Form No. DMB 234 (Rev. 1/96)
AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Contract will not be executed unless form is filed

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
PURCHASING OPERATIONS
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

January 26, 2010

CHANGE NOTICE NO. 1
TO
CONTRACT NO. 071B9200274
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR	TELEPHONE: Timothy Scott **(313) 924-9121**
Soelch Properties, LLC **8200 Lynch Road** **Detroit, MI 48234** **Email: Tscott@soelchgroup.com**	CONTRACTOR NUMBER/MAIL CODE BUYER/CA (517) 241-1650 **Terry Harris**
Contract Compliance Inspector: Tim Croze **Guardrail Beams, Parts & Accessories – Michigan Department of Transportation (MDOT)**	
CONTRACT PERIOD: **3 yrs. + 2 one-year options** From: **September 1, 2009** To: **August 31, 2012**	
TERMS **Net 45 Days**	SHIPMENT **14 Days ARO**
F.O.B. **Delivered**	SHIPPED FROM **N/A**
MINIMUM DELIVERY REQUIREMENTS **Minimum Order is $6,000.00**	
MISCELLANEOUS INFORMATION:	

THIS CONTRACT IS EXTENDED TO LOCAL UNITS OF GOVERNMENT.

NATURE OF CHANGE(S):

Effective immediately the following line items are hereby DELETED from this Contract:

Item	Unit	Part Number	NIGP Code	Description	Estimated Quantity	Unit Cost	Extended Cost
51	EA		570-28	Guardrail Approach Terminal 1T-SRT-350, furnish all parts as per attached MDOT Standard Plan R-61-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
53	EA		570-28	Guardrail Approach Terminal 1T, FLEAT, furnish all parts as per attached MDOT Standard Plan R-61-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
55	EA		570-28	Guardrail Approach Terminal 2T ET, furnish as per attached MDOT Standard Plan R-62-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
57	EA		570-28	Guardrail Approach Terminal 2T-SKT, furnish as per attached MDOT Standard Plan R-62-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
59	EA		570-28	Guardrail Approach Terminal 3T FLEAT-MT, furnish as per attached MDOT Standard Plan R-63-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A

All other Terms, Condition, Specifications and Pricing remain unchanged.

AUTHORITY/REASON:

Per email from MDOT (Rick Dolan) dated January 19, 2010 and DMB Purchasing Operations agreement.

TOTAL ESTIMATED CONTRACT VALUE REMAINS: $745,233.25

Form No. DMB 234 (Rev. 1/96)
AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Contract will not be executed unless form is filed

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
PURCHASING OPERATIONS
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

September 16, 2009

NOTICE
OF
CONTRACT NO. 071B9200274
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR **Soelch Properties, LLC** **8200 Lynch Road** **Detroit, MI 48234** **Email: Tscott@soelchgroup.com**	TELEPHONE: Timothy Scott **(313) 924-9121** CONTRACTOR NUMBER/MAIL CODE BUYER/CA (517) 241-1650 **Terry Harris**
Contract Compliance Inspector: Tim Croze **Guardrail Beams, Parts & Accessories – Michigan Department of Transportation (MDOT)**	
CONTRACT PERIOD: **3 yrs. + 2 one-year options** From: **September 1, 2009** To: **August 31, 2012**	
TERMS **Net 45 Days**	SHIPMENT **14 Days ARO**
F.O.B. **Delivered**	SHIPPED FROM **N/A**
MINIMUM DELIVERY REQUIREMENTS **Minimum Order is $6,000.00**	
MISCELLANEOUS INFORMATION:	

THIS CONTRACT IS EXTENDED TO LOCAL UNITS OF GOVERNMENT.

The terms and conditions of this Contract are those of ITB #071I9200215, this Contract Agreement and the vendor's quote dated July 1, 2009. In the event of any conflicts between the specifications, and terms and conditions, indicated by the State and those indicated by the vendor, those of the State take precedence.

Estimated Contract Value: $745,233.25

Form No. DMB 234 (Rev. 1/96)
AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Contract will not be executed unless form is filed

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
PURCHASING OPERATIONS
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

CONTRACT NO. 071B9200274
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR **Soelch Properties, LLC** **8200 Lynch Road** **Detroit, MI 48234** **Email: Tscott@soelchgroup.com**	TELEPHONE: Timothy Scott **(313) 924-9121** CONTRACTOR NUMBER/MAIL CODE BUYER/CA (517) 241-1650 **Terry Harris**
Contract Compliance Inspector: Tim Croze **Guardrail Beams, Parts & Accessories – Michigan Department of Transportation (MDOT)**	
CONTRACT PERIOD: 3 yrs. + 2 one-year options From: **September 1, 2009** To: **August 31, 2012**	
TERMS **Net 45 Days**	SHIPMENT **14 Days ARO**
F.O.B. **Delivered**	SHIPPED FROM **N/A**
MINIMUM DELIVERY REQUIREMENTS **Minimum Order is $6,000.00**	
MISCELLANEOUS INFORMATION: **THIS CONTRACT IS EXTENDED TO LOCAL UNITS OF GOVERNMENT.** **The terms and conditions of this Contract are those of ITB #071I9200215, this Contract Agreement and the vendor's quote dated July 1, 2009. In the event of any conflicts between the specifications, and terms and conditions, indicated by the State and those indicated by the vendor, those of the State take precedence.** **Estimated Contract Value: $745,233.25**	

THIS IS NOT AN ORDER: This Contract Agreement is awarded on the basis of our inquiry bearing the ITB No. 071I9200215. Orders for delivery will be issued directly by the Department of Transportation through the issuance of a Purchase Order Form.

All terms and conditions of the invitation to bid are made a part hereof.

FOR THE CONTRACTOR:	**FOR THE STATE:**
Soelch Properties, LLC Firm Name	Signature
Authorized Agent Signature	**Terry Harris, Buyer Specialist** Name/Title
Authorized Agent (Print or Type)	**Commodities Division, Purchasing Operations** Division
Date	Date

STATE OF MICHIGAN
Department of Management and Budget
Purchasing Operations

Contract No. 071B9200274
Guardrail Beams, Parts & Accessories
Michigan Department of Transportation
MDOT

Buyer Name: Terry Harris
Telephone Number: (517) 241-1650
E-Mail Address: harrist@michigan.gov

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Attachment A, Pricing
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Article 1 – Statement of Work (SOW)

1.010 Project Identification

1.011 Project Request

This Contract is to establish a three year contract for Guardrail Parts and endings for the Michigan Department of Transportation (MDOT).

1.012 Background

This Contract is for Guardrail Parts for the State of Michigan. Exact quantities to be purchased are unknown, however the Contractor will be required to furnish all such materials and services as may be ordered during this CONTRACT period. Quantities specified if any, are estimates based on prior purchases, and the State is not obligated to purchase in these or any other quantities. Orders for delivery will be issued directly to the Contractor by various State Agencies on the Purchase Order Contract Release Form.

1.020 Scope of Work and Deliverables

1.021 In Scope

Guardrail Parts and endings for use statewide by MDOT direct forces and MiDeal program members (authorized local units of government).

1.022 Work and Deliverable

Contractor must provide Deliverables/Services and staff, and otherwise do all things necessary for or incidental to providing guardrail parts and ending for MDOT and MiDeal Program members.

1.030 Roles and Responsibilities

1.031 Contractor Staff, Roles, and Responsibilities

Soelch Properties will comply with staff, roles, and responsibilities of this Contract Timothy Scott will be the contact phone number (313) 924-9121 and fax number (313) 924-0050. Soelch Properties is prepared to receive orders electronically, by phone, facsimile, and by written order. Soelch Properties shall have internal controls, approved by Purchasing Operations, to insure that authorized individuals with the State place orders. The contractor shall verify orders that have quantities that appear to be abnormal or excessive.

It is the preference of the State of Michigan that the Soelch Properties have an accessible customer service department with an individual specifically assigned to State of Michigan accounts. It is the preference of the State of Michigan that the Soelch Properties have experienced sales representatives make timely personal visits to State accounts. Soelch Properties customer service must respond to State agency inquiries promptly. It is the preference of the State of Michigan that the Soelch Properties provides a statewide toll-free number for customer service calls.

If mailed, a purchase order is considered “issued” when the State deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods.

1.040 Project Plan

1.041 Project Plan Management

Soelch Properties will carry out this project under the direction and control of MDOT, Operations Division.

1.042 Reports

Soelch Properties will be able to provide various reports, when requested by MDOT. Reports should include status of delivery, production, material test data, performance investigations and remedial actions, and any and all developments that may be vital to appropriate execution and application of all contract terms. Reports should be submitted electronically to the Michigan Department of Transportation, Operations Division Contract Compliance Inspector (CCI) Tim Croze.

Soelch Properties's awarded contracts that are available for purchases by MiDEAL program members (authorized local units of government), must submit reports of purchasing activities to Purchasing Operations, DMB on a quarterly basis. Reports shall include, at a minimum, an itemized listing of purchasing activities by each agency, with the agency name, and the total value of purchases for each agency, and a grand total of all purchases.

1.050 Acceptance

1.051 Criteria

The following criteria will be used by the State to determine Acceptance of the Services or Deliverables provided under this SOW:

The MDOT representative, or their designee, will inspect guardrail parts and endings and approve acceptance of goods upon delivery.

1.052 Final Acceptance

Deleted, Not Applicable

1.060 Proposal Pricing

1.061 Proposal Pricing

Soelch Properties does not offer a quick payment discount on this Contract.

1.062 Price Term

Prices quoted are the maximum for a period of 180 days from the date the Contract becomes effective.

Prices are subject to change at the end of each 180-day period. Such changes shall be based on changes in actual costs incurred. Documentation of such changes must be provided with the request for price change in order to substantiate any requested change. Purchasing Operations reserves the right to consider various pertinent information sources to evaluate price increase requests (such as the CPI and PPI, US City Average, as published by the US Department of Labor, Bureau of Labor Statistics). Purchasing Operations also reserves the right to consider other information related to special economic and/or industry circumstances, when evaluating a price change request. Changes may be either increases or decreases, and may be requested by either party. Approved changes shall be firm for the remainder of the contract period unless further revised at the end of the next 180-day period.

Requests for price changes shall be RECEIVED IN WRITING AT LEAST TEN DAYS PRIOR TO THEIR EFFECTIVE DATE, and are subject to written acceptance before becoming effective. In the event new prices are not acceptable, the CONTRACT may be cancelled. **The Contractor remains responsible for performing according to the contract terms at the contract price for all orders received before price revisions are approved or before the contract is cancelled.**

1.063 Tax Excluded from Price

(a) Sales Tax: For purchases made directly by the State, the State is exempt from State and Local Sales Tax. Prices must not include the taxes. Exemption Certificates for State Sales Tax will be furnished upon request.

(b) Federal Excise Tax: The State may be exempt from Federal Excise Tax, or the taxes may be reimbursable, if articles purchased under any resulting Contract are used for the State's exclusive use. Certificates showing exclusive use for the purposes of substantiating a tax-free or tax-reimbursable sale will be sent upon request. If a sale is tax exempt or tax reimbursable under the Internal Revenue Code, prices must not include the Federal Excise Tax.

1.064 Holdback

Deleted, Not Applicable

1.070 Commodity Requirements and Terms

Product Quality

1.0701 Specifications

Definite Specifications - All commodities and/or services to be furnished hereunder shall conform to the specifications as noted in the "Request for Proposal" and/or copies of specifications in Attachment B MDOT Standard Plans and Specifications and Materials Source Guide.

Descriptive literature that contains complete specifications or the complete specifications should be included with the alternate bid.

1.0702 Alternate Bids

Deleted, Not Applicable

1.0703 Research and Development

Soelch Properties will invest in new product development and research to their ability to stay current with ongoing demands.

1.0704 Quality Assurance Program

Soelch Properties will provide Quality Assurance regarding guardrail parts and accessories within their organization for this Contract.

1.0705 Warranty for Products or Services

Soelch Properties has agreed to all warranty. This shall include the warranty associated with the actual product being proposed, as well as the warranty associated with any service work performed under the contract. Soelch Properties has agreed to handle any repairs that need to be made due to damaged or defective product, how installation problems will be rectified, and the process State agencies should follow to report warranty issues.

1.0706 Training

Soelch Properties will provide training to MDOT and MiDeal members at no cost. Soelch Properties shall provide training to individual agencies, when necessary, on aspects of ordering, shipping, billing, and receiving. At the request of the Contract Administrator, Soelch Properties shall provide in-service training to agency personnel on products, installation, and product safety issues. Soelch Properties shall also provide agency training jointly with the State as needed during the period covered by the contract at no additional charge.

1.0707 Special Programs

The State will be made aware of any special programs that vendor's may have when they occur.

1.0708 Security

This Contract may require frequent deliveries to State of Michigan facilities. Soelch Properties shall discuss in their proposals all measures utilized by their firm to ensure the security and safety of these buildings. This shall include, but is not limited to, performance of security background checks on all personnel assigned to State of Michigan facilities (i.e. delivery people) and how they are performed, what the security check consists of, the name of the company that performs the security checks, use of uniforms and ID badges, etc. If security background checks are performed on staff, bidders shall indicate the name of the company that performs the check as well as provide a document stating that each employee has satisfactorily completed a security check and is suitable for assignment to State facilities. Upon request by the State, Soelch Properties shall provide the results of all security background checks.

The State will decide whether to issue State ID badges to Soelch Properties delivery personnel or accept the ID badge issued to delivery personnel by Soelch Properties.

The State may decide to also perform a security background check. If so, Soelch Properties will be required to provide to the State a list of all delivery people that will service State of Michigan facilities, including name and date of birth (social security number or driver license number would also be helpful).

Soelch Properties and its subcontractors shall comply with the security access requirements of individual State facilities; see section 2.051, Background Checks and Security.

Delivery Capabilities

1.0709 Time Frames

All orders to be delivered within 14 calendar days after receipt of order.

1.0710 Minimum Order

The minimum order is $6,000.00, with handling fee of $100 on orders below $6,000.00.

1.0711 Packaging

Soelch Properties is requested to provide packaging that most closely meets these packaging sizes. The state reserves the right of final approval on packaging offered by the Contractor.

Packaging and containers, etc., shall be in accordance with supplier's commercial practice and shall meet the requirements of Department of Transportation (D.O.T.) and rail and motor carrier freight classifications in effect at time of shipment, which will permit application of the lowest freight rate.

1.0712 Palletizing

Shipments shall be palletized whenever possible and shall conform to the following:

- Manufacturer's standard 4-way shipping pallets are acceptable.
- Maximum height: 5'6"; including pallet.
- Maximum weight: 3500 pounds; including pallet.
- Pallets are to be securely banded or shrink-wrapped.
- The cost of palletizing must be included in the unit price.

1.0713 Delivery Term

Prices shall be quoted "F.O.B. Delivered" with transportation charges prepaid on all orders of *$6000* or more to the State, or on all orders totaling or in excess of the Contractor's minimum order requirement stated on the Item Listing.

Freight Charges - Should an agency order below the minimum order requirement of this Contract, or should a vendor quote F.O.B. Shipping Point on one-time purchases, the Contractor should choose the most economically advantageous carrier and must be approved by the using agency.

United Parcel Service (UPS) must be used in instances where the weight of the shipment is less than 150 lbs., or where shipments could be separated into smaller parcels such as three (3) 50 lb. packages.

If the Contractor fails to follow these shipping instructions, the State shall pay the carrier used and deduct the difference from the Contractor's invoice for the amount that was charged and the amount that would have been charged if the requested carrier had been used.

1.0714 Contract Performance

Deleted, Not Applicable

1.0715 Place of Performance

Deleted, Not Applicable

1.0716 Environmental Requirements

Deleted, Not Applicable

1.0717 Subcontractors

Indicate below **ALL** work to be subcontracted under any resulting Contract (use additional attachment if necessary; estimates are acceptable):

Description of Work to be sub-contracted	**Percent (%) of total contract value to be sub-contracted**	**Sub-contractor's name and principal place of business (City and State)**
Mfg	100%	Trinity Ind., Canton, MI

1.0718 Reports and Meetings

Delete-Not Applicable

1.0719 Samples/Models

Delete-Not Applicable

1.080 Additional Requirements

Deleted, Not Applicable

1.081 Additional Terms and Conditions specific to this RFP

Deleted, Not Applicable

Article 2, Terms and Conditions

2.000 Contract Structure and Term

2.001 Contract Term

This Contract is for a period of 3 years beginning August 18, 2009 through August 17, 2012. All outstanding Purchase Orders must also expire upon the termination (cancellation for any of the reasons listed in **Section 2.150**) of the Contract, unless otherwise extended under the Contract. Absent an early termination for any reason, Purchase Orders issued but not expired, by the end of the Contract's stated term, will remain in effect for the balance of the fiscal year for which they were issued.

2.002 Options to Renew

This Contract may be renewed in writing by mutual agreement of the parties not less than 30 days before its expiration. The Contract may be renewed for up to 2 additional 1 year periods.

2.003 Legal Effect

Contractor shall show acceptance of this Contract by signing two copies of the Contract and returning them to the Contract Administrator. The Contractor shall not proceed with the performance of the work to be done under the Contract, including the purchase of necessary materials, until both parties have signed the Contract to show acceptance of its terms, and the Contractor receives a contract release/purchase order that authorizes and defines specific performance requirements.

Except as otherwise agreed in writing by the parties, the State assumes no liability for costs incurred by Contractor or payment under this Contract, until Contractor is notified in writing that this Contract (or Change Order) has been approved by the State Administrative Board (if required), approved and signed by all the parties, and a Purchase Order against the Contract has been issued.

2.004 Attachments & Exhibits

All Attachments and Exhibits affixed to any and all Statement(s) of Work, or appended to or referencing this Contract, are incorporated in their entirety and form part of this Contract.

2.005 Ordering

The State will issue a written Purchase Order, Blanket Purchase Order, Direct Voucher or Procurement Card Order, which must be approved by the Contract Administrator or the Contract Administrator's designee, to order any Services/Deliverables under this Contract. All orders are subject to the terms and conditions of this Contract. No additional terms and conditions contained on either a Purchase Order or Blanket Purchase Order apply unless they are also specifically contained in that Purchase Order's or Blanket Purchase Order's accompanying Statement of Work. Exact quantities to be purchased are unknown, however, the Contractor will be required to furnish all such materials and services as may be ordered during the CONTRACT period. Quantities specified, if any, are estimates based on prior purchases, and the State is not obligated to purchase in these or any other quantities.

2.006 Order of Precedence

(a) The Contract, including any Statements of Work and Exhibits, to the extent not contrary to the Contract, each of which is incorporated for all purposes, constitutes the entire agreement between the parties with respect to the subject matter and supersedes all prior agreements, whether written or oral, with respect to the subject matter and as additional terms and conditions on the purchase order must apply as limited by **Section 2.005.**

(b) In the event of any inconsistency between the terms of the Contract and a Statement of Work, the terms of the Statement of Work will take precedence (as to that Statement of Work only); provided, however, that a Statement of Work may not modify or amend the terms of the Contract, which may be modified or amended only by a formal Contract amendment.

2.007 Headings

Captions and headings used in the Contract are for information and organization purposes. Captions and headings, including inaccurate references, do not, in any way, define or limit the requirements or terms and conditions of the Contract.

2.008 Form, Function & Utility

If the Contract is for use of more than one State agency and if the Deliverable/Service does not the meet the form, function, and utility required by that State agency, that agency may, subject to State purchasing policies, procure the Deliverable/Service from another source.

2.009 Reformation and Severability

Each provision of the Contract is severable from all other provisions of the Contract and, if one or more of the provisions of the Contract is declared invalid, the remaining provisions of the Contract remain in full force and effect.

2.010 Consents and Approvals

Except as expressly provided otherwise in the Contract, if either party requires the consent or approval of the other party for the taking of any action under the Contract, the consent or approval must be in writing and must not be unreasonably withheld or delayed.

2.011 No Waiver of Default

If a party fails to insist upon strict adherence to any term of the Contract then the party has not waived the right to later insist upon strict adherence to that term, or any other term, of the Contract.

2.012 Survival

Any provisions of the Contract that impose continuing obligations on the parties, including without limitation the parties' respective warranty, indemnity and confidentiality obligations, survive the expiration or termination of the Contract for any reason. Specific references to survival in the Contract are solely for identification purposes and not meant to limit or prevent the survival of any other section.

2.020 Contract Administration

2.021 Issuing Office

This Contract is issued by the Department of Management and Budget, Purchasing Operations and MDOT (collectively, including all other relevant State of Michigan departments and agencies, the "State"). Purchasing Operations is the sole point of contact in the State with regard to all procurement and contractual matters relating to the Contract. Purchasing Operations **is the only State office authorized to change, modify, amend, alter or clarify the prices, specifications, terms and conditions of this Contract.** The Contractor Administrator within Purchasing Operations for this Contract is:

Terry Harris
Purchasing Operations
Department of Management and Budget
Mason Bldg, 2nd Floor
PO Box 30026
Lansing, MI 48909
Harrist@michigan.gov
(517) 241-1650

2.022 Contract Compliance Inspector (CCI)

After DMB-PurchOps receives the properly executed Contract, it is anticipated that the Director of Purchasing Operations, in consultation with MDOT will direct the person named below, or any other

person so designated, to monitor and coordinate the activities for the Contract on a day-to-day basis during its term. However, monitoring of this Contract implies **no authority to change, modify, clarify, amend, or otherwise alter the prices, terms, conditions and specifications of the Contract as that authority is retained by DMB Purchasing Operations**. The Contract Compliance Inspector for this Contract is:

Tim Croze
Roadway Operations Engineer
MDOT-Operations Division
6333 Old Lansing Rd.
Lansing, MI 48917
crozet@michigan.gov
(517) 322-3394
(517) 322-3385

2.023 Project Manager

Deleted, Not Applicable

2.024 Change Requests

The State reserves the right to request from time to time any changes to the requirements and specifications of the Contract and the work to be performed by the Contractor under the Contract. During the course of ordinary business, it may become necessary for the State to discontinue certain business practices or create Additional Services/Deliverables. At a minimum, to the extent applicable, the State would like the Contractor to provide a detailed outline of all work to be done, including tasks necessary to accomplish the services/deliverables, timeframes, listing of key personnel assigned, estimated hours for each individual per task, and a complete and detailed cost justification.

If the Contractor does not so notify the State, the Contractor has no right to claim thereafter that it is entitled to additional compensation for performing that service or providing that deliverable.

Change Requests:

(a) By giving Contractor written notice within a reasonable time, the State must be entitled to accept a Contractor proposal for Change, to reject it, or to reach another agreement with Contractor. Should the parties agree on carrying out a Change, a written Contract Change Notice must be prepared and issued under this Contract, describing the Change and its effects on the Services and any affected components of this Contract (a "Contract Change Notice").

(b) No proposed Change must be performed until the proposed Change has been specified in a duly executed Contract Change Notice issued by the Department of Management and Budget, Purchasing Operations.

(c) If the State requests or directs the Contractor to perform any activities that Contractor believes constitute a Change, the Contractor must notify the State that it believes the requested activities are a Change before beginning to work on the requested activities. If the Contractor fails to notify the State before beginning to work on the requested activities, then the Contractor waives any right to assert any claim for additional compensation or time for performing the requested activities. If the Contractor commences performing work outside the scope of this Contract and then ceases performing that work, the Contractor must, at the request of the State, retract any out-of-scope work that would adversely affect the Contract.

2.025 Notices

Any notice given to a party under the Contract must be deemed effective, if addressed to the party as addressed below, upon: (i) delivery, if hand delivered; (ii) receipt of a confirmed transmission by facsimile if a copy of the notice is sent by another means specified in this Section; (iii) the third Business Day after being sent by U.S. mail, postage pre-paid, return receipt requested; or (iv) the next Business Day after being sent by a nationally recognized overnight express courier with a reliable tracking system.

State:
State of Michigan
Purchasing Operations
Attention:
PO Box 30026
530 West Allegan
Lansing, Michigan 48909

Contractor:
Soelch Properties
5800 Lynch
Detroit, MI

Either party may change its address where notices are to be sent by giving notice according to this Section.

2.026 Binding Commitments

Representatives of Contractor must have the authority to make binding commitments on Contractor's behalf within the bounds set forth in the table. Contractor may change the representatives from time to time upon written notice.

2.027 Relationship of the Parties

The relationship between the State and Contractor is that of client and independent contractor. No agent, employee, or servant of Contractor or any of its Subcontractors must be or must be deemed to be an employee, agent or servant of the State for any reason. Contractor will be solely and entirely responsible for its acts and the acts of its agents, employees, servants and Subcontractors during the performance of the Contract.

2.028 Covenant of Good Faith

Each party must act reasonably and in good faith. Unless stated otherwise in the Contract, the parties will not unreasonably delay, condition or withhold the giving of any consent, decision or approval that is either requested or reasonably required of them in order for the other party to perform its responsibilities under the Contract.

2.029 Assignments

(a) Neither party may assign the Contract, or assign or delegate any of its duties or obligations under the Contract, to any other party (whether by operation of law or otherwise), without the prior written consent of the other party; provided, however, that the State may assign the Contract to any other State agency, department, division or department without the prior consent of Contractor and Contractor may assign the Contract to an affiliate so long as the affiliate is adequately capitalized and can provide adequate assurances that the affiliate can perform the Contract. The State may withhold consent from proposed assignments, subcontracts, or novations when the transfer of responsibility would operate to decrease the State's likelihood of receiving performance on the Contract or the State's ability to recover damages.

(b) Contractor may not, without the prior written approval of the State, assign its right to receive payments due under the Contract. If the State permits an assignment, the Contractor is not relieved of its responsibility to perform any of its contractual duties, and the requirement under the Contract that all payments must be made to one entity continues.

(c) If the Contractor intends to assign the contract or any of the Contractor's rights or duties under the Contract, the Contractor must notify the State in writing at least 90 days before the assignment. The Contractor also must provide the State with adequate information about the assignee within a reasonable amount of time before the assignment for the State to determine whether to approve the assignment.

2.030 General Provisions

2.031 Media Releases

News releases (including promotional literature and commercial advertisements) pertaining to the RFP and Contract or project to which it relates shall not be made without prior written State approval, and then only in accordance with the explicit written instructions from the State. No results of the activities associated with the RFP and Contract are to be released without prior written approval of the State and then only to persons designated.

2.032 Contract Distribution

Purchasing Operations retains the sole right of Contract distribution to all State agencies and local units of government unless other arrangements are authorized by Purchasing Operations.

2.033 Permits

Contractor must obtain and pay any associated costs for all required governmental permits, licenses and approvals for the delivery, installation and performance of the Services. The State must pay for all costs and expenses incurred in obtaining and maintaining any necessary easements or right of way.

2.034 Website Incorporation

The State is not bound by any content on the Contractor's website, even if the Contractor's documentation specifically referenced that content and attempts to incorporate it into any other communication, unless the State has actual knowledge of the content and has expressly agreed to be bound by it in a writing that has been manually signed by an authorized representative of the State.

2.035 Future Bidding Preclusion

Contractor acknowledges that, to the extent this Contract involves the creation, research, investigation or generation of a future RFP, it may be precluded from bidding on the subsequent RFP. The State reserves the right to disqualify any bidder if the State determines that the bidder has used its position (whether as an incumbent Contractor, or as a Contractor hired to assist with the RFP development, or as a Vendor offering free assistance) to gain a competitive advantage on the RFP.

2.036 Freedom of Information

All information in any proposal submitted to the State by Contractor and this Contract is subject to the provisions of the Michigan Freedom of Information Act, 1976 Public Act No. 442, as amended, MCL 15.231, et seq (the "FOIA").

2.037 Disaster Recovery

Contractor and the State recognize that the State provides essential services in times of natural or man-made disasters. Therefore, except as so mandated by Federal disaster response requirements, Contractor personnel dedicated to providing Services/Deliverables under this Contract will provide the State with priority service for repair and work around in the event of a natural or man-made disaster.

2.040 Financial Provisions

2.041 Fixed Prices for Services/Deliverables

Each Statement of Work or Purchase Order issued under this Contract shall specify (or indicate by reference to the appropriate Contract Exhibit) the firm, fixed prices for all Services/Deliverables, and the associated payment milestones and payment amounts. The State may make progress payments to the Contractor when requested as work progresses, but not more frequently than monthly, in amounts approved by the Contract Administrator, after negotiation. Contractor must show verification of measurable progress at the time of requesting progress payments.

2.042 Adjustments for Reductions in Scope of Services/Deliverables

If the scope of the Services/Deliverables under any Statement of Work issued under this Contract is subsequently reduced by the State, the parties shall negotiate an equitable reduction in Contractor's charges under such Statement of Work commensurate with the reduction in scope.

2.043 Services/Deliverables Covered

For all Services/Deliverables to be provided by Contractor (and its Subcontractors, if any) under this Contract, the State shall not be obligated to pay any amounts in addition to the charges specified in this Contract.

2.044 Invoicing and Payment – In General

(a) Each Statement of Work issued under this Contract shall list (or indicate by reference to the appropriate Contract Exhibit) the prices for all Services/Deliverables, equipment and commodities to be provided, and the associated payment milestones and payment amounts.

(b) Each Contractor invoice will show details as to charges by Service/Deliverable component and location at a level of detail reasonably necessary to satisfy the State's accounting and charge-back requirements. Invoices for Services performed on a time and materials basis will show, for each individual, the number of hours of Services performed during the billing period, the billable skill/labor category for such person and the applicable hourly billing rate. Prompt payment by the State is contingent on the Contractor's invoices showing the amount owed by the State minus any holdback amount to be retained by the State in accordance with **Section 1.064**.

(c) Correct invoices will be due and payable by the State, in accordance with the State's standard payment procedure as specified in 1984 Public Act No. 279, MCL 17.51 et seq., within 45 days after receipt, provided the State determines that the invoice was properly rendered.

(d) All invoices should reflect actual work done. Specific details of invoices and payments will be agreed upon between the Contract Administrator and the Contractor after the proposed Contract Agreement has been signed and accepted by both the Contractor and the Director of Purchasing Operations, Department of Management & Budget. This activity will occur only upon the specific written direction from Purchasing Operations.

The specific payment schedule for any Contract(s) entered into, as the State and the Contractor(s) will mutually agree upon. The schedule should show payment amount and should reflect actual work done by the payment dates, less any penalty cost charges accrued by those dates. As a general policy statements shall be forwarded to the designated representative by the 15th day of the following month.

The Government may make progress payments to the Contractor when requested as work progresses, but not more frequently than monthly, in amounts approved by the Contract Administrator, after negotiation. Contractor must show verification of measurable progress at the time of requesting progress payments.

2.045 Pro-ration

To the extent there are any Services that are to be paid for on a monthly basis, the cost of such Services shall be pro-rated for any partial month.

2.046 Antitrust Assignment

The Contractor assigns to the State any claim for overcharges resulting from antitrust violations to the extent that those violations concern materials or services supplied by third parties to the Contractor, toward fulfillment of this Contract.

2.047 Final Payment

The making of final payment by the State to Contractor does not constitute a waiver by either party of any rights or other claims as to the other party's continuing obligations under the Contract, nor will it constitute a waiver of any claims by one party against the other arising from unsettled claims or failure by a party to comply with this Contract, including claims for Services and Deliverables not reasonably

known until after acceptance to be defective or substandard. Contractor's acceptance of final payment by the State under this Contract shall constitute a waiver of all claims by Contractor against the State for payment under this Contract, other than those claims previously filed in writing on a timely basis and still unsettled.

2.048 Electronic Payment Requirement

Electronic transfer of funds is required for payments on State Contracts. Contractors are required to register with the State electronically at http://www.cpexpress.state.mi.us. As stated in Public Act 431 of 1984, all contracts that the State enters into for the purchase of goods and services shall provide that payment will be made by electronic fund transfer (EFT).

2.050 Taxes

2.051 Employment Taxes

Contractors are expected to collect and pay all applicable federal, state, and local employment taxes, including the taxes.

2.052 Sales and Use Taxes

Contractors are required to be registered and to remit sales and use taxes on taxable sales of tangible personal property or services delivered into the State. Contractors that lack sufficient presence in Michigan to be required to register and pay tax must do so as a volunteer. This requirement extends to: (1) all members of any controlled group as defined in § 1563(a) of the Internal Revenue Code and applicable regulations of which the company is a member, and (2) all organizations under common control as defined in § 414(c) of the Internal Revenue Code and applicable regulations of which the company is a member that make sales at retail for delivery into the State are registered with the State for the collection and remittance of sales and use taxes. In applying treasury regulations defining "two or more trades or businesses under common control" the term "organization" means sole proprietorship, a partnership (as defined in § 701(a)(2) of the Internal Revenue Code), a trust, an estate, a corporation, or a limited liability company.

2.060 Contract Management

2.061 Contractor Personnel Qualifications

All persons assigned by Contractor to the performance of Services under this Contract must be employees of Contractor or its majority-owned (directly or indirectly, at any tier) subsidiaries (or a State-approved Subcontractor) and must be fully qualified to perform the work assigned to them. Contractor must include a similar provision in any subcontract entered into with a Subcontractor. For the purposes of this Contract, independent contractors engaged by Contractor solely in a staff augmentation role must be treated by the State as if they were employees of Contractor for this Contract only; however, the State understands that the relationship between Contractor and Subcontractor is an independent contractor relationship.

2.062 Contractor Key Personnel

(a) The Contractor must provide the Contract Compliance Inspector with the names of the Key Personnel.

(b) Key Personnel must be dedicated as defined in the Statement of Work to the Project for its duration in the applicable Statement of Work with respect to other individuals designated as Key Personnel for that Statement of Work.

(c) The State will have the right to recommend and approve in writing the initial assignment, as well as any proposed reassignment or replacement, of any Key Personnel. Before assigning an individual to any Key Personnel position, Contractor will notify the State of the proposed assignment, will introduce the individual to the appropriate State representatives, and will provide the State with a resume and any other information about the individual reasonably requested by the State. The State reserves the right to

interview the individual before granting written approval. In the event the State finds a proposed individual unacceptable, the State will provide a written explanation including reasonable detail outlining the reasons for the rejection.

(d) Contractor must not remove any Key Personnel from their assigned roles on the Contract without the prior written consent of the State. The Contractor's removal of Key Personnel without the prior written consent of the State is an unauthorized removal ("Unauthorized Removal"). Unauthorized Removals does not include replacing Key Personnel for reasons beyond the reasonable control of Contractor, including illness, disability, leave of absence, personal emergency circumstances, resignation or for cause termination of the Key Personnel's employment. Unauthorized Removals does not include replacing Key Personnel because of promotions or other job movements allowed by Contractor personnel policies or Collective Bargaining Agreement(s) as long as the State receives prior written notice before shadowing occurs and Contractor provides 30 days of shadowing unless parties agree to a different time period. The Contractor with the State must review any Key Personnel replacements, and appropriate transition planning will be established. Any Unauthorized Removal may be considered by the State to be a material breach of the Contract, in respect of which the State may elect to exercise its termination and cancellation rights.

(e) The Contractor must notify the Contract Compliance Inspector and the Contract Administrator at least 10 business days before redeploying non-Key Personnel, who are dedicated to primarily to the Project, to other projects. If the State does not object to the redeployment by its scheduled date, the Contractor may then redeploy the non-Key Personnel.

2.063 Re-assignment of Personnel at the State's Request

The State reserves the right to require the removal from the Project of Contractor personnel found, in the judgment of the State, to be unacceptable. The State's request must be written with reasonable detail outlining the reasons for the removal request. Additionally, the State's request must be based on legitimate, good-faith reasons. Replacement personnel for the removed person must be fully qualified for the position. If the State exercises this right, and the Contractor cannot immediately replace the removed personnel, the State agrees to an equitable adjustment in schedule or other terms that may be affected by the State's required removal. If any incident with removed personnel results in delay not reasonably anticipatable under the circumstances and which is attributable to the State, the applicable SLAs for the affected Service will not be counted for a time as agreed to by the parties.

2.064 Contractor Personnel Location

All staff assigned by Contractor to work on the Contract will perform their duties either primarily at Contractor's offices and facilities or at State facilities. Without limiting the generality of the foregoing, Key Personnel will, at a minimum, spend at least the amount of time on-site at State facilities as indicated in the applicable Statement of Work. Subject to availability, selected Contractor personnel may be assigned office space to be shared with State personnel.

2.065 Contractor Identification

Contractor employees must be clearly identifiable while on State property by wearing a State-issued badge, as required. Contractor employees are required to clearly identify themselves and the company they work for whenever making contact with State personnel by telephone or other means.

2.066 Cooperation with Third Parties

Contractor agrees to cause its personnel and the personnel of any Subcontractors to cooperate with the State and its agents and other contractors including the State's Quality Assurance personnel. As reasonably requested by the State in writing, the Contractor will provide to the State's agents and other contractors reasonable access to Contractor's Project personnel, systems and facilities to the extent the access relates to activities specifically associated with this Contract and will not interfere or jeopardize the safety or operation of the systems or facilities. The State acknowledges that Contractor's time schedule for the Contract is very specific and agrees not to unnecessarily or unreasonably interfere with, delay or otherwise impeded Contractor's performance under this Contract with the requests for access.

2.067 Contract Management Responsibilities

The Contractor will be required to assume responsibility for all contractual activities, whether or not that Contractor performs them. Further, the State will consider the Contractor to be the sole point of contact with regard to contractual matters, including payment of any and all charges resulting from the anticipated Contract. If any part of the work is to be subcontracted, the Contract must include a list of subcontractors, including firm name and address, contact person and a complete description of work to be subcontracted. The State reserves the right to approve subcontractors and to require the Contractor to replace subcontractors found to be unacceptable. The Contractor is totally responsible for adherence by the subcontractor to all provisions of the Contract. Any change in subcontractors must be approved by the State, in writing, prior to such change.

2.068 Contractor Return of State Equipment/Resources

The Contractor must return to the State any State-furnished equipment, facilities and other resources when no longer required for the Contract in the same condition as when provided by the State, reasonable wear and tear excepted.

2.070 Subcontracting by Contractor

2.071 Contractor full Responsibility

Contractor shall have full responsibility for the successful performance and completion of all of the Services and Deliverables. The State will consider Contractor to be the sole point of contact with regard to all contractual matters under this Contract, including payment of any and all charges for Services and Deliverables.

2.072 State Consent to delegation

Contractor shall not delegate any duties under this Contract to a Subcontractor unless the Department of Management and Budget, Purchasing Operations has given written consent to such delegation. The State shall have the right of prior written approval of all Subcontractors and to require Contractor to replace any Subcontractors found, in the reasonable judgment of the State, to be unacceptable. The State's request shall be written with reasonable detail outlining the reasons for the removal request. Additionally, the State's request shall be based on legitimate, good-faith reasons. Replacement Subcontractor(s) for the removed Subcontractor shall be fully qualified for the position. If the State exercises this right, and the Contractor cannot immediately replace the removed Subcontractor, the State will agree to an equitable adjustment in schedule or other terms that may be affected by the State's required removal. If any such incident with a removed Subcontractor results in delay not reasonable anticipatable under the circumstances and which is attributable to the State, the applicable SLA for the affected Work will not be counted in time agreed upon by the parties.

2.073 Subcontractor bound to Contract

In any subcontracts entered into by Contractor for the performance of the Services, Contractor shall require the Subcontractor, to the extent of the Services to be performed by the Subcontractor, to be bound to Contractor by the terms of this Contract and to assume toward Contractor all of the obligations and responsibilities that Contractor, by this Contract, assumes toward the State. The State reserves the right to receive copies of and review all subcontracts, although Contractor may delete or mask any proprietary information, including pricing, contained in such contracts before providing them to the State. The management of any Subcontractor will be the responsibility of Contractor, and Contractor shall remain responsible for the performance of its Subcontractors to the same extent as if Contractor had not subcontracted such performance. Contractor shall make all payments to Subcontractors or suppliers of Contractor. Except as otherwise agreed in writing by the State and Contractor, the State will not be obligated to direct payments for the Services other than to Contractor. The State's written approval of any Subcontractor engaged by Contractor to perform any obligation under this Contract shall not relieve Contractor of any obligations or performance required under this Contract. Attached as **Exhibit A** is a list of the Subcontractors, if any, approved by the State as of the execution of this Contract, together with a copy of the applicable subcontract.

2.074 Flow Down

Except where specifically approved in writing by the State on a case-by-case basis, Contractor shall flow down the obligations in **Sections 2.031, 2.060, 2.100, 2.110, 2.120, 2.130, 2.200** in all of its agreements with any Subcontractors.

2.075 Competitive Selection

The Contractor shall select subcontractors (including suppliers) on a competitive basis to the maximum practical extent consistent with the objectives and requirements of the Contract.

2.080 State Responsibilities

2.081 Equipment

The State will provide only the equipment and resources identified in the Statements of Work and other Contract Exhibits.

2.082 Facilities

The State must designate space as long as it is available and as provided in the Statement of Work, to house the Contractor's personnel whom the parties agree will perform the Services/Deliverables at State facilities (collectively, the "State Facilities"). The Contractor must have reasonable access to, and unless agreed otherwise by the parties in writing must observe and comply with all rules and regulations relating to each of the State Facilities (including hours of operation) used by the Contractor in the course of providing the Services. Contractor agrees that it will not, without the prior written consent of the State, use any State Facilities or access any State information systems provided for the Contractor's use, or to which the Contractor otherwise gains access in the course of performing the Services, for any purpose other than providing the Services to the State.

2.090 Security

2.091 Background Checks

On a case-by-case basis, the State may investigate the Contractor's personnel before they may have access to State facilities and systems. The scope of the background check is at the discretion of the State and the results will be used to determine Contractor personnel eligibility for working within State facilities and systems. The investigations will include Michigan State Police Background checks (ICHAT) and may include the National Crime Information Center (NCIC) Finger Prints. Proposed Contractor personnel may be required to complete and submit an RI-8 Fingerprint Card for the NCIC Finger Print Check. Any request for background checks will be initiated by the State and will be reasonably related to the type of work requested.

All Contractor personnel will also be expected to comply with the State's security and acceptable use policies for State IT equipment and resources. See http://www.michigan.gov/dit. Furthermore, Contractor personnel will be expected to agree to the State's security and acceptable use policies before the Contractor personnel will be accepted as a resource to perform work for the State. It is expected the Contractor will present these documents to the prospective employee before the Contractor presents the individual to the State as a proposed resource. Contractor staff will be expected to comply with all Physical Security procedures in place within the facilities where they are working.

2.092 Security Breach Notification

If the Contractor breaches this Section, the Contractor must (i) promptly cure any deficiencies and (ii) comply with any applicable federal and state laws and regulations pertaining to unauthorized disclosures. Contractor and the State will cooperate to mitigate, to the extent practicable, the effects of any breach, intrusion, or unauthorized use or disclosure. Contractor must report to the State in writing any use or disclosure of Confidential Information, whether suspected or actual, other than as provided for by the

Contract within 10 days of becoming aware of the use or disclosure or the shorter time period as is reasonable under the circumstances.

2.093 PCI Data Security Requirements

Deleted, Not Applicable

2.100 Confidentiality

2.101 Confidentiality

Contractor and the State each acknowledge that the other possesses and will continue to possess confidential information that has been developed or received by it. As used in this Section, "Confidential Information" of Contractor must mean all non-public proprietary information of Contractor (other than Confidential Information of the State as defined below) which is marked confidential, restricted, proprietary or with a similar designation. "Confidential Information" of the State must mean any information which is retained in confidence by the State (or otherwise required to be held in confidence by the State under applicable federal, state and local laws and regulations) or which, in the case of tangible materials provided to Contractor by the State under its performance under this Contract, is marked as confidential, proprietary or with a similar designation by the State. "Confidential Information" excludes any information (including this Contract) that is publicly available under the Michigan FOIA.

2.102 Protection and Destruction of Confidential Information

The State and Contractor will each use at least the same degree of care to prevent disclosing to third parties the Confidential Information of the other as it employs to avoid unauthorized disclosure, publication or dissemination of its own confidential information of like character, but in no event less than reasonable care. Neither Contractor nor the State will (i) make any use of the Confidential Information of the other except as contemplated by this Contract, (ii) acquire any right in or assert any lien against the Confidential Information of the other, or (iii) if requested to do so, refuse for any reason to promptly return the other party's Confidential Information to the other party. Each party will limit disclosure of the other party's Confidential Information to employees and Subcontractors who must have access to fulfill the purposes of this Contract. Disclosure to, and use by, a Subcontractor is permissible where (A) use of a Subcontractor is authorized under this Contract, (B) the disclosure is necessary or otherwise naturally occurs in connection with work that is within the Subcontractor's scope of responsibility, and (C) Contractor obligates the Subcontractor in a written Contract to maintain the State's Confidential Information in confidence. At the State's request, any employee of Contractor and of any Subcontractor having access or continued access to the State's Confidential Information may be required to execute an acknowledgment that the employee has been advised of Contractor's and the Subcontractor's obligations under this Section and of the employee's obligation to Contractor or Subcontractor, as the case may be, to protect the Confidential Information from unauthorized use or disclosure.

Promptly upon termination or cancellation of the Contract for any reason, Contractor must certify to the State that Contractor has destroyed all State Confidential Information.

