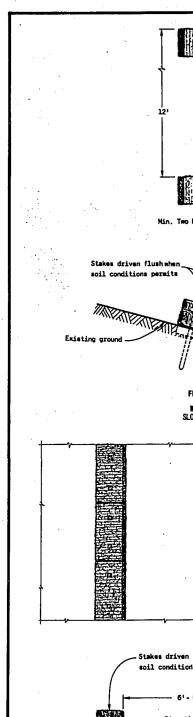


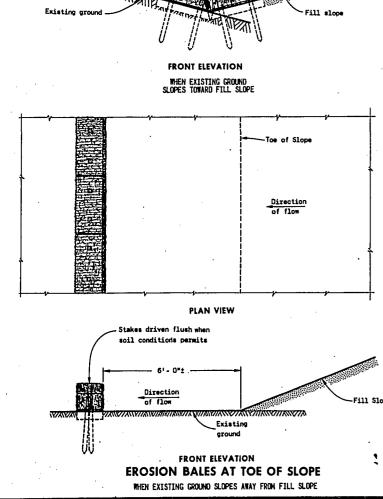
S.D.D.

8 E

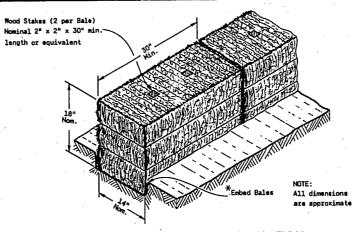
S.D.D. 8E7-



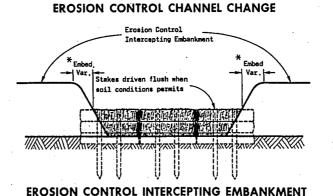
S.D.D.

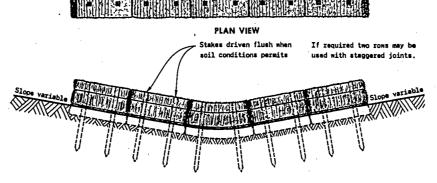


PLAN VIEW



DETAIL OF EROSION BALE INSTALLATION Stakes driven flush when * Embed | Var. | Var. | Frosion Control Change | Change |





FRONT ELEVATION
EROSION BALES ACROSS DITCH BOTTOM

GENERAL NOTES

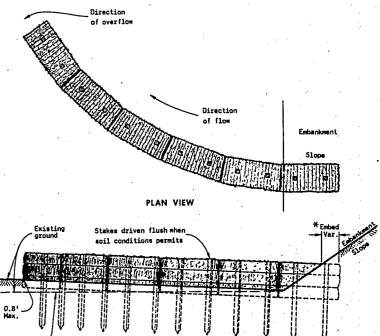
Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Bales shall be placed end to end or overlapping at right angles to the direction of flow and far enough up the sides of the ditch to prevent eroding around ends.

Bales shall be placed with twine or tie wires parallel to the ground.

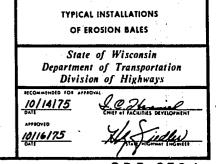
Stakes to be battered in opposite directions.

* As determined by the Engineer.

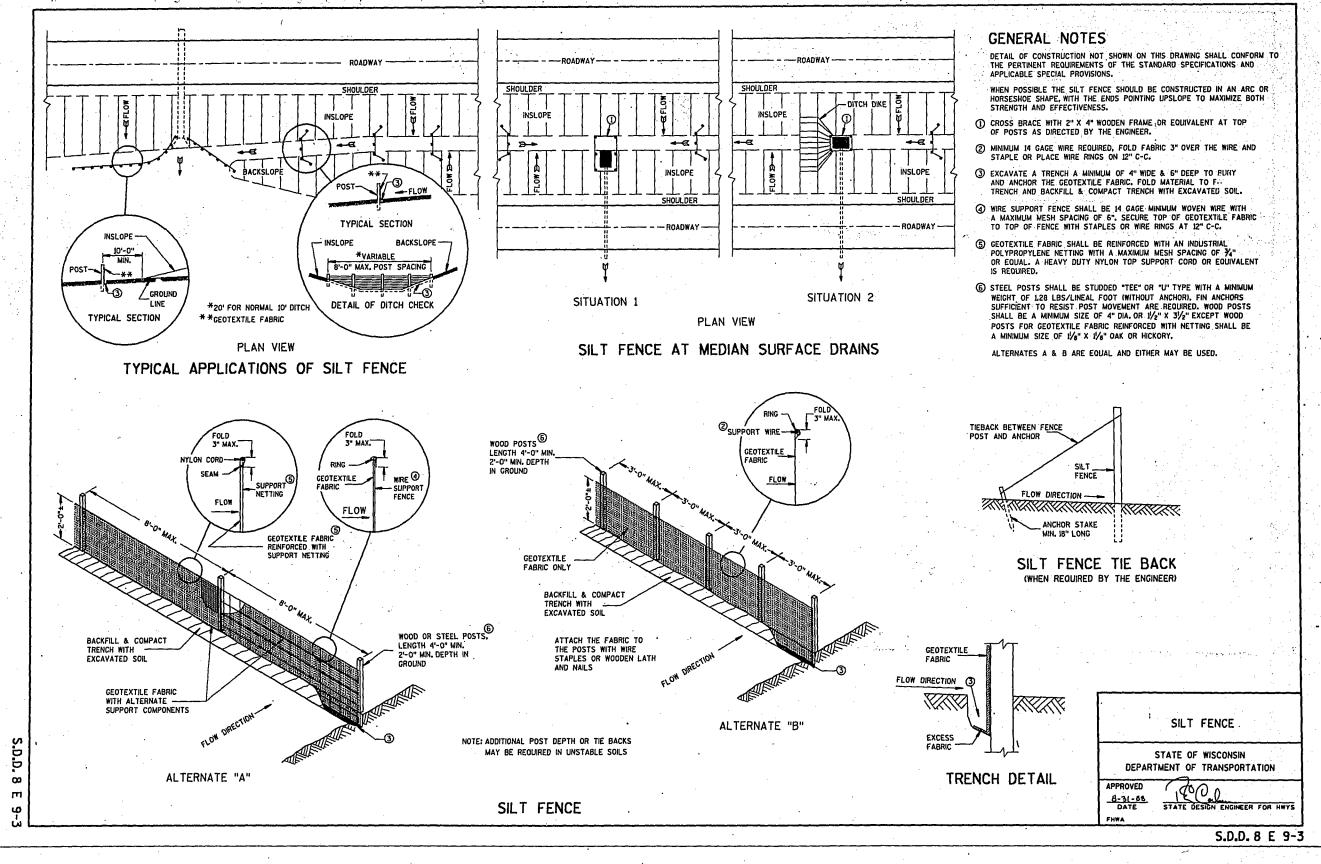


EROSION BALES AT TOE OF SLOPE

FRONT ELEVATION



S.D.D. 8 E 8-1



STEEL ALUM. (±1") (MAX.) (±1") (±11/2")

