

**NOTES:**

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, OR IN THE CONTRACT DOCUMENTS AND DETAILED SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE ACCORDING TO THE LATEST REVISIONS OF THE CITY OF ANN ARBOR PUBLIC SERVICE DEPARTMENT STANDARD SPECIFICATIONS AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION 2020 EDITION AS APPLICABLE.

THE PROPOSED IMPROVEMENTS COVERED BY THESE PLANS ARE DESIGNED IN ACCORDANCE WITH THE 2018 AASHTO "POLICY ON THE GEOMETRIC DESIGN OF HIGHWAYS AND STREETS", THE 2012 AASHTO "GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF BICYCLE FACILITIES", AND THE 2011 "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

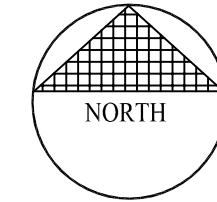
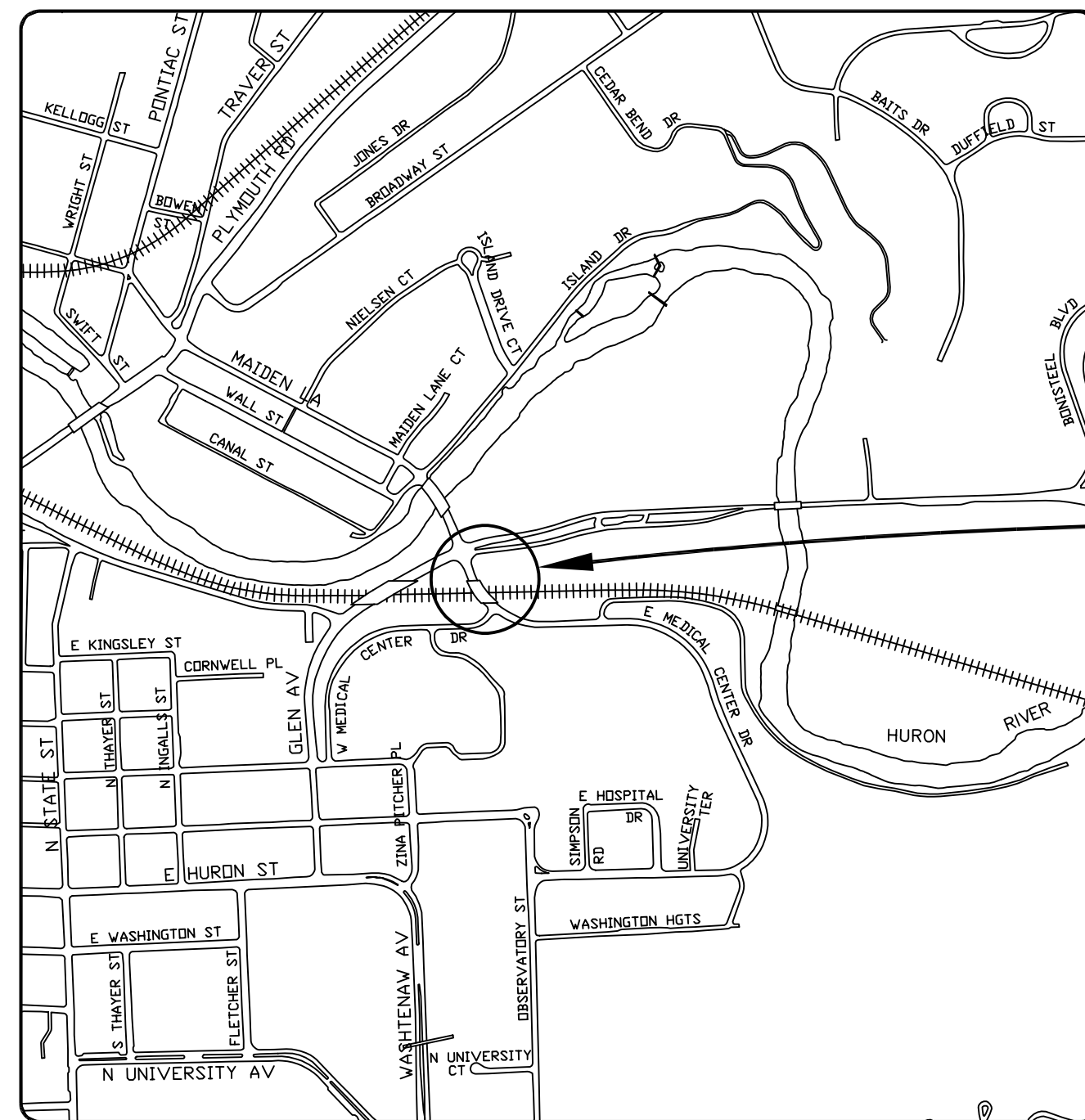
# CITY OF ANN ARBOR ENGINEERING

IN COOPERATION WITH THE  
UNIVERSITY OF MICHIGAN

## E. MEDICAL CENTER DRIVE BRIDGE REHABILITATION AND WIDENING

TRAFFIC DATA	
PRESENT ADT	18,500 (2021)
FUTURE ADT	20,000 (2041)
% COMMERCIAL	2.0%
POSTED SPEED	25 MPH
DESIGN SPEED	30 MPH

PERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION AT NO COST TO CONTRACTOR.	
PERMIT	ISSUING AUTHORITY
LANE CLOSURE PERMIT	CITY OF ANN ARBOR ENGINEERING UNIT
*NO PARKING* SIGNS PERMIT	CITY OF ANN ARBOR ENGINEERING UNIT
GRADING/ SOIL EROSION & SEDIMENTATION CONTROL PERMIT	CITY OF ANN ARBOR PLANNING AND DEVELOPMENT SERVICES UNIT
ACCESS AGREEMENT	UNIVERSITY OF MICHIGAN



**STR 11065**  
EAST MEDICAL CENTER DRIVE OVER NORFOLK SOUTHERN RAILROAD

**CITY FILE NO. 2021-008**

CONTRACT FOR: DECK REPLACEMENT AND WIDENING, STRUCTURAL STEEL REPAIRS, BEAM GALVANIZATION, PIER CAP REPLACEMENT, SUBSTRUCTURE PATCHING, SUBSTRUCTURE WIDENING.

PREPARED UNDER THE SUPERVISION OF

*Carrie L Hamel*

Carrie L Hamel, PE  
2023.10.06 16:20:03-04'00'

CARRIE HAMEL, P.E., MICHIGAN LICENSE NO.

DATE



CONTRACT FOR: APPROACH WORK, ROADWAY WIDENING, SIDEWALK REPLACEMENT, HMA RESURFACING AND RECONSTRUCTION, SIGNAL WORK AND MAINTENANCE OF TRAFFIC.

PREPARED UNDER THE SUPERVISION OF

*Leigh C Merrill III*

Digitally signed by Leigh C Merrill III  
Date: 2023.10.06 15:58:10-04'00'

LEIGH MERRILL P.E., MICHIGAN LICENSE NO.

DATE



DRAWING NO.

**2021-008-C1**

SHEET 1 OF 155

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

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

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 (734) 794-3304 M-F 7:30 AM - 5:30 PM (734) 994-2840 OFF HOURS	JASON MCDONALD
SANITARY		TRAVIS CONLEY
STORM		MARK SIRLS
SIGNS SIGNALS STREET LIGHTS		MARC MORENO

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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@fiberlink.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

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 SC-SESC-3 SD-GU-5 SD-GU-5 SD-GU-8 SD-M-1 SD-R-1 SD-R-4 SD-R-10 SD-R-15 SD-SL-1 SD-TD-1A SD-TD-6 SD-TD-7 SD-TD-9	INLET PROTECTION SILT FENCE STANDARD CASTING SCHEDULE MANHOLE CASTING ADJUSTMENT MANHOLE & VALVE/MOMUMENT BOX LOWERING TREE PROTECTION BARRIER CURB & GUTTER SPILL-OUT BARRIER CURB & GUTTER SIDEWALK & CURB & GUTTER JOINTS URBAN GUARDRAIL LOCATION STREETLIGHT FOUNDATION UTILITY TRENCH - TYPE I UTILITY TRENCH - TYPE VI UTILITY TRENCH - TYPE VII 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 R-53-A* B-25-K B-41-C B-102-C B-103-E MOT TYPICAL A 163-INT-LD-OUT	SIDEWALK RAMP & DETECTABLE WARNING DETAILS TEMPORARY CONCRETE BARRIER LIMITED DEFLECTION BRIDGE RAILING, AESTHETIC PARAPET TUBE FENCING FOR BRIDGE RAILING, AESTHETIC PARAPET TUBE STANDARD SLOPE PAVING DETAILS MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS SIGNAL WORK AT INTERSECTION LONGER THAN 1 HOUR ON E. MEDICAL CENTER DR. AT W. MEDICAL CENTER DR. OR CANCER CENTER SIGNAL WORK AT INTERSECTION OUTSIDE ROADWAY LONGER THAN 1 HOUR ON A 4-LANE UNDIVIDED ROADWAY
* DENOTES SPECIAL DETAIL	

X:\Projects\2021\2141\736300 AA - EMCD Bridge\01\_ConstDocs\CAD\EMCD\_Project\_Index\_Sheet

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

DLZ				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
PROJECT INFORMATION SHEET	
APPROVED BY:	Carrie L. Hamel, PE 2023.10.06 16:20:38-0400
SCALE NONE	0 INCH 1
DRAWING NO. <b>2021-008-C2</b>	SHEET NO. <u>2</u> OF <u>155</u>

# 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 <sub>c</sub> = 3,000 psi
GRADE 4500	f <sub>c</sub> = 4,000 psi
STEEL REINFORCEMENT:	f <sub>y</sub> = 60,000 psi
STRUCTURAL STEEL:	
AASHTO M270, GRADE 50 OR 50W	F <sub>y</sub> = 50,000 psi
AASHTO M270, GRADE 36	F <sub>y</sub> = 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 UNMOUNTED 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 REVIEW 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.

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:

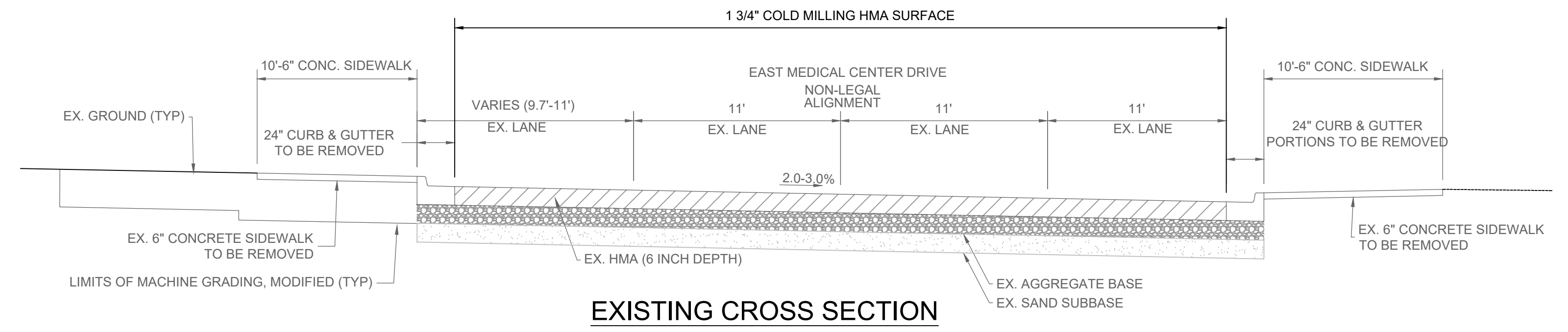
- BrB - Boyer Loamy Sand.

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

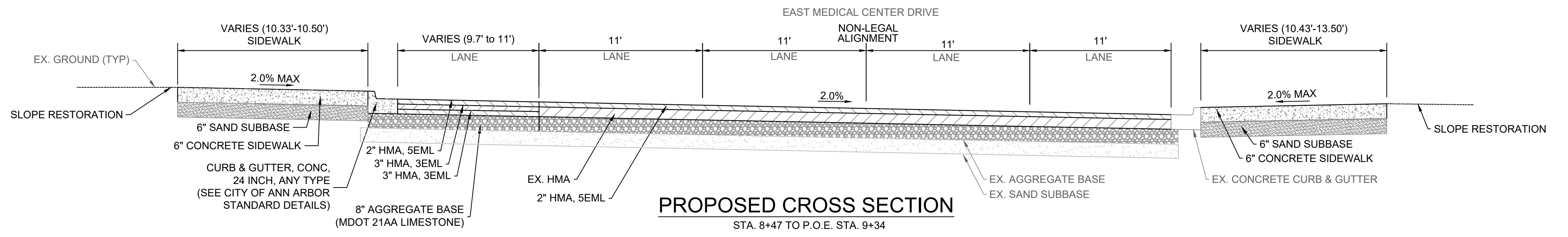
					<b>PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR</b>				
					<b>EAST MEDICAL CENTER DRIVE</b>				
					<b>PROJECT NOTE SHEET</b>				
					APPROVED BY:  Carrie L. Hamel, PE 2023.10.06 16:21:00-0400				
SCALE NONE		INCH 0 1			DRAWING NO. <b>2021-008-C3</b>		SHEET NO. <u>  3  </u> OF <u> 155 </u>		
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY					
	ORIGINAL ISSUE	10-6-23	DAF	CLH					

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

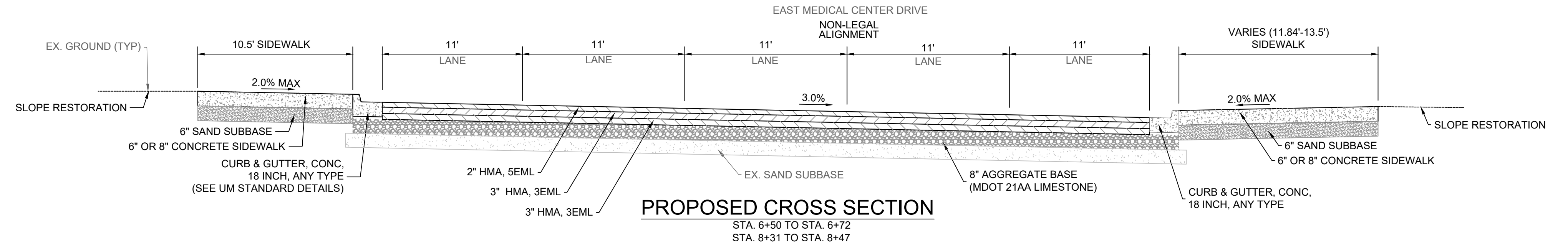
ROADWAY/MOT ITEMS							ROADWAY/MOT ITEMS							STRUCTURE ITEMS							
CODE NO.	WORK ITEM	UNITS	CONTRACT			AS-BUILT	CODE NO.	WORK ITEM	UNITS	CONTRACT			AS-BUILT	CODE NO.	WORK ITEM	UNITS	CONTRACT			AS-BUILT	
			CATG 0001	CATG 0002	CATG 0003					TOTAL	CATG 0001	CATG 0002					CATG 0003	TOTAL	CATG 0001		CATG 0002
1047051	Certified Payroll & Compliance	LSUM	1			1	8120258	Pavt Mrkg, Wet Reflective, Type R, Tape, Rt Turn Arrow	Ea	2			2	1077060	Relocation and Site Cleanup	Dir			15,000	15,000	
1047051	Project Supervision	LSUM	1			1	8120259	Pavt Mrkg, Wet Reflective, Type R, Tape, Thru Arrow	Ea	22			22	2040061	Structures, Rem Portions (STR 11065)	LSUM	0.9	0.1		1	
2010001	Clearing	Acre	0.2			0.2	8120265	Pavt Mrkg, Wet Reflective, Type R, Tape, 24 Inch, Stop Bar	Ft	195			195	2060002	Backfill, Structure, CIP	Cyd	500	500	340	1,340	
2040035	Guardrail, Rem	Ft	176			176	8120310	Sign Cover	Ea	1			1	2060010	Excavation, Fdn	Cyd	500	500	400	1,400	
2040050	Pavt, Rem	Syd	192			192	8120330	Sign, Portable, Changeable Message, Furn	Ea	4			4	2067050	Dewatering System, Excavation	Ea		2		2	
2040080	Exploratory Investigation, Vertical	Ft	50	150		200	8120331	Sign, Portable, Changeable Message, Furn	Ea	4			4	3027021	Sand Subbase Course, Class II, CIP	Cyd			35	35	
2047001	Curb and Gutter, Any Type or Size, Rem	Ft	70	311		381	8120340	Sign, Type A, Temp, Prismatic, Furn	Sft	30			30	7040001	Steel Sheet Piling, Permanent	Sft			6,870	6,870	
2047011	Sidewalk and Drive, Any Type or Thickness, Rem	Syd	70	571		641	8120341	Sign, Type A, Temp, Prismatic, Oper	Sft	30			30	7040002	Steel Sheet Piling, Temp	Sft	360			360	
2057011	Machine Grading, Modified	Syd		2.3		2.3	8120350	Sign, Type B, Temp, Prismatic, Furn	Sft	1022			1022	7040003	Steel Sheet Piling, Temp, Left in Place	Sft		520		520	
2057021	Non-Hazardous Contaminated Material Handling and Disposal, LM	Cyd	200		200	400	8120351	Sign, Type B, Temp, Prismatic, Oper	Sft	1022			1022	7057050	Micropile, Type B, Furn and Install, LRFD	Ea		20		20	
2087036	Erosion Control, Silt Fence	Ft	1,289			1,289	8120352	Sign, Type B, Temp, Prismatic, Spec, Furn	Sft	386			386	7057050	Micropile, Load Test, Proof, LRFD	Ea		4		4	
2087050	Erosion Control, Inlet Protection	Ea	5	2		7	8120353	Sign, Type B, Temp, Prismatic, Spec, Oper	Sft	386			386	7057050	Micropile, Load Test, Verification, LRFD	Ea		1		1	
2090001	Project Cleanup	LSUM	1			1	8120370	Traf Regulator Control	LSUM	1			1	7057051	Micropile Mobilization, LRFD (STR 11065)	LSUM		1		1	
3027021	Aggregate Base Course, 21AA, Modified	Cyd	43	56		99	8121000	Conc Barrier, Temp, Limited Deflection, Det 1, Furn	Ft	160			160	7060001	Bridge Ltg, Furn and Rem (STR 11065)	LSUM	0.9	0.1		1	
3027021	Sand Subbase Course, Class II, CIP	Cyd	16	94		110	8121001	Conc Barrier, Temp, Limited Deflection, Det 1, Oper	Ft	160			160	7060002	Bridge Ltg, Oper and Maintain	Cyd	387	71		458	
4030005	Dr Structure Cover, Adj, Case 1	Ea		2		2	8121100	Conc Barrier, Temp, Limited Deflection, Det 2, Furn	Ft	75			75	7060040	Elec Grounding System	Ea	1			1	
4030050	Dr Structure Cover, Type K	Ea	2	2		4	8121101	Conc Barrier, Temp, Limited Deflection, Det 2, Oper	Ft	75			75	7060050	Expansion Joint Device	Ft	163	41		204	
4030390	Dr Structure, Temp Lowering	Ea	2	2		4	8121102	Conc Barrier, Temp, Limited Deflection, Det 2, Adj	Ft	75			75	7060060	False Decking	Sft	20,230			20,230	
4037050	Dr Structure Cover, Adj	Ea	2			2	8121200	Conc Barrier, Temp, Limited Deflection, Det 3A, Furn	Ft	160			160	7060092	Reinforcement, Steel, Epoxy Coated	Lb	141,785	35,446	1,519	178,750	
4037050	Utility Structure Cover, Adjust, Case 1	Ea	1			1	8121201	Conc Barrier, Temp, Limited Deflection, Det 3A, Oper	Ft	160			160	7060100	Substructure Conc	Cyd	162	135		297	
5012013	HMA, 3EML	Ton	64	82		146	8122111	Pavt Mrkg, Wet Reflective, Type R, Tape, Only	Ea	4			4	7060110	Superstructure Conc	Cyd	114			114	
5012037	HMA, 5EML	Ton	222	22		244	8122145	Pavt Mrkg, Wet Reflective, Type R, Tape, Rt & Lt Turn Arrow Sym	Ea	2			2	7060111	Superstructure Conc, Form, Finish, and Cure (STR 11065)	LSUM	1			1	
5017031	Hand Patching, Modified	Ton	35	35		70	8122148	Pavt Mrkg, Wet Reflective, Type R, Tape, Thru & Rt Turn Arrow Sym	Ea	11			11	7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting (STR 11065)	LSUM	0.9	0.1		1	
5017011	Cold Milling, HMA Surface, Modified	Syd	1,501			1,501	8127050	Pedestrian Type II Barricade, Temp	Ea	2			2	7060113	Superstructure Conc, Night Casting	Cyd	387	71		458	
6030014	Cold Milling, Conc Surface, Modified	Syd	26			26	8167011	Slope Restoration	Syd	40	210		250	7060140	Water Repellent Treatment, Penetrating	Syd	59			59	
8027001	Curb and Gutter, Conc, 18 Inch, Any Type	Ft	50	227		277	8182000	Conduit, Rem	Ft	498	12		510	7062003	Conc, Grade 4500	Cyd			33	33	
8027001	Curb and Gutter, Conc, 24 Inch, Any Type	Ft	34	77		111	8182016	Conduit, Encased, 1, 4 Inch	Ft			207	207	7067001	Expansion Joint Device, Cover Plate, Modified	Ft	56			56	
8030030	Curb Ramp Opening, Conc, 6 inch	Ft		40		40	8182021	Conduit, Encased, 6, 4 Inch	Ft		129		129	7070019	Bearing, Elastomeric, 2 3/4 inch	Sin	4,851	1,485		6,336	
8037001	Detectable Warning Surface	Sft		64		64	8182034	Conduit, Directional Bore, 1, 1 1/2 Inch	Ft	60			60	7070021	Bearing, Elastomeric, 3 1/4 inch	Sin	4,510	1,370		5,880	
8037010	Concrete Sidewalk, 6 Inch	Sft		2833		2833	8182035	Conduit, Directional Bore, 1, 3 Inch	Ft	365			365	7070040	Shear Developers (STR 11065)	LSUM		0.75	0.25	1	
8037010	Concrete Sidewalk, 8 Inch	Sft		3510		3510	8182048	Conduit, DB, 1, 1 1/2 Inch	Ft	90			90	7070050	Structural Steel, Mixed, Erect	Lb	43,047	16,272		59,319	
8037010	Sidewalk Ramp, Concrete, 8 Inch	Sft		229		229	8182133	Conduit, Schedule 40, 2 Inch	Ft		385		385	7070051	Structural Steel, Mixed, Furn and Fab	Lb	43,047	16,272		59,319	
8070004	Guardrail, Type MGS-8, 72 inch Post	Ft	152			152	8182135	Conduit, Schedule 40, 3 Inch	Ft		688		688	7070070	Structural Steel, Rolled Shape, Erect	Lb		77,700		77,700	
8070044	Guardrail Approach Terminal, Type 2M	Ea	2			2	8182187	DB Cable, In Conduit, 600V, 1/C#6	Ft	3,456	699		4,155	7070071	Structural Steel, Rolled Shape, Furn and Fab	Lb		77,700		77,700	
8077050	Guardrail Departing Terminal, Type MGS	Ea	2			2	8182309	Hh, Polymer Conc	Ea	2			2	7077051	Structural Steel, Galvanizing (STR 11065)	LSUM	1			1	
8087001	Fence, Temp	Ft	2666			2666	8182330	Hh, Rem	Ea	3			3	7100001	Joint Waterproofing	Sft	770			770	
8087001	Post and Chain Fence, Salvage	Ft		84		84	8182349	Wood Pole, Cl 4, 30 Foot	Ea	5			5	7100003	Joint Waterproofing, Expansion	Sft	10			10	
8087001	Tree Fence, Protective	Ft	47			47	8182363	Wood Pole, Rem	Ea	5			5	7100030	Substructure Horizontal Surface Sealer (STR 11065)	Syd	93			93	
8087050	Gate, Temp	Ea	2			2	8182387	Wood Pole, Fit Up, TS Cable Pole	Ea	3			3	7110005	Bridge Railing, Aesthetic Parapet Tube	Ft	323			323	
8100398	Sign, Type IIA	Sft	20			20	8187001	Conduit, DB, 1, 2 Inch	Ft		8		8	7120007	Hand Chipping, Other Than Deck	Cft	130			130	
8100399	Sign, Type IIB	Sft	20			20	8187050	Handhole, Assembly, 17 inch x 30 inch	Ea	2	3	9	12	7120017	Patch, Forming	Sft	520			520	
8100402	Sign, Type III, Erect Salv	Ea	4			4	8187050	Handhole, Adjust, Any Size	Ea		1		1	7120020	Epoxy Only	Syd	1,020			1,020	
8107050	Hospital Sign and Foundation, Relocate	Ea		2		2	8187050	Hh, Tap, 4 Inch	Ea		2		2	7120028	Adhesive Anchoring of Horizontal Bar, 3/4 inch	Ea		92		92	
8110091	Pavt Mrkg, Polyurea, 4 Inch, White	Ft	685			685	8190306	Light Std Shaft, Rem and Salv	Ea	5			5	7120034	Adhesive Anchoring of Vertical Bar, 3/4 inch	Ea		8		8	
8110092	Pavt Mrkg, Polyurea, 4 Inch, Yellow	Ft	504			504	8197050	Luminaire Installation	Ea	5			5	7120084	Reinforcement, Mechanical Splice	Ea	796			796	
8110110	Pavt Mrkg, Polyurea, 12 Inch, Crosswalk	Ft	55			55	8197050	Pole Fit-Up	Ea	5			5	7120098	Flushing Cracks, Water	Ft	150			150	
8110114	Pavt Mrkg, Polyurea, 24 Inch, Stop Bar	Ft	58			58	8197050	Pole Installation	Ea	5			5	7120099	Structural Crack, Repr	Ft	150			150	
8110153	Pavt Mrkg, Sprayable Thermopl, 4 Inch, White	Ft	386			386	8200100	Pedestal, Alum	Ea	2	1		3	7120112	Patching Conc, C-L	Cyd	5			5	
8110154	Pavt Mrkg, Sprayable Thermopl, 4 Inch, Yellow	Ft	602			602	8200101	Pedestal, Alum, Salvage	Ea	1			1	7120120	Embedded Galvanic Anode	Ea	555			555	
8110307	Rem Curing Compound, for Longit Mrkg, 4 Inch	Ft	791			791	8200105	Pedestal, Fdn	Ea	2	1		3	7130010	Beam Plate, Seal Perimeter	Ft	2,220			2,220	
8110321	Rem Curing Compound, for Spec Mrkg	Sft	211			211	8200106	Pedestal Fdn, Rem	Ea	3	1		4	8037010	Concrete Sidewalk, 6 Inch	Sft			1,880	1,880	
8110343	Rem Spec Mrkg	Sft	1,000			1,000	8200110	Pedestal, Rem	Ea	3	1		4	8080110	Fence, Structure	Sft	2,635			2,635	
8110405	Pavt Mrkg, Polyurea, LT Turn Arrow Sym	Ea	7			7	8200121	Pushbutton and Sign	Ea	2	1		3	8127060	Railroad Inspection and Flagging	Dir	180,000	20,000		200,000	
8110410	Pavt Mrkg, Polyurea, Only	Ea	13			13	8200122	Pushbutton, Rem	Ea	3	1		4	8130015	Slope Paving Header	Ft		40	87	127	
8110412	Pavt Mrkg, Polyurea, RT Turn Arrow Sym	Ea	6			6	8200126	Pushbutton and Sign, Salvage	Ea	1			1	8130020	Slope Paving, Conc	Syd		20	30	50	
8110418	Pavt Mrkg, Polyurea, Thru Arrow Sym	Ea	3			3	8200140	Span Wire	Ea	4			4	8182097	Conduit, Schedule 80, 4 inch, Structure	Ft	2,940			2,940	
8117001	Recessing Pavt Mrkg, Longitudinal	Ft	2,219			2,219	8200141	Span Wire, Rem	Ea	4			4	8182133	Conduit, Schedule 40, 2 inch	Ft		160		160	
8117001	Recessing Pavt Mrkg, Transverse	Ft	119			119	8200168	Strut Guy	Ea	2			2	8182135	Conduit, Schedule 40, 3 inch	Ft			330	330	
8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	12			12	8200177	TS, Mast Arm Mtd, Rem	Ea	1			1	8240020	Structure Survey During Construction (STR 11065)	LSUM	1			1	
8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	12			12	8200251	TS, One Way Mast Arm Mtd, Salv	Ea	1			1	8507010	Soil Nails for Slope Stabilization	Sft		2,831		2,831	
8120026	Pedestrian Type II Barricade, Temp	Ea	4			4	8200376	Bracket, Truss, With 12 Foot Arm	Ea	1			1								
8120027	Pedestrian Type II Channelizer, Temp	Ft	60			60	8200444	Hemispherical Video Detection Camera	Ea	1		2	3								
8120035	Channelizing Device, 42 Inch, Fluorescent, Furn	Ea	50			50	8200445	Hemispherical Video Detection System	Ea			1	1								
8120036	Channelizing Device, 42 Inch, Fluorescent, Oper	Ea	50			50	8200446	Hemispherical Video Detection Camera, Rem	Ea	1			1								
8120040	Conc Barrier Ending, Temp, Det 2, Adj	Ea	2			2	8200452	TS Head, Adj	Ea	2			2								
8120041	Conc Barrier Ending, Temp, Det 2, Furn	Ea	2			2	8200453	TS Head, Temp	Ea	20			20								
8120042	Conc Barrier Ending, Temp, Det 2, Oper	Ea	2			2	8200458	TS Face, Bag	Ea	6			6								
8120080	Conc Barrier, Temp, Adj	Ft	100			100	8200459	TS Face, Bag, Rem	Ea	6			6								
8120081	Conc Barrier, Temp, Furn	Ft	100			100	8507051	Audio-Video Rte Survey	LSUM	1			1								



**EXISTING CROSS SECTION**

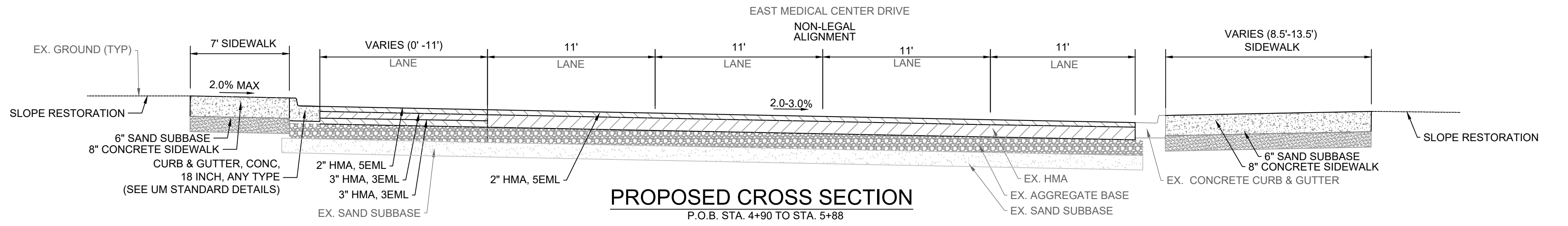


**PROPOSED CROSS SECTION**  
STA. 8+47 TO P.O.E. STA. 9+34



**PROPOSED CROSS SECTION**  
STA. 6+50 TO STA. 6+72  
STA. 8+31 TO STA. 8+47

**NOTE:**  
PROPOSED AGGREGATE BASE IS MDOT 21AA LIMESTONE.



**PROPOSED CROSS SECTION**  
P.O.B. STA. 4+90 TO STA. 5+88

HMA APPLICATION ESTIMATE			
PAY ITEM	RATE (LBS/SYD)	PERFORMANCE GRADE	REMARKS
HMA, 5EML	220	64-22	HMA, 5EML TOP COURSE AWI=260.
HMA, 3EML	330	64-22	HMA, 3EML LEVELING COURSE
HMA, 3EML	330	58-22	HMA, 3EML BASE COURSE
BOND COAT	0.10 GAL/SYD		FOR INFORMATION ONLY. SHALL NOT BE PAID SEPARATELY BUT IS INCLUDED IN PAY ITEM OF HMA COURSE BEING APPLIED

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

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

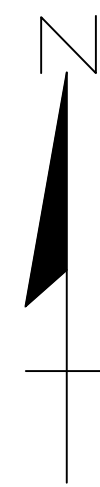
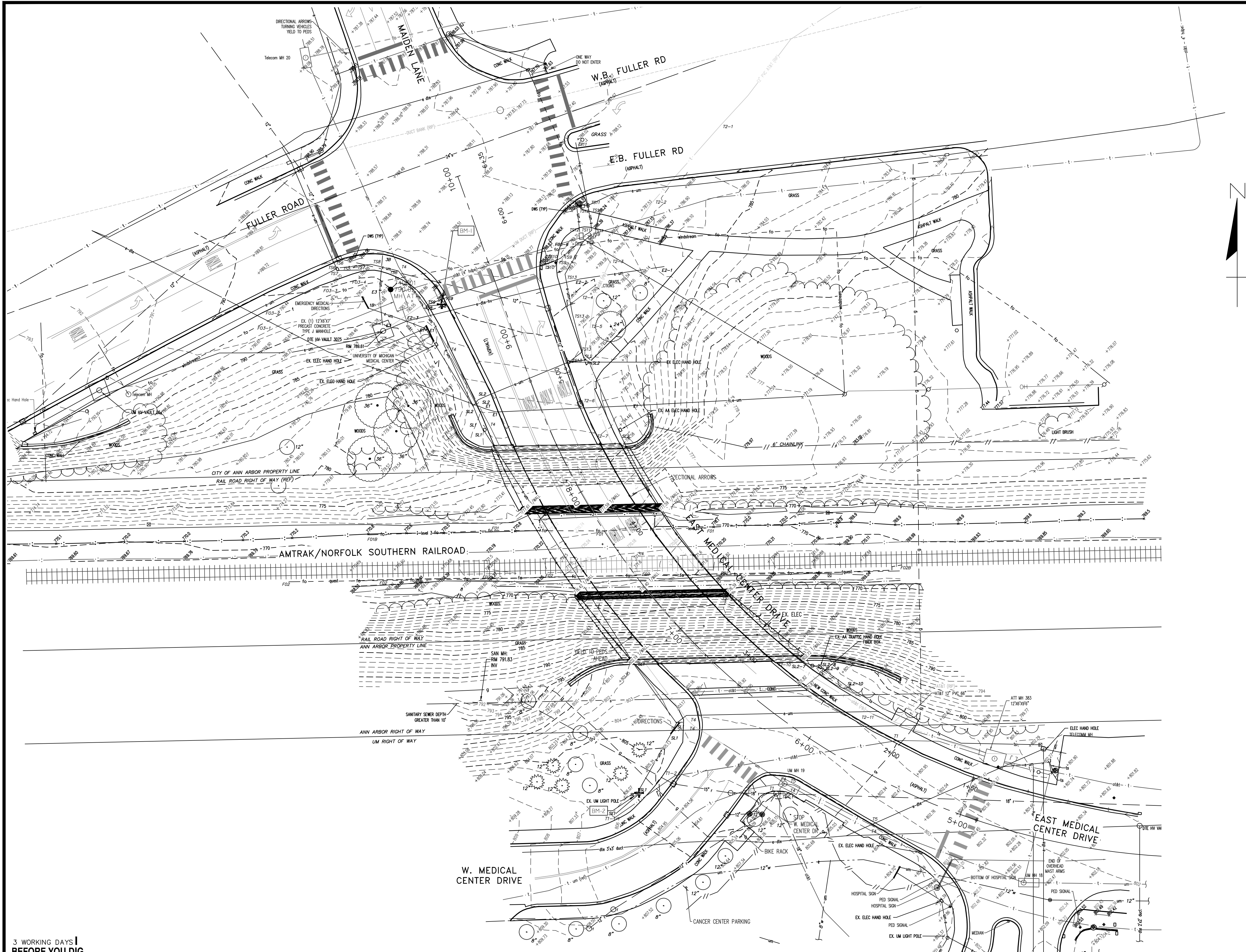
**E. MEDICAL CENTER DRIVE ROADWAY CROSS SECTIONS**

SCALE: 0 INCH 1

DRAWING NO. **2021-008-TSCS**

SHEET NO. **5** OF **155**

APPROVED BY: *Leigh C. Merrill III*  
LEIGH C. MERRILL P.E., MICHIGAN NO. 6201061025



**BENCHMARKS**

BM#1  
ELEV=790.619'  
TOP OF SW TRAFFIC SIGNAL BASE BOLT AT THE SW CORNER OF THE INTERSECTION OF FULLER AVE AND MAIDEN AVENUE/E. MEDICAL CENTER DRIVE

BM#2  
ELEV=806.437'  
TOP OF NE LIGHT POLE BASE BOLT ON NORTH SIDE OF W MEDICAL CENTER DRIVE +/- 40' FROM THE INTERSECTION OF E. MEDICAL CENTER DRIVE

**NOTE**

FOR UTILITY STRUCTURE INFORMATION, SEE STRUCTURE TABLE - SHEET 59.

**NOTES**

VERTICAL DATUM: NAVD 1988, BASED ON NGS CONCRETE MONUMENT DESIGNATED AS 0014A AND HAVING A PID OF AAS177.

HORIZONTAL DATUM: MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE 2113, INTERNATIONAL FEET, NAD 83, 2011 ADJUSTMENT YEAR

UTILITIES SHOWN ARE BASED OFF MARKED LOCATIONS PROVIDED BY T2 UTILITY ENGINEERS AND PLAN INFORMATION RECEIVED FROM UTILITY OWNERS IN RESPONSE TO A MISS DIG TICKET. UTILITY INFORMATION SHOULD BE CONSIDERED APPROXIMATE AND WILL NEED TO BE VERIFIED PRIOR TO ANY CONSTRUCTION.

MISS DIG TICKET #: B13010469

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

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	EXISTING HAND HOLE	DECIDUOUS TREE
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- EXISTING PEDESTRIAN SIGNAL	(Circle with diagonal lines)
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- BENCHMARK	(Circle with cross)
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- TREE/BRUSH LINE	(Circle with dots)
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL		

		SEE ABOVE			
		BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION
			ORIGINAL ISSUE	10/6/23	INB
			DATE		DR.BY
					CH.BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>E. MEDICAL CENTER DRIVE</b>	
<b>EXISTING CONDITIONS (E MED CNTR DR)</b>	
SCALE 1"=30'	INCH 0 1
DRAWING NO. <b>2021-008-TS1</b>	
SHEET NO. 6 OF 155	

APPROVED BY: Digitally signed by Leigh C. Merrill III Date: 2023.10.06 16:14:17-0400'

Coordinate System: State Plane Grid  
 Zone: Michigan Southern 2113  
 Ellipsoid: GRS 80  
 Horizontal Datum: NAD 83 (NRS 2011)  
 Vertical Datum: Geoid 128  
 Units: International Feet

Control

**CONTROL POINT # 1**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the north side of the Amtrak tracks.

COORDINATES: N=287044.0144 E=1324949.5600 EL=770.64'

COMBINED FACTOR: 0.99992963

**WITNESSES:**

1. N7844"E 50.75' TO WEST SIDE OF NORTHERN PIER OF E MEDICAL CENTER DRIVE BRIDGE.
2. S045"E 22.51' TO THE NORTHERN AMTRAK RAIL
3. S8646"W 93.43' TO REBAR CONTROL POINT 8
4. N2202"W 34.24' TO REBAR CONTROL POINT 3

**CONTROL POINT # 2**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the north side of the Amtrak tracks, EAST OF THE EAST MEDICAL CENTER DRIVE BRIDGE.

COORDINATES: N=287046.5865 E=13295189.4300 EL=769.97'

COMBINED FACTOR: 0.99992966

**WITNESSES:**

1. N01043"W 45.47' TO 6" HIGH CHAINLINK FENCE
2. N830 05'E 93.12' TO UTILITY POLE
3. S01009"E TO NORTHERN AMTRAK RAIL
4. N85020"W 105.09 FEET TO THE EAST SIDE OF THE NORTHERN PIER FOR THE E MEDICAL CENTER DRIVE BRIDGE OVER AMTRAK.

**CONTROL POINT # 3**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the north side of the Amtrak tracks, WEST OF THE EAST MEDICAL CENTER DRIVE BRIDGE.

COORDINATES: N=287075.7543 E=13294936.7100 EL=779.11'

COMBINED FACTOR: 0.99992921

**WITNESSES:**

1. N0441"W 39.31' TO 36" TREE
2. S2000"E 66.70' TO THE WEST SIDE OF THE NORTHERN PIER TO THE EAST MEDICAL CENTER BRIDGE OVER AMTRAK
3. S2200"E 34.24' TO CONTROL POINT 1 (REBAR)
4. N7203"W 27.10' TO 36" TREE.

**CONTROL POINT # 4**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground at the SW CORNER OF THE INTERSECTION OF EAST MEDICAL CENTER DRIVE AND FULLER AVENUE.

COORDINATES: 287188.4723 E=13294921.5700 EL=790.30'

COMBINED FACTOR: 0.99992819

**WITNESSES:**

1. S79009"E 27.63' TO THE SW CORNER OF DETECTABLE WARNING SURFACE
2. S40039"E 64.41' TO NORTH CORNER OF UNIVERSITY OF MICHIGAN MEDICAL SIGN
3. S58031"W 17.89 FEET TO THE NORTH CORNER OF UNIVERSITY OF MICHIGAN MEDICAL SIGN
4. N48004"W 20.58' TO THE SE CORNER OF DETECTABLE WARNING SURFACE

**CONTROL POINT # 5**

MAG NAIL SET IN CONCRETE BRIDGE EXPANSION JOINT ON THE EAST SIDE OF THE BRIDGE OVER THE NORTH PIER.

COORDINATES: N=287055.2003 E=13295078.6000 EL=797.58'

COMBINED FACTOR: 0.99992838

**WITNESSES:**

1. N56024"E 1.79' TO BOTTOM OF PARAPET WALL
2. S29024"E 57.80' TO BRIDGE EXPANSION JOINT AT EDGE OF SIDEWALK
3. S88021"W 9.97 FEET TO BRIDGE EXPANSION JOINT AT EDGE OF SIDEWALK
4. N57044"W 14.52' TO DIRECTIONAL ARROWS SIGN

**CONTROL POINT # 6**

SET MAG IN CONCRETE SIDEWALK JOINT AT SOUTHERN CORNER OF EAST MEDICAL CENTER DRIVE AND WEST MEDICAL CENTER DRIVE

COORDINATES: N=286890.9640 E=13295149.6300 EL=804.56'

COMBINED FACTOR: 0.99992806

**WITNESSES:**

1. N76005"E 5.59' TO CENTER OF TELEPHONE MANHOLE
2. S59001"W 32.89' TO CENTER OF CATCH BASIN
3. S74024"W 17.52' TO STOP SIGN
4. S81014"W 26.42' TO CENTER OF SANITARY MANHOLE.

**CONTROL POINT # 7**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the SOUTHWEST CORNER OF THE EAST MEDICAL CENTER DRIVE BRIDGE.

COORDINATES: N=286959.8056 E=13295063.1500 EL=802.00'

COMBINED FACTOR: 0.999928174

**WITNESSES:**

1. S42016"E 43.83 FEET TO A DIRECTION SIGN
2. S7038"E 48.10' TO A 12" TREE
3. S28052"W TO A 8" TREE
4. S72054"W 35.50 TO SW CORNER OF RETAINING WALL

**CONTROL POINT # 8**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the north side of the Amtrak tracks, WEST OF THE EAST MEDICAL CENTER DRIVE BRIDGE.

COORDINATES: N=287038.7366 E=13294856.2800 EL=770.34'

COMBINED FACTOR: 0.999929648

**WITNESSES:**

1. N86046"E 93.43' TO CONTROL POINT 1
3. S01006"E TO NORTH AMTRAK RAIL
3. N62021"W 86.12' TO CONTROL POINT 11
4. N01019"E 29.05' TO A 12" TREE

**CONTROL POINT # 9**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the south side of the Amtrak tracks, EAST OF THE EAST MEDICAL CENTER DRIVE BRIDGE.

COORDINATES: N=287006.6709 E=13295259.7600 EL=769.98'

COMBINED FACTOR: 0.999929683

**WITNESSES:**

1. N01012"W 16.30' TO THE SOUTHERN AMTRAK RAIL
2. N83051"W 78.32' TO A TELEPHONE HAND HOLE
3. S35003"W 62.92' TO THE NE CORNER OF RETAINING WALL

**CONTROL POINT # 10**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the south side of the Amtrak tracks, WEST OF THE EAST MEDICAL CENTER DRIVE BRIDGE.

COORDINATES: N=287005.0369 E=13295024.8000 EL=769.98'

COMBINED FACTOR: 0.999929683

**WITNESSES:**

1. N01009"W 13.09' TO THE SOUTHERN AMTRAK RAIL
2. S70038"E 7.08' TO THE WEST EDGE OF THE SOUTHERN PIER OF THE EAST MEDICAL CENTER BRIDGE OVER AMTRAK
3. S02045"E 53.30' TO THE NE CORNER OF RETAINING WALL.

**CONTROL POINT # 11**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the south side of the Amtrak tracks, WEST OF THE EAST MEDICAL CENTER DRIVE BRIDGE.

COORDINATES: N=287078.6776 E=13294780.0000 EL=781.27'

**COMBINED FACTOR: 0.999929105**

**WITNESSES:**

1. N21030"W 28.36' TO THE SE CORNER OF RETAINING WALL
2. N14056"W 44.52' TO THE CENTER OF TELEPHONE MANHOLE
3. S62021"E 86.12' TO CONTROL POINT 8.
4. S0048"E 33.68' TO CENTER OF TELEPHONE HAND HOLE.

**CONTROL POINT # 12**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the south side of FULLER AVENUE APPROXIMATELY 225' EAST OF EAST MEDICAL CENTER DRIVE.

COORDINATES: N=287233.2356 E=13295233.0800 EL=780.90'

COMBINED FACTOR: 0.999929048

**WITNESSES:**

1. N06013"W 30.95' TO THE SOUTHERN EDGE OF FULLER AVENUE.
2. N78020"E 43.39' TO THE INTERSECTION OF THE CURB AND SIDEWALK.
3. S13002"E TO THE NORTHERN EDGE OF SIDEWALK
4. S730 55"W 49.55 TO THE CENTER OF TELEPHONE HAND HOLE.

**CONTROL POINT # 13**

Set a 5/8" Diameter by 24" long rebar flush with the existing ground on the EAST/SOUTHEAST SIDE OF PARKING LOT ALONG THE SOUTH SIDE OF FULLER AVENUE.

COORDINATES: N=287133.8876 E=13295231.2700 EL=776.44'

COMBINED FACTOR: 0.99992931

**WITNESSES:**

1. N45009"E 36.14' TO LAMP POST
2. S62059"E TO SW CORNER OF PARKING LOT
3. S44005"E 12.92' TO UTILITY POLE
4. S73021"W TO UTILITY POLE

**BENCHMARKS:**

**BENCHMARK # 1**

DESCRIPTION: TOP OF THE SW TRAFFIC SIGNAL BASE BOLT AT THE SW CORNER OF THE INTERSECTION OF FULLER AVENUE AND MAIDEN AVENUE/EAST MEDICAL CENTER DRIVE.

COORDINATES: N=287174.7856 E=13294953.2000 EL=806.619'

**BENCHMARK # 2**

DESCRIPTION: TOP OF NE LIGHT POLE BASE BOLT ON NORTH SIDE OF WEST MEDICAL CENTER DRIVE +/- 40' FROM THE INTERSECTION OF EAST MEDICAL CENTER DRIVE.

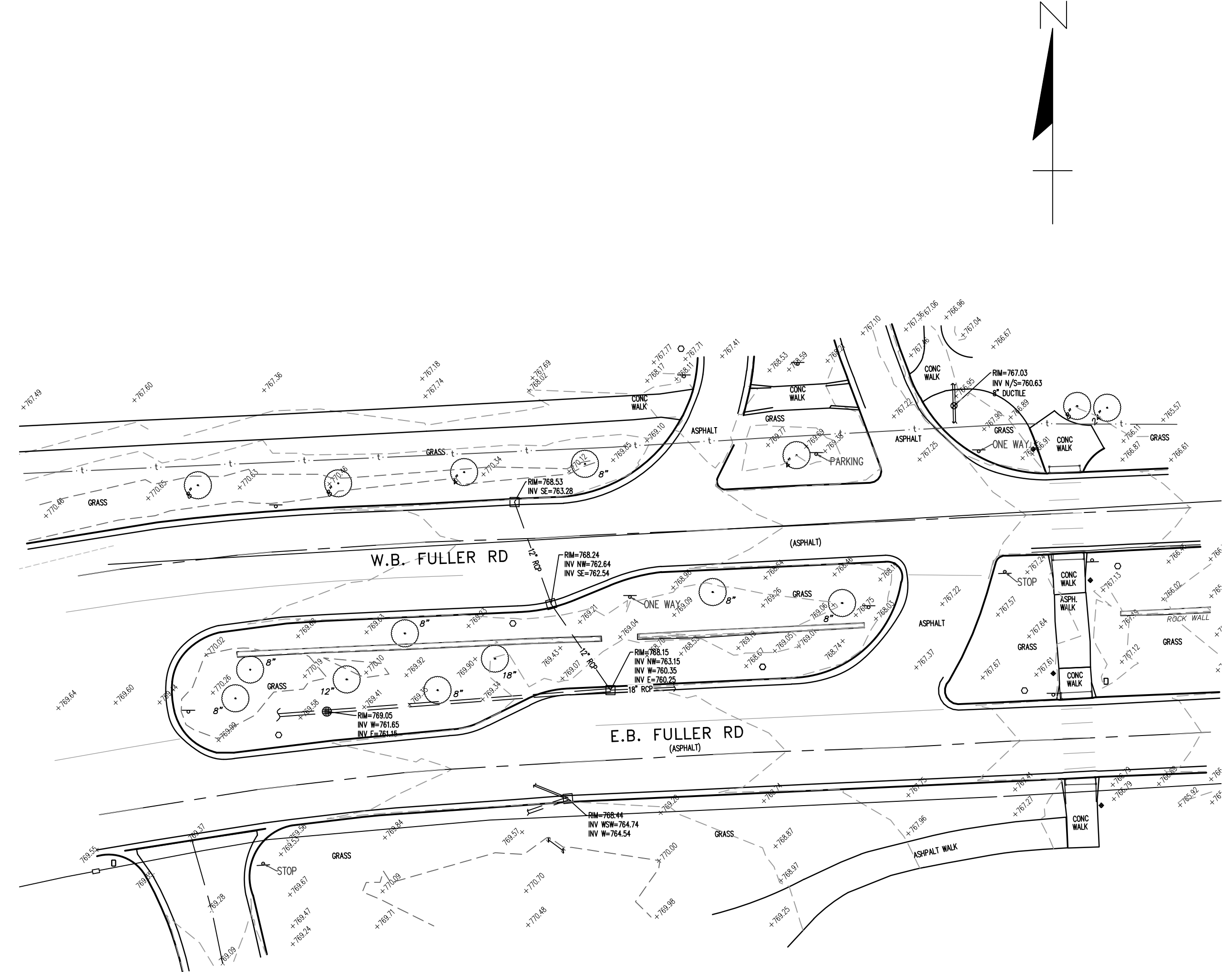
COORDINATES: N=286886.7248 E=13295069.5700 EL=806.437'

**GOVERNMENT CORNERS:**

DESIGNATION: 0014A

PROJ: A6517

DESCRIPTION: STATION 0014A IS LOCATED ON THE EASTERLY SIDE OF MAIDEN LANE APPROXIMATELY 140 FT (42.7 M) NORTHERLY OF THE NORTHERLY BACK OF CURB OF FULLER ROAD, SAID STATION BEING IN THE SOUTHWEST 1/4 OF SECTION 21, ANN ARBOR TOWNSHIP IN THE CITY OF ANN ARBOR, MICHIGAN. THE STATION IS LOCATED 5 FT (1.5 M) EASTERLY OF THE EASTERLY EDGE OF THE STONE WALL AND 71 FT (21.6 M) SOUTHEASTERLY OF THE SOUTHERLY MOST POINT OF THE CONCRETE BRIDGE ABUTMENT ON THE EASTERLY SIDE OF MAIDEN LANE. SAID STATION IS A PRIMARY CONTROL MONUMENT AND IS DESCRIBED AS THE 1993 EDITION OF THE CITY OF ANN ARBOR BRASS DISC, SET IN CONCRETE PER DETAIL AND IS FLUSH WITH THE GROUND. THIS POINT WAS SET BY THE CITY OF ANN ARBOR IN 1993 AND IS PAIRED WITH POINT 0014B.

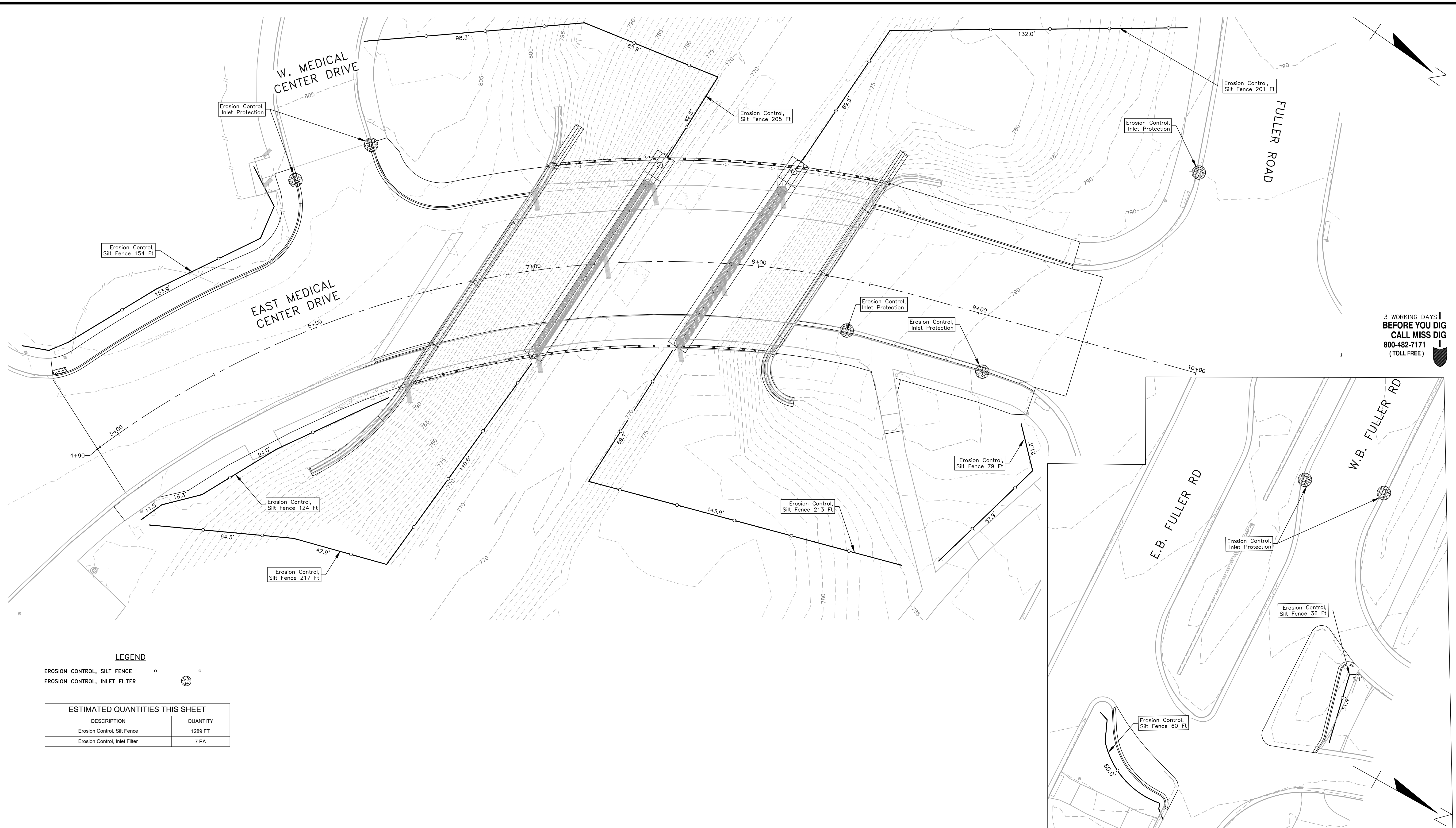


3 WORKING DAYS!  
**BEFORE YOU DIG**  
**CALL MISS DIG**  
 800-482-7171  
 (TOLL FREE)

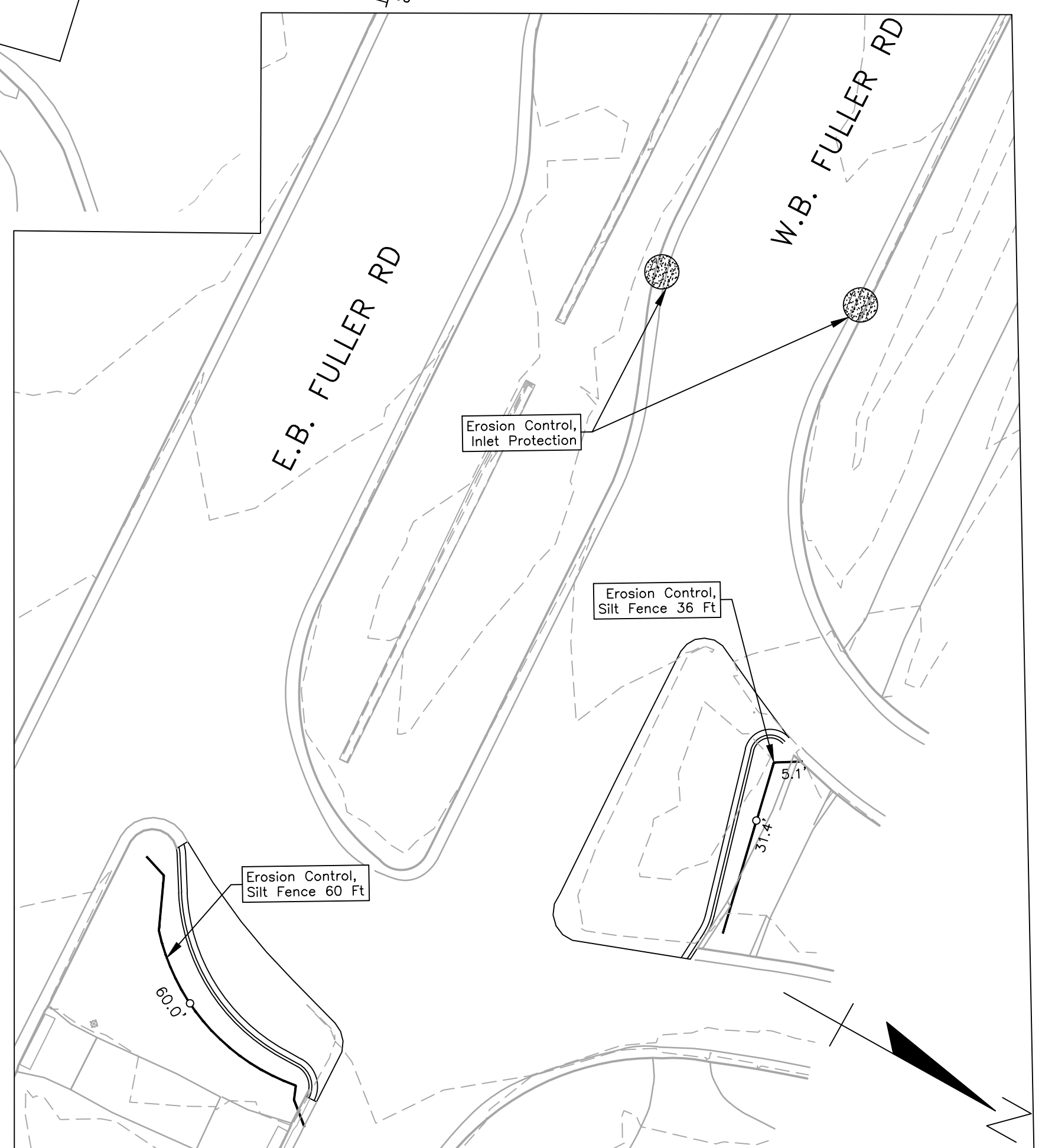
**LEGEND**

EXISTING FENCE - CONTOUR - STORM SEWER & CAT. BAS. - WATER MAIN & VALVE-IN-WELL - WATER MAIN & VALVE-IN-BOX	EXISTING SANITARY SEWER & MANHOLE - UTILITY POLE & GUY - FIRE HYDRANT ASSEMBLY - LIGHT POLE - END SECTION	EXISTING TELEPHONE - GAS LINE - CABLE T.V. - ELECTRIC - SIGN	EXISTING RD. & GRADE - LEFT EDGE/RD. GRADE - RIGHT EDGE/RD. GRADE - CURB & GUTTER - EDGE/GRAVEL	EXISTING HAND HOLE EXISTING PEDESTRIAN SIGNAL BENCHMARK TREE/BRUSH LINE	DECIDUOUS TREE 	CONIFEROUS TREE 	SEE ABOVE	BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
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<b>DLZ</b>		PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR				
<b>E. MEDICAL CENTER DRIVE</b>		<b>EXISTING CONDITIONS (FULLER RD.)</b>			SCALE 1"=30'	INCH 
<b>DRAWING NO.</b>		<b>2021-008-TS2</b>			DIGITALLY SIGNED BY LEIGH C MERRILL III Date: 2023.10.06 16:16:23-04'00'	
<b>SHEET NO.</b>		<b>7 OF 155</b>			APPROVED BY:	
REV. NO.		DESCRIPTION			DATE	
BENCH MARK		ORIGINAL ISSUE			10/6/23	
SURVEY BOOK		DATE			INB	
REV. NO.		DESCRIPTION			DATE	
BENCH MARK		ORIGINAL ISSUE			10/6/23	
SURVEY BOOK		DATE			INB	
REV. NO.		DESCRIPTION			DATE	
BENCH MARK		ORIGINAL ISSUE			10/6/23	
SURVEY BOOK		DATE			INB	
REV. NO.		DESCRIPTION			DATE	



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



**LEGEND**

- EROSION CONTROL, SILT FENCE
- EROSION CONTROL, INLET FILTER

ESTIMATED QUANTITIES THIS SHEET	
DESCRIPTION	QUANTITY
Erosion Control, Silt Fence	1289 FT
Erosion Control, Inlet Filter	7 EA

**LEGEND**

- EXISTING FENCE
- CONTOUR
- STORM SEWER & CAT. BAS.
- WATER MAIN & VALVE-IN-WELL
- WATER MAIN & VALVE-IN-BOX
- EXISTING SANITARY SEWER & MANHOLE
- UTILITY POLE & GUY
- FIRE HYDRANT ASSEMBLY
- LIGHT POLE
- END SECTION
- EXISTING TELEPHONE
- GAS LINE
- CABLE T.V.
- ELECTRIC
- SIGN
- EXISTING RD. @ GRADE
- LEFT EDGE/RD. GRADE
- RIGHT EDGE/RD. GRADE
- CURB & GUTTER
- EDGE/GRAVEL
- PROPOSED SANITARY SEWER & MANHOLE
- STORM SEWER & CAT. BAS.
- WATER MAIN W/F.H. ASSEM.
- CURB & GUTTER
- ROAD @ GRADE
- PROPOSED CURB & GUTTER
- PROPOSED SILT FENCE

<b>DLZ</b>					
SEE ABOVE	BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**E. MEDICAL CENTER DRIVE  
SOIL EROSION CONTROL MEASURES**

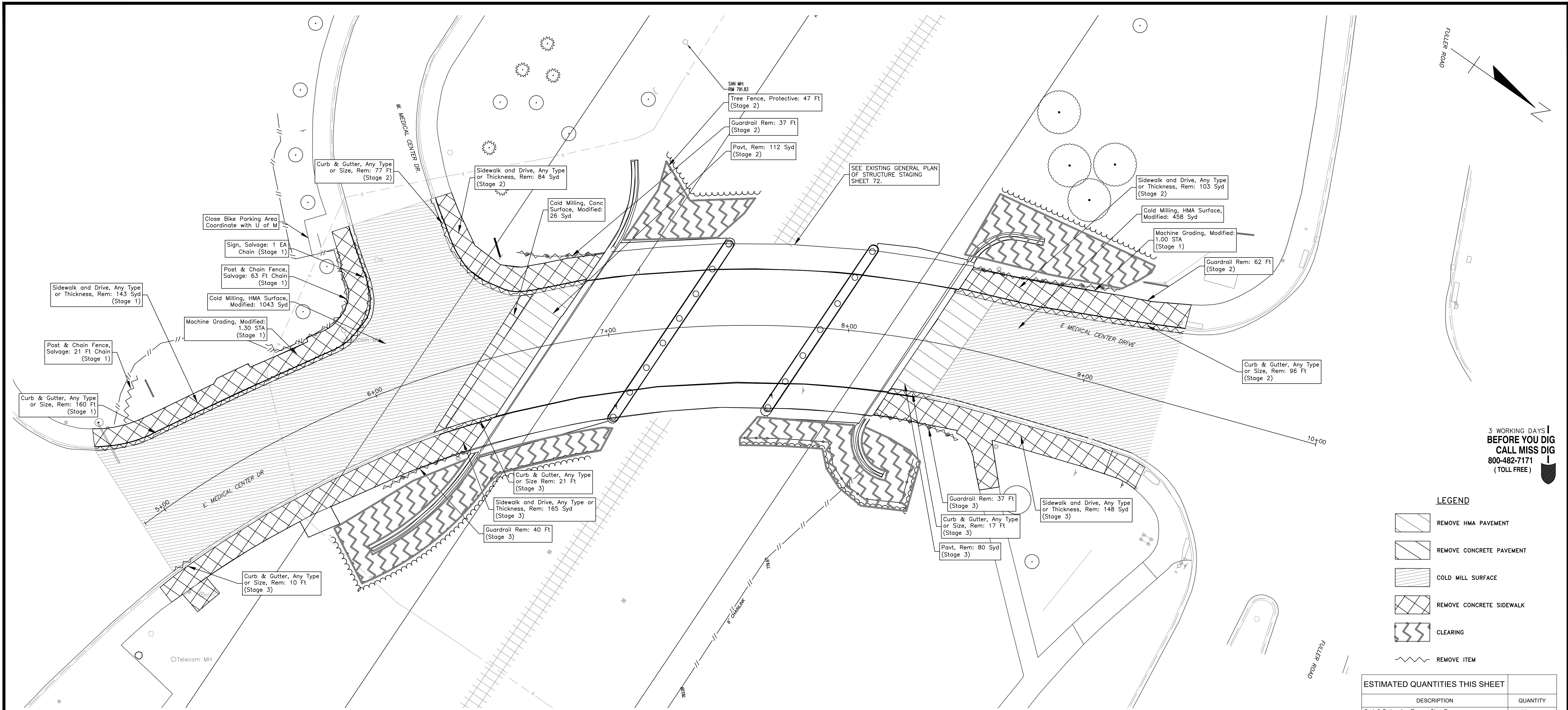
Digitally signed by  
Leigh Merrill  
Date: 2023.10.06

APPROVED BY: *[Signature]*

LEIGH C. MERRILL P.E., MICHIGAN NO. 6201061025

SCALE 1"=20'	INCH 0 1
DRAWING NO. <b>2021-008-SECM</b>	SHEET NO. <b>8</b> OF <b>155</b>





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

**LEGEND**

- REMOVE HMA PAVEMENT
- REMOVE CONCRETE PAVEMENT
- COLD MILL SURFACE
- REMOVE CONCRETE SIDEWALK
- CLEARING
- REMOVE ITEM

ESTIMATED QUANTITIES THIS SHEET	
DESCRIPTION	QUANTITY
Curb & Gutter, Any Type or Size, Rem	381 FT
Sidewalk and Drive, Any Type or Thickness, Rem	641 SYD
Pavt. Rem	192 SYD
Guardrail, Rem	176 FT
Cold Milling, HMA Surface, Modified	1501 SYD
Cold Milling, Conc Surface, Modified	26 SYD
Tree Fence, Protective	47 FT
Post and Chain Fence, Salvage	84 FT
Sign, Salvage	1 EA
Machine Grading, Modified	2.3 STA
Clearing	0.20 ACRE

**NOTE:**  
 THE CONTRACTOR SHALL NOTE THAT THIS WORK IS TO BE DONE IN STAGES IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC PLANS AND CONSTRUCTION SEQUENCE DEFINED ELSEWHERE IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL ONLY REMOVE THOSE ITEMS THAT ARE COMPATIBLE WITH THE PHASE OF WORK CURRENTLY BEING UNDERTAKEN WITH NO ADJUSTMENT IN THE UNIT PRICE AS BID FOR THE WORK. ALL REMOVALS PERFORMED SHALL PROVIDE FOR THE SAFE AND ORDERLY MAINTENANCE OF TRAFFIC.

**LEGEND**

- EXISTING FENCE
- CONTOUR
- STORM SEWER & CAT. BAS.
- WATER MAIN & VALVE-IN-WELL
- WATER MAIN & VALVE-IN-BOX
- EXISTING SANITARY SEWER & MANHOLE
- UTILITY POLE & GUY
- FIRE HYDRANT ASSEMBLY
- LIGHT POLE
- END SECTION
- EXISTING TELEPHONE
- GAS LINE
- CABLE T.V.
- ELECTRIC
- SIGN
- EXISTING RD. @ GRADE
- LEFT EDGE/RD. GRADE
- RIGHT EDGE/RD. GRADE
- CURB & GUTTER
- EDGE/GRAVEL
- PROPOSED SANITARY SEWER & MANHOLE
- STORM SEWER & CAT. BAS.
- WATER MAIN W/F.H. ASSEM.
- CONTOUR
- ROAD @ GRADE
- PROPOSED CURB & GUTTER
- SEE ABOVE
- BENCH MARK
- SURVEY BOOK

**DLZ**

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE ROADWAY REMOVAL PLAN**

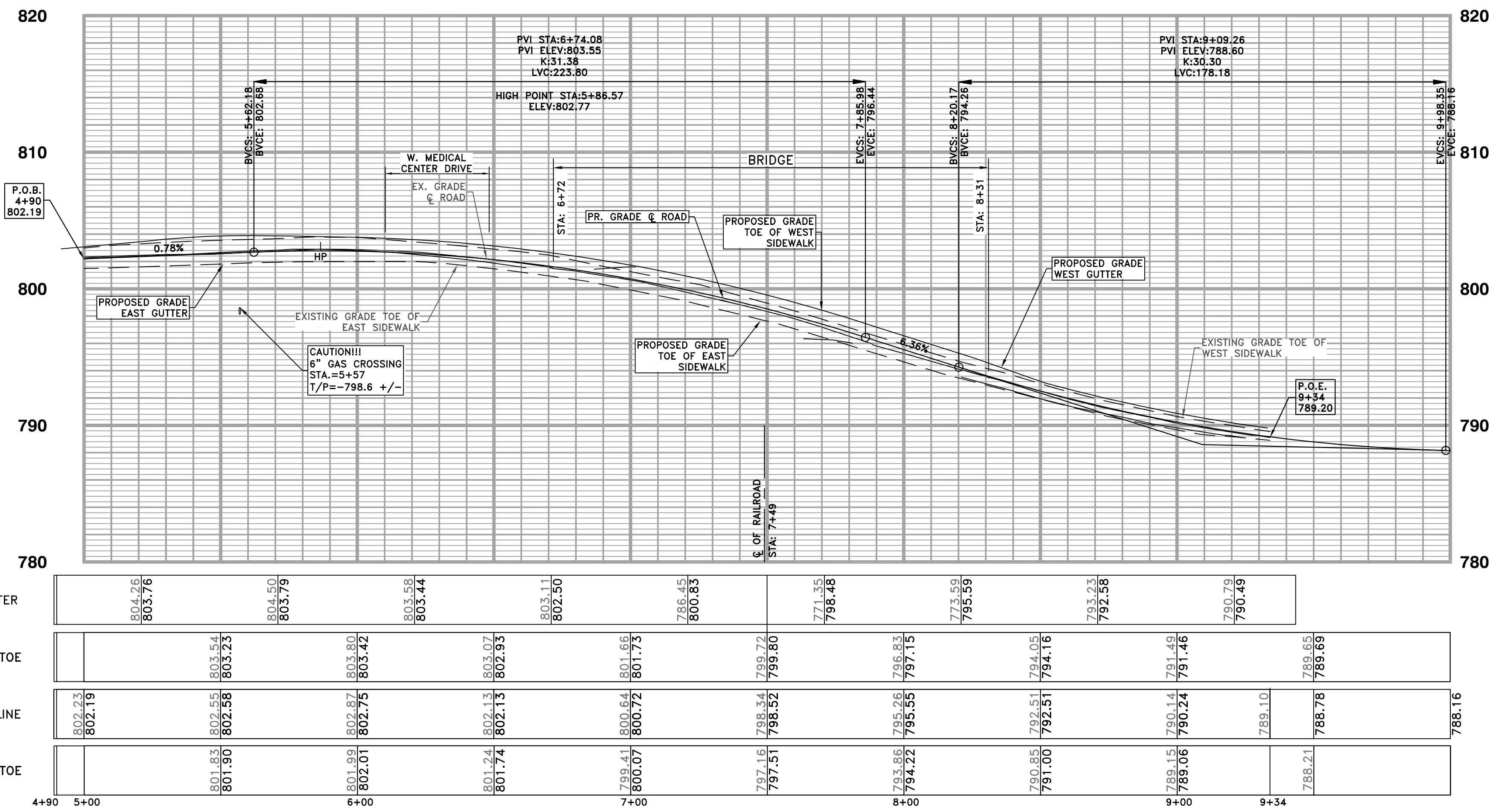
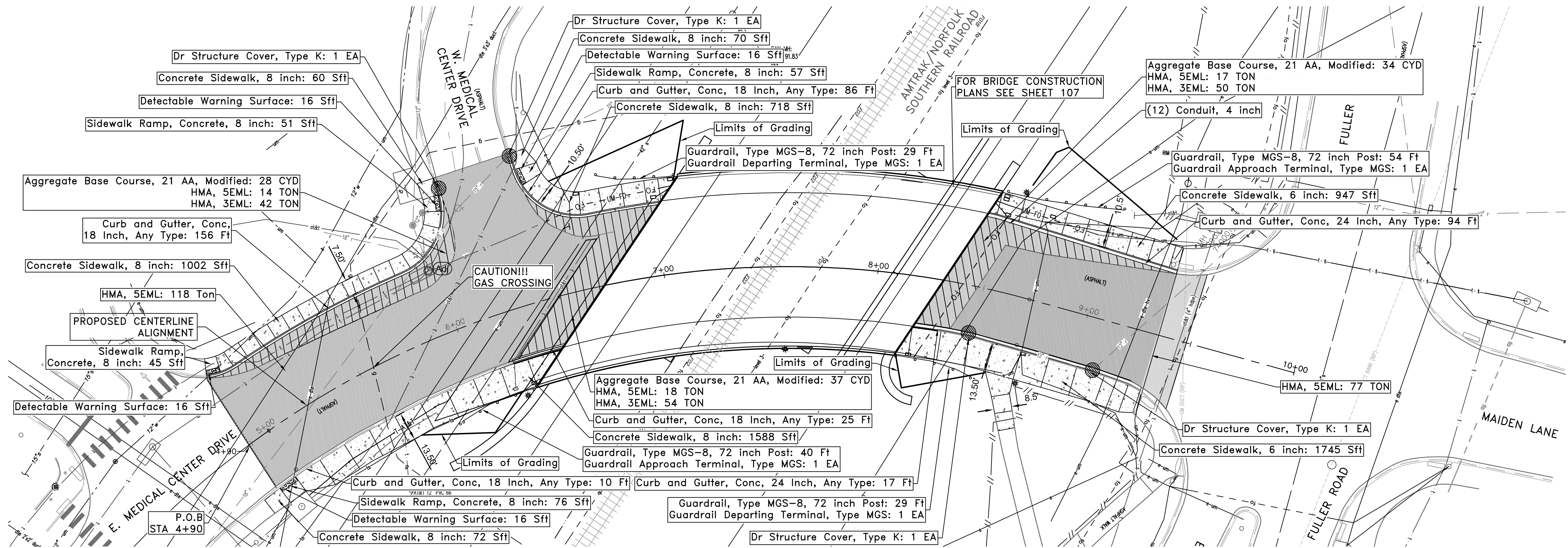
SCALE 1"=20' 0 INCH 1

DRAWING NO. **2021-008-R1**

SHEET NO. **9** OF **155**

APPROVED BY: *[Signature]*  
 LEIGH C. MERRILL P.E., MICHIGAN NO. 6201061025

Digitally signed by Leigh Merrill Signature  
 Date: 2023.10.06



NOTE:  
 CONTRACTOR TO SAW-CUT ALL CONCRETE AT THE REMOVAL LIMITS. CONTRACTOR TO SEAL CONCRETE JOINTS IN ACCORDANCE WITH UM STANDARD SIDEWALK DETAIL. INCLUDED IN "Concrete Sidewalk, 6 inch" AND "Sidewalk Ramps, Concrete, 8 inch" SEE SHEETS 52-53 FOR SIDEWALK DETAILED GRADES.

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

① HORIZONTAL CURVE DATA (ROAD CENTERLINE)

Δ	71°58'59.16"
D	N44°46'59.86"W
R	422.00'
T	306.51'
L	530.18'
P.C.	+1+58.25 (286848.74 N, 13295414.37 E)
P.I.	+1+06.84
P.T.	+3+71.93
P.C. TO P.I.	N73°31'19"W

LEGEND

[Hatched Box]	HMA Reconstruction
[Solid Grey Box]	HMA & Resurfacing
[Circle with 'Adj']	Adjust Structure
[Circle with 'Inlet Protection']	Inlet Protection, Fabric Drop

ESTIMATED QUANTITIES THIS SHEET

DESCRIPTION	QUANTITY
HMA 3EML	146 TON
HMA 5EML	244 TON
Curb and Gutter, Conc, 18 Inch, Any Type	277 FT
Curb and Gutter, Conc, 24 Inch, Any Type	111 FT
Concrete, Sidewalk, 6 Inch	2833 SFT
Concrete, Sidewalk, 8 Inch	3510 SFT
Aggregate Base Course, 21AA, Modified	99 CYD
Curb Ramp Opening, Conc, 6 Inch	40 FT
Detectable Warning Surface	64 SFT
Sidewalk Ramp, Concrete, 8 Inch	229 SFT
Guardrail, Type MGS-8, 72 Inch Post	152 FT
Guardrail Departing Terminal, Type MGS	2 EA
Guardrail Approach Terminal, Type 2M	2 EA
Dr Structure, Temp Lowering	4 EA
Dr Structure Cover, Adj	2 EA
Dr Structure Cover, Type K	4 EA
Dr Structure Cover, Adj, Case 1	2 EA
Sand Subbase Course, Class II, CIP	110 CYD
Slope Restoration	250 SYD

PROFILE ALONG ROAD CENTERLINE  
 STATIONING PER ROAD CENTERLINE

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	ROAD & GRADE	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL		REV. NO.

DLZ

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE ROADWAY CONSTRUCTION**

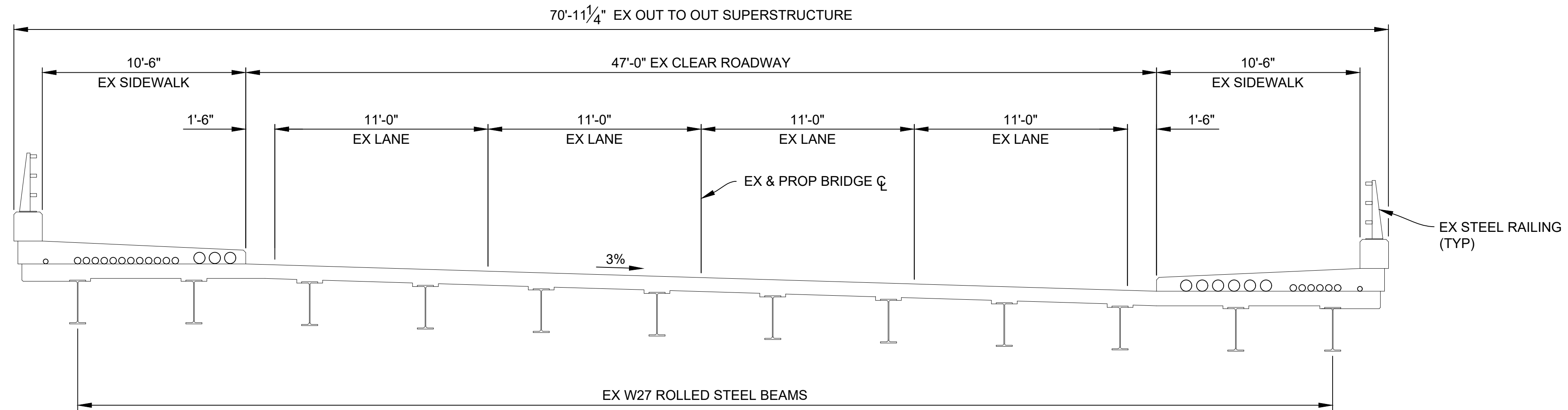
SCALE  
 HOR. 1"=40'  
 VERT. 1"=4'

DRAWING NO. **2021-008-R2**

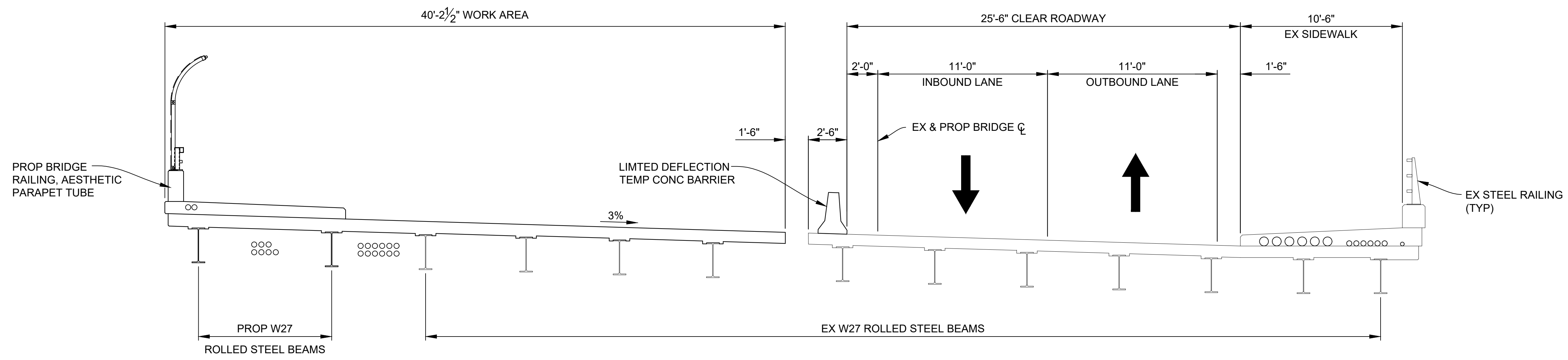
SHEET NO. 10 OF 155

APPROVED BY: [Signature]  
 Digitally signed by Leigh Merrill  
 Date: 2023.10.06

LEIGH C. MERRILL P.E., MICHIGAN NO. 6201061025



**EXISTING SECTION**  
(LOOKING UPSTATION)



**STAGE 2**  
(LOOKING UPSTATION)

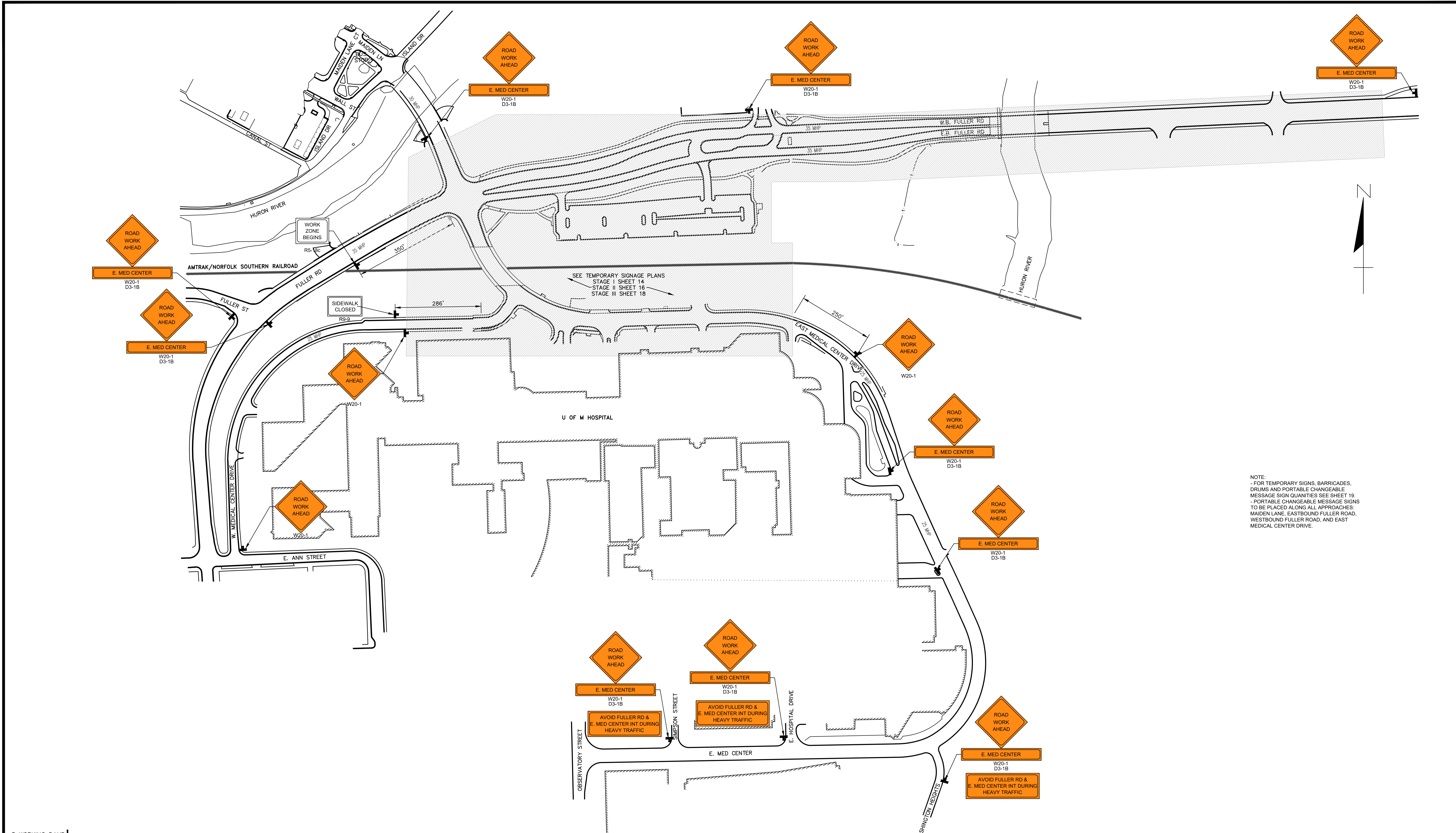
**NOTES:**

- STAGE 1 IS A PREPARATORY STAGE
- PLACE LIMITED DEFLECTION TEMPORARY BARRIER ACCORDING TO MDOT STANDARD PLAN R-53 SERIES.

<b>DLZ</b>					PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
					<b>EAST MEDICAL CENTER DRIVE</b>	
					<b>BRIDGE CONSTRUCTION STAGING DETAILS</b>	
					SCALE HOR. 1/4"=1'-0"	INCH 0 1
					DRAWING NO. <b>2021-008-S1</b>	
					SHEET NO. <u>  11  </u> OF <u> 155 </u>	
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY: <i>[Signature]</i> Carrie L. Hamel, P.E. 2023.10.06 16:21:44-04'00'	

X:\Projects\2021\21-41\736300\_AA - EACD Bridge\01\_Constr\Draws\CAD\EMCD\_rmf\_001





NOTE:  
 - FOR TEMPORARY SIGNS, BARRICADES, DRUMS AND PORTABLE CHANGEABLE MESSAGE SIGN QUANTITIES SEE SHEET 19.  
 - PORTABLE CHANGEABLE MESSAGE SIGNS TO BE PLACED ALONG ALL APPROACHES: MAIDEN LANE, EASTBOUND FULLER ROAD, WESTBOUND FULLER ROAD, AND EAST MEDICAL CENTER DRIVE.

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

**LEGEND**

EXISTING FENCE	--- --- ---	EXISTING SANITARY SEWER & MANHOLE	S	EXISTING TELEPHONE	t	EXISTING RD. & GRADE	---	PROPOSED SANITARY SEWER & MANHOLE	S	PROPOSED CURB & GUTTER	---
CONTOUR	--- --- ---	UTILITY POLE & GUY	U	GAS LINE	g	LEFT EDGE/RD. GRADE	---	STORM SEWER & CAT. BAS.	S	SEE ABOVE	
STORM SEWER & CAT. BAS.	--- --- ---	FIRE HYDRANT ASSEMBLY	F	CABLE T.V.	v	RIGHT EDGE/RD. GRADE	---	WATER MAIN W/F.H. ASSEM.	W	BENCH MARK	B
WATER MAIN & VALVE-IN-WELL	W	LIGHT POLE	o	ELECTRIC	e	CURB & GUTTER	---	CONTOUR	--- --- ---	SURVEY BOOK	SB
WATER MAIN & VALVE-IN-BOX	W	END SECTION	]	SIGN	h	EDGE/GRAVEL	---	ROAD & GRADE	---	REV. NO.	

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MED CENTER  
 MAINTENANCE OF TRAFFIC PLAN  
 ADVANCED WARNING SIGNAGE PLAN**

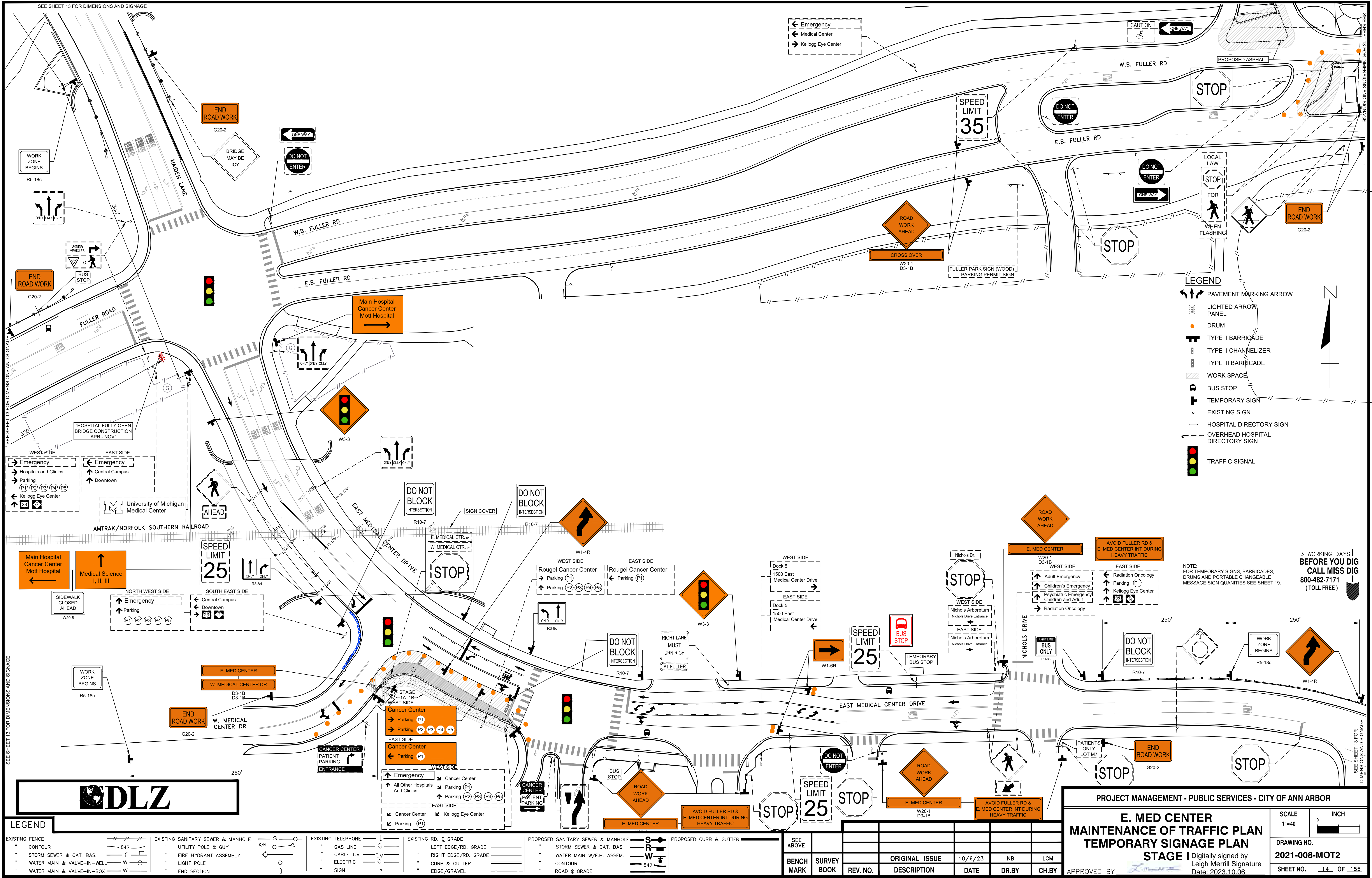
SCALE: 1"=150'

DRAWING NO. 2021-008-MOT1

SHEET NO. 13 OF 155

APPROVED BY: Leigh Merrill  
 Digitally signed by Leigh Merrill  
 Date: 2023.10.06

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM



SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

- LEGEND**
- PAVEMENT MARKING ARROW
  - LIGHTED ARROW PANEL
  - DRUM
  - TYPE II BARRICADE
  - TYPE II CHANNELIZER
  - TYPE III BARRICADE
  - WORK SPACE
  - BUS STOP
  - TEMPORARY SIGN
  - EXISTING SIGN
  - HOSPITAL DIRECTORY SIGN
  - OVERHEAD HOSPITAL DIRECTORY SIGN
  - TRAFFIC SIGNAL

NOTE: FOR TEMPORARY SIGNS, BARRICADES, DRUMS AND PORTABLE CHANGEABLE MESSAGE SIGN QUANTITIES SEE SHEET 19.

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



**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD & GRADE	- REV. NO.

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MED CENTER MAINTENANCE OF TRAFFIC PLAN**

**TEMPORARY SIGNAGE PLAN**

STAGE I

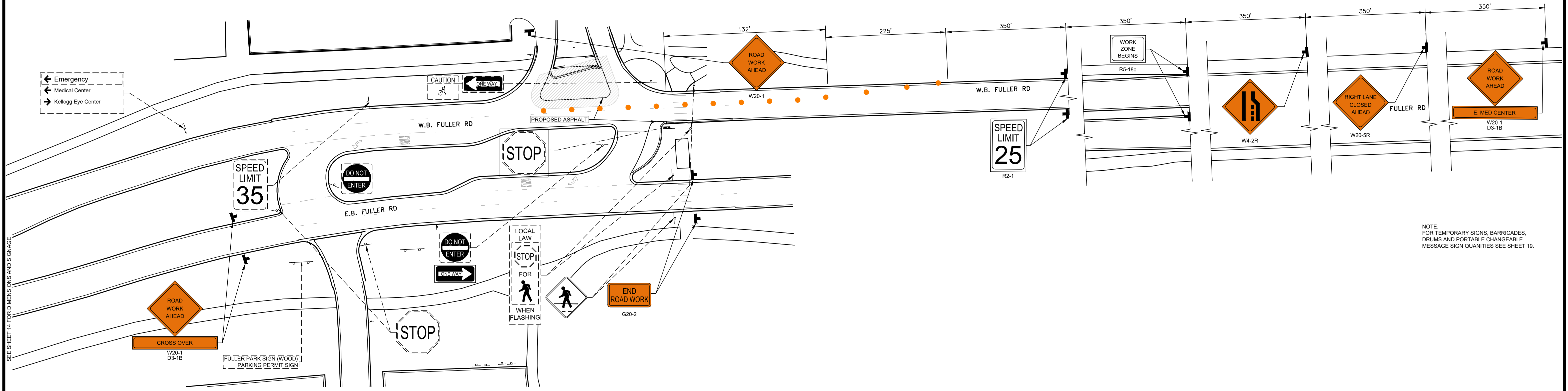
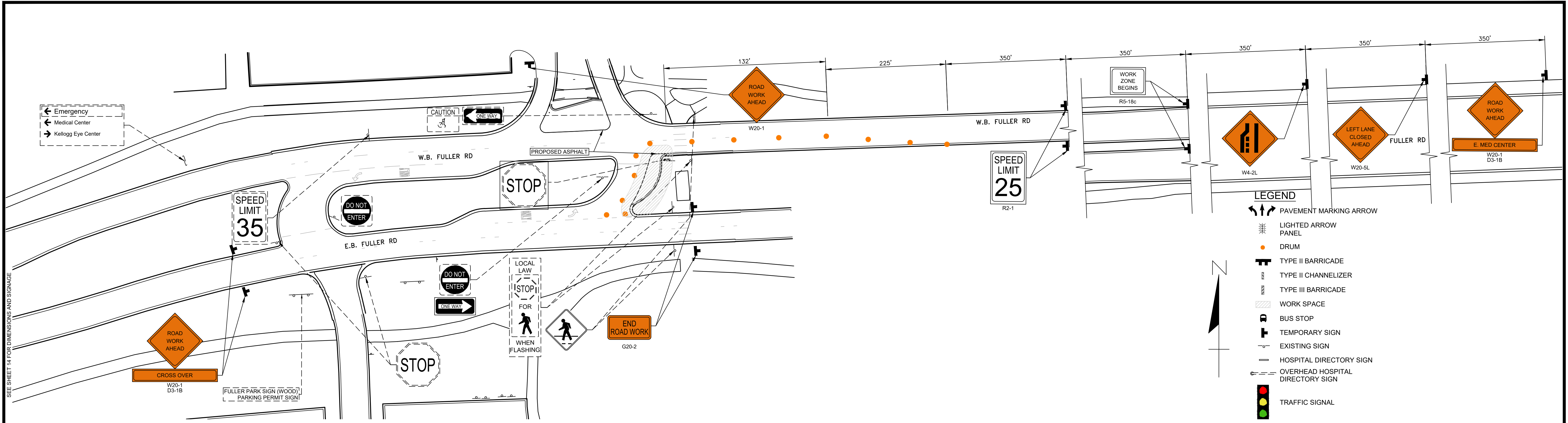
Digitally signed by Leigh Merrill Signature  
Date: 2023.10.06

APPROVED BY:

SCALE 1"=40'

DRAWING NO. 2021-008-MOT2

SHEET NO. 14 OF 155



NOTE:  
FOR TEMPORARY SIGNS, BARRICADES,  
DRUMS AND PORTABLE CHANGEABLE  
MESSAGE SIGN QUANTITIES SEE SHEET 19.

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

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD & GRADE	- REV. NO.

<b>DLZ</b>					
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY

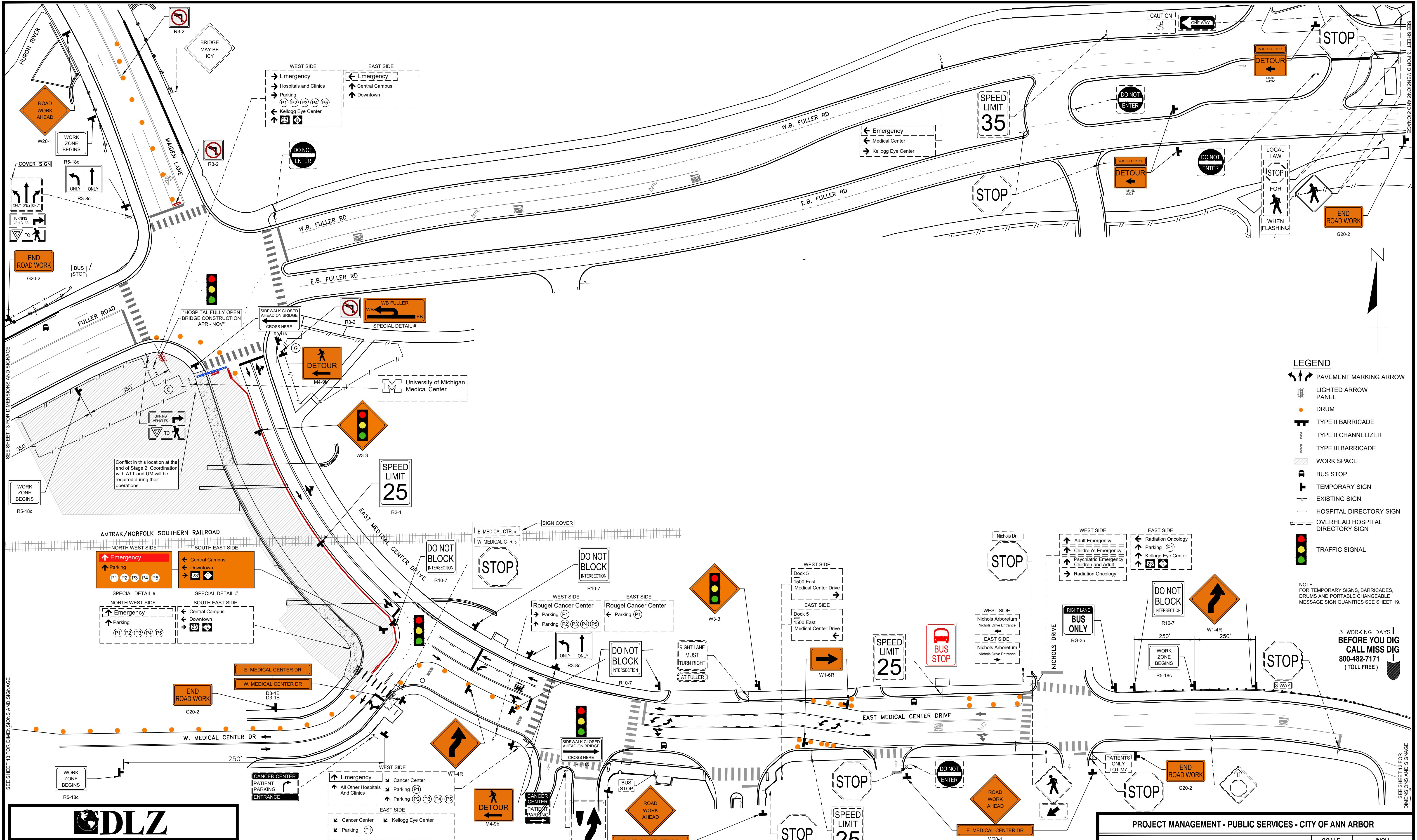
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MED CENTER  
MAINTENANCE OF TRAFFIC PLAN  
TEMPORARY SIGNAGE (FULLER)  
STAGE I**

Digitally signed by  
Leigh Merrill  
Date: 2023.10.06

SCALE 1"=40'	INCH 0 1
DRAWING NO. <b>2021-008-MOT3</b>	SHEET NO. <u>15</u> OF <u>155</u>

LEIGH C. MERRILL P.E. 20160000 6201061025



SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

- LEGEND**
- PAVEMENT MARKING ARROW
  - LIGHTED ARROW PANEL
  - DRUM
  - TYPE II BARRICADE
  - TYPE II CHANNELIZER
  - TYPE III BARRICADE
  - WORK SPACE
  - BUS STOP
  - TEMPORARY SIGN
  - EXISTING SIGN
  - HOSPITAL DIRECTORY SIGN
  - OVERHEAD HOSPITAL DIRECTORY SIGN
  - TRAFFIC SIGNAL

NOTE: FOR TEMPORARY SIGNS, BARRICADES, DRUMS AND PORTABLE CHANGEABLE MESSAGE SIGN QUANTITIES SEE SHEET 19.

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



LEGEND		EXISTING TELEPHONE		EXISTING RD. & GRADE		PROPOSED SANITARY SEWER & MANHOLE		PROPOSED CURB & GUTTER	
EXISTING FENCE	CONTOUR	GAS LINE	LEFT EDGE/RD. GRADE	SANITARY SEWER & MANHOLE	STORM SEWER & CAT. BAS.	SEE ABOVE			
STORM SEWER & CAT. BAS.	WATER MAIN & VALVE-IN-WELL	CABLE T.V.	RIGHT EDGE/RD. GRADE	UTILITY POLE & GUY	WATER MAIN W/F.H. ASSEM.	BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	CURB & GUTTER	FIRE HYDRANT ASSEMBLY	CONTOUR			ORIGINAL ISSUE	10/6/23
			EDGE/GRAVEL	LIGHT POLE	ROAD & GRADE			DATE	INB
				END SECTION				DR. BY	LCM
								CH. BY	

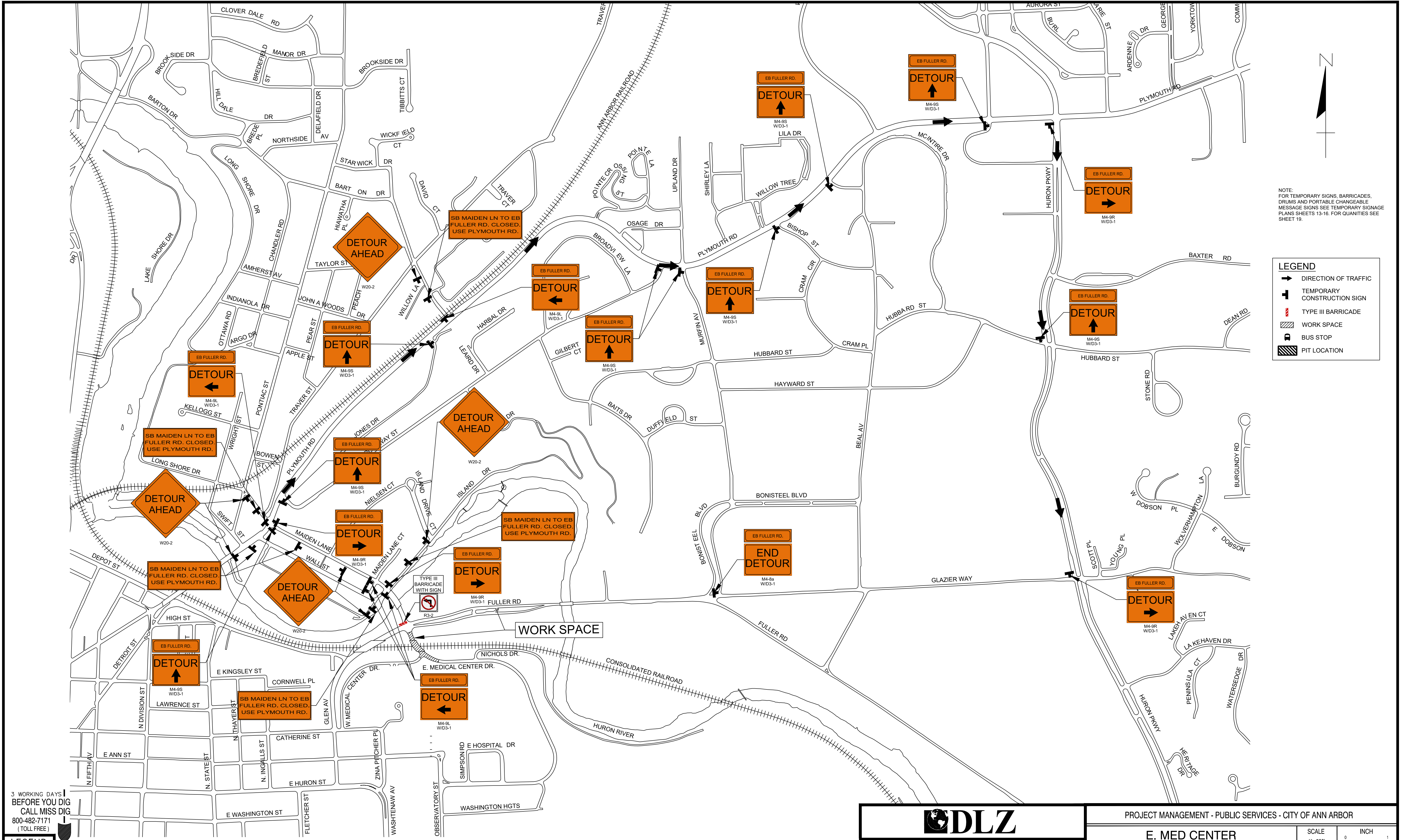
**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**E. MEDICAL CENTER DR  
MAINTENANCE OF TRAFFIC PLAN  
TEMPORARY SIGNAGE PLAN  
STAGE II**

Digitally signed by  
Leigh Merrill Signature  
Date: 2023.10.06

SCALE	1"=40'
DRAWING NO.	2021-008-MOT4
SHEET NO.	16 OF 155





NOTE:  
FOR TEMPORARY SIGNS, BARRICADES,  
DRUMS AND PORTABLE CHANGEABLE  
MESSAGE SIGNS SEE TEMPORARY SIGNAGE  
PLANS SHEETS 13-16. FOR QUANTITIES SEE  
SHEET 19.

**LEGEND**

- ➔ DIRECTION OF TRAFFIC
- ⊥ TEMPORARY CONSTRUCTION SIGN
- ▬ TYPE III BARRICADE
- ▨ WORK SPACE
- ⊞ BUS STOP
- ⊞ PIT LOCATION

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

**LEGEND**

- EXISTING FENCE
- CONTOUR
- STORM SEWER & CAT. BAS.
- WATER MAIN & VALVE-IN-WELL
- WATER MAIN & VALVE-IN-BOX
- EXISTING SANITARY SEWER & MANHOLE
- UTILITY POLE & GUY
- FIRE HYDRANT ASSEMBLY
- LIGHT POLE
- END SECTION
- EXISTING TELEPHONE
- GAS LINE
- CABLE T.V.
- ELECTRIC
- SIGN
- EXISTING RD. & GRADE
- LEFT EDGE/RD. GRADE
- RIGHT EDGE/RD. GRADE
- CURB & GUTTER
- EDGE/GRAVEL
- PROPOSED SANITARY SEWER & MANHOLE
- STORM SEWER & CAT. BAS.
- WATER MAIN W/F.H. ASSEM.
- CONTOUR
- ROAD & GRADE
- PROPOSED CURB & GUTTER
- SEE ABOVE
- BENCH MARK
- SURVEY BOOK

<b>DLZ</b>		REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MED CENTER  
MAINTENANCE OF TRAFFIC PLAN  
DETOUR PLAN**

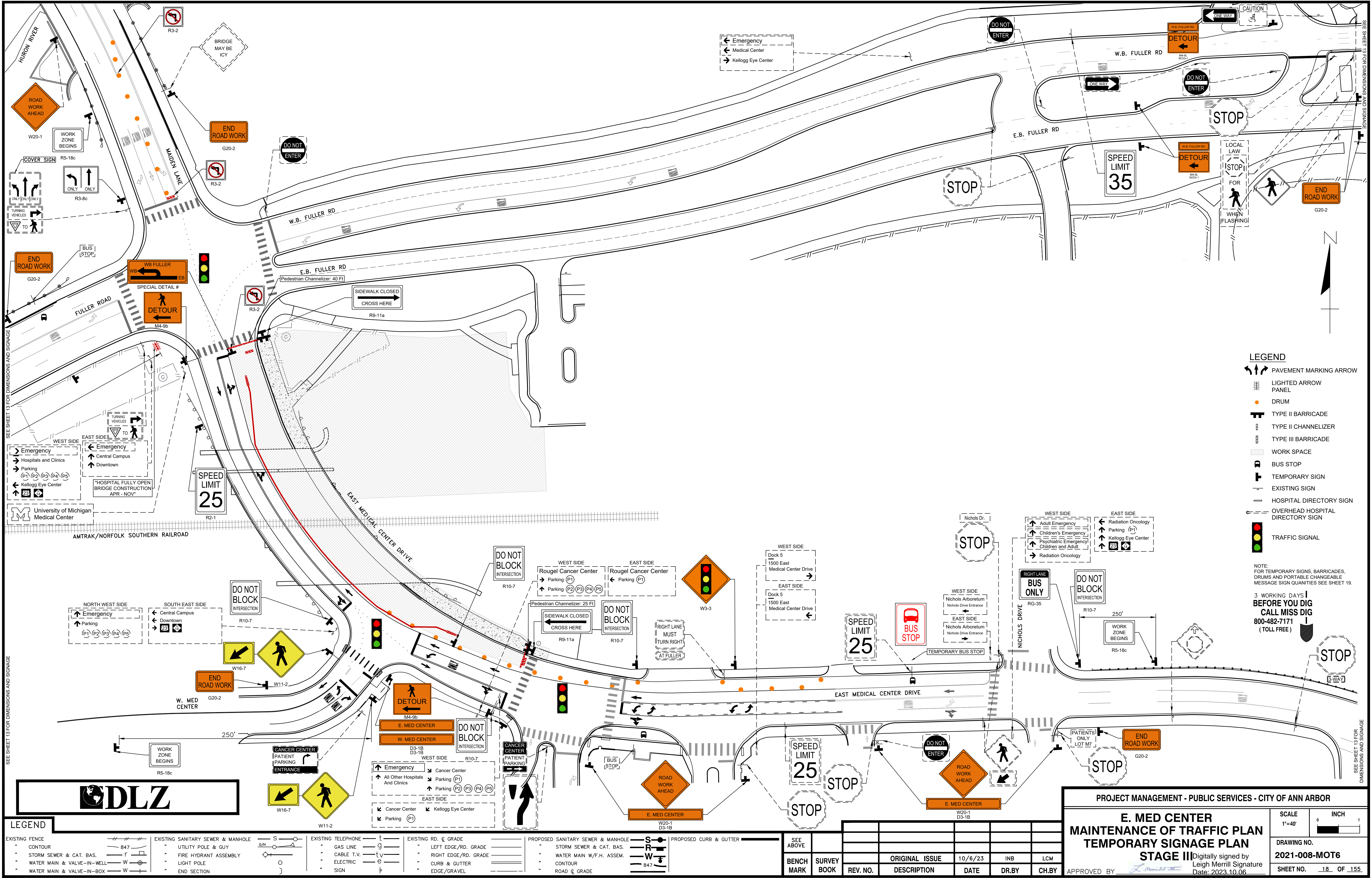
Digitally signed by  
Leigh Merrill Signature  
Date: 2023.10.06

APPROVED BY: *[Signature]*

SCALE  
1"=500'

DRAWING NO.  
2021-008-MOT5

SHEET NO. 17 OF 155



SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

SEE SHEET 13 FOR DIMENSIONS AND SIGNAGE

- LEGEND**
- PAVEMENT MARKING ARROW
  - LIGHTED ARROW PANEL
  - DRUM
  - TYPE II BARRICADE
  - TYPE II CHANNELIZER
  - TYPE III BARRICADE
  - WORK SPACE
  - BUS STOP
  - TEMPORARY SIGN
  - EXISTING SIGN
  - HOSPITAL DIRECTORY SIGN
  - OVERHEAD HOSPITAL DIRECTORY SIGN
  - TRAFFIC SIGNAL

NOTE:  
FOR TEMPORARY SIGNS, BARRICADES,  
DRUMS AND PORTABLE CHANGEABLE  
MESSAGE SIGN QUANTITIES SEE SHEET 19.

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



LEGEND		EXISTING FENCE		EXISTING SANITARY SEWER & MANHOLE		EXISTING TELEPHONE		EXISTING RD. & GRADE		PROPOSED SANITARY SEWER & MANHOLE		PROPOSED CURB & GUTTER		SEE ABOVE	
-	CONTOUR	-	STORM SEWER & CAT. BAS.	-	UTILITY POLE & GUY	-	GAS LINE	-	LEFT EDGE/RD. GRADE	-	STORM SEWER & CAT. BAS.	-	PROPOSED CURB & GUTTER	-	BENCH MARK
-	WATER MAIN & VALVE-IN-WELL	-	FIRE HYDRANT ASSEMBLY	-	END SECTION	-	CABLE T.V.	-	RIGHT EDGE/RD. GRADE	-	WATER MAIN W/F.H. ASSEM.	-	CONTOUR	-	SURVEY BOOK
-	WATER MAIN & VALVE-IN-BOX	-		-		-	ELECTRIC	-	CURB & GUTTER	-	CONTOUR	-	ROAD & GRADE	-	REV. NO.
-		-		-		-	SIGN	-	EDGE/GRAVEL	-	ROAD & GRADE	-		-	DESCRIPTION
-		-		-		-		-		-		-		-	DATE
-		-		-		-		-		-		-		-	10/6/23
-		-		-		-		-		-		-		-	INB
-		-		-		-		-		-		-		-	LCM
-		-		-		-		-		-		-		-	APPROVED BY
-		-		-		-		-		-		-		-	

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**E. MED CENTER  
MAINTENANCE OF TRAFFIC PLAN  
TEMPORARY SIGNAGE PLAN  
STAGE III**

Digitally signed by  
Leigh Merrill Signature  
Date: 2023.10.06

SCALE 1"=40'	INCH
DRAWING NO. 2021-008-MOT6	
SHEET NO. 18 OF 155	

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY	UNIT	PHASE	ADV	BRIDGE				MAX COUNT	QUANTITY	NOTES			
						1	2	3	4						
JN															
LENGTH															
						LENGTH/AREA/NUMBER PER STAGE(FUS/EA)									
8120012	Barricade Type I: High Intensity Double Sided Ligned Full - SEa	12	Ea			6	12	4		12	12				
8120013	Barricade Type I: High Intensity Double Sided Ligned Oper - SEa	12	Ea							12	12				
8120026	Pedestrian Type Barricade Temp - SEa	4	Ea			4	4	4		4	4				
8120027	Pedestrian Type Channelizer Temp - SF1	60	Ft			4	60	60		60	60				
8120252	Plastic Drum Fluorescent Full - SEa	50	Ea			39	50	23		50	50				
8120253	Plastic Drum Fluorescent Oper - SEa	50	Ea							50	50				
SIGNS															
				SIGN NUMBER	SIGN DESCRIPTION				Sign Area (SF)	NUMBER PER STAGE (Ea)					
8120340	Sign Type A Temp Prismatic Full - SSF	30	Sq									27			
8120341	Sign Type A Temp Prismatic Oper - SS1	30	Sq									27			
				R1-1	Stop	36	x	36	9				9		
				R3-2	No Left Turn	36	x	36	9		2	1	18		
8120350	Sign Type B Temp Prismatic Full - SSF	1022	Sq									929			
8120351	Sign Type B Temp Prismatic Oper - SS1	1022	Sq									929			
				G23-2	End Road Work	48	x	24	8		6		48		
				W20-1	Road Work Ahead	48	x	48	15	15	6	4	4	21	336
				R5-16c	Work Zone Begns	48	x	48	15	6			6	96	
				W20-2	Detour Ahead	48	x	48	15		4	4	4	64	
				W3-3	Signal Ahead	48	x	48	15		1	1	1	18	
				M4-8	Detour	24	x	12	2				0	0	
				M4-8a	End Detour	24	x	18	3				0	0	
				M4-9b	Pedestrian Detour	30	x	24	3		2	2	2	10	
				M4-9R	Detour R	30	x	24	3		4	4	4	20	
				M4-9L	Detour L	30	x	24	3		6	6	6	40	
				M4-9S	Detour Straight	30	x	24	3		8	8	8	40	
				M5-1L	Ahead Left Arrow	21	x	15	2.2				0	0	
				M5-1R	Ahead Right Arrow	21	x	15	2.2				0	0	
				M5-2R	Ahead Angle Right Arrow	21	x	15	2.2				0	0	
				M5-2R	Angle Right Arrow	21	x	15	2.2				0	0	
				M5-1L	Left	21	x	15	2.2				0	0	
				M5-1R	Right	21	x	15	2.2				0	0	
				M5-3a	Straight	21	x	25	3.6				0	0	
				R2-1	Speed Limit 35	30	x	36	7.5		2		2	18	
				R3-5c	Thru Right Only	36	x	30	7.5				0	0	
				R3-5c	Thru Left Only	36	x	30	7.5		2	1	2	18	
				R5-11a	Sidewalk Closed	48	x	24	8			2	2	18	
				W20-8	Sidewalk Closed Ahead	24	x	18	3				0	0	
				R10-7	Do Not Block Intersection	24	x	24	4		5	5	5	20	
				R6-3E	Right Lane Bus Only	24	x	24	4			1	1	4	
				W14-R	Street Right	48	x	48	15		2		2	32	
				W1-6L	One Direction Large Arrow Left	60	x	30	12.5				0	0	
				W1-6R	One Direction Large Arrow Right	60	x	30	12.5		2	2	2	28	
				W4-2L	Left Lane Ends	48	x	48	15				0	0	
				W4-2R	Right Lane Ends	48	x	48	15				0	0	
				W11-2	Pedestrian Crossing	48	x	48	15		3	3	3	48	
				W16-7P	Diagonal Arrow	24	x	12	2			2	2	4	
				W16-9P	Ahead	24	x	12	2			1	1	2	
				W20-5L	Left Lane Close Ahead	48	x	48	15				0	0	
				W20-5R	Right Lane Close Ahead	48	x	48	15				0	0	
				MISC	Engineer's Discretion				1				0	0	
8120352	Sign Type B Temp Prismatic Spec Full - SSF	366	Sq									351			
8120353	Sign Type B Temp Prismatic Spec Oper - SS1	366	Sq									351			
				D8-1B	E MEDICAL CENTER DR	48	x	12	4		4	1	15	60	
				D8-1B	W MEDICAL CENTER DR	48	x	12	4			1	0	0	
					Cancer Center Information	60	x	48	20				0	0	
					Hospital Cancer Signage	48	x	36	12				2	24	
					Medical Science Signage	48	x	36	12				0	0	
					Sidewalk Closed Ahead on Bridge	48	x	24	8				0	0	
				R3-2	Fuller Left Turn	60	x	36	15			1	0	0	
					EB Fuller Rd	48	x	12	4		19	19	19	75	
					WB Fuller Rd	48	x	12	4		3		3	12	
					Alternate Route	60	x	36	15		3		3	45	
					SB Maiden Lane to EB Fuller Close	60	x	36	15		5		5	75	

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

LEGEND

EXISTING FENCE	--- --- ---	EXISTING SANITARY SEWER & MANHOLE	---S---	EXISTING TELEPHONE	---t---	EXISTING RD. & GRADE	=====	PROPOSED SANITARY SEWER & MANHOLE	---S---	PROPOSED CURB & GUTTER	=====
CONTOUR	---847---	UTILITY POLE & GUY	---o---	GAS LINE	---g---	LEFT EDGE/RD. GRADE	=====	STORM SEWER & CAT. BAS.	---R---	SEE ABOVE	
STORM SEWER & CAT. BAS.	---R---	FIRE HYDRANT ASSEMBLY	---f---	CABLE T.V.	---tv---	RIGHT EDGE/RD. GRADE	=====	WATER MAIN W/F.H. ASSEM.	---W---	BENCH MARK	
WATER MAIN & VALVE-IN-WELL	---W---	LIGHT POLE	---o---	ELECTRIC	---e---	CURB & GUTTER	=====	CONTOUR	---847---	SURVEY BOOK	
WATER MAIN & VALVE-IN-BOX	---W---	END SECTION	---)---	SIGN	---p---	EDGE/GRAVEL	=====	ROAD & GRADE	=====	REV. NO.	

<b>DLZ</b>	
REV. NO.	DESCRIPTION

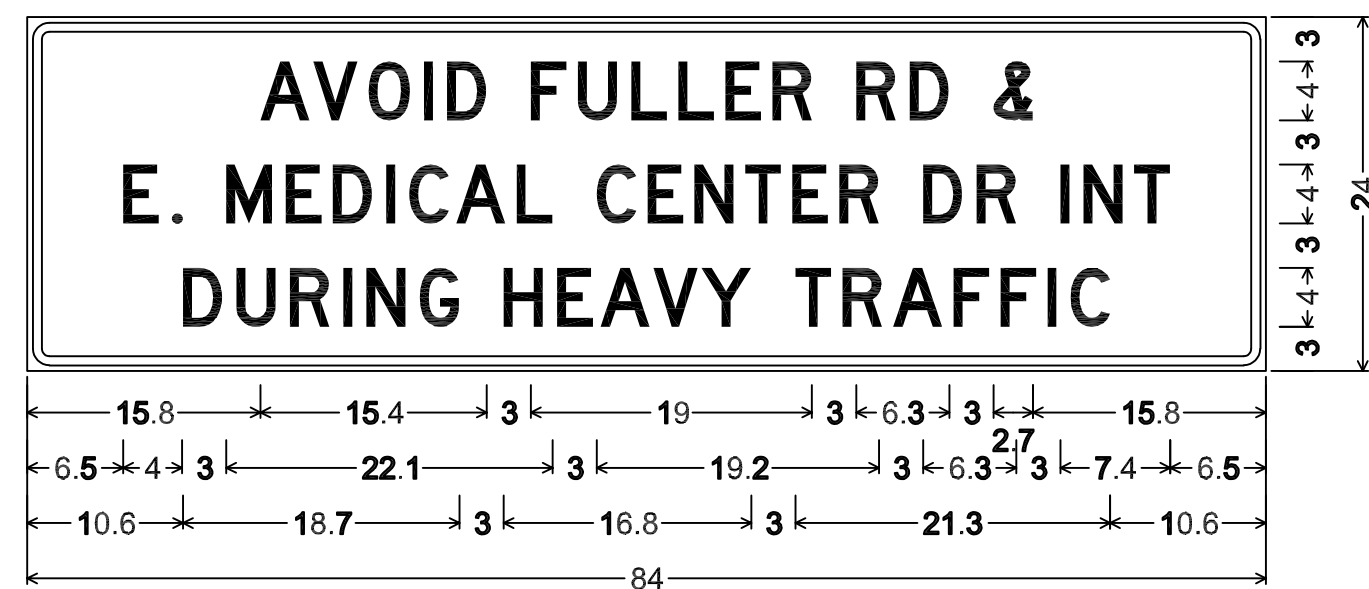
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE  
MAINTENANCE OF TRAFFIC PLAN  
M.O.T. QUANTITIES**

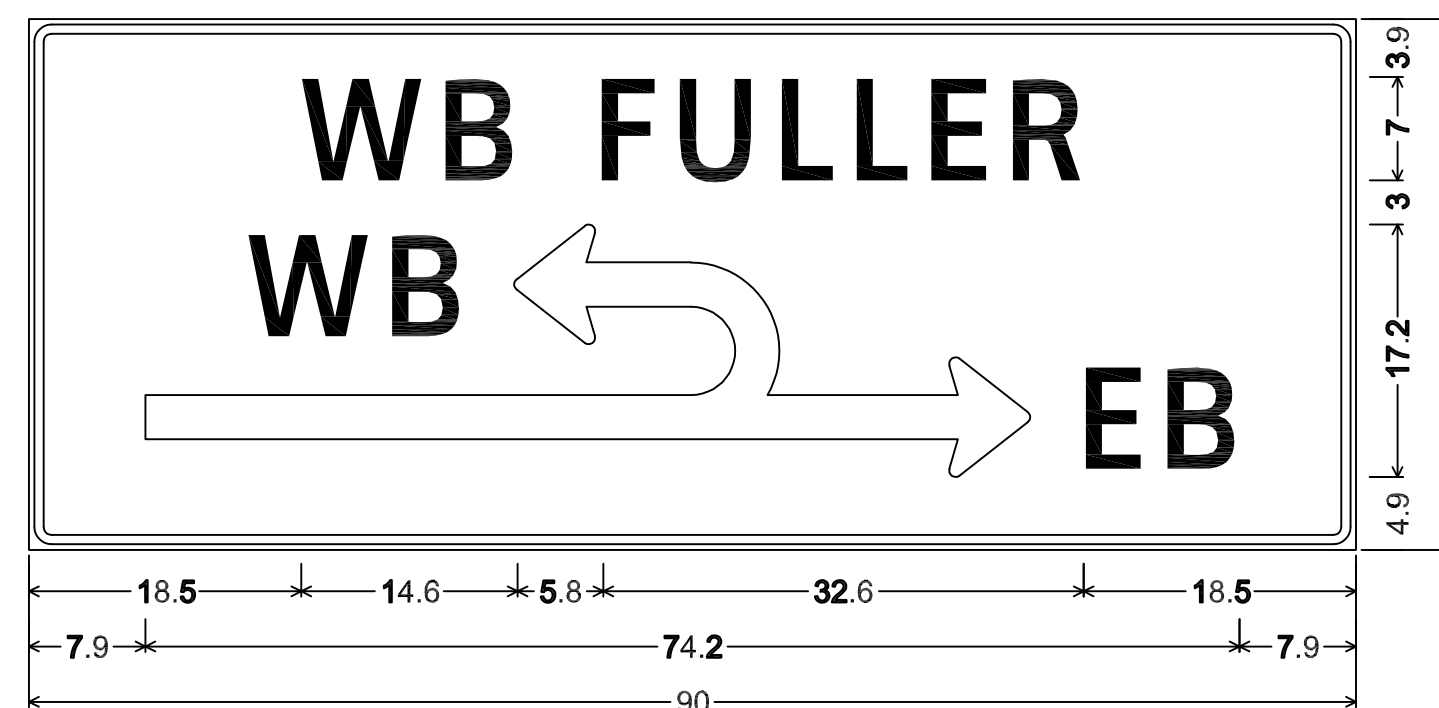
Digitally signed by  
Leigh Merrill  
Date: 2023.10.06

APPROVED BY: *[Signature]*

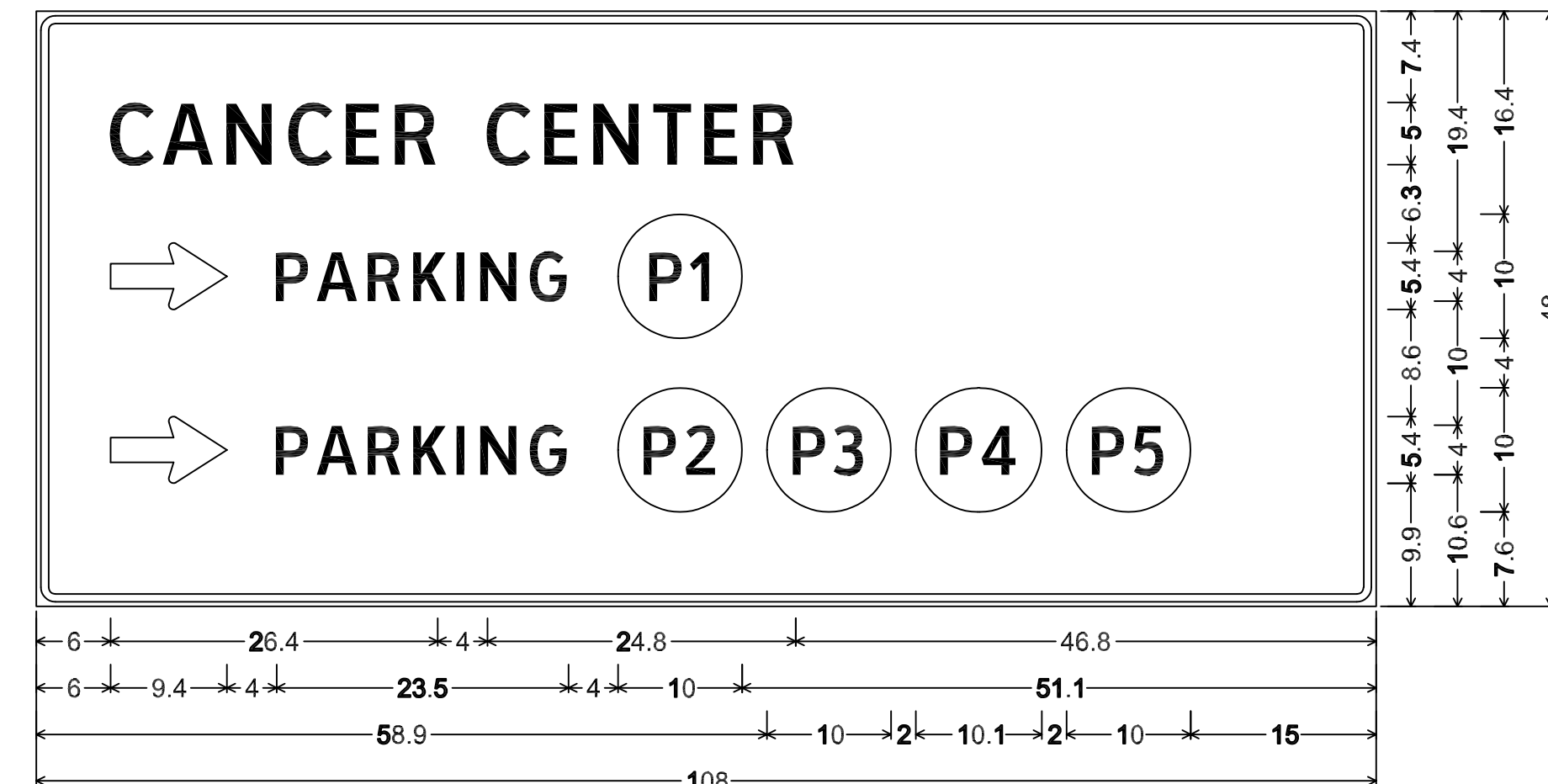
SCALE NTS	0 INCH 1
DRAWING NO. <b>2021-008-MOT7</b>	
SHEET NO. <u>19</u> OF <u>155</u>	



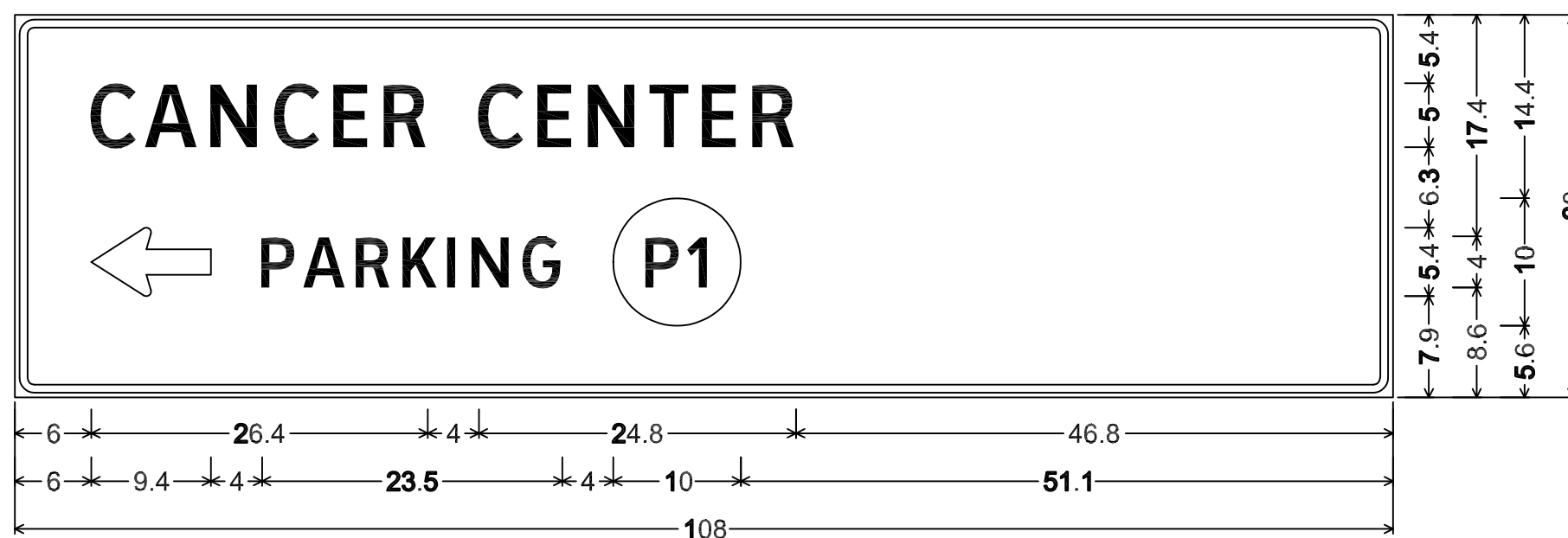
**SPECIAL DETAIL A:**  
 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;  
 "AVOID", D; "FULLER", D; "RD", D; "&", D; "E.", D; "MEDICAL", D;  
 "CENTER", D; "DR", D; "INT", D; "DURING", D; "HEAVY", D;  
 "TRAFFIC", D;



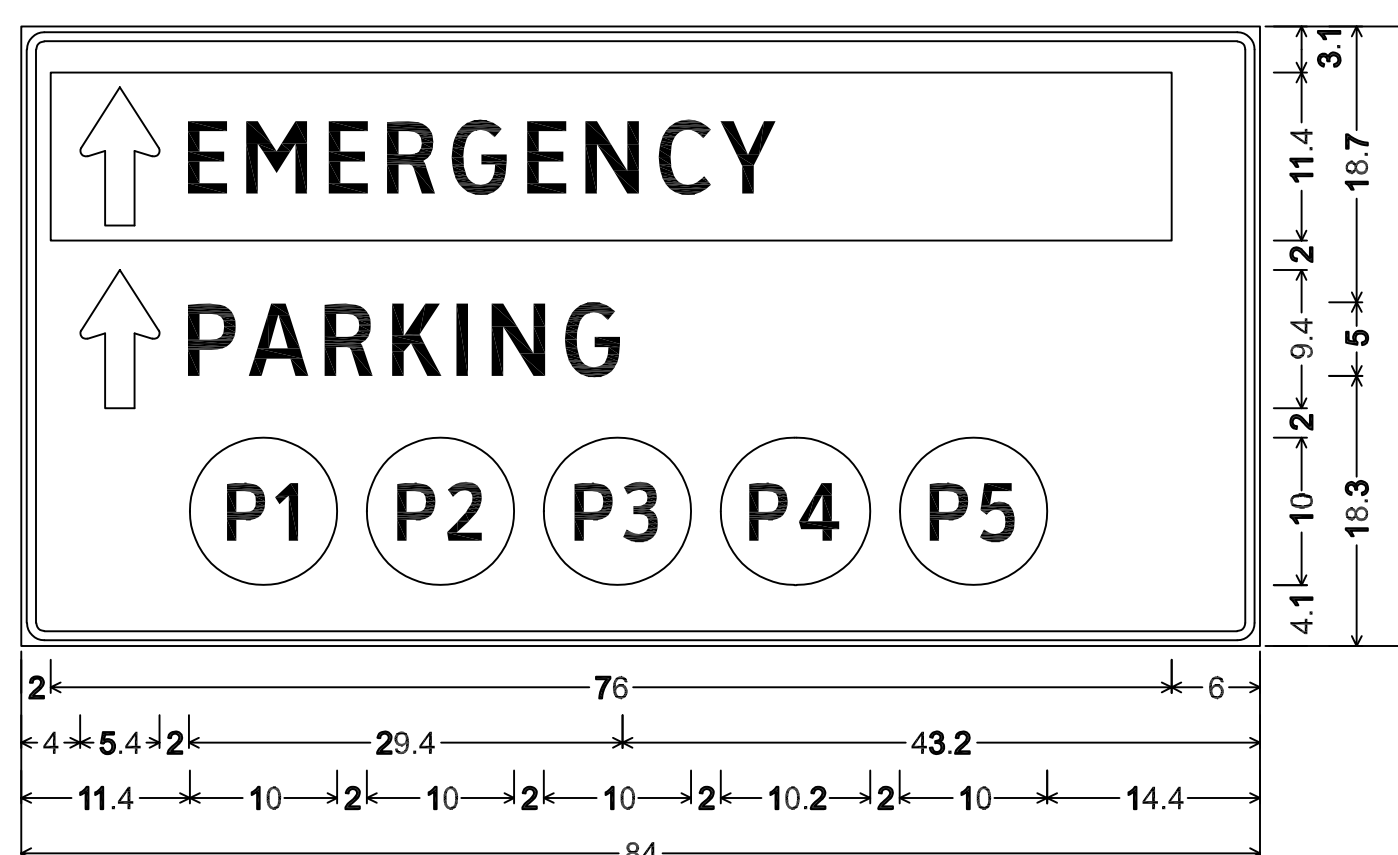
**SPECIAL DETAIL B:**  
 0.6" Border, 0.4" Indent, Black on Orange;  
 "WB FULLER", ClearviewHwy-3-W;



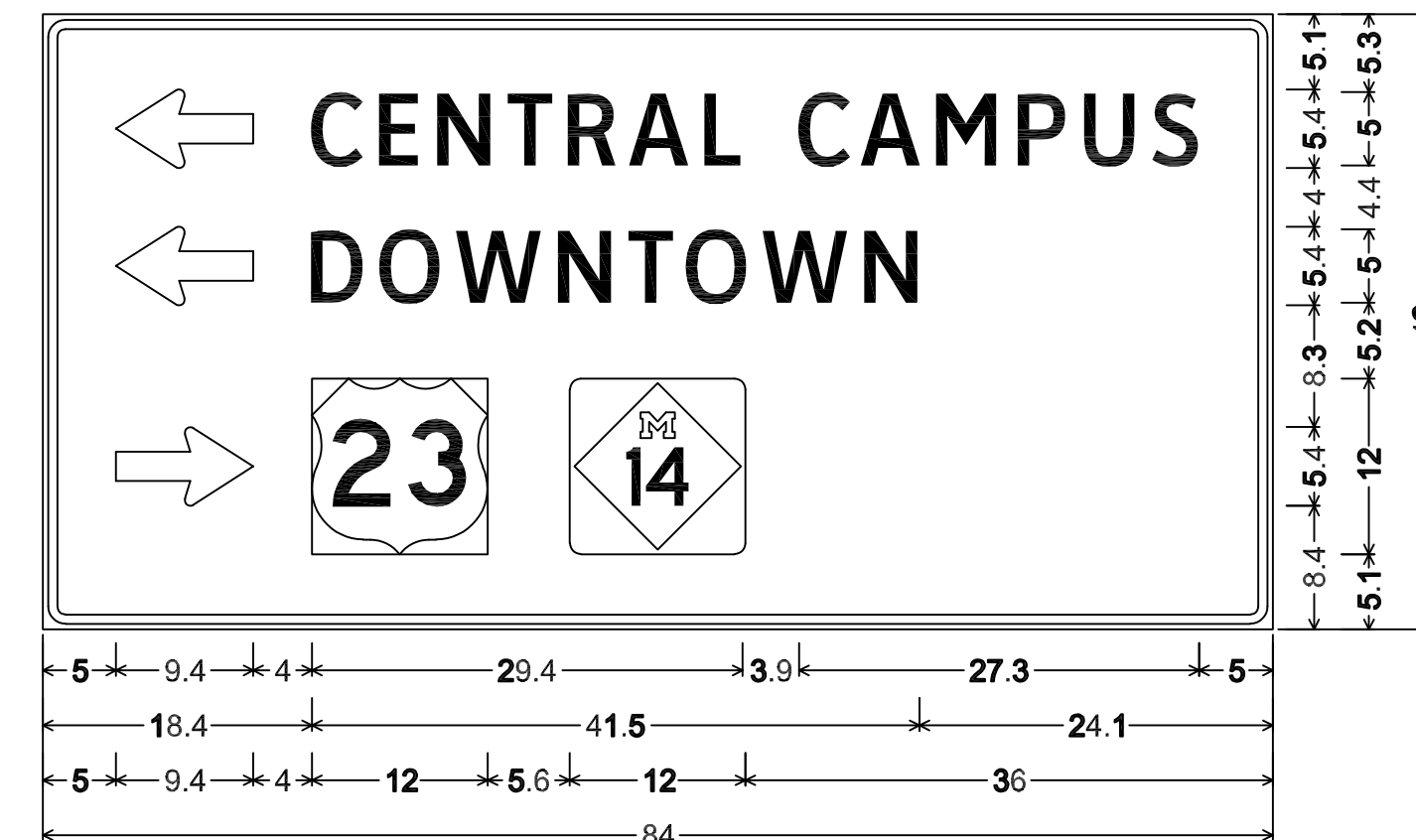
**SPECIAL DETAIL B:**  
 0.6" Border, 0.4" Indent, Black on Orange;  
 "CANCER CENTER", ClearviewHwy-3-W; Standard Arrow Custom 9.4" X 5.4" 0°;  
 "PARKING", ClearviewHwy-3-W; Rounded Rectangle 5.0" Radius;  
 Standard Arrow Custom 9.4" X 5.4" 0°; "PARKING", ClearviewHwy-3-W; Rounded Rectangle 5.0" Radius;  
 Rounded Rectangle 5.0" Radius;  
 Rounded Rectangle 5.0" Radius;  
 Rounded Rectangle 5.0" Radius;



**SPECIAL DETAIL B:**  
 0.6" Border, 0.4" Indent, Black on Orange;  
 "CANCER CENTER", ClearviewHwy-3-W; Standard Arrow Custom 9.4" X 5.4" 180°;  
 "PARKING", ClearviewHwy-3-W; Rounded Rectangle 5.0" Radius;



**SPECIAL DETAIL B:**  
 0.6" Border, 0.4" Indent, Black on Orange;  
 Rectangle Red;  
 " " White, E Mod; Standard Arrow Custom 9.4" X 5.4" 90°;  
 "PARKING", ClearviewHwy-3-W; " " White, E Mod;  
 Rounded Rectangle 5.0" Radius;  
 Rounded Rectangle 5.0" Radius;  
 Rounded Rectangle 5.0" Radius;  
 Rounded Rectangle 5.0" Radius;



**SPECIAL DETAIL B:**  
 0.6" Border, 0.4" Indent, Black on Orange;  
 Standard Arrow Custom 9.4" X 5.4" 180°;  
 "CENTRAL CAMPUS", ClearviewHwy-3-W;  
 Standard Arrow Custom 9.4" X 5.4" 180°; "DOWNTOWN", ClearviewHwy-3-W;  
 Standard Arrow Custom 9.4" X 5.4" 0°;  
 State Highway 14 M1-6b;

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

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. @ GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER	SEE ABOVE
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	BENCH MARK	SURVEY BOOK
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.		
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR		
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD @ GRADE		

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM

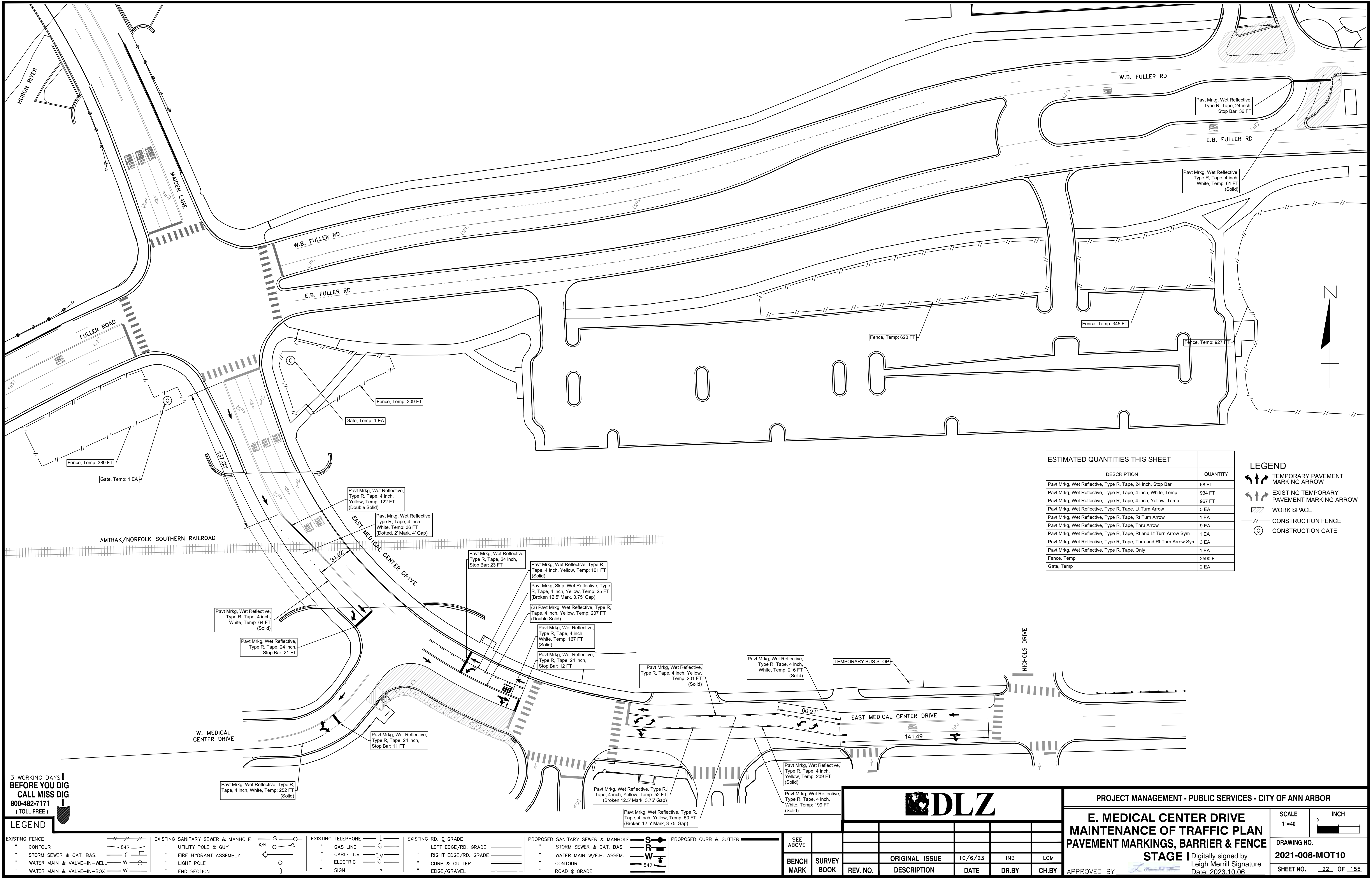
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE  
 SIGN DETAIL  
 FULLER RD AT E. MEDICAL CENTER RD**

Digitally signed by  
 Leigh Merrill Signature  
 Date: 2023.10.06

SCALE HOR. 1"=40' VERT. 1"=4'	INCH 0 1
DRAWING NO. <b>2021-008-MOT8</b>	SHEET NO. <u>20</u> OF <u>155</u>





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

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

**ESTIMATED QUANTITIES THIS SHEET**

DESCRIPTION	QUANTITY
Pavt Mrkg, Wet Reflective, Type R, Tape, 24 inch, Stop Bar	68 FT
Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, White, Temp	934 FT
Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, Yellow, Temp	967 FT
Pavt Mrkg, Wet Reflective, Type R, Tape, Lt Turn Arrow	5 EA
Pavt Mrkg, Wet Reflective, Type R, Tape, Rt Turn Arrow	1 EA
Pavt Mrkg, Wet Reflective, Type R, Tape, Thru Arrow	9 EA
Pavt Mrkg, Wet Reflective, Type R, Tape, Rt and Lt Turn Arrow Sym	1 EA
Pavt Mrkg, Wet Reflective, Type R, Tape, Thru and Rt Turn Arrow Sym	3 EA
Pavt Mrkg, Wet Reflective, Type R, Tape, Only	1 EA
Fence, Temp	2590 FT
Gate, Temp	2 EA

**LEGEND**

TEMPORARY PAVEMENT MARKING ARROW	EXISTING TEMPORARY PAVEMENT MARKING ARROW
WORK SPACE	CONSTRUCTION FENCE
CONSTRUCTION GATE	

**DLZ**

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

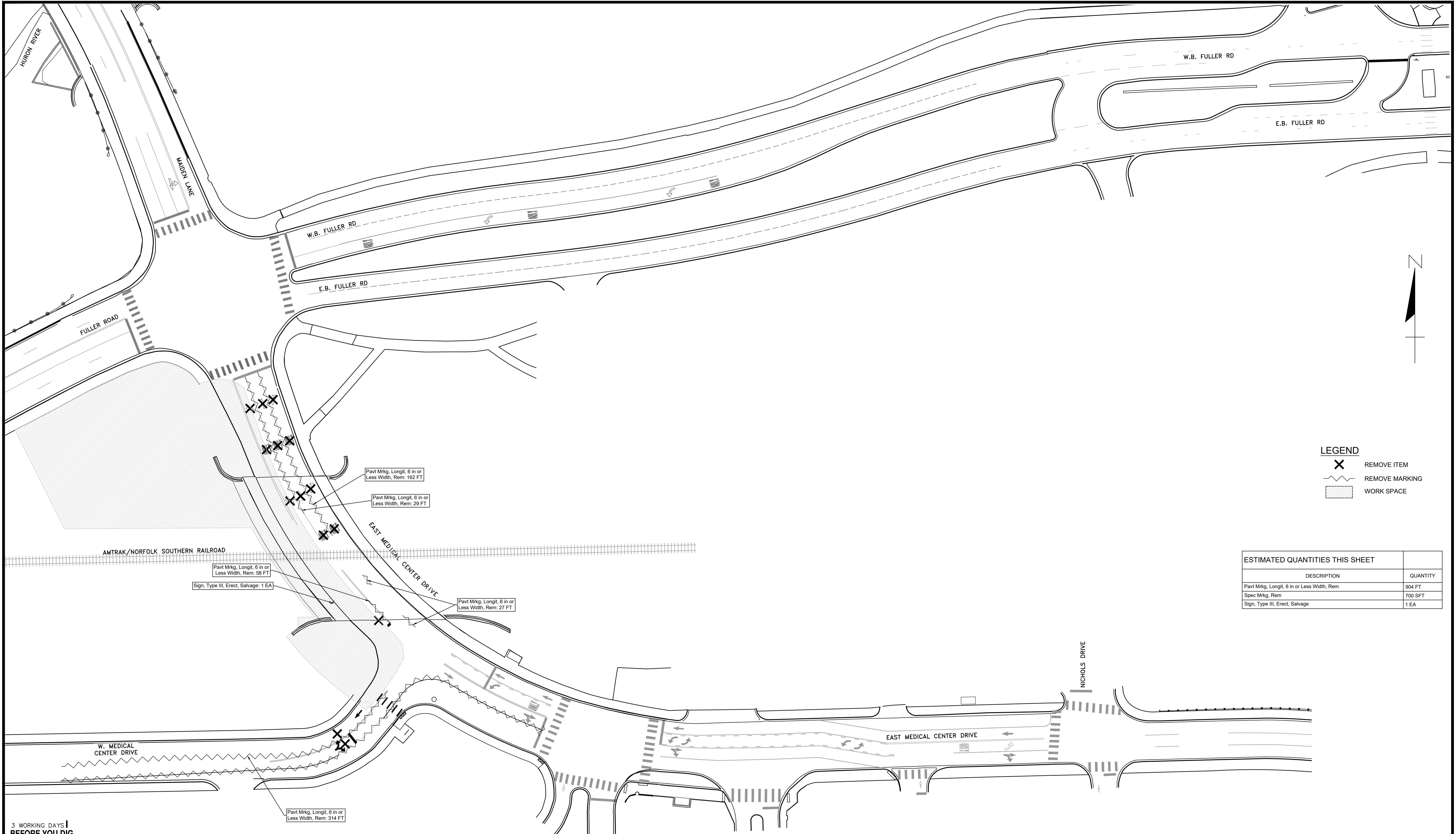
**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**E. MEDICAL CENTER DRIVE MAINTENANCE OF TRAFFIC PLAN PAVEMENT MARKINGS, BARRIER & FENCE**

**STAGE I** Digitally signed by Leigh Merrill Signature Date: 2023.10.06

APPROVED BY: \_\_\_\_\_

SCALE	1"=40'
DRAWING NO.	2021-008-MOT10
SHEET NO.	22 OF 155



**LEGEND**

- REMOVE ITEM
- REMOVE MARKING
- WORK SPACE

ESTIMATED QUANTITIES THIS SHEET	
DESCRIPTION	QUANTITY
Pavt Mrkg, Longit, 6 in or Less Width, Rem	904 FT
Spec Mrkg, Rem	700 SFT
Sign, Type III, Erect, Salvage	1 EA

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

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- - - - -	- S -	- t -	- - - - -	- S -	- - - - -
- - - - -	- UPG -	- g -	- - - - -	- SR -	- - - - -
- - - - -	- FHA -	- c -	- - - - -	- W -	- - - - -
- - - - -	- LP -	- e -	- - - - -	- 847 -	- - - - -
- - - - -	- ES -	- s -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -

<b>DLZ</b>					
SEE ABOVE					
BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR. BY
			ORIGINAL ISSUE	10/6/23	INB
					LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

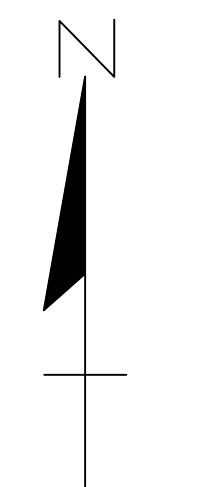
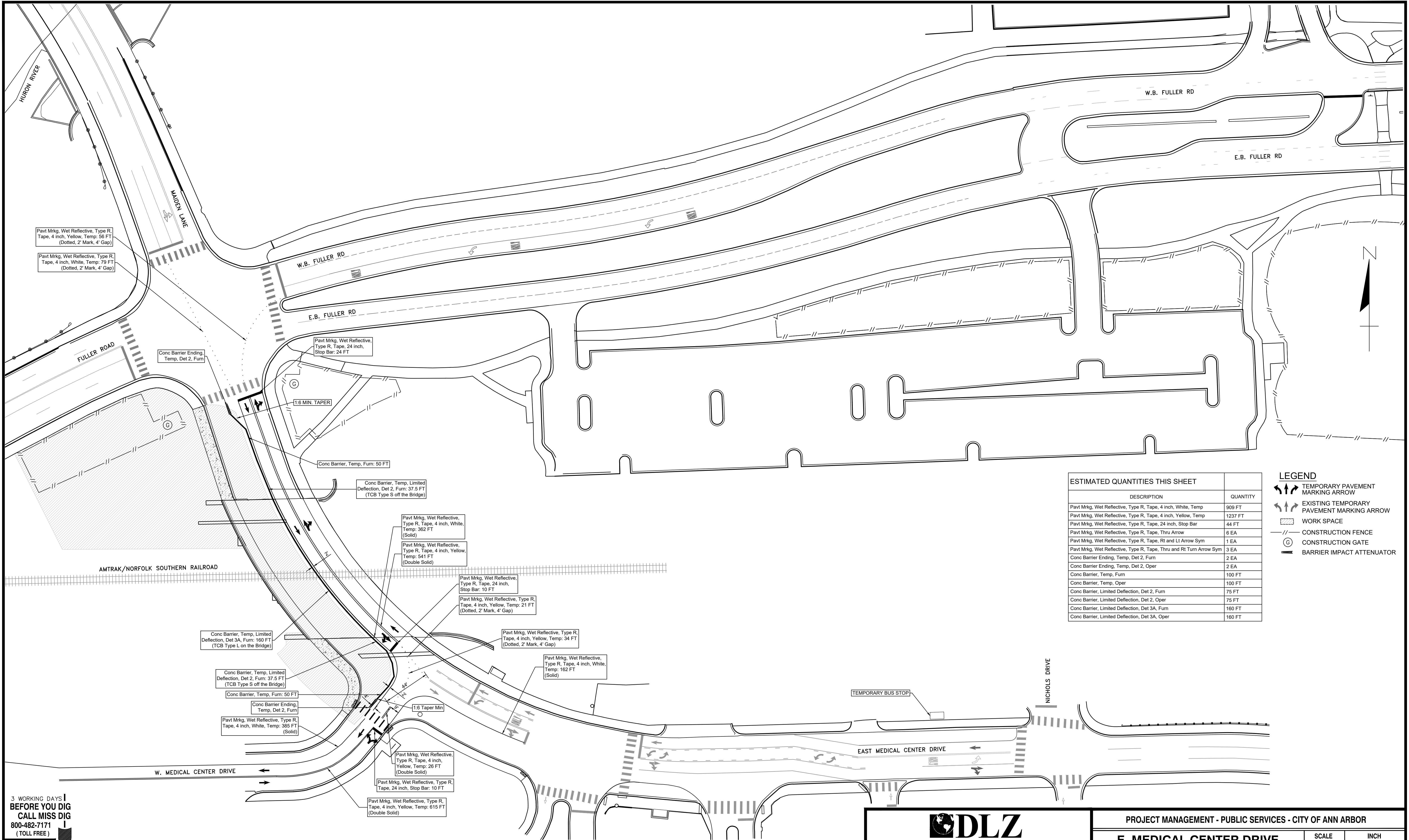
**E. MEDICAL CENTER DRIVE  
 MAINTENANCE OF TRAFFIC PLAN  
 PAVEMENT MARKING REMOVAL PLAN**

**STAGE II**

Digitally signed by Leigh Merrill  
 Signature Date: 2023.10.06

APPROVED BY:

SCALE	1"=40'
DRAWING NO.	2021-008-MOT11
SHEET NO.	23 OF 155



ESTIMATED QUANTITIES THIS SHEET	
DESCRIPTION	QUANTITY
Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, White, Temp	909 FT
Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, Yellow, Temp	1237 FT
Pavt Mrkg, Wet Reflective, Type R, Tape, 24 inch, Stop Bar	44 FT
Pavt Mrkg, Wet Reflective, Type R, Tape, Thru Arrow	6 EA
Pavt Mrkg, Wet Reflective, Type R, Tape, Rt and Lt Arrow Sym	1 EA
Pavt Mrkg, Wet Reflective, Type R, Tape, Thru and Rt Turn Arrow Sym	3 EA
Conc Barrier Ending, Temp, Det 2, Furn	2 EA
Conc Barrier Ending, Temp, Det 2, Oper	2 EA
Conc Barrier, Temp, Furn	100 FT
Conc Barrier, Temp, Oper	100 FT
Conc Barrier, Limited Deflection, Det 2, Furn	75 FT
Conc Barrier, Limited Deflection, Det 2, Oper	75 FT
Conc Barrier, Limited Deflection, Det 3A, Furn	160 FT
Conc Barrier, Limited Deflection, Det 3A, Oper	160 FT

LEGEND	
	TEMPORARY PAVEMENT MARKING ARROW
	EXISTING TEMPORARY PAVEMENT MARKING ARROW
	WORK SPACE
	CONSTRUCTION FENCE
	CONSTRUCTION GATE
	BARRIER IMPACT ATTENUATOR

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

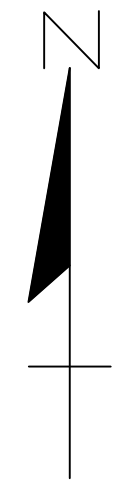
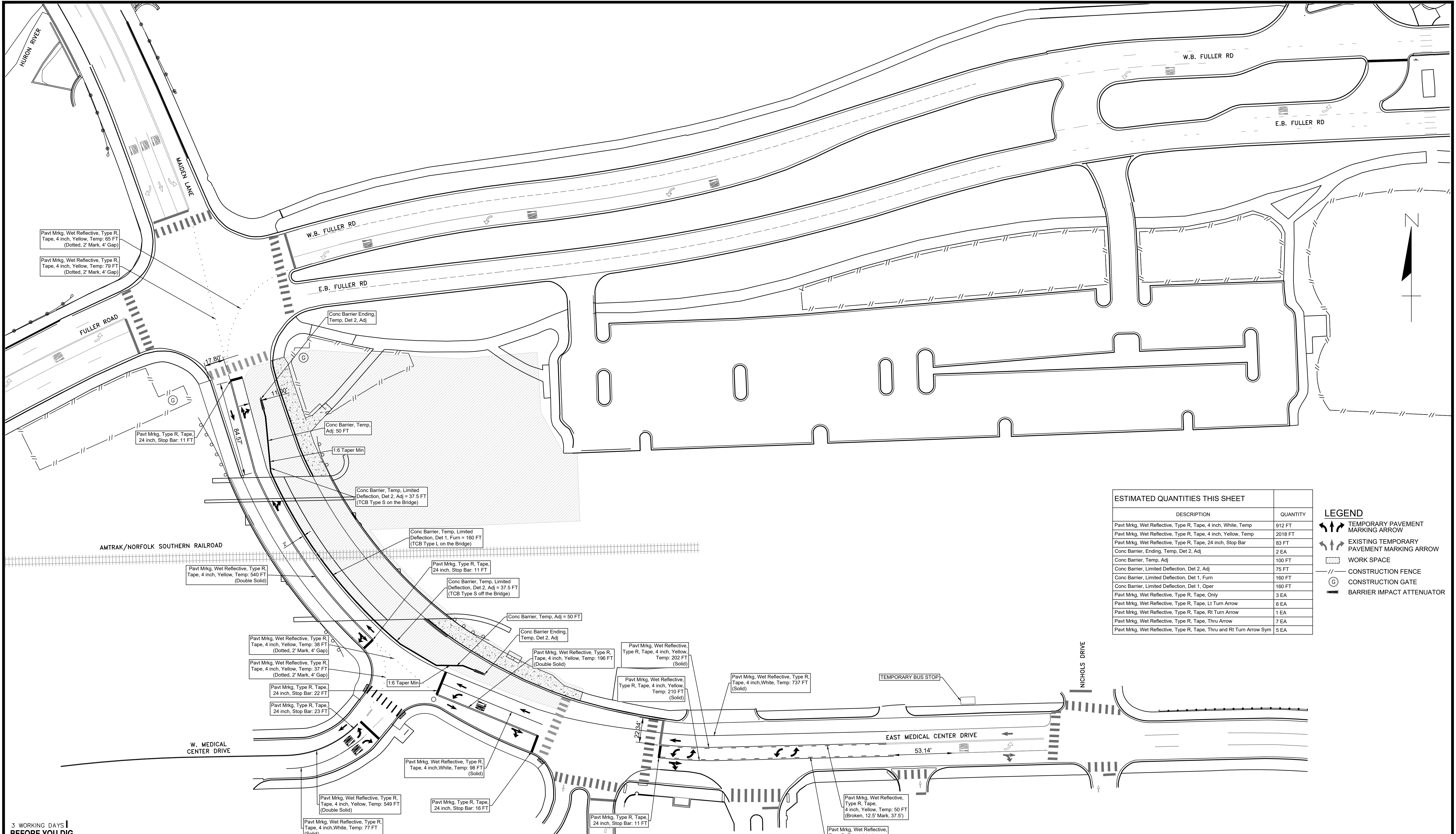
LEGEND	
EXISTING FENCE	---//---//---
CONTOUR	---847---
STORM SEWER & CAT. BAS.	---r---
WATER MAIN & VALVE-IN-WELL	---W---
WATER MAIN & VALVE-IN-BOX	---W+---
EXISTING SANITARY SEWER & MANHOLE	---S---
UTILITY POLE & GUY	---9/H---
FIRE HYDRANT ASSEMBLY	---F---
LIGHT POLE	---O---
END SECTION	---)---
EXISTING TELEPHONE	---t---
GAS LINE	---G---
CABLE T.V.	---TV---
ELECTRIC	---E---
SIGN	---b---
EXISTING RD. C GRADE	=====
LEFT EDGE/RD. GRADE	=====
RIGHT EDGE/RD. GRADE	=====
CURB & GUTTER	=====
EDGE/GRAVEL	=====
PROPOSED SANITARY SEWER & MANHOLE	---S---●---
STORM SEWER & CAT. BAS.	---r---●---
WATER MAIN W/F.H. ASSEM.	---W---●---
CONTOUR	---847---
ROAD C GRADE	=====
PROPOSED CURB & GUTTER	=====

<b>DLZ</b>					
SEE ABOVE					
BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR. BY
			ORIGINAL ISSUE	10/6/23	INB
					LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>E. MEDICAL CENTER DRIVE MAINTENANCE OF TRAFFIC PLAN PAVEMENT MARKINGS, BARRIER &amp; FENCE STAGE I</b>	
APPROVED BY:	DATE: 2023.10.06
SCALE: 1"=40'	INCH: 0 1
DRAWING NO. 2021-008-MOT12	SHEET NO. 24 OF 155







ESTIMATED QUANTITIES THIS SHEET	
DESCRIPTION	QUANTITY
Pav't M'kg, Wet Reflective, Type R, Tape, 4 inch, White, Temp	912 FT
Pav't M'kg, Wet Reflective, Type R, Tape, 4 inch, Yellow, Temp	2018 FT
Pav't M'kg, Wet Reflective, Type R, Tape, 24 inch, Stop Bar	83 FT
Conc Barrier, Ending, Temp, Det 2, Adj	2 EA
Conc Barrier, Temp, Adj	100 FT
Conc Barrier, Limited Deflection, Det 2, Adj	75 FT
Conc Barrier, Limited Deflection, Det 1, Furn	160 FT
Conc Barrier, Limited Deflection, Det 1, Oper	160 FT
Pav't M'kg, Wet Reflective, Type R, Tape, Only	3 EA
Pav't M'kg, Wet Reflective, Type R, Tape, Lt Turn Arrow	6 EA
Pav't M'kg, Wet Reflective, Type R, Tape, Rt Turn Arrow	1 EA
Pav't M'kg, Wet Reflective, Type R, Tape, Thru Arrow	7 EA
Pav't M'kg, Wet Reflective, Type R, Tape, Thru and Rt Turn Arrow Sym	5 EA

LEGEND	
	TEMPORARY PAVEMENT MARKING ARROW
	EXISTING PAVEMENT MARKING ARROW
	WORK SPACE
	CONSTRUCTION FENCE
	CONSTRUCTION GATE
	BARRIER IMPACT ATTENUATOR

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

LEGEND	
EXISTING FENCE	--- --- ---
CONTOUR	--- --- ---
STORM SEWER & CAT. BAS.	--- --- ---
WATER MAIN & VALVE-IN-WELL	--- --- ---
WATER MAIN & VALVE-IN-BOX	--- --- ---

EXISTING SANITARY SEWER & MANHOLE	
UTILITY POLE & GUY	--- --- ---
FIRE HYDRANT ASSEMBLY	--- --- ---
LIGHT POLE	--- --- ---
END SECTION	--- --- ---

EXISTING TELEPHONE	
GAS LINE	--- --- ---
CABLE T.V.	--- --- ---
ELECTRIC	--- --- ---
SIGN	--- --- ---

EXISTING RD. & GRADE	
LEFT EDGE/RD. GRADE	--- --- ---
RIGHT EDGE/RD. GRADE	--- --- ---
CURB & GUTTER	--- --- ---
EDGE/GRAVEL	--- --- ---

PROPOSED SANITARY SEWER & MANHOLE	
STORM SEWER & CAT. BAS.	--- --- ---
WATER MAIN W/F.H. ASSEM.	--- --- ---
CONTOUR	--- --- ---
ROAD & GRADE	--- --- ---

PROPOSED CURB & GUTTER	
SEE ABOVE	--- --- ---
BENCH MARK	--- --- ---
SURVEY BOOK	--- --- ---



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE MAINTENANCE OF TRAFFIC PLAN PAVEMENT MARKINGS, BARRIER & FENCE**

STAGE III

Digitally signed by Leigh Merrill Signature Date: 2023.10.06

APPROVED BY: \_\_\_\_\_

SCALE	1"=40'
DRAWING NO.	2021-008-MOT14
SHEET NO.	26 OF 155

## SIGNALS

	ANTENNA		SIGNAL HEAD PEDESTRIAN - EXISTING
	CASE SIGN (1-WAY OR 2-WAY)		SIGNAL HEAD PEDESTRIAN 1-WAY
	CASE SIGN (4-WAY)		SIGNAL HEAD PEDESTRIAN 2-WAY
	DEDICATED SHORT RANGE COMMUNICATIONS		SIGNAL HEAD VEHICLE 1-WAY - EXISTING
	CONTROLLER CABINET - POLE MOUNTED		SIGNAL HEAD VEHICLE 2-WAY - EXISTING
	CONTROL EMERGENCY PREEMPTION OPTICOM		SIGNAL HEAD VEHICLE 3-WAY - EXISTING
	DILEMMA ZONE DETECTION		SIGNAL HEAD VEHICLE 4-WAY - EXISTING
	GLOBAL POSITIONING SYSTEM MODULE		SIGNAL HEAD VEHICLE 1-WAY
	GUY ANCHOR		SIGNAL HEAD VEHICLE 2-WAY
	PEDESTRIAN PEDESTAL		SIGNAL HEAD VEHICLE 3-WAY
	PEDESTRIAN PUSHBUTTON		SIGNAL HEAD VEHICLE 4-WAY
	POLE MAST ARM (LENGTH VARIES) - EXISTING		SIGNAL HEAD VEHICLE BAGGED
	POLE MAST ARM (LENGTH VARIES)		SIGNAL HEAD VEHICLE PROGRAMMABLE
	POLE STRAIN		VEHICLE DETECTION CAMERA
	ROAD SIGN W/ FLASHING SIGN OPTICAL (1-WAY)		VEHICLE DETECTION CAMERA - HEMISPHERICAL
	SIGNAL HANDHOLE - POLYMER CONCRETE		VEHICLE DETECTION LOOP
	SIGNAL HANDHOLE - 2 FOOT ROUND		VEHICLE DETECTION - RADAR
	SIGNAL HANDHOLE - 3 FOOT ROUND		WIRELESS VEHICLE DETECTION RADIO RECEIVER
	SIGNAL HANDHOLE - 2 FOOT SQUARE		WIRELESS VEHICLE DETECTION RADIO REPEATER
	SIGNAL HANDHOLE - 4 FOOT SQUARE		WIRELESS VEHICLE DETECTION SENSOR - EXISTING
			WIRELESS VEHICLE DETECTION SENSOR

## CABLING / WIRING DIAGRAM

	CIRCUIT BREAKER
	COILED WIRE
	FUSE
	FUSE SWITCH
	GROUND
	ILLUMINATED CASE SIGN
	METER
	SERVICE DISCONNECT
	SIGNAL HEAD

### NOTE:

EXISTING ITEMS ARE REPRESENTED BY THIN LINE WEIGHTS.  
PROPOSED ITEMS ARE REPRESENTED BY HEAVIER LINE WEIGHTS.

