

GENERAL NOTES

DESCRIPTION

THIS WORK CONSISTS OF FURNISHING, INSTALLING, MAINTAINING AND SUBSEQUENTLY REMOVING TEMPORARY VANDAL FENCING ON NEW AND EXISTING BRIDGES. CONSTRUCT FENCING TAUT AND WITHIN 1 INCH FO AND CLOSELY CONFORMING TO THE SURFACE OF THE DECK, EXISTING BARRIER, SAFETY CURB, OR PORTABLE CONCRETE BARRIER. UNLESS OTHERWISE SPECIFIED IN THE PLANS, INSTALL POSTS AND POST SLEEVES PERPENDICULAR TO THE SURFACE TO WHICH IT IS ANCHORED.

TEMPORARY VANDAL FENCING, TYPE A ARE ANCHORED TO THE DECK SURFACE OR THE TOP OF AN EXISTING BARRIER. TEMPORARY VANDAL FENCING, TYPE B ARE ANCHORED TO THE NON-TRAFFIC SIDE OF THE PCB. TEMPORARY VANDAL FENCING, TYPE C ARE ANCHORED TO THE PHASE CONSTRUCTION JOINT EDGE OF THE NEW BRIDGE DECK.

REMOVAL

LEAVE TEMPORARY VANDAL FENCING INSTALLED ON AN EXISTING BARRIER IN PLACE UNTIL THE BARRIER IS REMOVED FROM THE BRIDGE. LEAVE ALL OTHER TYPES OF TEMPORARY VANDAL PROTECTION FENCING IN PLACE UNTIL THE ENGINEER DETERMINES THAT IT IS NO LONGER NECESSARY. REINSTALLATION OF THE FENCING IS NOT REQUIRED.

FENCE POSTS

FENCE POSTS SHALL BE 2.875 INCH OUTSIDE DIAMETER GRADE 2 PIPE, C&MS 710.03 (TYPE I) Fy = 50,000 PSI, 4.64 LB/FT. POSTS SHALL BE GALVANIZED PER C&MS 711.02

EXISTING BARRIER

WHEN TEMPORARY VANDAL PROTECTION FENCING IS TO BE MOUNTED ON AN EXISTING BARRIER, THE FENCE SHALL BE INSTALLED USING THE BP-1, BP-2, OR BP-5 BASE PLATE PER STANDARD DRAWING VPF-1-90. FABRICATE AND INSTALL THE POST SLEEVES, BASE PLATES, AND ADHESIVE ANCHORS AS DESCRIBED IN VPF-1-90. REMOVE AND REINSTALL THE EXISTING ALUMINUM/STEEL RAILING AS NECESSARY TO ERECT THE FENCING.

FABRIC TIES AND HOG RINGS

FABRIC TIES AND HOG RINGS SHALL BE 0.148 INCH CORE DIAMETER GALVANIZED STEEL WIRE AND 0.120 INCH ANNEALED STAINLESS STEEL WIRE CONFORMING TO ASTM A478, RESPECTIVELY. TO CONNECT THE FABRIC TO THE LINE POSTS, SUPPLY ONE FABRIC TIE FOR EACH ONE FOOT OF FABRIC HEIGHT. CONNECT THE FABRIC TO THE TENSION WIRE USING HOG RINGS 2-3 INCHES ON EACH SIDE OF THE POSTS AND AT SPACINGS NOT TO EXCEED 12 INCHES BETWEEN POSTS.

PLATES AND PLATE WASHERS

ALL PLATES AND PLATE WASHERS SHALL BE ASTM A709 GRADE 50. PLATES AND PLATE WASHERS SHALL BE GALVANIZED ACCORDING TO C&MS 711.02

HIGH STRENGTH THREADED ROD

THE 5/8 INCH DIAMETER HIGH STRENGTH THREADED ROD SHALL BE ASTM A449 WITH ASTM A563 NUTS. THREADED ROD AND NUTS SHALL BE GALVANIZED ACCORDING TO C&MS 711.02.

POST MOUNT PIPES, ANCHOR SLEEVES AND POST SLEEVES

POST MOUNT PIPES, ANCHOR SLEEVES, AND POST SLEEVES SHALL BE 3.500 INCH OUTSIDE DIAMETER PIPE, ASTM A53, 30,000 PSI MINIMUM YIELD STRENGTH, 7.58 LB/FT, GALVANIZED ACCORDING TO C&MS 711.02. HEXAGON SOCKET SET SCREWS SHALL BE SAE 4140 ALLOY STEEL, HEAT TREATED, WITH FLAT OR OVAL POINT.

ADHESIVE CONCRETE ANCHORS (GENERAL)

THE 1/2 INCH DIA. THREADED ROD FOR ADHESIVE ANCHORS SHALL BE ASTM F1554, GRADE 36, WITH ASTM A563 NUTS AND ASTM F436 WASHERS.

INSTALL ADHESIVE ANCHORS ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS PUBLISHED IN THE ICC-ES REPORTS LISTED BELOW.

THE HOLES FOR THE ADHESIVE ANCHORS SHALL BE DRILLED WITH A HAMMER DRILL AND CARBIDE BIT. PRIOR TO THE INSTALLATION OF THE ANCHORS, THE HOLES SHALL BE CLEANED AND DRIED IN A MANNER CONSISTENT WITH THE MANUFACTURER'S REQUIREMENTS FOR DRY CONCRETE.

SELECT FROM ONE OF THE FOLLOWING APPROVED PRODUCTS:

DEWALT PE1000+ EPOXY ADHESIVE ANCHOR SYSTEM (ICC-ES REPORT ESR-2583)

CHEMOFAST C-RE 385 EPOXY ADHESIVE ANCHORS (ICC-ES REPORT ESR-2538)

THE CONTRACTOR MAY USE A SUBSTITUTE ADHESIVE ANCHOR EVALUATED BY ICC-ES. THE SUBSTITUTE ANCHORS SHALL HAVE SUFFICIENT CAPACITY TO WITHSTAND THE FACTORED LOADING FOR EACH ANCHOR. THE ANCHOR ADHESIVE SHALL BE EVALUATED ACCORDING TO ACI 318 CHAPTER 17, "ANCHORING TO CONCRETE", FOR CRACKED AND UNCRACKED CONCRETE APPLICATIONS.

THE CONTRACTOR SHALL SUPPLY DOCUMENTATION SEALED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER ENSURING THAT THE SELECTED ADHESIVE ANCHORAGE PROVIDES SUFFICIENT CAPACITY FOR THIS APPLICATION IN ACCORDANCE WITH ACI 318. INSTALL THE SELECTED ANCHORS ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTION PUBLISHED IN THE ICC-ES REPORT. PUBLISHED ICC-ES REPORTS FOR ACCEPTABLE PRODUCTS ARE AVAILABLE AT:

WWW.ICC-ES.ORG/EVALUATION_REPORTS/

ADHESIVE CONCRETE ANCHORS (BRIDGE DECK)

THE EFFECTIVE EMBEDMENT DEPTH (H_{EF}) FOR 1/2 INCH DIAMETER ANCHORS INSTALLED IN THE BRIDGE DECK SHALL BE 6 INCHES. ANCHORS SHALL BE INSTALLED A MINIMUM OF 6 INCHES FROM THE EDGE OF THE DECK.

