

A Beginner's Guide to Structural Engineering Miscellaneous Steel Details

General Notes:

1. All member and connection design is to be in accordance with latest version of the American Institute of Steel Construction (AISC) Specification for Structural Steel Buildings and the AISC Specification for Structural Joints using ASTM A325 or A490 bolts as found in the AISC Steel Construction Manual (SCM).
2. All steel is the preferred type for each shape as indicated in the Steel Construction Manual unless otherwise noted or specified in problem statements.
3. All bolts are $\frac{3}{4}$ " dia. A325-N in standard holes unless otherwise noted or specified in problem statements. Faying surfaces are Class A (unpainted clean mill scale). Prevention of slip is a serviceability limit state.
4. The drawings presented here are schematic in nature. Actual member and bolt types and sizes and connection configurations are subject to change during problem completion.
5. These drawings are intended for use in teaching structural steel design and are not intended for actual construction.

Copyright 2007 T. Bartlett Quimby

This document is the property of T. Bartlett Quimby. The copyright holder gives permission for the use of this document for legitimate educational purposes as long as appropriate reference is given to the copyright holder. No part of this document may be used for commercial purposes of any kind except by the copyright holder.

Sheet Index:

- | | |
|----|-------------------------|
| S1 | Splice Connections |
| S2 | Brace Connections |
| S3 | Beam-Column Connections |
| S4 | Beam-Beam Connections |
| S5 | Miscellaneous Details |
| S6 | Composite Beams |

COVER SHEET

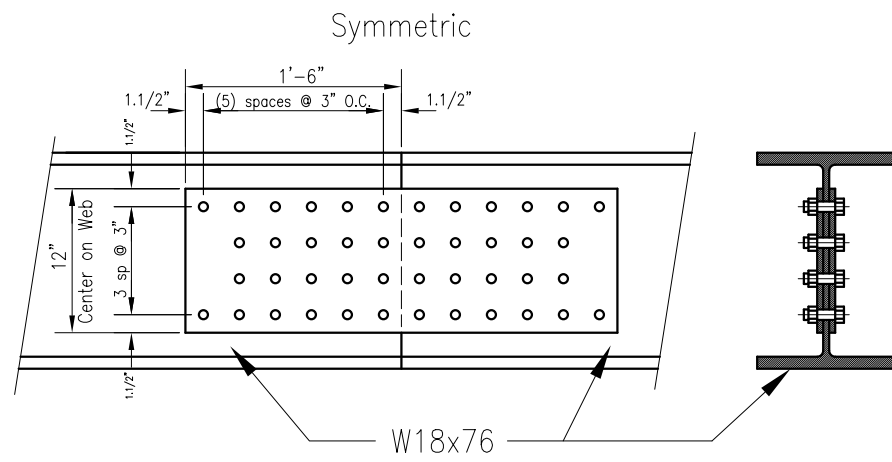
Project No.: MISCDET_STL
Sheet No.: COV of 6

Revisions:
0. 8/23/07

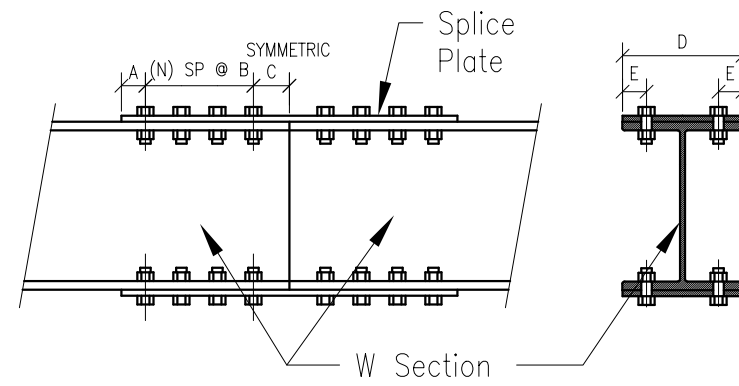
By: TBQ
Date: 2007
Checked: _____
Date: _____
Scale: -----

A Beginner's Guide to
Structural Engineering

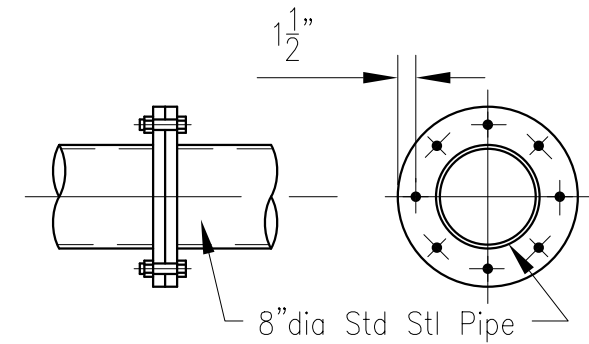
Quimby &
Associates
Consulting Engineers
QandA@alaska.com



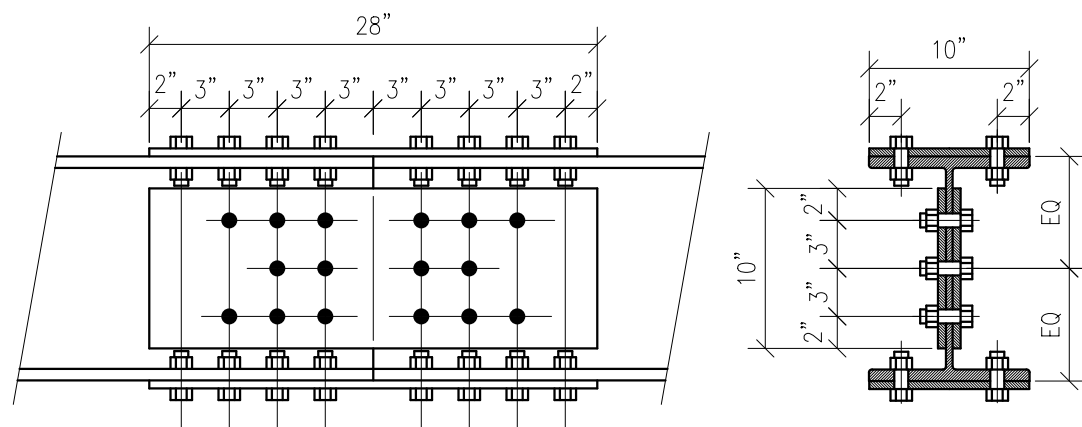
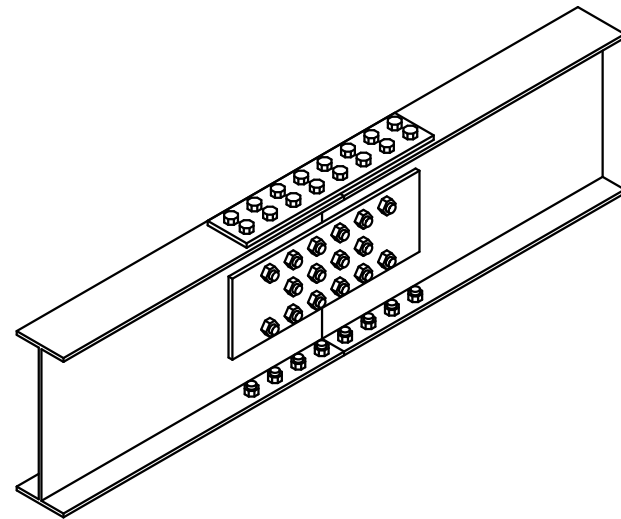
1 SPLICE CONNECTION
BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"