### LEGEND

EXISTING FENCE		EXISTING SANITARY SEWER & MANHOLE		EXISTING TELEPHONE		EXISTING RD. & GRADE		PROPOSED SANITARY SEWER & MANHOLE		PROPOSED CURB & GUTTER	
" CONTOUR		" UTILITY POLE & GUY		" GAS LINE		" LEFT EDGE/RD. GRADE		" STORM SEWER & CAT. BAS.		" SEE ABOVE	
" STORM SEWER & CAT. BAS.		" FIRE HYDRANT ASSEMBLY		" CABLE T.V.		" RIGHT EDGE/RD. GRADE		" WATER MAIN W/F.H. ASSEM.		" BENCH MARK	
" WATER MAIN & VALVE-IN-WELL		" LIGHT POLE		" ELECTRIC		" CURB & GUTTER		" CONTOUR		" SURVEY BOOK	
" WATER MAIN & VALVE-IN-BOX		" END SECTION		" SIGN		" EDGE/GRAVEL		" ROAD & GRADE		" REV. NO.	



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

E. MEDICAL CENTER DRIVE  
TRAFFIC SIGNAL PLANS  
LEGEND

SCALE  
NO SCALE

INCH  
0 1

DRAWING NO.

2021-008-MOT23

SHEET NO. 27 OF 155

Digitally signed by Leigh Merrill

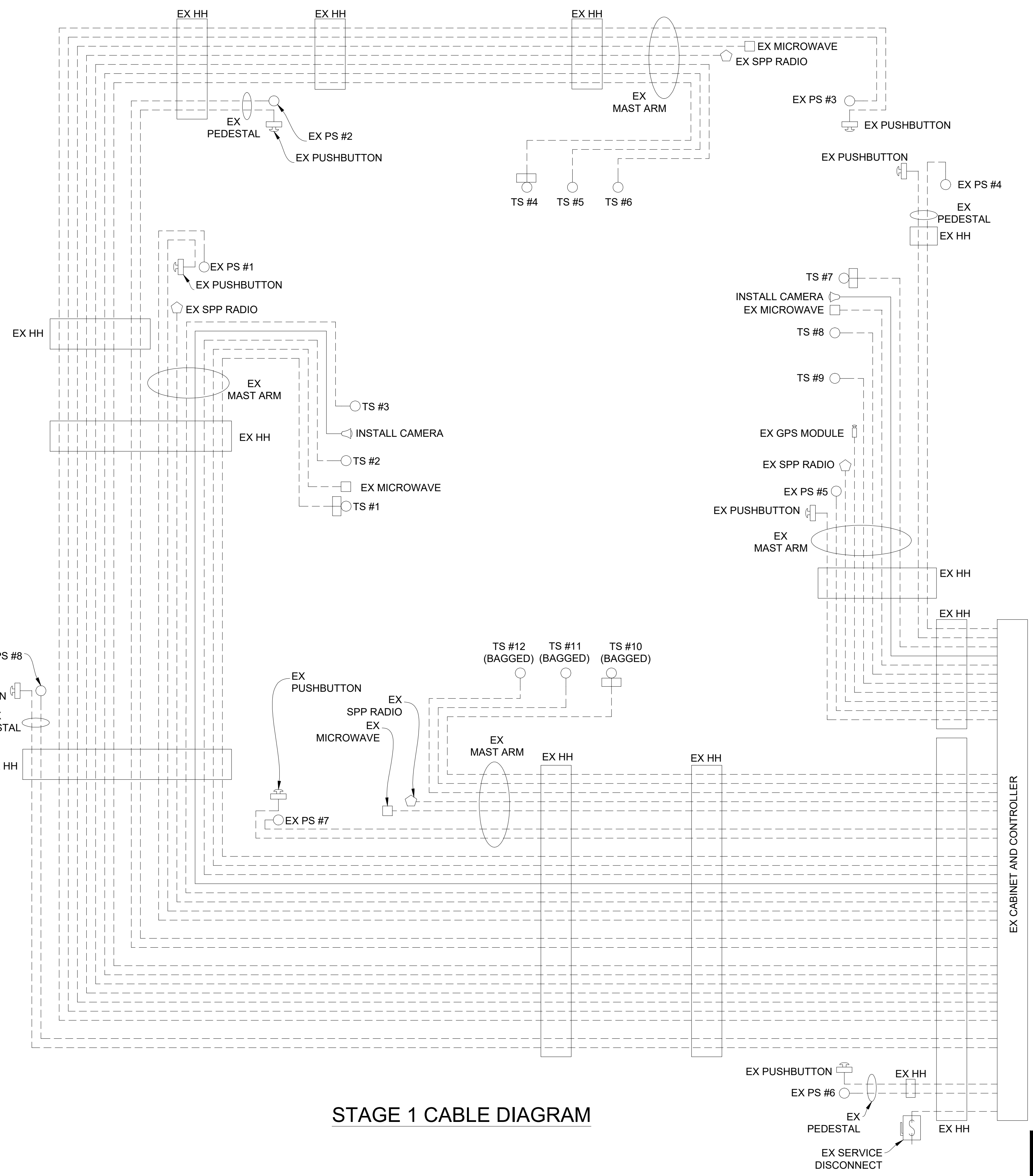
Signature

Date: 2023.10.06

APPROVED BY

LEIGH C. MERRILL P.E., MICHIGAN NO. 6201061025





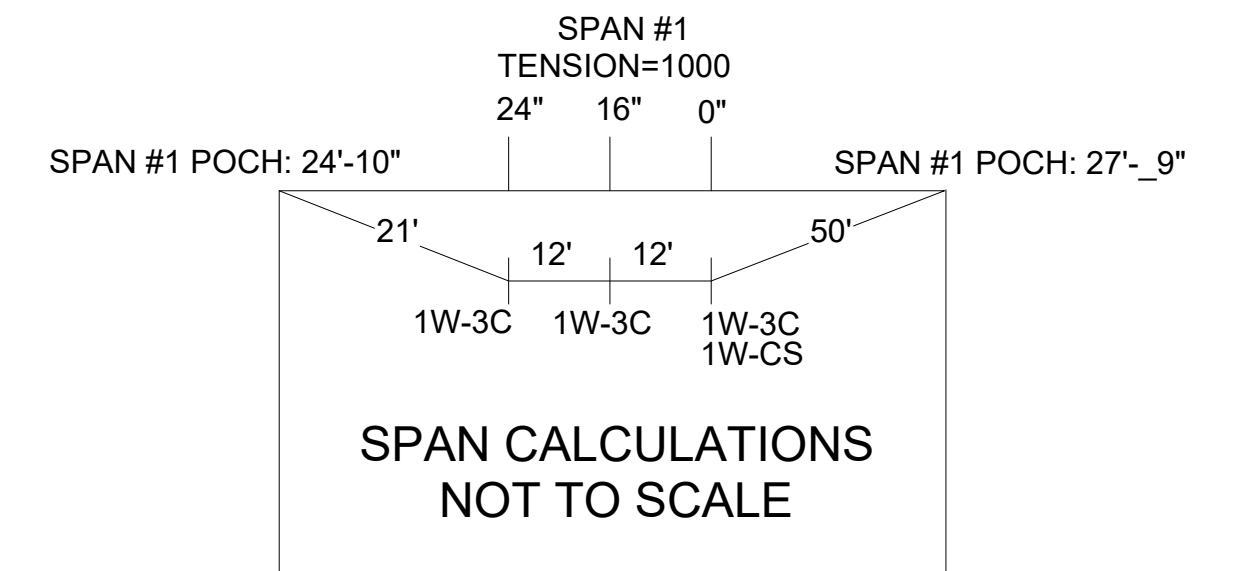
STAGE 1 CABLE DIAGRAM

**CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE**

- 1W-3C TRAFFIC SIGNAL CABLES ARE 5/C#16 P.J.
- 1W-3C TRAFFIC SIGNALS WITH 12"/27" CASE SIGN CABLES ARE 7/C#16 P.J.
- HEMISPHERICAL VIDEO DETECTION CAMERA CABLES ARE CAT5e 600V.

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

NOTE:  
FIBER OPTIC CABLES ARE PRESENT WITHIN EXISTING HANDHOLES BUT SIZE AND ROUTING IS UNKNOWN



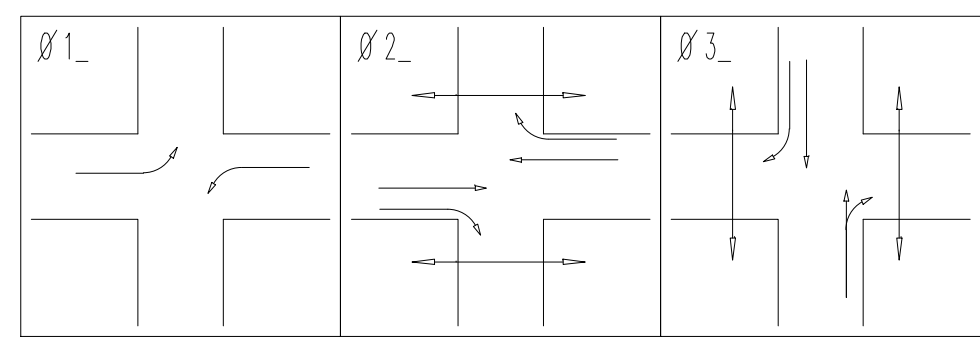
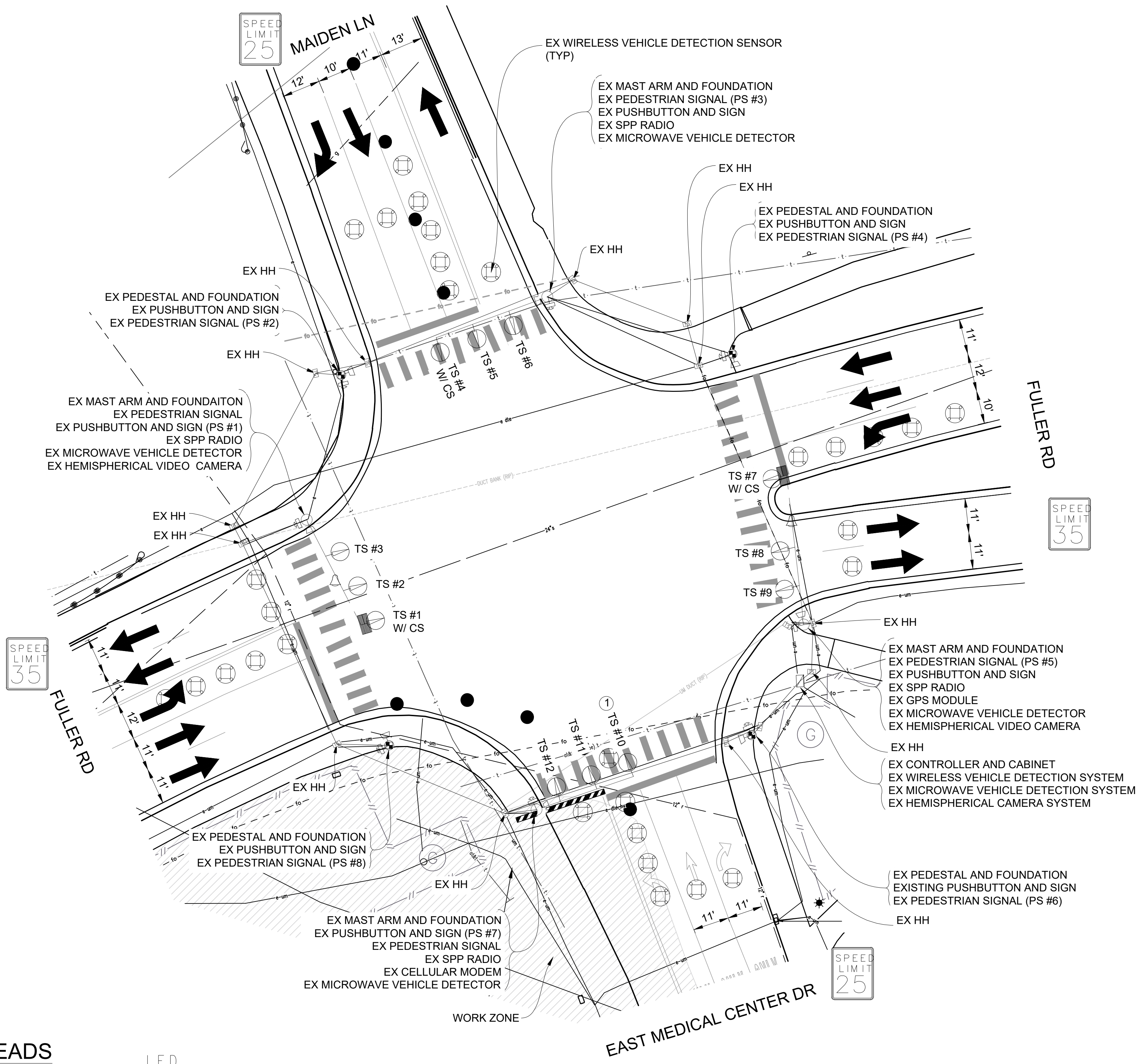
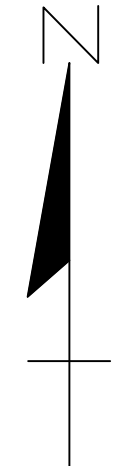
SIGNALS	
OPENINGS:	49
CYCLIC WATTS:	540
STEADY WATTS:	60

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

<b>DLZ</b>					
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY
	ORIGINAL ISSUE	10/6/23	INB	LCM	

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS FULLER RD AT E. MED. CENTER RD	
STAGE 1	
SCALE	INCH
NTS	0 1
DRAWING NO.	2021-008-MOT25
SHEET NO.	29 OF 155



PHASE DIAGRAM

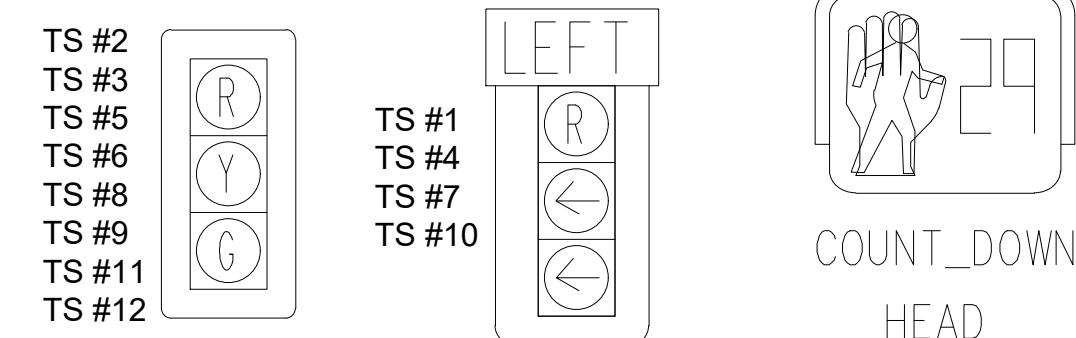
CONTRACTOR TO UTILIZE MOT TYPICAL 163-INT-LD-OUT FOR ALL SIGNAL WORK RELATED TO THIS INTERSECTION

ROW WAS NOT SURVEYED AND IS NOT MARKED ON PLANS

TIME OF REMOVAL OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER

LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
1	TS Mast Arm Mtd, Rem	1 Ea.

SIGNAL HEADS



STAGE 2 REMOVAL PLAN

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

SIGNALS	
OPENINGS:	40
CYCLIC WATTS:	516
STEADY WATTS:	45

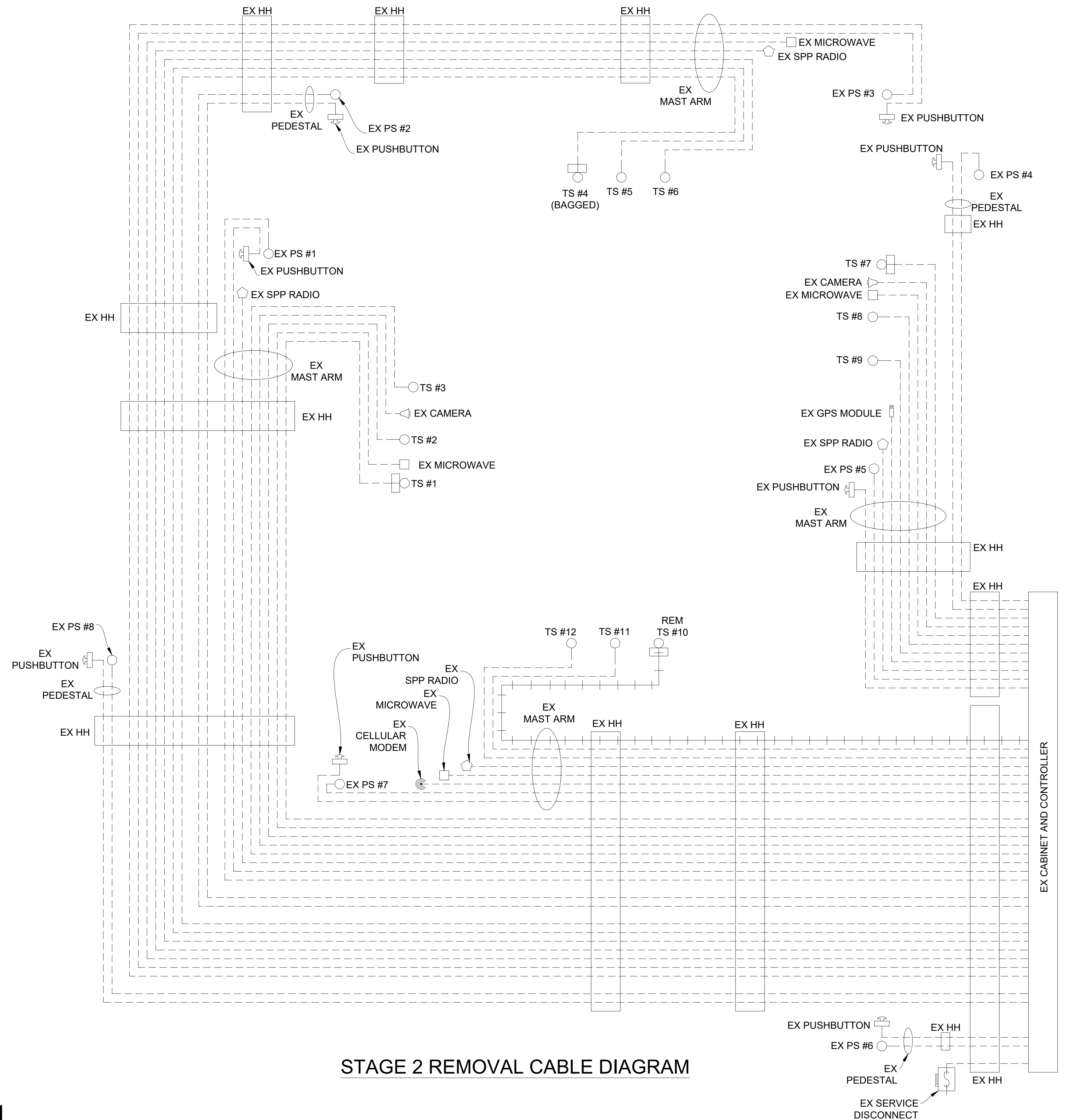
3 WORKING DAYS!  
BEFORE YOU DIG  
CALL MISS DIG  
800-482-7171  
(TOLL FREE)

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
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- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -

<b>DLZ</b>					
SEE ABOVE	BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR			
E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS FULLER RD AT E. MED. CENTER RD			
STAGE 2			
APPROVED BY: Leigh Merrill		Date: 2023.10.06	
SCALE	1"=20'	INCH	1
DRAWING NO.	2021-008-MOT26		
SHEET NO.	30 OF 155		



STAGE 2 REMOVAL CABLE DIAGRAM

**CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE**

- \_1. 1W-3C TRAFFIC SIGNAL CABLES ARE 5/C#16 PJ.
- \_2. 1W-3C TRAFFIC SIGNALS WITH 12"/27" CASE SIGN CABLES ARE 7/C#16 PJ.
- \_3. HEMISPHERICAL VIDEO DETECTION CAMERA CABLES ARE CAT5e 600V.

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

NOTE:  
FIBER OPTIC CABLES ARE PRESENT WITHIN EXISTING HANDHOLES BUT SIZE AND ROUTING IS UNKNOWN

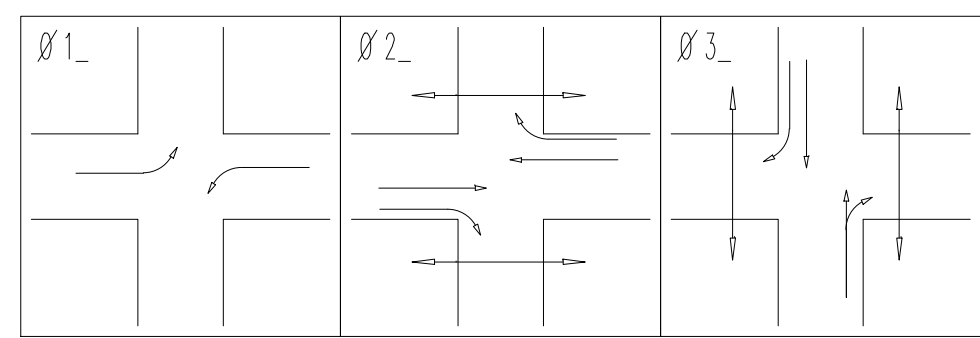
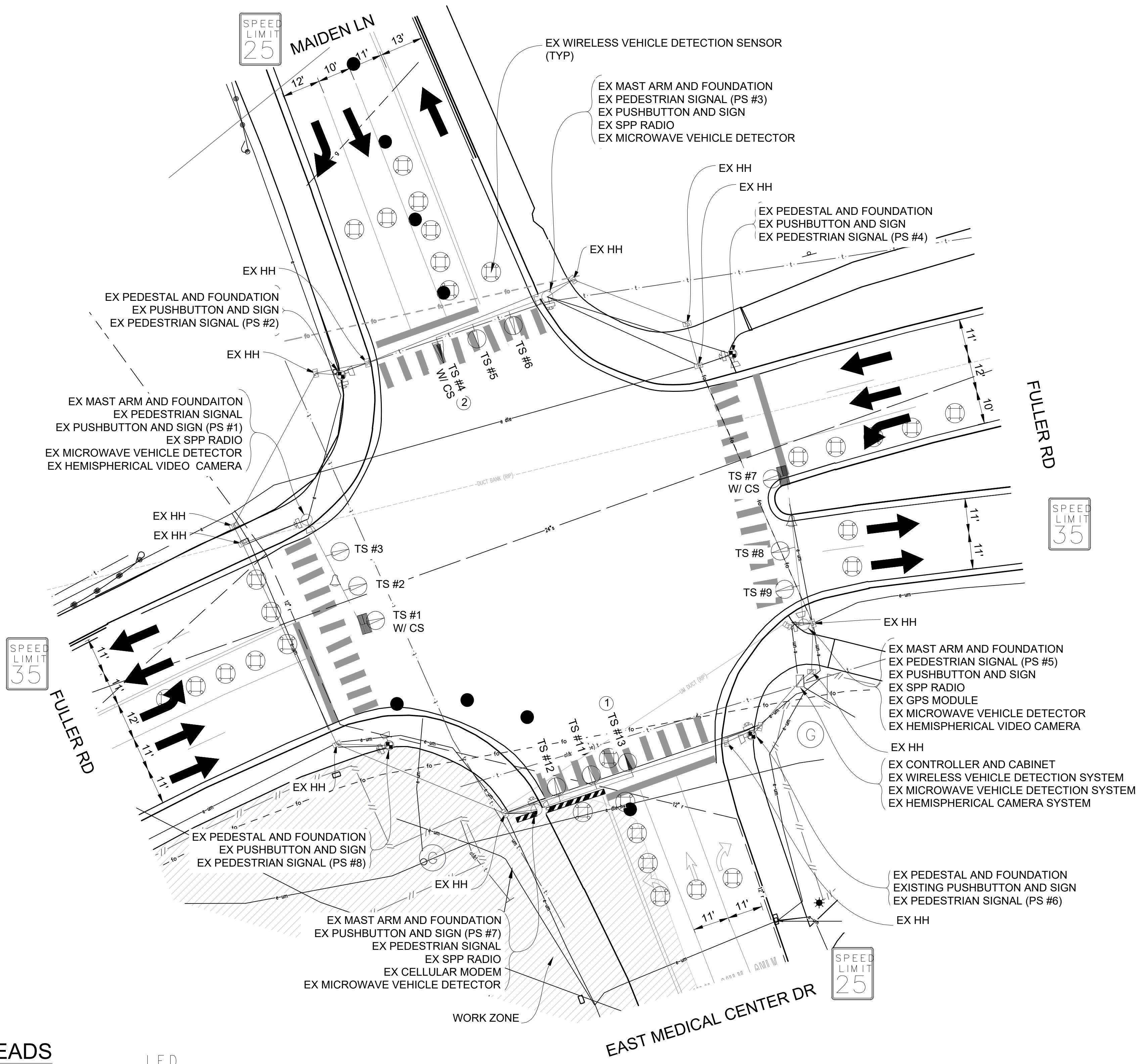
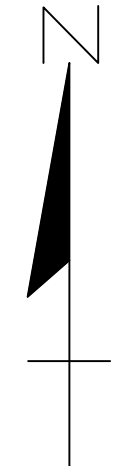
SIGNALS	
OPENINGS:	40
CYCLIC WATTS:	516
STEADY WATTS:	45

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

<b>DLZ</b>					
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY
	ORIGINAL ISSUE	10/6/23	INB	LCM	Leigh Merrill Signature
					Date: 2023.10.06

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS FULLER RD AT E. MED. CENTER RD	
SCALE NTS	0 INCH 1
DRAWING NO.	2021-008-MOT27
SHEET NO.	31 OF 155

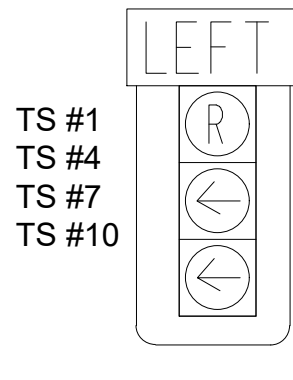
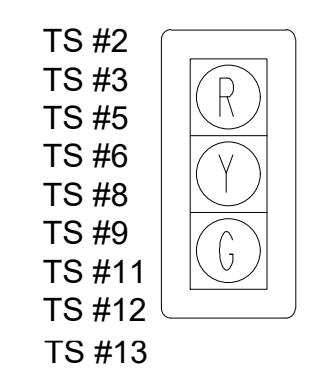


PHASE DIAGRAM

CONTRACTOR TO UTILIZE MOT TYPICAL 163-INT-LD-OUT FOR ALL SIGNAL WORK RELATED TO THIS INTERSECTION  
ROW WAS NOT SURVEYED AND IS NOT MARKED ON PLANS  
TIME OF REMOVAL OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER

LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
①	TS Head, Temp	1 Ea.
②	TS Face, Bag	1 Ea.

SIGNAL HEADS



STAGE 2 INSTALLATION PLAN

NOTE: PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

SIGNALS	
OPENINGS:	40
CYCLIC WATTS:	516
STEADY WATTS:	45

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

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD & GRADE	- REV. NO.

<b>DLZ</b>					
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY
	ORIGINAL ISSUE	10/6/23	INB	LCM	

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

E. MEDICAL CENTER DRIVE  
TRAFFIC SIGNAL PLANS  
FULLER RD AT E. MED. CENTER RD

SCALE 1"=20'

DRAWING NO. 2021-008-MOT28

STAGE 2

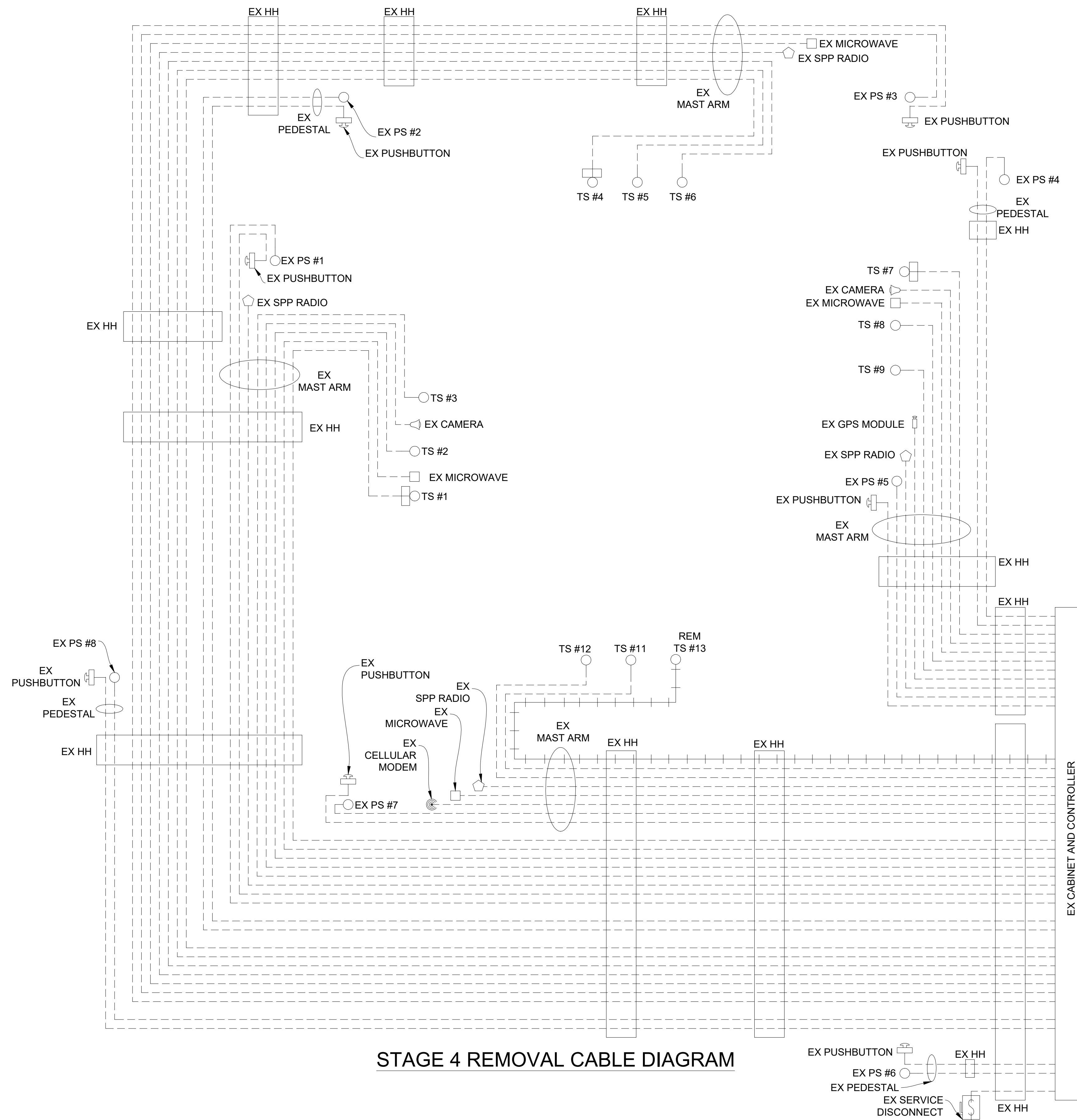
Digitally signed by Leigh Merrill  
Date: 2023.10.06

SHEET NO. 32 OF 155









STAGE 4 REMOVAL CABLE DIAGRAM

- CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE**
1. 1W-3C TRAFFIC SIGNAL CABLES ARE 5/C#16 P.J.
  2. 1W-3C TRAFFIC SIGNALS WITH 12"/27" CASE SIGN CABLES ARE 7/C#16 P.J.
  3. HEMISPHERICAL VIDEO DETECTION CAMERA CABLES ARE CAT5e 600V.

**NOTE:**  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

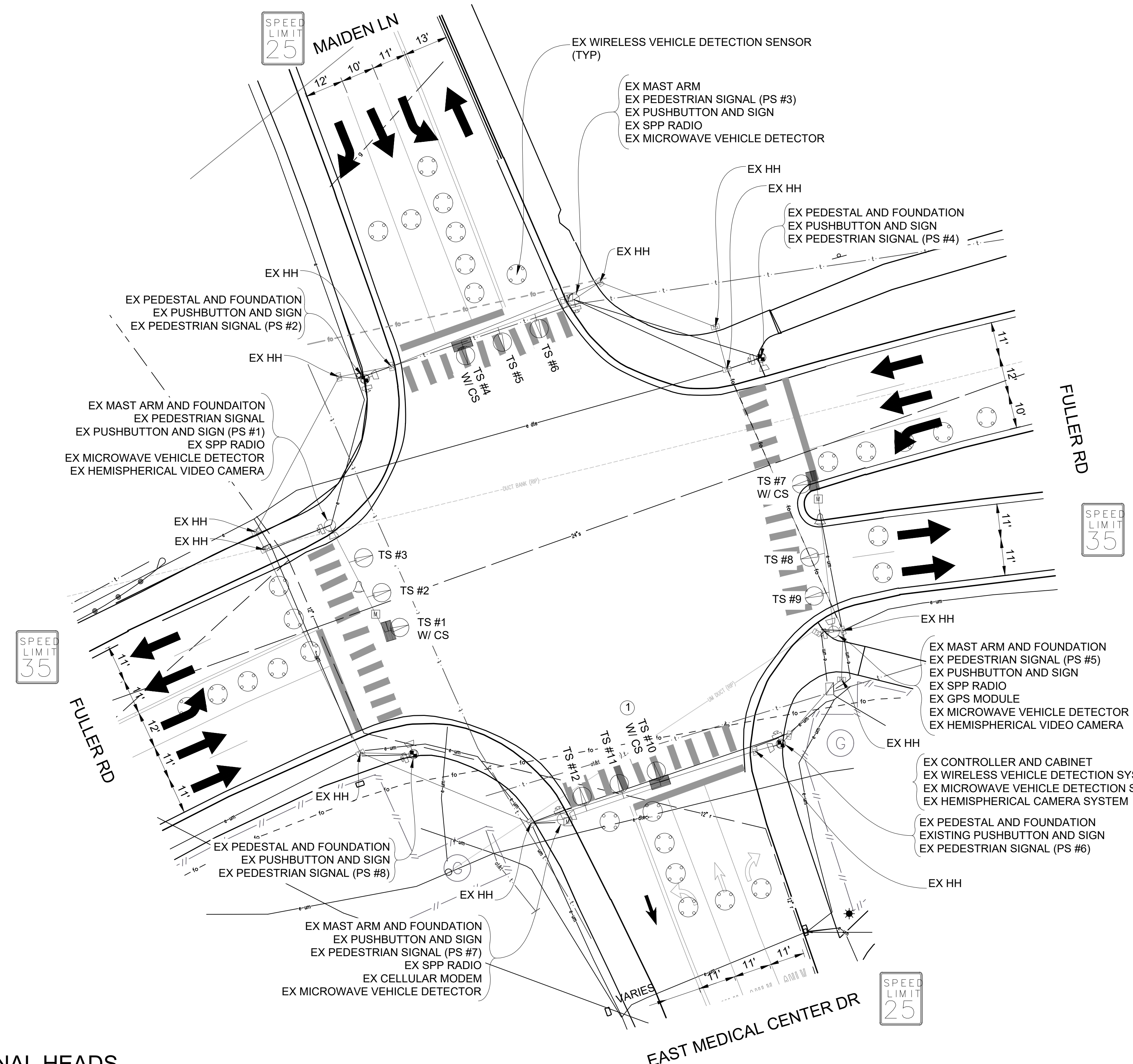
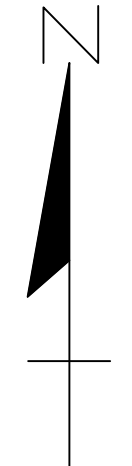
**NOTE:**  
FIBER OPTIC CABLES ARE PRESENT WITHIN EXISTING HANDHOLES BUT SIZE AND ROUTING IS UNKNOWN

**LEGEND**

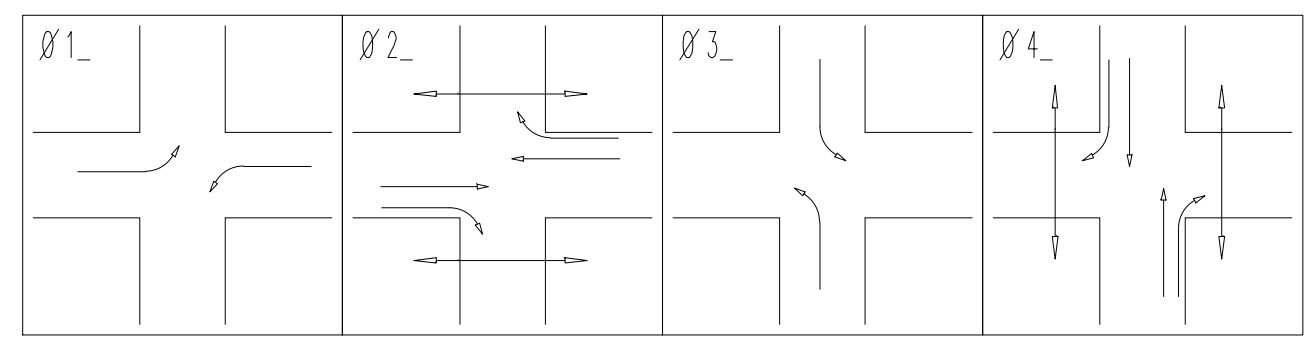
EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
" CONTOUR	" UTILITY POLE & GUY	" GAS LINE	" LEFT EDGE/RD. GRADE	" STORM SEWER & CAT. BAS.	SEE ABOVE
" STORM SEWER & CAT. BAS.	" FIRE HYDRANT ASSEMBLY	" CABLE T.V.	" RIGHT EDGE/RD. GRADE	" WATER MAIN W/F.H. ASSEM.	BENCH MARK
" WATER MAIN & VALVE-IN-WELL	" LIGHT POLE	" ELECTRIC	" CURB & GUTTER	" CONTOUR	SURVEY BOOK
" WATER MAIN & VALVE-IN-BOX	" END SECTION	" SIGN	" EDGE/GRAVEL	" ROAD & GRADE	REV. NO.

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS FULLER RD AT E. MED. CENTER RD	
SCALE NTS	INCH 0 1
DRAWING NO. 2021-008-MOT31	
STAGE 4	
Digitally signed by Leigh Merrill Date: 2023.10.06	
APPROVED BY: <i>[Signature]</i>	
SHEET NO. 35 OF 155	



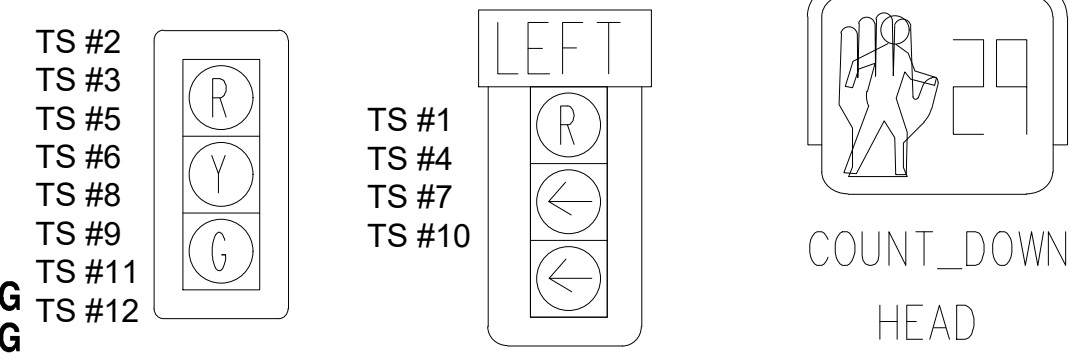
CONTRACTOR TO UTILIZE MOT TYPICAL 163-INT-LD-OUT FOR ALL SIGNAL WORK RELATED TO THIS INTERSECTION



PHASE DIAGRAM

LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
①	TS, One Way Mast Arm Mtd, Salv	1 Ea.

SIGNAL HEADS



STAGE 4 INSTALLATION PLAN

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

SIGNALS	
OPENINGS:	40
CYCLIC WATTS:	432
STEADY WATTS:	60

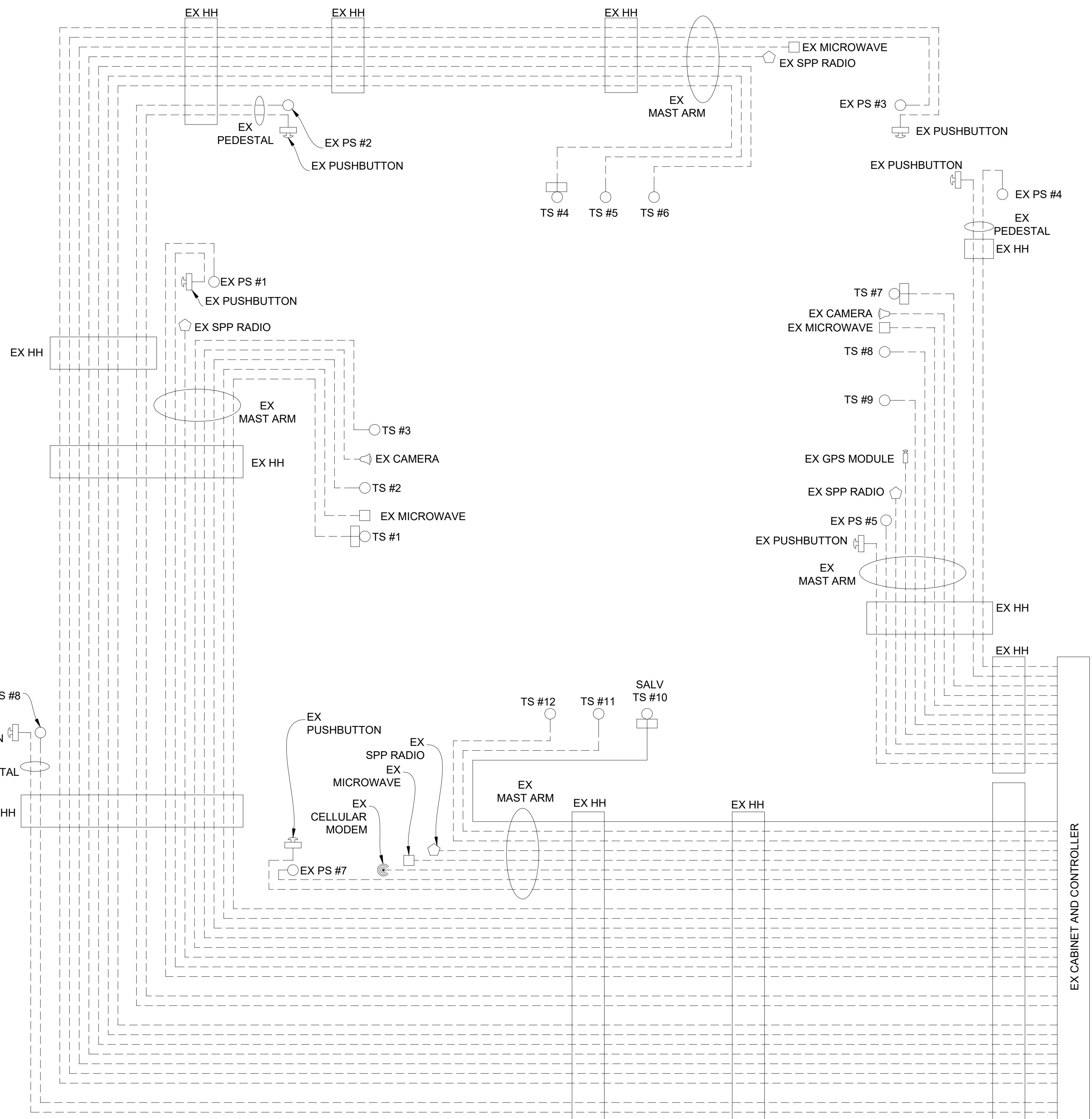
3 WORKING DAYS!  
BEFORE YOU DIG  
CALL MISS DIG  
800-482-7171  
(TOLL FREE)

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD & GRADE	- REV. NO.

<b>DLZ</b>					
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY
	ORIGINAL ISSUE	10/6/23	INB	LCM	

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS FULLER RD AT E. MED. CENTER RD	
STAGE 4	
Digitally signed by Leigh Merrill Date: 2023.10.06	
SCALE 1"=20'	INCH 0 1
DRAWING NO. 2021-008-MOT32	SHEET NO. 36 OF 155



STAGE 4 INSTALLATION CABLE DIAGRAM

**CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE**

1. 1W-3C TRAFFIC SIGNAL CABLES ARE 5/C#16 P.J.
2. 1W-3C TRAFFIC SIGNALS WITH 12"/27" CASE SIGN CABLES ARE 7/C#16 P.J.
3. HEMISPHERICAL VIDEO DETECTION CAMERA CABLES ARE CAT5e 600V.

**NOTE:**  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

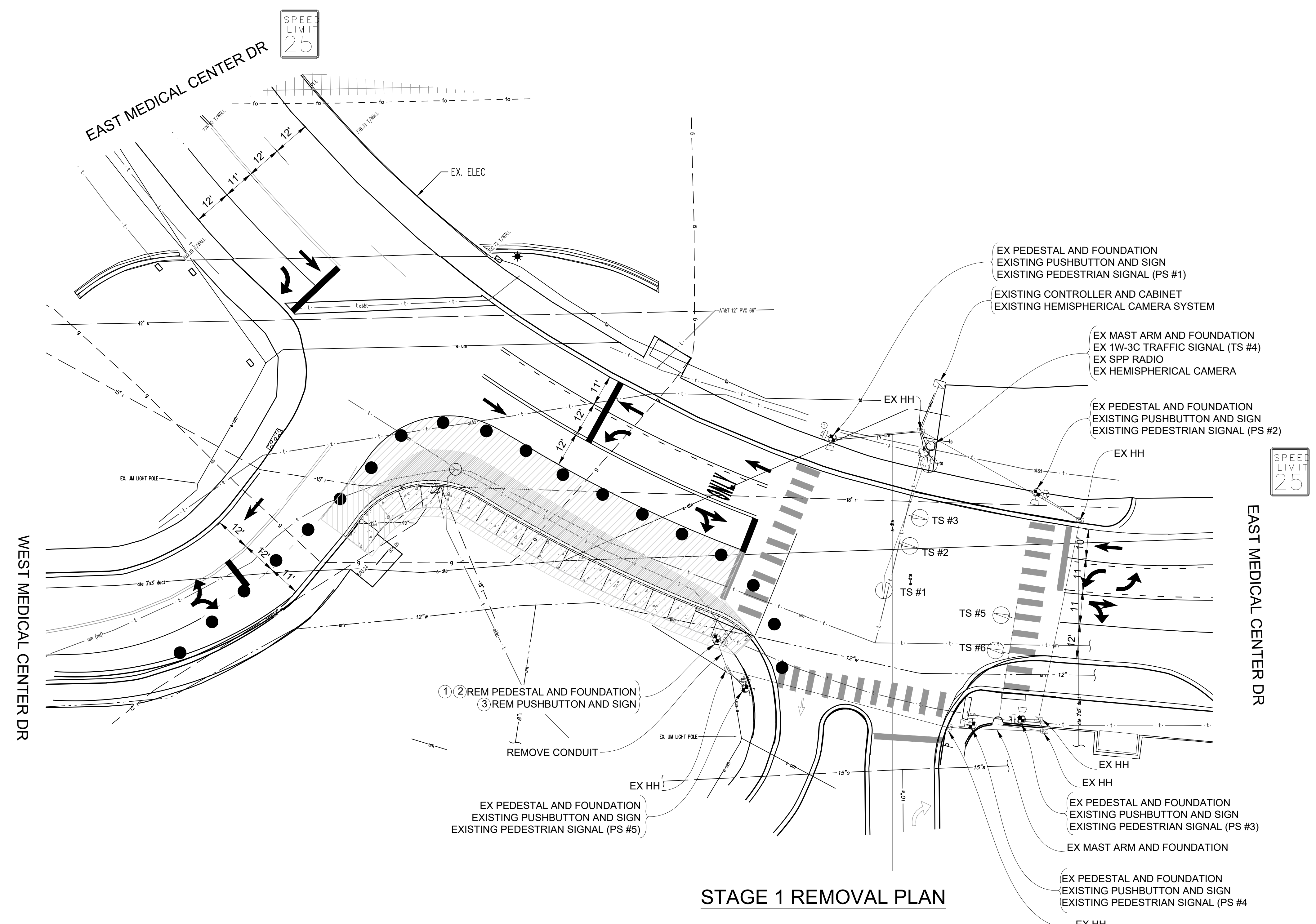
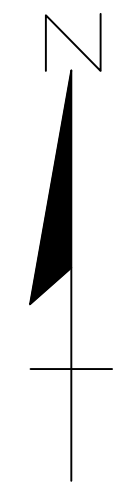
**NOTE:**  
FIBER OPTIC CABLES ARE PRESENT WITHIN EXISTING HANDHOLES BUT SIZE AND ROUTING IS UNKNOWN

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS FULLER RD AT E. MED. CENTER RD	
SCALE NTS	INCH 0 1
DRAWING NO. 2021-008-MOT33	
STAGE 4	
Digitally signed by Leigh Merrill Signature Date: 2023.10.06	
APPROVED BY	
SHEET NO. 37 OF 155	



**STAGE 1 REMOVAL PLAN**

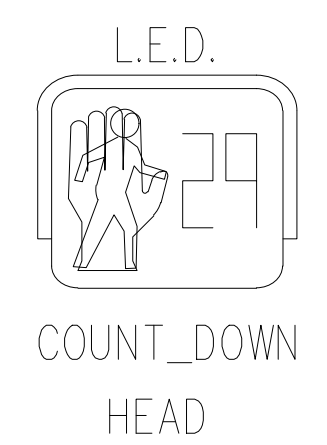
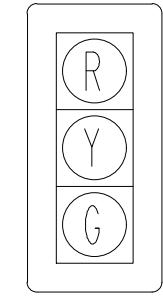
CONTRACTOR TO UTILIZE MOT TYPICAL A FOR INSTALLATION OF TEMPORARY SIGNALS PRIOR TO STAGE 1

TIME OF BAGGING AND UNBAGGING OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER.

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

**SIGNAL HEADS**

- TS #1
- TS #2
- TS #3
- TS #4
- TS #5
- TS #6



**LIST OF MATERIAL**

NO.	ITEM	QUANTITIES
①	Pedestal Fdn, Rem	1 Ea
②	Pedestal, Rem	1 Ea
③	Pushbutton, Rem	1 Ea
	Conduit, Rem	12 Ft

_ SIGNALS _	
OPENINGS:	55
CYCLIC WATTS:	733
STEADY WATTS:	45

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

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- - - - -	- S -	- t -	- - - - -	- S -	- - - - -
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- 847 -	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- r -	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- W -	- END SECTION	- SIGN	- EDGE/GRAVEL	- 847 -	- REV. NO.
- W -					- DESCRIPTION
					- DATE
					- DR. BY
					- CH. BY

**DLZ**

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

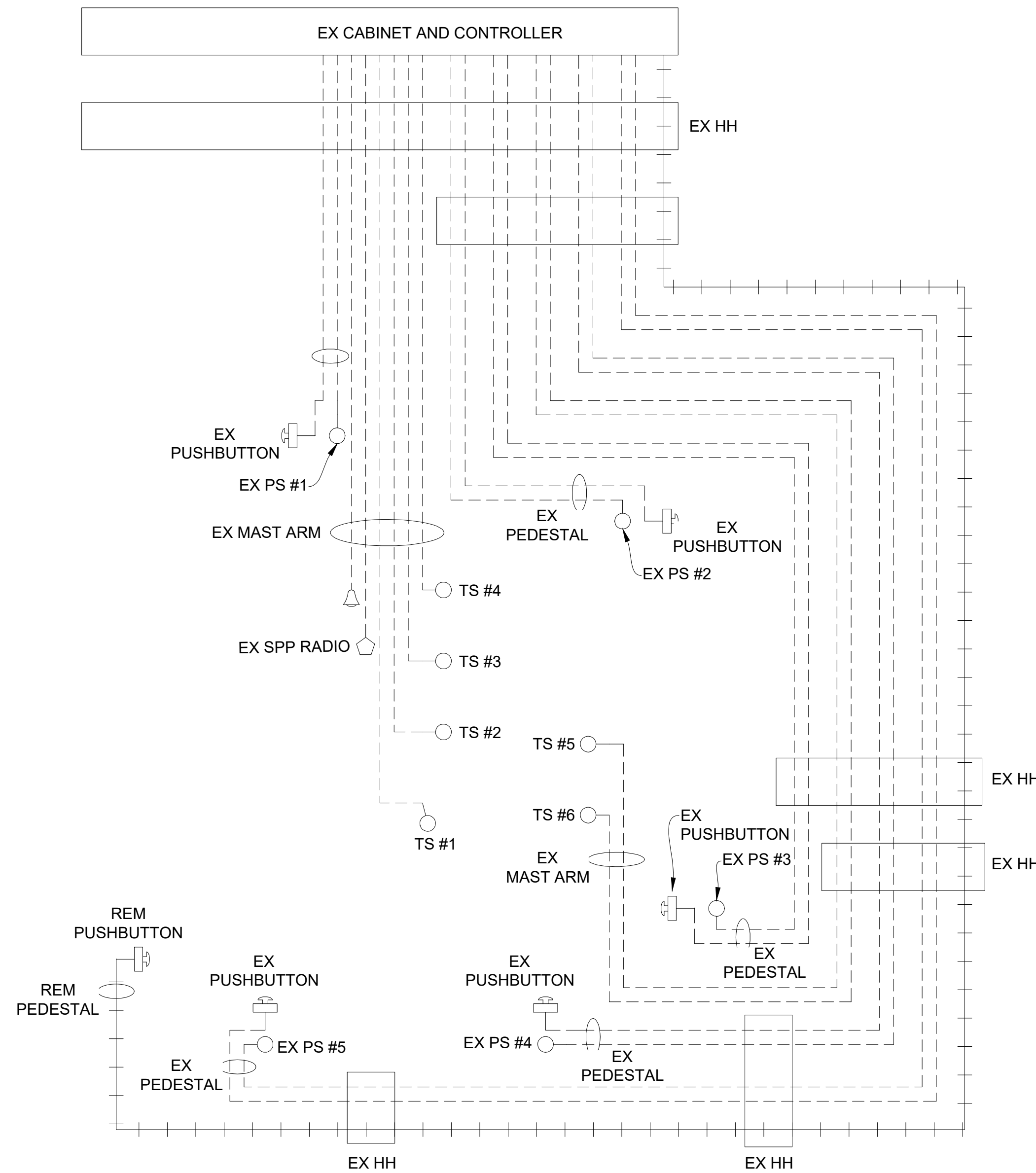
**E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS**  
FULLER RD AT E. MED. CENTER RD

SCALE: 1"=20'

DRAWING NO. 2021-008-MOT34

SHEET NO. 38 OF 155

APPROVED BY: Leigh Merrill  
Date: 2023.10.06



NOTE:  
 PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS  
 AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN.  
 CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE  
 ORDERING ANY MATERIAL OR MAKING ANY CHANGES

_ SIGNALS _	
OPENINGS:	55
CYCLIC WATTS:	733
STEADY WATTS:	45

STAGE 1 REMOVAL CABLE DIAGRAM

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. C GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD C GRADE	REV. NO.



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

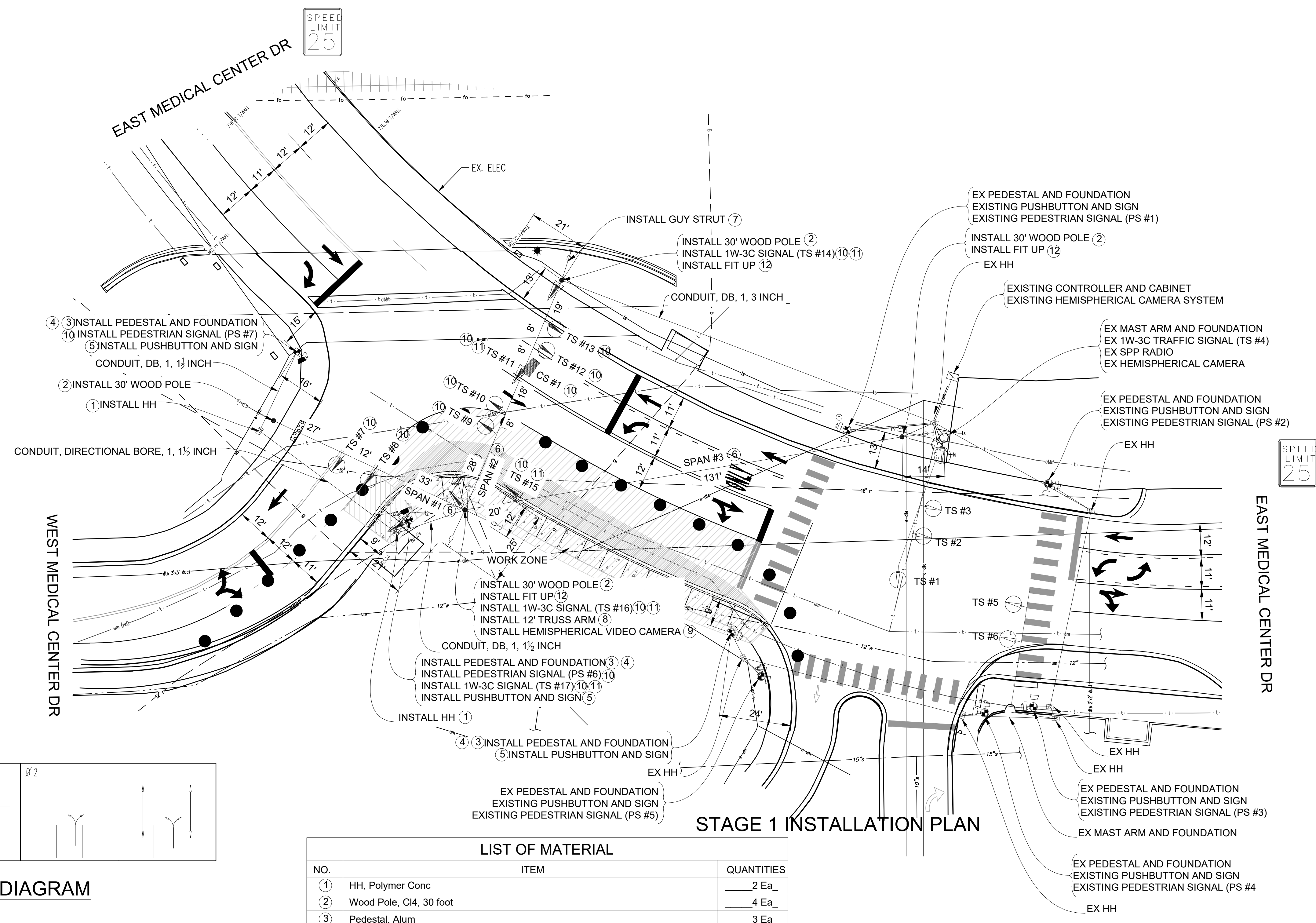
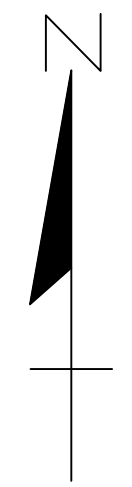
E. MEDICAL CENTER DRIVE  
 TRAFFIC SIGNAL PLANS  
 FULLER RD AT E. MED. CENTER RD  
 STAGE 1

SCALE	0	1
NTS	INCH	
DRAWING NO.	2021-008-MOT35	
SHEET NO.	39	OF 155

Digitally signed by Leigh Merrill  
 Signature Date: 2023.10.06

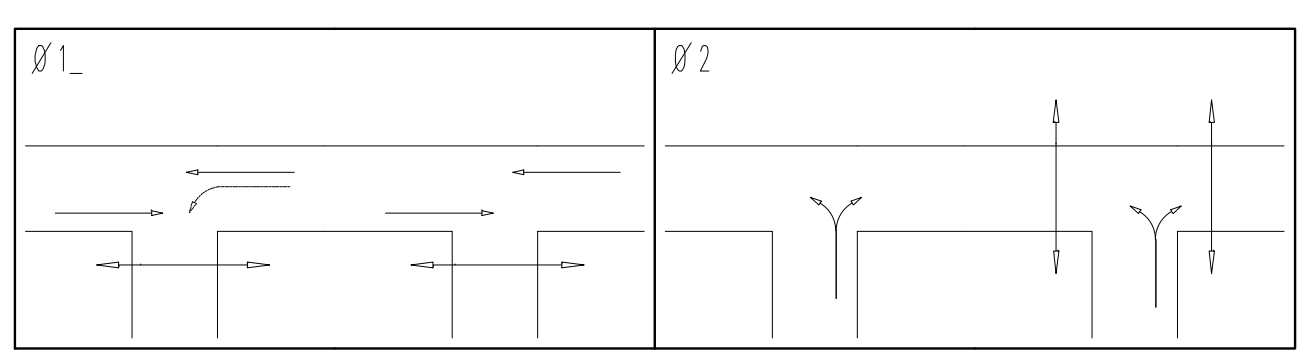
APPROVED BY

LEIGH C. MERRILL P.E. 203243040010. 6201061025

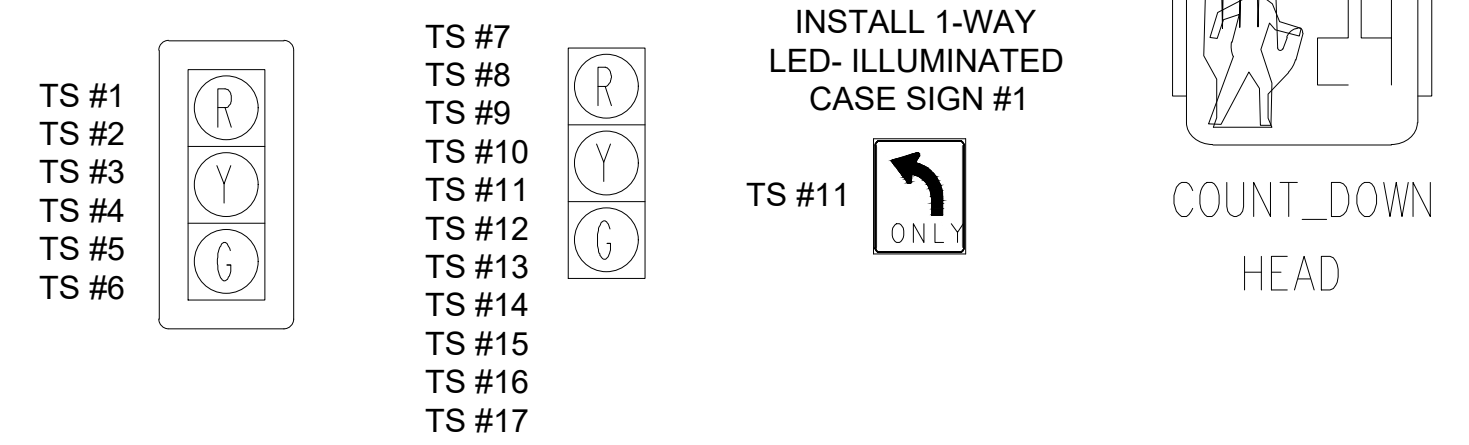


### STAGE 1 INSTALLATION PLAN

### PHASE DIAGRAM



### SIGNAL HEADS



NO.	ITEM	QUANTITIES
1	HH, Polymer Conc	2 Ea
2	Wood Pole, C14, 30 foot	4 Ea
3	Pedestal, Alum	3 Ea
4	Pedestal, Fdn	3 Ea
5	Pushbutton and Sign	3 Ea
6	Span Wire	3 Ea
7	Strut Guy	1 Ea
8	Bracket, Truss, With 12 Foot Arm	1 Ea
9	Hemispherical Video Detection Camera	1 Ea
10	TS Head, Temp	13 Ea
11	TS Face, Bag	5 Ea
12	Wood Pole, Fit Up, TS Cable Pole	3 Ea
	Conduit, Directional Bore, 1, 1 1/2 inch	60 Ft
	Conduit, DB, 1, 1 1/2 inch	80 Ft
	Conduit, DB, 1, 3 inch	150 Ft

CONTRACTOR TO UTILIZE MOT TYPICAL A FOR INSTALLATION OF TEMPORARY SIGNALS PRIOR TO STAGE 1

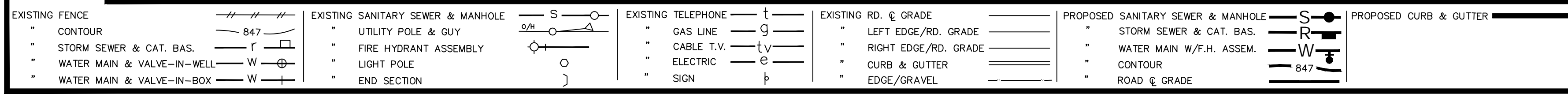
TIME OF BAGGING AND UNBAGGING OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER.

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

SIGNALS	
OPENINGS:	55
CYCLIC WATTS:	733
STEADY WATTS:	45

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

### LEGEND



**DLZ**

SEE ABOVE				
BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

E. MEDICAL CENTER DRIVE  
TRAFFIC SIGNAL PLANS  
FULLER RD AT E. MED. CENTER RD

SCALE: 1"=20'

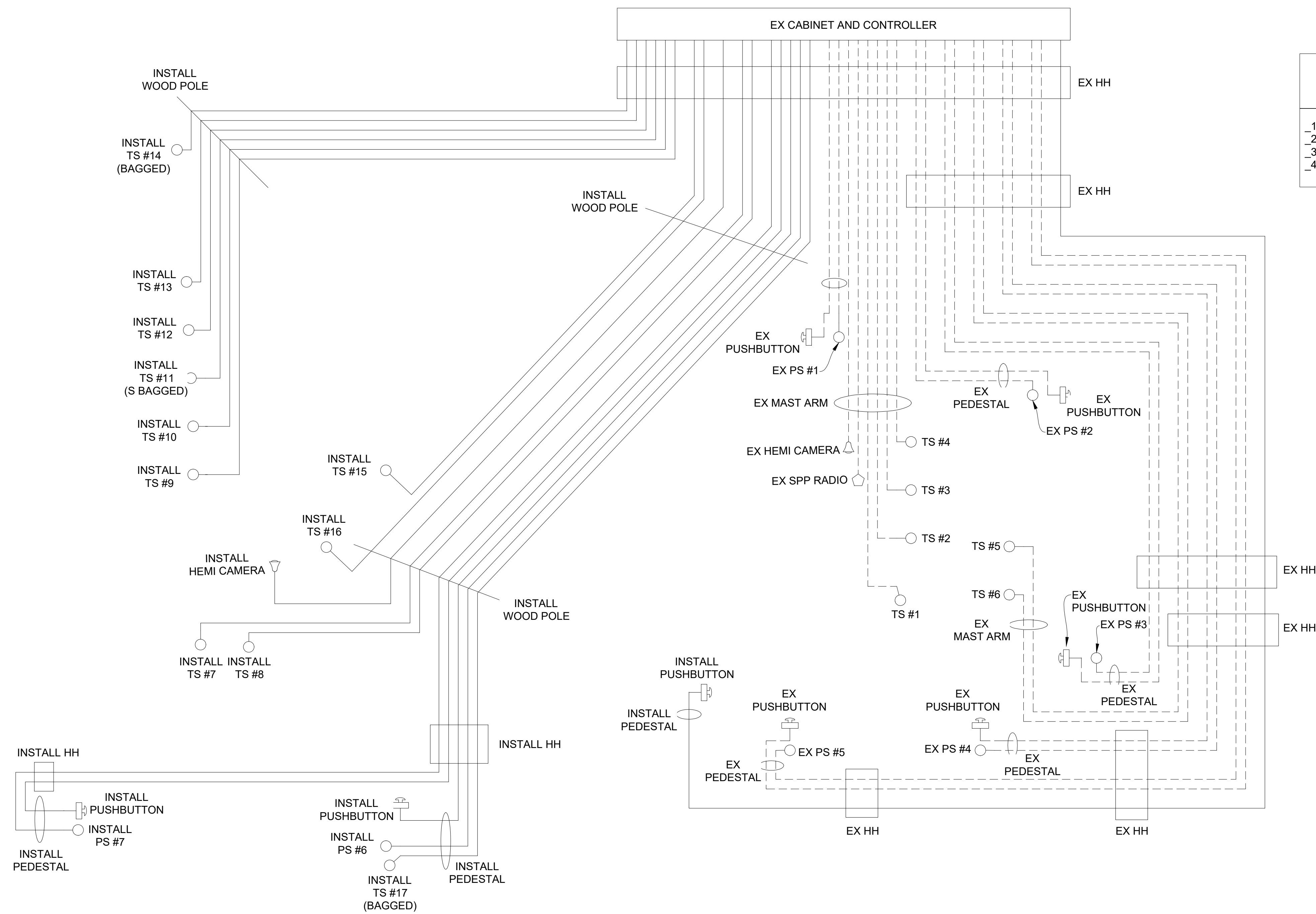
DRAWING NO. 2021-008-MOT36

STAGE 1

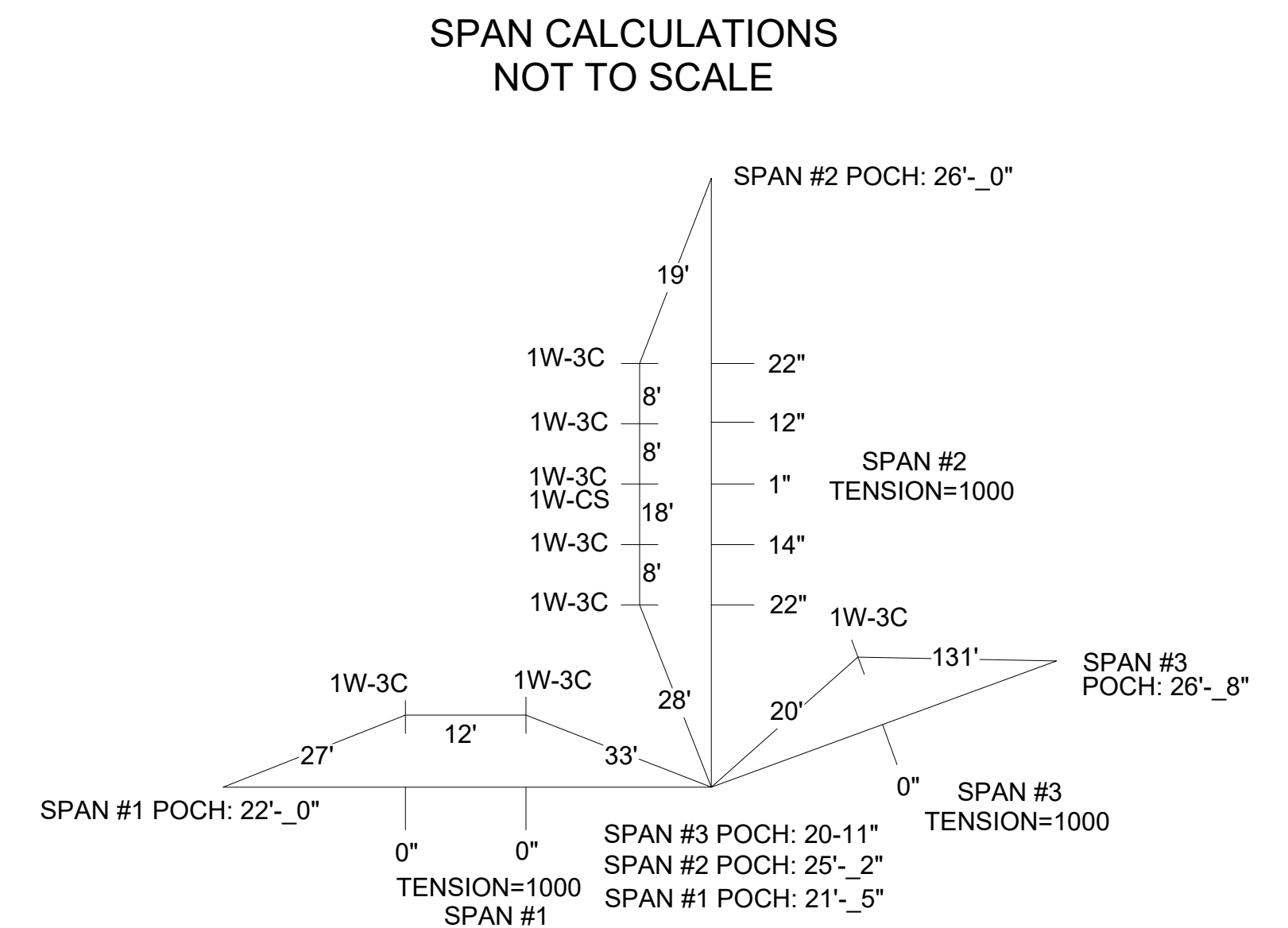
DATE: 2023.10.06

SHEET NO. 40 OF 155

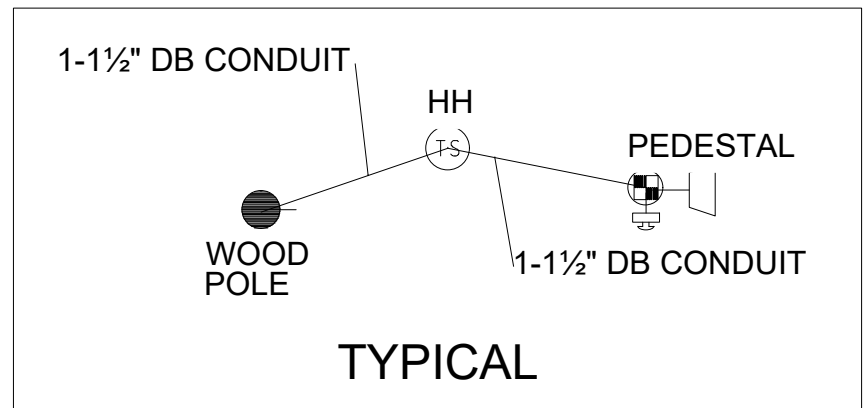




- CABLES TO BE USED UNLESS SPECIFIED OTHERWISE**
1. TRAFFIC SIGNAL CABLES ARE 5/C#16 PJ.
  2. 24" X 30" L.E.D. CASE SIGNS ARE 4/C#16 PJ.
  3. PEDESTRIAN SIGNALS CABLES ARE 7/C#16 PJ.
  4. PUSHBUTTON CABLES ARE 2/C#16 SHIELDED PJ.



SHOWN STEMS LENGTH ARE SUGGESTED ONLY



**STAGE 1 INSTALLATION CABLE DIAGRAM**

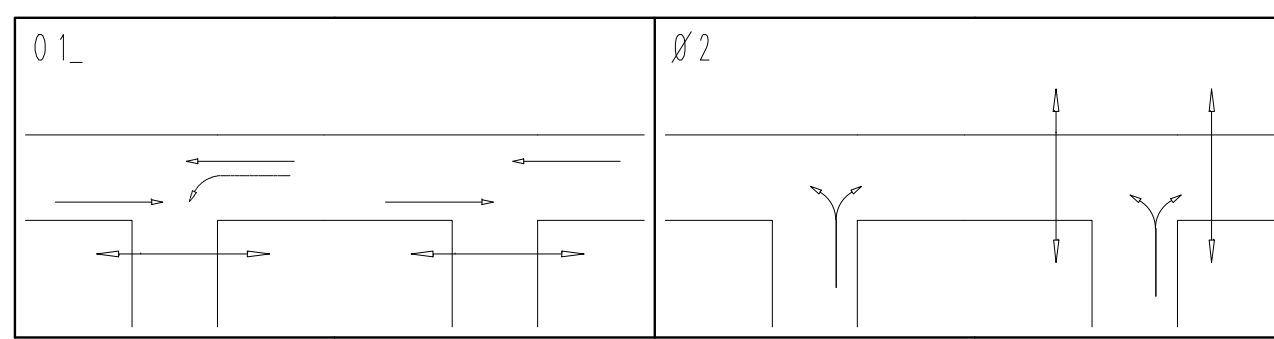
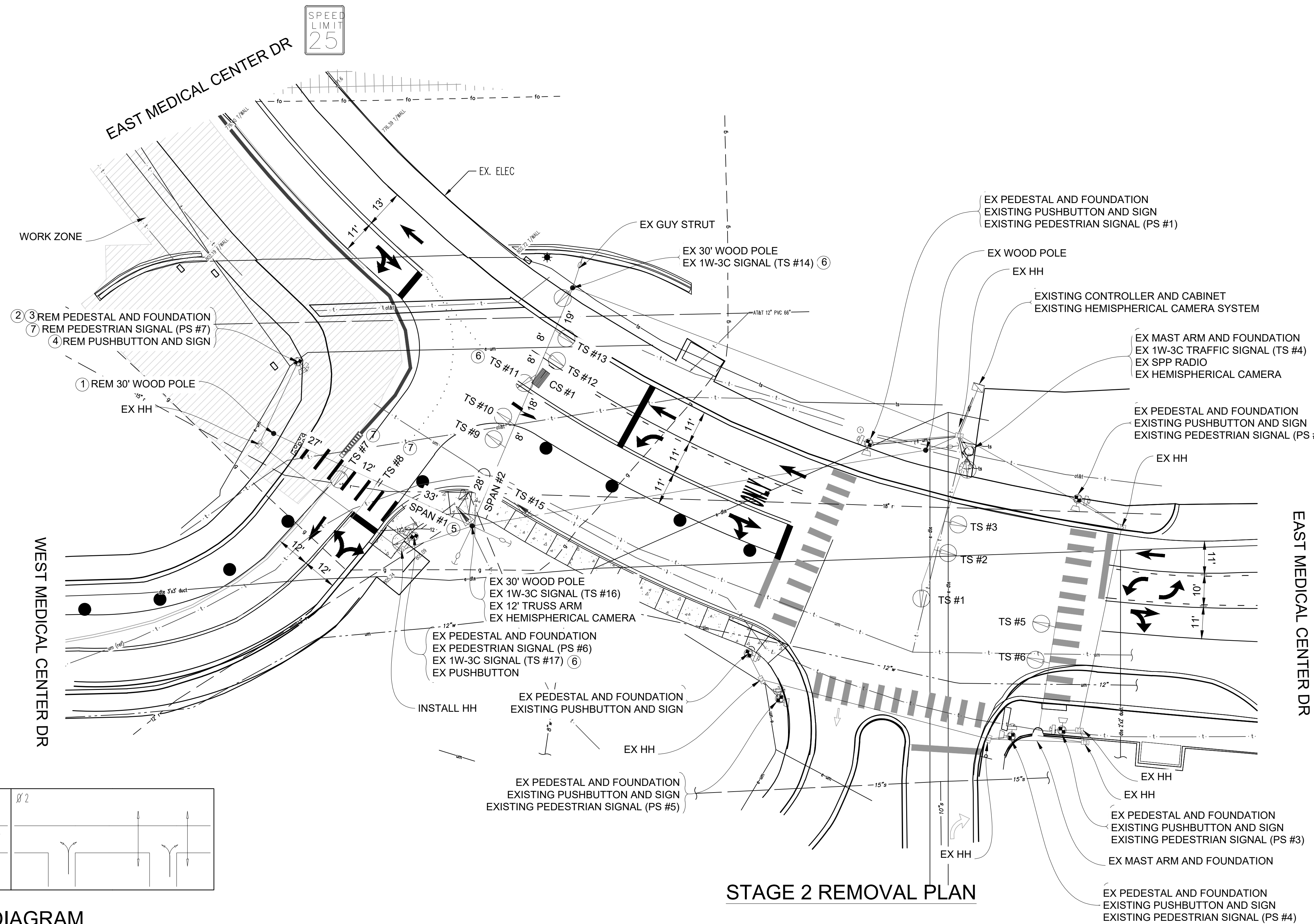
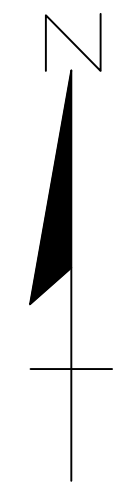
NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

**LEGEND**

EXISTING FENCE	847	EXISTING SANITARY SEWER & MANHOLE	S	EXISTING TELEPHONE	t	EXISTING RD. & GRADE	---	PROPOSED SANITARY SEWER & MANHOLE	S	PROPOSED CURB & GUTTER	---
CONTOUR	847	UTILITY POLE & GUY	U/G	GAS LINE	G	LEFT EDGE/RD. GRADE	---	STORM SEWER & CAT. BAS.	S	SEE ABOVE	
STORM SEWER & CAT. BAS.	847	FIRE HYDRANT ASSEMBLY	F	CABLE T.V.	t	RIGHT EDGE/RD. GRADE	---	WATER MAIN W/F.H. ASSEM.	W	BENCH MARK	
WATER MAIN & VALVE-IN-WELL	W	LIGHT POLE	L	ELECTRIC	e	CURB & GUTTER	---	CONTOUR	847	SURVEY BOOK	
WATER MAIN & VALVE-IN-BOX	W	END SECTION	]	SIGN	β	EDGE/GRAVEL	---	ROAD & GRADE	---	REV. NO.	

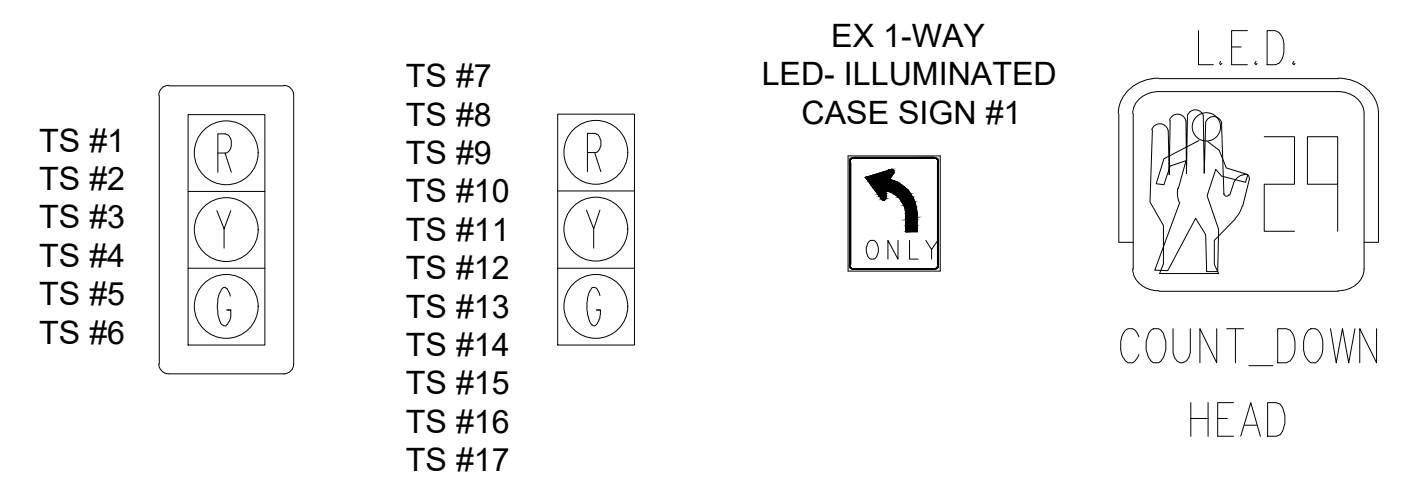
<b>DLZ</b>	
REV. NO.	DESCRIPTION
DATE	DR. BY
CH. BY	

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS FULLER RD AT E. MED. CENTER RD	
SCALE NTS	INCH 0 1
DRAWING NO. 2021-008-MOT37	SHEET NO. 41 OF 155
STAGE 1 APPROVED BY: Leigh Merrill Date: 2023.10.06	



PHASE DIAGRAM

SIGNAL HEADS



LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
1	Wood Pole, Rem	1 Ea.
2	Pedestal Fdn, Rem	1 Ea.
3	Pedestal, Rem	1 Ea.
4	Pushbutton, Rem	1 Ea.
5	Span Wire, Rem	1 Ea.
6	TS Face, Bag, Rem	3 Ea.
7	Remove Traffic Signal (Paid for Under "TS Head, Temp")	3 Ea.
	Conduit, Rem	30 Ft.

CONTRACTOR TO UTILIZE WORK ZONES AND LANE CLOSURES FOR INSTALLATION OF TRAFFIC SIGNALS PRIOR TO STAGE 2

TIME OF REMOVAL OR ADJUSTMENT OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER

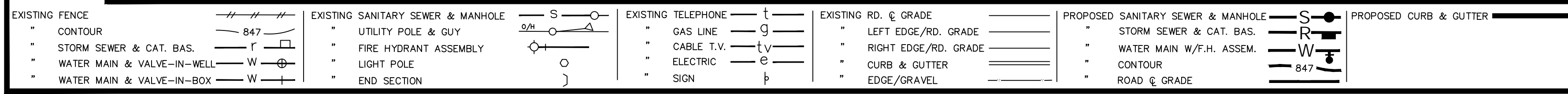
TIME OF BAGGING AND UNBAGGING OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER.

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLELY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

SIGNALS	
OPENINGS:	52
CYCLIC WATTS:	690
STEADY WATTS:	15

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

LEGEND



**DLZ**

SEE ABOVE

BENCH MARK SURVEY BOOK

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
1	ORIGINAL ISSUE	10/6/23	INB	LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

E. MEDICAL CENTER DRIVE  
TRAFFIC SIGNAL PLANS  
FULLER RD AT E. MED. CENTER RD

SCALE 1"=20'

DRAWING NO. 2022-008-MOT38

STAGE 2

DATE: 2023.10.06

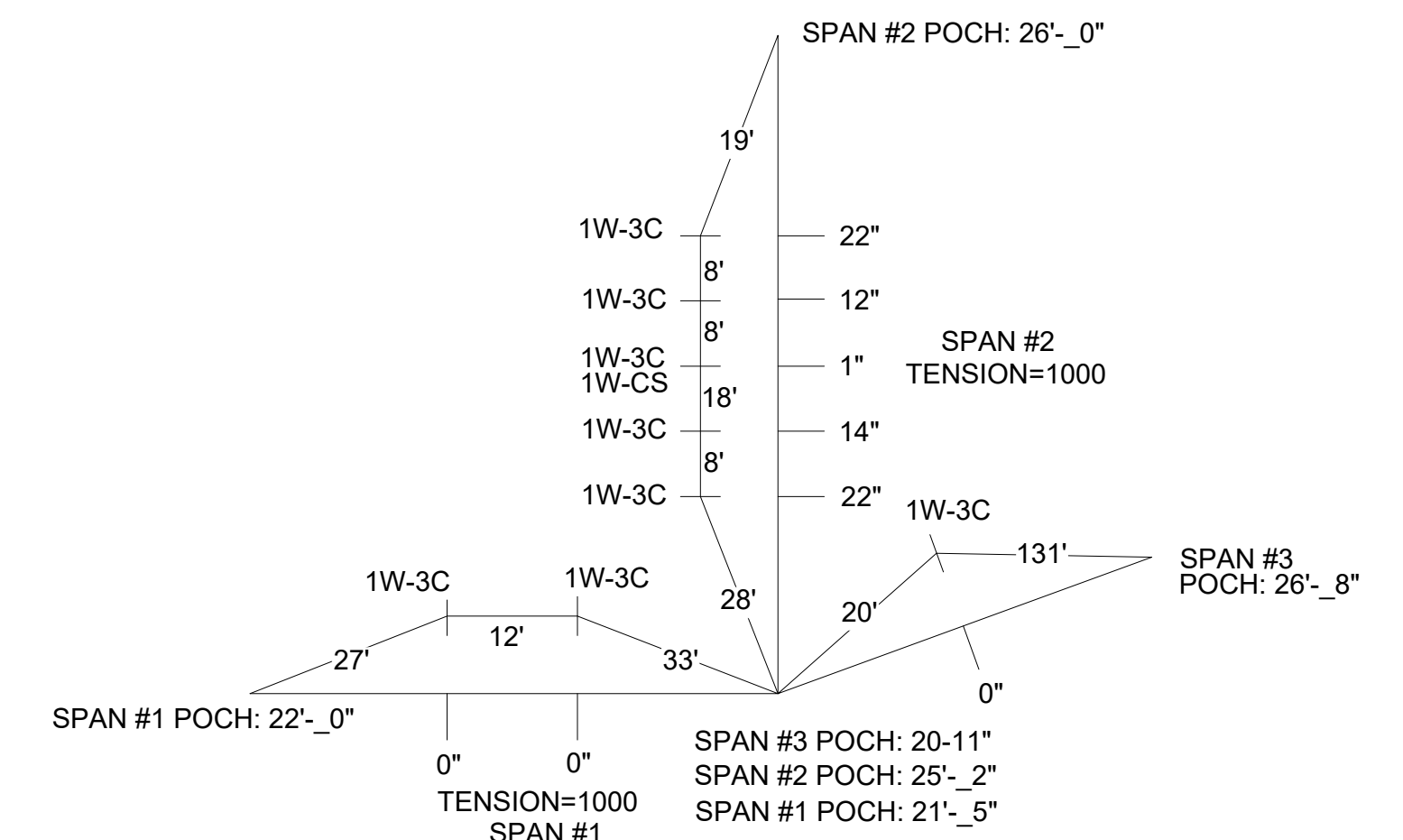
SHEET NO. 42 OF 155

APPROVED BY: Leigh Merrill

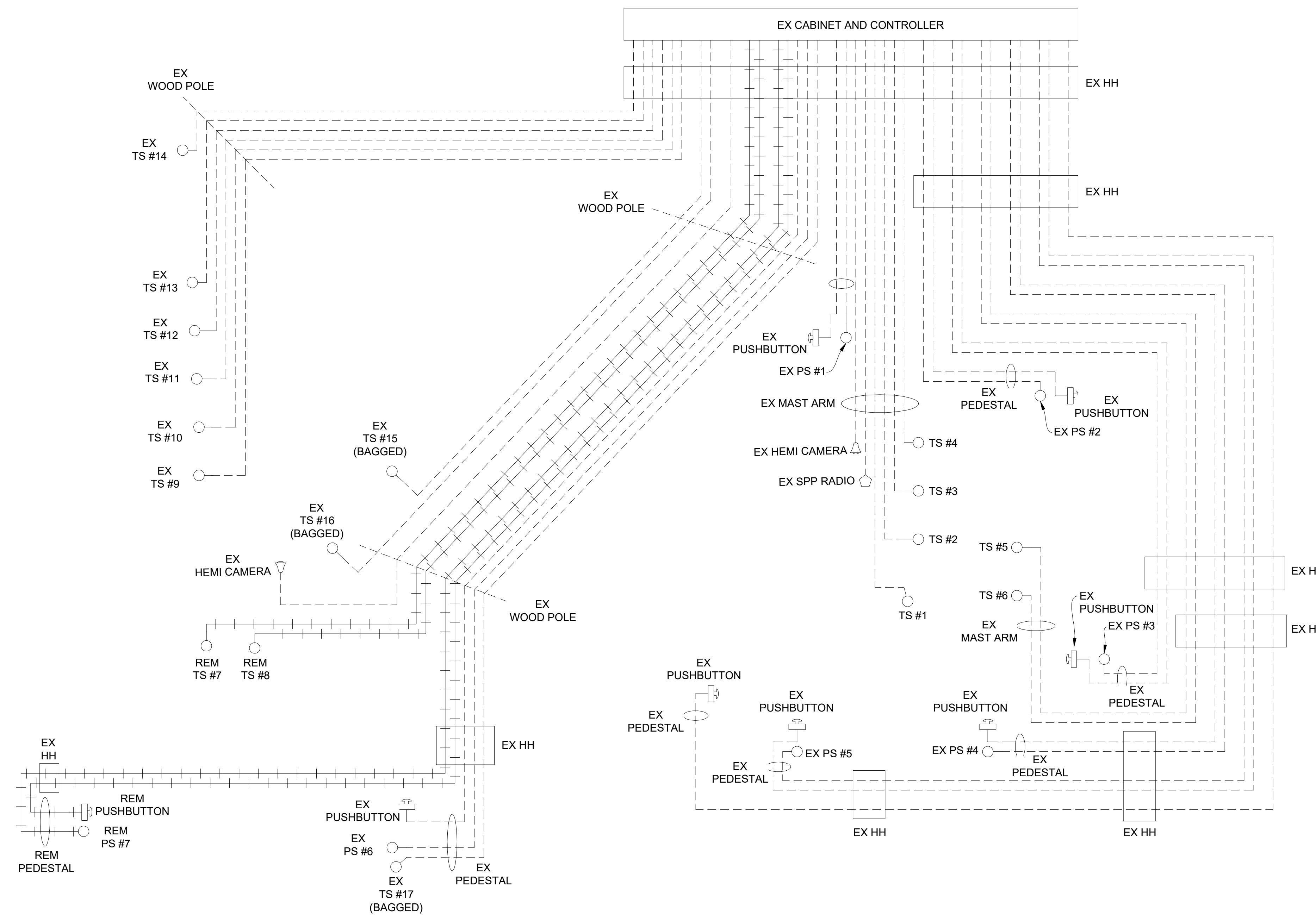
**CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE**

1. TRAFFIC SIGNAL CABLES ARE 5/C#16 PJ.
2. 24" X 30" L.E.D. CASE SIGNS ARE 4/C#16 PJ.
3. PEDESTRIAN SIGNALS CABLES ARE 7/C#16 PJ.
4. PUSHBUTTON CABLES ARE 2/C#16 SHIELDED PJ.

**SPAN CALCULATIONS  
NOT TO SCALE**



SHOWN STEMS LENGTH ARE SUGGESTED ONLY



**STAGE 2 REMOVAL CABLE DIAGRAM**

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

E. MEDICAL CENTER DRIVE  
TRAFFIC SIGNAL PLANS  
FULLER RD AT E. MED. CENTER RD

SIGNALS	
OPENINGS:	55
CYCLIC WATTS:	733
STEADY WATTS:	45

SCALE	0 INCH 1
DRAWING NO.	2021-008-MOT39
SHEET NO.	43 OF 155

DATE	10/6/23	DR. BY	INB	CH. BY	LCM
DESCRIPTION	ORIGINAL ISSUE	DATE	DR. BY	CH. BY	APPROVED BY

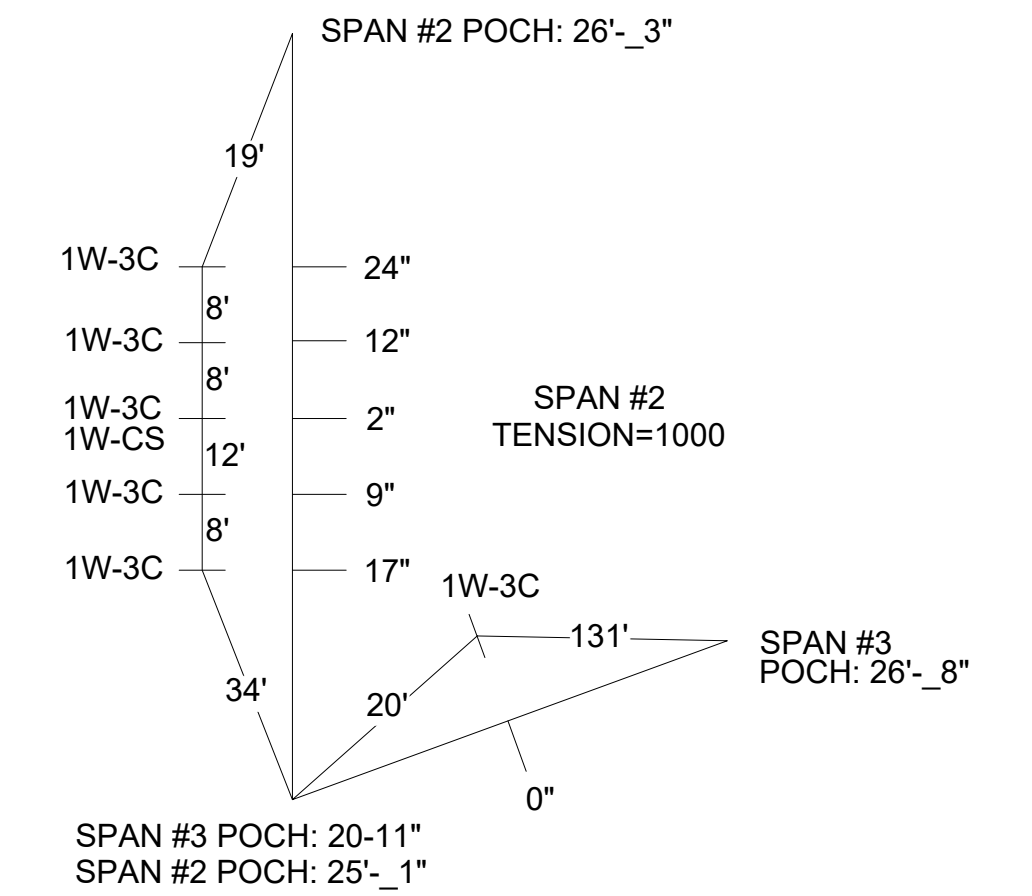
STAGE 2  
Digitally signed by Leigh Merrill  
Date: 2023.10.06



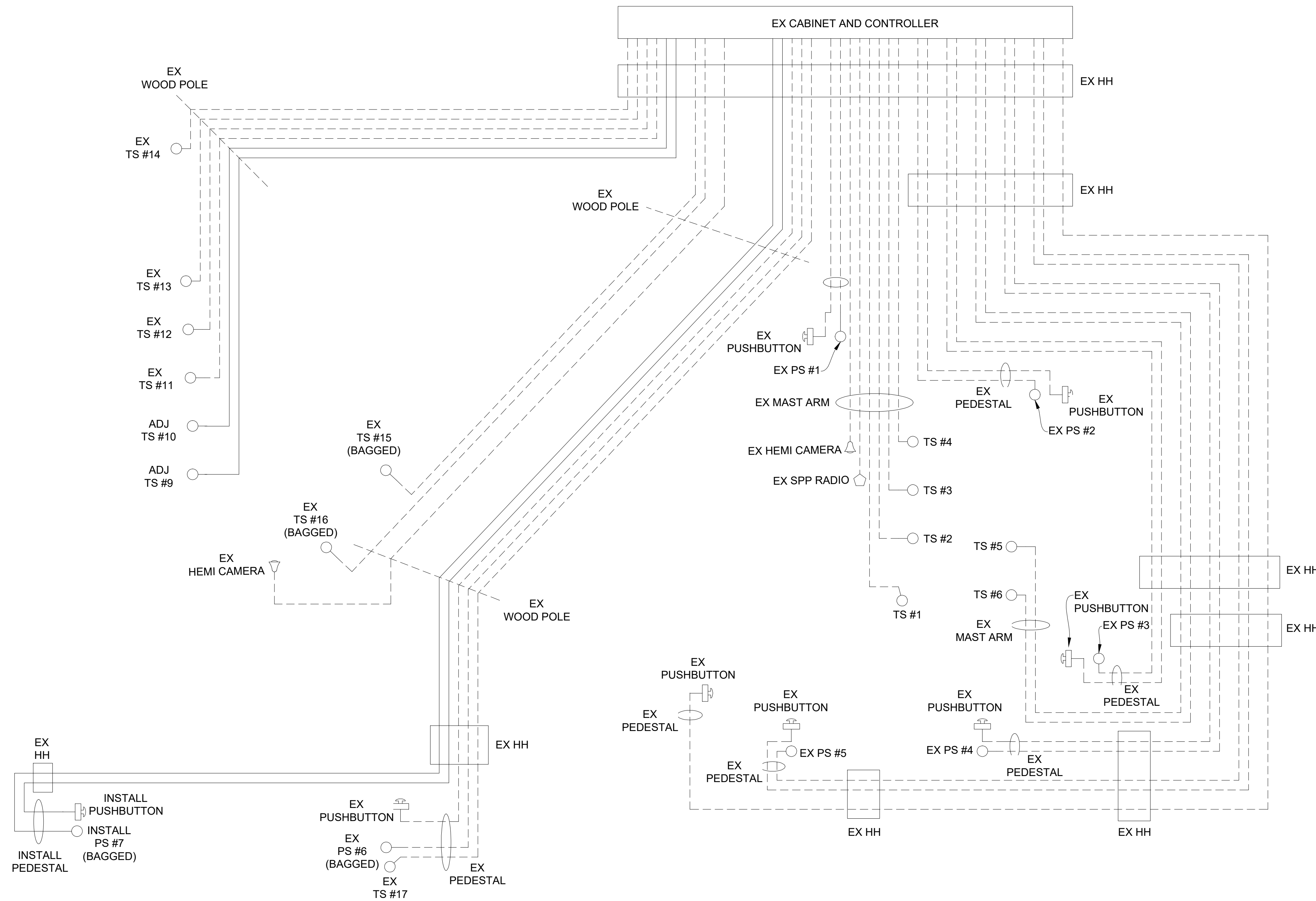
**CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE**

1. TRAFFIC SIGNAL CABLES ARE 5/C#16 PJ.
2. 24" X 30" L.E.D. CASE SIGNS ARE 4/C#16 PJ.
3. PEDESTRIAN SIGNALS CABLES ARE 7/C#16 PJ.
4. PUSHBUTTON CABLES ARE 2/C#16 SHIELDED PJ.

**SPAN CALCULATIONS  
NOT TO SCALE**



SHOWN STEMS LENGTH ARE SUGGESTED ONLY



**STAGE 3 CABLE DIAGRAM**

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

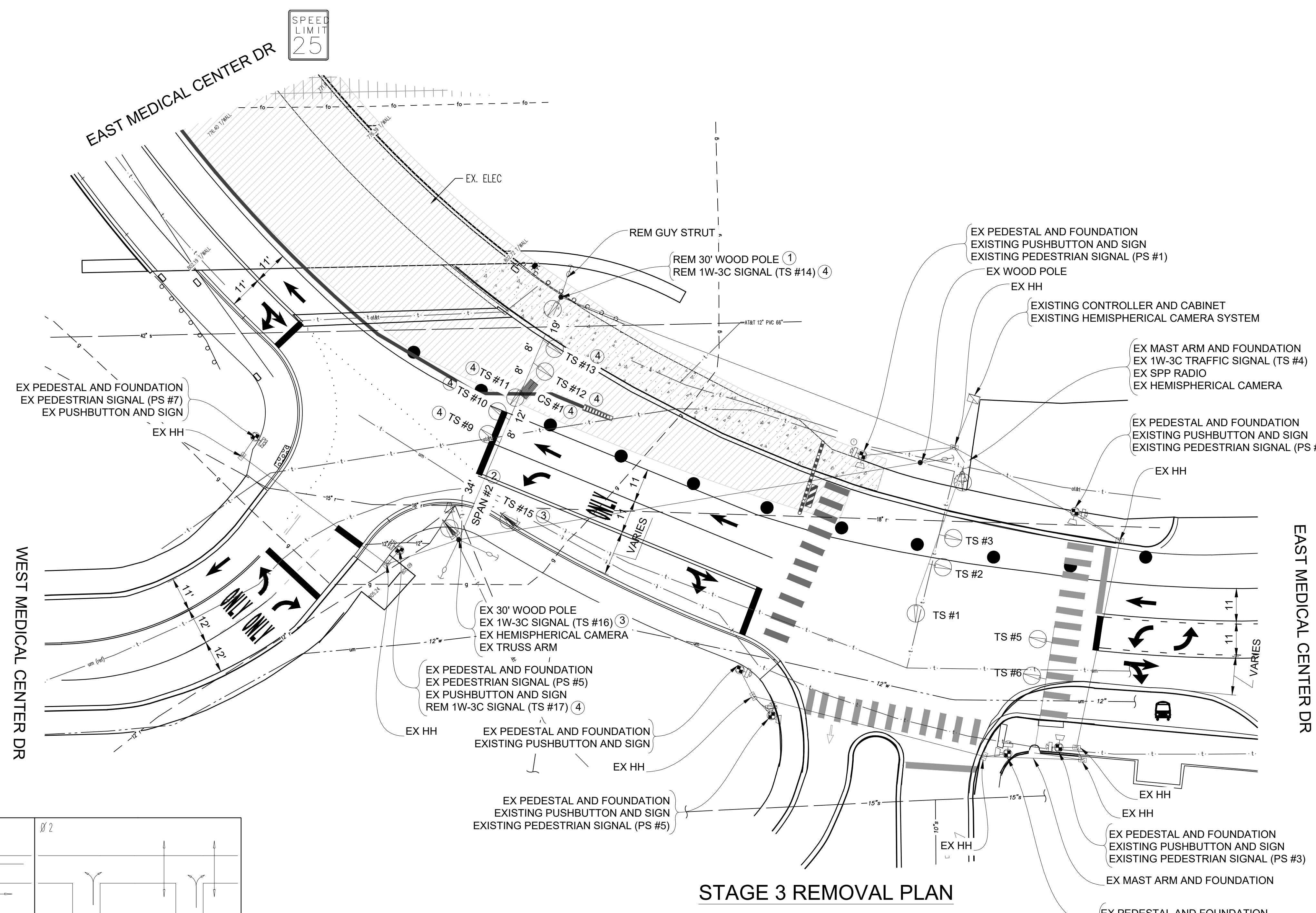
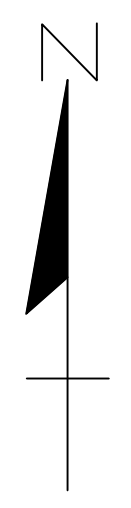
_ SIGNALS _	
OPENINGS:	49
CYCLIC WATTS:	647
STEADY WATTS:	45

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

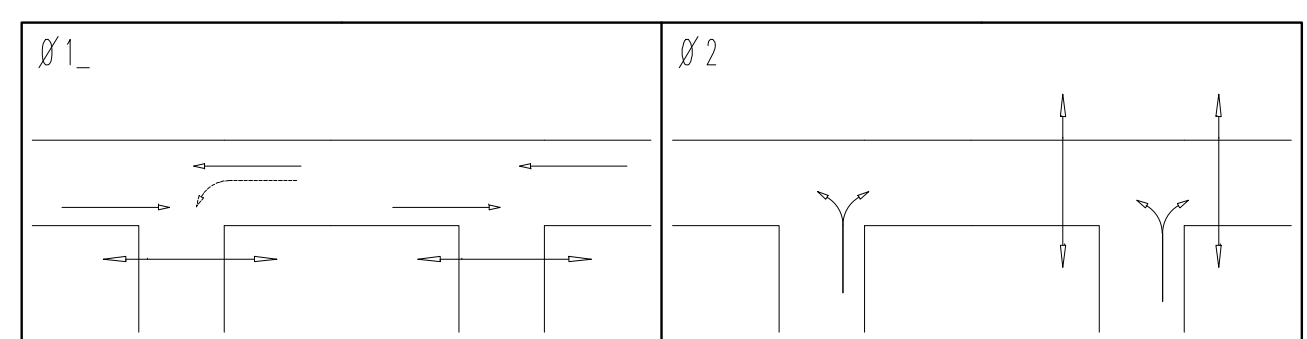
<b>DLZ</b>					
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY
	ORIGINAL ISSUE	10/6/23	INB	LCM	DATE: 2023.10.06

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS FULLER RD AT E. MED. CENTER RD	
SCALE NTS	INCH 0 1
STAGE 3	
Digitally signed by Leigh Merrill Date: 2023.10.06	
DRAWING NO.	2021-008-MOT41
SHEET NO.	45 OF 155



SPEED LIMIT 25

SPEED LIMIT 25



PHASE DIAGRAM

NO.	ITEM	QUANTITIES
①	Wood Pole, Rem	1 Ea
②	Span Wire, Rem	1 Ea
③	TS Face, Bag, Rem	2 Ea
④	Remove Traffic Signal (Paid for Under "TS Head, Temp")	8 Ea
	Conduit, Rem	160 Ft

LIST OF MATERIAL

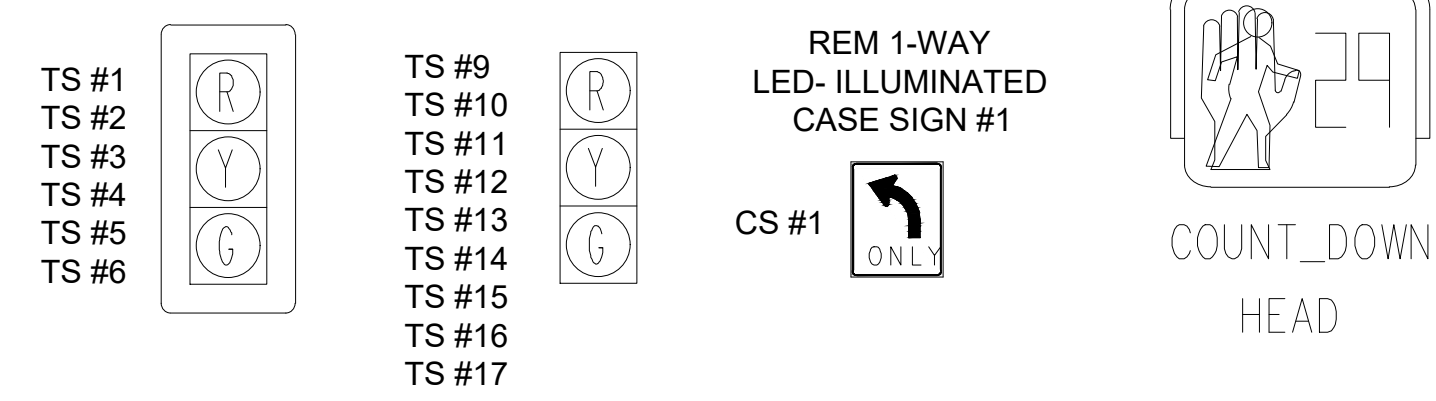
CONTRACTOR TO UTILIZE WORK ZONES AND MOT TYPICAL 163-INT-LD-OUT FOR INSTALLATION OF TRAFFIC SIGNALS PRIOR TO STAGE 3

TIME OF REMOVAL OR ADJUSTMENT OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER

NOTE: PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

SIGNALS	
OPENINGS:	46
CYCLIC WATTS:	604
STEADY WATTS:	15

SIGNAL HEADS



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

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

**DLZ**

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

E. MEDICAL CENTER DRIVE  
TRAFFIC SIGNAL PLANS  
FULLER RD AT E. MED. CENTER RD

STAGE 3  
Digitally signed by Leigh Merrill  
Date: 2023.10.06

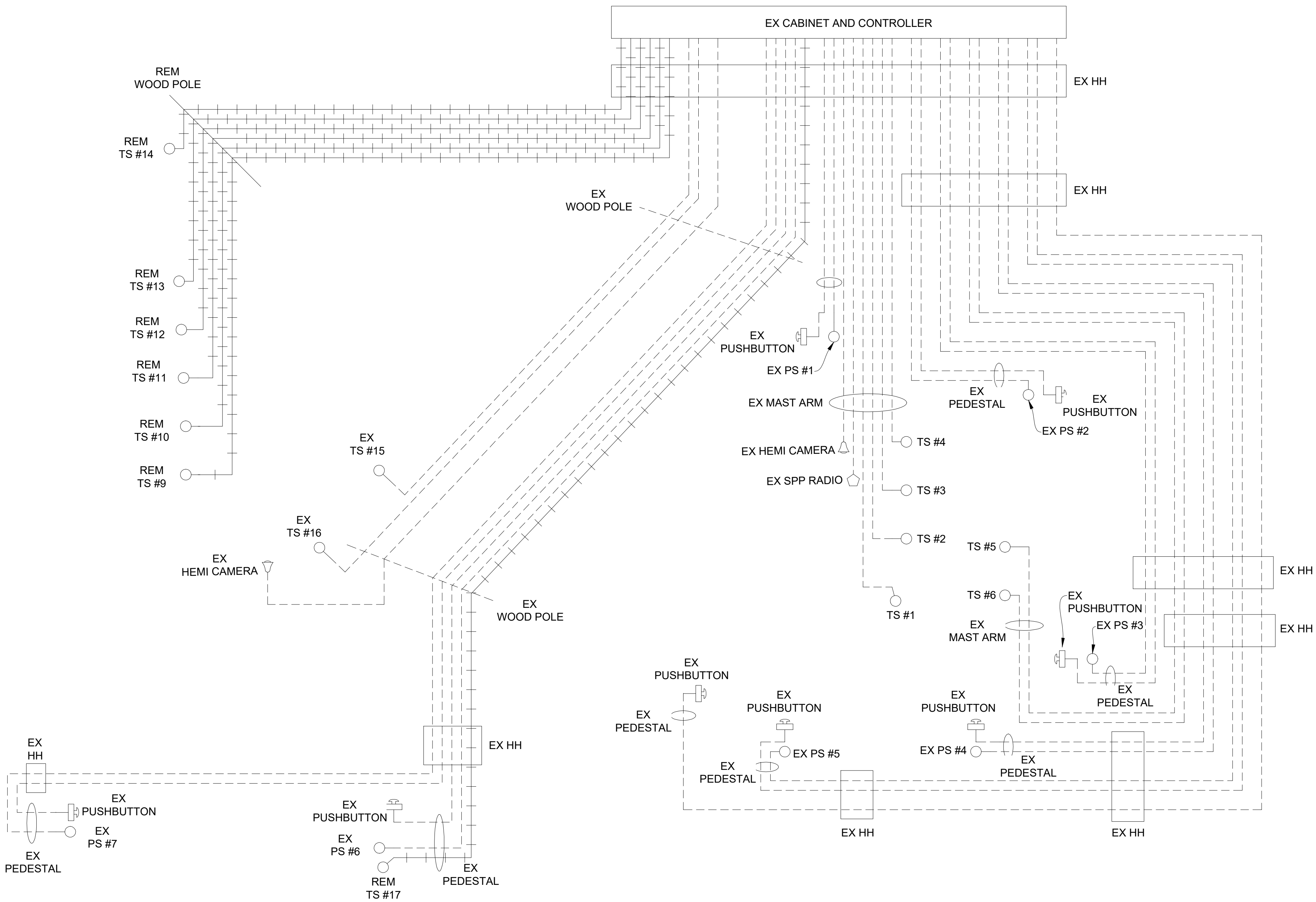
SCALE 1"=20'

DRAWING NO. 2022-008-MOT42

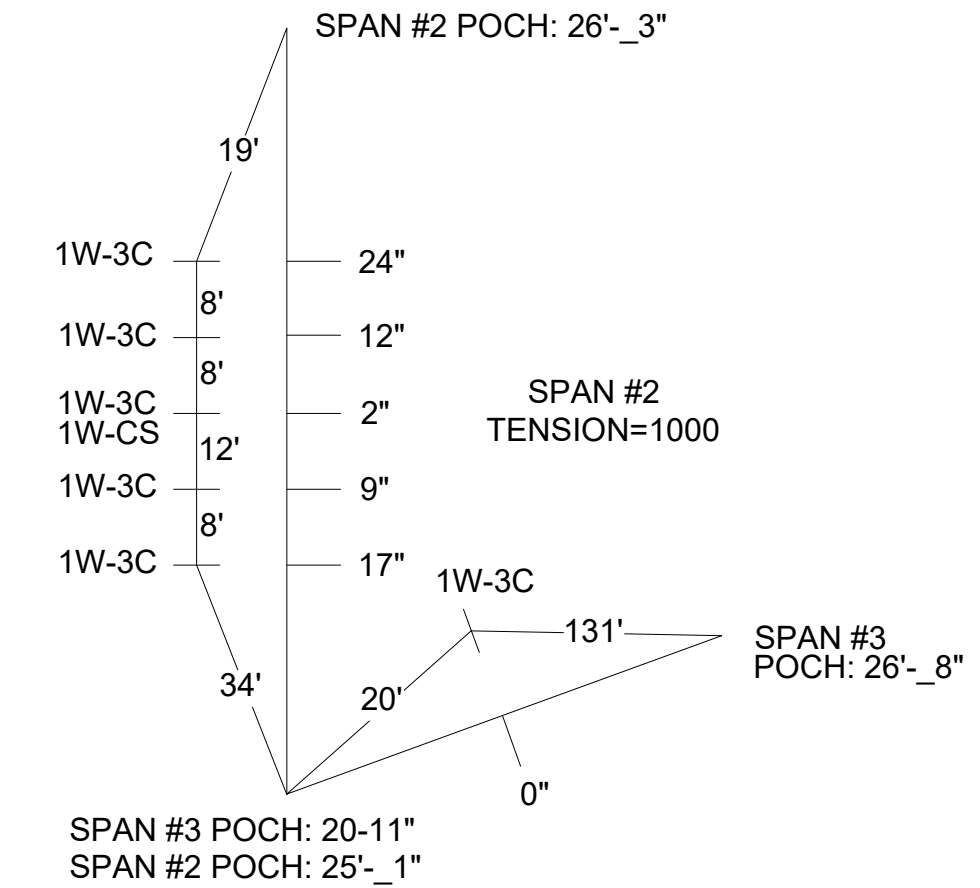
SHEET NO. 46 OF 155

**CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE**

1. TRAFFIC SIGNAL CABLES ARE 5/C#16 PJ.
2. 24" X 30" L.E.D. CASE SIGNS ARE 4/C#16 PJ.
3. PEDESTRIAN SIGNALS CABLES ARE 7/C#16 PJ.
4. PUSHBUTTON CABLES ARE 2/C#16 SHIELDED PJ.



**SPAN CALCULATIONS  
NOT TO SCALE**



SHOWN STEMS LENGTH ARE SUGGESTED ONLY

**STAGE 3 REMOVAL CABLE DIAGRAM**

**NOTE:**  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

SIGNALS	
OPENINGS:	49
CYCLIC WATTS:	647
STEADY WATTS:	45

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

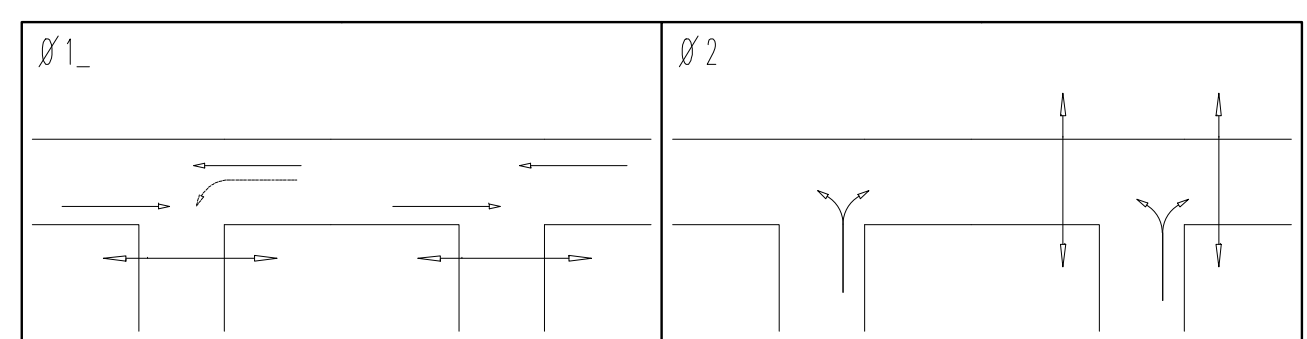
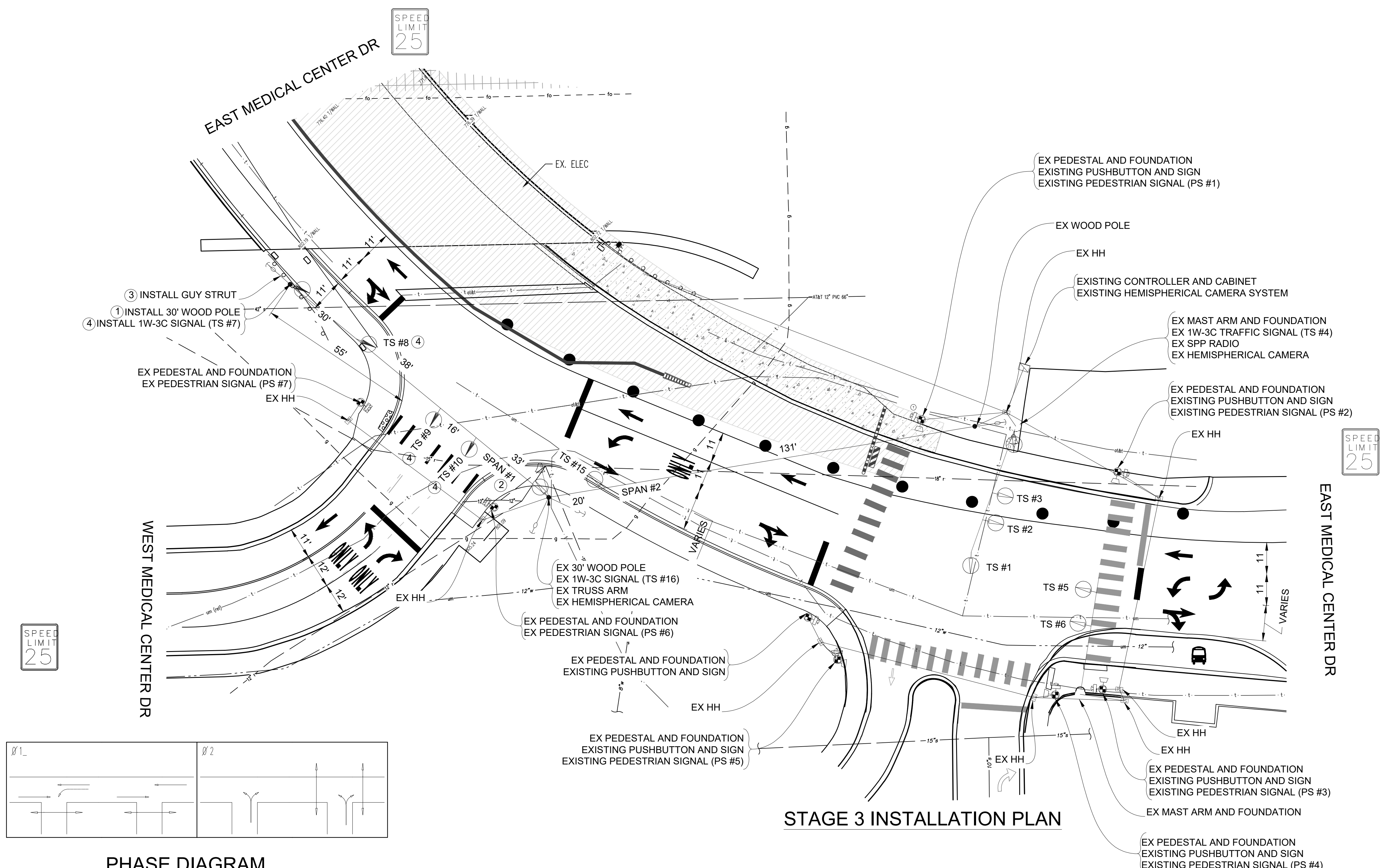
**E. MEDICAL CENTER DRIVE  
TRAFFIC SIGNAL PLANS  
FULLER RD AT E. MED. CENTER RD**

**STAGE 3**

Digitally signed by Leigh Merrill  
Date: 2023.10.06

SCALE	0 INCH 1
DRAWING NO.	2021-008-MOT43
SHEET NO.	47 OF 155

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY



PHASE DIAGRAM

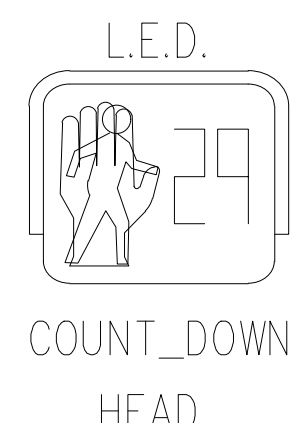
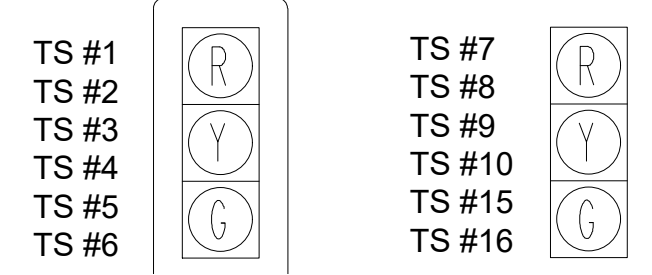
STAGE 3 INSTALLATION PLAN

LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
①	Wood Pole, C14, 30 foot	1 Ea.
②	Span Wire	1 Ea.
③	Strut Guy	1 Ea.
④	TS Head, Temp	4 Ea.

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

_ SIGNALS _	
OPENINGS:	49
CYCLIC WATTS:	647
STEADY WATTS:	45

SIGNAL HEADS



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

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -

CONTRACTOR TO UTILIZE WORK ZONES AND MOT TYPICAL 163-INT-LD-OUT FOR INSTALLATION OF TRAFFIC SIGNALS PRIOR TO STAGE 3

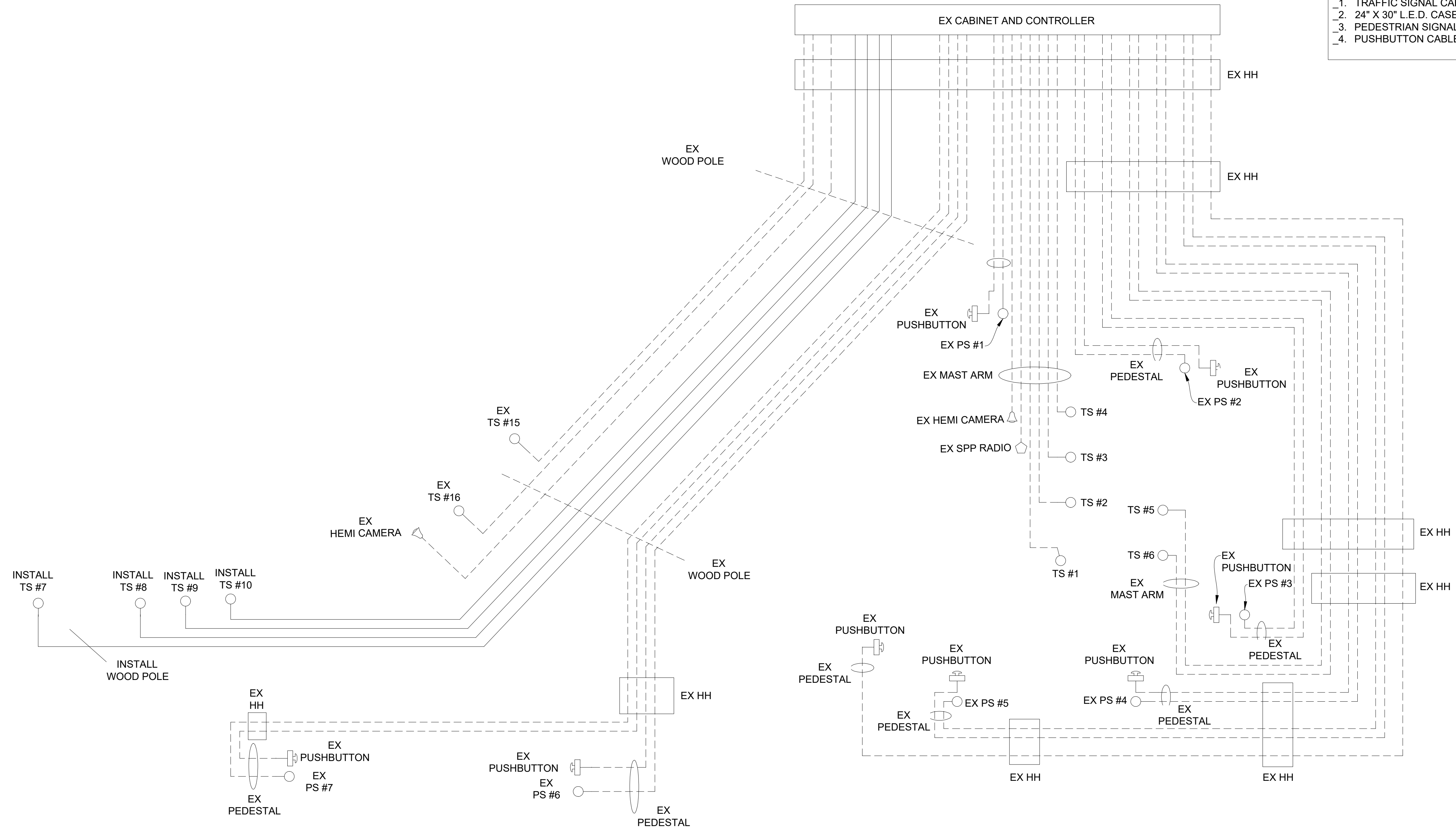
<b>DLZ</b>	
SEE ABOVE	
BENCH MARK	SURVEY BOOK
REV. NO.	DESCRIPTION
DATE	DR. BY
CH. BY	

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR			
E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL PLANS			
FULLER RD AT E. MED. CENTER RD			
STAGE 3			
Digitally signed by Leigh Merrill Signature Date: 2023.10.06			
APPROVED BY		SCALE	1"=20'
			0 INCH 1
DRAWING NO.	2022-008-MOT44		
SHEET NO.	48 OF 155		

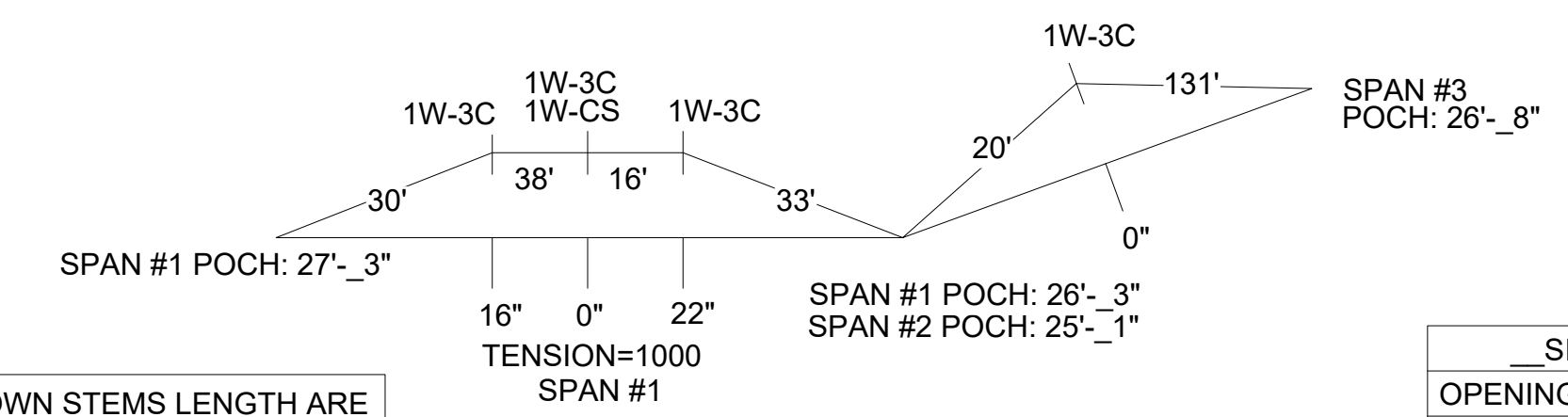


**CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE**

- 1. TRAFFIC SIGNAL CABLES ARE 5/C#16 P.J.
- 2. 24" X 30" L.E.D. CASE SIGNS ARE 4/C#16 P.J.
- 3. PEDESTRIAN SIGNALS CABLES ARE 7/C#16 P.J.
- 4. PUSHBUTTON CABLES ARE 2/C#16 SHIELDED P.J.



**SPAN CALCULATIONS  
NOT TO SCALE**



**STAGE 3 INSTALLATION CABLE DIAGRAM**

**NOTE:**  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN. CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE ORDERING ANY MATERIAL OR MAKING ANY CHANGES

SHOWN STEMS LENGTH ARE SUGGESTED ONLY

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE  
TRAFFIC SIGNAL PLANS  
FULLER RD AT E. MED. CENTER RD**

STAGE 3  
Digitally signed by Leigh Merrill  
Date: 2023.10.06

SCALE	0 INCH 1
DRAWING NO.	2021-008-MOT45
SHEET NO.	49 OF 155

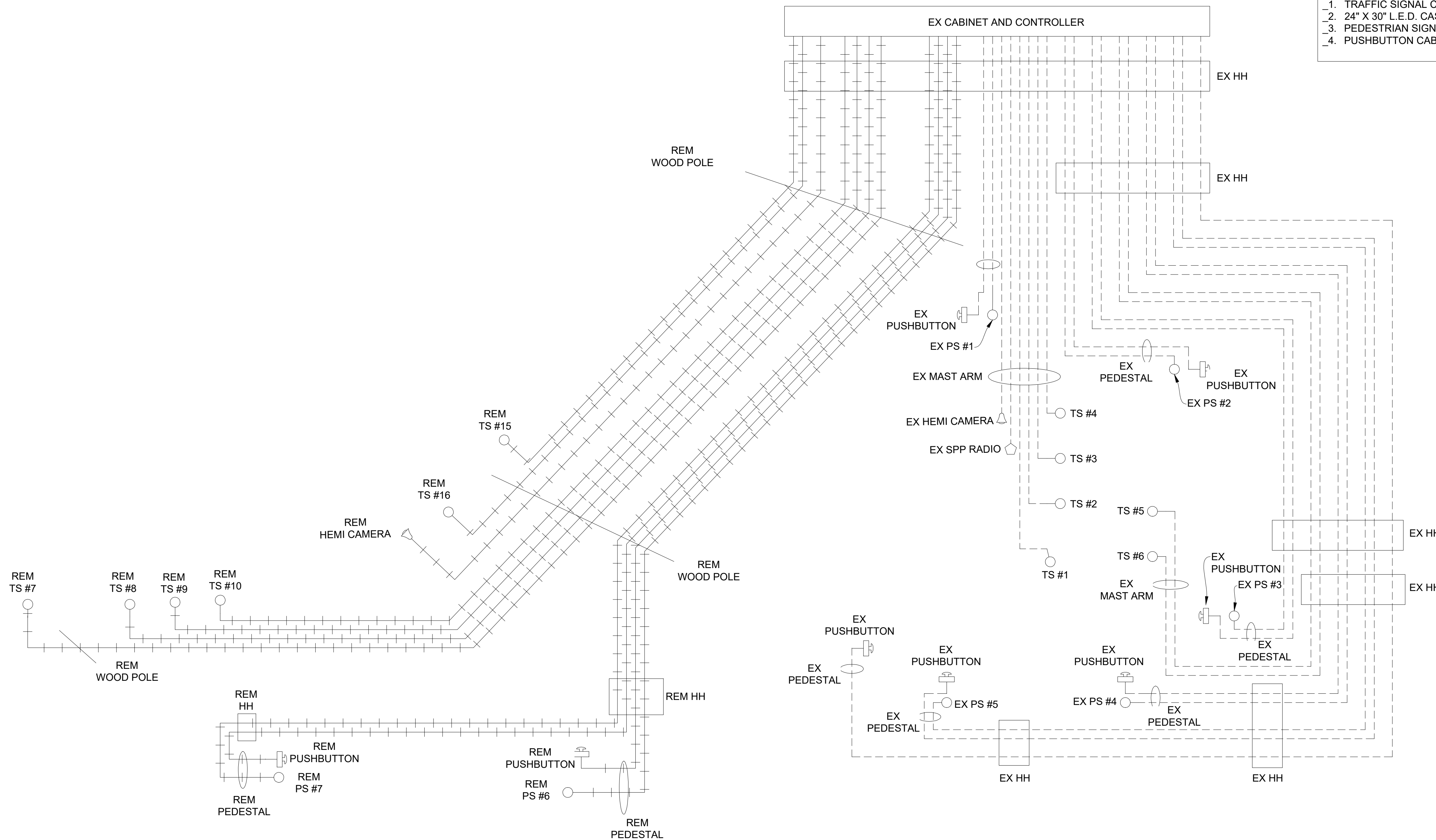
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
ORIGINAL ISSUE		10/6/23	INB	LCM

APPROVED BY

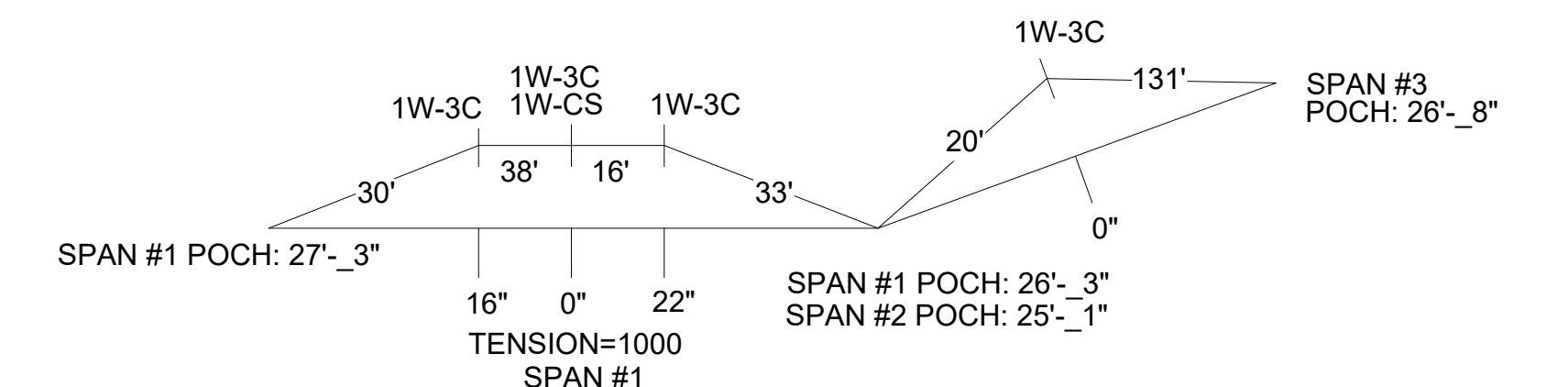


CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE

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2. 24" X 30" L.E.D. CASE SIGNS ARE 4/C#16 PJ.
3. PEDESTRIAN SIGNALS CABLES ARE 7/C#16 PJ.
4. PUSHBUTTON CABLES ARE 2/C#16 SHIELDED PJ.



SPAN CALCULATIONS  
NOT TO SCALE



SHOWN STEMS LENGTH ARE  
SUGGESTED ONLY

FINAL REMOVAL CABLE DIAGRAM

NOTE:  
PLANS HAVE BEEN PREPARED WITHOUT THE AIDE OF RECORD DRAWINGS  
AND ARE SOLEY BASED ON FIELD OBSERVATIONS. CONDUIT SIZE IS UNKNOWN.  
CONTRACTOR TO VERIFY ANY CONDUIT AND CABLE ROUTING BEFORE  
ORDERING ANY MATERIAL OR MAKING ANY CHANGES

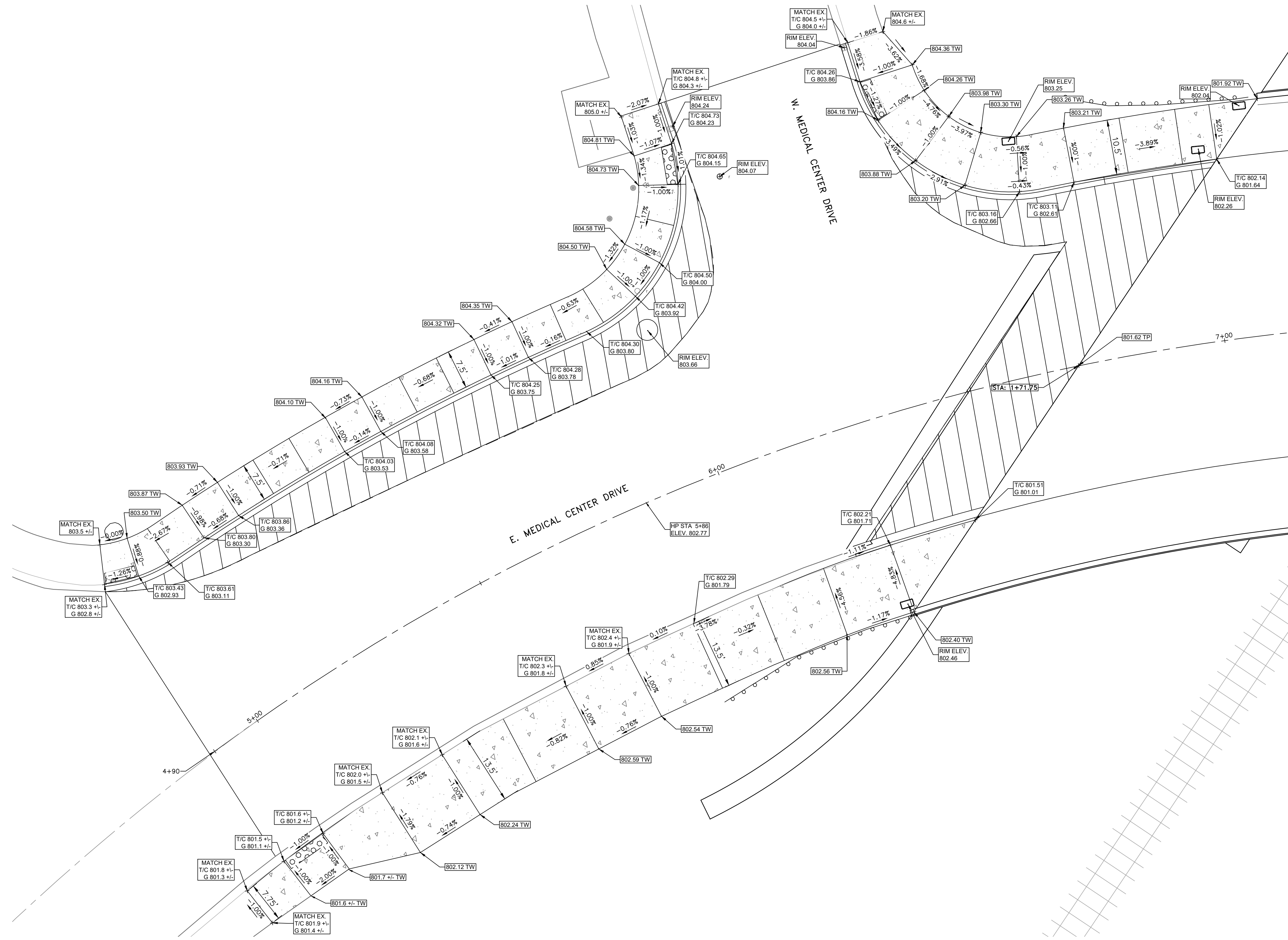
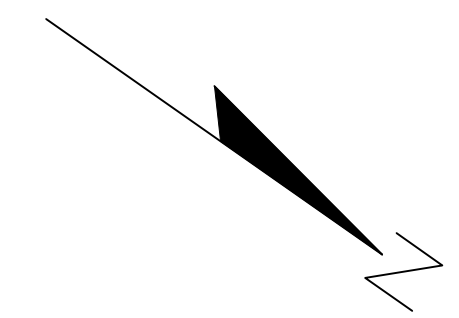
LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

<b>DLZ</b>					
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
E. MED CENTER TRAFFIC SIGNAL PLANS FULLER RD AT E. MED. CENTER RD	
SCALE NTS	INCH 0 1
DRAWING NO. 2021-008-MOT47	
SHEET NO. 51 OF 155	

APPROVED BY: Leigh Merrill  
Date: 2023.10.06  
Leigh Merrill Signature  
2023.10.06



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

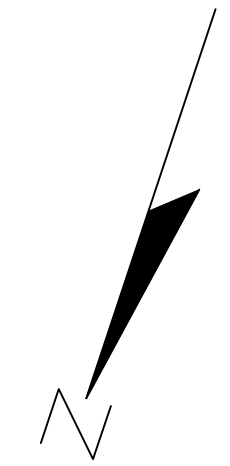
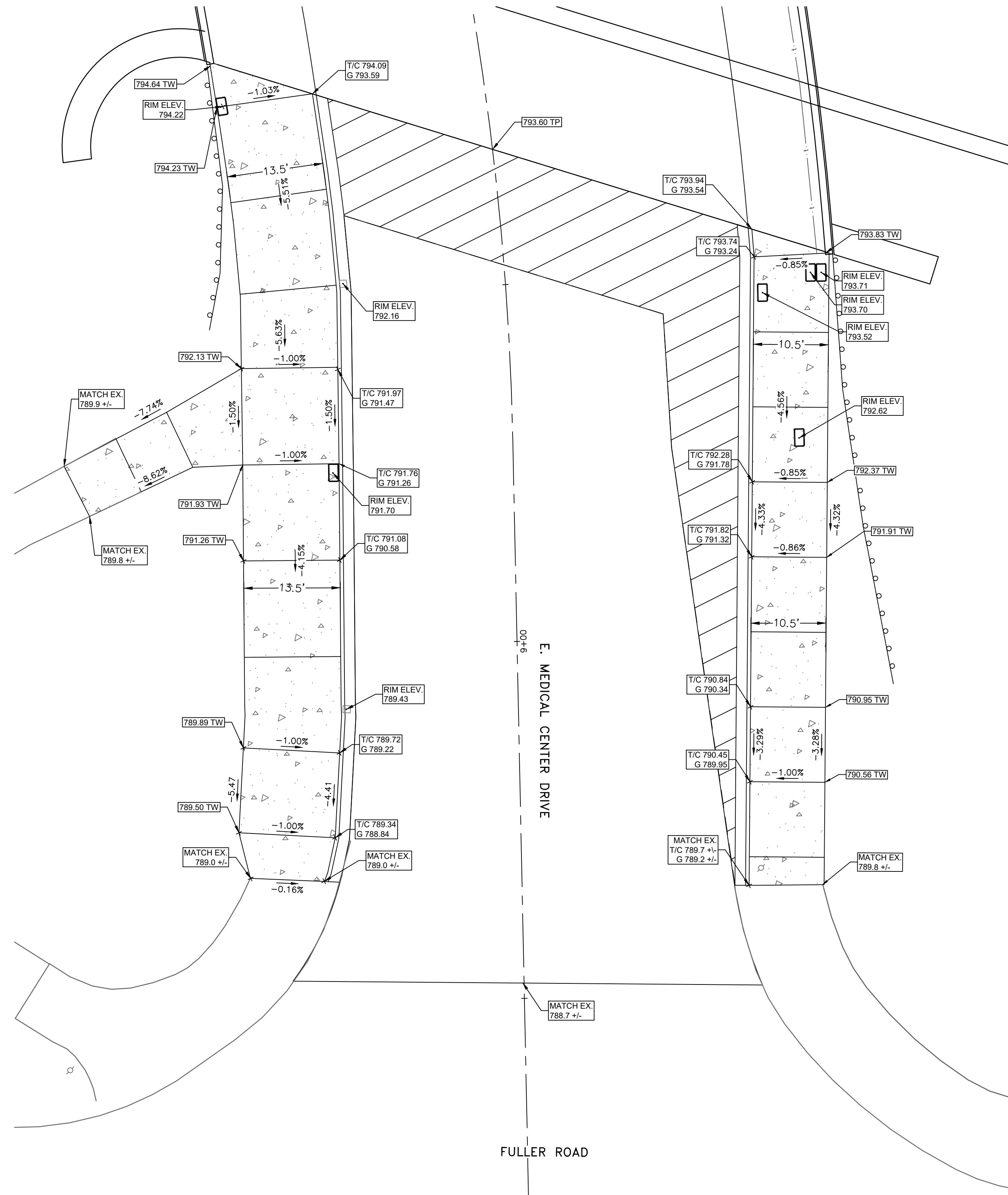
**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. @ GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD @ GRADE	- REV. NO.

**E. MEDICAL CENTER DRIVE  
 W. MEDICAL CENTER DRIVE**  
 SCALE: 1"=10'

<b>DLZ</b>				
SEE ABOVE	REV. NO.	DESCRIPTION	DATE	DR. BY
BENCH MARK	SURVEY BOOK	ORIGINAL ISSUE	10/6/23	INB
				LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR				
<b>E. MEDICAL CENTER DRIVE    DETAIL GRADES</b>				
SCALE	1"=10'	INCH	0	1
DRAWING NO.	2021-008-GD1			SHEET NO.
	52			OF 155
APPROVED BY	Digitally signed by Leigh Merrill Signature Date: 2023.10.06 LEIGH C. MERRILL P.E., MICHIGAN NO. 6201061025			



FULLER ROAD & E. MEDICAL CENTER DRIVE

SCALE: 1"=10'

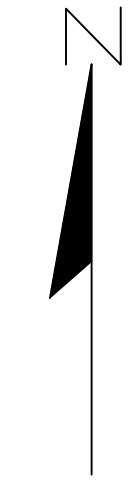
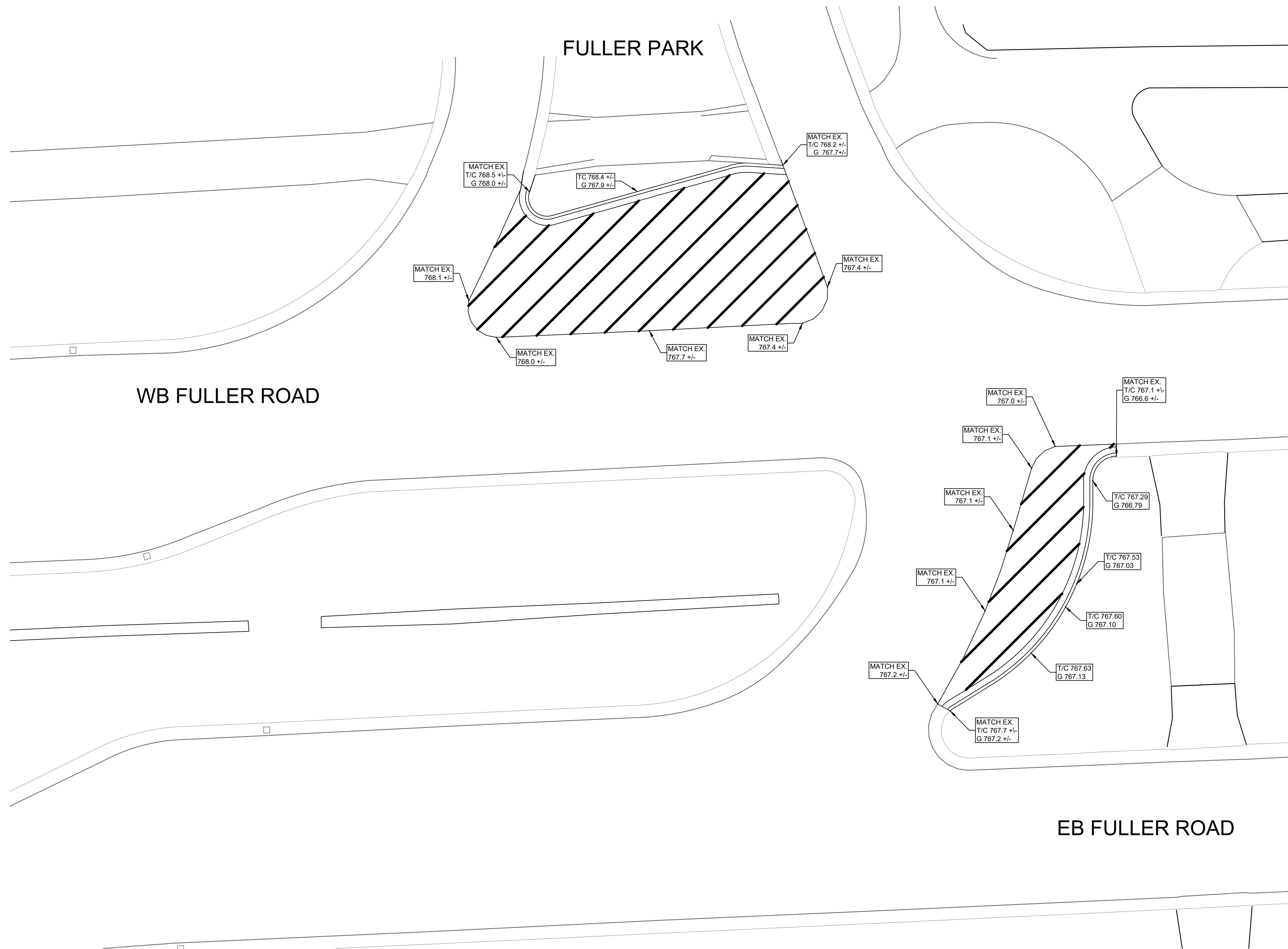
3 WORKING DAYS  
BEFORE YOU DIG  
CALL MISS DIG  
800-482-7171  
(TOLL FREE)

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. C. GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD C. GRADE	- REV. NO.

<b>DLZ</b>				

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR				
<b>E. MEDICAL CENTER DRIVE DETAIL GRADES</b>				
SCALE	1"=10'	INCH	0	1
DRAWING NO.	2021-008-GD2			SHEET NO. 53 OF 155
APPROVED BY	Digitally signed by Leigh Merrill Date: 2023.10.06 LEIGH C. MERRILL P. 2023.10.06 NO. 6201061025			



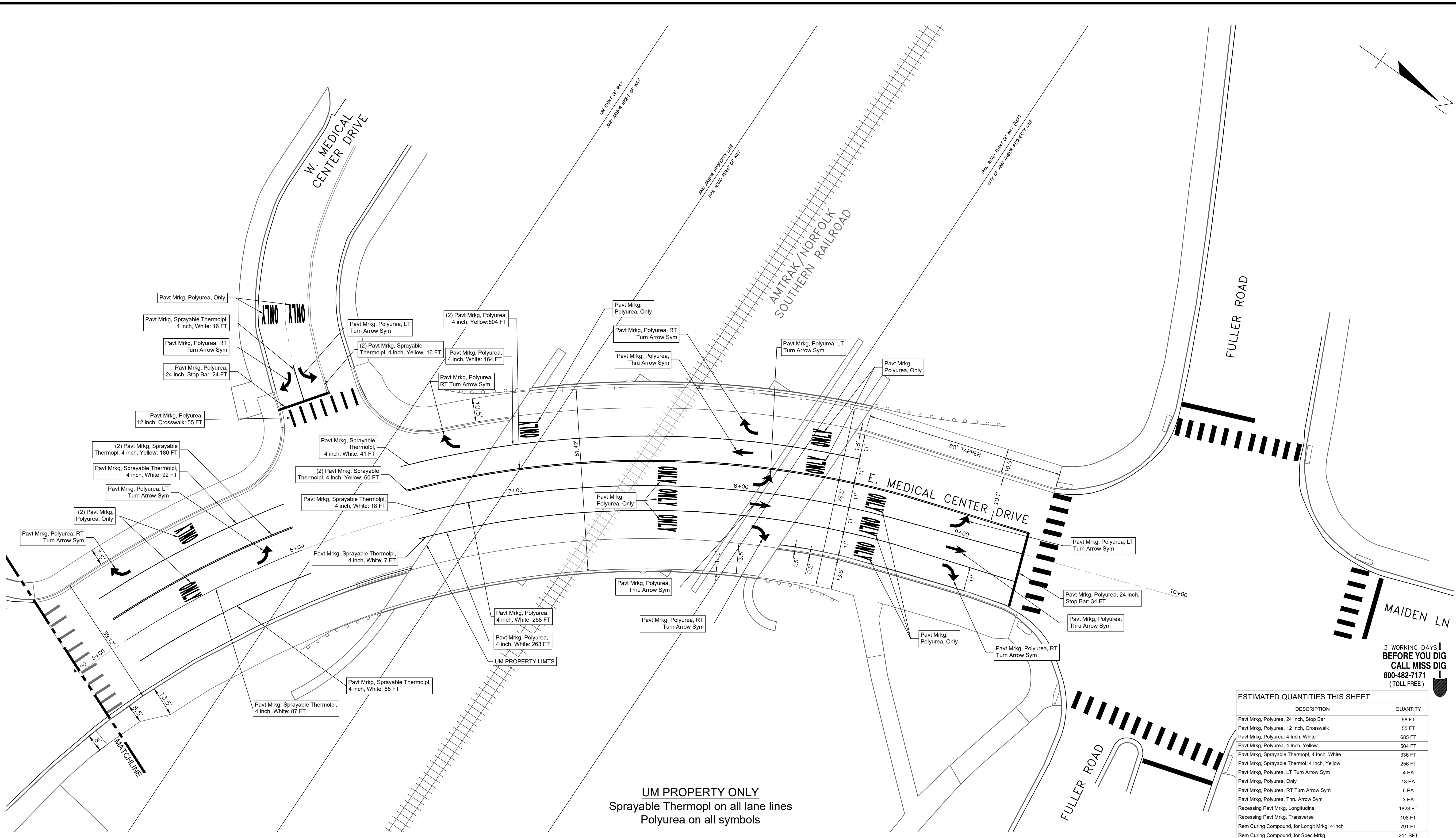
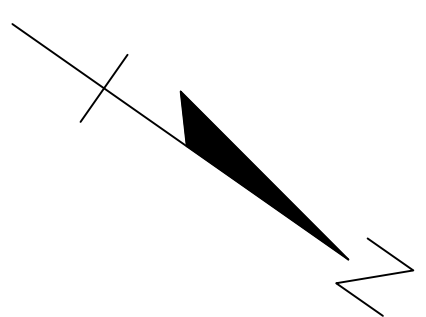
3 WORKING DAYS!  
**BEFORE YOU DIG**  
 CALL MISS DIG  
 800-482-7171  
 (TOLL FREE)

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. @ GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD @ GRADE	- REV. NO.

<b>DLZ</b>				

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR				
<b>E. MEDICAL CENTER DRIVE DETAIL GRADES</b>				
SCALE 1"=10'	0	INCH	1	
DRAWING NO. <b>2021-008-GD3</b>		SHEET NO. 54 OF 155		
APPROVED BY	Digitally signed by Leigh Merrill Date: 2023.10.06			



UM PROPERTY ONLY  
 Sprayable Thermopl on all lane lines  
 Polyurea on all symbols

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

ESTIMATED QUANTITIES THIS SHEET	
DESCRIPTION	QUANTITY
Pavt Mrkg, Polyurea, 24 Inch, Stop Bar	58 FT
Pavt Mrkg, Polyurea, 12 Inch, Crosswalk	55 FT
Pavt Mrkg, Polyurea, 4 Inch, White	685 FT
Pavt Mrkg, Polyurea, 4 Inch, Yellow	504 FT
Pavt Mrkg, Sprayable Thermopl, 4 Inch, White	336 FT
Pavt Mrkg, Sprayable Thermopl, 4 Inch, Yellow	256 FT
Pavt Mrkg, Polyurea, LT Turn Arrow Sym	4 EA
Pavt Mrkg, Polyurea, Only	13 EA
Pavt Mrkg, Polyurea, RT Turn Arrow Sym	6 EA
Pavt Mrkg, Polyurea, Thru Arrow Sym	3 EA
Recessing Pavt Mrkg, Longitudinal	1823 FT
Recessing Pavt Mrkg, Transverse	108 FT
Rem Curing Compound, for Longit Mrkg, 4 inch	791 FT
Rem Curing Compound, for Spec Mrkg	211 SFT

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. C. GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD C. GRADE	- REV. NO.

<b>DLZ</b>					
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	

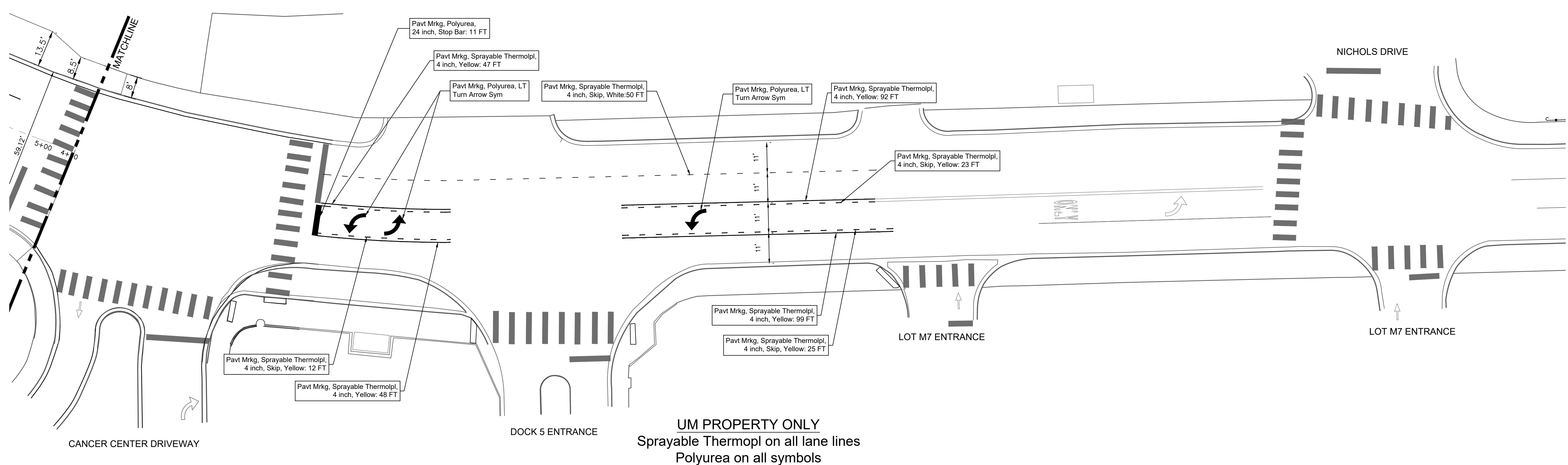
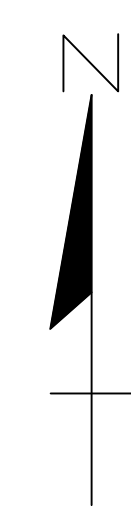
**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**E. MEDICAL CENTER DRIVE  
 PERMANENT PAVEMENT  
 PAVEMENT MARKING PLAN**

Digitally signed by  
 Leigh Merrill  
 Date: 2023.10.06

APPROVED BY: *[Signature]*

SCALE	1"=20'	INCH	0 1
DRAWING NO.	2021-008-PM1		
SHEET NO.	55	OF	155



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

ESTIMATED QUANTITIES THIS SHEET	
DESCRIPTION	QUANTITY
Pavt Mrkg, Polyurea, 24 Inch, Stop Bar	11 FT
Pavt Mrkg, Sprayable Thermopl, 4 Inch, White	50 FT
Pavt Mrkg, Sprayable Thermopl, 4 Inch, Yellow	346 FT
Pavt Mrkg, Polyurea, LT Turn Arrow Sym	3 EA
Recessing Pavt Mrkg, Longitudinal	396 FT
Recessing Pavt Mrkg, Transverse	11 FT

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. @ GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD @ GRADE	- REV. NO.

**DLZ**

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE PERMANENT PAVEMENT PAVEMENT MARKING PLAN**

SCALE 1"=20' INCH

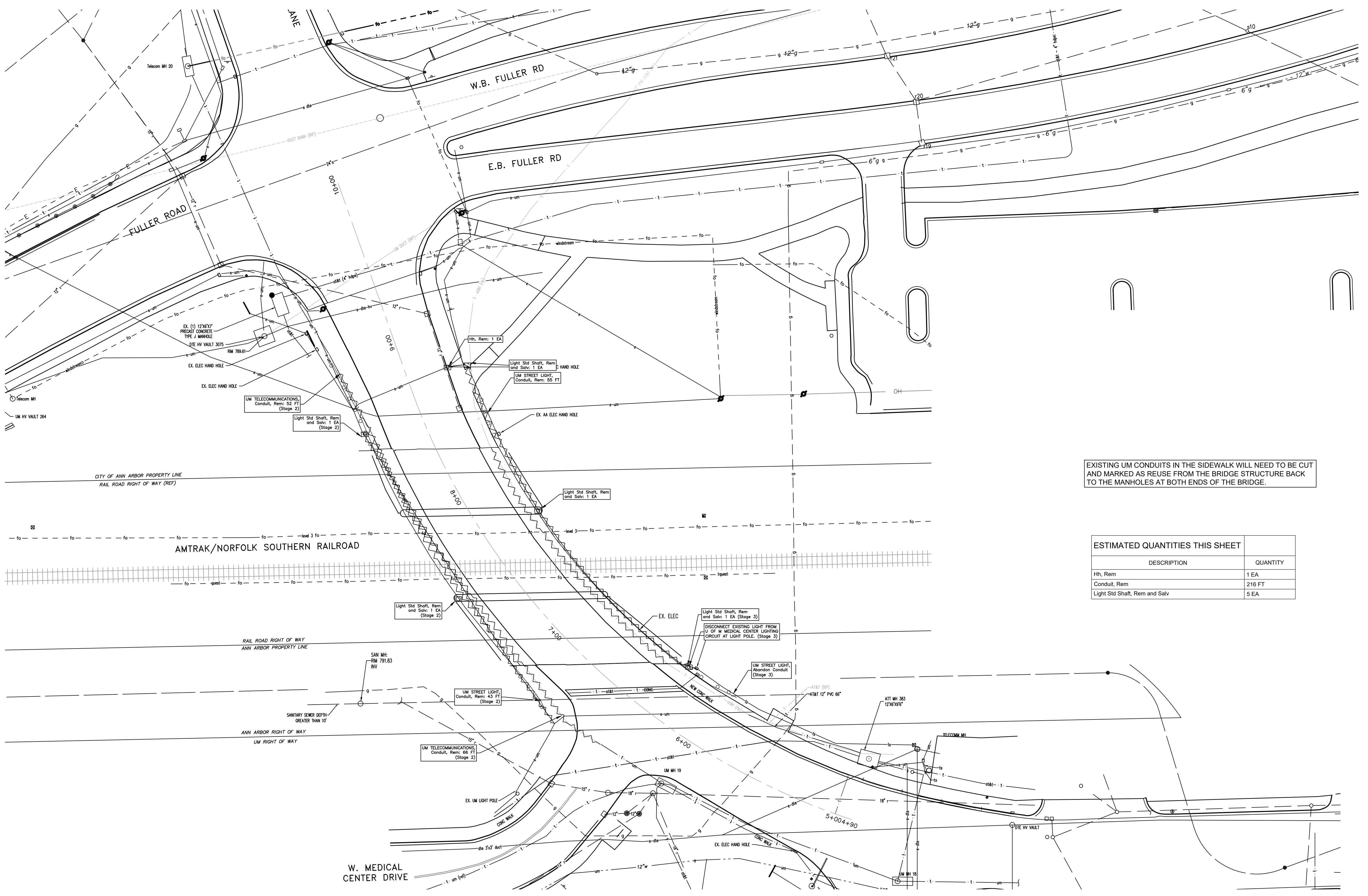
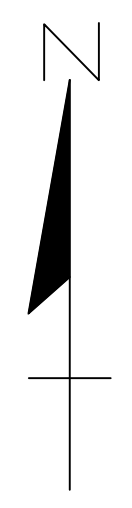
DRAWING NO. **2021-008-PM2**

SHEET NO. 56 OF 155

APPROVED BY: Leigh Merrill Signature Date: 2023.10.06

LEIGH C. MERRILL P.E. 20137611340 NO. 6201061025





EXISTING UM CONDUITS IN THE SIDEWALK WILL NEED TO BE CUT AND MARKED AS REUSE FROM THE BRIDGE STRUCTURE BACK TO THE MANHOLES AT BOTH ENDS OF THE BRIDGE.

ESTIMATED QUANTITIES THIS SHEET	
DESCRIPTION	QUANTITY
Hh, Rem	1 EA
Conduit, Rem	216 FT
Light Std Shaft, Rem and Salv	5 EA

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

**LEGEND**

EXISTING FENCE	--- --- ---	EXISTING TELEPHONE	---t---
CONTOUR	---847---	GAS LINE	---g---
STORM SEWER & CAT. BAS.	---r---	CABLE T.V.	---tv---
WATER MAIN & VALVE-IN-WELL	---W---	ELECTRIC	---e---
WATER MAIN & VALVE-IN-BOX	---W+---	SIGN	---b---
EXISTING SANITARY SEWER & MANHOLE	---S---	EXISTING RD. & GRADE	--- ---
UTILITY POLE & GUY	---u/h---	LEFT EDGE/RD. GRADE	--- ---
FIRE HYDRANT ASSEMBLY	---f---	RIGHT EDGE/RD. GRADE	--- ---
LIGHT POLE	---o---	CURB & GUTTER	--- ---
END SECTION	---)---	EDGE/GRAVEL	--- ---
PROPOSED SANITARY SEWER & MANHOLE	---S+---	PROPOSED CURB & GUTTER	--- ---
STORM SEWER & CAT. BAS.	---r+---	REMOVE ITEM	--- ---
WATER MAIN W/F.H. ASSEM.	---W+---	SEE ABOVE	--- ---
CONTOUR	---847---	BENCH MARK	--- ---
ROAD & GRADE	--- ---	SURVEY BOOK	--- ---



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

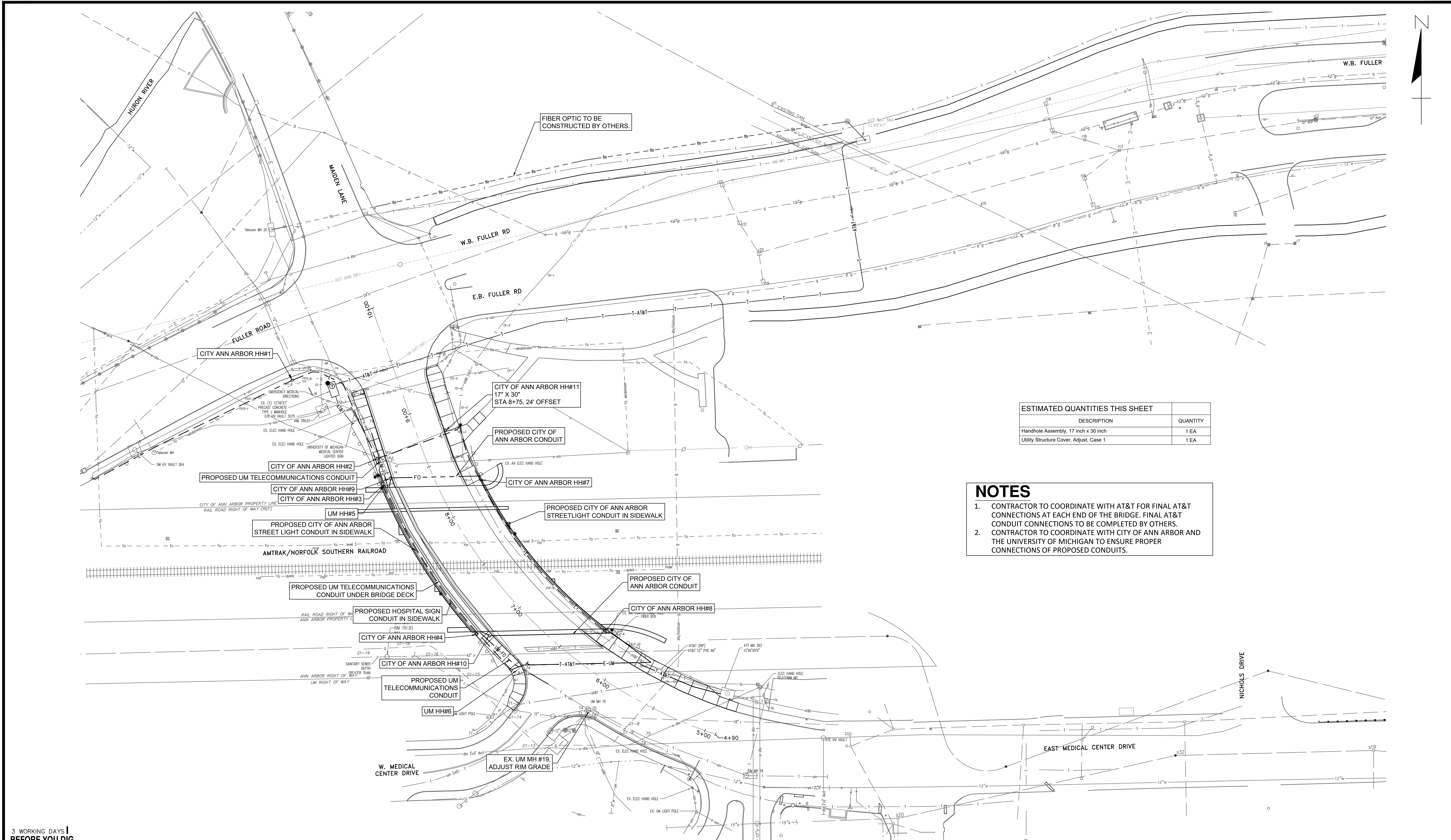
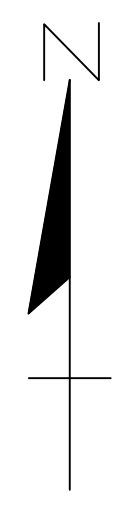
**E. MEDICAL CENTER DRIVE  
UTILITY REMOVAL PLAN**

Digitally signed by  
Leigh Merrill  
Date: 2023.10.06

SCALE	1"=30'
INCH	0 1
DRAWING NO.	2021-008-UT1
SHEET NO.	57 OF 155

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

APPROVED BY: *[Signature]*



ESTIMATED QUANTITIES THIS SHEET	
DESCRIPTION	QUANTITY
Handhole Assembly, 17 inch x 30 inch	1 EA
Utility Structure Cover, Adjust, Case 1	1 EA

- NOTES**
1. CONTRACTOR TO COORDINATE WITH AT&T FOR FINAL AT&T CONNECTIONS AT EACH END OF THE BRIDGE. FINAL AT&T CONDUIT CONNECTIONS TO BE COMPLETED BY OTHERS.
  2. CONTRACTOR TO COORDINATE WITH CITY OF ANN ARBOR AND THE UNIVERSITY OF MICHIGAN TO ENSURE PROPER CONNECTIONS OF PROPOSED CONDUITS.

