ADDENDUM No. 3

RFP No. 22-76

East Medical Center Drive Bridge Rehabilitation and Widening Project

Due: November 17, 2022 at 2 P.M. (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any), and is appended thereto. **This Addendum includes nine (9) pages and attachments.**

The Proposer is to acknowledge receipt of this Addendum No. 3, including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the RFP Document should be included in submitted proposal:

- **Attachment D - Prevailing Wage Declaration of Compliance**
- **Attachment E - Living Wage Declaration of Compliance**
- **Attachment G - Vendor Conflict of Interest Disclosure Form**
- **Attachment H - Non-Discrimination Declaration of Compliance**

Proposals that fail to provide these completed forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the RFP documents which are outlined below are referenced to a page or Section in which they appear conspicuously. Offerors are to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

Section/Page(s)	Change
RFP_22-76_Plans Sheet 2	Sheet 110 has been deleted from the set. Sheet 134A (MDOT Standard Plan B-41-C) has been added to the set.
RFP_22-76_Plans Sheet 3	A railroad note has been added to the plans stating that "all work must be completed in accordance with Amtrak EP3006 "Designated Construction Criteria for Overhead Bridges"."
RFP_22-76_Plans Sheet 4	Pay items No. 7070050 "Structural Steel, Mixed, Erect" and 7070051 "Structural Steel, Mixed, Furn and Fab" were decreased from 51,984 lb to 38,695 lb (CATG 0001) and 66,146 lb to 52,857 lb (Total). Pay item No. 7130010 "Beam Plate, Seal Perimeter" was increased from 1,660 ft to 2,320 ft.

	Pay item No. 7060040 “Elec Grounding System” has been added to the project. The quantity is 1 Ea. Pay item No. 8080010 “Fence, Structure” has been added to the project. The quantity is 2,635 Sft.
RFP_22-76_Plans Sheet 11	The cross-section was updated to show a proposed chain link fence on top of the barrier.
RFP_22-76_Plans Sheet 12	The cross-sections were updated to show a proposed chain link fence on top of the barrier.
RFP_22-76_Plans Sheet 69	The elevation view was updated to show a proposed chain link fence on top of the barrier.
RFP_22-76_Plans Sheet 70	The cross-section was updated to show a proposed chain link fence on top of the barrier.
RFP_22-76_Plans Sheet 91	Additional bolted steel repairs were added based on the results of the October 2022 bridge inspection. The “Structural Steel, Mixed, Erect” and “Structural Steel, Mixed, Furn and Fab” CATG 0001 quantities have been increased from 32,419 lb to 38,695 lb and the total quantity was increased from 46,581 lb to 52,857 lb. The “Beam Plate, Seal Perimeter” quantity was increased from 1,660 ft to 2,320 ft.
RFP_22-76_Plans Sheet 99	The bolted repair details have been updated based on the results of the October 2022 bridge inspection.
RFP_22-76_Plans Sheet 104	Barrier post spacings in the Span 1, west sidewalk were shifted to make room for chain link fence posts around the light standard.
RFP_22-76_Plans Sheet 105	The cross-sections were updated to show a proposed chain link fence on top of the barrier.
RFP_22-76_Plans Sheet 106	The cross-section was updated to show a proposed chain link fence on top of the barrier.
RFP_22-76_Plans Sheet 109	The splashboard panel spacing was replaced with chain link fence post spacing.
RFP_22-76_Plans Sheet 110	The splashboard panels are being deleted from the plans.
RFP_22-76_Plans Sheet 111	A note was added to the plans to provide direction for the proposed fencing. A pay item for “Elec Grounding System” with a quantity of 1 Ea was added to the plan sheet. A pay item for “Fence, Structure” with a quantity of 2,635 Sft was added to the plan sheet.

	The pay items for “Structural Steel, Mixed, Erect” and “Structural Steel, Mixed, Furn and Fab” were removed from the plan sheet.
RFP_22-76_Plans Sheet 134A	MDOT Standard Plan B-41-C Fencing for Bridge Railing, Aesthetic Parapet Tube was added to the plans.
RFP_22-76_Document	Amtrak EP3006 Design and Construction Criteria for Overhead Bridges is being added.
RFP_22-76_Document, pg15-20	Revised Bid Sheet with the revised quantities and new items has been updated. Revised pay items are bolded and in gray.

II. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the RFP. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: Are there designated staging areas that you envisioned where we can stage equipment and materials?

Answer 1: Yes, in the NE and NW quads of the E. Medical Center Drive structure. Staging locations are available within the gray shaded areas on sheets 16 and 18 of 153 in the plan set. Contractor is not allowed to stage any materials on UM property.

Question 2: What are the number of trains per day to expect in the proposal document?

Answer 2: The number of trains typically varies each day between 6 & 10, however this can and will change based on a number of items such as cancellations, additions and extra trains.

Question 3: When do you anticipate having to drive the sheet piles for the retaining wall?

Answer 3: The permanent steel sheet piling retaining wall will be placed part-width. The sheets will need to be driven in the weeks between the removal of the existing deck and beams and the replacement of the existing repaired beams and the proposed deck. The west half of the sheeting will be placed during stage 2 in the early summer of 2023. The east half will be placed during stage 3 during the late summer/early fall of 2023.

Question 4: Are there any Buy America restrictions on the job or federal funding restrictions?

Answer 4: No. This job has no federal funding, there are no Buy America restrictions.

Question 5: Is there any vibration criteria for the project?

Answer 5: Steps have been taken to minimize vibrations on the project due to the proximity to the UM hospital campus. The proposed piles will consist of drilled micropiles instead of driven piles. Also, the following note was included on the General Plan of Structure sheet (sheet 69 of 153 of the plans) regarding vibrations:
“INSTALL SHEET PILING USING EITHER AN IMPACT HAMMER OR A VARIABLE MOMENT DRIVER/EXTRACTOR OPERATED TO MINIMIZE

VIBRATIONS. DO NOT USE VIBRATORY HAMMERS THAT ARE NOT VARIABLE MOMENT."
There is no vibration monitoring set up for this project.

Question 6: Would you allow hollow bar soil nails?

Answer 6: No, the Special Provision for Soil Nails for Slope Stabilization states on page 1 of 16 that Hollow Bar Soil Nails shall not be used unless specifically allowed in the plans. The General Plan of Slope Stabilization (sheet 122 of 153) does not specifically allow for Hollow Bar Soil Nails.

Question 7: Has anybody spoken with Galvanizers about if their tanks are long enough to handle some of these longer beams for galvanizing?

Answer 7: Yes, the Canton, OH location of AZZ Galvanizing has a 51' long kettle. The longest beam in this plan set is 64'-5" long (Span 2, existing bm M) and it can be double-dipped in their kettle to coat the full length of the beam. The phone number for the sales rep, Dean, is 234-203-6247.

Question 8: Is there more information on general Amtrak requirements? Train movements, insurance requirements and limits and who is to be covered? Amtrak has some stuff in there about track monitoring, but it isn't addressed in the plans as far as if its required, if so, how is it paid?

Answer 8: There are several notes regarding Amtrak requirements in the Railroad section on sheet 3 of 153. There are also three Amtrak Engineering Practice Documents included in the proposal. They are as follows: EP2031-Track Monitoring for Work Disturbing Roadbed, EP3014-Maintenance and Protection of Railroad Traffic During Contractor Operations, and EP3016-Storm Water Drainage and Discharge from Adjacent Property on Amtrak Right-of-Way. Amtrak is also requiring a fourth EP to be added to this project as a result of the final review, EP3006-Design and Construction Criteria for Overhead Bridges. All of the included Amtrak EP's are required to be followed during construction. Track Monitoring for Work Disturbing Roadbed shall be included in the "General Conditions" Pay Item. There are also pay items and a special provision included for Railroad Inspection and Flagging. The pay item is shown in the list of structure items on page 4 of 153 and again in the quantity box on sheet 69 of 153.

The answer to Question 2 above indicates that the number of trains typically varies each day between 6 & 10, however this can and will change based on a number of items such as cancellations, additions and extra trains.

In Addendum 2, Question/Answer 3, it says that the City of Ann Arbor will purchase railroad insurance on behalf of the contractor.

Question 9: Can SIP Metal Decking be used for forming the bridge deck?

Answer 9: Yes, please see the plan note on sheet 111 of 153. "THE CONTRACTOR MAY USE PERMANENT METAL DECK FORMS. IF USED, THE CORRUGATIONS MUST BE FILLED WITH POLYSTERENE FOAM."

Offerors are responsible for any conclusions that they may draw from the information contained in the Addendum.

E. Schedule of Pricing/Cost – 20 Points

Pay Item	Description	Units	Quantity	Unit Price	Total Price
1047051	_Certified Payroll Compliance and Reporting	LSUM	1		
1047051	_Project Supervision, Max $175,000	LSUM	1		
1077060	_Relocation and Site Cleanup	Dlr	15000		
2010001	Clearing	Acre	0.2		
2040035	Guardrail, Rem	Ft	176		
2040050	Pavt, Rem	Syd	192		
2040061	Structures, Rem Portions (STR 11065)	LSUM	1		
2040080	Exploratory Investigation, Vertical	Ft	200		
2047001	_Curb and Gutter, Any Type or Size, Rem	Ft	381		
2047011	_Sidewalk and Drive, Any Type or Thickness, Rem	Syd	645		
2057002	_Machine Grading, Modified	Sta	2.3		
2057021	_Non-Hazardous Contaminated Material Handling and Disposal (LM)	Cyd	400		
2060002	Backfill, Structure, CIP	Cyd	940		
2060010	Excavation, Fdn	Cyd	1000		
2067050	_Dewatering System, Excavation	Ea	2		
2080036	Erosion Control, Silt Fence	Ft	1289		
2087050	_Erosion Control, Inlet Protection	Ea	7		
2090001	Project Cleanup	LSUM	1		
3027021	_Aggregate Base Course, 21AA, Modified	Cyd	99		
3027021	_Sand Subbase Course, Class II, CIP	Cyd	141		
4030005	Dr Structure Cover, Adj, Case 1	Ea	2		
4030050	Dr Structure Cover, Type K	Ea	4		
4030390	Dr Structure, Temp Lowering	Ea	4		
4037050	_Dr Structure Cover, Adj	Ea	2		
5012013	HMA, 3EML	Ton	146		
5012037	HMA, 5EML	Ton	244		
5017011	Cold Milling HMA Surface, Modified	Syd	1527		
5017031	_Hand Patching, Modified	Ton	70		
7040001	Steel Sheet Piling, Permanent	Sft	6690		
7040002	_Steel Sheet Piling, Temp	Sft	360		
7040003	Steel Sheet Piling, Temp, Left in Place	Sft	360		
7057050	_Micropile, Load Test, Proof, LRFD	Ea	4		
7057050	_Micropile, Load Test, Verification, LRFD	Ea	1		
7057050	_Micropile, Type B, Furn and Install, LRFD	Ea	18		
7057051	_Micropile, Mobilization, LRFD (STR 11065)	LSUM	1		
7060001	Bridge Ltg, Furn and Rem (STR 11065)	LSUM	1		
7060002	Bridge Ltg, Oper and Maintain	Cyd	429		
7060040	**Elec Grounding System**	**Ea**	**1**		
7060050	Expansion Joint Device	Ft	191		
7060060	False Decking	Sft	19840		
7060092	Reinforcement, Steel, Epoxy Coated	Lb	171348		

7060100	Substructure Conc	Cyd	289		
7060110	Superstructure Conc	Cyd	101		
7060111	Superstructure Conc, Form, Finish, and Cure (STR 11065)	LSUM	1		
7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting (STR 11065)	LSUM	1		
7060113	Superstructure Conc, Night Casting	Cyd	429		
7060140	Water Repellent Treatment, Penetrating	Syd	51		
7062003	Conc, Grade 4500	Cyd	33		
7067001	_Expansion Joint Device, Cover Plate, Modified	Ft	50		
7070019	Bearing, Elastomeric, 2 3/4 inch	Sin	6696		
7070021	Bearing, Elastomeric, 3 1/4 inch	Sin	6190		
7070040	Shear Developers (STR 11065)	LSUM	1		
7070050	**Structural Steel, Mixed, Erect**	**Lb**	**52857**		
7070051	**Structural Steel, Mixed, Furn and Fab**	**Lb**	**52857**		
7070070	Structural Steel, Rolled Shape, Erect	Lb	40000		
7070071	Structural Steel, Rolled Shape, Furn and Fab	Lb	40000		
7077051	_Structural Steel, Galvanizing (STR 11065)	LSUM	1		
7100001	Joint Waterproofing	Sft	740		
7100003	Joint Waterproofing, Expansion	Sft	10		
7100030	Substructure Horizontal Surface Sealer (STR 11065)	Syd	90		
7110005	Bridge Railing, Aesthetic Parapet Tube	Ft	321		
7120007	Hand Chipping, Other Than Deck	Cft	112		
7120017	Patch, Forming	Sft	447		
7120020	Epoxy Ovly	Syd	1050		
7120028	Adhesive Anchoring of Horizontal Bar, 3/4 inch	Ea	68		
7120034	Adhesive Anchoring of Vertical Bar, 3/4 inch	Ea	8		
7120084	Reinforcement, Mechanical Splice	Ea	794		
7120098	Flushing Cracks, Water	Ft	124		
7120099	Structural Crack, Repr	Ft	124		
7120112	Patching Conc, C-L	Cyd	5		
7120120	Embedded Galvanic Anode	Ea	555		
7130010	**Beam Plate, Seal Perimeter**	**Ft**	**2320**		
8027001	_Curb and Gutter, Conc, 18 Inch, Any Type	Ft	277		
8027001	_Curb and Gutter, Conc, 24 Inch, Any Type	Ft	111		
8037010	_Concrete Sidewalk, 6 Inch	Sft	5896		
8037010	_Detectable Warning Surface	Sft	64		
8037010	_Sidewalk Ramp, Concrete, 8 Inch	Sft	229		
8037010	_Concrete Sidewalk, 6 Inch	Sft	1830		
8070004	Guardrail, Type MGS-8	Ft	144		
8070044	Guardrail Approach Terminal, Type 2M	Ea	2		
8070052	Guardrail Departing Terminal, Type MGS	Ea	2		
8080010	**Fence, Structure**	**SFT**	**2635**		
8087001	_Fence, Temp	Ft	774		
8087001	_Tree Fence, Protective	Ft	47		

8087001	Post and Chain Fence, Salvage	Ft	84		
8087050	_Gate, Temp	Ea	2		
8100398	Sign, Type IIA	Sft	20		
8100399	Sign, Type IIB	Sft	20		
8100402	Sign, Type III, Erect, Salv	Ea	4		
8107050	Hospital Sign and Foundation, Relocate	Ea	2		
8110091	Pavt Mrkg, Polyurea, 4 inch, White	Ft	675		
8110092	Pavt Mrkg, Polyurea, 4 inch, Yellow	Ft	504		
8110110	Pavt Mrkg, Polyurea, 12 inch, Crosswalk	Ft	55		
8110114	Pavt Mrkg, Polyurea, 24 inch, Stop Bar	Ft	69		
8110153	Pavt Mrkg, Sprayable Thermopl, 4 inch, White	Ft	396		
8110154	Pavt Mrkg, Sprayable Thermopl, 4 inch, Yellow	Ft	602		
8110307	Rem Curing Compound, for Longit Mrkg, 4 inch	Ft	791		
8110321	Rem Curing Compound, for Spec Mrkg	Sft	211		
8110343	Rem Spec Mrkg	Sft	1000		
8110405	Pavt Mrkg, Polyurea, Lt Turn Arrow Sym	Ea	7		
8110410	Pavt Mrkg, Polyurea, Only	Ea	12		
8110412	Pavt Mrkg, Polyurea, Rt Turn Arrow Sym	Ea	5		
8110418	Pavt Mrkg, Polyurea, Thru Arrow Sym	Ea	3		
8117001	_Recessing Pavt Mrkg, Longitudinal	Ft	2219		
8117001	_Recessing Pavt Mrkg, Transverse	Ft	119		
8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	4		
8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	4		
8120027	Pedestrian Type II Channelizer, Temp	Ft	60		
8120035	Channelizing Device, 42 inch, Fluorescent, Furn	Ea	50		
8120036	Channelizing Device, 42 inch, Fluorescent, Oper	Ea	50		
8120040	Conc Barrier Ending, Temp, Det 2, Adj	Ea	2		
8120041	Conc Barrier Ending, Temp, Det 2, Furn	Ea	2		
8120042	Conc Barrier Ending, Temp, Det 2, Oper	Ea	2		
8120080	Conc Barrier, Temp, Adj	Ft	100		
8120081	Conc Barrier, Temp, Furn	Ft	100		
8120082	Conc Barrier, Temp, Oper	Ft	100		
8120140	Lighted Arrow, Type C, Furn	Ea	2		
8120141	Lighted Arrow, Type C, Oper	Ea	2		
8120160	Ltg for Night Work	LSUM	1		
8120170	Minor Traf Devices, Max $50,000	LSUM	1		
8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	Ft	1940		
8120211	Pavt Mrkg, Longit, Greater than 6 inch Width, Rem	Ft	30		
8120245	Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, White, Temp	Ft	2755		
8120246	Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, Yellow, Temp	Ft	4222		
8120252	Plastic Drum, Fluorescent, Furn	Ea	50		

8120253	Plastic Drum, Fluorescent, Oper	Ea	50		
8120257	Pavt Mrkg, Wet Reflective, Type R, Tape, Lt Turn Arrow	Ea	11		
8120258	Pavt Mrkg, Wet Reflective, Type R, Tape, Rt Turn Arrow	Ea	2		
8120259	Pavt Mrkg, Wet Reflective, Type R, Tape, Thru Arrow	Ea	22		
8120265	Pavt Mrkg, Wet Reflective, Type R, Tape, 24 inch, Stop Bar	Ft	195		
8120310	Sign Cover	Ea	1		
8120330	Sign, Portable, Changeable Message, Furn	Ea	1		
8120331	Sign, Portable, Changeable Message, Oper	Ea	1		
8120340	Sign, Type A, Temp, Prismatic, Furn	Sft	27		
8120341	Sign, Type A, Temp, Prismatic, Oper	Sft	27		
8120350	Sign, Type B, Temp, Prismatic, Furn	Sft	926		
8120351	Sign, Type B, Temp, Prismatic, Oper	Sft	926		
8120352	Sign, Type B, Temp, Prismatic, Spec, Furn	Sft	315		
8120353	Sign, Type B, Temp, Prismatic, Spec, Oper	Sft	315		
8120370	Traf Regulator Control, Max $100,000	LSUM	1		
8121000	Conc Barrier, Temp, Limited Deflection, Det 1, Furn	Ft	160		
8121001	Conc Barrier, Temp, Limited Deflection, Det 1, Oper	Ft	160		
8121100	Conc Barrier, Temp, Limited Deflection, Det 2, Furn	Ft	75		
8121101	Conc Barrier, Temp, Limited Deflection, Det 2, Oper	Ft	75		
8121102	Conc Barrier, Temp, Limited Deflection, Det 2, Adj	Ft	75		
8121200	Conc Barrier, Temp, Limited Deflection, Det 3A, Furn	Ft	160		
8121201	Conc Barrier, Temp, Limited Deflection, Det 3A, Oper	Ft	160		
8122012	Pavt Mrkg, Wet Reflective, Type R, Tape, 12 inch, White, Temp	Ft	86		
8122111	Pavt Mrkg, Wet Reflective, Type R, Tape, Only	Ea	4		
8122145	Pavt Mrkg, Wet Reflective, Type R, Tape, Rt and Lt Turn Arrow Sym	Ea	2		
8122148	Pavt Mrkg, Wet Reflective, Type R, Tape, Thru and Rt Turn Arrow Sym	Ea	11		
8127050	_Pedestrian Type II Barricade, Temp	Ea	2		
8127060	_Railroad Inspection and Flagging	Dlr	200000		
8130015	Slope Paving Header	Ft	231		
8130020	Slope Paving, Conc	Syd	85		
8167011	_Slope Restoration	Syd	250		
8182000	Conduit, Rem	Ft	510		
8182016	Conduit, Encased, 1, 4 inch	Ft	204		

8182021	Conduit, Encased, 6, 4 inch	Ft	126		
8182034	Conduit, Directional Bore, 1, 1 1/2 inch	Ft	60		
8182035	Conduit, Directional Bore, 1, 3 inch	Ft	365		
8182048	Conduit, DB, 1, 1 1/2 inch	Ft	90		
8182097	Conduit, Schedule 80, 4 inch, Structure	Ft	2920		
8182133	Conduit, Schedule 40, 2 inch	Ft	403		
8182135	Conduit, Schedule 40, 3 inch	Ft	1070		
8182187	DB Cable, in Conduit, 600V, 1/C#6	Ft	2919		
8182309	Hh, Polymer Conc	Ea	2		
8182330	Hh, Rem	Ea	2		
8182349	Wood Pole, Cl 4, 30 foot	Ea	5		
8182363	Wood Pole, Rem	Ea	5		
8182387	Wood Pole, Fit Up, TS Cable Pole	Ea	3		
8187001	_Conduit, DB, 1, 2 inch	Ft	8		
8187050	_Handhole Assembly, 17 inch x 30 inch	Ea	12		
8187050	_Handhole, Adjust, Any Size	Ea	1		
8187050	_Hh, Tap, 4 inch	Ea	2		
8197050	_Luminaire Installation	Ea	5		
8197050	_Pole Fit-Up	Ea	5		
8197050	_Pole Installation	Ea	5		
8197050	_Streetlight, Rem	Ea	5		
8200100	Pedestal, Alum	Ea	3		
8200101	Pedestal, Alum, Salv	Ea	1		
8200105	Pedestal, Fdn	Ea	3		
8200106	Pedestal Fdn, Rem	Ea	4		
8200110	Pedestal, Rem	Ea	4		
8200121	Pushbutton and Sign	Ea	3		
8200122	Pushbutton, Rem	Ea	4		
8200126	Pushbutton and Sign, Salv	Ea	1		
8200140	Span Wire	Ea	4		
8200141	Span Wire, Rem	Ea	4		
8200168	Strut Guy	Ea	2		
8200177	TS, Mast Arm Mtd, Rem	Ea	1		
8200251	TS, One Way Mast Arm Mtd, Salv	Ea	1		
8200376	Bracket, Truss, With 12 Foot Arm	Ea	1		
8200444	Hemispherical Video Detection Camera	Ea	3		
8200445	Hemispherical Video Detection System	Ea	1		
8200446	Hemispherical Video Detection Camera, Rem	Ea	1		
8200452	TS Head, Adj	Ea	2		
8200453	TS Head, Temp	Ea	20		
8200458	TS Face, Bag	Ea	6		
8200459	TS Face, Bag, Rem	Ea	6		
8507010	_Soil Nails for Slope Stabilization	Sft	2723		
8507051	_Audio-Video Rte Survey	LSUM	1		
8507051	General Conditions, Max $650,000	LSUM	1		
	ESTIMATED TOTAL				

SCOPE AND NATURE

To establish uniform requirements for the design and construction of overhead bridges by outside agencies.

SPECIAL REFERENCE

Standard Track Plan AM70050

ET Standard Plan ET1446-D

ET Standard Plan ET 1447-D

Engineering Practice 3003

Engineering Practice 3014 Section 02261

Engineering Practice 3014 Section 01520

Engineering Practice 3014 Section 01142

Engineering Practice 1604

AED-1 Procedures and Design Criteria to be Employed by Electrification Consultants Engaged in the Design of Electrification Facilities on the National Railroad Passenger Corporation

AREMA Manual for Railway Engineering – Chapter 8, Article 2.1.5

SPECIAL MATERIALS

N/A

PROCEDURE

DESIGN AND CONSTRUCTION CRITERIA FOR OVERHEAD BRIDGES

New or reconstructed bridges over Amtrak Railroad tracks shall meet the following requirements:

I. CLEARANCES

a. Horizontal and Vertical Clearances shall be in accordance with the current Standard Track Plan AM70050 – "Minimum Roadway Clearances". When replacing existing bridges that have substandard clearances, every effort shall be made to improve the clearances.

b. Temporary Construction clearances may be less if approved by Amtrak.

c. Amtrak shall be furnished as-built drawings showing actual clearances as constructed.

d. Horizontal clearances may need to be increased if a maintenance roadway is required by Amtrak.

e. Clearances shall be adjusted to provide for any planned changes in the trackage, including the change in track centers and raising of the tracks. Amtrak shall be contacted to obtain information on planned track changes. If the track is in a sag at the proposed overhead crossing location, it should be anticipated that the track may be raised to improve the condition. Clearances shall be increased to provide for this track raise.