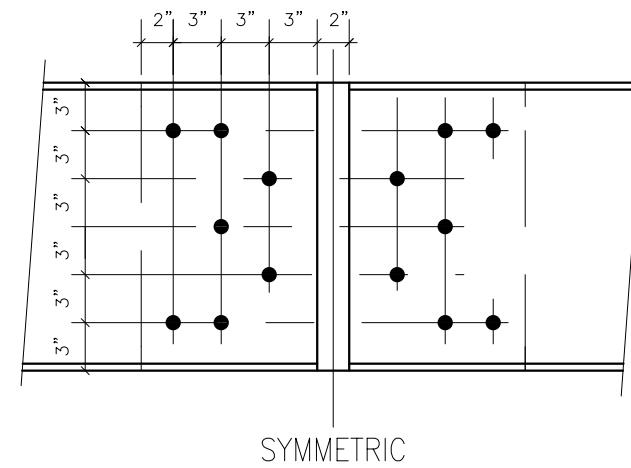
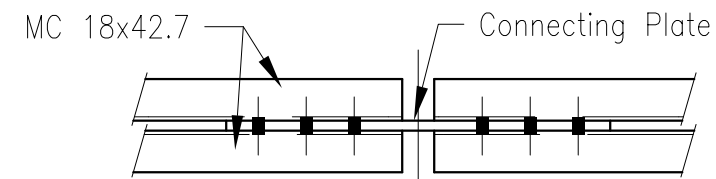
2 SPLICE CONNECTION
BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"



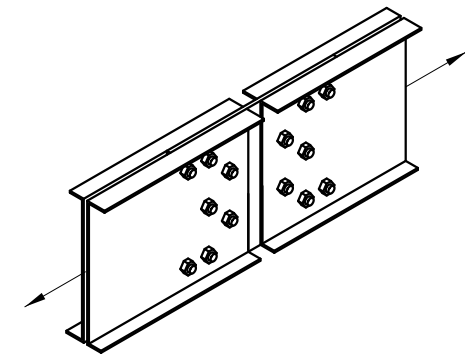
3 SPLICE CONNECTION
BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"

