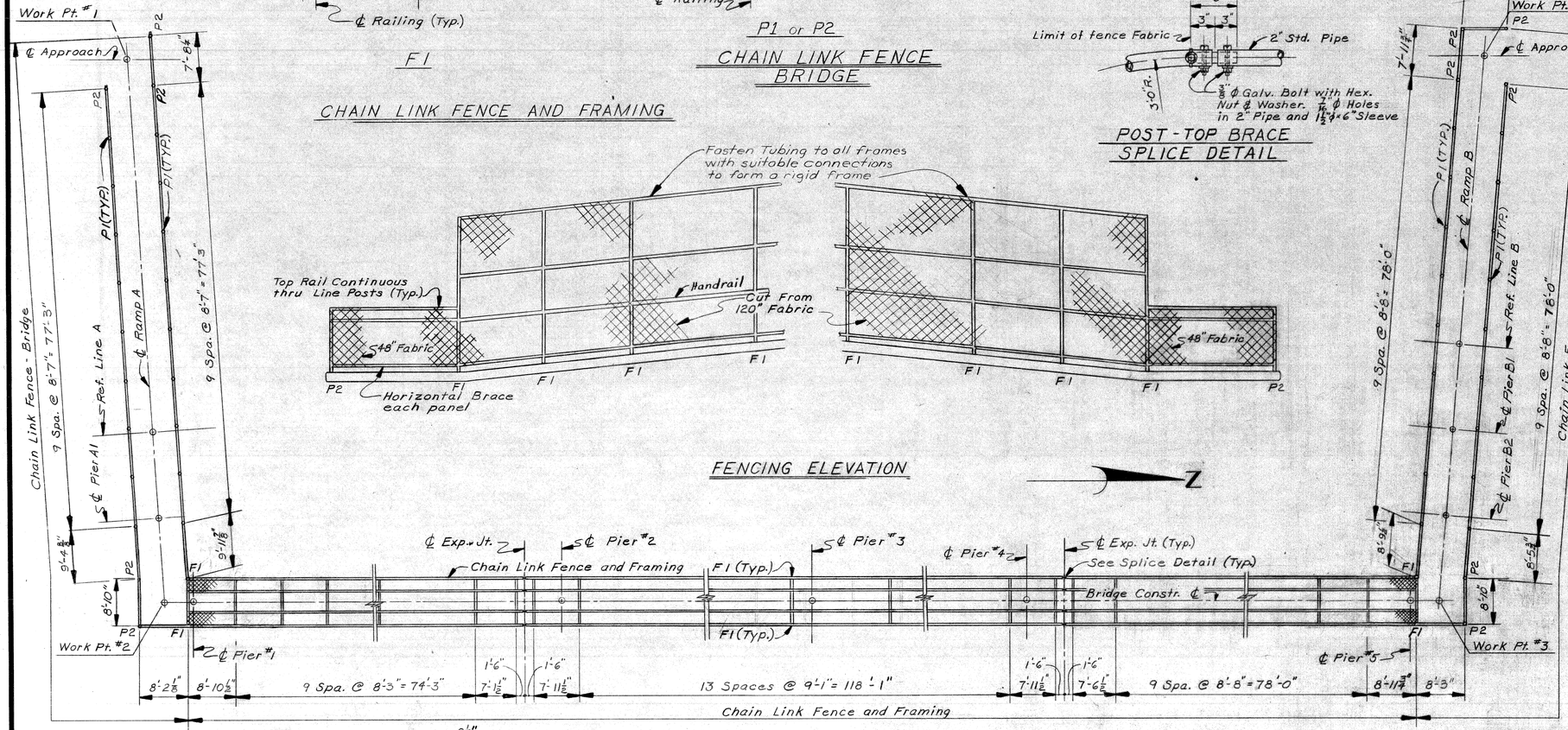


INSIDE CORNER



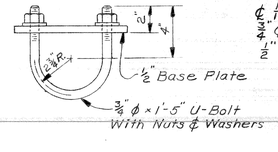
POST-TOP BRACE SPLICE DETAIL

CHAIN LINK FENCE AND FRAMING

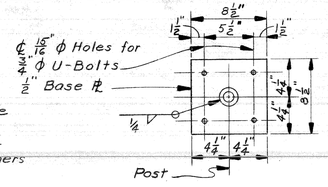


FENCING ELEVATION

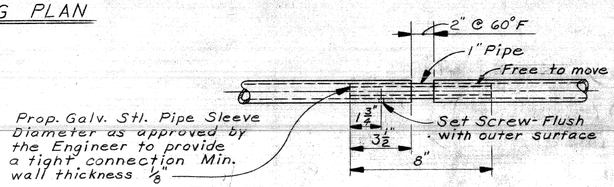
FENCING PLAN



U-BOLT DETAIL



POST BASE DETAILS



TYPICAL SPLICE DETAIL @ EXP. JTS.

NOTES:

Enclosure posts are to be normal to the deck slab.

Chain Link Fence and Framing and Chain Link Fence Bridge shall conform to the M.D.S.H. Standard Specifications, Sec. 8.22.04. The fence material is to be adequately fastened to all tubing in the frame and shall be No. 9 gage.

Nominal 1¼ pipe shall be 1⅝" O.D. steel pipe or tubing weighing 2.27 lbs. per. ft., galvanized

All fabric for fencing shall be furnished with knuckling at both selvages.

Nominal 2" pipe shall be 2⅜" O.D. steel pipe or tubing weighing 3.65 lbs. per. ft., galvanized.

All tubing shall be furnished with suitable connections and it's min. weight shall be within 5% of the weight specified.

All steel components are to be galvanized after fabrication (Anchor Bolts, Nuts and Washers shall be galvanized in accordance with A.S.T.M. A-153)

Anchor Bolts, Nuts and Washers may be A.S.T.M. A307.

Dimensions are horizontal along ℄ railing.

Pay length is measured out to out of metal with no deductions for expansions openings.

QUANTITIES

Chain Link Fence ℄ Framing	329.8 Lin Ft.
Chain Link Fence - Bridge	404.9 Lin Ft.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990120

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

FENCING DETAILS

REVISIONS

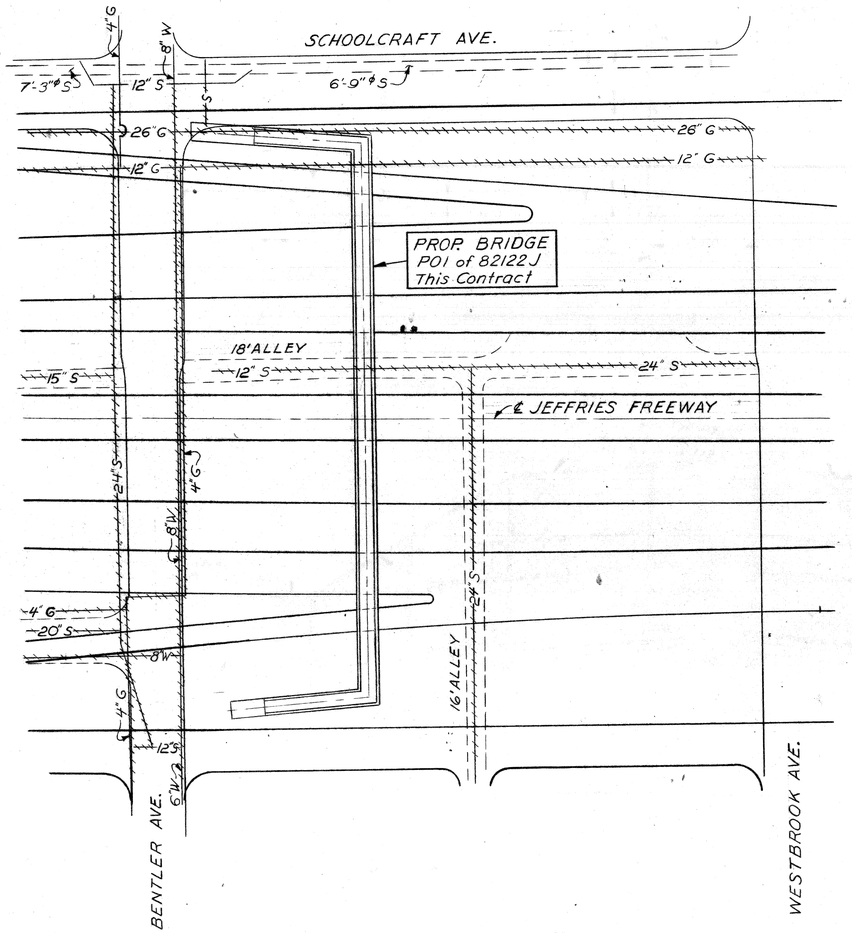
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	Mc Gurc	8-70
DRAWN BY	R. Rasik	8/69
TRACED BY		
CHECKED BY	J.M.	8/70

SHEET 17 OF 18

P01 of 82122 J



SITUATION PLAN
Scale : 1" 40'

LEGEND

UTILITY	Existing	Deleted or Abandoned	New Work by Others	New Work by Contractor
Michigan Consolidated Gas Co.	—G—	~~G~~		
Detroit Water Dept.	—W—	~~W~~		
Expwy. and City of Detroit Sewers	—S—	~~S~~		

NOTE:
Bridge construction and utility alterations are included in package contract for Control Section 82122 J.

The contractor shall locate all active underground utilities prior to starting work, and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
PW 990(20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

EXISTING UTILITIES AND PROPOSED ALTERATIONS

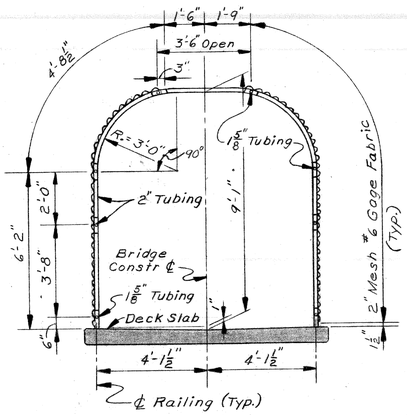
REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	McGuire	2-69
DRAWN BY	Van Nordstrom	4-19-69
TRACED BY		
CHECKED BY	R.H	3-69
SHEET	6 OF 8	

P01 of 82122J



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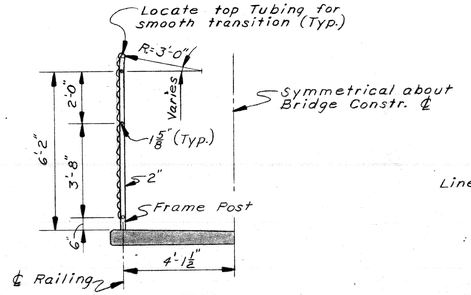

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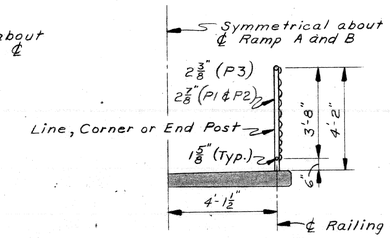
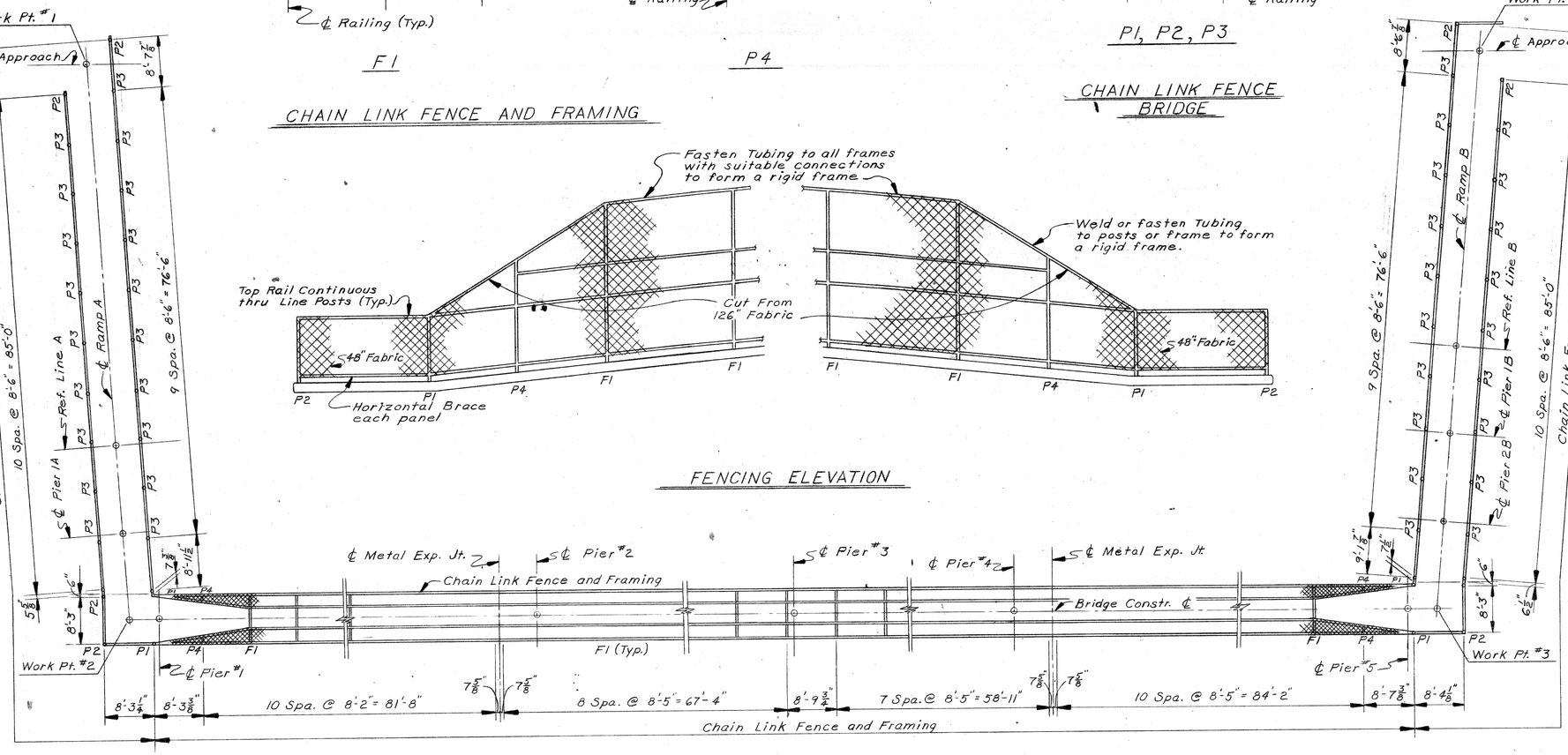


P1, P2, P3

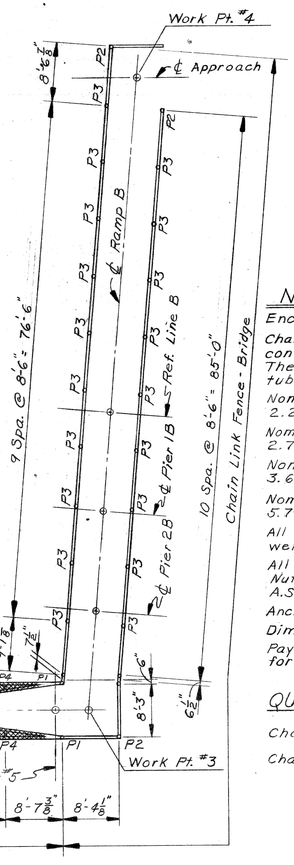
CHAIN LINK FENCE BRIDGE

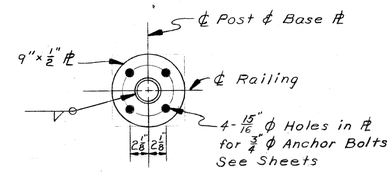
CHAIN LINK FENCE AND FRAMING

FENCING ELEVATION

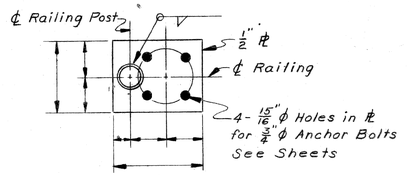


FENCING PLAN





BASE ℄ DETAIL



BASE ℄ DETAIL @ METAL EXP. JOINT

NOTES:

Enclosure posts are to be normal to the deck slab.

Chain Link Fence and Framing and Chain Link Fence Bridge shall conform to the M.D.S.H. Standard Specifications, Sec. 7.22.04. The fence material is to be adequately fastened to all tubing in the frame.

Nominal 1⅝" tubing shall be 1⅝" O.D. steel pipe or tubing weighing 2.27 lbs. per. ft., galvanized

Nominal 2" tubing shall be 2" O.D. steel pipe or tubing weighing 2.72 lbs. per. ft. galvanized.

Nominal 2⅜" tubing shall be 2⅜" O.D. steel pipe or tubing weighing 3.65 lbs. per. ft., galvanized.

Nominal 2⅞" tubing shall be 2⅞" O.D. steel pipe or tubing weighing 5.79 lbs. per. ft., galvanized

All tubing shall be furnished with suitable connections and it's min. weight shall be within 5% of the weight specified.

All steel components are to be galvanized. (Anchor Bolts, Nuts and Washers shall be galvanized in accordance with A.S.T.M. A153).

Anchor Bolts, Nuts and Washers are to be A.S.T.M. A 307.

Dimensions are horizontal along ℄ railing.

Pay length is measured out to out of metal with no deductions for expansions openings.

QUANTITIES

Chain Link Fence ℄ Framing	Lin. Ft.
Chain Link Fence - Bridge	Lin Ft.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

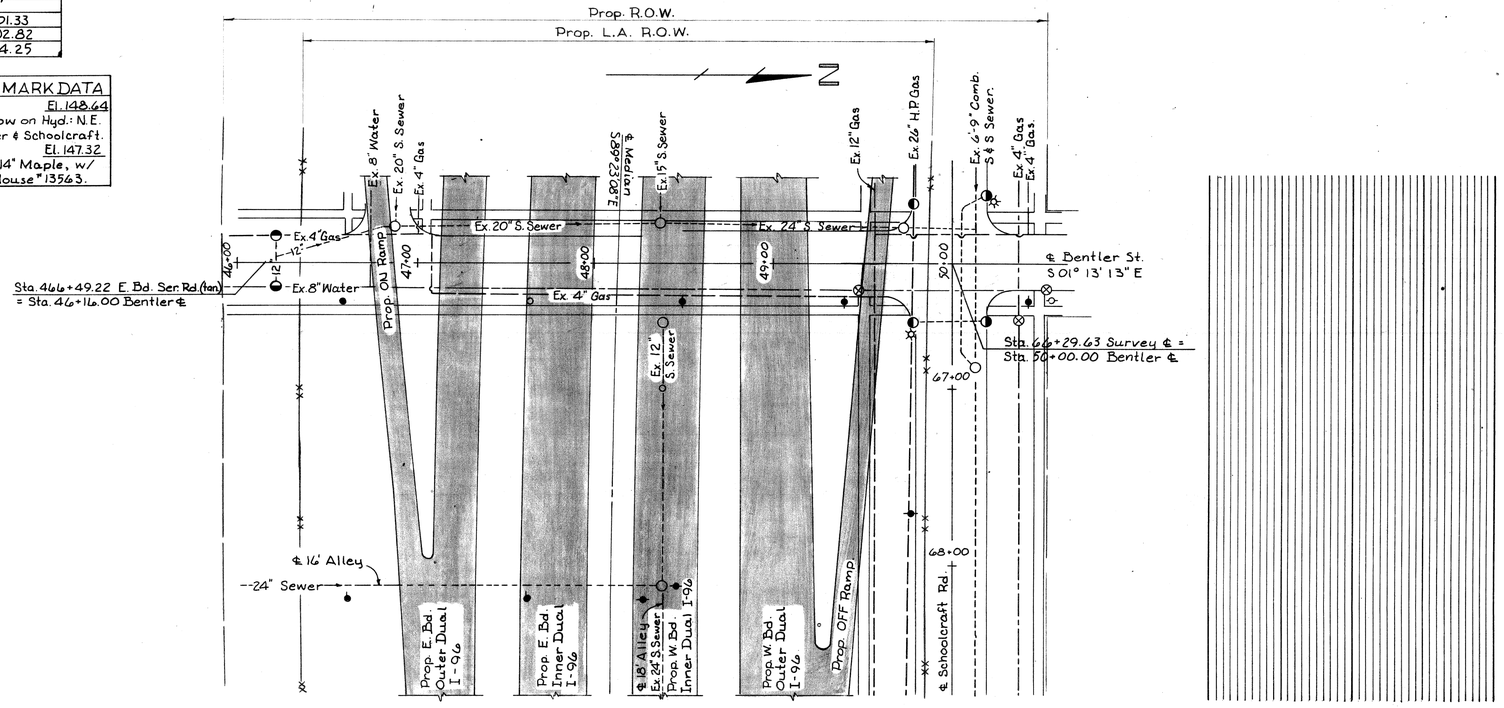
REVISIONS

NO.	DESCRIPTION	DATE	BY

SQUAD BOSS			
DRAWN BY			
TRACED BY			
CHECKED BY			
SHEET		OF	

CURVE DATA
Curve # 5
Med. Const. ℄
Δ = 2° 00' 35" Lt.
D = 0° 20' 00"
R = 17,188.73'
T = 301.49'
L = 602.92'
E = 2.64'
P.C. = 165+01.33
P.I. = 168+02.82
P.T. = 171+04.25

BENCH MARK DATA	
B.M. # 21	El. 148.64
Tip of arrow on Hyd.: N.E. cor. Bentler & Schoolcraft.	
B.M. # 21A	El. 147.32
B.M. Cap in 14" Maple, w/ Bentler: House # 13563.	



SITUATION PLAN
Scale 1" = 40'

PROFILE
VERT. SCALE — 1" = 10'
HOR. SCALE — 1" = 40'

REVISIONS			
NO.	DESCRIPTION	DATE	BY

MICHIGAN STATE HIGHWAY DEPARTMENT

I-96 UNDER BENTLER ST. IN THE CITY OF DETROIT.

GENERAL PLAN OF SITE

APPROVED _____ DESIGN SUPERVISING ENGINEER

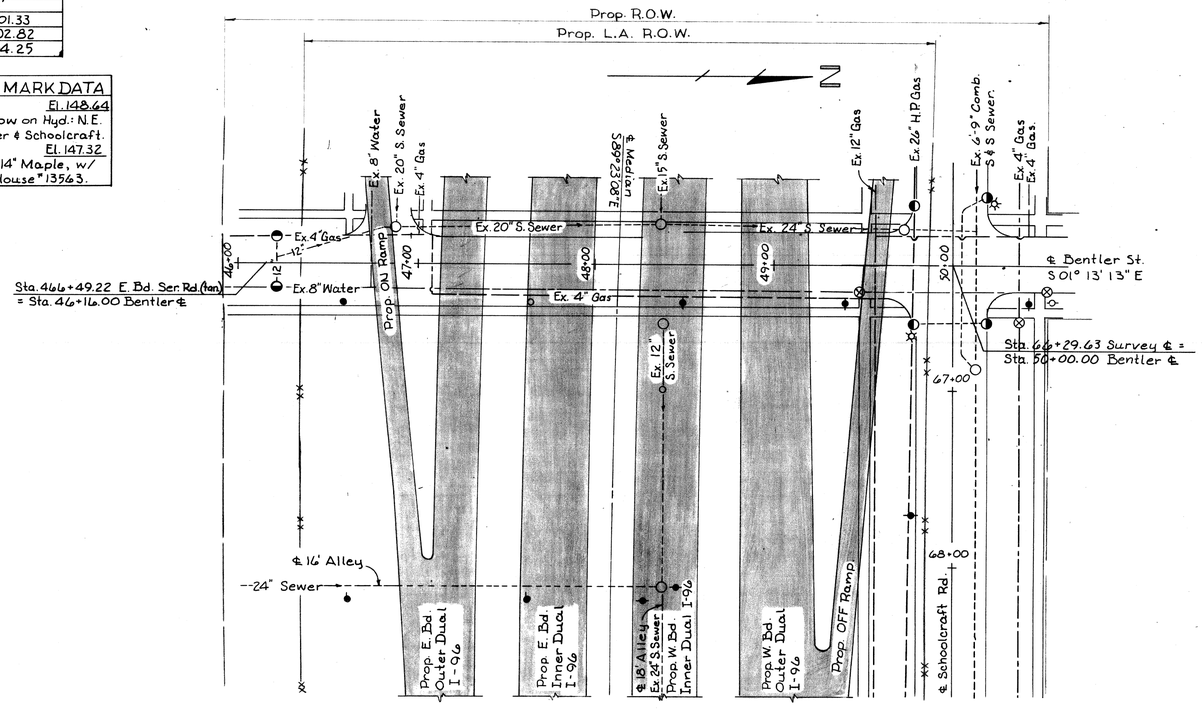
APPROVED _____ ASS'T. ENGINEER OF DESIGN

SQUAD BOSS		
DRAWN BY		
TRACED BY		
CHECKED BY		
SHEET	OF	

P01 of 82122

CURVE DATA
Curve # 5
Med. Const. ℄
Δ = 2° 00' 35" Lt.
D = 0° 20' 00"
R = 17,188.73'
T = 301.49'
L = 602.92'
E = 2.64'
P.C. = 165+01.33
P.I. = 168+02.82
P.T. = 171+04.25

BENCH MARK DATA	
B.M. # 21	El. 148.64
Tip of arrow on Hyd.: N.E. cor. Bentler & Schoolcraft.	
B.M. # 21A	El. 147.32
B.M. Cap in 14" Maple, w/ Bentler: House # 13563.	



SITUATION PLAN
Scale 1" = 40'

PROFILE
VERT. SCALE — 1" = 10'
HOR. SCALE — 1" = 40'

REVISIONS

NO.	DESCRIPTION	DATE	BY

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ ASS'T. ENGINEER OF DESIGN

MICHIGAN STATE HIGHWAY DEPARTMENT

I-96 UNDER BENTLER ST. IN THE CITY OF DETROIT.

GENERAL PLAN OF SITE

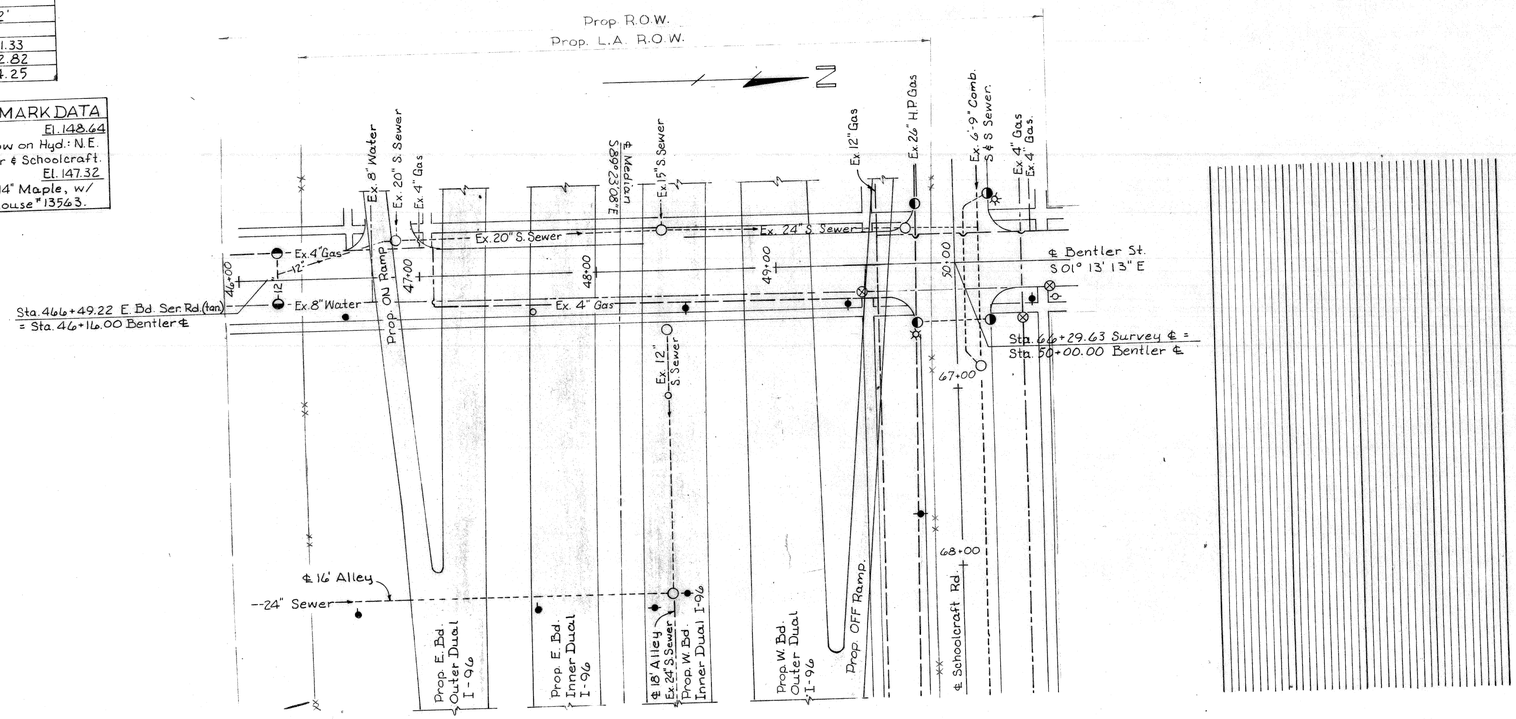
SQUAD BOSS		
DRAWN BY		
TRACED BY		
CHECKED BY		
SHEET	OF	

P01 of 82122

CURVE DATA
Curve # 5
Med. Const ℄
Δ = 2° 00' 35" Lt.
D = 0° 20' 00"
R = 17,188.73'
T = 301.49'
L = 602.92'
E = 2.64'
P.C. 165+01.33
P.I. 168+02.82
P.T. 171+04.25

BENCH MARK DATA

B.M. # 21 El. 148.64
Tip of arrow on Hyd.: N.E. cor. Bentler & Schoolcraft.
B.M. # 21A El. 147.32
B.M. Cap in 14" Maple, w/ Bentler: House # 13563.



SITUATION PLAN
Scale 1" = 40'

PROFILE
VERT. SCALE — 1" = 10'
HOR. SCALE — 1" = 40'

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN STATE HIGHWAY DEPARTMENT

I-96 UNDER BENTLER ST. IN THE CITY OF DETROIT.

GENERAL PLAN OF SITE

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ ASS'T. ENGINEER OF DESIGN

SQUAD BOSS		
DRAWN BY		
TRACED BY		
CHECKED BY		
SHEET	OF	

P01 of 82122

CURVE DATA
Curve # 5
Med. Const. ℄
Δ = 2° 00' 35" Lt.
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R = 17,188.73'
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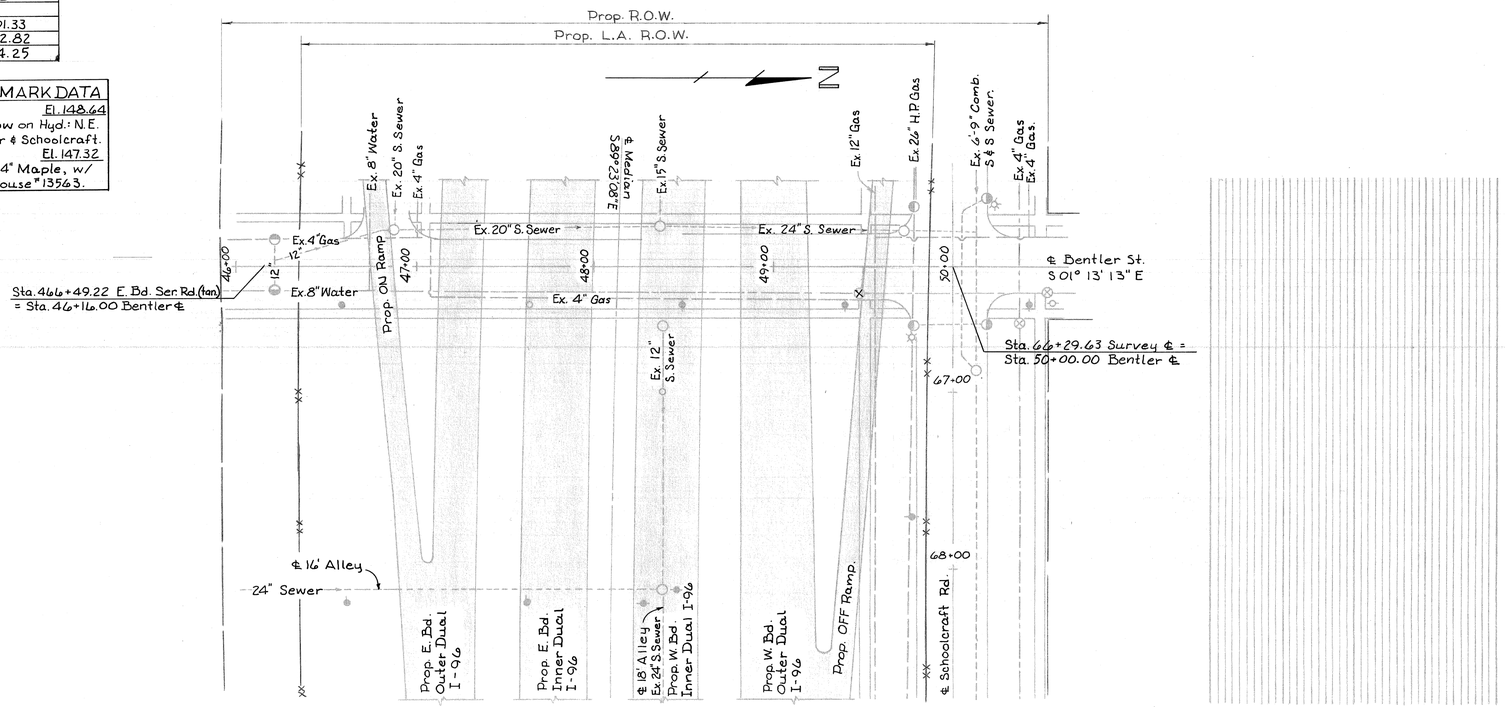
E = 2.64'
P.C. = 165+01.33
P.I. = 168+02.82
P.T. = 171+04.25

BENCH MARK DATA	
B.M. # 21	El. 148.64
Tip of arrow on Hyd.: N.E. cor. Bentler & Schoolcraft.	
B.M. # 21A	El. 147.32
B.M. Cap in 14" Maple, w/ Bentler: House # 13563.	



SITUATION PLAN
Scale 1" = 40'

PROFILE
VERT. SCALE — 1" = 10'
HOR. SCALE — 1" = 40'

REVISIONS

NO.	DESCRIPTION	DATE	BY

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ ASS'T. ENGINEER OF DESIGN

MICHIGAN STATE HIGHWAY DEPARTMENT

I-96 UNDER BENTLER ST. IN THE CITY OF DETROIT.

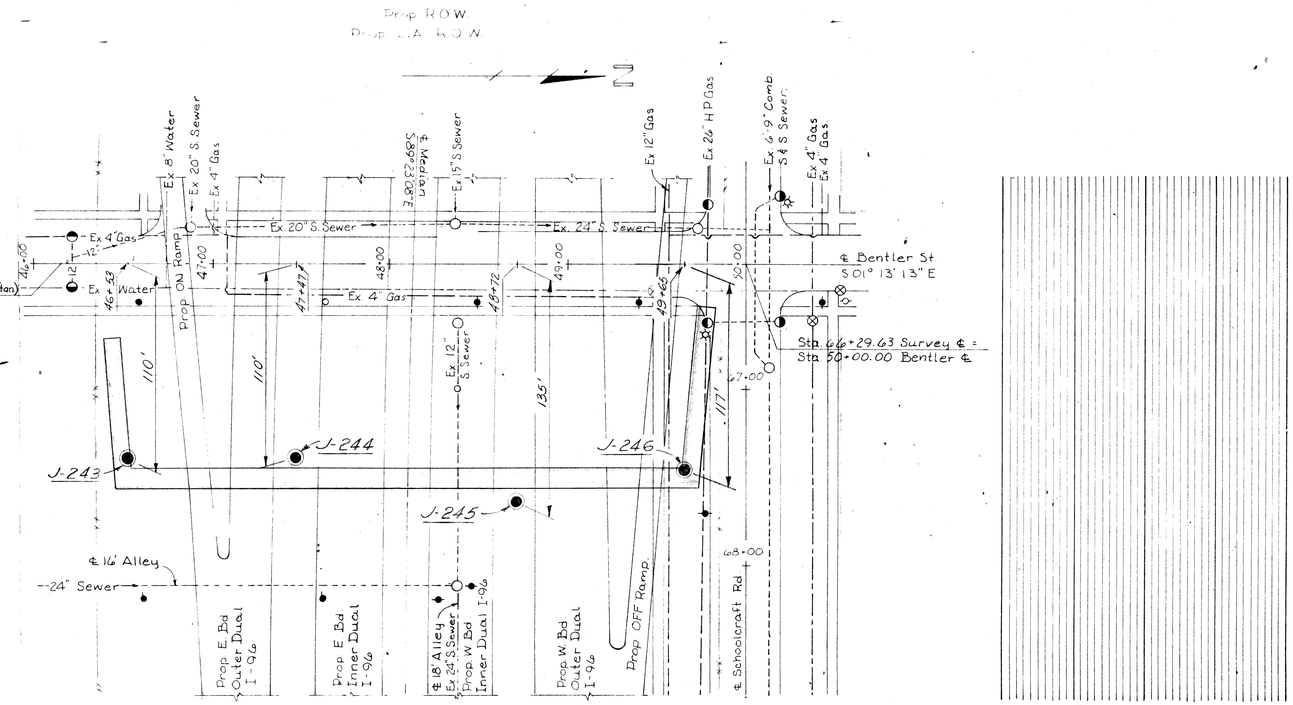
GENERAL PLAN OF SITE

SQUAD BOSS		
DRAWN BY		
TRACED BY		
CHECKED BY		
SHEET	OF	

P01 of 82122

CURVE DATA
Curve #5
Med. Const ℄
Δ = 2° 00' 35" Lt
D = 0° 20' 00"
R = 17,188.73'
T = 301.49'
L = 602.92'
E = 2.64'
PC = 165+01.33
PI = 168+02.82
PT = 171+04.25

BENCH MARK DATA
B.M. #21 El. 148.64
Tip of arrow on Hyd.: N.E. cor. Bentler & Schoolcraft
B.M. #21A El. 147.32
Bk. Cap in 14" Maple, w/ Bentler House #13563.



SITUATION PLAN
Scale 1" = 40'

● Denotes Soil Boring Required

Boring Number J-	Approx. Bott. Pkg. EL.
243	140.0
244	130.0
245	130.0
246	130.0

PROFILE
VERT. SCALE — 1" = 10'
HOR. SCALE — 1" = 40'

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

REQUEST FOR BORINGS

OFFICE COPY

Letting Date: 1-1-70

Plan Date 2-17-69

MICHIGAN STATE HIGHWAY DEPARTMENT

I-96 UNDER BENTLER ST. IN THE CITY OF DETROIT.