II. CRASH WALLS

AREMA Manual for Railway Engineering, Chapter 8, Article 2.1.5 Pier Protection, describes the requirements for the crash walls. Crash walls are required when face of the pier is closer than 25'-0" from centerline of the nearest track, measured perpendicular to the track, unless the size of the pier satisfies the criteria for piers of heavy construction as listed in Article II (d).

Crash walls shall meet the following requirements:

a. Crash walls for piers from 12 feet to 25 feet clear from the centerline of the track shall have a minimum height of 6 feet above the top of rail. Piers less than 12 feet clear from the centerline of the track shall have a minimum crash wall height of 12 feet above the top of rail. Crash walls shall be at least 2'-6" thick and at least 12 feet long.

b. For multi-column piers, the crash wall shall connect the columns and extend at least 1 foot beyond the outermost columns parallel to the track.

c. Crash walls shall be anchored to the footings and columns as applicable and shall extend to at least four feet below the lowest surrounding grade.

d. A pier shall be considered of heavy construction if it has a cross-sectional area equal to or greater than that required for the crash wall and the larger of its dimensions is parallel to the track.

e. Consideration may be given to providing protection for bridge piers located more than 25 feet from the centerline of track as conditions warrant. In making this determination, account shall be taken of such factors as horizontal and vertical alignment of the track, embankment height, and an assessment of the consequences of serious damage in the case of a collision.

III. BARRIERS

a. In the territory where there is railroad electrification, barriers shall be designed and constructed on both faces of the bridge in conformance with the current ET Standard Plan ET-1446-D “Electrified Territory OH Bridge Typical Protection Barrier”.

b. In non-electrified territory, chain-link fence with 1" mesh fabric may be substituted for the solid barrier.

IV. ELECTRIFICATION SYSTEMS.

a. In electrified territory the agency responsible for the project shall be required to comply with AED-1 “Procedures and Design Criteria to be Employed by Electrification Consultants Engaged in the Design of Electrification Facilities on the National Railroad Passenger Corporation”.

V. DRAINAGE

It is essential to maintain good drainage of railroad right-of-way during construction and provide for good drainage after construction of the overhead crossing. The following guidelines shall be followed:

a. Piers and end slopes shall be located such that they do not interfere with railroad drainage system, including, but not limited to, ditches, pipes, catch basins and detention basins.

b. Drainage from the section of the bridge above railroad right-of-way shall be collected with drain pipes and drained away from the railroad right-of-way. No open scuppers are permitted on the portion of the bridge over the railroad right of way. Drainage from any scuppers shall be drained away from the railroad right-of-way.

c. After completion of construction, railroad drainage ditches shall be cleaned of all debris to the satisfaction of Amtrak representatives.

d. During construction, silt fences shall be provided to prevent silting of the ditches. All drainage from the construction site must be collected and directed away from railroad property.

e. If the project will alter drainage characteristics at the site of the crossing at any time during or after completion of the project, three sets of the drainage calculations and plans shall be submitted to Amtrak for approval. Approval of the drainage plans shall not relieve the submitting agency of responsibility for the drainage design.

f. All disturbed areas on the railroad right-of-way shall be properly seeded and mulched to the satisfaction of Amtrak.

VI. STRUCTURE EXCAVATION AND SHORING

Shoring or sheeting protection shall be provided in conformance with the current Engineering Practice 3014 Section 02261 – "Requirements for Temporary Sheeting and Shoring to Support Amtrak Tracks". Blasting is restricted and if required shall be in conformance with Engineering Practice 3003- "Blasting Procedures".

a. A construction procedure for temporary shoring shall be shown on the drawing.

b. Safety railing meeting OSHA requirements shall be installed when temporary shoring is within 12 feet of track. When shoring is further than 12 feet from centerline of track, railing shall be provided if necessary for safety of workers and railroad personnel.

VII. GENERAL REQUIREMENTS

a. The distance from the nearest milepost at intersection of centerline of the track and centerline of the bridge shall be shown on the General Plan.

b. Horizontal and vertical clearances shall be marked clearly on the General Plan and Elevation.

c. Soil parameters used in designing the shoring shall be based on soil and rock data obtained from test borings performed for the design of the proposed structure.

d. It is the designer's responsibility to ensure that a constructability analysis is performed to confirm that the structure, as designed, can be constructed in the applicable railroad environment.

e. Piers, abutments and columns located within the railroad right-of-way shall have an anti-graffiti coating consisting of a three-coat system. Each of the three coats shall be a clear, two component, polyester type, aliphatic urethane. Each coat shall be applied at a minimum 2 mils DFT.

VIII. DEMOLITION OF EXISTING STRUCTURES

Railroad tracks shall be protected from damage during demolition of existing structure or replacement of deck slab. Either of the following methods may be used:

a. During demolition of the decks, a protection shield shall be erected over the right-of-way to catch falling debris. The shield shall be designed and constructed in

conformance with the current Engineering Practice 3014 Section 01520 – "Requirements for Temporary Protection Shields for Demolition and Construction of Overhead Bridges and Other Structures".

b. On light traffic density lines or when overhead protection shield cannot be installed due to limited clearance or type of superstructure, track may be protected by timber mats placed over the track structure, subject to approval by Amtrak. Timber mats shall be made in sections such that they may be lifted in and out quickly. Mats shall not rest on ties or rails.

Geo-fabric or canvas shall be placed over the track structure to keep the ballast clean.

The contractor shall submit detailed plans of the protection shield or the timber mats to the Project Engineer for approval prior to the start of demolition. The plans shall be prepared by a Registered Professional Engineer and shall bear his seal and signature.

Blasting will not be permitted to demolish a structure over or within the railroad right-of-way.

IX. ERECTION PROCEDURE

The contractor shall submit a detailed procedure for erecting the spans over railroad right of way. The procedure shall be in conformance with the current Engineering Practice 3014 Section 01142 – "Submission Documentation Required for Amtrak Review and Approval of Plans for Bridge Erection, Demolition, and Other Crane/Hoisting Operations over Railroad Right-Of-Way".

X. PIPELINES

All pipelines occupying the bridge shall be designed and constructed in accordance with Engineering Practice 1604 Pipeline Occupancy – Requirements and Specifications.

XI. CROSSING DATA

Plans submitted for review by Amtrak shall contain, at the minimum, the following information:

- Roadway name or route number
- Amtrak bridge number
- Skew angle to the railroad center line
- Proposed foundation type and elevation of bottom of footing
- Pile type and depth (if applicable)
- Top of rail elevation for all tracks
- Drainage modifications
- Elevation and cross sections of existing and proposed structure

- North arrow
- Railroad clearance information with dimensions in English units

The following “Overhead Bridge Crossing Data” sheet shall be completed and submitted, by the agency responsible for the project, with both the Preliminary and Final Plan submission to Amtrak.

OVERHEAD BRIDGE CROSSING DATA

1. LOCATION: _____ _____ _____
   CITY COUNTY STATE
2. Distance from nearest Mile Post to Centerline of Bridge: _____
3. DOT Crossing Number: _____
4. State Project Number: _____
5. Description of Project:
   _____
   _____
   _____
   _____
   _____
6. Minimum Horizontal Clearance from Centerline of nearest Track:
   A. Proposed: _____ B. Existing (if applicable): _____
7. Minimum Vertical Clearance above top of high rail:
   A. Proposed: _____ B. Existing (if applicable): _____
8. List piers where crashwalls are provided:

Pier:	Distance from centerline of track:
_____	_____
_____	_____

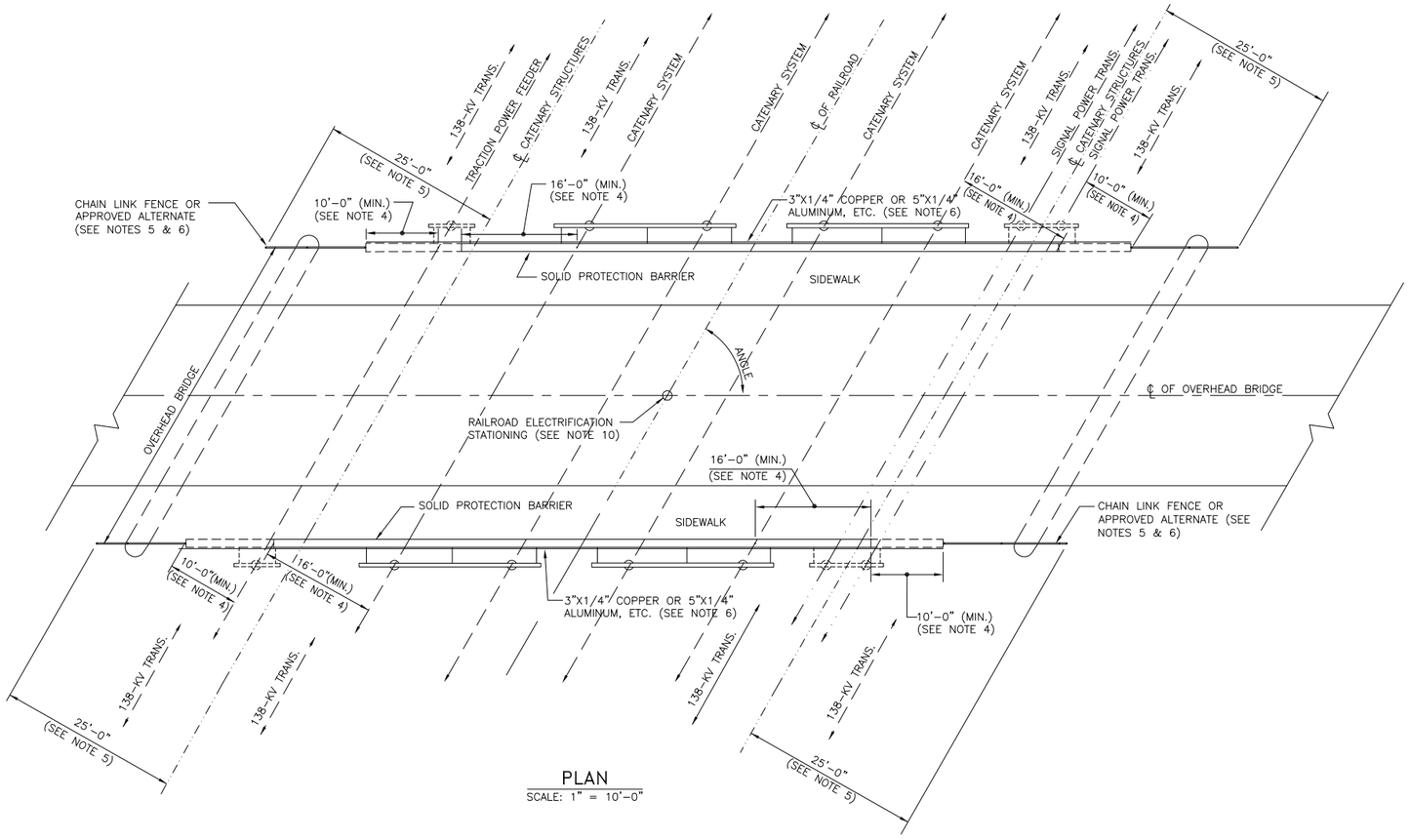
9. Describe how drainage from bridge is handled:
   _____
   _____
   _____
   _____
10. List piers where shoring is required to protect track:
    _____
    _____
11. Plan Submittal: Preliminary: _____ Final: _____

REPORTING

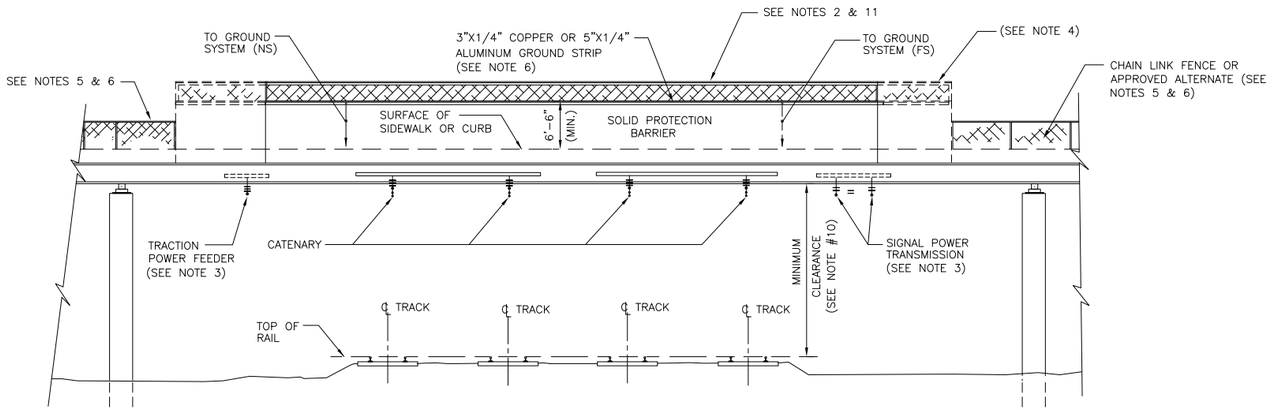
As detailed in procedure.

RESPONSIBILITY

Amtrak I&C Staff	Comply with Procedure
Director I&C	Assure Compliance
Amtrak Design Staff	Comply with Procedure
Amtrak Construction Staff	Comply with Procedure
Sr. Director Construction	Assure Compliance



PLAN
SCALE: 1" = 10'-0"



ELEVATION
SCALE: 1" = 10'-0"

GENERAL NOTES:

1. ANY MODIFICATION OF THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL BE SUBMITTED TO THE ELECTRIC TRACTION DEPARTMENT FOR APPROVAL.
2. OVERHEAD BRIDGES SHALL BE PROVIDED WITH 6'–6" HIGH SOLID PROTECTION BARRIERS ABOVE THE SURFACE OF THE SIDEWALK OR CURB TO PROTECT PEDESTRIANS AGAINST CONTACT WITH RAILROAD WIRES PASSING UNDER THE BRIDGE AND TO PREVENT DAMAGE TO THE WIRES. WHERE A WALKWAY EXISTS ON THE BRIDGE A CURVED FENCE SHALL BE INSTALLED ON TOP OF THE SOLID BARRIER OVER IT'S ENTIRE LENGTH. WHERE NO WALKWAY EXISTS THE FENCE SHALL BE STRAIGHT, (SEE SHEET 2 OF 2).
3. NORMALLY THE SIGNAL POWER TRANSMISSION WIRES AND THE TRACTION POWER FEEDER WIRES ARE LOCATED ABOVE THE BRIDGE. FOR THE ALTERNATE POSITION OF THESE WIRES UNDER THE BRIDGE, THE PROTECTIVE BARRIER SHALL EXTEND AS SPECIFIED IN NOTE NO.4.
4. THE PROTECTION BARRIER SHALL EXTEND AT LEAST 16 FEET BEYOND THE POINT AT WHICH ANY CATENARY WIRE PASSES UNDER THE BRIDGE; HOWEVER, THE MINIMUM DISTANCE FROM THE END OF THE PROTECTION BARRIER MEASURED TO A POINT OUTSIDE THE BRIDGE AND NORMAL TO THE WIRE SHALL BE 16 FEET.
   THE PROTECTION BARRIER SHALL EXTEND AT LEAST TEN (10) FEET BEYOND THE POINT AT WHICH A SIGNAL POWER OR TRACTION POWER FEEDER WIRE PASSES UNDER THE BRIDGE; THE MINIMUM DISTANCE FROM THE END OF THE PROTECTION BARRIER MEASURED TO A POINT OUTSIDE THE BRIDGE AND NORMAL TO THE WIRE SHALL BE TEN (10) FEET.
5. WHERE HIGH VOLTAGE WIRES PASS OVER THE BRIDGE, A CHAIN LINK FENCE OR SUITABLE ALTERNATIVE, CAPABLE OF BEING ELECTRICALLY BONDED TO THE BARRIER AND RAIL RETURN SYSTEM, SHALL EXTEND FROM THE END OF THE SOLID BARRIER TO A POINT 25 FEET BEYOND AND NORMAL TO THE CENTERLINE OF THE STRUCTURES SUPPORTING THE WIRES ON EITHER SIDE OF THE BRIDGE.
6. NONMETALLIC BARRIERS SHALL BE PROVIDED WITH GROUND STRIPS, EITHER 3" X 1/4" COPPER OR 5" X 1/4" ALUMINUM. OTHER MATERIALS MAY BE USED SUBJECT TO THE APPROVAL OF THE ELECTRIC TRACTION DEPARTMENT. METALLIC BARRIERS SHALL BE BONDED AND GROUNDED BY A METHOD AND WITH MATERIALS APPROVED BY THE ELECTRIC TRACTION DEPARTMENT.
7. PROTECTION BARRIERS SHALL BE GROUNDED IN ACCORDANCE WITH DRAWING ET–1120–C, TYPICAL DETAILS FOR POWER BONDING OF STRUCTURES.
8. OVERHEAD BRIDGES WITH OPEN–FLOOR CONSTRUCTION REQUIRE SPECIAL PROTECTION. THE DESIGN OF THE PROPOSED PROTECTION SHALL BE SUBMITTED TO THE ELECTRIC TRACTION DEPARTMENT FOR APPROVAL.
9. WHERE LOCAL CONDITIONS WARRANT, THE DIMENSIONS SHOWN ON THIS DRAWING MAY BE MODIFIED WITH THE APPROVAL OF THE ELECTRIC TRACTION DEPARTMENT.
10. DESIGN DRAWINGS OF THE OVERHEAD BRIDGE SHALL SHOW MINIMUM CLEARANCE, ANGLE, AND RAILROAD ELECTRIFICATION STATIONING AS INDICATED ON THIS DRAWING.
11. (a) EXISTING PROTECTION BARRIERS ON BRIDGES OVER ELECTRIFIED TRACKS IN CLASS EIGHT (8) TERRITORY (GREATER THAN 125 MPH) WHERE THERE'S A DEMONSTRATED NEED SHALL BE RETROFITTED WITH THE CURVED OR STRAIGHT FENCE OVER THEIR ENTIRE LENGTH.

    (b) A 9'–6" HIGH CHAIN LINK FENCE SHALL EXTEND FROM THE END OF THE SOLID PROTECTION BARRIER TO A POINT 16 FEET BEYOND THE CENTERLINE OF THE OUTERMOST ELECTRIFIED TRACK AS SPECIFIED IN NOTE FOUR (4) ABOVE. THE FENCE SHALL BE CURVED OR STRAIGHT PER NOTE (2).

No	Revisions	Date	By

Amtrak®

OFFICE OF
V.P., Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station–Philadelphia, Pennsylvania 19104

Approved	Date
Chief Engineer Electric Traction – R. J. Verhelle	6/7/99
/S/	
Director Electric Traction Design – M. D. Insogna	6/7/99
/S/	

10" 0" 10" 20"
Scale: 1"= 10'-0"

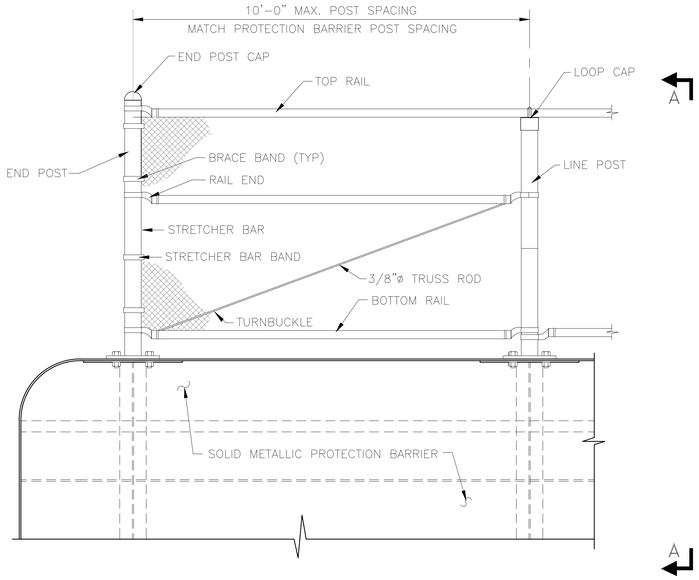
THIS DRAWING SUPERSEDES P.R.R. DRAWING ET–1446–D–4

E. T. STANDARD
ELECTRIFIED TERRITORY O.H. BRIDGES TYPICAL PROTECTION BARRIER

File No.:	3FF3B
Ref. No.:	ET–1446–D–4
Sheet No:	1 of 2

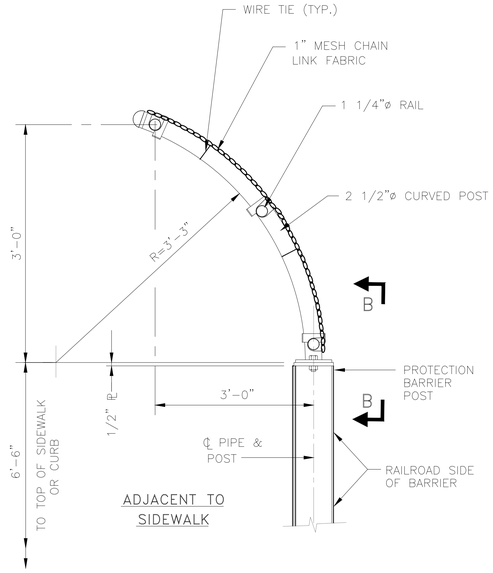
ET–1446–D

Designed: MDI	Drawn: BJT	Checked: MDI	Date: 05–07–99



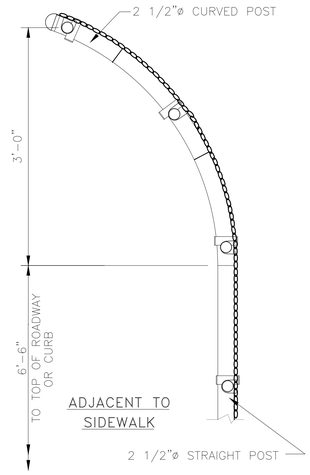
ELEVATION VIEW OF CURVED FENCE ATTACHMENT

NO SCALE



SECTION A–A

NO SCALE



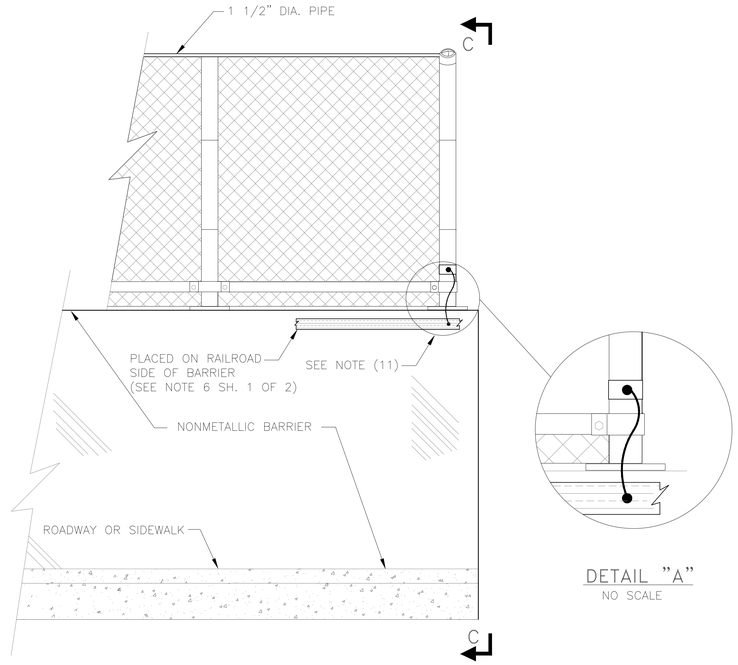
FENCING BEYOND BARRIER
(SEE NOTE 11b SH. 1 OF 2)

NO SCALE

GENERAL NOTES:

1. BASE PLATE MATERIAL SHALL CONFORM TO ASTM SPECIFICATION A709, GRADE 36, LATEST ISSUE. (GALVANIZED)
2. POSTS SHALL BE 2 1/2"ø STANDARD WEIGHT PIPE. (GALVANIZED)
3. RAILS SHALL BE 1 1/4"ø STANDARD WEIGHT PIPE. (GALVANIZED)
4. CHAIN–LINK FENCE FABRIC SHALL BE NUMBER NINE (9) GAUGE ALUMINUM COATED, ONE (1) INCH MESH SIZE, DIAMOND SHAPED.
5. WIRE TIES SHALL BE STANDARD NUMBER NINE (9) GAUGE WIRE FOR RAILS AND NUMBER SIX (6) GAUGE WIRE FOR POSTS. (ALUMINUM COATED)
6. BOLTS SHALL BE 5/8"ø STAINLESS STEEL CONFORMING TO ASTM SPECIFICATION A325, LATEST ISSUE.
7. MATERIAL BASED ON PENN DOT BC–701.
8. ALL WELDING SHALL CONFORM TO STRUCTURAL WELDING CODE WAS D1.5, LATEST EDITION. ALL WELDS SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED.
9. ALL GALVANIZING SHALL CONFORM TO ASTM SPECIFICATION A123, LATEST ISSUE.
10. THIS DRAWING CONFORMS TO STANDARD STRUCTURE PLAN SP3002. ALTERNATES SHALL BE SUBMITTED TO AMTRAK FOR APPROVAL.
11. NONMETALLIC SOLID PROTECTION BARRIERS WILL REQUIRE ADDITIONAL BONDING AND GROUNDING IN ACCORDANCE WITH AMTRAK STANDARDS. SEE DETAIL "A" BELOW. DETAILS SHALL BE FURNISHED BY THE ELECTRIFICATION CONSULTANT.
12. THE REQUIREMENTS FOR FENCING SHOWN ON THIS DRAWING, (ET–1446–D) SHEET 2 OF 2 ARE INTENDED TO DETER VANDALISM TO AMTRAK PROPERTY AND TO PREVENT INJURY TO AMTRAK EMPLOYEES AND PASSENGERS.
13. DETAILS OTHER THAN THOSE SHOWN ON THIS DRAWING SHALL BE PROVIDED BY THE A/E.