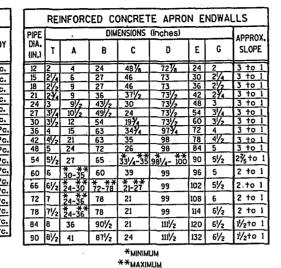
MIN. THICK.

(Inches)

METAL APRON ENDWALLS

DIMENSIONS (Inches)

SLOPE



THREADED 76" DIA. ROD CONNECTOR AROUND CULVERT & THROUGH TANK TYPE CONNECTOR LUG OR ALTERNATE CONNECTOR STRAP (SEE DETAIL) MEASURED LENGTH OF CULVERT TYPE 1 FOR 12" THRU 24" CORR. PIPE

ALTERNATE FOR TYPE 1 CONNECTION

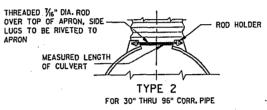
END SECTION CONNECTOR STRAP

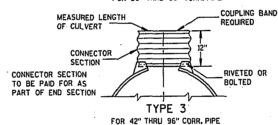
1" WIDE, 12 GA, (0.109"

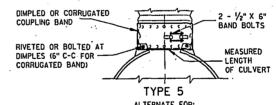
BAND BOLT AND NUT

THICK) GALVANIZED STRAP

WITH STANDARD 6" X 1/2"







ALTERNATE FOR: ALL SIZES CORRUGATED CIRCULAR PIPE

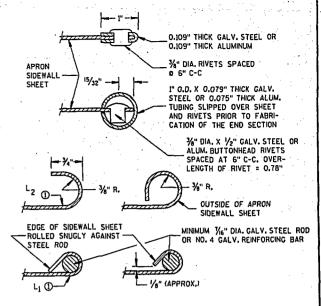
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

> FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE FNDWALL CONNECTION DETAILS 1. 2. 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

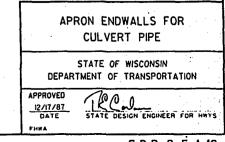
CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA, GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

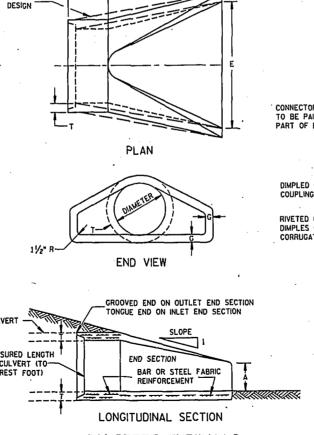
() FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

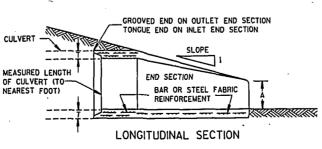


OPTIONAL REINFORCED EDGE (SEE SECTION A-A) PLAN VIEW END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS. OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER END CORNER TOE PLATE (SAME THICKNESS 1/6" DIA. HOLES FOR AND METAL AS APRON) SHALL BOLTS OR RIVETS BE FURNISHED WHEN CALLED 12" C-C MAX. SPACING FOR ON THE PLANS END VIEW SHOULDER SLOPE

