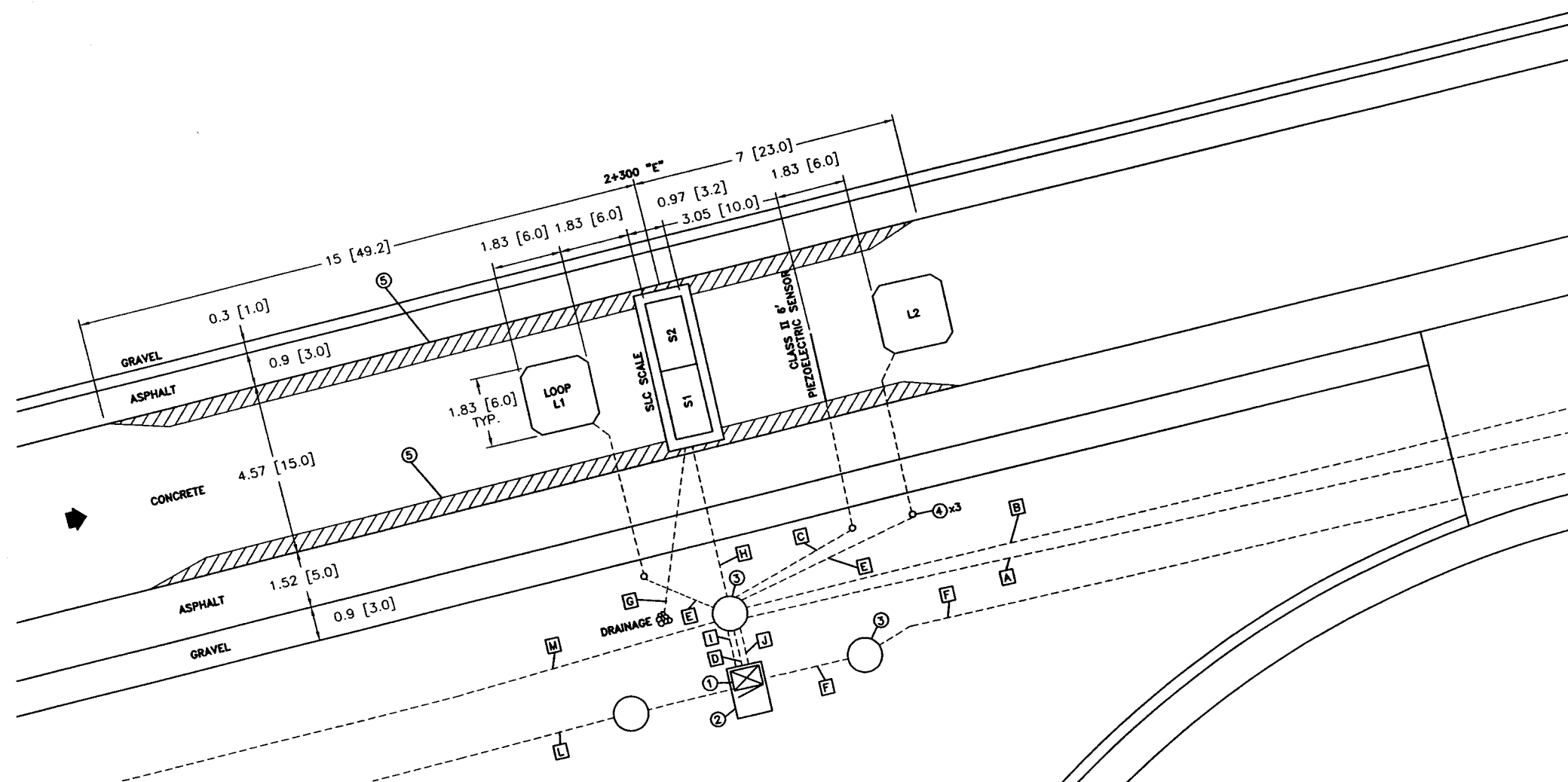




# **CONDUIT DETAILS: (THIS SHEET ONLY)**

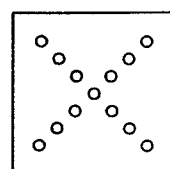
- [A] 50mm [2"] CONDUIT  
1-8 STRAND F/O CABLE (WIM COMMUNICATION)
- [B] 50mm [2"] CONDUIT  
3-1PR 14AWG (LOOP LEAD)
- [C] 25mm [1"] CONDUIT  
1- RG58 (PIEZO LEAD)
- [D] 75mm [3"] CONDUIT  
2-3PR 22AWG (SLC LEAD)  
4-2C 18AWG (OFF-SCALE LEAD)  
1- RG58 (PIEZO LEAD)
- [E] 25mm [1"] CONDUIT  
1-1C 14AWG (LOOP WIRE)
- [F] 75mm [3"] CONDUIT  
1- WIM CABINET POWER  
2-3C+GND (LCS)
- [G] 38mm [1 1/2"] ABS CONDUIT (DRAINAGE)
- [H] 50mm [2"] CONDUIT  
2-3PR 22AWG (SLC LEAD)  
4-2C 18AWG (OFF-SCALE LEAD)
- [I] 75mm [3"] CONDUIT  
5-1PR 14AWG (LOOP LEAD)
- [J] 75mm [3"] CONDUIT  
1-8 STRAND F/O CABLE (WIM COMMUNICATION)
- [L] 50mm [2"] CONDUIT  
SPARE
- [M] 50mm [2"] CONDUIT  
1-3C+GND (OPEN/CLOSED SIGN POWER)

## **NOTES: (THIS SHEET ONLY)**

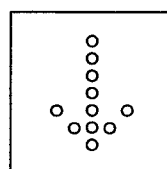
- ① CABINET WITH WIM ELECTRONICS.
- ② CABINET BASE.
- ③ PULL BOX. (450mm x 600mm)
- ④ DRILL THROUGH SHOULDER FOR CONDUIT.
- ⑤ STRIPING.

**DETAIL A**

**LANE CONTROL  
SIGNAL1 DETAIL**

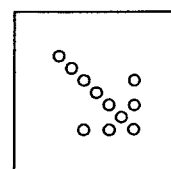


RED X

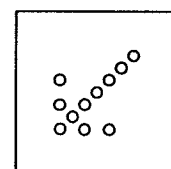


GREEN ARROW

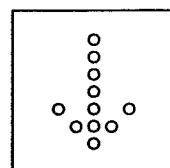
**LANE CONTROL  
SIGNAL2 DETAIL**



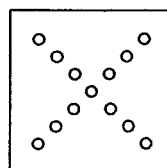
GREEN ARROW



GREEN ARROW



GREEN ARROW



RED X

**STATIC SCALE  
SCOREBOARD**

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  |  |
|  |  |  |  |  |  |
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DISPLAY 1

DISPLAY 2

DISPLAY 3

DISPLAY 4

**WEIGH STATION MESSAGE SIGN**

TURN INTO LOT

MESSAGE 1

OK GO AHEAD

MESSAGE 2

**WEIGH STATION VARIABLE MESSAGE SIGN (VMS)**

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

20F3

25-15-02

STATE PROJECT NUMBER  
1032-08-70

SHEET NO.  
461

GENERAL NOTES

WIND VELOCITY=137 km/h  
ALL DIMENSIONS, THICKNESSES, & WELD  
SIZES IN MILLIMETERS.

DRAWINGS SHALL NOT BE SCALED.

EXACT LOCATION OF SIGN BRIDGE SHALL BE  
DETERMINED BY THE DISTRICT TRAFFIC ENGINEER.

HANDHOLES ARE REQUIRED ON ALL TOWER  
COLUMNS FORWARD AGAINST DIRECTION OF TRAFFIC.

ALTERNATE DESIGNS ARE NOT ALLOWED.

○ INDICATES SIGN NUMBER.

LIST OF DRAWINGS

1. GENERAL PLAN
2. GALVANIZED STEEL CANTILEVER SIGN TRUSS
3. CANTILEVER TRUSS FOOTING
4. 4-CHORD GALVANIZED STEEL SIGN BRIDGE
5. SIGN BRIDGE DETAILS
6. 4-CHORD SIGN BRIDGE DETAILS
7. HANDHOLE DETAILS
8. SIGN BRIDGE CATWALK
9. SIGN BRIDGE FOOTING TYPE 'FI-MOD'
10. SIGN BRIDGE FOOTING TYPE 'A-MOD'

SIGN BRIDGE NOTES

- \* 2438± FROM FACE/SHOULDER TO CENTER OF  
TOWER COLUMNS. ADJUST TO ALIGN SIGNS.
- \* 2682± FROM FACE/SHOULDER TO CENTER OF  
TOWER COLUMNS. ADJUST TO ALIGN SIGNS.

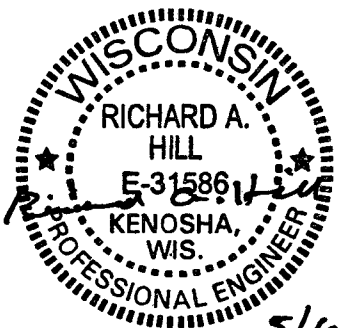
DESIGN DATA

OVERHEAD TRUSS:

DESIGN SIGN AREA = 49.0 m<sup>2</sup>  
+ 10.5 m<sup>2</sup> MEDIAN SIGN  
(ACTUAL SIGN AREA = 27.5 m<sup>2</sup>  
+ 10.5 m<sup>2</sup> MEDIAN SIGN)  
PLUS CATWALK & LIGHTING  
MAXIMUM SIGN DEPTH = 3.658 m

CANTILEVER TRUSSES:

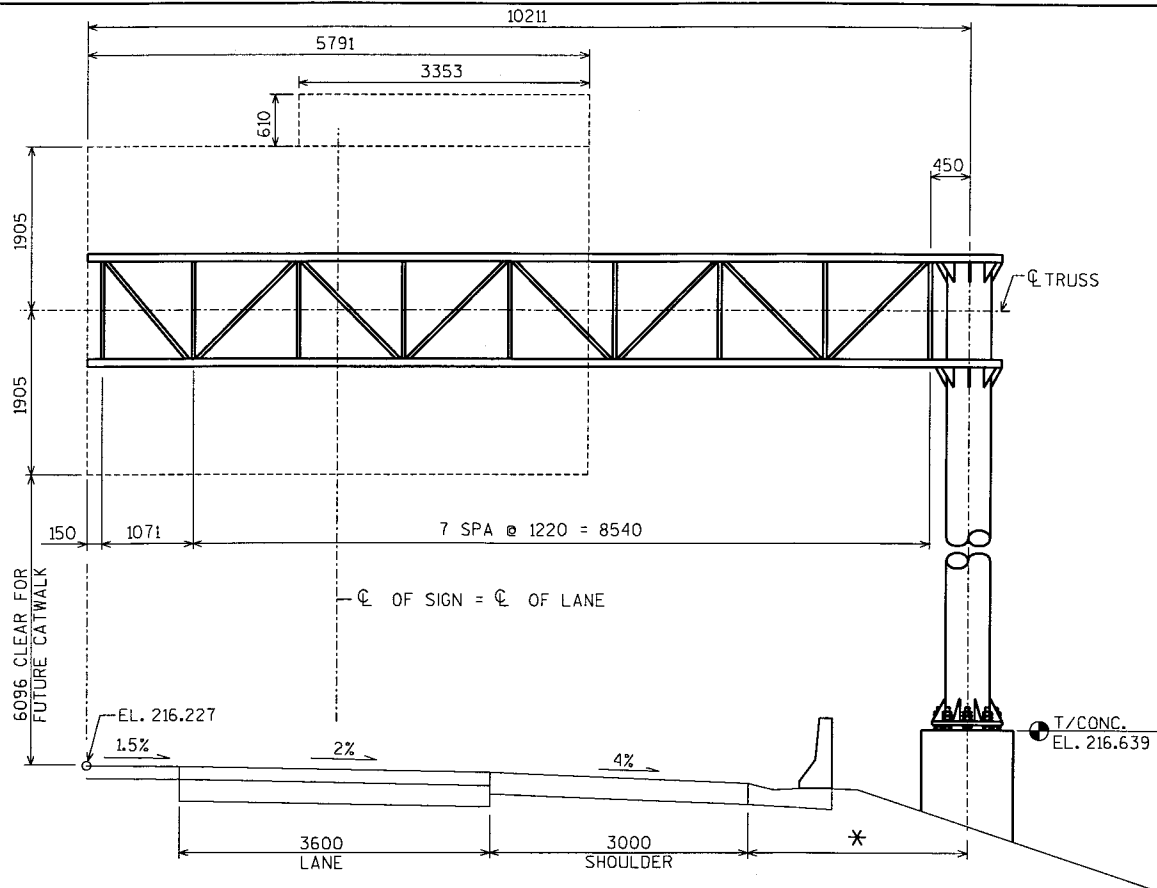
S-30-14  
ACTUAL SIGN AREA = 24.1 m<sup>2</sup>  
MAXIMUM SIGN DEPTH = 3.810 m  
S-30-15  
ACTUAL SIGN AREA = 22.5 m<sup>2</sup>  
MAXIMUM SIGN DEPTH = 3.658 m



BRIDGE OFFICE CONTACT :  
G. ANDERSON (608) 266-8488

|                                                                                 |      |                                  |  |                   |  |              |  |
|---------------------------------------------------------------------------------|------|----------------------------------|--|-------------------|--|--------------|--|
|                                                                                 |      |                                  |  |                   |  |              |  |
| NO.                                                                             | DATE | REVISION                         |  |                   |  | BY           |  |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                                  |  |                   |  |              |  |
| STRUCTURE S-30-13 THRU S-30-15                                                  |      |                                  |  |                   |  |              |  |
| E - W FREEWAY, IH - 94                                                          |      |                                  |  |                   |  |              |  |
| COUNTY                                                                          |      | KENOSHA                          |  | TOWN/CITY/VILLAGE |  | KENOSHA      |  |
| DESIGN SPEC.                                                                    |      | AASHTO 1998                      |  | LOAD              |  | CONST. SPEC. |  |
|                                                                                 |      |                                  |  | 137 km/h          |  | 1996         |  |
| DESIGNED BY                                                                     |      | JWC                              |  | DESIGN CK'D.      |  | SWS          |  |
|                                                                                 |      |                                  |  | DRAWN BY          |  | BLM          |  |
|                                                                                 |      |                                  |  | PLANS CK'D.       |  | JWC          |  |
| APPROVED                                                                        |      | G. Anderson                      |  |                   |  | 05-07-02     |  |
|                                                                                 |      | CHIEF STRUCTURAL DESIGN ENGINEER |  |                   |  | DATE         |  |
| GENERAL PLAN                                                                    |      |                                  |  | SHEET 1 OF 10     |  |              |  |
|                                                                                 |      |                                  |  | DATE:             |  |              |  |

I.D.