THE FACTORED LOADING ON EACH ANCHOR CONSISTS OF 2.12 KIPS OF TENSION AND 0.15 KIPS OF SHEAR.

WHEN NO LONGER NEEDED, REMOVE ANCHORS AS DIRECTED BY THE ENGINEER. WHERE THE DECK IS TO REMAIN, FILL HOLES WITH A NON-SHRINK, NON METALLIC GROUT CONFORMING TO C&MS 705.20.

IF APPLICABLE, THE 1/2 INCH DIAMETER ADHESIVE ANCHORS MAY BE SUBSTITUTED WITH 1/2 INCH DIAMETER THRU BOLTS WITH ADDITIONAL HEX NUT AND WASHER.

ADHESIVE CONCRETE ANCHORS (PORTABLE CONCRETE BARRIER)

THE EFFECTIVE EMBEDMENT DEPTH (H_{EF}) FOR 1/2 INCH DIAMETER ANCHORS INSTALLED IN THE PORTABLE CONCRETE BARRIER SHALL BE 4 INCHES.

THE FACTORED LOADING ON EACH ANCHOR CONSISTS OF 1.50 KIPS OF TENSION AND 0.05 KIPS OF SHEAR.

TENSION BARS

TENSION BARS SHALL BE 3/16 INCH X 3/4 INCH STEEL GALVANIZED ACCORDING TO C&MS 711.02.

PORTABLE CONCRETE BARRIER

PORTABLE CONCRETE BARRIER SHALL BE AS SHOWN IN STANDARD DRAWING PCB-91. ALL 1" DIAMETER HIGH STRENGTH ANCHOR BOLTS WILL BE PAID FOR UNDER ITEM 622 - PORTABLE BARRIER, 32", BRIDGE MOUNTED.

TRAFFIC SIDE ANCHORS

FOR TYPE B FENCING, UNLESS OTHERWISE SHOWN IN THE PLANS, PROVIDE AT LEAST ONE ANCHOR PER BARRIER SECTION ON THE TRAFFIC SIDE OF THE BARRIER.

NON-TRAFFIC SIDE ANCHORS

FOR TYPE B FENCING, ONE ANCHOR WILL BE REQUIRED AT THE FIRST AND LAST POST OF THE FENCING LIMITS ON THE NON-TRAFFIC SIDE OF THE BARRIER.

HIGH STRENGTH ANCHOR BOLTS FOR PORTABLE CONCRETE BARRIER

REFER TO STANDARD DRAWINGS PCB-91 FOR ADDITIONAL DETAILS REGARDING THE HIGH STRENGTH ANCHOR BOLTS ANCHORING THE PORTABLE CONCRETE BARRIER TO THE BRIDGE DECK.

TENSION WIRE

TENSION WIRE SHALL BE ALUMINIZED 0.177 INCH DIAMETER STEEL COIL SPRING WIRE CONFORMING TO AASHTO M181. PLACE TENSION WIRE AS CLOSE TO THE BOTTOM OF THE FENCE AS PRACTICAL BUT NOT MORE THAN 3 INCHES MAXIMUM. THE TENSION WIRE SHALL NOT SPAN MORE THAN 24'-6". THE MAXIMUM SAG IN THE WIRE SHALL BE 1/4 INCH AFTER TENSIONING.

ADJUSTABLE TRUSS RODS

INSTALL TRUSS RODS ONLY AS NECESSARY TO MEET THE REQUIREMENTS OF THIS DRAWING. ADJUSTABLE TRUSS RODS SHALL BE 3/8 INCH DIAMETER STEEL, GALVANIZED ACCORDING TO C&MS 711.02.

MECHANICAL CONNECTORS

ALL MECHANICAL CONNECTORS SHALL CONFORM TO C&MS 509.07. SUPPLY A MECHANICAL CONNECTOR FOR EACH TRANSVERSE DECK REBAR THAT WILL BE OBSTRUCTED BY THE SIDE MOUNTED CONNECTION PLATE. MECHANICAL CONNECTORS SHALL BE ATTACHED TO A FULLY DEVELOPED #5 TRANSVERSE DECK REINFORCING BAR. MECHANICAL CONNECTORS SHALL BE EPOXY COATED PER C&MS 509.09.

SELECT FROM ONE OF THE FOLLOWING APPROVED PRODUCTS:

DAYTON SUPERIOR D50 DBR COUPLER SYSTEM

MEADOW BURKE RC-54 THREADED REBAR COUPLER

THE CONTRACTOR MAY USE A SUBSTITUTE MECHANICAL CONNECTOR. THE SUBSTITUTE CONNECTORS SHALL HAVE THE ABILITY TO ACCEPT BOTH THE HIGH STRENGTH THREADED ROD AND THREADED REBAR ON THE FORM SIDE OF THE CONNECTOR. ON THE SIDE OF THE CONNECTOR OPPOSITE OF THE FORMS, THE CONNECTOR SHALL BE ATTACHED TO A FULLY DEVELOPED #5 TRANSVERSE DECK REINFORCING BAR. MECHANICAL CONNECTORS SHALL BE EPOXY COATED PER C&MS 509.09. PROVIDE CERTIFIED TEST DATA SHOWING CONNECTORS COMPLY WITH THE REQUIREMENTS OF C&MS 509.07.

FILLET WELDS

FILLET WELDS SHALL CONFORM TO C&MS 513.

LINE RAILS

LINE RAILS SHALL BE 1.660 INCH OUTSIDE DIAMETER GRADE 2 PIPE, C&MS 710.03 (TYPE I), FY = 50,000 PSI, 1.84 LB/FT. THE RAILS SHALL BE GALVANIZED ACCORDING TO C&MS 711.02.

FABRIC

FABRIC SHALL CONSIST OF A 2 INCH GALVANIZED DIAMOND MESH USING 0.120 INCH DIA. (11 GAGE) WIRE CONFORMING TO C&MS 710.03.

TENSION BANDS

TENSION BANDS SHALL BE 1/8 INCH X 1 INCH GALVANIZED STEEL ASSEMBLED WITH 3/8 INCH DIAMETER X 1/4 INCH GALVANIZED BOLTS. ONE TENSION BAND SHALL BE SUPPLIED FOR EACH FOOT OF FABRIC HEIGHT FOR THE END PANELS AND THE PULL PANELS. BANDS SHALL BE GALVANIZED ACCORDING TO C&MS 711.02. 3/8 INCH DIAMETER BOLTS SHALL BE ASTM A307.

MALLEABLE OR CAST IRON FITTINGS

MALLEABLE OR CAST IRON FITTINGS SHALL BE USED FOR LINE RAIL ENDS. ALL FITTINGS SHALL BE GALVANIZED ACCORDING TO C&MS 711.02.

FENCING CORROSION

REPLACE ALL ELEMENTS OF THE FENCING WITH ACTIVE CORROSION AS DIRECTED BY THE ENGINEER.

DESIGN LIMITATIONS

DO NOT USE THIS STANDARD WHEN TEMPORARY VANDAL PROTECTION FENCING IS TO BE MOUNTED ON TEMPORARY BARRIER THAT DOES NOT CONFORM TO PCB-91.

