

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|           |                            |          |                    |           |
|-----------|----------------------------|----------|--------------------|-----------|
| F.A. RTE. | SECTION                    | COUNTY   | TOTAL SHEETS       | SHEET NO. |
| VAR.      | D9 GUARDRAIL REPAIR FY21-1 | VARIOUS  | 20                 | 1         |
|           |                            | ILLINOIS | CONTRACT NO. 78747 |           |

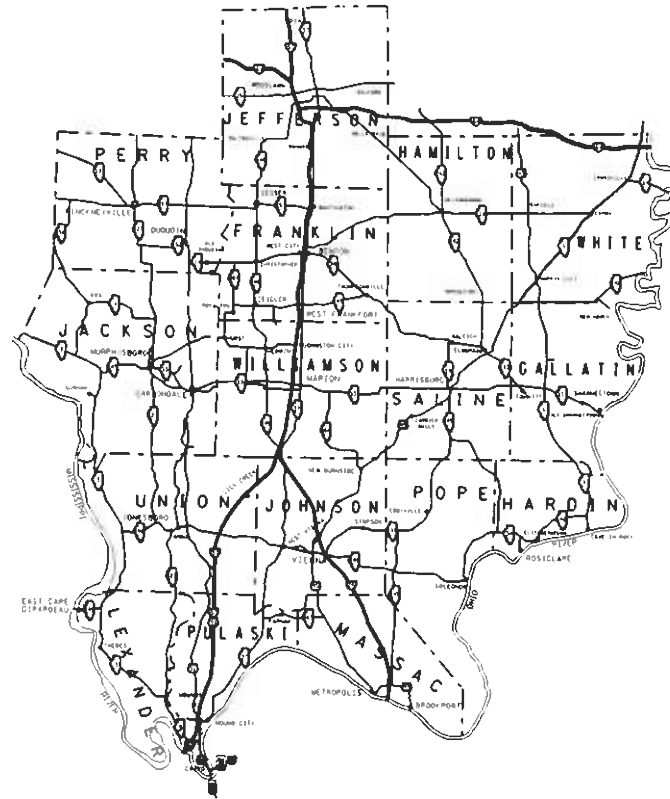
FOR INDEX OF SHEETS, SEE SHEET NO. 3  
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 5

**PROPOSED  
HIGHWAY PLANS**

VARIOUS ROUTES  
SECTION D9 GUARDRAIL REPAIR FY21-1

GUARDRAIL REPAIR  
VARIOUS COUNTIES

C-99-090-19



J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED 03-04-20 02  
KT  
REGION FIVE ENGINEER

May 8, 2020 [Signature]  
ENGINEER OF DESIGN AND ENVIRONMENT

May 8, 2020 [Signature]  
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION 13

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

PROJECT ENGINEER : SUSAN POE  
PROJECT DESIGNER : SUSAN POE

CONTRACT NO. 78747

Prepared By: Charles Stein  
DISTRICT STUDIES & PLANS ENGINEER

Examined By: Nancy Lee  
DISTRICT LAND ACQUISITION ENGINEER

Examined By: Connie  
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: Kevin Kelly  
DISTRICT OPERATIONS ENGINEER

Examined By: KR  
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: Doris J. Kelly  
DISTRICT CONSTRUCTION ENGINEER

Examined By: Rob Graeff (AWH)  
DISTRICT MATERIALS ENGINEER

|   |                                   |            |           |   |                           |       |    |        |           |                            |                    |              |           |
|---|-----------------------------------|------------|-----------|---|---------------------------|-------|----|--------|-----------|----------------------------|--------------------|--------------|-----------|
| FILE NAME =   | USER NAME = poesi                 | DESIGNED - | REVISED - | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>SIGNATURE SHEET</b>    |       |    |        | F.A. RTE. | SECTION                    | COUNTY             | TOTAL SHEETS | SHEET NO. |
| p:\planroom.dot\illinois.gov\PI\007\Documents\1007\Offices\District 9\Projects\Geometrics\guardrail.dgn | DRAWN to Geometrics\guardrail.dgn | REVISED -  | REVISED - |   |                           |       |    |        | VAR.      | 09 GUARDRAIL REPAIR FY21-1 | VARIOUS            | 20           | 2         |
| PLOT SCALE = 100.0000 1/4 in.   | CHECKED -                         | REVISED -  | REVISED - |   | SCALE:                    | SHEET | OF | SHEETS | STA.      | TO STA.                    | CONTRACT NO. 78747 |              |           |
| Default   | PLOT DATE = 2/21/2020             | DATE -     | REVISED - |   | ILLINOIS FED. AID PROJECT |       |    |        |           |                            |                    |              |           |

# INDEX OF SHEETS

| SHEET NO. | DESCRIPTION   |
|-----------|---|
| 1         | COVER SHEET   |
| 2         | SIGNATURE SHEET   |
| 3         | INDEX OF SHEETS, STANDARDS  |
| 4         | GENERAL NOTES   |
| 5 - 7     | SUMMARY OF QUANTITIES   |
| 8 - 11    | STEEL PLATE BEAM GUARDRAIL STANDARD INSTALLED PRIOR TO JANUARY 1, 2007        |
| 12 - 14   | TRAFFIC BARRIER TERMINAL, TYPE 6 STANDARD INSTALLED PRIOR TO JANUARY 1, 2007  |
| 15 -17    | TRAFFIC BARRIER TERMINAL, TYPE 6A STANDARD INSTALLED PRIOR TO JANUARY 1, 2007 |
| 18 - 19   | TRAFFIC BARRIER TERMINAL, TYPE 6B STANDARD INSTALLED PRIOR TO JANUARY 1, 2007 |
| 20        | CRASH-CUSHION ATTENUATING TERMINAL (C-A-T)                                    |

# LIST OF STANDARDS

|           |  |
|-----------|--|
| 000001-07 | STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS               |
| 001006    | DECIMAL OF AN INCH AND A FOOT                              |
| 630001-12 | STEEL PLATE BEAM GUARDRAIL                                 |
| 630006    | NON-BLOCKED STEEL PLATE BEAM GUARDRAIL                     |
| 630116    | BACK SIDE PROTECTION OF GUARDRAIL                          |
| 630101-10 | STRONG POST GUARDRAIL ATTACHED TO CULVERT                  |
| 630301-09 | SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS |
| 631011-10 | TRAFFIC BARRIER TERMINAL, TYPE 2                           |
| 631026-06 | TRAFFIC BARRIER TERMINA, TYPE 5                            |
| 631031-16 | TRAFFIC BARRIER TERMINAL, TYPE 6                           |
| 631032-09 | TRAFFIC BARRIER TERMINAL, TYPE 6A                          |
| 631033-08 | TRAFFIC BARRIER TERMINAL, TYPE 6B                          |
| 635001-02 | DELINEATORS  |
| 636001-02 | CABLE ROAD GUARD SINGLE STRAND                             |
| 643001-02 | SAND MODULE IMPACT ATTENUATORS                             |
| 664001-02 | CHAIN LINK FENCE   |
| 665001-02 | WOVEN WIRE FENCE   |
| 701001-02 | OFF ROAD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY            |
| 701006-05 | OFF ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE |
| 701011-04 | OFF ROAD OPERATIONS, 2L, 2W, DAY ONLY                      |

# LIST OF STANDARDS

|           |  |
|-----------|--|
| 701101-05 | OFF ROAD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE                      |
| 701106-02 | OFF ROAD OPERATIONS, MULTILANE, MORE THAN 15' AWAY                                 |
| 701201-05 | LANE CLOSURE, 2L, 2W, DAY ONLY FOR SPEEDS GREATER OR EQUAL TO 45 MPH               |
| 701301-04 | LANE CLOSURE, 2L, 2W, SHORT TERM OPERATIONS  |
| 701400-09 | APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY                                       |
| 701406-12 | LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY                              |
| 701421-08 | LANE CLOSURE, MULTILANE, DAY OPERATIONS ONLY FOR SPEEDS GREATER OR EQUAL TO 45 MPH |
| 701422-10 | LANE CLOSURE, MULTILANE, FOR SPEEDS GREATER THAN OR EQUAL TO 45 MPH TO 55 MPH      |
| 701428-01 | TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY                               |
| 701456-05 | PARTIAL EXIT RMAP CLOSURE FREEWAY/EXPRESSWAY                                       |
| 701501-06 | URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED  |
| 701502-09 | URBAN LANE CLOSURE, 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE                      |
| 701601-09 | URBAN LANE CLOSURE, MULTILANE, 1W AND 2W WITH NONTRAVERSABLE MEDIAN                |
| 701602-10 | URBAN LANE CLOSURE, MULTILANE, 2W WITH BIDIRECTIONAL LEFT TURN LANE                |
| 701606-10 | URBAN SINGLE LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN                     |
| 701701-10 | URBAN LANE CLOSURE, MULTILANE INTERSECTION   |
| 701901-08 | TRAFFIC CONTROL DEVICE   |
| 725001-01 | OBJECT AND TERMINAL MARKERS  |
| 782006-01 | GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS                              |

|                  |                         |          |         |   |  |                           |                         |         |              |           |         |
|------------------|-------------------------|----------|---------|---|--|---------------------------|-------------------------|---------|--------------|-----------|---------|
| FILE NAME        | USER NAME               | DESIGNED | REVISED | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>INDEX OF SHEETS &amp; LIST OF STANDARDS</b> | F.A. RTE.                 | SECTION                 | COUNTY  | TOTAL SHEETS | SHEET NO. |         |
| planningroom.dat | 1007 Offices District 9 | DRANN    | REVISED |   |  | VAR. 09                   | GUARDRAIL REPAIR FY22-1 | VARIOUS | 20           | 3         |         |
| PLOT SCALE       | 100.0000                | CHECKED  | REVISED |   |  | SCALE:                    | SHEET                   | OF      | SHEETS       | STA.      | TO STA. |
| PLOT DATE        | 3/2/2020                | DATE     | REVISED |   |  | ILLINOIS FED. AID PROJECT |                         |         |              |           |         |

# GENERAL NOTES

BEFORE ORDERING THE IMPACT ATTENUATORS, THE CONTRACTOR MUST CONTACT THE RESIDENT ENGINEER TO RECEIVE APPROVAL OF THE PROPOSED INSTALLATION.

ALL WORK IS TO BE REPLACED IN KIND OR AS INDICATED ON THE CONTRACT PLANS AND PROVISIONS.

THE LOCATIONS OF THE REPAIR AREAS SHALL BE DETERMINED BY THE ENGINEER.

GUARDRAIL WORK WILL INCLUDE ALIGNMENT AS NECESSARY TO RESTORE THE RAIL TO THE ORIGINAL CONDITIONS.

REMOVAL OF DAMAGED MATERIALS WILL INCLUDE DISMANTLING, LOADING, HAULING AND DISPOSAL. THE WORK SITE WILL BE LEFT IN A SAFE AND ORDERLY CONDITION.

THE LIMITS OF THE DAMAGED GUARDRAIL WILL BE MARKED WITH PAINT. THE REPLACEMENT PARTS AND THE QUANTITIES INDICATED ARE WITHIN THESE LIMITS AS MARKED.

REMOVED GUARDRAIL THAT IS NOT REPLACED ON THE SAME DAY MUST BE DELINEATED WITH LIGHTED BARRICADES. NO LOCATIONS WILL BE LEFT WITHOUT EITHER LIGHTED BARRICADES OR RESTORED GUARDRAIL AT ANY TIME.

ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE TO BE GIVEN TO UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. (PHONE: 800 892-0123) OR FOR NON-MEMBER, THE UTILITY COMPANY DIRECTLY.

THE CONTRACTOR SHALL BE ADVISED THAT THE GUARDRAIL PAY ITEMS INCLUDED IN THE PLANS MAY BE USED TO REPLACE/REPAIR SPBGR AND TRAFFIC BARRIER TERMINALS FOR THE NEW MIDWEST STANDARD AS SHOWN ON THE HIGHWAY STANDARDS AS WELL AS SPBGR AND TRAFFIC BARRIER TERMINAL INSTALLED PRIOR TO JAN. 1, 2007 AS SHOWN IN THE PLAN DETAILS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR UTILIZING THE CURRENT MIDWEST STANDARDS.

# COMMITMENTS

NONE

|   |                             |            |           |   |  |       |    |        |                                 |         |        |              |           |
|---|-----------------------------|------------|-----------|---|--|-------|----|--------|---------------------------------|---------|--------|--------------|-----------|
| FILE NAME *   | USER NAME = poesi           | DESIGNED - | REVISED - | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>GENERAL NOTES &amp; COMMITMENTS</b> |       |    |        | F.A. RTE. *                     | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| path: \\algrm00m01dot11linos.gov\PerIOD1\Documents\1007 Offices\District 9\Projects\Geometric\Drawings\Geometrics\guardrail.dgn | DRAWN -                     | REVISED -  | REVISED - |   |  |       |    |        | VAR. 09 GUARDRAIL REPAIR FY21-1 | VARIOUS | 20     | 4            |           |
| Default   | PLOT SCALE = 100.0000 / in. | CHECKED -  | REVISED - |   | CONTRACT NO. 78747                     |       |    |        | ILLINOIS FED. AID PROJECT       |         |        |              |           |
|   | PLOT DATE = 3/2/2020        | DATE -     | REVISED - |   | SCALE:                                 | SHEET | OF | SHEETS | STA.                            | TO      | STA.   |              |           |

# SUMMARY OF QUANTITIES

|           |                |              |                        |                            |
|-----------|----------------|--------------|------------------------|----------------------------|
| COUNTY:   | COUNTY:        | VARIOUS      | VARIOUS                | VARIOUS                    |
| ROUTE:    | ROUTE:         | VARIOUS      | VARIOUS                | VARIOUS                    |
| FUNDING:  | FUNDING:       | 100% STATE   | 100% STATE             | 100% STATE                 |
| LOCATION: | LOCATION:      | RURAL/URBAN  | RURAL/URBAN            | RURAL/URBAN                |
|           | TOTAL QUANTITY | MCHD<br>0021 | CONTRACT MAINT<br>0021 | HIGH TENSION CABLE<br>0021 |

| CODE NUMBER | ITEM DESCRIPTION   | UNIT  | TOTAL QUANTITY | MCHD<br>0021 | CONTRACT MAINT<br>0021 | HIGH TENSION CABLE<br>0021 |
|-------------|--|-------|----------------|--------------|------------------------|----------------------------|
| 25000100    | SEEDING, CLASS 1   | ACRE  | 10             | 5            | 3                      | 2                          |
| 63100167    | TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT           | EACH  | 97             | 80           | 17                     |                            |
| 63100169    | TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED            | EACH  | 11             | 8            | 3                      |                            |
| 64300260    | IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3 | EACH  | 6              | 4            | 2                      |                            |
| 64401300    | HIGH TENSION CABLE MEDIAN BARRIER TERMINALS                  | EACH  | 13             | 5            | 5                      | 3                          |
| 67100100    | MOBILIZATION   | L SUM | 1              | 1            | 0                      | 0                          |
| X0325899    | REPAIR HIGH TENSION CABLE (GIBRALTAR)                        | FOOT  | 400            | 166          | 125                    | 109                        |
| X0325900    | REPAIR HIGH TENSION BARRIER TERMINAL (GIBRALTAR)             | EACH  | 13             | 6            | 3                      | 4                          |
| X0325902    | REMOVE AND REPLACE POSTS (GIBRALTAR)                         | EACH  | 156            | 31           | 25                     | 100                        |
| X0326201    | REPAIR HIGH TENSION CABLE (TRINITY)                          | FOOT  | 390            | 166          | 125                    | 99                         |
| X0326202    | REPAIR POSTS (TRINITY)                                       | EACH  | 68             | 31           | 25                     | 12                         |
| X0326203    | REPAIR HIGH TENSION CABLE SYSTEM END SECTION (TRINITY)       | EACH  | 12             | 6            | 3                      | 3                          |

