CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

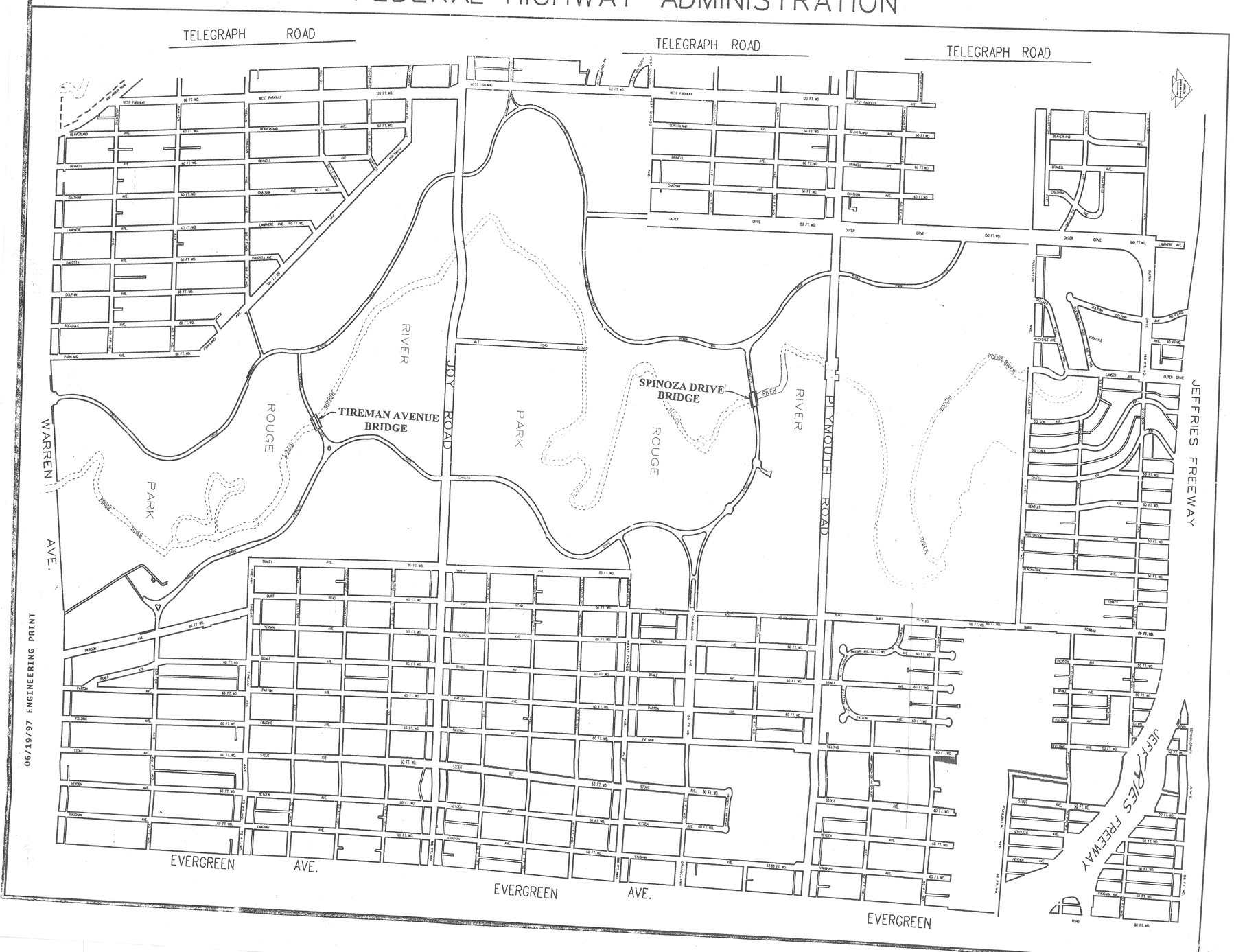
IN CO-OPERATION WITH

MICHIGAN DEPARTMENT OF TRANSPORTATION

AND

FEDERAL HIGHWAY ADMINISTRATION

NAME OF BRIDGE	(I) SPINOZA DRIVE BRIDGE Over Rouge River	(II) TIREMAN AVENUE BRIDGE Over Rouge River
FEDERAL AID URBAN PROJECT NO.	DSTP 9582 (019)	DSTP 9582 (020)
CONTROL SECTION NO.	DSTU 82400 FED ITEM HH 0390	DSTU 82400 FED ITEM HH 391
JOB NO.	36916A - B01 82-18-85	36917A - B01 82-18-84
CITY OF DETROIT BRIDGE NO.	BW - 270	BW - 265
FEDERAL STRUCTURE NO.	021800 B01	0153100 B01



INDEX OF SHEETS

SHEET	ITEM
S-1	COVER SHEET & LOCATION PLAN
S-2 TO S-19	SPINOZA DRIVE BRIDGE DRAWINGS
S-20 TO S-36	TIREMAN AVENUE BRIDGE DRAWINGS
S-37 TO S-41	CITY OF DETROIT STANDARD PLANS

SHEET S-1 OF 41 SHEETS

CONTRACT FOR SUPERSTRUCTURE RECONSTRUCTION, APPROACH WORK AND MISCELLANEOUS CONSTRUCTION

LOCAL AUTHORITY APPROVAL
CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

APPROVED BY William R. Talley HEAD ENGINEER 6/10/97 DATE

APPROVED BY Ali Fayezimi CITY ENGINEER 6/10/97 DATE

PREPARED UNDER SUPERVISION OF

Earl C. Howard REGISTERED PROFESSIONAL ENGINEER 28929 REGISTRATION NO.

CITY OF DETROIT
ORGANIZATION

DETROIT, MICHIGAN
ADDRESS

(SEAL)

JOB NO. 36916A
JOB NO. 36917A

SECTIONS 0001 & 0002
SECTIONS 0001 & 0002

BRIDGE NO. B01 82-18-85
BRIDGE NO. B01 82-18-84

FEDERAL AID URBAN PROJECT NO. DSTP 9582(019)
FEDERAL AID URBAN PROJECT NO. DSTP 9582(020)

06/19/97 ENGINEERING PRINT

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

PLANS FOR PROPOSED BRIDGE RECONSTRUCTION IN COOPERATION WITH
MICHIGAN DEPARTMENT OF TRANSPORTATION
AND
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL AID URBAN PROJECT NO. **DSTP 9582(019)**
CONTROL SECTION 82400 JOB NO. 36916A – BO1 82 – 18 – 85

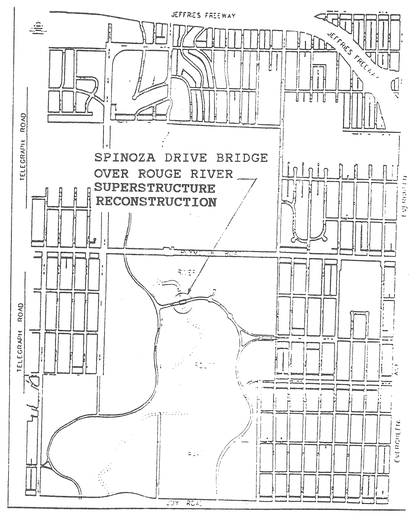
TRAFFIC DATA

POSTED SPEED	25 MPH
DESIGN SPEED	45 MPH
PRESENT ADT (1994)	2218
FUTURE ADT (2014)	4003
DESIGN LOADING	HS20

INDEX OF SHEETS

S-2 BRIDGE TITLE SHEET
S-3 SITE PLAN
S-4 GENERAL PLAN OF STRUCTURE
S-5 REMOVAL PLAN
S-6 REPAIRING STRUCTURAL CRACKS, PATCHING ABUTMENTS AND PIER
S-7 PLAN OF DECK AND CROSS SECTION
S-8 SUPERSTRUCTURE DETAILS
S-9 SUPERSTRUCTURE DETAILS
S-10 EXPANSION JOINT DETAILS
S-11 STEEL REINFORCEMENT DETAILS
S-12 EXISTING DECK AND SIDEWALK ELEVATIONS
S-13 PROPOSED DECK AND SIDEWALK ELEVATIONS
S-14 APPROACH REMOVAL PLAN, PROPOSED SECTIONS AND DETAILS
S-15 APPROACH PAVING PLAN AND DETAILED GRADES
S-16 DRAINAGE STRUCTURE DETAILS
S-17 TRAFFIC CONTROL AND DETOUR PLAN
S-18 DETAILS OF CONDUIT RECONSTRUCTION
S-19 QUANTITY SHEET

CITY OF DETROIT STANDARD PLANS LISTED ON SHEET S - 20



CITY OF DETROIT

BRIDGE NO. BW 270

FEDERAL STRUCTURE

NO. 0121800 B01

COUNTY : WAYNE TOWN : 01S
RANGE : 10E SECTION : 34

GENERAL NOTES

1. THE DESIGN OF THIS STRUCTURE REHABILITATION IS BASED ON CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES HS20 LOADING. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE WORKING STRESS METHOD OF DESIGN WAS USED FOR THIS STRUCTRE.
2. EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 1990 EDITION.
3. PUBLIC LIGHTING DEPARTMENT WORK TO BE DONE IN ACCORDANCE WITH P.L.D. SPECIFICATIONS AND CITY OF DETROIT DIVISION 15 STANDARDS.
4. THE STATIONING AS SHOWN ON THESE PLANS IS BELIEVED TO BE CORRECT. IT SHALL, HOWEVER, BE CHECKED AT THE TIME OF STARTING CONSTRUCTION, AND IF THE STATIONING SHOWN ON THE PLANS IS INCORRECT, IT SHALL BE REPORTED TO THE ENGINEERING OFFICE IN DETROIT AND THE STRUCTURE SHALL BE STAKED OUT USING THE ACTUAL CENTERLINE AS THE CONTROL POINT.
5. THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:
   CONCRETE (SUPERSTRUCTURE) GRADE 45D: f'_c = 4,000 PSI
   CONCRETE (RAILING AND BACKWALL) GRADE 45D : f'_c = 4,000 PSI
   PRESTRESSED CONCRETE : f'_c = 5,000 PSI
   STEEL REINFORCEMENT : f_y = 60,000 PSI
   STEEL REINFORCEMENT (PRETRESSED BEAM STIRRUPS) :
   f_y = 40,000 PSI
   STRUCTURAL STEEL A36 : F_y = 36,000 PSI
   PRESTRESSING STRANDS : f_{py} = 270,000 PSI
6. ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE 1/2" BEVELED EXCEPT AS OTHERWISE NOTED.
7. WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF WATER LEVELS THAT WILL EXIST DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
9. FOR PROTECTION OF UNDER GROUND UTILITIES, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF 3 WORKING DAYS PRIOR TO EXCAVATION IN THE VICINITY OF UTILITY LINES. ALL "MISS DIG" PARTICIPATING MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

DETROIT EDISON 1-800-477-4747
MICHIGAN CONSOLIDATED GAS CO. 313-965-8080
AMERITECH 313-221-6100
DETROIT WATER & SEWERAGE DEPARTMENT 313-267-7401
CITY OF DETROIT PUBLIC LIGHTING DEPARTMENT 313-267-7340
COMCAST CABLE COMPANY 313-934-2600

MDOT STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE NOTED.

* II-30E	CONCRETE CURB & CONCRETE CURB & GUTTER
* II-39L	TRANSVERSE PAVEMENT JOINTS
* II-43E	LOCATION OF TRANSVERSE JOINTS IN CONCRETE PAVEMENT
* II-44J	CONCRETE PAVEMENT REPAIR
* II-45H	CONVENTIONAL PAVEMENT REINFORCEMENT
III-60H	BEAM GUARDRAIL
III-67D	GUARDRAIL ANCHORAGE - BRIDGE, DETAILS
IV-83H	UTILITY TRENCHES
V-100C	SODDING & SEEDING
VI-125H	LIGHTED ARROWS & BARRICADES
X-18D	BRIDGE RAILLING SOLID PARAPET TYPE
XI-103D	MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS

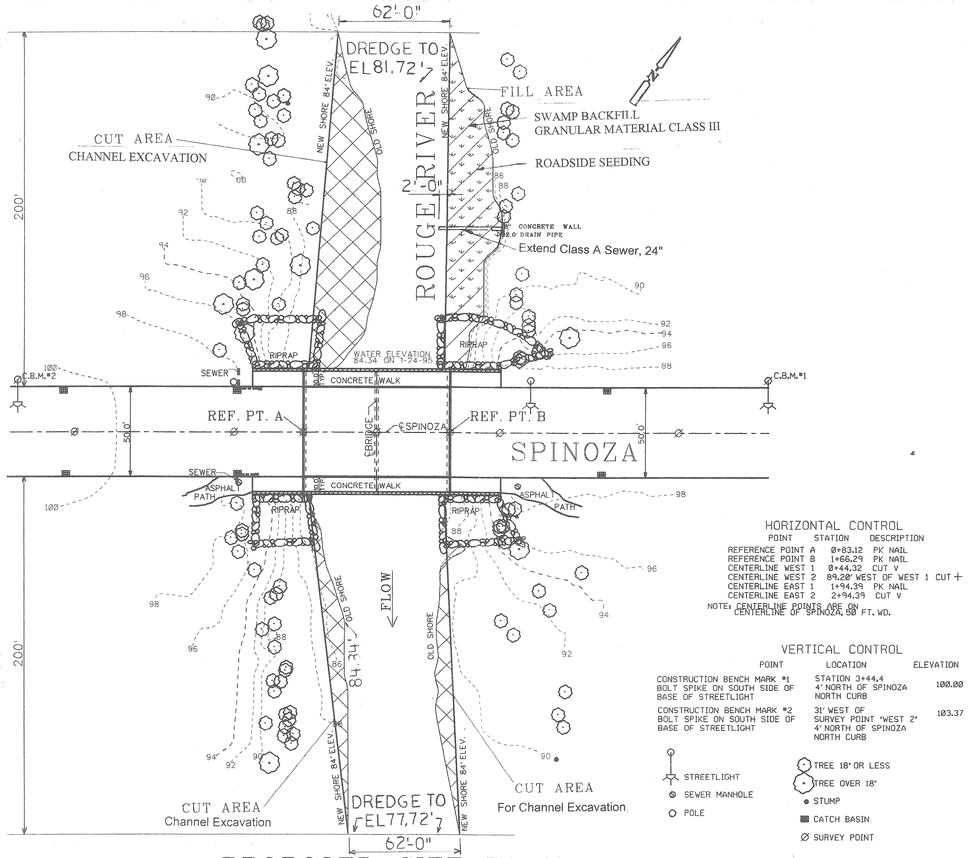
* Special Detail in Proposal.

06/19/97 ENGINEERING PRINT

FEDERAL AID URBAN PROJECT DSTP 9582(019) BRIDGE NO. BO1 82 - 18 - 85 SECTIONS 0001 & 0002 JOB NO. 36916A

BO1-82-18-85

©



HORIZONTAL CONTROL

POINT	STATION	DESCRIPTION
REFERENCE POINT A	0+83.12	PK NAIL
REFERENCE POINT B	1+66.29	PK NAIL
CENTERLINE WEST 1	0+44.32	CUT V
CENTERLINE WEST 2	89.28' WEST OF WEST 1	CUT +
CENTERLINE EAST 1	1+94.39	PK NAIL
CENTERLINE EAST 2	2+94.39	CUT V

NOTE: CENTER-LINE POINTS ARE ON CENTERLINE OF SPINOZA, 60 FT. WD.

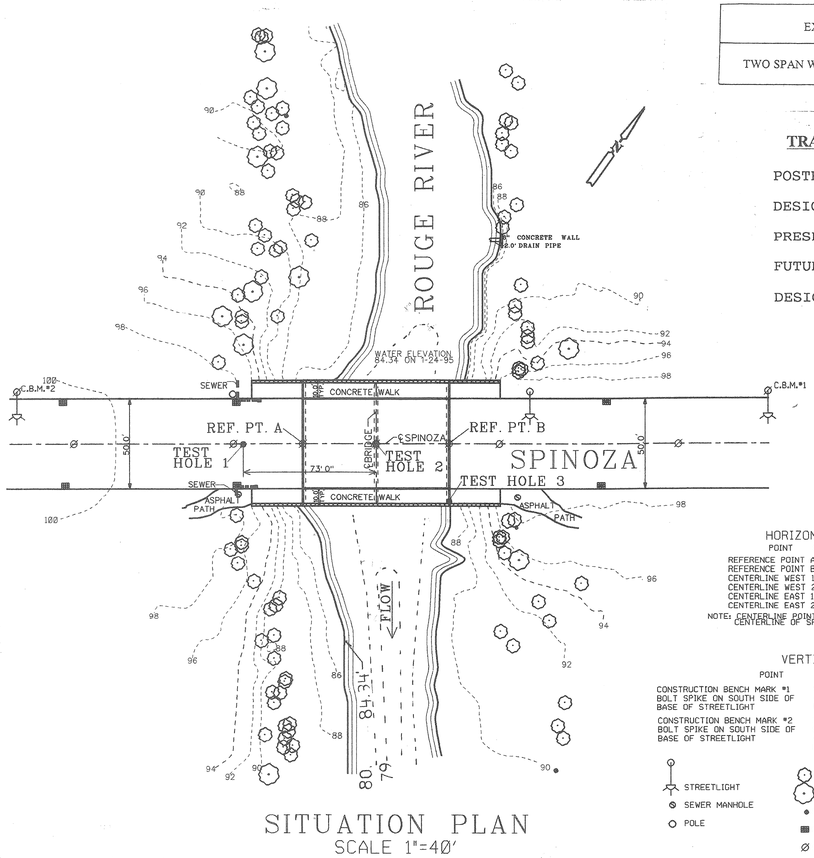
VERTICAL CONTROL

POINT	LOCATION	ELEVATION
CONSTRUCTION BENCH MARK #1 BOLT SPIKE ON SOUTH SIDE OF BASE OF STREETLIGHT	STATION 3+44.4 4' NORTH OF SPINOZA NORTH CURB	100.00
CONSTRUCTION BENCH MARK #2 BOLT SPIKE ON SOUTH SIDE OF BASE OF STREETLIGHT	31' WEST OF SURVEY POINT "WEST 2" 4' NORTH OF SPINOZA NORTH CURB	103.37

STREETLIGHT · SEWER MANHOLE · POLE · TREE 18" OR LESS · TREE OVER 18" · STUMP · CATCH BASIN · SURVEY POINT

PROPOSED SITE PLAN
SCALE 1"=40'

EXISTING STRUCTURE	
TWO SPAN W 36 STEEL BEAMS	BUILT IN 1930



TRAFFIC DATA

POSTED SPEED	25 MPH
DESIGN SPEED	45 MPH
PRESENT ADT (1994)	2218
FUTURE ADT (2014)	4003
DESIGN LOADING	HS20

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VERTICAL CONTROL

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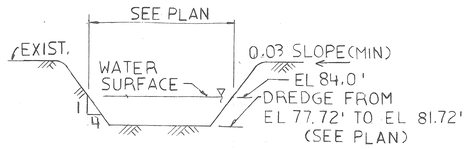
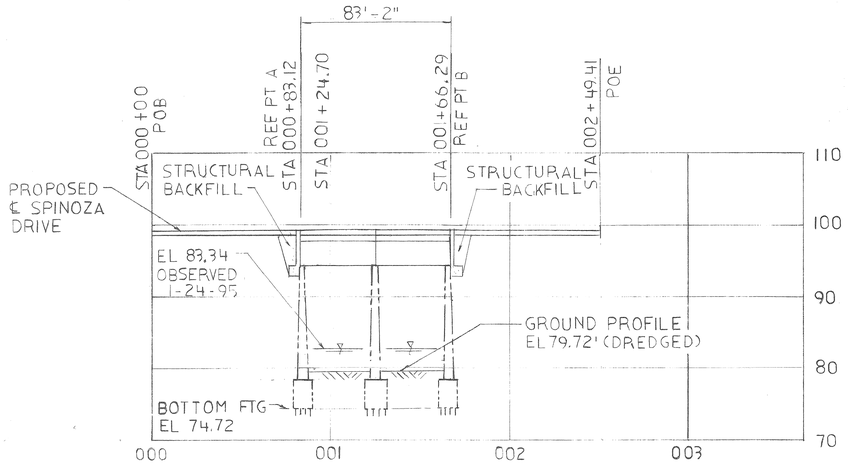
STREETLIGHT · SEWER MANHOLE · POLE · TREE 18" OR LESS · TREE OVER 18" · STUMP · CATCH BASIN · SURVEY POINT

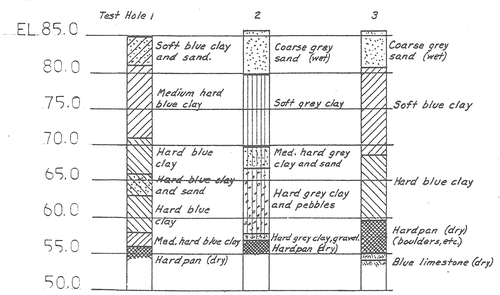
SITUATION PLAN
SCALE 1"=40'



NEW RIVER CROSS SECTION
SCALE VERT 1:10
HOR 1:40



PPOFILE ALONG CONSTRUCTION ℄ SPINOZA DRIVE
VERT SCALE 1" = 10'
HOR SCALE 1" = 40'



Note :-All the above sections are moist, except as noted.

RECORD OF TEST BORINGS (6-3-30)

PAY QUANTITIES		
ITEMS	QUANTITY	PAY UNIT
TOPSOIL SURFACE, 3"	968	SYD
FIELD OFFICE	6	MOS
MISC. MOBILIZATION, MAX. $66,000.00	0.5	LSUM
ROADSIDE SEEDING	20	LBS
CHEMICAL FERTILIZER NUTRIENT	48	LBS
MULCH	0.4	TON
ANCHORING MULCH	0.2	ACRE
MULCH BLANKETS	968	SYD
SWAMP BACKFILL	310	CYD
CHANNEL EXCAVATION	620	CYD
CLASS A SEWER 24"	30	LFT
TRENCH DETAIL A		

NOTES:

Traffic is to be maintained per Traffic Control and Detour Plan. Water level is subject to change. The Contractor is responsible for making his own determination of water levels that will exist during Construction.

Measures shall be taken to prevent debris from falling from the existing or proposed structure. If debris falls into the waterway, it shall be removed within 24 hours. Since disturbance of the waterway bottom may be as harmful as the debris itself, the preventive measures must be made as effective as possible.

Immediately after the repair of an abutment is complete, seeding and slope protection shall be placed on the adjacent embankment slopes.

Channel Excavation and Swamp Backfill Bid Items includes removal and disposal of all materials, of whatever nature encountered such as masonry, concrete, rock, tree and debris.

JOB NO. : 36916A

revisions	dr'n	ck'd	ap'vd	date
1				
2				
3				
4				
5				
6				

designed by RP/RF
drawn by JN
checked by EH
approved: Earl C. Howard

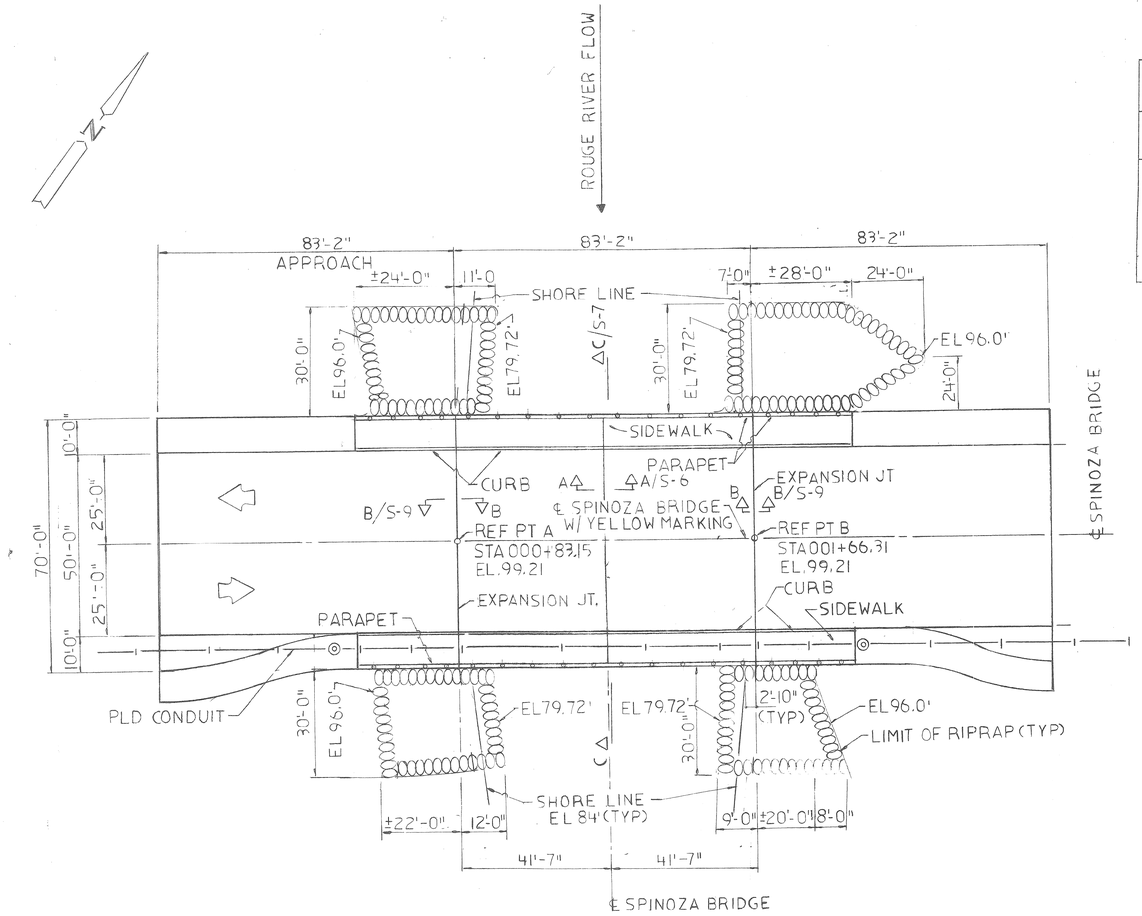
CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

SPINOZA DRIVE BRIDGE OVER ROUGE RIVER (BW-270)
SUPERSTRUCTURE RECONSTRUCTION

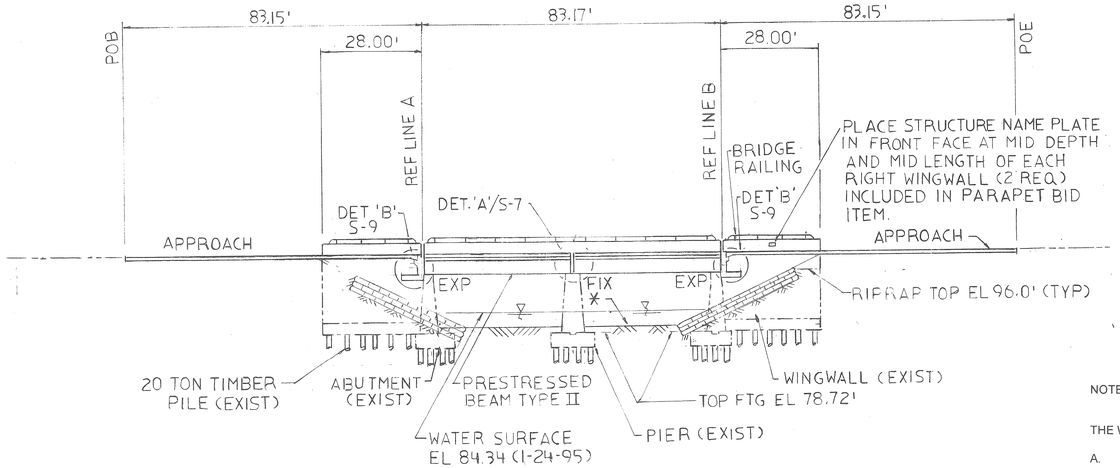
SITE PLAN

a.o. 93-22-16
contract no.
sheet S-3 of S-41
drawing no.
date MAR. ,1997

06/19/97 ENGINEERING PRINT



PLAN
1" = 20'-0"

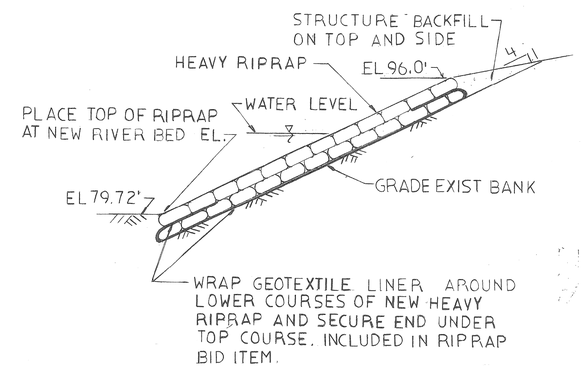


*NEW RIVER BED DREDGED TO EL 79.72' PLACE TOP OF RIPRAP AT BED ELEV.

ELEVATION
1" = 20'-0"
PARALLEL TO SPINOZA DRIVE

PAY QUANTITIES		
ITEMS	QUANTITY	PAY UNIT
RIPRAP, HEAVY	539	SYD
BRIDGE RAILING SOLID PARAPET TYPE	168	LFT
STRUCTURE BACKFILL (CIP)	138	CYD

Flood Data Frequency (Yrs)	Waterway Discharge Cfs.	Water Surface El. Ft.	Velocity in Channel with or without Str. Ft./Sec.	Waterway Area Below W.S. El. Sqft.	Backwater above W.S. El. Ft.	Final W.S. El. Ft.
Existing Structure Q Design (100 Yr.)	3292	85.56	4.5	732	0.10	85.46
*Existing Structure Q Overtopping (500 Yr.)	N.A.	N.A.	N.A.	N.A.	N.A	N.A.
Proposed Structure Q Design (100 Yr.)	3292	85.56	4.5	732	0.10	85.46
*Proposed Structure Q Overtopping (500 Yr.)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
Natural Channel Q Design (50 Yr.)	2992	84.50	4.4.	680	0.10	84.40
Witnessed Flood of Record 1986	----	85.66	----	----	----	---



RIPRAP DETAILS
1/8" = 1'-0

NOTES:

1. GEOTEXTILE LINER SHALL BE PLACED ON ALL SLOPES PRIOR TO PLACING RIPRAP.
2. THE RIPRAP QUANTITY IS BASED ON THE LATERAL DIMENSIONS OF THE AREA TO BE PROTECTED, REGARDLESS OF NUMBER OF LAYERS REQUIRED.
3. VERIFY ALL ELEVATIONS BEFORE CONSTRUCTION.
4. THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILLL NOT BE DISTURBED.
5. UNSUITABLE MATERIALL UNDER THE APPROACH SHALL BE REMOVED AND BACKFILLED WITH GRANULAR MATERIAL CLASS II.
6. THE GROUND ADJACENT TO THE APPROACH AND STRUCTURE SHALL BE GRADED BY THE CONTRACTOR TO PROVIDE DRAINAGE.
7. THIS BRIDGE IS PART OF A PARK AND ALL AREA SHOWN IS WITHIN CITY OF DETROIT RIGHT-OF-WAY.
8. PLACE RIPRAP FROM EL 79.72 FT. TO EL 96.0 FT.
9. TEMPORARILY STORED EXCAVATED MATERIAL SHALL NOT BE ALLOWED TO ERODE INTO THE WATERCOURSE.
10. FOR STRUCTURE NAME PLATE LOCATION, SEE THIS SHEET

NOTES:

THE WORKS COVERED BY THESE PLANS INCLUDES THE FOLLOWING:

A. REMOVAL AND RECONSTRUCTION OF BRIDGE SUPERSTRUCTURE AND APPROACHES.

B. REPAIR OF SUBSTRUCTURES.

C. DREDGING, BACKFILLING AND PLACEMENT OF RIPRAP IN THE RIVERBED.

JOB NO. : 36916A

revisions	dr'n	ck'd	ap'vd	date
1				
2				
3				
4				
5				

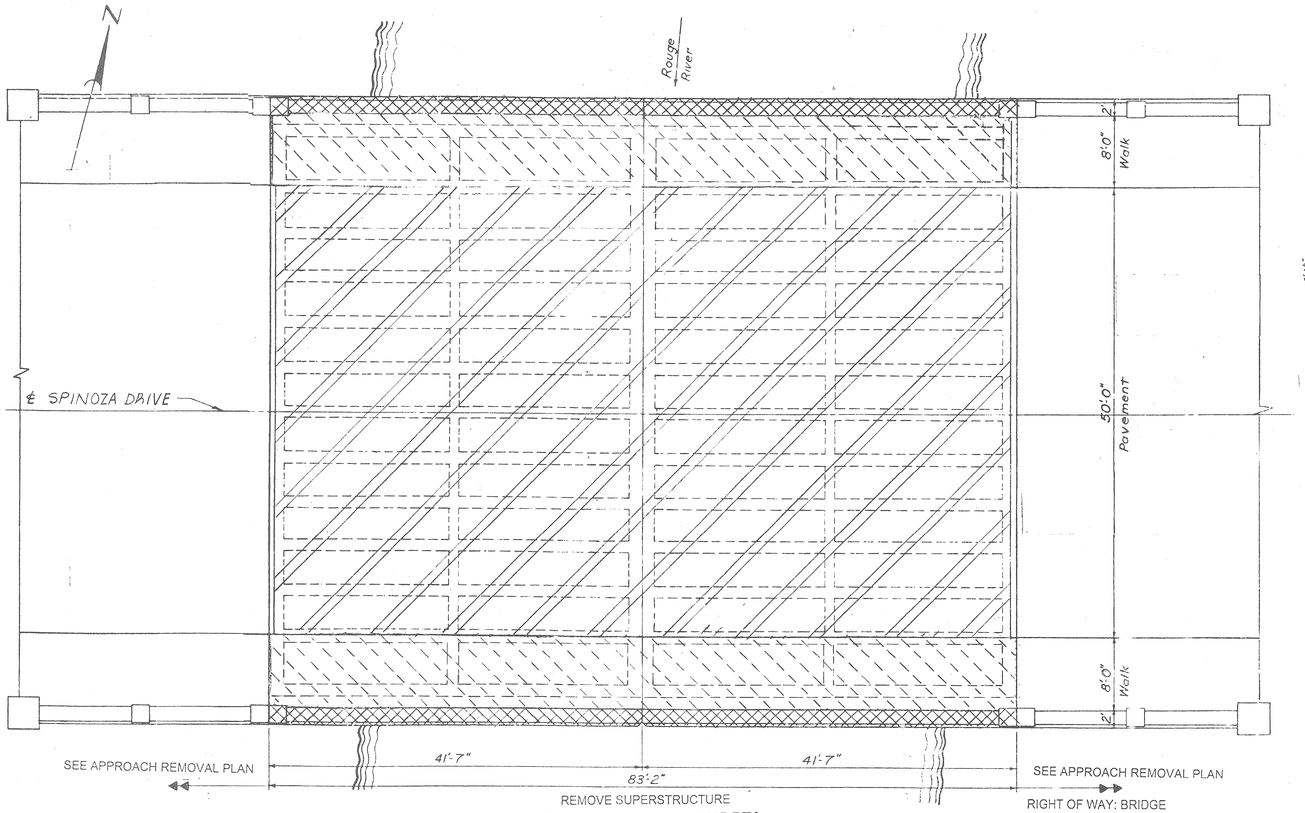
designed by RF
drawn by RF
checked by EH
approved: Gerald C. Heinrich

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

SPINOZA DRIVE BRIDGE OVER ROUGE RIVER(BW-270)
SUPERSTRUCTURE RECONSTRUCTION
GENERAL PLAN OF STRUCTURE

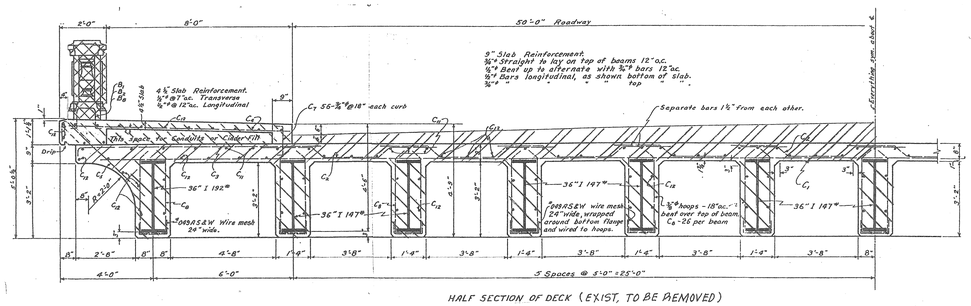
a.o. 93-22-16
contract no.
sheet S-4 of S-41
drawing no.
date MAR. ,1997

06/19/97 ENGINEERING PRINT



REMOVAL PLAN (EXIST)

SCALE $\frac{1}{6}$" = 1'-0"



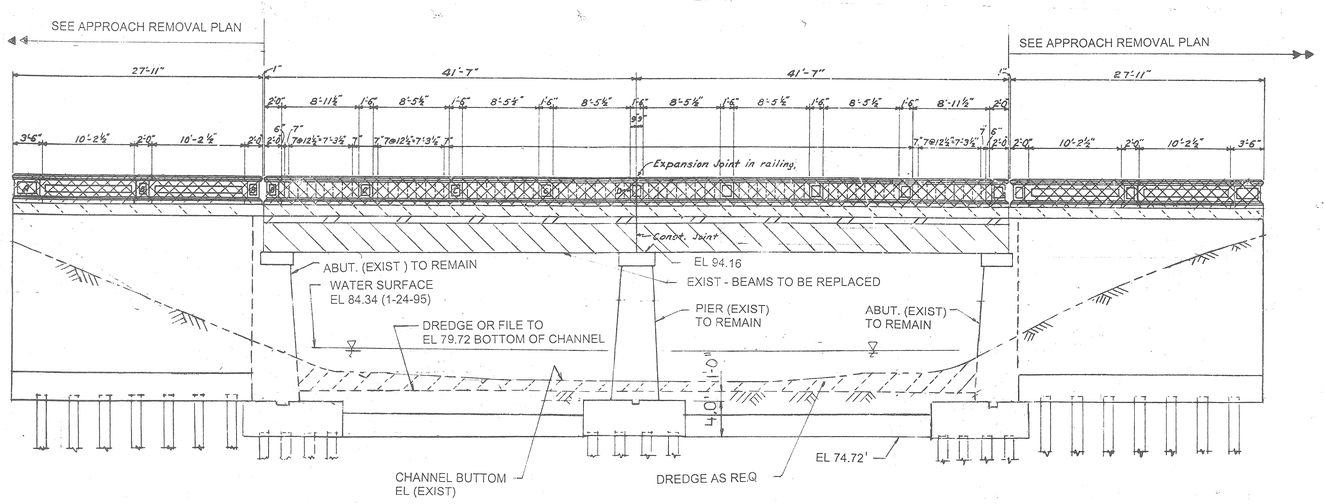
HALF SECTION OF DECK (EXIST, TO BE REMOVED)

No Scale

LEGEND*

- REMOVE PARAPET
- REMOVE DECK
- REMOVE SIDEWALK ON THE DECK
- REMOVE BEAMS, BEARINGS, ANCHOR BOLTS AND GROUTS

*: REFER TO THIS SHEET ONLY



REMOVAL - ELEVATION (EXIST)

1/8" = 1'-0"