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

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- - - - -	S	t	—	S	—
CONTOUR	UTILITY POLE & GUY	G	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	STREET LIGHT CONDUIT
847	—	g	—	—	—
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	C	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	TELECOM. CONDUIT
—	—	t	—	—	—
W	LIGHT POLE	e	CURB & GUTTER	CONTOUR	LIGHT POLE
—	—	—	—	—	—
W	END SECTION	—	EDGE/GRAVEL	ROAD & GRADE	HANDHOLE
—	—	—	—	—	—



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE  
OVERALL UTILITY PLAN**

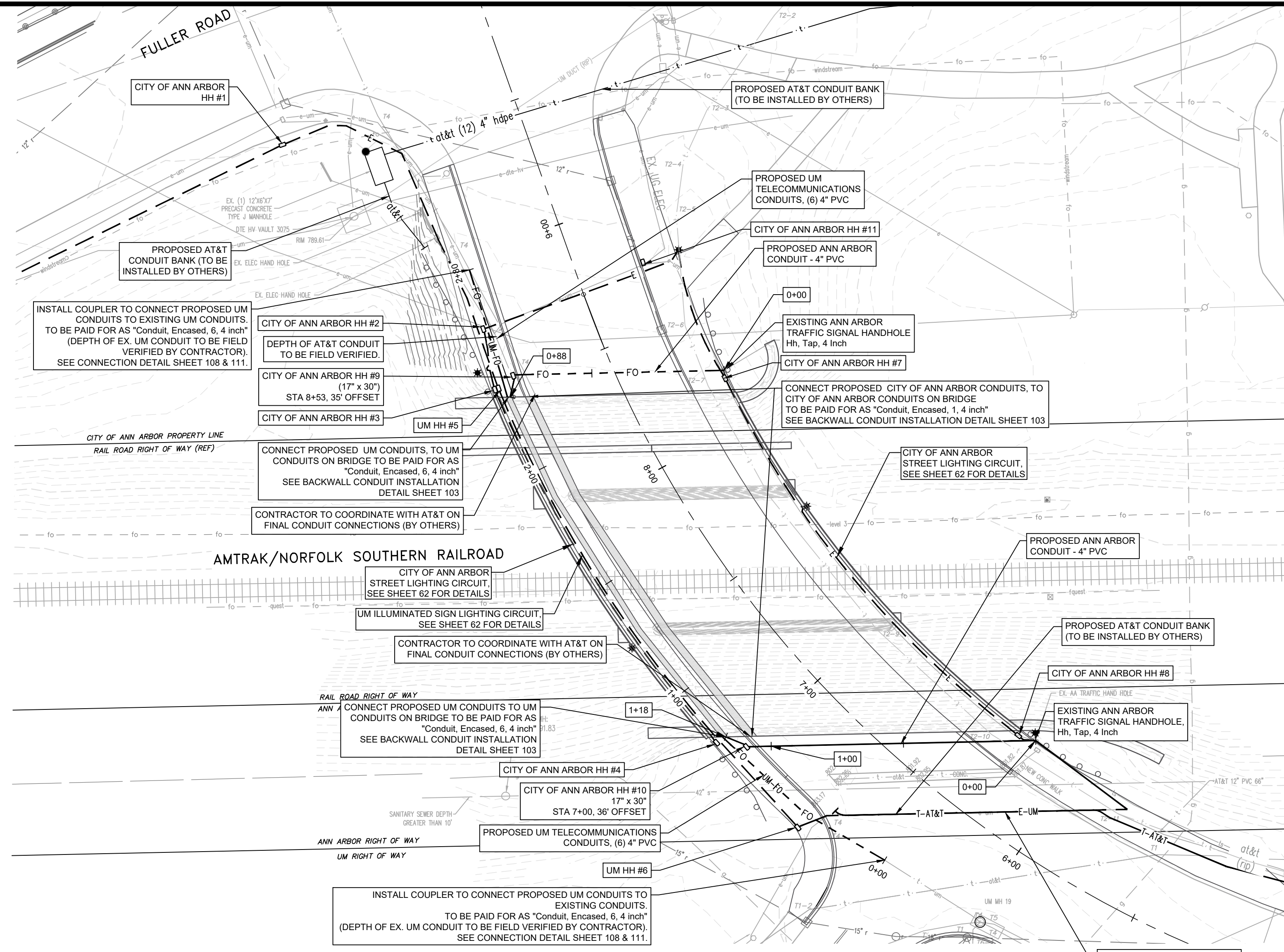
SCALE	1"=40'
DRAWING NO.	2021-008-UT2
SHEET NO.	58 OF 155

Digitally signed by  
Leigh Merrill Signature  
Date: 2023.10.06

APPROVED BY

SEE ABOVE	BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
				ORIGINAL ISSUE	10/6/23	DLL	LCM



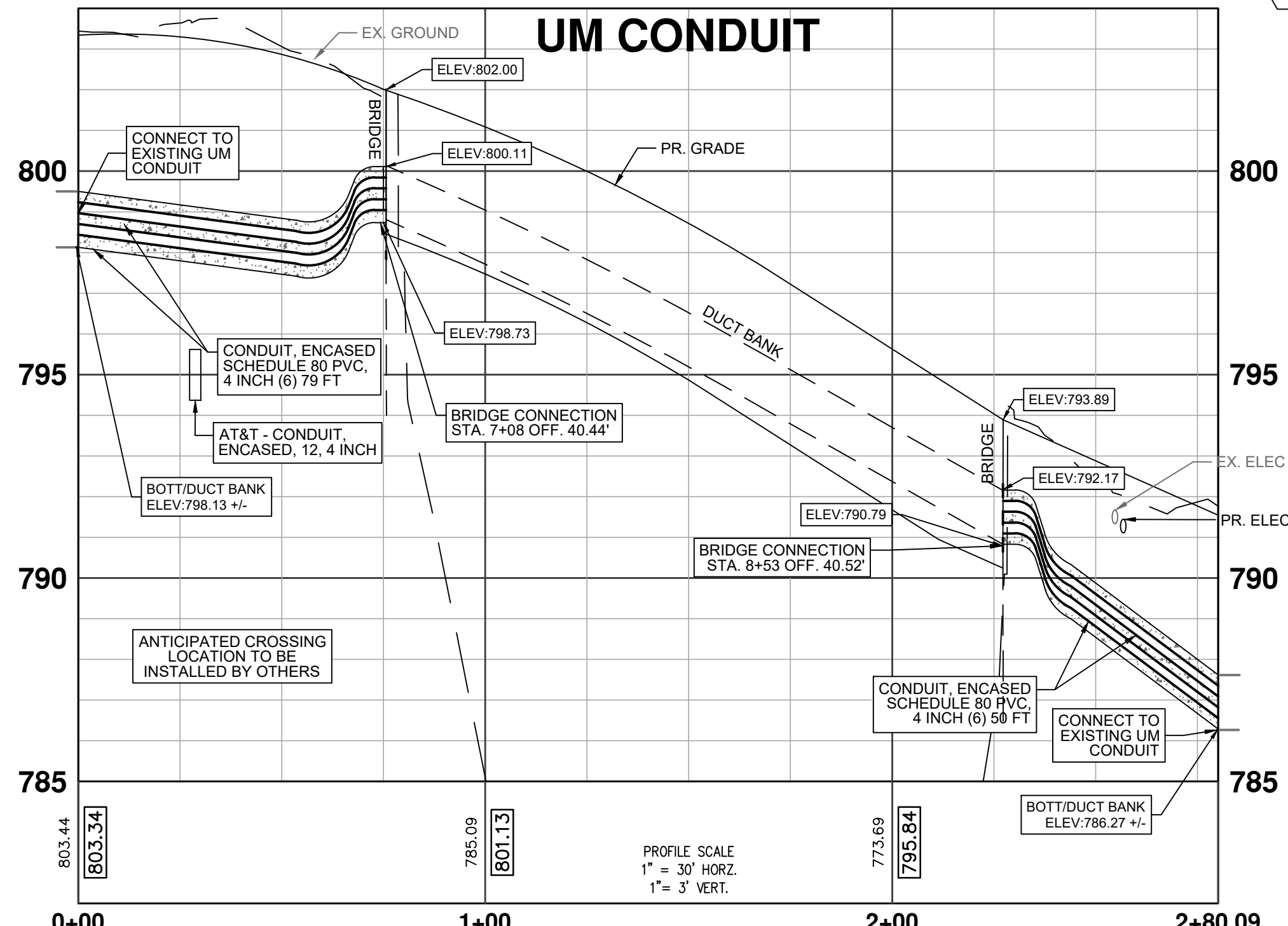


INSTALL COUPLER TO CONNECT PROPOSED UM CONDUITS TO EXISTING UM CONDUITS. TO BE PAID FOR AS "Conduit, Encased, 6, 4 inch" (DEPTH OF EX. UM CONDUIT TO BE FIELD VERIFIED BY CONTRACTOR). SEE CONNECTION DETAIL SHEET 108 & 111.

CONNECT PROPOSED UM CONDUITS, TO UM CONDUITS ON BRIDGE TO BE PAID FOR AS "Conduit, Encased, 6, 4 inch" SEE BACKWALL CONDUIT INSTALLATION DETAIL SHEET 103

CONNECT PROPOSED CITY OF ANN ARBOR CONDUITS, TO CITY OF ANN ARBOR CONDUITS ON BRIDGE TO BE PAID FOR AS "Conduit, Encased, 1, 4 inch" SEE BACKWALL CONDUIT INSTALLATION DETAIL SHEET 103

INSTALL COUPLER TO CONNECT PROPOSED UM CONDUITS TO EXISTING CONDUITS. TO BE PAID FOR AS "Conduit, Encased, 6, 4 inch" (DEPTH OF EX. UM CONDUIT TO BE FIELD VERIFIED BY CONTRACTOR). SEE CONNECTION DETAIL SHEET 108 & 111.

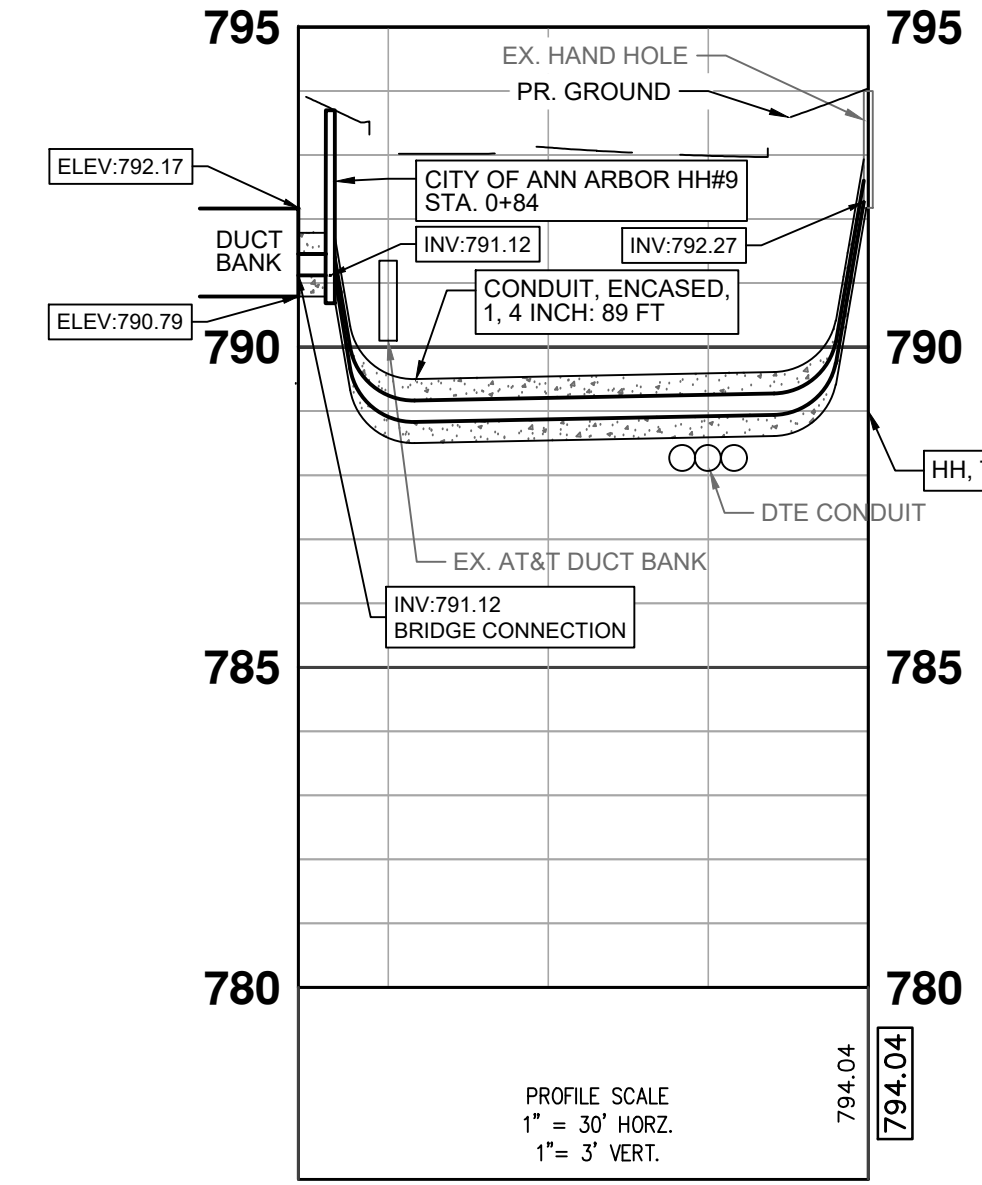


PAY ITEM	DESCRIPTION	UNITS	QUANTITY
8182021	Conduit, Encased, 6, 4 inch	FT	129
8182016	Conduit, Encased, 1, 4 inch	FT	207
8187050	Handhole Assembly, 17 inch x 30 inch	EA	2
8187050	Hh, Tap, 4 inch	EA	2

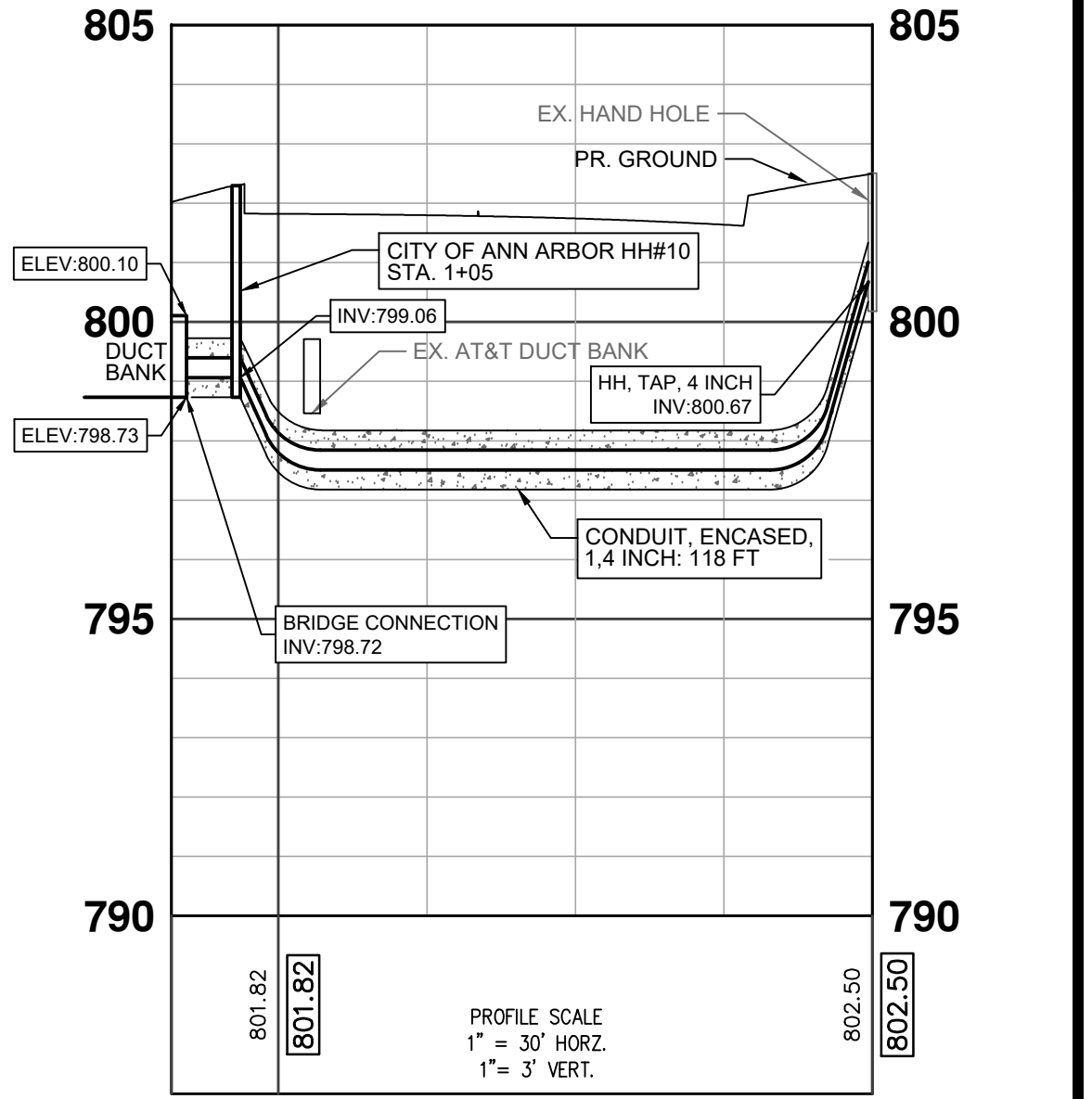
3 WORKING DAYS  
BEFORE YOU DIG  
CALL MISS DIG  
800-482-7171  
(TOLL FREE)

LEGEND		EXISTING TELEPHONE		PROPOSED CURB & GUTTER		SEE ABOVE	
EXISTING FENCE	--- --- ---	EXISTING RD. & GRADE	—t—	PROPOSED SANITARY SEWER & MANHOLE	—S—	BENCH MARK	—B—
CONTOUR	---847---	LEFT EDGE/RD. GRADE	—g—	STORM SEWER & CAT. BAS.	—S—	SURVEY BOOK	—S—
STORM SEWER & CAT. BAS.	---r---	RIGHT EDGE/RD. GRADE	—g—	WATER MAIN W/F.H. ASSEM.	—W—	REV. NO.	DESCRIPTION
WATER MAIN & VALVE-IN-WELL	---W---	CURB & GUTTER	—t—	CONTOUR	---847---	DATE	10/6/23
WATER MAIN & VALVE-IN-BOX	---W---	EDGE/GRAVEL	—t—	ROAD & GRADE	---847---	DR. BY	DLI
						CH. BY	LCM

### ANN ARBOR CONDUIT (NORTH)



### ANN ARBOR CONDUIT (SOUTH)



### NOTES

- UM TELECOMMUNICATIONS DUCT BANK SHALL CONSIST OF SIX 4" I.D. SCH. 80 PVC CONDUITS, CONCRETE ENCASED. A 3" THICK MINIMUM CONCRETE COVER SHALL PROTECT DUCTS OVER THE ENTIRE LENGTH AND WIDTH OF THE DUCT BANK. FIBER AND INSTALLATION OF FIBER BY OWNER.
- CITY OF ANN ARBOR TELECOMMUNICATIONS DUCT BANK SHALL CONSIST OF ONE 4" SCH. 80 PVC CONDUIT, CONCRETE ENCASED. A 3" THICK MINIMUM CONCRETE COVER SHALL PROTECT DUCTS OVER THE ENTIRE LENGTH AND WIDTH OF THE CONDUIT. FIBER AND INSTALLATION OF FIBER BY OWNER.
- CONTACT CITY OF ANN ARBOR REPRESENTATIVE MARC MARENO (734)794-6350 PRIOR TO ACCESSING CITY OF ANN ARBOR HANDHOLES. CONTACT UM-ITS REPRESENTATIVE KEVIN MCLAUGHLIN, PE, RCDD (734) 615-5699 PRIOR TO ACCESSING UM HANDHOLES. CITY OF ANN ARBOR AND/OR UM REPRESENTATIVE TO BE ON-SITE WHEN ACCESSING HANDHOLES.
- CONTACT UM-ITS REPRESENTATIVE KEVIN MCLAUGHLIN, PE, RCDD (734) 615-5699 FOR INSPECTIONS AND ACCEPTANCE OF DUCT BANK CONSTRUCTION. THE CITY OF ANN ARBOR WILL INSPECT RESTORATION OF DISTURBANCES WITHIN THE PUBLIC RIGHT OF WAY.
- 17 INCH X 30 INCH HANDHOLE ASSEMBLIES SHALL CONSIST OF TWO, STACKED "QUAZITE" BOXES. THE COVER SHALL BE A LOCKING HEAVY-DUTY BOLT-DOWN TYPE WITH A LOGO THAT READS "TRAFFIC SIGNAL" OR "STREET LIGHTING", BASED ON THEIR INTENDED USE. THE TOTAL DEPTH OF THE HANDHOLE SHALL BE 18 INCHES.
- DUCT BANKS SHALL BE SUPPORTED ON UNDISTURBED SOIL OR ON PIERS EXTENDING DOWN TO UNDISTURBED SOIL.
- CHANGES IN DUCT BANK DIRECTION SHALL BE MADE WITH 10' MINIMUM RADIUS WITH MANUFACTURED SWEEPS.
- DUCT BANKS SHALL BE SLOPED DOWNWARD TOWARD MANHOLES AND AWAY FROM BUILDINGS A MINIMUM OF 6" PER 100'. DUCT BANKS SHALL NOT CONTAIN TRAPS WHERE WATER MAY ACCUMULATE.
- PULL A SOLID MANDREL AND A STIFF BRISTLED BRUSH THROUGH EACH DUCT TO CLEAN THEM AND INSURE THE ABSENCE OF KINKS AND FLAT SPOTS. A MINIMUM 3-1/4" DIAMETER BY 5' MINIMUM LONG MANDREL SHALL BE USED FOR 4" CONDUIT. THE MANDREL PULL SHALL BE WITNESSED BY THE OWNER'S REPRESENTATIVE. WHEN MANDREL PULLS DETECT CRUSHED, FLATTENED, KINKED, OR OBSTRUCTED DUCTS OR CONDUITS, ADDITIONAL DUCTS OR CONDUITS SHALL BE PROVIDED. TO BE PAID FOR IN "Conduit, Encased, 6, 4 inch" AND "Conduit, Encased, 1, 4 inch".
- DUCT BANKS SHALL BE MARKED WITH A 6" WIDE RED PLASTIC MARKER STRIP PLACED IN THE BACKFILL APPROXIMATELY 12" ABOVE THE ENTIRE LENGTH OF THE DUCT BANK. TO BE PAID FOR IN "Conduit, Encased, 6, 4 inch" AND "Conduit, Encased, 1, 4 inch".
- CONDUIT EXPANSION COUPLINGS SHALL BE INSTALLED ON ALL CONDUITS AT EACH END OF THE BRIDGE. DETAIL ON SHEET 111.
- COPPERHEAD™ COPPER COATED STEEL LOCATING WIRE, (#12 CCS EXTRA HIGH STRENGTH HARD DRAWN 1150# (SOLOSHOT)), OR EQUIVALENT, SHALL BE PLACED OUTSIDE THE DUCT AND INSTALLED WHEN DUCT PULLBACK/ PLACEMENT IS PERFORMED. TRACER WIRE IS NOT TO BE PLACED INSIDE THE DUCT. WHERE MULTIPLE DUCTS ARE PLACED, ONLY 1 TRACER WIRE SHALL BE REQUIRED PER PACKAGE. A MINIMUM OF 60" OF TRACER WIRE SHALL EXTEND FROM THE ENDPOINT OF THE DUCT AND BE NEATLY COILED AT THE DUCT PATHWAY TERMINATION ENDPOINT. TO BE PAID FOR IN "Conduit, Encased, 6, 4 inch" AND "Conduit, Encased, 1, 4 inch".
- #1250 LB. MULE TAPE WITH FOOTAGE MARKINGS OR EQUIVALENT SHALL BE PLACED IN ALL NEW DUCT. A MINIMUM OF 60" OF MULE TAPE SHALL EXTEND FROM THE ENDS OF THE DUCT, COILED AND SECURED TO THE END OF THE DUCT WITH TAPE OR SOME OTHER MEANS. TO BE PAID FOR IN "Conduit, Encased, 6, 4 inch" AND "Conduit, Encased, 1, 4 inch".
- OPEN DUCTS IN MAN HOLES SHALL BE PLUGGED WITH REMOVABLE PLUGS AFTER MANDREL PROOFING TO PREVENT DIRT AND MOISTURE FROM ENTERING THE DUCTS. TO BE PAID FOR IN "Conduit, Encased, 6, 4 inch" AND "Conduit, Encased, 1, 4 inch".
- CONTRACTOR TO PROVIDE SCH. 80 PVC EXPANSION JOINT EVERY 100' UNDER THE BRIDGE DECK, AS WELL AS AT EACH END OF THE BRIDGE. SEE SHEET 103 FOR DETAIL. TO BE PAID FOR IN "Conduit, Encased, 6, 4 inch" AND "Conduit, Encased, 1, 4 inch".
- SWEEP ACCESS ROADS TO ELIMINATE DEBRIS CAUSED BY EQUIPMENT AND CONSTRUCTION ACTIVITIES.

### TELECOMMUNICATIONS PHASING PLAN

- PHASE 1:  
1. CONTRACTOR TO ADJUST ELEVATION OF RIM OF UM MANHOLE #19 TO MATCH ADJACENT ROADWAY GRADE.
- PHASE 2:  
1. CONTRACTOR TO INSTALL CITY OF ANN ARBOR HH#9 AND HH#10.  
2. CONTRACTOR TO INSTALL (1) 4" SCH. 80 PVC CONDUIT FROM HH#9 TO NORTH END OF THE BRIDGE AND FROM HH#10 TO SOUTH END OF THE BRIDGE. CONTRACTOR TO INSTALL (1) 4" SCH. 80 PVC CONDUIT FROM HH#9 TO HH#10 TO THE EAST EDGE OF PHASE 2 CONSTRUCTION. CONDUITS TO BE ENCASED IN CONCRETE PER DETAIL.  
3. CONTRACTOR TO INSTALL (6) 4" ID SCH. 80 PVC UM CONDUITS FROM COUPLERS AT EXISTING UM CONDUITS TO END OF BRIDGE ON NORTH AND SOUTH SIDES OF THE BRIDGE. CONDUITS TO BE ENCASED IN CONCRETE PER DETAIL.  
4. CONTRACTOR TO COORDINATE WITH AT&T CONTRACTOR FOR THE CONSTRUCTION OF THE AT&T CONDUIT CONNECTIONS AT EACH END OF THE BRIDGE.
- PHASE 3:  
1. CONTRACTOR TO INSTALL (1) 4" SCH. 80 PVC CONDUIT FROM THE EAST EDGE OF PHASE 2 CONSTRUCTION TO THE EXISTING CITY OF ANN ARBOR TRAFFIC SIGNAL HANDHOLES NORTH AND SOUTH OF THE BRIDGE.



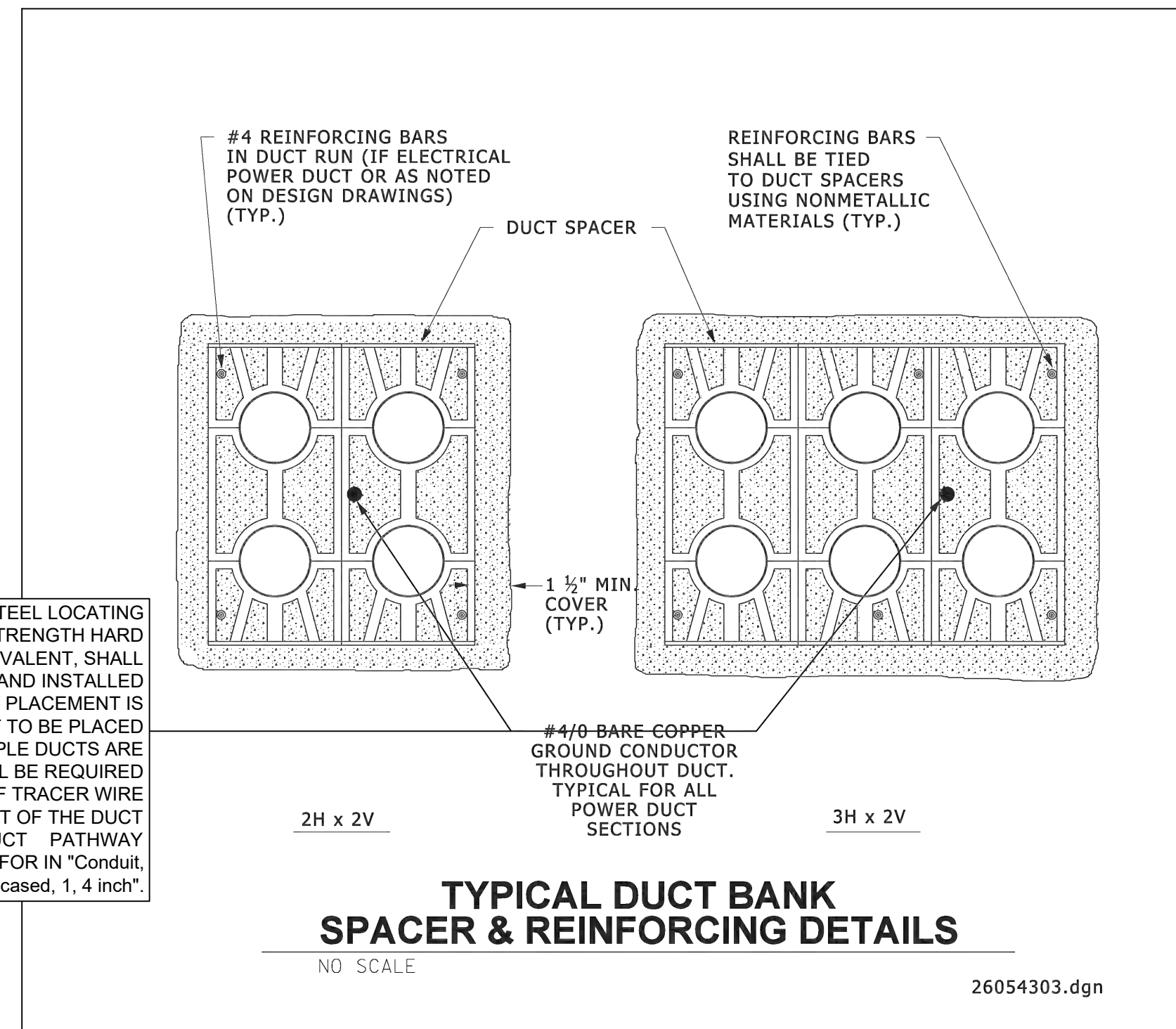
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

### E. MEDICAL CENTER DRIVE

### TELECOMMUNICATIONS CONDUIT PLAN

Digitally signed by Leigh Merrill Signature  
Date: 2023.10.06

SCALE	1"=30'
DRAWING NO.	2021-008-UT4
SHEET NO.	60 OF 155

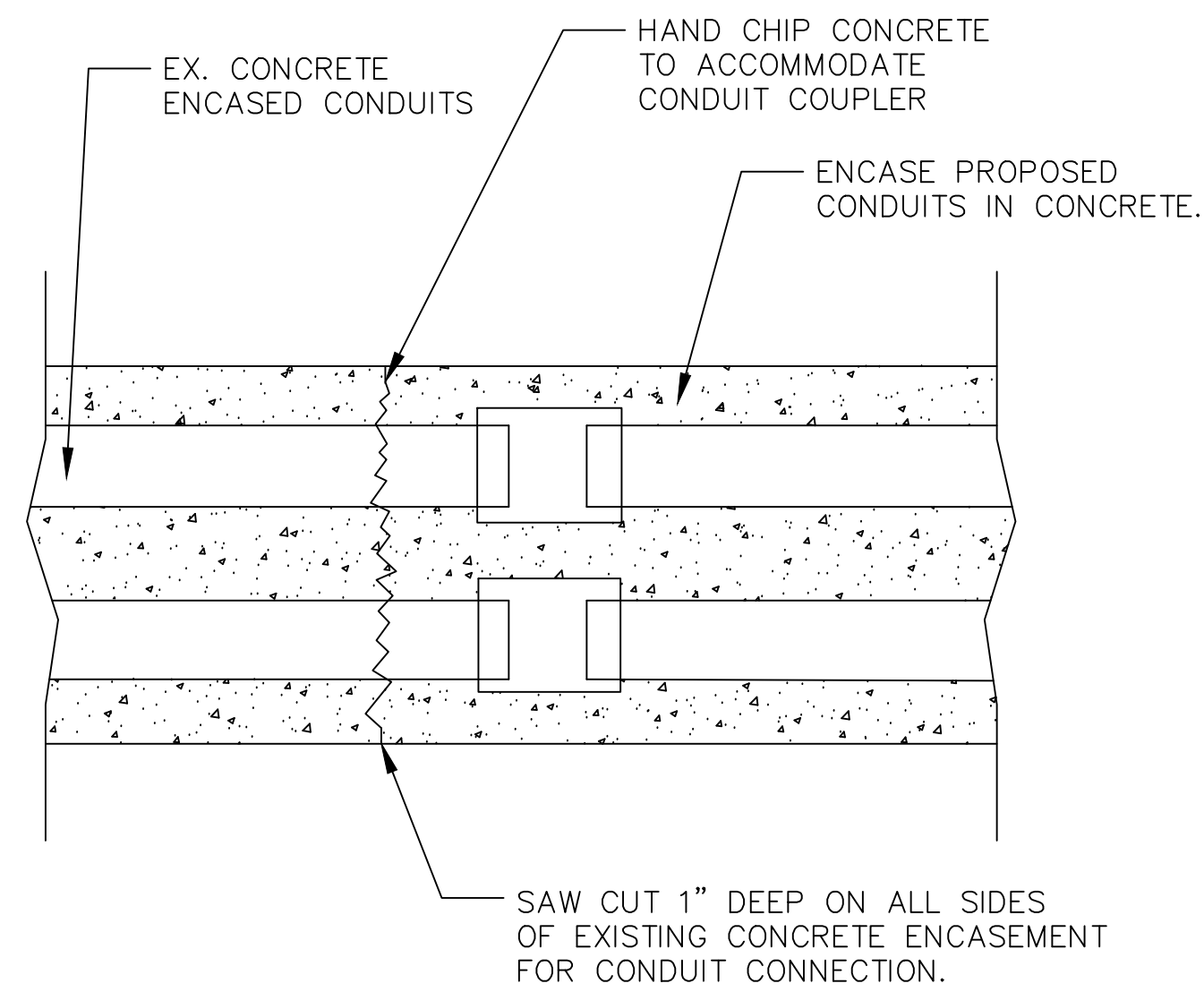


COPPERHEAD™ COPPER COATED STEEL LOCATING WIRE, (#12 CCS EXTRA HIGH STRENGTH HARD DRAWN 1150# (SOLOSHOT), OR EQUIVALENT, SHALL BE PLACED OUTSIDE THE DUCT AND INSTALLED WHEN DUCT PULLBACK/ PLACEMENT IS PERFORMED. TRACER WIRE IS NOT TO BE PLACED INSIDE THE DUCT. WHERE MULTIPLE DUCTS ARE PLACED, ONLY 1 TRACER WIRE SHALL BE REQUIRED PER PACKAGE. A MINIMUM OF 60" OF TRACER WIRE SHALL EXTEND FROM THE ENDPOINT OF THE DUCT AND BE NEATLY COILED AT THE DUCT PATHWAY TERMINATION ENDPOINT. TO BE PAID FOR IN "Conduit, Encased, 6, 4 inch" AND "Conduit, Encased, 1, 4 inch".

**TYPICAL DUCT BANK SPACER & REINFORCING DETAILS**

NO SCALE

26054303.dgn

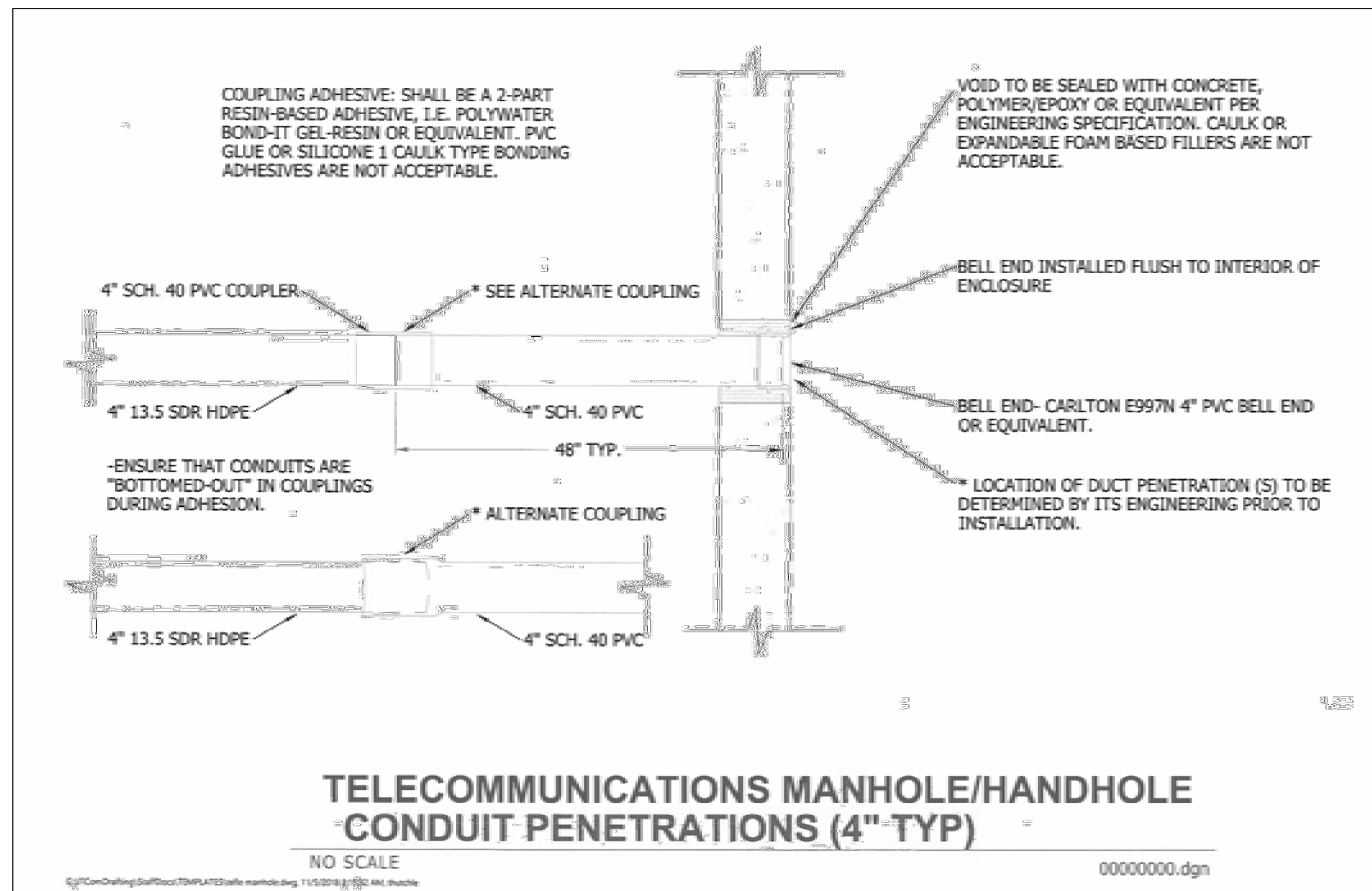


**CONDUIT CONNECTION ENCASEMENT DETAIL**

REV	CHANGE	DATE
B	IMAGE ENHANCEMENT	09/02/15

UNLESS OTHERWISE SPECIFIED:		NAME	DATE	
DIMENSIONS ARE IN INCHES		DRAWN	HUIZAR 06/02/14	
TOLERANCES:		CHECKED	F.GRO 06/02/14	
FRACTIONAL ± 1/64		ENG APPR.		
ANGULAR ± 0.15°		MFG APPR.		TITLE:
TWO PLACE DECIMAL ±0.010		G.A.		<b>4" KWIKIE HOLLOW STEM</b>
THREE PLACE DECIMAL ±0.005		COMMENTS:		
INTERPRET GEOMETRIC TOLERANCING PER:				SIZE
MATERIAL:				A
SEE BOM				DWG. NO.
				5120-40
				REV
				B
				SCALE:
				WEIGHT:
				SHEET 1 OF 1

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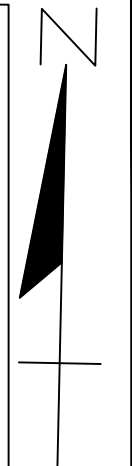


3 WORKING DAYS  
BEFORE YOU DIG  
CALL MISS DIG  
800-482-7171  
(TOLL FREE)

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD & GRADE	

		PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR			
		<b>E. MEDICAL CENTER DRIVE</b>		SCALE 1"=30'	
		<b>TELECOMMUNICATIONS CONDUIT DETAILS</b>		DRAWING NO. <b>2021-008-UT5</b>	
		Date: 2023.10.06		SHEET NO. 61 OF 155	
		APPROVED BY:		Digitally signed by Leigh Merrill Date: 2023.10.06	
		REV. NO.		CH.BY	
		DESCRIPTION		DATE	
		10/6/23		DLL LCM	



**NOTES**

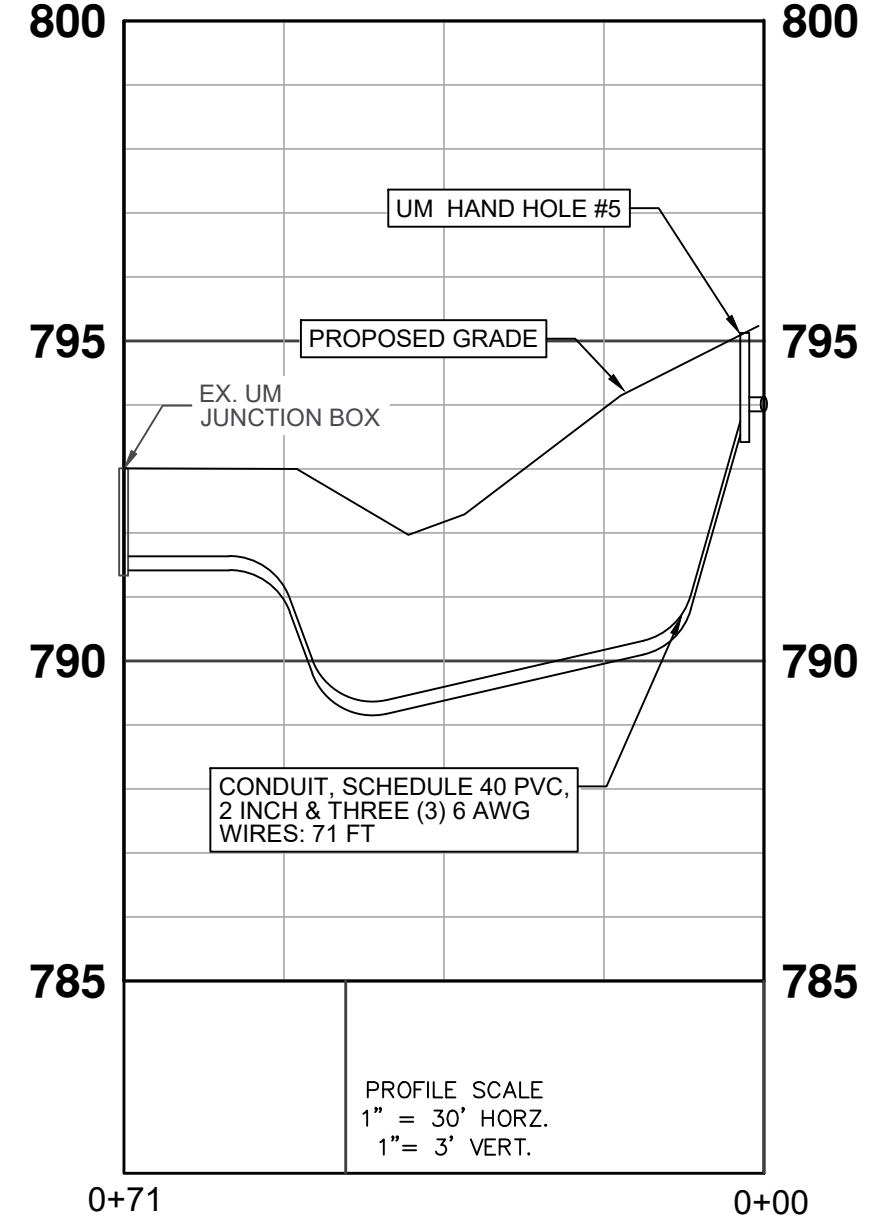
- SEE SHEET 107 FOR CONDUIT DETAILS AT BRIDGE APPROACHES.
- CONDUIT SHALL BE 2 INCH OR 3 INCH SCH. 80 PVC. CONDUITS SHALL BE FITTED WITH EXPANSION JOINTS AT EACH END OF THE BRIDGE, TO BE PAID FOR IN "CONDUIT, SCHEDULE 40 PVC, 2 INCH" AND "CONDUIT, SCHEDULE 40 PVC, 3 INCH".
- ALL STREET LIGHT AND ILLUMINATED SIGN WIRING IN CONDUIT TO BE THREE (3) 6 AWG XLP/USE-2/RHH/RHW-2, IN BLACK, WHITE AND GREEN.
- CONTACT CITY OF ANN ARBOR REPRESENTATIVE MARC MARENO (734)794-6350 PRIOR TO ACCESSING CITY OF ANN ARBOR HANDHOLES. CONTACT UM-ITS REPRESENTATIVE KEVIN MCLAUGHLIN, PE, RCDD (734) 615-5699 PRIOR TO ACCESSING UM HANDHOLES. CITY OF ANN ARBOR AND/OR UM REPRESENTATIVE TO BE ON-SITE WHEN ACCESSING HANDHOLES.
- 17 INCH X 30 INCH HANDHOLE ASSEMBLIES SHALL CONSIST OF TWO, STACKED "QUAZITE" BOXES. THE COVER SHALL BE A LOCKING HEAVY-DUTY BOLT-DOWN TYPE WITH A LOGO THAT READS "TRAFFIC SIGNAL" OR "STREET LIGHTING", BASED ON THEIR INTENDED USE. THE TOTAL DEPTH OF THE HANDHOLE SHALL BE 18 INCHES.
- EXISTING UNIVERSITY OF MICHIGAN MEDICAL CENTER STREET LIGHTS AT PROPOSED LIGHT LOCATIONS L1 THROUGH L5 ARE TO BE REMOVED AND REPLACED WITH CITY OF ANN ARBOR LIGHT POLES, LUMINAIRES AND FOUNDATIONS. THE PROPOSED LIGHTS SHALL BE CONNECTED TO THE CITY OF ANN ARBOR'S EXISTING LIGHTING CIRCUIT.
- CONDUIT FOR BOTH THE ANN ARBOR STREET LIGHT CIRCUIT AND THE UNIVERSITY OF MICHIGAN MEDICAL CENTER ILLUMINATED SIGNS CIRCUIT TO BE INSTALLED IN THE NEW BRIDGE SIDEWALK AS SHOWN. CONTRACTOR SHALL INSTALL NEW WIRES BETWEEN HANDHOLE #5 AND #6 AND RECONNECT THE ILLUMINATED SIGNS CIRCUIT, TO BE PAID FOR IN "CONDUIT, SCHEDULE 40 PVC, 2 INCH" TO BE PAID FOR IN "CONDUIT, SCHEDULE 80 PVC, 2 INCH".
- LOCATE PROPOSED AND EXISTING UNDERGROUND PIPES AND UTILITIES AND PROPOSED GUARDRAIL POSTS PRIOR TO INSTALLING LIGHTING. FIELD ADJUSTMENTS MAY BE NECESSARY AS DIRECTED BY THE ENGINEER.
- COPPERHEAD COPPER COATED STEEL LOCATING WIRE, (#12 CCS EXTRA HIGH STRENGTH HARD DRAWN 1150# (SOLOSHOT)), OR EQUIVALENT, SHALL BE PLACED OUTSIDE THE DUCT OR CONDUIT AND INSTALLED WHEN DUCT/CONDUIT PULLBACK/PLACEMENT IS PERFORMED. TRACER WIRE IS NOT TO BE PLACED INSIDE THE DUCT OR CONDUIT. WHERE MULTIPLE DUCTS ARE PLACED, ONLY 1 TRACER WIRE SHALL BE REQUIRED PER PACKAGE. A MINIMUM OF 60" OF TRACER WIRE SHALL EXTEND FROM THE ENDPOINT OF THE DUCT AND BE NEARLY COILED AT THE DUCT OR CONDUIT PATHWAY TERMINATION ENDPOINT.
- STREET LIGHT POLES SHALL BE SHAKESPEARE AS30-10S1DB01/OPAR6-BK-H WITH THE FOLLOWING SPECIFICATIONS: 30' SMOOTH FINISH, ANCHOR BASE POLE WITH 4"X 12" HANDHOLE, POLE TO BE DRILLED FOR 6" ALUMINUM MAST ARM AND BASE COVER, BASE COVER TO BE 1-PIECE POWDERED COATED BLACK, AND ANCHOR BOLTS TO BE 1" DIAMETER.
- LUMINAIRE TO BE LUMICON LWS-LSL-60-GR-1-T2-OW-7P WITH THE FOLLOWING SPECIFICATIONS: 58 WATT LED STREET LUMINAIRE, 8,201 DELIVERED LUMENS, TYPE II DISTRIBUTION, 120 VOLT-277 VOLT, 3000K COLOR TEMPERATURE, 7-PIN RECEPTACLE, 20K-AMP SURGE SUPPRESSION.

MISCELLANEOUS QUANTITIES THIS SHEET			
PAY ITEM	DESCRIPTION	UNITS	QUANTITY
8182133	Conduit, Schedule 40 PVC, 2 inch	Ft	385
8182135	Conduit, Schedule 40 PVC, 3 inch	Ft	688
8190211	DB Cable, in Conduit, 600V, 1/C#6	Ft	3456
8187050	Handhole Assembly, 17 inch x 30 inch	Ea	8
8197050	Pole Installation	Ea	5
8197050	Luminaire Installation	Ea	5
8197050	Pole Fill-Up	Ea	5

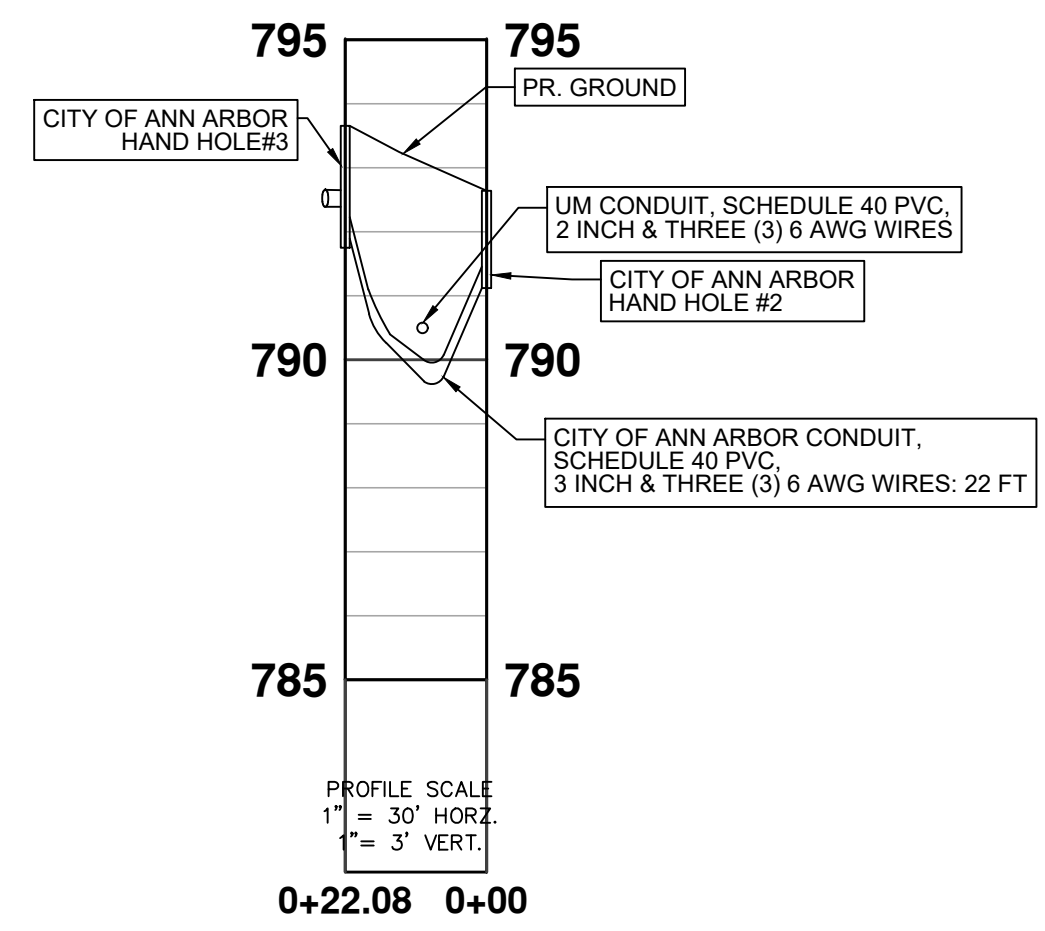
**STREET LIGHT PHASING PLAN**

- PRIOR TO PHASE 1:
- UM TO INSTALL SCHEDULE 40 PVC CONDUIT ATOP AT&T CONDUIT CROSSING E. MEDICAL CENTER DR. SOUTH OF THE BRIDGE TO PROVIDE ELECTRICITY TO THE STREET LIGHTS DURING PHASE 2.
- PHASE 2:
- CONTRACTOR TO INSTALL SCHEDULE 80 PVC CONDUIT FROM EXISTING CITY OF ANN ARBOR HAND HOLE THROUGH CITY OF ANN ARBOR HH#2 AND TERMINATE IN CITY OF ANN ARBOR HH#4.
  - UM TO DISCONNECT WIRING FOR LIGHTS IN BRIDGE AND SIGNS BEFORE CONTRACTOR DEMOLITION. CONTRACTOR TO COORDINATE WORK WITH UM.
  - CONTRACTOR TO INSTALL SCHEDULE 40 PVC CONDUIT AND WIRING FROM CITY OF ANN ARBOR HH#2 TO THE SOUTH THROUGH SIDEWALK AND TERMINATING AT CITY OF ANN ARBOR HH#4. CONTRACTOR TO PULL WIRING THROUGH CONDUIT AND CONNECT TO STREETLIGHTS L1 AND L2.
  - CONTRACTOR TO INSTALL STREET LIGHTS L1 AND L2.
  - CONTRACTOR TO INSTALL SCHEDULE 40 PVC CONDUIT FROM THE EXISTING SOUTH HOSPITAL SIGN TO THE SOUTH THROUGH SIDEWALK AND TERMINATING AT UM HH#6.
  - THE LIGHTED HOSPITAL SIGNS HAVE EXISTING CONDUIT BETWEEN THEM AND A JUNCTION BOX ON EACH SIDE OF THE SOUTH SIGN. CONTRACTOR IS TO PROTECT OR REPLACE IF DAMAGED. CONTRACTOR TO FIELD VERIFY THAT IT IS NOT DAMAGED.
  - UM TO PULL WIRING THROUGH UM SCHEDULE 80 PVC CONDUITS, CONTRACTOR TO COORDINATE WITH UM.
- PHASE 3:
- CONTRACTOR TO DISCONNECT & PULL TEMPORARY STREET LIGHT WIRING ON EAST SIDE.
  - CONTRACTOR TO REMOVE AND SALVAGE STREET LIGHT POLES IF NEW CITY TEMP POLES - UM POLES TO BE DISCARDED.
  - CONTRACTOR TO INSTALL SCHEDULE 40 PVC CONDUIT FROM L3 TO CITY OF ANN ARBOR HH#7. CONTRACTOR TO INSTALL SCHEDULE 40 PVC CONDUIT FROM CITY OF ANN ARBOR HH#7 THROUGH THE SIDEWALK AND TERMINATING AT CITY OF ANN ARBOR HH#8. CONTRACTOR TO PULL WIRE THROUGH CONDUIT AND CONNECT TO PROPOSED STREET LIGHTS L3, L4 AND L5.

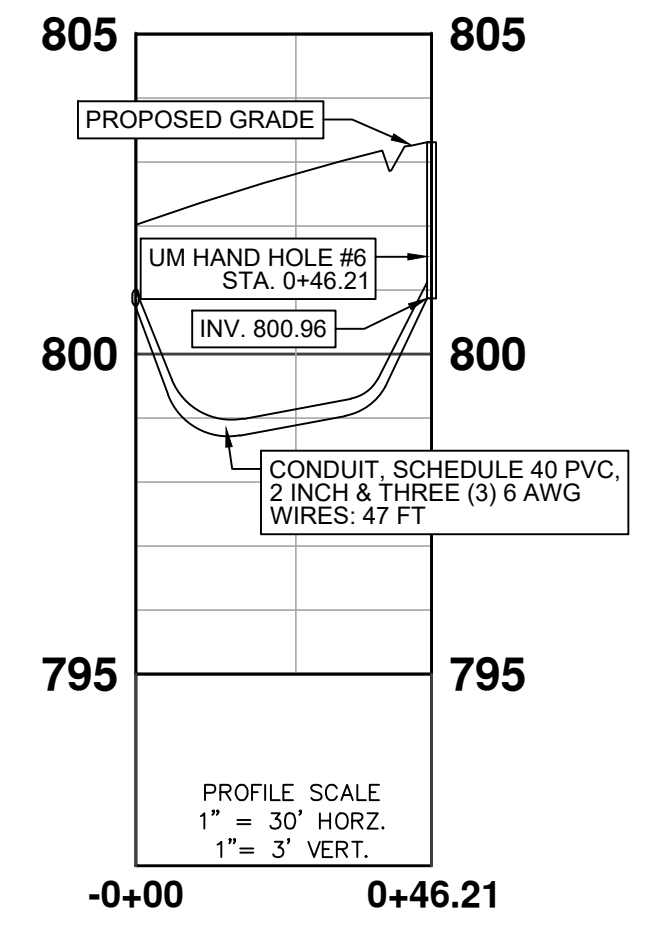
**UM MEDICAL CENTER LIGHTING CIRCUIT CONNECTION (NORTH OF BRIDGE)**



**CITY OF ANN ARBOR LIGHTING CIRCUIT CONNECTION (NORTH OF BRIDGE)**



**UM MEDICAL CENTER LIGHTING CIRCUIT CONNECTION (SOUTH OF BRIDGE)**



**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	STREET LIGHT CONDUIT
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	TELECOM. CONDUIT
WATER MAIN & VALVE-IN-WELL	END SECTION	ELECTRIC	CURB & GUTTER	ROAD & GRADE	LIGHT POLE
WATER MAIN & VALVE-IN-BOX		SIGN	EDGE/GRAVEL		HANDHOLE

**DLZ**

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

**STREET LIGHT ELECTRICAL PLAN**

Digitally signed by Leigh Merrill Signature Date: 2023.10.06

SCALE	1"=20'
DRAWING NO.	2021-008-UT6
SHEET NO.	62 OF 155

APPROVED BY: [Signature]

20:35:47-0400

3 WORKING DAYS!  
BEFORE YOU DIG  
CALL MISS DIG  
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X:\Projects\2021\2141\356300 AA - EMCD Bridge\01\_ConstrDocs\CAD\EMCD\_STREET\_LIGHT\_ELECTRICAL\_PLAN







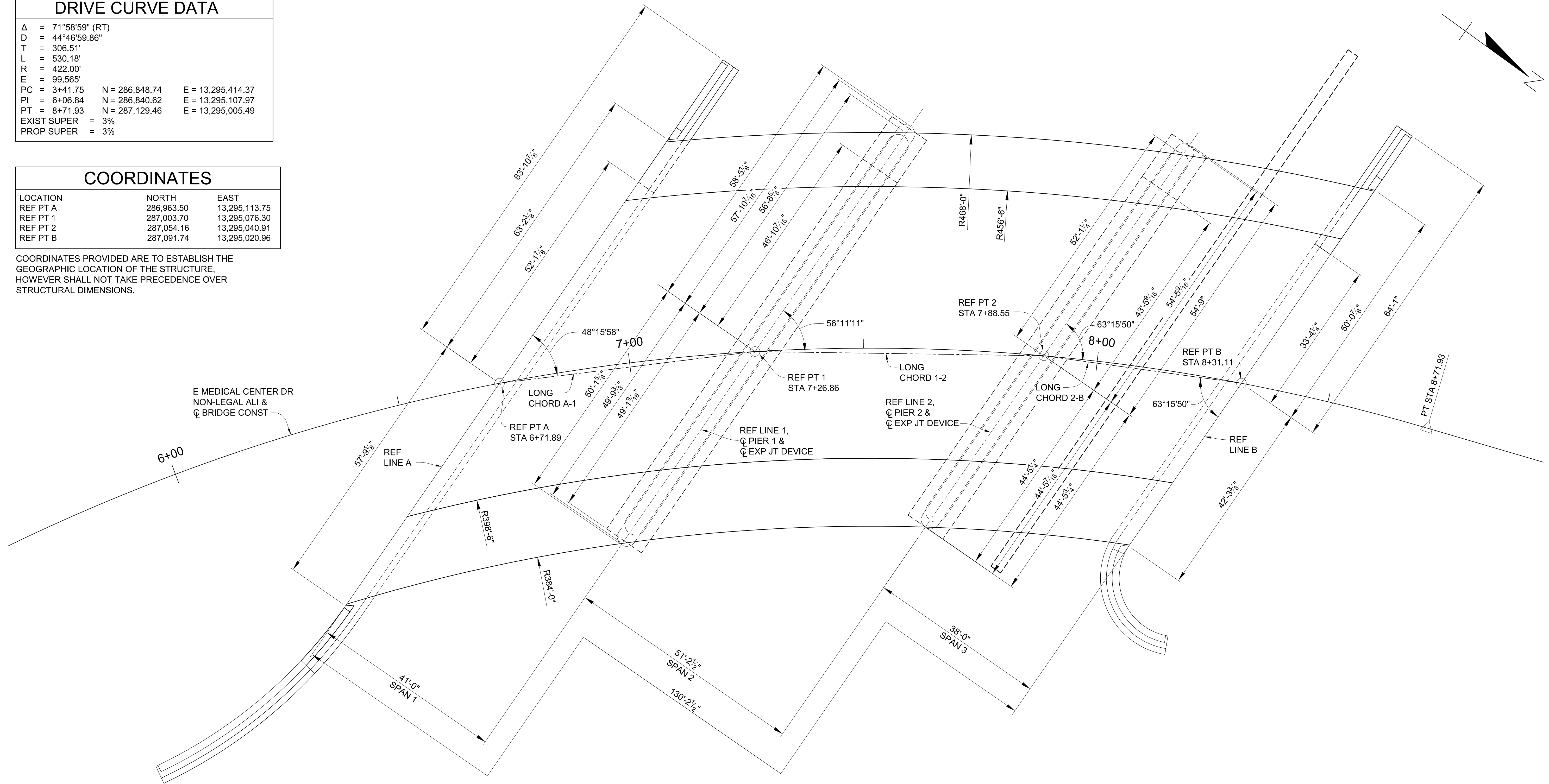
### EAST MEDICAL CENTER DRIVE CURVE DATA

$\Delta$  = 71°58'59" (RT)  
 $D$  = 44°46'59.86"  
 $T$  = 306.51'  
 $L$  = 530.18'  
 $R$  = 422.00'  
 $E$  = 99.565'  
 $PC$  = 3+41.75     $N$  = 286,848.74     $E$  = 13,295,414.37  
 $PI$  = 6+06.84     $N$  = 286,840.62     $E$  = 13,295,107.97  
 $PT$  = 8+71.93     $N$  = 287,129.46     $E$  = 13,295,005.49  
 $EXIST\ SUPER$  = 3%  
 $PROP\ SUPER$  = 3%

### COORDINATES

LOCATION	NORTH	EAST
REF PT A	286,963.50	13,295,113.75
REF PT 1	287,003.70	13,295,076.30
REF PT 2	287,054.16	13,295,040.91
REF PT B	287,091.74	13,295,020.96

COORDINATES PROVIDED ARE TO ESTABLISH THE GEOGRAPHIC LOCATION OF THE STRUCTURE, HOWEVER SHALL NOT TAKE PRECEDENCE OVER STRUCTURAL DIMENSIONS.



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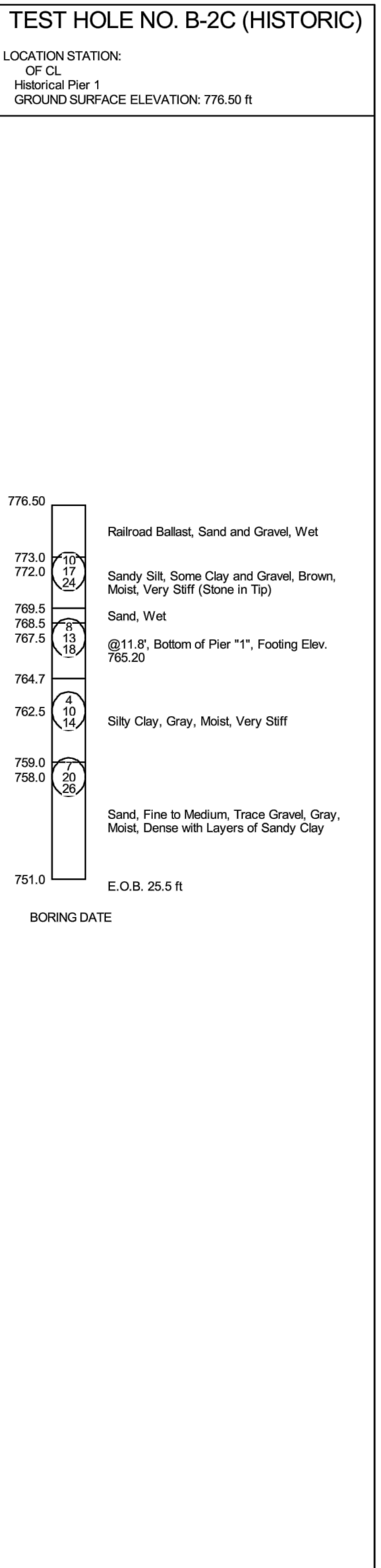
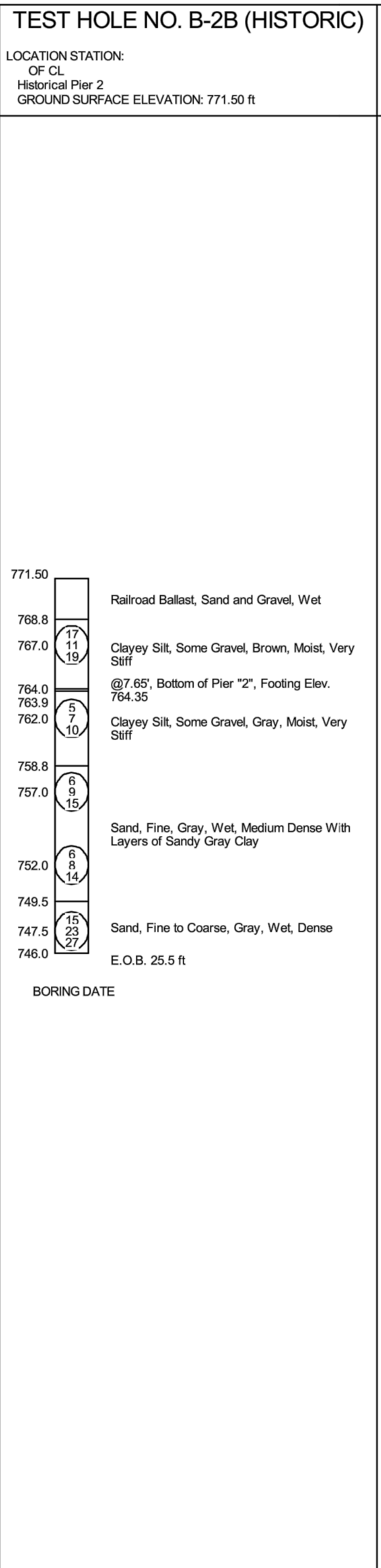
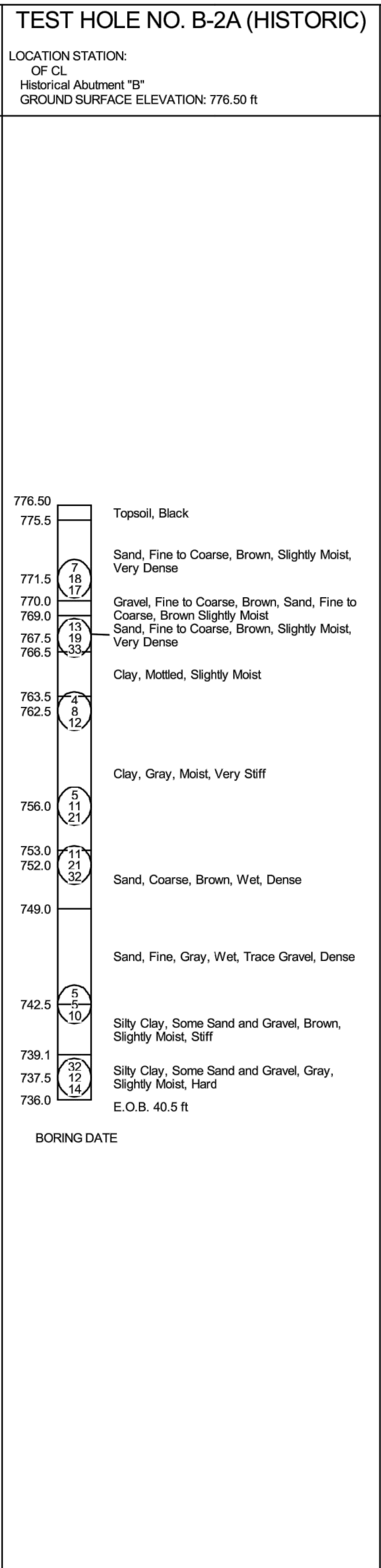
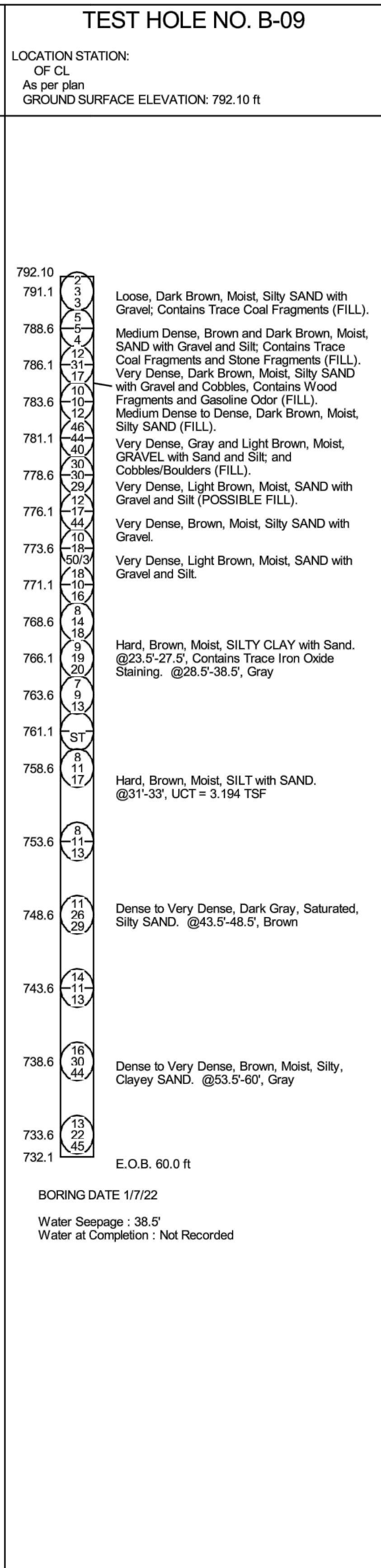
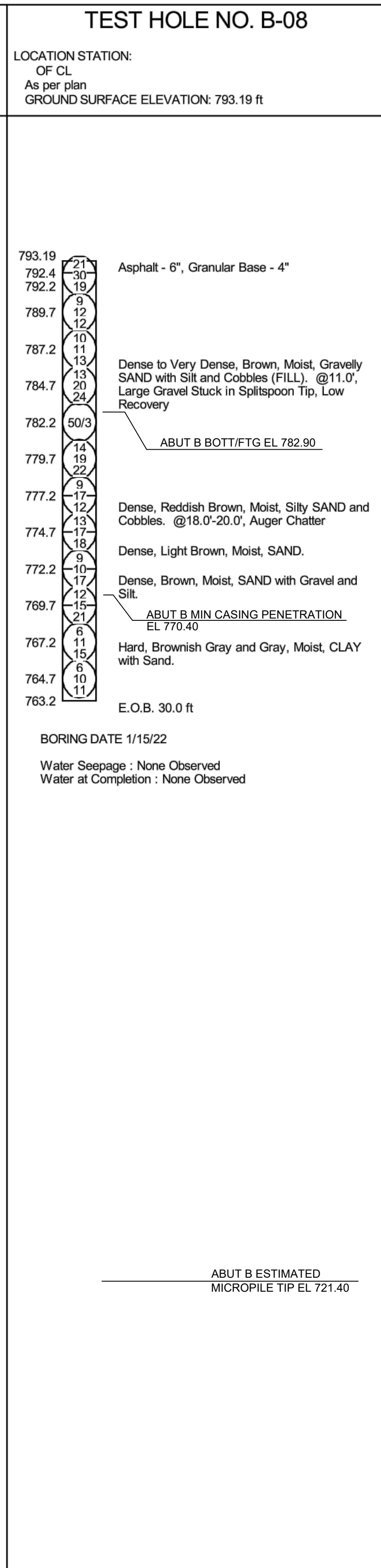
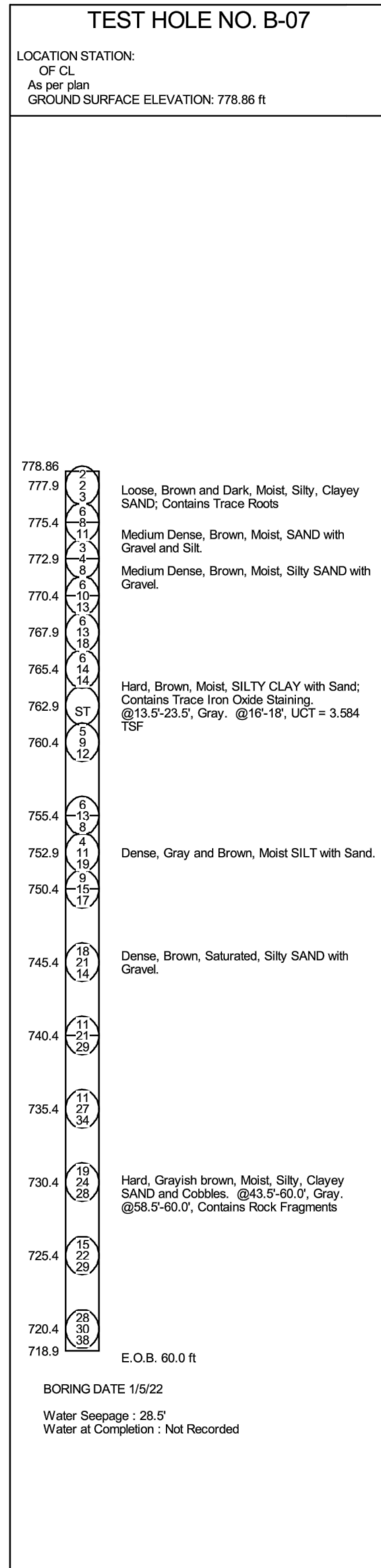
<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>LAYOUT DIAGRAM</b>	
SCALE HOR. 3/32" = 1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR2</b>	
SHEET NO. <u>65</u> OF <u>155</u>	

APPROVED BY: *Carrie L. Hamel*  
 Carrie L. Hamel, PE  
 2023.10.06 16:45:56-04'00"  
 CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734



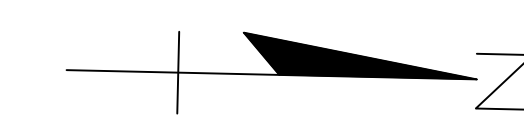
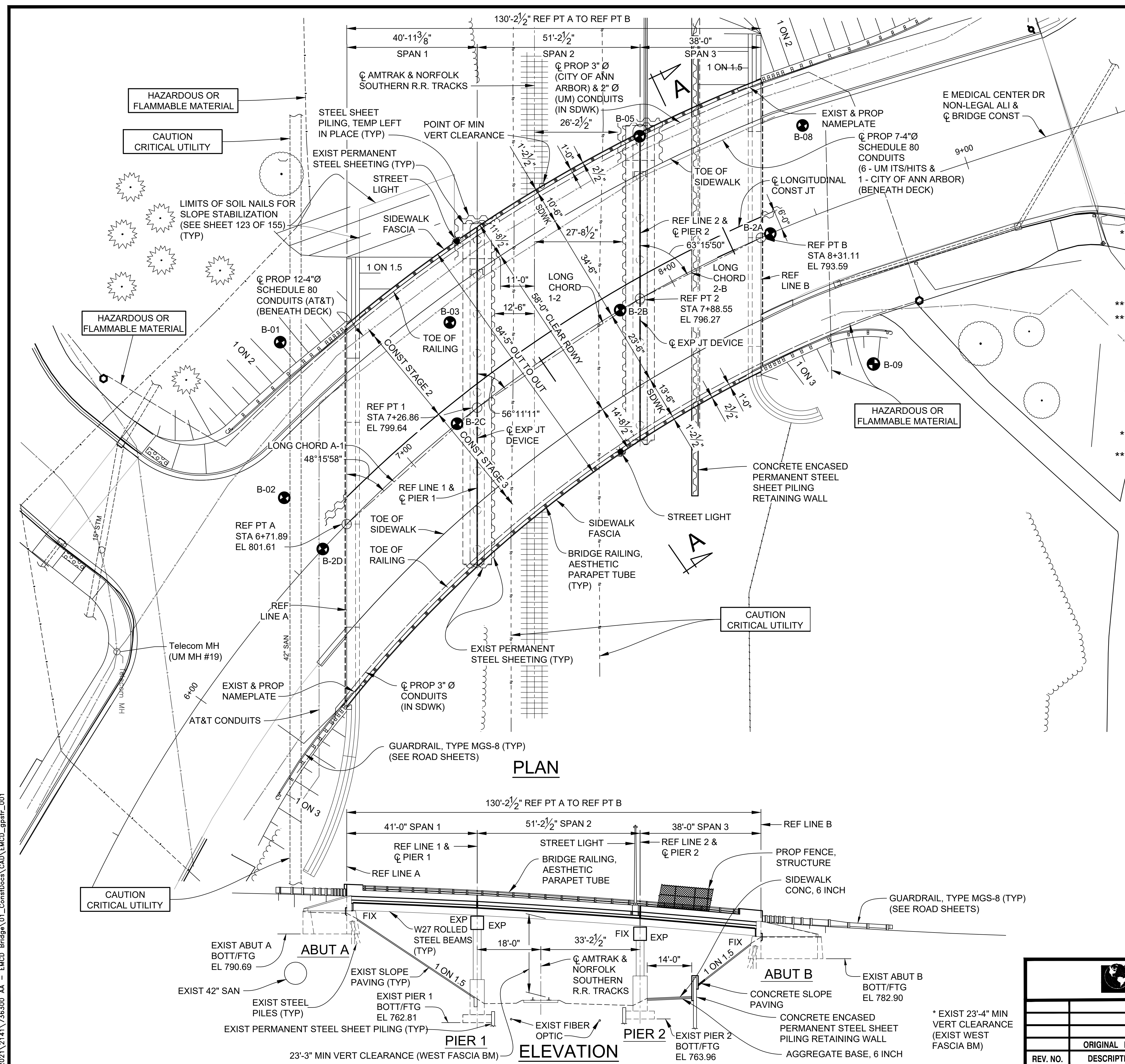
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<b>DLZ</b>					PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR				
					<b>EAST MEDICAL CENTER DRIVE</b>				
					<b>SOIL BORINGS</b>				
					DRAWING NO. <b>2021-008-BR4</b>				
					SHEET NO. <u>67</u> OF <u>155</u>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY: <i>Carrie L. Hamel</i> Carrie L. Hamel, PE 2023.10.06 17:19:09-04'00'				
	ORIGINAL ISSUE	10-6-23	DAF	CLH					





ESTIMATED QUANTITIES THIS SHEET					
DESCRIPTION	CATG 0001	CATG 0002	CATG 0003	CATG 0005	TOTAL
Removal of Existing Concrete	2			12,000	12,000
Structures Rem. Portions of Sidewalks	15.5	2.8	2.1		20.4
Structures Rem. Portions of Deck	500	500	340		1,340
Excavation for	500	500	400		1,400
Dewatering System - Excavation	2				2
Steel Sheet Piling Temp.	350				350
Steel Sheet Piling Temp. Left in Place	50		500		550
False Decking	20,000				20,000
False Decking - Removal	180,000		20,000		200,000
Slope Paving Repair		40	60		100
Slope Paving Conc.		20	30		50
Structure Survey During Construction - STR LINES	1				1
Concrete Schedule 80 Pier Structure		2,340			2,340
Concrete Schedule 40 Pier			150		150
Concrete Schedule 40 Pier				130	130

\*\* 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 FASCIA'S 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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<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

**GENERAL PLAN OF STRUCTURE**

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

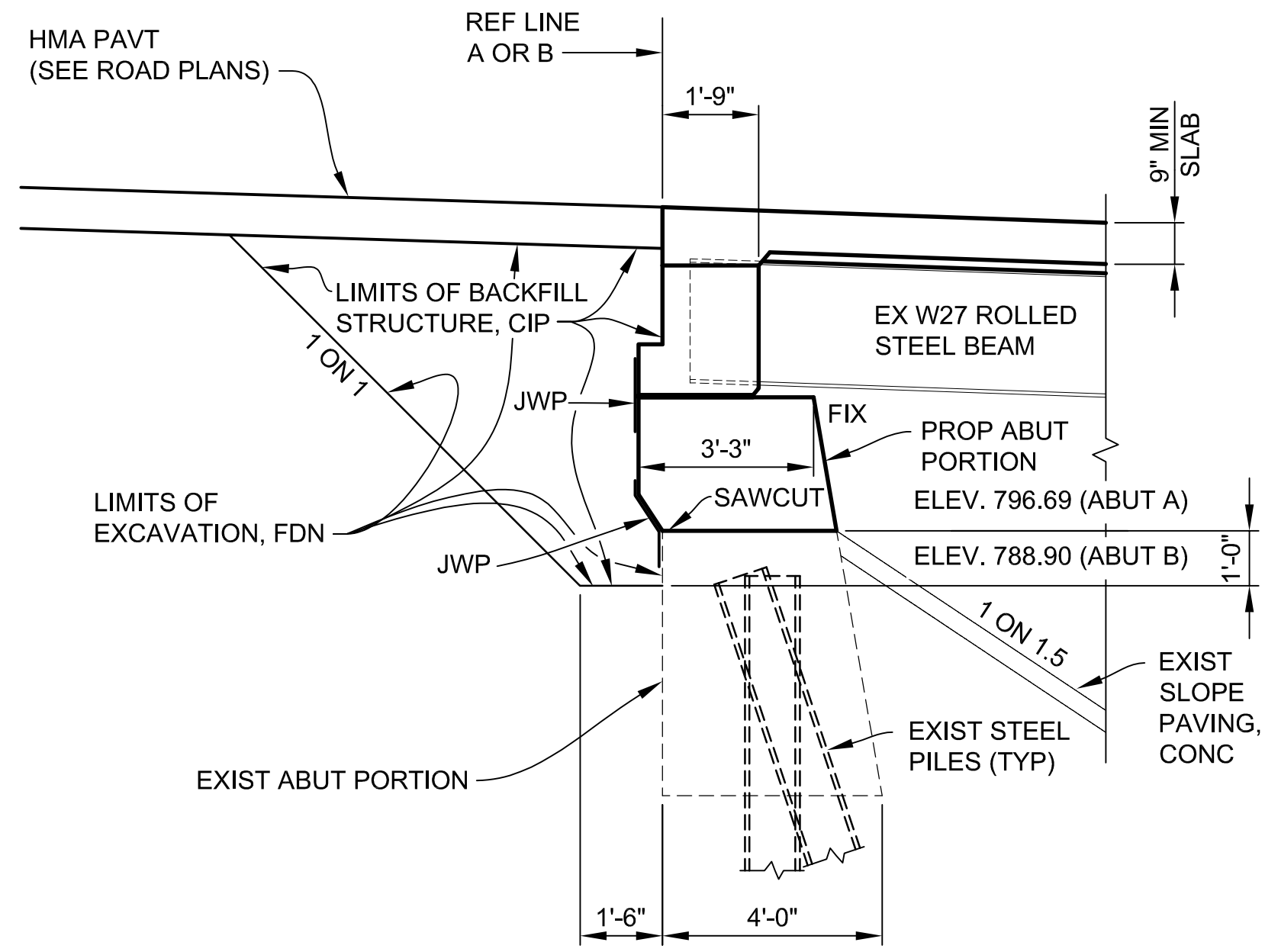
DRAWING NO. **2021-008-BR6**

SHEET NO. 69 OF 155

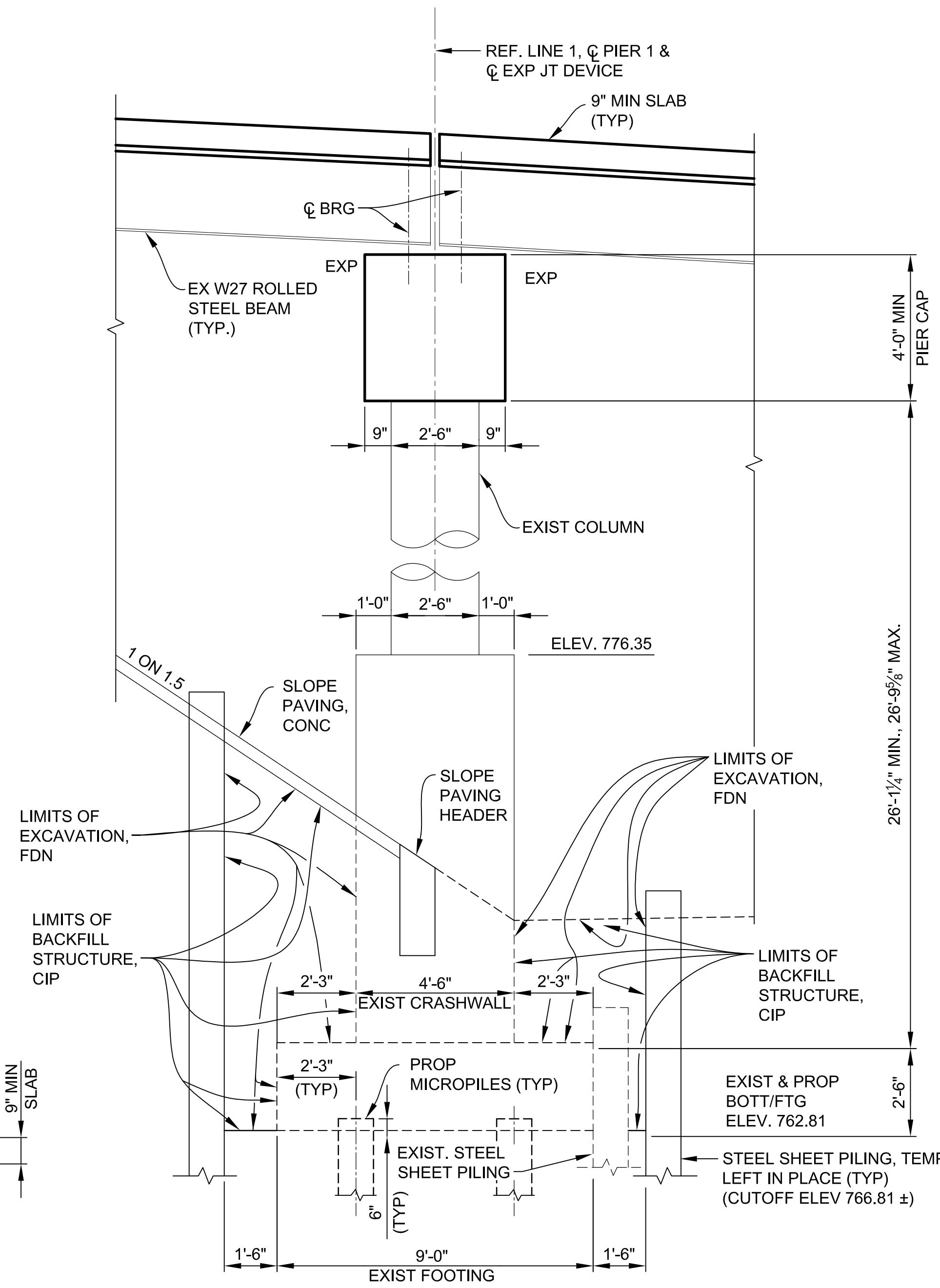
APPROVED BY: *[Signature]* CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

15 2021\2141\736300 AA - EMCD Bridge\01\_Constr\Draws\CAD\EMCD\_gprfr\_001

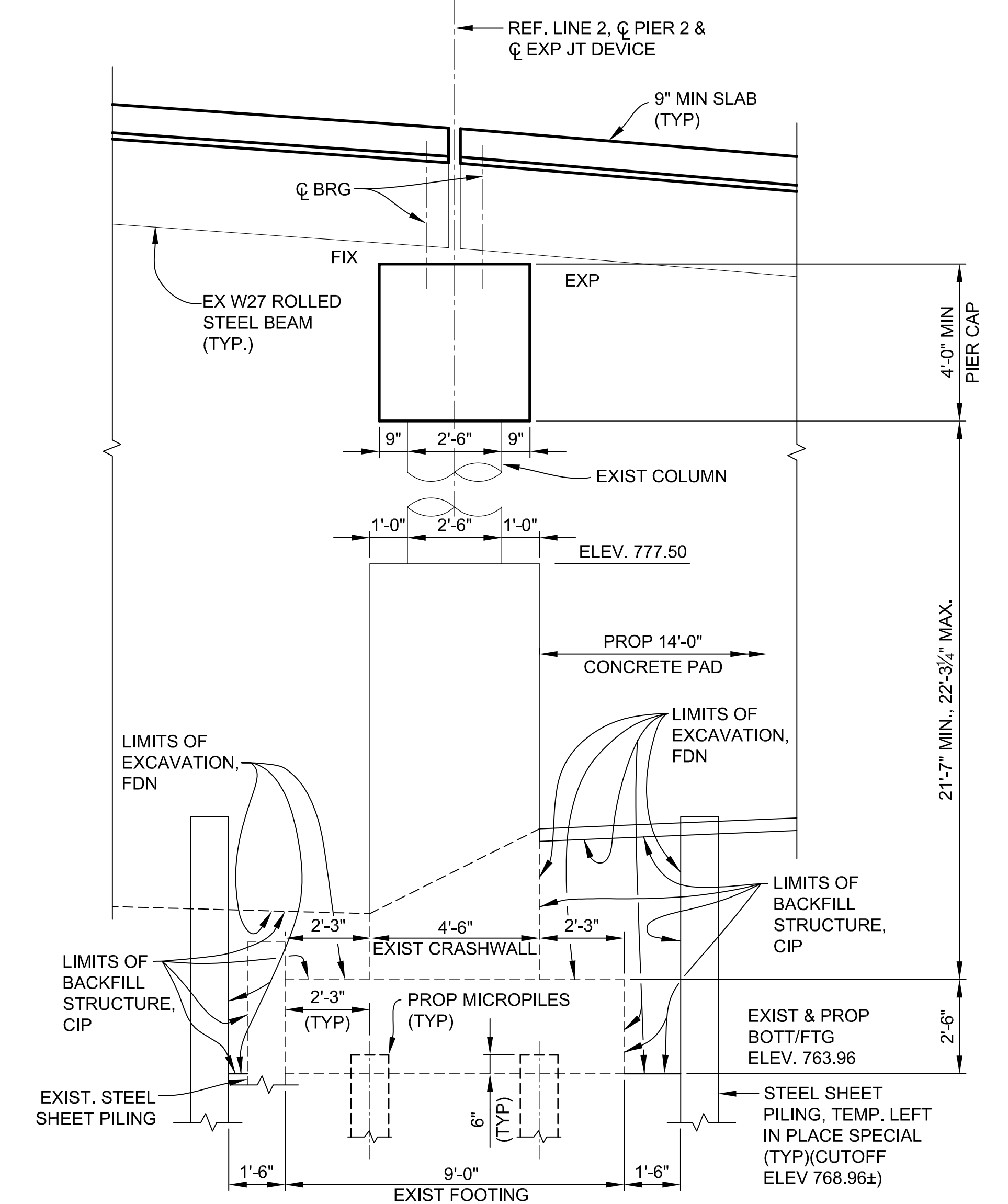




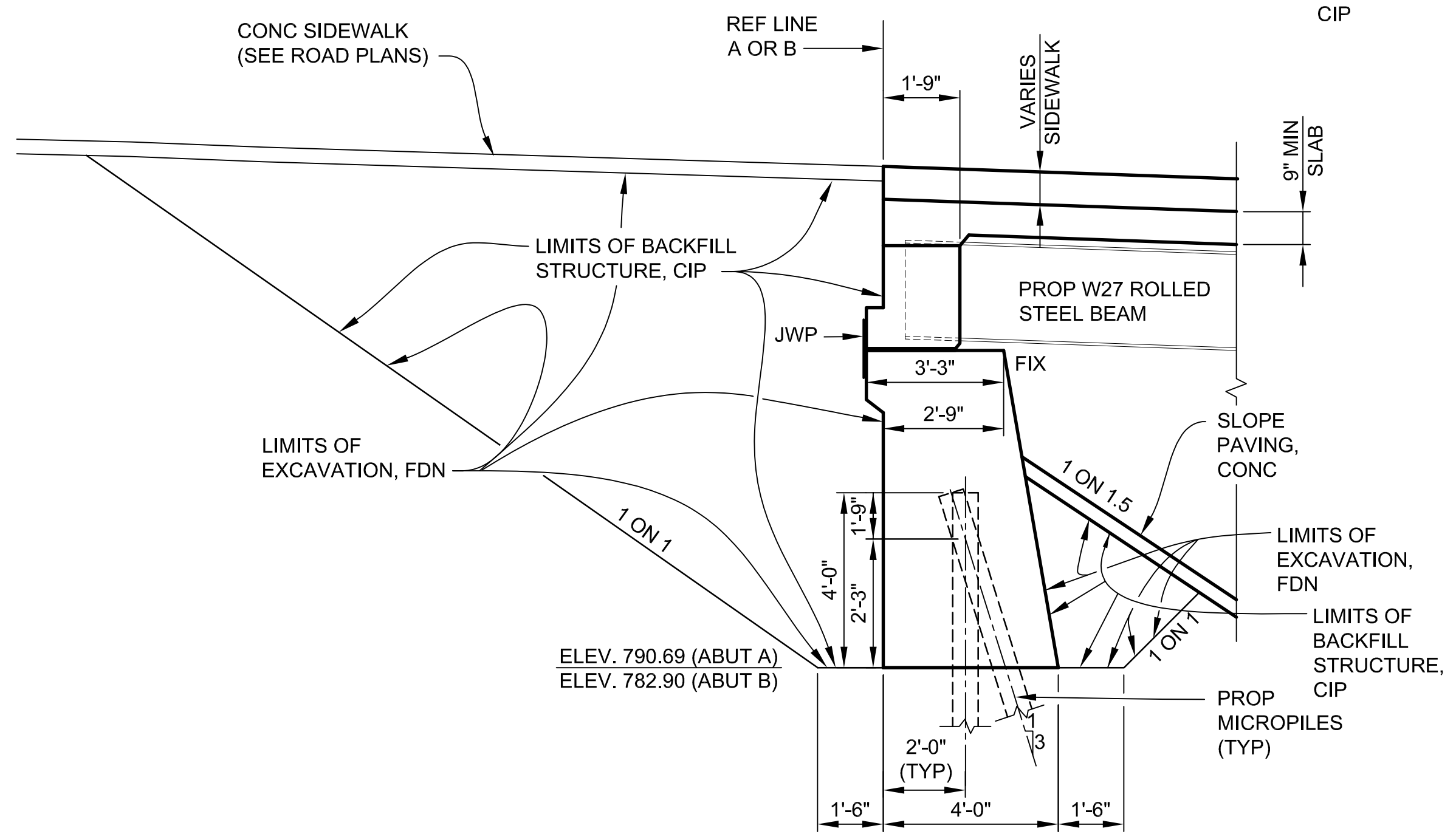
**TYPICAL ABUTMENT SECTION  
(PARTIAL REPLACEMENT)**



**SECTION AT PIER 1**



**SECTION AT PIER 2**



**TYPICAL ABUTMENT SECTION  
(FULL REPLACEMENT)**

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REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

**GENERAL PLAN OF STRUCTURE**

SCALE: HOR. 3/8"=1'-0" 0 INCH 1

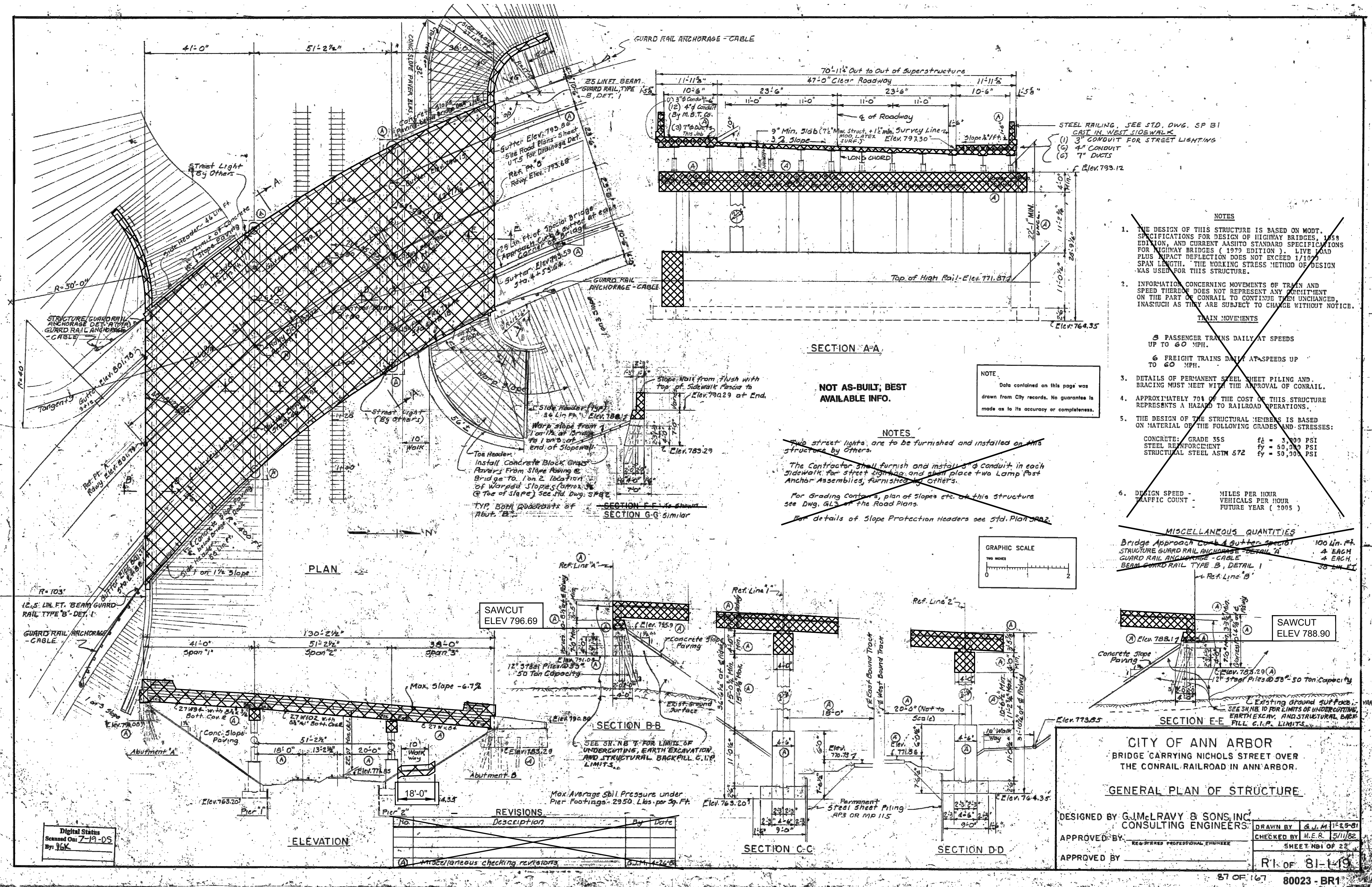
DRAWING NO. **2021-008-BR8**

SHEET NO. 71 OF 155

APPROVED BY: *[Signature]* CARRIE L. HAMEL, P.E. 2023.10.06 17:21:00-04100

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**NOTES:**

REMOVE EXISTING RAILINGS, SIDEWALKS, STRUCTURE LIGHTING, AND DECK. CARE SHALL BE TAKEN TO SALVAGE EXISTING SHEAR DEVELOPERS. WHERE EXISTING SHEAR DEVELOPERS ARE DAMAGED THEY SHALL BE REPLACED IN KIND. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".

SAW-CUT THE DECK ON BOTH THE TOP AND BOTTOM SURFACE PRIOR TO DECK REMOVAL PROCEDURES.

EXISTING STRUCTURE NAME PLATES AND TRAFFIC SIGNS SHALL BE SALVAGED, CLEANED AND REINSTALLED ON PROPOSED STRUCTURE. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".

REMOVE EXISTING PIER CAPS AND PORTIONS OF THE CRASH WALL. SALVAGE BLAST CLEAN, AND STRAIGHTEN EXISTING VERTICAL REINFORCEMENT IN PIER COLUMNS AND EMBED IN PROPOSED PIER CAP. SALVAGE BLAST CLEAN, AND STRAIGHTEN EXISTING HORIZONTAL REINFORCEMENT IN THE CRASH WALL. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".

REMOVE PORTIONS OF EXISTING ABUTMENTS. EXISTING REINFORCING STEEL SHALL BE BLAST CLEANED, STRAIGHTENED AND EMBEDDED IN PROPOSED ABUTMENTS. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".

EXISTING BEAMS SHALL BE REMOVED AND PLACED ASIDE FOR REHABILITATION AND GALVANIZING. EXISTING DIAPHRAGMS AND CONNECTION PLATES SHALL BE REMOVED. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".

PLAN ELEVATIONS REFER TO NAVD88 DATUM. ELEVATION EQUATION: PROP ELEV. = EXIST. PLAN ELEV. - 0.39 FT

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY USING THE LEGEND BELOW.

PROPOSED WORK  
 DENOTES REMOVAL PORTIONS

- NOTES**
- THE DESIGN OF THIS STRUCTURE IS BASED ON MODT. SPECIFICATIONS FOR DESIGN OF HIGHWAY BRIDGES, 1988 EDITION, AND CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (1979 EDITION). LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/100 SPAN LENGTH. THE WORKING STRESS METHOD OF DESIGN WAS USED FOR THIS STRUCTURE.
  - INFORMATION CONCERNING MOVEMENTS OF TRAIN AND SPEED THEREOF DOES NOT REPRESENT ANY COMMITMENT ON THE PART OF CONRAIL TO CONTINUE THEM UNCHANGED, INASMUCH AS THEY ARE SUBJECT TO CHANGE WITHOUT NOTICE.
- TRAIN MOVEMENTS**
- 5 PASSENGER TRAINS DAILY AT SPEEDS UP TO 60 MPH.
  - 6 FREIGHT TRAINS DAILY AT SPEEDS UP TO 60 MPH.
- DETAILS OF PERMANENT STEEL SHEET PILING AND BRACING MUST MEET WITH THE APPROVAL OF CONRAIL.
  - APPROXIMATELY 70% OF THE COST OF THIS STRUCTURE REPRESENTS A HAZARD TO RAILROAD OPERATIONS.
  - THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:
 

CONCRETE: GRADE 355	f <sub>c</sub> = 3,000 PSI
STEEL REINFORCEMENT	f <sub>y</sub> = 50,000 PSI
STRUCTURAL STEEL ASTM 572	f <sub>y</sub> = 50,000 PSI
  - DESIGN SPEED - TRAFFIC COUNT -
 

MILES PER HOUR	VEHICLES PER HOUR
FUTURE YEAR ( 2005 )	

**MISCELLANEOUS QUANTITIES**

Bridge Approach Cont'd gutter spec 100 lin. ft.  
 STRUCTURE GUARD RAIL ANCHORAGE - DETAIL 1 4 EACH  
 GUARD RAIL DISCONNECT - DETAIL 2 4 EACH  
 BEAM GUARD RAIL TYPE B, DETAIL 1 30 LIN. FT.

**CITY OF ANN ARBOR**  
 BRIDGE CARRYING NICHOLS STREET OVER THE CONRAIL RAILROAD IN ANN ARBOR.

**GENERAL PLAN OF STRUCTURE**

DESIGNED BY G.J. McLAVY & SONS, INC.  
 CONSULTING ENGINEERS

APPROVED BY: [Signature]  
 REGISTERED PROFESSIONAL ENGINEER

APPROVED BY: [Signature]  
 REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: G.J.M. 11-29-01  
 CHECKED BY: M.E.R. 5/11/02  
 SHEET NO. 1 OF 23

Rk of 81-1-19

87 OF 167 80023 - BR1

**SECTION A-A**

NOT AS-BUILT, BEST AVAILABLE INFO.

**NOTES**

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

**NOTES**

Two street lights are to be furnished and installed on this structure by others.

The Contractor shall furnish and install a 3" conduit in each sidewalk for street lighting and shall place two Lamp Post Anchor Assemblies furnished by others.

For Grading Contour, plan of slopes etc. of this structure see Dwg. G-13 of the Road Plans.

For details of Slope Protection Headers see Std. Plan 3002.

**REVISIONS**

No.	Description	By	Date
(A)	Miscellaneous checking revisions	B.M.	4-24-05

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

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

EXISTING GENERAL PLAN OF STRUCTURE REMOVAL

SCALE: NONE 0 INCH 1

DRAWING NO. 2021-008-BR9

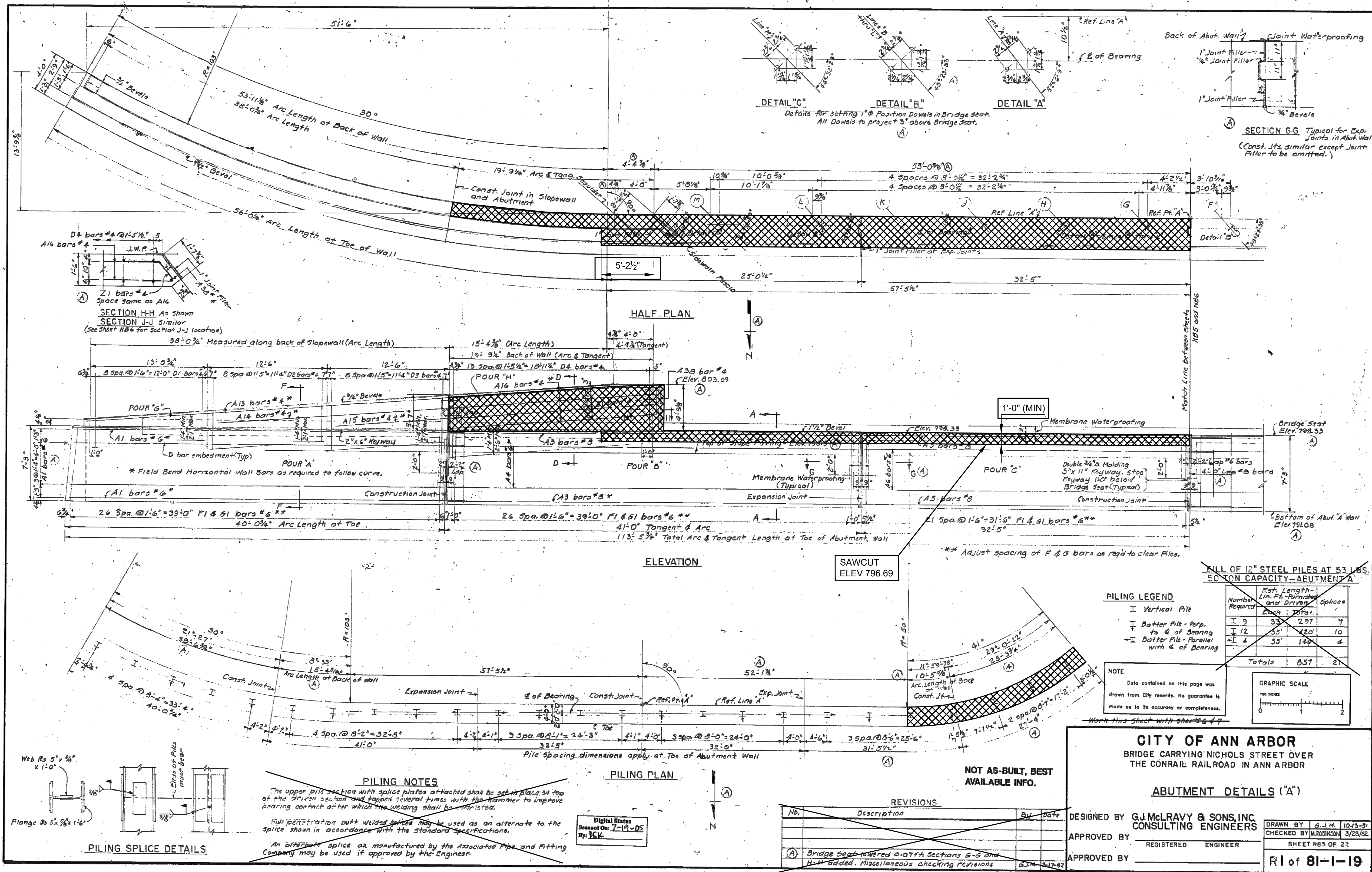
SHEET NO. 72 OF 155

APPROVED BY: [Signature] Carrie L. Hamel, PE 2023.10.06 17:21:18-04'00

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



X:\Projects\2021\2141\736300\_AA - EMCD Bridge\01\_Constr\Docs\CAD\EMCD\_rem\_002



**NOTES:**  
 REMOVE PORTIONS OF EXISTING ABUTMENTS. EXISTING REINFORCING STEEL SHALL BE BLAST CLEANED, STRAIGHTENED AND EMBEDDED IN PROPOSED ABUTMENTS. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".  
 PLAN ELEVATIONS REFER TO NAVD88 DATUM. ELEVATION EQUATION: PROP ELEV. = EXIST. PLAN ELEV. -0.39 FT

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY USING THE LEGEND BELOW.  
 [Symbol] PROPOSED WORK  
 [Symbol] DENOTES REMOVAL PORTIONS

**PILING LEGEND**

Number Required	Est. Length- Lin. Ft. - Buried and Driven	Splices
I 9	33' 2.97'	7
I 12	35' 4.20'	10
I 4	35' 1.40'	4
<b>Totals</b>	<b>857</b>	<b>21</b>

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

**GRAPHIC SCALE**  
 TWO INCHES

**CITY OF ANN ARBOR**  
 BRIDGE CARRYING NICHOLS STREET OVER THE CONRAIL RAILROAD IN ANN ARBOR

**ABUTMENT DETAILS ("A")**

DESIGNED BY G.J. McRAVY & SONS, INC. CONSULTING ENGINEERS  
 APPROVED BY REGISTERED ENGINEER  
 APPROVED BY

DRAWN BY G.J.M. 10/23/21  
 CHECKED BY M. ROBINSON 3/28/22  
 SHEET NBS OF 22  
**R1 of 81-1-19**

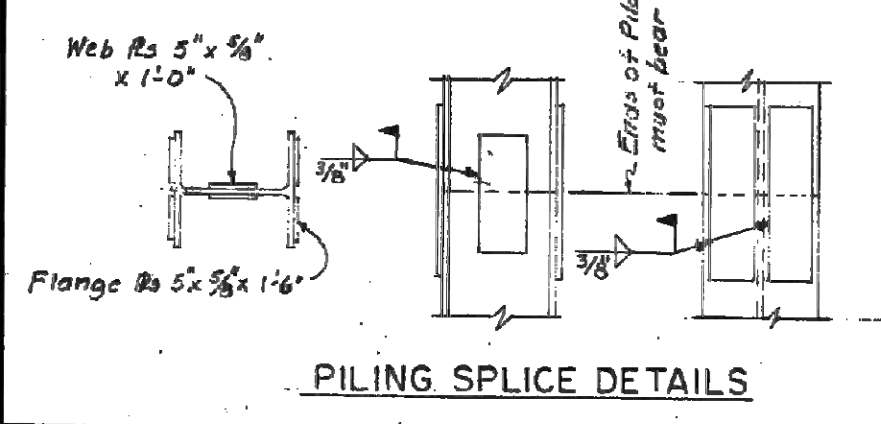
91 OF 167  
 80023 - BR5

**REVISIONS**

No.	Description	By	Date
(A)	Bridge Seat lowered 0.07ft Sections G-G and H-H added. Miscellaneous checking revisions	GJM	3/17/22

**PILING NOTES**  
 The upper pile section with splice plates attached shall be set in place on top of the driven section and tapped several times with the hammer to improve bearing contact after which the welding shall be completed.  
 All penetration butt welded splices may be used as an alternate to the splice shown in accordance with the standard specifications.  
 An alternate splice as manufactured by the Associated Piling and Pitting Company may be used if approved by the Engineer.

**PILING PLAN**



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

**DLZ**

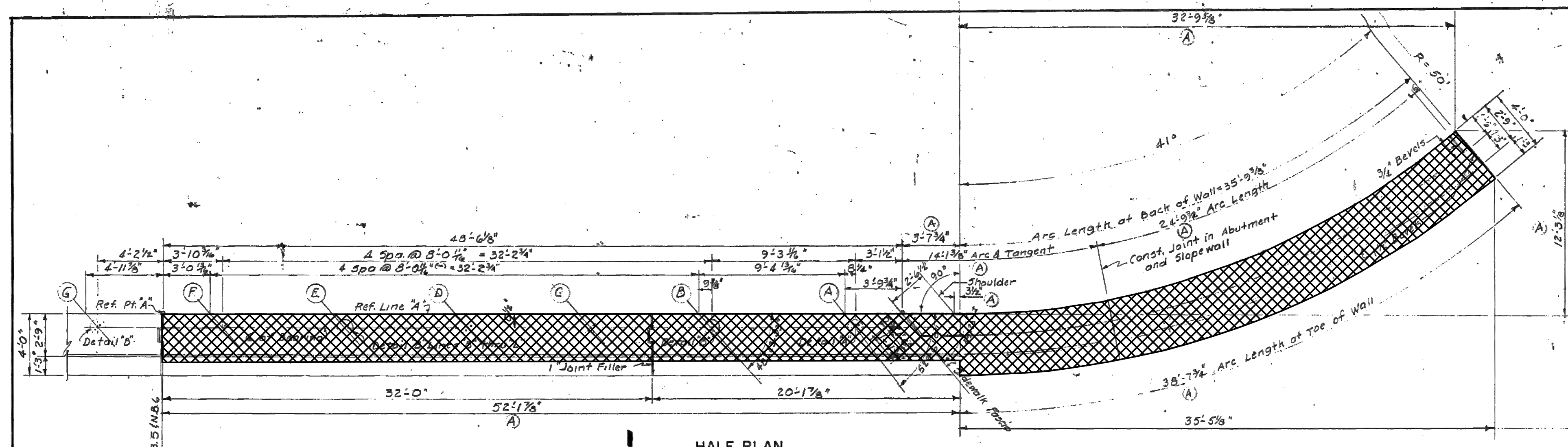
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
ORIGINAL ISSUE		10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**  
 EXISTING ABUTMENT A DETAILS  
 REMOVAL

SCALE NONE 0 INCH 1  
 DRAWING NO. 2021-008-BR10  
 SHEET NO. 73 OF 155

APPROVED BY [Signature]  
 CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

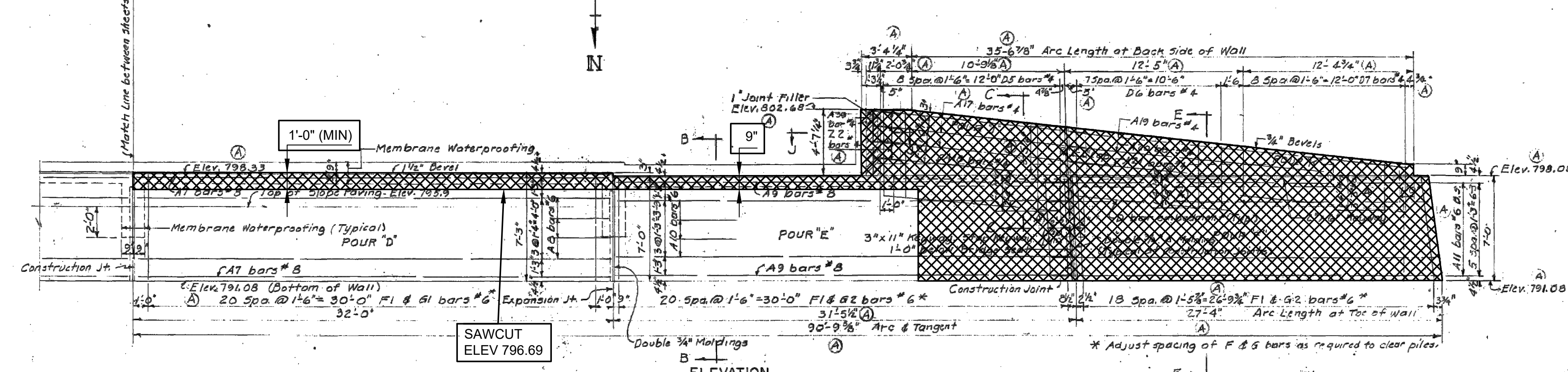


POUR	LOCATION	CU. YDS.
A	Wall	35.6
B	Wall	36.9
C	Wall	29.4
D	Wall	29.0
E	Wall	27.1
F	Wall	23.0
G	Sloped Wall	4.6
H	Sloped Wall	4.9
J	Sloped Wall	3.1
K	Sloped Wall	2.9
Total		196.5

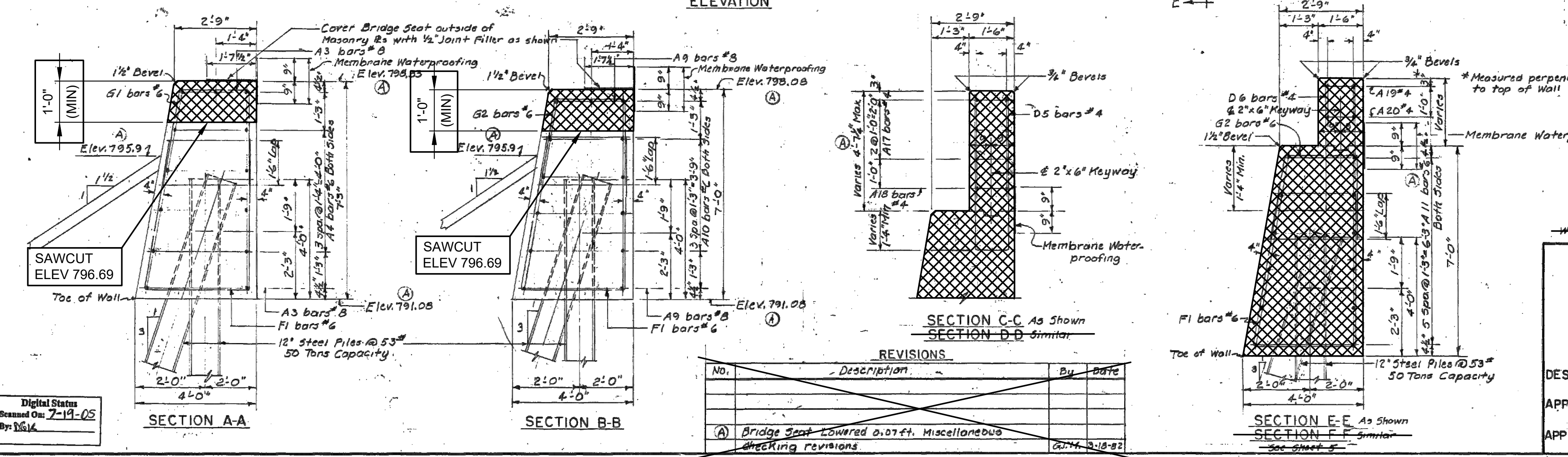
MISCELLANEOUS QUANTITIES	
Membrane Waterproofing	320 Sq. Ft.
Concrete Slope Forming 4" Min. Thickness	502 Sq. Yds.
Headers - Slope Protection	132 Lin. Ft.
Low Temperature Protection	142 Cu. Yds.

INCIDENTAL QUANTITIES	
1/2" Joint Filler	152 Sq. Ft.
1" Joint Filler	62 Sq. Ft.

**NOTES:**  
 REMOVE PORTIONS OF EXISTING ABUTMENTS. EXISTING REINFORCING STEEL SHALL BE BLAST CLEANED, STRAIGHTENED AND EMBEDDED IN PROPOSED ABUTMENTS. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".  
 PLAN ELEVATIONS REFER TO NAVD88 DATUM. ELEVATION EQUATION: PROP ELEV. = EXIST. PLAN ELEV. -0.39 FT



**NOTES**  
 Bridge Seats shall be finished to provide true planes at the elevations shown and shall not vary more than 1/8" under a 10' straight edge nor more than 1/16" under any bearing.  
 Sloped walls shall not be cast until the superstructure is complete to the tops of the railing bases.  
 For molding and bevel details see std. Dwg. R11.  
 After the steel piles are driven and cut off, the portions to be embedded in concrete shall be thoroughly cleaned of all loose paint, scale and dirt to ensure that a satisfactory bond between the steel and concrete will be obtained.  
 Pile driving equipment shall be in accordance with Art. 5.02 of the Standard Specifications.  
 Piles shall be driven with such accuracy that the ends of the piles to be embedded in concrete are within 3 inches of the locations shown on the Plans.  
 Joint Filler shall be incidental to Substructure Concrete and will not be paid for separately.



**GRAPHIC SCALE**  
 0 1 2  
 FEET

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

**NOT AS-BUILT, BEST AVAILABLE INFO.**

Work this Sheet with Sheets 5 & 6

**CITY OF ANN ARBOR**  
 BRIDGE CARRYING NICHOLS STREET OVER THE CONRAIL RAILROAD IN ANN ARBOR

**ABUTMENT "A" DETAILS**

DESIGNED BY G.J. McLAVY & SONS, INC. CONSULTING ENGINEERS  
 APPROVED BY [Signature] REGISTERED PROFESSIONAL ENGINEER  
 APPROVED BY [Signature]

DRAWN BY G.J.M. 10/14/01  
 CHECKED BY JACOBSON 3/26/02  
 SHEET 106 OF 22  
 R1 of 81-1-19

92 OF 167 80023 - BR6

NO.	DESCRIPTION	BY	DATE
(A)	Bridge Seat lowered 0.07 ft. Miscellaneous checking revisions	GM	3/18/02

X:\Projects\2021\2141\736300\_AA - EMCD Bridge\01\_ConstrDocs\CAD\EMCD\_rem\_003

Digital Status  
 Scanned On: 7-19-05  
 By: NLS

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

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**EAST MEDICAL CENTER DRIVE**  
 EXISTING ABUTMENT A DETAILS  
 REMOVAL

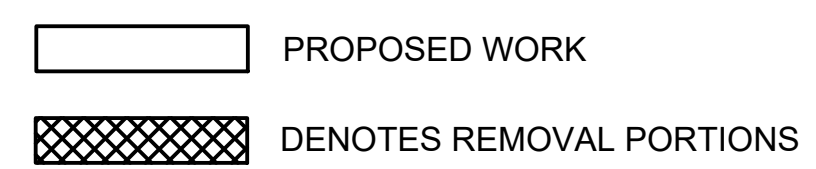
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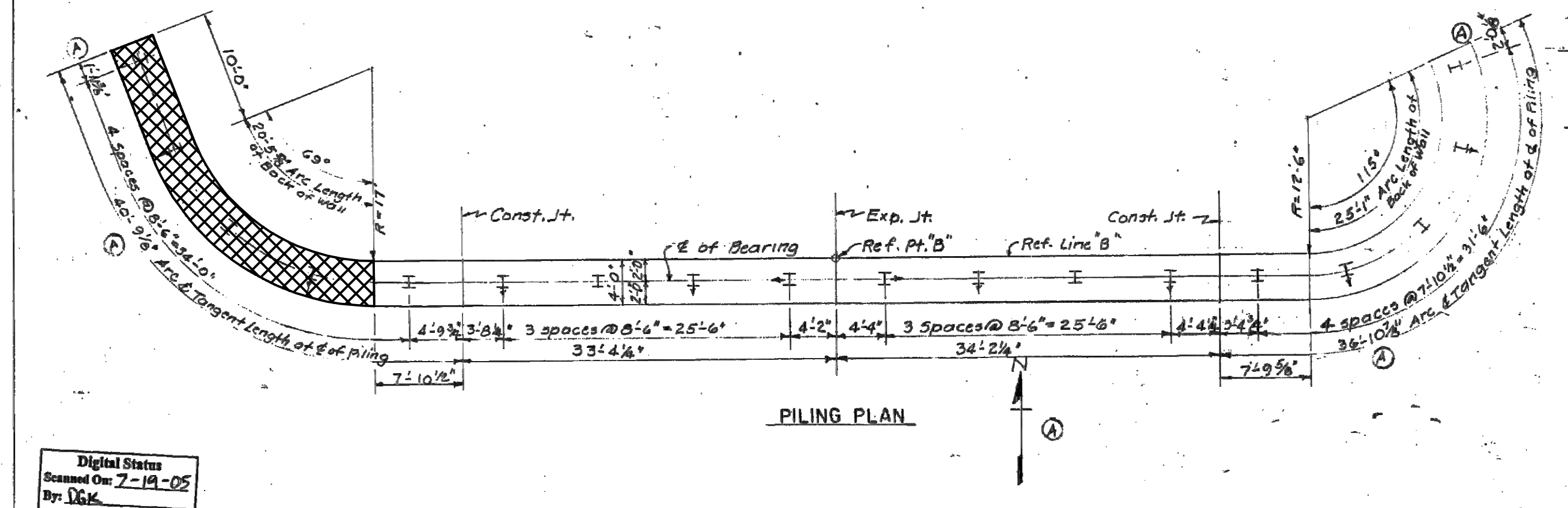
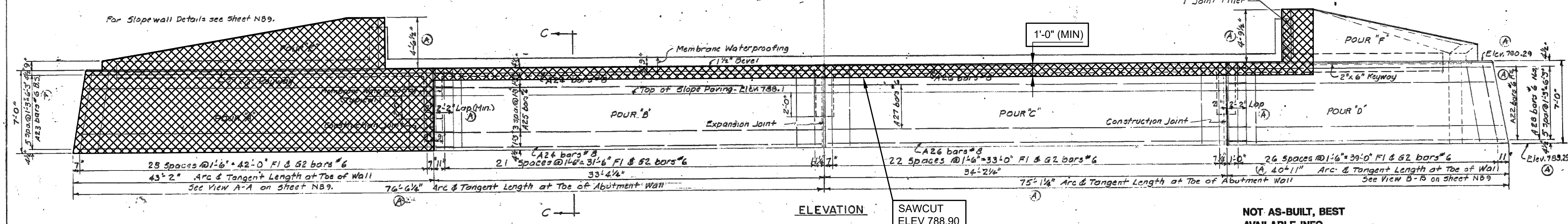
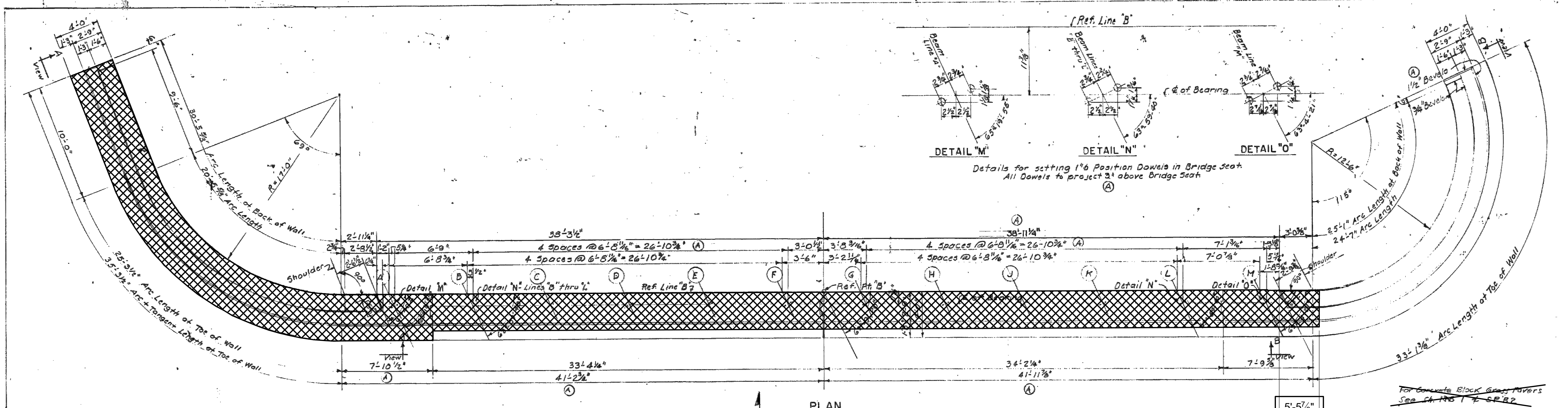
DRAWING NO. 2021-008-BR11  
 SHEET NO. 74 OF 155

APPROVED BY [Signature] Carrie L. Hamel, PE  
 2023.10.06 17:29:20-00'00"

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

NOTES:  
 REMOVE PORTIONS OF EXISTING ABUTMENTS. EXISTING REINFORCING STEEL SHALL BE BLAST CLEANED, STRAIGHTENED AND EMBEDDED IN PROPOSED ABUTMENTS. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".  
 PLAN ELEVATIONS REFER TO NAVD88 DATUM. ELEVATION EQUATION: PROP ELEV. = EXIST. PLAN ELEV. -0.39 FT

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY USING THE LEGEND BELOW.  




**BILL OF 12" STEEL PILES AT 53 LBS. 55 TON CAPACITY-ABUTMENT B**

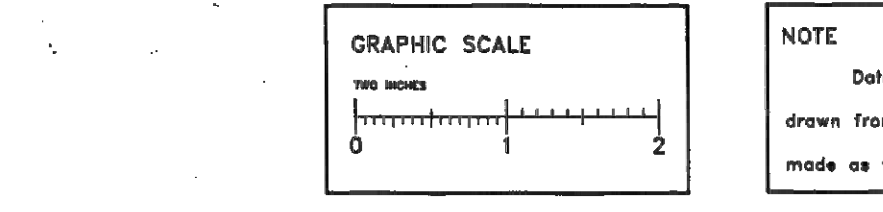
PILING LEGEND	Number Required	Est. Length - Lin. Ft. - Furnished and Driven		Splices
		Each	Total	
Vertical Pile	1	22	192	5
Batter Pile - Perp. to E of Bearing	1	25	200	5
Batter Pile - Parallel with E of Bearing	2	25	50	1
<b>Totals</b>		<b>442</b>	<b>442</b>	<b>11</b>

**MISCELLANEOUS QUANTITIES**

Membrane Waterproofing	220 Sq. Ft.
Concrete Slope Paving - 1" Min. Thickness	358 Sq. Yds.
Headers - Slope Paving - Brass Dowels	274 Lin. Ft.
Low Temperature Protection - Subst. Concrete	126 Cu. Yds.
3" Thick Concrete Block Grass Pavers	270 Sq. Yds.
<b>INCIDENTAL QUANTITIES</b>	
1/2" Joint Filler	113 Sq. Ft.
1" Joint Filler	57 Sq. Ft.
<b>Total</b>	<b>137.0</b>

**SUBSTRUCTURE CONCRETE ABUTMENT B**

POUR	LOCATION	CU. YDS.
A	Wall	25.7
B	Wall	29.2
C	Wall	29.9
D	Wall	32.3
E	Sloped Wall	5.3
F	Spillway	4.6
<b>Total</b>		<b>137.0</b>



**CITY OF ANN ARBOR**  
 BRIDGE CARRYING NICHOLS STREET OVER THE CONRAIL RAILROAD IN ANN ARBOR

**ABUTMENT "B" DETAILS**

DESIGNED BY GJM LRAVY & SONS, INC. CONSULTING ENGINEERS  
 APPROVED BY [Signature] REGISTERED PROFESSIONAL ENGINEER

DRAWN BY G.J.M. 10-21-81  
 CHECKED BY M.ROBINSON 3/23/82  
 SHEET NBB OF 22  
 R1 OF 81-1-19

94 OF 167  
 80023 - BRB

Digital Status  
 Scanned On 7-18-05  
 By: DCK

**REVISIONS**

No.	Description	By	Date
(A)	Bridge seat elev. changed. Also miscellaneous checking. Revisions in Dimensions and Quantities	GJM	1-12-82

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

<b>DLZ</b>	
REV. NO.	DESCRIPTION
DATE	DR. BY
CH. BY	

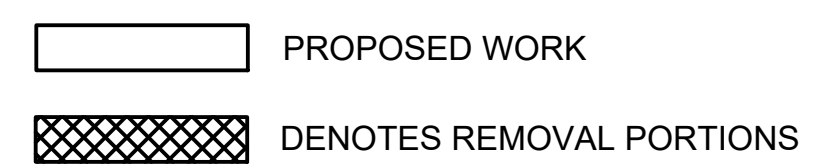
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

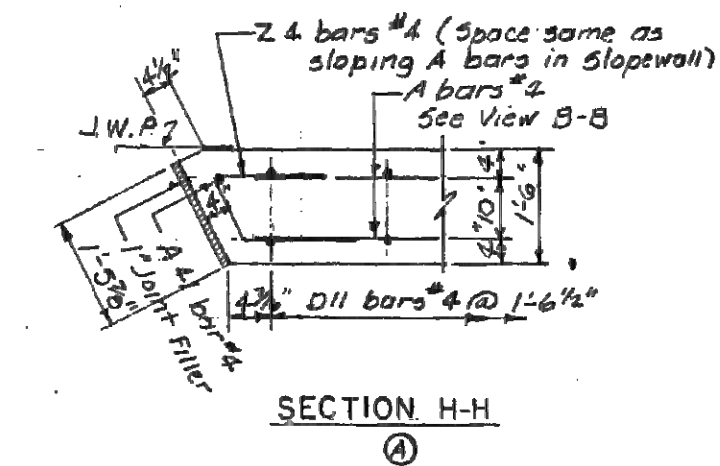
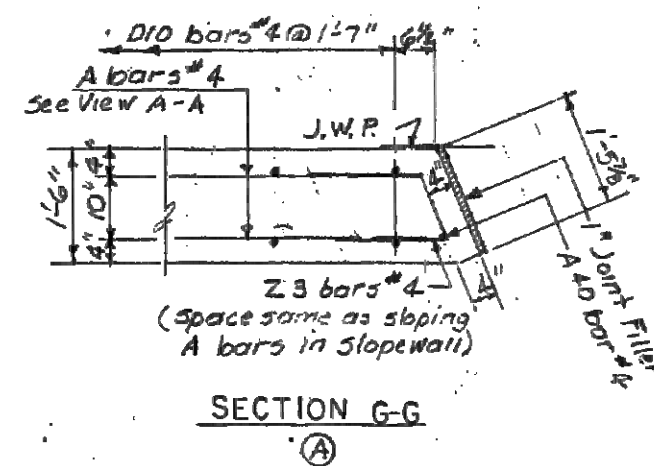
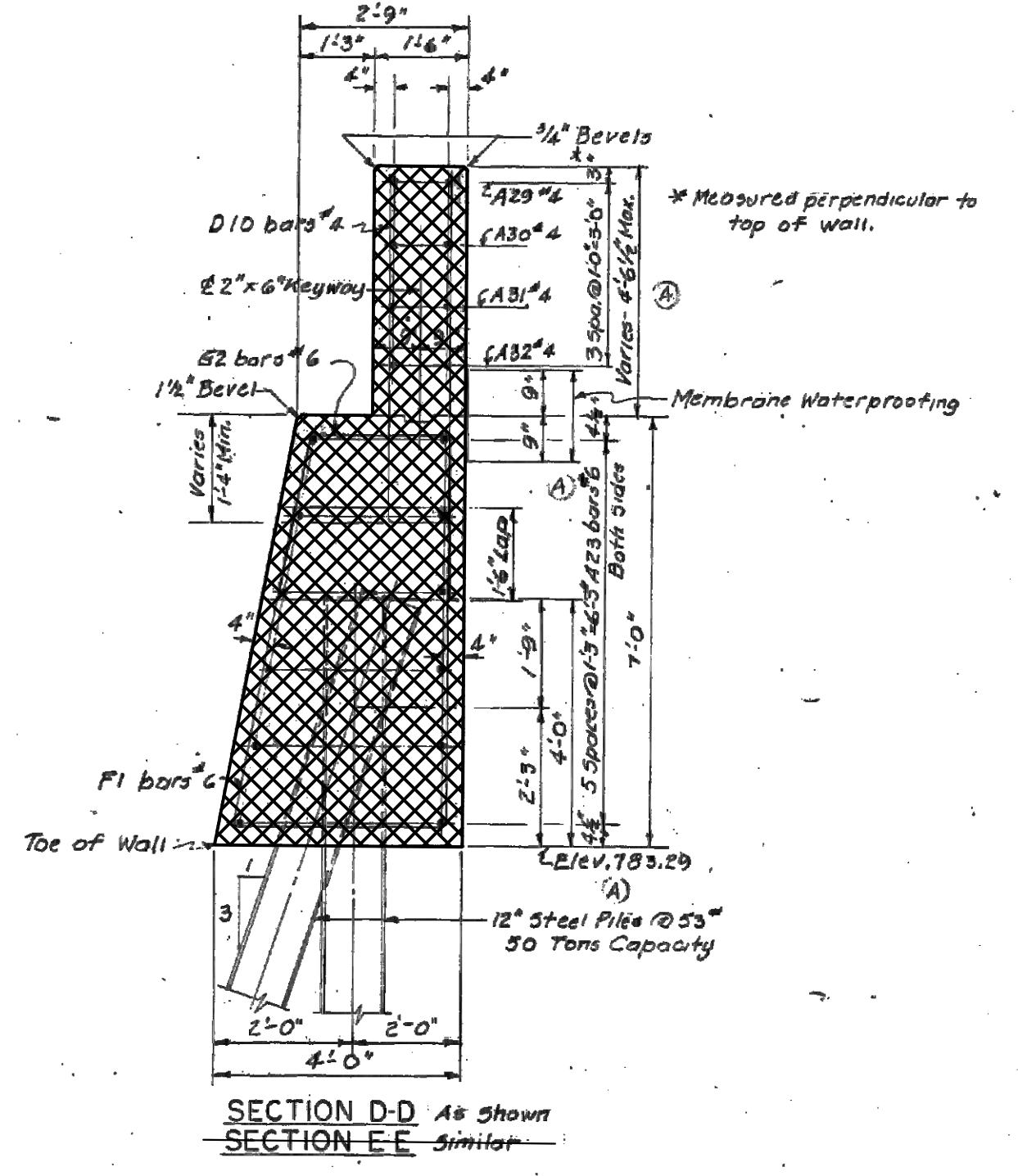
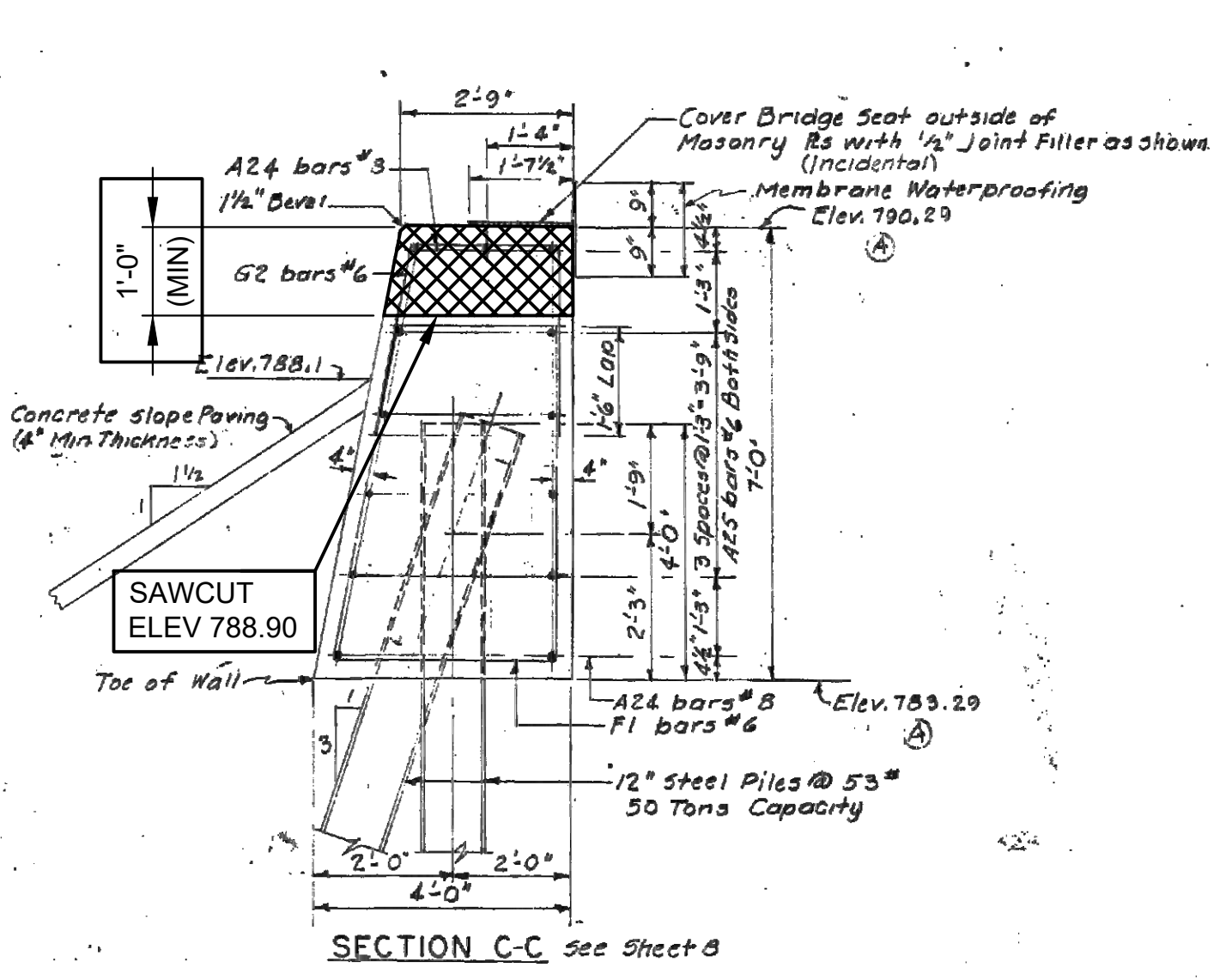
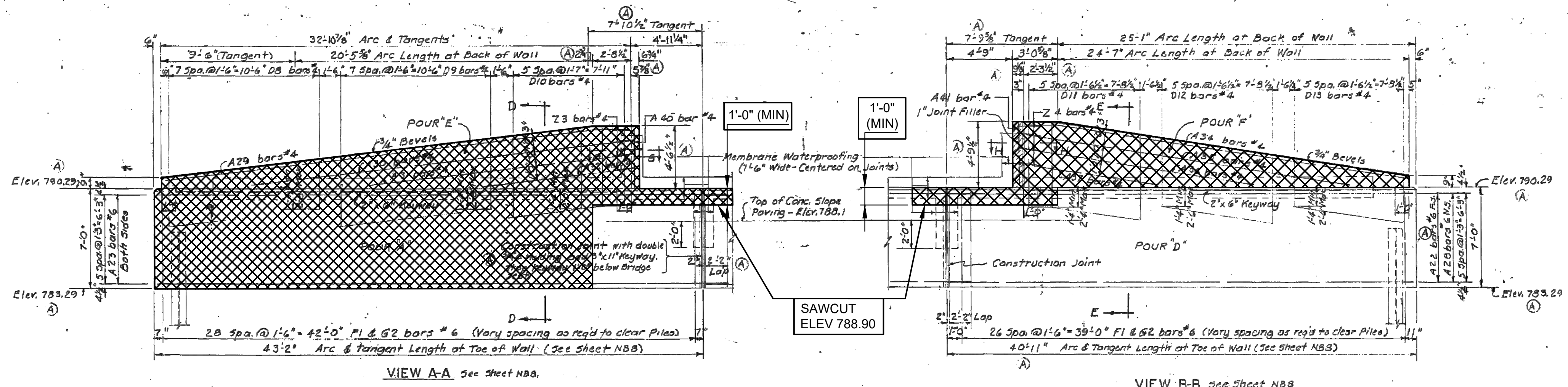
**EAST MEDICAL CENTER DRIVE**  
 EXISTING ABUTMENT B DETAILS  
 REMOVAL

SCALE NONE 0 INCH 1  
 DRAWING NO. 2021-008-BR12  
 SHEET NO. 75 OF 155

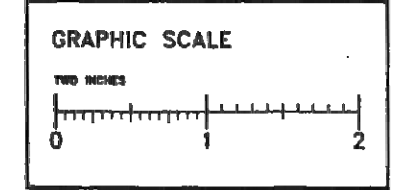
APPROVED BY [Signature] Carrie L. Hamel, P.E.  
 2023.10.06 17:29:41-0400  
 CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

NOTES:  
 REMOVE PORTIONS OF EXISTING ABUTMENTS. EXISTING REINFORCING STEEL SHALL BE BLAST CLEANED, STRAIGHTENED AND EMBEDDED IN PROPOSED ABUTMENTS. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".  
 PLAN ELEVATIONS REFER TO NAVD88 DATUM. ELEVATION EQUATION: PROP ELEV. = EXIST. PLAN ELEV. -0.39 FT

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY USING THE LEGEND BELOW.  




NOTE  
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Work this sheet with sheet NBB & NB10

CITY OF ANN ARBOR  
 BRIDGE CARRYING NICHOLS STREET OVER THE CONRAIL RAILROAD IN ANN ARBOR

ABUTMENT "B" DETAILS

DESIGNED BY G.J.McLRAY & SONS, INC. CONSULTING ENGINEERS  
 APPROVED BY [Signature] REGISTERED PROFESSIONAL ENGINEER  
 APPROVED BY [Signature]

DRAWN BY G.J.M. 10-23-81  
 CHECKED BY M.ROBINSON 4/1/82  
 SHEET N89 OF 22

RI of 81-1-19

95 OF 167 80023 - BR9

REVISIONS			
No.	Description	By	Date
(A)	Bridge seat lowered 0.07 ft. and miscellaneous checking revisions. Sections G-G and H-H added.	GJM	8-20-02

Digital Status  
 Scanned On 7-19-05  
 By: [Signature]

X:\Projects\2021\2141\736500\_AA - EMCD Bridge\01\_Constr\Docs\CAD\EMCD\_rem\_005

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REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE  
 EXISTING ABUTMENT B DETAILS  
 REMOVAL

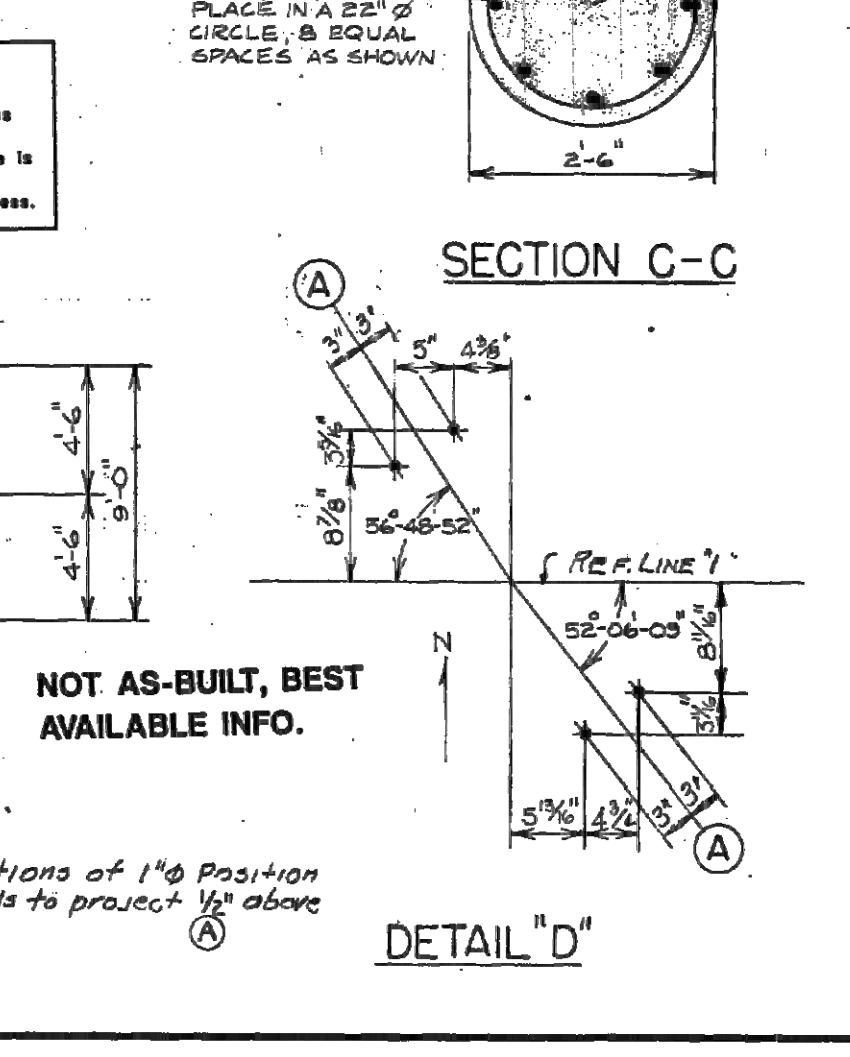
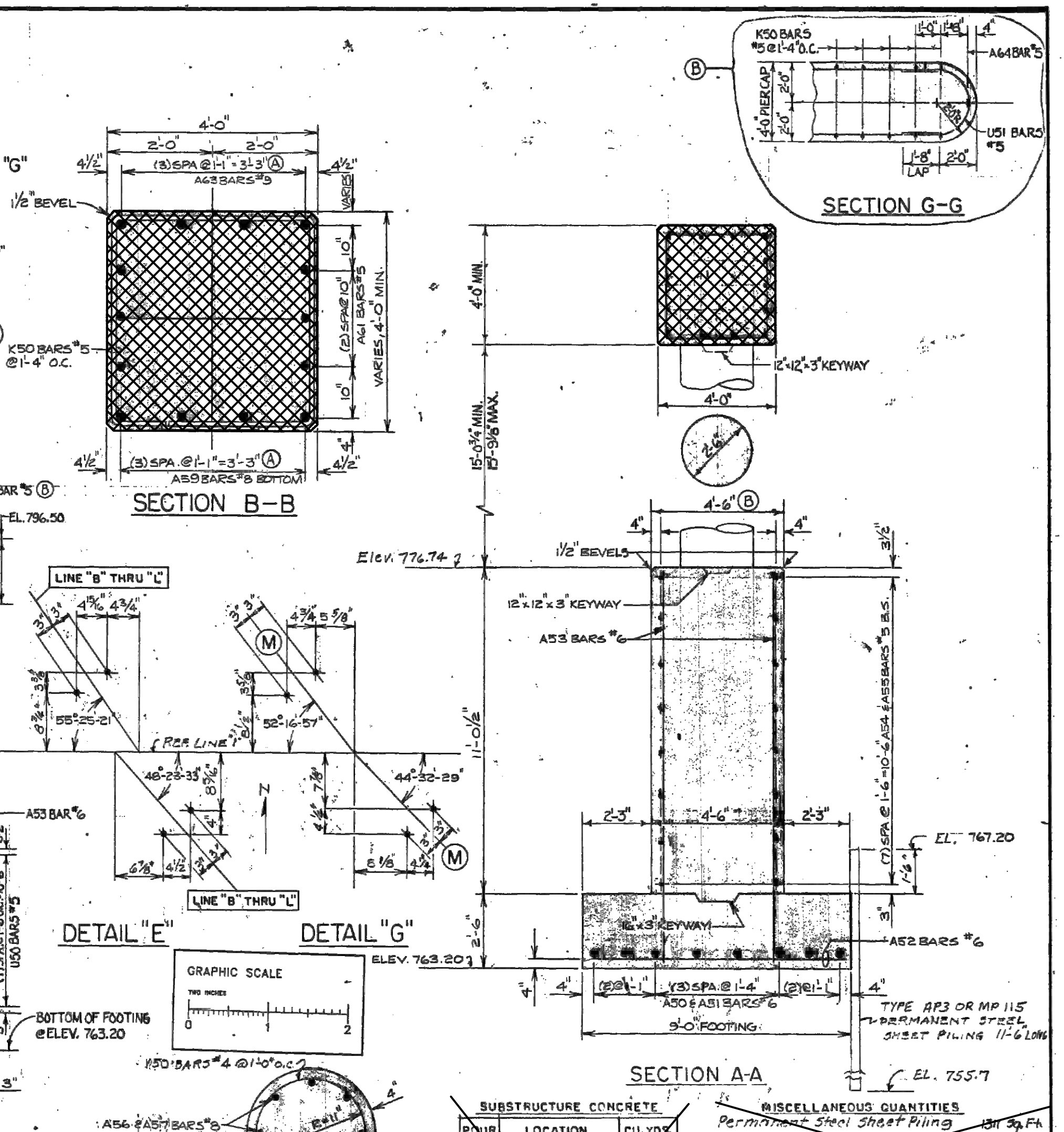
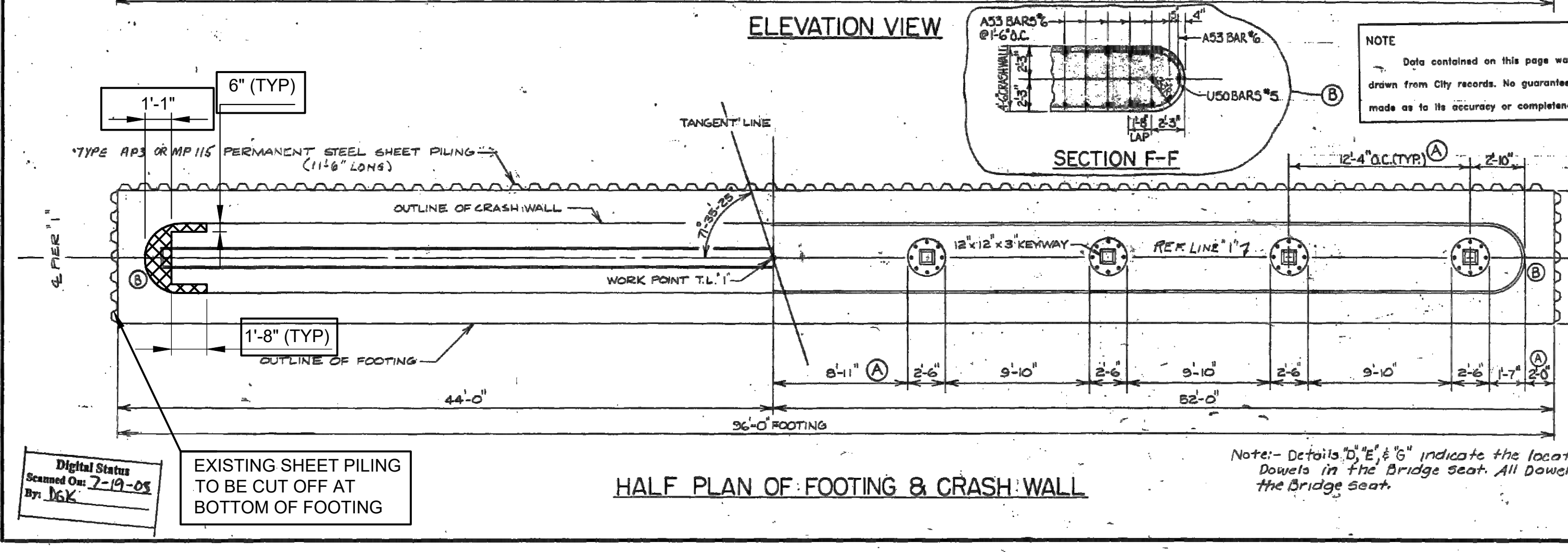
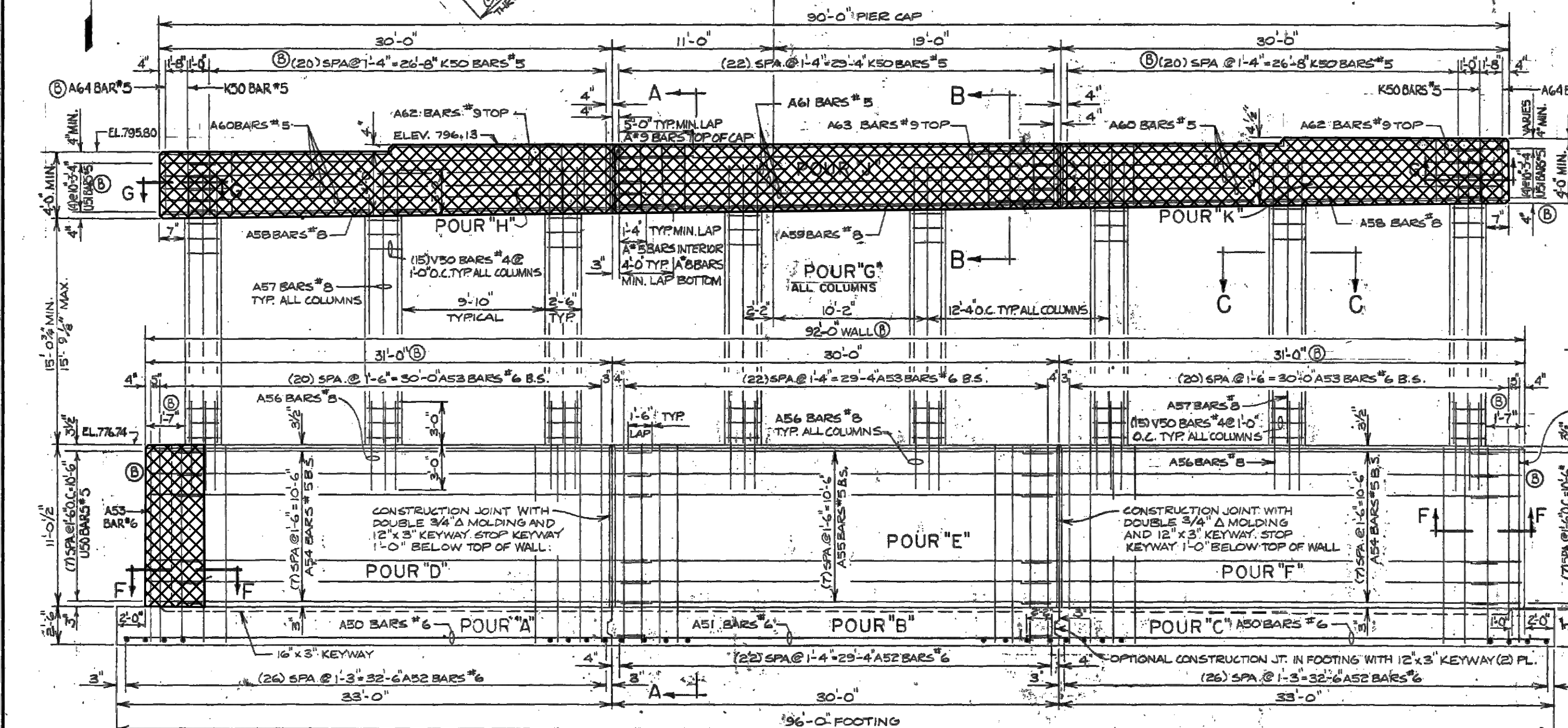
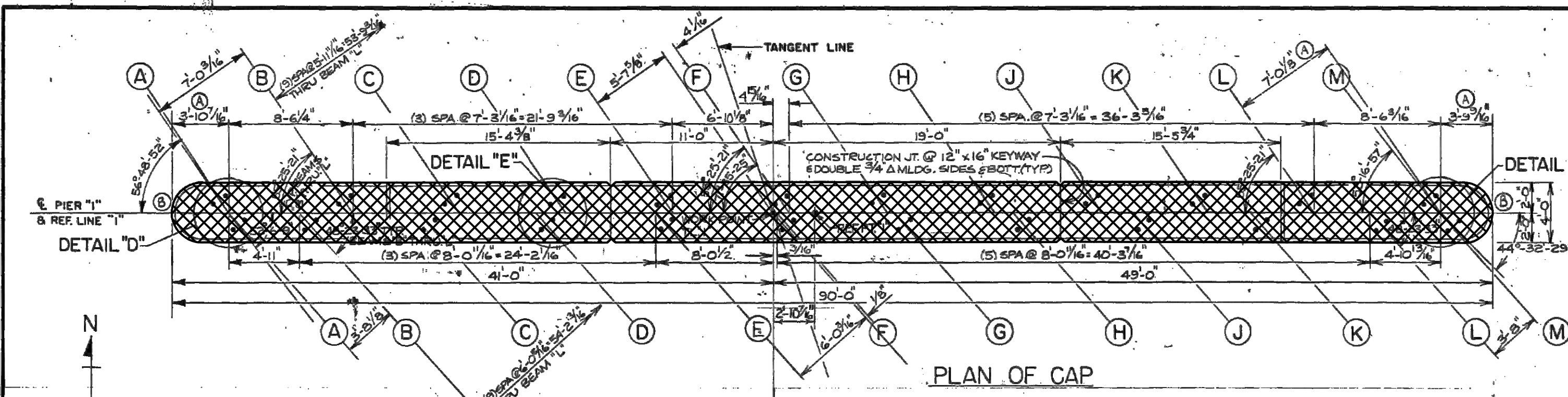
SCALE NONE 0 INCH 1

DRAWING NO. 2021-008-BR13

SHEET NO. 76 OF 155

APPROVED BY [Signature] Carrie L. Hamel, P.E. 2023.10.06 17:30:03-0400

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



NOTES:

REMOVE EXISTING PIER CAPS AND PORTIONS OF THE CRASH WALL. SALVAGE BLAST CLEAN, AND STRAIGHTEN EXISTING VERTICAL REINFORCEMENT IN PIER COLUMNS AND EMBED IN PROPOSED PIER CAP. SALVAGE BLAST CLEAN, AND STRAIGHTEN EXISTING HORIZONTAL REINFORCEMENT IN THE CRASH WALL. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".

PLAN ELEVATIONS REFER TO NAVD88 DATUM.  
ELEVATION EQUATION:  
PROP ELEV. = EXIST. PLAN ELEV. -0.39 FT

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY USING THE LEGEND BELOW.

□ PROPOSED WORK

▨ DENOTES REMOVAL PORTIONS

SUBSTRUCTURE CONCRETE		MISCELLANEOUS QUANTITIES	
POUR	LOCATION	CU. YDS.	
A	Footing	27.5	Permanent Steel Sheet Piling 131 sq. Ft.
B	Footing	25.0	Protective Sealing Coating for Concrete 360 sq. Ft.
C	Footing	27.5	Low Temperature Protection Substructure Concrete 316.7 cu. Yds.
D	Wall	57.0	
E	Wall	55.2	
F	Wall	57.0	
G	Columns	22.2	
H	Cap	18.0	
J	Cap	18.5	
K	Cap	18.0	
Total		325.9	

**CITY OF ANN ARBOR**  
BRIDGE CARRYING NICHOLS STREET OVER THE CONRAIL RAILROAD IN ANN ARBOR

**PIER "I" DETAILS**

DESIGNED BY G.J. McRAVY & SONS, INC. CONSULTING ENGINEERS  
DRAWN BY GMC 4/21  
APPROVED BY [Signature] REGISTERED PROFESSIONAL ENGINEER  
CHECKED BY M. ROBINSON 3/26/22  
SHEET NBI 01 22

APPROVED BY [Signature] REGISTERED PROFESSIONAL ENGINEER  
RI OF 81-1-19

97 OF 167 80023 - BR11

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Digital Status  
Scanned On 7-19-06  
By: LCK

EXISTING SHEET PILING TO BE CUT OFF AT BOTTOM OF FOOTING

Note: Details "D", "E", & "G" indicate the locations of 1"Ø Dowels in the Bridge Seat. All Dowels to project 1/2" above the Bridge Seat.

NOT AS-BUILT, BEST AVAILABLE INFO.

DETAIL "D"



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

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

EXISTING PIER 1 DETAILS  
REMOVAL

SCALE NONE 0 INCH 1

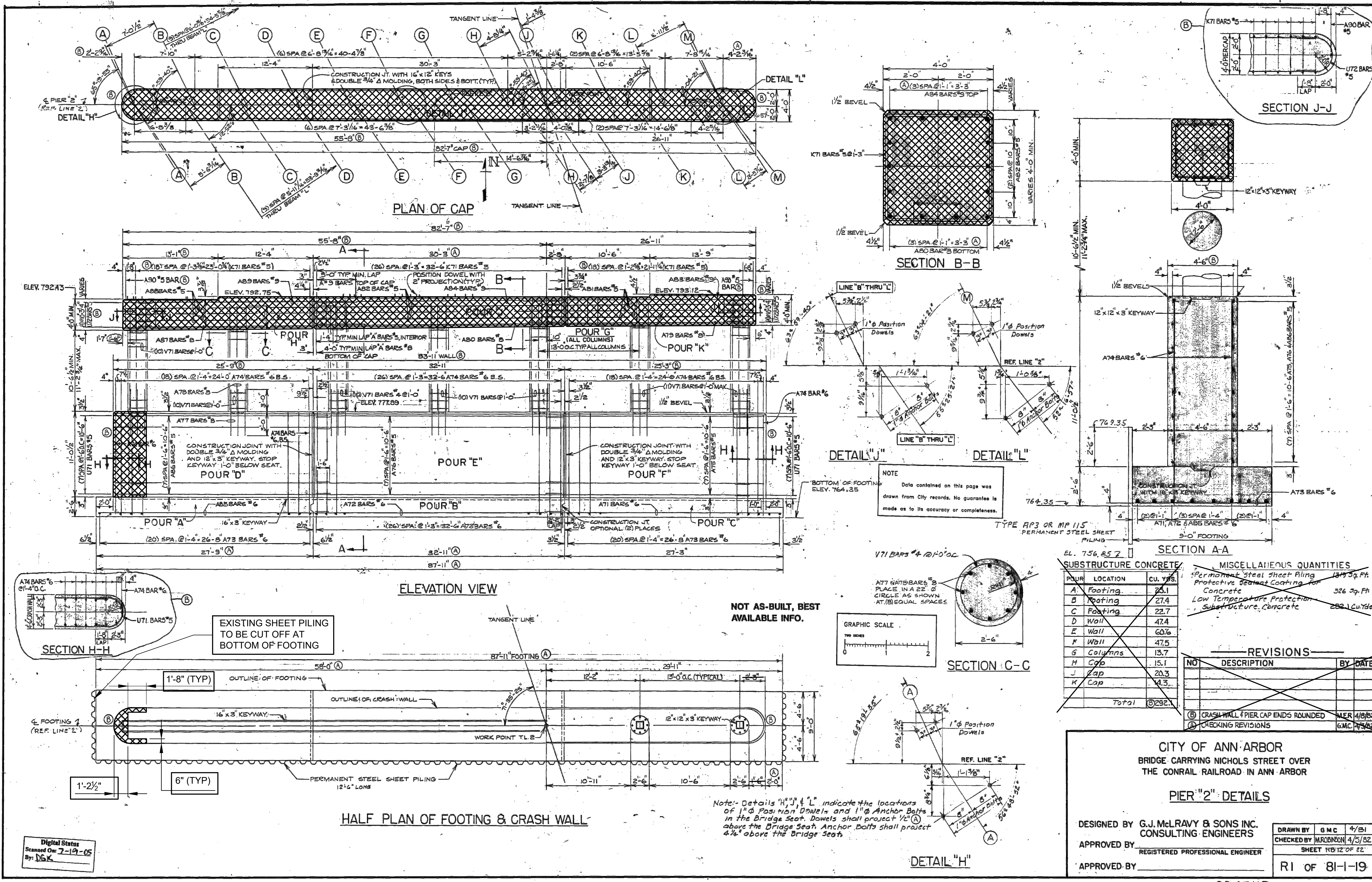
DRAWING NO. 2021-008-BR14

SHEET NO. 77 OF 155

APPROVED BY [Signature] Carrie L. Hamel, PE  
2023.10.06 17:30:21-04'00"

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

X:\Projects\2021\2141\736300\_AA - EMCD Bridge\01\_Constr\Docs\CAD\EMCD\_rem\_007



**NOTES:**

REMOVE EXISTING PIER CAPS AND PORTIONS OF THE CRASH WALL. SALVAGE BLAST CLEAN, AND STRAIGHTEN EXISTING VERTICAL REINFORCEMENT IN PIER COLUMNS AND EMBED IN PROPOSED PIER CAP. SALVAGE BLAST CLEAN, AND STRAIGHTEN EXISTING HORIZONTAL REINFORCEMENT IN THE CRASH WALL. INCLUDED IN THE BID ITEM "STRUCTURES, REHABILITATION, REM PORTIONS (STR 11065)".