FENCING LIMITS

PROVIDE THE LENGTH SHOWN IN THE PLANS. IF NO LENGTH IS SHOWN THEN FENCING ON THE BRIDGE SHALL EXTEND BETWEEN ITS END POSTS PLACED AT THE LOCATIONS SELECTED FROM THE FOLLOWING LIST THAT CREATES THE SHORTEST LENGTH:

- A. 30-FT ± 2.5-FT BEYOND THE UNDER BRIDGE ROUTE'S EDGE OF TRAVELED WAY NEAREST THE FENCE TERMINAL
- B. THE CENTERLINE OF THE ABUTMENT EXPANSION JOINT (-2.5-FT, + 0-FT)
- C. THE END OF THE BRIDGE BARRIER (-2.5-FT, +0-FT)

METHOD OF MEASUREMENT:

THE DEPARTMENT WILL MEASURE TEMPORARY VANDAL FENCING BY THE FOOT ROUNDED TO THE NEAREST 1-FT FOR EACH APPLICATION PLACED.

BASIS OF PAYMENT:

THE DEPARTMENT WILL MAKE PAYMENT FOR THE COMPLETED AND ACCEPTED QUANTITIES OF TEMPORARY VANDAL FENCE AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
607	FOOT	TEMPORARY VANDAL FENCE, TYPE A
607	FOOT	TEMPORARY VANDAL FENCE, TYPE B
607	FOOT	TEMPORARY VANDAL FENCE, TYPE C

ABBREVIATIONS:

- MAX. - MAXIMUM
- MIN. - MINIMUM
- TYP. - TYPICAL
- C/C - CENTER TO CENTER
- O.D. - OUTSIDE DIAMETER
- DIA. - DIAMETER
- PCB - PORTABLE CONCRETE BARRIER
- MECH. - MECHANICAL
- H.S. - HIGH STRENGTH
- B.S. - BOTH SIDES

