



SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2-14	MAINTENANCE OF TRAFFIC
15-33	MAIDEN LANE STRUCTURE
34-59	FULLER RD STRUCTURE

MDOT JOB NO.	123008A	126043A	FEDERAL PROJECT NO.	STP 1581(213)	STP 1581 (212)
CONTROL SECTION	STU 81001	STU 81475	FEDERAL ITEM NO.	HK 0118	HK 0117

THE FOLLOWING ENTITIES HAVE UTILITIES OR FACILITIES LOCATED WITHIN THE PROJECT RIGHT OF WAY:

CITY OF ANN ARBOR
301 E HURON ST
ANN ARBOR, MI 48108
CONTACT: CHUCK FOJTIK
PHONE: (734) 794-6000 EXT. 43322
EMAIL: CFOJTIK@A2GOV.ORG

UNIVERSITY OF MICHIGAN
1100 E HURON ST
ANN ARBOR, MI 48104
CONTACT: RAY GARRETT
PHONE: (734) 764-2105
EMAIL: RCGARRET@UMICH.EDU

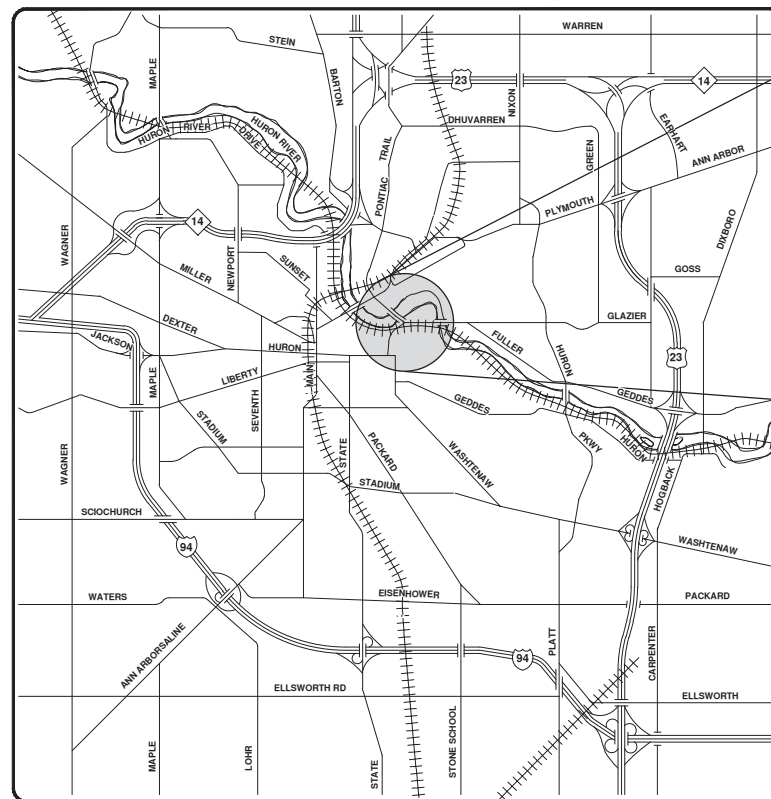
DTE ENERGY
8001 HAGGERTY RD
BELLEVILLE, MI 48111
PHONE: (734) 347-4321
FAX: (734) 347-4338
EMAIL: SWPD@DTEenergy.com

NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)
30TH STREET STATION, MAIL BOX 64
2995 MARKET STREET
PHILADELPHIA, PA 19104
CONTACT: EARL WATSON III
DIRECTOR I&C PROJECTS
PHONE: (215) 349-1393

STANDARD PLANS AND SPECIAL DETAILS		
REQUIRED ON THIS PROJECT	ITEM OF WORK	STANDARD PLAN NUMBERS
X	GUARDRAIL TYPES A, B, BD, T, AND TD	R-60-I
X	GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (SKT)	R-62-H
X	GUARDRAIL DEPARTING TERMINAL TYPES B & T	R-66-D
X	GUARDRAIL ANCHORAGE, BRIDGE, DETAILS	R-67-F
X	PLACEMENT OF TEMPORARY CONCRETE BARRIER	R-126-I
X	MOLDING, BEVEL, LIGHT STD. ANCHOR BOLT ASSY., AND NAME PLATE DETAILS	B-103-E
X	WORK GUARDRAIL AT INTERSECTIONS	21
WORK ZONE AND PAVEMENT MARKING STANDARD PLANS		
X	GROUND DRIVEN SIGN SUPPORTS	WZD-100-A*
X	TEMPORARY TRAFFIC CONTROL DEVICES	WZD-125-D*
X	PAVEMENT ARROW AND MESSAGE DETAILS	PAVE-900-E*
X	LONGITUDINAL LINE TYPES AND PLACEMENT	PAVE-905-B
X	LEFT TURN LANE MARKINGS	PAVE-935-B
X	INTERSECTION, STOP BAR, AND CROSSWALK MARKINGS	PAVE-945-B

* SPECIAL DETAIL LOCATED IN PROPOSAL

TRAFFIC DATA (MAIDEN LANE)	
2015 ANNUAL DAILY TRAFFIC (ADT)	9,000
2035 ADT	9,500
2015 % COMMERCIAL	16.6%
2035 % COMMERCIAL	16.6%
POSTED SPEED	30 MPH
DESIGN SPEED	35 MPH



VICINITY MAP
CITY FILE NO. 2014-024

MAIDEN LANE
POB (JN126043A)
STA. 106+00

ENT fy = 60,000 psi
STRUCTURAL STEEL (FOR TEMPORARY SUPPORTS):
AASHTO M270 GRADE 36 fy = 36,000 psi
STRUCTURAL STEEL (ELSEWHERE):
AASHTO M270 GRADE 50 fy = 50,000 psi
STRUCTURAL STAINLESS STEEL PINS: ASTM A276 UNS
DESIGNATION S20161 OR S21800 fy = 50,000 psi
TEMP SUPPORT HANGER RODS:
ASTM A 193 GRADE B7 (AISI 4140) Fu = 125,000 psi
2 1/2" AND UNDER Fy = 105,000 psi

ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH TRIANGULAR MOLDINGS OF THE SIZE PROVIDED IN THE ORIGINAL CONSTRUCTION.

UNLESS OTHERWISE SHOWN ON THE PLANS PROVIDE MINIMUM CONCRETE CLEAR COVER FOR REINFORCEMENT ACCORDING TO THE FOLLOWING:

CONCRETE CAST AGAINST EARTH: 3 IN
ALL OTHER UNLESS SHOWN ON PLANS: 2 IN

MAIDEN LANE
OVER HURON
RIVER
S21 T2S R6E

MAIDEN LANE
POE (JN126043A)
STA. 109+25

FULLER RD
POE (JN123008A)
STA. 15+30

FULLER RD
OVER AMTRAK
RAILROAD
S28 T2S R6E

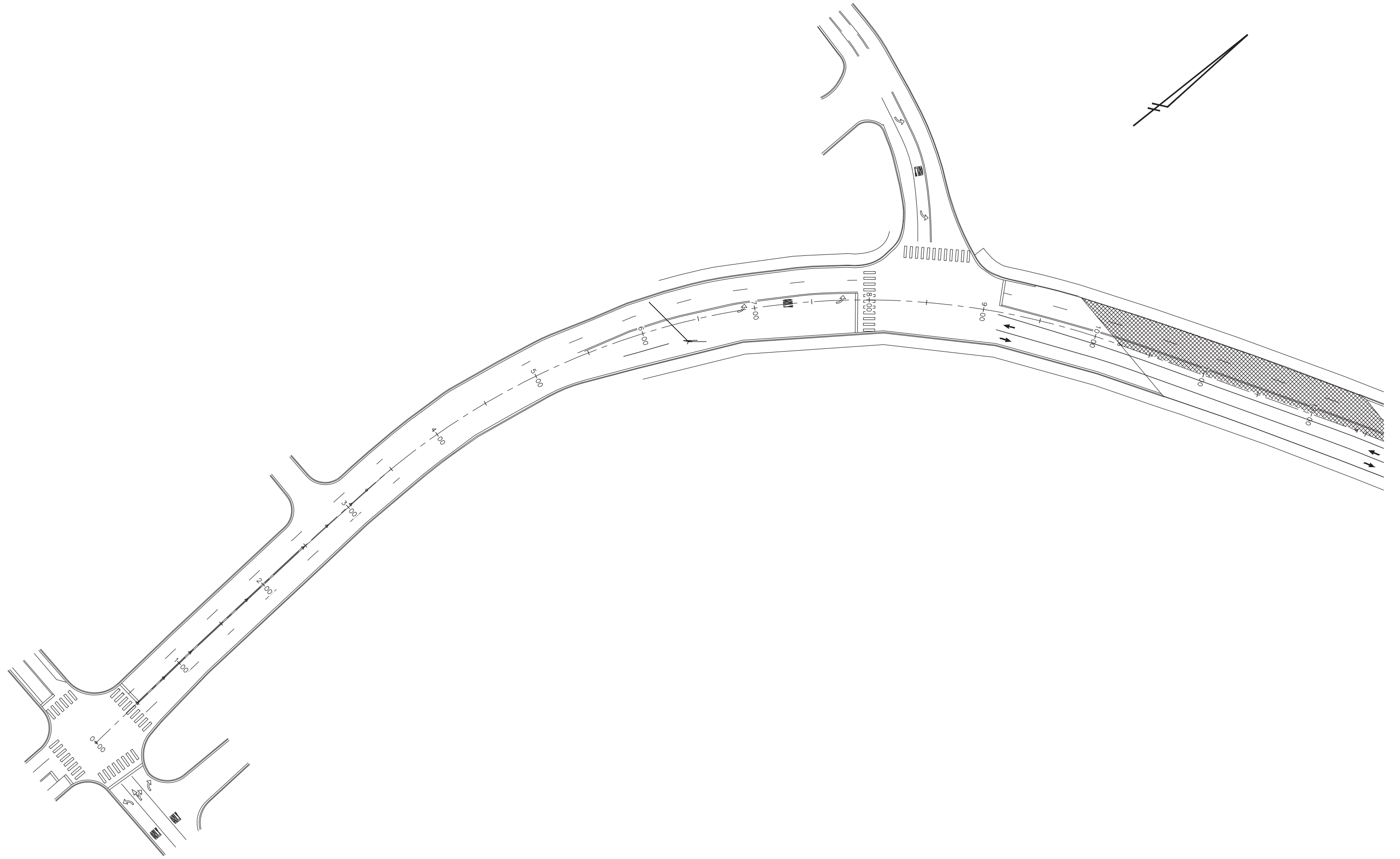
FULLER RD
POB (JN123008A)
STA. 10+00



NCI NORTHWEST CONSULTANTS, INC.
CIVIL - STRUCTURAL - TRANSPORTATION
44978 FORD ROAD, SUITE A, CANTON, MICHIGAN 48187
TEL. (734) 454-7566, FAX (734) 454-7536

JONATHAN DRUMMOND, P.E. - MI LICENSE No. 6201050042

ENGINEERS SEAL
PROFILE: NA
NONE

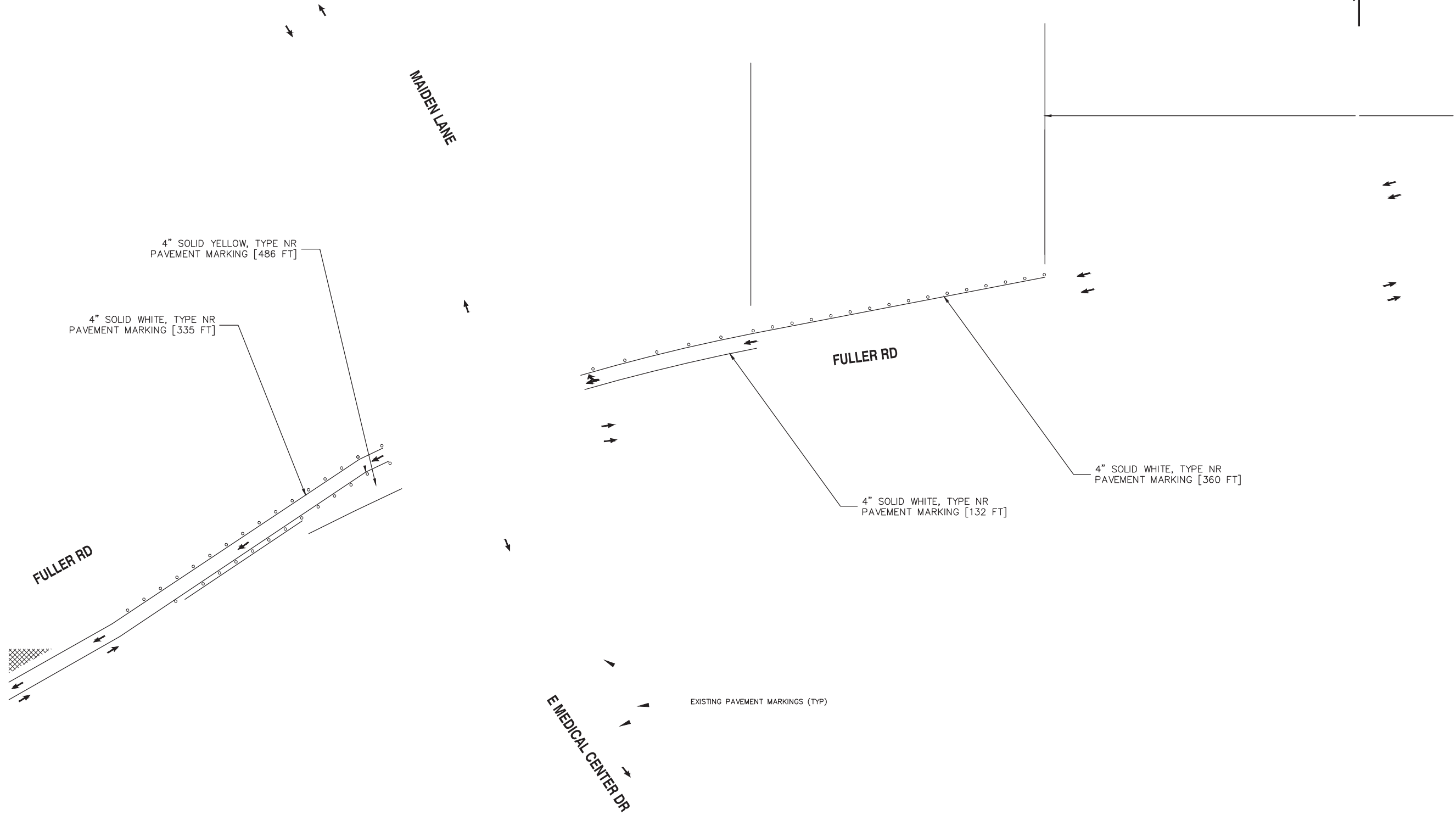


R5-18c
48"X48"



R5-18b
48"X60"

W20-1
36"X36"



4" SOLID YELLOW, TYPE NR
PAVEMENT MARKING [486 FT]

4" SOLID WHITE, TYPE NR
PAVEMENT MARKING [335 FT]

FULLER RD

4" SOLID WHITE, TYPE NR
PAVEMENT MARKING [132 FT]

4" SOLID WHITE, TYPE NR
PAVEMENT MARKING [360 FT]

FULLER RD

MAIDEN LANE

E MEDICAL CENTER DR

EXISTING PAVEMENT MARKINGS (TYP)

A  W1-6L
48"X24"

4" SOLID YELLOW, TYPE NR
PAVEMENT MARKING [332 FT]
PLACE 8 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
25' C-C
PLACE 17 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
15' C-C

225' TRAFFIC SHIFT (22')

FULLER RD

4" DOUBLE YELLOW, TYPE NR
PAVEMENT MARKING [700 FT]

4" SOLID WHITE, TYPE NR
PAVEMENT MARKING [355 FT]

PLACE 5 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
25' C-C

FULLER RD

225' TRAFFIC MERGE (11')
GLEN AVE

PLACE 15 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
15' C-C

TYPE III BARRICADE
(8 EACH)

TEMP ATTENUATOR

PLACE TEMP CONC CONC BARRIER
AS SHOWN [350 FT]

PLACE 3 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
25' C-C

4" SOLID WHITE, TYPE NR
PAVEMENT MARKING [640 FT]

PLACE 12 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
15' C-C

CATHERINE ST

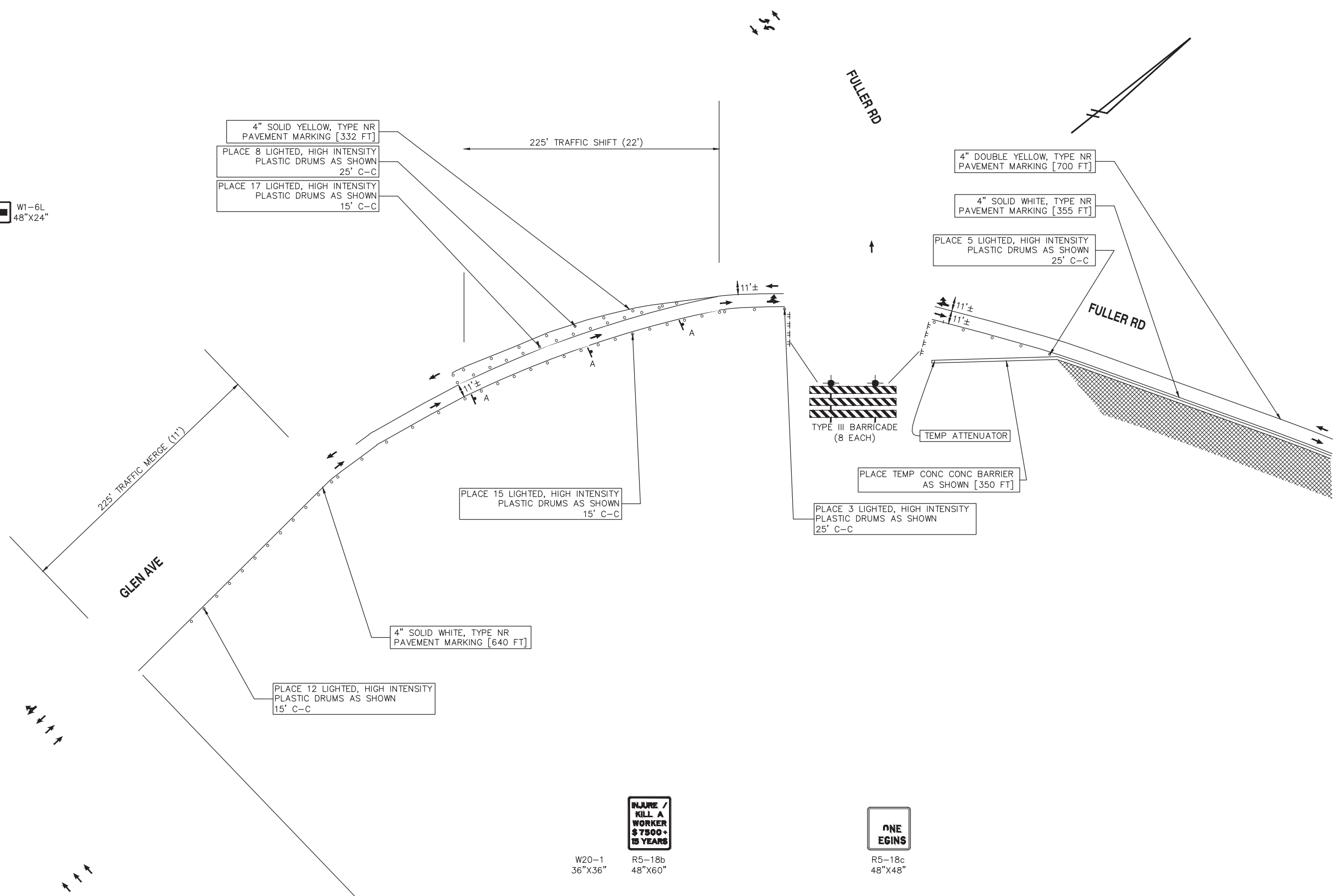
**INJURE /
KILL A
WORKER
\$7500+
15 YEARS**

W20-1
36"X36"

R5-18b
48"X60"

**ONE
EGINS**

R5-18c
48"X48"



R5-18c
48"X48"



R5-18b
48"X60"

W20-1
36"X36"

A W1-6R
48"X24"

MAIDEN LANE

4" SOLID WHITE, TYPE NR
PAVEMENT MARKING [340 FT]

PLACE 24 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
25' C-C

LIGHTED ARROW,
TYPE C [1 EACH]

4" SOLID YELLOW, TYPE NR
PAVEMENT MARKING [243 FT]

PLACE 9 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
25' C-C

PLACE 7 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
25' C-C

PLACE TEMP CONC CONC BARRIER
AS SHOWN [140 FT]

FULLER RD

FULLER RD

PLACE 5 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
15' C-C

700'

4" SOLID YELLOW, TYPE NR
PAVEMENT MARKING [242 FT]

4" SOLID WHITE, TYPE NR
PAVEMENT MARKING [195 FT]

TEMP ATTENUATOR

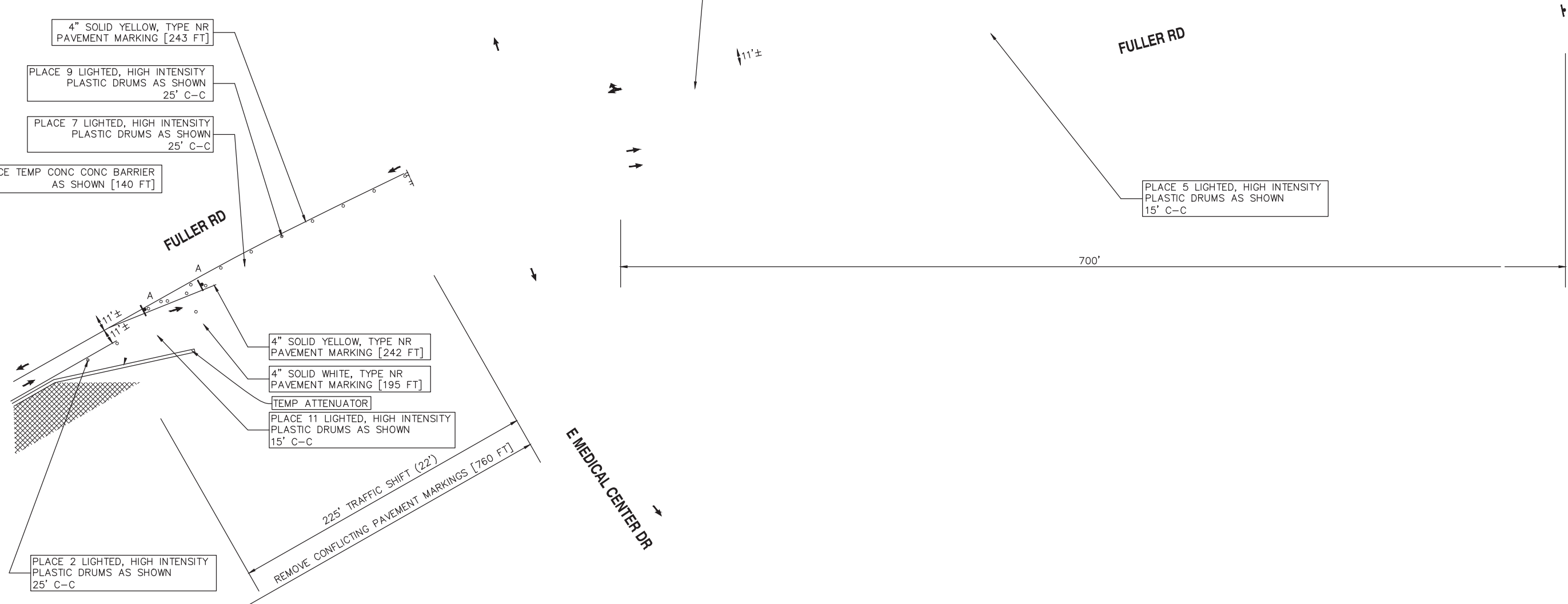
PLACE 11 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
15' C-C

E MEDICAL CENTER DR

225' TRAFFIC SHIFT (22')


REMOVE CONFLICTING PAVEMENT MARKINGS [760 FT]

PLACE 2 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
25' C-C






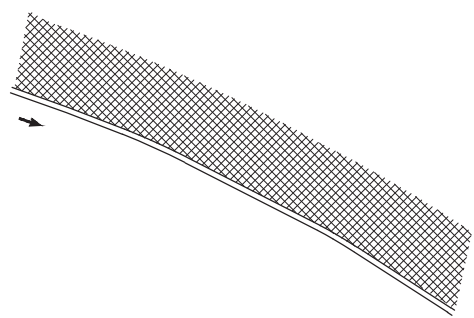
MAIDEN LANE



ISLAND DR



PLACE 9 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS AS SHOWN
15' C-C

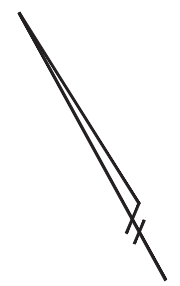


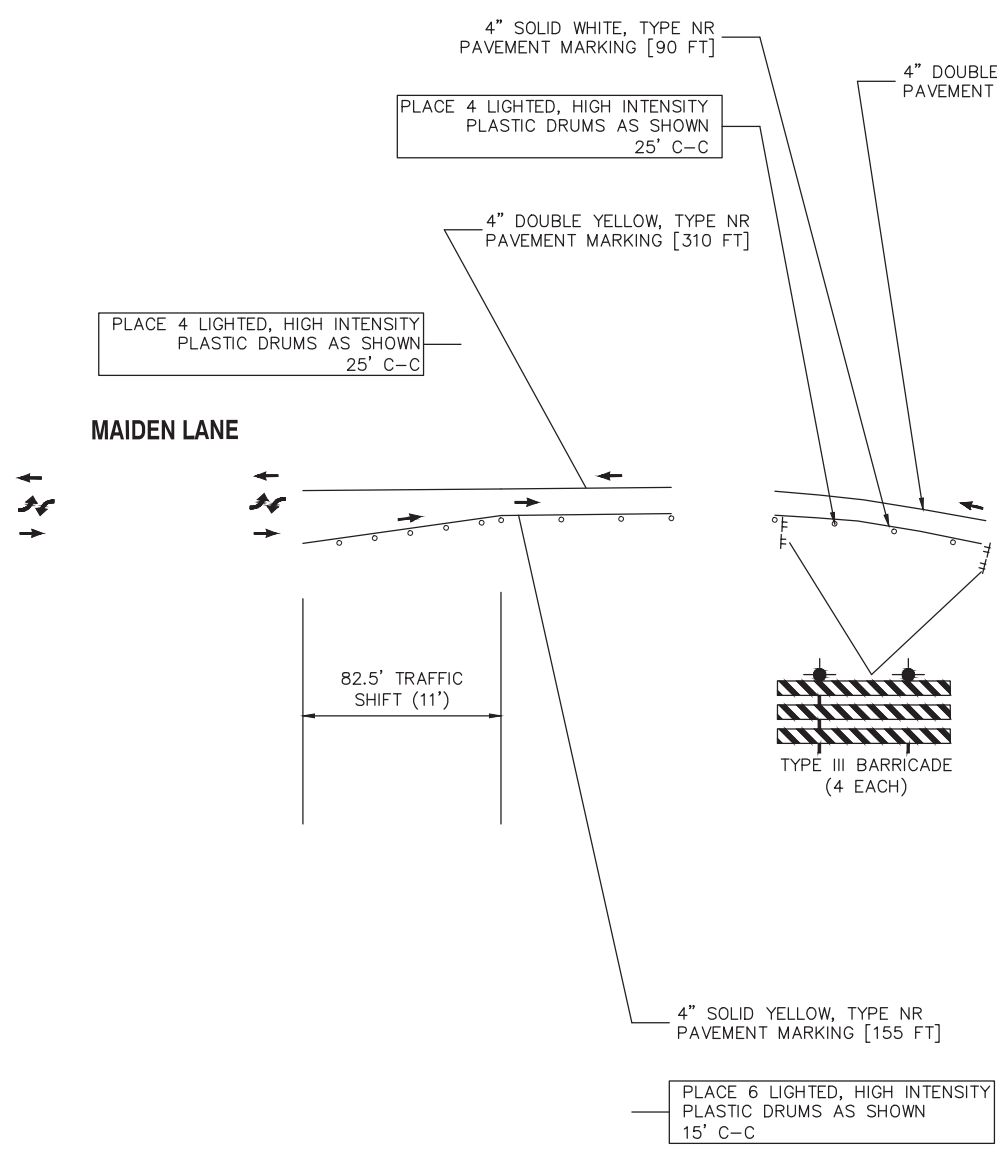
PLACE 54 LIGHTED, HIGH INTENSITY
PLASTIC DRUMS TO CLOSE LEFT TURN
LANE START

FULLER RD



FULLER RD





ISLAND DR

4" DOUBLE YELLOW, TYPE NR PAVEMENT MARKING [760 FT]

4" SOLID WHITE, TYPE NR PAVEMENT MARKING [375 FT]

PLACE TEMP CONC CONC BARRIER AS SHOWN [278 FT]

TEMP ATTENUATOR

FULLER RD

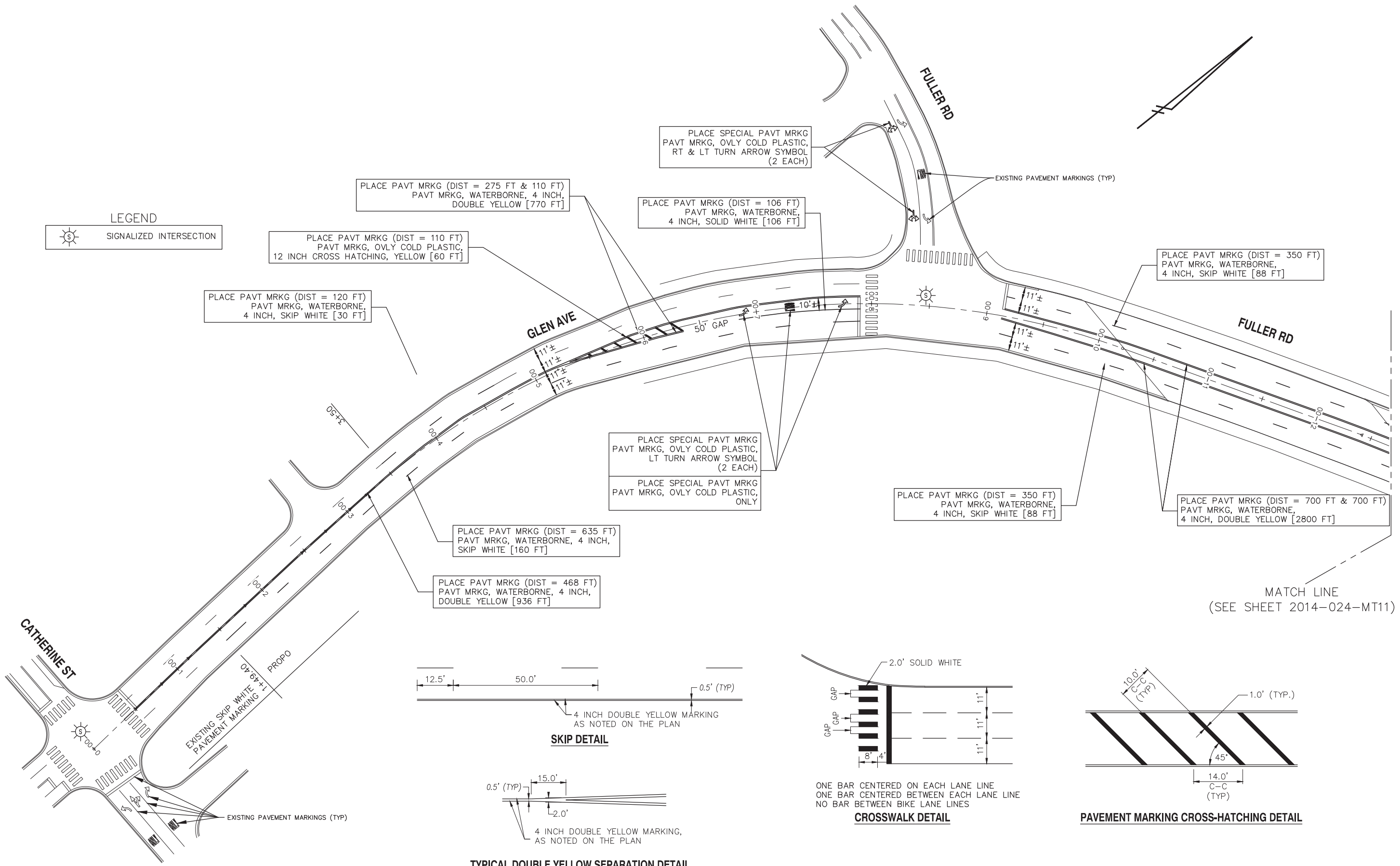
FULLER RD



R5-18b
48"x60"

W1-4L
36"x36"

R5-18c
48"x48"



LEGEND
 SIGNALIZED INTERSECTION

PLACE PAVT MRKG (DIST = 275 FT & 110 FT)
 PAVT MRKG, WATERBORNE, 4 INCH,
 DOUBLE YELLOW [770 FT]

PLACE PAVT MRKG (DIST = 110 FT)
 PAVT MRKG, OVLY COLD PLASTIC,
 12 INCH CROSS HATCHING, YELLOW [60 FT]

PLACE PAVT MRKG (DIST = 120 FT)
 PAVT MRKG, WATERBORNE,
 4 INCH, SKIP WHITE [30 FT]

PLACE SPECIAL PAVT MRKG
 PAVT MRKG, OVLY COLD PLASTIC,
 RT & LT TURN ARROW SYMBOL
 (2 EACH)

PLACE PAVT MRKG (DIST = 106 FT)
 PAVT MRKG, WATERBORNE,
 4 INCH, SOLID WHITE [106 FT]

PLACE PAVT MRKG (DIST = 350 FT)
 PAVT MRKG, WATERBORNE,
 4 INCH, SKIP WHITE [88 FT]

PLACE SPECIAL PAVT MRKG
 PAVT MRKG, OVLY COLD PLASTIC,
 LT TURN ARROW SYMBOL
 (2 EACH)

PLACE SPECIAL PAVT MRKG
 PAVT MRKG, OVLY COLD PLASTIC,
 ONLY

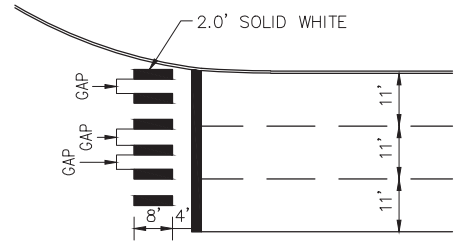
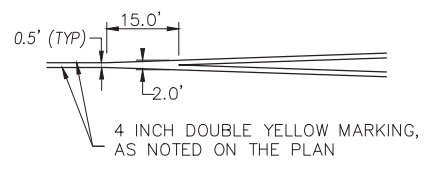
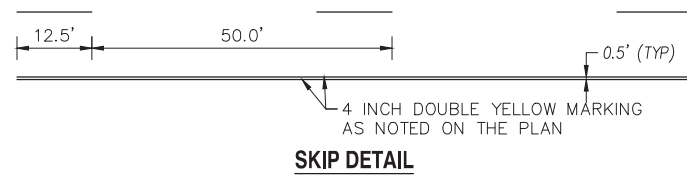
PLACE PAVT MRKG (DIST = 350 FT)
 PAVT MRKG, WATERBORNE,
 4 INCH, SKIP WHITE [88 FT]

PLACE PAVT MRKG (DIST = 700 FT & 700 FT)
 PAVT MRKG, WATERBORNE,
 4 INCH, DOUBLE YELLOW [2800 FT]

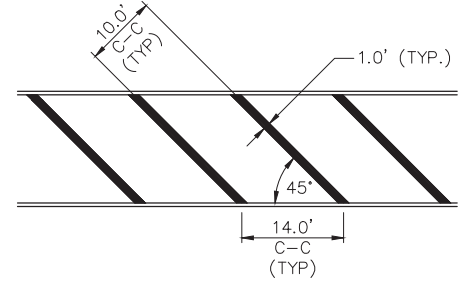
PLACE PAVT MRKG (DIST = 635 FT)
 PAVT MRKG, WATERBORNE, 4 INCH,
 SKIP WHITE [160 FT]

PLACE PAVT MRKG (DIST = 468 FT)
 PAVT MRKG, WATERBORNE, 4 INCH,
 DOUBLE YELLOW [936 FT]

MATCH LINE
 (SEE SHEET 2014-024-MT11)



ONE BAR CENTERED ON EACH LANE LINE
 ONE BAR CENTERED BETWEEN EACH LANE LINE
 NO BAR BETWEEN BIKE LANE LINES



NOTE:
 IN AREAS OF CONCRETE PAVEMENT WITH INTEGRAL CURB AND GUTTER ALL DIMENSIONS ARE MEASURED FROM THE FACE OF CURB. IN ALL OTHER AREAS, THE DIMENSIONS ARE MEASURED FROM THE EDGE OF METAL.