2.103 Exclusions

Notwithstanding the foregoing, the provisions of **Section 2.080** will not apply to any particular information which the State or Contractor can demonstrate (i) was, at the time of disclosure to it, in the public domain; (ii) after disclosure to it, is published or otherwise becomes part of the public domain through no fault of the receiving party; (iii) was in the possession of the receiving party at the time of disclosure to it without an obligation of confidentiality; (iv) was received after disclosure to it from a third party who had a lawful right to disclose the information to it without any obligation to restrict its further disclosure; or (v) was independently developed by the receiving party without reference to Confidential Information of the furnishing party. Further, the provisions of **Section 2.080** will not apply to any particular Confidential Information to the extent the receiving party is required by law to disclose the

Confidential Information, provided that the receiving party (i) promptly provides the furnishing party with notice of the legal request, and (ii) assists the furnishing party in resisting or limiting the scope of the disclosure as reasonably requested by the furnishing party.

2.104 No Implied Rights

Nothing contained in this Section must be construed as obligating a party to disclose any particular Confidential Information to the other party, or as granting to or conferring on a party, expressly or impliedly, any right or license to the Confidential Information of the other party.

2.105 Respective Obligations

The parties' respective obligations under this Section must survive the termination or expiration of this Contract for any reason.

2.110 Records and Inspections

2.111 Inspection of Work Performed

The State's authorized representatives must at all reasonable times and with 10 days prior written request, have the right to enter Contractor's premises, or any other places, where the Services are being performed, and must have access, upon reasonable request, to interim drafts of Deliverables or work-in-progress. Upon 10 Days prior written notice and at all reasonable times, the State's representatives must be allowed to inspect, monitor, or otherwise evaluate the work being performed and to the extent that the access will not reasonably interfere or jeopardize the safety or operation of the systems or facilities. Contractor must provide all reasonable facilities and assistance for the State's representatives.

2.112 Examination of Records

For seven years after the Contractor provides any work under this Contract (the "Audit Period"), the State may examine and copy any of Contractor's books, records, documents and papers pertinent to establishing Contractor's compliance with the Contract and with applicable laws and rules. The State must notify the Contractor 20 days before examining the Contractor's books and records. The State does not have the right to review any information deemed confidential by the Contractor to the extent access would require the confidential information to become publicly available. This provision also applies to the books, records, accounts, documents and papers, in print or electronic form, of any parent, affiliated or subsidiary organization of Contractor, or any Subcontractor of Contractor performing services in connection with the Contract.

2.113 Retention of Records

Contractor must maintain at least until the end of the Audit Period all pertinent financial and accounting records (including time sheets and payroll records, and information pertaining to the Contract and to the Services, equipment, and commodities provided under the Contract) pertaining to the Contract according to generally accepted accounting principles and other procedures specified in this Section. Financial and accounting records must be made available, upon request, to the State at any time during the Audit Period. If an audit, litigation, or other action involving Contractor's records is initiated before the end of the Audit Period, the records must be retained until all issues arising out of the audit, litigation, or other action are resolved or until the end of the Audit Period, whichever is later.

2.114 Audit Resolution

If necessary, the Contractor and the State will meet to review each audit report promptly after issuance. The Contractor will respond to each audit report in writing within 30 days from receipt of the report, unless a shorter response time is specified in the report. The Contractor and the State must develop, agree upon and monitor an action plan to promptly address and resolve any deficiencies, concerns, and/or recommendations in the audit report.

2.115 Errors

(a) If the audit demonstrates any errors in the documents provided to the State, then the amount in error must be reflected as a credit or debit on the next invoice and in subsequent invoices until the amount is paid or refunded in full. However, a credit or debit may not be carried for more than four invoices. If a balance remains after four invoices, then the remaining amount will be due as a payment or refund within 45 days of the last quarterly invoice that the balance appeared on or termination of the contract, whichever is earlier.

(b) In addition to other available remedies, the difference between the payment received and the correct payment amount is greater than 10%, then the Contractor must pay all of the reasonable costs of the audit.

2.120 Warranties

2.121 Warranties and Representations

The Contractor represents and warrants:

(a) It is capable in all respects of fulfilling and must fulfill all of its obligations under this Contract. The performance of all obligations under this Contract must be provided in a timely, professional, and workman-like manner and must meet the performance and operational standards required under this Contract.

(b) The Contract Appendices, Attachments and Exhibits identify the equipment and software and services necessary for the Deliverable(s) to perform and Services to operate in compliance with the Contract's requirements and other standards of performance.

(c) It is the lawful owner or licensee of any Deliverable licensed or sold to the State by Contractor or developed by Contractor under this Contract, and Contractor has all of the rights necessary to convey to the State the ownership rights or licensed use, as applicable, of any and all Deliverables. None of the Deliverables provided by Contractor to the State under this Contract, nor their use by the State, will infringe the patent, copyright, trade secret, or other proprietary rights of any third party.

(d) If, under this Contract, Contractor procures any equipment, software or other Deliverable for the State (including equipment, software and other Deliverables manufactured, re-marketed or otherwise sold by Contractor under Contractor's name), then in addition to Contractor's other responsibilities with respect to the items in this Contract, Contractor must assign or otherwise transfer to the State or its designees, or afford the State the benefits of, any manufacturer's warranty for the Deliverable.

(e) The contract signatory has the power and authority, including any necessary corporate authorizations, necessary to enter into this Contract, on behalf of Contractor.

(f) It is qualified and registered to transact business in all locations where required.

(g) Neither the Contractor nor any Affiliates, nor any employee of either, has, must have, or must acquire, any contractual, financial, business, or other interest, direct or indirect, that would conflict in any manner or degree with Contractor's performance of its duties and responsibilities to the State under this Contract or otherwise create an appearance of impropriety with respect to the award or performance of this Agreement. Contractor must notify the State about the nature of the conflict or appearance of impropriety within two days of learning about it.

(h) Neither Contractor nor any Affiliates, nor any employee of either has accepted or must accept anything of value based on an understanding that the actions of the Contractor or Affiliates or employee on behalf of the State would be influenced. Contractor must not attempt to influence any State employee by the direct or indirect offer of anything of value.

(i) Neither Contractor nor any Affiliates, nor any employee of either has paid or agreed to pay any person, other than bona fide employees and consultants working solely for Contractor or the Affiliate, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of this Contract.

(j) The prices proposed by Contractor were arrived at independently, without consultation, communication, or agreement with any other bidder for the purpose of restricting competition; the prices quoted were not knowingly disclosed by Contractor to any other bidder; and no attempt was made by Contractor to induce any other person to submit or not submit a proposal for the purpose of restricting competition.

(k) All financial statements, reports, and other information furnished by Contractor to the State as part of its response to the RFP or otherwise in connection with the award of this Contract fairly and accurately represent the business, properties, financial condition, and results of operations of Contractor as of the respective dates, or for the respective periods, covered by the financial statements, reports, other information. Since the respective dates or periods covered by the financial statements, reports, or other information, there have been no material adverse change in the business, properties, financial condition, or results of operations of Contractor.

(l) All written information furnished to the State by or for the Contractor in connection with this Contract, including its bid, is true, accurate, and complete, and contains no untrue statement of material fact or omits any material fact necessary to make the information not misleading.

(m) It is not in material default or breach of any other contract or agreement that it may have with the State or any of its departments, commissions, boards, or agencies. Contractor further represents and warrants that it has not been a party to any contract with the State or any of its departments that was terminated by the State or the department within the previous five years for the reason that Contractor failed to perform or otherwise breached an obligation of the contract.

(n) If any of the certifications, representations, or disclosures made in the Contractor's original bid response change after contract award, the Contractor is required to report those changes immediately to the Department of Management and Budget, Purchasing Operations.

2.122 Warranty of Merchantability

Goods provided by Contractor under this agreement shall be merchantable. All goods provided under this Contract shall be of good quality within the description given by the State, shall be fit for their ordinary purpose, shall be adequately contained and packaged within the description given by the State, shall conform to the agreed upon specifications, and shall conform to the affirmations of fact made by the Contractor or on the container or label.

2.123 Warranty of Fitness for a Particular Purpose

When the Contractor has reason to know or knows any particular purpose for which the goods are required, and the State is relying on the Contractor's skill or judgment to select or furnish suitable goods, there is a warranty that the goods are fit for such purpose.

2.124 Warranty of Title

Contractor shall, in providing goods to the State, convey good title in those goods, whose transfer is right and lawful. All goods provided by Contractor shall be delivered free from any security interest, lien, or encumbrance of which the State, at the time of contracting, has no knowledge. Goods provided by Contractor, under this Contract, shall be delivered free of any rightful claim of any third person by of infringement or the like.

2.125 Equipment Warranty

Deleted, Not Applicable

2.126 Equipment to be New

If applicable, all equipment provided under this Contract by Contractor shall be new where Contractor has knowledge regarding whether the equipment is new or assembled from new or serviceable used parts that are like new in performance or has the option of selecting one or the other. Equipment that is assembled from new or serviceable used parts that are like new in performance is acceptable where Contractor does not have knowledge or the ability to select one or other, unless specifically agreed otherwise in writing by the State.

2.127 Prohibited Products

The State will not accept salvage, distressed, outdated or discontinued merchandise. Shipping of such merchandise to any State agency, as a result of an order placed against the Contract, shall be considered default by the Contractor of the terms and conditions of the Contract and may result in cancellation of the Contract by the State. The brand and product number offered for all items shall remain consistent for the term of the Contract, unless Purchasing Operations has approved a change order pursuant to **Section 2.024**.

2.128 Consequences For Breach

In addition to any remedies available in law, if the Contractor breaches any of the warranties contained in this section, the breach may be considered as a default in the performance of a material obligation of this Contract.

2.130 Insurance

2.131 Liability Insurance

The Contractor must provide proof of the minimum levels of insurance coverage as indicated below. The insurance must protect the State from claims which may arise out of or result from the Contractor's performance of services under the terms of this Contract, whether the services are performed by the Contractor, or by any subcontractor, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.

The Contractor waives all rights against the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees and agents for recovery of damages to the extent these damages are covered by the insurance policies the Contractor is required to maintain under this Contract.

All insurance coverages provided relative to this Contract/Purchase Order are PRIMARY and NON-CONTRIBUTING to any comparable liability insurance (including self-insurances) carried by the State.

The insurance must be written for not less than any minimum coverage specified in this Contract or required by law, whichever is greater.

The insurers selected by Contractor must have an A.M. Best rating of A or better, or as otherwise approved in writing by the State, or if the ratings are no longer available, with a comparable rating from a recognized insurance rating agency. All policies of insurance required in this Contract must be issued by companies that have been approved to do business in the State.
See www.michigan.gov/dleg.

Where specific limits are shown, they are the minimum acceptable limits. If Contractor's policy contains higher limits, the State must be entitled to coverage to the extent of the higher limits.

The Contractor is required to pay for and provide the type and amount of insurance checked ☑ below:

☑ 1. Commercial General Liability with the following minimum coverage:

$2,000,000 General Aggregate Limit other than Products/Completed Operations
$2,000,000 Products/Completed Operations Aggregate Limit
$1,000,000 Personal & Advertising Injury Limit
$1,000,000 Each Occurrence Limit

The Contractor must list the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees and agents as ADDITIONAL INSUREDS on the Commercial General Liability certificate. The Contractor also agrees to provide evidence that insurance policies contain a waiver of subrogation by the insurance company.

☑ 2. If a motor vehicle is used to provide services or products under this Contract, the Contractor must have vehicle liability insurance on any auto including owned, hired and non-owned vehicles used in Contractor‘s business for bodily injury and property damage as required by law.

The Contractor must list the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees and agents as ADDITIONAL INSUREDS on the vehicle liability certificate. The Contractor also agrees to provide evidence that insurance policies contain a waiver of subrogation by the insurance company.

☑ 3. Workers’ compensation coverage must be provided according to applicable laws governing the employees and employers work activities in the state of the Contractor’s domicile. If the applicable coverage is provided by a self-insurer, proof must be provided of approved self-insured authority by the jurisdiction of domicile. For employees working outside of the state of qualification, Contractor must provide appropriate certificates of insurance proving mandated coverage levels for the jurisdictions where the employees’ activities occur.

Any certificates of insurance received must also provide a list of states where the coverage is applicable.

The Contractor also agrees to provide evidence that insurance policies contain a waiver of subrogation by the insurance company. This provision must not be applicable where prohibited or limited by the laws of the jurisdiction in which the work is to be performed.

☑ 4. Employers liability insurance with the following minimum limits:

$100,000 each accident
$100,000 each employee by disease
$500,000 aggregate disease

☐ 5. Employee Fidelity, including Computer Crimes, insurance naming the State as a loss payee, providing coverage for direct loss to the State and any legal liability of the State arising out of or related to fraudulent or dishonest acts committed by the employees of Contractor or its Subcontractors, acting alone or in collusion with others, in a minimum amount of one million dollars ($1,000,000.00) with a maximum deductible of fifty thousand dollars ($50,000.00).

☐ 6. Umbrella or Excess Liability Insurance in a minimum amount of ten million dollars ($10,000,000.00), which must apply, at a minimum, to the insurance required in Subsection 1 (Commercial General Liability) above.

☐ 7. Professional Liability (Errors and Omissions) Insurance with the following minimum coverage: three million dollars ($3,000,000.00) each occurrence and three million dollars ($3,000,000.00) annual aggregate.

☐ 8. Fire and Personal Property Insurance covering against any loss or damage to the office space used by Contractor for any reason under this Contract, and the equipment, software and other contents of the office space, including without limitation, those contents used by Contractor to provide the Services to the State, up to its replacement value, where the office space and its contents are under the care, custody and control of Contractor. The policy must cover all risks of direct physical loss or damage, including without limitation, flood and earthquake coverage and coverage for computer hardware and software. The State must be endorsed on the policy as a loss payee as its interests appear.

2.132 Subcontractor Insurance Coverage

Except where the State has approved in writing a Contractor subcontract with other insurance provisions, Contractor must require all of its Subcontractors under this Contract to purchase and maintain the insurance coverage as described in this Section for the Contractor in connection with the performance of work by those Subcontractors. Alternatively, Contractor may include any Subcontractors under Contractor's insurance on the coverage required in this Section. Subcontractor(s) must fully comply with the insurance coverage required in this Section. Failure of Subcontractor(s) to comply with insurance requirements does not limit Contractor's liability or responsibility.

2.133 Certificates of Insurance and Other Requirements

Contractor must furnish to DMB-PurchOps, certificate(s) of insurance verifying insurance coverage or providing satisfactory evidence of self-insurance as required in this Section (the "Certificates"). The Certificate must be on the standard "accord" form or equivalent. **THE CONTRACT OR PURCHASE ORDER NO. MUST BE SHOWN ON THE CERTIFICATE OF INSURANCE TO ASSURE CORRECT FILING.** All Certificate(s) are to be prepared and submitted by the Insurance Provider. All Certificate(s) must contain a provision indicating that coverages afforded under the policies WILL NOT BE CANCELLED, MATERIALLY CHANGED, OR NOT RENEWED without 30 days prior written notice, except for 10 days for non-payment of premium, having been given to the Director of Purchasing Operations, Department of Management and Budget. The notice must include the Contract or Purchase Order number affected. Before the Contract is signed, and not less than 20 days before the insurance expiration date every year thereafter, the Contractor must provide evidence that the State and its agents, officers and employees are listed as additional insureds under each commercial general liability and commercial automobile liability policy. In the event the State approves the representation of the State by the insurer's attorney, the attorney may be required to be designated as a Special Assistant Attorney General by the Attorney General of the State of Michigan.

The Contractor must maintain all required insurance coverage throughout the term of the Contract and any extensions and, in the case of claims-made Commercial General Liability policies, must secure tail coverage for at least three years following the expiration or termination for any reason of this Contract. The minimum limits of coverage specified above are not intended, and must not be construed, to limit any liability or indemnity of Contractor under this Contract to any indemnified party or other persons. Contractor is responsible for all deductibles with regard to the insurance. If the Contractor fails to pay any premium for required insurance as specified in this Contract, or if any insurer cancels or significantly reduces any required insurance as specified in this Contract without the State's written consent, then the State may, after the State has given the Contractor at least 30 days written notice, pay the premium or procure similar insurance coverage from another company or companies. The State may deduct any part of the cost from any payment due the Contractor, or the Contractor must pay that cost upon demand by the State.

2.140 Indemnification

2.141 General Indemnification

To the extent permitted by law, the Contractor must indemnify, defend and hold harmless the State from liability, including all claims and losses, and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest and penalties), accruing or resulting to any person, firm or corporation that may be injured or damaged by the Contractor in the performance of this Contract and that are attributable to the negligence or tortious acts of the Contractor or any of its subcontractors, or by anyone else for whose acts any of them may be liable.

2.142 Code Indemnification

To the extent permitted by law, the Contractor shall indemnify, defend and hold harmless the State from any claim, loss, or expense arising from Contractor's breach of the No Surreptitious Code Warranty.

2.143 Employee Indemnification

In any claims against the State of Michigan, its departments, divisions, agencies, sections, commissions, officers, employees and agents, by any employee of the Contractor or any of its subcontractors, the indemnification obligation under the Contract must not be limited in any way by the amount or type of damages, compensation or benefits payable by or for the Contractor or any of its subcontractors under worker's disability compensation acts, disability benefit acts or other employee benefit acts. This indemnification clause is intended to be comprehensive. Any overlap in provisions, or the fact that greater specificity is provided as to some categories of risk, is not intended to limit the scope of indemnification under any other provisions.

2.144 Patent/Copyright Infringement Indemnification

To the extent permitted by law, the Contractor must indemnify, defend and hold harmless the State from and against all losses, liabilities, damages (including taxes), and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest and penalties) incurred in connection with any action or proceeding threatened or brought against the State to the extent that the action or proceeding is based on a claim that any piece of equipment, software, commodity or service supplied by the Contractor or its subcontractors, or the operation of the equipment, software, commodity or service, or the use or reproduction of any documentation provided with the equipment, software, commodity or service infringes any United States patent, copyright, trademark or trade secret of any person or entity, which is enforceable under the laws of the United States.

In addition, should the equipment, software, commodity, or service, or its operation, become or in the State's or Contractor's opinion be likely to become the subject of a claim of infringement, the Contractor must at the Contractor's sole expense (i) procure for the State the right to continue using the equipment, software, commodity or service or, if the option is not reasonably available to the Contractor, (ii) replace or modify to the State's satisfaction the same with equipment, software, commodity or service of equivalent function and performance so that it becomes non-infringing, or, if the option is not reasonably available to Contractor, (iii) accept its return by the State with appropriate credits to the State against the Contractor's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.

Notwithstanding the foregoing, the Contractor has no obligation to indemnify or defend the State for, or to pay any costs, damages or attorneys' fees related to, any claim based upon (i) equipment developed based on written specifications of the State; (ii) use of the equipment in a configuration other than implemented or approved in writing by the Contractor, including, but not limited to, any modification of the equipment by the State; or (iii) the combination, operation, or use of the equipment with equipment or software not supplied by the Contractor under this Contract.

2.145 Continuation of Indemnification Obligations

The Contractor's duty to indemnify under this Section continues in full force and effect, notwithstanding the expiration or early cancellation of the Contract, with respect to any claims based on facts or conditions that occurred before expiration or cancellation.

2.146 Indemnification Procedures

The procedures set forth below must apply to all indemnity obligations under this Contract.

(a) After the State receives notice of the action or proceeding involving a claim for which it will seek indemnification, the State must promptly notify Contractor of the claim in writing and take or assist Contractor in taking, as the case may be, any reasonable action to avoid the imposition of a default judgment against Contractor. No failure to notify the Contractor relieves the Contractor of its indemnification obligations except to the extent that the Contractor can prove damages attributable to the failure. Within 10 days following receipt of written notice from the State relating to any claim, the Contractor must notify the State in writing whether Contractor agrees to assume control of the defense and settlement of that claim (a "Notice of Election"). After notifying Contractor of a claim and before the State receiving Contractor's Notice of Election, the State is entitled to defend against the claim, at the Contractor's expense, and the Contractor will be responsible for any reasonable costs incurred by the State in defending against the claim during that period.

(b) If Contractor delivers a Notice of Election relating to any claim: (i) the State is entitled to participate in the defense of the claim and to employ counsel at its own expense to assist in the handling of the claim and to monitor and advise the State about the status and progress of the defense; (ii) the Contractor must, at the request of the State, demonstrate to the reasonable satisfaction of the State, the Contractor's financial ability to carry out its defense and indemnity obligations under this Contract; (iii) the Contractor must periodically advise the State about the status and progress of the defense and must obtain the prior written approval of the State before entering into any settlement of the claim or ceasing to defend against the claim and (iv) to the extent that any principles of Michigan governmental or public law may be involved or challenged, the State has the right, at its own expense, to control the defense of that portion of the claim involving the principles of Michigan governmental or public law. But the State may retain control of the defense and settlement of a claim by notifying the Contractor in writing within 10 days after the State's receipt of Contractor's information requested by the State under clause (ii) of this paragraph if the State determines that the Contractor has failed to demonstrate to the reasonable satisfaction of the State the Contractor's financial ability to carry out its defense and indemnity obligations under this Section. Any litigation activity on behalf of the State, or any of its subdivisions under this Section, must be coordinated with the Department of Attorney General. In the event the insurer's attorney represents the State under this Section, the insurer's attorney may be required to be designated as a Special Assistant Attorney General by the Attorney General of the State of Michigan.

(c) If Contractor does not deliver a Notice of Election relating to any claim of which it is notified by the State as provided above, the State may defend the claim in the manner as it may deem appropriate, at the cost and expense of Contractor. If it is determined that the claim was one against which Contractor was required to indemnify the State, upon request of the State, Contractor must promptly reimburse the State for all the reasonable costs and expenses.

2.150 Termination/Cancellation

2.151 Notice and Right to Cure

If the Contractor breaches the contract, and the State in its sole discretion determines that the breach is curable, then the State will provide the Contractor with written notice of the breach and a time period (not less than 30 days) to cure the Breach. The notice of breach and opportunity to cure is inapplicable for successive or repeated breaches or if the State determines in its sole discretion that the breach poses a

serious and imminent threat to the health or safety of any person or the imminent loss, damage, or destruction of any real or tangible personal property.

2.152 Termination for Cause

(a) The State may terminate this contract, for cause, by notifying the Contractor in writing, if the Contractor (i) breaches any of its material duties or obligations under this Contract (including a Chronic Failure to meet any particular SLA), or (ii) fails to cure a breach within the time period specified in the written notice of breach provided by the State

(b) If this Contract is terminated for cause, the Contractor must pay all costs incurred by the State in terminating this Contract, including but not limited to, State administrative costs, reasonable attorneys' fees and court costs, and any reasonable additional costs the State may incur to procure the Services/Deliverables required by this Contract from other sources. Re-procurement costs are not consequential, indirect or incidental damages, and cannot be excluded by any other terms otherwise included in this Contract, provided the costs are not in excess of 50% more than the prices for the Service/Deliverables provided under this Contract.

(c) If the State chooses to partially terminate this Contract for cause, charges payable under this Contract will be equitably adjusted to reflect those Services/Deliverables that are terminated and the State must pay for all Services/Deliverables for which Final Acceptance has been granted provided up to the termination date. Services and related provisions of this Contract that are terminated for cause must cease on the effective date of the termination.

(d) If the State terminates this Contract for cause under this Section, and it is determined, for any reason, that Contractor was not in breach of contract under the provisions of this section, that termination for cause must be deemed to have been a termination for convenience, effective as of the same date, and the rights and obligations of the parties must be limited to that otherwise provided in this Contract for a termination for convenience.

2.153 Termination for Convenience

The State may terminate this Contract for its convenience, in whole or part, if the State determines that a termination is in the State's best interest. Reasons for the termination must be left to the sole discretion of the State and may include, but not necessarily be limited to (a) the State no longer needs the Services or products specified in the Contract, (b) relocation of office, program changes, changes in laws, rules, or regulations make implementation of the Services no longer practical or feasible, (c) unacceptable prices for Additional Services or New Work requested by the State, or (d) falsification or misrepresentation, by inclusion or non-inclusion, of information material to a response to any RFP issued by the State. The State may terminate this Contract for its convenience, in whole or in part, by giving Contractor written notice at least 30 days before the date of termination. If the State chooses to terminate this Contract in part, the charges payable under this Contract must be equitably adjusted to reflect those Services/Deliverables that are terminated. Services and related provisions of this Contract that are terminated for cause must cease on the effective date of the termination.

2.154 Termination for Non-Appropriation

(a) Contractor acknowledges that, if this Contract extends for several fiscal years, continuation of this Contract is subject to appropriation or availability of funds for this Contract. If funds to enable the State to effect continued payment under this Contract are not appropriated or otherwise made available, the State must terminate this Contract and all affected Statements of Work, in whole or in part, at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to Contractor. The State must give Contractor at least 30 days advance written notice of termination for non-appropriation or unavailability (or the time as is available if the State receives notice of the final decision less than 30 days before the funding cutoff).

(b) If funding for the Contract is reduced by law, or funds to pay Contractor for the agreed-to level of the Services or production of Deliverables to be provided by Contractor are not appropriated or otherwise unavailable, the State may, upon 30 days written notice to Contractor, reduce the level of the Services or the change the production of Deliverables in the manner and for the periods of time as the State may elect. The charges payable under this Contract will be equitably adjusted to reflect any equipment, services or commodities not provided by reason of the reduction.

(c) If the State terminates this Contract, eliminates certain Deliverables, or reduces the level of Services to be provided by Contractor under this Section, the State must pay Contractor for all Work-in-Process performed through the effective date of the termination or reduction in level, as the case may be and as determined by the State, to the extent funds are available. This Section will not preclude Contractor from reducing or stopping Services/Deliverables or raising against the State in a court of competent jurisdiction, any claim for a shortfall in payment for Services performed or Deliverables finally accepted before the effective date of termination.

2.155 Termination for Criminal Conviction

The State may terminate this Contract immediately and without further liability or penalty in the event Contractor, an officer of Contractor, or an owner of a 25% or greater share of Contractor is convicted of a criminal offense related to a State, public or private Contract or subcontract.

2.156 Termination for Approvals Rescinded

The State may terminate this Contract if any final administrative or judicial decision or adjudication disapproves a previously approved request for purchase of personal services under Constitution 1963, Article 11, § 5, and Civil Service Rule 7-1. In that case, the State will pay the Contractor for only the work completed to that point under the Contract. Termination may be in whole or in part and may be immediate as of the date of the written notice to Contractor or may be effective as of the date stated in the written notice.

2.157 Rights and Obligations upon Termination

(a) If the State terminates this Contract for any reason, the Contractor must (a) stop all work as specified in the notice of termination, (b) take any action that may be necessary, or that the State may direct, for preservation and protection of Deliverables or other property derived or resulting from this Contract that may be in Contractor's possession, (c) return all materials and property provided directly or indirectly to Contractor by any entity, agent or employee of the State, (d) transfer title in, and deliver to, the State, unless otherwise directed, all Deliverables intended to be transferred to the State at the termination of the Contract and which are resulting from the Contract (which must be provided to the State on an "As-Is" basis except to the extent the amounts paid by the State in respect of the items included compensation to Contractor for the provision of warranty services in respect of the materials), and (e) take any action to mitigate and limit any potential damages, or requests for Contractor adjustment or termination settlement costs, to the maximum practical extent, including terminating or limiting as otherwise applicable those subcontracts and outstanding orders for material and supplies resulting from the terminated Contract.

(b) If the State terminates this Contract before its expiration for its own convenience, the State must pay Contractor for all charges due for Services provided before the date of termination and, if applicable, as a separate item of payment under this Contract, for Work In Process, on a percentage of completion basis at the level of completion determined by the State. All completed or partially completed Deliverables prepared by Contractor under this Contract, at the option of the State, becomes the State's property, and Contractor is entitled to receive equitable fair compensation for the Deliverables. Regardless of the basis for the termination, the State is not obligated to pay, or otherwise compensate, Contractor for any lost expected future profits, costs or expenses incurred with respect to Services not actually performed for the State.

(c) Upon a good faith termination, the State may assume, at its option, any subcontracts and agreements for services and deliverables provided under this Contract, and may further pursue completion of the Services/Deliverables under this Contract by replacement contract or otherwise as the State may in its sole judgment deem expedient.

2.158 Reservation of Rights

Any termination of this Contract or any Statement of Work issued under it by a party must be with full reservation of, and without prejudice to, any rights or remedies otherwise available to the party with respect to any claims arising before or as a result of the termination.

2.160 Termination by Contractor

2.161 Termination by Contractor

If the State breaches the Contract, and the Contractor in its sole discretion determines that the breach is curable, then the Contractor will provide the State with written notice of the breach and a time period (not less than 30 days) to cure the breach. The Notice of Breach and opportunity to cure is inapplicable for successive and repeated breaches.

The Contractor may terminate this Contract if the State (i) materially breaches its obligation to pay the Contractor undisputed amounts due and owing under this Contract, (ii) breaches its other obligations under this Contract to an extent that makes it impossible or commercially impractical for the Contractor to perform the Services, or (iii) does not cure the breach within the time period specified in a written notice of breach. But the Contractor must discharge its obligations under **Section 2.160** before it terminates the Contract.

2.170 Transition Responsibilities

2.171 Contractor Transition Responsibilities

If the State terminates this contract, for convenience or cause, or if the Contract is otherwise dissolved, voided, rescinded, nullified, expires or rendered unenforceable, the Contractor agrees to comply with direction provided by the State to assist in the orderly transition of equipment, services, software, leases, etc. to the State or a third party designated by the State. If this Contract expires or terminates, the Contractor agrees to make all reasonable efforts to effect an orderly transition of services within a reasonable period of time that in no event will exceed 30 days. These efforts must include, but are not limited to, those listed in **Sections 2.141, 2.142, 2.143, 2.144, and 2.145.**

2.172 Contractor Personnel Transition

The Contractor must work with the State, or a specified third party, to develop a transition plan setting forth the specific tasks and schedule to be accomplished by the parties, to effect an orderly transition. The Contractor must allow as many personnel as practicable to remain on the job to help the State, or a specified third party, maintain the continuity and consistency of the services required by this Contract. In addition, during or following the transition period, in the event the State requires the Services of the Contractor's subcontractors or vendors, as necessary to meet its needs, Contractor agrees to reasonably, and with good-faith, work with the State to use the Services of Contractor's subcontractors or vendors. Contractor will notify all of Contractor's subcontractors of procedures to be followed during transition.

2.173 Contractor Information Transition

The Contractor agrees to provide reasonable detailed specifications for all Services/Deliverables needed by the State, or specified third party, to properly provide the Services/Deliverables required under this Contract. The Contractor will provide the State with asset management data generated from the inception of this Contract through the date on which this Contractor is terminated in a comma-delineated format unless otherwise requested by the State. The Contractor will deliver to the State any remaining owed reports and documentation still in Contractor's possession subject to appropriate payment by the State.

2.174 Contractor Software Transition

The Contractor must reasonably assist the State in the acquisition of any Contractor software required to perform the Services/use the Deliverables under this Contract. This must include any documentation being used by the Contractor to perform the Services under this Contract. If the State transfers any software licenses to the Contractor, those licenses must, upon expiration of the Contract, transfer back to the State at their current revision level. Upon notification by the State, Contractor may be required to freeze all non-critical changes to Deliverables/Services.

2.175 Transition Payments

If the transition results from a termination for any reason, reimbursement must be governed by the termination provisions of this Contract. If the transition results from expiration, the Contractor will be reimbursed for all reasonable transition costs (i.e. costs incurred within the agreed period after contract expiration that result from transition operations) at the rates agreed upon by the State. The Contractor will prepare an accurate accounting from which the State and Contractor may reconcile all outstanding accounts.

2.176 State Transition Responsibilities

In the event that this Contract is terminated, dissolved, voided, rescinded, nullified, or otherwise rendered unenforceable, the State agrees to perform the following obligations, and any others upon which the State and the Contractor agree:

(a) Reconciling all accounts between the State and the Contractor;

(b) Completing any pending post-project reviews.

2.180 Stop Work

2.181 Stop Work Orders

The State may, at any time, by written stop work order to Contractor, require that Contractor stop all, or any part, of the work called for by the Contract for a period of up to 90 calendar days after the stop work order is delivered to Contractor, and for any further period to which the parties may agree. The stop work order must be identified as a stop work order and must indicate that it is issued under this **Section 2.150**. Upon receipt of the stop work order, Contractor must immediately comply with its terms and take all reasonable steps to minimize incurring costs allocable to the work covered by the stop work order during the period of work stoppage. Within the period of the stop work order, the State must either: (a) cancel the stop work order; or (b) terminate the work covered by the stop work order as provided in **Section 2.130**.

2.182 Cancellation or Expiration of Stop Work Order

The Contractor must resume work if the State cancels a Stop Work Order or if it expires. The parties will agree upon an equitable adjustment in the delivery schedule, the Contract price, or both, and the Contract must be modified, in writing, accordingly, if: (a) the stop work order results in an increase in the time required for, or in Contractor's costs properly allocable to, the performance of any part of the Contract; and (b) Contractor asserts its right to an equitable adjustment within 30 calendar days after the end of the period of work stoppage; provided that, if the State decides the facts justify the action, the State may receive and act upon a Contractor proposal submitted at any time before final payment under the Contract. Any adjustment will conform to the requirements of **Section 2.024**.

2.183 Allowance of Contractor Costs

If the stop work order is not canceled and the work covered by the stop work order is terminated for reasons other than material breach, the termination must be deemed to be a termination for convenience under **Section 2.130**, and the State will pay reasonable costs resulting from the stop work order in arriving at the termination settlement. For the avoidance of doubt, the State is not be liable to Contractor for loss of profits because of a stop work order issued under this **Section 2.150.**

2.190 Dispute Resolution

2.191 In General

Any claim, counterclaim, or dispute between the State and Contractor arising out of or relating to the Contract or any Statement of Work must be resolved as follows. For all Contractor claims seeking an increase in the amounts payable to Contractor under the Contract, or the time for Contractor's performance, Contractor must submit a letter, together with all data supporting the claims, executed by Contractor's Contract Administrator or the Contract Administrator's designee certifying that (a) the claim is made in good faith, (b) the amount claimed accurately reflects the adjustments in the amounts payable to Contractor or the time for Contractor's performance for which Contractor believes the State is liable and covers all costs of every type to which Contractor is entitled from the occurrence of the claimed event, and (c) the claim and the supporting data are current and complete to Contractor's best knowledge and belief.

2.192 Informal Dispute Resolution

(a) All disputes between the parties must be resolved under the Contract Management procedures in this Contract. If the parties are unable to resolve any disputes after compliance with the processes, the parties must meet with the Director of Purchasing Operations, DMB, or designee, for the purpose of attempting to resolve the dispute without the need for formal legal proceedings, as follows:

(i) The representatives of Contractor and the State must meet as often as the parties reasonably deem necessary to gather and furnish to each other all information with respect to the matter in issue which the parties believe to be appropriate and germane in connection with its resolution. The representatives must discuss the problem and negotiate in good faith in an effort to resolve the dispute without the necessity of any formal proceeding.

(ii) During the course of negotiations, all reasonable requests made by one party to another for non-privileged information reasonably related to the Contract will be honored in order that each of the parties may be fully advised of the other's position.

(iii) The specific format for the discussions will be left to the discretion of the designated State and Contractor representatives, but may include the preparation of agreed upon statements of fact or written statements of position.

(iv) Following the completion of this process within 60 calendar days, the Director of Purchasing Operations, DMB, or designee, must issue a written opinion regarding the issue(s) in dispute within 30 calendar days. The opinion regarding the dispute must be considered the State's final action and the exhaustion of administrative remedies.

(b) This Section will not be construed to prevent either party from instituting, and a party is authorized to institute, formal proceedings earlier to avoid the expiration of any applicable limitations period, to preserve a superior position with respect to other creditors, or under **Section 2.163**.

(c) The State will not mediate disputes between the Contractor and any other entity, except state agencies, concerning responsibility for performance of work under the Contract.

2.193 Injunctive Relief

The only circumstance in which disputes between the State and Contractor will not be subject to the provisions of **Section 2.162** is where a party makes a good faith determination that a breach of the terms of the Contract by the other party is the that the damages to the party resulting from the breach will be so immediate, so large or severe and so incapable of adequate redress after the fact that a temporary restraining order or other immediate injunctive relief is the only adequate remedy.

2.194 Continued Performance

Each party agrees to continue performing its obligations under the Contract while a dispute is being resolved except to the extent the issue in dispute precludes performance (dispute over payment must not be deemed to preclude performance) and without limiting either party's right to terminate the Contract as provided in **Section 2.150**, as the case may be.

2.200 Federal and State Contract Requirements

2.201 Nondiscrimination

In the performance of the Contract, Contractor agrees not to discriminate against any employee or applicant for employment, with respect to his or her hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, religion, national origin, ancestry, age, sex, height, weight, marital status, physical or mental disability. Contractor further agrees that every subcontract entered into for the performance of this Contract or any purchase order resulting from this Contract will contain a provision requiring non-discrimination in employment, as specified here, binding upon each Subcontractor. This covenant is required under the Elliot Larsen Civil Rights Act, 1976 PA 453, MCL 37.2101, et seq., and the Persons with Disabilities Civil Rights Act, 1976 PA 220, MCL 37.1101, et seq., and any breach of this provision may be regarded as a material breach of the Contract.

2.202 Unfair Labor Practices

Under 1980 PA 278, MCL 423.321, et seq., the State must not award a Contract or subcontract to an employer whose name appears in the current register of employers failing to correct an unfair labor practice compiled under section 2 of the Act. This information is compiled by the United States National Labor Relations Board. A Contractor of the State, in relation to the Contract, must not enter into a contract with a Subcontractor, manufacturer, or supplier whose name appears in this register. Under section 4 of 1980 PA 278, MCL 423.324, the State may void any Contract if, after award of the Contract, the name of Contractor as an employer or the name of the Subcontractor, manufacturer or supplier of Contractor appears in the register.

2.203 Workplace Safety and Discriminatory Harassment

In performing Services for the State, the Contractor must comply with the Department of Civil Services Rule 2-20 regarding Workplace Safety and Rule 1-8.3 regarding Discriminatory Harassment. In addition, the Contractor must comply with Civil Service regulations and any applicable agency rules provided to the Contractor. For Civil Service Rules, see http://www.mi.gov/mdcs/0,1607,7-147-6877---,00.html.

2.204 Prevailing Wage

The rates of wages and fringe benefits to be paid each class of individuals employed by the Contractor, its subcontractors, their subcontractors, and all persons involved with the performance of this Contract in privity of contract with the Contractor shall not be less than the wage rates and fringe benefits established by the Michigan Department of Labor and Economic Development, Wage and Hour Bureau, schedule of occupational classification and wage rates and fringe benefits for the local where the work is to be performed. The term Contractor shall include all general contractors, prime contractors, project managers, trade contractors, and all of their contractors or subcontractors and persons in privity of contract with them.

The Contractor, its subcontractors, their subcontractors and all persons involved with the performance of this contract in privity of contract with the Contractor shall keep posted on the work site, in a conspicuous place, a copy of all wage rates and fringe benefits as prescribed in the contract. You must also post, in a conspicuous place, the address and telephone number of the Michigan Department of Labor and Economic Development, the office responsible for enforcement of the wage rates and fringe benefits. You shall keep an accurate record showing the name and occupation of the actual wage and benefits paid to each individual employed in connection with this contract. This record shall be available to the State upon request for reasonable inspection.

If any trade is omitted from the list of wage rates and fringe benefits to be paid to each class of individuals by the Contractor, it is understood that the trades omitted shall also be paid not less than the wage rate and fringe benefits prevailing in the local where the work is to be performed.

2.210 Governing Law

2.211 Governing Law

The Contract must in all respects be governed by, and construed according to, the substantive laws of the State of Michigan without regard to any Michigan choice of law rules that would apply the substantive law of any other jurisdiction to the extent not inconsistent with, or pre-empted by federal law.

2.212 Compliance with Laws

Contractor shall comply with all applicable state, federal and local laws and ordinances in providing the Services/Deliverables.

2.213 Jurisdiction

Any dispute arising from the Contract must be resolved in the State of Michigan. With respect to any claim between the parties, Contractor consents to venue in Ingham County, Michigan, and irrevocably waives any objections it may have to the jurisdiction on the grounds of lack of personal jurisdiction of the court or the laying of venue of the court or on the basis of forum non conveniens or otherwise. Contractor agrees to appoint agents in the State of Michigan to receive service of process.

2.220 Limitation of Liability

2.221 Limitation of Liability

Neither the Contractor nor the State is liable to each other, regardless of the form of action, for consequential, incidental, indirect, or special damages. This limitation of liability does not apply to claims for infringement of United States patent, copyright, trademark or trade secrets; to claims for personal injury or damage to property caused by the gross negligence or willful misconduct of the Contractor; to claims covered by other specific provisions of this Contract calling for liquidated damages; or to court costs or attorney's fees awarded by a court in addition to damages after litigation based on this Contract.

2.230 Disclosure Responsibilities

2.231 Disclosure of Litigation

(a) Disclosure. Contractor must disclose any material criminal litigation, investigations or proceedings involving the Contractor (and each Subcontractor) or any of its officers or directors or any litigation, investigations or proceedings under the Sarbanes-Oxley Act. In addition, each Contractor (and each Subcontractor) must notify the State of any material civil litigation, arbitration or proceeding which arises during the term of the Contract and extensions, to which Contractor (or, to the extent Contractor is aware, any Subcontractor) is a party, and which involves: (i) disputes that might reasonably be expected to adversely affect the viability or financial stability of Contractor or any Subcontractor; or (ii) a claim or written allegation of fraud against Contractor or, to the extent Contractor is aware, any Subcontractor by a governmental or public entity arising out of their business dealings with governmental or public entities. The Contractor must disclose in writing to the Contract Administrator any litigation, investigation, arbitration or other proceeding (collectively, "Proceeding") within 30 days of its occurrence. Details of settlements which are prevented from disclosure by the terms of the settlement may be annotated. Information provided to the State from Contractor's publicly filed documents referencing its material litigation will be deemed to satisfy the requirements of this Section.

(b) Assurances. If any Proceeding disclosed to the State under this Section, or of which the State otherwise becomes aware, during the term of this Contract would cause a reasonable party to be concerned about:

(i) the ability of Contractor (or a Subcontractor) to continue to perform this Contract according to its terms and conditions, or

(ii) whether Contractor (or a Subcontractor) in performing Services for the State is engaged in conduct which is similar in nature to conduct alleged in the Proceeding, which conduct would constitute a breach of this Contract or a violation of Michigan law, regulations or public policy, then the Contractor must provide the State all reasonable assurances requested by the State to demonstrate that:

(a) Contractor and its Subcontractors will be able to continue to perform this Contract and any Statements of Work according to its terms and conditions, and

(b) Contractor and its Subcontractors have not and will not engage in conduct in performing the Services which is similar in nature to the conduct alleged in the Proceeding.

(c) Contractor must make the following notifications in writing:

(1) Within 30 days of Contractor becoming aware that a change in its ownership or officers has occurred, or is certain to occur, or a change that could result in changes in the valuation of its capitalized assets in the accounting records, Contractor must notify DMB PurchOps.

(2) Contractor must also notify DMB PurchOps within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership or officers.

(3) Contractor must also notify DMB PurchOps within 30 days whenever changes to company affiliations occur.

2.232 Call Center Disclosure

Deleted, Not Applicable

2.233 Bankruptcy

The State may, without prejudice to any other right or remedy, terminate this Contract, in whole or in part, and, at its option, may take possession of the "Work in Process" and finish the Works in Process by whatever appropriate method the State may deem expedient if:

(a) the Contractor files for protection under the bankruptcy laws;
(b) an involuntary petition is filed against the Contractor and not removed within 30 days;
(c) the Contractor becomes insolvent or if a receiver is appointed due to the Contractor's insolvency;
(d) the Contractor makes a general assignment for the benefit of creditors; or
(e) the Contractor or its affiliates are unable to provide reasonable assurances that the Contractor or its affiliates can deliver the services under this Contract.

Contractor will fix appropriate notices or labels on the Work in Process to indicate ownership by the State. To the extent reasonably possible, materials and Work in Process must be stored separately from other stock and marked conspicuously with labels indicating ownership by the State.

2.240 Performance

Deleted, Not Applicable

2.241 Time of Performance

(a) Contractor must use commercially reasonable efforts to provide the resources necessary to complete all Services and Deliverables according to the time schedules contained in the Statements of Work and other Exhibits governing the work, and with professional quality.

(b) Without limiting the generality of **Section 2.211(a),** Contractor must notify the State in a timely manner upon becoming aware of any circumstances that may reasonably be expected to jeopardize the timely and successful completion of any Deliverables/Services on the scheduled due dates in the latest State-approved delivery schedule and must inform the State of the projected actual delivery date.

(c) If the Contractor believes that a delay in performance by the State has caused or will cause the Contractor to be unable to perform its obligations according to specified Contract time periods, the Contractor must notify the State in a timely manner and must use commercially reasonable efforts to

perform its obligations according to the Contract time periods notwithstanding the State's failure. Contractor will not be in default for a delay in performance to the extent the delay is caused by the State.

2.242 Service Level Agreements (SLAs)

Deleted, Not Applicable.