S-30-14

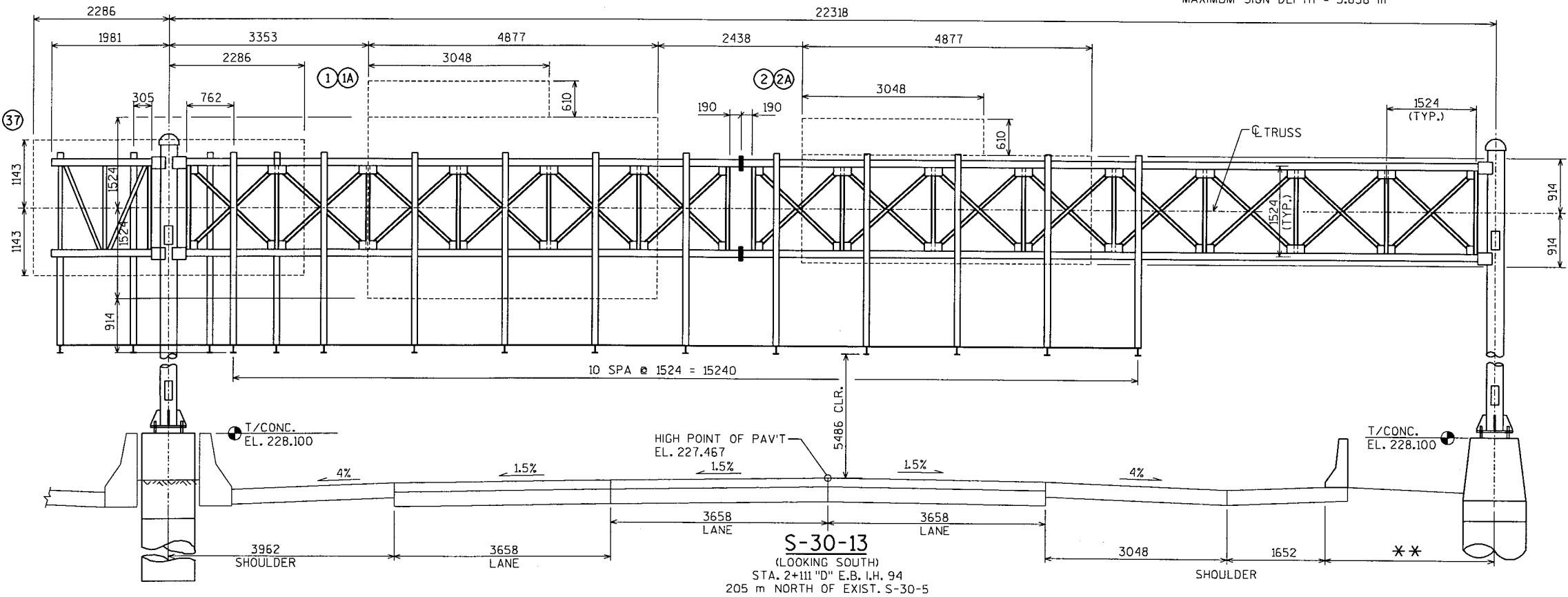
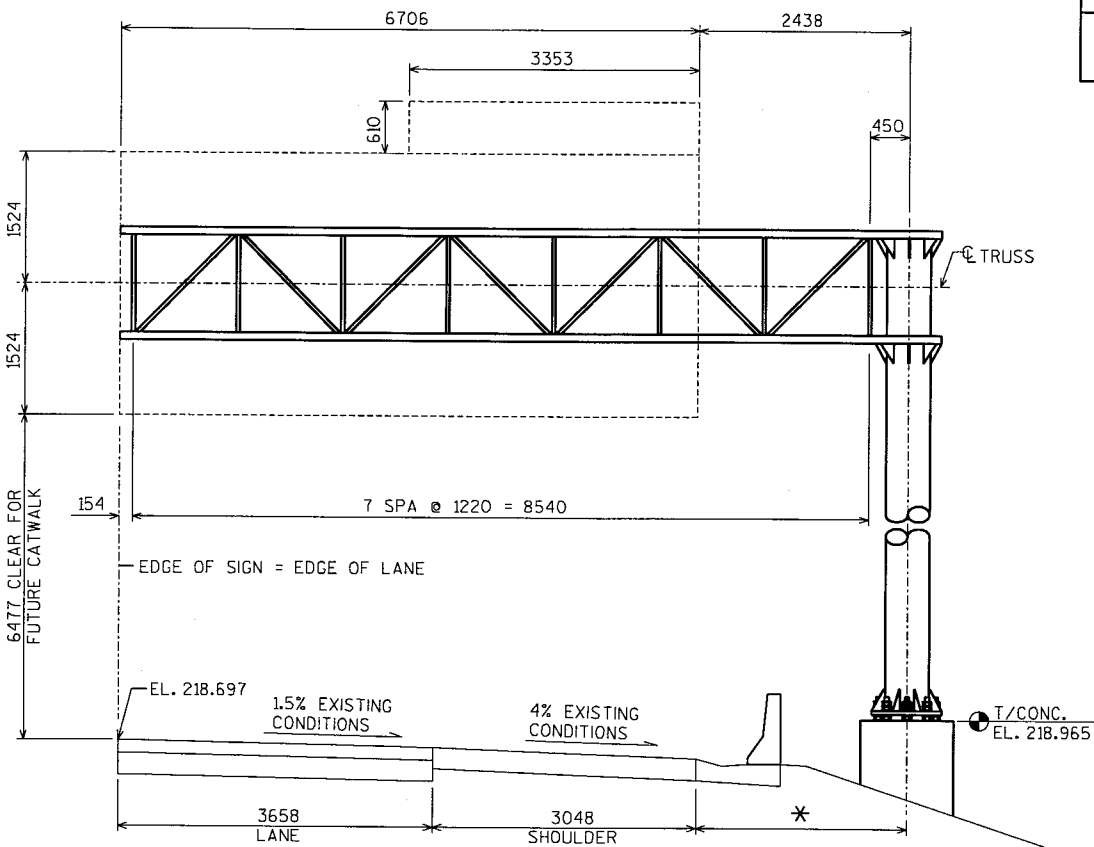
(LOOKING NORTH)  
STA. 4+120 "E"  
W.B. I.H. 94

TOTAL ESTIMATED QUANTITIES

| ITEM NUMBERS | BID ITEMS                                                   | UNIT | S-30-13 | S-30-14 | S-30-15 | TOTAL |
|--------------|-------------------------------------------------------------|------|---------|---------|---------|-------|
| 63601        | CONCRETE MASONRY, SIGN SUPPORTS                             | m3   | 16.5    | 6.1     | 6.1     | 28.7  |
| 63610        | HIGH STRENGTH BAR STEEL REINFORCEMENT, SIGN SUPPORTS        | kg   | 545     | 447     | 447     | 1439  |
| 64112        | SIGN BRIDGE, CANTILEVERED, STRUCTURE S-30-14                | LS   |         | 1       |         | 1     |
| 64113        | SIGN BRIDGE, CANTILEVERED, STRUCTURE S-30-15                | LS   |         |         | 1       | 1     |
| 64166        | SIGN BRIDGE, STRUCTURE S-30-13                              | LS   | 1       |         |         | 1     |
| 90004M       | REMOVING SIGN BRIDGE, STRUCTURE S-30-5                      | LS   | 1       |         |         | 1     |
| 90004W       | REMOVING MEDIAN SINGLE POLE SIGN BRIDGE, STRUCTURE S-30-200 | LS   | 1       |         |         | 1     |

S-30-15

(LOOKING NORTH)  
STA. 4+807.5"E"  
W.B. I.H. 94



S-30-13

(LOOKING SOUTH)  
STA. 2+111 "D" E.B. I.H. 94  
205 m NORTH OF EXIST. S-30-5

FILE = K:\PROJECTS\5116\PLANS\SIGNSTRUCT\5116SGNDT.DGN

SCALE =

SHEET NO.

462

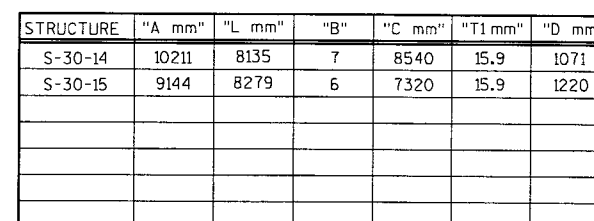
DRAWINGS SHALL NOT BE SCALED.

WIND VELOCITY = 137 km/h

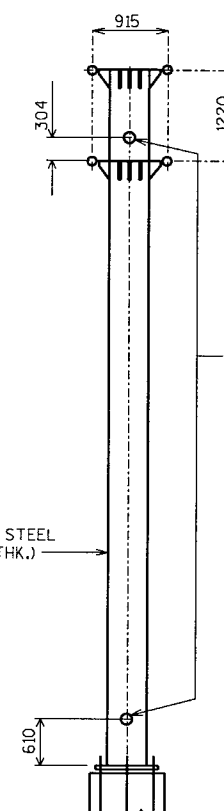
ALL DIMENSIONS, THICKNESSES, & WELD SIZES IN  
MILLIMETERS

CHORDS & COLUMN

(INCLD. HANDHOLE) — API-5L-X42 — fy=289 MPa  
 ALL OTHER PIPE — A53, GRADE B — fy=241 MPa  
 PLATES & BARS — A709M — fy=248 MPa  
 ANCHOR BOLTS — A.A.S.H.T.O. M314 — fy=380 MPa  
 HIGH STRENGTH BOLTS—A325M — fy=635 MPa  
 STRUCTURAL MEMBERS GALVANIZED A123  
 HARDWARE GALVANIZED — A153 CLASS C

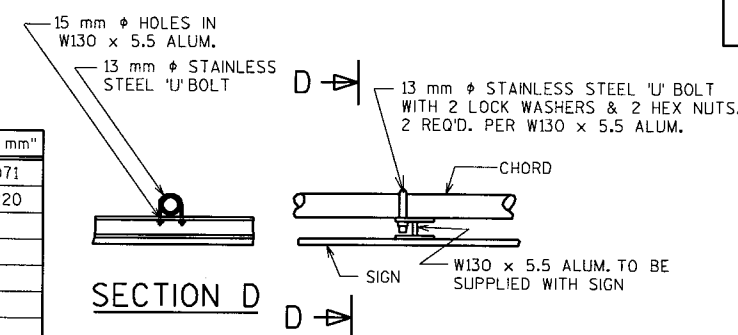


## PLAN



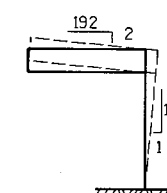
ELEVATION

END VIEW

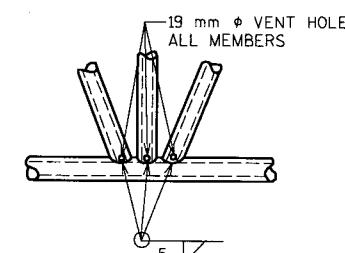


SECTION D

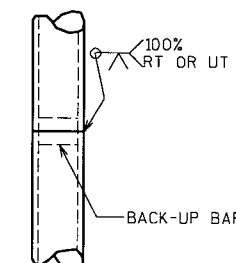
TYPICAL SIGN CONNECTION



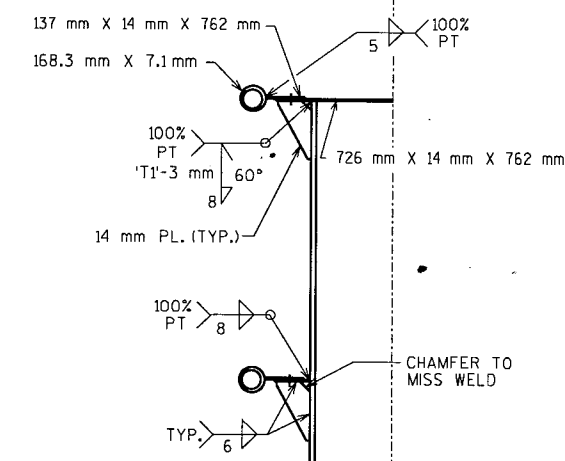
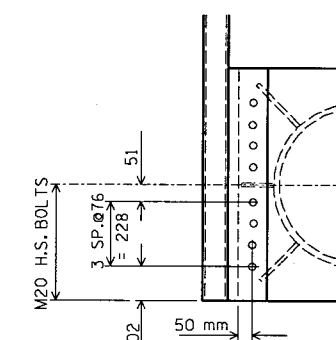
CAMBER DIAGRAM



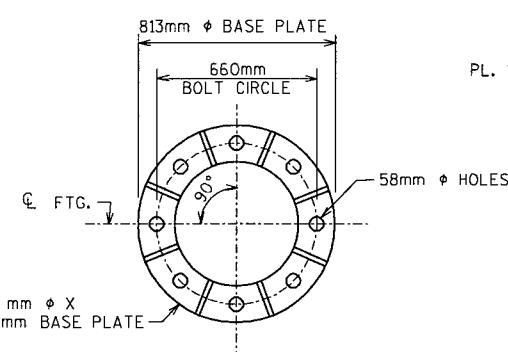
## TRUSS JOINT DETAILS



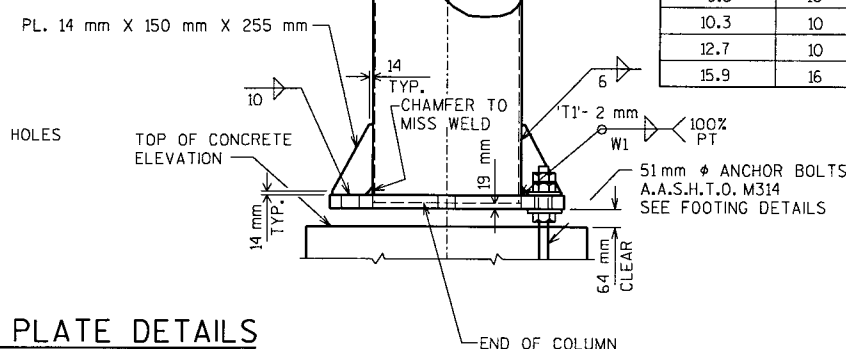
OPTIONAL COLUMN  
OR CHORD SPLICE  
DETAIL



