



Highway Guardrail Product & RFQ Guide

W-beam, thrie-beam, posts, blockouts, fasteners, curves, finish, inspection and document control

Document	Value
Document code	QY-HGR-RFQ-01
Revision / date	Rev. 1.0 / 24 Jul 2026
Intended use	Procurement and engineering clarification before project-specific drawings and compliance evidence
Status	Controlled customer reference; project data remains subject to approved submittals

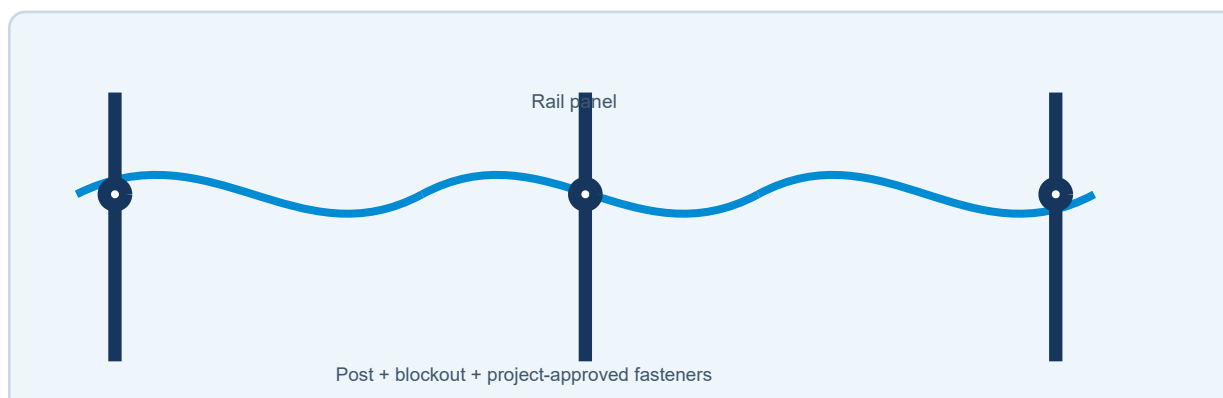
Evidence boundary. Roadside barrier crashworthiness is system-specific. This guide does not claim that a QY component or assembly is MASH-compliant, agency-approved or interchangeable with an accepted system unless the exact tested/approved configuration and evidence are supplied.

Use rule: Never release a quotation, fabrication drawing, installation instruction or compliance statement from this guide without a project-specific technical review.

Engineering clarity • RFQ completeness • traceable evidence



1. System boundary



A roadside barrier is a complete system: rail, splice, post, blockout, fasteners, end treatment, transition, foundation/soil interaction and installation geometry. Changing one item can change system performance.

QY quotation routes

Route	Customer input	QY output
Build to approved drawing	Issued project drawing, bill of materials and governing specification	Component offer with deviation list and document package
Match a named public standard	Standard designation, edition, class/type and agency supplements	Specification review; exact evidence confirmed before claim
Develop an RFQ package	Site, barrier function, geometry, environment and authority	Preliminary schedule for designer/agency review; not an approved safety system

Product family

- W-beam and thrie-beam rail elements; straight or project-defined curved panels.
- Steel posts, blockouts/spacers and post-to-rail hardware.
- Splice bolts, post bolts, nuts, washers and accessory fasteners.
- Transitions and terminal connection components only to approved system drawings.
- Hot-dip galvanized or other specified finishes with inspection records.



2. Rail panel RFQ data

Parameter	Required selection / entry
Profile	W-beam / thrie-beam / other approved profile
Nominal length	Overall and effective coverage length
Base metal	Grade, standard and certified thickness/gauge
Hole pattern	Approved drawing number and revision
End geometry	Standard splice / flared / special transition / custom
Curvature	Inside/outside curve, radius, chord, rise and orientation
Finish	Coating standard, class/grade, local repair method and appearance
Marking	Heat/lot, component ID, date or agency code as required
Quantity / packing	Panels per bundle, separators, lift points and destination

Curve data

For a circular arc, provide any two independent geometry controls plus orientation. A common check is radius $R = C^2/(8M) + M/2$, where C is chord length and M is mid-ordinate rise. The project drawing governs.