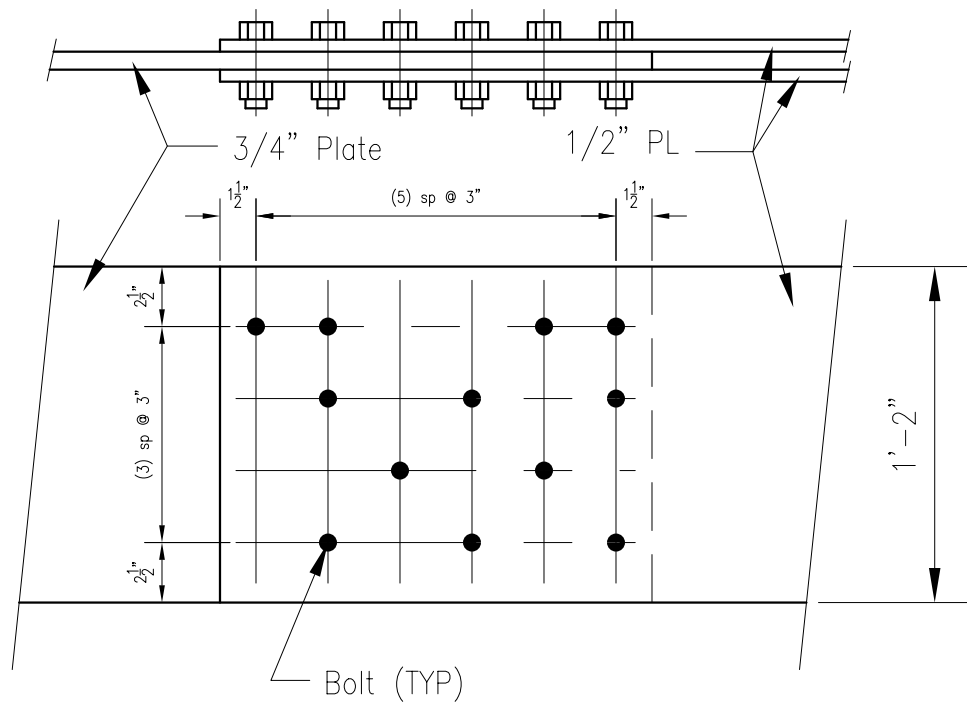


4 SPLICE CONNECTION
BGSE: MiscDet-Stl SCALE: 1" = 1'-0"

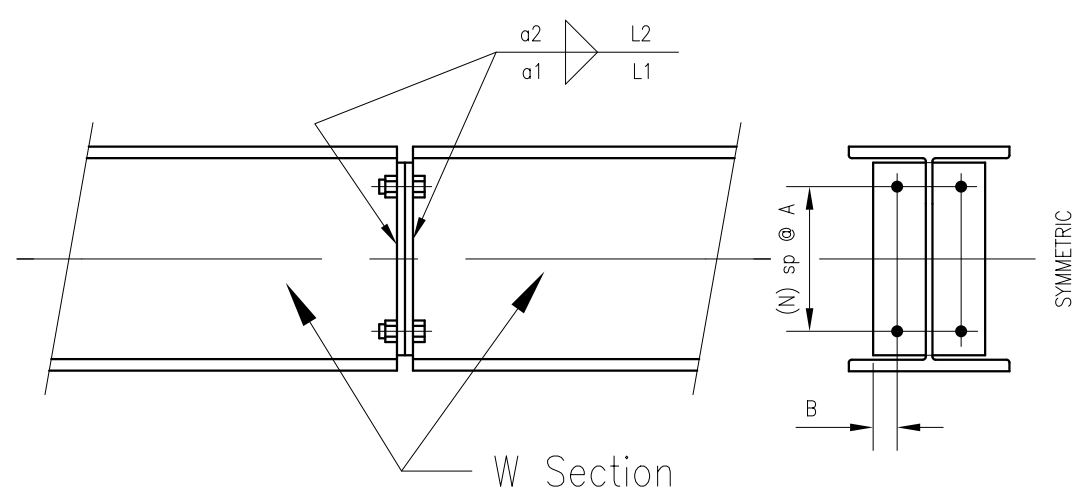


5 SPLICE CONNECTION
BGSE: MiscDet-Stl SCALE: 1" = 1'-0"

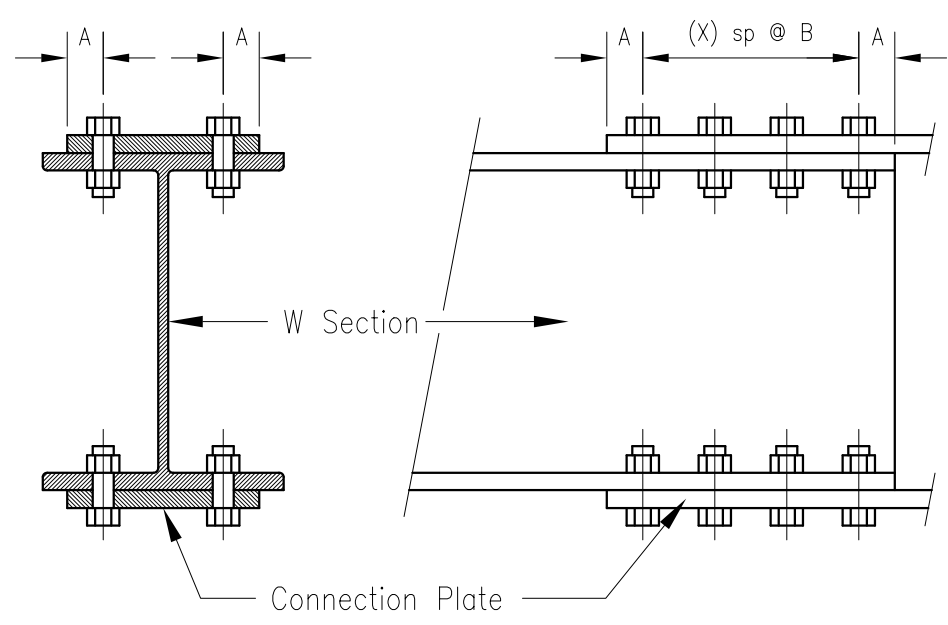




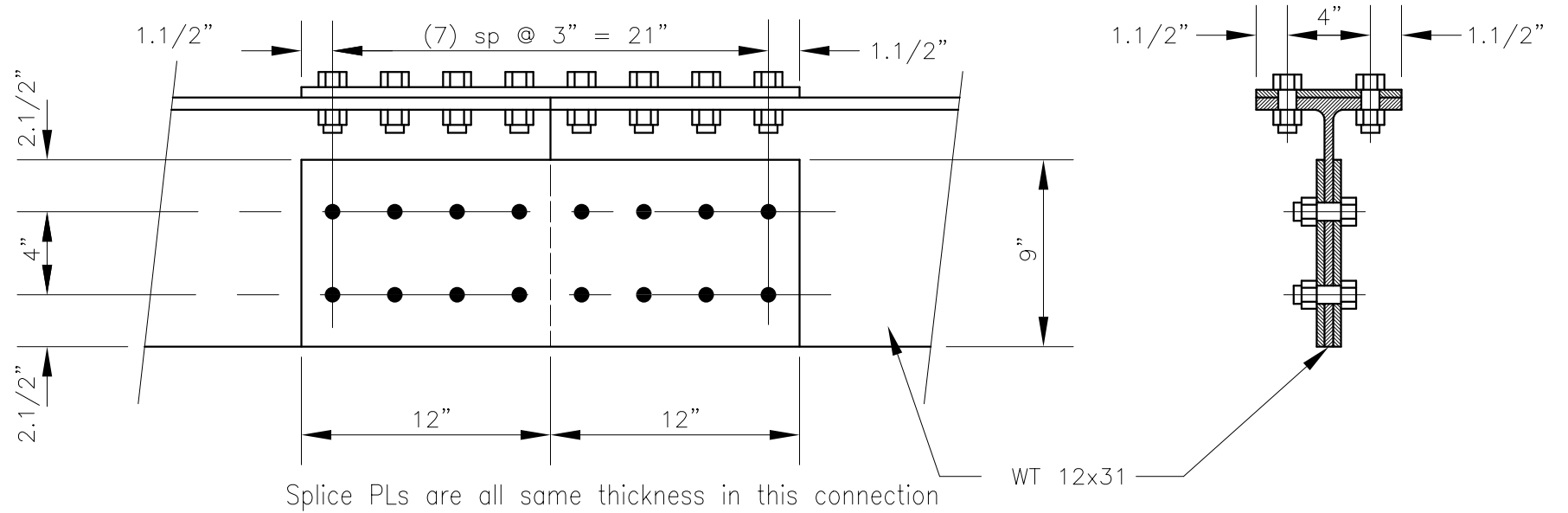
1 SPLICE CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"