PLAN ELEVATIONS REFER TO NAVD88 DATUM. ELEVATION EQUATION: PROP ELEV. = EXIST. PLAN ELEV. -0.39 FT

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY USING THE LEGEND BELOW.

**EL. 756.857**

POUR	LOCATION	CU. YDS.
A	Footing	25.1
B	Footing	27.4
C	Footing	22.7
D	Wall	47.4
E	Wall	60.6
F	Wall	47.5
G	Columns	13.7
H	Cap	15.1
J	Cap	20.3
K	Cap	14.3
<b>Total</b>		<b>292.1</b>

MISCELLANEOUS QUANTITIES	
Permanent Steel Sheet Piling	137.59 Ft.
Protective Sealant Coating for Concrete	326 Sq. Ft.
Low Temperature Protection Substructure Concrete	282.1 Cu. Yds.

REVISIONS		
NO.	DESCRIPTION	BY DATE
1	CRASH WALL & PIER CAP ENDS ROUNDED	NER 4/8/22
2	CHECKING REVISIONS	GMC 7/4/22

**CITY OF ANN ARBOR**  
**BRIDGE CARRYING NICHOLS STREET OVER THE CONRAIL RAILROAD IN ANN ARBOR**

**PIER "2" DETAILS**

DESIGNED BY G.J. McLAVY & SONS INC. CONSULTING ENGINEERS  
 APPROVED BY [Signature] REGISTERED PROFESSIONAL ENGINEER  
 APPROVED BY [Signature]

DRAWN BY G.M.C. 4/21  
 CHECKED BY M.ROBEY 4/25/22  
 SHEET 11B 12 OF 22

R1 OF 81-19

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

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**EAST MEDICAL CENTER DRIVE**  
**EXISTING PIER 2 DETAILS**  
**REMOVAL**

SCALE NONE 0 INCH 1

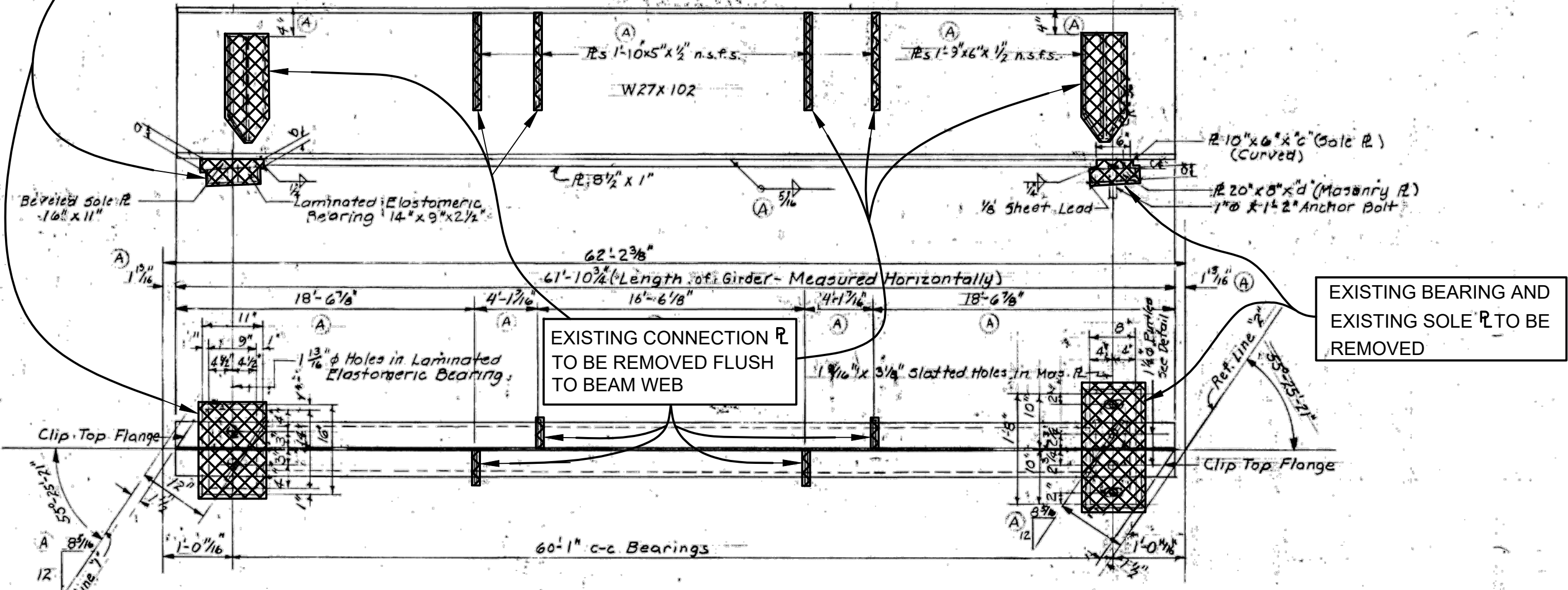
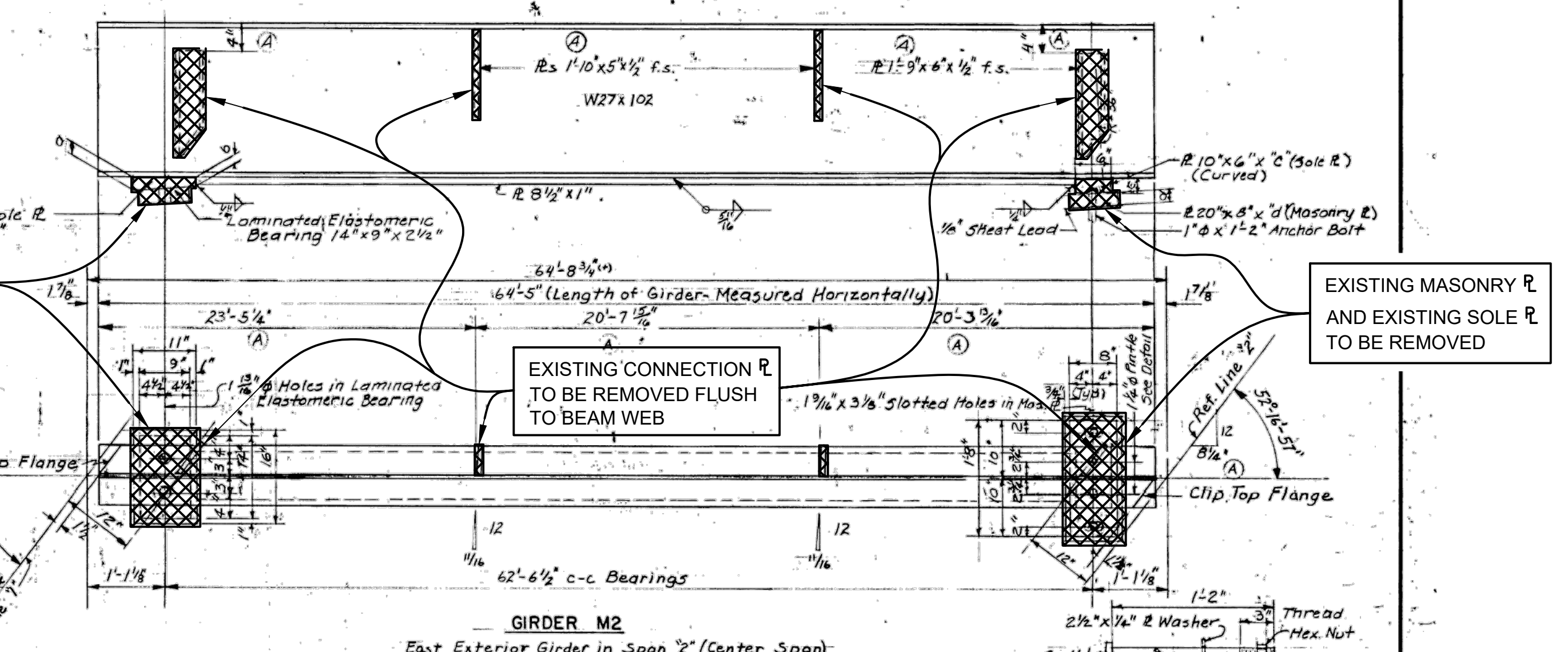
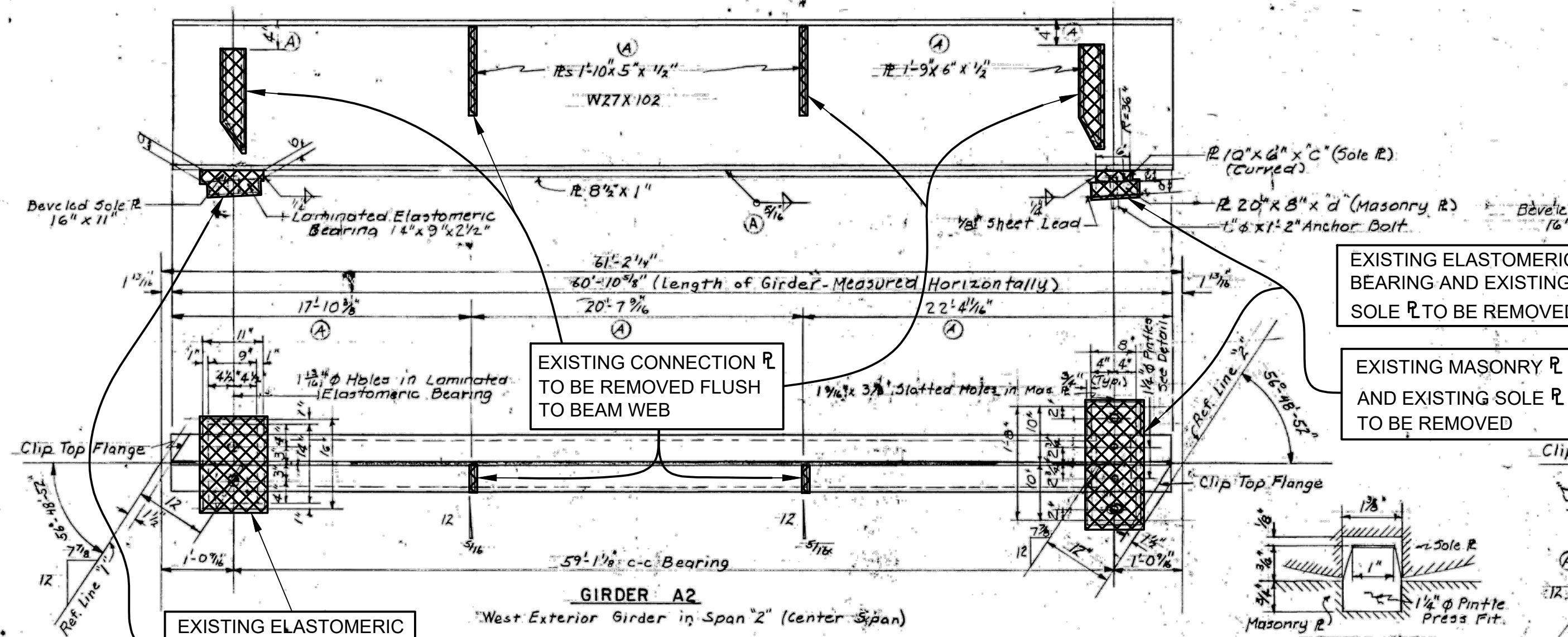
DRAWING NO. **2021-008-BR15**

SHEET NO. 78 OF 155

APPROVED BY [Signature] Carrie L. Hamel, P.E. 2023.10.06 17:37:48-04007

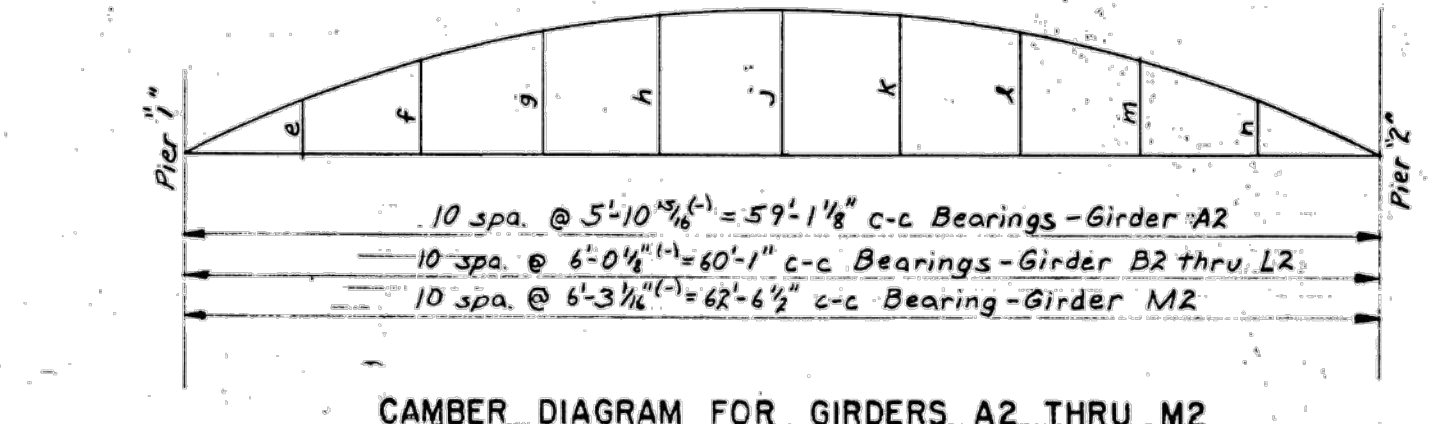
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

X:\Projects\2021\2141\736300\_AA - EMCD Bridge\01\_Constr\Docs\CAD\EMCD\_rem\_008



**TABULATED DIMENSIONS**

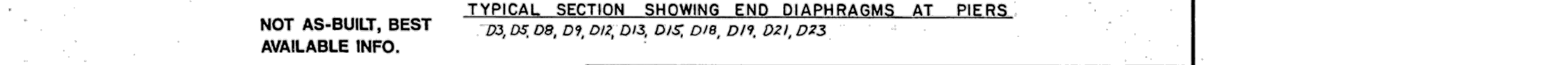
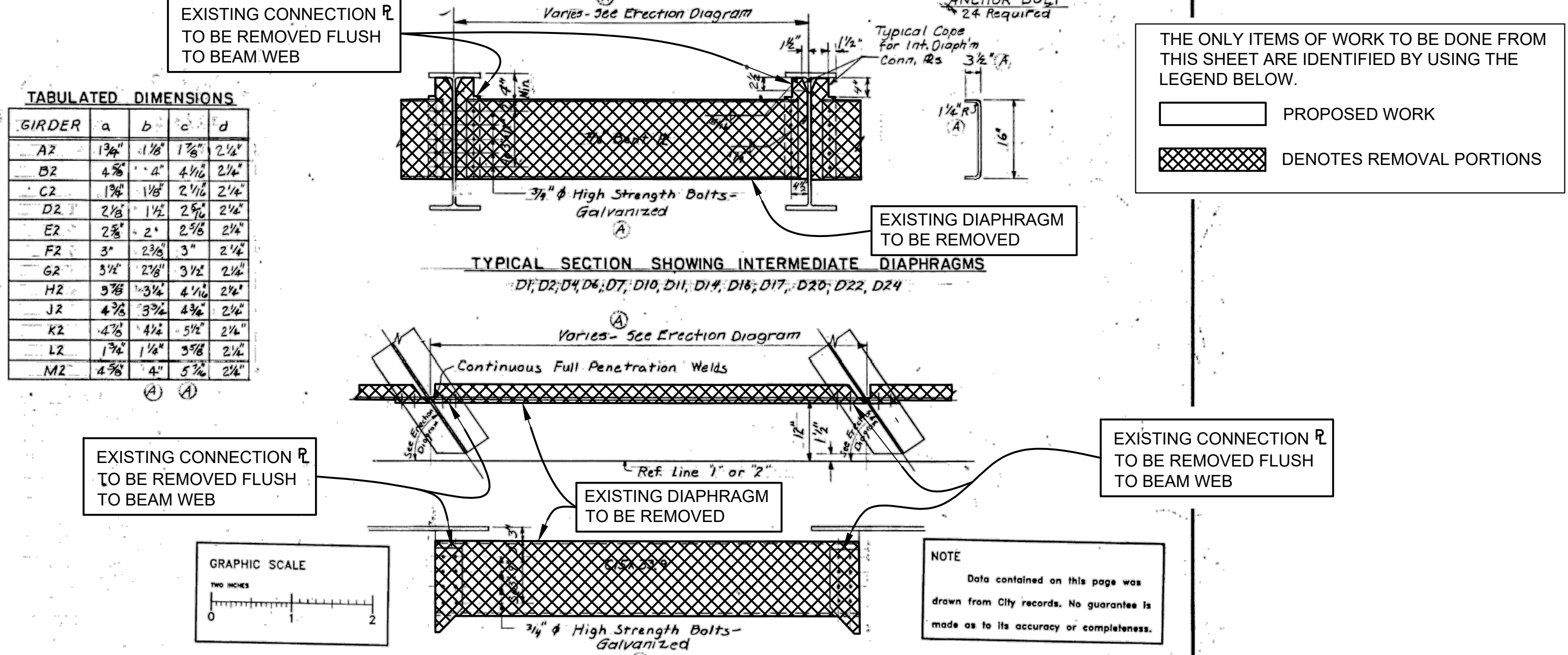
GIRDER	a	b	c	d
A2	1 3/8	1 1/8	1 3/8	2 1/4
B2	4 5/8	1 1/8	4 1/2	2 1/4
C2	1 7/8	1 1/8	2 1/4	2 1/4
D2	2 1/8	1 1/8	2 3/4	2 1/4
E2	2 3/8	2	2 3/8	2 1/4
F2	3	2 3/8	3	2 1/4
G2	3 1/4	2 3/8	3 1/2	2 1/4
H2	3 3/8	3 3/8	4 1/4	2 1/4
J2	4 3/8	3 3/8	4 3/4	2 1/4
K2	4 7/8	4 1/4	5 1/4	2 1/4
L2	1 3/4	1 1/8	3 3/8	2 1/4
M2	4 3/8	4	5 3/8	2 1/4



**TABULATED DIMENSIONS FOR CAMBER DIAGRAM**

GIRDER	e	f	g	h	i	j	k	l	m	n
A2	1'	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	
B2	1'	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	
C2	1'	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	
D2	1'	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	
E2	1 1/4	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	1 1/4
F2	1 1/4	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	1 1/4
G2	1 1/4	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	1 1/4
H2	1 1/4	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	1 1/4
J2	1 1/4	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	1 1/4
K2	1 1/4	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	1 1/4
L2	1 1/4	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	1 1/4
M2	1 1/4	1 3/4	2 1/4	2 1/2	2 3/4	2 3/4	1 3/4	1 3/4	3/4	1 1/4

Digital Status  
Scanned On: 7-19-05  
By: LBS



NOT AS-BUILT, BEST AVAILABLE INFO.  
Note: The Intermediate Diaphragm locations shown are suggested locations only.

**REVISIONS**

No.	Description	By	Date
(A)	Miscellaneous checking revisions	B.J.H.	4-9-82

**CITY OF ANN ARBOR**  
BRIDGE CARRYING NICHOLS STREET OVER THE CONRAIL RAILROAD IN ANN ARBOR

**STRUCTURAL STEEL DETAILS**  
SPAN "2"

DESIGNED BY: G.J. McLAVY & SONS, INC. CONSULTING ENGINEERS  
APPROVED BY: REGISTERED ENGINEER

DRAWN BY: G.J.M. 7-30-81  
TRACED BY: TLD 8-13-81  
CHECKED BY: M.E.R. 4/20/82

APPROVED BY: R.I. OF 81-1-19

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY USING THE LEGEND BELOW.

PROPOSED WORK

DENOTES REMOVAL PORTIONS

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

**DLZ**

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

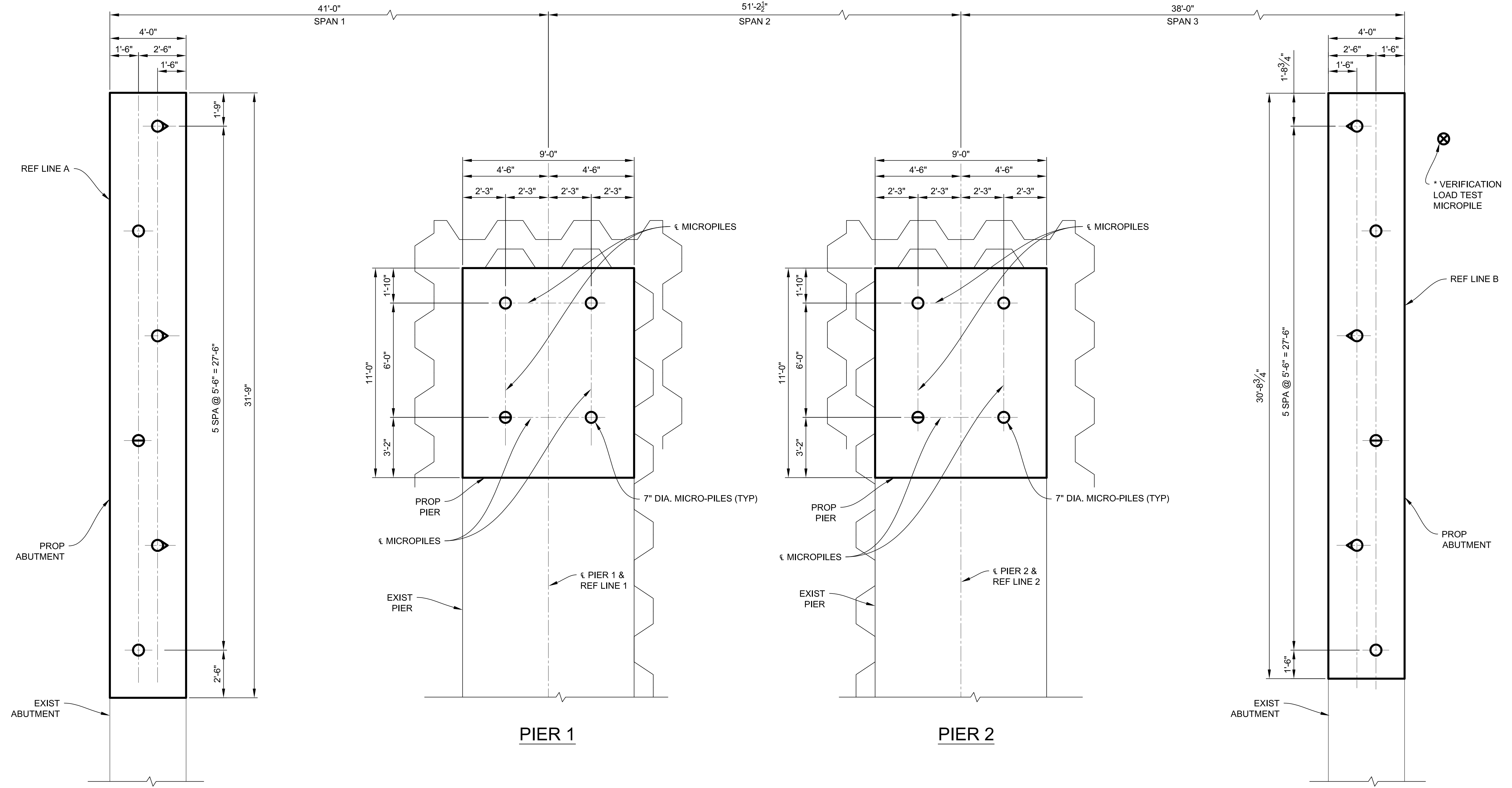
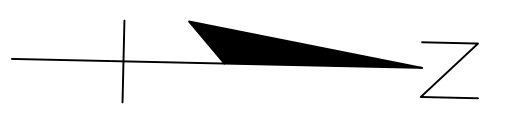
**EAST MEDICAL CENTER DRIVE**  
EXISTING STRUCTURAL STEEL DETAILS  
REMOVAL

SCALE: NONE INCH

DRAWING NO. 2021-008-BR16

SHEET NO. 79 OF 155

APPROVED BY: Carrie L. Hamel, P.E. 2023.10.06 17:40:10-04/00



ESTIMATED QUANTITIES THIS SHEET					
DESCRIPTION	UNITS	CATG 0001	CATG 0002	CATG 0003	TOTAL
Micropile, Type B, Furn and Install, LRFD	Ea		20		20
Micropile, Load Test, Proof, LRFD	Ea		4		4
Micropile, Load Test, Verification, LRFD	Ea		1		1
Micropile Mobilization, LRFD (STR 11065)	LSUM		1		1

\* LOCATION OF VERIFICATION LOAD TEST MICROPILE SHALL BE NEAR, EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

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

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**EAST MEDICAL CENTER DRIVE**

**MICROPILE PLAN**

APPROVED BY: *Carrie L. Hamel*  
Carrie L. Hamel, PE  
2023.10.06 17:40:29-04/07

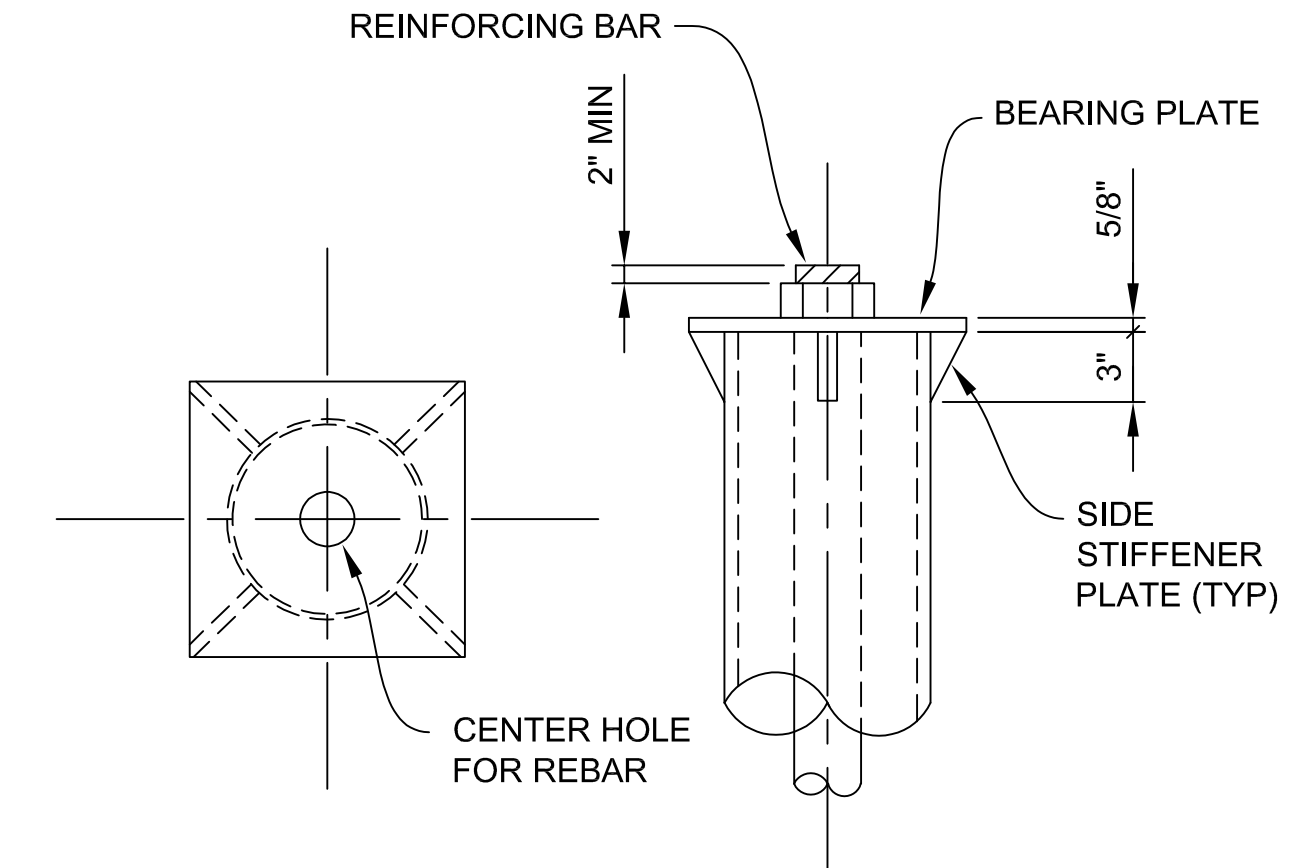
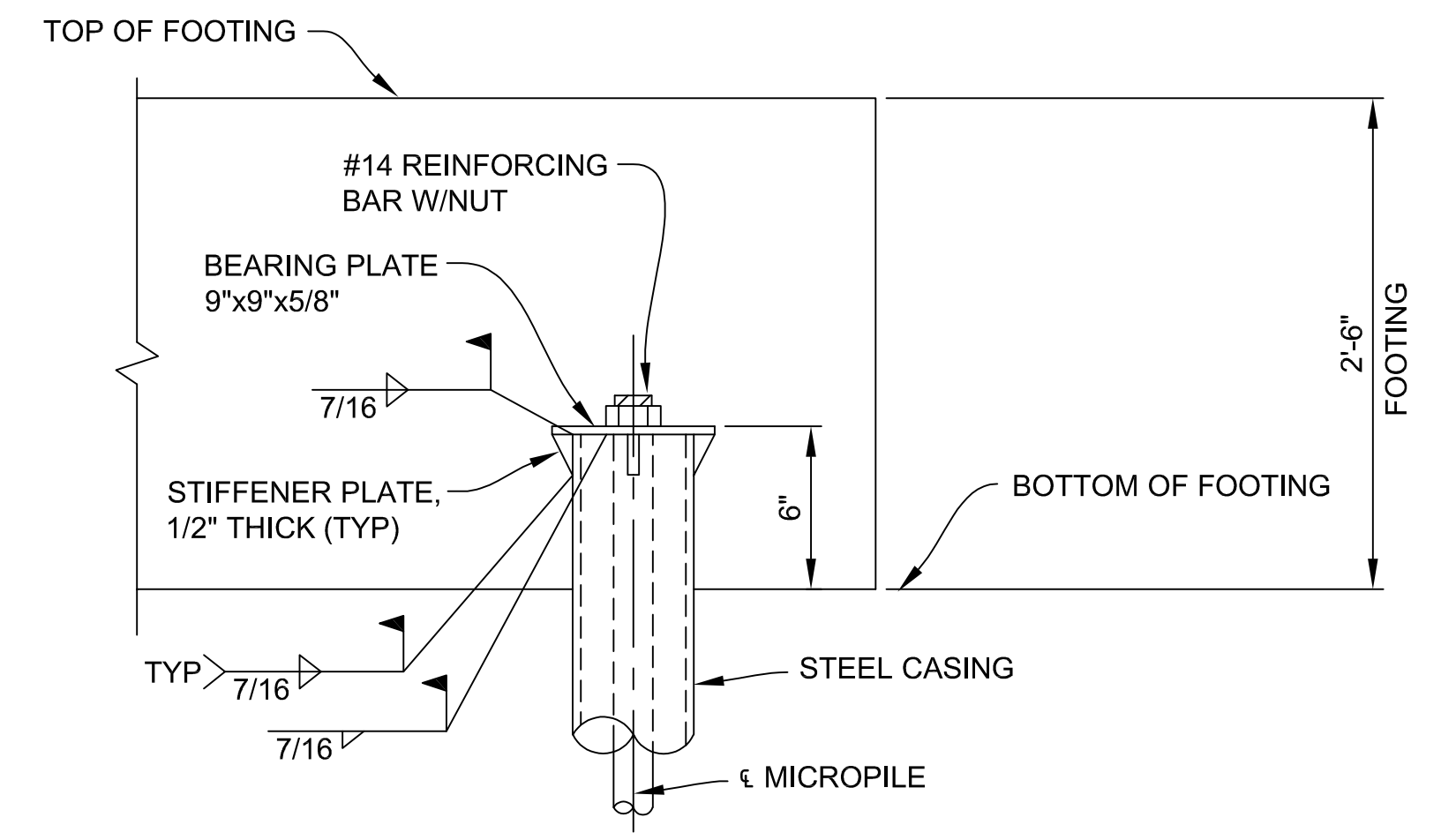
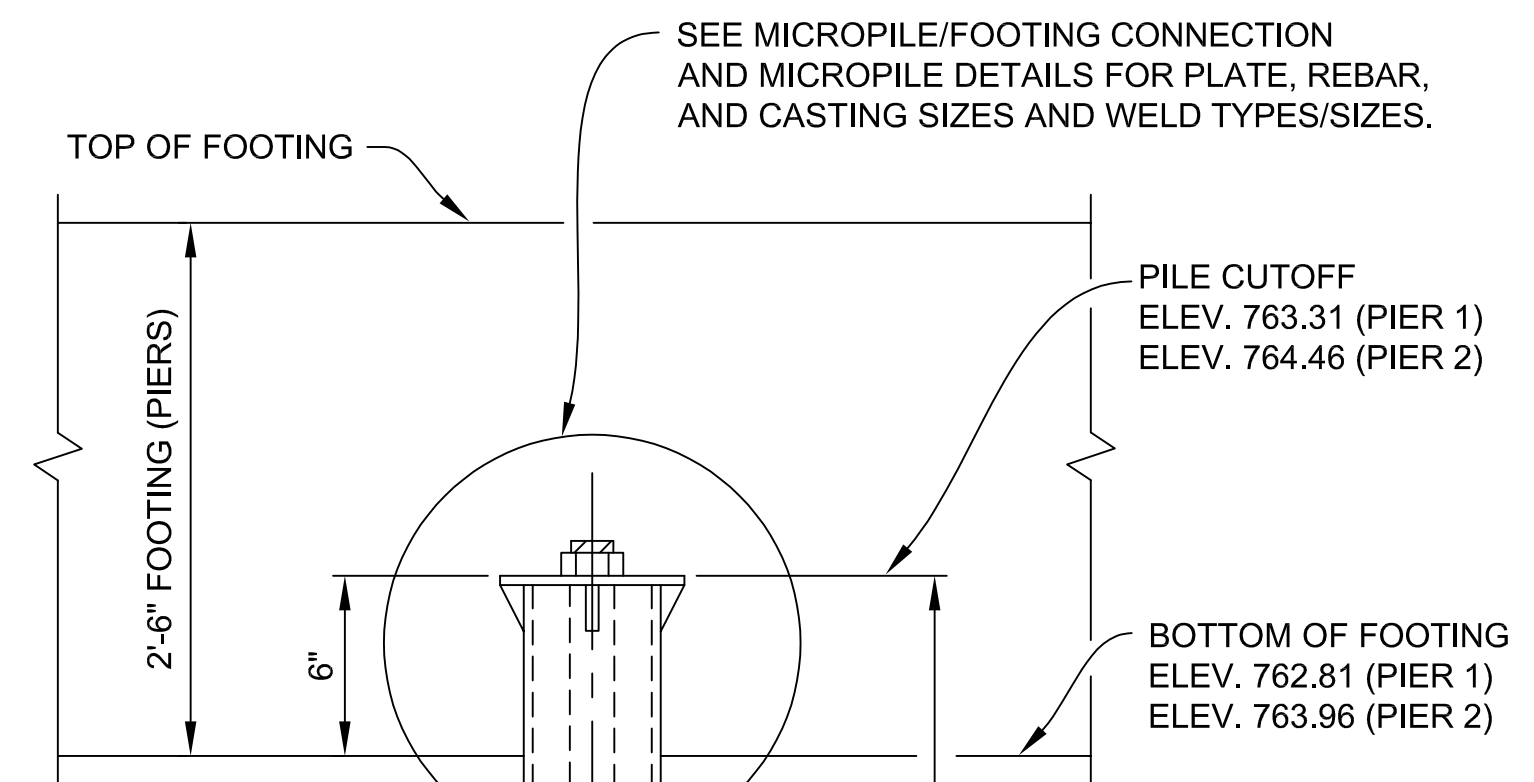
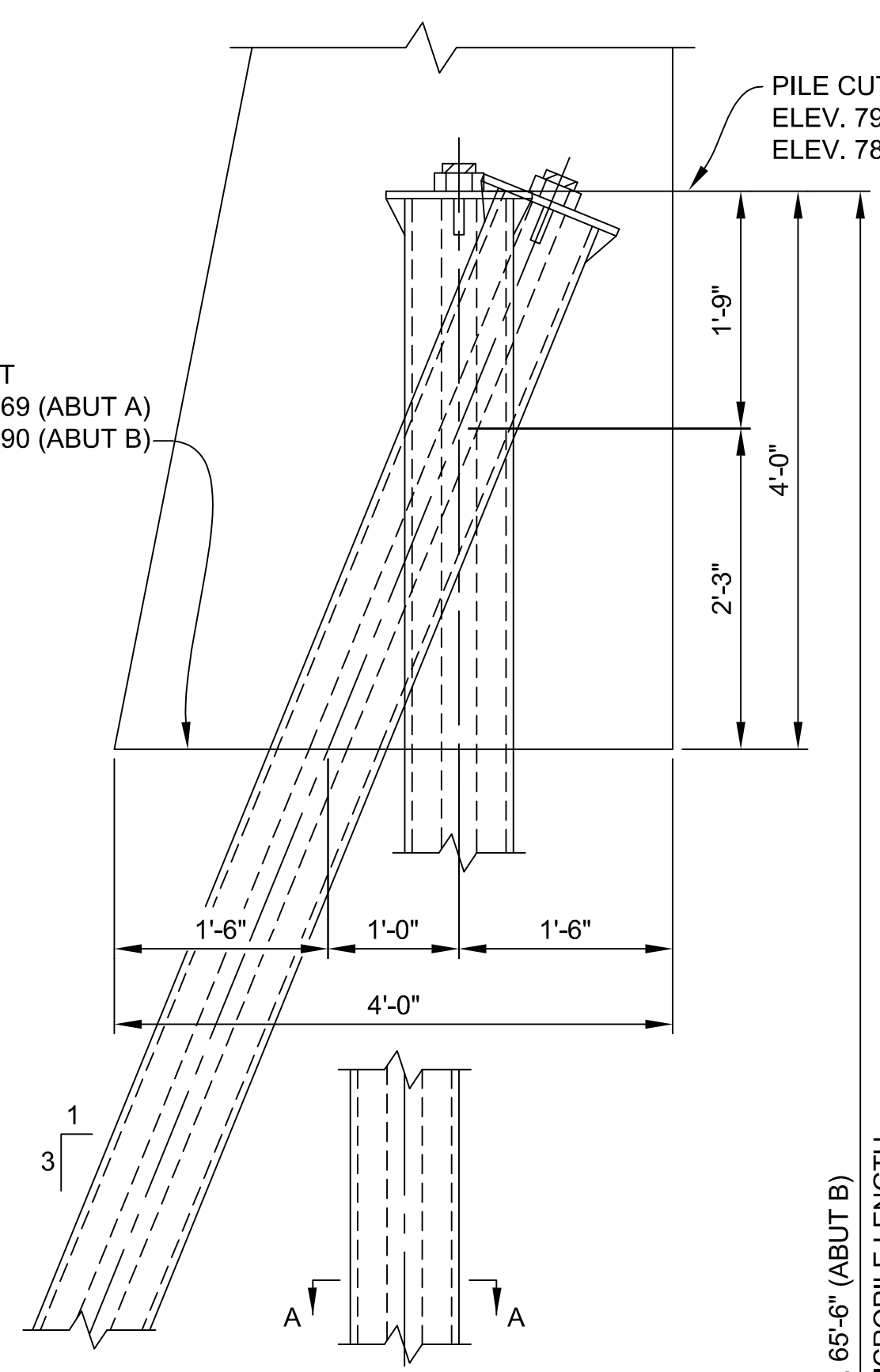
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DRAWING NO. <b>2021-008-BR17</b>	
SHEET NO. <u>80</u> OF <u>155</u>	

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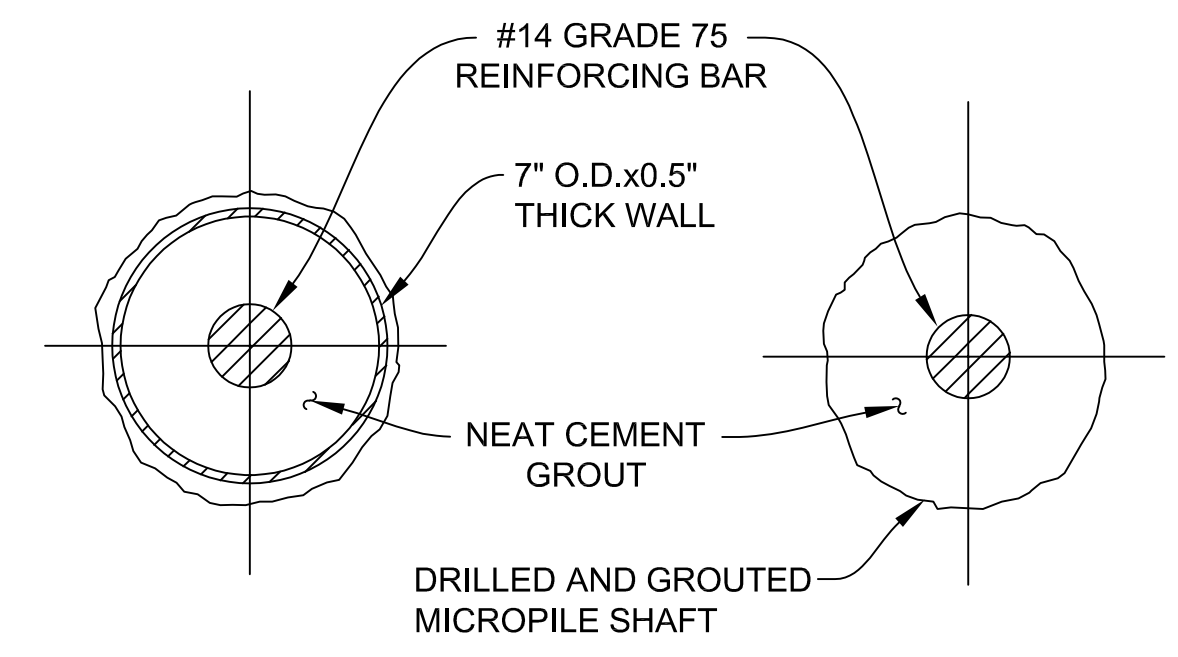
BOTT/ABUT  
ELEV. 790.69 (ABUT A)  
ELEV. 782.90 (ABUT B)

PILE CUTOFF  
ELEV. 794.69 (ABUT A)  
ELEV. 786.90 (ABUT B)



**MICROPILE/FOOTING CONNECTION DETAIL**  
(PIER SHOWN)

**MICROPILE DETAILS**



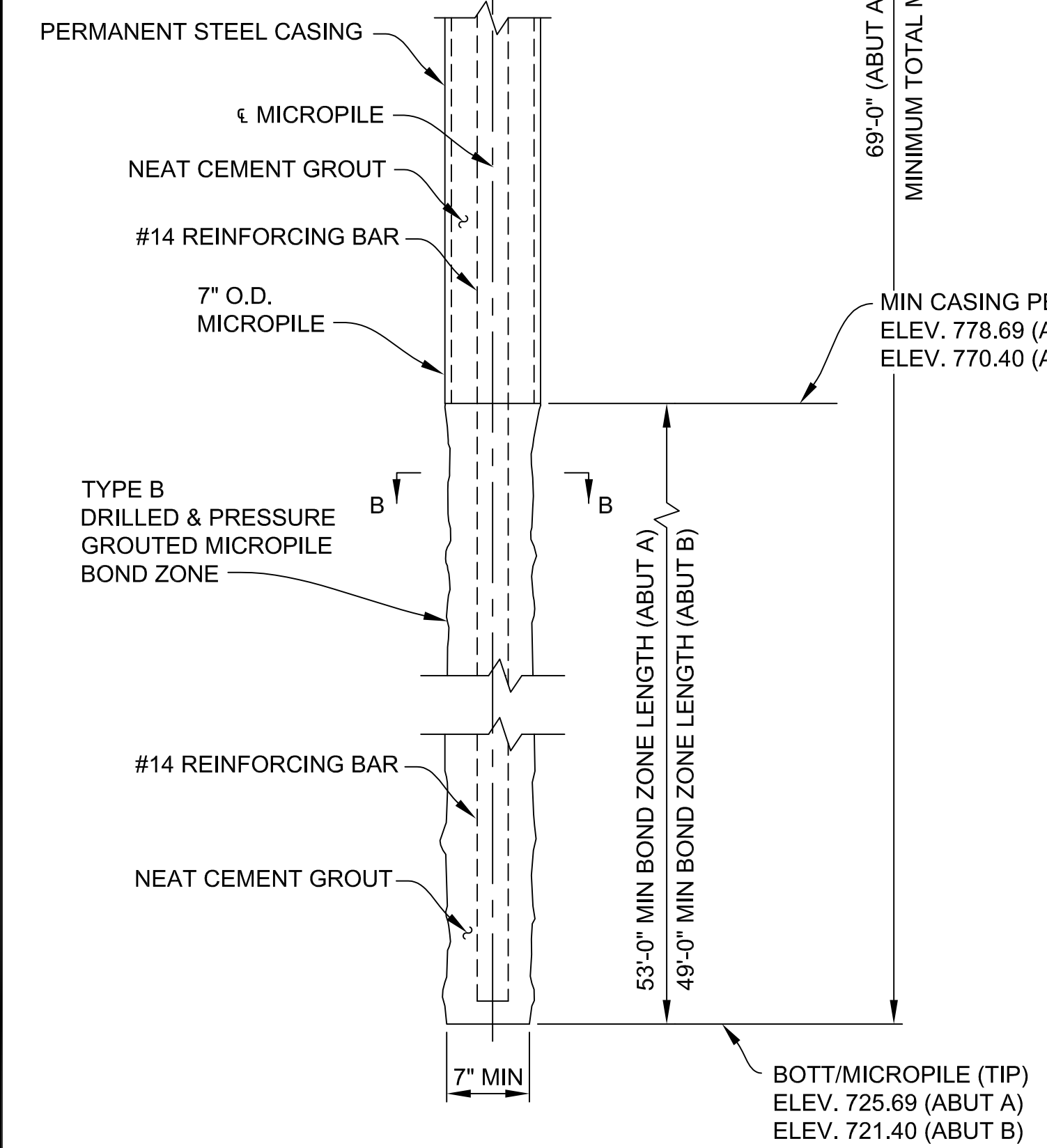
**SECTION A-A**

**SECTION B-B**

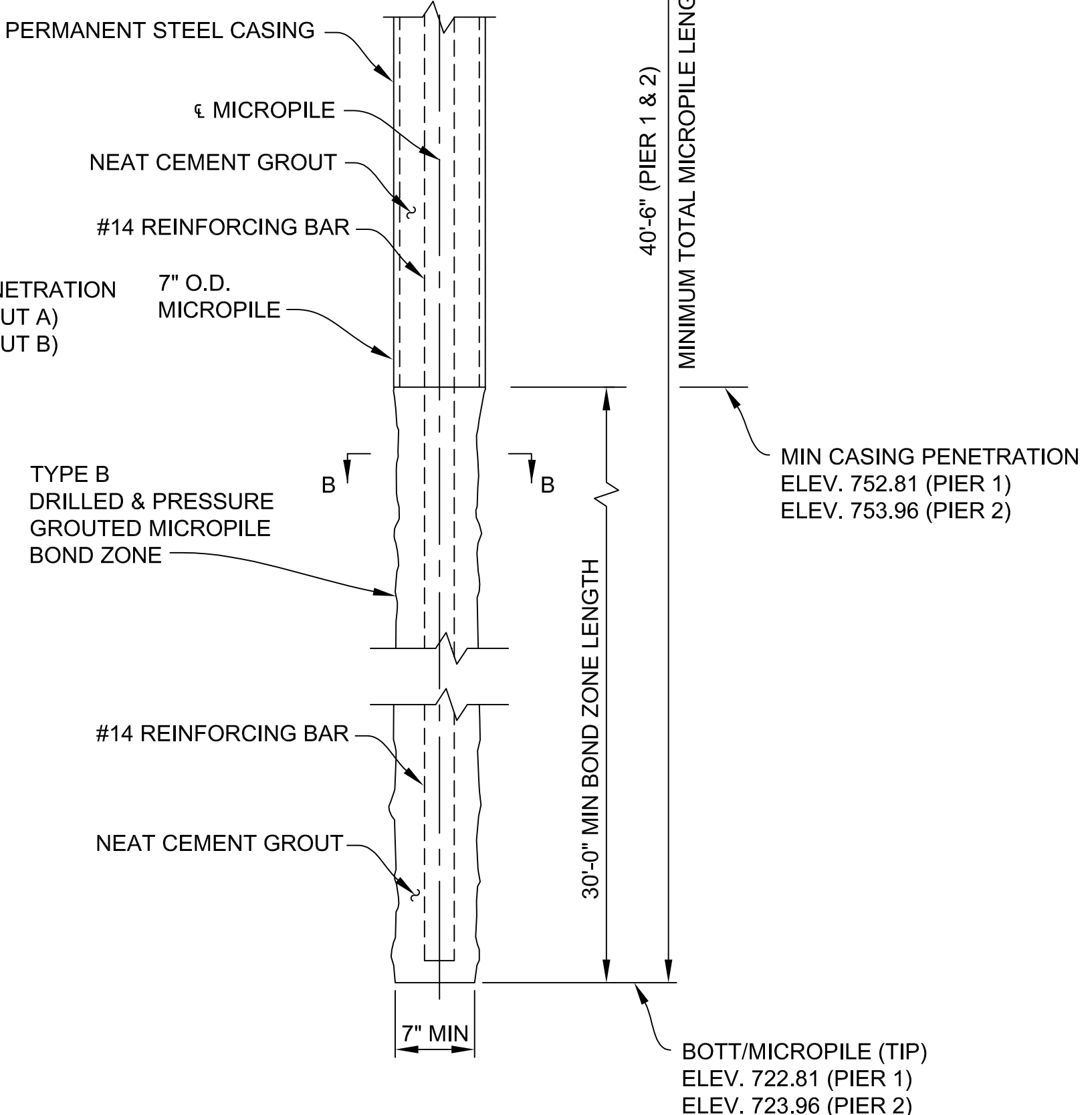
180 KIP (ABUT A), 180 KIP (ABUT B), & 91 KIP (AT PIERS) TYPE B 7" O.D. MICROPILE (SEE MICROPILE ELEVATION)					
LOCATION	PILE TYPE	NUMBER OF PILES	ESTIMATED LENGTH FURNISHED, DRILLED & GROUTED		CUT-OFF ELEV.
			EACH LFT	TOTAL LFT	
ABUT A	VERTICAL	3	69	207	794.69
	BATTERED 3V:1H	3	73	219	794.69
PIER 1	VERTICAL	4	41	164	763.31
PIER 2	VERTICAL	4	41	164	764.46
ABUT B	VERTICAL	3	66	198	786.90
	BATTERED 3V:1H	3	70	210	786.90
TOTAL		20		1162	

**NOTES:**

- DENOTES BATTERED MICROPILE.
  - DENOTES VERTICAL MICROPILE.
  - ⊕ DENOTES PROOF LOAD TEST MICROPILE, LRFD.
  - ⊗ DENOTES VERIFICATION LOAD TEST MICROPILE, LRFD.
- FACTORED NOMINAL RESISTANCE OF MICROPILE SHALL BE 180 KIP (ABUT A), 180 KIP (ABUT B), & 91 KIP (PIER 1 & 2).
- INSTALL ALL PIPES TO THE PILE TIP ELEVATION SHOWN.
- PILES DESIGNED USING AASHTO LRFD WITH RESISTANCE FACTOR OF 0.7.
- INSTALL PILES TO MEET CONSTRUCTION TOLERANCES ESTABLISHED IN SPECIAL PROVISION.
- ENGINEER TO OBSERVE PILE INSTALLATION TO ENSURE ADEQUATE STRUCTURAL INTEGRITY.
- FURNISH 7" O.D. STEEL CASING (NP-80) WITH A MINIMUM 0.5" WALL THICKNESS WITH A MINIMUM YIELD STRENGTH OF 80 KSI.
- FURNISH #14 WILLIAMS ASTM A-615 GRADE 75 ALL-THREAD BAR (OR EQUIVALENT). DETERMINE LENGTH OF COUPLE BAR SECTIONS BASED ON OVERHEAD CLEARANCES. FINISH COUPLERS AND NUTS MANUFACTURED SPECIFICALLY FOR THE THREADED BAR USED.
- FURNISH ASTM A572 GRADE 50 STEEL BEARING PLATES AND SIDE STIFFENERS.
- SEE SPECIAL PROVISION FOR FURTHER REQUIREMENTS.
- MICROPILES SHALL BE TYPE B. AFTER THE PRIMARY GROUT HAS BEEN TREMIED, PRESSUREGROUT THROUGH THE CASING TO A MINIMUM PRESSURE OF 40 PSI.
- COBBLES AND BOULDERS SHOULD BE ANTICIPATED DURING MICROPILE INSTALLATION. NO MICROPILE SHOULD BE TERMINATED ON A COBBLE OR BOULDER.



**MICROPILE ELEVATION**  
(ABUTMENTS A & B)



**MICROPILE ELEVATION**  
(PIERS 1 & 2)

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

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**EAST MEDICAL CENTER DRIVE**

**MICROPILE DETAILS**

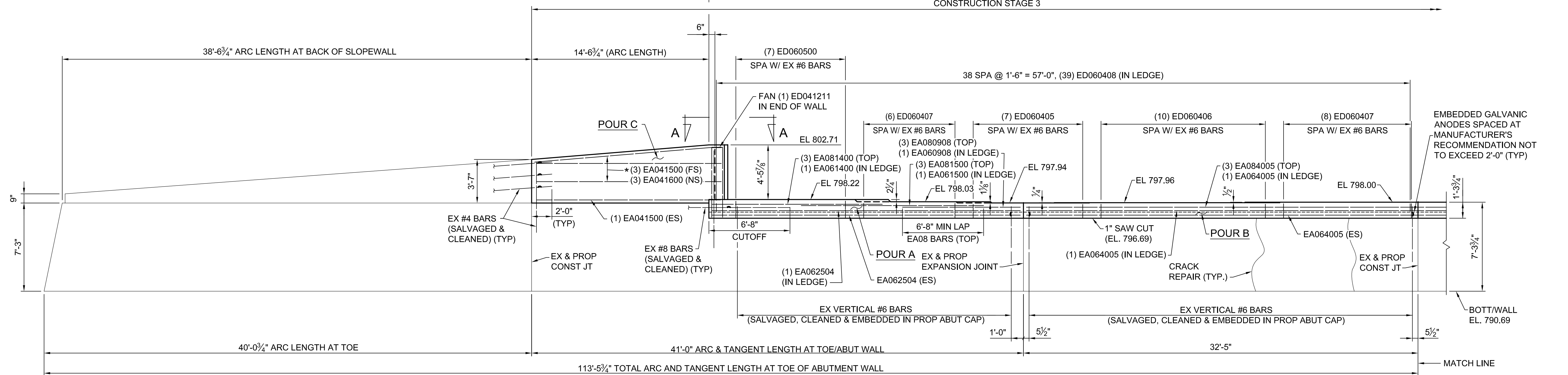
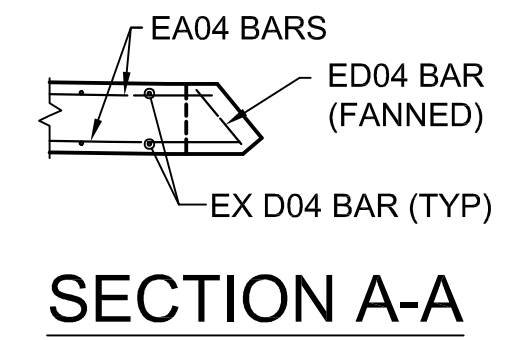
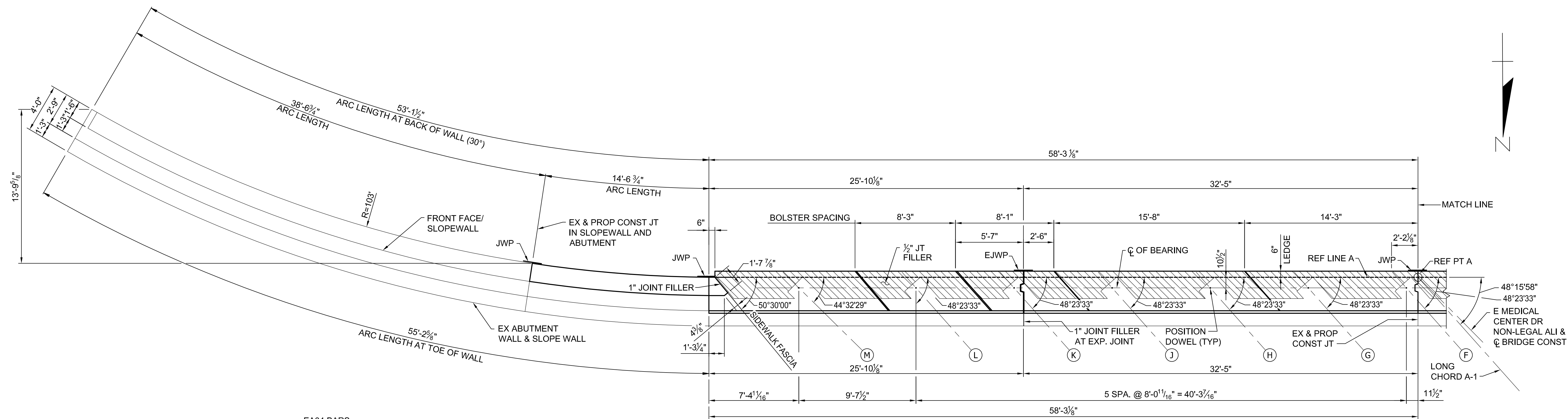
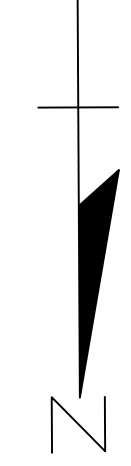
APPROVED BY: *[Signature]*  
Carrie L. Hamel, PE  
2023.10.06 17:40:46-0400

SCALE  
HOR. 1/2"=1'-0"  
0 INCH 1

DRAWING NO.  
**2021-008-BR18**

SHEET NO. 81 OF 155

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\* FIELD BEND HORIZONTAL WALL BARS AS REQUIRED TO FOLLOW CURVE

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

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

**ABUTMENT A DETAILS**

APPROVED BY: *[Signature]* Carrie L Hamel, PE  
 2023.10.06 17:41:24-04'00"

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

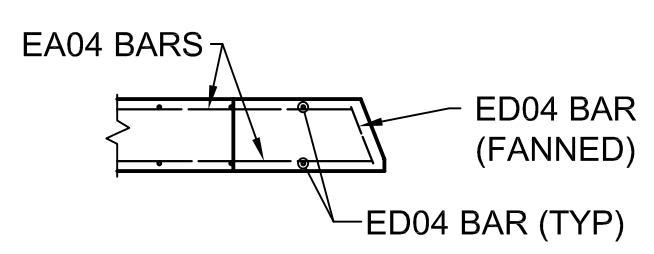
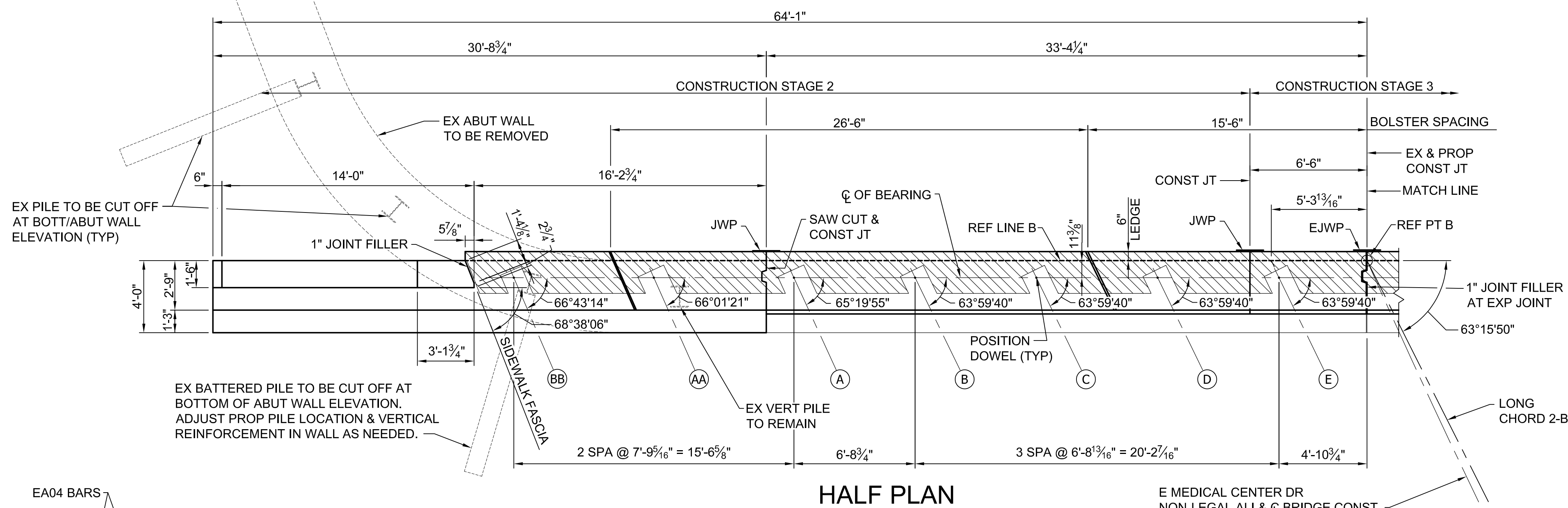
DRAWING NO. **2021-008-BR19**

SHEET NO. **82** OF **155**

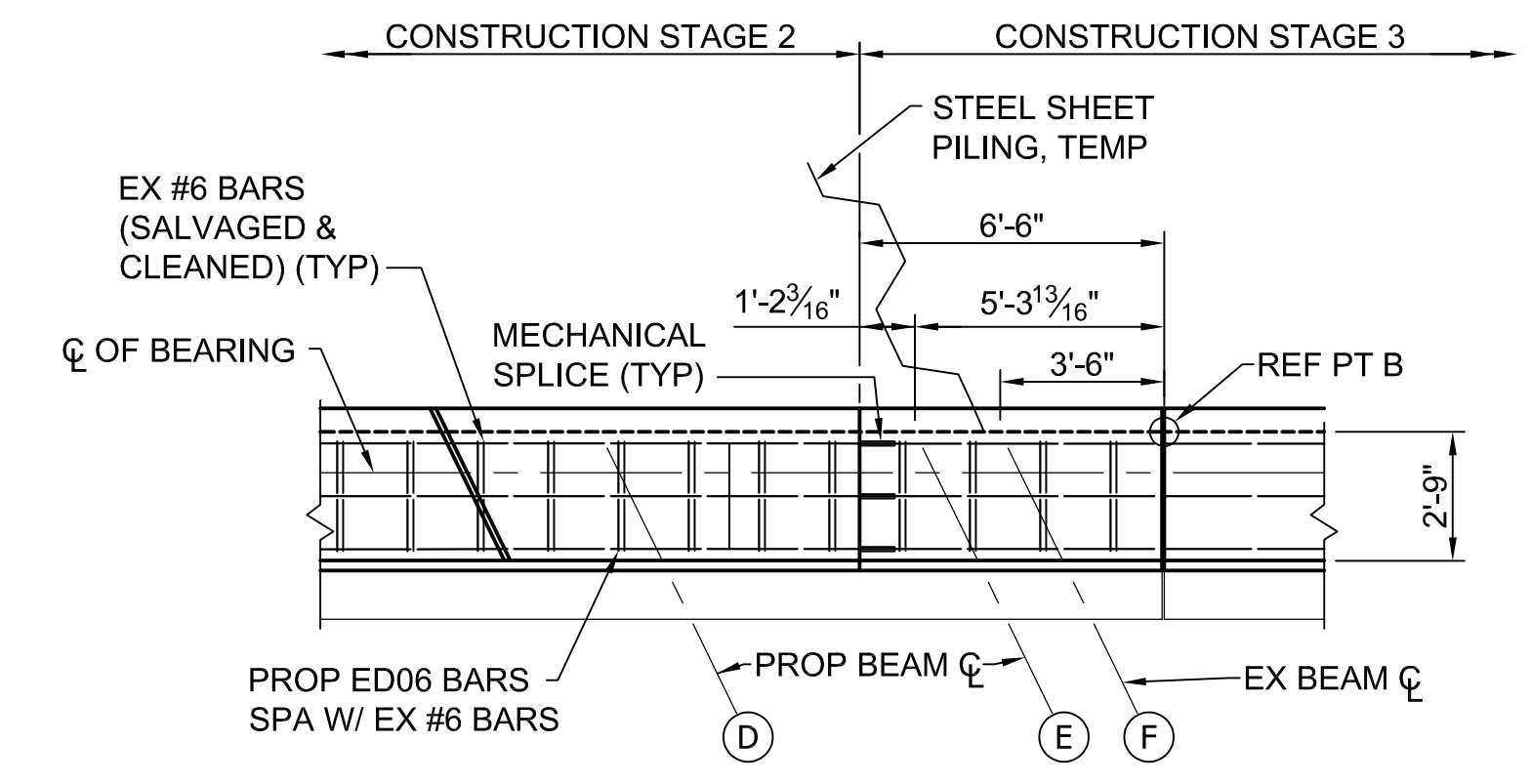
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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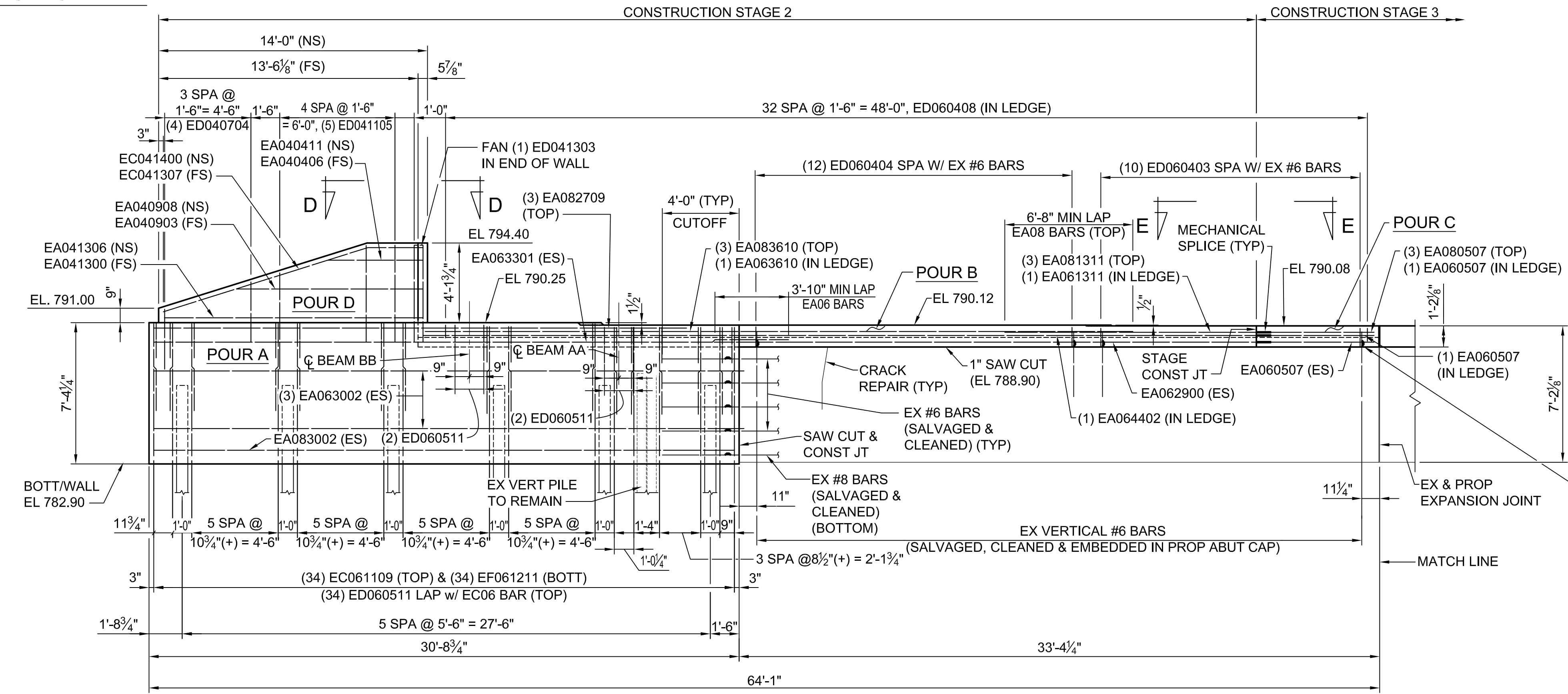




**SECTION D-D**



**SECTION E-E**



**ELEVATION**

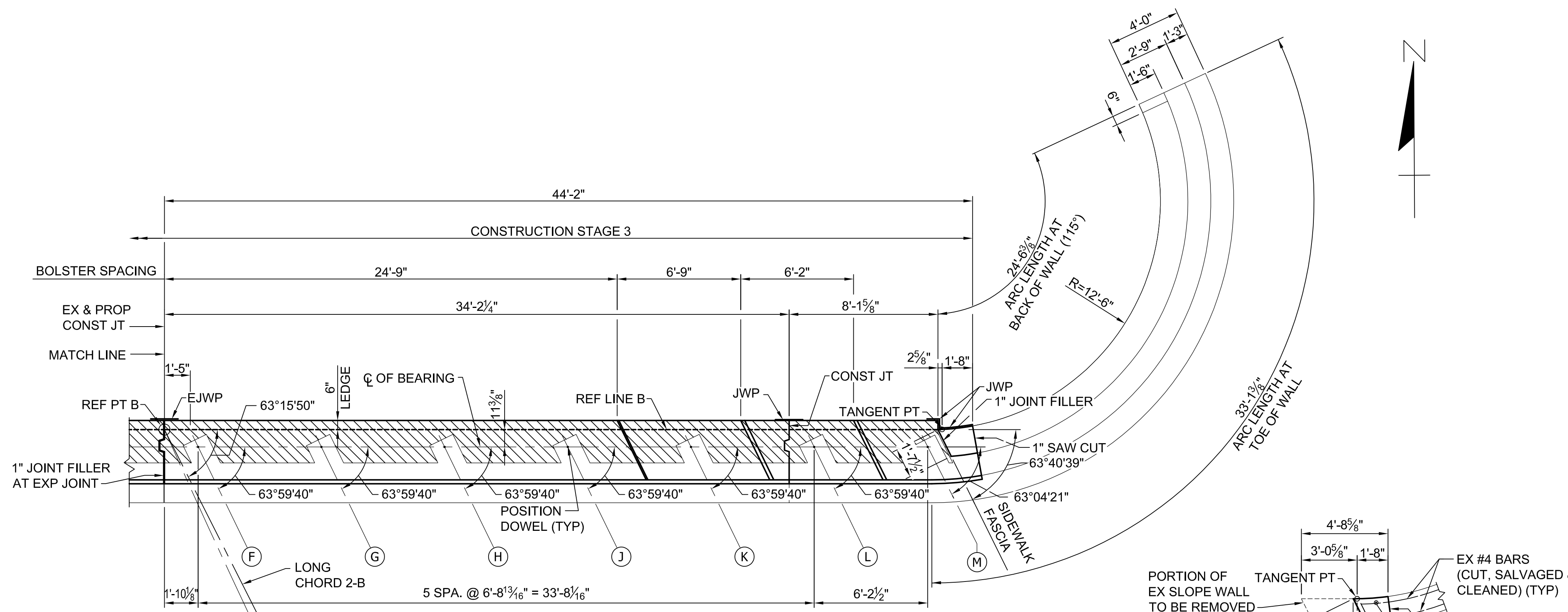
3 WORKING DAYS | BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

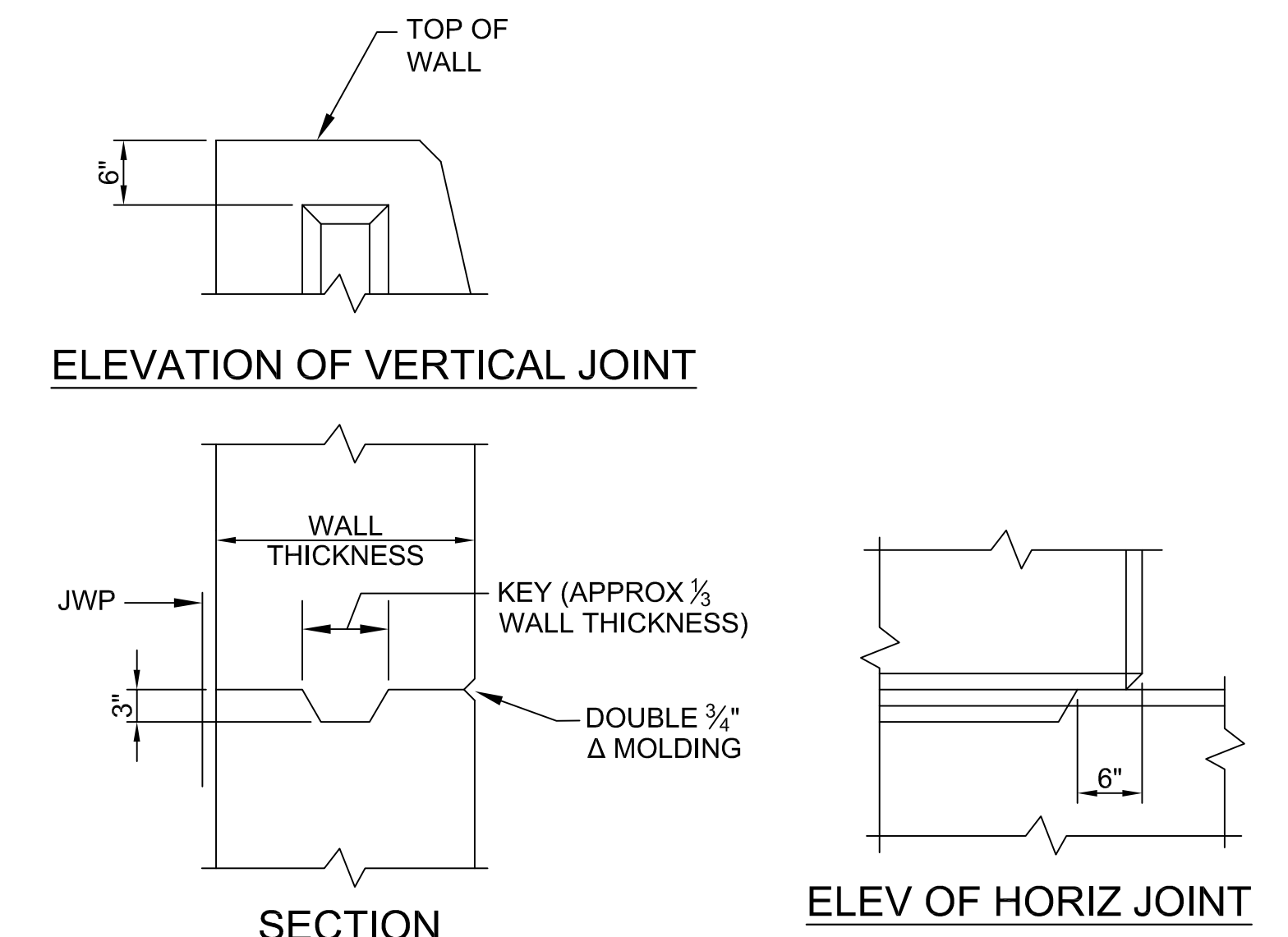
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>ABUTMENT B DETAILS</b>	
SCALE HOR. 1/4"=1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR21</b>	
SHEET NO. <u>84</u> OF <u>155</u>	
APPROVED BY	CARRIE L. HAMEL, P.E. 2023.10.06 17:42:04-04'00'

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

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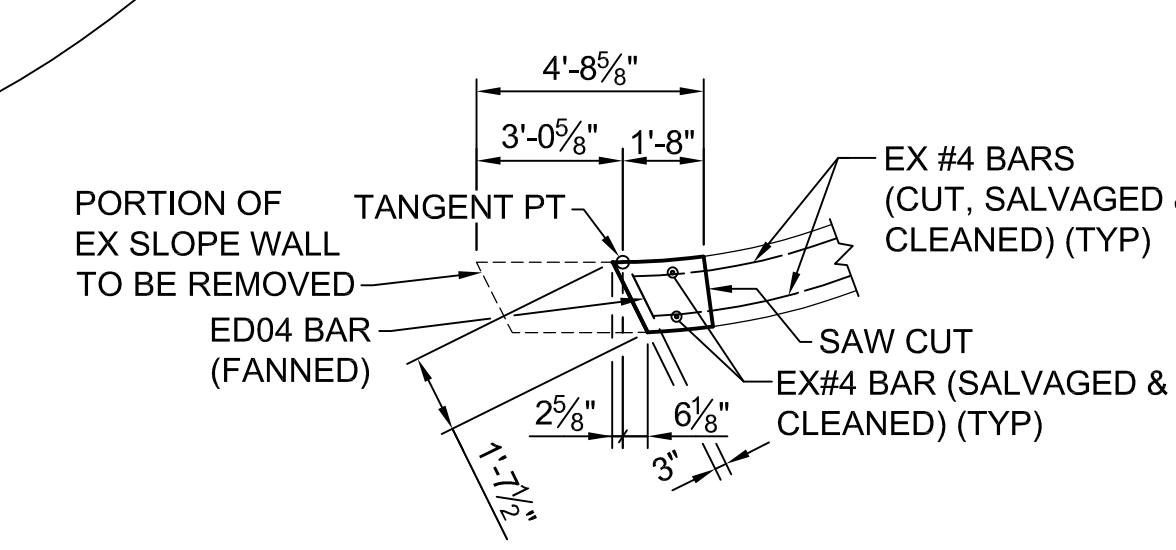


**HALF PLAN**

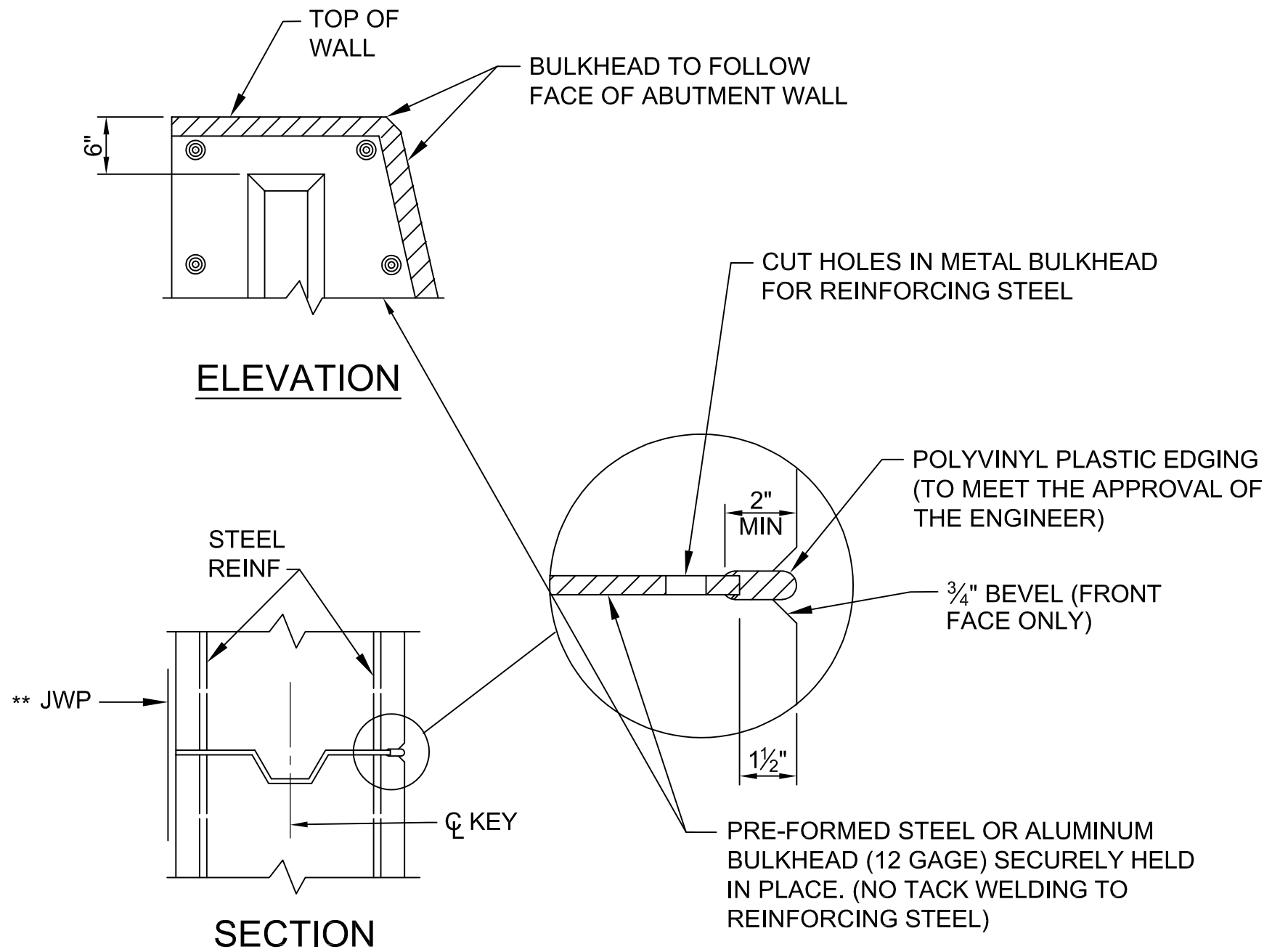


**CONSTRUCTION JOINT DETAILS**

NOTE: WHERE OPTIONAL CONSTRUCTION JOINTS ARE USED, THERE WILL BE NO PAYMENT FOR THE REQUIRED JOINT WATERPROOFING.



**SECTION F-F**

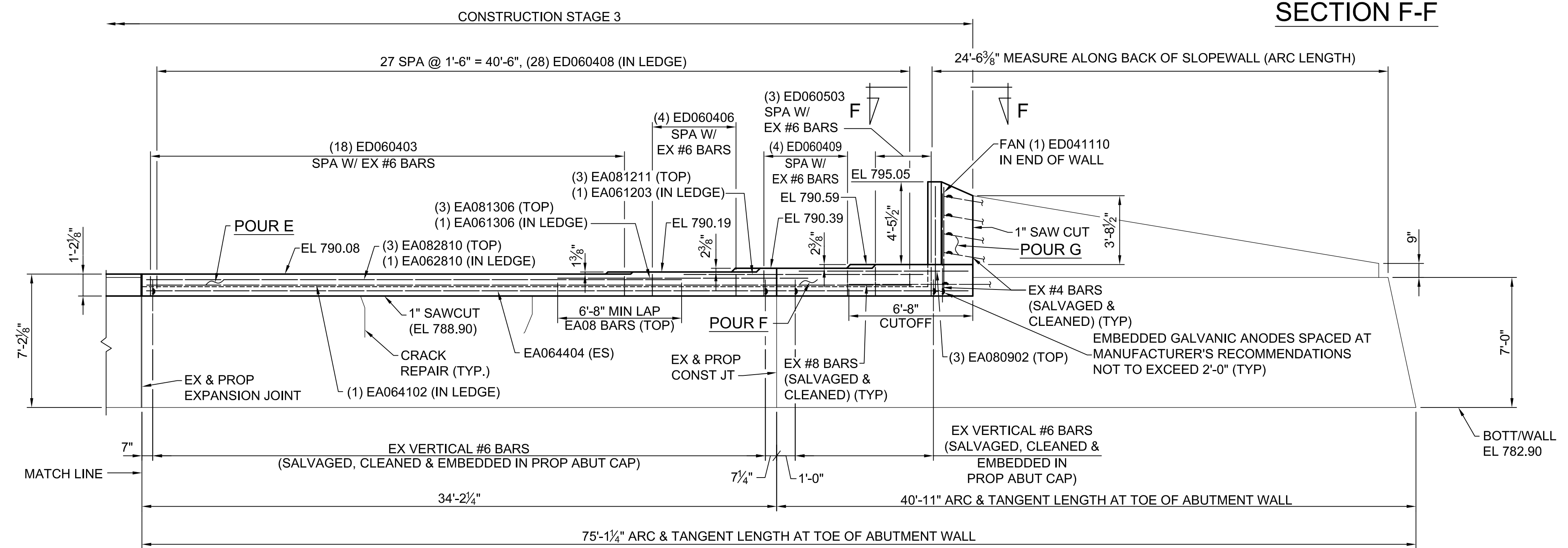


**METAL BULKHEAD DETAILS**

NOTE: METAL BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT AT CONTRACTOR'S EXPENSE. CARE IS TO BE USED IN CASTING CONCRETE TO PREVENT DISLOCATION OR MISALIGNMENT OF BULKHEAD.  
 \*\* PREFORMED WATERPROOFING MEMBRANE MAY BE USED AS AN ALTERNATE.

**NOTES:**

JOINT AND BULKHEAD DETAILS ARE FOR BOTH ABUTMENTS.  
 TRIM EXISTING BARS AS NEEDED TO ACHIEVE 2" MIN COVER.



**ELEVATION**

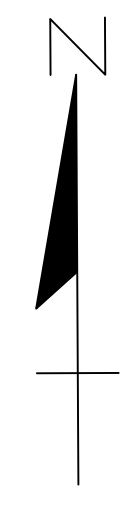
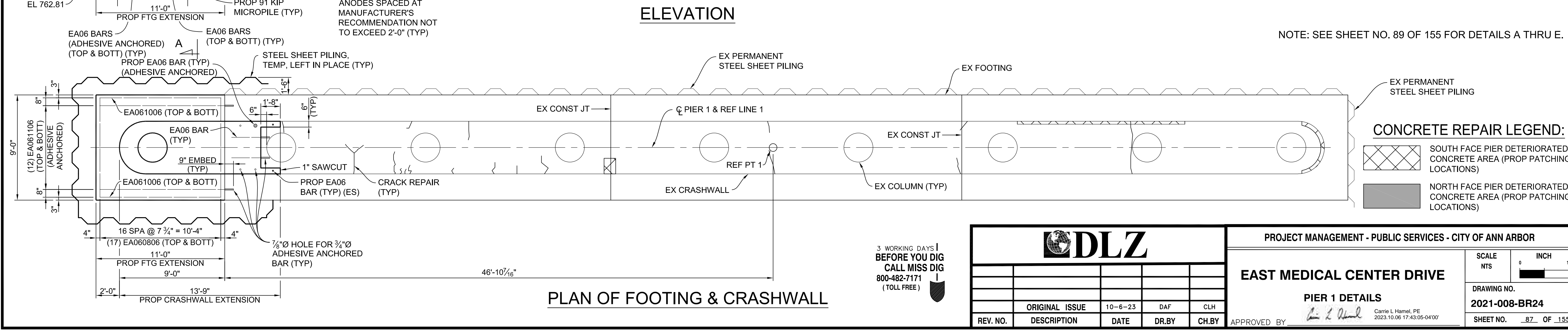
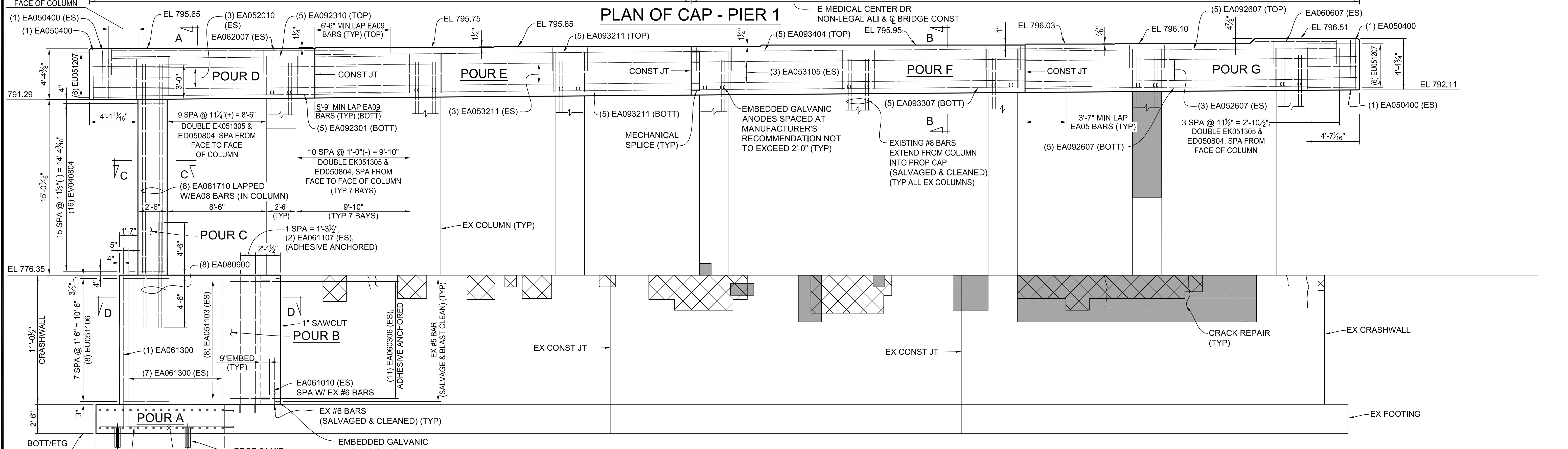
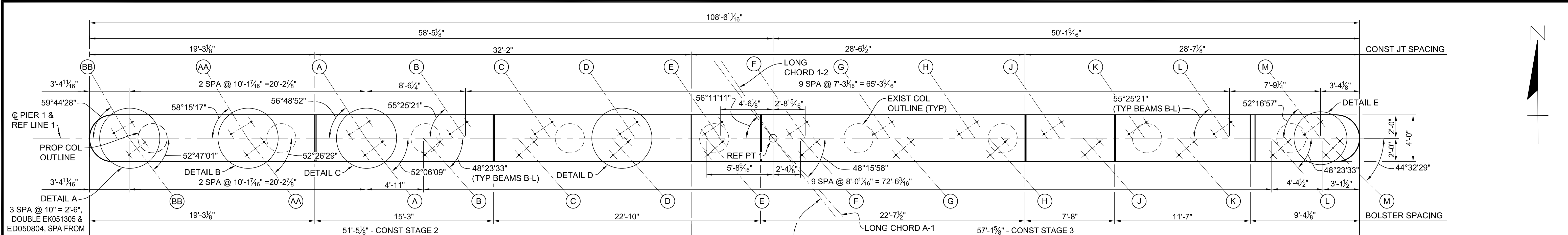
3 WORKING DAYS BEFORE YOU DIG  
 CALL MISS DIG  
 800-482-7171  
 (TOLL FREE)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>ABUTMENT B DETAILS</b>	
SCALE HOR. 1/4"=1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR22</b>	
APPROVED BY <i>Carrie L. Hamel</i>	Carrie L. Hamel, PE 2023.10.06 17:42:19-04'00"
SHEET NO. <u>85</u> OF <u>155</u>	

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NOTE: SEE SHEET NO. 89 OF 155 FOR DETAILS A THRU E.

**CONCRETE REPAIR LEGEND:**

- SOUTH FACE PIER DETERIORATED CONCRETE AREA (PROP PATCHING LOCATIONS)
- NORTH FACE PIER DETERIORATED CONCRETE AREA (PROP PATCHING LOCATIONS)

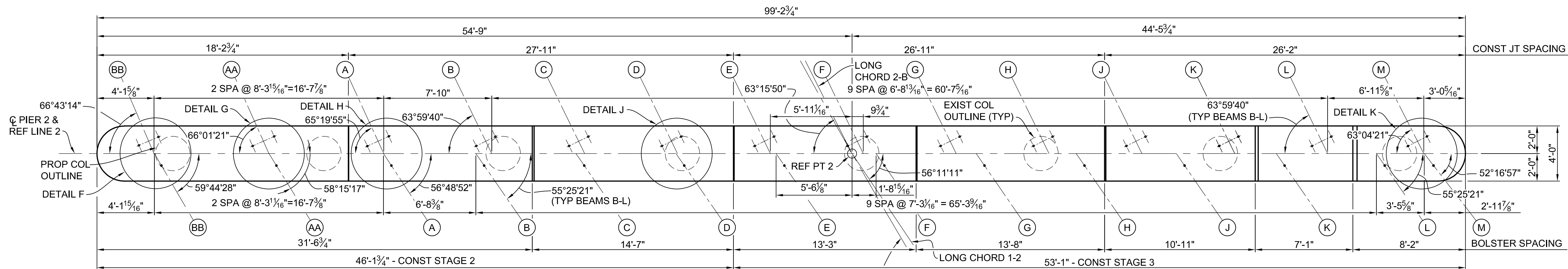
3 WORKING DAYS!  
BEFORE YOU DIG  
CALL MISS DIG  
800-482-7171  
(TOLL FREE)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

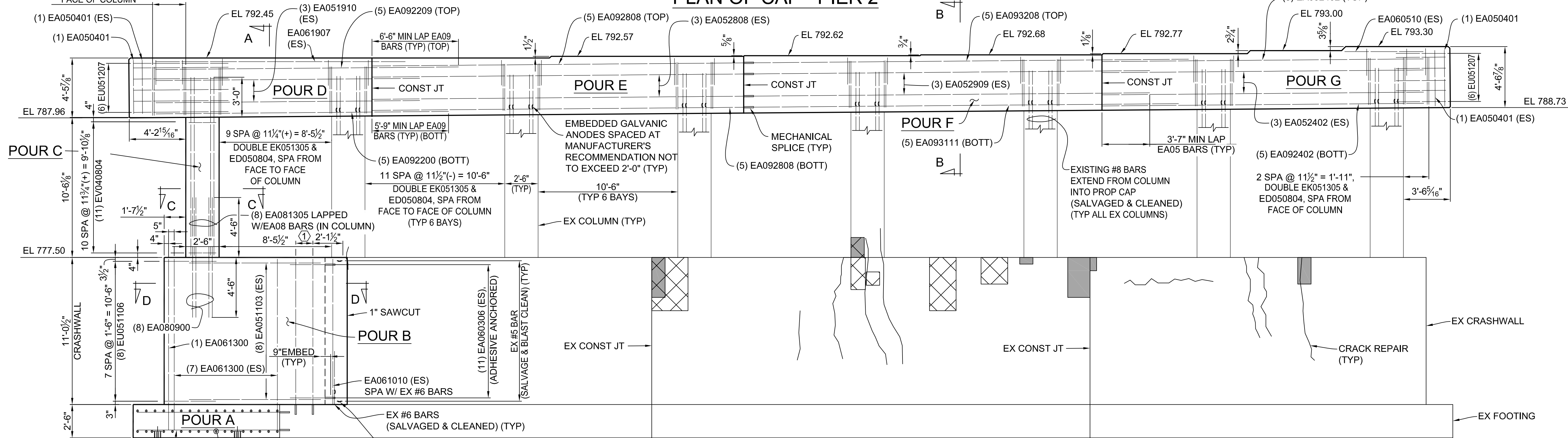
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>PIER 1 DETAILS</b>	
SCALE NTS	INCH 0 1
DRAWING NO. <b>2021-008-BR24</b>	
SHEET NO. <u>87</u> OF <u>155</u>	

APPROVED BY: *Carrie L. Hamel*  
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

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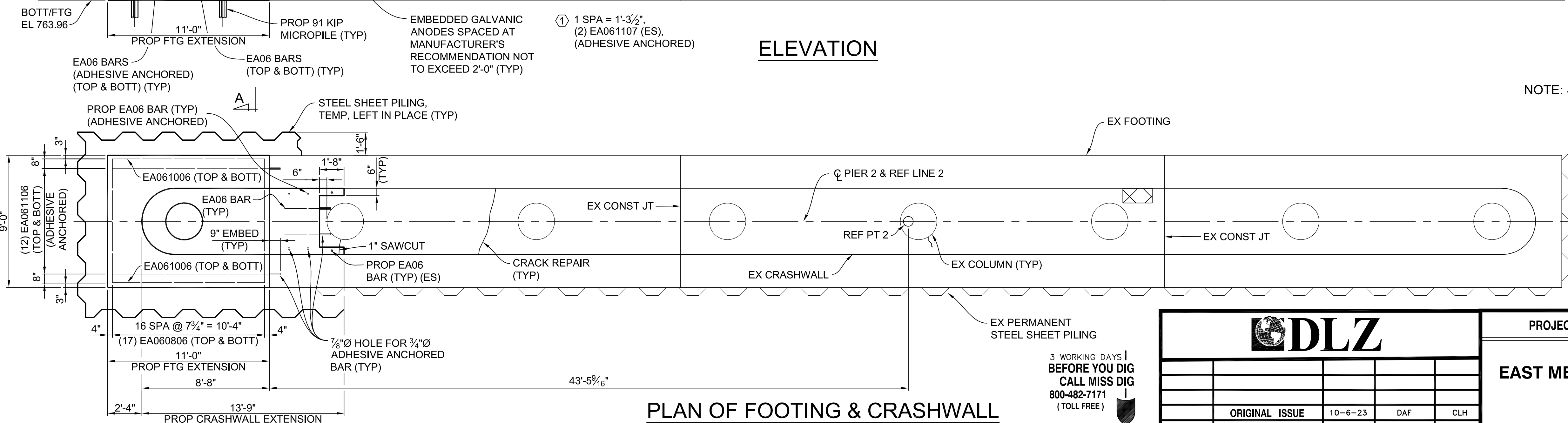


**PLAN OF CAP - PIER 2**



**ELEVATION**

NOTE: SEE SHEET NO. 89 OF 155 FOR DETAILS F THRU K.



**PLAN OF FOOTING & CRASHWALL**

**CONCRETE REPAIR LEGEND:**

- SOUTH FACE PIER DETERIORATED CONCRETE AREA (PROP PATCHING LOCATIONS)
- NORTH FACE PIER DETERIORATED CONCRETE AREA (PROP PATCHING LOCATIONS)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>PIER 2 DETAILS</b>	
SCALE NTS	INCH 0 1
DRAWING NO. <b>2021-008-BR25</b>	
SHEET NO. <u>88</u> OF <u>155</u>	

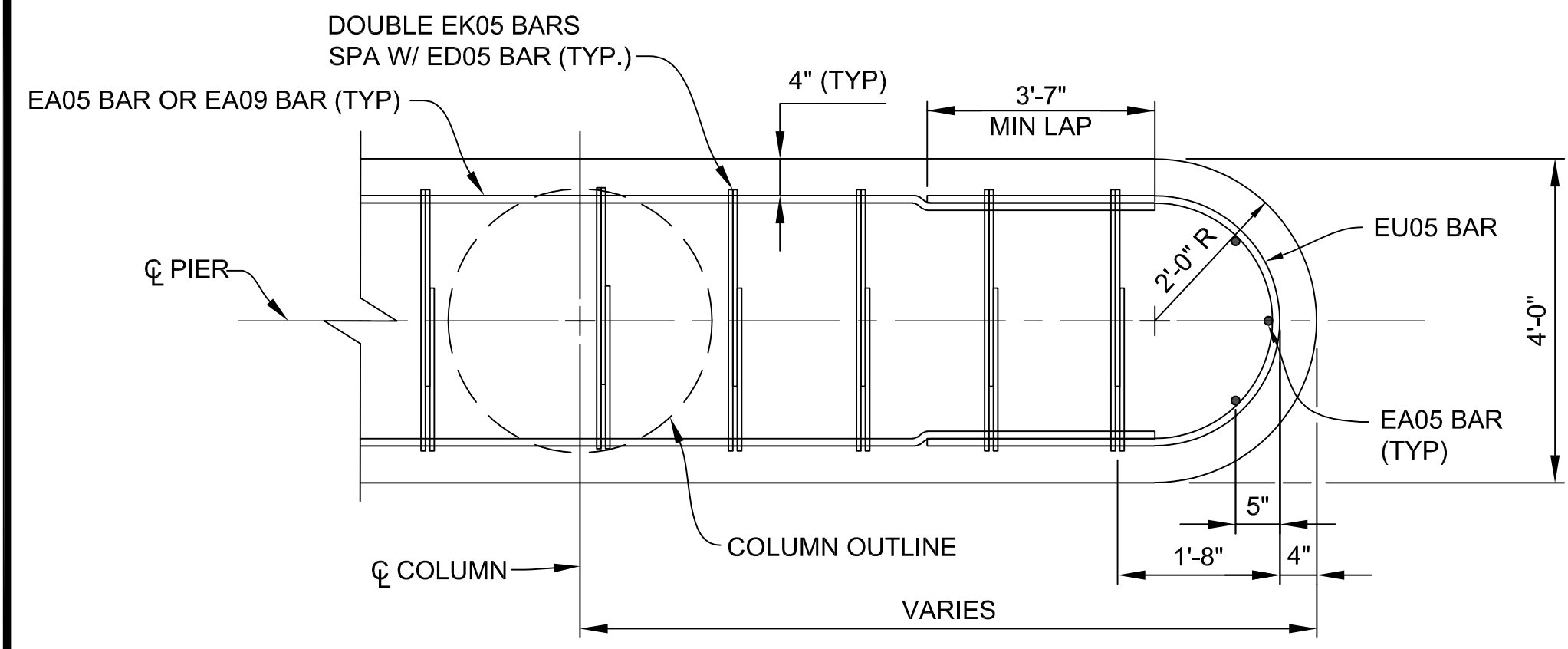
3 WORKING DAYS  
**BEFORE YOU DIG**  
CALL MISS DIG  
800-482-7171  
(TOLL FREE)

APPROVED BY: *Carrie L. Hamel*  
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

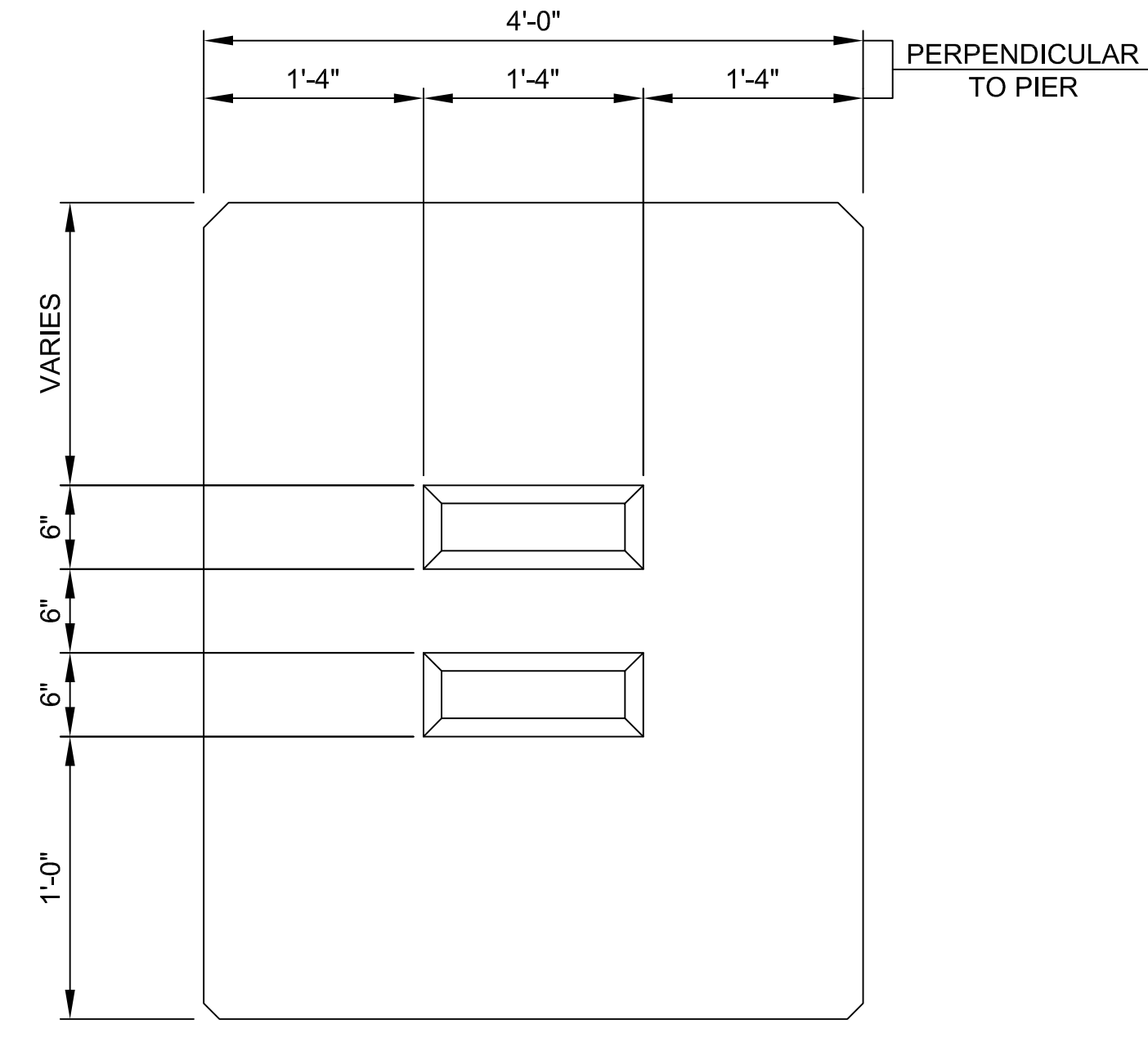
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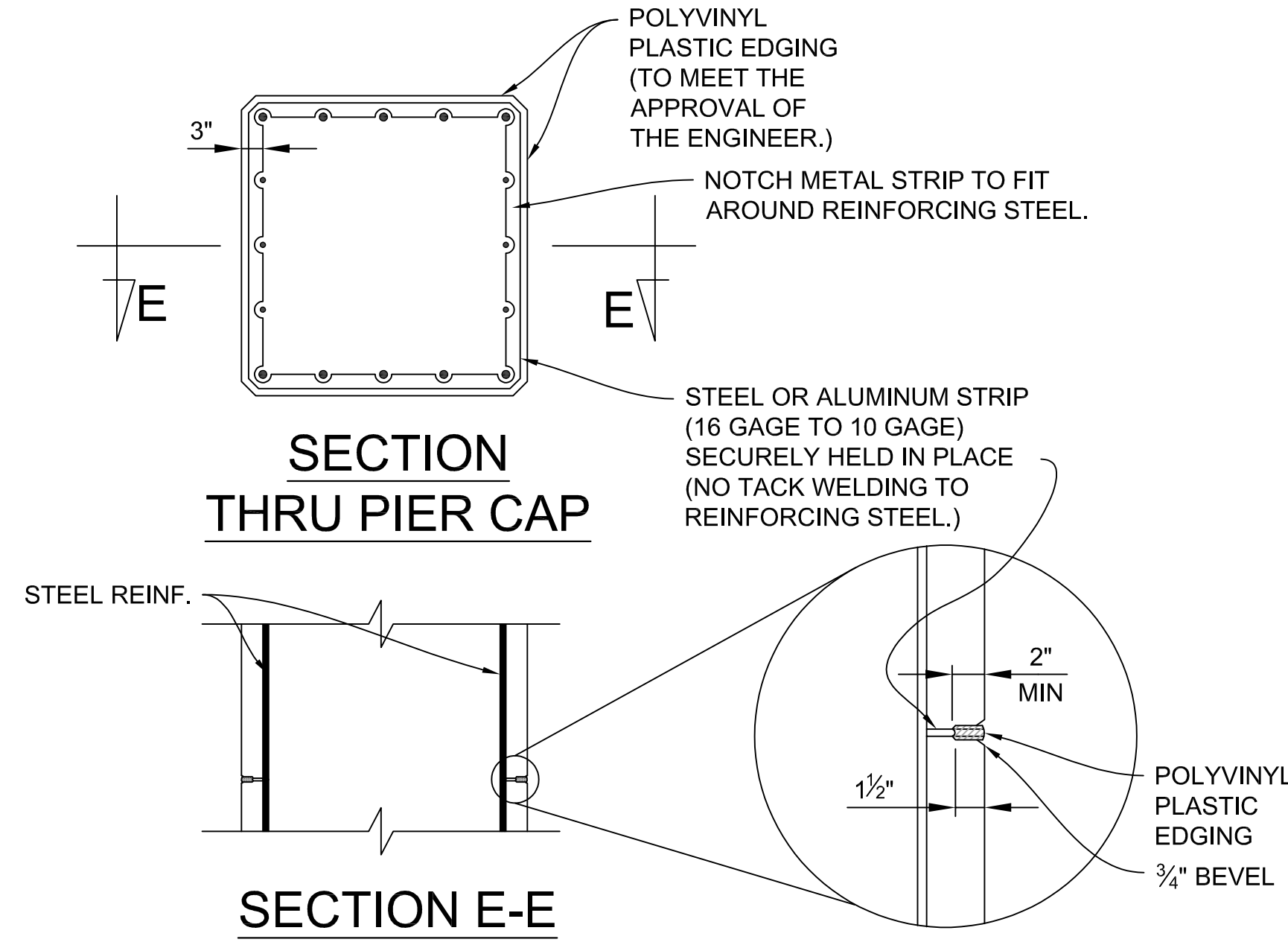




TYPICAL CAP END-SECTION



SHEAR KEY DETAIL

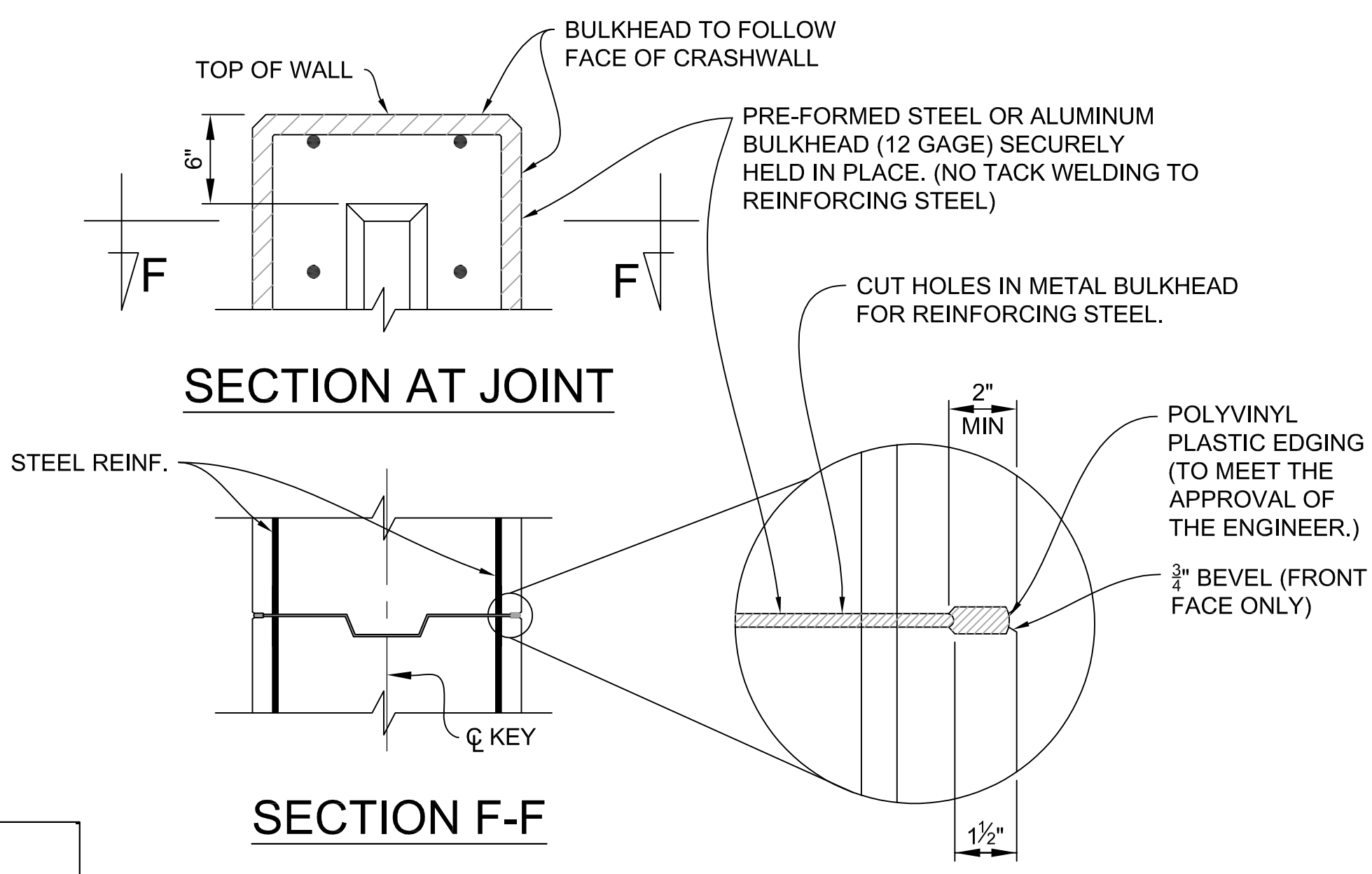


SECTION THRU PIER CAP

SECTION E-E

PIER CAP PARTIAL METAL BULKHEAD DETAILS

NOTES: PARTIAL METAL BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT AT CONTRACTOR'S EXPENSE. CARE IS TO BE USED IN CASTING CONCRETE TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.



SECTION AT JOINT

SECTION F-F

CRASHWALL METAL BULKHEAD DETAILS

NOTES: METAL BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT AT CONTRACTOR'S EXPENSE. CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SUBSTRUCTURE CONCRETE QUANTITIES (CYD)		
POUR	PIER 1	PIER 2
* A	9.5	9.5
* B	22.5	22.5
* C	3.0	2.0
D	12.0	12.0
E	20.4	18.0
F	17.6	17.0
G	18.0	17.0
TOTAL	103	98

\* DENOTES CATG 0002 (35 CYD @ PIER 1 & 34 CYD @ PIER 2), ALL OTHER POURS INCLUDED IN CATG 0001

NOTES:

REPAIR AREAS/CRACKS SHOWN ARE APPROXIMATIONS BASED ON A BRIDGE INSPECTION THAT TOOK PLACE IN OCTOBER, 2021 AND A FOLLOW-UP INSPECTION IN APRIL, 2023.

PIER COLUMNS AND CRASHWALLS SHALL BE SOUNDED PRIOR TO CONSTRUCTION AND ADDITIONAL AREAS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER.

PENETRATING WATER REPELLENT TREATMENT SHALL BE APPLIED TO THE PIER REPAIR AREAS AS DIRECTED BY THE ENGINEER.

INSTALL GALVANIC ANODES ON EXPOSED REBAR ALONG PERIMETER OF REPAIR, SPACED PER MANUFACTURER'S RECOMMENDATIONS (24 INCH MAX).

A CRACK THAT EXTENDS BELOW THE GROUND LINE SHALL, WITH PRIOR APPROVAL OF THE ENGINEER, BE REPAIRED. ALL EXCAVATION, BACKFILL, WORK, AND MATERIAL REQUIRED SHALL BE INCLUDED IN PAYMENT FOR "STRUCTURAL CRACK, REPR".

APPLY SUBSTRUCTURE HORIZONTAL SURFACE SEALER TO THE TOP HORIZONTAL SURFACE OF PIERS 1 & 2 AFTER THE ELASTOMERIC BEARINGS HAVE BEEN PLACED IN FINAL POSITION ON THE STRUCTURE. CLEAN ACCIDENTALLY COATED VERTICAL SURFACES AT THE CONTRACTOR'S EXPENSE.

APPLY LOW TEMPERATURE PROTECTION OF CONCRETE ACCORDING TO SECTION 706.03J OF THE MDOT 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE IS INCLUDED IN THE RELATED ITEMS OF WORK.

FOR MICROPILE QUANTITIES, LAYOUT AND NOTES, SEE SHEETS 80 AND 81 OF 155.

ADJUST BAR SPACING IN FOOTINGS AS NECESSARY TO AVOID MICROPILES.

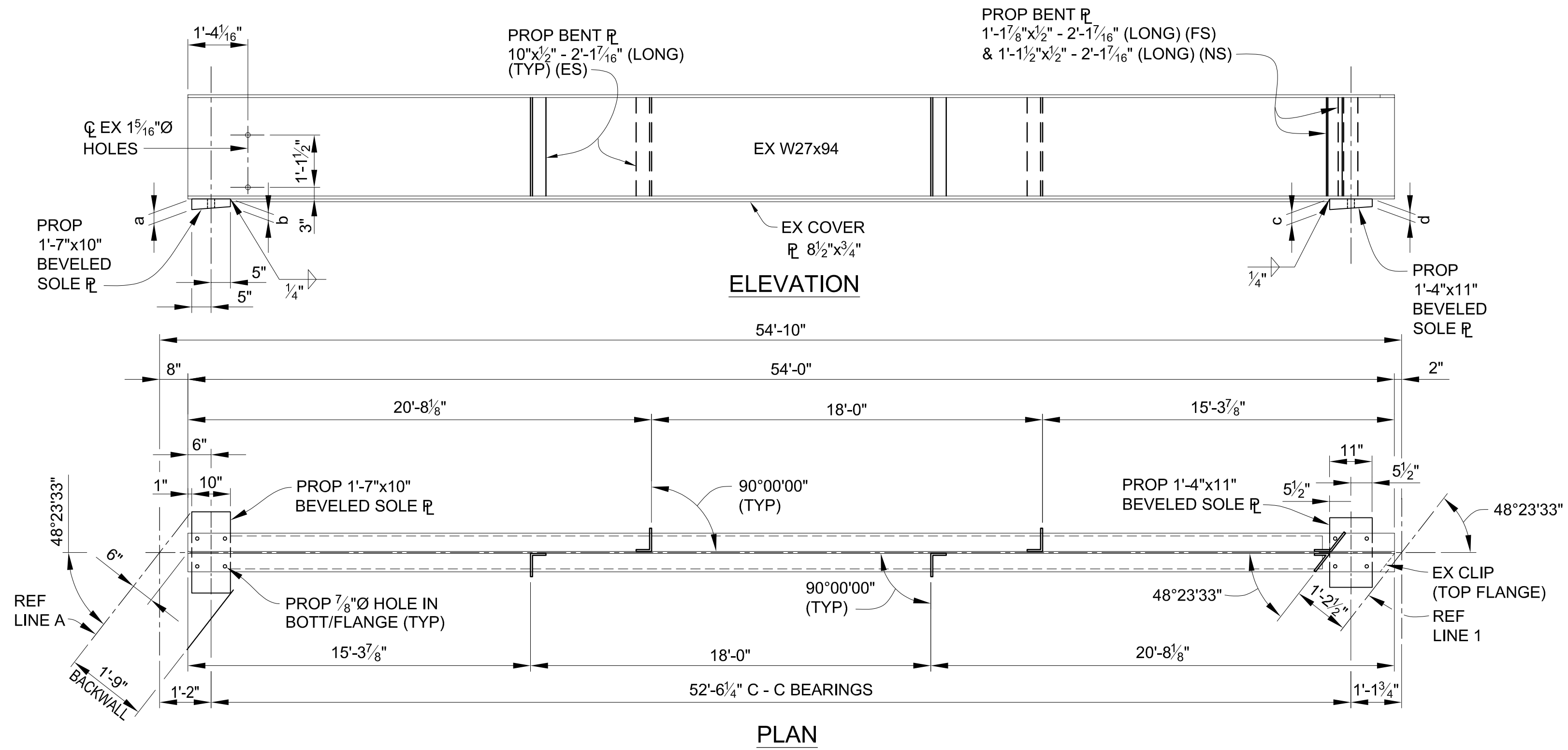
ESTIMATED QUANTITIES THIS SHEET				
DESCRIPTION	UNITS	DATE 0002	DATE 0001	TOTAL
Substructure Concrete	CYD	103	98	201
Water Proofing and Treatment Reinforcing	SF	58		58
Substructure Horizontal Surface Sealer (EPICURE)	SF	58		58
Hand Drilling Other Than Deep	LF	129		129
Rebar Forming	SF	58		58
Mechanical Anchoring of Horizontal Bar 3/4" dia	LF		58	58
Mechanical Anchoring of Vertical Bar 3/4" dia	LF		58	58
Reinforcement Mechanical Splice	LF	58		58
Forming Deck Water	SF	58		58
Structure Deck Repar	SF	58		58
Reinforcing Concrete	CYD	103		103
Embedded Sealer Anode	LF	130		130

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

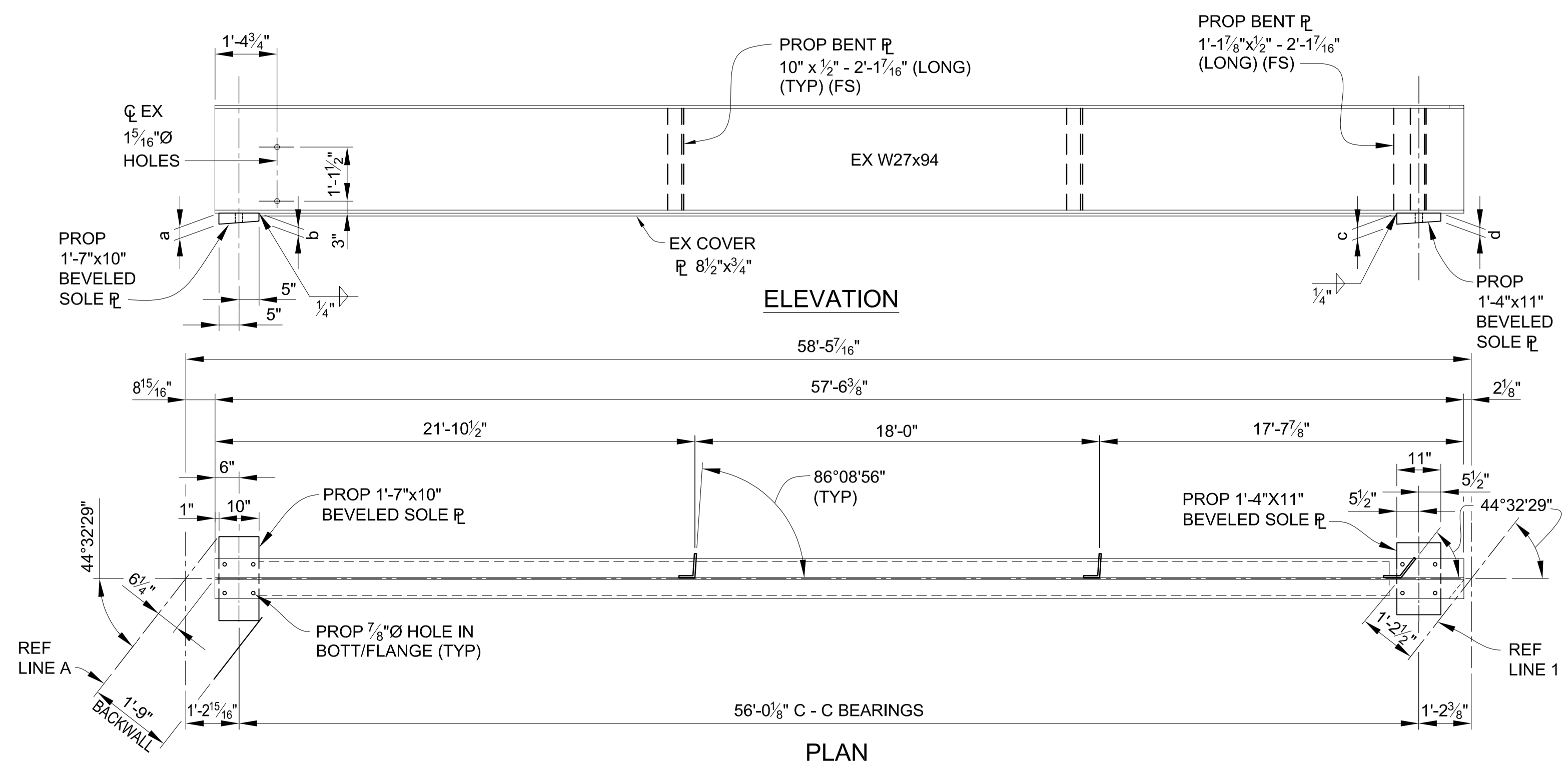
<b>DLZ</b>					PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR				
					<b>EAST MEDICAL CENTER DRIVE</b>				
					<b>PIER DETAILS</b>				
					APPROVED BY: <i>Carrie L. Hamel</i> Carrie L. Hamel, PE 2023.10.06 17:43:51-04'00"				
SCALE	NTS				INCH	0 1			
DRAWING NO.					2021-008-BR27				
SHEET NO.					90 OF 155				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY					
	ORIGINAL ISSUE	10-6-23	DAF	CLH					

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EXISTING BEAMS B THRU L



EXISTING BEAM M

SPAN 1 - SOLE PLATE TABULATED DIMENSIONS				
BEAM	REF LINE A		REF LINE 1	
	a	b	c	d
B	2 7/16"	2"	4"	3 9/16"
C	2 5/16"	2"	2 7/8"	2 7/16"
D	2 5/16"	2"	3 1/4"	2 13/16"
E	2 5/16"	2"	3 5/8"	3 3/16"
F	2 5/16"	2"	2 7/8"	2 1/2"
G	2 5/16"	2"	3 5/16"	2 15/16"
H	2 5/16"	2"	3 5/8"	3 1/4"
J	2 5/16"	2"	2 15/16"	2 9/16"
K	2 5/16"	2"	3 1/16"	3 3/8"
L	2 5/16"	2"	2 7/16"	2 1/8"
M	2 5/16"	2"	3 13/16"	3 9/16"

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

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

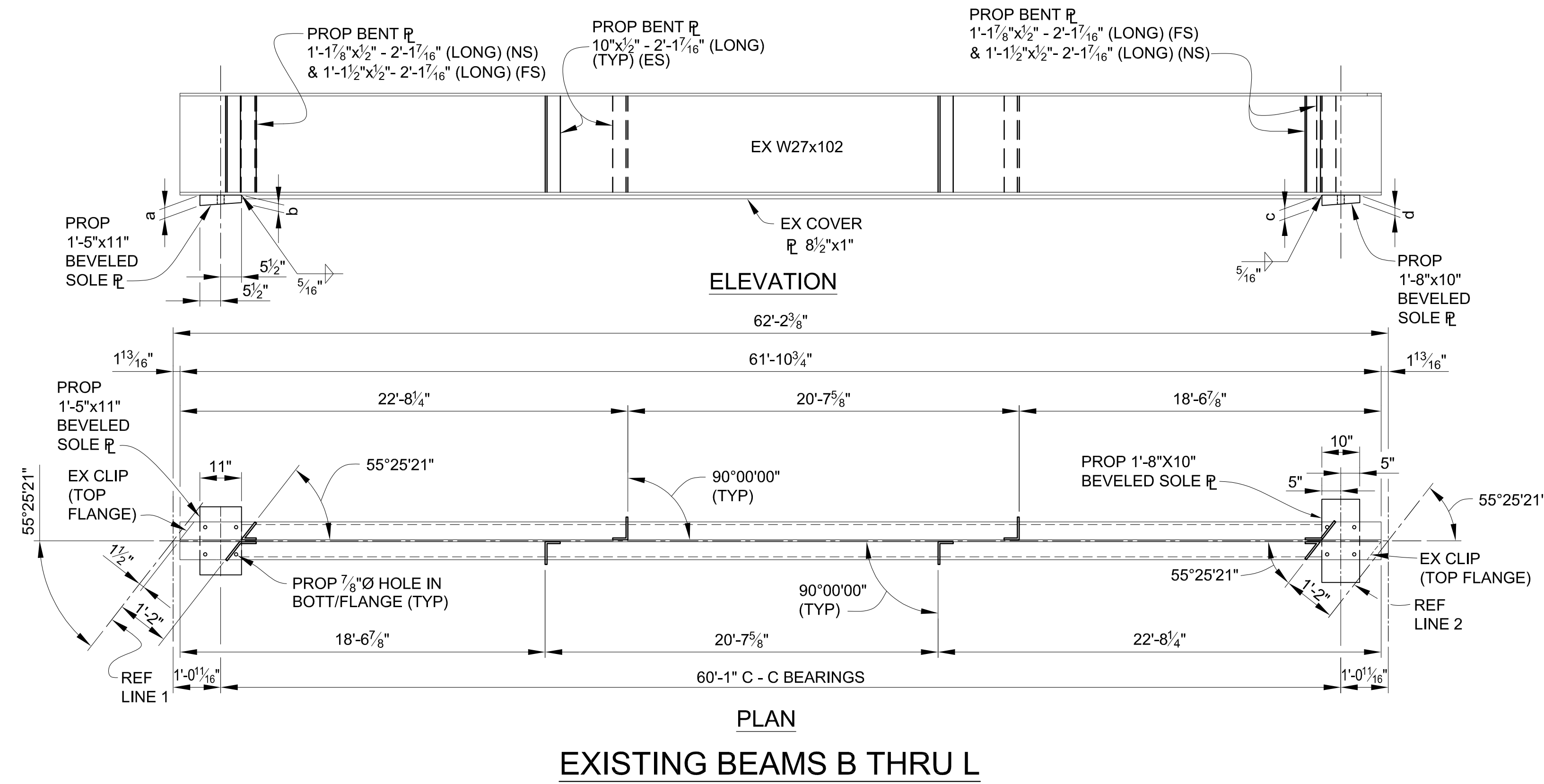
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**  
STRUCTURAL STEEL DETAILS  
EXISTING BEAMS - SPAN 1

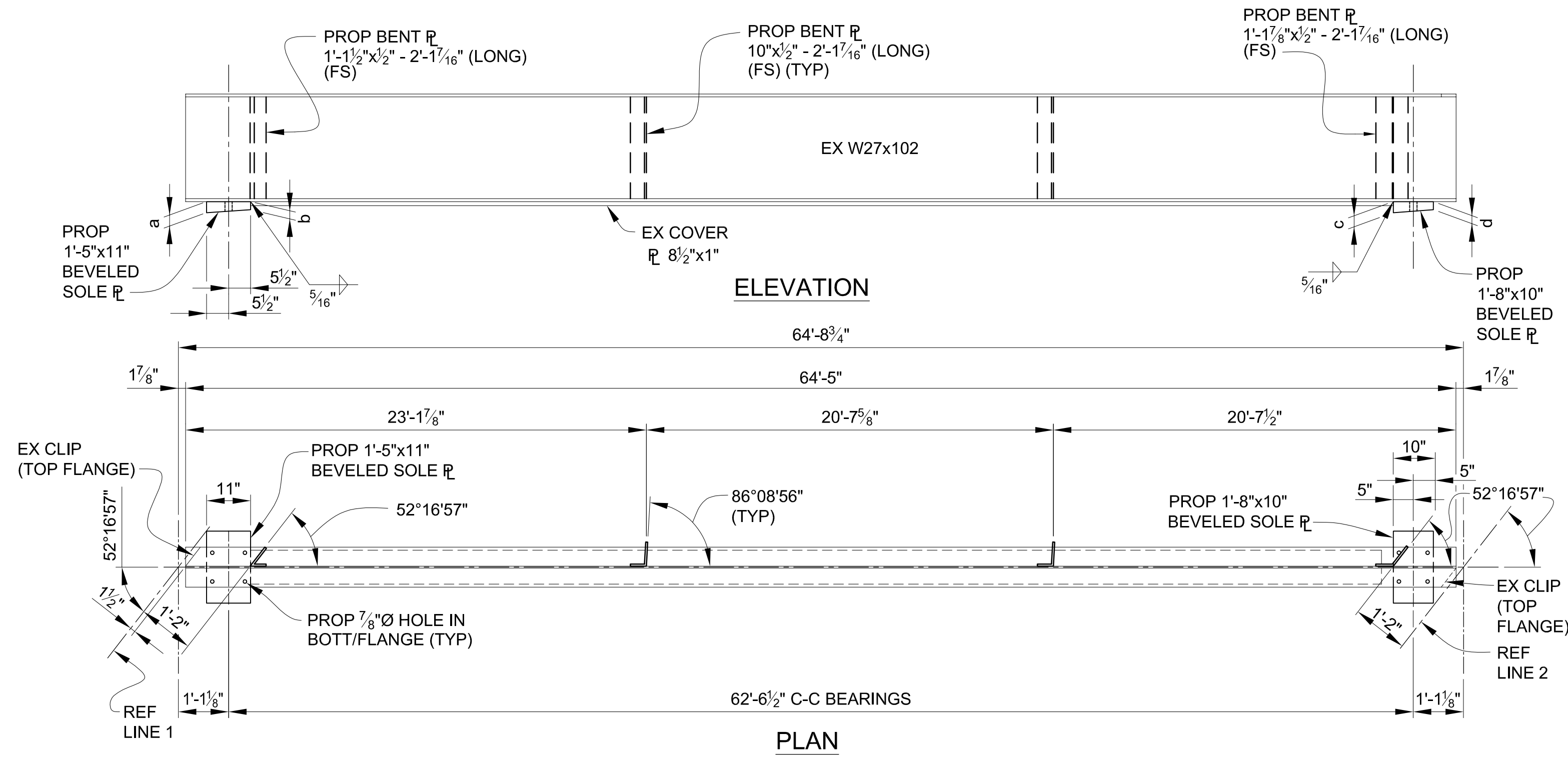
APPROVED BY: *Carrie L. Hamel*  
Carrie L. Hamel, PE  
2023.10.06 17:44:24-0400

SCALE: HOR. 3/32" = 1'-0"  
DRAWING NO. 2021-008-BR29  
SHEET NO. 92 OF 155

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EXISTING BEAMS B THRU L



EXISTING BEAM M

SPAN 2 - SOLE PLATE TABULATED DIMENSIONS

BEAM	REF LINE 1		REF LINE 2	
	a	b	c	d
B	2 7/8"	2 1/4"	3 1/16"	3 3/8"
C	2 5/8"	2"	2 3/16"	2"
D	2 5/8"	2"	3 3/8"	2 9/16"
E	2 5/8"	2"	3"	2 7/16"
F	2 9/16"	2"	2 3/4"	2 3/16"
G	2 9/16"	2"	3"	2 1/2"
H	2 9/16"	2"	3 3/4"	3 1/4"
J	2 9/16"	2"	2 1 1/16"	2 3/16"
K	2 9/16"	2"	2 1/2"	2"
L	3 5/8"	3 3/8"	2 7/8"	2 3/8"
M	2 1/2"	2"	4"	3 9/16"

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

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

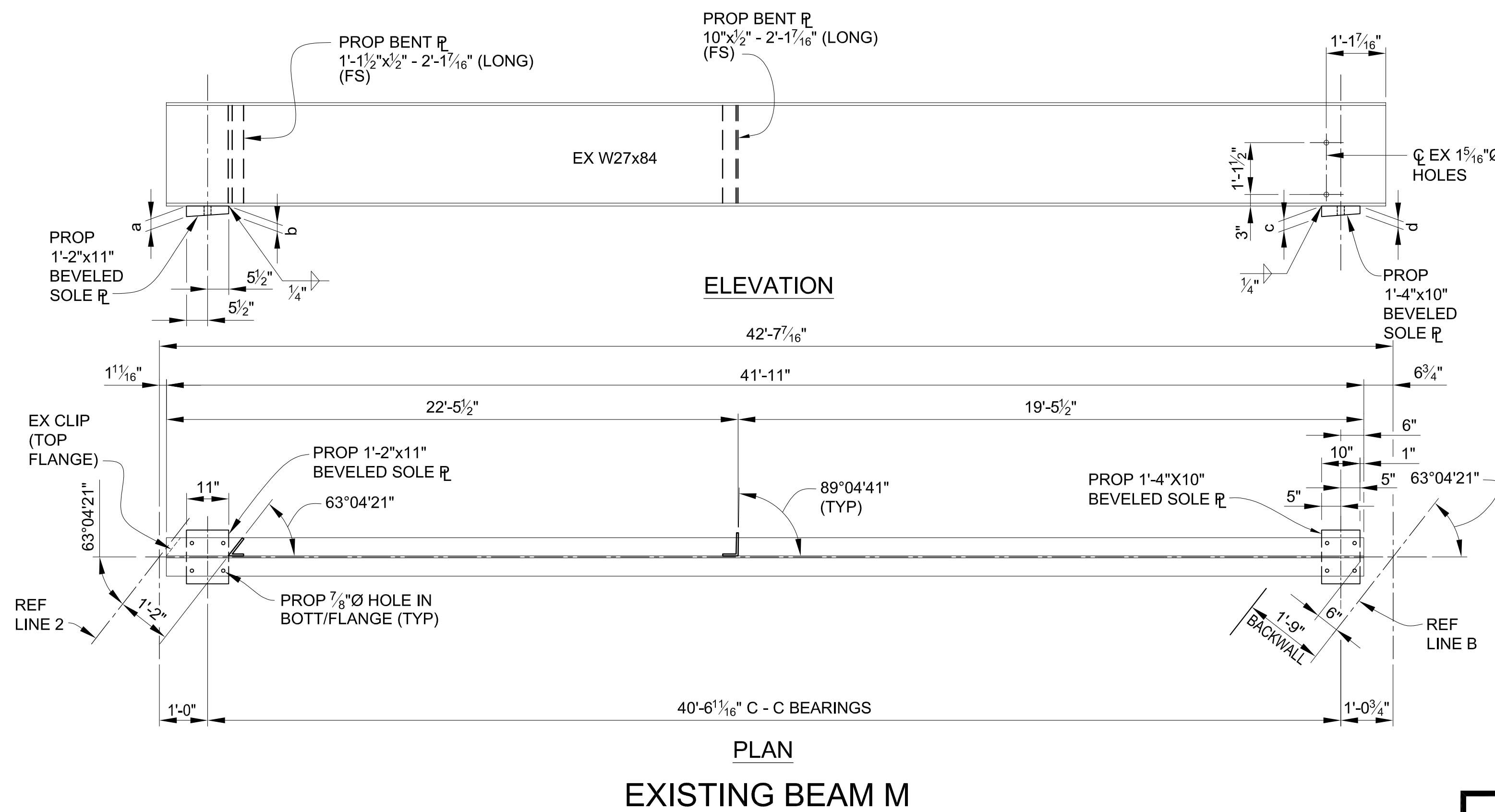
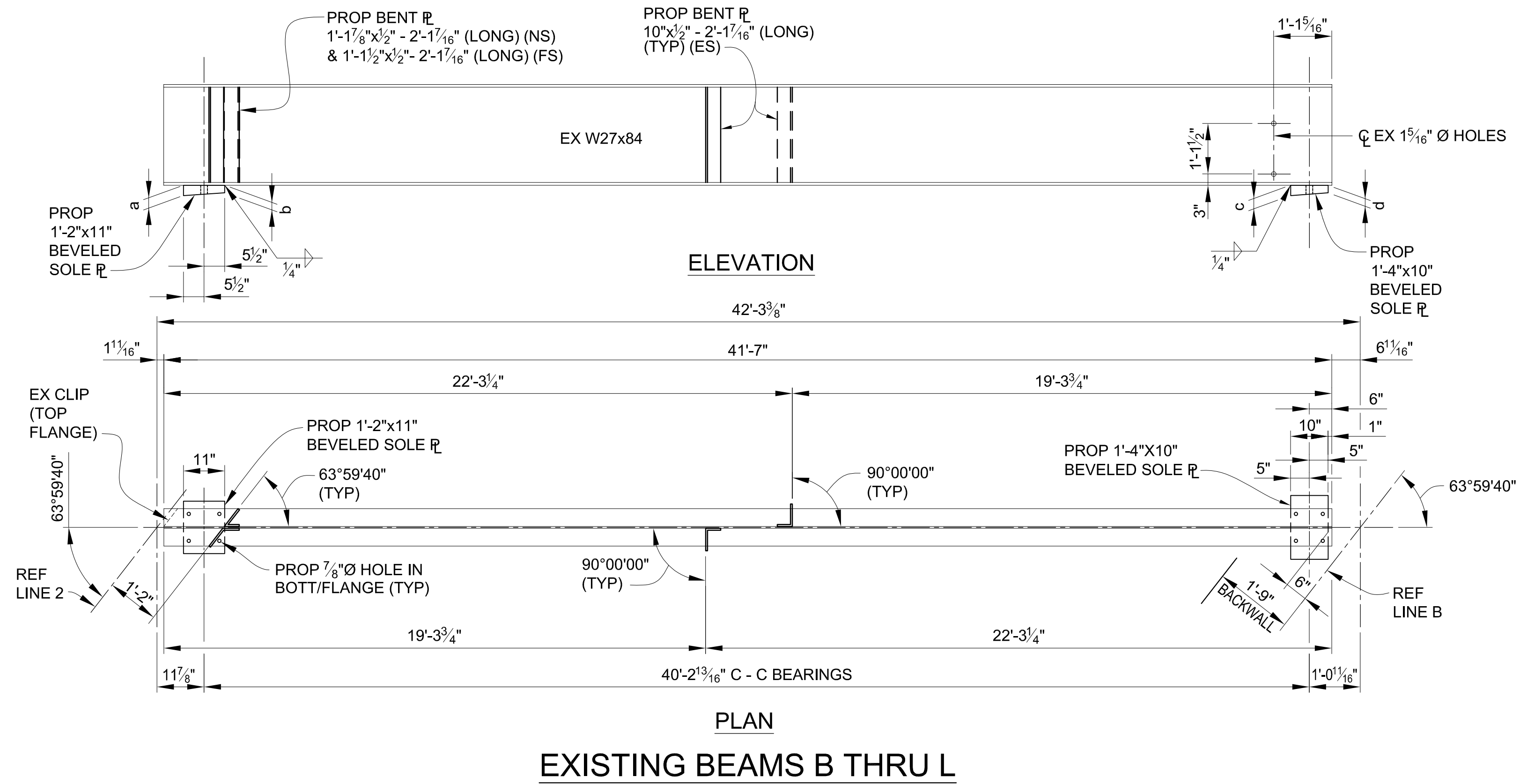
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**  
STRUCTURAL STEEL DETAILS  
EXISTING BEAMS - SPAN 2

APPROVED BY: *Carrie L. Hamel*  
Carrie L. Hamel, PE  
2023.10.06 17:44:41-04'00"

SCALE: HOR. 3/32" = 1'-0"  
DRAWING NO. 2021-008-BR30  
SHEET NO. 93 OF 155

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**SPAN 3 - SOLE PLATE  
TABULATED DIMENSIONS**

BEAM	REF LINE 2		REF LINE B	
	a	b	c	d
B	3/16"	2 3/4"	3 1/8"	2 1/2"
C	2 1/16"	2"	2 5/8"	2"
D	2 1/16"	2 1/4"	3 1/16"	2 3/16"
E	2 1/16"	2"	3 1/8"	2 1/2"
F	2 1/16"	2 1/4"	2 7/8"	2 1/4"
G	2 1/16"	2"	2 3/4"	2 1/8"
H	3 5/16"	2 5/8"	2 5/8"	2"
J	2 1/16"	2"	2 5/8"	2"
K	3 1/2"	2 1/16"	2 5/8"	2"
L	2 1/16"	2"	2 5/8"	2"
M	2 1/16"	2"	2 5/8"	2"

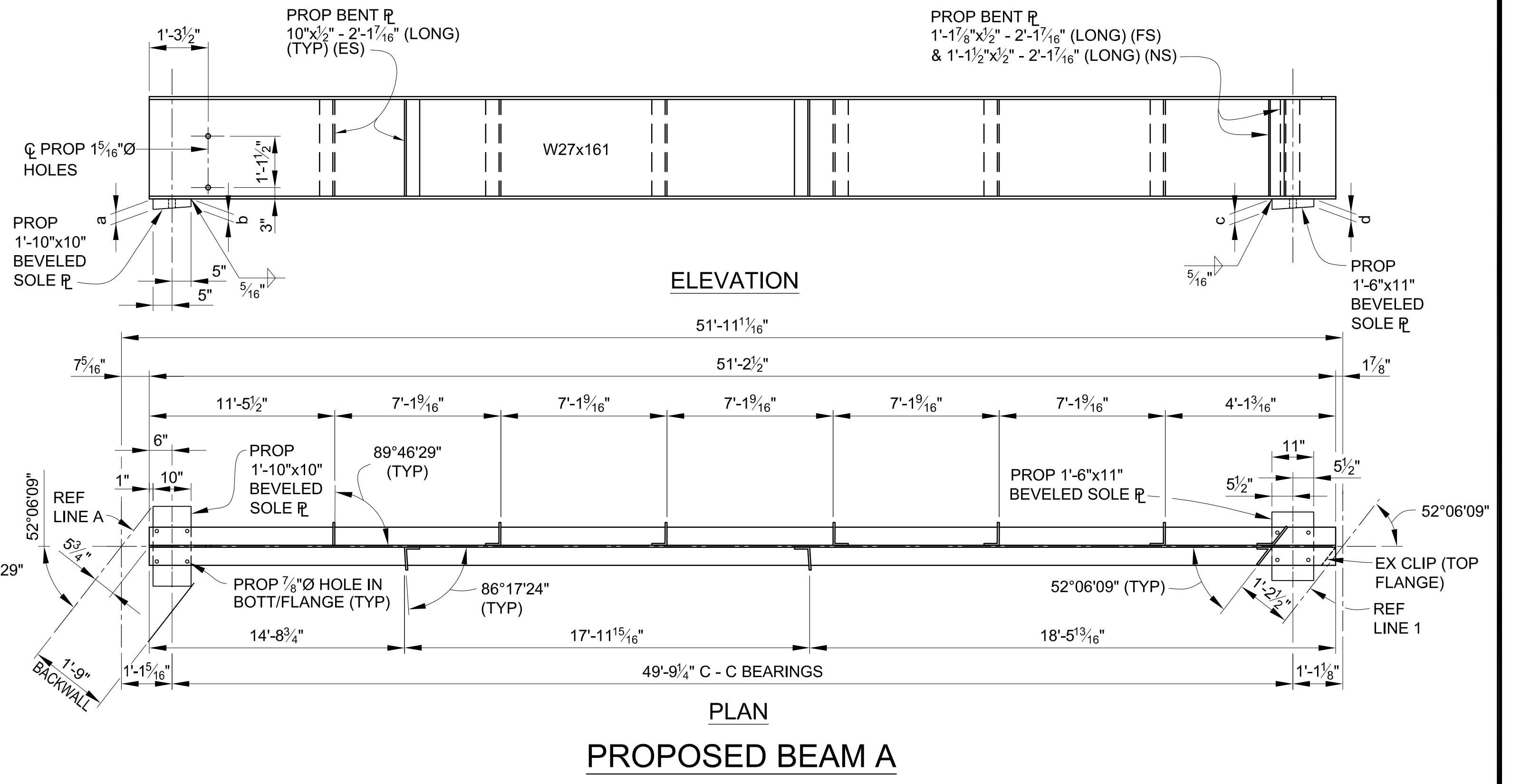
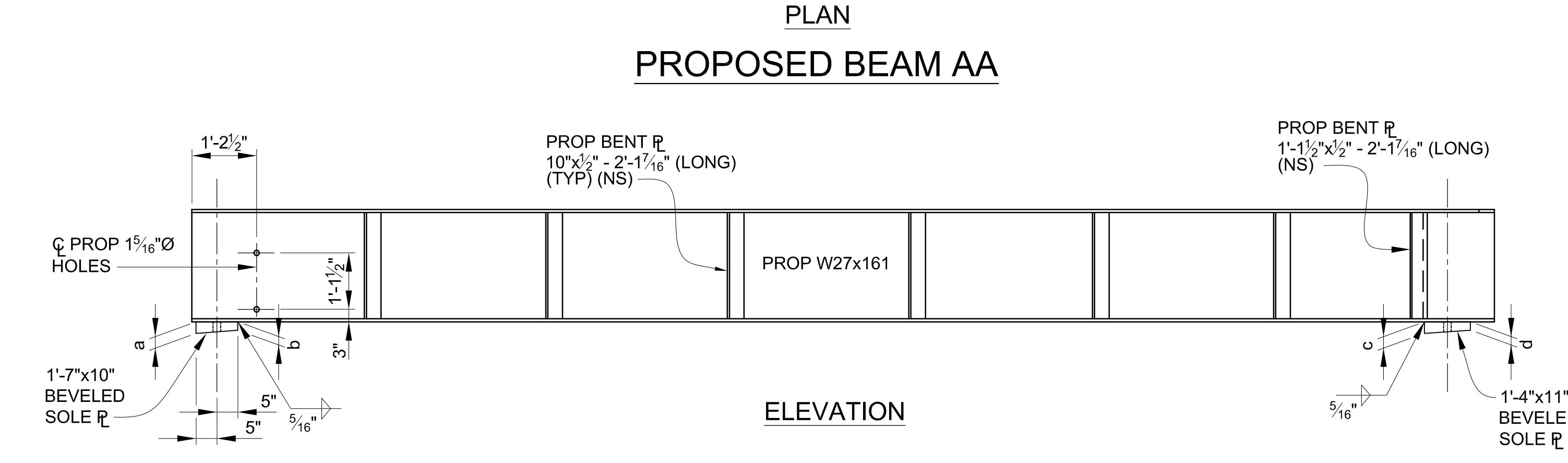
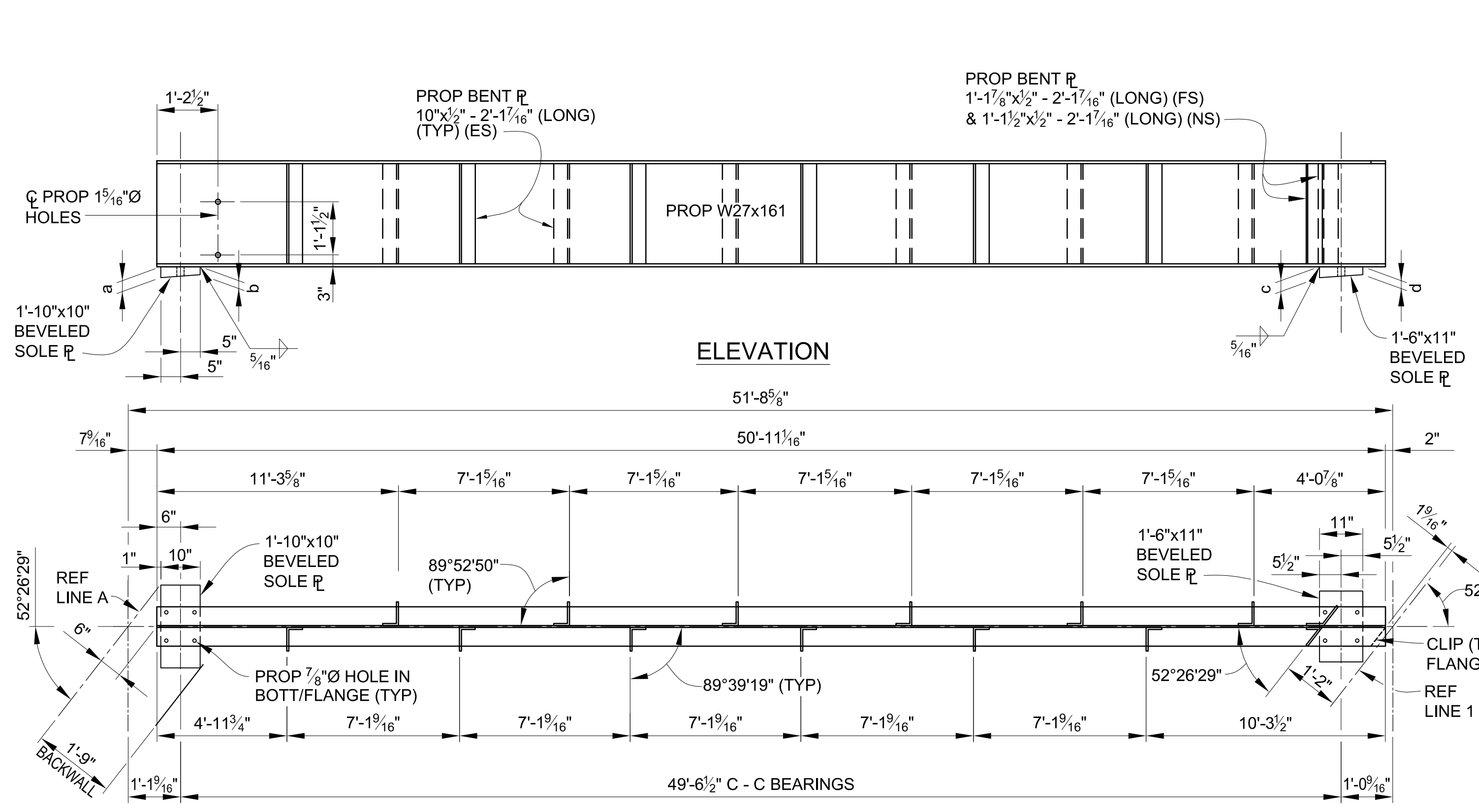
3 WORKING DAYS  
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800-482-7171  
(TOLL FREE)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE STRUCTURAL STEEL DETAILS EXISTING BEAMS - SPAN 3</b>	
SCALE HOR. 3/32"=1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR31</b>	
SHEET NO. <u>94</u> OF <u>155</u>	

APPROVED BY: *Carrie L. Hamel*  
Carrie L. Hamel, PE  
2023.10.06 17:44:56-04'00"

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



**SPAN 1 - SOLE PLATE TABULATED DIMENSIONS**

BEAM	REF LINE A		REF LINE 1	
	a	b	c	d
AA	2 7/16"	2"	4 3/4"	4 1/4"
BB	2 1/2"	2"	4 1/16"	4 3/16"
A	2 7/16"	2"	4 1/16"	4 3/16"

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

**DLZ**

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
10-6-23	ORIGINAL ISSUE	DAF	CLH	

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**EAST MEDICAL CENTER DRIVE**

**STRUCTURAL STEEL DETAILS**

**PROPOSED BEAMS SPAN 1**

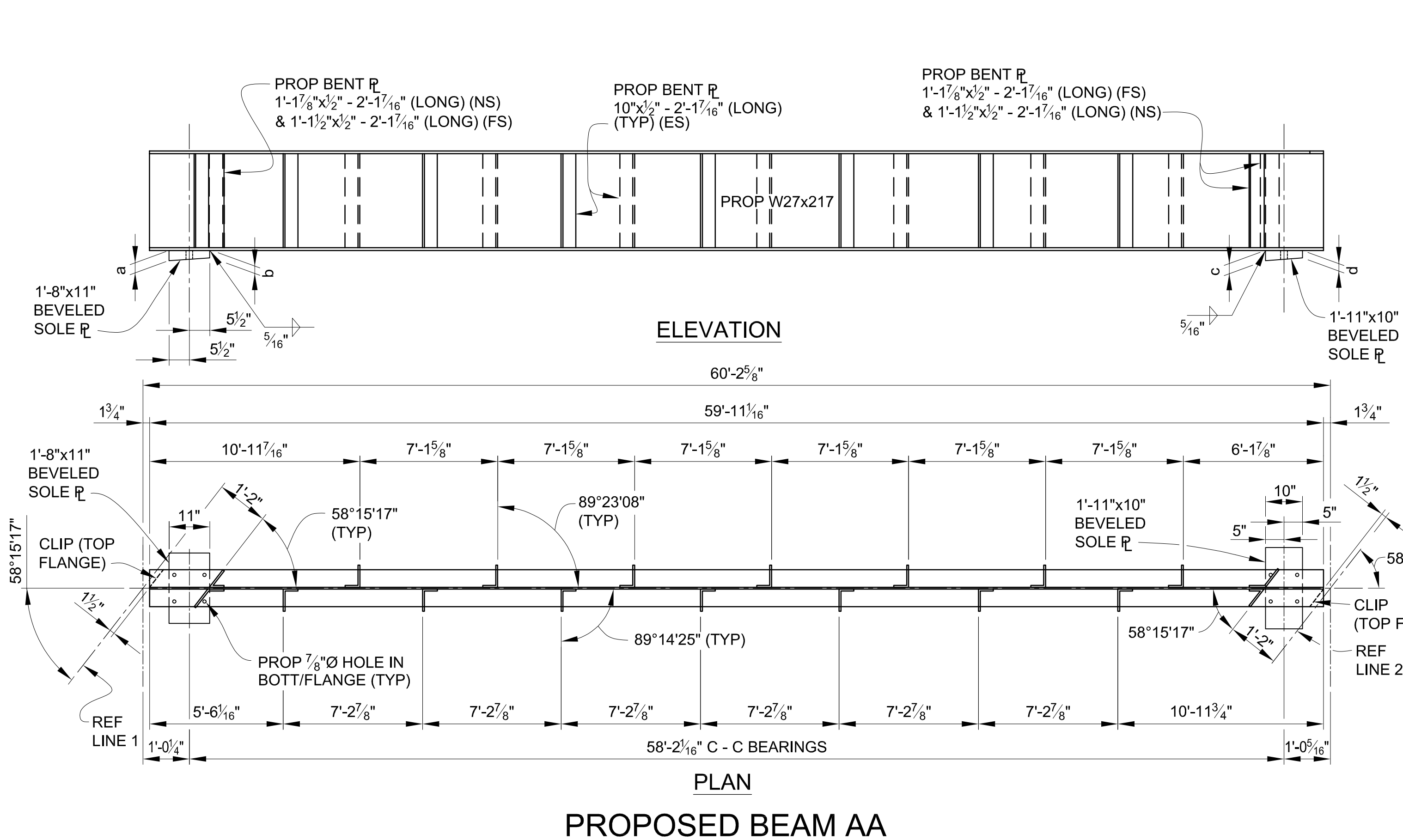
APPROVED BY: *Carrie L Hamel, P.E.*

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

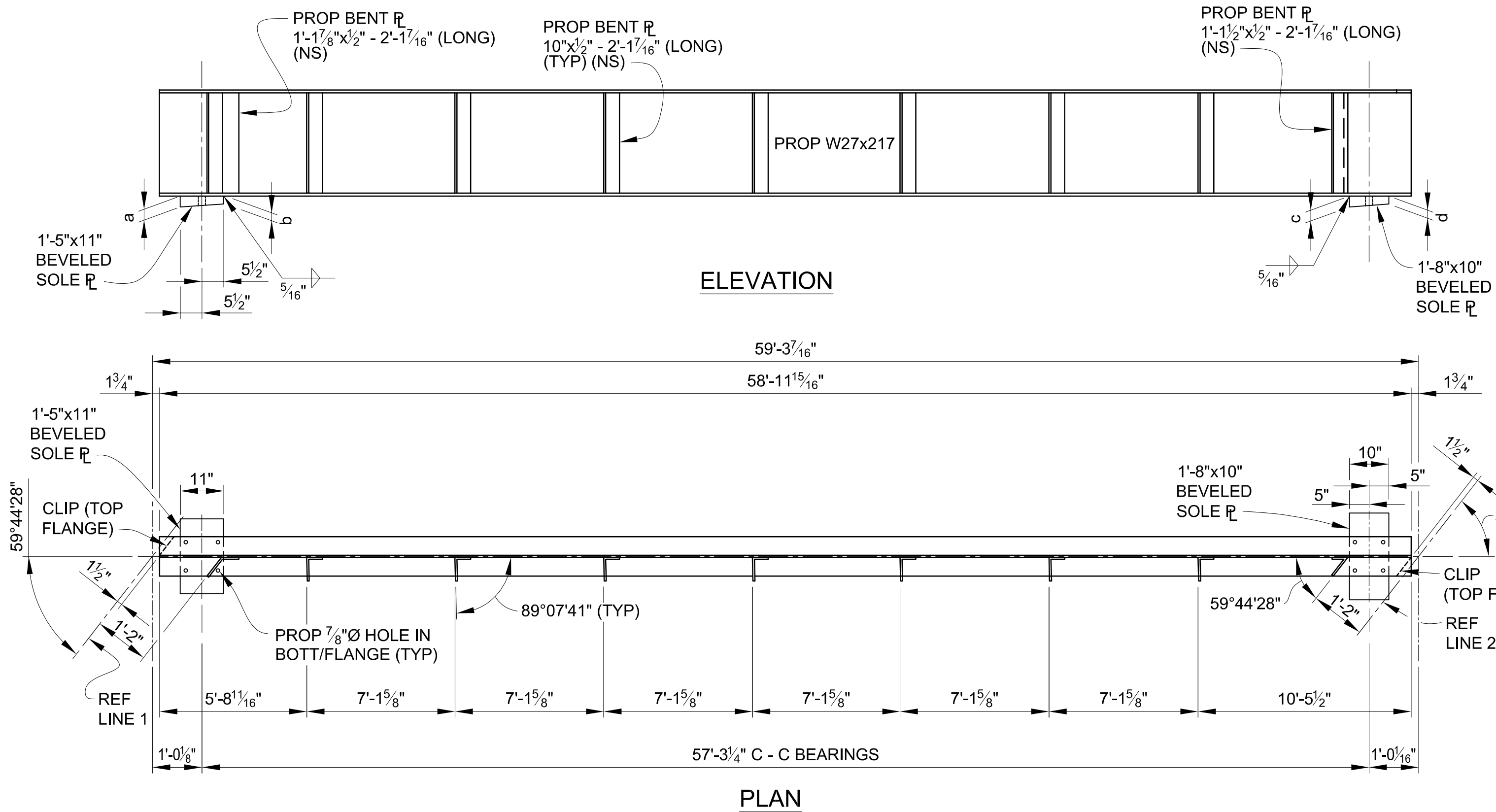
DRAWING NO. 2021-008-BR32

SHEET NO. 95 OF 155

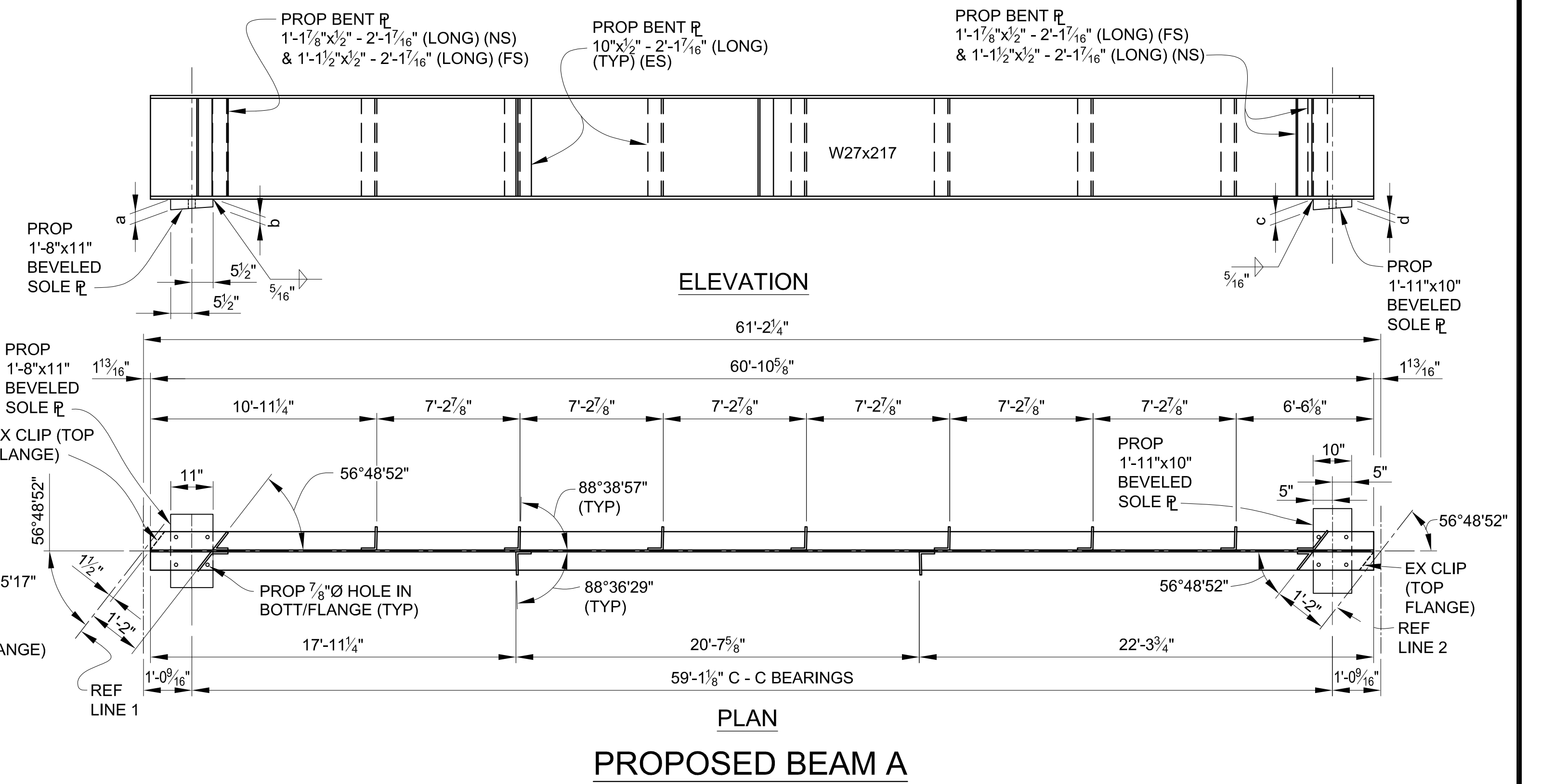
rp.com\pan-files\Projects\2021\2141736300 AA - EMCD Bridge\01\_ConstrDocs\CAD\EMCD\_bmwf\_006



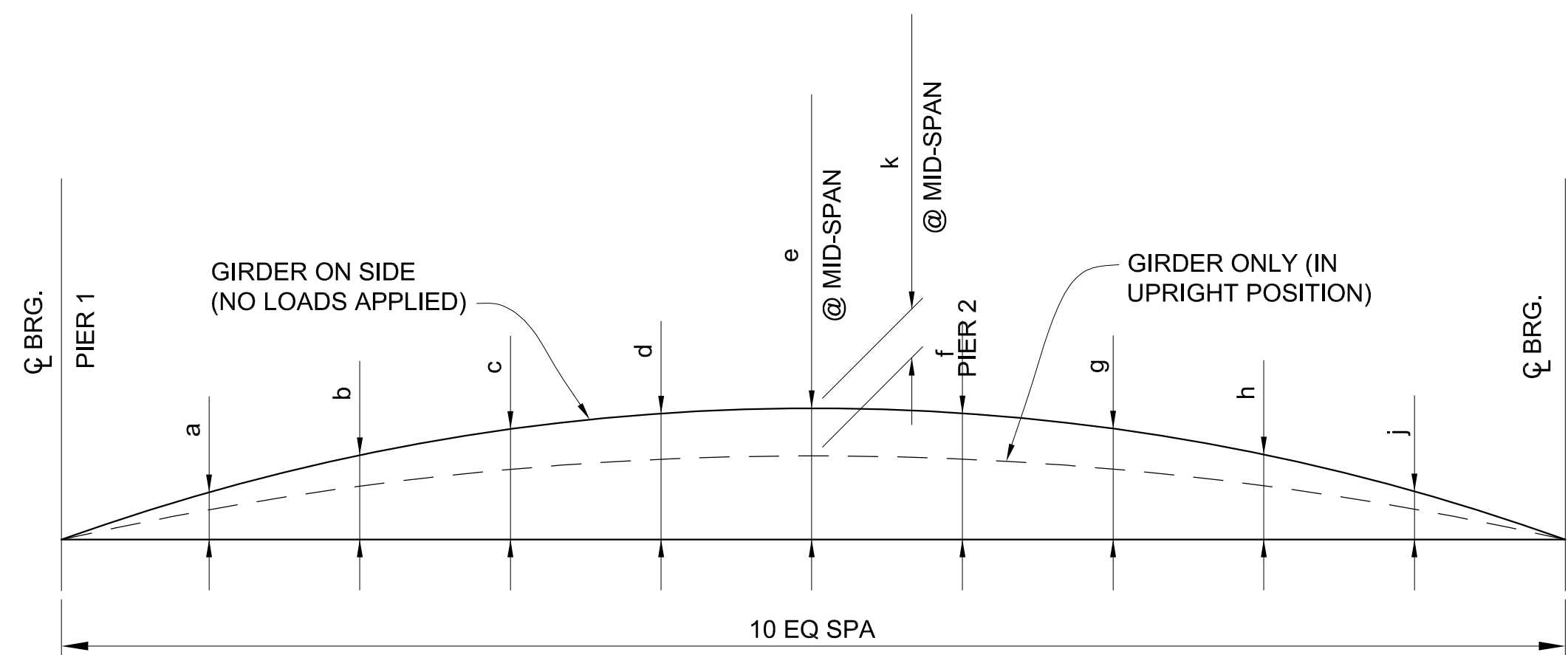
PROPOSED BEAM AA



PROPOSED BEAM BB



PROPOSED BEAM A



CAMBER DIAGRAM

		CAMBER IN IN.		
		BEAM A	BEAM AA	BEAM BB
SPAN 2	a	0.44	0.48	0.38
	b	0.83	0.91	0.71
	c	1.14	1.25	0.97
	d	1.33	1.47	1.14
	e	1.39	1.54	1.20
	f	1.33	1.47	1.14
	g	1.14	1.25	0.97
	h	0.83	0.91	0.71
	i	0.44	0.43	0.38
	k	0.40	0.46	0.30

SPAN 2 - SOLE PLATE TABULATED DIMENSIONS

BEAM	REF LINE 1		REF LINE 2	
	a	b	c	d
AA	2 1/16"	2"	2 5/8"	2"
BB	2 1/16"	2"	2 5/8"	2"
A	2 5/8"	2"	2 9/16"	2"

**DLZ**

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REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

