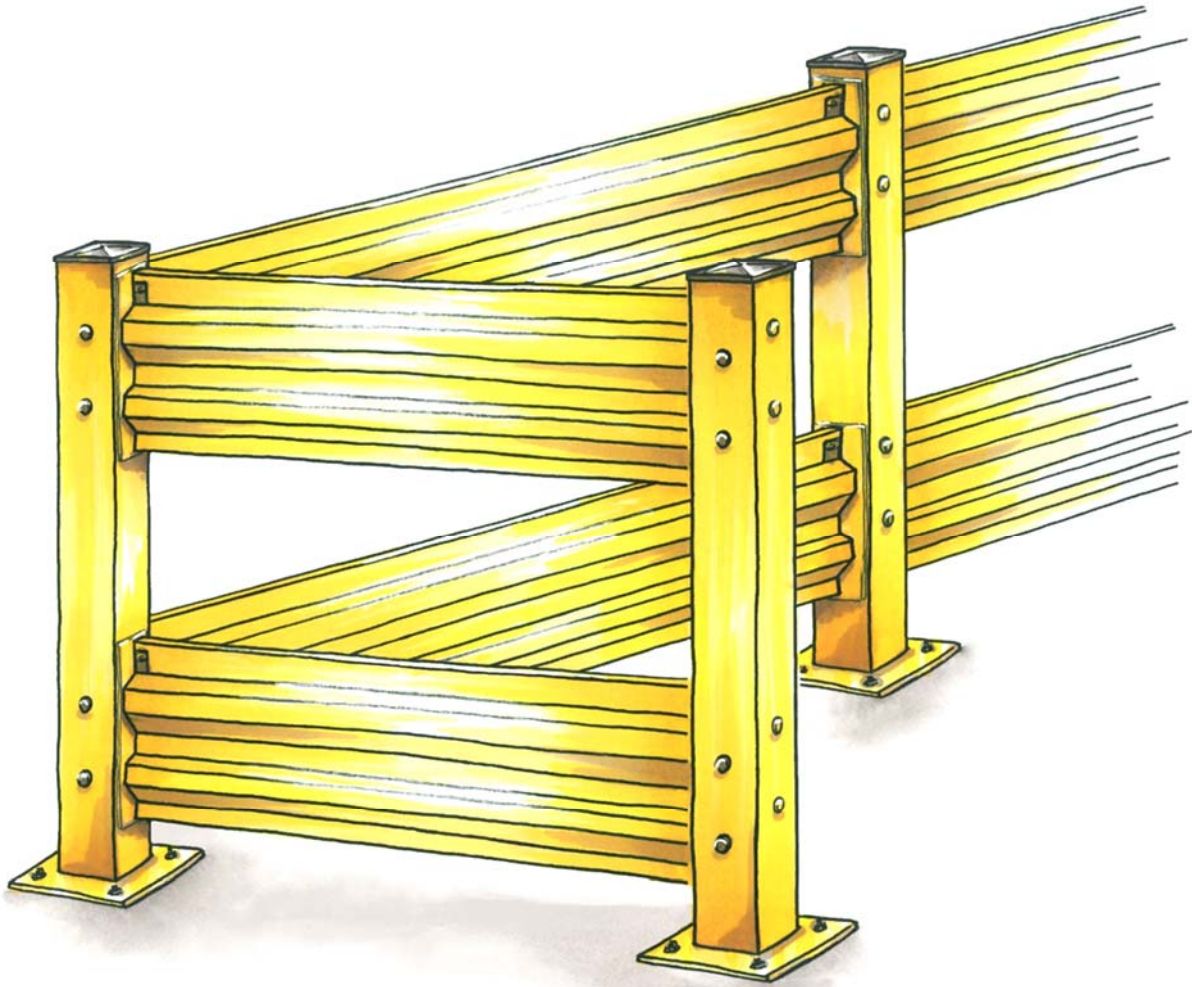


INSTALLATION MANUAL

For the most current release of this manual,
please visit our website at cogan.com

V.2014.2



Product	Guardrail
Sub-product	Heavy duty guardrail barrier

- Easy to install protectors.
- Single or double rail system uses the same type of connection.
- Lift-out rail sections requires specific brackets and spacing.



