

SECTION 05 52 13

PIPE AND TUBE RAILINGS

PART 1 – GENERAL

1.1 PURPOSE

- A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 LESSONS LEARNED AND DESIGN CONSIDERATIONS

- A. **Paint all cuts and welds to prevent rusting.**

1.3 WORK INCLUDED

- A. Wall mounted handrails.
- B. Stair railings and guardrails.

1.4 RELATED WORK

- A. Section 05 51 00 – Metal Stairs: Handrails other than those specified in this section.
- B. Section 09 90 00 – Painting and Coating: Paint finish.

1.5 REFERENCE STANDARDS

- A. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; current edition.
- B. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; current edition.
- C. ASTM E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings; current edition.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Handrails and Railings:
 - 1. C. R. Laurence Co., Inc: www.crlaurence.com.
 - 2. The Wagner Companies: www.wagnercompanies.com.
 - 3. Substitutions: See Division 01.

2.2 RAILINGS - GENERAL REQUIREMENTS

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of ASTM E985 and applicable local code.
- B. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 75 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E 935.
- C. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E 935.
- D. Allow for expansion and contraction of members and building movement without damage to connections or members.
- E. Dimensions: See drawings for configurations and heights.
- F. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
- G. Provide welding fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

GUIDE SPECIFICATIONS FOR DESIGN AND CONSTRUCTION DOCUMENTS

- H. Finish: Galvanized after fabrication, except sheet components to be galvanized before fabrication.
- I. Finish:
 - 1. Interior: Shop or factory prime painted.
 - 2. Exterior: Re-coatable epoxy primer.
- J. Under Side of Stair: Exposed to view, to be finished same as specified for other exposed to view surfaces.

2.3 STEEL RAILING SYSTEM

- A. Steel Tube: ASTM A 500, Grade B cold-formed structural tubing.
- B. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.
- C. Exposed Fasteners: No exposed bolts or screws.

2.4 FABRICATION

- A. Accurately form components to suit specific project conditions and for proper connection to building structure.
- B. Fit and shop assemble components in largest practical sizes for delivery to site.
- C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.
- D. Welded Joints:
 - 1. Exterior Components: Continuously seal joined pieces by continuous welds. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
 - 2. Interior Components: Continuously seal joined pieces by continuous welds.
 - 3. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply items required to be cast into concrete or embedded in masonry with setting templates, for installation as work of other sections.

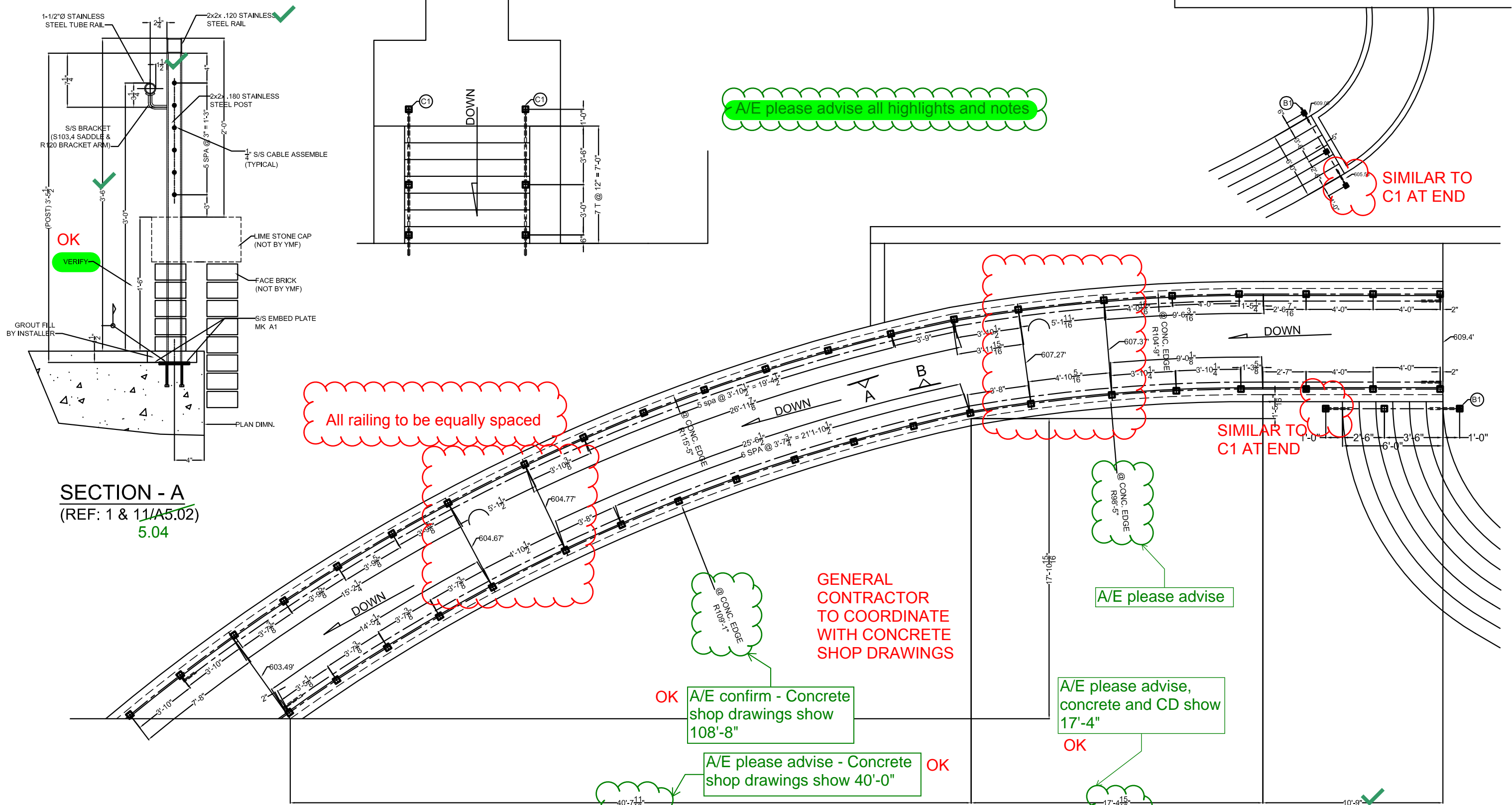
3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- C. Anchor railings securely to structure.