2.243 Liquidated Damages

Deleted, Not Applicable

2.244 Excusable Failure

Neither party will be liable for any default, damage or delay in the performance of its obligations under the Contract to the extent the default, damage or delay is caused by government regulations or requirements (executive, legislative, judicial, military or otherwise), power failure, electrical surges or current fluctuations, lightning, earthquake, war, water or other forces of nature or acts of God, delays or failures of transportation, equipment shortages, suppliers' failures, or acts or omissions of common carriers, fire; riots, civil disorders; strikes or other labor disputes, embargoes; injunctions (provided the injunction was not issued as a result of any fault or negligence of the party seeking to have its default or delay excused); or any other cause beyond the reasonable control of a party; provided the non-performing party and its Subcontractors are without fault in causing the default or delay, and the default or delay could not have been prevented by reasonable precautions and cannot reasonably be circumvented by the non-performing party through the use of alternate sources, workaround plans or other means, including disaster recovery plans.

If a party does not perform its contractual obligations for any of the reasons listed above, the non-performing party will be excused from any further performance of its affected obligation(s) for as long as the circumstances prevail. But the party must use commercially reasonable efforts to recommence performance whenever and to whatever extent possible without delay. A party must promptly notify the other party in writing immediately after the excusable failure occurs, and also when it abates or ends.

If any of the above-enumerated circumstances substantially prevent, hinder, or delay the Contractor's performance of the Services/provision of Deliverables for more than 10 Business Days, and the State determines that performance is not likely to be resumed within a period of time that is satisfactory to the State in its reasonable discretion, then at the State's option: (a) the State may procure the affected Services/Deliverables from an alternate source, and the State is not be liable for payment for the unperformed Services/ Deliverables not provided under the Contract for so long as the delay in performance continues; (b) the State may terminate any portion of the Contract so affected and the charges payable will be equitably adjusted to reflect those Services/Deliverables terminated; or (c) the State may terminate the affected Statement of Work without liability to Contractor as of a date specified by the State in a written notice of termination to the Contractor, except to the extent that the State must pay for Services/Deliverables provided through the date of termination.

The Contractor will not have the right to any additional payments from the State as a result of any Excusable Failure occurrence or to payments for Services not rendered/Deliverables not provided as a result of the Excusable Failure condition. Defaults or delays in performance by Contractor which are caused by acts or omissions of its Subcontractors will not relieve Contractor of its obligations under the Contract except to the extent that a Subcontractor is itself subject to an Excusable Failure condition described above and Contractor cannot reasonably circumvent the effect of the Subcontractor's default or delay in performance through the use of alternate sources, workaround plans or other means.

2.250 Approval of Deliverables

2.251 Delivery Responsibilities

Unless otherwise specified by the State within an individual order, the following must be applicable to all orders issued under this Contract.

(a) Shipment responsibilities - Services performed/Deliverables provided under this Contract must be delivered "F.O.B. Destination, within Government Premises." The Contractor must have complete responsibility for providing all Services/Deliverables to all site(s) unless otherwise stated. Actual delivery dates will be specified on the individual purchase order.

(b) Delivery locations - Services will be performed/Deliverables will be provided at every State of Michigan location within Michigan unless otherwise stated in the SOW. Specific locations will be provided by the State or upon issuance of individual purchase orders.

(c) Damage Disputes - At the time of delivery to State Locations, the State must examine all packages. The quantity of packages delivered must be recorded and any obvious visible or suspected damage must be noted at time of delivery using the shipper's delivery document(s) and appropriate procedures to record the damage.

Where there is no obvious or suspected damage, all deliveries to a State Location must be opened by the State and the contents inspected for possible internal damage not visible externally within 14 days of receipt. Any damage must be reported to the Contractor within five days of inspection.

2.252 Delivery of Deliverables

Where applicable, the Statements of Work/POs contain lists of the Deliverables to be prepared and delivered by Contractor including, for each Deliverable, the scheduled delivery date and a designation of whether the Deliverable is a document ("Written Deliverable"), a good ("Physical Deliverable") or a Service. All Deliverables must be completed and delivered for State review and written approval and, where applicable, installed according to the State-approved delivery schedule and any other applicable terms and conditions of the Contract.

2.253 Testing

(a) Before delivering any of the above-mentioned Statement of Work Physical Deliverables or Services to the State, Contractor will first perform all required quality assurance activities to verify that the Physical Deliverable or Service is complete and conforms with its specifications listed in the applicable Statement of Work or Purchase Order. Before delivering a Physical Deliverable or Service to the State, Contractor must certify to the State that (1) it has performed the quality assurance activities, (2) it has performed any applicable testing, (3) it has corrected all material deficiencies discovered during the quality assurance activities and testing, (4) the Deliverable or Service is in a suitable state of readiness for the State's review and approval, and (5) the Deliverable/Service has all Critical Security patches/updates applied.

(b) If a Deliverable includes installation at a State Location, then Contractor must (1) perform any applicable testing, (2) correct all material deficiencies discovered during the quality assurance activities and testing, and (3) inform the State that the Deliverable is in a suitable state of readiness for the State's review and approval. To the extent that testing occurs at State Locations, the State is entitled to observe or otherwise participate in testing.

2.254 Approval of Deliverables, In General

(a) All Deliverables (Physical Deliverables and Written Deliverables) and Services require formal written approval by the State, according to the following procedures. Formal approval by the State requires the State to confirm in writing that the Deliverable meets its specifications. Formal approval may include the successful completion of Testing as applicable in **Section 2.253**, to be led by the State with the support and assistance of Contractor. The approval process will be facilitated by ongoing consultation between the parties, inspection of interim and intermediate Deliverables and collaboration on key decisions.

(b) The State's obligation to comply with any State Review Period is conditioned on the timely delivery of Deliverables/Services being reviewed.

(c) Before commencement of its review or testing of a Deliverable/Service, the State may inspect the Deliverable/Service to confirm that all components of the Deliverable/Service have been delivered without material deficiencies. If the State determines that the Deliverable/Service has material deficiencies, the State may refuse delivery of the Deliverable/Service without performing any further inspection or testing of the Deliverable/Service. Otherwise, the review period will be deemed to have started on the day the State receives the Deliverable or the Service begins, and the State and Contractor agree that the Deliverable/Service is ready for use and, where applicable, certification by Contractor according to **Section 2.223**.

(d) The State will approve in writing a Deliverable/Service after confirming that it conforms to and performs according to its specifications without material deficiency. The State may, but is not be required to, conditionally approve in writing a Deliverable/Service that contains material deficiencies if the State elects to permit Contractor to rectify them post-approval. In any case, Contractor will be responsible for working diligently to correct within a reasonable time at Contractor's expense all deficiencies in the Deliverable/Service that remain outstanding at the time of State approval.

(e) If, after three opportunities (the original and two repeat efforts), the Contractor is unable to correct all deficiencies preventing Final Acceptance of a Deliverable/Service, the State may: (i) demand that the Contractor cure the failure and give the Contractor additional time to cure the failure at the sole expense of the Contractor; or (ii) keep the Contract in force and do, either itself or through other parties, whatever the Contractor has failed to do, and recover the difference between the cost to cure the deficiency and the contract price plus an additional sum equal to 10% of the cost to cure the deficiency to cover the State's general expenses provided the State can furnish proof of the general expenses; or (iii) terminate the particular Statement of Work for default, either in whole or in part by notice to Contractor provided Contractor is unable to cure the breach. Notwithstanding the foregoing, the State cannot use, as a basis for exercising its termination rights under this Section, deficiencies discovered in a repeat State Review Period that could reasonably have been discovered during a prior State Review Period.

(f) The State, at any time and in its reasonable discretion, may halt the testing or approval process if the process reveals deficiencies in or problems with a Deliverable/Service in a sufficient quantity or of a sufficient severity that renders continuing the process unproductive or unworkable. If that happens, the State may stop using the Service or return the applicable Deliverable to Contractor for correction and re-delivery before resuming the testing or approval process.

2.255 Process For Approval of Written Deliverables

The State Review Period for Written Deliverables will be the number of days set forth in the applicable Statement of Work following delivery of the final version of the Deliverable (and if the Statement of Work does not state the State Review Period, it is by default five Business Days for Written Deliverables of 100 pages or less and 10 Business Days for Written Deliverables of more than 100 pages). The duration of the State Review Periods will be doubled if the State has not had an opportunity to review an interim draft of the Written Deliverable before its submission to the State. The State agrees to notify Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by Contractor or describing any deficiencies that must be corrected before approval of the Deliverable (or at the State's election, after approval of the Deliverable). If the State notifies the Contractor about deficiencies, the Contractor will correct the described deficiencies and within 30 Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

2.256 Process for Approval of Services

The State Review Period for approval of Services is governed by the applicable Statement of Work (and if the Statement of Work does not state the State Review Period, it is by default 30 Business Days for Services). The State agrees to notify the Contractor in writing by the end of the State Review Period either stating that the Service is approved in the form delivered by the Contractor or describing any deficiencies that must be corrected before approval of the Services (or at the State's election, after approval of the Service). If the State delivers to the Contractor a notice of deficiencies, the Contractor will correct the described deficiencies and within 30 Business Days resubmit the Service in a form that shows all revisions made to the original version delivered to the State. The Contractor's correction efforts will be made at no additional charge. Upon implementation of a corrected Service from Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Service for conformity and that the identified deficiencies have been corrected.

2.257 Process for Approval of Physical Deliverables

The State Review Period for approval of Physical Deliverables is governed by the applicable Statement of Work (and if the Statement of Work does not state the State Review Period, it is by default 30 continuous Business Days for a Physical Deliverable). The State agrees to notify the Contractor in writing by the end of the State Review Period either stating that the Deliverable is approved in the form delivered by the Contractor or describing any deficiencies that must be corrected before approval of the Deliverable (or at the State's election, after approval of the Deliverable). If the State delivers to the Contractor a notice of deficiencies, the Contractor will correct the described deficiencies and within 30 Business Days resubmit the Deliverable in a form that shows all revisions made to the original version delivered to the State. The Contractor's correction efforts will be made at no additional charge. Upon receipt of a corrected Deliverable from the Contractor, the State will have a reasonable additional period of time, not to exceed the length of the original State Review Period, to review the corrected Deliverable to confirm that the identified deficiencies have been corrected.

2.258 Final Acceptance

Unless otherwise stated in the Article 1, Statement of Work or Purchase Order, "Final Acceptance" of each Deliverable must occur when each Deliverable/Service has been approved by the State following the State Review Periods identified in **Sections 2.251-2.257**. Payment will be made for Deliverables installed and accepted. Upon acceptance of a Service, the State will pay for all Services provided during the State Review Period that conformed to the acceptance criteria.

2.260 Ownership

2.261 Ownership of Work Product by State

The State owns all Deliverables as they are works made for hire by the Contractor for the State. The State owns all United States and international copyrights, trademarks, patents or other proprietary rights in the Deliverables.

2.262 Vesting of Rights

With the sole exception of any preexisting licensed works identified in the SOW, the Contractor assigns, and upon creation of each Deliverable automatically assigns, to the State, ownership of all United States and international copyrights, trademarks, patents, or other proprietary rights in each and every Deliverable, whether or not registered by the Contractor, insofar as any the Deliverable, by operation of law, may not be considered work made for hire by the Contractor for the State. From time to time upon the State's request, the Contractor must confirm the assignment by execution and delivery of the assignments, confirmations of assignment, or other written instruments as the State may request. The State may obtain and hold in its own name all copyright, trademark, and patent registrations and other evidence of rights that may be available for Deliverables.

2.263 Rights in Data

(a) The State is the owner of all data made available by the State to the Contractor or its agents, Subcontractors or representatives under the Contract. The Contractor will not use the State's data for any purpose other than providing the Services, nor will any part of the State's data be disclosed, sold, assigned, leased or otherwise disposed of to the general public or to specific third parties or commercially exploited by or on behalf of the Contractor. No employees of the Contractor, other than those on a strictly need-to-know basis, have access to the State's data. Contractor will not possess or assert any lien or other right against the State's data. Without limiting the generality of this Section, the Contractor must only use personally identifiable information as strictly necessary to provide the Services and must disclose the information only to its employees who have a strict need-to-know the information. The Contractor must comply at all times with all laws and regulations applicable to the personally identifiable information.

(b) The State is the owner of all State-specific data under the Contract. The State may use the data provided by the Contractor for any purpose. The State will not possess or assert any lien or other right against the Contractor's data. Without limiting the generality of this Section, the State may use personally identifiable information only as strictly necessary to utilize the Services and must disclose the information only to its employees who have a strict need to know the information, except as provided by law. The State must comply at all times with all laws and regulations applicable to the personally identifiable information. Other material developed and provided to the State remains the State's sole and exclusive property.

2.264 Ownership of Materials

The State and the Contractor will continue to own their respective proprietary technologies developed before entering into the Contract. Any hardware bought through the Contractor by the State, and paid for by the State, will be owned by the State. Any software licensed through the Contractor and sold to the State, will be licensed directly to the State.

2.270 State Standards

2.271 Existing Technology Standards

The Contractor will adhere to all existing standards as described within the comprehensive listing of the State's existing technology standards at http://www.michigan.gov/dit.

2.272 Acceptable Use Policy

To the extent that Contractor has access to the State computer system, Contractor must comply with the State's Acceptable Use Policy, see http://www.michigan.gov/ditservice. All Contractor employees must be required, in writing, to agree to the State's Acceptable Use Policy before accessing the State system. The State reserves the right to terminate Contractor's access to the State system if a violation occurs.

2.273 Systems Changes

Contractor is not responsible for and not authorized to make changes to any State systems without written authorization from the Project Manager. Any changes Contractor makes to State systems with the State's approval must be done according to applicable State procedures, including security, access and configuration management procedures.

2.280 Extended Purchasing

2.281 MiDEAL

Public Act 431 of 1984 permits DMB to provide purchasing services to any city, village, county, township, school district, intermediate school district, non-profit hospital, institution of higher education, community, or junior college. A current listing of approved program members is available at: www.michigan.gov/buymichiganfirst. Unless otherwise stated, the Contractor must ensure that the non-state agency is an authorized purchaser before extending the Contract pricing.

The Contractor will supply Contract Services and equipment to these local governmental agencies at the established State of Michigan contract prices and terms to the extent applicable and where available. The Contractor must send its invoices to and pay the local unit of government on a direct and individual basis.

To the extent that authorized local units of government purchase quantities of Services and/or equipment under this Contract, the quantities of Services and/or equipment purchased will be included in determining the appropriate rate wherever tiered pricing based on quantity is provided.

In those cases, contract vendors supply merchandise at the established State of Michigan contract prices and terms. The Bidder must submit invoices and pay the authorized MIDEAL member on a direct and individual basis according to contract terms.

2.282 State Employee Purchases
Deleted, Not Applicable

2.290 Environmental Provision

2.291 Environmental Provision

Energy Efficiency Purchasing Policy – The State seeks wherever possible to purchase energy efficient products. This includes giving preference to U.S. Environmental Protection Agency (EPA) certified 'Energy Star' products for any category of products for which EPA has established Energy Star certification. For other purchases, the State may include energy efficiency as one of the priority factors to consider when choosing among comparable products.

Environmental Purchasing Policy – The State of Michigan is committed to encouraging the use of products and services that impact the environment less than competing products. The State is accomplishing this by including environmental considerations in purchasing decisions, while remaining fiscally responsible, to promote practices that improve worker health, conserve natural resources, and prevent pollution. Environmental components that are to be considered include: recycled content and recyclability; energy efficiency; and the presence of undesirable materials in the products, especially those toxic chemicals which are persistent and bioaccumulative. The Contractor should be able to supply products containing recycled and environmentally preferable materials that meet performance requirements and is encouraged to offer such products throughout the duration of this Contract. Information on any relevant third party certification (such as Green Seal, Energy Star, etc.) should also be provided.

Hazardous Materials:
For the purposes of this Section, "Hazardous Materials" is a generic term used to describe asbestos, ACBMs, PCBs, petroleum products, construction materials including paint thinners, solvents, gasoline, oil, and any other material the manufacture, use, treatment, storage, transportation or disposal of which is regulated by the federal, state or local laws governing the protection of the public health, natural resources or the environment. This includes, but is not limited to, materials the as batteries and circuit packs, and other materials that are regulated as (1) "Hazardous Materials" under the Hazardous Materials Transportation Act, (2) "chemical hazards" under the Occupational Safety and Health Administration standards, (3) "chemical substances or mixtures" under the Toxic Substances Control Act, (4) "pesticides" under the Federal Insecticide Fungicide and Rodenticide Act, and (5) "hazardous wastes" as defined or listed under the Resource Conservation and Recovery Act.
(a) The Contractor must use, handle, store, dispose of, process, transport and transfer any material considered a Hazardous Material according to all federal, State and local laws. The State must provide a safe and suitable environment for performance of Contractor's Work. Before the commencement of Work, the State must advise the Contractor of the presence at the work site of any Hazardous Material to the extent that the State is aware of the Hazardous Material. If the Contractor encounters material reasonably believed to be a Hazardous Material and which may present a substantial danger, the Contractor must immediately stop all affected Work, notify the State in writing about the conditions encountered, and take appropriate health and safety precautions.

(b) Upon receipt of a written notice, the State will investigate the conditions. If (a) the material is a Hazardous Material that may present a substantial danger, and (b) the Hazardous Material was not brought to the site by the Contractor, or does not result in whole or in part from any violation by the Contractor of any laws covering the use, handling, storage, disposal of, processing, transport and transfer of Hazardous Materials, the State must order a suspension of Work in writing. The State must proceed to have the Hazardous Material removed or rendered harmless. In the alternative, the State must terminate the affected Work for the State's convenience.

(c) Once the Hazardous Material has been removed or rendered harmless by the State, the Contractor must resume Work as directed in writing by the State. Any determination by the Michigan Department of Community Health or the Michigan Department of Environmental Quality that the Hazardous Material has either been removed or rendered harmless is binding upon the State and Contractor for the purposes of resuming the Work. If any incident with Hazardous Material results in delay not reasonable anticipatable under the circumstances and which is attributable to the State, the applicable SLAs for the affected Work will not be counted in time as mutually agreed by the parties.

(d) If the Hazardous Material was brought to the site by the Contractor, or results in whole or in part from any violation by the Contractor of any laws covering the use, handling, storage, disposal of, processing, transport and transfer of Hazardous Material, or from any other act or omission within the control of the Contractor, the Contractor must bear its proportionate share of the delay and costs involved in cleaning up the site and removing and rendering harmless the Hazardous Material according to Applicable Laws to the condition approved by applicable regulatory agency(ies).

Michigan has a Consumer Products Rule pertaining to labeling of certain products containing volatile organic compounds. For specific details visit http://www.michigan.gov/deq/0,1607,7-135-3310_4108-173523--,00.html

Refrigeration and Air Conditioning:
The Contractor shall comply with the applicable requirements of Sections 608 and 609 of the Clean Air Act (42 U.S.C. 7671g and 7671h) as each or both apply to this contract.

Environmental Performance:
Waste Reduction Program - Contractor shall establish a program to promote cost-effective waste reduction in all operations and facilities covered by this contract. The Contractor's programs shall comply with applicable Federal, State, and local requirements, specifically including Section 6002 of the Resource Conservation and Recovery Act (42 U.S.C. 6962, et seq.).

2.300 Other Provisions

2.311 Forced Labor, Convict Labor, or Indentured Servitude Made Materials

Contractor has certified, to the best of its knowledge and belief no foreign (outside of the U.S.) made equipment, materials, or supplies, will be furnished to the State under this Contract, that have been produced in whole or in part by forced labor, convict labor, or indentured servitude.

"Forced or indentured child labor" means all work or service: exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or performed by any person under the age of 18 under a contract the enforcement of which can be accomplished by process or penalties.

Attachment A, Prices Proposal

Item	Unit	Part Number	NIGP Code	Description	Estimated Quantity	Unit Cost	Extended Cost
1	EA	14756 G	570-28	Post, Steel, I-Beam, hot-dip galvanized after drilling, W6 x 8½" x 7' long. Drill for use with wood offset block, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (7'-0" Galvanized Guardrail Post for use with Thrie Beam Rail)	400	$41.33	$16,532.00
2	EA	533 G	570-28	Post, Steel, I-Beam, hot-dip galvanized after drilling, W6 x 8½" x 6' long. Drill for use with wood offset block, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (6'-0" Galvanized Guardrail Post for use with W-Beam Rail)	200	$33.33	$6,666.00
3	EA	14843G	570-28	Post, Steel, I-Beam, hot-dip galvanized after drilling, W6 x 8½" x 8' long. Drill for use with wood offset block, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (8'-0" Galvanized Guardrail Post for use with W-Beam or Thrie Beam Rail when the guardrail is placed at the shoulder hinge point)	300	$48.00	$14,400.00
4	EA	737A	570-28	Post Sleeve, 6¼" x 8¼" x 5'-0", 3/16" thick material, galvanized after fabrication, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (This post sleeve is for use only when reconstructing BCTs with full size posts)	100	$73.33	$7,333.00

5	EA	12050G	570-28	Guardrail, Thrie Beam, special drilled for anchor plate, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R66 Series (Thrie beam guardrail for use with departing ends)	50	$146.66	$7,333.00
6	EA	975G	570-28	Guardrail, Thrie Beam, Terminal Connector 10 gauge, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R67 Series (Thrie beam guardrail end shoe - 10 gauge)	25	$46.66	$1,166.50
7	EA	209G	570-28	Guardrail, Thrie Beam, Length 13'-6", per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (Standard 13'-6" Thrie Beam rail section)	1500	$74.66	$111,990.00
8	EA	211G	570-28	Guardrail, Thrie Beam, Length 13'-6", Holes punched at 3'-1½" (4 spaces) per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R72 Series (Rail Sections used for post gapping with W beam backing)	125	$74.66	$9,332.50
9	EA	212G	570-28	Guardrail, Thrie Beam, Length 13'-6", Holes punched at 3'-1½" (2 spaces) and 6'-3" (1 space) per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R72 Series (Rail Sections used for post gapping with W beam backing)	125	$93.33	$11,666.25
10	EA	12502G	570-28	Guardrail, Thrie Beam, Length 13'-6", Holes punched at 3'-1½" (3 spaces) and 1'-6¾" (2 spaces) per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R67 Series (Rail Sections used for anchorage to a rigid barrier (Details T -4 & 6)	250	$93.33	$23,332.50

11	EA	12513G	570-28	Guardrail, Thrie Beam, Length 13'-6", Holes punched at 3'-1½" (2 spaces) and 1'-6¾" (4 spaces) per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R67 Series (Rail Sections used for anchorage to a rigid barrier (Detail T -3)	250	$93.33	$23,332.50
12	EA	957G	570-28	Guardrail, Thrie Beam, Terminal End Shoe, Type T, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R66 Series (Thrie beam guardrail terminal end shoe)	75	$49.33	$3,699.75
13	EA	1506G	570-28	Guardrail, Thrie Beam, Curved Convex 50' radius, 13'-6" long , per the attached terms, conditions, MDOT2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (Thrie beam rail convex curved section 50' radius ?)	5	$92.00	$460.00
14	EA	2509G	570-28	Guardrail, Thrie Beam, Curved Concave 50' radius, 13'-6" long, per the attached terms, conditions, MDOT2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (Thrie beam rail concave curved section 50' radius ?)	250	$93.00	$23,250.00
15	EA	1868G	570-28	Guardrail, Thrie Beam, Curved Convex 100' radius, 13'-6" long, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (Thrie beam rail curved convex section 100' radius ?)	5	$93.00	$465.00
16	EA	2868G	570-28	Guardrail, Thrie Beam, Curved Concave 100' radius, 13'-6" long, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (Thrie beam rail curved concave section 100' radius ?)	125	$93.00	$11,625.00

17	EA	12501G	570-28	Guardrail, Thrie Beam, Expansion Section, Length 13'-6", per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R67 Series (Thrie Beam expansion section to be used with Thrie Beam Terminal Connector for expansion at bridges)	25	$146.66	$3,666.50
18	EA	973G	570-28	Guardrail, Thrie Beam Transition, Length 7'-3½", per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (Thrie Beam transition section is used to transition from Thrie Beam to W-beam sections)	100	$93.33	$9,333.00
19	EA	13350G	570-28	Guardrail, Thrie Beam, Expansion Section,10 gauge, Length 13'-6", per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans B22 and B23 Series (Thrie Beam expansion section to be used with bridge rail retrofit, 10 gauge material)	5	$193.00	$965.00
20	EA	308G	570-28	Guardrail, Thrie Beam, 10 gauge, Length 13'-6", per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans B22 and B23 Series (Standard Thrie Beam section to be used with bridge rail retrofit, 10 gauge material)	25	$93.33	$2,333.25
21	EA	926G	570-28	Special, End Shoe W-Beam, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R67 Series. (Slotted end shoe to allow expansion of W-beam rail at bridge connections)	150	$27.00	$4,050.00
22	EA	9G	570-28	Guardrail, W-Beam, Length 13'-6", per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (Standard 13'-6" W-Beam rail section)	1200	$46.66	$55,992.00

23	EA	21G	570-28	Guardrail, W-Beam, Length 13'-6", punched to accept cable anchor block, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R66 Series (W-Beam rail section punched to accept cable anchorage used as departing end)	50	$54.00	$2,700.00
24	EA	11G	570-28	Guardrail, W Beam, Length 13'-6", Holes punched at 3'-1½" (4 spaces) per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R72 Series (Rail Sections used for front rail or backing of post gapping)	50	$46.66	$2,333.00
25	EA	12G	570-28	Guardrail, W-Beam, Length 13'-6", Holes punched at 3'-1½" (2 spaces) and 6'-3" (1 space) per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R72 Series (Rail Sections used for back rail of post gapping with Thrie -beam front)	50	$53.33	$2,666.50
26	EA	1152G	570-28	Guardrail, W-Beam, Curved 5' Convex radius, 7'-3½" long, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R56 Series (For use on bullnoses ?)	25	$126.00	$3,150.00
27	EA	1005G	570-28	Guardrail, W-Beam, Curved 5' Convex radius, 13'-6" long, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R56 Series (For use on bullnoses ?)	100	$126.00	$12,600.00
28	EA	1040G	570-28	Guardrail, W-Beam, Curved 40' Convex radius, 13'-6" long, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R56 Series (For use on bullnoses ?)	50	$74.00	$3,700.00
29	EA	1025G	570-28	Guardrail, W-Beam, Curved 25' Convex radius, 13'-6" long , per the attached terms, conditions, MDOT2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (W-Beam rail curved convex section 25' radius ?)	50	$74.00	$3,700.00

30	EA	2025G	570-28	Guardrail, W-Beam, Curved Concave 25' radius, 13'-6" long, per the attached terms, conditions, MDOT2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (W-Beam rail curved concave section 25' radius?)	50	$74.00	$3,700.00
31	EA	1050G	570-28	Guardrail, W-Beam, Curved 50' Convex radius, 13'-6" long , per the attached terms, conditions, MDOT2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (W-Beam rail curved convex section 50' radius ?)	50	$60.00	$3,000.00
32	EA	2050G	570-28	Guardrail, W-Beam, Curved 50' Concave radius, 13'-6" long , per the attached terms, conditions, MDOT2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (W-Beam rail curved concave section 50' radius ?)	75	$60.00	$4,500.00
33	EA	1100G	570-28	Guardrail, W-Beam, Curved 100' Convex radius, 13'-6" long , per the attached terms, conditions, MDOT2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (W-Beam rail curved convex section 100' radius ?)	75	$60.00	$4,500.00
34	EA	2100G	570-28	Guardrail, W-Beam, Curved 100' Concave radius, 13'-6" long , per the attached terms, conditions, MDOT2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (W-Beam rail curved concave section 100' radius ?)	75	$60.00	$4,500.00
35	EA	1862G	570-28	Guardrail, W-Beam, Curved 100' Convex radius, 13'-6" long, punched to accept cable anchor block, per the attached terms, conditions, MDOT2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series, rail section must be tagged or stamped. (W-Beam rail curved convex section 100' radius for use as the first section in a BCT repair to simulate the parabolic offset)	50	$60.00	$3,000.00

36	EA	907G	570-28	Guardrail, Buffered End Shoe, Type B, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R66 Series (W-beam guardrail terminal end shoe)	50	$24.00	$1,200.00
37	EA	919G 927G	570-28	Guardrail, Buffered End Section, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans III 58 Series (W-beam guardrail buffered end section)	50	$26.66	$1,333.00
38	EA	700A	570-28	Guardrail, Anchor Plate, 1'-4" long, (8) Holes ¾" diameter, 3/16" thick steel, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R61 & R66 Series (For use with cable anchorage)	50	$41.00	$2,050.00
39	EA	783A	570-28	Guardrail, Bearing Plate, 8" x 8" x ⅝" thick, with 8" x 1" x ¼" thick section, 1 1/16" diameter hole, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R66 Series (For use with guardrail approach and departing ends with cable anchorages)	50	$16.00	$800.00
40	EA	1-3000G 1-3900G 4-3910G 1-4901G	570-28	Guardrail, Cable Assembly. W/Swag Fitting & Stud, Galvanized W/(4) each hex nuts and (2) washers, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R61 Series. (BCT cable assembly)	50	$61.00	$3,050.00
41	EA	706G	570-28	Post Sleeve, 2" I.D. x 6", per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R61 Series. (Small piece of pipe that goes in hole of first post for cable assembly)	50	$6.00	$300.00
42	EA	769G	570-28	Soil Plate, Hot-Dip Zinc Coated after Welding and Drilling. Size 2'-0" x 1'-6" x ¼" thick, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R61 Series. (For use with cable assembly)	50	$26.66	$1,333.00

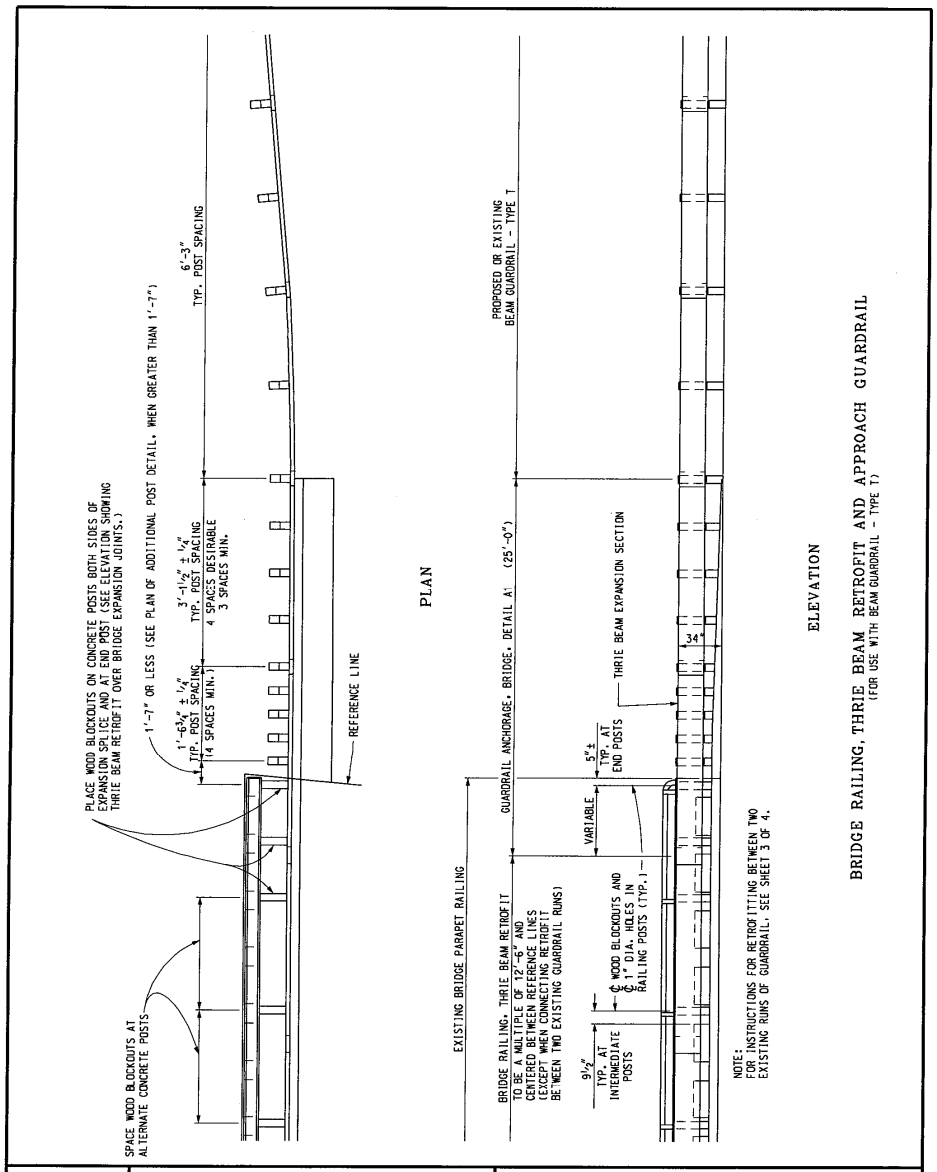
43	EA	3502G	570-28	Post Bolt, Oval Shoulder with clipped head Size ⅝" x 9½" (minimum 1¾" thread length), per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (For attaching guardrail to a steel post using wood blockouts - single sided)	600	$1.46	$876.00
44	EA	3582G	570-28	Post Bolt, Oval Shoulder with clipped head Size ⅝" x 18" (minimum 2 ½" thread length), per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (For attaching guardrail to a wood post using wood blockouts)	1000	$2.33	$2,330.00
45	EA	3362G	570-28	Splice Bolt, Oval Shoulder with clipped head Size ⅝" x 1¼" (minimum 1" thread length), per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (For attaching one section of guardrail to another)	20000	$.27	$5,400.00
46	EA	3340G	570-28	Guardrail, Nut, 1¼", Hex Head, 15/16" diameter x 1/16" deep recess (one or both sides), per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (For use with all post and splice bolts)	40000	$.27	$10,800.00
47	EA	3300G	570-28	Guardrail, Flat Washer, 1¾" diameter, 11/16" diameter hole, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (For use with all post bolts)	200	$.22	$44.00
48	EA	1-3300G 1-3340G 1-3380G	570-28	Bolt, Galvanized, Hex Head, ⅝" diameter x 1½" length, includes hex head nut and washer, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (For attaching cable anchorage to rail section)	50	$.38	$19.00
49	EA	3331G	570-28	Washer, Guard, Reflective, High Intensity, Slotted, Galvanized, Amber, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (Reflector color shall match edge line)	750	$3.00	$2,250.00

50	EA	3330G	570-28	Washer, Guard, Reflective, High Intensity, Slotted, Galvanized, Silver, per the attached terms, conditions, MDOT 2003 Standard Specification for Construction Section 908 and MDOT Standard Plans R60 Series (Reflector color shall match edge line)	2500	$3.00	$7,500.00
51	EA		570-28	Guardrail Approach Terminal 1T-SRT-350, furnish all parts as per attached MDOT Standard Plan R-61-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
52	EA		570-28	Guardrail Approach Terminal 1B-SRT-350, furnish all parts as per attached MDOT Standard Plan R-61-G and MDOT 2003 Standard Specification for Construction Section 908	25	$1,221.00	$30,525.00
53	EA		570-28	Guardrail Approach Terminal 1T, FLEAT, furnish all parts as per attached MDOT Standard Plan R-61-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
54	EA		570-28	Guardrail Approach Terminal 1B, FLEAT, furnish all parts as per attached MDOT Standard Plan R-61-G and MDOT 2003 Standard Specification for Construction Section 908	25	$1,840.00	$46,000.00
55	EA		570-28	Guardrail Approach Terminal 2T ET, furnish as per attached MDOT Standard Plan R-62-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
56	EA		570-28	Guardrail Approach Terminal 2B ET, furnish as per attached MDOT Standard Plan R-62-G and MDOT 2003 Standard Specification for Construction Section 908	25	$1,734.00	$43,350.00
57	EA		570-28	Guardrail Approach Terminal 2T-SKT, furnish as per attached MDOT Standard Plan R-62-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
58	EA		570-28	Guardrail Approach Terminal 2B-SKT, furnish as per attached MDOT Standard Plan R-62-G and MDOT 2003 Standard Specification for Construction Section 908	25	$1,684.00	$42,100.00
59	EA		570-28	Guardrail Approach Terminal 3T FLEAT-MT, furnish as per attached MDOT Standard Plan R-63-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
60	EA		570-28	Guardrail Approach Terminal 3B FLEAT-MT, furnish as per attached MDOT Standard Plan R-63-G and MDOT 2003 Standard Specification for Construction Section 908	25	$2,800.00	$70,000.00

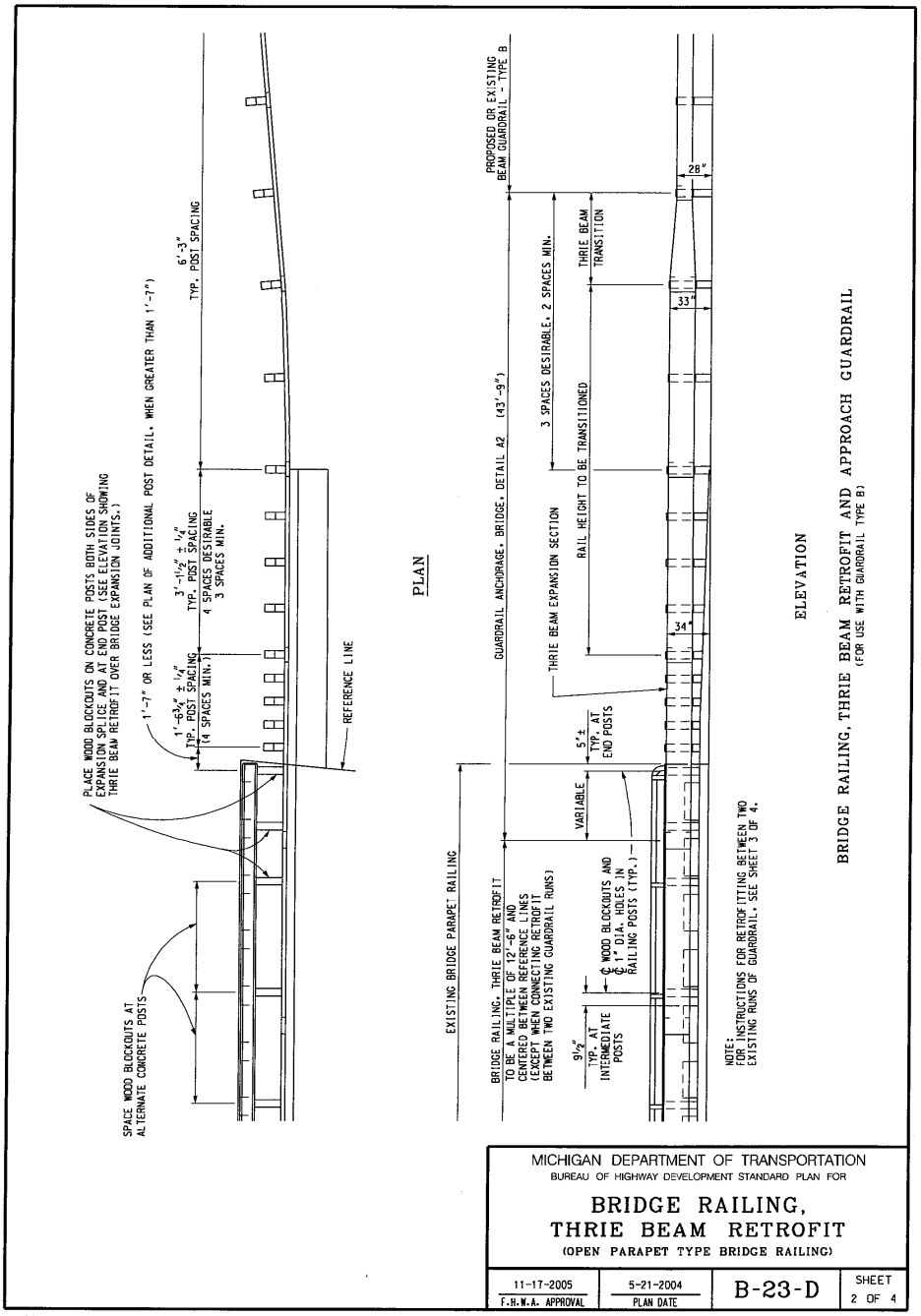
61	EA		570-28	Guardrail Approach Terminal 3T C-A-T, furnish as per attached MDOT Standard Plan R-63-G and MDOT 2003 Standard Specification for Construction Section 908	25	N/A	N/A
62	EA		570-28	Guardrail Approach Terminal 3B C-A-T, furnish as per attached MDOT Standard Plan R-63-G and MDOT 2003 Standard Specification for Construction Section 908	25	$2,840.00	$71,000.00

Attachment B: MDOT Standard Plans and Specifications and Material Source Guide

B-23-D Bridge Railing Thrie Beam Retrofit (Open Parapet) -4 pages
B-22-D Bridge Railing Thrie Beam Retroifit (R4 Type)-4 pages
R-60-G Guardrail, Types A, B, BD, T, & TD-10 pages
R-66 D Guardrail Departing Terminal Types B & T-2 pages
R-67-F Guardrail Anchorage Bridge Details-7 pages
R-72-C W-Beam Backed Guardrail Installations-4 pages
R-61-G Guardrail Approach Terminal Types 1B & 1T-14 pages
R-62-G Guardrail Approach Terminal Types 2B & 2T-9 pages
R-63-B Guardrail Approach Terminal Types 3B & 3T-16 pages
MDOT Standard Specification for Construction Section 908.12
MDOT Material Source Guide-2 pages



NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL SIGNED COPY APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



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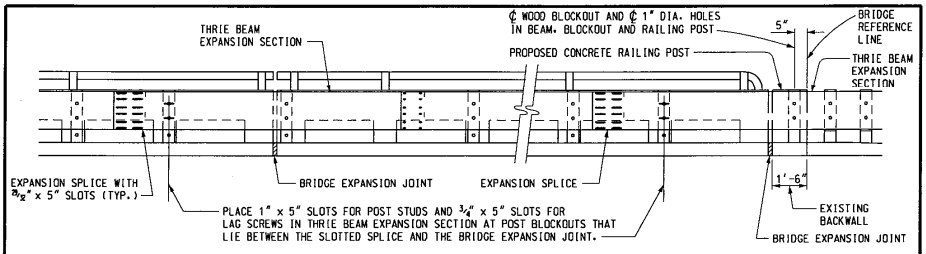
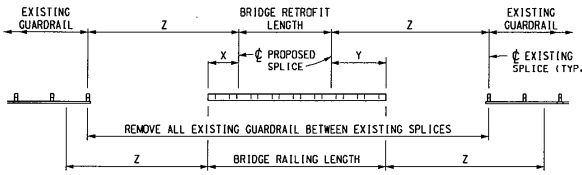


AT PIER OR ABUTMENT WITH RETURN WINGWALLS

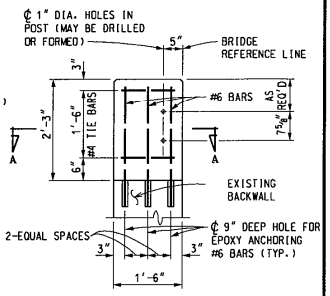
AT ABUTMENT WITH SLOPEWALLS

ELEVATION SHOWING THRIE BEAM RETROFIT OVER BRIDGE EXPANSION JOINTS



Z = 25'-0" WHEN CONNECTING TO BEAM GUARDRAIL TYPE T.
USE GUARDRAIL ANCHORAGE, BRIDGE, DETAIL A-1
OR
Z = 43'-9" WHEN CONNECTING TO BEAM GUARDRAIL TYPE B.
USE GUARDRAIL ANCHORAGE, BRIDGE, DETAIL A-2.

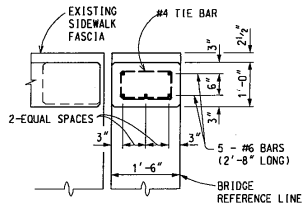
SKETCH FOR RETROFITTING BETWEEN TWO EXISTING RUNS OF GUARDRAIL



ELEVATION

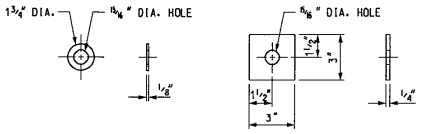
INSTRUCTIONS FOR LAYING OUT RETROFIT BETWEEN TWO EXISTING RUNS OF GUARDRAIL

1. MEASURE THE APPROPRIATE "Z" DISTANCE FROM ONE END OF THE BRIDGE RAILING AND LOCATE THE FIRST EXISTING SPLICE BACK TOWARD THE BRIDGE.
2. FROM THIS SPLICE, MEASURE THE SAME "Z" DISTANCE BACK TOWARD THE BRIDGE TO OBTAIN THE "X" DIMENSION. THIS DIMENSION WILL VARY FROM 0 TO 12'-6".
3. REPEAT STEPS 1 AND 2, FROM OPPOSITE END OF THE BRIDGE TO OBTAIN "Y" DIMENSION.
4. SUBTRACT THE SUM OF "X" + "Y" FROM BRIDGE RAILING LENGTH. THIS WILL BE THE BRIDGE RETROFIT LENGTH.
5. DIVIDE THE BRIDGE RETROFIT LENGTH BY 12'-6" TO OBTAIN THE NUMBER OF BEAM ELEMENTS PLUS A REMAINDER. THE REMAINDER WILL BE THE LENGTH OF A SHORTENED ELEMENT.
6. WHEN THE REMAINDER IS LESS THAN 2'-6", ADD 12'-6" TO THE REMAINDER AND DIVIDE BY TWO. THE BRIDGE RETROFIT WILL CONTAIN TWO SHORTENED BEAM ELEMENTS WITH ONE LESS 12'-6" BEAM ELEMENT THAN CALCULATED IN STEP 5.