REV. - MS

# SUMMARY OF QUANTITIES - CONT

|           |           |             |             |             |
|-----------|-----------|-------------|-------------|-------------|
| COUNTY:   | COUNTY:   | VARIOUS     | VARIOUS     | VARIOUS     |
| ROUTE:    | ROUTE:    | VARIOUS     | VARIOUS     | VARIOUS     |
| FUNDING:  | FUNDING:  | 100% STATE  | 100% STATE  | 100% STATE  |
| LOCATION: | LOCATION: | RURAL/URBAN | RURAL/URBAN | RURAL/URBAN |

| CODE NUMBER | ITEM DESCRIPTION                            | UNIT | TOTAL QUANTITY | MCHD | CONTRACT MAINT | HIGH TENSION CABLE |
|-------------|---|------|----------------|------|----------------|--------------------|
|             |   |      |                | 0021 | 0021           | 0021               |
| X6300210    | GUARDRAIL BLOCKS                            | EACH | 400            | 300  | 100            |                    |
| X6300215    | RAIL ELEMENT PLATES                         | EACH | 239            | 226  | 13             |                    |
| X6300217    | RAIL ELEMENT PLATES (RADIUS)                | EACH | 12             | 9    | 3              |                    |
| X6300220    | EXTRUDER HEAD                               | EACH | 7              | 4    | 3              |                    |
| X6300230    | STEEL POSTS                                 | EACH | 244            | 231  | 13             |                    |
| X6300231    | STEEL POST, ATTACHED TO STRUCTURES          | EACH | 3              | 3    |                |                    |
| X6300235    | WOOD POSTS                                  | EACH | 31             | 16   | 15             |                    |
| X6310088    | TRAFFIC BARRIER TERMINAL TYPE 6A (SPECIAL)  | EACH | 5              | 5    |                |                    |
| X6310176    | TRAFFIC BARRIER TERMINAL, TYPE 2 (SPECIAL)  | EACH | 6              | 6    |                |                    |
| X6310214    | TRAFFIC BARRIER TERMINAL, TYPE 6 (SPECIAL)  | EACH | 6              | 6    |                |                    |
| X6311215    | TRAFFIC BARRIER TERMINAL (C-A-T)            | EACH | 8              | 5    | 3              |                    |
| X6311217    | TRAFFIC BARRIER TERMINAL, TYPE 6B (SPECIAL) | EACH | 6              | 6    |                |                    |

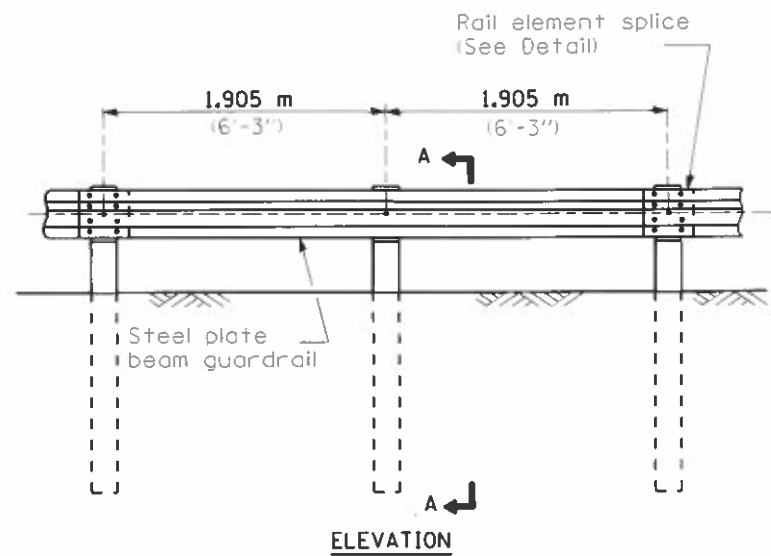
REV. - MS

# SUMMARY OF QUANTITIES - CONT

|           |           |             |             |             |
|-----------|-----------|-------------|-------------|-------------|
| COUNTY:   | COUNTY:   | VARIOUS     | VARIOUS     | VARIOUS     |
| ROUTE:    | ROUTE:    | VARIOUS     | VARIOUS     | VARIOUS     |
| FUNDING:  | FUNDING:  | 100% STATE  | 100% STATE  | 100% STATE  |
| LOCATION: | LOCATION: | RURAL/URBAN | RURAL/URBAN | RURAL/URBAN |

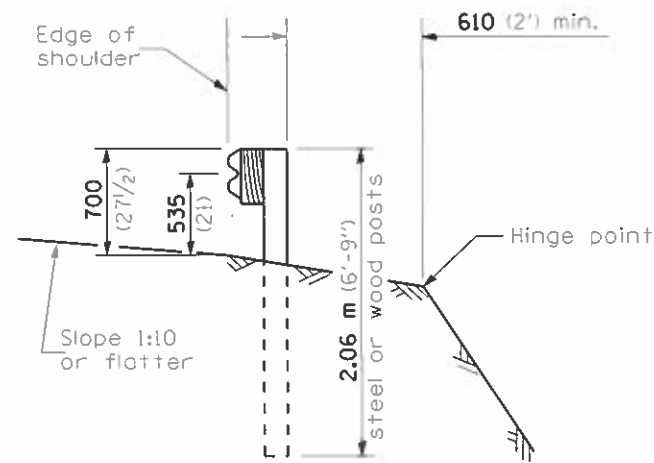
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|-------------|---|------|----------------|------|----------------|--------------------|
|             |   |      |                | 0021 | 0021           | 0021               |
| X6331110    | STEEL POSTS, SPECIAL  | EACH | 3              | 3    |                |                    |
| X6430210    | REMOVE AND REINSTALL IMPACT ATTENUATORS                           | EACH | 34             | 31   | 3              |                    |
| X6640298    | CHAIN LINK FENCE (SPECIAL)  | FOOT | 163            | 101  | 62             |                    |
| X6650208    | WOVEN WIRE FENCE REMOVAL AND REPLACEMENT                          | FOOT | 101            | 101  |                |                    |
| X7010102    | NIGHTTIME WORK ZONE LIGHTING                                      | EACH | 40             | 22   | 18             |                    |
| X7011834    | TRAFFIC CONTROL AND PROTECTION, CALL OUT WORK                     | EACH | 53             | 36   | 17             |                    |
| X7011836    | TRAFFIC CONTROL AND PROTECTION, FREEWAY/EXPRESSWAY, CALL OUT WORK | EACH | 60             | 38   | 17             | 5                  |
| Z0052410    | REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)         | EACH | 24             | 16   | 8              |                    |
| Z0052415    | REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (FLARED)          | EACH | 8              | 5    | 3              |                    |
| Z0053200    | REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6                           | EACH | 7              | 4    | 3              |                    |
| Z0053210    | REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6A                          | EACH | 5              | 5    |                |                    |
| Z0053220    | REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6B                          | EACH | 5              | 5    |                |                    |

REV. - MS

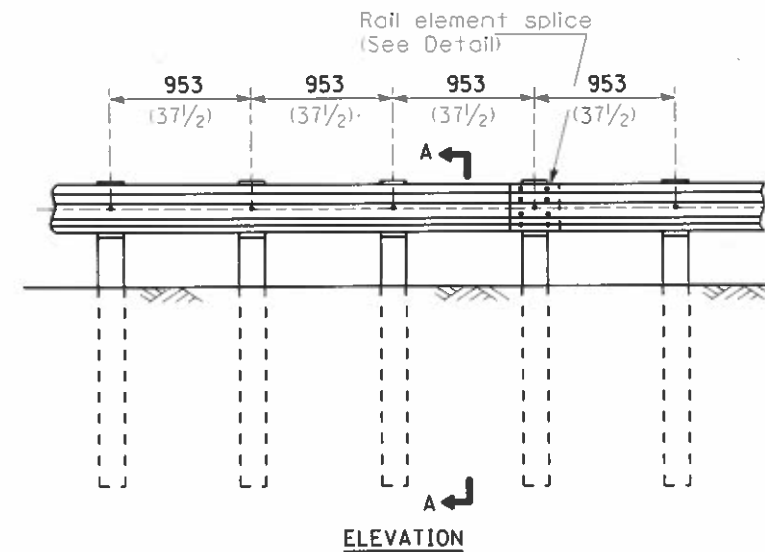


**TYPE A**

1.905 m (6'-3") Typical post spacing

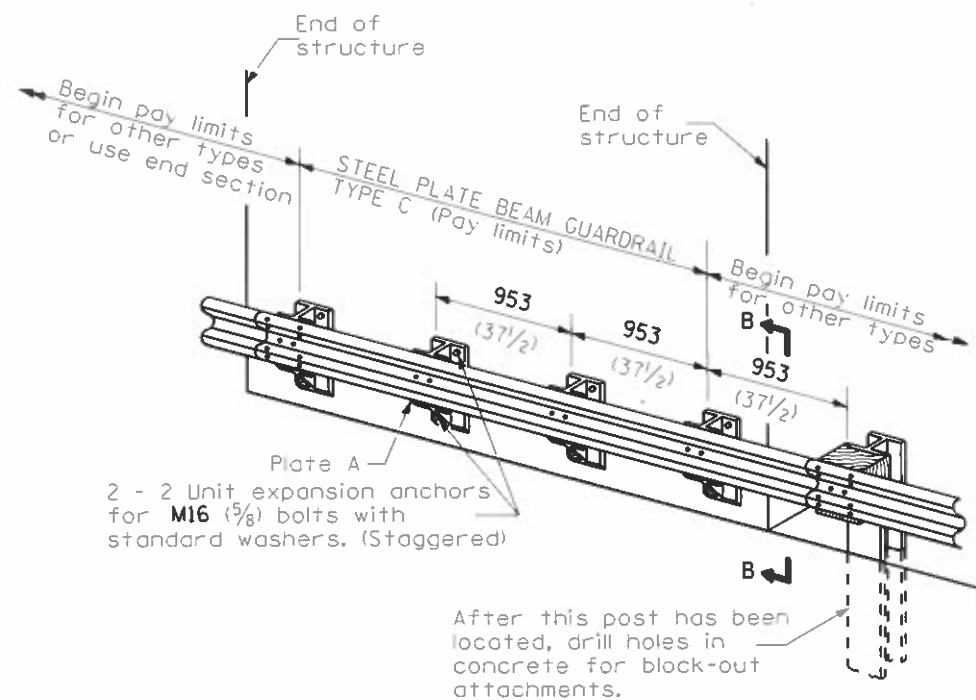


**SECTION A-A**



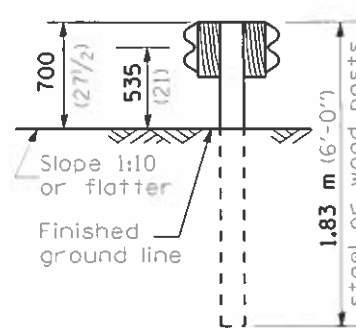
**TYPE B**

953 (37 1/2) Closed post spacing

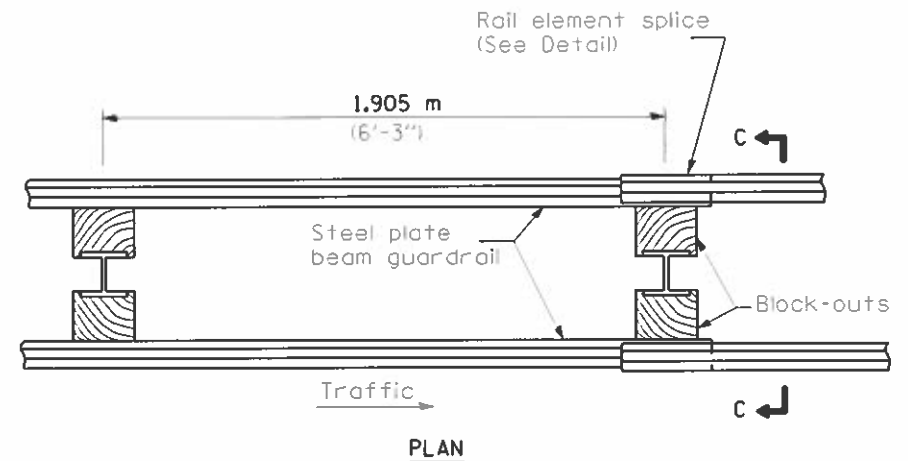


**TYPE C**

953 (37 1/2) Block-out spacing

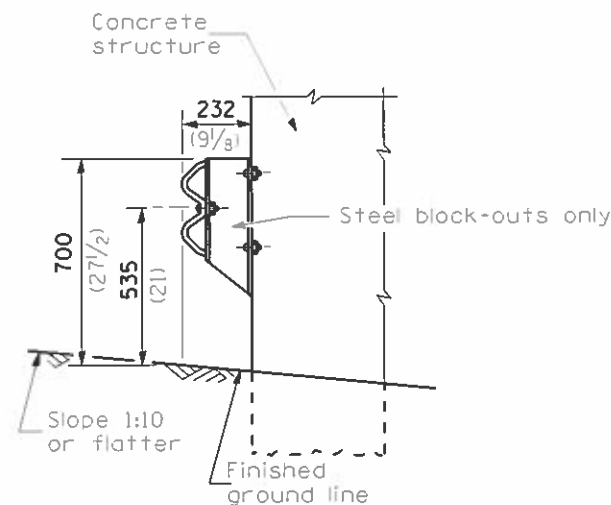


**SECTION C-C**



**TYPE D**

Double steel plate beam guardrail  
1.905 m (6'-3") typical post spacing



**SECTION B-B**

THIS DETAIL IS APPLICABLE TO THE GUARDRAIL  
INSTALLED PRIOR TO JANUARY 1, 2007.