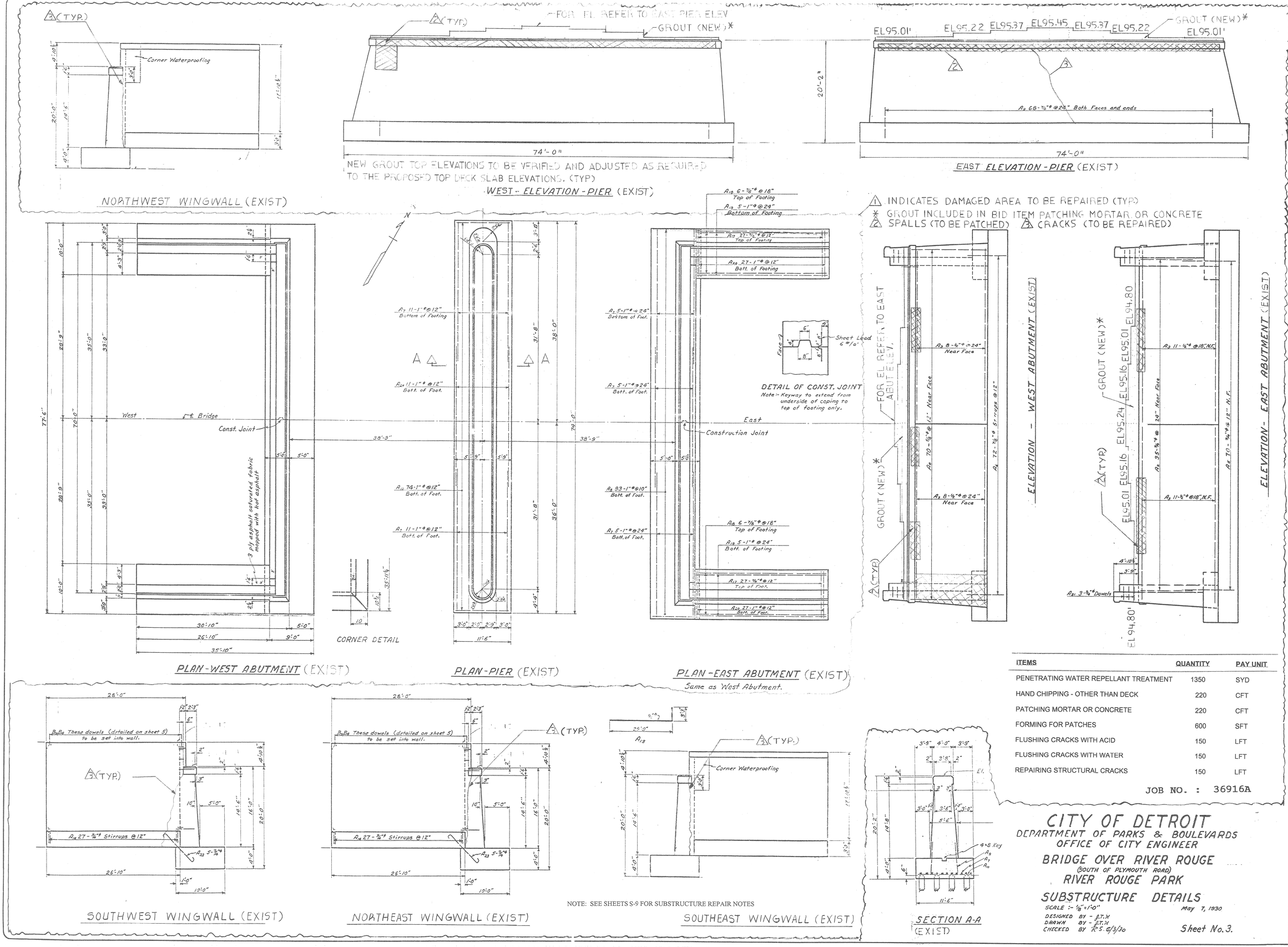
PAY QUANTITIES		
ITEMS	QUANTITY	PAY UNIT
MISC. REMOVAL OF PORTIONS OF STRUCTURES, B01-82-18-85	1	LSUM

NOTES:

1. REMOVAL OF PARAPET, DECK, SIDEWALK ON DECK, BEAMS, BEARINGS, ANCHOR BOLTS, GROUT AND ANY OTHER ITEMS ON THE BRIDGE DECK WILL BE PAID FOR AS ' MISC. REMOVAL OF PORTIONS OF STRUCTURES, B01-82-18-85' LSUM.
2. REMOVAL AND DISPOSAL OF THE MATERIALS SHALL BE IN ACCORDANCE WITH SECTION 2.06 OF 1990 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

JOB NO. : 36916A

| revisions | | |



NOTE: SEE SHEETS S-9 FOR SUBSTRUCTURE REPAIR NOTES

ITEMS	QUANTITY	PAY UNIT
PENETRATING WATER REPELLANT TREATMENT	1350	SYD
HAND CHIPPING - OTHER THAN DECK	220	CFT
PATCHING MORTAR OR CONCRETE	220	CFT
FORMING FOR PATCHES	600	SFT
FLUSHING CRACKS WITH ACID	150	LFT
FLUSHING CRACKS WITH WATER	150	LFT
REPAIRING STRUCTURAL CRACKS	150	LFT

JOB NO. : 36916A

CITY OF DETROIT
DEPARTMENT OF PARKS & BOULEVARDS
OFFICE OF CITY ENGINEER

BRIDGE OVER RIVER ROUGE
(SOUTH OF PLYMOUTH ROAD)
RIVER ROUGE PARK

SUBSTRUCTURE DETAILS

SCALE :- 1/8" = 1'-0"
May 7, 1930

DESIGNED BY - J.T.H
DRAWN BY - J.T.H
CHECKED BY R.S. 6/3/30

Sheet No. 3.

revisions

date	dr'n	ck'd	ap'vd

designed by MH
drawn by RJF
checked by EH
approved: Earl C. Hunnicutt

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

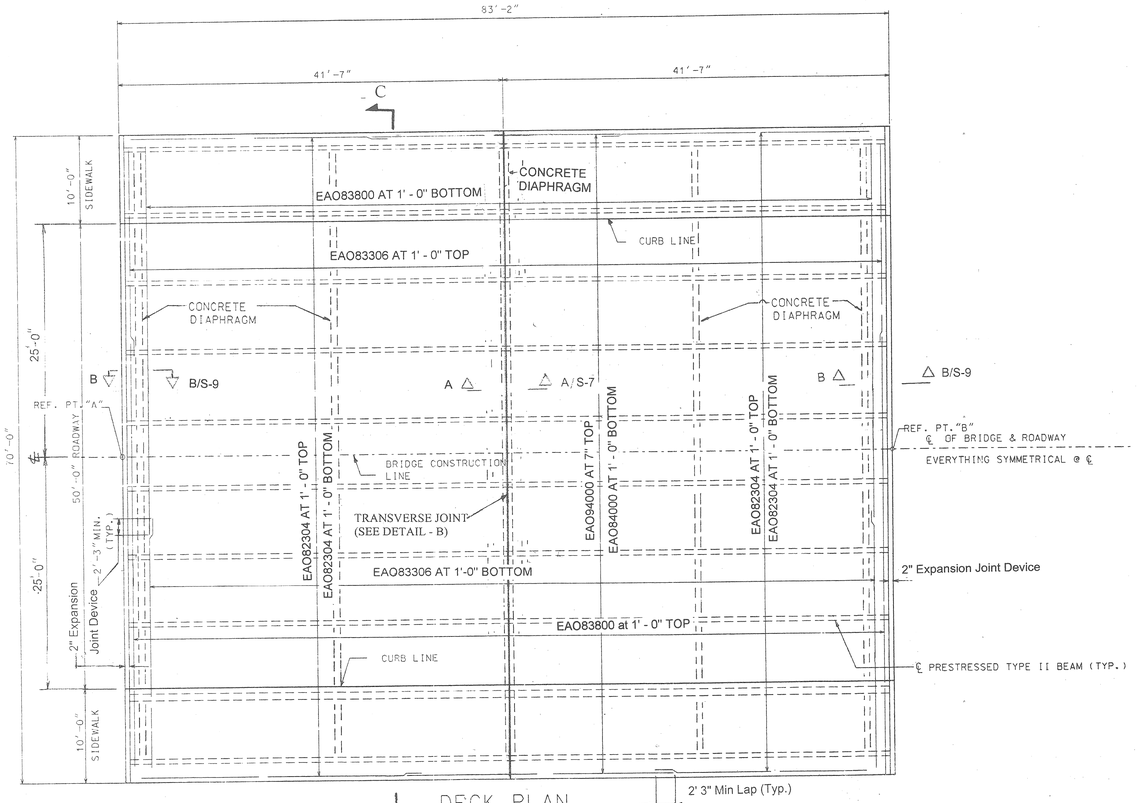
SPINOZA DRIVE BRIDGE OVER ROUGE RIVER(BW-270)
SUPERSTRUCTURE RECONSTRUCTION
REPAIRING STRUCTURAL CRACKS, PATCHING ABUTMENTS AND PIER

a.o. 93-22-16
contract no.
sheet S-6 of S-41
drawing no.
date MAR. ,1997

06/19/97 ENGINEERING PRINT

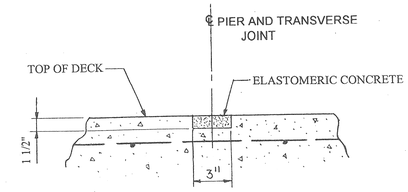
SCALE	HORIZONTAL / VERTICAL	BOOK NO. PG. / PAVING COMPLETED	LEVEL / DATE	BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

BENCH MARKS ELEV

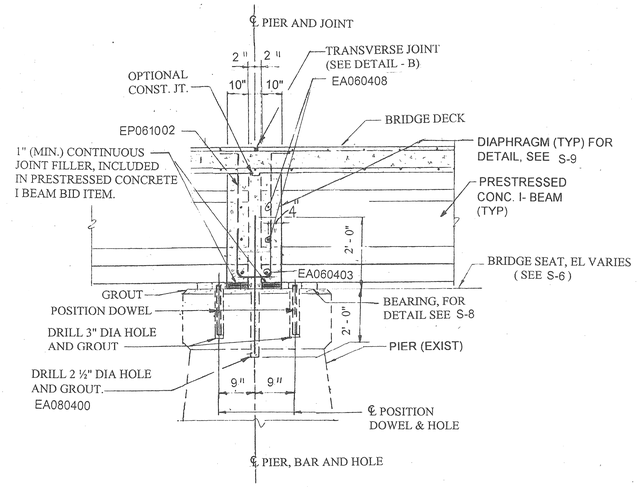


DECK PLAN

SCALE : 1/8" = 1' - 0"



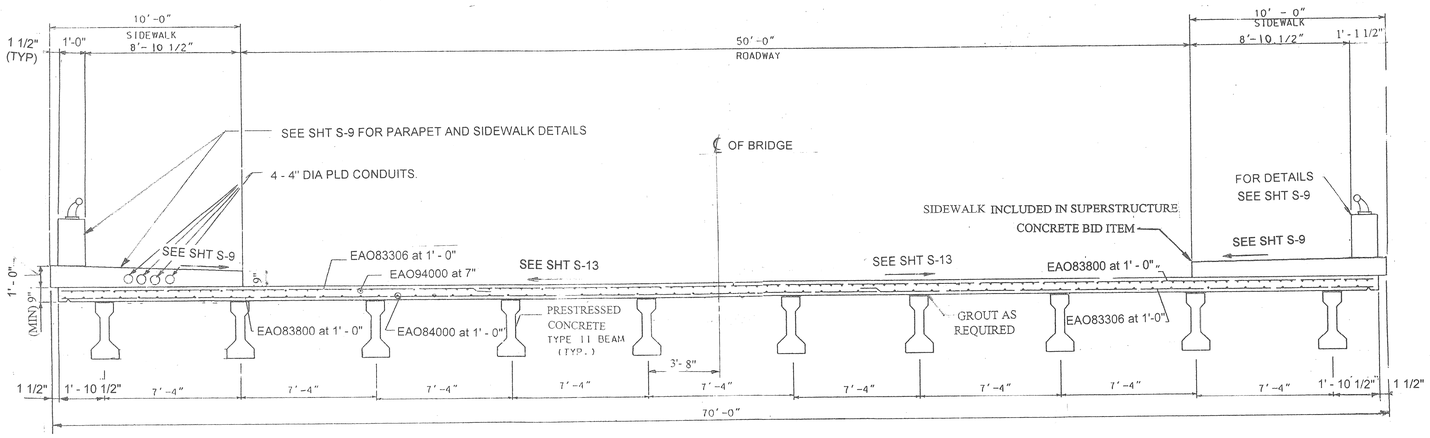
DETAIL B



SECTION A-A

(S-7) (S-9) SCALE : 1/2" = 1'-0"

PAY QUANTITIES		
ITEMS	QUANTITY	PAY UNIT
MISC. ELASTOMERIC CONCRETE	3	CFT
SUPERSTRUCTURE CONCRETE	337	CYD
MISC. FORM,FINISH,AND CURE SUPERSTRUCTURE CONCRETE, B01-82-18-85	1	LSUM
JOINT WATERPROOFING	210	SFT



CROSS SECTION OF DECK (SECTION C-C)

SCALE : 1/4" = 1' - 0"

SUPERSTRUCTURE MISCELLANEOUS NOTES

A. FOR BRIDGE RAILING, MOLDING AND BEVEL DETAILS, SEE STANDARD X-18D AND X1-103D.

B. A RUBBED SURFACE FINISH ON THE VERTICAL AND TOP CONCRETE SURFACES OF THE PARAPET RAILING, IS REQUIRED ON THIS STRUCTURE.

C. WHERE CAST-IN-ANCHORAGE IS USED FOR EXPANSION JOINT DEVICES IT IS RECOMMENDED THAT THE PLACING OF DECK CONCRETE PROGRESS TOWARD THE JOINT SO THAT THE EFFECTS OF DEAD LOAD DEFLECTION WILL OCCUR BEFORE CONCRETE IS PLACED AT THE ANCHORAGE.

D. DO NOT POUR DECK CONCRETE UNTIL DIAPHRAGM CONCRETE ATTAINS A COMPRESSIVE STRENGTH OF 3,000 PSI.

E. SIDEWALK AND PARAPET POURS SHALL NOT BE CAST UNTIL SLAB CONCRETE ATTAINED AT LEAST 75% OF ITS DESIGN STRENGTH.

DESCRIPTION	BY	CK	APV	DATE
REVISIONS				

	BY	CHECKED BY	APPROVED:
PLAN	RF	FH	Earl C. Howard, ENGINEER OF STREETS
GRADE			
ESTIMATE			
FINAL	SHEET	REVIEW	

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

SPINOZA DRIVE BRIDGE OVER ROUGE RIVER (BW-270)

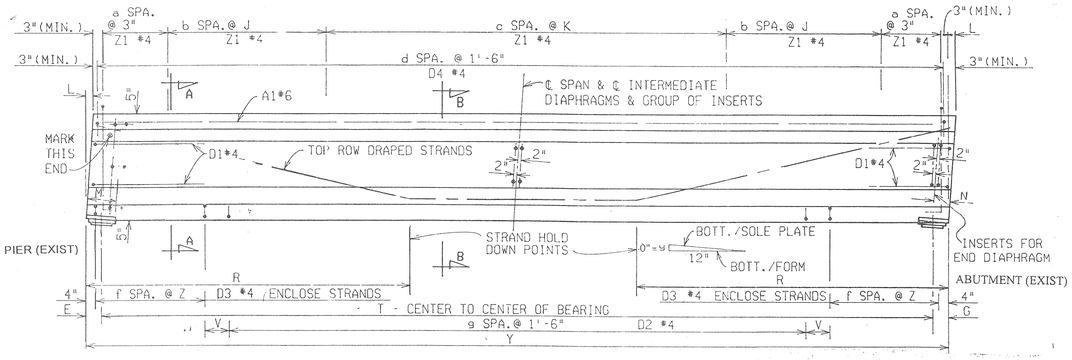
SUPERSTRUCTURE RECONSTRUCTION

PLAN OF DECK AND CROSS SECTION

SHEET S-7 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-16
DATE MAR. ,1997

JOB NO 36916A

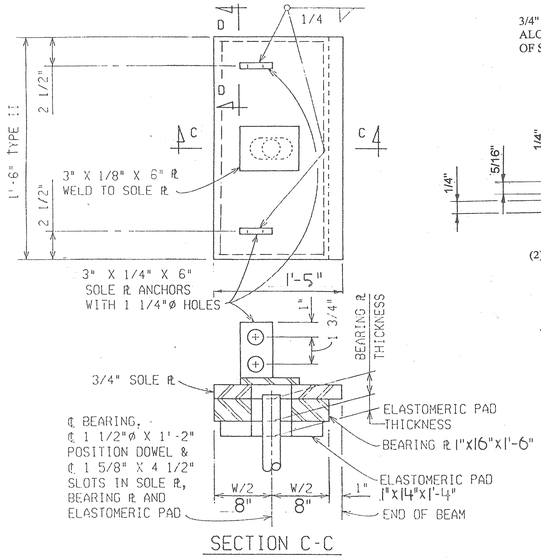
06/19/97 ENGINEERING PRINT



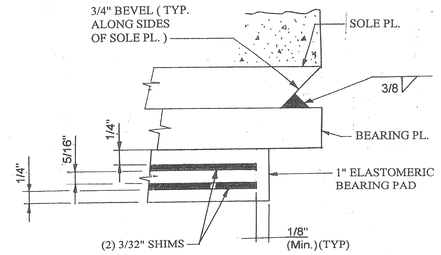
ELEVATION

BEAM DIMENSIONS		
MARK		
TYPE	II	
NO.REQ.	20	
a	12	
b	10	
c	25	
d	27	
E	7"	
f	12	
g	23	
G	9"	
h		
h'		
J	6"	
K	1'-0"	
L	0	
M	11 1/2"	
N	2'-0"	
P		
Q		
R	16'-6"	
T	39'-9"	
V	6'2"	
X		
X'		
** Y	41'-3"	
Z	3"	
ø		
APPROX. WEIGHT	8 TONS	

** CONTRACTOR TO FIELD VERIFY THE DIMENSION.
*** INDICATES EPOXY COATED BARS.



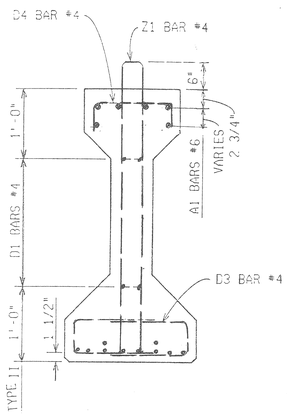
SECTION C-C



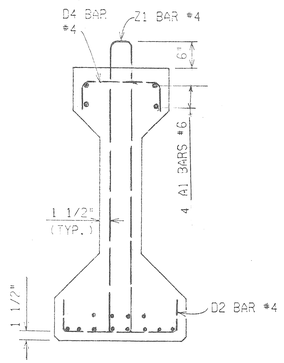
SECTION D-D

BEARING DETAILS

PAY QUANTITIES		
ITEMS	QUANTITY	PAY UNIT
ELASTOMERIC BEARING 1"	60	SFT
PRESTRESSED CONCRETE I-BEAM 36" - FURNISHED	840	LFT
PRESTRESSED CONCRETE I-BEAM 36" -ERECTED	840	LFT

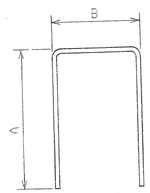


SECTION A-A

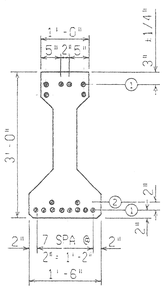


SECTION B-B

BAR DIMENSIONS		
BAR	DIM.	BEAM TYPE II
A1*6	A	Y'-3"
D1*4	A	4'-0"
	B	2 1/2"
D2*4	A	3"
	B	1'-3 1/2"
D3*4	A	1'-2"
	B	3 1/2"
D4*4	A	4"
	B	8"
***		
Z1*4	A	3'-2 1/2"
	B	3 1/2"

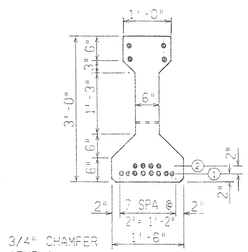


D BAR



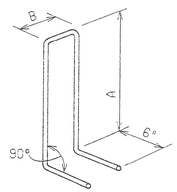
TYPE II
(36" BEAM)

SECTION A-A
SHOWING STRAND ARRANGEMENT AT END FACE



TYPE II
(36" BEAM)

SECTION B-B
SHOWING STRAND LOCATIONS AT MIDSPAN



Z BAR

A BAR

PRESTRESSED CONCRETE I-BEAM

1. PRESTRESSING STRANDS SHALL BE GIVEN AN INITIAL PRESTRESS OF 31,000 LBS. EACH.
2. CONCRETE INSERTS SHALL BE RICHMOND, 3/4" DIAMETER, TYPE T2 OR TYPE TL2F; DAYTON SUPERIOR, 3/4" DIAMETER, TYPE B-1 HEAVY OR TYPE B-18; OR EQUAL.
3. THREADING OF REINFORCEMENT AND INSTALLATION INTO CONCRETE INSERTS IS INCLUDED IN THE BID ITEM "PRESTRESSED CONCRETE I-BEAM, FURNISHED".
4. POSITION DOWELS WILL NOT BE PAID FOR SEPARATELY; PAYMENT FOR THIS WORK WILL BE CONSIDERED INCLUDED IN PAYMENT FOR PRESTRESSED CONCRETE BEAMS.
5. LIFTING DEVICES SHALL BE REMOVED, REMOVAL IS INCLUDED IN THE BID ITEM "PRESTRESSED CONCRETE I-BEAM, FURNISHED".
6. CONTRACTOR SHALL DESIGN, DETAIL, MANUFACTURE, AND ERECT THE PRESTRESSED CONCRETE BEAMS IN ACCORDANCE WITH SECTION 5.05 OF MDOT STANDARD SPECIFICATION FOR CONSTRUCTION 1990 EDITION. CAPACITY SHALL NOT BE LESS THAN WHAT IS SHOWN AND DETAILED ON THE DRAWING.

ELASTOMERIC BEARINGS

1. IF THE POSITION DOWELS AND SOLE PLATE DOWELS AT ABUTMENTS AND PIER ARE MISALIGNED DUE TO TEMPERATURE EFFECTS ON THE BEAMS, HOLES IN THE ELASTOMERIC BEARINGS SHALL BE CENTERED ON THE DOWELS.

TREATMENT OF EPOXY-COATED BARS

1. REINFORCEMENT IS TO BE SHOP CUT AS SHOWN. THE EPOXY COATING SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TABLE 1
NUMBER OF 1/2"ø - 270KSI - 7 WIRE STRANDS IN INDICATED ROW

MARK	TYPE	MIDSPAN (SECTION B-B) BOTTOM ①	②	③	④	END FACE (SECTION A-A) BOTTOM ①	②	③	④	TOP ①	②	TOTAL NUMBER	INITIAL PRESTRESS FORCE/STRAND (LBS.)	REQUIRED CONCRETE RELEASE STRENGTH (PSI)
		8	4			8	2			2		12	31,000	4,000

revisions | date | ck'd | ap'vd | d'n

designed by RF
drawn by RF
checked by EH
approved:

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

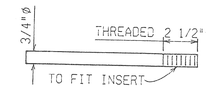
SPINOZA DRIVE BRIDGE OVER ROUGE RIVER(BW-270)
SUPERSTRUCTURE RECONSTRUCTION
SUPERSTRUCTURE DETAILS

NOTES:

1. ALL STEEL IN THE BEARING SHALL MEET THE REQUIREMENTS OF ASTM A36.
2. ALL STEEL IN THE BEARING IS INCLUDED IN THE PAY ITEM "PRESTRESSED CONCRETE I-BEAM, FURNISHED".
3. TACK WELDING OF STEEL REINFORCEMENT IS PROHIBITED.
4. ELASTOMER FOR ELASTOMERIC BEARING PAD SHALL BE NOMINAL 50 DUROMETER HARDNESS FOR LAMINATED BEARINGS.
5. PRESTRESSING STRAND SHALL BE 1/2" DIAMETER WITH AN AREA OF 0.153 SQUARE INCHES AND SHALL BE GRADE 270 IN ACCORDANCE WITH ASTM A416 AND SUPPLEMENT. LOW RELAXATION STRANDS SHALL BE USED.
6. END BLOCKS ARE REQUIRED.
7. TOTAL ESTIMATED CHANGE OF LENGTH OF BOTTOM FLANGE AT TRANSFER OF PRESTRESS FORCE IS 3/4"
8. WHEN BOND BREAKERS ARE REQUIRED, THEY SHALL BE PLACED SYMMETRICALLY ABOUT THE ℄ OF THE BEAM. THE NUMBER AND LENGTH OF BOND BREAKER SHALL BE AS SHOWN IN THE ELEVATION OF THE BEAM. LENGTH SHOWN IS FROM END OF BEAM TO END OF BREAKER. THEY SHALL CONSIST OF TWO TUBES (ONE INSIDE THE OTHER) WITH OVERLAP TURNED IN OPPOSITE DIRECTION.
9. LIFTING OF BEAM SHALL BE BY EQUAL LOADS TO EACH PAIR OF LIFTING DEVICES.
10. THE TOP FLANGE TOP SURFACE SHALL BE INTENTIONALLY ROUGHENED.
11. ALL EXPOSED SURFACES OF CONCRETE TO BE RUBBED AS SOON AS FORMS ARE REMOVED. NO CEMENT GROUT TO BE USED ON EXPOSED SURFACES.
12. ALL REINFORCING BARS SHOULD BE SECURELY TIED AT ALL INTERSECTIONS.

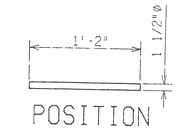
a.o. 93-22-16
contract no.
sheet S-8 of S-41
drawing no.
date MAR. ,1997

06/19/97 ENGINEERING PRINT



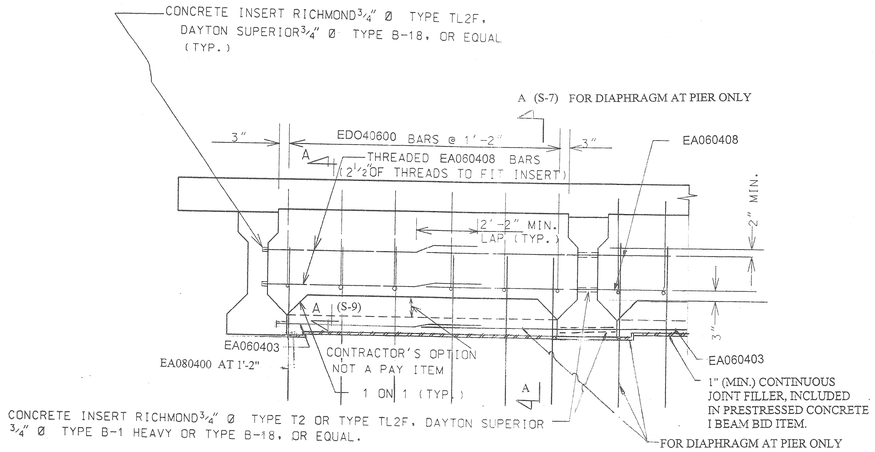
THREADED ANCHOR BAR DETAIL

INCLUDED IN PAY ITEM REINFORCING STEEL



POSITION DOWEL DETAIL

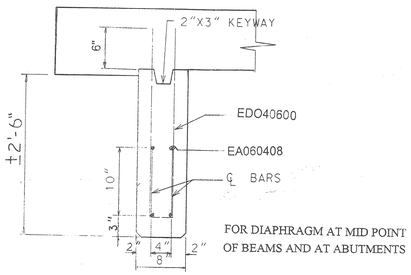
PAY QUANTITIES		
ITEMS	QUANTITY	PAY UNIT
UNCLASSIFIED FOUNDATION EXCAVATION	233	CYD



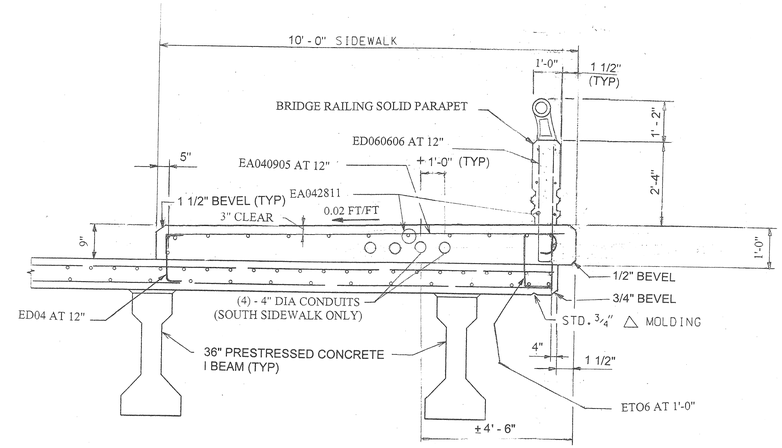
USE DIAPHRAGM AT MID POINTS OF BEAMS, AND AT ENDS OF BEAMS. DIAPHRAGM QUANTITIES ARE INCLUDED WITH SUPERSTRUCTURE CONCRETE QUANTITIES.

DIAPHRAGM ELEVATION

SCALE : 1/2" = 1' - 0"

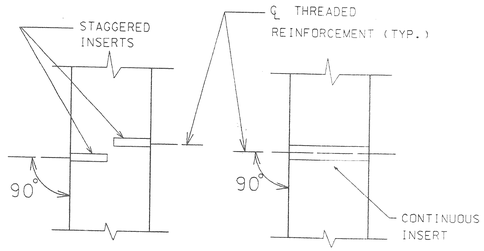


SECTION A - A



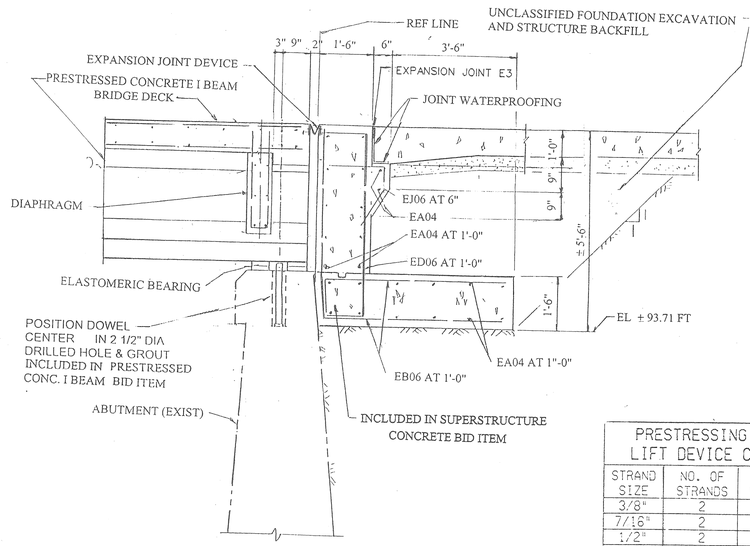
TYPICAL SIDEWALK SECTION

NTS



CONCRETE INSERT DETAILS

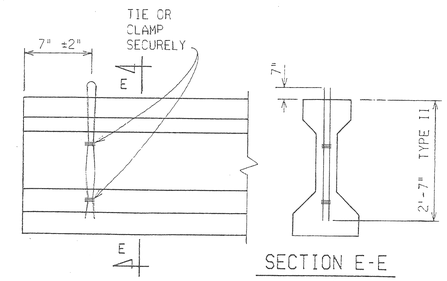
CONCRETE INSERTS AT ENDS OF BEAM SHALL BE STAGGERED AND AT MIDSPAN MAY BE CONTINUOUS OR STAGGERED. THREADED REINFORCEMENT FOR STAGGERED INSERTS SHALL BE BENT TO THE REQUIRED Ø ANGLE PRIOR TO INSTALLATION. BENT REINFORCEMENT MAY REQUIRE INSTALLATION BEFORE BEAM IS ERECTED.



SECTION B-B AND DETAIL B

SCALE : 1/2" = 1'-0"

PRESTRESSING STRAND LIFT DEVICE CAPACITY		
STRAND SIZE	NO. OF STRANDS	ALLOWABLE WT. OF BEAM
3/8"	2	20 TONS
7/16"	2	27 TONS
1/2"	2	36 TONS
3/8"	3	30 TONS
7/16"	3	40.5 TONS
1/2"	3	54 TONS



SECTION E-E

LIFTING DEVICE

SUBSTRUCTURE NOTES:

1. THE ENTIRE TOP, EXISTING AND REPAIRED, THE FRONT FACE OF INDEPENDENT BACKWALL, ALL OTHER SURFACES OF EXISTING ABUTMENTS AND PIER, SHALL BE GIVEN AN APPLICATION OF PENETRATING WATER REPELLENT TREATMENT AFTER THE NEW ELASTOMERIC BEARINGS HAVE BEEN PLACED IN FINAL POSITION ON THE STRUCTURE.
2. FORMS FOR LARGE PATCHES SHALL BE INSTALLED IN 2' TO 4' HIGH SECTIONS WITH THE TOP OF FORM NO MORE THAN 4' ABOVE THE LEVEL OF CONCRETE AS THE POUR PROGRESSES.
3. LATEX MODIFIED HIGH-EARLY STRENGTH PATCHING MIXTURE IN ACCORDANCE WITH SUBSECTION 7.03.03 OF THE STANDARD SPECIFICATIONS SHALL BE USED FOR SUBSTRUCTURE REPAIRS.

JOB NO. : 36916A

REVISIONS							
DESCRIPTION	P. Shah	DR	CK	DAP	VD	DATE	

	BY	CHECKED BY
PLAN	RF	EH
GRADE		
ESTIMATE		
FINAL	CHECK	REVIEW

APPROVED: Earl C. Howard, STRUCTURAL ENGINEER

CITY OF DETROIT

CITY ENGINEERING DIVISION

DEPARTMENT OF PUBLIC WORKS

SPINOZA DRIVE BRIDGE OVER ROUGE RIVER (BW-270)
SUPERSTRUCTURE RECONSTRUCTION

SUPERSTRUCTURE DETAILS

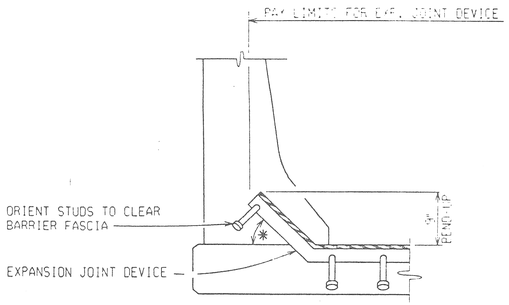
SHEET S-9 OF S-41 SHEETS

CONTRACT NO.

ASSIGNMENT NO. 93-22-16

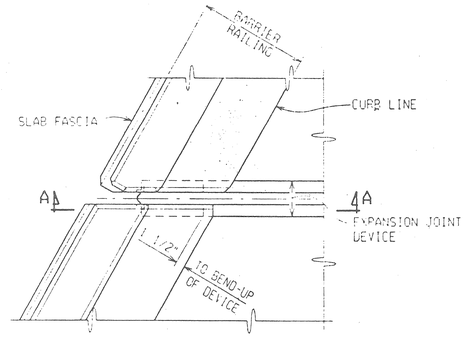
DATE MAR. ,1997

06/19/97 ENGINEERING PRINT



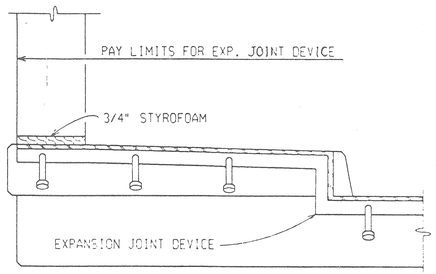
SECTION A-A

✱ — FOR ANGLES OF CROSSING FROM 90° TO 45° INCLUSIVE, BEND ANCHORAGE UP 45° ALONG ℄ EXPANSION JT. FOR ANGLES OF CROSSING LESS THAN 45°, A SPECIAL ENDING MAY BE REQUIRED.

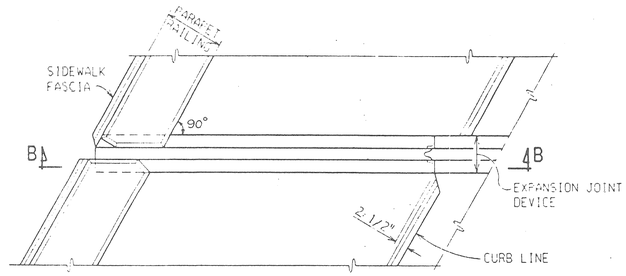


PLAN AT BARRIER RAILING

BARRIER TREATMENT



SECTION B-B

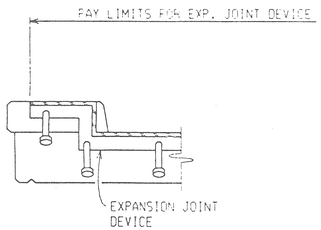


PLAN AT PARAPET RAILING

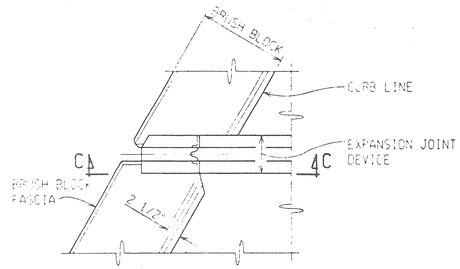
(DETAILS ARE SIMILAR FOR BRIDGE RAILING, 3-TUBE GALVANIZED STEEL)

SIDEWALK TREATMENT

(FOR EXPANSION JOINTS LOCATION, SEE SHT. S-)



SECTION C-C



PLAN AT 2-TUBE GALVANIZED STEEL RAILING

BRUSH BLOCK TREATMENT

STRUCTURE NUMBER	ANGLE OF CROSSING TO NEAREST 10°	LOCATION OF JOINT	MIN. TOT. TRAVEL ALONG CENTERLINE OF BRIDGE	REQUIRED LENGTH OF EXPANSION JOINT DEVICE
—	90°	A	0.5"	70'-0"
—	90°	B	0.5"	70'-0"

NOTES:

JOINT TYPES

THE EXPANSION JOINT DEVICE SHALL BE OF A TYPE THAT INCLUDES A CONTINUOUS SEAL ACROSS THE DECK. UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR HAS THE OPTION OF USING ANY OF THE DEVICES LISTD BELOW

DEVICE	MANUFACTURER
STEELFLEX-SSA2	D.S. BROWN
STEELFLEX-SSCM	D.S. BROWN
STEELFLEX-RS	D.S. BROWN
ONFLEX 40 SS	STRUCTURAL RUBBER PRODUCTS CO.
STRUPCO 400L	STRUCTURAL RUBBER PRODUCTS CO.

THE MODEL OF THE JOINT TYPE SELECTED SHALL BE SUITABLE TO ACCOMMODATE THE TOTAL MOVEMENT NOTED ON THE PLANS.

COMPLETE WORKING DRAWINGS OF ALL DETAILS OF FABRICATION OF THE EXPANSION JOINT DEVICE SHALL BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH STANDARD SPECIFICATION 1.05.02. THIS REQUIREMENT IS WAIVED FOR EXPANSION JOINT DEVICES FOR WHICH A SET OF STANDARD INSTALLATION DETAILS HAS BEEN APPROVED. STANDARD INSTALLATION DETAILS CAN BE OBTAINED FROM THE DESIGN DIVISION.

FABRICATION AND INSTALLATION

THE EXPANSION JOINT SHALL BE SHOP FABRICATED TO CONFORM TO THE CONTOUR OF THE BRIDGE DECK, BARRIERS, ETC. IT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS SUBJECT TO NOTES HEREIN AND THE APPROVAL OF THE ENGINEER.

THE STEEL ANCHORAGE FOR STRIP SEAL GLANDS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SUBSECTION 5.04.22 OF THE STANDARD SPECIFICATIONS.

THE PRO-SPAN DEVICE MUST INCORPORATE A CAST-IN-PLACE STEEL SEAT.

THE AREA OF THE STEEL ANCHORAGE AND SEALING GLAND WHICH WILL BE IN CONTACT WITH A SEALANT, OR LUBRICANT-ADHESIVE SHALL BE CLEANED WITH TOLUENE OR OTHER APPROVED SOLVENT.

WHERE THE SEALING GLAND IS LOCKED INTO A STEEL ANCHORAGE, A LUBRICANT-ADHESIVE CONFORMING TO STANDARD SPECIFICATION 8.16.04-e SHALL BE REQUIRED BETWEEN THE SEAL AND STEEL ANCHORAGE.

ALL BOLT WELL CAVITIES SHALL BE FILLED WITH AN APPROVED FLEXIBLE EPOXY OR A SEALANT CONFORMING TO FEDERAL SPECIFICATION TT-S-00230C.

IN THE EVENT THAT THE CONSTRUCTION SEQUENCE REQUIRES SPLICING THE SEALING GLAND, IT SHALL BE SPLICED BY AN APPROVED METHOD (SUCH AS COLD VULCANIZATION) BY A TRAINED REPRESENTATIVE OF THE MANUFACTURER.

DETAILS AT CURBS OR BARRIERS

THE DETAILS ON THIS SHEET SHOW AN APPROVED MEANS OF TERMINATING THE EXPANSION JOINT DEVICE AT CURBS OR BARRIERS. VARIATIONS OR ALTERNATIVE SCHEMES WILL BE CONSIDERED AND MAY BE USED IF APPROVED BY THE ENGINEER.

MATERIALS

THE COST OF ALL MATERIALS AND LABOR REQUIRED FOR PROPER INSTALLATION OF THE EXPANSION JOINT AND THE TERMINAL ASSEMBLIES AT THE CURBS, SIDEWALKS, OR BARRIERS IS INCLUDED IN THE PAYMENT FOR THE EXPANSION JOINT DEVICE.