SIDE ELEVATION

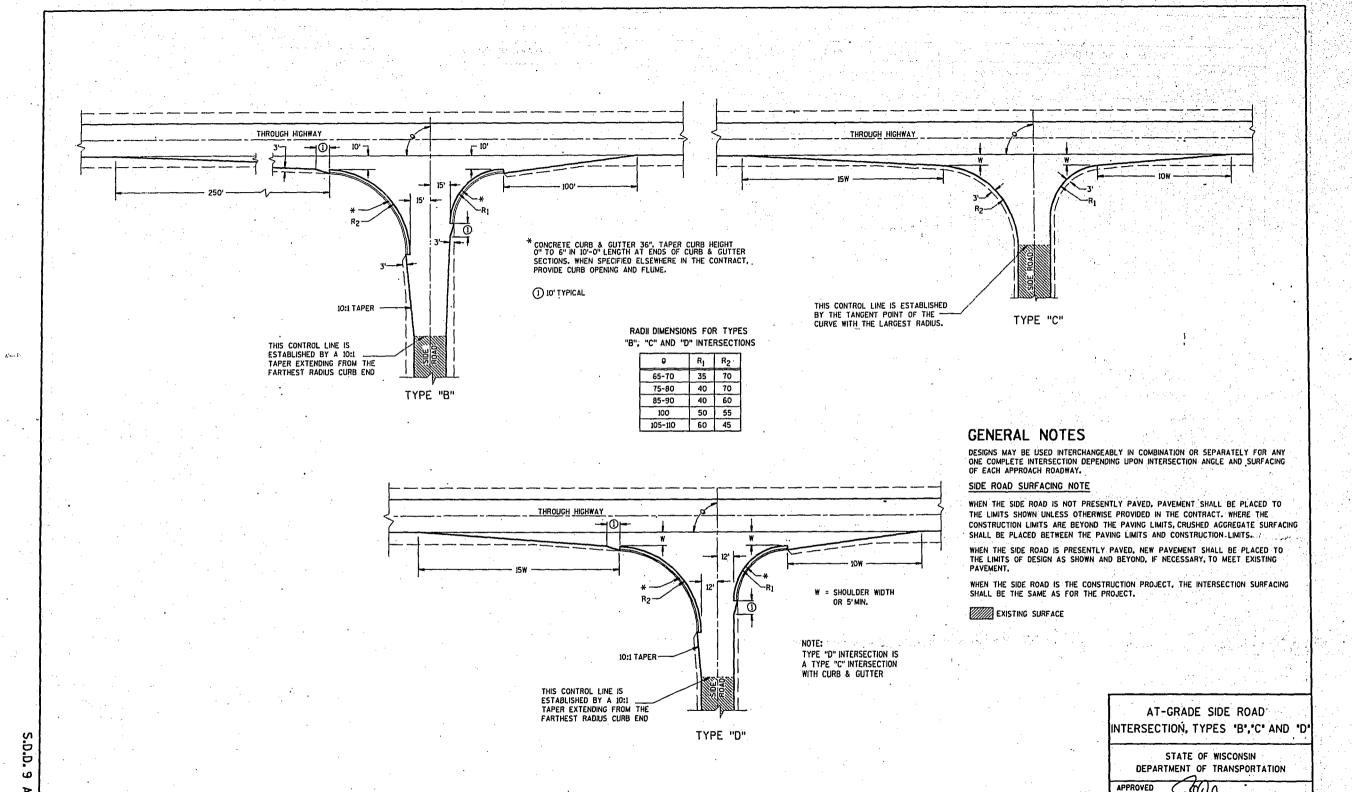
METAL ENDWALLS



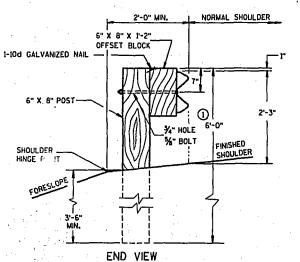


CONCRETE ENDWALLS

DIA



STATE DESIGN ENGINEER FOR HWYS



6" X 8" X 1'-2" DESIGN NOTE: (WILL NOT APPEAR ON CONTRACT PLANS) OFFSET BLOCK 1-10d GALVANIZED NAIL -

GUTTER TO PAV'T

8 -%" + x 11/4" BUTTON HEAD

OVAL SHOULDERS & RECESS NUTS.

BUTTON HEAD BOLT

ROUND WASHER AND

%" + x 1'-6" WITH

RECESS NUT.

FINISHED SHOULDER

BOLTS WITH

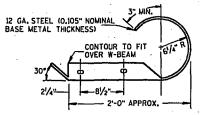
HINGE POINT

REFER TO PROCEDURE II-45-I FOR GUIDANCE ON THE USE OF BEAM GUARD ON CURBED ROADWAYS

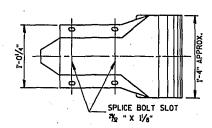
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, AND THE APPLICABLE SPECIAL PROVISIONS.

- (1) POST LENGTH SHALL BE INCREASED TO PROVIDE A MINIMUM EMBEDMENT OF 3'-6" WHERE THE SHOULDER HINGE POINT IS LOCATED IN FRONT OF THE POST.
- PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.

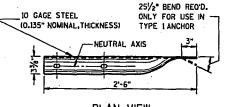


PLAN VIEW

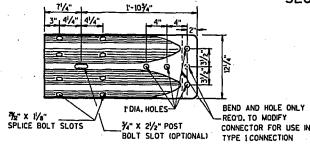


FRONT VIEW

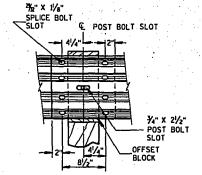
W BEAM END SECTION (ROUNDED)



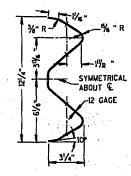
PLAN VIEW



FRONT VIEW W BEAM TERMINAL CONNECTOR



W BEAM SPLICE



SECTION THRU W BEAM

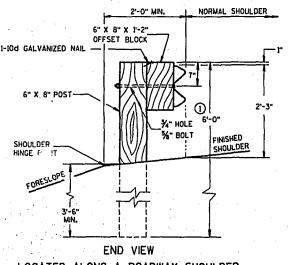
SHEETS ID IS OPTIONAL FOR INCLUSION IN PLANS WHEN APPLICABLE.

CLASS "A" STEEL PLATE BEAM GUARD. INSTALLATION & ELEMENTS

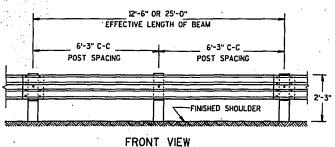
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

STATE DESIGN ENGINEER FOR HWYS



LOCATED ALONG A ROADWAY SHOULDER



.-.---FRONT VIEW

END VIEW LOCATED ALONG A CURBED ROADWAY

2'-0" MIN.

¾" HOLE

%" BOLT

6" X 8"

3'-6"

POST

1

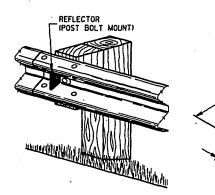
BEAM SPLICING AND POST MOUNTING DETAIL

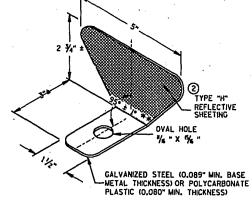
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

REFLECTOR SPACING BEAM GUARD REFLECTOR NO. SURFACES LENGTH SPACING REFLECTORIZED MIN. NO. REFLECTORS ONE WAY < 200' > 200' 50' C-C 3 100, C-C TWO WAY < 200' * 25' C-C 6 50°C-C TWO WAY > 500, < 500, 50' C-C 3

EVERY OTHER REFLECTOR REVERSED FOR 2-WAY VISIBILITY.
CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED RELECTORS.