**GENERAL NOTES**

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in millimeters (inches) unless otherwise shown.

| DATE   | REVISIONS                                    |
|--------|--|
| 4-1-06 | Deleted plate washer F.                      |
| 1-1-05 | Rev. post in impervious material on sheet 4. |

**STEEL PLATE BEAM GUARDRAIL**

(Sheet 1 of 4)

**STANDARD 630001-06**

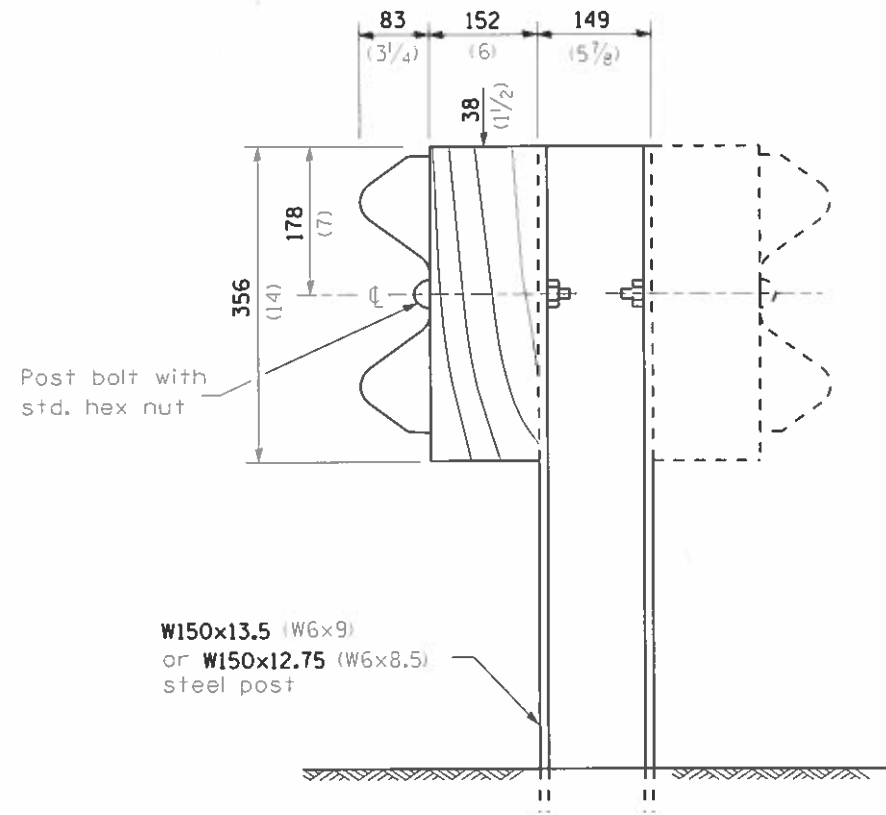
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| p:\planroom\dot.illinois.gov\PA1001\Documents\100T\Offices\District 9\Projects\Geometrics\guardrail.dgn |                  | DRAWN =    | REVISED = |
|   |                  | CHECKED =  | REVISED = |
|   |                  | DATE =     | REVISED = |

|   |  |
|---|--|
| <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> |  |
|---|--|

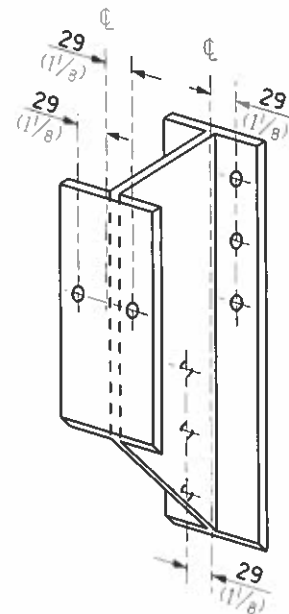
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|---|-------|------|---------|
| <b>STEEL PLATE BEAM GUARDRAIL STANDARD<br/>INSTALLED PRIOR TO JANUARY 1, 2007</b> |       |      |         |
| SCALE:  | SHEET | OF   | SHEETS  |
|   |       | STA. | TO STA. |

|                           |                         |         |              |           |
|---------------------------|-------------------------|---------|--------------|-----------|
| F.A. RTE.                 | SECTION                 | COUNTY  | TOTAL SHEETS | SHEET NO. |
| VAR. 09                   | GUARDRAIL REPAIR FY21-1 | VARIOUS | 20           | 8         |
| CONTRACT NO. 78747        |                         |         |              |           |
| ILLINOIS FED. AID PROJECT |                         |         |              |           |

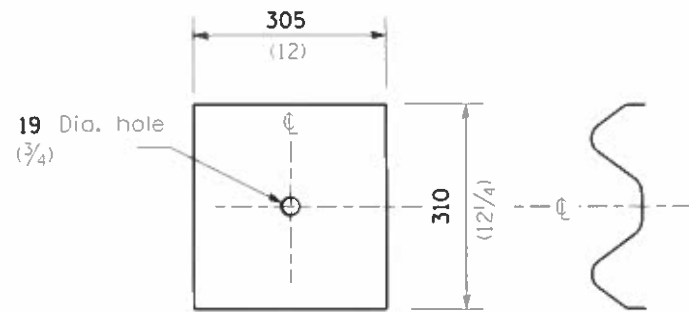




**STEEL POST CONSTRUCTION**



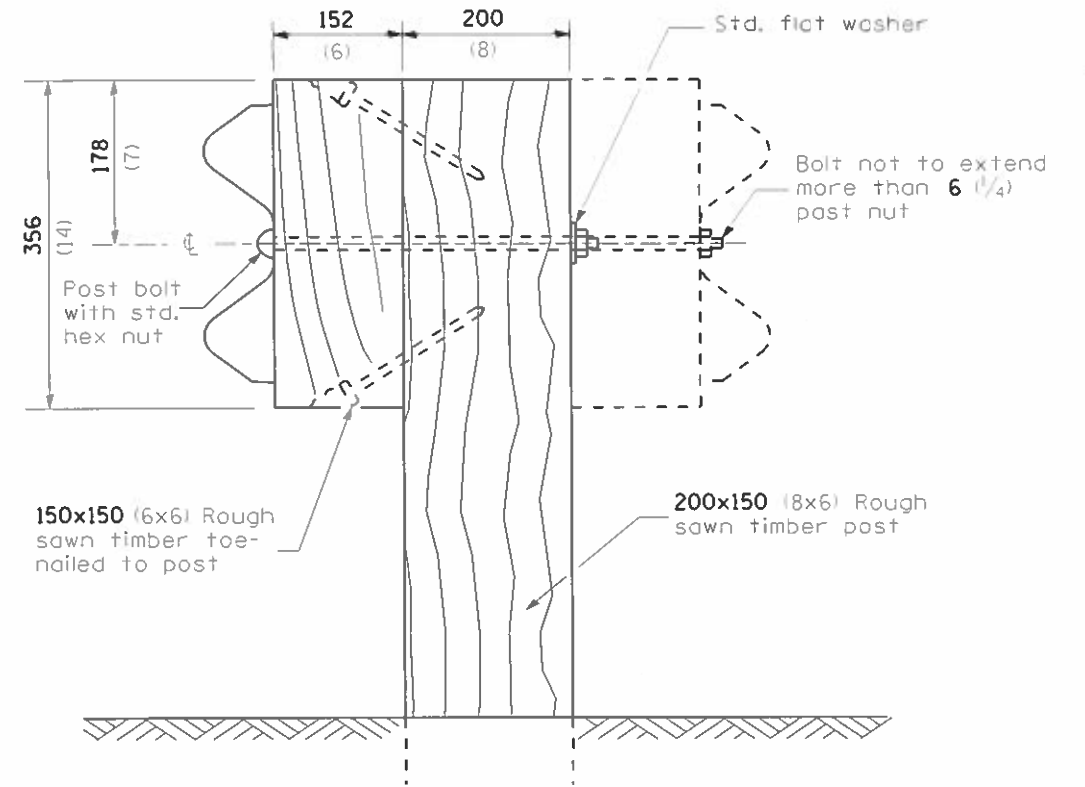
**STEEL BLOCK-OUT DETAIL**



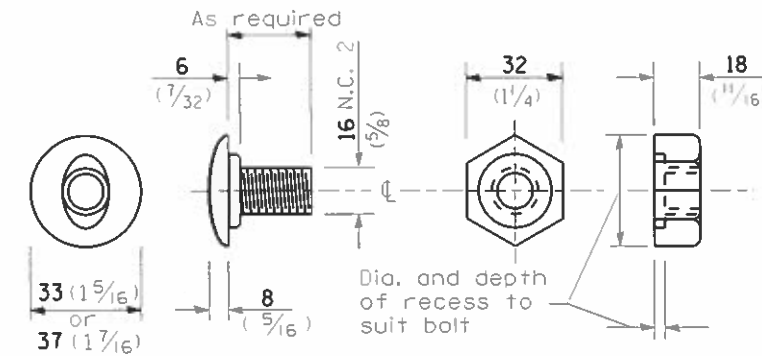
NOTE

Plate A shall be placed between rail element and block-out at non-splice mounting points only when steel block-outs are used.

**PLATE A**



**WOOD POST CONSTRUCTION**



**POST OR SPLICE BOLT & NUT**

**STEEL PLATE BEAM GUARDRAIL**

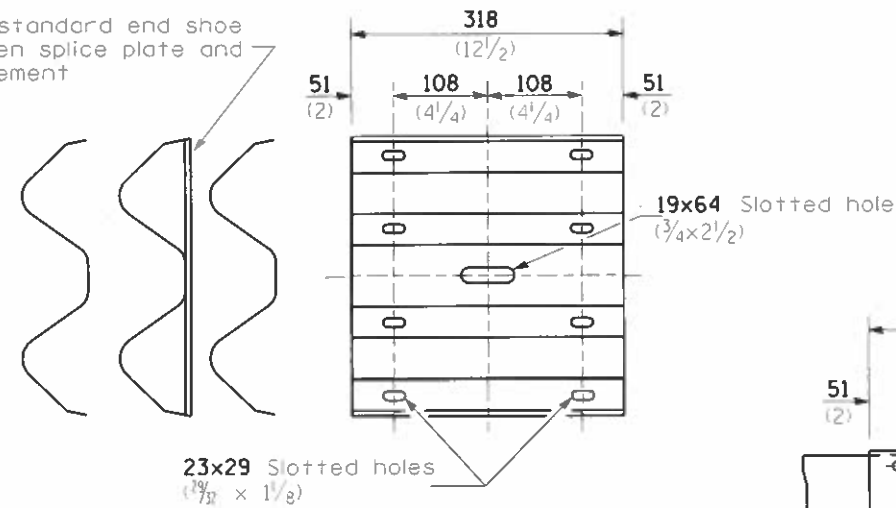
(Sheet 2 of 4)

**STANDARD 630001-06**

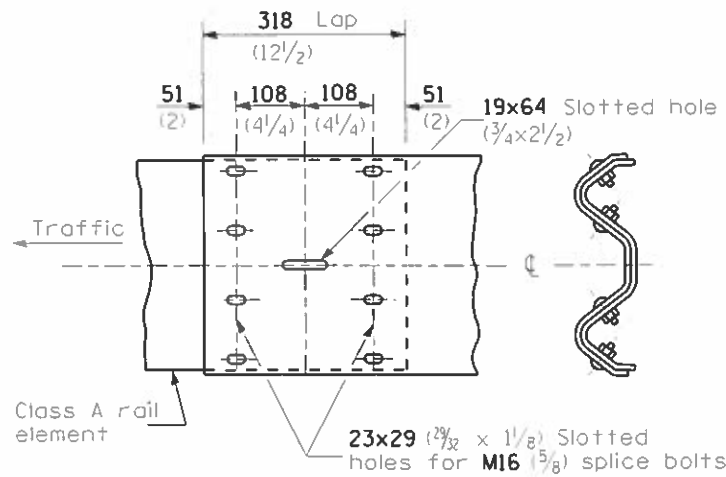
THIS DETAIL IS APPLICABLE TO THE GUARDRAIL INSTALLED PRIOR TO JANUARY 1, 2007.

|   |                       |                                  |           |   |   |       |    |           |         |         |              |                            |         |    |   |
|---|-----------------------|----------------------------------|-----------|---|---|-------|----|-----------|---------|---------|--------------|----------------------------|---------|----|---|
| FILE NAME *   | USER NAME * (poes)    | DESIGNED -                       | REVISED - | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>STEEL PLATE BEAM GUARDRAIL STANDARD<br/>INSTALLED PRIOR TO JANUARY 1, 2007</b> |       |    | F.A. RTE. | SECTION | COUNTY  | TOTAL SHEETS | SHEET NO.                  |         |    |   |
| p:\11\planroom\dot.illinois.gov\100T Documents\100T Offices\District 9\Projects\Geometrics\guardr\1.dgn |                       | DRAGON (Geometrics\guardr\1.dgn) | REVISED - |   | SCALE:  | SHEET | OF | SHEETS    | STA.    | TO STA. | VAR.         | 09 GUARDRAIL REPAIR FY21-1 | VARIOUS | 20 | 9 |
|   |                       | CHECKED -                        | REVISED - |   |   |       |    |           |         |         |              | CONTRACT NO. 78747         |         |    |   |
| Default   | PLOT DATE = 2/21/2020 | DATE -                           | REVISED - |   |   |       |    |           |         |         |              | ILLINOIS FED. AID PROJECT  |         |    |   |

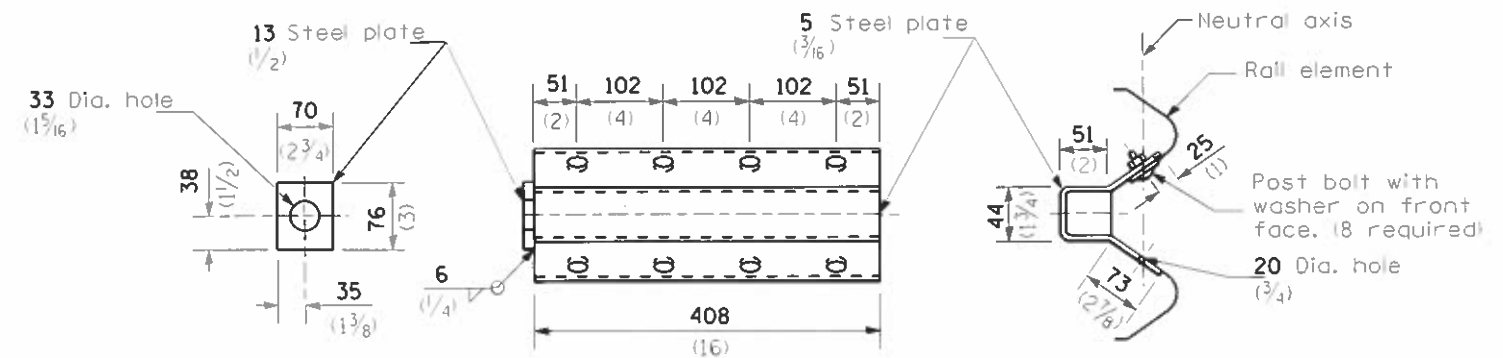
Place standard end shoe between splice plate and rail element



**SPLICE PLATE**

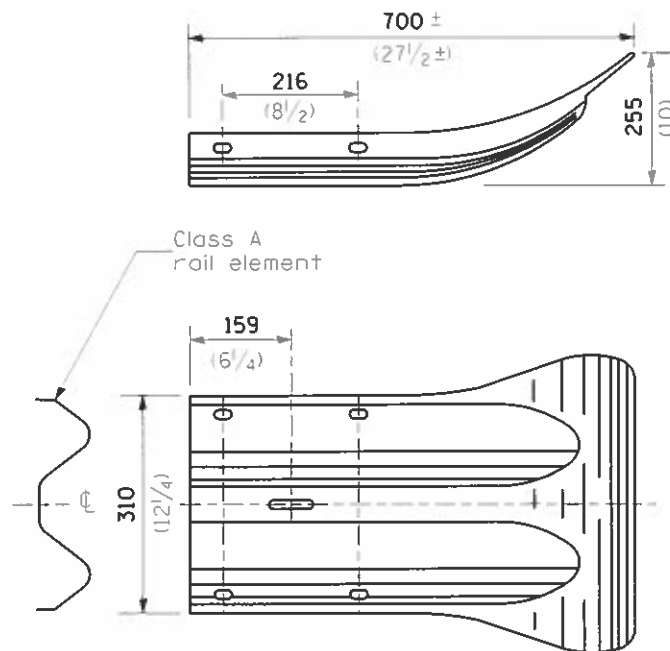


**RAIL ELEMENT SPLICE**

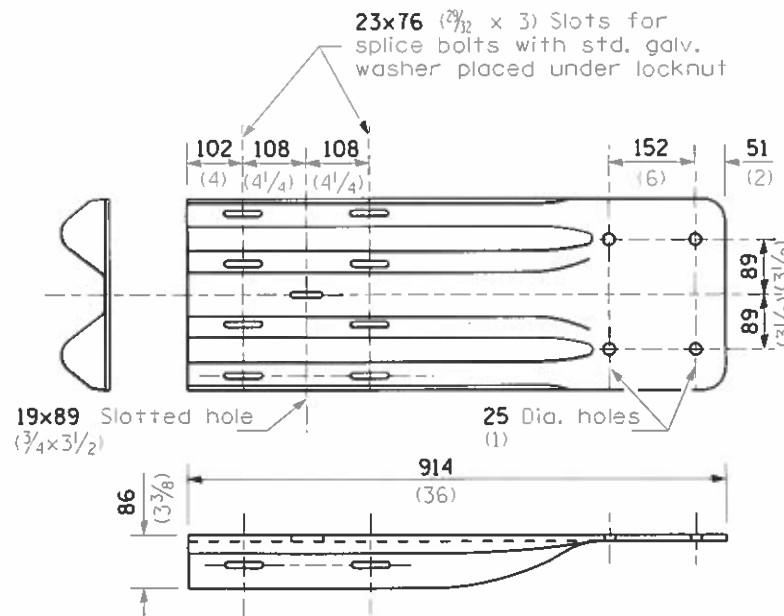


**NOTE**  
Anchor plate T shall be used to attach cable assembly to guardrail when required on traffic barrier terminals.