QUANTITY		
ITEM	UNIT	AMOUNT
EXPANSION JOINT DEVICE	LINEAR FEET	132

JOB NO. : 36916A

MICHIGAN DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT DETAILS

SQUAD BOSS		
DRAWN BY	LRB	09-06-88
CORRECTED BY	DHS-1	07-26-93
CHECKED BY	SPB/CHC	
SHEET	OF	

revisions: dr'n ck'd ap'vd date

designed by MDOT
drawn by RF
checked by EH
approved: Earl C. Hawrel

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

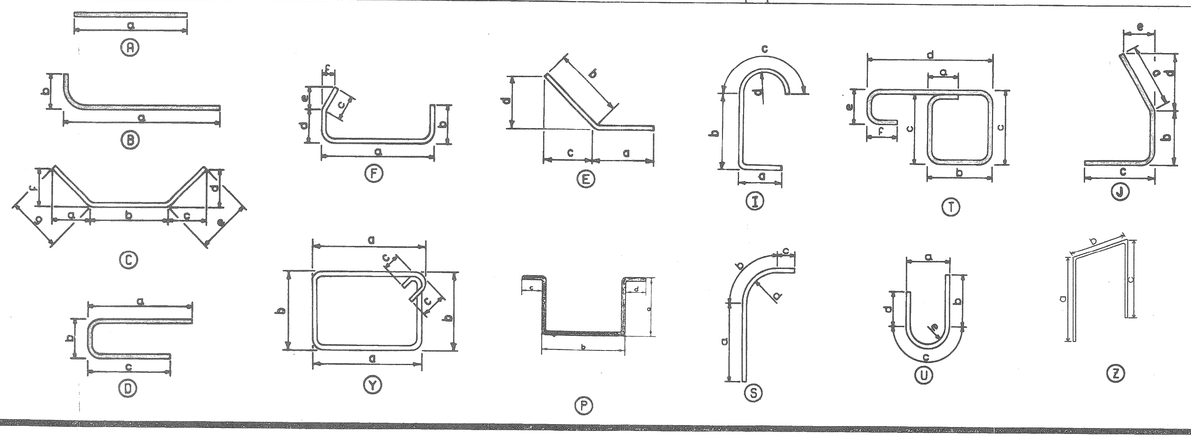
SPINOZA DRIVE BRIDGE OVER ROUGE RIVER (BW-270)
SUPERSTRUCTURE RECONSTRUCTION
EXPANSION JOINT DETAILS

a.o. 93-22-16
contract no.
sheet S-10 of S-41
drawing no.
date MAR. ,1997

06/19/97 ENGINEERING PRINT

BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT. LBS
BRIDGE:										
(a) DECK:										
EA084000	40'-0"								168	17,942
EA083106	31'-6"								168	14,137
EA082804	28'-4"								284	17,691
EA084000	40'-0"								71	7,583
EA094000	40'-0"								121	16,456
(b) SIDEWALKS:										
EA040905	9'-5"								166	1,044
EA042811	28'-11"								78	1,507
ED040205	0'-8"	1'-1"	0'-8"						166	268
ET060611	1'-0"	1'-0"	1'-4"	1'-3"	0'-6"	0'-6"			166	1,725
(c) SOLID PARAPETS: (INCLUDES APPROACH WORK)										
EA042811	28'-11"								36	695
ED060606	3'-1"	0'-4"	3'-1"						166	1,621
EA042708	27'-8"								24	444
EA060402	4'-2"								84	526
(d) DIAPHRAGMS:										
✓ED040600	2'-10"	4"	2'-10"						216	866
✓EA060403	4'-3"								36	230
✓EA060408	4'-8"								360	2,520
✓EP061002	3'-4"	1'-6"	1'-0"	1'-0"					54	825
EA080400	4'-0"								54	577
(e) BACKWALLS:										
EB061006	5'-0"	5'-6"							132	5,082
EB060600	5'-0"	1'-0"							132	1,130
ED060706	1'-0"	5'-6"	1'-0"						132	1,487
EA043310	33'-10"								96	5,169
ET060808	1'-9"	0'-5"	1'-6"	1'-5"	1'-0"				264	1,454
									TOTAL =	95,032

TOTAL EPOXY COATED STEEL REINFORCEMENT 95,032 LBS



NOTES

ALL BENDS IN REINFORCING STEEL TO BE MADE ABOUT A PIN OF THE MINIMUM DIAMETER ALLOWED BY THE STANDARD SPECIFICATION.

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

WHERE FIELD CUTTING OF EPOXY BARS IS REQUIRED, THE CONTRACTOR SHALL REPAIR THE EPOXY COATING AT THE CUT END AS PROVIDED FOR IN STANDARD SPECIFICATION 8.05.03 (INCLUDED IN STEEL REINFORCEMENT EPOXY COATED).

REINFORCEMENT SHALL BE BUNDLED AND TAGGED AS TO THE LOCATION AS SHOWN ON THIS SHEET.

THE CONTRACTOR SHALL SUBMIT ORIGINAL SHOP DRAWINGS FOR FABRICATION, BENDING AND PLACEMENT OF CONCRETE REINFORCEMENT IN CONFORMANCE WITH THE FIELD MEASUREMENTS. THE SHOP DRAWINGS SHALL COMPLY WITH ACI 315-80 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI 315R-80 "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" SHOWING BAR SCHEDULES, STIRRUP SPACING, DIAGRAMS OF BENT BARS, ARRANGEMENT, SPACING AND BAR MARKS OF CONCRETE REINFORCEMENT.

BAR NUMBERS:

EPOXY COATED
BAR SHAPE
BAR SIZE
BAR LENGTH (FT)
BAR LENGTH (IN)

EA062906

SPINOZA DRIVE BRIDGE OVER ROUGE RIVER
BW - 270 **SUPERSTRUCTURE RECONSTRUCTION**

STEEL REINFORCEMENT DETAILS

REVISIONS

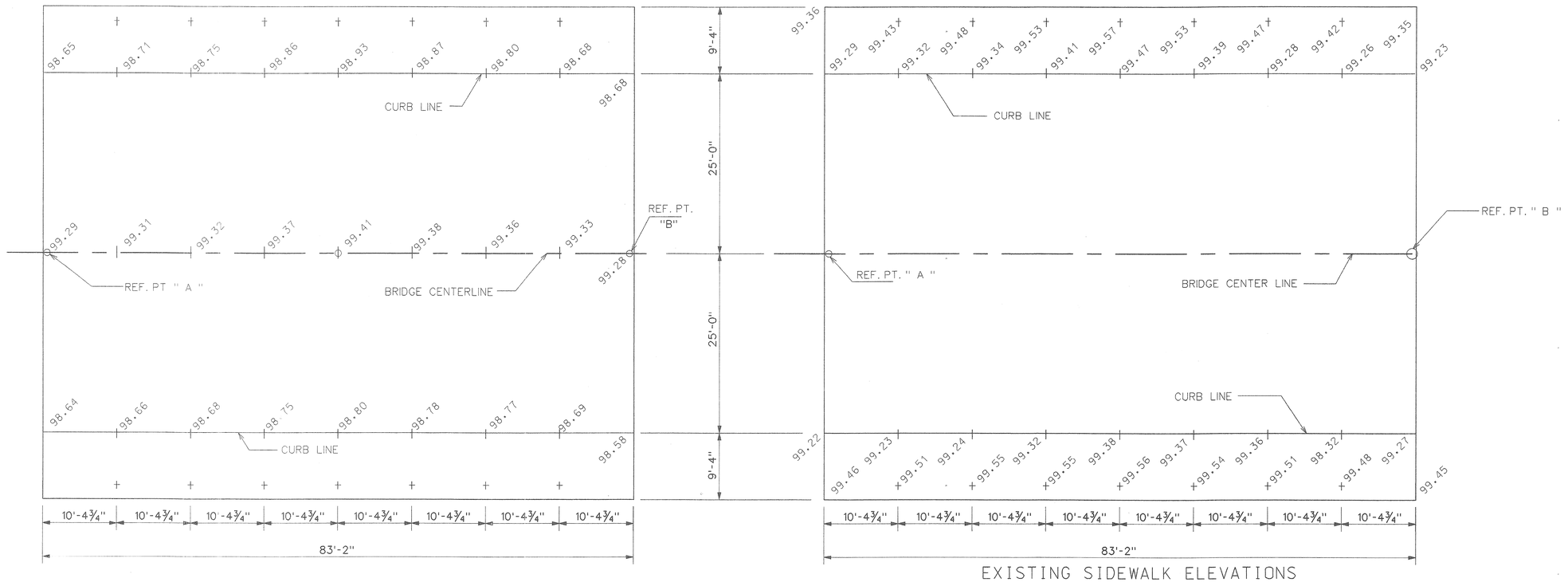
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	E. HOWARD	
DRAWN BY	PP	
TRACED BY		
CHECKED BY	R.F. EH	
SHEET	S-11 & S-41	
DATE	MAR. ,1997	

JOB NO 36916A

SCALE	HORIZONTAL / VERTICAL	BOOK NO. PG. / PAVING COMPLETED	LEVEL / DATE	BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

BENCH MARKS ELEV



EXISTING TOP OF DECK SLAB ELEVATIONS

1/8" = 1'-0"

EXISTING SIDEWALK ELEVATIONS

1/8" = 1'-0"

JOB NO. 36916A

DESCRIPTION	DR	CK	DP	VD	DATE
REVISIONS					

	BY	CHECKED BY
PLAN	N.W.,K.M.	
GRADE	P.S.,N.W.	
ESTIMATE		
FINAL	CHECK	REVIEW

APPROVED: Earl C. Hummel
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAU OF STREETS AND HIGHWAYS

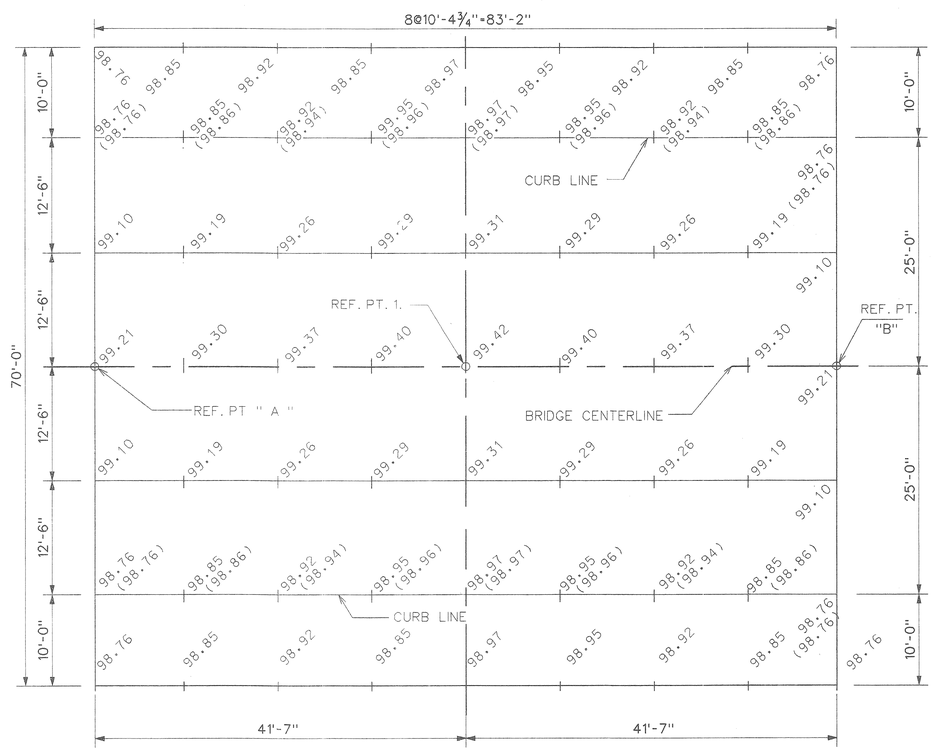
SPINOZA DRIVE BRIDGE OVER ROUGE RIVER (BW-270)
EXISTING SLAB AND SIDEWALK ELEVATIONS

SHEET S-12 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-16
DATE MAR. ,1997

06/19/97 ENGINEERING PRINT

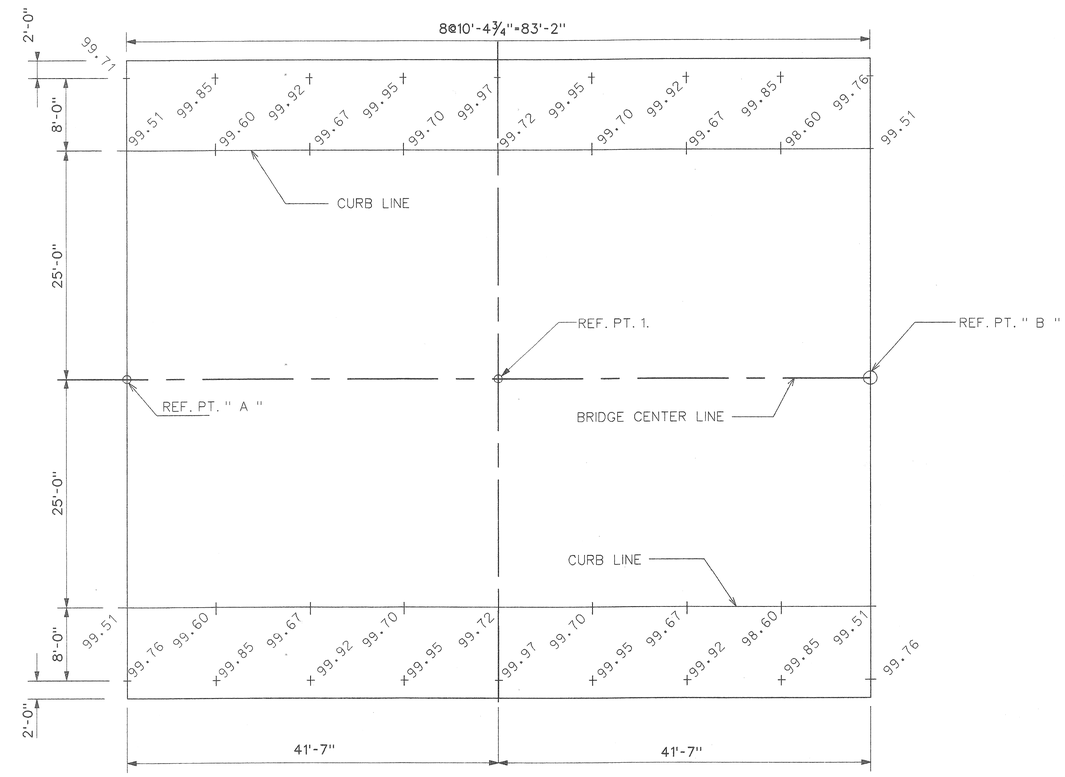
SCALE	HORIZONTAL / VERTICAL	BOOK NO. PG. / PAVING COMPLETED	LEVEL / DATE	BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

BENCH MARKS ELEV



PROPOSED TOP OF DECK SLAB ELEVATIONS

1/8" = 1'-0"

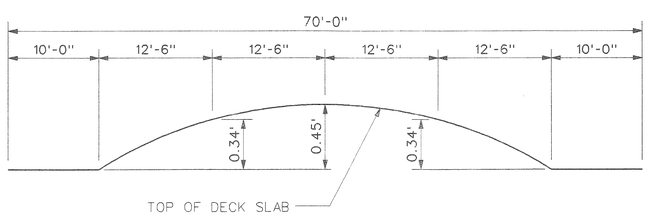


PROPOSED SIDEWALK ELEVATIONS

1/8" = 1'-0"

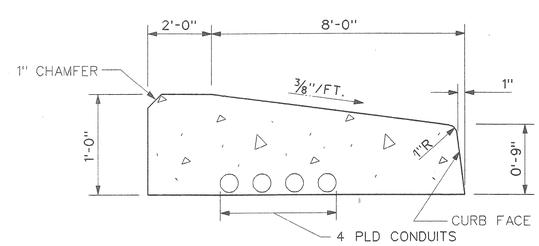
NOTES :

1. ALL ELEVATIONS ARE BASED ON CITY OF DETROIT DATUM.
2. SIDEWALK POUR SHALL NOT BE CAST UNTIL SLAB CONCRETE HAS ATTAINED AT LEAST 75% OF ITS DESIGN STRENGTH.
3. FOR SURVEY BENCH MARK LOCATIONS & ELEVATIONS, SEE SHEET NO. S-3 .
4. SLAB & SIDEWALK ELAVATIONS ARE BASED ON THE CONDITIONS THAT ALL CONCRETE BEAMS HAVE BEEN ERECTED, BUT NO OTHER LOADS ARE APPLIED. THESE ELEVATIONS INCLUDE ALLOWANCES FOR DEFLECTION DUE TO FORMS AND STEEL REINFORCEMENT, DECK CONCRETE AND BARRIERS.
5. SCREED ELEVATIONS ARE BASED ON THE CONDITION THAT THAT NO SLAB CONCRETE HAS BEEN CAST AND THAT FORMWORK AND STEEL REINFORCEMENT ARE IN PLACE.
6. TRANSVERSE STRIKE OF FINISHING MACHINE IS TO USED IN PLACING DECK CONCRETE.
7. SCREED RAILS FOR FINISHING CONCRETE SHALL BE LOCATED OVER FASCIA BEAMS.
8. SCREED ELEVATIONS ARE IN PARENTHESIS THUS ( ).
9. TRANSVERSE SIDEWALK CONTRACTION JOINTS TO BE AT 8-FT. INTERVALS OR AS DIRECTED BY THE ENGINEER.



TYPICAL SECTION FOR TOP OF DECK SLAB

NO SCALE



TYPICAL SIDEWALK SECTION

NO SCALE

JOB NO. 36916A

REVISIONS	DESCRIPTION	BY	CHECKED BY	APPROVED
	PLAN	N.W.,K.M.		Earl C. Howard, STRUCTURAL ENGINEER
	GRADE	P.S.,N.W.		
	ESTIMATE			
	FINAL	SHEET	REVIEW	

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAU OF STREETS AND HIGHWAYS

SPINOZA DRIVE BRIDGE OVER ROUGE RIVER (BW-270)
PROPOSED DECK AND SIDEWALK ELEVATIONS

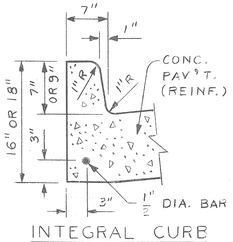
SHEET S-13 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-16
DATE MAR. ,1997

06/19/97 ENGINEERING PRINT

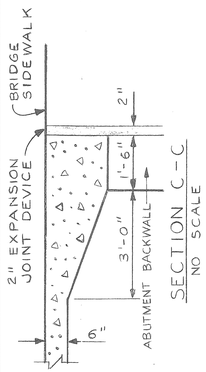
SCALE	HORIZONTAL / VERTICAL	BOOK NO. / PG. / PAVING COMPLETED	LEVEL / DATE	BEFORE STARTING CONSTRUCTION, CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

NOTE – FOR SYMBOLS (A) ETC. SEE STANDARD DETAIL DRAWING NO C-4378

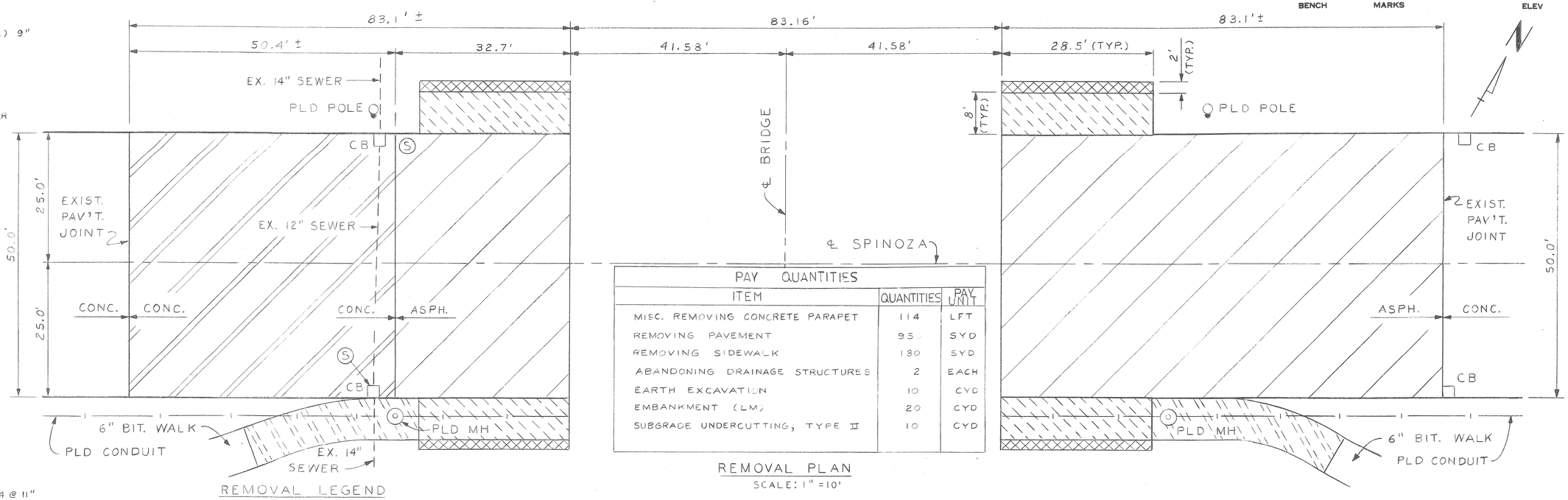
BENCH MARKS ELEV



INTEGRAL CURB
NO SCALE

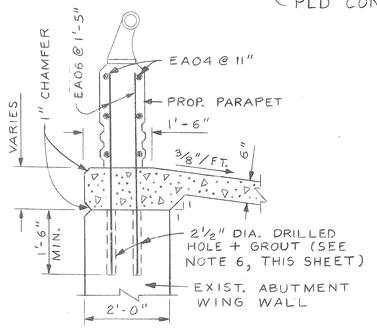


SECTION C-C
NO SCALE

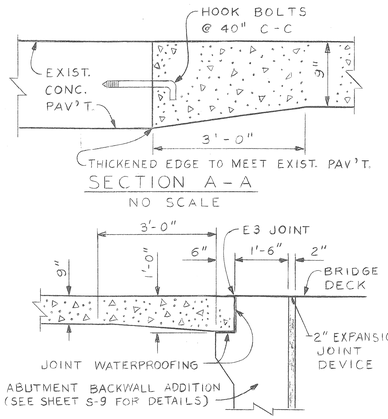


PAY QUANTITIES		
ITEM	QUANTITIES	PAY UNIT
MISC. REMOVING CONCRETE PARAPET	114	LFT
REMOVING PAVEMENT	955	SYD
REMOVING SIDEWALK	130	SYD
ABANDONING DRAINAGE STRUCTURES	2	EACH
EARTH EXCAVATION	10	CYD
EMBANKMENT (LM)	20	CYD
SUBGRADE UNDERCUTTING, TYPE II	10	CYD

REMOVAL PLAN
SCALE: 1" = 10'



DETAIL OF PROPOSED SIDEWALK AT WING WALL
NO SCALE



SECTION A-A
NO SCALE

SECTION B-B
NO SCALE

REMOVAL LEGEND

- (S) ABANDONING DRAINAGE STRUCTURE
- REMOVING PAVEMENT (ASPHALT)
- REMOVING PAVEMENT (CONCRETE)
- REMOVING SIDEWALK
- REMOVING BITUMINOUS SIDEWALK
- REMOVING CONCRETE BRIDGE PARAPET

PAVING PLAN LEGEND

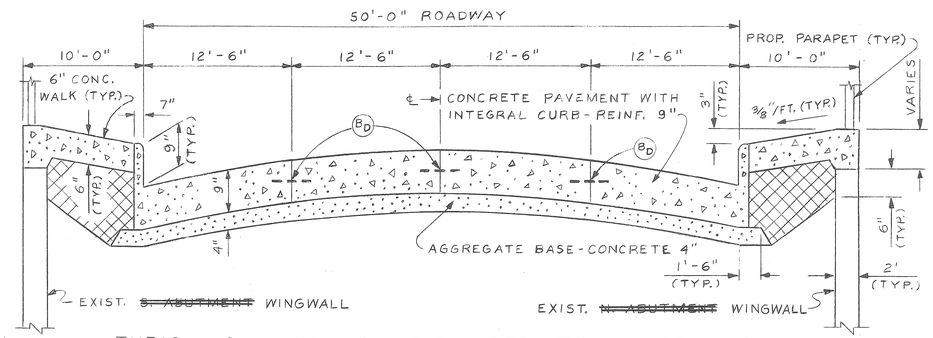
- (C) TRANSVERSE CONTRACTION JOINT
- (E) TRANSVERSE EXPANSION JOINT
- CONC. PAV'T. WITH INTEGRAL CURB - REINF. 9"
- CONCRETE SIDEWALK, 6"
- BITUMINOUS SIDEWALK, 4" (SEE NOTE 5 ON SHEET NO S-15).
- BRIDGE PARAPET ON CONCRETE WALK
- CLASS "A" SODDING WITH 3" TOPSOIL
- BACKFILL AND CLASS "A" SODDING
- CLASS C-76-III 12" SEWER IN TRENCH DETAIL B
- (A) CATCH BASIN "A"
- (B) CATCH BASIN "B" W/O TRAP
- (D) ADJUSTING DRAINAGE STRUCTURE COVER, CASE 2

TYPICAL SECTION LEGEND

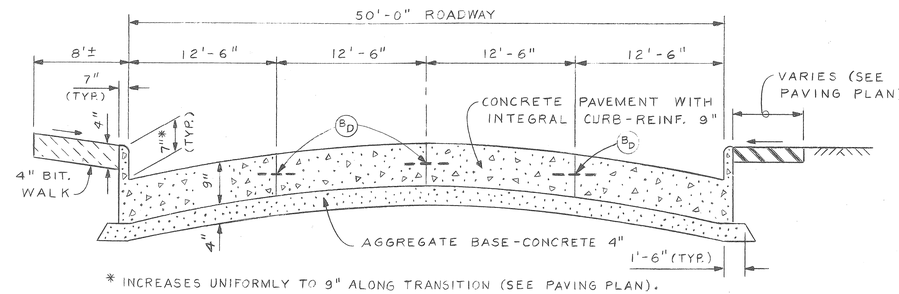
- AGGREGATE BASE UNDER CONCRETE (4" IN PLACE)
- GRANULAR MATERIAL CLASS II
- BITUMINOUS SIDEWALK, 4"
- CLASS "A" SODDING WITH 3" TOPSOIL
- (BD) LONGITUDINAL JOINT, OPTIONAL B OR D

NOTES

1. SUBGRADE UNDERCUTTING SHALL BE AS DIRECTED BY THE ENGINEER.
2. INCLUDE BITUMINOUS WALK REMOVAL WITH EARTH EXCAVATION.
3. REMOVING PAVEMENT (ASPHALT) AND REMOVING PAVEMENT (CONCRETE) SHALL BE PAID FOR AS REMOVING PAVEMENT.
4. TYPE B JOINT DENOTES AN MDOT LONGITUDINAL BULKHEAD JOINT; TYPE D JOINT DENOTES AN MDOT LONGITUDINAL LANE TIE JOINT.
5. FOR A PROFILE VIEW OF THE EXISTING BRIDGE PARAPET SEE SHEET NO. S-5.
6. THIS WORK INCLUDED IN PAY ITEM: "BRIDGE RAILING, SOLID PARAPET TYPE".
7. FOR DETAILS OF THE PROPOSED PARAPET SEE SHEET NO. S-9. SEE ALSO MDOT STANDARD PLAN X-18D, "BRIDGE RAILING, SOLID PARAPET TYPE".
8. TRANSVERSE CONTRACTION JOINTS ON APPROACH SIDEWALKS SHALL BE SPACED AT 6' INTERVALS.
9. PROVIDE DOUBLE-YELLOW ℄ PAVEMENT MARKINGS CONFORMING TO DETROIT DOT FIELD MARKING STANDARDS NO. SG-50. MARKINGS ARE TO BE OF POLYESTER MATERIAL.
10. SEE ALSO NOTES ON SHEET NO. S-15.



TYPICAL SECTION FROM BRIDGE DECK TO END OF WING WALL
NO SCALE



* INCREASES UNIFORMLY TO 9" ALONG TRANSITION (SEE PAVING PLAN).

TYPICAL SECTION FROM END OF WING WALL TO EXISTING PAV'T.
NO SCALE

JOB NO. 36916A

06/19/97 ENGINEERING PRINT

DESCRIPTION	DR N	CK D	AP VD	DATE
REVISIONS				

	BY	CHECKED BY
PLAN	N.W.	
GRADE	N.W.	
ESTIMATE		
FINAL	CHECK	REVIEW

APPROVED: Earl C. Howard, ENGINEER OF STREETS

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
BUREAU OF STREETS AND HIGHWAYS

SPINOZA DR. BRIDGE OVER ROUGE RIVER (BW-270)
APPROACH REMOVAL PLAN, TYPICAL SECTIONS & DETAILS

SHEET S-14 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-16
DATE MAR., 1997

SCALE	HORIZONTAL	BOOK NO.	PG.	LEVEL
	VERTICAL	PAVING COMPLETED		DATE

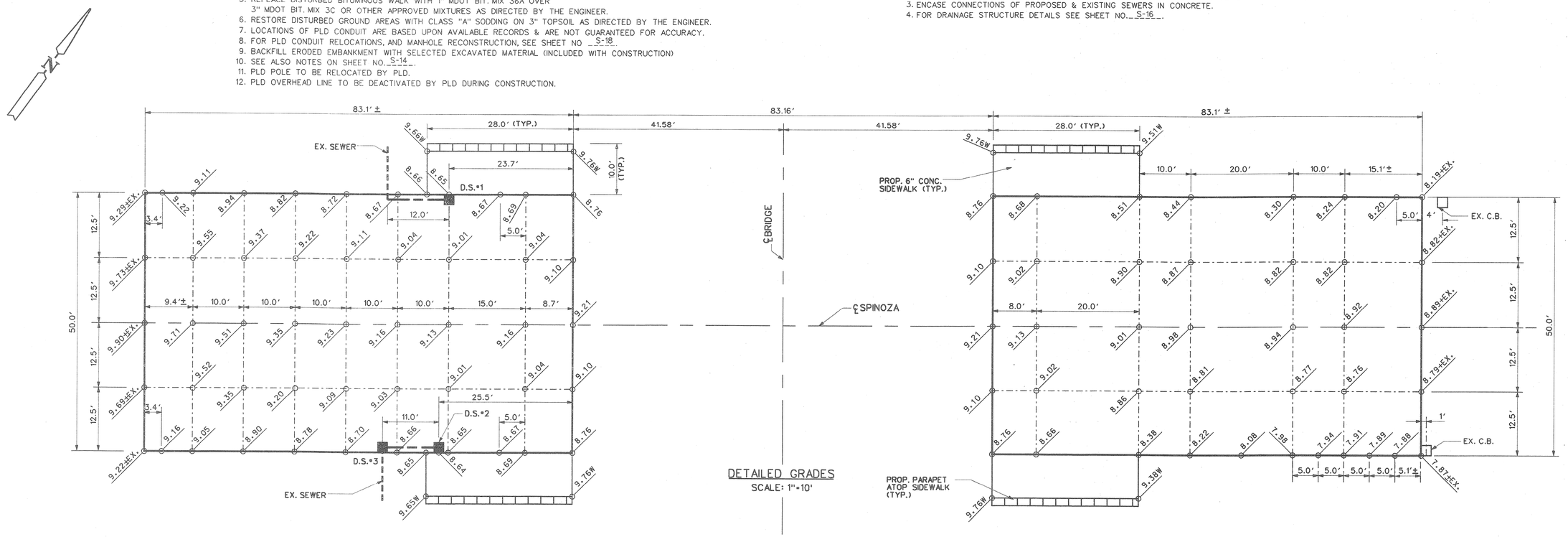
BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

NOTES:

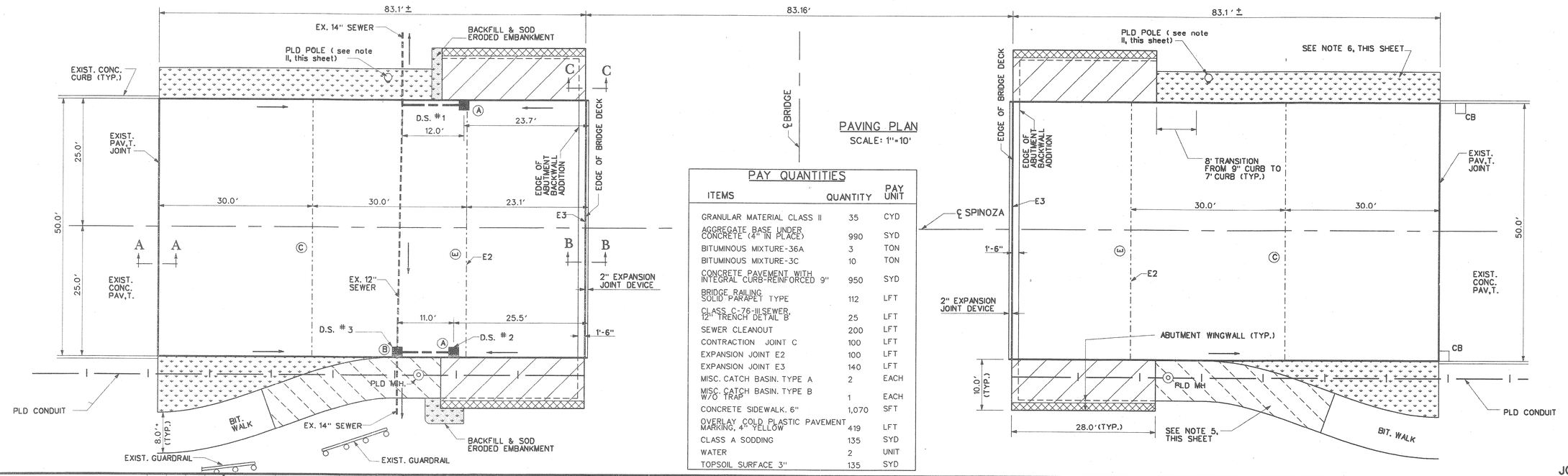
1. FOR SURVEY BENCH MARK LOCATIONS AND ELEVATIONS SEE SHEET NO. S-3.
2. ADD 90.00 TO ELEVATIONS SHOWN.
3. FOR ELEVATIONS SHOWN, "W" DENOTES TOP OF WALK ELEVATIONS. ALL OTHER ELEVATIONS SHOWN ARE PAVEMENT SURFACE ELEVATIONS.
4. FOR PAVING PLAN LEGEND, CROSS SECTIONS AND DETAILS, SEE SHEET NO. S-14.
5. REPLACE DISTURBED BITUMINOUS WALK WITH 1" MDOT BIT. MIX 36A OVER 3" MDOT BIT. MIX 3C OR OTHER APPROVED MIXTURES AS DIRECTED BY THE ENGINEER.
6. RESTORE DISTURBED GROUND AREAS WITH CLASS "A" SODDING ON 3" TOPSOIL AS DIRECTED BY THE ENGINEER.
7. LOCATIONS OF PLD CONDUIT ARE BASED UPON AVAILABLE RECORDS & ARE NOT GUARANTEED FOR ACCURACY.
8. FOR PLD CONDUIT RELOCATIONS, AND MANHOLE RECONSTRUCTION, SEE SHEET NO S-18.
9. BACKFILL ERODED EMBANKMENT WITH SELECTED EXCAVATED MATERIAL (INCLUDED WITH CONSTRUCTION)
10. SEE ALSO NOTES ON SHEET NO. S-14.
11. PLD POLE TO BE RELOCATED BY PLD.
12. PLD OVERHEAD LINE TO BE DEACTIVATED BY PLD DURING CONSTRUCTION.

DRAINAGE STRUCTURE NOTES

1. INSTALL 12" DIA. C-76 III SEWERS IN TRENCH DETAIL B. (SEE M.D.O.T. STANDARD DETAIL IV-83H)
2. VERIFY DIAMETERS, INV. ELEVATIONS & DIRECTION OF FLOW OF EXISTING SEWERS IN THE FIELD.
3. ENCASE CONNECTIONS OF PROPOSED & EXISTING SEWERS IN CONCRETE.
4. FOR DRAINAGE STRUCTURE DETAILS SEE SHEET NO. S-16.



DETAILED GRADES
SCALE: 1"=10'



PAVING PLAN
SCALE: 1"=10'

PAY QUANTITIES

ITEMS	QUANTITY	PAY UNIT
GRANULAR MATERIAL CLASS II	35	CYD
AGGREGATE BASE UNDER CONCRETE (4" IN PLACE)	990	SYD
BITUMINOUS MIXTURE-36A	3	TON
BITUMINOUS MIXTURE-3C	10	TON
CONCRETE PAVEMENT WITH INTEGRAL CURB-REINFORCED 9"	950	SYD
BRIDGE RAILING SOLID PARAPET TYPE	112	LFT
CLASS C-76-III SEWER, 12" TRENCH DETAIL B	25	LFT
SEWER CLEANOUT	200	LFT
CONTRACTION JOINT C	100	LFT
EXPANSION JOINT E2	100	LFT
EXPANSION JOINT E3	140	LFT
MISC. CATCH BASIN. TYPE A	2	EACH
MISC. CATCH BASIN. TYPE B W/O TRAP	1	EACH
CONCRETE SIDEWALK. 6"	1,070	SFT
OVERLAY COLD PLASTIC PAVEMENT MARKING, 4" YELLOW	419	LFT
CLASS A SODDING	135	SYD
WATER	2	UNIT
TOPSOIL SURFACE 3"	135	SYD

JOB NO. 36916A

	BY	CHECKED BY	APPROVED:
PLAN	N.W.,K.M.		
GRADE	N.W.,K.M.		ENGINEER OF STREETS
ESTIMATE			
FINAL	SHEET	REVIEW	

DESCRIPTION | DR | CK | DA | PV | DATE
REVISIONS

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAU OF STREETS AND HIGHWAYS

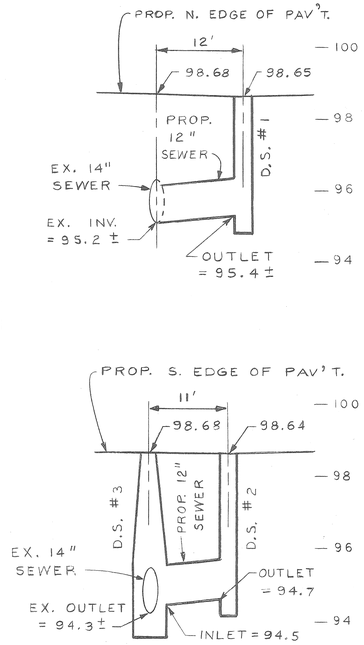
SPINOZA DRIVE BRIDGE OVER ROUGE RIVER (BW-270)
APPROACH PAVING PLAN AND DETAILED GRADES

SHEET S-15 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-16
DATE MAR. ,1997

06/19/97 ENGINEERING PRINT

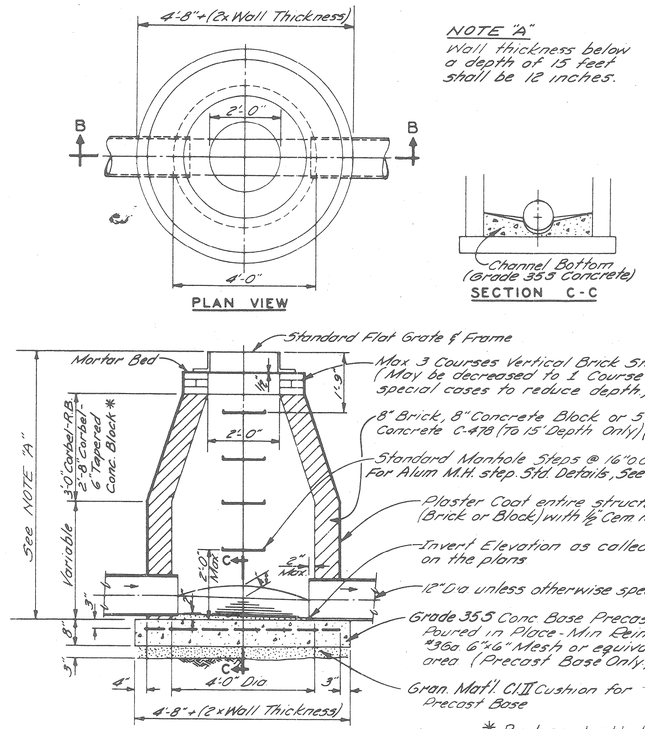
SCALE	HORIZONTAL	BOOK	LEVEL
	VERTICAL	NO. PG.	DATE
		PAVING COMPLETED	

BEFORE STARTING CONSTRUCTION ——— CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.



DRAINAGE STRUCTURE PROFILES

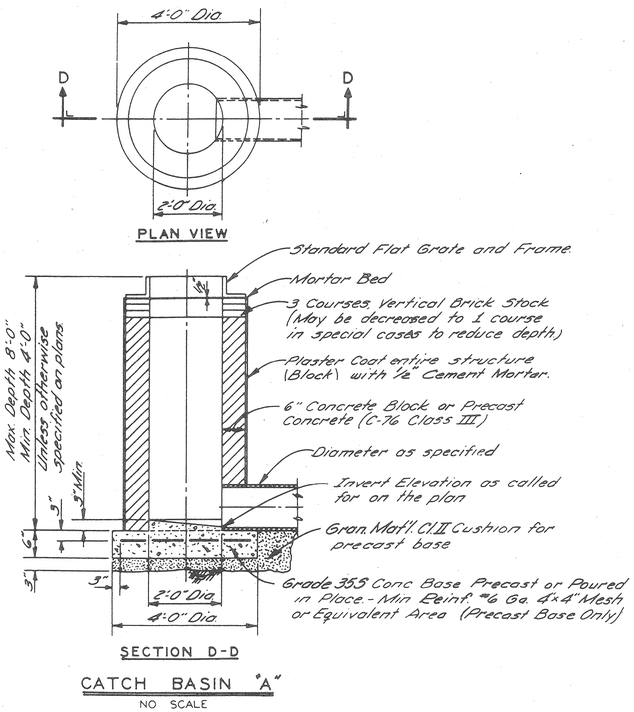
SCALE: 1" = 10' HORIZ.
1" = 2' VERT.