GENERAL PLAN OF SITE

REVISIONS			
NO	DESCRIPTION	DATE	BY

APPROVED ..... DESIGN SUPERVISING ENGINEER

APPROVED ..... ASST. ENGINEER OF DESIGN

SQUAD BOSS		
DRAWN BY		
TRACED BY		
CHECKED BY		
SHEET	OF	

P01 of 82122J

CURVE DATA
Curve # 5
Med. Const. ℄
Δ = 2° 00' 35" Lt.
D = 0° 20' 00"
R = 17,188.73'
T = 301.49'
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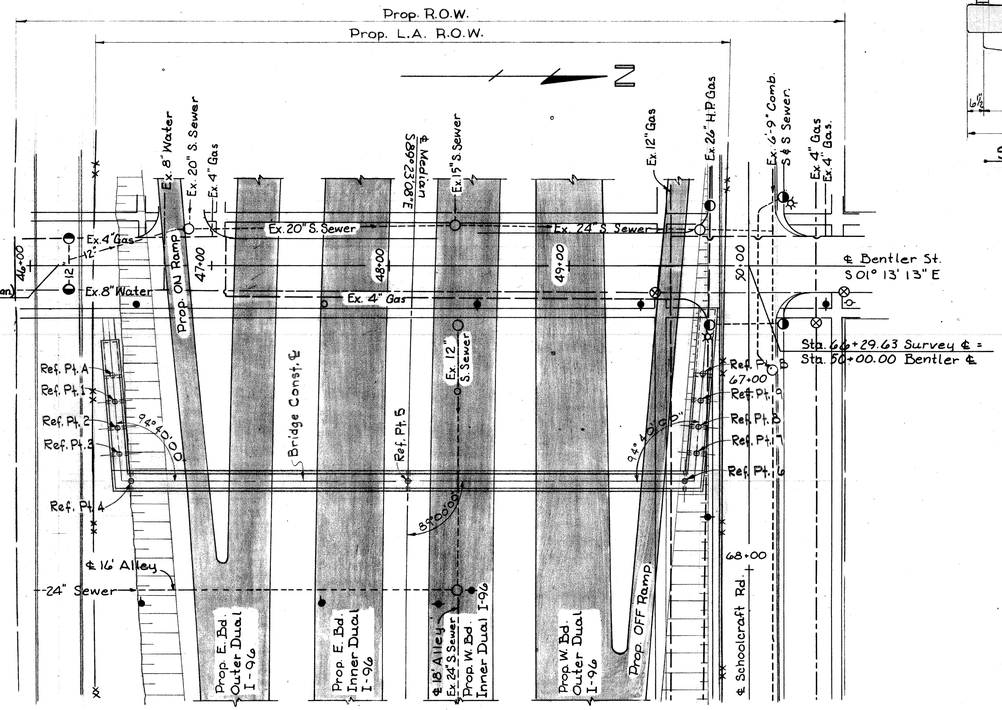
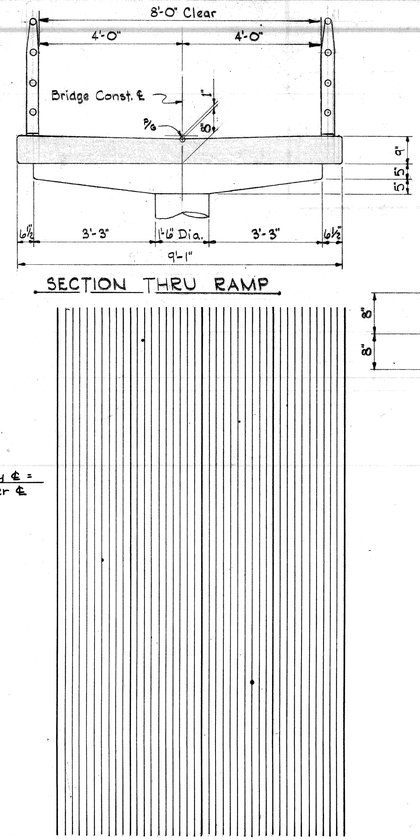
E = 2.64'
P.C. = 165+01.33
P.I. = 168+02.82
P.T. = 171+04.25

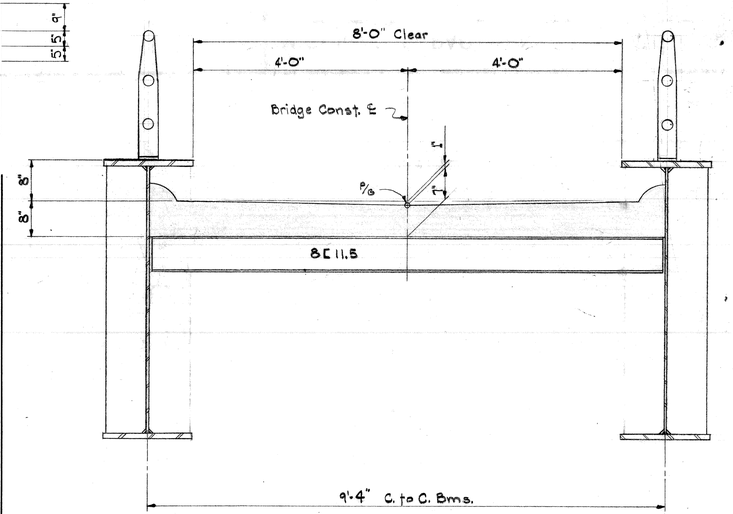
BENCH MARK DATA	
B.M. # 21	El. 148.64
Tip of arrow on Hyd.: N.E. cor. Bentler & Schoolcraft.	
B.M. # 21A	El. 147.32
B.M. Cap in 14" Maple, w/ Bentler: House # 13563.	



SITUATION PLAN
Scale 1" = 40'

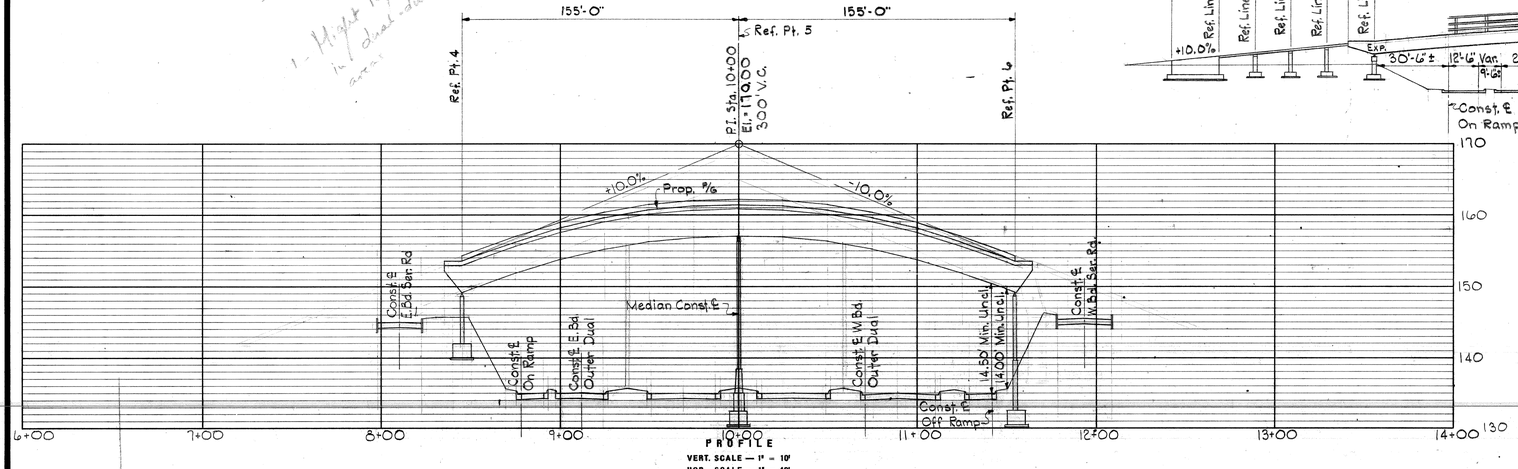


SECTION THRU RAMP

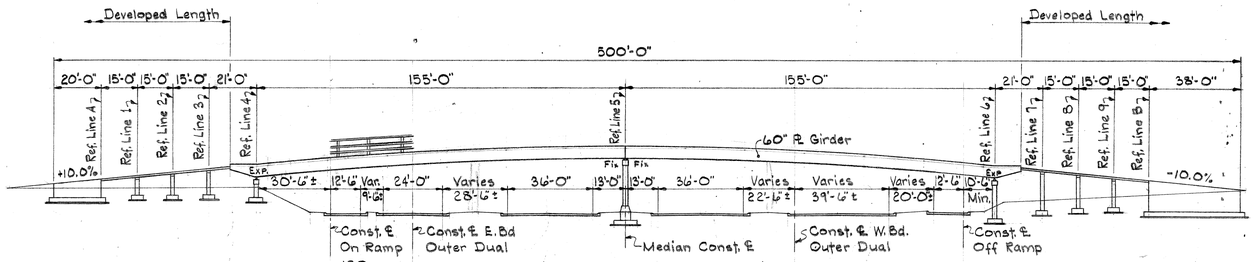


DECK CROSS SECTION

1 - Height requirement in dual-dual median area.



PROFILE
VERT. SCALE — 1" = 10'
HOR. SCALE — 1" = 40'



ELEVATION

REVISIONS			
NO.	DESCRIPTION	DATE	BY

MICHIGAN STATE HIGHWAY DEPARTMENT

I-96 UNDER BENTLER ST. IN THE CITY OF DETROIT.

GENERAL PLAN OF SITE

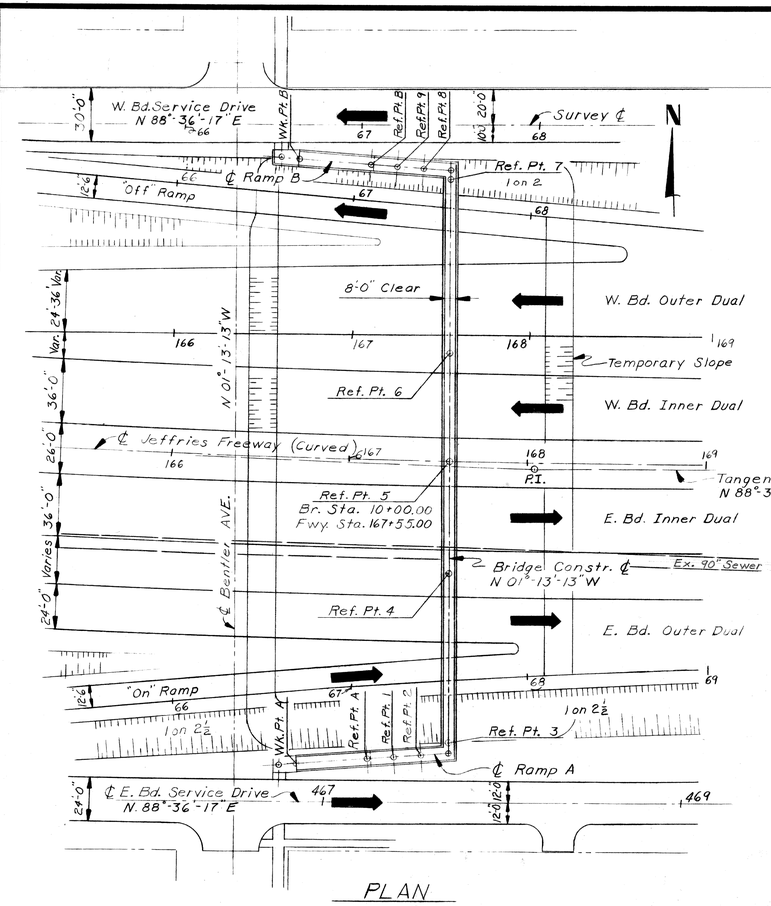
STUDY "A"

SQUAD BOSS	Woodard	4-26-67
DRAWN BY	Kellermann	4/28/67
TRACED BY		
CHECKED BY	ZWW	4-26-67
SHEET	OF	

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ ASS'T. ENGINEER OF DESIGN

P01 of 82122



PLAN

Scale 1" = 40'

CURVE DATA
℄ JEFFRIES FREEWAY
CURVE #5

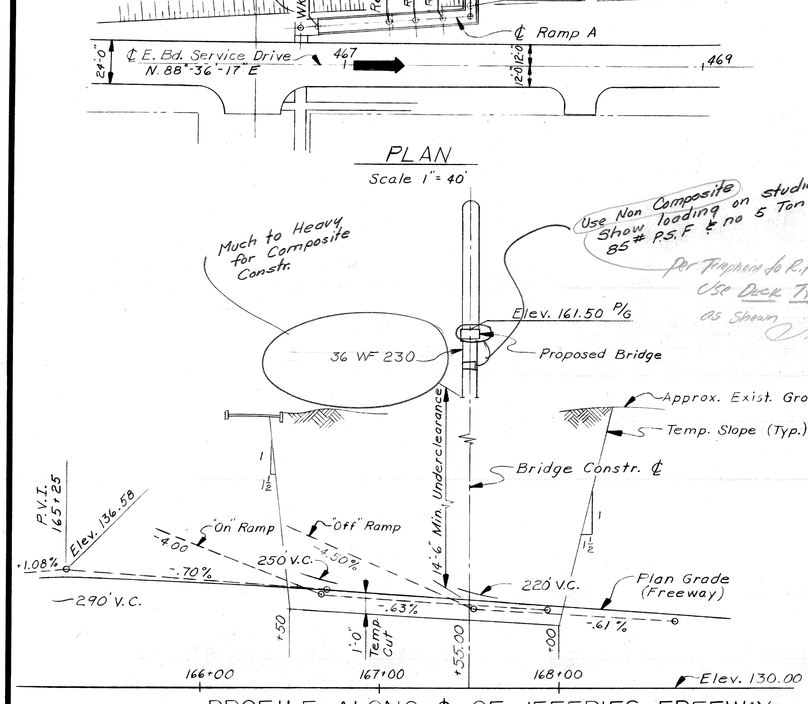
- △ = 2°-00'-35"
- D = 0°-20'-00"
- R = 17,188.73'
- T = 301.49'
- L = 602.92'
- E = 2.64'
- P.C. = Sta. 165+01.33
- P.I. = Sta. 168+02.82
- P.T. = Sta. 171+04.25

BENCH MARKS

B.M. #21 Arrow on Hydrant on N.E. Corner of Bentler and Schoolcraft, Elev. 148.64

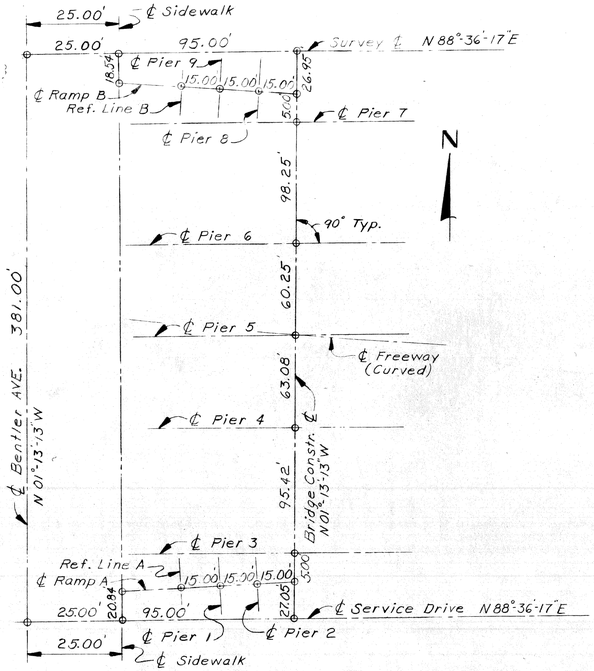
B.M. #21A B.M. Cap in 14" Maple west of Bentler near House #13563, Elev. 147.32

P.B.M. #112-253 City of Detroit Monument on N.E. Corner of Schoolcraft and Burt Road, Elev. 144.870



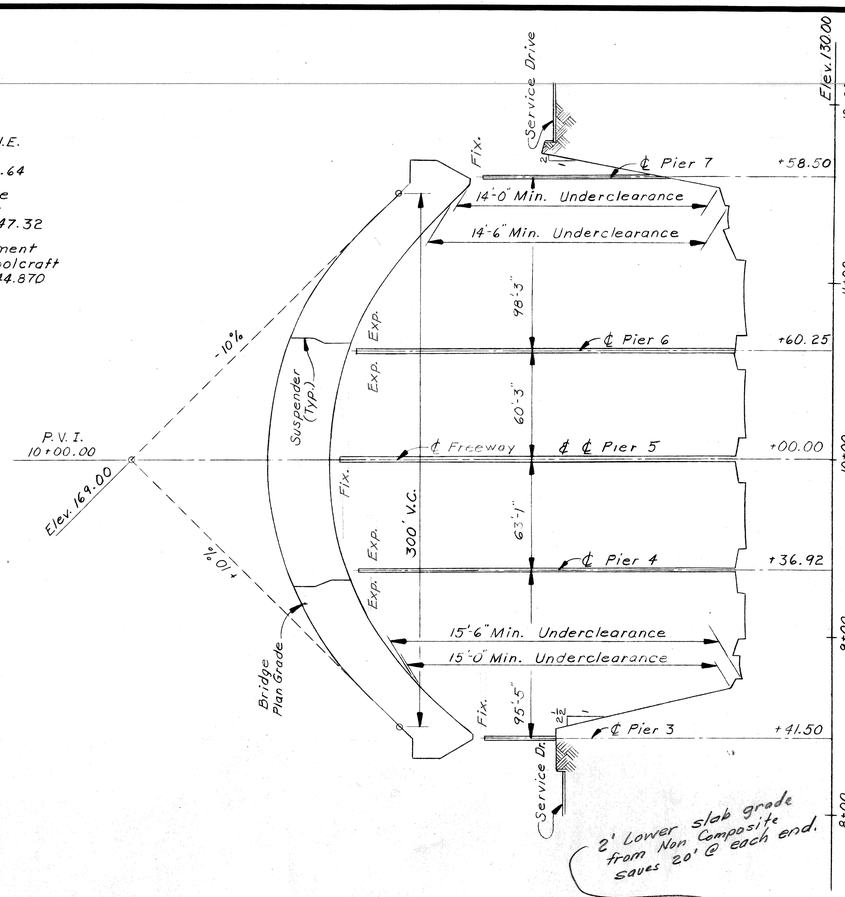
PROFILE ALONG ℄ OF JEFFRIES FREEWAY

Scale Hor. 1" = 40' Vert. 1" = 4'



ALIGNMENT DIAGRAM

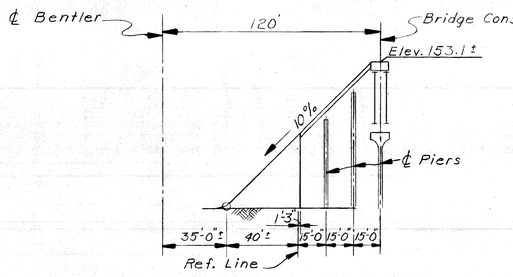
No Scale



PROFILE ALONG BRIDGE CONSTRUCTION ℄

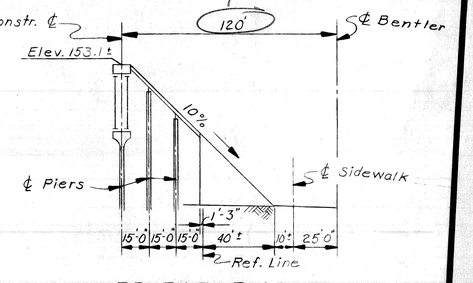
Scale Hor. 1" = 40' Vert. 1" = 4'

2' Lower slab grade from Non Composite saves 20' @ each end.



PROFILE - RAMP A

Scale Hor. 1" = 40' Vert. 1" = 4'



PROFILE - RAMP B

Scale Hor. 1" = 40' Vert. 1" = 4'

STUDY "A" 4-30-69

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (14)

REVISIONS			
NO.	DESCRIPTION	DATE	BY

STUDY A
May 5, 1969

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

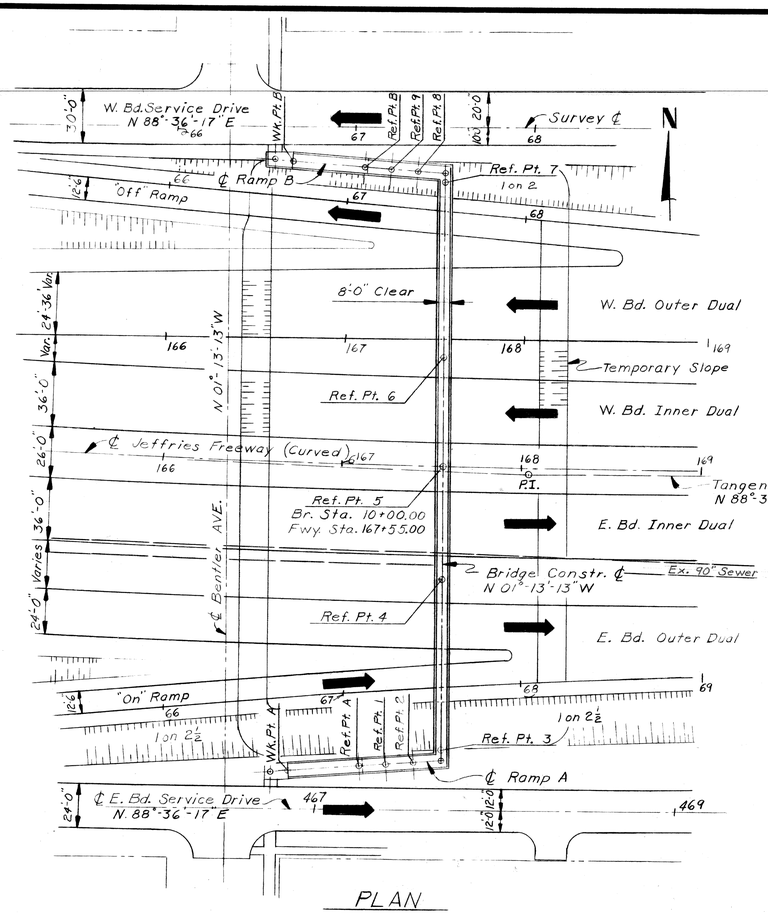
CITY OF DETROIT

SQUAD BOSS	Wyatt	5/69
DRAWN BY		
TRACED BY	Rosik	5/69
CHECKED BY		
SHEET	1 OF	

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ DESIGN ENGINEER

P01 of 82122J



PLAN
Scale 1" = 40'

CURVE DATA
℄ JEFFRIES FREEWAY
CURVE #5

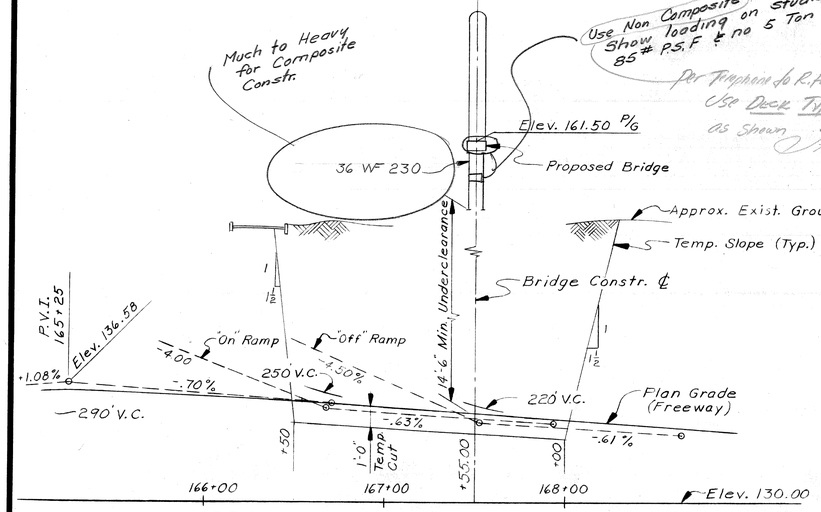
△	= 2°-00'-35"
D	= 0°-20'-00"
R	= 17,188.73'
T	= 301.49'
L	= 602.92'
E	= 2.64'
P.C.	= Sta. 165+01.33
P.I.	= Sta. 168+02.82
P.T.	= Sta. 171+04.25

BENCH MARKS

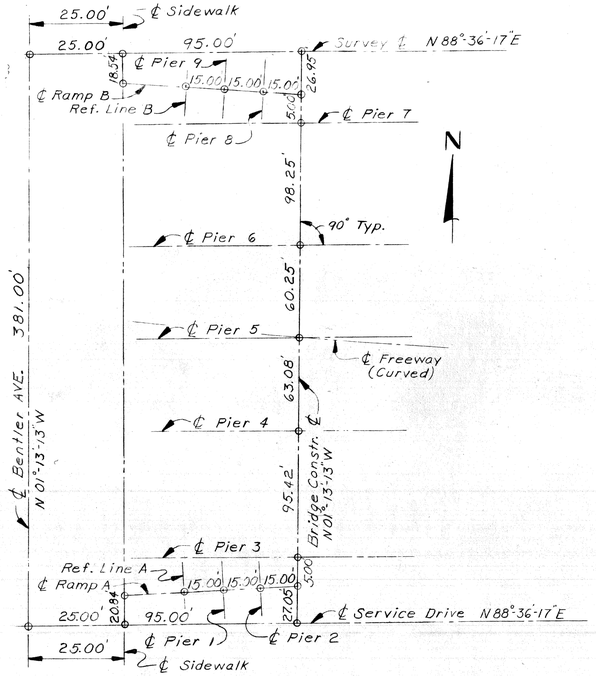
B.M. #21 Arrow on Hydrant on N.E. Corner of Bentler and Schoolcraft, Elev. 148.64

B.M. #21A B. M. Cap in 14" Maple west of Bentler near House #13563, Elev. 147.32

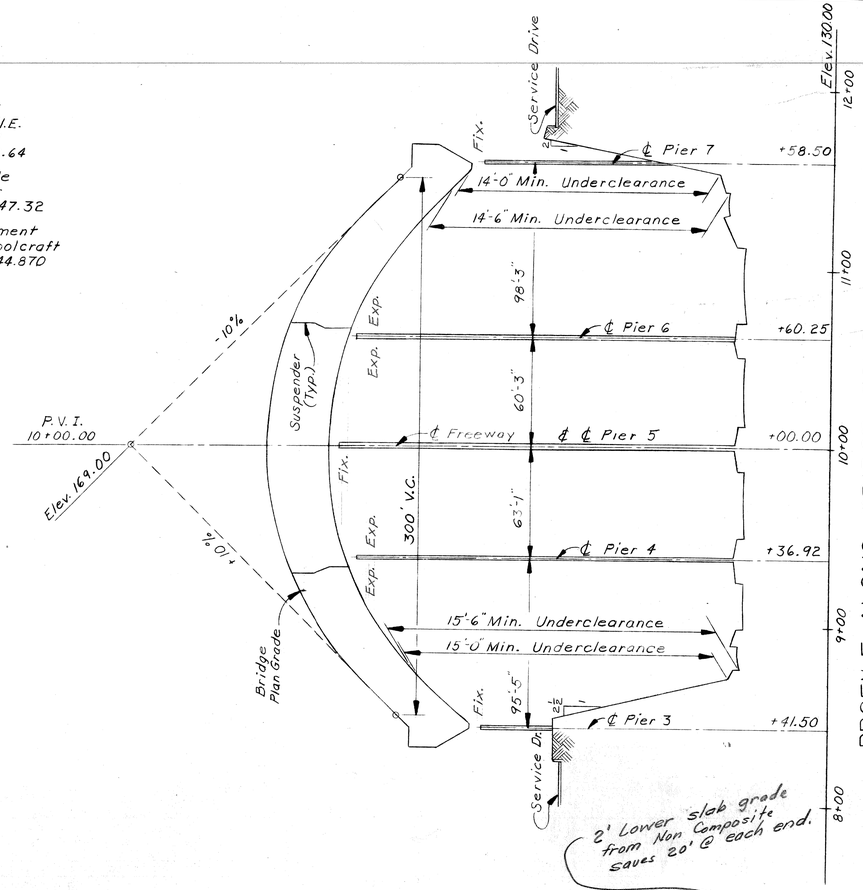
P.B.M. #112-253 City of Detroit Monument on N.E. Corner of Schoolcraft and Burt Road, Elev. 144.870



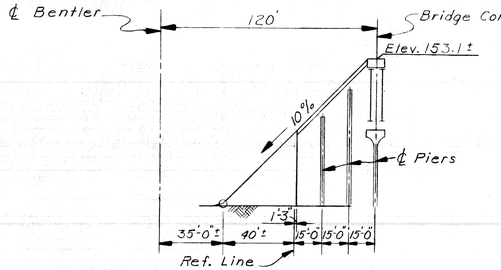
PROFILE ALONG ℄ OF JEFFRIES FREEWAY
Scale Hor. 1" = 40'
Vert. 1" = 4'



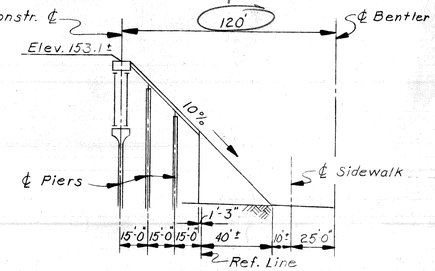
ALIGNMENT DIAGRAM
No Scale



2' Lower slab grade from Non Composite saves 20' @ each end.



PROFILE - RAMP A
Scale Hor. 1" = 40'
Vert. 1" = 4'



PROFILE - RAMP B
Scale Hor. 1" = 40'
Vert. 1" = 4'

STUDY "A" 4-30-69

STUDY A
May 5, 1969

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (14)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

CITY OF DETROIT

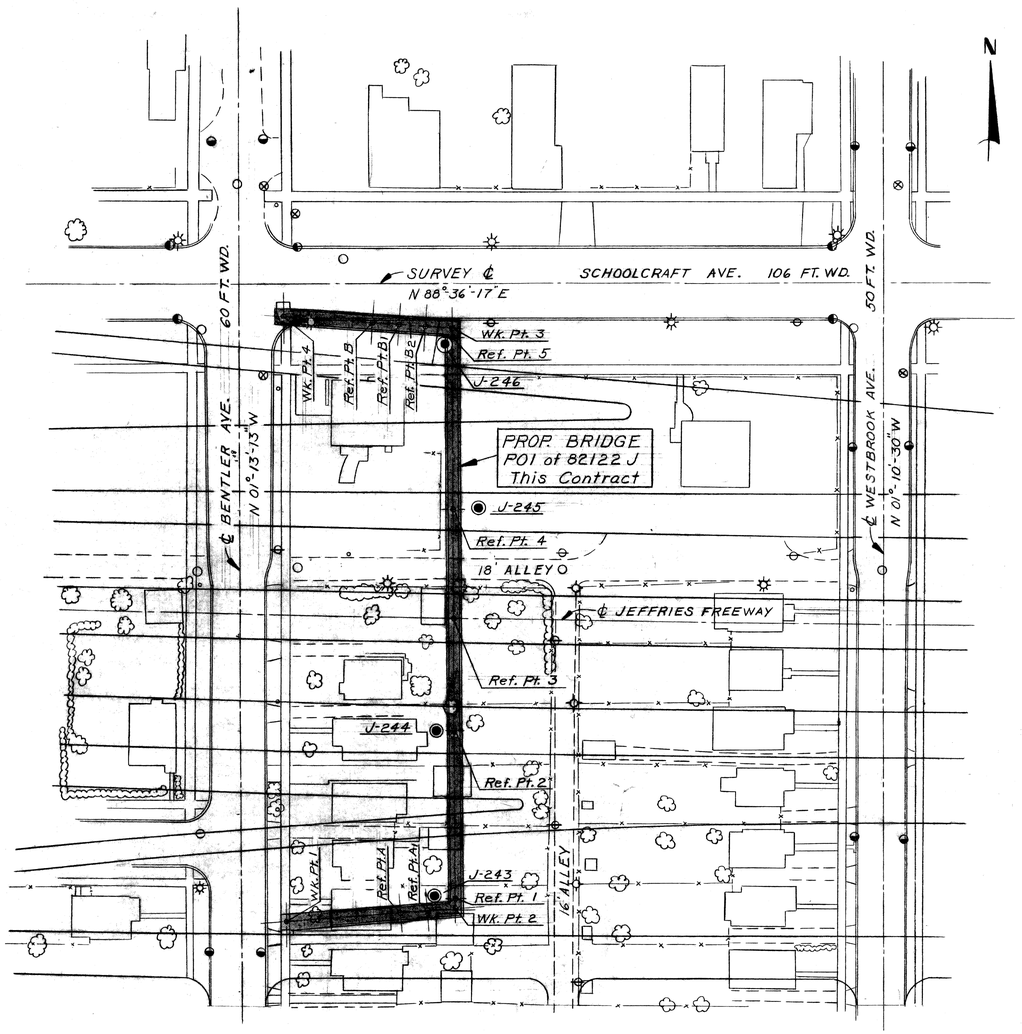
SQUAD BOSS		
DRAWN BY	Wolff	5/69
TRACED BY	Rosik	5/69
CHECKED BY		

SHEET 1 OF 1

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ DESIGN ENGINEER

P01 of 82122J



SITUATION PLAN

Scale: 1" = 40'

LEGEND

- Tree
- Fence
- Sewer Manhole
- Sewer Inlet or Catch Basin
- Water Gatewell and Valve
- P.L.C. Cable Manhole
- P.L.C. Lightpole
- M.B.T. Pole
- D.E. Pole
- Test Hole for Soil Profile

NOTES :

The topography shown represents conditions existing at the time the field survey was made. These conditions may have been materially altered by the operations of others before this work has been started.

The work covered by these plans includes the construction of the proposed bridge.

All other work is included in the road plans which are a part of this contract.

Removal of fences and buildings is not a part of this contract.

Bench Marks are referenced to the City of Detroit Datum.

LOG OF SOIL BORINGS

J 243

Pier #1 Bot. Ftg El. 140.00

146.6

* N = 3-5		Topsoil.
* N = 3-5	140	Moderately compact brown sand, heavy trace of clay.
S = 408	130	Firm gray and brown mottled silty clay, trace of sand.
S = 204		Firm gray slightly mottled clay, trace of sand.
S = 180	120	Firm gray silty clay, trace of sand, occasional pebble, silt partings.
S = 300		Plastic gray mottled silty clay, trace of sand, occasional pebble.
S = 276	110	End of boring.
S = 240		Water level below ground after completion (uncased) 1 hr. 0.5 ft.; 24 hr. 4.2 ft.
	100	

J-244

Pier #2 Bot. Ftg El. 129.70

146.1

		Fill (sand, cinders, gravel).
* N = 4-5		Topsoil.
* N = 4-5	140	Moderately compact brown medium sand.
S = 288	130	Firm brown and gray mottled clay, trace of sand.
S = 204		Firm brown and gray mottled silty clay, trace of sand.
S = 240		Firm gray silty clay, trace of sand, occasional pebble, silt partings.
S = 192	120	Plastic gray mottled silty clay, trace of sand, occasional pebble, silt partings.
S = 300	110	
* N = 2-3		Soft gray silty clay, trace of sand, occasional pebble.
* N = 1-2		Moderately compact medium sand, fine and medium gravel.
* N = 11-18	100	Stiff gray silty clay, trace of sand, occasional pebble.
* N = 23		Hard gray silty clay, trace of sand, occasional pebble.
	90	Compact silt and fine sand.
		End of boring.
	80	Water level below ground after completion (uncased) 1 hr. 1 ft.; 24 hr. 3.5 ft.

J-245

Pier #4 Bot. Ftg El. 129.70

146.3

* N = 4-5		Topsoil.
	140	Moderately compact brown fine sand.
S = 480		Firm gray and brown mottled sandy silty clay.
S = 360	130	
S = 336		Plastic gray mottled silty clay, trace of sand, occasional pebble, silt partings.
S = 240	120	
S = 288		End of boring.
S = 264	110	Water level below ground after completion (uncased) 1 hr. 1.5 ft.; 24 hr. 4 ft.
	100	

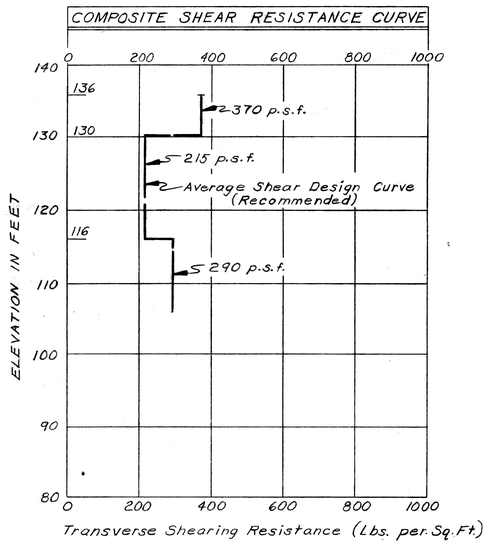
J-246

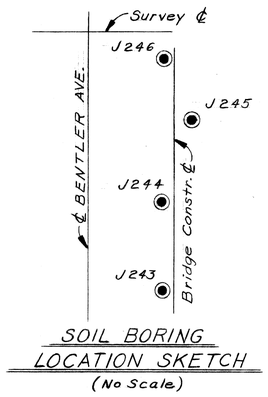
Pier #5 Bot. Ftg El. 133.40

145.5

* N = 4-4		Topsoil.
	140	Firm gray and brown mottled clay, trace of sand, wet at 3 feet.
S = 288		Firm gray silty clay, trace of sand, occasional pebble.
S = 408	130	Plastic gray silty clay, trace of sand, occasional pebble, silt partings.
S = 120		Coarse gray sand and gravel.
S = 192	120	Plastic gray silty clay, trace of sand, occasional pebble.
S = 336		End of boring.
S = 324	110	Water level below ground after completion (uncased) 2 ft.
	100	

COMPOSITE SHEAR RESISTANCE CURVE





SOIL BORING LOCATION SKETCH

(No Scale)

NOTES :

N Indicates the number of blows required to drive the sampler 6" (or as noted) using a 140 # hammer falling 30". Where blow count is not shown, sampler was levered, pushed or hand driven.

S Indicates Transverse Shearing Resistance in Lbs. per Sq. Ft. as determined by M.D.S.H. Standard Test.

* Indicates no sample.

All elevations are based on City of Detroit Datum.