**ANCHOR PLATE T DETAILS**



**END SECTION**



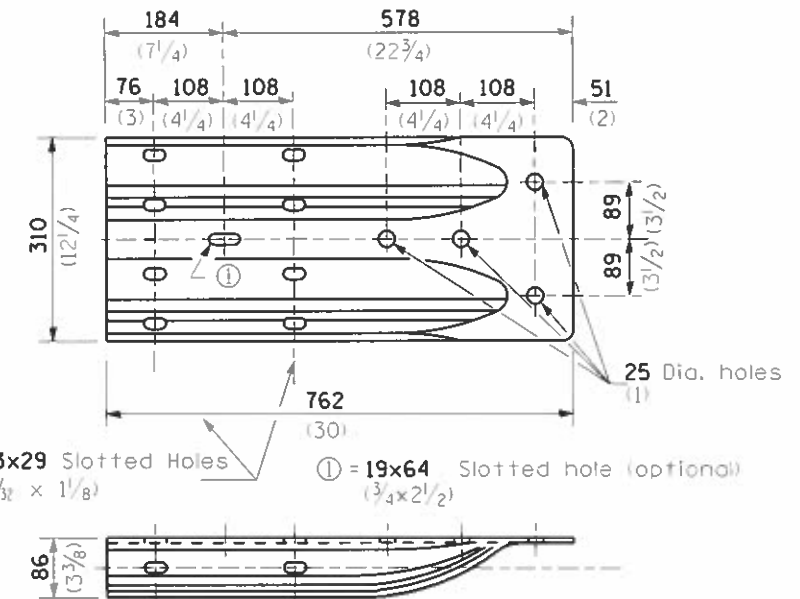
**NOTE**

When end shoe is attached to a bridge parapet which has an expansion joint, the bolts shall be provided with a locknut or double nut and shall be tightened only to a point that will allow guardrail movement.

The standard end shoe shall be attached to the concrete with pre-drilled or self-drilling anchor bolts. The anchor cone shall be set flush with the surface of the concrete.

Externally threaded studs protruding from the surface of the concrete will not be permitted.

**END SHOE**



**ALTERNATE END SHOE**

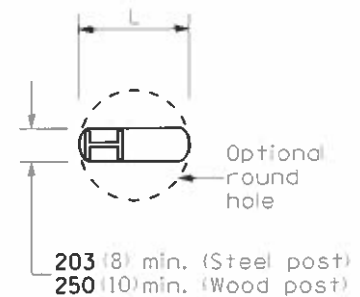
THIS DETAIL IS APPLICABLE TO THE GUARDRAIL INSTALLED PRIOR TO JANUARY 1, 2007.

**STEEL PLATE BEAM GUARDRAIL**

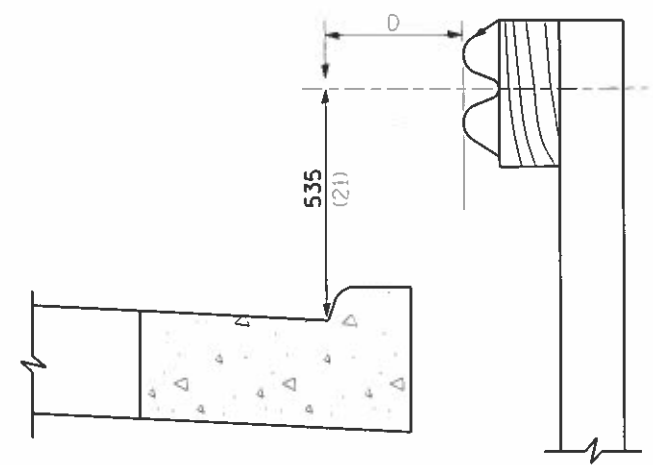
(Sheet 3 of 4)

**STANDARD 630001-06**

|   |                       |            |           |   |   |                            |         |                    |         |        |              |           |
|---|-----------------------|------------|-----------|---|---|----------------------------|---------|--------------------|---------|--------|--------------|-----------|
| FILE NAME *   | USER NAME * (pos)     | DESIGNED - | REVISED - | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>STEEL PLATE BEAM GUARDRAIL STANDARD<br/>INSTALLED PRIOR TO JANUARY 1, 2007</b> |                            |         | F.A. -             | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| pwil\planroom\dot.illinois.gov\PI\DOT\Documents\IDOT Offices\District 9\Projects\Geometrics\guardrail.dgn | DRABIN                | DRABIN     | REVISED   |   | VAR.  | D9 GUARDRAIL REPAIR FY21-1 | VARIOUS | 20                 | 10      |        |              |           |
| PLOT SCALE = 26.0000 1/8 in.  | CHECKED -             | REVISED -  | REVISED - |   | SCALE: SHEET OF SHEETS STA. TO STA.   |                            |         | CONTRACT NO. 78747 |         |        |              |           |
| Default   | PLOT DATE = 2/21/2020 | DATE -     | REVISED - |   | ILLINOIS FED. AID PROJECT   |                            |         |                    |         |        |              |           |



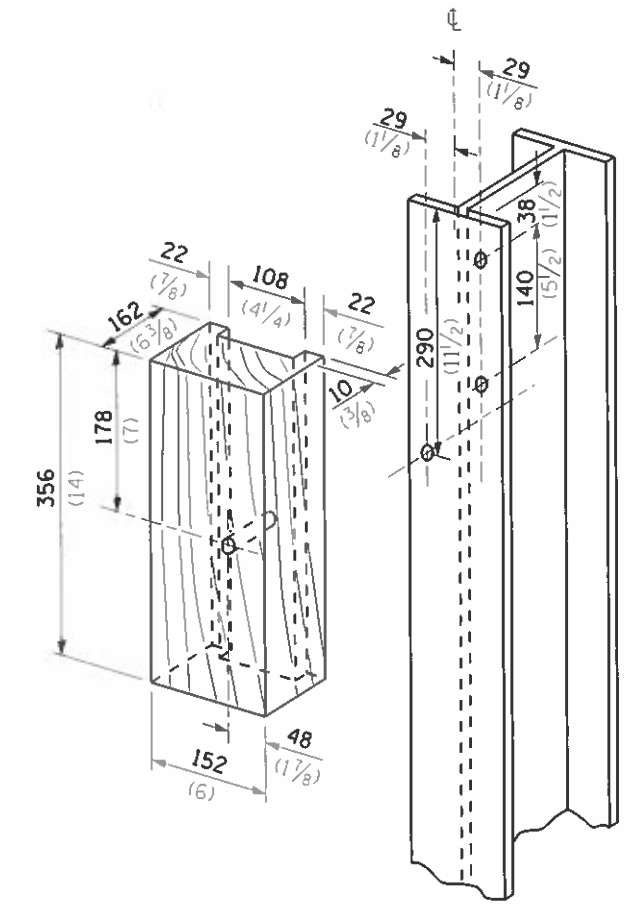
**PLAN**



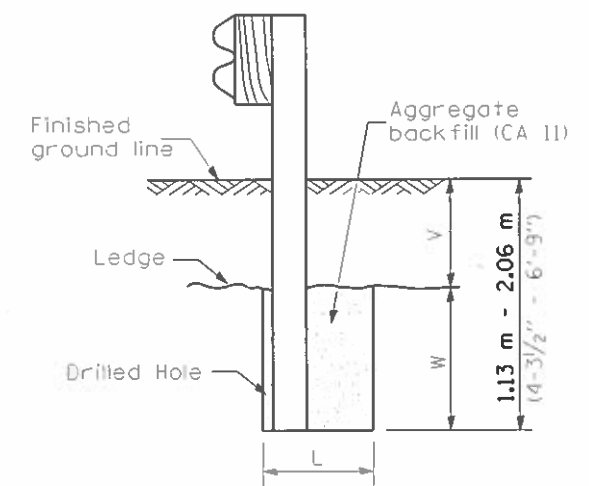
Note:  
If it is necessary for D to be more than 300 (12) and less than 3.0 m (10'-0") type M-5 (M-2) curb and gutter (Std. 60600) shall be used in front of and in advance of the guardrail.

**GUARDRAIL PLACED BEHIND CURB**

(D = 0 desirable to 300 (12) maximum)



**WOOD BLOCK-OUT AND STEEL POST DETAILS**

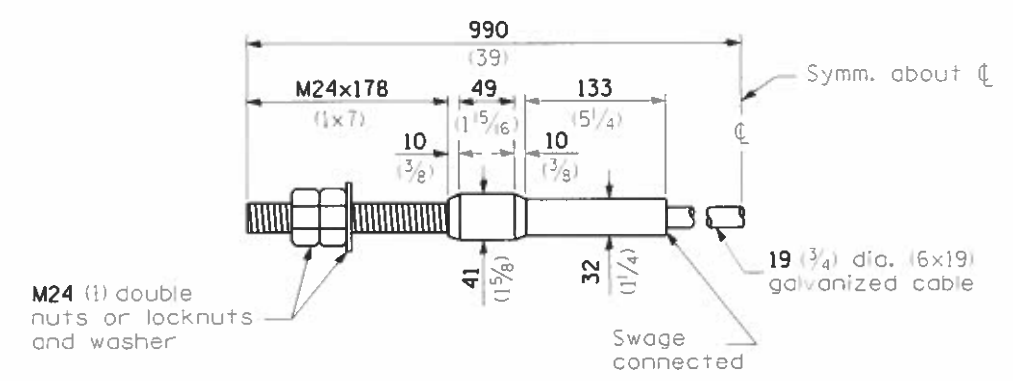


Note:  
Ledge line is top of rock ledge or hard slag fill.

**ELEVATION**

**FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED**

| V                               | W                   | L           |             |
|---------------------------------|---------------------|-------------|-------------|
|                                 |                     | Steel Post  | Wood Post   |
| 0 - 460<br>(0 - 18)             | 610<br>(24)         | 530<br>(21) | 580<br>(23) |
| >460 - 825<br>(>18 - 41.5)      | 305<br>(12)         | 203<br>(8)  | 250<br>(10) |
| >825 - 1.13 m<br>(>41.5 - 53.5) | 305 - 0<br>(12 - 0) | 203<br>(8)  | 250<br>(10) |



**CABLE ASSEMBLY**

(18,100 kg (40,000 lbs.) min. breaking strength)  
Tighten to taut tension.

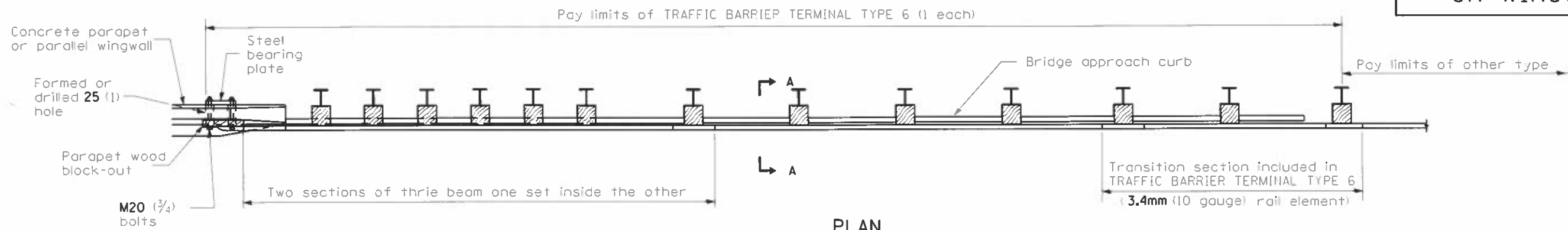
**STEEL PLATE BEAM GUARDRAIL**

(Sheet 4 of 4)

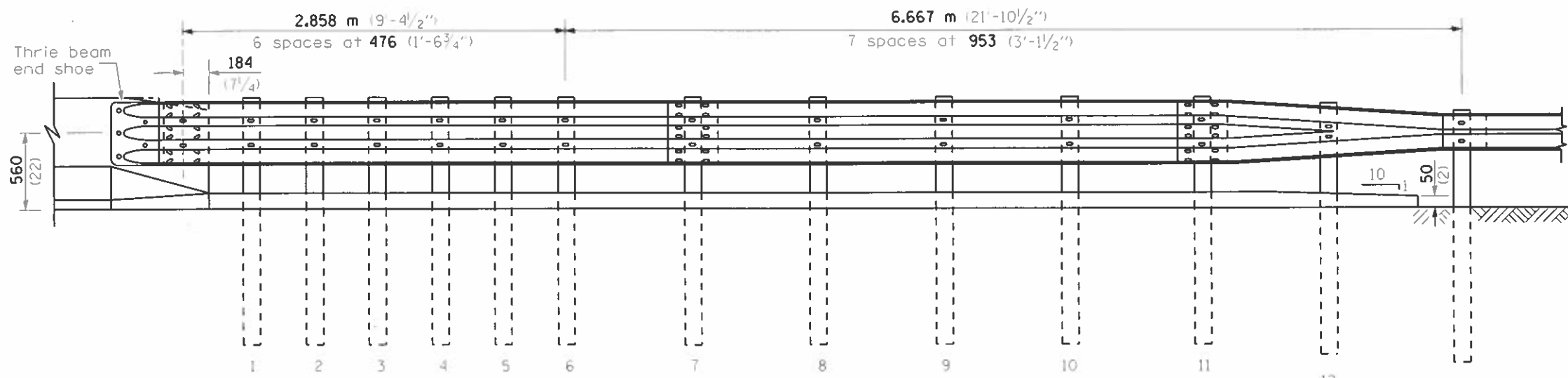
**STANDARD 630001-06**

THIS DETAIL IS APPLICABLE TO THE GUARDRAIL INSTALLED PRIOR TO JANUARY 1, 2007.

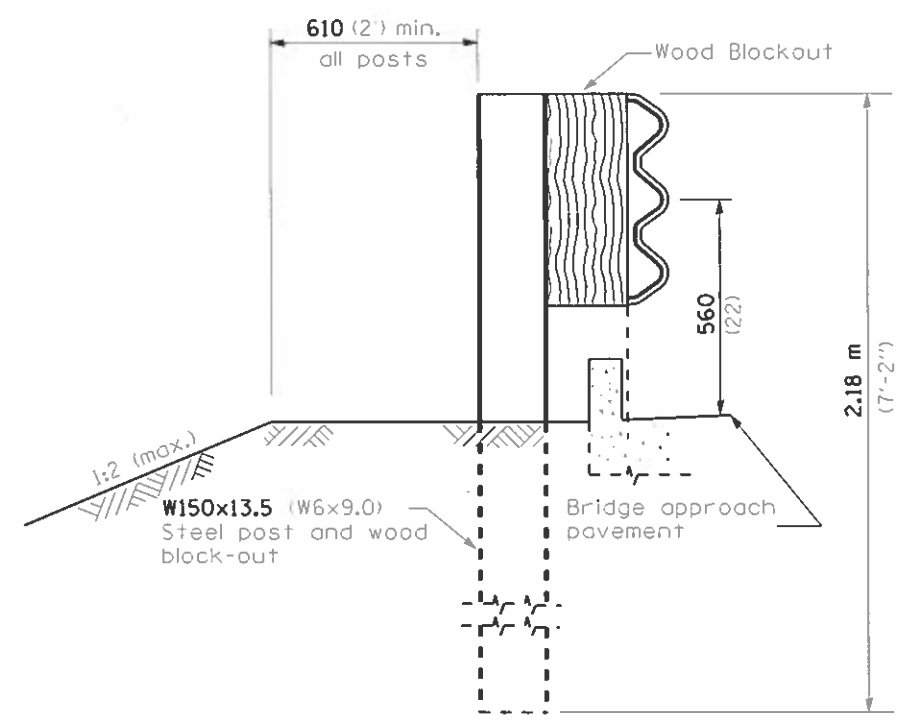
# PARAPET OR WINGWALL



**PLAN**



**ELEVATION**



**SECTION A-A**

### GENERAL NOTES

- See Standard 630001 for details of guardrail not shown.
- Thrie beam rail shall be bolted to block-out at all posts.
- See Standard 420401 for details of bridge approach pavement.
- All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).
- All dimensions are in millimeters (inches) unless otherwise shown.