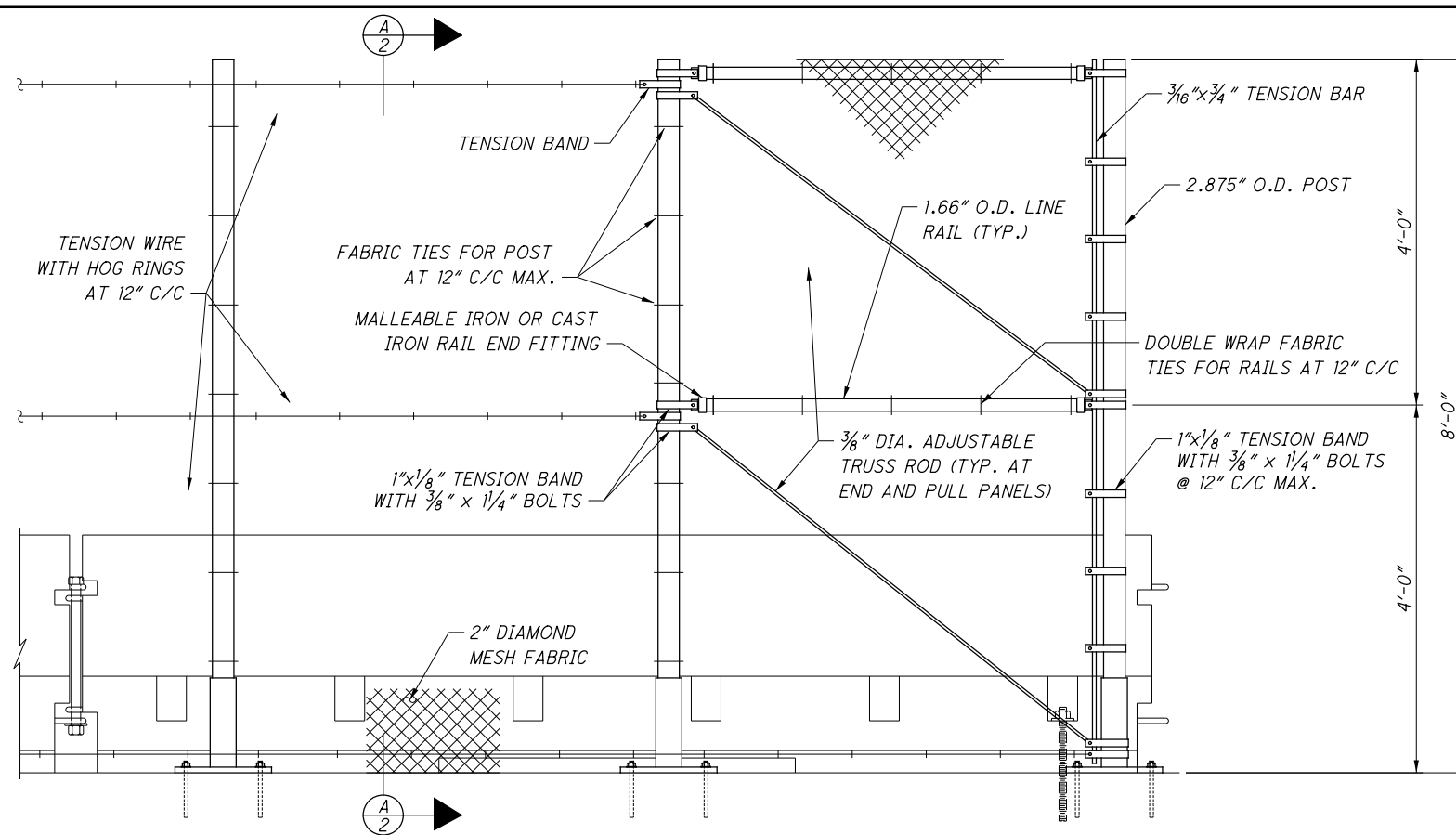
DESIGN AGENCY
OFFICE OF
STRUCTURAL ENGINEERING

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
07-20-18
DATE

REVISIONS

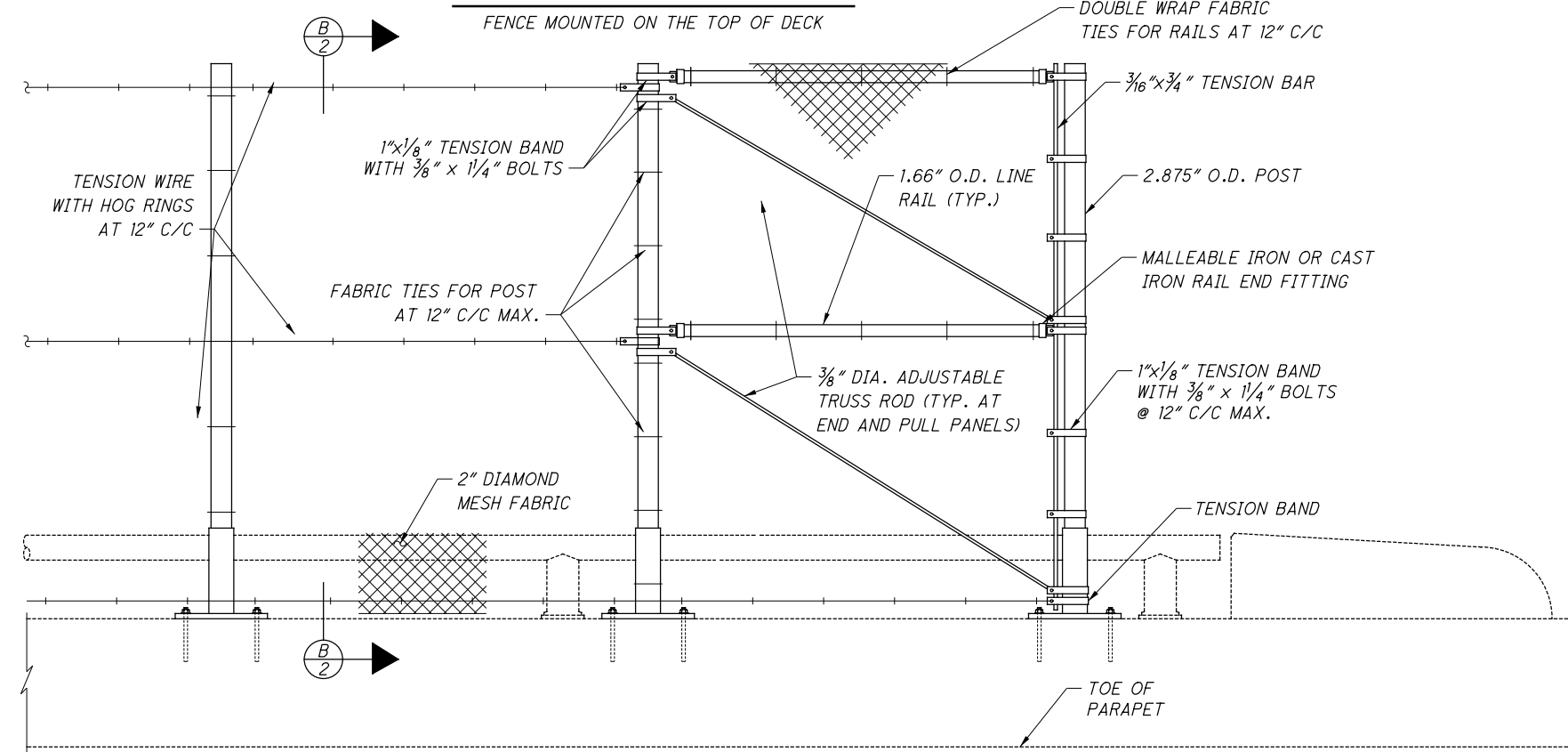
TVPF-1-18

STANDARD BRIDGE DRAWING
TEMPORARY VANDAL PROTECTION FENCING



TEMPORARY FENCE ELEVATION

FENCE MOUNTED ON THE TOP OF DECK

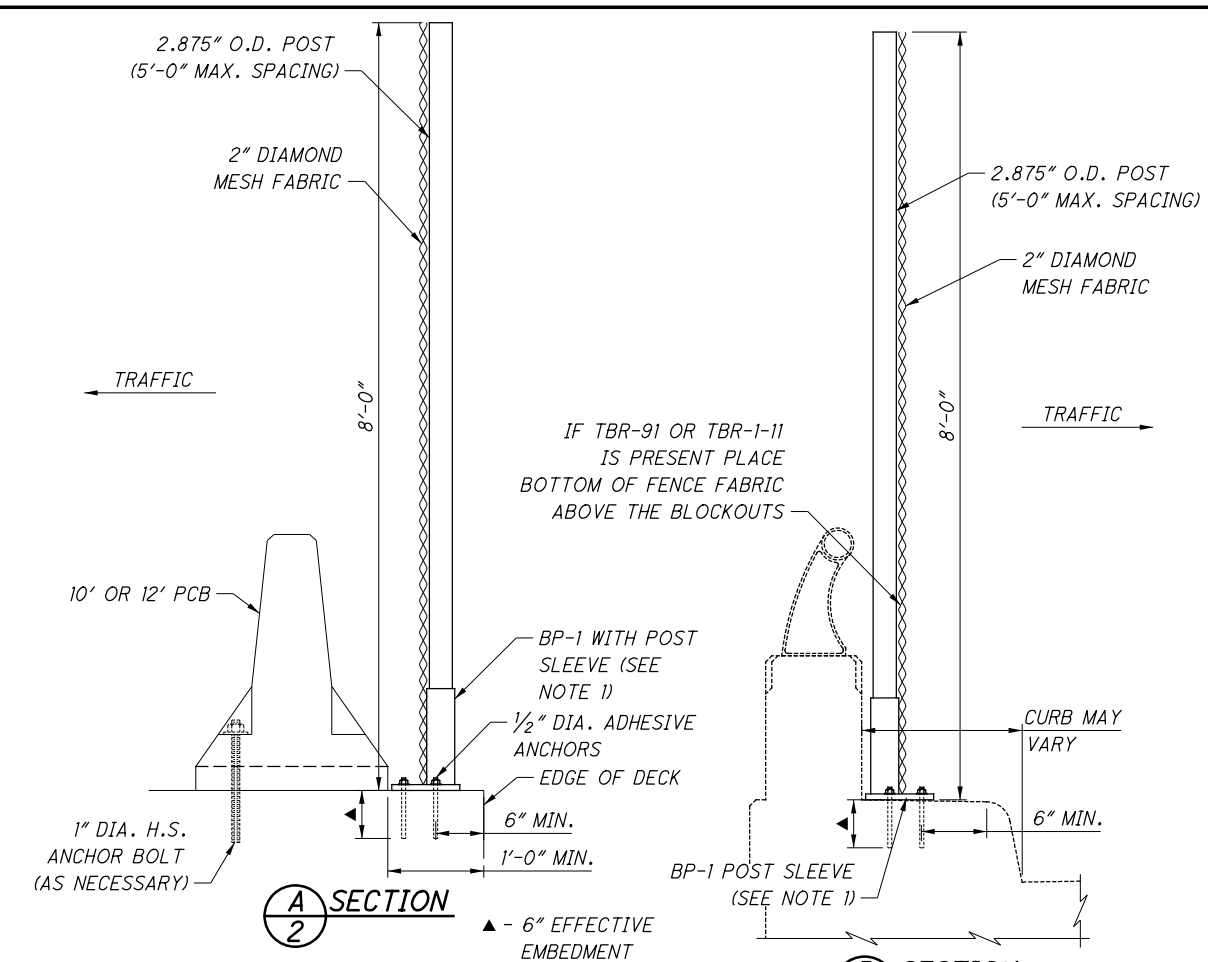


TEMPORARY FENCE ELEVATION

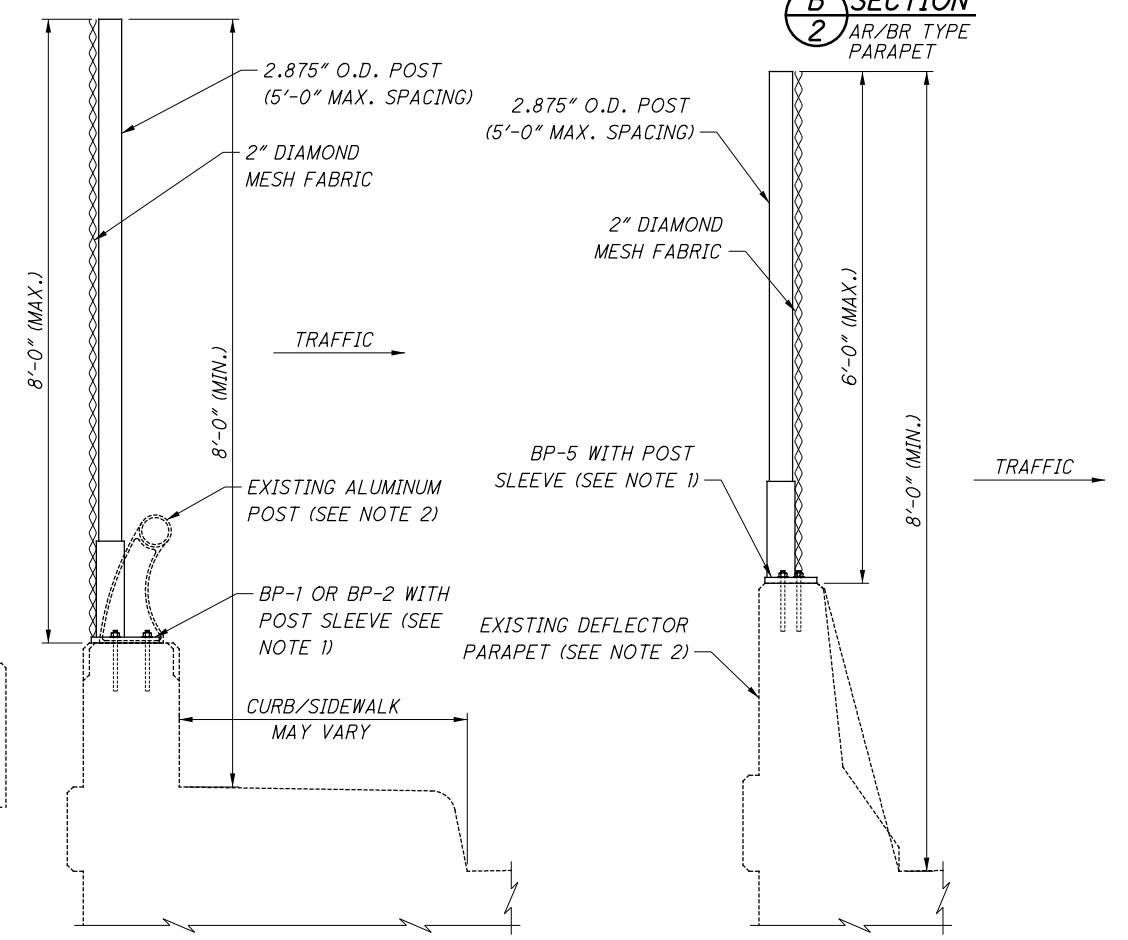