Water level below ground indicated for these soil borings may be residual wash boring water and not true water table.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H Court STRUCTURAL ENGINEER

JOB No. PW 990(20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF SITE

APPROVED _____ DESIGN SUPERVISING ENGINEER

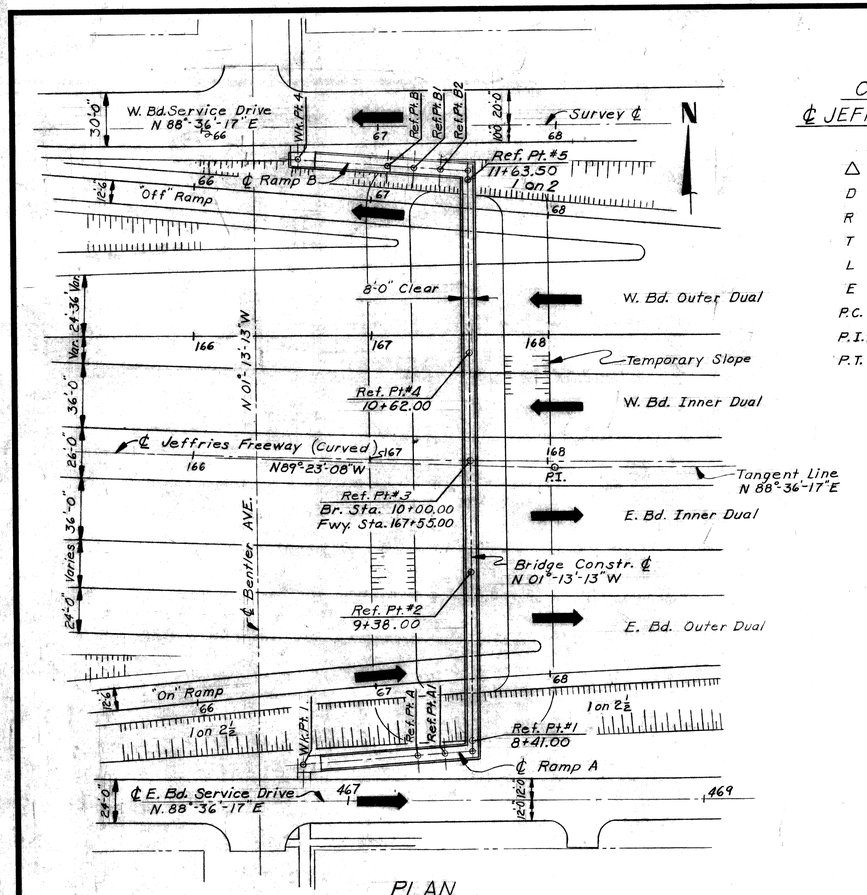
APPROVED _____ ENGINEER - DESIGN SECTION I

CITY OF DETROIT

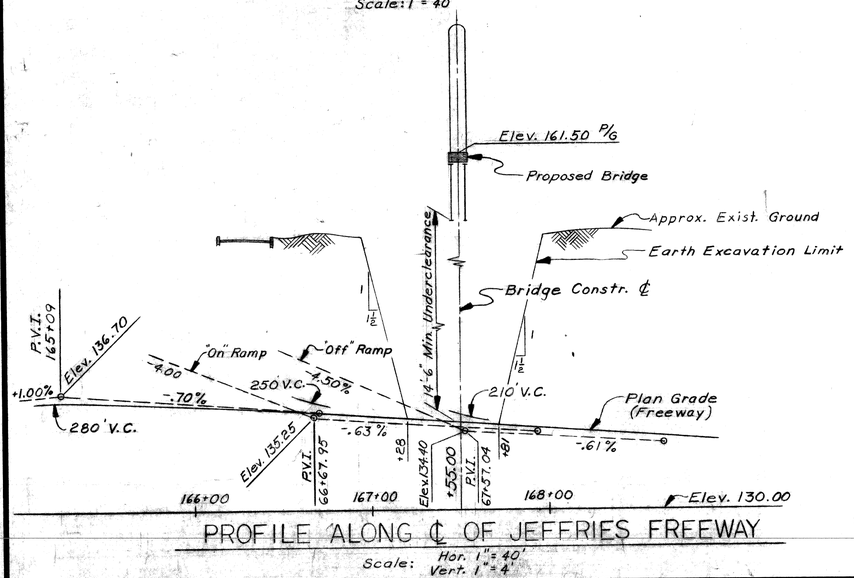
SQUAD BOSS	McGuire	8-69
DRAWN BY	Rosik	7-69
TRACED BY		
CHECKED BY	R.H.	8-69

SHEET 2 OF 18

P01 of 82122 J



PLAN
Scale: 1" = 40'



PROFILE ALONG ℄ OF JEFFRIES FREEWAY
Scale: Hor. 1" = 40'
Vert. 1" = 4'

CURVE DATA
℄ JEFFRIES FREEWAY
CURVE #5

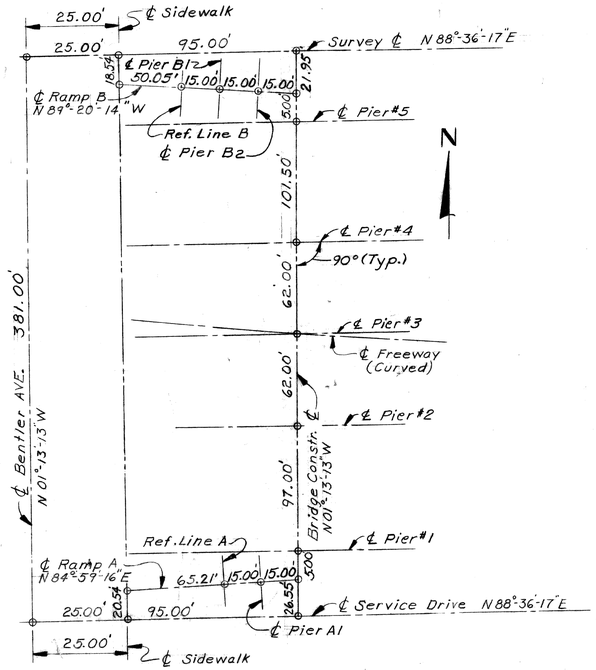
△ = 2°-00'-35" Lt.
D = 0°-20'-00"
R = 17,188.73'
T = 301.49'
L = 602.92'
E = 2.64'
P.C. = Sta. 165+01.29
P.I. = Sta. 168+02.78
P.T. = Sta. 171+04.21

BENCH MARKS

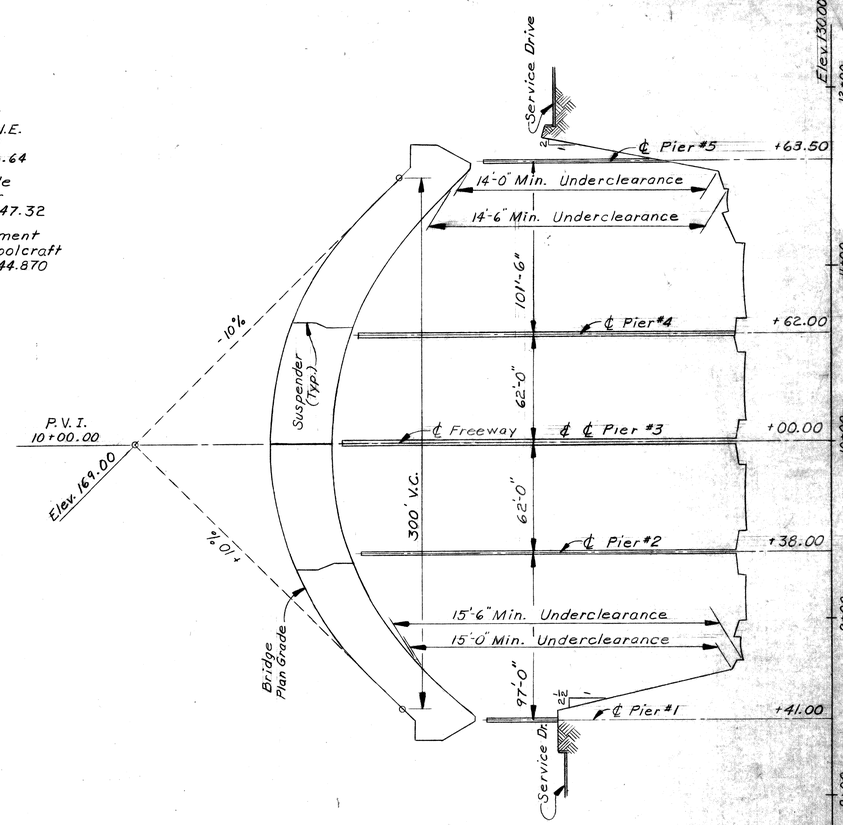
B.M. #21 Arrow on Hydrant on N.E. Corner of Bentler and Schoolcraft, Elev. 148.64

B.M. #21A B.M. Cap in 14" Maple west of Bentler near House #13563, Elev. 147.32

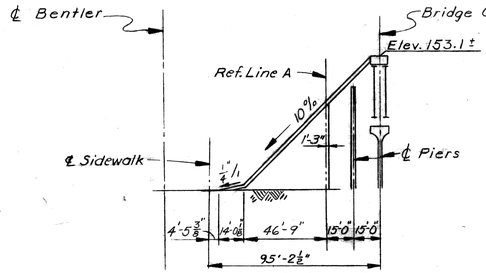
P.B.M. #112-253 City of Detroit Monument on N.E. Corner of Schoolcraft and Burt Road, Elev. 144.870



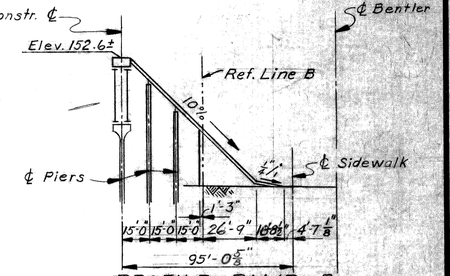
ALIGNMENT DIAGRAM
No Scale



PROFILE ALONG ℄ BRIDGE CONSTRUCTION
Scale: Hor. 1" = 40'
Vert. 1" = 4'



PROFILE - RAMP A
Scale: Hor. 1" = 40'
Vert. 1" = 4'



PROFILE - RAMP B
Scale: Hor. 1" = 40'
Vert. 1" = 4'

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

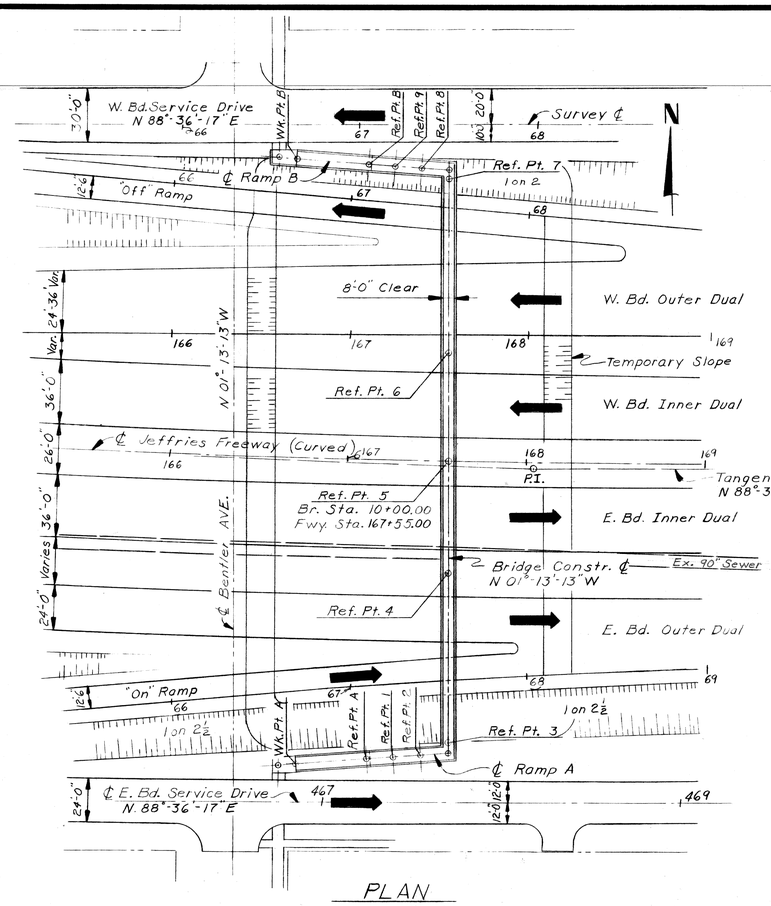
CITY OF DETROIT

SQUAD BOSS	M. Guire	8-69
DRAWN BY	Rosik	7-69
TRACED BY		
CHECKED BY	R.H.	8-69
SHEET	3 OF 18	

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ ENGINEER - DESIGN SECTION I

P01 of 82122J



PLAN

Scale 1" = 40'

CURVE DATA

℄ JEFFRIES FREEWAY

CURVE #5

△	= 2°-00'-35"
D	= 0°-20'-00"
R	= 17,188.73'
T	= 301.49'
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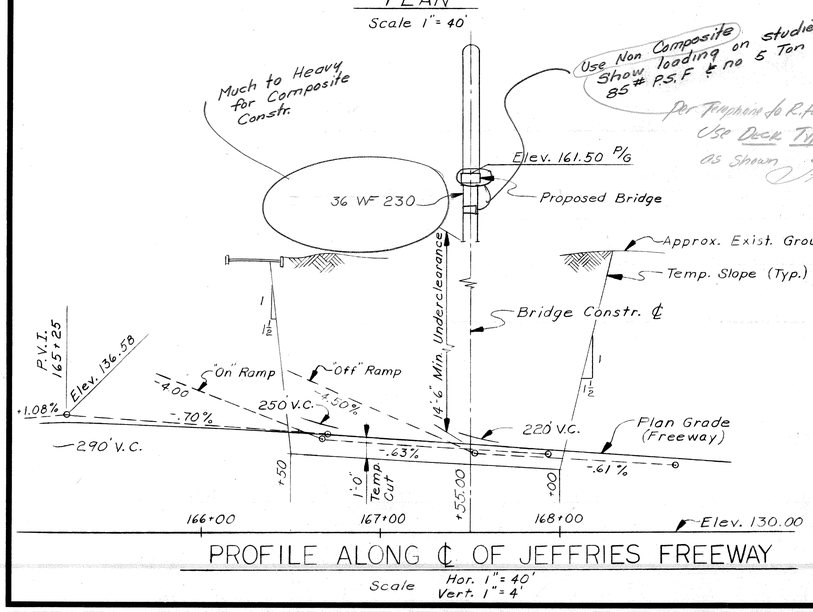
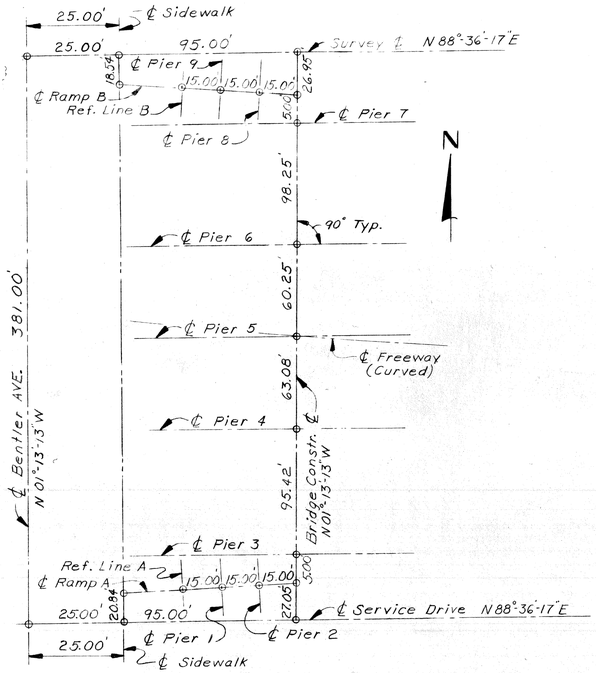


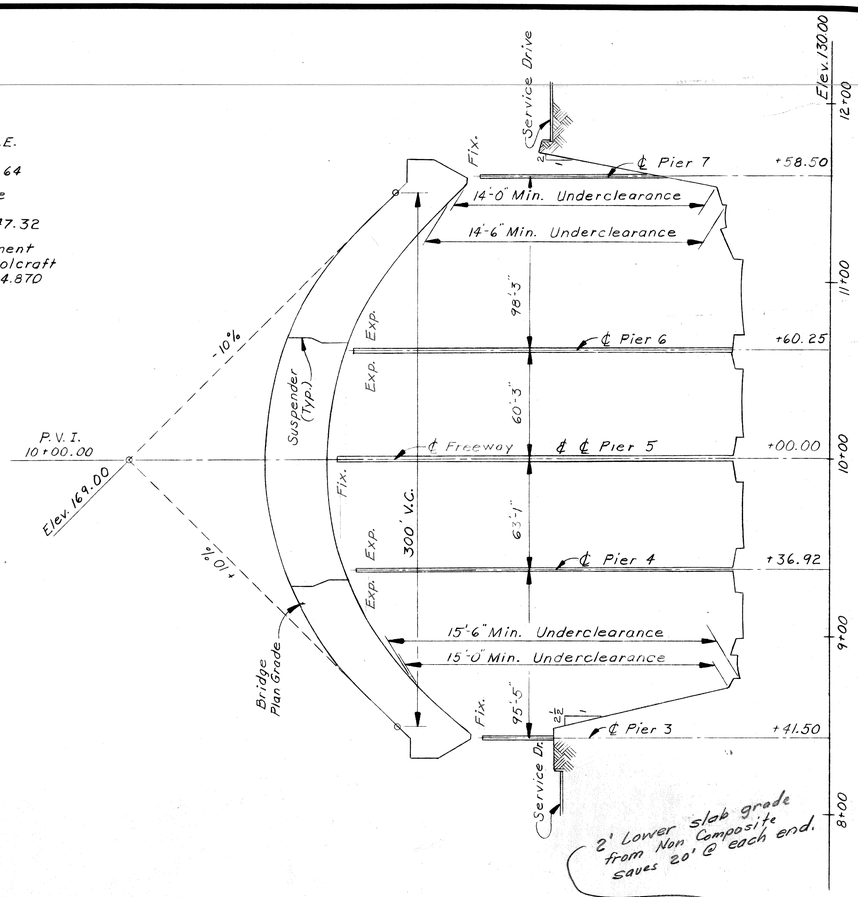
PROFILE ALONG ℄ OF JEFFRIES FREEWAY

Scale Hor. 1" = 40'
Vert. 1" = 4'



ALIGNMENT DIAGRAM

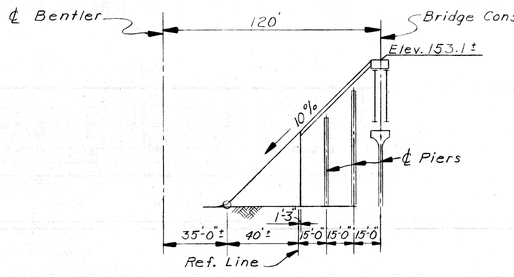
No Scale



PROFILE ALONG BRIDGE CONSTRUCTION ℄

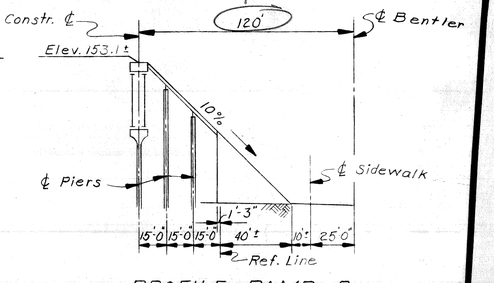
Scale Hor. 1" = 40'
Vert. 1" = 4'

2' Lower slab grade from Non Composite saves 20' @ each end.



PROFILE - RAMP A

Scale Hor. 1" = 40'
Vert. 1" = 4'



PROFILE - RAMP B

Scale Hor. 1" = 40'
Vert. 1" = 4'

STUDY "A" 4-30-69

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (14)

REVISIONS

NO.	DESCRIPTION	DATE	BY

STUDY A
May 5, 1969

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

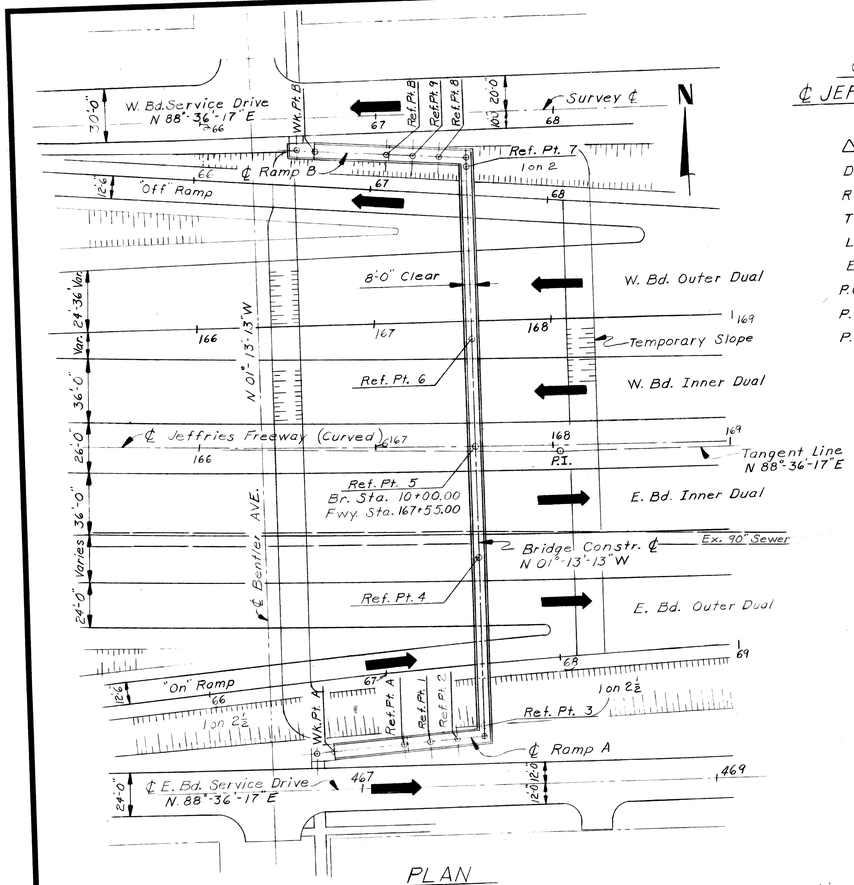
CITY OF DETROIT

SQUAD BOSS		
DRAWN BY	Wolfe	5/69
TRACED BY	Kosik	5/69
CHECKED BY		
SHEET	1	OF

APPROVED _____ DESIGN SUPERVISING ENGINEER

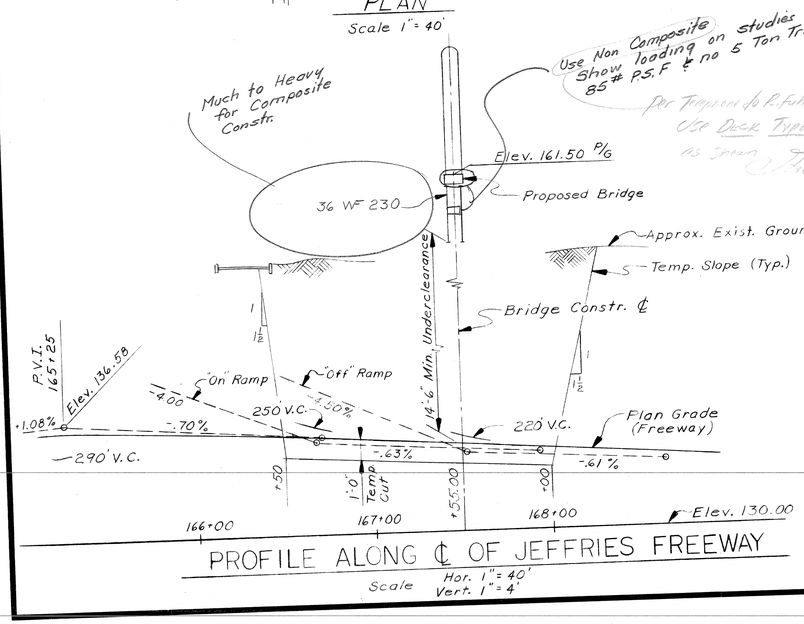
APPROVED _____ DESIGN ENGINEER

P01 of 82122J



PLAN

Scale 1" = 40'



PROFILE ALONG ℄ OF JEFFRIES FREEWAY

Scale Hor. 1" = 40'
Vert. 1" = 4'

CURVE DATA
℄ JEFFRIES FREEWAY
CURVE #5

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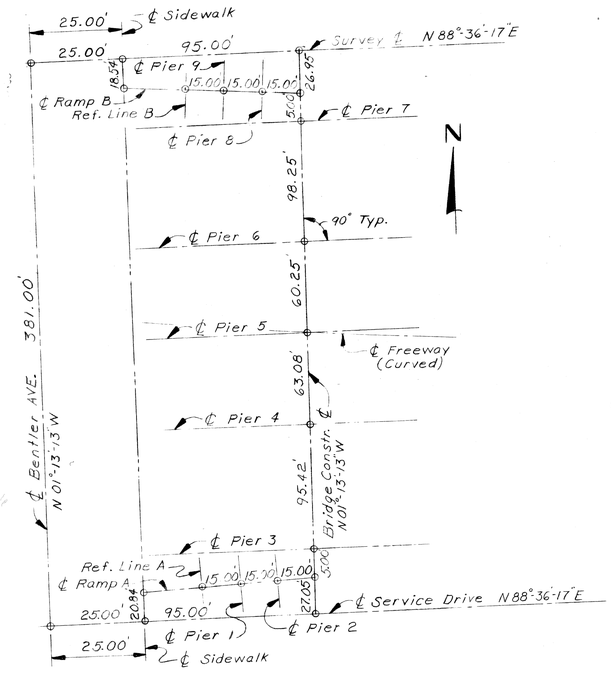
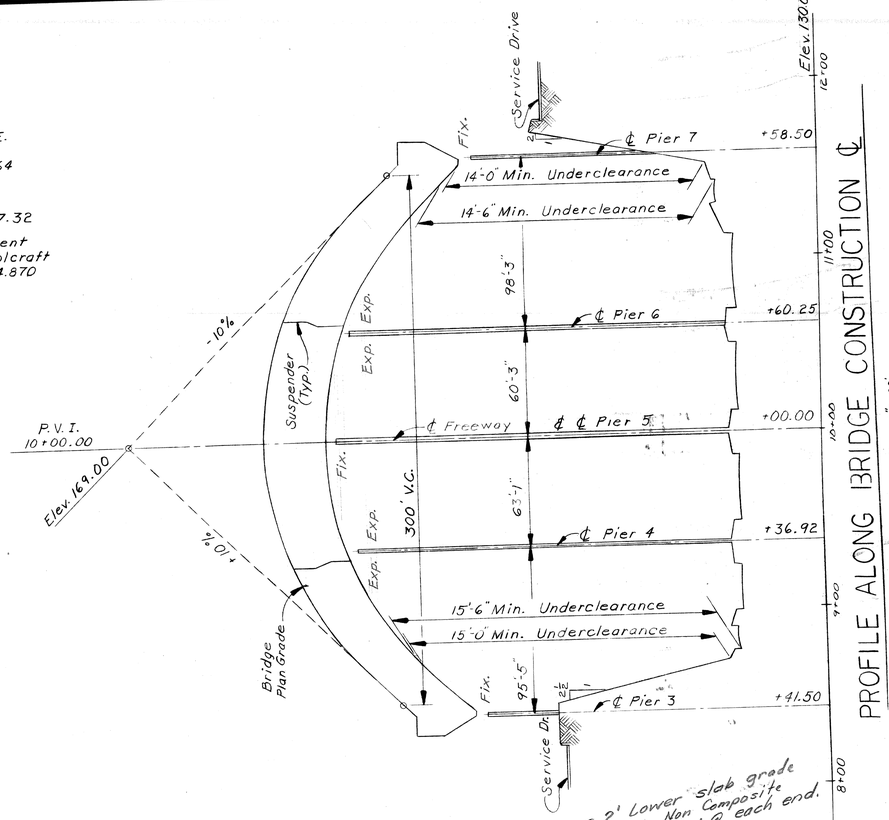


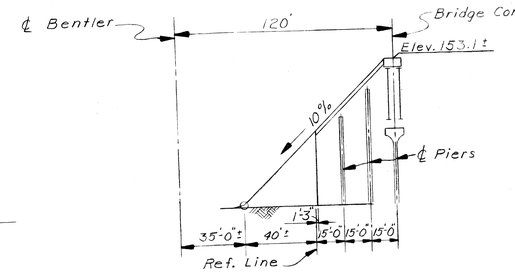
ALIGNMENT DIAGRAM

No Scale



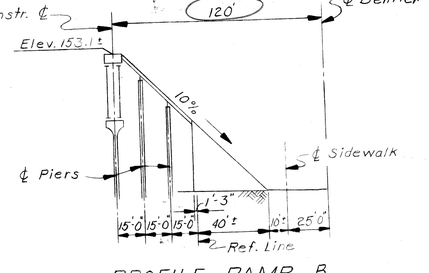
PROFILE ALONG ℄ OF CONSTRUCTION ℄

Scale Hor. 1" = 40'
Vert. 1" = 4'



PROFILE - RAMP A

Scale Hor. 1" = 40'
Vert. 1" = 4'



PROFILE - RAMP B

Scale Hor. 1" = 40'
Vert. 1" = 4'

STUDY "A" 4-30-69

STUDY A
May 5, 1969

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (14)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

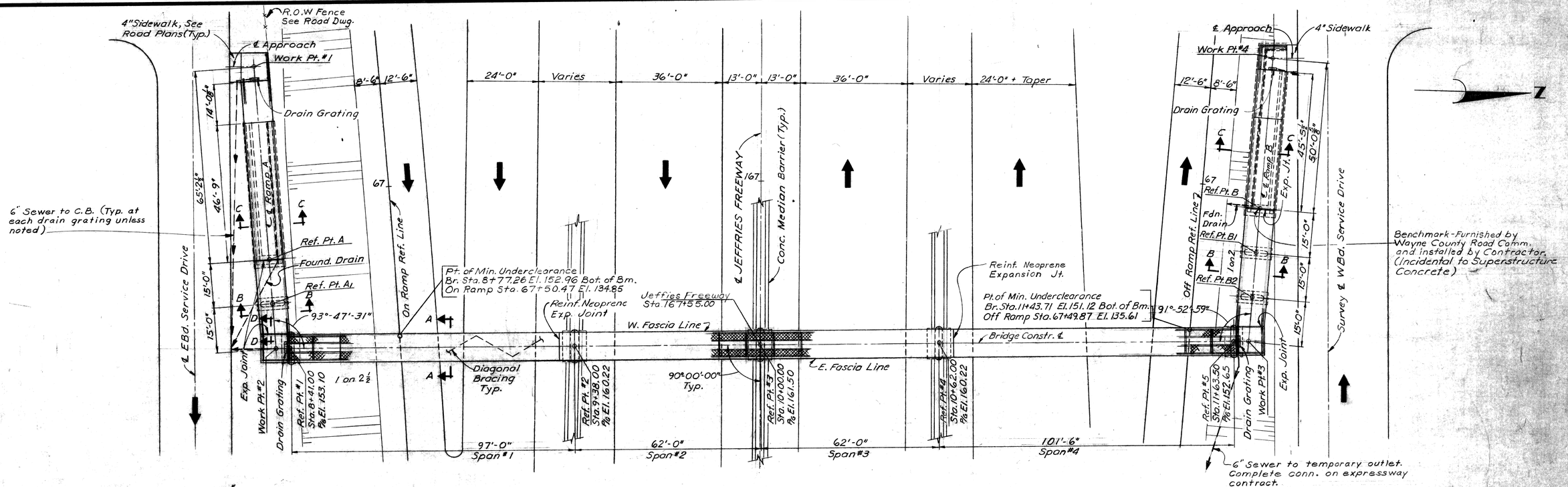
CITY OF DETROIT

SQUAD BOSS	Watts	5/69
DRAWN BY		
TRACED BY	Rosik	5/69
CHECKED BY		
SHEET	1 OF	

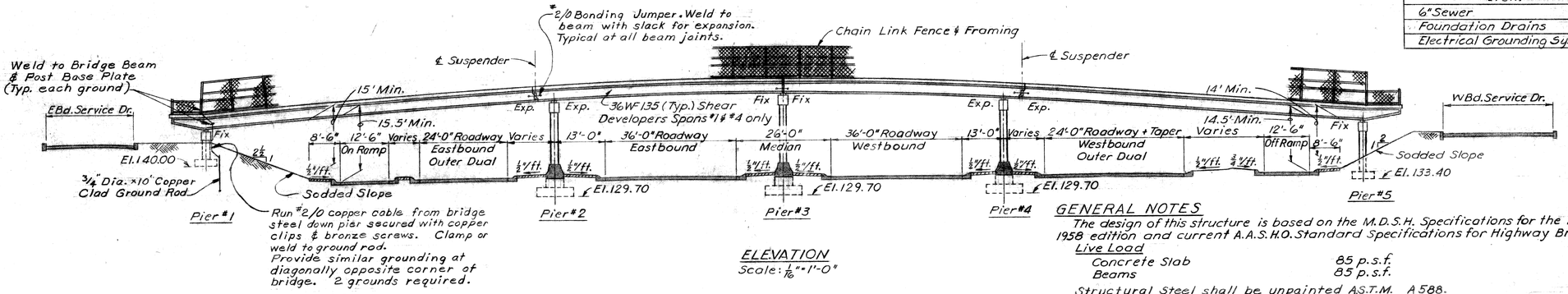
APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ DESIGN ENGINEER

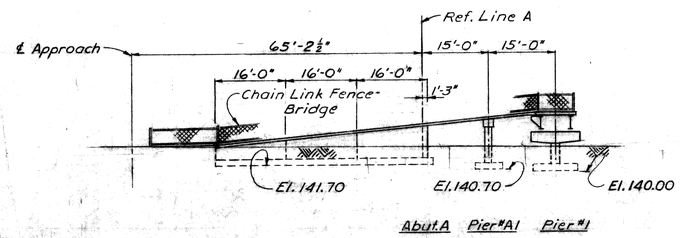
P01 of 82122J



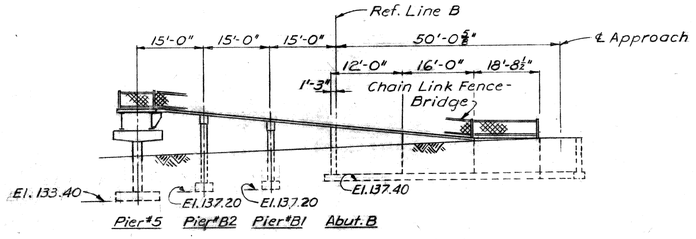
PLAN
Scale: 1/16"=1'-0"



ELEVATION
Scale: 1/16"=1'-0"



RAMP A - ELEVATION
Scale: 1/16"=1'-0"



RAMP B - ELEVATION
Scale: 1/16"=1'-0"

MISCELLANEOUS QUANTITIES		
Item	Unit	Amount
6" Sewer	Lin. Ft.	232
Foundation Drains	Lin. Ft.	38
Electrical Grounding System	LUMP	SUM

GENERAL NOTES

The design of this structure is based on the M.D.S.H. Specifications for the Design of Highway Bridges, 1958 edition and current A.A.S.H.O. Standard Specifications for Highway Bridges.

Live Load

Concrete Slab	85 p.s.f.
Beams	85 p.s.f.

Structural Steel shall be unpainted A.S.T.M. A 588.

The top of slab is parallel to the vertical curve and its tangents.

Tamped Clay and Selected Excavated Material are incidental to Unclassified Excavation. Granular Material - Class I is incidental to Foundation Drain.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H Grant STRUCTURAL ENGINEER

JOB No. PW 990(20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF STRUCTURE

CITY OF DETROIT

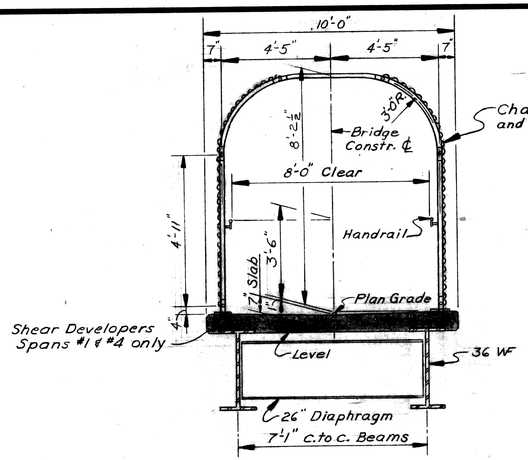
SQUAD BOSS	M. Burns	8-69
DRAWN BY	R. Harris	8-69
TRACED BY		
CHECKED BY	J.M.	8-69

SHEET 4 OF 18

APPROVED DESIGN SUPERVISING ENGINEER

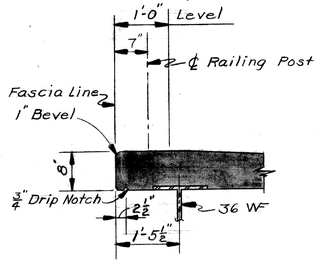
APPROVED ENGINEER - DESIGN SECTION I

POI of 82122J



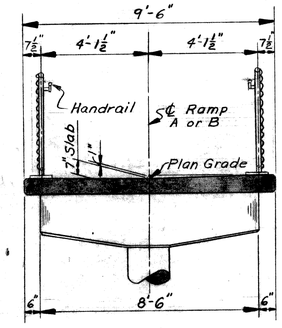
SECTION A-A

Scale: $\frac{3}{8}$" = 1'-0"



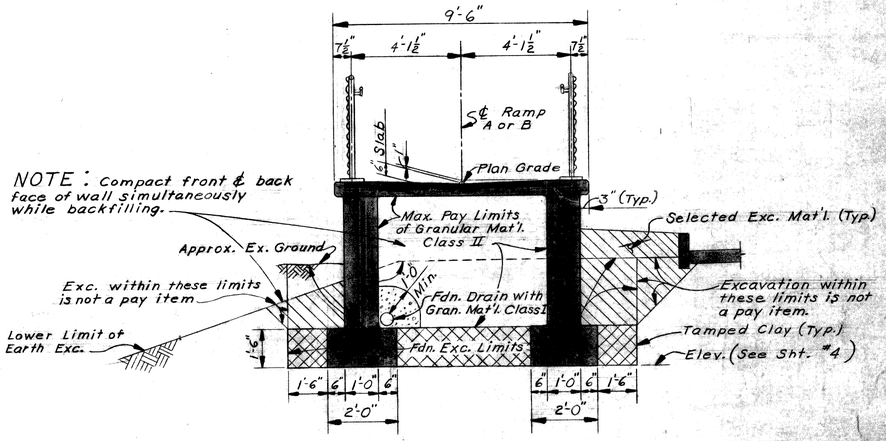
FASCIA DETAIL

Scale: $\frac{3}{4}$" = 1'-0"



SECTION B-B

Scale: $\frac{3}{8}$" = 1'-0"

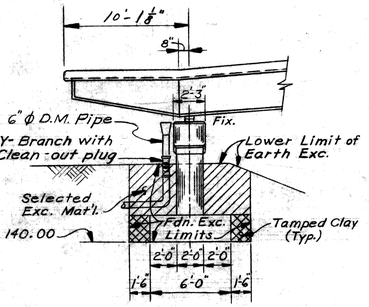


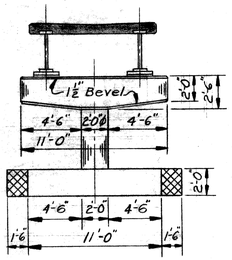
Ramp B Shown - Ramp A Similar

SECTION C-C

Scale: $\frac{3}{8}$" = 1'-0"

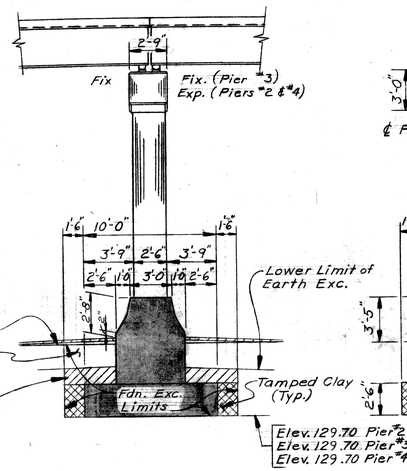
QUANTITIES BILLED ON ROAD PLANS		
Item	Unit	Amount
Earth Excavation	Cu. Yds.	8800
Granular Material Class II	Cu. Yds.	160





PIER #1

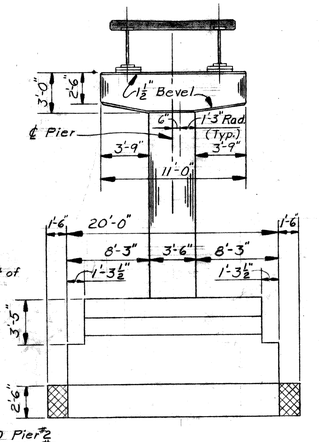
Scale: $\frac{3}{16}$" = 1'-0"

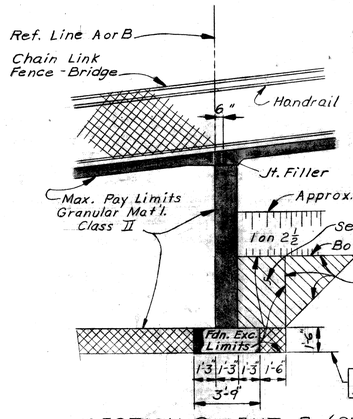


PIERS #2-#3-#4

Pier 3 (Shown)

Scale: $\frac{3}{16}$" = 1'-0"

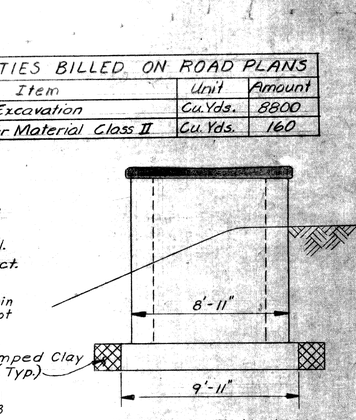




SECTION @ ABUT. B (Shown)

SECTION @ ABUT. A (Opp. Hand)

Scale: $\frac{1}{4}$" = 1'-0"

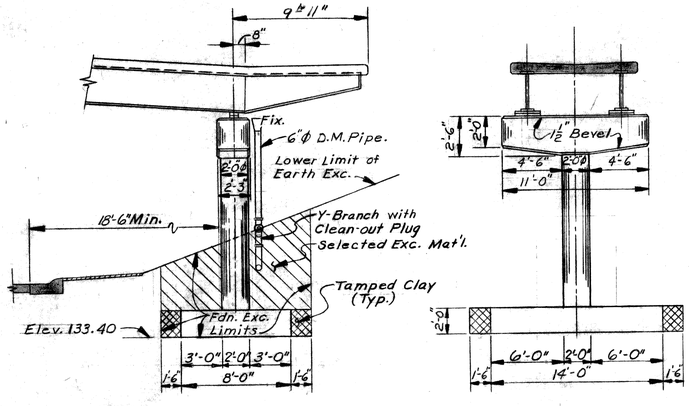


ABUT. ELEVATION

SECTION D-D

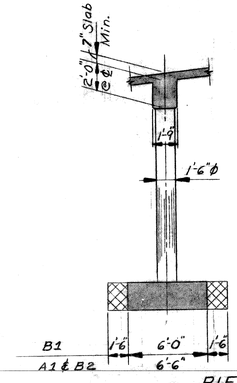
DETAIL THRU SIDEWALK

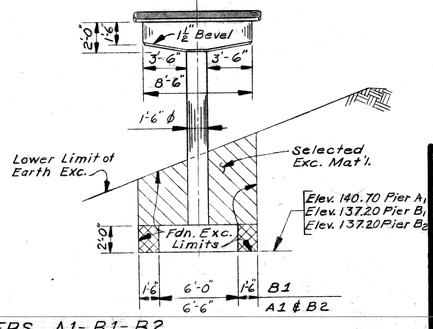
Scale: $\frac{3}{8}$" = 1'-0"



PIER #5

Scale: $\frac{3}{16}$" = 1'-0"





PIERS A1-B1-B2

Scale: $\frac{3}{16}$" = 1'-0"

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

GENERAL PLAN OF STRUCTURE

CITY OF DETROIT

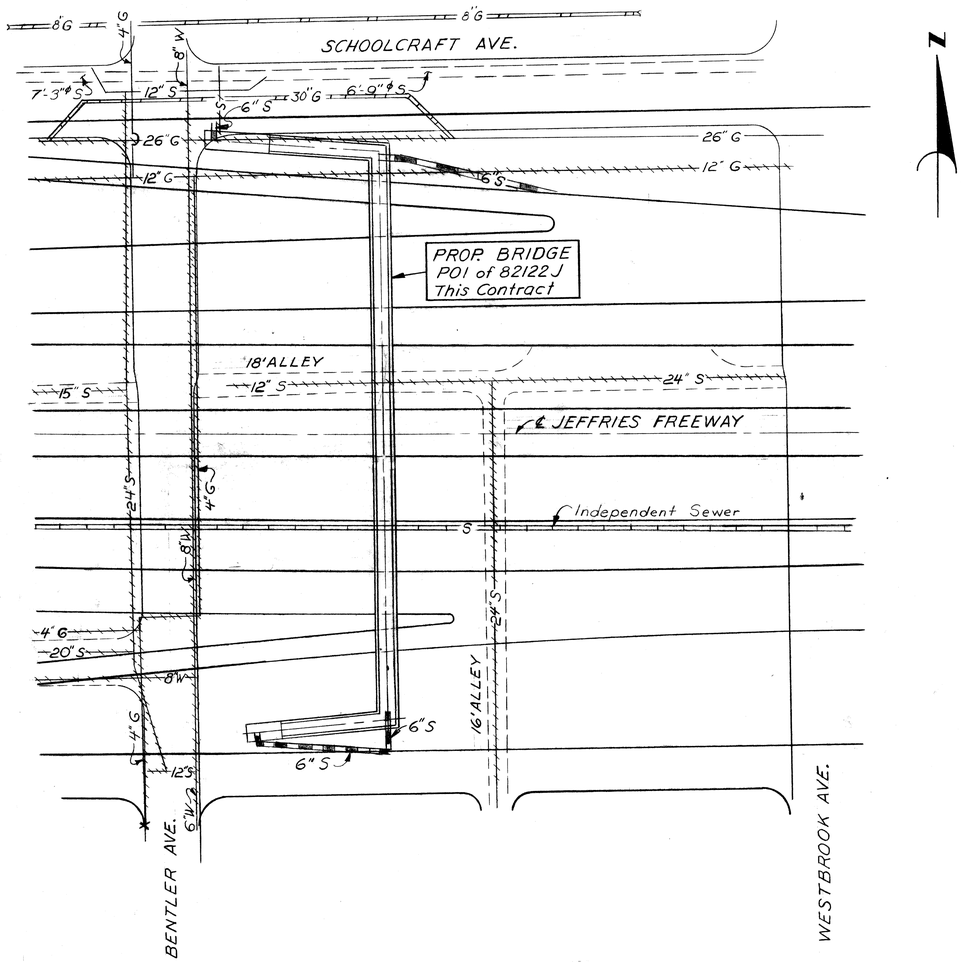
SQUAD BOSS	M. Cuneo	8-69
DRAWN BY	Rosik	8-69
TRACED BY		
CHECKED BY	R.H.	JM 8-69

SHEET 5 OF 13

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ ENGINEER - DESIGN SECTION I

P01 of 82122J



SITUATION PLAN
Scale : 1" 40'

N

LEGEND

UTILITY	Existing	Deleted or Abandoned	New Work by Others	New Work by Contractor
Michigan Consolidated Gas Co.	—G—	+++G+++	G	
Detroit Water Dept.	—W—	+++W+++		
Expwy. and City of Detroit Sewers	—S—	+++S+++	S	S

NOTE:
Bridge construction and utility alterations are included in package contract for Control Section 82122 J.