SECTION A - A

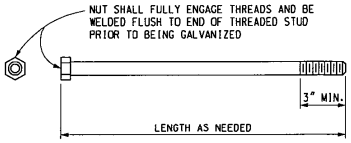
CONCRETE RAILING POST DETAIL



ROUND WASHER

SQUARE WASHER

WASHERS USED WITH 7/8" DIA. STUDS



7/8" DIA. THREADED STUD

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

BRIDGE RAILING, THRIE BEAM RETROFIT

(OPEN PARAPET TYPE BRIDGE RAILING)

11-17-2005 F.H.W.A. APPROVAL	5-21-2004 PLAN DATE	B-23-D	SHEET 3 OF 4

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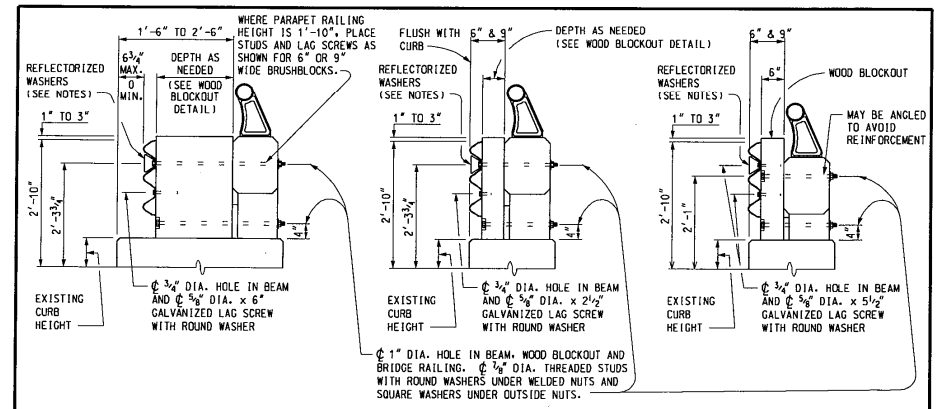
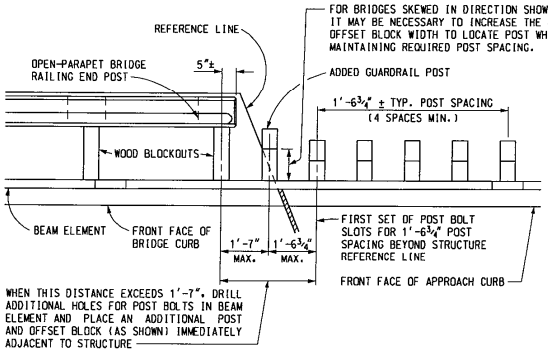


2'-3" HIGH PARAPET RAILING BEHIND 1'-6" TO 2'-6" WIDE BRUSHBLOCK

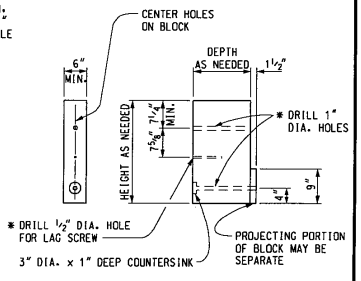
2'-3" HIGH PARAPET RAILING BEHIND 6" OR 9" WIDE BRUSHBLOCK

1'-10" HIGH PARAPET RAILING BEHIND 6" OR 9" WIDE BRUSHBLOCK

SECTIONS THRU PARAPET RAILING

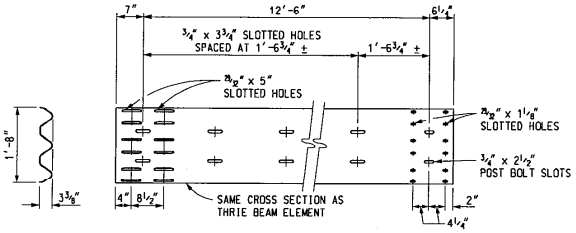


PLAN OF ADDITIONAL POST DETAIL



WOOD BLOCKOUT DETAIL

WOOD BLOCKOUTS MAY BE MADE FROM A COMBINATION OF SEPARATE BLOCKS



THRIE BEAM EXPANSION SECTION

NOTES:

THIS STANDARD IS INTENDED FOR USE IN UPGRADING OF EXISTING OPEN-PARAPET TYPE BRIDGE RAILINGS AND APPROACH GUARDRAIL.

BRIDGE RAILING, THRIE BEAM RETROFIT AND GUARDRAIL ANCHORAGES SHALL CONFORM TO THE CURRENT STANDARD PLAN R-60 SERIES, WHERE APPLICABLE, EXCEPT AS SHOWN ON THIS PLAN.

ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WTH SECTIONS 807 & 908 OF THE STANDARD SPECIFICATIONS.

REFLECTORIZED WASHERS SHALL BE SPACED AT 25'-0" INTERVALS AT BEAM ELEMENT SPLICES. THEY SHALL BE ATTACHED AT UPPER POST BOLT SLOTS WITH STANDARD SPLICE BOLTS.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

BRIDGE RAILING, THRIE BEAM RETROFIT

(OPEN PARAPET TYPE BRIDGE RAILING)

11-17-2005 F.H.W.A. APPROVAL	5-21-2004 PLAN DATE	B-23-D	SHEET 4 OF 4

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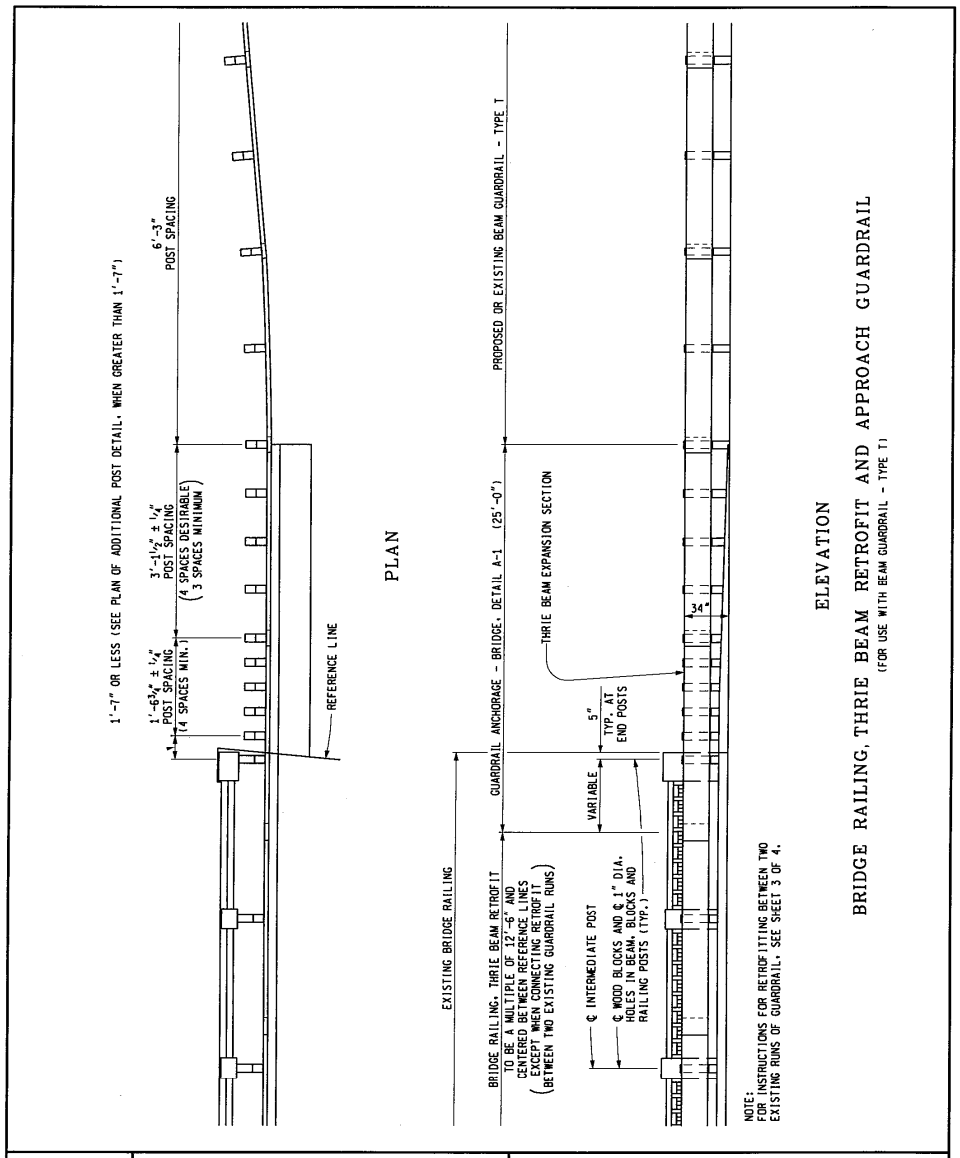

MDOT Michigan Department of Transportation

PREPARED BY DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: John C. Friend
ENGINEER OF DELIVERY

APPROVED BY: Joel S. Pollock
ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

BRIDGE RAILING, THRIE BEAM RETROFIT

(R4 TYPE BRIDGE RAILING)

10-21-2008	2-21-2008	B-22-D	SHEET
F.H.W.A. APPROVAL	PLAN DATE		1 OF 4

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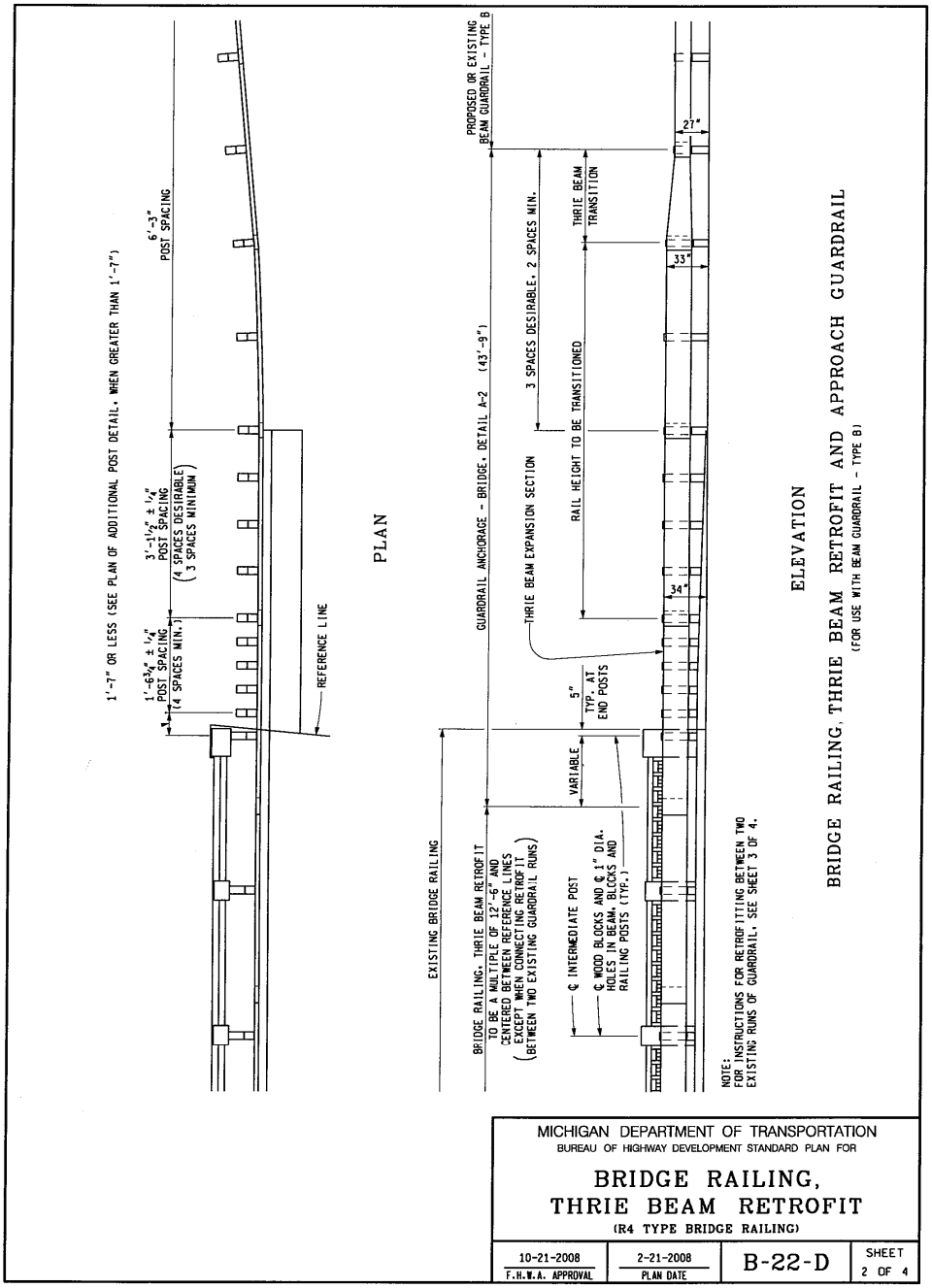

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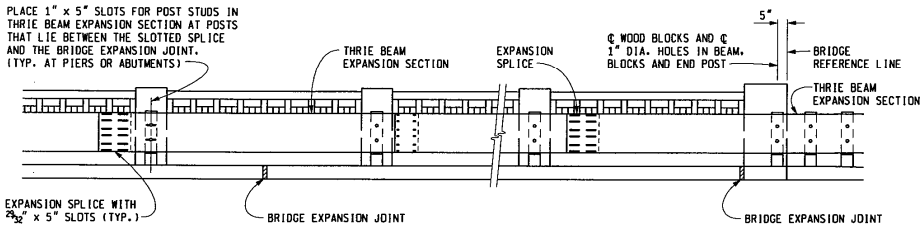
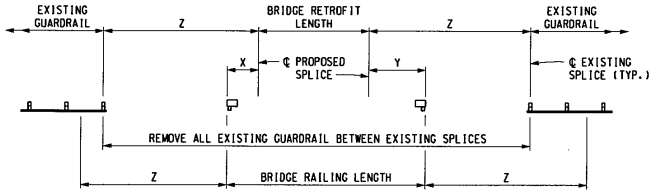


AT PIER AT ABUTMENT

ELEVATION SHOWING THRIE BEAM RETROFIT OVER BRIDGE EXPANSION JOINTS

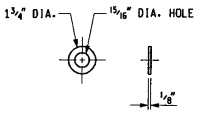


Z = 25'-0" WHEN CONNECTING TO BEAM GUARDRAIL TYPE T. USE GUARDRAIL ANCHORAGE - BRIDGE, DETAIL A-1
OR
Z = 43'-9" WHEN CONNECTING TO BEAM GUARDRAIL TYPE B. USE GUARDRAIL ANCHORAGE - BRIDGE, DETAIL A-2.

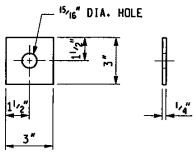
SKETCH FOR RETROFITTING BETWEEN TWO EXISTING RUNS OF GUARDRAIL

INSTRUCTIONS FOR LAYING OUT RETROFIT
BETWEEN TWO EXISTING RUNS OF GUARDRAIL

1. MEASURE THE APPROPRIATE "Z" DISTANCE FROM ONE END OF THE BRIDGE RAILING AND LOCATE THE FIRST EXISTING SPLICE BACK TOWARD THE BRIDGE.
2. FROM THIS SPLICE. MEASURE THE SAME "Z" DISTANCE BACK TOWARD THE BRIDGE TO OBTAIN THE "X" DIMENSION. THIS DIMENSION WILL VARY FROM 0 TO 12'-6".
3. REPEAT STEPS 1 AND 2. FROM OPPOSITE END OF THE BRIDGE TO OBTAIN "Y" DIMENSION.
4. SUBTRACT THE SUM OF "X" + "Y" FROM BRIDGE RAILING LENGTH. THIS WILL BE THE BRIDGE RETROFIT LENGTH.
5. DIVIDE THE BRIDGE RETROFIT LENGTH BY 12'-6" TO OBTAIN THE NUMBER OF BEAM ELEMENTS PLUS A REMAINDER. THE REMAINDER WILL BE THE LENGTH OF A SHORTENED ELEMENT.
6. WHEN THE REMAINDER IS LESS THAN 2'-6". ADD 12'-6" TO THE REMAINDER AND DIVIDE BY TWO. THE BRIDGE RETROFIT WILL CONTAIN TWO SHORTENED BEAM ELEMENTS WITH ONE LESS 12'-6" BEAM ELEMENT THAN CALCULATED IN STEP 5.

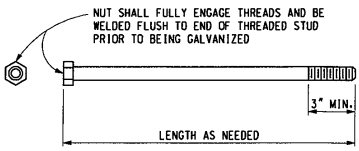


ROUND WASHER



SQUARE WASHER

WASHERS USED WITH 7/8" DIA. STUDS



7/8" DIA. THREADED STUD

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

BRIDGE RAILING,
THRIE BEAM RETROFIT
(R4 TYPE BRIDGE RAILING)

10-21-2008 F.H.W.A. APPROVAL	2-21-2008 PLAN DATE	B-22-D	SHEET 3 OF 4

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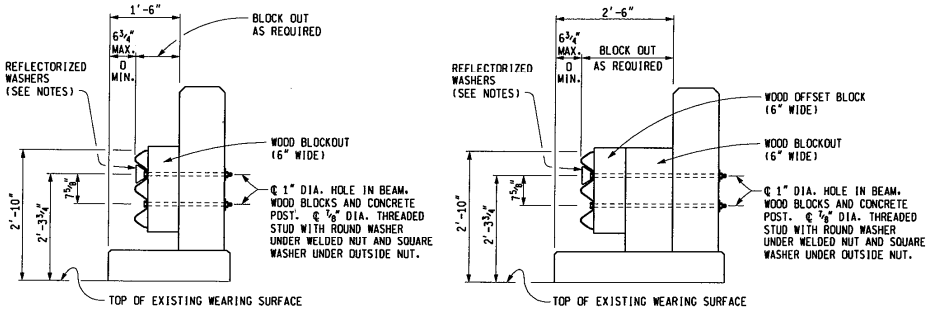
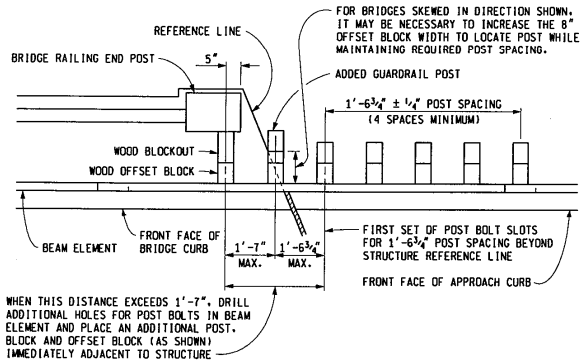
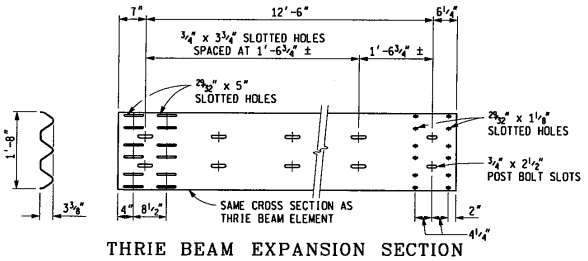


SECTIONS THRU R4 RAILING

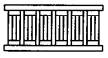


PLAN OF ADDITIONAL POST DETAIL



THRIE BEAM EXPANSION SECTION

NOTE:



R4 TYPE BRIDGE RAILINGS CAN BE IDENTIFIED AS HAVING CONCRETE POSTS AND REMOVABLE METAL PANELS WITH GRIDS OF THIS PATTERN.

NOTES:

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REFLECTORIZED WASHERS SHALL BE SPACED AT 25'-0" INTERVALS AT BEAM ELEMENT SPLICES. THEY SHALL BE ATTACHED AT UPPER POST BOLT SLOTS WITH STANDARD SPLICE BOLTS.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

BRIDGE RAILING, THRIE BEAM RETROFIT

(R4 TYPE BRIDGE RAILING)

10-21-2008 F.H.W.A. APPROVAL	2-21-2008 PLAN DATE	B-22-D	SHEET 4 OF 4

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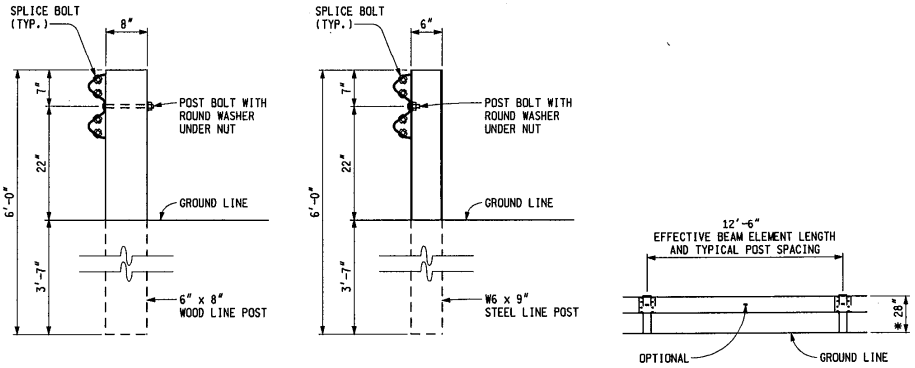


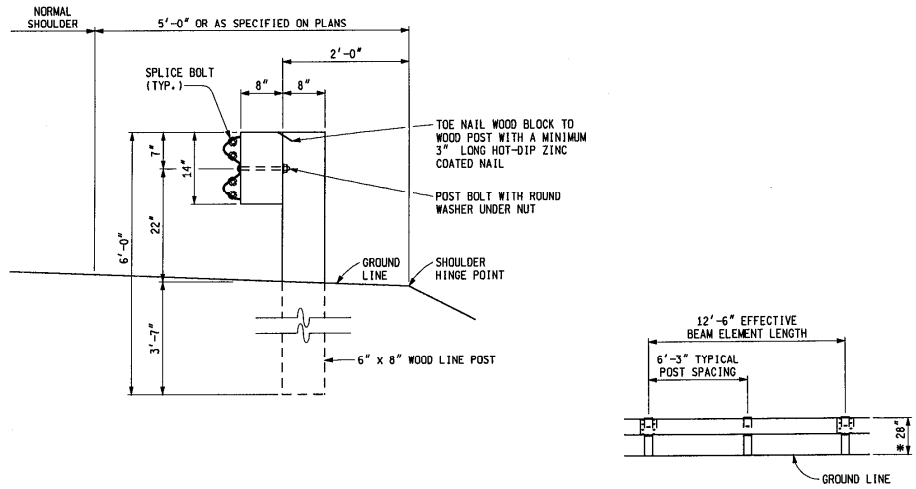
WOOD POST

STEEL POST

ELEVATION SHOWING POST SPACING

* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE A



ELEVATION SHOWING POST SPACING

* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE B
(WOOD POST)

MDOT Michigan Department of Transportation PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: W.K.P.	DEPARTMENT DIRECTOR Kirk T. Steudle APPROVED BY: John C. Friend ENGINEER OF DELIVERY APPROVED BY: Joel S. Pollard ENGINEER OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR GUARDRAIL, TYPES A, B, BD, T, & TD

4-26-2007	11-21-2006	R-60-G	SHEET
F.H.W.A. APPROVAL	PLAN DATE		1 OF 10

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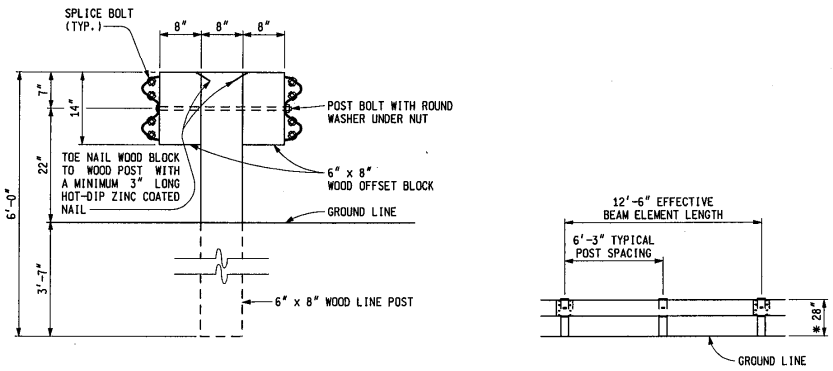
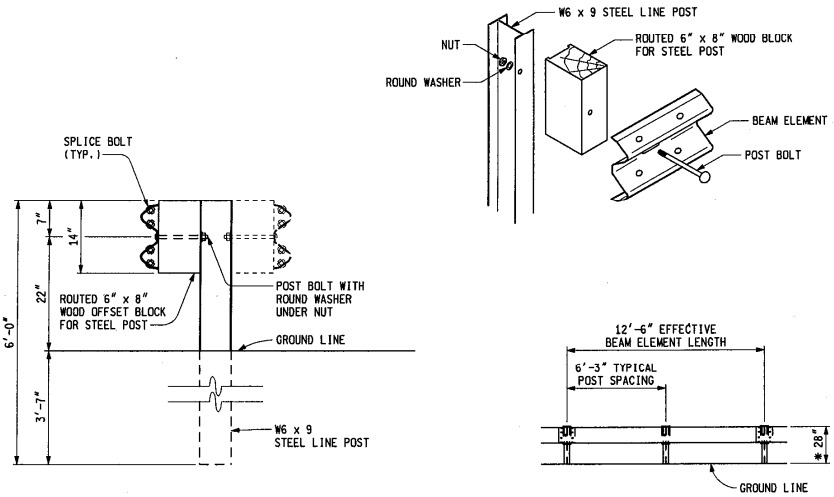


ELEVATION SHOWING POST SPACING
* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE BD
(WOOD POST)



ELEVATION SHOWING POST SPACING
* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE B (OR BD)
(STEEL POST)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL,
TYPES A, B, BD, T, & TD

4-26-2007 F.H.W.A. APPROVAL	11-21-2006 PLAN DATE	R-60-G	SHEET 2 OF 10

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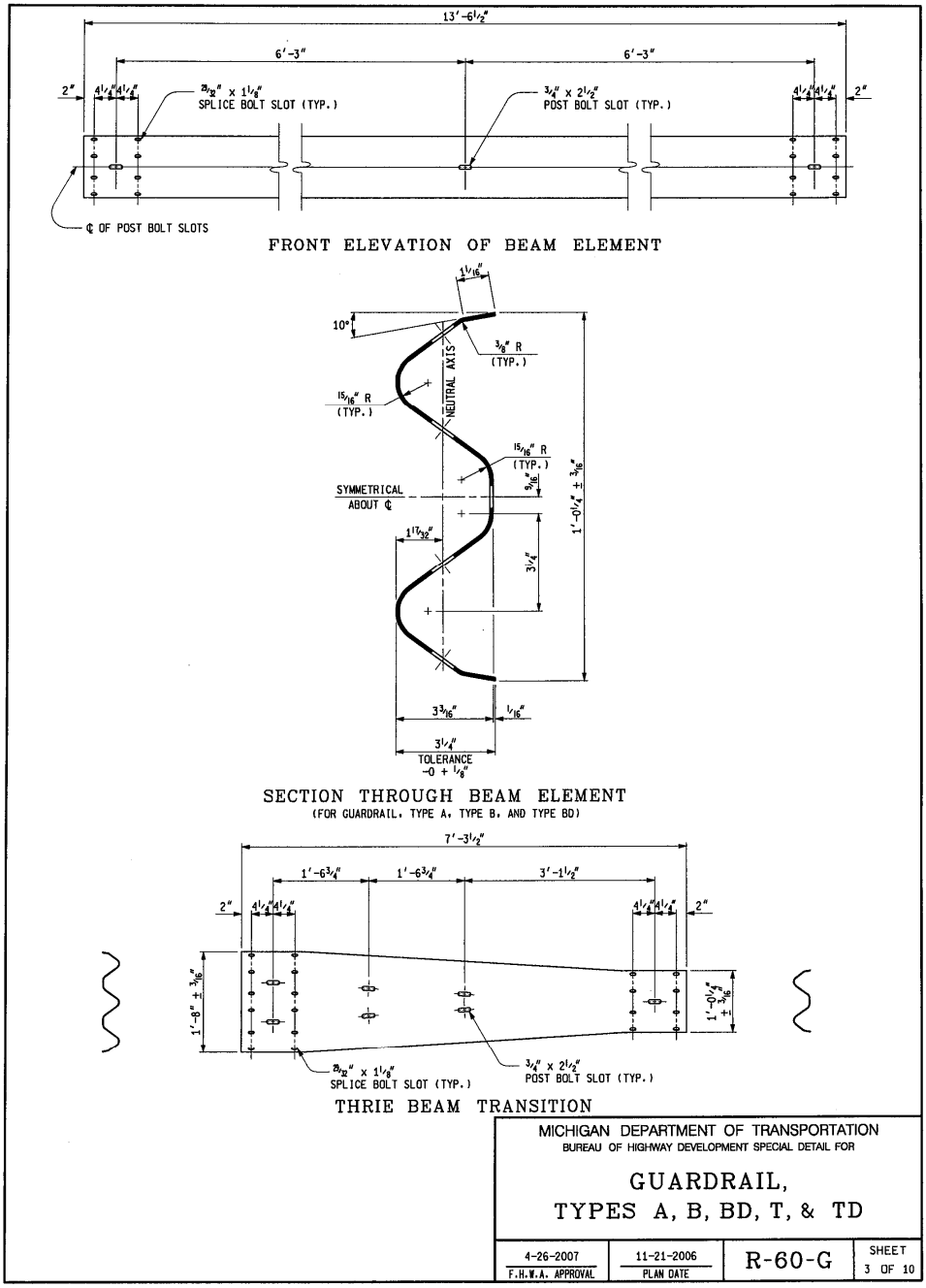

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL,
TYPES A, B, BD, T, & TD

4-26-2007 F.H.W.A. APPROVAL	11-21-2006 PLAN DATE	R-60-G	SHEET 3 OF 10

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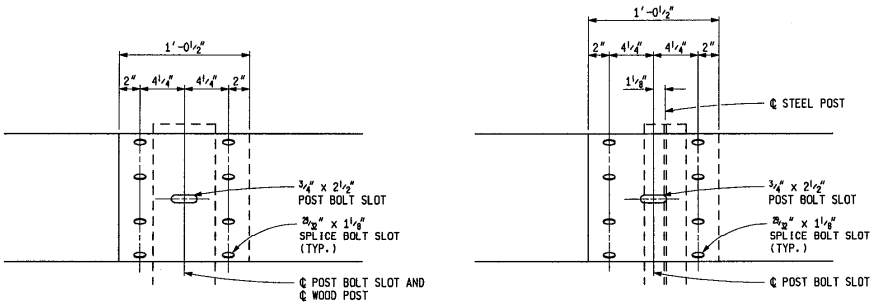
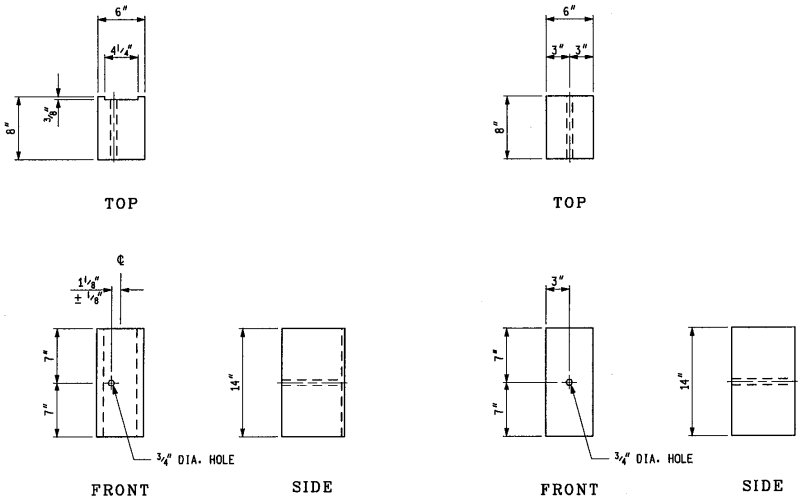


WOOD POST STEEL POST

BEAM ELEMENT SPLICE DETAILS



FOR USE ON STEEL POSTS

FOR USE ON WOOD POSTS
(SEE NOTES ON SHEET 10 OF 10)

WOOD OFFSET BLOCKS FOR GUARDRAIL, TYPE B AND TYPE BD

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL,
TYPES A, B, BD, T, & TD

4-26-2007 F.H.W.A. APPROVAL	11-21-2006 PLAN DATE	R-60-G	SHEET 4 OF 10

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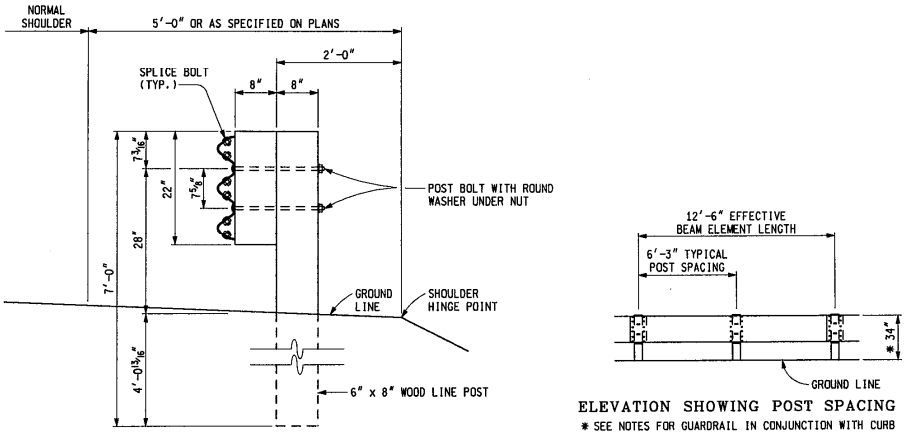
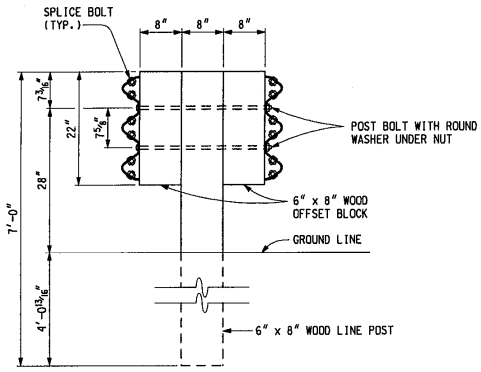
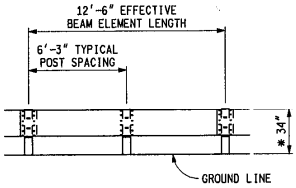


ELEVATION SHOWING POST SPACING

* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE T
(WOOD POST)





ELEVATION SHOWING POST SPACING

* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE TD
(WOOD POST)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL,
TYPES A, B, BD, T, & TD

4-26-2007 F.H.W.A. APPROVAL	11-21-2006 PLAN DATE	R-60-G	SHEET 5 OF 10

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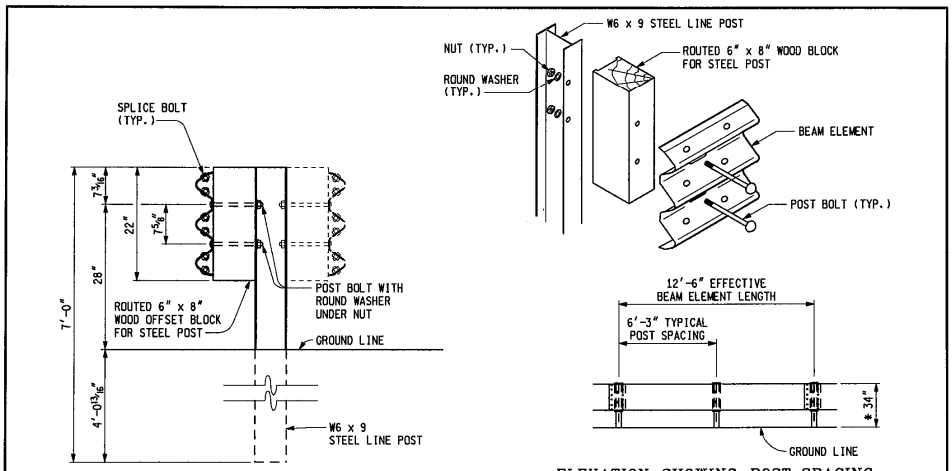
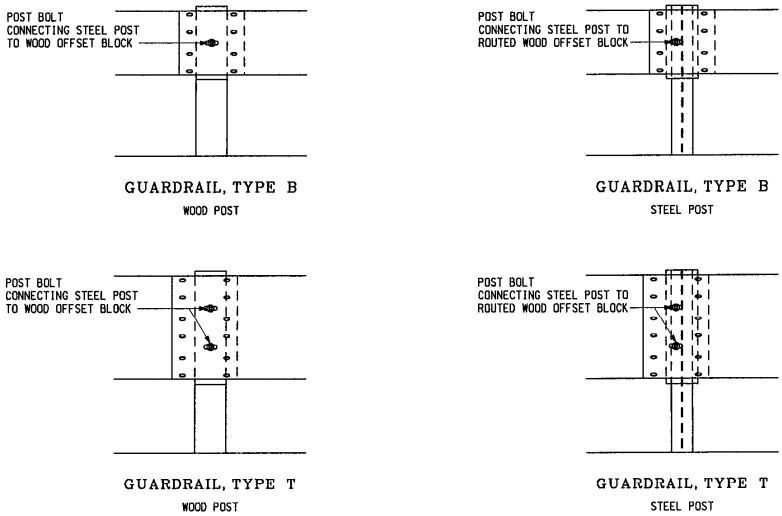


ELEVATION SHOWING POST SPACING

* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE T OR TD
(STEEL POST)



GUARDRAIL, TYPE B
WOOD POST

GUARDRAIL, TYPE B
STEEL POST

GUARDRAIL, TYPE T
WOOD POST

GUARDRAIL, TYPE T
STEEL POST

BLOCK AND POST CONNECTION DETAILS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL,
TYPES A, B, BD, T, & TD

4-26-2007 F.H.W.A. APPROVAL	11-21-2006 PLAN DATE	R-60-G	SHEET 6 OF 10

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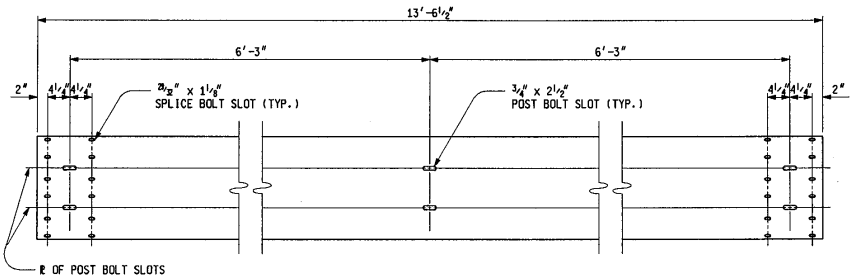
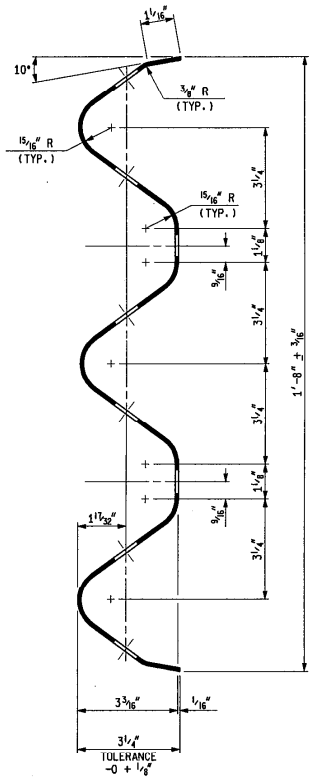


FRONT ELEVATION OF THRIE BEAM ELEMENT



SECTION THROUGH THRIE BEAM ELEMENT
(FOR GUARDRAIL, TYPE T AND TD)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL,
TYPES A, B, BD, T, & TD

4-26-2007 F.H.W.A. APPROVAL	11-21-2006 PLAN DATE	R-60-G	SHEET 7 OF 10

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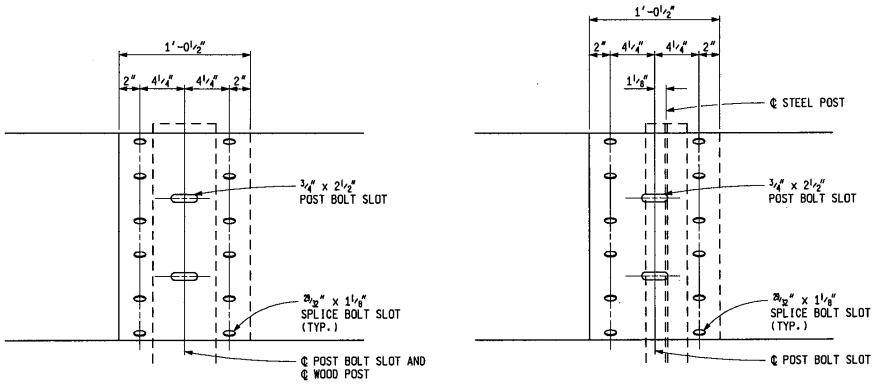
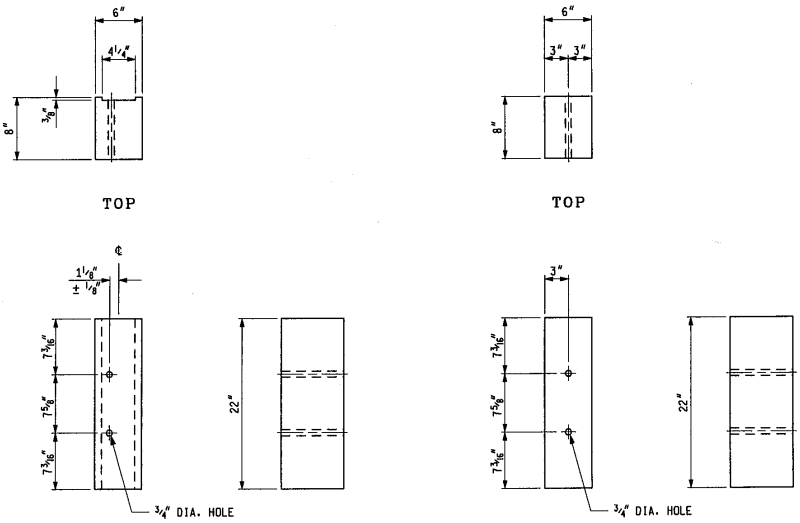


WOOD POST STEEL POST

THRIE BEAM ELEMENT SPLICE DETAILS



FOR USE ON STEEL POSTS

FOR USE ON WOOD POSTS
(SEE NOTES ON SHEET 10 OF 10)

WOOD OFFSET BLOCKS FOR GUARDRAIL, TYPE T AND TYPE TD

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL,
TYPES A, B, BD, T, & TD

4-26-2007 F.H.W.A. APPROVAL	11-21-2006 PLAN DATE	R-60-G	SHEET 8 OF 10

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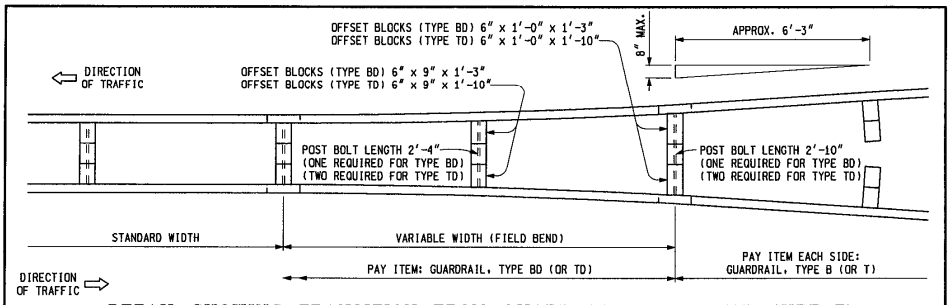


DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD)

POST BOLTS, SPLICE BOLTS AND WASHERS AT BEAM ELEMENT SPLICE POSTS AND AT INTERMEDIATE POSTS

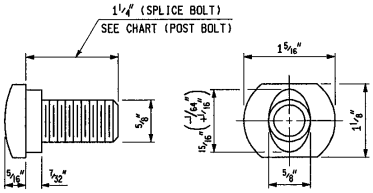
GUARDRAIL TYPE	POST	OFFSET BLOCK	POST BOLTS NO. REQ'D	POST BOLTS LENGTH	SPLICE BOLTS (1 1/4" LONG) (NO. REQ'D)		WASHERS (ROUND) (NO. REQ'D)
A	WOOD	N/A	1	9 1/2"	8	NOT NEEDED AT INTERMEDIATE POSTS	1
	STEEL	N/A	1	2"			1
B	WOOD	WOOD	1	18"	8		1
	STEEL	WOOD	1	9 1/2"			1
BD	WOOD	WOOD	1	*26 1/2"	16		——
	STEEL	WOOD	2	9 1/2"			2
T	WOOD	WOOD	2	18"	12		2
	STEEL	WOOD	2	9 1/2"			2
TD	WOOD	WOOD	2	*26 1/2"	24		——
	STEEL	WOOD	4	9 1/2"			4

THRIE BEAM TRANSITIONS REQUIRE 20 SPLICE BOLTS EACH (12 ON TYPE T END AND 8 ON TYPE B END).