2 SPLICE CONNECTION
 BGSE: MiscDet-Stl SCALE: 1" = 1'-0"

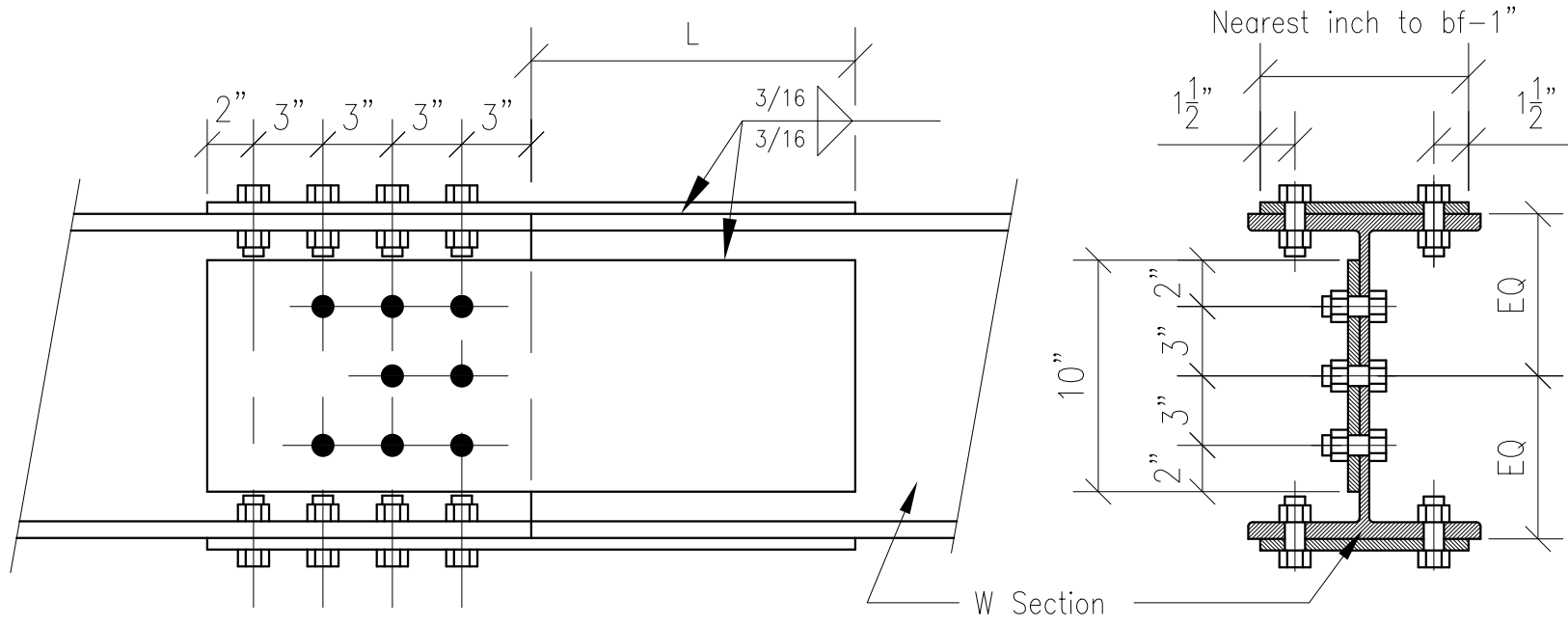


3 SPLICE CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"



4 SPLICE CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"

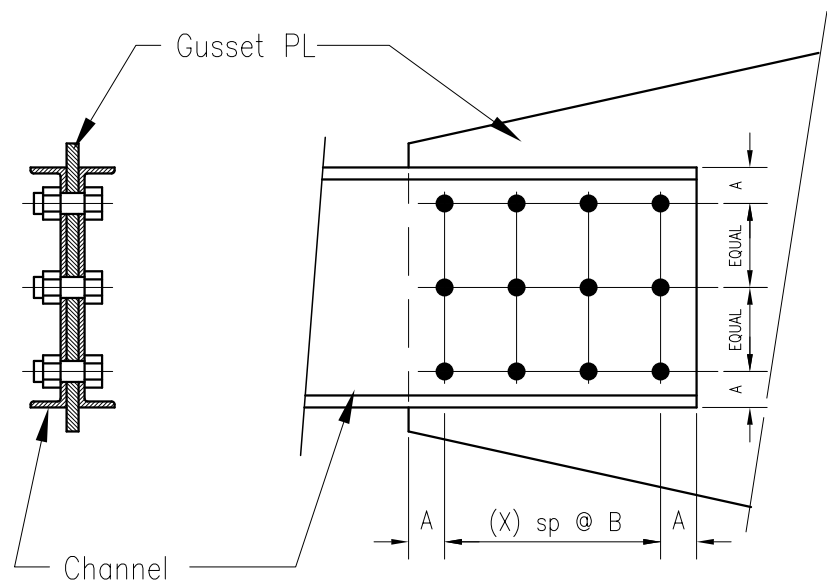
Project No: MISCDET_STL
 Sheet No: S1.2 of 3
 Revisions: 0. 8/23/07
 SPLICE CONNECTIONS
 Date: 2007
 Checked: _____
 Date: _____
 Scale: _____
 By: TBQ
 A Beginner's Guide to Structural Engineering
 Quimby & Associates Consulting Engineers
 QandA@alaska.com



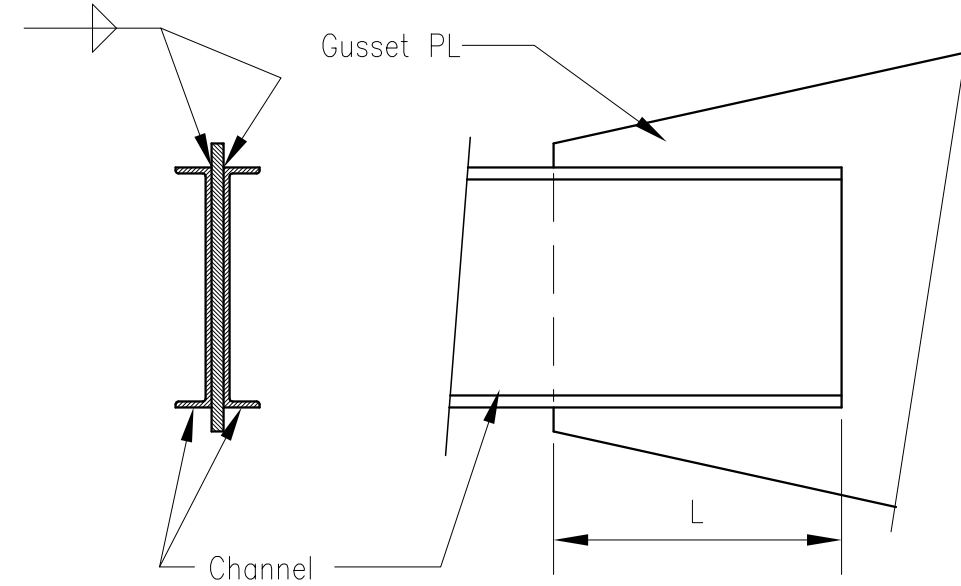
1 SPLICE CONNECTION

BGSE: MiscDet-Stl

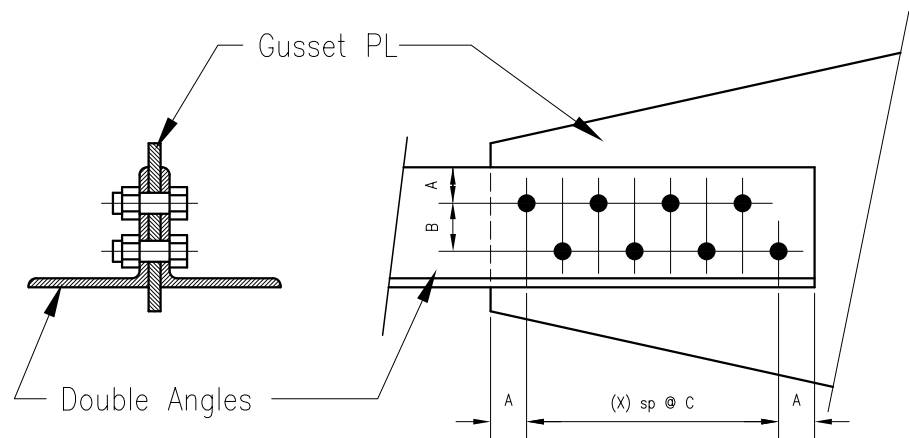
SCALE: 1.1/2" = 1'-0"