The contractor shall locate all active underground utilities prior to starting work, and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
PW 990(20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

EXISTING UTILITIES AND PROPOSED ALTERATIONS

REVISIONS

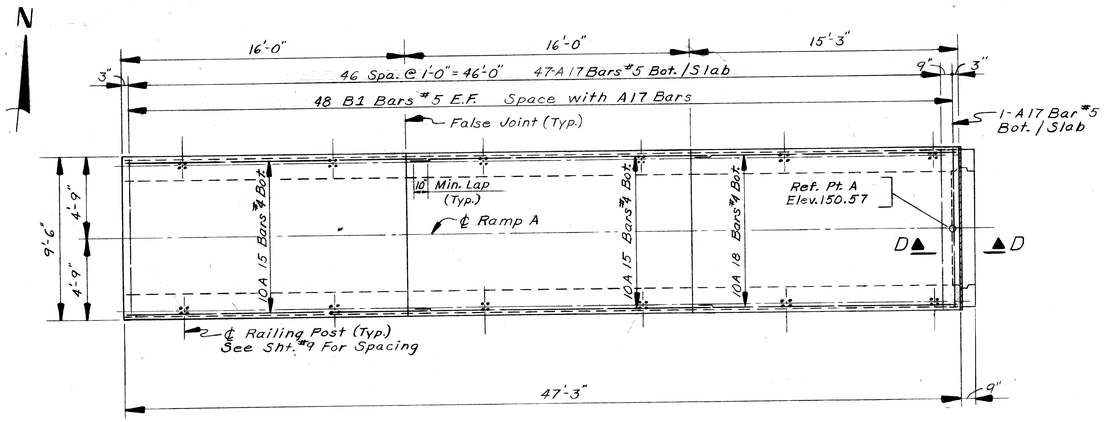
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

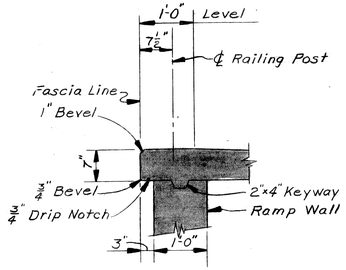
SQUAD BOSS	M. Guerre	8-69
DRAWN BY	Van Nordstrom	4-19-69
TRACED BY		
CHECKED BY	R. H.	8-69

SHEET 6 OF 18

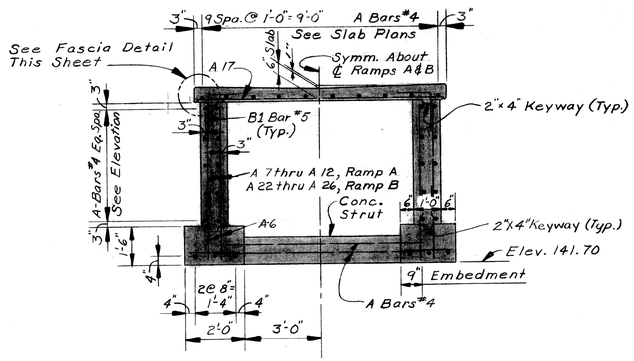
POI of 82122J



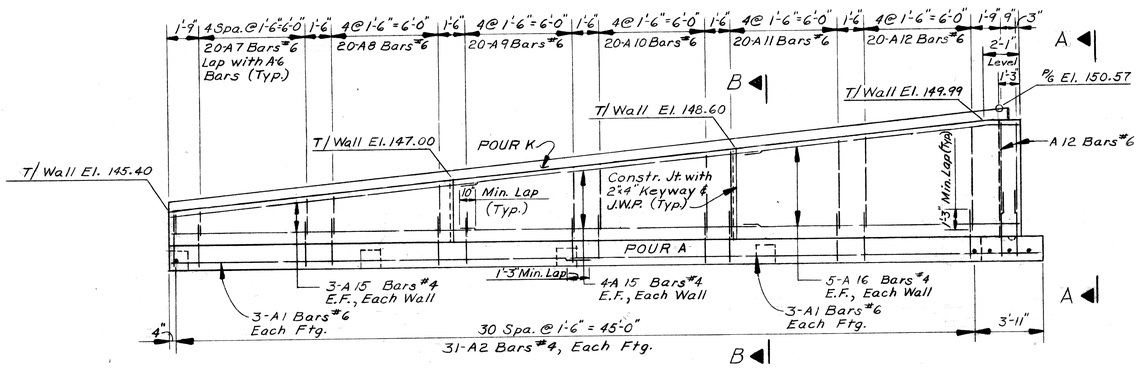
PLAN - RAMP A SLAB



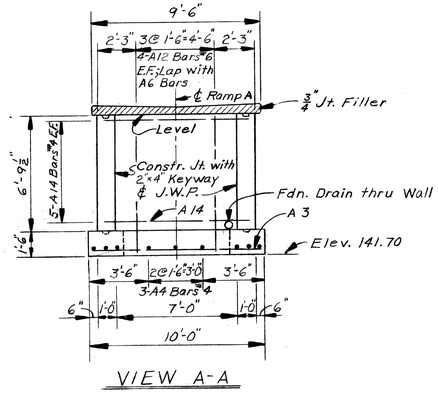
FASCIA DETAIL



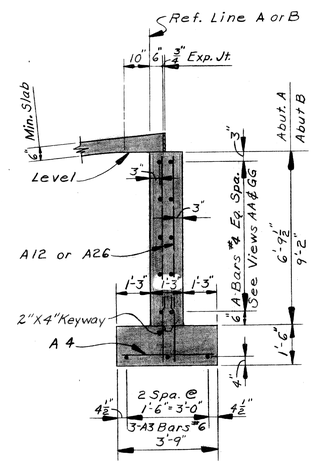
SECTION B-B



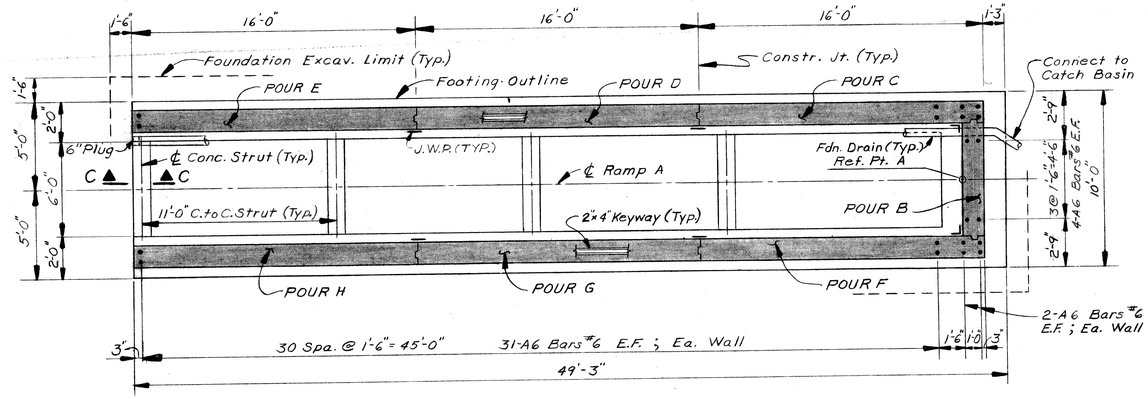
ELEVATION



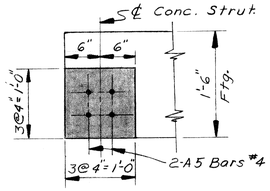
VIEW A-A



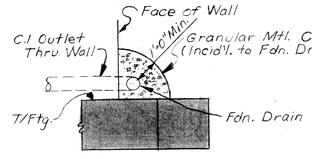
SECTION D-D



FOOTING PLAN



SECTION C-C



FOUNDATION DRAIN DETAIL

CONCRETE QUANTITIES CU. YDS.			
POUR	LOCATION	ABUT. A	ABUT. B
A	Footing ℄ Struts	*13.1	*14.6
B	Abutment Stem	2.2	3.0
C	Wingwall Stem	3.7	3.9
D	Wingwall Stem	2.7	4.4
E	Wingwall Stem	1.8	4.4
F	Wingwall Stem	3.7	3.9
G	Wingwall Stem	2.7	4.4
H	Wingwall Stem	1.8	4.4
J	Wingwall Stem	—	3.9
K	Slab	10.4	10.1
L	Slab	—	2.5
TOTAL Grade A(6A)			27.7 Cu. Yds.
TOTAL Grade A(6AA)			73.9 Cu. Yds.

* denotes Grade A(6A) Concrete

MISCELLANEOUS QUANTITIES				
ITEM	UNIT	ABUT. A	ABUT. B	TOTAL
Unclassified Excavation	Cu. Yds.	108	203	311
¾" Joint Filler	Sq. Ft.	6	6	12
Foundation Drains	Lin. Ft.	50	64	114
Joint Waterproofing	Sq. Ft.	41	73	114
Low Temp. Prot. Subst'n. Conc.	Cu. Yds.	42.5	59.1	101.6

NOTE: Work this sheet with sheets #8 & #9

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ABUTMENT A AND RAMP A DETAILS

REVISIONS

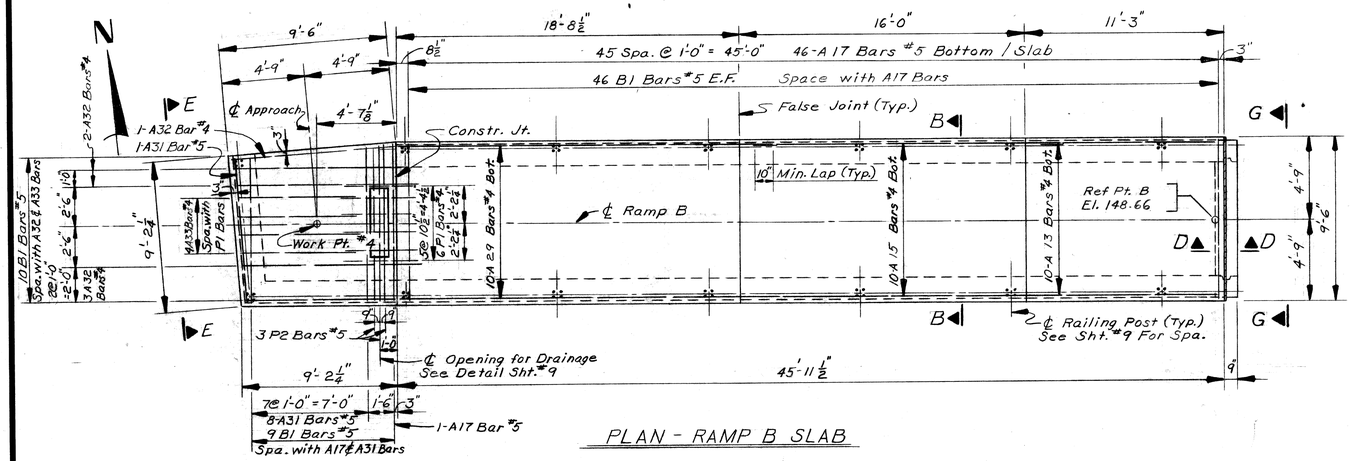
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

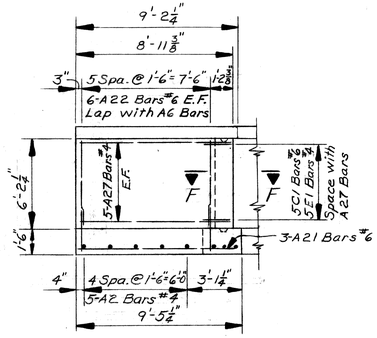
SQUAD BOSS	M Curro	8/20
DRAWN BY	J.B.W.	10/49
TRACED BY	R. Rosik	8/49
CHECKED BY	J.E.S.	10/49

SHEET 7 OF 18

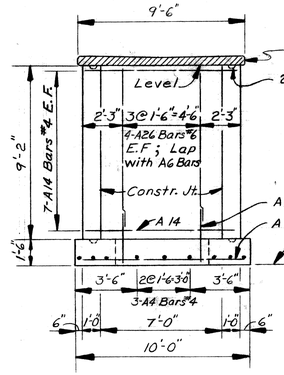
P01 of 82122J



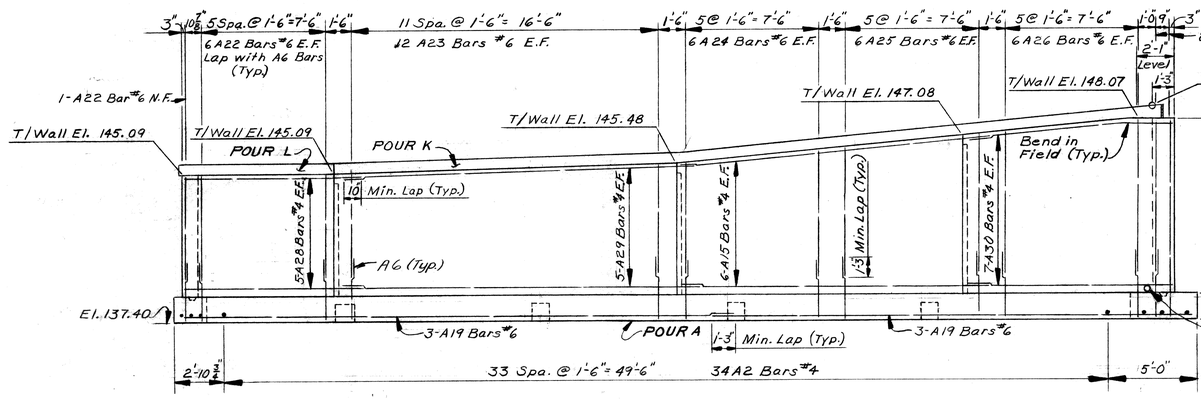
PLAN - RAMP B SLAB



VIEW E-E



VIEW G-G



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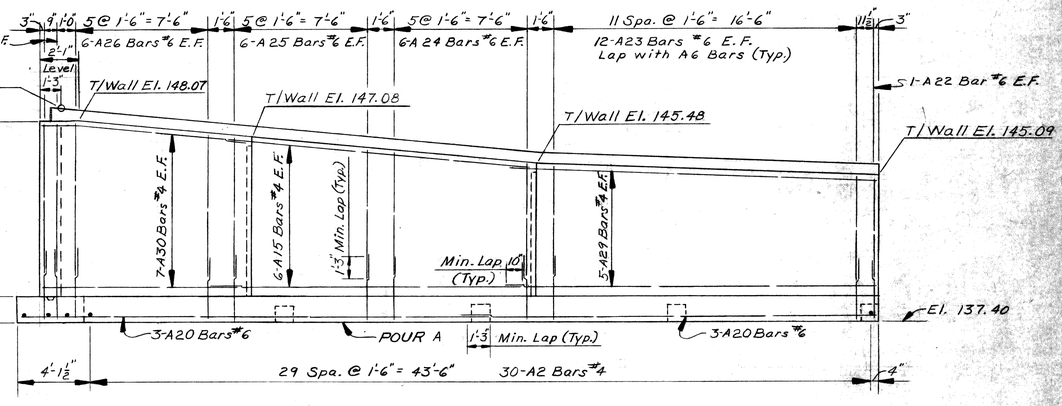

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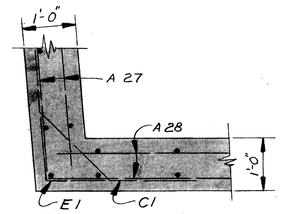
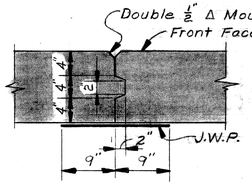
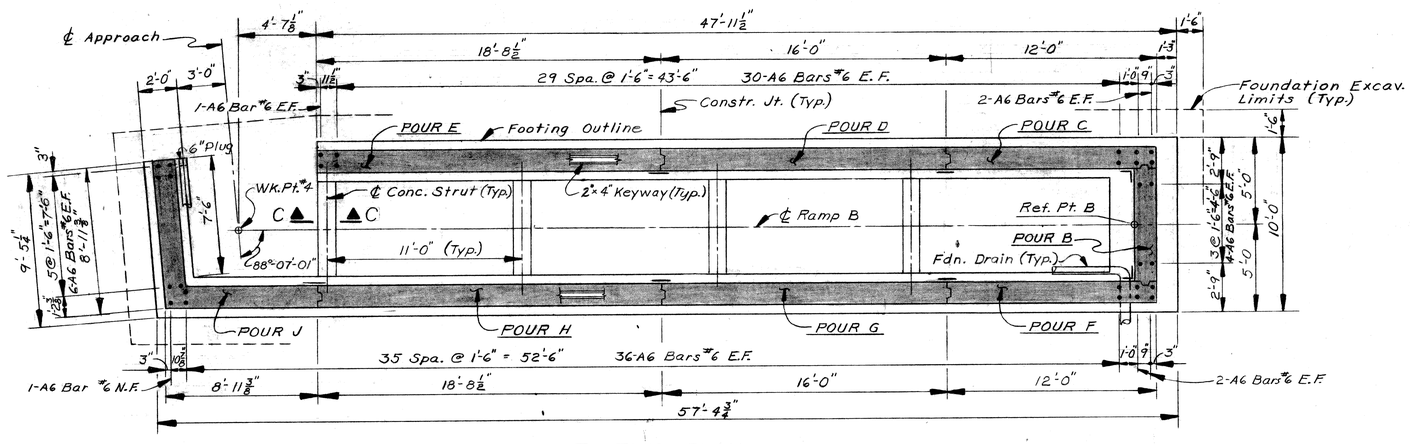


SECTION F-F



CONSTR. JOINT DETAILS



FOOTING PLAN

NOTE: Work this sheet with sheets #7 & #9

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB NO. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ABUTMENT B AND RAMP B DETAILS

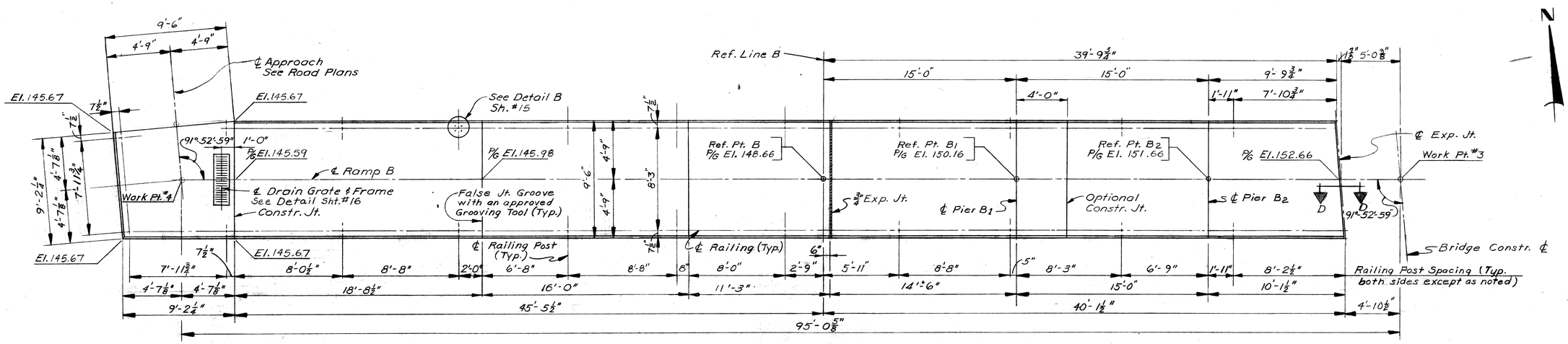
REVISIONS

NO.	DESCRIPTION	DATE	BY

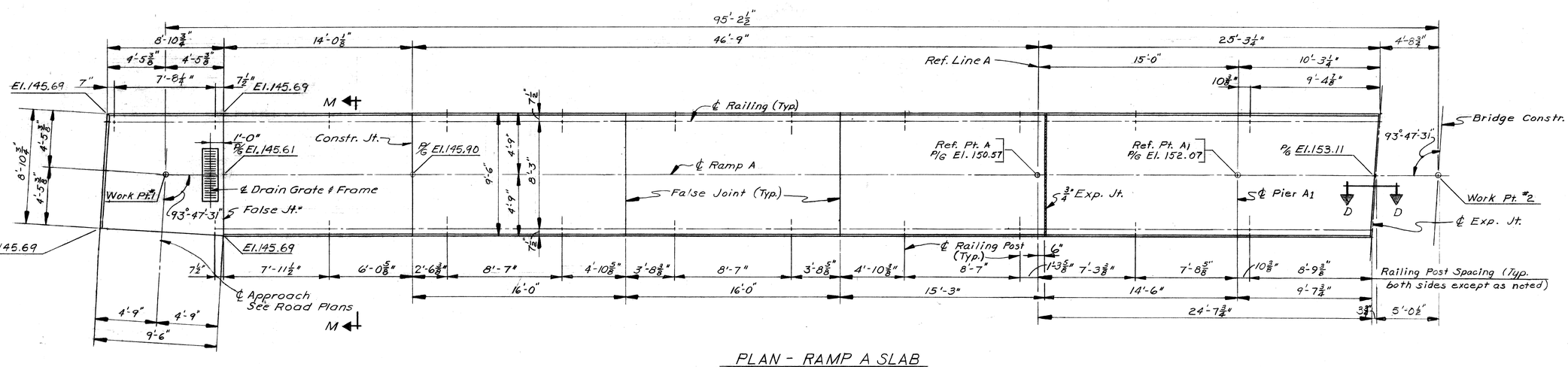
CITY OF DETROIT

SQUAD BOSS	McGuire	5/70
DRAWN BY	J.B.W.	10/69
TRACED BY	R. Rasik	8/70
CHECKED BY	W.F.S.	10/70
SHEET 8 OF 18		

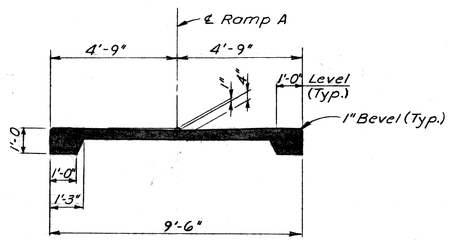
P01 of 82122



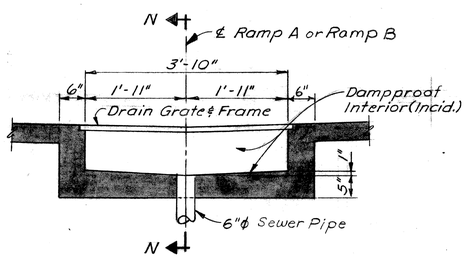
PLAN - RAMP B SLAB



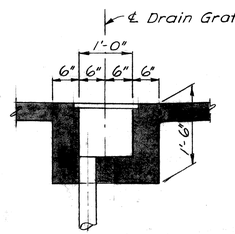
PLAN - RAMP A SLAB



SECTION M-M



DRAINAGE DETAIL



SECTION N-N

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ Municipal Engineer

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

RAMP DETAILS

REVISIONS

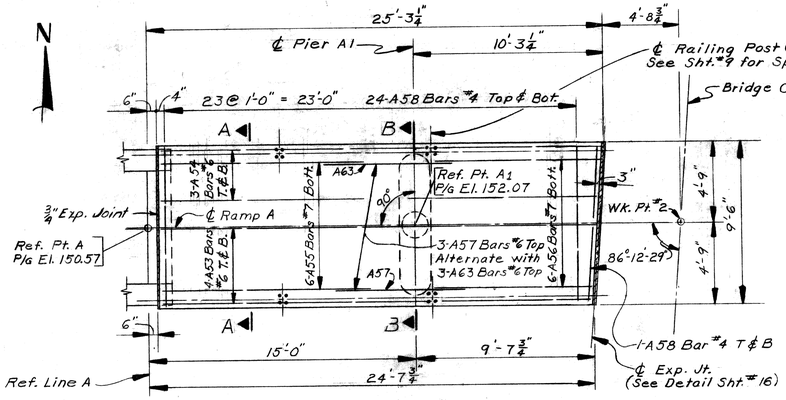
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

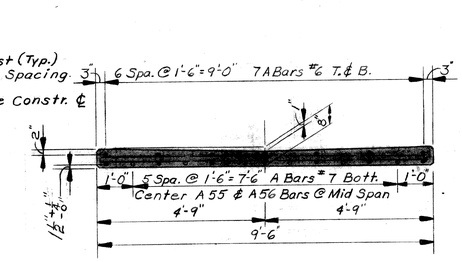
SQUAD BOSS	McGuire	8/70
DRAWN BY	J.B.A.	10/69
TRACED BY	R.Ward	4/70
CHECKED BY	J.B.S.	12/69

SHEET 9 OF 18

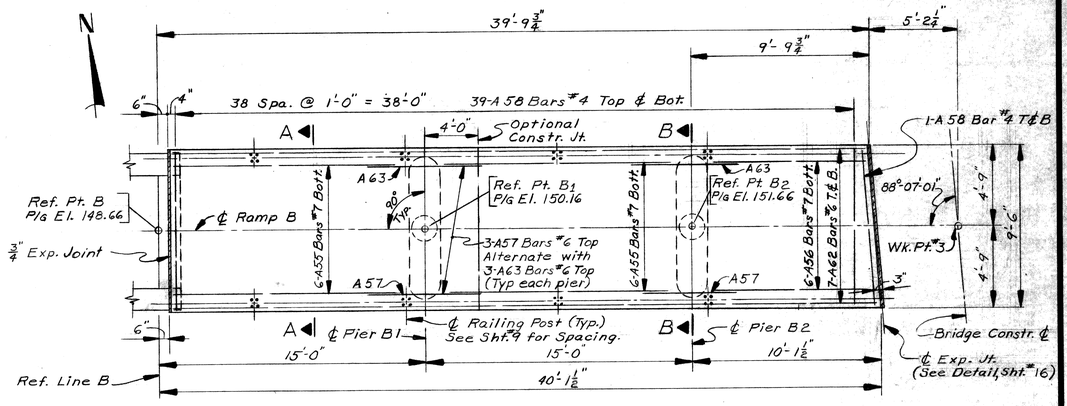
P01 of 82122J



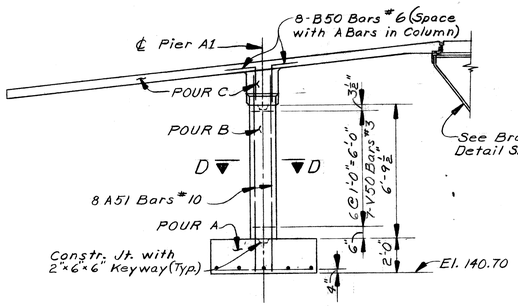
RAMP A - PLAN



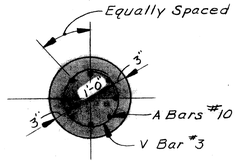
SECTION A-A



RAMP B - PLAN



ELEVATION PIER A1



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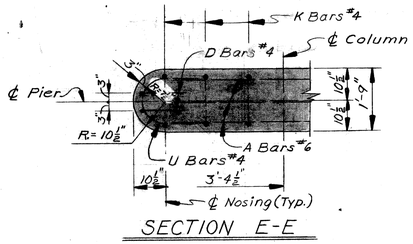

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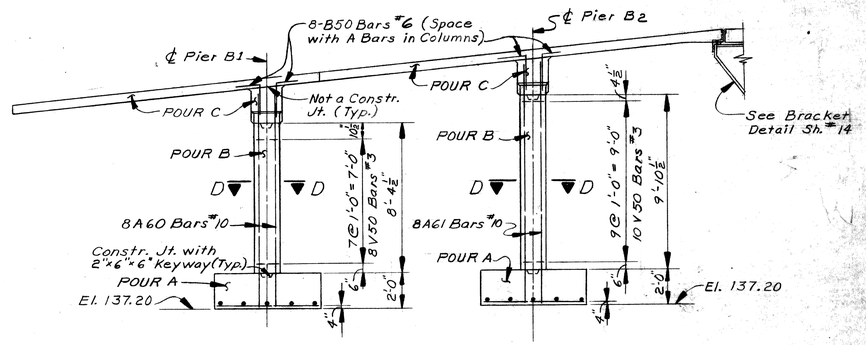
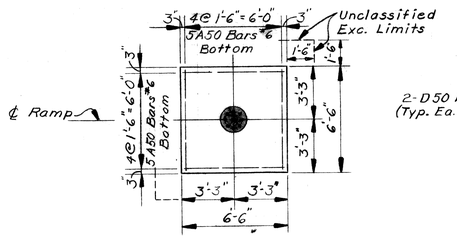
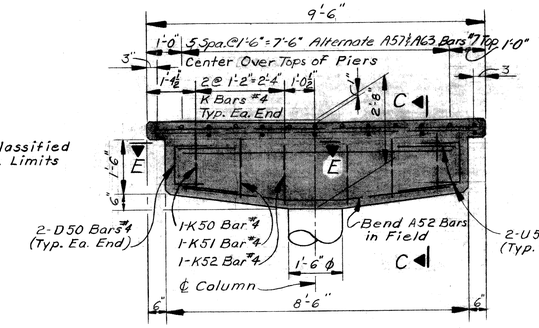


ELEVATION PIER B1

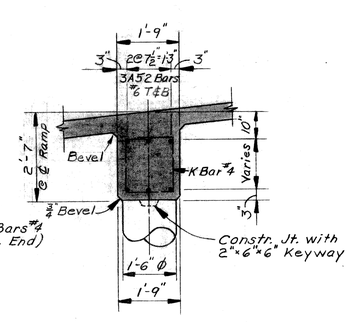
ELEVATION PIER B2



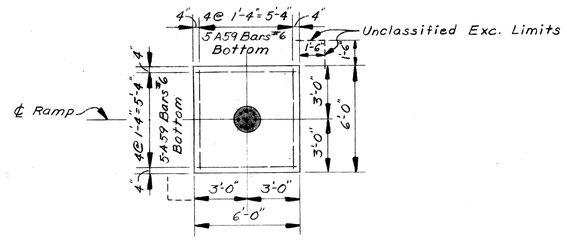
PIERS A1 & B2 - FOOTING PLAN



SECTION B-B



SECTION C-C



PIER B1 - FOOTING PLAN

CONCRETE QUANTITIES CU. YDS.							
POUR	LOCATION	PIER A1		PIER B1		PIER B2	
		Gr. A(6A)	Gr. A(6AA)	Gr. A(6A)	Gr. A(6AA)	Gr. A(6A)	Gr. A(6AA)
A	Footing	3.1	—	2.7	—	3.1	—
B	Column	—	0.4	—	0.5	—	0.6
C	Beam & Slab	—	6.4	—	5.1	—	5.6
	TOTALS	3.1	6.8	2.7	5.6	3.1	6.2
	TOTAL A(6A)	8.9 Cu. yds.		TOTAL A(6AA)		18.6 Cu. yds.	

MISCELLANEOUS QUANTITIES					
ITEM	UNIT	AMOUNT			
		PIER-A1	PIER-B1	PIER-B2	TOTAL
Unclassified Excavation	Cu. Yds	9	8	9	26
Low Temp. Prot. Substr. Concrete	Cu. Yds.	9.9	8.3	9.3	27.5

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

PIER AND RAMP DETAILS

REVISIONS

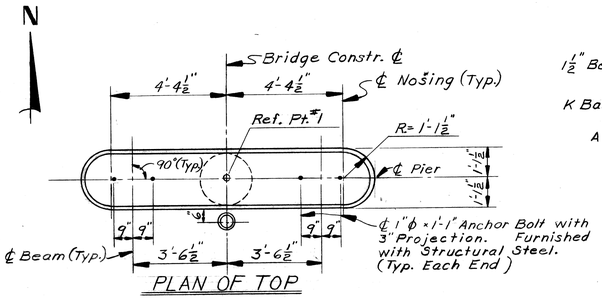
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

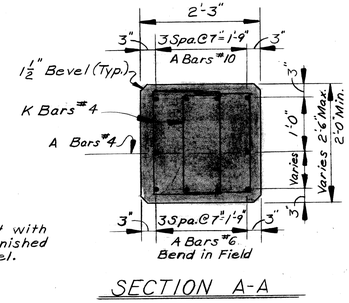
SQUAD BOSS	M. Guire	8/70
DRAWN BY	J. Bud.	10/69
TRACED BY	R. Rosik	8/69
CHECKED BY	J. E. S.	10/69

SHEET 10 OF 18

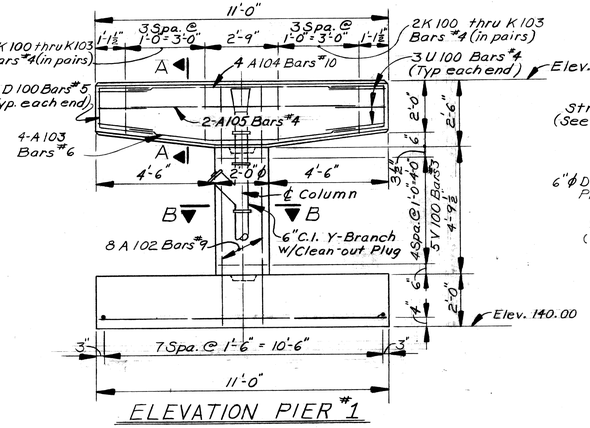
P01 of 82122J



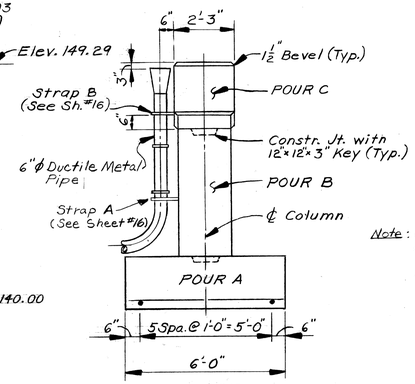
PLAN OF TOP



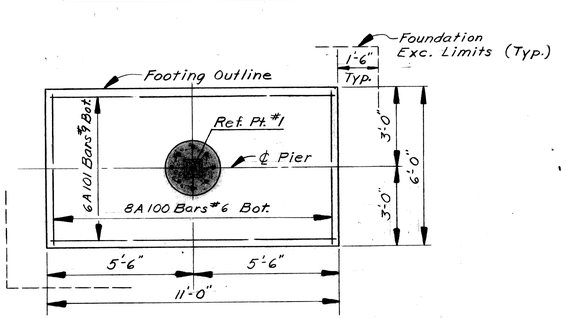
SECTION A-A



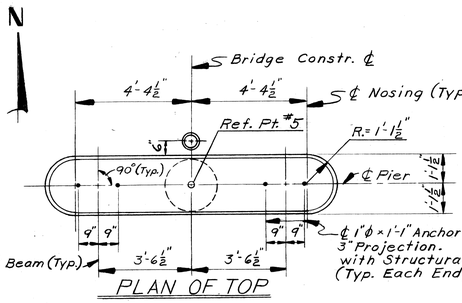
ELEVATION PIER #1



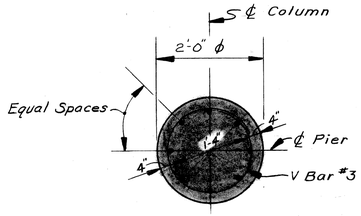
END VIEW



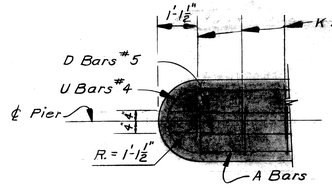
FOUNDATION PLAN



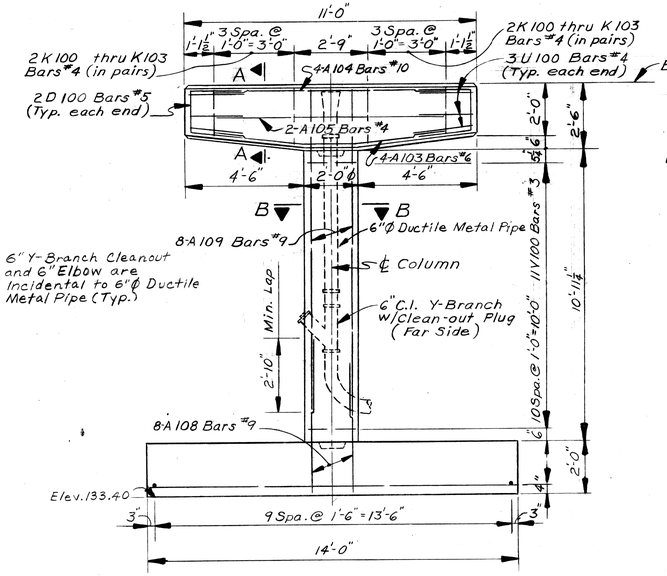
PLAN OF TOP



SECTION B-B

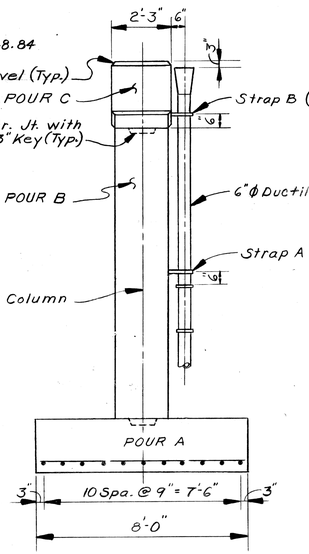


END OF CAP DETAIL



Note: 6" Y-Branch Cleanout and 6" Elbow are Incidental to 6"ϕ Ductile Metal Pipe (Typ.)