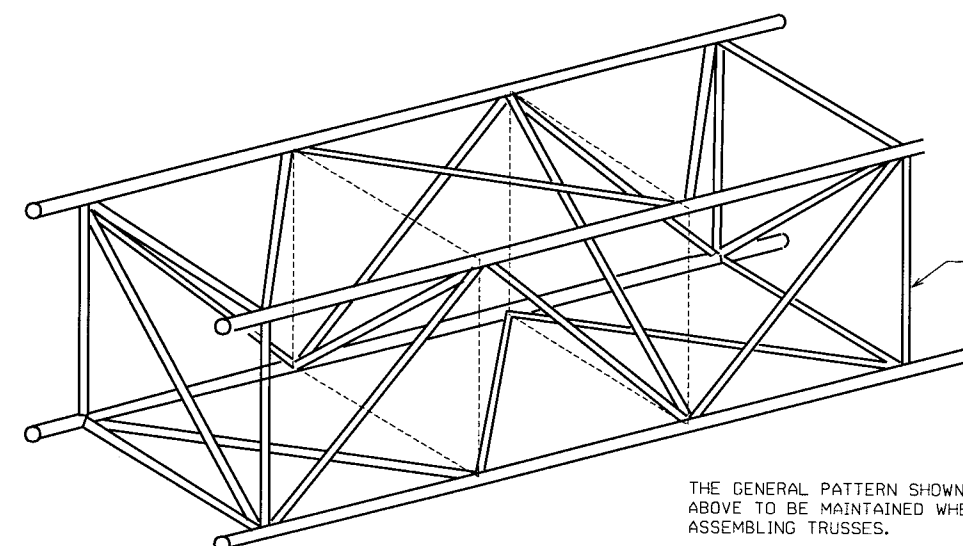
TRUSS TO COLUMN  
CONNECTION DETAILS



## BASE PLATE DETAILS



| WELD SIZE 'W' |     |
|---------------|-----|
| POLE 'T'      | 'W' |
| 7.1           | 6   |
| 7.9           | 6   |
| 8.7           | 8   |
| 9.5           | 10  |
| 10.3          | 10  |
| 12.7          | 10  |
| 15.9          | 16  |



TYPICAL TRUSS SECTION

THE GENERAL PATTERN SHOWN  
ABOVE TO BE MAINTAINED WHEN  
ASSEMBLING TRUSSES.

|                                                                                 |      |                 |                   |
|---------------------------------------------------------------------------------|------|-----------------|-------------------|
| NO.                                                                             | DATE | REVISION        | BY                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |                   |
| STRUCTURES S-30-14 THRU S-30-15                                                 |      |                 |                   |
| CONST.<br>SPEC.                                                                 | 1996 | DRAWN BY<br>BLM | PLANS<br>Ckd. JWC |
| GALV'D STL.<br>CANTILEVER SIGN<br>TRIUSS                                        |      |                 | SHEET 2 OF 10     |

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SCALE =

1032-08-70

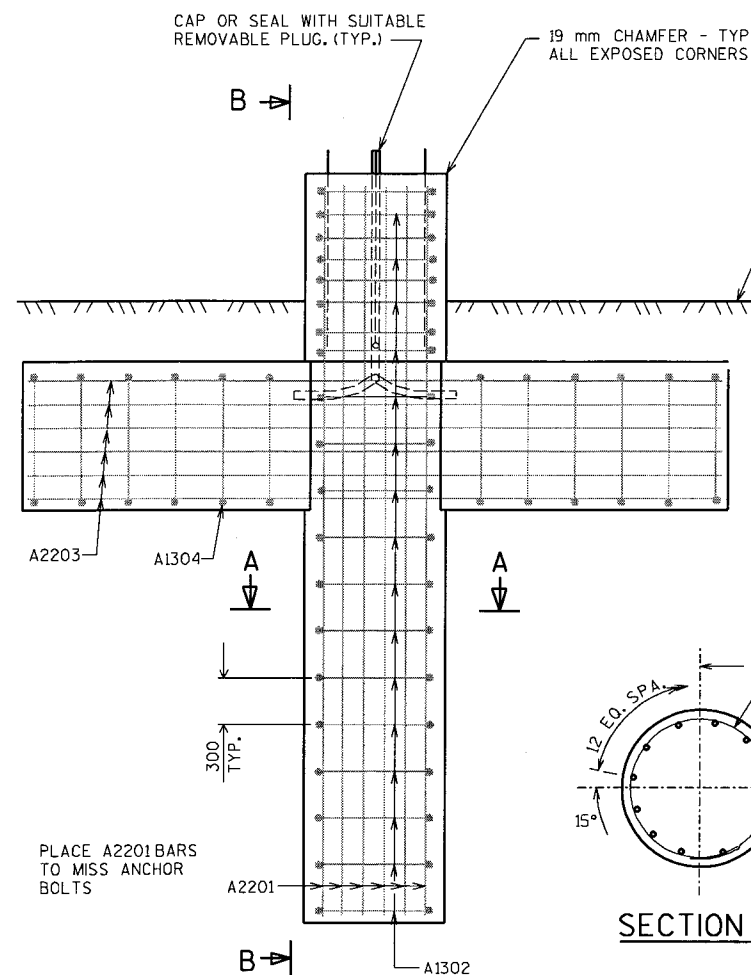
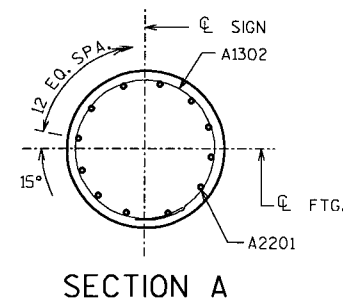
463

NOTE:  
THE FIRST OR FIRST TWO DIGITS OF A  
BAR MARK SIGNIFIES THE BAR SIZE.

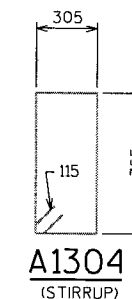
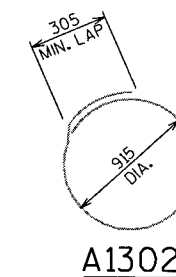
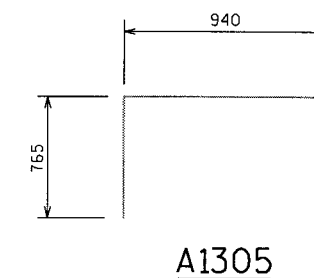
## BILL OF BARS

447 kg

| BAR MARK | COAT | NO. REQ'D | LENGTH | BENT | CUT. DIAG. | BUN-DLE | LOCATION                |
|----------|------|-----------|--------|------|------------|---------|-------------------------|
| A2201    |      | 12        | 4725   |      |            |         | FOOTING - COLUMN/TOP    |
| A1302    |      | 16        | 3200   | X    |            |         | FOOTING - COLUMN/TOP    |
| A2203    |      | 12        | 4570   |      |            |         | FOOTING - WINGS         |
| A1304    |      | 12        | 2370   | X    |            |         | FOOTING - WINGS         |
| A1305    |      | 10        | 2470   | X    |            |         | FOOTING - TOP           |
| A1306    |      | 4         | 1970   |      |            |         | FOOTING - TOP - COLUMNS |
|          |      |           |        |      |            |         |                         |
|          |      |           |        |      |            |         |                         |
|          |      |           |        |      |            |         |                         |
|          |      |           |        |      |            |         |                         |

ELEVATION  
(6.1 m<sup>3</sup>/ftg.)

SECTION B



## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.  
BAR STEEL REINFORCEMENT SHALL  
BE EMBEDDED 75 mm CLEAR UNLESS  
DETAILED OTHERWISE.

## ALLOWABLE DESIGN STRESSES

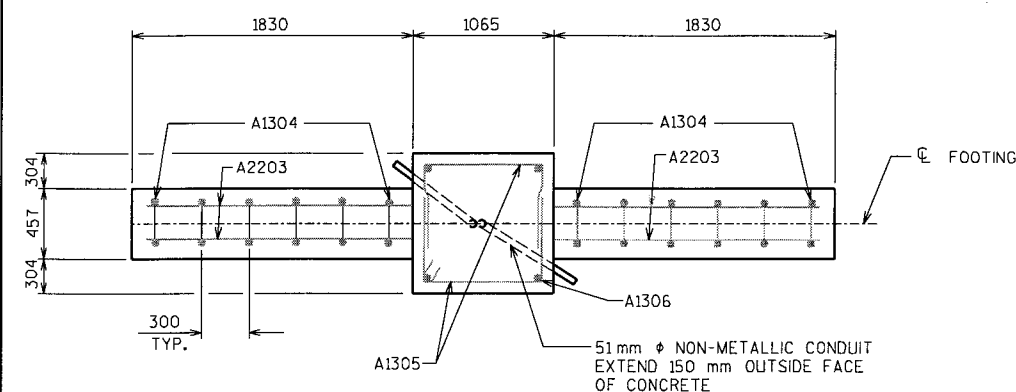
CONCRETE MASONRY  $f'_c=24$  MPa  
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 420  $f_y=420$  MPa  
ANCHOR BOLTS A.A.S.H.T.O. M314  $f_y=380$  MPa

## FOUNDATION DATA

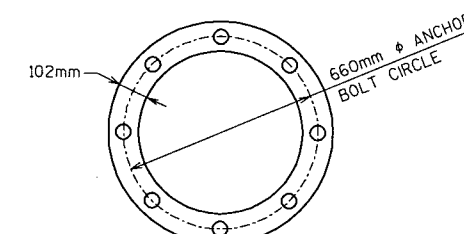
ALLOWABLE SOIL BEARING PRESSURE = 192 kPa

## TOTAL ESTIMATED QUANTITIES (1 FTG.)

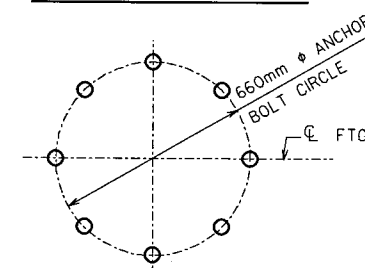
CONCRETE MASONRY, SIGN SUPPORTS 6.1 m<sup>3</sup>  
HIGH STRENGTH BAR STEEL REINFORCEMENT, SIGN SUPPORTS 445 kg



PLAN



TOP VIEW OF TOP &amp; BOTTOM TEMPLATES



TOP ANCHOR BOLT TEMPLATE,  
7mm THICK, REMOVE  
AFTER CONCRETE SET

TOP OF CONCRETE

8-51 mm  $\phi$  X 1420 mm  
ANCHOR BOLTS-  
AASHTO M314

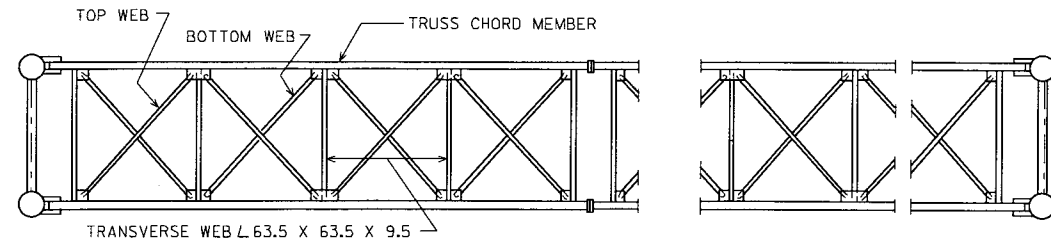
BOTTOM ANCHOR BOLT  
TEMPLATE 14mm THICK

THREAD BOTTOM 140 mm  
OF ANCHOR BOLTS  
FOR NUTS

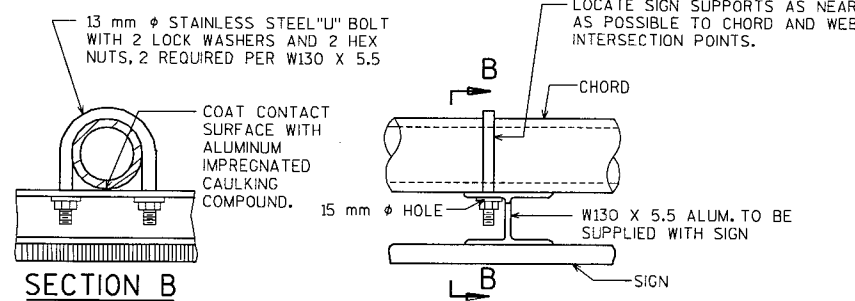
ANCHOR BOLT DETAILS

| NO.                                                                             | DATE | REVISION     | BY             |
|---------------------------------------------------------------------------------|------|--------------|----------------|
|                                                                                 |      |              |                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |              |                |
| STRUCTURES S-30-14 THRU S-30-15                                                 |      |              |                |
| CONST. SPEC.                                                                    | 1996 | DRAWN BY BLM | PLANS CKD. JWC |
| CANTILEVER<br>TRUSS FOOTING                                                     |      |              | SHEET 3 OF 10  |