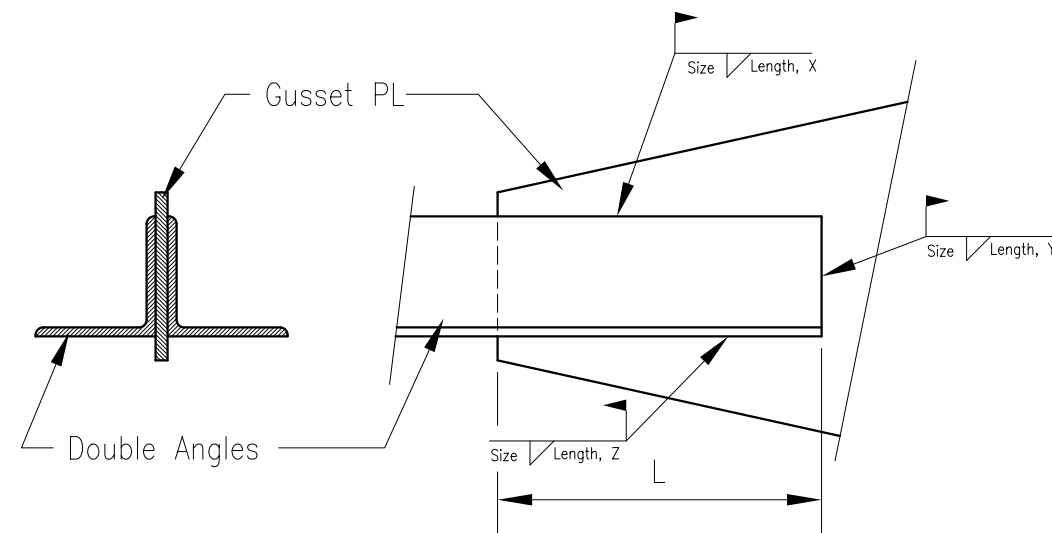
1 BRACE CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"



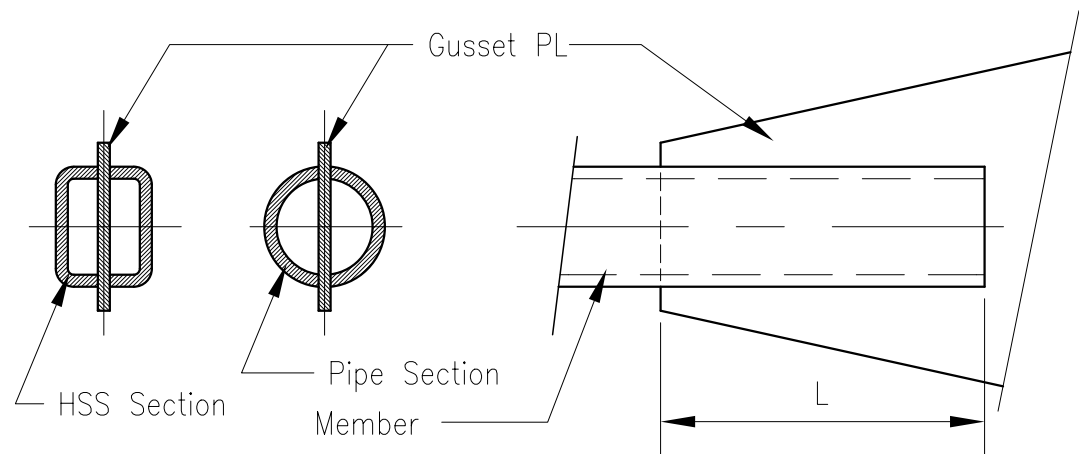
2 BRACE CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"