ELEVATION PIER #5



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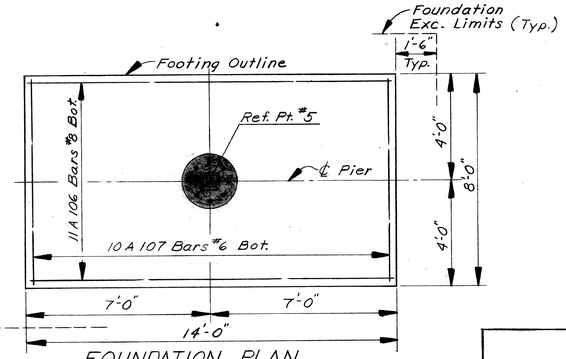


FOUNDATION PLAN

GENERAL NOTES:

For bevel and molding details, see Std. Sheet R16.

Anchor Bolts shall be set accurately to a template.

The Project Engineer shall adjust the spacing of the reinforcing steel as required to permit placing of anchor bolts.

Cover all piers except top of Pier #3 with clear protective coating for substructure concrete to 6" below finished grade.

The top of Pier #3 shall be given an application of protective sealant coating for concrete prior to placing masonry plates.

CONCRETE QUANTITIES CU. YDS.

POUR	LOCATION	PIER #1 Gr. A(6A)	PIER #1 Gr. A(6AA)	PIER #5 Gr. A(6A)	PIER #5 Gr. A(6AA)
A	Footing	4.9	-	4.9	-
B	Column	-	0.6	-	1.3
C	Cap	-	2.0	-	2.0
TOTAL		4.9	2.6	4.9	3.3
TOTAL A(6A)	9.8 Cu.Yds.				
TOTAL A(6AA)	5.9 Cu.Yds.				

MISCELLANEOUS QUANTITIES

ITEM	UNIT	AMOUNT PIER #1	AMOUNT PIER #5	AMOUNT TOTAL
Unclassified Excavation	Cu. Yds.	26	50	76
Low Temp. Prot. Substr. Concrete	Cu. Yds.	7.5	8.2	15.7
Clear Protective Coating for Substructure Concrete	Sq. Ft.	112	150	262
6"ϕ Ductile Metal Pipe	Lin. Ft.	2	8	10

Note: Maximum average foundation pressure D.L. only = 2100 Lbs./Sq. Ft.
Maximum foundation pressure D.L and L.L = 3470 Lbs./Sq. Ft.

PLANS PREPARED BY CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS CITY ENGINEERING DIVISION BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: [illegible] DEPUTY DIRECTOR ENGINEER

DATE: FEB 14 1969

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

PIER No 185 DETAILS

CITY OF DETROIT

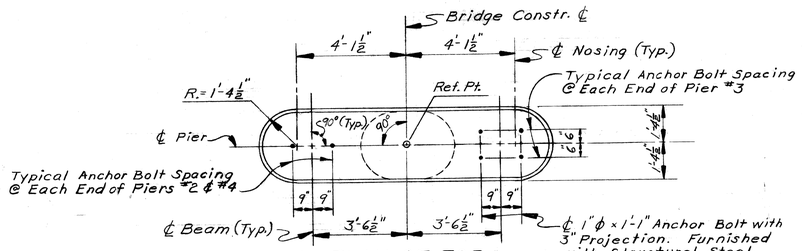
SQUAD BOSS	McGuire	5/20
DRAWN BY	J.B.W	10/69
TRACED BY	P.H. / R.R.	9/69
CHECKED BY	J.E.S	10/69

SHEET 11 OF 18

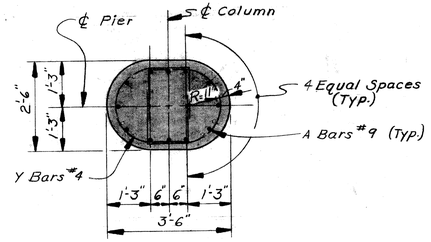
REVISIONS

NO.	DESCRIPTION	DATE	BY

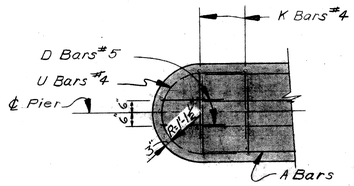
P01 of 82122



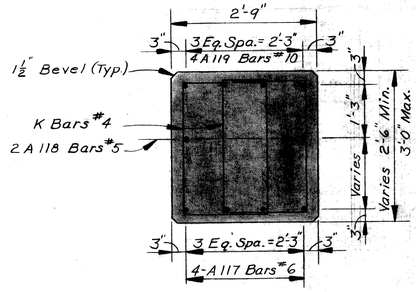
PLAN OF TOP



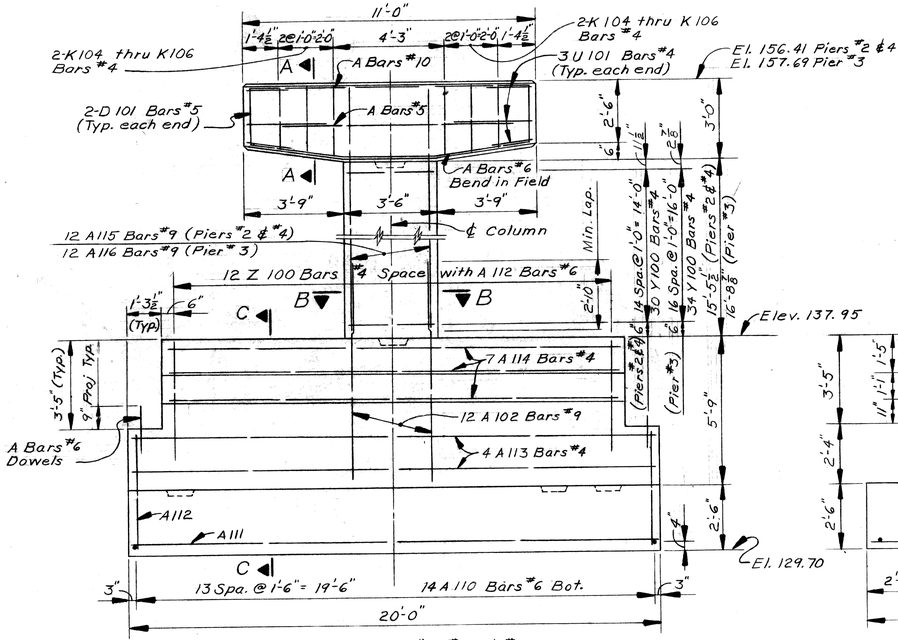
SECTION B-B



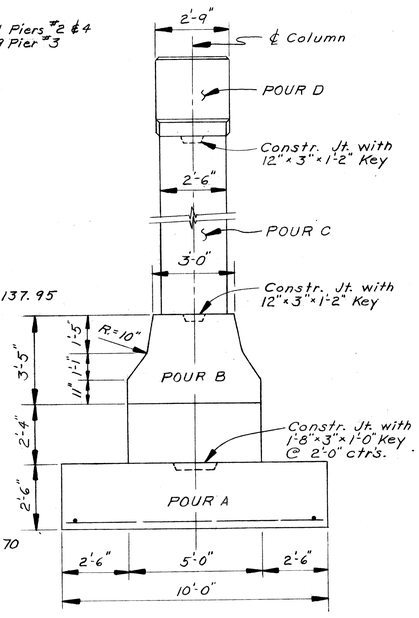
END OF CAP DETAIL



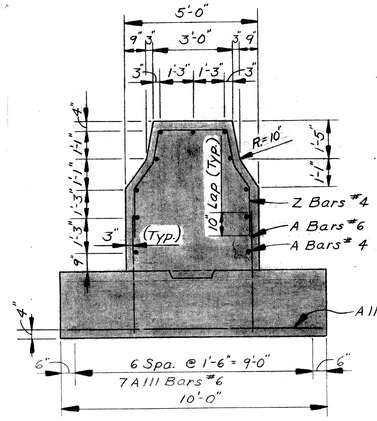
SECTION A-A



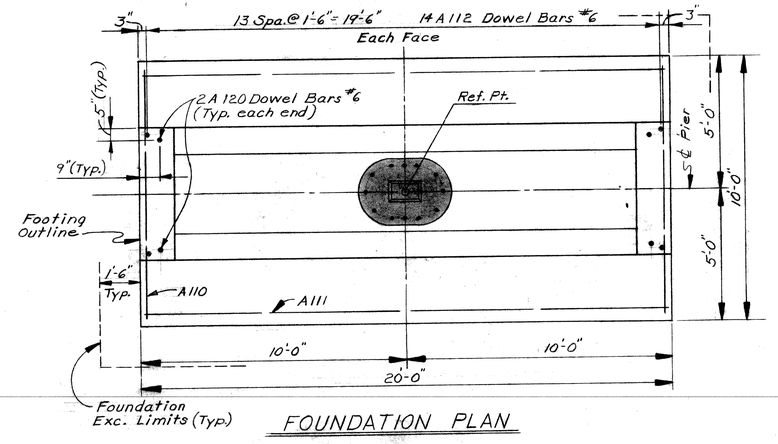
ELEVATION - PIERS #2, #3, & #4



END VIEW



SECTION C-C



FOUNDATION PLAN

Note: Maximum average foundation pressure D.L only = 1550 p.s.f.
Maximum foundation pressure D.L and L.L = 2600 p.s.f.

MISCELLANEOUS QUANTITIES

ITEM	UNIT	AMOUNT PIER #2	PIER #3	PIER #4	TOTAL
Unclassified Excavation	Cu. Yds.	65	65	65	195
Low Temp. Prot. Substr. Concrete	Cu. Yds.	43.2	43.6	93.2	130.0
Clear Protective Coating for Substructure Concrete	Sq. Ft.	469	447	464	1375
Protective Sealant Coating for Substr. Concrete	Sq. Ft.	—	28.6	—	28.6

CONCRETE QUANTITIES CU. YDS.

POUR	LOCATION	PIER #2 Gr. A(6A)	PIER #2 Gr. A(6AA)	PIER #3 Gr. A(6A)	PIER #3 Gr. A(6AA)	PIER #4 Gr. A(6A)	PIER #4 Gr. A(6AA)
A	Footing	18.5	-	18.5	-	18.5	-
B	Barrier Wall	-	17.5	-	17.5	-	17.5
C	Column	-	4.2	-	4.6	-	4.2
D	Cap	-	3.0	-	3.0	-	3.0
TOTALS		18.5	24.7	18.5	25.1	18.5	24.7
TOTAL A(6A)		55.5 Cu. Yds.					
TOTAL A(6AA)		74.5 Cu. Yds.					

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
PW 990(20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

PIER No. 2, 3, & 4 DETAILS

CITY OF DETROIT

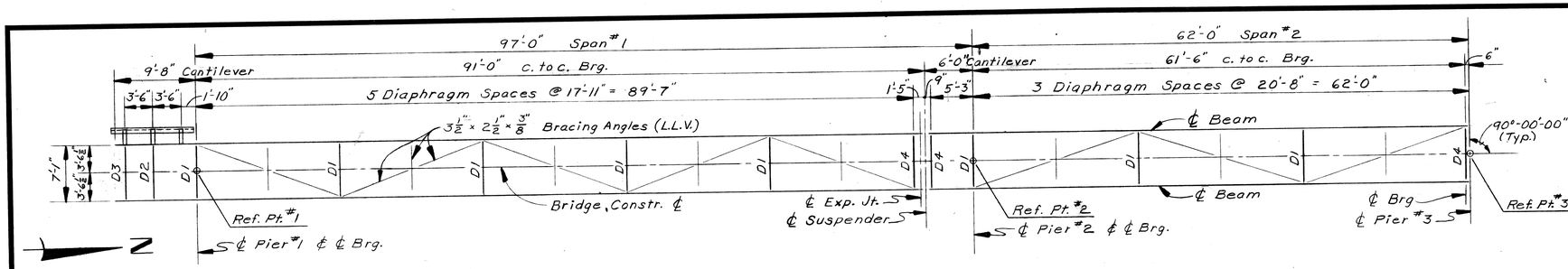
SQUAD BOSS	McGuire	8/70
DRAWN BY	R Rosik	9/69
TRACED BY	J.&W.	10/69
CHECKED BY	J.E.S.	2/70

SHEET 12 OF 18

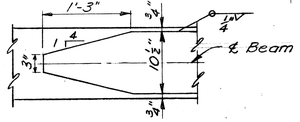
P01 of 82122J

REVISIONS

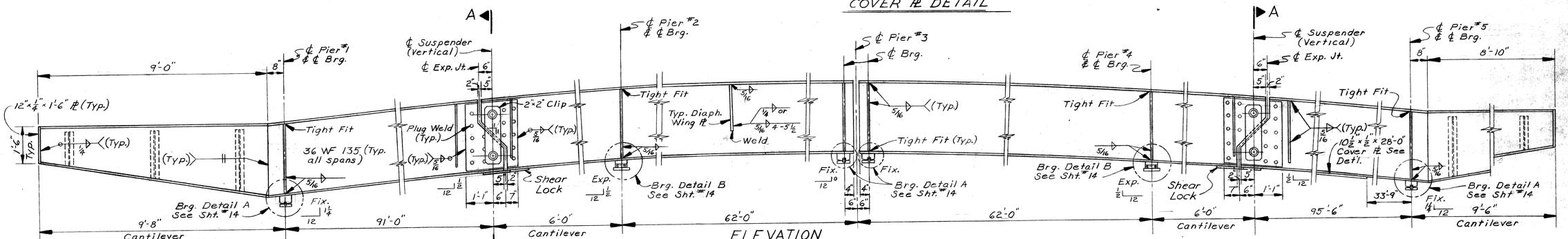
NO.	DESCRIPTION	DATE	BY



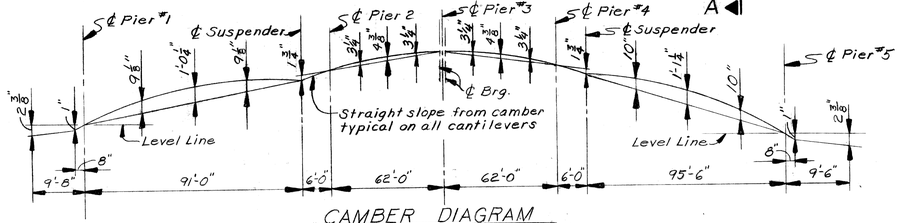
FRAMING PLAN



COVER PL DETAIL

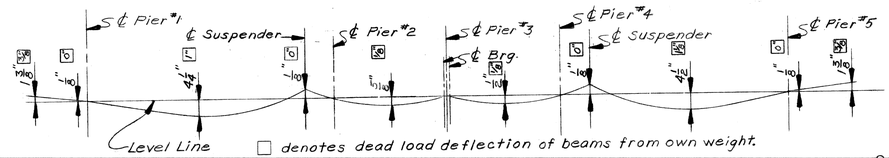


ELEVATION



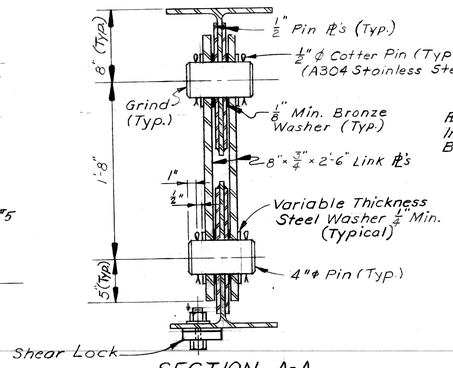
CAMBER DIAGRAM

Camber Ordinates allow for vertical curve and D.L. deflections.
Parabolic camber ordinates are given at ¼ pts.

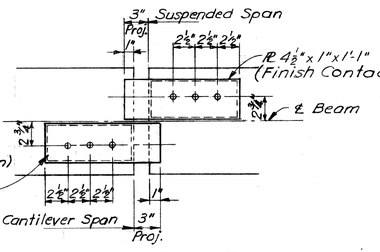


DEFLECTION DIAGRAM

Deflection Ordinates include allowance for deflection due to weight of structural steel, slab, re-bars, and fence.



SECTION A-A



SHEAR LOCK DETAIL

STRUCTURAL STEEL NOTES

DESIGN : Michigan Department of State Highways Specifications' for the Design of Highway Bridges-1958 edition and current AASHO Standard Specifications for Highway Bridges. (Live Load 85 p.s.f. for Slab, Floor Beam and Main Beam.

FABRICATION : Michigan Department of State Highways Standard Specifications for Highway Construction-1970 edition.

SHOP CONNECTIONS : Shall be Welded as shown on the plans.

FIELD CONNECTIONS : Shall be bolted with ¾ High Strength Bolts except as noted.

CAMBER : The beams are to be cambered as shown on the camber diagram. Camber is to be measured with the beam lying on it's side. Allowable camber tolerance for rolled beams is ± ¼". Heating is to be used, if necessary, to assure camber permanency within the above tolerance.

GALVANIZE : Anchor Bolts (including nuts and washers) shall be galvanized in accordance with ASTM Designation A153.
All steel material used for bearings, with the exception of portion welded to beams, shall be galvanized in accordance with ASTM Designation A123. Galvanizing shall be applied after fabrication of bearing. Mill scale and foreign material shall be removed prior to galvanizing.

WELDING : Magnetic particle inspection of welds is required and shall consist of 100% inspection of not less than one fabricated section selected at random.

STEEL : All structural steel shall be unpainted ASTM Designation A588. Steel in anchor bolts may be ASTM designation A307. Anchor bolt length shown are min. Bolts longer may be used at no additional cost.

BRONZE : Bronze for washers shall be ASTM B100 or ASTM B22.

QUANTITIES

Gray Iron Castings or Ductile Iron Castings	700 Lbs.
Structural Steel	108715 Lbs.
Bronze	85 Lbs.
Total Structural Steel - Furnishing ℄ Fab. (A588 Rolled)	109500 Lbs.
Total Structural Steel - Erection (A588 Rolled)	109500 Lbs.
Shear Developers	Lump Sum

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H Cavit STRUCTURAL ENGINEER

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

STRUCTURAL STEEL DETAILS

CITY OF DETROIT

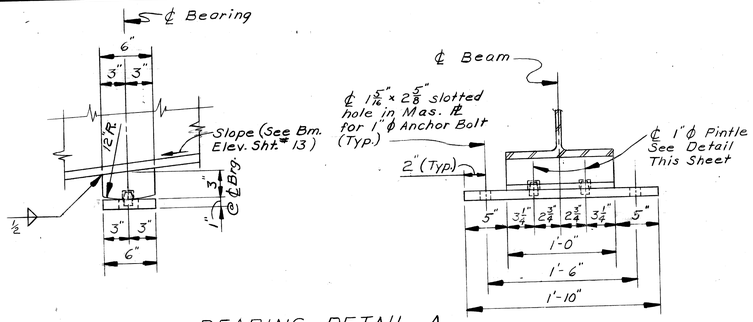
SQUAD BOSS	M. Calvin	8/70
DRAWN BY	R. Rozik	8/69
TRACED BY	J.M.	10/69
CHECKED BY	J.E.S.	10/69

SHEET 13 OF 18

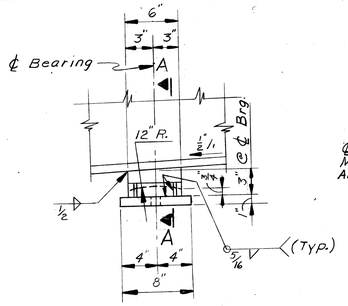
REVISIONS

NO.	DESCRIPTION	DATE	BY

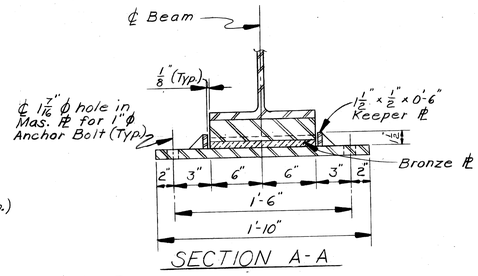
PO1 of 82122J



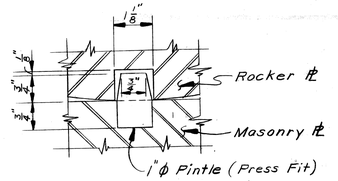
BEARING DETAIL A



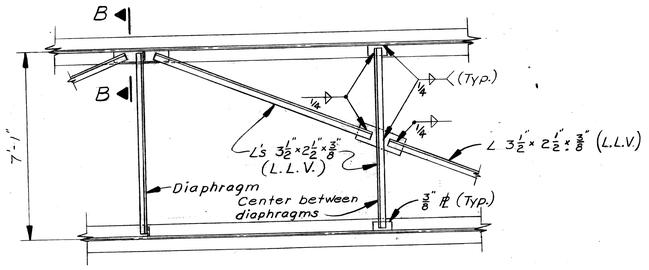
BEARING DETAIL B



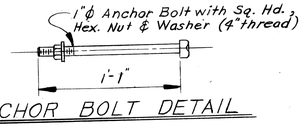
SECTION A-A



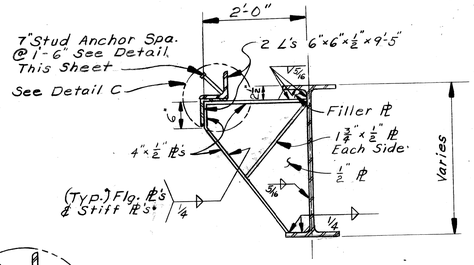
PINTLE DETAIL

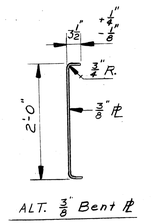


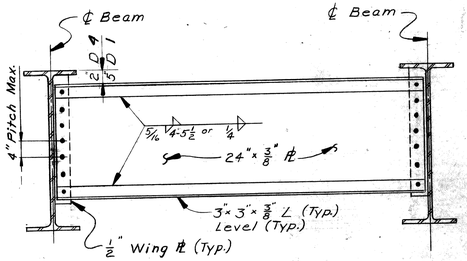
LATERAL BRACING DETAIL



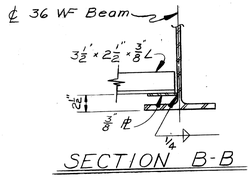
ANCHOR BOLT DETAIL



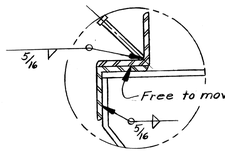




DIAPHRAGM D1 & D4

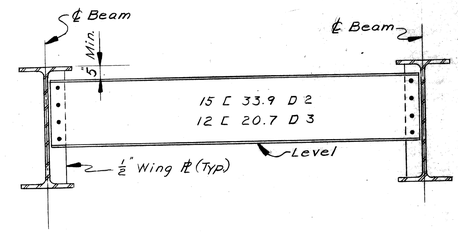


SECTION B-B

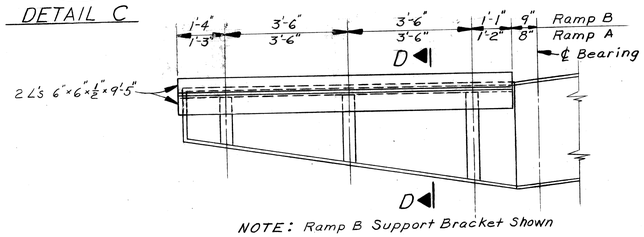


DETAIL C

SECTION D-D

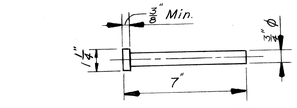


DIAPHRAGMS D2 & D3



NOTE: Ramp B Support Bracket Shown

ELEVATION RAMP SUPPORT BRACKETS



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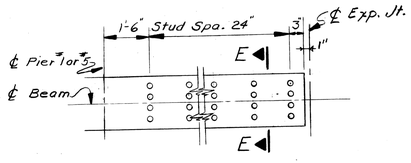
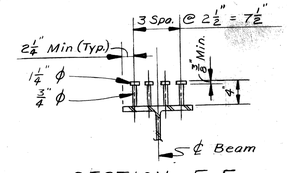


PLAN OF STUDS



SECTION E-E

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

JOB NO.

APPROVED: CHIEF ENGINEER
CONSTRUCTION ENGINEER
PW ORDER

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

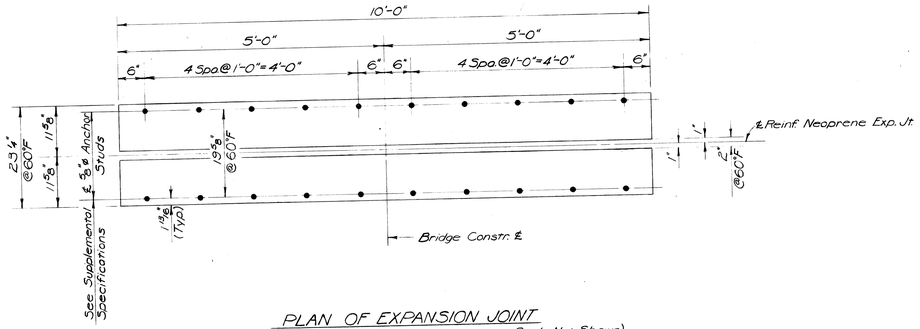
STRUCTURAL STEEL DETAILS

CITY OF DETROIT

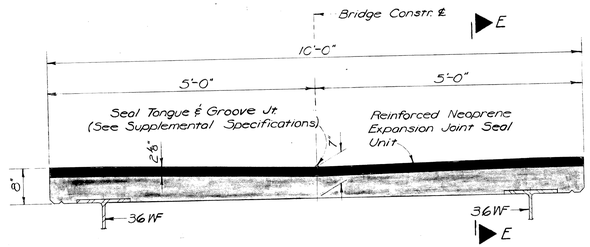
REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	McGuire	8/70
DRAWN BY	R Rosik	8/69
TRACED BY	J.M.	11/69
CHECKED BY	J.E.S.	11/69
SHEET	14 OF 18	

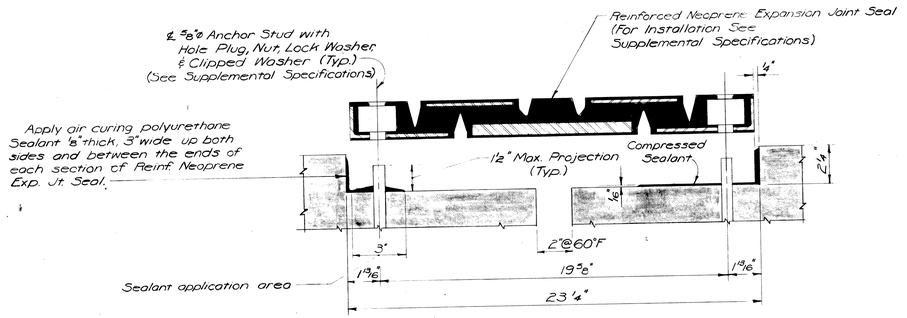
P01 of 82122J



PLAN OF EXPANSION JOINT
(Reinforced Neoprene Expansion Joint Seal Not Shown)



CROSS-SECTION ON ℄ OF EXP. JT.



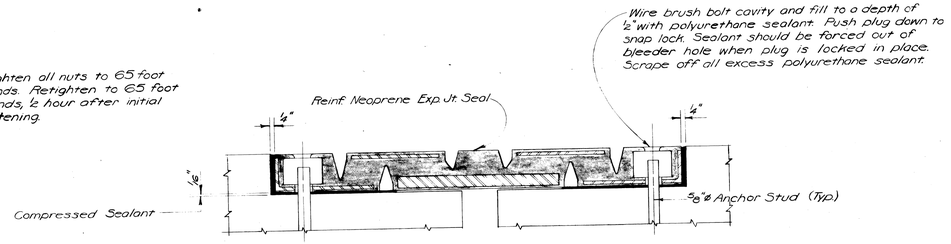
SECTION E-E

PRESET WIDTH BETWEEN EXPANSION ANCHOR HOLES							
Temp	30°	40°	50°	60°	70°	80°	90°
A	1'-8¼"	1'-8"	1'-7⅞"	1'-7⅝"	1'-7½"	1'-7¼"	1'-7⅛"

MISCELLANEOUS QUANTITIES			
Item	Unit	Span 1	Span 4
22¾" Reinforced Neoprene Expansion Joint Seal	Lin. Ft.	10.0	10.0
Total Lin. Ft. 22¾" Reinforced Neoprene Expansion Joint Seal = 20.0			

NOTES:
The item "22¾" Reinforced Neoprene Expansion Joint Seal" includes furnishing and installing all items necessary to complete its installation in the bridge. (See Supplemental Specifications)

NOTE:
Tighten all nuts to 65 foot pounds. Retighten to 65 foot pounds, ½ hour after initial tightening.



SECTION
INSTALLATION OF REINFORCED NEOPRENE EXP. JT. SEAL

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERING OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS
APPROVED _____ STRUCTURAL ENGINEER
JOB NO. PW 990(_0)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

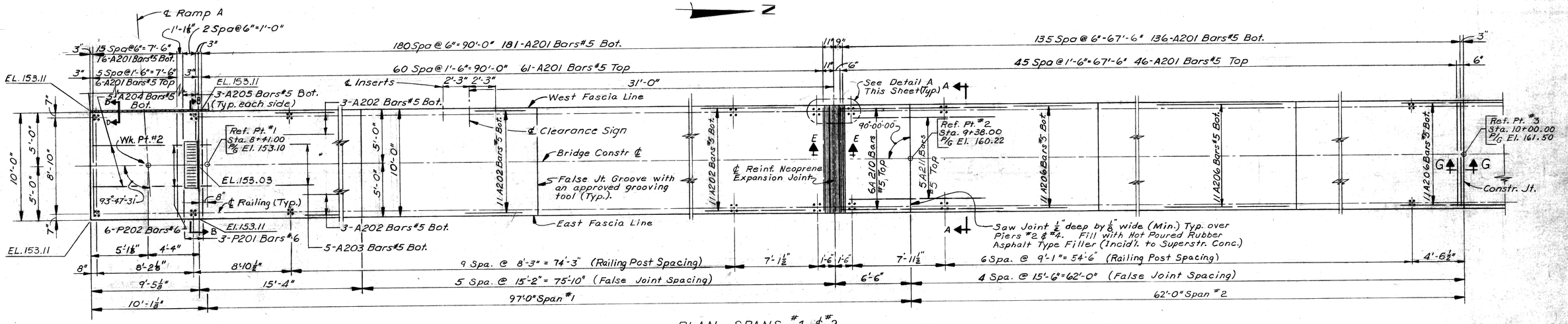
REINFORCED NEOPRENE EXPANSION JOINT SEAL 22-3/4"

CITY OF DETROIT

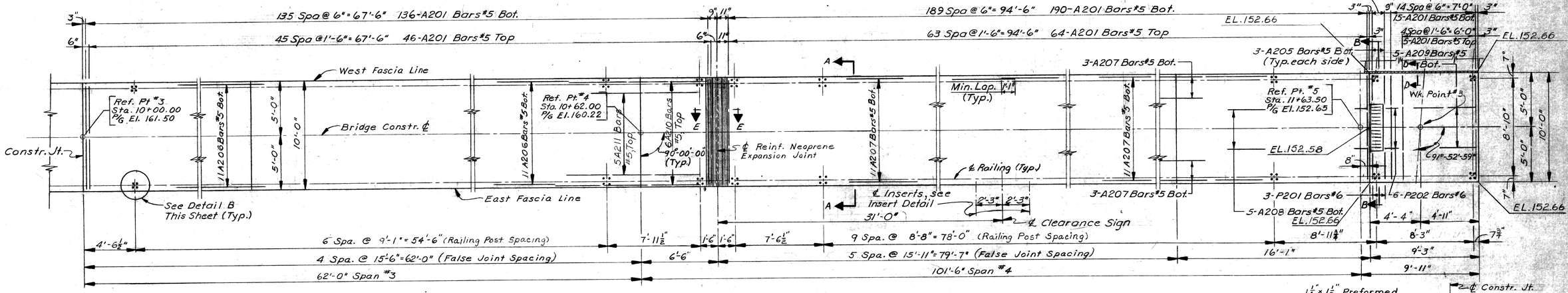
REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	McGuire	8-70
DRAWN BY	A. Morris	7-70
TRACED BY		
CHECKED BY	J.H.K.	7-70
SHEET 19A OF 18		

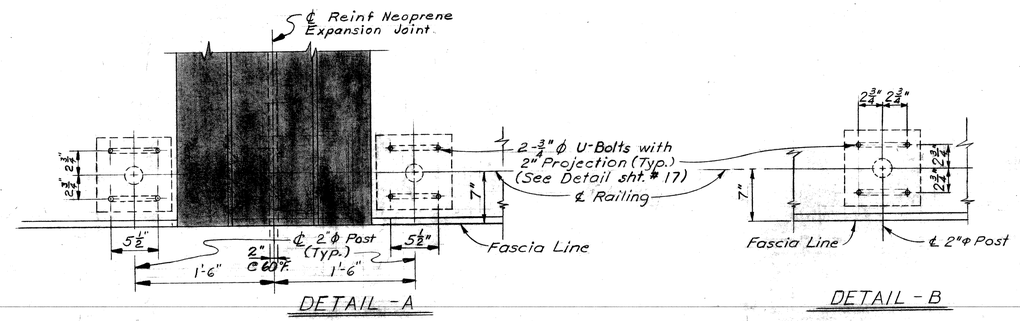
PO1 of R2112J



PLAN - SPANS #1 & #2

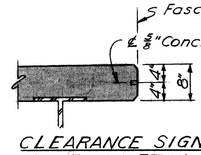


PLAN - SPANS #3 & #4

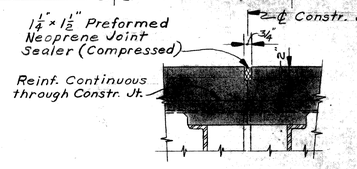


DETAIL - A

DETAIL - B



CLEARANCE SIGN INSERT DETAIL



SECTION G-G

Note : For Sections not shown see sheet #16.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H Grant STRUCTURAL ENGINEER

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SUPERSTRUCTURE DETAILS

CITY OF DETROIT

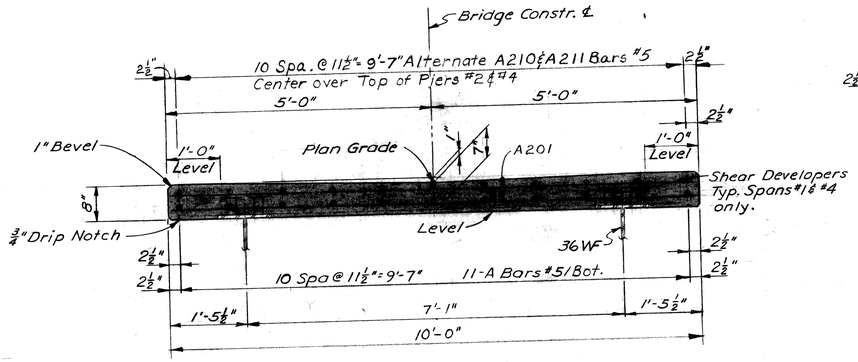
SQUAD BOSS	McGuire	8/70
DRAWN BY	R. Harris	9/69
TRACED BY		
CHECKED BY	J.B.W.	12/69

SHEET 15 OF 18

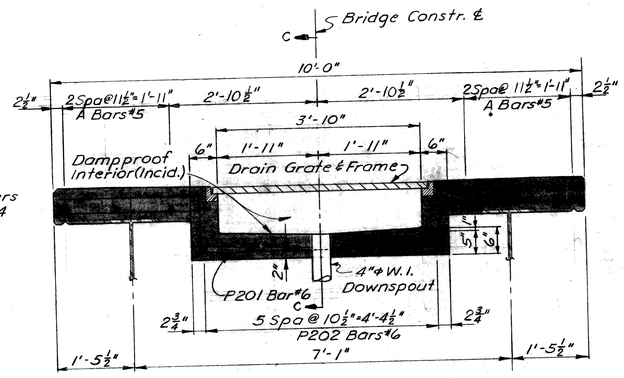
REVISIONS

NO.	DESCRIPTION	DATE	BY

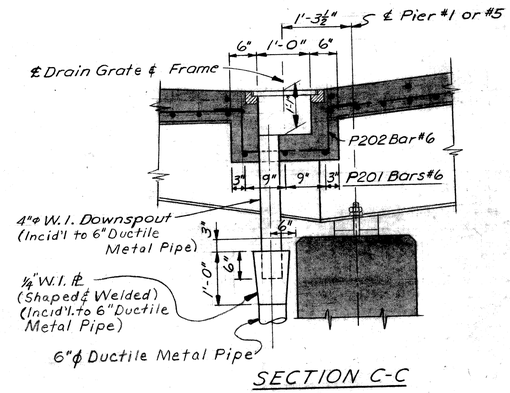
P01 of 82122J



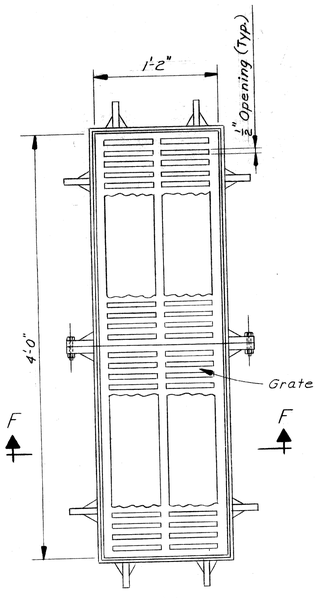
SECTION A-A



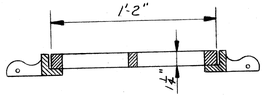
SECTION B-B



SECTION C-C

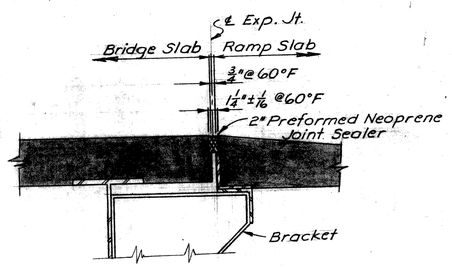


PLAN

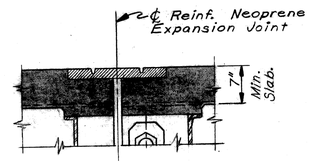


SECTION F F

DRAIN GRATE & FRAME DETAILS



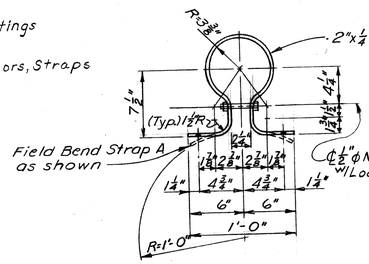
SECTION D-D



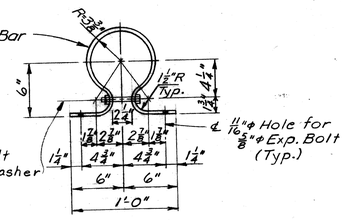
SECTION E-E

CONCRETE QUANTITIES				
Pour	Span #1	Span #2	Span #3	Span #4
A	23.9	16.3	16.3	24.9
Total Gr. A (6AA) = 81.4 Cu. Yds.				

4 complete Frames with Anchors and Gratings are required. Material is to be Gray Iron Castings conforming to A.S.T.M. Specification A 48-64, or Ductile Iron Casting conforming to A.S.T.M. Specification A 536-67. Weight of Grates, Anchors, Straps and Frames is included in Structural Steel Weight. Grates shall be bolted to Frames.