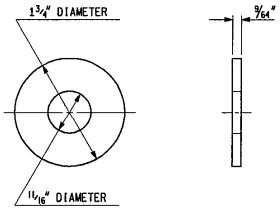
* EXCEPT AS SPECIFIED ON DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD). POST BOLTS SHALL NOT EXTEND MORE THAN 1/2" BEYOND NUT.

MINIMUM POST BOLT THREAD LENGTH

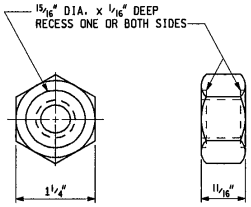
BOLT LENGTH	MINIMUM THREAD LENGTH
9 1/2"	1 3/4"
18"	2 1/2"
26 1/2"	3"



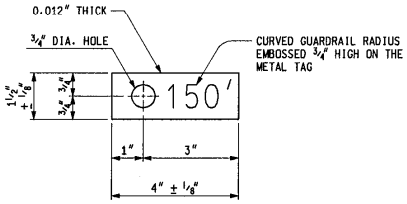
SPLICE BOLT AND POST BOLT



ROUND WASHER



NUT



METAL TAG

FOR CURVED GUARDRAIL WITH RADIUS OF 150' OR LESS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL,
TYPES A, B, BD, T, & TD

4-26-2007 F.H.W.A. APPROVAL	11-21-2006 PLAN DATE	R-60-G	SHEET 9 OF 10

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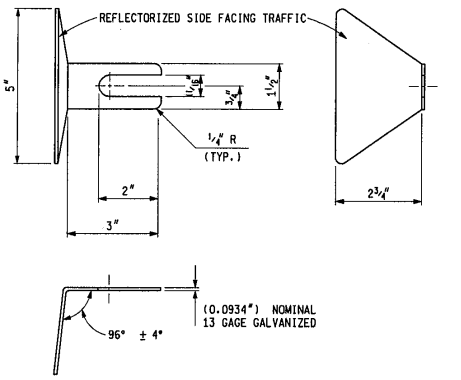
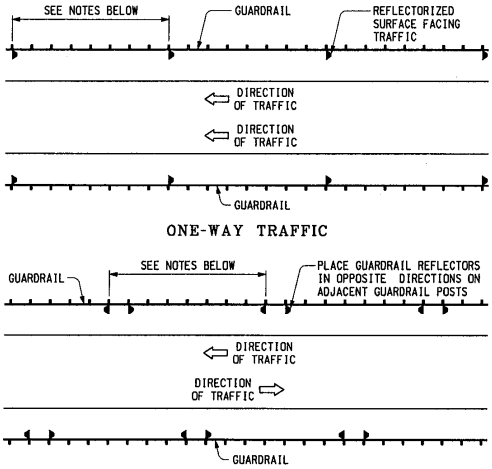
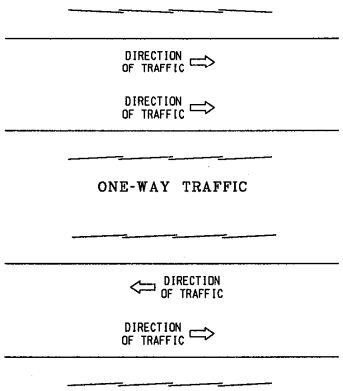


GUARDRAIL REFLECTOR



PLACEMENT OF GUARDRAIL REFLECTORS



DIRECTION OF RAIL LAP

NOTES GOVERNING THE USE OF GUARDRAIL REFLECTORS

1. GUARDRAIL REFLECTORS SHALL BE USED ON ALL STANDARD GUARDRAIL RUNS, REGARDLESS OF ROADWAY LIGHTING.
2. GUARDRAIL REFLECTORS ARE TO BE SPACED AT THE FOLLOWING INTERVALS:
   a) 50'-0" ON TANGENT SECTIONS AND CURVES WITH A RADIUS OF 1150' OR MORE.
   b) 25'-0" ON CURVES WITH A RADIUS LESS THAN 1150'.
3. FOR GUARDRAIL REFLECTOR PLACEMENT ON APPROACH TERMINALS, SEE THE APPROPRIATE GUARDRAIL APPROACH TERMINAL STANDARD PLAN.
4. A GUARDRAIL REFLECTOR IS TO BE PLACED ON THE SECOND POST FROM THE GUARDRAIL DEPARTING TERMINAL.
5. ON GUARDRAIL, TYPE T AND TYPE TD GUARDRAIL REFLECTORS ARE TO BE PLACED ON THE UPPER POST BOLT.
6. GUARDRAIL REFLECTORS SHALL MATCH COLOR OF EDGE LINE.

NOTES:

DETAILS SPECIFIED ON THIS STANDARD ARE ACCORDING TO THE JOINT AASHTO - ARBA TECHNICAL BULLETIN NO. 268. "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE".

BEAM ELEMENTS SHALL BE SHOP BENT TO PLAN RADIUS FOR CURVE RADII 150' OR LESS. A TAG IDENTIFYING THE CURVATURE OF THE SHOP BENT SECTION WILL BE REQUIRED FOR EACH CURVED ELEMENT.

POST BOLT SLOTS AT 6'-3" INTERVALS WILL BE ALLOWED IN BEAM ELEMENTS USED TO CONSTRUCT GUARDRAIL, TYPE A.

SEE STANDARD PLAN R-61-SERIES, R-62-SERIES OR R-63-SERIES FOR GUARDRAIL APPROACH TERMINALS, STANDARD PLAN R-66-SERIES FOR GUARDRAIL DEPARTING TERMINALS AND STANDARD PLAN R-67-SERIES FOR GUARDRAIL ANCHORAGE, BRIDGE.

WHEN THE PLANS SPECIFY GUARDRAIL IS TO BE PLACED ON THE SHOULDER HINGE POINT, RATHER THAN AS SPECIFIED ON THIS PLAN, 8'-0" POSTS SHALL BE PROVIDED, WITH THE ADDITIONAL LENGTH EMBEDDED FOR ADDED STABILITY. (NOT NECESSARY WHEN THE SLOPE IS REASONABLY LEVEL BEYOND THE SHOULDER HINGE POINT, AS DETERMINED BY THE ENGINEER.)

WOOD POSTS WITH 1/2" BEVELS AT THE TOP MAY BE USED IN LIEU OF WOOD POSTS WITHOUT BEVELS SPECIFIED. THE LENGTH, WIDTH AND DEPTH OF THE POST SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT.

WOOD OFFSET BLOCKS WITH 1/2" BEVELS AT THE TOP AND BOTTOM OR A 1" BEVELED TOP MAY BE USED IN LIEU OF WOOD BLOCKS WITHOUT BEVELS SPECIFIED. THE LENGTH (FRONT AND BACK FACE), WIDTH AND DEPTH OF THE BLOCK SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT AND COMPATIBILITY WITH POST HOLES.

WHEN THE DISTANCE BETWEEN THE BACK OF CURB AND THE FACE OF THE GUARDRAIL POST IS 10" OR LESS, THE RAIL HEIGHT SHOULD BE MEASURED FROM THE FRONT EDGE OF THE GUTTER PAN, WHICH IS THE POINT ON THE GUTTER PAN THAT IS CLOSEST TO THE EDGE OF THE TRAVELED LANE. AT GREATER DISTANCES (TYPICALLY 5'-0" TO 6'-6") THE RAIL HEIGHT SHOULD BE MEASURED FROM THE GROUND JUST IN FRONT OF THE GUARDRAIL.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL, TYPES A, B, BD, T, & TD

4-26-2007 F.H.W.A. APPROVAL	11-21-2006 PLAN DATE	R-60-G	SHEET 10 OF 10

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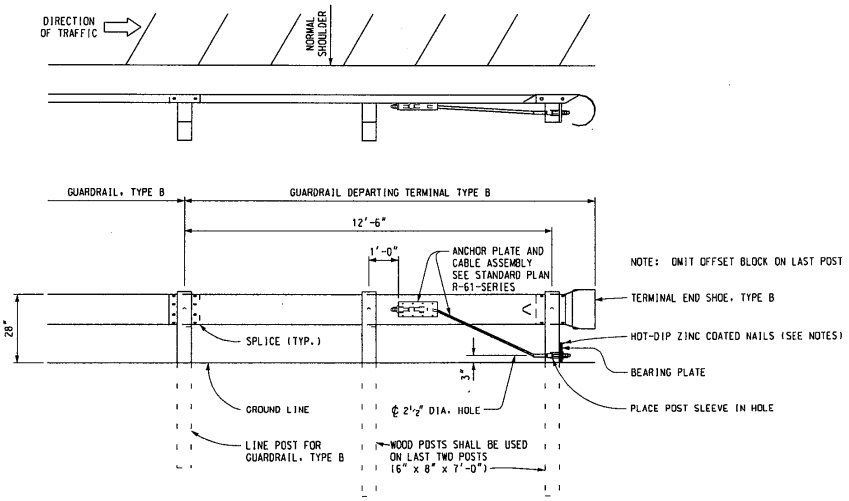
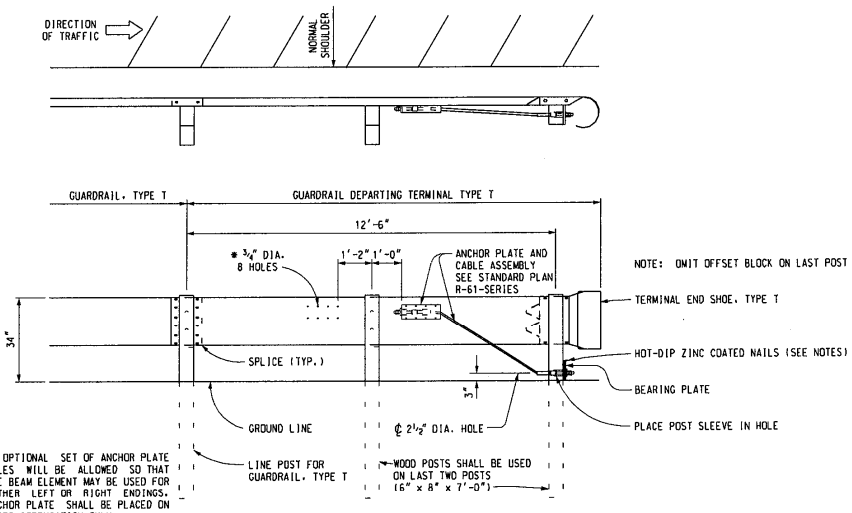


GUARDRAIL DEPARTING TERMINAL TYPE B



* AN OPTIONAL SET OF ANCHOR PLATE HOLES WILL BE ALLOWED SO THAT THE BEAM ELEMENT MAY BE USED FOR EITHER LEFT OR RIGHT ENDINGS. ANCHOR PLATE SHALL BE PLACED ON UPPER CORRUGATION ONLY.

GUARDRAIL DEPARTING TERMINAL TYPE T

MDOT Michigan Department of Transportation	ENGINEER OF CONSTRUCTION & TECHNOLOGY	ENGINEER - ROAD DESIGN	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR GUARDRAIL DEPARTING TERMINAL TYPES B & T
PREPARED BY DESIGN DIVISION	ENGINEER OF MAINTENANCE	ENGINEER OF DESIGN DEPARTMENT DIRECTOR Gregory J. Rosine	
DRAWN BY: B.L.T. CHECKED BY: W.K.P.	ENGINEER OF TRAFFIC AND SAFETY	BY: CHIEF ENGINEER/DEPUTY DIRECTOR BUREAU OF HIGHWAY TECHNICAL SERVICES	12-21-2001 F.H.W.A. APPROVAL 5-25-2001 PLAN DATE R-66-D SHEET 1 OF 2

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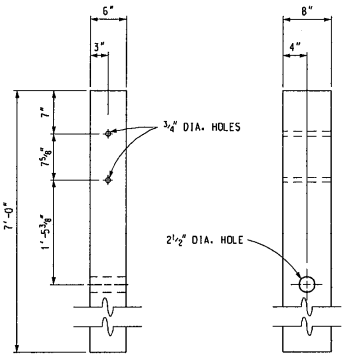
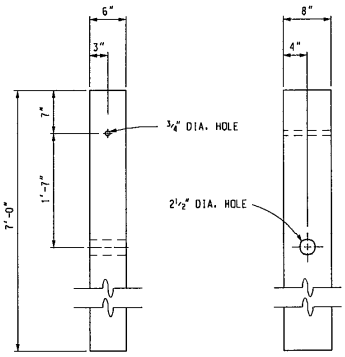
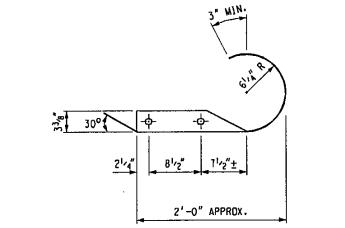
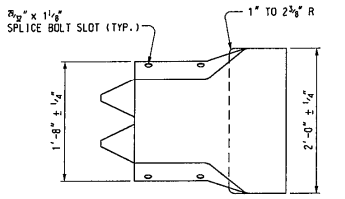


WOOD POST DETAIL
(FOR LAST POST, GUARDRAIL DEPARTING TERMINAL TYPE T)

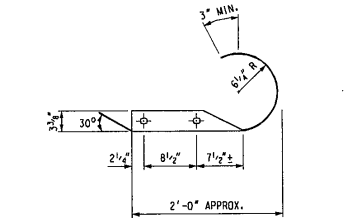


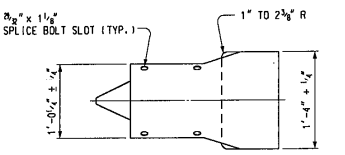
WOOD POST DETAIL
(FOR LAST POST, GUARDRAIL DEPARTING TERMINAL TYPE B)



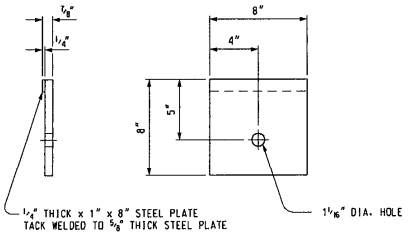


TERMINAL END SHOE, TYPE T

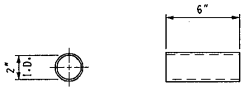




TERMINAL END SHOE, TYPE B



BEARING PLATE



POST SLEEVE

NOTES:

ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, AND HARDWARE (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND TO THE CURRENT STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS STANDARD.

ALL 1:10 SLOPES SHALL BE GRADED TO CLASS A SLOPE TOLERANCES.

FOR DETAILS OF GUARDRAIL PLACEMENT, SEE STANDARD PLAN R-59-SERIES.

AFTER THE CABLE ASSEMBLY HAS BEEN TIGHTENED, A SECOND NUT SHALL BE INSTALLED ON EACH END OF THE CABLE SO THAT THE CABLE WILL NOT LOOSEN.

TWO HOT-DIP ZINC COATED NAILS SHALL BE DRIVEN INTO THE WOOD POST AT THE TOP OF THE BEARING PLATE TO KEEP THE BEARING PLATE FROM ROTATING.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

GUARDRAIL DEPARTING TERMINAL TYPES B & T

12-21-2001	5-25-2001	R-66-D	SHEET
F.H.W.A. APPROVAL	PLAN DATE		2 OF 2

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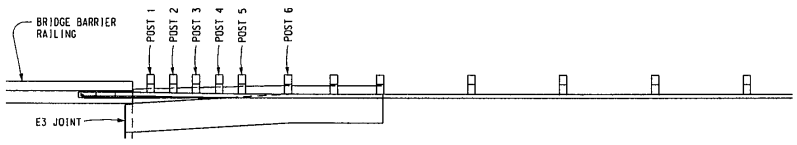
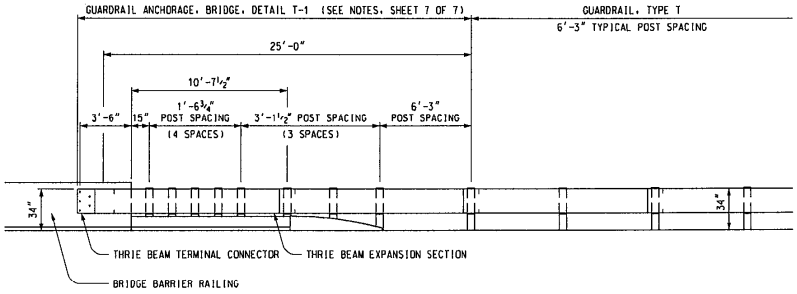
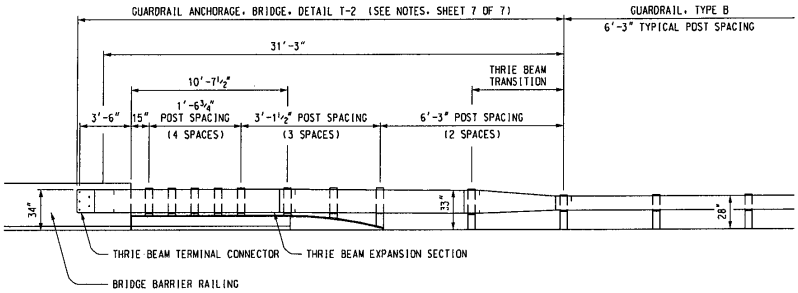


PLAN VIEW



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE T)



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE B)

DETAILS FOR CONNECTING GUARDRAIL TO BRIDGE BARRIER RAILINGS, TYPE 4, 2-TUBE, 4-TUBE, OR AESTHETIC PARAPET TUBE

(WITHOUT EXPANSION AT BACKWALL)

MDOT Michigan Department of Transportation PREPARED BY DESIGN SUPPORT AREA DRAWN BY: B.L.T. CHECKED BY: W.K.P.	DEPARTMENT DIRECTOR Kirk T. Steudle APPROVED BY: ENGINEER OF DELIVERY APPROVED BY: ENGINEER OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR GUARDRAIL ANCHORAGE, BRIDGE, DETAILS			
		6-15-2006 F.H.W.A. APPROVAL	4-24-2006 PLAN DATE	R-67-F	SHEET 1 OF 7

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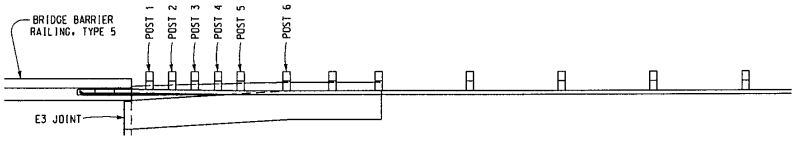
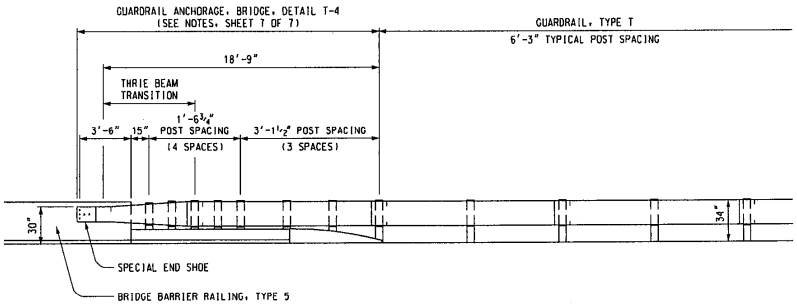
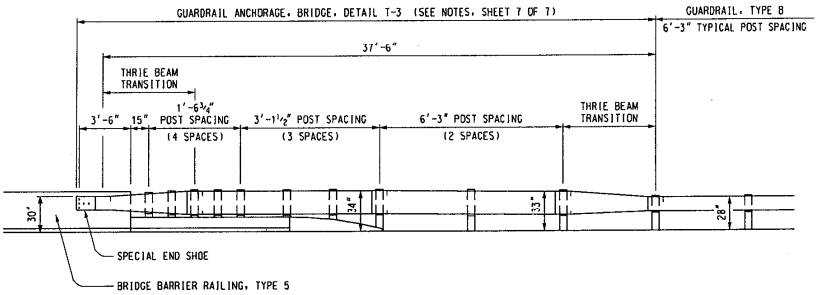


PLAN VIEW



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE T)



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE B)

DETAILS FOR CONNECTING GUARDRAIL TO BRIDGE BARRIER RAILINGS, TYPE 5

(WITHOUT EXPANSION AT BACKWALL)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

6-15-2006 F.H.W.A. APPROVAL	4-24-2006 PLAN DATE	R-67-F	SHEET 2 OF 7

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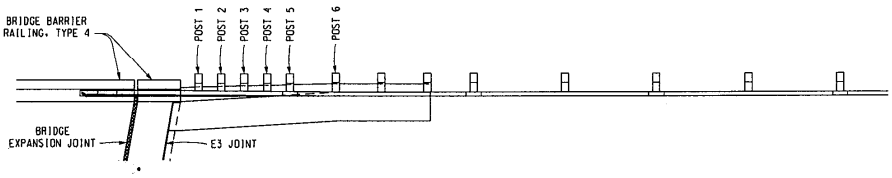
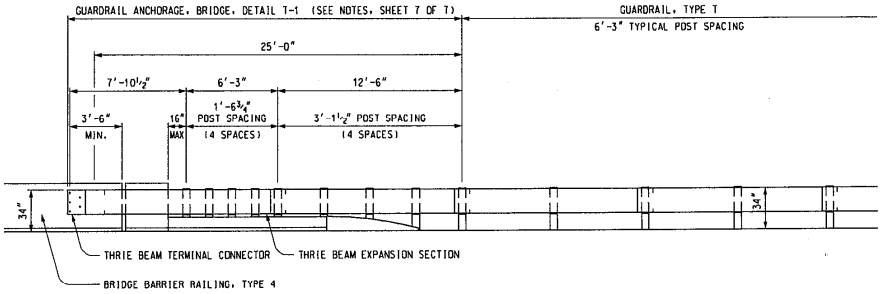
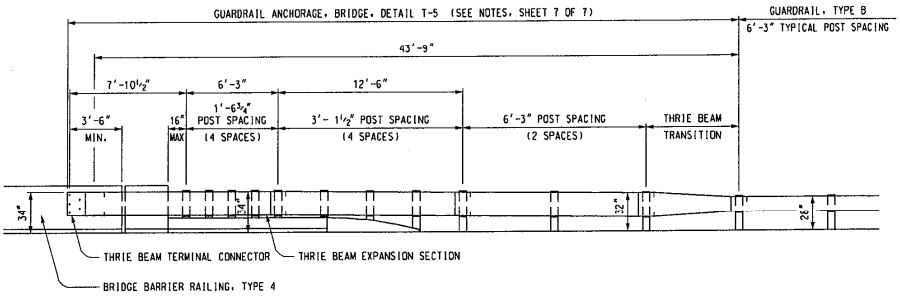


PLAN VIEW



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE T)



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE B)

DETAILS FOR CONNECTING GUARDRAIL TO BRIDGE BARRIER RAILINGS, TYPE 4, 2-TUBE, 4-TUBE, OR AESTHETIC PARAPET TUBE

(WITH EXPANSION AT BACKWALL)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

6-15-2006 F.H.W.A. APPROVAL	4-24-2006 PLAN DATE	R-67-F	SHEET 3 OF 7

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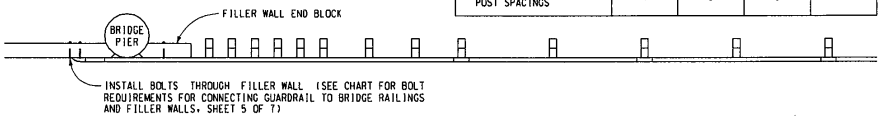
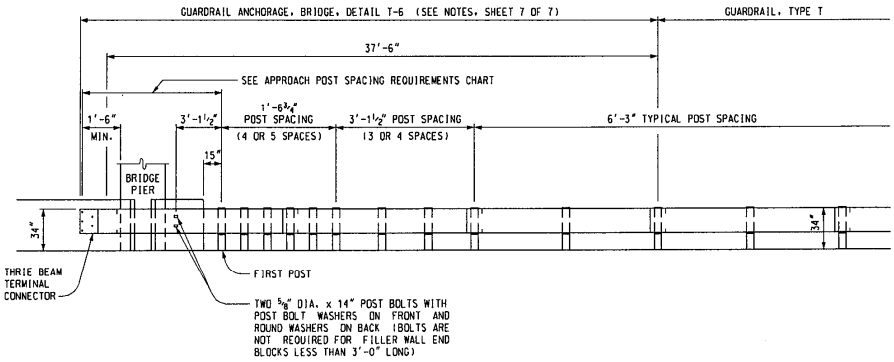
NOTE: FILLER WALL END BLOCK MAY BE OMITTED WHEN FIRST ANCHORAGE POST CAN BE INSTALLED FULL DEPTH 1'-3" FROM BRIDGE PIER.

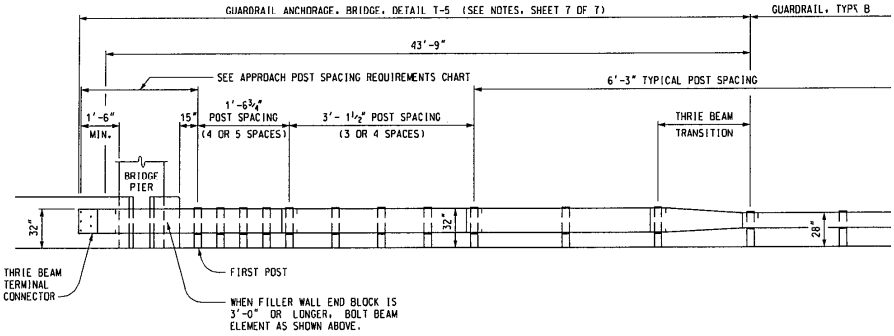
APPROACH POST SPACING REQUIREMENTS				
DISTANCE FROM ANCHOR BOLTS TO FIRST POST	7'-11¾"	9'-6½"	11'-1¼"	12'-8"
NUMBER OF 1'-6¾" POST SPACINGS	4	5	4	5
NUMBER OF 3'-1½" POST SPACINGS	4	3	3	4



PLAN VIEW



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE T)



ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE B)

DETAILS FOR CONNECTING GUARDRAIL TO FILLER WALLS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

6-15-2006 F.H.W.A. APPROVAL	4-24-2006 PLAN DATE	R-67-F	SHEET 4 OF 7

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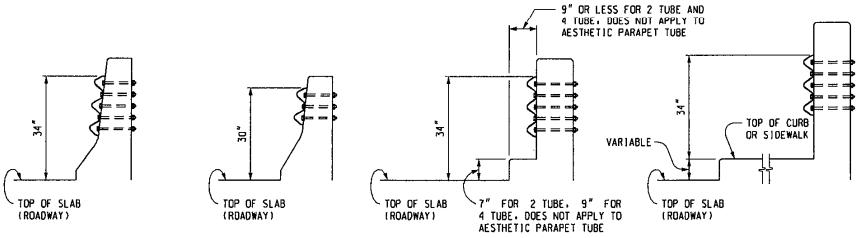
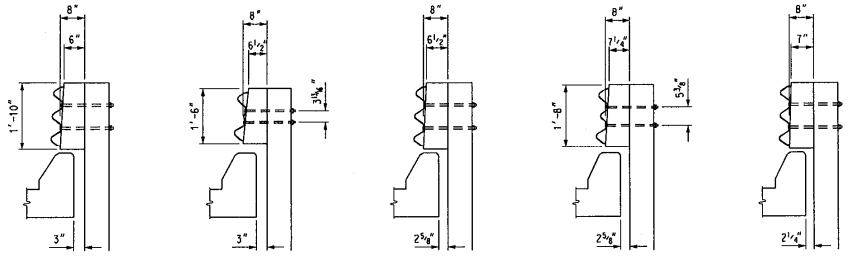
HIGH STRENGTH 7/8" DIA. HEX HEAD BOLT AND NUTS SHALL BE USED TO CONNECT GUARDRAIL TO BRIDGE RAILINGS WITH ROUND WASHERS ON FRONT AND SQUARE WASHERS ON BACK. (SEE CHART BELOW FOR LENGTHS AND NUMBER REQUIRED.) WASHER DETAILS ARE SHOWN ON SHEET 6 OF 7.

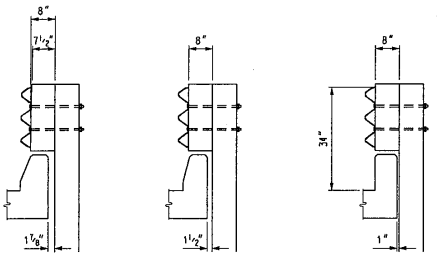


BRIDGE BARRIER RAILING TYPE 4 | BRIDGE BARRIER RAILING TYPE 5 | BRIDGE RAILING, 2 TUBE, 4 TUBE, OR AESTHETIC PARAPET TUBE (WITHOUT SIDEWALK OR BRUSH BLOCK) | BRIDGE RAILING, 4 TUBE OR AESTHETIC PARAPET TUBE (WITH SIDEWALK)

SECTIONS AT BRIDGE RAILINGS



POST 1 FOR BRIDGE BARRIER RAILING, TYPE 4 | POST 1 FOR BRIDGE BARRIER RAILING, TYPE 5 | POST 2 FOR BRIDGE BARRIER RAILING, TYPE 4 | POST 2 FOR BRIDGE BARRIER RAILING, TYPE 5 | POST 3



POST 4 | POST 5 | POST 6

BOLT REQUIREMENTS FOR CONNECTING GUARDRAIL TO BRIDGE RAILINGS & FILLER WALLS

BRIDGE RAILING	BOLT LENGTH	MINIMUM THREAD LENGTH	NUMBER REQUIRED
TYPE 4	12 1/2"	4"	5
TYPE 5	11 1/2"	4"	4
2 TUBE	WALL THICKNESS + 2"	2"	5
4 TUBE	WALL THICKNESS + 2"	2"	5
AESTHETIC PARAPET	WALL THICKNESS + 2"	2"	5
** FILLER WALL	WALL THICKNESS + 2"	2"	5

SHORTER BOLT LENGTHS MAY BE USED PROVIDED THE BOLT EXTENDS 1/4" BEYOND THE NUT WHEN TIGHTENED.

** THE USE OF 7/8" DIA. ADHESIVE ANCHORED BOLTS EMBEDDED 8" TO ATTACH GUARDRAIL TO FILLER WALLS WILL BE ALLOWED. INSTEAD OF BOLTING THROUGH THE FILLER WALL, IN THE FOLLOWING LOCATIONS:

1. AT OR NEAR THE JOINT LINE WHEN A FILLER WALL IS A DIFFERENT THICKNESS THAN THE FILLER WALL EXTENSION.
2. IN EXISTING FILLER WALLS THICKER THAN 1'-6".
3. WHEN CONDITIONS PROHIBIT THE USE OF BOLTS.

GUARDRAIL POST SECTIONS FOR GUARDRAIL ANCHORAGE, BRIDGE

NOTE: ADHESIVE ANCHORS SHALL BE SELECTED FROM THE QUALIFIED PRODUCTS LIST OF THE MATERIALS SAMPLING GUIDE.

NOTE:
POST AND BLOCK SECTIONS FOR THE 2 TUBE, 4 TUBE, AND AESTHETIC PARAPET TUBE BRIDGE RAILINGS SHALL BE THE SAME AS THAT SHOWN ON POST 6. POST SPACING SHALL BE AS SHOWN IN ELEVATION VIEWS.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

6-15-2006 F.H.W.A. APPROVAL	4-24-2006 PLAN DATE	R-67-F	SHEET 5 OF 7

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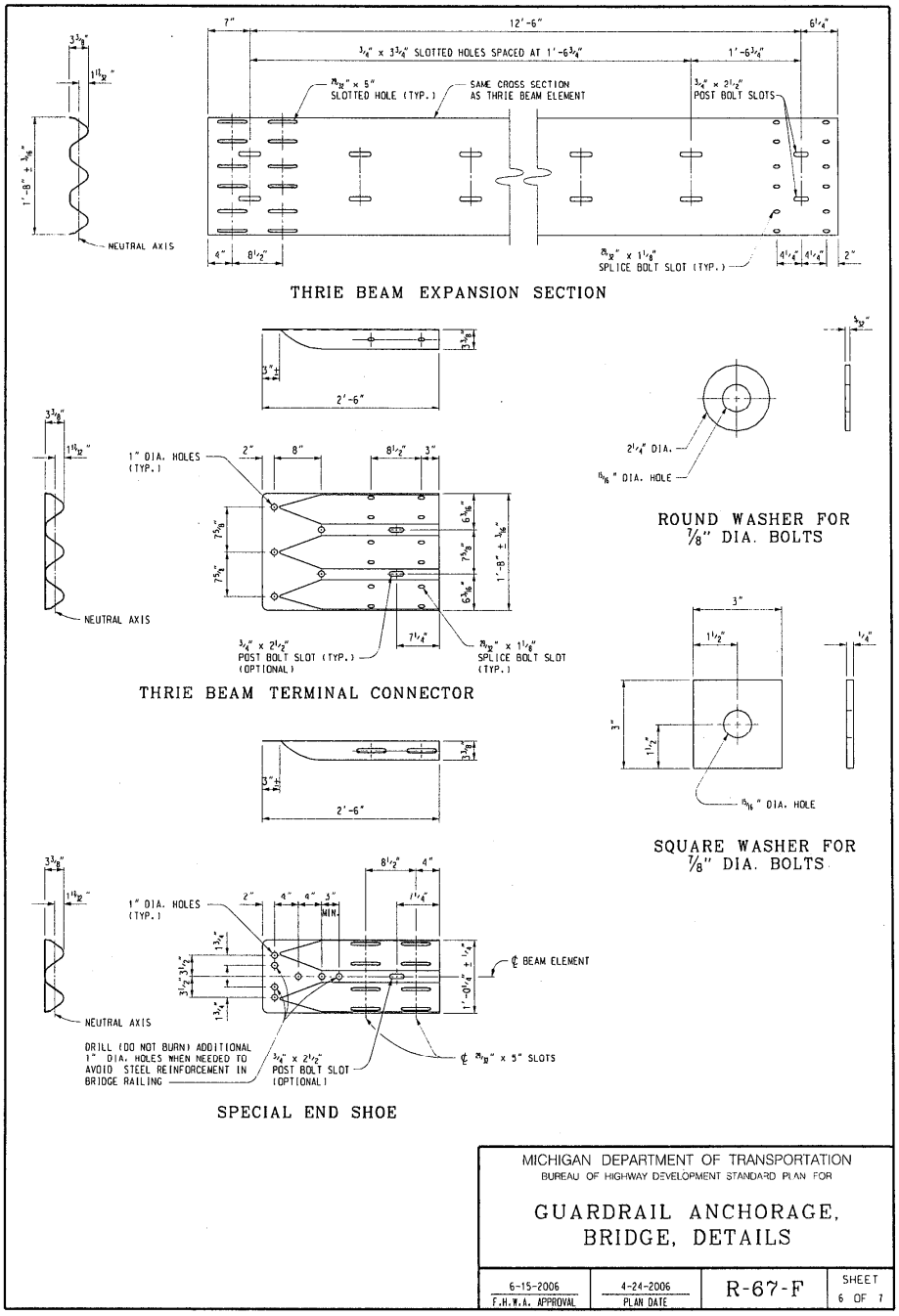

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NOTES:

ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, REFLECTORS, AND HARDWARE, (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND TO THE CURRENT STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS STANDARD.

ALL POSTS USED TO CONSTRUCT GUARDRAIL ANCHORAGE, BRIDGE SHALL BE 7'-0" LONG.

THE THRIE BEAM TERMINAL CONNECTOR AND SPECIAL END SHOE SHALL BE THE SAME MATERIAL AS ADJACENT RUN OF GUARDRAIL, EXCEPT THAT THEY SHALL NOT BE LIGHTER THAN 10 GAGE (0.138").

SECTIONS OF THE THRIE BEAM ELEMENT REQUIRED TO BE TWISTED FOR USE IN ANCHORAGE SHALL BE FIELD BENT.

GUARDRAIL BEAM ELEMENTS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC, EXCEPT FOR THE THRIE BEAM TERMINAL CONNECTOR WHICH MAY BE LAPPED IN EITHER DIRECTION.

STANDARD SPLICE BOLTS SHALL BE USED WHEN SPLICING THE THRIE BEAM TERMINAL CONNECTOR TO THE THRIE BEAM EXPANSION SECTION AND WHEN SPLICING THE SPECIAL END SHOE TO THE TRANSITION SECTION. THE SPLICE BOLT NUT SHALL BE INSTALLED FINGER-TIGHT AND SHALL FULLY ENGAGE THE SPLICE BOLT WITH A MINIMUM OF ONE THREAD EXTENDING BEYOND THE NUT. THIS SHALL BE FOLLOWED UP BY UPSETTING THE FIRST THREAD ON THE OUTSIDE OF THE NUT WITH A CENTER PUNCH OR COLD CHISEL, SO THAT IT WILL NOT LOOSEN.

SEE THE CURRENT STANDARD PLAN R-32-SERIES FOR APPROACH CURB AND GUTTER AND DOWNSPOUT HEADER.

GUARDRAIL ANCHORAGE, BRIDGE, DETAILS T-1, T-2, T-5, AND T-6 REQUIRE THAT THE THRIE BEAM TERMINAL CONNECTOR BE ATTACHED TO THE $\frac{25}{32}$" x 5" LONG SLOTTED HOLES IN THE THRIE BEAM EXPANSION SECTION.

SEE APPROPRIATE PLANS TO DETERMINE WHETHER GUARDRAIL ANCHORAGE, BRIDGE SPANS A BRIDGE EXPANSION JOINT.

SEE THE CURRENT STANDARD PLAN R-55-SERIES FOR FILLER WALLS AND FILLER WALL END BLOCK.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

6-15-2006 F.H.W.A. APPROVAL	4-24-2006 PLAN DATE	R-67-F	SHEET 7 OF 7

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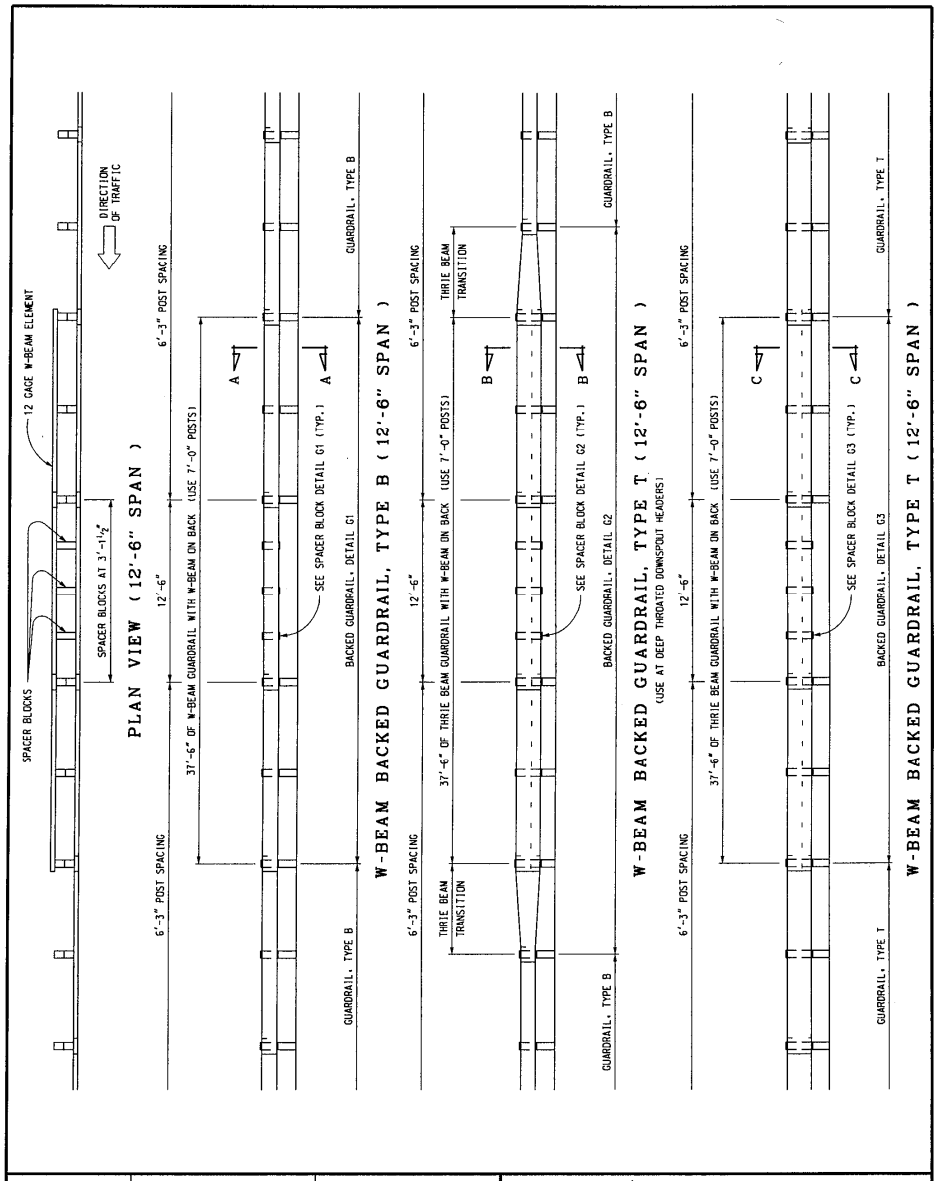

MDOT Michigan Department of Transportation

PREPARED BY DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

ENGINEER OF CONSTRUCTION & TECHNOLOGY

ENGINEER OF MAINTENANCE

ENGINEER OF TRAFFIC AND SAFETY

ENGINEER - ROAD DESIGN

ENGINEER OF DESIGN

DEPARTMENT DIRECTOR
Gregory J. Rosine

BY:
CHIEF ENGINEER/DEPUTY DIRECTOR
BUREAU OF HIGHWAY TECHNICAL SERVICES

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

W-BEAM BACKED GUARDRAIL INSTALLATIONS

12-21-2001	6-1-2001	R-72-C	SHEET
F.H.W.A. APPROVAL	PLAN DATE		1 OF 4

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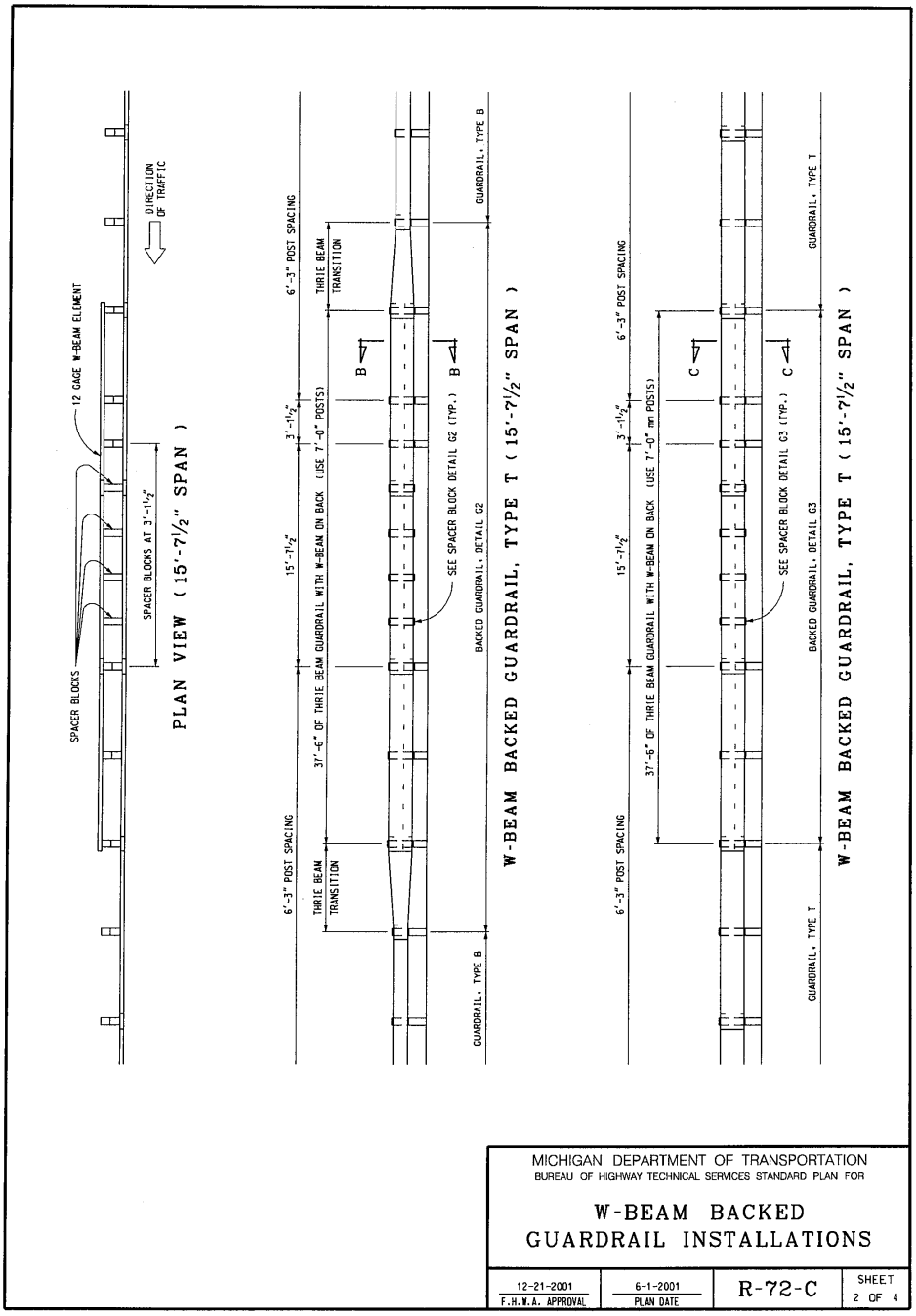