FENCE MOUNTED TO EXISTING BARRIER OR SAFETY CURB

NOTES:

1. FABRICATE BASE PLATES AND POST SLEEVES AS SHOWN IN STD. DWG. VPF-1-90. FOR DECK AND CURB MOUNTED POSTS INSTALL THE ANCHORS PER THIS DRAWING. FOR POSTS MOUNTED ON EXISTING BARRIER INSTALLED THE ANCHORS PER STD. DWG. VPF-1-90.
2. FOR ADDITIONAL PARAPET TYPES, SEE SHEET 277 OF STD. DWG. VPF-1-90.



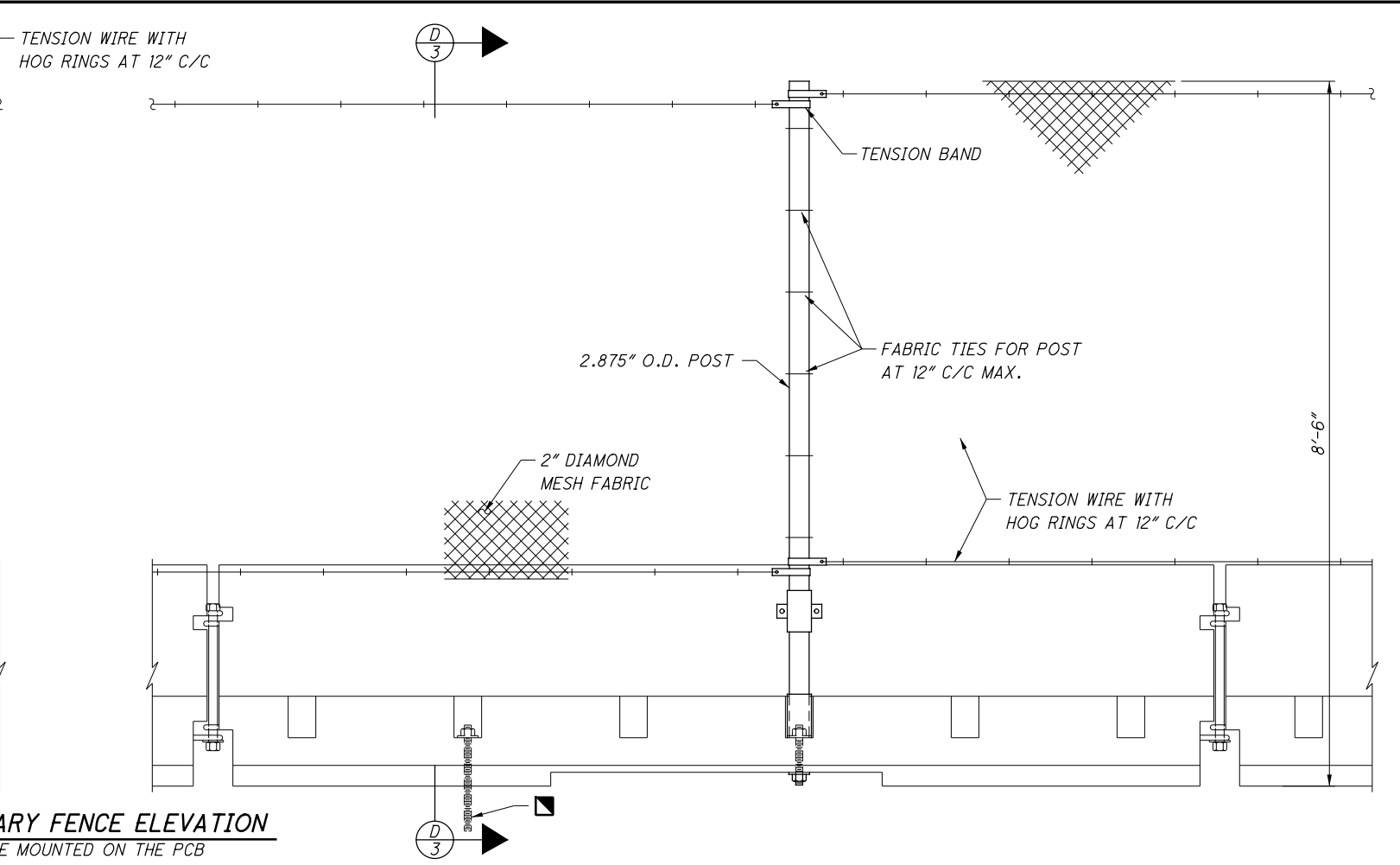
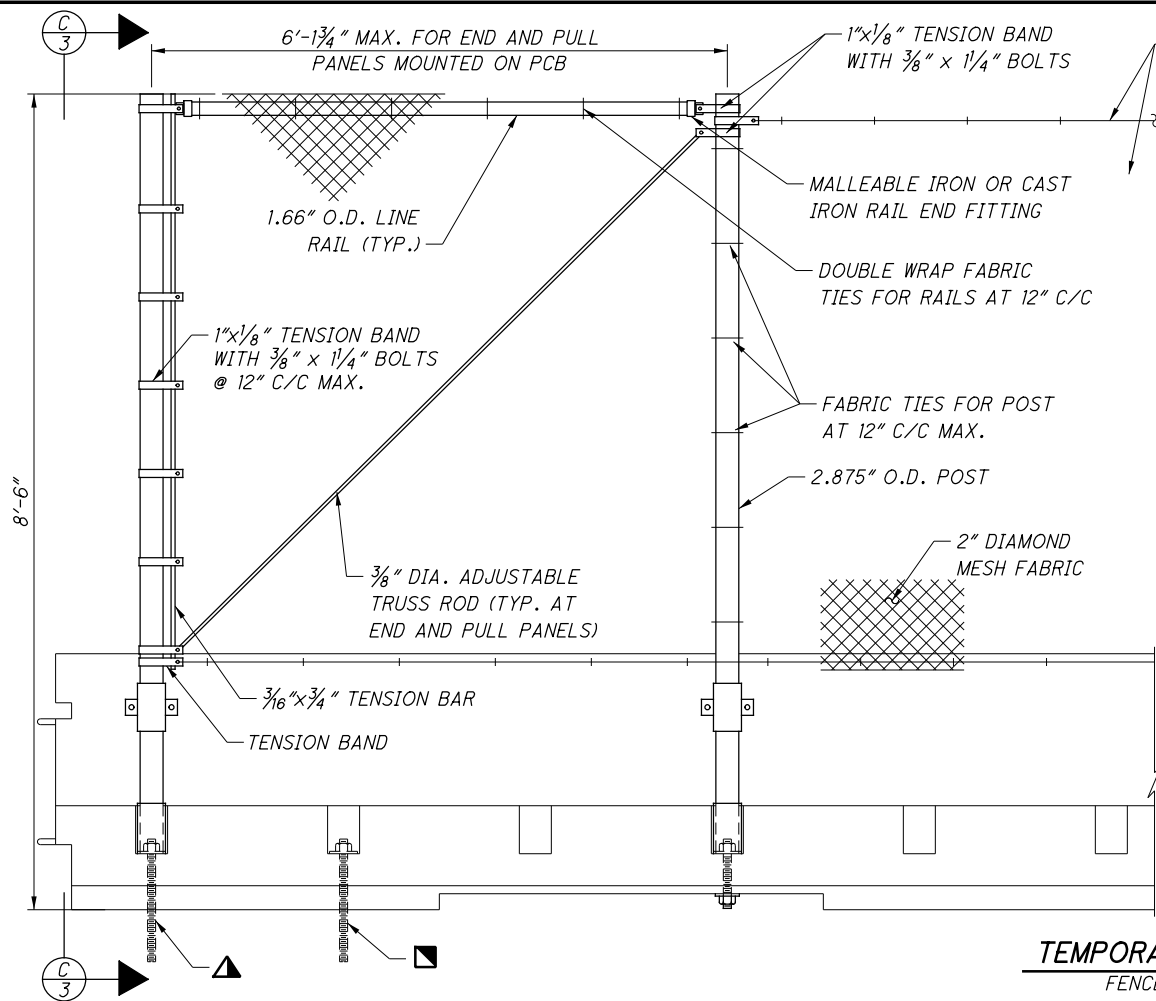
A SECTION