3.3 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION



SECTION - A
(REF: 1 & 11/A5.02)
5.04

MATERIAL NOTE:
 1-1/2"Ø x .120 STAINLESS STEEL TUBE - TYPE 304
 2x2x.120 STAINLESS STEEL TUBE - TYPE 304
 2x2x.180 STAINLESS STEEL TUBE - TYPE 304
 1/4 x 4 STAINLESS STEEL BAR - TYPE 304
 1/4" STAINLESS STEEL CABLE ASSEMBLY (SEE DETAIL)

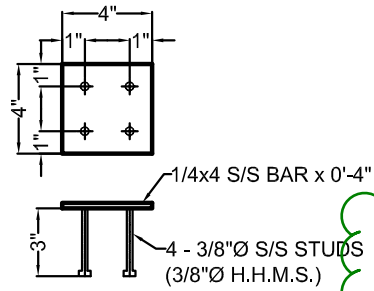
ERECTION PLAN - STAINLESS STEEL HANDRAIL
(REF: C.4, A1.03, 1/A5.01, 14, & 17/A5.02)

RESUBMIT FOR APPROVAL ONLY

ALL WELDED CONNECTION U.N.O.				INSTALLATION BY YMF							
FINISH:				PRINT RECORD		REVISIONS					
S/S #4 SATIN (120 GRIT)				APPR.	REV.	FIELD	SHOP	DATE	1	PER REV DWG	
									2		
									3		
									4		
									5		
				PLOT SCALE: 1" = 1'							
DRAWN BY: R				DATE: 02-11-16				DETAILS OF STAINLESS STEEL HANDRAILS			
CHECKED BY:				DATE:				PROJECT: UTA - LEADERSHIP AND CAREER CENTER			
REVISED: R				DATE: 06-02-16				LOCATION: ARLINGTON, TX			
APPROVED:				DATE:				ARCHITECT: LBM ARCHITECTS			
								GEN. CONTR. X			
								CUSTOMER: VAUGHN CONSTRUCTION			
								CUST. CONTRACT X			
								CUST. PO: 234201-0007			
								YMF-CONTRACT 7615			
								SHT. NO. E1 OF ONE			