*MAIDEN LANE

PLACE SPECIAL PAVT MRKG
PAVT MRKG, OVLY COLD PLASTIC,
LT TURN ARROW SYMBOL
(2 EACH)
PLACE SPECIAL PAVT MRK

PLACE PAVT MRKG (DIST = 323 FT)
PAVT MRKG, WATERBORNE,
4 INCH, SKIP WHITE [81 FT]

FULLER RD

FULLER RD

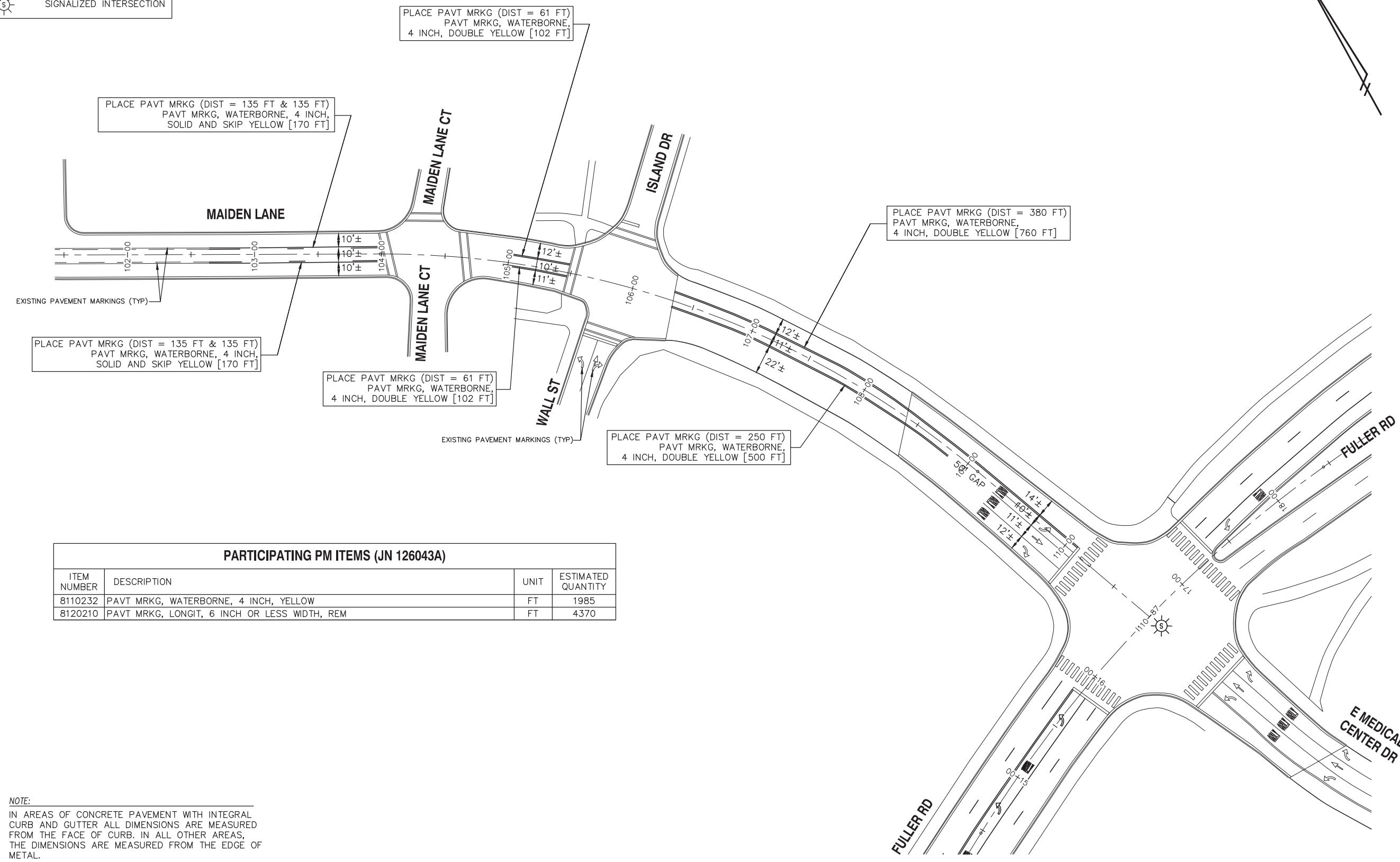
PLACE PAVT MRKG (DIST = 338 FT)
PAVT MRKG, WATERBORNE,
4 INCH, SKIP WHITE [85 FT]

E MEDICAL CENTER DR

PLACE PAVT MRKG (330 FT & 125 FT)
PAVT MRKG, WATERBORNE,
4 INCH, DOUBLE YELLOW [910 FT]

LEGEND

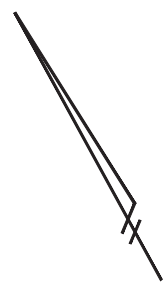
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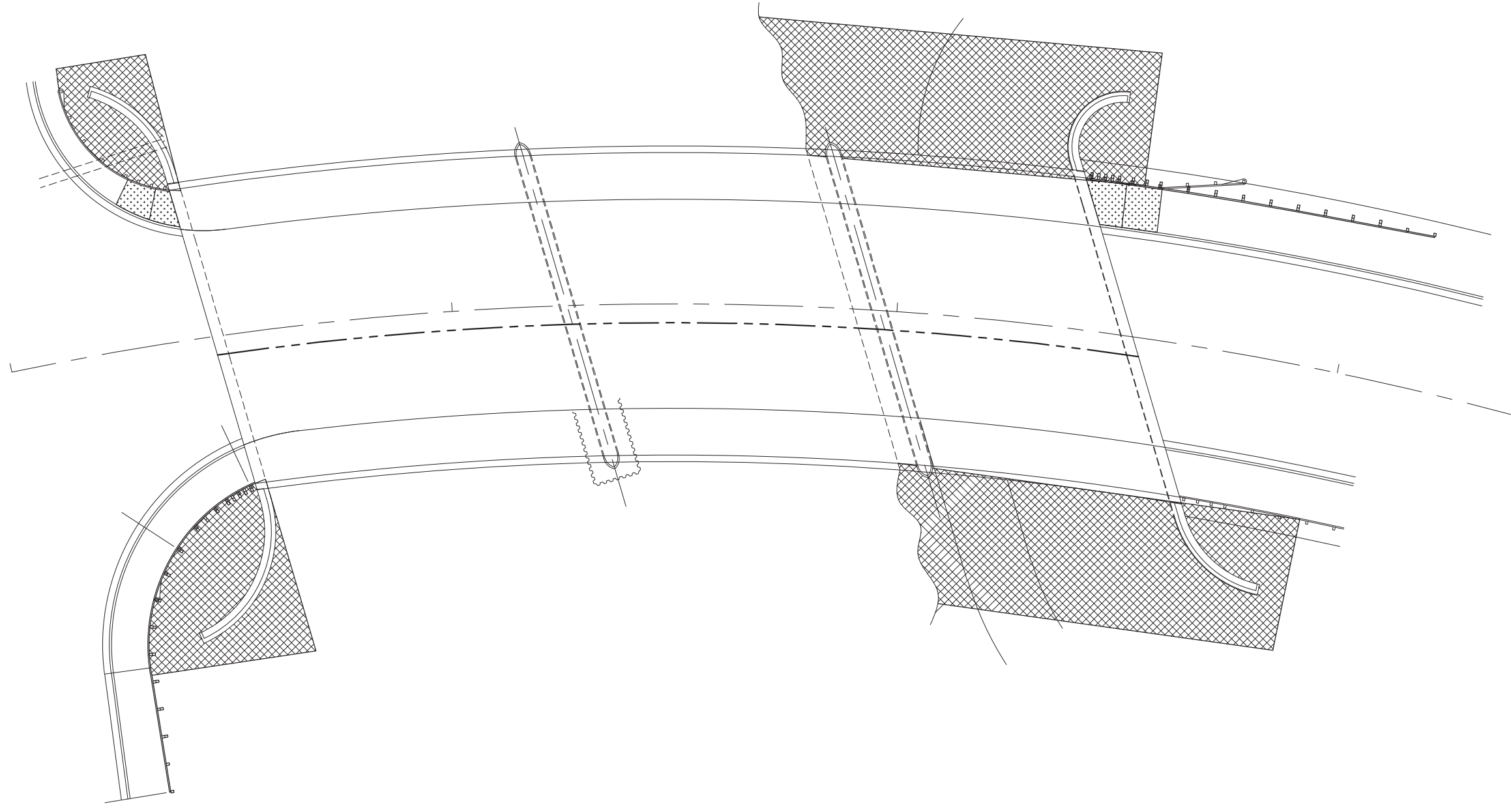


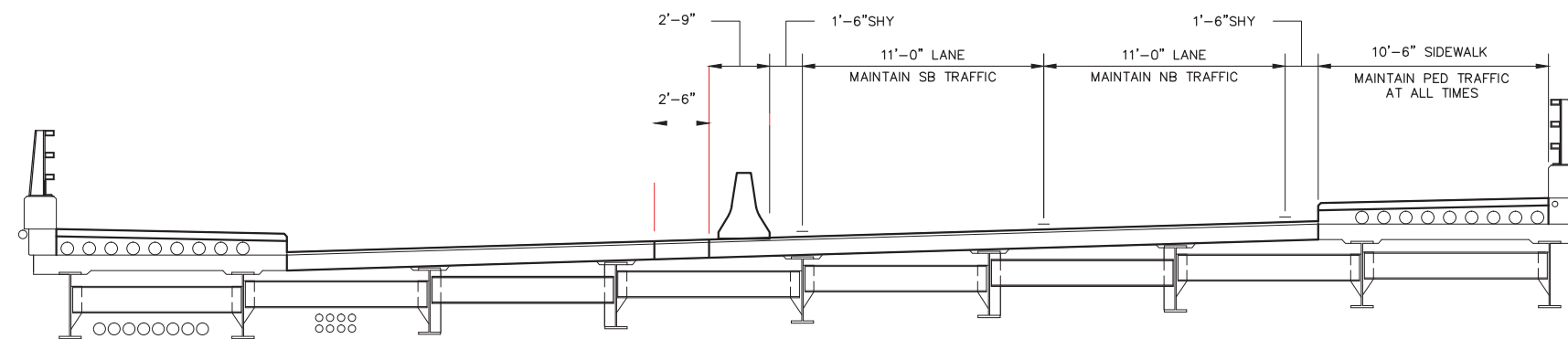
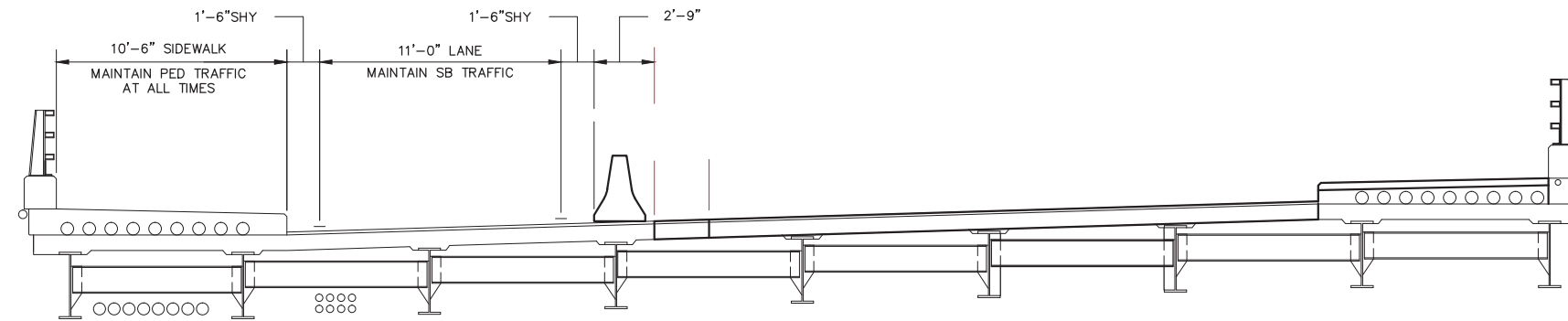
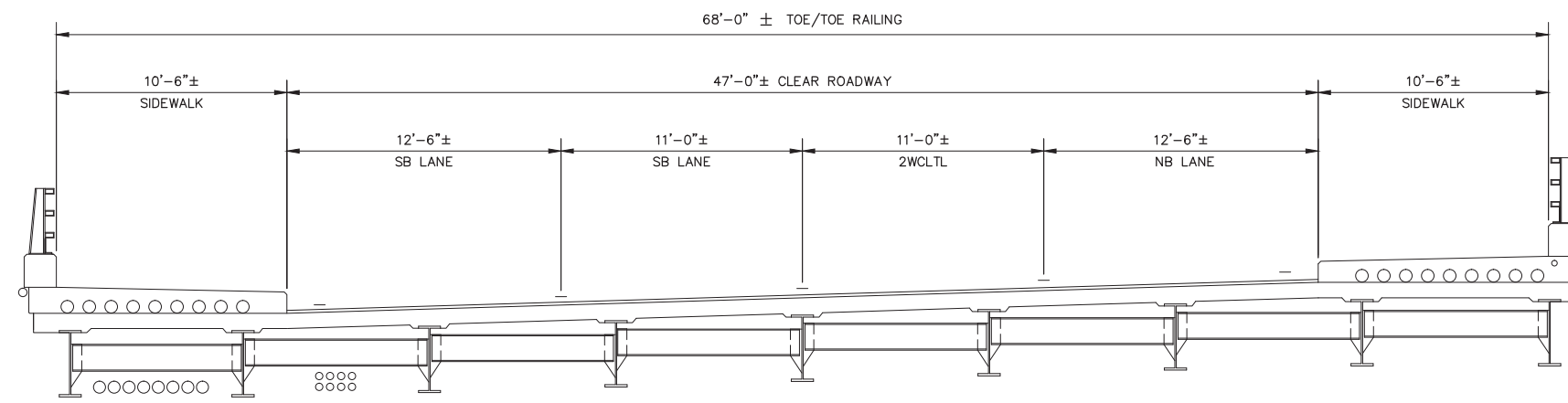
PARTICIPATING PM ITEMS (JN 126043A)

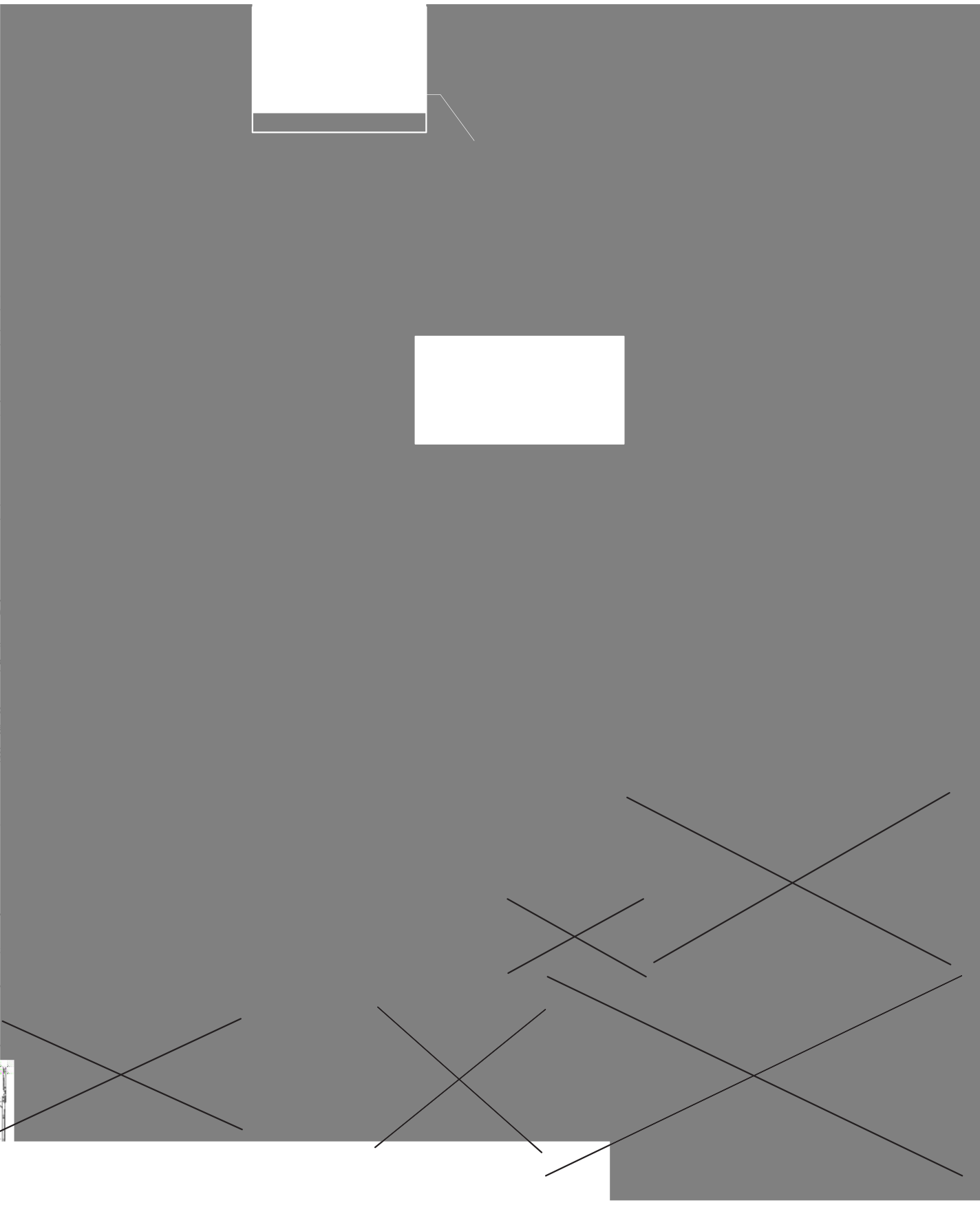
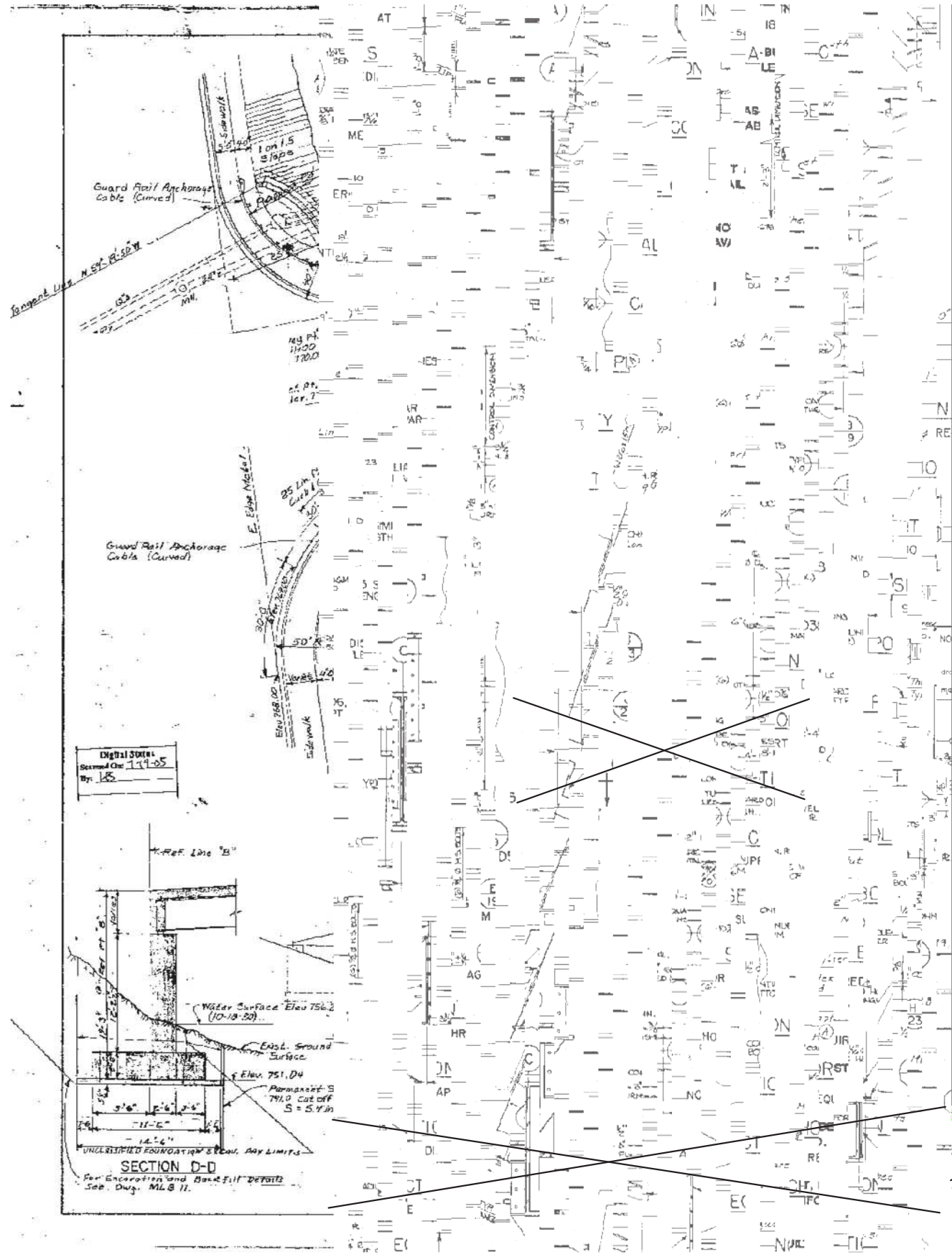
ITEM NUMBER	DESCRIPTION	UNIT	ESTIMATED QUANTITY
8110232	PAVT MRKG, WATERBORNE, 4 INCH, YELLOW	FT	1985
8120210	PAVT MRKG, LONGIT, 6 INCH OR LESS WIDTH, REM	FT	4370

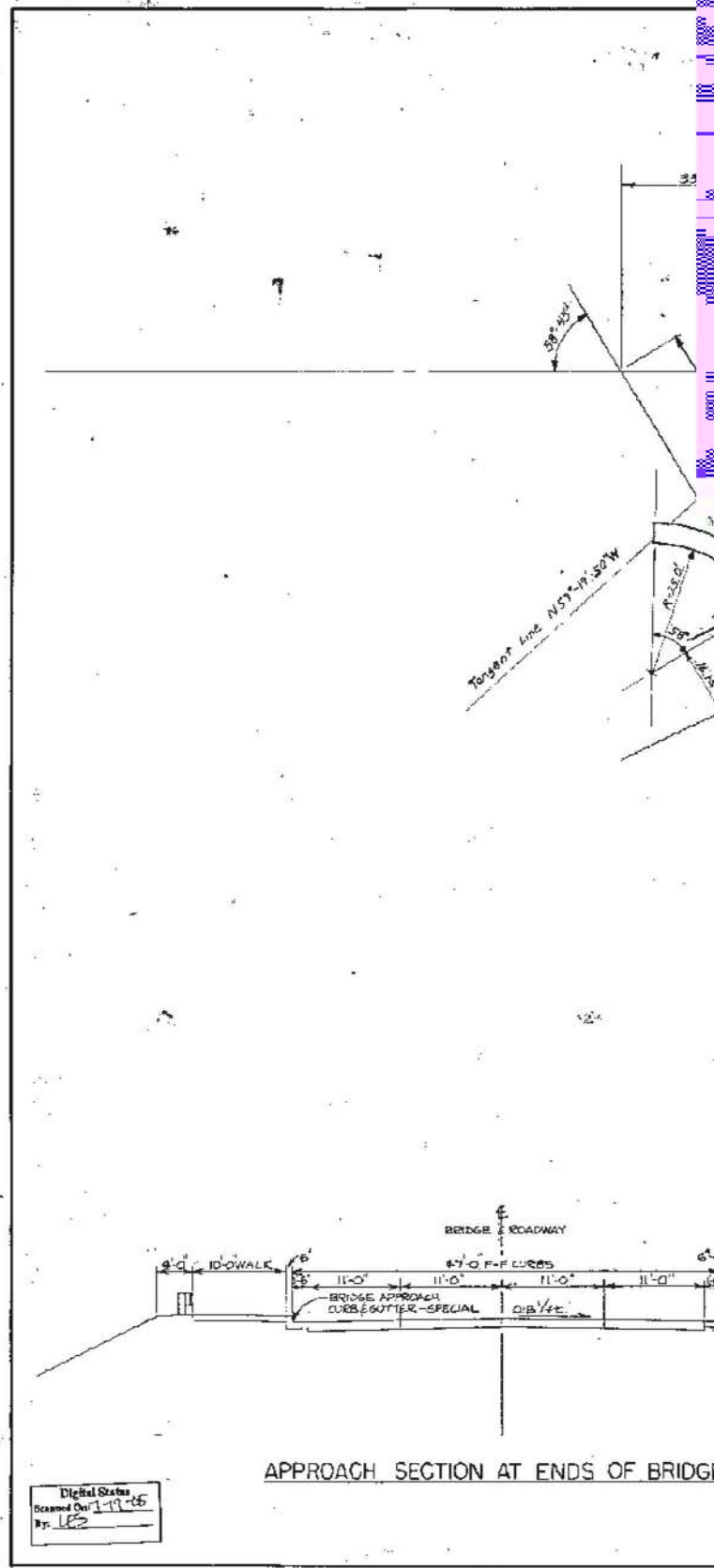
NOTE:
 IN AREAS OF CONCRETE PAVEMENT WITH INTEGRAL CURB AND GUTTER ALL DIMENSIONS ARE MEASURED FROM THE FACE OF CURB. IN ALL OTHER AREAS, THE DIMENSIONS ARE MEASURED FROM THE EDGE OF METAL.





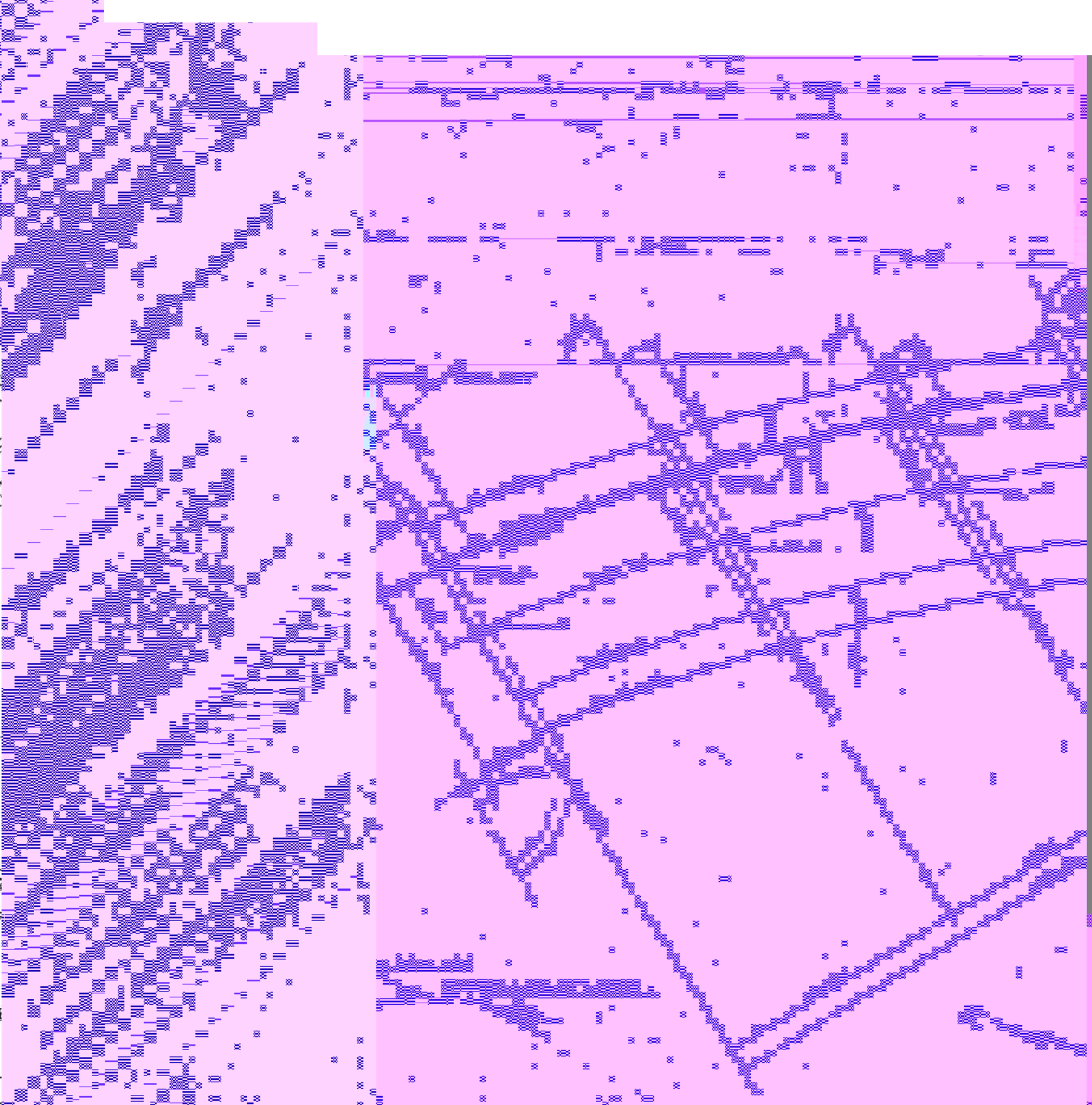


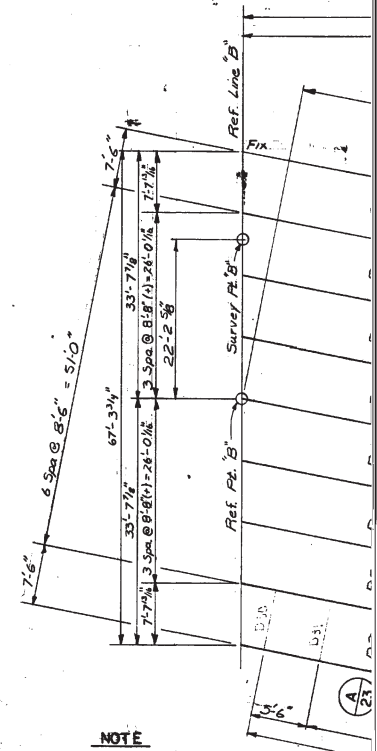




APPROACH SECTION AT ENDS OF BRIDGE

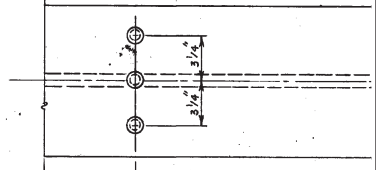
Digital Status
Scanned On: 11-19-05
By: LES





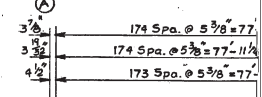
NOTE

All Studs Shall Be Placed And Welded In The Field. Welding Of Studs Shall Be Considered To Be Incidental To Lump Sum Payment For Shear Developers.
 Estimated Number Of Studs Required - 12,501

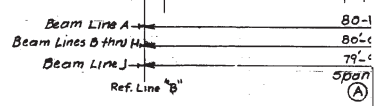


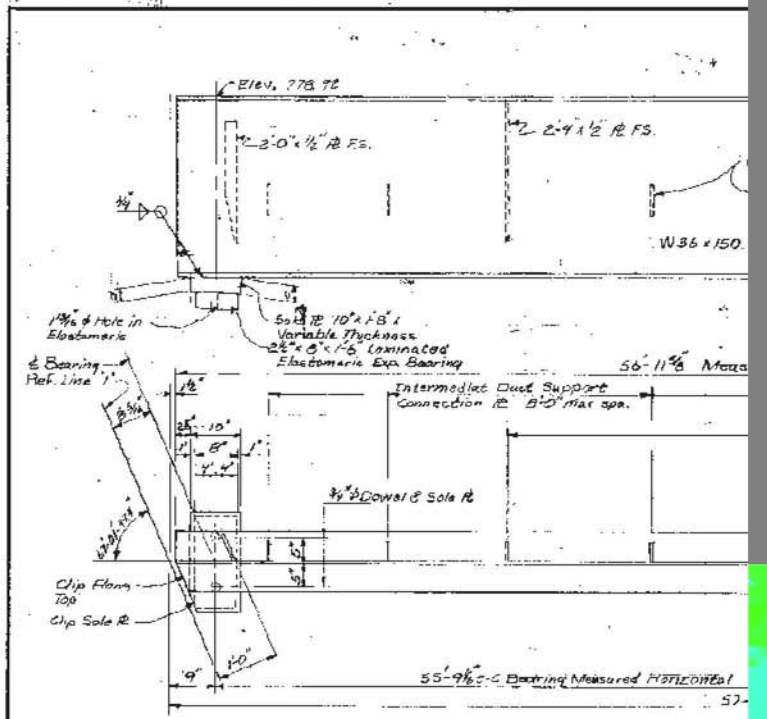
Pitch Or Spacing
 (See Diagram Below)

PLAN

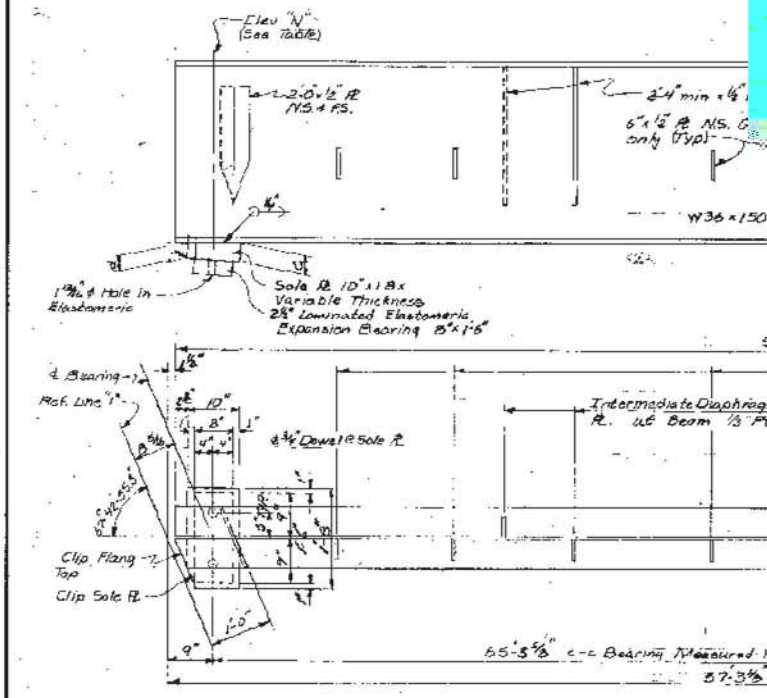


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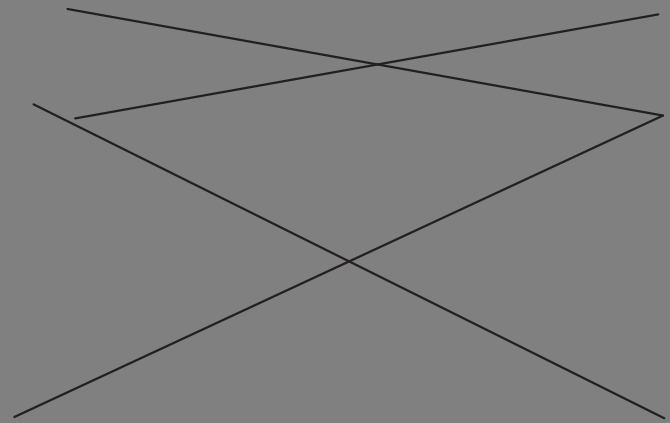
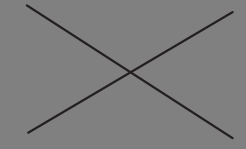
GIRDER A1
West Exterior Girder in Span



GIRDERS B1 through B10
Interior Girders in Span

Digital Stamp
Scanned On 7-9-05
By JES

DO NOT WORK FROM THIS SIDE



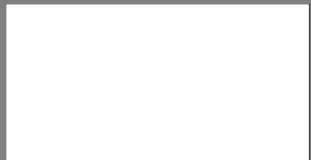
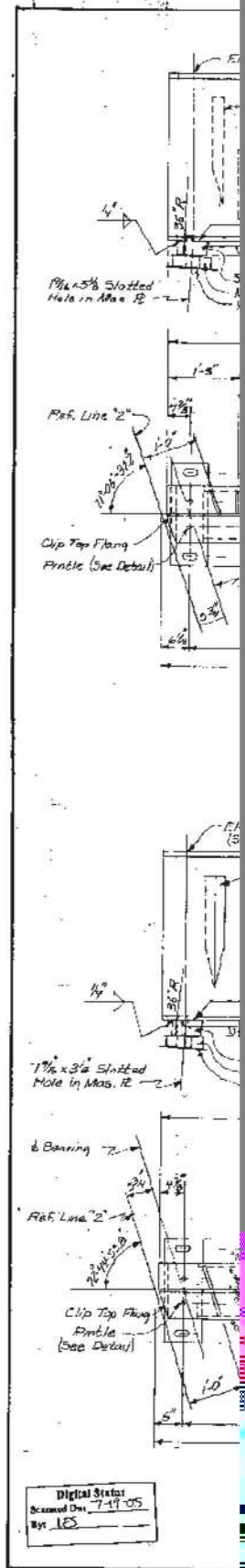
REV.	DESCRIPTION	DATE	DRAWN	CHECKED

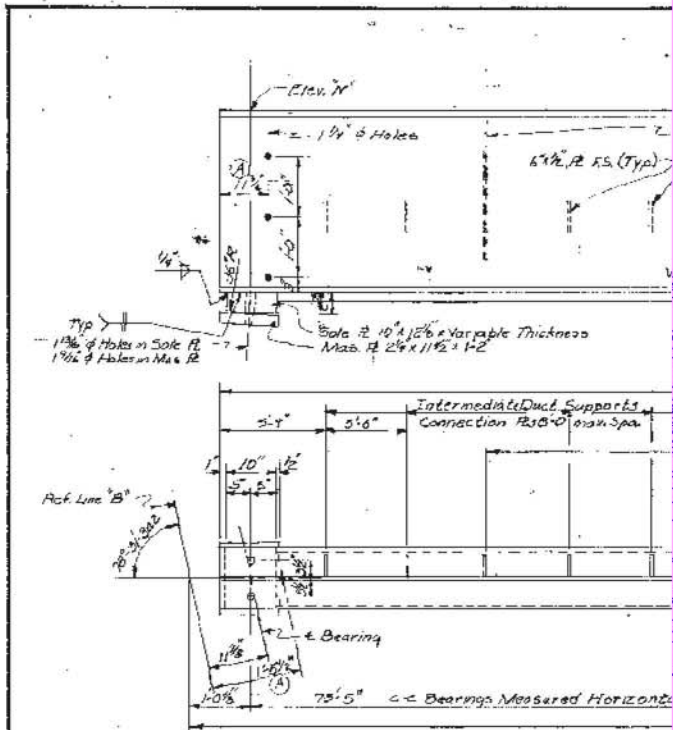
CITY OF ANN ARBOR
PUBLIC SERVICE
301 EAST HURON STREET
ANN ARBOR MI 48106-1667
www.a2gov.org



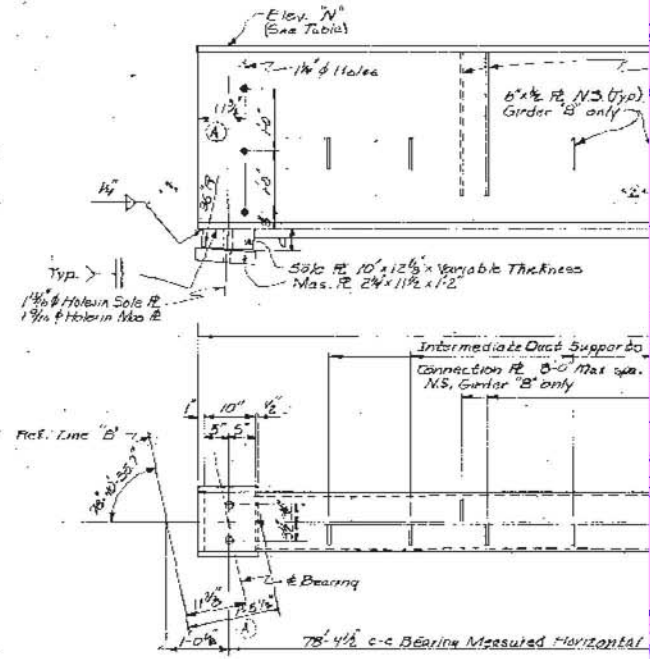
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
FULLER ROAD & MAIDEN LANE
BRIDGES REHABILITATION PROJECT
MAIDEN LANE OVER HURON RIVER
EXISTING STRUCTURAL STEEL DETAILS

SCALE NONE
PROFILE: N/A
DRAWING No. 2014-024-ML6



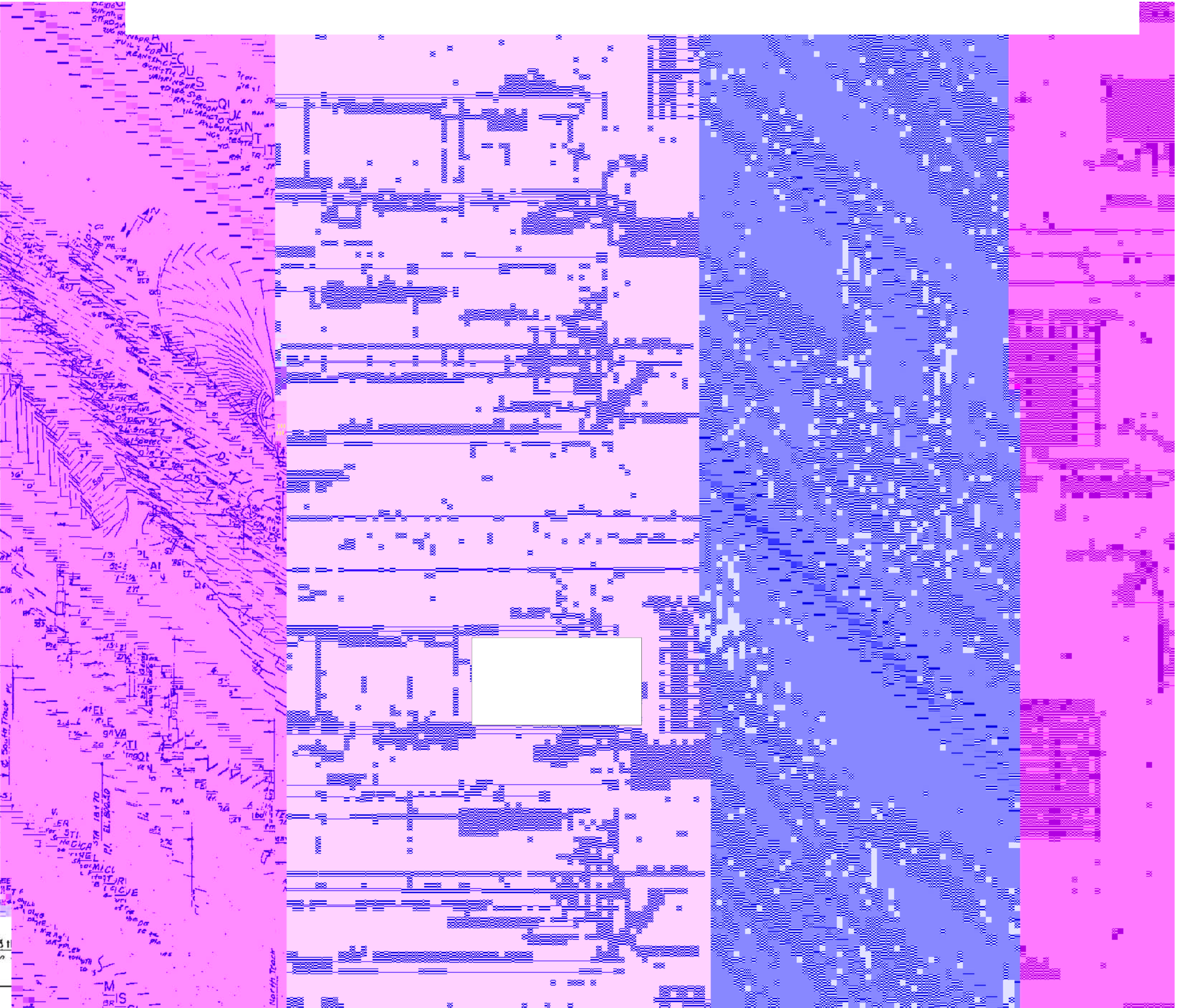


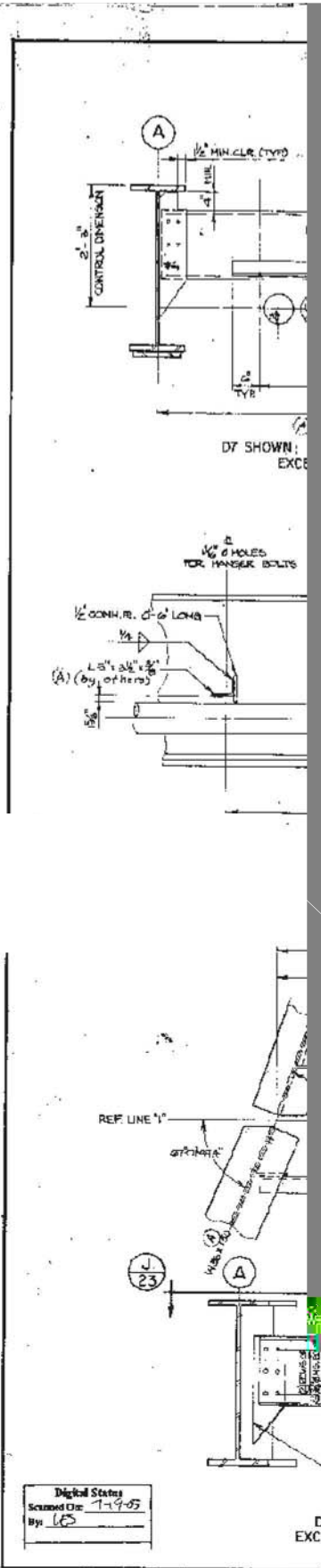
GIRDERS B31
West Exterior



GIRDERS B31
Interior Girders in

Digital Status
Drawn On: 7-19-05
By: LES





Digital Status
 Scanned On: 1-19-05
 By: LES

D
 EXCE

THIS SHEET IS PROVIDED TO AID THE CONTRACTOR IN UNDERSTANDING THE EXISTING CONDITIONS OF THE PROPOSED WORK. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND FAMILIARIZE THEMSELVES WITH THIS SHEET AND ALL ITS CONTENTS. CONTRACT PAY ITEMS MAY, OR MAY NOT, BE SHOWN ON THIS SHEET. REGARDLESS, THE CONTRACTOR SHALL FULLY FAMILIARIZE THEMSELVES WITH ALL CONDITIONS OF THE WORK AND THE EXISTING STRUCTURE AND SHALL ACCOUNT FOR ANY AND ALL NEEDED COSTS TO PERFORM THE WORK OF THIS PROJECT ARISING FROM THE EXISTING CONDITIONS OF THE EXISTING BRIDGE STRUCTURE AND ITS APPURTENANCES.