3 BRACE CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"



4 BRACE CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"

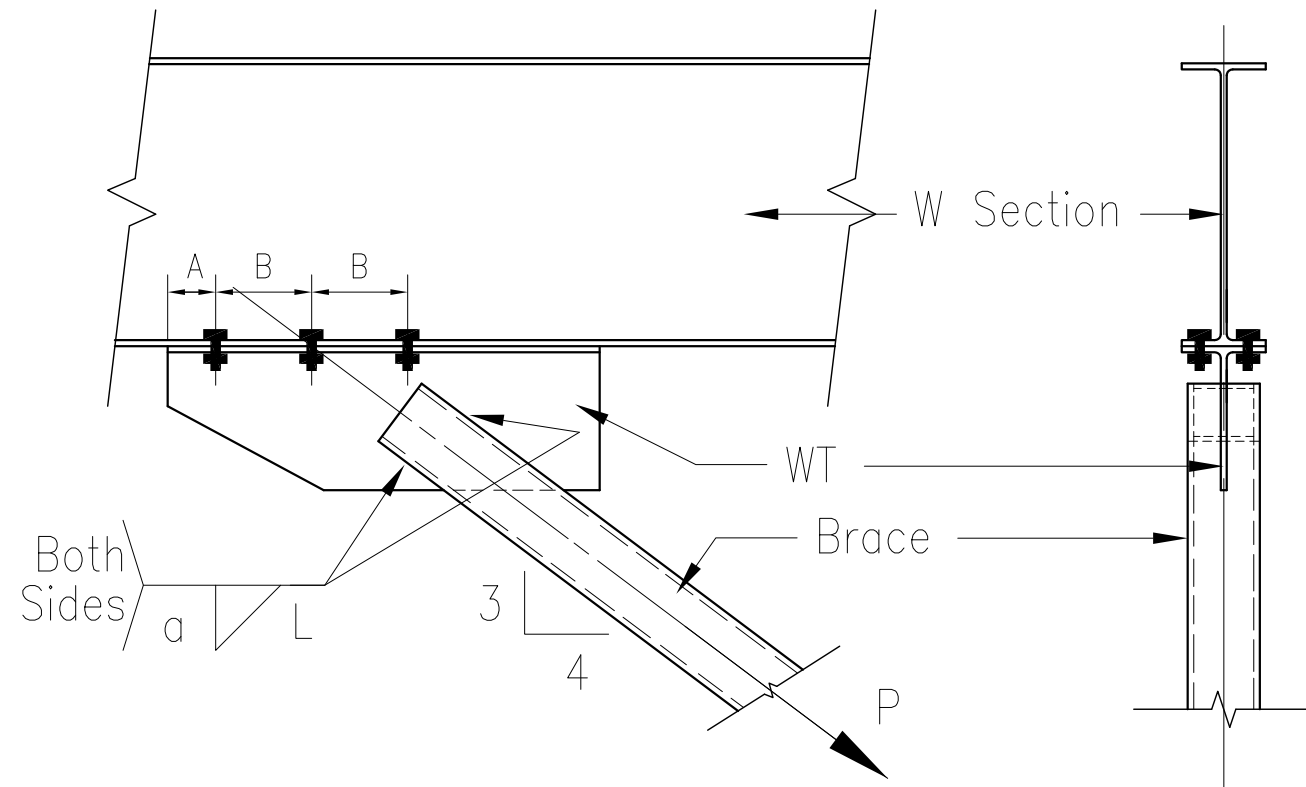
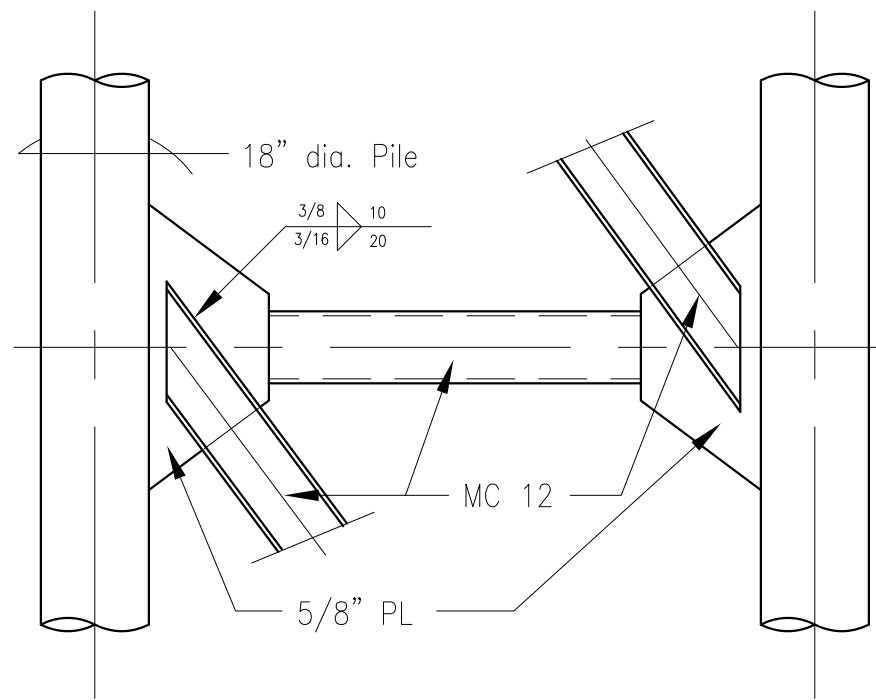


5 BRACE CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"

Project No:	MISCDET_STL
Sheet No.:	S2.1 of 2
Revisions:	0. 8/23/07
BRACE CONNECTIONS	
By: TBQ	Checked: _____
Date: 2007	Date: _____
	Scale: _____

A Beginner's Guide to
 Structural Engineering

Quimby &
 Associates
 Consulting Engineers
 QandA@alaska.com

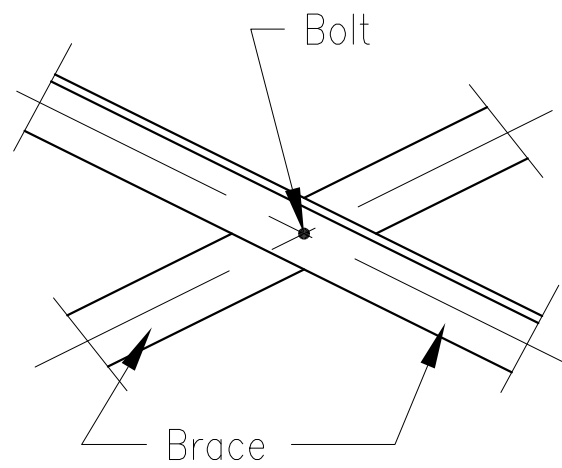


1 BRACE CONNECTION
BGSE: MiscDet-Stl

SCALE: 3/8" = 1'-0"

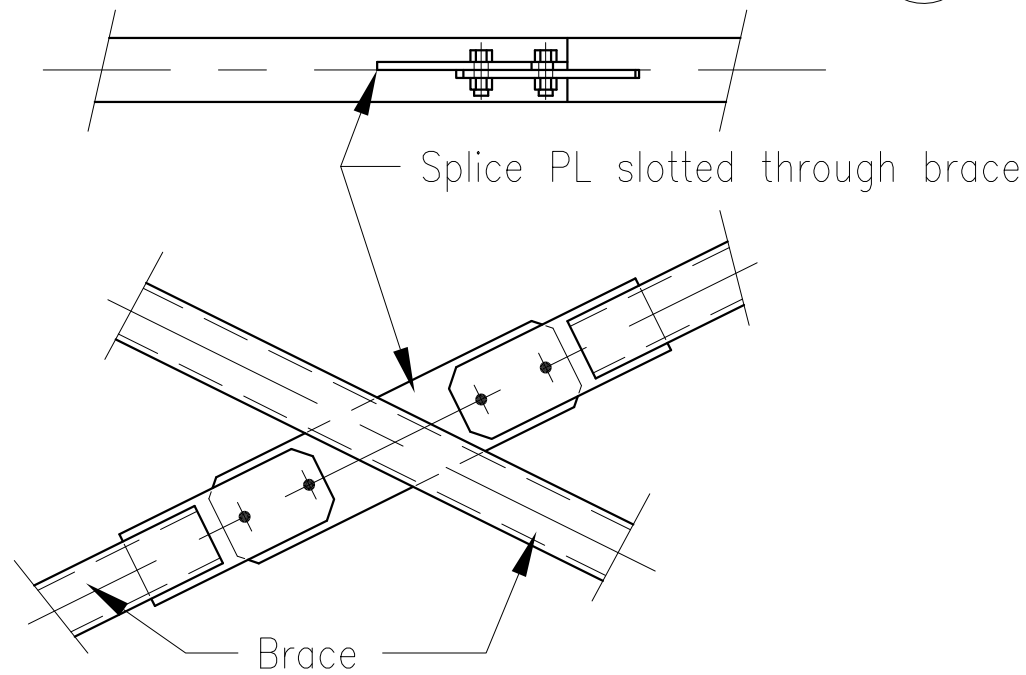
2 BRACE CONNECTION
BGSE: MiscDet-Stl

SCALE: 3/4" = 1'-0"