STRAP A DETAIL



STRAP B DETAIL

MISCELLANEOUS QUANTITIES		
ITEM	UNIT	AMOUNT
Water Reducing Retarding Admixture	Gals.	12.0
1¼" Preformed Neoprene Jt. Sealer	Lin. Ft.	10.0
2 Preformed Neoprene Jt. Sealer	Lin. Ft.	19.0

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H Cook STRUCTURAL ENGINEER

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SUPERSTRUCTURE DETAILS

CITY OF DETROIT

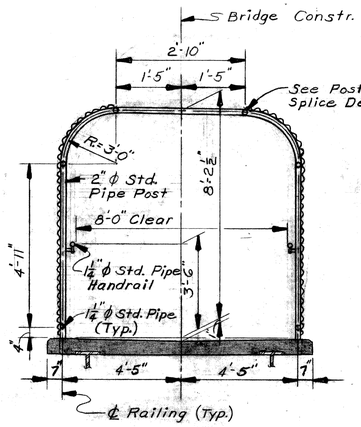
SQUAD BOSS	McGuire	8/70
DRAWN BY	E. Harris	9/69
TRACED BY		
CHECKED BY	J.B.W.	10/69

SHEET 16 OF 18

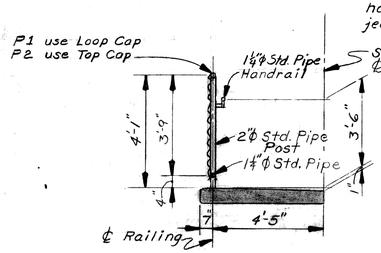
REVISIONS

NO.	DESCRIPTION	DATE	BY

P01 of 82122J

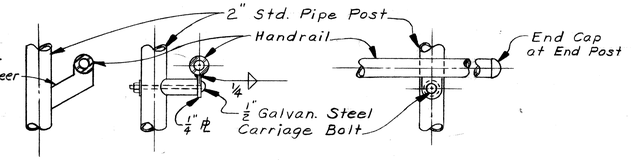


F1



P1 or P2

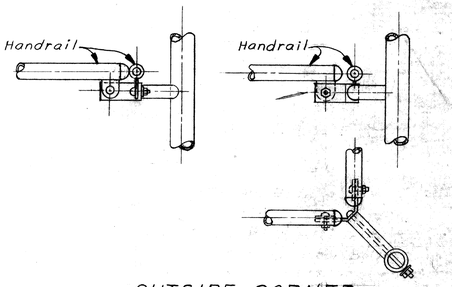
CHAIN LINK FENCE BRIDGE



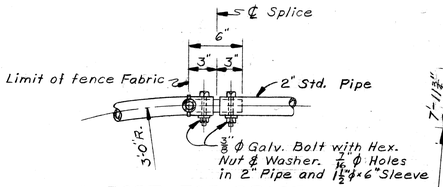
ALT.

STANDARD

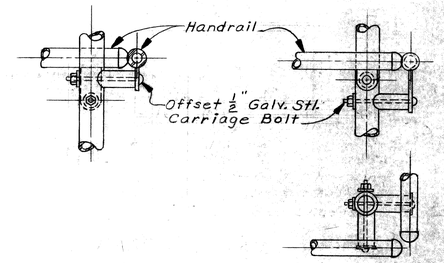
HANDRAIL DETAILS



OUTSIDE CORNER

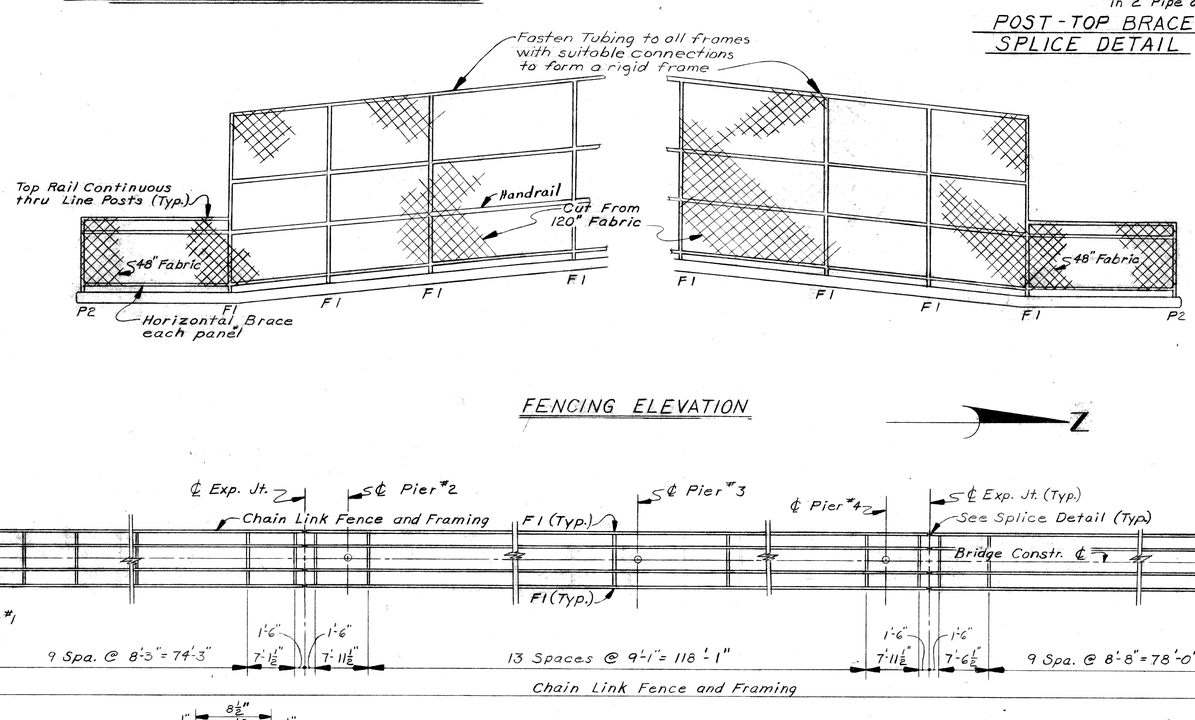


POST-TOP BRACE SPLICE DETAIL



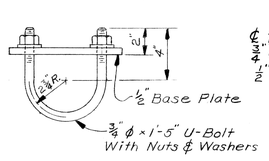
INSIDE CORNER

CHAIN LINK FENCE AND FRAMING

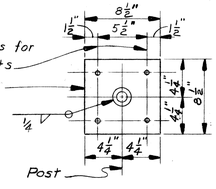


FENCING ELEVATION

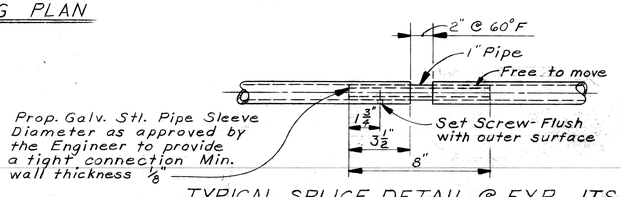
FENCING PLAN



U-BOLT DETAIL



POST BASE DETAILS



TYPICAL SPLICE DETAIL @ EXP. JTS.

NOTES:

Enclosure posts are to be normal to the deck slab.

Chain Link Fence and Framing and Chain Link Fence Bridge shall conform to the M.D.S.H. Standard Specifications, Sec. 6.22.04.

The fence material is to be adequately fastened to all tubing in the frame and shall be No. 9 gage.

Nominal 1¼" pipe shall be 1⅝" O.D. steel pipe or tubing weighing 2.27 lbs. per. ft., galvanized

All fabric for fencing shall be furnished with knuckling at both selvages.

Nominal 2" pipe shall be 2⅜" O.D. steel pipe or tubing weighing 3.65 lbs. per. ft., galvanized.

All tubing shall be furnished with suitable connections and it's min. weight shall be within 5% of the weight specified.

All Steel components are to be galvanized after fabrication (Anchor Bolts, Nuts and Washers shall be galvanized in accordance with A.S.T.M. A-153)

Anchor Bolts, Nuts and Washers may be A.S.T.M. A307.

Dimensions are horizontal along ℄ railing.

Pay length is measured out to out of metal with no deductions for expansions openings.

QUANTITIES

Chain Link Fence ℄ Framing	324.8 Lin. Ft.
Chain Link Fence - Bridge	404.9 Lin Ft.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990120

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

FENCING DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	Mc Guire	8-70
DRAWN BY	R. Rosia	8-70
TRACED BY		
CHECKED BY	J.M.	8/70

SHEET 17 OF 18

POI of 82122 J

ABUTMENTS & RAMPS

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A 1								#6	25'-0"	12	451
A 2								#4	1'-6	131	131
A 3								#6	9'-6"	6	86
A 4								#4	3'-3"	6	13
A 5								#4	7'-6"	32	160
A 6								#6	3'-3"	303	1479
A 7								#6	2'-0"	20	60
A 8								#6	2'-9"	20	83
A 9								#6	3'-6"	20	105
A10								#6	4'-3"	20	128
A11								#6	5'-0"	20	150
A12								#6	5'-9"	36	311
A13								#4	10'-9"	10	72
A14								#4	8'-6"	24	136
A15								#4	17'-0"	82	930
A16								#4	15'-6"	20	207
A17								#5	9'-0"	95	892
A18								#4	14'-9"	10	98
A19								#6	29'-3"	6	264
A20								#6	24'-6"	6	221
A21								#6	9'-0"	3	41
A22								#6	5'-3"	27	213
A23								#6	5'-6"	48	396
A24								#6	6'-6"	24	234
A25								#6	7'-3"	24	261
A26								#6	8'-3"	40	496
A27								#4	8'-3"	10	55
A28								#4	9'-9"	10	65
A29								#4	19'-9"	30	395
A30								#4	11'-6	28	215
A31								#5	8'-9"	9	82
A32								#4	10'-3"	6	41
A33								#4	7'-3"	4	19
B 1	1'-1 7/8"	1'-1"						#5	2'-2"	207	468
C 1	8 1/2"	1'-6 3/4"	8 1/2"	9 1/2"	1'-0 1/8"	9 1/2"	1'-0 1/8"	#6	3'-7"	5	27
E 1	1'-0"	1'-3"	3/8"	1'-3"				#4	2'-3"	5	8
P 1	1'-1"	1'-8 1/2"	1'-3"	1'-3"				#4	6'-3"	6	25
P 2	1'-1"	4'-6 1/2"	2'-3"	2'-3"				#5	11'-1"	3	35
TOTAL ABUTMENTS & RAMPS											9053 #
A50								#6	6'-0"	20	180
A51								#10	10'-3"	8	353
A52								#6	6'-9"	18	182
A53								#6	23'-9"	8	285
A54								#6	24'-3"	6	219
A55								#7	9'-9"	18	359
A56								#7	7'-3"	12	178
A57								#6	12'-0"	9	162
A58								#4	9'-0"	130	781
A59								#6	5'-6"	10	83
A60								#10	12'-0"	8	413
A61								#10	13'-6"	8	465
A62								#6	38'-9"	14	815
A63								#6	9'-6"	9	128
B50	2'-0"	2'-0"						#6	3'-11"	24	141
D50	1'-6 1/4"	1'-0 1/2"						#4	4'-1"	12	33
K50	1'-3 1/2"	1'-1 1/8"	1'-1"	1'-4 3/4"				#4	6'-1"	6	24
K51	1'-5 1/2"	1'-1 1/8"	1'-1"	1'-4 3/4"				#4	6'-5"	6	26
K52	1'-7 1/2"	1'-1 1/8"	1'-1"	1'-4 3/4"				#4	6'-9"	6	27
U50	1'-3 1/2"	11 1/4"	1'-11 1/2"	7 1/4"				#4	3'-10"	12	31
V50	3'-6 3/4"	7 1/4"						#3	4'-2"	25	39
TOTAL PIER A1, B1&B2											4924 #

PIERS A1, B1 & B2

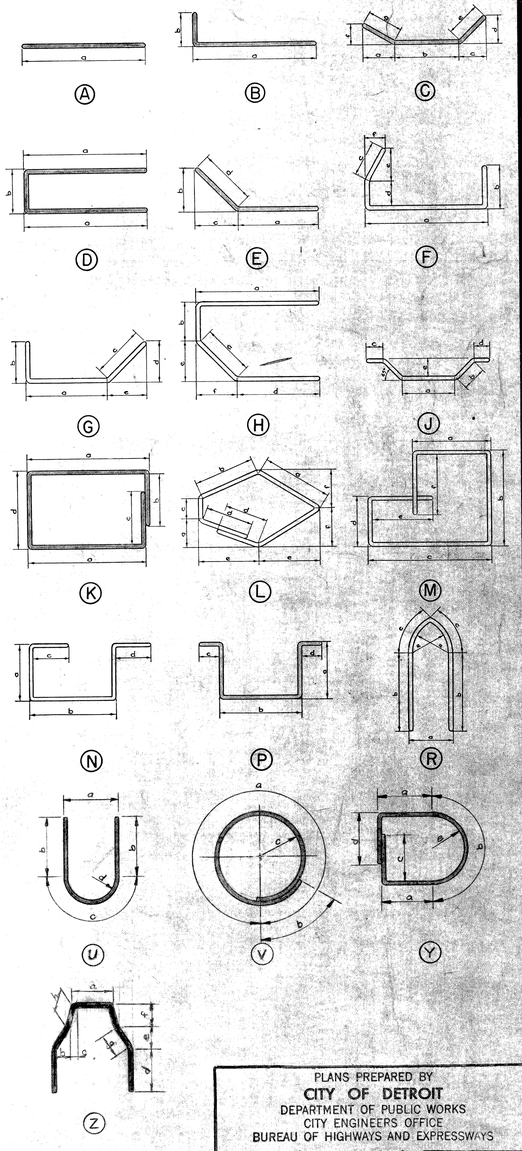
PIERS 1 THRU 5

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A100								#6	5'-6"	8	66
A101								#9	10'-6"	6	214
A102								#9	8'-9"	44	1309
A103								#6	8'-9"	8	105
A104								#10	8'-9"	8	301
A105								#4	8'-9"	4	23
A106								#8	13'-6"	11	396
A107								#6	7'-6"	10	113
A108								#9	5'-0"	8	136
A109								#9	12'-9"	8	347
A110								#6	9'-6"	42	599
A111								#6	19'-6"	21	615
A112								#6	4'-6"	84	568
A113								#4	19'-6"	12	156
A114								#4	17'-0"	21	238
A115								#9	18'-3"	24	1489
A116								#9	19'-6"	12	796
A117								#6	8'-3"	12	149
A118								#5	8'-3"	6	52
A119								#10	8'-3"	12	486
A120								#6	2'-0"	12	36
D100	2'-0"	1'-7 1/8"						#5	5'-6"	8	46
D101	2'-3"	2'-1 1/4"						#5	6'-6"	12	81
K100	1'-9 1/2"	1'-1"	1'-1 3/4"	1'-4 1/2"				#4	7'-1"	8	38
K101	1'-11"	1'-1"	1'-1 3/4"	1'-4 1/2"				#4	7'-4"	8	39
K102	2'-0 1/8"	1'-1"	1'-1 3/4"	1'-4 1/2"				#4	7'-6"	8	40
K103	2'-1 1/8"	1'-1"	1'-1 3/4"	1'-4 1/2"				#4	7'-9"	8	41
K104	2'-4 1/2"	1'-3"	1'-3 3/4"	1'-8 1/2"				#4	8'-10"	12	71
K105	2'-6"	1'-3"	1'-3 3/4"	1'-8 1/2"				#4	9'-2"	12	73
K106	2'-7 1/8"	1'-3"	1'-3 3/4"	1'-8 1/2"				#4	9'-6"	12	76
U100	1'-10"	11 1/8"	2'-9 3/4"	10 1/2"				#4	4'-8"	12	37
U101	2'-4"	11 3/8"	3'-7 1/4"	1'-1 1/2"				#4	5'-6"	18	66
V100	4'-7 7/8"	7 5/8"	8"					#3	5'-3"	16	32
Y100	1'-1"	3'-1 1/4"	1'-4 1/2"	1'-5"	11 5/8"			#4	8'-1"	94	507
Z100	2'-6 1/2"	3"	9"	1'-10"	1'-1"	1'-1 7/8" (g)	1'-2 5/8" (h)	#4	11'-2"	36	268
TOTAL PIERS 1 THRU 5											9549 #

SUPERSTRUCTURE

BAR	a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D.	TOTAL WT.
A201								#5	9'-9"	902	9172
A202								#5	34'-3"	28	1000
A203								#5	25'-0"	5	130
A204								#5	7'-9"	5	40
A205								#5	2'-6"	12	31
A206								#5	28'-3"	55	1621
A207								#5	35'-9"	28	1044
A208								#5	26'-9"	5	139
A209								#5	7'-6"	5	39
A210								#5	12'-6"	12	156
A211								#5	10'-6"	10	110
P201	1'-1"	4'-6 1/2"	2'-6"	2'-6"				#6	11'-7"	6	104
P202	1'-1"	4'-8 1/2"	1'-3"	1'-3"				#6	6'-3"	12	113
TOTAL SUPERSTRUCTURE											13,699 #

BAR BENDING DIAGRAM



PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990(20)

Note:—
All right angle bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.
All bar numbers shown on this sheet are to be prefixed P01.

TOLERANCES IN CUTTIN AND BENDING BARS ARE AS ESTABLISHED IN MANUAL OF STANDARD PRACTICE OF THE CONCRETE REINFORCING STEEL INSTITUTE AND DETAILING MANUAL OF THE AMERICAN CONCRETE INSTITUTE.

Grand Total Steel Reinforcement 37225 #

MICHIGAN STATE HIGHWAY DEPARTMENT

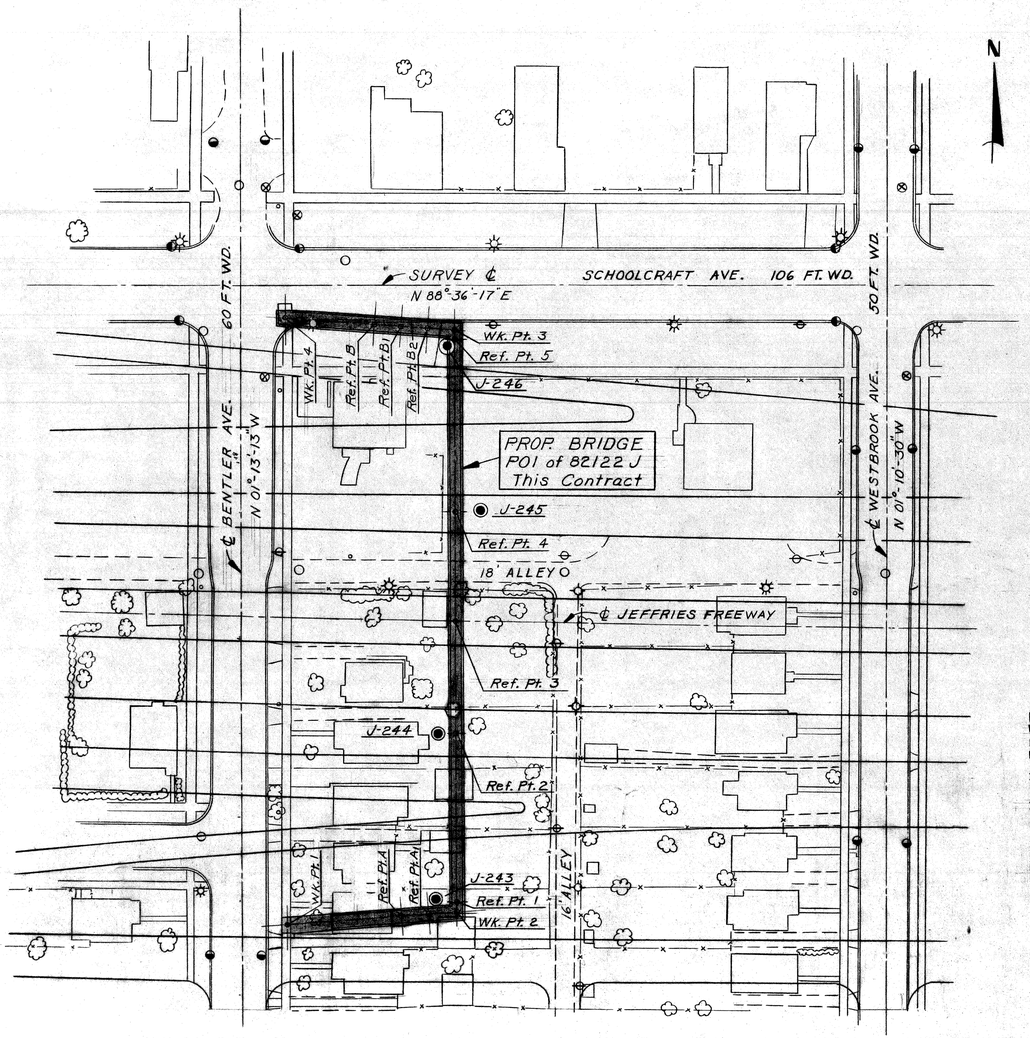
STEEL REINFORCEMENT DETAILS

CITY OF DETROIT

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	McGuire 8/70
DRAWN BY	J.B.W. 12-69
TRACED BY	
CHECKED BY	J.E.S. 10-69
SHEET	18 OF 18

P01 of 82122J



SITUATION PLAN

Scale: 1" = 40'

LEGEND

- Tree
- Fence
- Sewer Manhole
- Sewer Inlet or Catch Basin
- Water Gatewell and Valve
- P.L.C. Cable Manhole
- P.L.C. Lightpole
- M.B.T. Pole
- D.E. Pole
- Test Hole for Soil Profile

NOTES:

The topography shown represents conditions existing at the time the field survey was made. These conditions may have been materially altered by the operations of others before this work has been started.

The work covered by these plans includes the construction of the proposed bridge.

All other work is included in the road plans which are a part of this contract.

Removal of fences and buildings is not a part of this contract.

Bench Marks are referenced to the City of Detroit Datum.

LOG OF SOIL BORINGS

J 243

Pier #1 Bot. Fig El. 140.00

146.6

* N = 3-5		Topsoil.
* N = 3-5	140	Moderately compact brown sand, heavy trace of clay.
		Firm gray and brown mottled silty clay, trace of sand.
S = 408	130	Firm gray slightly mottled clay, trace of sand.
S = 204		Firm gray silty clay, trace of sand, occasional pebble, silt partings.
S = 180	120	
S = 300		Plastic gray mottled silty clay, trace of sand, occasional pebble.
S = 276	110	
S = 240		End of boring.
	100	Water level below ground after completion (uncased) 1 hr. 0.5 ft.; 24 hr. 4.2 ft.

J-244

Pier #2 Bot. Fig El. 129.70

146.7

		Fill (sand, cinders, gravel).
* N = 4-5		Topsoil.
* N = 4-5	140	Moderately compact brown medium sand.
		Firm brown and gray mottled clay, trace of sand.
S = 288	130	Firm brown and gray mottled silty clay, trace of sand.
S = 204		Firm gray silty clay, trace of sand, occasional pebble, silt partings.
S = 240	120	
S = 192		Plastic gray mottled silty clay, trace of sand, occasional pebble, silt partings.
S = 300	110	
* N = 2-3		Soft gray silty clay, trace of sand, occasional pebble.
* N = 1-2		Moderately compact medium sand, fine and medium gravel.
* N = 11-18	100	Stiff gray silty clay, trace of sand, occasional pebble.
* N = 23		Hard gray silty clay, trace of sand, occasional pebble.
	90	Compact silt and fine sand.
		End of boring.
	80	Water level below ground after completion (uncased) 1 hr. 1 ft.; 24 hr. 3.5 ft.

J-245

Pier #4 Bot. Fig El. 129.70

146.3

* N = 4-5		Topsoil.
	140	Moderately compact brown fine sand.
S = 480		Firm gray and brown mottled sandy silty clay.
S = 360	130	
S = 336		Plastic gray mottled silty clay, trace of sand, occasional pebble silt partings.
S = 240	120	
S = 288		
S = 264	110	End of boring.
		Water level below ground after completion (uncased) 1 hr. 1.5 ft.; 24 hr. 4 ft.
	100	

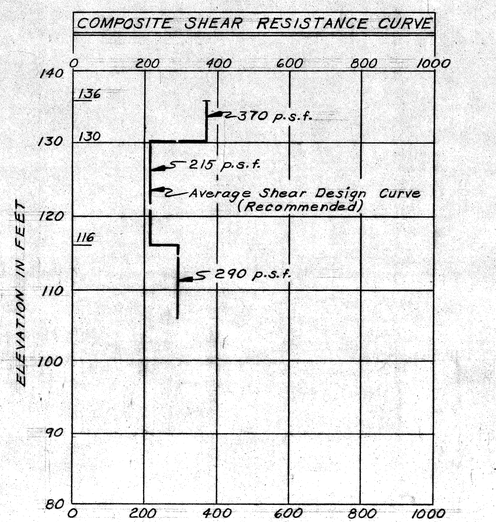
J-246

Pier #5 Bot. Fig El. 137.40

145.5

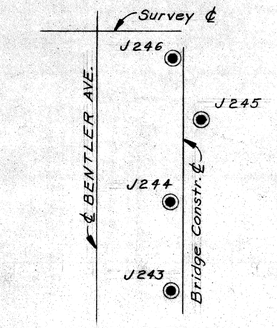
* N = 4-4		Topsoil.
	140	Firm gray and brown mottled clay, trace of sand, wet at 3 feet.
S = 288		Firm gray silty clay, trace of sand, occasional pebble.
S = 408	130	Plastic gray silty clay, trace of sand, occasional pebble, silt partings.
S = 120		Coarse gray sand and gravel.
S = 192	120	Plastic gray silty clay, trace of sand, occasional pebble.
S = 336		End of boring.
S = 324	110	Water level below ground after completion (uncased) 2 ft.
	100	

COMPOSITE SHEAR RESISTANCE CURVE



SOIL BORING LOCATION SKETCH

(No Scale)



NOTES:

N Indicates the number of blows required to drive the sampler 6" (or as noted) using a 140 # hammer falling 30". Where blow count is not shown, sampler was levered, pushed or hand driven.

S Indicates Transverse Shearing Resistance in Lbs. per Sq. Ft. as determined by M.D.S.H. Standard Test.

* Indicates no sample.

All elevations are based on City of Detroit Datum.

Water level below ground indicated for these soil borings may be residual wash boring water and not true water table.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS' OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990(20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF SITE

CITY OF DETROIT

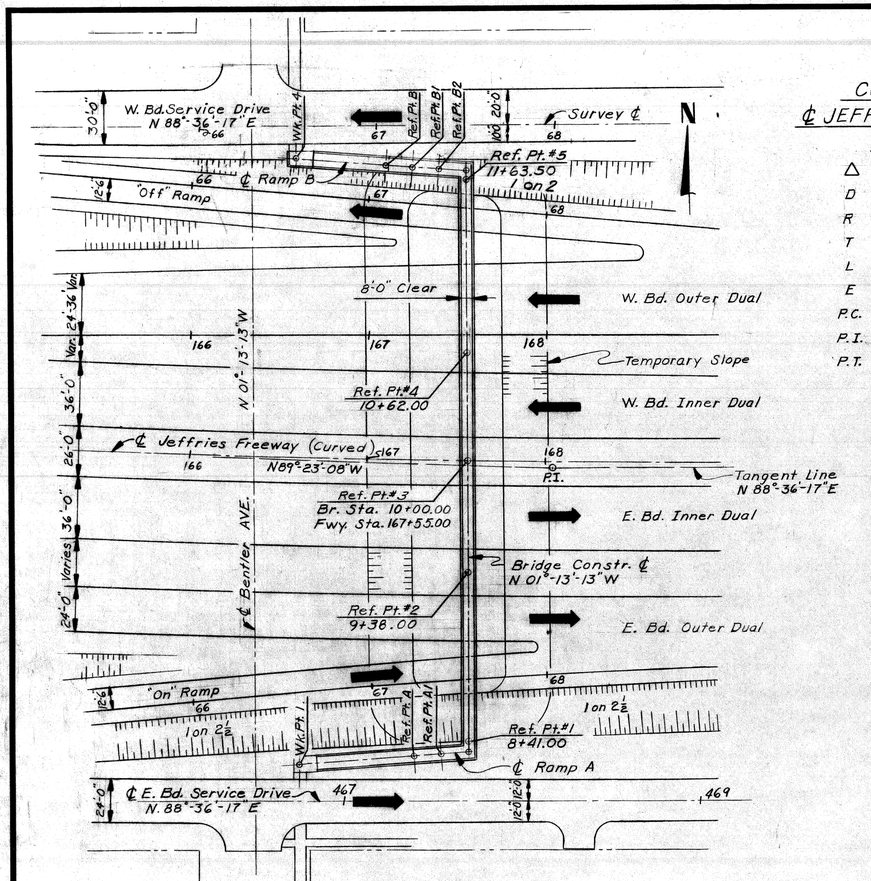
SQUAD BOSS	McGuire	8-69
DRAWN BY	Root	7-69
TRACED BY		
CHECKED BY	R.M.	8-69

SHEET 2 OF 18

APPROVED _____ DESIGN SUPERVISING ENGINEER

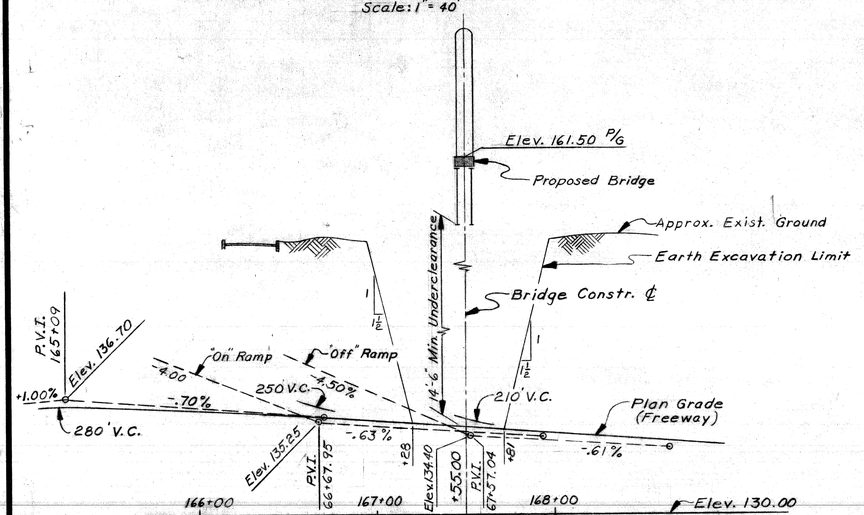
APPROVED _____ ENGINEER - DESIGN SECTION I

POI of 82122 J



PLAN

Scale: 1" = 40'



PROFILE ALONG ℄ OF JEFFRIES FREEWAY

Scale: Hor. 1" = 40'
Vert. 1" = 4'

CURVE DATA
℄ JEFFRIES FREEWAY
CURVE #5

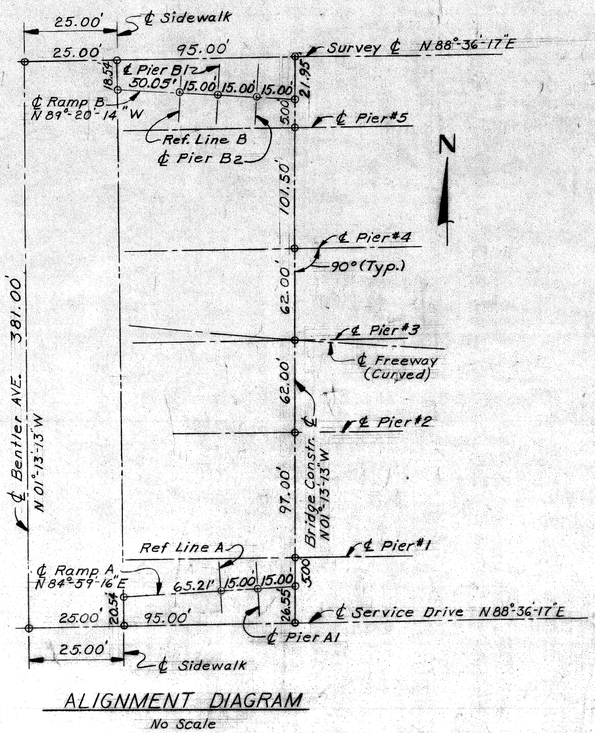
- △ = 2°-00'-35" Lt.
- D = 0°-20'-00"
- R = 17,188.73'
- T = 301.49'
- L = 602.92'
- E = 2.64'
- P.C. = Sta. 165+01.29
- P.I. = Sta. 168+02.78
- P.T. = Sta. 171+04.21

BENCH MARKS

B.M. #21 Arrow on Hydrant on N.E. Corner of Bentler and Schoolcraft, Elev. 148.64

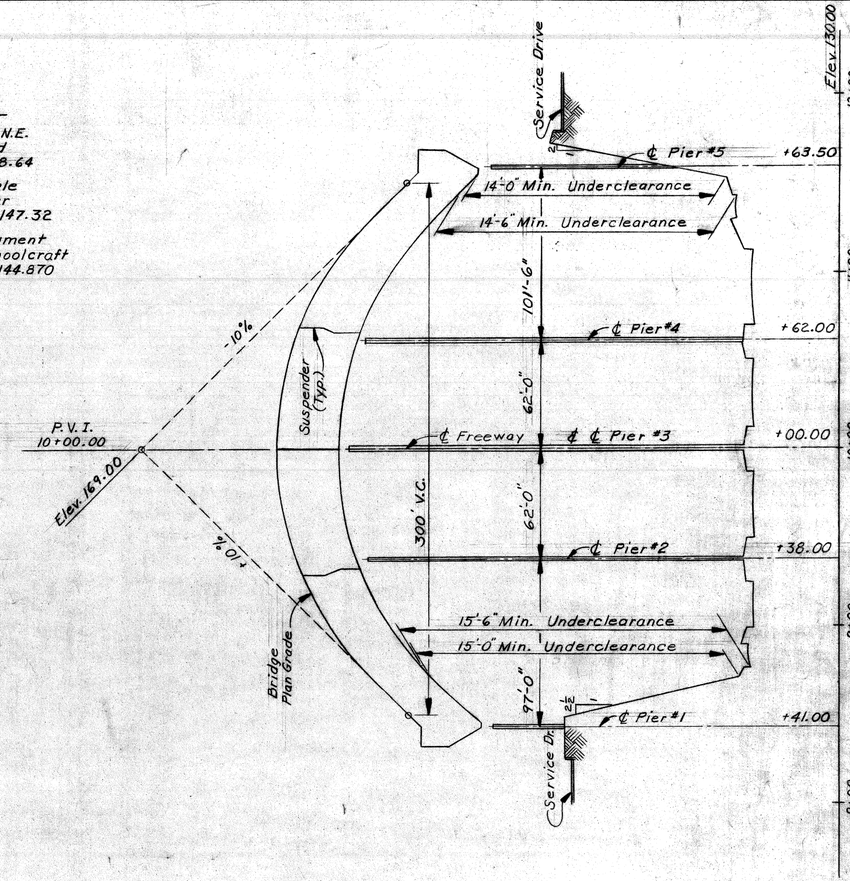
B.M. #21A B.M. Cap in 14" Maple west of Bentler near House #13563, Elev. 147.32

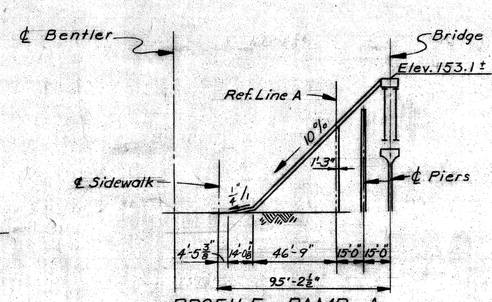
P.B.M. #112-253 City of Detroit Monument on N.E. Corner of Schoolcraft and Burt Road, Elev. 144.870



ALIGNMENT DIAGRAM

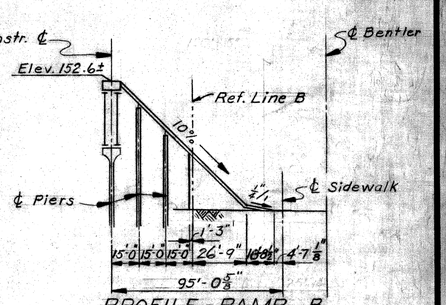
No Scale





PROFILE - RAMP A

Scale: Hor. 1" = 40'
Vert. 1" = 4'



PROFILE - RAMP B

Scale: Hor. 1" = 40'
Vert. 1" = 4'

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H Garrett STRUCTURAL ENGINEER

JOB No. PW 990 (20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

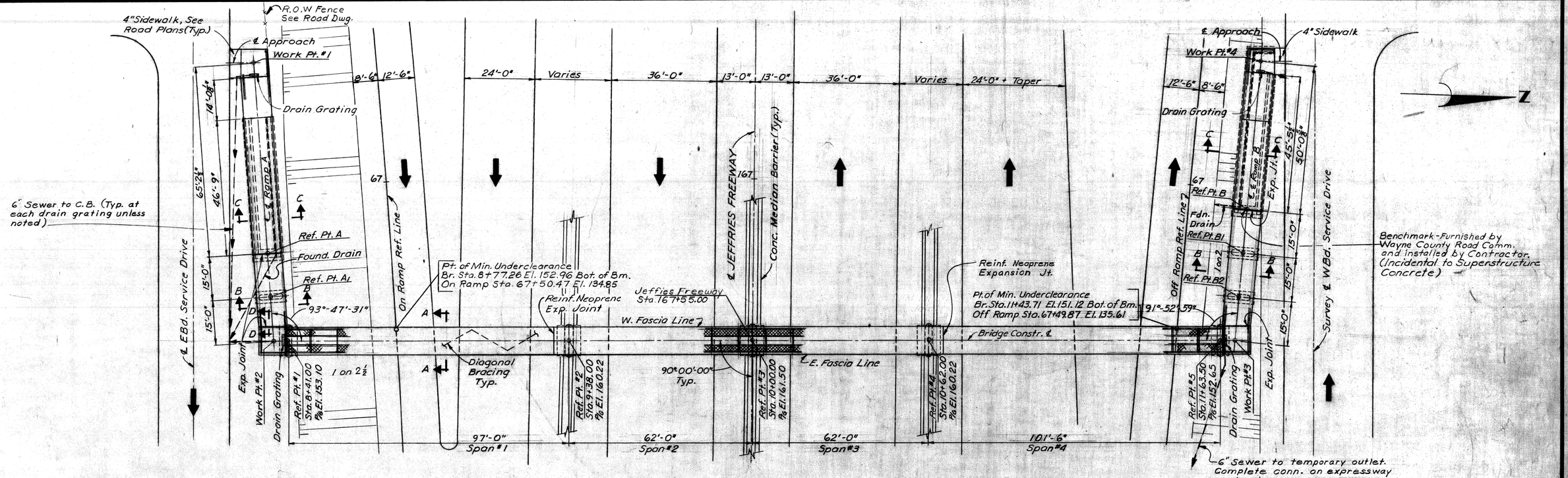
CITY OF DETROIT

SQUAD BOSS	M. Guire	8-69
DRAWN BY	Rosik	7-69
TRACED BY		
CHECKED BY	R.H.	8-69
SHEET	3 OF 18	

APPROVED _____ DESIGN SUPERVISING ENGINEER

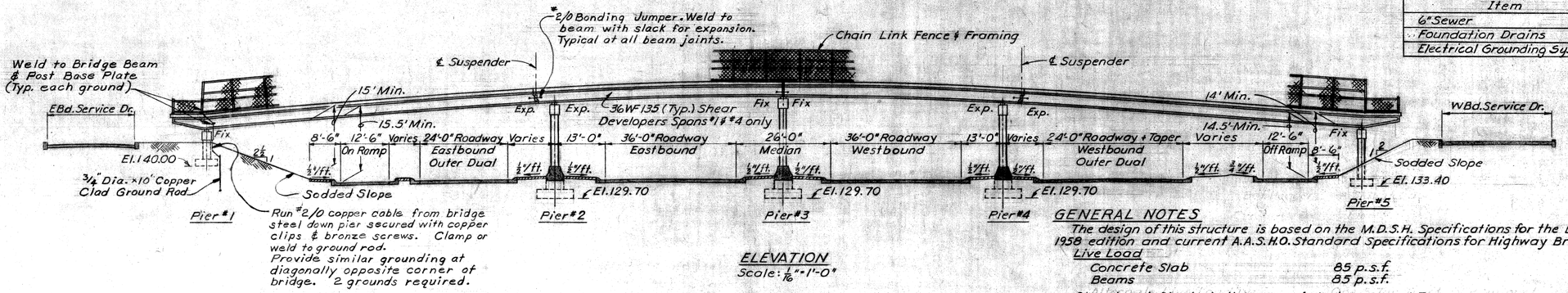
APPROVED _____ ENGINEER - DESIGN SECTION I

P01 of 82122J

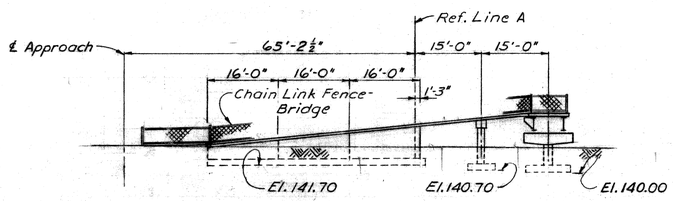


PLAN
Scale: 1/16"=1'-0"

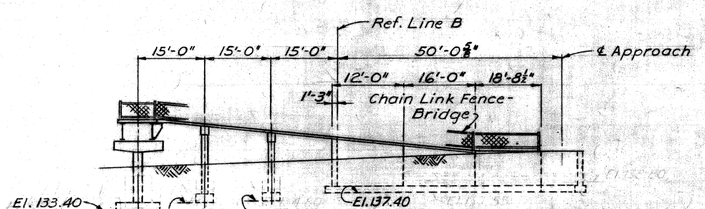
MISCELLANEOUS QUANTITIES		
Item	Unit	Amount
6" Sewer	Lin. Ft.	232
Foundation Drains	Lin. Ft.	38
Electrical Grounding System	LUMP	SUM



ELEVATION
Scale: 1/16"=1'-0"



RAMP A - ELEVATION
Scale: 1/16"=1'-0"



RAMP B - ELEVATION
Scale: 1/16"=1'-0"

GENERAL NOTES

The design of this structure is based on the M.D.S.H. Specifications for the Design of Highway Bridges, 1958 edition and current A.A.S.H.O. Standard Specifications for Highway Bridges.