SN 11072
 REMOVE, REFURBISH, AND RE-ERECT EXISTING RAILING. PAID FOR AS "Bridge Railing, Cleaning and Coating".



HAZARDOUS OR FLAMMABLE MATERIAL

UTILITY CONDUIT HAS BEEN INSTALLED ON SIDE OF DECK

ADDITIONAL UTILITY CONDUITS HAVE BEEN INSTALLED IN THESE BAYS.

SN 11072

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED WITH THE LEGEND BOX BELOW LABELED WITH THIS STRUCTURE'S NUMBER.

-  - PROPOSED WORK
-  - DENOTES REMOVED PORTIONS

SN 11072
 FOR LIMITS OF SCARIFYING AND HYDRODEMOLITION SEE DECK REHABILITATION DETAILS.

NCI NORTHWEST CONSULTANTS, INC.

CITY OF ANN ARBOR
 PUBLIC SERVICES
 301 EAST HURON STREET
 ANN ARBOR MI 48106-1746
 www.a2gov.org



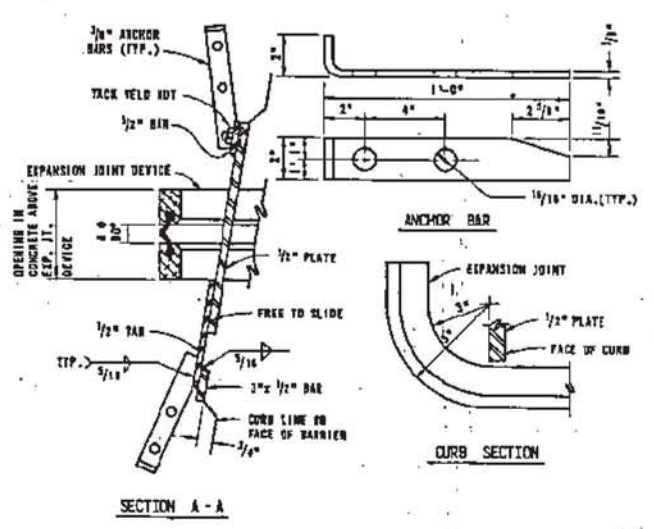
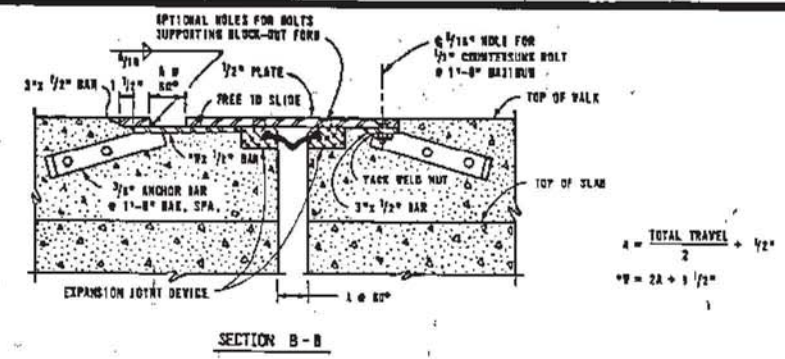
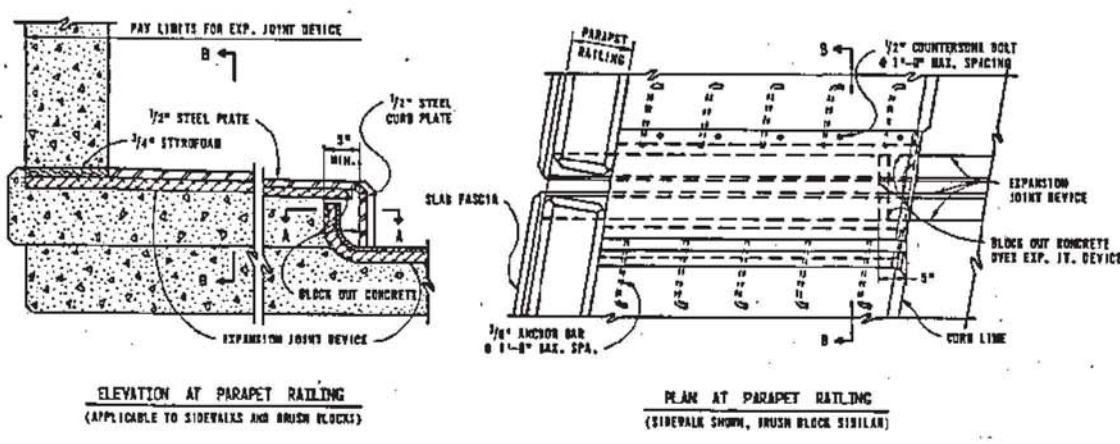
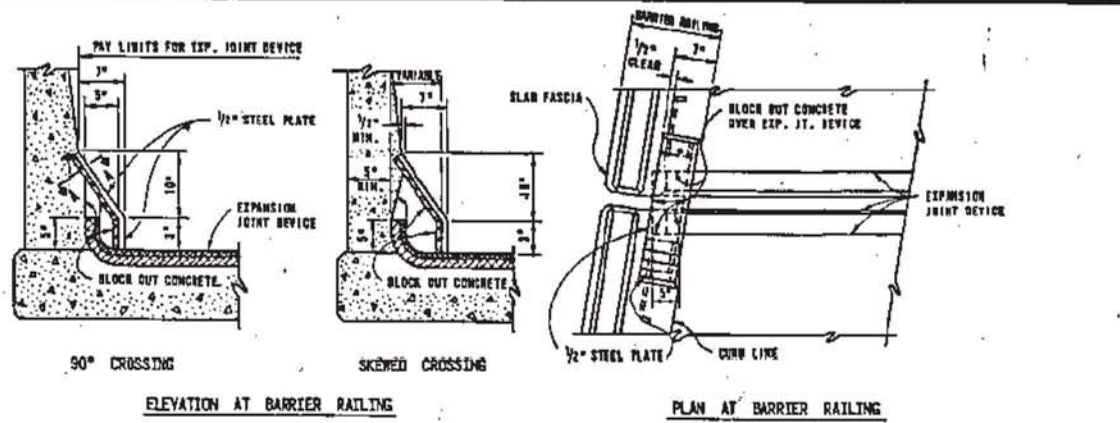
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 MAIDEN LANE OVER HURON RIVER
 EXISTING SUPERSTRUCTURE DETAILS

SCALE: NONE
 PROFILE: N/A
 DRAWING No. 2014-024-ML10

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
		11-21-14	APM	



Know what's below. Call before you dig.



NOTES:

JOINT TYPES

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

DEVICE	MANUFACTURER
ACME STRIP SEAL, TITAN	ACME HIGHWAY PRODUCTS
ALU - STRIP, BARR - MAUERER STRIP SEAL	WATSON HOBMAN, INC.
OMFLEX	STRUCTURAL ACCESSORIES, INC.
PRO - SPAN, FEL - SPAN C.S.	FEL - PRO INC.

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 1.05.82.

FABRICATION AND INSTALLATION

THE EXPANSION JOINT SHALL BE BENT IN THE SHOP TO CONFORM TO THE CONTOUR OF THE ROADWAY SLAB. IT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS SUBJECT TO NOTES HEREIN AND THE APPROVAL OF THE ENGINEER.

WHERE THE DEVICE IS TO BE INSTALLED ON CAST CONCRETE, THE SURFACE LATENCY SHALL BE REMOVED BY SANDBLASTING AND ANY HOLES FILLED WITH EPOXY MORTAR PRIOR TO BEDDING.

WHEN THE SEALING GLAND IS LOCKED INTO A METAL EXTENSION, A LUBRICANT-ADHESIVE CONFORMING TO STANDARD SPECIFICATION 8.18.84 - 6 SHALL BE REQUIRED BETWEEN THE SEAL AND METAL EXTENSION.

A SEALANT SHALL BE USED BETWEEN THE SEAT AND THE ANCHORED PORTION OF THE SEALING GLAND, AND ALSO BETWEEN THE SEAT AND HOLD DOWN DEVICE. THE SEALANT SHALL CONFORM TO FEDERAL SPECIFICATION 8096-456a GRADE B, TT-8-002580, OR SHALL BE AN APPROVED EQUAL.

THE VOID FORMED BETWEEN THE VERTICAL EDGE OF THE HOLD DOWN DEVICE AND THE BLOCK OUT SHALL BE FILLED WITH A SEALANT IF LESS THAN 1/8" IN WIDTH OR WITH AN EPOXY MORTAR IF GREATER THAN 1/8" INCH. THE SEALANT SHALL CONFORM TO FEDERAL SPECIFICATION FT-5-89338C OR SHALL BE AN APPROVED FLEXIBLE EPOXY.

ALL BOLT CAVITIES IN THE HOLD DOWN DEVICES SHALL BE FILLED WITH AN EPOXY MORTAR IF THE CAVITIES ARE CONTINUOUS OR WITH AN APPROVED FLEXIBLE EPOXY IF THEY ARE NOT CONTINUOUS.

THE AREA OF THE HOLD DOWN DEVICE AND SEALING GLAND WHICH WILL BE IN CONTACT WITH A SEALANT SHALL BE CLEANED WITH TOLUENE OR OTHER APPROVED SOLVENT.

ALL SURFACES IN CONTACT WITH THE EPOXY MORTAR SHALL BE LIGHTLY SAND BLASTED AND PRIMED WITH THE BINDER PRIOR TO PLACING THE MORTAR.

THE EPOXY MORTAR USED TO REPAIR THE SEAT AND TO FILL THE BOLT CHANNEL IN CONJUNCTION WITH THE INSTALLATION OF THE BRIDGE EXPANSION JOINT SYSTEMS SHALL BE MIXED AND PLACED AS SPECIFIED IN SUBSECTION 4.58.16-a OF THE 1978 STANDARD SPECIFICATIONS, USING AN EPOXY BINDER MEETING THE REQUIREMENTS SPECIFIED IN SUBSECTION 8.18.85 OF THE 1978 STANDARD SPECIFICATIONS.

THE PRO-SPAN, ACME TITAN AND TITAN DEVICES MUST INCORPORATE A GAST-IN-PLACE METAL SEAT.

THE PROJECT ENGINEER SHALL NOTIFY THE TESTING AND RESEARCH DIVISION AS TO THE DATE THE DEVICE WILL BE INSTALLED.

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.

MISCELLANEOUS QUANTITY			
ITEM	UNIT	AMOUNT	
EXPANSION JOINT DEVICE	MIN. TRAVEL	LINEAL FEET	

NOT AS-BUILT, BEST AVAILABLE INFO.

GRAPHIC SCALE
0 1 2

NOTE
Data contained on this page was drawn from city records. No guarantee is made as to its accuracy or completeness.

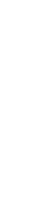
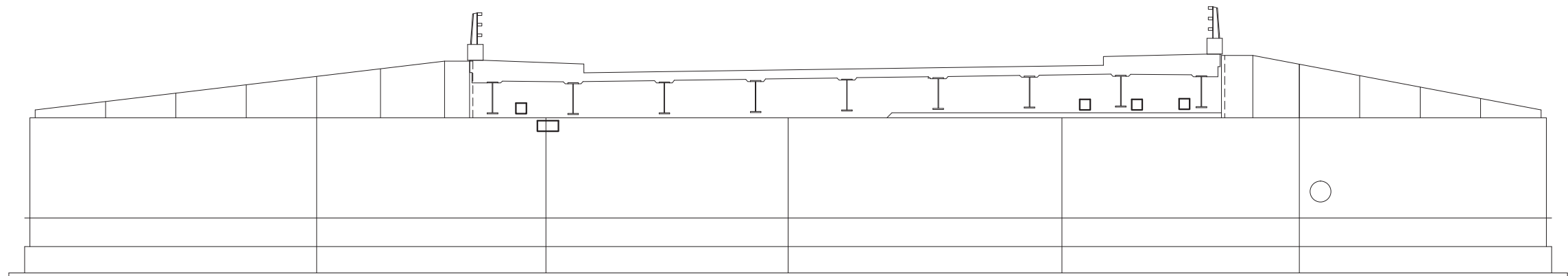
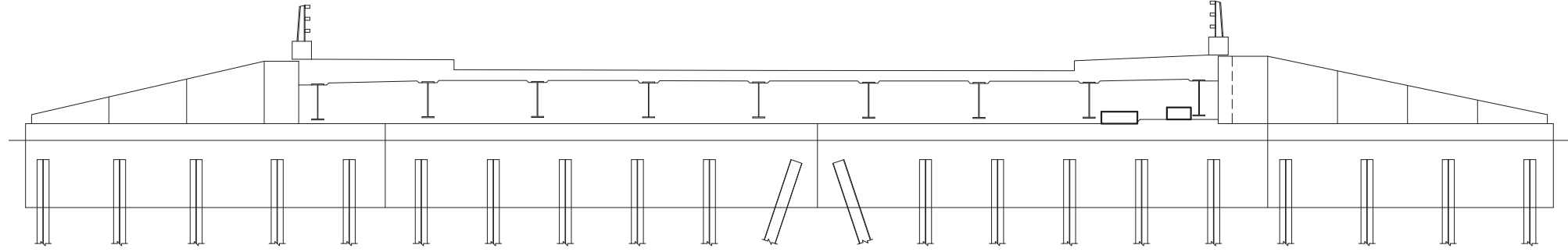
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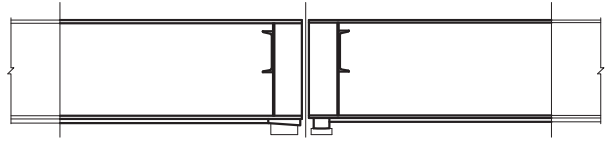
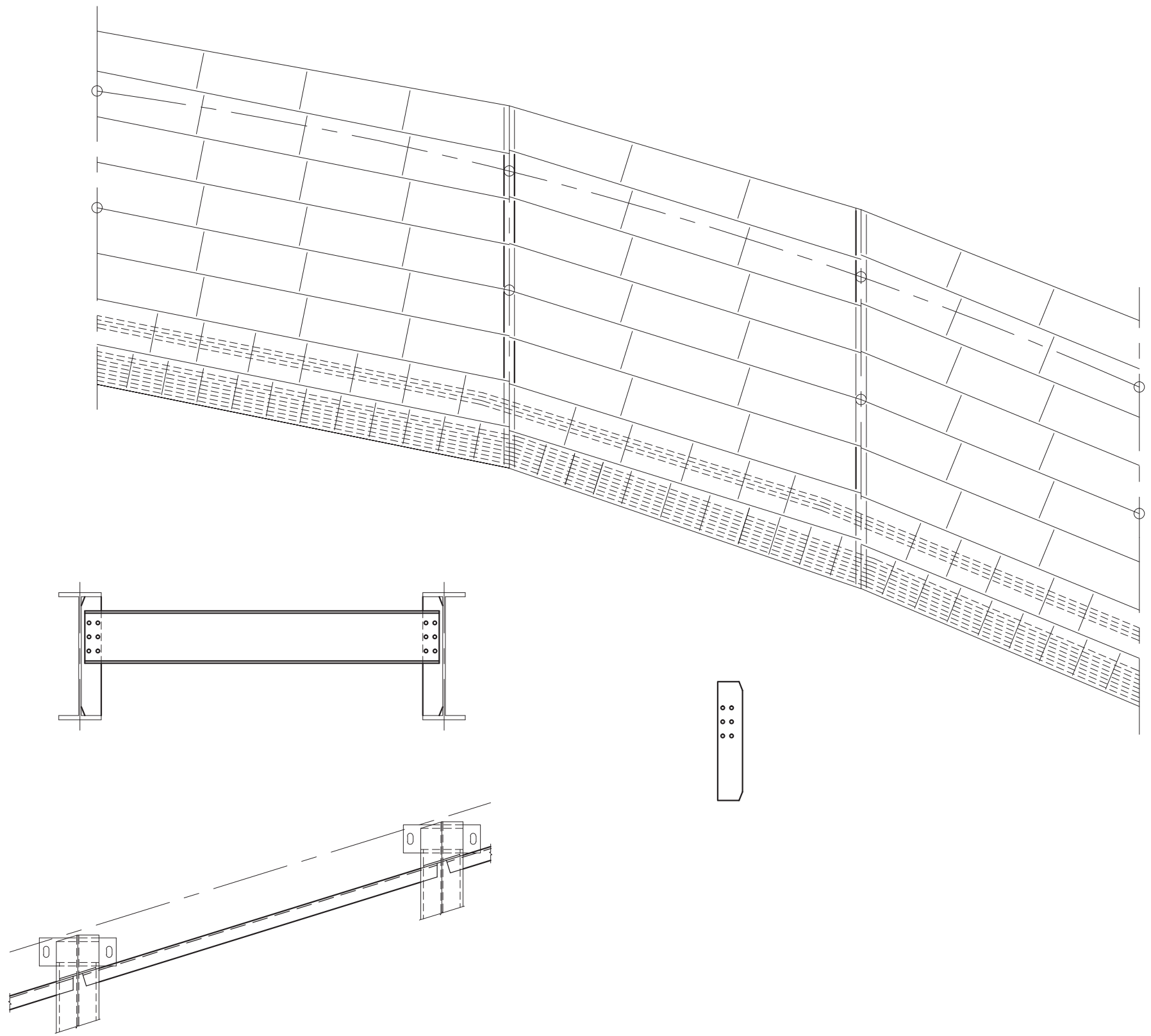
EXPANSION JOINT DETAILS

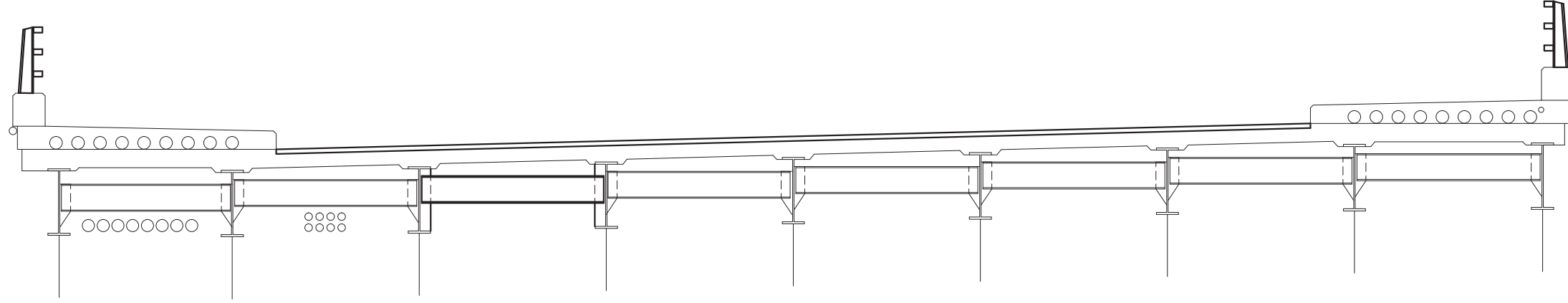
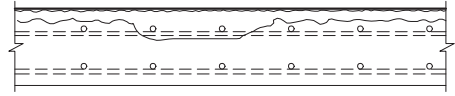
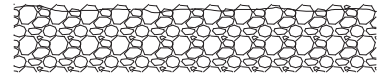
EJ-3-F (6-18-81)

DESIGNER	J.L.L.	5-18-81
CHECKER	J.L.L.	6-18-81
DATE		6-18-81

PROFILE: NA
NONE







NORTH

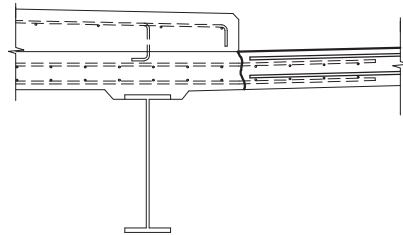
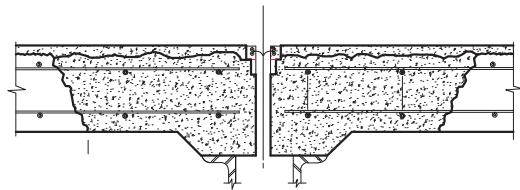
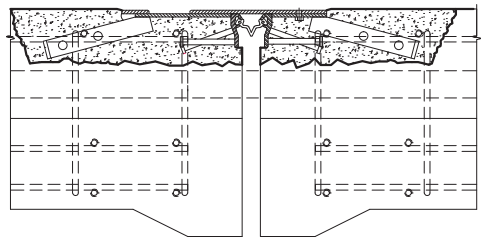
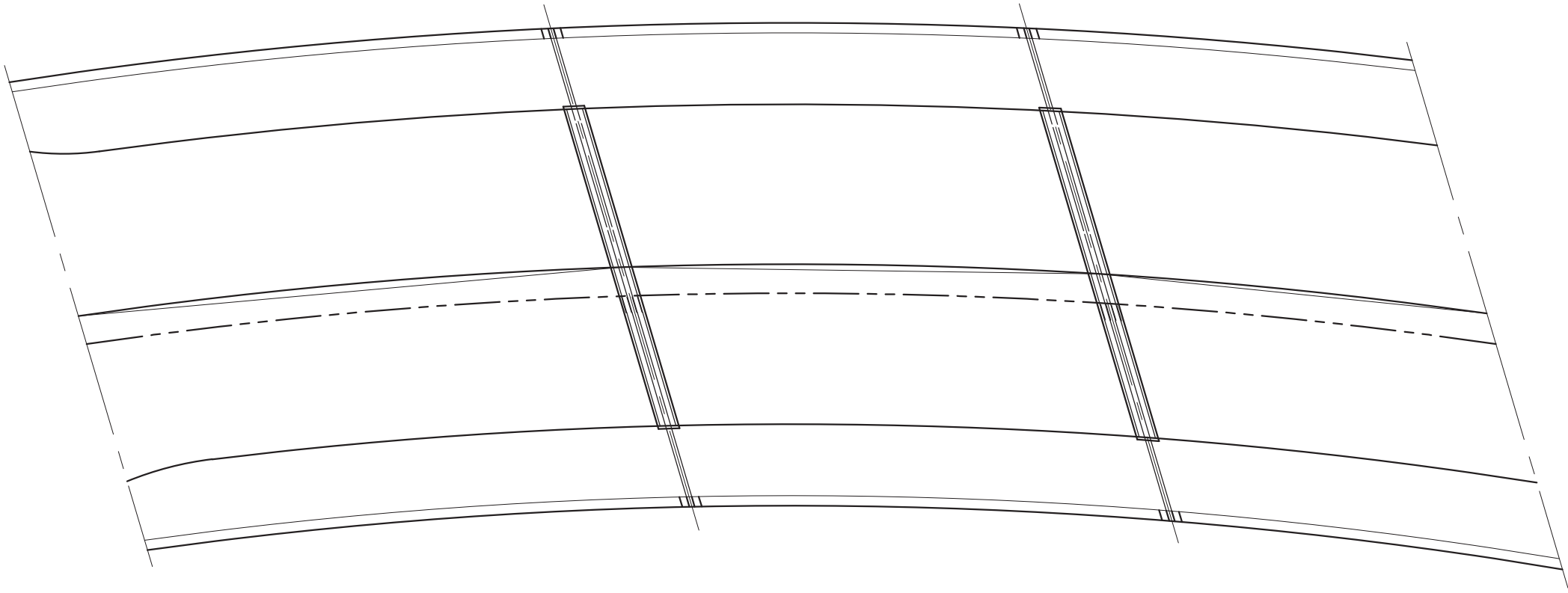
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 MAIDEN LANE OVER HURON RIVER
 DECK REHABILITATION DETAILS

SCALE: NONE
 PROFILE: N/A
 DRAWING No. 2014-024-ML15



REV.	DESCRIPTION	DATE	DRAWN	CHECKED





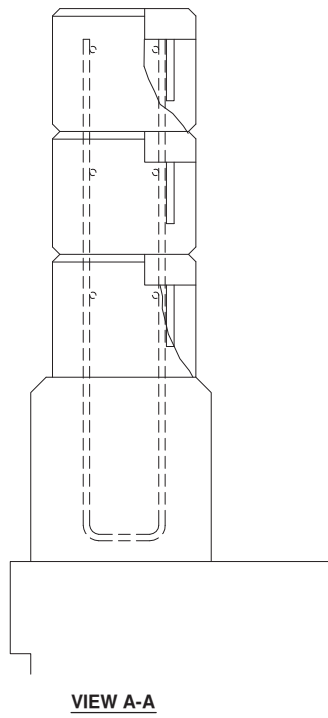
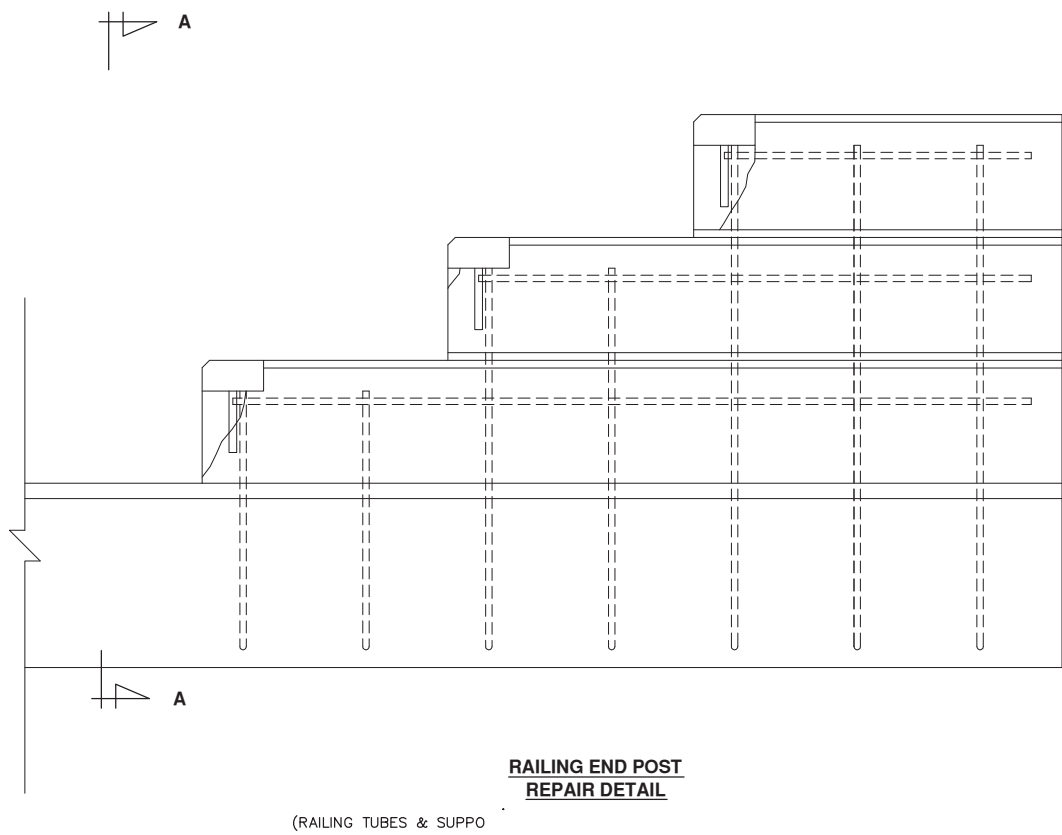


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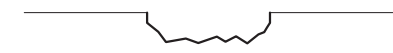
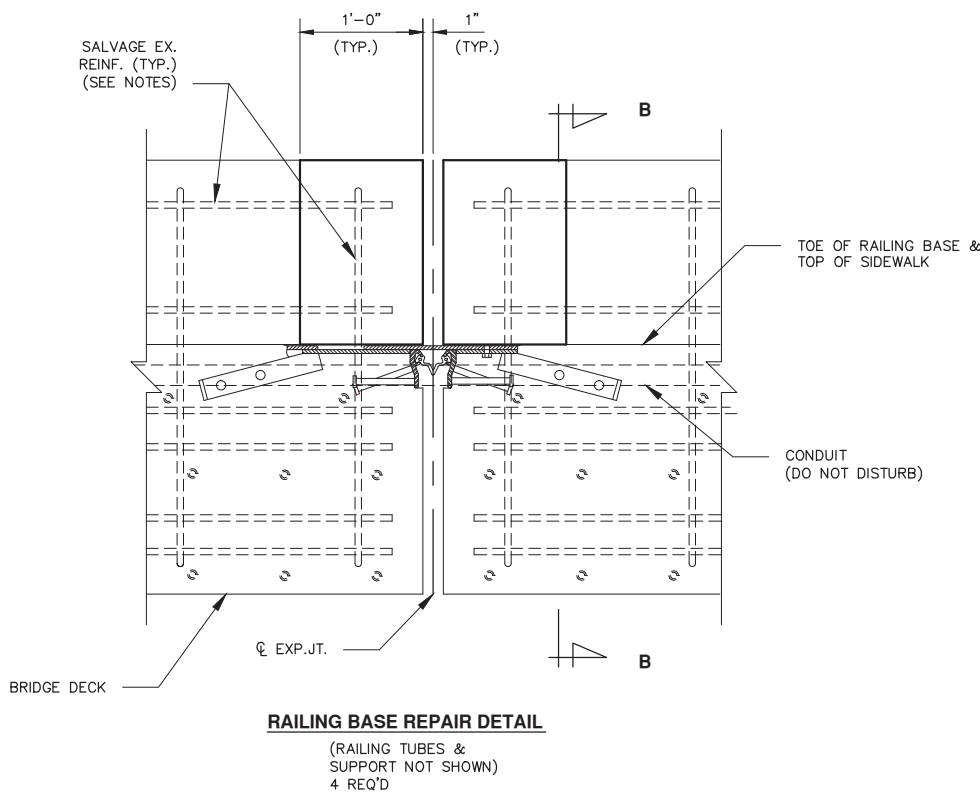
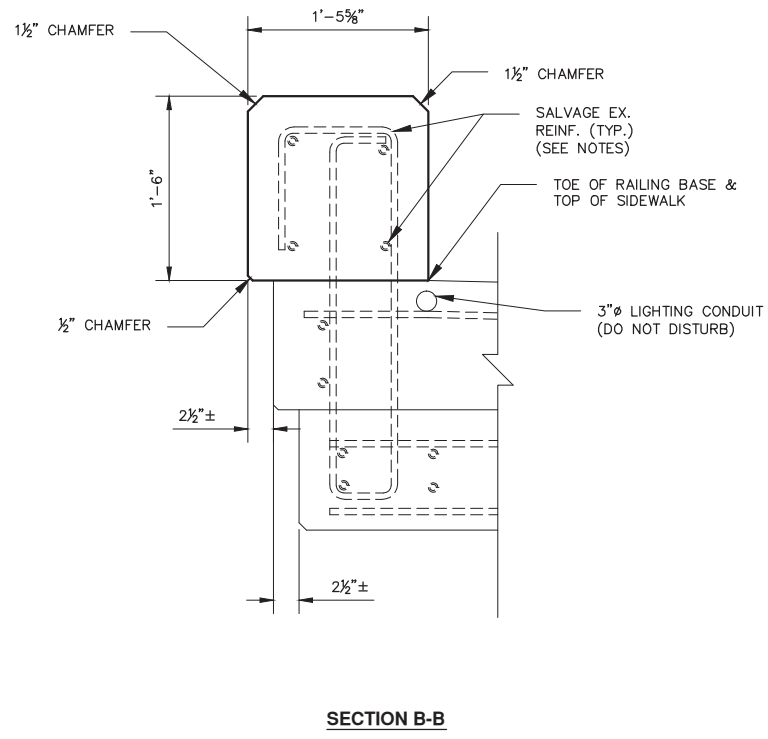
CITY OF ANN ARBOR
 PUBLIC SERVICE
 301 EAST HURON STREET
 ANN ARBOR, MI 48106-1647
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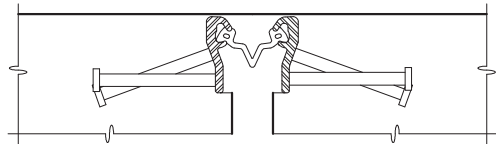
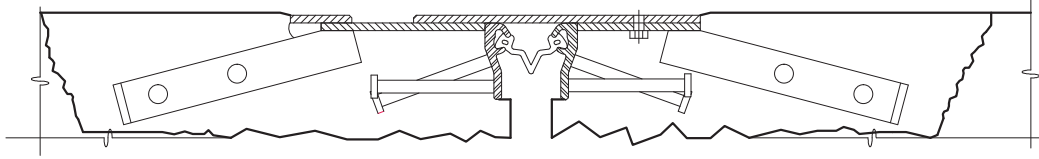
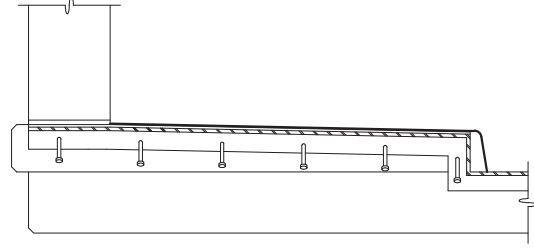
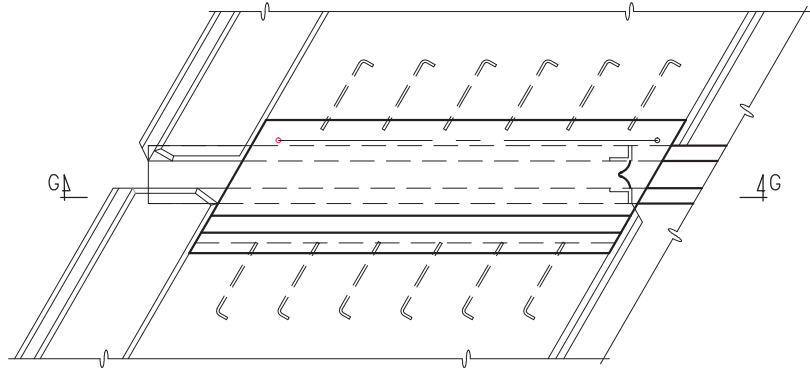


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 MAIDEN LANE OVER HURON RIVER
 RAILING REHABILITATION DETAILS



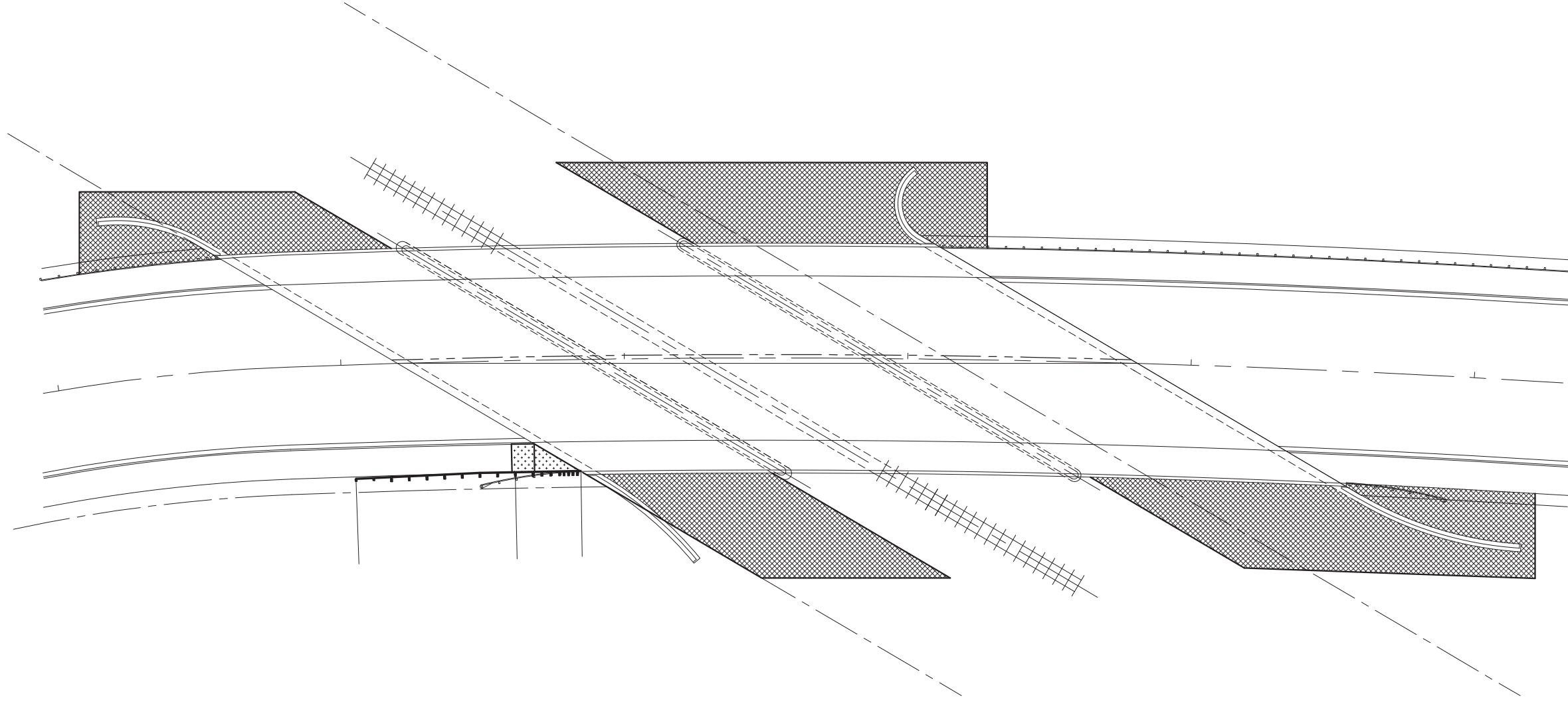
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Amount	Unit	Description
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39	Sft	Patch, Forming