3 BRACE CONNECTION
BGSE: MiscDet-Stl

SCALE: 1.1/2" = 1'-0"



4 BRACE CONNECTION
BGSE: MiscDet-Stl

SCALE: 1.1/2" = 1'-0"

Project No.: MISCDET_STL
Sheet No.: S2.2 of 2

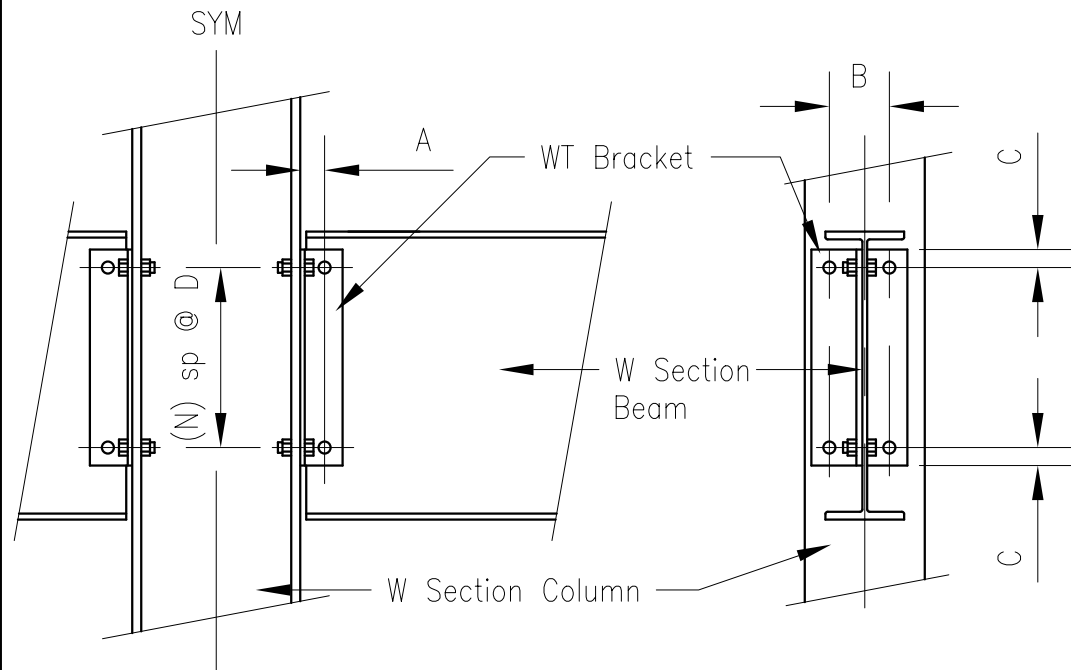
Revisions:
0. 8/23/07
1. 9/19/07

BRACE CONNECTIONS

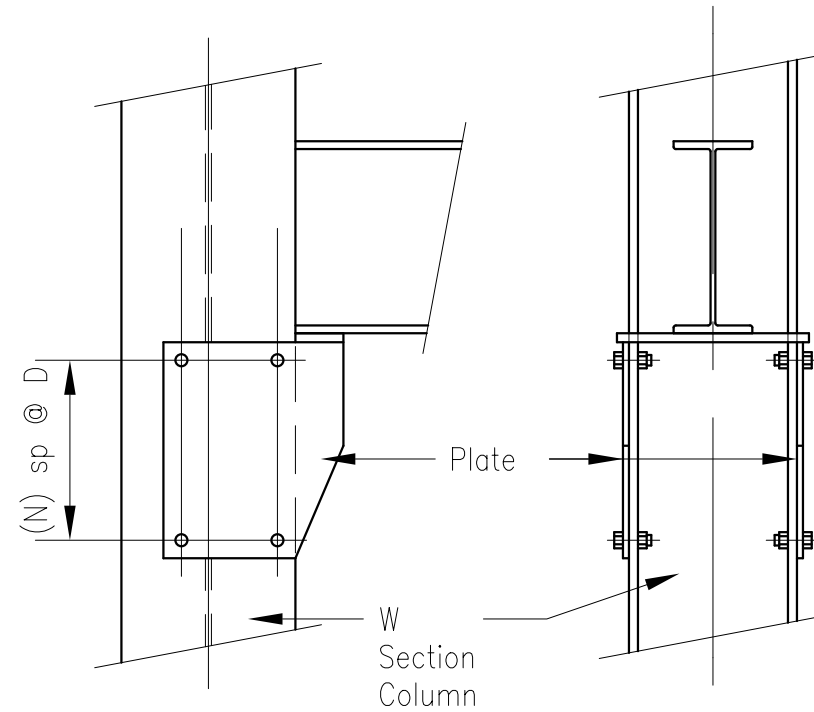
By: TBQ Date: 2007 Checked: Date: Scale: -----

A Beginner's Guide to Structural Engineering

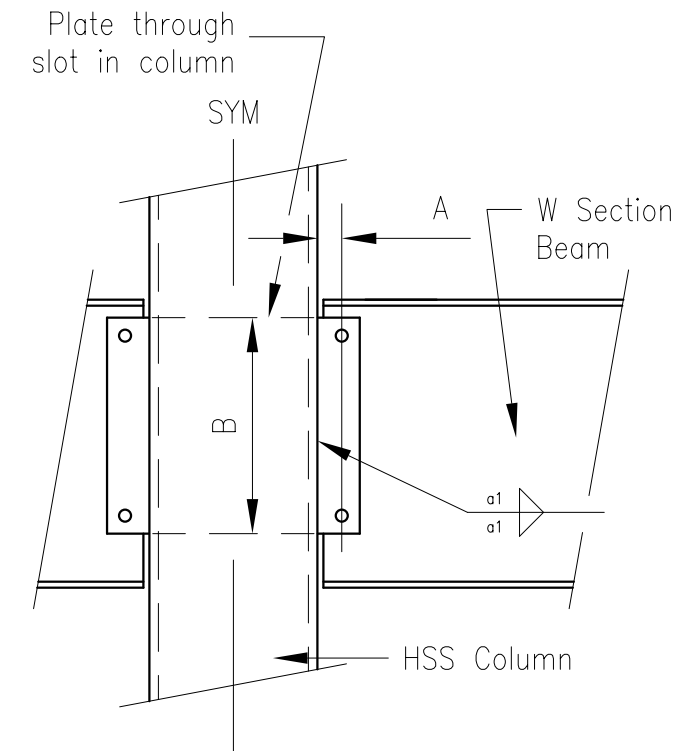
Quimby & Associates
Consulting Engineers
QandA@alaska.com