B SECTION

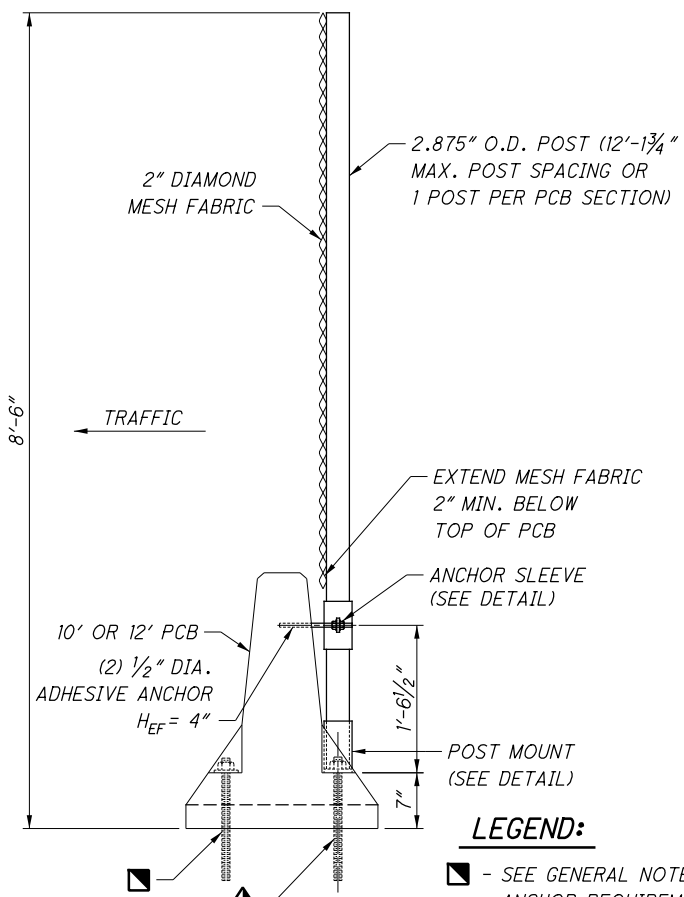
B SECTION

DESIGN AGENCY	OFFICE OF STRUCTURAL ENGINEERING
STATE OF OHIO DEPARTMENT OF TRANSPORTATION	DATE
REVISIONS	ADMINISTRATOR
STANDARD BRIDGE DRAWING	TVPF-1-18
TEMPORARY VANDAL PROTECTION FENCING (TYPE A)	
2	4