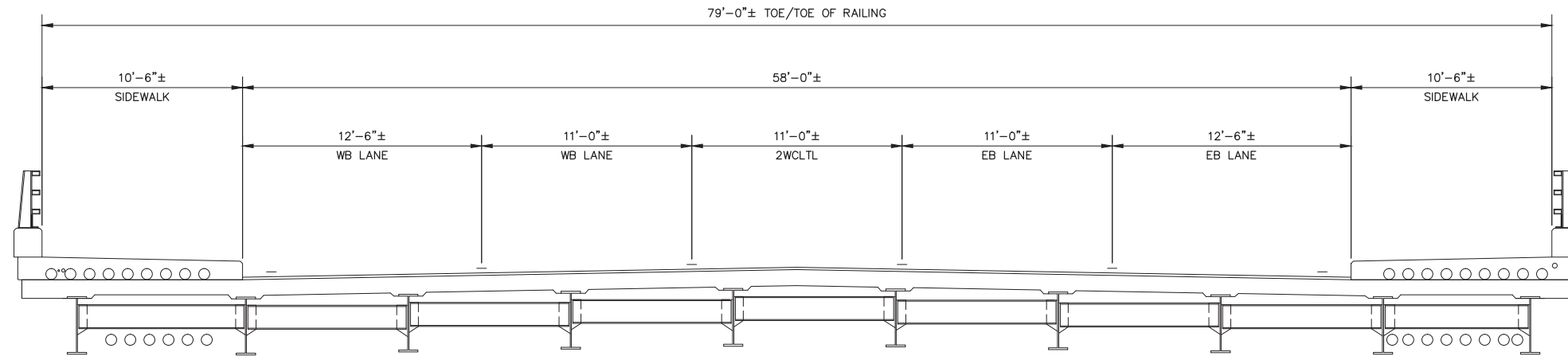




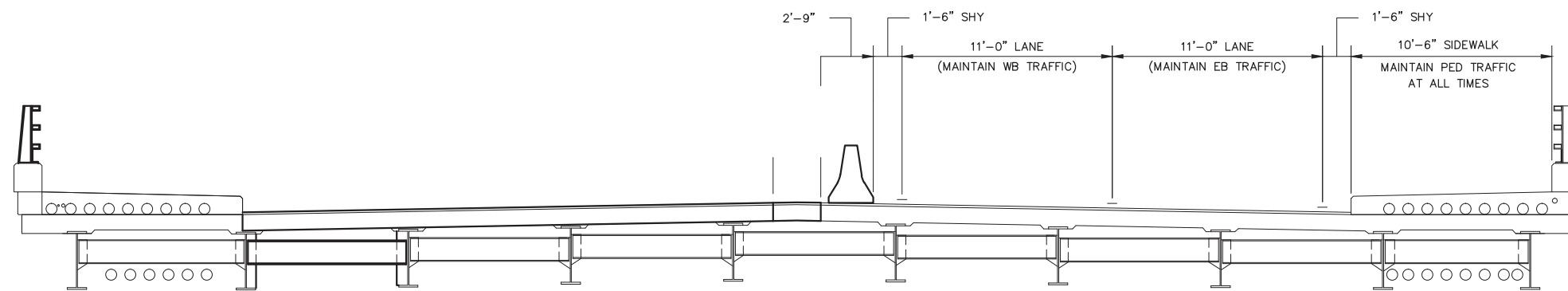
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PROFILE: NA



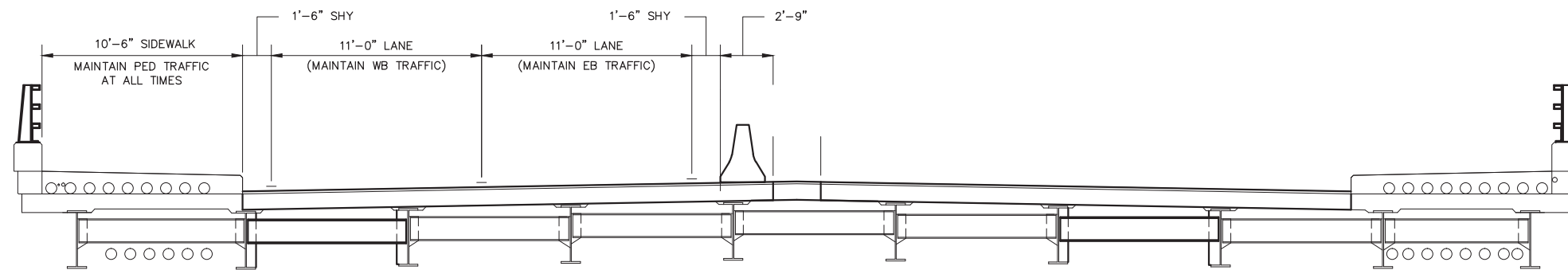




EXISTING TRANSVERSE SECTION



STAGE I CONSTRUCTION

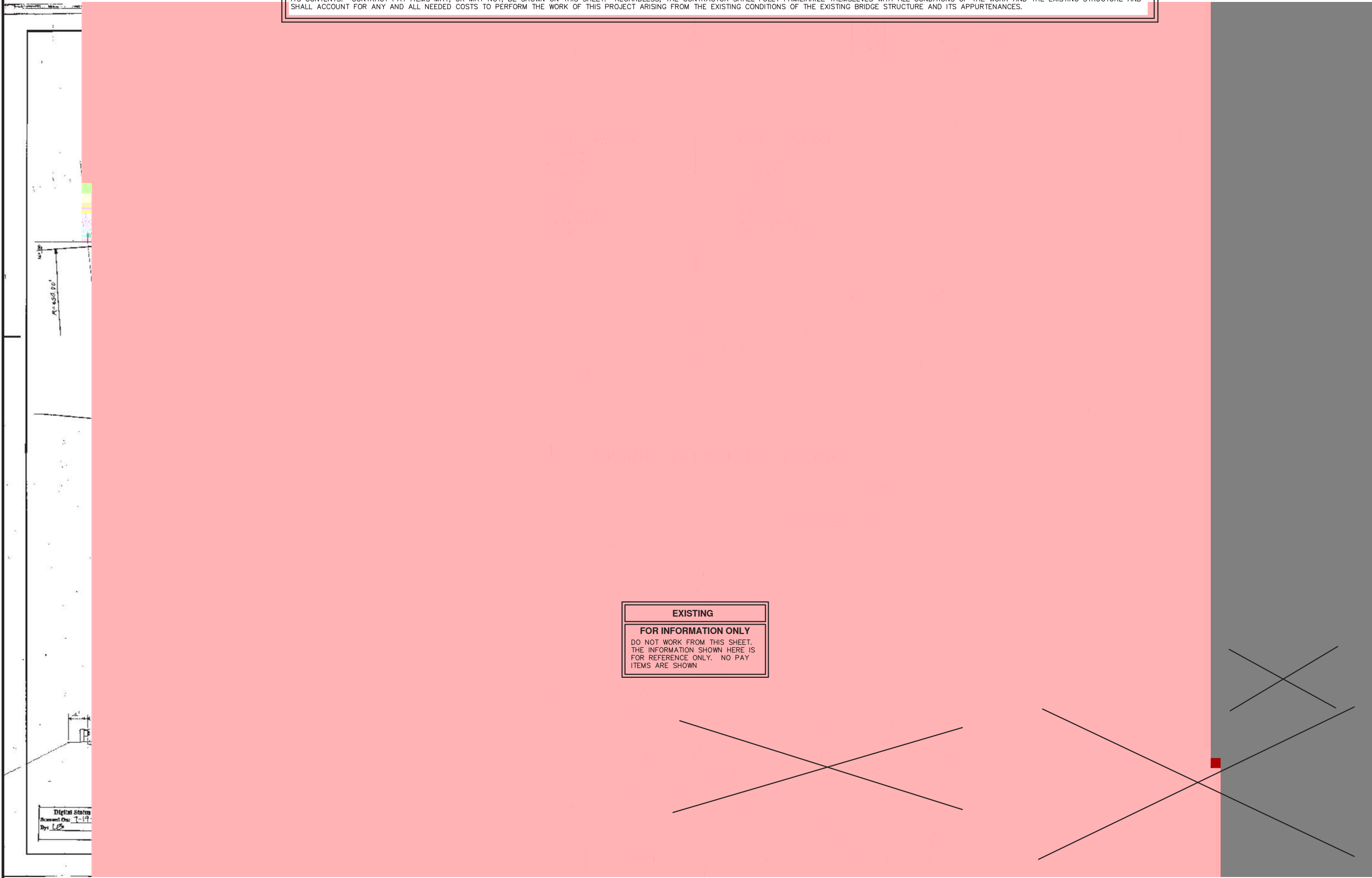


STAGE II CONSTRUCTION

010' 241(+)' 0 #



THIS SHEET IS PROVIDED TO AID THE CONTRACTOR IN UNDERSTANDING THE EXISTING CONDITIONS OF THE PROPOSED WORK. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND FAMILIARIZE THEMSELVES WITH THIS SHEET AND ALL ITS CONTENTS. CONTRACT PAY ITEMS MAY, OR MAY NOT, BE SHOWN ON THIS SHEET. REGARDLESS, THE CONTRACTOR SHALL FULLY FAMILIARIZE THEMSELVES WITH ALL CONDITIONS OF THE WORK AND THE EXISTING STRUCTURE AND SHALL ACCOUNT FOR ANY AND ALL NEEDED COSTS TO PERFORM THE WORK OF THIS PROJECT ARISING FROM THE EXISTING CONDITIONS OF THE EXISTING BRIDGE STRUCTURE AND ITS APPURTENANCES.



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FOR INFORMATION ONLY
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		11-21-14			

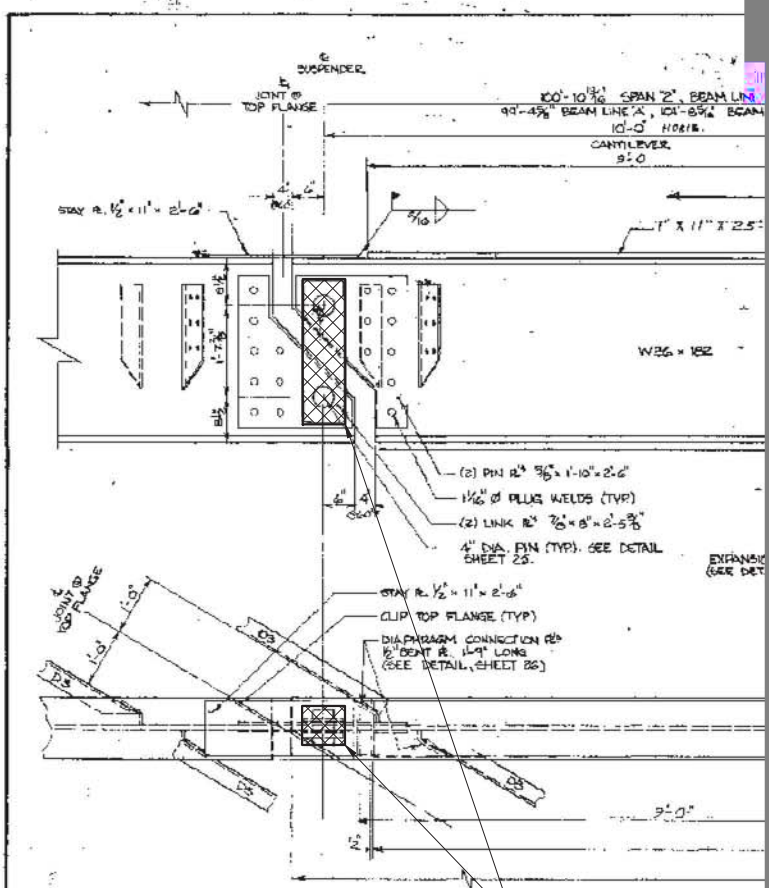
CITY OF ANN ARBOR
 PUBLIC SERVICE
 301 EAST HURON STREET
 ANN ARBOR, MI 48106-1410
 734.768.9410
 www.a2gov.org



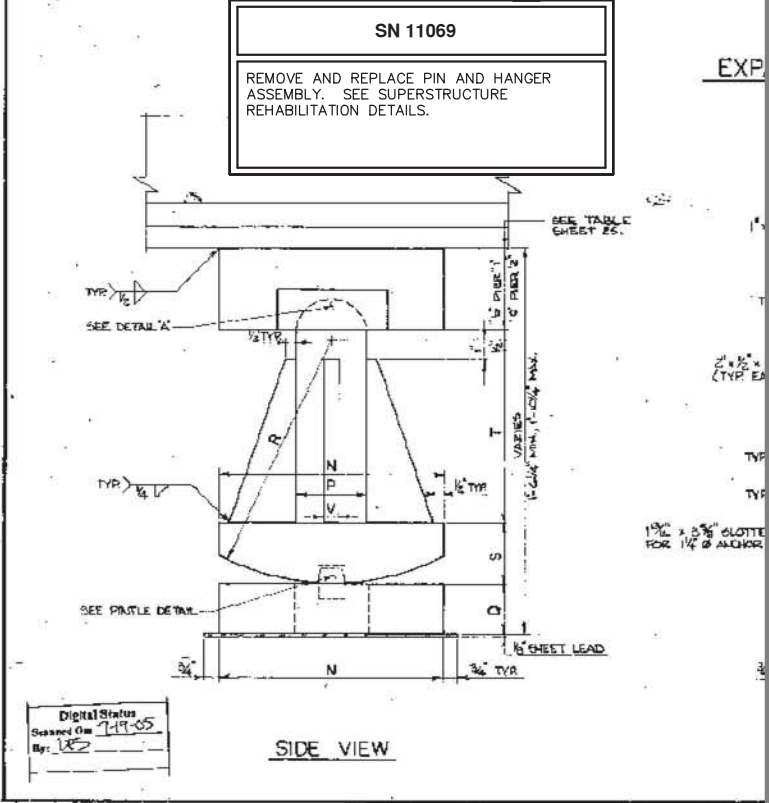
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 FULLER RD OVER AMTRAK RAILROAD
 EXISTING STAKE OUT DIAGRAM

SCALE: NONE
 PROFILE: N/A
 DRAWING No. 2014-024-FR4

THIS SHEET IS PROVIDED TO AID THE CONTRACTOR IN UNDERSTANDING



SN 11069
 REMOVE AND REPLACE PIN AND HANGER ASSEMBLY. SEE SUPERSTRUCTURE REHABILITATION DETAILS.



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 By: [Signature]

SIDE VIEW

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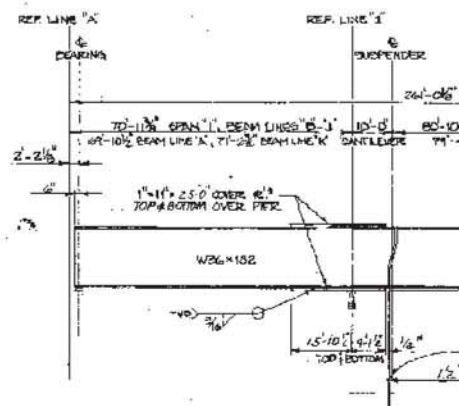
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 FULLER RD OVER AMTRAK RAILROAD
 EXISTING STRUCTURAL STEEL DETAILS

SCALE: NONE
 PROFILE: N/A
 DRAWING No. 2014-024-FR7

BEARING PLATE THICKNESS

	ABUT. A	PIER 1	PIER 2
	"a"	"b"	"c"
A	2 1/8	3 3/16	5 7/8
B	1 1/2	3 1/4	5 1/4
C	1 7/8	4 1/8	6 1/16
D	3	5 1/16	5 1/16
E	2	5	3 3/4
F	1 1/2	4 3/8	3 1/4
G	1 1/2	7 1/4	3 1/4
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J	2 1/8	6 3/16	3 1/4
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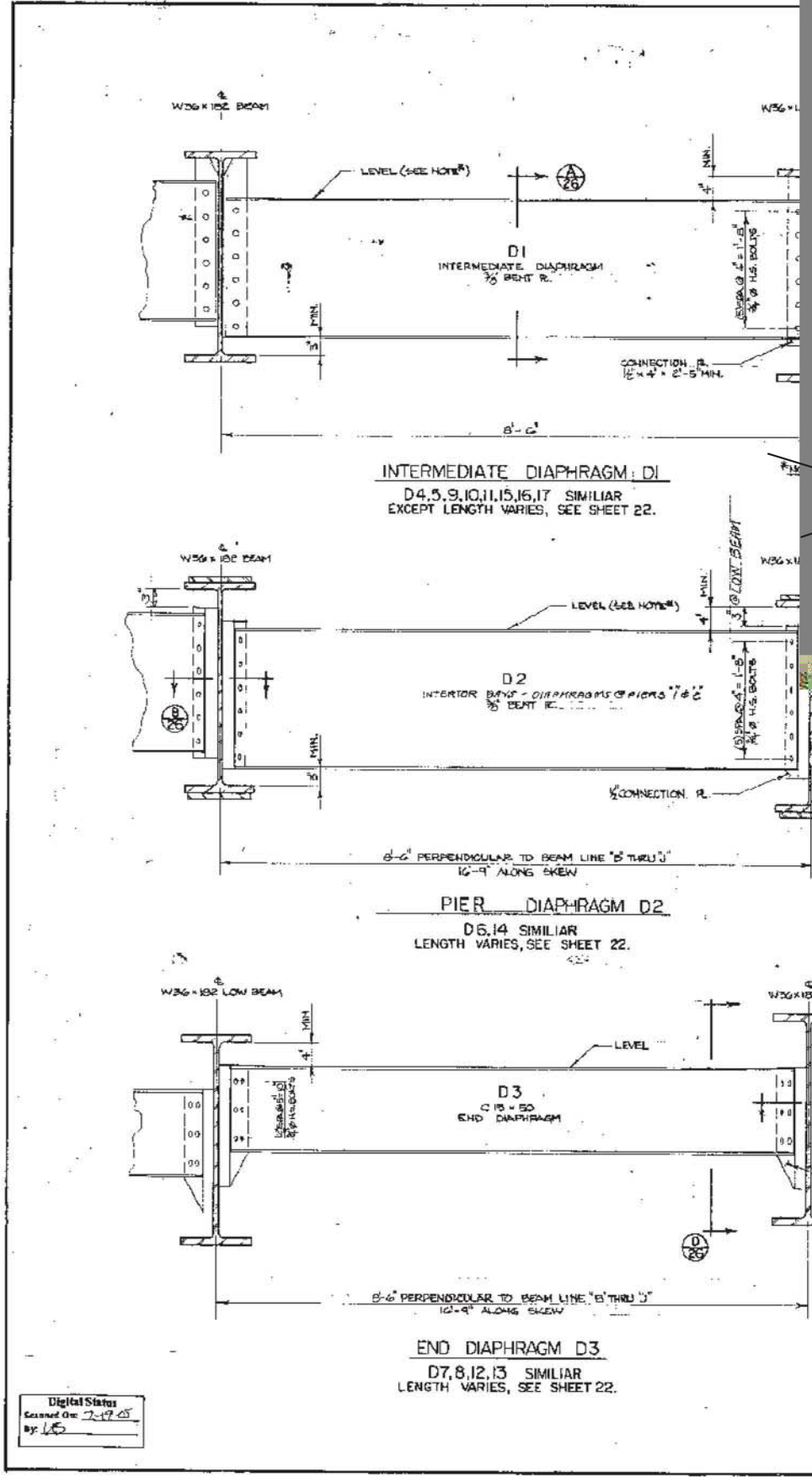
(ALL DIMENSIONS IN INCHES)



CO

Digital Status
 Section No. 1-19-65
 By: LRS

THIS SHEET IS PROVIDED TO AID THE CONTRACTOR IN UNDERSTANDING THE EXISTING CONDITIONS OF THE PROPOSED WORK. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND FAMILIARIZE THEMSELVES WITH THIS SHEET AND ALL ITS CONTENTS. CONTRACT PAY ITEMS MAY, OR MAY NOT, BE SHOWN ON THIS SHEET. REGARDLESS, THE CONTRACTOR SHALL FULLY FAMILIARIZE THEMSELVES WITH ALL CONDITIONS OF THE WORK AND THE EXISTING STRUCTURE AND SHALL ACCOUNT FOR ANY AND ALL NEEDED COSTS TO PERFORM THE WORK OF THIS PROJECT ARISING FROM THE EXISTING CONDITIONS OF THE EXISTING BRIDGE STRUCTURE AND ITS APPURTENANCES.



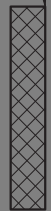
SN 11069

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED WITH THE LEGEND BOX BELOW LABELED WITH THIS STRUCTURE'S NUMBER.

- PROPOSED WORK
 - DENOTES REMOVED PORTIONS

SN 11069

REMOVE AND REPLACE PIN AND HANGER ASSEMBLY. SEE SUPERSTRUCTURE REHABILITATION DETAILS.



NCI NORTHWEST CONSULTANTS, INC.



REV.	DESCRIPTION	DATE	DRAWN	APR	CHECKED
		11-21-14			

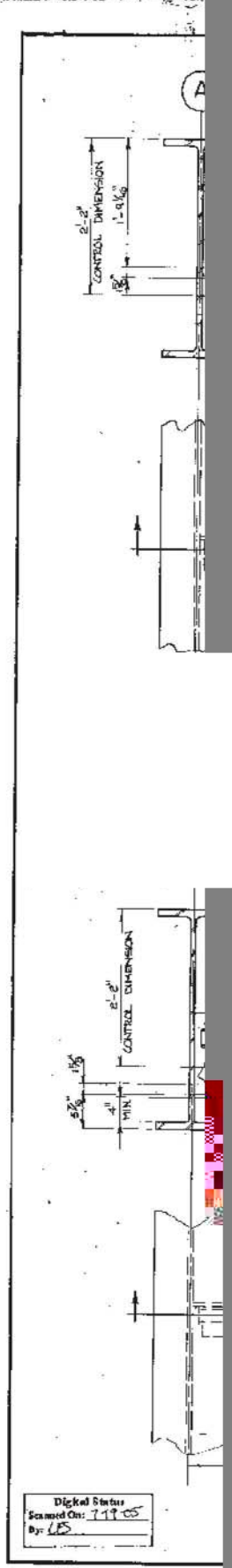
CITY OF ANN ARBOR
PUBLIC SERVICE
301 EAST HURON STREET
ANN ARBOR MI 48106-1647
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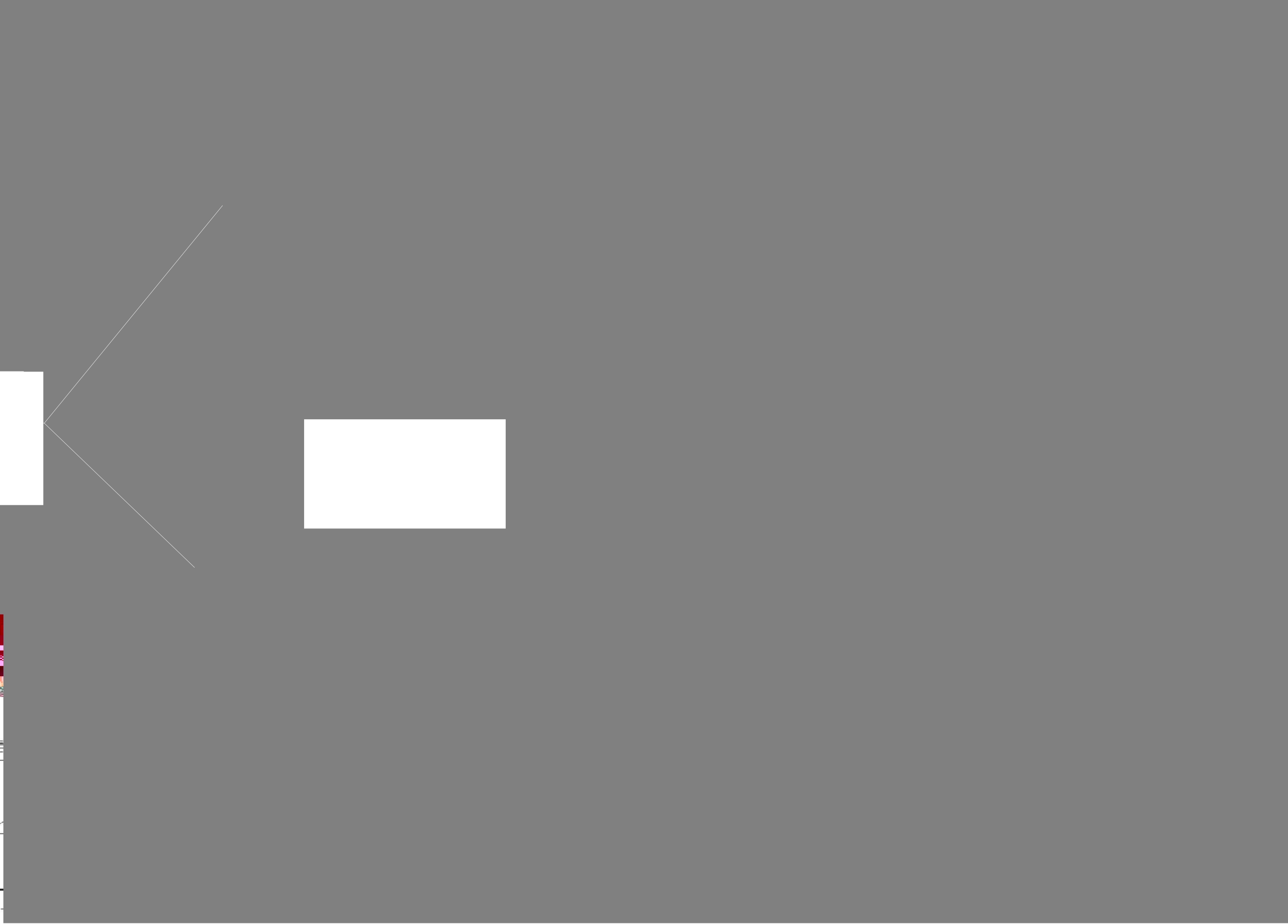
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
FULLER ROAD & MAIDEN LANE
BRIDGES REHABILITATION PROJECT
FULLER RD OVER AMTRAK RAILROAD
EXISTING STRUCTURAL STEEL DETAILS

SCALE NONE
PROFILE: N/A
DRAWING No. 2014-024-FR9

Digital Status
Created On: 2-19-05
By: LJS





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Scanned On: 7-17-05
By: LBS



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SN 11069
 REMOVE AND REPLACE PIN AND HANGER ASSEMBLY. SEE SUPERSTRUCTURE REHABILITATION DETAILS.

SN 11069
 THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED WITH THE LEGEND BOX BELOW LABELED WITH THIS STRUCTURE'S NUMBER.


 - PROPOSED WORK

 - DENOTES REMOVED PORTIONS

TOTAL COST FOR DEPT. SLAB, GIRDER, U. CAMBER BRIDGE

Digital Stamp
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 By: [Signature]

NCI NORTHWEST CONSULTANTS, INC.



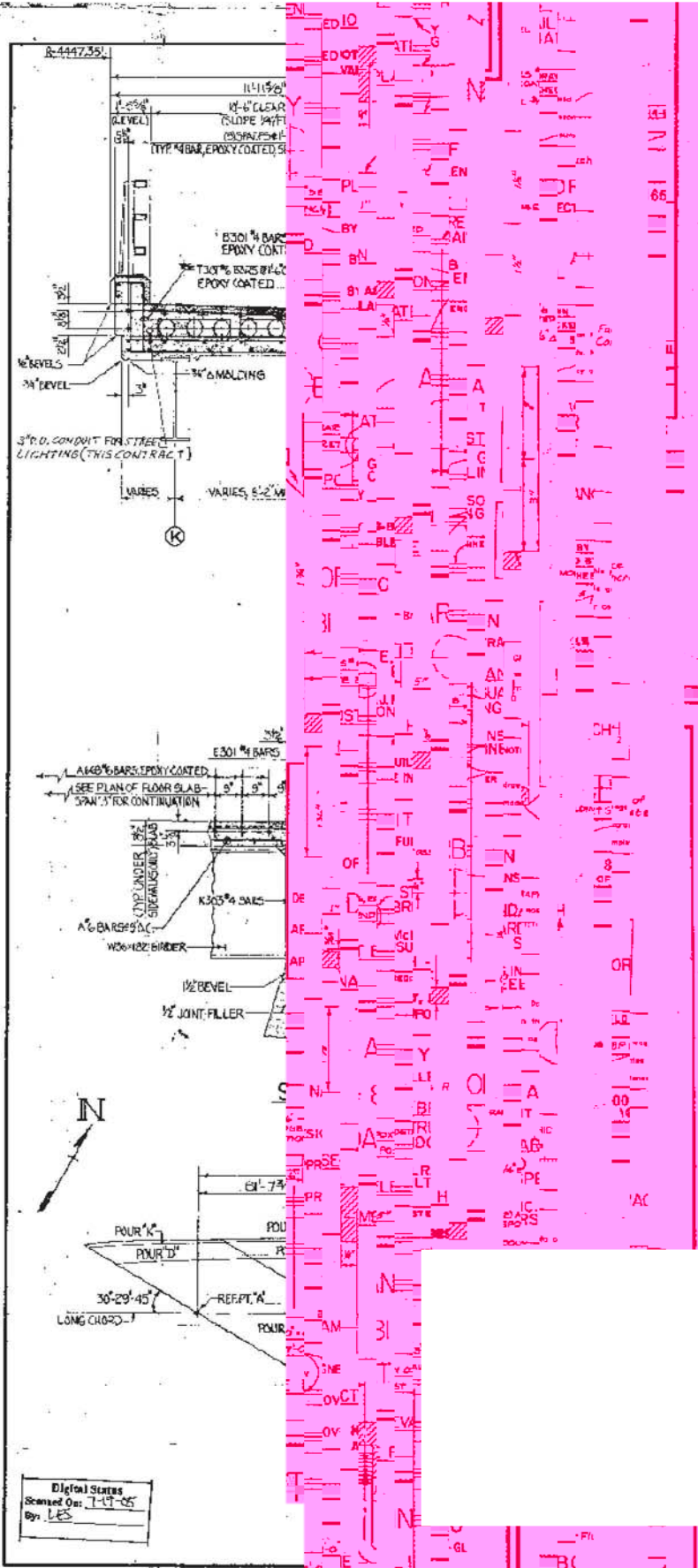
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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 FULLER RD OVER AMTRAK RAILROAD
 EXISTING STRUCTURAL STEEL DETAILS

SCALE NONE
 PROFILE: N/A
 DRAWING No. 2014-024-FR11



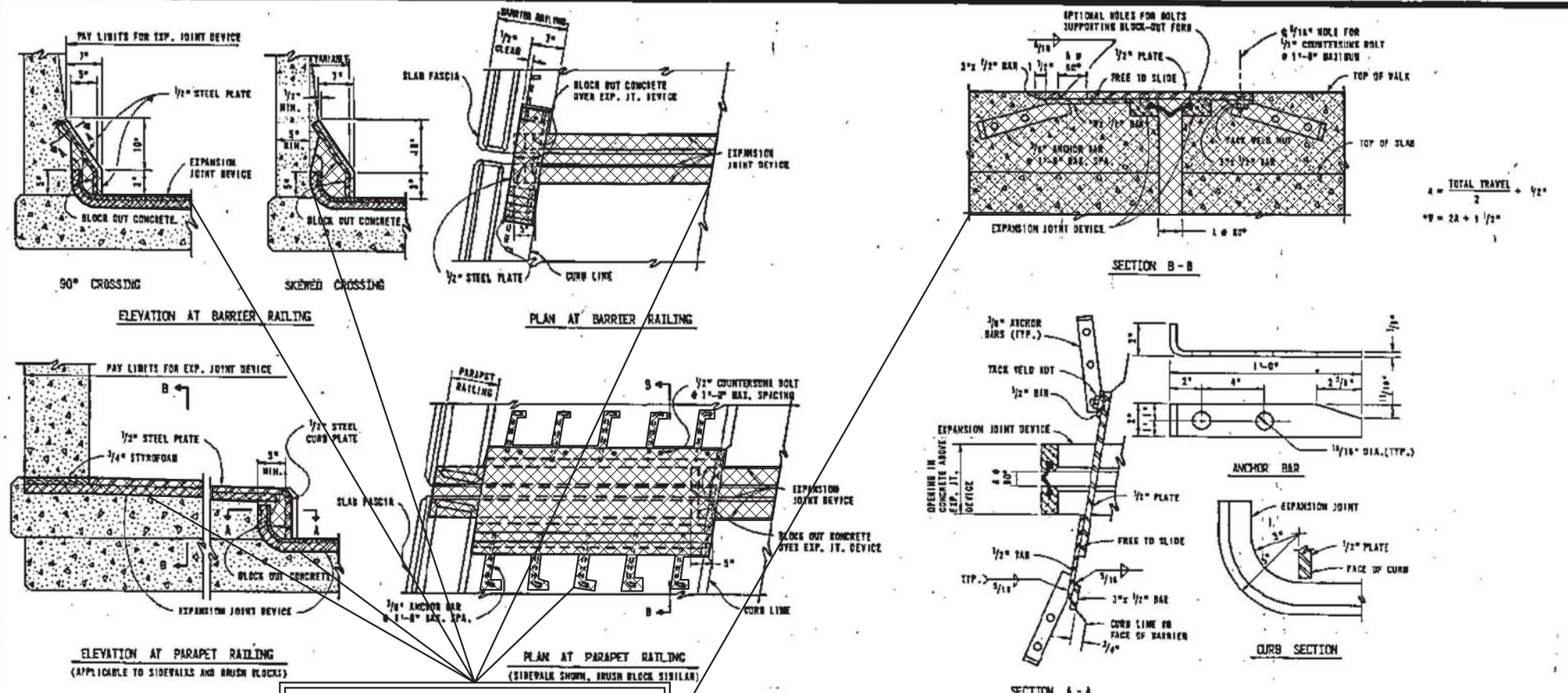
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APR	CHECKED
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DATE	11-21-14
ORIGINAL ISSUE	
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REV.	

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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 FULLER RD OVER AMTRAK RAILROAD
 EXISTING EXPANSION JOINT DETAILS

SCALE NONE
 PROFILE: N/A
 DRAWING NO. 2014-024-FR14
 SHEET NO. 43 OF 54



NOTES:

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

DEVICE	MANUFACTURER
ACME STRIP SEAL, TROJAN, TITAN	ACME HIGHWAY PRODUCTS
ALL-STRIP, BARD - MAUER STRIP SEAL	WATSON HOBMAN, INC.
CHFLER	STRUCTURAL ACCESSORIES, INC.
PRO-SPAN, FEL - SPAN C.S.	FEL - PRO INC.

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.
FABRICATION AND INSTALLATION
 THE EXPANSION JOINT SHALL BE BENT IN THE SHOP TO CONFORM TO THE CONTOUR OF THE ROADWAY SLAB. IT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS SUBJECT TO NOTES HEREIN AND THE APPROVAL OF THE ENGINEER.
 WHERE THE DEVICE IS TO BE INSTALLED ON CAST CONCRETE, THE SURFACE LATENCY SHALL BE REMOVED BY SANDBLASTING AND ANY HOLES FILLED WITH EPOXY MORTAR PRIOR TO BIDDING.
 WHEN THE SEALING GLAND IS LOCATED WITHIN A METAL EXTENSION, A LUBRICANT-ADHESIVE CONFORMING TO STANDARD SPECIFICATION 0.10.04 - 0 SHALL BE REQUIRED BETWEEN THE SEAL AND METAL EXTENSION.
 A SEALANT SHALL BE USED BETWEEN THE SEAT AND THE ANCHORED PORTION OF THE SEALING GLAND, AND ALSO BETWEEN THE SEAT AND HOLD DOWN DEVICE. THE SEALANT SHALL CONFORM TO FEDERAL SPECIFICATION 0090-4500 GRADE B, TT-S-002500, OR SHALL BE AN APPROVED EQUAL.
 THE VOID FORMED BETWEEN THE VERTICAL EDGE OF THE HOLD DOWN DEVICE AND THE BLOCK OUT SHALL BE FILLED WITH A SEALANT IF LESS THAN 1/8 INCH IN WIDTH OR WITH AN EPOXY MORTAR IF GREATER THAN 1/8 INCH. THE SEALANT SHALL CONFORM TO FEDERAL SPECIFICATION TT-S-002500 OR SHALL BE AN APPROVED FLEXIBLE EPOXY.
 ALL BOLT CAVITIES IN THE HOLD DOWN DEVICES SHALL BE FILLED WITH AN EPOXY MORTAR IF THE CAVITIES ARE CONTINUOUS OR WITH AN APPROVED FLEXIBLE EPOXY IF THEY ARE NOT CONTINUOUS.
 THE AREA OF THE HOLD DOWN DEVICE AND SEALING GLAND WHICH WILL BE IN CONTACT WITH A SEALANT SHALL BE CLEANED WITH TOLUENE OR OTHER APPROVED SOLVENT.
 ALL SURFACES IN CONTACT WITH THE EPOXY MORTAR SHALL BE LIGHTLY SAND BLASTED AND PRIMED WITH THE BINDER PRIOR TO PLACING THE MORTAR.
 THE EPOXY MORTAR USED TO REPAIR THE SEAT, AND TO FILL THE BOLT CHANNELS IN CONJUNCTION WITH THE INSTALLATION OF THE BRIDGE EXPANSION JOINT SYSTEMS SHALL BE MIXED AND PLACED AS SPECIFIED IN SUBSECTION 4.50.16-a OF THE 1970 STANDARD SPECIFICATIONS, USING AN EPOXY BINDER MEETING THE REQUIREMENTS SPECIFIED IN SUBSECTION 0.10.05 OF THE 1970 STANDARD SPECIFICATIONS.
 THE PRO-SPAN, ACME TROJAN AND TITAN DEVICES MUST INCORPORATE A GAST-IN-PLACE RETAL SEAT.
 THE PROJECT ENGINEER SHALL NOTIFY THE TESTING AND RESEARCH DIVISION AS TO THE DATE THE DEVICE WILL BE INSTALLED.
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.

SN 11069
 REMOVE EX. EXPANSION JOINT DEVICES.
 PAID FOR AS "Deck Joint, Rem". FOR MORE INFORMATION
 SEE DECK RESURFACING DETAILS.

SN 11069

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED WITH THE LEGEND BOX BELOW LABELED WITH THIS STRUCTURES NUMBER.

	PROPOSED WORK
	DENOTES REMOVED PORTIONS

THIS SHEET IS PROVIDED TO AID THE CONTRACTOR IN UNDERSTANDING THE EXISTING CONDITIONS OF THE PROPOSED WORK. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND FAMILIARIZE THEMSELVES WITH THIS SHEET AND ALL ITS CONTENTS. CONTRACT PAY ITEMS MAY, OR MAY NOT, BE SHOWN ON THIS SHEET. REGARDLESS, THE CONTRACTOR SHALL FULLY FAMILIARIZE THEMSELVES WITH ALL CONDITIONS OF THE WORK AND THE EXISTING STRUCTURE AND SHALL ACCOUNT FOR ANY AND ALL NEEDED COSTS TO PERFORM THE WORK OF THIS PROJECT ARISING FROM THE EXISTING CONDITIONS OF THE EXISTING BRIDGE STRUCTURE AND ITS APPURTENANCES.

THE CONTRACTOR SHALL PRESERVE AND PROTECT THE EXISTING CONDUITS FROM DAMAGE DURING THE DECK AND SIDEWALK JOINT REMOVAL OPERATION

NOT AS-BUILT, BEST AVAILABLE INFO.

GRAPHIC SCALE
 0 1 2

NOTE
 Data contained on this page was drawn from City records. No guarantee is made as to its accuracy or completeness.