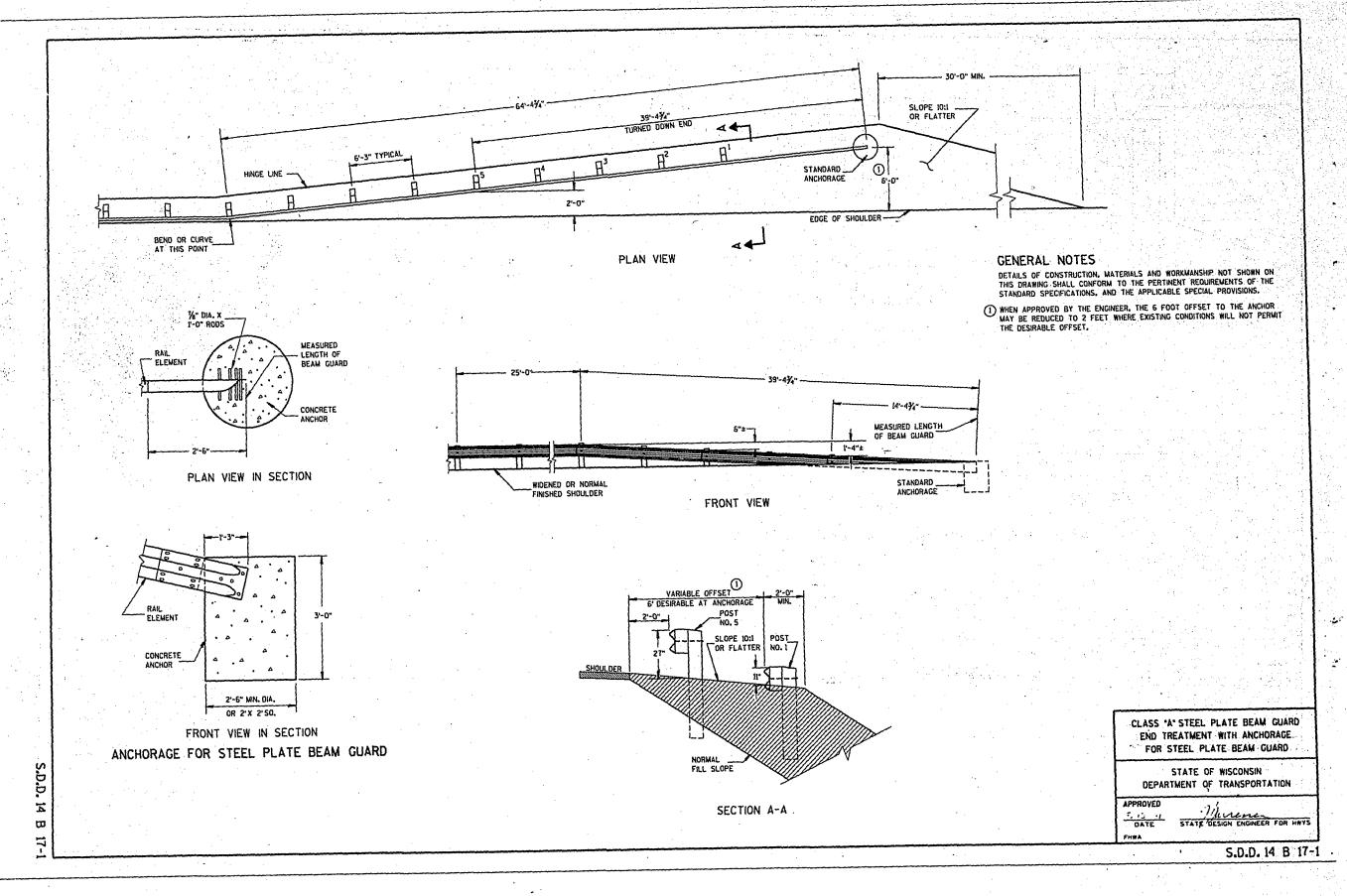
ANGLE OF BEND TO BE 90° ± 1° FOR TWO-SIDED REFLECTORS.



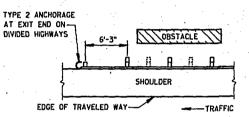


REFLECTOR DETAIL AND TYPICAL INSTALLATION

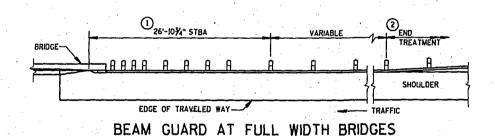
S.D.D. 14 B 15-1a

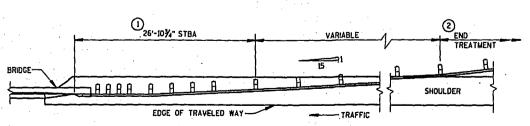


BEAM GUARD AT MINOR SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC





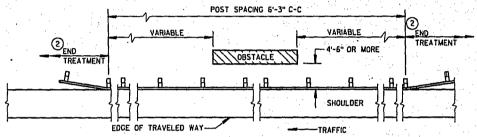
BEAM GUARD AT NARROW BRIDGES

GENERAL NOTES

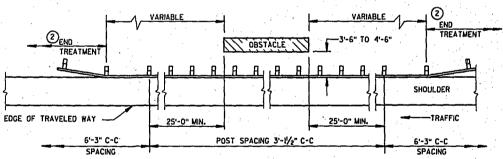
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS,

BEAM GUARD LOCATIONS AND LENGTHS ARE SHOWN ELSEWHERE IN THE PLAN.

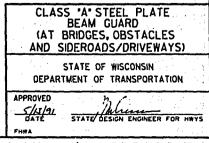
- 1) STEEL THRIE BEAM STRUCTURE APPROACH.
- 2 UNLESS OTHERWISE INDICATED, THE FLARED END TREATMENT WITH A TYPE I ANCHORAGE SHALL BE USED TO TERMINATE BEAM GUARD ON THE TRAFFIC APPROACH SIDE OF BRIDGES/OBSTACLES, TYPE 2 ANCHORAGE SHALL BE USED ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

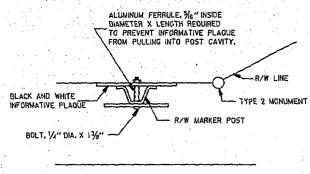


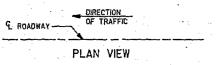
BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC (RAIL TO OBSTACLE CLEARANCE 4'-6" OR MORE)

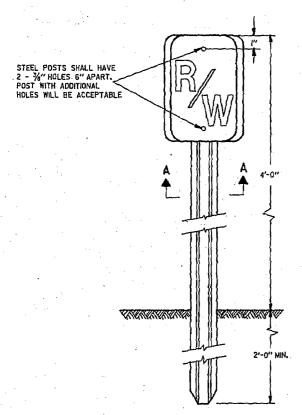


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

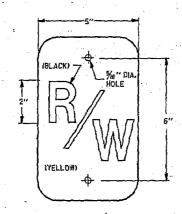








FRONT VIEW STEEL MARKER POST



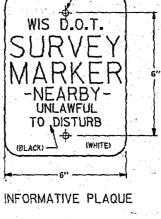
RIGHT OF WAY MARKER

THE RIGHT OF WAY MARKER AND INFORMATIVE PLADUE, WHEN REQUIRED, WILL BE FURNISHED BY EITHER THE MISCONSIN DEPARTMENT OF TRANSPORTATION OR THE LOCAL GOVERNMENT.