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

W-BEAM BACKED GUARDRAIL INSTALLATIONS

12-21-2001 F.H.W.A. APPROVAL	6-1-2001 PLAN DATE	R-72-C	SHEET 2 OF 4

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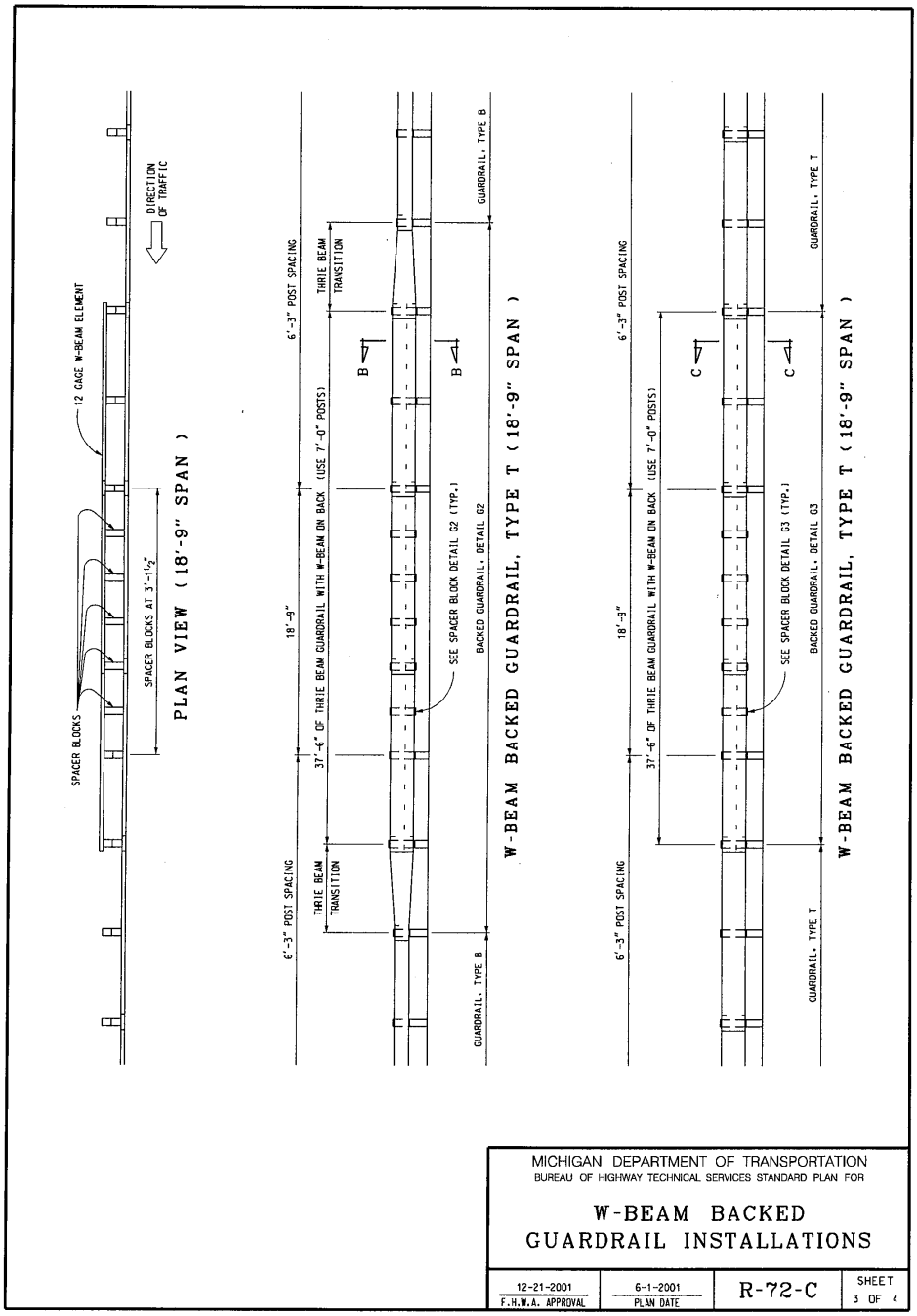

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

W-BEAM BACKED GUARDRAIL INSTALLATIONS

12-21-2001 F.H.W.A. APPROVAL	6-1-2001 PLAN DATE	R-72-C	SHEET 3 OF 4

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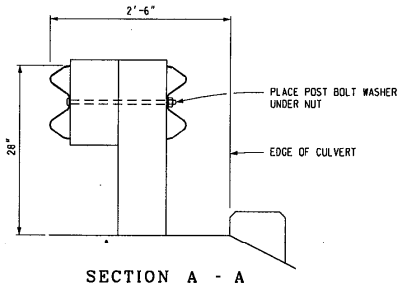
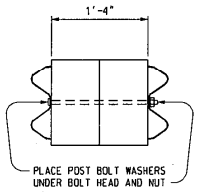
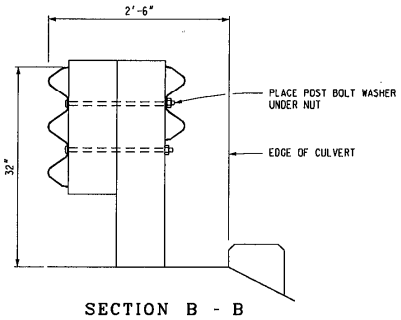


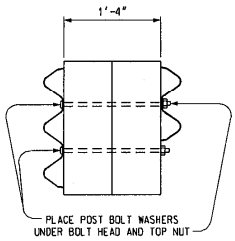
SECTION A - A



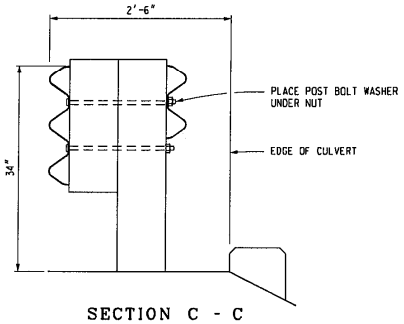
SPACER BLOCK DETAIL G1



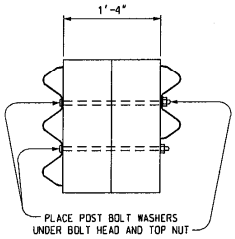
SECTION B - B



SPACER BLOCK DETAIL G2



SECTION C - C



SPACER BLOCK DETAIL G3

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THE GUARDRAIL MODIFICATIONS DETAILED ON THIS STANDARD SHOULD ONLY BE USED WHERE 6'-3" POST SPACING AND POST EMBEDMENT CANNOT BE MET. WHEN THE SPANNING DISTANCE BETWEEN POSTS IS 15'-7½", THE 3'-1½" POST SPACING SHOULD BE PLACED ON THE APPROACH END.

IF USE OF THIS DESIGN WOULD INTERFERE WITH THE POST SPACING WITHIN A GUARDRAIL BRIDGE ANCHORAGE AS SPECIFIED ON STANDARD PLAN R-67-SERIES, OTHER OPTIONS SHOULD BE INVESTIGATED AND USED.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

W-BEAM BACKED GUARDRAIL INSTALLATIONS

12-21-2001 F.H.W.A. APPROVAL	6-1-2001 PLAN DATE	R-72-C	SHEET 4 OF 4

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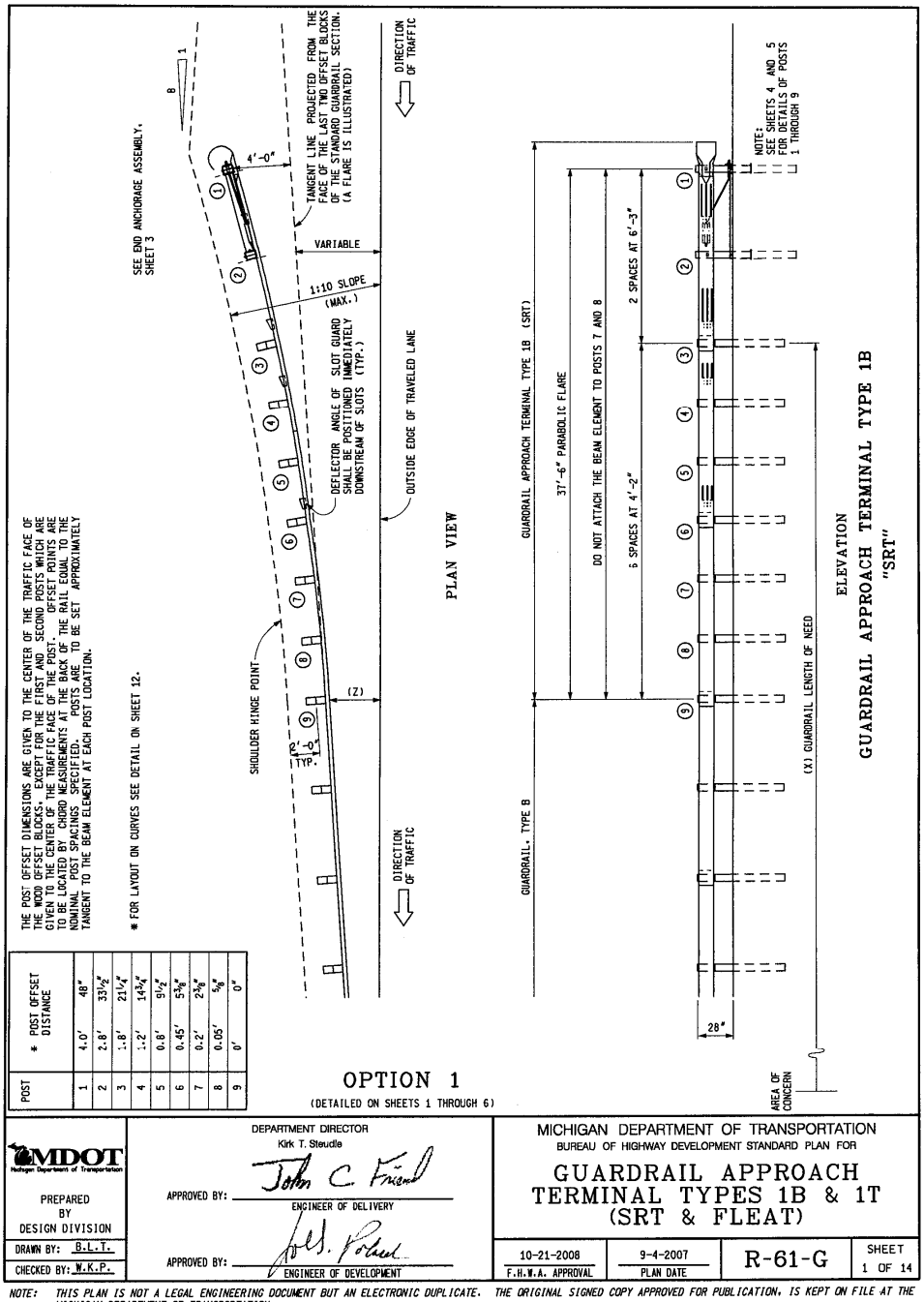

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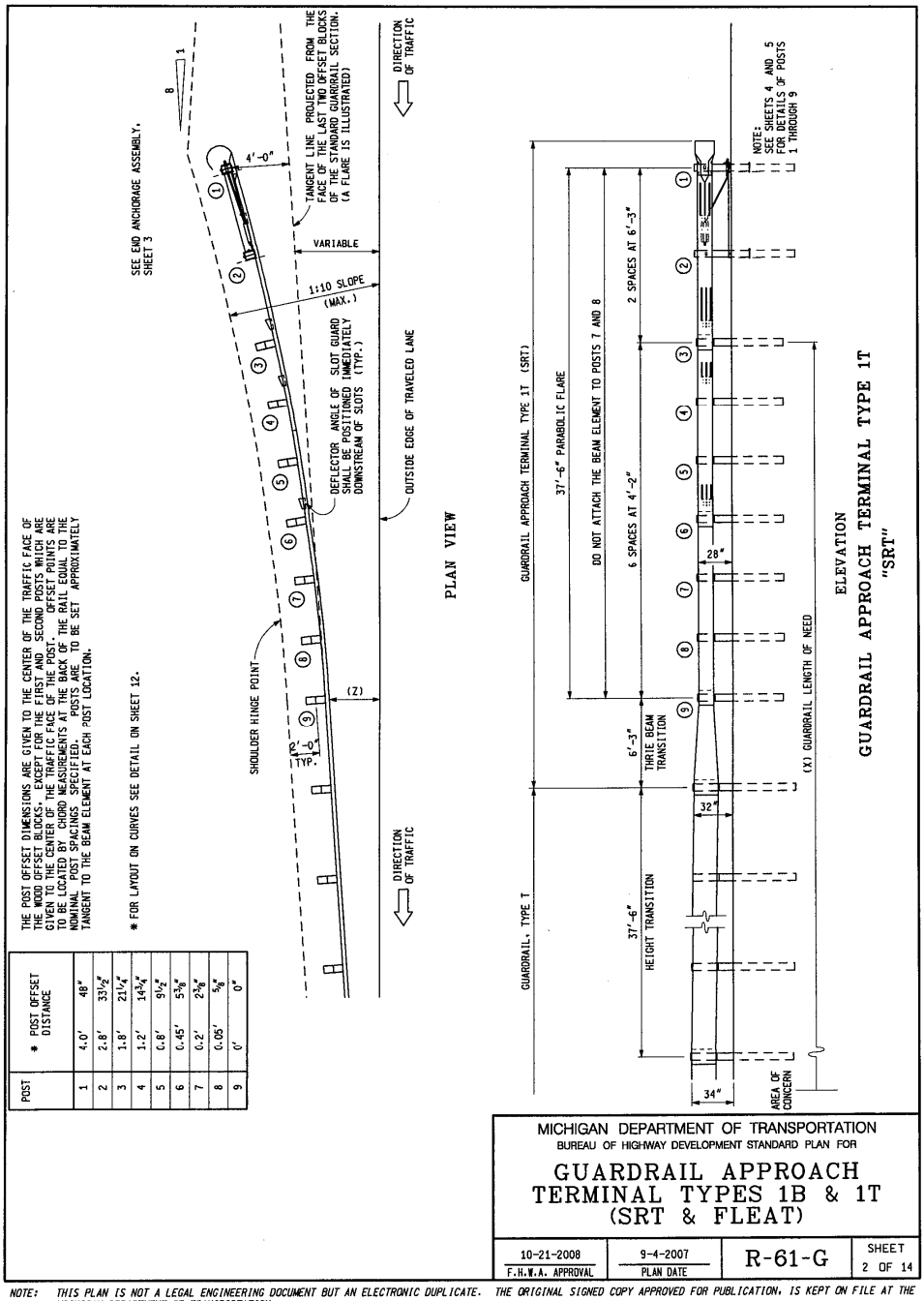

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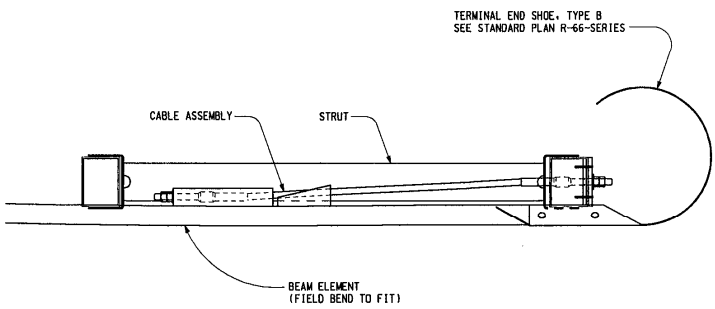
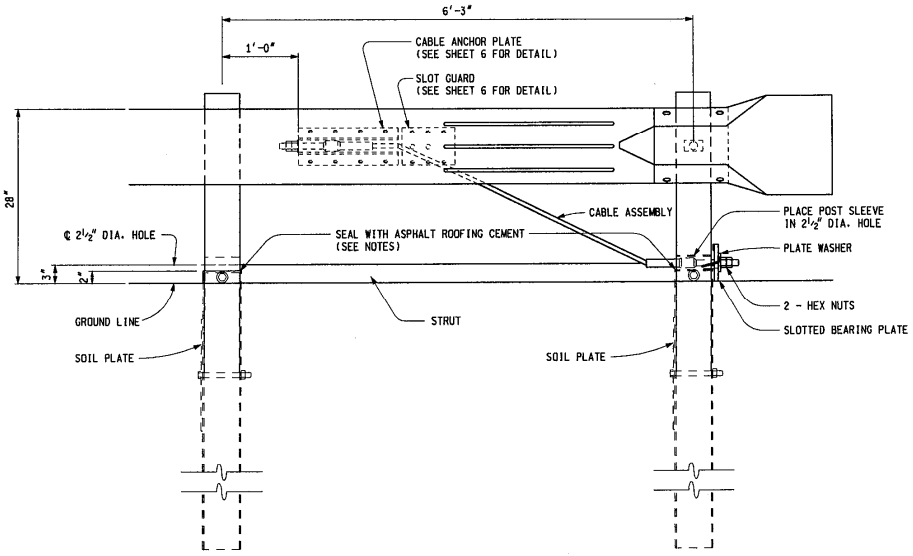


PLAN VIEW



ELEVATION

END ANCHORAGE ASSEMBLY
(SRT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH
TERMINAL TYPES 1B & 1T
(SRT & FLEAT)

10-21-2008	9-4-2007	R-61-G	SHEET
F.H.W.A. APPROVAL	PLAN DATE		3 OF 14

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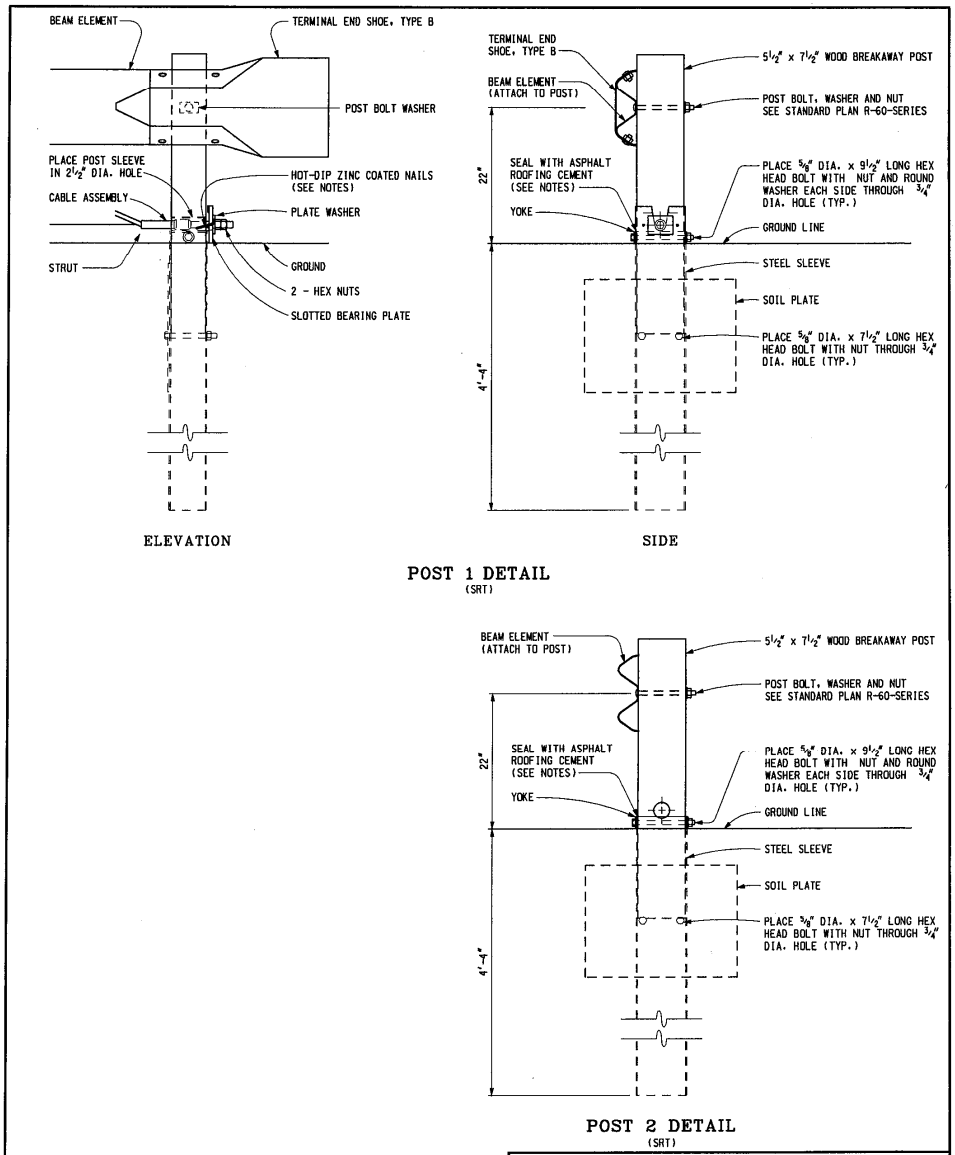

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T (SRT & FLEAT)

10-21-2008 F.H.W.A. APPROVAL	9-4-2007 PLAN DATE	R-61-G	SHEET 4 OF 14

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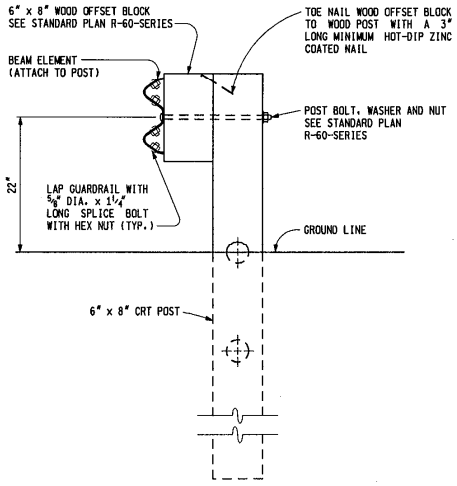
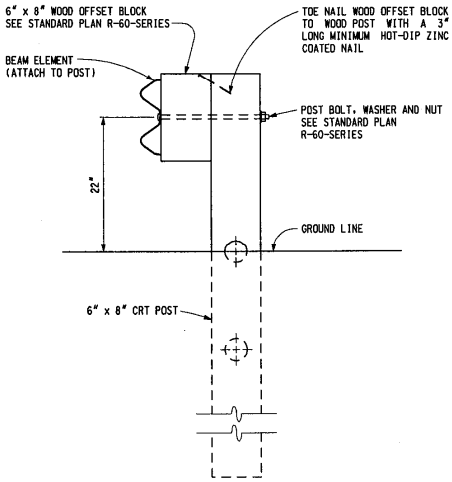
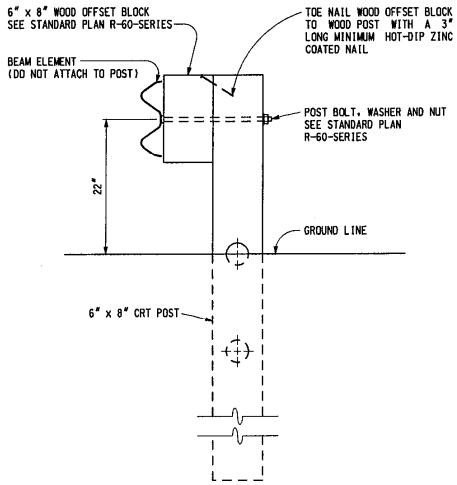


POST 3 AND 6 DETAIL
(SRT)



POST 4 AND 5 DETAIL
(SRT)



POST 7 AND 8 DETAIL
(SRT)

NOTE: POST 9 IS A STANDARD LINE POST

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T (SRT & FLEAT)

10-21-2008	9-4-2007	R-61-G	SHEET
F.H.W.A. APPROVAL	PLAN DATE		5 OF 14

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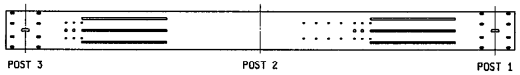
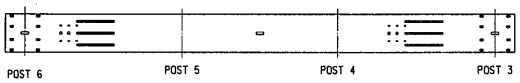
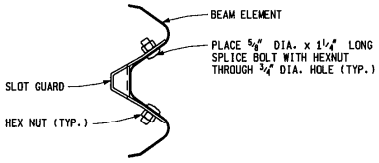


SLOTTED RAIL BEAM ELEMENT
(POST 1 THROUGH 3)

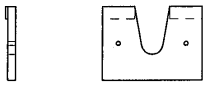


SLOTTED RAIL BEAM ELEMENT
(POST 3 THROUGH 6)



ASSEMBLY DETAIL

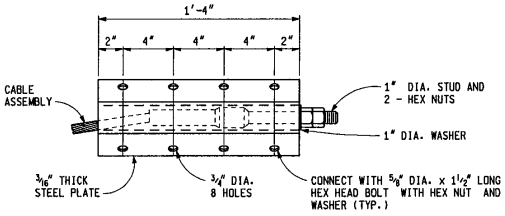
SLOT GUARD DETAILS

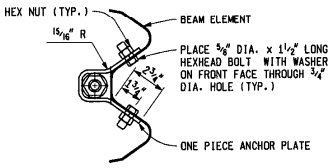


SLOTTED BEARING PLATE

PLATE WASHER

NOTE: ALL (SRT) ITEMS ILLUSTRATED WITHOUT DIMENSIONS SHALL BE ACCORDING TO THE MANUFACTURERS SPECIFICATION.





CABLE ANCHOR PLATE DETAILS
(SRT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T (SRT & FLEAT)

10-21-2008 F.H.W.A. APPROVAL	9-4-2007 PLAN DATE	R-61-G	SHEET 6 OF 14

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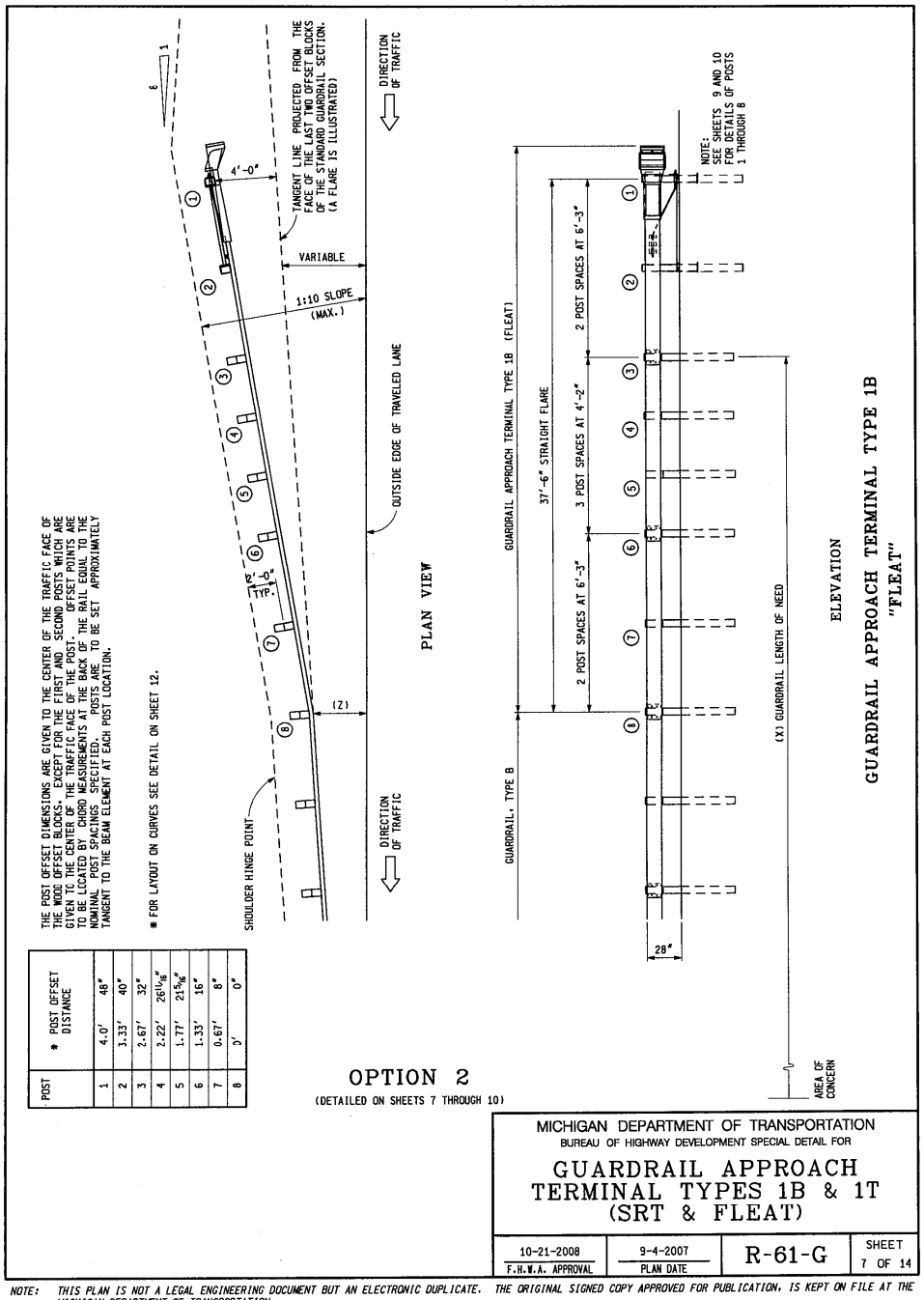

POST	* POST OFFSET DISTANCE
1	4.0' 48"
2	3.33' 40"
3	2.67' 32"
4	2.22' 26 11/16"
5	1.77' 21 5/16"
6	1.33' 16"
7	0.67' 8"
8	0' 0"

OPTION 2

(DETAILED ON SHEETS 7 THROUGH 10)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T (SRT & FLEAT)

10-21-2008 F.H.W.A. APPROVAL	9-4-2007 PLAN DATE	R-61-G	SHEET 7 OF 14

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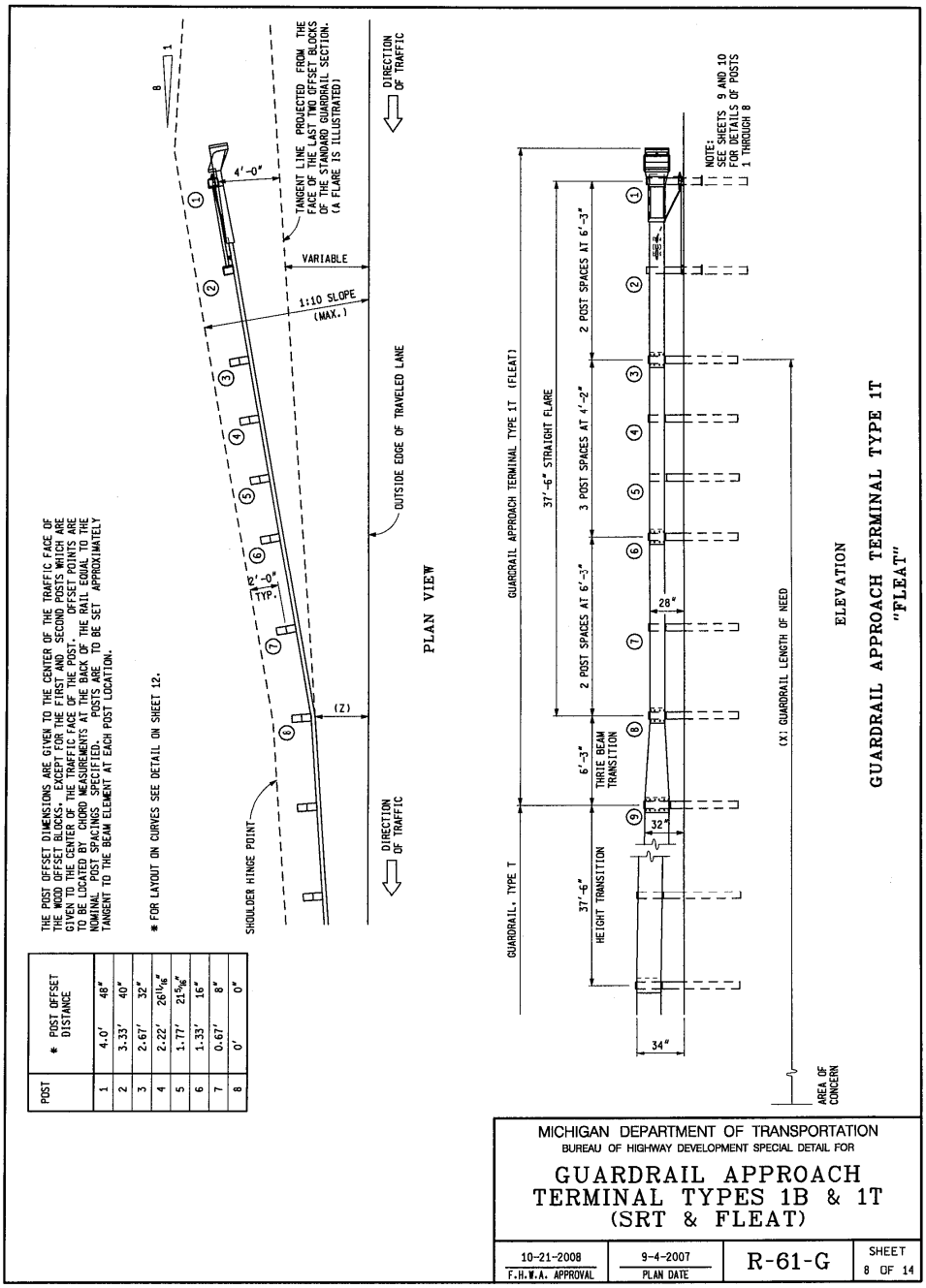

POST	* POST OFFSET DISTANCE
1	4.0' 48"
2	3.33' 40"
3	2.67' 32"
4	2.22' 26 1/16"
5	1.77' 21 5/16"
6	1.33' 16"
7	0.67' 8"
8	0' 0"

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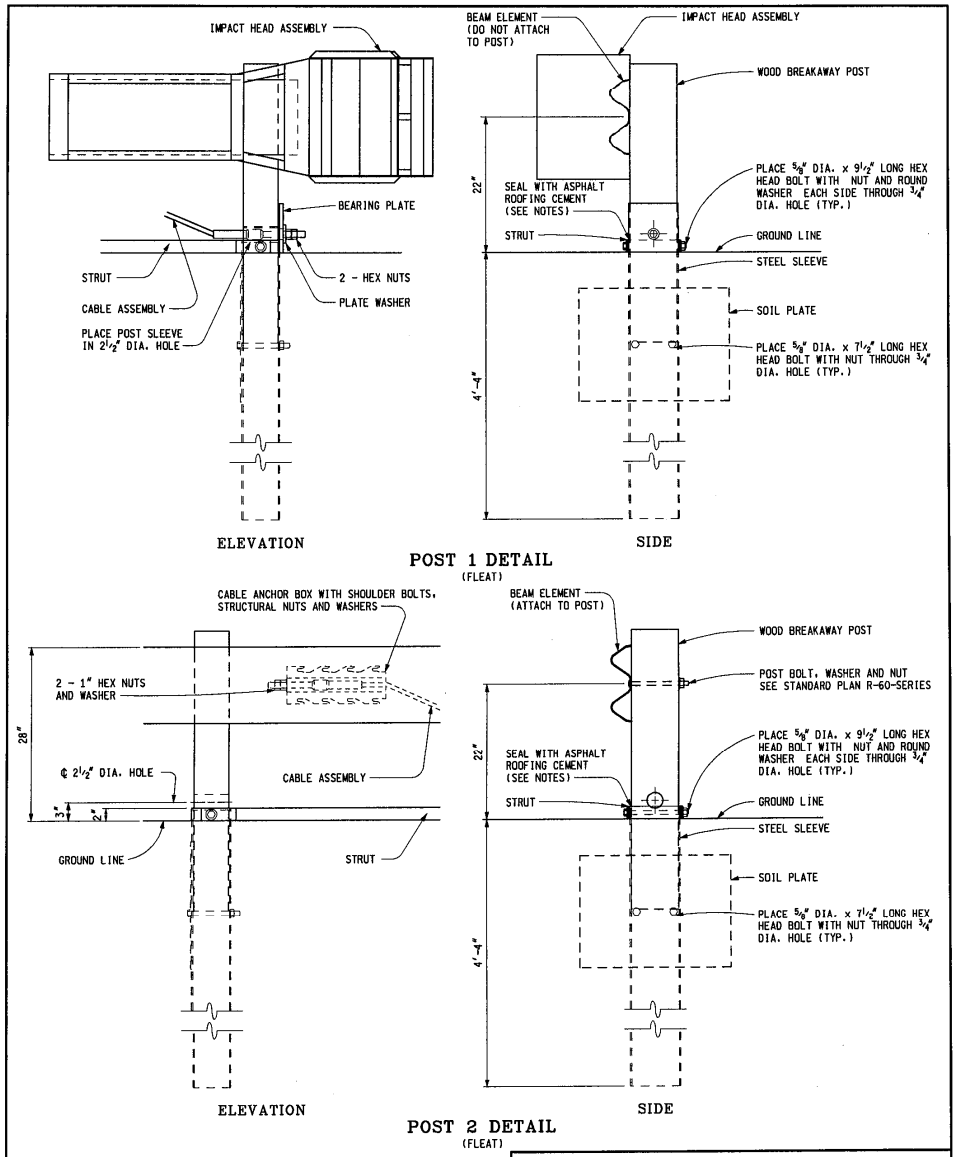

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T (SRT & FLEAT)

10-21-2008	9-4-2007	R-61-G	SHEET
F.H.W.A. APPROVAL	PLAN DATE		9 OF 14

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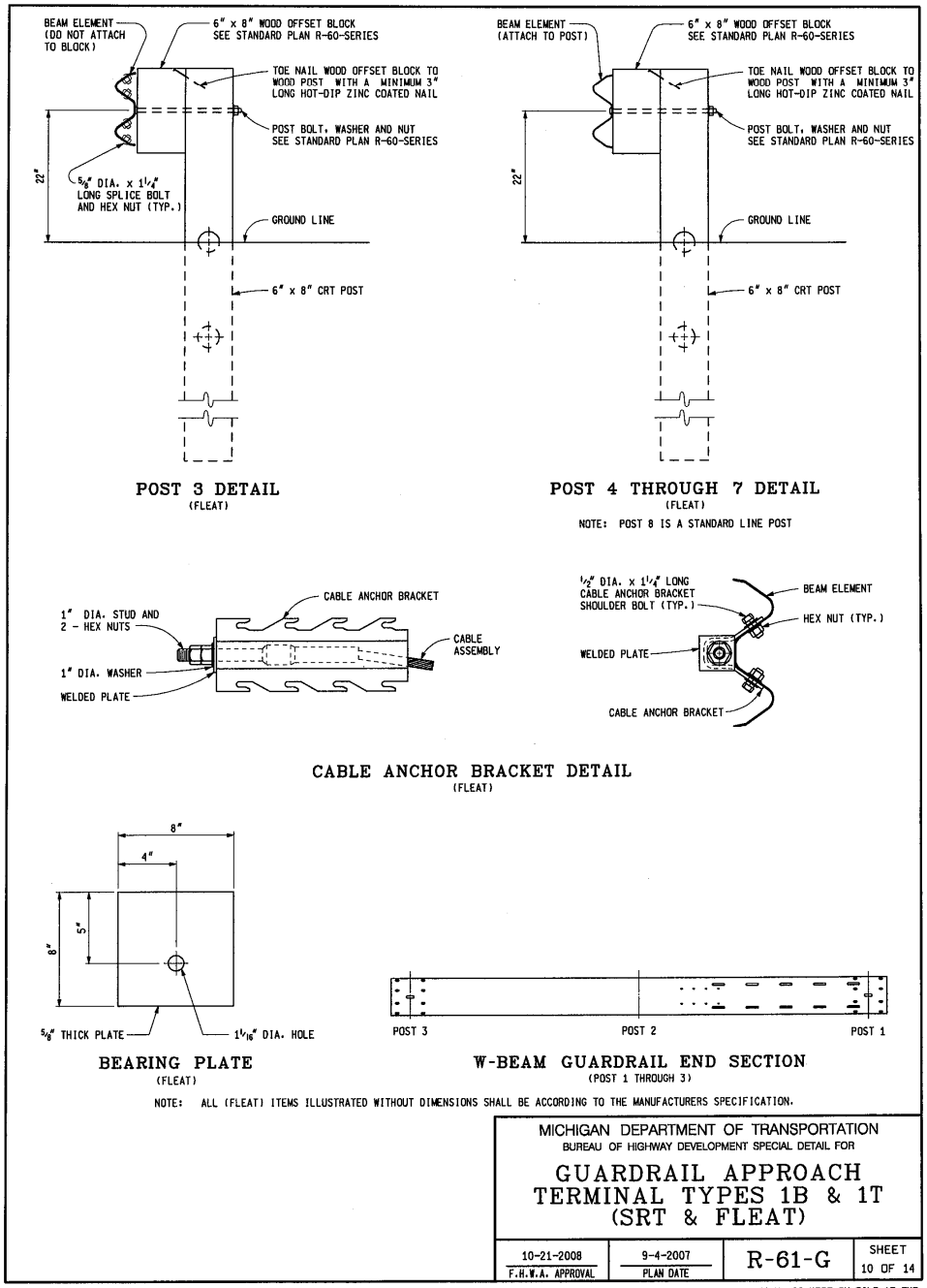

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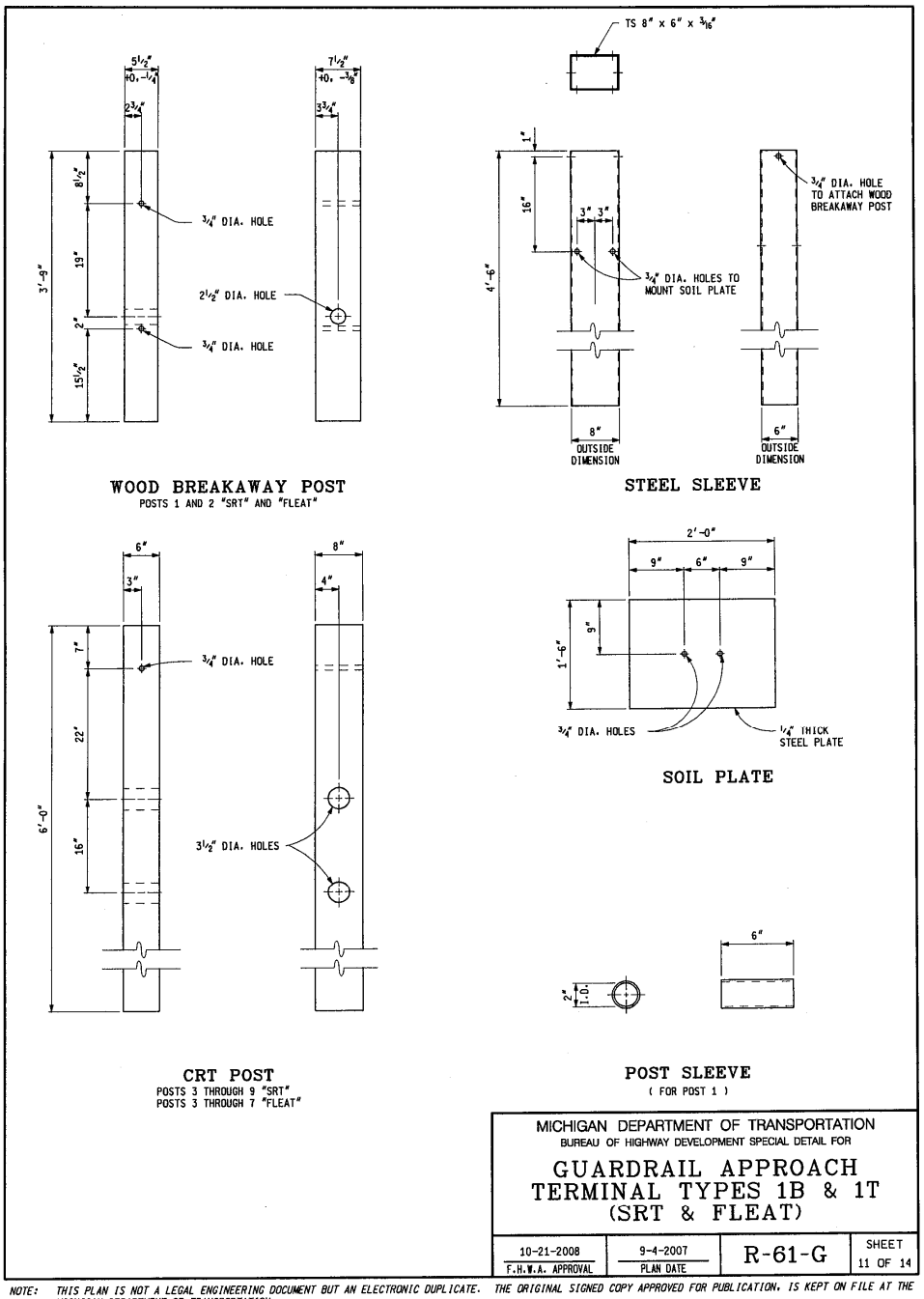