MISCELLANEOUS QUANTITY		
ITEM	UNIT	AMOUNT
EXPANSION JOINT DEVICE	MIN. TRAVEL	LINEAL FEET

EXPANSION JOINT DETAILS

EJ-3-F (6-18-81)

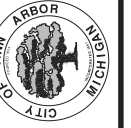
STANDARD	C.H.T.	6-18-81
DRAWN BY	J.L.C.	12-20-81
CHECKED BY	J.L.C.	1-13-82

Digital Status
 Scanned On: 7-20-05
 By: LGS



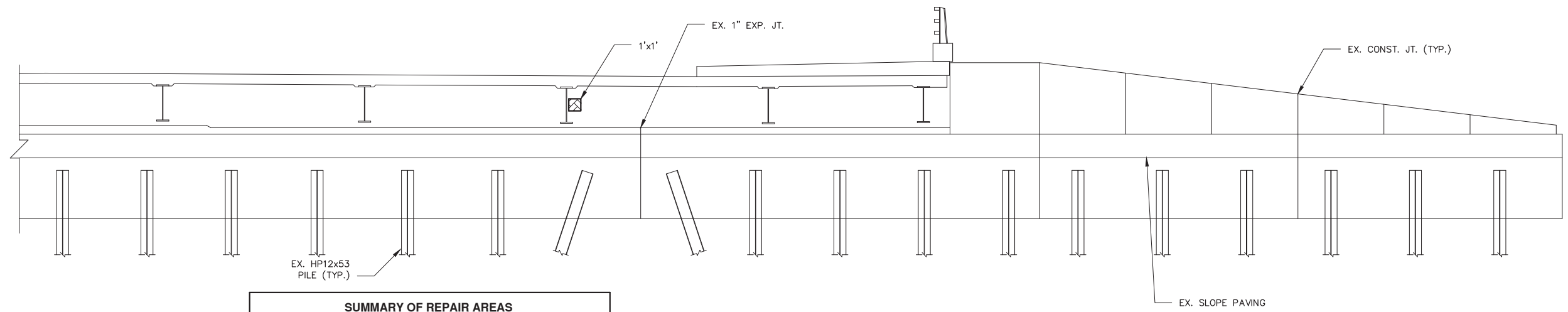
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11-21-14	11-21-14	DATE	PDF	DRAWN

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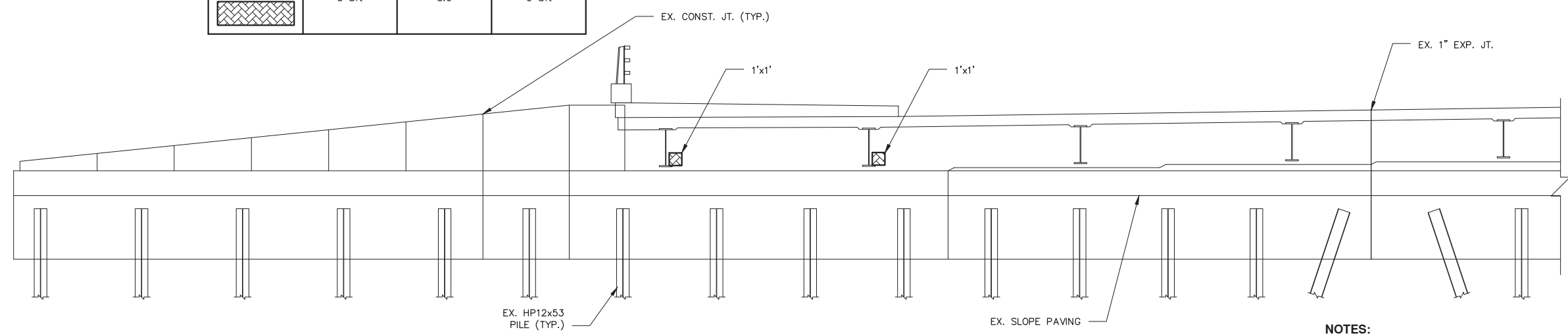
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 FULLER RD OVER AMTRAK RAILROAD
 SUBSTRUCTURE REHABILITATION DETAILS

SCALE NONE
 PROFILE: N/A
 DRAWING No.
 2014-024-FR15



SUMMARY OF REPAIR AREAS			
PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETEIORATION WAS PERFORMED IN SEPTEMBER OF 2014. EXACT DIMENSIONS AND LOCATIONS OF REPAIR AREAS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITIES.			
TYPE	MEASURED QUANTITIES	ESTIMATING FACTOR	ESTIMATED QUANTITIES
ABUTMENT A PATCHING 	3 Sft	3.0	9 Sft

ABUTMENT A ELEVATION
 (LOOKING WEST)



ABUTMENT A ELEVATION
 (LOOKING WEST)

NOTES:

DENOTES AREA REPAIRED WITH "Hand Chipping, Other Than Deck", "Patch, Forming", "Patching Conc. C-L", AND "Embedded Galvanic Anode"

- TYP. DENOTES TYPICAL
- EX. DENOTES EXISTING
- CONST. DENOTES CONSTRUCTION
- EXP. DENOTES EXPANSION
- JT. DENOTES JOINT
- BRG. DENOTES BEARING
- REF. DENOTES REFERENCE
- ABUT. DENOTES ABUTMENT

ABUTMENT A PATCHING QUANTITIES ARE INCLUDED WITH MISCELLANEOUS QUANTITIES ON SHEET 45/54.

NO AREAS OF DELAMINATIONS FOUND AT PIERS AT TIME OF INSPECTION.

FORMS FOR LARGE PATCHES SHALL BE INSTALLED IN 2'-0" TO 4'-0" HIGH SECTIONS WITH THE TOP OF FORM NO MORE THAN 4'-0" ABOVE THE LEVEL OF CONCRETE AS THE POUR PROGRESSES.

EMBEDDED GALVANIC ANODES SHALL BE INSTALLED IN ALL CONCRETE REPAIRS AT A MAXIMUM SPACING OF 2'-0".

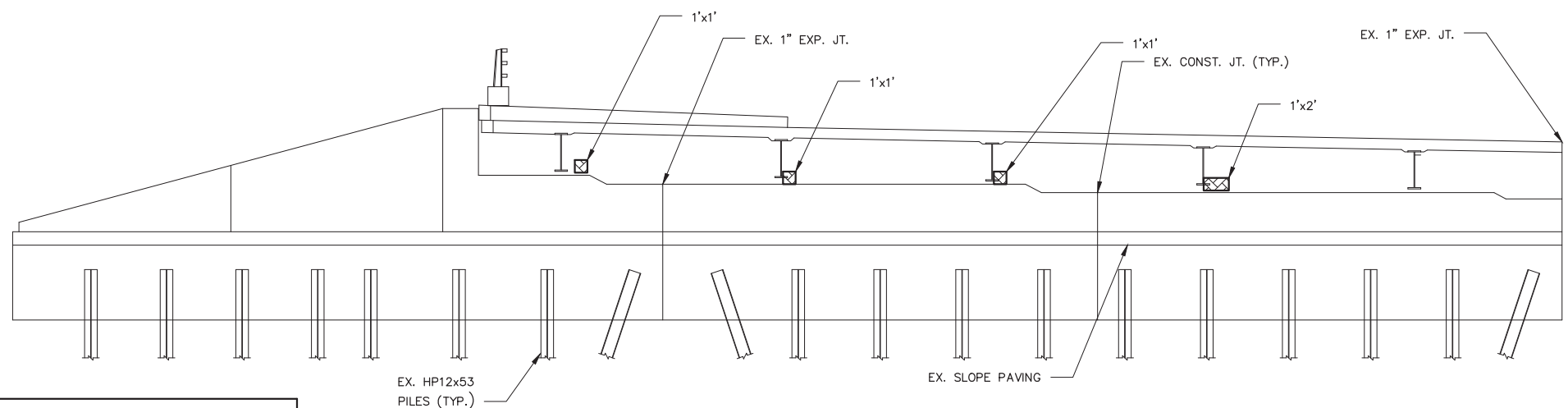


REV.	DESCRIPTION	DATE	DRAWN	CHECKED
		11-21-14	PDF	APM

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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
FULLER ROAD & MAIDEN LANE
BRIDGES REHABILITATION PROJECT
FULLER RD OVER AMTRAK RAILROAD
SUBSTRUCTURE REHABILITATION DETAILS



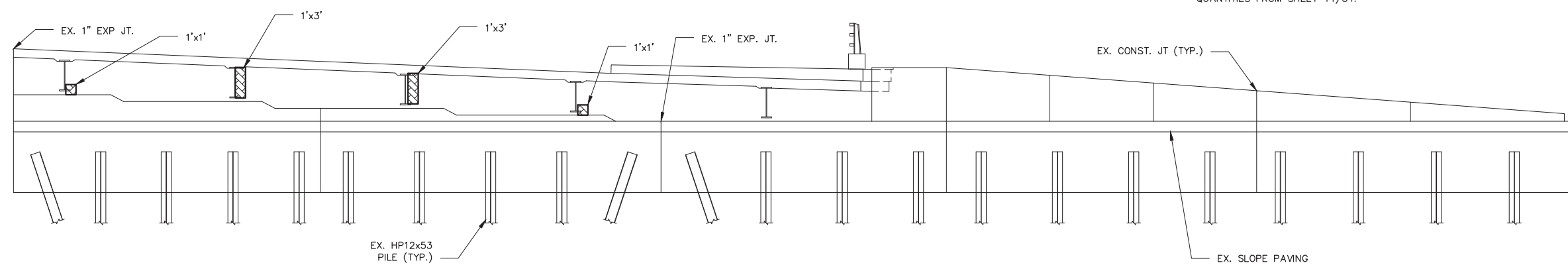
ABUTMENT B ELEVATION
(LOOKING EAST)

SUMMARY OF REPAIR AREAS			
PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN SEPTEMBER OF 2014. EXACT DIMENSIONS AND LOCATIONS OF REPAIR AREAS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITIES.			
TYPE	MEASURED QUANTITIES	ESTIMATING FACTOR	ESTIMATED QUANTITIES
ABUTMENT B PATCHING 	13 Sft	3.0	39 Sft

MISCELLANEOUS QUANTITIES		
Amount	Unit	Description
**24	Cft	Hand Chipping, Other Than Deck
**48	Sft	Patch, Forming
**24	Ea	Embedded Galvanic Anode
**1	Cyd	Patching Conc. C-L

** QUANTITY PROVIDED TO BE USED AT THE DIRECTION OF THE ENGINEER.

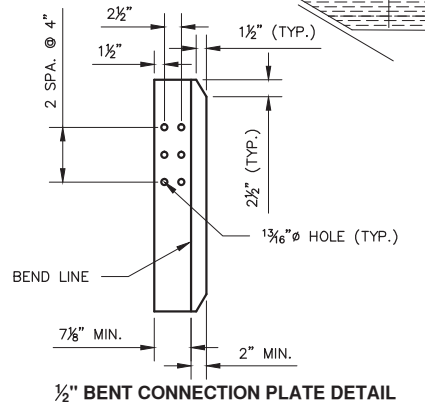
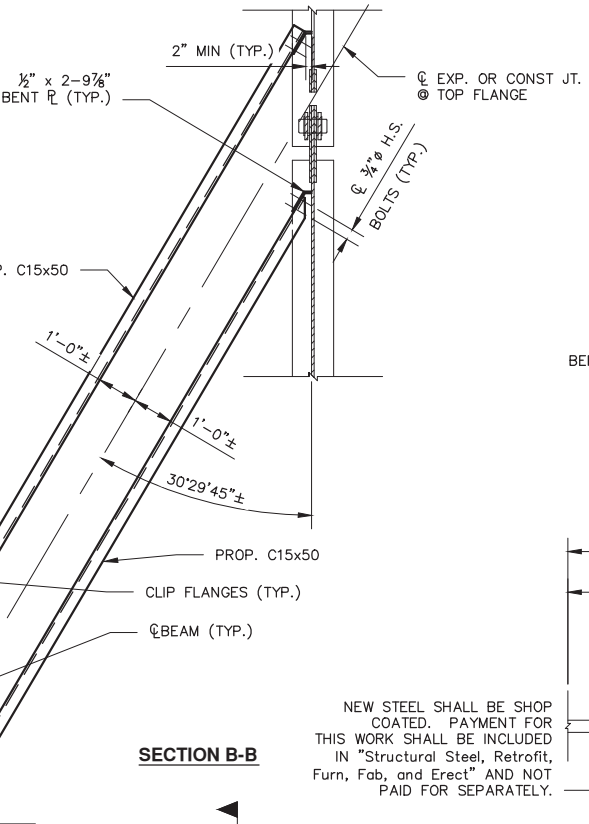
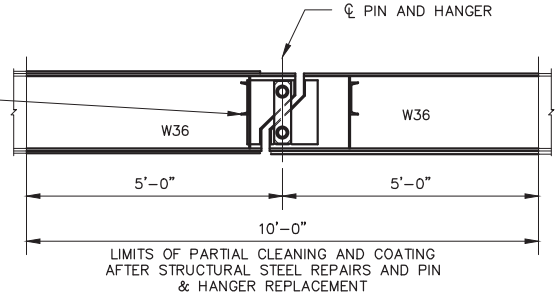
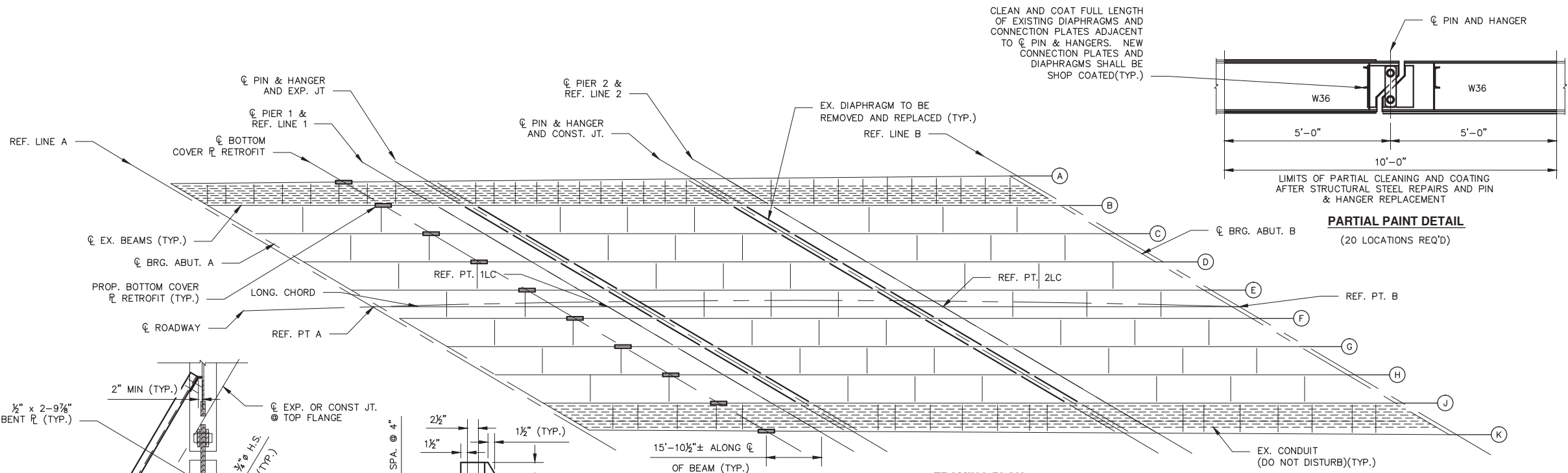
MISCELLANEOUS QUANTITIES INCLUDE ABUTMENT A PATCHING QUANTITIES FROM SHEET 44/54.



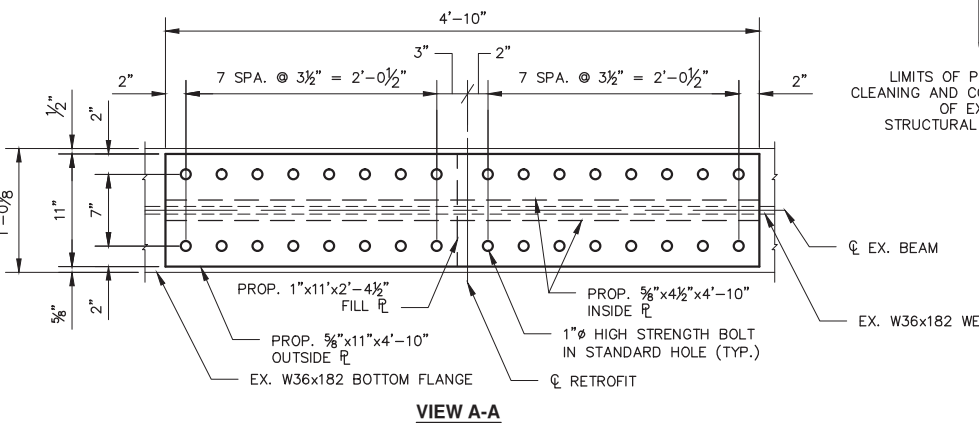
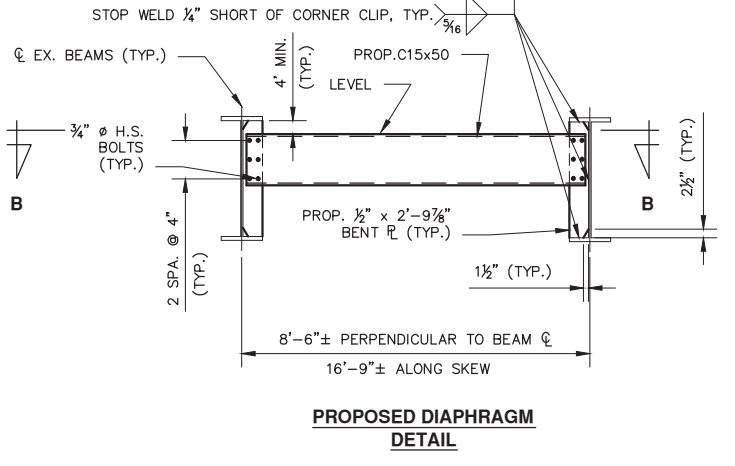
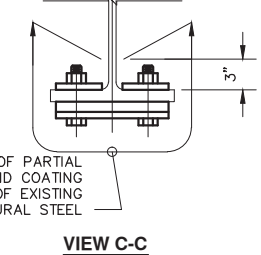
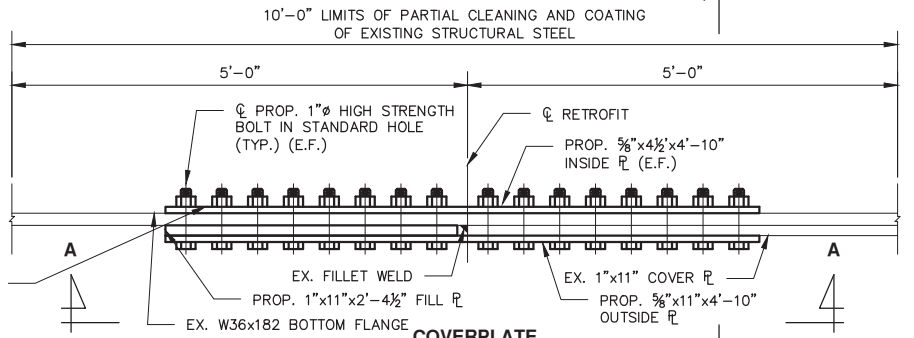
ABUTMENT B ELEVATION
(LOOKING EAST)

NOTES:

- DENOTES AREA REPAIRED WITH "Hand Chipping, Other Than Deck", "Patch, Forming", "Patching Conc. C-L", AND "Embedded Galvanic Anode"
 - TYP. DENOTES TYPICAL
 - EX. DENOTES EXISTING
 - CONST. DENOTES CONSTRUCTION
 - EXP. DENOTES EXPANSION
 - JT. DENOTES JOINT
 - BRG. DENOTES BEARING
 - REF. DENOTES REFERENCE
 - ABUT. DENOTES ABUTMENT
- NO AREAS OF DELAMINATIONS FOUND AT PIERS AT TIME OF INSPECTION.
- FORMS FOR LARGE PATCHES SHALL BE INSTALLED IN 2'-0" TO 4'-0" HIGH SECTIONS WITH THE TOP OF FORM NO MORE THAN 4'-0" ABOVE THE LEVEL OF CONCRETE AS THE POUR PROGRESSES.
- EMBEDDED GALVANIC ANODES SHALL BE INSTALLED IN ALL CONCRETE REPAIRS AT A MAXIMUM SPACING OF 2'-0".



MISCELLANEOUS QUANTITIES		
Amount	Unit	Description
3531	Lb	Structural Steel, Retrofit, Furn, Fab, and Erect, Modified
1	LS	Steel Structure, Cleaning, Partial, Type 4, (11069)
1	LS	Steel Structure, Coating, partial, Type 4, (11069)
1	LS	Field Repair of Damaged Coating (11069)
120	Ft	Protective Shield, Utility Pipe
554	Ft	Beam Plate, Seal Perimeter
26092	Lb	Structural Steel Diaphragms, Remove, Furnish, Fabricate, and Erect



NOTES:
 SEE SECTION 715 OF THE STANDARD SPECIFICATIONS FOR PROTECTION OF WORK AND ENVIRONMENT DURING THE BLAST CLEANING OF STRUCTURES.
 CONDUITS SHALL NOT BE CLEANED AND COATED.
 THE CONTRACTOR SHALL NOTIFY EACH UTILITY COMPANY A MINIMUM OF THREE FULL WORKING DAYS IN ADVANCE OF WORK IMPACTING THAT COMPANY'S CONDUITS OR FACILITIES.
 THE ESTIMATED AREA OF STRUCTURAL STEEL TO BE CLEANED IS 2465 SQUARE FEET.
 THE ESTIMATED AREA OF STRUCTURAL STEEL TO BE COATED IS 2465 SQUARE FEET.

STRUCTURAL STEEL SHALL BE COATED ACCORDING TO SECTION 715 AND 716 OF THE STANDARD SPECIFICATIONS. THE COLOR OF THE URETHANE PROTECTIVE COAT SHALL MATCH THE COLOR OF THE EXISTING STRUCTURAL STEEL COATING, OR AS APPROVED BY THE ENGINEER. THE URETHANE PROTECTIVE COAT SHALL BE HIGH GLOSS.
 FIELD CONNECTIONS SHALL BE BOLTED WITH 3/4" HIGH-STRENGTH BOLTS.
 STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270, GRADE 50, OR AASHTO M270, GRADE 50W. (AASHTO M270, GRADE 36, STEEL MAY BE USED IN LIEU OF THESE STEELS FOR BEARINGS, DIAPHRAGMS, AND CROSS FRAMES.)
 THE PLATE SURFACES OF THE MAIN GIRDER RETROFIT SPLICES, AND ALL OTHER BOLTED CONNECTIONS, UNLESS OTHERWISE NOTED, SHALL BE COATED ACCORDING TO SECTION 716.03.B.2.a FOR SLIP CRITICAL CONNECTIONS. COATED CONNECTIONS (PAYING SURFACES) SHALL MEET THE MINIMUM CURE TIMES ACCORDING TO THE PRODUCT QUALIFICATION TEST AND SECTION 716.02 BEFORE CONNECTION ASSEMBLY.
 THIS BRIDGE IS COATED WITH A ZINC BASED COATING SYSTEM.
 SEALANT SHALL BE APPLIED AROUND THE PERIMETER OF BOLTED END DIAPHRAGM CONNECTION PLATES AND ANGLES.
 THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO AVOID OVERSPRAY ON ADJACENT SUBSTRUCTURE AND SUPERSTRUCTURE CONCRETE SURFACES AND ON SIGNS ATTACHED TO THE STRUCTURE.

THIS BRIDGE WAS COATED WITH THE FOLLOWING PAINT SYSTEM:
 MANUFACTURER: _____
 PRIMER: _____
 INTERMEDIATE(S): _____
 TOP COAT: _____

TYP. DENOTES TYPICAL
 EX. DENOTES EXISTING
 PROP. DENOTES PROPOSED
 P. DENOTES PLATE
 SPA. DENOTES SPACES
 CONST. DENOTES CONSTRUCTION
 EXP. DENOTES EXPANSION
 JT. DENOTES JOINT
 BRG. DENOTES BEARING
 REF. DENOTES REFERENCE
 REQ'D DENOTES REQUIRED
 PT. DENOTES POINT
 E.F. DENOTES EACH FACE
 H.S. DENOTES HIGH STRENGTH

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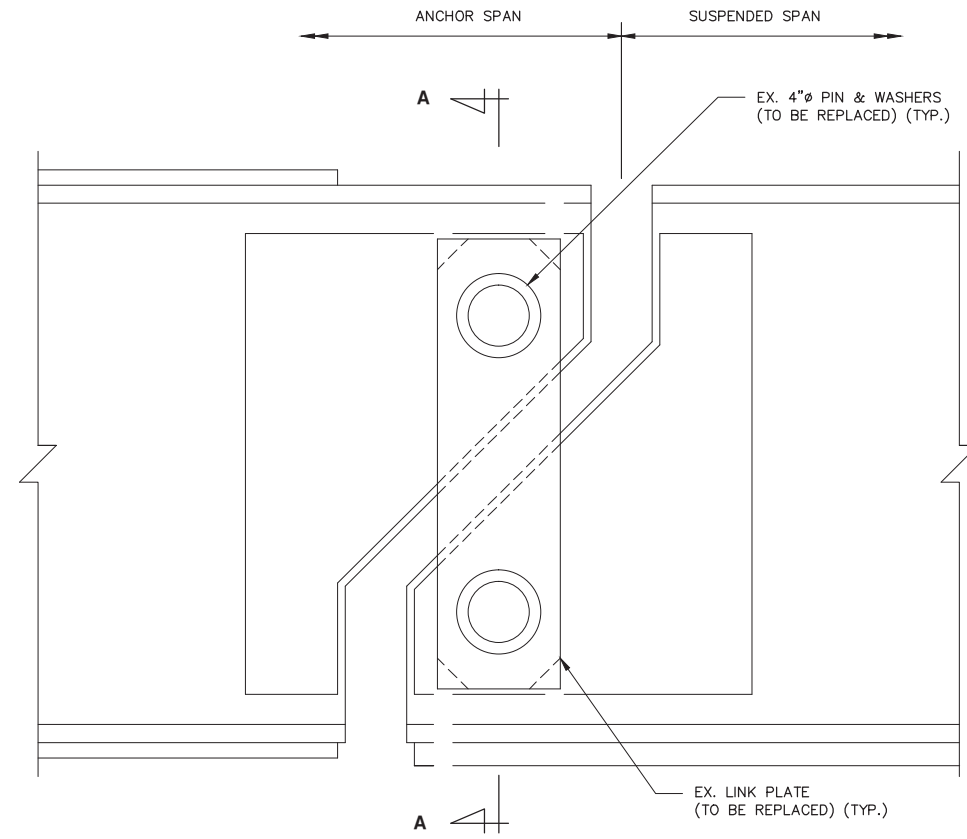
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11-21-14	DATE	11-21-14	APR	CHECKED

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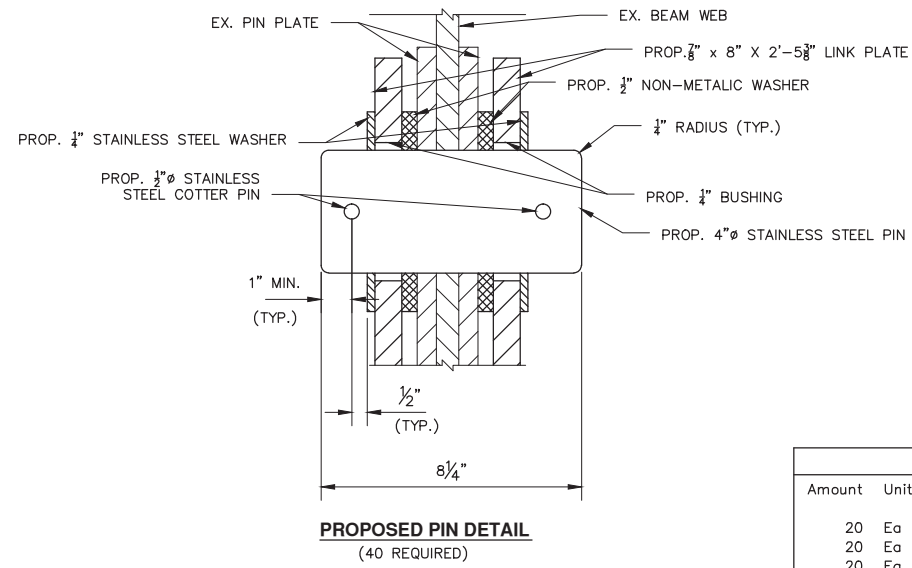


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 FULLER RD OVER AMTRAK RAILROAD
 SUPERSTRUCTURE REHABILITATION DETAILS

PROFILE: N/A
 SCALE: NONE
 DRAWING No. 2014-024-FR17
 SHEET No. 46 OF 54

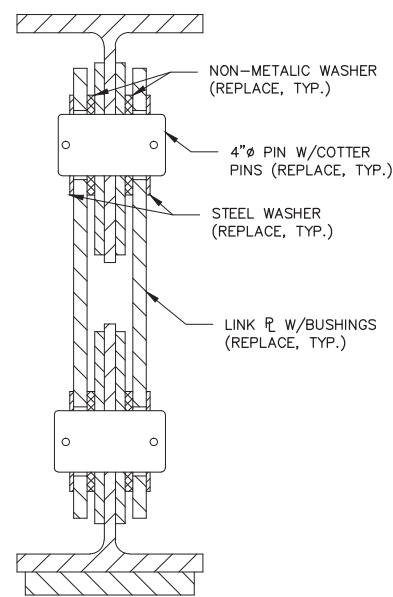


ELEVATION AT PIN

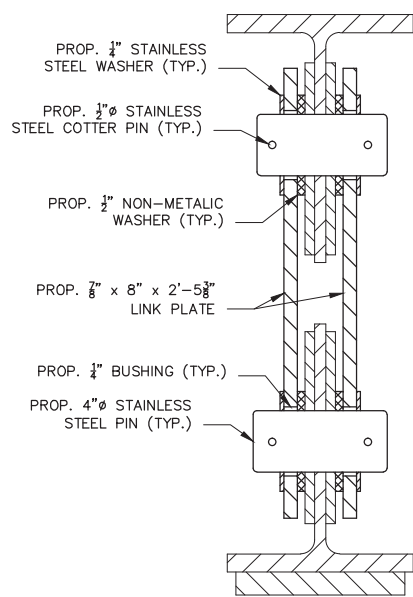


PROPOSED PIN DETAIL
(40 REQUIRED)

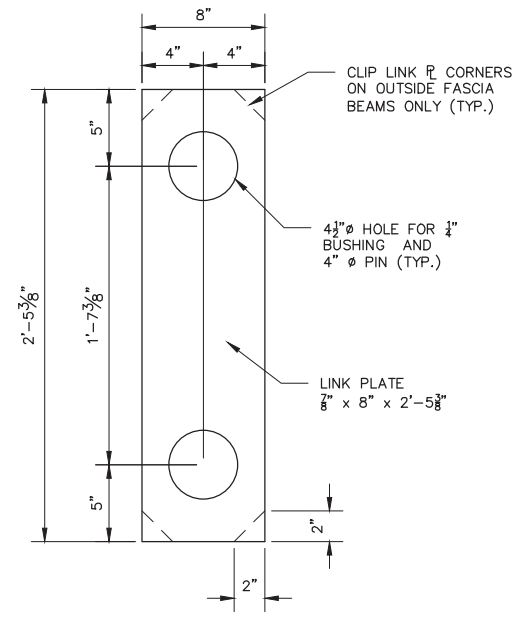
MISCELLANEOUS QUANTITIES		
Amount	Unit	Description
20	Ea	Support, Suspension, Temp
20	Ea	Hanger Assembly, Field Measurement
20	Ea	Hanger Assembly, Rem and Erect
3794	Lb	Structural Steel, Furn and Fab, Pin and Hanger
80	Ea	Bushing



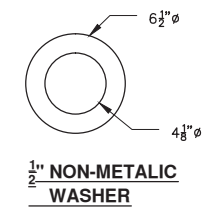
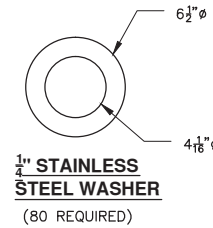
SECTION A-A
(EXISTING)



SECTION A-A
(PROPOSED)



LINK PLATE
(40 REQUIRED)



1/2\"/>

THE AREA WITHIN 5 FEET EACH SIDE OF THE CENTERLINE OF THE HANGER ASSEMBLY SHALL BE COATED PRIOR TO INSTALLING THE NEW LINK PLATES AND PINS. PROPOSED LINK PLATES SHALL BE SHOP COATED

THE PROTECTION OF WORK AND ENVIRONMENT DURING THE BLAST CLEANING OF WEBS BEHIND AND AROUND HANGER ASSEMBLIES SHALL BE ACCORDING TO SUBSECTION 715 OF THE STANDARD SPECIFICATIONS (INCLUDED IN THE BID ITEM "Hanger Assembly, Rem and Erect".)

WELDING ON EXISTING BEAMS WILL NOT BE PERMITTED. (EXCEPT AS NOTED)

REV.	DATE	DESCRIPTION
11-21-14	DATE	DRAWN
APM	CHECKED	

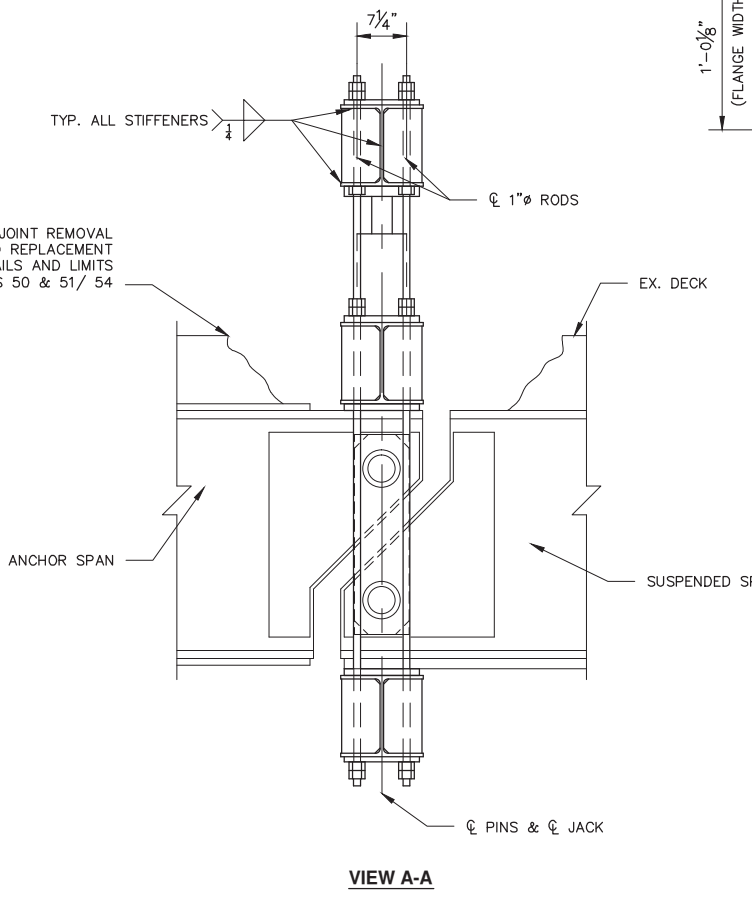
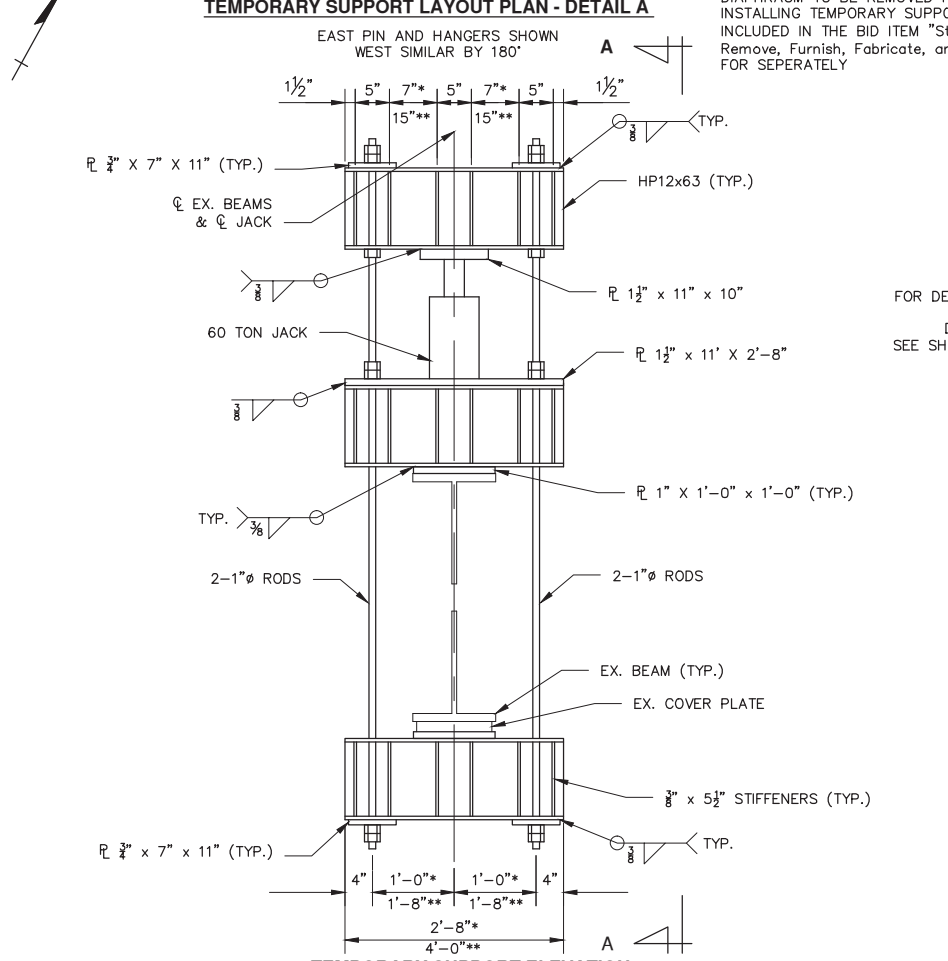
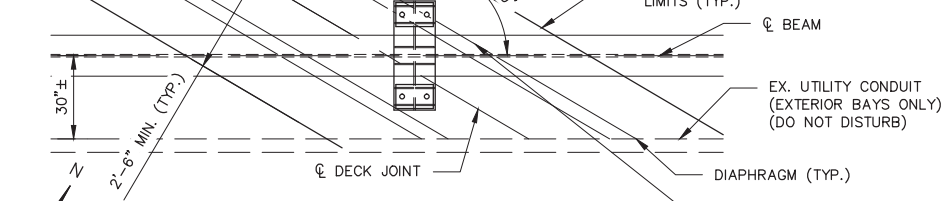
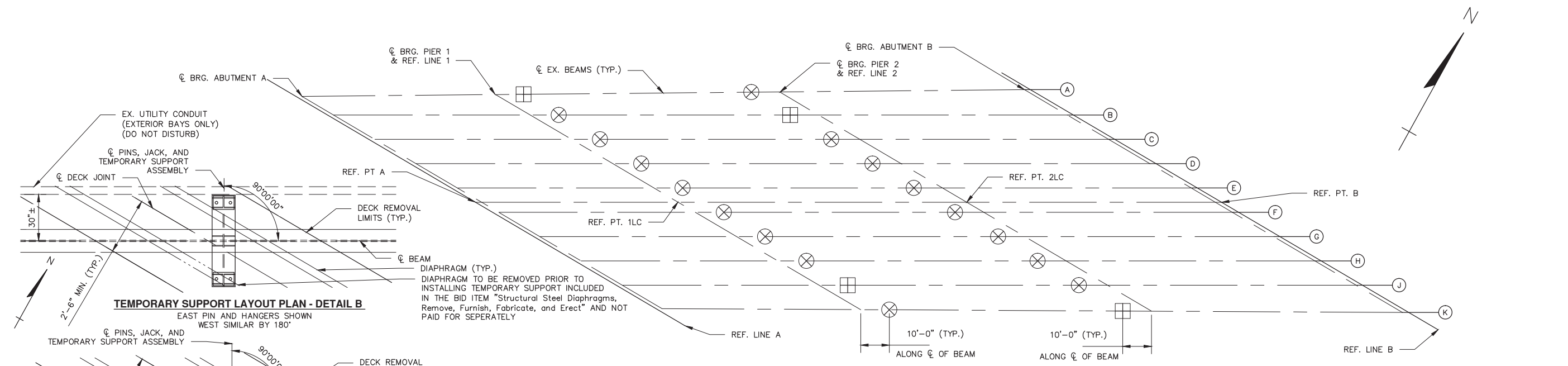
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	ORIGINAL ISSUE			