THIS DETAIL IS APPLICABLE TO THE GUARDRAIL INSTALLED PRIOR TO JANUARY 1, 2007.

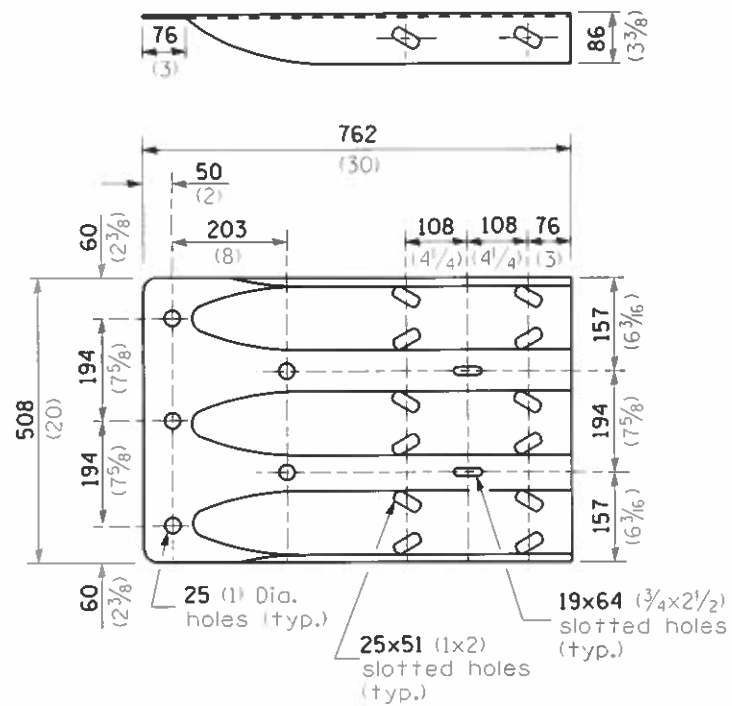
## TRAFFIC BARRIER TERMINAL, TYPE 6

Sheet 1 of 3

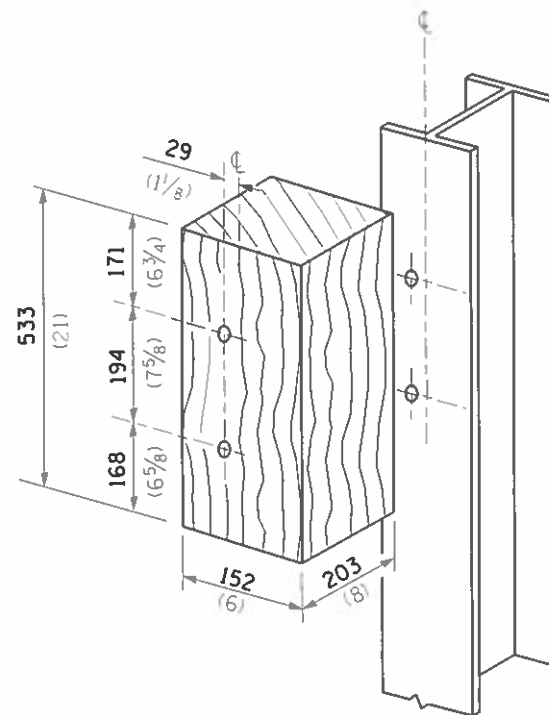
### STANDARD 631031-05

|           |            |          |         |   |   |       |           |                            |         |              |                    |  |
|-----------|------------|----------|---------|---|---|-------|-----------|----------------------------|---------|--------------|--------------------|--|
| FILE NAME | USER NAME  | DESIGNED | REVISED | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>TRAFFIC BARRIER TERMINAL, TYPE 6 STANDARD<br/>INSTALLED PRIOR TO JANUARY 1, 2007</b> |       | F.A. RTE. | SECTION                    | COUNTY  | TOTAL SHEETS | SHEET NO.          |  |
| Default   | DOT        | DOT      | DOT     |   |   |       | VAR. 09   | 09 GUARDRAIL REPAIR FY21-1 | VARIOUS | 20           | 12                 |  |
|           | PLOT SCALE | CHECKED  | REVISED |   | SCALE   | SHEET | OF        | SHEETS                     | STA.    | TO STA.      | CONTRACT NO. 78747 |  |
|           | PLOT DATE  | DATE     | REVISED |   | ILLINOIS FED. AID PROJECT   |       |           |                            |         |              |                    |  |

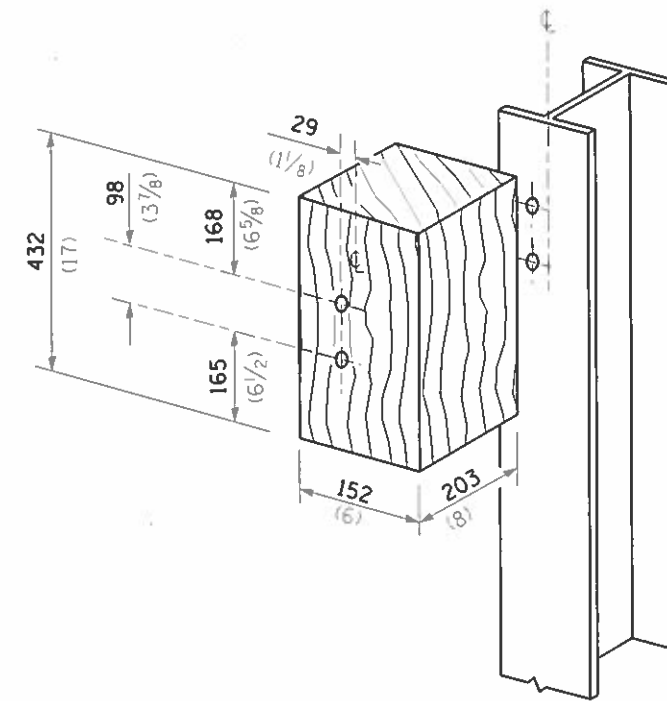




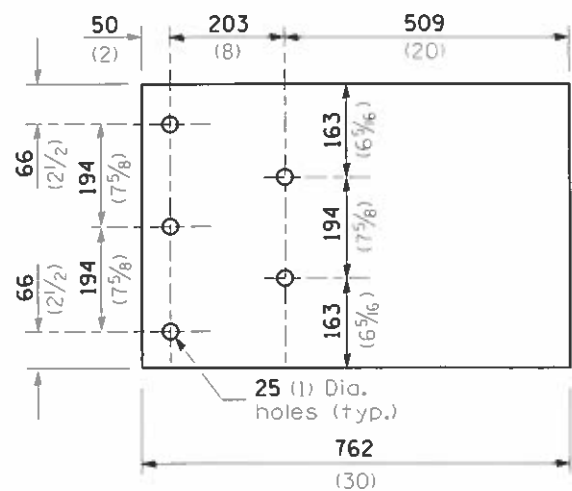
**THRIE BEAM END SHOE DETAIL**



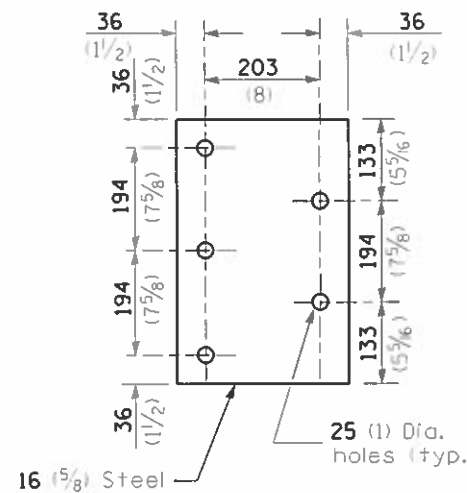
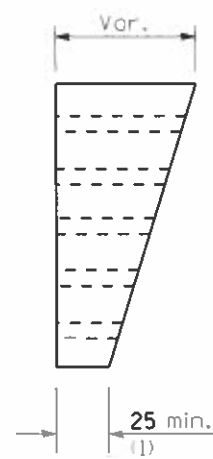
**POSTS 1-11 WOOD BLOCKOUT DETAIL**



**POST 12 WOOD BLOCKOUT DETAIL**



**PARAPET WOOD BLOCK-OUT DETAIL**



**PARAPET STEEL BEARING PLATE DETAIL**

(5 each individual 125x125x16 (5x5x5/8) steel plates with centered 25 (1) holes may be substituted for the plate shown.)

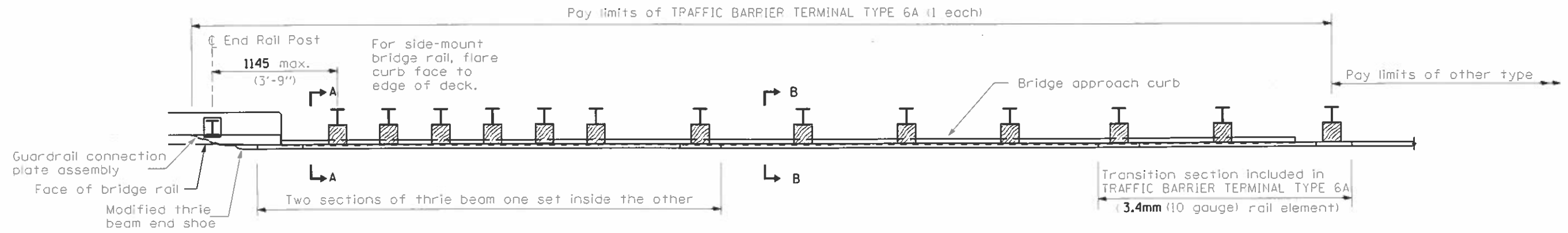
THIS DETAIL IS APPLICABLE TO THE GUARDRAIL  
INSTALLED PRIOR TO JANUARY 1, 2007.

**TRAFFIC BARRIER  
TERMINAL, TYPE 6**

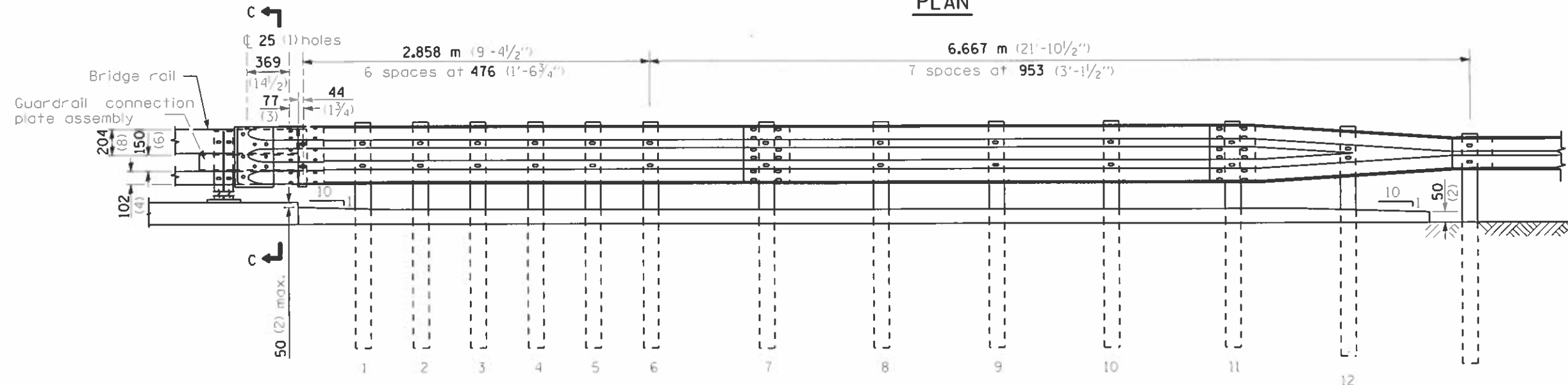
Sheet 3 of 3

**STANDARD 631031-05**

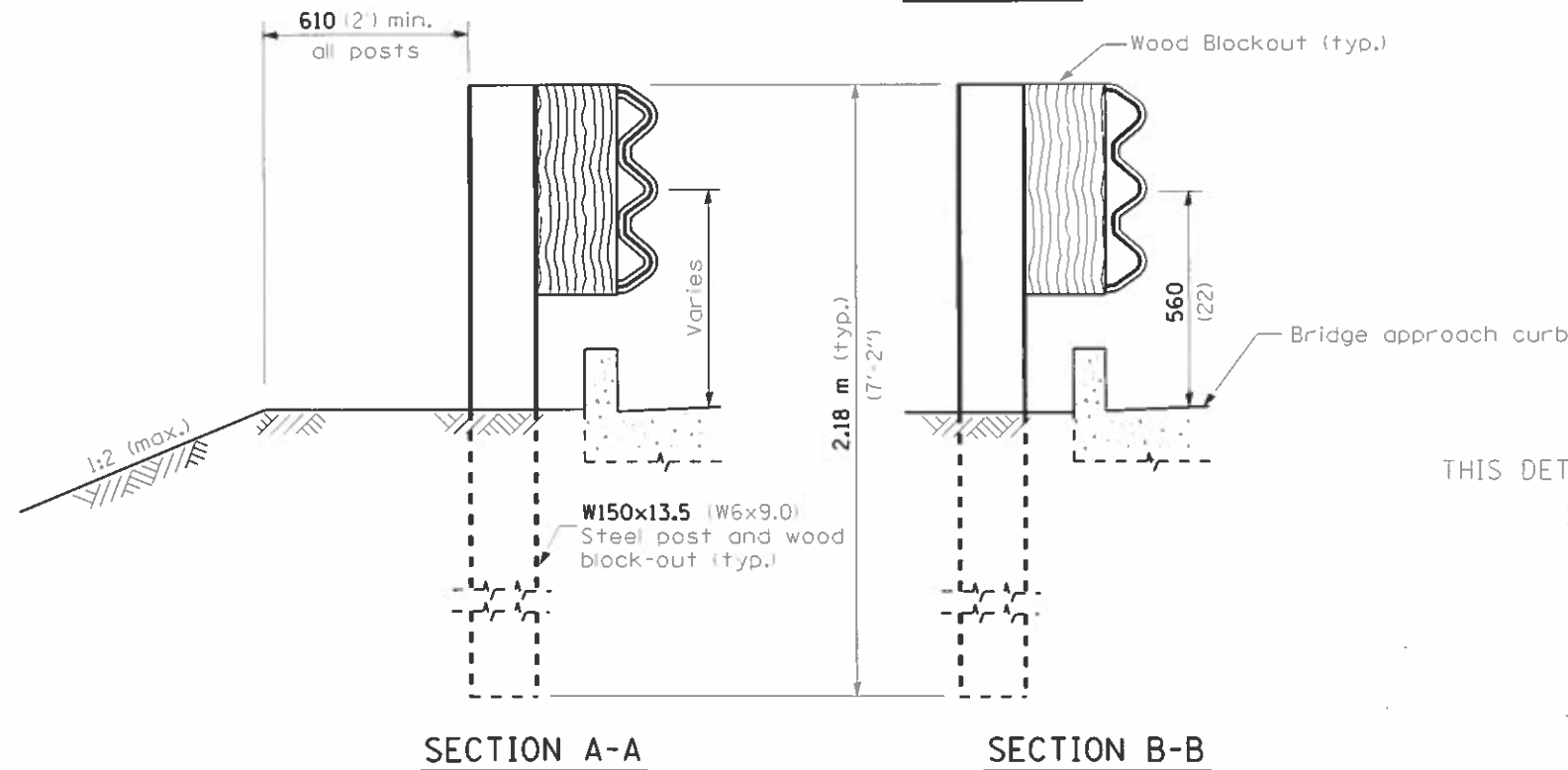
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| FILE NAME *  | USER NAME * poel      | DESIGNED - | REVISED - | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>TRAFFIC BARRIER TERMINAL, TYPE 6 STANDARD<br/>INSTALLED PRIOR TO JANUARY 1, 2007</b> | F.A. RTE.                 | SECTION                    | COUNTY  | TOTAL SHEETS | SHEET NO. |
| p:\planroom\dot.illinois.gov\1007\Documents\1007\District 9\Projects\Geometric\guardrail\ldg | DRAIN                 | REVIS      | REVIS     |   |   | VAR.                      | D9 GUARDRAIL REPAIR FY21-1 | VARIOUS | 20           | 14        |
| PLOT SCALE * 26.0000 in.   | CHECKED               | REVIS      | REVIS     |   |   | CONTRACT NO. 78747        |                            |         |              |           |
| Default  | PLOT DATE * 2/21/2020 | DATE       | REVIS     |   |   | ILLINOIS FED. AID PROJECT |                            |         |              |           |



PLAN



ELEVATION



SECTION A-A

SECTION B-B

GENERAL NOTES

- This standard shows attachment to curb mounted bridge rail. Attachment to side mounted bridge rail is similar.
- See Standard 630001 for details of guardrail not shown.
- Thrie beam rail shall be bolted to block-out at all posts.
- See Standard 420401 for details of bridge approach pavement.
- All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).
- All dimensions are in millimeters (inches) unless otherwise shown.