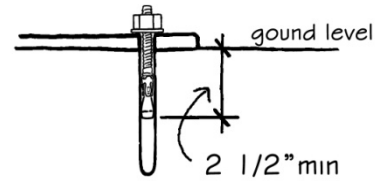
A Tradition of Quality Since 1901

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ANCHOR BOLTS

Cogan shall not supply anchor bolts. The client or owner shall be responsible for adequate anchoring conditions and shall be responsible for the installation of adequate anchor bolts. All base plates are fabricated with $\phi 3/4$ " holes (typically 4 anchor holes per base plate).

As a minimum, Cogan recommends $5/8$ " X $4 1/2$ " anchors with a minimum of $2 1/2$ " embedment.

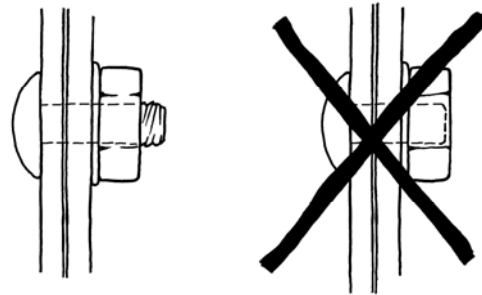


BOLT TIGHTENING

Bolts must be installed in properly aligned holes. Initially, they need only be tightened to the snug tight condition. The snug tight condition is defined as the tightness that exists when all plies in a joint are in firm contact. This may be obtained by the full effort of a man using an ordinary spud wrench.

To ensure that the correct length of bolt has been used, verify that the entire thread of the nut is engaged with the bolt. If bolt does not exceed past the face of the nut, recheck installation details for type of hardware required.

Subsequently, the bolts should be tightened, but not exceed, an additional $1/3$ turn past the snug tight condition. This ensures correct bolt tensioning.



QUALITY ASSURANCE

1. System manufacturer:
 - Established firm with a minimum of 10 (ten) years of experience in the design and fabrication of guardrail systems.
2. System design:
 - Under the direct supervision of an engineer experienced in the design of guardrails in accordance with NBC, AISC and CSA standards. (listed in § 13145.3)
3. Installation contractor shall have adequate experience in installing Cogan's Guardrail system.

MATERIALS

Finish shall be security yellow, applied with an oven cured, powder coating process.

TOOLS REQUIRED FOR INSTALLATION

- Measuring tape
- Chalk line
- 2 FT Level (preferably magnetic)
- Hammer drill with $5/8$ " drill bit
- $15/16$ " and $3/4$ " Wrench or sockets (anchor bolts)
- Miscellaneous extensions