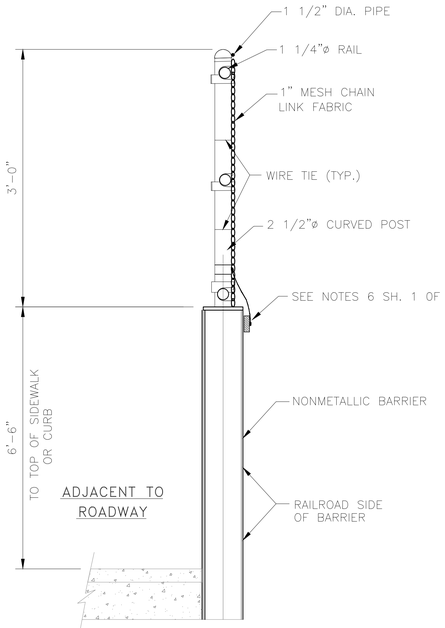
WALKWAY SIDE OF BRIDGE



ELEVATION VIEW OF STRAIGHT FENCE ATTACHMENT

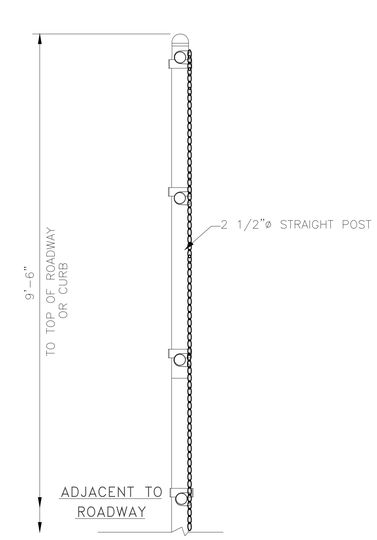
NO SCALE

NO SCALE



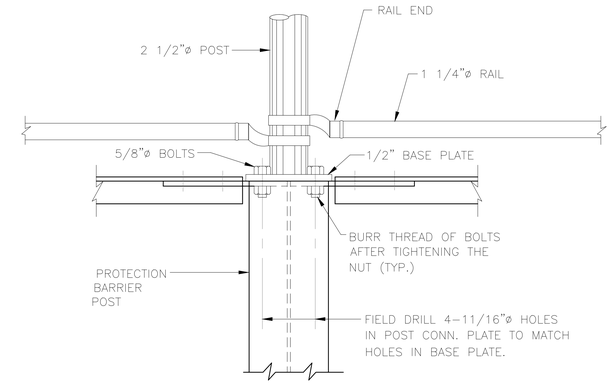
SECTION C–C

NO SCALE



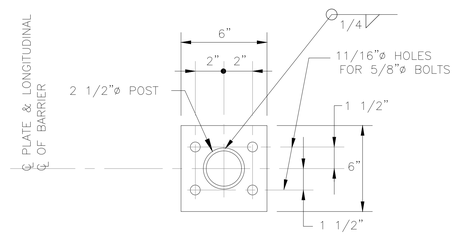
FENCING BEYOND BARRIER
(SEE NOTE 11b SHEET 1 OF 2)

NO SCALE



SECTION B–B
TYPICAL FOR METALLIC BARRIERS

NO SCALE



BASE PLATE DETAIL (TYPICAL)

NO SCALE

ROADWAY SIDE OF BRIDGE

No	Revisions	Date	By

Amtrak®

OFFICE OF
V.P., Chief Engineer
Engineering
National Railroad Passenger Corporation
30TH Street Station–Philadelphia, Pennsylvania 19104

Approved	Date
Chief Engineer Electric Traction – R. J. Verhelle /S/	6/7/99
Director Electric Traction Design – M. D. Insogna /S/	6/7/99

E. T. STANDARD

ELECTRIFIED TERRITORY O.H. BRIDGES
TYPICAL PROTECTION BARRIER

Designed:	Drawn:	Checked:	Date:
MDI	BJT	MDI	05–07–99

File No.:	3FF3B
Ref. No.:	None
Sheet No:	2 of 2

ET–1446–D

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
GENERAL CONDITIONS, MAX $650,000

a. DESCRIPTION - This item shall include all work described and required by the Plans and Specifications for which no item of work is listed in the Bid Form, including but not limited to:

- Scheduling and organization of all work, subcontractors, suppliers, testing, inspection, surveying, and staking
- Coordination of, and cooperation with, other contractors, agencies, departments, and utilities
- Protection of Utilities
- Placing, maintaining, and removing all soil erosion and sedimentation controls
- Maintaining drainage
- Maintaining drives, drive openings, sidewalks, pedestrian building access, mail deliveries, and solid waste/recycle pick-ups
- Storing all materials and equipment in designated areas
- Coordination efforts to furnish various HMA mixtures as directed by the Engineer
- Furnishing and operation vacuum-type street cleaning equipment a minimum of once per week, or more frequently, if directed by the engineer;
- Furnishing and operating vacuum-type utility structure cleaning equipment
- Furnishing and operating both vibratory plate and pneumatic-type ("pogo-stick") compactors
- Furnishing and operating all equipment required to complete the proposed work activities as specified
- Furnishing and operating a backhoe during all work activities;
- Furnishing and operating a jackhammer and air compressor during all work activities;
- Noise and dust control
- Furnish and install temporary barricades and fencing at excavation areas to protect workers and people in the work area.
- Mobilization(s) and demobilization(s)
- Furnishing submittals and certifications for materials and supplies
- Disposing of excavated materials and debris
- All miscellaneous and incidental items such as overhead, insurance, and permits.
- Interim and final site cleanup, including, but not limited to removal and disposal of excess materials, removal of all dirt and deleterious materials, power washing pavements, removal of all packing materials and labels, etc.
- Scheduling and organization of all work, subcontractors, suppliers, testing, inspection, and construction surveying and staking;
- coordination of, and cooperation with, other contractors, agencies, departments, and utilities;
- Coordination with City forces to stockpile and load used castings on City vehicles;
- Protection and maintenance of all existing utilities, including support, protection, capping, repair, replacement, connection or re-connection of existing pipes, and utilities damaged by the Contractor's operations;
- Maintaining and removing all soil erosion and sedimentation controls (as specified herein or as shown on project plans) for which no pay item exists;

- Maintaining the site, and all areas within the Construction Influence Area, in a well-graded and drained state at all times during the course of the project. De-watering and drainage of all excavations as required to maintain a stable. Open hole;
- The continuous maintenance of the temporary road surface with the Construction Influence Area throughout the duration of the construction. This includes any needed grading to maintain the surface in a smooth condition free of potholes, ruts, bumps, or other objectionable conditions;
- Temporary sheeting, bracing, and shoring of excavations in accordance with the applicable MIOSHA Standards;
- Maintaining driveway openings. Sidewalks, bike paths, mail deliveries, and solid waste/recycle pick-ups. This includes the placement and maintenance of maintenance aggregate across sidewalk ramps all as needed and as directed by the Engineer;
- Using quantities of dust palliative, maintenance aggregate, and hot patching mixture for use as temporary base, surfacing, and dust control at utility crossings, side roads, and driveways;
- Storing all materials and equipment off lawn areas;
- Temporary removal/re-location, storage, and re-installation/re-setting of existing street name, guide, and regulatory signs, mailboxes, newspaper tubes, etc. which conflict with the proposed construction;
- Site clean-up on a daily basis during the course of the project's construction.
- Coordination efforts to furnish the various required HMA mixtures as directed by the Engineer;
- Coordination efforts to furnish and operate various-size vehicles/equipment as directed by the engineer;
- Noise and dust control in accordance with the applicable City of Ann Arbor Ordinances;
- Mobilization(s) and demobilization(s) of all needed materials. Equipment, and personnel;
- Furnishing all required shop drawing, information submittals, and material certifications for all needed materials and supplies incorporated into the project;
- The proper off-site disposal of all excavated materials and debris;
- Removal of shrubs, brush, and trees less than 8" diameter (DBH) as shown on the plan sheets or as directed by the engineer;
- Fencing to protect excavation over 1' in depth during non-work hours. The fencing must be a minimum of 36" high, be constructed of orange HDPE material, and reasonably secured to prevent unwarranted access;
- Submittal of Close-Out Documents at the conclusion of work and prior to final payment, including as-built documentation of field changes and manufacturer's product warrantee and maintenance instructions;
- All miscellaneous and incidental items such as overhead, insurance, and permits; and,
- Meeting all requirements relating to Debarment Certification, David Bacon Act, and Disadvantaged Business Enterprise, and providing the necessary documentation;
- Performing the Track Monitoring for Work Disturbing Roadbed in accordance with the Specification.

b. MEASUREMENT AND PAYMENT - This item of work will be paid for on a pro rata basis at the time of each progress payment. Measurement will be based on the ratio between work

completed during the payment period and the total contract amount. When all of the work of this Contract has been completed, the measurement of this item shall be 1.0 Lump Sum.

The completed work as measured for this item of work will be paid for at the Contract Unit Price for the following Contract (Pay) Item:

PAY ITEM	**PAY UNIT**
General Conditions, Max $650,000	Lump Sum

The unit price for this item of work shall include all labor, material, and equipment costs to perform all the work specified in the City Standard Specifications and as modified by this Detailed Specification.

PUBLIC UTILITY CONTACT INFORMATION

WATER	CITY OF ANN ARBOR FIELD OPERATIONS SERVICE UNIT W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	DAN WOODEN (734) 794-6350
SANITARY		TRAVIS CONLEY (734) 794-3304
STORM		KEVIN SCHNEIDER (734) 794-6350
SIGNS SIGNALS STREET LIGHTS		MARC MORENO (734) 794-6350

PRIVATE UTILITY CONTACT INFORMATION

GAS	DTE ENERGY 3150 E. MICHIGAN AVE YPSILANTE TOWNSHIP, MI 48198	ROBERT CZAPIEWSKI (734) 544-7818
ELECTRIC	DTE ELECTRIC	RAFAEL RAMIREZ-INCIARTE (313) 597-4411 rafael.ramirezinciart2@ dteenergy.com
CABLE	COMCAST 25626 TELEGRAPH ROAD SOUTHFIELD, MI 48034	JEFF DOBIES (734) 359-1669
PHONE	AT&T 550 S. MAPLE ROAD ANN ARBOR, MI 48103	MICHAEL ZAREMA (734) 277-4855
FIBER OPTIC	VERIZON BUSINESS/MCI 3 PARKLANE BOULEVARD DEARBORN, MI 48126	MARLON REDD (313) 588-0849 marlon.redd@verizon.com
FIBER OPTIC	FIBER LINK, INC.	JOEL JARVIS Missdigdsg@ fiberlinc.com
FIBER OPTIC	WINDSTREAM COMMUNICATIONS	JEFF WEBB (734) 790-6556 jeff.webb@windstream.com
FIBER OPTIC	LUMEN/CENTURYLINK 19675 WEST 10 MILE ROAD SOUTHFIELD, MI 48075	DAVE HUCKFELDT (517) 812-2592 dave.huckfeldt@lumen.com
ITS/FIBER OPTIC	UNIVERSITY OF MICHIGAN	KEVIN MCLAUGHLIN (734) 615-5699 mckevin@umich.edu

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2021-008-C1	1	TITLE SHEET
2021-008-C2	2	PROJECT INFORMATION
2021-008-C3	3	PROJECT NOTES
2021-008-C4	4	MISCELLANEOUS QUANTITIES
		ROAD PLANS
2021-008-TSCS	5	ROADWAY CROSS SECTIONS
2021-008-TS1	6	EXISTING CONDITIONS (E. MED. CNTR. DR.)
2021-008-TS2	7	EXISTING CONDITIONS (FULLER RD.)
2021-008-SECM	8	SOIL EROSION AND SEDIMENTATION CONTROL PLAN
2021-008-R1	9	ROADWAY REMOVAL PLAN
2021-008-R2	10	ROADWAY CONSTRUCTION
2021-008-MOT1 TO MOT2	11-12	BRIDGE CONSTRUCTION STAGING DETAILS
2021-008-MOT1	13	ADVANCED WARNING SIGNAGE PLAN
2021-008-MOT2-MOT4	14 - 16	TEMPORARY SIGNAGE PLAN (STG. I AND II)
2021-008-MOT5	15	DETOUR PLAN
2021-008-MOT6	16	TEMPORARY SIGNAGE PLAN (STG.III)
2021-008-MOT7	17	M.O.T. QUANTITIES
2021-008-MOT8	18	SIGN DETAILS
2021-008-MOT9-MOT14	21 - 26	PAVEMENT MARKING PLANS
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2021-008-GD1-GD3	52 - 54	DETAIL GRADES
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2021-008-UT2	58	OVERALL UTILITY PLAN
2021-008-UT4	59	TELECOMMUNICATIONS CONDUIT PLAN
2021-008-UT5	60	TELECOMMUNICATIONS CONDUIT DETAILS
2021-008-UT6	61	STREET LIGHT ELECTRICAL PLAN
2021-008-UT6	62	UM HOSPITAL SIGN RELOCATION

SHEET INDEX

DRAWING NUMBER	SHEET NUMBER	SHEET TITLE
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2021-008-BR2	65	LAYOUT DIAGRAM
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		STANDARD PLANS
2021-008-STD1 TO STD2	123-125	ANN ARBOR STANDARD DETAILS
2021-008-STD3 TO STD4	126-127	U OF M STANDARD DETAILS
2021-008-STD5 TO STD9	128-132	MDOT ROAD STANDARD DETAILS (REV NO. 1)
2021-008-STD10 TO STD13	133-136	MDOT BRIDGE STANDARD DETAILS ***
2021-008-SSD1 TO SSD9	137-153	MDOT TRAFFIC SIGNAL SPECIAL DETAILS

STANDARD PLANS

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

STD. PLAN NO.	ITEM OF WORK
	ANN ARBOR STANDARD PLANS
SD-SESC-1	INLET PROTECTION
SC-SESC-3	SILT FENCE
SD-GU-5	STANDARD CASTING SCHEDULE
SD-GU-5	MANHOLE CASTING ADJUSTMENT
SD-GU-8	MANHOLE & VALVE/MOMUMENT BOX LOWERING
SD-M-1	TREE PROTECTION
SD-R-1	BARRIER CURB & GUTTER
SD-R-4	SPILL-OUT BARRIER CURB & GUTTER
SD-R-10	SIDEWALK & CURB & GUTTER JOINTS
SD-R-15	URBAN GUARDRAIL LOCATION
SD-SL-1	STREETLIGHT FOUNDATION
SD-TD-1A	UTILITY TRENCH - TYPE I
SD-TD-6	UTILITY TRENCH - TYPE VI
SD-TD-7	UTILITY TRENCH - TYPE VII
SD-TD-9	UTILITY TRENCH - TYPE IX
	UNIVERSITY OF MICHIGAN STANDARD PLANS
	EXPANSION JOINT REPLACEMENT
	PAVEMENT EXPANSION JOINT (E.J.)
	18" CURB & GUTTER, SPILLOUT
	18" CURB & GUTTER (U OF M STANDARD)
	SIDEWALK CONTROL JOINT LAYOUT
	MILLED EDGE
	MANHOLE COVER ADJUSTMENT & STRUCTURE REBUILD
	SIGN MOUNT - TURF
	SIGN MOUNT - CONCRETE SURFACE
	BICYCLE HOOP - CONCRETE
	BICYCLE HOOP - MULCH
	BICYCLE HOOP - CORED
	BICYCLE HOOP - PAVERS
	BICYCLE HOOP - SURFACE MOUNT
	MULCH BLANKET INSTALLATION
	SILT FENCE
	INLET FILTER SACK
	SEEDED AREA
	M.D.O.T. STANDARD PLANS
R-28-J	SIDEWALK RAMP & DETECTABLE WARNING DETAILS
R-53-A*	TEMPORARY CONCRETE BARRIER LIMITED DEFLECTION
B-25-K	BRIDGE RAILING, AESTHETIC PARAPET TUBE
B-41-C	FENCING FOR BRIDGE RAILING, AESTHETIC PARAPET TUBE (REV NO. 1)
B-102-C	STANDARD SLOPE PAVING DETAILS
B-103-E	MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS
MOT TYPICAL A	SIGNAL WORK AT INTERSECTION LONGER THAN 1 HOUR ON E. MEDICAL CENTER DR. AT W. MEDICAL CENTER DR. OR CANCER CENTER
163-INT-LD-OUT	SIGNAL WORK AT INTERSECTION OUTSIDE ROADWAY LONGER THAN 1 HOUR ON A 4-LANE UNDIVIDED ROADWAY

* DENOTES SPECIAL DETAIL

** SHEET NO. 110 OF 153 SHOWING THE SPLASHBOARD DETAILS HAS BEEN DELETED FROM THE SET. (REV NO. 1)

*** SHEET NO. 134A OF 153 SHOWING MDOT STANDARD PLAN B-41-C FENCING FOR BRIDGE RAILING, AESTHETIC PARAPET TUBE HAS BEEN ADDED TO THE SET.

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

DLZ

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

PROJECT INFORMATION SHEET

SCALE NONE

INCH 0 1

DRAWING NO. 2021-008-C2

SHEET NO. 2 OF 153

APPROVED BY _____

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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NOTES:

GENERAL

THE UNDERGROUND LOCATIONS AND DEPTH SHOWN FOR ALL PUBLIC AND PRIVATE UTILITIES ARE APPROXIMATE. THE CITY OF ANN ARBOR, THE UNIVERSITY OF MICHIGAN, AND DLZ ASSUME NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. THE CONTRACTOR SHALL CONTACT MISS-DIG TO LOCATE ALL MARKED AND UNMARKED UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DELAYS, DAMAGES, COSTS AND/OR CHARGES INCURRED DUE TO AND/OR BY REASON OF ANY UTILITY, STRUCTURE, FEATURES AND/OR SITE CONDITION, WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE, AT ITS SOLE EXPENSE, TO AS GOOD OR BETTER CONDITION, ANY AND ALL UTILITIES, STRUCTURES, FEATURES AND/OR SITE CONDITIONS WHICH ARE IMPACTED BY REASON OF THE WORK, OR INJURED BY ITS OPERATIONS, OR DURING THE OPERATIONS OF ITS SUBCONTRACTORS OR SUPPLIERS.

DRIVEWAYS AND ENTRANCES TO BUILDINGS, REAL PROPERTY, AND THE LIKE SHALL NOT BE BLOCKED EXCEPT FOR SHORT DURATIONS AND ONLY WHEN APPROVED BY THE ENGINEER. VEHICULAR AND PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES AS SPECIFIED IN MAINTAINING TRAFFIC PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUOUS MAINTENANCE OF THE TEMPORARY TRAFFIC CONTROL DEVICES AND SOIL EROSION CONTROL MEASURES WITHIN THE CONSTRUCTION AREA AND APPROACHES TO PROJECT SITE, UNTIL THE FINAL COMPLETION OF THE PROJECT. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.

THE LOCATION OF MATERIAL STOCK PILES AND ON-SITE STAGING AREAS ARE TO BE APPROVED BY THE ENGINEER IN ADVANCE. ANY MATERIALS STOCKPILED OR STORED SHALL NOT CREATE AN EROSION PROBLEM, INTERFERE WITH DRAINAGE, OR CREATE INSUFFICIENT SIGHT DISTANCE.

EXISTING STREET NAME, GUIDE, REGULATORY SIGNS, BRIDGE LIGHTING, ETC, WHICH CONFLICT WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED PRIOR TO CONSTRUCTION, STORED IN A MANNER WHICH WILL PREVENT DAMAGE, AND RE-SET IN LOCATIONS AS DIRECTED BY THE ENGINEER OR THE UNIVERSITY OF MICHIGAN. THE WORK TO COMPLY WITH THESE REQUIREMENTS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE OTHER BID ITEMS OF WORK.

A RAILROAD PERMIT IS REQUIRED TO ACCESS THE TRACK SIDE OF THE PIERS TO PERFORM THE SUBSTRUCTURE REPAIRS.

THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES AND SERVICE LEADS ARE TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

DURING NON-WORKING HOURS NO MORE THAN TEN(10) FEET OF TRENCH SHALL REMAIN OPEN. ANY OPEN TRENCH SHALL BE PROPERLY SECURED WITH PROTECTIVE FENCING. THIS WORK SHALL BE INCLUDED IN THE ITEMS OF WORK BEING UNDERTAKEN AND WILL NOT BE PAID FOR SEPARATELY.

FOR MAINLINE HMA PAVING, THE WIDTH OF THE MAT FOR EACH PASS OF THE PAVER SHALL BE NOT LESS THAN 10.5', NOR GREATER THAN 16', EXPECT AS NOTED IN THE PLANS AND AS DIRECTED BY THE ENGINEER. THE ENGINEER WILL DIRECT THE LAYOUT OF ALL HMA LONGITUDINAL JOINTS DURING CONSTRUCTION.

ALL EXCAVATION REQUIRED FOR PROJECT GRADING WITHIN THE PROJECT LIMITS, INCLUDING PROPOSED PAVEMENT, BIOSWALES, SIDEWALK, AND SIDEWALK RAMPS SHALL BE INCLUDED IN "MACHINE GRADING, MODIFIED,____".

EXCAVATION AND BACKFILL BEHIND CURB AND GUTTER SHALL BE INCLUDED IN "MACHINE GRADING, MODIFIED,_____". ALL BACKFILL UNDER PROPOSED CONCRETE PAVEMENTS SUCH AS DRIVE APPROACHES, RAMPS, SIDEWALK, ETC., SHALL BE MDOT CLASS II GRANULAR MATERIAL, COMPACTED TO 95% OF ITS MAX. DRY DENSITY AND WILL BE PAID FOR AS "SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED." BACKFILL FOR OTHER AREAS MUST BE APPROVED BY THE ENGINEER AND COMPACTED TO 95% OF ITS MAX. DRY DENSITY. NO PAYMENT WILL BE MADE FOR SUB-BASE OR AGGREGATE BASE THAT EXTENDS BEYOND 12" BEHIND THE BACK OF CURB. REFERENCE THE TYPICAL CROSS-SECTIONS.

SOME STORM SEWER MAY UNAVOIDABLY BECOME DAMAGED DURING CONSTRUCTION, OR IT MAY BE DETERMINED BY THE ENGINEER THAT EXISTING STORM SEWER NEEDS TO BE REPLACED. IN EITHER CASE THE ENGINEER MAY DIRECT THE SEWER TO BE REMOVED AND REPLACED. THE REMOVAL OF THE EXISTING SEWER AND/OR DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE CONTRACT WORK ITEMS "SEWER, ANY SIZE OR DEPTH, REM" OR "DR STRUCTURE, ANY SIZE OR DEPTH, REM", AND THE REPLACEMENT SEWER SHALL BE INSTALLED AND PAID FOR AT THE CORRESPONDING CONTRACT UNIT PRICE, IF CONTAINED WITHIN THE CONTRACT, FOR THE VARIOUS TYPES AND SIZES OF SEWER TO BE REPLACED.

ALL STRUCTURES SHALL RECEIVE NEW CASTINGS, EITHER TYPE B, TYPE K, TYPE Q, OR TYPE R AS SPECIFIED ON THE STANDARD CASTING SCHEDULE. THE EXISTING CASTINGS SHALL BE NEATLY STACKED ON-SITE IN A SINGLE LOCATION SO THAT CITY OF ANN ARBOR FORCES CAN RETRIEVE THEM AT A LATER DATE. THE CONTRACTOR SHALL ASSIST CITY FORCES BY LOADING THEM INTO CITY TRUCKS. ALL COSTS ASSOCIATED WITH STORING, STOCKPILING, AND LOADING CASTINGS INTO CITY VEHICLES SHALL BE INCLUDED IN THE ITEM OF WORK "GENERAL CONDITIONS, MAX $650,000" AND WILL NOT BE PAID FOR SEPARATELY.