THIS DETAIL IS APPLICABLE TO THE GUARDRAIL INSTALLED PRIOR TO JANUARY 1, 2007.

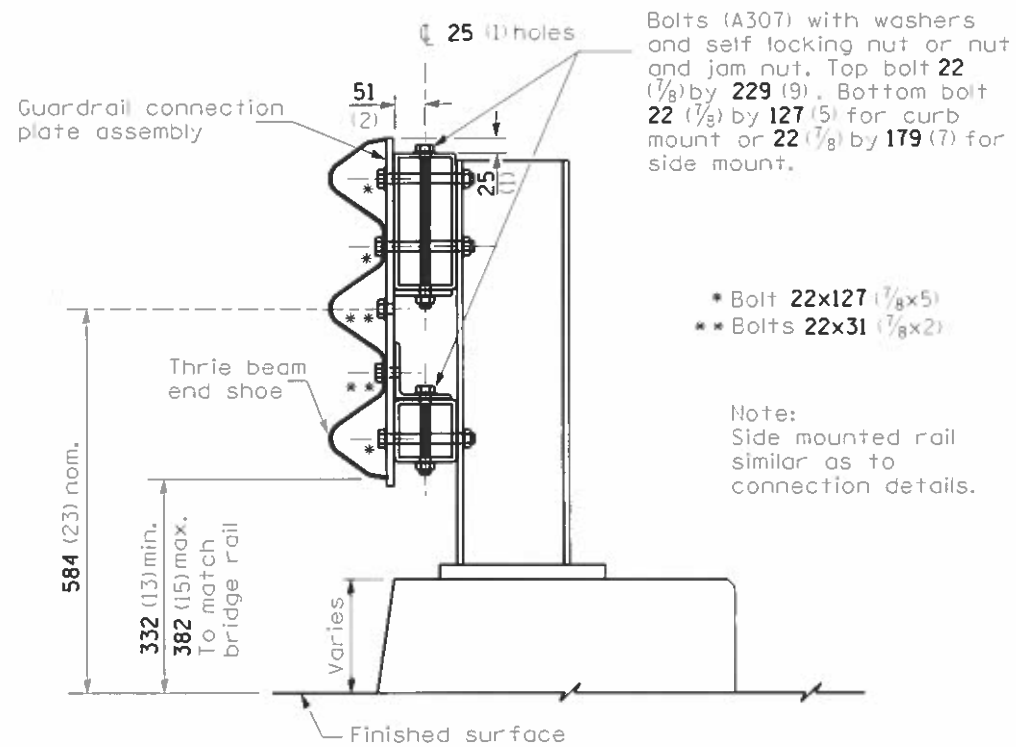
| DATE   | REVISIONS  |
|--------|--|
| 4-1-06 | Added a General Note.  |
| 1-1-04 | Revised bolts and bolt spacing in connection plate & wood blockouts. |

TRAFFIC BARRIER TERMINAL, TYPE 6A

Sheet 1 of 3

STANDARD 631032-02

|             |                       |            |           |   |  |       |           |         |        |              |           |                            |         |    |    |
|-------------|-----------------------|------------|-----------|---|--|-------|-----------|---------|--------|--------------|-----------|----------------------------|---------|----|----|
| FILE NAME = | USER NAME =           | DESIGNED = | REVISED = | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>TRAFFIC BARRIER TERMINAL, TYPE 6A STANDARD<br/>INSTALLED PRIOR TO JANUARY 1, 2007</b> |       | F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |                            |         |    |    |
| Default     | PLDT DATE = 2/21/2020 | CHECKED =  | REVISED = |   | SCALE:   | SHEET | OF        | SHEETS  | STA.   | TO STA.      | VAR.      | D9 GUARDRAIL REPAIR FY21-1 | VARIOUS | 20 | 15 |
|             |                       | DATE =     | REVISED = |   |  |       |           |         |        |              |           | CONTRACT NO. T8747         |         |    |    |
|             |                       |            |           |   |  |       |           |         |        |              |           | ILLINOIS FED. AID PROJECT  |         |    |    |

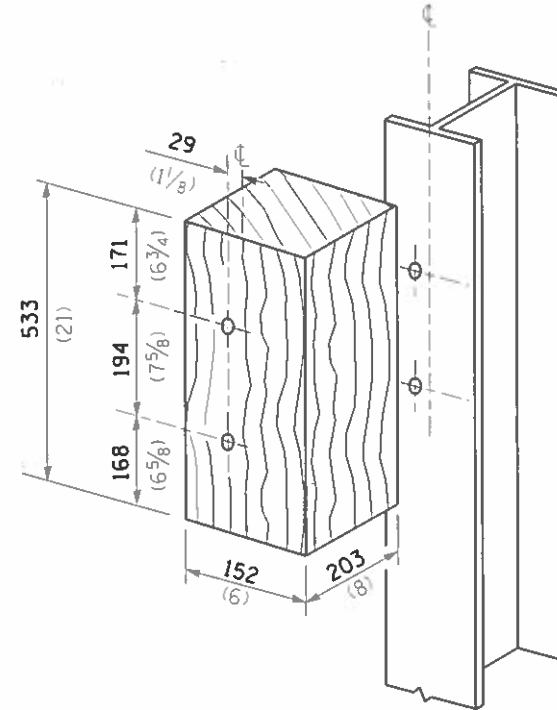


Bolts (A307) with washers and self locking nut or nut and jam nut. Top bolt 22 (7/8) by 229 (9). Bottom bolt 22 (7/8) by 127 (5) for curb mount or 22 (7/8) by 179 (7) for side mount.

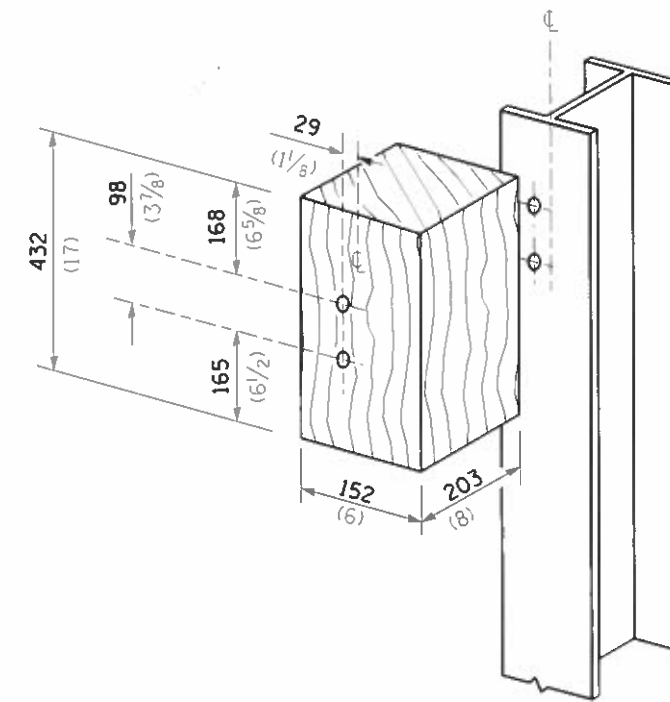
- \* Bolt 22x127 (7/8x5)
- \* Bolts 22x31 (7/8x2)

Note:  
Side mounted rail similar as to connection details.

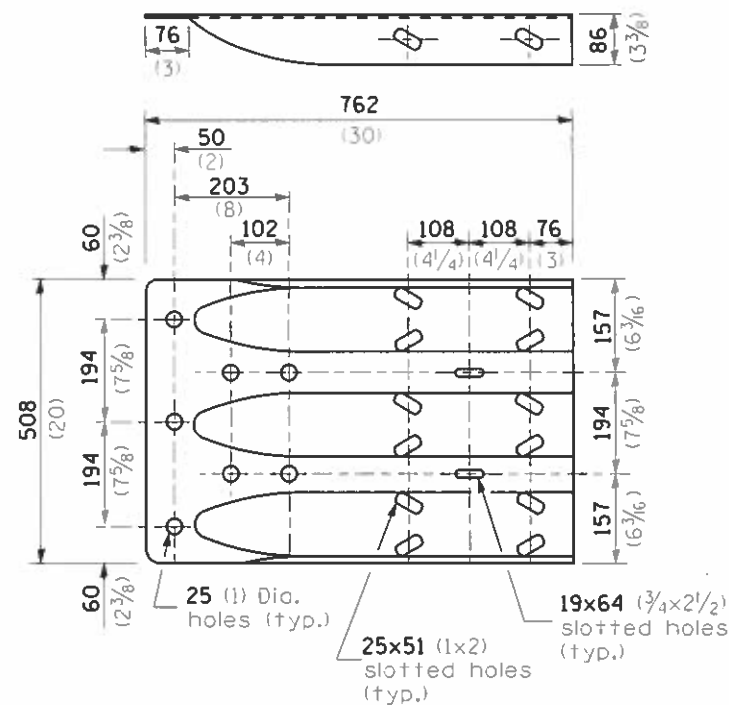
**SECTION C-C**



**POSTS 1-11 WOOD BLOCKOUT DETAIL**



**POST 12 WOOD BLOCKOUT DETAIL**



**MODIFIED THRIE BEAM END SHOE DETAIL**

THIS DETAIL IS APPLICABLE TO THE GUARDRAIL INSTALLED PRIOR TO JANUARY 1, 2007.

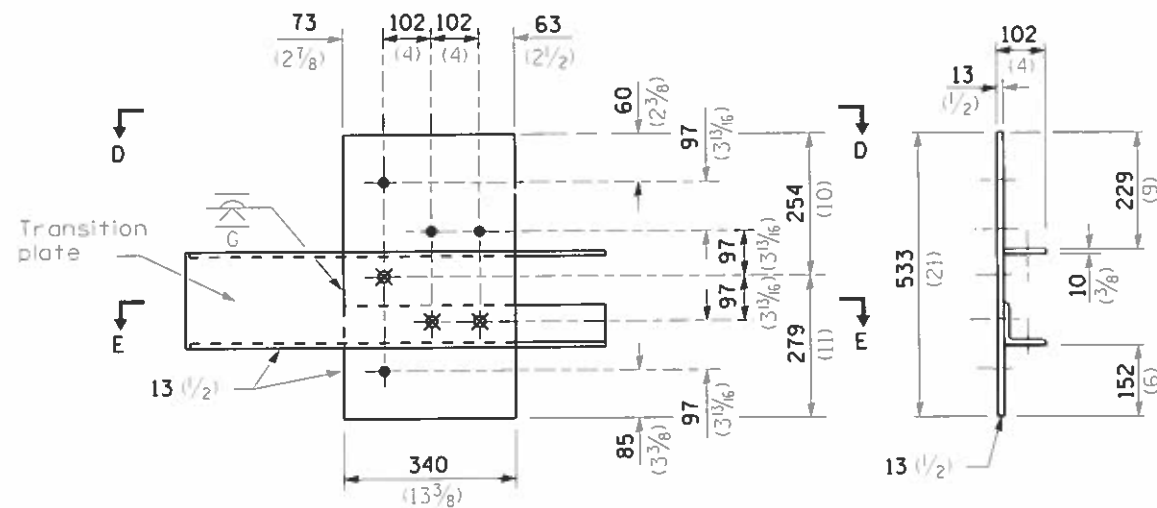
**TRAFFIC BARRIER  
TERMINAL, TYPE 6A**

Sheet 2 of 3

**STANDARD 631032-02**

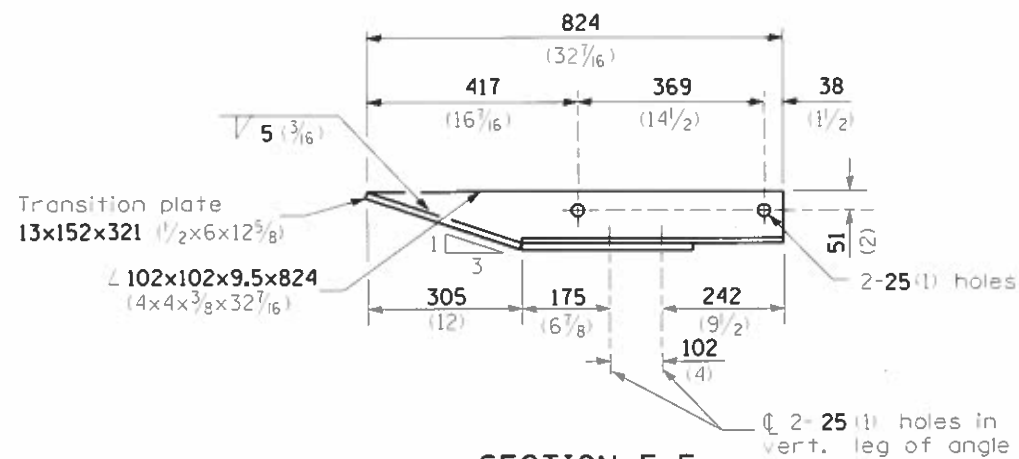
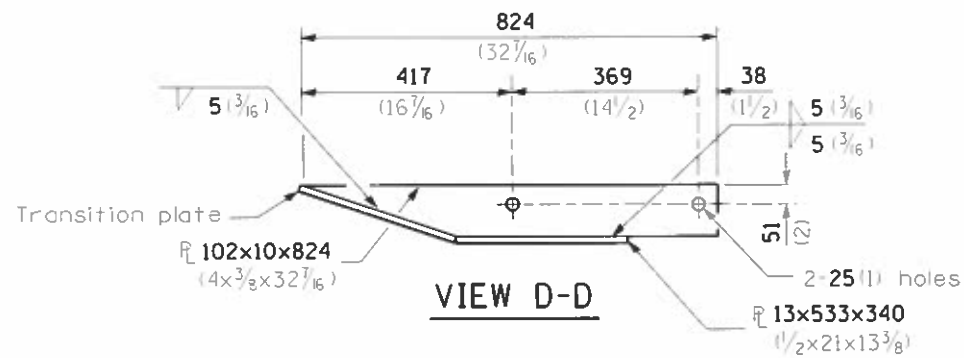
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| FILE NAME * | USER NAME * | DESIGNED -      | REVISED - | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>TRAFFIC BARRIER TERMINAL, TYPE 6A STANDARD<br/>INSTALLED PRIOR TO JANUARY 1, 2007</b> |       |    | F.A. RTE. | SECTION                    | COUNTY  | TOTAL SHEETS              | SHEET NO. |
| Default     | peel        | DRWN: [unclear] | REVISED - |   |  |       |    | VAR. 09   | D9 GUARDRAIL REPAIR FY21-1 | VARIOUS | 20                        | 16        |
|             |             | CHECKED -       | REVISED - |   | SCALE:   | SHEET | OF | SHEETS    | STA.                       | TO STA. | CONTRACT NO. 78747        |           |
|             |             | DATE -          | REVISED - |   |  |       |    |           |                            |         | ILLINOIS FED. AID PROJECT |           |