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T (SRT & FLEAT)

10-21-2008 F.H.W.A. APPROVAL	9-4-2007 PLAN DATE	R-61-G	SHEET 11 OF 14

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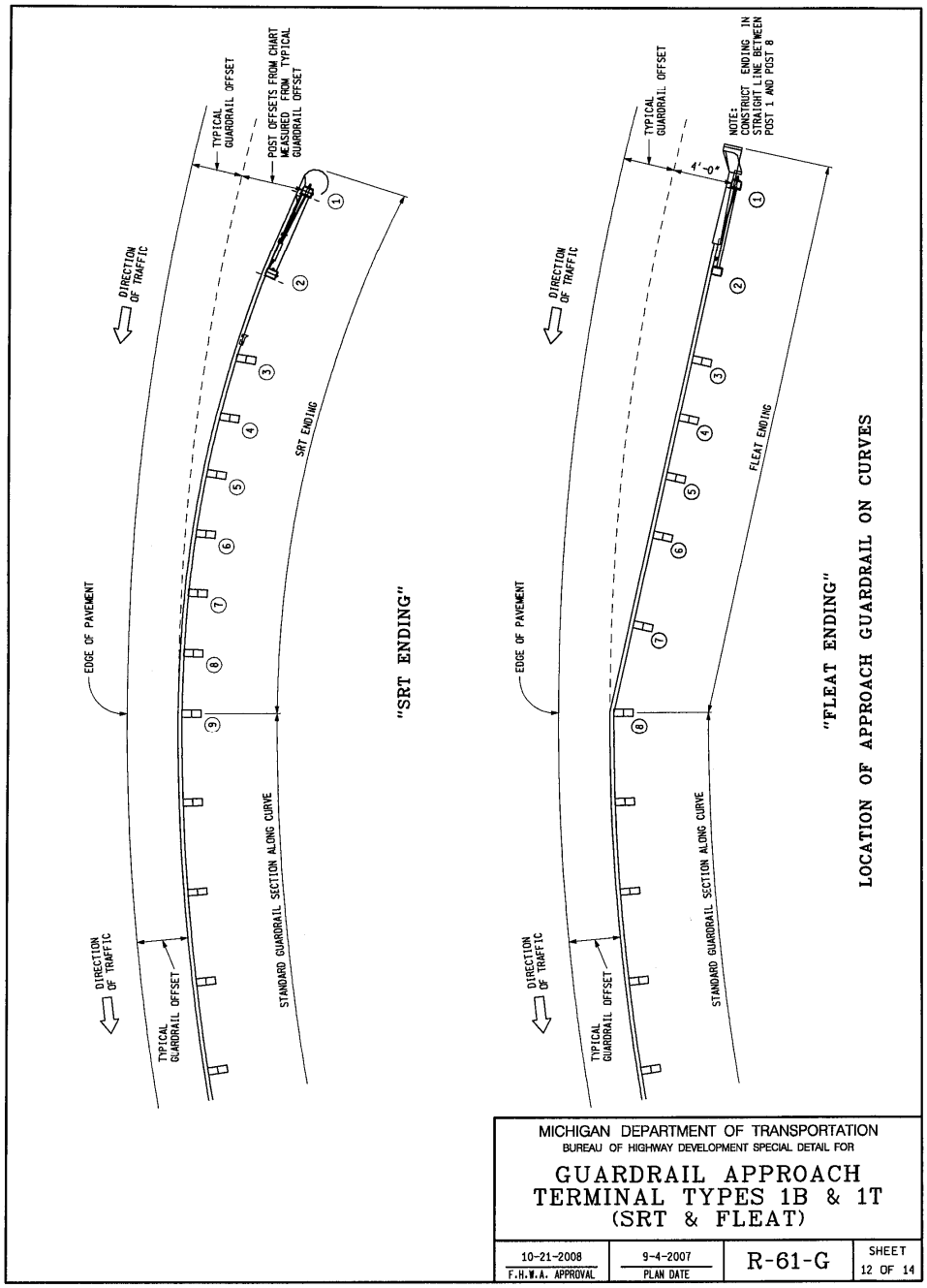

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T (SRT & FLEAT)

10-21-2008 F.H.W.A. APPROVAL	9-4-2007 PLAN DATE	R-61-G	SHEET 12 OF 14

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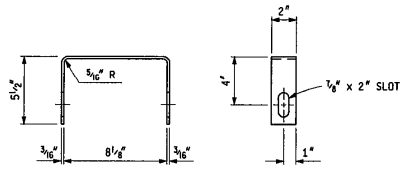
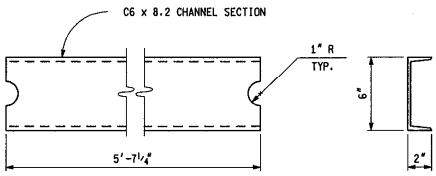
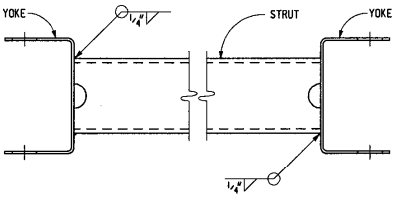


YOKE DETAIL

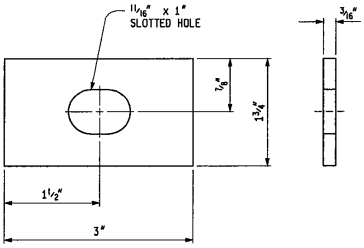


STRUT DETAIL

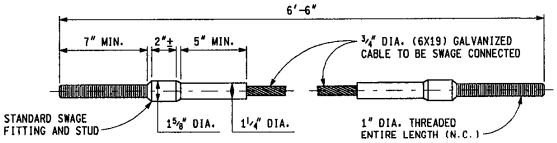


ASSEMBLY DETAIL

STRUT AND YOKE ASSEMBLY



POST BOLT WASHER
(POST 1 ONLY)



CABLE ASSEMBLY

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T (SRT & FLEAT)

10-21-2008	9-4-2007	R-61-G	SHEET
F.H.W.A. APPROVAL	PLAN DATE		13 OF 14

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NOTES:

ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, AND HARDWARE (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND TO THE CURRENT STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS STANDARD.

ALL 1:10 SLOPES SHALL BE GRADED TO CLASS A SLOPE TOLERANCES.

AFTER THE CABLE ASSEMBLY HAS BEEN TIGHTENED, A SECOND NUT SHALL BE INSTALLED ON EACH END OF THE CABLE SO THAT THE CABLE WILL NOT LOOSEN.

TWO HOT-DIP ZINC COATED NAILS SHALL BE DRIVEN INTO THE WOOD POST THROUGH THE HOLES IN THE SLOTTED BEARING PLATE ON POST 1 OF THE "SRT" TO KEEP THE PLATE FROM ROTATING.

GUARDRAIL REFLECTORS ARE NOT TO BE USED ON THE "FLEAT" OR "SRT". PLACE REFLECTORS BEGINNING ON STANDARD RUN OF GUARDRAIL.

USE REFLECTIVE SHEETING ACCORDING TO THE FOLLOWING TRAFFIC CONDITIONS:
(NOTE: ALTERNATE 3" BLACK AND 3" YELLOW STRIPES ON A 45° ANGLE)

TRAFFIC PASSING ON THE LEFT SIDE

TRAFFIC PASSING ON BOTH SIDES

TRAFFIC PASSING ON THE RIGHT SIDE

ON THE "SRT", THE CURVED PORTION OF THE TERMINAL END SHOE FACING TRAFFIC (HALF CIRCLE) SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ON THE "FLEAT", THE PORTION OF THE IMPACT HEAD ASSEMBLY FACING TRAFFIC SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ASPHALT ROOFING CEMENT SHALL BE USED TO SEAL THE PERIMETER AREA BETWEEN THE STEEL SLEEVE (SOIL TUBE) AND THE WOOD BREAKAWAY POST.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T (SRT & FLEAT)

10-21-2008	9-4-2007	R-61-G	SHEET
F.H.W.A. APPROVAL	PLAN DATE		14 OF 14

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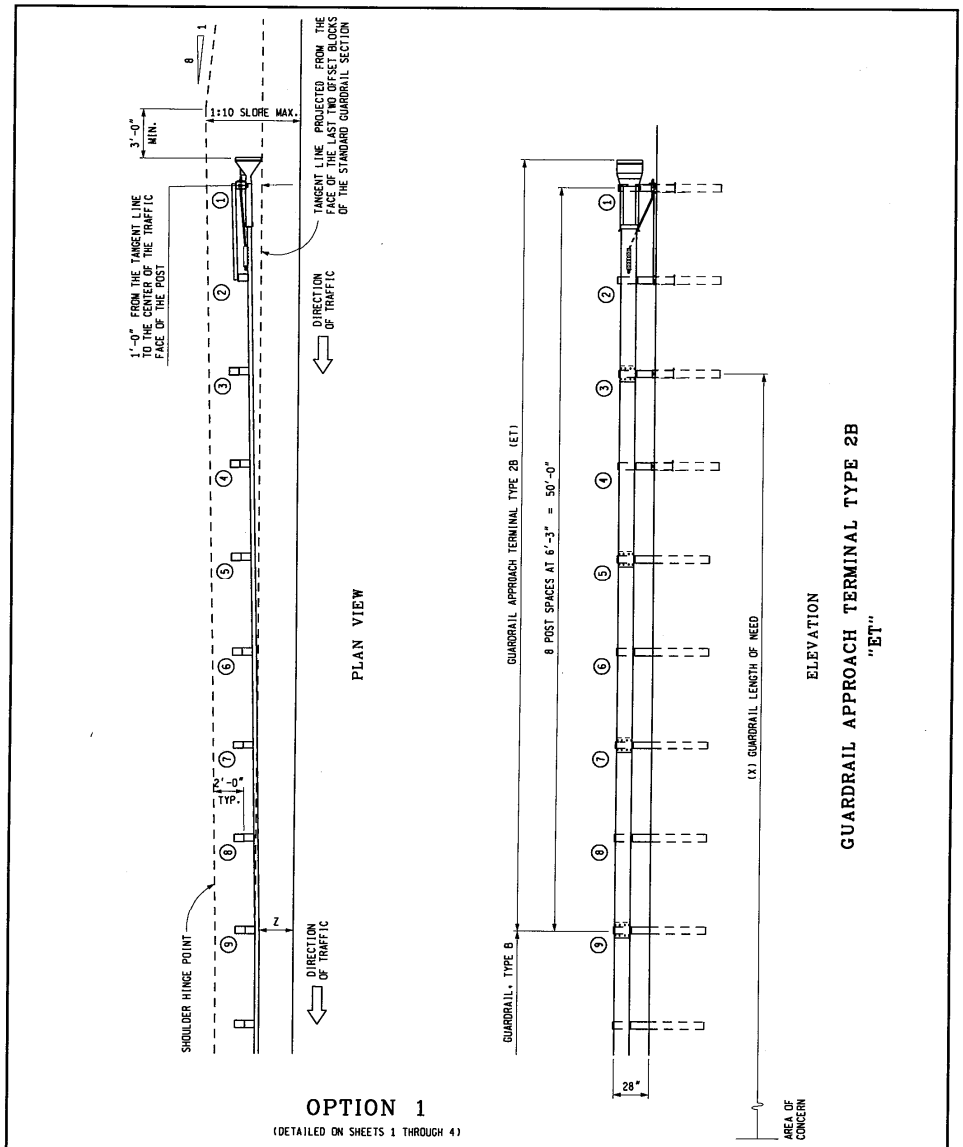

OPTION 1

(DETAILED ON SHEETS 1 THROUGH 4)

MDOT Michigan Department of Transportation PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: W.K.P.	DEPARTMENT DIRECTOR Kirk T. Steudle APPROVED BY: John C. Friend ENGINEER OF DELIVERY APPROVED BY: Jolt. Poland ENGINEER OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (ET & SKT)

10-21-2008	8-30-2007	R-62-G	SHEET
F.H.W.A. APPROVAL	PLAN DATE		1 OF 9

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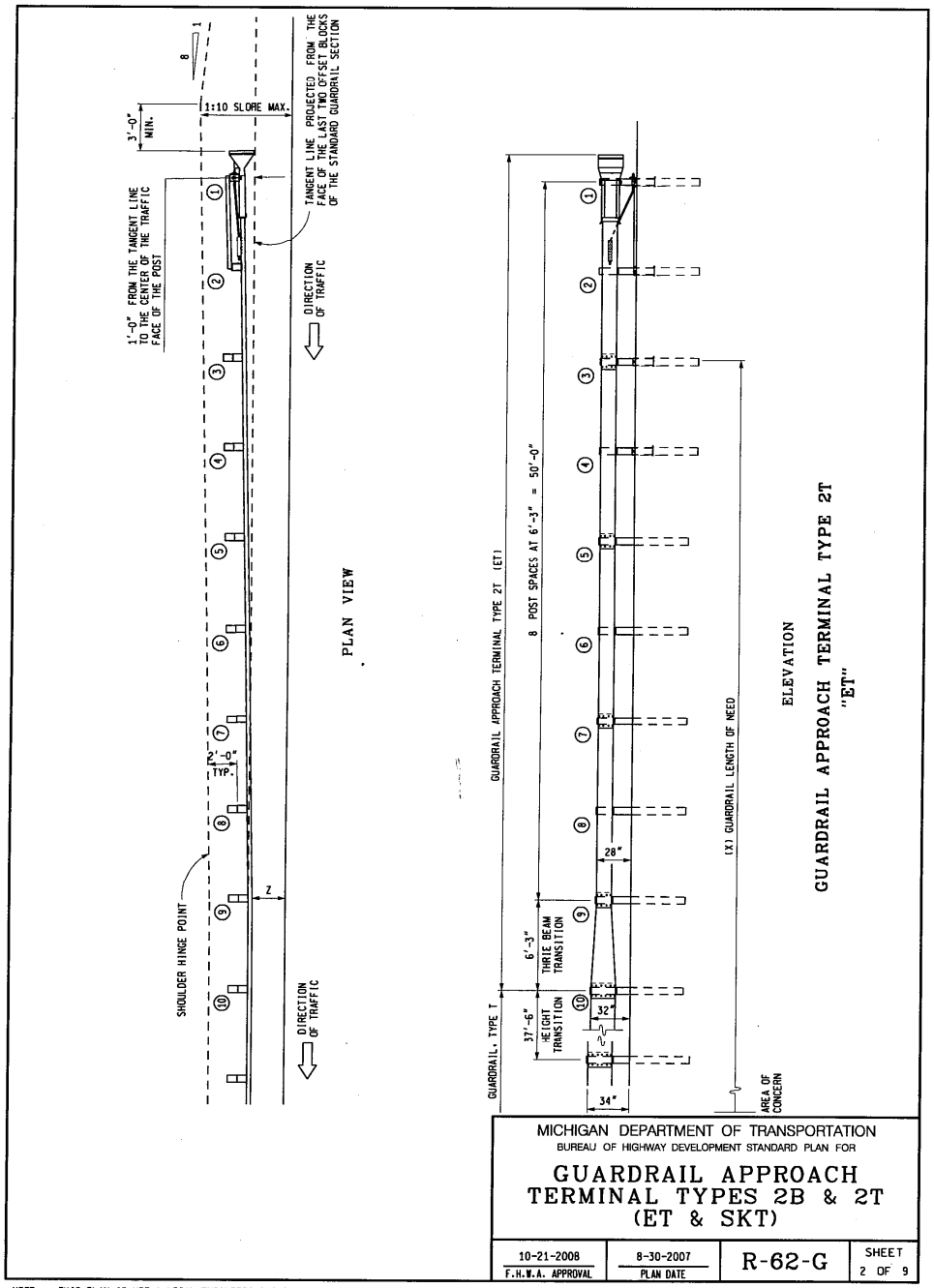

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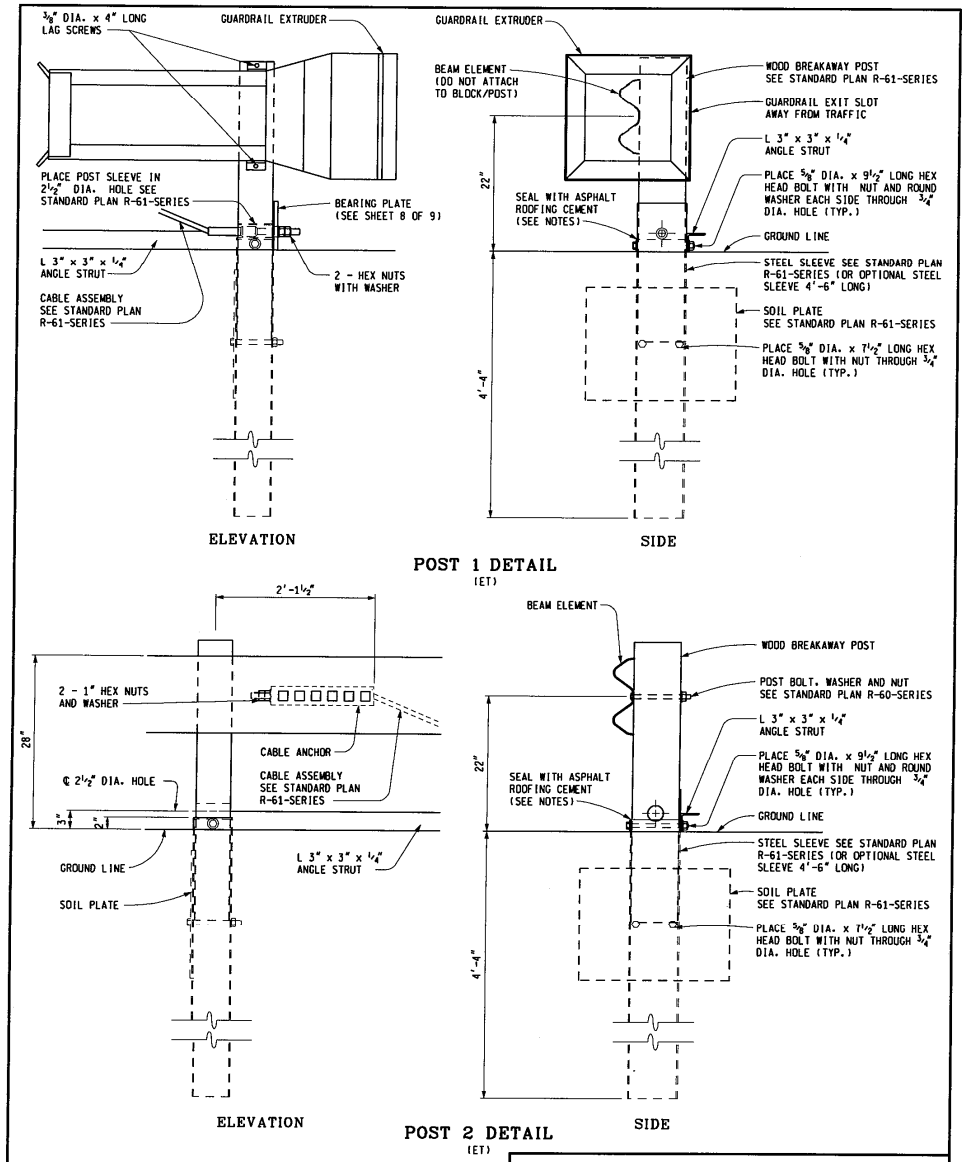

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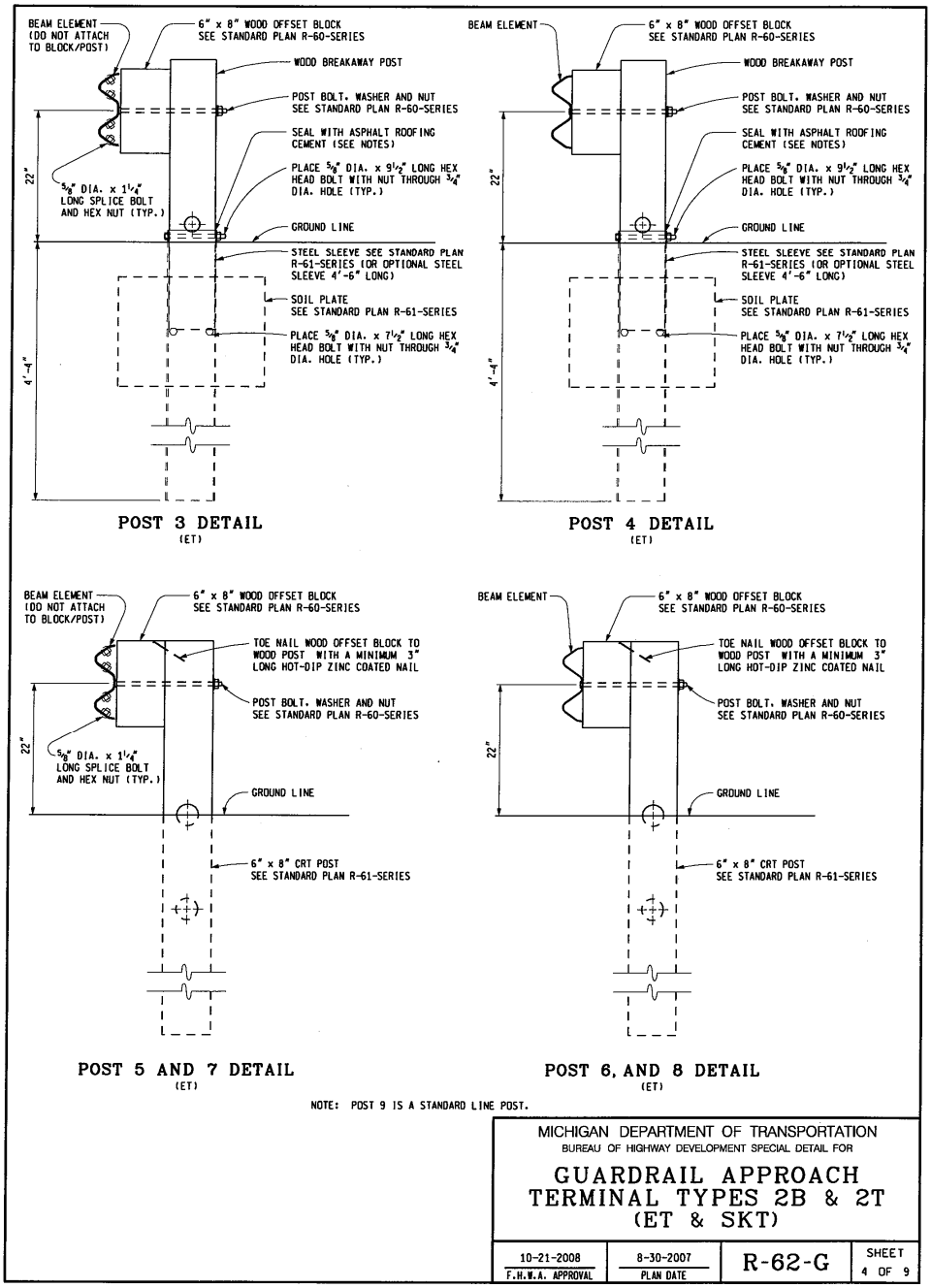

NOTE: POST 9 IS A STANDARD LINE POST.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (ET & SKT)

10-21-2008 F.H.W.A. APPROVAL	8-30-2007 PLAN DATE	R-62-G	SHEET 4 OF 9

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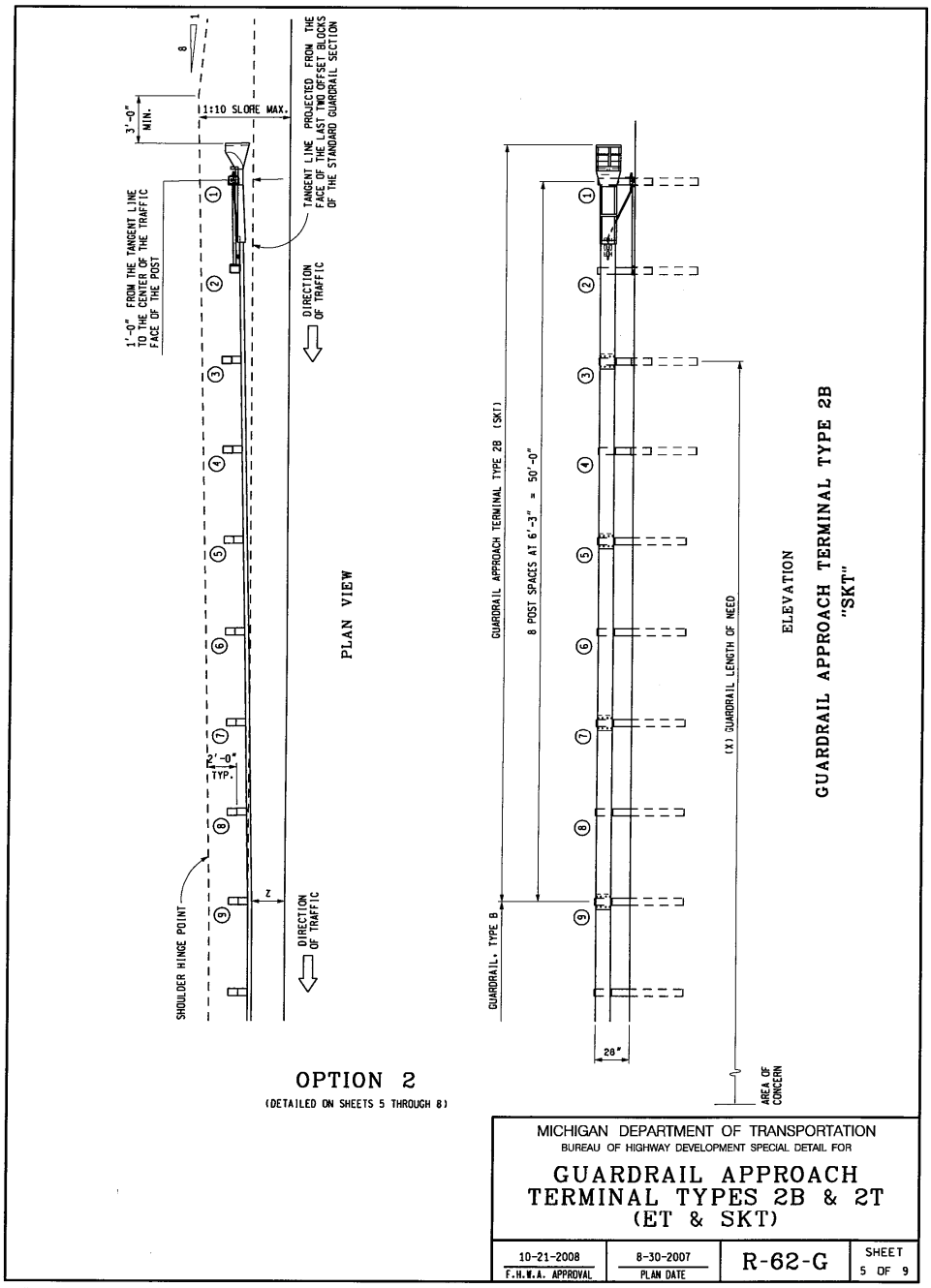

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (ET & SKT)

10-21-2008 F.H.W.A. APPROVAL	8-30-2007 PLAN DATE	R-62-G	SHEET 5 OF 9

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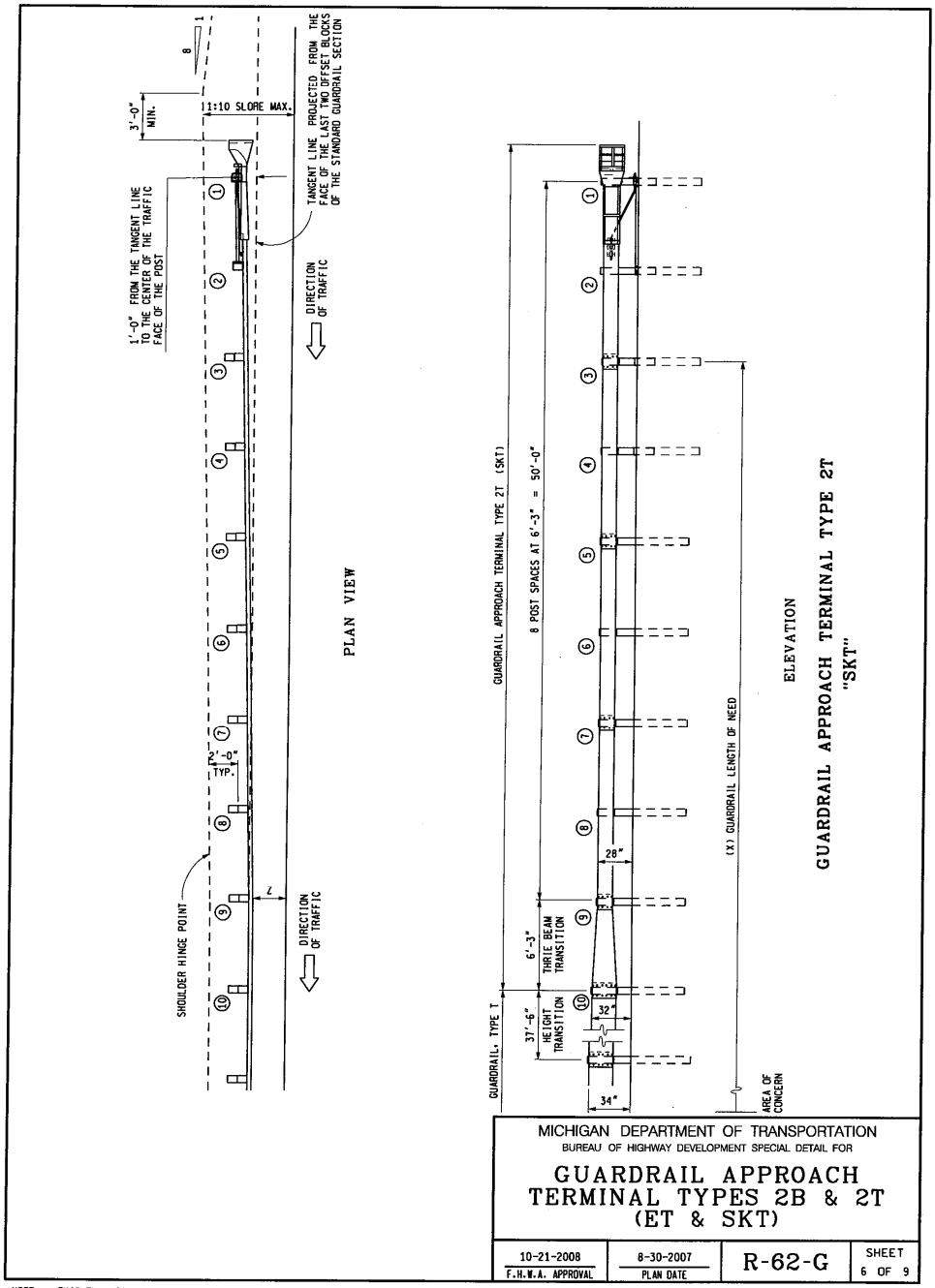

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (ET & SKT)

10-21-2008 F.H.W.A. APPROVAL	8-30-2007 PLAN DATE	R-62-G	SHEET 6 OF 9

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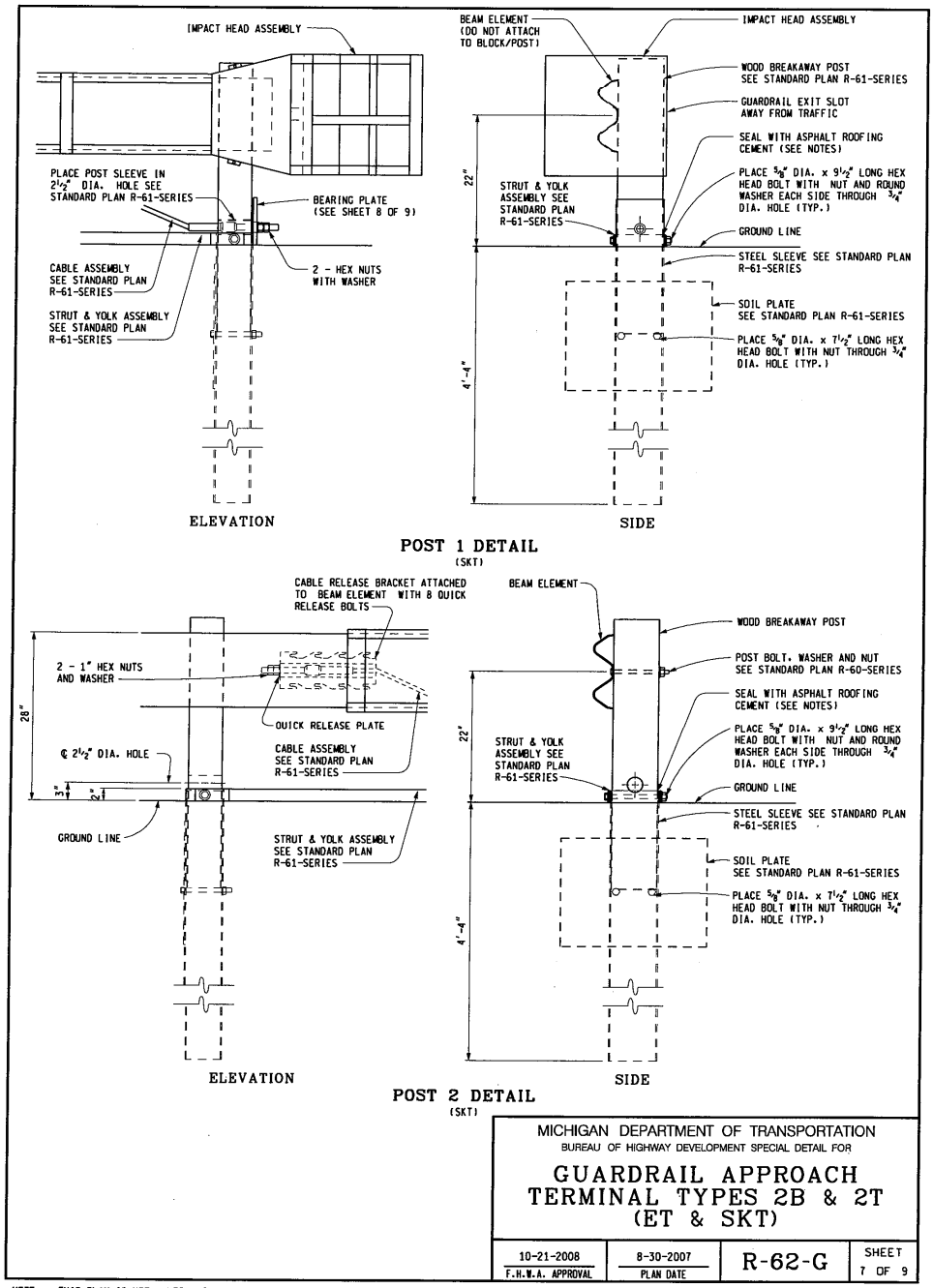

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (ET & SKT)

10-21-2008 F.H.W.A. APPROVAL	8-30-2007 PLAN DATE	R-62-G	SHEET 7 OF 9

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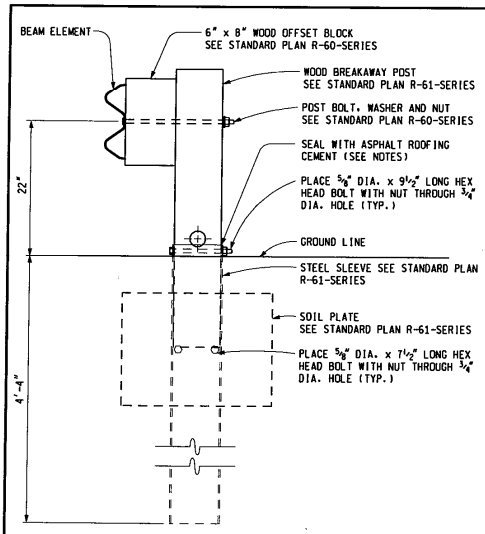
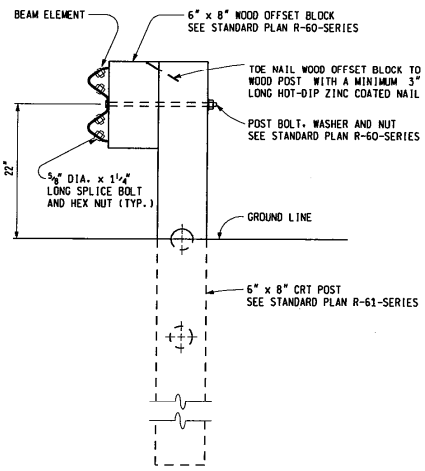
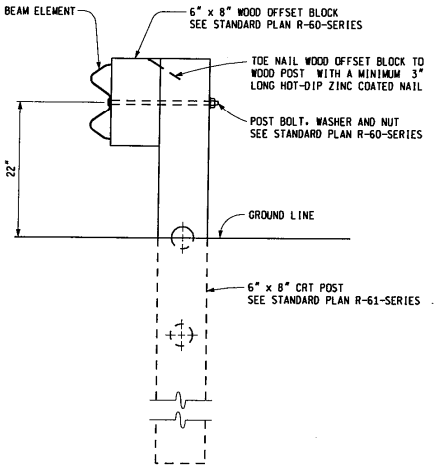


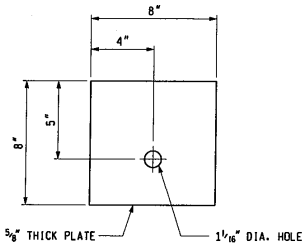
POST 3 AND 4 DETAIL
(SKT)
NOTE: BEAM ELEMENTS ARE SPLICED TOGETHER AT POST 3



POST 5 AND 7 DETAIL
(SKT)



POST 6 AND 8 DETAIL
(SKT)
NOTE: POST 9 IS A STANDARD LINE POST.



BEARING PLATE
(ET & SKT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (ET & SKT)

10-21-2008	8-30-2007	R-62-G	SHEET
F.H.W.A. APPROVAL	PLAN DATE		8 OF 9

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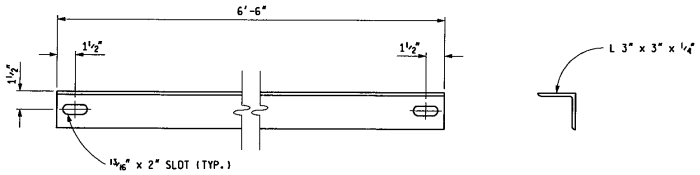

ANGLE STRUT
(ET)

NOTES:

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ALL 1:10 SLOPES SHALL BE GRADED TO CLASS A SLOPE TOLERANCES.

THE BREAKAWAY CABLE ASSEMBLY MUST BE TAUT. A LOCKING DEVICE (VICE GRIPS OR CHANNEL LOCK PLIERS) SHOULD BE USED TO PREVENT THE CABLE FROM TWISTING WHEN TIGHTENING THE NUTS.

AFTER THE CABLE ASSEMBLY HAS BEEN TIGHTENED, A SECOND NUT SHALL BE INSTALLED ON EACH END OF THE CABLE SO THAT THE CABLE WILL NOT LOOSEN.

WHEN SITE CONDITIONS WARRANT AND WITH THE APPROVAL OF THE ENGINEER, GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T CAN BE INSTALLED STRAIGHT (WITHOUT THE 1:50 FLARE).

GUARDRAIL REFLECTORS ARE NOT TO BE USED ON THE "ET" OR "SKT". PLACE REFLECTORS BEGINNING ON STANDARD RUN OF GUARDRAIL.