ALL FITTINGS, HYDRANTS, VALVES AND CASTINGS REMOVED DURING CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CITY OF ANN ARBOR. THE CONTRACTOR SHALL COORDINATE PICK UP BY THE CITY OF ANN ARBOR FIELD OPERATIONS UNIT AT W.R. WHEELER SERVICE CENTER YARD.

PAYMENT FOR DRAINAGE STRUCTURE SUMPS WHERE SPECIFIED SHALL BE INCLUDED IN THE PAYMENT FOR THE VARIOUS DRAINAGE STRUCTURES SIZES AND/OR TYPES.

WHERE PIPES OF DIFFERENT SIZES OR MATERIALS ARE JOINED OR SAWED SEWER PIPE CONNECTIONS ARE MADE, FRENCO FLEXIBLE COUPLINGS WITH STAINLESS STEEL SHEAR RINGS SHALL BE USED. THE CONTRACTOR'S PURCHASE PRICE FOR THE DEVICES, INCLUDING SHIPPING, SHALL BE PAID AS AN EXTRA. PRIOR TO PAYMENT FOR THIS ITEM, THE CONTRACTOR SHALL SUBMIT RECEIPTS FOR THE ENGINEER'S REVIEW AND APPROVAL. ALL OTHERS COSTS ASSOCIATED WITH THE INSTALLATION OF THESE DEVICES SHALL BE INCLUDED IN THE PAYMENT FOR THE SEWER.

WHERE STORM SEWER IS TO BE REMOVED AND REPLACED OR ADDED, ALL PIPE SHALL BE INSTALLED USING THE UTILITY TRENCH DETAILS SHOWN ELSEWHERE IN THE PLAN SHEETS AND/OR DETAILED IN THE SPECIFICATIONS. TRENCH DETAILS I AND V REQUIRE THE USE OF MDOT CLASS II GRANULAR MATERIAL.

IF THE CONTRACTOR ENCOUNTERS EXISTING EDGE DRAIN(S) DURING CONSTRUCTION OF THE PROPOSED EDGE DRAINS, INLET LEADS, OR CATCH BASINS, IT SHALL BE CAPPED AT EACH END TO PREVENT MATERIAL FROM ENTERING THE PIPE. THE COST OF THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE PARTICULAR ITEM OF WORK BEING PERFORMED WHEN EXISTING EDGE DRAIN(S) ARE ENCOUNTERED.

IN AREAS WHERE EDGE DRAIN CANNOT BE INSTALLED IN ACCORDANCE WITH THE DETAILS, THE EDGE DRAIN SHALL BE INSTALLED AT THE DEPTH AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. IN NO CASE SHALL THE EDGE DRAIN BE INSTALLED AT A GRADE LESS THAN 0.50% OR AT A DEPTH LESS THAN 3.25' BELOW THE TOP OF PAVEMENT.

ALL CURB, SIDEWALK, DRIVEWAY APPROACH REMOVALS SHALL BE APPROVED BY THE ENGINEER BEFORE THE WORK IS PERFORMED. ALL CONCRETE AND BITUMINOUS MATERIALS SHALL BE SAW-CUT FULL-DEPTH AT THEIR REMOVAL LIMITS PRIOR TO REMOVAL. SAW-CUTTING WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "MACHINE GRADING, MODIFIED,_____."

PLACE 4" (MINIMUM) OR 6" (MINIMUM) THICKNESS CLASS II GRANULAR MATERIAL COMPACTED TO 95% OF ITS MAX. DRY DENSITY UNDER CONCRETE SIDEWALK AS SHOWN ON THE DETAILS. THIS WORK SHALL BE INCLUDED IN THE CONTRACT ITEMS "SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED."

PLACE 6" (MINIMUM) CLASS II GRANULAR MATERIAL COMPACTED TO 95% OF ITS MAX. DRY DENSITY UNDER DRIVE APPROACHES. THIS WORK SHALL BE INCLUDED IN THE CONTRACT ITEM "SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED."

BRIDGE

THE RECONSTRUCTION DESIGN OF THE SUPERSTRUCTURE, PIER CAPS, AND WIDENED SUBSTRUCTURE UNITS IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION HL-93 LOADING WITH THE EXCEPTION THAT THE DESIGN TANDEM PORTION OF THE HL-93 LOAD DEFINITION IS REPLACED BY A SINGLE 60 KIP AXLE LOAD BEFORE APPLICATION OF THIS 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MOD. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE ORIGINAL STRUCTURE WAS DESIGNED FOR HS25 LOADING.

THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

CONCRETE:	
GRADE 3500	f'c = 3,000 psi
GRADE 4500	f'c = 4,000 psi
STEEL REINFORCEMENT:	fy = 60,000 psi
STRUCTURAL STEEL:	
AASHTO M270, GRADE 50 OR 50W	Fy = 50,000 psi
AASHTO M270, GRADE 36	Fy = 36,000 psi

BEVEL ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS WITH 1/2" TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED.

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.

REMOVAL OF EXISTING HMA PATCHES AS A RESULT OF REMOVAL OF OTHER SUPERSTRUCTURE ITEMS SHALL BE INCLUDED IN THE REMOVAL OF THOSE ITEMS AND SHALL NOT BE PAID FOR SEPARATELY.

NO PORTION OF THE FORMWORK OR FALSEWORK SHALL ENCROACH ON THE EXISTING UNDERCLEARANCE.

THIS PROJECT HAS BEEN EVALUATED USING THE FAA NOTICE CRITERIA TOOL FOR A TEMPORARY STRUCTURE HEIGHT OF 232 FEET ABOVE A GROUND LEVEL ELEVATION OF 771 FEET AND NO PERMITS ARE REQUIRED.

UM CONDUIT

PULL A SOLID MANDREL AND A STIFF BRISTLED BRUSH THROUGH EACH DUCT TO CLEAN THEM AND ENSURE THE ABSENCE OF KINKS AND FLAT SPOTS. A MINIMUM 3-1/4" DIAMETER BY 5" MINIMUM LONG MANDREL SHALL BE USED FOR 4" CONDUIT AND A MINIMUM 4" DIAMETER BY 6" MINIMUM LONG MANDREL SHALL BE USED FOR 5" DIAMETER CONDUIT. THE MADREL PULL SHALL BE WITNESSED BY THE ENGINEER. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE CONDUIT PAY ITEMS.

LIGHTING

THE CONTRACTOR SHALL FURNISH ALL MATERIALS AND LABOR AS INDICATED ON PLANS AND AS REQUIRED FOR A COMPLETE ELECTRICAL SYSTEM.

THE CONTRACTOR SHALL VISIT THE JOB SITE, THOROUGHLY CHECK THE EXISTING FIELD CONDITIONS AND EXISTING ELECTRICAL INSTALLATIONS AND CLARIFY ALL DISCREPANCIES WITH THE ENGINEER BEFORE SUBMITTING A BID AS NO EXTRAS WILL BE ALLOWED FOR OMITTED WORK DUE TO FAILURE TO INSPECT THE SITE.

ALL ELECTRICAL WORK SHALL COMPLY WITH N.E.C., LOCAL CODES, ORDINANCES AND REGULATIONS INCLUDING THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT.

ALL MATERIALS SHALL BE NEW AND BEAR THE UL LABEL.

ELECTRICAL ENCLOSURES, SUPPORT RACKS, CONDUIT SYSTEMS, ETC., SHALL BE THOROUGHLY GROUNDED IN ACCORDANCE WITH THE N.E.C. AND ALL LOCAL CODES. INCLUDED IN THE PAY ITEM "DB CABLE IN CONDUIT, 600V, 1/C#6".

COORDINATE ALL ELECTRICAL UNDERGROUND WORK WITH NEW AND EXISTING UNDERGROUND UTILITIES BEFORE INSTALLATION.

HAND DIG WHERE REQUIRED TO LOCATE EXISTING UTILITIES PRIOR TO INSTALLATION OF THE PROPOSED ROADWAY LIGHTING CONDUIT. INCLUDED IN THE PAY ITEM "EXPLORATORY EXCAVATION, VERTICAL".

ALL LIGHT POLES SHALL BE STORED WITH WOOD BLOCKING SEPARATION AND CARE SHALL BE TAKEN SO AS NOT TO DAMAGE THE FACTORY FINISH OF POLES AND LUMINAIRES. ALL DAMAGE SHALL BE TOUCHED UP WITH FACTORY APPROVED TOUCH- UP PAINT.

CARE SHALL BE EXERCISED DURING POLE BASE & POLE PLACEMENT, SO THAT ANCHOR BOLTS ARE CORRECTLY ALIGNED, POLES ARE PLUMB, LUMINAIRES ARE POSITIONED AND ORIENTED PROPERLY.

FINAL LOCATIONS OF LIGHT STANDARDS, CONDUIT AND HANDHOLES SHALL BE FIELD ADJUSTED AS DIRECTED BY THE ENGINEER PRIOR TO CONSTRUCTION TO AVOID CONFLICTS THAT MAY BE ENCOUNTERED.

PROVIDE A COMPLETE UNDERGROUND SYSTEM AS SHOWN INCLUDING ALL EXCAVATION AND BACKFILL. ALL CONDUIT JOINTS SHALL BE MADE WATERTIGHT.

ALL THREADED ELECTRICAL EQUIPMENT (CONDUIT, COUPLINGS, JUNCTION BOXES, ETC.) INSTALLED OUTDOORS SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.

ELECTRICAL SERVICE SHALL BE 120 VOLT, SINGLE PHASE, 2 WIRE, WITH GROUND.

STREET LIGHTING LUMINAIRES SHALL BE LED TYPE II DISTRIBUTION, 58 WATT, 120/277 VOLT, 8,201 DELIVERED LUMENS, 3000K CCT, LUMECON WORKMEN SERIES LWS-LSL-60-GR-1-T2-OW-7P.

STREET LIGHTING POLES SHALL BE ROUND TAPERED COMPOSITE, ANCHOR BASE POLE, 30' MOUNTING HEIGHT, VALMONT SHAKESPEARE AS SERIES, AS30-01S1DB01/OPAR6-BK-H, SMOOTH FINISH, BLACK IN COLOR. POLE SHALL HAVE 4"X12" HANDHOLE AND ONE-PIECE BASE COVER, POWDER COATED BLACK. POLE TO BE DRILLED FOR 6' ALUMINUM MAST ARM AND SUPPLIED WITH 1" DIAMETER ANCHOR BOLTS.

LUMINAIRE MAST ARM SHALL BE ALUMINUM WITH 6' LENGTH.

SMOOTH SURFACE PVC, SCHEDULE 40 OR SCHEDULE 80, CONDUIT ONLY IS ALLOWED ON THIS JOB.

ALL WIRE AND CABLE SHALL BE INSTALLED IN CONTINUOUS UNCUT LENGTH BETWEEN HANDHOLES OR LIGHT STANDARDS.

ALL WORK ASSOCIATED WITH COMPLYING WITH THE ABOVE REQUIREMENTS SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RESPECTIVE ITEMS BID FOR INSTALLING AND MAKING THE LIGHTING SYSTEM READY FOR OPERATION.

RAILROAD

ALL UNDERGROUND UTILITIES, CABLE, AND FACILITIES LOCATED WITHIN THE MDOT/AMTRAK ROW MUST BE LOCATED AND PROTECTED BEFORE ANY EXCAVATING, DRILLING, BORING/DIRECTIONAL DRILLING, GROUND PENETRATING ACTIVITIES, OR CONSTRUCTION TAKES PLACE. THIS INCLUDES RAILROAD AND COMMERCIAL UTILITIES, CABLES, DUCT LINES, AND FACILITIES. THESE ACTIVITIES WILL NOT BE PERFORMED IN CLOSE PROXIMITY TO THE AMTRAK DUCT LINES UNLESS MONITORED BY ON-SITE AMTRAK COMMUNICATIONS AND SIGNAL (C&S) DEPARTMENT PERSONNEL. HAND DIGGING MAY BE REQUIRED, AS DIRECTED BY AMTRAK THROUGH THE ON-SITE AMTRAK C&S SUPPORT PERSONNEL. AMTRAK MAINTAINS THE RIGHT TO ACCESS ALL EXISTING CABLES AND CONDUITS THROUGHOUT CONSTRUCTION. AMTRAK ALSO RESERVES THE RIGHT TO UPGRADE AND INSTALL NEW CABLES AND CONDUITS IN THE AFFECTED AREA. THE CALL BEFORE YOU DIG 811 "ONE-CALL" PROCESS MUST BE FOLLOWED. PLEASE NOTE THAT AMTRAK IS NOT A PART OF THE "ONE-CALL" PROCESS; CONTACT AMTRAK ENGINEERING TO HAVE ALL AMTRAK UNDERGROUND UTILITIES AND ASSETS LOCATED. IF REQUESTED BY AMTRAK, EXISTING DEPTHS OF UTILITIES BEING CROSSED MUST BE VERIFIED THROUGH TEST PITS PERFORMED BY THE CONTRACTOR PERSONNEL. HAND DIGGING MAY BE REQUIRED. PRECAUTIONS MUST BE TAKEN TO PREVENT ANY INTERRUPTION TO AMTRAK'S OPERATION.

AMTRAK C&S PERSONNEL MUST FIELD-VERIFY THAT THERE IS NO SIGNAL EQUIPMENT IN THE WAY OF THE PROJECT AND THAT SIGNAL PREVIEW IS NOT BEING OBSTRUCTED.

ALL WORK MUST BE COMPLETED IN ACCORDANCE WITH AMTRAK EP3014 "MAINTENANCE AND PROTECTION OF RAILROAD TRAFFIC DURING CONTRACTOR OPERATIONS", INCLUDING BUT NOT LIMITED TO, DESIGN REQUIREMENTS FOR TEMPORARY SHIELDING, SHORING AND BARRIERS.

REV NO. 1

ALL WORK MUST BE COMPLETED IN ACCORDANCE WITH AMTRAK EP3006 "DESIGNATED CONSTRUCTION CRITERIA FOR OVERHEAD BRIDGES".

SEQUENCE OF EROSION CONTROL MEASURES:

1. THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER, A SEQUENCE OF CONSTRUCTION WITH RESPECT TO THE SOIL EROSION CONTROL MEASURES FOR REVIEW, COMMENT AND APPROVAL. THIS SCHEDULE IS TO INCLUDE INSPECTION AND REPAIR OF ALL TEMPORARY EROSION CONTROL MEASURES DAILY AND WITHIN 24 HOURS OF A STORM EVENT.

SOIL EROSION AND SEDIMENTATION CONTROL INSTALLATION MINIMUM REQUIREMENTS:

1.1. INSTALL SILT FENCE, TREE PROTECTION FENCING, MUD MATS, INLET FILTERS ON EXISTING DRAINAGE FEATURES, AND ALL OTHER TEMPORARY SOIL EROSION CONTROLS, PRIOR TO ANY CLEARING OR EARTH MOVING OPERATION.

1.2. STRIP AND STOCKPILE TOPSOIL. STABILIZE STOCKPILE AS REQUIRED.

1.3. CONTINUALLY MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES, AS REQUIRED TO ALLOW DRAINAGE AND SEDIMENT REMOVAL. REMOVE ANY ACCUMULATED SEDIMENT IMMEDIATELY.

1.4. COMPLETE ALL FINE GRADING.

1.5. TEMPORARY SEED AND INSTALL EROSION CONTROL BLANKET IN ALL DISTURBED AREAS.

1.6. REFER TO LANDSCAPE PLANTING PLANS FOR PERMANENT SITE STABILIZATION.

1.7. REMEDY ANY NOTED DEFECTS TO THE SATISFACTION OF THE CITY OF ANN ARBOR'S SOIL EROSION AND SEDIMENTATION CONTROL OFFICIAL.

1.8. ALL TEMP. SOIL EROSION CONTROL MEASURES MUST BE REMOVED, WITH ENGINEERS APPROVAL, PRIOR TO FINAL INSPECTION

NOTE: THIS SEQUENCE IS FOR INFORMATION ONLY. IT IS INTENDED TO SHOW THE SEQUENCE OF CONSTRUCTION WITH RESPECT TO THE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THEIR OWN DETAILED CONSTRUCTION SEQUENCE AND SCHEDULE TO THE ENGINEER FOR REVIEW, COMMENT, AND APPROVAL.

ON SITE SOILS PER THE USDA SOIL SURVEY OF WASHTENAW COUNTY, MICHIGAN:

- BnB - Boyer Loamy Sand.

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

DLZ

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

PROJECT NOTE SHEET

APPROVED BY _____

SCALE NONE

INCH 0 1

DRAWING NO. 2021-008-C3

SHEET NO. 3 OF 153

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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PROJECT: 2022 E. MEDICAL CENTER DRIVE BRIDGE REHABILITATION AND WIDENING QUANTITY SHEET

ROADWAY/MOT ITEMS

CODE NO.	WORK ITEM	UNITS	CONTRACT CATG 0001	CATG 0002	CATG 0003	TOTAL	AS-BUILT
1047051	_Certified Payroll & Compliance	LSUM	1			1	
1047051	_Project Supervision	LSUM	1			1	
2010001	Clearing	Acre	0.2			0.2	
2040035	Guardrail, Rem	Ft	176			176	
2040050	Pavt, Rem	Syd	192			192	
2040080	Exploratory Investigation, Vertical	Ft	50	150		200	
2047001	_Curb and Gutter, Any Type or Size, Rem	Ft	70	311		381	
2047011	_Sidewalk and Drive, Any Type or Thickness, Rem	Syd	70	575		645	
2057011	_Machine Grading, Modified	Syd		2.3		2.3	
2057021	Non-Hazardous Contaminated Material Handling and Disposal, LM	Cyd	200		200	400	
2087036	Erosion Control, Silt Fence	Ft	1,289			1,289	
2087050	_Erosion Control, Inlet Protection	Ea	5	2		7	
2090001	Project Cleanup	LSUM	1			1	
3027021	_Aggregate Base Course, 21AA, Modified	Cyd	43	56		99	
3027021	_Sand Subbase Course, Class II, CIP	Cyd	16	91		107	
4030005	Dr Structure Cover, Adj, Case 1	Ea		2		2	
4030050	Dr Structure Cover, Type K	Ea	2	2		4	
4030390	Dr Structure, Temp Lowering	Ea	2	2		4	
4037050	_Dr Structure Cover, Adj	Ea	2			2	
5012013	HMA, 3EML	Ton	64	82		146	
5012037	HMA, 5EML	Ton	222	22		244	
5017011	Hand Patching, Modified	Ton	35	35		70	
5017011	_Cold Milling, HMA Surface, Modified	Syd	1,527			1,527	
8027001	_Curb and Gutter, Conc, 18 Inch, Any Type	Ft	50	227		277	
8027001	_Curb and Gutter, Conc, 24 Inch, Any Type	Ft	34	77		111	
8037001	Detectable Warning Surface	Sft		64		64	
8037010	_Concrete Sidewalk, 6 Inch	Sft	819	5,077		5,896	
8037010	Sidewalk Ramp, Concrete, 8 Inch	Sft		229		229	
8070004	Guardrail, Type MGS-8	Ft	144			144	
8070044	Guardrail Approach Terminal, Type 2M	Ea	2			2	
8077050	Guardrail Departing Terminal, Type MGS	Ea	2			2	
8087001	_Fence, Temp	Ft	774			774	
8087001	_Post and Chain Fence, Salvage	Ft		84		84	
8087001	_Tree Fence, Protective	Ft	47			47	
8087050	_Gate, Temp	Ea	2			2	
8100398	Sign, Type IIA	Sft	20			20	
8100399	Sign, Type IIB	Sft	20			20	
8100402	Sign, Type III, Erect Salv	Ea	4			4	
8107050	_Hospital Sign and Foundation, Relocate	Ea		2		2	
8110091	Pavt Mrkg, Polyurea, 4 Inch, White	Ft	675			675	
8110092	Pavt Mrkg, Polyurea, 4 Inch, Yellow	Ft	504			504	
8110110	Pavt Mrkg, Polyurea, 12 Inch, Crosswalk	Ft	55			55	
8110114	Pavt Mrkg, Polyurea, 24 Inch, Stop Bar	Ft	69			69	
8110153	Pavt Mrkg, Sprayable Thermopl, 4 Inch, White	Ft	396			396	
8110154	Pavt Mrkg, Sprayable Thermopl, 4 Inch, Yellow	Ft	602			602	
8110307	Rem Curing Compound, for Longit Mrkg, 4 Inch	Ft	791			791	
8110321	Rem Curing Compound, for Spec Mrkg	Sft	211			211	
8110343	Rem Spec Mrkg	Sft	1,000			1,000	
8110405	Pavt Mrkg, Polyurea, LT Turn Arrow Sym	Ea	7			7	
8110410	Pavt Mrkg, Polyurea, Only	Ea	12			12	
8110412	Pavt Mrkg, Polyurea, RT Turn Arrow Sym	Ea	5			5	
8110418	Pavt Mrkg, Polyurea, Thru Arrow Sym	Ea	3			3	
8117001	Recessing Pavt Mrkg, Longitudinal	Ft	2,219			2,219	
8117001	Recessing Pavt Mrkg, Transverse	Ft	119			119	
8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	4			4	
8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	4			4	
8120027	Pedestrian Type II Channelizer, Temp	Ft	60			60	
8120035	Channelizing Device, 42 Inch, Fluorescent, Furn	Ea	50			50	
8120036	Channelizing Device, 42 Inch, Fluorescent, Oper	Ea	50			50	
8120040	Conc Barrier Ending, Temp, Det 2, Adj	Ea	2			2	
8120041	Conc Barrier Ending, Temp, Det 2, Furn	Ea	2			2	
8120042	Conc Barrier Ending, Temp, Det 2, Oper	Ea	2			2	
8120080	Conc Barrier, Temp, Adj	Ft	100			100	
8120081	Conc Barrier, Temp, Furn	Ft	100			100	
8120082	Conc Barrier, Temp, Oper	Ft	100			100	
8120140	Lighted Arrow, Type C, Furn	Ea	2			2	
8120141	Lighted Arrow, Type C, Oper	Ea	2			2	
8120160	Ltg for Night Work	LSUM	1			1	
8120170	Minor Traf Devices	LSUM	1			1	
8120210	Pavt Mrkg, Longit, 6 Inch or Less Width, Rem	Ft	1,940			1,940	
8120211	Pavt Mrkg, Longit, Greater Than 6 Inch Width, Rem	Ft	30			30	
8120245	Pavt Mrkg, Wet Reflective, Type R, Tape, 4 Inch, White, Temp	Ft	2,755			2,755	
8120246	Pavt Mrkg, Wet Reflective, Type R, Tape, 4 Inch, Yellow, Temp	Ft	4,222			4,222	
8120252	Plastic Drum, Fluorescent, Furn	Ea	50			50	
8120253	Plastic Drum, Fluorescent, Oper	Ea	50			50	
8120257	Pavt Mrkg, Wet Reflective, Type R, Tape, Lt Turn Arrow	Ea	11			11	
8120258	Pavt Mrkg, Wet Reflective, Type R, Tape, Rt Turn Arrow	Ea	2			2	
8120259	Pavt Mrkg, Wet Reflective, Type R, Tape, Thru Arrow	Ea	22			22	
8120265	Pavt Mrkg, Wet Reflective, Type R, Tape, 24 Inch, Stop Bar	Ft	195			195	
8120310	Sign Cover	Ea	1			1	