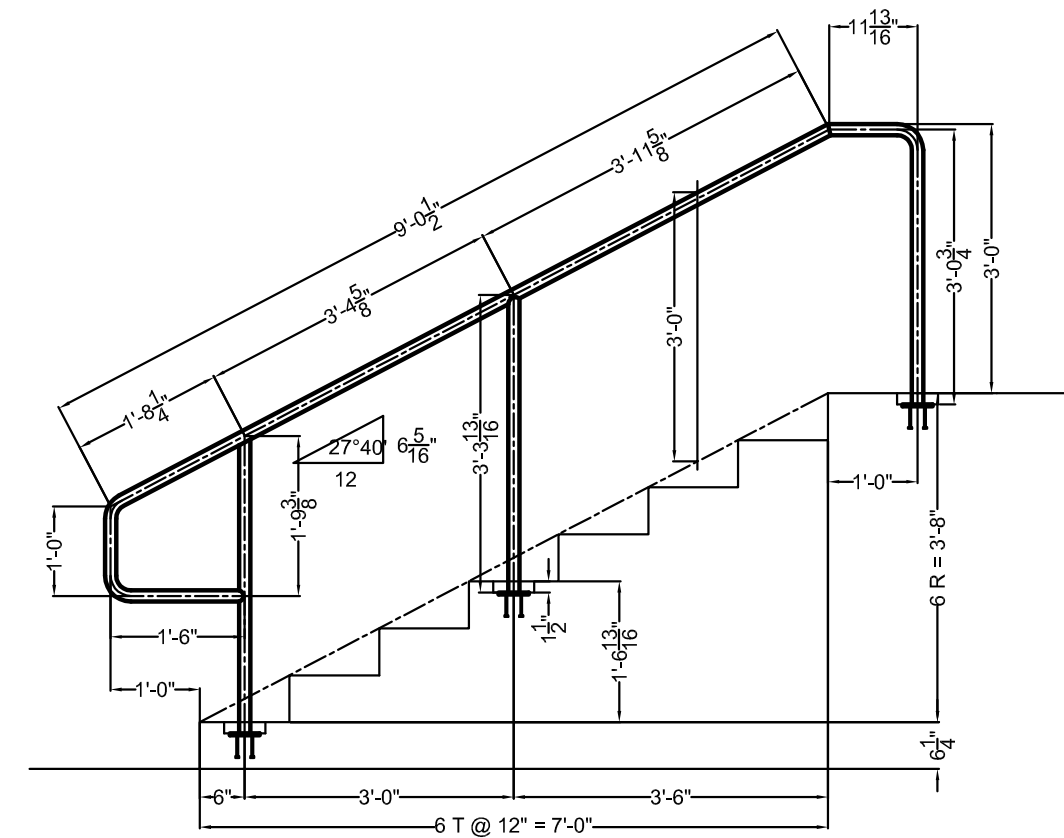
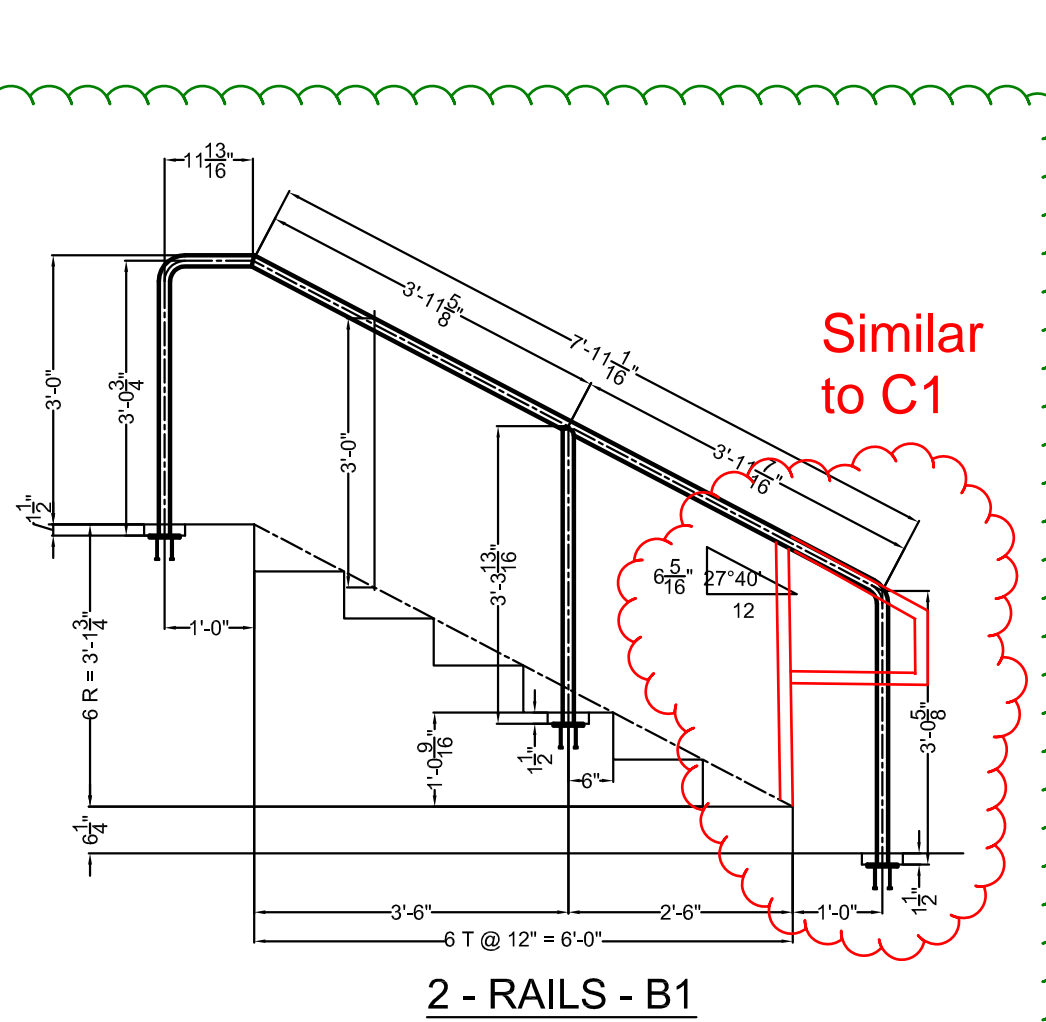
YORK METAL FABRICATORS INC.
 P.O. BOX 18149 (27 NE 26 ST)
 OKLAHOMA CITY, OK 73154
 PHONE (405) 528-7495, FAX (405) 528-7426
 1-800-255-4703
 WEB SITE: www.yorkmetal.com