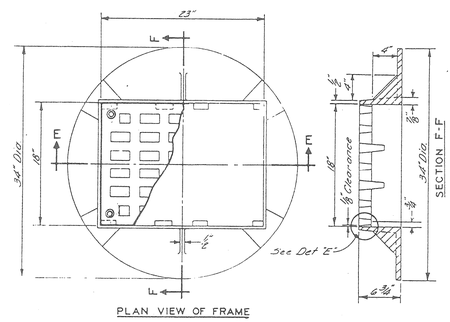
NOTE "A"
Wall thickness below a depth of 15 feet shall be 12 inches.

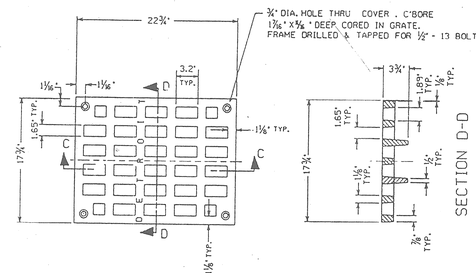
* Reduce depth to a minimum to keep sewers out of corbel.

CATCH BASIN "B"
NO SCALE



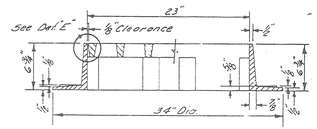
CATCH BASIN "A"
NO SCALE

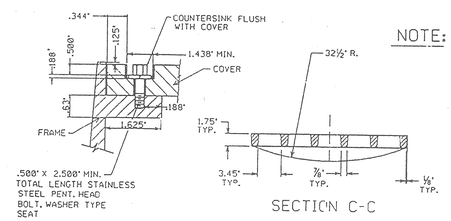




MATERIAL: GRAY IRON A.S.T.M. STD. SPEC. A-48, CLASS 30. BEARING SURFACES OF COVER AND FRAME SHALL BE GROUND TO PREVENT ROCKING. CASTING SHALL NOT BE COATED

NOTE: f̄s FINISH SURFACE





COVER BOLT DETAIL

STANDARD FLAT GRATE AND FRAME
NO SCALE

GENERAL NOTES

1. The materials & workmanship shall be in accordance with the current Standard Specifications.
2. Center of Catch Basin shall be 20 inches from back of curb.
3. All sizes & flow lines of pipe, and elevations for top & bottom of structures shall be determined from the plans or construction requirements.
   The bell shall be removed from the first length of outlet pipe projecting through the wall of the structures.
   When any structure is constructed of precast concrete or concrete block, the top of the masonry shall be left sufficiently low to permit proper adjustment of cover to grade by the use of mortar or bricks as directed by the Engineer.
4. A plaster coat of mortar ½ inch in thickness shall be applied to the outer surface of the structure as shown. A ½ inch cement plaster coat shall be placed on the inside of all sumps.
5. Contractor shall verify elevations of existing utilities to enable construction to indicated elevations shown on drawings. If necessary, invert elevations shown on the drawings may be altered in the field to clear existing utilities. Such alterations, upward or downward, shall be at no change in contract price.
6. When precast concrete pipe sections are used for catch basins, either a section of the inlet and outlet pipes or an opening or eye for the inlet & outlet pipes shall be cast into the wall of the catch basin pipe when it is being manufactured. Eyes in precast pipe sections shall be furnished to accommodate a flexible joint connection such as Press-Wedge by Press Seal Gasket Corp or Res-Seal by Scales Mfg. Corp.

JOB NO. 30916

DESCRIPTION	DR N	CK D	AP VD	DATE
REVISIONS				

	BY	CHECKED BY
PLAN	N.W.	NW
GRADE		
ESTIMATE		
FINAL	CHECK	REVIEW

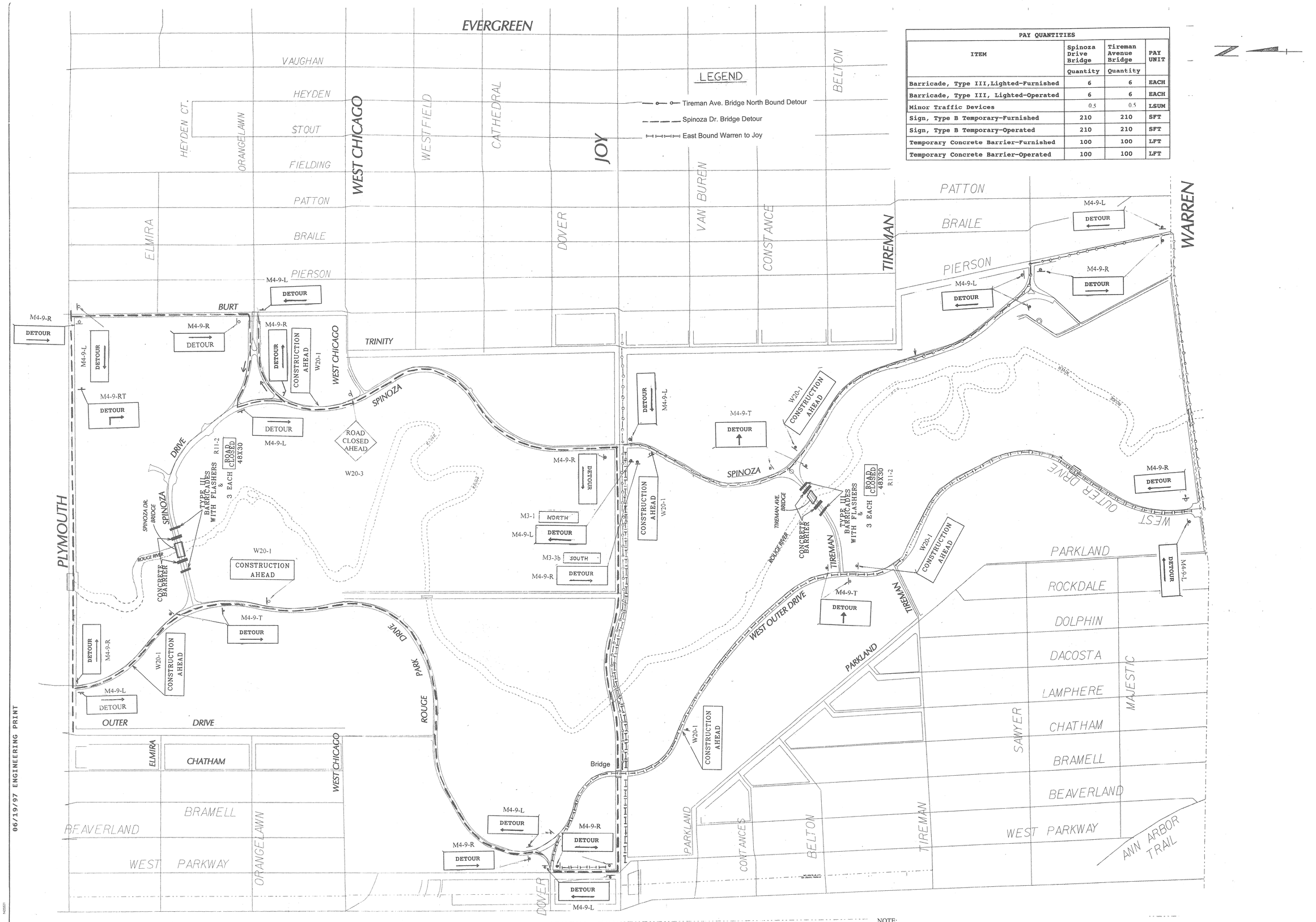
APPROVED: Earl C. Hayward, ENGINEER OF STREETS

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
BUREAU OF STREETS AND HIGHWAYS

SPINOZA BRIDGE OVER ROUGE RIVER (BW-270)
DRAINAGE STRUCTURE DETAILS

SHEET S-16 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-16
DATE MAR., 1997

06/19/97 ENGINEERING PRINT



PAY QUANTITIES

ITEM	Spinoza Drive Bridge Quantity	Tireman Avenue Bridge Quantity	PAY UNIT
Barricade, Type III, Lighted-Furnished	6	6	EACH
Barricade, Type III, Lighted-Operated	6	6	EACH
Minor Traffic Devices	0.5	0.5	LSUM
Sign, Type B Temporary-Furnished	210	210	SFT
Sign, Type B Temporary-Operated	210	210	SFT
Temporary Concrete Barrier-Furnished	100	100	LFT
Temporary Concrete Barrier-Operated	100	100	LFT

NOTE:

1. FOR TRAFFIC MAINTENANCE AND CONTROL, REFER TO MDOT 1990 STANDARD SPECIFICATION FOR CONSTRUCTION SECTION 6.31.

JOB NO. : 36916A

revisions | date | ap'vd | ck'd | dr'n

designed by JA, RW
drawn by JF
checked by RW, JA, EH
approved: Earl C. Howard
EARL HOWARD

CITY OF DETROIT

CITY ENGINEERING DIVISION

DEPARTMENT OF PUBLIC WORKS

SPINOZA DRIVE BRIDGE OVER ROUGE RIVER(BW-270)
SUPERSTRUCTURE RECONSTRUCTION

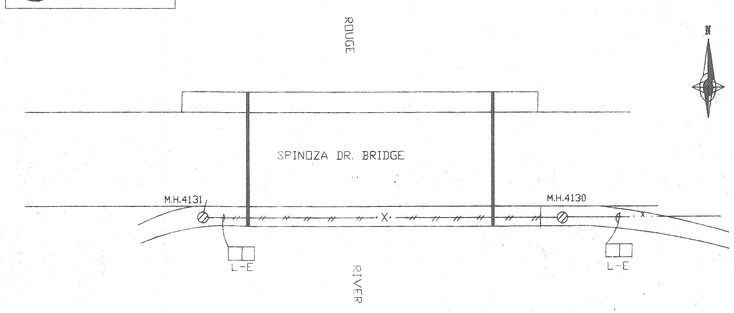
TRAFFIC CONTROL AND DETOUR PLAN

a.o. 93-22-16
contract no.
sheet S-17 of S-41
drawing no.
date MAR. ,1997

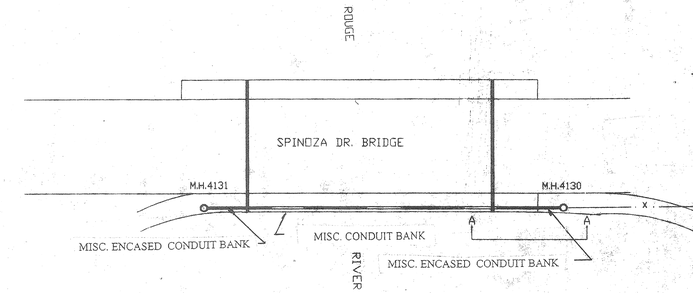
06/19/97 ENGINEERING PRINT

CALL MISS DIG BEFORE YOU DIG

T-109 & 110

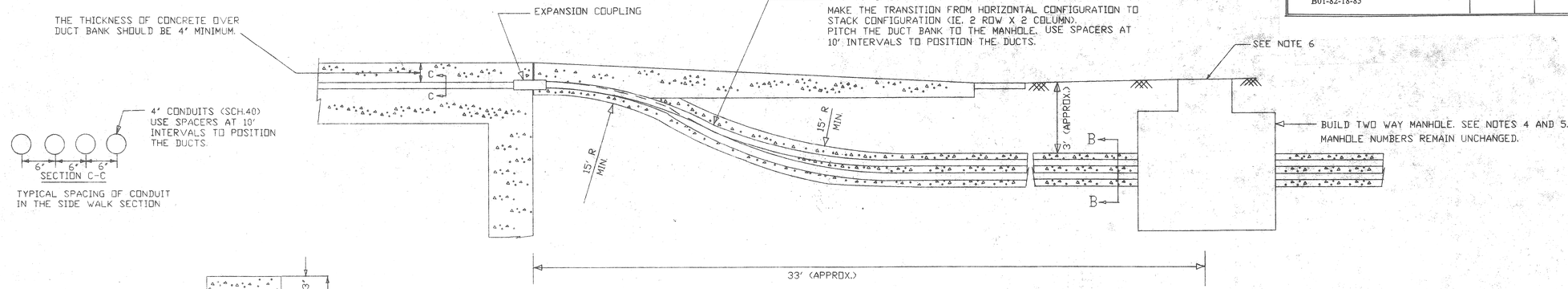


EXISTING



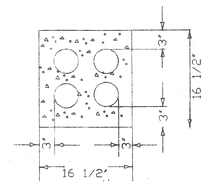
FUTURE

PAY QUANTITY		
ITEM	QUANTITY	PAY UNIT
(A) BRIDGE:		
MISC. CONDUIT BANK	83	LFT
(B) APPROACH WORK:		
MISC. MANHOLE	2	EACH
MISC. ENCASED CONDUIT BANK	62	LFT
MANHOLE - REMOVE	2	EACH
MISC. DUCT BANK - REMOVE, B01-82-18-85	1	LSUM



SECTION A-A

TYPICAL SECTIONAL VIEW.



SECTION B-B

NOTE

1. REFER TO P.L.D. DRAWING NO. 101 FOR ENCASED CONDUIT BANK.
2. REFER TO P.L.D. DRAWING NO. 104 FOR MANHOLE CONSTRUCTION.
3. ALL THE DEBRIS OF THE DISMANTLED DUCTS AND MANHOLES SHOULD BE REMOVED BEFORE NEW MANHOLES AND DUCTS ARE INSTALLED.
4. NEW MANHOLES SHOULD ACCOMMMODATE THE EXISTING DUCT BANK ON ONE SIDE AND THE NEW DUCTBANK ON THE OTHER SIDE. PRECAST MANHOLES MAY BE USED PER P.L.D. APPROVAL.
5. THE DUCT BANKS SHOULD BE TERMINATED IN THE DUCT POCKETS OF THE MANHOLES PER P.L.D. SPECIFICATIONS.
6. P.L.D. APPROVED MANHOLE FRAME AND COVER SHOULD BE INSTALLED.
7. PLEASE CONTACT P.L.D. INSPECTORS BEFORE STARTING ANY WORK.
   MR. SIDNEY BASS (313)267- 7340
   MR. KEN HARDAWAY (313)267- 6043
8. THE CONTRACTOR SHOULD NOTIFY P.L.D. SYSTEM OPERATOR (313) 224- 0500 48 HRS. PRIOR TO PERFORMING ANY WORK.
9. REFER TO THE FOLLOWING SPECIFICATIONS: CITY ENGINEERING DEPARTMENT STANDARD SPECIFICATIONS FOR PAVING AND RELATED CONSTRUCTION (DIVISION 15 WITH SPECIAL PROVISIONS FOR P.L.D. ELECTRICAL WORK).

LEGEND

- EXISTING DUCT BANK
- EXISTING DUCT
- DISMANTLE THE EXISTING DUCT BANK
- DISMANTLE THE MANHOLE
- BUILD DUCT BANK
- BUILD NEW MANHOLE

NOT TO SCALE

REVISION	DESCRIPTION	DATE
	CONDUIT CHANGED FROM SCHEDULE 80 TO SCHEDULE 40	3/25/1996
	NEW MANHOLE PROPOSED	4/2/1996

SPINOZA DRIVE BRIDGE IN ROUGE PARK

DETAILS OF CONDUIT RECONSTRUCTION

SPINOZA DRIVE AND ROUGE RIVER

DRAWN BY

CHECKED BY SB

APPROVED BY Earl C. Howard

PUBLIC LIGHTING DEPARTMENT

CITY OF DETROIT

FILE NO. 44-0414

SHEET NO. S-18 of S-41

DATE MAR. ,1997

06/19/97 ENGINEERING PRINT

QUANTITY SHEET

AS PER PLANS

ITEMS		SHEET NO'S. TOTALS	UNITS	S-2 BRIDGE TITLE SHEET	S-3 SITE PLAN	S-4 GENERAL PLAN OF STRUCTURE	S-5 REMOVAL PLAN	S-6 REPAIRING STRUCTURAL CRACKS, PATCHING ABUTMENTS AND PIER	S-7 PLAN OF DECK AND CROSS SECTION	S-8 SUPERSTRUCTURE DETAILS	S-9 SUPERSTRUCTURE DETAILS	S-10 EXPANSION JOINT DETAILS	S-11 STEEL REINFORCEMENT DETAILS	S-12 EXISTING DECK AND SIDEWALK ELEVATIONS	S-13 PROPOSED DECK AND SIDEWALK ELEVATIONS	S-14 APPROACH REMOVAL PLAN, PROPOSED SECTIONS AND DETAILS	S-15 APPROACH PAVING PLAN, AND DETAILED GRADES	S-16 DRAINAGE STRUCTURE DETAILS	S-17 TRAFFIC CONTROL AND DETOUR PLAN	S-18 DETAILS OF CONDUIT RECONSTRUCTION	S-19 QUANTITY SHEET
PART 01 - APPROACH	*ITEM CODE NO.*																				
MISC. MOBILIZATION MAX, $66,000.00	1507051	0.50	LSUM		0.50																
MISC. REMOVAL OF PORTIONS OF STRUCTURES, B01-82-18-85	2067051	1	LSUM				1														
REMOVING PAVEMENT	2070002	950	SYD													950					
REMOVING SIDEWALK	2070006	130	SYD													130					
ABANDONING DRAINAGE STRUCTURES	2070016	2	EACH													2					
MISC. REMOVING CONCRETE PARAPET	2077001	114	LFT													114					
EARTH EXCAVATION	2080001	10	CYD													10					
EMBANKMENT (LM)	2080020	20	CYD													20					
SUBGRADE UNDERCUTTING TYPE II	2080031	10	CYD													10					
GRANULAR MATERIAL CLASS II	2080051	35	CYD														35				
AGGREGATE BASE UNDER CONCRETE (4" IN PLACE)	3010021	990	SYD														990				
BITUMINOUS MIXTURE -3C	4000047	10	TON														10				
BITUMINOUS MIXTURE - 36A	4000050	3	TON														3				
CONCRETE PAVEMENT WITH INTEGRAL CURB-REINFORCED 9"	4500173	950	SYD														950				
CONTRACTION JOINT C	4500270	100	LFT														100				
EXPANSION JOINT E2	4500275	100	LFT														100				
EXPANSION JOINT E3	4500276	140	LFT														140				
CLASS A SEWER, 24" TRENCH DETAIL A	5130018	30	LFT		30																
CLASS C76-III SEWER, 12",TRENCH DETAIL B	5130337	25	LFT														25				
SEWER CLEANOUT	5140013	200	LFT														200				
MISC. CATCH BASIN TYPE A	5147050	2	EACH														2				
MISC. CATCH BASIN TYPE B W/O TRAP	5147050	1	EACH														1.				
CONCRETE SIDEWALK 6"	6110003	1,070	SFT														1,070				
FIELD OFFICE	6220001	6	MOS		6																
OVERLAY COLD PLASTIC PAVEMENT MARKING, 4" YELLOW	6290351	419	LFT														419				
BARRICADE, TYPE III, LIGHTED-FURNISHED	6310036	6	EACH																6		
BARRICADE, TYPE III, LIGHTED-OPERATED	6310037	6	EACH																6		
TEMPORARY CONCRETE BARRIER-FURNISHED	6310040	100	LFT																100		
TEMPORARY CONCRETE BARRIER-OPERATED	6310041	100	LFT																100		
MINOR TRAFFIC DEVICES	6310054	0.50	LSUM																0.50		
SIGN, TYPE B TEMPORARY-FURNISHED	6310065	210	SFT																210		
SIGN, TYPE B TEMPORARY-OPERATED	6310066	210	SFT																210		
CLASS A SODDING	6530001	135	SYD														135				
WATER	6530003	2	UNIT														2				
ROADSIDE SEEDING	6530006	20	LBS		20																
CHEMICAL FERTILIZER NUTRIENT	6530010	48	LBS		48																
TOPSOIL SURFACE 3"	6530014	1,103	SYD		968												135				
MULCH	6530030	0.4	TON		0.4																
ANCHORING MULCH	6530031	0.2	ACRE		0.2																
MULCH BLANKETS	6530037	968	SYD		968																
MANHOLE - REMOVE	6902569	2	EACH																	2	
MISC. ENCASED CONDUIT BANK	6907001	62	LFT																	62	
MISC. MANHOLE	6907050	2	EACH																	2	
MISC. DUCT BANK-REMOVE,B01-82-18-85	6907051	1	LSUM																	1	
PART 02 - BRIDGE	*ITEM CODE NO.*																				
SWAMP BACKFILL	2080023	310	CYD		310																
UNCLASSIFIED FOUNDATION EXCAVATION	2090003	233	CYD								233										
CHANNEL EXCAVATION	2090004	620	CYD		620																
STRUCTURE BACKFILL (CIP)	2090005	138	CYD			138															
SUPERSTRUCTURE CONCRETE	5030024	337	CYD						337												
EXPANSION JOINT DEVICE	5030099	132	LFT									132									
MISC.FORM, FINISH & CURE SUPERSTRUCTURE CONC.,B01-82-18-85	5037051	1	LSUM						1												
STEEL REINFORCEMENT, EPOXY COATED	5030031	95,032	LBS										95,032								
PENETRATING WATER REPELLANT TREATMENT	5030052	1,350	SYD					1,350													
MISC. ELASTOMERIC CONCRETE	5037020	3	CFT						3												
ELASTOMERIC BEARING, 1"	5040062	60	SFT							60											
PRESTRESSED CONCRETE I-BEAM, 36"-FURNISHED	5050015	840	LFT							840											
PRESTRESSED CONCRETE I-BEAM, 36"-ERECTED	5050016	840	LFT							840											
JOINT WATERPROOFING	5060001	210	SFT						210												
BRIDGE RAILING SOLID PARAPET TYPE	5080002	280	LFT			168											112				
HAND CHIPPING - OTHER THAN DECK	5090007	220	CFT					220													
PATCHING MORTAR OR CONCRETE	5090015	220	CFT					220													
FORMING FOR PATCHES	5090017	600	SFT					600													
FLUSHING CRACKS WITH ACID	5090097	150	LFT					150													
FLUSHING CRACKS WITH WATER	5090098	150	LFT					150													
REPAIRING STRUCTURAL CRACKS	5090099	150	LFT					150													
RIPRAP, HEAVY	6010015	539	SYD			539															
MISC. CONDUIT BANK	6907001	83	LFT																	83	

JOB NO:

revisions				

revisions				

designed by P.P.

drawn by K.M.

approved: E.H.

CITY OF DETROIT
city engineering division
department of public works

SPINOZA DRIVE BRIDGE BW-270
QUANTITY SHEET

a.o. 93-22-16
contract no.
sheet S-19
of S-41
drawing no.
date MARCH 1997

06/19/97 ENGINEERING PRINT

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

IN CO-OPERATION WITH

MICHIGAN DEPARTMENT OF TRANSPORTATION

AND

FEDERAL HIGHWAY ADMINISTRATION

FEDERAL AID URBAN PROJECT NO. MICHIGAN DSTP 9582(020)

CONTROL SECTION 82400 JOB NO. 36917A – B01 82-18-84

TRAFFIC DATA

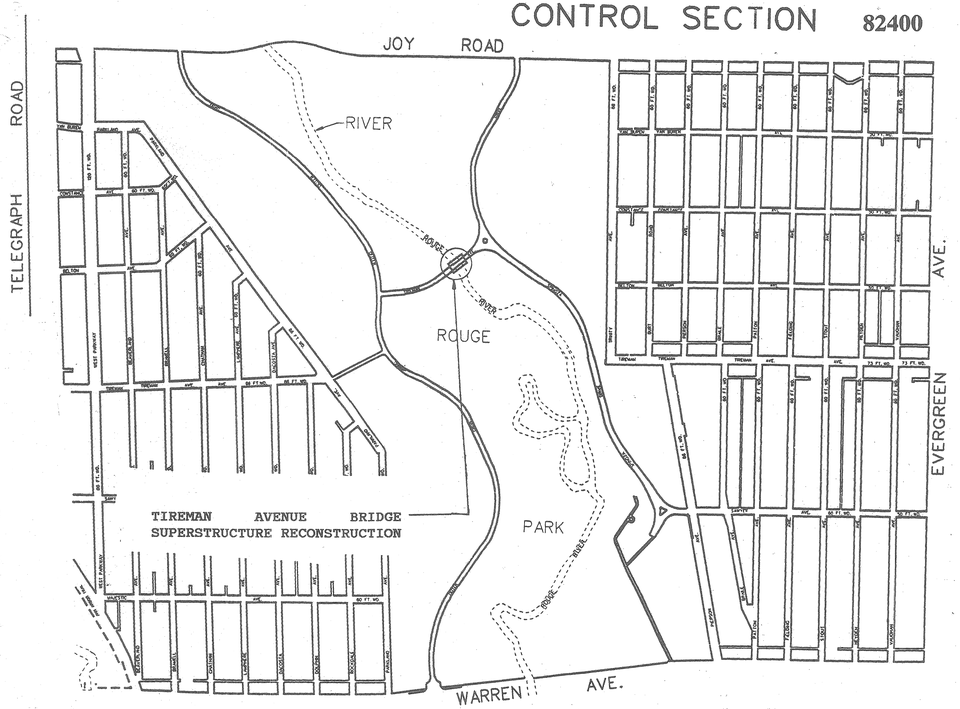
POSTED SPEED	25 MPH
DESIGN SPEED	45 MPH
PRESENT ADT (1994)	1956
FUTURE ADT (2014)	3533
DESIGN LOADING	HS20

INDEX OF SHEETS

S-20 BRIDGE TITLE SHEET
S-21 SITE PLAN
S-22 GENERAL PLAN OF STRUCTURE
S-23 REMOVAL PLAN
S-24 REPAIRING STRUCTURAL CRACKS, PATCHING ABUTMENTS AND PIER
S-25 PLAN OF DECK AND CROSS SECTION
S-26 SUPERSTRUCTURE DETAILS
S-27 PRESTRESSED BEAM DETAILS
S-28 EXPANSION JOINT DETAILS
S-29 STEEL REINFORCEMENT DETAILS
S-30 EXISTING DECK AND SIDEWALK ELEVATIONS
S-31 PROPOSED DECK AND SIDEWALK ELEVATIONS
S-32 APPROACH REMOVAL PLAN, PROPOSED SECTIONS AND DETAILS
S-33 APPROACH PAVING PLAN AND DETAILED GRADES
S-34 DRAINAGE STRUCTURE DETAILS
- TRAFFIC CONTROL AND DETOUR PLAN . . . . (S-17)
S-35 DETAILS OF CONDUIT RECONSTRUCTION
S-36 QUANTITY SHEET

CITY OF DETROIT STANDARD PLANS

S-37 MISCELLANEOUS ENCASED CONDUIT SECTION DETAILS _____ 101-PLD
S-38 DETAIL FOR JOINING CONDUIT ENCASEMENTS ___ 101A-PLD
S-39 TWO WAY MANHOLE _____ 104-PLD
S-40 MULT. ST. LTG. CABLE CONNECTIONS, CLAMP-ON ARM & MISCELLANEOUS DETAILS _____ 114-PLD
S-41 CODE 009-OC ST. LTG. STD. DETAILS _____ 115-PLD



COUNTY: WAYNE TOWN: 02S

RANGE : 10E SECTION: 3

CITY OF DETROIT

BRIDGE NO. BW 265

FEDERAL STRUCTURE

NO. 0153100 B01

N

MDOT STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE NOTED.

* II-30E	CONCRETE CURB & CONCRETE CURB & GUTTER
* II-39L	TRANSVERSE PAVEMENT JOINTS
* II-43E	LOCATION OF TRANSVERSE JOINTS IN CONCRETE PAVEMENT
* II-44J	CONCRETE PAVEMENT REPAIR
* II-45H	CONVENTIONAL PAVEMENT REINFORCEMENT
III-60H	BEAM GUARDRAIL
III-67D	GUARDRAIL ANCHORAGE - BRIDGE, DETAILS
IV-83H	UTILITY TRENCHES
V-100C	SODDING & SEEDING
VI-125H	LIGHTED ARROWS & BARRICADES
X-18D	BRIDGE RAILLING SOLID PARAPET TYPE
XI-103D	MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS

* Special Detail in Proposal.

GENERAL NOTES

1. THE DESIGN OF THIS STRUCTURE REHABILITATION IS BASED ON CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES HS20 LOADING. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE WORKING STRESS METHOD OF DESIGN WAS USED FOR THIS STRUCTRE.
2. EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 1990 EDITION.
3. PUBLIC LIGHTING DEPARTMENT WORK TO BE DONE IN ACCORDANCE WITH P.L.D. SPECIFICATIONS AND CITY OF DETROIT DIVISION 15 STANDARDS.
4. THE STATIONING AS SHOWN ON THESE PLANS IS BELIEVED TO BE CORRECT. IT SHALL, HOWEVER, BE CHECKED AT THE TIME OF STARTING CONSTRUCTION, AND IF THE STATIONING SHOWN ON THE PLANS IS INCORRECT, IT SHALL BE REPORTED TO THE ENGINEERING OFFICE IN DETROIT AND THE STRUCTURE SHALL BE STAKED OUT USING THE ACTUAL CENTERLINE AS THE CONTROL POINT.
5. THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

   CONCRETE (SUPERSTRUCTURE) GRADE 45D: f'_c = 4,000 PSI

   CONCRETE (RAILING AND BACKWALL) GRADE 45D: f'_c = 4,000 PSI

   PRESTRESSED CONCRETE : f'_c = 5,000 PSI

   STEEL REINFORCEMENT : f_y = 60,000 PSI

   STEEL REINFORCEMENT (PRETRESSED BEAM STIRRUPS) : f_y = 40,000 PSI

   STRUCTURAL STEEL A36 : F_y = 36,000 PSI

   PRESTRESSING STRANDS : f_{py} = 270,000 PSI
6. ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE 1/2" BEVELED EXCEPT AS OTHERWISE NOTED.
7. WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF WATER LEVELS THAT WILL EXIST DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
9. FOR PROTECTION OF UNDER GROUND UTILITIES, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF 3 WORKING DAYS PRIOR TO EXCAVATION IN THE VICINITY OF UTILITY LINES. ALL "MISS DIG" PARTICIPATING MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

   DETROIT EDISON 1-800-477-4747

   MICHIGAN CONSOLIDATED GAS CO. 313-965-8080

   AMERITECH 313-221-6100

   DETROIT WATER & SEWERAGE DEPARTMENT 313-267-7401

   CITY OF DETROIT PUBLIC LIGHTING DEPARTMENT 313-267-7340

   COMCAST CABLE COMPANY 313-934-2600

CONTRACT FOR SUPERSTRUCTURE RECONSTRUCTION, APPROACH WORK AND MISCELLANEOUS CONSTRUCTION

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
SUPERSTRUCTURE RECONSTRUCTION

BRIDGE TITLE SHEET

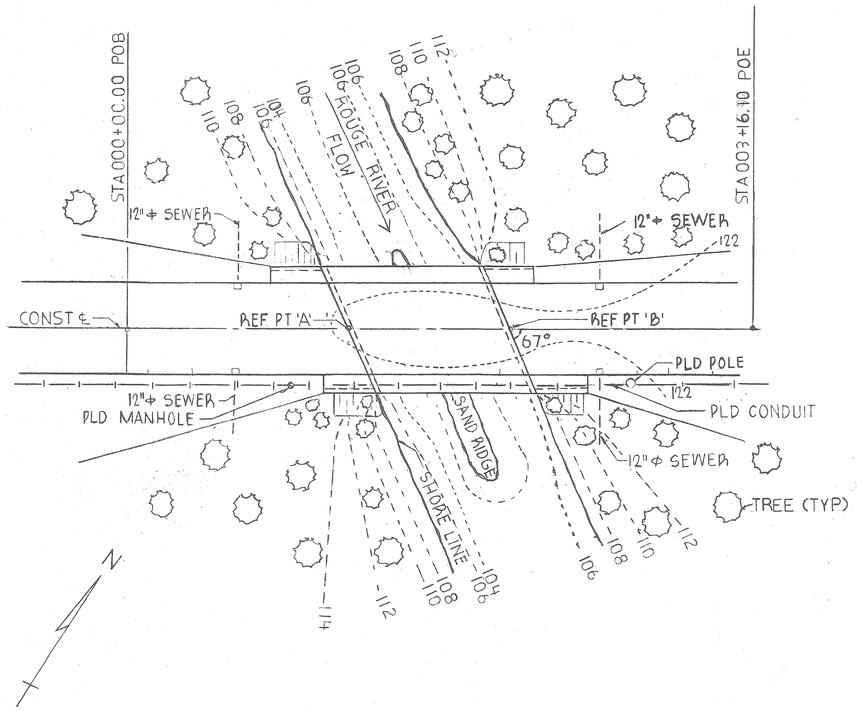
SHEET S20 OF S-41 SHEETS

FEDERAL AID URBAN PROJECT NO. DSTP 9582(020) BRIDGE NO. B01 82 – 18 –84 SECTIONS 0001 & 0002 JOB NO. 36917A

B01 82-18-84 ©

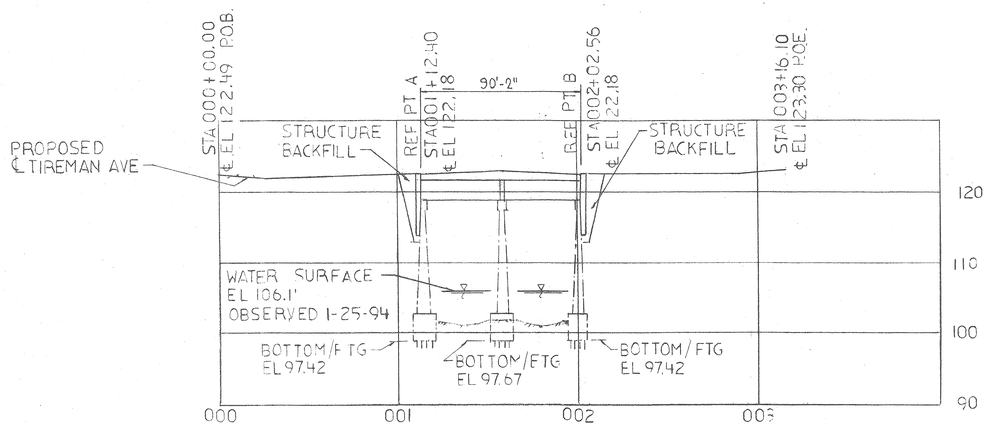
BENCH	MARKS	ELEV
PBM 109-252	NE CORNER TIREMAN & BERT ROAD	128.09
PBM 103-252A	NE CORNER TIREMAN & PATTON	136.68
PBM 110-250A	NE CORNER SPINOZA & JOY ROAD	136.26
CBM # 1	SPIKE IN POLE, S. SIDE OF TIREMAN, E. OF BRIDGE	123.04
CBM # 2	SPIKE IN POLE, S. SIDE OF TIREMAN, W. OF BRIDGE	124.55

EXISTING STRUCTURE
TWO 45 FT. SPANS, 36" STEEL I-BEAM BUILT IN 1930.



SITUATION PLAN
SCALE 1"=40'-0"

DO NO WORK FROM THIS SHEET. THE INFORMATION SHOWN HERE IS FOR REFERENCE ONLY. NO PAY ITEMS ARE SHOWN.



PROFILE ALONG CONSTRUCTION ℄ TIREMAN AVE
VERT SCALE 1"=10'
HOR SCALE 1"=40'

TRAFFIC DATA

POSTED SPEED	25 MPH
DESIGN SPEED	45 MPH
PRESENT ADT (1994)	1956
FUTURE ADT (2014)	3533
DESIGN LOADING	HS20

NOTES:

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 WILL NOT BE DAMAGED.

TRAFFIC IS TO BE MAINTAINED PER TRAFFIC CONTROL AND DETOUR PLAN. WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF WATER LEVELS THAT WILL EXIST DURING CONSTRUCTION.

MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE EXISTING OR PROPOSED STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY, IT SHALL BE REMOVED WITHIN 24 HOURS. SINCE DISTURBANCE OF THE WATERWAY BOTTOM MAY BE AS HARMFUL AS THE DEBRIS ITSELF, THE PREVENTIVE MEASURES MUST BE MADE AS EFFECTIVE AS POSSIBLE.

JOB NO. : 36917A

revisions

date	d'n	ck'd	ap'vd

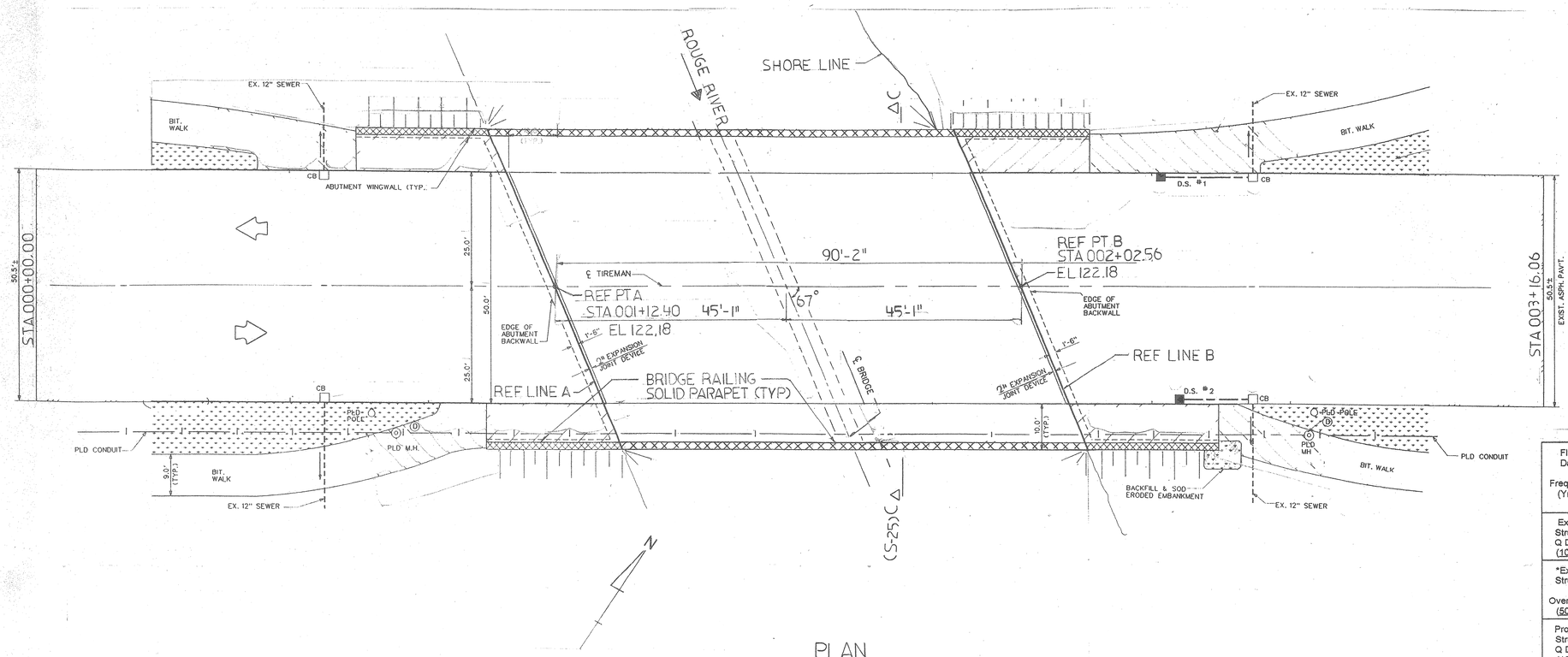
designed by RP
drawn by JN
checked by RP
approved E.C. Howard

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
SUPERSTRUCTURE RECONSTRUCTION
SITE PLAN

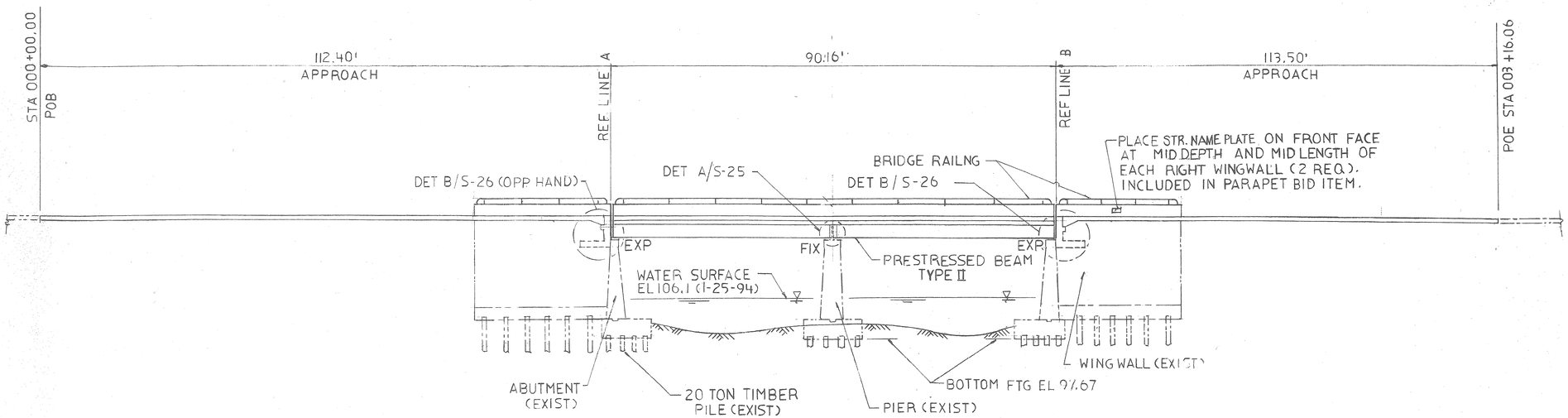
a.o. 93-22-17
contract no.
sheet S-21 of S-41
drawing no.
date APRIL, 1997

06/19/97 ENGINEERING PRINT



PLAN
1" = 12'-0"

Flood Data Frequency (Yrs)	Waterway Discharge Cfs.	Water Surface El. Ft.	Velocity in Channel with or without Str. Ft./Sec.	Waterway Area Below W.S. El. Sqft.	Backwater above W.S. El. Ft.	Final W.S. El. Ft.
Existing Structure Q Design (100 Yr.)	4116	107.13	5.1	807	0.10	107.03
*Existing Structure Q Overtopping (500 Yr.)	NA	NA	NA	NA	NA	NA
Proposed Structure Q Design (100 Yr.)	4116	107.13	5.1	807	0.10	107.03
*Proposed Structure Q Overtopping (500 Yr.)	NA	NA	NA	NA	NA	NA
Natural Channel Q Design (50 Yr.)	3950	106.13	4.7	713	0.10	106.03
1968 Witnessed Flood of Record	—	107.23	—	—	—	—



ELEVATION
1" = 12'-0"

VERIFY ALL ELEVATIONS BEFORE CONSTRUCTION.