STRUCTURAL STEEL DETAILS  
PROPOSED BEAMS SPAN 2

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

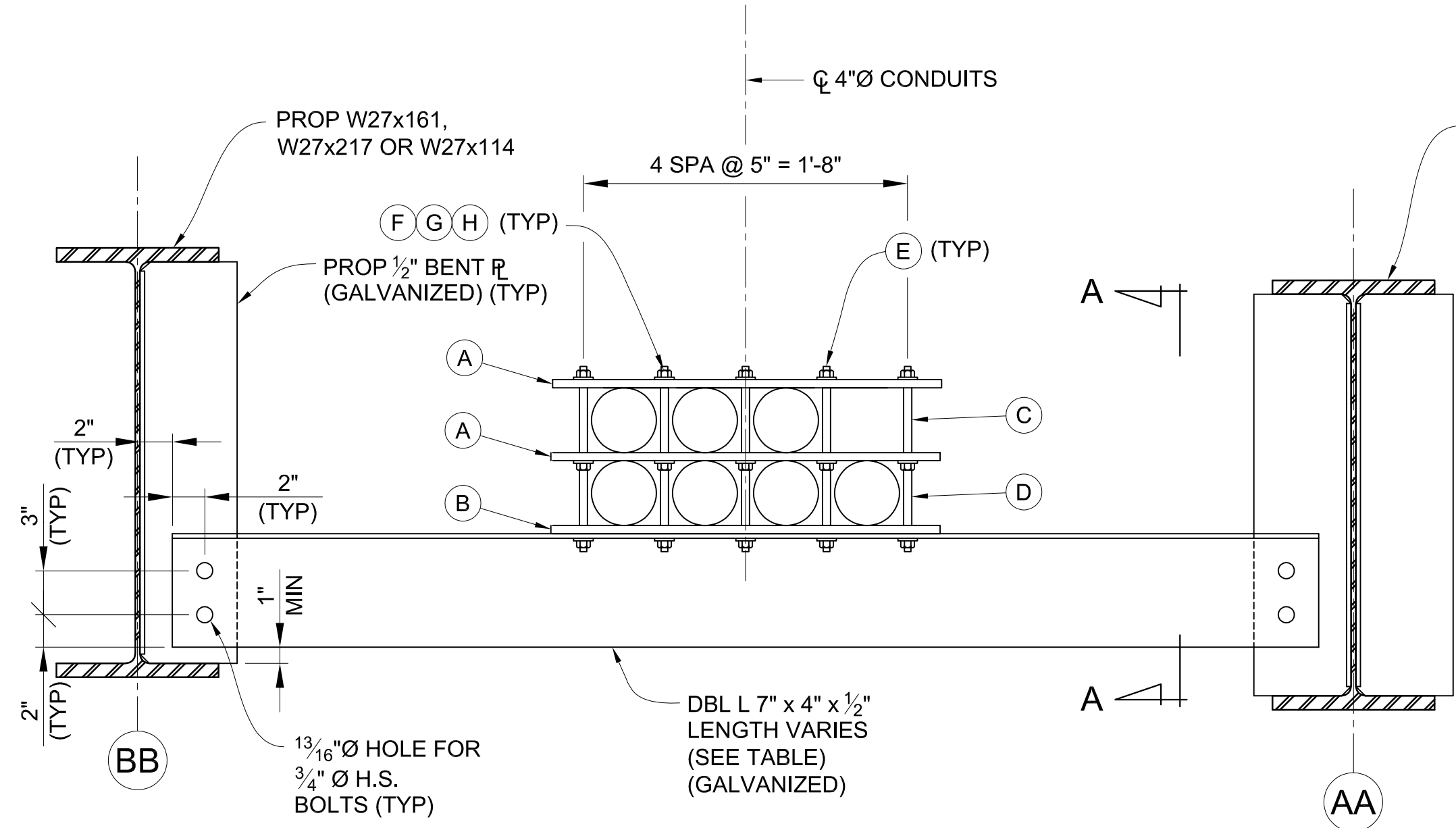
DRAWING NO. 2021-008-BR33

SHEET NO. 96 OF 155

APPROVED BY: *Carrie L. Hamel*  
Carrie L. Hamel, PE  
2023.10.06 17:45:30-0400



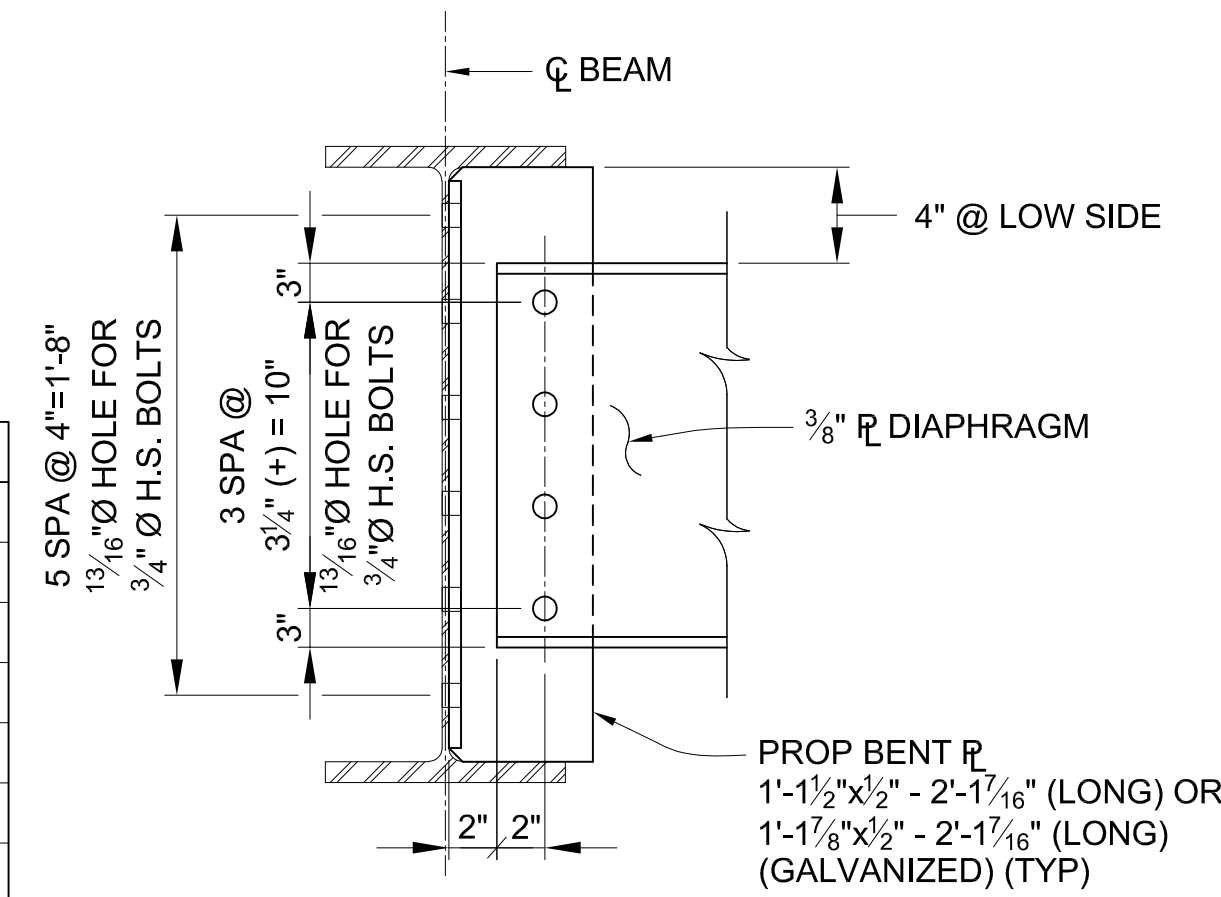




**DIAPHRAGM D25 - D31, D38 - D46 & D54 - D58**

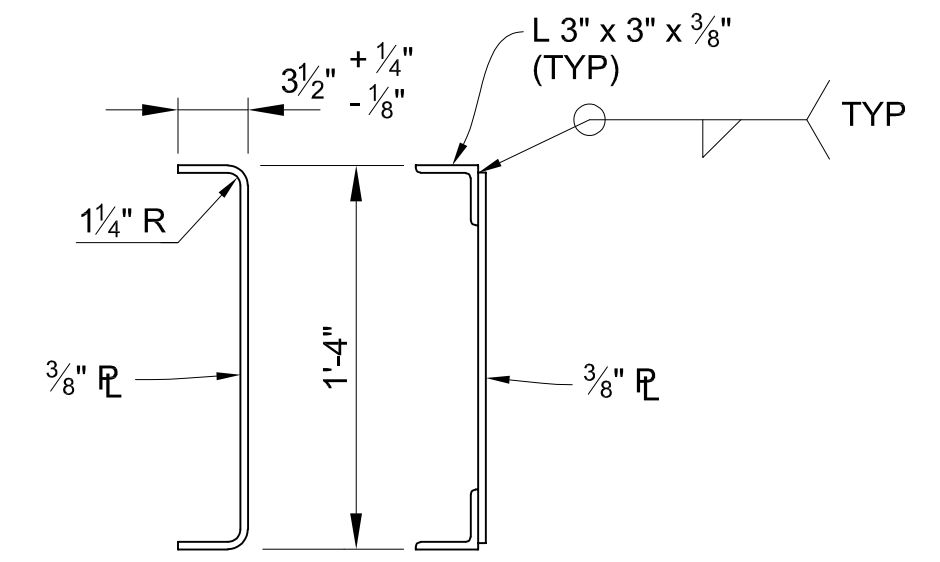
(21 REQUIRED)

CONDUIT HANGAR ASSEMBLY BILL OF MATERIALS	
A	1/2" x 2 1/2" x 2'-0" FIBERGLASS PLATE
B	1/2" x 10" x 2'-0" STEEL PLATE
C	1/2" x 5" FIBERGLASS SPACER TUBE
D	1/2" x 4 1/2" FIBERGLASS SPACER TUBE
E	1/2" x 1'-4" HOT DIP GALVANIZED THREADED ROD
F	1/2" HOT DIP GALVANIZED HEX NUT
G	1/2" HOT DIP GALVANIZED FLAT WASHER
H	1/2" HOT DIP GALVANIZED LOCK WASHER



**BOLTED CONNECTION DETAIL**

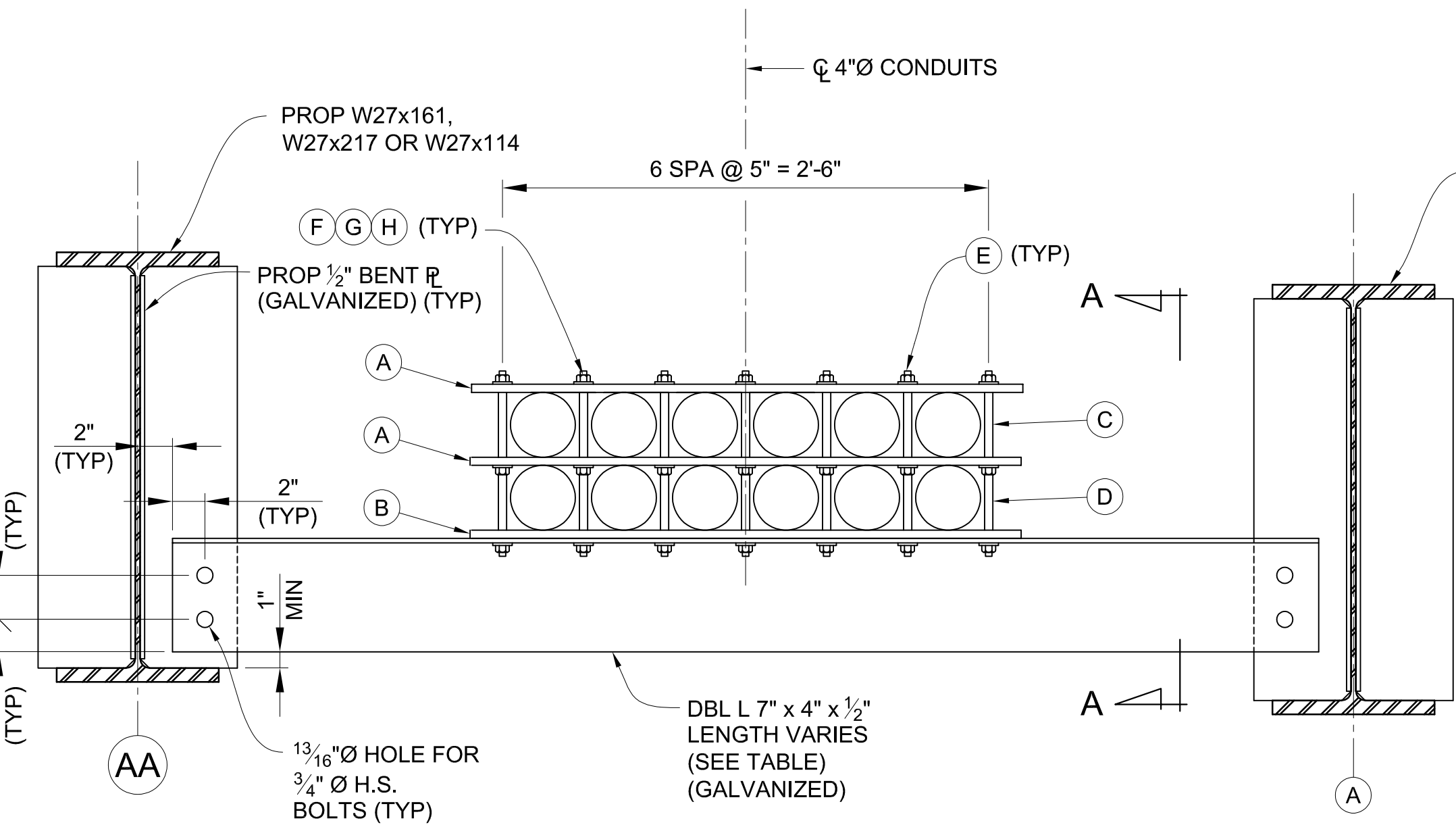
INTERMEDIATE DIAPHRAGMS  
APPLIES TO: D1, D2, D4, D6, D7, D10, D11, D14, D16, D17, D20, D22, D24



ALTERNATE

**TYPICAL INTERMEDIATE DIAPHRAGM**

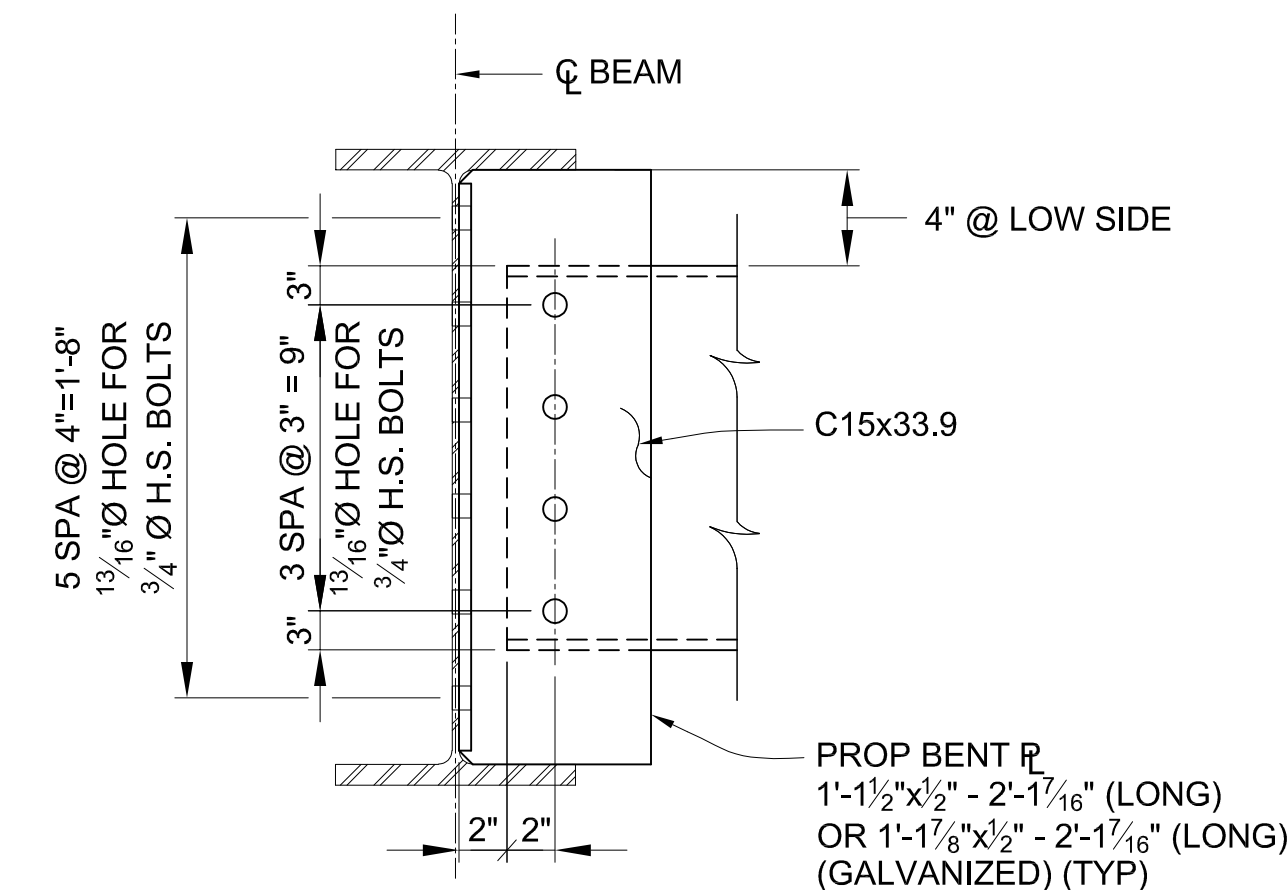
APPLIES TO: D1, D2, D4, D6, D7, D10, D11, D14, D16, D17, D20, D22, D24



**DIAPHRAGM D31 - D38, D46 - D54 & D59 - D62**

(21 REQUIRED)

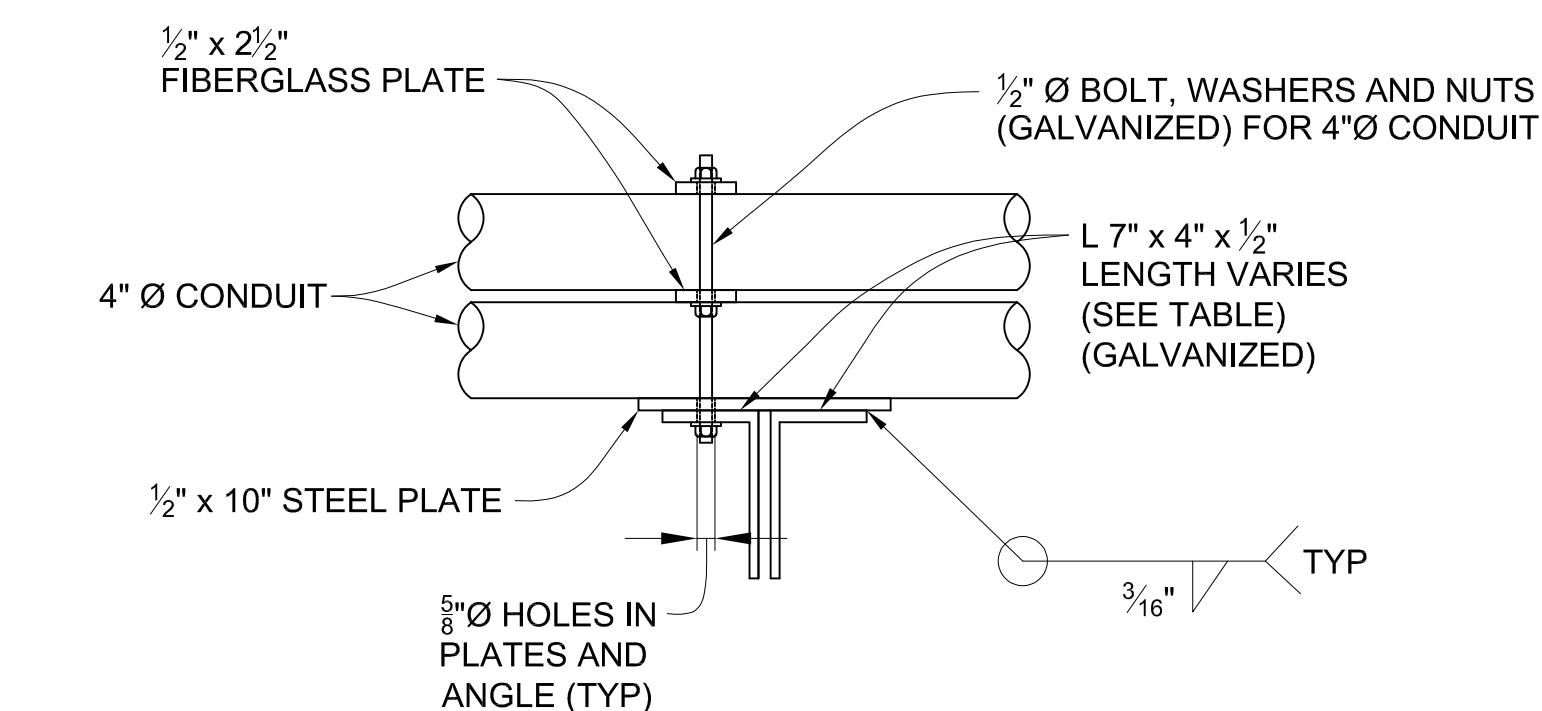
CONDUIT HANGAR ASSEMBLY BILL OF MATERIALS	
A	1/2" x 2 1/2" x 2'-10" FIBERGLASS PLATE
B	1/2" x 10" x 2'-10" STEEL PLATE
C	1/2" x 5" FIBERGLASS SPACER TUBE
D	1/2" x 4 1/2" FIBERGLASS SPACER TUBE
E	1/2" x 1'-4" HOT DIP GALVANIZED THREADED ROD
F	1/2" HOT DIP GALVANIZED HEX NUT
G	1/2" HOT DIP GALVANIZED FLAT WASHER
H	1/2" HOT DIP GALVANIZED LOCK WASHER



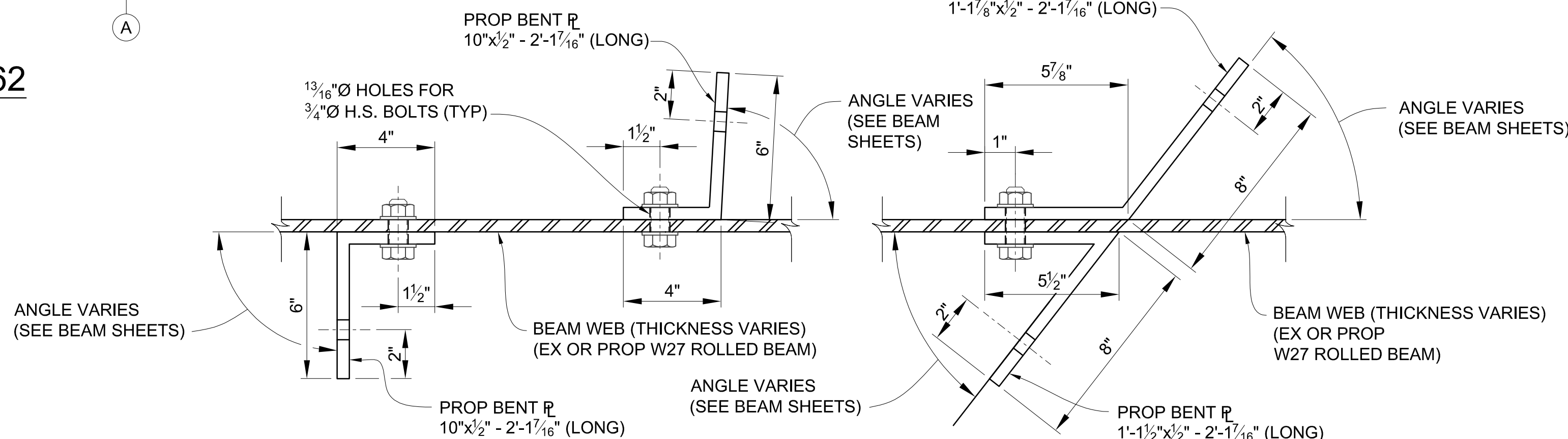
**BOLTED CONNECTION DETAIL**

END DIAPHRAGMS  
APPLIES TO: D3, D5, D8, D9, D12, D13, D15, D18, D19, D21, D23

DIAPHRAGM LENGTH TABLE			
DIAPHRAGM	LENGTH	DIAPHRAGM	LENGTH
D1	5'-8 5/8"	D34	7'-10 5/8"
D2	4'-7"	D35	7'-9 5/8"
D3	4'-6 15/16"	D36	7'-9 1/8"
D4	5'-8 5/16"	D37	7'-8 9/16"
D5	7'-7 5/16"	D38	9'-8 1/4"
D6	5'-3 15/16"	D39	8'-1 1/16"
D7	4'-0 15/16"	D40	7'-11 3/16"
D8	4'-0 1/2"	D41	7'-9"
D9	8'-1"	D42	7'-6 3/4"
D10	6'-2 7/8"	D43	7'-4 9/16"
D11	5'-8 7/8"	D44	7'-2 5/16"
D12	6'-4 3/16"	D45	7'-0 1/8"
D13	6'-10 3/16"	D46	7'-11 1/2"
D14	5'-7 1 1/16"	D47	7'-11 15/16"
D15	7'-3 5/16"	D48	7'-9 3/4"
D16	4'-9 1/4"	D49	7'-7 3/8"
D17	3'-7 3/8"	D50	7'-5 3/8"
D18	3'-11 1/16"	D51	7'-3 3/8"
D19	7'-5 1/4"	D52	7'-1"
D20	6'-3 1/8"	D53	6'-10 13/16"
D21	6'-4 3/8"	D54	7'-11 3/8"
D22	5'-8 5/8"	D55	7'-2 5/16"
D23	6'-6 15/16"	D56	7'-1 1/8"
D24	5'-6 3/4"	D57	6'-11 15/16"
D25	7'-11 1/16"	D58	6'-10 3/4"
D26	7'-11 1/16"	D59	7'-1 7/8"
D27	7'-10 9/16"	D60	7'-0 1/16"
D28	7'-10 1/16"	D61	6'-11 1/2"
D29	7'-9 9/16"	D62	6'-10 3/16"
D30	7'-9 1/16"		
D31	9'-8 1/2"		
D32	7'-11 1/8"		
D33	7'-10 5/8"		



**SECTION A-A**



INTERMEDIATE DIAPHRAGMS

END DIAPHRAGMS

**BENT PLATE DETAILS**

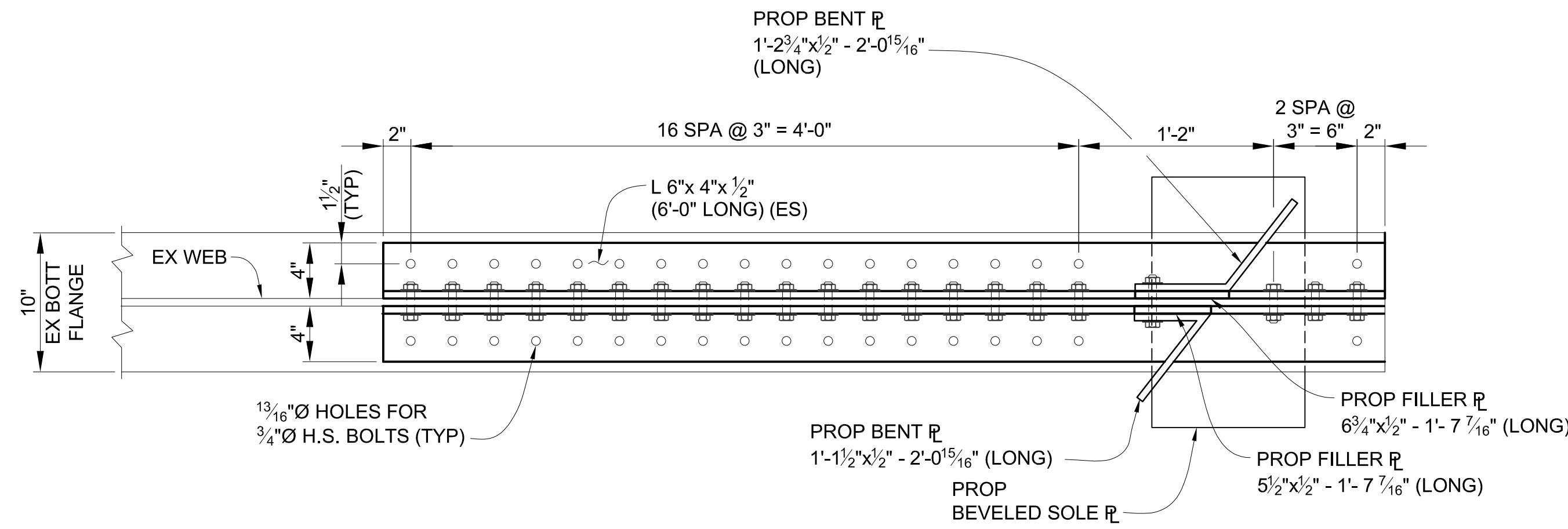
3 WORKING DAYS  
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800-482-7171  
(TOLL FREE)

DLZ			
REV. NO.	DESCRIPTION	DATE	DR. BY
	ORIGINAL ISSUE	10-6-23	DAF
			CLH

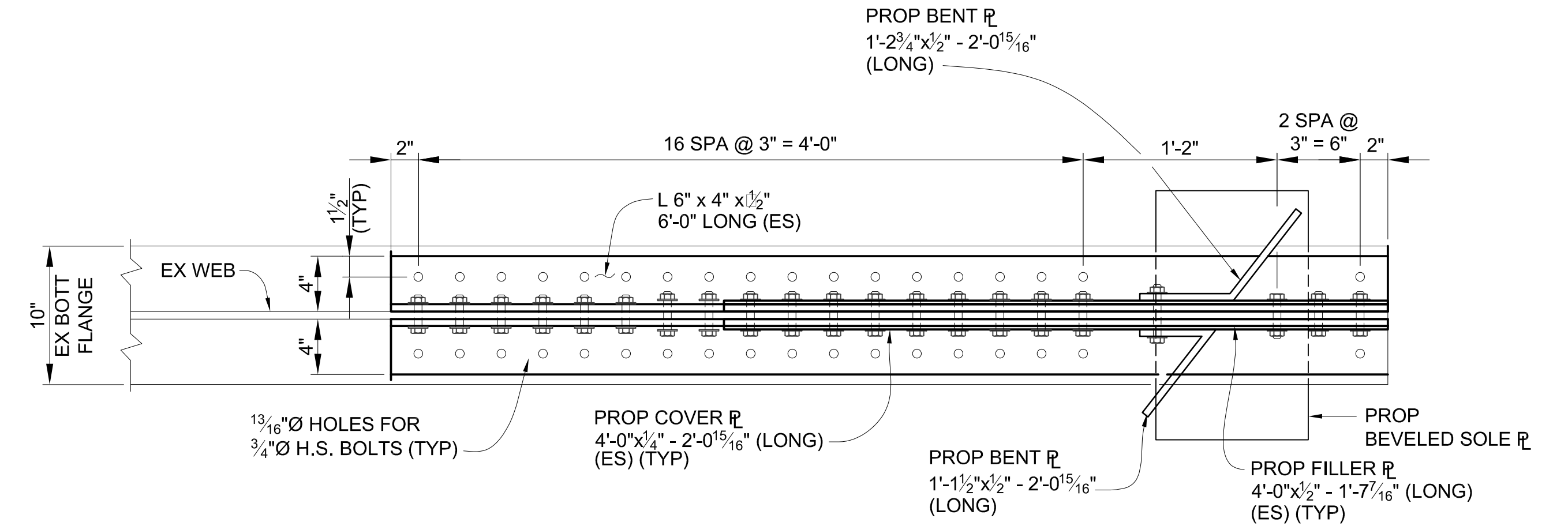
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
EAST MEDICAL CENTER DRIVE	
STRUCTURAL STEEL DETAILS	
DIAPHRAGM DETAILS	
SCALE	INCH
HOR. 3/32"=1'-0"	0 1
DRAWING NO.	2021-008-BR35
SHEET NO.	98 OF 155

APPROVED BY: *Carrie L. Hamel*  
Carrie L. Hamel, PE  
2023.10.06 17:45:55-0400  
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734

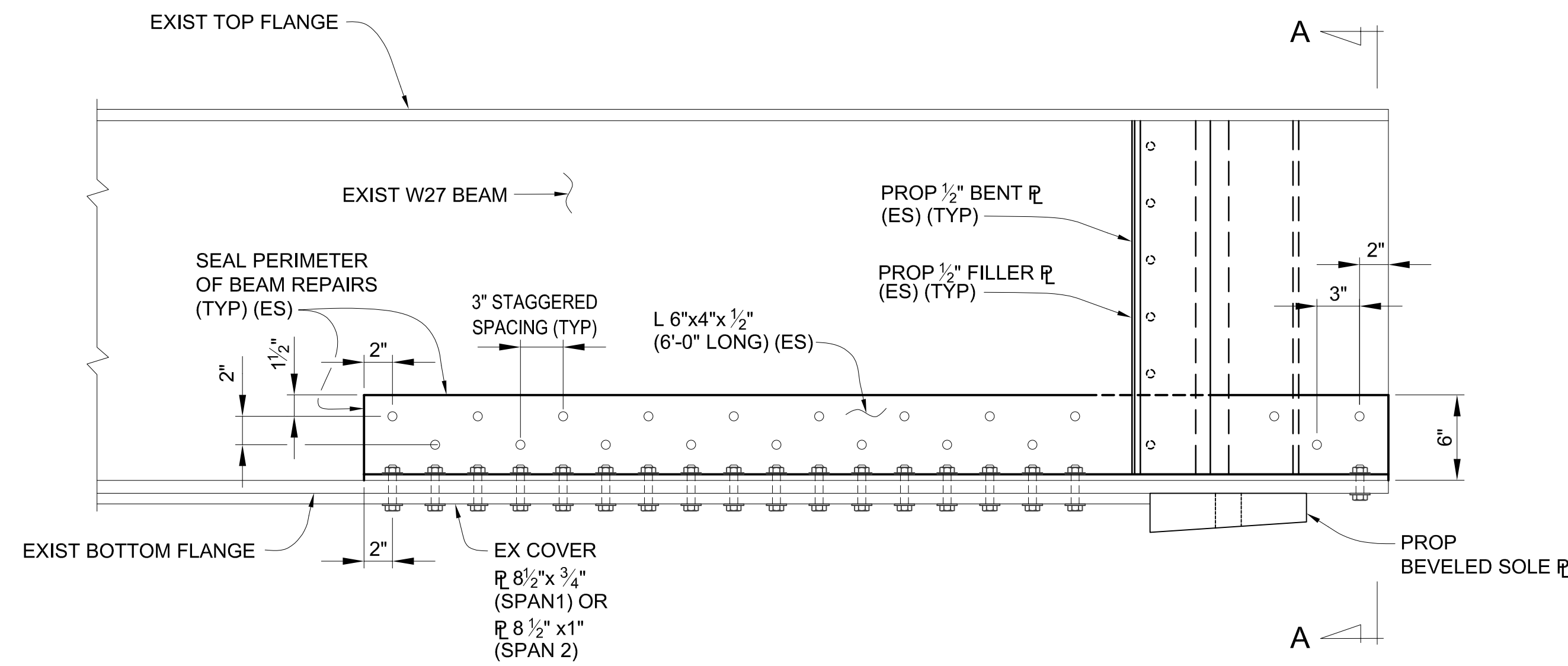
rp.com\pan-files\Projects\2021\2141736300 AA - EMCD Bridge\01\_Constr\Docs\CAD\EMCD\_bmwf\_008



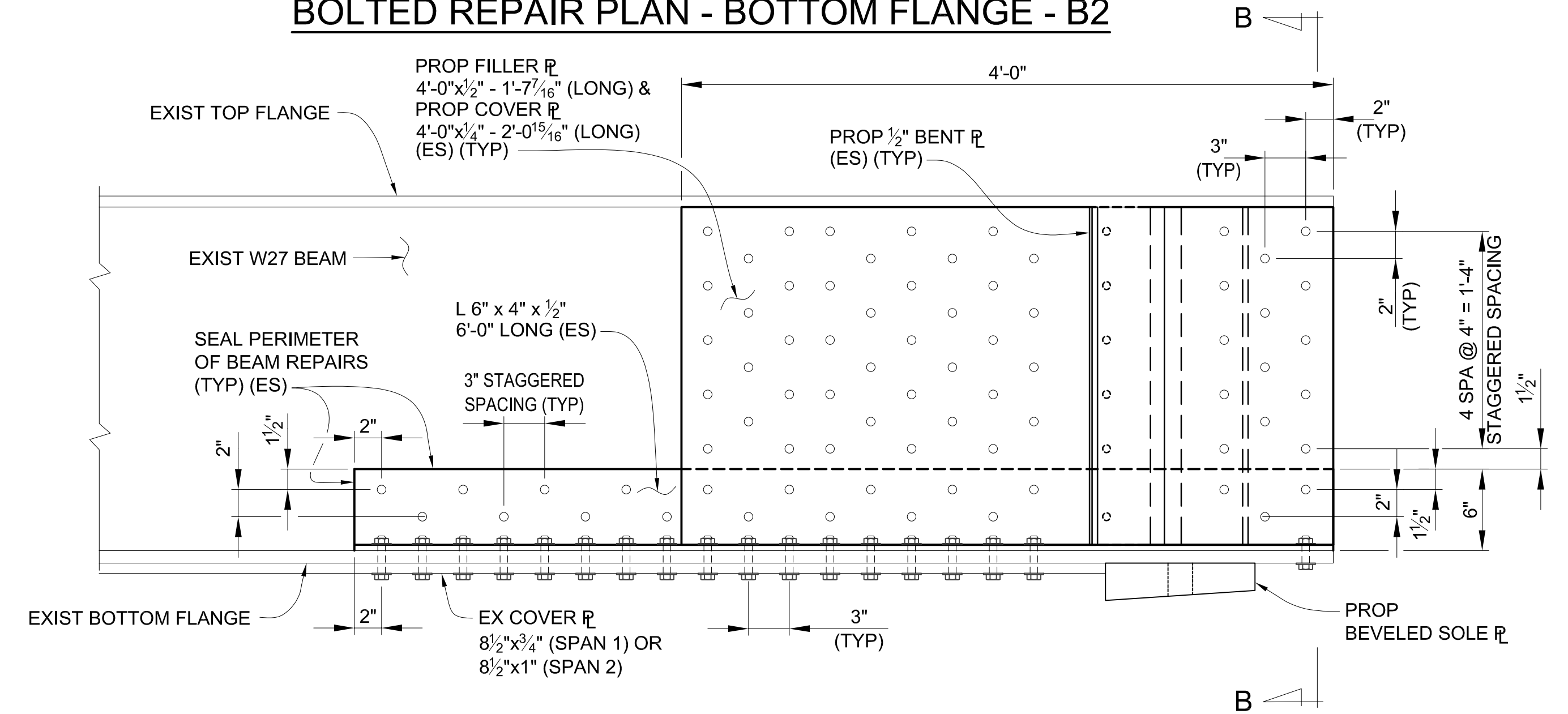
**BOLTED REPAIR PLAN - BOTTOM FLANGE - B1**



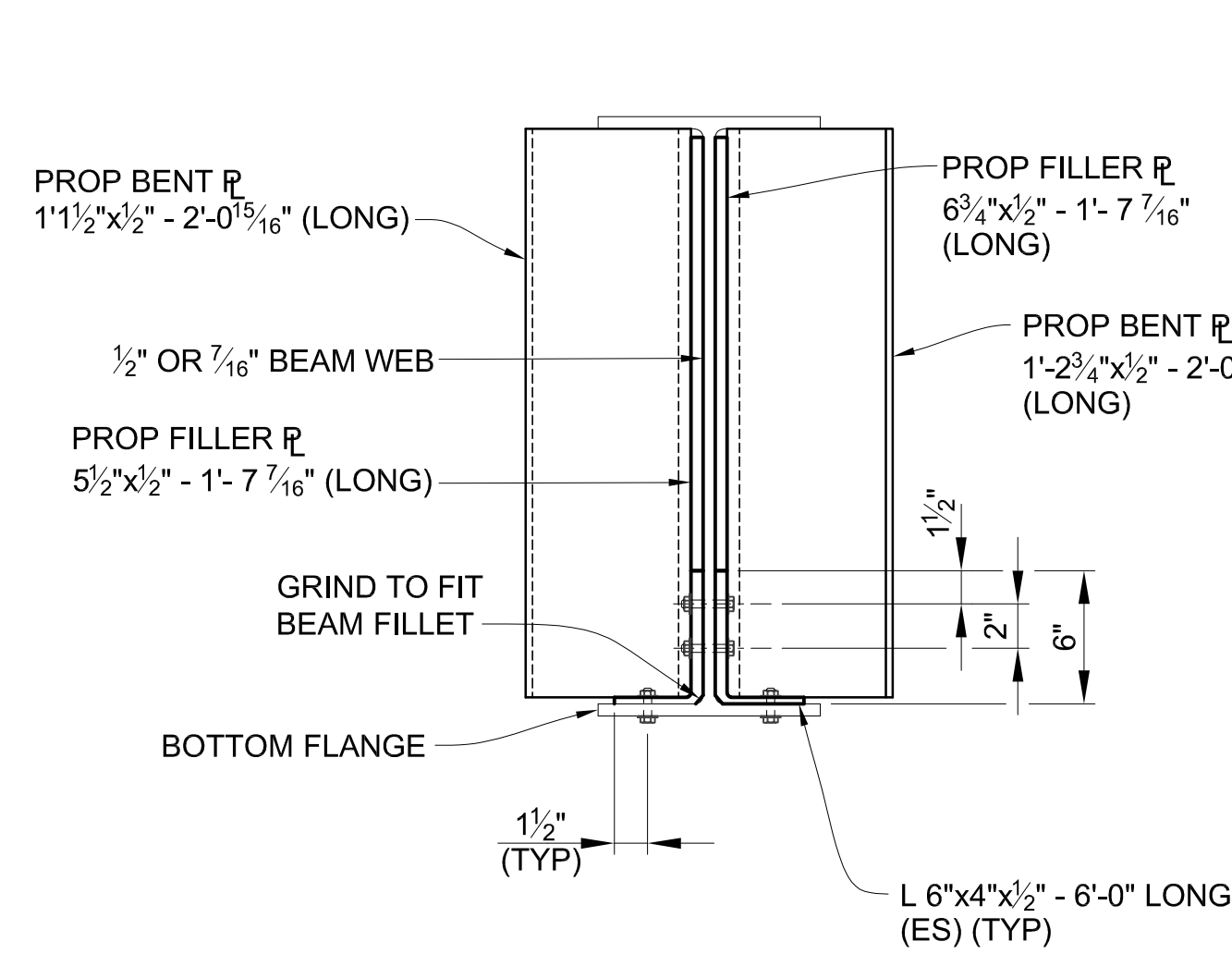
**BOLTED REPAIR PLAN - BOTTOM FLANGE - B2**



**BOLTED REPAIR ELEVATION - B1**

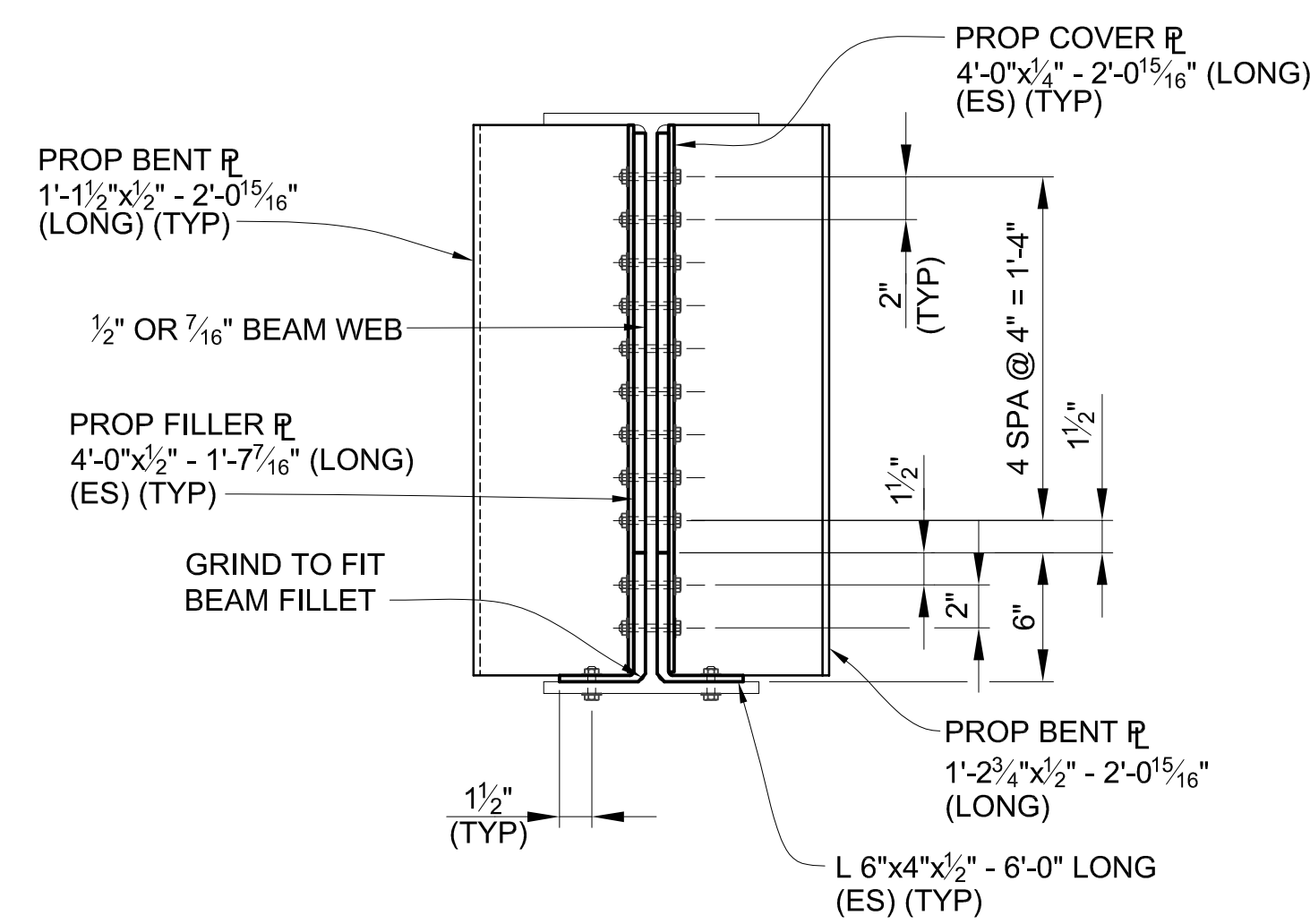


**BOLTED REPAIR ELEVATION - B2**



**SECTION A-A**

(BOLT HOLES IN END DIAPHRAGM CONNECTION PLATES NOT SHOWN)



**SECTION B-B**

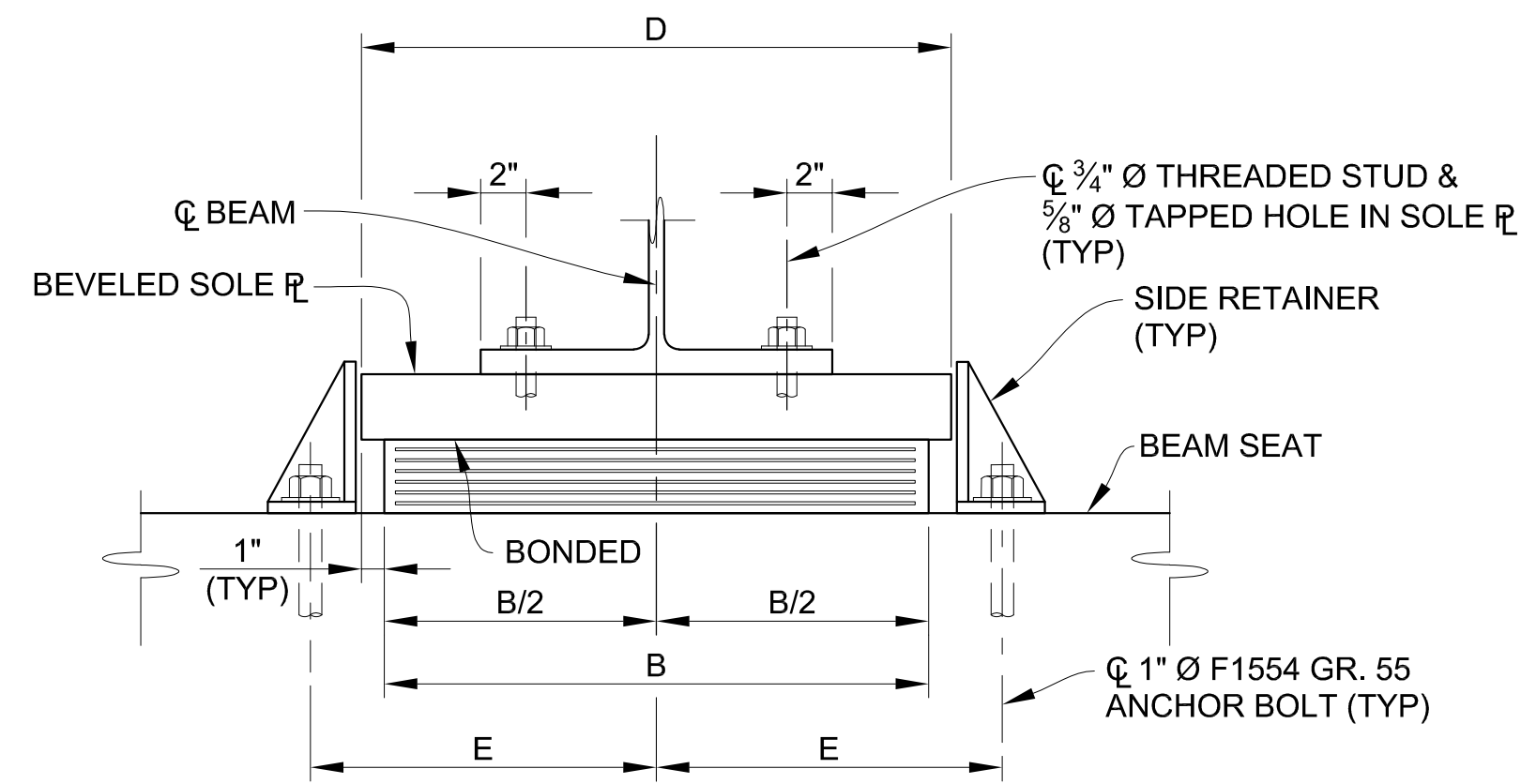
(BOLT HOLES IN END DIAPHRAGM CONNECTION PLATES NOT SHOWN)

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

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

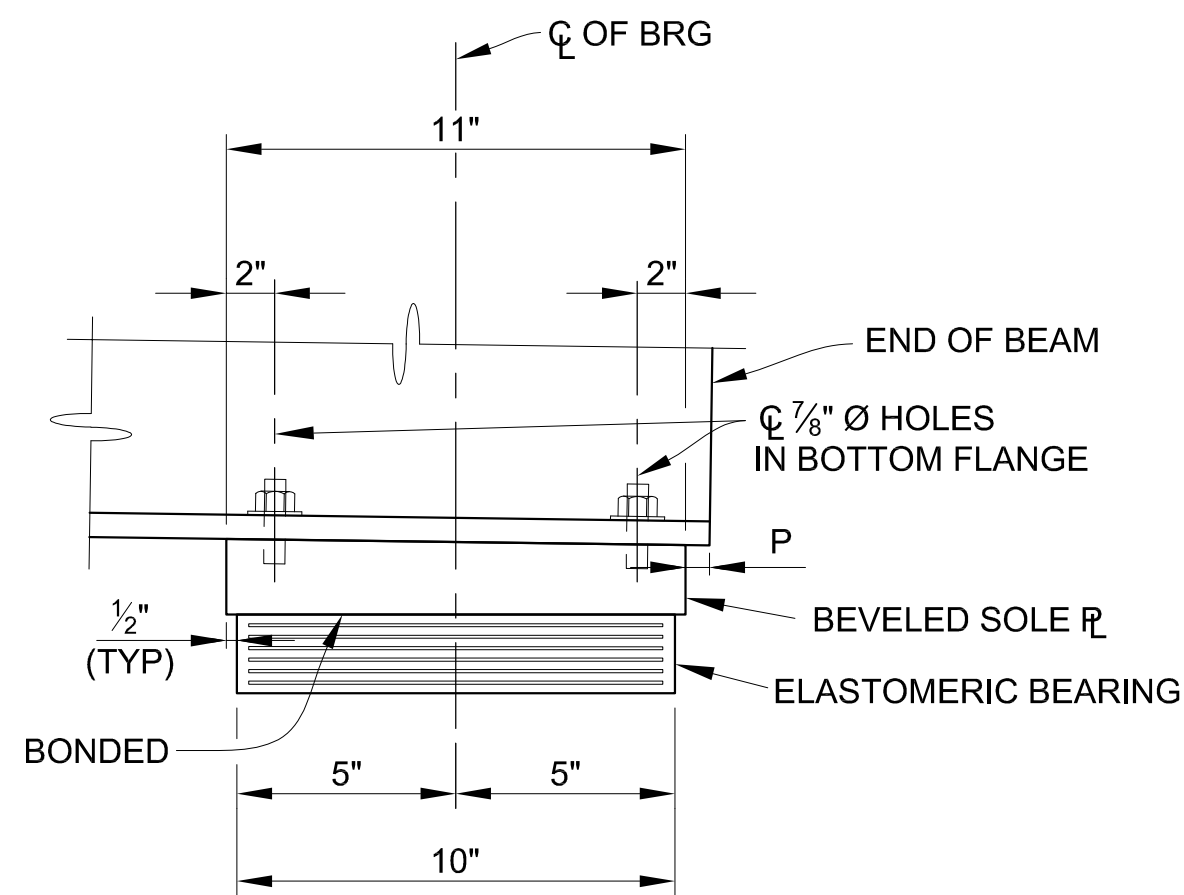
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>STRUCTURAL STEEL DETAILS</b>	
<b>BOLTED BEAM END REPAIRS</b>	
SCALE HOR. 3/32" = 1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR36</b>	
APPROVED BY: <i>Carrie L. Hamel</i> Carrie L. Hamel, PE 2023.10.06 17:46:09-04'00'	
SHEET NO. <u>99</u> OF <u>155</u>	

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



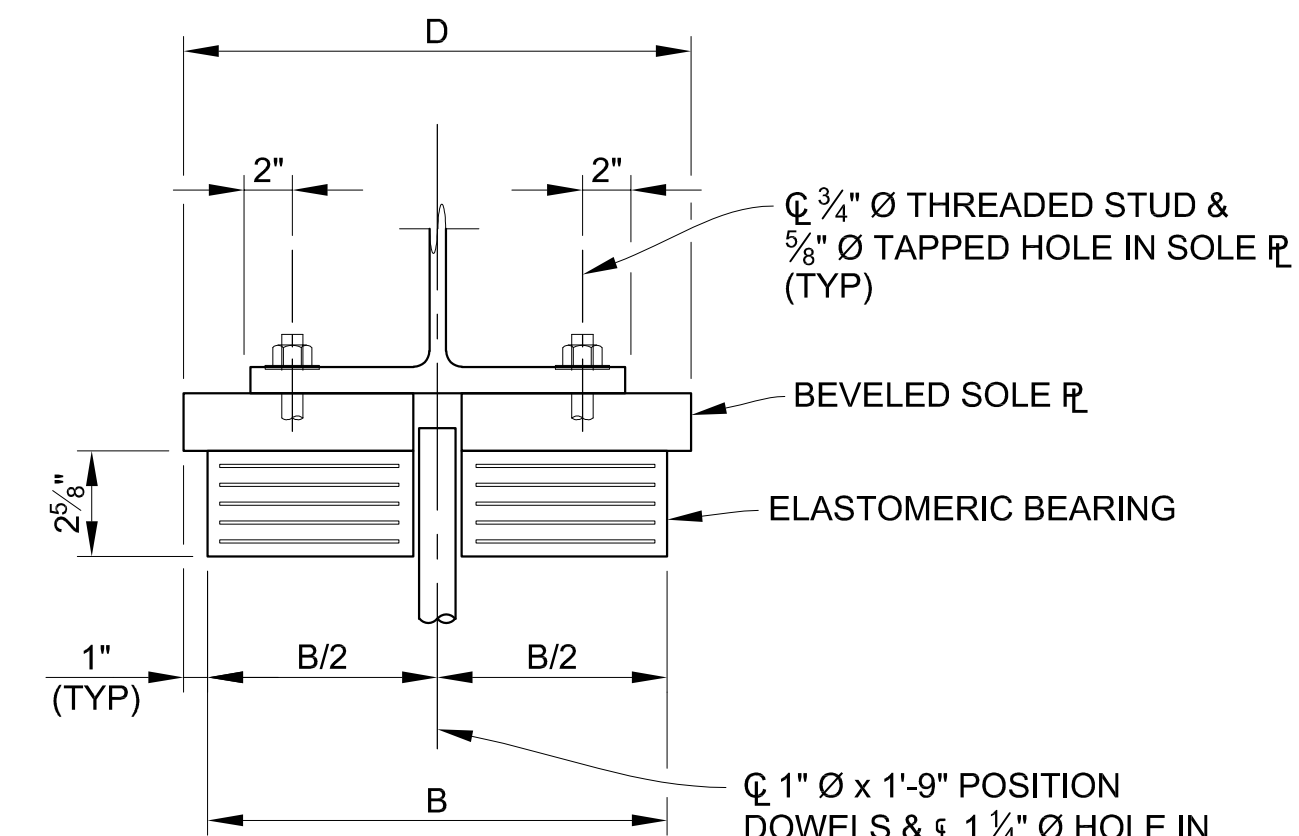
**ELASTOMERIC EXPANSION BEARING**

END VIEW



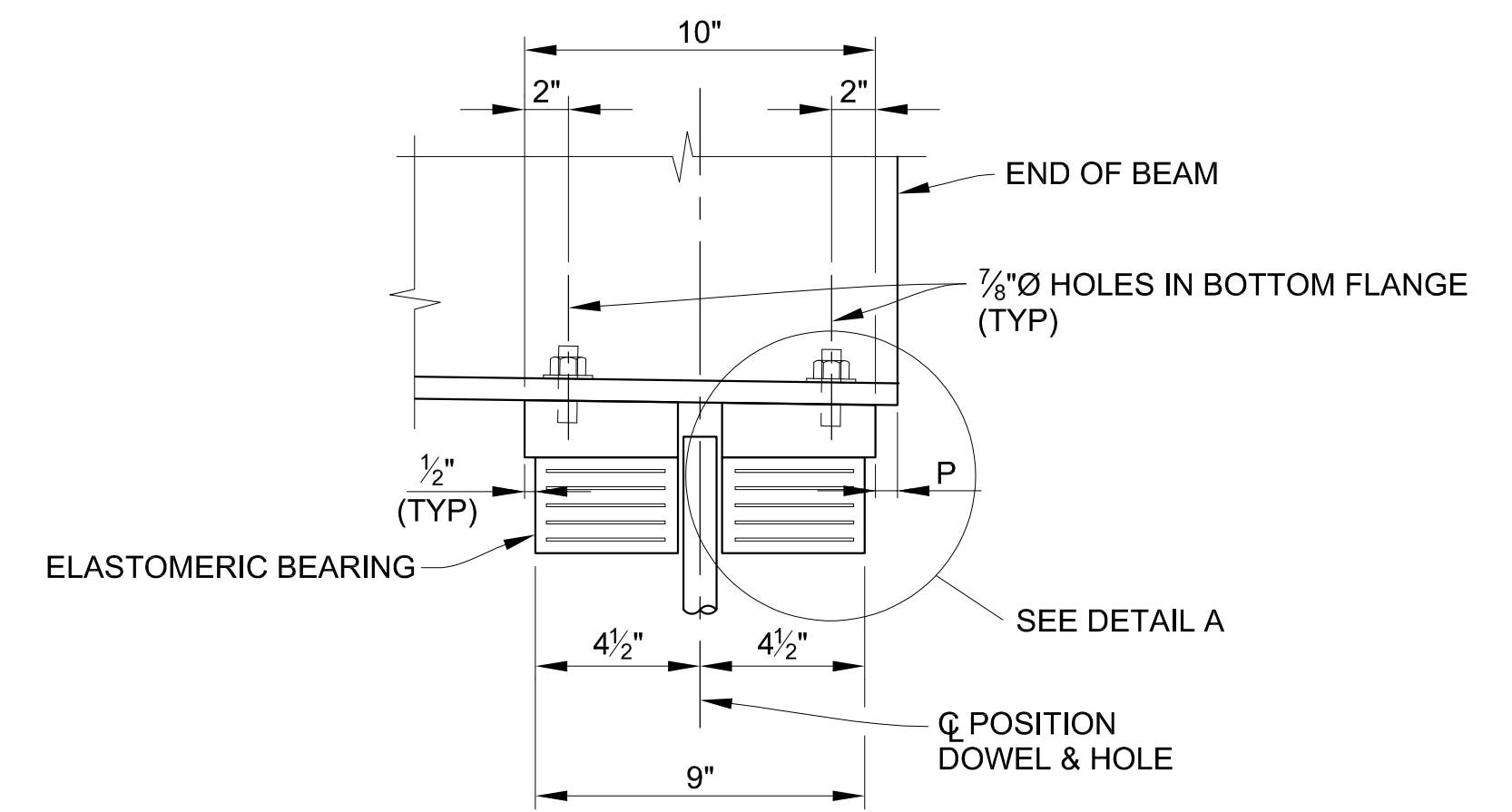
**ELASTOMERIC EXPANSION BEARING**

SIDE VIEW



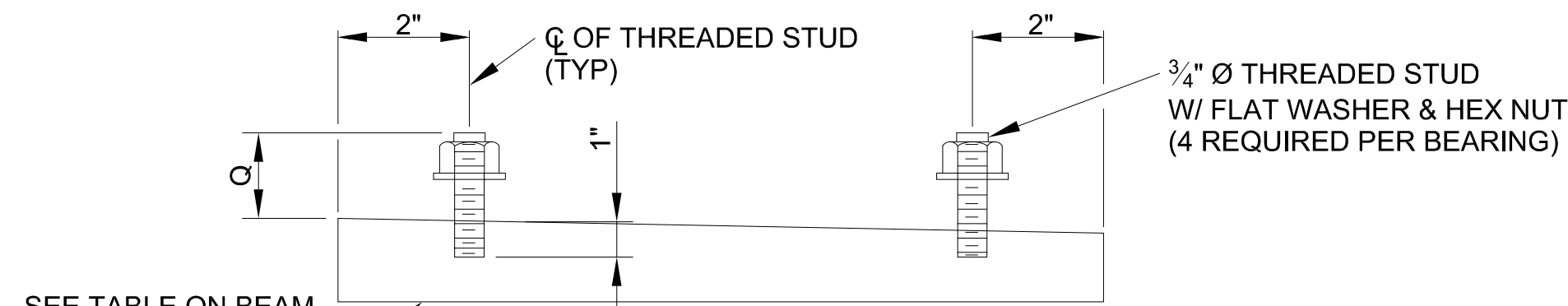
**ELASTOMERIC FIXED BEARING**

END VIEW



**ELASTOMERIC FIXED BEARING**

SIDE VIEW

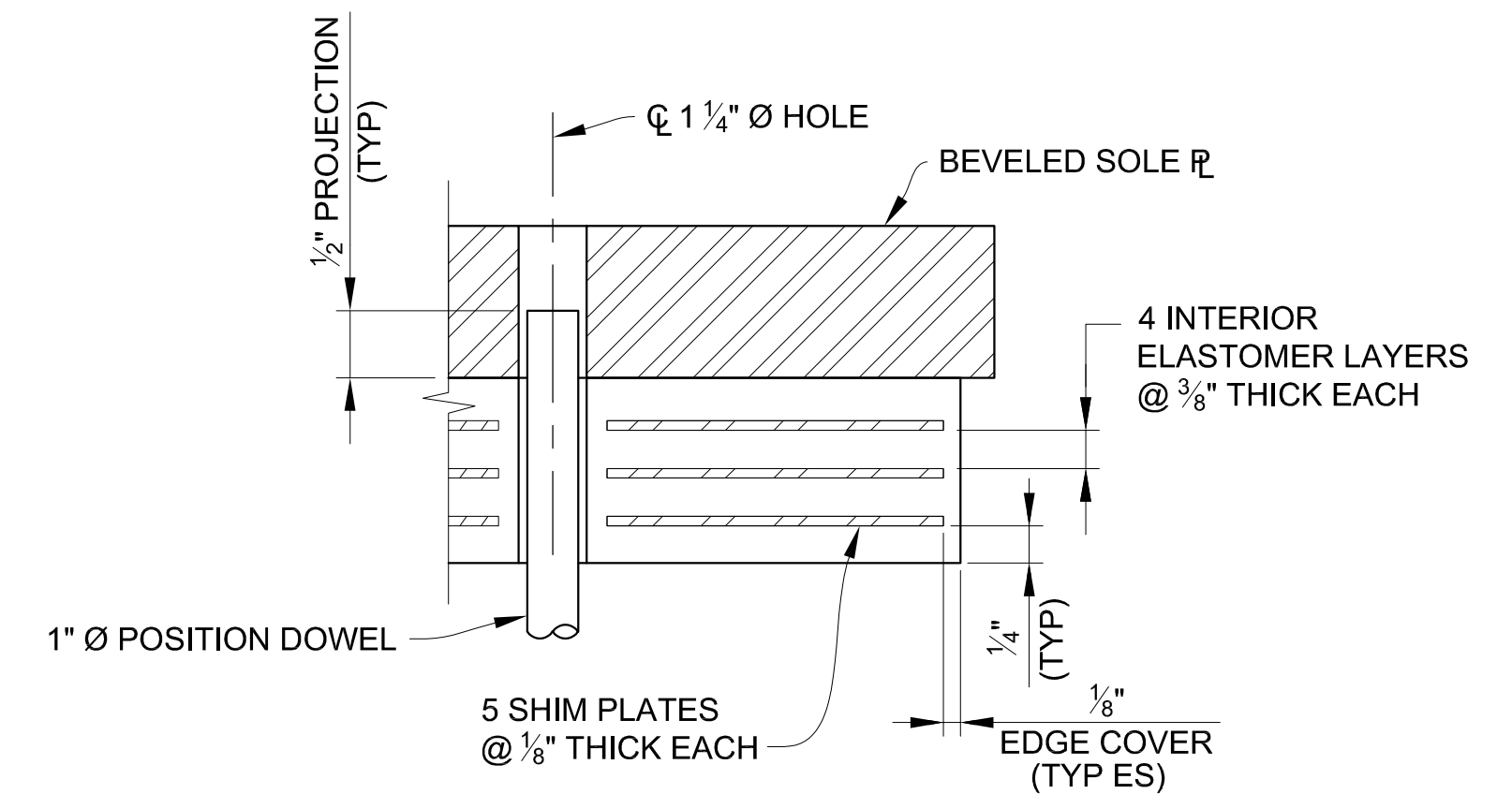


**BEVELED SOLE PLATE DETAILS**

SIDE VIEW

SEE TABLE ON BEAM DETAIL SHEETS FOR BEVELED SOLE PLATE DIMENSIONS

BEARING ASSEMBLY DIMENSIONS											
SPAN	ABUTMENT A (FIXED)						PIER 1 (EXPANSION)				
	BEAM	B	D	E	P	Q	B	D	E	P	Q
SPAN 1	BB	17"	19"		1"	3"	14"	16"	10 1/4"	5"	3"
	AA	20"	22"		1"	3"	16"	18"	11 1/4"	5 1/16"	3"
	A	20"	22"		1"	3"	16"	18"	11 1/4"	5 3/4"	3"
	B-L	17"	19"		1"	2 1/2"	14"	16"	10 1/4"	6 1/4"	2 1/2"
	M	17"	19"		1"	2 1/2"	14"	16"	10 1/4"	6 3/4"	2 1/2"
SPAN 2	BB	15"	17"	10 3/4"	4 7/8"	3 1/4"	18"	20"	5 5/16"	3 1/4"	
	AA	18"	20"	12 1/4"	5"	3 1/4"	21"	23"	5 9/16"	3 1/4"	
	A	18"	20"	12 1/4"	5 1/4"	3 1/4"	21"	23"	5 3/4"	3 1/4"	
	B-L	15"	17"	10 3/4"	5 3/8"	2 3/4"	18"	20"	5 7/8"	2 3/4"	
	M	15"	17"	10 3/4"	5 3/4"	2 3/4"	18"	20"	6 1/4"	2 3/4"	
SPAN 3	BB	12"	14"	9 1/4"	4 5/16"	2 3/4"	14"	16"	1"	2 3/4"	
	AA	14"	16"	10 1/4"	4 3/8"	2 3/4"	17"	19"	1"	2 3/4"	
	A	14"	16"	10 1/4"	4 11/16"	2 3/4"	17"	19"	1"	2 3/4"	
	B-L	12"	14"	9 1/4"	4 11/16"	2 1/2"	14"	16"	1"	2 1/2"	
	M	12"	14"	9 1/4"	4 13/16"	2 1/2"	14"	16"	1"	2 1/2"	
SPAN 1	PIER 1 (EXPANSION)						PIER 2 (FIXED)				
	BEAM	B	D	E	P	Q	B	D	E	P	Q
SPAN 2	PIER 2 (EXPANSION)						ABUTMENT B (FIXED)				
	BEAM	B	D	E	P	Q	B	D	E	P	Q



**DETAIL A**

**ELASTOMERIC BEARING DETAILS - FIXED**

**NOTES:**

ES DENOTES EACH SIDE.

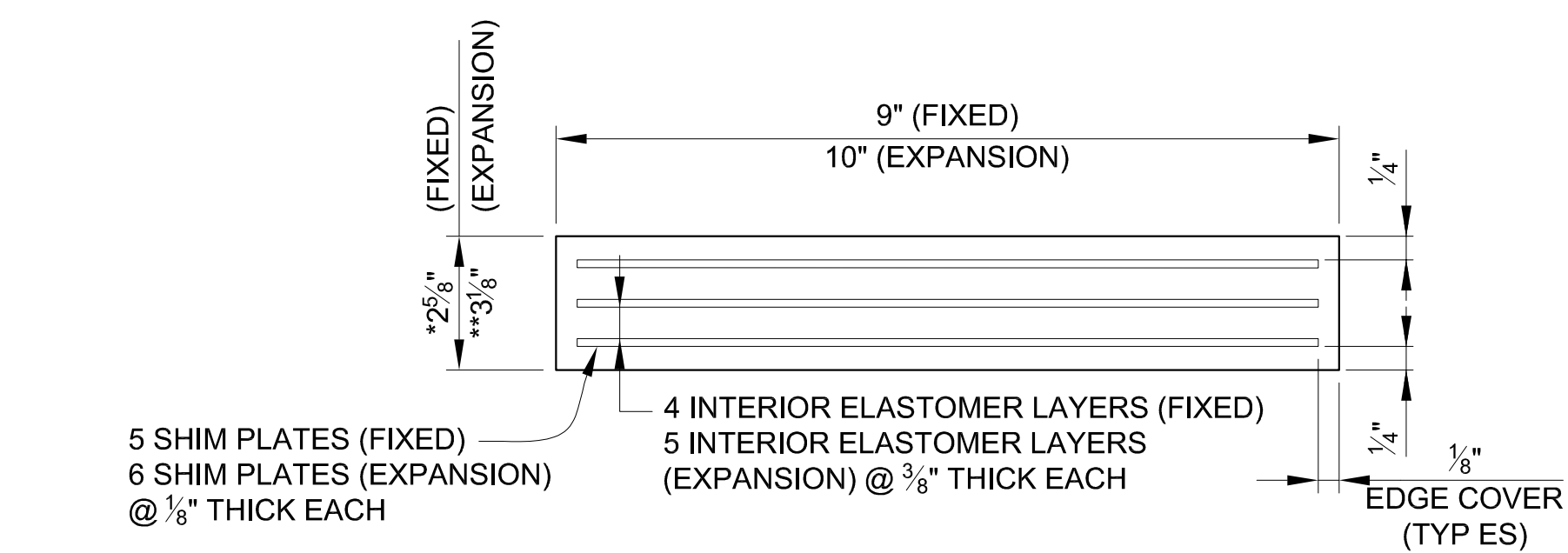
USE NON-DEFORMED STEEL RODS IN ACCORDANCE WITH AASHTO M 270 GRADE 36 AND HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M 111, AS POSITION DOWELS FOR ROLLED STEEL BEAMS.

STEEL FOR SOLE PLATES AND OTHER BEARING COMPONENTS SHALL MEET THE REQUIREMENTS OF AASHTO M 270 GRADE 36.

ANCHOR BOLT LENGTHS SHOWN ARE MINIMUM. BOLTS LONGER THAN THAT SHOWN MAY BE FURNISHED AT NO ADDITIONAL COST. ANCHOR BOLTS AND POSITION DOWELS SHALL BE GALVANIZED ACCORDING TO MDOT 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 716.03.B.4.

ANCHOR BOLTS SHALL CONFORM TO MDOT 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 908.14.

ANCHOR BOLTS SHALL BE INSTALLED AFTER BEAMS ARE ERECTED IN PLACE.

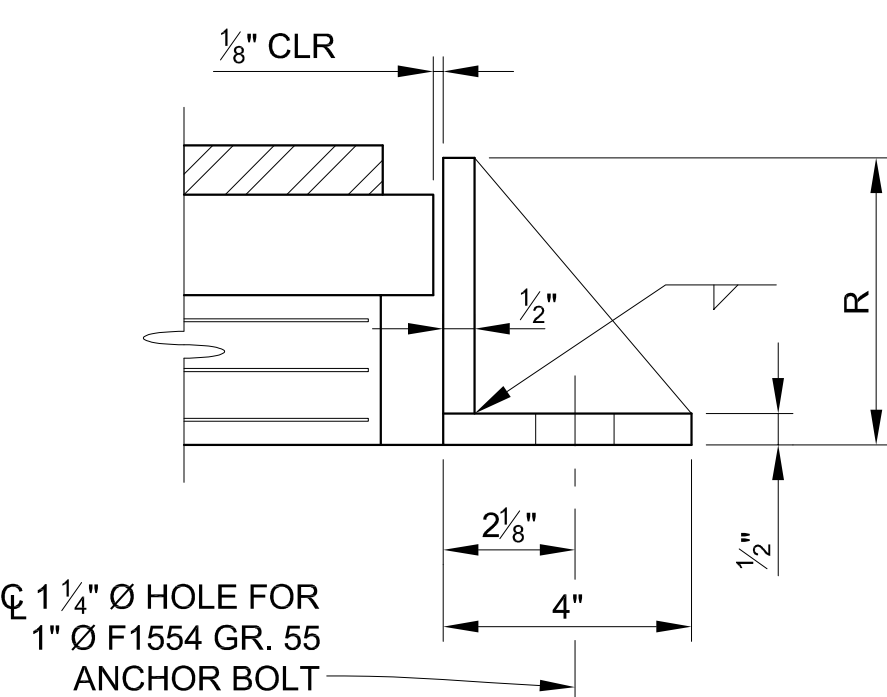


**ELASTOMERIC BEARING DETAILS**

SIDE VIEW

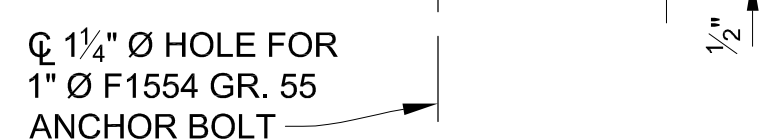
\* PAID FOR AS "BEARING ELASTOMERIC, 2 3/4 INCH"

\*\* PAID FOR AS "BEARING ELASTOMERIC, 3 1/4 INCH"

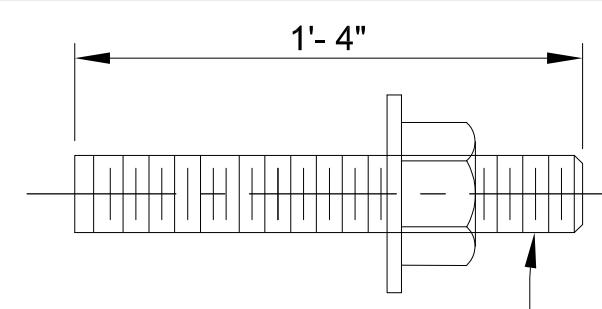


**ELEVATION**

**SIDE RETAINER**



**PLAN**



**ANCHOR BOLT DETAIL**

**POSITION DOWEL DETAIL**

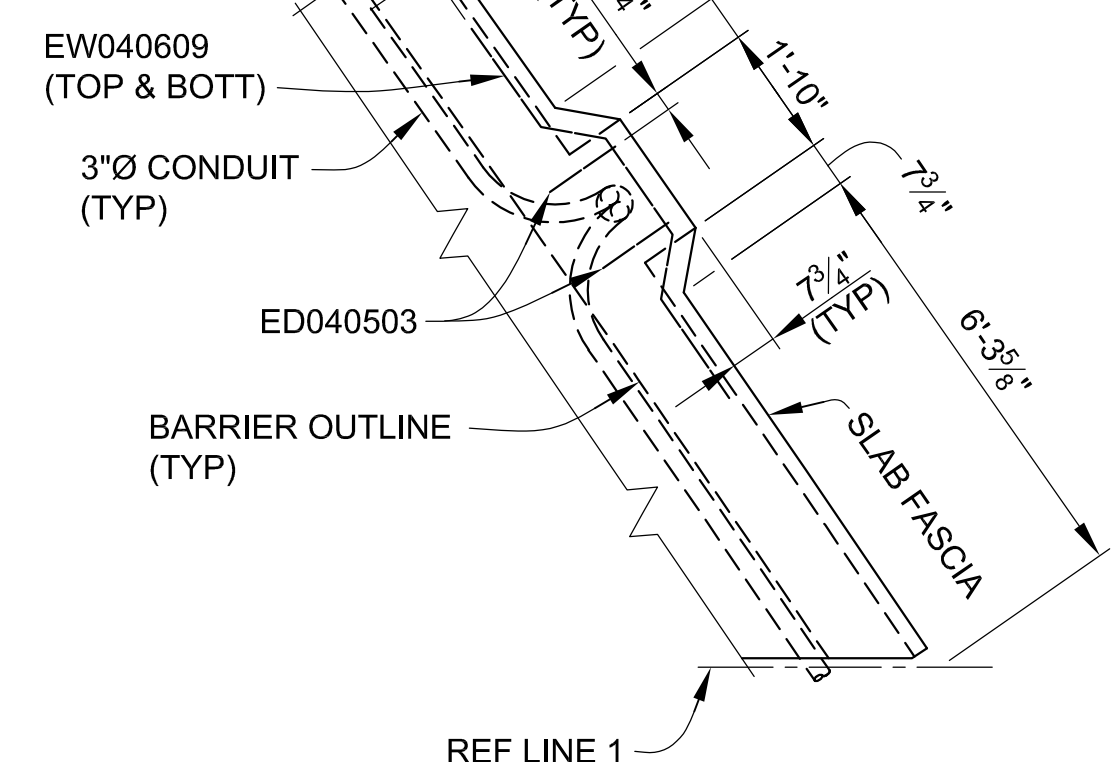
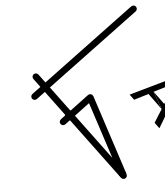
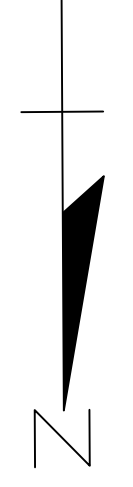
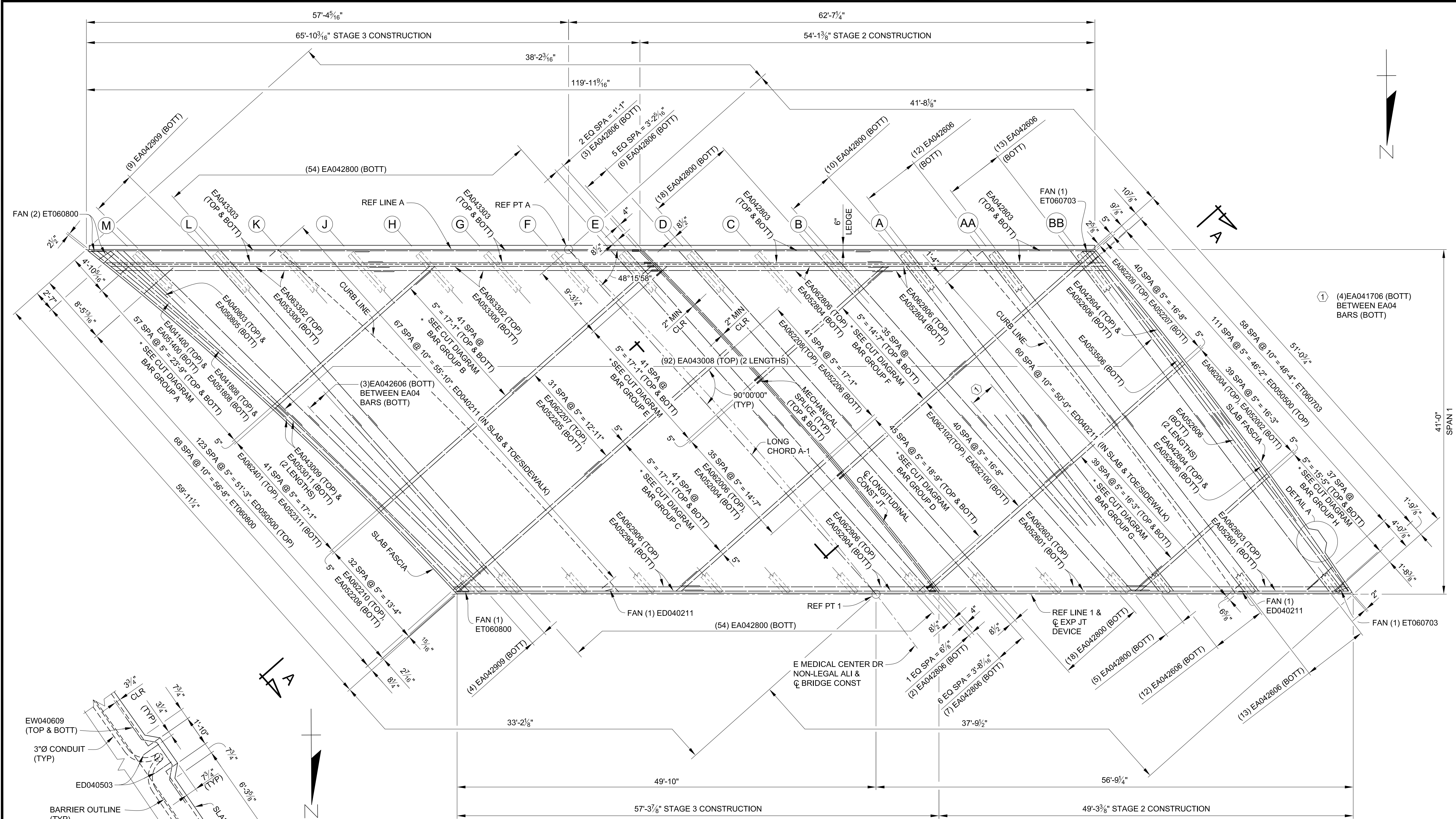
R (SIDE RETAINER HEIGHT, INCH)														
SPAN	BB	AA	A	B	C	D	E	F	G	H	J	K	L	M
1-PIER 1 (EXP)	8 1/2	8 1/2	8 1/2	7 3/4	6 1/2	7	7 1/2	6 1/2	7	7 1/2	7	7 1/2	6 1/2	7 1/2
2-PIER 1 (EXP)	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	7 1/2	6 1/2
3-PIER 2 (EXP)	6 1/2	6 1/2	6 1/2	7 1/2	6 1/2	7	6 1/2	7	6 1/2	7	6 1/2	7 1/2	6 1/2	6 1/2

ESTIMATED QUANTITIES THIS SHEET					
DESCRIPTION	UNITS	CATG 0001	CATG 0002	CATG 0003	TOTAL
Bearing, Elastomeric, 2 3/4 inch	Sin	4,851	1,485		6,336
Bearing, Elastomeric, 3 1/4 inch	Sin	4,510	1,370		5,880

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

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	SBV	KJS

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>BEARING DETAILS</b>	
SCALE HOR. 3/32"=1'-0"	INCH
DRAWING NO. <b>2021-008-BR37</b>	
SHEET NO. <u>100</u> OF <u>155</u>	



**DETAIL A**

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.

**PLAN - SPAN 1**

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

DLZ				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

**SUPERSTRUCTURE DETAILS**

APPROVED BY: *Carrie L. Hamel*  
Carrie L. Hamel, P.E.  
2023.10.06 17:46:36-04'00"

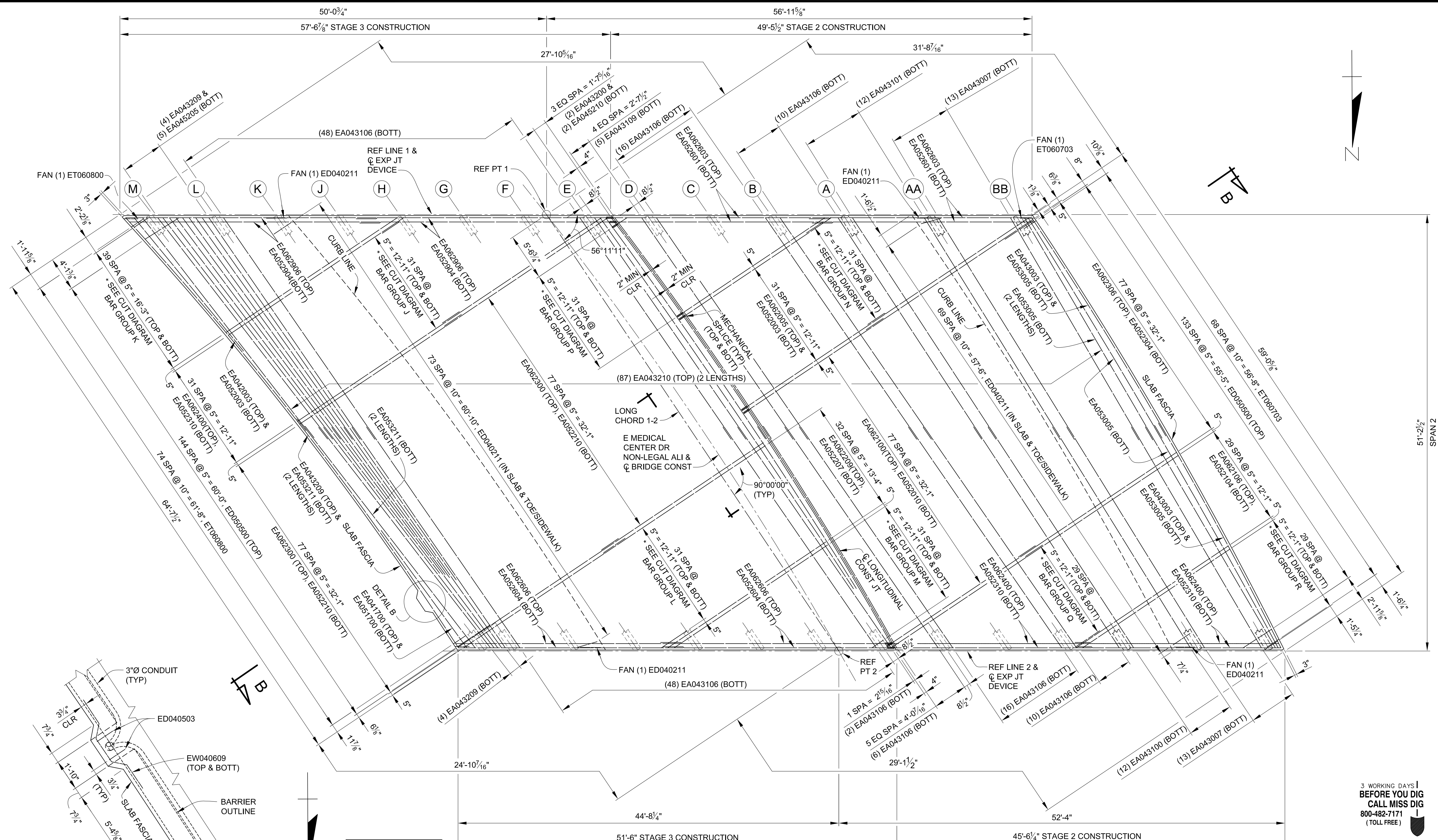
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DRAWING NO. **2021-008-BR38**

SHEET NO. **101** OF **155**

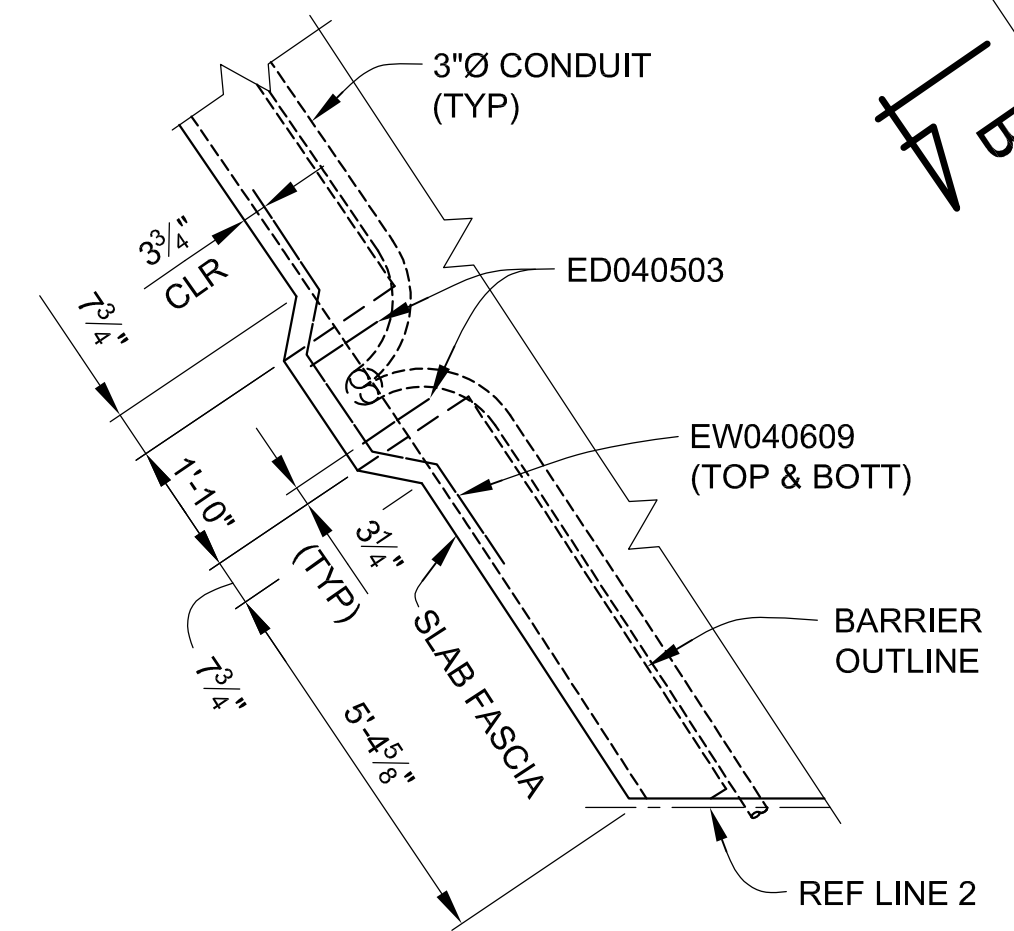
Izcorp.com\pan-files\Projects\2021\2141\736300\_AA - EMCD Bridge\01\_Constr\Docs\CAD\EMCD\_deck\_001

\\p01p.com\pan-files\Projects\2021\2141\736500\_AA - EMCD Bridge\01\_ConstrDocs\CAD\EMCD\_deek\_002



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

**DETAIL B**



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

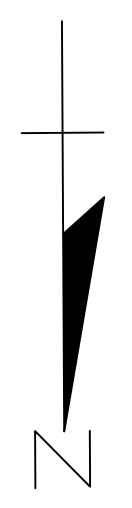
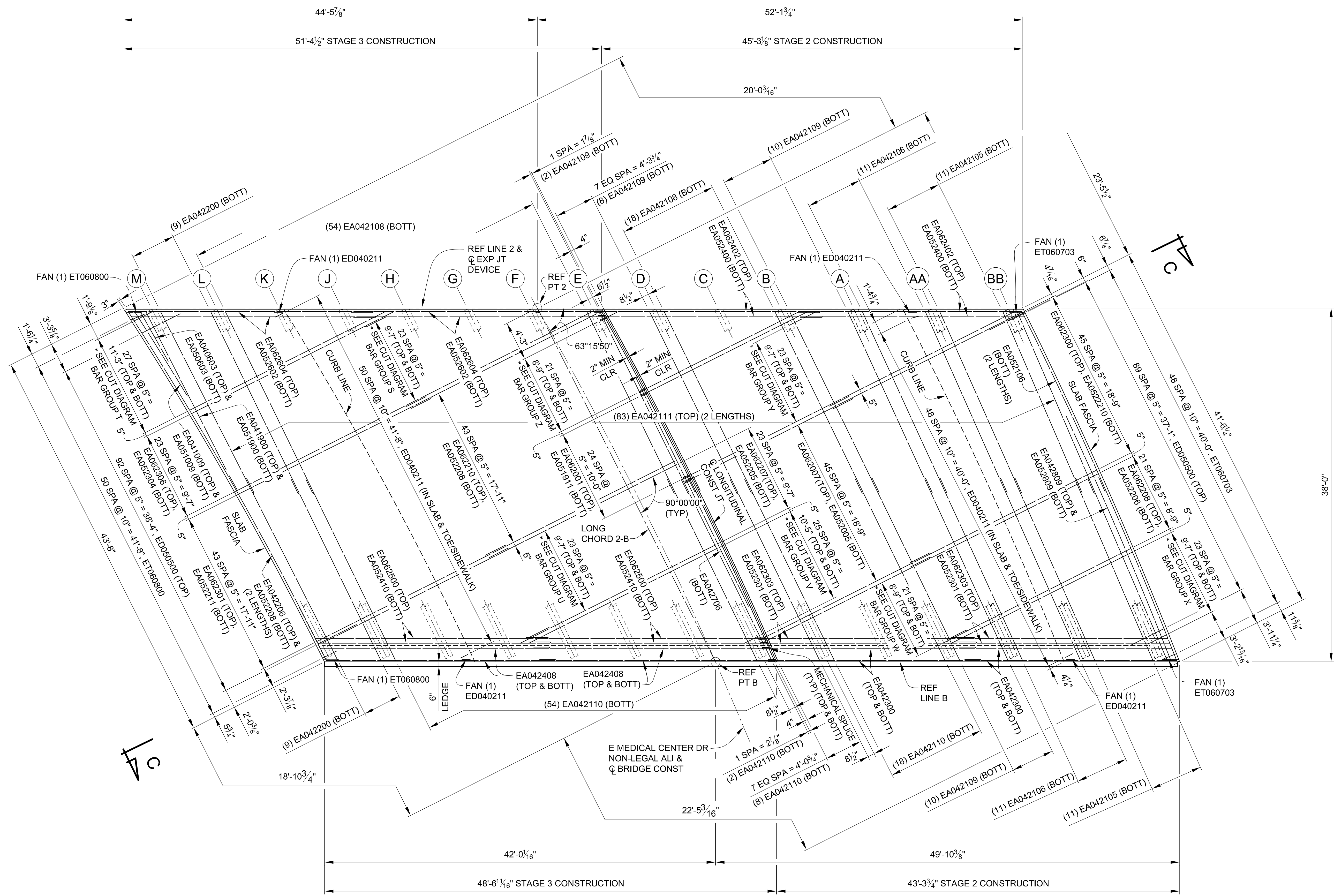
\* SEE STEEL REINFORCEMENT SHEETS FOR BAR CUT DIAGRAM DETAILS.

**PLAN - SPAN 2**

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>SUPERSTRUCTURE DETAILS</b>	
SCALE HOR. 3/16"=1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR39</b>	
SHEET NO. <u>102</u> OF <u>155</u>	

APPROVED BY: *[Signature]*  
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734



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.

**PLAN - SPAN 3**

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

**DLZ**

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

**SUPERSTRUCTURE DETAILS**

APPROVED BY: *Carrie L. Hamel*  
Carrie L. Hamel, PE  
2023.10.06 17:47:06-04/07

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

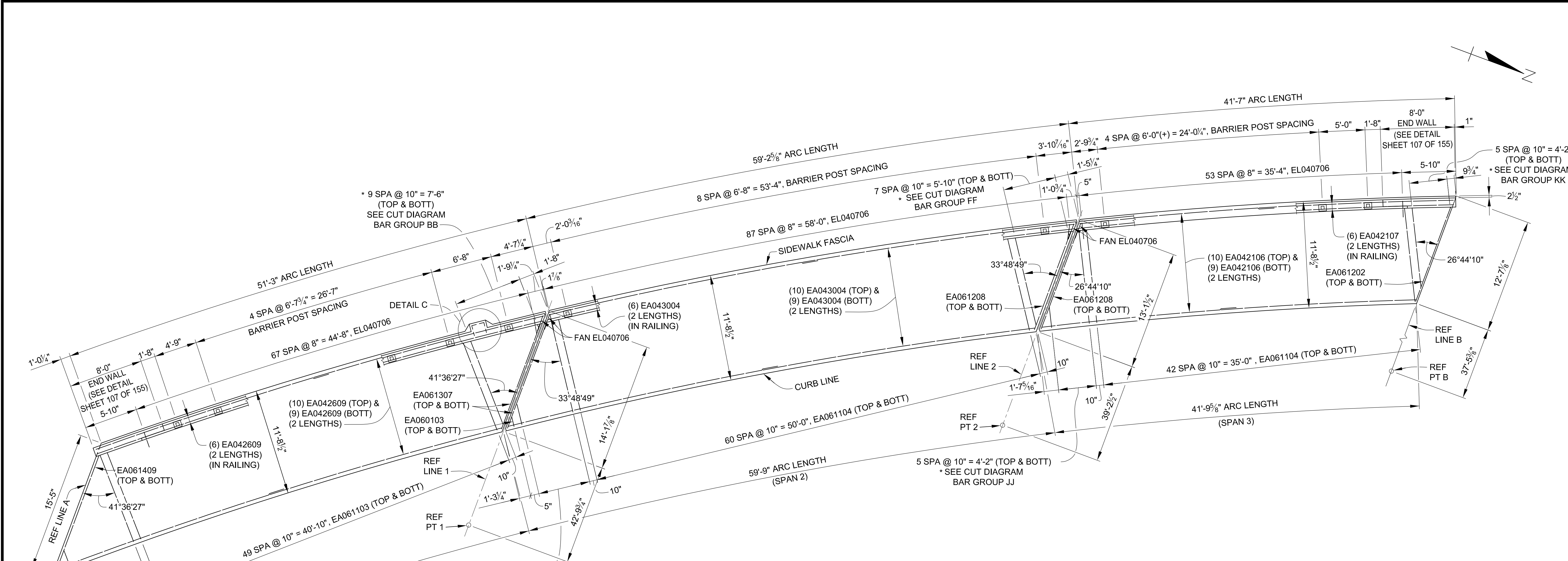
DRAWING NO.  
**2021-008-BR40**

SHEET NO. 103 OF 155

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

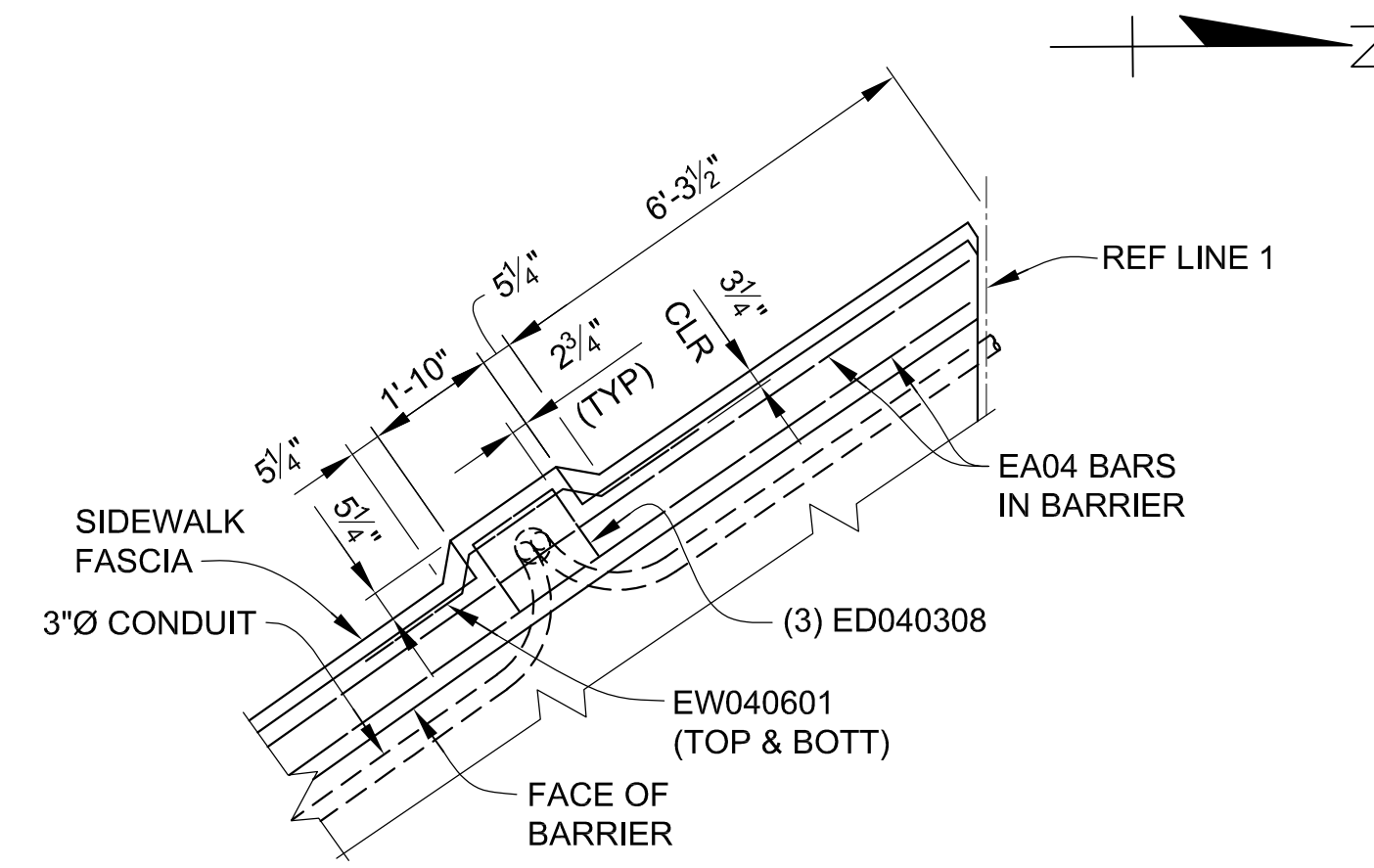
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I:\p\com\pan-files\Projects\2021\2141\Const\Drawings\CAD\EMCD\_deck\_004



**PLAN OF WEST SIDEWALK**

\* SEE STEEL REINFORCEMENT SHEETS FOR BAR CUT DIAGRAM DETAILS.



**DETAIL C**

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

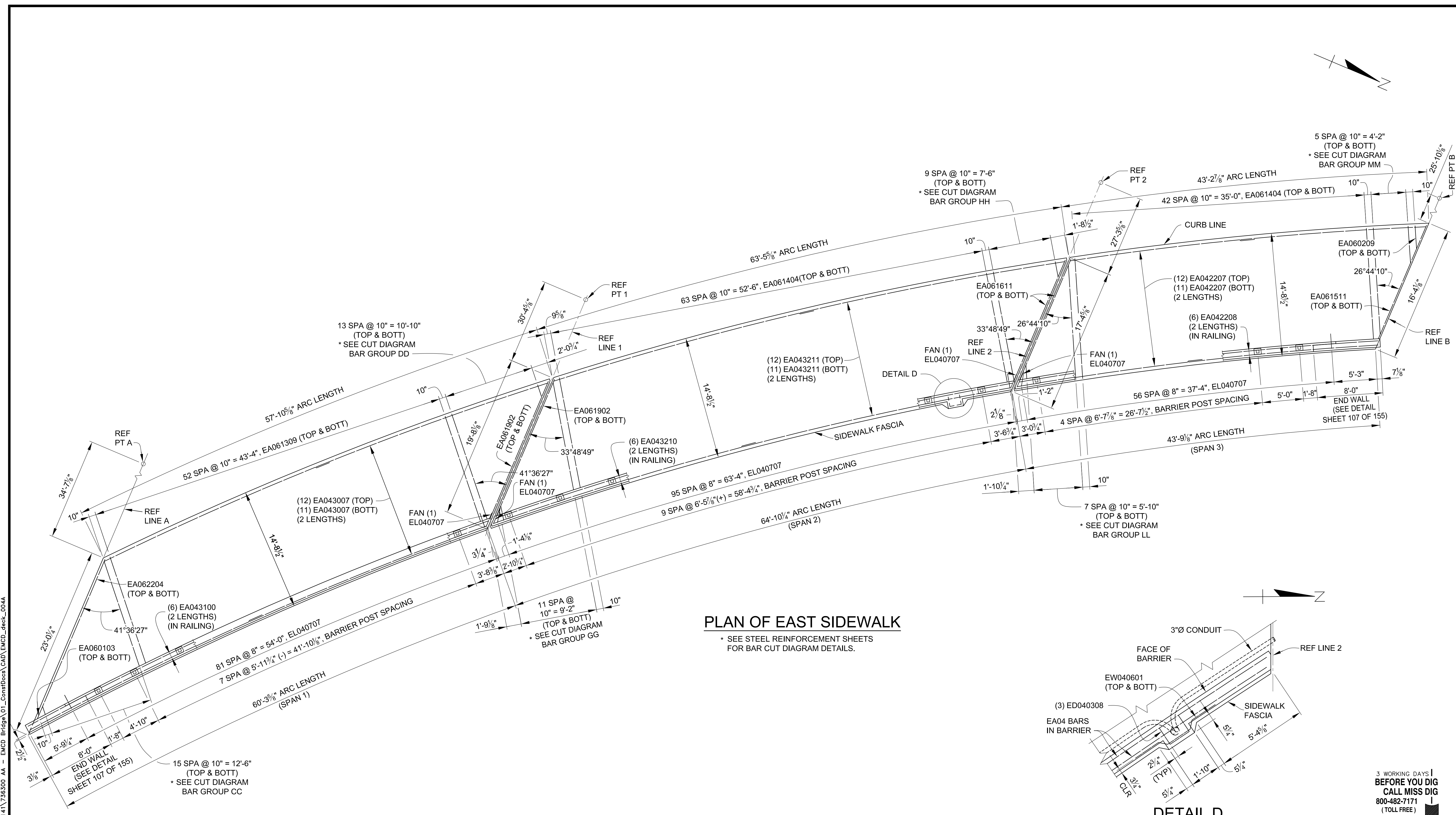
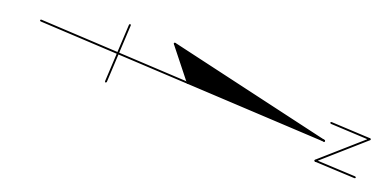
MIN LAP TABLE	
EA03 BARS	- 1'-2"
EA04 BARS	- 1'-7"
EA05 BARS	- 2'-0"
EA06 BARS	- 2'-4"

DLZ				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>SUPERSTRUCTURE DETAILS</b>	
SCALE HOR. 3/16"=1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR41</b>	
SHEET NO. <u>104</u> OF <u>155</u>	

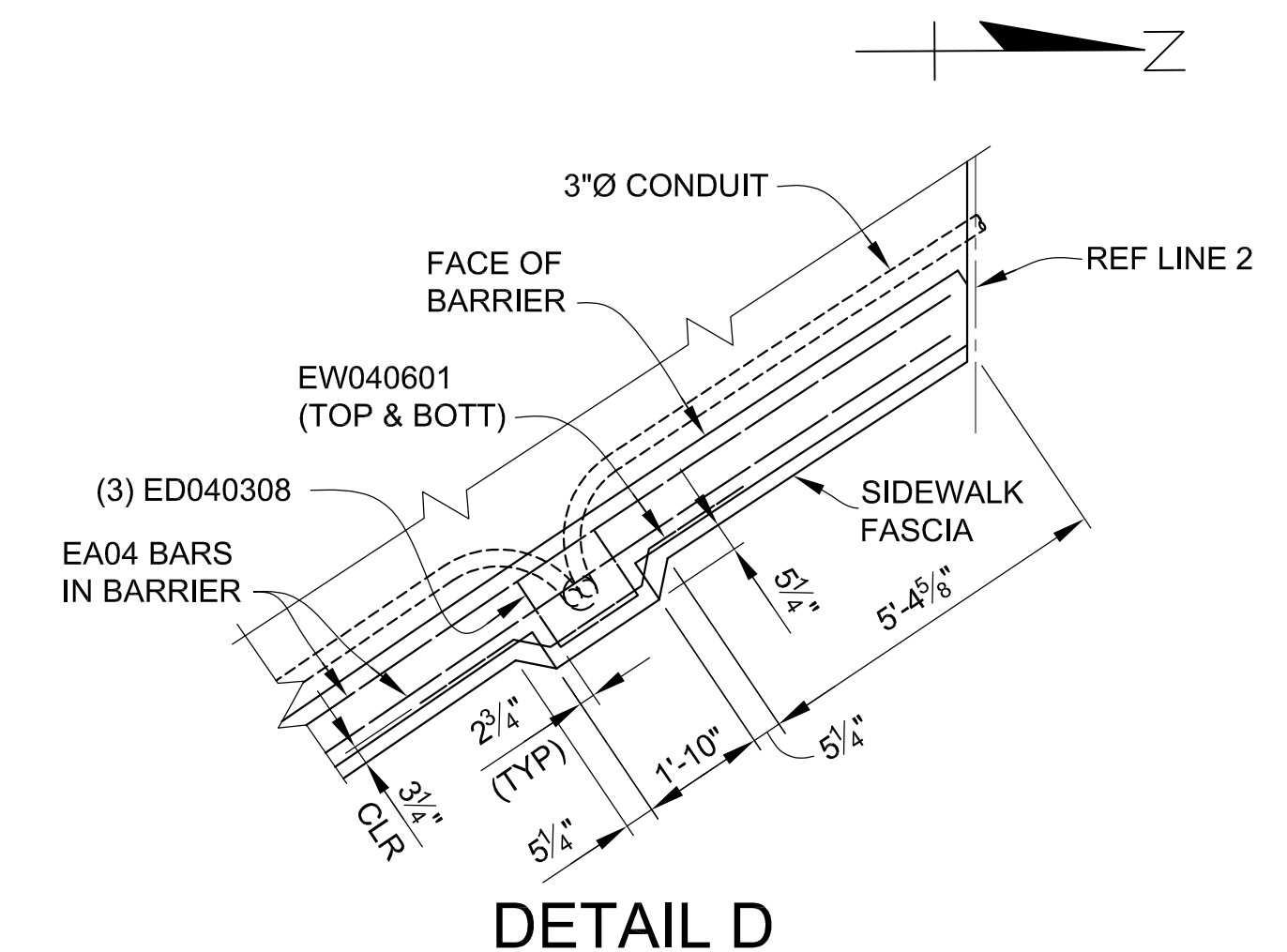
APPROVED BY: *Carrie L. Hamel*  
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734





**PLAN OF EAST SIDEWALK**

\* SEE STEEL REINFORCEMENT SHEETS FOR BAR CUT DIAGRAM DETAILS.



**DETAIL D**

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

DLZ				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

**SUPERSTRUCTURE DETAILS**

APPROVED BY: *Carrie L. Hamel*  
Carrie L. Hamel, P.E.  
2023.10.06 17:47:38-04'00"

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

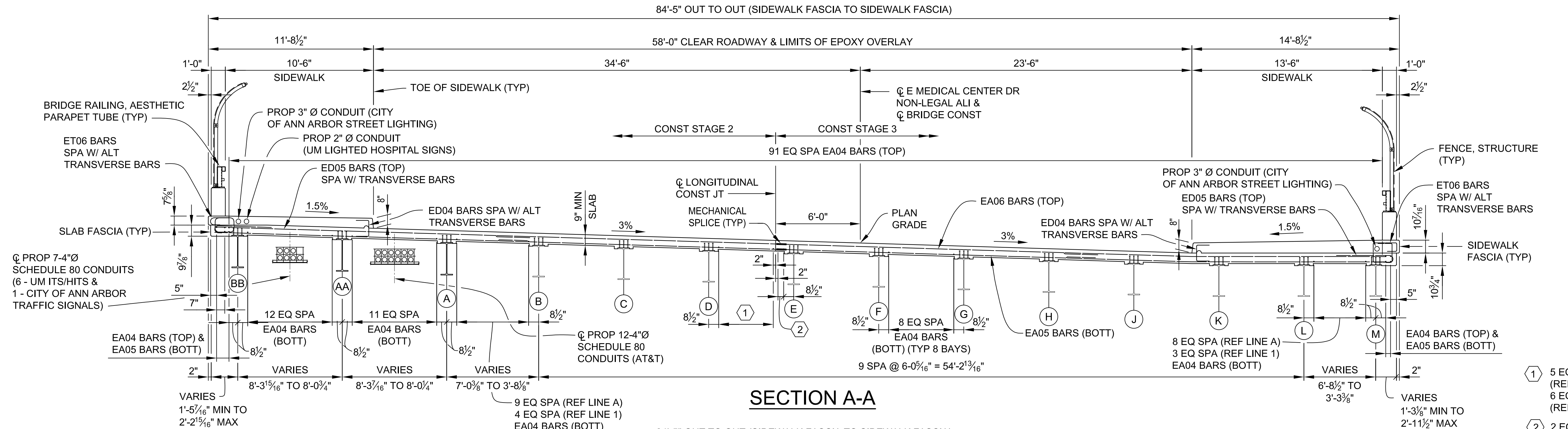
DRAWING NO. **2021-008-BR42**

SHEET NO. **105** OF **155**

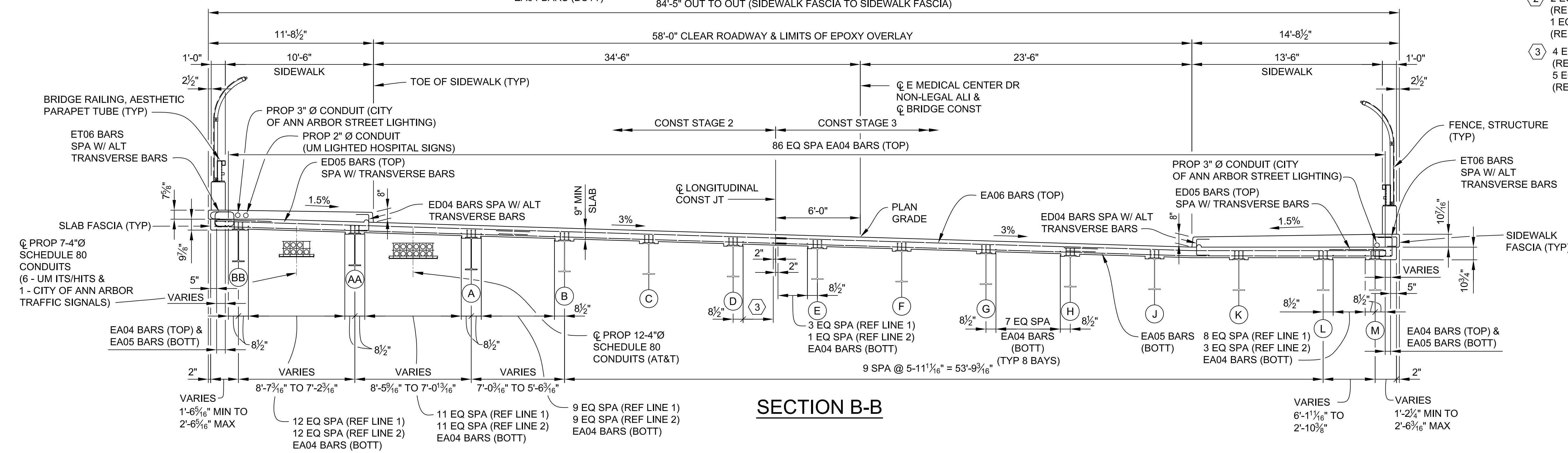
3 WORKING DAYS | BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

zcorp.com\pan-files\Projects\2021\2141\756300 AA - EMD Bridge\01\_ConstrDocs\CAD\EMCD\_deck\_004A

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**SECTION A-A**



**SECTION B-B**

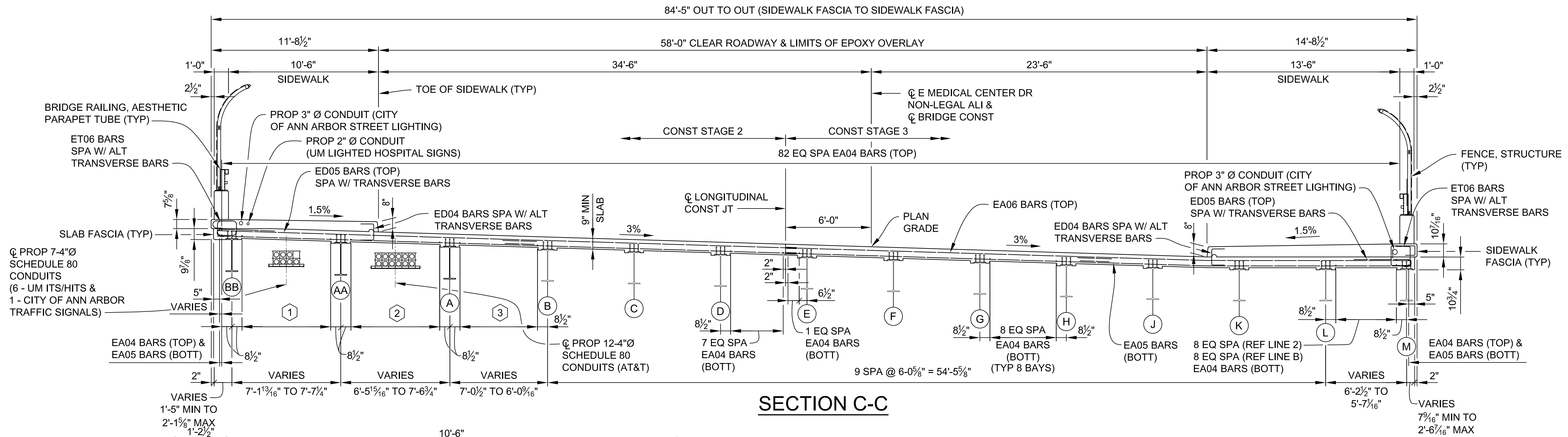
- ① 5 EQ SPA EA04 BARS (BOTT) (REF LINE A)  
6 EQ SPA EA04 BARS (BOTT) (REF LINE 1)
- ② 2 EQ SPA EA04 BARS (BOTT) (REF LINE A)  
1 EQ SPA EA04 BARS (BOTT) (REF LINE 1)
- ③ 4 EQ SPA EA04 BARS (BOTT) (REF LINE 1)  
5 EQ SPA EA04 BARS (BOTT) (REF LINE 2)

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

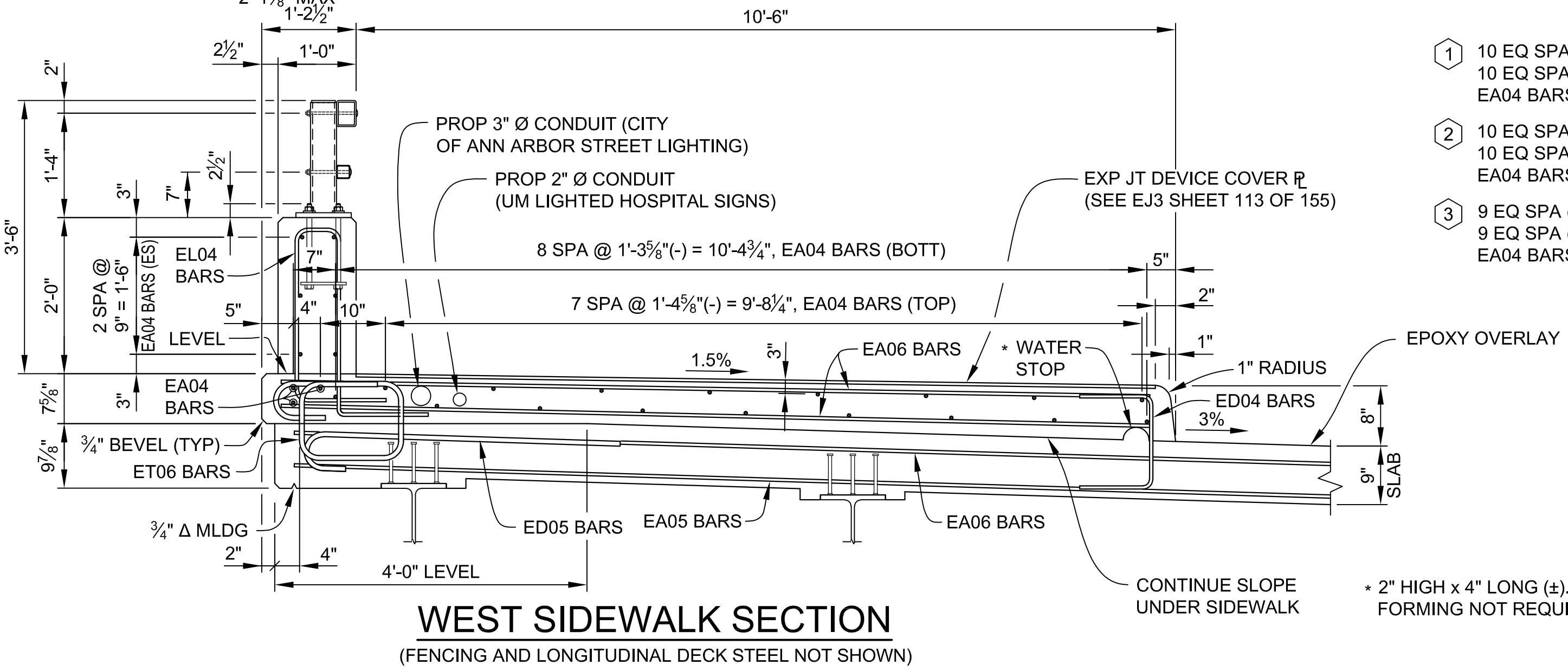
3 WORKING DAYS | BEFORE YOU DIG | CALL MISS DIG | 800-482-7171 | (TOLL FREE)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>SUPERSTRUCTURE DETAILS</b>	
SCALE HOR. 1/4"=1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR43</b>	
SHEET NO. <u>106</u> OF <u>155</u>	

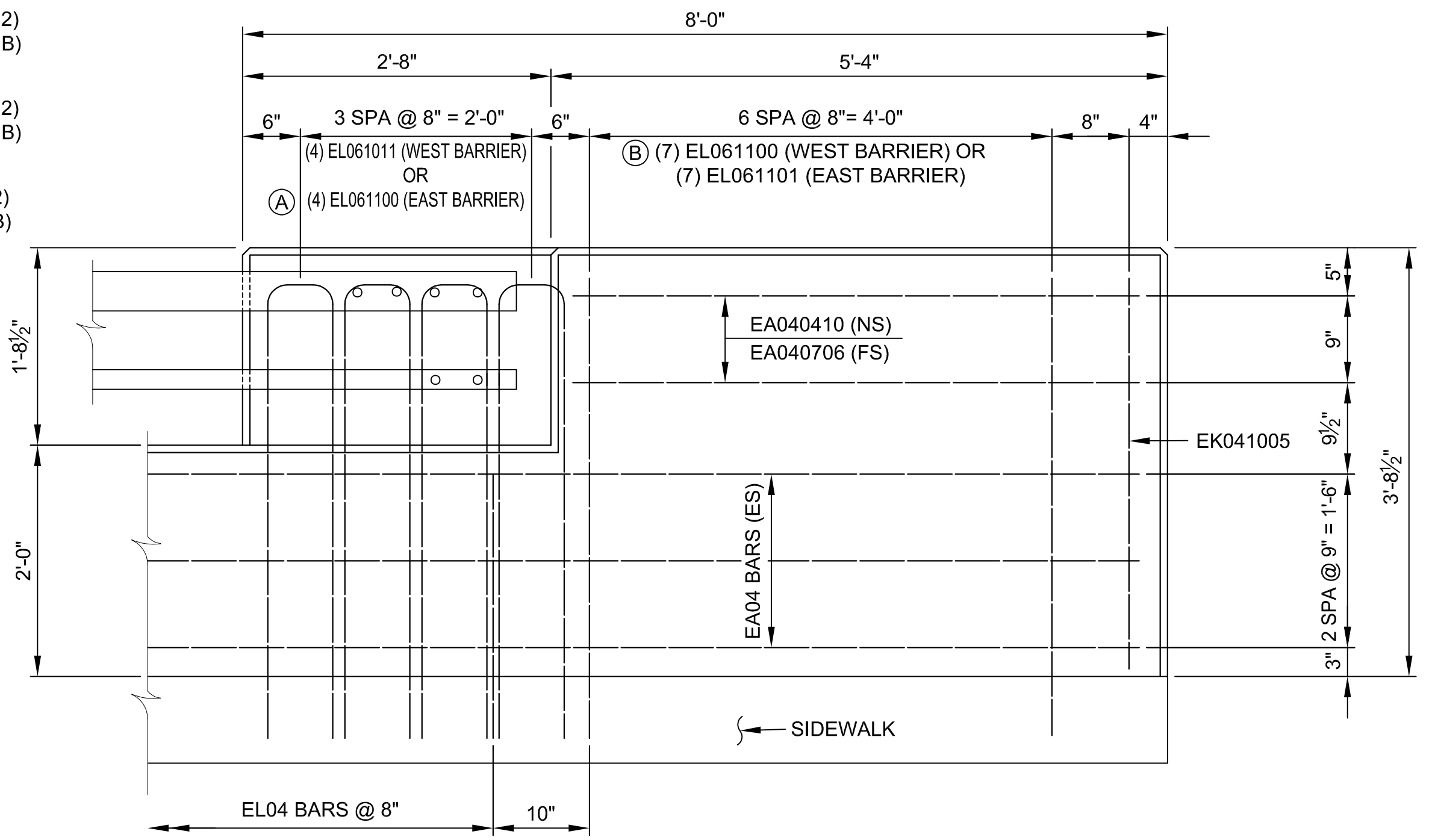


**SECTION C-C**



**WEST SIDEWALK SECTION**  
(FENCING AND LONGITUDINAL DECK STEEL NOT SHOWN)

- ① 10 EQ SPA (REF LINE 2)  
10 EQ SPA (REF LINE B)  
EA04 BARS (BOTT)
- ② 10 EQ SPA (REF LINE 2)  
10 EQ SPA (REF LINE B)  
EA04 BARS (BOTT)
- ③ 9 EQ SPA (REF LINE 2)  
9 EQ SPA (REF LINE B)  
EA04 BARS (BOTT)

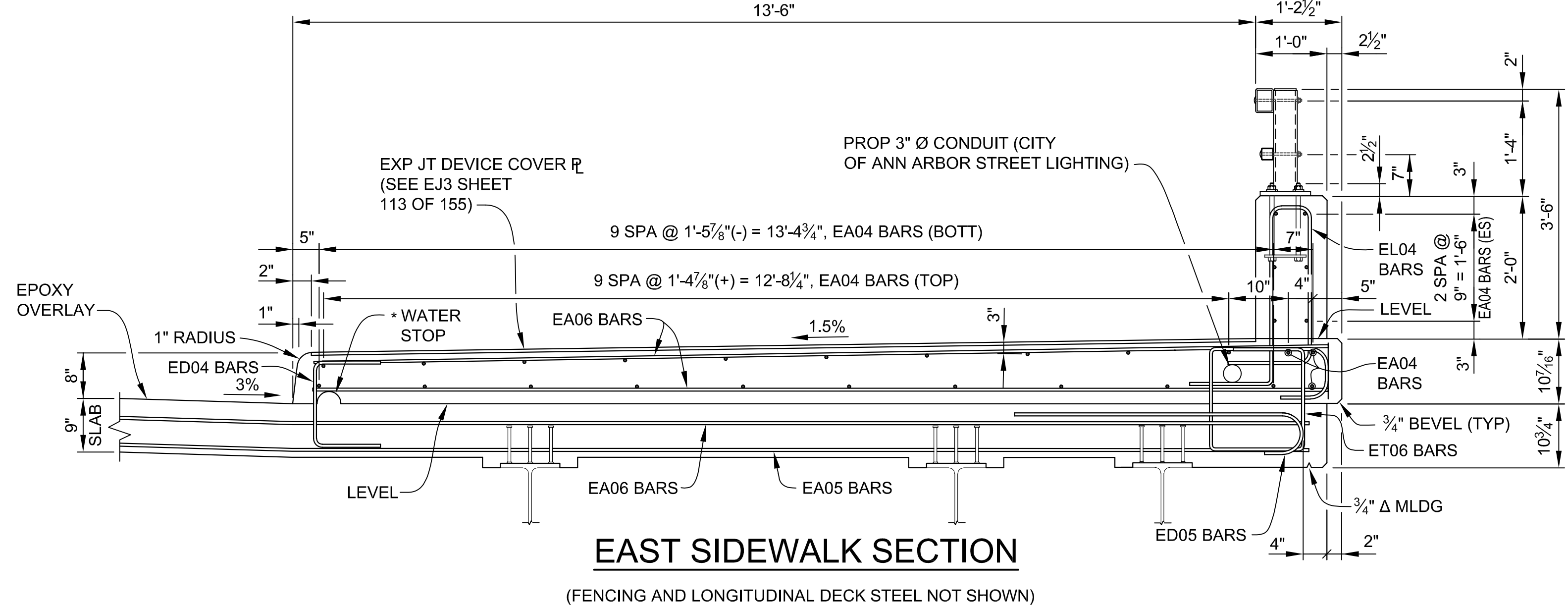


**ELEVATION  
END WALL DETAIL**  
(AESTHETIC PARAPET TUBE)

**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 134 - 135 OF 155.

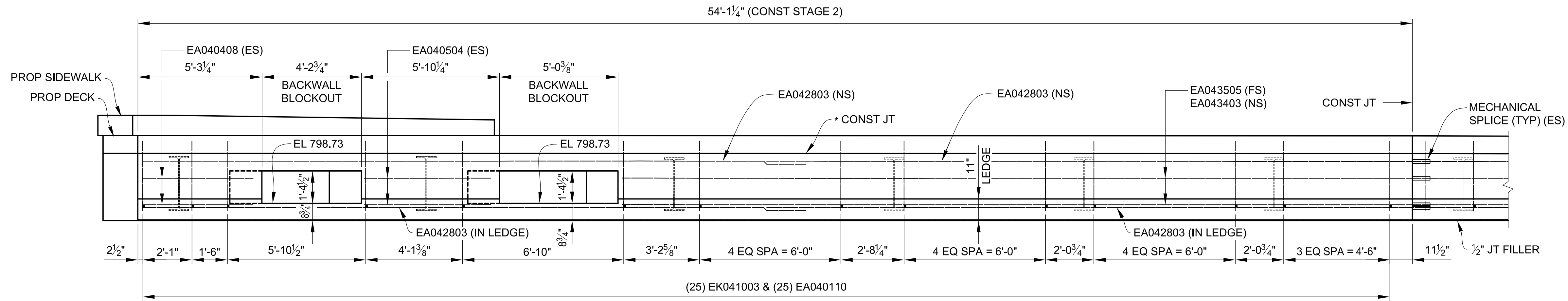


**EAST SIDEWALK SECTION**  
(FENCING AND LONGITUDINAL DECK STEEL NOT SHOWN)

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

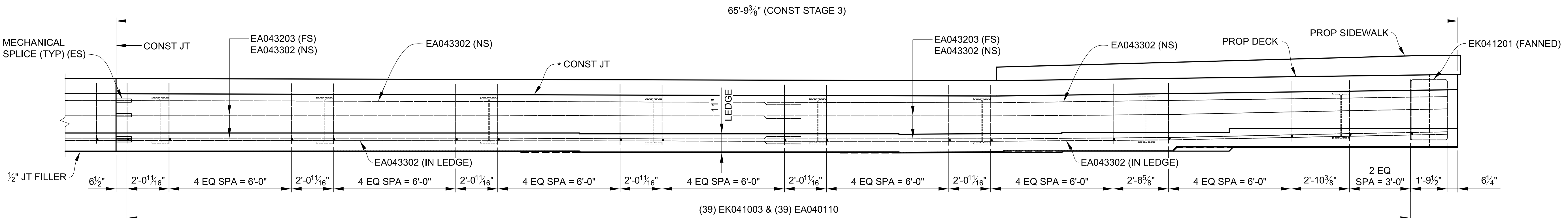
<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>SUPERSTRUCTURE DETAILS</b>	
SCALE HOR. 1/4"=1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR44</b>	
SHEET NO. <u>107</u> OF <u>155</u>	



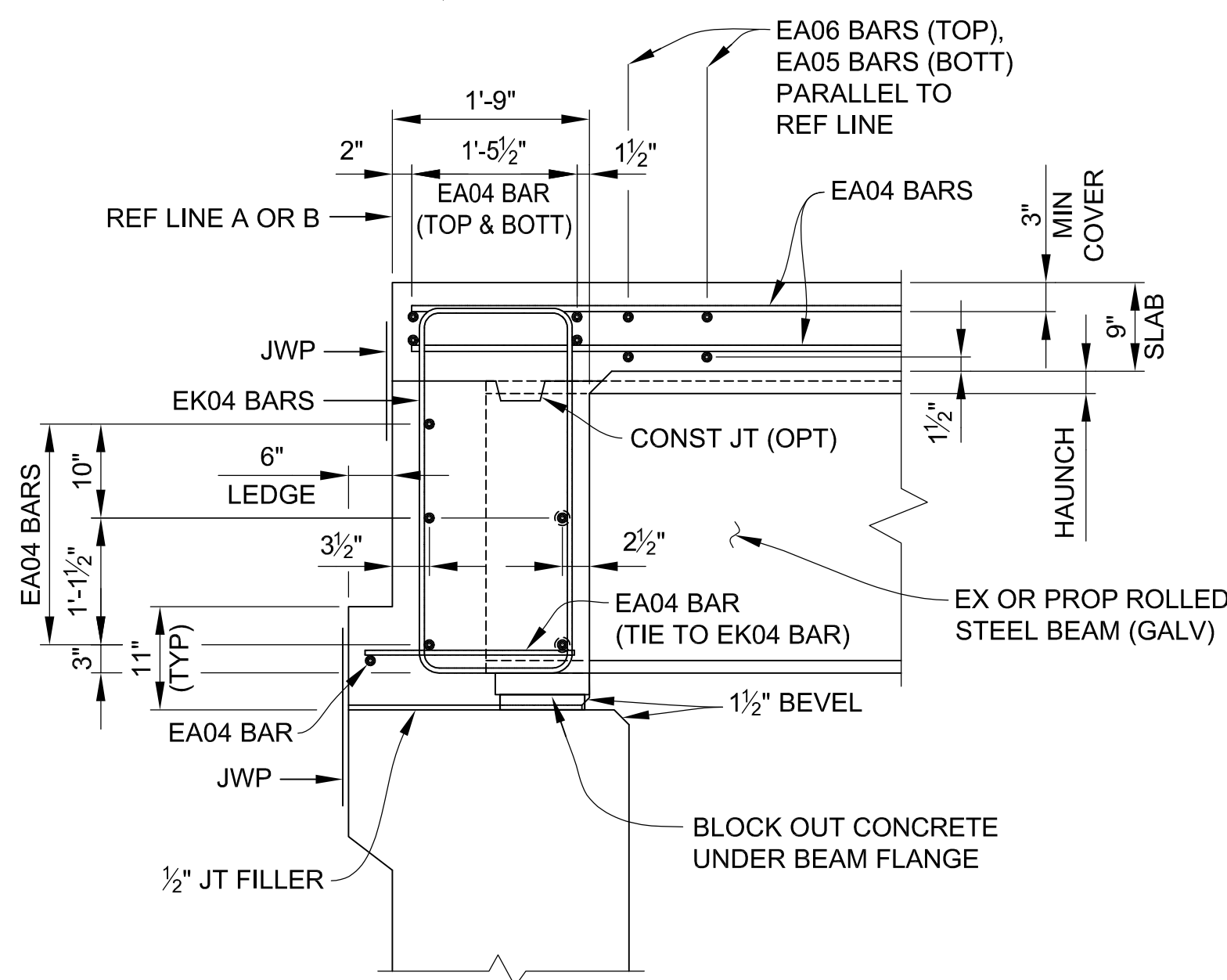
### BACKWALL ELEVATION ABUTMENT A - CONST STAGE 2

(LOOKING UP STATION)  
 \* OPTIONAL CONSTRUCTION JOINT IF BACKWALL IS POURED WITH DECK.



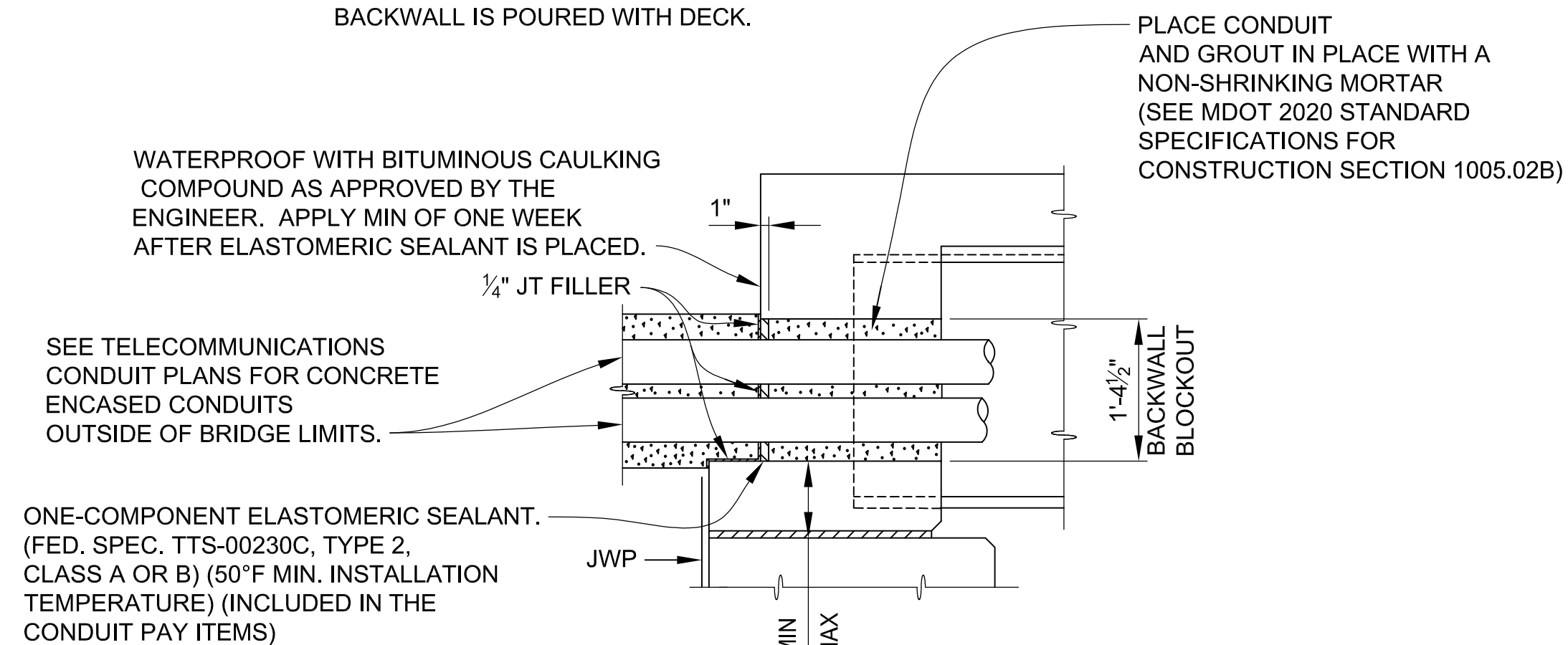
### BACKWALL ELEVATION ABUTMENT A - CONST STAGE 3

(LOOKING UP STATION)  
 \* OPTIONAL CONSTRUCTION JOINT IF BACKWALL IS POURED WITH DECK.



### TYPICAL BACKWALL SECTION

IF A CONSTRUCTION JOINT IS USED, CAST THE LOWER PORTION OF THE BACKWALL PRIOR TO PLACING DECK REINFORCEMENT. THERE WILL BE NO PAYMENT FOR THE REQUIRED JOINT WATERPROOFING.



### BACKWALL CONDUIT INSTALLATION

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

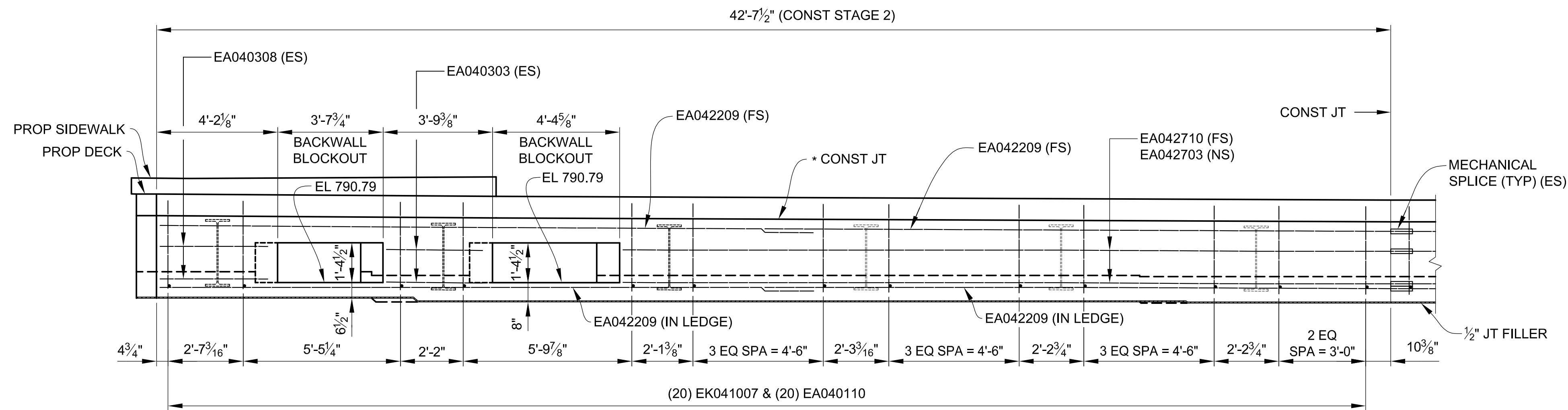
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3 WORKING DAYS  
 BEFORE YOU DIG  
 CALL MISS DIG  
 800-482-7171  
 (TOLL FREE)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>SUPERSTRUCTURE DETAILS</b>	
SCALE HOR. 3/16"=1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR45</b>	
SHEET NO. <u>108</u> OF <u>155</u>	

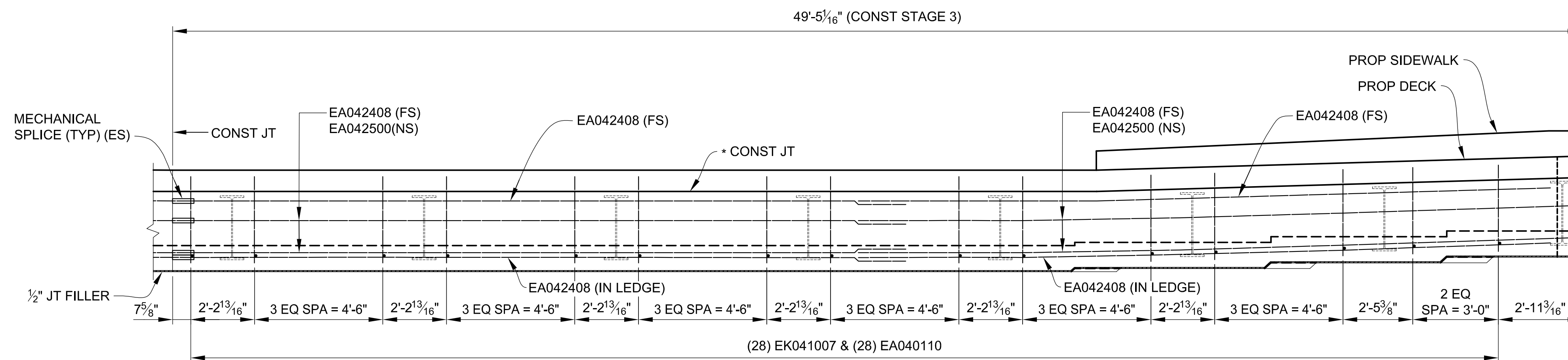
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734



**BACKWALL ELEVATION ABUTMENT B - CONST STAGE 2**

(LOOKING UP STATION)

\* OPTIONAL CONSTRUCTION JOINT IF BACKWALL IS POURED WITH DECK.



**BACKWALL ELEVATION ABUTMENT B - CONST STAGE 3**

(LOOKING UP STATION)

\* OPTIONAL CONSTRUCTION JOINT IF BACKWALL IS POURED WITH DECK.

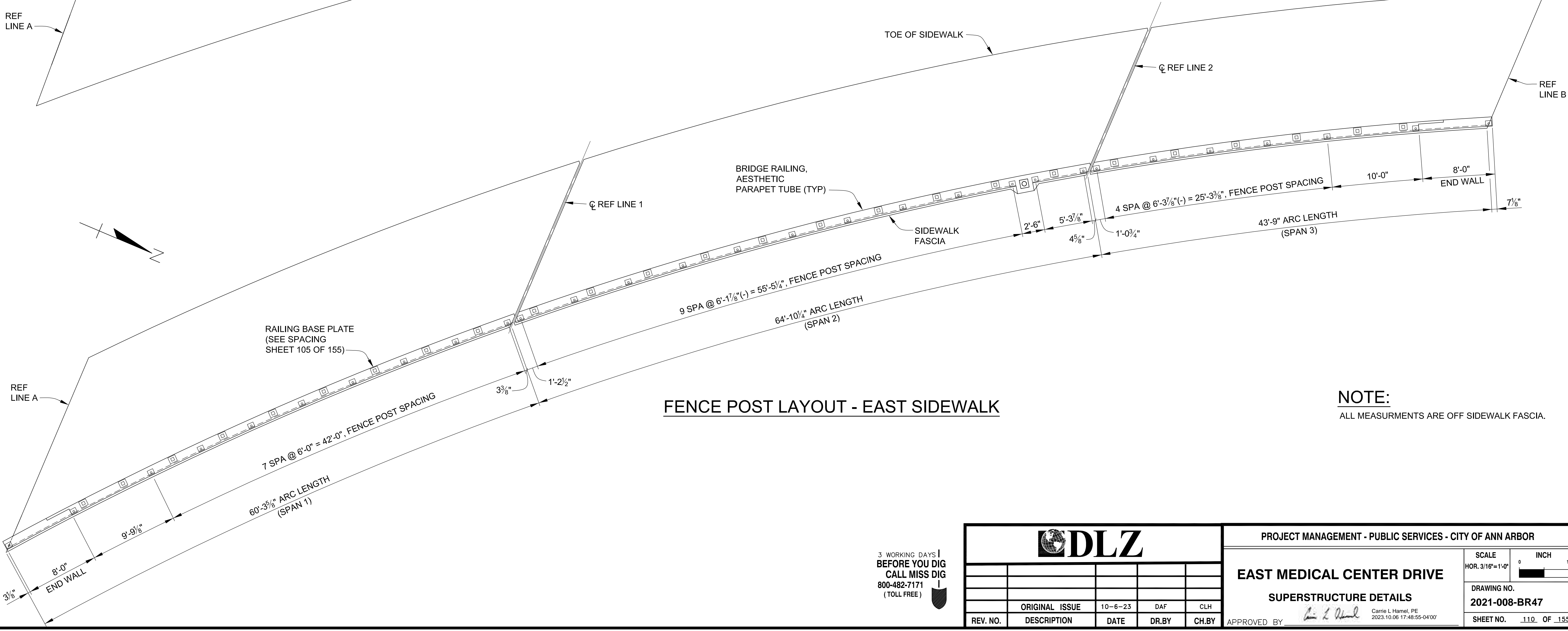
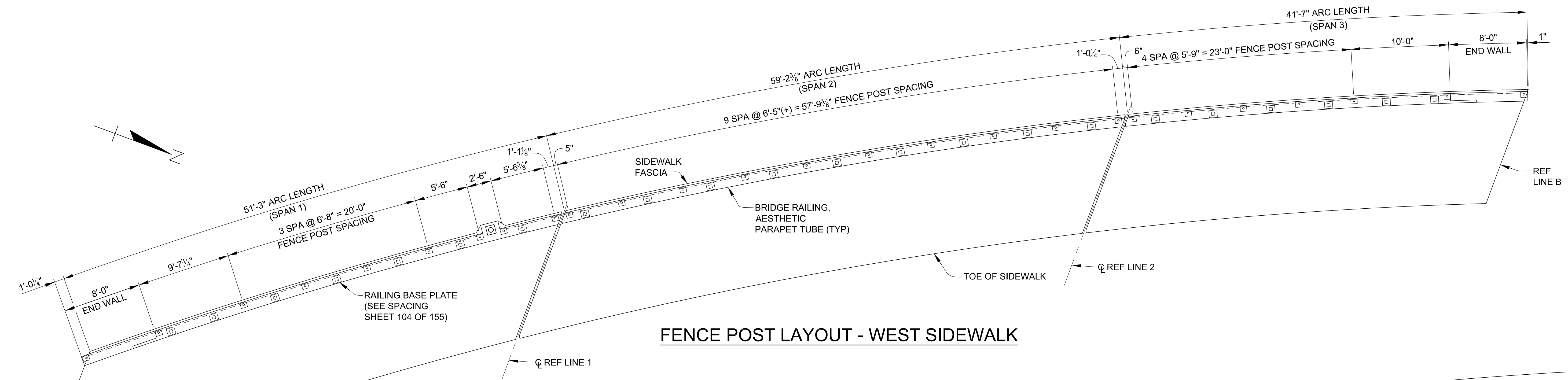
MIN LAP TABLE	
EA03 BARS - 1'-2"	
EA04 BARS - 1'-7"	
EA05 BARS - 2'-0"	
EA06 BARS - 2'-4"	

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<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>SUPERSTRUCTURE DETAILS</b>	
DRAWING NO. <b>2021-008-BR46</b>	
SHEET NO. <b>109 OF 155</b>	
APPROVED BY: <i>Carrie L. Hamel</i>	Carrie L. Hamel, PE 2023.10.06 17:48:41-0400

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**NOTE:**  
ALL MEASUREMENTS ARE OFF SIDEWALK FASCIA.

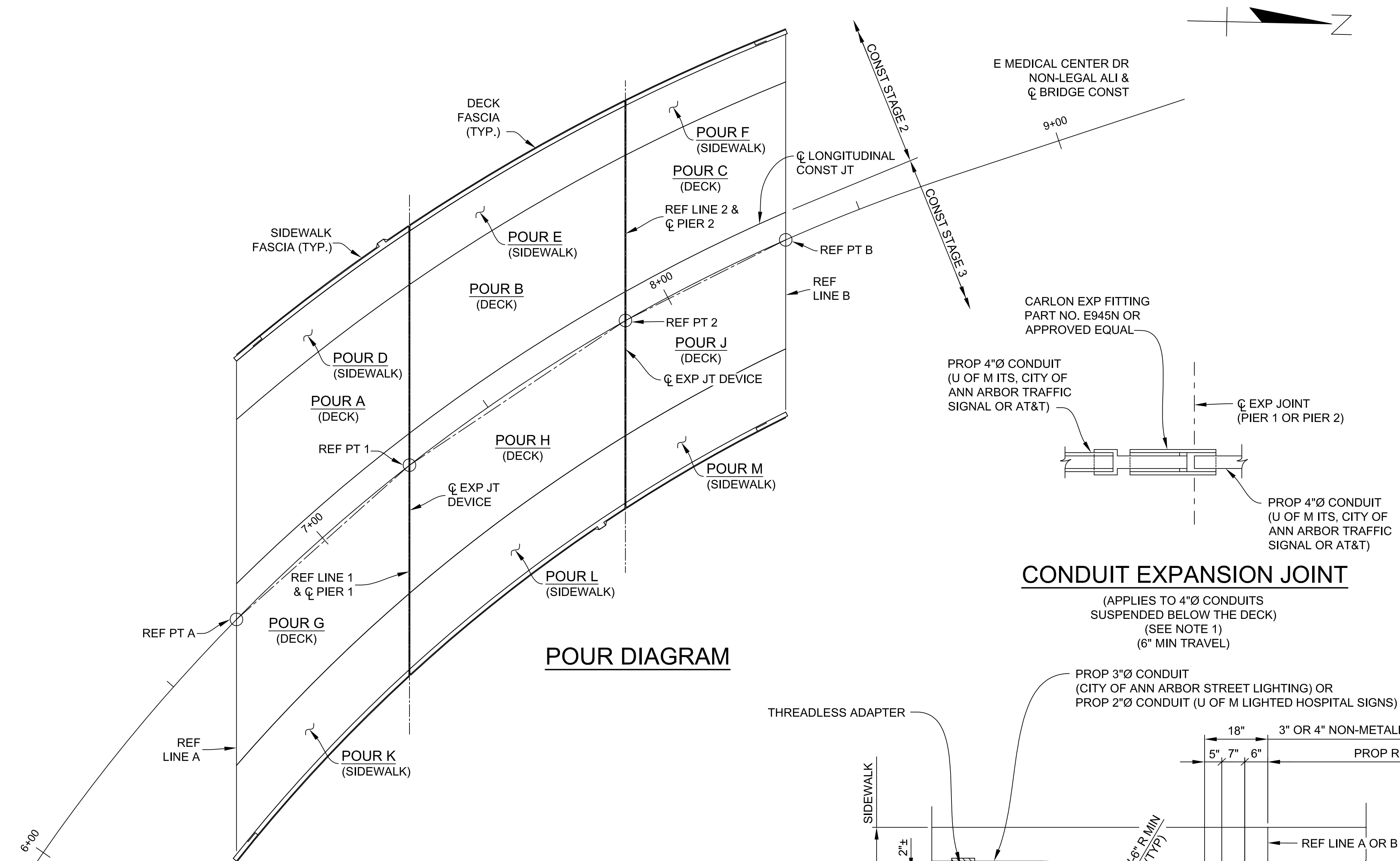
3 WORKING DAYS |  
BEFORE YOU DIG  
CALL MISS DIG  
800-482-7171  
(TOLL FREE)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>SUPERSTRUCTURE DETAILS</b>	
APPROVED BY: <i>Carrie L. Hamel</i>	Carrie L. Hamel, PE 2023.10.06 17:48:55-04100
SCALE HOR. 3/16"=1'-0"	INCH 0 1
DRAWING NO. <b>2021-008-BR47</b>	SHEET NO. <u>110</u> OF <u>155</u>

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

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SUPERSTRUCTURE CONCRETE QUANTITIES	
POUR	QUANTITY (CYDS)(CATG 0001)
D	14.3
E	16.5
F	11.6
K	25.5
L	27.5
M	18.6
TOTAL	114

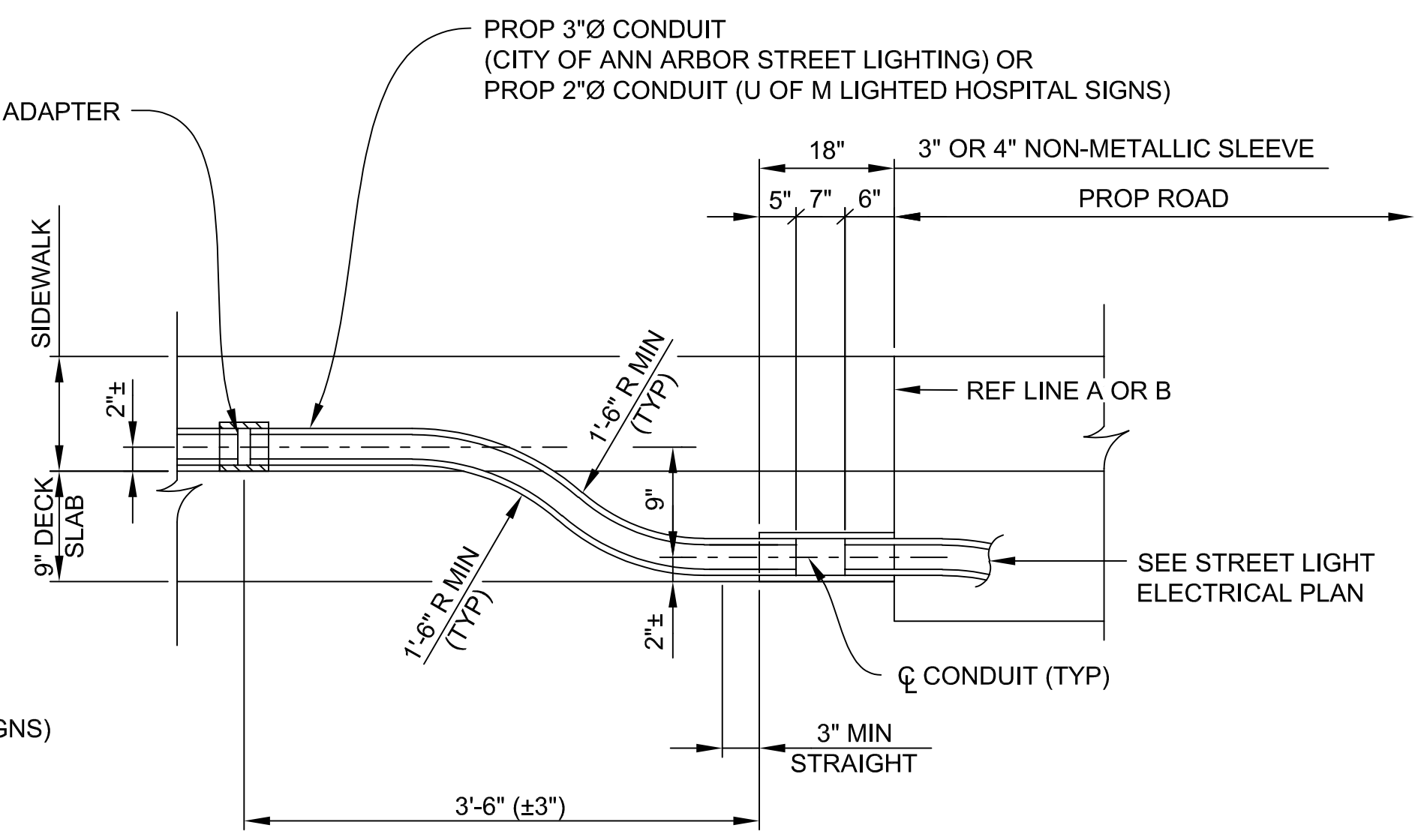
SUPERSTRUCTURE CONCRETE NIGHT CASTING QUANTITIES		
POUR	QUANTITY (CYDS)(CATG 0001)	QUANTITY (CYDS)(CATG 0002)
* A	50.7	25.7
B	48.1	24.5
* C	37.8	20.8
* G	98.6	
H	83.3	
* J	68.5	
TOTAL	387	71

\* BACKWALL INCLUDED IN THE POUR.

ESTIMATED QUANTITIES THIS SHEET				
DESCRIPTION	UNITS	CATG 0001	CATG 0002	TOTAL
Bridge Deck Formwork	SF	100	0	100
Bridge Deck Reinforcement	CY	100	0	100
Bridge Deck Concrete	CY	100	0	100
Bridge Deck Formwork	SF	0	100	100
Bridge Deck Reinforcement	CY	0	100	100
Bridge Deck Concrete	CY	0	100	100
Bridge Deck Formwork	SF	100	0	100
Bridge Deck Reinforcement	CY	100	0	100
Bridge Deck Concrete	CY	100	0	100
Bridge Deck Formwork	SF	0	100	100
Bridge Deck Reinforcement	CY	0	100	100
Bridge Deck Concrete	CY	0	100	100
Bridge Deck Formwork	SF	100	0	100
Bridge Deck Reinforcement	CY	100	0	100
Bridge Deck Concrete	CY	100	0	100
Bridge Deck Formwork	SF	0	100	100
Bridge Deck Reinforcement	CY	0	100	100
Bridge Deck Concrete	CY	0	100	100
Bridge Deck Formwork	SF	100	0	100
Bridge Deck Reinforcement	CY	100	0	100
Bridge Deck Concrete	CY	100	0	100

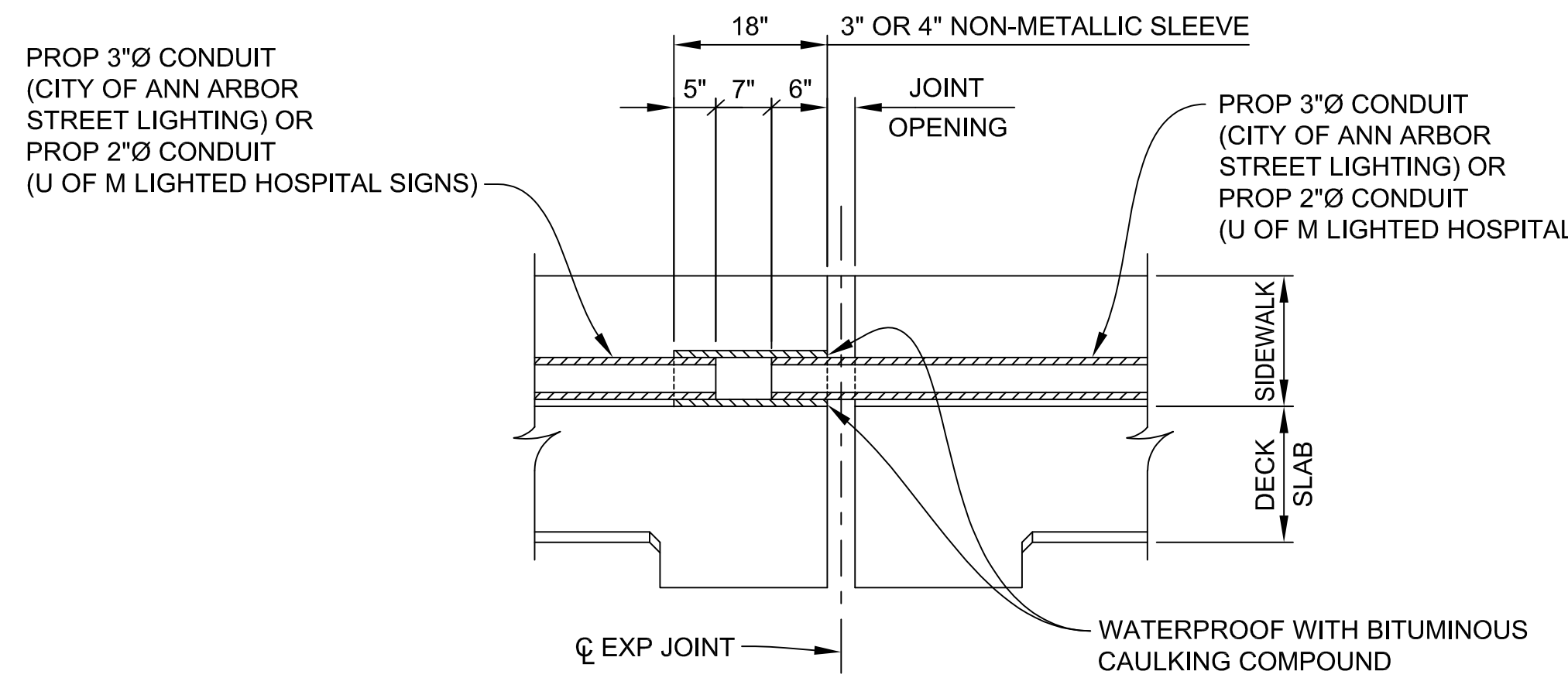
**CONDUIT EXPANSION JOINT**

(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)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**EAST MEDICAL CENTER DRIVE**

**SUPERSTRUCTURE DETAIL**

DRAWING NO. **2021-008-BR48**

SHEET NO. **111** OF **155**

APPROVED BY: *Carrie L. Hamel, P.E.*

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

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

## BOTTOM OF SLAB ELEVATIONS

		REF. A						REF. 1						REF. 2						REF. B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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		0	1	2	3	4	5	6	0	1	2	3	4	5	6	7	0	1	2	3	4	5	0	1	2	3	4	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
BB	FASCIA	800.85	800.56	800.25	799.91	799.55	799.16	798.75	798.64	798.25	797.84	797.40	796.93	796.45	795.97	795.48	795.37	794.92	794.48	794.03	793.56	793.10	800.83	800.54	800.24	799.90	799.54	799.15	798.73	798.63	798.24	797.83	797.39	796.92	796.44	795.95	795.46	795.35	794.91	794.46	794.00	793.54	793.07	800.87	800.60	800.30	799.97	799.61	799.21	798.80	798.69	798.31	797.91	797.47	797.01	796.51	796.00	795.49	795.37	794.92	794.47	794.00	793.53	793.05	800.83	800.56	800.27	799.94	799.57	799.18	798.76	798.66	798.28	797.88	797.44	796.97	796.47	795.97	795.45	795.34	794.90	794.44	793.98	793.50	793.02	800.87	800.60	800.30	799.98	799.62	799.23	798.82	798.72	798.34	797.93	797.50	797.03	796.52	796.01	795.49	795.37	794.91	794.45	793.98	793.49	793.00	800.84	800.57	800.28	799.95	799.59	799.21	798.80	798.70	798.31	797.91	797.47	797.00	796.50	795.98	795.46	795.34	794.89	794.43	793.95	793.47	792.98	800.86	800.69	800.44	800.14	799.76	799.34	798.84	798.75	798.45	798.09	797.67	797.18	796.65	796.08	795.50	795.38	794.89	794.41	793.93	793.45	792.97	800.84	800.67	800.41	800.11	799.74	799.31	798.81	798.72	798.42	798.06	797.64	797.15	796.62	796.05	795.47	795.35	794.87	794.38	793.90	793.42	792.94	800.86	800.70	800.45	800.15	799.78	799.36	798.87	798.78	798.47	798.12	797.70	797.20	796.68	796.10	795.51	795.39	794.90	794.41	793.92	793.43	792.94	800.84	800.67	800.43	800.13	799.76	799.34	798.84	798.75	798.45	798.09	797.67	797.17	796.66	796.08	795.49	795.37	794.87	794.38	793.89	793.40	792.92	800.86	800.70	800.46	800.17	799.80	799.39	798.90	798.80	798.50	798.15	797.73	797.24	796.72	796.14	795.54	795.41	794.91	794.41	793.91	793.41	792.92	800.83	800.67	800.43	800.14	799.78	799.36	798.87	798.78	798.48	798.12	797.71	797.22	796.69	796.11	795.51	795.39	794.88	794.38	793.88	793.39	792.89	800.85	800.70	800.47	800.18	799.83	799.41	798.93	798.83	798.54	798.20	797.79	797.32	796.79	796.20	795.57	795.44	794.93	794.42	793.91	793.40	792.90	800.82	800.67	800.44	800.16	799.80	799.39	798.90	798.81	798.52	798.18	797.76	797.29	796.77	796.17	795.54	795.41	794.90	794.39	793.88	793.38	792.88	800.84	800.70	800.47	800.19	799.84	799.44	798.96	798.86	798.58	798.24	797.83	797.36	796.83	796.24	795.61	795.47	794.95	794.43	793.92	793.40	792.89	800.81	800.67	800.45	800.17	799.82	799.41	798.93	798.83	798.55	798.21	797.80	797.33	796.81	796.22	795.58	795.45	794.93	794.41	793.89	793.38	792.86	800.82	800.69	800.48	800.21	799.86	799.46	798.99	798.89	798.61	798.28	797.87	797.40	796.88	796.29	795.65	795.51	794.99	794.46	793.94	793.41	792.90	800.80	800.67	800.45	800.18	799.84	799.44	798.96	798.86	798.59	798.25	797.84	797.37	796.85	796.26	795.63	795.49	794.96	794.44	793.91	793.39	792.87	800.80	800.68	800.48	800.22	799.88	799.49	799.02	798.92	798.65	798.33	797.93	797.47	796.95	796.35	795.70	795.56	795.03	794.49	793.95	793.42	792.89	800.78	800.66	800.45	800.19	799.86	799.46	798.99	798.89	798.63	798.31	797.91	797.45	796.92	796.33	795.67	795.53	795.00	794.46	793.93	793.39	792.87	800.78	800.67	800.47	800.22	799.90	799.51	799.05	798.95	798.69	798.37	797.98	797.52	797.00	796.40	795.75	795.60	795.07	794.52	793.98	793.44	792.90	800.75	800.64	800.45	800.20	799.87	799.49	799.02	798.92	798.66	798.35	797.95	797.49	796.97	796.38	795.73	795.58	795.04	794.50	793.95	793.41	792.87	800.75	800.68	800.52	800.30	800.00	799.63	799.17	799.01	798.78	798.49	798.11	797.67	797.15	796.56	795.90	795.67	795.15	794.62	794.07	793.52	792.98	800.72	800.65	800.50	800.27	799.97	799.60	799.15	798.99	798.76	798.46	798.09	797.64	797.13	796.53	795.87	795.64	795.12	794.59	794.05	793.50	792.95	800.86	800.81	800.67	800.46	800.18	799.82	799.38	799.20	799.01	798.74	798.38	797.94	797.42	796.82	796.14	795.89	795.40	794.89	794.32	793.74	793.18	800.84	800.79	800.65	800.44	800.15	799.80	799.36	799.18	798.99	798.71	798.36	797.92	797.40	796.79	796.11	795.87	795.38	794.86	794.30	793.72	793.15	800.99	800.95	800.81	800.60	800.31	799.95	799.50	799.40	799.20	798.92	798.55	798.10	797.57	796.95	796.26	796.13	795.63	795.11	794.53	793.95	793.37	FASCIA	801.04	800.99	800.84	800.63	800.34	799.99	799.55	799.46	799.25	798.95	798.58	798.13	797.61	797.01	796.34	796.21	795.69	795.14	794.55	793.96	793.38

## BULKHEAD ELEVATIONS

LOCATION	CONST. JT. A	EXP. JT. 1	EXP. JT. 2	CONST. JT. B
WEST FASCIA	801.64	799.45	796.18	793.93
GRADE BREAK/WEST SIDEWALK	801.64	799.46	796.17	793.89
TOE/WEST SIDEWALK	801.64	799.49	796.17	793.82
LONG CONST. JT.	801.63	799.61	796.24	793.61
P/G & BRIDGE C/L	801.61	799.64	796.28	793.59
TOE/EAST SIDEWALK	801.51	799.75	796.45	793.57
EAST FASCIA	801.81	800.26	797.03	794.05

### NOTES:

BOTTOM OF SLAB ELEVATIONS ARE AT RIGHT ANGLES TO THE BEAM CENTERLINE AND ARE BASED ON THE CONDITION THAT THE BEAMS AND DIAPHRAGMS RE COMPLETELY ERCTED WITH NO OTHER LOADS APPLIED. THESE ELEVATIONS INCLUDE ALLOWANCE FOR VERTICAL CURVE AND DEFLECTION DUE TO FORMS, STEEL REINFORCEMENT, CONCRETE SLAB, BRUSHBLOCK AND RAILING.

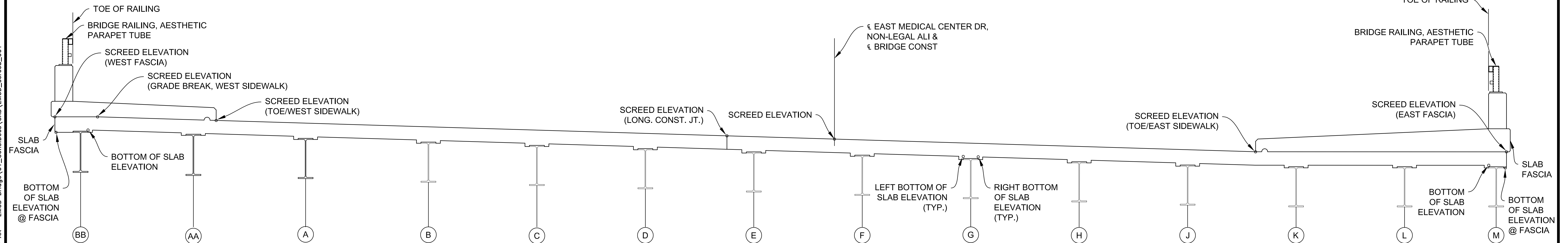
SCREED ELEVATIONS ARE BASED ON THE CONDITION THAT NO SLAB CONCRETE HAS BEEN CAST AND THAT FORMWORK AND STEEL REINFORCEMENT ARE IN PLACE.

SCREED RAILS FOR FINISHIG OF STRUCTURAL CONCRETE SHALL BE LOCATED OVER FASCIA BEAMS.

SECTIONS FOR BOTTOM OF SLAB AND/OR SCREED ELEVATIONS ARE GIVEN ALONG BEAM CENTERLINES FROM CENTERLINE OF BEARING TO CENTERLINE OF BEARING AT EQUAL SPACINGS.