Live Load

Concrete Slab	85 p.s.f.
Beams	85 p.s.f.

Structural Steel shall be unpainted A.S.T.M. A 588.

The top of slab is parallel to the vertical curve and its tangents.

Tamped Clay and Selected Excavated Material are incidental to Unclassified Excavation.
Granular Material - Class I is incidental to Foundation Drain.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H Gaust STRUCTURAL ENGINEER

JOB No. PW 990(20)

REVISIONS		
NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF STRUCTURE

CITY OF DETROIT

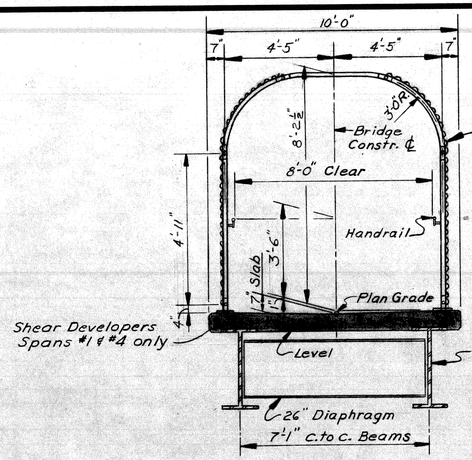
SQUAD BOSS	M. Dunn	8-69
DRAWN BY	R. Harris	8-69
TRACED BY		
CHECKED BY	J.M.	8-69

SHEET 4 OF 18

APPROVED DESIGN SUPERVISING ENGINEER

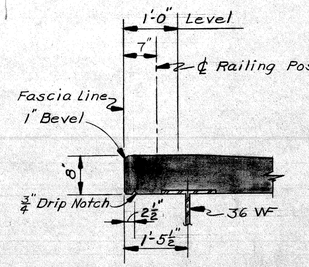
APPROVED ENGINEER - DESIGN SECTION I

P01 of 82122J



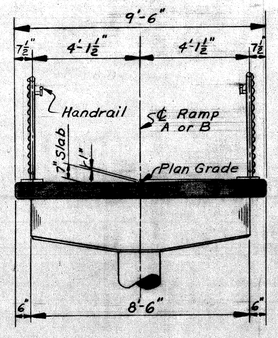
SECTION A-A

Scale: 3/8" = 1'-0"



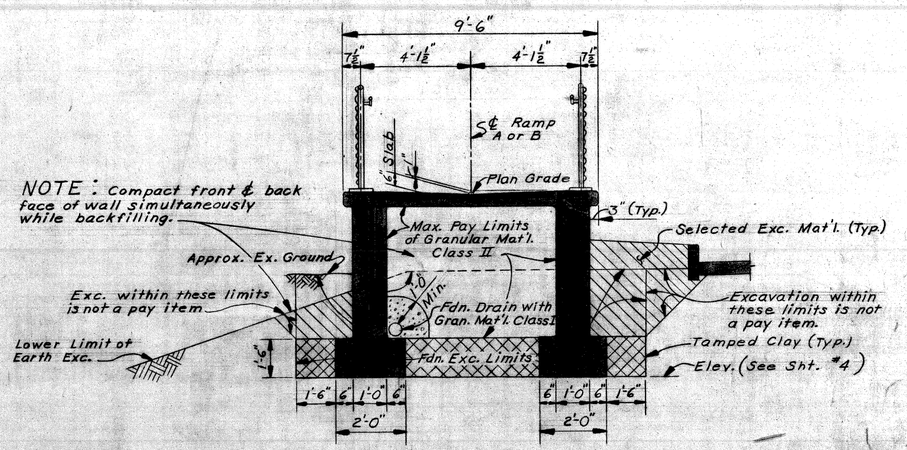
FASCIA DETAIL

Scale: 3/4" = 1'-0"



SECTION B-B

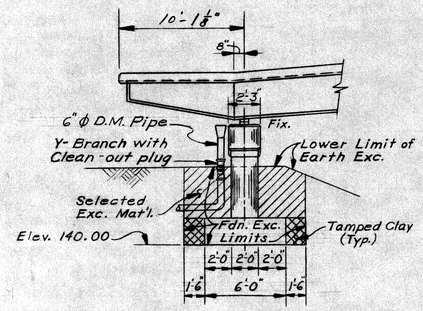
Scale: 3/8" = 1'-0"

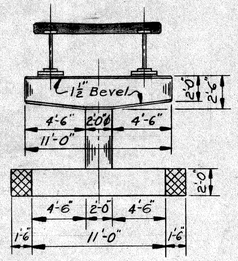


Ramp B Shown - Ramp A Similar

SECTION C-C

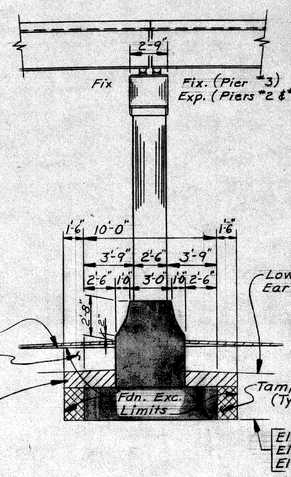
Scale: 3/8" = 1'-0"





PIER #1

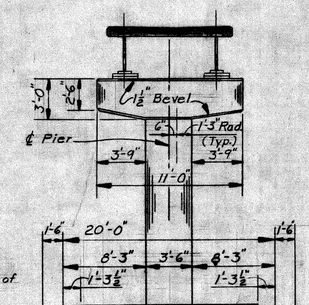
Scale: 3/16" = 1'-0"

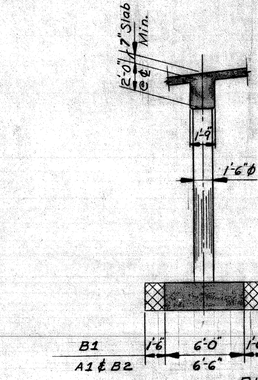


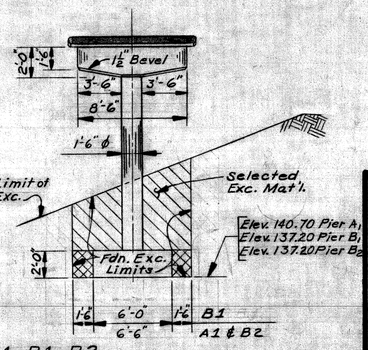
PIERS #2-#3-#4

Pier 3 (Shown)

Scale: 3/16" = 1'-0"

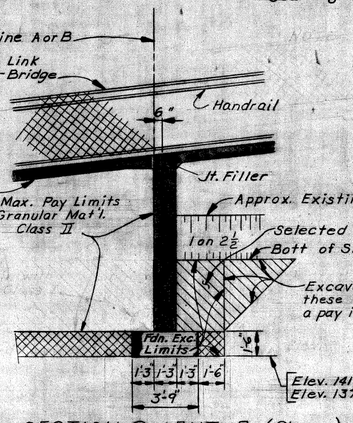






PIERS A1-B1-B2

Scale: 3/16" = 1'-0"

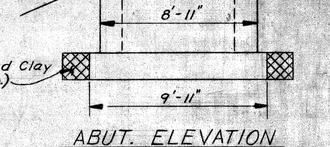


SECTION @ ABUT. B (Shown)

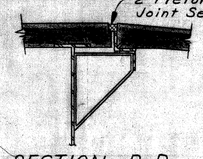
SECTION @ ABUT. A (Opp. Hand)

Scale: ¼" = 1'-0"

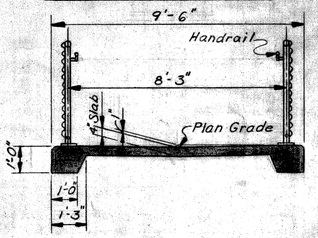
QUANTITIES BILLED ON ROAD PLANS		
Item	Unit	Amount
Earth Excavation	Cu. Yds.	8800
Granular Material Class II	Cu. Yds.	160



ABUT. ELEVATION

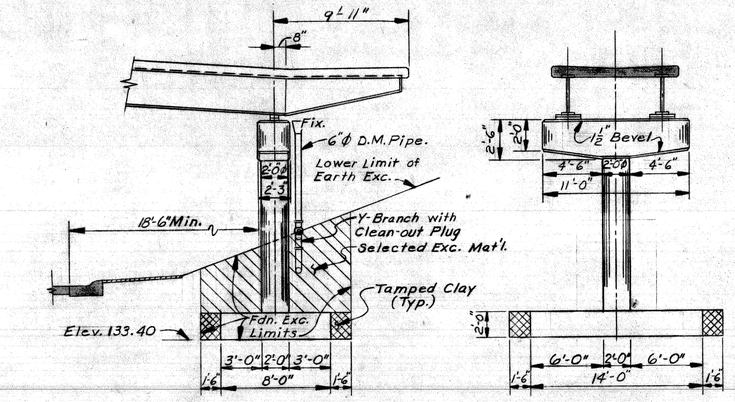


SECTION D-D



DETAIL THRU SIDEWALK

Scale: ¾" = 1'-0"



PIER #5

Scale: 3/16" = 1'-0"

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

GENERAL PLAN OF STRUCTURE

CITY OF DETROIT

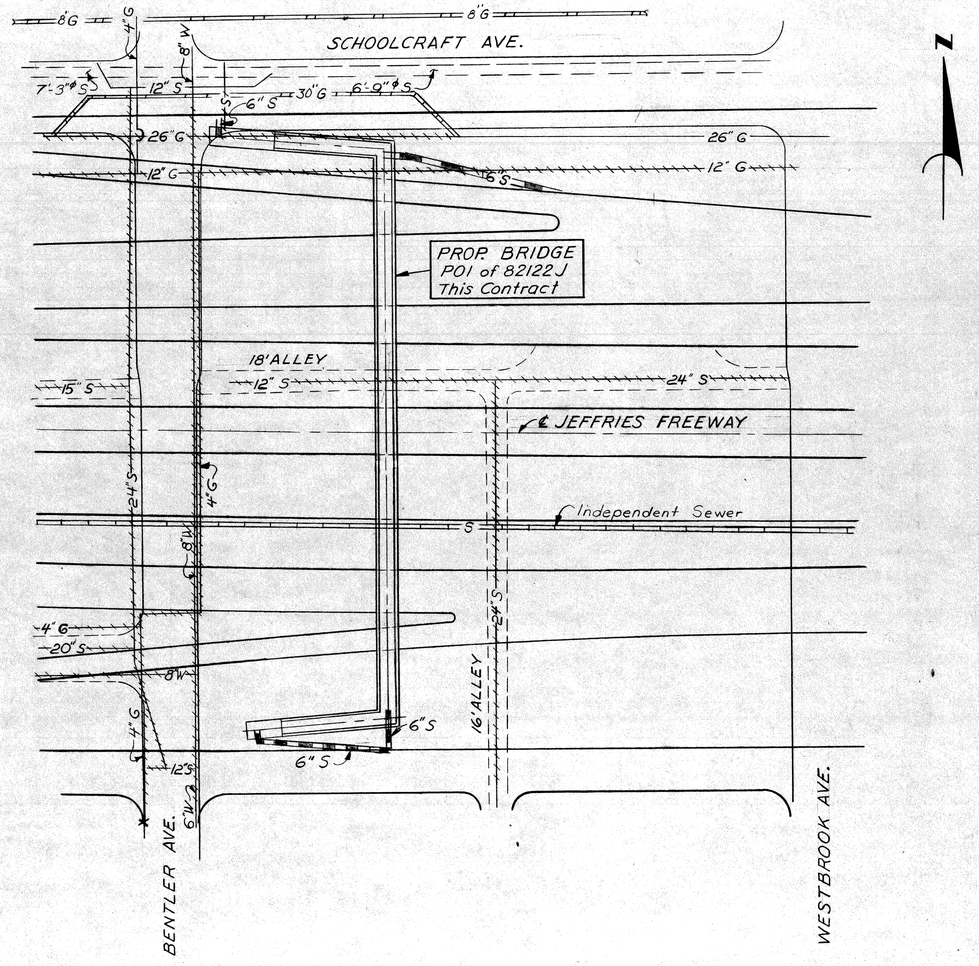
SQUAD BOSS	McGuire	8-69
DRAWN BY	Rosil	8-69
TRACED BY		
CHECKED BY	R.H. JM	8-69

SHEET 5 OF 18

APPROVED _____ DESIGN SUPERVISING ENGINEER

APPROVED _____ ENGINEER - DESIGN SECTION I

P01 of 82122J



SITUATION PLAN
Scale : 1" 40'

LEGEND

UTILITY	Existing	Deleted or Abandoned	New Work by Others	New Work by Contractor
Michigan Consolidated Gas Co.	G	G	G	
Detroit Water Dept.	W	W		
Expwy. and City of Detroit Sewers	S	S	S	S

NOTE:

Bridge construction and utility alterations are included in package contract for Control Section 82122 J.

The contractor shall locate all active underground utilities prior to starting work, and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
PW 990(20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

BENTLER AVE. PEDESTRIAN BRIDGE
OVER THE JEFFRIES FREEWAY IN DETROIT

EXISTING UTILITIES AND PROPOSED ALTERATIONS

REVISIONS

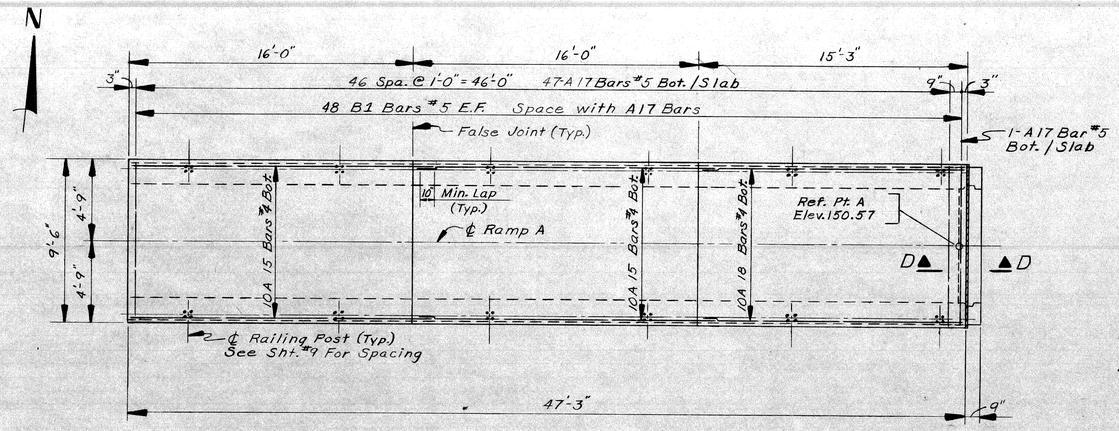
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

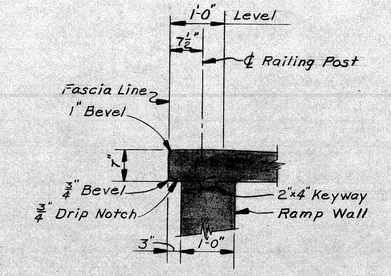
SQUAD BOSS	M. Gurr	8-69
DRAWN BY	Van Kerckhove	4-13-69
TRACED BY		
CHECKED BY	R.H	8-69

SHEET 6 OF 18

P01 of 82122J



PLAN - RAMP A SLAB



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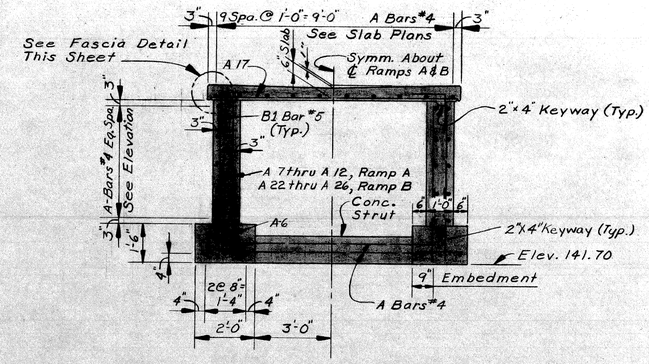
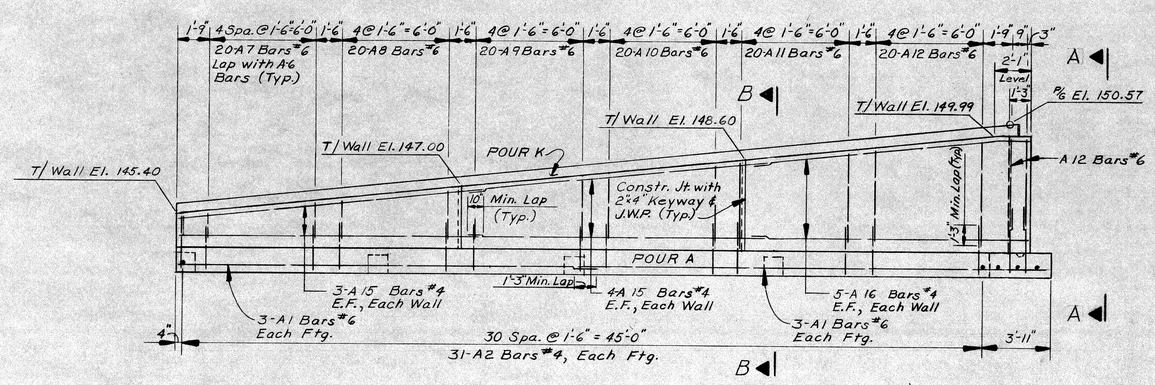
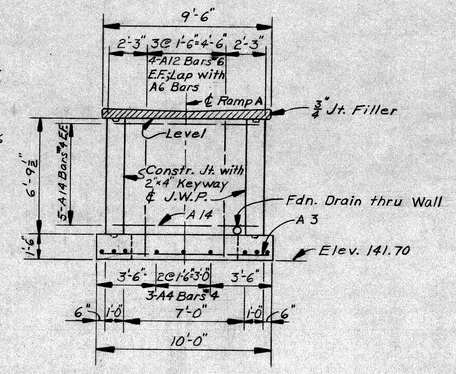


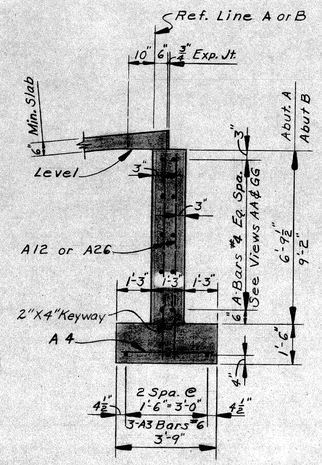
SECTION B-B



ELEVATION



VIEW A-A

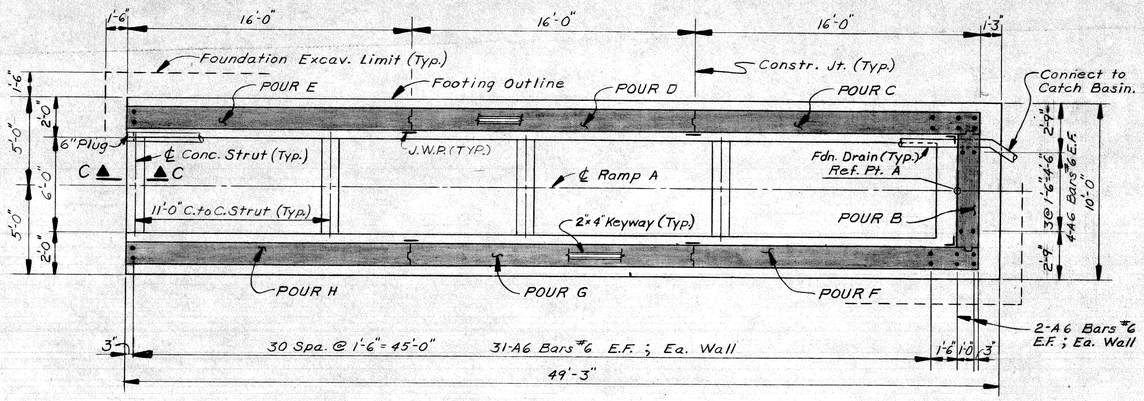


SECTION D-D

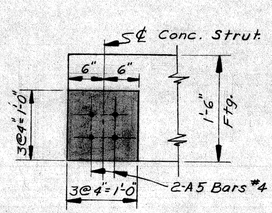
CONCRETE QUANTITIES		CU. YDS.	
POUR	LOCATION	ABUT. "A"	ABUT. "B"
A	Footing & Struts	*13.1	*14.6
B	Abutment Stem	2.2	3.0
C	Wingwall Stem	3.7	3.9
D	Wingwall Stem	2.7	4.4
E	Wingwall Stem	1.8	4.4
F	Wingwall Stem	3.7	3.9
G	Wingwall Stem	2.7	4.4
H	Wingwall Stem	1.8	4.4
J	Wingwall Stem	—	3.9
K	Slab	10.4	10.1
L	Slab	—	2.5
TOTAL Grade A(6A)		27.7 Cu. Yds.	
TOTAL Grade A(6AA)		73.9 Cu. Yds.	

* denotes Grade A(6A) Concrete

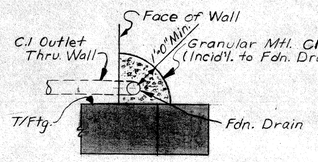
MISCELLANEOUS QUANTITIES				
ITEM	UNIT	ABUT. A	ABUT. B	TOTAL
Unclassified Excavation	Cu. Yds.	108	203	311
¾" Joint Filler	Sq. Ft.	6	6	12
Foundation Drains	Lin. Ft.	50	64	114
Joint Waterproofing	Sq. Ft.	41	73	114
Low Temp. Prot. Substr. Conc.	Cu. Yds.	42.5	59.1	101.6



FOOTING PLAN



SECTION C-C



FOUNDATION DRAIN DETAIL

NOTE: Work this sheet with sheets #8 & #9

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ABUTMENT A AND RAMP A DETAILS

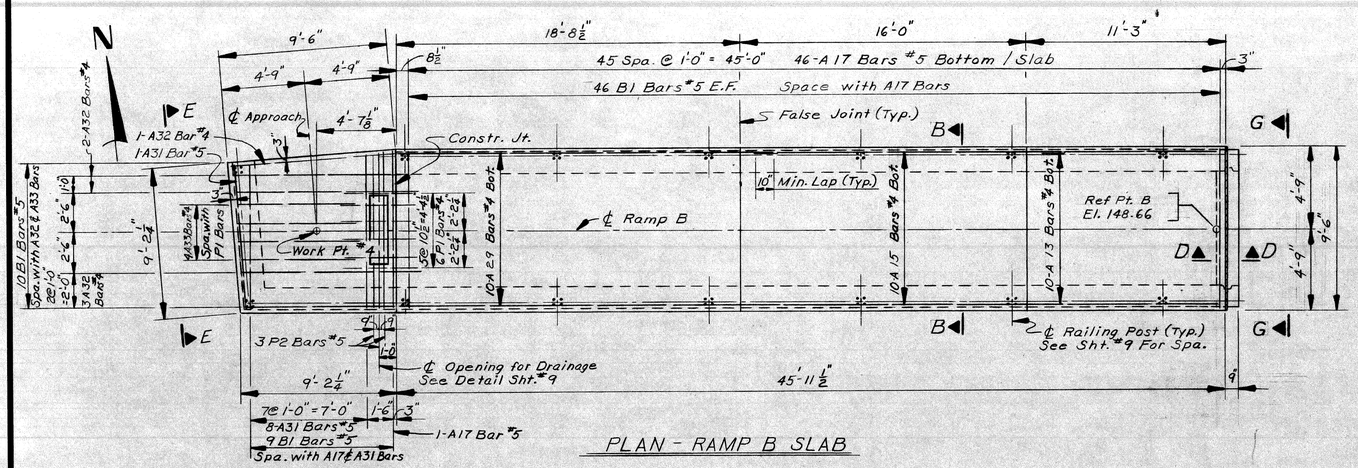
REVISIONS

NO.	DESCRIPTION	DATE	BY

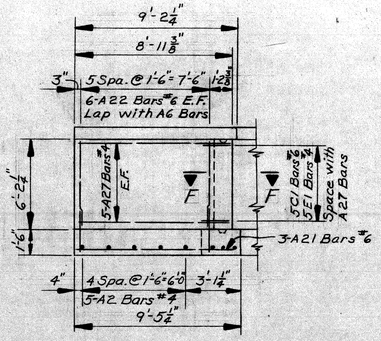
CITY OF DETROIT

SQUAD BOSS	McGuire	8/70
DRAWN BY	J.B.W.	10/69
TRACED BY	R. Resik	8/69
CHECKED BY	J.E.S.	10/69
SHEET	7 OF	18

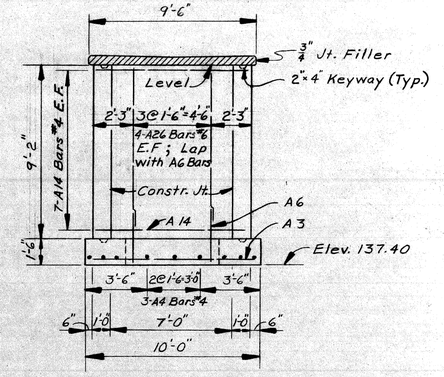
P01 of 82122J



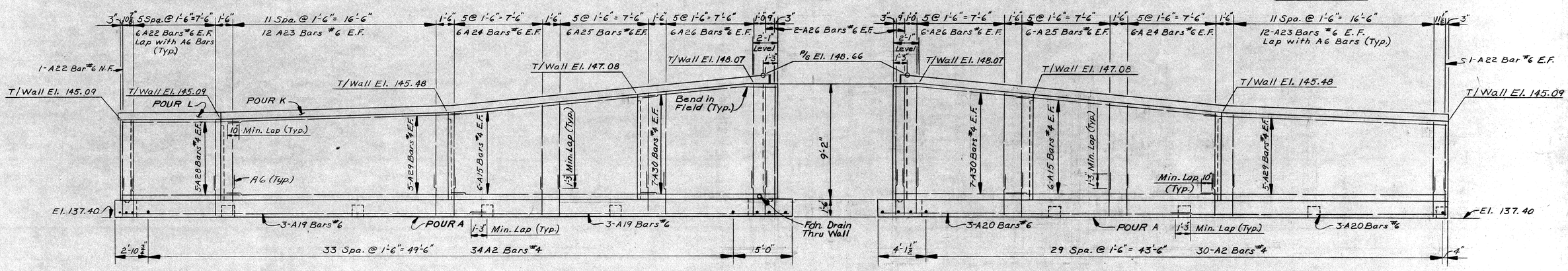
PLAN - RAMP B SLAB



VIEW E-E

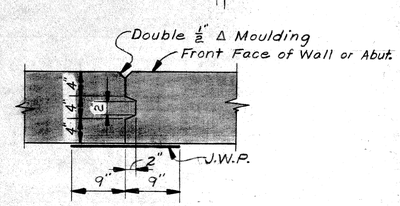


VIEW G-G

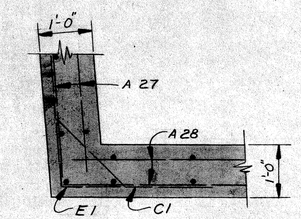


S. ELEVATION

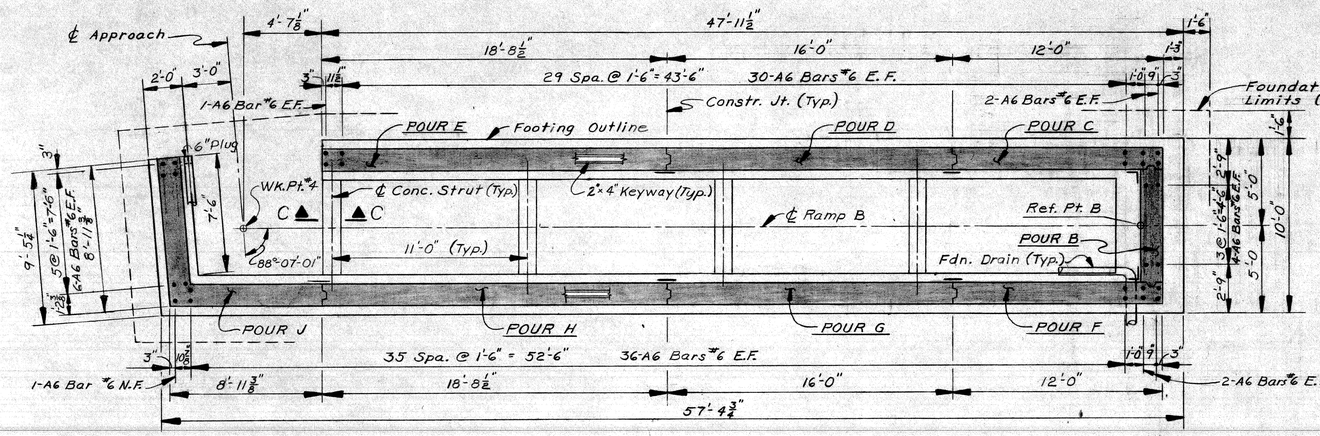
N. ELEVATION



CONSTR. JOINT DETAILS



SECTION F-F



FOOTING PLAN

NOTE: Work this sheet with sheets #7 & #9

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ABUTMENT B AND RAMP B DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

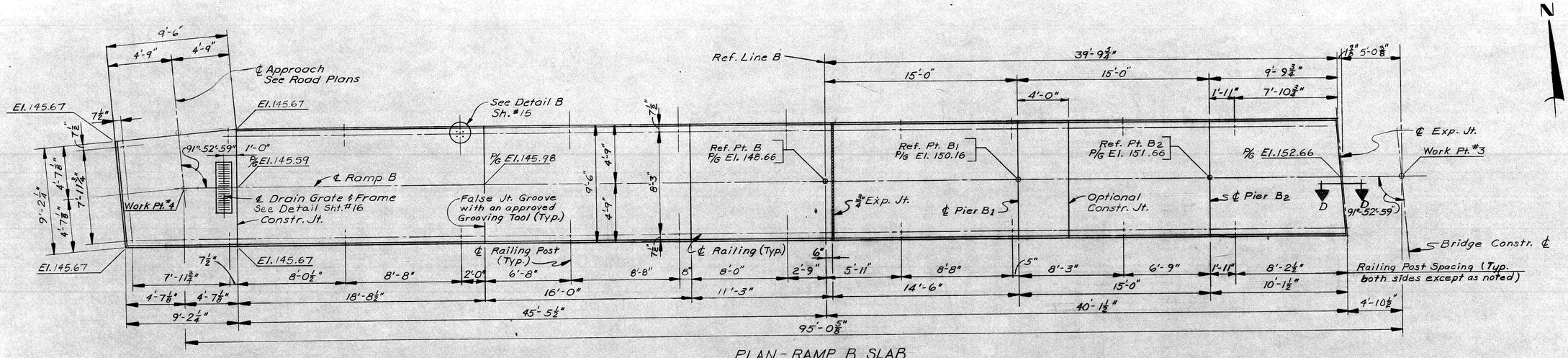
CITY OF DETROIT

SQUAD BOSS	McGuire	8/70
DRAWN BY	J.D.W.	10/68
TRACED BY	R. Rozit	6/69
CHECKED BY	W.T.S.	10/69

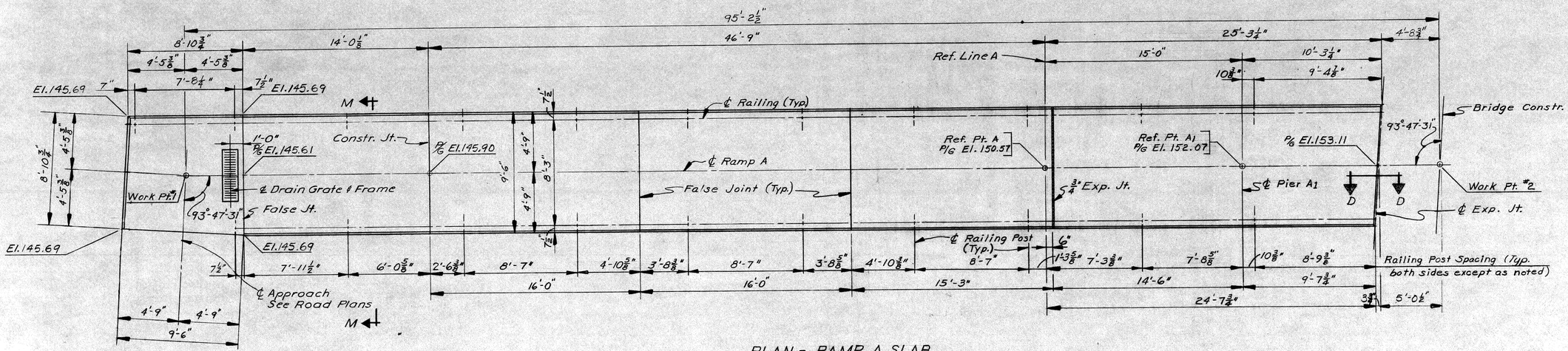
SHEET 8 OF 18

P01 of 82122J

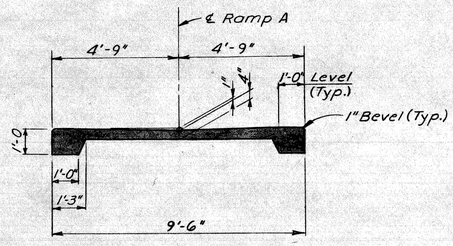
Abutment B & Ramp B Dtls



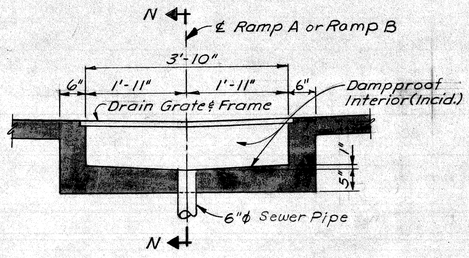
PLAN - RAMP B SLAB



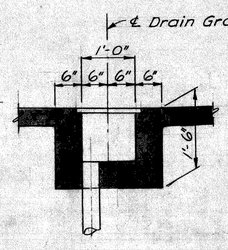
PLAN - RAMP A SLAB



SECTION M-M



DRAINAGE DETAIL



SECTION N-N

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No.
PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

RAMP DETAILS

CITY OF DETROIT

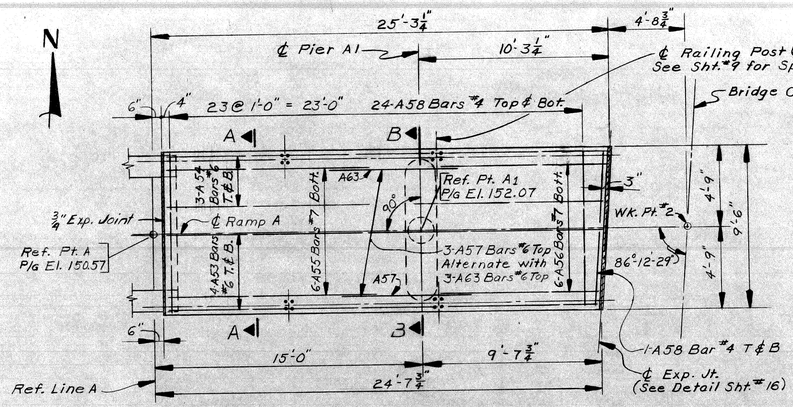
SQUAD BOSS	McGuire	8/70
DRAWN BY	J.B.al	10/69
TRACED BY	R.Reed	4/70
CHECKED BY	J.E.S.	12/69

SHEET 7 OF 18

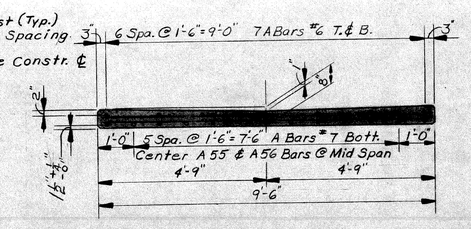
REVISIONS

NO.	DESCRIPTION	DATE	BY

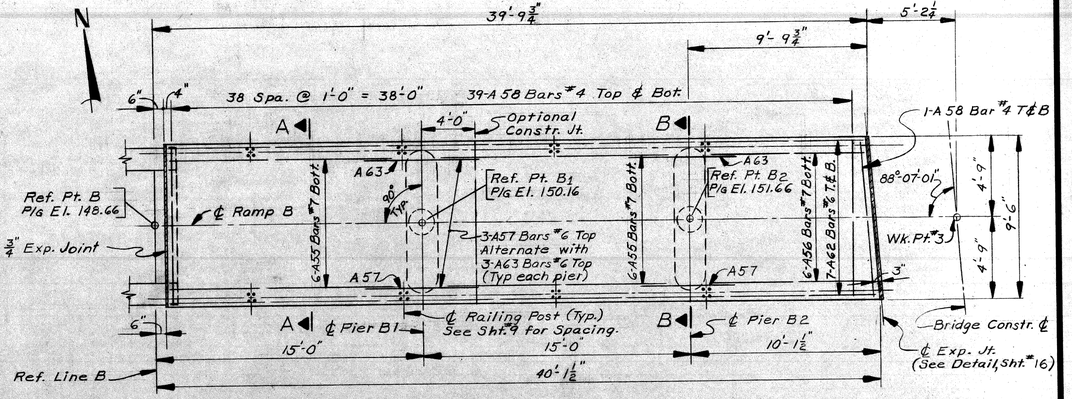
P01 of 82122J



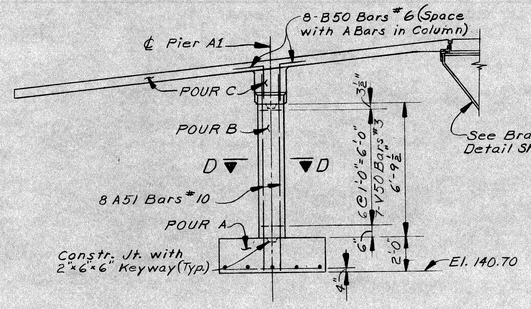
RAMP A - PLAN



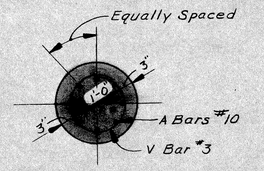
SECTION A-A



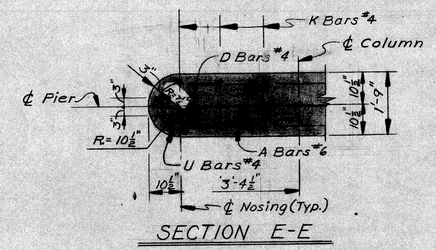
RAMP B - PLAN



ELEVATION PIER A1



SECTION D-D



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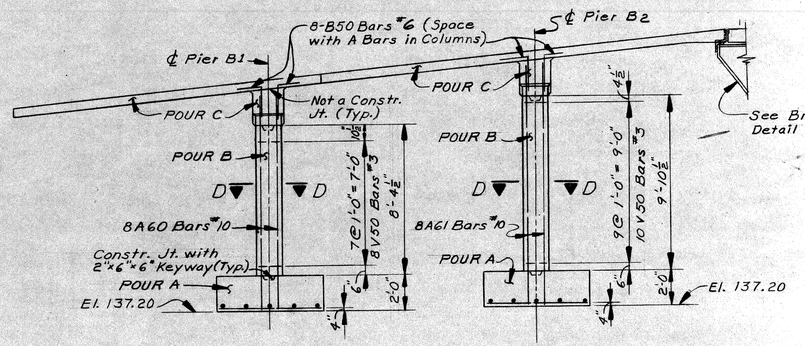
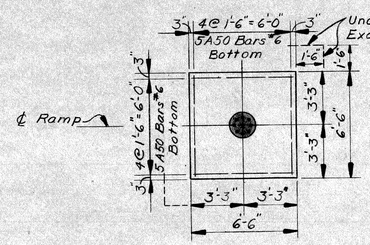
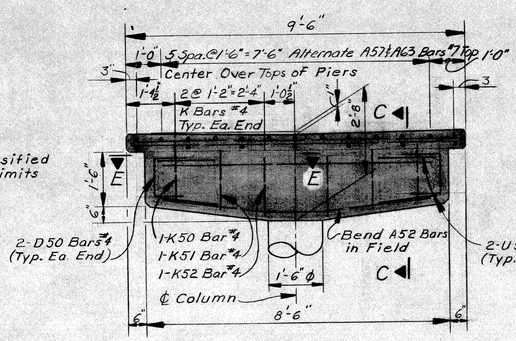


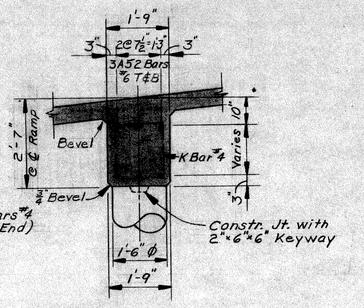
ELEVATION PIER B1 ELEVATION PIER B2



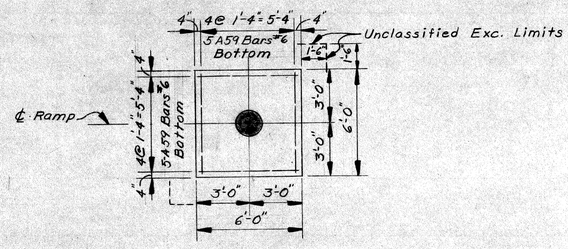
PIERS A1 & B2 - FOOTING PLAN



SECTION B-B



SECTION C-C



PIER B1-FOOTING PLAN

CONCRETE QUANTITIES CU. YDS.