ROADWAY/MOT ITEMS

CODE NO.	WORK ITEM	UNITS	CONTRACT CATG 0001	CATG 0002	CATG 0003	TOTAL	AS-BUILT
8120330	Sign, Portable, Changeable Message, Furn	Ea	1			1	
8120331	Sign, Portable, Changeable Message, Furn	Ea	1			1	
8120340	Sign, Type A, Temp, Prismatic, Furn	Sft	27			27	
8120341	Sign, Type A, Temp, Prismatic, Oper	Sft	27			27	
8120350	Sign, Type B, Temp, Prismatic, Furn	Sft	926			926	
8120351	Sign, Type B, Temp, Prismatic, Oper	Sft	926			926	
8120352	Sign, Type B, Temp, Prismatic, Spec, Furn	Sft	315			315	
8120353	Sign, Type B, Temp, Prismatic, Spec, Oper	Sft	315			315	
8120370	Traf Regulator Control	LSUM	1			1	
8121000	Conc Barrier, Temp, Limited Deflection, Det 1, Furn	Ft	160			160	
8121001	Conc Barrier, Temp, Limited Deflection, Det 1, Oper	Ft	160			160	
8121100	Conc Barrier, Temp, Limited Deflection, Det 2, Furn	Ft	75			75	
8121101	Conc Barrier, Temp, Limited Deflection, Det 2, Oper	Ft	75			75	
8121102	Conc Barrier, Temp, Limited Deflection, Det 2, Adj	Ft	75			75	
8121200	Conc Barrier, Temp, Limited Deflection, Det 3A, Furn	Ft	160			160	
8121201	Conc Barrier, Temp, Limited Deflection, Det 3A, Oper	Ft	160			160	
8122012	Pavt Mrkg, Wet Reflective, Type R, Tape, 12 Inch, White, Temp	Ft	86			86	
8122111	Pavt Mrkg, Wet Reflective, Type R, Tape, Only	Ea	4			4	
8122145	Pavt Mrkg, Wet Reflective, Type R, Tape, Rt & Lt Turn Arrow Sym	Ea	2			2	
8122148	Pavt Mrkg, Wet Reflective, Type R, Tape, Thru & Rt Turn Arrow Sym	Ea	11			11	
8127050	Pedestrian Type II Barricade, Temp	Ea	2			2	
8167011	_Slope Restoration	Syd	40	210		250	
8182000	Conduit, Rem	Ft	498	12		510	
8182016	Conduit, Encased, 1, 4 Inch	Ft			204	204	
8182021	Conduit, Encased, 6, 4 Inch	Ft		126		126	
8182034	Conduit, Directional Bore, 1, 1 1/2 Inch	Ft	60			60	
8182035	Conduit, Directional Bore, 1, 3 Inch	Ft	365			365	
8182048	Conduit, DB, 1, 1 1/2 Inch	Ft	90			90	
8182133	Conduit, Schedule 40, 2 Inch	Ft		233		233	
8182135	Conduit, Schedule 40, 3 Inch	Ft			740	740	
8182187	DB Cable, In Conduit, 600V, 1/C#6	Ft	2,220	699		2,919	
8182309	Hh, Polymer Conc	Ea	2			2	
8182330	Hh, Rem	Ea	2			2	
8182349	Wood Pole, Cl 4, 30 Foot	Ea	5			5	
8182363	Wood Pole, Rem	Ea	5			5	
8182387	Wood Pole, Fit Up, TS Cable Pole	Ea	3			3	
8187001	_Conduit, DB, 1, 2 Inch	Ft		8		8	
8187050	Handhole, Assembly, 17 inch x 30 inch	Ea	2	3	7	12	
8187050	_Handhole, Adjust, Any Size	Ea		1		1	
8187050	_Hh, Tap, 4 Inch	Ea			2	2	
8197050	_Luminaire Installation	Ea	5			5	
8197050	_Pole Fit-Up	Ea	5			5	
8197050	_Pole Installation	Ea	5			5	
8197050	_Streetlight, Rem	Ea	5			5	
8200100	Pedestal, Alum	Ea	2	1		3	
8200101	Pedestal, Alum, Salvage	Ea	1			1	
8200105	Pedestal, Fdn	Ea	2	1		3	
8200106	Pedestal Fdn, Rem	Ea	3	1		4	
8200110	Pedestal, Rem	Ea	3	1		4	
8200121	Pushbutton and Sign	Ea	2	1		3	
8200122	Pushbutton, Rem	Ea	3	1		4	
8200126	Pushbutton and Sign, Salvage	Ea	1			1	
8200140	Span Wire	Ea	4			4	
8200141	Span Wire, Rem	Ea	4			4	
8200168	Strut Guy	Ea	2			2	
8200177	TS, Mast Arm Mtd, Rem	Ea	1			1	
8200251	TS, One Way Mast Arm Mtd, Salv	Ea	1			1	
8200376	Bracket, Truss, With 12 Foot Arm	Ea	1			1	
8200444	Hemispherical Video Detection Camera	Ea	1		2	3	
8200445	Hemispherical Video Detection System	Ea			1	1	
8200446	Hemispherical Video Detection Camera, Rem	Ea	1			1	
8200452	TS Head, Adj	Ea	2			2	
8200453	TS Head, Temp	Ea	20			20	
8200458	TS Face, Bag	Ea	6			6	
8200459	TS Face, Bag, Rem	Ea	6			6	
8507051	_Audio-Video Rte Survey	LSUM	1			1	
8507051	_General Conditions, Max $650,000	LSUM	0.65	0.26	0.09	1	

STRUCTURE ITEMS

CODE NO.	WORK ITEM	UNITS	CONTRACT CATG 0001	CATG 0002	CATG 0003	TOTAL	AS-BUILT
1077060	_Relocation and Site Cleanup	Dlr			15,000	15,000	
2040061	Structures, Rem Portions (STR 11065)	LSUM	0.9	0.1		1	
2060002	Backfill, Structure, CIP	Cyd	300	300	340	940	
2060010	Excavation, Fdn	Cyd	300	300	400	1,000	
2067050	Dewatering System, Excavation	Ea		2		2	
3027021	_Sand Subbase Course, Class II, CIP	Cyd			34	34	
7040001	Steel Sheet Piling, Permanent	Sft			6,690	6,690	
7040002	Steel Sheet Piling, Temp	Sft	360			360	
7040003	Steel Sheet Piling, Temp, Left in Place	Sft		360		360	
7057050	_Micropile, Type B, Furn and Install, LRFD	Ea		18		18	
7057050	_Micropile, Load Test, Proof, LRFD	Ea		4		4	
7057050	_Micropile, Load Test, Verification, LRFD	Ea		1		1	
7057051	_Micropile Mobilization, LRFD (STR 11065)	LSUM		1		1	
7060001	Bridge Ltg, Furn and Rem (STR 11065)	LSUM	0.9	0.1		1	
7060002	Bridge Ltg, Oper and Maintain	Cyd	375	54		429	
7060050	Expansion Joint Device	Ft	162	29		191	
7060060	False Decking	Sft	19,840			19,840	
7060092	Reinforcement, Steel, Epoxy Coated	Lb	135,940	33,985	1,423	171,348	
7060100	Substructure Conc	Cyd	160	129		289	
7060110	Superstructure Conc	Cyd	101			101	
7060111	Superstructure Conc, Form, Finish, and Cure (STR 11065)	LSUM	1			1	
7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting (STR 11065)	LSUM	0.9	0.1		1	
7060113	Superstructure Conc, Night Casting	Cyd	375	54		429	
7060140	Water Repellent Treatment, Penetrating	Syd	51			51	
7062003	Conc, Grade 4500	Cyd			33	33	
7067001	_Expansion Joint Device, Cover Plate, Modified	Ft	50			50	
7070019	Bearing, Elastomeric, 2 3/4 inch	Sin	5,796	900		6,696	
7070021	Bearing, Elastomeric, 3 1/4 inch	Sin	5,310	880		6,190	
7070040	Shear Developers (STR 11065)	LSUM		0.7	0.3	1	REV NO. 1
7070050	Structural Steel, Mixed, Erect	Lb	38,695	14,162		52,857	
7070051	Structural Steel, Mixed, Furn and Fab	Lb	38,695	14,162		52,857	
7070070	Structural Steel, Rolled Shape, Erect	Lb		40,000		40,000	
7070071	Structural Steel, Rolled Shape, Furn and Fab	Lb		40,000		40,000	
7077051	_Structural Steel, Galvanizing (STR 11065)	LSUM	1			1	
7100001	Joint Waterproofing	Sft	740			740	
7100003	Joint Waterproofing, Expansion	Sft	10			10	
7100030	Substructure Horizontal Surface Sealer (STR 11065)	Syd	90			90	
7110005	Bridge Railing, Aesthetic Parapet Tube	Ft	321			321	
7120007	Hand Chipping, Other Than Deck	Cft	112			112	
7120017	Patch, Forming	Sft	447			447	
7120020	Epoxy Ovly	Syd	1,050			1,050	
7120028	Adhesive Anchoring of Horizontal Bar, 3/4 inch	Ea		68		68	
7120034	Adhesive Anchoring of Vertical Bar, 3/4 inch	Ea		8		8	
7120084	Reinforcement, Mechanical Splice	Ea	794			794	
7120098	Flushing Cracks, Water	Ft	124			124	
7120099	Structural Crack, Repr	Ft	124			124	
7120112	Patching Conc, C-L	Cyd	5			5	
7120120	Embedded Galvanic Anode	Ea	555			555	REV NO. 1
7130010	Beam Plate, Seal Perimeter	Ft	2,320			2,320	
8037010	_Concrete Sidewalk, 6 Inch	Sft			1,830	1,830	
8127060	Railroad Inspection and Flagging	Dlr	180,000	20,000		200,000	
8130015	Slope Paving Header	Ft		100	131	231	
8130020	Slope Paving, Conc	Syd		55	30	85	
8182097	Conduit, Schedule 80, 4 inch, Structure	Ft	2920			2920	
8182133	Conduit, Schedule 40, 2 inch	Ft		170		170	
8182135	Conduit, Schedule 40, 3 inch	Ft			330	330	
8507010	_Soil Nails for Slope Stabilization	Sft		2,723		2,723	
7060040	Elec Grounding System	Ea	1			1	REV NO. 1
8080110	Fence, Structure	Sft	2635			2635	

NOTES:

CATG 0001 = 50% CITY OF ANN ARBOR / 50% UNIVERSITY OF MICHIGAN
CATG 0002 = 100% UNIVERSITY OF MICHIGAN
CATG 0003 = 100% CITY OF ANN ARBOR

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
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DLZ

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DL	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

MISCELLANEOUS QUANTITIES

SCALE NONE

INCH 0 1

DRAWING NO. 2021-008-C4

SHEET NO. 4 OF 153

APPROVED BY _____

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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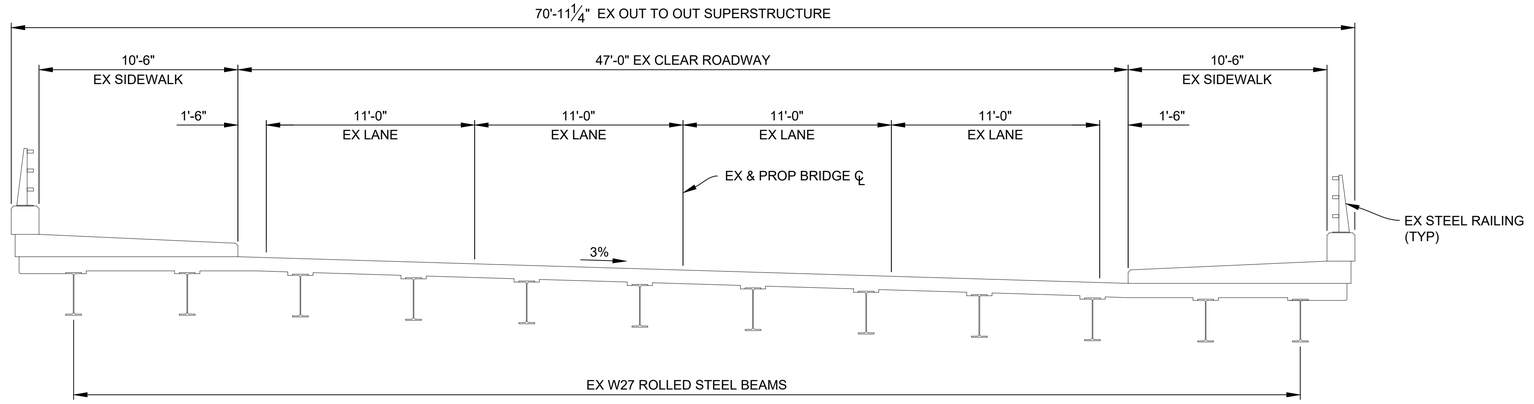
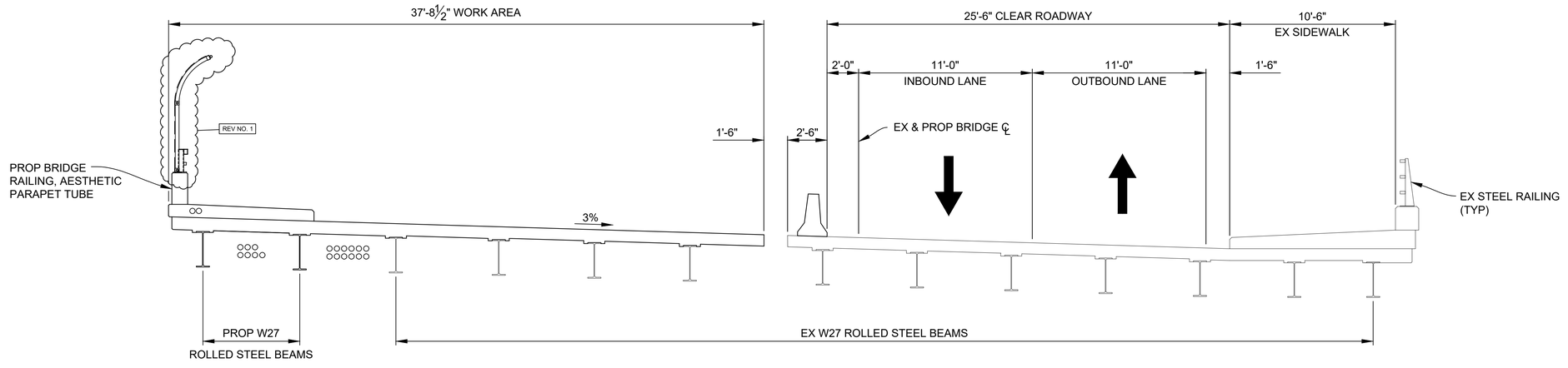


EXISTING SECTION

(LOOKING UPSTATION)



STAGE 2

(LOOKING UPSTATION)

NOTES:

STAGE 1 IS A PREPARATORY STAGE

PLACE LIMITED DEFLECTION TEMPORARY BARRIER ACCORDING TO STANDARD PLAN R-53 SERIES.

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE			

DLZ

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

BRIDGE CONSTRUCTION STAGING DETAILS

APPROVED BY _____

SCALE HOR. 1/4"=1'-0" | INCH 0 1

DRAWING NO. 2021-008-

SHEET NO. 11 OF 153

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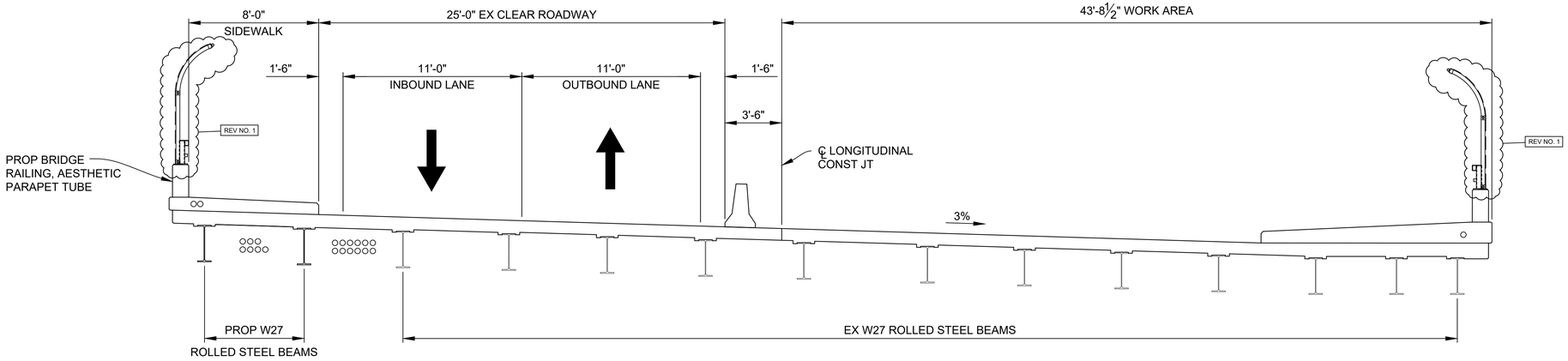
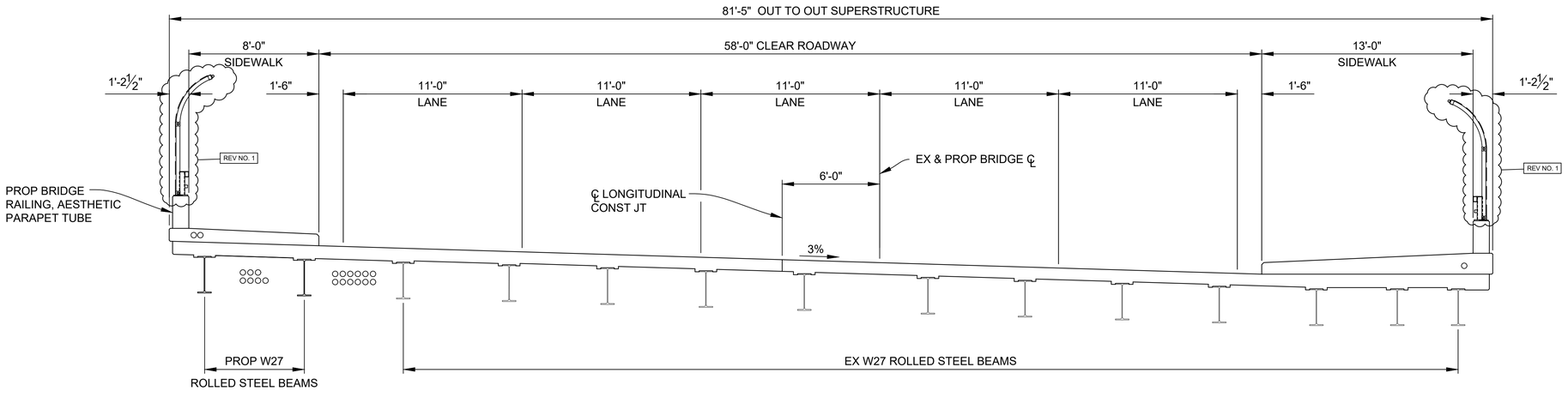


STAGE 3

(LOOKING UPSTATION)



PROPOSED SECTION

(LOOKING UPSTATION)

NOTES:

PLACE LIMITED DEFLECTION TEMPORARY BARRIER ACCORDING TO STANDARD PLAN R-53 SERIES.

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE			

DLZ

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

BRIDGE CONSTRUCTION STAGING DETAILS

APPROVED BY _____

SCALE HOR. 1/4"=1'-0" | INCH 0 1

DRAWING NO. 2021-008-

SHEET NO. 12 OF 153

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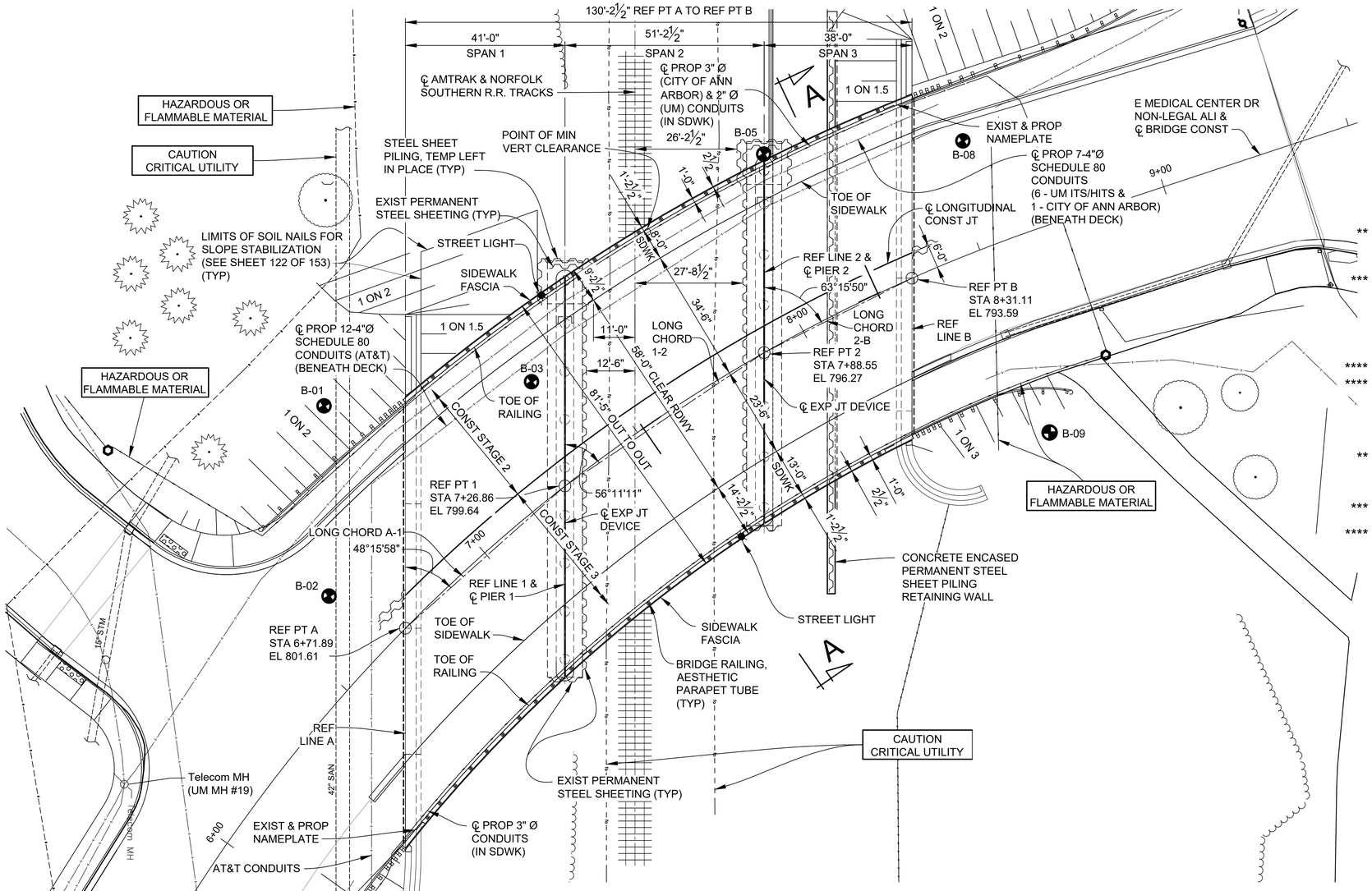
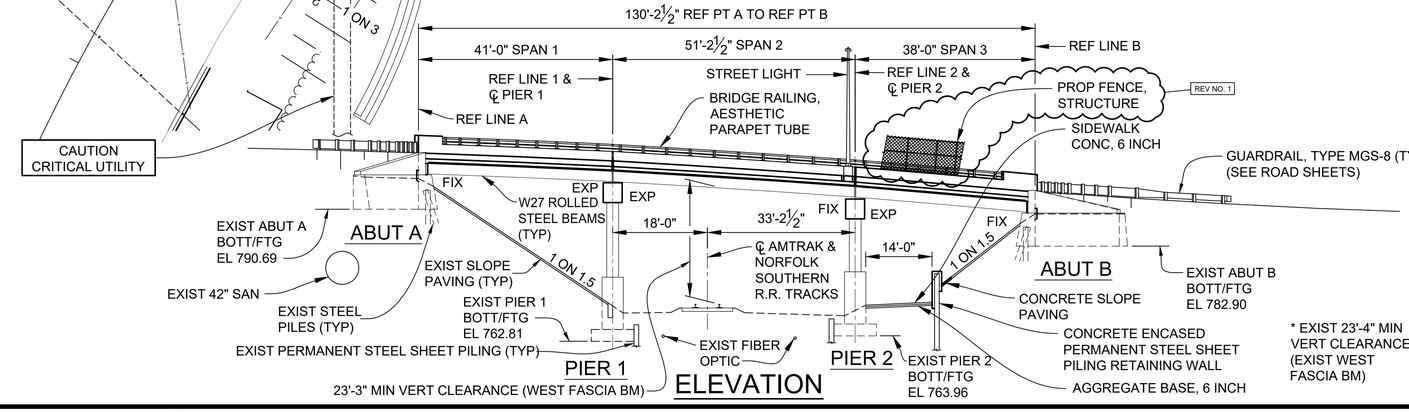


PLAN



ELEVATION

* EXIST 23'-4" MIN VERT CLEARANCE (EXIST WEST FASCIA BM)

ESTIMATED QUANTITIES THIS SHEET

	DESCRIPTION	UNITS	CATG 0001	CATG 0002	CATG 0003	TOTAL
	Relocation and Site Cleanup	Dlr			15,000	15,000
**	Structures, Rem Portions (STR 11065)	LSUM	0.9	0.1		1
	Backfill, Structure, CIP	Cyd	300	300	340	940
	Excavation, Fdn	Cyd	300	300	400	1,000
***	Dewatering System, Excavation	Ea		2		2
	Steel Sheet Piling, Temp	Sft	360			360
	Steel Sheet Piling, Temp, Left in Place	Sft		360		360
	False Decking	Sft	19,840			19,840
	Railroad Inspection and Flagging	Dlr	180,000	20,000		200,000
****	Slope Paving Header	Ft		100	131	231
****	Slope Paving, Conc	Syd		55	30	85
	Conduit, Schedule 80, 4 inch, Structure	Ft	2,920			2,920
	Conduit, Schedule 40, 2 inch	Ft		170		170
	Conduit, Schedule 40, 3 inch	Ft			330	330

** INCLUDES REMOVAL OF EXISTING RAILINGS, SIDEWALKS, DECK, PIER CAPS, PORTIONS OF CRASHWALLS AND ABUTMENTS, PORTIONS OF SLOPE PAVING BEHIND PIER 2, AND THE EXIST 10'-0" WIDE CONCRETE PAD BEHIND PIER 2.