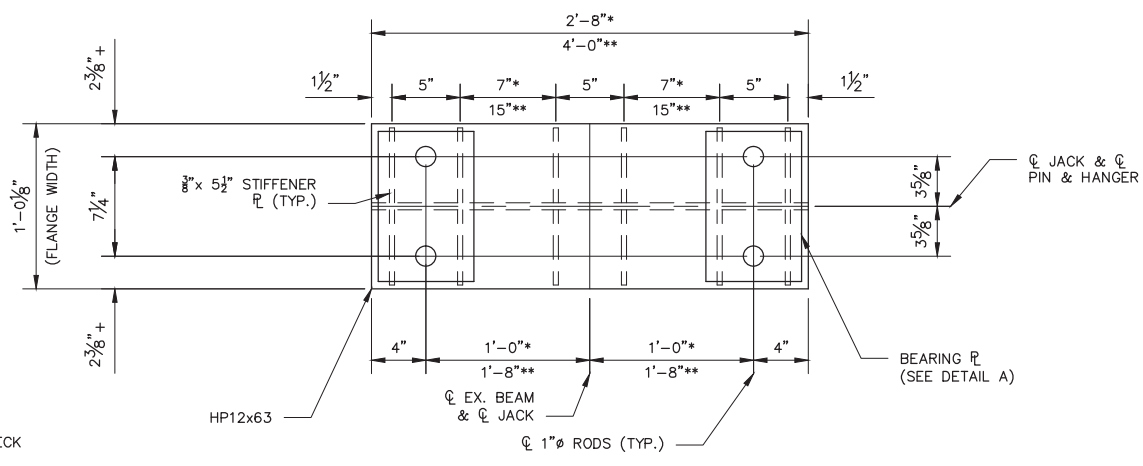
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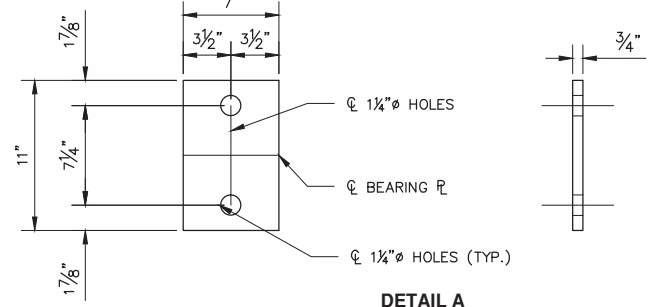
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FULLER ROAD & MAIDEN LANE
BRIDGES REHABILITATION PROJECT
FULLER RD OVER AMTRAK RAILROAD
SUPERSTRUCTURE REHABILITATION DETAILS



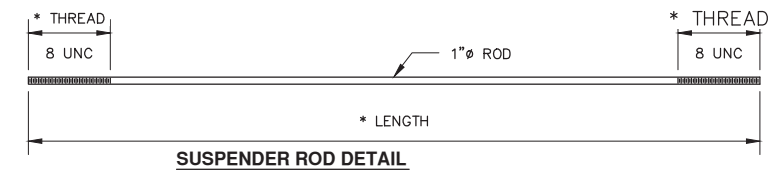
- ⊗ - DETAIL A TEMPORARY SUPPORT LOCATION
- ⊕ - DETAIL B TEMPORARY SUPPORT LOCATION



TEMPORARY SUPPORT PLAN
* DENOTES DIMENSION FOR DETAIL A
** DENOTES DIMENSION FOR DETAIL B



DETAIL A

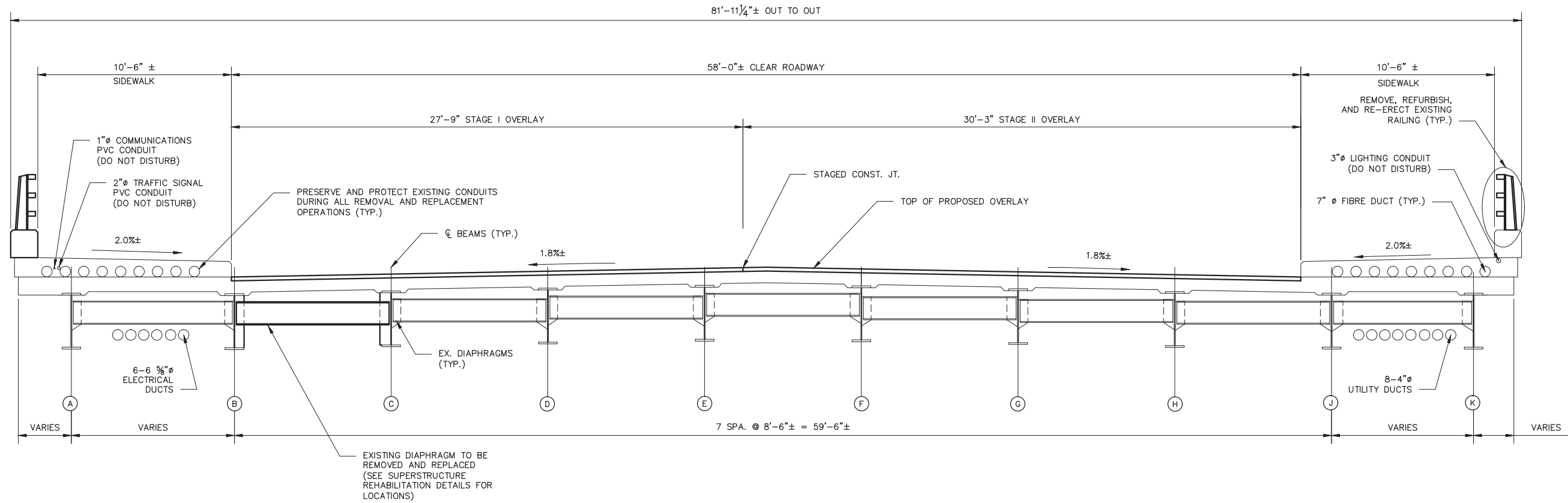


SUSPENDER ROD DETAIL

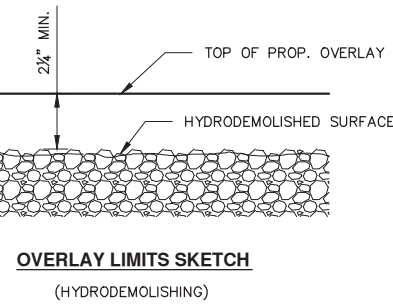
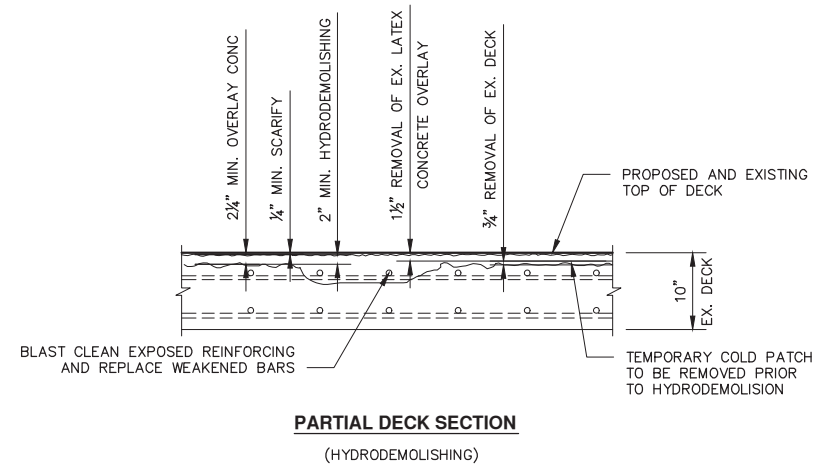
* CONTRACTOR SHALL DETERMINE ROD AND THREAD LENGTH TO FIT SITUATION
4 REQUIRED PER ASSEMBLY W/7 HEAVY HEX NUTS & 4 HARDENED WASHERS PER ROD

NOTES
1 1/4" DRILLED HOLES IN ALL HP12x63 SECTIONS AND PLATES.
NUTS ARE USED AS SHIMS.
STOP WELDS 1/4" SHORT OF CORNER CLIPS, WRAP WELD AROUND OUTSIDE EDGE AT STIFFENERS.
THE PERMISSIBLE JACK CAPACITY SHALL BE LIMITED TO 60 TONS.
ALTERNATE DESIGNS OF THE TEMPORARY SUPPORT SHALL BE BASED ON LOADS AS FOLLOWS: 100 KIPS VERTICAL BEAM LOAD

TEMPORARY SUPPORT ELEVATION
* DENOTES DIMENSION FOR DETAIL A
** DENOTES DIMENSION FOR DETAIL B



TRANSVERSE DECK SECTION
(LOOKING EAST)



OVERLAY LIMITS SKETCH
(HYDRODEMOLISHING)

NOTES:

TYP. DENOTES TYPICAL
 EX. DENOTES EXISTING
 CONST. DENOTES CONSTRUCTION
 EXP. DENOTES EXPANSION
 JT. DENOTES JOINT
 BRG. DENOTES BEARING
 REF. DENOTES REFERENCE
 REQ'D DENOTES REQUIRED
 REINF. DENOTES REINFORCEMENT

STEEL REINFORCEMENT EPOXY COATING SHALL BE REPAIRED ACCORDING TO THE STANDARD SPECIFICATIONS

THE VOLUME OF "Concrete, Silica Fume Modified" IS BASED ON THE OVERLAY AND AN ESTIMATED QUANTITY TO REPLACE UNSOUND CONCRETE AND TO MAKE ADJUSTMENTS AS DETERMINED BY THE ENGINEER.

EXPANSION JOINT REPLACEMENT SHALL EXTEND ACROSS SIDEWALKS.

THE CONTRACTOR SHALL REMOVE AND REPLACE ONLY THAT PORTION OF THE BARRIER CONCRETE THAT IS NECESSARY FOR INSTALLATION OF THE DECK JOINT

THE BID ITEM "Deck Joint, Rem" INCLUDES HAND CHIPPING WITHIN LIMITS REQUIRED FOR REMOVAL.

BEFORE OVERLAYING, SOUND CONCRETE TO DETERMINE WHETHER 2'-6" REMOVAL AT EITHER SIDE OF TRANSVERSE JOINTS WILL BE ADEQUATE. INCREASE THE REMOVAL LIMITS IF NECESSARY.

THE ACTUAL QUANTITY OF "Conc, Silica Fume Modified" PLACED ON THE DECK WAS _____ CUBIC YARDS.

BRIDGE OVERLAY CROSS SLOPE SHALL BE PLACED TO MATCH EXISTING SLOPE.

THE ENGINEER HAS PRE-DETERMINED THAT THERE ARE NO ACCEPTABLE LOCATIONS WITHIN THE VICINITY OF THE BRIDGE TO DISCHARGE HYDRODEMOLITION RUNOFF WATER. IT SHALL BE NOTED THAT THE ENGINEER WILL NOT GRANT APPROVALS REQUIRED BY SECTIONS F.2 AND F.3 OF THE SPECIAL PROVISION "MANAGING HYDRODEMOLITION RUNOFF WATER" REQUIRED TO DISCHARGE THE HYDRODEMOLITION RUNOFF WATER IN THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BASE HIS BID ON DISPOSING OF THE HYDRODEMOLITION RUNOFF WATER AS REQUIRED BY SECTION G OF THE SPECIAL PROVISION.

THE EXISTING DECK HAS A LATEX MODIFIED CONCRETE SURFACE.

FALSE DECKING SHALL INCLUDE THE AREA BOUNDED BY REFERENCE LINES 1 AND 2 AND OUTSIDE FLANGE FASCIA OF BEAMS A AND K.

LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03 J. OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BID ITEM FOR "Conc, Silica Fume Modified".

CONCRETE TRUCKS AND OTHER HEAVY EQUIPMENT SHALL NOT BE ALLOWED ON THE DECK WHEN REINFORCING STEEL IS TIED IN PLACE AND EXPOSED.

MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE. ALL MEASURES SHALL BE EFFECTIVE.

THE PROPOSED TOP OF OVERLAY ELEVATIONS SHALL MATCH EXISTING TOP OF DECK ELEVATIONS AT ALL LOCATIONS. THE CONTRACTOR SHALL SURVEY DECK ELEVATIONS AT THE CURB LINES AND AT THE LOCATION OF THE STAGE CONSTRUCTION JOINT AT MAXIMUM 25' INTERVALS. THESE ELEVATIONS SHALL BE RECORDED AND SUBMITTED TO THE ENGINEER PRIOR TO BEGINNING ANY DECK REMOVAL OPERATIONS, AND SHALL BE USED TO SET THE FINISHING MACHINE PRIOR TO PLACING THE OVERLAY CONCRETE. DOCUMENTATION OF EXISTING DECK ELEVATIONS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RESPECTIVE ITEMS OF WORK

NCI NORTHWEST CONSULTANTS, INC.



REV.	DESCRIPTION	DATE	APPROVED	CHECKED

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 FULLER RD OVER AMTRAK RAILROAD
 DECK REHABILITATION DETAILS

SCALE NONE
 PROFILE: N/A
 DRAWING No. 2014-024-FR20



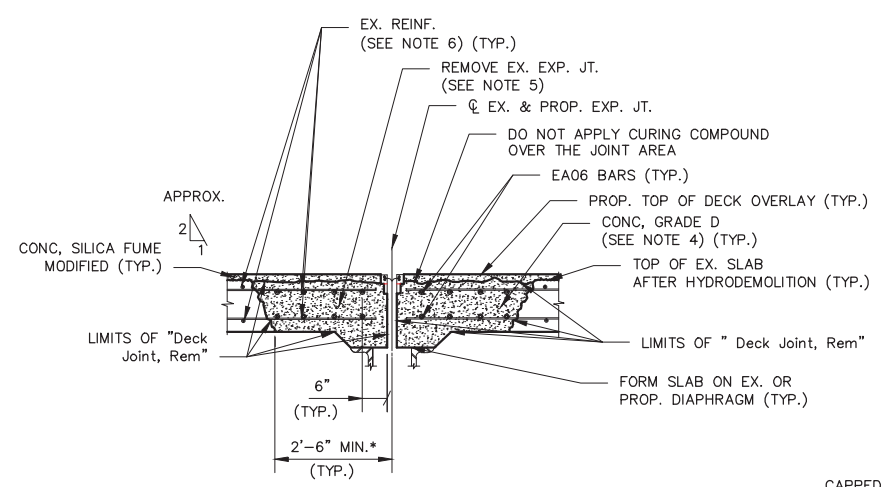
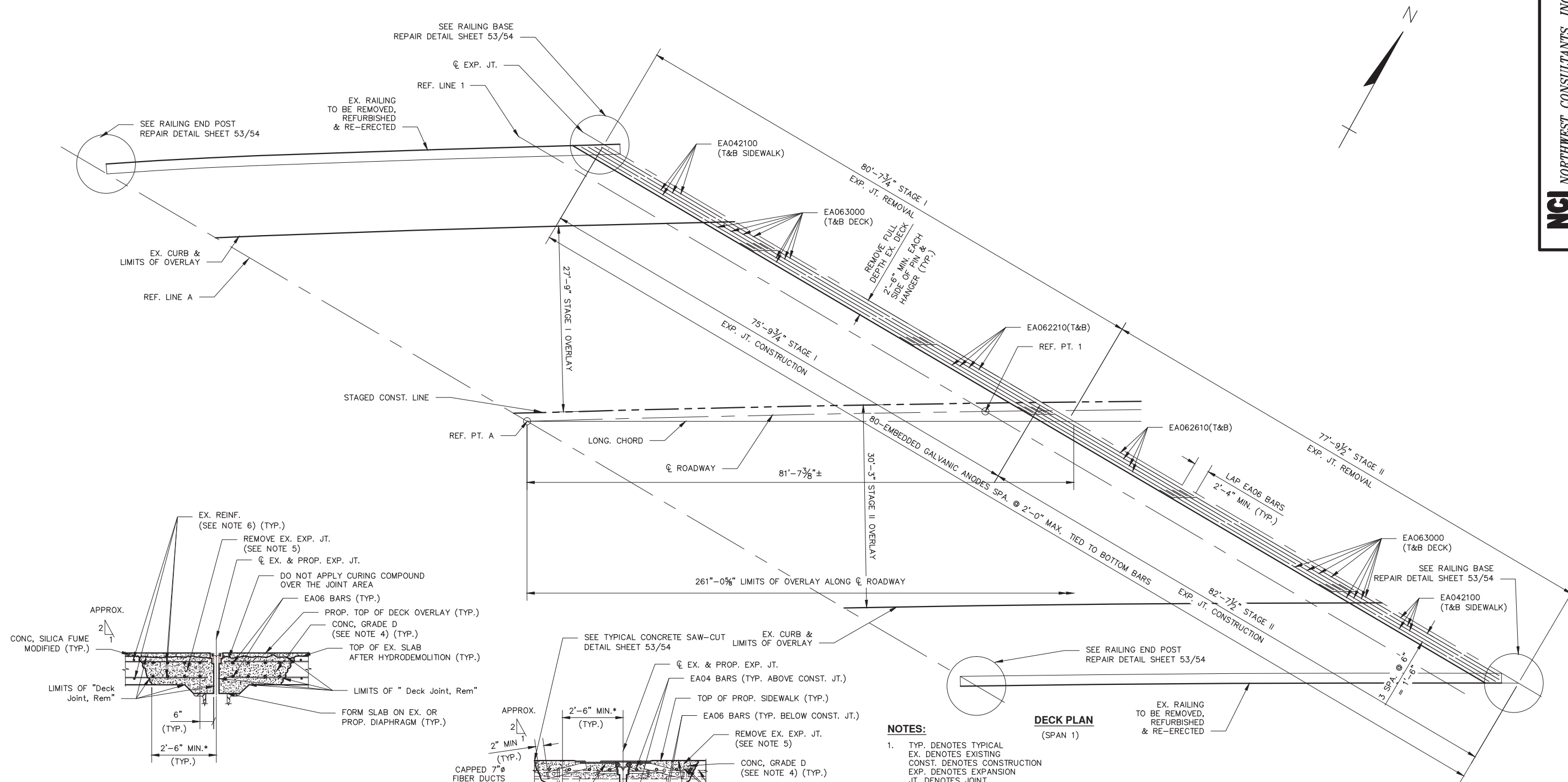
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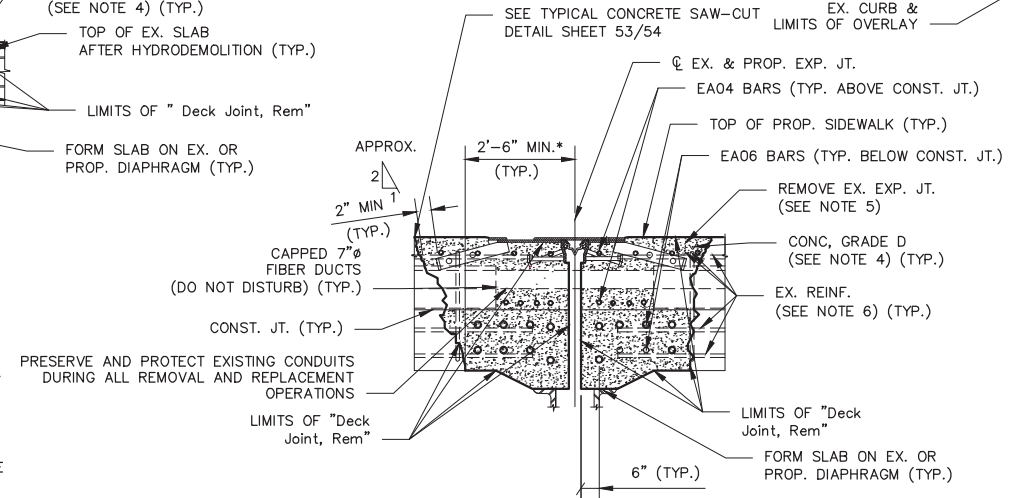


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
FULLER ROAD & MAIDEN LANE
BRIDGES REHABILITATION PROJECT
FULLER RD OVER AMTRAK RAILROAD
DECK REHABILITATION DETAILS

SCALE NONE
PROFILE: N/A
DRAWING No. 2014-024-FR21



TYPICAL DECK EXPANSION JOINT REPAIR SECTION
(BEFORE OVERLAYING, SOUND CONCRETE TO DETERMINE WHETHER 2'-6" REMOVAL AT EITHER SIDE OF TRANSVERSE JOINTS WILL BE ADEQUATE. INCREASE THE REMOVAL LIMITS IF NECESSARY)
* ENGINEER TO VERIFY AND APPROVE LIMITS PRIOR TO REMOVAL OF THE DECK JOINT. ANY ADDITIONAL REMOVAL WITHOUT THE ENGINEER'S APPROVAL SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER.



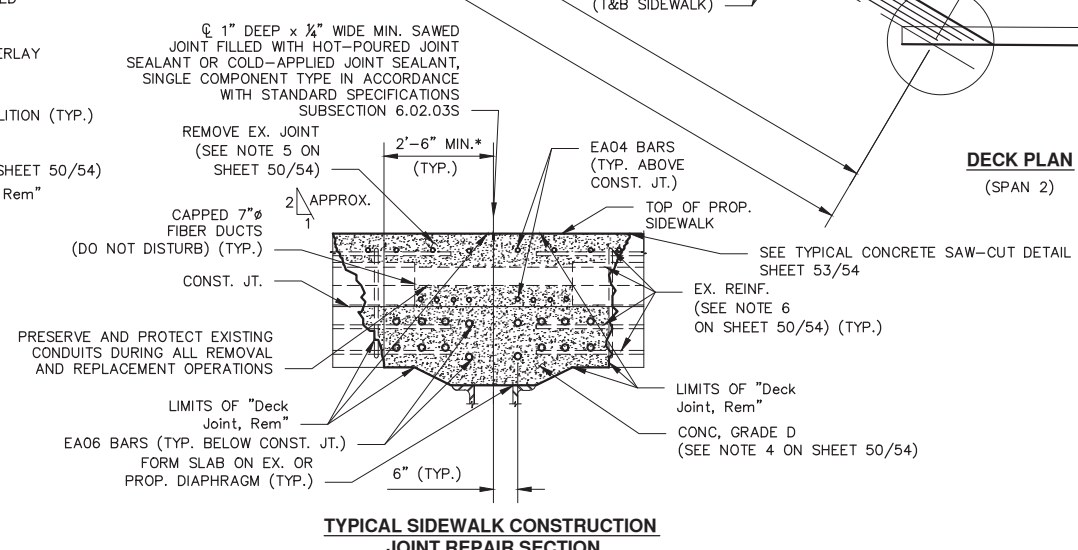
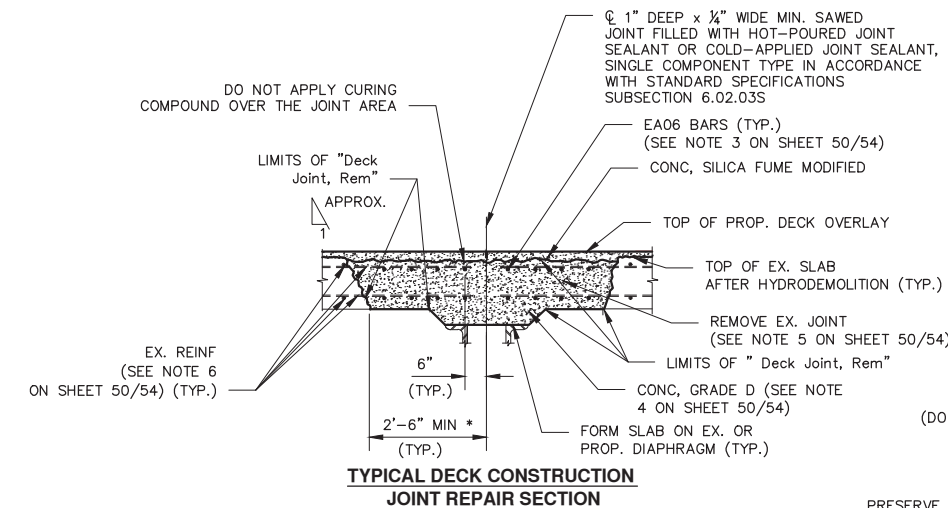
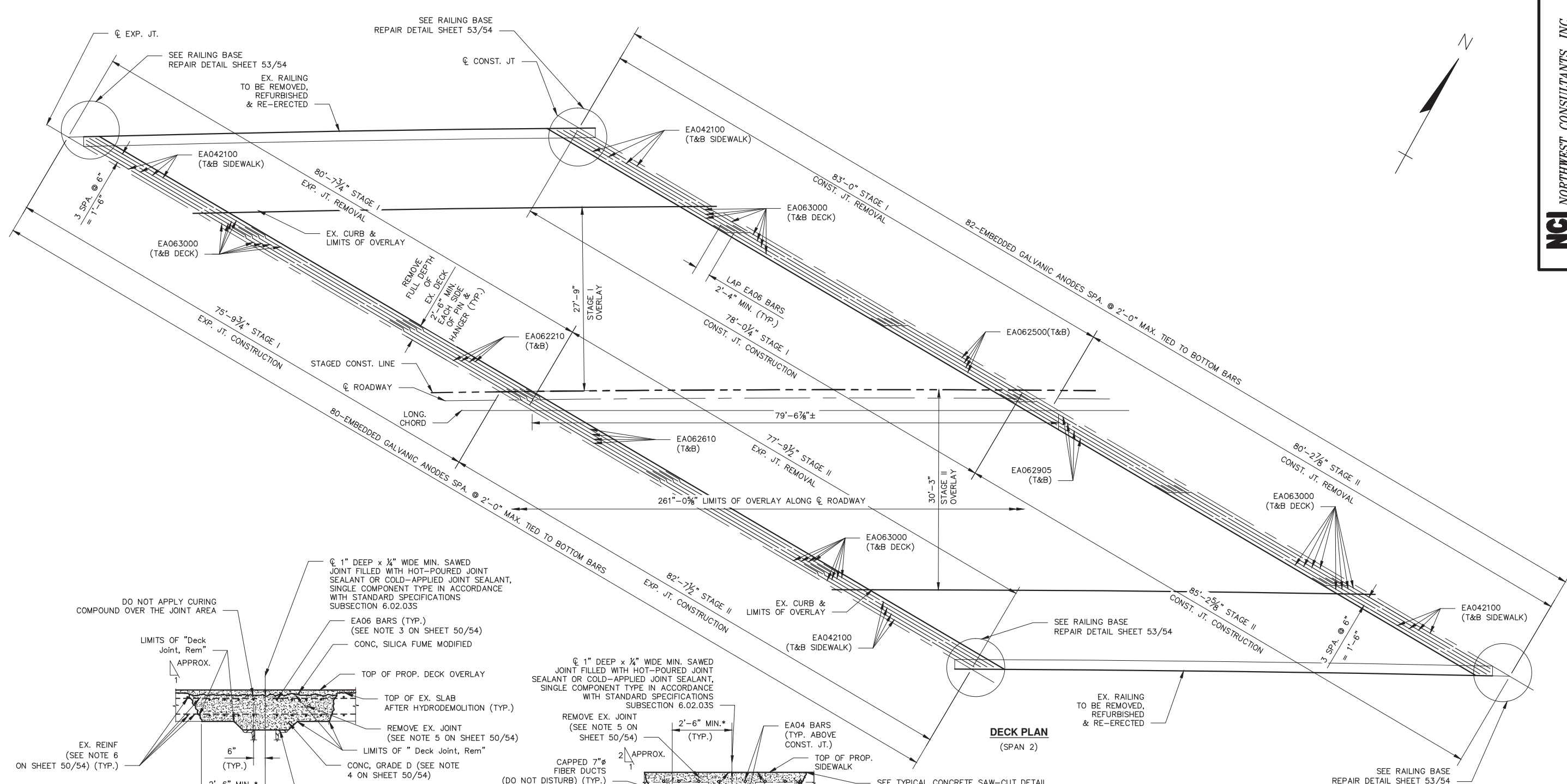
TYPICAL SIDEWALK EXPANSION JOINT REPAIR SECTION
(BEFORE OVERLAYING, SOUND CONCRETE TO DETERMINE WHETHER 2'-6" REMOVAL AT EITHER SIDE OF TRANSVERSE JOINTS WILL BE ADEQUATE. INCREASE THE REMOVAL LIMITS IF NECESSARY)
* ENGINEER TO VERIFY AND APPROVE LIMITS PRIOR TO REMOVAL OF THE DECK JOINT. ANY ADDITIONAL REMOVAL WITHOUT THE ENGINEER'S APPROVAL SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER.

NOTES:

1. TYP. DENOTES TYPICAL
EX. DENOTES EXISTING
CONST. DENOTES CONSTRUCTION
EXP. DENOTES EXPANSION
JT. DENOTES JOINT
LONG. DENOTES LONGITUDINAL
REF. DENOTES REFERENCE
PROP. DENOTES PROPOSED
MIN. DENOTES MINIMUM
T&B DENOTES TOP AND BOTTOM
TRANS. DENOTES TRANSVERSE
REINF. DENOTES REINFORCEMENT
REQ'D DENOTES REQUIRED
VAR. DENOTES VARYING
APPROX. DENOTES APPROXIMATE
MAX. DENOTES MAXIMUM
2. STEEL REINFORCEMENT EPOXY COATING SHALL BE REPAIRED ACCORDING TO THE STANDARD SPECIFICATIONS
3. REINFORCEMENT STEEL BARS LABELED EA04 AND EA06 PLACED PARALLEL TO SKEW SHALL BE REPLACED AS SHOWN, AND PAID FOR AS "Reinforcement, Steel, Epoxy Coated".
4. CONC. SILICA FUME MODIFIED MAY BE SUBSTITUTED FOR CONC. GRADE D, BUT WILL BE PAID FOR AS "Conc, Grade D". COST OF FORMING IS INCLUDED IN THE BID ITEM "Conc, Grade D"
5. THE BID ITEM "Deck Joint, Rem" INCLUDES HAND CHIPPING WITHIN LIMITS REQUIRED FOR REMOVAL OF THE EXPANSION JOINT AND INSTALLATION OF THE TEMPORARY SUPPORTS.
6. EXPOSED EXISTING LONGITUDINAL AND TRANSVERSE REINFORCEMENT SHALL BE LEFT INTACT AND BLAST CLEANED OR REPLACED AT THE DIRECTION OF THE ENGINEER.
7. THE CONTRACTOR SHALL REMOVE AND REPLACE ONLY THAT PORTION OF THE BARRIER THAT IS NECESSARY FOR INSTALLATION OF THE DECK JOINT. SEE RAILING BASE REPAIR DETAIL ON SHEET 53/54 FOR DETAILS.
8. DECK REHABILITATION QUANTITIES ARE INCLUDED WITH MISCELLANEOUS QUANTITIES ON SHEET 52/54.

DECK PLAN
(SPAN 1)

EX. RAILING TO BE REMOVED, REFURBISHED & RE-ERECTED



DECK PLAN
(SPAN 2)

NCI NORTHWEST CONSULTANTS, INC.

<p>Know what's below. Call before you dig.</p>	<p>APR 11-21-14 DATE</p> <p>PDF DRAWN DESCRIPTION</p> <p>REV.</p>
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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 FULLER ROAD & MAIDEN LANE
 BRIDGES REHABILITATION PROJECT
 FULLER RD OVER AMTRAK RAILROAD
 DECK REHABILITATION DETAILS

SCALE NONE
 PROFILE: N/A
 DRAWING No. 2014-024-FR22
 SHEET No. 51 OF 54



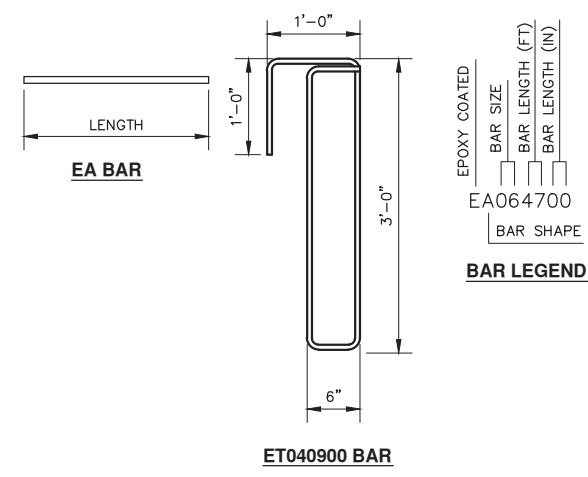
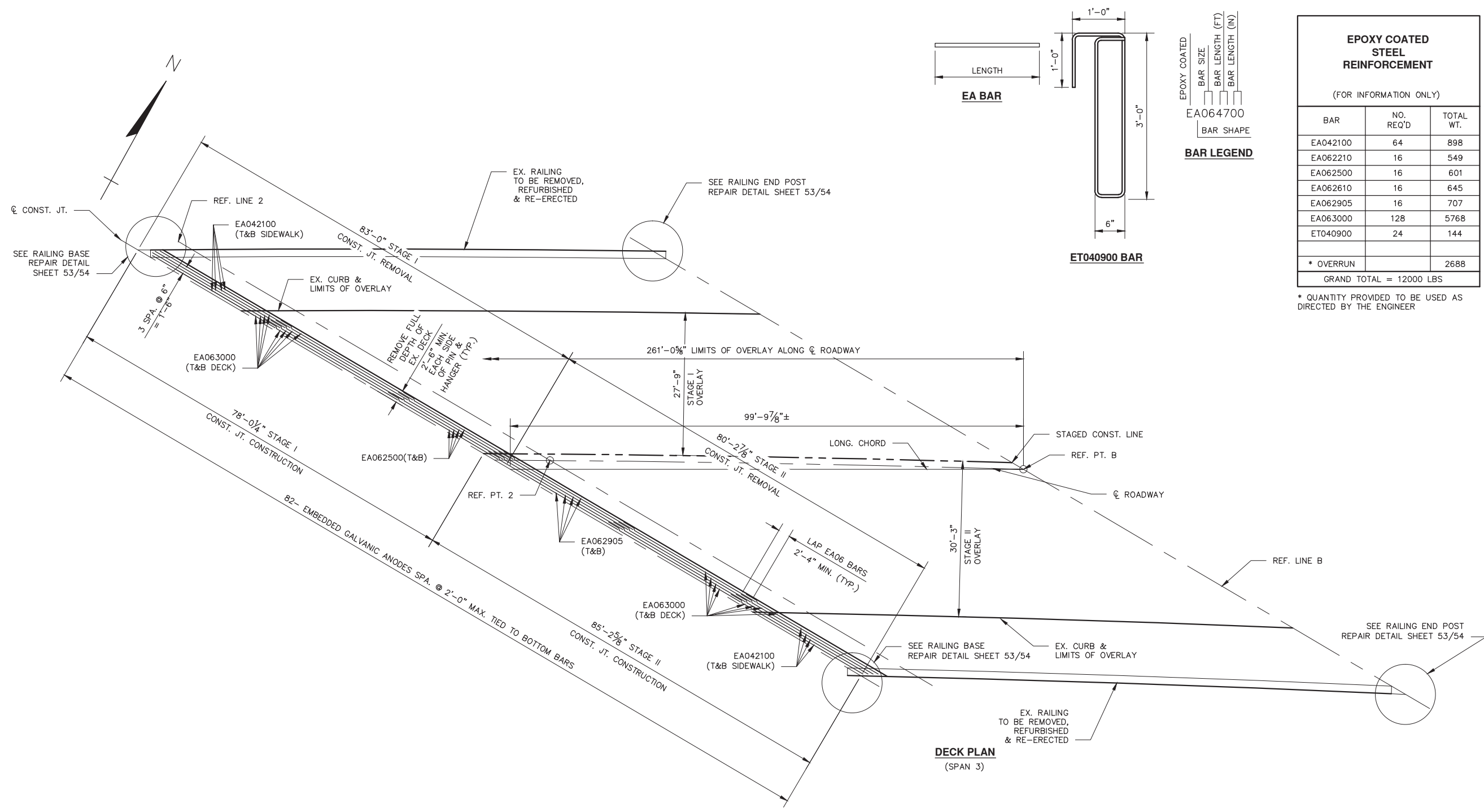
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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
FULLER ROAD & MAIDEN LANE
BRIDGES REHABILITATION PROJECT
FULLER RD OVER AMTRAK RAILROAD
DECK REHABILITATION DETAILS

SCALE NONE
PROFILE: N/A
DRAWING No. 2014-024-FR23



EPOXY COATED STEEL REINFORCEMENT

(FOR INFORMATION ONLY)

BAR	NO. REQ'D	TOTAL WT.
EA042100	64	898
EA062210	16	549
EA062500	16	601
EA062610	16	645
EA062905	16	707
EA063000	128	5768
ET040900	24	144
* OVERRUN		2688
GRAND TOTAL =		12000 LBS

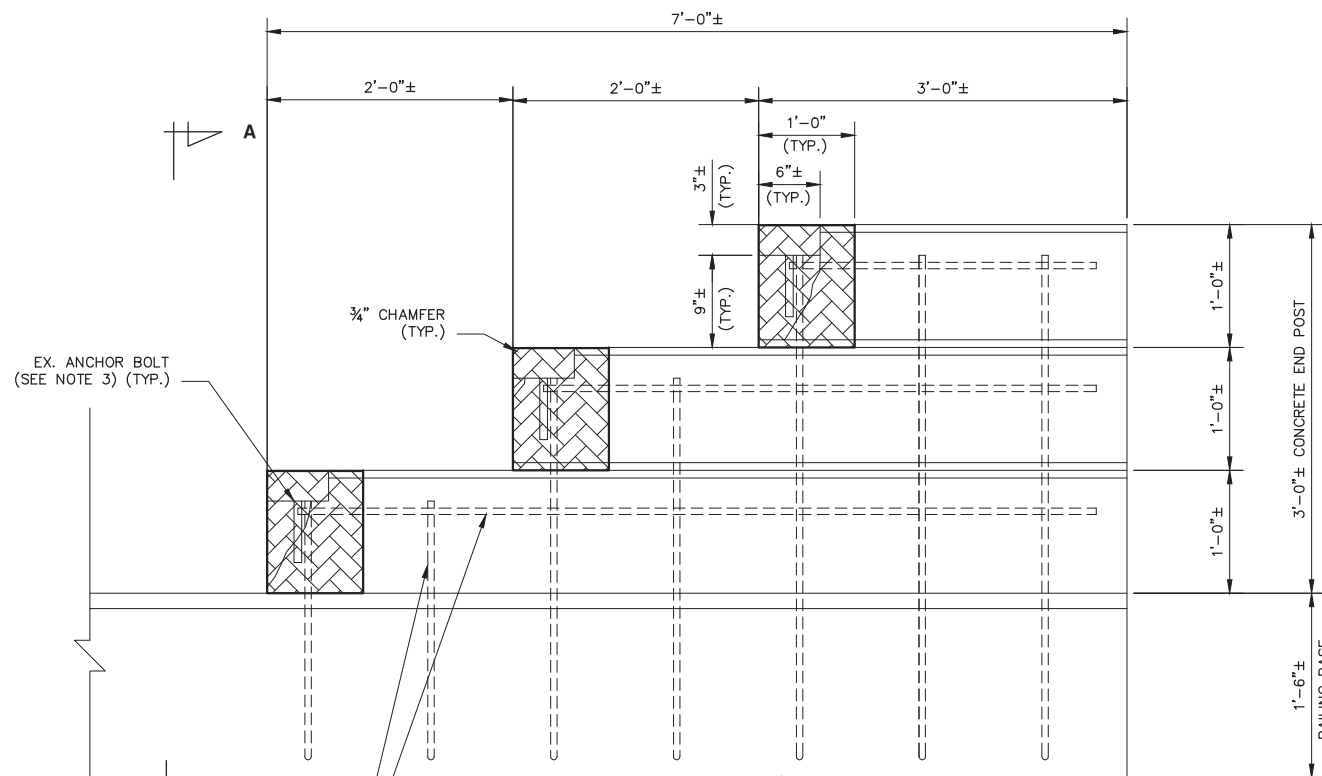
* QUANTITY PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER

MISCELLANEOUS QUANTITIES

Amount	Unit	Description
82	Cyd	***Conc. Grade D
7672	Sft	False Decking
12000	Lb	***Reinforcement, Steel, Epoxy Coated
1683	Syd	Scarifying
1683	Syd	Bridge Deck Surface Construction
105	Cyd	Conc. Silica Fume Modified
322	Ft	Deck Joint, Rem
1683	Syd	Hydrodemolition, First Pass
169	Syd	Hydrodemolition, Second Pass
324	Ea	Embedded Galvanic Anode
513	Ft	Bridge Railing, Cleaning and Coating

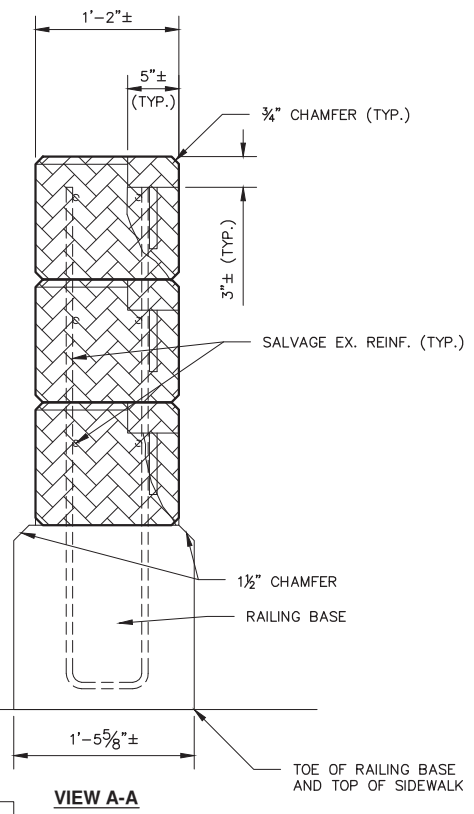
*** INCLUDES QUANTITY FOR RAILING BASE REPAIR DETAIL ON SHEET 53/54.