## SCREED ELEVATIONS

		REF. A						REF. 1						REF. 2						REF. B																																																																																																																														
		SPAN 1												SPAN 2												SPAN 3																																																																																																																								
		0	1	2	3	4	5	6	0	1	2	3	4	5	6	7	0	1	2	3	4	5	0	1	2	3	4	5																																																																																																																						
WEST FASCIA	801.48	801.19	800.88	800.54	800.18	799.79	799.38	799.27	798.88	798.47	798.03	797.56	797.08	796.60	796.11	796.00	795.55	795.11	794.66	794.19	793.73	801.60	801.31	801.01	800.67	800.31	799.92	799.51	799.41	799.01	798.60	798.16	797.69	797.21	796.72	796.22	796.11	795.66	795.21	794.76	794.29	793.82	801.60	801.33	801.03	800.71	800.34	799.95	799.54	799.43	799.05	798.65	798.21	797.74	797.25	796.74	796.22	796.11	795.66	795.20	794.73	794.25	793.77	801.59	801.44	801.20	800.91	800.55	800.14	799.66	799.56	799.27	798.92	798.51	798.04	797.51	796.92	796.30	796.17	795.66	795.15	794.65	794.14	793.64	801.58	801.43	801.21	800.93	800.57	800.17	799.68	799.59	799.30	798.96	798.54	798.07	797.55	796.96	796.33	796.20	795.68	795.17	794.65	794.14	793.63	801.48	801.39	801.21	800.96	800.64	800.26	799.80	799.71	799.45	799.13	798.73	798.28	797.76	797.16	796.52	796.39	795.84	795.29	794.74	794.19	793.64	801.64	801.59	801.45	801.23	800.94	800.59	800.16	800.07	799.85	799.56	799.18	798.73	798.21	797.61	796.95	796.44	795.89	795.30	794.71	794.13



**TYPICAL DECK SECTION - SHOWING LOCATION OF SCREED AND BOTTOM OF SLAB ELEVATIONS**

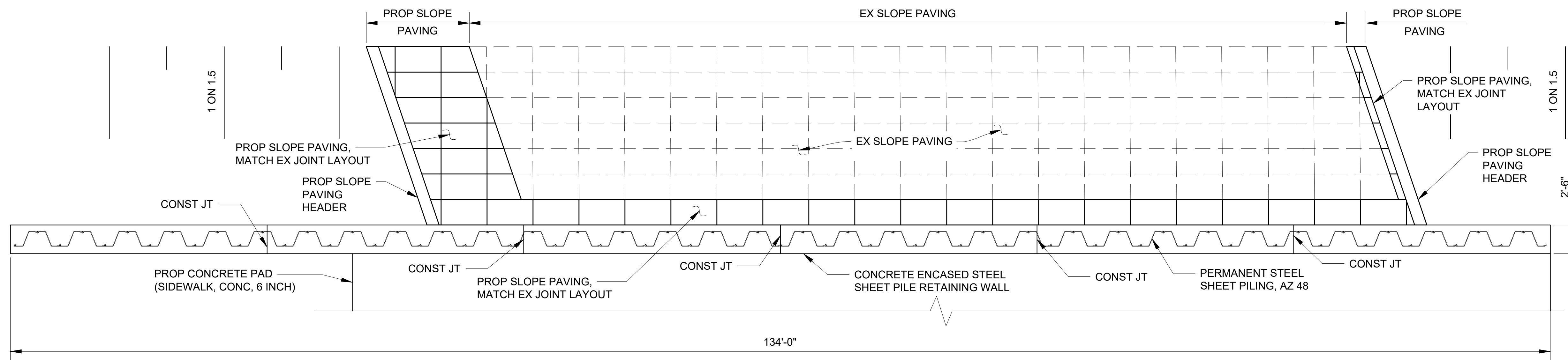
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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR				
<b>EAST MEDICAL CENTER DRIVE</b>				
<b>SLAB AND SCREED DETAILS</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	DAF	CLH
APPROVED BY: <i>[Signature]</i> Carrie L. Hamel, PE 2023.10.06 17:49:22-04007				
				SCALE HOR. 3/8"=1'-0"
				INCH 0 1
				DRAWING NO. <b>2021-008-BR49</b>
				SHEET NO. <b>112</b> OF <b>155</b>

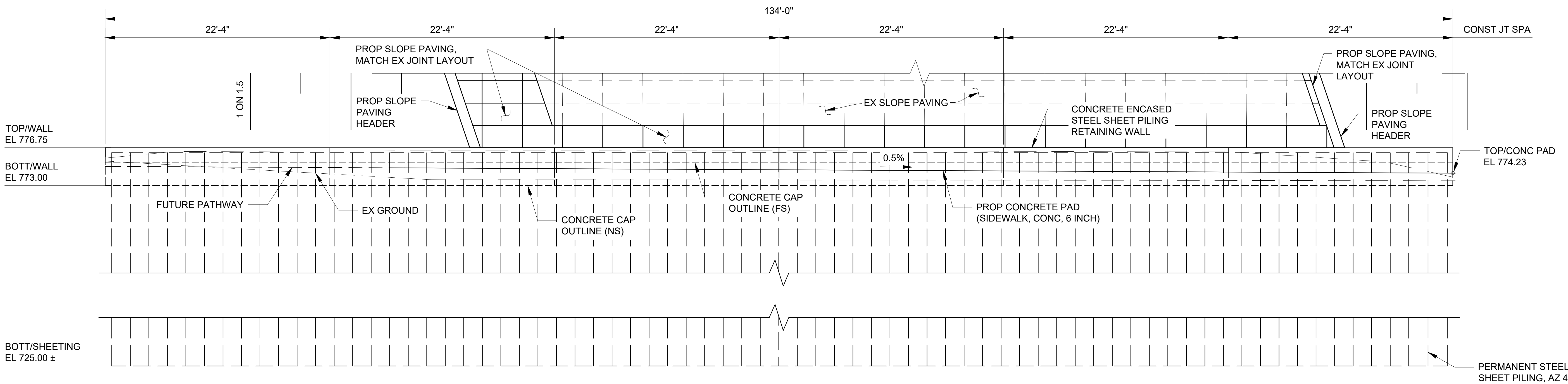
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PLAN



ELEVATION

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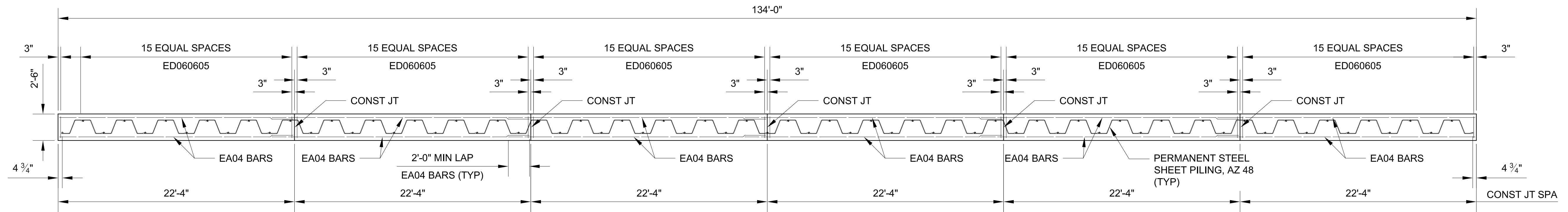
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800-482-7171  
(TOLL FREE)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	SBV	KJS

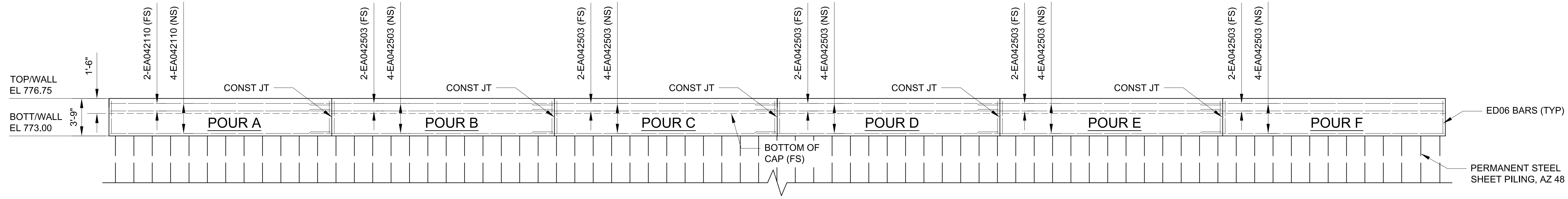
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>RETAINING WALL DETAILS</b>	
SCALE NTS	INCH 0 1
DRAWING NO. <b>2021-008-BR51</b>	
SHEET NO. <b>.114 OF .155</b>	

APPROVED BY: *[Signature]*  
Carrie L. Hamel, PE  
2023.10.06 17:49:52-04'00"

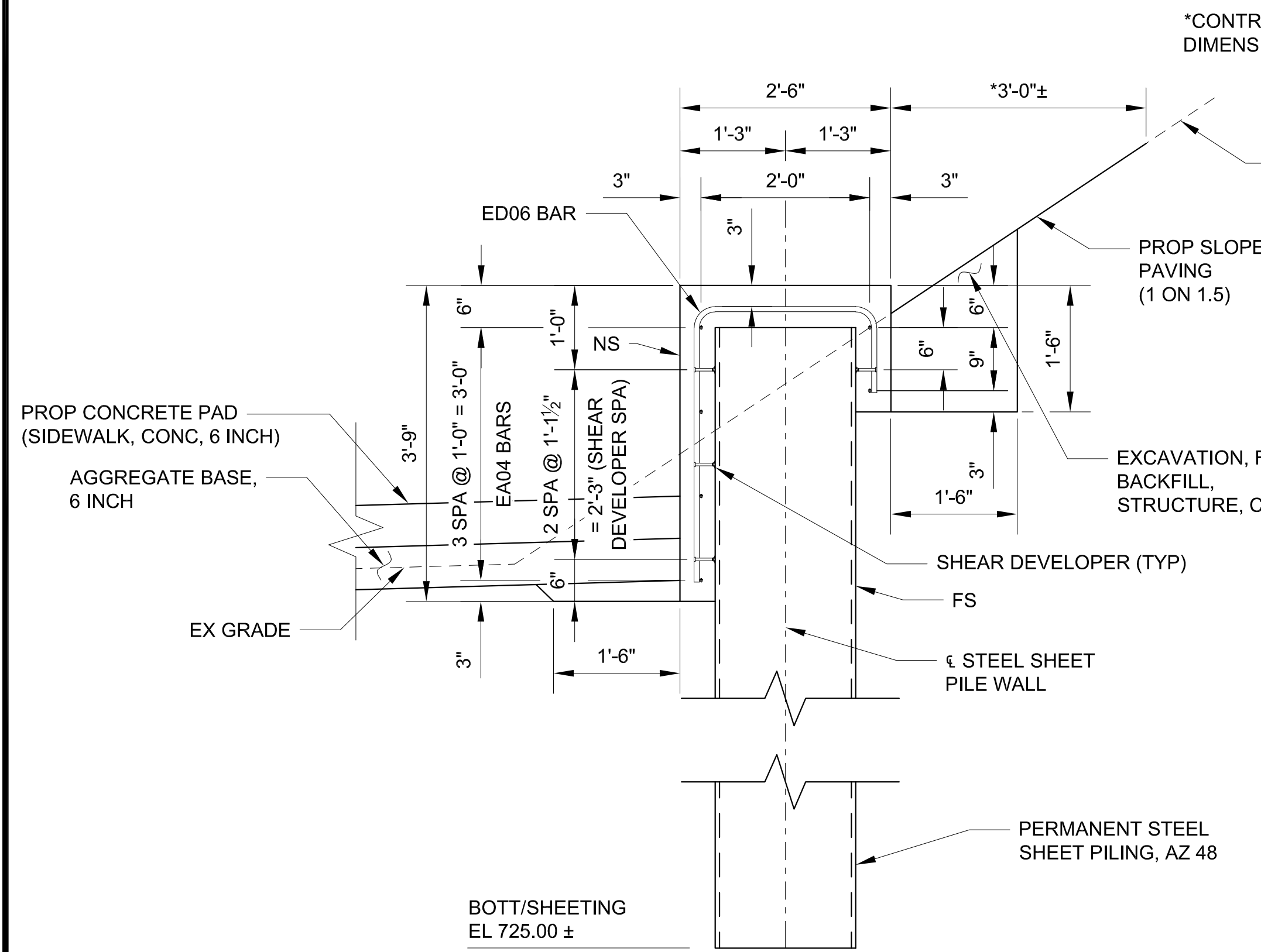
CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734



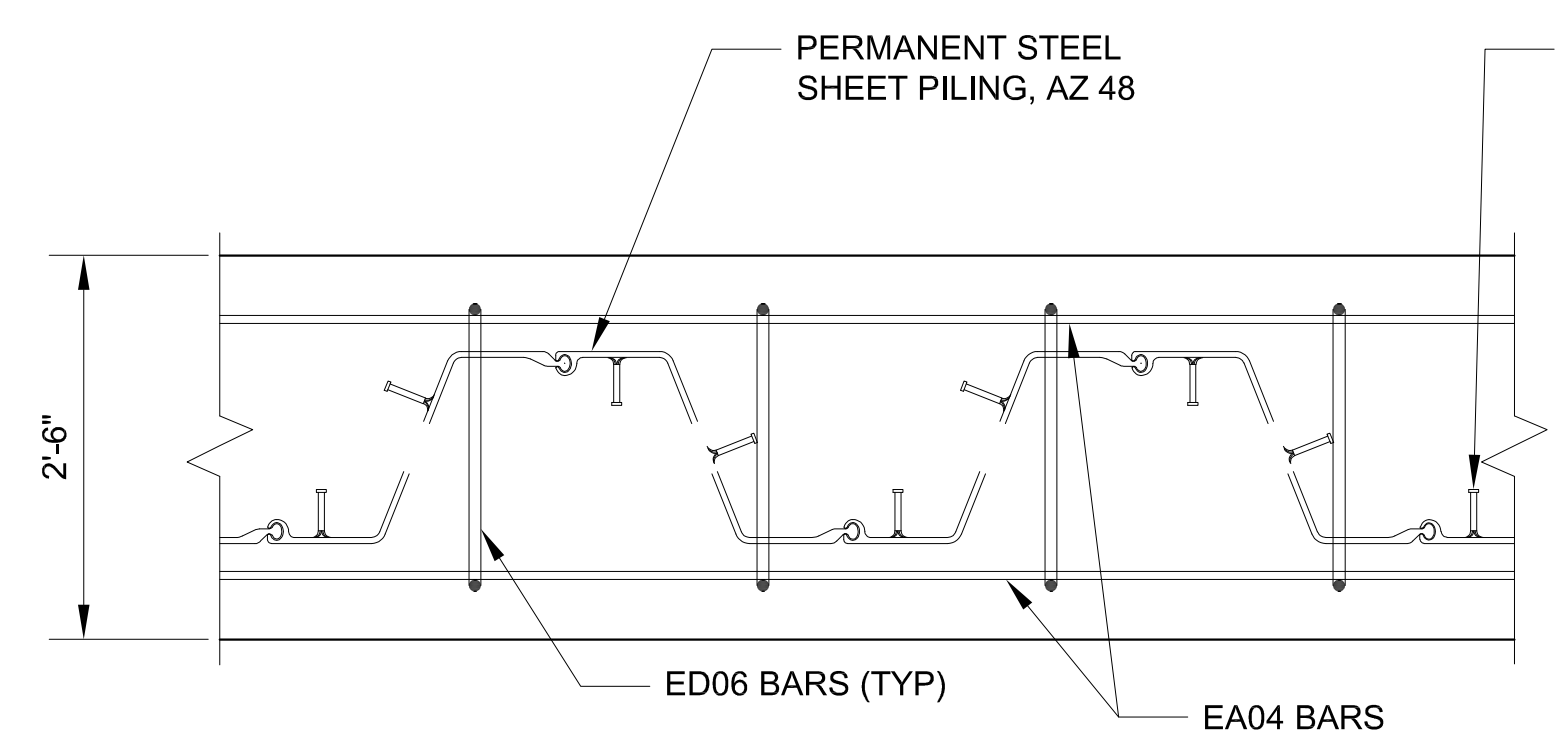
PLAN



ELEVATION



TYPICAL WALL SECTION



PARTIAL PLAN OF CONCRETE CAP

**CONC, GRADE 4500 QUANTITIES\*\***

POUR	CYD
A	5.5
B	5.5
C	5.5
D	5.5
E	5.5
F	5.5
<b>TOTAL</b>	<b>33.0</b>

\*\* FOR INFORMATION ONLY

**ESTIMATED QUANTITIES THIS SHEET**

DESCRIPTION	UNITS	CATG 0001	CATG 0002	CATG 0003	TOTAL
Sand Subbase Course, Class II, CIP	Cyd			35	35
Steel Sheet Piling, Permanent	Sft			6,870	6,870
Conc, Grade 4500	Cyd			33	33
Shear Developers (STR 11065)	LSUM			0.25	0.25
Concrete Sidewalk, 6 inch	Sft			1,880	1,880

**NOTES:**

- NS DENOTES NEAR SIDE.
- FS DENOTES FAR SIDE.
- FOR BEVEL AND MOLDING DETAILS, SEE MDOT STANDARD PLAN B-103 SERIES.
- VERTICAL SURFACES OF THE CONCRETE WALL ENCASUREMENT SHALL BE FORMED AND CAST VERTICAL, AND CENTERED ON THE STEEL SHEET PILING, AFTER BACKFILLING, AS NOTED ABOVE.
- SHEAR DEVELOPERS SHALL BE 3/4" DIAMETER HEADED STUDS AND 3 INCHES IN LENGTH, AND SHALL BE WELDED ALL-AROUND TO THE STEEL SHEET PILING.
- ALL PERMANENT STEEL SHEET PILING SHALL BE AZ 48. WHERE ALLOWED BY THE ENGINEER, SELECT ALTERNATE HOT ROLLED SHEET PILING WITH A NOMINAL SECTION MODULUS OF AT LEAST 89.3 IN<sup>3</sup>/FT.
- PROVIDE HOT ROLLED PERMANENT STEEL SHEET PILING. DO NOT USE COLD ROLLED PILING.
- LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03J OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE BID ITEM "CONC, GRADE 4500".
- SHOES SHALL BE REQUIRED FOR PROP SHEET PILING DUE TO THE ANTICIPATED PRESENCE OF COBBLES/BOULDERS DURING DRIVING.

3 WORKING DAYS BEFORE YOU DIG  
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<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	SBV	KJS

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**EAST MEDICAL CENTER DRIVE**

**RETAINING WALL DETAILS**

APPROVED BY: *Carrie L. Hamel, PE*  
Carrie L. Hamel, PE  
2023.10.06 17:50:06-0400

SCALE NTS	0 INCH 1
DRAWING NO. <b>2021-008-BR52</b>	SHEET NO. <b>115</b> OF <b>155</b>



30m\pdm-files\Files\Projects\2021\2141\36300 AA - EMCD Bridge\01\_Constr\Docs\CAD\EMCD\_reinforcement\_001

BAR	DIMENSIONS												NO.	TOTAL
	A	B	C	D	E	F	G	H	J	K	M	P		
EA050400	4'-0"												6	25
EA051103	11'-3"												16	188
EA052010	20'-10"												6	130
EA052607	26'-7"												6	166
EA053105	31'-5"												6	197
EA053211	32'-11"												6	206
EA060306	3'-6"												22	116
EA060607	6'-7"												2	20
EA060806	8'-6"												34	434
EA061006	10'-6"												4	63
EA061010	10'-10"												2	33
EA061106	11'-6"												24	415
EA061107	11'-7"												4	70
EA061300	13'-0"												15	293
EA062007	20'-7"												2	62
EA080900	9'-0"												8	192
EA081710	17'-10"												8	381
EA092301	23'-1"												5	392
EA092310	23'-10"												5	405
EA092607	26'-7"												10	904
EA093211	32'-11"												10	1120
EA093307	33'-7"												5	571
EA093404	34'-4"												5	584
ED050804	2'-6"	3'-4"	2'-6"										95	826
EK051305	2'-2 1/2"	2'-9"	2'-9"	3'-6"									190	2659
EU051106	3'-11"	2'-8 1/8"	6'-1 3/4"	2'-8 1/8"	1'-10 7/8"								8	96
EU051207	3'-5"	3'-7 1/4"	5'-4 1/2"	3'-7 1/4"	1'-7 7/8"								12	157
EV040804	6'-3"	2'-1"	0'-11 1/2"	0'-0"	0'-0"								16	89

PIER 1

PIER 2

BAR	DIMENSIONS												NO.	TOTAL
	A	B	C	D	E	F	G	H	J	K	M	P		
EA050401	4'-1"												6	26
EA051103	11'-3"												16	188
EA051910	19'-10"												6	124
EA052402	24'-2"												6	151
EA052808	28'-8"												6	179
EA052909	29'-9"												6	186
EA060306	3'-6"												22	116
EA060510	5'-10"												2	18
EA060806	8'-6"												34	434
EA061006	10'-6"												4	63
EA061010	10'-10"												2	33
EA061106	11'-6"												24	415
EA061107	11'-7"												4	70
EA061300	13'-0"												15	293
EA061907	19'-7"												2	59
EA080900	9'-0"												8	192
EA081305	13'-5"												8	287
EA092200	22'-0"												5	374
EA092209	22'-9"												5	387
EA092402	24'-2"												10	822
EA092808	28'-8"												10	974
EA093111	31'-11"												5	543
EA093208	32'-8"												5	555
ED050804	2'-6"	3'-4"	2'-6"										89	774
EK051305	2'-2 1/2"	2'-9"	2'-9"	3'-6"									178	2491
EU051106	3'-11"	2'-8 1/8"	6'-1 3/4"	2'-8 1/8"	1'-10 7/8"								8	96
EU051207	3'-5"	3'-7 1/4"	5'-4 1/2"	3'-7 1/4"	1'-7 7/8"								12	157
EV040804	6'-3"	2'-1"	0'-11 1/2"	0'-0"	0'-0"								11	61

\*Threaded

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 (TOLL FREE)

<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	CLH	KJS

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>STEEL REINFORCEMENT DETAILS</b>	
SCALE HOR. 1"=40' VERT. 1"=4' 	DRAWING NO. <b>2021-008-BR54</b> SHEET NO. <u>117</u> OF <u>155</u>
APPROVED BY 	CARRIE L. HAMEL, P.E. MICHIGAN, P.E. <small>2023.10.06 17:50:51-0400</small>

com\pcc-Files\Projects\2021\2141\736500\_AA - EMCD Bridge\01\_Const\Draw\EMCD\_reinforcement\_001

DECK-SPAN 1

BAR	DIMENSIONS												NO.	TOTAL
	A	B	C	D	E	F	G	H	J	K	M	P		
EA040110	1'-10"												64	79
EA040408	4'-8"												4	12
EA040410	4'-10"												4	13
EA040504	5'-4"												4	14
EA040706	7'-6"												4	20
EA040803	8'-3"												1	6
EA041400	14'-0"												1	9
EA041706	17'-6"												4	47
EA041808	18'-8"												1	12
EA042604	26'-4"												2	35
EA042606	26'-6"												53	939
EA042609	26'-9"												50	893
EA042800	28'-0"												159	2974
EA042803	28'-3"												12	226
EA042806	28'-6"												18	342
EA042909	29'-9"												13	258
EA043007	30'-7"												46	940
EA043008	30'-8"												184	3769
EA043009	30'-9"												4	82
EA043100	31'-0"												12	248
EA043203	32'-3"												4	86
EA043302	33'-2"												8	177
EA043303	33'-3"												8	178
EA043403	34'-3"												2	46
EA043505	35'-5"												2	47
EA050805	8'-5"												1	9
EA051400	14'-0"												1	15
EA051808	18'-8"												1	19
EA052002	20'-2"												40	841
EA052004	20'-4"												36	763
EA052100	21'-0"												41	898
EA052110	21'-10"												19	433
EA052202	22'-2"												21	486
EA052205	22'-5"												32	748
EA052206	22'-6"												42	986
EA052207	22'-7"												41	966
EA052208	22'-8"												33	780
EA052311	23'-11"												42	1048
EA052400	24'-0"												23	576
EA052508	25'-8"												18	482
EA052511	25'-11"												21	568
EA052601	26'-1"												25	680
EA052605	26'-5"												29	799
EA052606	26'-6"												4	111
EA052705	27'-5"												20	572
EA052804	28'-4"												4	118
EA052904	29'-4"												4	122
EA053011	30'-11"												4	129
EA053300	33'-0"												4	138
EA053506	35'-6"												1	37

DECK-SPAN 1 (CONT.)

BAR	DIMENSIONS												NO.	TOTAL
	A	B	C	D	E	F	G	H	J	K	M	P		
EA060103	1'-3"												2	4
EA061103	11'-3"												100	1690
EA061201	12'-1"												10	181
EA061205	12'-5"												10	186
EA061307	13'-7"												2	41
EA061309	13'-9"												106	2189
EA061409	14'-9"												2	44
EA061504	15'-4"												14	322
EA061604	16'-4"												16	393
EA061902	19'-2"												2	58
EA062004	20'-4"												40	1222
EA062006	20'-6"												36	1108
EA062102	21'-2"												41	1303
EA062110	21'-10"												19	623
EA062202	22'-2"												21	699
EA062204	22'-4"												2	67
EA062207	22'-7"												32	1085
EA062208	22'-8"												42	1430
EA062209	22'-9"												41	1401
EA062210	22'-10"												33	1132
EA062400	24'-0"												23	829
EA062401	24'-1"												42	1519
EA062508	25'-8"												18	694
EA062511	25'-11"												21	817
EA062601	26'-1"												21	823
EA062603	26'-3"												4	158
EA062605	26'-5"												29	1151
EA062705	27'-5"												20	824
EA062806	28'-6"												4	171
EA062906	29'-6"												4	177
EA063302	33'-2"												4	199
ED040211	0'-10 3/4"	1'-1 1/2"	0'-10 3/4"										131	255
ED040308	1'-1 3/4"	1'-4 1/2"	1'-1 3/4"										3	7
ED040503	1'-1 1/2"	3'-0"	1'-1 1/2"										2	7
ED050500	4'-0"	0'-6"	0'-6"										236	1231
EK041003	1'-4 1/2"	2'-3 1/2"	2'-3 1/2"	2'-11"									64	438
EK041005	0'-7 1/4"	2'-11 3/4"	2'-11 3/4"	3'-3"									2	14
EK041201	2'-3 1/2"	2'-3 1/2"	2'-3 1/2"	2'-11"									1	8
EL040706	2'-2"	0'-7"	2'-5"	1'-2"	1'-2"	0'-7"	0'-0"						69	346
EL040707	2'-2"	0'-7"	2'-6"	1'-2"	1'-2"	0'-7"	0'-0"						83	420
EL061011	3'-10 1/2"	0'-6 3/4"	4'-1 1/2"	1'-2 1/8"	1'-2 1/8"	0'-0"	0'-6 3/4"						4	66
EL061100	3'-10 1/2"	0'-6 3/4"	4'-2 1/2"	1'-2 1/8"	1'-2 1/8"	0'-0"	0'-6 3/4"						4	66
EL061101	4'-1 1/2"	0'-7 1/4"	3'-10 1/2"	1'-2 3/8"	1'-2 3/8"	0'-7 1/4"	0'-0"						7	116
EL061101	4'-2 1/2"	0'-7 1/4"	3'-10 1/2"	1'-2 3/8"	1'-2 3/8"	0'-7 1/4"	0'-0"						7	117
ET060703	1'-0"	1'-4"	1'-0"	1'-8"	0'-6"	0'-9"							61	664
ET060800	1'-0"	1'-4"	1'-4 1/2"	1'-8"	0'-7"	0'-8"							72	865
EW040601	1'-8"	0'-4 3/4"	1'-7 1/2"	0'-4 3/4"	1'-8"	0'-4 3/4"	0'-6 3/4"	0'-6 3/4"	0'-4 3/4"				2	8
EW040609	1'-8"	0'-7 3/4"	1'-7"	0'-7 3/4"	1'-8"	0'-7 7/8"	0'-11"	0'-11"	0'-7 7/8"				2	9

\*Threaded

3 WORKING DAYS  
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(TOLL FREE)

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23	CLH	KJS

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**EAST MEDICAL CENTER DRIVE**

**STEEL REINFORCEMENT DETAILS**

APPROVED BY:

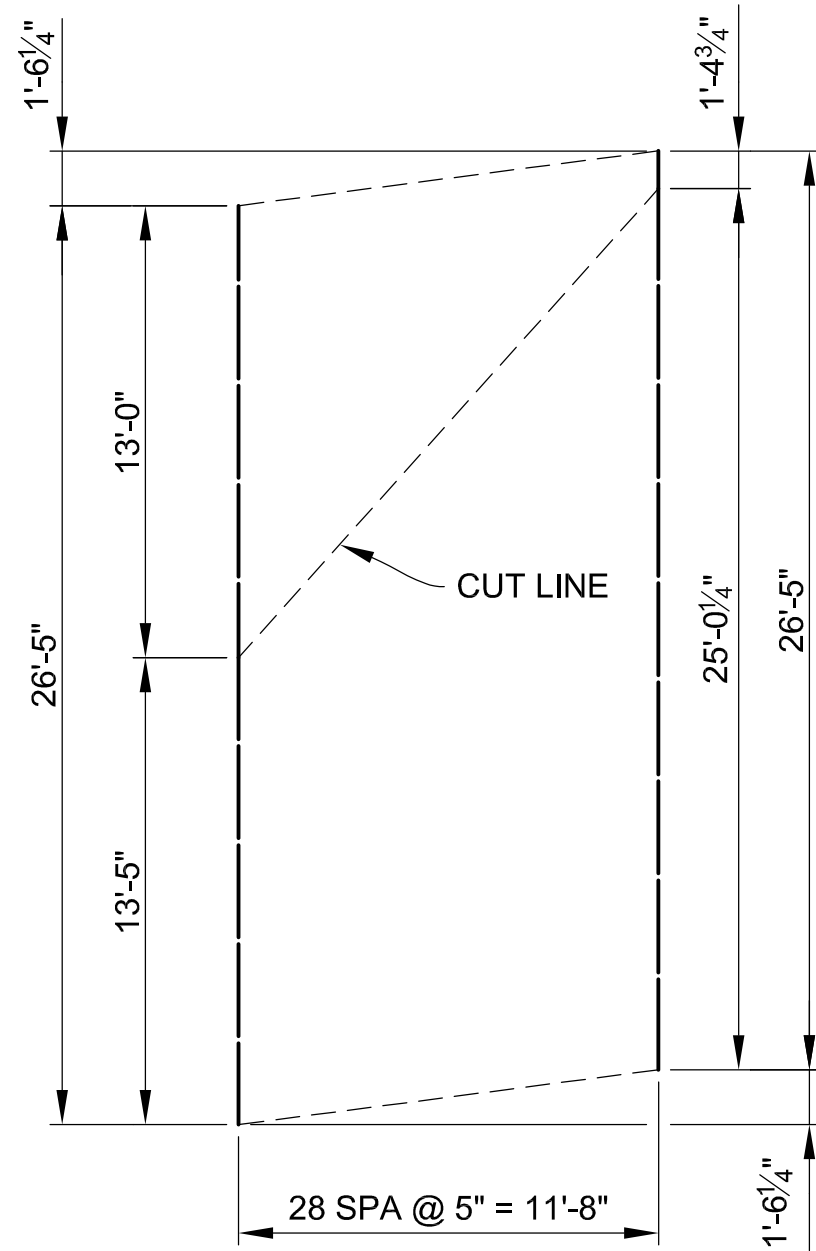
Carrie L. Hamel, PE  
2023.10.06 17:51:17-04'00"

SCALE	HOR. 1"=40'	VERT. 1"=4'
DRAWING NO.	2021-008-BR55	
SHEET NO.	118	OF 155

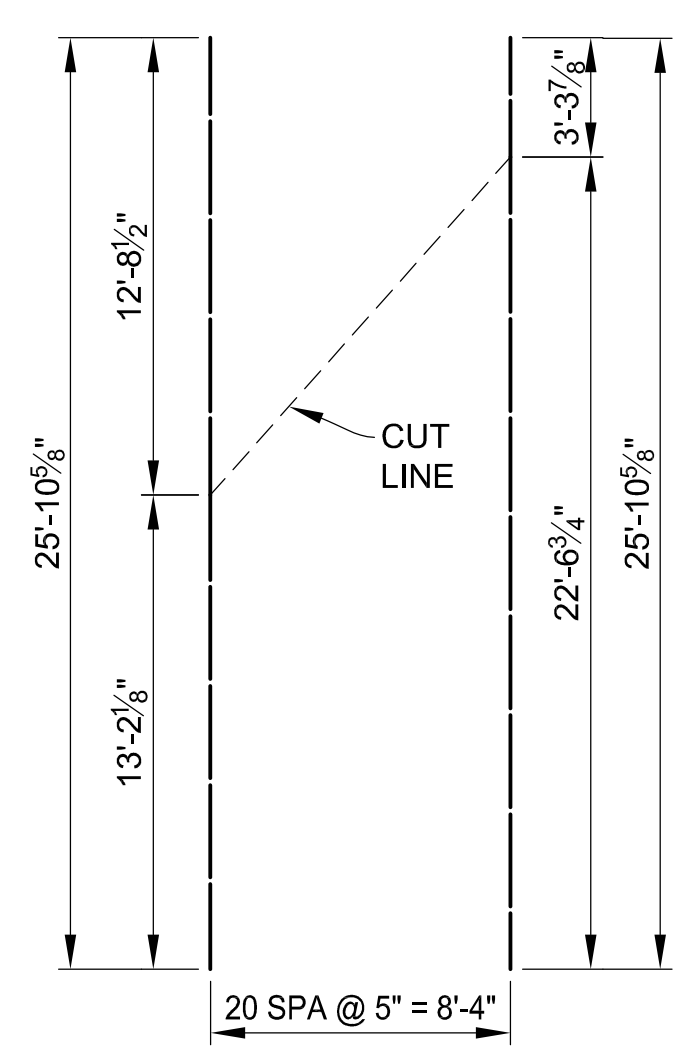




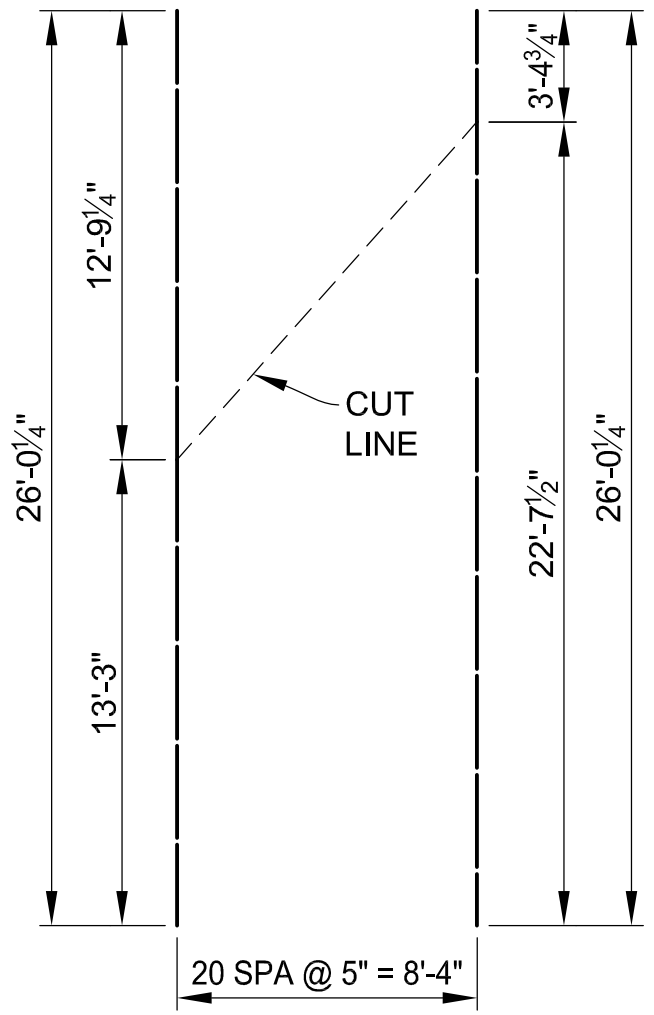




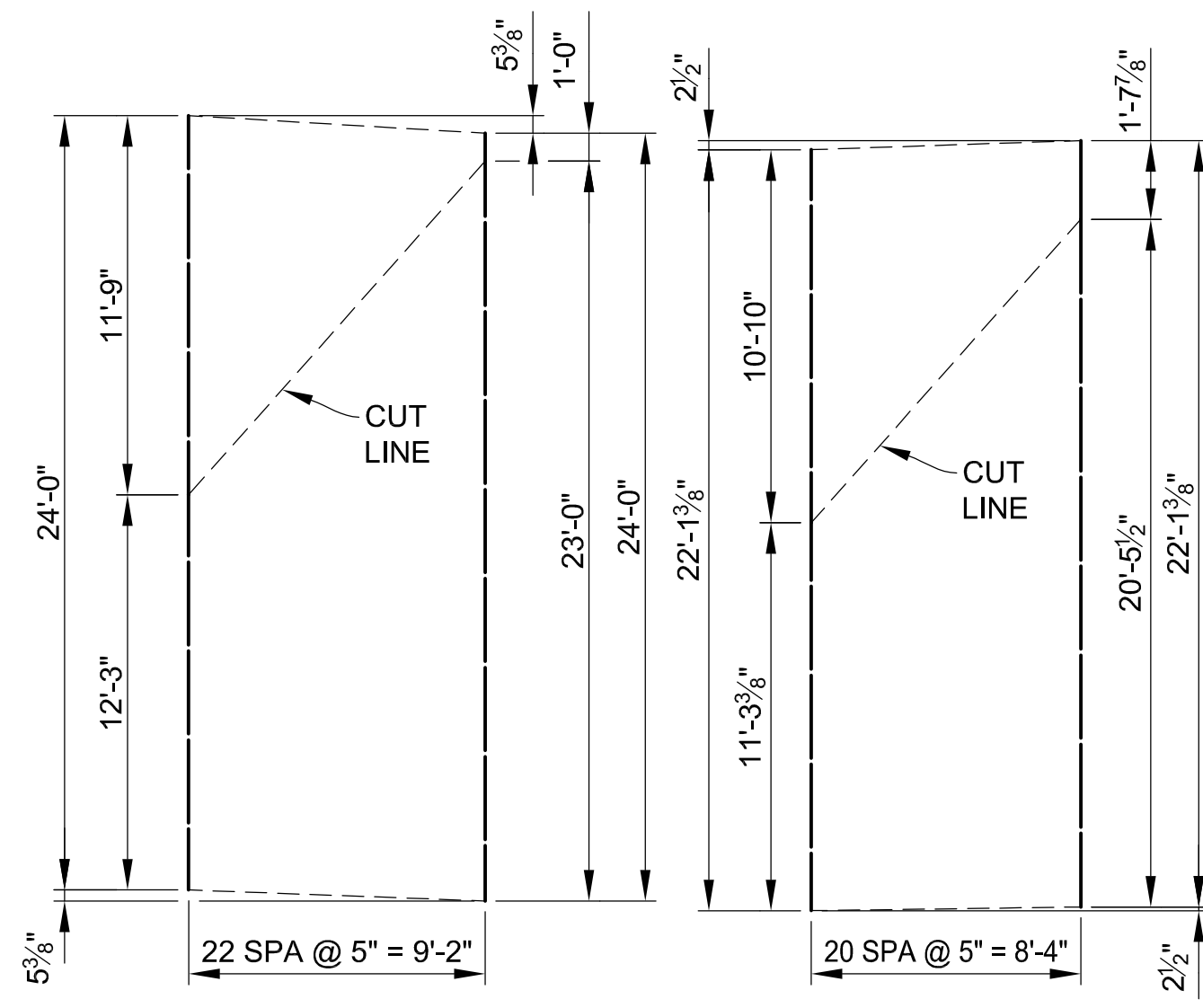
**BAR GROUP A**  
 EA052605 (TOTAL 29 BARS) (BOTT)  
 EA062605 (TOTAL 29 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 1, STAGE 3 CONSTRUCTION)



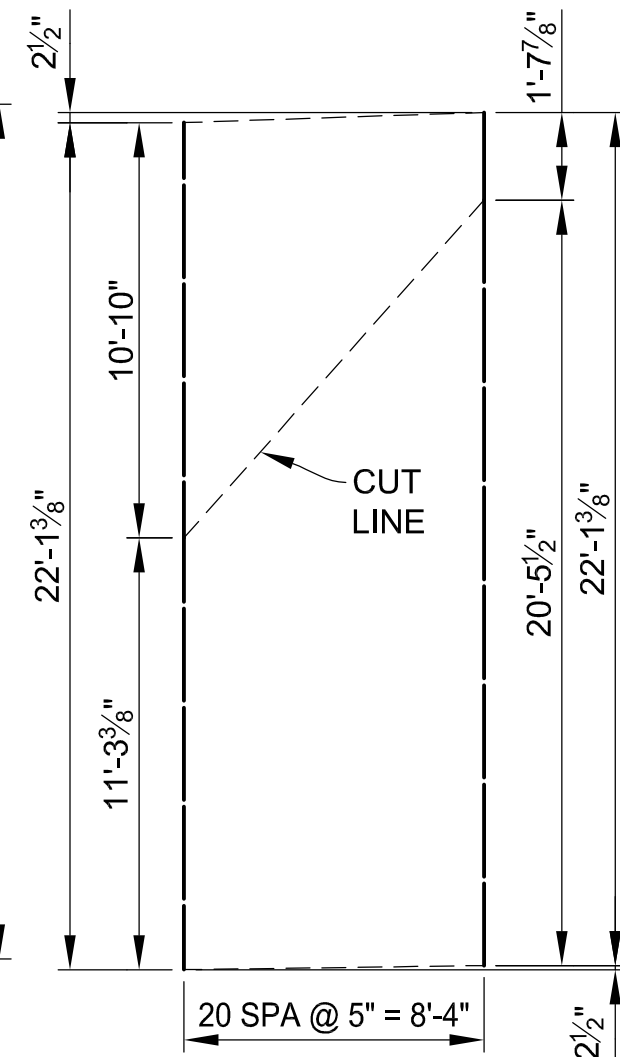
**BAR GROUP B**  
 EA052511 (TOTAL 21 BARS) (BOTT)  
 EA062511 (TOTAL 21 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 1, STAGE 3 CONSTRUCTION)



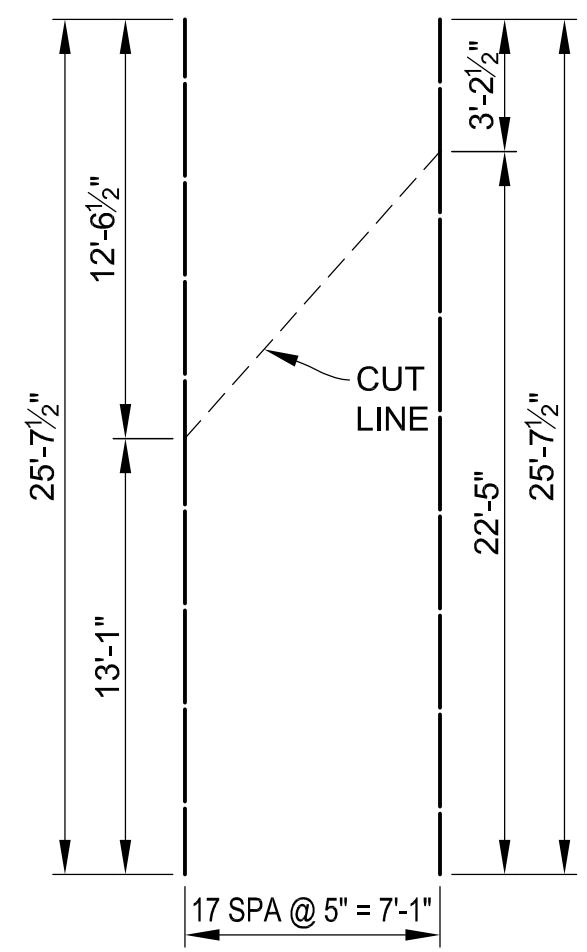
**BAR GROUP C**  
 EA052601 (TOTAL 21 BARS) (BOTT)  
 EA062601 (TOTAL 21 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 1, STAGE 3 CONSTRUCTION)



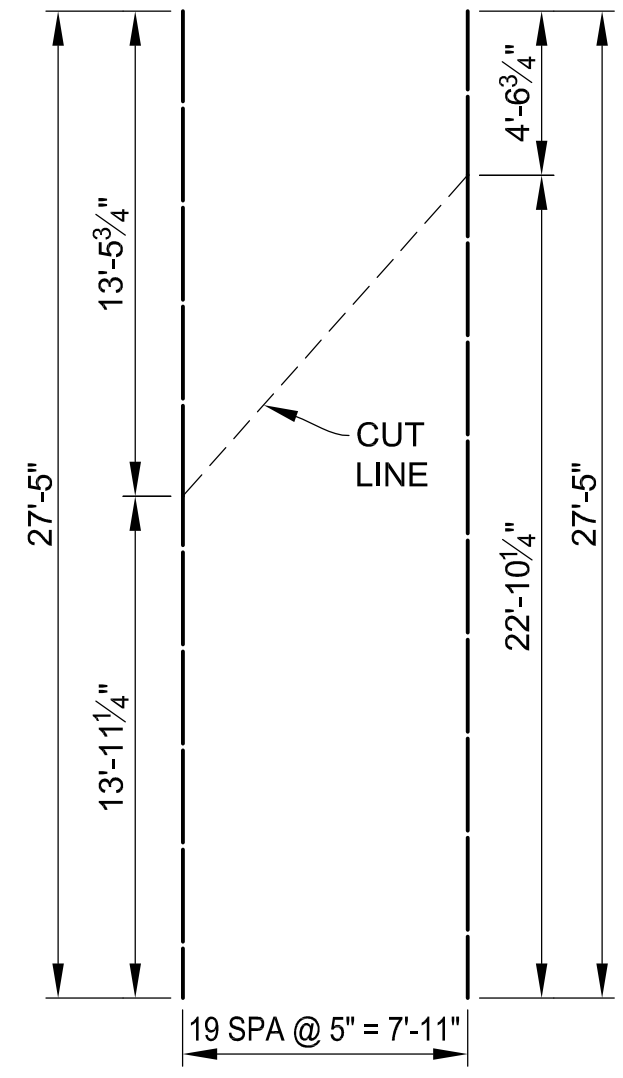
**BAR GROUP D**  
 EA052400 (TOTAL 23 BARS) (BOTT)  
 EA062400 (TOTAL 23 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 1, STAGE 3 CONSTRUCTION)



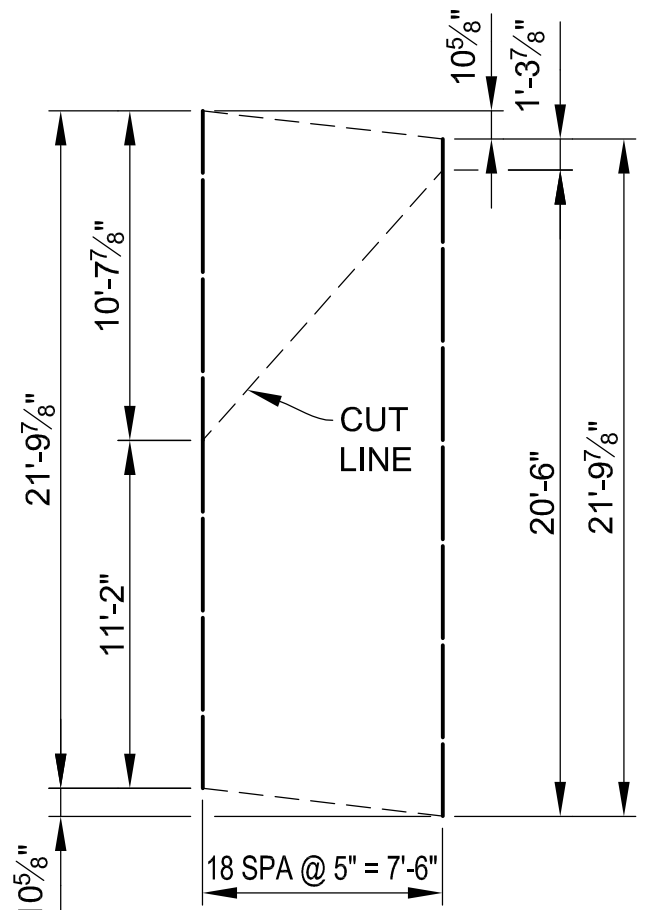
**BAR GROUP E**  
 EA052202 (TOTAL 21 BARS) (BOTT)  
 EA062202 (TOTAL 21 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 1, STAGE 2 CONSTRUCTION)



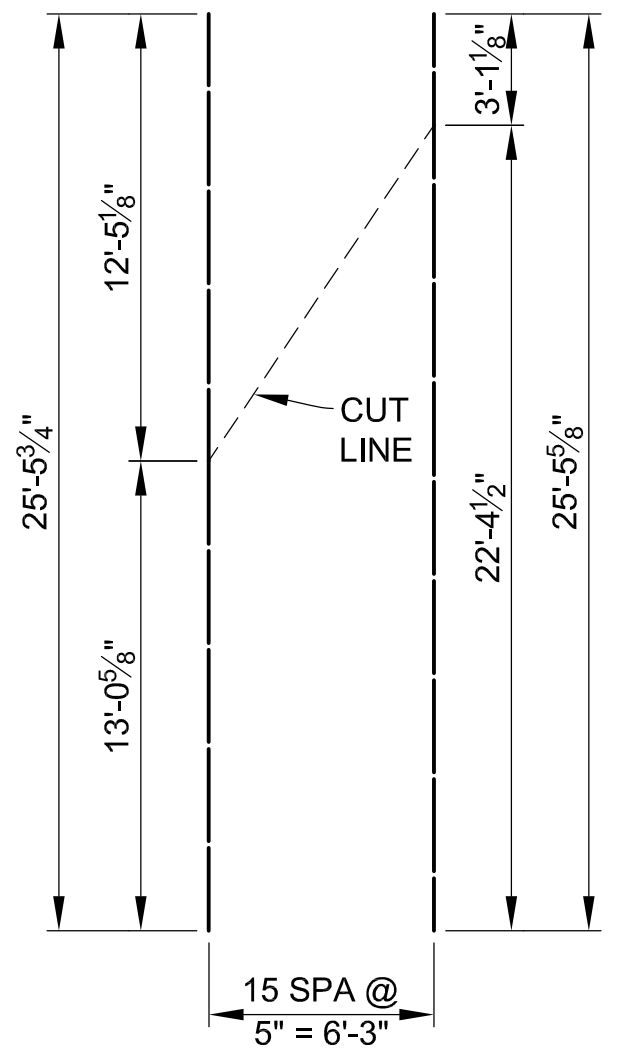
**BAR GROUP F**  
 EA052508 (TOTAL 18 BARS) (BOTT)  
 EA062508 (TOTAL 18 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 1, STAGE 2 CONSTRUCTION)



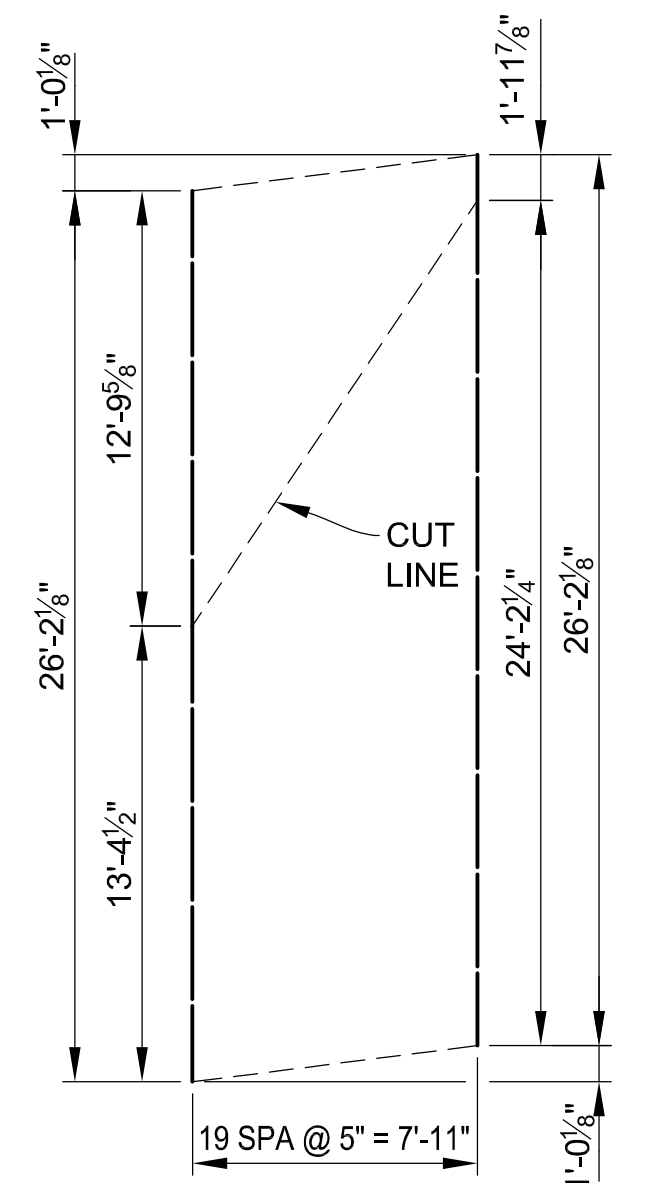
**BAR GROUP G**  
 EA052705 (TOTAL 20 BARS) (BOTT)  
 EA062705 (TOTAL 20 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 1, STAGE 2 CONSTRUCTION)



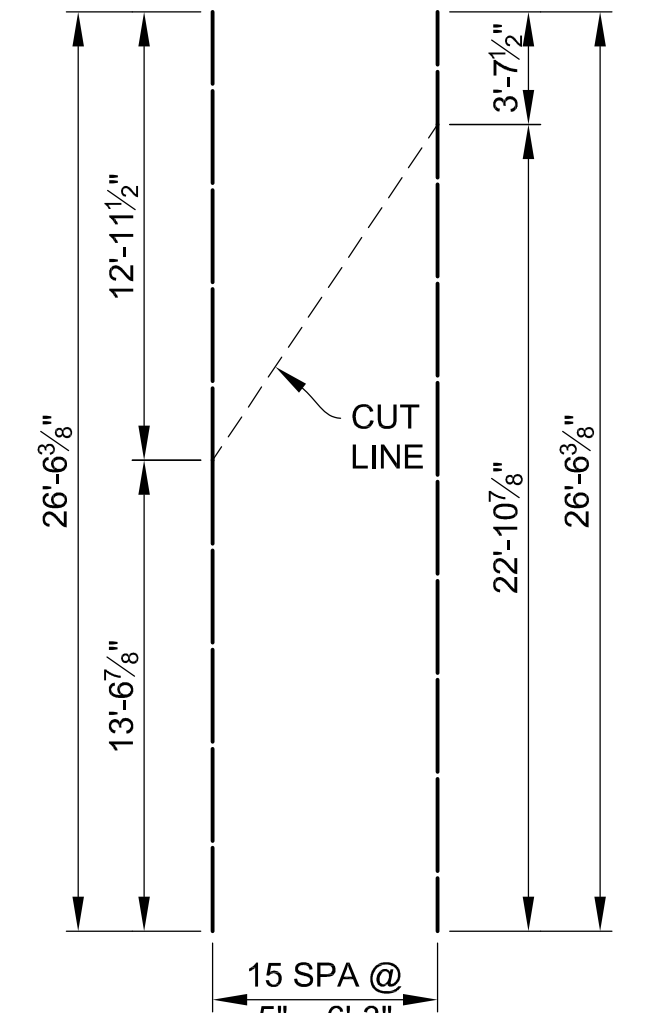
**BAR GROUP H**  
 EA052110 (TOTAL 19 BARS) (BOTT)  
 EA062110 (TOTAL 19 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 1, STAGE 2 CONSTRUCTION)



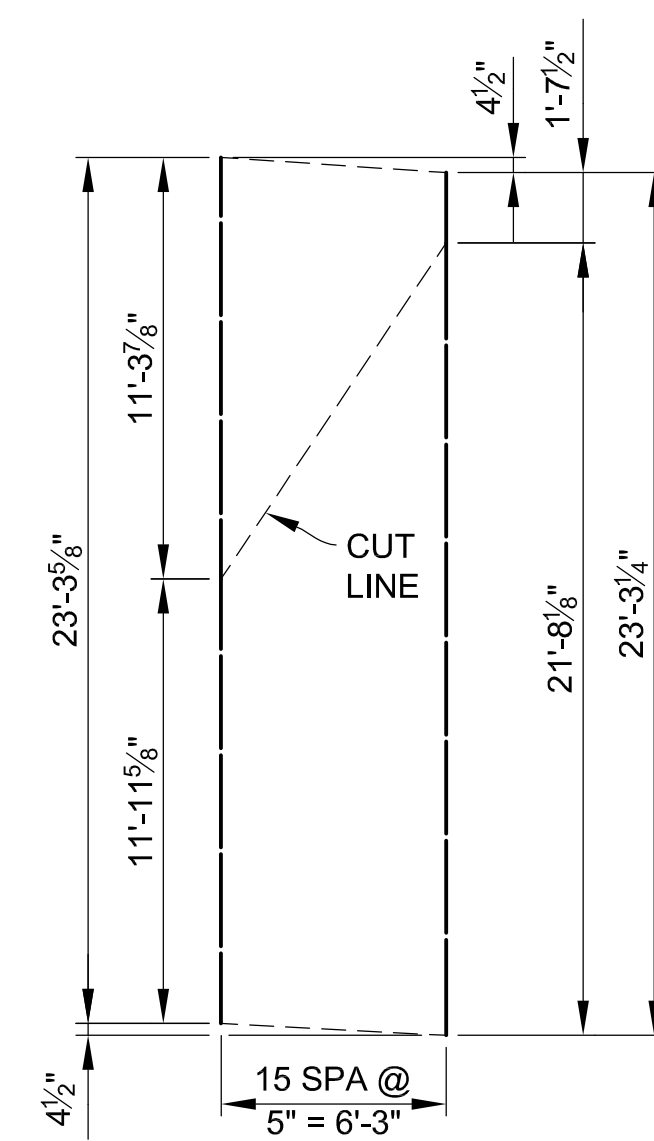
**BAR GROUP J**  
 EA052506 (TOTAL 16 BARS) (BOTT)  
 EA062506 (TOTAL 16 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 2, STAGE 3 CONSTRUCTION)



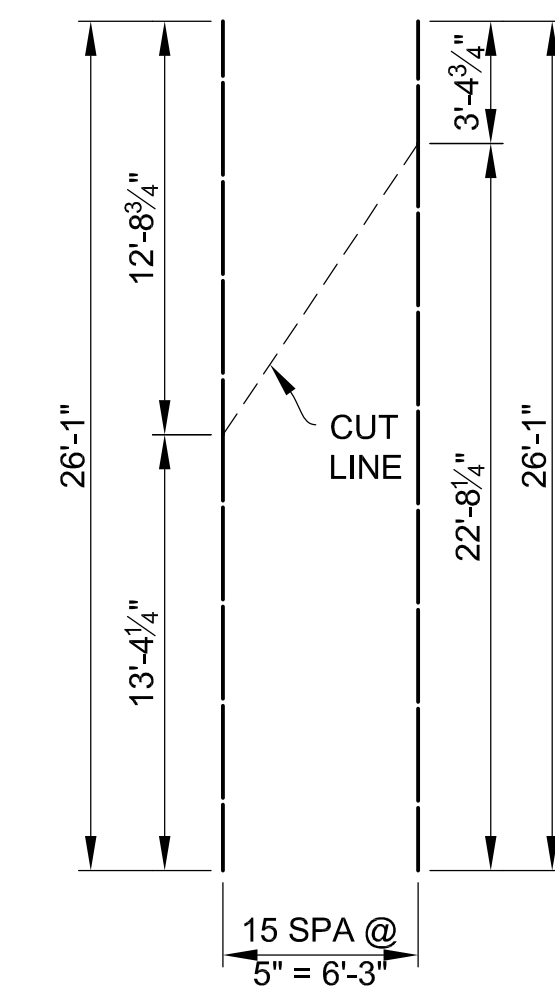
**BAR GROUP K**  
 EA052603 (TOTAL 20 BARS) (BOTT)  
 EA062603 (TOTAL 20 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 2, STAGE 3 CONSTRUCTION)



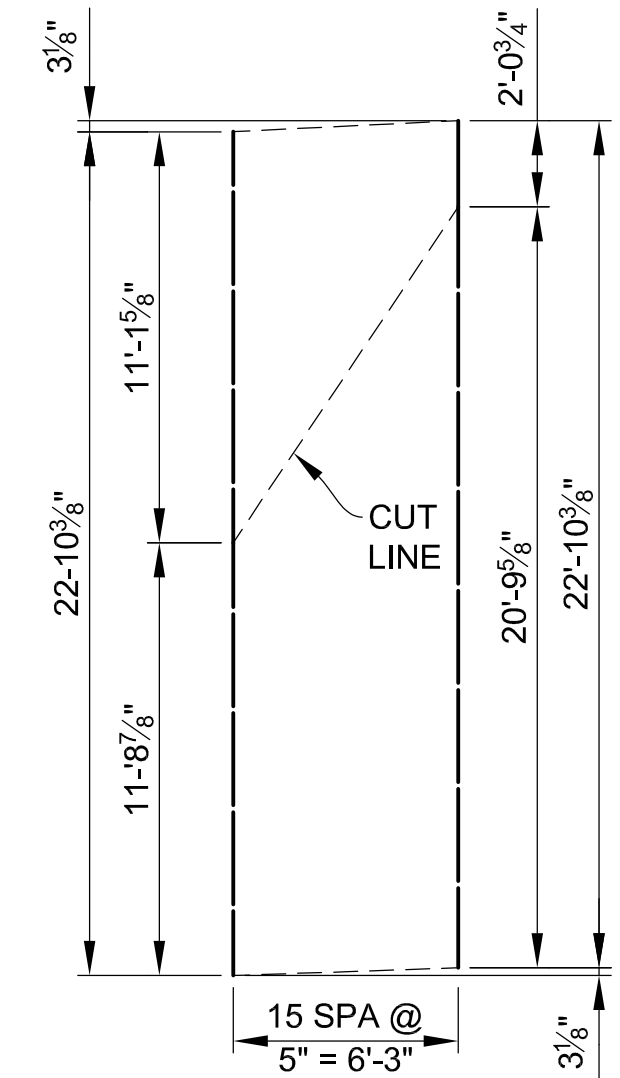
**BAR GROUP L**  
 EA052607 (TOTAL 16 BARS) (BOTT)  
 EA062607 (TOTAL 16 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 2, STAGE 3 CONSTRUCTION)



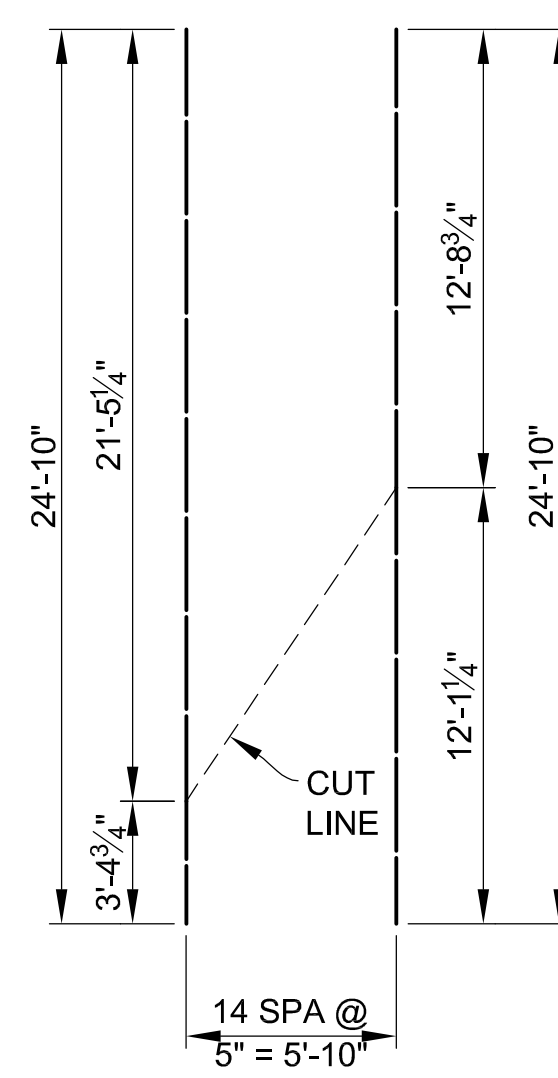
**BAR GROUP M**  
 EA052304 (TOTAL 16 BARS) (BOTT)  
 EA062304 (TOTAL 16 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 2, STAGE 3 CONSTRUCTION)



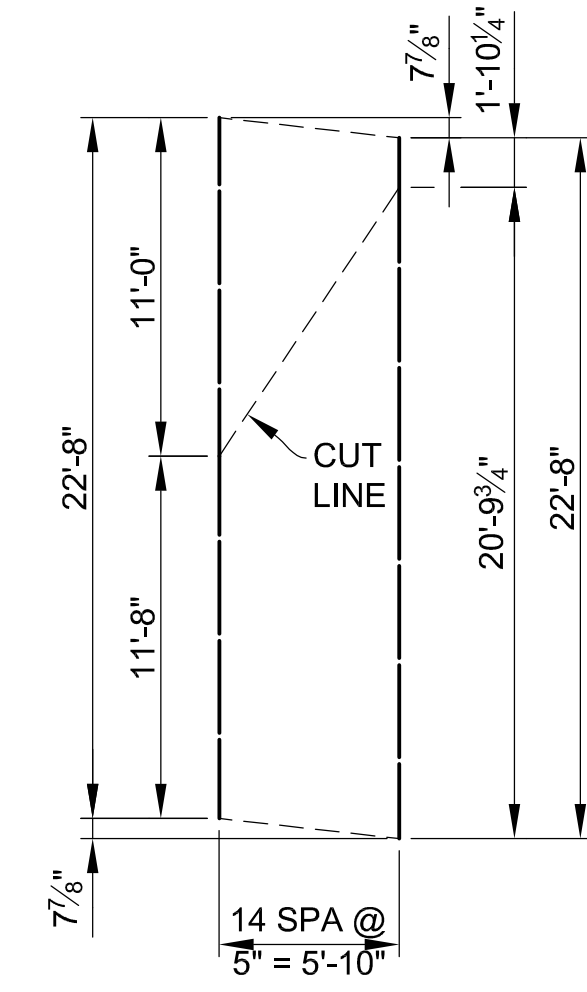
**BAR GROUP N**  
 EA052601 (TOTAL 16 BARS) (BOTT)  
 EA062601 (TOTAL 16 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 2, STAGE 2 CONSTRUCTION)



**BAR GROUP P**  
 EA052211 (TOTAL 16 BARS) (BOTT)  
 EA062211 (TOTAL 16 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 2, STAGE 2 CONSTRUCTION)



**BAR GROUP Q**  
 EA052410 (TOTAL 15 BARS) (BOTT)  
 EA062410 (TOTAL 15 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 2, STAGE 2 CONSTRUCTION)



**BAR GROUP R**  
 EA052208 (TOTAL 15 BARS) (BOTT)  
 EA062208 (TOTAL 15 BARS) (TOP)  
 (QUANTIFIED IN DECK,  
 SPAN 2, STAGE 2 CONSTRUCTION)

**NOTE:**

REINFORCEMENT IS TO BE SHOP CUT AS SHOWN. THE EPOXY COATING SHALL BE REPAIRED ACCORDING TO SECTION 706.03E.8 OF THE MDOT 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

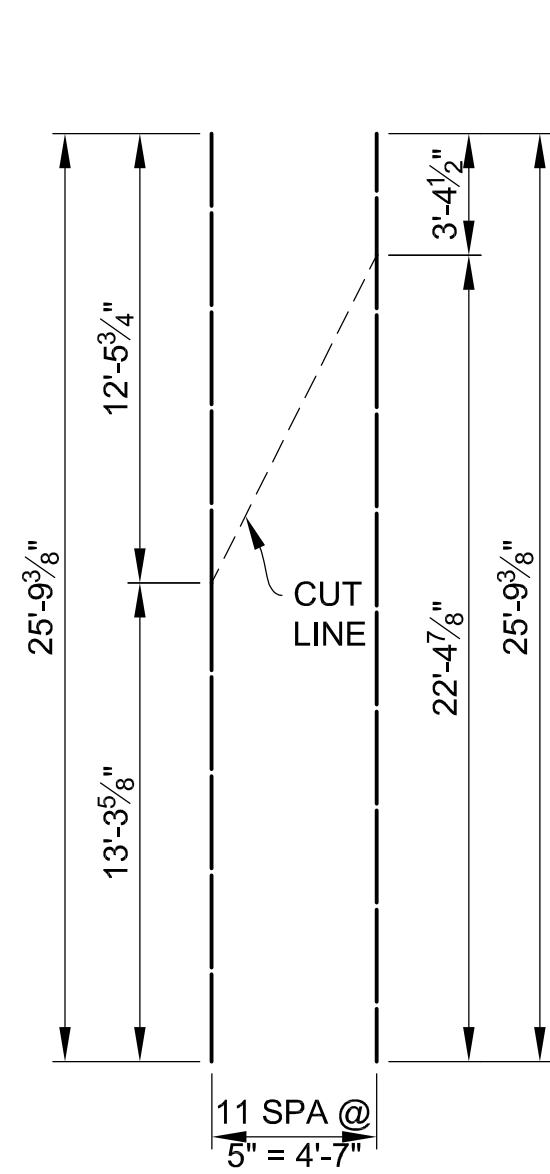
om\_pan-files\Projects\2021\2141\736300\_AA -- EMCD Bridge\01\_Const\Docs\CAD\EMCD\_reinforcement\_L001

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<b>DLZ</b>				
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

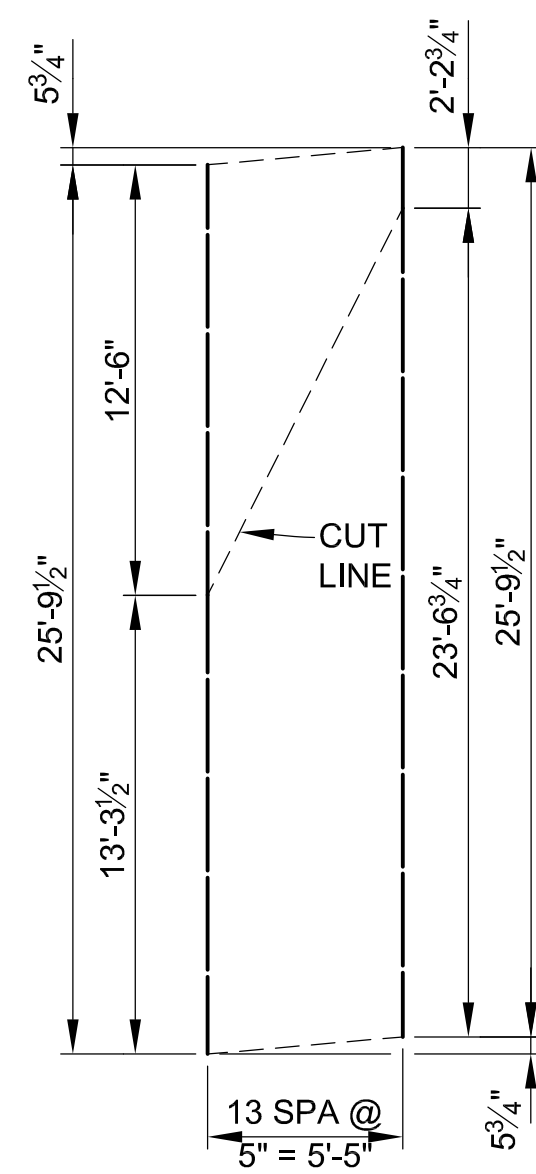
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>STEEL REINFORCEMENT DETAILS</b>	
SCALE HOR. 1"=40' VERT. 1"=4'	INCH 0 1
DRAWING NO. <b>2021-008-BR58</b>	
SHEET NO. <b>121</b> OF <b>155</b>	

APPROVED BY: *Carrie L. Hamel*  
 CARRIE L. HAMEL, P.E. MICHIGAN NO. 6201056734



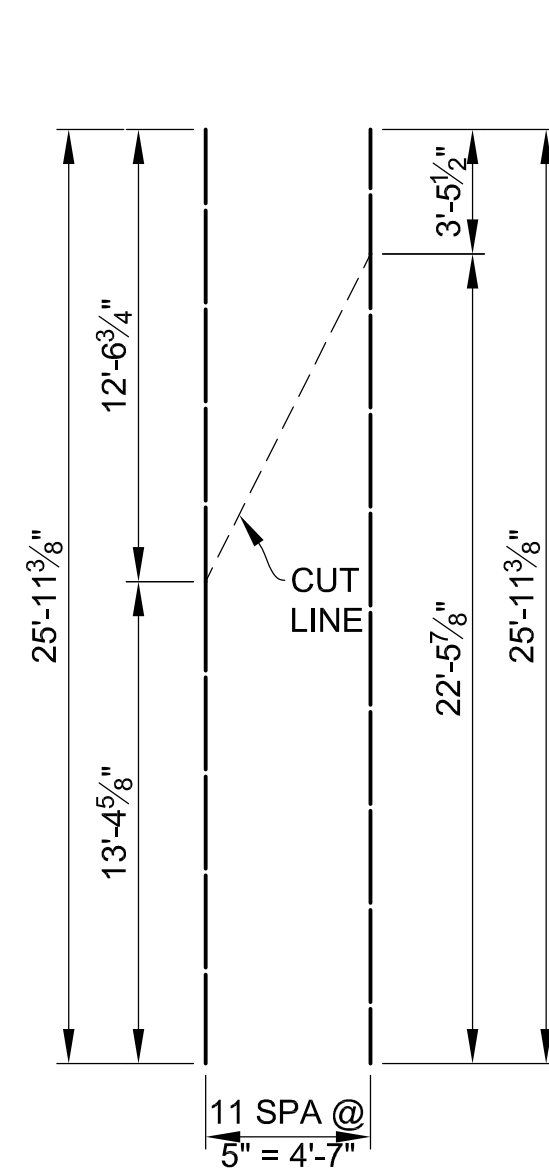
**BAR GROUP S**

EA052510 (TOTAL 12 BARS) (BOTT)  
EA062510 (TOTAL 12 BARS) (TOP)  
(QUANTIFIED IN DECK,  
SPAN 3, STAGE 3 CONSTRUCTION)



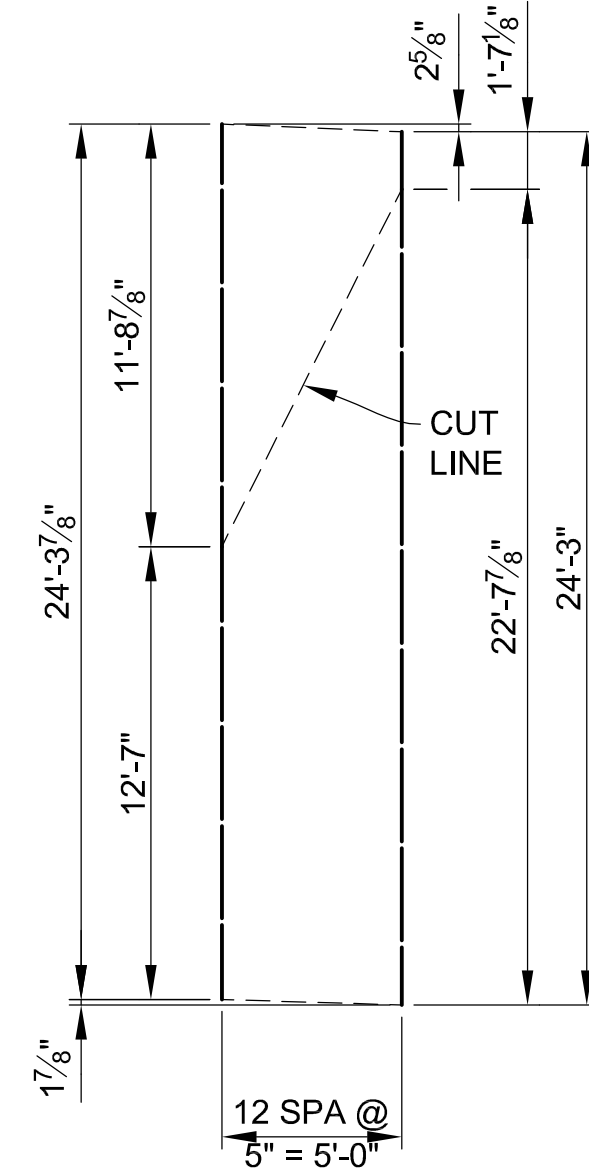
**BAR GROUP T**

EA052510 (TOTAL 14 BARS) (BOTT)  
EA062510 (TOTAL 14 BARS) (TOP)  
(QUANTIFIED IN DECK,  
SPAN 3, STAGE 3 CONSTRUCTION)



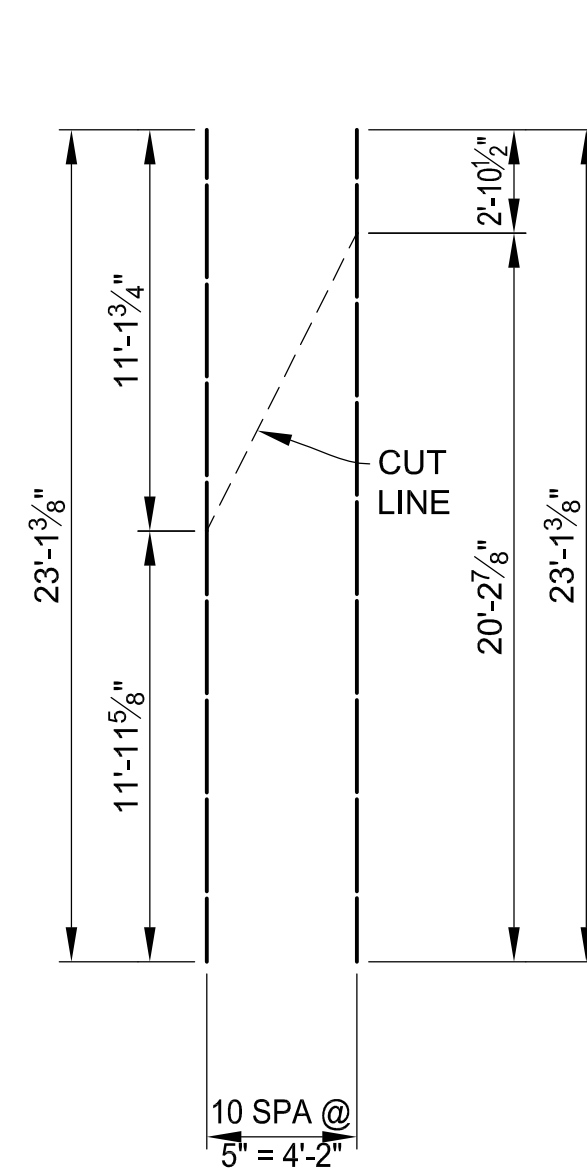
**BAR GROUP U**

EA052600 (TOTAL 12 BARS) (BOTT)  
EA062600 (TOTAL 12 BARS) (TOP)  
(QUANTIFIED IN DECK,  
SPAN 3, STAGE 3 CONSTRUCTION)



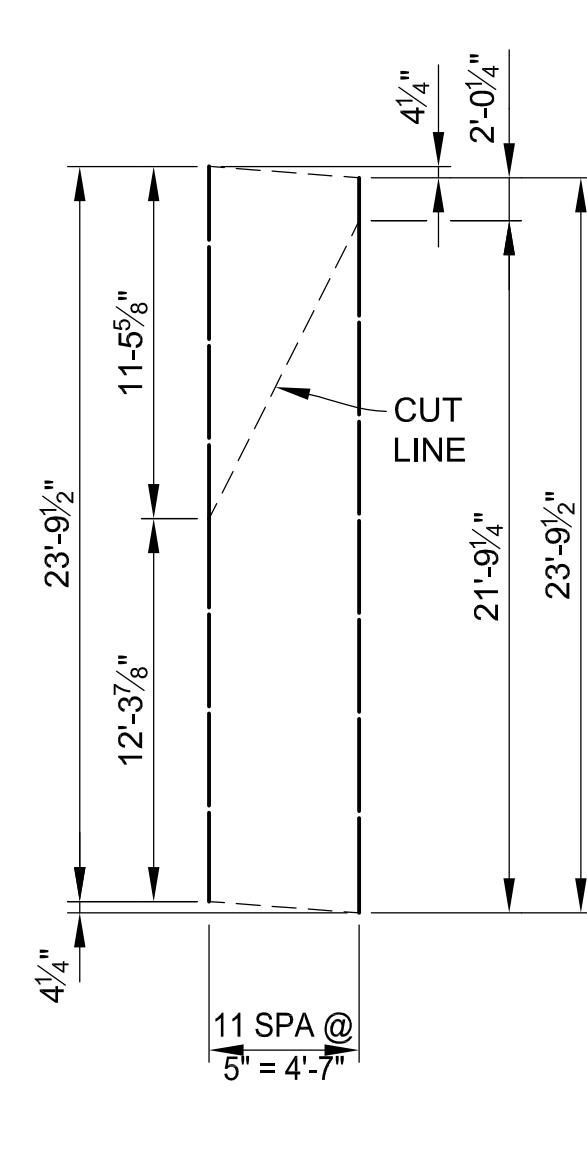
**BAR GROUP V**

EA052404 (TOTAL 13 BARS) (BOTT)  
EA062404 (TOTAL 13 BARS) (TOP)  
(QUANTIFIED IN DECK,  
SPAN 3, STAGE 3 CONSTRUCTION)



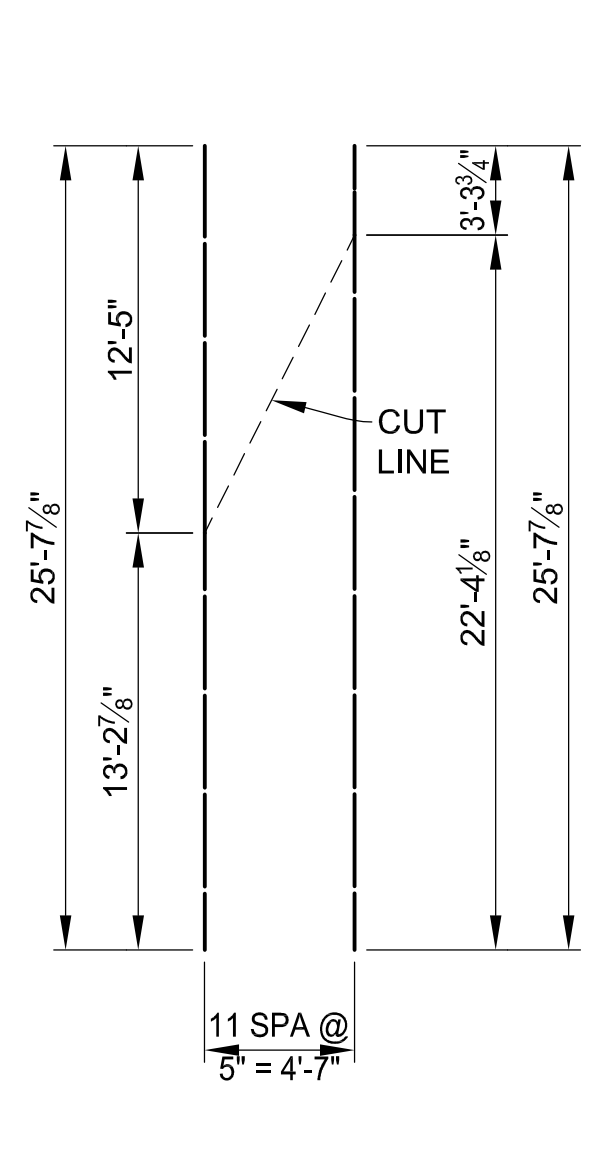
**BAR GROUP W**

EA052302 (TOTAL 11 BARS) (BOTT)  
EA062302 (TOTAL 11 BARS) (TOP)  
(QUANTIFIED IN DECK,  
SPAN 3, STAGE 2 CONSTRUCTION)



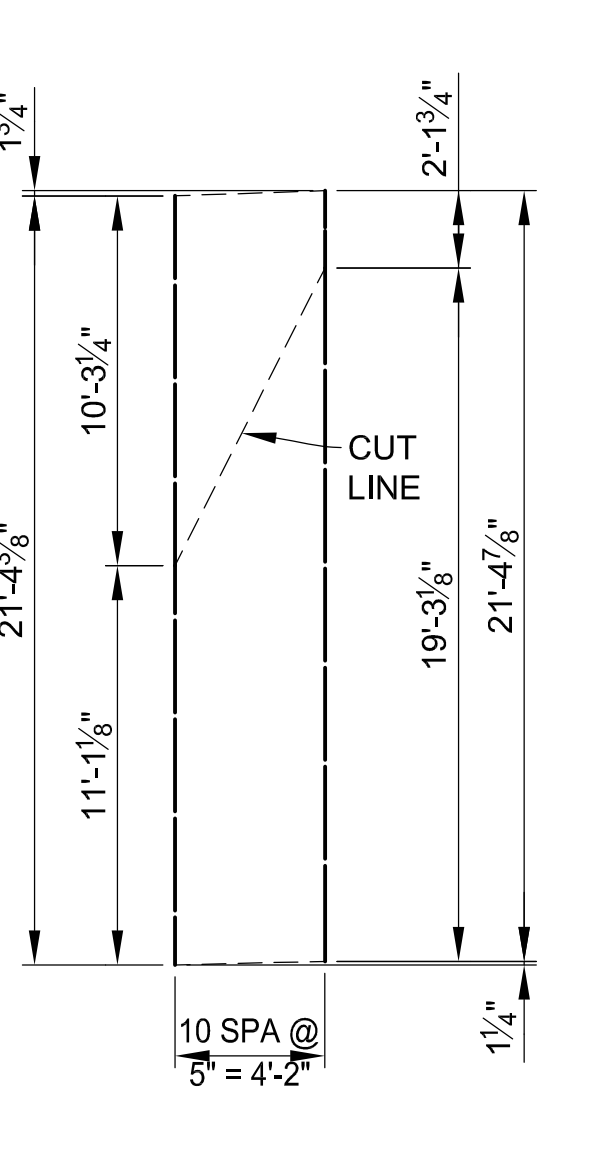
**BAR GROUP X**

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EA062310 (TOTAL 12 BARS) (TOP)  
(QUANTIFIED IN DECK,  
SPAN 3, STAGE 2 CONSTRUCTION)



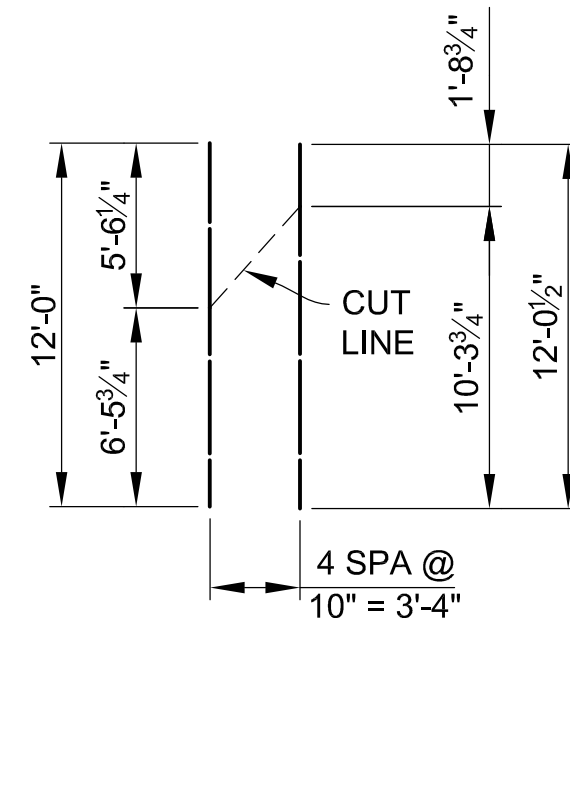
**BAR GROUP Y**

EA052508 (TOTAL 12 BARS) (BOTT)  
EA062508 (TOTAL 12 BARS) (TOP)  
(QUANTIFIED IN DECK,  
SPAN 3, STAGE 2 CONSTRUCTION)



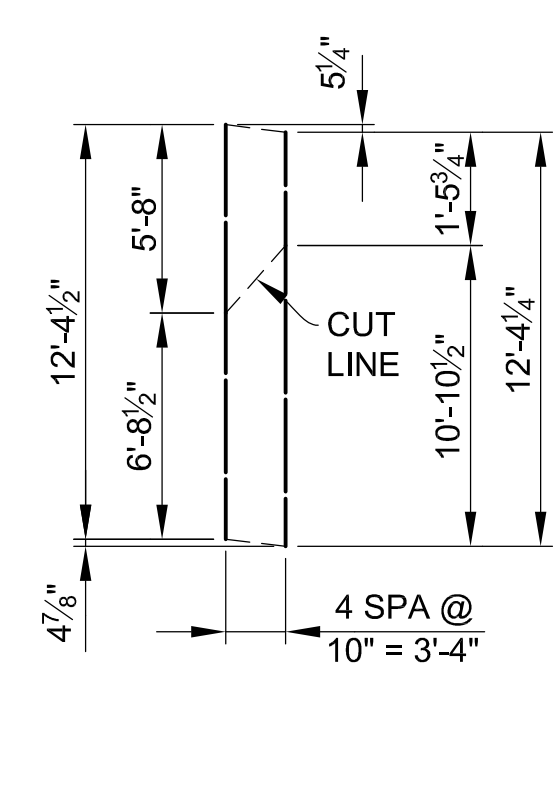
**BAR GROUP Z**

EA052105 (TOTAL 11 BARS) (BOTT)  
EA062105 (TOTAL 11 BARS) (TOP)  
(QUANTIFIED IN DECK,  
SPAN 3, STAGE 2 CONSTRUCTION)



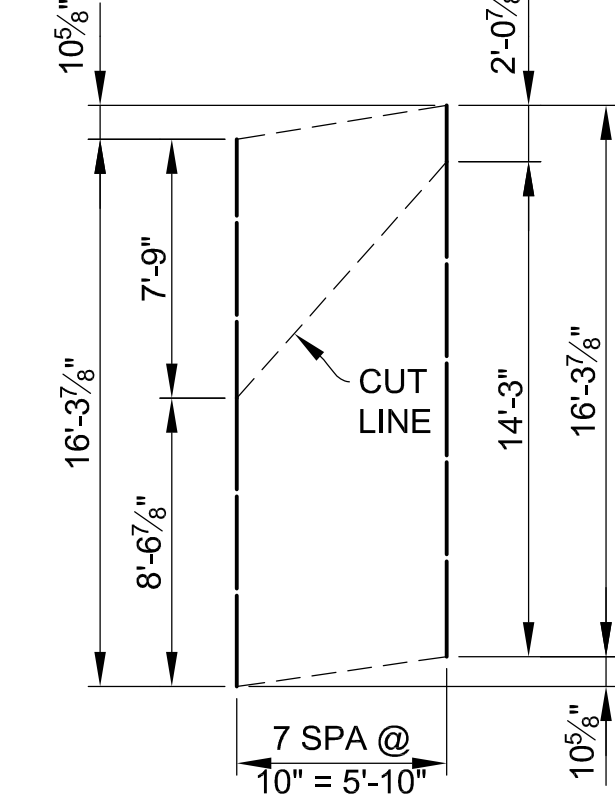
**BAR GROUP AA**

EA061201 (TOTAL 5 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 1, STAGE 2 CONSTRUCTION)



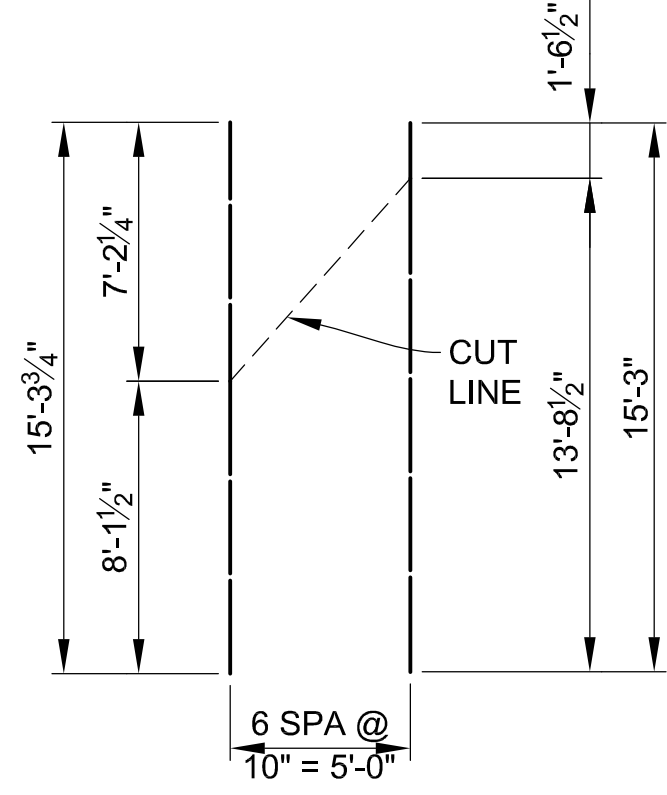
**BAR GROUP BB**

EA061205 (TOTAL 5 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 1, STAGE 2 CONSTRUCTION)



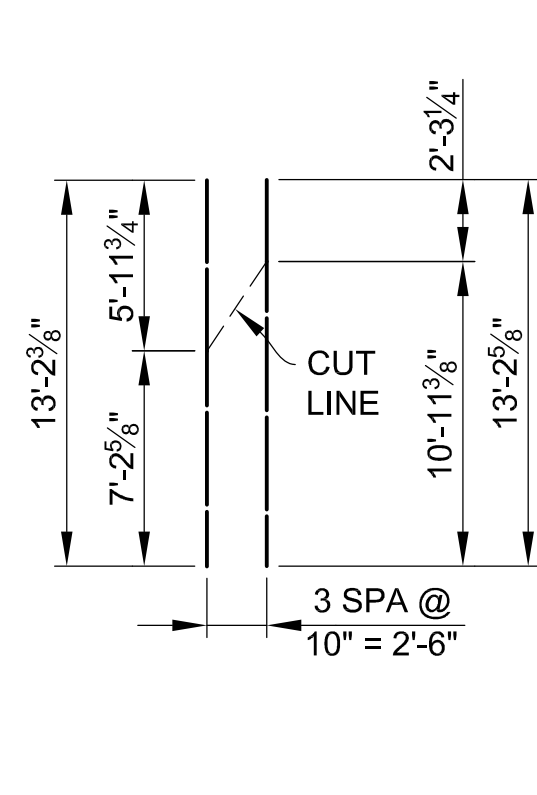
**BAR GROUP CC**

EA061604 (TOTAL 8 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 1, STAGE 3 CONSTRUCTION)



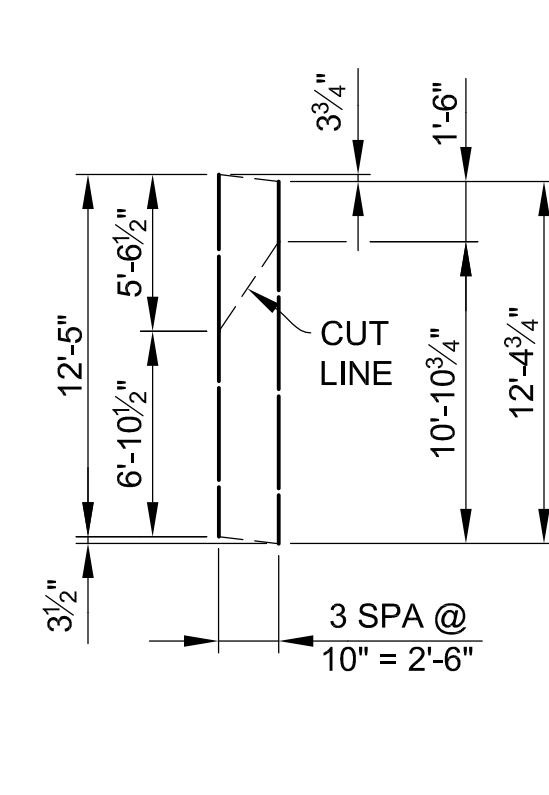
**BAR GROUP DD**

EA061504 (TOTAL 7 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 1, STAGE 3 CONSTRUCTION)



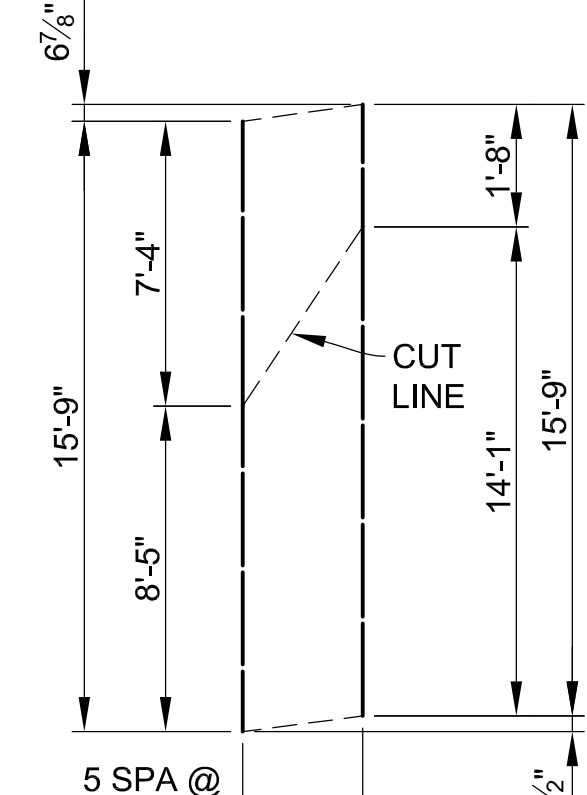
**BAR GROUP EE**

EA061303 (TOTAL 4 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 2, STAGE 2 CONSTRUCTION)



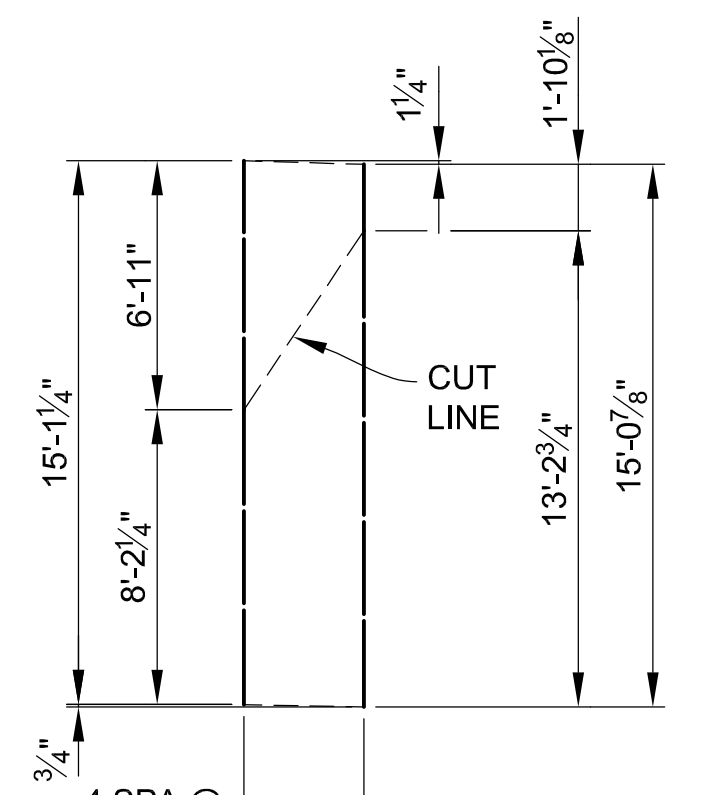
**BAR GROUP FF**

EA061205 (TOTAL 4 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 2, STAGE 2 CONSTRUCTION)



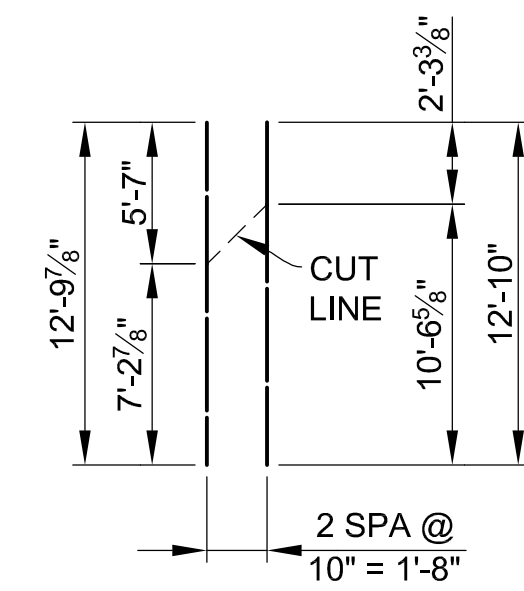
**BAR GROUP GG**

EA061509 (TOTAL 6 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 2, STAGE 3 CONSTRUCTION)



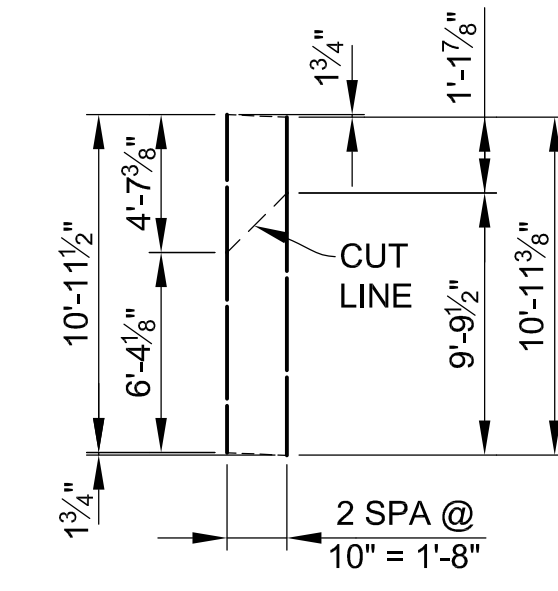
**BAR GROUP HH**

EA061502 (TOTAL 5 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 2, STAGE 3 CONSTRUCTION)



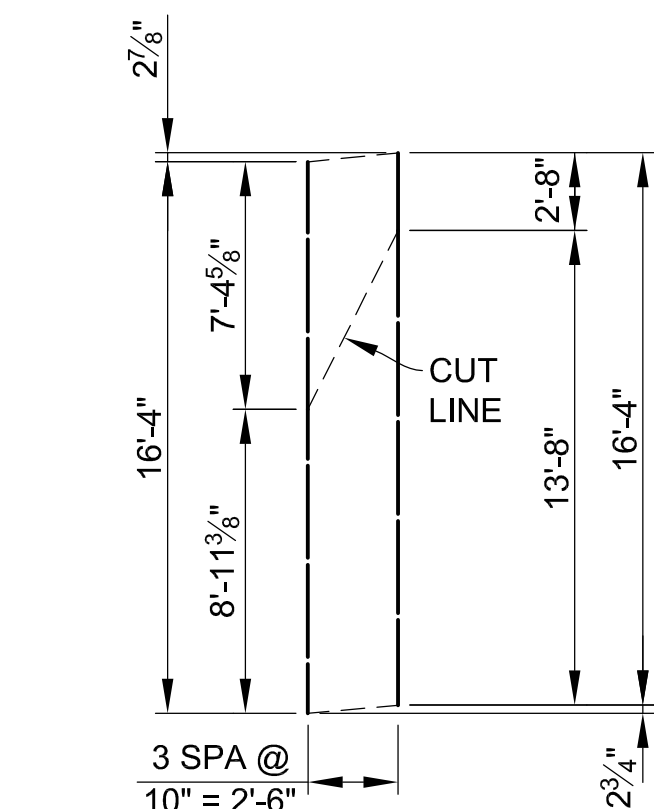
**BAR GROUP JJ**

EA061210 (TOTAL 3 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 3, STAGE 2 CONSTRUCTION)



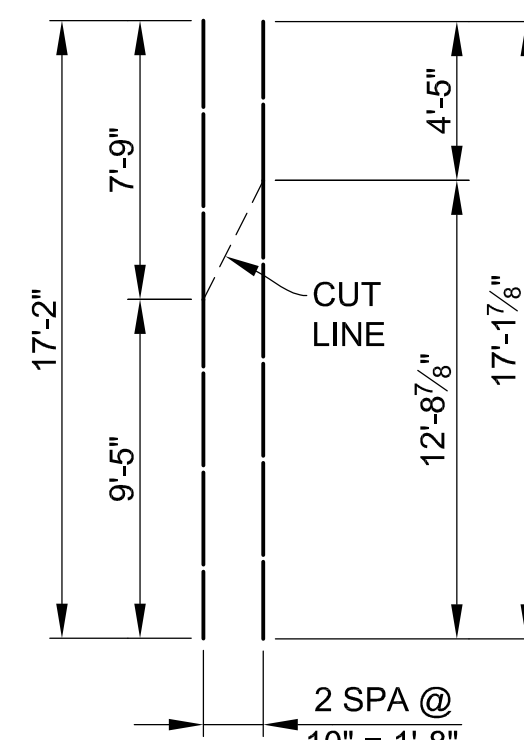
**BAR GROUP KK**

EA061100 (TOTAL 3 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 3, STAGE 2 CONSTRUCTION)



**BAR GROUP LL**

EA061604 (TOTAL 4 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 3, STAGE 3 CONSTRUCTION)



**BAR GROUP MM**

EA061702 (TOTAL 3 BARS) (TOP & BOTT)  
(QUANTIFIED IN SIDEWALK,  
SPAN 3, STAGE 3 CONSTRUCTION)

**NOTE:**

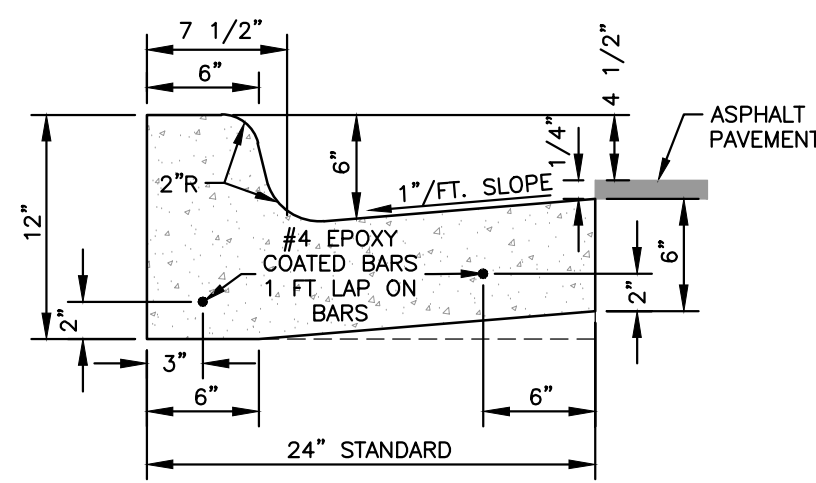
REINFORCEMENT IS TO BE SHOP CUT AS SHOWN. THE EPOXY COATING SHALL BE REPAIRED ACCORDING TO SECTION 706.03E.8 OF THE MDOT 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

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	ORIGINAL ISSUE	10-6-23	DAF	CLH

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>STEEL REINFORCEMENT DETAILS</b>	
SCALE HOR. 1"=40' VERT. 1"=4'	INCH 0 1
DRAWING NO. <b>2021-008-BR59</b>	
SHEET NO. <u>122</u> OF <u>155</u>	

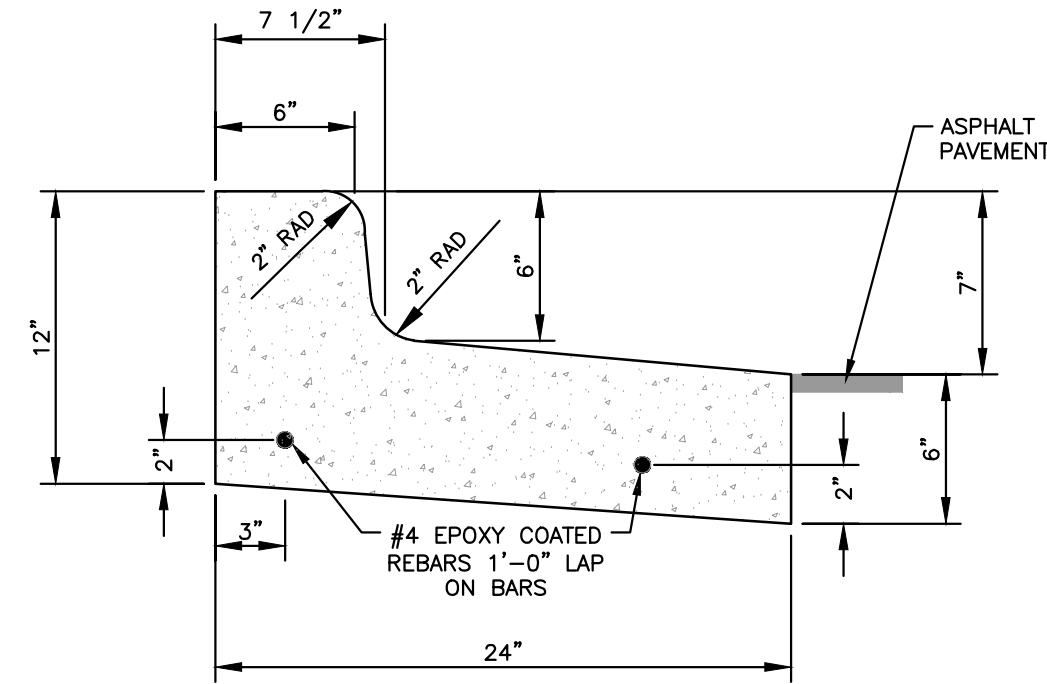




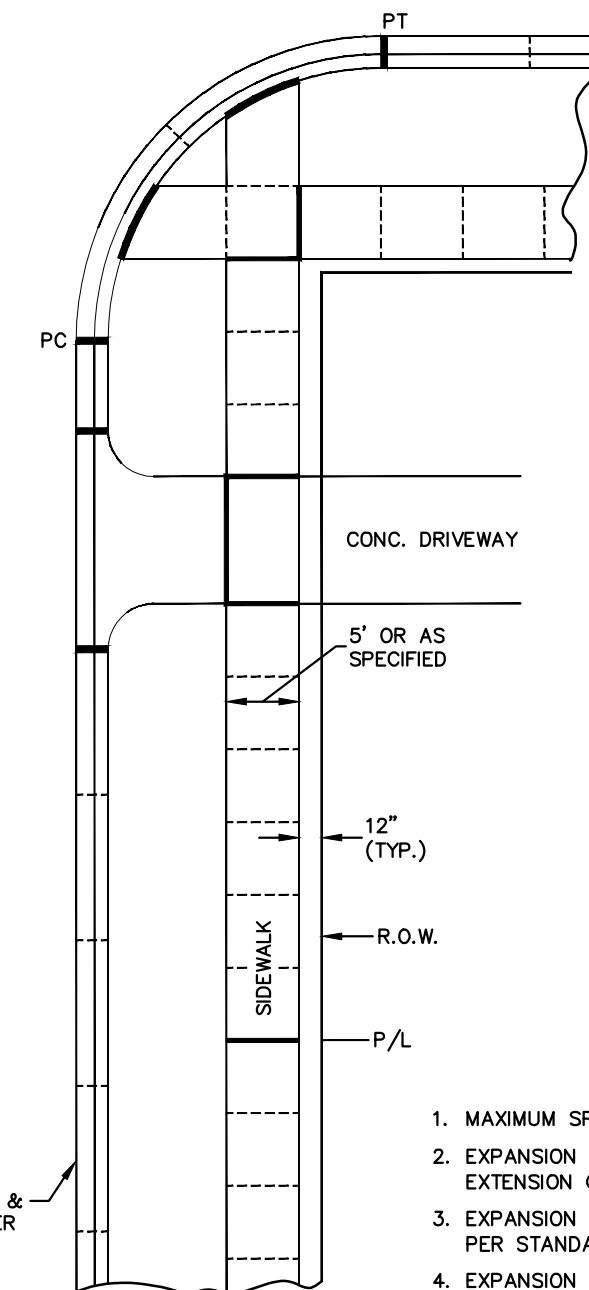
NOTES:

1. BARRIER CURB AND GUTTER ON ASPHALT STREETS SHALL CONFORM TO THIS DETAIL.
2. BARRIER CURB AND GUTTER ON CONCRETE STREETS SHALL CONFORM TO MDOT CURB AND GUTTER DETAIL F3.

**BARRIER CURB AND GUTTER SD-R-1**



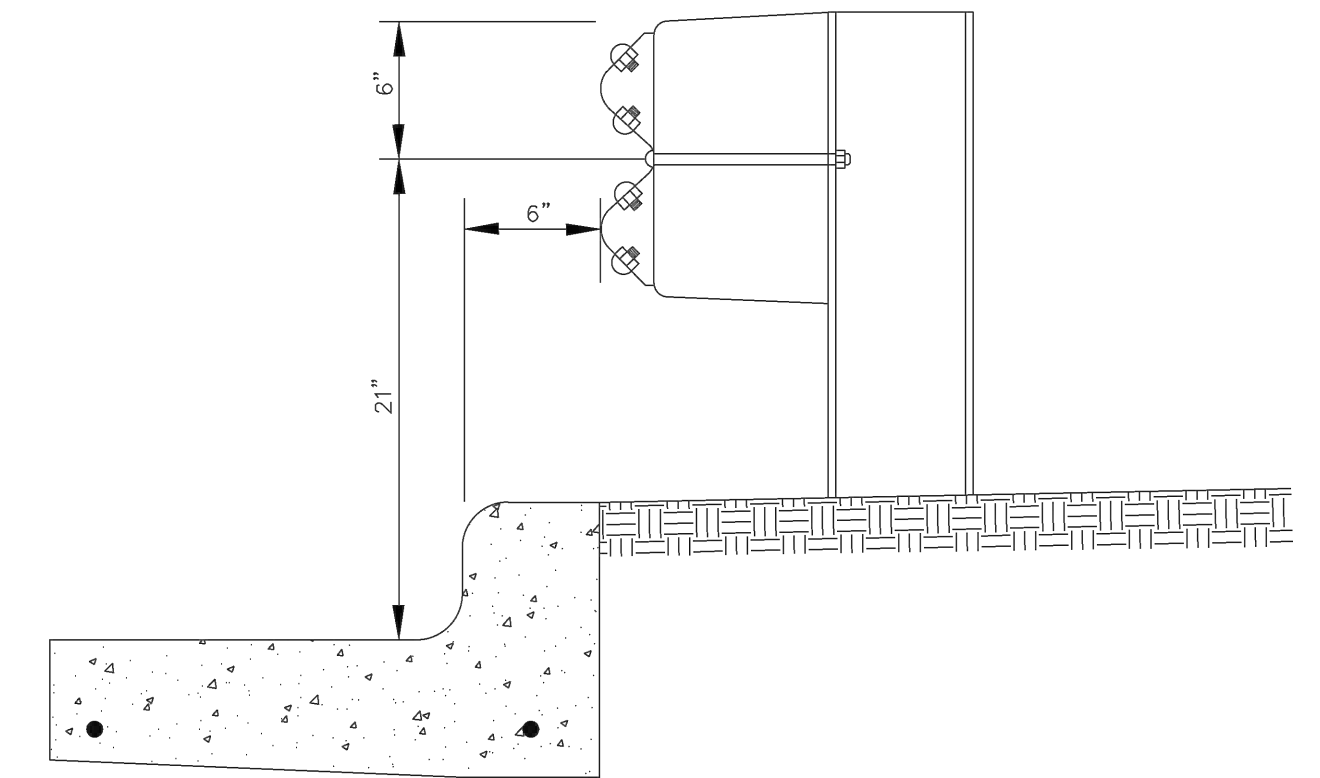
**SPILL-OUT BARRIER CURB & GUTTER SD-R-4**



LEGEND:

- CONTRACTION JOINTS -----
  - 1/2" EXPANSION JOINTS - - - - -
  - 3/4" EXPANSION JOINTS - - - - -
1. MAXIMUM SPACING BETWEEN ALL EXPANSION JOINTS SHALL BE 300'.
  2. EXPANSION JOINTS SHALL BE PLACED IN SIDEWALKS AT THE EXTENSION OF ALL PROPERTY LINES.
  3. EXPANSION JOINTS SHALL BE PLACED AT DRIVE APPROACH EDGES PER STANDARD DRIVE APPROACH DETAILS SD-R-6 THROUGH SD-R-8.
  4. EXPANSION JOINTS SHALL BE PLACED AT SIDEWALK INTERSECTIONS AS SHOWN.
  5. EXPANSION JOINTS SHALL BE PLACED IN CURB AND GUTTER AT PC AND PT OF INTERSECTION RADII.
  6. CONTRACTION JOINT SPACING FOR CURB AND CURB SHALL BE 10' STANDARD AND 8' MINIMUM.
  7. CONTRACTION JOINTS FOR SIDEWALKS SHALL BE PLACED AT ALL SLAB ENDS (5' TYPICAL, 3' MINIMUM TO 7' MAXIMUM).

**SIDEWALK AND CURB & GUTTER JOINTS SD-R-10**



NOTE:  
STANDARD GUARDRAIL CONSTRUCTION TO BE IN ACCORDANCE WITH MDOT BEAM GUARDRAIL TYPE B REQUIREMENTS

REV. NO.	DATE	DR. BY	CH. BY	DATE
REVISIONS				
PUBLIC SERVICES DEPARTMENT CITY OF ANN ARBOR				
URBAN GUARDRAIL LOCATION				
DR. BY	NCF	CH. BY	CSS	DRAWING NO.
SCALE	NONE	DATE	1-31-94	SD-R-15
INCH				SHEET NO. OF



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BARRIER CURB & GUTTER			
DR. ENG	CH. ENG	DRAWING NO.	
SCALE N.T.S.	DATE 7/1/2022	SD-R-1	



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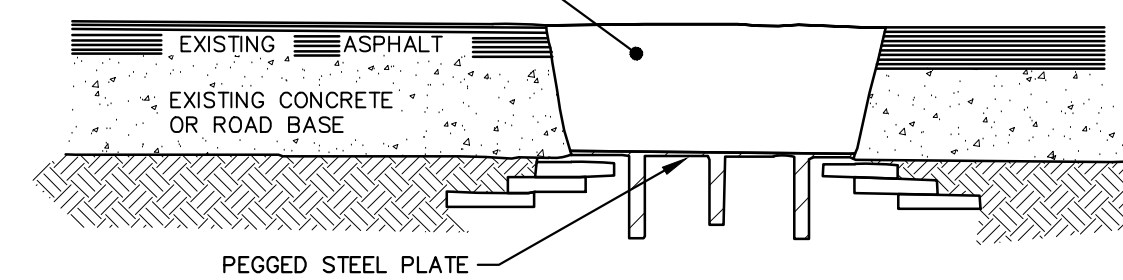
REV. NO.	DATE	DRAWN BY	CHECKED BY
SPILL-OUT BARRIER CURB & GUTTER			
DR. ENG	CH. ENG	DRAWING NO.	
SCALE N.T.S.	DATE 7/1/2022	SD-R-4	



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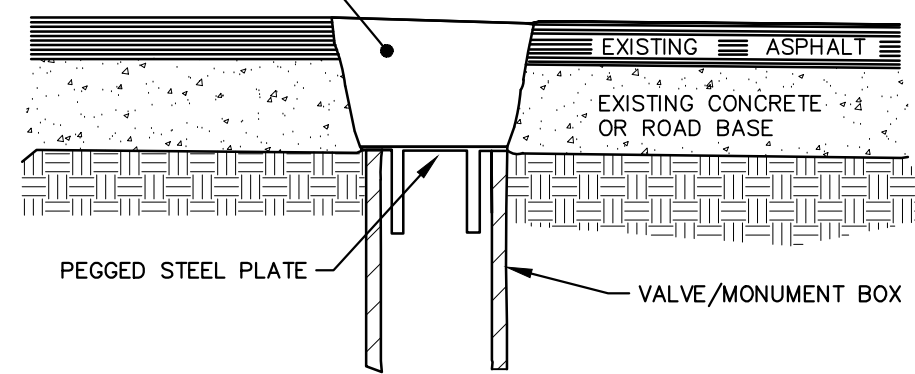
REV. NO.	DATE	DRAWN BY	CHECKED BY
SIDEWALK AND CURB & GUTTER JOINT SPACING			
DR. ENG	CH. ENG	DRAWING NO.	
SCALE N.T.S.	DATE 7/1/2022	SD-R-10	

MDOT HMA MIX AS SPECIFIED BY PSAA (SEE NOTE 1)



**MANHOLE LOWERING DETAIL**

MDOT HMA MIX AS SPECIFIED BY PSAA (SEE NOTE 1)



**VALVE BOX/MONUMENT BOX LOWERING DETAIL (SEE NOTE 3)**

NOTES:

1. IF TRAFFIC IS TO BE MAINTAINED ON THE ROADWAY BEFORE OR AFTER THE COLD MILLING OPERATION, THE STRUCTURE SHALL BE LOWERED TO THE EXTENT THAT A MINIMUM OF THREE(3) INCHES ASPHALT MATERIAL MDOT HMA MIX AS SPECIFIED BY PSAA, OR ENGINEER APPROVED EQUAL, REMAINS TO SUPPORT TRAFFIC.
2. IF THE ROADWAY BEING MILLED IS CLOSED TO TRAFFIC, THE STRUCTURE SHALL BE LOWERED SUCH THAT THE STEEL PLATE IS A MINIMUM OF FOUR(4) INCHES BELOW THE PROPOSED ROAD GRADE AND THE RESULTING VOID SHALL BE FILLED WITH MDOT HMA MIX AS SPECIFIED BY PSAA OR ENGINEER APPROVED EQUAL.
3. WHERE A MONUMENT IS TO BE LOWERED, THE CONTRACTOR SHALL GIVE THE ENGINEER A MINIMUM OF 48 HOURS WRITTEN NOTICE SO THAT THE MONUMENT CAN BE PROPERLY WITNESSED OR PROTECTED. FAILURE TO DO SO SHALL RESULT IN THE ENGINEER REPLACING SAID MONUMENT AT THE CONTRACTOR'S EXPENSE.

**MANHOLE & VALVE/MONUMENT BOX LOWERING SD-GU-8**



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REV. NO.	DATE	DRAWN BY	CHECKED BY
MANHOLE & VALVE/MONUMENT BOX LOWERING			
DR. ENG	CH. ENG	DRAWING NO.	
SCALE N.T.S.	DATE 7/1/2022	SD-GU-8	



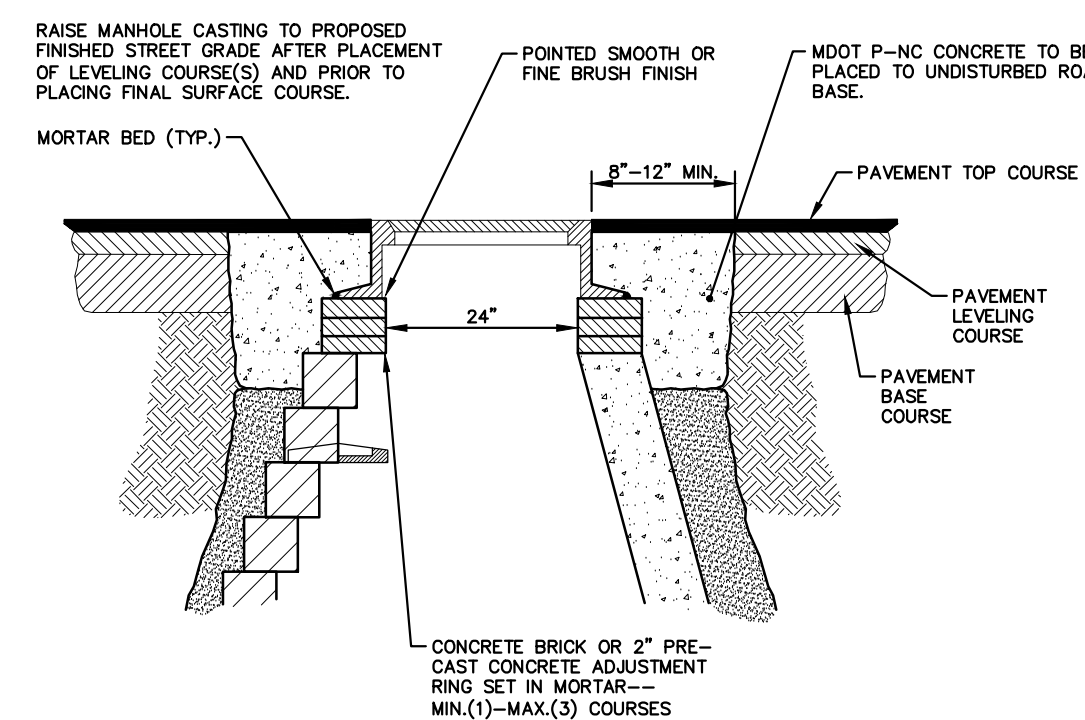
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REV. NO.	DATE	DRAWN BY	CHECKED BY
STANDARD CASTING SCHEDULE			
DR. ENG	CH. ENG	DRAWING NO.	
SCALE N.T.S.	DATE 10/7/2022	SD-GU-4	

TYPE OF CASTING	MDOT DESIGNATION	EQ. CASTING NO.	NEENAH CASTING NO.
MANHOLE AND GATE WELL FRAME AND COVER	Q/B	10402 W/ TYPE A COVER*	R-1642 W/ TYPE C COVER*
BARRIER CURB INLET FRAME AND COVER	K	7045Z W/ TYPE M1 GRATE	R-3031-B W/ TYPE S GRATE
BARRIER CURB DOUBLE INLET FRAME AND COVER	K	7036Z W/ TYPE M2 GRATE	N/A
GUTTER INLET FRAME AND COVER	R	5080Z W/ TYPE 5000M2 GRATE	R-3440C W/ TYPE S GRATE
GUTTER DOUBLE INLET FRAME AND COVER	R	7034Z W/ TYPE M GRATE	N/A
MOUNTABLE CURB INLET ASSEMBLY		7065	N/A
YARD DRAIN (BEE HIVE) FRAME AND COVER	D	10402 TYPE 02 GRATE	R-2560-E1
WATER VALVE BOX ASSEMBLY IN PAVEMENT		8560	N/A
MONUMENT BOX ASSEMBLY		8360	N/A

NOTES:

\*EACH COVER SHALL HAVE "SANITARY", "STORM", OR "WATER" CAST IN THE SURFACE, WHICHEVER IS APPLICABLE. SANITARY SEWER COVERS SHALL BE GASKETED IN FLOOD PRONE AREAS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE PSAA. FRAMES AND COVERS MUST HAVE MACHINED BEARING SURFACES.



- NOTE:
1. IF MANHOLE WILL BE PLACED IN GRAVEL ROAD, CASTING TO BE SET 6" TO 8" BELOW ROADWAY GRADE. ALL CONSTRUCTION METHODS SHALL REMAIN AS SHOWN ABOVE.
  2. P-NC CONCRETE MIXTURE SHALL CONTAIN 658 POUNDS PER CUBIC YARD (7 SACKS) OF CEMENT WHEN THE FORECASTED AIR TEMPERATURE IS ABOVE 59-F AND 752 POUNDS PER CUBIC YARD (8 SACKS) OF CEMENT WHEN THE FORECASTED AIR TEMPERATURE IS 59-F OR LESS.

**MANHOLE CASTING ADJUSTMENT SD-GU-5**



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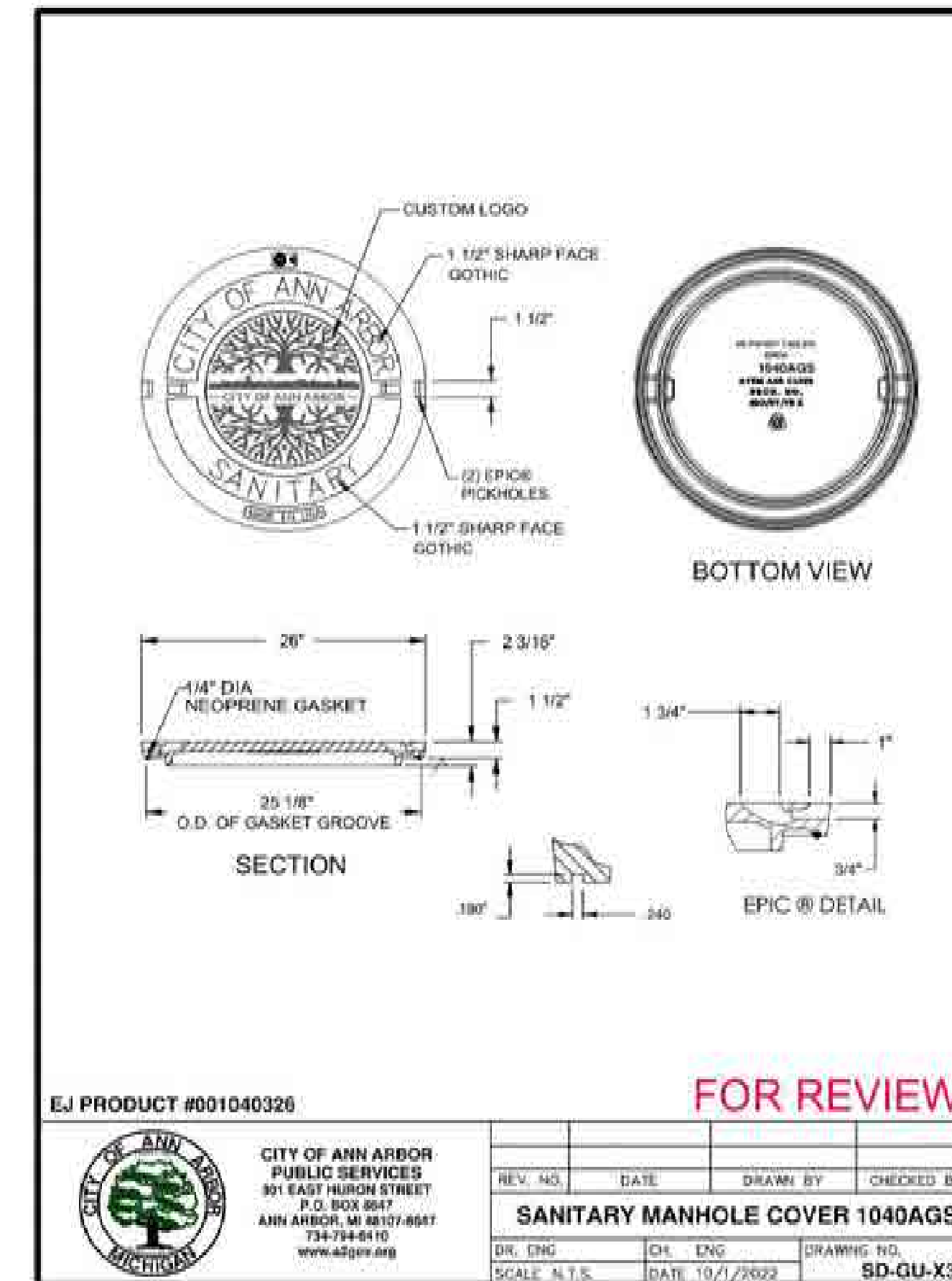
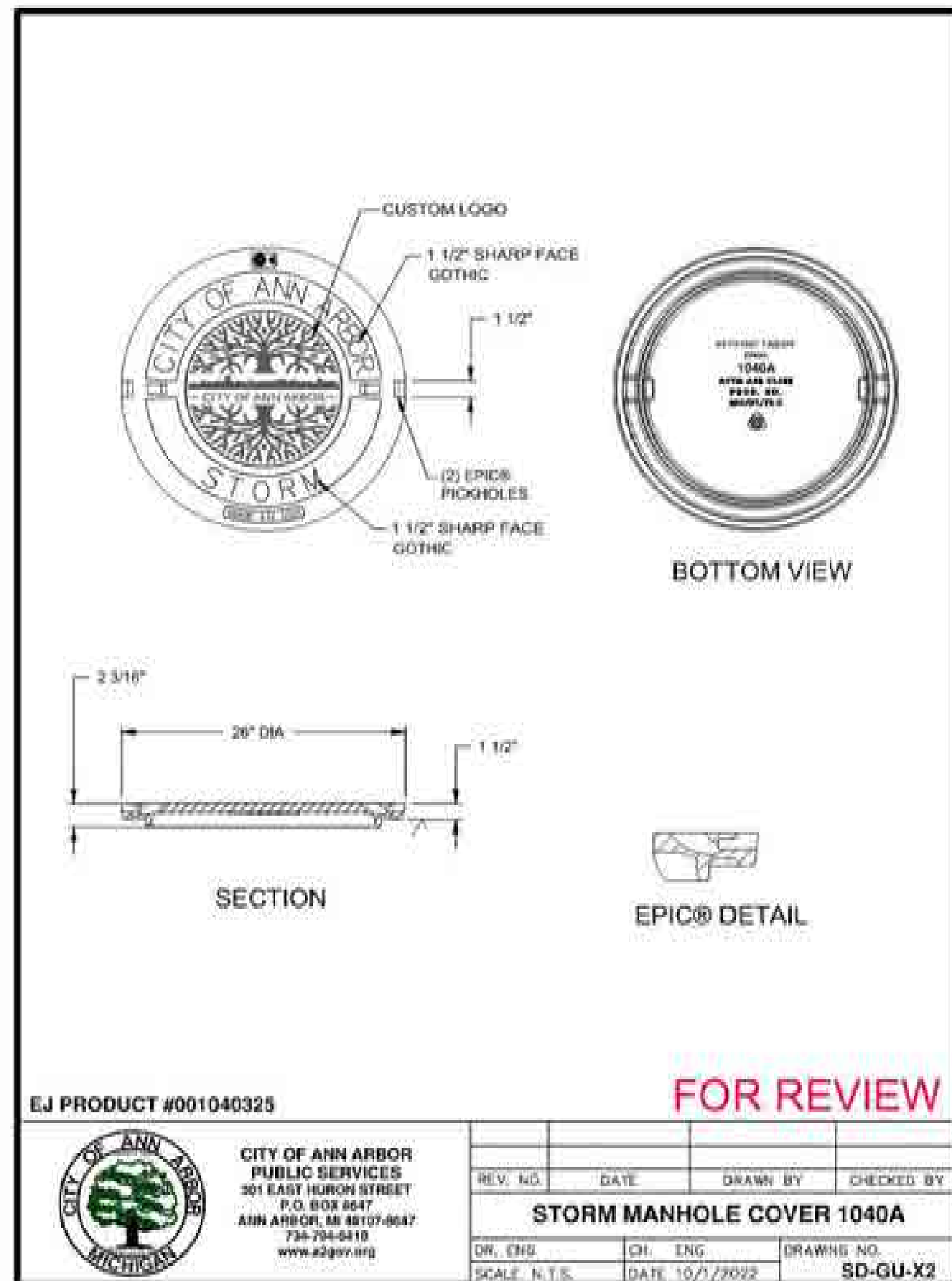
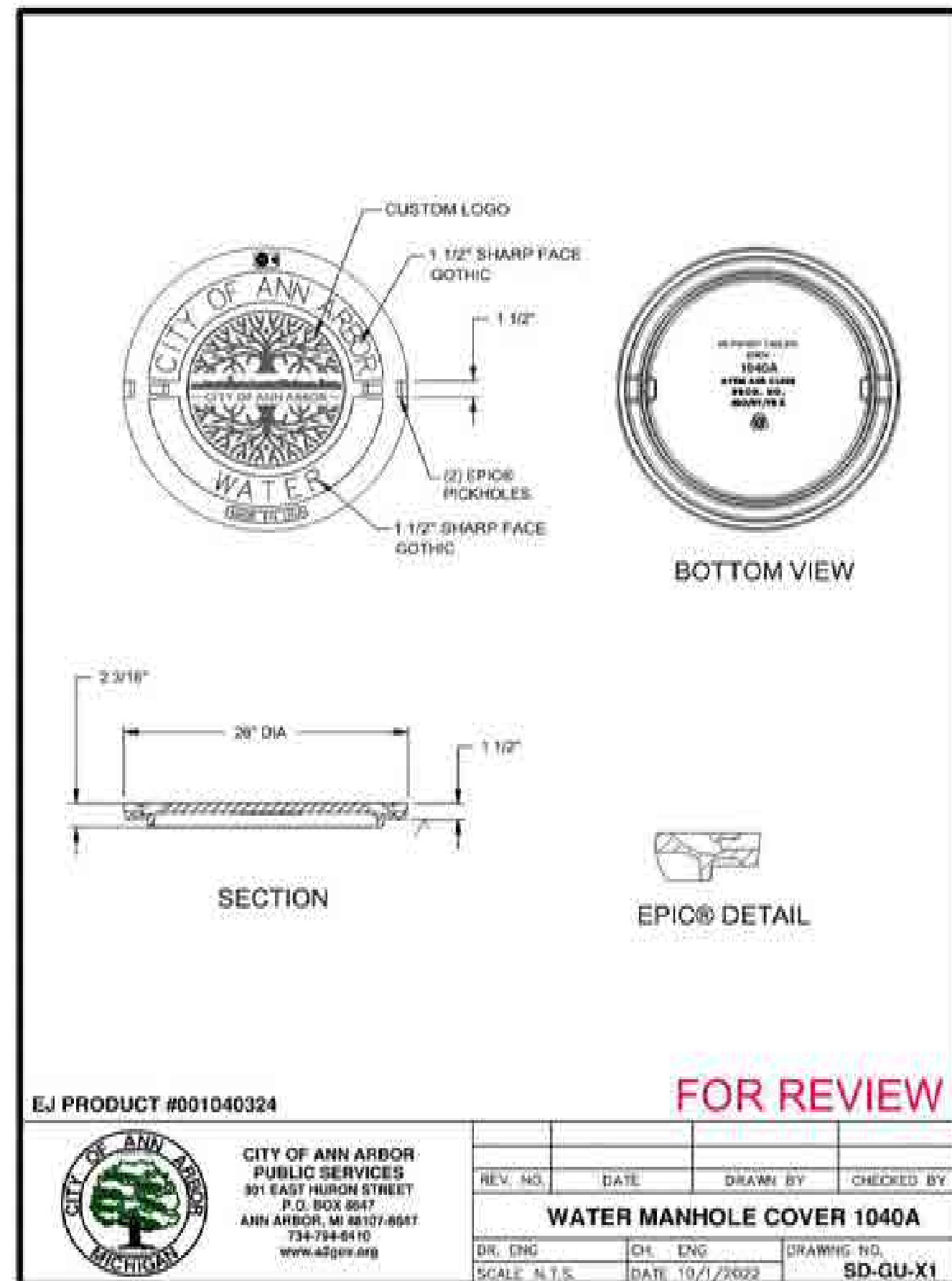
REV. NO.	DATE	DRAWN BY	CHECKED BY
MANHOLE CASTING ADJUSTMENT			
DR. ENG	CH. ENG	DRAWING NO.	
SCALE N.T.S.	DATE 7/1/2022	SD-GU-5	



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	ORIGINAL ISSUE	10/6/23	INB	LCM

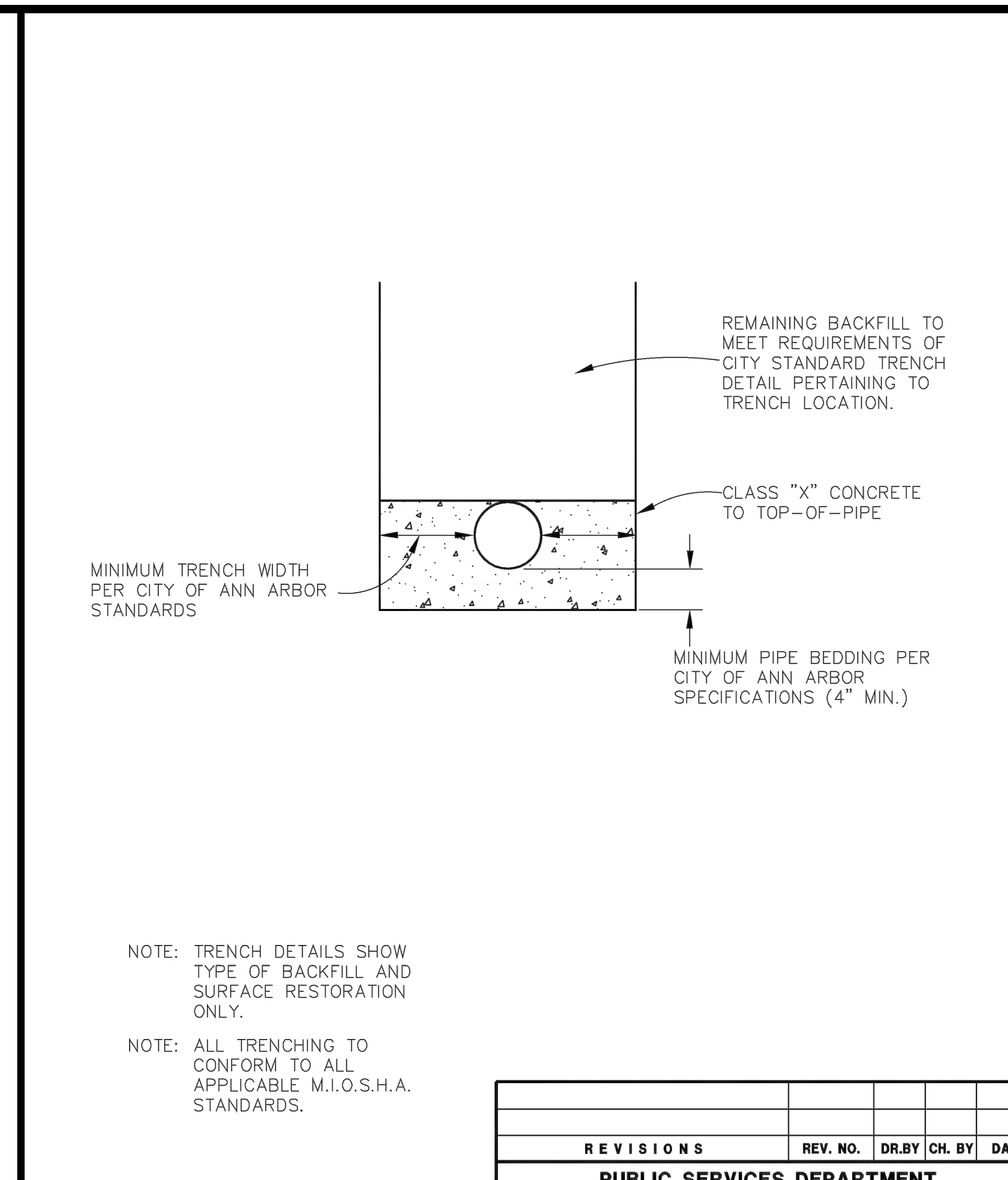
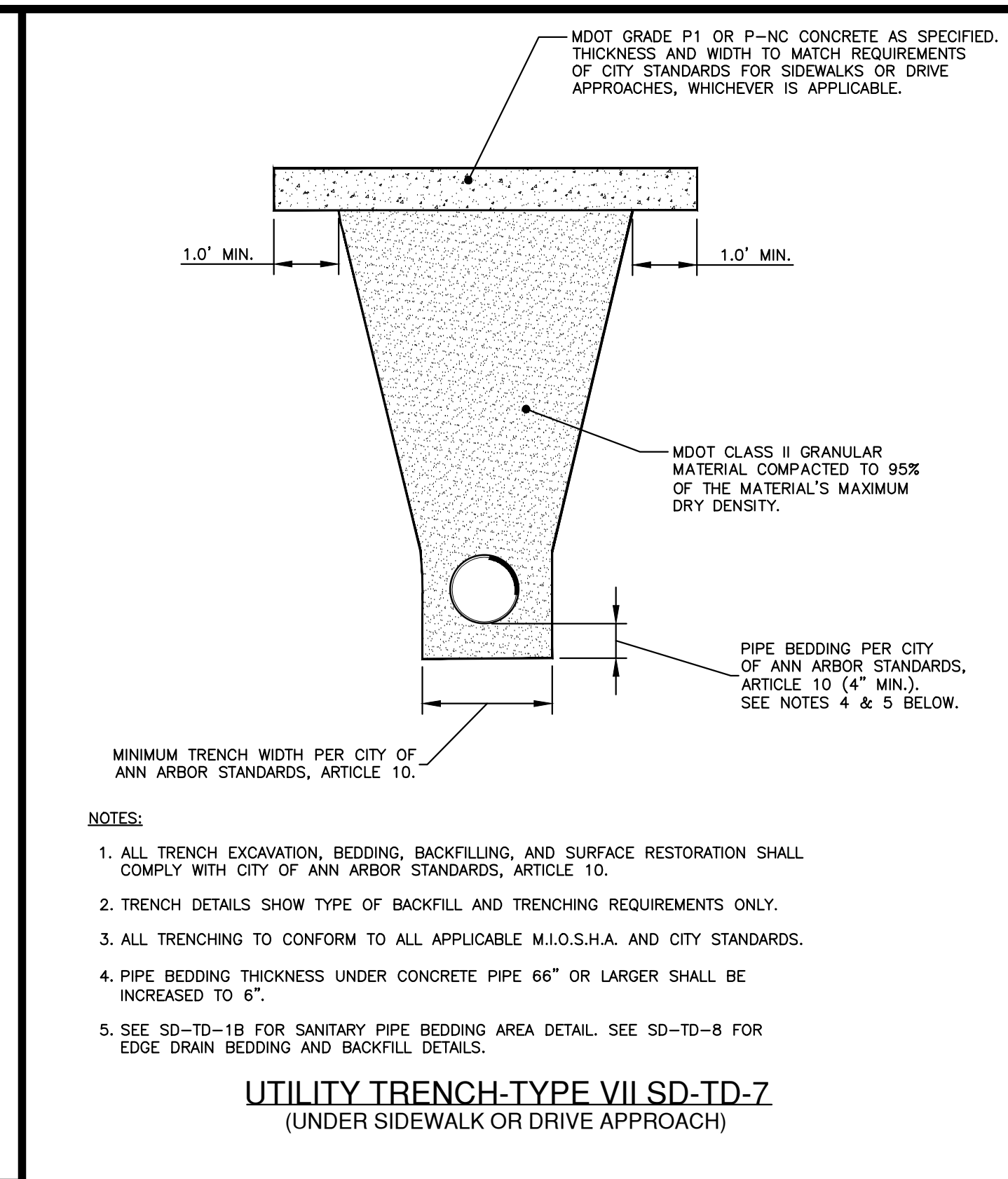
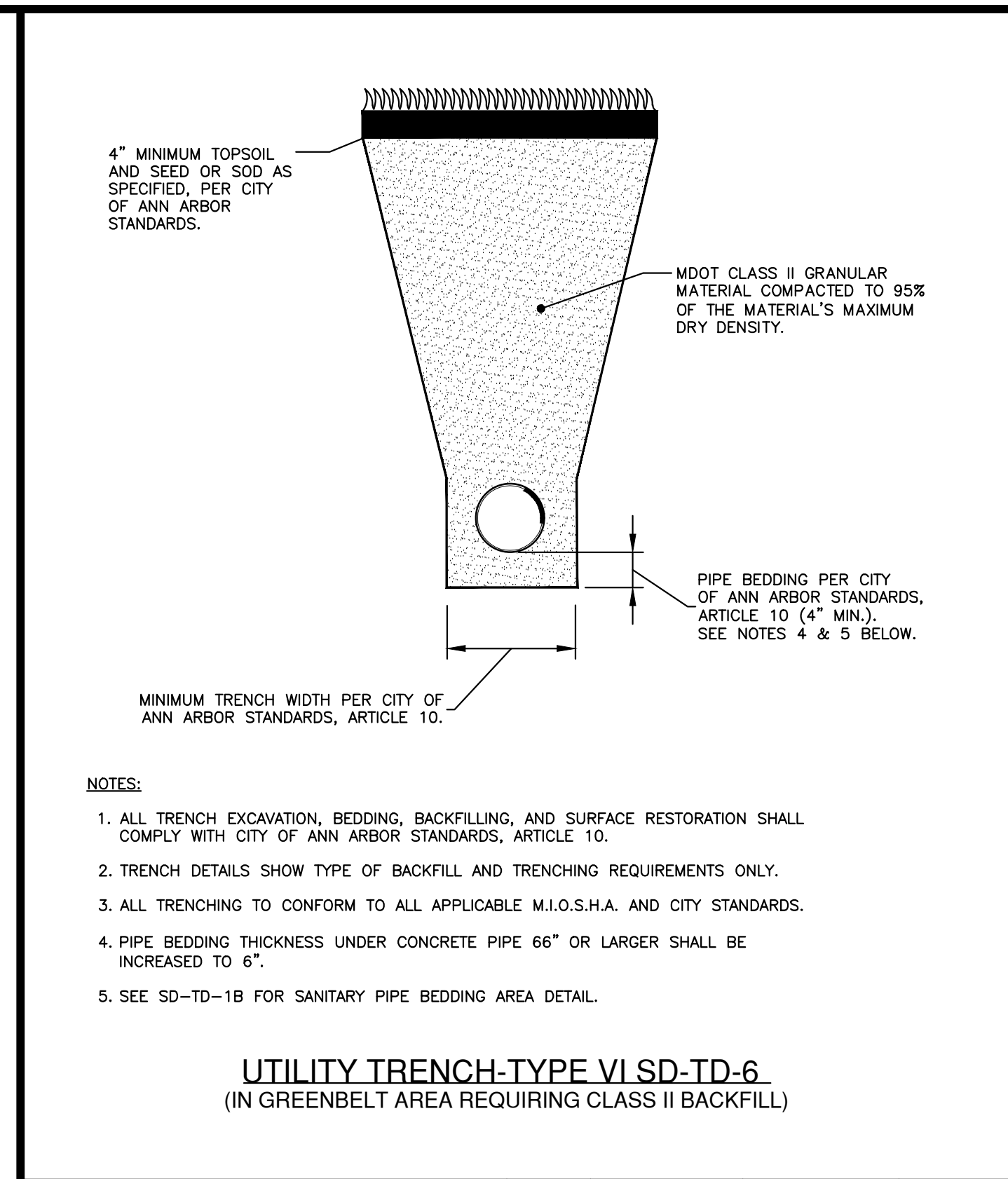
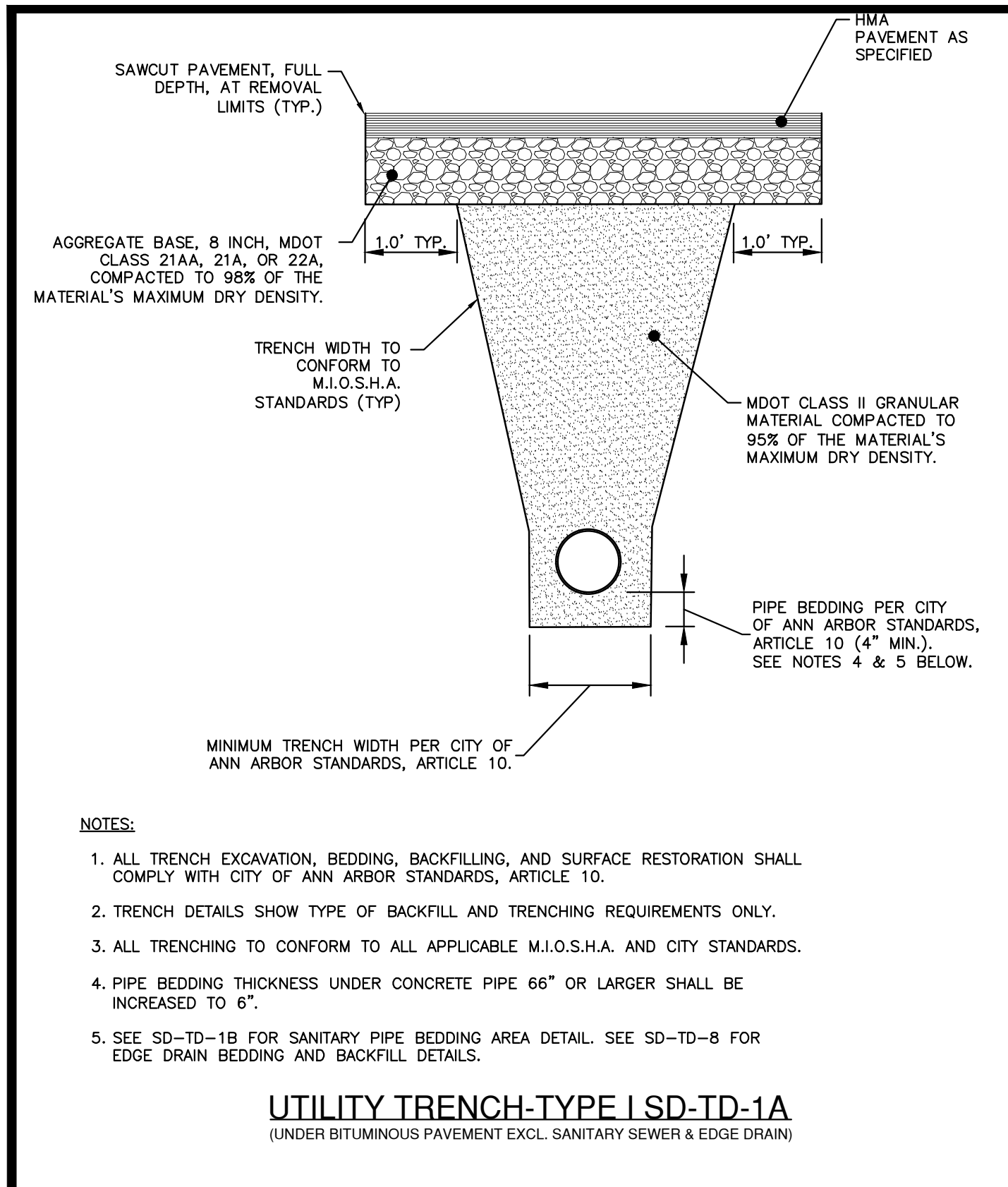
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR				
<b>E. MEDICAL CENTER DRIVE ANN ARBOR STANDARD DETAILS</b>				
SCALE	N/A	INCH	0	1
DRAWING NO.	2021-008-STD1			
SHEET NO.	124	OF	155	

APPROVED BY: LEIGH C. MERRILL P.E., MICHIGAN NO. 6201061025



		PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR			
		<b>E. MEDICAL CENTER DRIVE ANN ARBOR STANDARD DETAILS</b>			
		SCALE	0 INCH		
		N/A	1		
		DRAWING NO.			
		2021-008-STD2			
		SHEET NO. 125 OF 155			
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY
	ORIGINAL ISSUE	10/6/23	INB	LCM	

LEIGH C. MERRILL P.E., MICHIGAN NO. 6201061025



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REV. NO.	DATE	DRAWN BY	CHECKED BY

**UTILITY TRENCH - TYPE I**  
(UNDER BITUMINOUS PAVEMENT EXCL. SANITARY SEWER & EDGE DRAIN)

DR. ENG	CH. ENG	DRAWING NO.
SCALE N.T.S.	DATE 7/1/2022	SD-TD-1A

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REV. NO.	DATE	DRAWN BY	CHECKED BY

**UTILITY TRENCH - TYPE VI**

DR. ENG	CH. ENG	DRAWING NO.
SCALE N.T.S.	DATE 7/1/2022	SD-TD-6

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**UTILITY TRENCH - TYPE VII**

DR. ENG	CH. ENG	DRAWING NO.
SCALE N.T.S.	DATE 7/1/2022	SD-TD-7

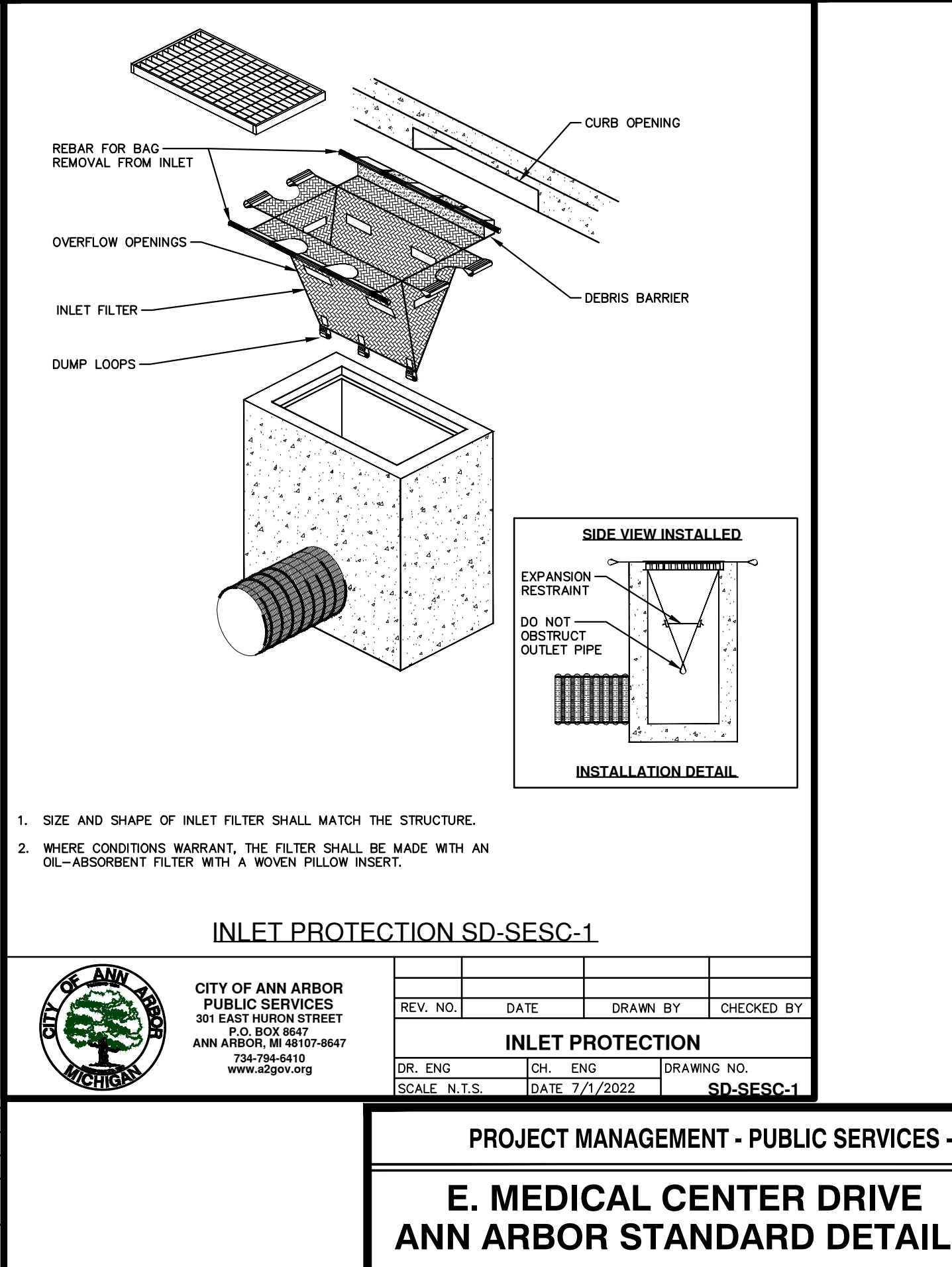
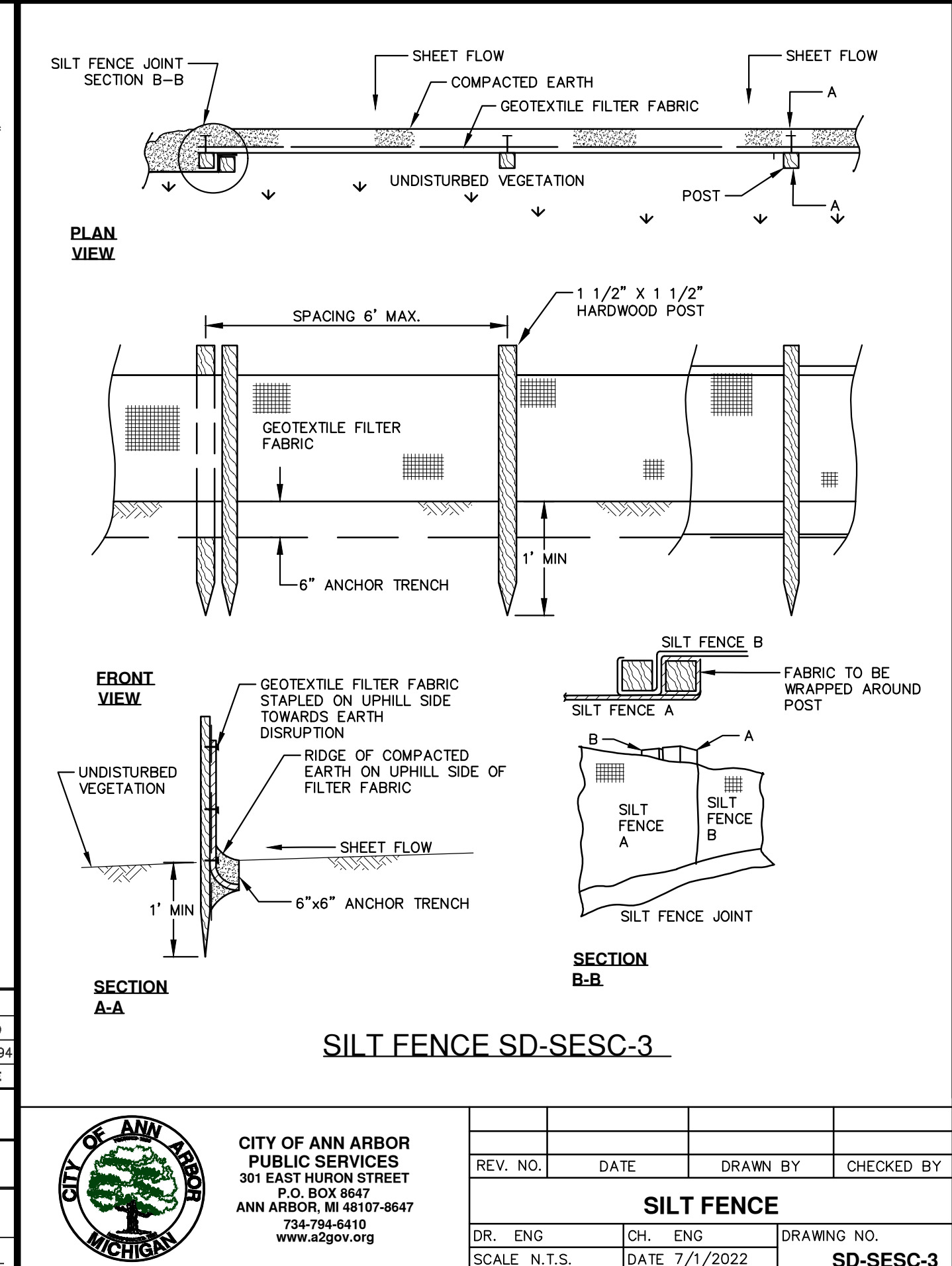
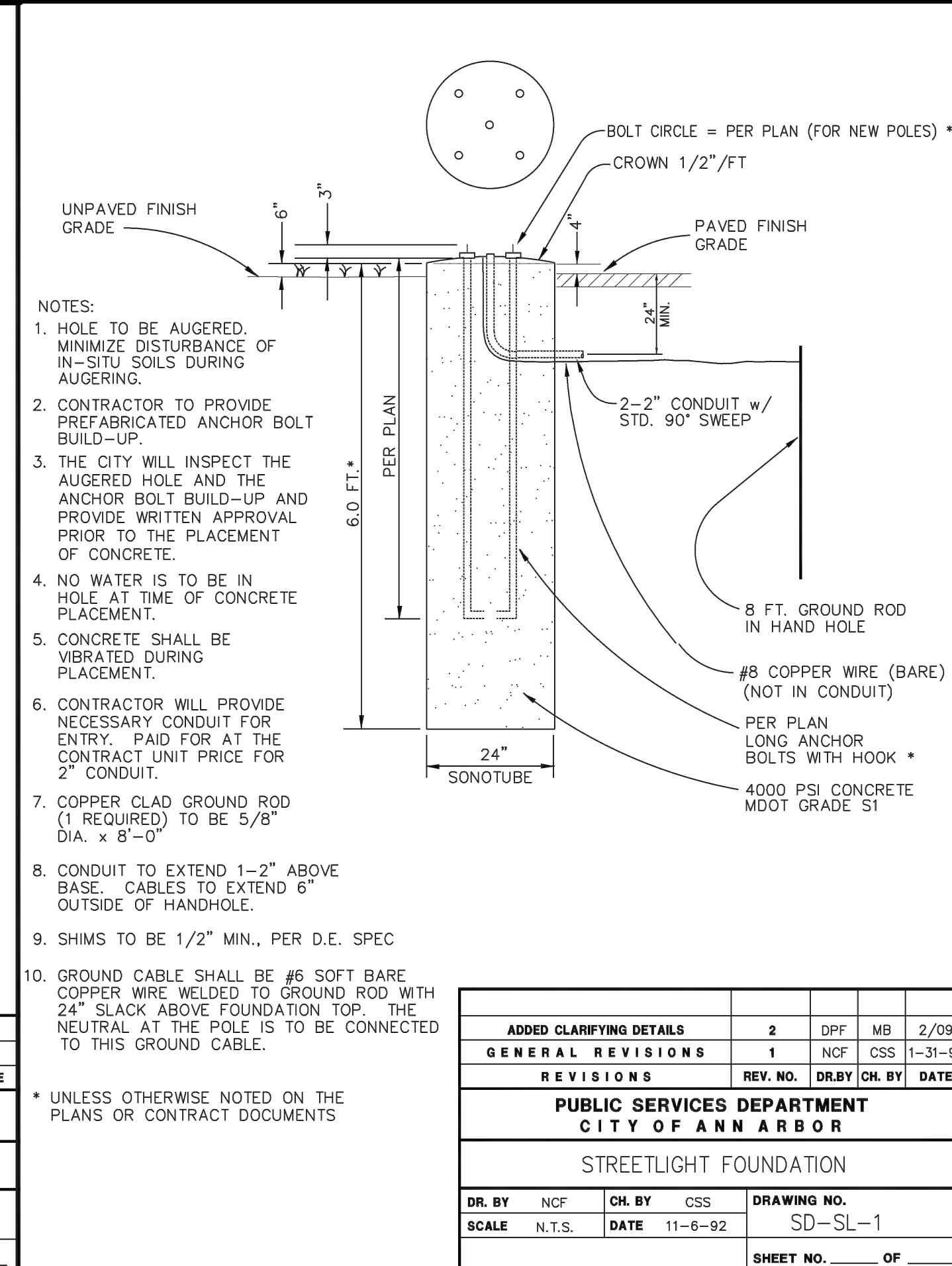
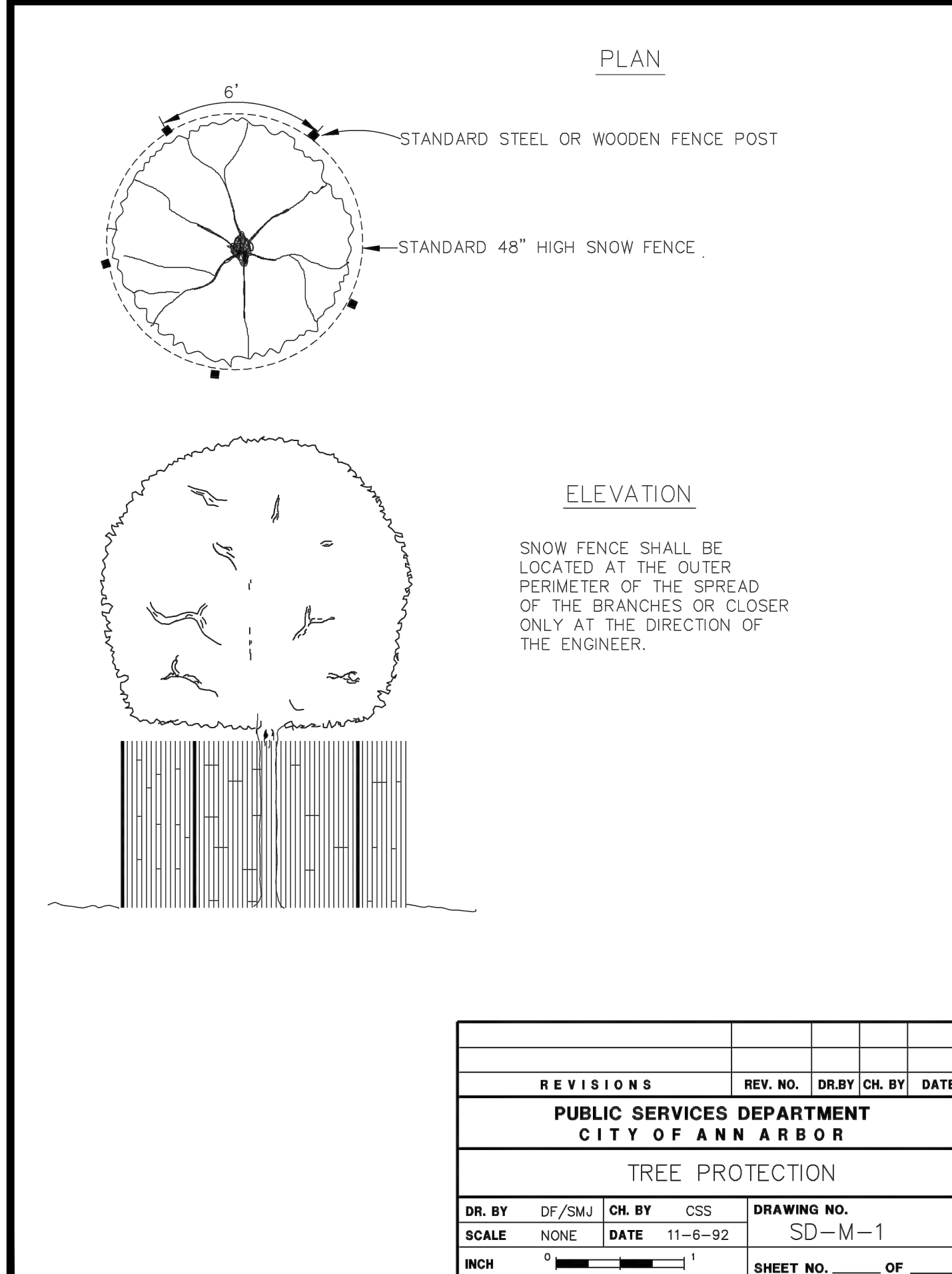
REVISIONS				
REV. NO.	DATE	DR. BY	CH. BY	DATE

**PUBLIC SERVICES DEPARTMENT CITY OF ANN ARBOR**

**UTILITY TRENCH-TYPE IX (CONCRETE ENGAGEMENT)**

DR. BY	D.F.	CH. BY	C.S.S.	DRAWING NO.
SCALE	NONE	DATE	11-6-92	SD-TD-9

INCH 0 1 SHEET NO. OF



**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**E. MEDICAL CENTER DRIVE ANN ARBOR STANDARD DETAILS**

SCALE N/A INCH 0 1

DRAWING NO. 2021-008-STD3

SHEET NO. 126 OF 155

APPROVED BY LEIGH C. MERRILL P.E., MICHIGAN NO. 6201061025

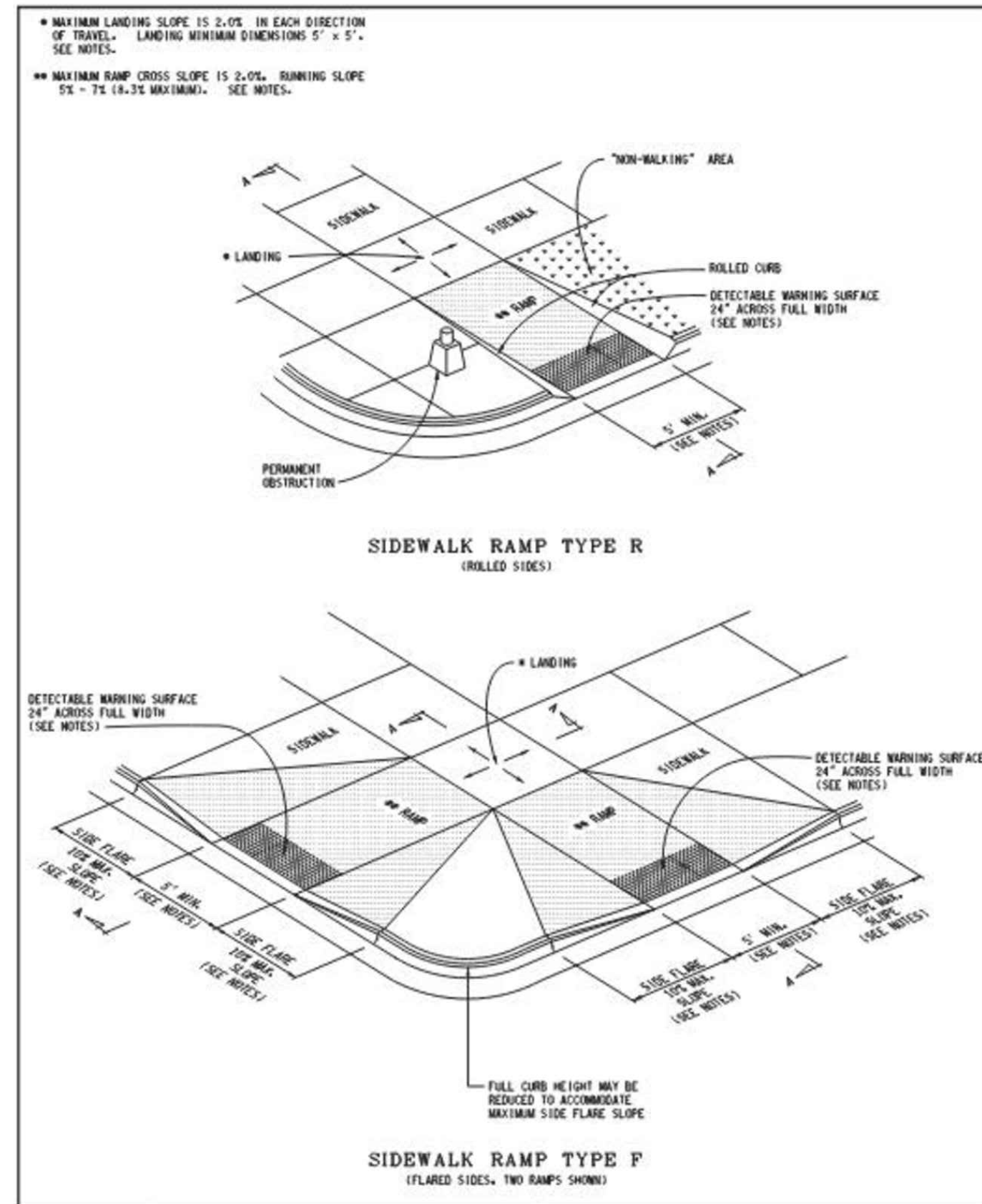
**DLZ**

ORIGINAL ISSUE 10/6/23 INB LCM

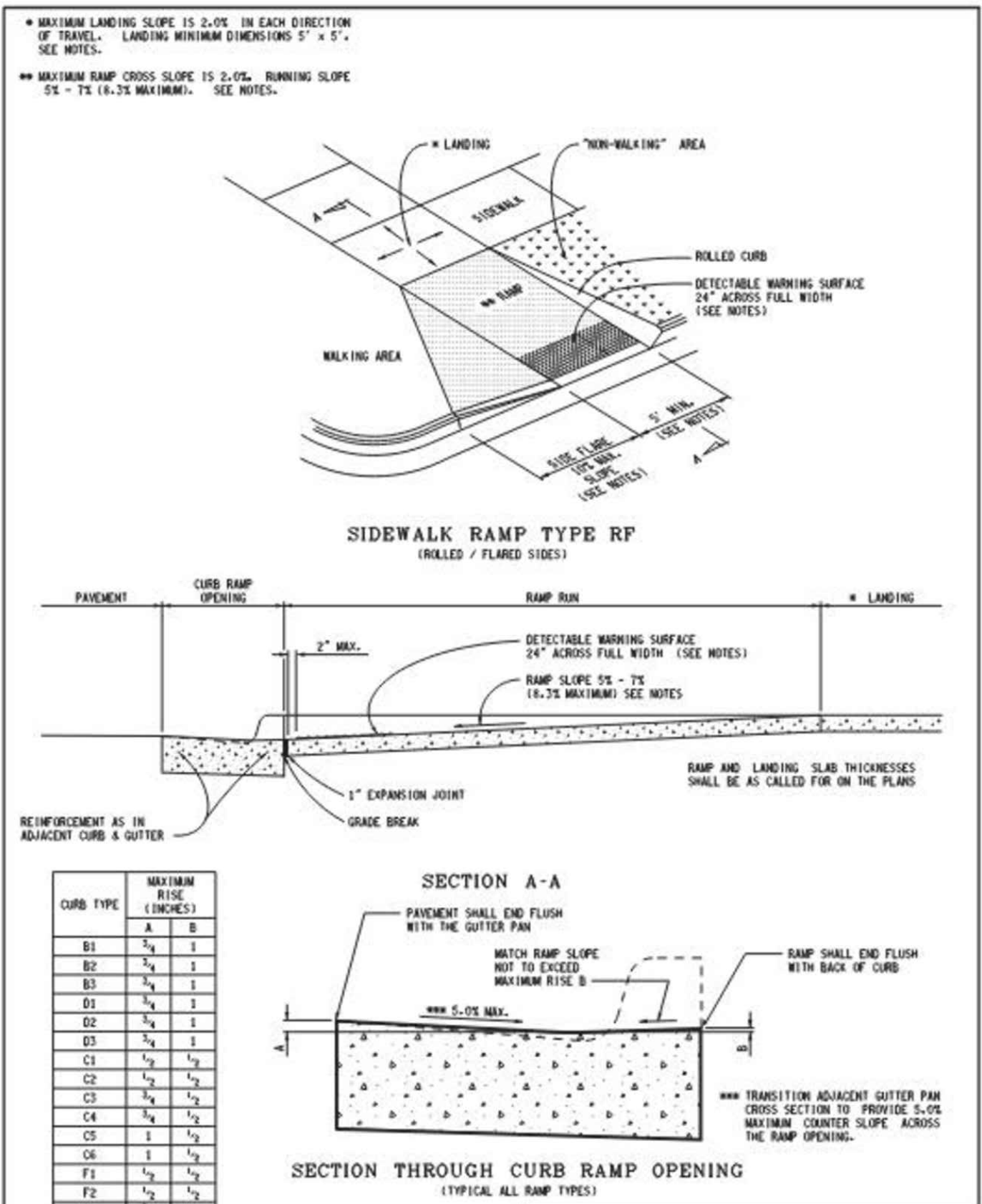








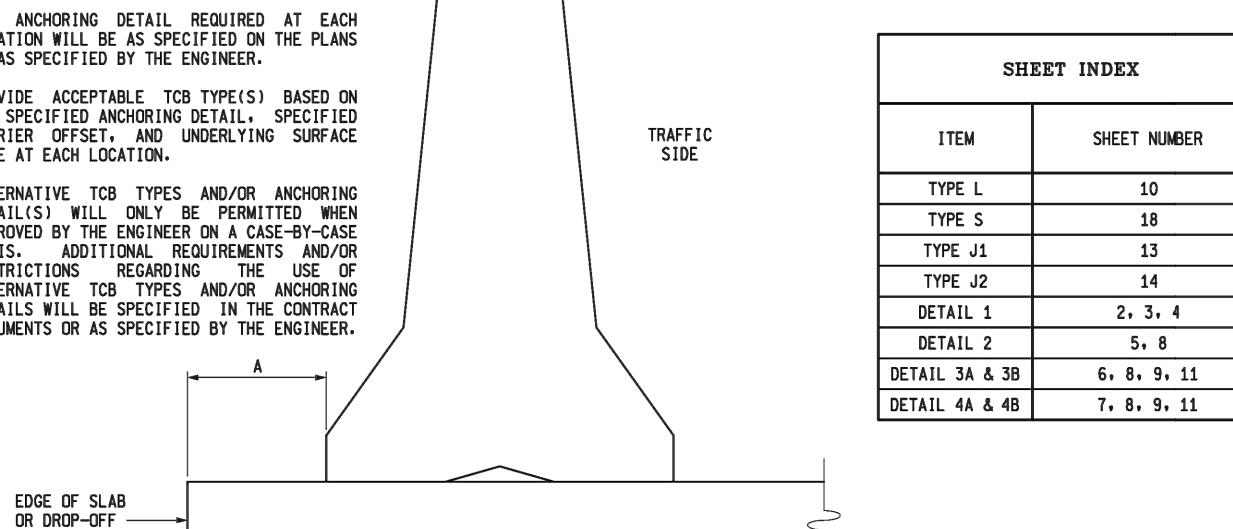
APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES		APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT	
DESIGN DIVISION		DESIGN DIVISION	
DRAWN BY: S.L.L.		DRAWN BY: S.L.L.	
CHECKED BY: S.L.L.		CHECKED BY: S.L.L.	