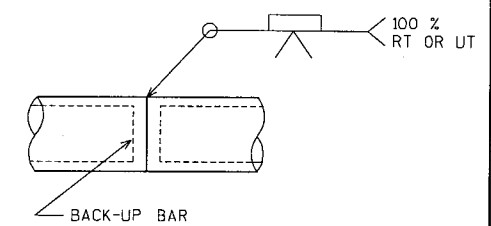
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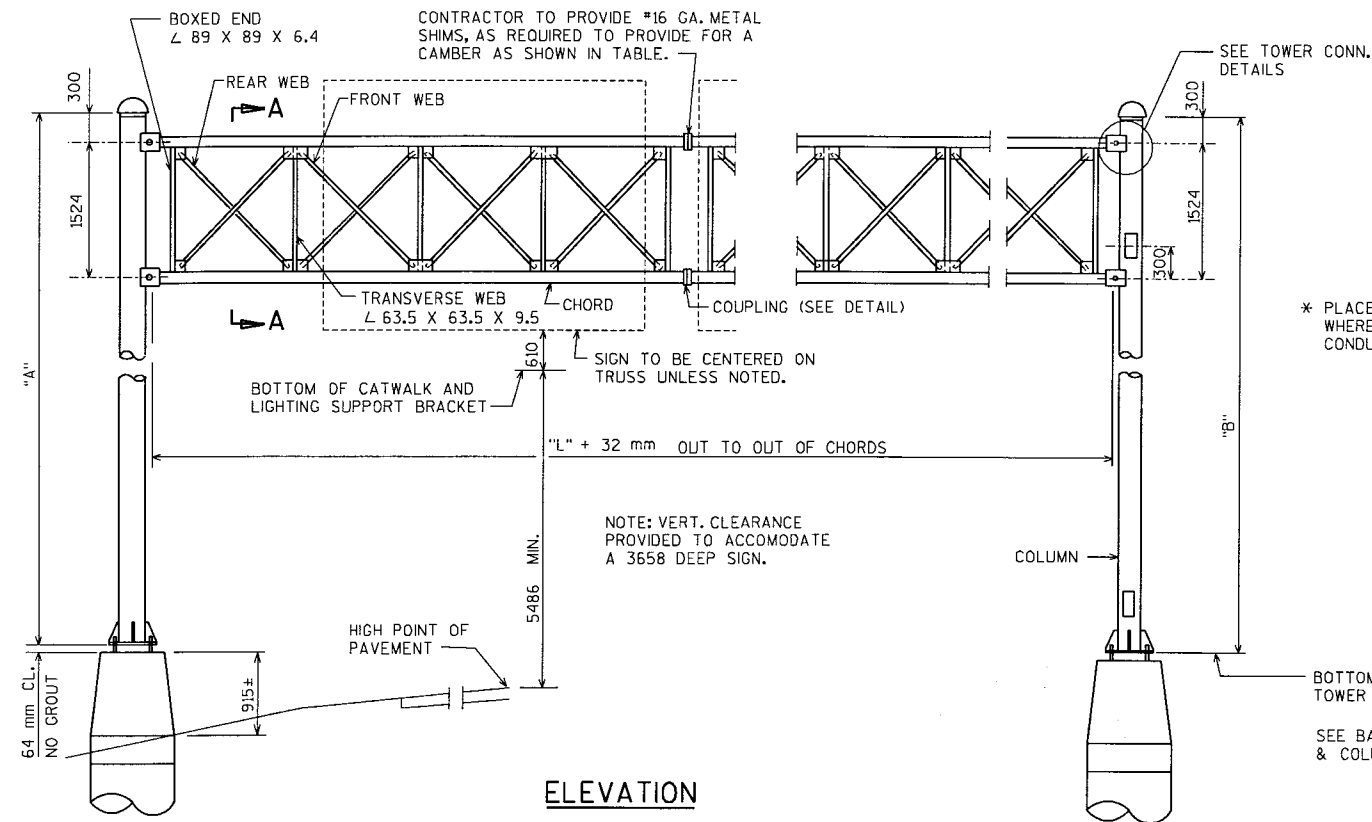
PLAN



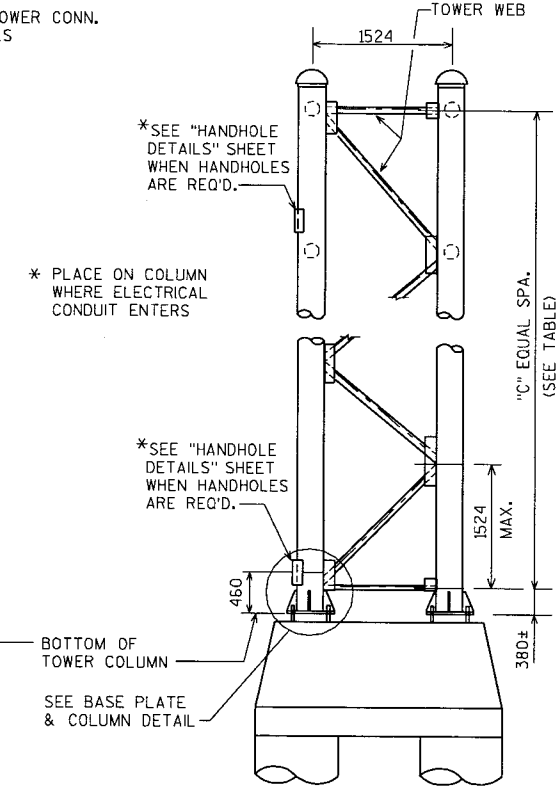
TYPICAL SIGN CONNECTION



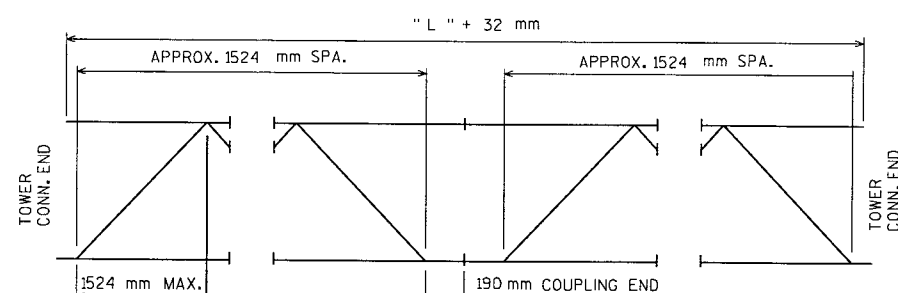
CHORD SPLICE



ELEVATION



END VIEW



TRUSS ARRANGEMENT

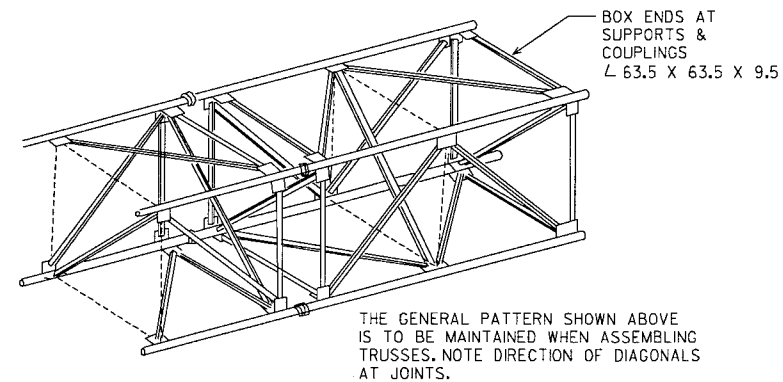
FABRICATOR MAY MAKE TRUSSES ANY LENGTH KEEPING A SECTION A MINIMUM OF 6096 mm & A MULTIPLE OF 1524 mm. CHORD FIELD SPLICES SHALL BE MADE WITH COUPLINGS. CHORD SHOP SPLICE SHALL BE THE WELDED SPLICE SHOWN ABOVE.

NOTES

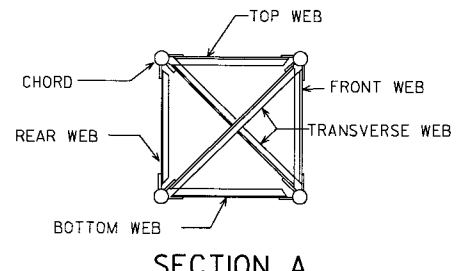
DRAWINGS SHALL NOT BE SCALED.  
 STEEL COLUMN PIPE SHALL BE A.P.I. SPEC. 5L GRADE X42 F<sub>y</sub> = 289 MPa  
 ALL STEEL PIPE MEMBERS OF TRUSS SHALL BE A.P.I. SPEC. 5L GRADE X42 F<sub>y</sub> = 289 MPa  
 PLATES, BARS, STRUCTURAL ANGLES SHALL BE A.S.T.M. A709 GRADE 36 F<sub>y</sub> = 248 MPa  
 ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED.  
 ALL BOLTED CONNECTIONS SHALL BE MADE WITH M20 A325M BOLTS, GALVANIZED A.S.T.M. A153, CLASS C.  
 WELDED CONNECTIONS CAN BE USED IN LIEU OF BOLTED CONNECTIONS, IF UNIT CAN BE GALVANIZED IN ONE PIECE.  
 STEEL ANCHOR BOLTS SHALL BE A.A.S.H.T.O. M314-90 GRADE 380. F<sub>y</sub> = 380 MPa  
 SIGNS OR BLANKS SHALL BE INSTALLED ON TRUSS AT TIME OF ERECTION.  
 BLANKS SHALL BE 1/4 THE LENGTH OF THE BRIDGE, 610 mm DEEPER THAN C TO C OF CHORDS & SHALL BE CENTERED ON THE BRIDGE. SIGNS SHALL BE AS DESIGNATED IN PLANS.  
 THE UPPER 300 mm OF ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE A.A.S.H.T.O. SPECIFICATION AS STATED IN SECTION 641. OF THE WIS. D.O.T. STANDARD SPECIFICATIONS.  
 WELD TEST AS PER AWS D11.

DESIGN DATA

|                                                                              |                       |            |
|------------------------------------------------------------------------------|-----------------------|------------|
| DEAD LOAD - WT. OF SIGN, SUPPORTING STRUCTURE, CATWALK, LIGHTS AND RAILINGS. |                       |            |
| LIVE LOAD - SINGLE LINE LOAD OF 2.3 kN DISTRIBUTED OVER 610 mm OF CATWALK.   |                       |            |
| ICE LOAD - 144 Pa TO 1 FACE OF SIGN & AROUND SURFACE OF MEMBERS.             |                       |            |
| WIND PRESSURE - 137 km/h TO SIGN AREA & EXPOSED MEMBERS.                     |                       |            |
| WIND COMPONENTS                                                              | NORMAL                | TRANSVERSE |
| COMBINATION 1                                                                | 1.0                   | 0.2        |
| COMBINATION 2                                                                | 0.6                   | 0.3        |
| group loads                                                                  | % OF ALLOWABLE STRESS |            |
| 1. DEAD                                                                      | 100                   |            |
| 2. DEAD + WIND                                                               | 140                   |            |
| 3. DEAD + ICE + 1.2 kPa WIND                                                 | 140                   |            |