MISCELLANEOUS QUANTITIES INCLUDE DECK REHABILITATION QUANTITIES FROM SHEET 50/54 & 51/54

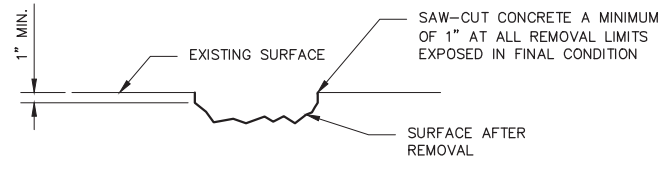


RAILING END POST REPAIR DETAIL

(RAILING TUBES & SUPPORT NOT SHOWN, GUARDRAIL ANCHORAGE NOT SHOWN)
4 REQ'D



VIEW A-A



TYPICAL SAW-CUT DETAIL

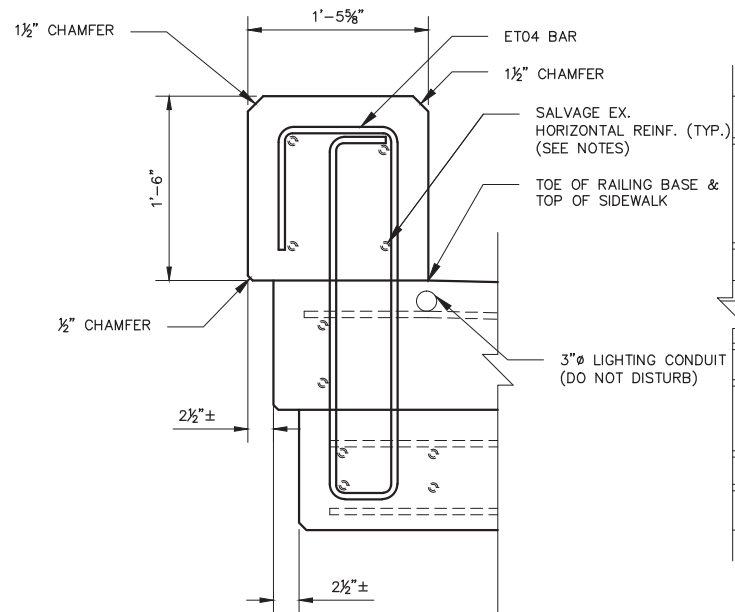
NOTES:

- 1. EXISTING REINFORCEMENT SHALL BE LEFT INTACT AND BLAST CLEANED OR REPLACED AT THE DIRECTION OF THE ENGINEER.
- 2. STEEL REINFORCEMENT EPOXY COATING SHALL BE REPAIRED ACCORDING TO THE STANDARD SPECIFICATIONS.
- 3. EXISTING RAILING ANCHOR BOLTS ARE TO BE REMOVED AND REPLACED BY ADHESIVE ANCHORING AFTER CONCRETE REPAIRS. FOR ADDITIONAL INFORMATION SEE SPECIAL PROVISION FOR "BRIDGE RAILING, CLEANING AND COATING".

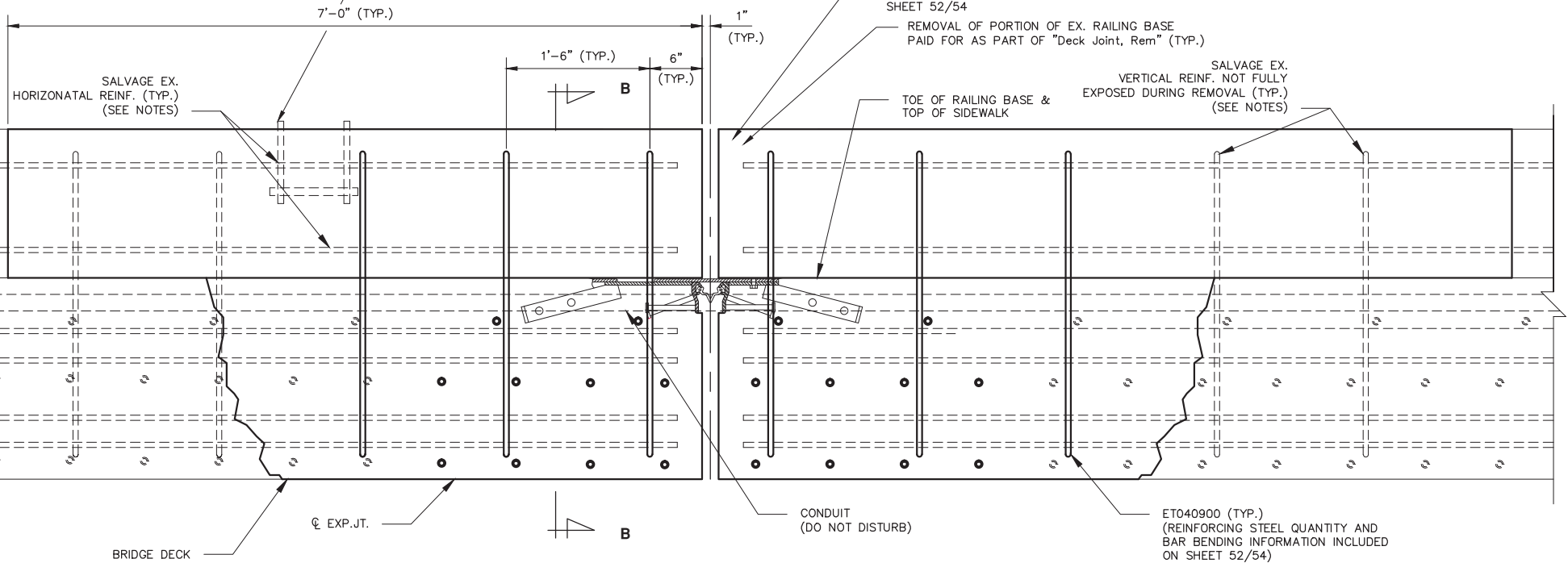
MISCELLANEOUS QUANTITIES

Amount	Unit	Description
14	Cft	Hand Chipping, Other Than Deck
39	Sft	Patch, Forming
1	Cyd	Patching Conc, C-L
**8	Ea	Adhesive Anchoring of Horizontal Bar, 1/2 inch
**4	Ea	Adhesive Anchoring of Vertical Bar, 3/4 inch

** QUANTITY PROVIDED TO BE USED AT THE DIRECTION OF THE ENGINEER



SECTION B-B



RAILING BASE REPAIR DETAIL

(RAILING TUBES NOT SHOWN) 4 REQ'D

NCI NORTHWEST CONSULTANTS, INC.



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FULLER ROAD & MAIDEN LANE
BRIDGES REHABILITATION PROJECT
FULLER RD OVER AMTRAK RAILROAD
RAILING REHABILITATION DETAILS

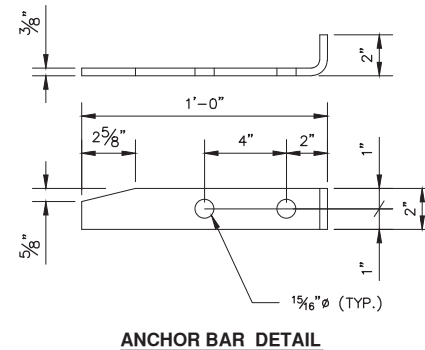
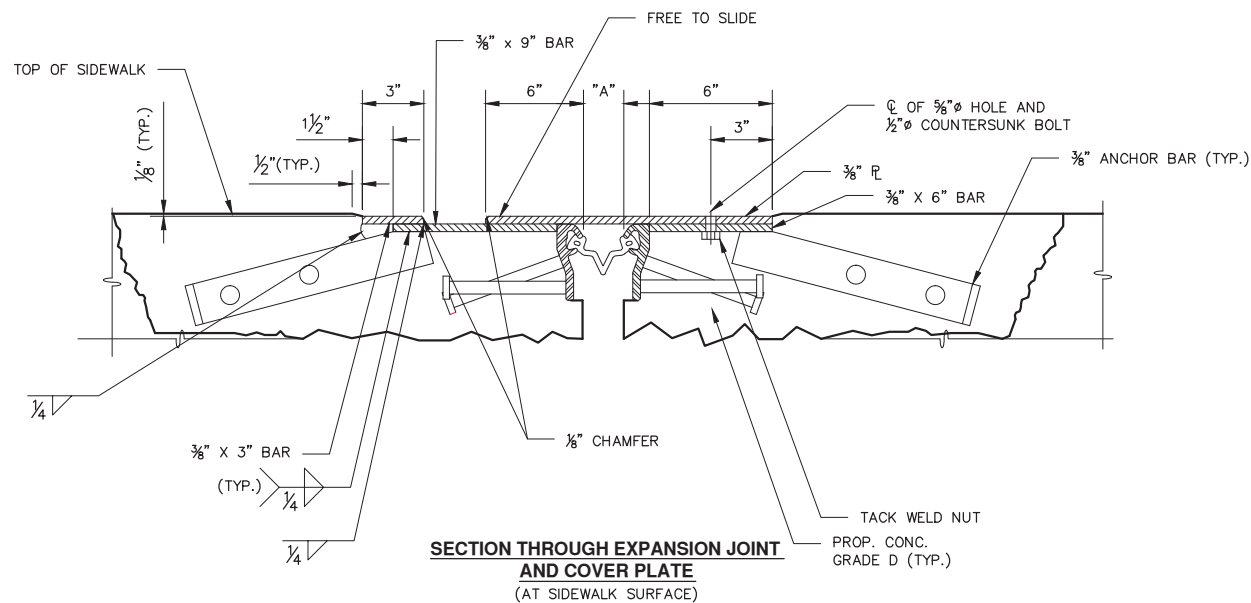
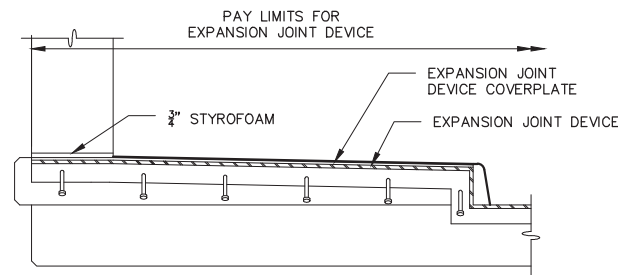
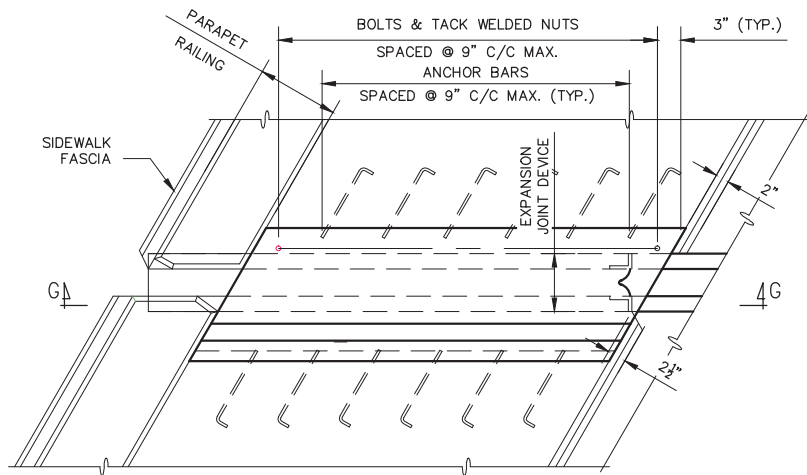
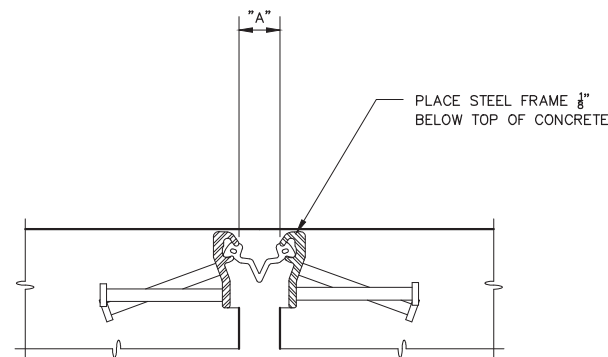


TABLE "A"

TEMPERATURE (F°)	30	40	50	60	70	80	90
"A" (IN.)	1 3/4"	1 3/4"	1 5/8"	1 1/2"	1 3/8"	1 1/4"	1 1/8"



NOTES:

JOINT TYPES

THE PROFILE OF THE RAIL SHALL BE SIMILAR TO THAT SHOWN IN THE PLAN DETAILS.

THE EXPANSION JOINT DEVICE SHALL BE OF A TYPE THAT INCLUDES A CONTINUOUS NEOPRENE SEAL ACROSS THE DECK.

DEVICE	MANUFACTURER
STEELEX-SSCM2	D.S. BROWN

COMPLETE WORKING DRAWINGS OF ALL DETAILS OF FABRICATION OF THE EXPANSION JOINT DEVICE SHALL BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH STANDARD SPECIFICATION 104.02. FOR ADDITIONAL REQUIREMENTS SEE SPECIAL PROVISION FOR "EXPANSION JOINT DEVICE, MODIFIED".

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 THE MANUFACTURER'S RECOMMENDATIONS SUBJECT TO NOTES HEREIN AND THE APPROVAL OF THE ENGINEER.

TIE DECK REINFORCING STEEL TO STEEL FRAME ANCHORS TO MAXIMUM EXTENT PRACTICABLE WITHOUT DAMAGING GALVANIZED OR EPOXY COATINGS.

THE TOP OF THE EXPANSION JOINT DEVICE SHALL BE SET 1/8" - 3/8" BELOW THE CONCRETE SLAB (PAVEMENT) WITH A TOLERANCE OF ± 1/8"

THE STEEL ANCHORAGE FOR STRIP STEEL GLANDS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SUBSECTION 707.03C.17 OF THE STANDARD SPECIFICATIONS.

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.

IN THE EVENT THAT SPLICING IS REQUIRED OF 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.

SIDEWALK SECTIONS

ALL STEEL FOR COVER PLATE SHALL BE AASHTO M270, GRADE 36, MEET THE REQUIREMENTS OF ASTM A786, AND BE HOT-DIP GALVANIZED (ASTM A123).

COVER PLATES SHALL HAVE THEIR TOP SURFACE COATED WITH AN ANTI-SLIP COATING. SEE SPECIAL PROVISION FOR "EXPANSION JOINT DEVICE, MODIFIED".

USE ASTM F 593 (TYPE 304) STAINLESS STEEL 1/2" DIAMETER FLATHEAD COUNTERSUNK SCREWS.

CAST CURBS AND SIDEWALKS WITH 3/8" SLIDING PLATES IN PLACE TO INSURE THAT SCREWS ARE ALIGNED PROPERLY. APPLY BOND BREAKER TO SLIDING PLATES PRIOR TO INSTALLATION.

INSTALL PLATES SO THAT THE SCREWS AND INSERTS ARE SET ON THE HIGH SIDE OF LONGITUDINAL SIDEWALK GRADE.

ALL BOLT WELL CAVITIES SHALL BE FILLED WITH AN APPROVED FLEXIBLE EPOXY OR A SEALANT CONFORMING TO FEDERAL SPECIFICATION TT-5-00230C.

THE COST OF ALL MATERIALS AND LABOR REQUIRED FOR PROPER INSTALLATION OF THE COVER PLATE IS INCLUDED IN THE PAYMENT FOR "Expansion Joint Device, Cover Plate, Modified".

STRUCTURE TITLE	ANGLE OF CROSSING TO NEAREST 10°	LOCATION OF JOINT	MIN. TOT. TRAVEL ALONG CENTERLINE OF BRIDGE *	REQUIRED LENGTH OF EXPANSION JOINT DEVICE	REQUIRED LENGTH OF COVER PLATE
FULLER RD	60°	PIN & HANGER 1	2 IN	158.44'	40.63'

MISCELLANEOUS QUANTITIES

Amount	Unit	Description
159	Ft	Expansion Joint Device, Modified
41	Ft	Expansion Joint Device, Cover Plate, Modified

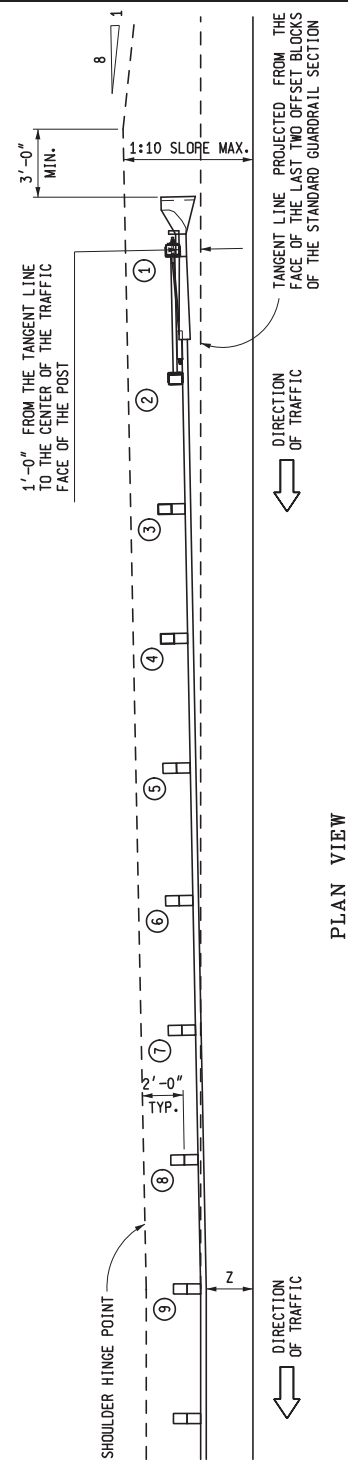
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FULLER ROAD & MAIDEN LANE
BRIDGES REHABILITATION PROJECT
FULLER RD OVER AMTRAK RAILROAD
EXPANSION JOINT DETAILS

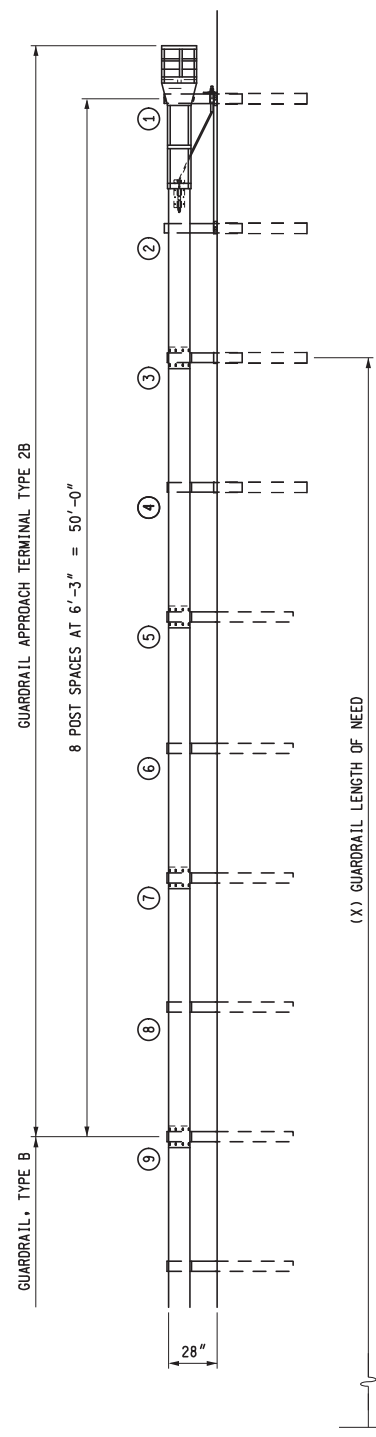
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SCALE NONE
DRAWING No. 2014-024-FR25

SHEET No. 54 OF 54



PLAN VIEW



ELEVATION

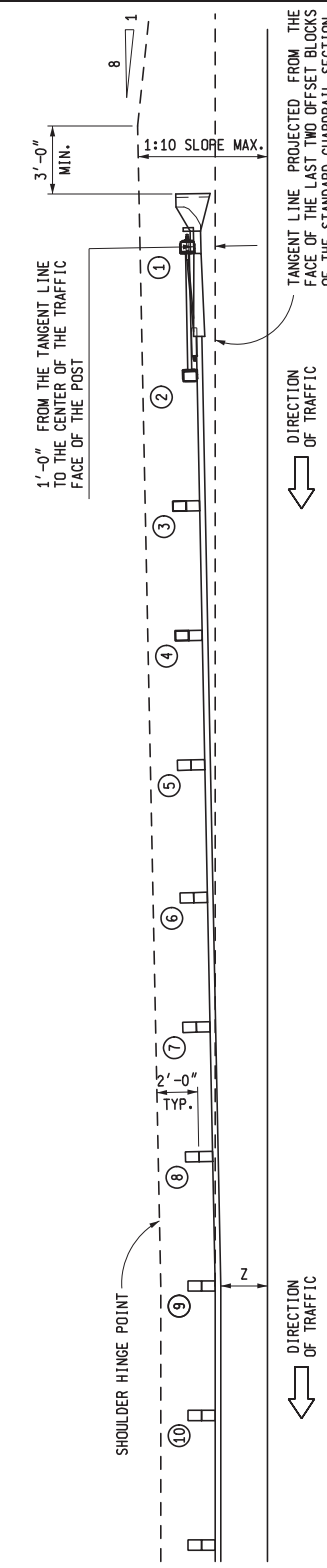
GUARDRAIL APPROACH TERMINAL TYPE 2B



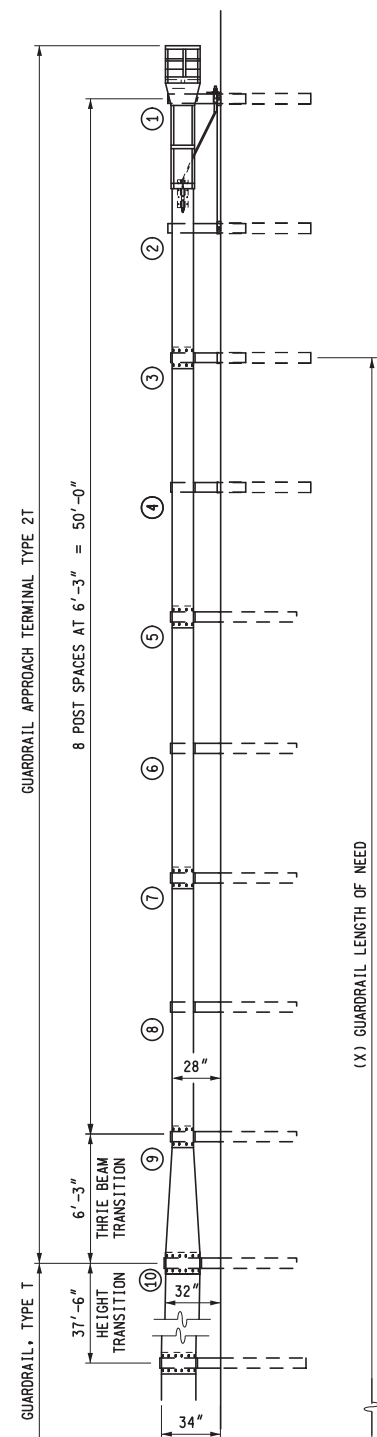
PREPARED BY
DESIGN DIVISION
DRAWN BY: B.L.T.
CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Stuedle
APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES
APPROVED BY: _____
DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
**GUARDRAIL APPROACH
TERMINAL TYPES 2B & 2T
(SKT)**
F.H.W.A. APPROVAL 10-28-2014 R-62-H SHEET 1 OF 5
PLAN DATE



PLAN VIEW

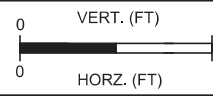


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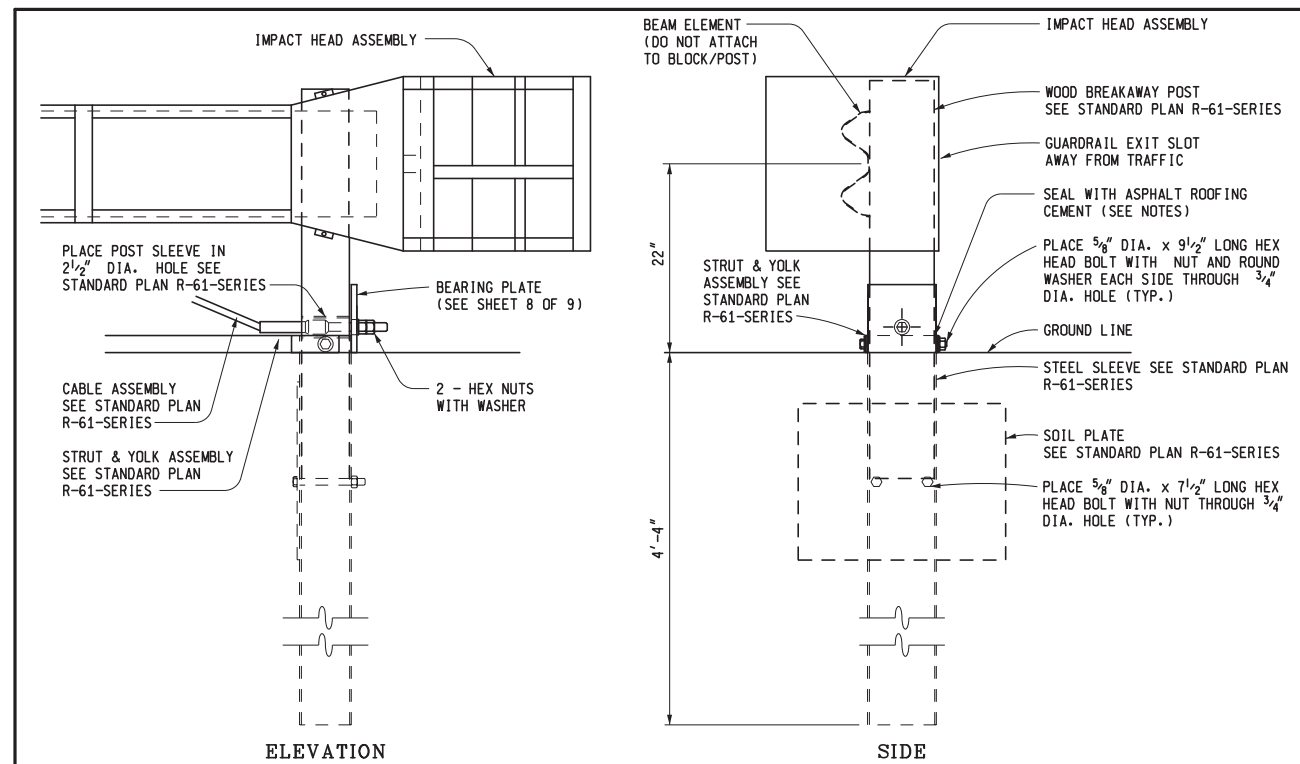
GUARDRAIL APPROACH TERMINAL TYPE 2T

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
**GUARDRAIL APPROACH
TERMINAL TYPES 2B & 2T
(SKT)**
F.H.W.A. APPROVAL 10-28-2014 R-62-H SHEET 2 OF 5
PLAN DATE

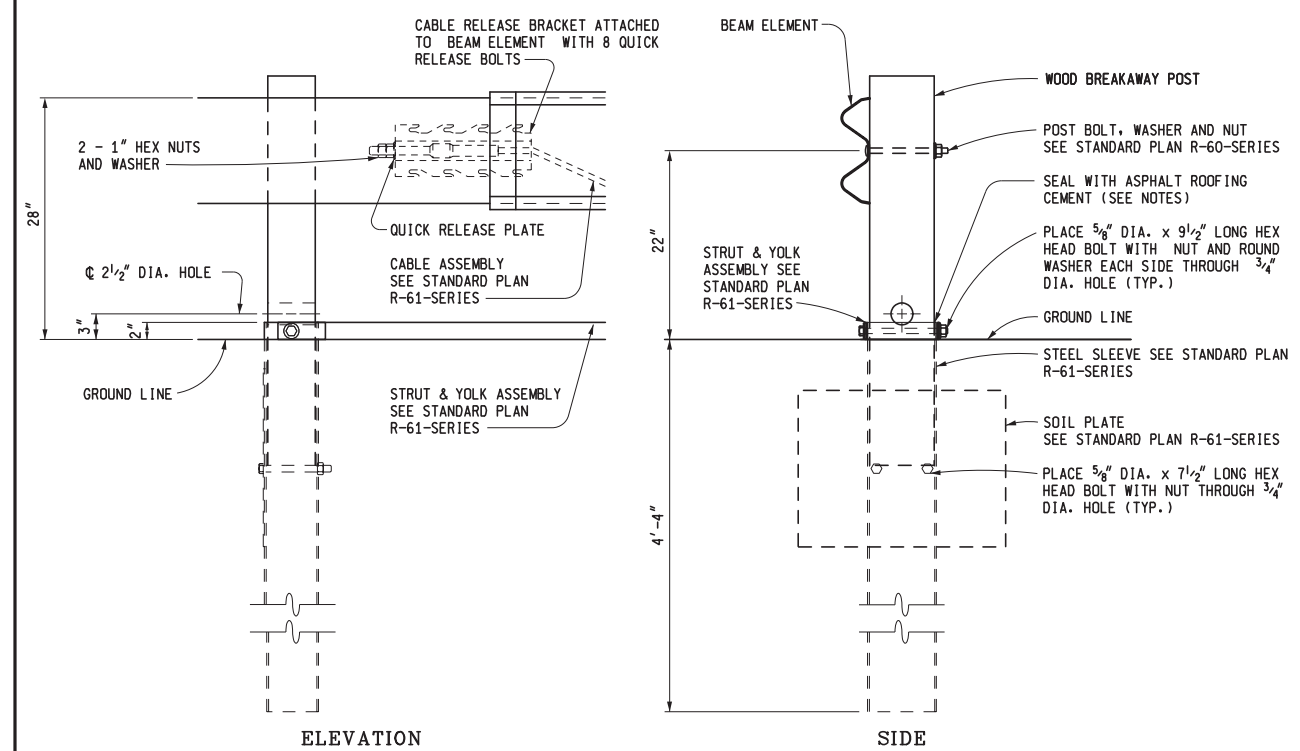
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



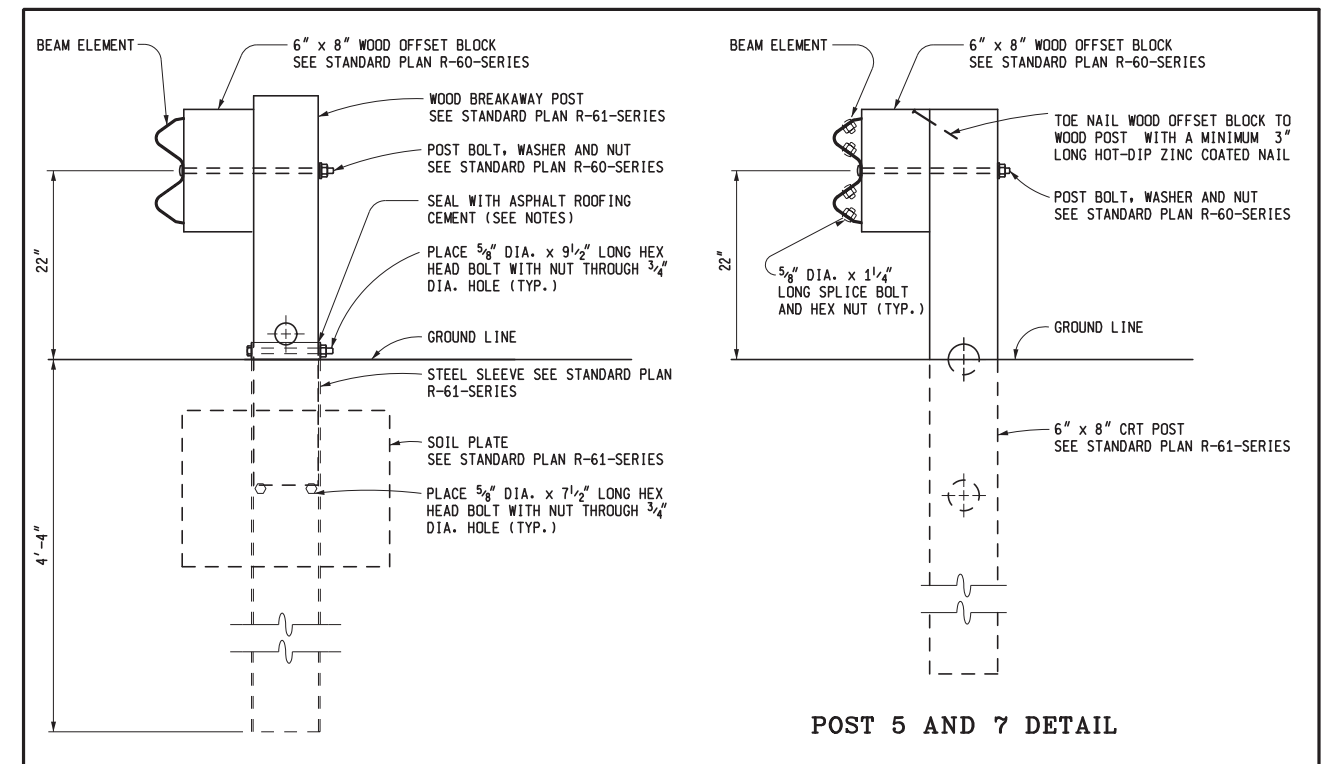
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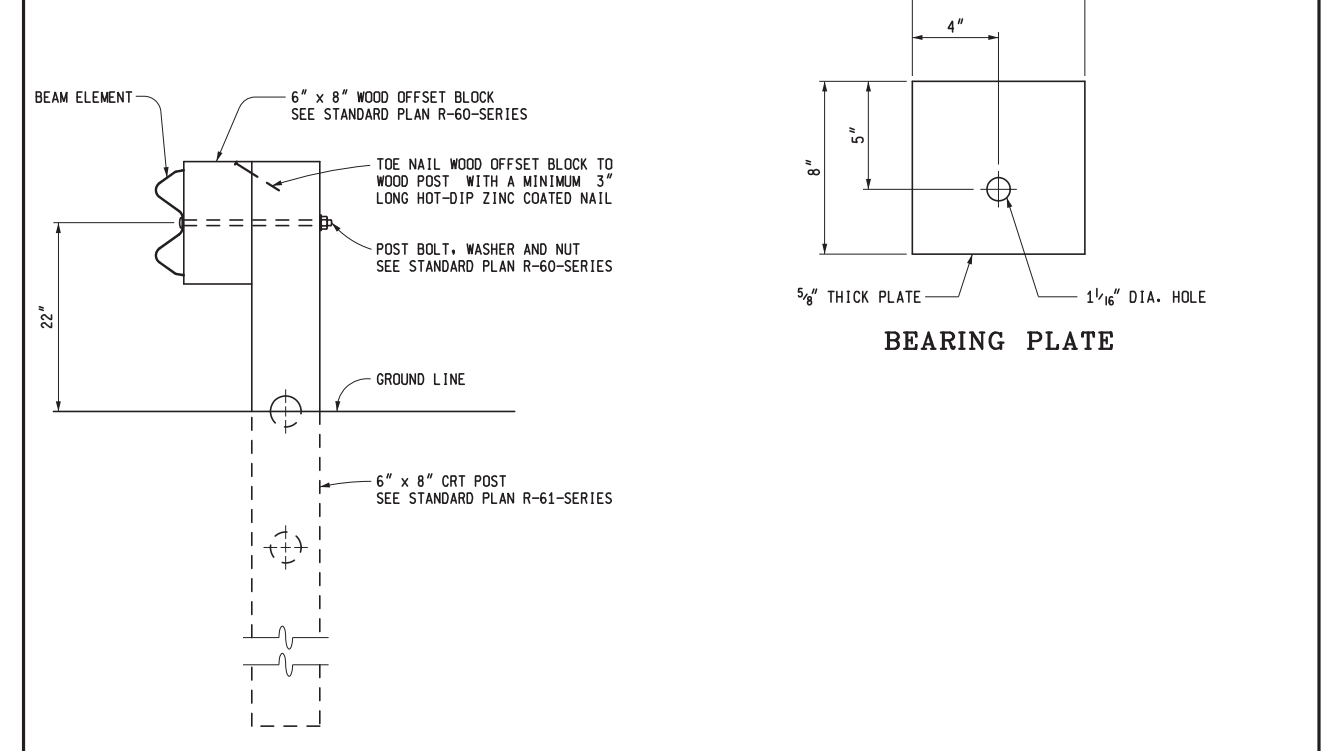
POST 1 DETAIL



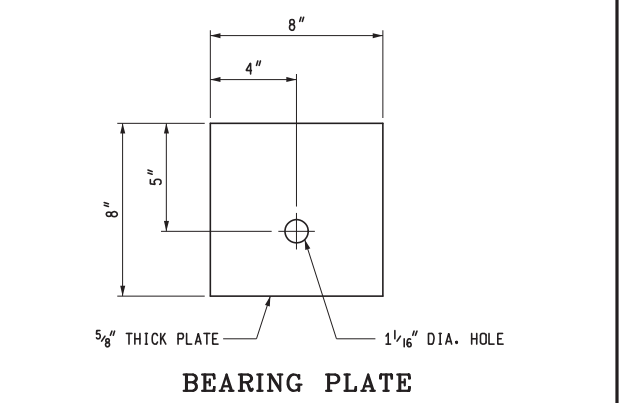
POST 2 DETAIL



POST 3 AND 4 DETAIL



POST 6 AND 8 DETAIL



BEARING PLATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

**GUARDRAIL APPROACH
TERMINAL TYPES 2B & 2T
(SKT)**

F.H.W.A. APPROVAL	10-28-2014 PLAN DATE	R-62-H	SHEET 3 OF 5
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MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

**GUARDRAIL APPROACH
TERMINAL TYPES 2B & 2T
(SKT)**

F.H.W.A. APPROVAL	10-28-2014 PLAN DATE	R-62-H	SHEET 4 OF 5
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AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT
Michigan Department of Transportation

0 VERT. (FT)
0 HORZ. (FT)

DATE: 1-8-15
DESIGN UNIT:
TSC:
FILE:

CS: STU 81001 & STU 81475
JN: 123008 & 126043A

DRAWING	SHEET
	56

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR			
F.H.W.A. APPROVAL	PLAN DATE		SHEET OF

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (SKT)			
F.H.W.A. APPROVAL	10-28-2014 PLAN DATE	R-62-H	SHEET 5 OF 5

NOTES:

ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, AND HARDWARE (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND TO THE CURRENT STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS STANDARD.

ALL 1:10 SLOPES SHALL BE GRADED TO CLASS A SLOPE TOLERANCES.