UNDERLYING SURFACE	ACCEPTABLE TEMPORARY CONCRETE BARRIER (TCB) TYPES AND ANCHORING DETAILS BASED ON UNDERLYING SURFACE TYPE AND BARRIER OFFSET FROM DROP-OFF							
	BARRIER OFFSET							
	0" ≤ A < 6"		6" ≤ A < 12"		12" ≤ A < 26"		A ≥ 26"	
TCB TYPE	DETAIL	TCB TYPE	DETAIL	TCB TYPE	DETAIL	TCB TYPE	DETAIL	
BRIDGE DECK (CONCRETE)	L OR S ●	3A OR 4A ●	L OR S ●	3A OR 4A ●	L	1	●●●	N/A
BRIDGE DECK (CONCRETE WITH HMA OVERLAY)	L OR S ●	3B ●	L OR S ●	3B ●	L	1	●●●	N/A
ROADWAY (CONCRETE)	L OR S ●	4A ●	L OR S ●	4A ●	L	1	●●●	N/A
ROADWAY (HMA)	●●●●	●●●●	L OR S ●	2	L	1	●●●	N/A
ROADWAY (CONCRETE WITH HMA OVERLAY)	L OR S ●	4B ●	L OR S ●	4B ●	L	1	●●●	N/A

IN REGARDS TO BARRIER OFFSET, "A" IS THE DISTANCE FROM THE OUTSIDE EDGE OF THE TCB TO THE DROP OFF OR THE EDGE OF SLAB.

NOTES:  
 THE CLEAR DIMENSION, A, BETWEEN THE TOE OF THE TCB AND THE DROP-OFF OR EDGE OF SLAB WILL BE AS SPECIFIED ON THE PLANS OR AS SPECIFIED BY THE ENGINEER.  
 THE ANCHORING DETAIL REQUIRED AT EACH LOCATION WILL BE AS SPECIFIED ON THE PLANS OR AS SPECIFIED BY THE ENGINEER.  
 PROVIDE ACCEPTABLE TCB TYPE(S) BASED ON THE SPECIFIED ANCHORING DETAIL, SPECIFIED BARRIER OFFSET, AND UNDERLYING SURFACE TYPE AT EACH LOCATION.  
 ALTERNATIVE TCB TYPES AND/OR ANCHORING DETAIL(S) WILL ONLY BE PERMITTED WHEN APPROVED BY THE ENGINEER ON A CASE-BY-CASE BASIS. ADDITIONAL REQUIREMENTS AND/OR RESTRICTIONS REGARDING THE USE OF ALTERNATIVE TCB TYPES AND/OR ANCHORING DETAILS WILL BE SPECIFIED IN THE CONTRACT DOCUMENTS OR AS SPECIFIED BY THE ENGINEER.



- USE TYPE J1 AND J2 TCB SECTIONS OVER BRIDGE DECK EXPANSION JOINTS WITH THERMAL EXPANSION FROM 1 1/2" TO 4". DO NOT USE DETAILS 3A, 3B, OR 4A, OVER BRIDGE DECK EXPANSION JOINTS WITH THERMAL EXPANSION GREATER THAN 4". INSTEAD, USE DETAIL 1 AND TYPE 1 TCB SECTIONS WITH "A" NOT BEING ≥ 12". OVER THE ENTIRE BRIDGE SPAN WHEN PLACING LIMITED DEFLECTION TCB SECTIONS OVER BRIDGE DECK EXPANSION JOINTS WITH THERMAL EXPANSION GREATER THAN 4". REFER TO TCB SECTION OVER BRIDGE EXPANSION JOINT DETAILS. FOR ADDITIONAL INFORMATION CONTACT THE TRAFFIC AND SAFETY CRASH BARRIER ENGINEER.
- PROVIDE THE ANCHORING DETAIL SPECIFIED ON THE PLANS OR AS SPECIFIED BY THE ENGINEER.
- USE OF LIMITED DEFLECTION TCB IS NOT REQUIRED WHEN "A" ≥ 26". TYPE L OR TYPE S TCB MAY BE USED WITHOUT ANCHORING TO THE UNDERLYING SURFACE OR BOX-BEAM STIFFENERS. OTHER MOOT APPROVED STANDARD TEMPORARY BARRIER TYPES MAY ALSO BE USED WHEN "A" ≥ 26".
- DO NOT INSTALL LIMITED DEFLECTION TCB ON HMA ROADWAYS WHEN "A" < 6".

DEPARTMENT DIRECTOR  
K.A. T. Shultz

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TEMPORARY CONCRETE BARRIER  
LIMITED DEFLECTION

PREPARED BY: \_\_\_\_\_  
DESIGN DIVISION

APPROVED BY: \_\_\_\_\_  
DIRECTOR, BUREAU OF FIELD SERVICES

DECEMBER 14, 2015  
F.J.H.W.A. APPROVAL

8-14-2015  
PLAN DATE

R-53-A

SHEET 1 OF 22

BOX BEAM STIFFENED METHOD DETAIL 1

NOTES:  
 FOLLOW TCB TYPE AND BARRIER OFFSET REQUIREMENTS IDENTIFIED IN TABLE ON SHEET 1.  
 WHERE TCB WITH BOX-BEAM STIFFENERS (DETAIL 1) IS FLARED OR PLACED ON A RADIUS, THE RESULTING GAPS BETWEEN THE BOX-BEAM AND TCB MUST BE SHIMMED.  
 SHIMMING MUST CONSIST OF 8" x 8" x 1/2" SQUARE PLATE AND FENDER WASHERS, AS NEEDED TO SNUG THE BOX-BEAM STIFFENER TO THE TCB.  
 FENDER WASHERS MUST BE 3" NOMINAL O.D.  
 INSTALL CONNECTION PINS BETWEEN TCB SECTIONS IN ADDITION TO BOX-BEAM STIFFENERS.

SIDE VIEW (CONSTRUCTION SIDE)

PLAN VIEW TCB CURVING AWAY FROM TRAFFIC

PLAN VIEW TCB CURVING TOWARD TRAFFIC

BOX-BEAM HOLE LAYOUT DETAIL

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TEMPORARY CONCRETE BARRIER  
LIMITED DEFLECTION

8-14-2015  
PLAN DATE

R-53-A

SHEET 2 OF 22

BOX BEAM STIFFENED METHOD DETAIL 1

SECTION WITH SHIMMING

SECTION WITHOUT SHIMMING

BOX-BEAM HOLE LAYOUT DETAIL

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TEMPORARY CONCRETE BARRIER  
LIMITED DEFLECTION

8-14-2015  
PLAN DATE

R-53-A

SHEET 3 OF 22

TRANSITION FROM LIMITED DEFLECTION TEMPORARY CONCRETE BARRIER TO STANDARD TEMPORARY BARRIER WHEN USING DETAIL 1

TYPE	#1	#2	#3	#4	#5	#6
TYPE L	1	2	3	3	2	1
TYPE S						

NOTES:  
 INSTALL THE FOLLOWING NUMBER OF ANCHOR BOLTS (STAKES) SHOWN ON THE TRAFFIC SIDE OF THE BARRIER ON THE FOLLOWING TEMPORARY CONCRETE BARRIER SECTIONS:  
 STANDARD TEMPORARY BARRIER CONSISTS OF ANY TEMPORARY BARRIER MEETING MOST SPECIFICATIONS.  
 THE SECTIONS AND PLAN MUST BE LAPPED. OVERLAP THE AREA REQUIRING LIMITED DEFLECTION TEMPORARY CONCRETE BARRIER.  
 ANY OBSERVATIONS FROM THIS DETAIL REQUIRE APPROVAL FROM THE ENGINEER PRIOR TO INSTALLATION.  
 INSTALL BOX-BEAM STIFFENERS BETWEEN TCB SECTIONS AS DEPICTED IN THIS DETAIL.  
 USE EITHER TYPE L OR TYPE S TCB FOR SECTIONS #1, #2, #3, #4, #5, #6, AND #7. THE NUMBER OF ANCHOR BOLTS (STAKES) SHOWN ON THE TRAFFIC SIDE OF THE BARRIER MUST BE AS SPECIFIED BY THE ENGINEER.

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TEMPORARY CONCRETE BARRIER  
LIMITED DEFLECTION

8-14-2015  
PLAN DATE

R-53-A

SHEET 4 OF 22

STAKED METHOD DETAIL 2

STOP PLATE DETAIL

STAKE DETAIL

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TEMPORARY CONCRETE BARRIER  
LIMITED DEFLECTION

8-14-2015  
PLAN DATE

R-53-A

SHEET 5 OF 22

THROUGH BOLT METHOD DETAILS 3A AND 3B

DETAIL 3A

DETAIL 3B

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TEMPORARY CONCRETE BARRIER  
LIMITED DEFLECTION

8-14-2015  
PLAN DATE

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SHEET 6 OF 22

3 WORKING DAYS  
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	ORIGINAL ISSUE	10/6/23	INB	LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

EAST MEDICAL CENTER DRIVE

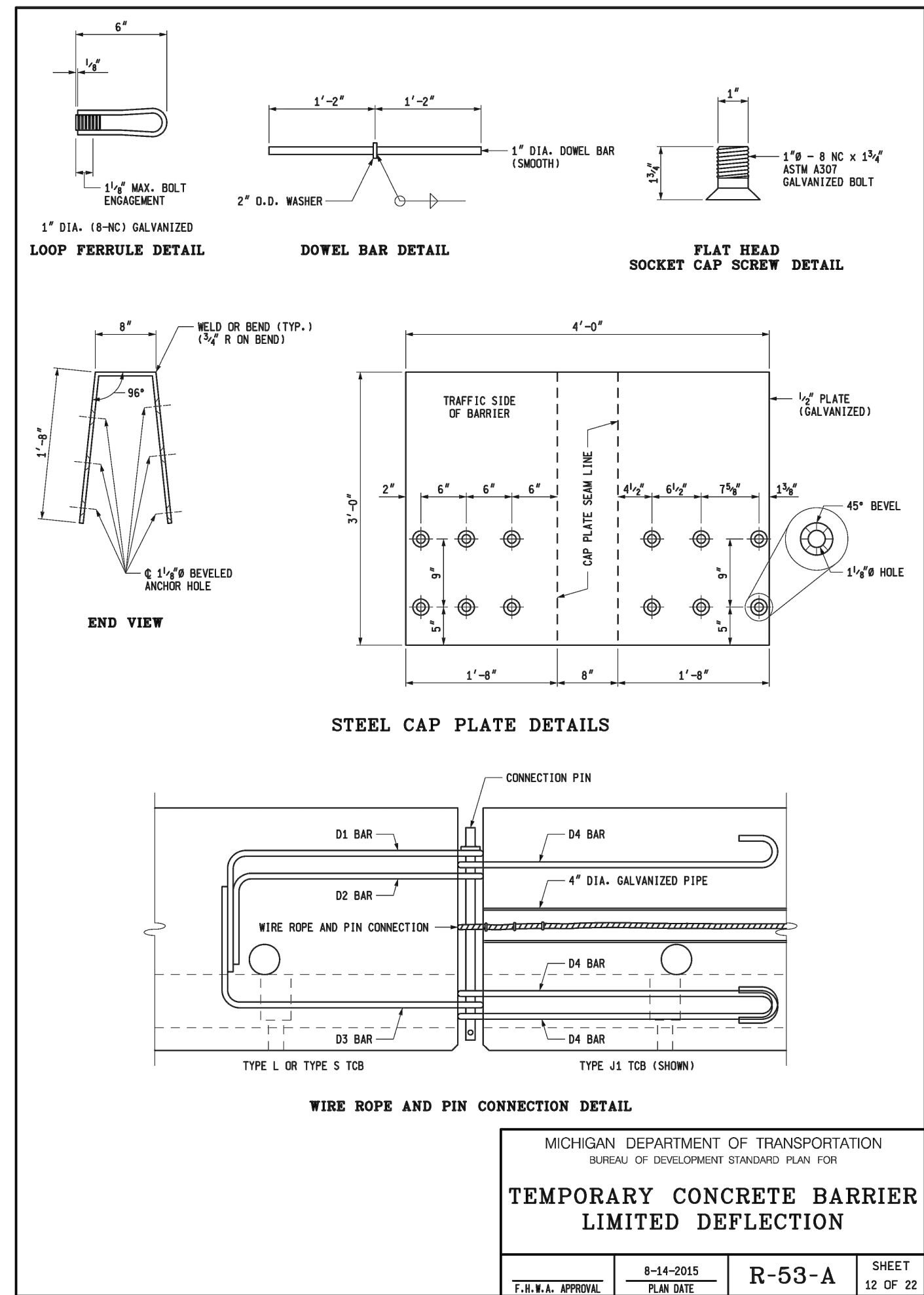
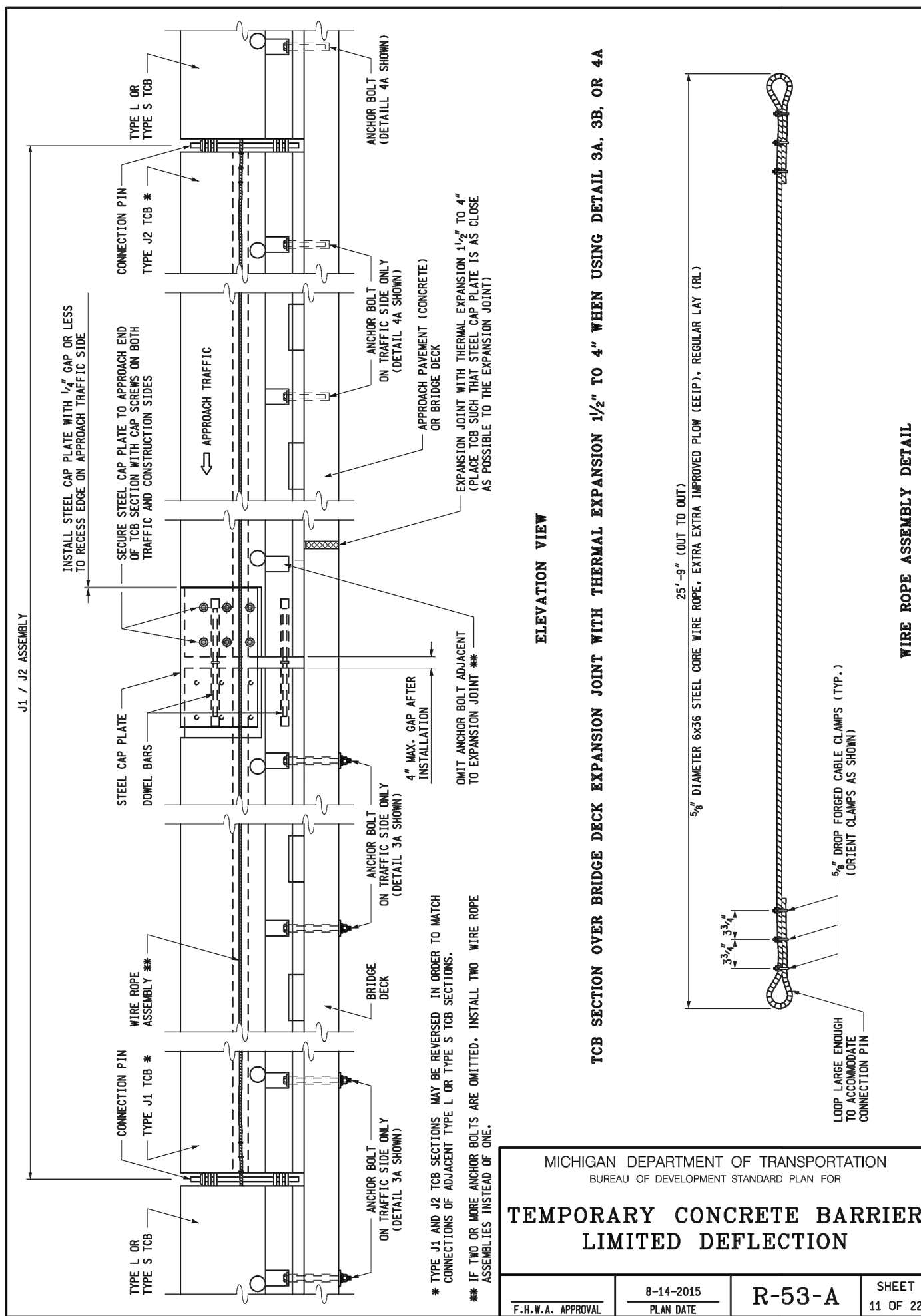
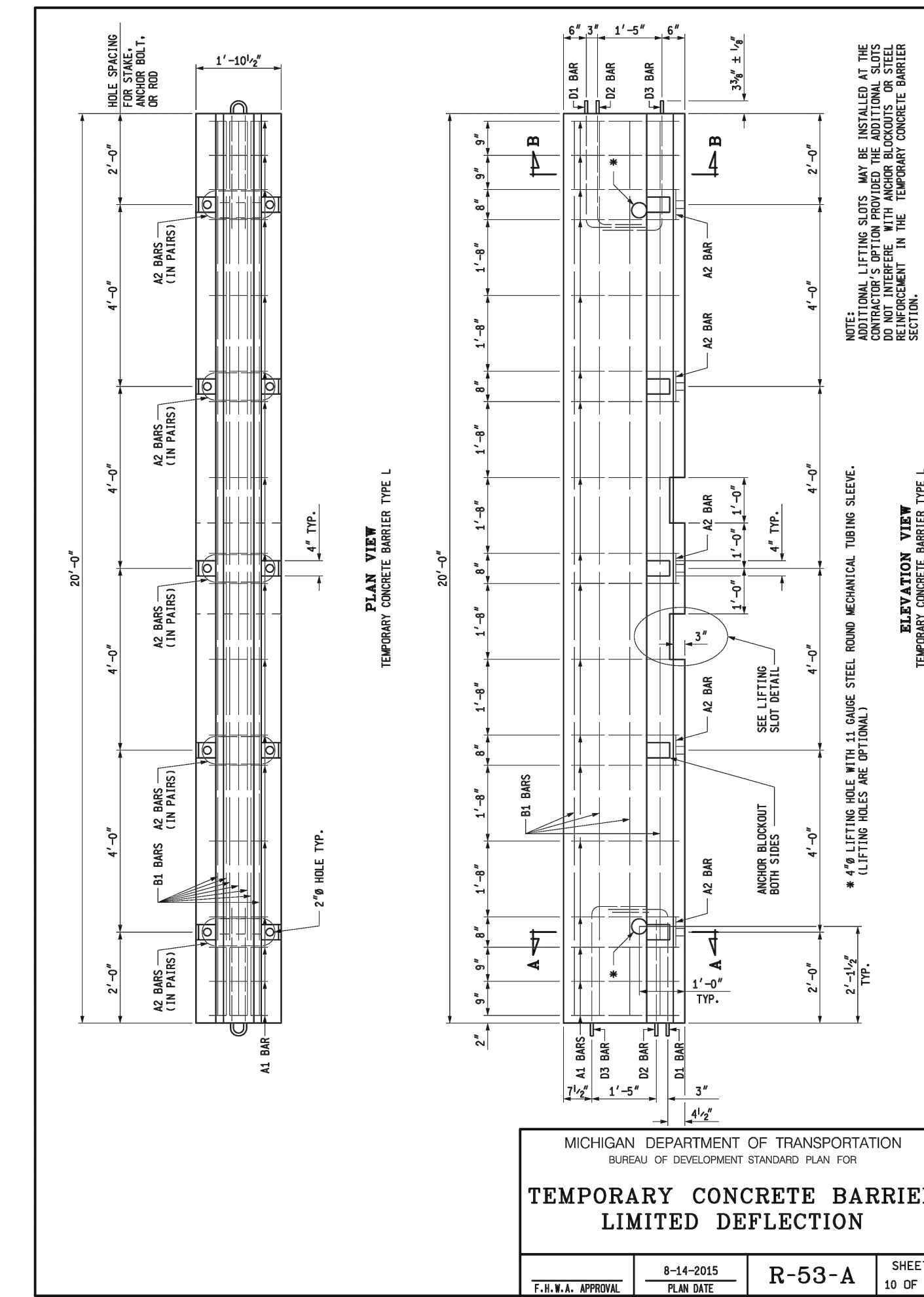
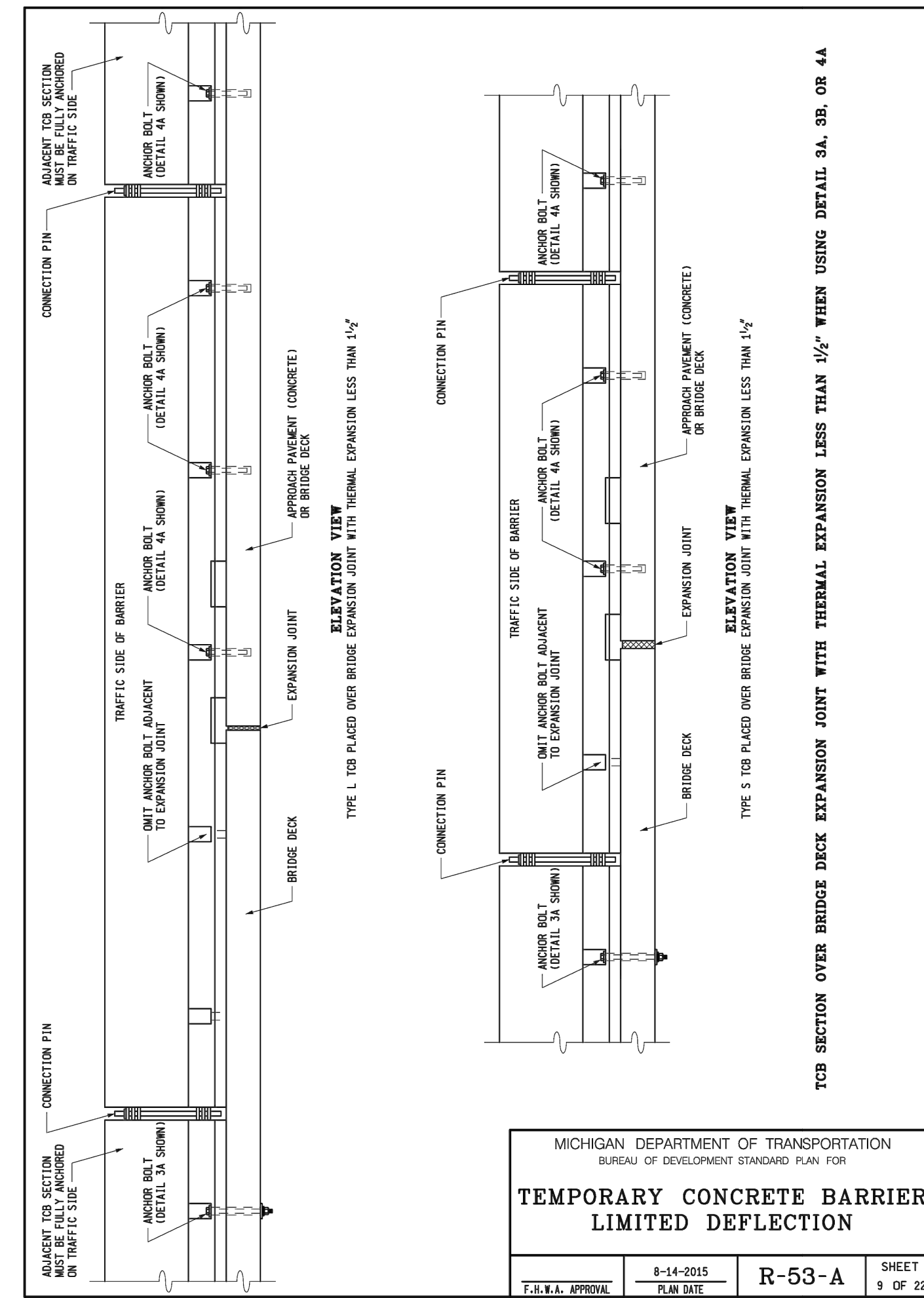
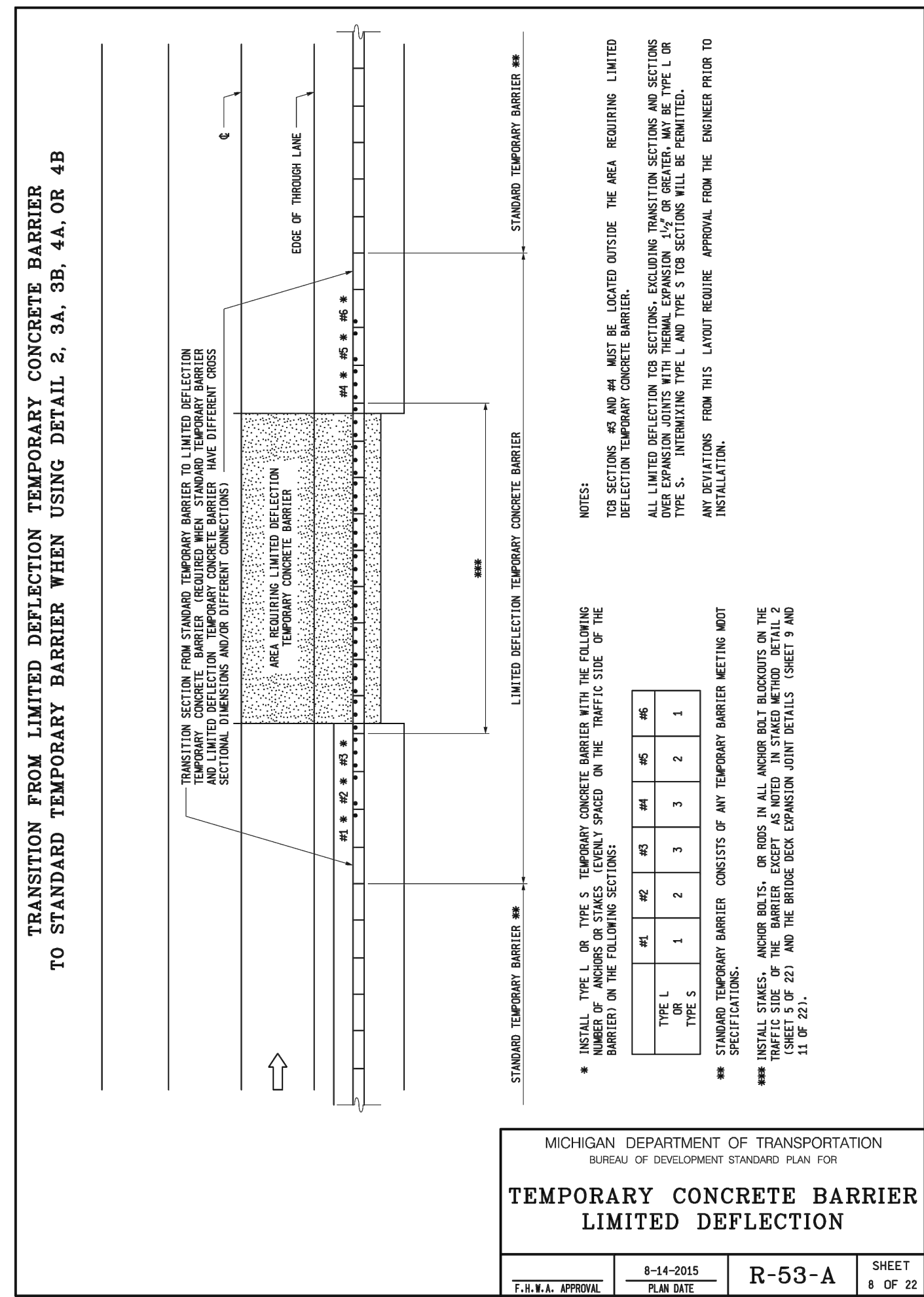
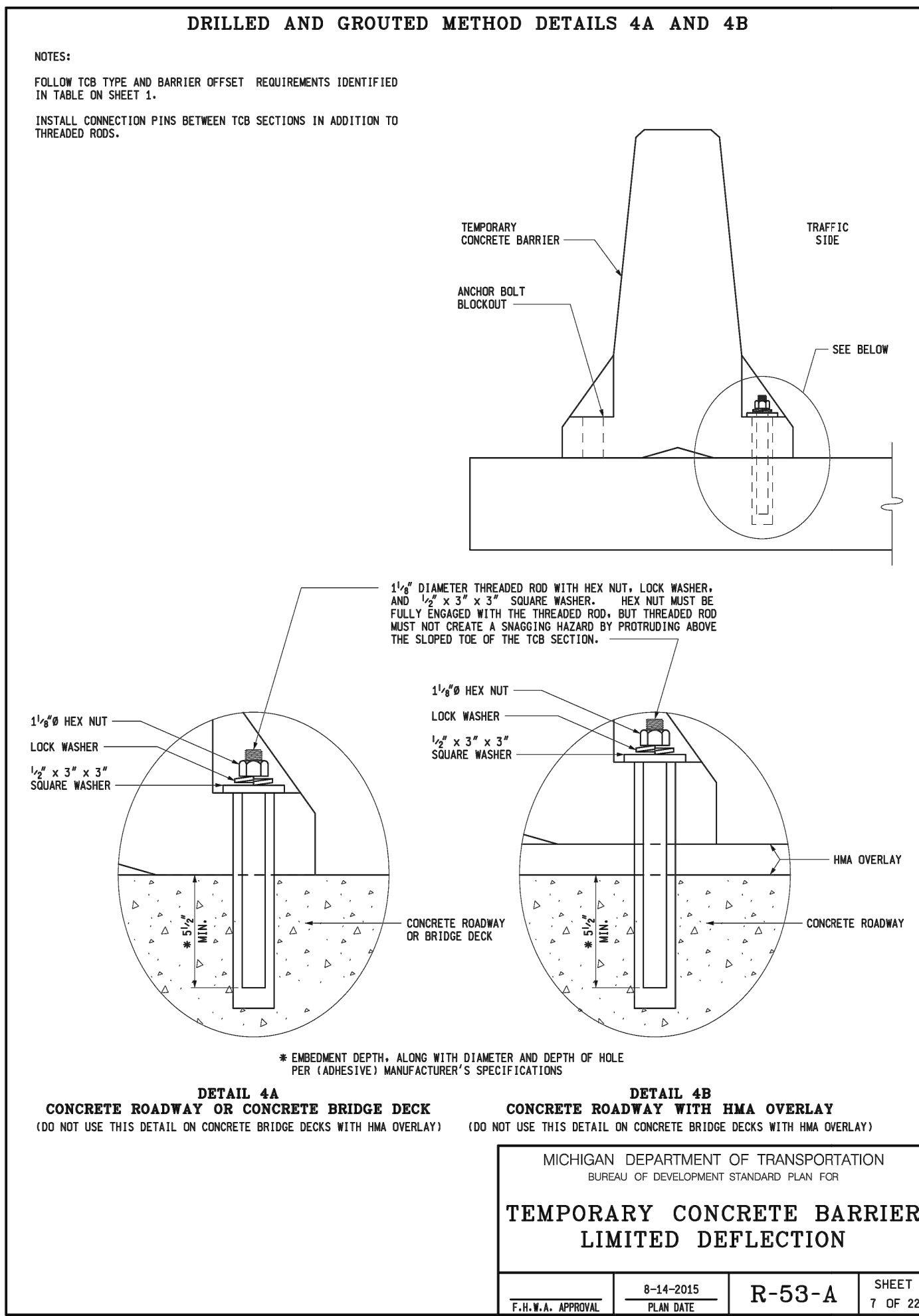
MDOT STANDARD DETAILS

SCALE  
HOR. 1"=40'  
VERT. 1"=4'

DRAWING NO.  
2021-008-STD7

SHEET NO. 130 OF 155

APPROVED BY: \_\_\_\_\_



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<b>DLZ</b>			
REV. NO.	DESCRIPTION	DATE	DR. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**

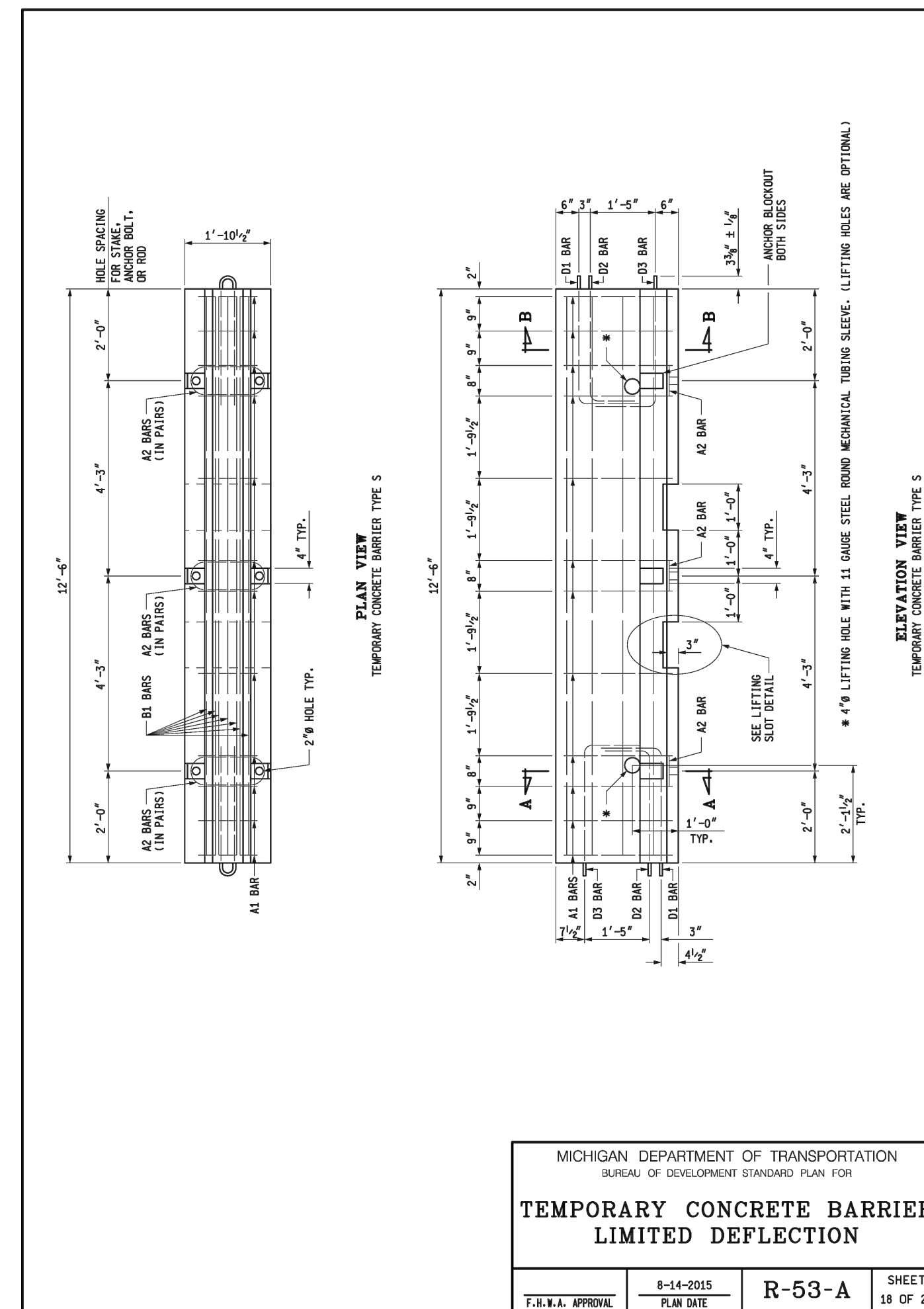
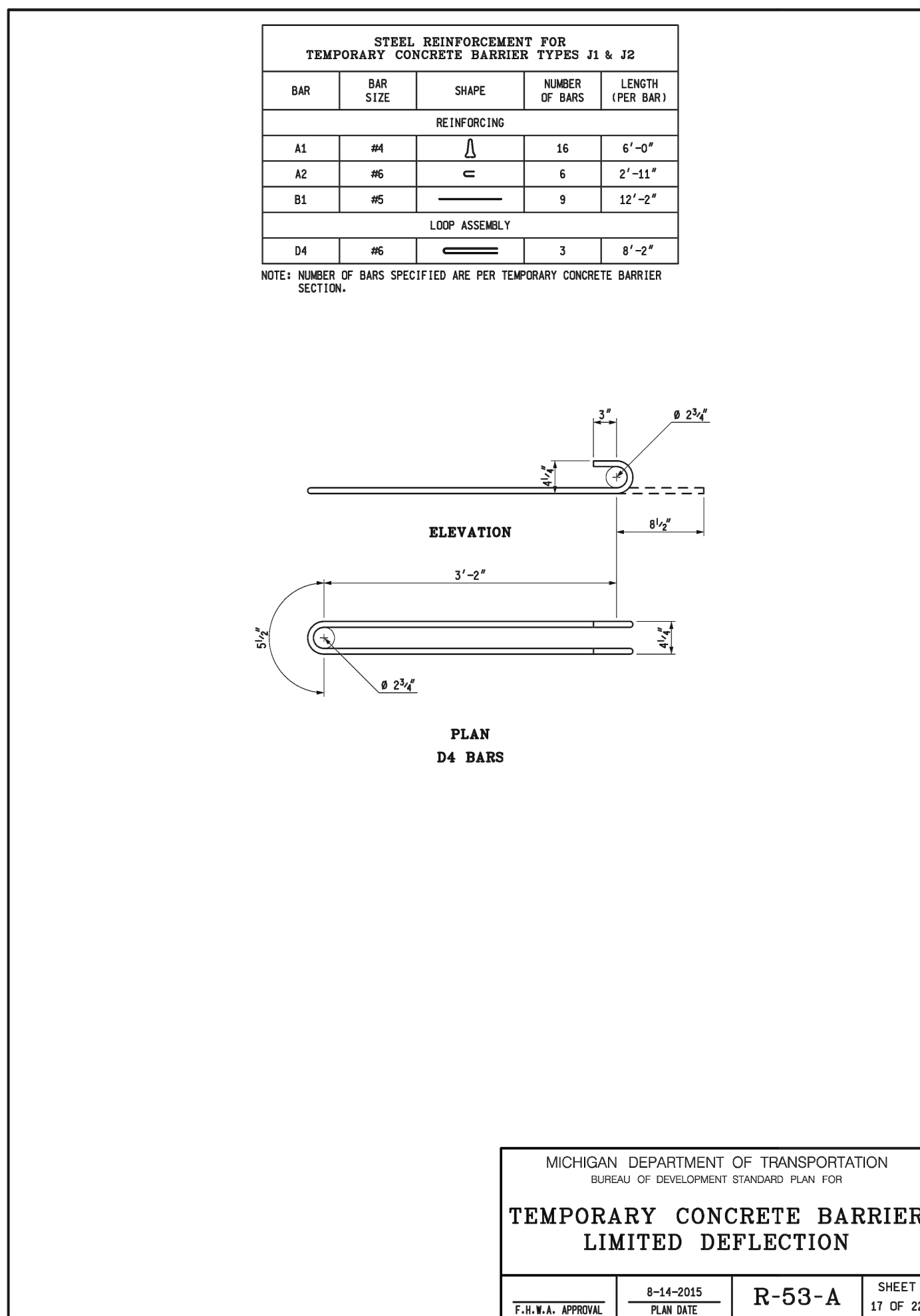
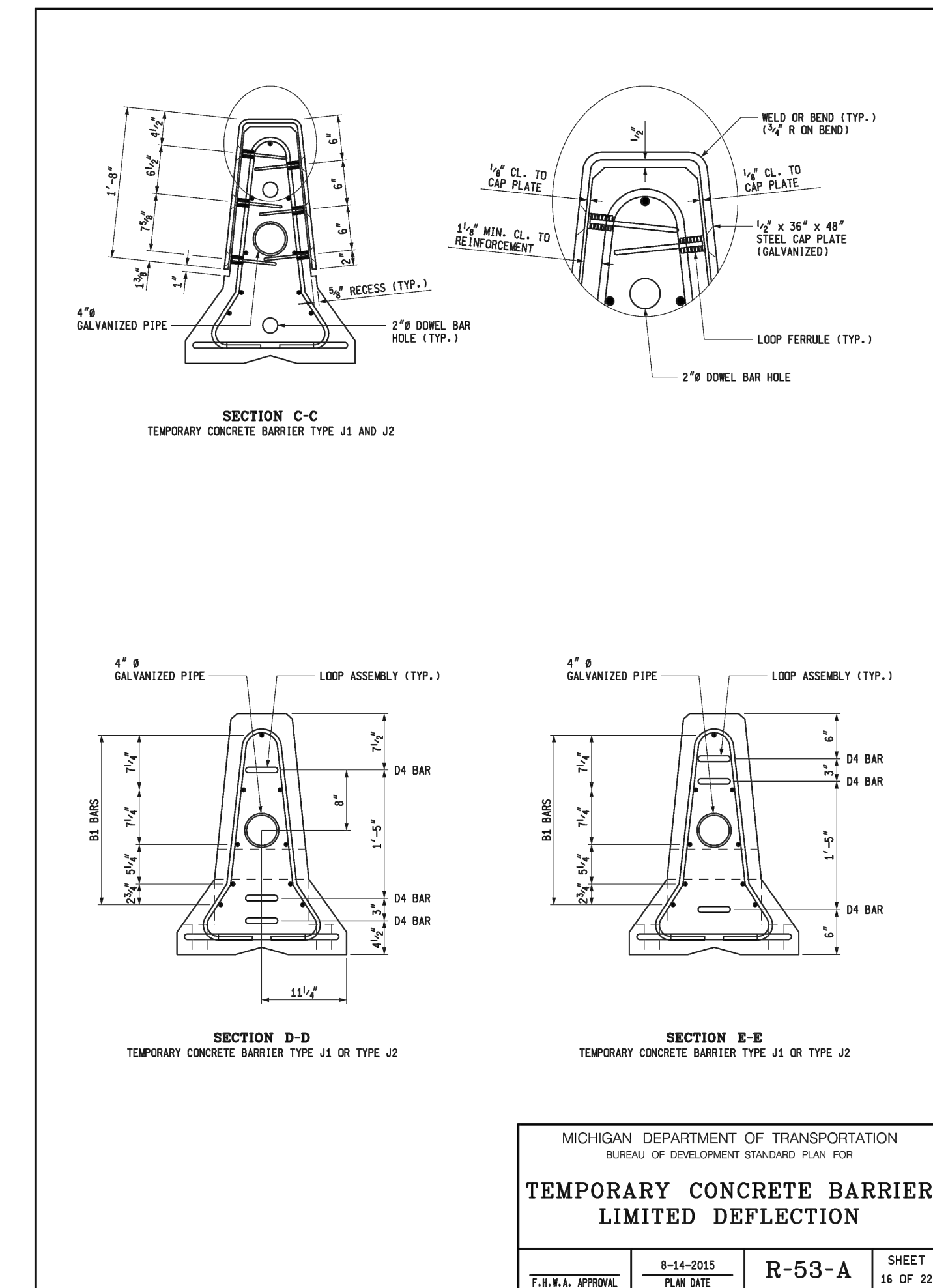
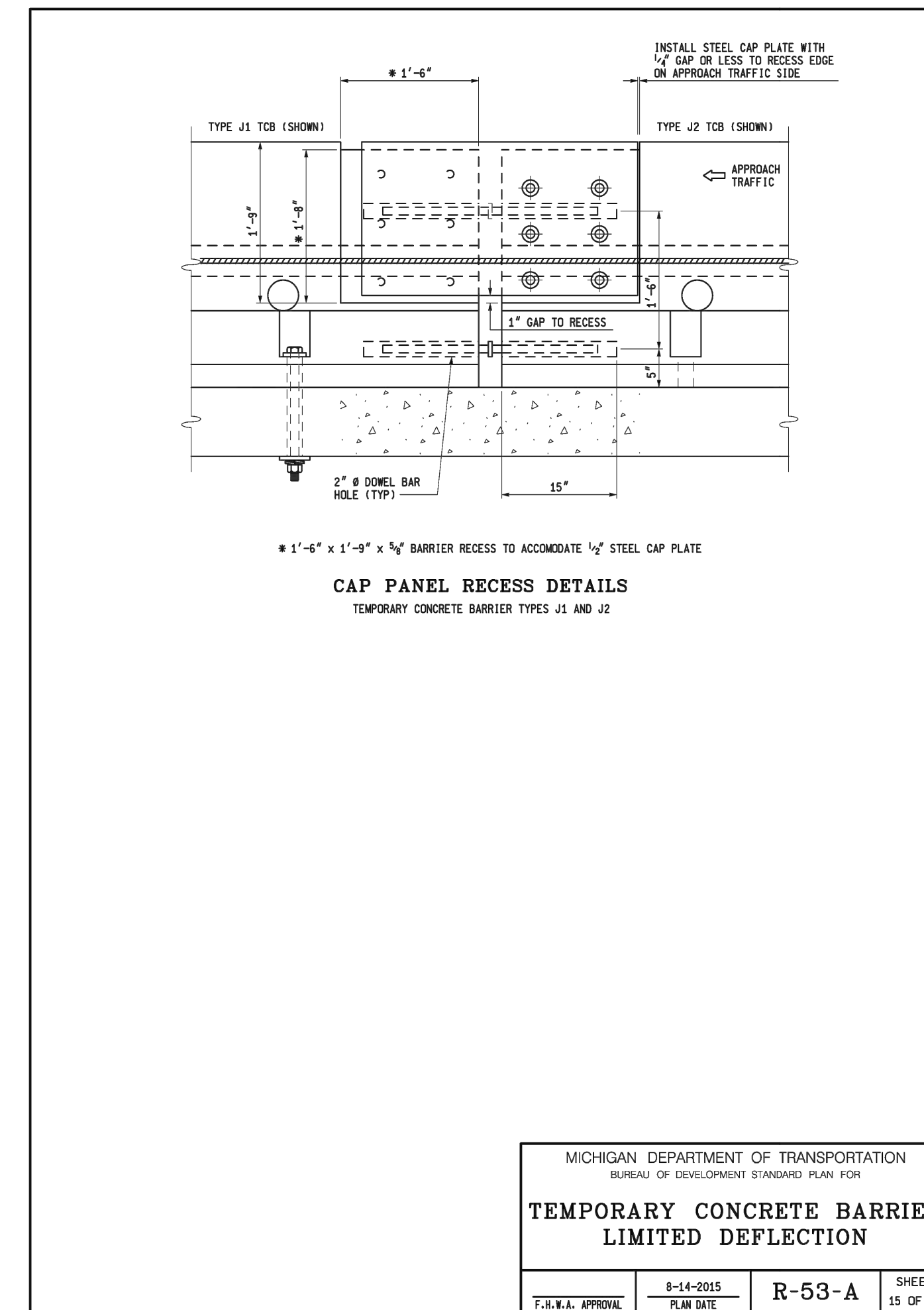
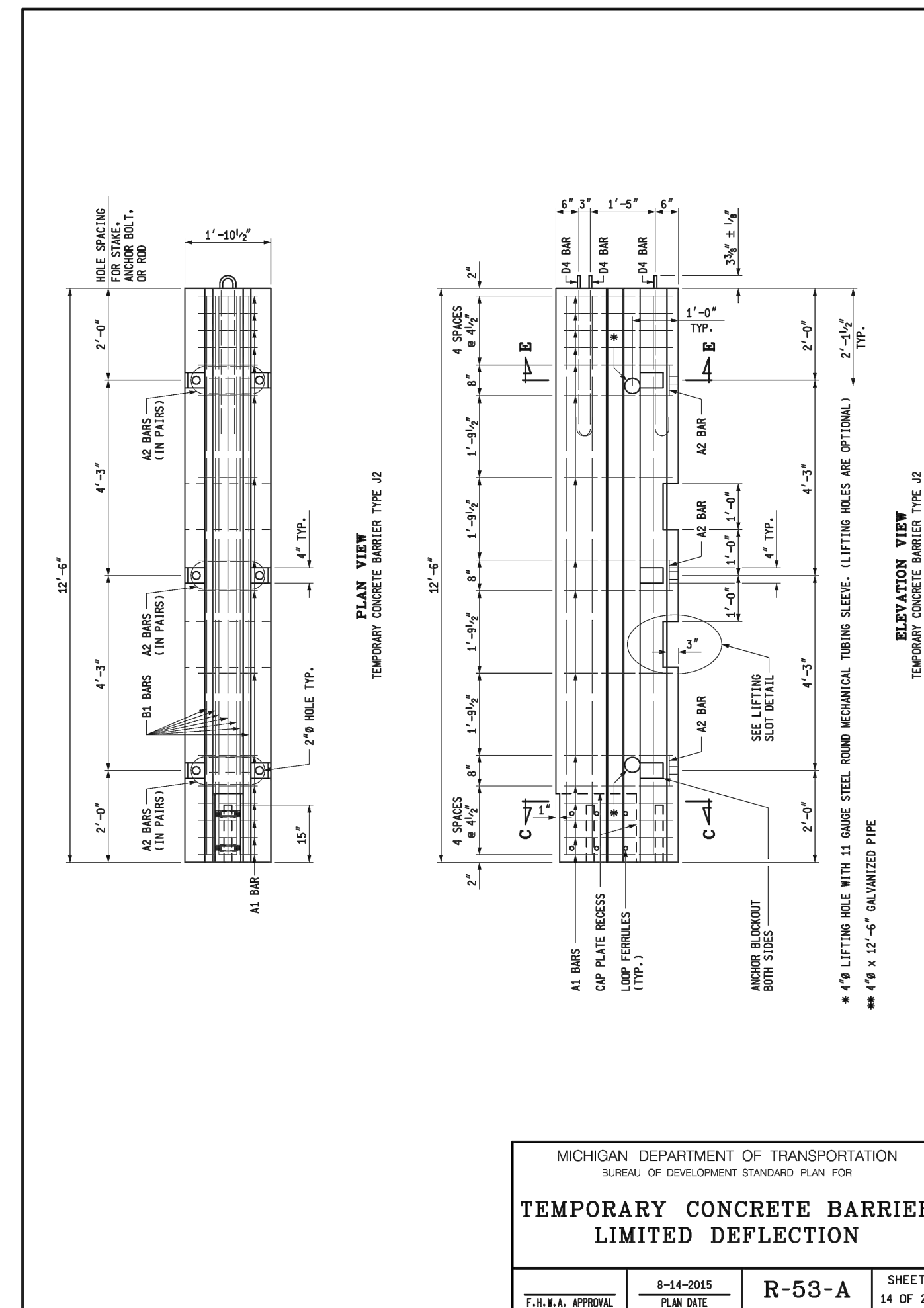
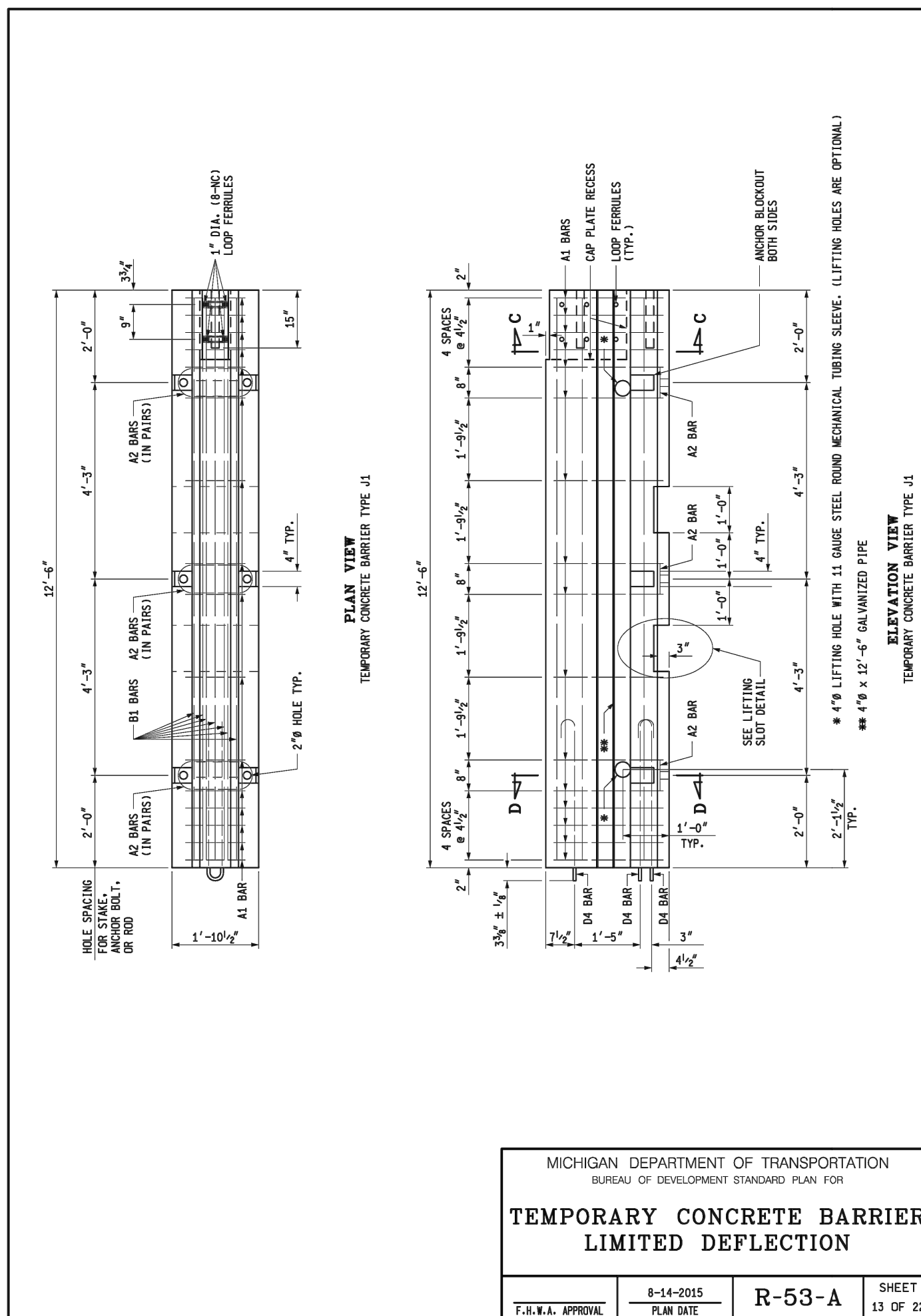
MDOT STANDARD DETAILS

SCALE  
HOR. 1"=40'  
VERT. 1"=4'

DRAWING NO.  
**2021-008-STD8**

SHEET NO. 131 OF 155

APPROVED BY: \_\_\_\_\_

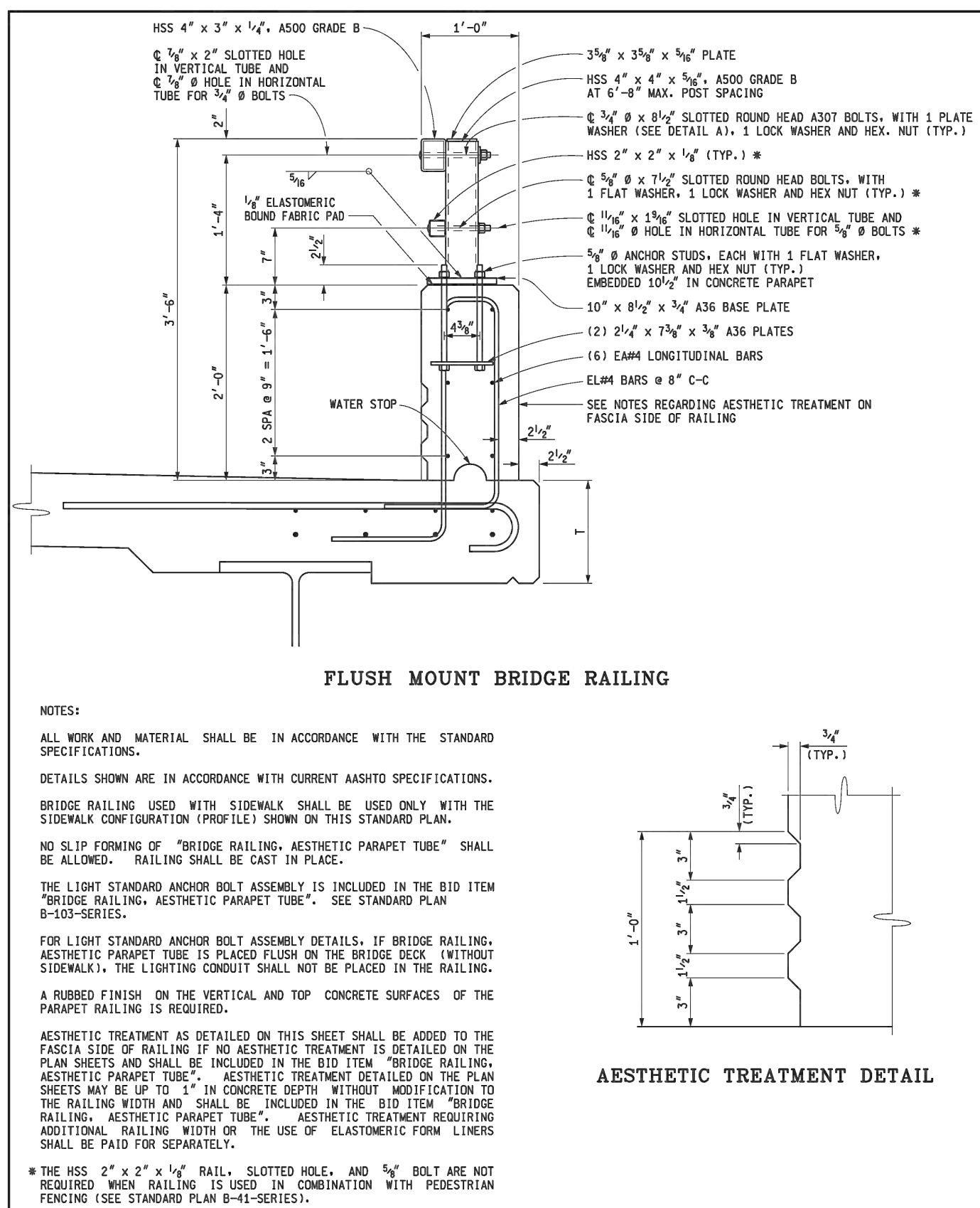


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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>MDOT STANDARD DETAILS</b>	
SCALE NTS	0 INCH 1
DRAWING NO. <b>2021-008-STD9</b>	
SHEET NO. 132 OF 155	

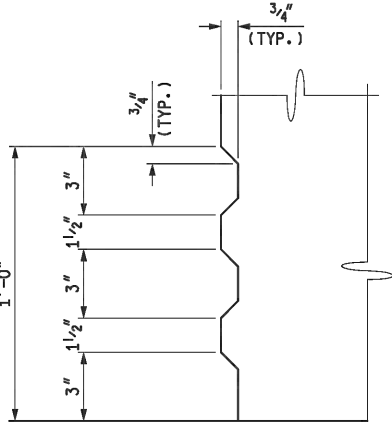




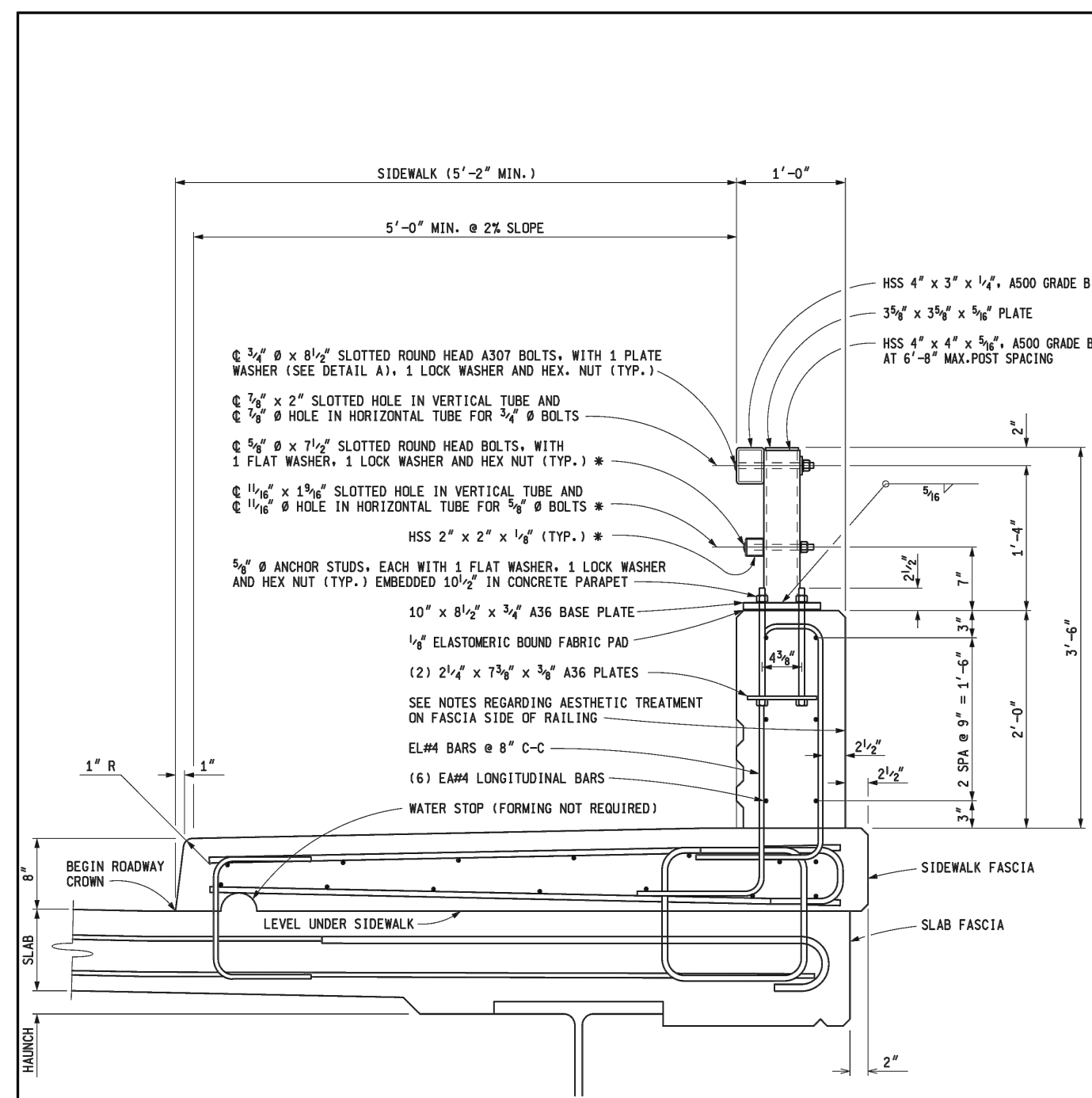
FLUSH MOUNT BRIDGE RAILING

NOTES:  
 ALL WORK AND MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.  
 DETAILS SHOWN ARE IN ACCORDANCE WITH CURRENT AASHTO SPECIFICATIONS.  
 BRIDGE RAILING USED WITH SIDEWALK SHALL BE USED ONLY WITH THE SIDEWALK CONFIGURATION (PROFILE) SHOWN ON THIS STANDARD PLAN.  
 NO SLIP FORMING OF "BRIDGE RAILING, AESTHETIC PARAPET TUBE" SHALL BE ALLOWED. RAILING SHALL BE CAST IN PLACE.  
 THE LIGHT STANDARD ANCHOR BOLT ASSEMBLY IS INCLUDED IN THE BID ITEM "BRIDGE RAILING, AESTHETIC PARAPET TUBE". SEE STANDARD PLAN B-103-SERIES.  
 FOR LIGHT STANDARD ANCHOR BOLT ASSEMBLY DETAILS, IF BRIDGE RAILING, AESTHETIC PARAPET TUBE IS PLACED FLOOR ON THE BRIDGE DECK (WITHOUT SIDEWALK), THE LIGHTING CONDUIT SHALL NOT BE PLACED IN THE RAILING. A RUBBED FINISH ON THE VERTICAL AND TOP CONCRETE SURFACES OF THE PARAPET RAILING IS REQUIRED.  
 AESTHETIC TREATMENT AS DETAILED ON THIS SHEET SHALL BE ADDED TO THE FASCIA SIDE OF RAILING IF NO AESTHETIC TREATMENT IS DETAILED ON THE PLAN SHEETS AND SHALL BE INCLUDED IN THE BID ITEM "BRIDGE RAILING, AESTHETIC PARAPET TUBE". AESTHETIC TREATMENT DETAILED ON THE PLAN SHEETS MAY BE UP TO 1" IN CONCRETE DEPTH WITHOUT MODIFICATION TO THE RAILING WIDTH AND SHALL BE INCLUDED IN THE BID ITEM "BRIDGE RAILING, AESTHETIC PARAPET TUBE". AESTHETIC TREATMENT REQUIRING ADDITIONAL RAILING WIDTH OR THE USE OF ELASTOMERIC FORM LINERS SHALL BE PAID FOR SEPARATELY.  
 \* THE HSS 2" x 2" x 1/4" RAIL, SLOTTED HOLE, AND 3/8" BOLT ARE NOT REQUIRED WHEN RAILING IS USED IN COMBINATION WITH PEDESTRIAN FENCING (SEE STANDARD PLAN B-41-SERIES).

AESTHETIC TREATMENT DETAIL

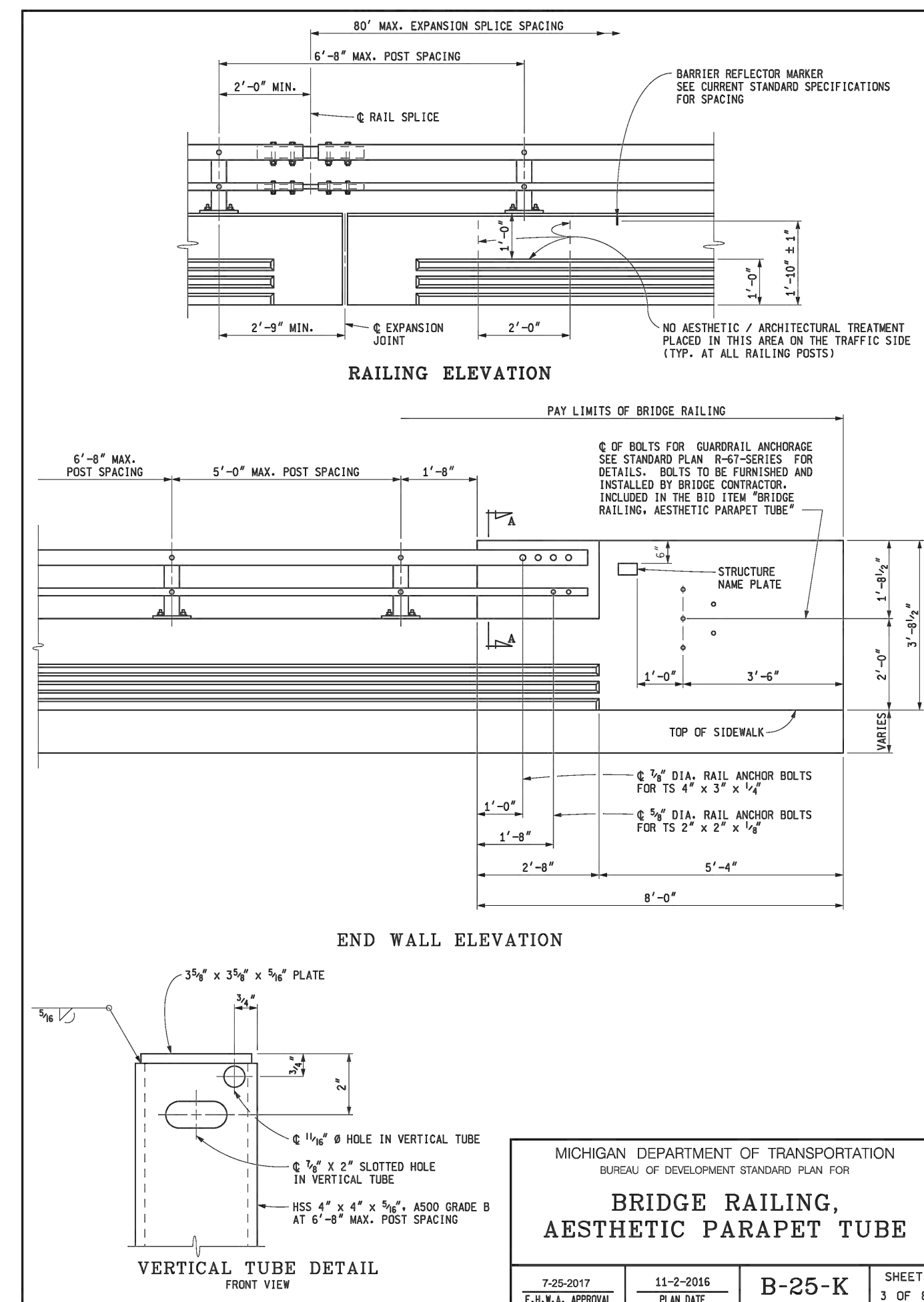


	DEPARTMENT DIRECTOR Kirk T. Steudde	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR		SHEET 1 OF 8
	PREPARED BY DESIGN DIVISION DRAWN BY: J.L.L. CHECKED BY: J.L.L.	APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES Bradley C. Wierlich	<b>BRIDGE RAILING,          AESTHETIC PARAPET TUBE</b>	
	7-25-2017 F.S.W.A. APPROVAL	11-2-2016 PLAN DATE	<b>B-25-K</b>	

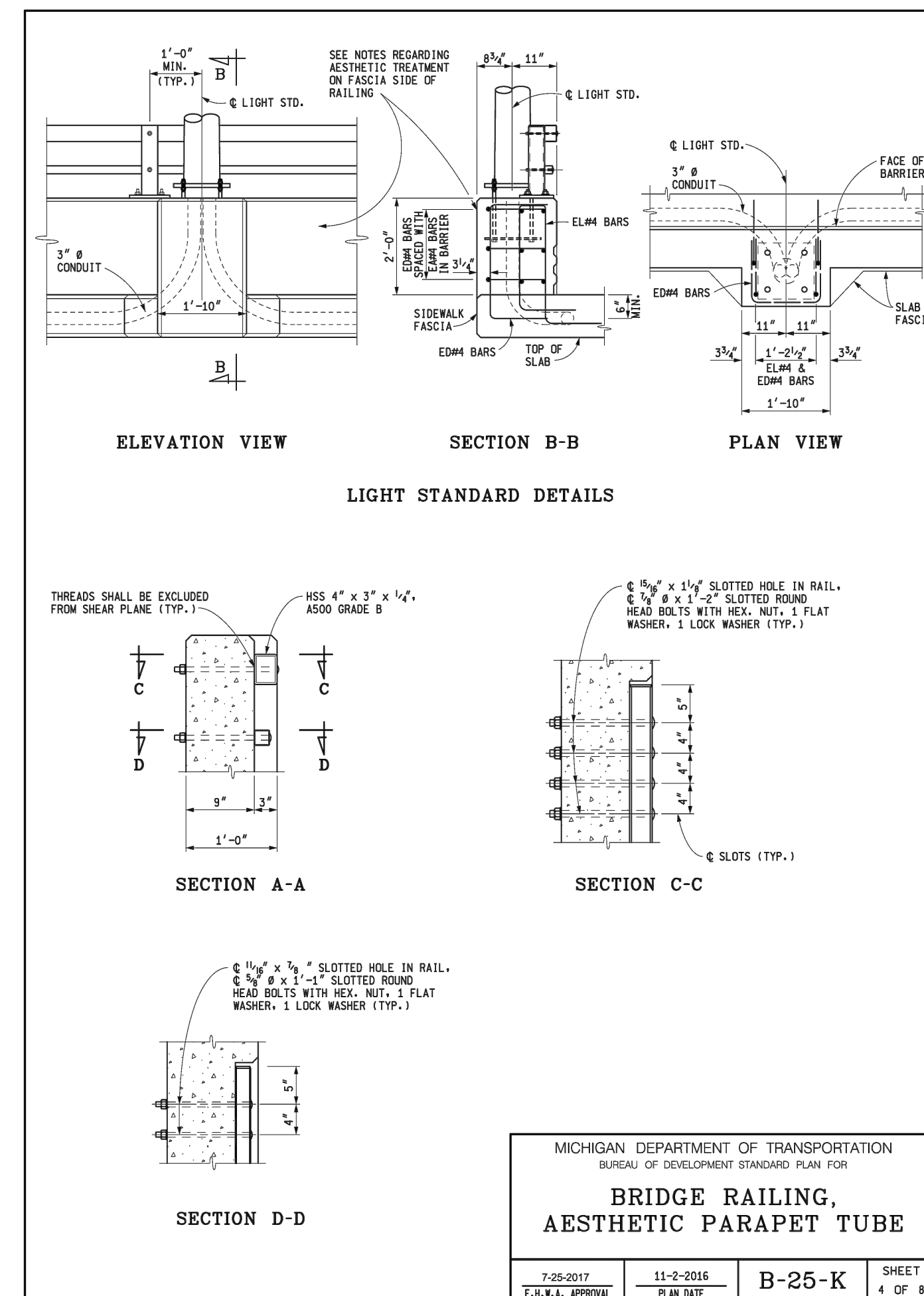


BRIDGE RAILING WITH SIDEWALK

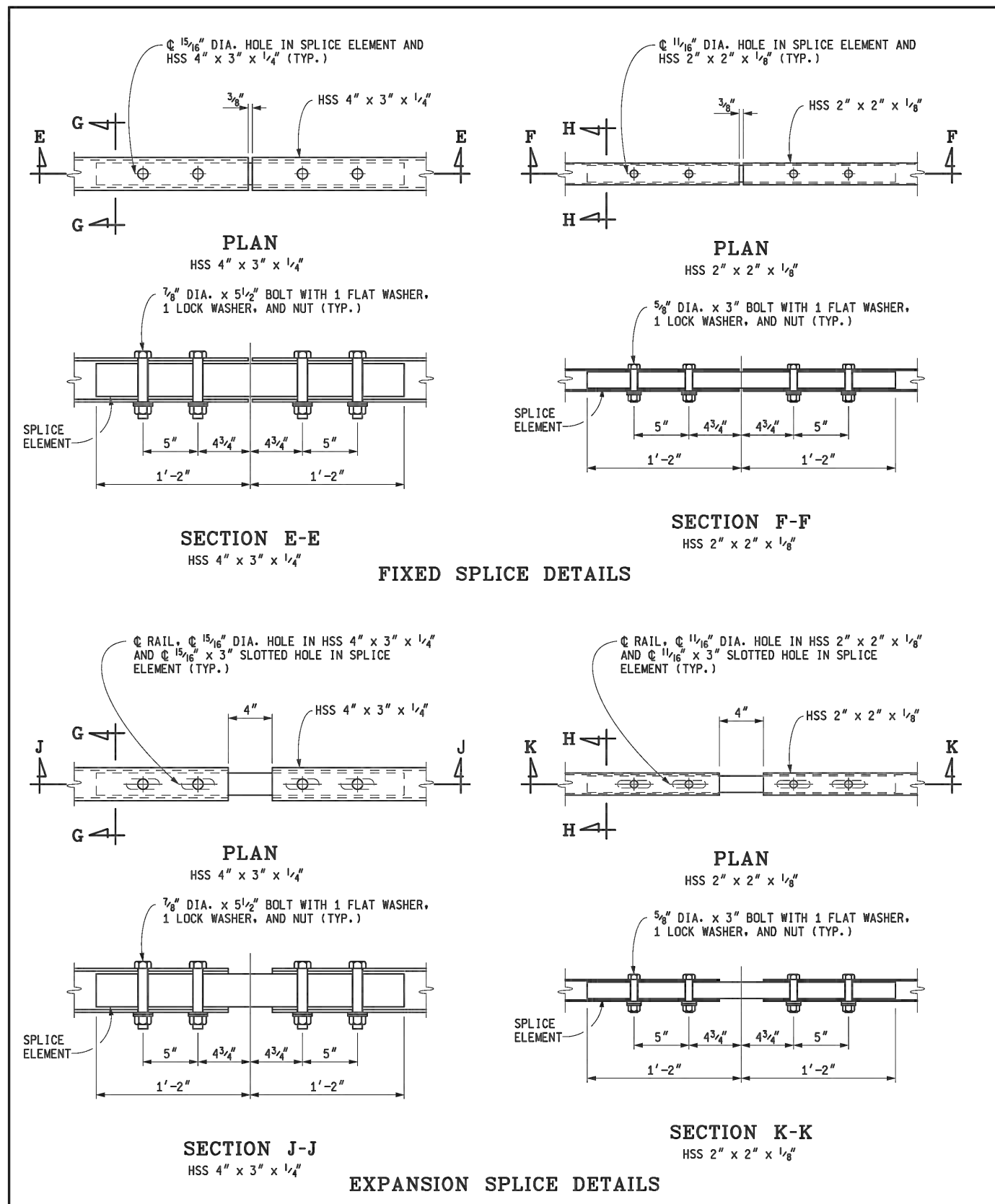
	DEPARTMENT DIRECTOR Kirk T. Steudde	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR		SHEET 2 OF 8
	PREPARED BY DESIGN DIVISION DRAWN BY: J.L.L. CHECKED BY: J.L.L.	APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES Bradley C. Wierlich	<b>BRIDGE RAILING,          AESTHETIC PARAPET TUBE</b>	
	7-25-2017 F.S.W.A. APPROVAL	11-2-2016 PLAN DATE	<b>B-25-K</b>	



	DEPARTMENT DIRECTOR Kirk T. Steudde	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR		SHEET 3 OF 8
	PREPARED BY DESIGN DIVISION DRAWN BY: J.L.L. CHECKED BY: J.L.L.	APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES Bradley C. Wierlich	<b>BRIDGE RAILING,          AESTHETIC PARAPET TUBE</b>	
	7-25-2017 F.S.W.A. APPROVAL	11-2-2016 PLAN DATE	<b>B-25-K</b>	



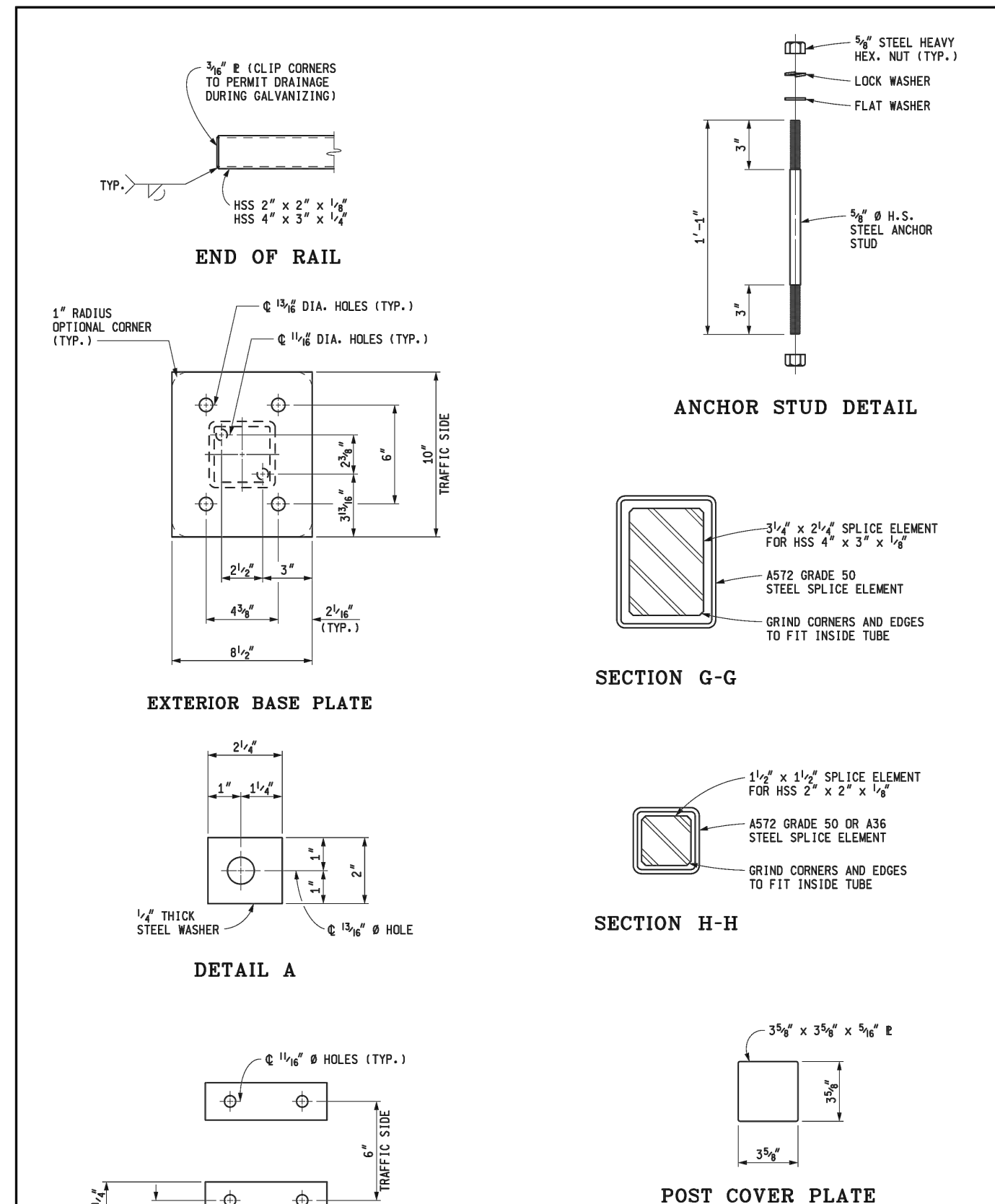
	DEPARTMENT DIRECTOR Kirk T. Steudde	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR		SHEET 4 OF 8
	PREPARED BY DESIGN DIVISION DRAWN BY: J.L.L. CHECKED BY: J.L.L.	APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES Bradley C. Wierlich	<b>BRIDGE RAILING,          AESTHETIC PARAPET TUBE</b>	
	7-25-2017 F.S.W.A. APPROVAL	11-2-2016 PLAN DATE	<b>B-25-K</b>	



FIXED SPLICE DETAILS

EXPANSION SPLICE DETAILS

	DEPARTMENT DIRECTOR Kirk T. Steudde	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR		SHEET 5 OF 8
	PREPARED BY DESIGN DIVISION DRAWN BY: J.L.L. CHECKED BY: J.L.L.	APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES Bradley C. Wierlich	<b>BRIDGE RAILING,          AESTHETIC PARAPET TUBE</b>	
	7-25-2017 F.S.W.A. APPROVAL	11-2-2016 PLAN DATE	<b>B-25-K</b>	



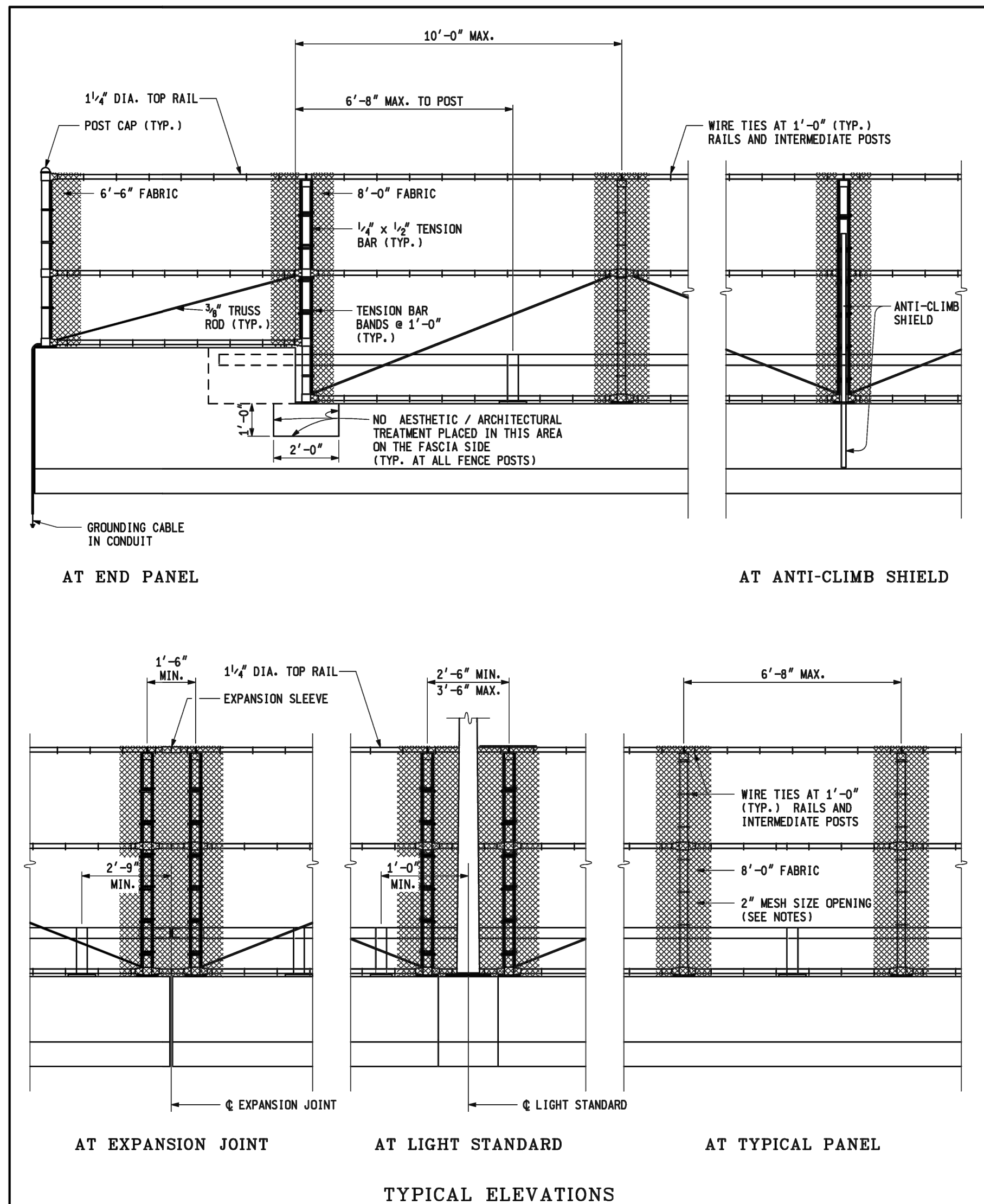
	DEPARTMENT DIRECTOR Kirk T. Steudde	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR		SHEET 6 OF 8
	PREPARED BY DESIGN DIVISION DRAWN BY: J.L.L. CHECKED BY: J.L.L.	APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES Bradley C. Wierlich	<b>BRIDGE RAILING,          AESTHETIC PARAPET TUBE</b>	
	7-25-2017 F.S.W.A. APPROVAL	11-2-2016 PLAN DATE	<b>B-25-K</b>	

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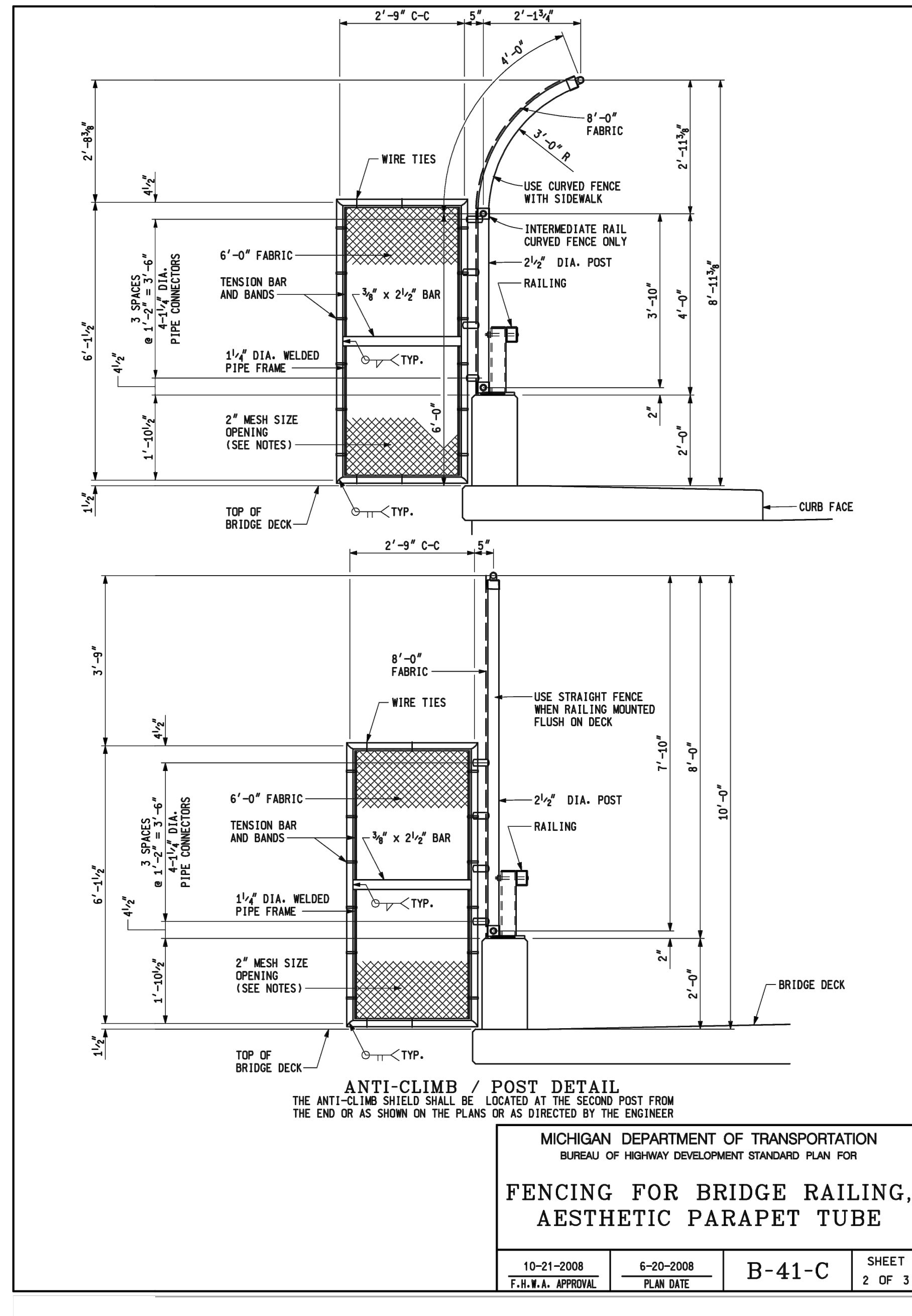
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23		

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
SCALE HOR. 1"=40' VERT. 1"=4'	INCH 
<b>EAST MEDICAL CENTER DRIVE</b>	
MDOT STANDARD DETAILS	
DRAWING NO. <b>2021-008-STD11</b>	
SHEET NO. 134 OF 155	

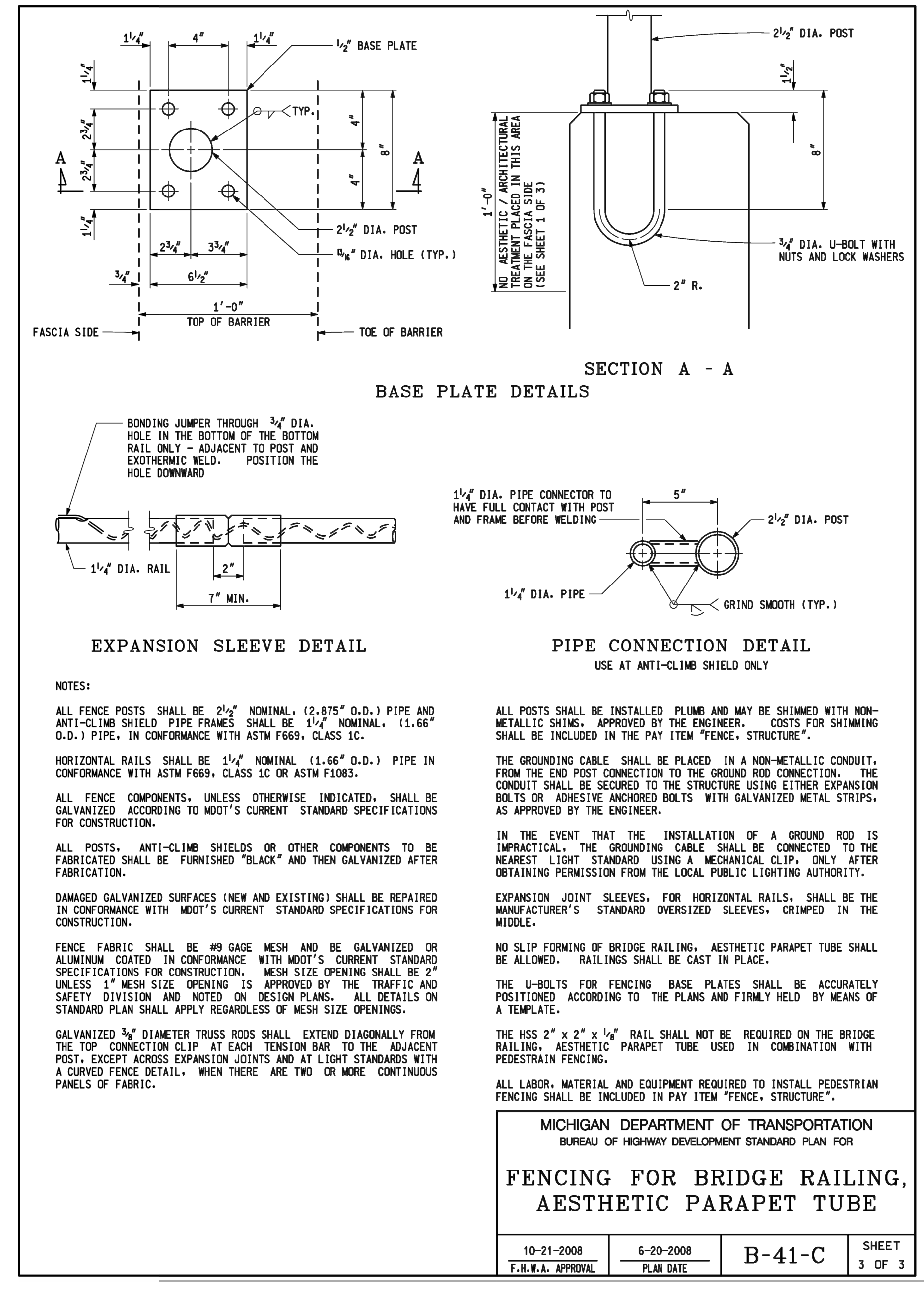




	DEPARTMENT DIRECTOR KIM T. SHAW  APPROVED BY: ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR <b>FENCING FOR BRIDGE RAILING,          AESTHETIC PARAPET TUBE</b>			
	PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: V.Z.	APPROVED BY: APPROVED BY: ENGINEER OF DEVELOPMENT	10-21-2008 F.H.W.A. APPROVAL	6-20-2008 PLAN DATE	B-41-C



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



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

3 WORKING DAYS  
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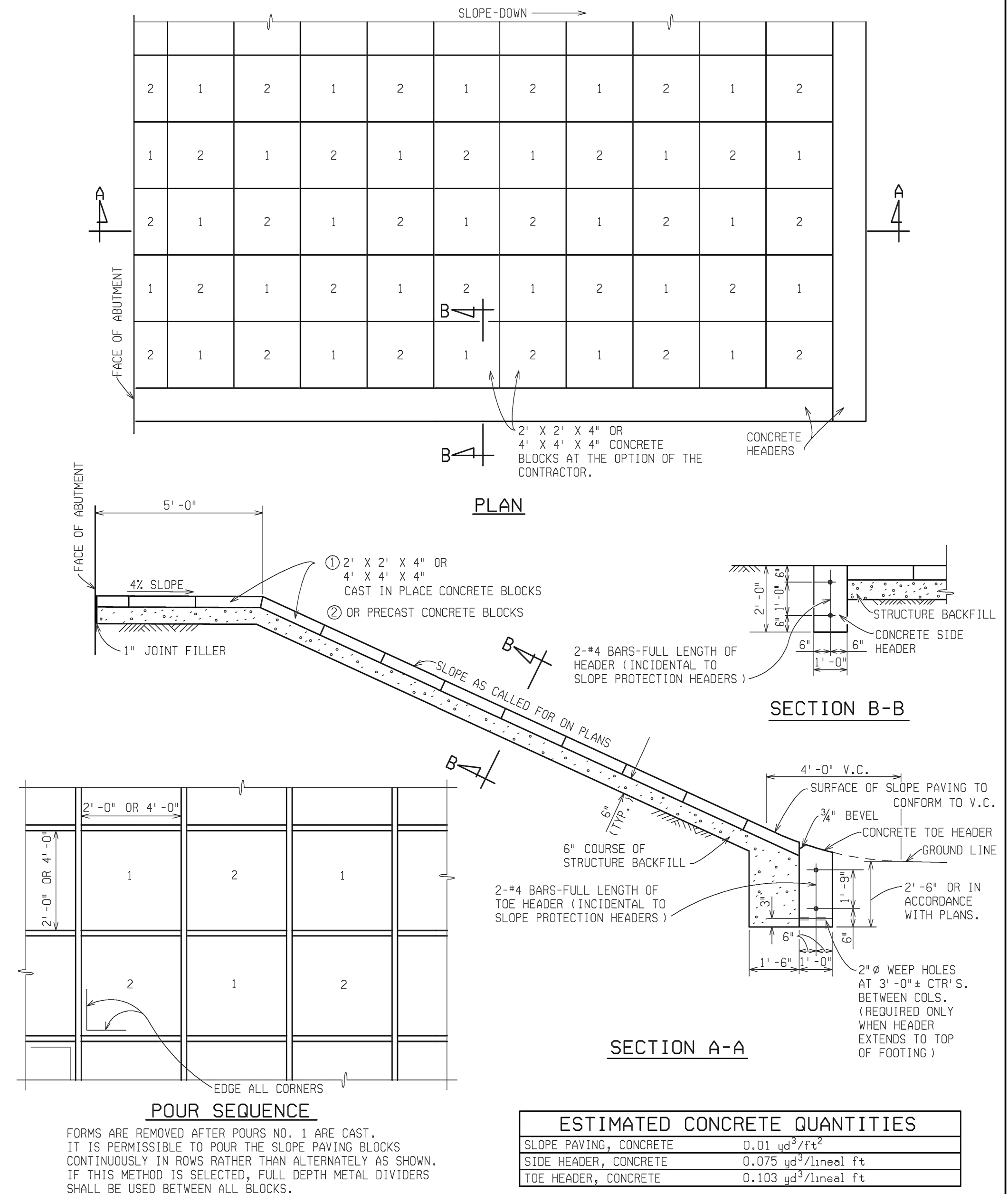
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10-6-23		

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
MDOT STANDARD DETAILS	
SCALE HOR. 1"=40' VERT. 1"=4' 	DRAWING NO. <b>2021-008-STD13</b>
SHEET NO. 136 OF 155	

X:\Projects\2021\2141\736500 AA - EMCD Bridge\01\_Const\Draws\CAD\EMCD\_Standard Detail B041C



**SLOPE PAVING, CONCRETE**



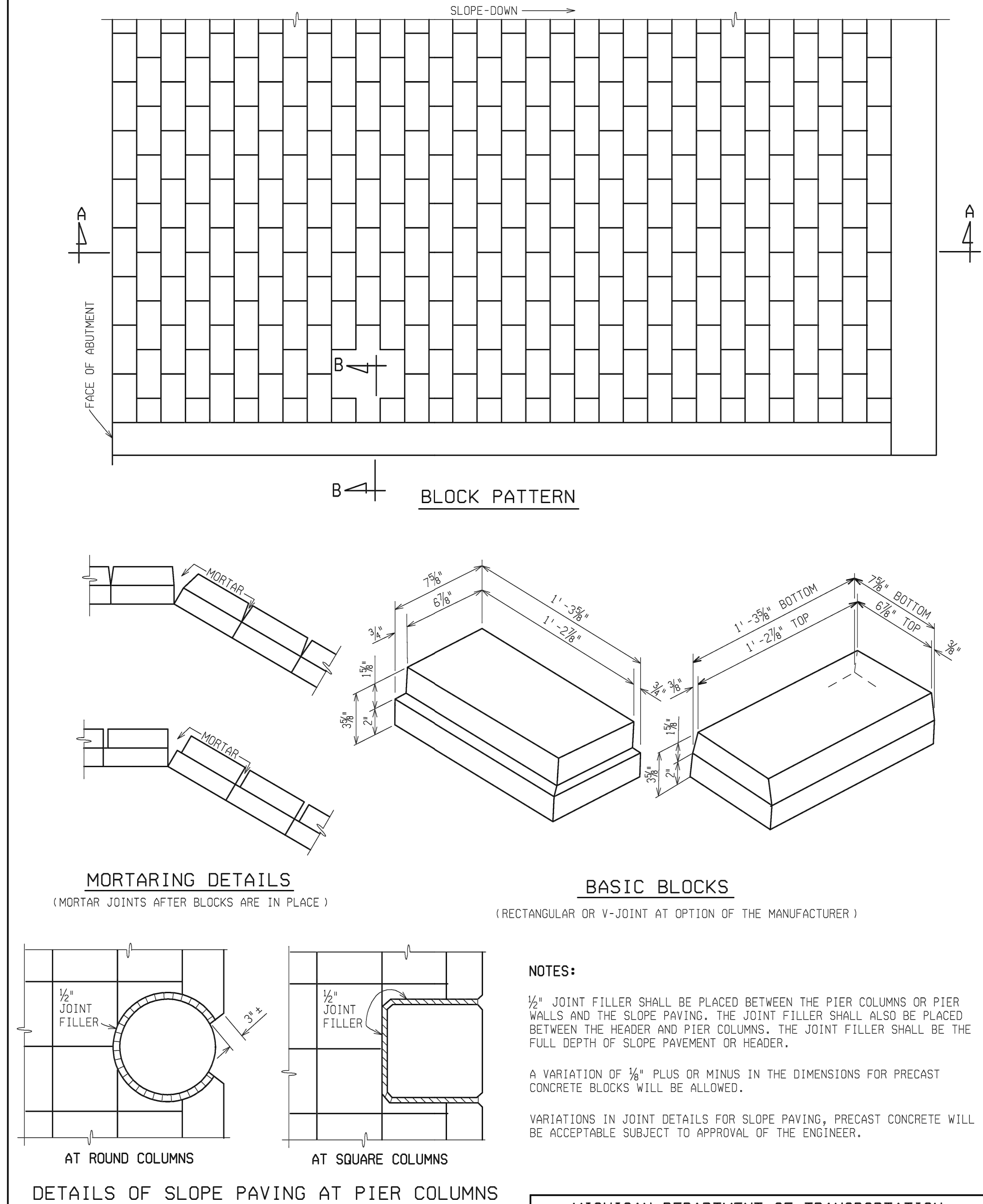
**ESTIMATED CONCRETE QUANTITIES**

SLOPE PAVING, CONCRETE	0.01 cu yd/ft <sup>2</sup>
SIDE HEADER, CONCRETE	0.075 cu yd/lineal ft
TOE HEADER, CONCRETE	0.103 cu yd/lineal ft

**POUR SEQUENCE**  
FORMS ARE REMOVED AFTER POURS NO. 1 ARE CAST. IT IS PERMISSIBLE TO POUR THE SLOPE PAVING BLOCKS CONTINUOUSLY IN ROWS RATHER THAN ALTERNATELY AS SHOWN. IF THIS METHOD IS SELECTED, FULL DEPTH METAL DIVIDERS SHALL BE USED BETWEEN ALL BLOCKS.

<b>MDOT</b> MICHIGAN DEPARTMENT OF TRANSPORTATION	<i>James D. Roberts</i> ENGINEER OF CONSTRUCTION & TECHNOLOGY	<i>Gregory J. Rosine</i> ENGINEER - BRIDGE DESIGN	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR <b>STANDARD SLOPE PAVING DETAILS</b>
PREPARED BY DESIGN DIVISION	<i>Caewin Roberts</i> ENGINEER OF MAINTENANCE	<i>Gregory J. Rosine</i> ENGINEER OF DESIGN	
DRAWN BY:	<i>John L. Roberts</i>	<i>Gregory J. Rosine</i> DEPARTMENT DIRECTOR	11-26-2001 F.H.W.A. APPROVAL PLAN DATE
CHECKED BY: VZ	ENGINEER OF TRAFFIC AND SAFETY	<i>Gregory J. Rosine</i> CHIEF ENGINEER/DEPUTY DIRECTOR HIGHWAY TECHNICAL SERVICES	
			B-102-C SHEET 1 OF 2

**SLOPE PAVING, PRECAST CONCRETE**



**NOTES:**  
1/2" JOINT FILLER SHALL BE PLACED BETWEEN THE PIER COLUMNS OR PIER WALLS AND THE SLOPE PAVING. THE JOINT FILLER SHALL ALSO BE PLACED BETWEEN THE HEADER AND PIER COLUMNS. THE JOINT FILLER SHALL BE THE FULL DEPTH OF SLOPE PAVEMENT OR HEADER.  
A VARIATION OF 3/8" PLUS OR MINUS IN THE DIMENSIONS FOR PRECAST CONCRETE BLOCKS WILL BE ALLOWED.  
VARIATIONS IN JOINT DETAILS FOR SLOPE PAVING, PRECAST CONCRETE WILL BE ACCEPTABLE SUBJECT TO APPROVAL OF THE ENGINEER.

**DETAILS OF SLOPE PAVING AT PIER COLUMNS**

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR <b>STANDARD SLOPE PAVING DETAILS</b>		
11-26-2001 F.H.W.A. APPROVAL	PLAN DATE	B-102-C SHEET 2 OF 2

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



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**EAST MEDICAL CENTER DRIVE**  
MDOT STANDARD DETAILS

SCALE	INCH
HOR. 1"=40'	0 1
VERT. 1"=4'	
DRAWING NO.	2021-008-STD14
SHEET NO.	137 OF 155

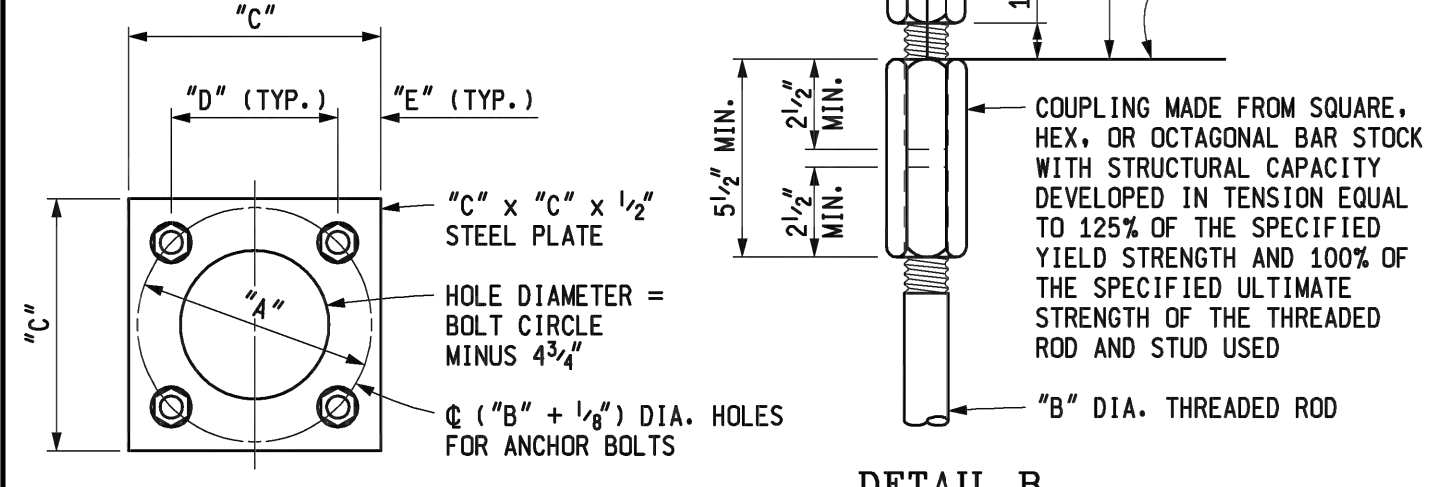
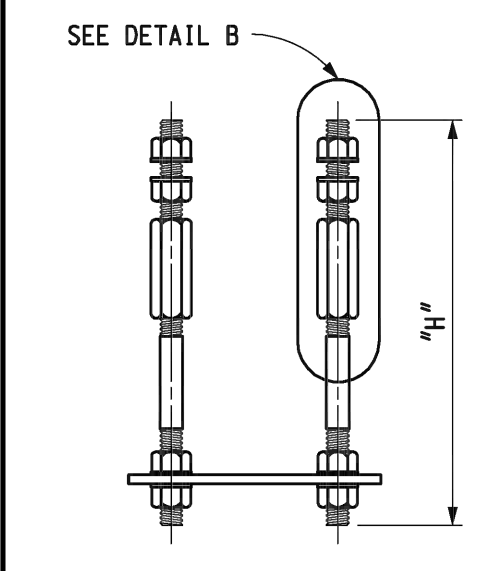
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

APPROVED BY \_\_\_\_\_

ANCHOR BOLT ASSEMBLY DIMENSIONS								
LIGHT STANDARD MOUNTING HEIGHT	BOLT CIRCLE "A"	ANCHOR BOLT DIA. "B"	"C"	"D"	"E"	STUD PROJECTION "F"	STUD LENGTH "G"	"H"
30'*	11"	1"	11 1/2"	7 3/4"	1 1/8"	4 3/4"	7 1/4"	1' - 9 3/4"
30'**	11"	1 1/4"	11 1/2"	7 3/4"	1 1/8"	5 1/2"	8"	1' - 10 1/2"
40'**	1' - 1"	1 1/4"	1' - 2"	9 1/4"	2 3/8"	5 1/2"	8"	1' - 10 1/2"
45'**	1' - 1"	1 1/4"	1' - 2"	9 1/4"	2 3/8"	5 1/2"	8"	1' - 10 1/2"

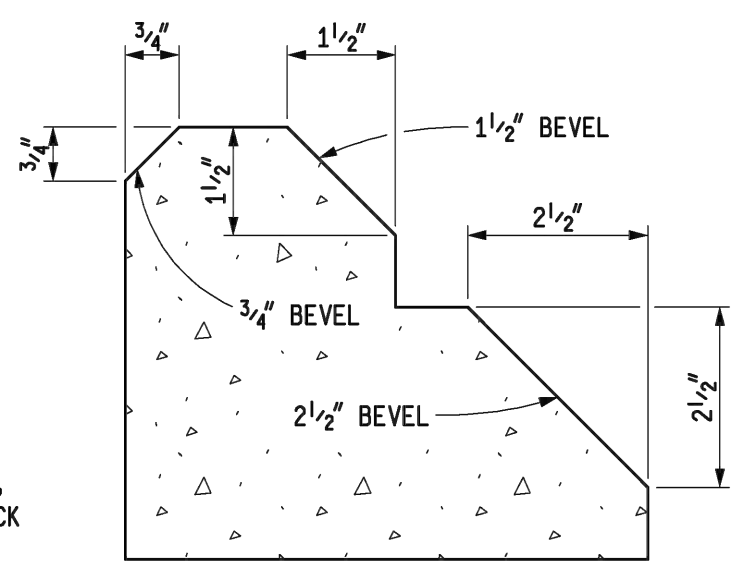
\* UP TO 15' SINGLE OR DOUBLE BRACKET ARM  
 \*\* UP TO 17' SINGLE OR DOUBLE BRACKET ARM

ANCHOR BOLTS (4 REQUIRED):  
 "B" DIA. x 1'-2" THREADED ROD AND "B" DIA. x "G" STUD  
 WITH 4 NUTS, 4 WASHERS, AND ONE COUPLING.

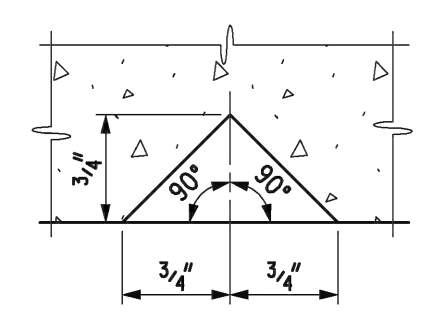


DETAIL B

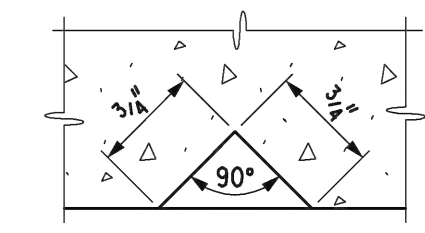
LIGHT STANDARD ANCHOR BOLT ASSEMBLY



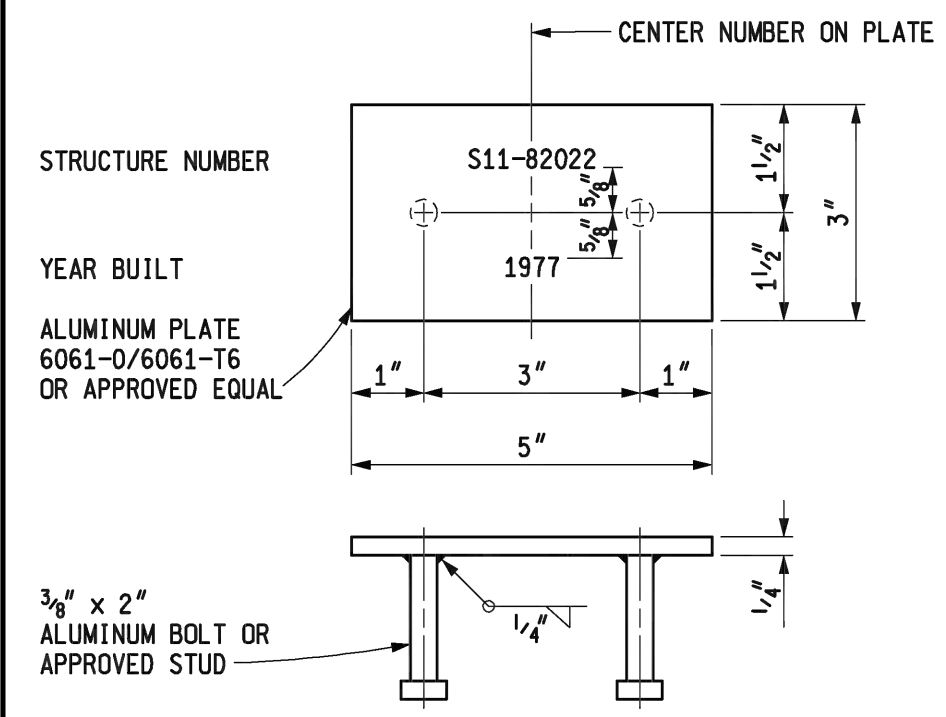
BEVEL DETAILS



DOUBLE 3/4" Δ MOLDING



3/4" Δ MOLDING  
 MOLDING DETAILS



NAME PLATE

NOTES:  
 DIE STAMP - 1/4" MINIMUM  
 LETTERS AND NUMBERS SHALL BE 1/4" MINIMUM OR 3/8" MAXIMUM HEIGHT.  
 DATE SHALL BE YEAR THAT SUPERSTRUCTURE WAS COMPLETED.

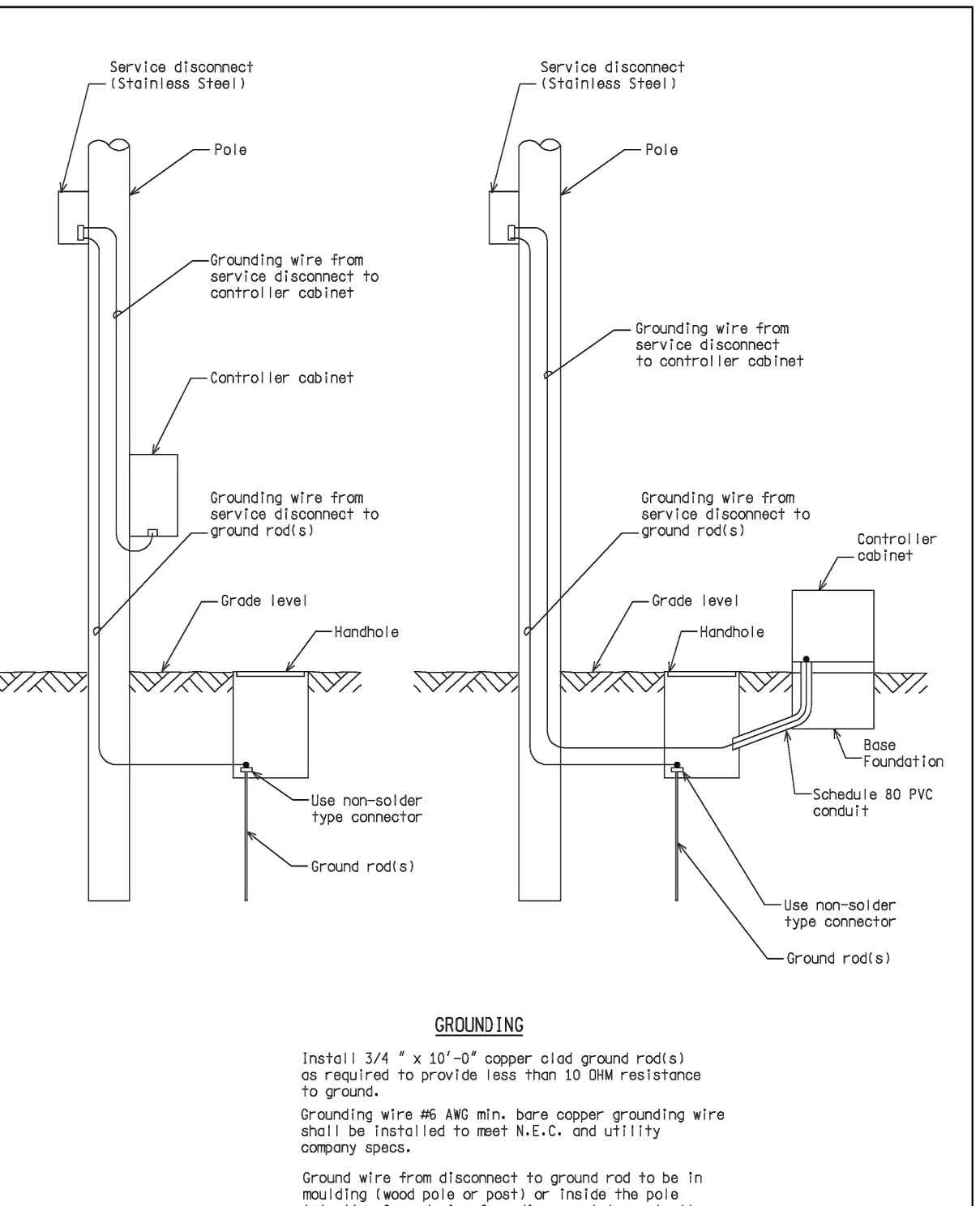
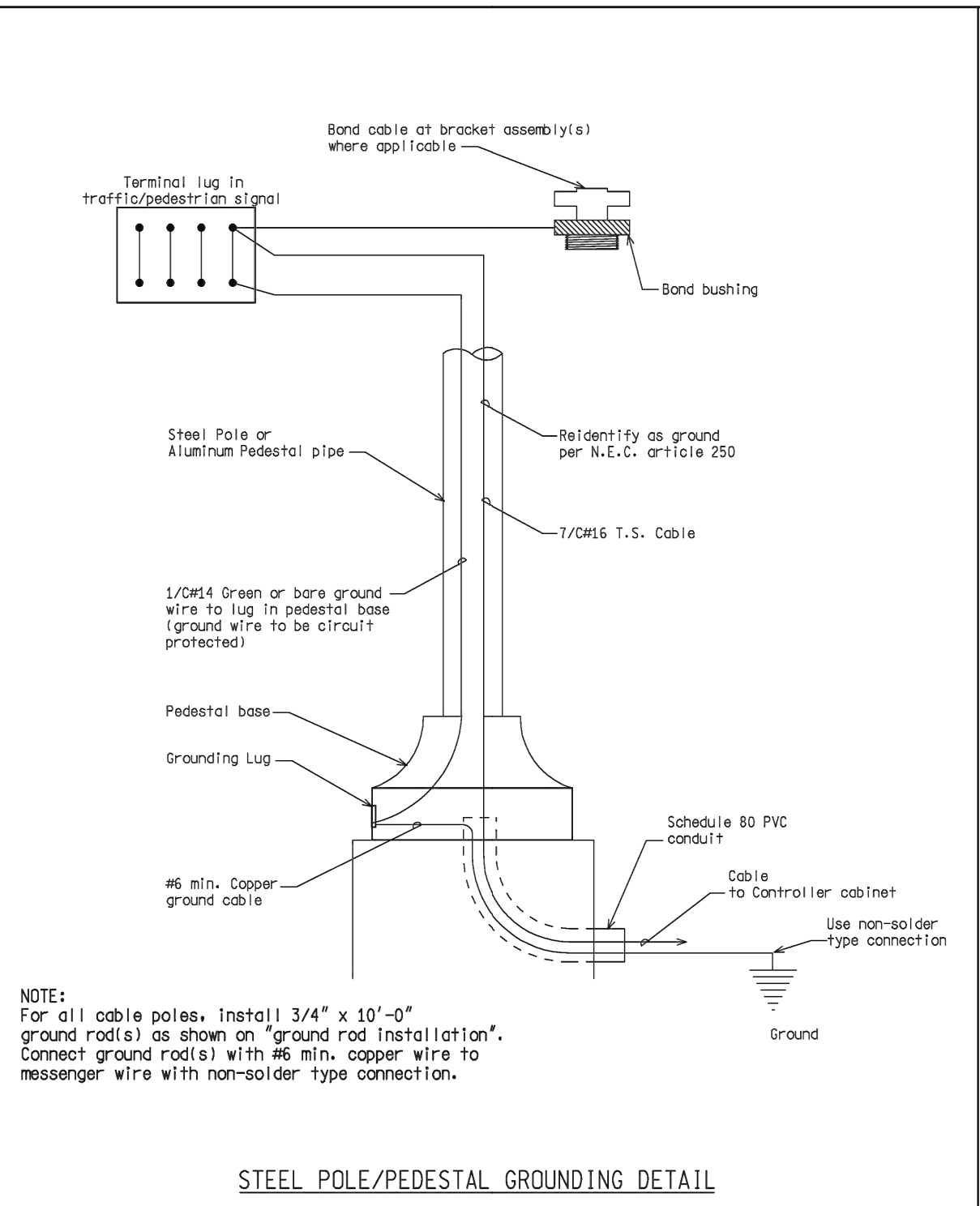
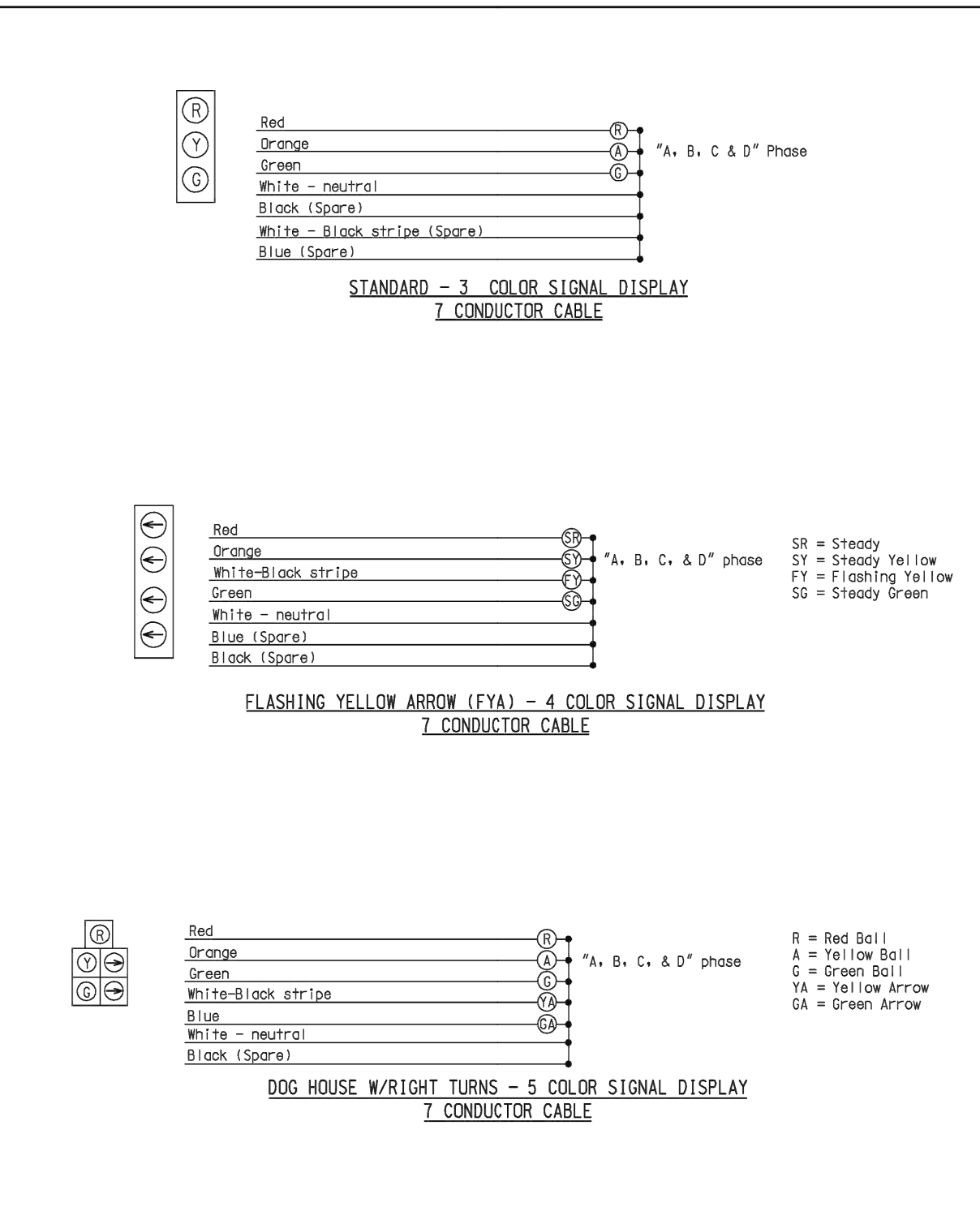
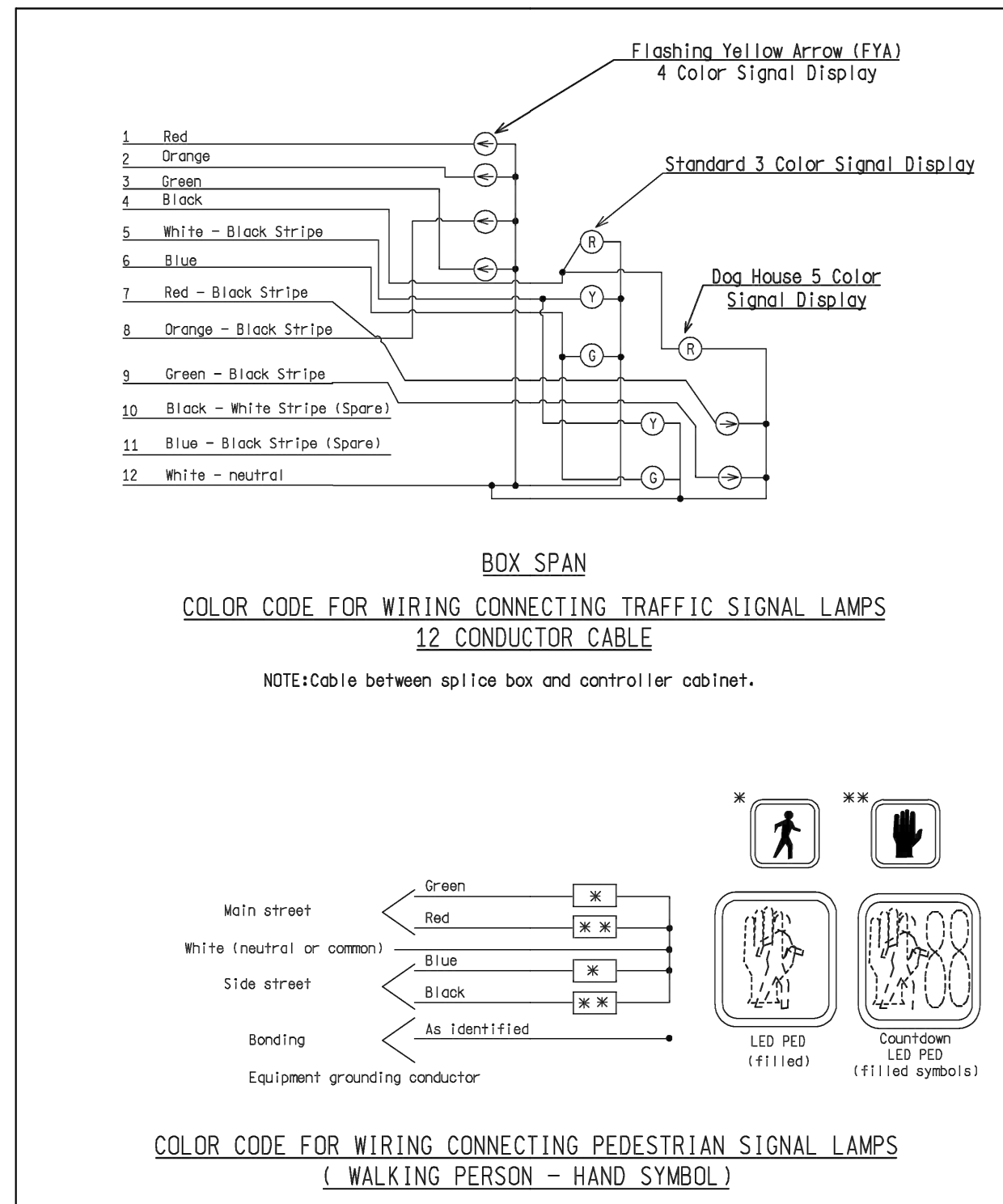
NOTES:  
 DETAILS SHOWN ARE ACCORDING TO THE CURRENT AASHTO SPECIFICATIONS.  
 LIGHT STANDARD ANCHOR BOLT ASSEMBLY STEEL PLATE SHALL BE ASTM A36.  
 ALL STEEL SHALL BE HOT-DIP GALVANIZED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS.  
 ANCHOR BOLTS, WASHERS, COUPLINGS AND NUTS FOR LIGHT STANDARDS SHALL BE ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS.  
 THE COUPLING SHALL BE RETAPPED AFTER GALVANIZING IN THE SAME MANNER AS SPECIFIED FOR NUTS.  
 ALUMINUM PLATE SHALL MEET THE REQUIREMENTS OF ASTM B209.  
 ALUMINUM BOLT SHALL MEET THE REQUIREMENTS OF ASTM F468.

	DEPARTMENT DIRECTOR 	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR		
	PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: V.Z.	APPROVED BY: 	<b>MOLDING, BEVEL,          LIGHT STD. ANCHOR BOLT ASSY.,          AND NAME PLATE DETAILS</b>	
		10-21-2008 F.H.W.A. APPROVAL	3-30-2007 PLAN DATE	B-103-E SHEET 1 OF 1

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

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR	
<b>EAST MEDICAL CENTER DRIVE</b>	
<b>MDOT STANDARD DETAILS</b>	
SCALE HOR. 1"=40' VERT. 1"=4'	
DRAWING NO. <b>2021-008-STD15</b>	
SHEET NO. <u>138</u> OF <u>155</u>	

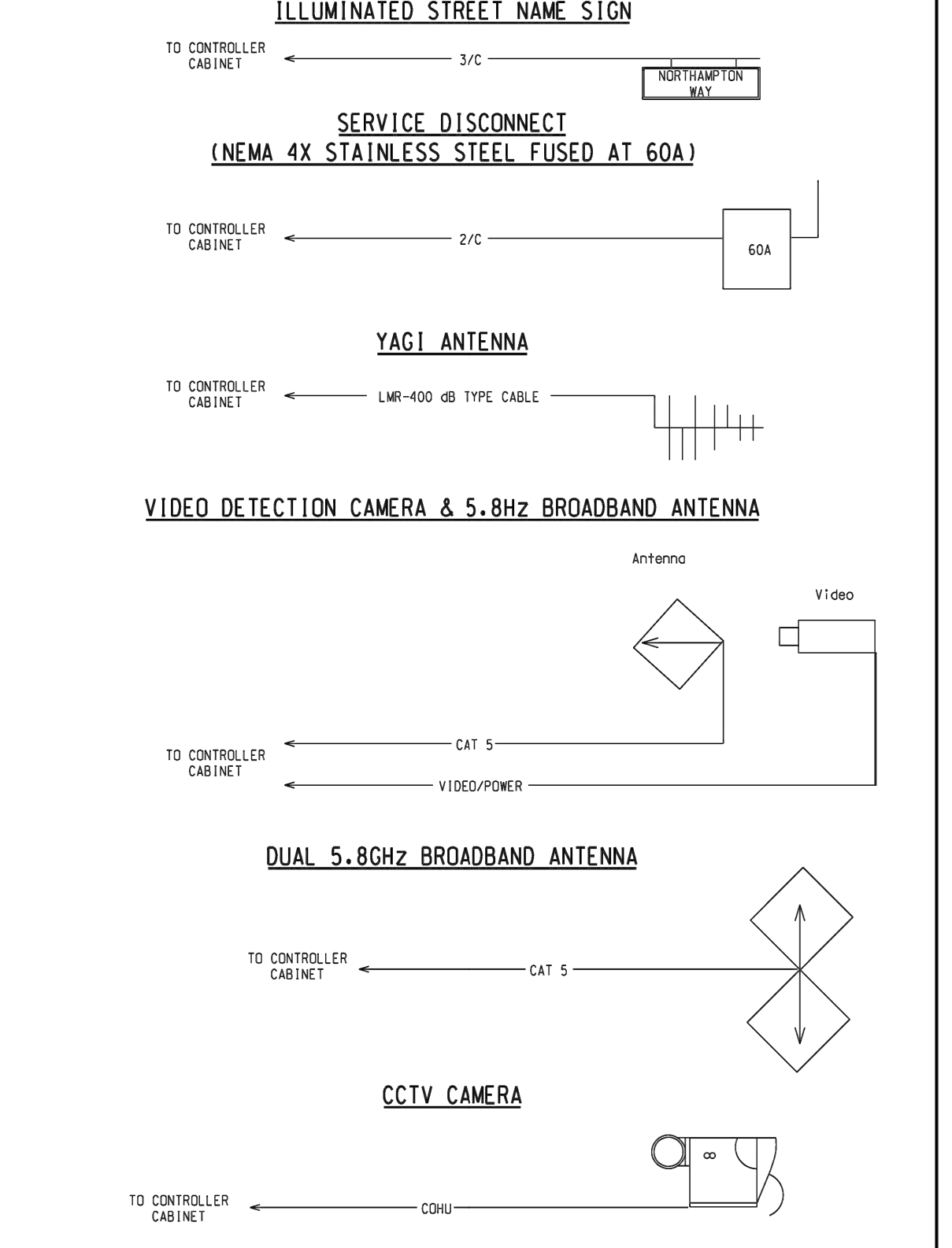
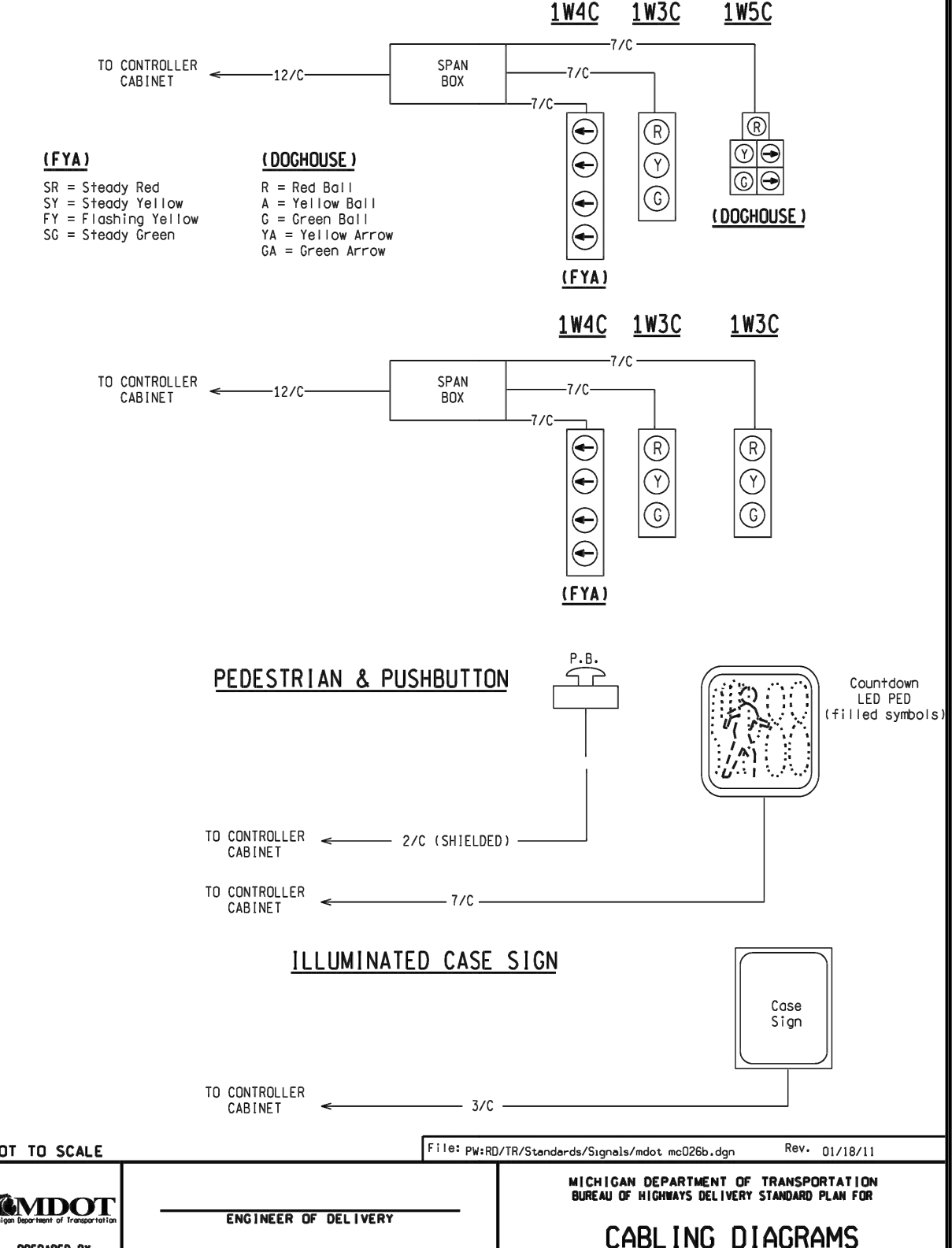
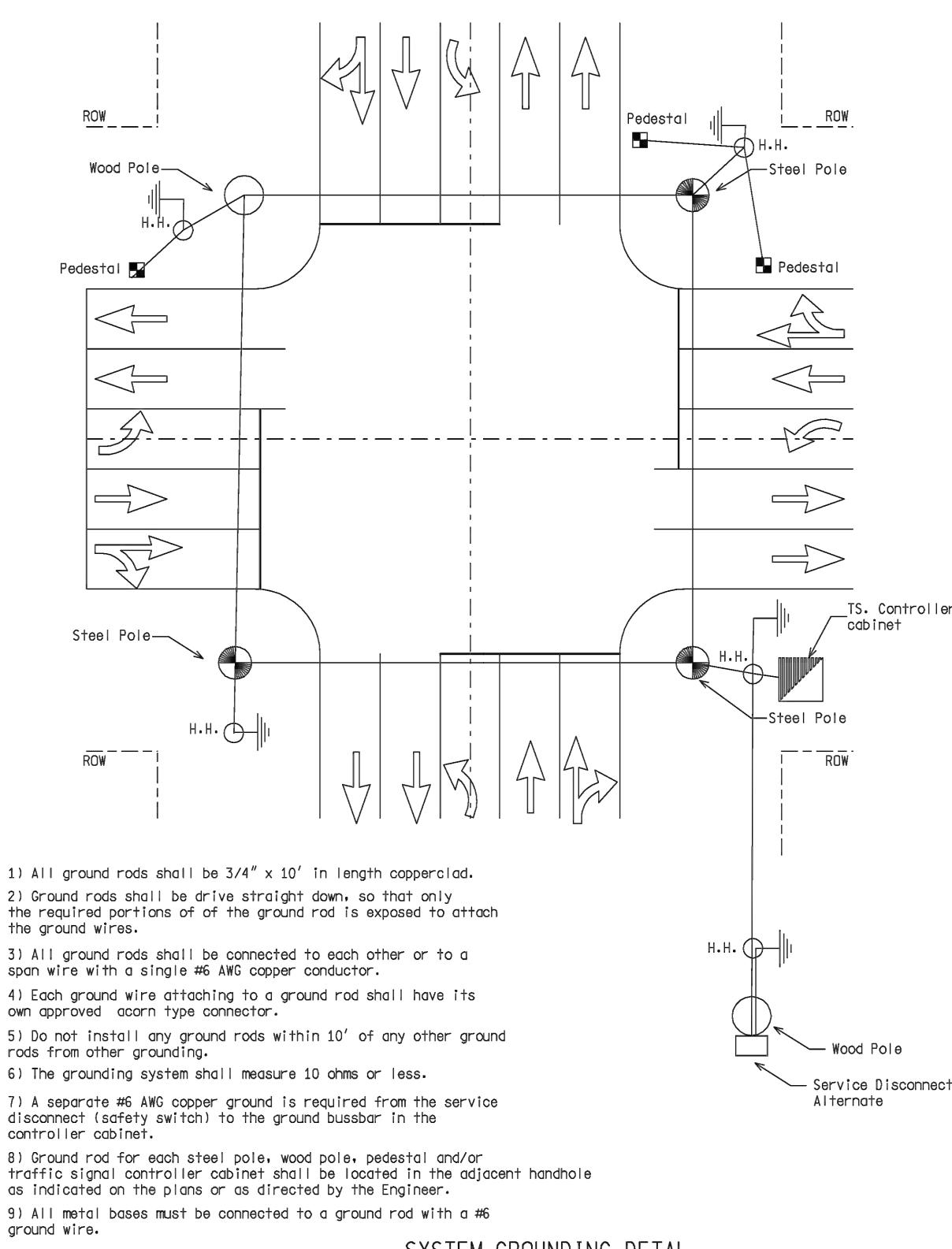
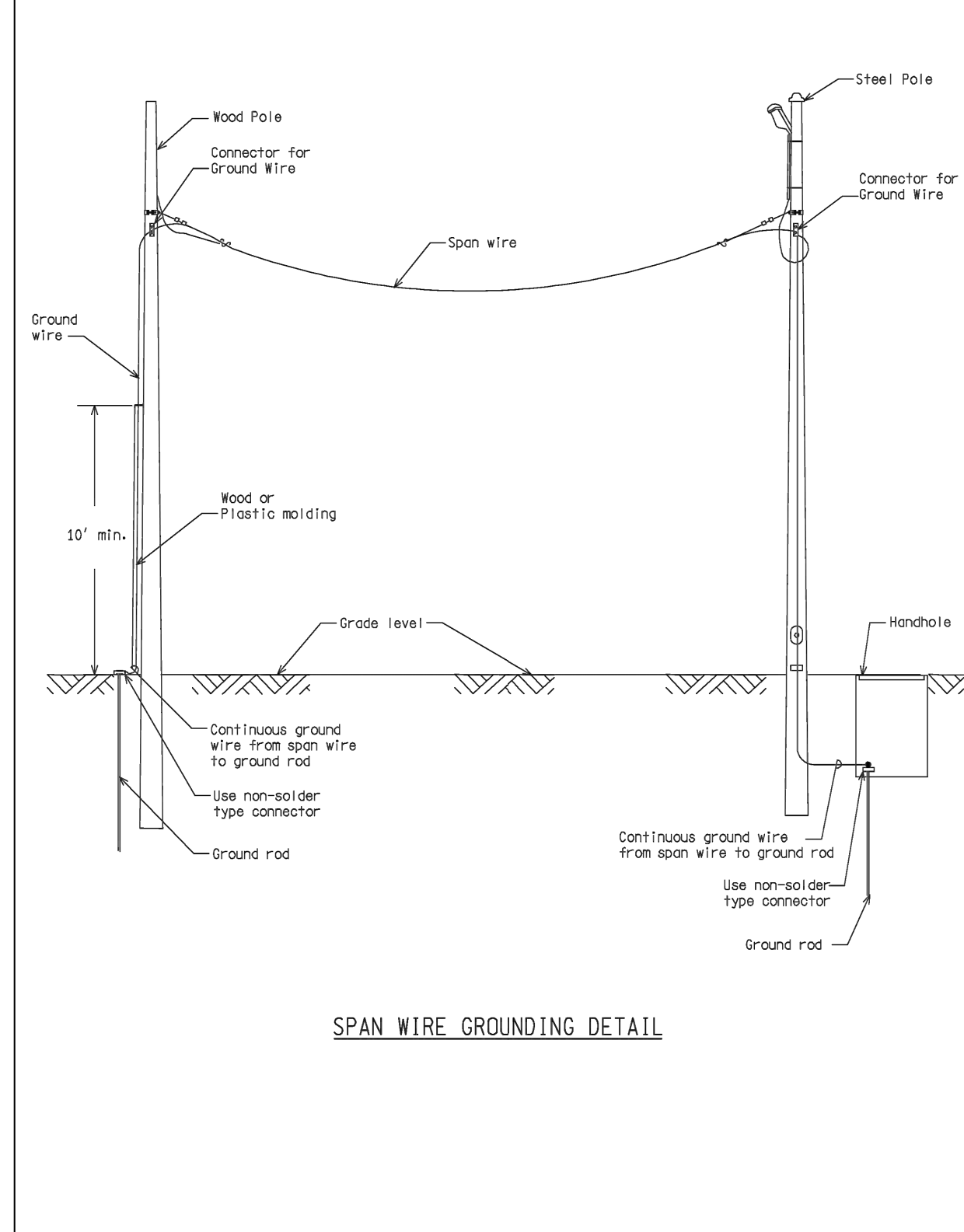


NOT TO SCALE	F1141: Pw/HD/TR/Standards/Signals/ndot_sug202a.dgn	Rev. 11/16/10
<b>MDOT</b>	ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	<b>COLOR CODE WIRING/ EQUIPMENT GROUNDING</b>
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWHA APPROVAL DATE	MC-026-A
		SHEET 1 OF 6

NOT TO SCALE	F1141: Pw/HD/TR/Standards/Signals/ndot_sug202a.dgn	Rev. 11/16/10
<b>MDOT</b>	ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	<b>COLOR CODE WIRING/ EQUIPMENT GROUNDING</b>
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWHA APPROVAL DATE	MC-026-A
		SHEET 2 OF 6

NOT TO SCALE	F1141: Pw/HD/TR/Standards/Signals/ndot_sug202a.dgn	Rev. 11/16/10
<b>MDOT</b>	ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	<b>COLOR CODE WIRING/ EQUIPMENT GROUNDING</b>
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWHA APPROVAL DATE	MC-026-A
		SHEET 3 OF 6

NOT TO SCALE	F1141: Pw/HD/TR/Standards/Signals/ndot_sug202a.dgn	Rev. 11/16/10
<b>MDOT</b>	ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	<b>COLOR CODE WIRING/ EQUIPMENT GROUNDING</b>
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWHA APPROVAL DATE	MC-026-A
		SHEET 4 OF 6



NOT TO SCALE	F1141: Pw/HD/TR/Standards/Signals/ndot_sug202a.dgn	Rev. 11/16/10
<b>MDOT</b>	ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	<b>COLOR CODE WIRING/ EQUIPMENT GROUNDING</b>
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWHA APPROVAL DATE	MC-026-A
		SHEET 5 OF 6

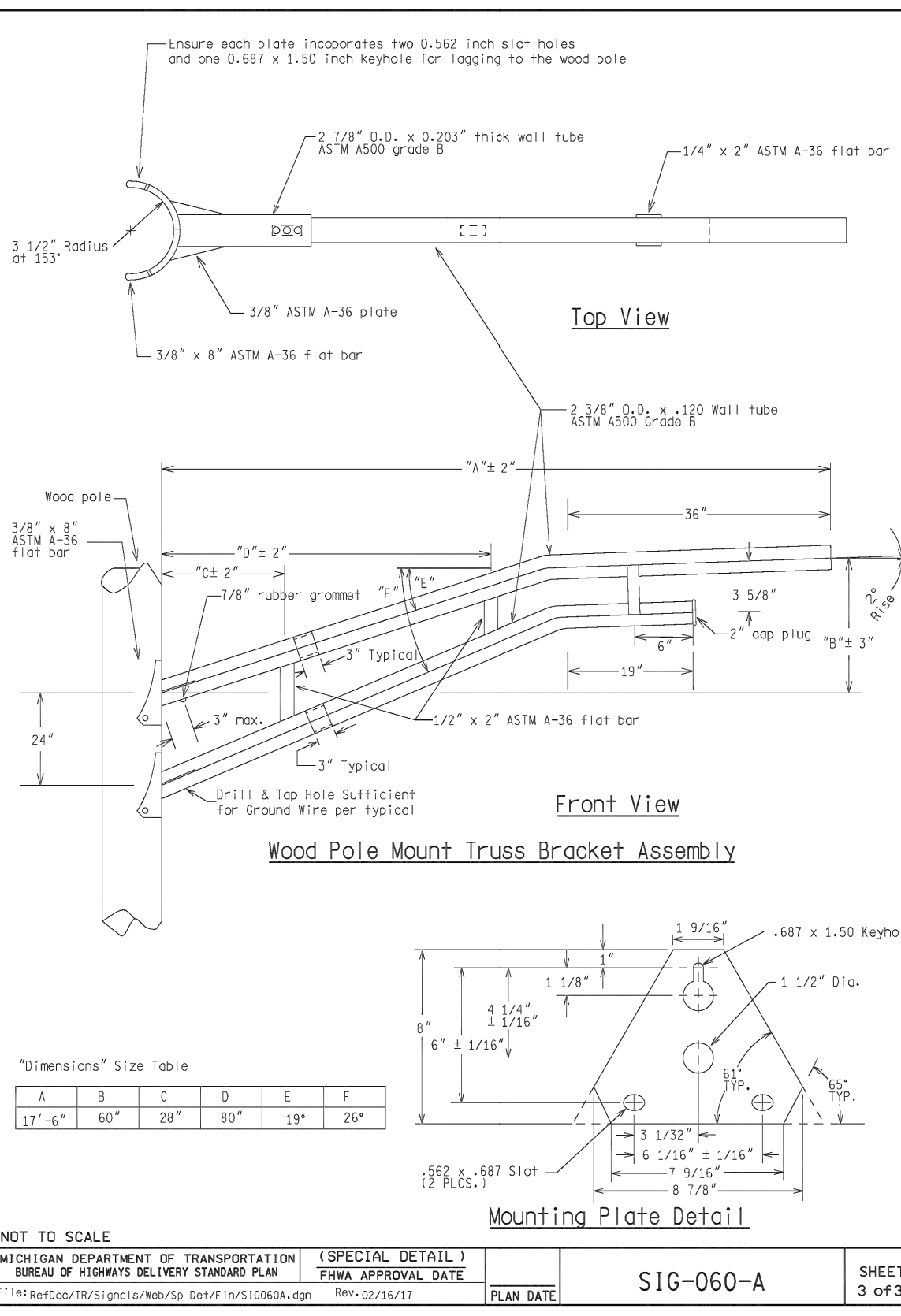
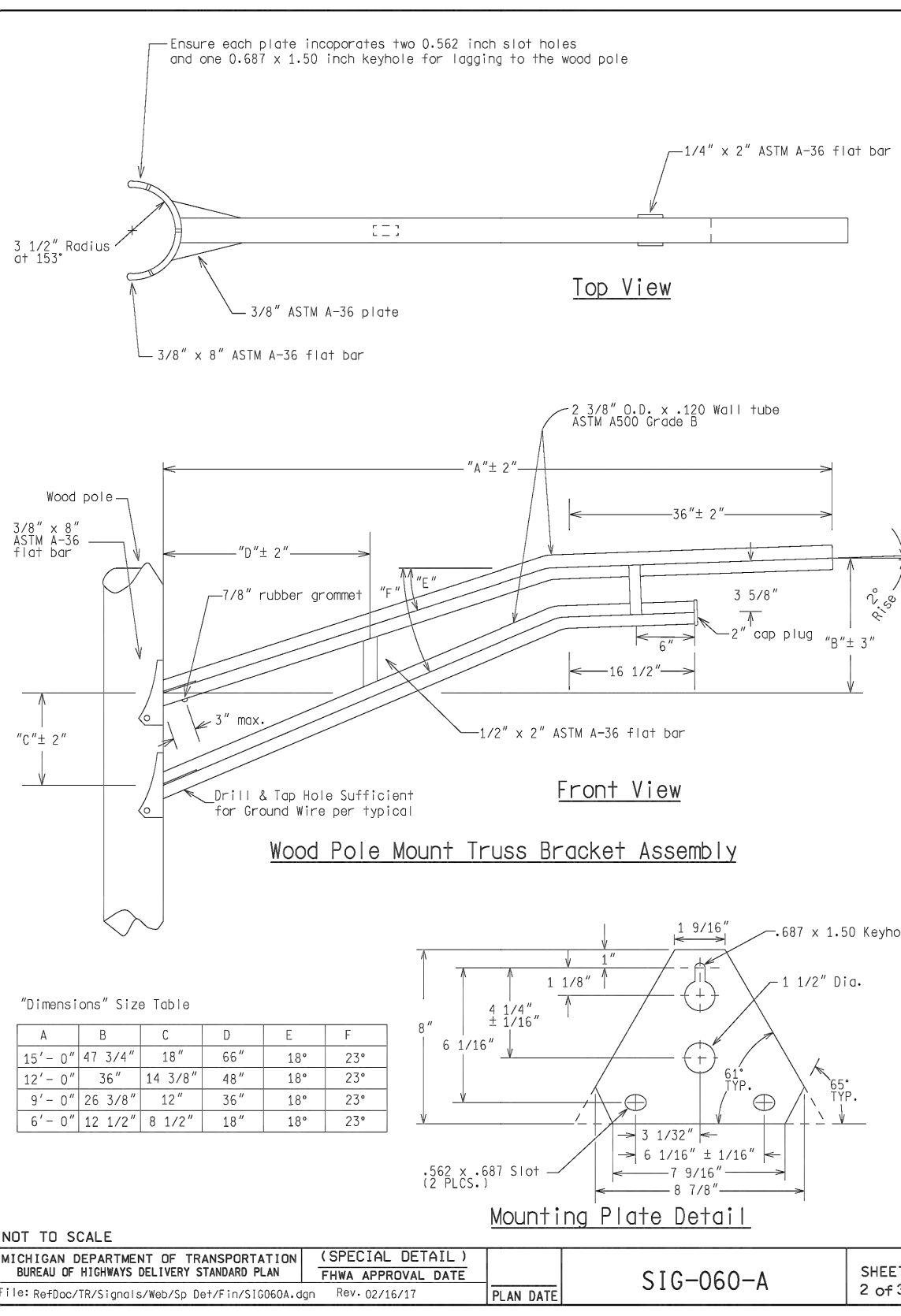
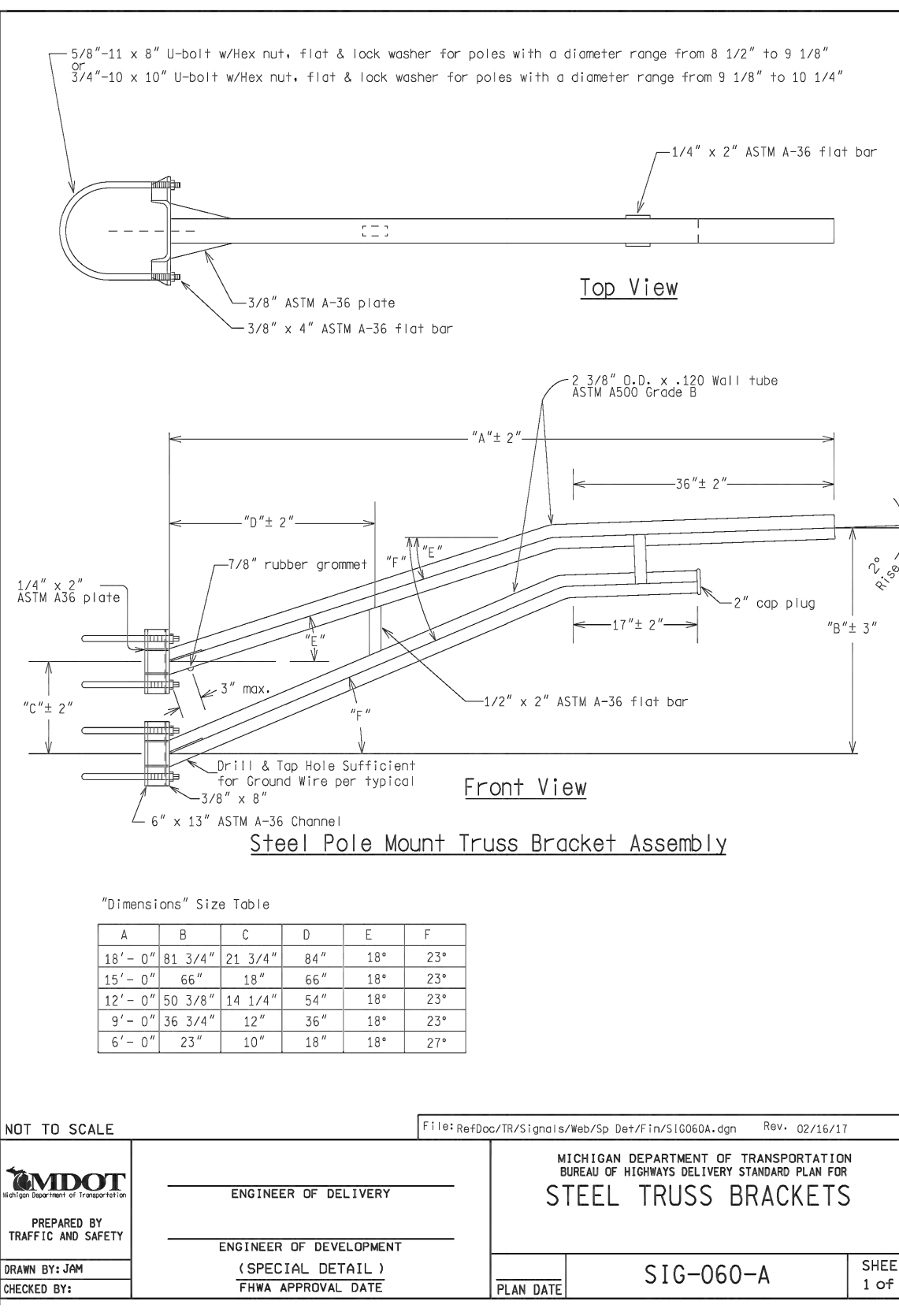
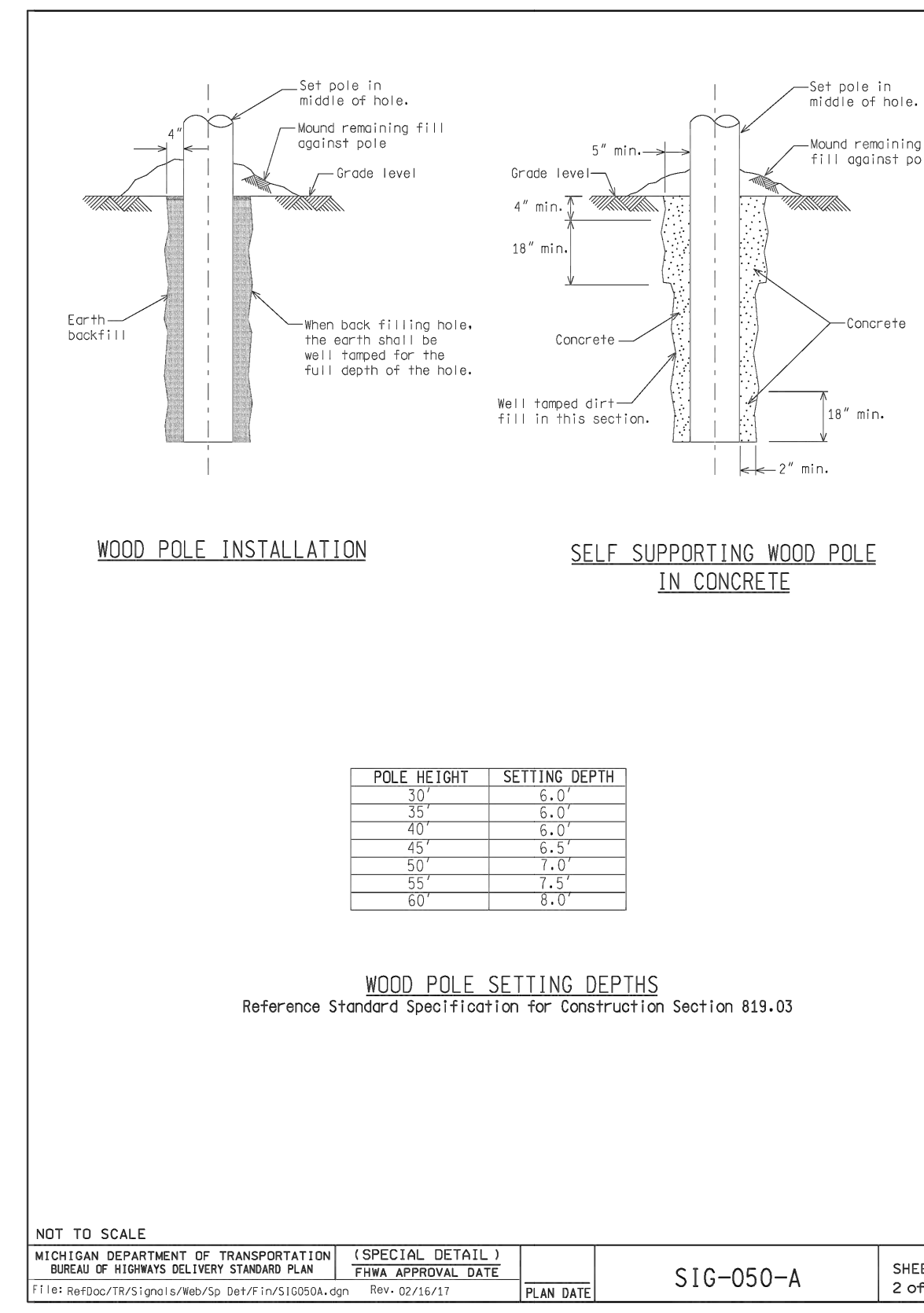
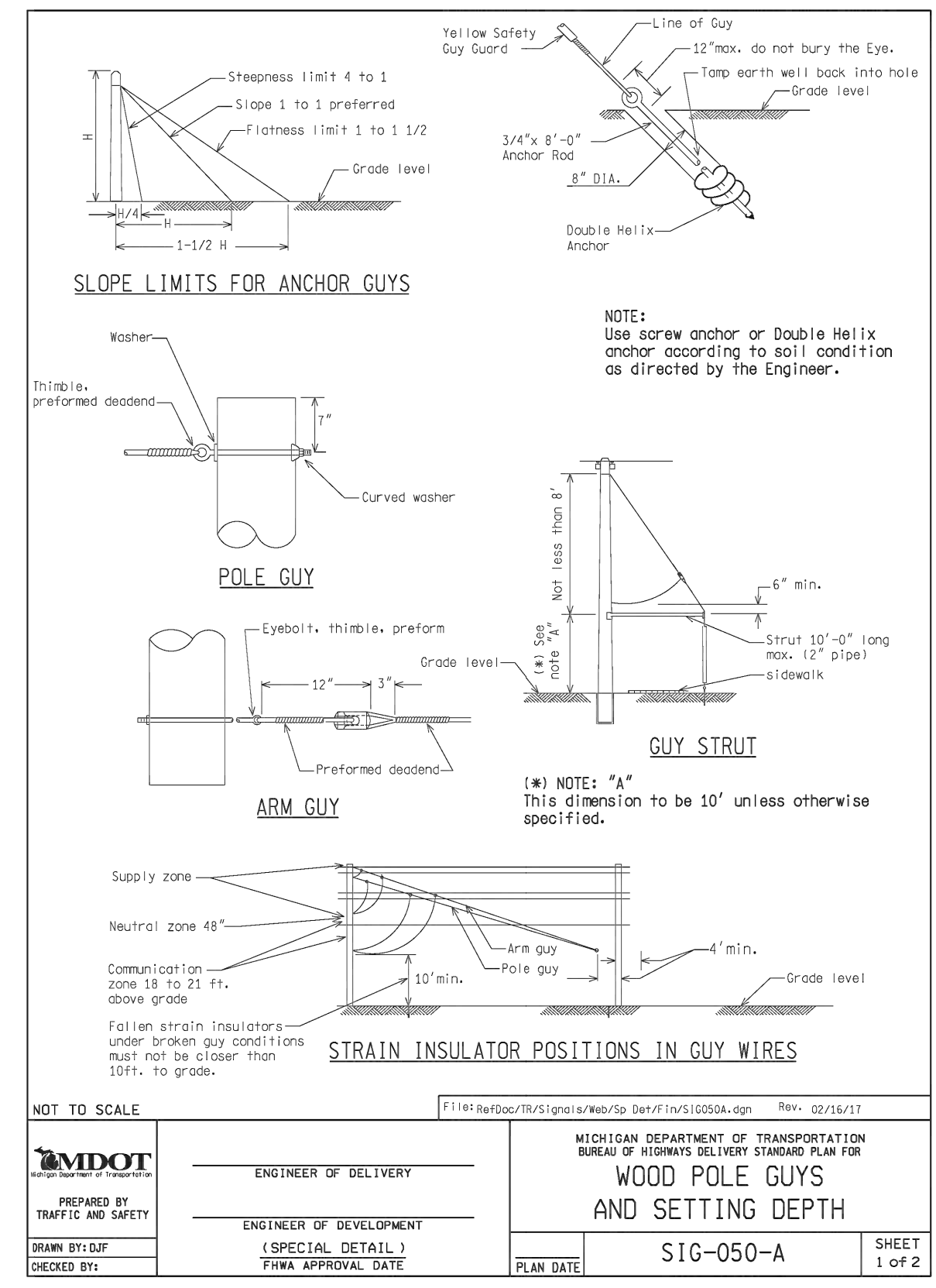
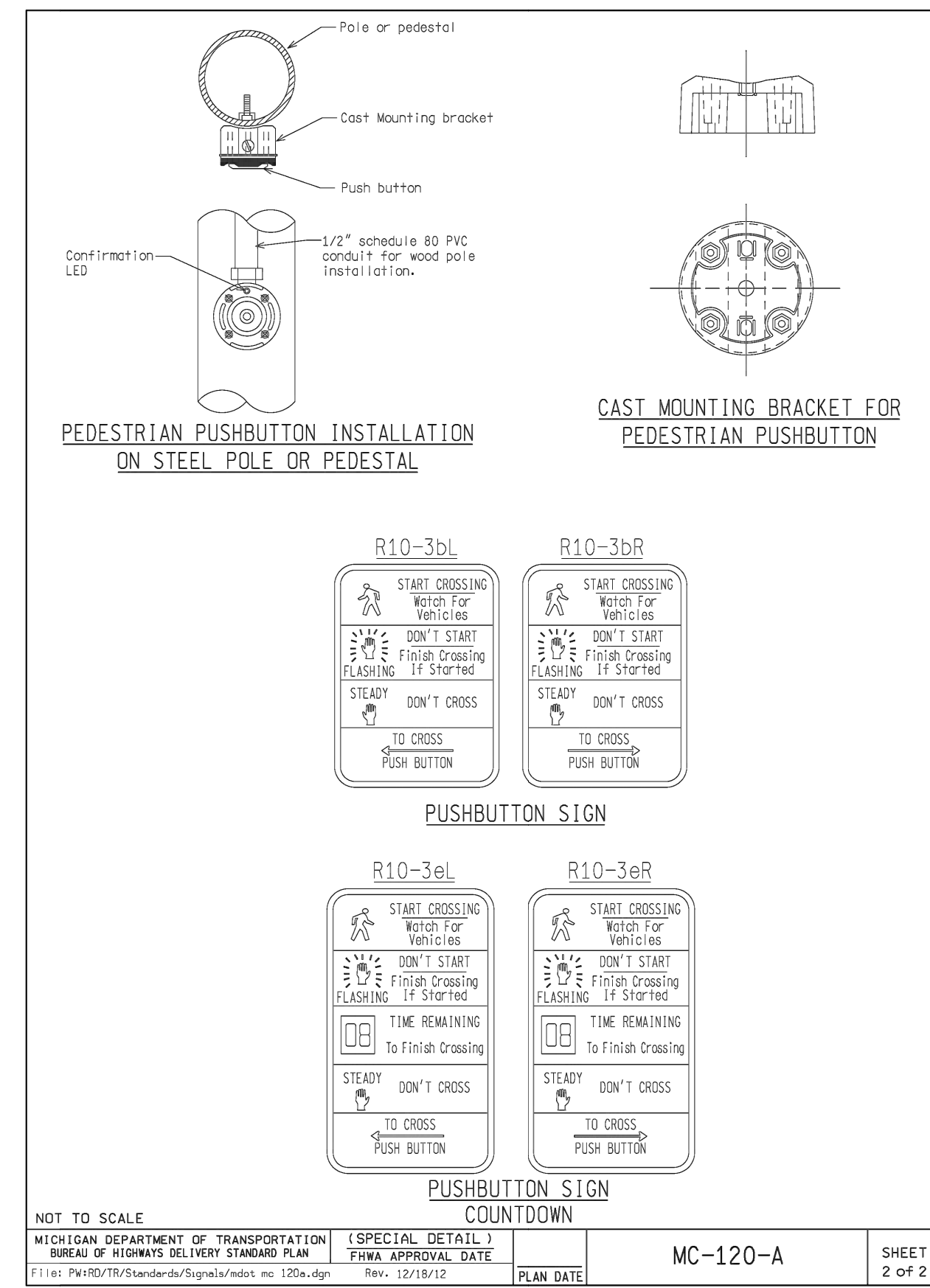
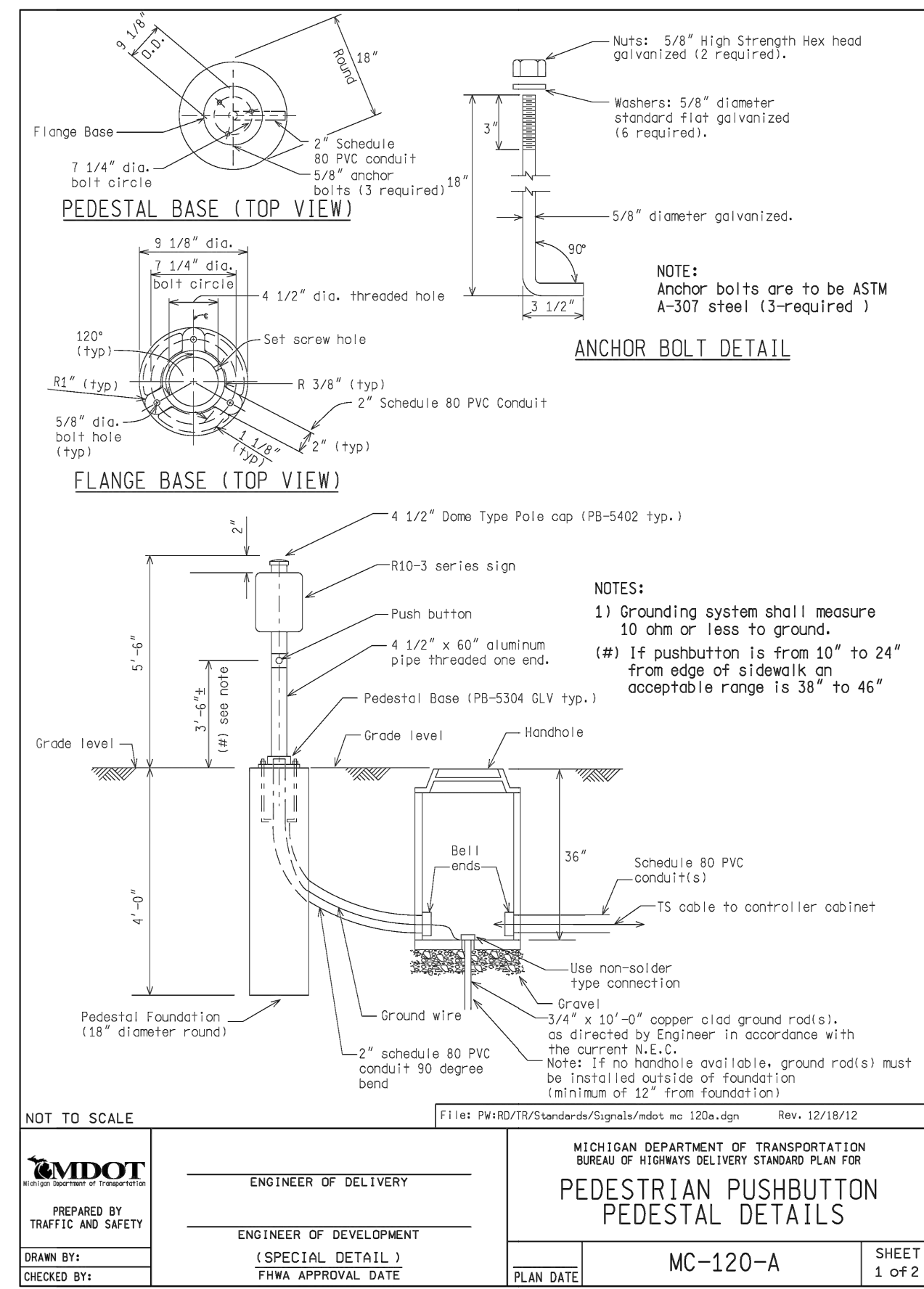
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<b>MDOT</b>	ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	<b>COLOR CODE WIRING/ EQUIPMENT GROUNDING</b>
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWHA APPROVAL DATE	MC-026-A
		SHEET 6 OF 6