USE REFLECTIVE SHEETING ACCORDING TO THE FOLLOWING TRAFFIC CONDITIONS:
(NOTE: ALTERNATE 3" BLACK AND 3" YELLOW STRIPES ON A 45° ANGLE)

TRAFFIC PASSING ON THE LEFT SIDE | TRAFFIC PASSING ON BOTH SIDES | TRAFFIC PASSING ON THE RIGHT SIDE

ON THE "ET", THE PORTION OF THE GUARDRAIL EXTRUDER FACING TRAFFIC SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ON THE "SKT", THE PORTION OF THE IMPACT HEAD ASSEMBLY FACING TRAFFIC SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ASPHALT ROOFING CEMENT SHALL BE USED TO SEAL THE PERIMETER AREA BETWEEN THE STEEL SLEEVE (SOIL TUBE) AND THE WOOD BREAKAWAY POST.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SPECIAL DETAIL FOR

GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (ET & SKT)

10-21-2008 F.H.W.A. APPROVAL	8-30-2007 PLAN DATE	R-62-G	SHEET 9 OF 9

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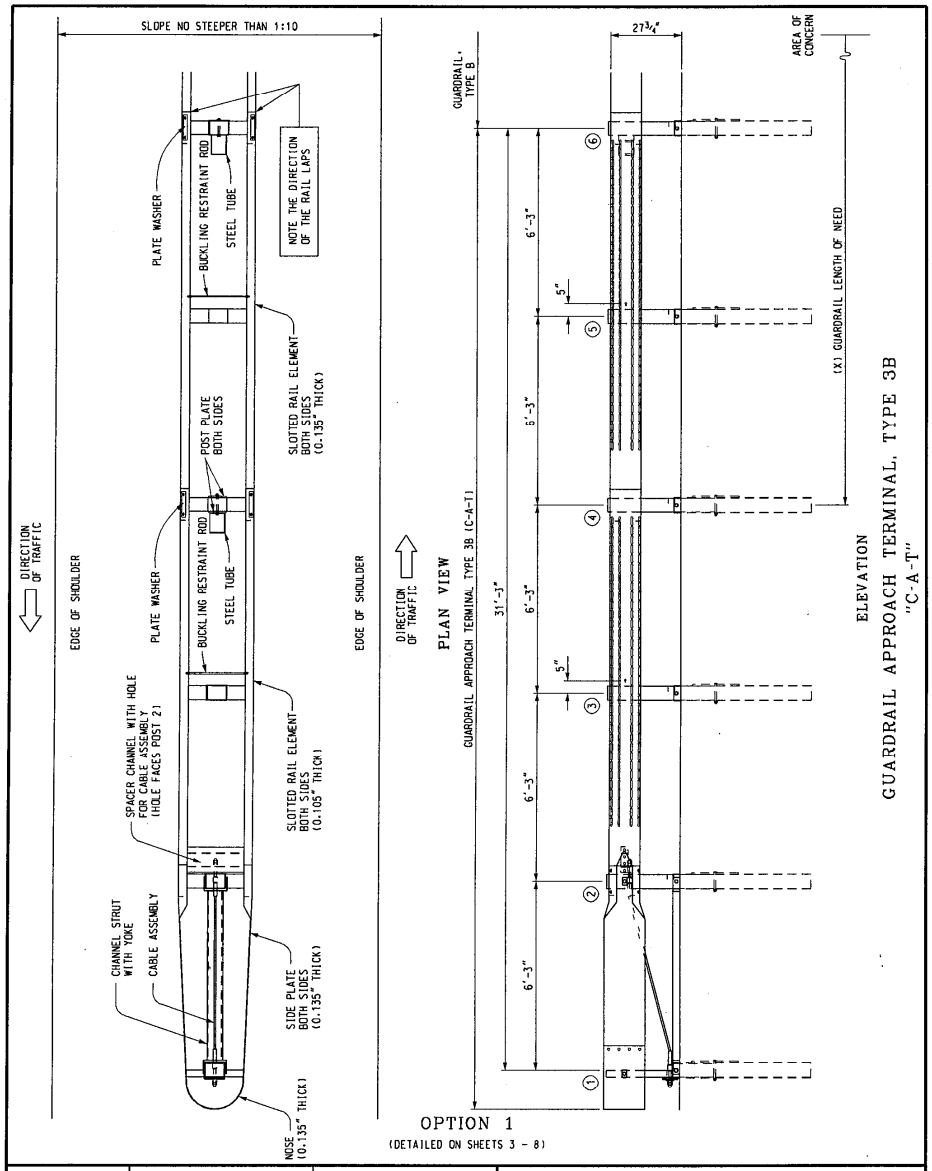

MDOT Michigan Department of Transportation	ENGINEER OF CONSTRUCTION & TECHNOLOGY	ENGINEER OF DESIGN SUPPORT AREA	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T
PREPARED BY DESIGN SUPPORT AREA	ENGINEER OF MAINTENANCE	DEPARTMENT DIRECTOR Gloria J. Jeff	
DRAWN BY: B.L.T.			10-27-2004 F.H.W.A. APPROVAL · 6-11-2004 PLAN DATE · R-63-B · SHEET 1 OF 16
CHECKED BY: W.K.P.	ENGINEER OF TRAFFIC AND SAFETY	ENGINEER OF DEVELOPMENT	

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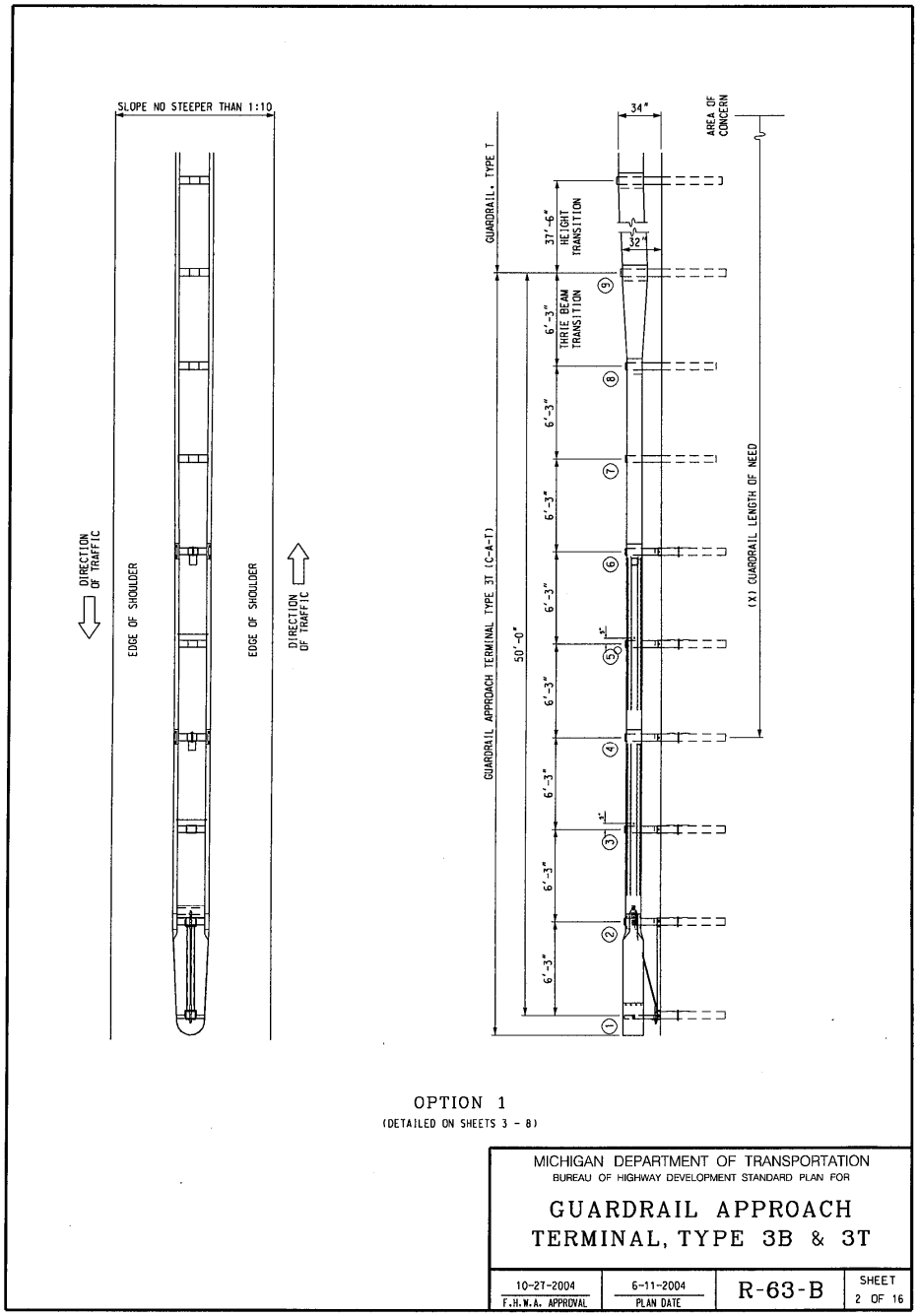

OPTION 1
(DETAILED ON SHEETS 3 - 8)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004 F.H.W.A. APPROVAL	6-11-2004 PLAN DATE	R-63-B	SHEET 2 OF 16

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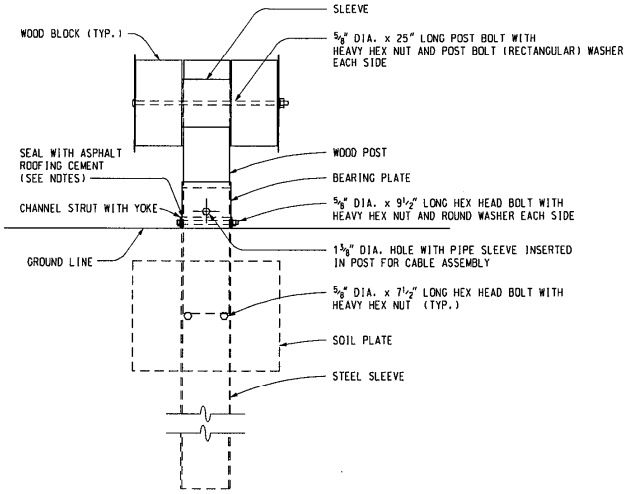
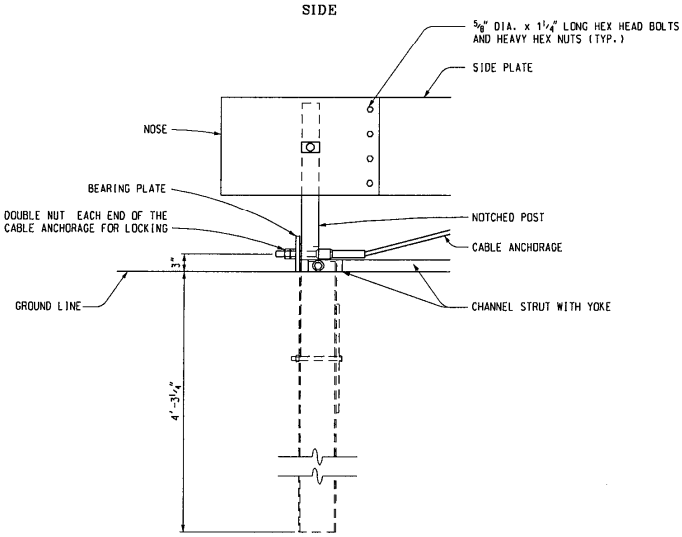


SIDE



ELEVATION

POST 1 DETAILS

(C-A-T)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004	6-11-2004	R-63-B	SHEET
F.H.W.A. APPROVAL	PLAN DATE		3 OF 16

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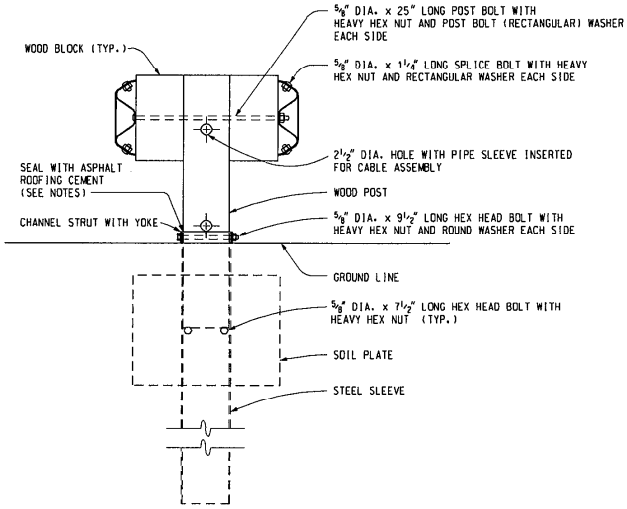
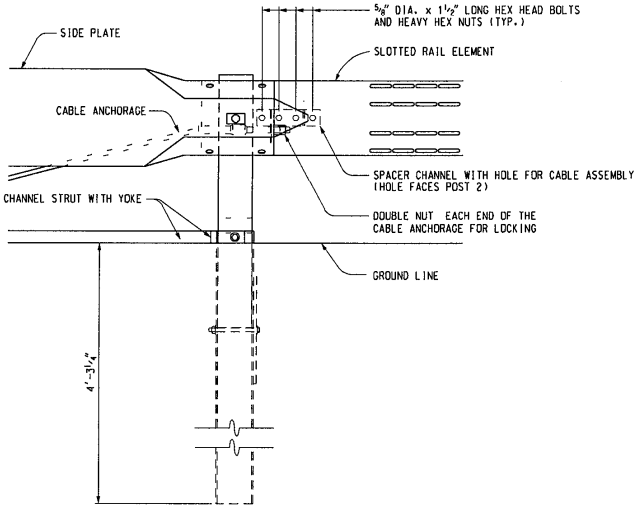


SIDE



ELEVATION

POST 2 DETAILS

(C-A-T)

MICHIGAN DEPARTMENT OF TRANSPORTATION

BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004 F.H.W.A. APPROVAL	6-11-2004 PLAN DATE	R-63-B	SHEET 4 OF 16

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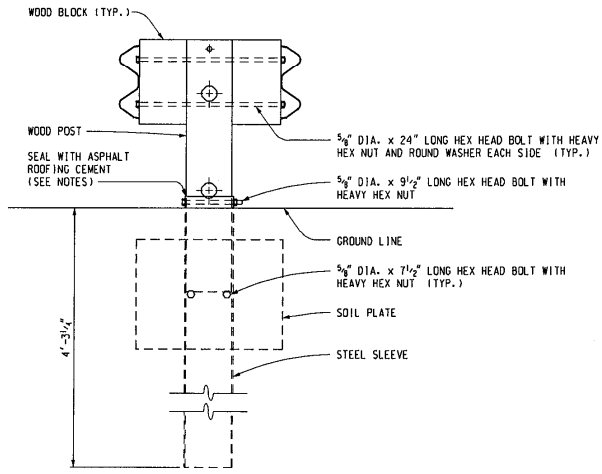
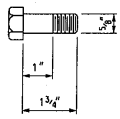
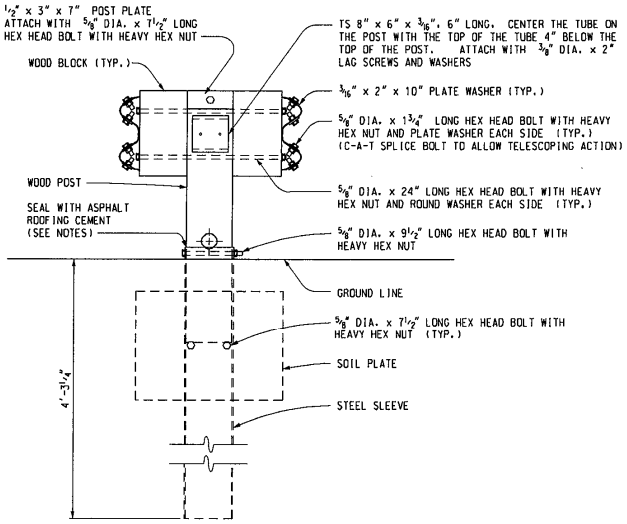


POST 3 AND 5 DETAIL
(C-A-T)



C-A-T SPLICE BOLT
C-A-T SPLICE BOLTS REQUIRED TO ALLOW TELESCOPING ACTION



POST 4 DETAIL
(C-A-T)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004	6-11-2004	R-63-B	SHEET
F.H.W.A. APPROVAL	PLAN DATE		5 OF 16

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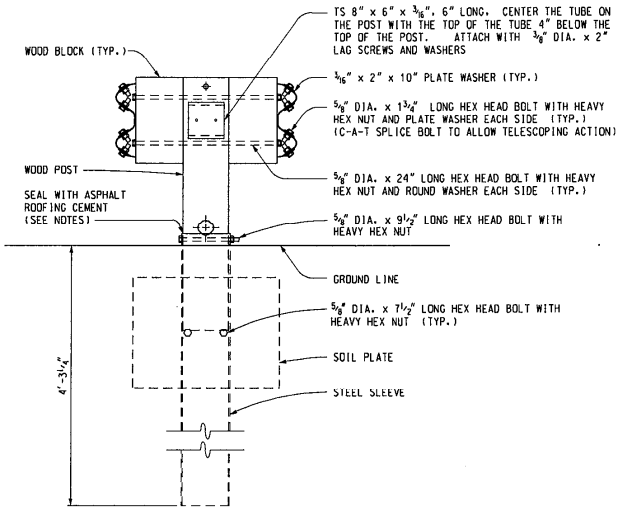
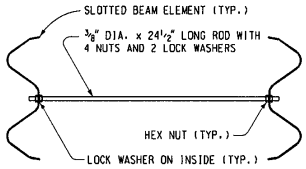


POST 6 DETAIL
(C-A-T)



BUCKLING RESTRAINT ROD DETAIL
(C-A-T)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004 F.H.W.A. APPROVAL	6-11-2004 PLAN DATE	R-63-B	SHEET 6 OF 16

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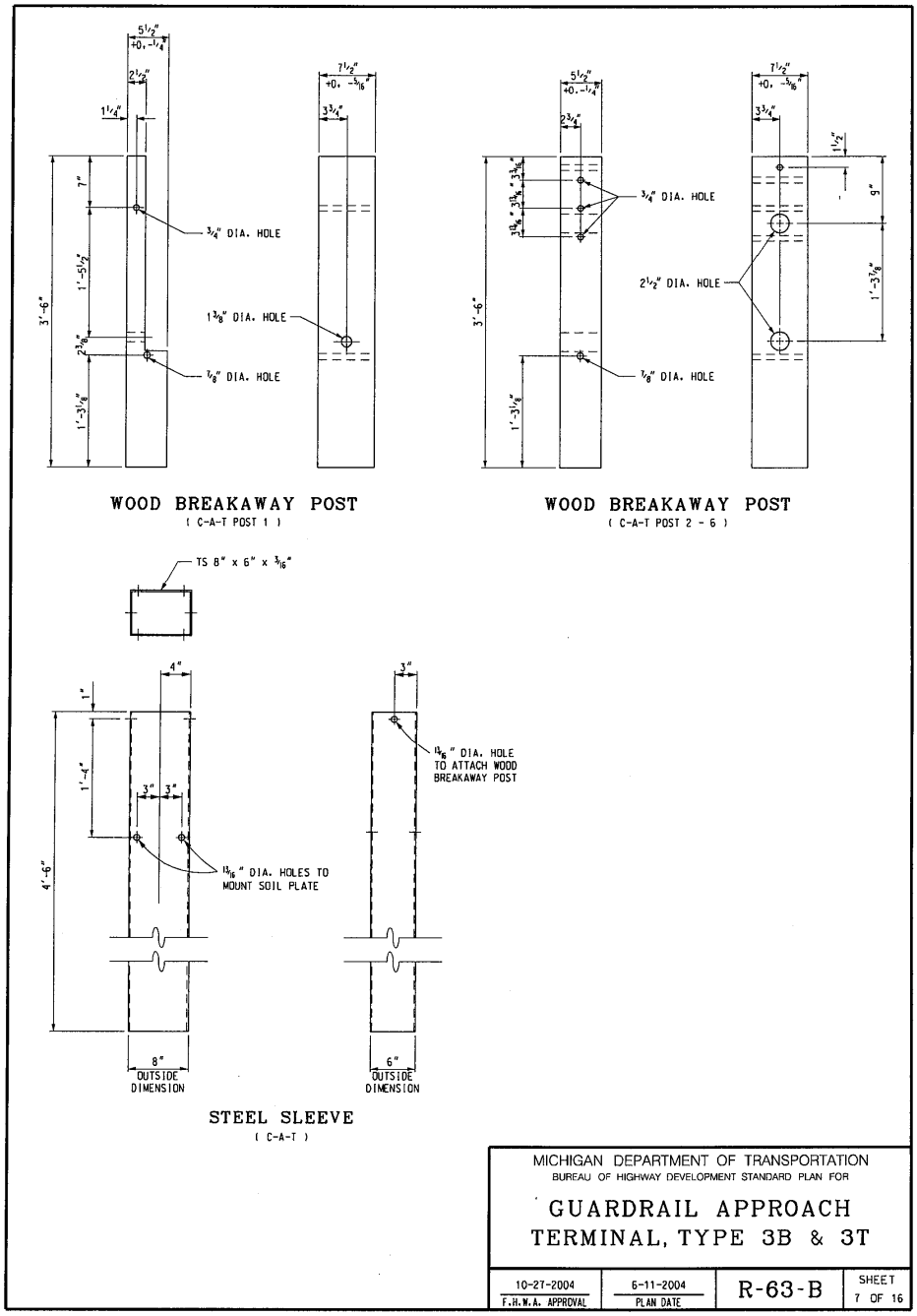

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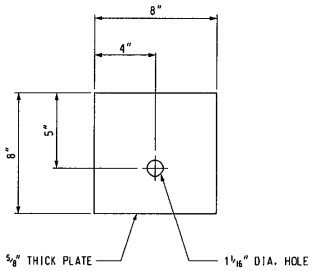
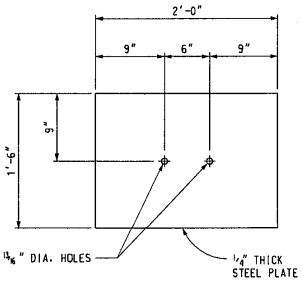
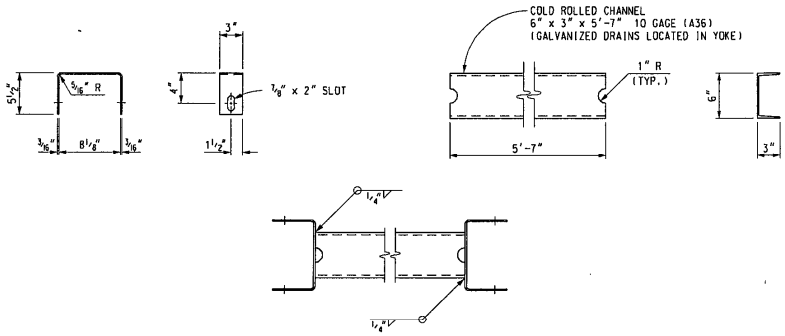


BEARING PLATE
(C-A-T)

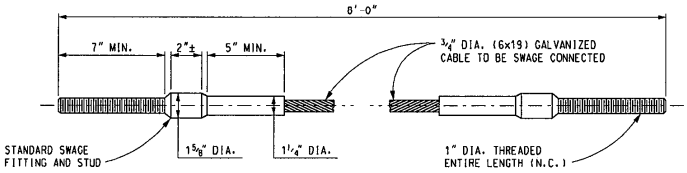


SOIL PLATE
(C-A-T)



ASSEMBLY DETAIL

STRUT DETAILS
(C-A-T)



CABLE ASSEMBLY
(C-A-T)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH
TERMINAL, TYPE 3B & 3T

10-27-2004	6-11-2004	R-63-B	SHEET
F.H.W.A. APPROVAL	PLAN DATE		8 OF 16

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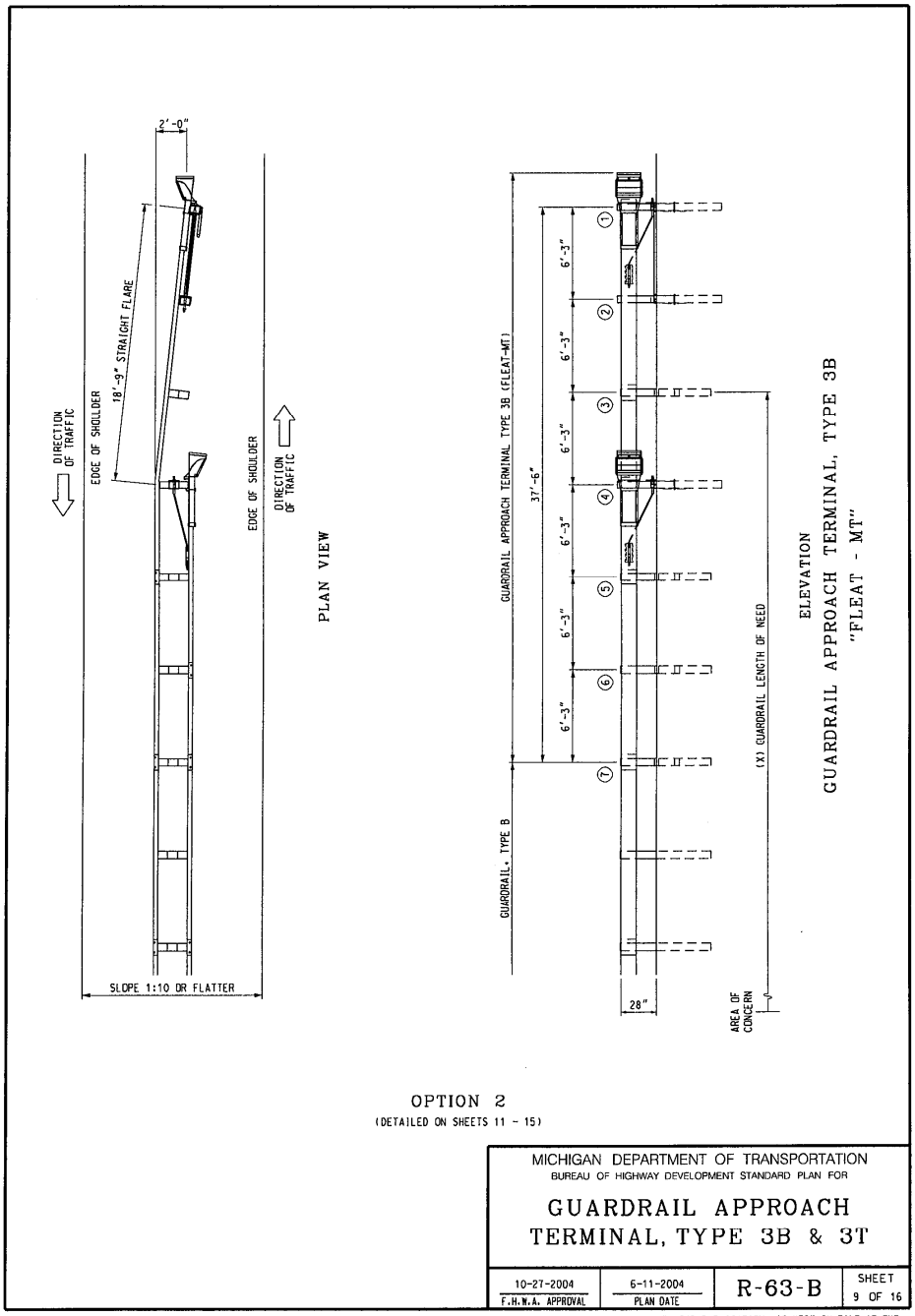

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004 F.H.W.A. APPROVAL	6-11-2004 PLAN DATE	R-63-B	SHEET 9 OF 16

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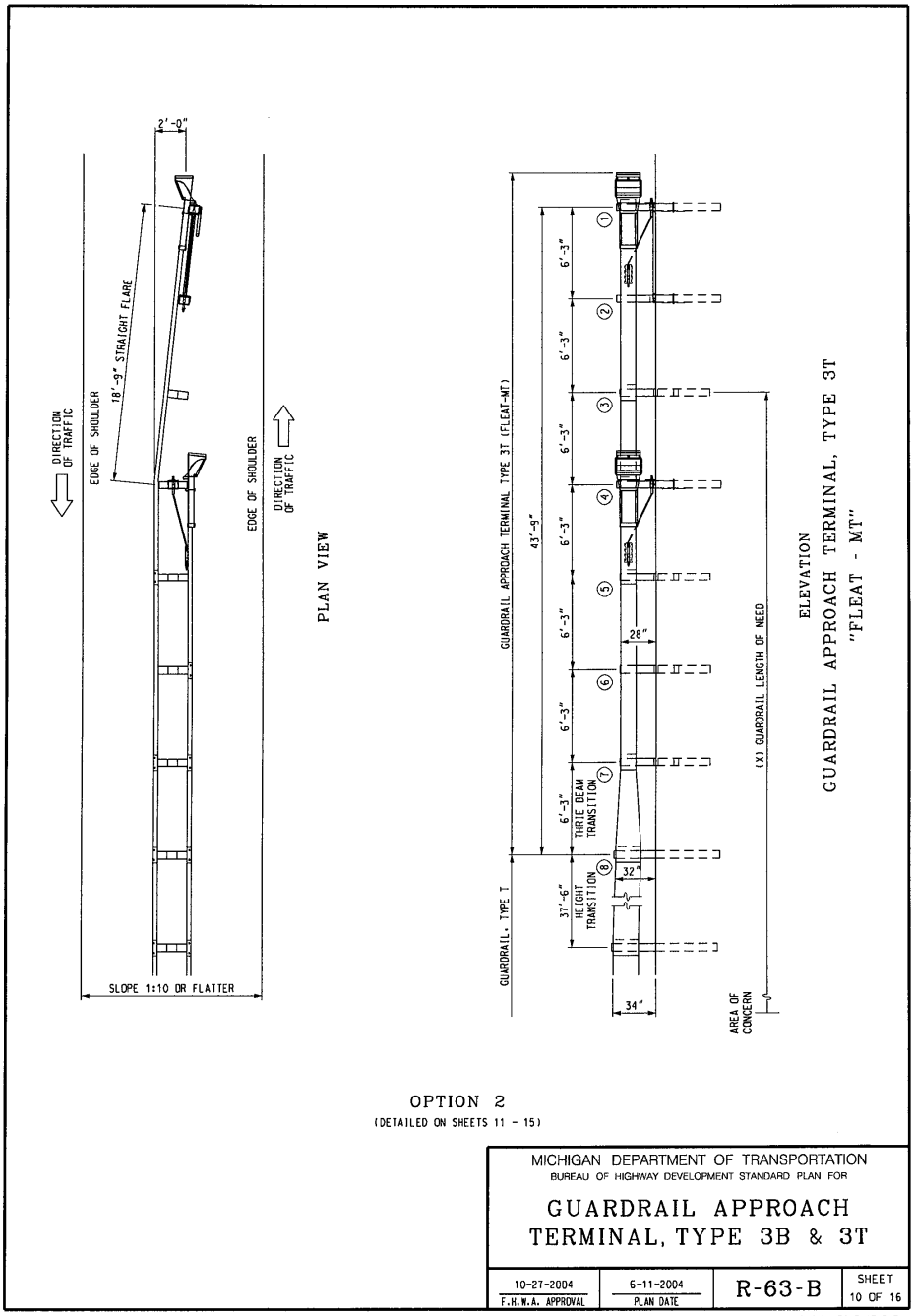

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004 F.H.W.A. APPROVAL	6-11-2004 PLAN DATE	R-63-B	SHEET 10 OF 16

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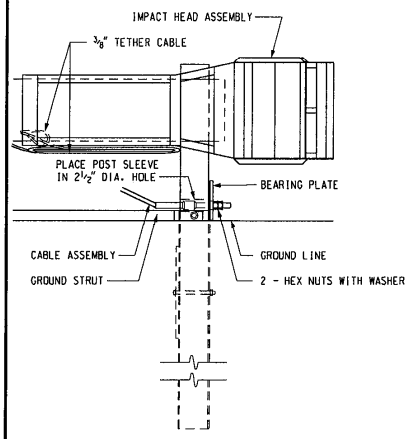
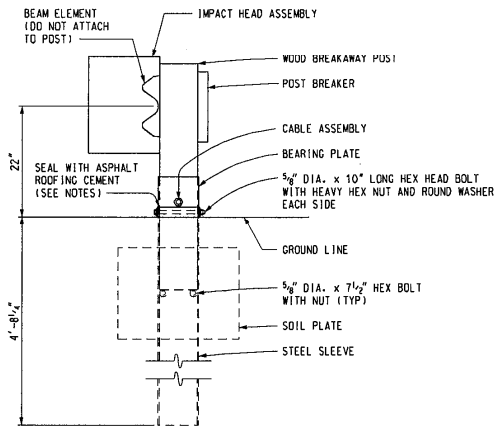


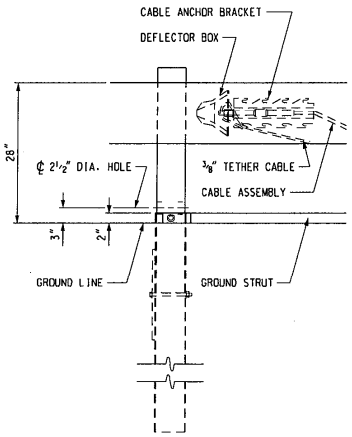
ELEVATION



SIDE

POST 1 DETAIL

(FLEAT-MT)



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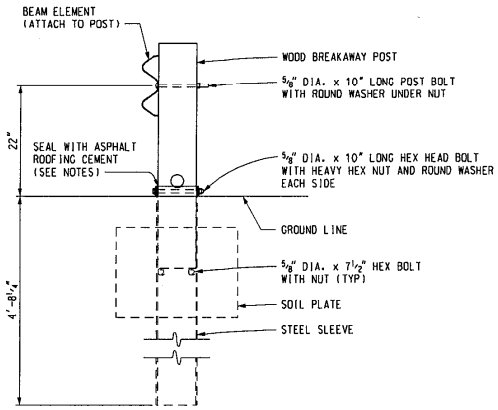

SIDE

POST 2 DETAIL

(FLEAT-MT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004 F.H.W.A. APPROVAL	6-11-2004 PLAN DATE	R-63-B	SHEET 11 OF 16

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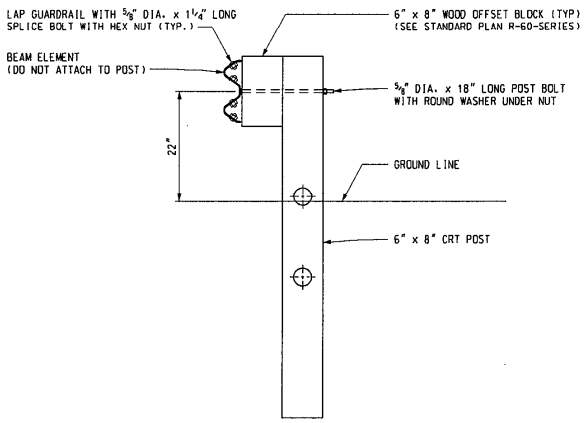
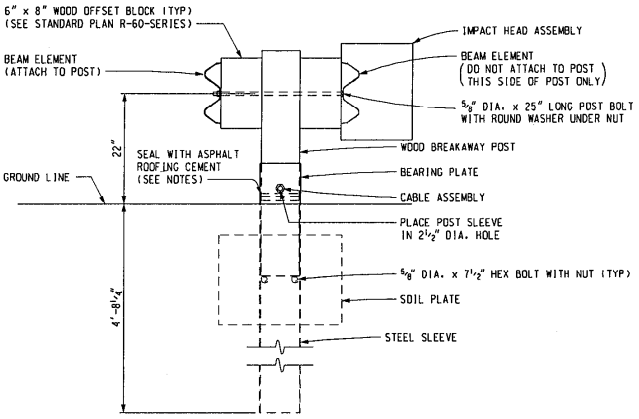


POST 3 DETAIL

(FLEAT-MT)



POST 4 DETAIL

(FLEAT-MT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004 F.H.W.A. APPROVAL	6-11-2004 PLAN DATE	R-63-B	SHEET 12 OF 16

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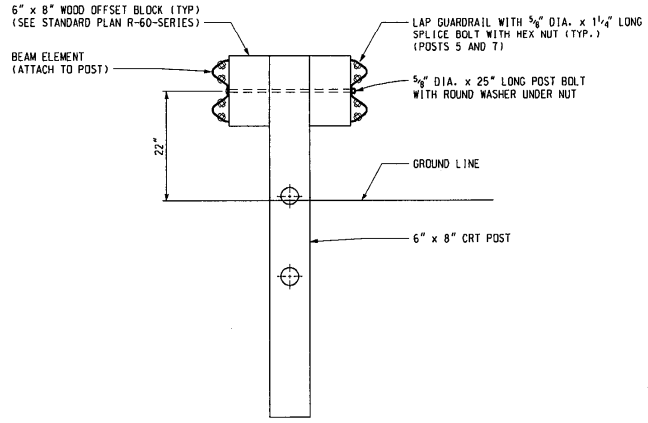
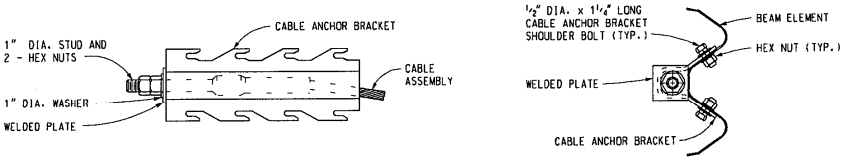


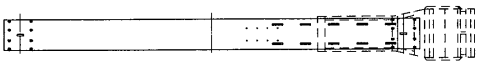
POST 5, 6 AND 7 DETAIL

(FLEAT-MT)
NOTE: POST 8 IS A STANDARD LINE POST



CABLE ANCHOR BRACKET DETAIL

(FLEAT-MT)



W-BEAM GUARDRAIL END SECTION

(USE WITH IMPACT HEAD ASSEMBLY)

NOTE: ALL (FLEAT-MT) ITEMS ILLUSTRATED WITHOUT DIMENSIONS SHALL BE ACCORDING TO THE MANUFACTURERS SPECIFICATION.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

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F.H.W.A. APPROVAL	PLAN DATE		13 OF 16

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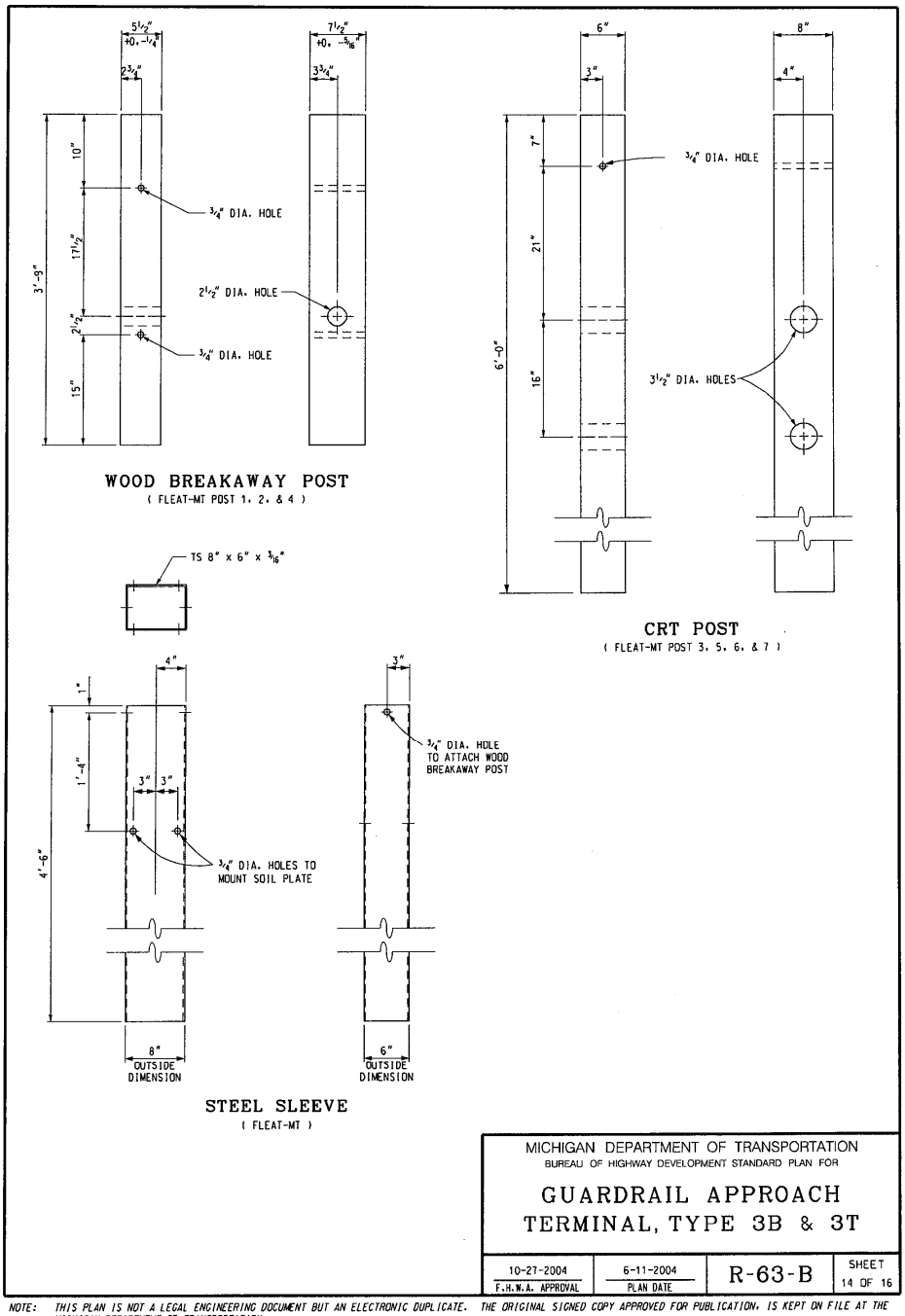

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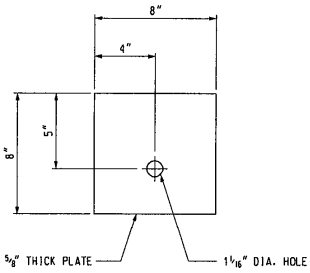
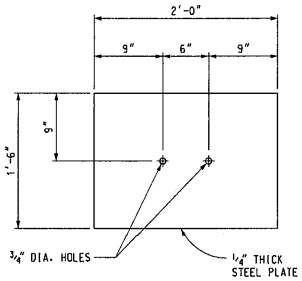
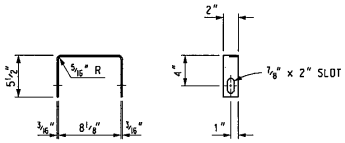
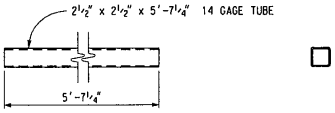


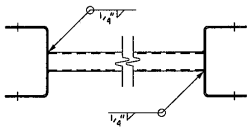
BEARING PLATE
(FLEAT-MT)



SOIL PLATE
(FLEAT-MT)

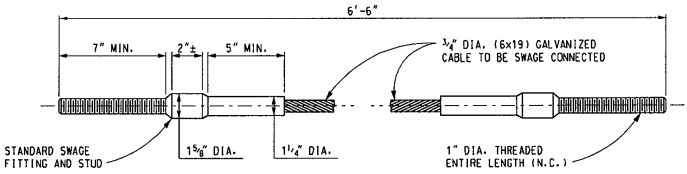






ASSEMBLY DETAIL

STRUT DETAILS
(FLEAT-MT)



CABLE ASSEMBLY
(FLEAT-MT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH
TERMINAL, TYPE 3B & 3T

10-27-2004	6-11-2004	R-63-B	SHEET
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NOTES:

ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, AND HARDWARE (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND TO THE CURRENT STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS STANDARD.

ALL 1:10 SLOPES SHALL BE GRADED TO CLASS A SLOPE TOLERANCES.

FOR DETAILS OF GUARDRAIL PLACEMENT, SEE STANDARD PLAN R-56-SERIES, AND R-59-SERIES.

AFTER THE CABLE ASSEMBLY HAS BEEN TIGHTENED, A SECOND NUT SHALL BE INSTALLED SO THAT THE CABLE WILL NOT LOOSEN.

HARDWARE BETWEEN POST 1 AND POST 6 (OPTION 1) ARE PROPRIETARY ITEMS OF THE C-A-T AND MUST BE PURCHASED FROM AN AUTHORIZED DISTRIBUTER.

HARDWARE BETWEEN POST 1 AND POST 7 (OPTION 2) ARE PROPRIETARY ITEMS OF THE FLEAT-MT AND MUST BE PURCHASED FROM AN AUTHORIZED DISTRIBUTER.

GUARDRAIL REFLECTORS ARE NOT TO BE USED ON THE "C-A-T" OR "FLEAT-MT". PLACE RELECTORS BEGINNING ON STANDARD RUN OF GUARDRAIL.

USE REFLECTIVE SHEETING ACCORDING TO THE FOLLOWING TRAFFIC CONDITIONS: (NOTE: ALTERNATE 3" BLACK AND 3" YELLOW STRIPES ON A 45° ANGLE)

TRAFFIC PASSING ON THE LEFT SIDE

TRAFFIC PASSING ON BOTH SIDES

TRAFFIC PASSING ON THE RIGHT SIDE

ON THE "C-A-T", THE CURVED PORTION OF THE NOSE FACING TRAFFIC SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ON THE "FLEAT-MT", THE PORTION OF THE IMPACT HEAD ASSEMBLIES FACING TRAFFIC SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ASPHALT ROOFING CEMENT SHALL BE USED TO SEAL THE PERIMETER AREA BETWEEN THE STEEL SLEEVE (SOIL TUBE) AND THE WOOD BREAKAWAY POST.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

10-27-2004	6-11-2004	R-63-B	SHEET
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908.12 Steel Beam Guardrail Elements, Hardware, and Steel Sleeves.

A. **Steel Beam Elements and End Sections.** Steel beam sections, backup elements, buffered end sections, terminal end shoes, and special end shoes must meet the requirements for Class A guardrail of AASHTO M 180, except that thrie beam elements used for bridge railing retrofit, and special end shoes for making connections to bridge barrier railings must meet the requirements for Class B guardrail of AASHTO M 180.

All steel beam elements, back-up elements, and end sections must be of the shape specified. All must be hot-dip zinc coated after fabrication according to the requirements for Type II zinc coatings of AASHTO M 180 except that beam elements and corresponding back-up elements for guardrail Type A, B and BD may be hot-dip zinc coated before or after fabrication.

B. **Hardware.** Hot-dip zinc coat all bolts, nuts, washers, and other hardware for guardrail according to AASHTO M 232.

All bolts, nuts, and round washers for guardrail, other than at bridge barrier railings, must conform to ASTM A 307, A 563 (Grade A, with Supplementary Requirements S1 of ASTM A 563), and AASHTO M 293, respectively.

Washers, other than round washers, for guardrail must meet the requirements for circular washers in AASHTO M 293 except that the dimensions must be as shown on the plans.

Bolts and nuts for making splices and connections of beam elements, other than at bridge barrier railings, must meet the configuration requirements of AASHTO M 180 (bolts must be of the Alternate No. 2 configuration).

Bolts, nuts, and washers for connections at bridge barrier railings must conform to AASHTO M 164 Type 1 galvanized high-strength structural bolts with suitable nuts and hardened washers.

Wire rope and fittings for the cable anchorage must conform to AASHTO M 30. Wire rope must be Type II with a Class B coating.

C. **Steel Sleeves, Soil Plates, and Bearing Plates.** Steel for the sleeves and plates for wood guardrail posts must meet the requirements specified for either structural steel plate in ASTM A 36 or hot-rolled steel sheet in ASTM A 1011, Grades 36 or 40.

908.12

Hot-dip zinc coat sleeves and plates according to AASHTO M 111. The weight of the zinc coating on the sleeves must average at least 2.0 ounce per square foot and no individual specimen may have less than 1.7 ounce per square foot. On the plates, the coating weights must average not less than 2.3 ounce per square foot and no individual specimen may have less than 2.0 ounce per square foot.

The steel sleeve must have 1 or 2 full penetration longitudinal welds running the entire length of the sleeve. Meet the steel sleeve inside dimensions shown on the plans within a tolerance, after galvanizing, of -0 and +⅛ inch.

Meet the steel plate dimensions shown on the plans within a tolerance of -0.000 and + 0.250 inch.

908.13 Steel Posts for Guardrail. Furnish W6 by 9 section steel posts of the length called for on the plans, weighing not less than 9.0 pound per foot including zinc coating. Nominal 6 by 4 inch joist sections, weighing not less than 8.5 pound per linear foot, including the zinc coating, will be permitted. Fabricate from ASTM A 36 structural steel.

Hot-dip galvanize posts according to ASTM A 123, providing an average coating weight of not less than 2.0 ounce per square foot of surface area.

908.14 Reflectorized Washers for Guardrail. Fabricate from steel sheet not lighter than 13 gage (0.0934 inch nominal) galvanized according to ASTM A 653, Coating Designation G210. Firmly bond reflective material to the galvanized steel.

The size and shape of the washers must conform to the details shown in the contract documents. Thoroughly degrease steel washers and treat according to the sheeting manufacturer's recommendations prior to application of the sheeting. Use Type III reflective sheeting as specified in subsection 919.03.B.

908.15 Anchor Bolts, Nuts, and Washers.

A. **General.** The supplier or fabricator of all bolts must furnish a Type A certification, including results of yield strength, tensile strength, elongation, reduction of area, and Charpy V-notch tests, with reference to the heat number of the steel, and to furnace lot number if heat treated. Prior to sampling, anchor bolts for cantilever and truss sign supports must have an identification stamped in the end of the hook to identify the specific heat number and in the threaded end cross-