1/16" 10 13/16"

MIN. WEIGHT 1.08 LB./FT.

SECTION A-A



- 3/6" DIA. HOLE

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

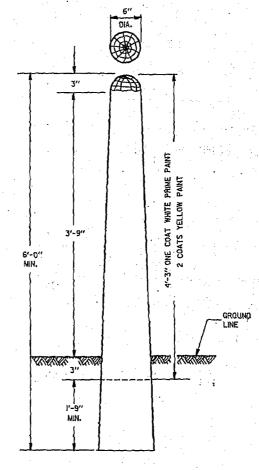
THE CONTRACTOR MAY INSTALL EITHER STEEL OR WOOD MARKER POSTS UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. ONLY ONE TYPE OF POST SHALL BE USED THROUGHOUT THE PROJECT.

RIGHT OF WAY MARKER OR INFORMATIVE PLACUE IS NOT REQUIRED ON WOOD MARKER POSTS.

A MARKER POST FOR RIGHT OF WAY SHALL BE PLACED ADJACENT TO EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STEEL POSTS SHALL BE MADE FROM HIGH STRENGTH HOT ROLLED STEEL CONFORMING TO ASTM DESIGNATION A 499 OR EQUAL.

STEEL POSTS SHALL BE COATED WITH A FEDERAL HIGHWAY YELLOW ENAMEL.



FRONT VIEW WOOD MARKER POST

MARKER POSTS FOR RIGHT OF WAY

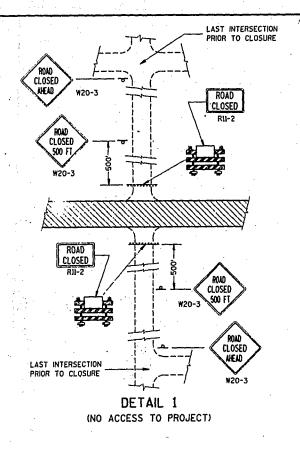
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED 6-18-84 DATE

FHWA

MAY 4, 1984

S.D.D. 15 A 1-5

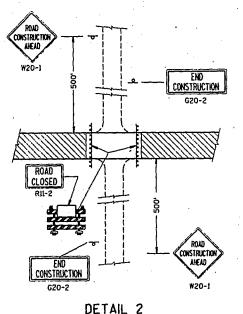


S.D.D.

ភ

C

2



(PUBLIC CROSS-TRAFFIC MAINTAINED, NO ACCESS TO PROJECT).

CONSTRUCTION W20-1 CONSTRUCTION ROLD CONSTRUCTION G20-2 ROLD CONSTRUCTION ROLD CONSTRUCTION WEAD ROLD CONSTRUCTION WEAD W20-1

DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND THEIR LOCATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE WISCONSIN MANUAL OF TRAFFIC CONTROL DEVICES, THE PLANS, SPECIFICATIONS AND CONTRACT.

SIGN AND BARRICADE LOCATIONS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER. ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS WORK SHALL BE COVERED AS DIRECTED BY THE ENGINEER. ALL "STOP" OR OTHER REGULATORY SIGNS ON THE SIDE ROADS SHALL NOT BE DISTURBED, EXCEPT WHEN NECESSARY TO COMPLETE THE WORK. THE SIGNS MUST THEN BE IMMEDIATELY REESTABLISHED.

ALL TYPE INBARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL FOR FULL ROAD CLOSURES. TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

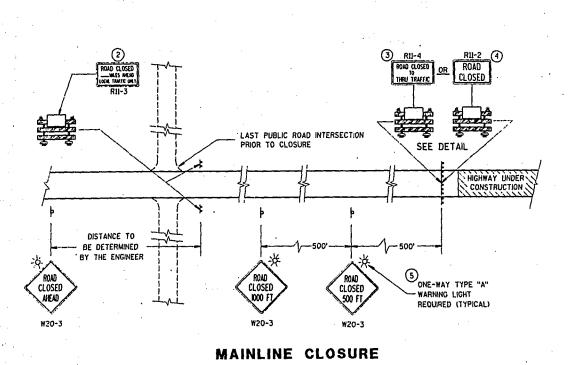
THE ROAD CLOSED SIGN (R11-2), ROAD CLOSED ____ MILES AHEAD SIGN (R11-3) AND THE ROAD CLOSED TO THRU TRAFFIC SIGN (R11-4) SHALL BE ATTACHED ONLY TO THE TOP RAIL OF THE TYPE III BARRICADE. THE SIGNS SHALL NOT COVER MIDDLE RAIL.

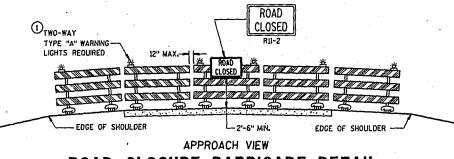
TYPE "H" REFLECTIVE SHEETING SHALL BE USED ON ALL BARRICADES, TYPE I, II AND III, AND ON ALL RIJ-2, RIJ-3 AND RIJ-4 SIGNS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2, "ROAD CLOSED" SIGNS SHALL BE 48" X 30".
R11-3, AND R11-4 SIGNS SHALL BE 60" X 30".
G20-2 SIGNS SHALL BE 60" X 24".

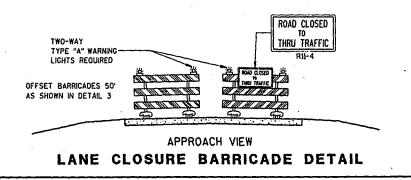
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND AT LEAST ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN.
- (2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- (3) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT. SEE LANE CLOSURE BARRICADE DETAIL.
- (4) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT. SEE ROAD CLOSURE BARRICADE DETAIL.
- (5) ONE-WAY LIGHTS SHALL BE PROVIDED ON ALL ADVANCE WARNING SIGNS. THE UNIT SHALL BE POSITIONED SUCH THAT THE LIGHT SOURCE IS OUTSIDE THE SIGN FACE AND AT THE TOP OF THE SIGN.