SAMPLE APPROVAL DRAWING

<p>DRAWING HISTORY</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>REV</th> <th>ACTIVITY</th> <th>AUTHOR</th> <th>VERIFIED</th> </tr> </thead> <tbody> <tr> <td>18-03-14</td> <td>0</td> <td>Approval drawing created.</td> <td>SJ</td> <td></td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	DATE	REV	ACTIVITY	AUTHOR	VERIFIED	18-03-14	0	Approval drawing created.	SJ												<p>GUARD RAIL SPECIFICATIONS:</p> <ul style="list-style-type: none"> - ALL BASEPLATES 10"x10"x$\frac{1}{2}$" - GUARD RAIL COLUMN ARE MADE OF HSS 5"x5" ASTM 500 GRADE C. - GUARD RAILS ARE 12" HIGH, MADE WITH 12 GA CORRUGATED STEEL. <p>DISCLAIMER:</p> <ul style="list-style-type: none"> - COGAN TEST CONDITIONS DEMONSTRATE THAT WITH PROPER INSTALLATION, GUARD RAILS CAN WITHSTAND A 10,000 LB. LOAD FROM BREAKING THROUGH AT FOUR (4) MPH. - INSTALLING COGAN'S GUARD RAIL SYSTEM AT A MINIMUM 12 INCH DISTANCE, WILL HELP ENSURE THE SAFETY OF YOUR PROTECTED AREA DUE TO RAIL DEFORMATION CAUSED BY COLLISION - BASED ON 4000 PSI CONCRETE, COGAN RECOMMENDS ANCHORS 858" x 4-1/2" (WEDGE TYPE). <p>FIELD MEASUREMENTS:</p> <p>ALL FIELD MEASUREMENTS MUST BE VERIFIED AND GIVEN TO COGAN, IN OPENING SIZE WITH NO REDUCTIONS. COGAN WILL REDUCE ALL OPENINGS ACCORDING TO THEIR NEED FOR DOOR AND PANEL CLEARANCE REQUIREMENTS.</p> <p>LEGEND:</p> <ul style="list-style-type: none"> ARL- ACTUAL RAIL LENGTH C/C- CENTER TO CENTER O.D.- OUTSIDE DIMENSION - THE COMPONENTS ARE COLORED WITH ONE COAT OF COGAN POWDER ***** PAINT. 		<p>IMPORTANT NOTE</p> <p>The client and/or owner shall be responsible for all quantities and dimensions including the verification of, and coordination with field conditions. The client and/or owner shall verify all critical dimensions and conditions of existing construction that relate to this guardrail project prior to manufacturing. Cogan must be notified in writing of any elements found to be inconsistent or not compatible with the details indicated by these approval drawings.</p> <p>The client and/or owner must submit signed (approved) drawings prior to the start of the guardrail production.</p> <p>The client and/or owner shall be responsible for the building classification on all construction and warrant that all construction shall be governed by the latest edition of the state building code (including any revisions or addendums) and/or with any other applicable code or requirements of all authorities having jurisdiction.</p> <p>Cogan reserves the right to adjust any component after approval stage to meet the required needs as final calculations will be executed before the project enters production.</p> <p>For installation instruction assistance, please call Cogan: 1-800-597-2642</p> <p>Verify all dimensions and details carefully. Check the appropriate box. Return a signed and dated copy to Cogan.</p> <p>NOTE: Ship dates are set only after receipt of final approval.</p> <p>By approving these drawings, the client and/or owner is accepting that these designs may be or are an alternative to the specifications and/or designs previously provided to Cogan.</p> <p>BY SIGNING THIS DRAWING / ACKNOWLEDGE THAT I HAVE READ THE CONSUMER INFORMATION SHEET, AND THAT I AGREE WITH ITS CONTENT.</p> <p>The dimensions, details and design shown are:</p> <p><input type="checkbox"/> APPROVED (No changes)</p> <p><input type="checkbox"/> APPROVED WITH MINOR CHANGES</p> <p><input type="checkbox"/> REVISE & RE-SUBMIT</p> <p><input type="checkbox"/> NOT APPROVED</p> <p>NAME: _____</p> <p>SIGNATURE: _____</p> <p>DATE: _____</p>
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DATE	REV	ACTIVITY	AUTHOR	VERIFIED										
12-20-14	0	Approval drawings created.	SJ											

QTY: 2

QTY: 1

APPROVAL DRAWING

NAME: _____
SIGNATURE: _____
DATE: _____

READY, SET, INSTALL !



Make sure the installation site is cleaned of all debris to ensure an adequate access for the installer. The client or owner shall advise the installation company of any embedded floor obstacles that may interfere with the floor anchors.