TYPICAL TRUSS SECTION

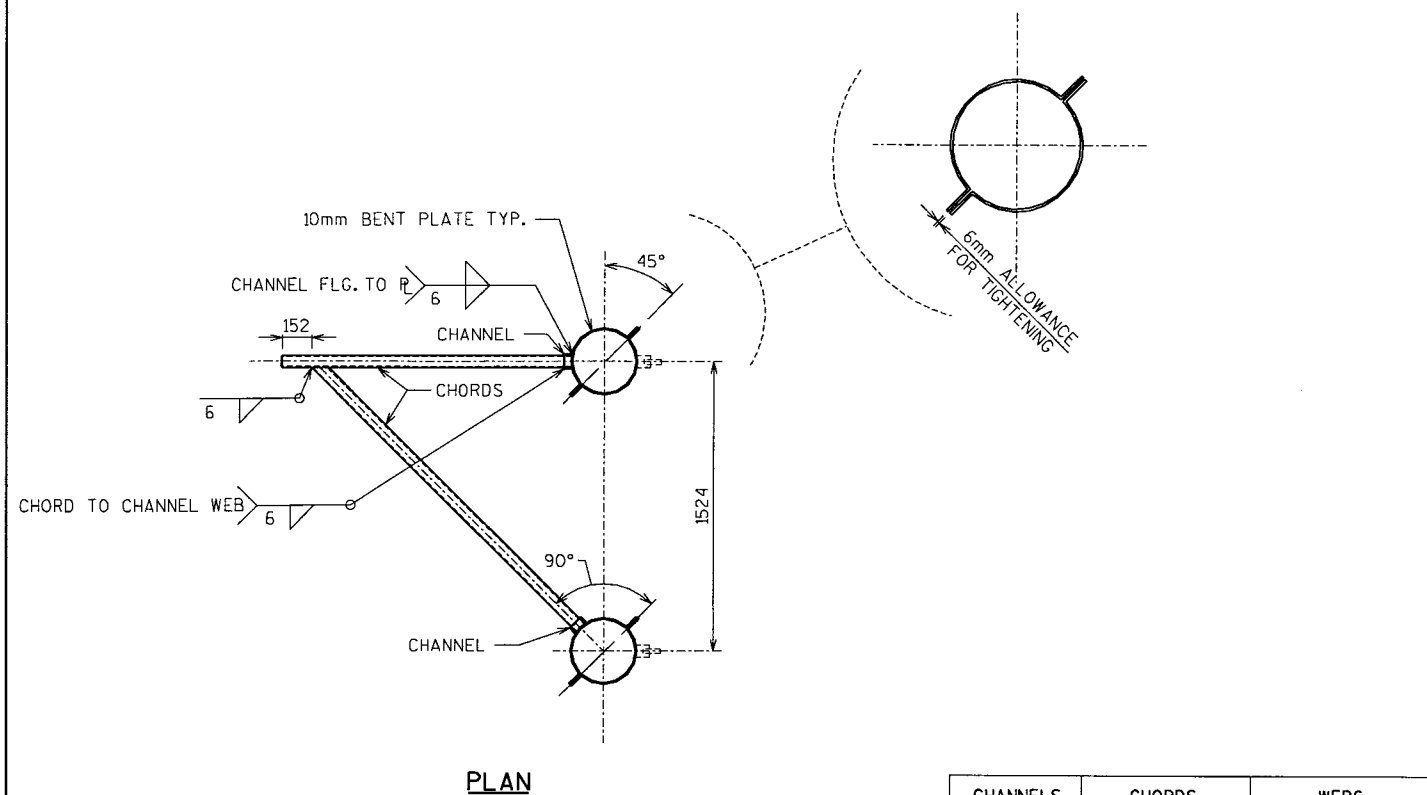


SECTION A

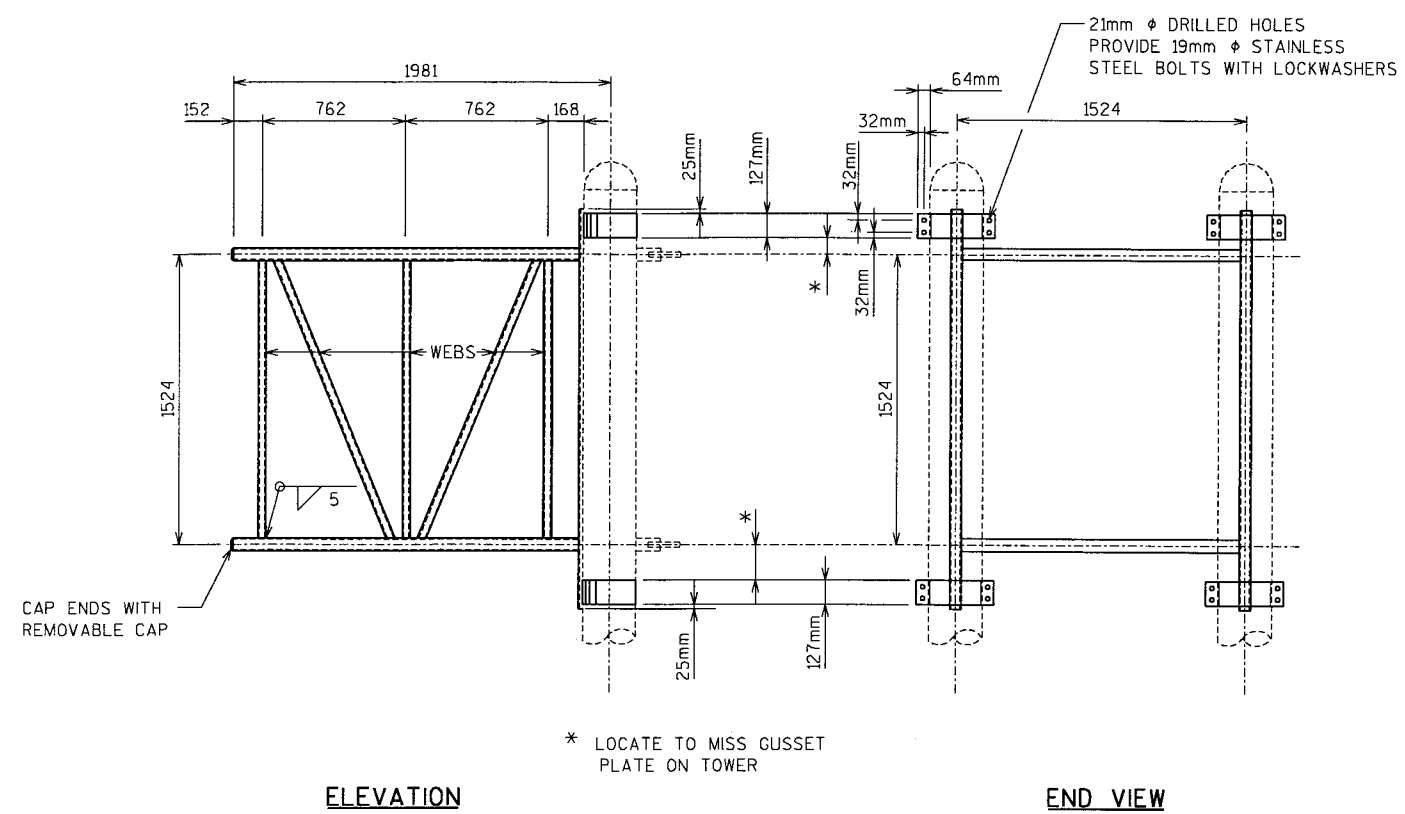
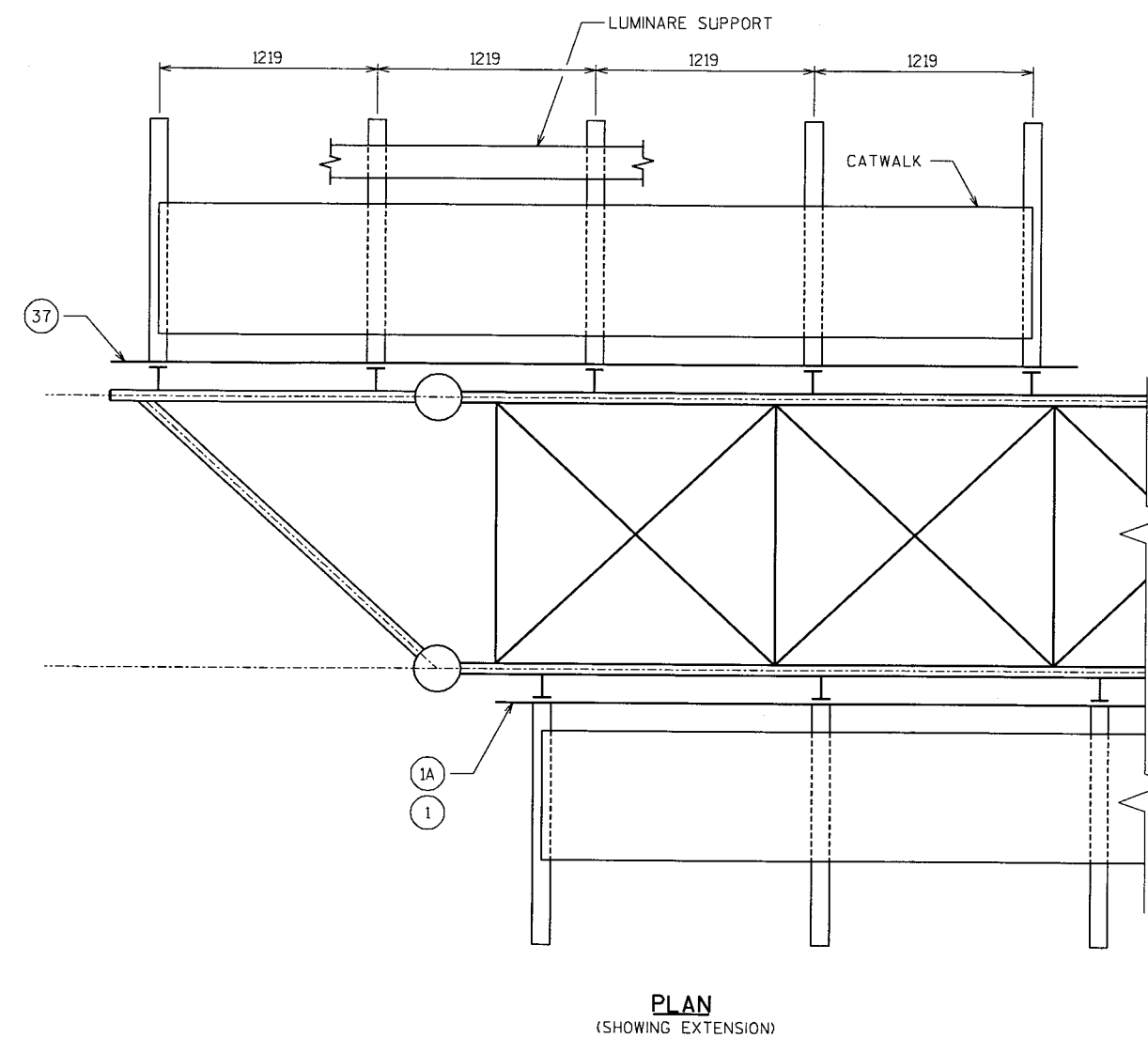
TABLE

| STRUCTURE | A    | B    | C | CHORDS<br>O.D. X THK. | TOP & BOTTOM<br>WEB | FRONT &<br>REAR WEB | COUPLING<br>PLATE<br>"D1" & "T" | BOLT<br>CIRCLE<br>DIA. "D2" | NO. OF<br>BOLTS IN<br>COUPLING | CAMBER | COLUMN<br>O.D. X THK. | TOWER WEB       | "L"   |
|-----------|------|------|---|-----------------------|---------------------|---------------------|---------------------------------|-----------------------------|--------------------------------|--------|-----------------------|-----------------|-------|
| S-30-13   | 8290 | 8290 | 5 | 141 X 6.6             | L 63.5 X 63.5 X 9.5 | L 63.5 X 63.5 X 9.5 | 285 X 32                        | 210                         | 8                              | 32 mm  | 273 X 9.3             | L 76 X 76 X 9.5 | 21937 |
|           |      |      |   |                       |                     |                     |                                 |                             |                                |        |                       |                 |       |
|           |      |      |   |                       |                     |                     |                                 |                             |                                |        |                       |                 |       |

|                                                                                 |      |                 |                   |
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| NO.                                                                             | DATE | REVISION        | BY                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |                   |
| STRUCTURE S-30-13                                                               |      |                 |                   |
| CONST.<br>SPEC.                                                                 | 1996 | DRAWN<br>BY BLM | PLANS<br>CKD. JWC |
| 4-CHORD GALV'D<br>STL. SIGN BRIDGE                                              |      |                 | SHEET 4 OF 10     |



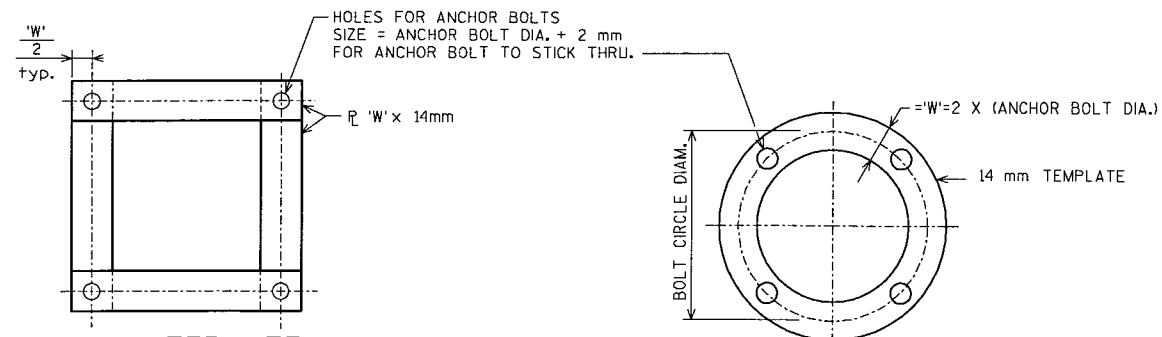
| CHANNELS    | CHORDS<br>O.D. X THK. | WEBS<br>O.D. X THK. |
|-------------|-----------------------|---------------------|
| C102 X 2.44 | 73 mm X 5 mm          | 42 mm X 3.5 mm      |



| NO.                                                                             | DATE | REVISION     | BY              |
|---------------------------------------------------------------------------------|------|--------------|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |              |                 |
| STRUCTURE S-30-13                                                               |      |              |                 |
| CONST. SPEC.                                                                    | 1996 | DRAWN BY SET | PLANS CK'D. SWS |
| SIGN BRIDGE DETAILS                                                             |      |              | SHEET 5 OF 10   |

1032-08-70

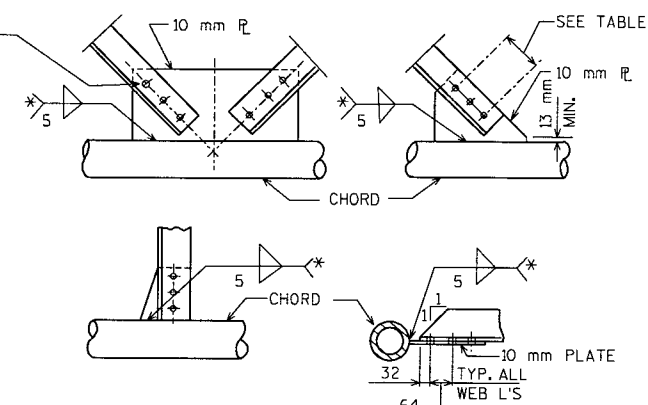
466

ALTERNATE  
ANCHOR PLATE/TEMPLATE PLAN

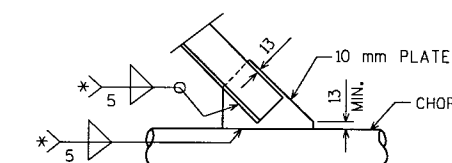
ANCHOR PLATE/TEMPLATE PLAN

CAP FABRICATED FROM STEEL  
PLATES (MIN. THICKNESS 5 mm)  
WILL BE ACCEPTABLE, SUBJECT  
TO APPROVAL BY THE ENGINEER.DRILL AND TAP 2 HOLES  
180° APART FOR 12 mm  $\phi$   
SET SCREWS.

TOWER CAP DETAIL

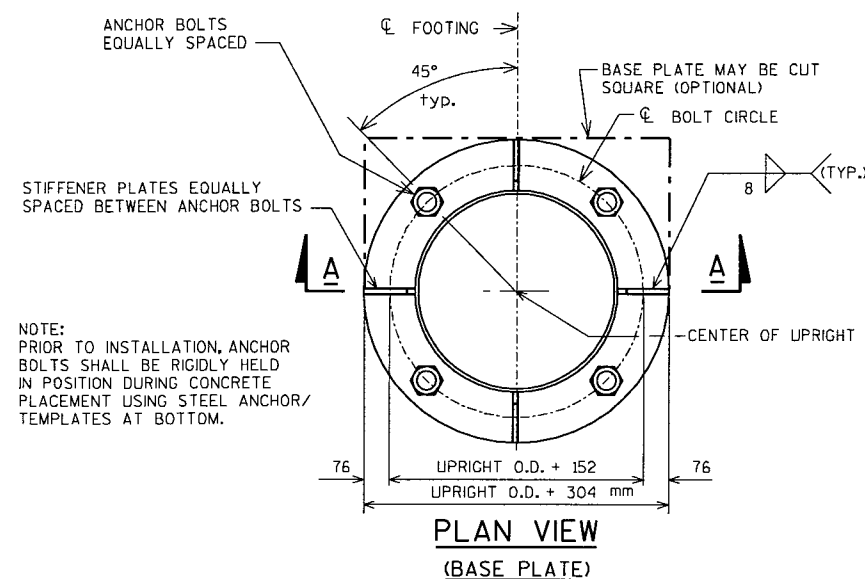
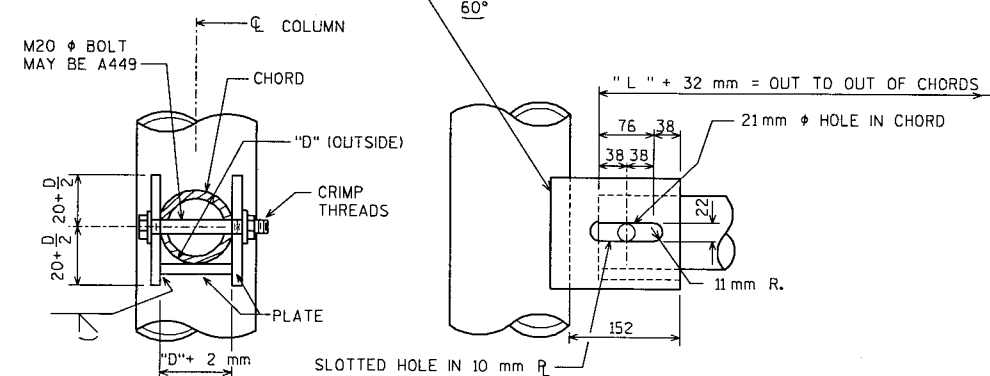
HOLE FOR M20 BOLT  
(A325M STEEL) TYP.