THE BREAKAWAY CABLE ASSEMBLY MUST BE TAUT. A LOCKING DEVICE (VICE GRIPS OR CHANNEL LOCK PLIERS) SHOULD BE USED TO PREVENT THE CABLE FROM TWISTING WHEN TIGHTENING THE NUTS.


AFTER THE CABLE ASSEMBLY HAS BEEN TIGHTENED, A SECOND NUT SHALL BE INSTALLED ON EACH END OF THE CABLE SO THAT THE CABLE WILL NOT LOOSEN.


WHEN SITE CONDITIONS WARRANT AND WITH THE APPROVAL OF THE ENGINEER, GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T CAN BE INSTALLED STRAIGHT (WITHOUT THE 1:50 FLARE).

GUARDRAIL REFLECTORS ARE NOT TO BE USED ON THE GUARDRAIL APPROACH TERMINAL. PLACE REFLECTORS BEGINNING ON STANDARD RUN OF GUARDRAIL.

USE REFLECTIVE SHEETING ACCORDING TO THE FOLLOWING TRAFFIC CONDITIONS:
 (NOTE: ALTERNATE 3" BLACK AND 3" YELLOW STRIPES ON A 45° ANGLE)




 TRAFFIC PASSING ON
THE LEFT SIDE

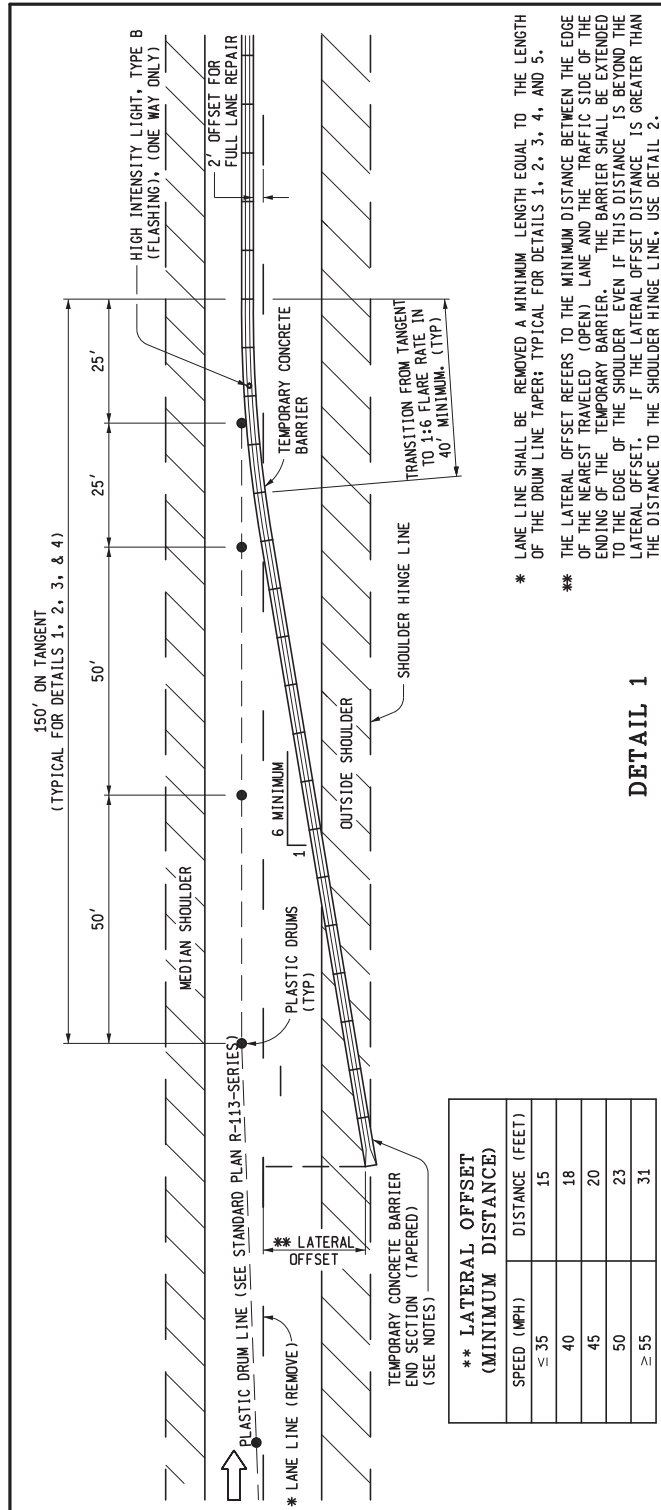

 TRAFFIC PASSING ON
BOTH SIDES


 TRAFFIC PASSING ON
THE RIGHT SIDE

THE PORTION OF THE IMPACT HEAD ASSEMBLY FACING TRAFFIC SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ASPHALT ROOFING CEMENT SHALL BE USED TO SEAL THE PERIMETER AREA BETWEEN THE STEEL SLEEVE (SOIL TUBE) AND THE WOOD BREAKAWAY POST.

AS-LET PLAN REVISIONS									0 VERT. (FT)  0 HORZ. (FT)	DATE: 1-8-15	CS: STU 81001 & STU 81475	DRAWING	SHEET
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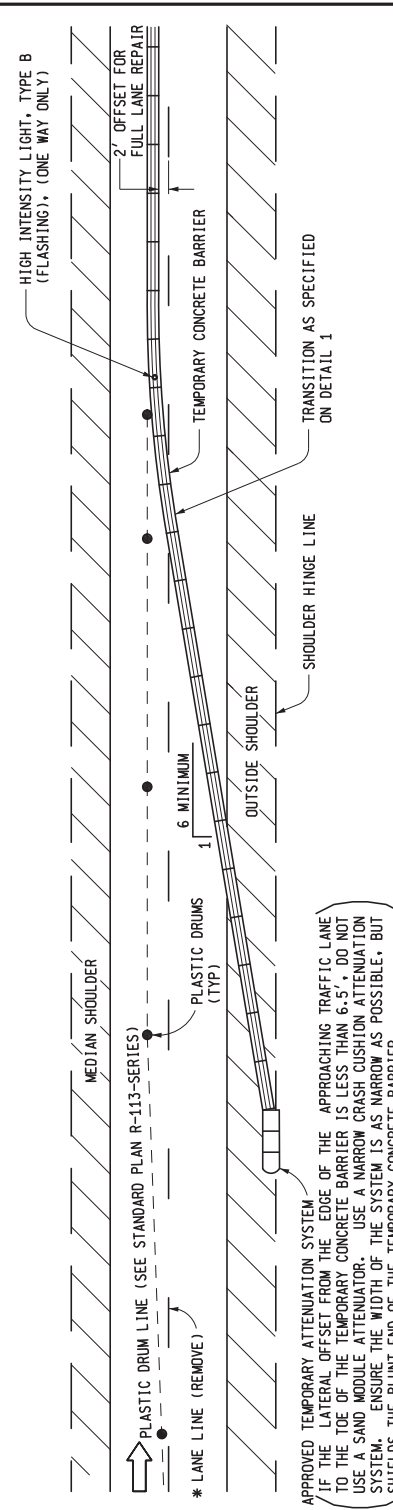


* LANE LINE SHALL BE REMOVED A MINIMUM LENGTH EQUAL TO THE LENGTH OF THE DRUM LINE TAPER; TYPICAL FOR DETAILS 1, 2, 3, 4, AND 5.

** THE LATERAL OFFSET REFERS TO THE MINIMUM DISTANCE BETWEEN THE EDGE OF THE NEAREST TRAVELED (OPEN) LANE AND THE TRAFFIC SIDE OF THE ENDING OF THE TEMPORARY BARRIER. THE BARRIER SHALL BE EXTENDED TO THE EDGE OF THE SHOULDER, EVEN IF THIS DISTANCE IS GREATER THAN THE LATERAL OFFSET. IF THE LATERAL OFFSET DISTANCE IS GREATER THAN THE DISTANCE TO THE SHOULDER HINGE LINE, USE DETAIL 2.

DETAIL 1

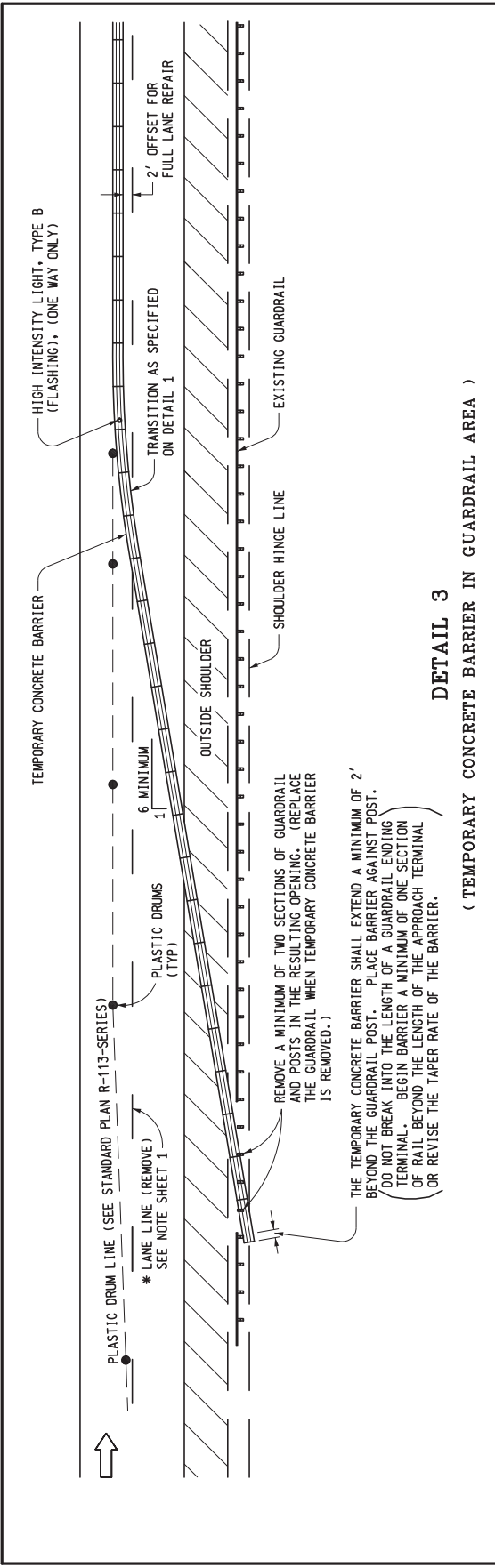
** LATERAL OFFSET (MINIMUM DISTANCE)	
SPEED (MPH)	DISTANCE (FEET)
≤ 35	15
40	18
45	20
50	23
≥ 55	31



APPROVED TEMPORARY ATTENUATION SYSTEM (IF THE LATERAL OFFSET FROM THE EDGE OF THE APPROACHING TRAFFIC LANE TO THE TOE OF THE TEMPORARY CONCRETE BARRIER IS LESS THAN 6.5', DO NOT USE A SAND MODULE ATTENUATOR. USE A NARROW CRASH CUSHION ATTENUATION SYSTEM. ENSURE THE WIDTH OF THE SYSTEM IS AS NARROW AS POSSIBLE, BUT SHIELDS THE BLUNT END OF THE TEMPORARY CONCRETE BARRIER.)

DETAIL 2

WHEN DETAIL 1 CANNOT BE USED BECAUSE OF RESTRICTED LATERAL OFFSET

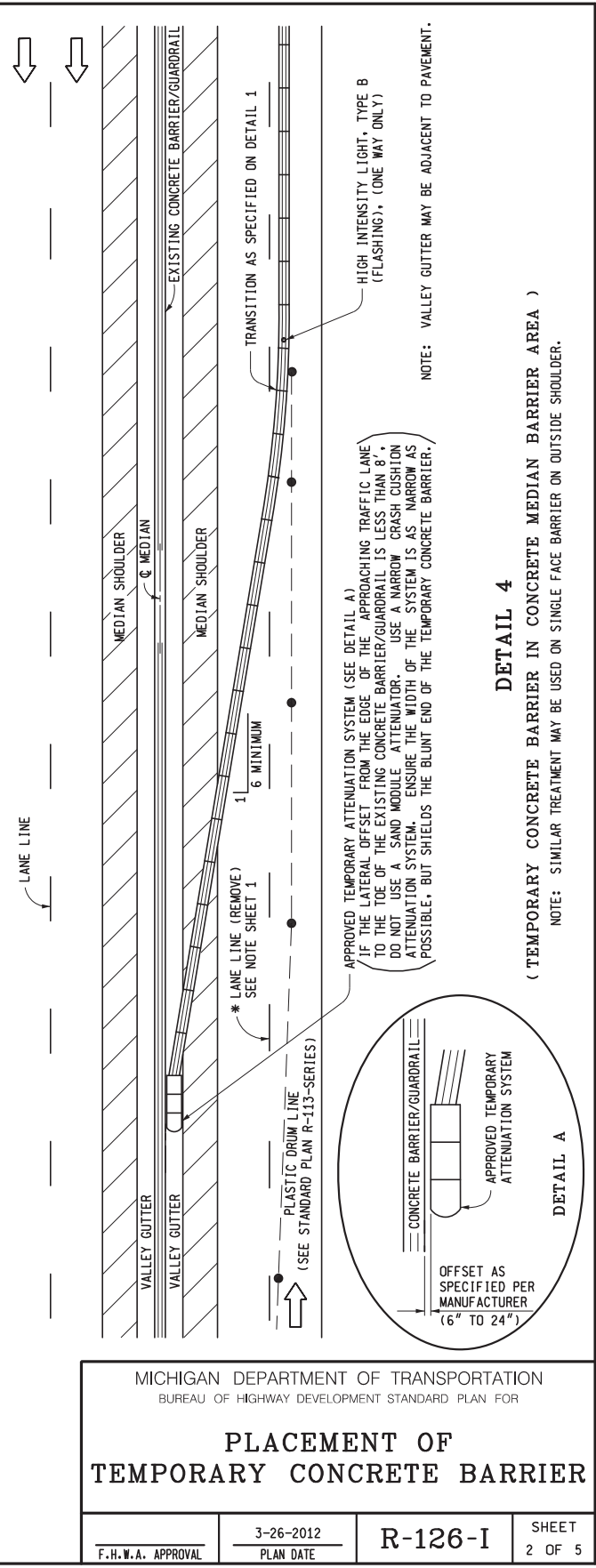


REMOVE A MINIMUM OF TWO SECTIONS OF GUARDRAIL AND POSTS IN THE RESULTING OPENING. (REPLACE THE GUARDRAIL WHEN TEMPORARY CONCRETE BARRIER IS REMOVED.)

THE TEMPORARY CONCRETE BARRIER SHALL EXTEND A MINIMUM OF 2' BEYOND THE GUARDRAIL POST. PLACE BARRIER AGAINST POST. DO NOT BREAK INTO THE LENGTH OF A GUARDRAIL ENDING TERMINAL. BEGIN BARRIER A MINIMUM OF ONE SECTION OF RAIL BEYOND THE LENGTH OF THE APPROACH TERMINAL OR REVISE THE TAPER RATE OF THE BARRIER.

DETAIL 3

(TEMPORARY CONCRETE BARRIER IN GUARDRAIL AREA)



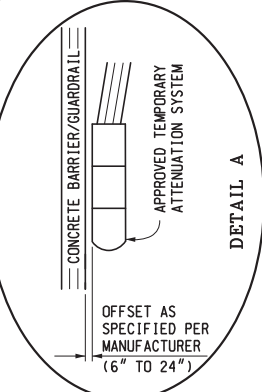
APPROVED TEMPORARY ATTENUATION SYSTEM (SEE DETAIL A) IF THE LATERAL OFFSET FROM THE EDGE OF THE APPROACHING TRAFFIC LANE TO THE TOE OF THE EXISTING CONCRETE BARRIER/GUARDRAIL IS LESS THAN 8'. DO NOT USE A SAND MODULE ATTENUATOR. USE A NARROW CRASH CUSHION ATTENUATION SYSTEM. ENSURE THE WIDTH OF THE SYSTEM IS AS NARROW AS POSSIBLE, BUT SHIELDS THE BLUNT END OF THE TEMPORARY CONCRETE BARRIER.

NOTE: VALLEY GUTTER MAY BE ADJACENT TO PAVEMENT.

DETAIL 4

(TEMPORARY CONCRETE BARRIER IN CONCRETE MEDIAN BARRIER AREA)

NOTE: SIMILAR TREATMENT MAY BE USED ON SINGLE FACE BARRIER ON OUTSIDE SHOULDER.



MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
Kirk T. Stuedle

PREPARED BY: DESIGN DIVISION
DRAWN BY: B.L.T.
CHECKED BY: W.K.P.

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

PLACEMENT OF TEMPORARY CONCRETE BARRIER

F.H.W.A. APPROVAL

3-26-2012
PLAN DATE

R-126-I

SHEET 1 OF 5

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

PLACEMENT OF TEMPORARY CONCRETE BARRIER

F.H.W.A. APPROVAL

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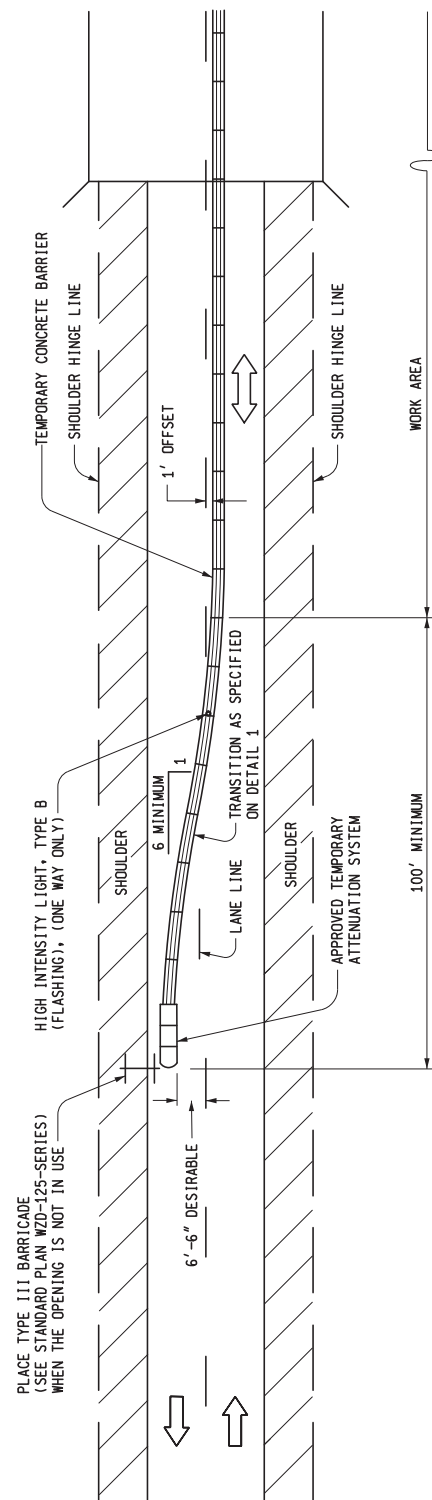
SHEET 2 OF 5

AS-LET PLAN REVISIONS							
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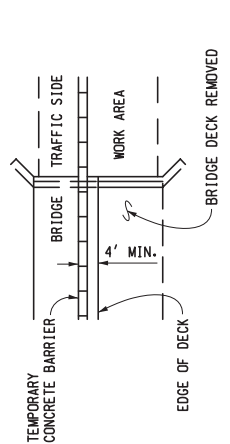
MDOT Michigan Department of Transportation

0 VERT. (FT)
0 HORZ. (FT)

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DETAIL 5
(TRAILING END OF TEMPORARY CONCRETE BARRIER ON TWO-WAY ROADWAY)



TEMPORARY CONCRETE BARRIER ON BRIDGE
(BRIDGE DECK REPLACEMENT - PART WIDTH)

- BARRIER ON BRIDGE NOTES:**
- IT IS RECOMMENDED THAT ONE OF THE FOLLOWING METHODS, WHICH ARE LISTED IN ORDER OF PREFERENCE, BE USED WHEN THERE IS LESS THAN 4'-0" Laterally BETWEEN THE TOE OF THE BARRIER ON THE TRAFFIC SIDE AND THE DROP-OFF.
 - CONSTRUCT A SLIP-FORMED CONTINUOUSLY STEEL REINFORCED CONCRETE BARRIER.
 - IF THE BARRIER IS TO BE PLACED ON AN EXISTING CONCRETE DECK THAT WILL EVENTUALLY BE REMOVED ANYWAY, DRILL TWO HOLES LARGE ENOUGH FOR #8 STEEL DOMELS OR PEGS TO BE INSERTED INTO THE LOWER SLOPING PORTION OF EACH BARRIER SECTION NEAR EACH END OF THE TRAFFIC SIDE OF THE BARRIER AND CONTINUING INTO THE CONCRETE BELOW THESE DOMELS SHOULD EXTEND 6" IN THE DECK AND AT LEAST 6" INTO THE BARRIER, BUT NOT PROTRUDE ABOVE THE BARRIER SURFACE AND BE GROUTED TO PREVENT BOTH SLIDING AND OVERTURNING OF THE BARRIER SECTION.
 - IF BARRIER IS PLACED ON A NEWLY CONSTRUCTED SURFACE, DEVICES FOR ANCHORING THE TEMPORARY CONCRETE BARRIER COULD BE USED, PROVIDED THE ANCHORING DEVICES CAN BE REMOVED FLUSH WITH THE ROADWAY SURFACE WHEN THE BARRIER IS REMOVED.

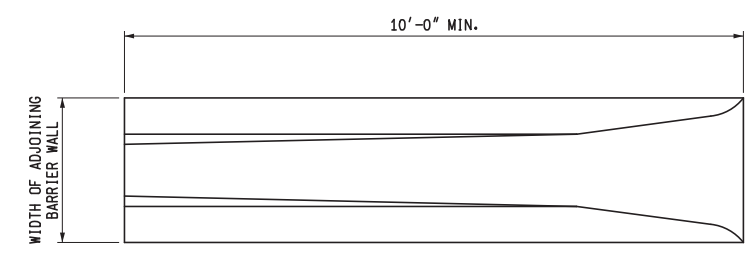
DETAIL 5 NOTES:

WHERE CONTROLLED BI-DIRECTIONAL TRAFFIC IS MAINTAINED ON A SINGLE LANE, THE PLACING OF TEMPORARY CONCRETE BARRIER ON THE APPROACHING END OF A LANE CLOSURE SHALL BE THE SAME AS SPECIFIED ON DETAIL 1, 2 OR 3. THE TRAILING END OF THE LANE CLOSURE SHALL BE AS SPECIFIED ON DETAIL 5. THE PLASTIC DRUM LINE TAPER WILL BE ACCORDING TO DETAIL 5. WITH THE MAINTAINING TRAFFIC CONTROL DEVICES OR MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL IN THE PLANS OR PROPOSAL, THE TEMPORARY CONCRETE BARRIER END SECTION ON THE TRAILING END OF THE TEMPORARY CONCRETE BARRIER SHALL BE PARALLEL WITH THE TRAFFIC.

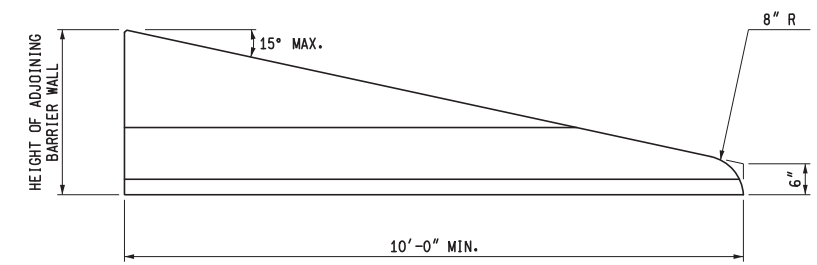
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

PLACEMENT OF TEMPORARY CONCRETE BARRIER

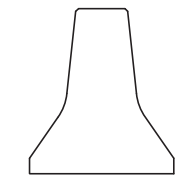
F.H.W.A. APPROVAL	3-26-2012 PLAN DATE	R-126-I	SHEET 3 OF 5
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TOP VIEW



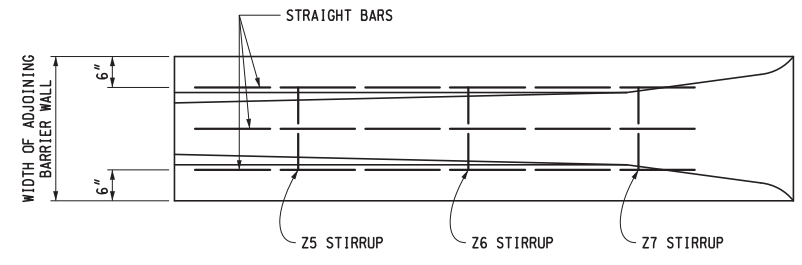
ELEVATION VIEW



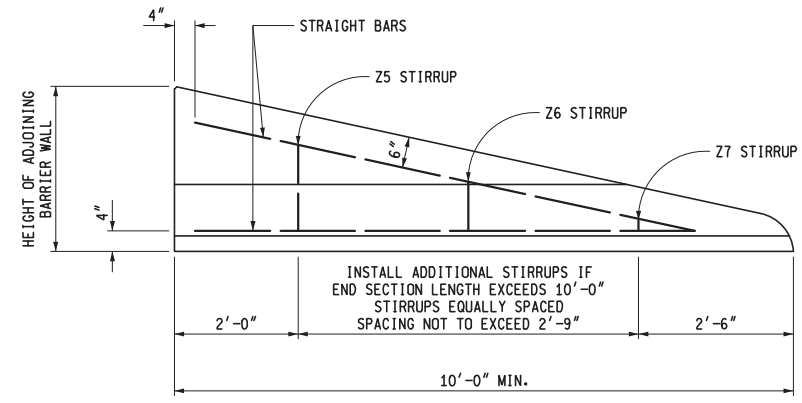
END VIEW

MUST MATCH CROSS-SECTIONAL SHAPE AND DIMENSIONS OF ADJOINING BARRIER WALL

TEMPORARY CONCRETE BARRIER SLOPED END SECTION



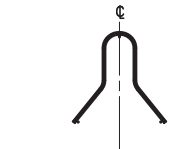
TOP VIEW



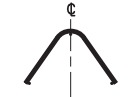
ELEVATION VIEW

STEEL REINFORCEMENT FOR TEMPORARY CONCRETE BARRIER SLOPED END SECTION

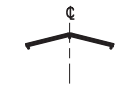
NOTE: #5 BARS SHALL BE USED FOR ALL STRAIGHT BARS AND STIRRUPS



Z5 STIRRUP DETAIL



Z6 STIRRUP DETAIL



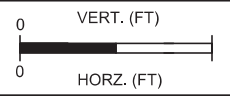
Z7 STIRRUP DETAIL

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

PLACEMENT OF TEMPORARY CONCRETE BARRIER

F.H.W.A. APPROVAL	3-26-2012 PLAN DATE	R-126-I	SHEET 4 OF 5
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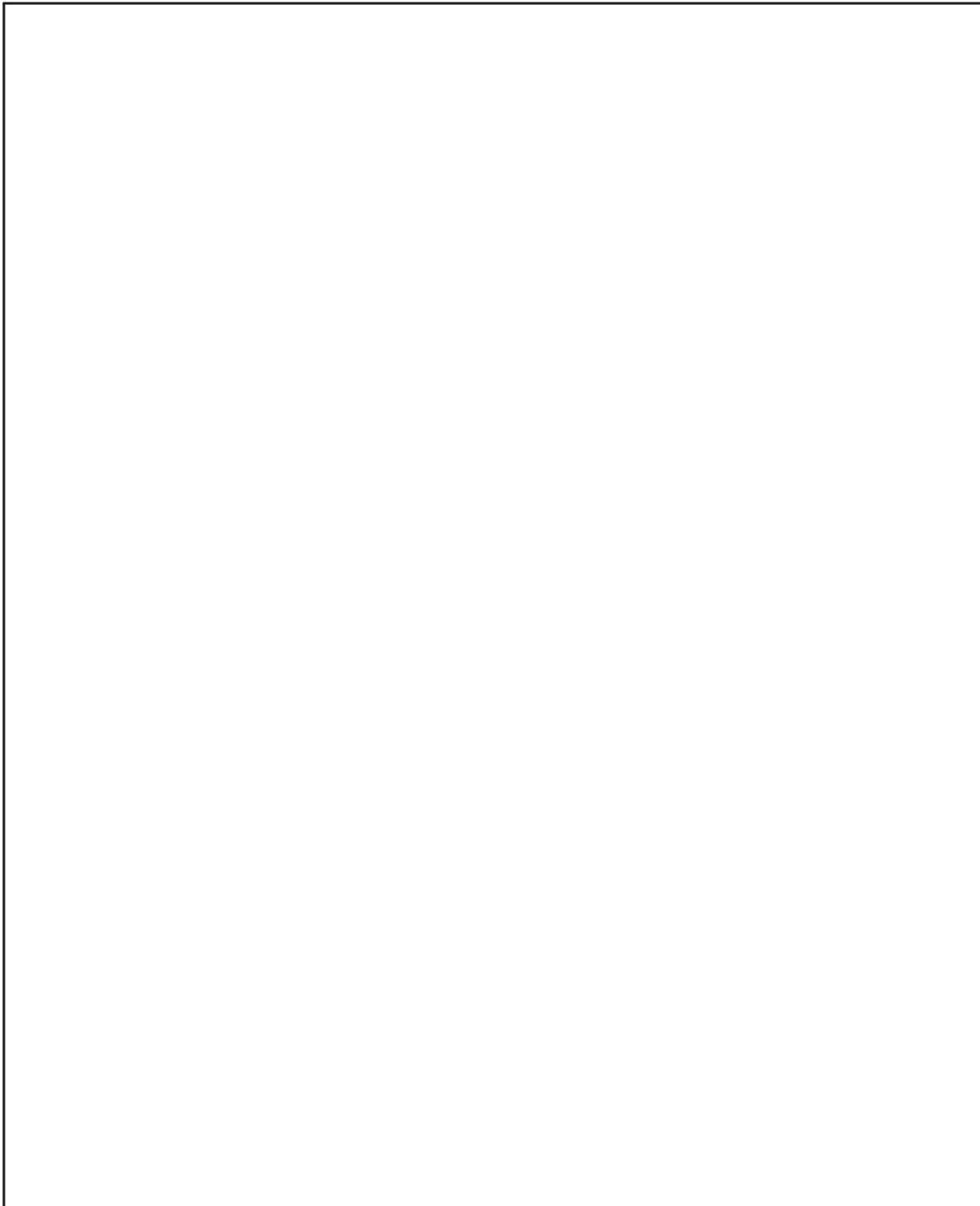
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



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JN: 123008 & 126043A

DRAWING SHEET
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR			
F.H.W.A. APPROVAL	PLAN DATE		SHEET OF



NOTES:

THE SEQUENCE OF BARRIER PLACEMENT SHALL BE IN THE DIRECTION OF TRAFFIC FLOW. BARRIER REMOVAL SHALL BE IN THE DIRECTION OPPOSITE TO TRAFFIC FLOW.

TEMPORARY PORTABLE BARRIER END SECTION SHALL BE USED TO TERMINATE BARRIER ENDS SUBJECT TO APPROACH TRAFFIC, EXCEPT WHEN THE BARRIER IS OTHERWISE ATTENUATED OR TERMINATED BEHIND GUARDRAIL.

DETAIL 2 WILL BE USED WHEN THERE IS NO EXISTING GUARDRAIL OR BARRIER AVAILABLE AS SPECIFIED IN DETAILS 3 OR 4.

THE LOCATION OF THE HIGH INTENSITY LIGHT, TYPE B (FLASHING) SPECIFIED IN DETAIL 1, SHALL APPLY TO DETAILS 2, 3, 4, AND 5. ALSO THE HIGH INTENSITY LIGHT, TYPE B SHALL BE FASTENED ON THE TOP OF THE BARRIER.

THE BARRIER FLARE RATE SHALL BE AT LEAST 6' OF RUN FOR EVERY FOOT OF OFFSET.

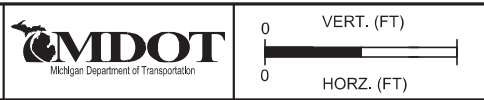
EXACT LATERAL PLACEMENT OF BARRIER MUST BE SPECIFIED ON THE PLANS OR IN THE PROPOSAL. BARRIER POSITION SPECIFIED IS DESIRABLE WHEN WORK AREA INVOLVES THE FULL WIDTH OF THE CLOSED LANE. WHEN PARTIAL LANE WORK IS INVOLVED, OR SHOULDER WORK ONLY, BARRIER SHOULD BE SET INSIDE CLOSED LANE, AS ALLOWED BY WORK AREA, WITH 2' OR MORE OFFSET DESIRABLE TO LANE LINE.

IN DETAIL 3, EXISTING GUARDRAIL POSTS ARE REMOVED TO FACILITATE PLACING OF TEMPORARY BARRIER BEHIND THE GUARDRAIL. THE DEGREE OF THE BARRIER DEPARTURE ANGLE WILL DETERMINE THE AMOUNT OF BEAM GUARDRAIL AND THE NUMBER OF POSTS TO BE REMOVED.

THE HIGH INTENSITY LIGHT, TYPE B SHALL BE OMITTED WHERE TWO-WAY TRAFFIC IS MAINTAINED ON ONE LANE AND IS CONTROLLED BY TRAFFIC SIGNALS.

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR			
PLACEMENT OF TEMPORARY CONCRETE BARRIER			
F.H.W.A. APPROVAL	3-26-2012 PLAN DATE	R-126-I	SHEET 5 OF 5

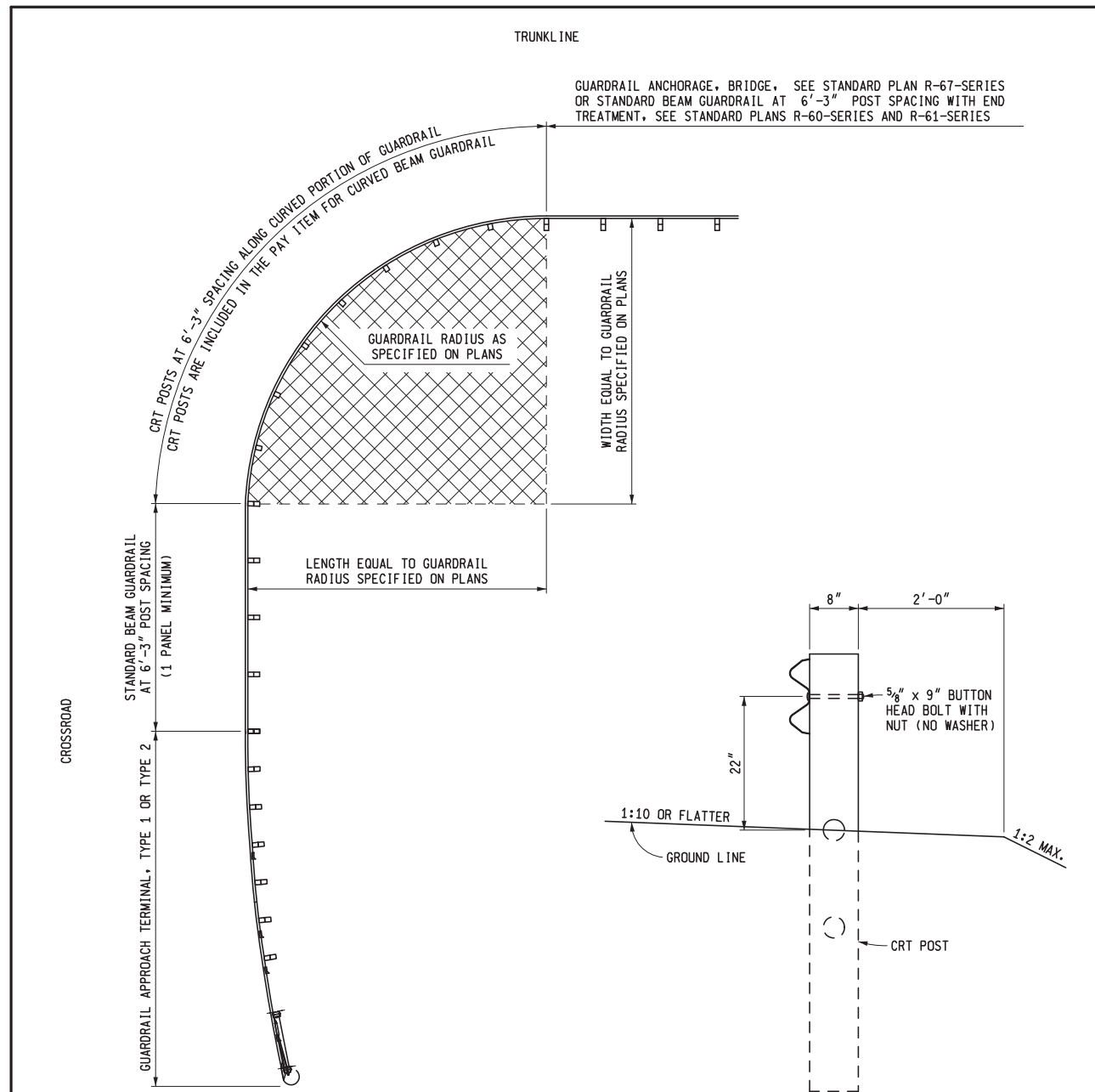
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE: 1-8-15
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JN: 123008 & 126043A

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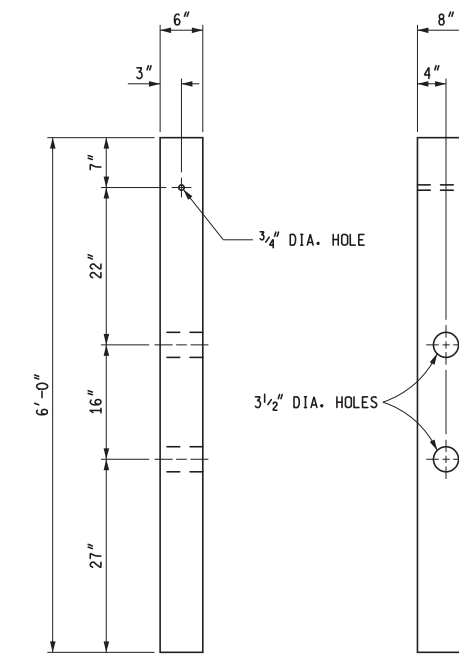


PLAN VIEW

TYPICAL SECTION AT CRT POST

NOTE:
 FOR DRIVEWAYS, IF R.O.W. ALLOWS, USE DEPARTING END TERMINAL. (SEE STANDARD PLAN R-66-SERIES) IF R.O.W. IS LIMITED SUCH THAT A TYPICAL DEPARTING END TERMINAL CANNOT BE FIT IN, DRILL 8 HOLES IN THE CURVED BEAM GUARDRAIL TO ACCOMMODATE AN ANCHOR PLATE AND INSTALL A CABLE ANCHOR SIMILAR TO THAT OF THE DEPARTING END TERMINAL ON STANDARD PLAN R-66-SERIES. THIS WILL BE PAID FOR AS GUARDRAIL, DEPARTING TERMINAL.

<p>PREPARED BY DESIGN SUPPORT AREA</p> <p>DRAWN BY: <u>B.L.T.</u></p> <p>CHECKED BY: <u>W.K.P.</u></p>	DEPARTMENT DIRECTOR Kirk T. Stuedle	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR	
	APPROVED BY: _____ ENGINEER OF DELIVERY	GUARDRAIL AT INTERSECTIONS	
APPROVED BY: _____ ENGINEER OF DEVELOPMENT	F.H.W.A. APPROVAL	5-24-2001 PLAN DATE	SPECIAL DETAIL 21 SHEET 1 OF 2



CONTROLLED RELEASING TERMINAL POST (CRT)

NOTES:
 THE SLOPE IN FRONT OF THE INSTALLATION SHOULD NOT EXCEED 1:10 AND EXTEND TO 2'-0" BEYOND THE GUARDRAIL POST. THE SLOPE BEYOND THIS HINGE LINE SHALL BE 1:2 OR FLATTER.
 THE CROSS HATCHED AREA BEHIND THE CURVED GUARDRAIL SHOULD BE KEPT FREE OF FIXED OBJECTS.

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR	
GUARDRAIL AT INTERSECTIONS	
F.H.W.A. APPROVAL	5-24-2001 PLAN DATE
SPECIAL DETAIL 21	SHEET 2 OF 2