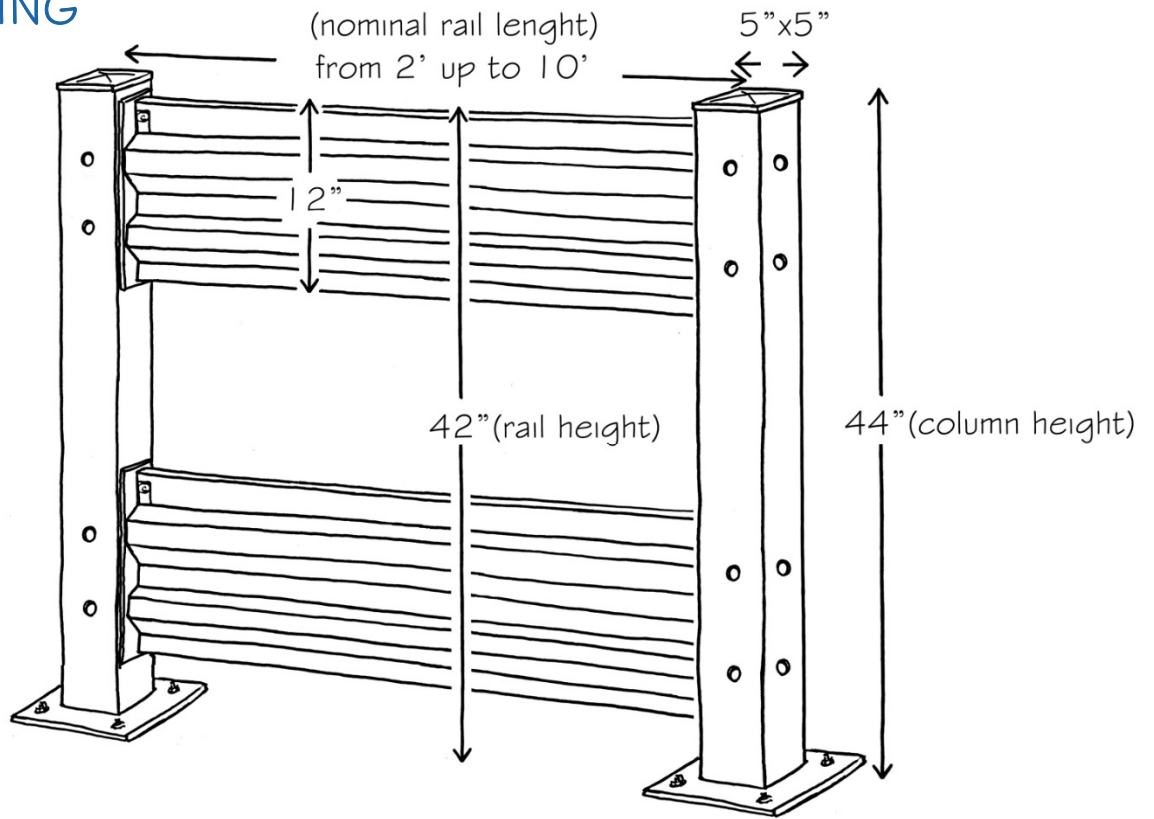
Carefully inspect all the installation site. The guardrail contractor's technician shall inspect the job site prior to the preparation of approval drawings.



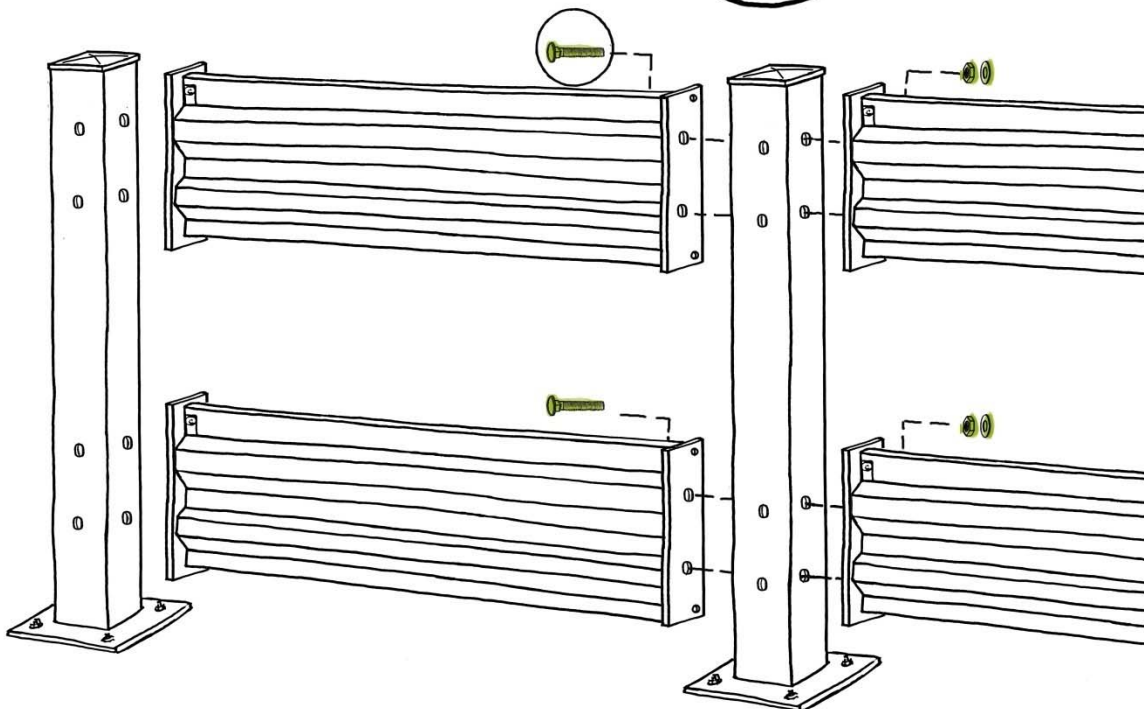
Review carefully all your installation drawings. Installation and assembly of guardrails and accessories shall be in accordance with the specification and instructions contained in this manual and installation drawings. Any Cogan product requiring modification during installation (on site) should be approved by a Cogan product engineer.