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 LOCATION: ARLINGTON, TX
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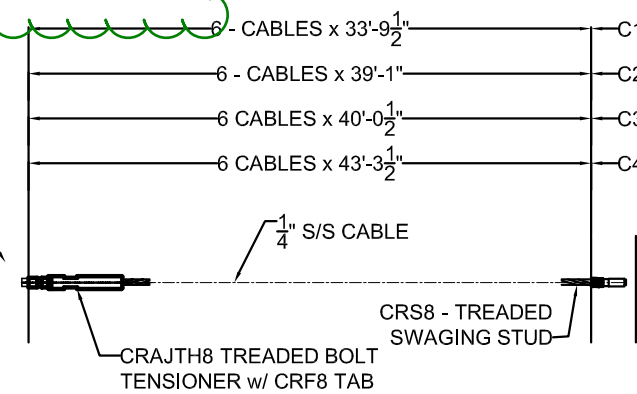
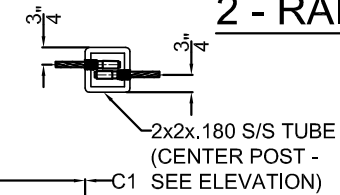


54 - EMBED PLATES - A1

A/E please advise if these are still in the project



2 - RAILS - C1



24 - CABLE ASSEMBLIES

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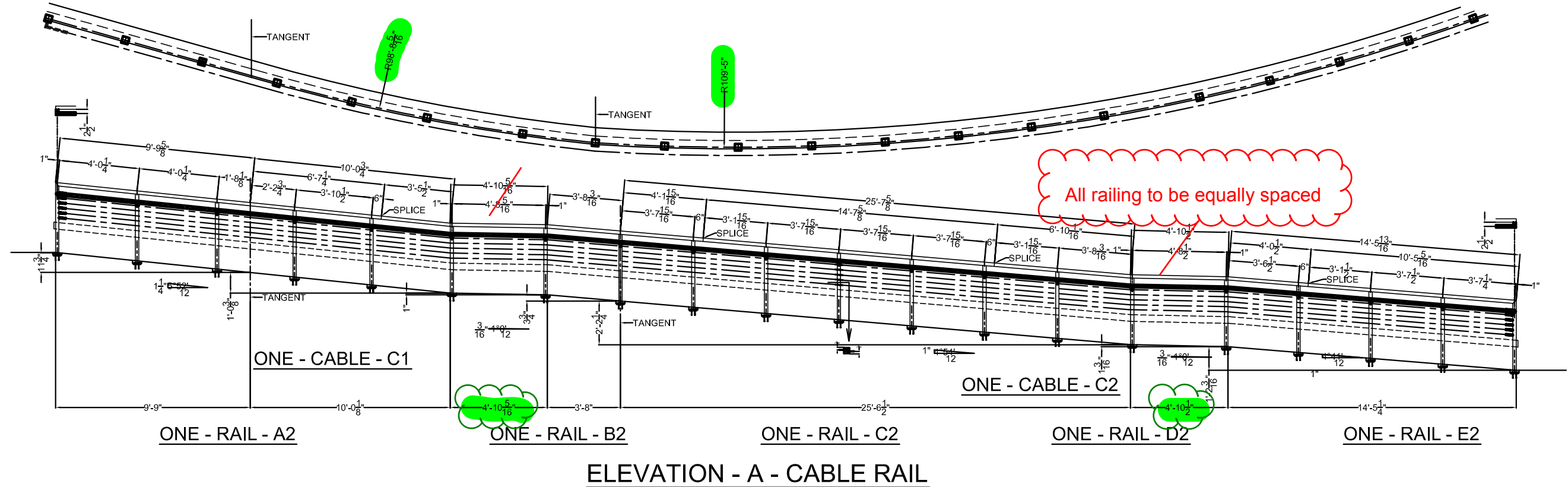
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SHT. NO. ONE		OF 3	