Input	Definition	Record
Chord C	Straight-line distance between panel endpoints	_____ mm / in
Rise M	Maximum offset from chord to arc	_____ mm / in
Radius R	Centerline or reference radius — state basis	_____ mm / ft
Orientation	Inside / outside curve; traffic face; top/bottom	_____
Tolerance	Project drawing tolerance	_____



3. Posts, blockouts and foundations

Item	Specify	Do not assume
Steel post	Section, mass/length, grade, length, holes and coating	A visually similar post is structurally equivalent
Blockout	Material, geometry, hole pattern and orientation	Thickness or recycled content without approval
Post spacing	Exact approved system drawing	A universal spacing for all soils and test levels
Embedment	Approved depth, soil class or foundation detail	Field adjustment without designer acceptance
Base-plated post	Plate, anchors, concrete, edge distances and design loads	Anchor capacity from bolt diameter alone

Fastener schedule

- Identify every fastener by location, diameter, length, head geometry, nut/washer, grade and finish.
- Confirm whether threads may occur in shear planes and whether bolt projection limits apply.
- Use the exact assembly sequence and tightening requirements on the approved system drawing.
- ~~Package component kits by installation station where requested; label lot and drawing revision.~~

Terminals, transitions and crash cushions are not generic accessories. Supply only against the exact approved assembly and its installation/inspection instructions.



4. Galvanizing and corrosion control

Control	Required record
Process route	After-fabrication hot dip / metallic-coated input / duplex system / other
Governing standard	Project-specified standard and edition; component-specific applicability checked
Coating acceptance	Thickness/mass, sampling plan, appearance and permitted repair
Drainage / venting	Fabrication features reviewed before galvanizing
Handling	No damaging chains on finished surfaces; dry, ventilated storage
Traceability	Coating batch linked to component and inspection report

Commonly referenced standards include ASTM A123/A123M for fabricated iron/steel products and ASTM A153/A153M for certain hardware. The purchase order must state the applicable current or contractually adopted edition and grade/class.

Finish acceptance checkpoints

- Coating measurement locations and sample size agreed.
- Bare areas, runs, sharp points, damage and repair evaluated against the governing standard.
- Holes, slots, threads and mating surfaces remain fit for assembly.
- Bundle separation and wet-storage-stain prevention defined for shipment.



5. Quality evidence pack

Document	Release content
Approved drawing	Part number, revision, dimensions, tolerances and material/finish notes
Material certificate	Heat/lot, grade, chemistry/mechanical results and traceable quantity
Dimensional report	Critical profile, thickness, length, holes and curvature checks
Coating report	Standard/edition, sample locations, results and instrument identification
Fastener certificate	Grade, size, finish and lot
Packing list	Bundle/kit IDs, counts, gross/net mass and destination marks
Deviation register	Any difference from RFQ/drawing; purchaser disposition before release

Inspection and marking

- Use a traveler or inspection plan that links raw material, forming, punching, coating and final release.
- Keep component identity visible after bundling; do not rely only on outer packaging.
- Photograph special profiles, curves and bundle labels before shipment.
- Retain the project drawing revision used for production.



6. Complete RFQ checklist

Category	Required information
Project authority	Country/state, road authority, governing specification and edition
System evidence	Approved system name/drawing/test level/eligibility or agency reference, if required
Rail panels	Profile, material, thickness, length, holes, ends, curves, quantity
Posts/blockouts	Section, grade, length, holes, spacing and foundation/soil detail
Fasteners	Complete bill of materials and coating
Transitions/terminals	Exact approved drawings; interface points and quantities
Finish	Standard, grade/class, appearance and repair requirements
Inspection	ITP, witness/hold points, certificates and language
Packing	Bundle size, kit sequence, container limits, marks and moisture controls
Commercial	Incoterm, destination, delivery, spare quantity and drawing approval date

RFQ submission: sales@qymetaltech.com | qymetaltech.com/contact/

Reference framework

- AASHTO M180 or another purchaser-specified rail material/product standard, when contractually applicable.
- AASHTO Manual for Assessing Safety Hardware (MASH) and the relevant road authority process for crashworthiness.
- ASTM A123/A123M and ASTM A153/A153M where applicable to the specified galvanizing route.
- Approved agency drawings and project supplements always govern component geometry and installation.