**GUARDRAIL CONNECTION PLATE ASSEMBLY DETAILS**

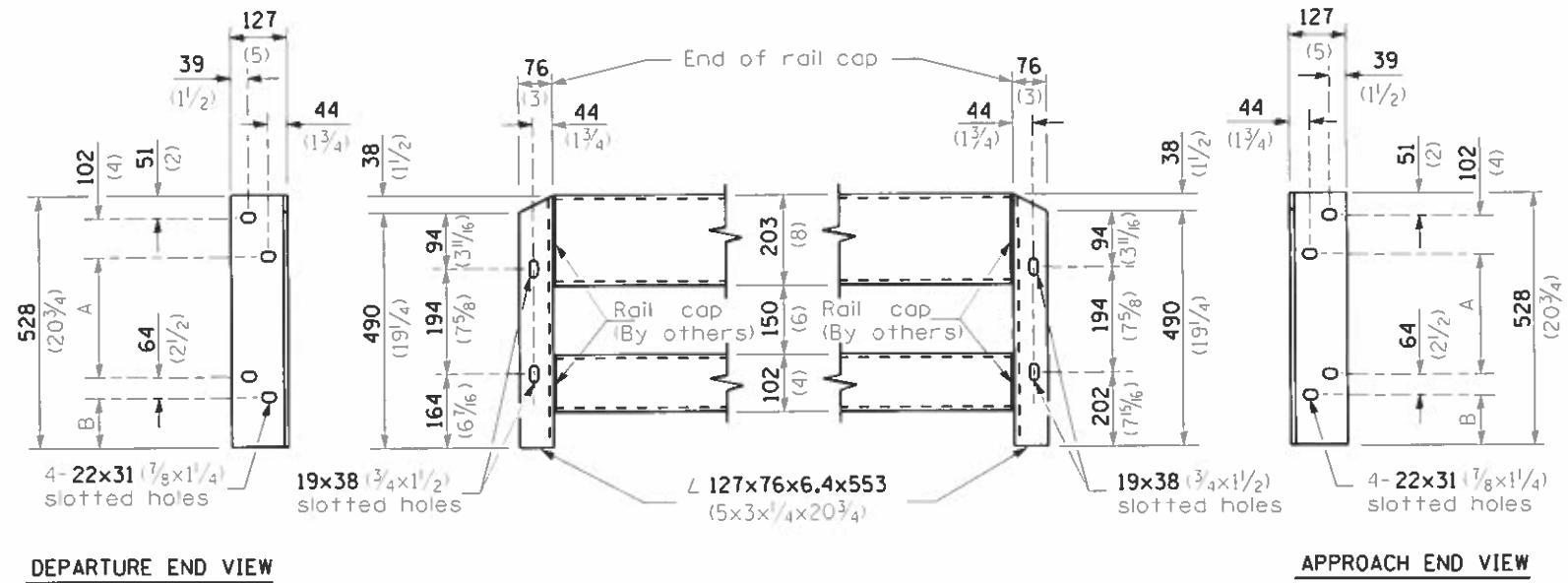
(Mirror for opposite end)



- 4-25(1) holes for 22 (7/8) H.S. bolts and nuts
- ✕ Drill and tap 3 holes for 22 (7/8) H.S. bolts.

**LEGEND**

| Dimensions            | A           | B          |
|-----------------------|-------------|------------|
| For Curb Mounted Rail | 222 (8 3/4) | 89 (3 1/2) |
| For Side Mounted Rail | 247 (9 3/4) | 64 (2 1/2) |



**CONNECTION ANGLES**

Install angles to rail caps using 19 (5/8) washers and self-locking nuts or nuts and jam nuts, to be provided by others.

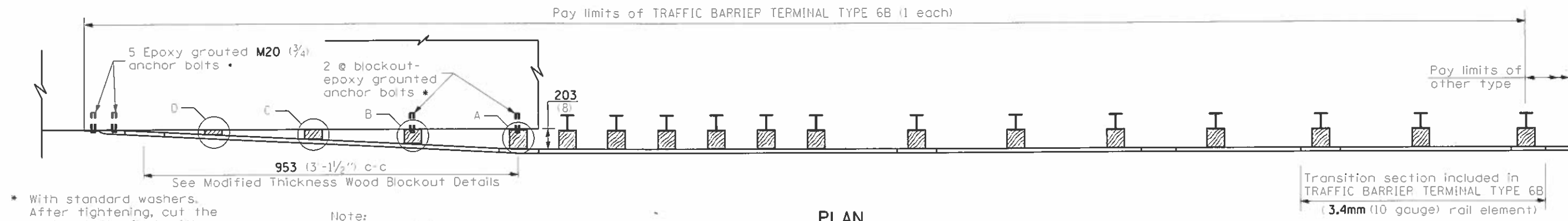
THIS DETAIL IS APPLICABLE TO THE GUARDRAIL INSTALLED PRIOR TO JANUARY 1, 2007.

**TRAFFIC BARRIER TERMINAL, TYPE 6A**

Sheet 3 of 3

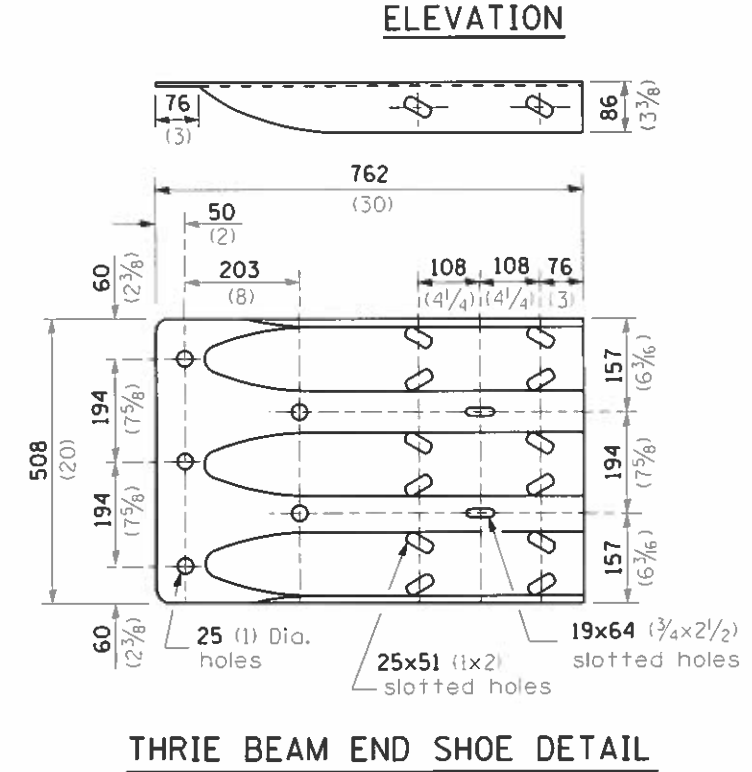
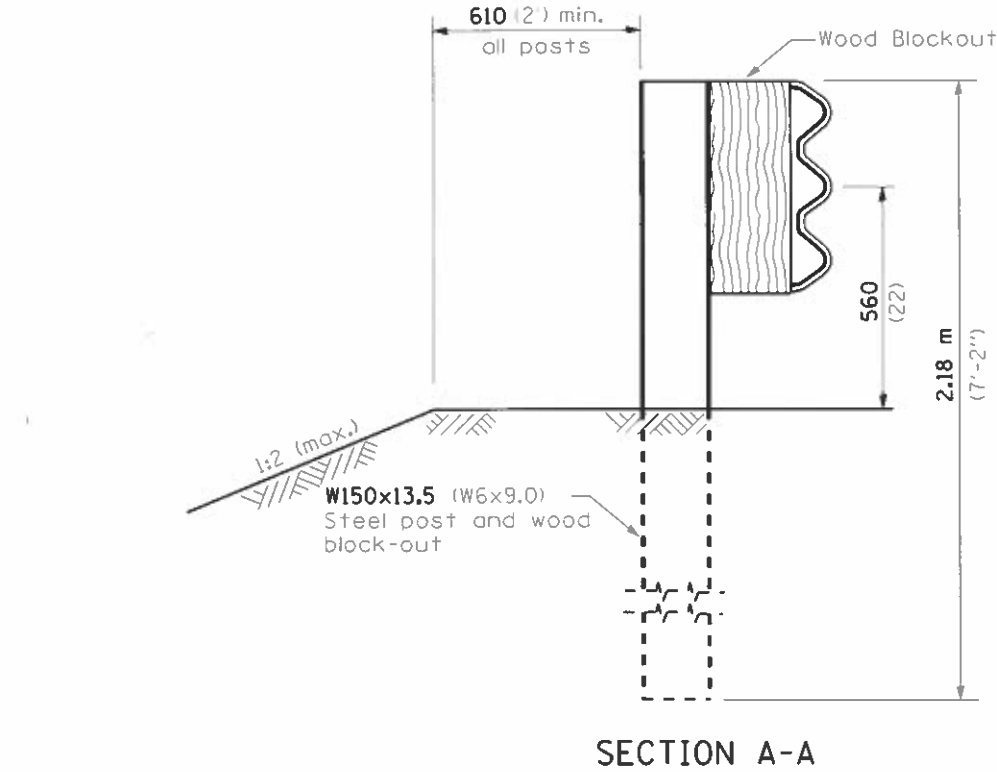
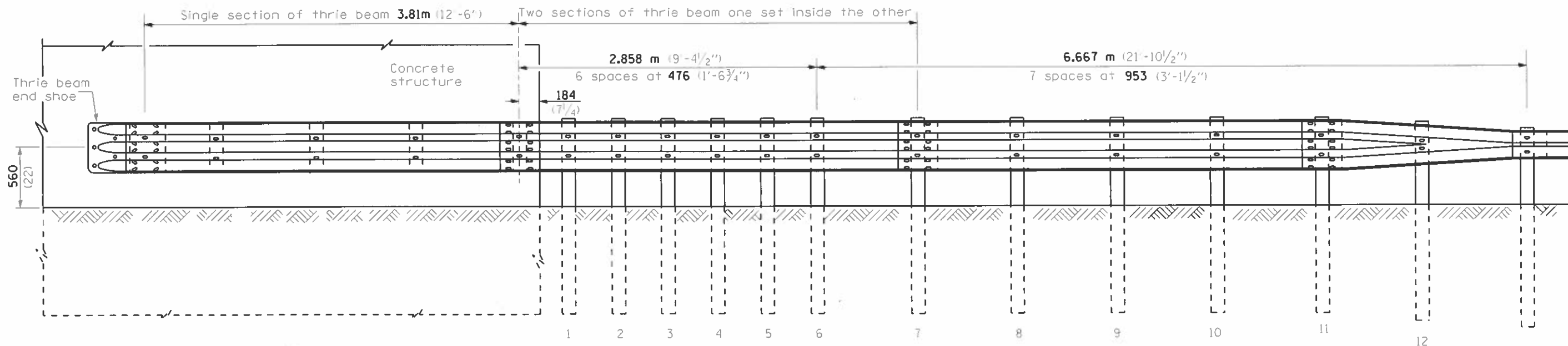
**STANDARD 631032-02**

|   |                   |            |           |   |  |                           |                            |         |              |           |  |
|---|-------------------|------------|-----------|---|--|---------------------------|----------------------------|---------|--------------|-----------|--|
| FILE NAME *   | USER NAME * (paw) | DESIGNED - | REVISED - | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>TRAFFIC BARRIER TERMINAL, TYPE 6A STANDARD<br/>INSTALLED PRIOR TO JANUARY 1, 2007</b> | F.A. RTE.                 | SECTION                    | COUNTY  | TOTAL SHEETS | SHEET NO. |  |
| px:\planroom\d01\illinois\p1001\Documents\DOT Offices\District 9\Projects\Geometric\guardrail\guardrail.dgn |                   | DRAWN -    | REVISED - |   |  | VAR.                      | D9 GUARDRAIL REPAIR FY21-1 | VARIOUS | 20           | 17        |  |
| PLOT SCALE = 26.8000 / in.  |                   | CHECKED -  | REVISED - |   |  | CONTRACT NO. 78747        |                            |         |              |           |  |
| Default   |                   | DATE -     | REVISED - |   |  | ILLINOIS FED. AID PROJECT |                            |         |              |           |  |



\* With standard washers. After tightening, cut the anchor bolts flush with nuts, and damage the nut to prevent it from loosening.

Note: See wood block details A, B, C. & D



THIS DETAIL IS APPLICABLE TO THE GUARDRAIL INSTALLED PRIOR TO JANUARY 1, 2007.

**GENERAL NOTES**

See Standard 630001 for details of guardrail not shown.

Thrie beam rail shall be bolted to block-out at all posts.

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

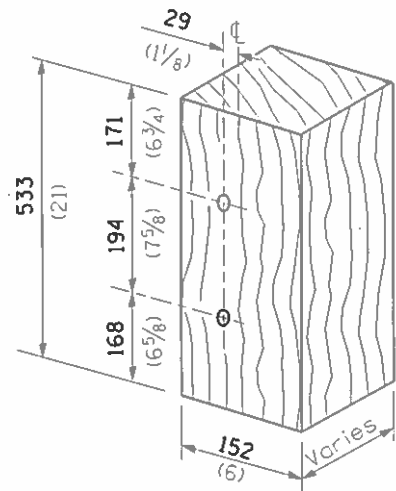
All dimensions are in millimeters (inches) unless otherwise shown.