NOT TO SCALE	F1141: Pw/HD/TR/Standards/Signals/ndot_sug202a.dgn	Rev. 01/18/11
<b>MDOT</b>	ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	<b>COLOR CODE WIRING/ EQUIPMENT GROUNDING</b>
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWHA APPROVAL DATE	MC-026-B
		SHEET 1 OF 2

NOT TO SCALE	F1141: Pw/HD/TR/Standards/Signals/ndot_sug202a.dgn	Rev. 01/18/11
<b>MDOT</b>	ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	<b>COLOR CODE WIRING/ EQUIPMENT GROUNDING</b>
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWHA APPROVAL DATE	MC-026-B
		SHEET 2 OF 2

<b>LEGEND</b>	EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	STORM SEWER & CAT. BAS.	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
WATER MAIN & VALVE-IN-WELL	FIRE HYDRANT ASSEMBLY	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-BOX	LIGHT POLE	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
	END SECTION	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

<b>DLZ</b>		PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR			
<b>E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL SPECIAL DETAILS</b>		SCALE	INCH		
		NTS	0 1		
		DRAWING NO.	2021-008-SSD1		
		SHEET NO.	139 OF 155		
REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY	APPROVED BY
	ORIGINAL ISSUE	10/6/23	INB	LCM	



**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	SEE ABOVE
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	BENCH MARK
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	SURVEY BOOK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	REV. NO.
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD & GRADE	DESCRIPTION

DATE	10/6/23	INB	LCM
DATE	10/6/23	INB	LCM
DATE	10/6/23	INB	LCM
DATE	10/6/23	INB	LCM

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

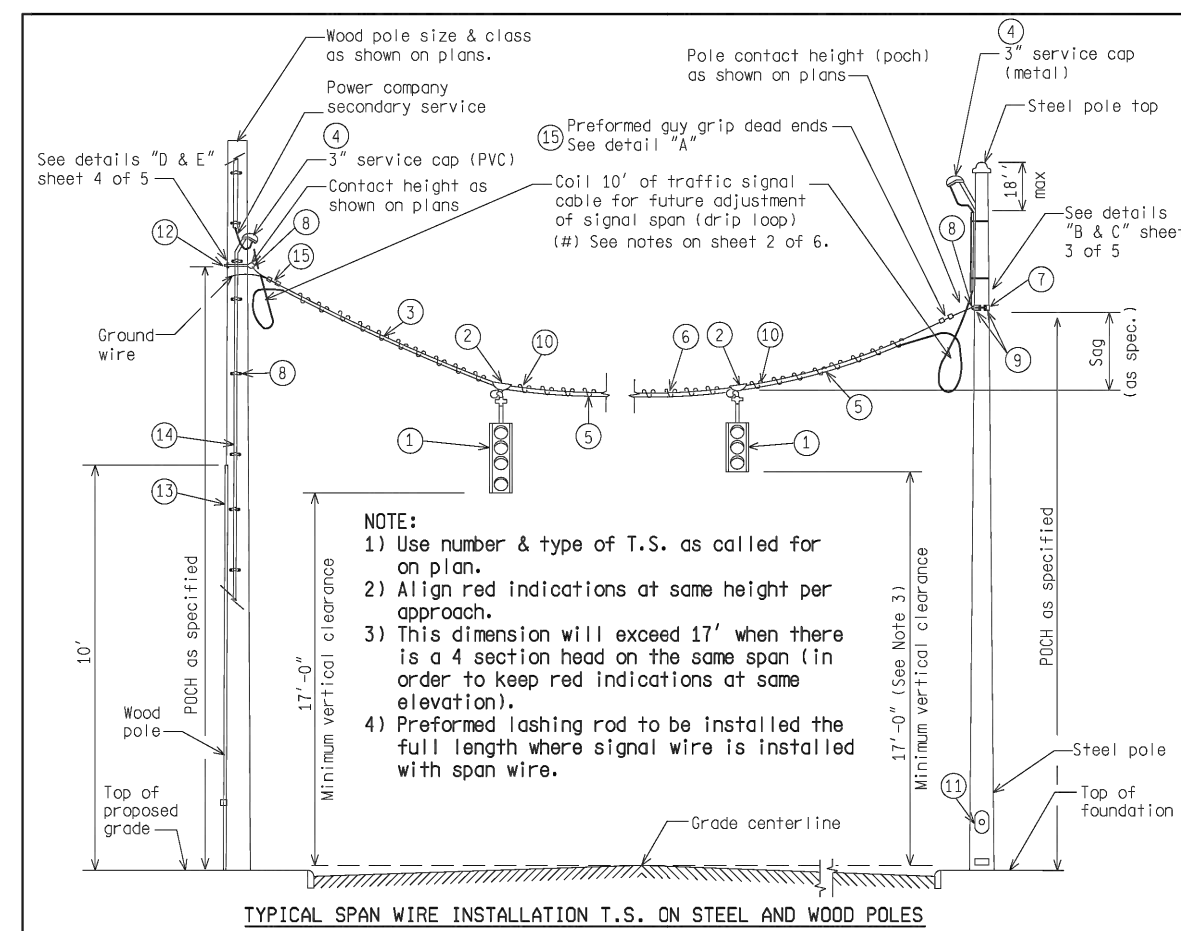
**E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL SPECIAL DETAILS**

SCALE: 0 INCH 1

DRAWING NO. 2021-008-SSD2

SHEET NO. 140 OF 155

APPROVED BY: \_\_\_\_\_



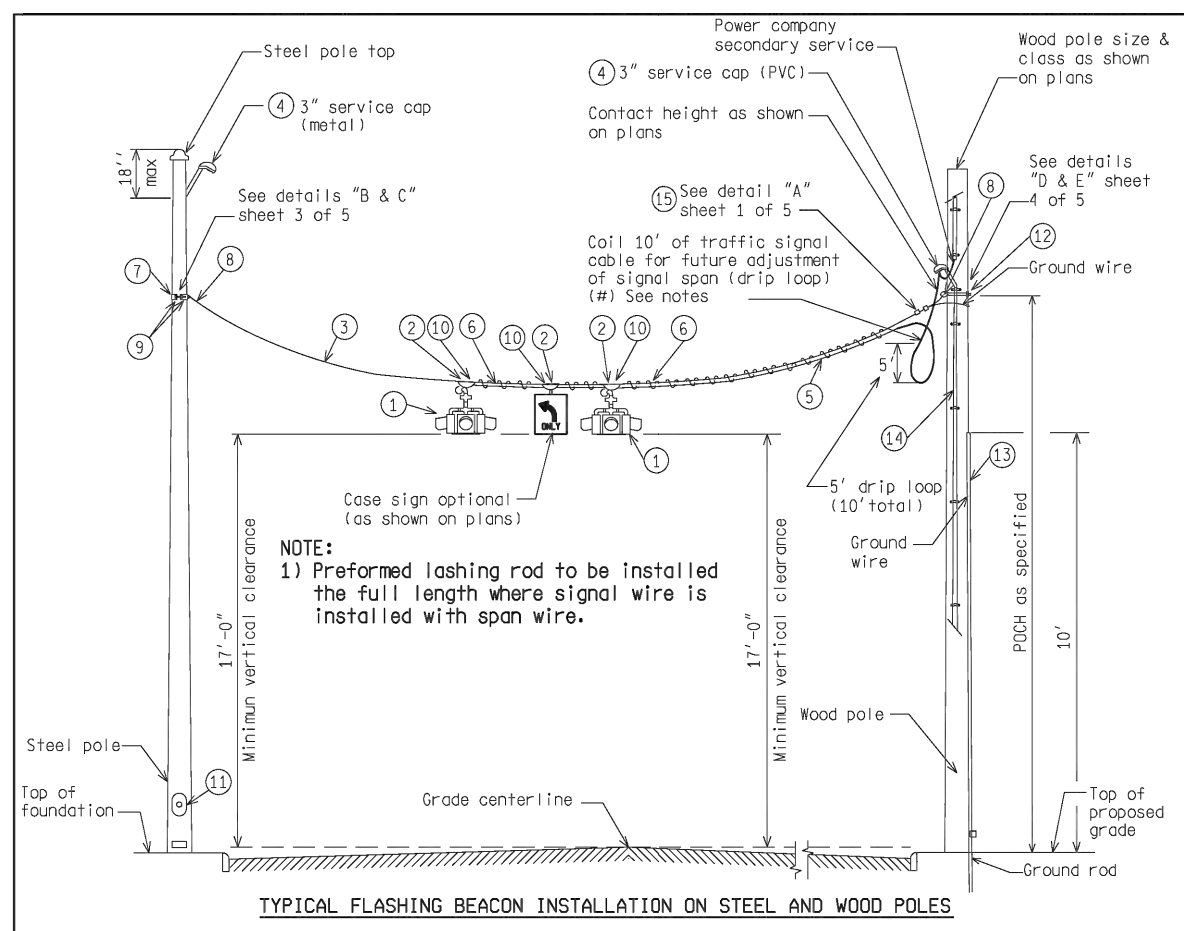
NO.	ITEM
1	Traffic signal (no. heads as indicated)
2	Span wire hanger
3	5/16" extra high strength span wire
4	3" service cap (weatherhead), metal for steel and PVC for wood poles
5	P.V.C. traffic signal cable (as specified)
6	Preformed lashing rods
7	Pole band clamp (steel pole)
8	Guy thimble (2" dia.)
9	(2) 5/8" x 4" long bolt, nut, washers per pole band clamp (steel pole)
10	Install span wire preformed (armor rod) under each span hanger
11	Access hand hole all new & existing steel poles
12	5/8" eyebolt, oval eye and nut
13	Wood moulding or plastic duct (10" from ground level)
14	3" schedule 80 PVC or rigid metal (10" see note on sheet 2 of 5)
15	Preformed guy grip dead ends

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR  
**ALL SPAN WIRE T.S. ON STEEL AND WOOD POLES**

ENGINEER OF DELIVERY: \_\_\_\_\_  
 ENGINEER OF DEVELOPMENT: \_\_\_\_\_  
 SPECIAL DETAIL: \_\_\_\_\_  
 FHW A APPROVAL DATE: \_\_\_\_\_

PLAN DATE: SIG-010-A SHEET 1 OF 7



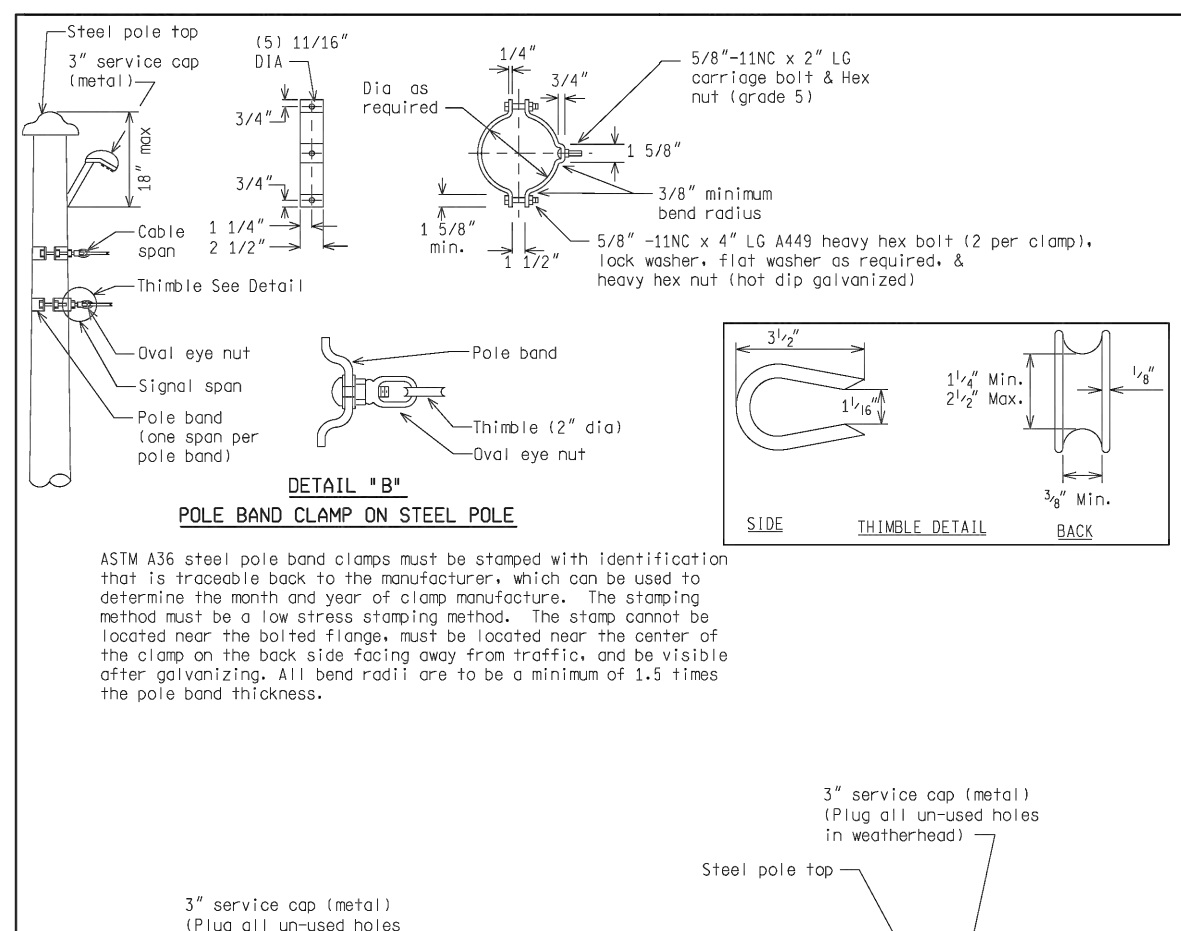
NO.	ITEM
1	Traffic signal (no. heads as indicated)
2	Span wire hanger
3	5/16" extra high strength span wire
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NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR  
**ALL SPAN WIRE T.S. ON STEEL AND WOOD POLES**

ENGINEER OF DELIVERY: \_\_\_\_\_  
 ENGINEER OF DEVELOPMENT: \_\_\_\_\_  
 SPECIAL DETAIL: \_\_\_\_\_  
 FHW A APPROVAL DATE: \_\_\_\_\_

PLAN DATE: SIG-010-A SHEET 2 OF 7



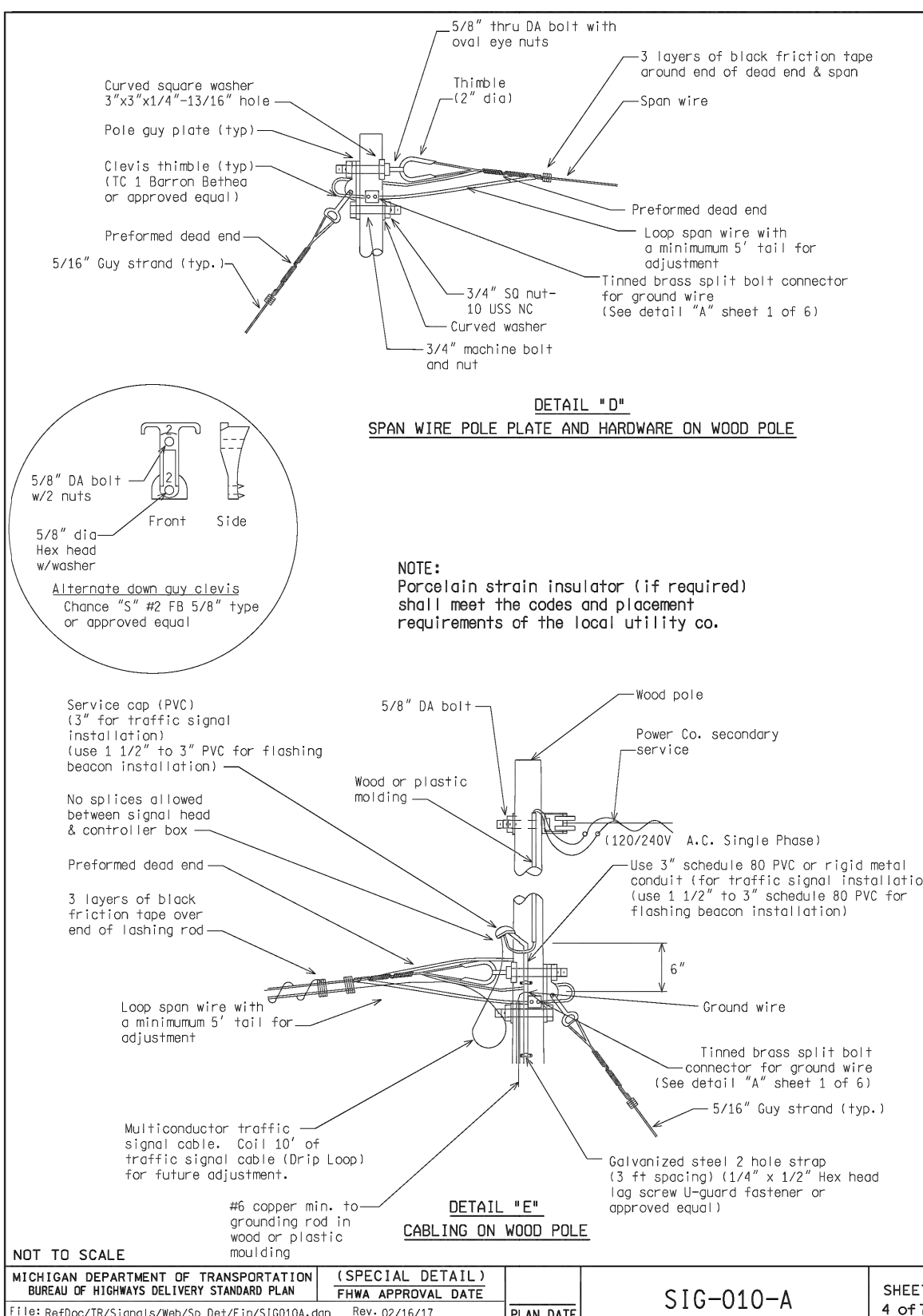
NO.	ITEM
1	Traffic signal (no. heads as indicated)
2	Span wire hanger
3	5/16" extra high strength span wire
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NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR  
**ALL SPAN WIRE T.S. ON STEEL AND WOOD POLES**

ENGINEER OF DELIVERY: \_\_\_\_\_  
 ENGINEER OF DEVELOPMENT: \_\_\_\_\_  
 SPECIAL DETAIL: \_\_\_\_\_  
 FHW A APPROVAL DATE: \_\_\_\_\_

PLAN DATE: SIG-010-A SHEET 3 OF 7

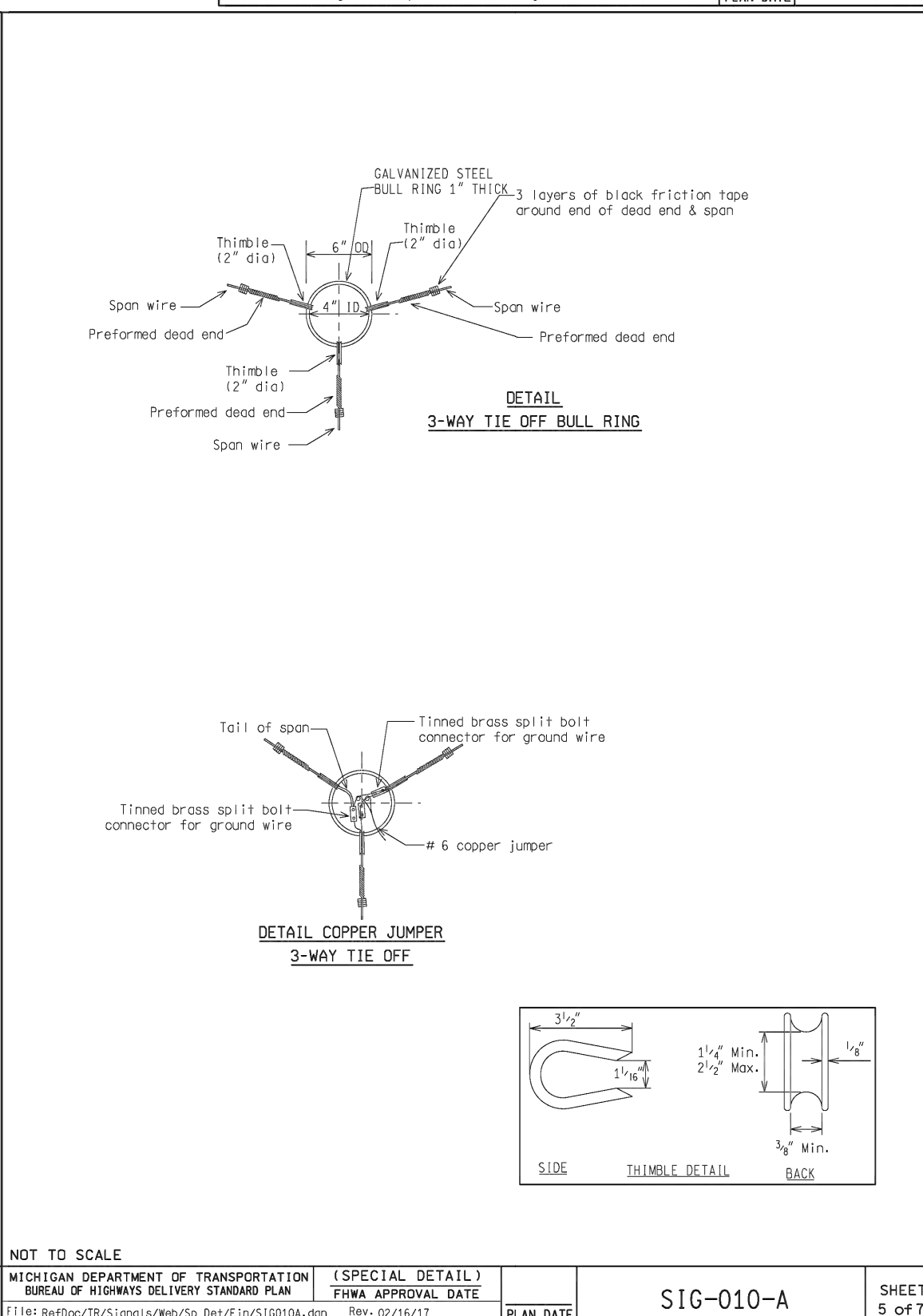


NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR  
**ALL SPAN WIRE T.S. ON STEEL AND WOOD POLES**

ENGINEER OF DELIVERY: \_\_\_\_\_  
 ENGINEER OF DEVELOPMENT: \_\_\_\_\_  
 SPECIAL DETAIL: \_\_\_\_\_  
 FHW A APPROVAL DATE: \_\_\_\_\_

PLAN DATE: SIG-010-A SHEET 4 OF 7

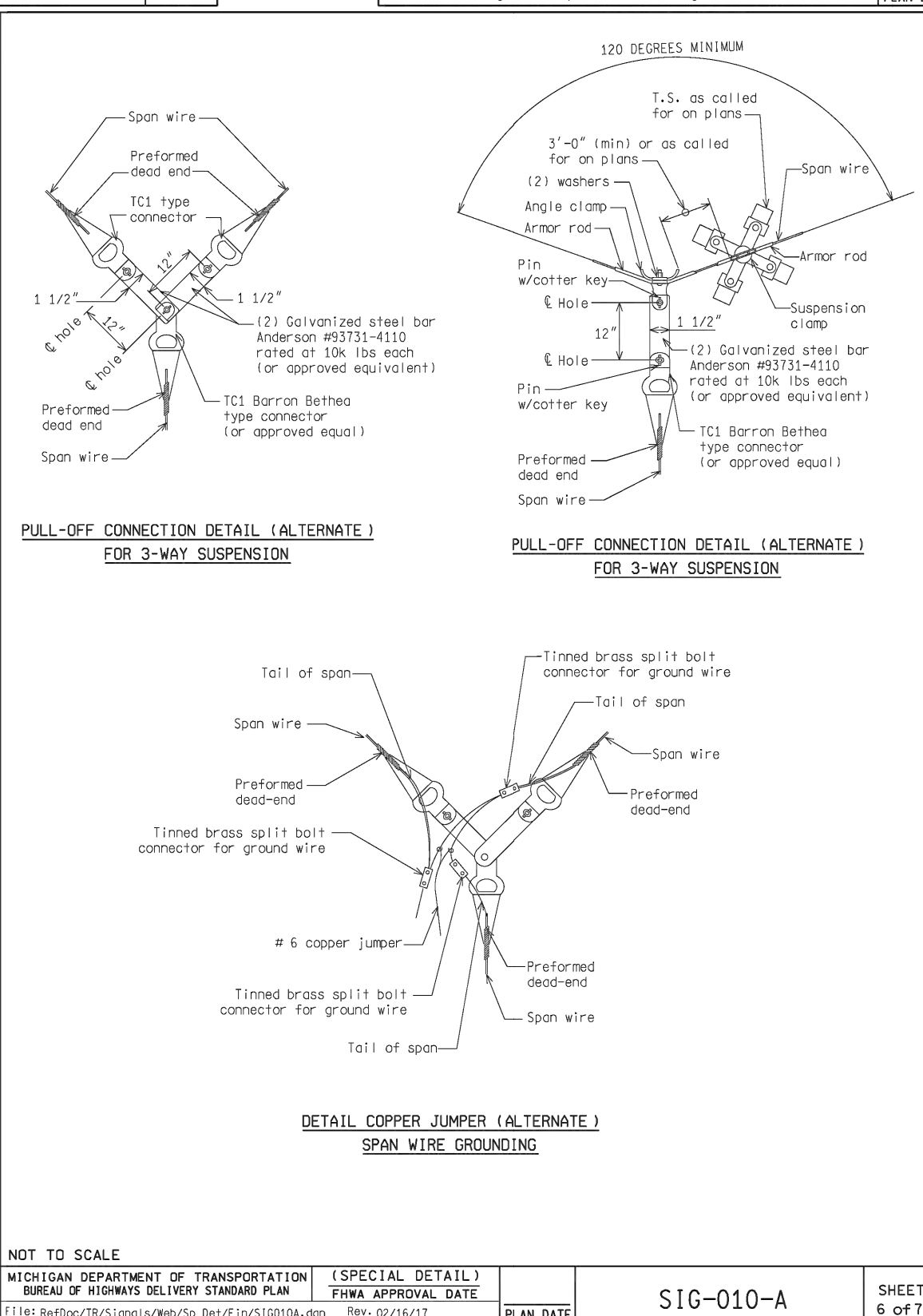


NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR  
**ALL SPAN WIRE T.S. ON STEEL AND WOOD POLES**

ENGINEER OF DELIVERY: \_\_\_\_\_  
 ENGINEER OF DEVELOPMENT: \_\_\_\_\_  
 SPECIAL DETAIL: \_\_\_\_\_  
 FHW A APPROVAL DATE: \_\_\_\_\_

PLAN DATE: SIG-010-A SHEET 5 OF 7

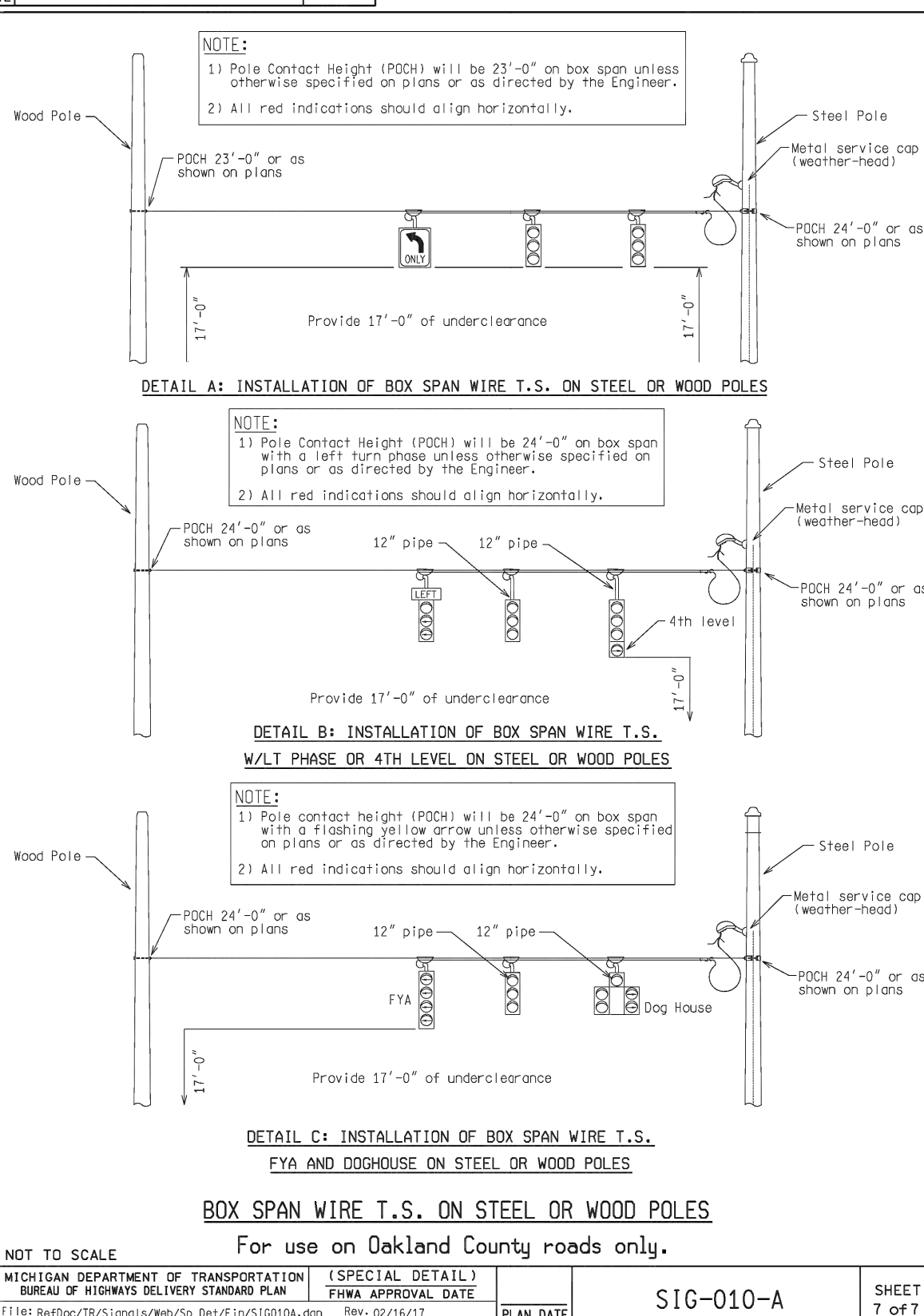


NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR  
**ALL SPAN WIRE T.S. ON STEEL AND WOOD POLES**

ENGINEER OF DELIVERY: \_\_\_\_\_  
 ENGINEER OF DEVELOPMENT: \_\_\_\_\_  
 SPECIAL DETAIL: \_\_\_\_\_  
 FHW A APPROVAL DATE: \_\_\_\_\_

PLAN DATE: SIG-010-A SHEET 6 OF 7



NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR  
**ALL SPAN WIRE T.S. ON STEEL AND WOOD POLES**

ENGINEER OF DELIVERY: \_\_\_\_\_  
 ENGINEER OF DEVELOPMENT: \_\_\_\_\_  
 SPECIAL DETAIL: \_\_\_\_\_  
 FHW A APPROVAL DATE: \_\_\_\_\_

PLAN DATE: SIG-010-A SHEET 7 OF 7

**LEGEND**

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH SURVEY
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	REV. NO.
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	DESCRIPTION

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**

**E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL SPECIAL DETAILS**

SCALE: 0 INCH 1

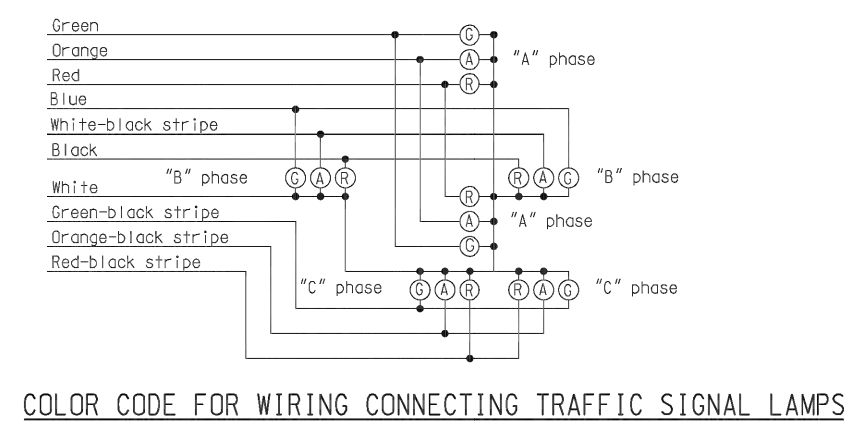
DRAWING NO. 2021-008-SSD3

SHEET NO. 141 OF 155

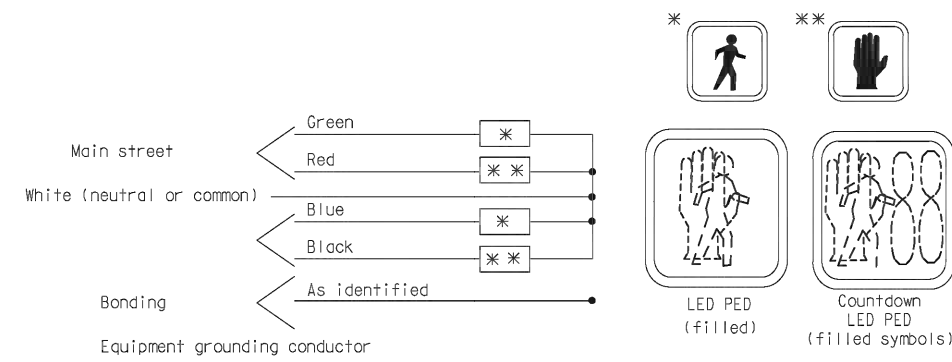
APPROVED BY: \_\_\_\_\_

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY



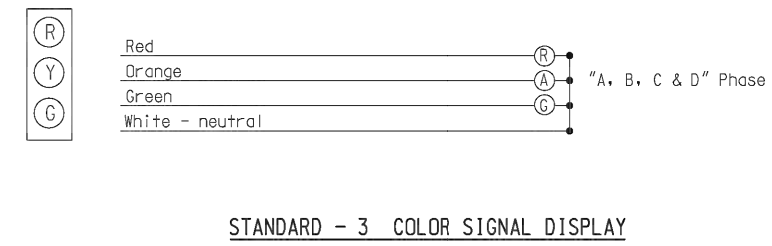


NOTE: No splices allowed between traffic signal head and controller.

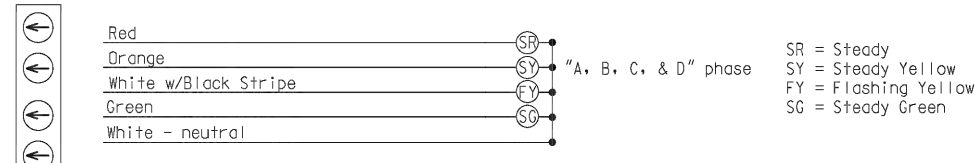


COLOR CODE FOR WIRING CONNECTING PEDESTRIAN SIGNAL LAMPS  
( WALKING PERSON - HAND SYMBOL )

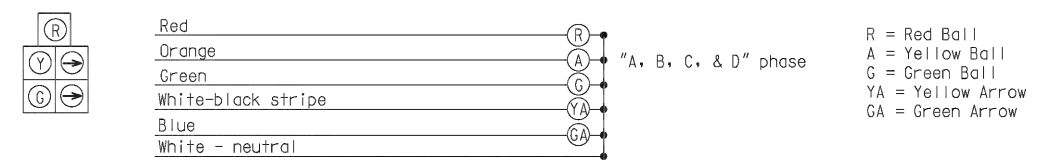
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PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWA APPROVAL DATE	
	SIG-230-A	SHEET 1 of 6



STANDARD - 3 COLOR SIGNAL DISPLAY



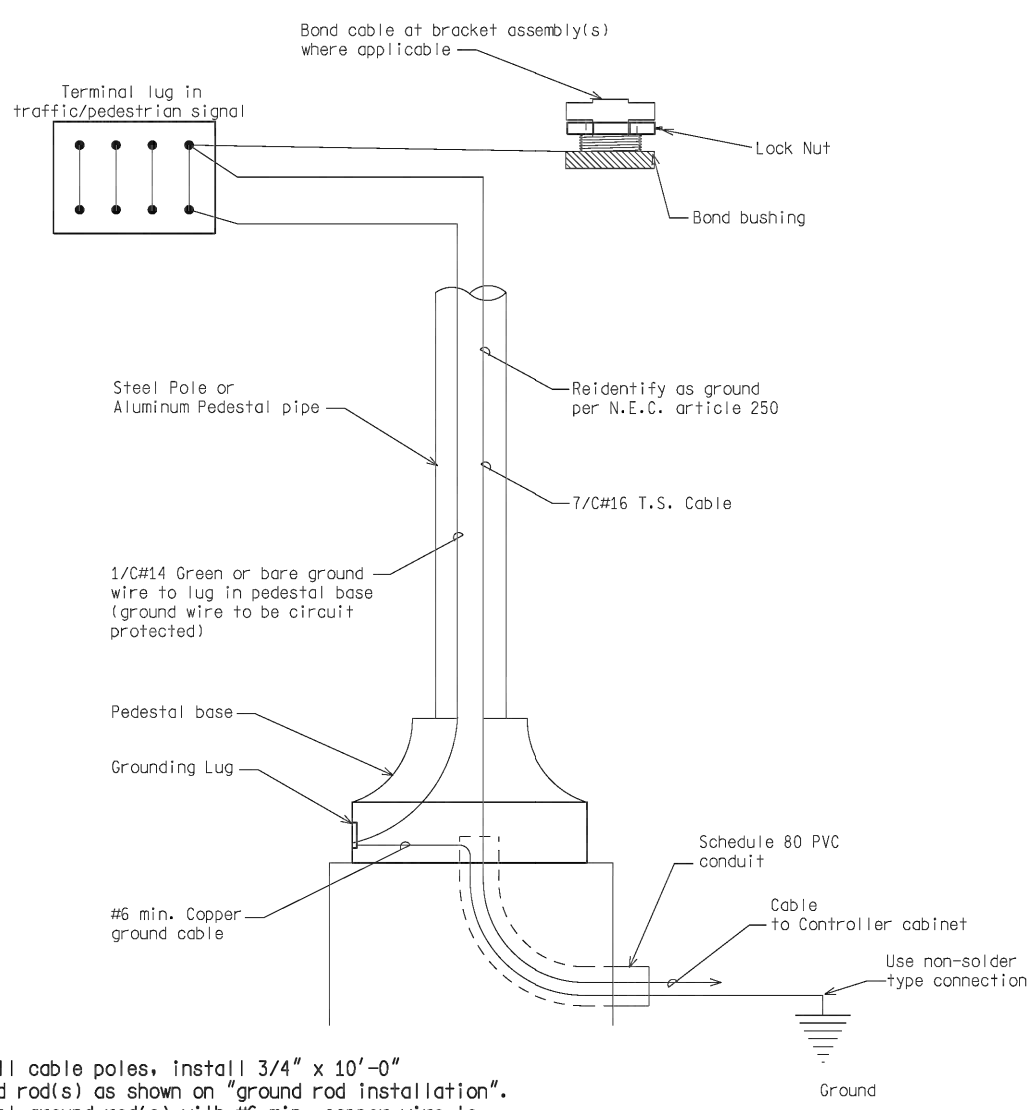
FLASHING YELLOW ARROW (FYA) - 4 COLOR SIGNAL DISPLAY



DOG HOUSE W/RIGHT TURNS - 5 COLOR SIGNAL DISPLAY

COLOR CODE FOR WIRING CONNECTING TRAFFIC SIGNAL LAMPS

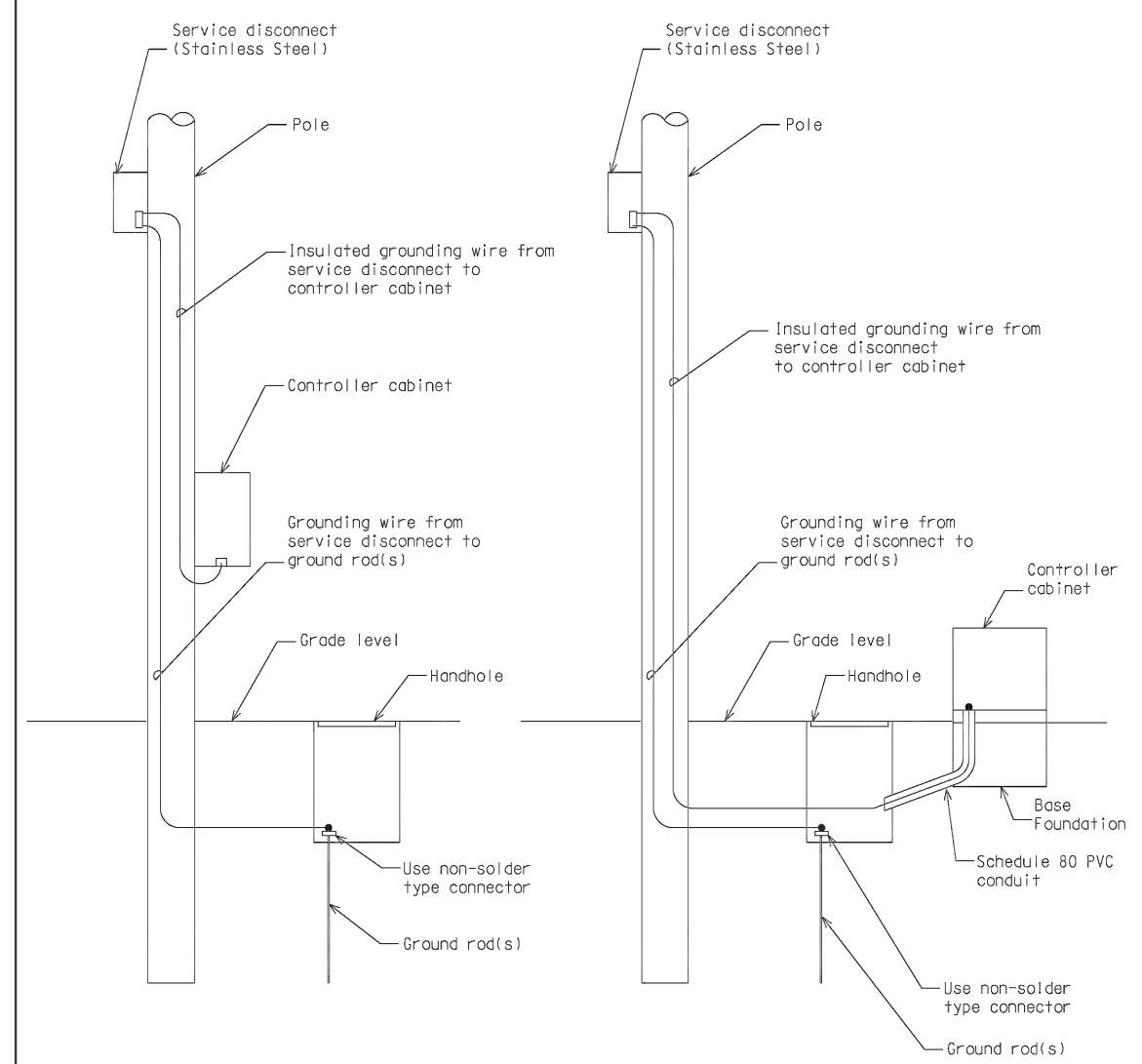
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR COLOR CODE WIRING/ EQUIPMENT GROUNDING	ENGINEER OF DELIVERY	
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWA APPROVAL DATE	
	SIG-230-A	SHEET 2 of 6



NOTE:  
For all cable poles, install 3/4" x 10'-0"  
ground rods as shown on "ground rod installation".  
Connect ground rods with #6 min. copper wire to  
messenger wire with non-solder type connection.

STEEL POLE/PEDESTAL GROUNDING DETAIL

NOT TO SCALE	F:\181\ReDoc\TR\Sig\sig\Reb\sp_bey\F181233A.dgn	Rev. 02/16/17
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR COLOR CODE WIRING/ EQUIPMENT GROUNDING	ENGINEER OF DELIVERY	
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWA APPROVAL DATE	
	SIG-230-A	SHEET 3 of 6

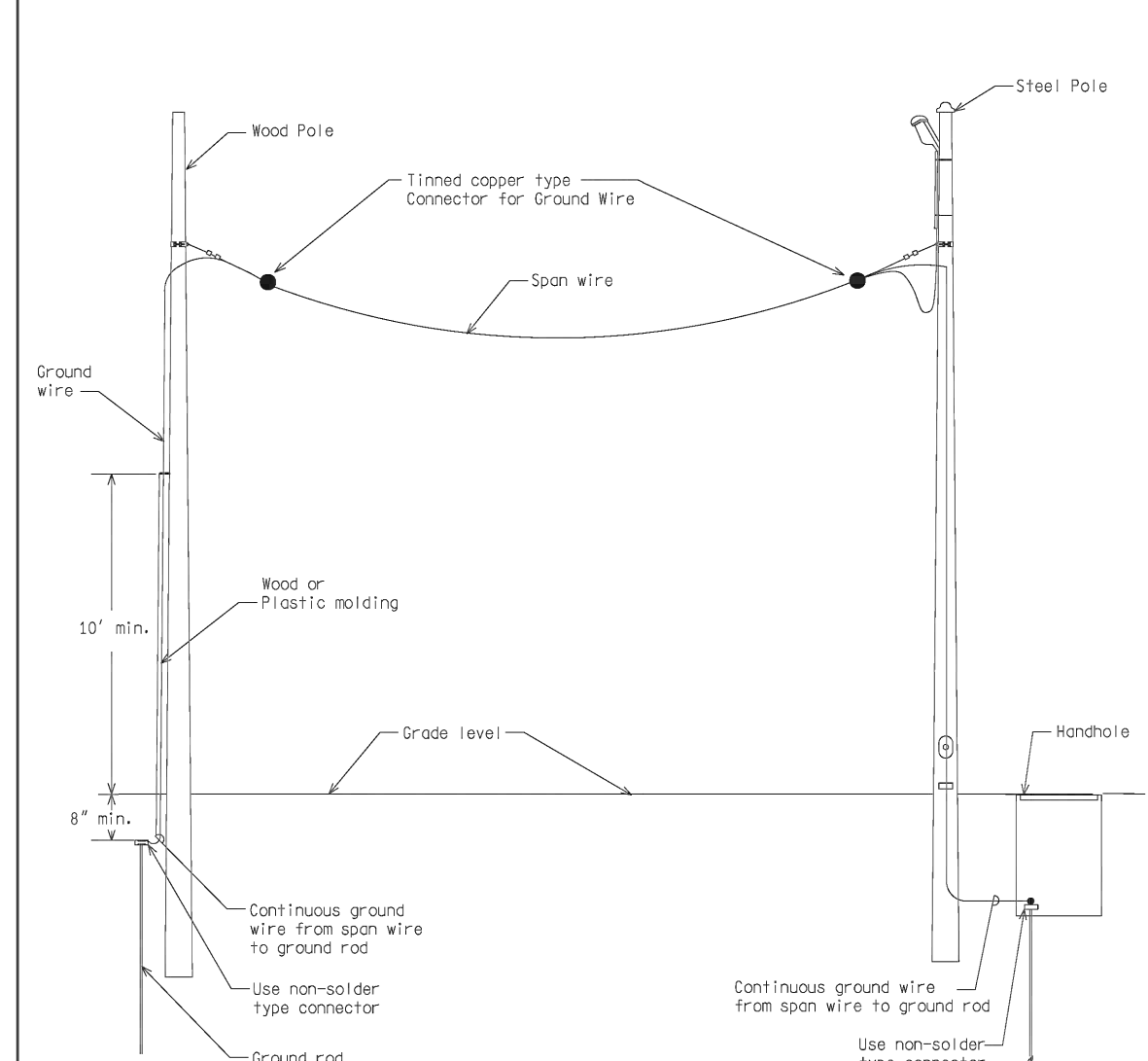


GROUNDING

Install 3/4" x 10'-0" copper clad ground rods as required to provide less than 10 Ohm resistance to ground.  
Grounding wire #6 AWG min. bare copper grounding wire shall be installed to meet N.E.C. and utility company specs.  
Ground wire from disconnect to ground rod to be in routing (wood pole or post) or inside the pole (steel). Ground wire from disconnect to controller cabinet to be in conduit (wood pole, wood post, and steel pole).

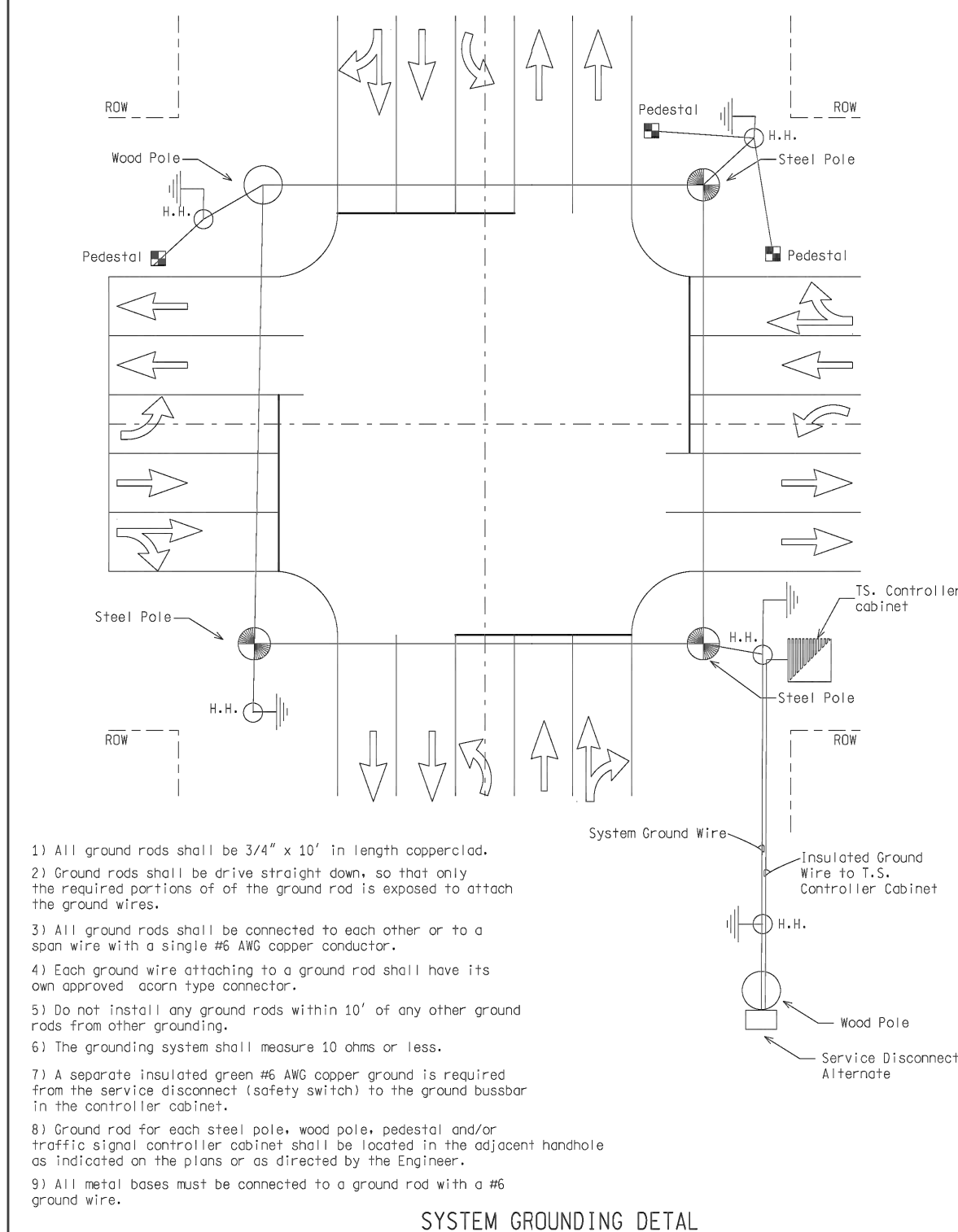
CONTROLLER CABINET GROUNDING DETAIL

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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR COLOR CODE WIRING/ EQUIPMENT GROUNDING	ENGINEER OF DELIVERY	
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWA APPROVAL DATE	
	SIG-230-A	SHEET 4 of 6



SPAN WIRE GROUNDING DETAIL

NOT TO SCALE	F:\181\ReDoc\TR\Sig\sig\Reb\sp_bey\F181233A.dgn	Rev. 02/16/17
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR COLOR CODE WIRING/ EQUIPMENT GROUNDING	ENGINEER OF DELIVERY	
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWA APPROVAL DATE	
	SIG-230-A	SHEET 5 of 6



- All ground rods shall be 3/4" x 10' in length copper clad.
- Ground rods shall be driven straight down, so that only the required portions of all the ground rod is exposed to attach the ground wires.
- All ground rods shall be connected to each other or to a span wire with a single #6 AWG copper conductor.
- Each ground wire attaching to a ground rod shall have its own approved acorn type connector.
- Do not install any ground rods within 10' of any other ground rods from other grounding.
- The grounding system shall measure 10 ohms or less.
- A separate insulated green #6 AWG copper ground is required from the service disconnect (safety switch) to the ground busbar in the controller cabinet.
- Ground rod for each steel pole, wood pole, pedestal and/or traffic signal controller cabinet shall be located in the adjacent handhole as indicated on the plans or as directed by the Engineer.
- All metal bases must be connected to a ground rod with a #6 ground wire.

SYSTEM GROUNDING DETAIL

NOT TO SCALE	F:\181\ReDoc\TR\Sig\sig\Reb\sp_bey\F181233A.dgn	Rev. 02/16/17
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR COLOR CODE WIRING/ EQUIPMENT GROUNDING	ENGINEER OF DELIVERY	
PREPARED BY TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	
DRAWN BY: DJF	(SPECIAL DETAIL)	PLAN DATE
CHECKED BY:	FWA APPROVAL DATE	
	SIG-230-A	SHEET 6 of 6

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.



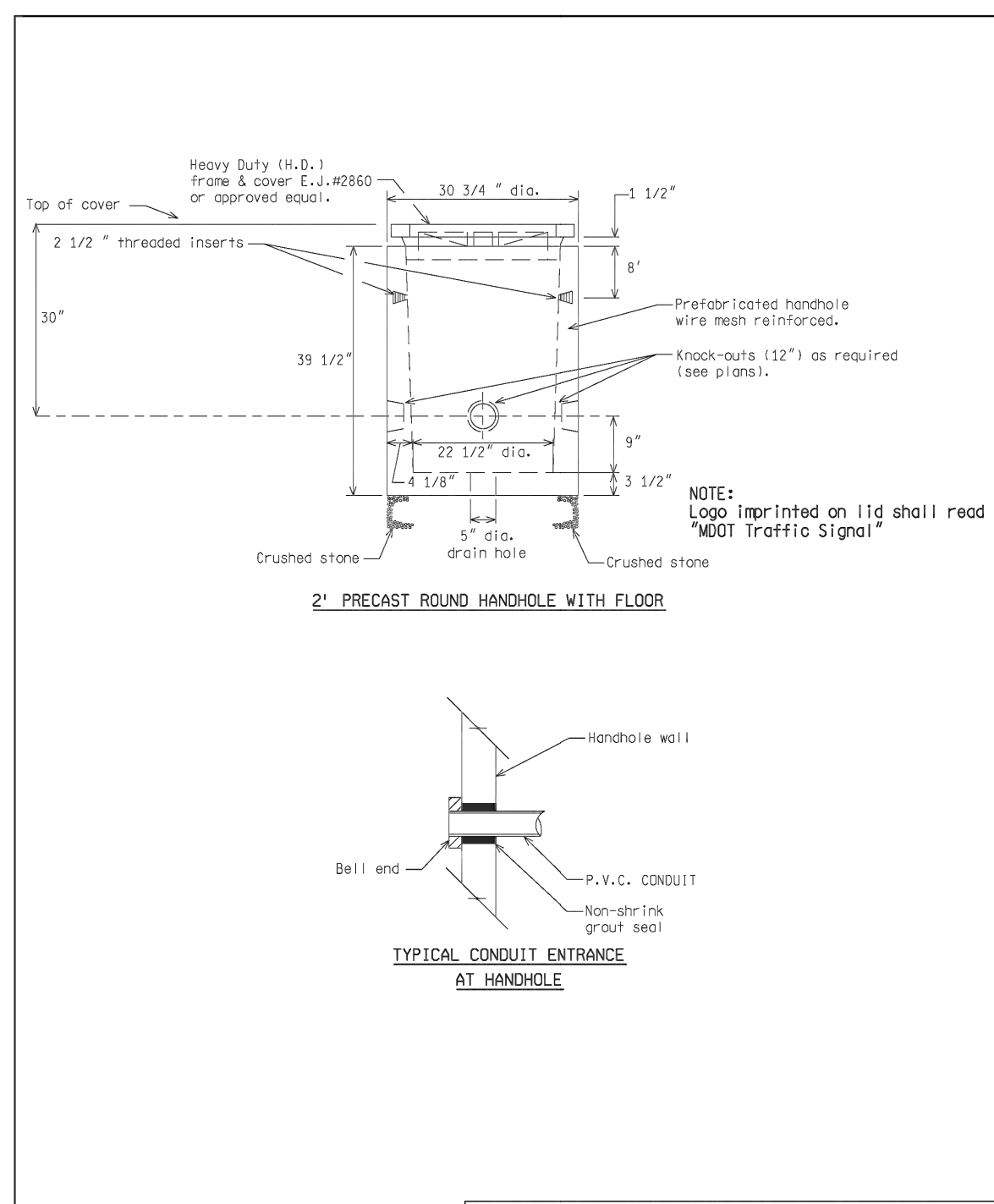
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

E. MEDICAL CENTER DRIVE  
TRAFFIC SIGNAL SPECIAL DETAILS

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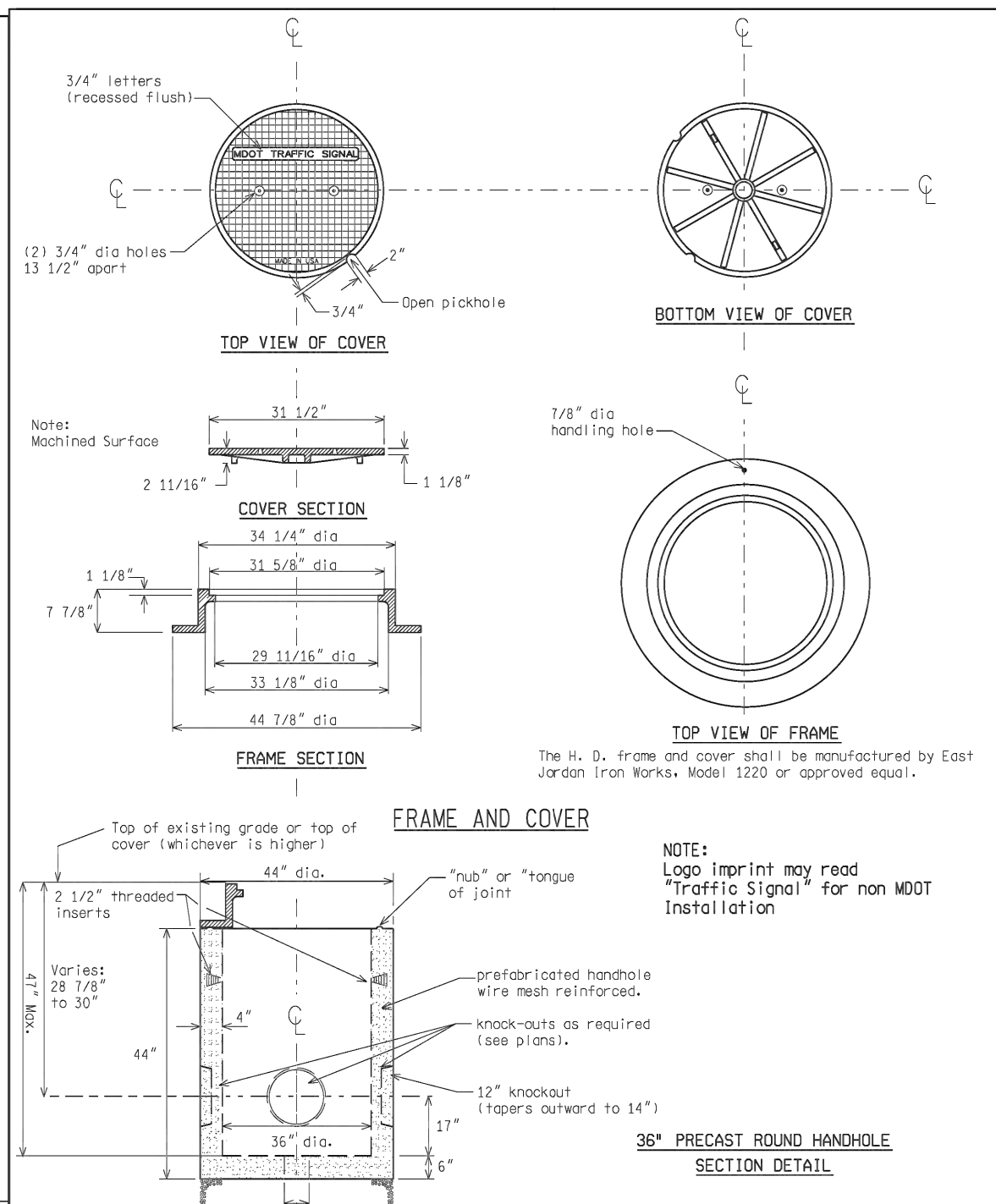
DRAWING NO.	2021-008-SSD5
SHEET NO.	143 OF 155

APPROVED BY: \_\_\_\_\_



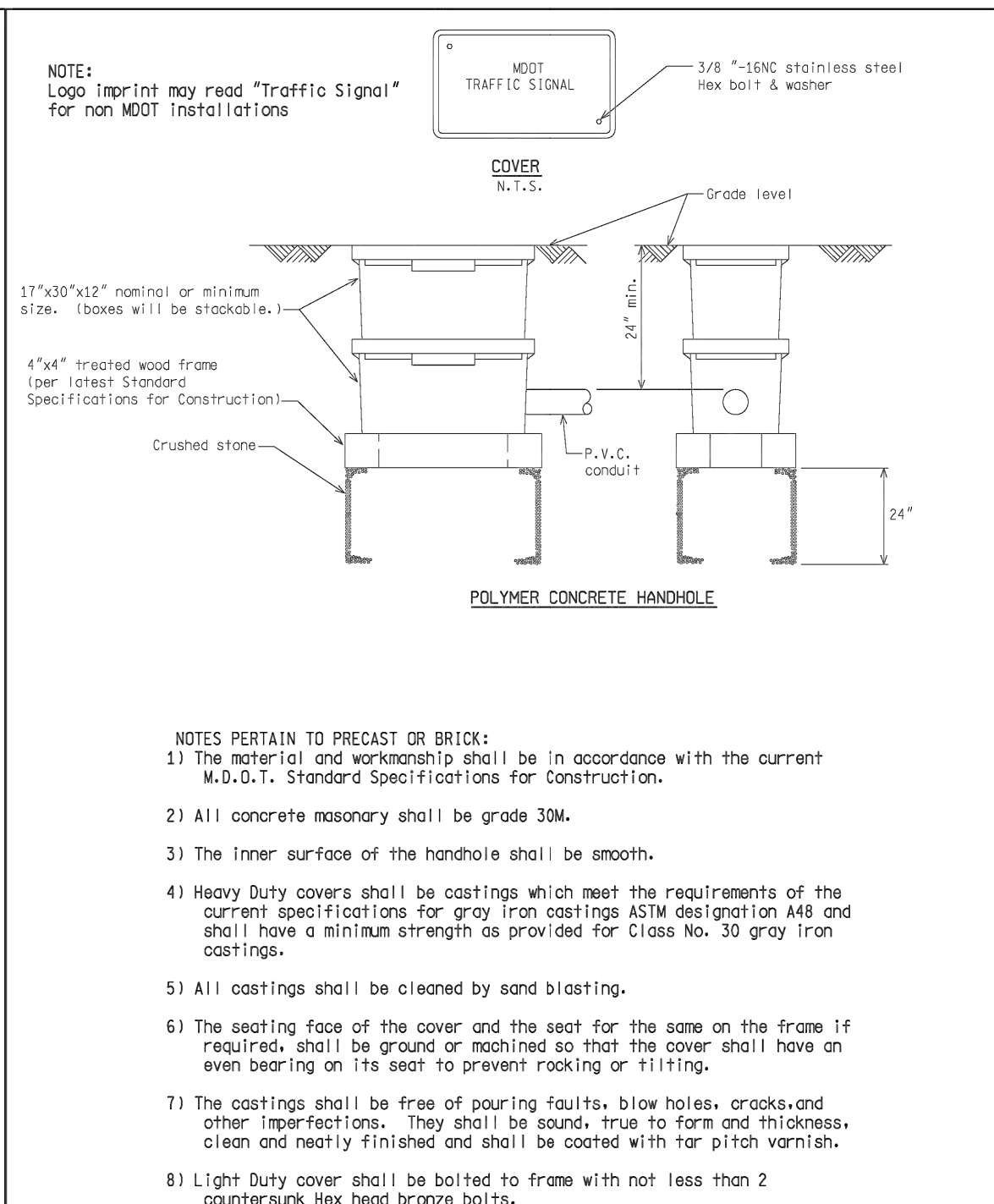
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-240-A	SHEET 1 OF 6
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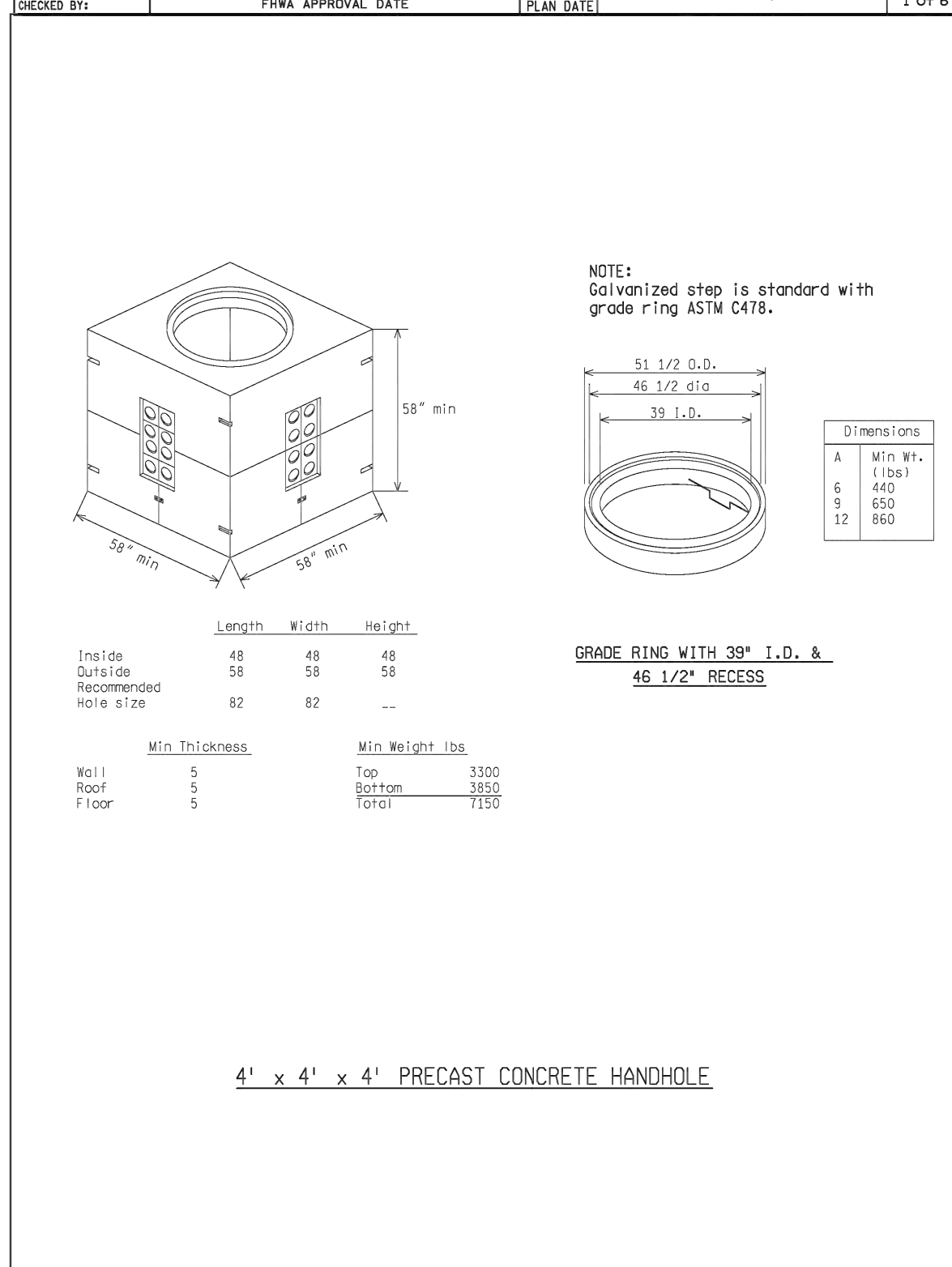
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-240-A	SHEET 2 OF 6
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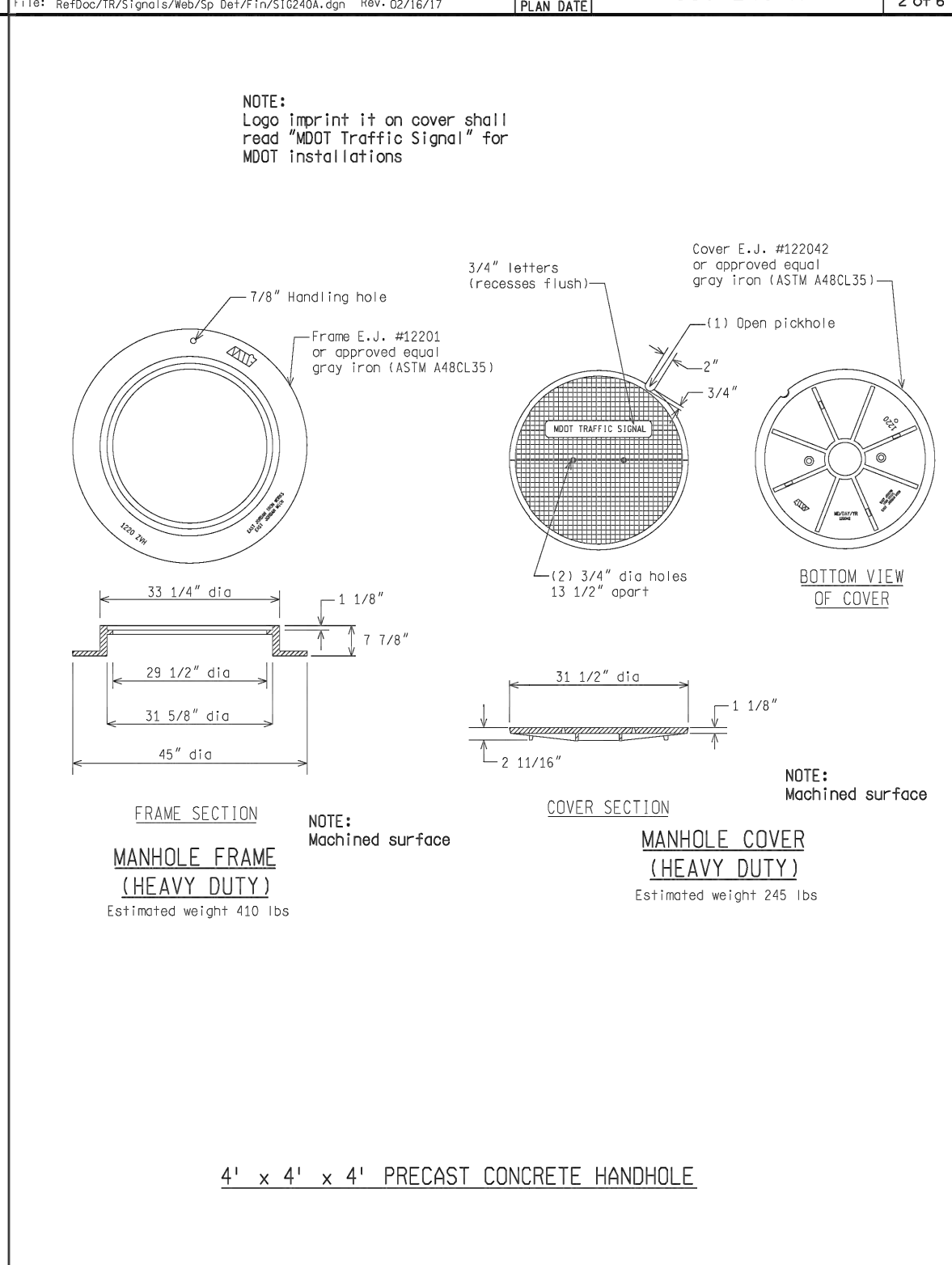
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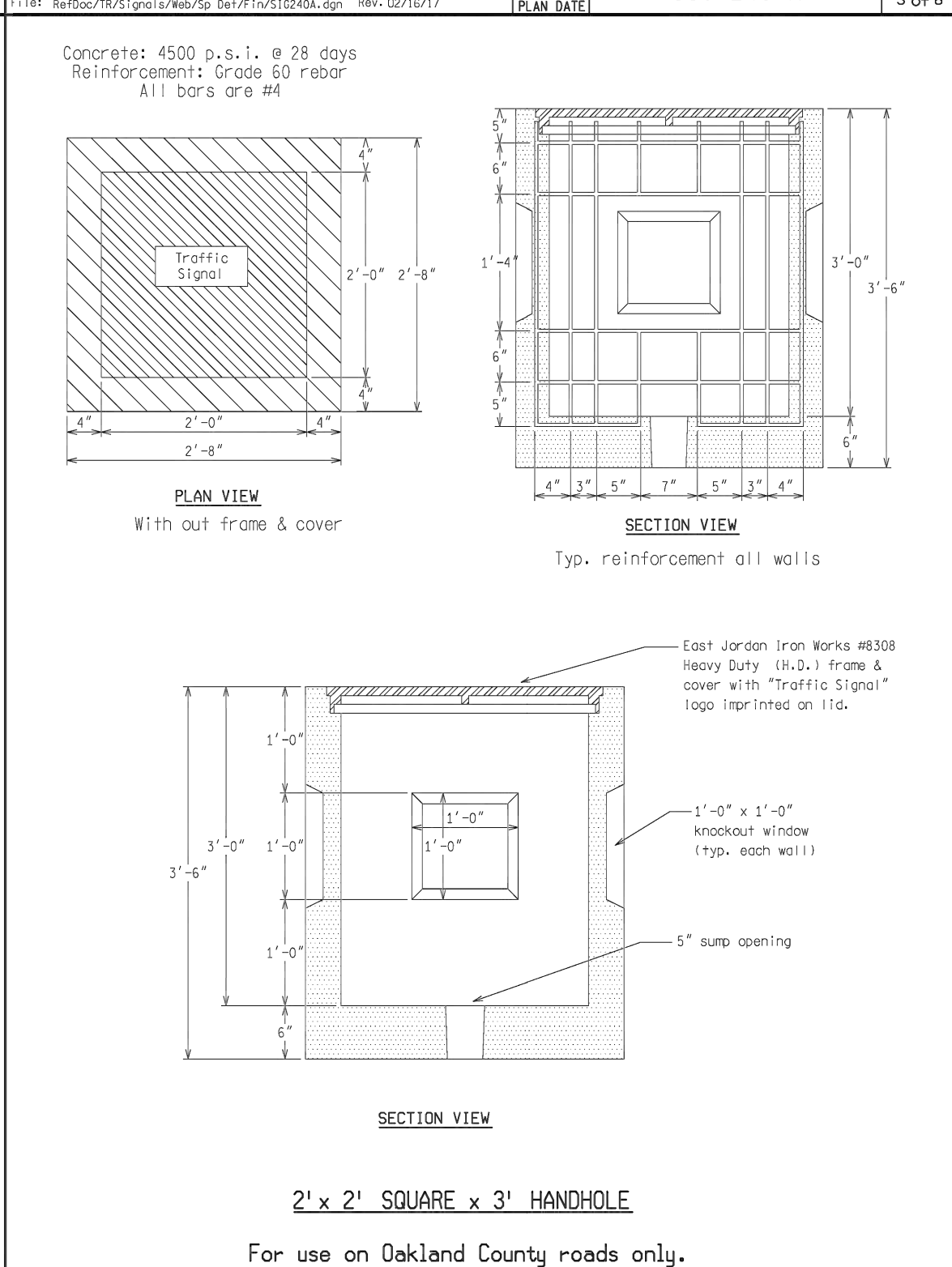
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-240-A	SHEET 4 OF 6
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NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-240-A	SHEET 5 OF 6
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NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-240-A	SHEET 6 OF 6
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LEGEND

EXISTING FENCE	--- --- --- ---	EXISTING SANITARY SEWER & MANHOLE	—S—	EXISTING TELEPHONE	—t—	EXISTING RD. & GRADE	—C—	PROPOSED SANITARY SEWER & MANHOLE	—S—	PROPOSED CURB & GUTTER	—C—
CONTOUR	— — — —	UTILITY POLE & GUY	—U—	GAS LINE	—g—	LEFT EDGE/RD. GRADE	—L—	STORM SEWER & CAT. BAS.	—S—	SEE ABOVE	
STORM SEWER & CAT. BAS.	— — — —	FIRE HYDRANT ASSEMBLY	—F—	CABLE T.V.	—t—	RIGHT EDGE/RD. GRADE	—R—	WATER MAIN W/F.H. ASSEM.	—W—	BENCH MARK	
WATER MAIN & VALVE-IN-WELL	— — — —	LIGHT POLE	—L—	ELECTRIC	—e—	CURB & GUTTER	—C—	CONTOUR	— — — —	REV. NO.	
WATER MAIN & VALVE-IN-BOX	— — — —	END SECTION	—E—	SIGN	—s—	EDGE/GRAVEL	—E—	ROAD & GRADE	—C—	DESCRIPTION	

SEE ABOVE					
BENCH MARK					
REV. NO.					
DESCRIPTION					
DATE					
DR. BY					
CH. BY					

**DLZ**

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL SPECIAL DETAILS**

SCALE: 0 INCH 1

DRAWING NO. 2021-008-SSD6

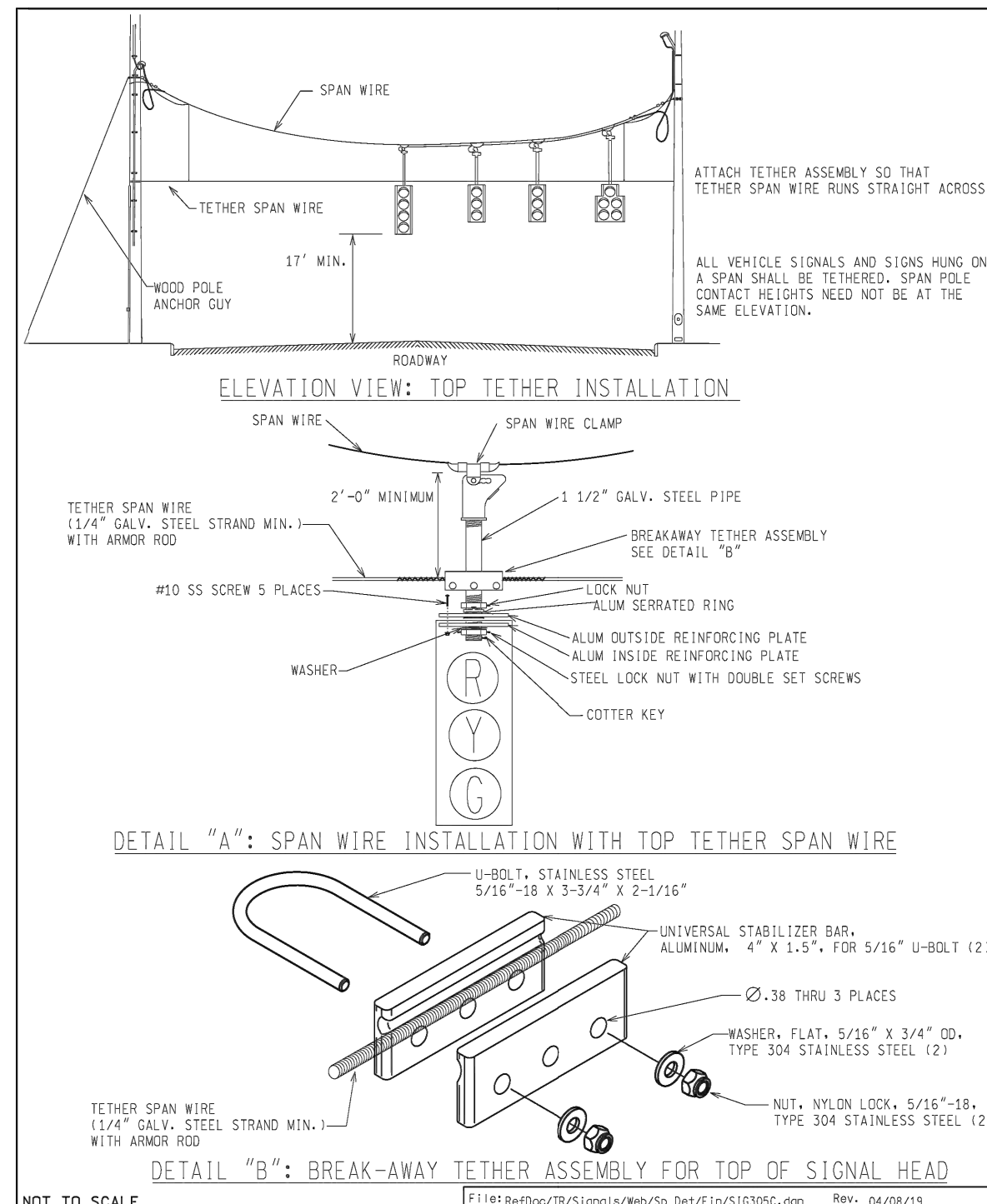
SHEET NO. 144 OF 155

APPROVED BY: \_\_\_\_\_

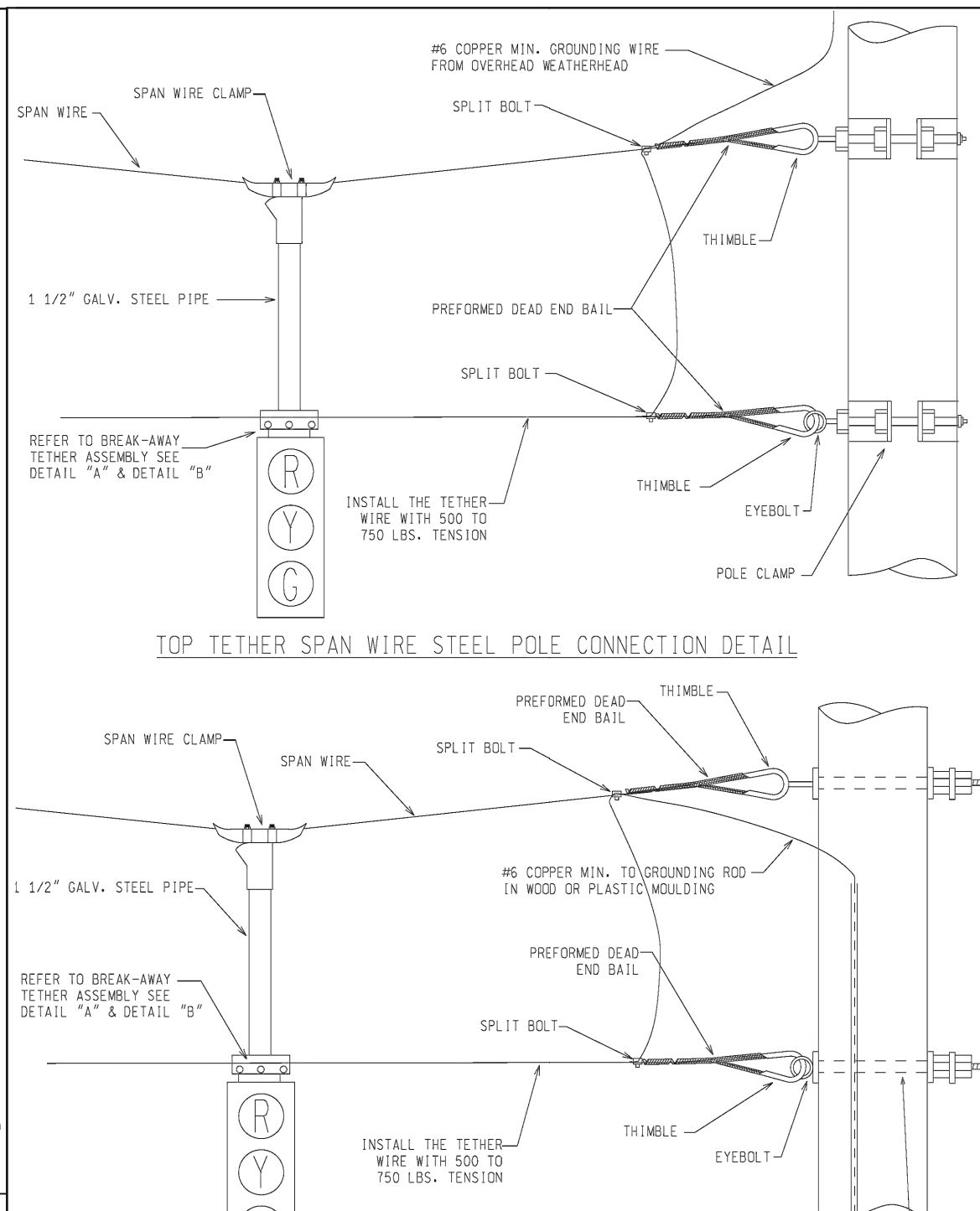
REV. NO.					
DESCRIPTION					
DATE					
DR. BY					
CH. BY					



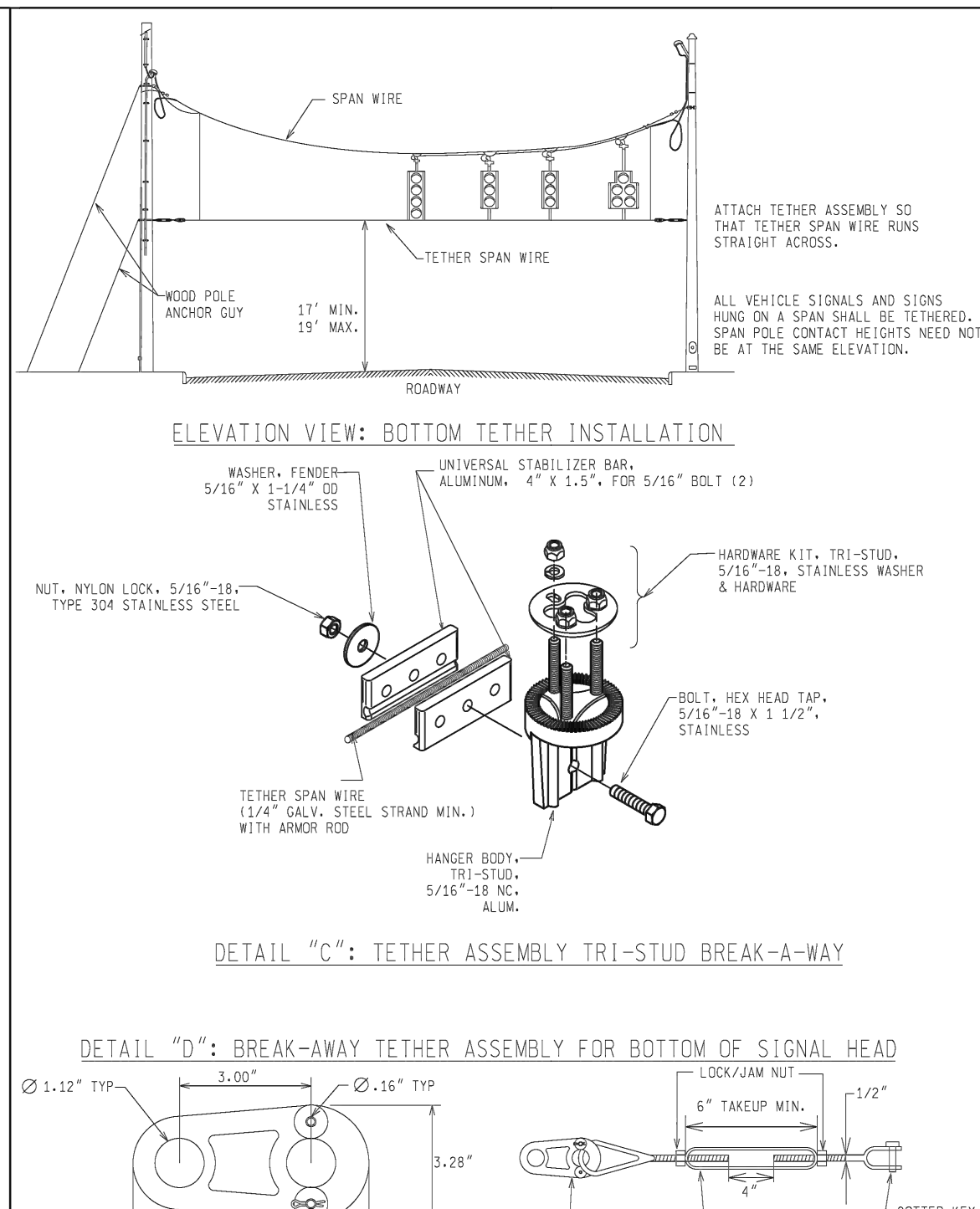




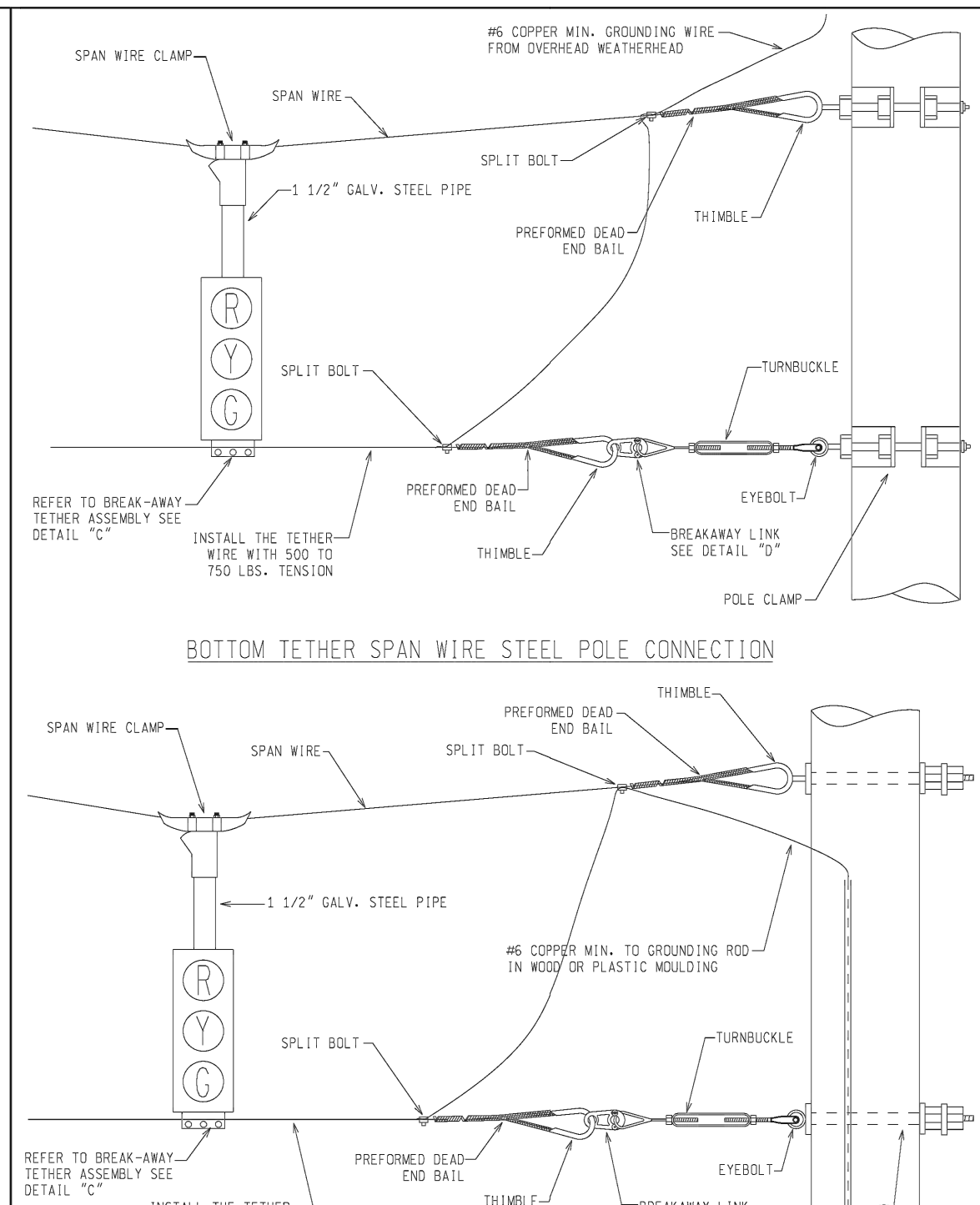
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ENGINEER OF DELIVERY	ENGINEER OF DEVELOPMENT	(SPECIAL DETAIL)	PLAN DATE	FWHA APPROVAL DATE	



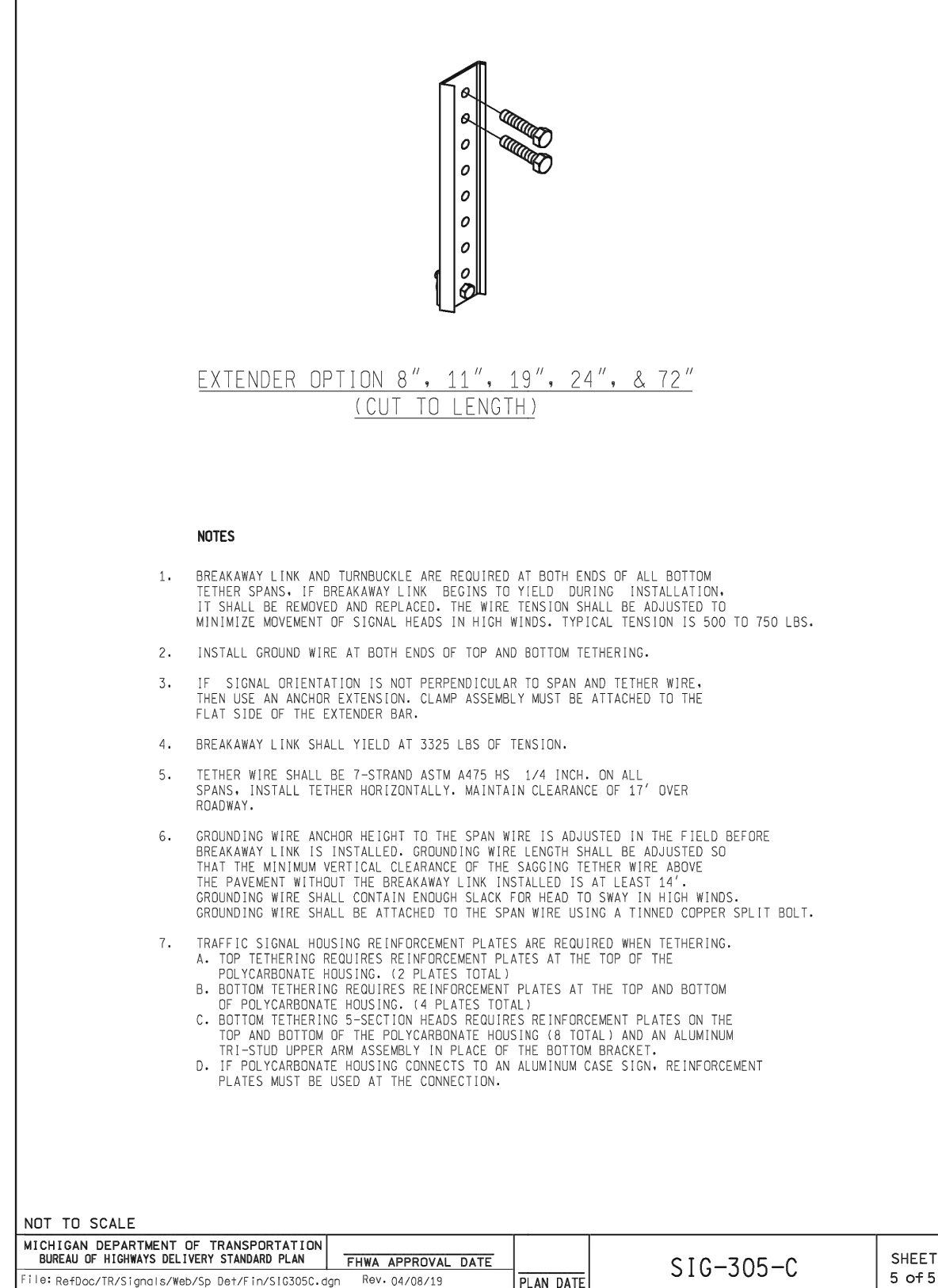
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ENGINEER OF DELIVERY	ENGINEER OF DEVELOPMENT	(SPECIAL DETAIL)	PLAN DATE	FWHA APPROVAL DATE	



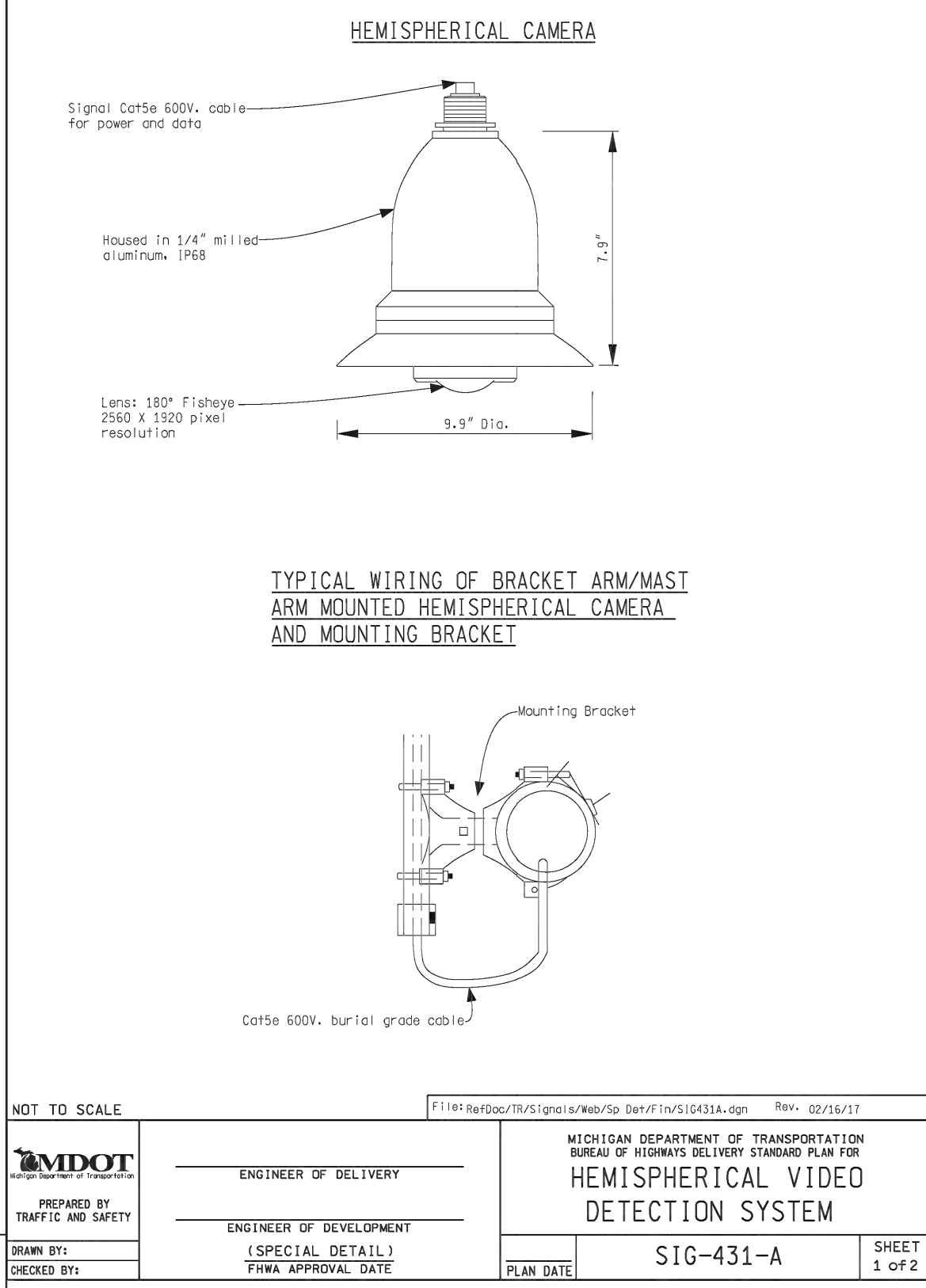
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ENGINEER OF DELIVERY	ENGINEER OF DEVELOPMENT	(SPECIAL DETAIL)	PLAN DATE	FWHA APPROVAL DATE	



NOT TO SCALE	F:\1181\Re\002\TR\S\Signal\Web\Sp_Det\FIN\SIG305-C.dgn	Rev. 04/08/19	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR <b>SPAN WIRE TETHER DETAILS</b>	SIG-305-C	SHEET 4 of 5
ENGINEER OF DELIVERY	ENGINEER OF DEVELOPMENT	(SPECIAL DETAIL)	PLAN DATE	FWHA APPROVAL DATE	



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ENGINEER OF DELIVERY	ENGINEER OF DEVELOPMENT	(SPECIAL DETAIL)	PLAN DATE	FWHA APPROVAL DATE	



NOT TO SCALE	F:\1181\Re\002\TR\S\Signal\Web\Sp_Det\FIN\SIG431-A.dgn	Rev. 02/16/17	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR <b>HEMISPHERICAL VIDEO DETECTION SYSTEM</b>	SIG-431-A	SHEET 2 of 2
ENGINEER OF DELIVERY	ENGINEER OF DEVELOPMENT	(SPECIAL DETAIL)	PLAN DATE	FWHA APPROVAL DATE	

**LEGEND**

EXISTING FENCE	--- --- --- ---	EXISTING SANITARY SEWER & MANHOLE	S	EXISTING TELEPHONE	t
CONTOUR	847	UTILITY POLE & GUY	U/H	GAS LINE	G
STORM SEWER & CAT. BAS.	IT	FIRE HYDRANT ASSEMBLY	FD	CABLE T.V.	TV
WATER MAIN & VALVE-IN-WELL	W	LIGHT POLE	O	ELECTRIC	E
WATER MAIN & VALVE-IN-BOX	W	END SECTION	)	SIGN	β

EXISTING RD. & GRADE	---	PROPOSED SANITARY SEWER & MANHOLE	S	PROPOSED CURB & GUTTER	---
LEFT EDGE/RD. GRADE	---	STORM SEWER & CAT. BAS.	IT	SEE ABOVE	
RIGHT EDGE/RD. GRADE	---	WATER MAIN W/F.H. ASSEM.	W	BENCH MARK	BM
CURB & GUTTER	---	CONTOUR	847	SURVEY BOOK	SB
EDGE/GRAVEL	---	ROAD & GRADE	---	REV. NO.	

EXISTING RD. & GRADE	---	PROPOSED SANITARY SEWER & MANHOLE	S	PROPOSED CURB & GUTTER	---
LEFT EDGE/RD. GRADE	---	STORM SEWER & CAT. BAS.	IT	SEE ABOVE	
RIGHT EDGE/RD. GRADE	---	WATER MAIN W/F.H. ASSEM.	W	BENCH MARK	BM
CURB & GUTTER	---	CONTOUR	847	SURVEY BOOK	SB
EDGE/GRAVEL	---	ROAD & GRADE	---	REV. NO.	

EXISTING RD. & GRADE	---	PROPOSED SANITARY SEWER & MANHOLE	S	PROPOSED CURB & GUTTER	---
LEFT EDGE/RD. GRADE	---	STORM SEWER & CAT. BAS.	IT	SEE ABOVE	
RIGHT EDGE/RD. GRADE	---	WATER MAIN W/F.H. ASSEM.	W	BENCH MARK	BM
CURB & GUTTER	---	CONTOUR	847	SURVEY BOOK	SB
EDGE/GRAVEL	---	ROAD & GRADE	---	REV. NO.	

**DLZ**

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

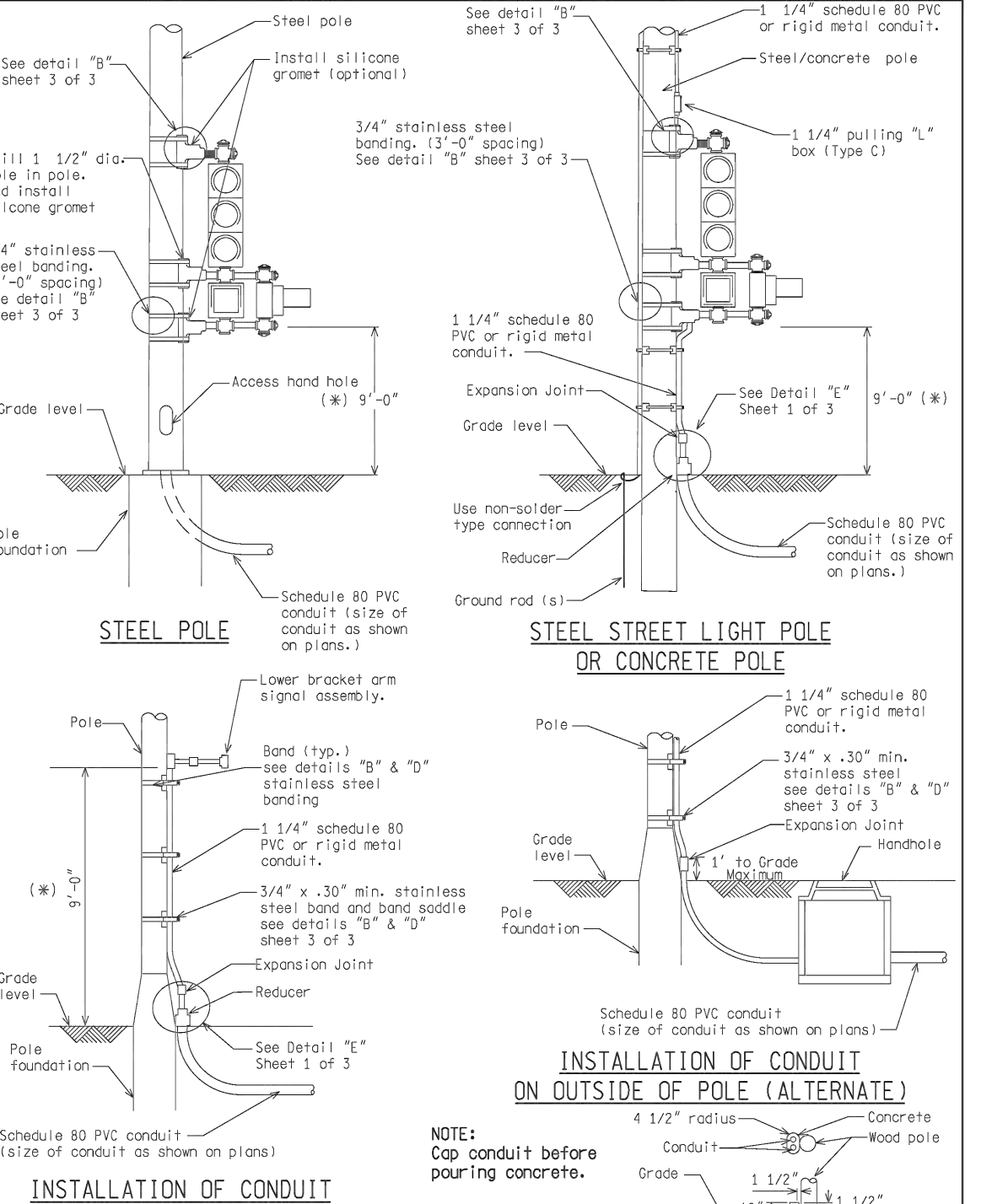
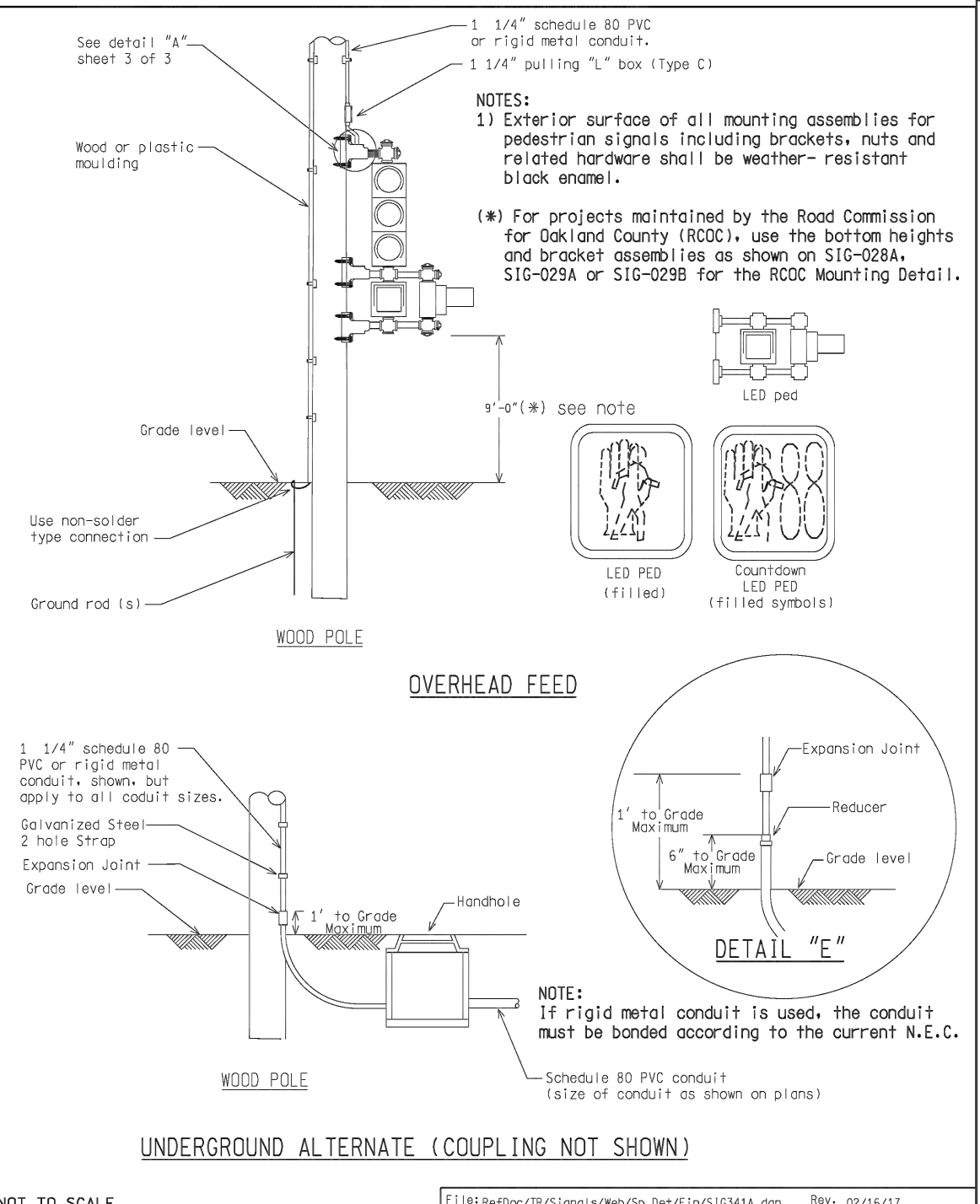
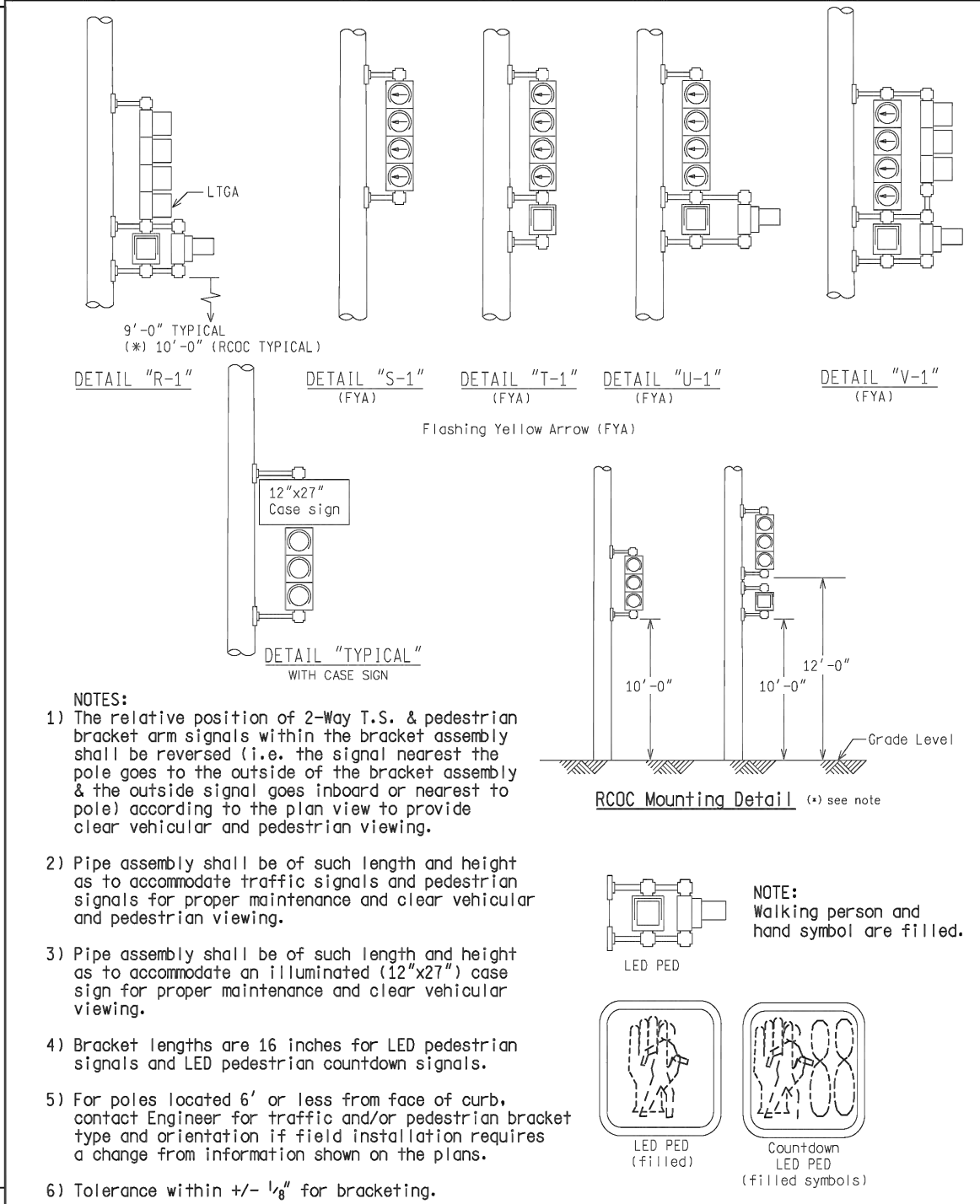
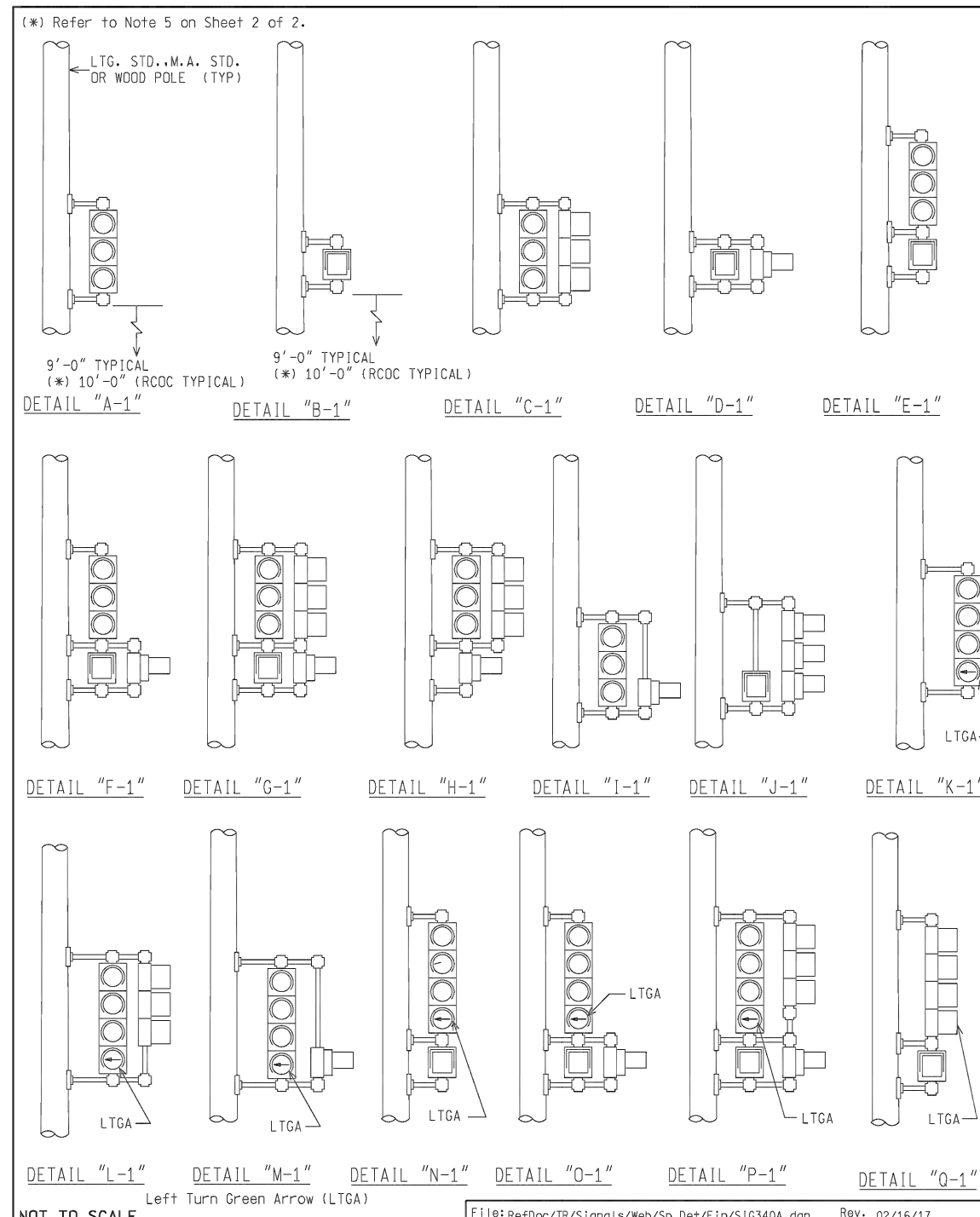
**E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL SPECIAL DETAILS**

SCALE: NTS

DRAWING NO. 2021-008-SSD8

SHEET NO. 146 OF 155

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM
APPROVED BY				

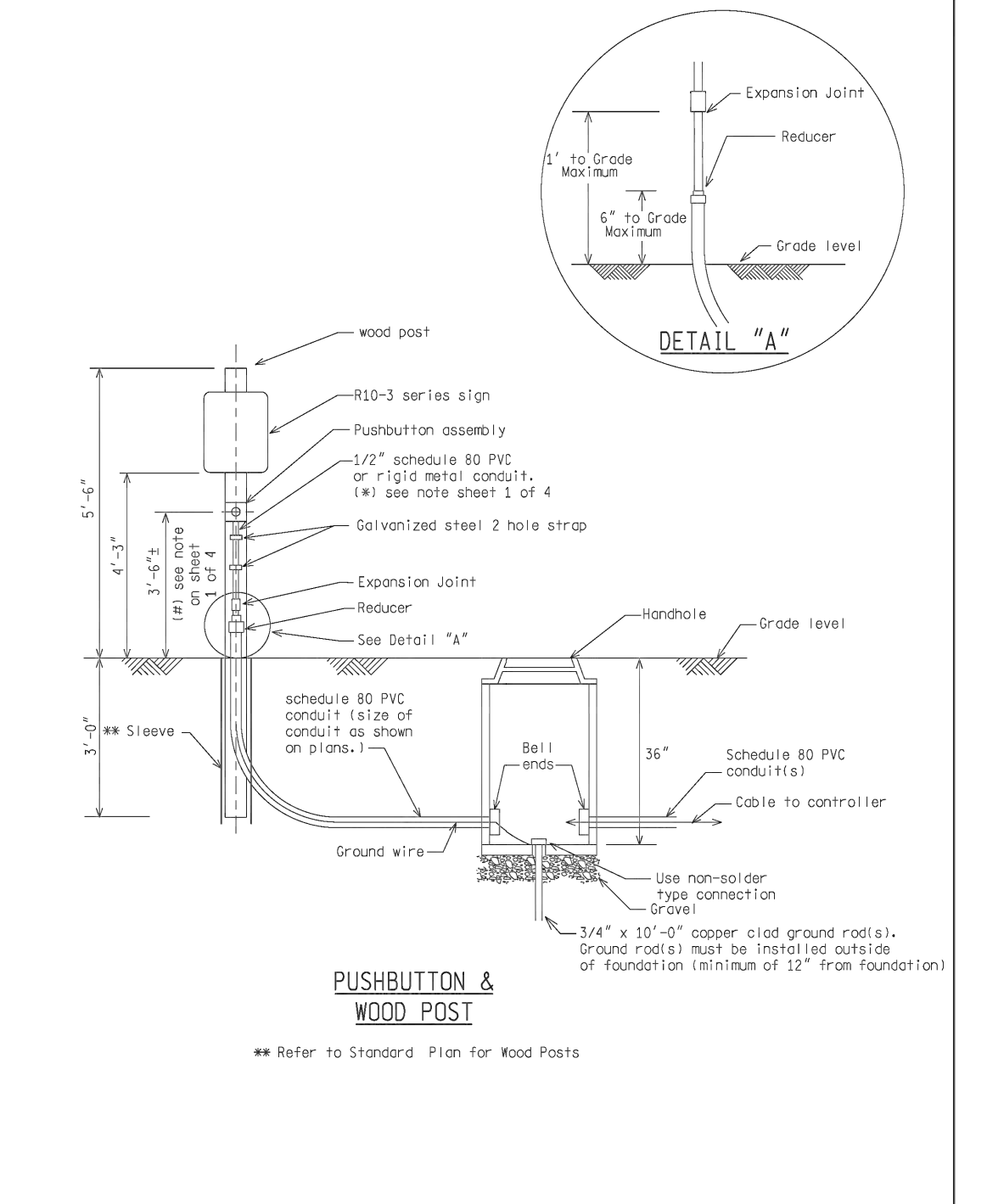
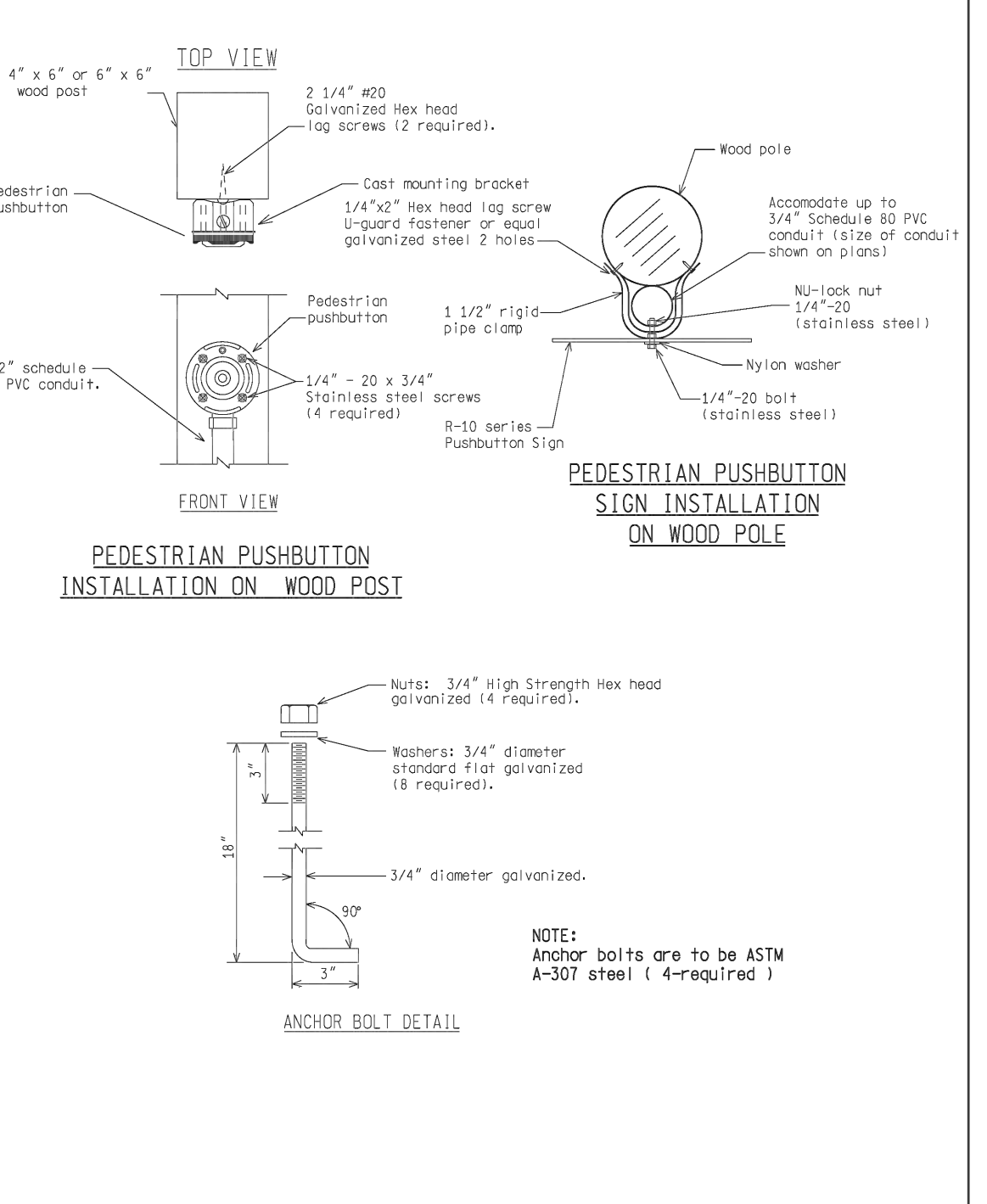
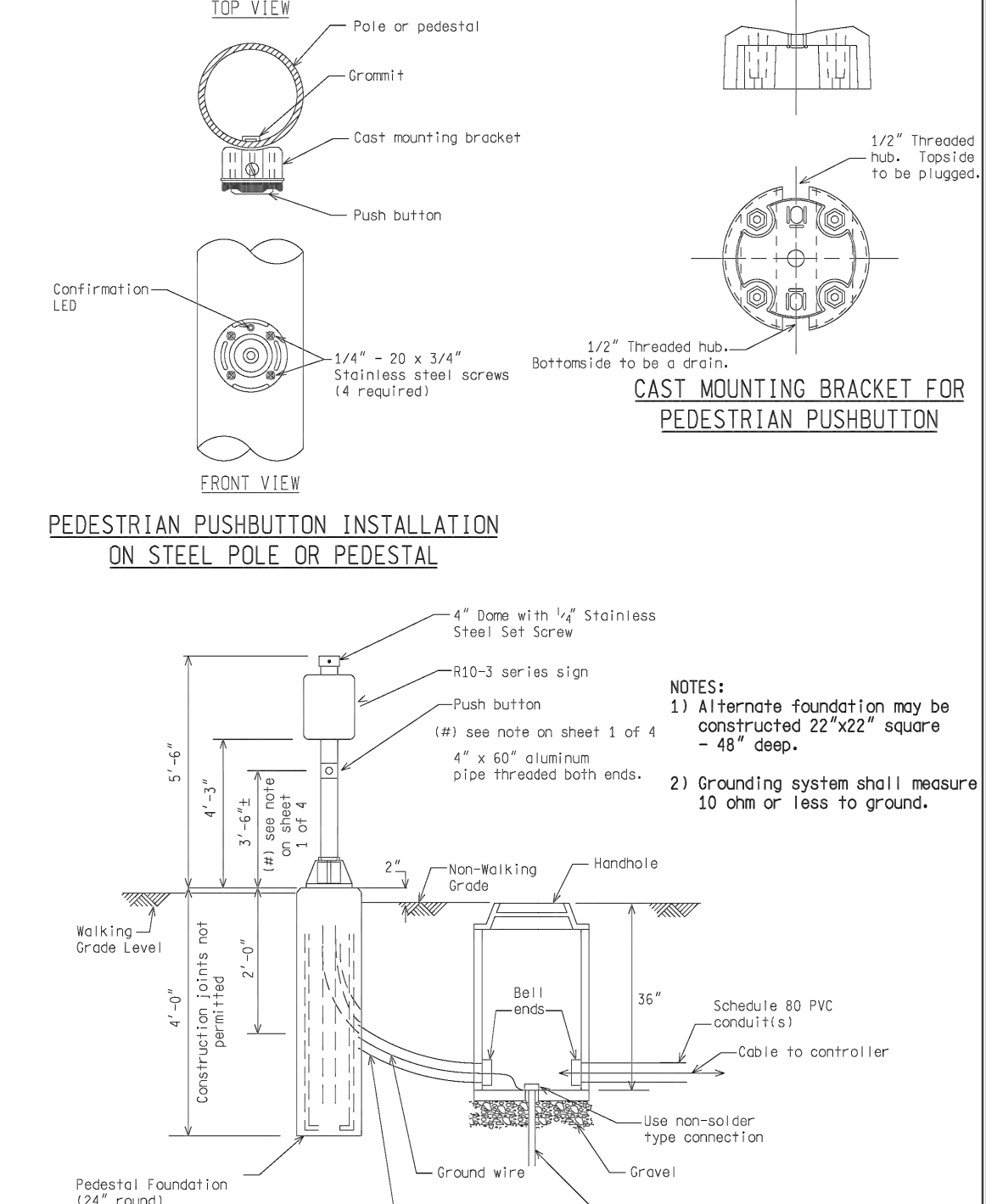
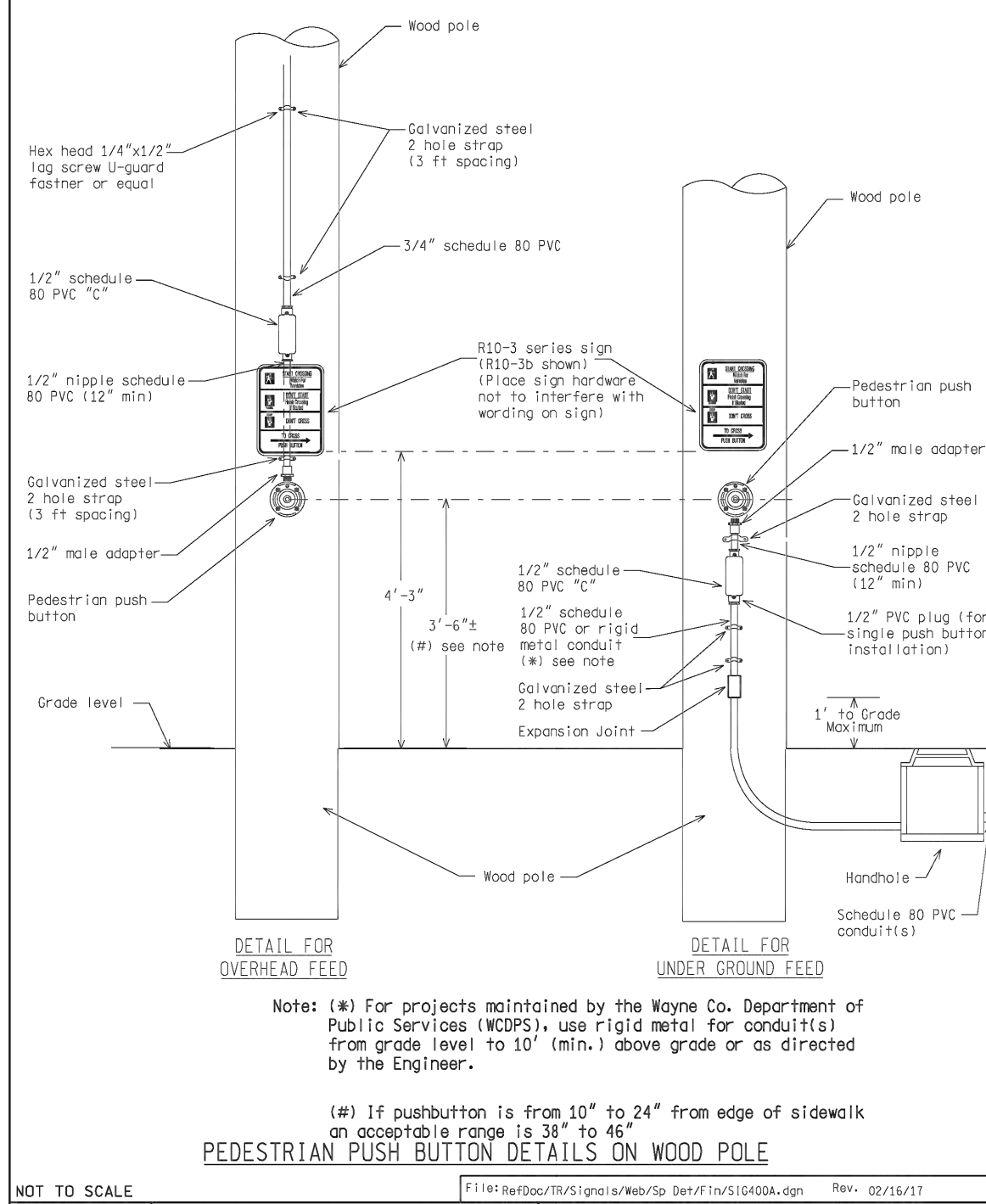
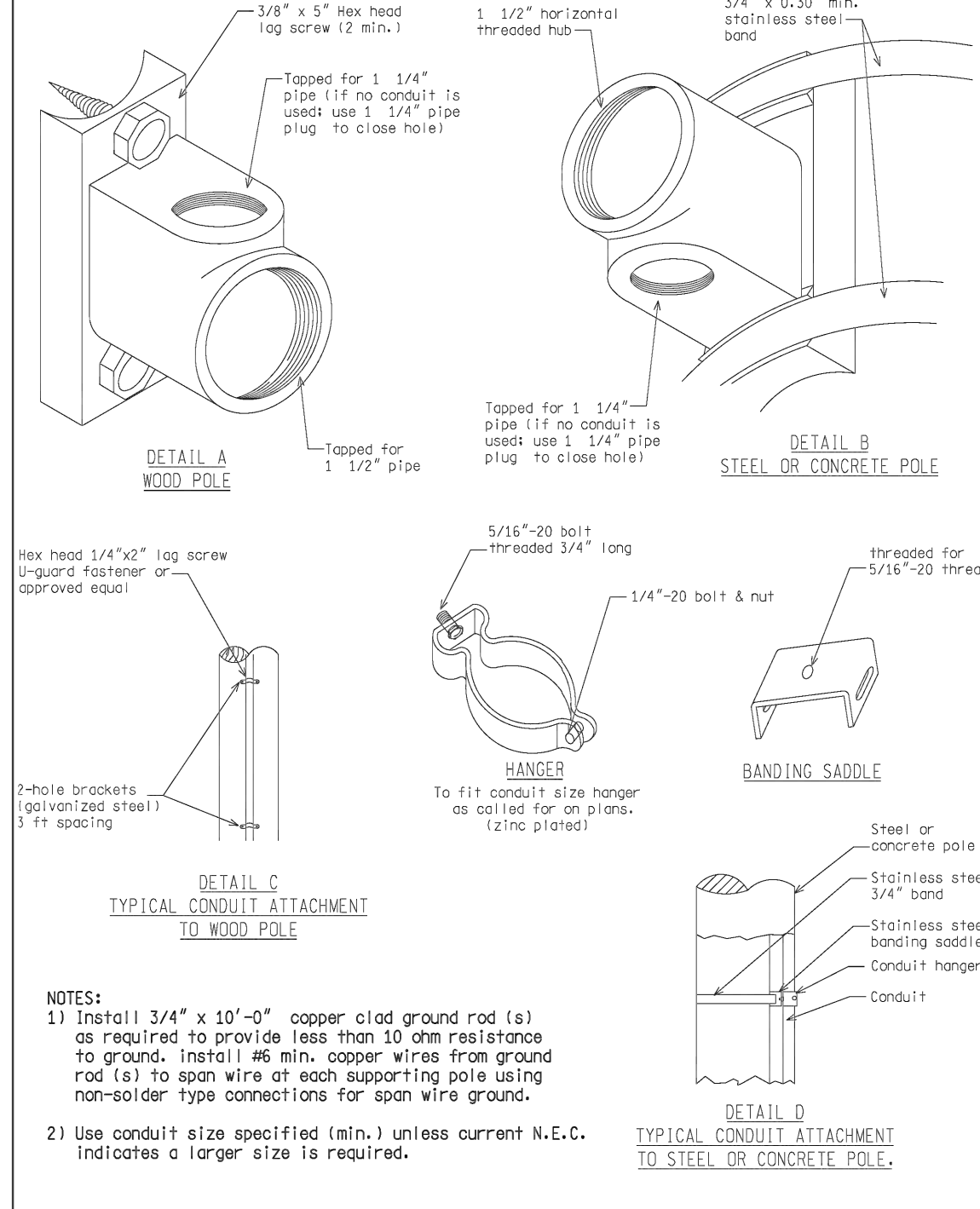


ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	SIG-340-A	SHEET 1 OF 2
ENGINEER OF DEVELOPMENT	POLE MOUNTED SIGNAL DISPLAYS		
PREPARED BY	TRAFFIC AND SAFETY		
DRAWN BY	(SPECIAL DETAIL) FWA APPROVAL DATE	PLAN DATE	
CHECKED BY			

ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	SIG-340-A	SHEET 2 OF 2
ENGINEER OF DEVELOPMENT	POLE MOUNTED SIGNAL DISPLAYS		
PREPARED BY	TRAFFIC AND SAFETY		
DRAWN BY	(SPECIAL DETAIL) FWA APPROVAL DATE	PLAN DATE	
CHECKED BY			

ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	SIG-341-A	SHEET 1 OF 3
ENGINEER OF DEVELOPMENT	POLE MOUNTING DETAILS FOR SIGNALS		
PREPARED BY	TRAFFIC AND SAFETY		
DRAWN BY	(SPECIAL DETAIL) FWA APPROVAL DATE	PLAN DATE	
CHECKED BY			

ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	SIG-341-A	SHEET 2 OF 3
ENGINEER OF DEVELOPMENT	POLE MOUNTING DETAILS FOR SIGNALS		
PREPARED BY	TRAFFIC AND SAFETY		
DRAWN BY	(SPECIAL DETAIL) FWA APPROVAL DATE	PLAN DATE	
CHECKED BY			



ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	SIG-341-A	SHEET 3 OF 3
ENGINEER OF DEVELOPMENT	PEDESTRIAN PUSH BUTTON DETAILS		
PREPARED BY	TRAFFIC AND SAFETY		
DRAWN BY	(SPECIAL DETAIL) FWA APPROVAL DATE	PLAN DATE	
CHECKED BY			

ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	SIG-400-A	SHEET 1 OF 4
ENGINEER OF DEVELOPMENT	PEDESTRIAN PUSH BUTTON DETAILS		
PREPARED BY	TRAFFIC AND SAFETY		
DRAWN BY	(SPECIAL DETAIL) FWA APPROVAL DATE	PLAN DATE	
CHECKED BY			

ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	SIG-400-A	SHEET 2 OF 4
ENGINEER OF DEVELOPMENT	PEDESTRIAN PUSH BUTTON DETAILS		
PREPARED BY	TRAFFIC AND SAFETY		
DRAWN BY	(SPECIAL DETAIL) FWA APPROVAL DATE	PLAN DATE	
CHECKED BY			

ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	SIG-400-A	SHEET 3 OF 4
ENGINEER OF DEVELOPMENT	PEDESTRIAN PUSH BUTTON DETAILS		
PREPARED BY	TRAFFIC AND SAFETY		
DRAWN BY	(SPECIAL DETAIL) FWA APPROVAL DATE	PLAN DATE	
CHECKED BY			

ENGINEER OF DELIVERY	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR	SIG-400-A	SHEET 4 OF 4
ENGINEER OF DEVELOPMENT	PEDESTRIAN PUSH BUTTON DETAILS		
PREPARED BY	TRAFFIC AND SAFETY		
DRAWN BY	(SPECIAL DETAIL) FWA APPROVAL DATE	PLAN DATE	
CHECKED BY			

LEGEND

EXISTING FENCE	--- --- --- ---	EXISTING SANITARY SEWER & MANHOLE	S	EXISTING TELEPHONE	t	EXISTING RD. & GRADE	---	PROPOSED SANITARY SEWER & MANHOLE	S	PROPOSED CURB & GUTTER	---
CONTOUR	847	UTILITY POLE & GUY	U/G	GAS LINE	G	LEFT EDGE/RD. GRADE	---	STORM SEWER & CAT. BAS.	S	SEE ABOVE	
STORM SEWER & CAT. BAS.	W	FIRE HYDRANT ASSEMBLY	F	CABLE T.V.	T	RIGHT EDGE/RD. GRADE	---	WATER MAIN W/F.H. ASSEM.	W	BENCH MARK	
WATER MAIN & VALVE-IN-WELL	W	LIGHT POLE	O	ELECTRIC	E	CURB & GUTTER	---	CONTOUR	847	SURVEY BOOK	
WATER MAIN & VALVE-IN-BOX	W	END SECTION	)	SIGN	b	EDGE/GRAVEL	---	ROAD & GRADE	---	REV. NO.	



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL SPECIAL DETAILS

SCALE	0 INCH 1
DRAWING NO.	2021-008-SSD9
SHEET NO.	147 OF 155

APPROVED BY	
REV. NO.	
DESCRIPTION	
DATE	10/6/23
DR. BY	INB
CH. BY	LCM







TRAFFIC SIGNAL TIMING PERMIT

APPROACH	PHASE	1	2	3	4	5	6	7	8	TIMING INSTALLED
PASSAGE		4.0	4.0						4.0	REMARKS This timing plan is for EMCD bridge construction Stages 1, 2, and 3. 5.0 seconds leading ped timing for crossing Glen (Ph. 8)
MAXIMUM NO. 2		45	35						22	
YELLOW CHANGE		3.0	3.0						3.0	
RED CLEARANCE		2.5	2.5						2.5	
WALK		4							6	
EXTENDED PED. CLEARANCE		0							0	
PEDESTRIAN RECALL		0							0	
INITIATION		4	1						1	
NON-ACT RESPONSE		1	2						2	
PEDESTRIAN RECALL		2	0						2	

PREPARED BY: DLZ DATE: 09/21/22

FLASH HOURS: 00:01 to 05:15 DAILY  NONE   
00:01 to 06:30 Saturday - Sunday

NIGHT FLASH: FY = NB/SB Glen FR = EB/WB Catherine  
CONFLICT FLASH: FY = FR = All legs

CONTROLLER TYPE:  EPAC  Other  
 PRE-EMPT  COUNTDOWN PEDS

LOCATION: Catherine at Glenn  
CITY/TWP: City of Ann Arbor  
COUNTY: Washtenaw  
MILE POINT CONTROL SECTION-SPOT # 88  
Job # (if Applicable):

PHASE	Hours of Operation:
1	D1/S1/O1: Normal
2	D3/S3/O1: 06:30 to 09:00 Monday-Friday D2/S1/O1: 09:00 to 15:15 Monday-Friday & 19:00 to 00:01 Saturday-Sunday D3/S1/O1: 15:15 to 18:30 Monday-Friday & 10:00 to 19:00 Saturday-Sunday
3	
4	
5	
6	
7	
8	

Overlap Phase	Load Bays	Phases Overlapped	T.G. (s)	Y (s)	R (s)	-G/Y	+GRN
=							
=							
=							
=							

CLEAR PAGE 1

CLEAR ALL

ADVANCED TIMING PARAMETERS FORM

SYSTEM INFORMATION

Phase # / Description

Controller Type:  EPAC  Other

System Type:  Closed Loop  Stand By  Group 1  Group 2

Address:  TBC  TBC/GPS  None  Other

If TBC, Sync by:  TOD  Event

Interconnect Type:  Hardwire  Fiber-Optic  Radio  Cell Modem  None  Other

If Cell Modem: Phone #

Controller Status:  Primary  Secondary  Isolated  TBC

If Secondary, Primary Location:

Primary Spot #:

PHASE	1	2	3	4	5	6	7	8	O1	O2	O3	COORDINATION DATA
DIAL SPLIT CYCLE												Operation Mode
DIAL SPLIT CYCLE												Coordination Mode
DIAL SPLIT CYCLE												Maximum Mode
DIAL SPLIT CYCLE												Correction Mode
DIAL SPLIT CYCLE												Offset Mode
DIAL SPLIT CYCLE												Force Mode
DIAL SPLIT CYCLE												Max Dwell
DIAL SPLIT CYCLE												Yield Period

Overlap Phase	Load Bays	Phases Overlapped	T.G. (s)	Y (s)	R (s)	-G/Y	+GRN
=							
=							
=							
=							

PREPARED BY: DLZ DATE: 09/21/22

LOCATION: Catherine at Glenn

CONTROL SECTION-SPOT # 88

MDOT  County  City  Consultant

CLEAR PAGE 2

PREEMPTION INFORMATION FORM

Preempt # =	Time (s)	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Preempt System Data
SEL Ped Cl		Vehicle																	Ring
SEL Yellow		Vehicle																	MIN
SEL Red Cl		Vehicle																	GRN/WLK (s)
TRACK Green		Ped																	PE/FL
TRACK Ped Cl		Ped																	PE1/2
TRACK Yellow		Ped																	PE2/3
TRACK Red CL		Ped																	PE3/4
DWELL Green		Overlap Vehicle	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	PE4/5
RET Ped Cl		Overlap Vehicle																	PE5/6
RET Yellow		Overlap Vehicle																	Status
RET Red Cl		Overlap Vehicle																	REMARKS:

PREPARED BY: DLZ DATE: 09/21/22

LOCATION: Catherine at Glenn

CONTROL SECTION-SPOT # 88

CLEAR PAGE 3

LEGEND

EXISTING FENCE	--- --- --- ---	EXISTING SANITARY SEWER & MANHOLE	S --- O	EXISTING TELEPHONE	t ---	EXISTING RD. & GRADE	--- --- ---	PROPOSED SANITARY SEWER & MANHOLE	S --- O	PROPOSED CURB & GUTTER	--- --- ---
CONTOUR	--- --- --- ---	UTILITY POLE & GUY	--- --- ---	GAS LINE	g ---	LEFT EDGE/RD. GRADE	--- --- ---	STORM SEWER & CAT. BAS.	--- --- ---	SEE ABOVE	
STORM SEWER & CAT. BAS.	--- --- --- ---	FIRE HYDRANT ASSEMBLY	--- --- ---	CABLE T.V.	t --- v	RIGHT EDGE/RD. GRADE	--- --- ---	WATER MAIN W/F.H. ASSEM.	--- --- ---	BENCH MARK	
WATER MAIN & VALVE-IN-WELL	--- --- --- ---	LIGHT POLE	o ---	ELECTRIC	e ---	CURB & GUTTER	--- --- ---	CONTOUR	--- --- ---	SURVEY BOOK	
WATER MAIN & VALVE-IN-BOX	--- --- --- ---	END SECTION	--- --- ---	SIGN	β ---	EDGE/GRAVEL	--- --- ---	ROAD & GRADE	--- --- ---	REV. NO.	

**DLZ**

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL TIMING PERMITS**

SCALE: 0 INCH 1

DRAWING NO. 2021-08-TSTP4

SHEET NO. 151 OF 155

APPROVED BY: \_\_\_\_\_

DATE: 10/6/23

DR. BY: INB

CH. BY: LCM

SEE ABOVE

BENCH MARK

SURVEY BOOK

REV. NO.

DESCRIPTION

DATE

DR. BY

CH. BY

APPROVED BY: \_\_\_\_\_





TRAFFIC SIGNAL TIMING PERMIT

APPROACH	PHASE	1	2	3	4	5	6	7	8	TIMING INSTALLED
MINIMUM GREEN		5	10		5	6	10		7	
PASSAGE		2.0	0.0		3.0	2.0	0.0		3.0	
MAXIMUM NO. 1		24	40		70	20	40		70	
MAXIMUM NO. 2		0	0		0	0	0		0	
YELLOW CHANGE		0.0	0.0		0.1	0.0	0.0		0.1	
RED CLEARANCE		2.5	2.5		3.3	2.5	2.5		3.3	
WALK			8			8			10	
PEDESTRIAN CLEARANCE			17			17			17	
EXTENDED PED. CLEARANCE			3			3			3	
RIGHT IN WALK			0			0			0	
INITIALIZATION		1	4		4	1	4		4	
NON-ACT RESPONSE		0	0		0	0	0		0	
VEHICLE RECALL		2	0		0	2	0		0	
PEDESTRIAN RECALL			0			0			0	
NON-LOCK MEMORY		0	0		0	0	0		0	
DIAL ENTRY		0	1		1	0	1		1	
DIAL 1	SPLIT 1	120	22	42	56	23	41		56	0 0 0
DIAL 2	SPLIT 1	140	24	40	70	24	40		70	0 0 0
DIAL 3	SPLIT 1									
DIAL 4	SPLIT 1									
DIAL 5	SPLIT 1									
DIAL 6	SPLIT 1									
DIAL 7	SPLIT 1									
DIAL 8	SPLIT 1									

REMARKS: This timing plan is for EMCD bridge construction Stage 2.

PREPARED BY: DLZ DATE: 09/09/22

FLASH HOURS:  DAILY  NONE

NIGHT FLASH:  FR =

CONFLICT FLASH:  FR = All Directions

CONTROLLER TYPE:  EPAC  PRE-EMPT   
 Other:  COUNTDOWN PEDS

LOCATION: Fuller & Maiden/EMCD  
 CITY/TWP: Ann Arbor  
 COUNTY: Washtenaw  
 MILE POINT: CONTROL SECTION-SPOT # 126  
 Job # (If Applicable):

CLEAR PAGE 1

CLEAR ALL

ADVANCED TIMING PARAMETERS FORM

SYSTEM INFORMATION	Phase # / Description	LEFT-TURN PHASING			RING AND BARRIER STRUCTURE				
		Permissive-Protected	Protected-Only	Protected-Only	R1	B1	B2	B3	B4
Controller Type: <input checked="" type="checkbox"/> EPAC <input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
System Type: <input type="checkbox"/> Closed Loop <input type="checkbox"/> Stand By <input type="checkbox"/> Group 1 <input type="checkbox"/> Group 2 Address: <input checked="" type="checkbox"/> TBC <input type="checkbox"/> TBC/GPS <input type="checkbox"/> None <input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Vehicular Detection: <input type="checkbox"/> Stand By <input type="checkbox"/> Group 1 <input type="checkbox"/> Group 2 Address: <input checked="" type="checkbox"/> TBC <input type="checkbox"/> TBC/GPS <input type="checkbox"/> None <input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Pedestrian Detection: <input type="checkbox"/> Stand By <input type="checkbox"/> Group 1 <input type="checkbox"/> Group 2 Address: <input checked="" type="checkbox"/> TBC <input type="checkbox"/> TBC/GPS <input type="checkbox"/> None <input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
DISAPPEARING LEGEND LABEL SIGNS									
ADDITIONAL DIAL SPLIT DATA									
COORDINATION DATA									
ADDITIONAL OVERLAP DATA									

PREPARED BY: DLZ DATE: 09/09/22

LOCATION: Fuller & Maiden/EMCD  
 CITY/TWP: Ann Arbor  
 COUNTY: Washtenaw  
 MILE POINT: CONTROL SECTION-SPOT # 126  
 Job # (If Applicable):

CLEAR PAGE 2

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

**DLZ**

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
	ORIGINAL ISSUE	10/6/23	INB	LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL TIMING PERMITS**

SCALE NTS 0 1 INCH

DRAWING NO. 2021-08-TSTP6

SHEET NO. 153 OF 155

APPROVED BY: \_\_\_\_\_

TRAFFIC SIGNAL TIMING PERMIT

APPROACH	PHASE	1	2	3	4	5	6	7	8	TIMING INSTALLED
EB/WB										
WB										
NB										
SB										
WALK		8							8	
EXTENDED PED. CLEARANCE		3							3	
PEDESTRIAN RECALL		0							0	
NON-Lock MEMORY		0							0	
DIAL ENTRY		0							0	
DIAL 1 SPLIT 1	CYCLE	120	89	31					31	5
DIAL 2 SPLIT 1		140	100	41					41	17
DIAL 3 SPLIT 1										
DIAL 4 SPLIT 1										
DIAL 5 SPLIT 1										
DIAL 6 SPLIT 1										
DIAL 7 SPLIT 1										
DIAL 8 SPLIT 1										

REMARKS: This timing plan is for EMCD bridge construction Stage 3.

PREPARED BY: DLZ DATE: 09/09/22

FLASH HOURS:  DAILY  NONE

NIGHT FLASH: FY = FR =

CONFLICT FLASH: FY = FR = All Directions

CONTROLLER TYPE:  EPAC  PRE-EMPT  COUNTDOWN PEDS

LOCATION: EMCD at WMCD & Cancer Center

CITY/TWP: Ann Arbor

COUNTY: Washtenaw

MILE POINT CONTROL SECTION-SPOT # 139

Job # (If Applicable):

CLEAR PAGE 1

CLEAR ALL

ADVANCED TIMING PARAMETERS FORM

SYSTEM INFORMATION	Phase # / Description	LEFT TURN PHASING				RING AND BARRIER STRUCTURE													
		Permissive-Protected	Protected-Only	Protected-Only	Protected-Only	B1	B2	B3	B4										
Controller Type: <input checked="" type="checkbox"/> EPAC <input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
System Type: <input type="checkbox"/> Closed Loop <input type="checkbox"/> Stand By <input type="checkbox"/> Group 1 <input type="checkbox"/> Group 2 <input checked="" type="checkbox"/> TBC <input type="checkbox"/> TBC/GPS <input type="checkbox"/> None <input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
Vehicular Detection: <input checked="" type="checkbox"/> Loop <input type="checkbox"/> Video <input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
Pedestrian Detection: <input type="checkbox"/> Push-Button Crossing Locations <input type="checkbox"/> None <input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
DISAPPEARING LEGEND CASE SIGNS: <input type="checkbox"/> None <input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
ADDITIONAL DIAL SPLIT DATA: PHASE 1 2 3 4 5 6 7 8 O1 O2 O3																			
COORDINATION DATA: Operation Mode 1 Coordination Mode 0 Maximum Mode 0 Correction Mode 3 Offset Mode 0 Force Mode 0 Max Dwell 0 Yield Period 0																			
ADDITIONAL OVERLAP DATA: Overlap Phase Load Bays Phases Overlapped T.G. (s) Y (s) R (s) -GY +GRN																			
PREPARED BY: DLZ DATE: 09/09/22 <input type="checkbox"/> MDOT <input type="checkbox"/> County <input type="checkbox"/> City <input checked="" type="checkbox"/> Consultant																			
LOCATION: EMCD at WMCD & Cancer Center CONTROL SECTION-SPOT # 139																			

CLEAR PAGE 2

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	SEE ABOVE
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	BENCH MARK
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	SURVEY BOOK
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	REV. NO.

**DLZ**

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

**E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL TIMING PERMITS**

SCALE NTS 0 1 INCH

DRAWING NO. 2021-08-TSTP7

SHEET NO. 154 OF 155

APPROVED BY: \_\_\_\_\_

TRAFFIC SIGNAL TIMING PERMIT

APPROACH	PHASE	1	2	3	4	5	6	7	8	TIMING INSTALLED			
MINIMUM GREEN		6	10		6	6	10		7	REMARKS This timing plan is for EMCD bridge construction Stage 3.			
PASSAGE		2.0	0.0		3.0	2.0	0.0		3.0				
MAXIMUM NO. 1		20	40		70	20	40		70				
MAXIMUM NO. 2													
YELLOW CHANGE		3.0	3.0		3.0	3.0	3.0		3.0				
RED CLEARANCE		2.5	2.5		3.3	2.5	3.3		3.3				
WALK			8		7		9		10				
PEDESTRIAN CLEARANCE			17		10		17		14				
EXTENDED PED. CLEARANCE			3		3		3		3				
PEST IN WALK			0		0		0		0				
INITIALIZATION		1	4		4	1	4		4				
NON-ACT RESPONSE		0	0		0	0	0		0				
VEHICLE RECALL		2	3		0	2	3		0				
PEDESTRIAN RECALL			0		0		0		0				
NON-LOCK MEMORY		0	0		0	0	0		0				
DIAL ENTRY		0	1		1	0	1		1				
DIAL	1	SPLIT	1	00	10	30	40	10	30	O1	O2	O3	
DIAL	2	SPLIT	1	120	23	40	57	23	40	57	0	0	0
DIAL	3	SPLIT	1	140	20	40	70	20	40	70	0	0	0
DIAL		SPLIT											
DIAL		SPLIT											
DIAL		SPLIT											
DIAL		SPLIT											
PHASE	Hours of Operation:												
1 Fuller EB-Left	D1/S1/O1: Normal												
2 Fuller WB-Thru	D2/S1/O1: 07:00 to 09:00 Monday-Friday												
3 Maiden SB-Left	D3/S1/O1: 14:00 to 17:00 Monday-Friday												
4 EMCD NB-Thru													
5 Fuller WB-Left													
6 Fuller EB-Thru													
7 EMCD NB-Left													
8 Maiden SB-Thru													
OVERLAPS													
Overlap Phase	Load	Phases											
=	Bays	Overlapped	T.G. (s)	Y (s)	R (s)	-GY	+GRN						
=													
=													
=													
CONFLICT FLASH:		FR = All Directions											
NIGHT FLASH:		FR =											
CONTRROLLER TYPE:		PRE-EMPT <input type="checkbox"/>											
		COUNTDOWN PEDS <input checked="" type="checkbox"/>											
LOCATION:		Fuller & Maiden/EMCD											
CITY/TWP:		Ann Arbor											
COUNTY:		Washtenaw											
MILE POINT		CONTROL SECTION-SPOT #											
		126											
Job # (if Applicable):													

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ADVANCED TIMING PARAMETERS FORM

SYSTEM INFORMATION	LEFT TURN PHASING				RING AND BARRIER STRUCTURE						
	Phase # / Description	Permissive-Protected	Protected-Only	Split	Lead	Lag	R1	B1	B2	B3	B4
Controller Type:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> EPAC		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System Type:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Closed Loop		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Stand By		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Group 1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Group 2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> TBC		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> TBC/GPS		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> None		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> TOD		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Event		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/> Hardwire		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Fiber-Optic		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Radio		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Cell Modem		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> None		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If Cell Modem:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phone #		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controller Status:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Primary		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Secondary		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Isolated		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> TBC		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If Secondary:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Primary Location:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PREPARED BY: DLZ	DATE: 09/09/22	LOCATION:		Fuller & Maiden/EMCD							
Primary Spot #:		CONTROL SECTION-SPOT #		126							
	<input type="checkbox"/> MDOT	<input type="checkbox"/> County	<input type="checkbox"/> City	<input checked="" type="checkbox"/> Consultant							

CLEAR PAGE 2

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
- CONTOUR	- UTILITY POLE & GUY	- GAS LINE	- LEFT EDGE/RD. GRADE	- STORM SEWER & CAT. BAS.	- SEE ABOVE
- STORM SEWER & CAT. BAS.	- FIRE HYDRANT ASSEMBLY	- CABLE T.V.	- RIGHT EDGE/RD. GRADE	- WATER MAIN W/F.H. ASSEM.	- BENCH MARK
- WATER MAIN & VALVE-IN-WELL	- LIGHT POLE	- ELECTRIC	- CURB & GUTTER	- CONTOUR	- SURVEY BOOK
- WATER MAIN & VALVE-IN-BOX	- END SECTION	- SIGN	- EDGE/GRAVEL	- ROAD & GRADE	- REV. NO.



PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

E. MEDICAL CENTER DRIVE TRAFFIC SIGNAL TIMING PERMITS

SCALE	0	1
NTS	INCH	
DRAWING NO.	2021-08-TSTP8	
SHEET NO.	155	OF 155

REV. NO.	DESCRIPTION	DATE	DR. BY	CH. BY
	ORIGINAL ISSUE	10/6/23	INB	LCM

APPROVED BY