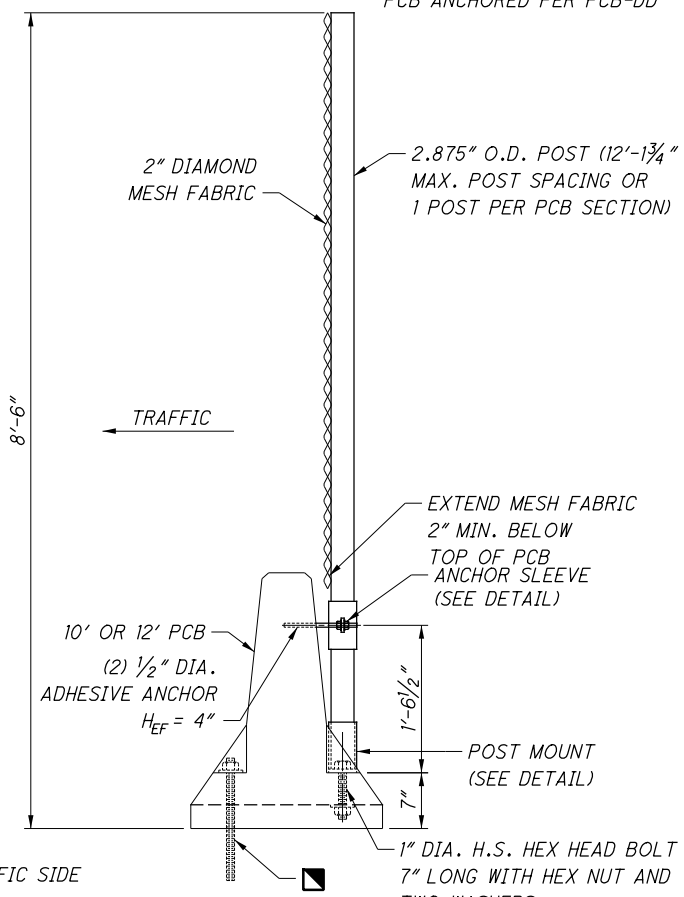


TEMPORARY FENCE ELEVATION

FENCE MOUNTED ON THE PCB
PCB ANCHORED PER PCB-DD



C SECTION

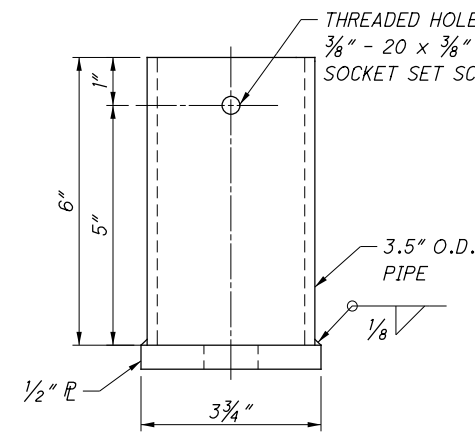


D SECTION

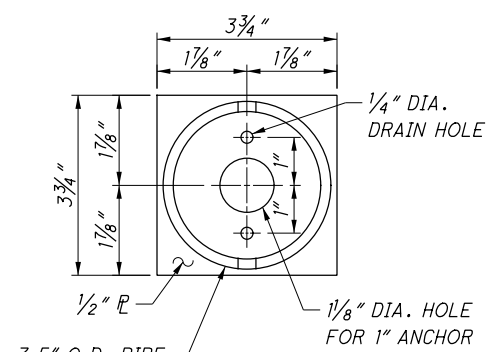
LEGEND:

▣ - SEE GENERAL NOTES FOR TRAFFIC SIDE ANCHOR REQUIREMENTS.

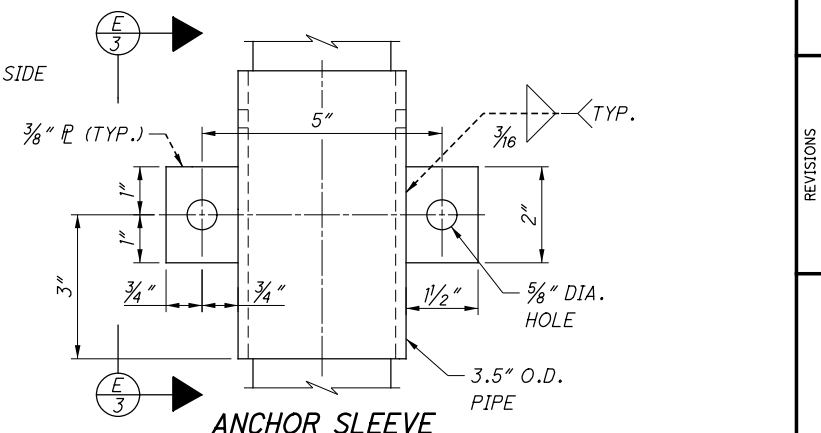
▴ - SEE GENERAL NOTES FOR NON-TRAFFIC SIDE ANCHOR REQUIREMENTS.