JOB NO. : 36917A

revisions

1							
2							
3							
4							
5							
6							
7							
8							

dr'n ck'd ap'vd date

designed by RF
drawn by JN
checked by RF
approved: E.C. Hawkins

CITY OF DETROIT

CITY ENGINEERING DIVISION

DEPARTMENT OF PUBLIC WORKS

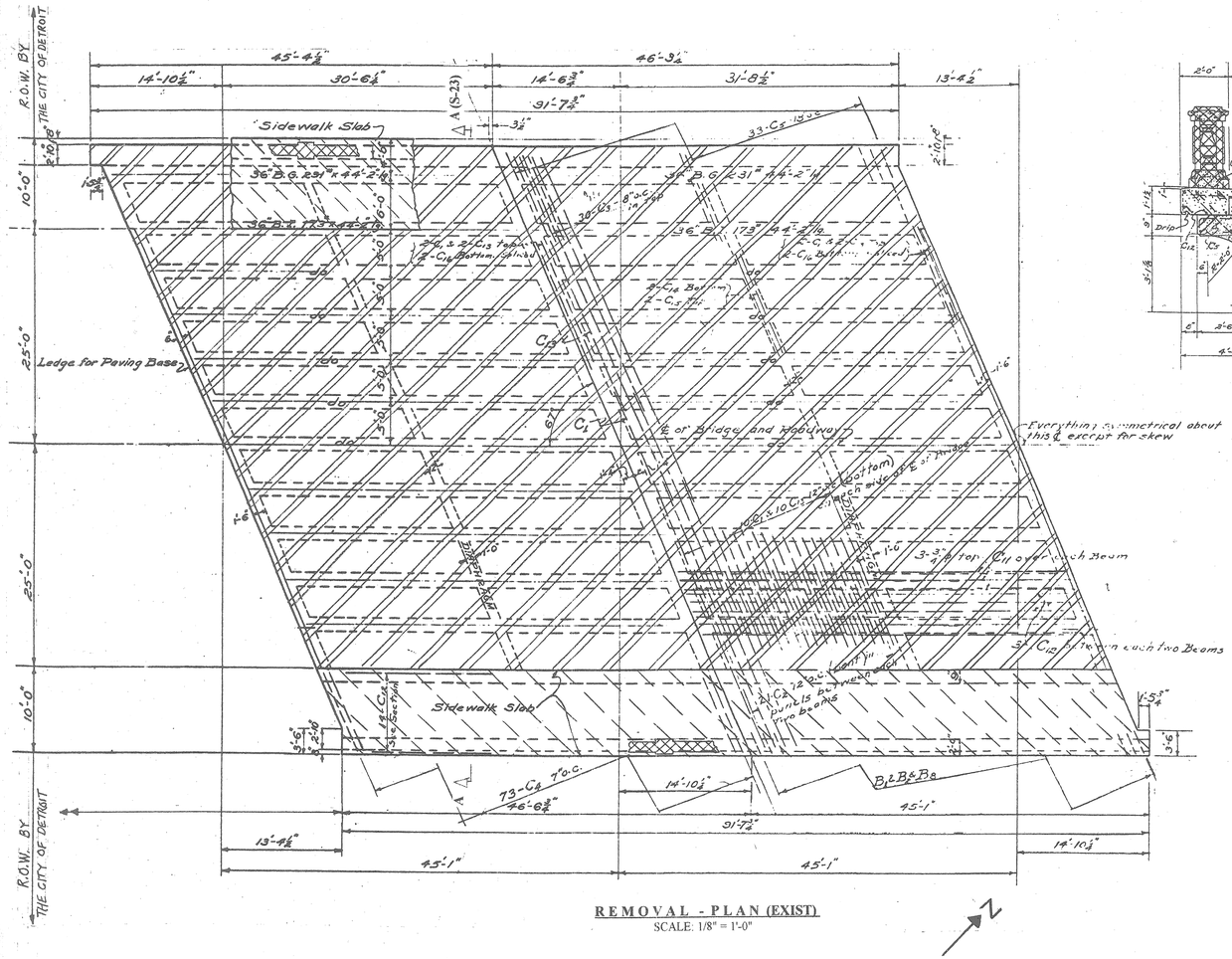
TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
SUPERSTRUCTURE RECONSTRUCTION

GENERAL PLAN OF STRUCTURE

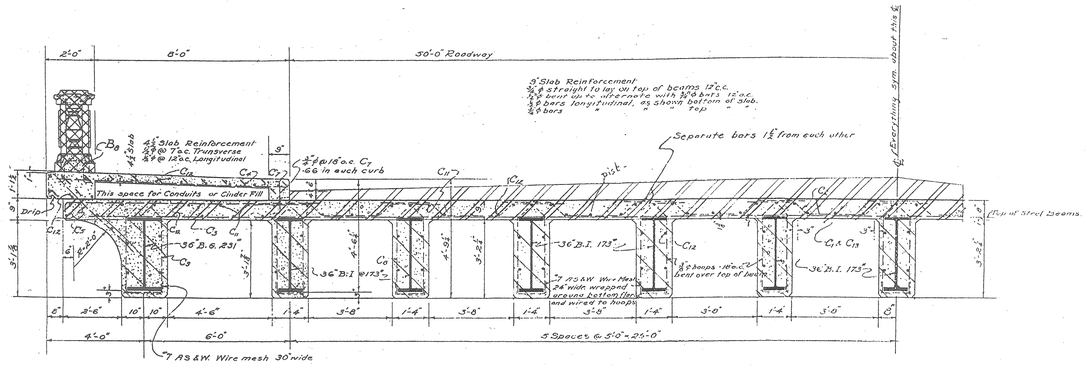
a.o. 93-22-17
contract no.
sheet S-22 of S-41
drawing no.
date APRIL, 1997

06/19/97 ENGINEERING PRINT

TELEPHE POST 7433331



REMOVAL - PLAN (EXIST)
SCALE: 1/8" = 1'-0"



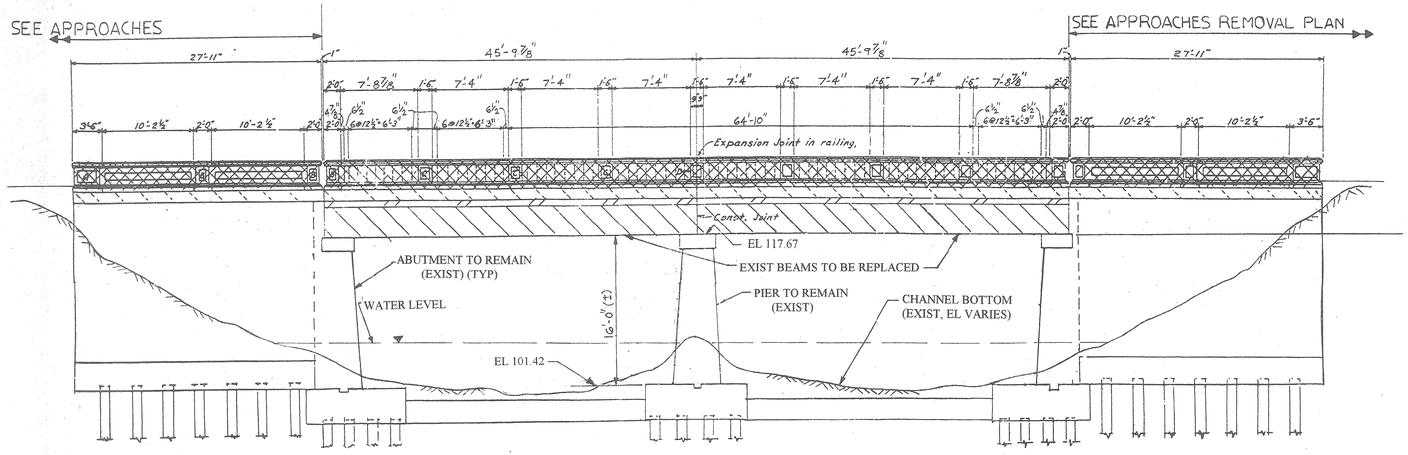
SECTION A-A (HALF SECTION OF DECK)
SCALE: N.T.S.

LEGEND*

- REMOVE PARAPET
- REMOVE DECK
- REMOVE SIDEWALK ON THE DECK
- REMOVE BEAMS, BEARINGS, ANCHOR BOLTS AND GROUTS

* REFER TO THIS SHEET ONLY

PAY QUANTITY		
ITEM	QUANTITY	PAY UNIT
Misc. Removal Of Portions Of Structures B01-82-18-84	1	LSUM
Field Office	6	MOS
Misc. Mobilization. Max $66,000	0.5	LSUM



REMOVAL - ELEVATION (EXIST)
SCALE: N.T.S.

NOTES:

THE WORKS COVERED BY THESE PLANS INCLUDES THE FOLLOWING:

A. REMOVAL AND RECONSTRUCTION OF BRIDGE SUPERSTRUCTURE AND APPROACHES.

B. REPAIR OF SUBSTRUCTURES.

REMOVAL OF STRUCTURE NOTES:

1. REMOVAL OF PARAPET, DECK, SIDEWALK ON THE DECK, BEAMS, BEARINGS, ANCHOR BOLTS, GROUT AND ANY OTHER ITEMS ON THE BRIDGE DECK WILL BE PAID FOR AS "REMOVAL OF PORTIONS OF STRUCTURES", LUMP SUM.
2. REMOVAL AND DISPOSAL OF THE MATERIALS SHALL BE IN ACCORDANCE WITH SECTION 2.06 OF 1990 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

SUBSTRUCTURE NOTES: (REFER TO SHEET S-24 FOR SUBSTRUCTURE REPAIR DETAILS)

1. THE ENTIRE TOP, EXISTING AND REPAIRED, THE FRONT FACE OF INDEPENDENT BACKWALL, ALL OTHER SURFACES OF EXISTING ABUTMENTS AND PIER, SHALL BE GIVEN AN APPLICATION OF PENETRATING WATER REPELLENT TREATMENT AFTER THE NEW ELASTOMERIC BEARINGS HAVE BEEN PLACED IN FINAL POSITION ON THE STRUCTURE.
2. FORMS FOR LARGE PATCHES SHALL BE INSTALLED IN 2' TO 4'HIGH SECTIONS WITH THE TOP FORM NO MORE THAN 4' ABOVE THE LEVEL OF CONCRETE AS THE POUR PROGRESSES.
3. LATEX MODIFIED HIGH-EARLY STRENGTH PATCHING MIXTURE IN ACCORDANCE WITH SUBSECTION 7.03.03 OF THE STANDARD SPECIFICATIONS SHALL BE USED FOR SUBSTRUCTURE REPAIRS.

Job No. : 36917A

revisions								

designed by PP
drawn by PP
checked by RF
approved: EARL C. HOWARD

CITY OF DETROIT

CITY ENGINEERING DIVISION

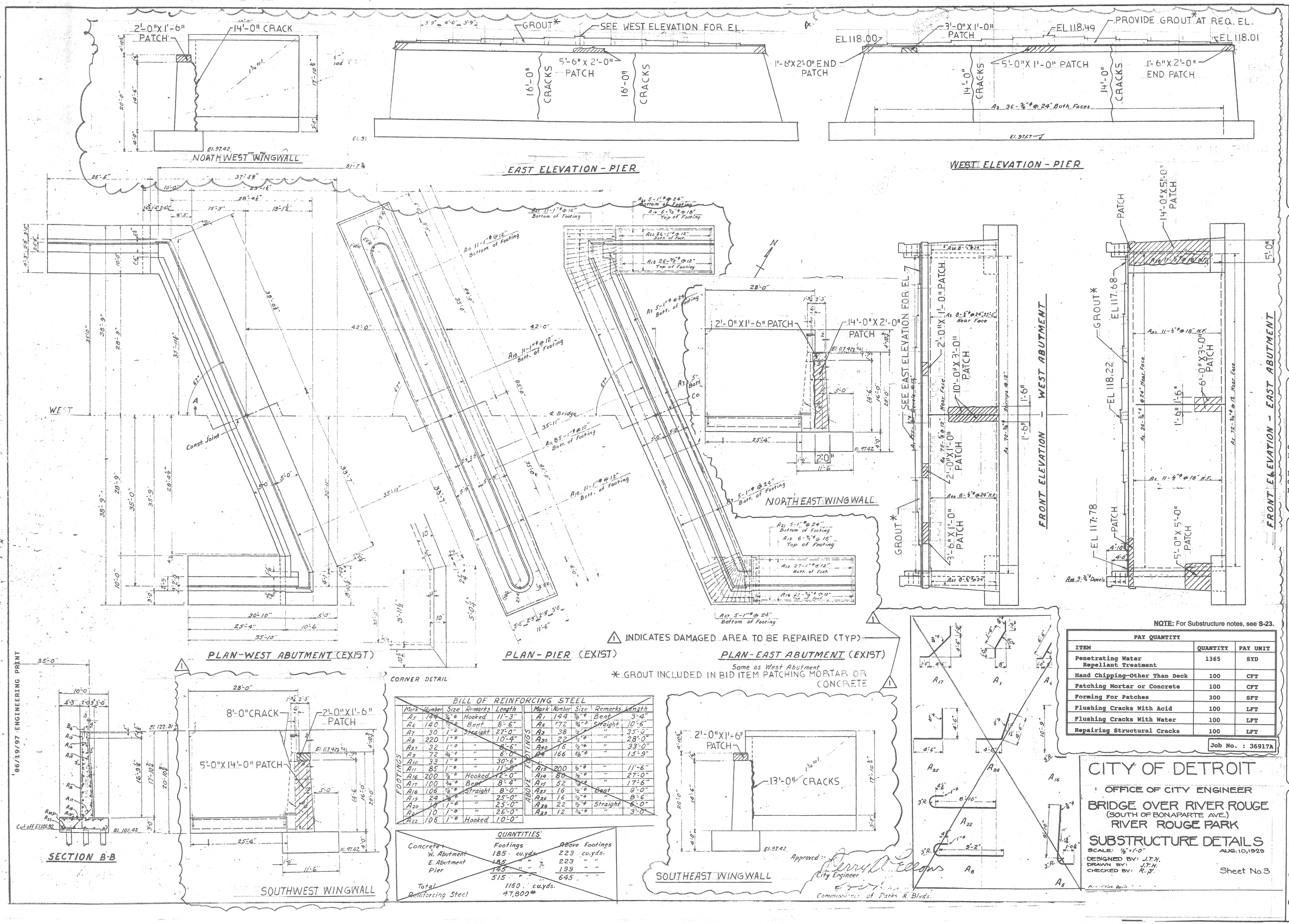
DEPARTMENT OF PUBLIC WORKS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
BRIDGE DECK RECONSTRUCTION

REMOVAL PLAN

a.o. 93-22-17
contract no.
sheet S-23 of S-41
drawing no.
date APRIL ,1997

06/19/97 ENGINEERING PRINT



NOTE: For Substructure notes, see S-23.

PAY QUANTITY		
ITEM	QUANTITY	PAY UNIT
Penetrating Water Repellant Treatment	1365	SYD
Hand Chipping-Other Than Deck	100	CFT
Patching Mortar or Concrete	100	CFT
Forming For Patches	300	SFT
Flushing Cracks With Acid	100	LFT
Flushing Cracks With Water	100	LFT
Repairing Structural Cracks	100	LFT

Job No. : 36917A

BILL OF REINFORCING STEEL

Mark	Number	Size	Remarks	Length
FOOTINGS				
A_5	144	⅞"ϕ	Hooked	11'-3"
A_6	140	⅞"ϕ	Bent	8'-6"
A_7	30	1"ϕ	Straight	27'-0"
A_8	220	1"ϕ	"	10'-4"
A_{21}	32	1"ϕ	"	6'-6"
A_9	72	⅞"ϕ	"	6'-9"
A_{10}	33	1"ϕ	"	30'-6"
A_{11}	85	1"ϕ	"	11'-0"
A_{16}	200	⅞"ϕ	Hooked	12'-0"
A_{17}	100	¾"ϕ	Bent	8'-4"
A_{18}	106	⅞"ϕ	Straight	8'-0"
A_{19}	24	⅞"ϕ	"	25'-0"
A_{20}	19	1"ϕ	"	25'-0"
A_7	10	1"ϕ	"	26'-0"
A_{22}	106	1"ϕ	Hooked	10'-0"
ABOVE FOOTINGS				
A_1	144	⅞"ϕ	Bent	3'-4"
A_2	172	¾"ϕ	Straight	10'-6"
A_3	38	½"ϕ	"	35'-0"
A_{30}	22	½"ϕ	"	28'-0"
A_{40}	16	½"ϕ	"	33'-0"
A_4	166	⅝"ϕ	"	13'-9"
A_{13}	200	⅝"ϕ	"	11'-6"
A_{14}	80	½"ϕ	"	27'-0"
A_{15}	52	½"ϕ	"	17'-6"
A_{25}	16	½"ϕ	Bent	9'-0"
A_{26}	16	½"ϕ	"	8'-6"
A_{28}	22	⅝"ϕ	Straight	6'-0"
A_{29}	12	¾"ϕ	"	3'-0"

QUANTITIES

	Footings	Above Footings
Concrete:		
W. Abutment	185 cu.yds.	223 cu.yds.
E. Abutment	185 " "	223 " "
Pier	145 " "	199 " "
	515 " "	645 " "
Total	1150 cu.yds.	
Reinforcing Steel	47,800#	

Approved: Terry A. Edens
City Engineer
Commissioner of Parks & Blvds.

CITY OF DETROIT

OFFICE OF CITY ENGINEER

BRIDGE OVER RIVER ROUGE
(SOUTH OF BONAPARTE AVE.)
RIVER ROUGE PARK

SUBSTRUCTURE DETAILS

SCALE: ⅛"=1'-0"
AUG. 10, 1929
DESIGNED BY: J.T.H.
DRAWN BY: J.T.H.
CHECKED BY: R.J.
Sheet No. 3

revisions

designed by MH
drawn by RF
checked by MH, RF
approved: E.C. Howard

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
SUPERSTRUCTURE RECONSTRUCTION

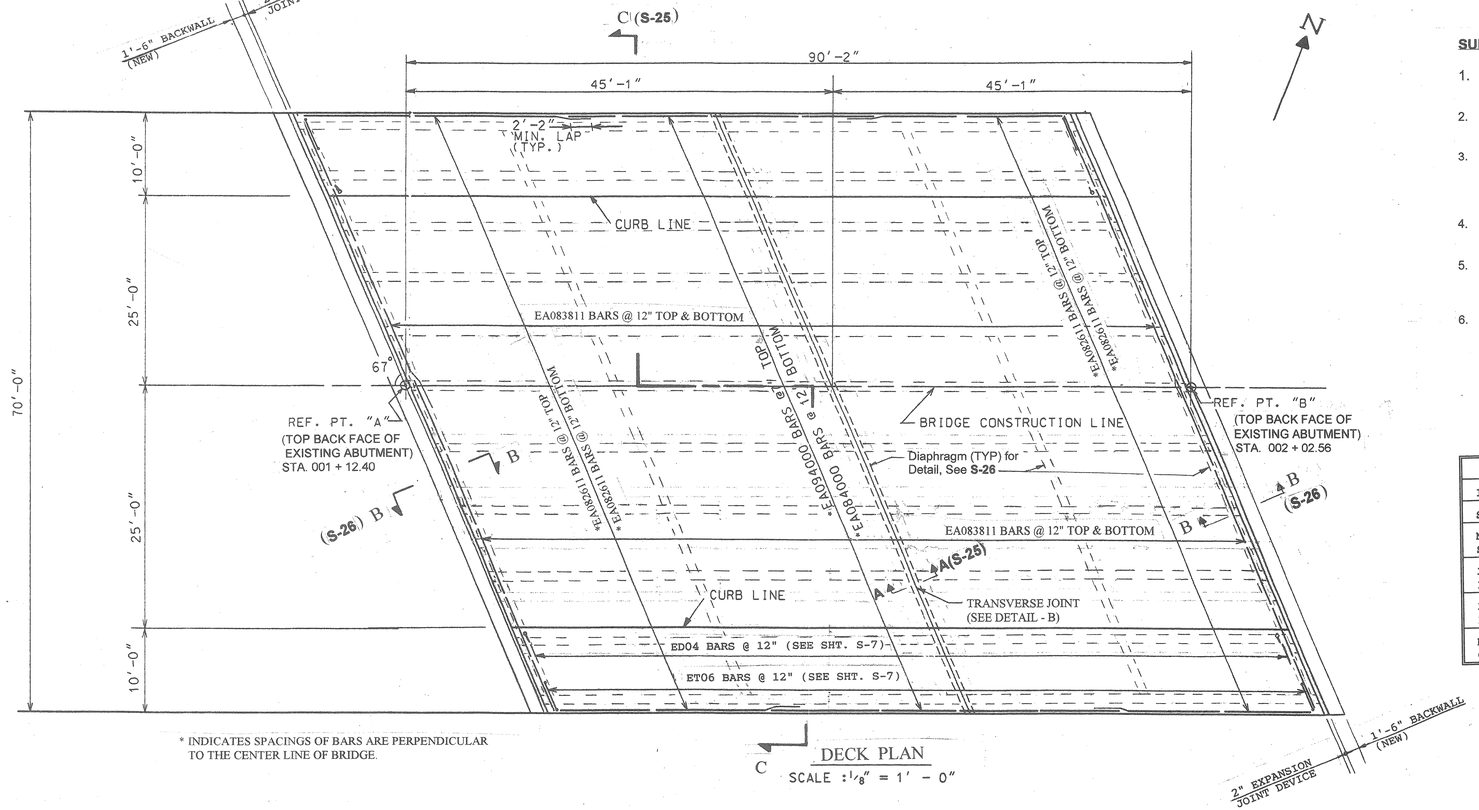
REPAIRING STRUCTURAL CRACKS, PATCHING ABUTMENTS AND PIER

a.o.
contract no.
sheet S-24 of S-41
drawing no.
date APRIL, 1997

06/19/97 ENGINEERING PRINT

SCALE	HORIZONTAL / VERTICAL	BOOK NO. PG. / PAVING COMPLETED	LEVEL / DATE	BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

BENCH MARKS ELEV



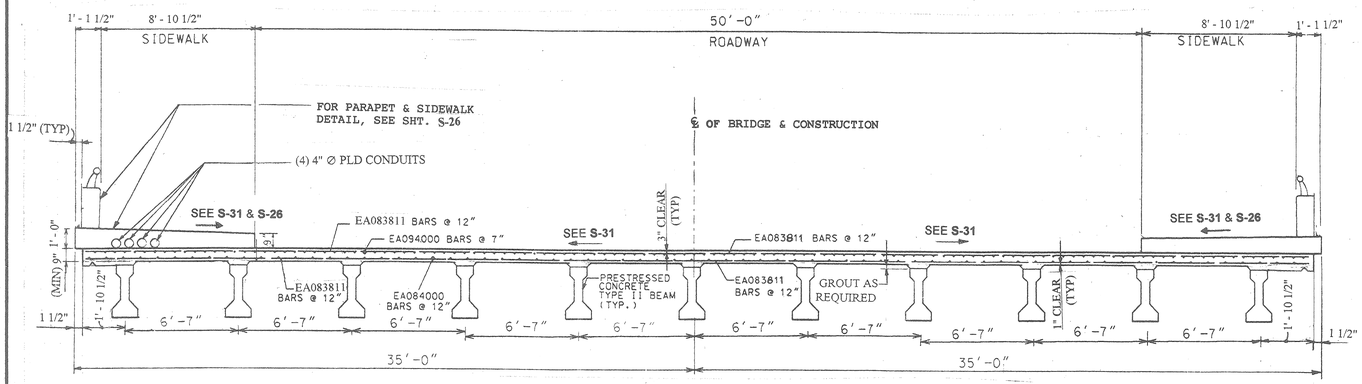
* INDICATES SPACINGS OF BARS ARE PERPENDICULAR TO THE CENTER LINE OF BRIDGE.

DECK PLAN
SCALE : 1/8" = 1' - 0"

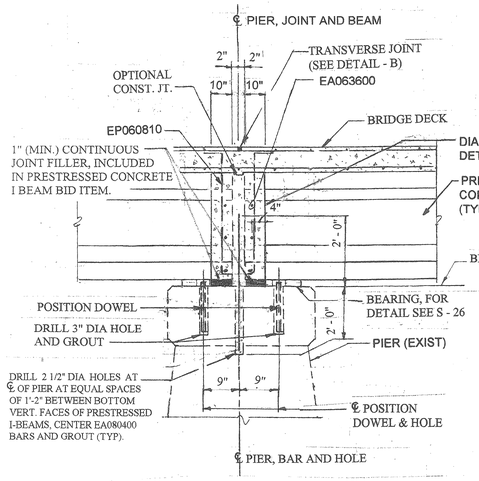
SUPERSTRUCTURE MISCELLANEOUS NOTES:

1. FOR BRIDGE RAILING, MOLDING AND BEVEL DETAILS, SEE STANDARD X-18D AND XI-103D.
2. A RUBBED SURFACE FINISH ON THE VERTICAL AND TOP CONCRETE SURFACES OF THE PARAPET RAILING IS REQUIRED ON THIS STRUCTURE.
3. WHERE CAST-IN-ANCHORAGE IS USED FOR EXPANSION JOINT DEVICES, IT IS RECOMMENDED THAT THE PLACING OF DECK CONCRETE PROGRESS TOWARD THE JOINT SO THAT THE EFFECTS OF DEAD LOAD DEFLECTION WILL OCCUR BEFORE CONCRETE IS PLACED AT THE ANCHORAGE.
4. DO NOT POUR DECK CONCRETE UNTIL DIAPHRAGM CONCRETE ATTAINS A COMPRESSIVE STRENGTH OF 3,000 PSI.
5. CONCRETE QUANTITIES FOR DECK, BEAM ON PIER, DIAPHRAGMS, SIDEWALKS AND BACKWALL WITH FOOTING ARE INCLUDED IN THE PAY ITEM-SUPERSTRUCTURE CONCRETE.
6. SIDEWALK AND PARAPET CONCRETE POURS SHALL NOT BE CAST UNTIL SLAB CONCRETE ATTAINS AT LEAST 75% OF ITS DESIGN STRENGTH.

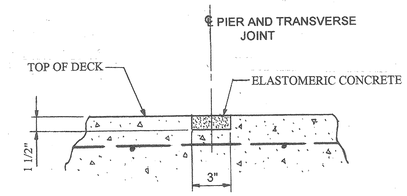
PAY QUANTITY		
ITEM	QUANTITY	PAY UNIT
SuperStructure Concrete	357	CYD
Misc. Form, Finish, Cure Superstructure Concrete	1	LSUM
36" Prestressed Concrete I-Beam, Furnished	985	LFT
36" Prestressed Concrete I-Beam, Erected	985	LFT
Miscellaneous Elastomeric Concrete	2.50	CFT



CROSS SECTION OF DECK (SECTION C-C)
SCALE : 1/4" = 1' - 0"



SECTION A-A & DETAIL A
(S-25) (S-26) (S-27)
SCALE: 1/2" = 1'-0"



DETAIL B

Job No. : 36917A

		BY	CHECKED BY	APPROVED:
	PLAN	PS, PP	PP, EH	
	GRADE			ENGINEER OF STRUCTURES
	ESTIMATE			
DESCRIPTION / DR / CK / DA / PV / DATE	FINAL	CHECK	REVIEW	

REVISIONS

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
BRIDGE DECK RECONSTRUCTION

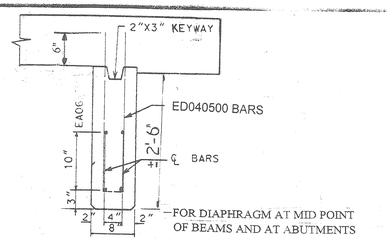
PLAN OF DECK AND CROSS SECTION

SHEET S-25 of S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-17
DATE APRIL, 1997

06/19/97 ENGINEERING PRINT

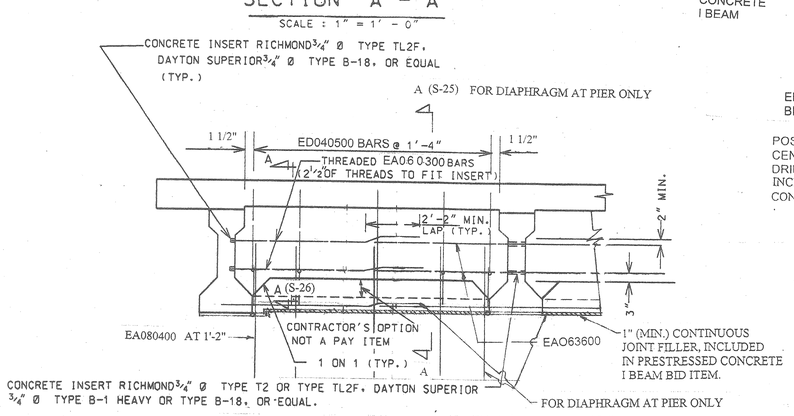
SCALE	HORIZONTAL / VERTICAL	BOOK NO. PG. / PAGING COMPLETED	LEVEL / DATE	BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

BENCH MARKS ELEV



SECTION A - A

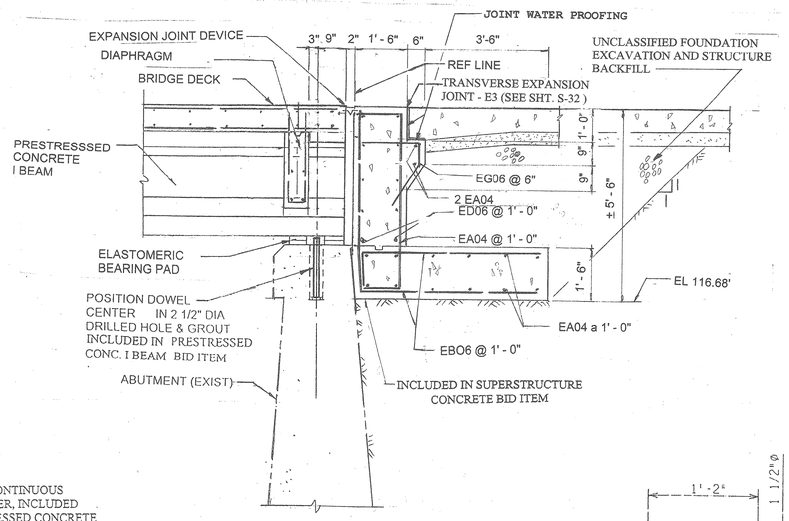
SCALE : 1" = 1' - 0"



USE DIAPHRAGM AT MID-POINT AND AT EACH END OF BEAMS. DIAPHRAGM CONCRETE QUANTITIES ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES.

DIAPHRAGM ELEVATION

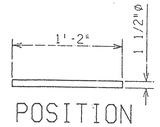
SCALE : 1/2" = 1' - 0"



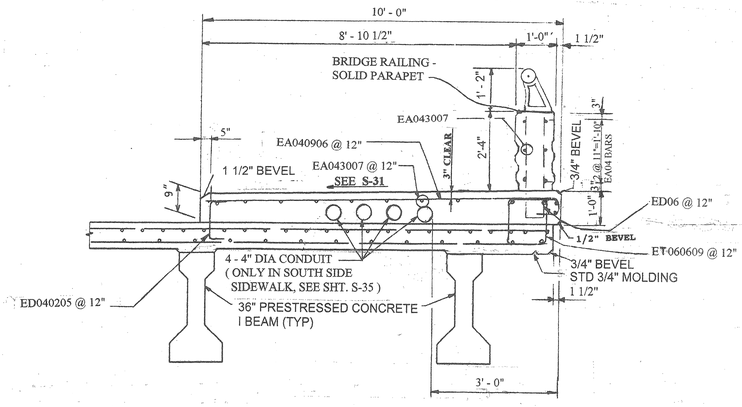
SECTION B-B & DETAIL B

(S-25 & S-33) (S-27)

SCALE: 1/2" = 1'-0"

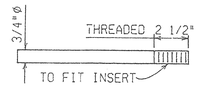


POSITION DOWEL DETAIL



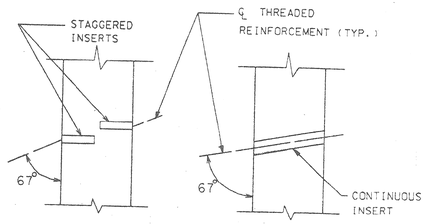
TYPICAL SIDEWALK SECTION

SCALE : 1/2" = 1'-0"



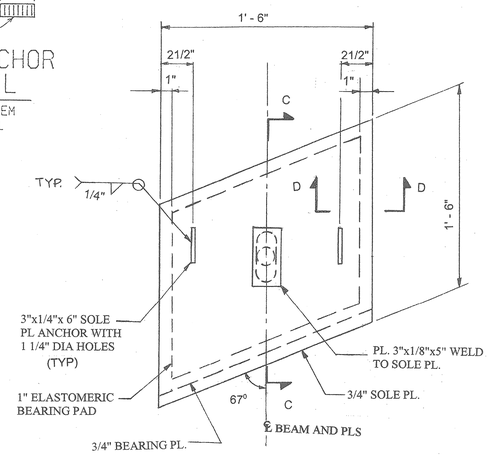
THREADED ANCHOR BAR DETAIL

INCLUDED IN PAY ITEM REINFORCING STEEL

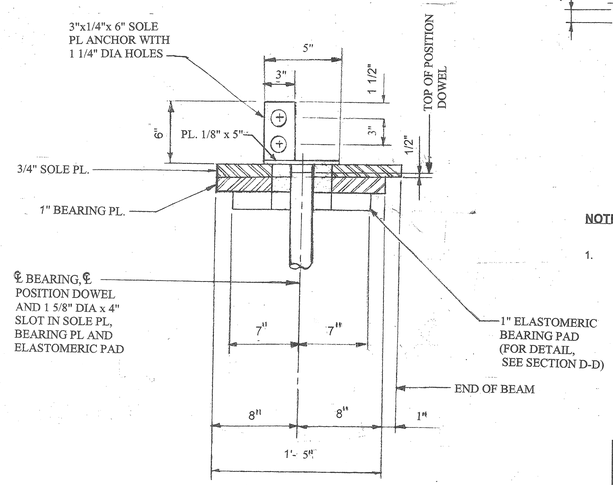


CONCRETE INSERT DETAILS

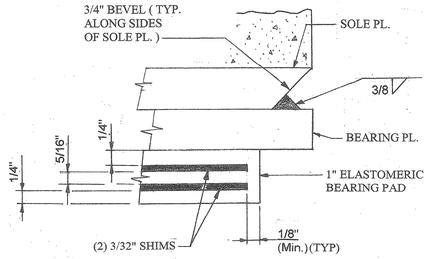
CONCRETE INSERTS AT ENDS OF BEAM SHALL BE STAGGERED AND AT MIDSPAN MAY BE CONTINUOUS OR STAGGERED. THREADED REINFORCEMENT FOR STAGGERED INSERTS SHALL BE BENT TO THE REQUIRED Ø ANGLE PRIOR TO INSTALLATION. BENT REINFORCEMENT MAY REQUIRE INSTALLATION BEFORE BEAM IS ERECTED.



PLAN



SECTION C-C



SECTION D-D

NOTES:

1. IF THE POSITION DOWELS AND SOLE PLATE DOWELS AT ABUTMENTS AND PIER ARE MISALIGNED DUE TO TEMPERATURE EFFECTS ON THE BEAMS, HOLES IN THE ELASTOMERIC BEARINGS SHALL BE CENTERED ON THE DOWELS.

PAY QUANTITY		
ITEM	QUANTITY	PAY UNIT
Unclassified Foundation Excavation	255	CYD
Structural Backfill (CIP)	125	CYD
Elastomeric Bearing, 1"	70	SFT
Bridge Railing, Solid Parapet Type	185	LFT

BEARING DETAILS

Job No. : 36917A

	BY	CHECKED BY
PLAN	PP, RF	EH
GRADE		
ESTIMATE		
FINAL	*****	*****

APPROVED: Gail A. Hartwell
ENGINEER OF STRUCTURES

DESCRIPTION | DR | CK | DAP | DATE
REVISIONS

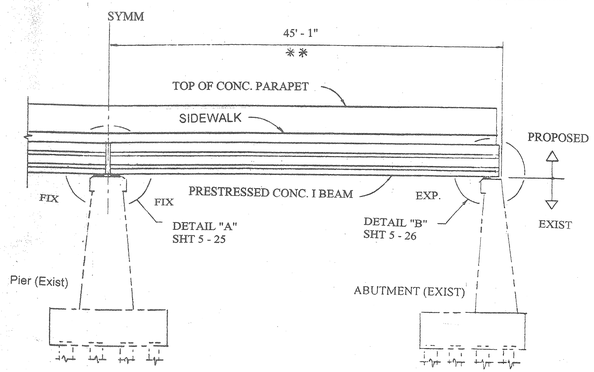
CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
SUPERSTRUCTURE RECONSTRUCTION

SUPERSTRUCTURE DETAILS

SHEET S-26 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-17
DATE APRIL, 1997

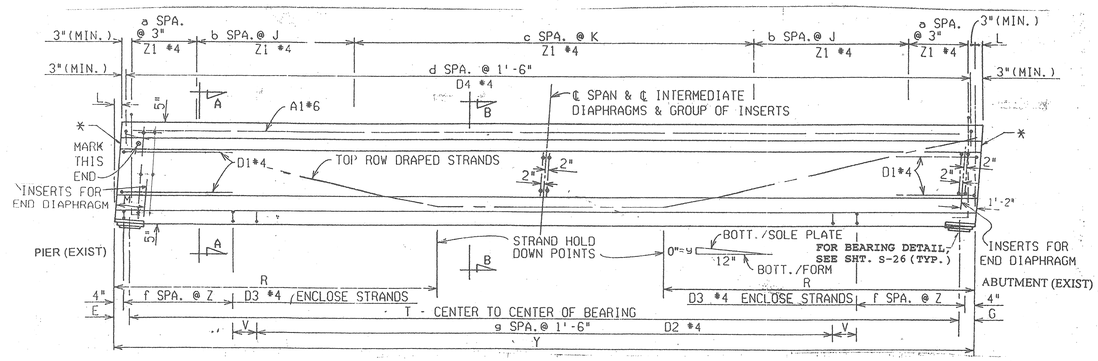
06/19/97 ENGINEERING PRINT



ELEVATION

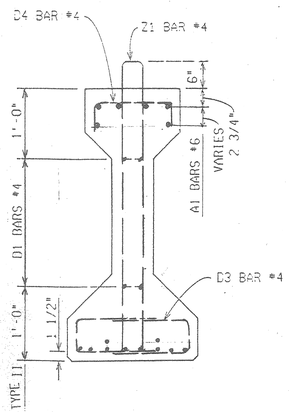
1/8" = 1' - 0"

(FOR CLARITY, ALL DETAILS ARE NOT SHOWN ABOVE)

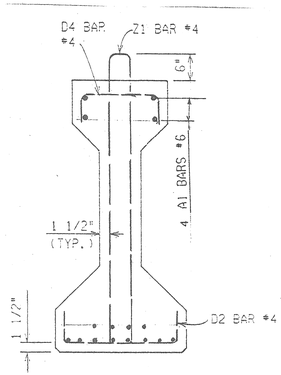


* THE ENDS OF BEAM SHALL BE SKEW PARALLEL TO THE ENDS OF DECK SLAB. PROVIDE BARS D_1, D_3, D_4, AND Z_1 PARALLEL TO THE ENDS (SKEW) IN A MAXIMUM OF 5'-0" LENGTH FROM THE ENDS AT SPACINGS INDICATED ON BEAM ELEVATION. 'B' DIMENSION FOR BARS SHALL BE PROVIDED ACCORDING TO THE SKEWNESS. ADD ADDITIONAL BAR/ BARS AS NECESSARY TO ADJUST FOR REQUIRED SPACING BETWEEN BARS. BARS IN THE REMAINING PORTION OF THE BEAM MAY NOT BE SKEW.