**TRAFFIC BARRIER TERMINAL, TYPE 6B**

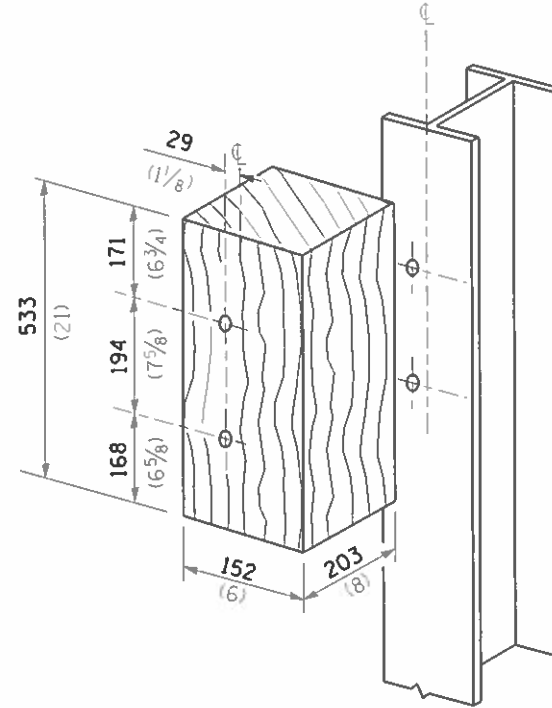
Sheet 1 of 2

**STANDARD 631033-01**

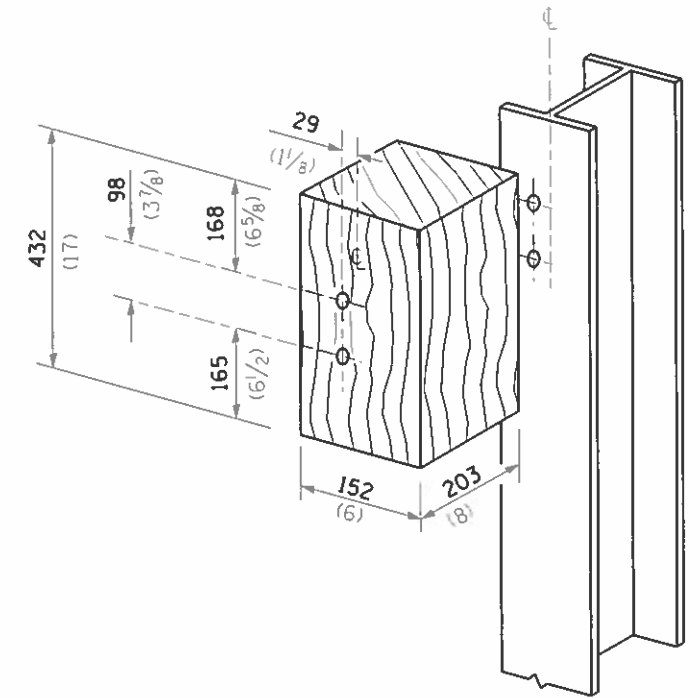
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|  |                  | CHECKED:         | REVISIONS: |  | SCALE: SHEET OF SHEETS STA. TO STA.   |   |         |        | 20                 | 1B        |
|  |                  | DATE:            | REVISIONS: |  |   |   |         |        | CONTRACT NO. 78747 |           |
|  |                  |                  |            |  |   | ILLINOIS FED. AID PROJECT                 |         |        |                    |           |



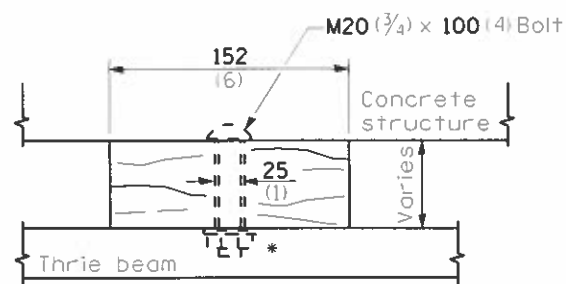
MODIFIED THICKNESS WOOD BLOCKOUT DETAIL



POSTS 1-11 WOOD BLOCKOUT DETAIL

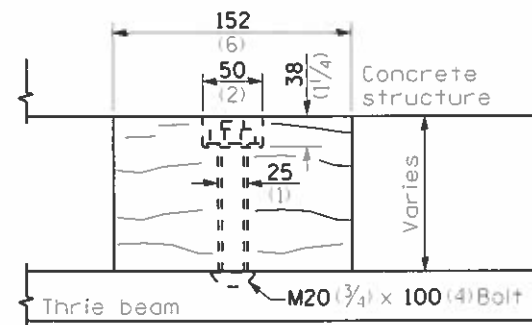


POST 12 WOOD BLOCKOUT DETAIL

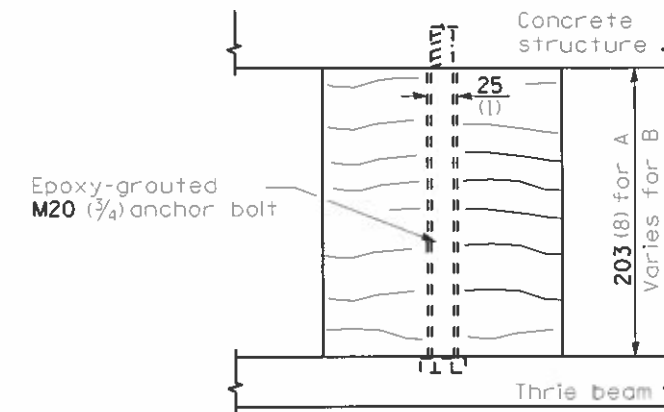


WOOD BLOCKOUT D

Bolt to thrie beam with M20 (3/4) by 100 (4) bolt, washer & nut. Reverse direction of insertion. \*



WOOD BLOCKOUT C



WOOD BLOCKOUT A & B

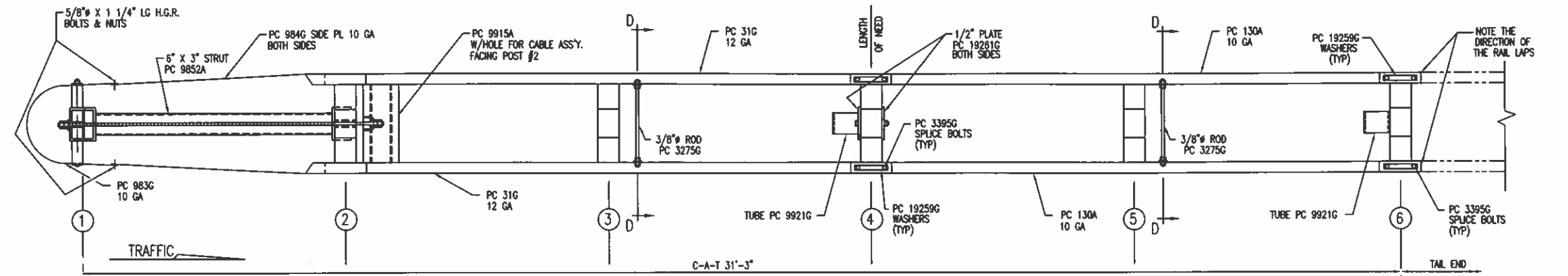
THIS DETAIL IS APPLICABLE TO THE GUARDRAIL  
INSTALLED PRIOR TO JANUARY 1, 2007.

TRAFFIC BARRIER  
TERMINAL, TYPE 6B

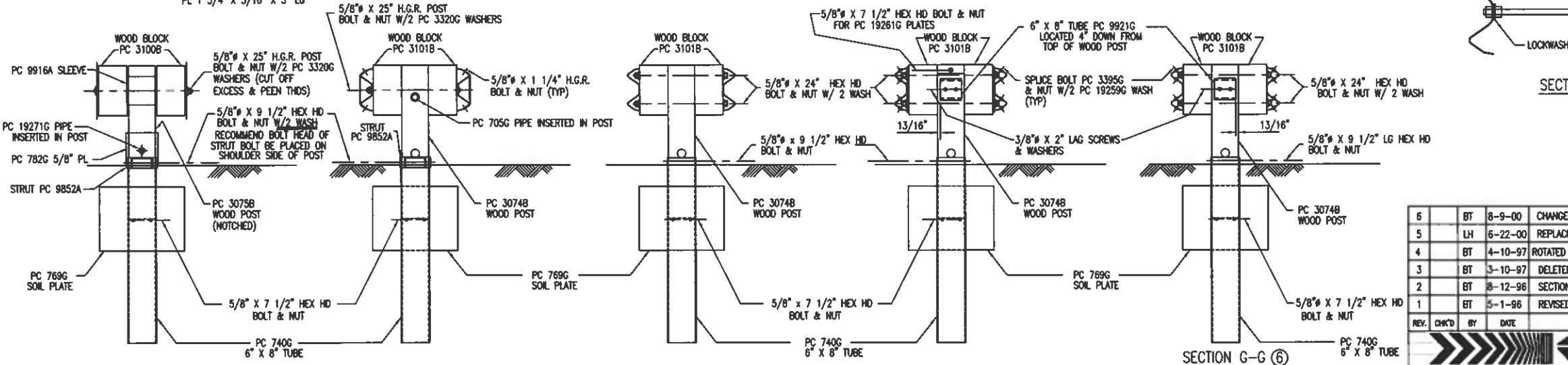
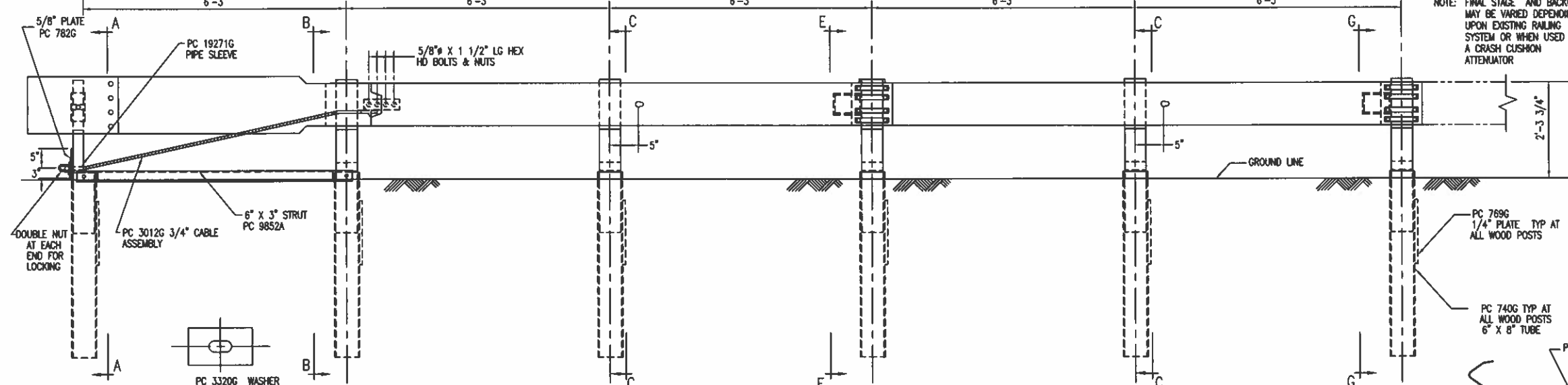
Sheet 2 of 2

**STANDARD 631033-01**

|   |   |                                  |           |   |  |                                 |         |        |              |           |                    |
|---|---|----------------------------------|-----------|---|--|---------------------------------|---------|--------|--------------|-----------|--------------------|
| FILE NAME *                               | USER NAME * poesi                           | DESIGNED -                       | REVISED - | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>TRAFFIC BARRIER TERMINAL, TYPE 6B STANDARD<br/>INSTALLED PRIOR TO JANUARY 1, 2007</b> | F.A. -                          | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |                    |
| pe:\planroom\dtd\illinois.go:\PW1001\Docu | ents\100T Offices\District 9\Projects\Geome | ORAN to Geometrics\guardra.l.dgn | REVISED - |   |  | VAR. D9 GUARDRAIL REPAIR FY21-1 | VARIOUS | 20     | 19           |           |                    |
| PLOT SCALE * 26.0000 / in.                | CHECKED -                                   | REVISED -                        | SCALE:    |   |  | SHEET                           | OF      | SHEETS | STA.         | TO STA.   | CONTRACT NO. 78747 |
| Default                                   | PLDT DATE * 2/21/2020                       | DATE -                           | REVISED - |   |  | ILLINOIS FED. AID PROJECT       |         |        |              |           |                    |



| C-A-T BILL OF MATERIAL |     |                                    |
|------------------------|-----|------------------------------------|
| PRODUCT CODE           | QTY | DESCRIPTION                        |
| 31G                    | 2   | 12/12/0 CAT (GUARDRAIL)            |
| 130A                   | 2   | 10/12/0/5/10/10/SP CAT (GUARDRAIL) |
| 705G                   | 1   | 2" x 5 1/2" PIPE                   |
| 740G                   | 6   | 4" TUBE SLEEVE                     |
| 769G                   | 6   | 1/4 x 18 x 24 SOIL PLATE           |
| 782G                   | 1   | 5/8" x 8" x 8" BEARING PLATE       |
| 983G                   | 1   | 10/NOSE PLATE/CAT/ROLLED           |
| 984G                   | 2   | 10/SIDE PLATE CAT                  |
| 3012G                  | 1   | CABLE 3/4 x 80/DRL SWG             |
| 3074B                  | 5   | WD 3/6 POST #2, 3, 4, 5, 6 CAT     |
| 3075B                  | 1   | WD 3/6 POST #1 CAT                 |
| 3100B                  | 2   | WD BLOCK 12 #1 CAT                 |
| 3101B                  | 10  | WD BLOCK 12 #2-6 CAT               |
| 3255G                  | 4   | 3/8" FLAT WASHER                   |
| 3263G                  | 4   | 3/8" x 2" LAG SCREW                |
| 3275G                  | 2   | 3/8" x 24 1/2" RESTRAINT ROD       |
| 3300G                  | 20  | 5/8" FLAT WASHER                   |
| 3320G                  | 4   | 3/16" x 1 3/4" x 3" RECT WASHER    |
| 3340G                  | 85  | 5/8" G.R. NUT                      |
| 3380G                  | 16  | 5/8" x 1 1/4" G.R. BOLT            |
| 3380C                  | 8   | 5/8" x 1 1/2" HEX BOLT             |
| 3395G                  | 32  | 5/8" x 1 3/4" HEX BOLT CAT         |
| 3478G                  | 13  | 5/8" x 7 1/2" HEX BOLT             |
| 3497G                  | 6   | 5/8" x 9 1/2" HEX BOLT             |
| 3650G                  | 2   | 5/8" x 25" G.R. BOLT               |
| 3900G                  | 2   | 1" FLAT WASHER                     |
| 3910G                  | 4   | 1" HEX NUT                         |
| 4252G                  | 8   | 3/8" HEX NUT                       |
| 4258G                  | 4   | 3/8" LOCK WASHER                   |
| 4640G                  | 8   | 5/8" x 24" HEX BOLT                |
| 9852A                  | 1   | CHANNEL STRUT x 6'-6"              |
| 9915A                  | 1   | SPACER CHANNEL CAT                 |
| 9916A                  | 1   | 10/BENT PLATE SLEEVE               |
| 9921G                  | 2   | 6" SLEEVE 6 x 8                    |
| 19259G                 | 32  | 3/16" x 2" x 10" PLATE WASHER      |
| 19261G                 | 2   | 1/2 x 3 x 7 POST PLATE             |
| 19271G                 | 1   | 1" x 2 1/2" PIPE SLEEVE CAT        |



| REV. | CHK'D | BY      | DATE | REMARKS  |
|------|-------|---------|------|--|
| 6    | BT    | 8-9-00  |      | CHANGED SYSTEM HEIGHT, WAS 2'-3"                 |
| 5    | LH    | 6-22-00 |      | REPLACED PC 766 WITH PC 769, CHANGED TITLE BLOCK |
| 4    | BT    | 4-10-97 |      | ROTATED BLOCK PC 9921 90° AT POST 4 & 6          |
| 3    | BT    | 3-10-97 |      | DELETED PC 3072, 3073, 4470, CHG QTY 3074 & 3478 |
| 2    | BT    | 8-12-96 |      | SECTIONS A-A & B-B, CORRECTED PIPE SLEEVE PC No  |
| 1    | BT    | 5-1-96  |      | REVISED PC No 31G & 130A                         |

**C-A-T**

CRASH-CUSHION ATTENUATING TERMINAL  
PLAN, ELEVATION & SECTIONS FOR USE  
AS A LONGITUDINAL MEDIAN BARRIER TERMINAL  
OR CRASH CUSHION ATTENUATOR

DRAWN BT  
CHECKED EN  
SCALE N.T.S.  
DATE 7-15-94  
ENG. FILE # SS245-01E  
SHT. No. E1 OF 1  
DRAWING NO. SS-245  
REV. 6

TRINITY INDUSTRIES, INC.  
HIGHWAY SAFETY PRODUCTS  
2525 STEMMONS FREEWAY, DALLAS, TX 75207