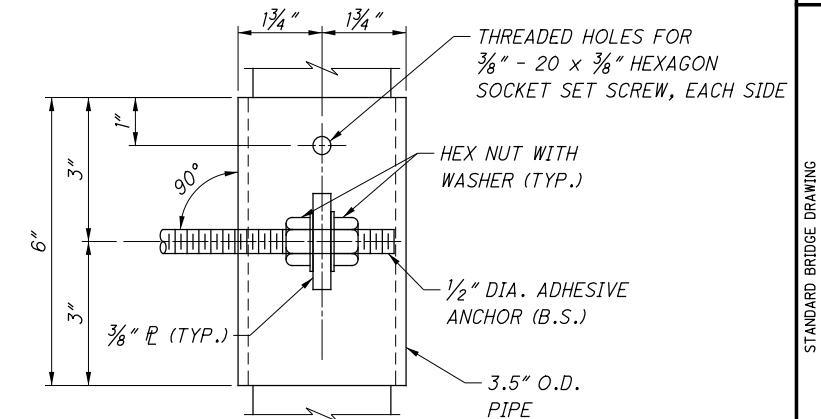
POST MOUNT ELEVATION



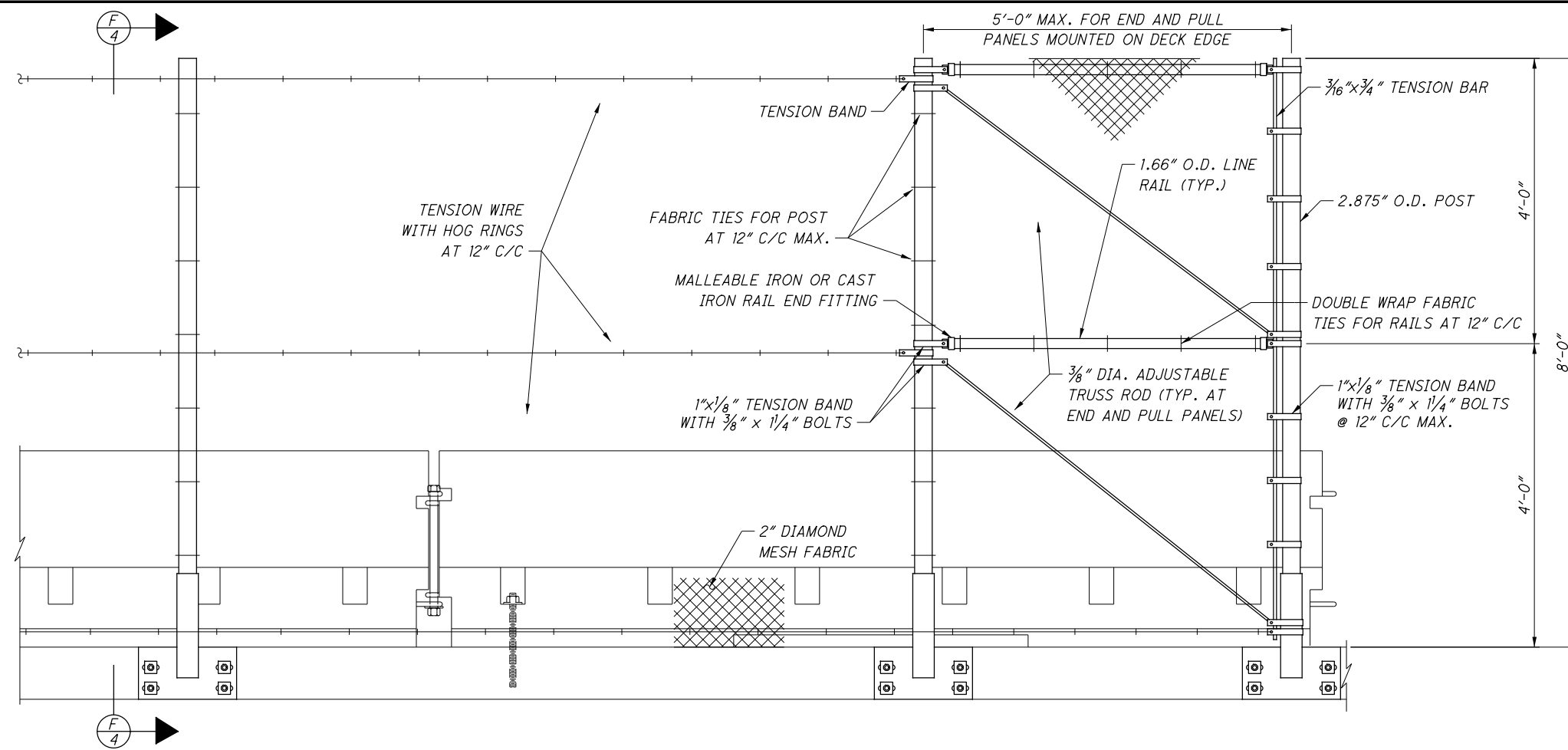
POST MOUNT PLAN



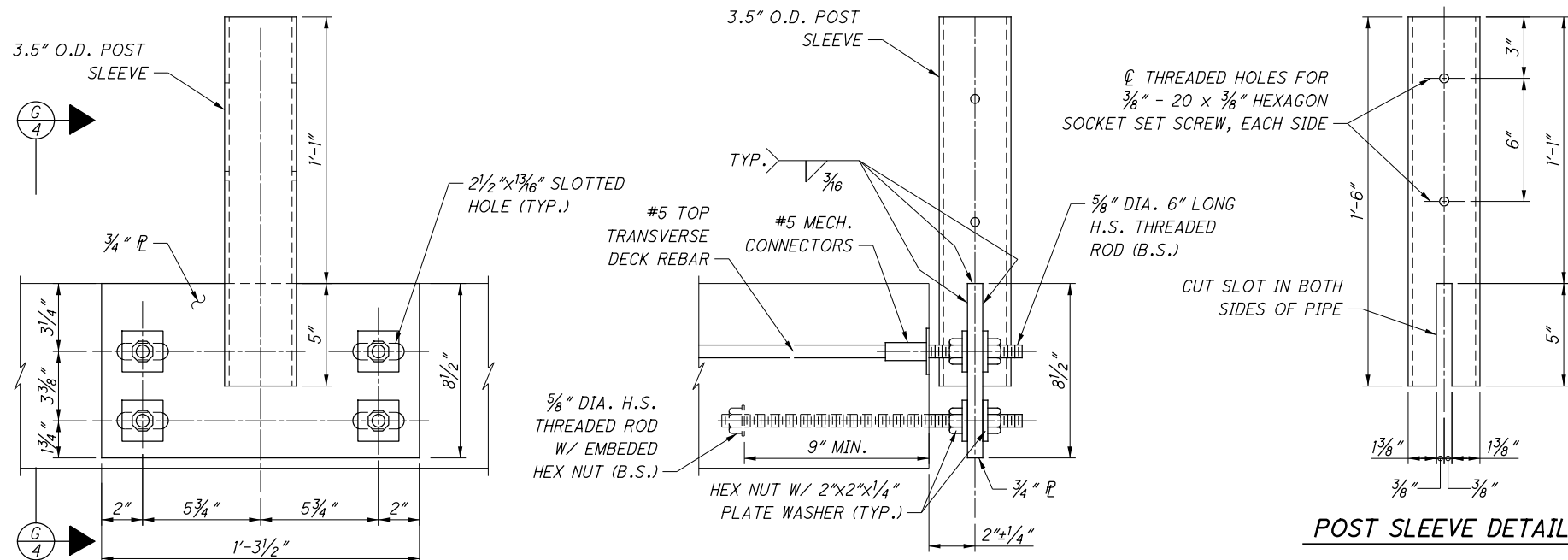
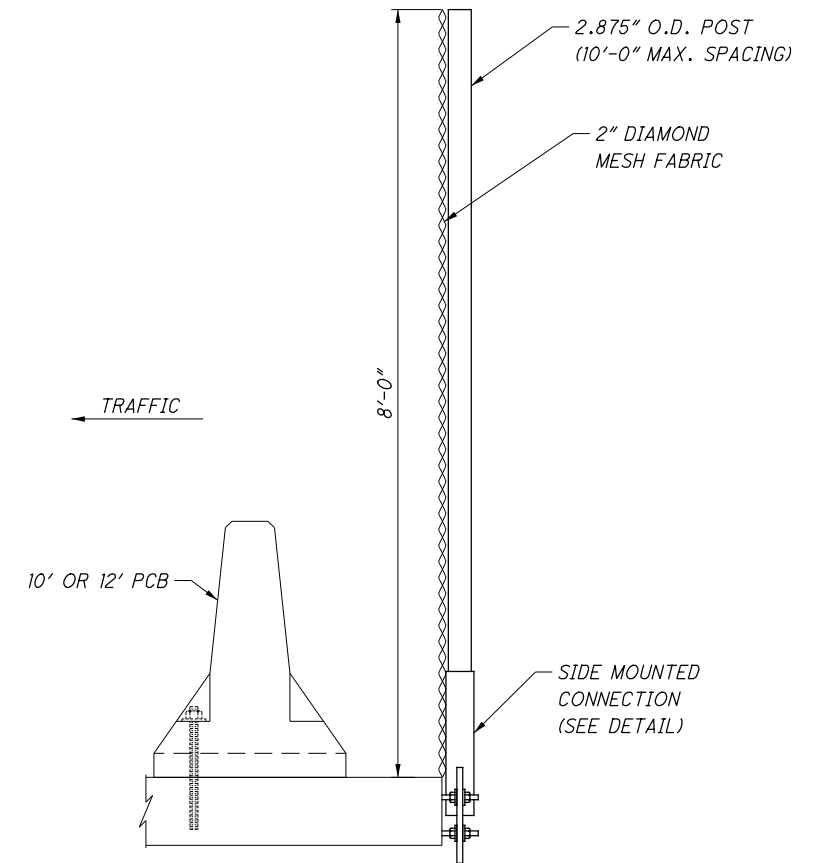
ANCHOR SLEEVE



E VIEW



TEMPORARY FENCE ELEVATION
FENCE MOUNTED ON THE DECK EDGE



SIDE MOUNTED CONNECTION DETAIL
POST AND SET SCREWS NOT SHOWN

G VIEW
POST AND SET SCREWS NOT SHOWN

POST SLEEVE DETAIL