SIDEROAD CLOSURES





ROAD CLOSURE BARRICADE DETAIL



.

LEGEND

TYPE III BARRICADES WITH TYPE "H"

TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)

P POST MOUNTED WARNING SIGN

REFLECTIVE SHEETING

WORK AREA

BARRICADES AND TRAFFIC CONTROL FOR ROAD CLOSURES

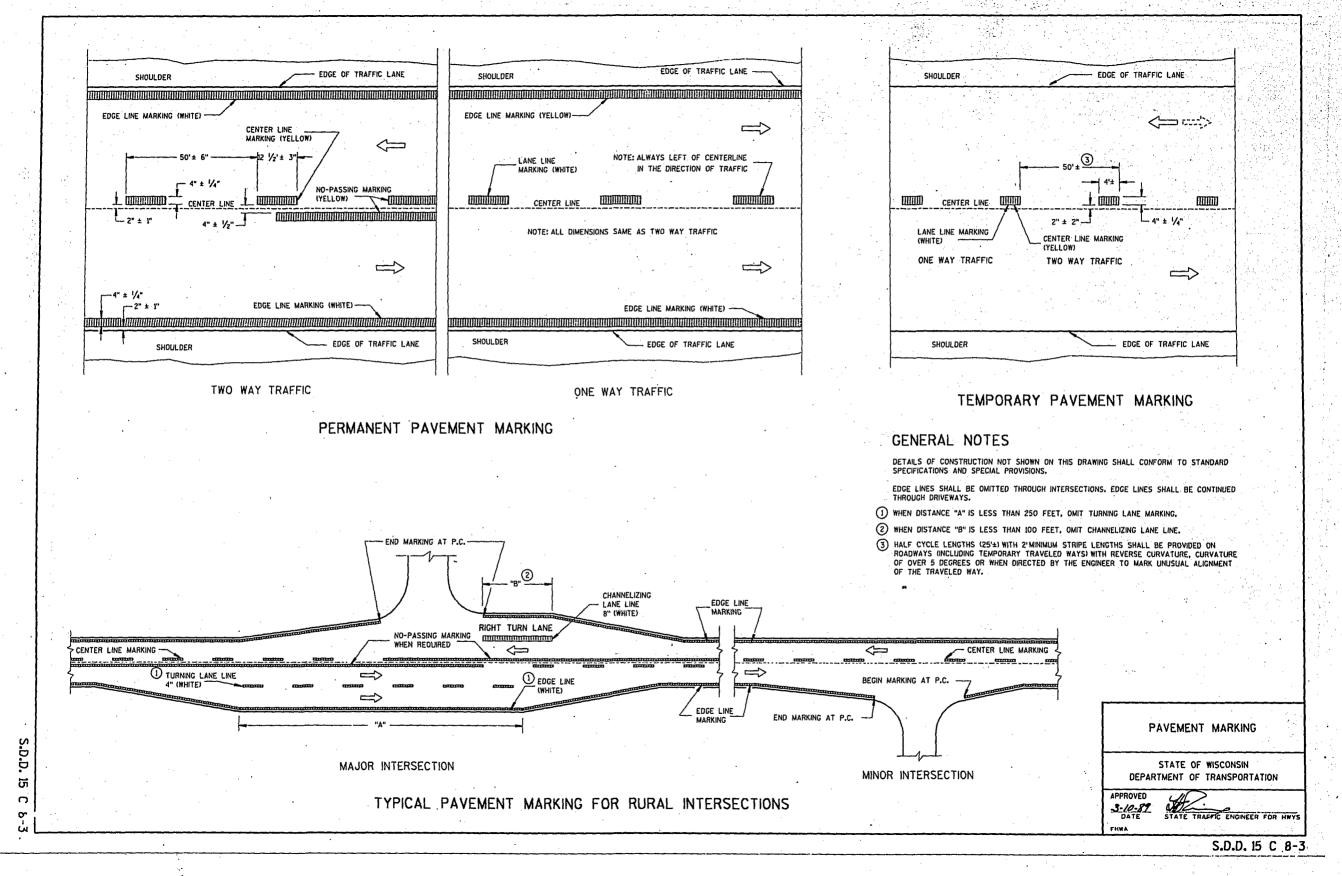
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