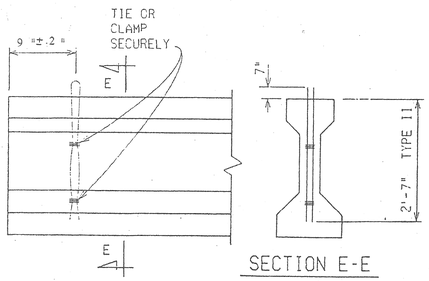
ELEVATION



SECTION A-A



SECTION B-B



SECTION E-E

LIFTING DEVICE

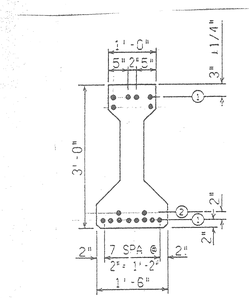
PRESTRESSING STRAND LIFT DEVICE CAPACITY		
STRAND SIZE	NO. OF STRANDS	ALLOWABLE WT. OF BEAM
3/8"	2	20 TONS
7/16"	2	27 TONS
1/2"	2	36 TONS
3/8"	3	30 TONS
7/16"	3	40.5 TONS
1/2"	3	54 TONS

FOR INFORMATION ONLY

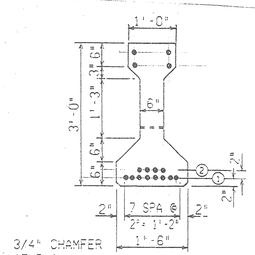
BEAM DIMENSIONS	
MARK	TYPICAL
TYPE	II
NOS.REQ	22
a	15
b	12
c	25
d	30
E	7"
f	19
g	23
G	9"
h	
I	1'-6"
J	6"
K	1'-0"
L	0
M	1'-8"
P	
Q	
R	17'-3"
T	43'-2 5/8"
U	
V	0
X	
** Y	44'-8 5/8"
Z	3"
APPROX.WEIGHT=8.6TONS	

TABLE 1													
NUMBER OF 1/2"ø · 270KSI · 7 WIRE STRANDS IN INDICATED ROW													
MARK	TYPE	MIDSPAN (SECTION B-B)				END FACE (SECTION A-A)						TOTAL NUMBER	INITIAL PRESTRESS FORCE/STRAND (LBS.)	REQUIRED CONCRETE RELEASE STRENGTH (PSI)
		BOTTOM				BOTTOM				TOP				
		①	②	③	④	①	②	③	④	①	②			
		8	4			8	2			2		12	31,000	4,000

** CONTRACTOR TO FIELD VERIFY THE DIMENSION.
*** INDICATES EPOXY COATED BARS.



TYPE II
(36" BEAM)

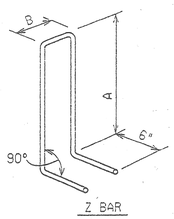


TYPE II
(36" BEAM)

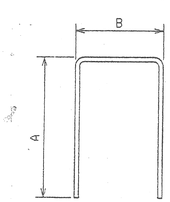
SECTION A-A
SHOWING STRAND ARRANGEMENT AT END FACE

SECTION B-B
SHOWING STRAND LOCATIONS AT MIDSPAN

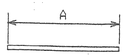
BAR DIMENSIONS		
BAR	DIM.	BEAM TYPE II
A1*6	A	Y-3"
D1*4	A	4'-0"
	B	2 1/2"
D2*4	A	3'
	B	1'-3 1/2"
D3*4	A	1'-2"
	B	3 1/2"
D4*4	A	4"
	B	8"
*** Z1*4	A	3'-2 1/2"
	B	3 1/2"



Z BAR



D BAR



A BAR

NOTES:

1. ALL STEEL IN THE BEARING SHALL MEET THE REQUIREMENTS OF ASTM A36.
2. ALL STEEL IN THE BEARING IS INCLUDED IN THE PAY ITEM "PRESTRESSED CONCRETE I-BEAM, FURNISHED".
3. TACK WELDING OF STEEL REINFORCEMENT IS PROHIBITED.
4. ELASTOMER FOR ELASTOMERIC BEARING PAD SHALL BE NOMINAL 50 DUROMETER HARDNESS FOR LAMINATED BEARINGS.
5. PRESTRESSING STRAND SHALL BE 1/2" DIAMETER WITH AN AREA OF 0.153 SQUARE INCHES AND SHALL BE GRADE 270 IN ACCORDANCE WITH ASTM A416 AND SUPPLEMENT. LOW RELAXATION STRANDS SHALL BE USED.
6. END BLOCKS ARE REQUIRED.
7. TOTAL ESTIMATED CHANGE OF LENGTH OF BOTTOM FLANGE AT TRANSFER OF PRESTRESS FORCE IS 3/4".
8. WHEN BOND BREAKERS ARE REQUIRED, THEY SHALL BE PLACED SYMMETRICALLY ABOUT THE ℄ OF THE BEAM. THE NUMBER AND LENGTH OF BOND BREAKER SHALL BE AS SHOWN IN THE ELEVATION OF THE BEAM. LENGTH SHOWN IS FROM END OF BEAM TO END OF BREAKER. THEY SHALL CONSIST OF TWO TUBES (ONE INSIDE THE OTHER) WITH OVERLAP TURNED IN OPPOSITE DIRECTION.
9. LIFTING OF BEAM SHALL BE BY EQUAL LOADS TO EACH PAIR OF LIFTING DEVICES.
10. THE TOP FLANGE TOP SURFACE SHALL BE INTENTIONALLY ROUGHENED.
11. ALL EXPOSED SURFACES OF CONCRETE TO BE RUBBED AS SOON AS FORMS ARE REMOVED. NO CEMENT GROUT TO BE USED ON EXPOSED SURFACES.
12. ALL REINFORCING BARS SHOULD BE SECURELY TIED AT ALL INTERSECTIONS.

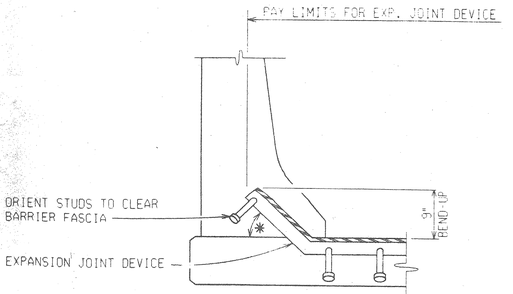
TREATMENT OF EPOXY- COATED BARS

13. REINFORCEMENT IS TO BE SHOP CUT AS SHOWN. THE EPOXY COATING SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PRESTRESSED CONCRETE I-BEAM

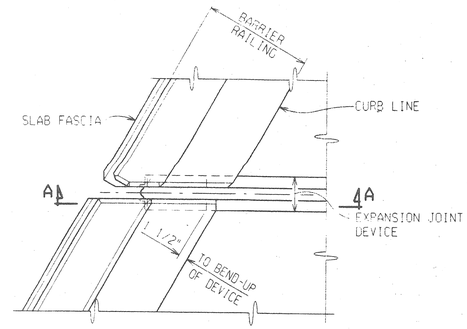
14. PRESTRESSING STRANDS SHALL BE GIVEN AN INITIAL PRESTRESS OF 31,000 LBS. EACH.
15. CONCRETE INSERTS SHALL BE RICHMOND, 3/4" DIAMETER, TYPE T2 OR TYPE TL2F; DAYTON SUPERIOR, 3/4" DIAMETER TYPE B-1 HEAVY OR TYPE B-18; OR EQUAL.
16. THREADING OF REINFORCEMENT AND INSTALLATION INTO CONCRETE INSERTS IS INCLUDED IN THE BID ITEM "PRESTRESSED CONCRETE I-BEAM, FURNISHED".
17. LIFTING DEVICES SHALL BE REMOVED. REMOVAL IS INCLUDED IN THE BID ITEM "PRESTRESSED CONCRETE I-BEAM, FURNISHED."
18. CONTRACTOR SHALL DESIGN, DETAIL, MANUFACTURE, AND ERECT THE PRESTRESSED CONCRETE BEAMS IN ACCORDANCE WITH SECTION 5.05 OF MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, 1990 EDITION. CAPACITY SHALL NOT BE LESS THAN WHAT IS SHOWN AND DETAILED ON THE DRAWING.

revisions						



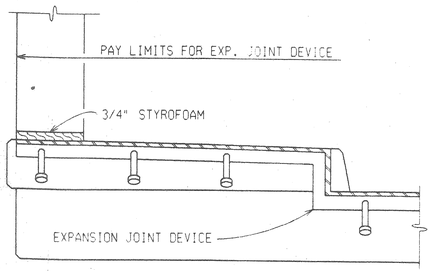
SECTION A-A

*—FOR ANGLES OF CROSSING FROM 90° TO 45° INCLUSIVE, BEND ANCHORAGE UP 45° ALONG ℄ EXPANSION JT. FOR ANGLES OF CROSSING LESS THAN 45°, A SPECIAL ENDING MAY BE REQUIRED.

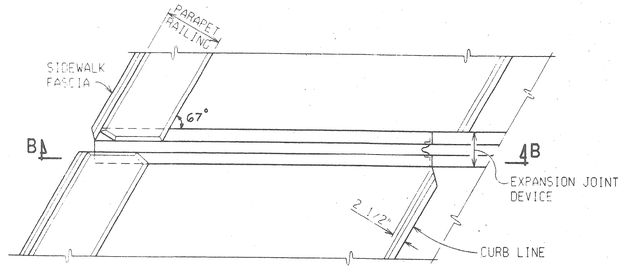


PLAN AT BARRIER RAILING

BARRIER TREATMENT



SECTION B-B

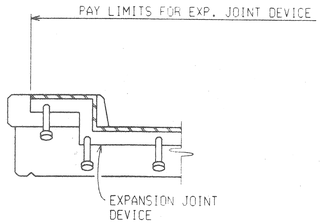


PLAN AT PARAPET RAILING

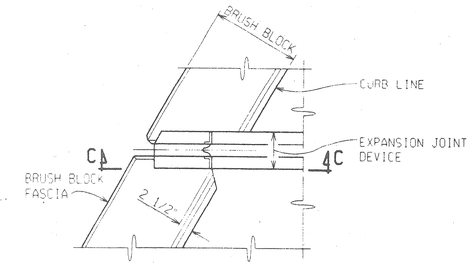
(DETAILS ARE SIMILAR FOR BRIDGE RAILING, 3-TUBE GALVANIZED STEEL)

SIDEWALK TREATMENT

(FOR EXPANSION JOINTS LOCATION, SEE SHT. S-25)



SECTION C-C



PLAN AT 2-TUBE GALVANIZED STEEL RAILING

BRUSH BLOCK TREATMENT

STRUCTURE NUMBER	ANGLE OF CROSSING TO NEAREST 10°	LOCATION OF JOINT REF. PT.(**)	MIN. TOT. TRAVEL ALONG CENTERLINE OF BRIDGE	REQUIRED LENGTH OF EXPANSION JOINT DEVICE
–	70°	A	0.64"	77'-6"
–	70°	B	0.64"	77'-6"

** SEE S-25 .

NOTES:

JOINT TYPES

THE EXPANSION JOINT DEVICE SHALL BE OF A TYPE THAT INCLUDES A CONTINUOUS SEAL ACROSS THE DECK. UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR HAS THE OPTION OF USING ANY OF THE DEVICES LISTD BELOW.

DEVICE	MANUFACTURER
STEELFLEX-SSA2	D.S. BROWN
STEELFLEX-SSCM	D.S. BROWN
STEELFLEX-RS	D.S. BROWN
ONFLEX 40 SS	STRUCTURAL RUBBER PRODUCTS CO.
STRUPCO 400L	STRUCTURAL RUBBER PRODUCTS CO.

THE MODEL OF THE JOINT TYPE SELECTED SHALL BE SUITABLE TO ACCOMMODATE THE TOTAL MOVEMENT NOTED ON THE PLANS.

COMPLETE WORKING DRAWINGS OF ALL DETAILS OF FABRICATION OF THE EXPANSION JOINT DEVICE SHALL BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH STANDARD SPECIFICATION 1.05.02. THIS REQUIREMENT IS WAIVED FOR EXPANSION JOINT DEVICES FOR WHICH A SET OF STANDARD INSTALLATION DETAILS HAS BEEN APPROVED. STANDARD INSTALLATION DETAILS CAN BE OBTAINED FROM THE DESIGN DIVISION.

FABRICATION AND INSTALLATION

THE EXPANSION JOINT SHALL BE SHOP FABRICATED TO CONFORM TO THE CONTOUR OF THE BRIDGE DECK, BARRIERS, ETC. IT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS SUBJECT TO NOTES HEREIN AND THE APPROVAL OF THE ENGINEER.

THE STEEL ANCHORAGE FOR STRIP SEAL GLANDS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SUBSECTION 5.04.22 OF THE STANDARD SPECIFICATIONS.

THE PRO-SPAN DEVICE MUST INCORPORATE A CAST-IN-PLACE STEEL SEAT.

THE AREA OF THE STEEL ANCHORAGE AND SEALING GLAND WHICH WILL BE IN CONTACT WITH A SEALANT, OR LUBRICANT-ADHESIVE SHALL BE CLEANED WITH TOLUENE OR OTHER APPROVED SOLVENT.

WHERE THE SEALING GLAND IS LOCKED INTO A STEEL ANCHORAGE, A LUBRICANT-ADHESIVE CONFORMING TO STANDARD SPECIFICATION 8.16.04-e SHALL BE REQUIRED BETWEEN THE SEAL AND STEEL ANCHORAGE.

ALL BOLT WELL CAVITIES SHALL BE FILLED WITH AN APPROVED FLEXIBLE EPOXY OR A SEALANT CONFORMING TO FEDERAL SPECIFICATION TT-S-00230C.

IN THE EVENT THAT THE CONSTRUCTION SEQUENCE REQUIRES SPLICING THE SEALING GLAND, IT SHALL BE SPLICED BY AN APPROVED METHOD (SUCH AS COLD VULCANIZATION) BY A TRAINED REPRESENTATIVE OF THE MANUFACTURER.

DETAILS AT CURBS OR BARRIERS

THE DETAILS ON THIS SHEET SHOW AN APPROVED MEANS OF TERMINATING THE EXPANSION JOINT DEVICE AT CURBS OR BARRIERS. VARIATIONS OR ALTERNATIVE SCHEMES WILL BE CONSIDERED AND MAY BE USED IF APPROVED BY THE ENGINEER.

MATERIALS

THE COST OF ALL MATERIALS AND LABOR REQUIRED FOR PROPER INSTALLATION OF THE EXPANSION JOINT AND THE TERMINAL ASSEMBLIES AT THE CURBS, SIDEWALKS, OR BARRIERS IS INCLUDED IN THE PAYMENT FOR THE EXPANSION JOINT DEVICE.

QUANTITY		
ITEM	UNIT	AMOUNT
EXPANSION JOINT DEVICE	LINEAR FEET	155

Job No. : 36917A

MICHIGAN DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT DETAILS

SQUAD BOSS		
DRAWN BY	LRB	09-06-88
CORRECTED BY	DHS-1	07-26-93
CHECKED BY	SPB/CHC	
SHEET	OF	

revisions						
–	e	d	c	b	a	e'

dr'n ck'd ap'vd date

designed by PP

drawn by PP

checked by EH

approved: E C Howard

CITY OF DETROIT

CITY ENGINEERING DIVISION

DEPARTMENT OF PUBLIC WORKS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
SUPERSTRUCTURE RECONSTRUCTION

EXPANSION JOINT DETAILS

a.o. 93-22-17

contract no.

sheet S-28 of S-41

drawing no.

date APRIL ,1997

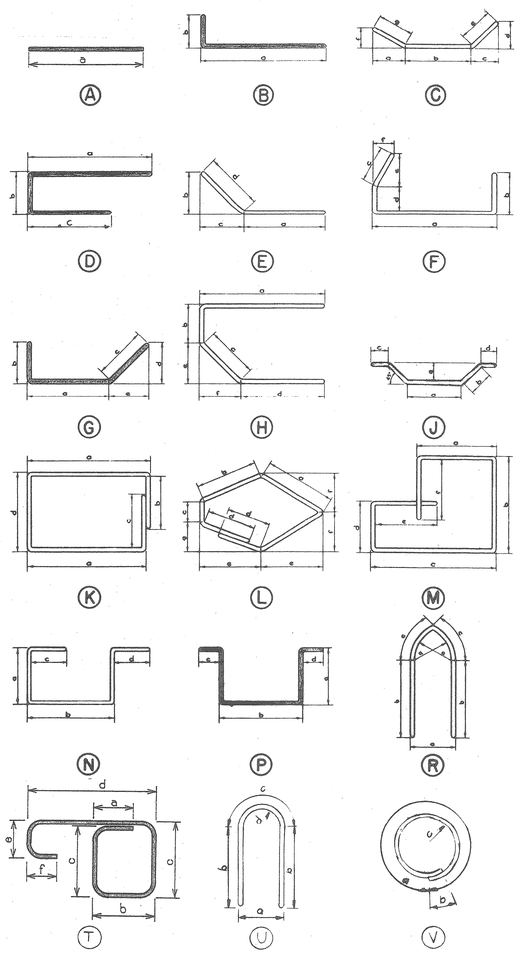
06/19/97 ENGINEERING PRINT

BAR	DIMENSIONS a	b	c	d	e	f	g			NO. REQ'D.	TOTAL W.T.
BRIDGE : (Includes Approach Area Solid Parapets)											LBS.
(a) DECK:											
EA083811	38'-11"									364	37,824
EA082611	26'-11"									284	20,413
EA084000	40'-0"									71	7,583
EA094000	40'-0"									121	16,456
(b) SIDEWALKS:											
EA043007	30'-7"									66	1,348
EA040906	9'-6"									182	1,155
ED040206	0'-8"	1'-1"	0'-8"							182	294
ET060609	1'-0"	1'-0"	1'-4"	1'-1"	0'-6"	0'-6"				182	1,845
(c) SOLID PARAPETS: (INCLUDES APPROACH WORK)											
EA043007	30'-7"									36	735
ED060606	3'-1"	0'-4"	3'-1"							182	1,777
EA042708	27'-8"									24	444
EA060402	4'-2"									84	526
(d) DIAPHRAGMS:											
EA060407	4'-7"									400	2753
ED040601	2'-10	5	2'-10							200	810
EA060402	4'-2"									40	251
ED061002	3'-4"	1'-6"	1'-0"	1'-0"						50	763
EA080400	4'-0"									50	534
(e) BACKWALLS:											
EA043609	36'-9"									50	1,227
EB060600	5'-0"	1'-0"								146	1,316
EB061006	5'-0"	5'-6"								146	2,303
ED060706	5'-6"	1'-0"		1'-0"						146	1,645
EG060308	0'-5"	1'-6"	1'-9"	1'-0"	1'-5"					292	1,608
									TOTAL		103,610 LBS.

BAR	DIMENSIONS a	b	c	d	e	f	g			NO. REQ'D.	TOTAL W.T.

BAR	DIMENSIONS a	b	c	d	e	f	g			NO. REQ'D.	TOTAL W.T.

BAR BENDING DIAGRAM



NOTES

ALL BENDS IN REINFORCING STEEL TO BE MADE ABOUT A PIN OF THE MINIMUM DIAMETER ALLOWED BY THE STANDARD SPECIFICATION.

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

WHERE FIELD CUTTING OF EPOXY BARS IS REQUIRED, THE CONTRACTOR SHALL REPAIR THE EPOXY COATING AT THE CUT END AS PROVIDED FOR IN STANDARD SPECIFICATION 8.05.03 (INCLUDED IN STEEL REINFORCEMENT EPOXY COATED).

REINFORCEMENT SHALL BE BUNDLED AND TAGGED AS TO THE LOCATION AS SHOWN ON THIS SHEET.

THE CONTRACTOR SHALL SUBMIT ORIGINAL SHOP DRAWINGS FOR FABRICATION, BENDING AND PLACEMENT OF CONCRETE REINFORCEMENT IN CONFORMANCE WITH THE FIELD MEASUREMENTS. THE SHOP DRAWINGS SHALL COMPLY WITH ACI 315-80 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI 315R-80 "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" SHOWING BAR SCHEDULES, STIRRUP SPACING, DIAGRAMS OF BENT BARS, ARRANGEMENT, SPACING AND BAR MARKS OF CONCRETE REINFORCEMENT.

BAR NUMBERS:

EPOXY COATED
BAR SHAPE
BAR SIZE
BAR LENGTH (FT)
BAR LENGTH (IN)

EA062906

TOTAL EPOXY COATED STEEL REINFORCEMENT = 103,610 LBS

Job No. : 36917A

COORD	DESCRIPTION	DR'N	CK'D	APV'D	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY PP
DRAWN BY PP
TRACED BY
CHECKED BY

APPROVED: Paul C. Howard
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
SUPERSTRUCTURE RECONSTRUCTION

STEEL REINFORCEMENT DETAILS

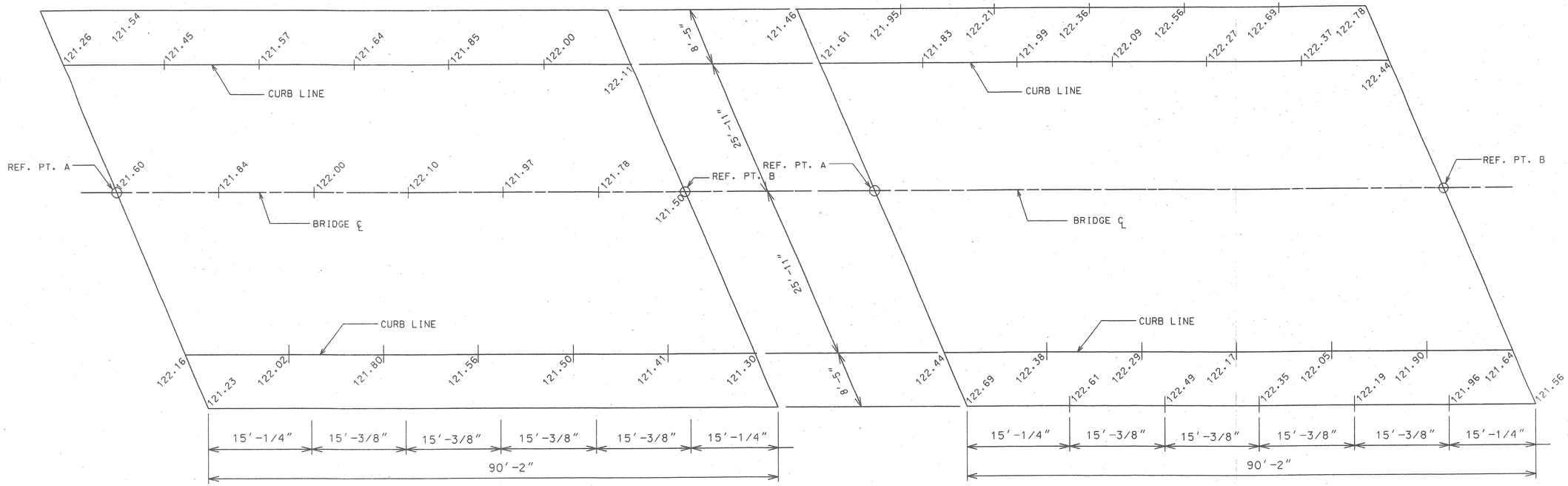
SHEET S-29 of S-41 SHEETS
CONTRACT No.
assignment no. : 93-22-17
DATE APRIL ,1997

06/19/97 ENGINEERING PRINT

SCALE	HORIZONTAL	BOOK NO.	PG.	LEVEL
	VERTICAL	PAVING COMPLETED		DATE

BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

BENCH MARKS		ELEV
PBM 109-252	NE CORNER TIREMAN & BERT ROAD	128.09
PBM 103-252A	NE CORNER TIREMAN & PATTON	136.68
PBM 110-250A	NE CORNER SPINOZA & JOY ROAD	136.26
CBM # 1	SPIKE IN POLE, S. SIDE OF TIREMAN, E. OF BRIDGE	123.04
CBM # 2	SPIKE IN POLE, S. SIDE OF TIREMAN, W. OF BRIDGE	124.55



EXISTING TOP OF SLAB ELEVATIONS

SCALE 1/8" = 1'-0"

EXISTING SIDEWALK ELEVATIONS

SCALE 1/8" = 1'-0"

Job No. : 36917A

REVISIONS	P. SHEET	DR	HCK	DAPV	DATE
DESCRIPTION					

	BY	CHECKED BY
PLAN	RP	RP
GRADE	RS	RS
ESTIMATE		
FINAL	SHEET	REVIEW

APPROVED: Earl C. Howard
STRUCTURAL ENGINEER

CITY OF DETROIT

CITY ENGINEERING DIVISION

DEPARTMENT OF PUBLIC WORKS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
SUPERSTRUCTURE RECONSTRUCTION

EXISTING DECK AND SIDEWALK ELEVATIONS

SHEET S-304 S-41 SHEETS

CONTRACT NO.

ASSIGNMENT NO. 93-22-17

DATE APR. 1997

06/19/97 ENGINEERING PRINT

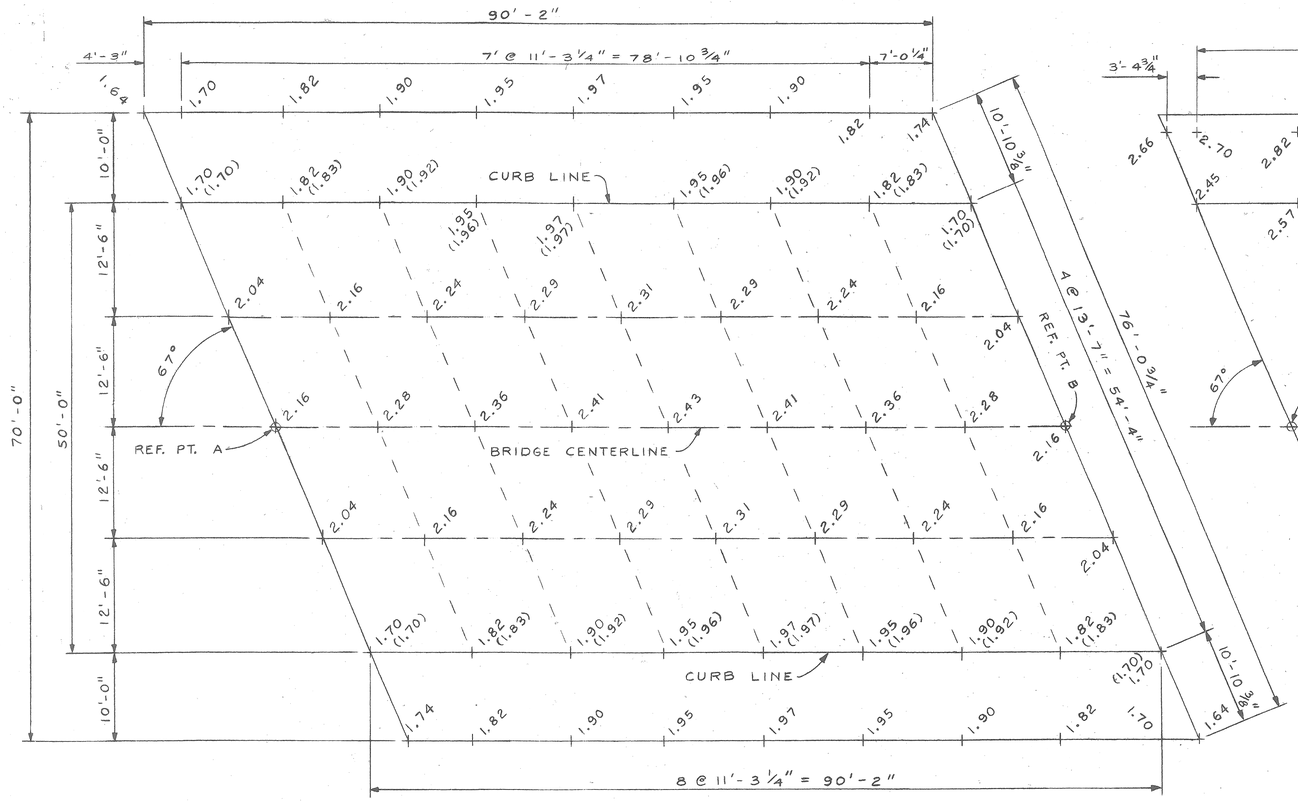
SCALE	HORIZONTAL	BOOK	LEVEL
	VERTICAL	NO. PG.	DATE
		PAVING COMPLETED	

BEFORE STARTING CONSTRUCTION ——— CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

NOTE - FOR SYMBOLS Ⓐ ETC., SEE STANDARD DETAIL DRAWING NO C-1376

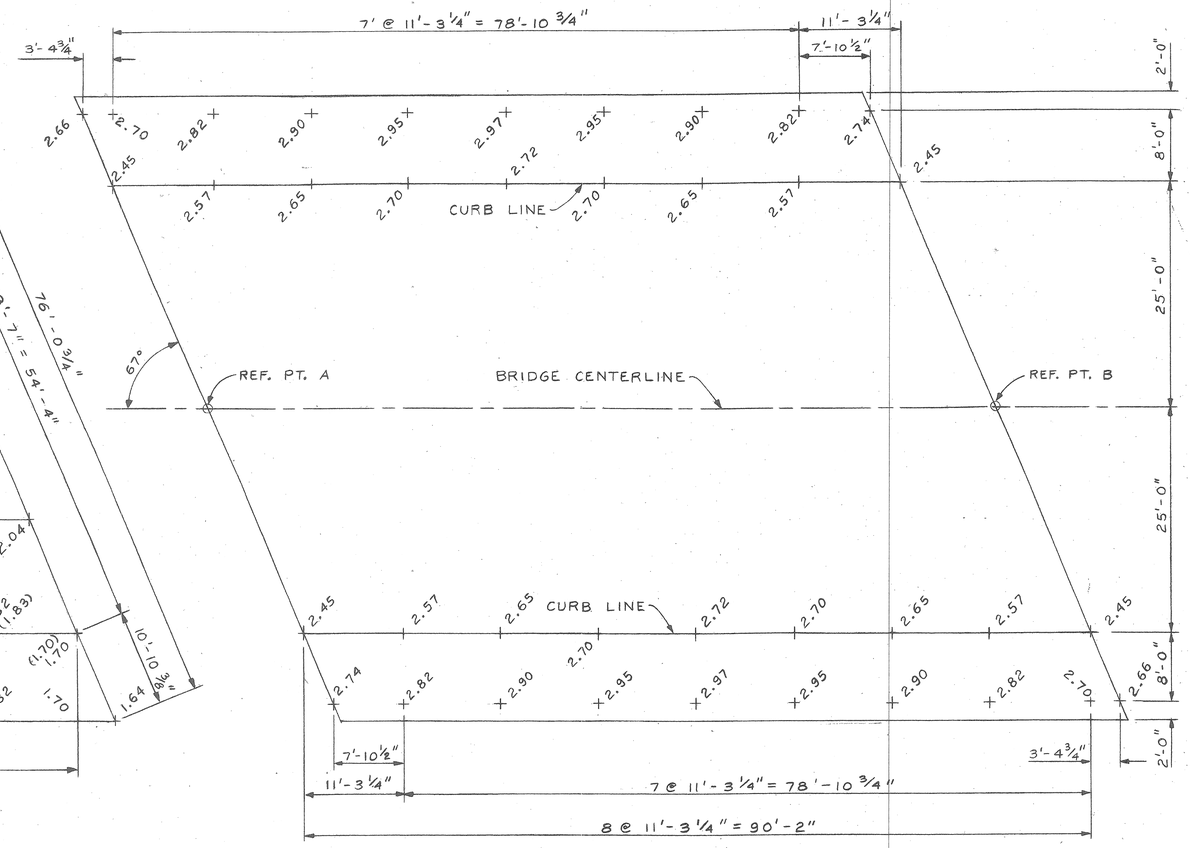
BENCH MARKS ELEV

ADD 120.00 FT. TO ELEVATIONS SHOWN.



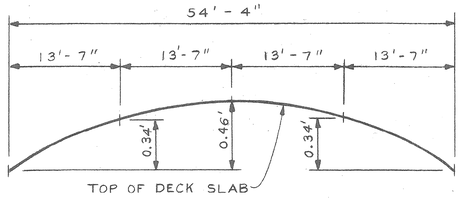
PROPOSED TOP OF DECK SLAB ELEVATIONS

SCALE: 1/8" = 1'-0"



PROPOSED SIDEWALK ELEVATIONS

SCALE: 1/8" = 1'-0"

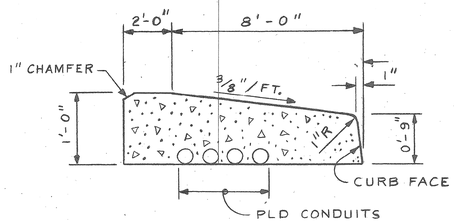


TYPICAL SECTION FOR TOP OF DECK SLAB BETWEEN CURB LINES AT 67° DIAGONAL

NO SCALE

NOTES

1. ALL ELEVATIONS ARE BASED ON CITY OF DETROIT DATUM.
2. FOR SURVEY BENCH MARK LOCATIONS & ELEVATIONS SEE SHEET NO. S-21.
3. SIDEWALK POUR SHALL NOT BE CAST UNTIL SLAB CONCRETE HAS ATTAINED AT LEAST 75% OF ITS DESIGN STRENGTH.
4. SLAB & SIDEWALK ELEVATIONS ARE BASED ON THE CONDITION THAT ALL CONCRETE BEAMS HAVE ERECTED, BUT NO OTHER LOADS ARE APPLIED. THESE ELEVATIONS INCLUDE ALLOWANCES FOR DEFLECTION DUE TO FORMS, STEEL REINFORCEMENT, DECK CONCRETE AND BARRIERS.
5. SCREED RAILS FOR FINISHING CONCRETE SHALL BE LOCATED OVER FASCIA BEAMS.
6. SCREED ELEVATIONS ARE SHOWN IN PARENTHESIS THUS ( ).
7. TRANSVERSE SIDEWALK CONTRACTION JOINTS ARE TO BE AT 8-FT. INTERVALS OR AS DIRECTED BY THE ENGINEER.



TYPICAL SIDEWALK SECTION

NO SCALE

Job No. : 36917A

DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS				

	BY	CHECKED BY
PLAN	N.W.	
GRADE	N.W.	
ESTIMATE		
FINAL	CHECK	REVIEW

APPROVED: Earl C. Howard
ENGINEER OF STREETS

CITY OF DETROIT
CITY ENGINEERING DIVISION D.P.W.
BUREAU OF STREETS AND HIGHWAYS

TIREMAN AVE. BRIDGE OVER ROUGE RIVER (BW-265)
PROPOSED DECK SLAB AND SIDEWALK ELEVATIONS

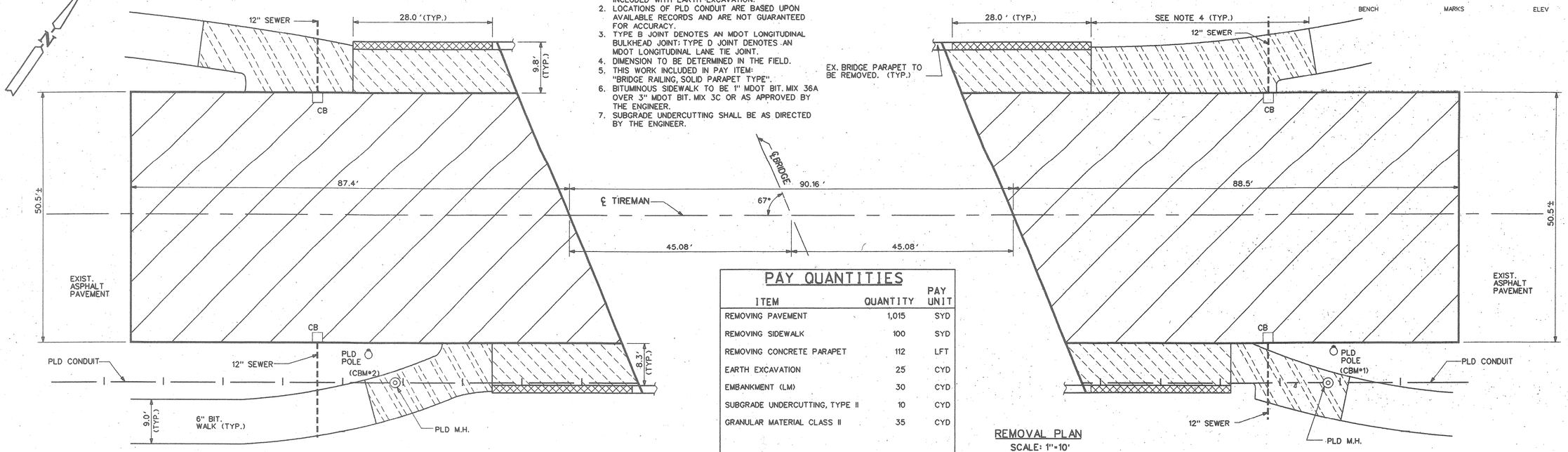
SHEET S-31 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-17
DATE MAR., 1997

06/19/97 ENGINEERING PRINT

SCALE	HORIZONTAL / VERTICAL	BOOK NO. / PAVING COMPLETED	PG.	LEVEL / DATE	BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

NOTES:

1. REMOVAL OF BITUMINOUS SIDEWALK SHALL BE INCLUDED WITH EARTH EXCAVATION.
2. LOCATIONS OF PLD CONDUIT ARE BASED UPON AVAILABLE RECORDS AND ARE NOT GUARANTEED FOR ACCURACY.
3. TYPE B JOINT DENOTES AN MDOT LONGITUDINAL BULKHEAD JOINT; TYPE D JOINT DENOTES AN MDOT LONGITUDINAL LANE TIE JOINT.
4. DIMENSION TO BE DETERMINED IN THE FIELD.
5. THIS WORK INCLUDED IN PAY ITEM: "BRIDGE RAILING, SOLID PARAPET TYPE".
6. BITUMINOUS SIDEWALK TO BE 1" MDOT BIT. MIX 36A OVER 3" MDOT BIT. MIX 3C OR AS APPROVED BY THE ENGINEER.
7. SUBGRADE UNDERCUTTING SHALL BE AS DIRECTED BY THE ENGINEER.



REMOVAL PLAN
SCALE: 1"=10'

PAY QUANTITIES

ITEM	QUANTITY	PAY UNIT
REMOVING PAVEMENT	1,015	SYD
REMOVING SIDEWALK	100	SYD
REMOVING CONCRETE PARAPET	112	LFT
EARTH EXCAVATION	25	CYD
EMBANKMENT (LM)	30	CYD
SUBGRADE UNDERCUTTING, TYPE II	10	CYD
GRANULAR MATERIAL CLASS II	35	CYD
REMOVING BITUMINOUS SURFACE (see sheet no. S-33)	196	SYD

REMOVAL LEGEND

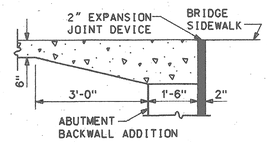
- REMOVING PAVEMENT
- REMOVING SIDEWALK
- REMOVING BITUMINOUS SIDEWALK
- REMOVING CONCRETE BRIDGE PARAPET

TYPICAL SECTION LEGEND

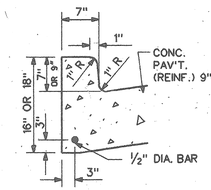
- AGGREGATE BASE UNDER CONCRETE (4" IN PLACE)
- GRANULAR MATERIAL CLASS II
- BITUMINOUS SIDEWALK, 4"
- CLASS "A" SODDING WITH 3" TOPSOIL
- (B) OPTIONAL B OR D LONGITUDINAL JOINT

PAVING PLAN LEGEND

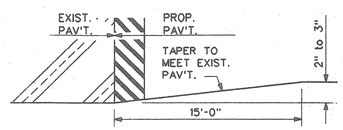
- CONC.PAV'T. WITH INTEGRAL CURB-REINF. 9"
- CONC. BASE COURSE WITH INT. CURB-REINF. 9" AND 2" BITUMINOUS SURFACE
- REMOVING BITUMINOUS SURFACE & RESURFACE
- CONCRETE SIDEWALK, 6"
- BITUMINOUS SIDEWALK, 4" (see note 6, this sheet)
- BRIDGE PARAPET ON CONC. WALK
- CLASS "A" SODDING WITH 3" TOPSOIL
- BACKFILL AND CLASS "A" SODDING
- CLASS C-76-III 12" SEWER IN TRENCH DETAIL B
- (A) CATCH BASIN "A"
- (D) ADJUSTING DRAINAGE STRUCTURE COVER, CASE 2
- (E) TRANSVERSE EXPANSION JOINT
- (G) TRANSVERSE CONTRACTION JOINT



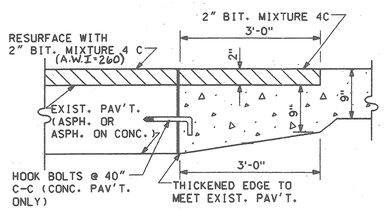
SECTION C-C
NO SCALE



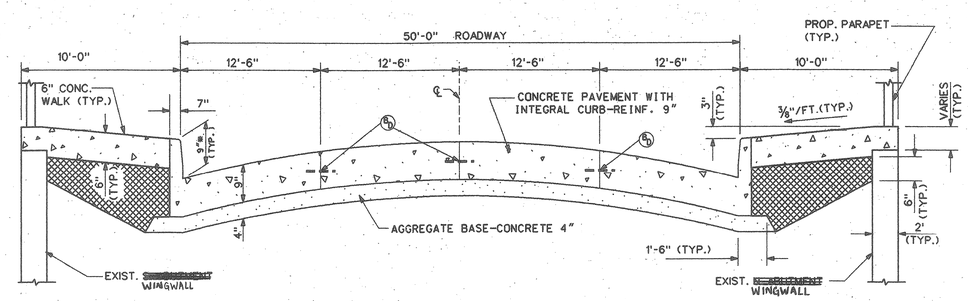
INTEGRAL CURB
NO SCALE



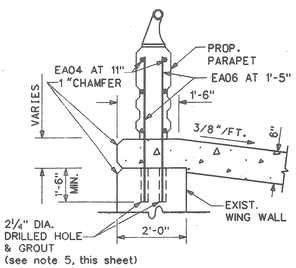
DETAIL "A"
NO SCALE



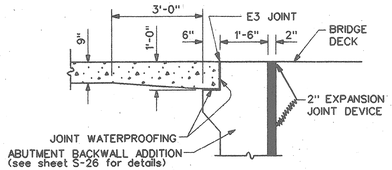
SECTION A-A
NO SCALE



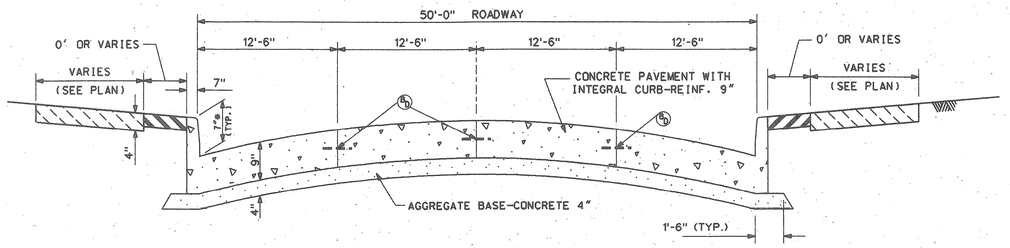
TYPICAL SECTION FROM BRIDGE DECK TO END OF WING WALL
NO SCALE



DETAIL OF PROPOSED SIDEWALK AT WING WALL
NO SCALE



SECTION B-B
NO SCALE



* INCREASES UNIFORMLY TO 9" ALONG TRANSITION (SEE PAVING PLAN).