TYPICAL TRUSS CONNECTION DETAILS

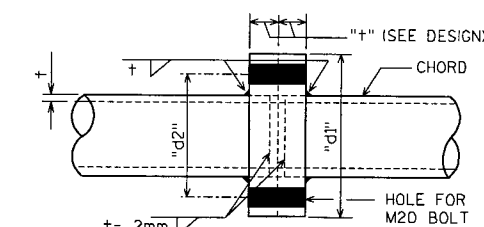


TYPICAL WELDED ALTERNATE

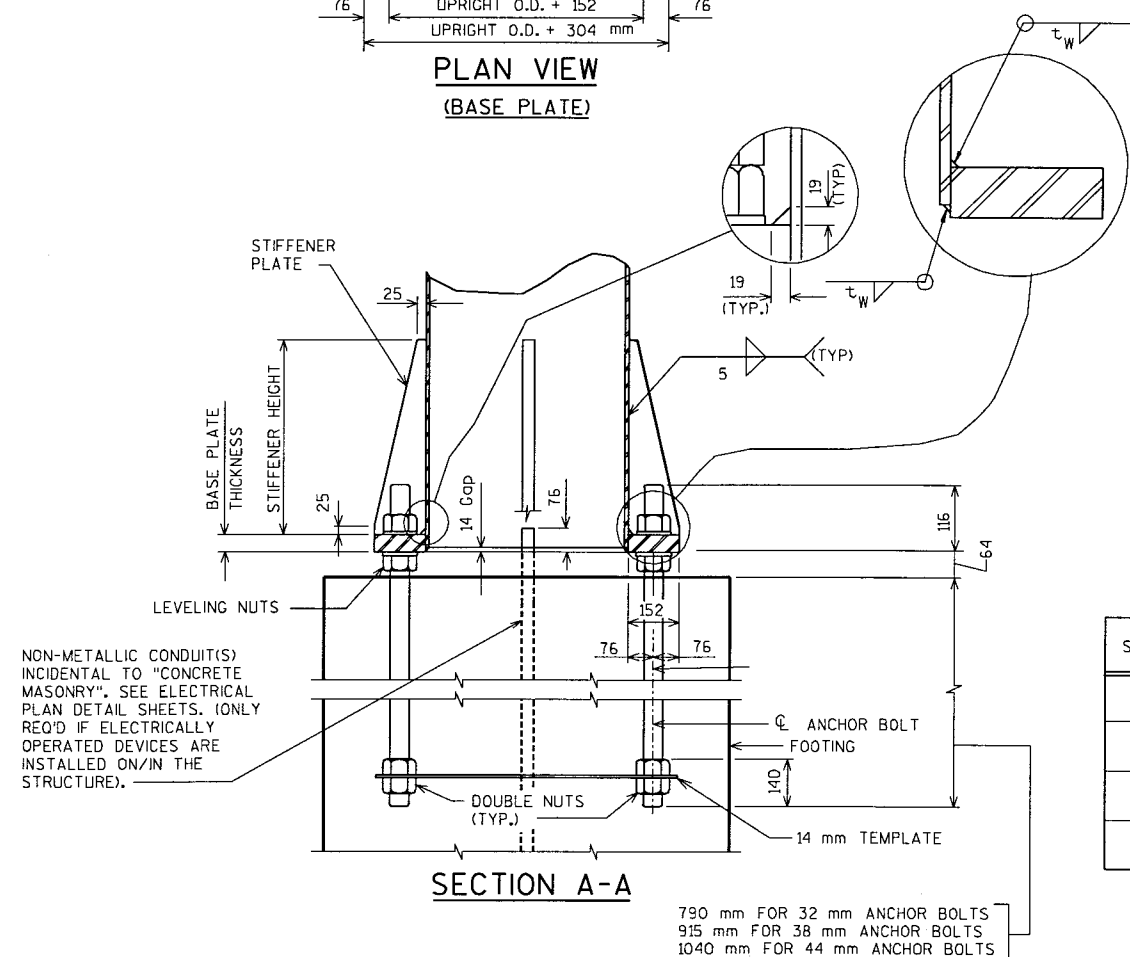
| *ANGLE       | WELD LENGTH | NO. OF BOLTS |
|--------------|-------------|--------------|
| 64x64x6.4    | 280 mm      | 3            |
| 76x76x4.8    | 255 mm      | 3            |
| 76x76x6.4    | 330 mm      | 4            |
| 76x76x7.9    | 420 mm      | 5            |
| 76x76x9.5    | 495 mm      | 6            |
| 102x102x6.4  | 460 mm      | 5            |
| 102x102x7.9  | 560 mm      | 6            |
| 102x102x9.5  | 660 mm      | 8            |
| 102x102x11.1 | 765 mm      | 9            |
| 102x102x12.7 | 865 mm      | 10           |

PLAN VIEW  
(BASE PLATE)

TOWER CONNECTION DETAIL



COUPLING DETAIL



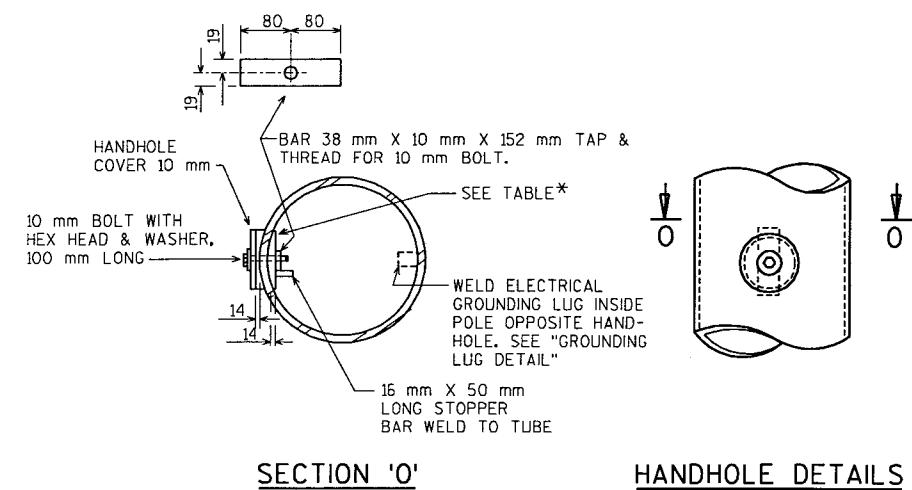
SECTION A-A

790 mm FOR 32 mm ANCHOR BOLTS  
915 mm FOR 38 mm ANCHOR BOLTS  
1040 mm FOR 44 mm ANCHOR BOLTS

BASE PLATE &amp; UPRIGHT COLUMN DETAILS

| STRUCTURE | COLUMN<br>O.D. X THK. | ANCHOR BOLTS | BASE PLATE<br>THICKNESS (mm) | STIFFENER PLATE<br>THICKNESS (mm) | STIFFENER PLATE<br>HEIGHT (mm) | $t_w$<br>(mm) |
|-----------|-----------------------|--------------|------------------------------|-----------------------------------|--------------------------------|---------------|
| S-30-13   | 273 X 9.3             | 32 mm        | 38                           | 13                                | 203                            | 8             |
|           |                       |              |                              |                                   |                                |               |
|           |                       |              |                              |                                   |                                |               |

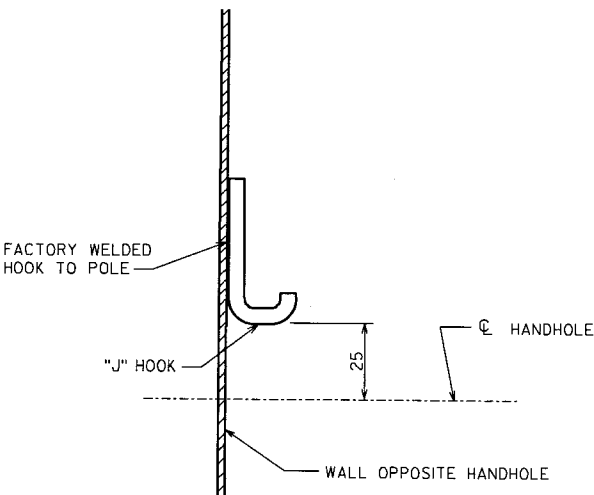
| NO.                                                                             | DATE | REVISION        | BY                |
|---------------------------------------------------------------------------------|------|-----------------|-------------------|
|                                                                                 |      |                 |                   |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |                   |
| STRUCTURE S-30-13                                                               |      |                 |                   |
| CONST.<br>SPEC.                                                                 | 1996 | DRAWN<br>BY BLM | PLANS<br>CK'D JWC |
| 4-CHORD SIGN<br>BRIDGE DETAILS                                                  |      |                 | SHEET 6 OF 10     |



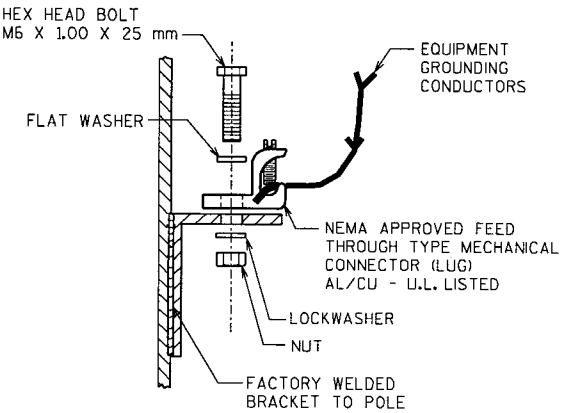
HANDHOLE NOTES

HANDHOLES SHALL BE LOCATED IN ONE COLUMNS OF THE SIGN BRIDGE STRUCTURE IF ELECTRICALLY OPERATED DEVICES ARE INSTALLED ON/IN THE STRUCTURE. COLUMNS WITH HANDHOLES SHALL BE NEAR THE ELECTRICAL SERVICE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF THE ELECTRICAL SERVICE ENTRANCE WITH THE DISTRICT TRAFFIC SECTION PRIOR TO FABRICATION OF THE SIGN BRIDGE COLUMNS AND MEMBERS. CONDUIT (AS REQ'D.) SHALL BE LOCATED, PLACED AND SIZED AS SHOWN ON THE ELECTRICAL DETAIL PLAN SHEETS.

|   |                                                                 |                                |
|---|-----------------------------------------------------------------|--------------------------------|
| * | UPRIGHT DIAM. SIZE                                              | HANDHOLE PIPE O.D. X MIN. THK. |
|   | UP TO AND INCLD. 406.4 mm X 9.5 mm                              | 141.3mm X 12.7mm               |
|   | GREATER THAN 406.4 mm X 9.5 mm TO AND INCLD. 610.0 mm X 14.3 mm | 168.3 mm X 14.3mm              |



THE "J" HOOK SHALL BE FACTORY WELDED TO THE INSIDE OF ALL COLUMNS CONTAINING ELECTRICAL WIRING. THE "J" HOOK SHALL BE ATTACHED ABOVE THE CENTERLINE OF THE UPPER HANDHOLE AND MOUNTED DIRECTLY OPPOSITE THE HANDHOLE AS SHOWN IN THE DRAWING.

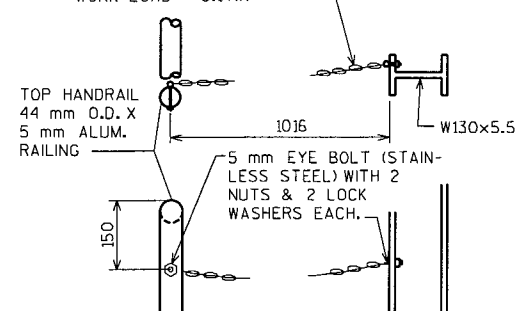


NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

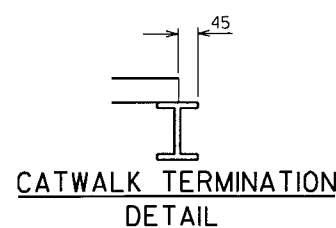
|                                                                                 |      |               |                 |
|---------------------------------------------------------------------------------|------|---------------|-----------------|
| NO.                                                                             | DATE | REVISION      | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |               |                 |
| STRUCTURES S-30-13 THRU S-30-15                                                 |      |               |                 |
| CONST. SPEC.                                                                    | 1996 | DRAWN BY BLM  | PLANS CK'D. JWC |
| HANDHOLE DETAILS                                                                |      | SHEET 7 OF 10 |                 |

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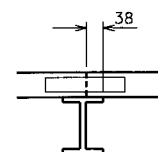
5 mm GALV. STEEL STRAIGHT LENGTH CHAIN  
WITH APPROX. 12 LINKS PER 305 mm. RATED  
WORK LOAD = 3.1 kN