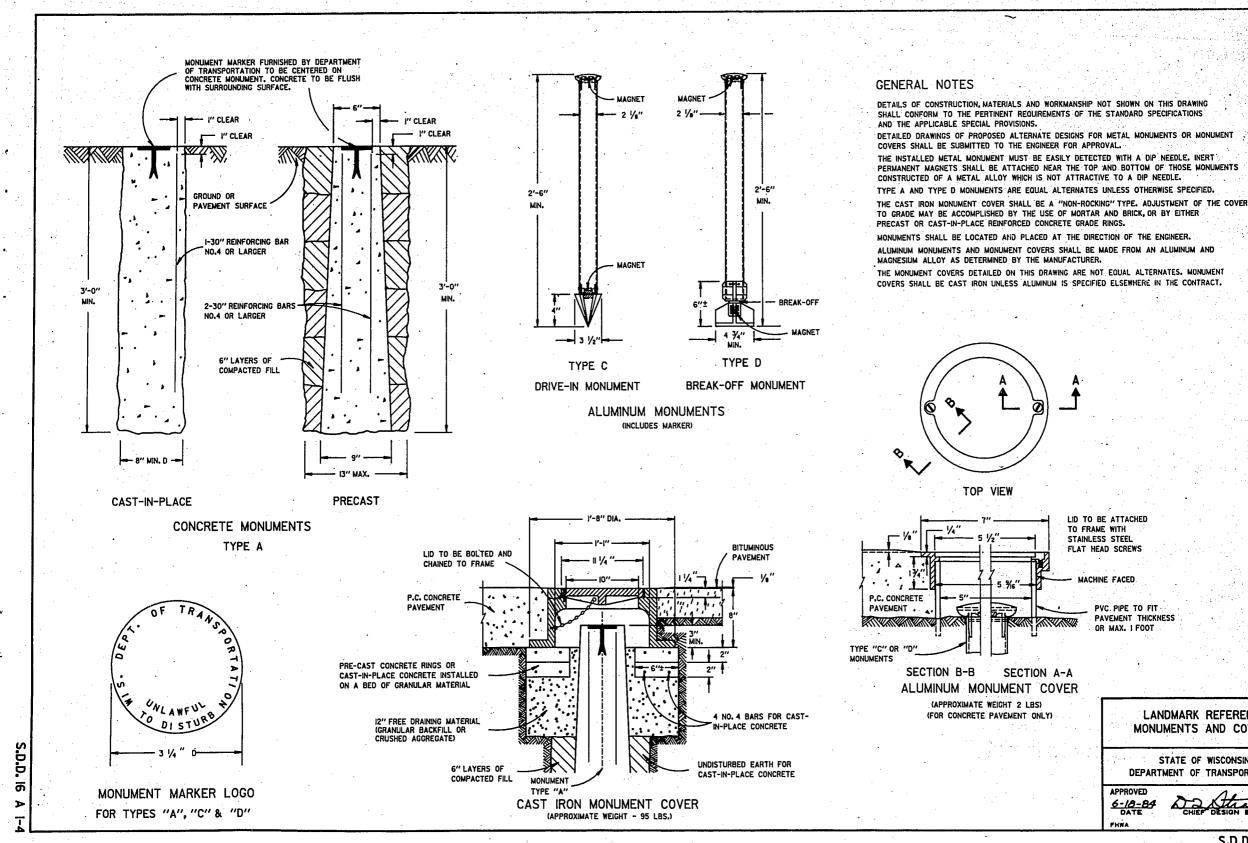
APPROVED

10-31-57

DATE

STATE TRAFFIC ENGINEER FOR HWYS





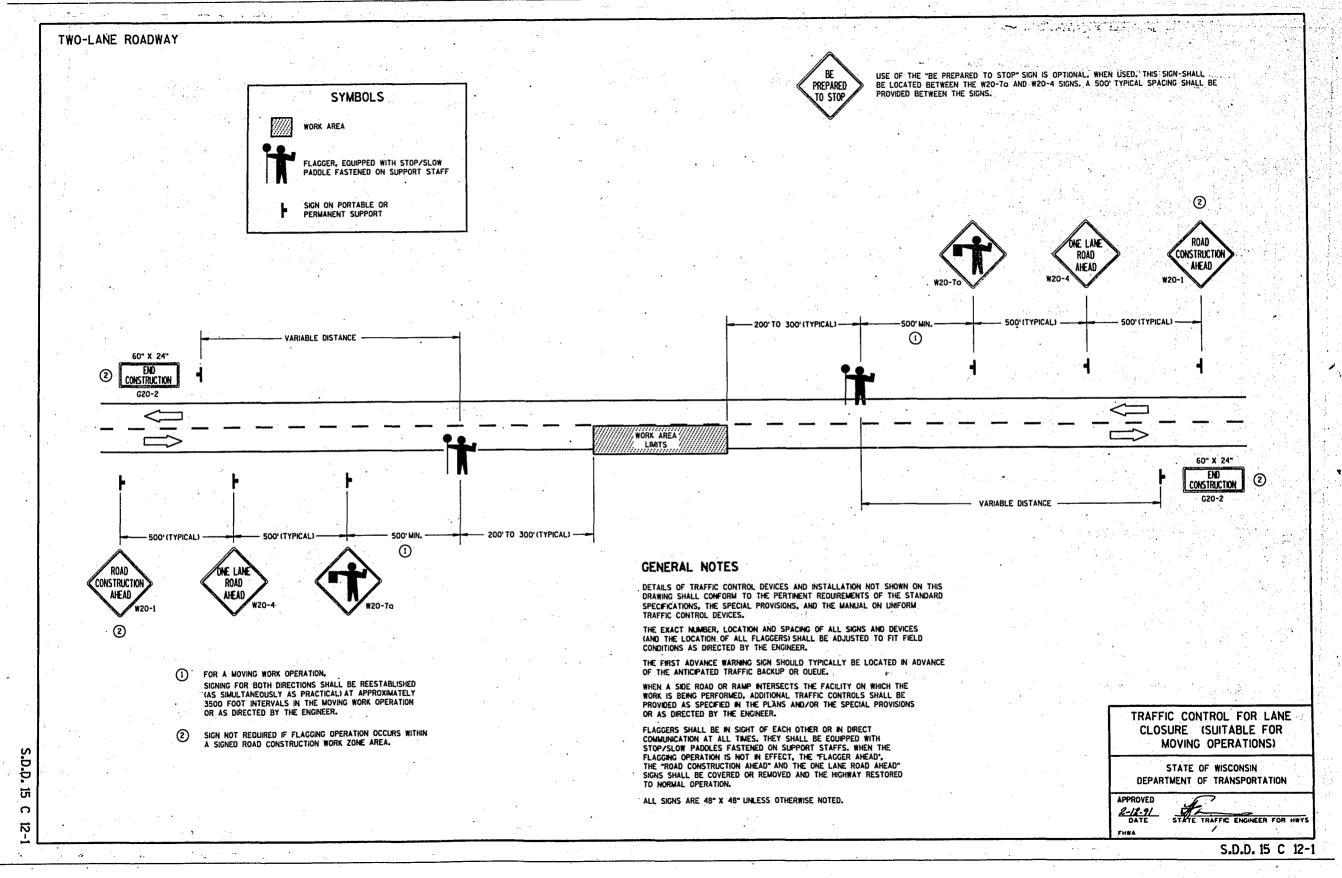
S.D.D. 16 A 1-4

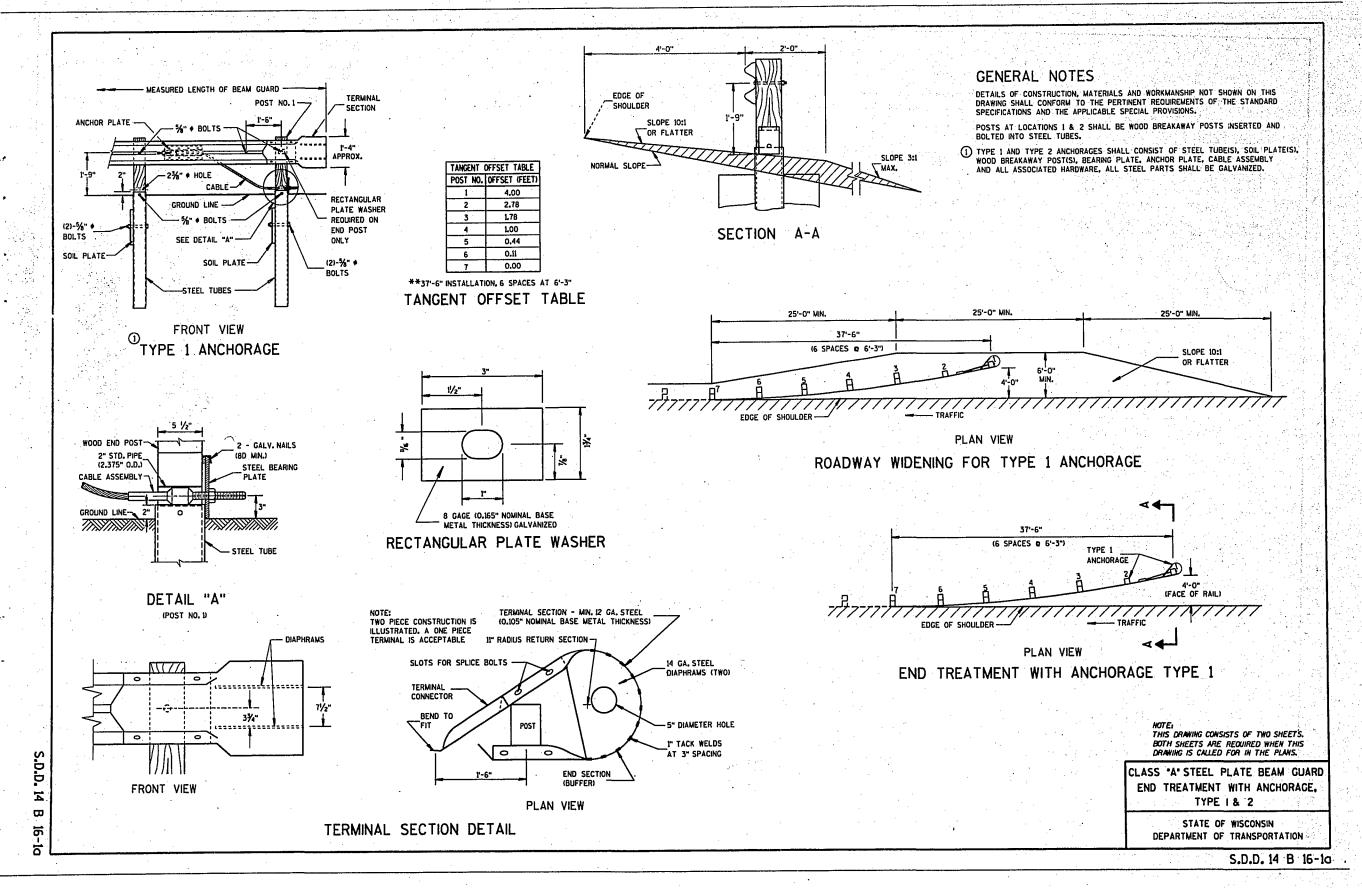
LANDMARK REFERENCE

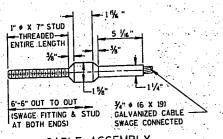
MONUMENTS AND COVERS

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION



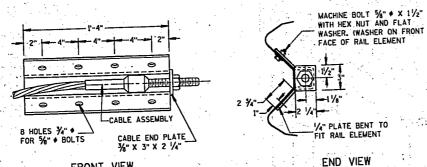




CABLE ASSEMBLY

CABLE. SWAGE FITTING, STUD AND NUT SHALL DEVELOP A MINIMUM BREAKING STRENGTH OF 40,000 LB

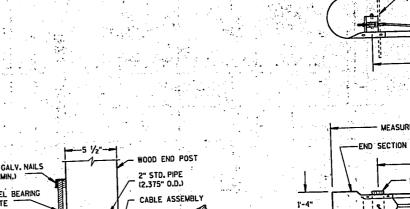
¾" ♦ HOLES



ANCHOR PLATE DETAIL

%" X 1" X 8" PLATE TACK WELDED TO %" PLATE

%" STEEL PLATE



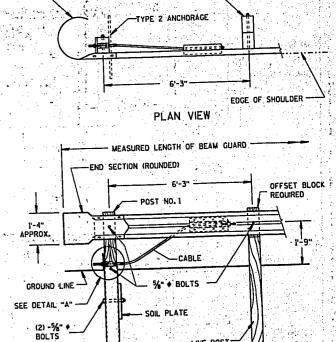
2 - GALY. NAILS (SD MIN.) STEEL BEARING PLATE - GROUND LINE 3". **XX XXXX** STEEL TUBE DETAIL "A'



STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-500 GRADE B OR ASTM A-50L

- FND SECTION ROUNDED

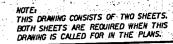
POST AND OFFSET BLOCK



FRONT VIEW TYPE 2 ANCHORAGE

_ STEEL TUBE

END TREATMENT WITH ANCHORAGE TYPE 2 (USE ON ONE-WAY ROADWAYS ONLY - DEPARTING END)

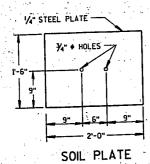


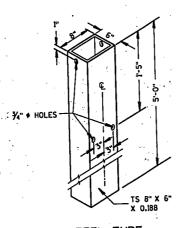
CLASS "A" STEEL PLATE BEAM GUARD END TREATMENT WITH ANCHORAGE. TYPE 1 & 2

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED STATE WESIGN ENGINEER FOR HWYS

S.D.D. 14 B 16-1b





STEEL BEARING PLATE

2" STANDARD PIPE IN NO. 1

POST ONLY.

23/8" + HOLE

STEEL TUBE THE STEEL TUBE SHALL CONFORM TO REQUIREMENTS OF ASTM A501



ANCHORAGE COMPONENTS (COMMON TO BOTH TYPE 1 & 2 ANCHORAGES)