TYPICAL SECTION FROM END OF WING WALL TO EXISTING PAV'T.
NO SCALE

JOB NO. 36917A

REVISIONS	DESCRIPTION	DR	CK	DA	PV	DATE

	BY	CHECKED BY
PLAN	N.W.,K.M.	
GRADE		
ESTIMATE		
FINAL	****	****

APPROVED: Earl C. Howard, ENGINEER OF STREETS

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAU OF STREETS AND HIGHWAYS

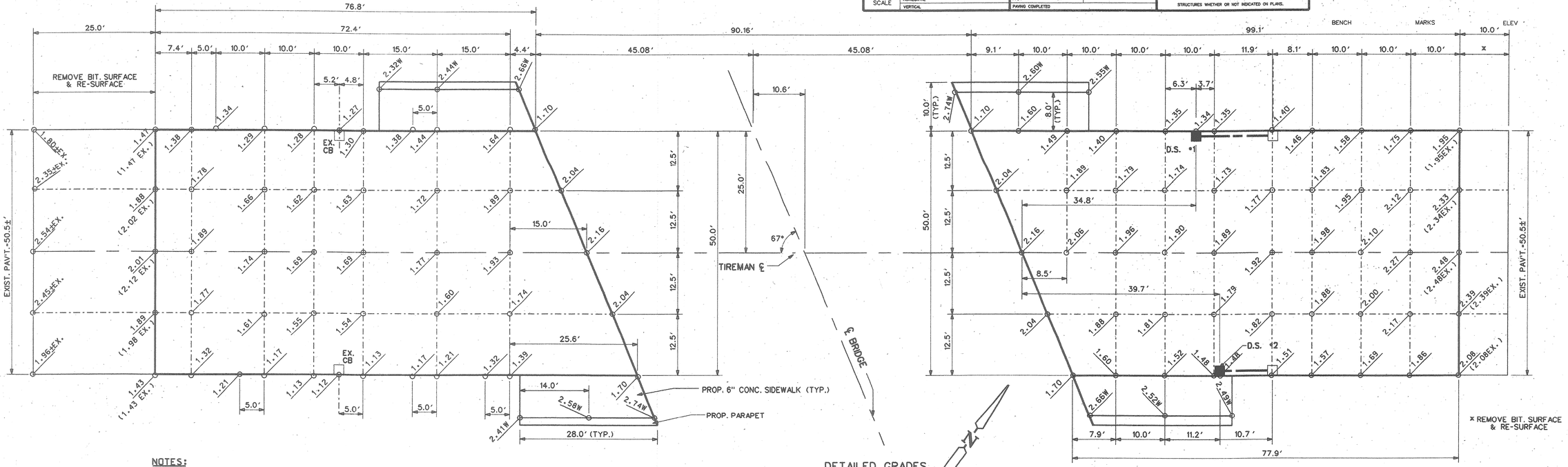
TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
APPROACH REMOVAL PLAN, PROPOSED SECTIONS & DETAILS

SHEET S-32 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-17
DATE MAR. ,1997

06/19/97 ENGINEERING PRINT

SCALE	HORIZONTAL	BOOK NO.	PG.	LEVEL
	VERTICAL	PAVING COMPLETED		DATE

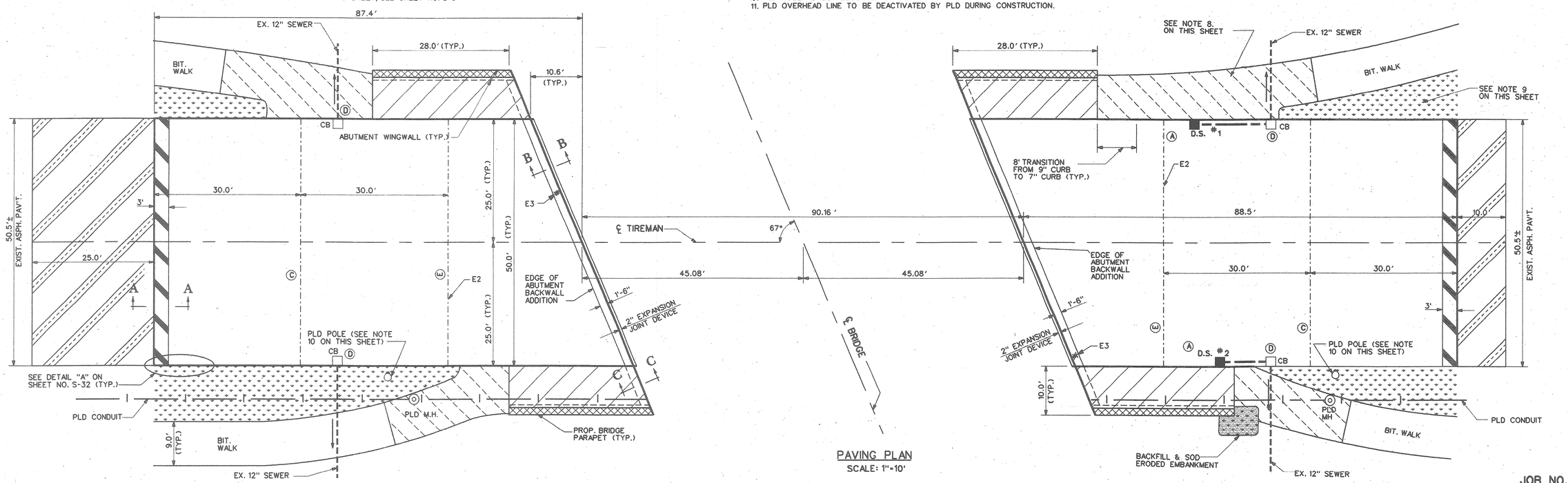
BEFORE STARTING CONSTRUCTION CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.



DETAILED GRADES
SCALE: 1"=10'

NOTES:

1. FOR SURVEY BENCH MARK LOCATIONS AND ELEVATIONS SEE SHEET NO. S-21 .
2. ADD 120.00 TO ELEVATIONS SHOWN.
3. FOR ELEVATIONS SHOWN, "W" DENOTES TOP OF WALK ELEVATIONS. ALL OTHER ELEVATIONS SHOWN ARE PAVEMENT SURFACE ELEVATIONS.
4. FOR PAVING PLAN LEGEND, CROSS SECTIONS AND DETAILS SEE SHEET NO. S-32 .
5. FOR DRAINAGE STRUCTURE DETAILS SEE SHEET NO. S-34 .
6. SEE ALSO NOTES ON SHEET NO. S-32 AND ON SHEET NO. S-34.
7. FOR PAY QUANTITIES APPLICABLE TO THIS SHEET, SEE SHEET NO. S-34
8. REPLACE DISTURBED BITUMINOUS WALK WITH 1" BIT. MIX 36-A OVER 3" BIT. MIX 3C AS DIRECTED BY THE ENGINEER.
9. RESTORE DISTURBED GROUND AREAS WITH CLASS "A" SODDING ON 3" TOPSOIL AS DIRECTED BY THE ENGINEER.
10. PLD POLE TO BE RELOCATED BY PLD.
11. PLD OVERHEAD LINE TO BE DEACTIVATED BY PLD DURING CONSTRUCTION.



PAVING PLAN
SCALE: 1"=10'

JOB NO. 36917A

DESCRIPTION	BY	CHECKED BY
PLAN	N.W.,K.M.	
GRADE	N.W.,K.M.	
ESTIMATE		
FINAL		

REVISIONS

APPROVED: Earl C. Howard
ENGINEER OF STREETS

CITY OF DETROIT
CITY ENGINEERING DIVISION - D.P.W.
BUREAU OF STREETS AND HIGHWAYS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
APPROACH PAVING PLAN AND DETAILED GRADES

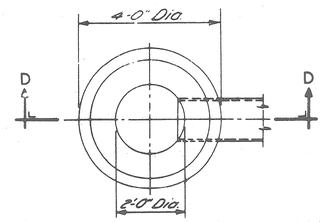
SHEET S-33 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-17
DATE MAR., ,1997

06/19/97 ENGINEERING PRINT

SCALE	HORIZONTAL / VERTICAL	BOOK NO. / PAVING COMPLETED	PG.	LEVEL / DATE	BEFORE STARTING CONSTRUCTION, CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

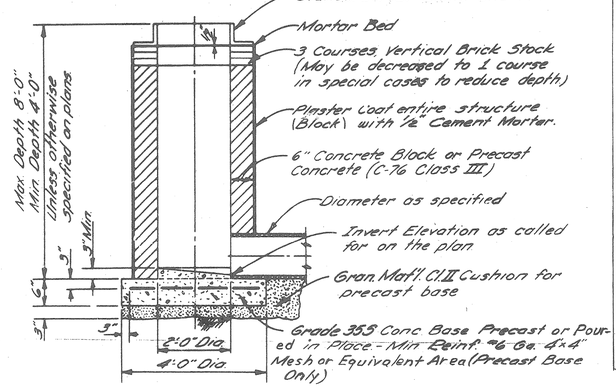
NOTES

1. Install 12-inch dia. C-76-III sewers in trench detail B.
2. Verify diameters and invert elevations of existing sewers in the field.
3. For a profile view of the existing bridge parapet see sheet no. S-23.
4. For details of the proposed parapet see sheet no. S-26. See also MDOT Standard Plan X-18D, "Bridge Railing, Solid Parapet Type".
5. Transverse contraction joints on approach sidewalks shall be spaced at 6 ft. intervals.
6. Replace disturbed bituminous walk with 1" MDOT Bit. Mix 36A over 3" MDOT Bit. Mix 3C or other approved mixture as directed by the Engineer.
7. Restore disturbed ground areas with Class A sodding on 3" topsoil as directed by the engineer.
8. Backfill eroded embankment with selected excavated material (included with construction).
9. For PLD manhole reconstruction see sheet no. S-35.
10. For PLD conduit reconstruction see sheet no. S-35.
11. Provide double-yellow L pavement markings conforming to Detroit DOT Field Pavement Marking Standards No. SG-50. Markings are to be of polyester material.



PLAN VIEW

NOTE: Catch Basin "A" will be used only when outletting to a Catch Basin

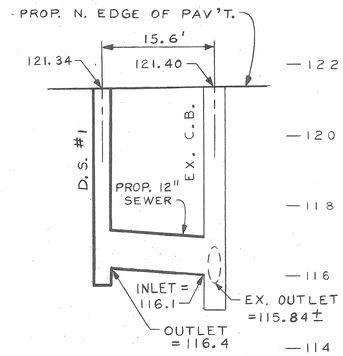


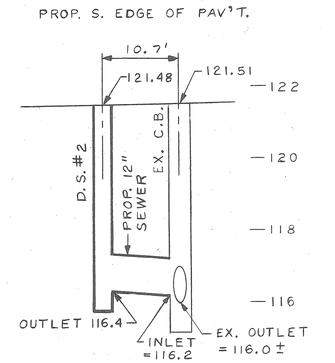
SECTION D-D

CATCH BASIN "A"

NO SCALE

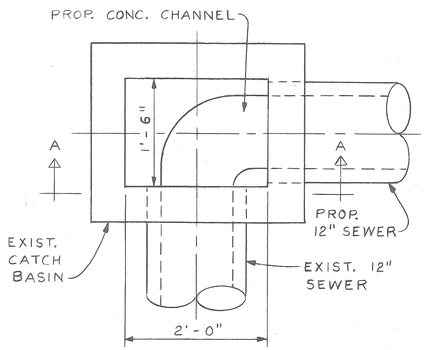
PAY QUANTITIES		
ITEM	QUANTITY	PAY UNIT
AGGREGATE BASE UNDER CONCRETE (4" IN PLACE)	1,043	SYD
JOINT WATERPROOFING	230	SFT
CONCRETE SIDEWALK, 6"	1,120	SFT
CONCRETE PAVEMENT WITH INTEGRAL CURB - REINF. 9"	1,005	SYD
BRIDGE RAILING, SOLID PARAPET TYPE	112	LFT
CLASS C-76-III SEWER, 12" TRENCH DETAIL B	27	LFT
SEWER TAP, 12"	2	EACH
SEWER CLEANOUT	300	LFT
ADJUSTING DRAINAGE STRUCTURE COVER, CASE 2	6	EACH
MISC. CATCH BASIN TYPE A	2	EACH
BITUMINOUS MIXTURE, 3C	23	TON
BITUMINOUS MIXTURE, 4C	26	TON
BITUMINOUS MIXTURE, 36A	7	TON
OVERLAY COLD PLASTIC PAVEMENT MARKING, 4" YELLOW	440	LFT
CLASS A SODDING	124	SYD
WATER	2	UNIT
TOPSOIL SURFACE, 3"	124	SYD
CLEANING DRAINAGE STRUCTURE	4	EACH
CONTRACTION JOINT C	100	LFT
EXPANSION JOINT E2	100	LFT
EXPANSION JOINT E3	152	LFT



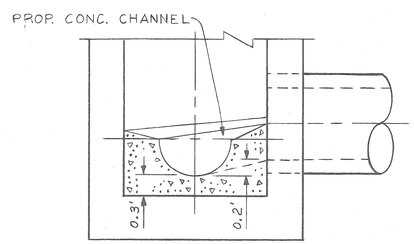


DRAINAGE STRUCTURE DETAILS

SCALE: 1" = 10' HORIZ.
1" = 2' VERT.



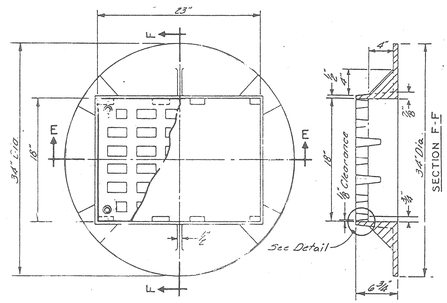
PLAN



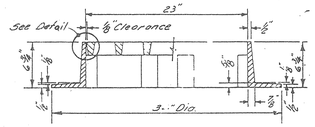
SECTION A-A

DETAIL OF EXISTING CATCH BASIN

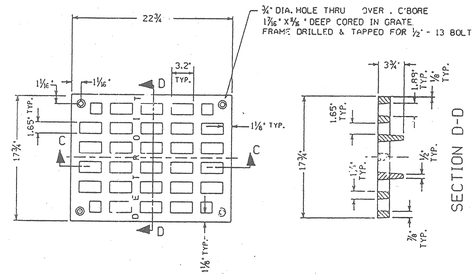
SCALE 1" = 1'-0"



PLAN VIEW OF FRAME



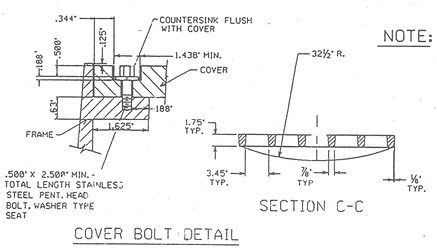
SECTION E-E



PLAN VIEW OF GRATE

MATERIAL: GRAY IRON A.S.T.M. STD. SPEC. A-48, CL. 30, BEARING SURFACES OF COVER AND FRAME SHALL BE GROUND TO PREVENT ROCKING. CASTING SHALL NOT BE COATED

NOTE: f = FINISH SURFACE



COVER BOLT DETAIL

STANDARD FLAT GRATE AND FRAME

NO SCALE

CATCH BASIN NOTES

1. The materials & workmanship shall be in accordance with the current Standard Specifications.
2. Center of Catch Basin shall be 20 inches from back of curb.
3. All sizes & flow lines of pipe, and elevations for top & bottom of structures shall be determined from the plans or construction requirements.
   The bell shall be removed from the first length of outlet pipe projecting through the wall of the structures.
   When any structure is constructed of precast concrete or concrete block, the top of the masonry shall be left sufficiently low to permit proper adjustment of cover to grade by the use of mortar or bricks as directed by the Engineer.
4. A plaster coat of mortar ½ inch in thickness shall be applied to the outer surface of the structure as shown. A ½ inch cement plaster coat shall be placed on the inside of all sumps.
5. Contractor shall verify elevations of existing utilities to enable construction to indicated elevations shown on drawings. If necessary, invert elevations shown on the drawings may be altered in the field to clear existing utilities. Such alterations, upward or downward, shall be at no change in contract price.
6. When precast concrete pipe sections are used for catch basins, either a section of the inlet and outlet pipes or an opening or eye for the inlet & outlet pipes shall be cast into the wall of the catch basin pipe when it is being manufactured. Sizes in precast pipe sections shall be furnished to accommodate a flexible joint connection such as Press-Wedge by Press Seal Gasket Corp or Res-Seal by Scales Mfg. Corp.

Job No. : 36917A

DESCRIPTION	DR N	CK D	AP VD	DATE
REVISIONS				

	BY	CHECKED BY
PLAN	N.W.	
GRADE		
ESTIMATE		
FINAL	CHECK	REVIEW

APPROVED: Earl C. Hawn
ENGINEER OF STREETS

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
BUREAU OF STREETS AND HIGHWAYS

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
DRAINAGE STRUCTURE DETAILS

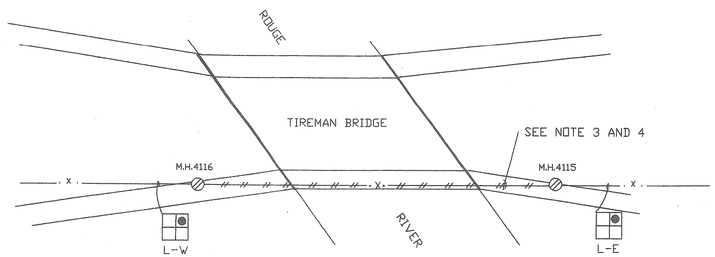
SHEET S-34 OF S-41 SHEETS
CONTRACT NO.
ASSIGNMENT NO. 93-22-17
DATE MAR., 1997

06/19/97 ENGINEERING PRINT

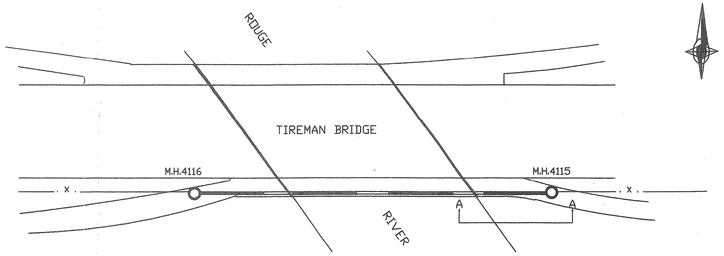
T-109

CALL MISS DIG BEFORE YOU DIG

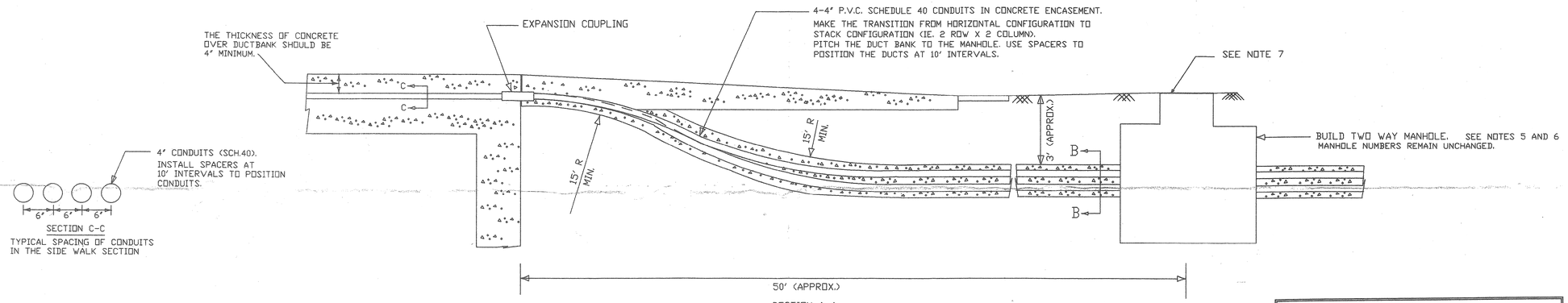
CAUTION ! HIGH VOLTAGE CABLES



EXISTING



FUTURE

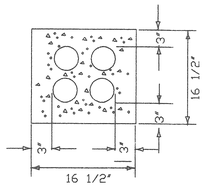


SECTION C-C

TYPICAL SPACING OF CONDUITS IN THE SIDE WALK SECTION

SECTION A-A

TYPICAL SECTIONAL VIEW



SECTION B-B

PAY QUANTITY		
ITEM	QUANTITY	PAY UNIT
(a) BRIDGE :		
Misc. Conduit Bank	90	LFT
(b) APPROACH WORK :		
Misc. Manhole	2	EACH
Misc.Encased Conduit Bank	100	LFT
Manhole-Remove	2	EACH
Misc. Duct Bank-Remove	1	LSUM

NOTE

1. REFER TO P.L.D. DRAWING NO. 101 FOR ENCASED CONDUIT BANK. (S-37)
2. REFER TO P.L.D. DRAWING NO. 104 FOR MANHOLE CONSTRUCTION. (S-40)
3. THE CONTRACTOR SHOULD DO ANY WORK ONLY AFTER THE HIGH VOLTAGE CABLES AND COMMUNICATION CABLES ARE CUT AND REMOVED. THE CABLES WILL BE REMOVED AND REINSTALLED AS A FORCE ACCOUNT WORK BY P.L.D. CONTACT P.L.D. ENGINEERING DIVISION (313) 267-7801 THREE WEEKS IN ADVANCE FOR ARRANGING CABLE WORK.
4. ALL THE DEBRIS OF THE DISMANTLED MANHOLES SHOULD BE REMOVED BEFORE NEW MANHOLES AND DUCTS ARE INSTALLED
5. THE NEW MANHOLE SHOULD BE BUILT TO ACCOMODATE THE EXISTING DUCT BANK ON ONE SIDE AND THE NEW DUCT BANK ON THE OTHER SIDE. THE MANHOLE SHOULD BE GROUNDED AND CABLE RACKS SHOULD BE INSTALLED PER P.L.D. SPECS. PRECAST MANHOLE MAY BE INSTALLED PER APPROVAL BY P.L.D.
6. THE DUCT BANKS SHOULD BE TERMINATED IN THE DUCT POCKETS OF THE MANHOLES PER P.L.D. SPECIFICATIONS.
7. P.L.D. APPROVED MANHOLE FRAME AND COVER SHOULD BE INSTALLED.
8. PLEASE CONTACT P.L.D. INSPECTORS BEFORE STARTING ANY WORK.
   MR. SIDNEY BASS (313)267- 7340
   MR. KEN HARDAWAY (313)267- 6043
9. THE CONTRACTOR SHOULD NOTIFY P.L.D. SYSTEM OPERATOR (313) 224- 0500 48 HRS. PRIOR TO PERFORMING ANY WORK.
10. REFER TO THE FOLLOWING SPECIFICATIONS:
    CITY ENGINEERING DEPARTMENT STANDARD SPECIFICATIONS FOR PAVING AND RELATED CONSTRUCTION (DIVISION 15 WITH SPECIAL PROVISIONS FOR ELECTRICAL WORK).
11. REFER TO SHT S-37 TO S-41 FOR CITY OF DETROIT STANDARD PLANS FOR PUBLIC LIGHTING DEPARTMENT.

LEGEND

- EXISTING DUCT BANK
- DISMANTLE THE EXISTING DUCT BANK.
- DISMANTLE THE MANHOLE
- EXISTING DUCT WITH CABLE
- NEW DUCT BANK
- BUILD NEW MANHOLE

NOT TO SCALE

JOB NO. : 36917A

REVISION	DESCRIPTION	DATE
	CONDUIT CHANGED FROM SCHEDULE 80 TO SCHEDULE 40	3/25/1996
	NEW MANHOLE PROPOSED	4/2/1996

TIREMAN BRIDGE IN ROUGE PARK

DETAILS OF CONDUIT RECONSTRUCTION

TIREMAN AND ROUGE RIVER

DRAWN BY

CHECKED BY

APPROVED BY E.C. Howard

PUBLIC LIGHTING DEPARTMENT

CITY OF DETROIT

FILE NO. 44-0413

SHEET NO: S-35

ASSIGNMENT NO. 93-22-17

7/28/95

06/19/97 ENGINEERING PRINT

QUANTITY SHEET

AS PER PLANS

ITEMS		TOTALS	UNITS	S-20 BRIDGE TITLE SHEET	S-21 SITE PLAN	S-22 GENERAL PLAN OF STRUCTURE	S-23 REMOVAL PLAN	S-24 REPAIRING STRUCTURAL CRACKS, PATCHING ABUTMENTS AND PIER	S-25 PLAN OF DECK AND CROSS SECTION	S-26 SUPERSTRUCTURE DETAILS	S-27 PRESTRESSED BEAM DETAILS	S-28 EXPANSION JOINT DETAILS	S-29 STEEL REINFORCEMENT DETAILS	S-30 EXISTING DECK AND SIDEWALK ELEVATIONS	S-31 PROPOSED DECK AND SIDEWALK ELEVATIONS	S-32 APPROACH REMOVAL PLAN, PROPOSED SECTIONS AND DETAILS	S-33 APPROACH PAVING PLAN, AND DETAILED GRADES	S-34 DRAINAGE STRUCTURE DETAILS	S-35 DETAILS OF CONDUIT RECONSTRUCTION	S-36 QUANTITY SHEET	S-17 TRAFFIC CONTROL AND DETOUR PLAN (SPINOZA DRIVE BRIDGE)	S-37 MISCELLANEOUS ENCASED CONDUIT SECTION DETAILS	S-38 DETAIL FOR JOINING CONDUIT ENCASEMENTS	S-39 TWO WAY MANHOLE	S-40 MULT. ST. LTG CABLE CONNECTIONS, CLAMP-ON ARM & MISC. DETAILS	S-41 CODE 009-OC ST LTG. STD. DETAILS
PART 02 BRIDGE:																										
UNCLASSIFIED FOUNDATION EXCAVATION	2090003	255	CYD							255																
STRUCTURAL BACKFILL (CIP)	2090005	125	CYD							125																
SUPERSTRUCTURE CONCRETE	5030024	~~[illegible]~~ 357	CYD						~~[illegible]~~ 357																	
MISC. FORM, FINISH, CURE SUPERSTRUCTURE CONCRETE,B01-82-18-84	5037051	1	LSUM						1																	
STEEL REINFORCEMENT, EPOXY COATED	5030031	103,610	LBS										103,610													
PENETRATING WATER REPELLANT TREATMENT	5030052	1365	SYD					1365										~~[illegible]~~								
EXPANSION JOINT DEVICE	5030099	155	LFT									155														
MISC. ELASTOMERIC CONCRETE	5037020	2.5	CFT						2.50																	
ELASTOMERIC BEARING, 1"	5040062	70	SFT							70																
PRESTRESSED CONCRETE I-BEAM, 36" FURNISHED	5050015	985	LFT						985																	
PRESTRESSED CONCRETE I-BEAM, 36" ERECTED	5050016	985	LFT						985																	
JOINT WATER PROOFING	5060001	230	SFT														230									
BRIDGE RAILING, SOLID PARAPET TYPE	5080002	297	LFT							185							112									
HAND CHIPPING-OTHER THAN DECK	5090007	100	CFT					100																		
PATCHING MORTAR OR CONCRETE	5090015	100	CFT					100																		
FORMING FOR PATCHES	5090017	300	SFT					300																		
FLUSHING CRACKS WITH ACID	5090097	100	LFT					100																		
FLUSHING CRACKS WITH WATER	5090098	100	LFT					100																		
REPAIRING STRUCTURAL CRACKS	5090099	100	LFT					100																		
MISC. CONDUIT BANK	6907001	90	LFT																90							
PART 01 APPROACH:																										
MISC. MOBILIZATION, MAX $66,000.00	1507051	0.5	LSUM				0.5																			
MISC. REMOVAL OF PORTIONS OF STRUCTURES B01-82-18-84	2067051	1	LSUM				1																			
MISC. REMOVING CONCRETE PARAPET	2077001	112	LFT													112										
REMOVING PAVEMENT	2070002	1015	SYD													1015										
REMOVING SIDEWALKS	2070006	100	SYD													100										
SEWER TAP, 12"	5130624	2	EACH															2								
EARTH EXCAVATION	2080001	25	CYD													25										
EMBANKMENT(LM)	2080020	30	CYD													30										
SUBGRADE UNDERCUTTING, TYPE II	2080031	10	CYD													10										
GRANULAR MATERIAL CLASS II	2080051	35	CYD													35										
AGGREGATE BASE UNDER CONCRETE(4" IN PLACE)	3010021	1043	SYD															1043								
REMOVING BITUMINOUS SURFACE	4000001	196	SYD													196										
BITUMINOUS MIXTURE-3C	4000047	23	TON															23								
BITUMINOUS MIXTURE-4C	4000049	26	TON															26								
BITUMINOUS MIXTURE-36A	4000050	7	TON															7								
CONCRETE PAVEMENT WITH INTEGRAL CURB-REINFORCED 9"	4500173	1005	SYD															1005								
CONTRACTION JOINT C	4500270	100	LFT															100								
EXPANSION JOINT E2	4500275	100	LFT															100								
EXPANSION JOINT E3	4500276	152	LFT															152								
CLASS C76-III SEWER,12",TRENCH DETAIL B	5130337	27	LFT															27								
SEWER CLEANOUT	5140013	300	LFT															300								
CONCRETE SIDEWALK, 6"	6110003	1120	SFT															1120								
OVERLAY COLD PLASTIC PAVEMENT MARKING, 4",YELLOW	6290351	620	LFT															620**								
FIELD OFFICE	6220001	■ 6	MOS				■ 6																			
BARRICADE, TYPE III, LIGHTED-FURNISHED	6310036	6	EACH																		6					
BARRICADE, TYPE III, LIGHTED-OPERATED	6310037	6	EACH																		6					
TEMPORARY CONCRETE BARRIER-FURNISHED	6310040	100	LFT																		100					
TEMPORARY CONCRETE BARRIER-OPERATED	6310041	100	LFT																		100					
MINOR TRAFFIC DEVICES	6310054	0.5	LSUM																		0.5					
SIGN, TYPE B TEMPORARY-FURNISHED	6310065	210	SFT																		210					
SIGN, TYPE B TEMPORARY-OPERATED	6310066	210	SFT																		210					
CLASS A SODDING	6530001	124	SYD															124								
WATER	6530003	2	UNIT															2								
TOP SOIL SURFACE,3"	6530014	124	SYD															124								
MISC. CATCH BASIN, TYPE A	5147000	2	EACH															2								
ADJUSTING DRAINAGE STRUCTURE COVER, CASE 2	5140046	6	EACH															6								
CLEANING DRAINAGE STRUCTURE	5140014	4	EACH															4								
MISC. ENCASED CONDUIT BANK	6907001	100	LFT																100							
MANHOLE-REMOVE	6902569	2	EACH																2							
MISC. DUCT BANK - REMOVE, B01-82-18-84	6907051	1	LSUM																1							
MISC. MANHOLE	6907050	2	EACH																2							

■ ~~THIS QUANTITY IS INCLUDED IN QUANTITY SHOWN IN SHT. S-20 LOCATION~~

** INCLUDES QUANTITY FOR BRIDGE AND APPROACHES

JOB NO: 36917A

revisions | dr'n | ck'ed | apv'ed | date

revisions | dr'n | ck'ed | apv'ed | date

designed by P.P.

drawn by K.M.

approved:

EARL C. HOWARD

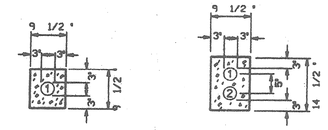
CITY OF DETROIT
city engineering division
department of public works

TIREMAN AVENUE BRIDGE OVER ROUGE RIVER (BW-265)
SUPERSTRUCTURE RECONSTRUCTION

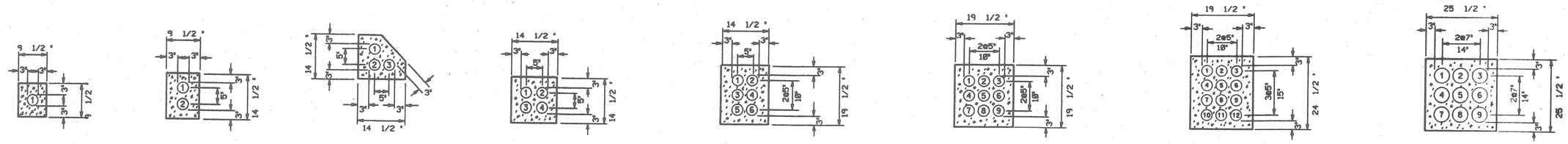
QUANTITY SHEET

a.o. contract no. 93-22-17
sheet S-36 of S-41
drawing no.
date APRIL ,1997

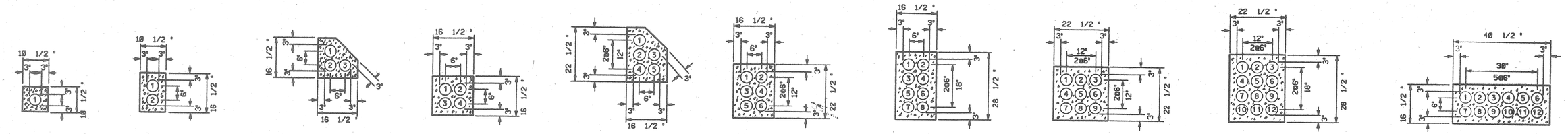
06/19/97 ENGINEERING PRINT



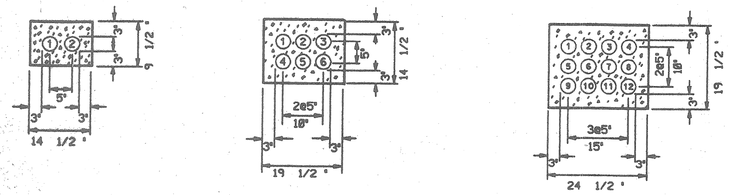
1-2" CONDUIT 2-2" CONDUITS



1-3" CONDUIT 2-3" CONDUITS 3-3" CONDUITS 4-3" CONDUITS 6-3" CONDUITS 9-3" CONDUITS 12-3" CONDUITS 9-5" CONDUITS



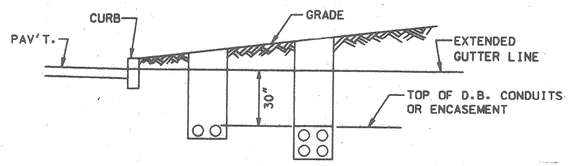
1-4" CONDUITS 2-4" CONDUITS 3-4" CONDUITS 4-4" CONDUITS 5-4" CONDUITS 6-4" CONDUITS 8-4" CONDUITS 9-4" CONDUITS 12-4" CONDUITS 12-4" CONDUITS IN BRIDGE APPROACH



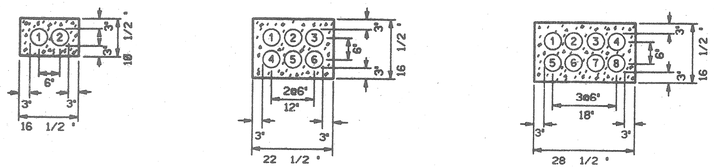
2-3" CONDUITS 6-3" CONDUITS 12-3" CONDUITS

ALTERNATE ARRANGEMENT OF 3" CONDUIT

(TO SUIT FIELD CONDITIONS)
(TO BE APPROVED BY THE ENGINEER)



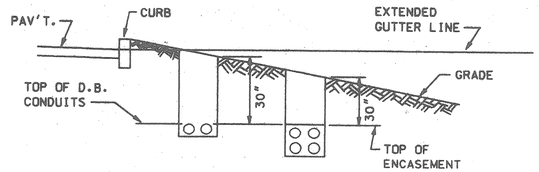
UPWARD GRADE
N.T.S.



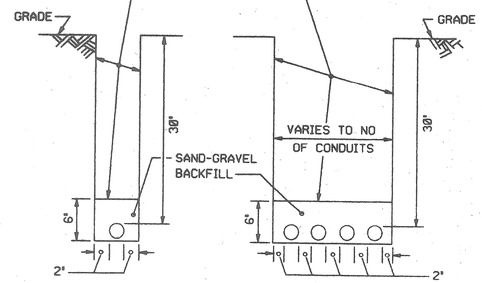
2-4" CONDUITS 6-4" CONDUITS 8-4" CONDUITS

ALTERNATE ARRANGEMENT OF 4" CONDUIT

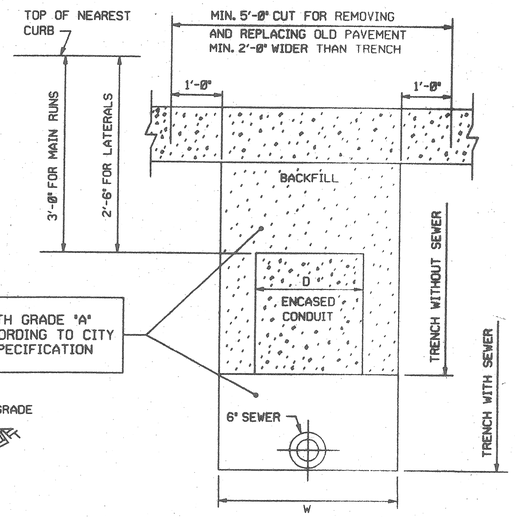
(TO SUIT FIELD CONDITIONS)
(TO BE APPROVED BY THE ENGINEER)



DOWNWARD GRADE
N.T.S.



DIRECT BURIAL CONDUIT(S)



DIRECT BURIAL CONDUIT(S)

NOTE:

THE PREFERRED TRENCH WIDTH "W" IS THE WIDTH OF "D" OF CONDUIT ENCASEMENT.