*** FOR DEWATERING OF PERMANENT STEEL SHEET PILING ENCLOSURES FOR PROPOSED PIER WIDENING.

**** CATG 0002 QUANTITY IS FOR WIDENED PORTIONS OF SLOPE PAVING ON WEST SIDE OF BRIDGE. CATG 0003 QUANTITY IS FOR REPAIRS TO SLOPE PAVING BEHIND PIER 2 AFTER CONSTRUCTION OF CONCRETE ENCASED STEEL SHEET PILING RETAINING WALL.

NOTES:

THE RECONSTRUCTION DESIGN OF THE SUPERSTRUCTURE, PIER CAPS, AND WIDENED SUBSTRUCTURE UNITS IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION HL-93 LOADING WITH THE EXCEPTION THAT THE DESIGN TANDEM PORTION OF THE HL-93 LOAD DEFINITION IS REPLACED BY A SINGLE 60 KIP AXLE LOAD BEFORE APPLICATION OF THIS 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MOD. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE ORIGINAL STRUCTURE WAS DESIGNED FOR HS25 LOADING.

FOR DETAILS OF CONCRETE SLOPE PAVING PROTECTION, SEE MDOT STANDARD PLAN B-102-SERIES.

FALSE DECKING INCLUDES THE AREA BOUNDED BY REFERENCE LINES A & B AND OUTSIDE FLANGE FASCIAS OF FASCIA BEAMS. THE ESTIMATED AREA IS 9237 SFT DURING REMOVAL AND 10,602 SFT DURING CONSTRUCTION.

INSTALL SHEET PILING USING EITHER AN IMPACT HAMMER OR A VARIABLE MOMENT DRIVER/EXTRACTOR OPERATED TO MINIMIZE VIBRATIONS. DO NOT USE VIBRATORY HAMMERS THAT ARE NOT VARIABLE MOMENT.

SHOES SHALL BE REQUIRED FOR PROP SHEET PILING DUE TO THE ANTICIPATED PRESENCE OF COBBLES/BOULDERS DURING DRIVING.

GROUNDWATER MAY BE PRESENT WITHIN THE PROPOSED STEEL SHEETING ENCLOSURES FOR THE PIER WIDENING. THE COST OF DEWATERING IS INCLUDED IN THE PAY ITEM "DEWATERING SYSTEM, EXCAVATION"

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DLZ

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

GENERAL PLAN OF STRUCTURE

SCALE HOR. 1/16"=1'-0" | INCH 0 1

DRAWING NO. 2021-008-BR6

SHEET NO. 69 OF 153

APPROVED BY _____

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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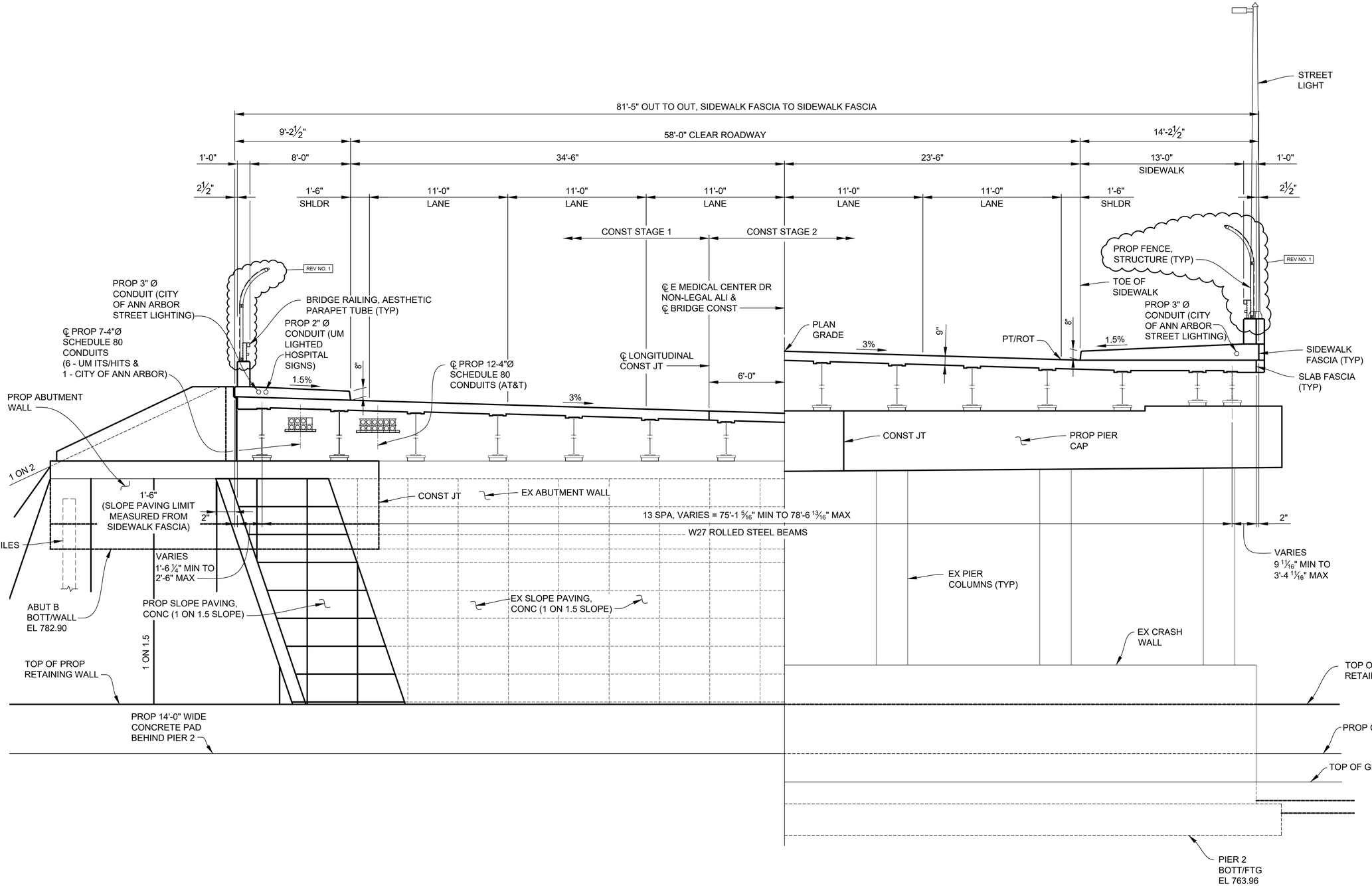

SECTION A-A

3 WORKING DAYS
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DLZ

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

GENERAL PLAN OF STRUCTURE

SCALE HOR. 1/4"=1'-0" | INCH 0 1

DRAWING NO. 2021-008-BR7

SHEET NO. 70 OF 153

APPROVED BY _____

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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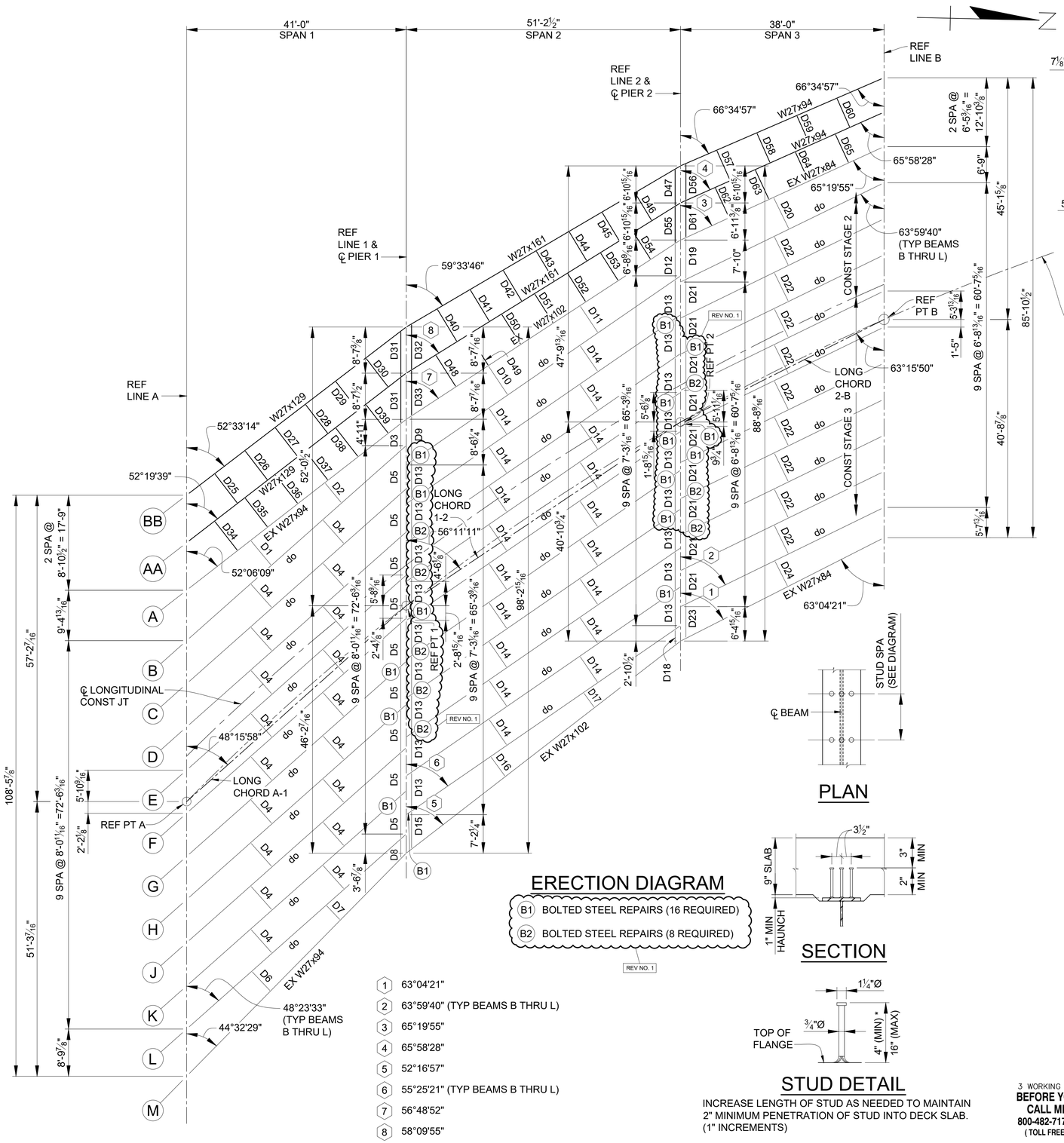

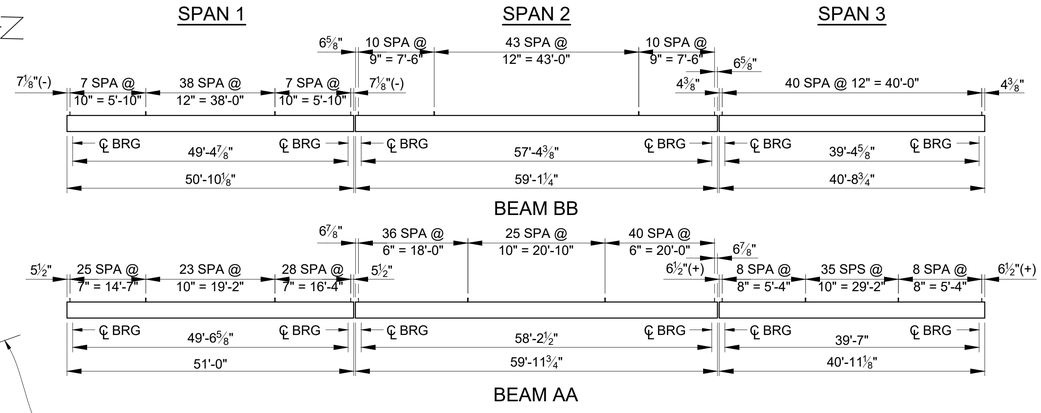

STUD SPACING DIAGRAM

ESTIMATED QUANTITIES THIS SHEET					
DESCRIPTION	UNITS	CATG 0001	CATG 0002	CATG 0003	TOTAL
Shear Developers (STR 11065)	LSUM		0.7		0.7
Structural Steel, Mixed, Erect	Lb	38,695	14,162		52,857
Structural Steel, Mixed, Furn and Fab	Lb	38,695	14,162		52,857
Structural Steel, Rolled Shape, Erect	Lb		40,000		40,000
Structural Steel, Rolled Shape, Furn and Fab	Lb		40,000		40,000
Structural Steel, Galvanizing (STR 11065)	LSUM		1		1
Beam Plate, Seal Perimeter	Ft	2,320			2,320

REV NO. 1 (Structural Steel, Mixed, Erect; Structural Steel, Mixed, Furn and Fab)

REV NO. 1 (Structural Steel, Galvanizing (STR 11065))

NOTES:

ES DENOTES EACH SIDE.

NS DENOTES NEAR SIDE.

FS DENOTES FAR SIDE.

CONTRACTOR MUST VERIFY ALL DIMENSIONS PRIOR TO STEEL FABRICATION.

CONNECTIONS SHALL BE BOLTED WITH ¾" HIGH STRENGTH BOLTS.

ANCHOR BOLT LENGTHS SHOWN ARE MINIMUM. BOLTS LONGER THAN THOSE SHOWN MAY BE FURNISHED AT NO ADDITIONAL COST.

EXISTING AND PROPOSED STRUCTURAL STEEL SHALL BE GALVANIZED ACCORDING TO SECTION 716.03.B.4 OF THE MDOT 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 50. AASHTO M270, GRADE 36 STEEL MAY BE USED IN LIEU OF THIS STEEL FOR BEARINGS AND DIAPHRAGMS.

PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 36 FOR BOLTED STEEL BEAM REPAIRS.

THIS BRIDGE IS COATED WITH A ZINC BASED COATING SYSTEM. THE STRUCTURAL STEEL HAS BEEN BLAST CLEANED PRIOR TO COATING. THE ADDITIONAL EFFORT TO CLEAN THE STRUCTURAL STEEL WILL NOT BE PAID FOR SEPARATELY BUT WILL BE CONSIDERED INCLUDED IN THE BID ITEMS.

THE ENGINEER WILL INSPECT THE STRUCTURAL STEEL PARTS THAT HAVE BEEN BLAST CLEANED FOR EVIDENCE OF CRACKS OR LOSS OF SECTION DUE TO CORROSION OF MORE THAN 25 PERCENT. THE ENGINEER WILL REPORT DETERIORATION IN WRITING TO THE CITY OF ANN ARBOR.

APPLY SEALANT AROUND THE CONNECTION OF NEW STRUCTURAL STEEL MEMBER TO EXISTING STRUCTURAL STEEL MEMBER.

THE PAYMENT FOR PROPOSED DIAPHRAGMS, CONNECTION PLATES, STEEL SUPPORT ANGLES FOR CONDUIT HANGER ASSEMBLIES, AND BOLTED BEAM END REPAIRS SHALL BE INCLUDED IN THE PAY ITEMS "STRUCTURAL STEEL, MIXED, ERECT" AND "STRUCTURAL STEEL, MIXED, FURN AND FAB".

THE PAYMENT FOR PROPOSED BEAMS SHALL BE INCLUDED IN THE PAY ITEMS "STRUCTURAL STEEL, ROLLED SHAPE, ERECT" AND "STRUCTURAL STEEL, ROLLED SHAPE, FURN AND FAB".

THE PAYMENT FOR THE CONDUIT HANGER ASSEMBLY WILL BE INCLUDED IN THE PAY ITEM "CONDUIT, SCHEDULE 80, 4 INCH, STRUCTURE".

ERECTION DIAGRAM

B1 BOLTED STEEL REPAIRS (16 REQUIRED)

B2 BOLTED STEEL REPAIRS (8 REQUIRED)

REV NO. 1

1. 63°04'21"
2. 63°59'40" (TYP BEAMS B THRU L)
3. 65°19'55"
4. 65°58'28"
5. 52°16'57"
6. 55°25'21" (TYP BEAMS B THRU L)
7. 56°48'52"
8. 58°09'55"

PLAN

SECTION

STUD DETAIL

INCREASE LENGTH OF STUD AS NEEDED TO MAINTAIN 2" MINIMUM PENETRATION OF STUD INTO DECK SLAB. (1" INCREMENTS)

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

DLZ

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

STRUCTURAL STEEL DETAILS
ERECTION DIAGRAM

SCALE HOR. 3/32"=1'-0" | INCH 0 1

DRAWING NO. 2021-008-BR28

SHEET NO. 91 OF 153

APPROVED BY _____

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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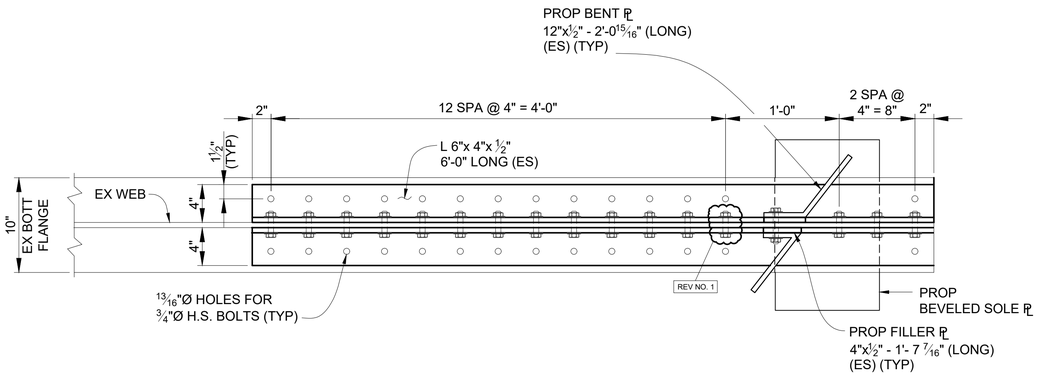
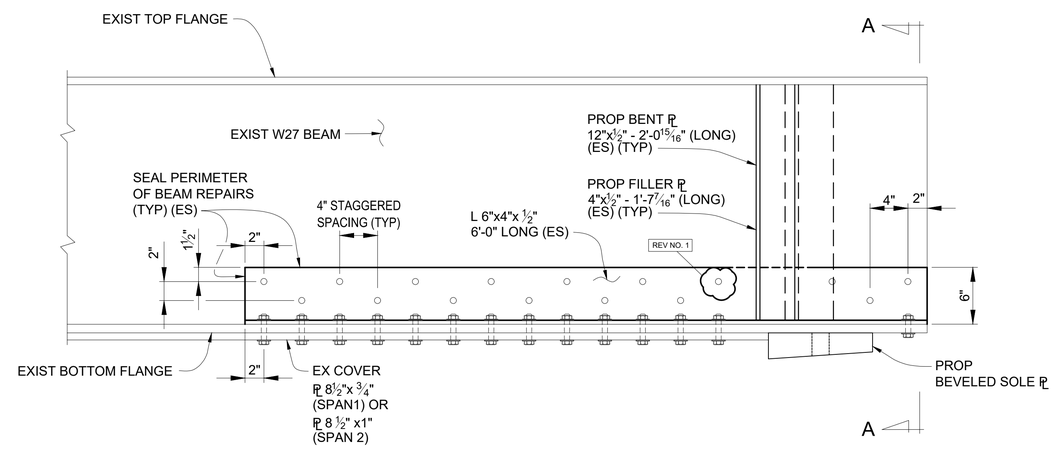
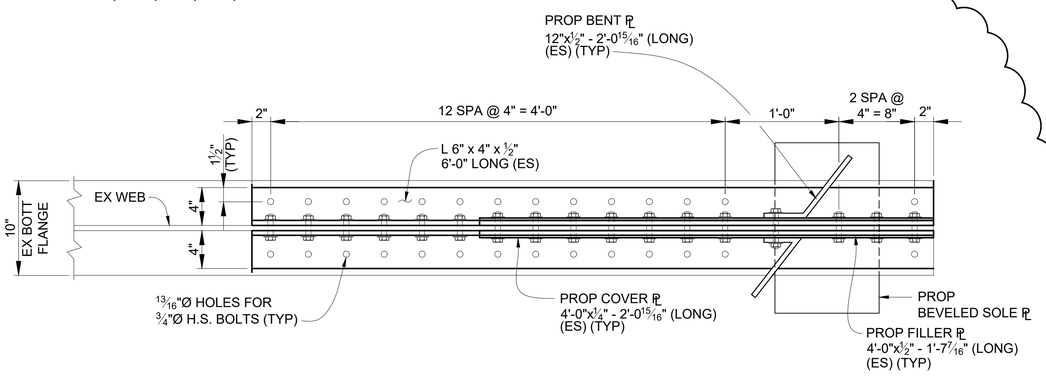


BOLTED REPAIR PLAN - BOTTOM FLANGE - B1

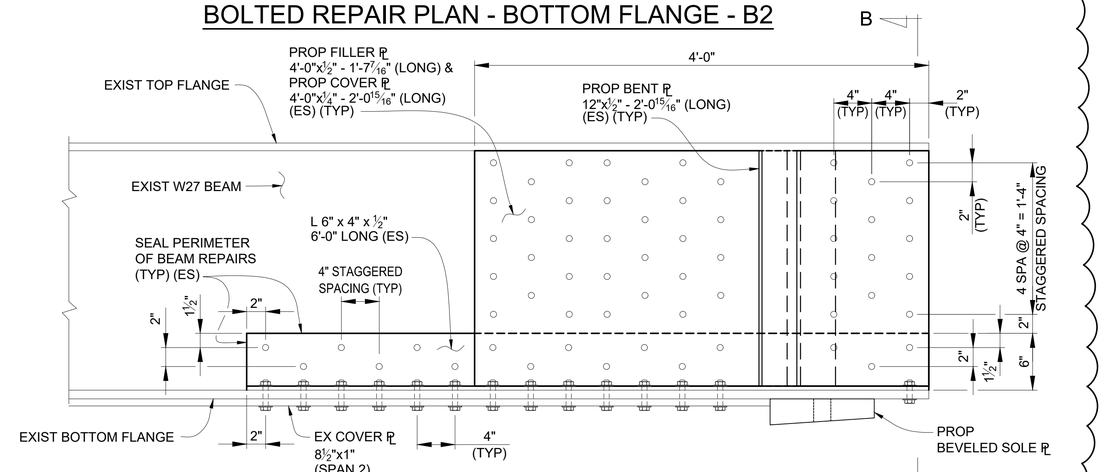


BOLTED REPAIR ELEVATION - B1

(BOLT HOLES IN END DIAPHRAGM CONNECTION PLATES NOT SHOWN)



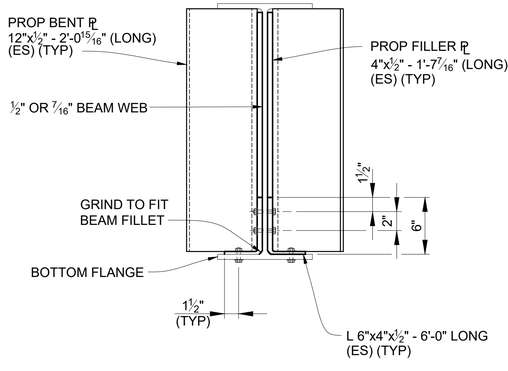
BOLTED REPAIR PLAN - BOTTOM FLANGE - B2



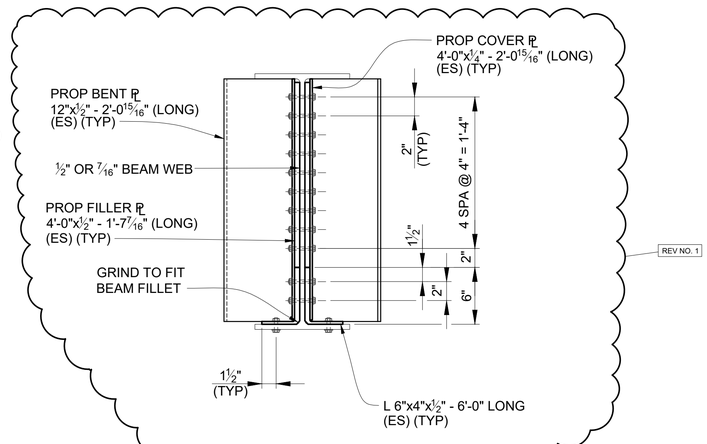
BOLTED REPAIR ELEVATION - B2

(BOLT HOLES IN END DIAPHRAGM CONNECTION PLATES NOT SHOWN)

REV NO. 1



SECTION A-A



SECTION B-B

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

DLZ

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

STRUCTURAL STEEL DETAILS
BOLTED BEAM END REPAIRS

SCALE
HOR. 3/32"=1'-0"
INCH
0 1

DRAWING NO.
2021-008-BR36

SHEET NO. 99 OF 153

APPROVED BY

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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PLAN OF WEST SIDEWALK

PLAN OF EAST SIDEWALK

DETAIL C

DETAIL D

MIN LAP TABLE

EA03 BARS	1'-2"
EA04 BARS	1'-7"
EA05 BARS	2'-0"
EA06 BARS	2'-4"

* SEE STEEL REINFORCEMENT SHEETS FOR BAR CUT DIAGRAM DETAILS.