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 GEN. CONTR. X
 CUSTOMER VAUGHN CONSTRUCTION
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All railing to be equally spaced

ELEVATION - A - CABLE RAIL

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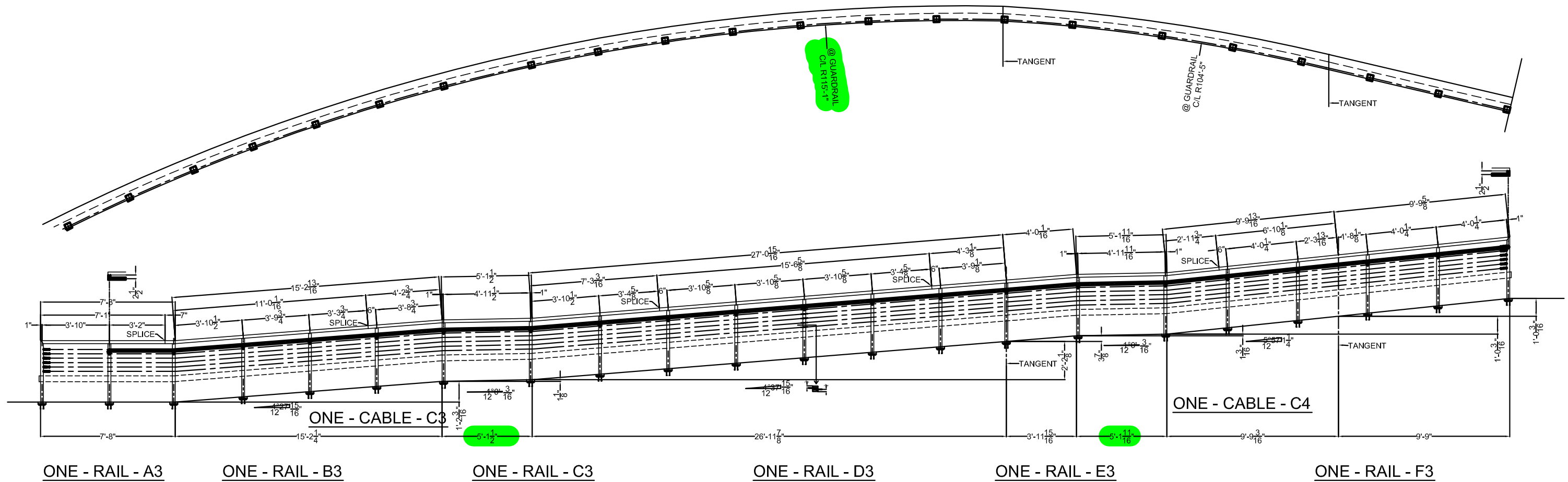
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		REVISED: R DATE: 06-02-16	
		APPROVED: DATE:	
		YMF-CONTRACT 7615 SHT. NO. 2 OF 3	

DETAILS OF STAINLESS STEEL CABLE HANDRAILS
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 GEN. CONTR. X
 CUSTOMER VAUGHN CONSTRUCTION
 CUST. CONTRACT X CUST. PO 234201-0007



ELEVATION - B - CABLE RAIL

**RESUBMIT
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