ASSEMBLING



REGULAR SECTION

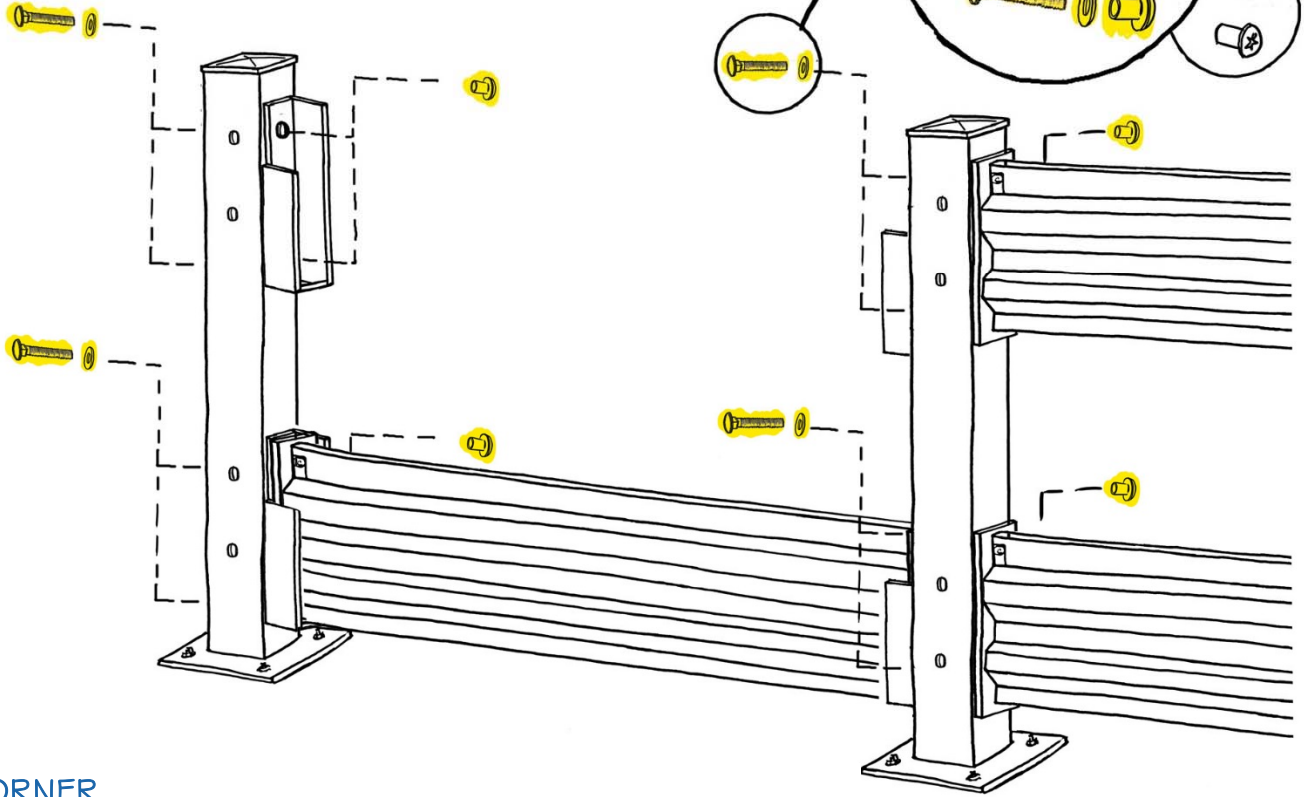


LIFT-OUT SECTION

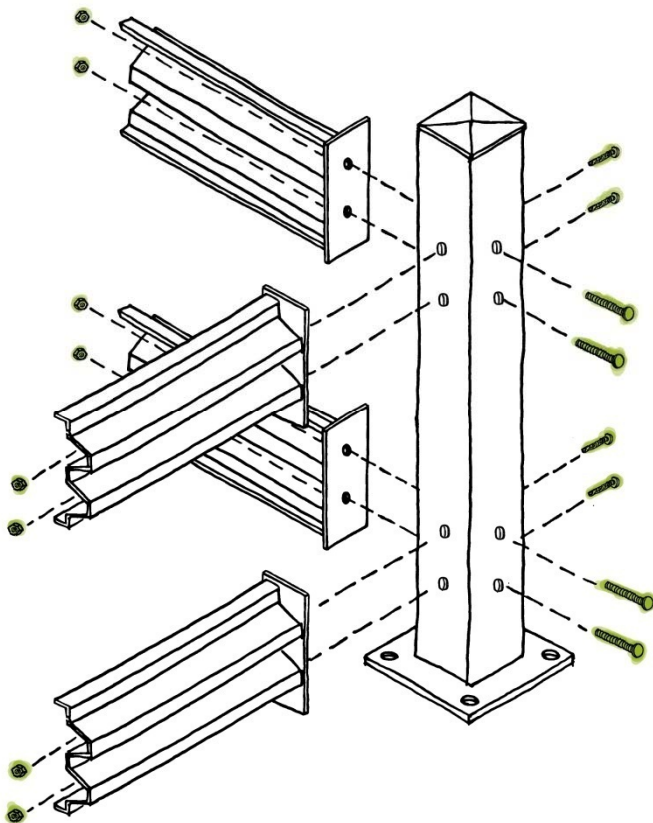


Add 1" to nominal distance in between columns when lift-out section

$\varnothing 5/16$ " x 5 1/2"
carriage bolt with
washer + "T" nut
head tork socket



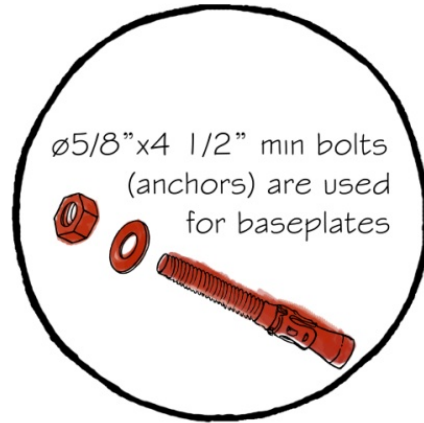
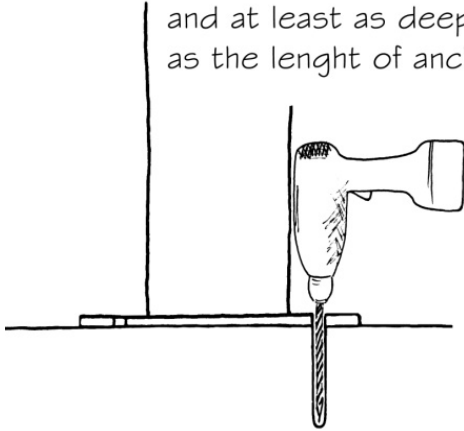
CORNER



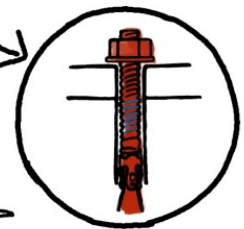
$\varnothing 1/2$ " x 7"
carriage bolt

ANCHORING

Hammer drill a hole
same nominal diameter
and at least as deep
as the length of anchors



Drive the hilti bolt in the hole
so that at least **6 threads**
are below the top surface of fixture.
Then tighten to the recommended
torque value to achieve proper
anchor setting



Clean hole with
blow out bulb