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

DLZ

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

SUPERSTRUCTURE DETAILS

SCALE HOR. 3/16"=1'-0" | INCH 0 1

DRAWING NO. 2021-008-BR41

SHEET NO. 104 OF 153

APPROVED BY _____

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

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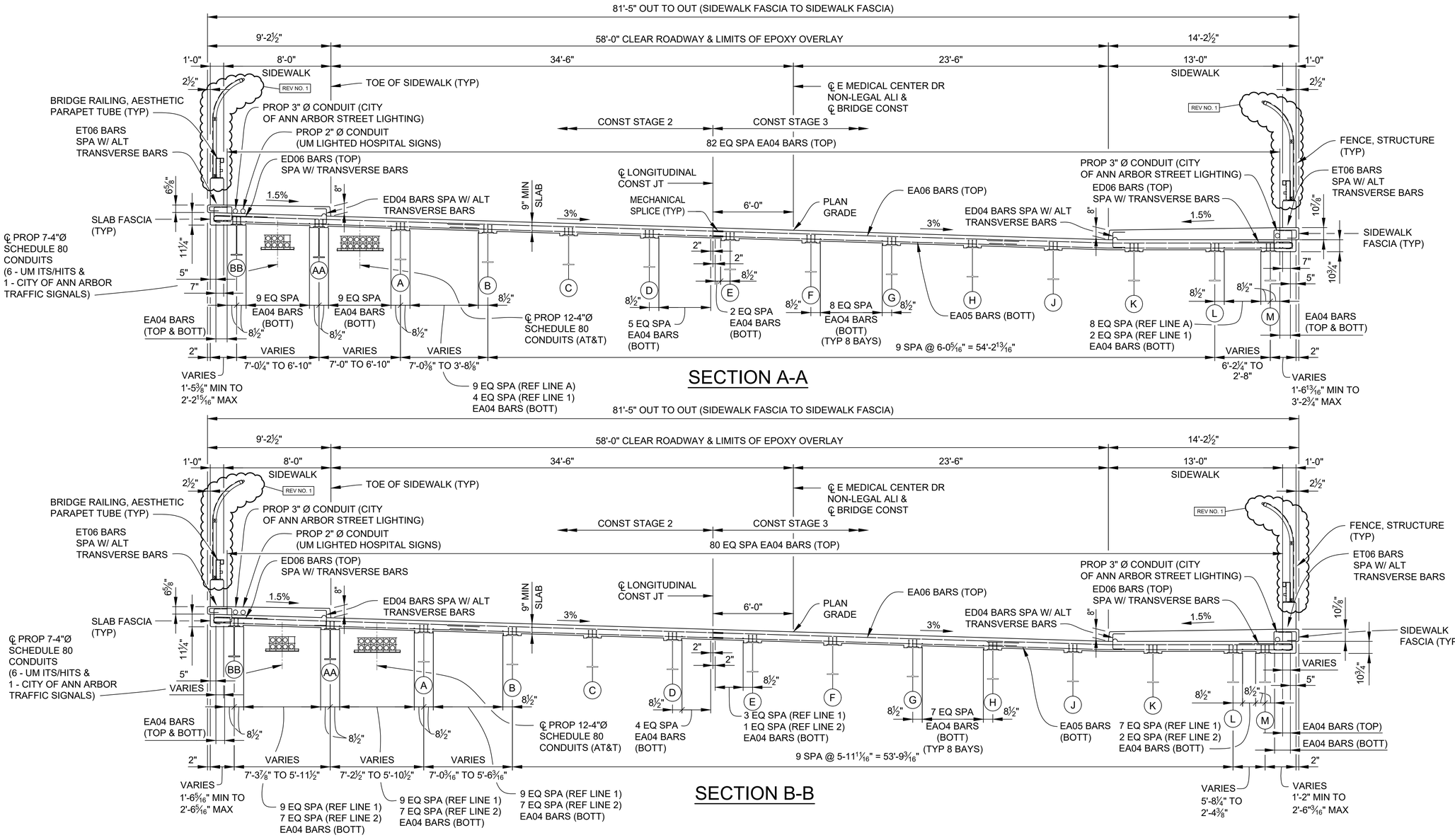

SECTION A-A

SECTION B-B

MIN LAP TABLE
EA03 BARS - 1'-2"
EA04 BARS - 1'-7"
EA05 BARS - 2'-0"
EA06 BARS - 2'-4"

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

DLZ

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

SUPERSTRUCTURE DETAILS

SCALE HOR. 1/4"=1'-0" | INCH 0 1

DRAWING NO. 2021-008-BR42

SHEET NO. 105 OF 153

APPROVED BY _____

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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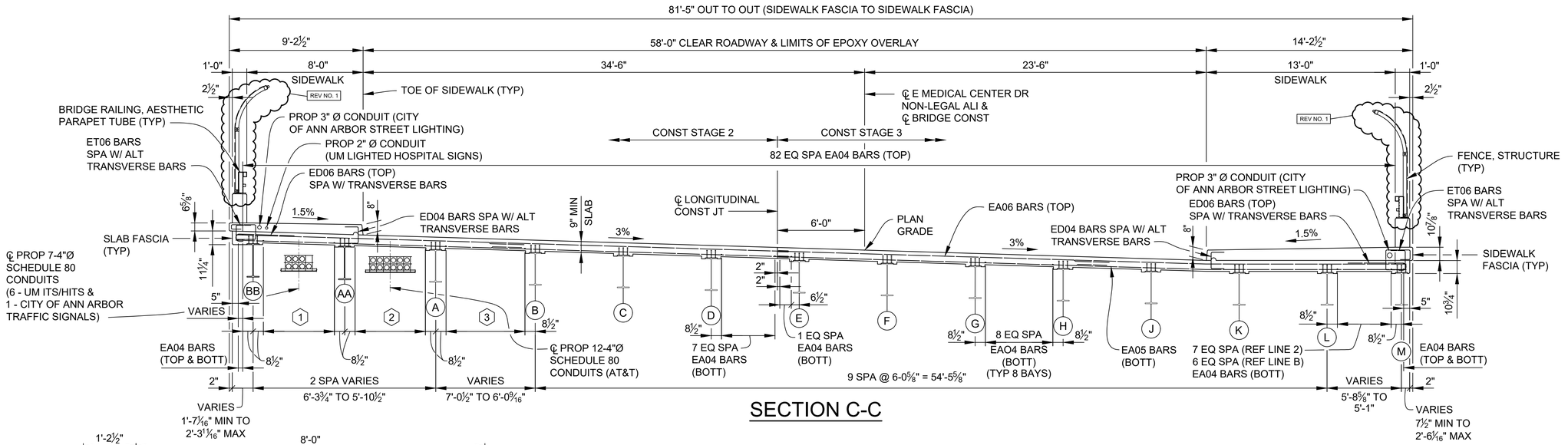
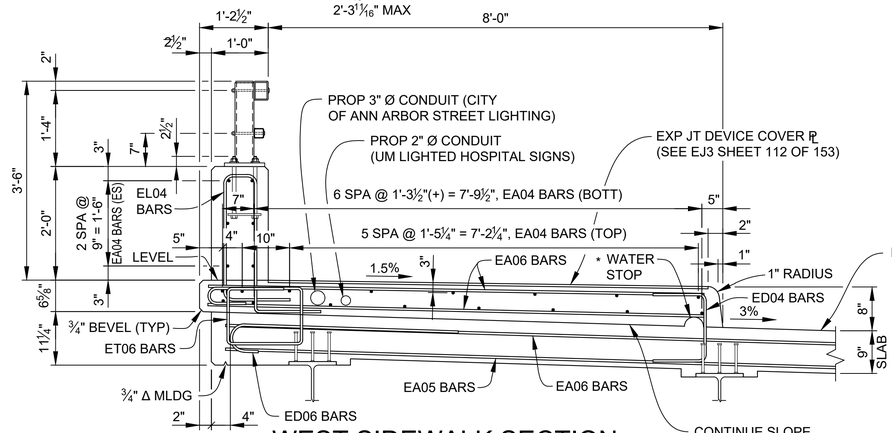


SECTION C-C



WEST SIDEWALK SECTION

REV NO. 1

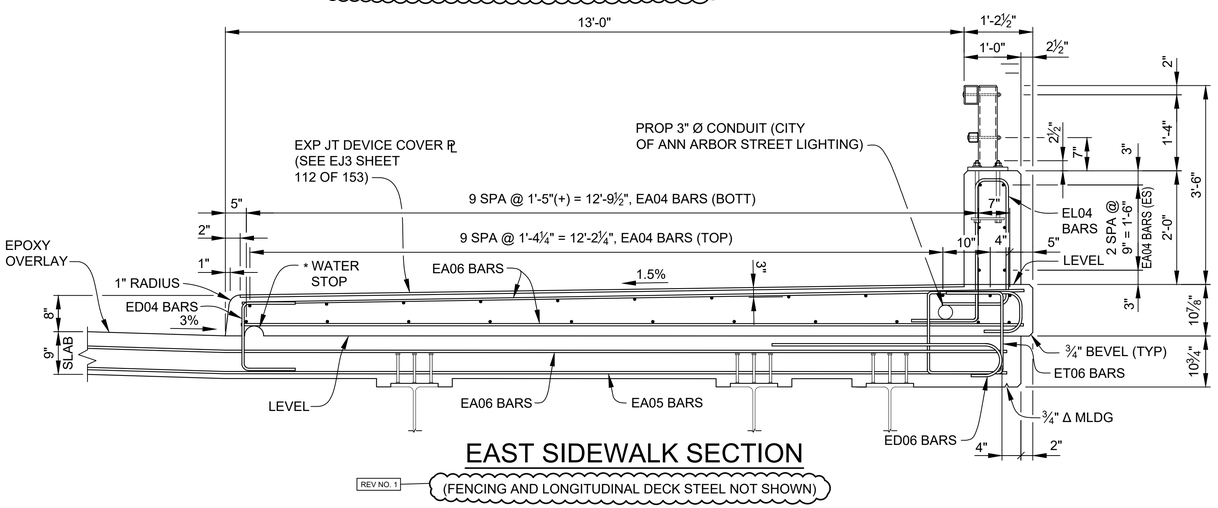
(FENCING AND LONGITUDINAL DECK STEEL NOT SHOWN)

1 8 EQ SPA (REF LINE 2)
7 EQ SPA (REF LINE B)
EA04 BARS (BOTT)

2 8 EQ SPA (REF LINE 2)
7 EQ SPA (REF LINE B)
EA04 BARS (BOTT)

3 9 EQ SPA (REF LINE 2)
8 EQ SPA (REF LINE B)
EA04 BARS (BOTT)

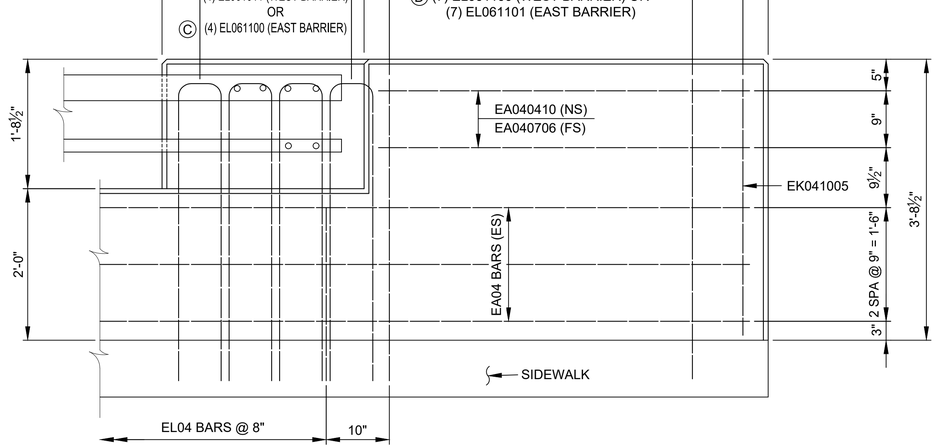
* 2" HIGH x 4" LONG (±).
FORMING NOT REQUIRED.



EAST SIDEWALK SECTION

REV NO. 1

(FENCING AND LONGITUDINAL DECK STEEL NOT SHOWN)



ELEVATION

END WALL DETAIL

(AESTHETIC PARAPET TUBE)

MIN LAP TABLE
EA03 BARS - 1'-2"
EA04 BARS - 1'-7"
EA05 BARS - 2'-0"
EA06 BARS - 2'-4"

NOTE:
FOR ADDITIONAL DETAILS OF RAILING, SEE MDOT STANDARD PLAN B-25-K ON SHEETS 133 - 134 OF 153.

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

DLZ

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

SUPERSTRUCTURE DETAILS

SCALE
HOR. 1/4"=1'-0"
INCH 0 1

DRAWING NO.
2021-008-BR43

SHEET NO. 106 OF 153

APPROVED BY _____

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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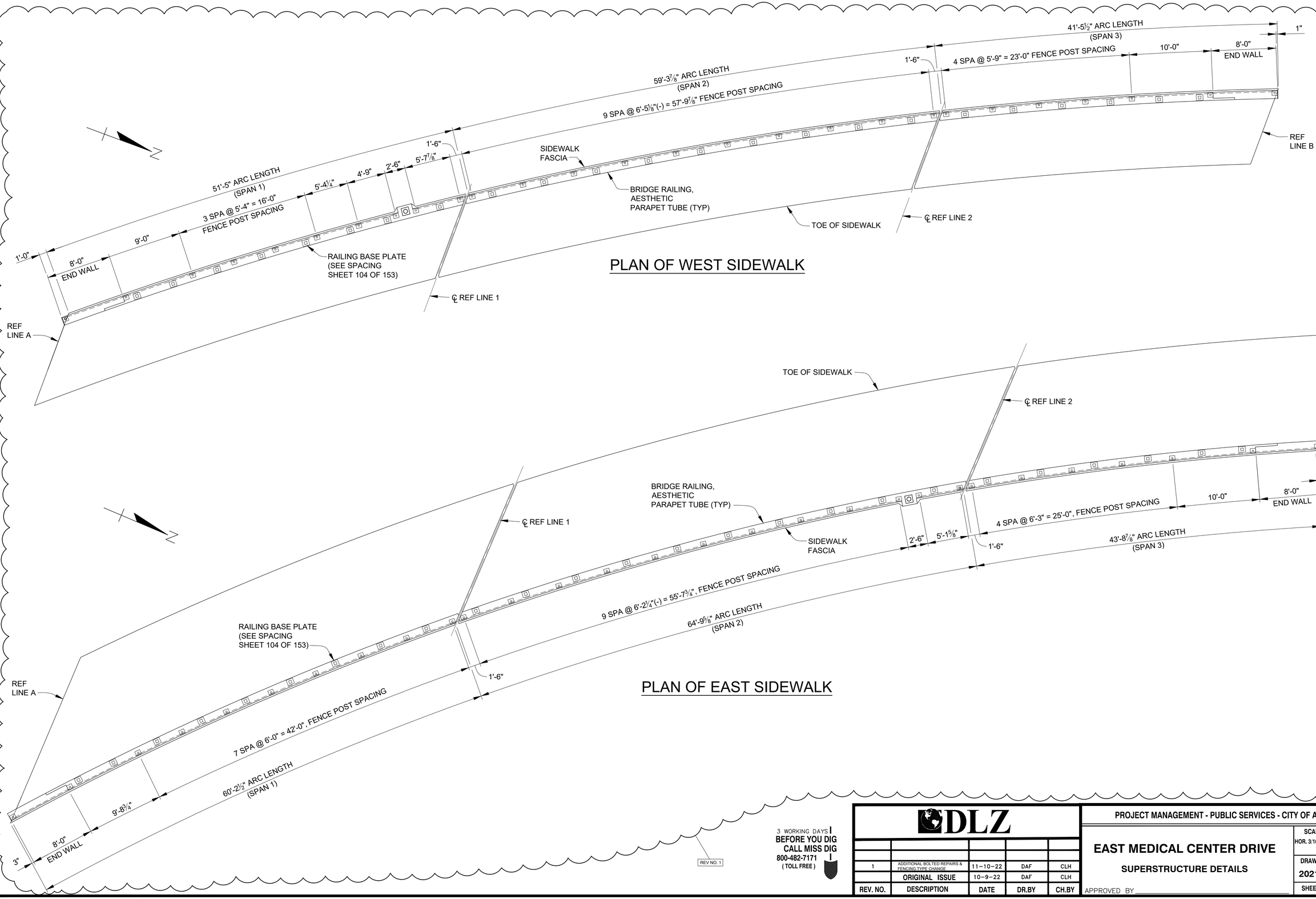

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REV NO. 1

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

DLZ

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

SUPERSTRUCTURE DETAILS

SCALE
HOR. 3/16"=1'-0"

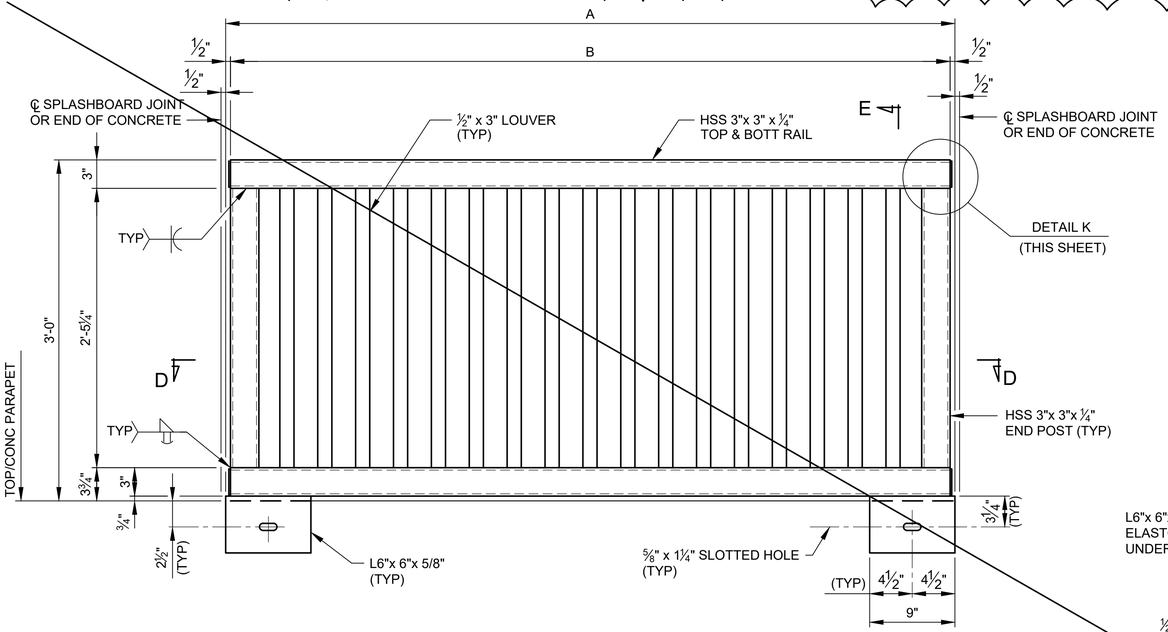
INCH
0 1

DRAWING NO.
2021-008-BR46

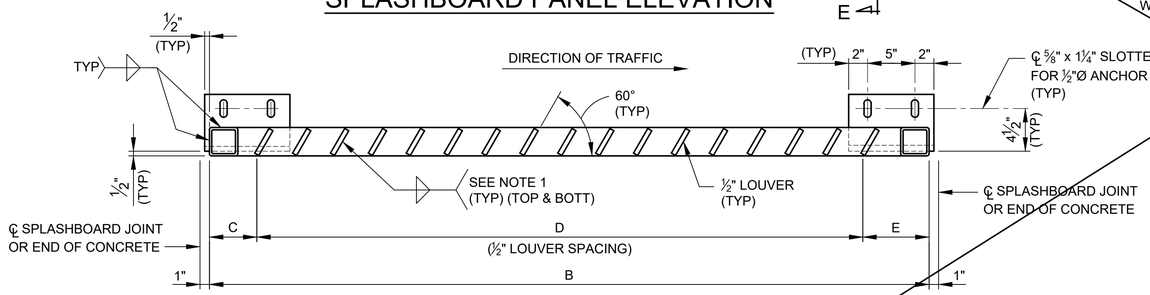
SHEET NO. 109 OF 153

APPROVED BY

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734



SPLASHBOARD PANEL ELEVATION



SECTION D-D

(VIEWED FROM INSIDE FACE)

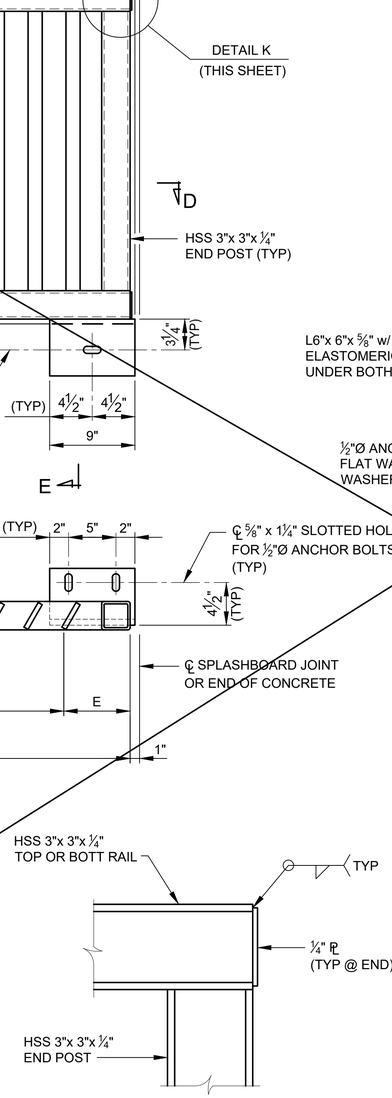
NOTE 1: WRAP WELD AROUND OUTSIDE EDGE

ANCHOR BOLT DETAIL

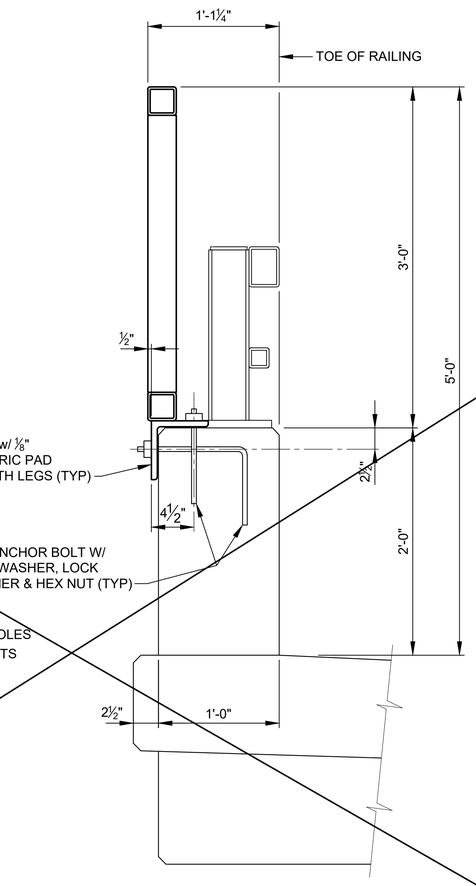
(94 REQUIRED)

ANCHOR BOLT DETAIL

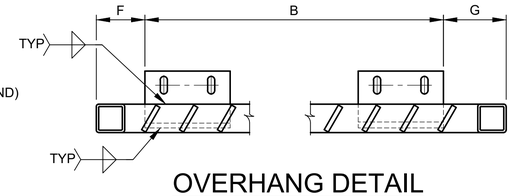
(188 REQUIRED)



DETAIL K



SECTION E-E



OVERHANG DETAIL

(VIEWED FROM INSIDE FACE)

SPLASHBOARD PANEL DIMENSIONS

PANEL	QUANTITY	A	B	C	D	E	F	G
P-1	4	4'-1"	4'-0"	5½"	9 SPA @ 4"= 3'-0"	6½"		
P-2	1	4'-5"	4'-4"	6"	10 SPA @ 4"= 3'-4"	6"		
P-3	12	6'-0"	5'-11"	5"	15 SPA @ 4"= 5'-0"	6"		
P-4	1	7'-6½"	8'-8½"	5¾"	23 SPA @ 4"= 7'-8"	6¾"		1'-2½"
P-5	1	6'-4¼"	6'-8⅞"	6"	17 SPA @ 4"= 5'-8"	6⅞"	2¾"	1⅞"
P-6	1	5'-10⅝"	5'-9⅝"	6¼"	14 SPA @ 4"= 4'-8"	7⅜"		
P-7	17	6'-6"	6'-5"	6"	16 SPA @ 4"= 5'-4"	7"		
P-8	1	6'-5"	6'-6⅜"	5"	17 SPA @ 4"= 5'-8"	5⅜"		1⅞"
P-9	1	5'-5⅝"	5'-4⅜"	6"	13 SPA @ 4"= 4'-4"	6⅜"		
P-10	1	5'-3⅞"	5'-2⅞"	5"	13 SPA @ 4"= 4'-4"	5⅞"		
P-11	1	4'-10⅜"	4'-9⅜"	6¼"	11 SPA @ 4"= 3'-8"	7⅛"		
P-12	1	6'-1⅞"	6'-0⅞"	5⅞"	15 SPA @ 4"= 5'-0"	7"		
P-13	1	4'-10"	5'-0⅛"	5½"	12 SPA @ 4"= 4'-0"	6⅝"		2⅝"
P-14	1	5'-2"	5'-4¼"	5½"	13 SPA @ 4"= 4'-4"	6¾"	2¾"	
P-15	1	5'-8⅞"	5'-11⅛"	5⅛"	15 SPA @ 4"= 5'-0"	6"		2¾"
P-16	1	5'-9⅜"	5'-10⅝"	4⅞"	15 SPA @ 4"= 5'-0"	5¾"		1¾"
P-17	1	5'-10"	5'-9"	6"	14 SPA @ 4"= 4'-8"	7"		

NOTES:

PROPOSED SPLASHBOARD PANELS AND ANCHOR BOLTS ARE INCLUDED IN THE BID ITEMS "STRUCTURAL STEEL, MIXED, FURN AND FAB" AND "STRUCTURAL STEEL, MIXED, ERECT".