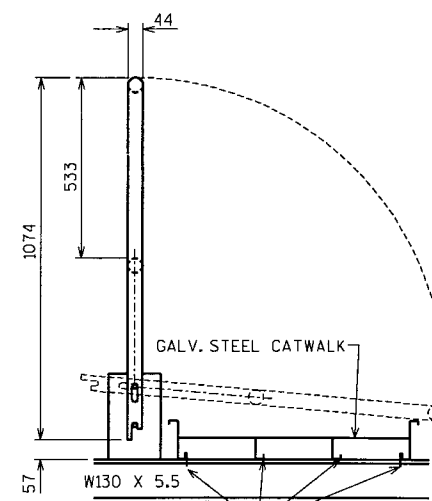
### SAFETY CHAIN DETAIL



CATWALK TERMINATION  
DETAIL

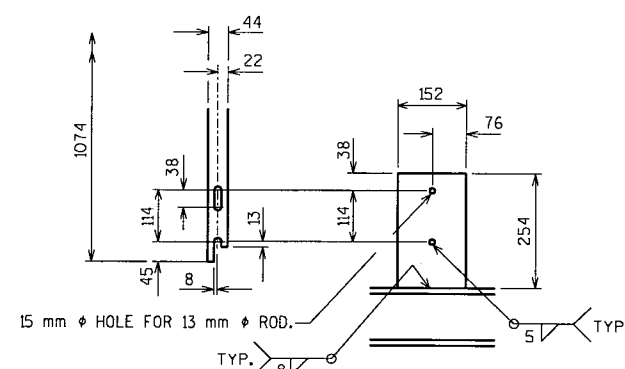


CATWALK SPLICE  
LOCATION DETAIL

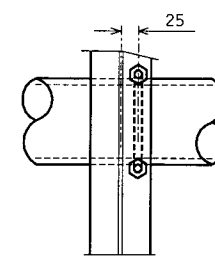


RAIL POST DETAIL

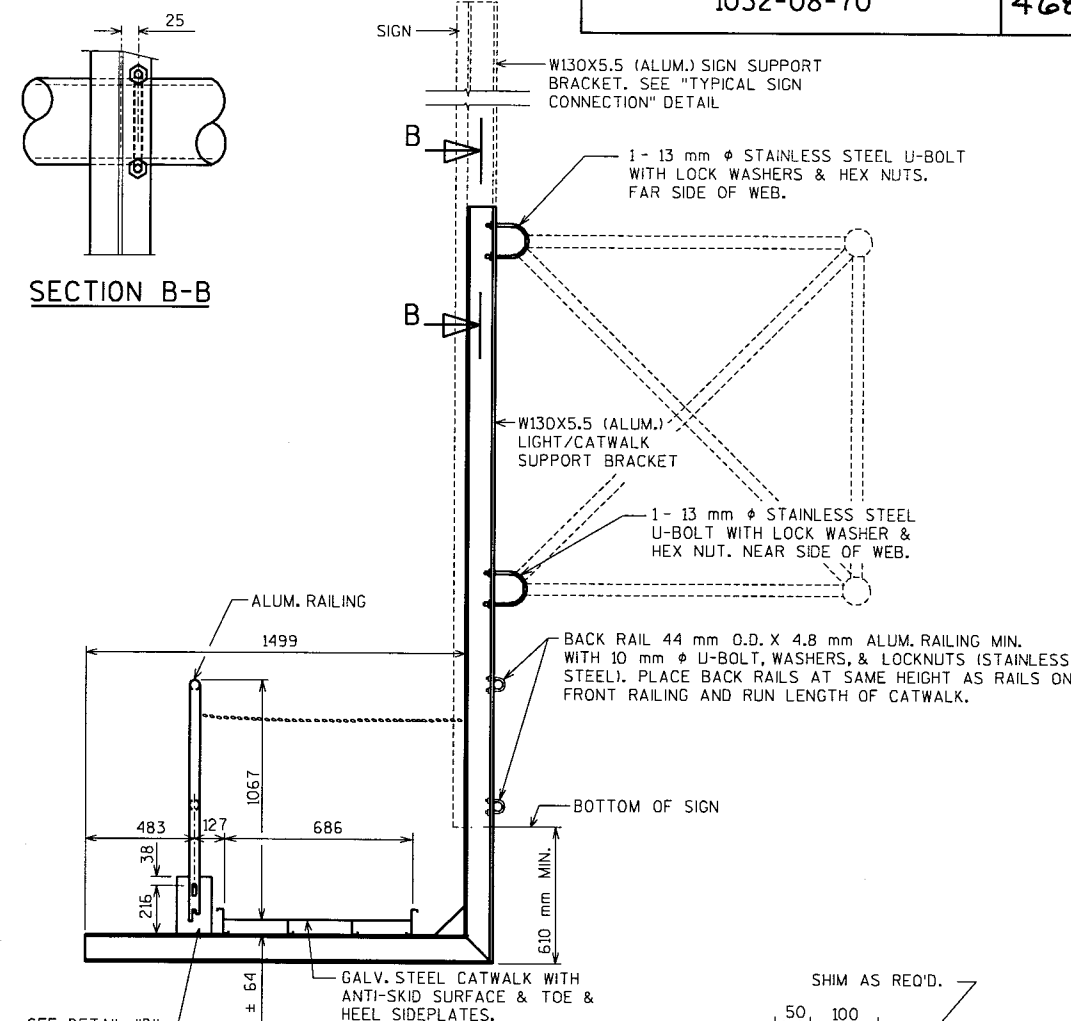
NOTE:  
CATWALK SHALL MEET A.A.S.H.T.O. "SPECIFICATIONS FOR THE DESIGN & CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS" 1985, (2.3 kN DISTRIBUTED OVER 610 mm TRANSVERSELY WITH THE BASIC ALLOWABLE UNIT STRESS - A.A.S.H.T.O. HIGHWAY BRIDGES 1985 (INCREASED 25%), MAX. SPAN IS 2438 mm. CATWALK SHALL ALSO MEET O.S.H.A. 1970 STD'S. FOR WALKING-WORKING SURFACES.



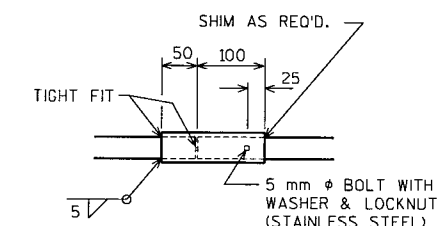
DETAIL "D"



SECTION B-B

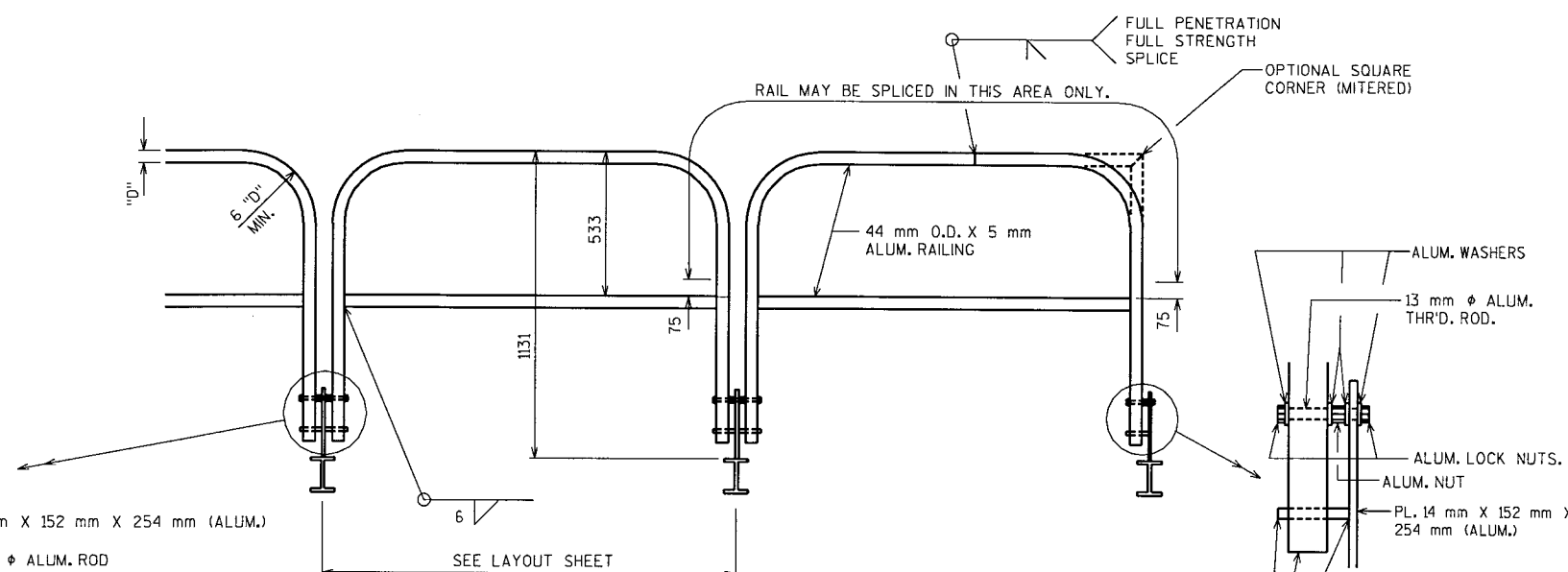
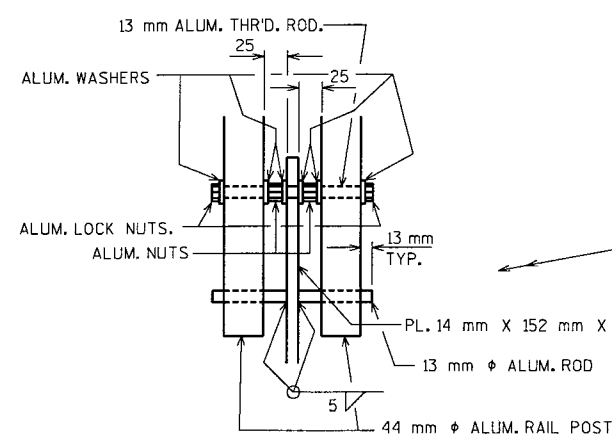


SECTION THRU WALKWAY

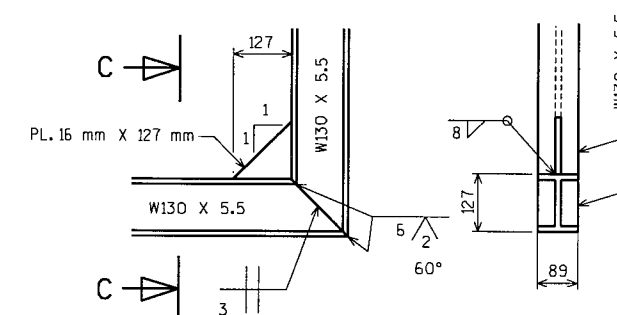


BACKRAIL SPLICE

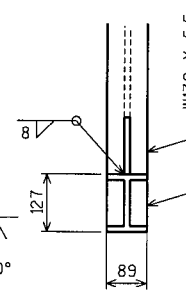
ONE SPLICE ALLOWED FOR LENGTHS OVER 9144 mm



## TYPICAL RAILING DETAILS

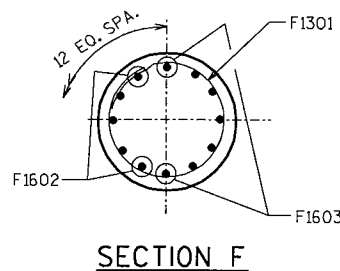
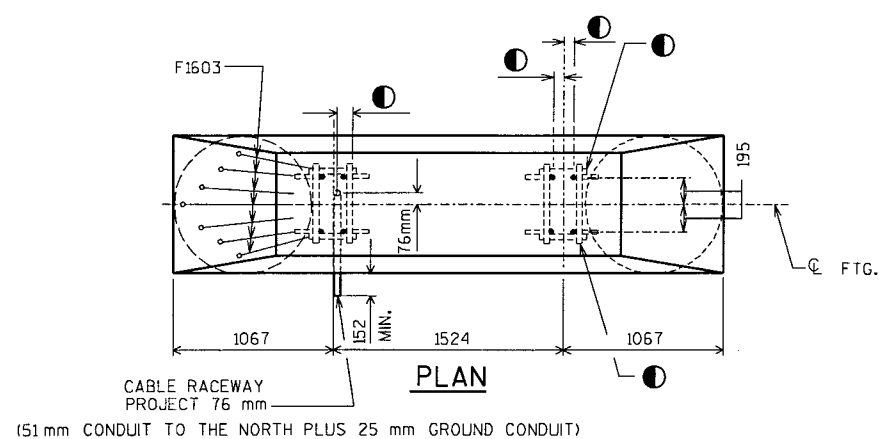


BRACKET DETAIL



SECTION C-C

|                                                                                 |      |                 |                   |
|---------------------------------------------------------------------------------|------|-----------------|-------------------|
|                                                                                 |      |                 |                   |
| NO.                                                                             | DATE | REVISION        | BY                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |                   |
| STRUCTURE S-30-13                                                               |      |                 |                   |
| CONST.<br>SPEC.                                                                 | 1996 | DRAWN<br>BY BLM | PLANS<br>CKD. JWC |
| SIGN BRIDGE                                                                     |      |                 | SHEET 8 OF 10     |
| CATWALK                                                                         |      |                 |                   |

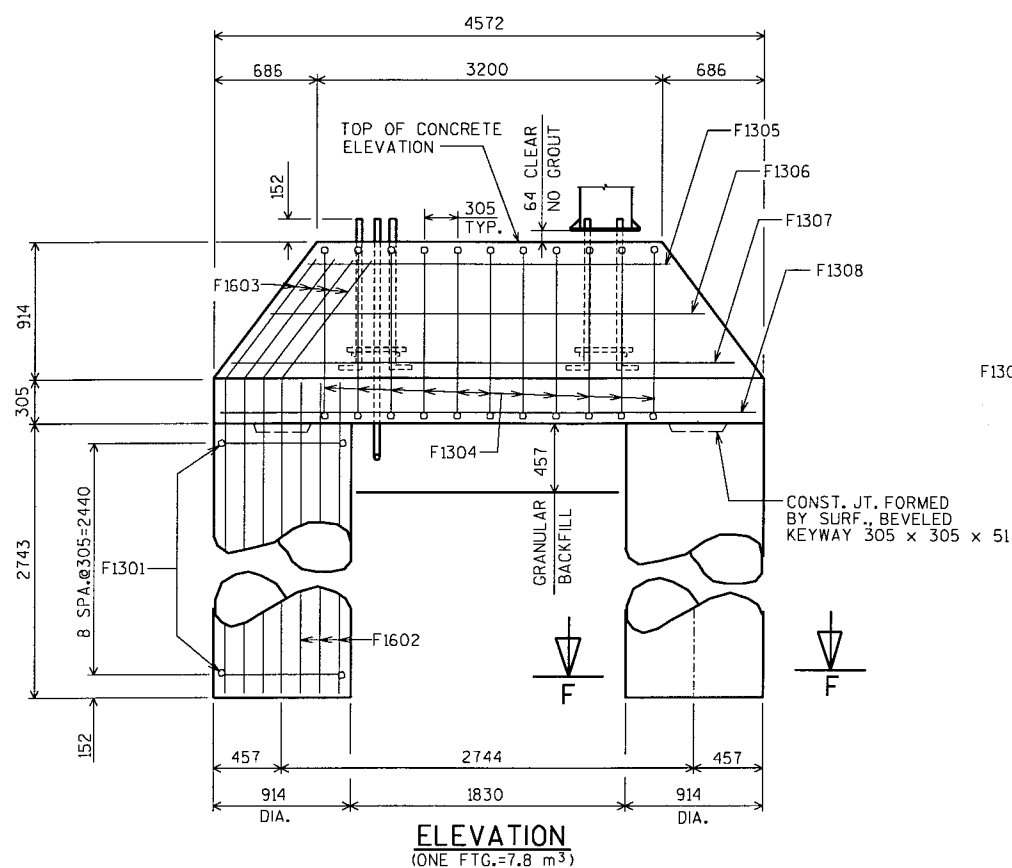


### BILL OF BARS

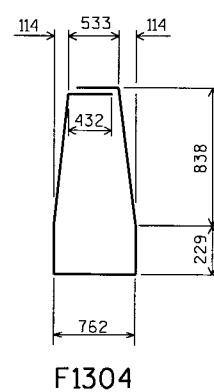
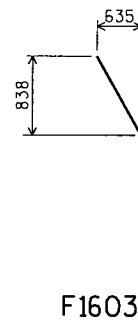
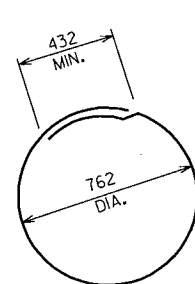
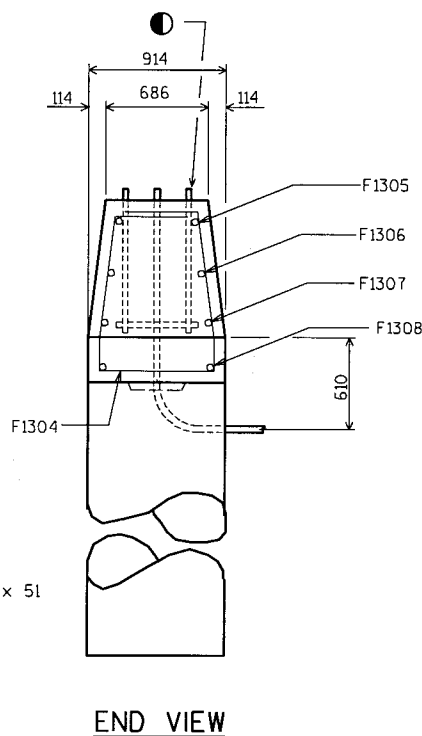
ONE FTG.=260 Kg