JOB NO. : 36917A

101

REVISIONS	Date	Description	Chkd. by

MISC. ENCASED CONDUIT SECTIONS DETAILS

Drawn CEA
Checked
Approved
Date

PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 Wyoming Detroit, Mich. 48221

Drwg. No. of
File No. CEA

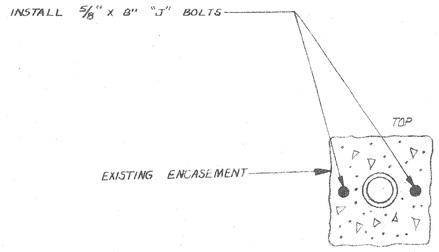
Checked by
Approved by

PUBLIC LIGHTING DEPARTMENT
CITY OF DETROIT

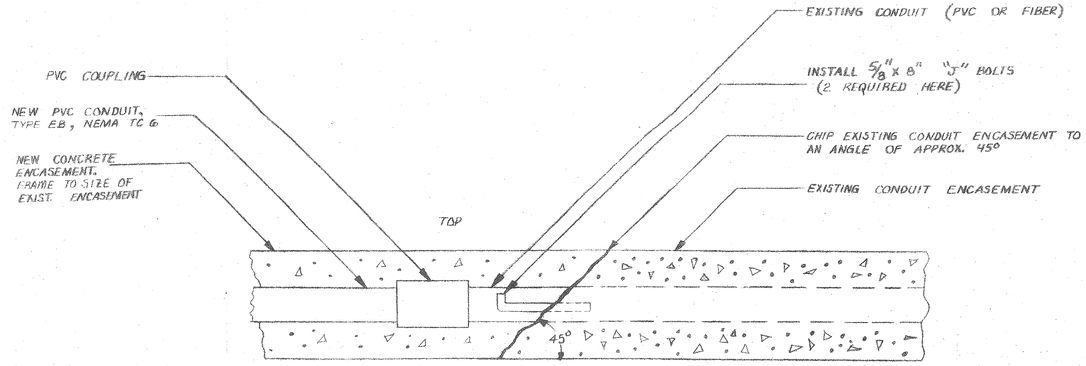
File No.
Sheet No. S-37
Date

06/19/97 ENGINEERING PRINT

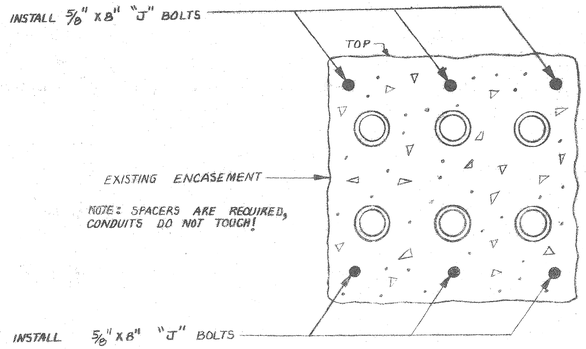
IMAGE MEDIA® 72336



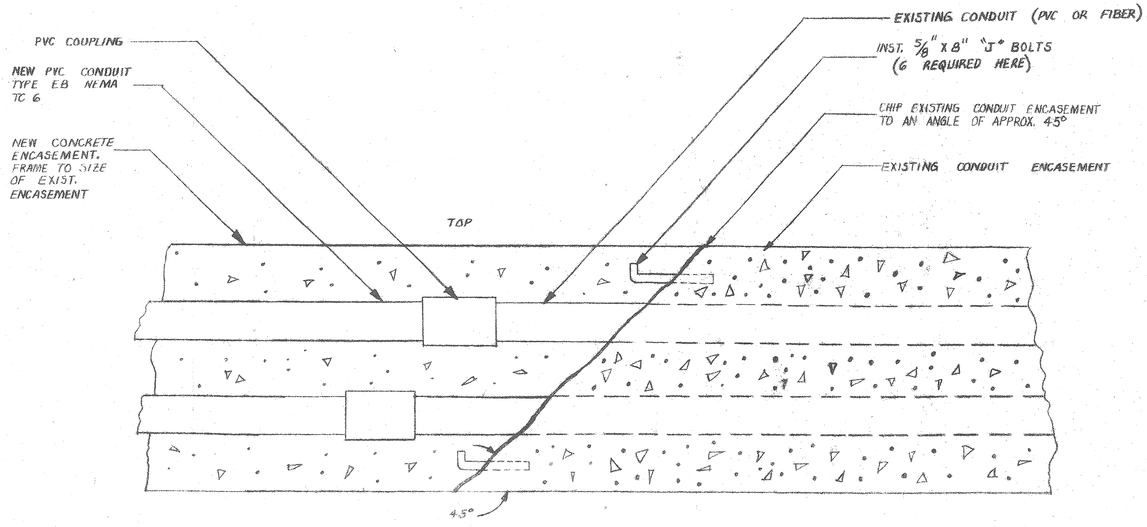
DETAIL A
(N.T.S.)
END VIEW OF CONDUIT ENCASEMENT SHOWING APPROX. LOCATION OF "J" BOLTS



DETAIL A
(N.T.S.)
SIDE VIEW OF A SINGLE CONDUIT ENCASEMENT



DETAIL B
(N.T.S)
END VIEW OF CONDUIT ENCASEMENT SHOWING APPROX. LOCATION OF "J" BOLTS (6 REQUIRED)



DETAIL B
(N.T.S.)
SIDE VIEW OF A MULTIPLE CONDUIT ENCASEMENT

NOTE: TO TERMINATE A NEW CONDUIT BANK FOR FUTURE EXTENSION, REFERENCE P.L.C. DRAWING # 44-0308

JOB NO. : 36917A

DATE	DESCRIPTION	CHKD. BY

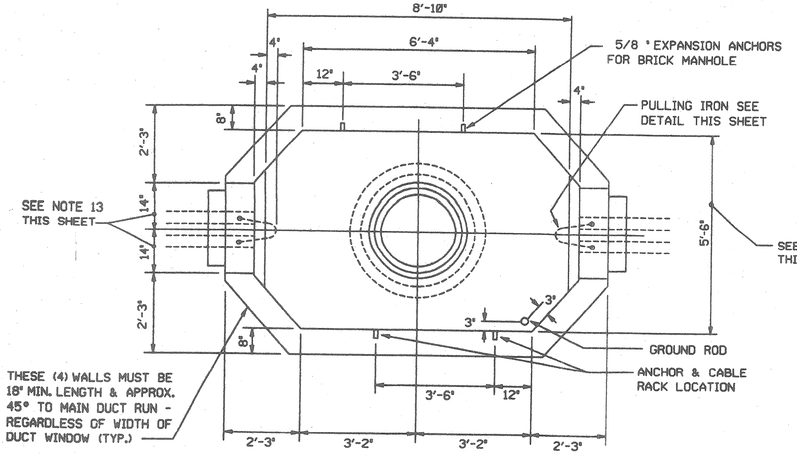
DETAIL FOR JOINING CONDUIT ENCASEMENTS

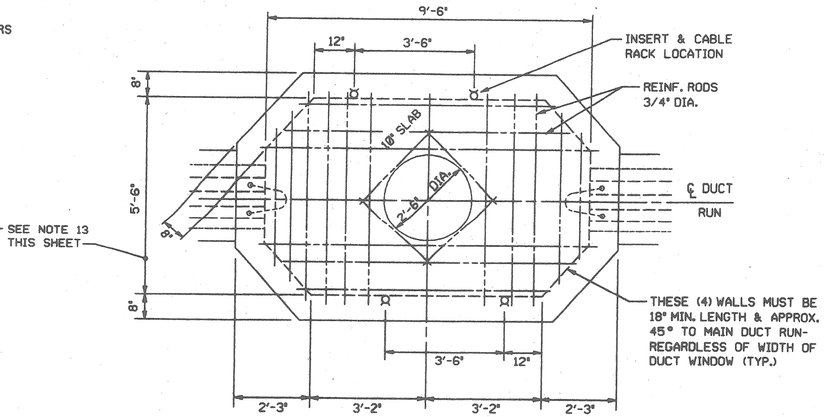
DRAWN BY M. LASKOWSKI
CHECKED BY M.L.
APPROVED BY M.L.

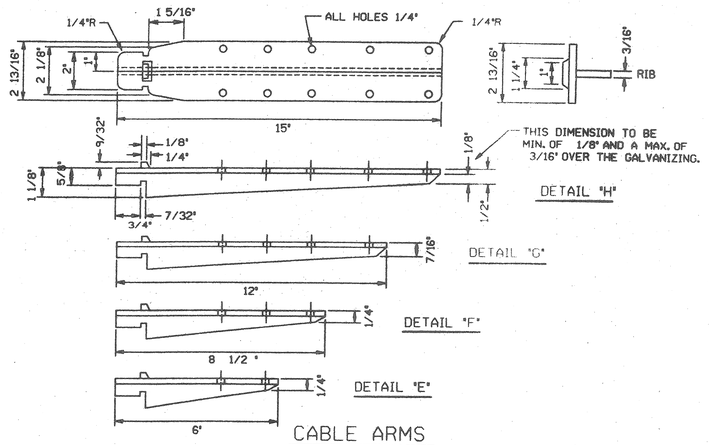
PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

FILE NO. 101 A
SHEET NO. S-38
DATE JAN. 27, '72

06/19/97 ENGINEERING PRINT



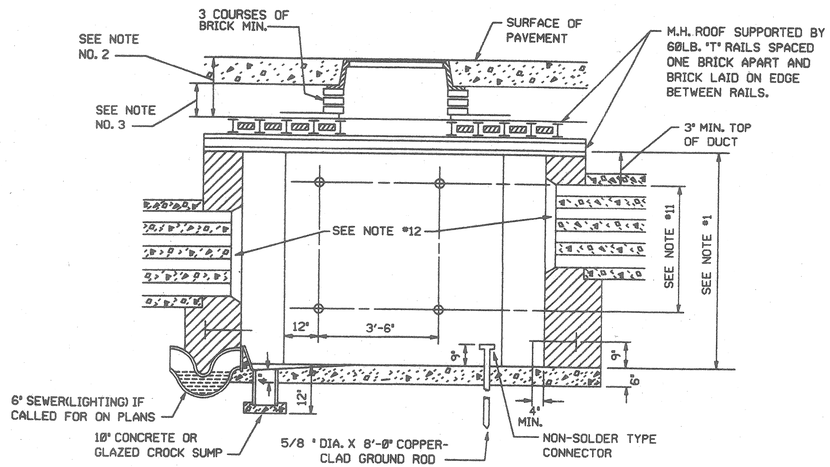




CABLE ARMS

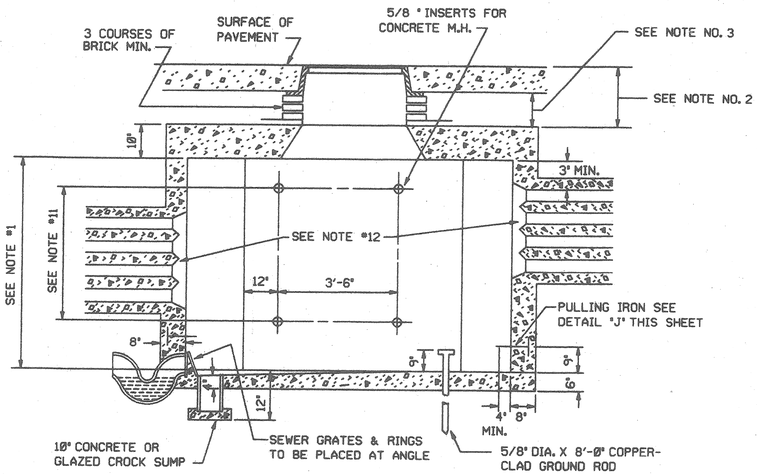
MALLEABLE CAST IRON

N.T.S.



BRICK-TWO WAY MANHOLE

N.T.S.

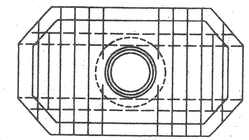


CONCRETE-TWO WAY MANHOLE

N.T.S.

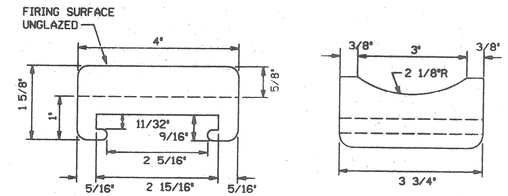
3/4" DIA. REINFORCING STEEL RODS REQ'D. FOR 2-WAY M.H.

10 PIECES	3'-6" LONG
2 PIECES	5'-0" LONG
8 PIECES	6'-6" LONG
2 PIECES	8'-0" LONG
4 PIECES	10'-0" LONG



60 LB. "T" RAILS

2 PIECES	4'-6" LONG
2 PIECES	6'-0" LONG
6 PIECES	6'-10" LONG
2 PIECES	9'-3" LONG
2 PIECES	10'-8" LONG
TOTAL WEIGHT	2040 LB.



CABLE ARM INSULATORS

WHITE GLAZED PORCELAIN DRY PROCESS

N.T.S.

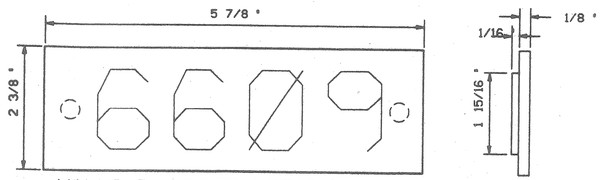
NOTE:

CABLE RACKS SHALL BE GALV. AFTER FAB. IN ACCORDANCE WITH ASTM A-123.

CABLE ARMS SHALL BE GALV. AFTER FAB. IN ACCORDANCE WITH ASTM A-153 53.

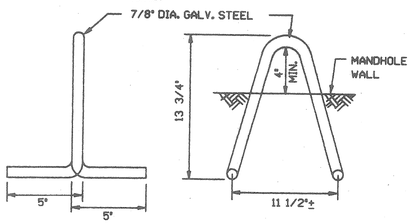
ARMS MUST FIT ON INSDE & OUTSIDE OF RACKS & MUST ALLOW INSULATOR TO FIT LOOSELY.

USE 1/2 " GALV. SUPPORTING BOLTS AND EXPANSION ANCHORS.



MANHOLE NUMBER DETAIL (LEAD)

N.T.S.

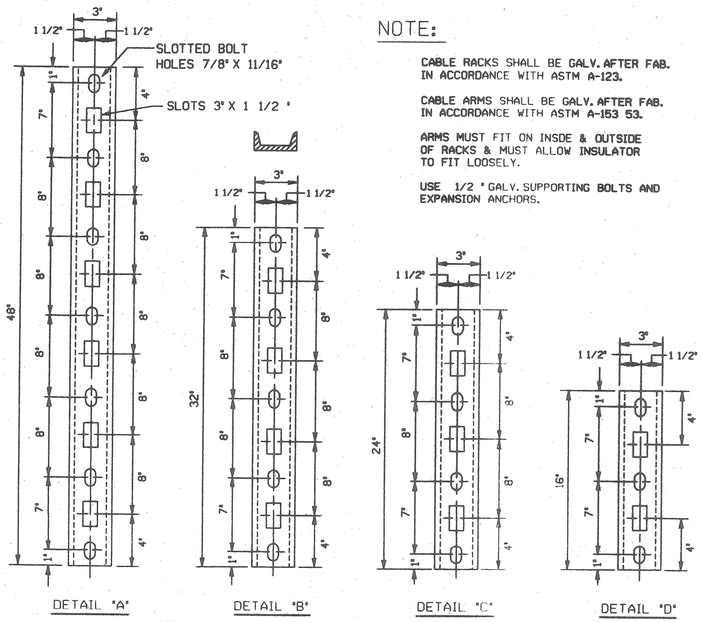


PULLING IRON - DETAIL "J"

N.T.S.

NOTE :

1. THIS DIMENSION NORMALLY 6'-6". SEE SPECIFICATIONS FOR UNUSUAL CONDITIONS.
2. WHERE M.H.'S ARE LOCATED BACK OF CURBS, TOP OF M.H. ROOF MUST BE BUILT 26" BELOW CURB GRADE TO PROVIDE FOR FUTURE PAVEMENT.
3. IN EXISTING PAVEMENT, PROVIDE AT LEAST 8" BETWEEN TOP OF ROOF AND BASE OF PAVEMENT
4. BOLTS, RACKS & PULLING IRONS TO BE HOT-DIP GALV.
5. ℄ OF RAILS UNDER M.H. FRAME FLANGE TO BE APPROX. 18" FROM C'S OF FRAMES.
6. M.H. NUMBER TO BE INSTALLED ON MANHOLE WALL IN CONSPICUOUS PLACE.
7. MOUNTING HEIGHT FOR LOWER BOLTS OF CABLE RACK SHALL BE THE AVERAGE HEIGHT OF THE BOTTOM OF THE LOWEST DUCTS IN MAIN CONDUITS. INSTALL MIN. (2) 48" LONG RACKS ON WALLS.
8. 8" THICK CHIMNEYS WHERE SPECIFIED SHALL BE INCIDENTAL TO APPLICABLE M.H. ITEM.
9. EXCAVATION LIMITS FOR PUBLIC LIGHTING DEPARTMENT MANHOLES SHALL BE ON VERTICAL PLANES ON THE FOOTING OUTLINE.
10. 1/2" PLASTER OUTSIDE WALLS OF BRICK MANHOLES.
11. SPACING OF INSERTS AS REQUIRED TO ACCOMMODATE CABLE RACK
12. BELL ENDS ARE REQUIRED ON EACH CONDUIT ENTERING MANHOLE. (TYPE AND SIZE SHALL BE IDENTICAL TO CONDUIT TYPE AND SIZE)
13. THIS IS A MINIMUM DIMENSION & IS EXPANDABLE TO ACCOMMODATE MAIN DUCT WINDOW.
14. (4) HEAVY 48" CABLE RACKS, (8) 15" CABLE ARMS & INSULATORS REQUIRED PER MANHOLE, UNLESS SPECIFIED OTHERWISE.
15. CONTRACTOR IS TO INSTALL MANHOLE NO. TAG FURNISHED BY P.L.D. MANHOLE SHALL NOT BE CONSIDERED COMPLETE WITHOUT MANHOLE NO. TAG INSTALLED.



CABLE RACKS

3" STD. 4.1# CHANNEL

N.T.S.

JOB NO. : 36917A

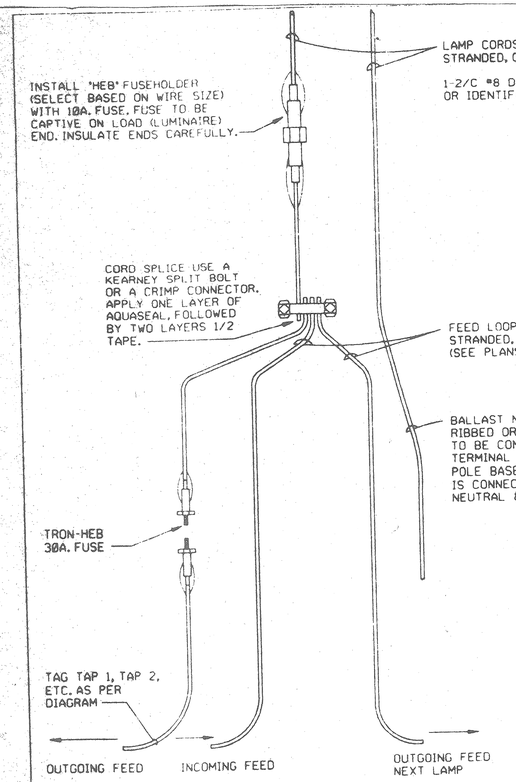
104

06/19/97 ENGINEERING PRINT

REVISIONS	Date	Description	Chkd. by

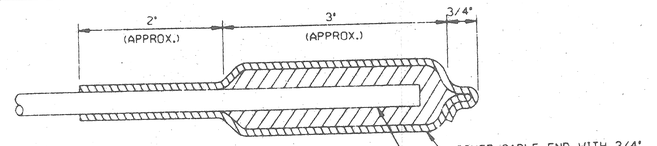
TWO-WAY MANHOLE

Drawn CEA	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 Wyoming Detroit, Mich. 48221	Checked by	PUBLIC LIGHTING DEPARTMENT CITY OF DETROIT
Checked			
Approved		Approved by	
Date	Drwg. No. of / File No. CEA		File No. / Sheet No. S-39 / Date



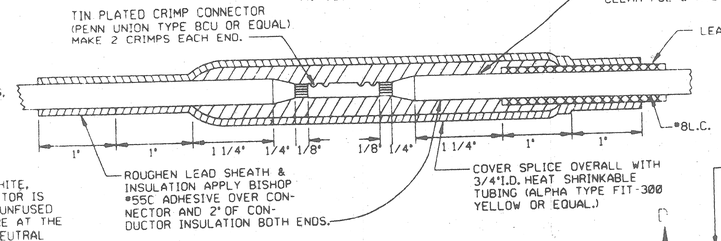
MULTIPLE STREET LIGHTING CONNECTION IN POLE BASE

N.T.S.



MULTIPLE STREET LIGHTING CABLE DETAIL OF SEALING OF CABLE END

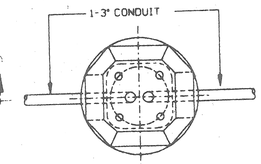
N.T.S.



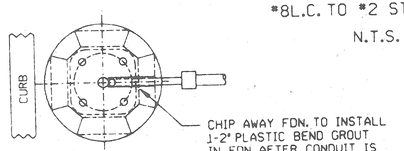
MULTIPLE STREET LIGHTING SPLICE DETAIL A

#8L.C. TO #2 ST. LTG.

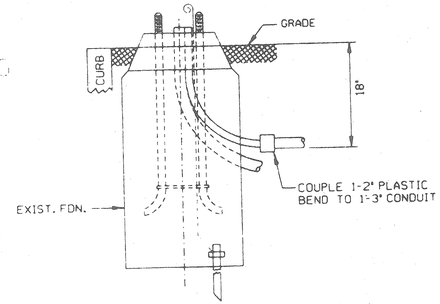
N.T.S.



PLAN



PLAN

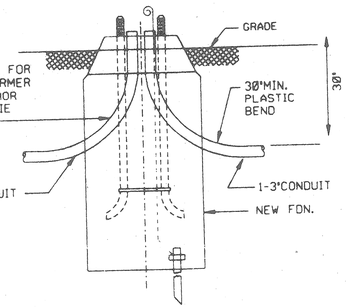


DETAIL OF INSTALLING CONDUITS INTO EXISTING FDN.

N.T.S.

NOTE:

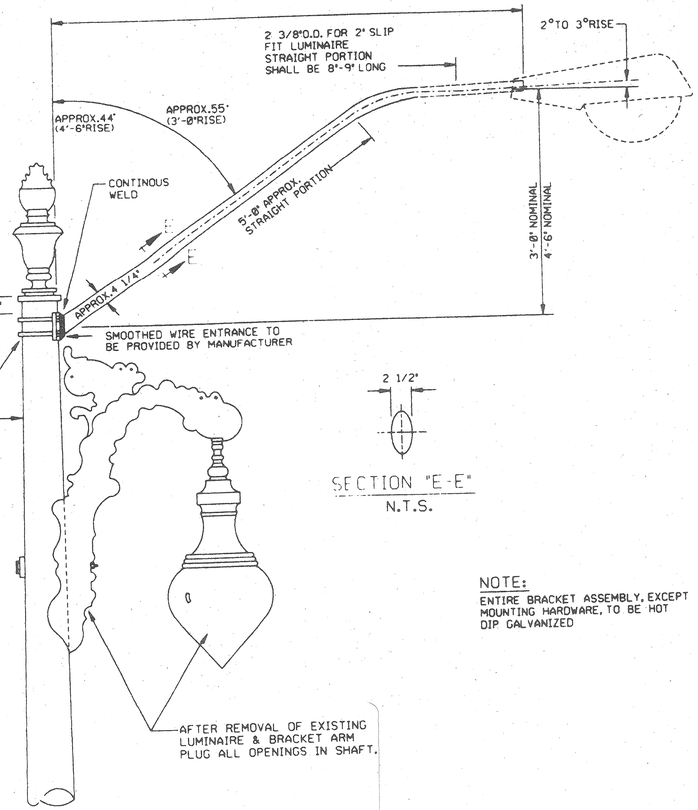
THIS DETAIL TYPICAL FOR USE WITH A TRANSFORMER BASE STD. WHEN ANCHOR BASE STD. IS USED. TIE CONDUITS TOGETHER.



SECTION D-D

DETAIL OF INSTALLING CONDUITS IN & OUT OF NEW FDN.

N.T.S.



CLAMP ON BRACKET ARM ELEVATION

N.T.S.

SECTION "E-E"

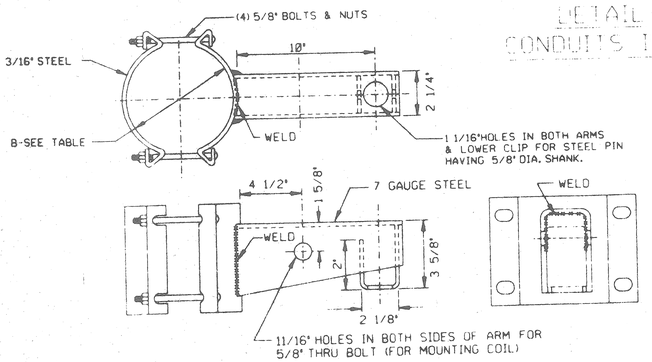
N.T.S.

NOTE:

ENTIRE BRACKET ASSEMBLY, EXCEPT MOUNTING HARDWARE, TO BE HOT DIP GALVANIZED

TYPE	POLE DIAMETER
A	3.6"-4-5"
B	6.1"-6.9"
C	7.5"-8.5"

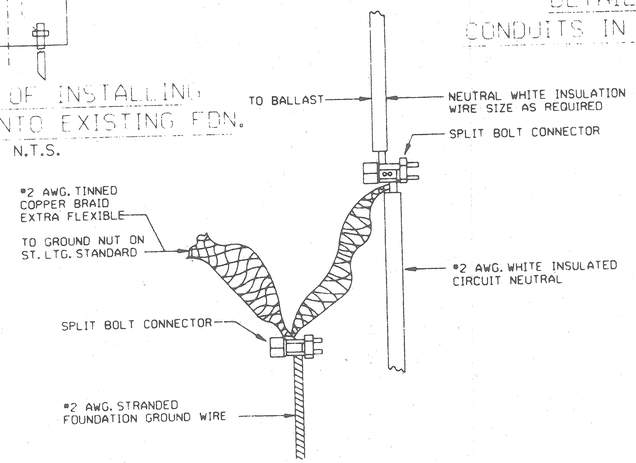
CLAMP SIZE TABLE



* FINISH SHALL BE HOT DIP GALVANIZED AFTER FABRICATION

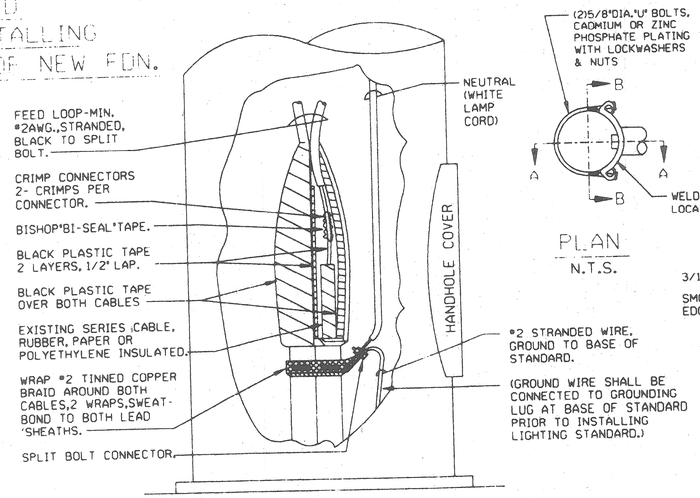
CLAMP FEEDER ARM

N.T.S.



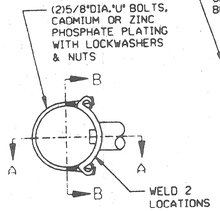
GROUND CONNECTION

N.T.S.



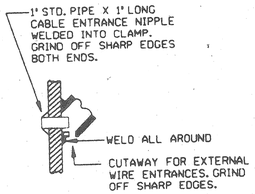
SERIES-TO-MULTIPLE LIGHTING CONVERSION POLE BASE CONNECTIONS

N.T.S.

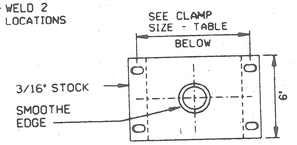


PLAN

N.T.S.



SECTION A-A



SECTION B-B

CLAMP SIZE TABLE

TYPE	POLE DIAMETER
A	3.6"-4-5"
B	6.1"-6.9"
C	7.5"-8.5"

PIPE CLAMP DETAILS

N.T.S.

06/19/97 ENGINEERING PRINT

REVISIONS	Date	Description	Chkd. by

THE CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
MOUNT ELLIOTT-MOUND ROAD GRADE SEPARATION
MULT. ST. LTG. CABLE CONNECTIONS, CLAMP-ON ARM & MISC. DETAILS

Drawn CEA
Checked
Approved
Date

PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 Wyoming Detroit, Mich. 48221
Drwg. No. of File No. CEA

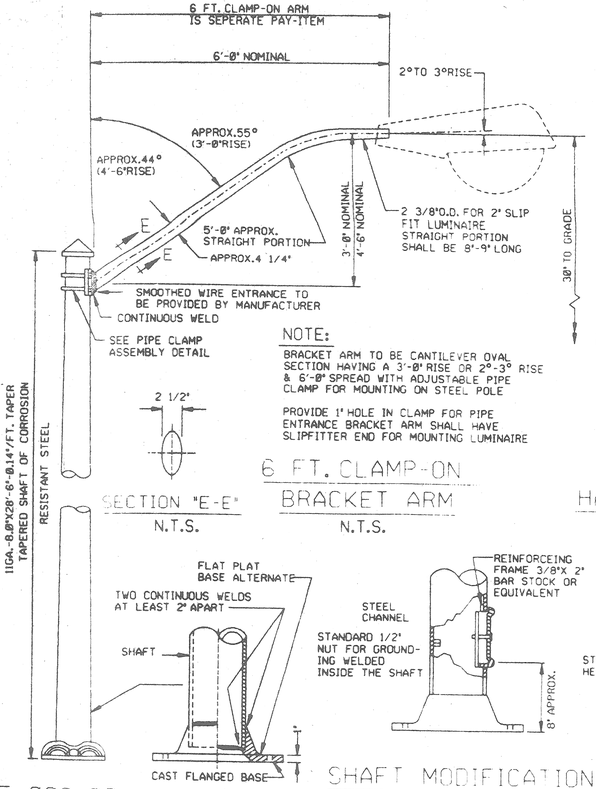
Checked by
Approved by

PUBLIC LIGHTING DEPARTMENT
CITY OF DETROIT

File No.
Sheet No. S-40
Date

114

JOB NO 36917A



NOTE:

BRACKET ARM TO BE CANTILEVER OVAL SECTION HAVING A 3'-0" RISE OR 2°-3° RISE & 6'-0" SPREAD WITH ADJUSTABLE PIPE CLAMP FOR MOUNTING ON STEEL POLE

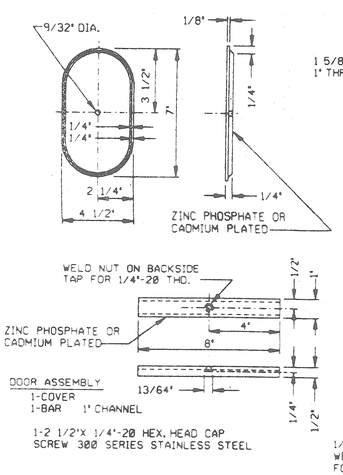
PROVIDE 1" HOLE IN CLAMP FOR PIPE ENTRANCE BRACKET ARM SHALL HAVE SLIPFITTER END FOR MOUNTING LUMINAIRE

SECTION "E-E"
N.T.S.

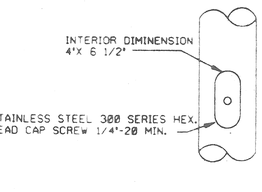
6 FT. CLAMP-ON BRACKET ARM
N.T.S.

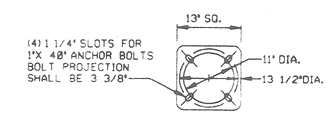
CODE 009-00 STREET LIGHTING STANDARD
N.T.S.

SHAFT MODIFICATION
N.T.S.

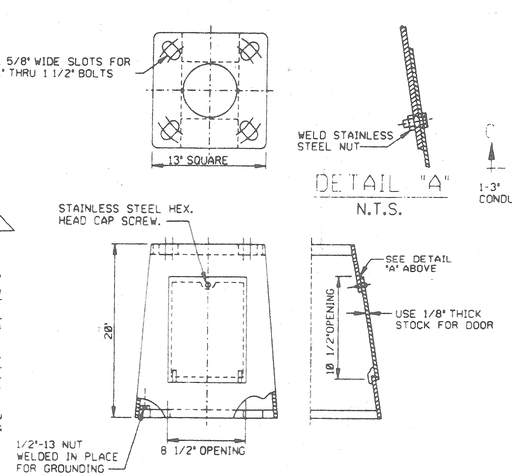


HANDHOLE COVER DETAIL
N.T.S.

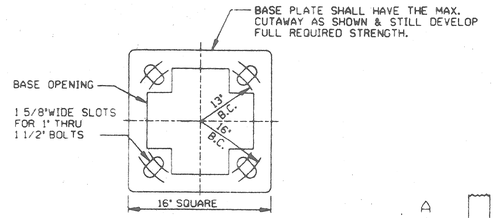




BASE PLATE PLAN
N.T.S.



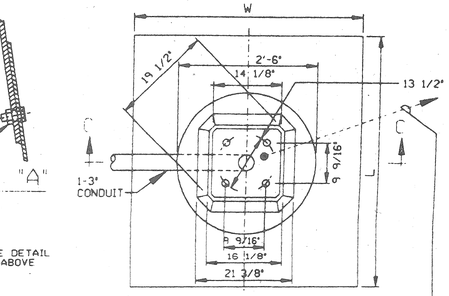
DETAIL "A"
N.T.S.



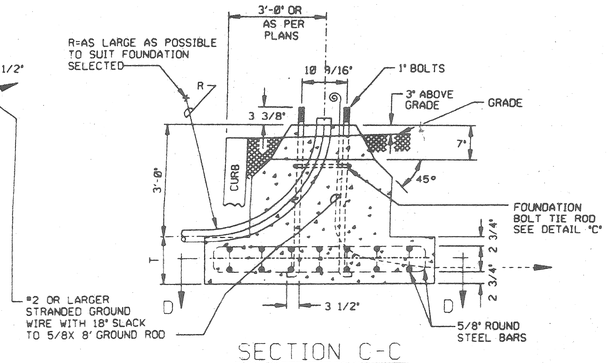
NOTES:

MATERIALS
1. TOP, BOTTOM & SIDES TO BE GALVANIZED STEEL AS PER MANUFACTURER.
2. DOOR FASTENING SCREW TO BE ASTM SERIES 300 STAINLESS STEEL MIN. 1/4"-20 NC. HEX HEAD CAP SCREW ONLY.
3. THE DOOR FASTENING METHOD SHALL USE ONLY ONE HEX. HEAD CAP SCREW, SERIES 300 STAINLESS STEEL. MULTIPLE SCREWS WILL NO LONGER BE ALLOWED TO INSURE PROPER FIELD INSTALLATION AND OPERATION.

P.L.D. UNIVERSAL STEEL TRANSFORMER BASE
N.T.S.



SPECIAL FDN. PLAN
N.T.S.



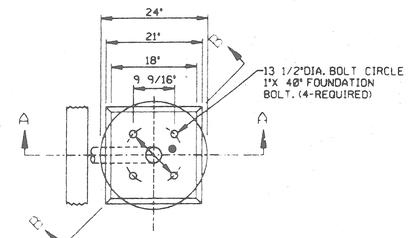
SECTION C-C
N.T.S.

SPECIAL FOUNDATION

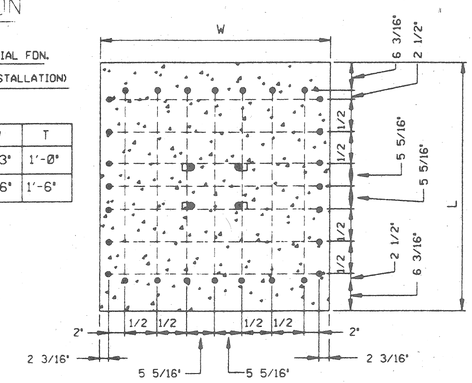
THERE SHALL BE NO EXTRA PAYMENT FOR SPECIAL FDN.

(TO BE PAID FOR AS A NORMAL ST. LTG STD. FDN. INSTALLATION)

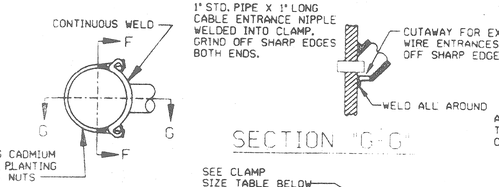
L	W	T
5'-0"	4'-3"	1'-0"
4'-6"	3'-6"	1'-6"



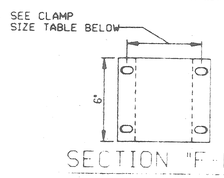
FDN. PLAN



SECTION D-D
N.T.S.



SECTION "G-G"



SECTION "F-F"

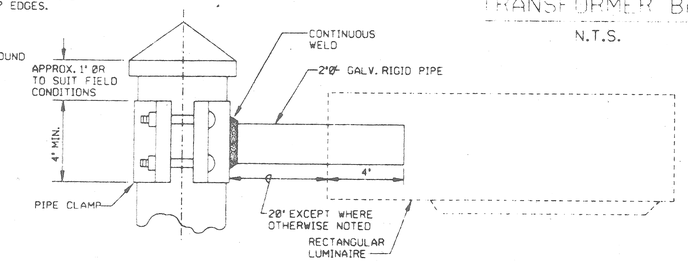
TYPE	POLE DIAMETER
A	3.6"-4-5"
B	6.1"-6.9"
C	7.5"-8.5"

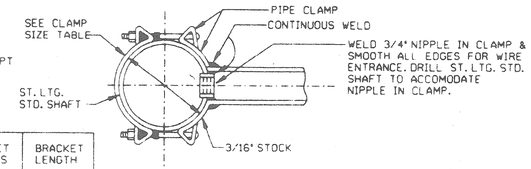
CLAMP SIZE TABLE

PIPE CLAMP DETAILS
N.T.S.

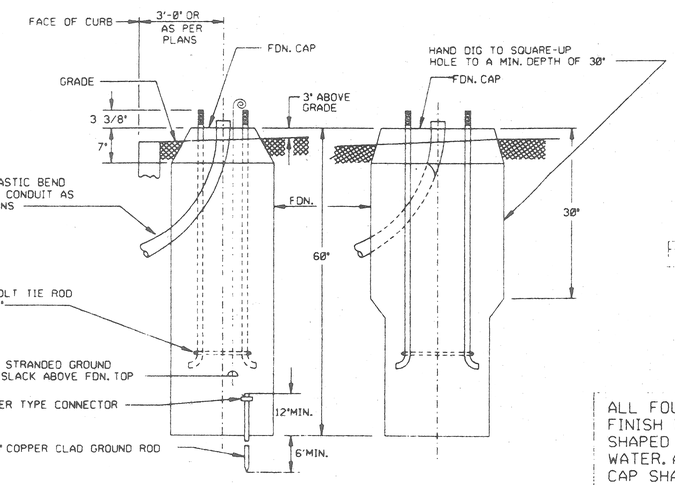
NOTE:

ENTIRE BRACKET ASSEMBLY, EXCEPT MOUNTING HARDWARE, TO BE HOT DIP GALVANIZED





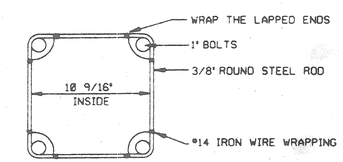
CLAMP-ON BRACKET & RECTANGULAR LUMINAIRE
N.T.S.



SECTION A-A
N.T.S.

SECTION B-B
N.T.S.

ANCHOR BASE STD. FOUNDATION



DETAIL "C"

FDN. BOLT TIE ROD
N.T.S.

ALL FOUNDATION CAPS SHALL HAVE A SMOOTH FINISH WITH BEVELED EDGES & SHALL BE SHAPED TO ALLOW COMPLETE DRAINAGE OF WATER. ANCHOR BOLT PROJECTIONS ABOVE CAP SHALL BE CLEANED OF ALL CONCRETE & FULLY USABLE THEIR FULL LENGTH.

STD. CODE NO.	SHAFT LENGTH	SHAFT DEFLECTION *	MINIMUM LOAD * *	ANCHOR BOLT CIRCLE Ø	ANCHOR BOLT Ø & O.A.	HANDHOLE	LUMINAIRE MOUNTING HEIGHT	BRACKET FITTERS REQ'D	BRACKET LENGTH
009-00	28'-6"	2.9"	880#	13 1/2"	1"X 40"	4"X 6 1/2"	30'	—	6'

* SHAFT DEFLECTION: SHAFT DEFLECTION MEASURED IN INCHES AT TOP, SHALL NOT BE GREATER THAN THAT SHOWN, FOR A HORIZONTAL LOAD OF 100 LBS. APPLIED 18 INCHES BELOW TOP OF SHAFT.

* * SHAFT LOADING: SHAFTS SHALL WITHSTAND, AT THE GUARANTEED MINIMUM YEILD STRENGTH OF THE SHAFT MATERIAL, THE LOADS SHOWN IN THIS TABLE. THE LOAD SHALL BE APPLIED IN A SINGLE HORIZONTAL DIRECTION ANYWHERE AROUND THE CIRCUMFERENCE OF SHAFT 18 INCHES FROM THE TOP.

08/19/97 ENGINEERING PRINT

REVISIONS	Date	Description	Chkd. by

THE CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
MOUNT ELLIOTT-MOUND ROAD GRADE SEPARATION
CODE 009-00 ST. LTG. STD. DETAILS

Drawn LEA
Checked
Approved
Date

PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC
ENGINEERING CONSULTANTS
16580 Wyoming Detroit, Mich. 48221
Orig. No. File No.
of CEA

Checked by
Approved by

PUBLIC LIGHTING DEPARTMENT

File No.
Sheet No. S-41
Date

115

Job No. : 36917A