ELASTOMERIC BEARING PAD (⅛") USED UNDER THE ANGLES SHALL NOT BE PAID FOR SEPARATELY BUT INCLUDED IN THE QUANTITY FOR STRUCTURAL STEEL.

STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270, GRADE 36.

REV NO. 1

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

DLZ

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

SUPERSTRUCTURE DETAIL

SCALE HOR. 1/16"=1'-0" | INCH 0 1

DRAWING NO. 2021-008-BR47

SHEET NO. 110 OF 153

APPROVED BY _____

CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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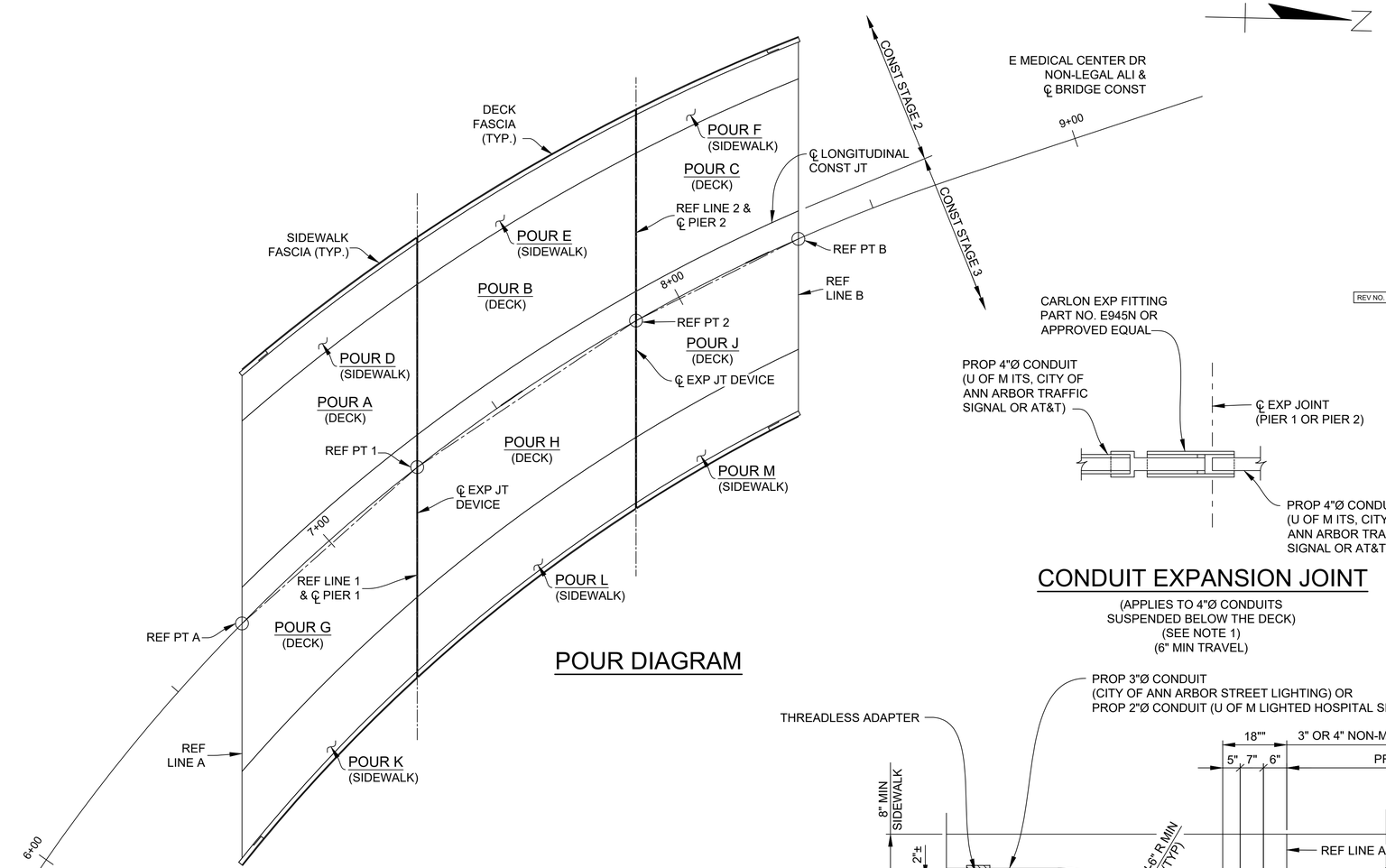
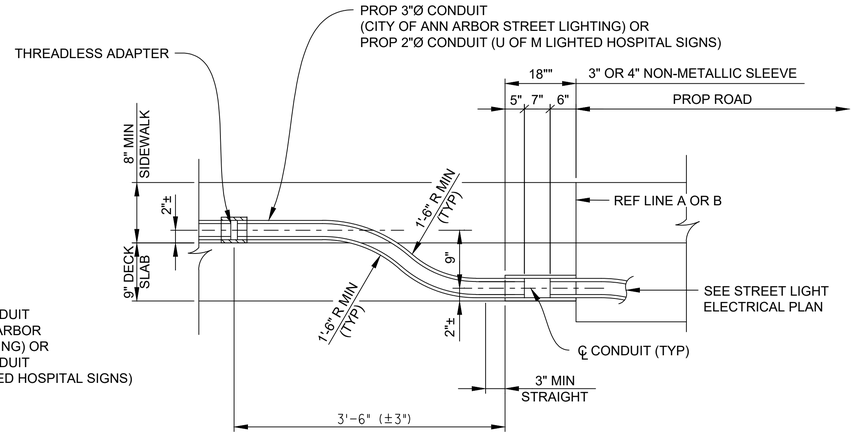


POUR DIAGRAM

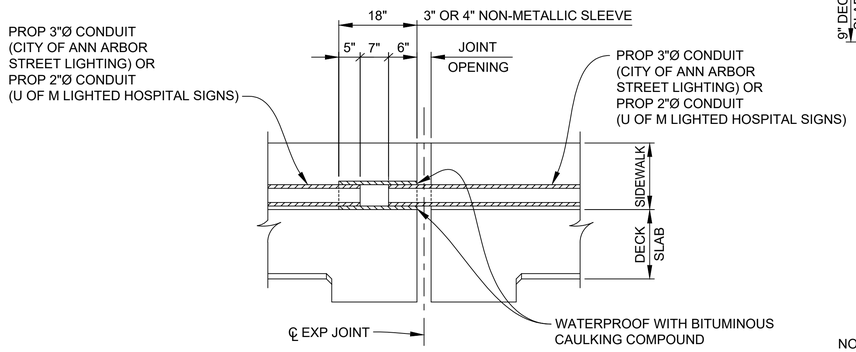
CONDUIT EXPANSION JOINT

(APPLIES TO 4"Ø CONDUITS SUSPENDED BELOW THE DECK)
(SEE NOTE 1)
(6" MIN TRAVEL)



CONDUIT DETAILS AT APPROACHES

(SEE NOTE 1)



LIGHTING CONDUIT AT TRANSVERSE EXPANSION JOINT

(SEE NOTE 1)

NOTE 1:
SLEEVES, ADAPTERS, COUPLINGS, CONDUIT, PLUGS AND WATERPROOFING ARE INCLUDED IN THE BID ITEM "CONDUIT, SCHEDULE 40, 2 INCH", "CONDUIT, SCHEDULE 40, 3 INCH" OR "CONDUIT, SCHEDULE 80, 4 INCH, STRUCTURE"

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

SUPERSTRUCTURE CONCRETE QUANTITIES	
POUR	QUANTITY (CYDS)(CATG 0001)
D	10.8
E	12.3
F	8.7
K	24.7
L	26.5
M	18.0
TOTAL	101

SUPERSTRUCTURE CONCRETE NIGHT CASTING QUANTITIES		
POUR	QUANTITY (CYDS)(CATG 0001)	QUANTITY (CYDS)(CATG 0002)
* A	50.2	19.3
B	48.8	19.2
* C	38.6	15.5
* G	89.1	
H	83.2	
* J	65.1	
TOTAL	375	54

* BACKWALL INCLUDED IN THE POUR.

REV NO. 1

ESTIMATED QUANTITIES THIS SHEET

DESCRIPTION	UNITS	CATG 0001	CATG 0002	CATG 0003	TOTAL
Bridge Ltg, Furn and Rem (STR 11065)	LSUM	0.9	0.1		1
Bridge Ltg, Oper and Maintain	Cyd	375	54		429
Elec Grounding System	Ea	1			1
Superstructure Conc	Cyd	101			101
Superstructure Conc, Form, Finish, and Cure (STR 11065)	LSUM	1			1
Superstructure Conc, Form, Finish, and Cure, Night Casting (STR 11065)	LSUM	0.9	0.1		1
Superstructure Conc, Night Casting	Cyd	375	54		429
Bridge Railing, Aesthetic Parapet Tube	Ft	321			321
Epoxy Ovly	Syd	1,050			1050
Reinforcement, Mechanical Splice	Ea	748			748
Fence, Structure	Sft	2,635			2,635

NOTES

ES DENOTES EACH SIDE.

NS DENOTES NEAR SIDE.

FS DENOTES FAR SIDE.

T&B DENOTES TOP AND BOTTOM.

FOR DETAILS OF NAME PLATES, MOLDINGS, AND BEVELS, SEE MDOT STANDARD PLAN B-103-SERIES.

FOR NAME PLATE LOCATION, SEE GENERAL PLAN OF STRUCTURE SHEET.

ALPHABETICAL DESIGNATION OF DECK POURS IS NOT TO BE CONSTRUED AS A POUR SEQUENCE.

APPLY LOW TEMPERATURE PROTECTION OF CONCRETE ACCORDING TO SECTION 706.03 J. OF THE 2020 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE CONCRETE BID ITEMS.

NO PORTION OF DECK FRAMEWORK SHALL ENCROACH ON THE EXISTING UNDERCLEARANCE.

THE CONTRACTOR MAY USE PERMANENT METAL DECK FORMS. IF USED, THE CORRUGATIONS MUST BE FILLED WITH POLYSTYRENE FOAM.

SAWCUT THE DECK ON BOTH TOP AND BOTTOM SURFACE PRIOR TO DECK REMOVAL PROCEDURES.

LIGHT STANDARD ANCHOR ASSEMBLY IS INCLUDED IN PAYMENT FOR "BRIDGE RAILING, AESTHETIC PARAPET TUBE".

NOTIFY THE UTILITY OWNER ONE WEEK PRIOR TO BEGINNING INSTALLATION OF DUCTS IN THE SIDEWALK.

SEE STANDARD PLAN B-25-K FOR ADDITIONAL RAILING DETAILS, INCLUDING BUMPOUT FOR LIGHT STANDARD.

REV NO. 1

SEE STANDARD PLAN B-41-C FOR FENCING DETAILS. MAX. MESH SIZE SHALL BE 1". FENCE FABRIC SHALL BE SQUARE, NOT DIAMOND SHAPED.

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22	DAF	CLH

DLZ

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

SUPERSTRUCTURE DETAIL

SCALE HOR. 1/16"=1'-0" | INCH 0 1

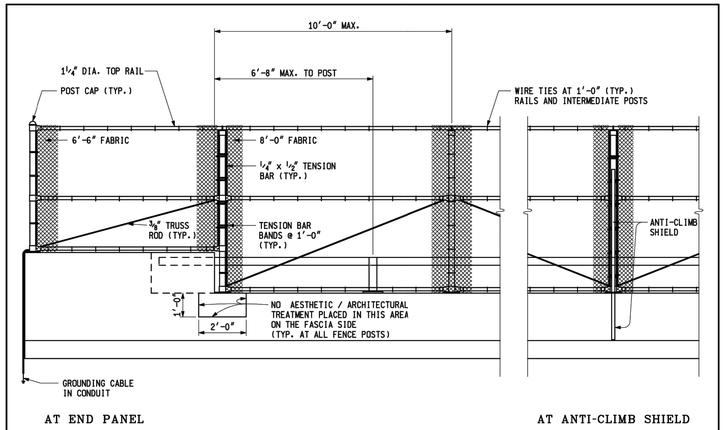
DRAWING NO. 2021-008-BR48

SHEET NO. 111 OF 153

APPROVED BY _____

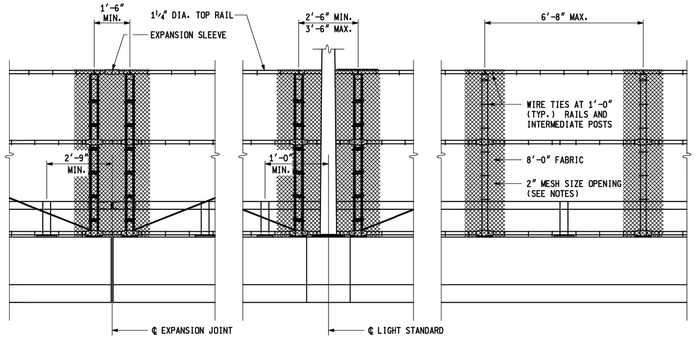
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

X:\Projects\2021\2141\736300 AA - EMCD Bridge\01_ConstDocs\CAD\EMCD_deck_009



AT END PANEL

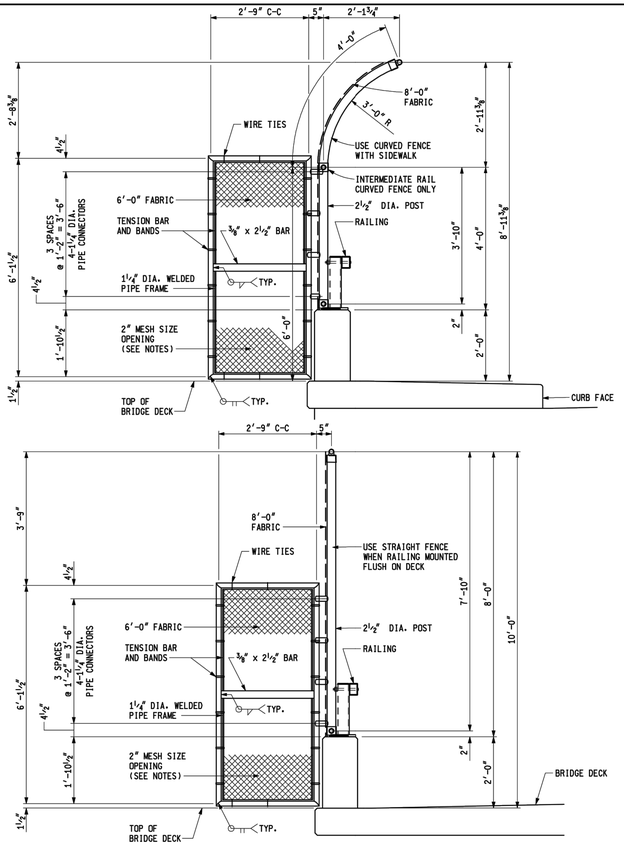
AT ANTI-CLIMB SHIELD



AT EXPANSION JOINT AT LIGHT STANDARD AT TYPICAL PANEL

TYPICAL ELEVATIONS

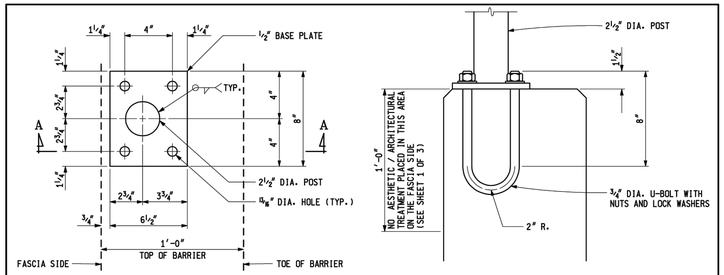
MDOT Michigan Department of Transportation PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: V.Z.	DEPARTMENT DIRECTOR Kirk T. Steudle APPROVED BY: John C. Friend ENGINEER OF DELIVERY APPROVED BY: Joel S. Pollard ENGINEER OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR FENCING FOR BRIDGE RAILING, AESTHETIC PARAPET TUBE 10-21-2008 F.H.W.A. APPROVAL · 6-20-2008 PLAN DATE · B-41-C · SHEET 1 OF 3



ANTI-CLIMB / POST DETAIL

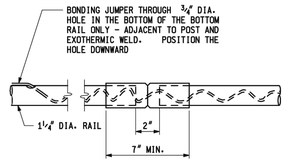
THE ANTI-CLIMB SHIELD SHALL BE LOCATED AT THE SECOND POST FROM THE END OR AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR FENCING FOR BRIDGE RAILING, AESTHETIC PARAPET TUBE 10-21-2008 F.H.W.A. APPROVAL · 6-20-2008 PLAN DATE · B-41-C · SHEET 2 OF 3		

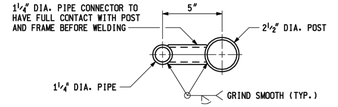


SECTION A - A

BASE PLATE DETAILS



EXPANSION SLEEVE DETAIL



PIPE CONNECTION DETAIL

USE AT ANTI-CLIMB SHIELD ONLY

NOTES:

ALL FENCE POSTS SHALL BE 2½" NOMINAL, (2.875" O.D.) PIPE AND ANTI-CLIMB SHIELD PIPE FRAMES SHALL BE 1¼" NOMINAL, (1.66" O.D.) PIPE, IN CONFORMANCE WITH ASTM F669, CLASS 1C.

HORIZONTAL RAILS SHALL BE 1¼" NOMINAL (1.66" O.D.) PIPE IN CONFORMANCE WITH ASTM F669, CLASS 1C OR ASTM F1083.

ALL FENCE COMPONENTS, UNLESS OTHERWISE INDICATED, SHALL BE GALVANIZED ACCORDING TO MDOT'S CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

ALL POSTS, ANTI-CLIMB SHIELDS OR OTHER COMPONENTS TO BE FABRICATED SHALL BE FURNISHED "BLACK" AND THEN GALVANIZED AFTER FABRICATION.

DAMAGED GALVANIZED SURFACES (NEW AND EXISTING) SHALL BE REPAIRED IN CONFORMANCE WITH MDOT'S CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

FENCE FABRIC SHALL BE #9 GAGE MESH AND BE GALVANIZED OR ALUMINUM COATED IN CONFORMANCE WITH MDOT'S CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION. MESH SIZE OPENING SHALL BE 2" UNLESS 1" MESH SIZE OPENING IS APPROVED BY THE TRAFFIC AND SAFETY DIVISION AND NOTED ON DESIGN PLANS. ALL DETAILS ON STANDARD PLAN SHALL APPLY REGARDLESS OF MESH SIZE OPENINGS.

GALVANIZED ⅜" DIAMETER TRUSS RODS SHALL EXTEND DIAGONALLY FROM THE TOP CONNECTION CLIP AT EACH TENSION BAR TO THE ADJACENT POST, EXCEPT ACROSS EXPANSION JOINTS AND AT LIGHT STANDARDS WITH A CURVED FENCE DETAIL, WHEN THERE ARE TWO OR MORE CONTINUOUS PANELS OF FABRIC.

ALL POSTS SHALL BE INSTALLED PLUMB AND MAY BE SHIMMED WITH NON-METALLIC SHIMS, APPROVED BY THE ENGINEER. COSTS FOR SHIMMING SHALL BE INCLUDED IN THE PAY ITEM "FENCE, STRUCTURE".

THE GROUNDING CABLE SHALL BE PLACED IN A NON-METALLIC CONDUIT, FROM THE END POST CONNECTION TO THE GROUND ROD CONNECTION. THE CONDUIT SHALL BE SECURED TO THE STRUCTURE USING EITHER EXPANSION BOLTS OR ADHESIVE ANCHORED BOLTS WITH GALVANIZED METAL STRIPS, AS APPROVED BY THE ENGINEER.

IN THE EVENT THAT THE INSTALLATION OF A GROUND ROD IS IMPRACTICAL, THE GROUNDING CABLE SHALL BE CONNECTED TO THE NEAREST LIGHT STANDARD USING A MECHANICAL CLIP, ONLY AFTER OBTAINING PERMISSION FROM THE LOCAL PUBLIC LIGHTING AUTHORITY.

EXPANSION JOINT SLEEVES, FOR HORIZONTAL RAILS, SHALL BE THE MANUFACTURER'S STANDARD OVERSIZED SLEEVES, CRIMPED IN THE MIDDLE.

NO SLIP FORMING OF BRIDGE RAILING, AESTHETIC PARAPET TUBE SHALL BE ALLOWED. RAILINGS SHALL BE CAST IN PLACE.

THE U-BOLTS FOR FENCING BASE PLATES SHALL BE ACCURATELY POSITIONED ACCORDING TO THE PLANS AND FIRMLY HELD BY MEANS OF A TEMPLATE.

THE HSS 2" x 2" x ⅛" RAIL SHALL NOT BE REQUIRED ON THE BRIDGE RAILING, AESTHETIC PARAPET TUBE USED IN COMBINATION WITH PEDESTRAIN FENCING.

ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO INSTALL PEDESTRIAN FENCING SHALL BE INCLUDED IN PAY ITEM "FENCE, STRUCTURE".

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR FENCING FOR BRIDGE RAILING, AESTHETIC PARAPET TUBE 10-21-2008 F.H.W.A. APPROVAL · 6-20-2008 PLAN DATE · B-41-C · SHEET 3 OF 3		

REV NO. 1

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

DLZ

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
1	ADDITIONAL BOLTED REPAIRS & FENCING TYPE CHANGE	11-10-22	DAF	CLH
	ORIGINAL ISSUE	10-9-22		

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

MDOT STANDARD DETAILS

APPROVED BY _____

SCALE HOR. 1"=40' VERT. 1"=4' · INCH 0 1

DRAWING NO. 2021-008-STD10A

SHEET NO. 134A OF 153

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