NOTE: THE FIRST OR FIRST TWO DIGITS  
OF A BAR MARK SIGNIFIES THE  
BAR SIZE.

| BAR<br>MARK | COAT | NO.<br>REQ'D | LENGTH | BENT | CUT,<br>DIAG. | BUN-<br>DLE | LOCATION         |
|-------------|------|--------------|--------|------|---------------|-------------|------------------|
| F1301       |      | 18           | 2850   | X    |               |             | FOOTING-HOOPS    |
| F1602       |      | 10           | 3120   |      |               |             | FOOTING-VERT.    |
| F1603       |      | 14           | 4010   | X    |               |             | FOOTING-VERT.    |
| F1304       |      | 11           | 3660   | X    |               |             | FOOTING-STIRRUPS |
| F1305       |      | 2            | 3250   |      |               |             | FOOTING-HORIZ.   |
| F1306       |      | 2            | 3710   |      |               |             | FOOTING-HORIZ.   |
| F1307       |      | 2            | 4160   |      |               |             | FOOTING-HORIZ.   |
| F1308       |      | 2            | 4410   |      |               |             | FOOTING-HORIZ.   |



FOOTING TYPE 'F1'



### GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.  
BAR STEEL REINFORCEMENT SHALL BE IMBEDDED 75mm CLR.  
CONCRETE MASONRY ----  $f_c' = 24 \text{ MPa}$   
BAR STEEL REINF. ---- GRADE 420  $f_y = 420 \text{ MPa}$   
ALLOWABLE SOIL PRESSURE ----  $P_{allow} = 144 \text{ kPa}$   
SOIL DENSITY ----  $\gamma = 19 \text{ kN/m}^3$   
COORDINATE CONDUIT WITH CIVIL PLANS.

### SUMMARY OF QUANTITIES (1 FTG.)

| ITEM                                                 | UNIT           | FTG. TYPE 'F1' |
|------------------------------------------------------|----------------|----------------|
| CONCRETE MASONRY, SIGN SUPPORTS                      | m <sup>3</sup> | 7.8            |
| HIGH STRENGTH BAR STEEL REINFORCEMENT, SIGN SUPPORTS | Kg             | 260            |

| NO.                                                                             | DATE | REVISION        | BY                 |
|---------------------------------------------------------------------------------|------|-----------------|--------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |                    |
| STRUCTURE S-30-13                                                               |      |                 |                    |
| CONST.<br>SPEC.                                                                 | 1996 | DRAWN<br>BY BLM | PLANS<br>CK'D. JWC |
| SIGN BRIDGE<br>FOOTING TYPE<br>"F1-MOD"                                         |      |                 | SHEET 9 OF 10      |

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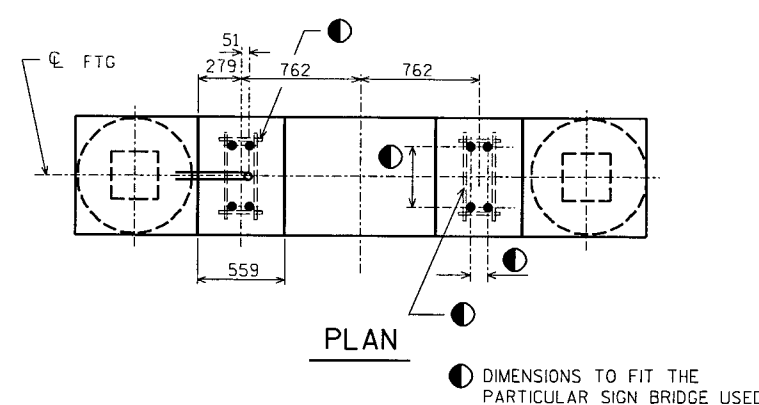
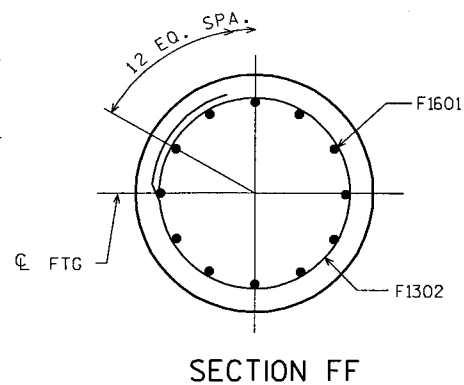
SCALE =

## BILL OF BARS (1FOOTING) 285 Kg

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | CUT. DIAG. | BUN-DLE | LOCATION       |
|----------|------|------------|--------|------|------------|---------|----------------|
| F1601    |      | 24         | 3810   |      |            |         | FTG - VERT     |
| F1302    |      | 18         | 2850   | x    |            |         | FTG - HOOPS    |
| F1303    |      | 15         | 3790   | x    |            |         | FTG - STIRRUPS |
| F1304    |      | 8          | 4420   |      |            |         | FTG - HORIZ    |

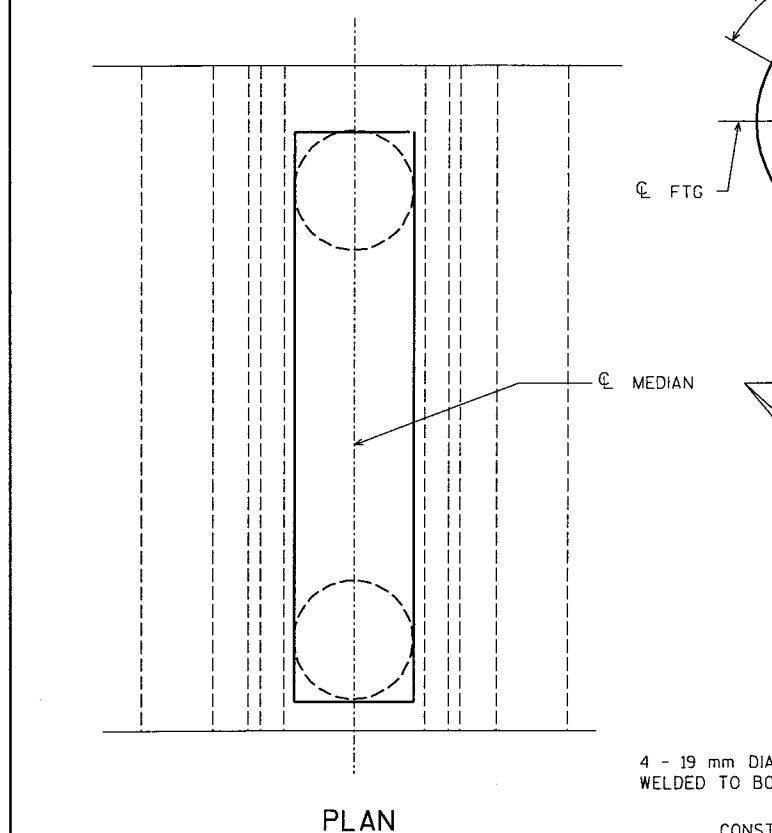
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

ALL DIMENSIONS ARE TO OUT OF BAR



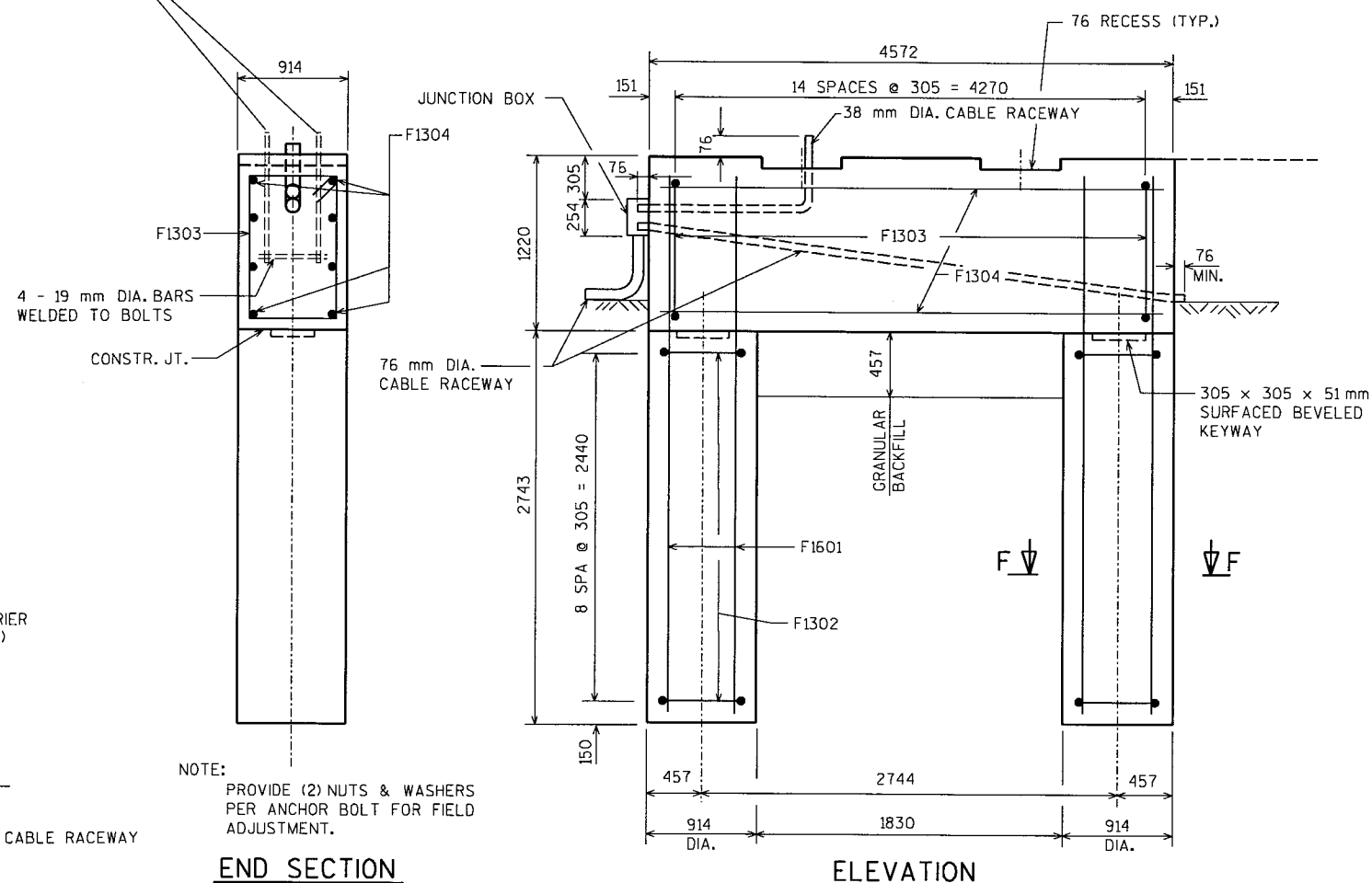
PLAN

● DIMENSIONS TO FIT THE PARTICULAR SIGN BRIDGE USED



PLAN

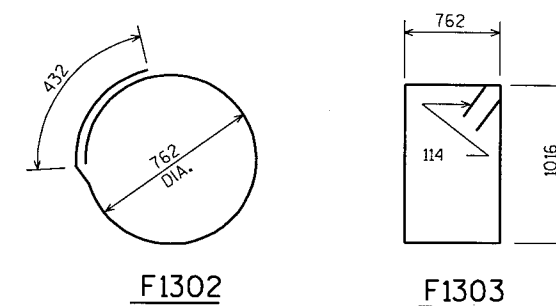
4 - 38 mm DIA. X 914 ANCHOR BOLTS (ASTM A449) THREAD 152 AND CUT OFF 13 mm ABOVE NUT WHEN FINISHED GALVANIZE TOP 203 mm.



END SECTION

ELEVATION

NOTE: 8.7 m<sup>3</sup> OF CONCRETE REQ'D FOR ONE FOOTING



F1302

F1303

## DESIGN DATA

CONCRETE MASONRY \_\_\_\_\_ f'c = 24 MPa  
 HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 420 \_\_\_\_\_ fy = 420 MPa  
 ALLOWABLE SOIL PRESSURE \_\_\_\_\_ Pallow = 144 kPa  
 SOIL DENSITY \_\_\_\_\_ GAMMA = 19 kN/m<sup>3</sup>

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 75 mm CLEAR.

THE USE OF STRUCTURAL GRADE BAR STEEL REINFORCEMENT IS PROHIBITED.

CABLE RACEWAY TO ENTER SIGN BRIDGE COLUMN CLOSEST TO SIGNS.

CONDUIT TO BE PLACED IN MEDIAN FOOTING ONLY.

COORDINATE CONDUIT & JUNCTION BOXES WITH CIVIL PLANS.

## SUMMARY OF QUANTITIES

(1FTG)

| BID ITEMS                                            | UNIT           | TYPE "A-MOD" |
|------------------------------------------------------|----------------|--------------|
| CONCRETE MASONRY, SIGN SUPPORTS                      | m <sup>3</sup> | 8.7          |
| HIGH STRENGTH BAR STEEL REINFORCEMENT, SIGN SUPPORTS | Kg             | 285          |

NOTE: TYPE "A" FOOTING SHALL BE USED FOR MEDIAN SIGN BRIDGE FOOTINGS WHERE SPACE PERMITS.

ELEVATION  
(SHOWN IN MEDIAN)

BRIDGE OFFICE CONTACT:  
G. Anderson (608) 266-8488

| NO.                                                                             | DATE | REVISION     | BY             |
|---------------------------------------------------------------------------------|------|--------------|----------------|
|                                                                                 |      |              |                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |              |                |
| STRUCTURE S-30-13                                                               |      |              |                |
| CONST. SPEC.                                                                    | 1996 | DRAWN BY BLM | PLANS CKD. JWC |
| SIGN BRIDGE<br>FTG. TYPE<br>"A-MOD"                                             |      |              | SHEET 10 OF 10 |