POUR	LOCATION	PIER A1		PIER B1		PIER B2	
		Gr. A(6A)	Gr. A(6AA)	Gr. A(6A)	Gr. A(6AA)	Gr. A(6A)	Gr. A(6AA)
A	Footing	3.1	—	2.7	—	3.1	—
B	Column	—	0.4	—	0.5	—	0.6
C	Beam & Slab	—	6.4	—	5.1	—	5.6
	TOTALS	3.1	6.8	2.7	5.6	3.1	6.2
	TOTAL A(6A)	8.9 Cu. yds.		TOTAL A(6AA)		18.6 Cu. yds.	

MISCELLANEOUS QUANTITIES

ITEM	UNIT	AMOUNT			
		PIER-A1	PIER-B1	PIER-B2	TOTAL
Unclassified Excavation	Cu. Yds	9	8	9	26
Low Temp. Prot. Substr. Concrete	Cu. Yds.	9.9	8.3	9.3	27.5

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

PIER AND RAMP DETAILS

CITY OF DETROIT

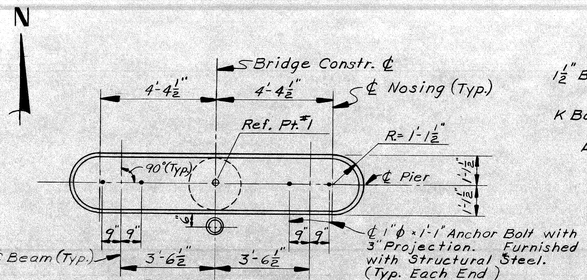
SQUAD BOSS	McGuire	8/70
DRAWN BY	J.B.W.	10/69
TRACED BY	R Rosik	8/18
CHECKED BY	J.E.S.	10/69

SHEET 10 OF 18

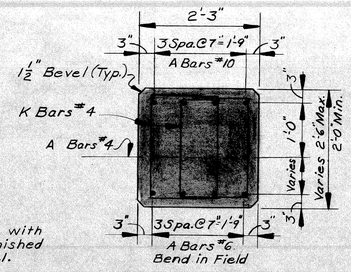
REVISIONS

NO.	DESCRIPTION	DATE	BY

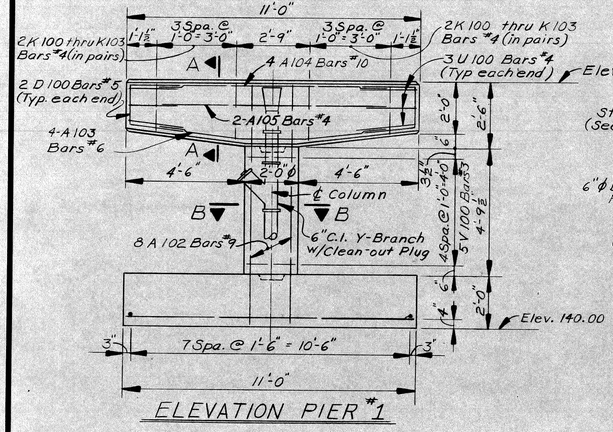
P01 of 82122J



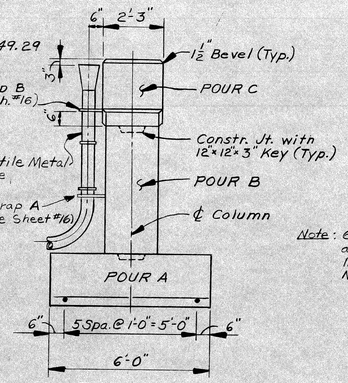
PLAN OF TOP



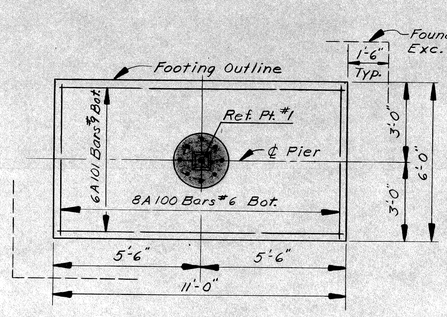
SECTION A-A



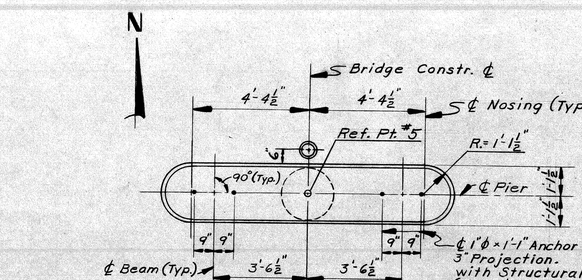
ELEVATION PIER #1



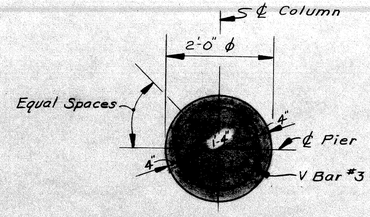
END VIEW



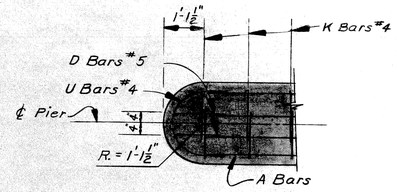
FOUNDATION PLAN



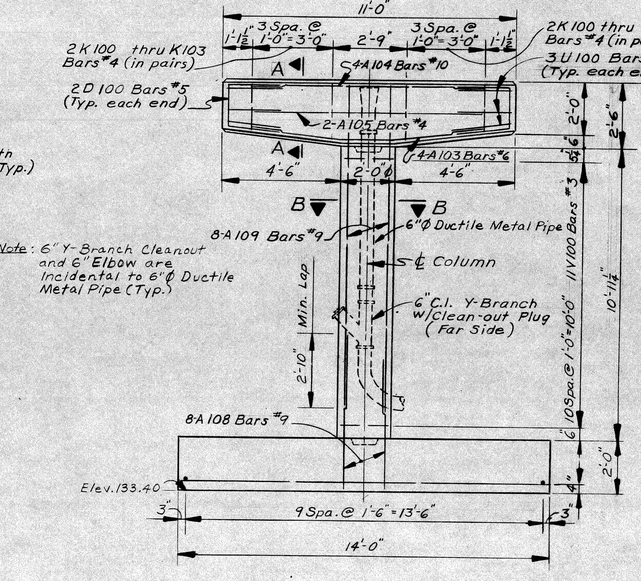
PLAN OF TOP



SECTION B-B

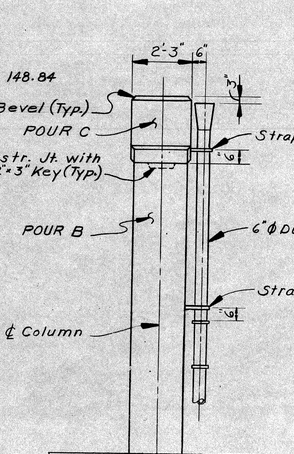


END OF CAP DETAIL

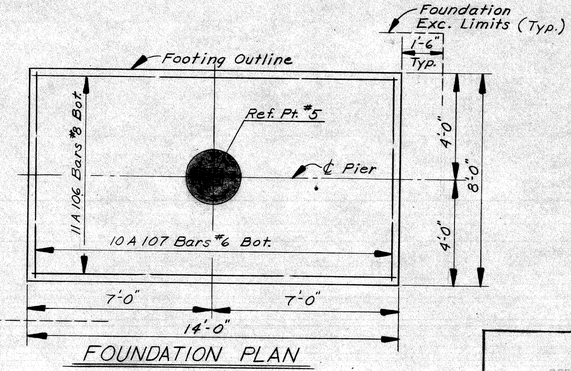


Note: 6" Y-Branch Cleanout and 6" Elbow are Incidental to 6" ϕ Ductile Metal Pipe (Typ.)

ELEVATION PIER #5



END VIEW



FOUNDATION PLAN

GENERAL NOTES:

For bevel and molding details, see Std. Sheet R16.

Anchor Bolts shall be set accurately to a template.

The Project Engineer shall adjust the spacing of the reinforcing steel as required to permit placing of anchor bolts.

Cover all piers except top of Pier #3 with clear protective coating for substructure concrete to 6" below finished grade.

The top of Pier #3 shall be given an application of protective sealant coating for concrete prior to placing masonry plates.

CONCRETE QUANTITIES CU. YDS.

POUR	LOCATION	PIER #1		PIER #5	
		Gr. A(6A)	Gr. A(6AA)	Gr. A(6A)	Gr. A(6AA)
A	Footing	4.9	-	4.9	-
B	Column	-	0.6	-	1.3
C	Cap	-	2.0	-	2.0
TOTAL		4.9	2.6	4.9	3.3
TOTAL A(6A)		9.8 Cu. Yds.			
TOTAL A(6AA)		5.9 Cu. Yds.			

MISCELLANEOUS QUANTITIES

ITEM	UNIT	AMOUNT PIER #1	PIER #5	TOTAL
Unclassified Excavation	Cu. Yds.	26	50	76
Low Temp. Prot. Substr. Concrete	Cu. Yds.	7.5	8.2	15.7
Clear Protective Coating for Substructure Concrete	Sq. Ft.	112	150	262
6" ϕ Ductile Metal Pipe	Lin. Ft.	2	8	10

Note: Maximum average foundation pressure D.L. only = 2100 Lbs./Sq. Ft.
Maximum foundation pressure D.L and L.L = 3470 Lbs./Sq. Ft.

PLANS PREPARED BY
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CITY ENGINEER'S OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB NO.

P.W. PROJECT

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

PIER No 1&5 DETAILS

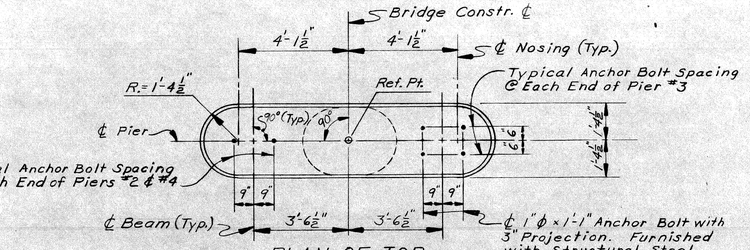
CITY OF DETROIT

REVISIONS

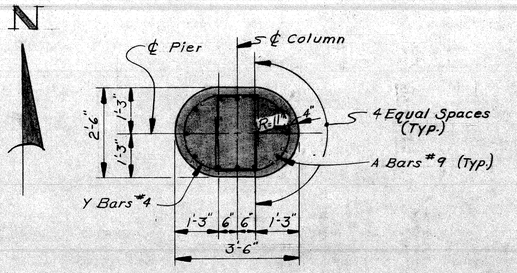
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	M. Guire	5/70
DRAWN BY	J.B.W.	10/69
TRACED BY	M.T.R.	3/69
CHECKED BY	J.E.S.	10/69

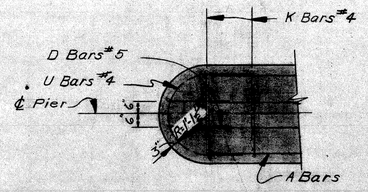
SHEET 11 OF 18



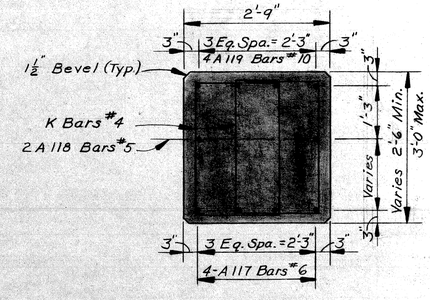
PLAN OF TOP



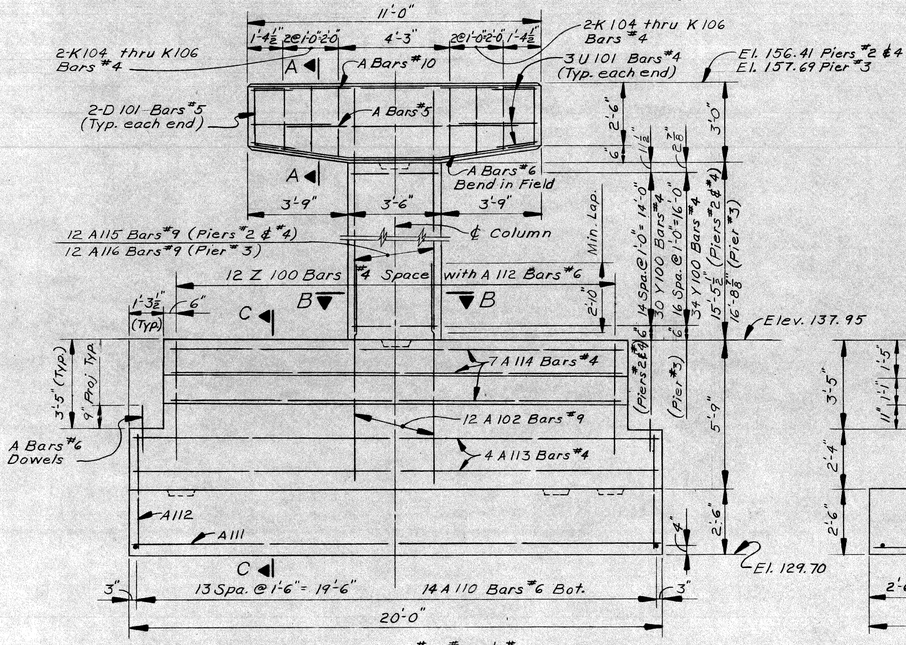
SECTION B-B



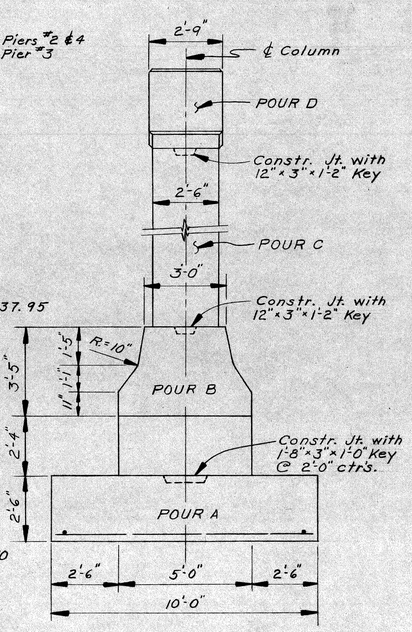
END OF CAP DETAIL



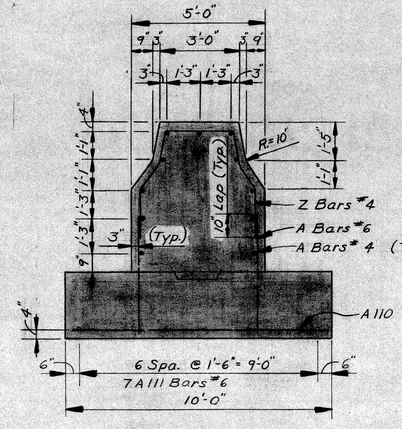
SECTION A-A



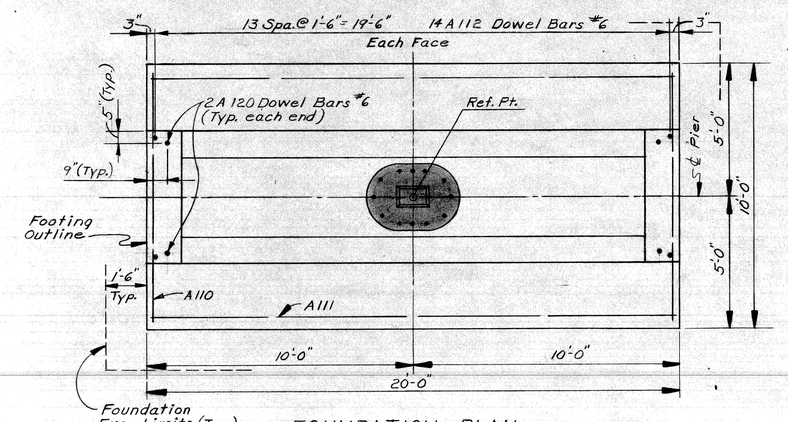
ELEVATION - PIERS #2, #3, ℄ #4



END VIEW



SECTION C-C



FOUNDATION PLAN

Note: Maximum average foundation pressure D.L only = 1550 p.s.f.
Maximum foundation pressure D.L and L.L = 2600 p.s.f.

MISCELLANEOUS QUANTITIES

ITEM	UNIT	AMOUNT PIER #2	PIER #3	PIER #4	TOTAL
Unclassified Excavation	Cu. Yds.	65	65	65	195
Low Temp. Prot. Substr. Concrete	Cu. Yds.	43.2	43.6	43.2	130.0
Clear Protective Coating for Substructure Concrete	Sq. Ft.	469	447	464	1375
Protective Sealant Coating for Substr. Concrete	Sq. Ft.	—	28.6	—	28.6

CONCRETE QUANTITIES CU. YDS.

POUR	LOCATION	PIER #2 Gr. A(6A)	PIER #2 Gr. A(6AA)	PIER #3 Gr. A(6A)	PIER #3 Gr. A(6AA)	PIER #4 Gr. A(6A)	PIER #4 Gr. A(6AA)
A	Footing	18.5	-	18.5	-	18.5	-
B	Barrier Wall	-	17.5	-	17.5	-	17.5
C	Column	-	4.2	-	4.6	-	4.2
D	Cap	-	3.0	-	3.0	-	3.0
TOTALS		18.5	24.7	18.5	25.1	18.5	24.7
TOTAL A(6A)		55.5 Cu. Yds.					
TOTAL A(6AA)		74.5 Cu. Yds.					

PLANS PREPARED BY
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CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB No. PW 990(20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

PIER No. 2, 3, & 4 DETAILS

CITY OF DETROIT

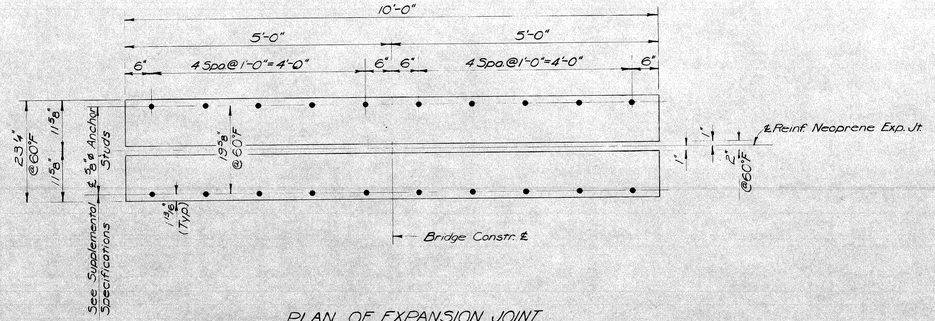
SQUAD BOSS	McGuire	8/70
DRAWN BY	R Rozik	9/69
TRACED BY	J.S.W.	10/69
CHECKED BY	J.E.S.	10/69

SHEET 12 OF 18

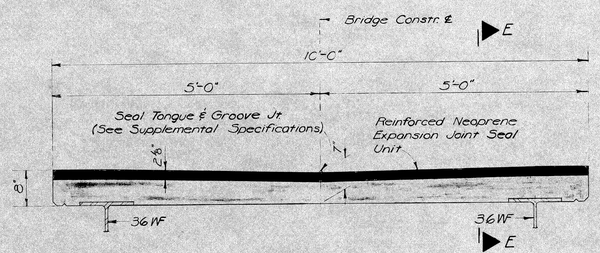
REVISIONS

NO.	DESCRIPTION	DATE	BY

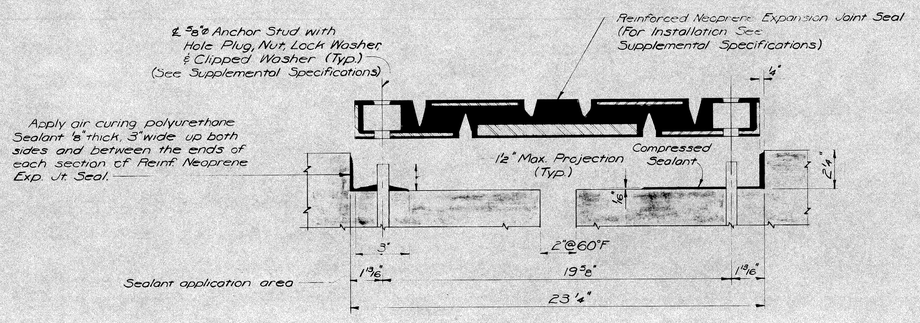
P01 of 82122J



PLAN OF EXPANSION JOINT
(Reinforced Neoprene Expansion Joint Seal Not Shown)



CROSS-SECTION ON ℄ OF EXP. JT.



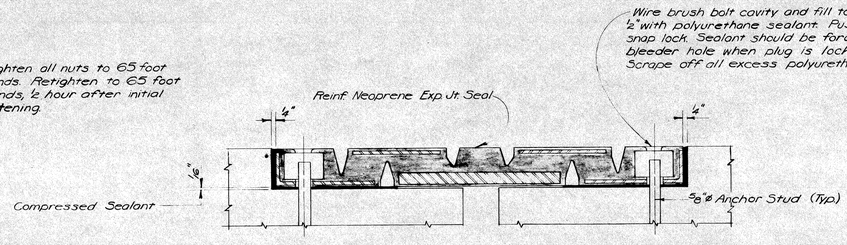
SECTION E-E

PRESET WIDTH BETWEEN EXPANSION ANCHOR HOLES							
Temp	30°	40°	50°	60°	70°	80°	90°
A	1'-8 1/4"	1'-8"	1'-7 7/8"	1'-7 5/8"	1'-7 1/2"	1'-7 1/4"	1'-7 1/8"

MISCELLANEOUS QUANTITIES			
Item	Unit	Span 1	Span 4
22 3/4" Reinforced Neoprene Expansion Joint Seal	Lin. Ft.	10.0	10.0
Total Lin. Ft. 22 3/4" Reinforced Neoprene Expansion Joint Seal = 20.0			

NOTES:
The item "22 3/4" Reinforced Neoprene Expansion Joint Seal" includes furnishing and installing all items necessary to complete its installation in the bridge. (See Supplemental Specifications)

NOTE:
Tighten all nuts to 65 foot pounds. Retighten to 65 foot pounds, 1/2 hour after initial tightening.



SECTION
INSTALLATION OF REINFORCED NEOPRENE EXP. JT. SEAL

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED _____ STRUCTURAL ENGINEER

JOB NO.
PW 990(20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

REINFORCED NEOPRENE EXPANSION JOINT SEAL 22-3/4"

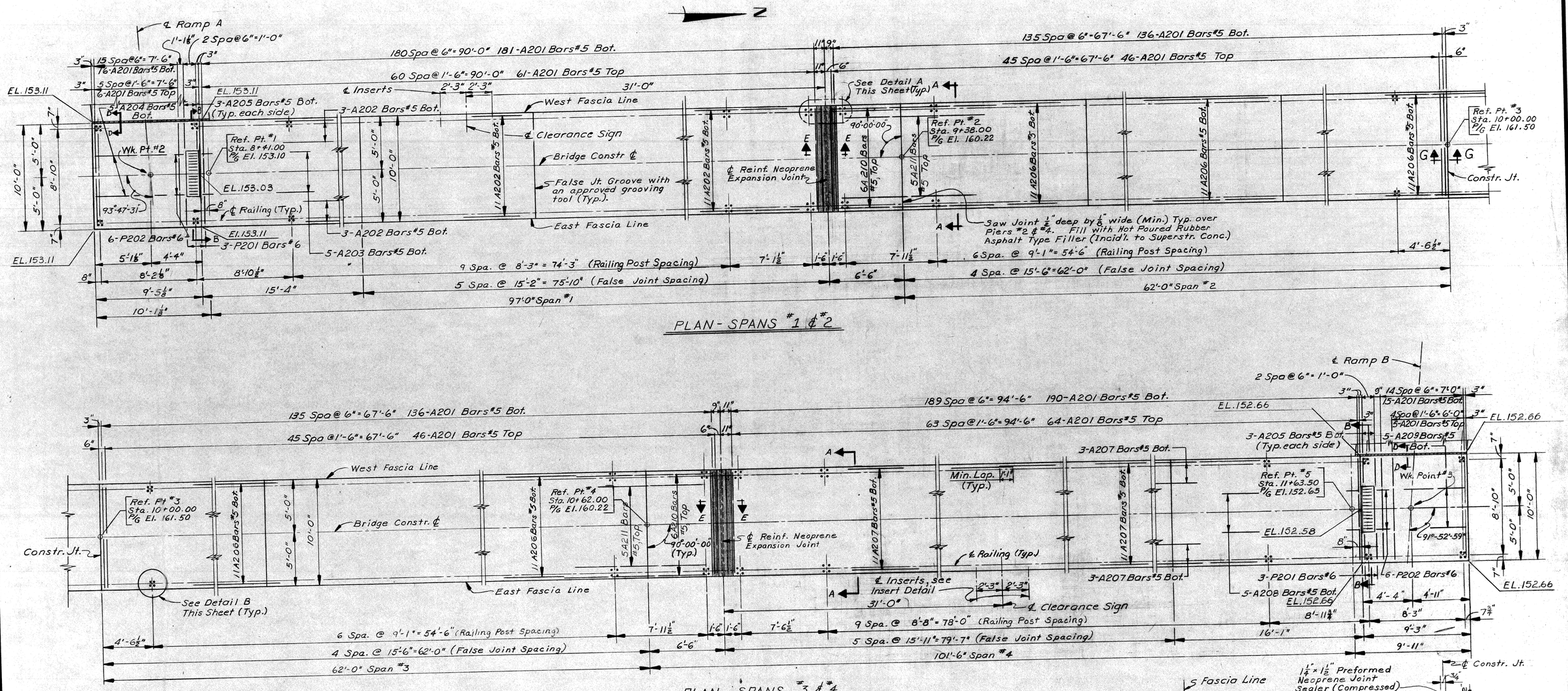
CITY OF DETROIT

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	McGuire	8-70
DRAWN BY	A. Morris	7-70
TRACED BY		
CHECKED BY	J. L. K.	7-70

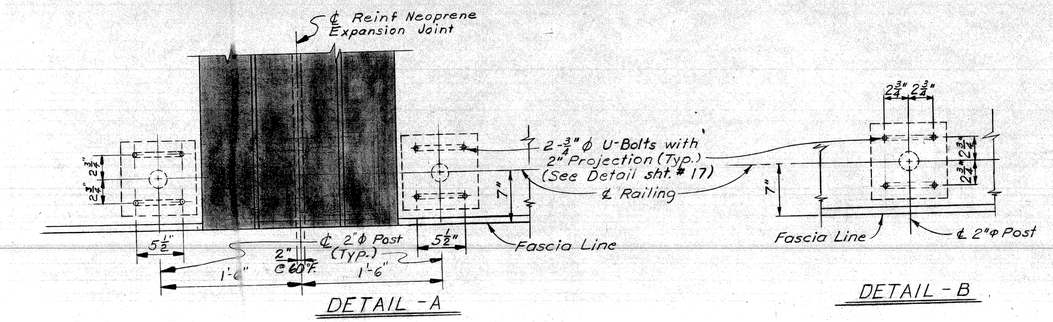
SHEET 19A OF 18

SCALE 1" = 1'-0"



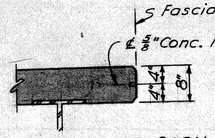
PLAN - SPANS #1 & #2

PLAN - SPANS #3 & #4

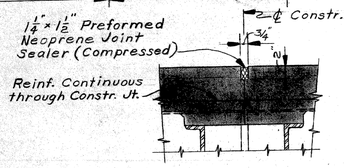


DETAIL - A

DETAIL - B



CLEARANCE SIGN INSERT DETAIL



SECTION G-G

Note : For Sections not shown see sheet #16.

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H Grant STRUCTURAL ENGINEER

JOB No. PW 990 (20)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SUPERSTRUCTURE DETAILS

CITY OF DETROIT

SQUAD BOSS	McGuire	8/70
DRAWN BY	E. Harris	9/69
TRACED BY		
CHECKED BY	J.B.W.	10/69

SHEET 15 OF 18

REVISIONS

NO.	DESCRIPTION	DATE	BY

P01 of 82122J

ABUTMENTS & RAMPS

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D	TOTAL WT.
A 1								#6	25'-0"	12	451
A 2								#4	1'-6	131	131
A 3								#6	9'-6"	6	86
A 4								#4	3'-3"	6	13
A 5								#4	7'-6"	32	160
A 6								#6	3'-3"	303	1479
A 7								#6	2'-0"	20	60
A 8								#6	2'-9"	20	83
A 9								#6	3'-6"	20	105
A10								#6	4'-3"	20	128
A11								#6	5'-0"	20	150
A12								#6	5'-9"	36	311
A13								#4	10'-9"	10	72
A14								#4	8'-6"	24	136
A15								#4	17'-0"	82	930
A16								#4	15'-6"	20	207
A17								#5	9'-0"	95	892
A18								#4	14'-9"	10	98
A19								#6	29'-3"	6	264
A20								#6	24'-6"	6	221
A21								#6	9'-0"	3	41
A22								#6	5'-3"	27	213
A23								#6	5'-6"	48	396
A24								#6	6'-6"	24	234
A25								#6	7'-3"	24	261
A26								#6	8'-3"	40	496
A27								#4	8'-3"	10	55
A28								#4	9'-9"	10	65
A29								#4	19'-9"	30	395
A30								#4	11'-6	28	215
A31								#5	8'-9"	9	82
A32								#4	10'-3"	6	41
A33								#4	7'-3"	4	19
B 1	1'-1 5/8"	1'-1"						#5	2'-2"	207	468
C 1	8 1/2"	1'-6 3/4"	8 1/2"	9 1/2"	1'-0 1/2"	9 1/2"	1'-0 1/2"	#6	3'-7"	5	27
E 1	1'-0"	1'-3"	3/4"	1'-3"				#4	2'-3"	5	8
P 1	1'-1"	1'-8 1/4"	1'-3"	1'-3"				#4	6'-3"	6	25
P 2	1'-1"	4'-6 1/4"	2'-3"	2'-3"				#5	11'-1"	3	35
TOTAL ABUTMENTS & RAMPS											9053 #

PIERS A1, B1 & B2

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D	TOTAL WT.
A50								#6	6'-0"	20	180
A51								#10	10'-3"	8	353
A52								#6	6'-9"	18	182
A53								#6	23'-9"	8	285
A54								#6	24'-3"	6	219
A55								#7	9'-9"	18	359
A56								#7	7'-3"	12	178
A57								#6	12'-0"	9	162
A58								#4	9'-0"	130	781
A59								#6	5'-6"	10	83
A60								#10	12'-0"	8	413
A61								#10	13'-6"	8	465
A62								#6	38'-9"	14	815
A63								#6	9'-6"	9	128
B50	2'-0"	2'-0"						#6	3'-11"	24	141
D50	1'-6 1/4"	1'-0 1/8"						#4	4'-1"	12	33
K50	1'-3 1/2"	1'-1 1/4"	1'-1"	1'-4 3/4"				#4	6'-1"	6	24
K51	1'-5 1/2"	1'-1 1/4"	1'-1"	1'-4 3/4"				#4	6'-5"	6	26
K52	1'-7 1/2"	1'-1 1/4"	1'-1"	1'-4 3/4"				#4	6'-9"	6	27
U50	1'-3 1/2"	11 1/4"	1'-11 1/2"	7 1/4"				#4	3'-10"	12	31
V50	3'-6 3/8"	7 1/4"						#3	4'-2"	25	39
TOTAL PIER A1, B1 B2											4924 #

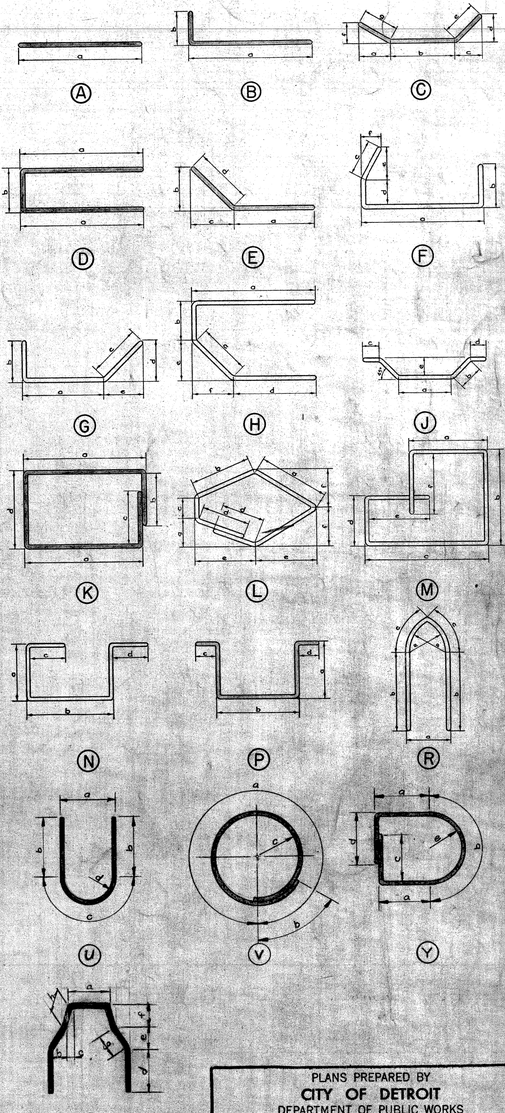
PIERS 1 THRU 5

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D	TOTAL WT.
A100								#6	5'-6"	8	66
A101								#9	10'-6"	6	214
A102								#9	8'-9"	44	1309
A103								#6	8'-9"	8	105
A104								#10	8'-9"	8	301
A105								#4	8'-9"	4	23
A106								#8	13'-6"	11	396
A107								#6	7'-6"	10	113
A108								#9	5'-0"	8	136
A109								#9	12'-9"	8	347
A110								#6	9'-6"	42	599
A111								#6	19'-6"	21	615
A112								#6	4'-6"	84	568
A113								#4	19'-6"	12	156
A114								#4	17'-0"	21	238
A115								#9	18'-3"	24	1489
A116								#9	19'-6"	12	796
A117								#6	8'-3"	12	149
A118								#5	8'-3"	6	52
A119								#10	8'-3"	12	426
A120								#6	2'-0"	12	36
D100	2'-0"	1'-7 1/8"						#5	5'-6"	8	46
D101	2'-3"	2'-1 1/2"						#5	6'-6"	12	81
K100	1'-9 1/2"	1'-1"	1'-1 3/8"	1'-4 1/8"				#4	7'-1"	8	38
K101	1'-11"	1'-1"	1'-1 3/8"	1'-4 1/8"				#4	7'-4"	8	39
K102	2'-0 1/2"	1'-1"	1'-1 3/8"	1'-4 1/8"				#4	7'-6"	8	40
K103	2'-1 1/2"	1'-1"	1'-1 3/8"	1'-4 1/8"				#4	7'-9"	8	41
K104	2'-4 1/2"	1'-3"	1'-3 3/8"	1'-8 1/8"				#4	8'-10"	12	71
K105	2'-6"	1'-3"	1'-3 3/8"	1'-8 1/8"				#4	9'-2"	12	73
K106	2'-7 1/8"	1'-3"	1'-3 3/8"	1'-8 1/8"				#4	9'-6"	12	76
U100	1'-10"	11 1/8"	2'-9 3/8"	10 1/2"				#4	4'-8"	12	37
U101	2'-4"	11 3/8"	3'-7 1/4"	1'-1 1/2"				#4	5'-6"	18	66
V100	4'-7 3/8"	7 5/8"	8"					#3	5'-3"	16	32
Y100	1'-1"	3'-1 1/4"	1'-4 1/8"	1'-5"	11 5/8"			#4	8'-1"	94	507
Z100	2'-6 1/2"	3"	9"	1'-10"	1'-1"	1'-1 3/8" (g)	1'-2 1/8" (h)	#4	11'-2"	36	260
TOTAL PIERS 1 THRU 5											9549 #

SUPERSTRUCTURE

BAR	DIMENSIONS a	b	c	d	e	f	g	SIZE	LENGTH	NO. REQ'D	TOTAL WT.
A201								#5	9'-9"	902	9172
A202								#5	34'-3"	28	1000
A203								#5	25'-0"	5	130
A204								#5	7'-9"	5	40
A205								#5	2'-6"	12	31
A206								#5	28'-3"	55	1621
A207								#5	35'-9"	28	1044
A208								#5	26'-9"	5	139
A209								#5	7'-6"	5	39
A210								#5	12'-6"	12	156
A211								#5	10'-6"	10	110
P201	1'-1"	4'-6 1/2"	2'-6"	2'-6"				#6	11'-7"	6	104
P202	1'-1"	4'-8 1/2"	1'-3"	1'-3"				#6	6'-3"	12	113
TOTAL SUPERSTRUCTURE											13699 #

BAR BENDING DIAGRAM



Note :—
All right angle bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.
All bar numbers shown on this sheet are to be prefixed P01.

TOLERANCES IN CUTTIN AND BENDING BARS ARE AS ESTABLISHED IN MANUAL OF STANDARD PRACTICE OF THE CONCRETE REINFORCING STEEL INSTITUTE AND DETAILING MANUAL OF THE AMERICAN CONCRETE INSTITUTE.

Grand Total Steel Reinforcement 37225 #

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED H. Carst STRUCTURAL ENGINEER

JOB No. PW 990(20)

MICHIGAN STATE HIGHWAY DEPARTMENT

STEEL REINFORCEMENT DETAILS

CITY OF DETROIT

REVISIONS NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	McGuire	E/D
DRAWN BY	J.B.W.	10-69
TRACED BY		
CHECKED BY	J.E.S.	10-69

SHEET 18 OF 18

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