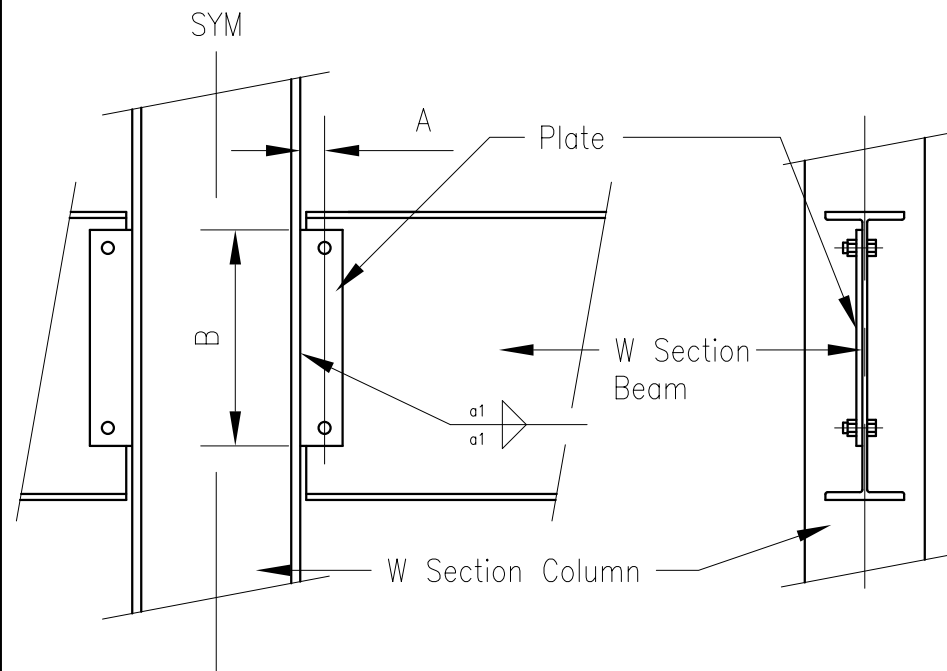
1 BEAM-COLUMN CONNECTION
BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"



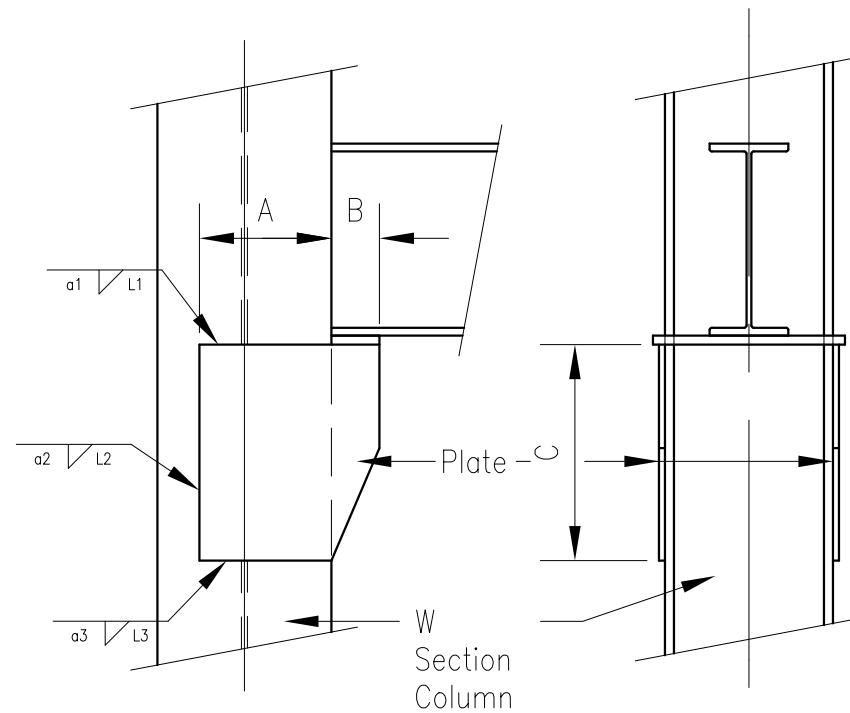
2 BEAM-COLUMN CONNECTION
BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"



3 BEAM-COL CONNECTION
BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"



4 BEAM-COLUMN CONNECTION
BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"



5 BEAM-COLUMN CONNECTION
BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"

Project No.: MISCDET_STL
Sheet No.: S3.1 of 1

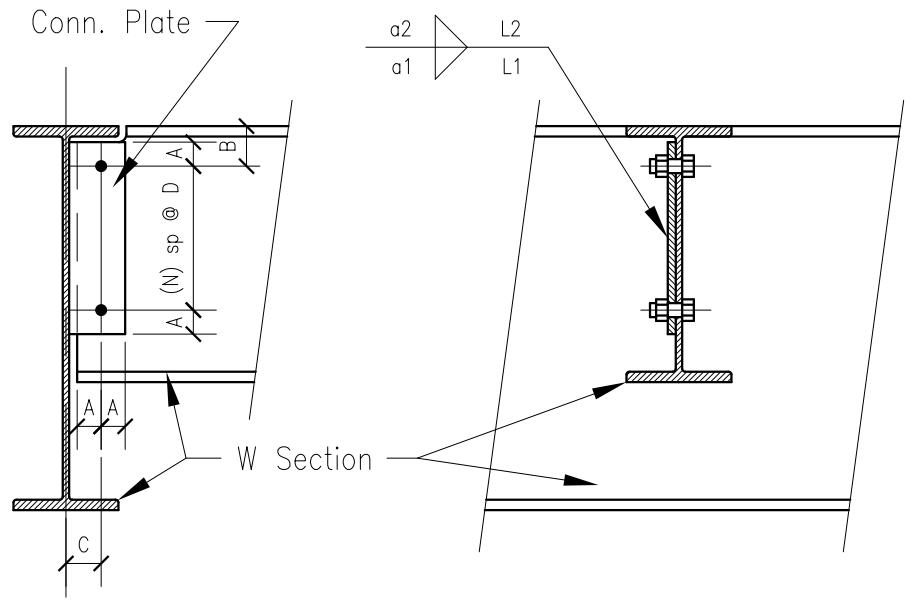
Revisions:
0. 8/23/07

BEAM-COLUMN CONNECTIONS

By: TBQ Date: 2007 Checked: Date: Scale: ---

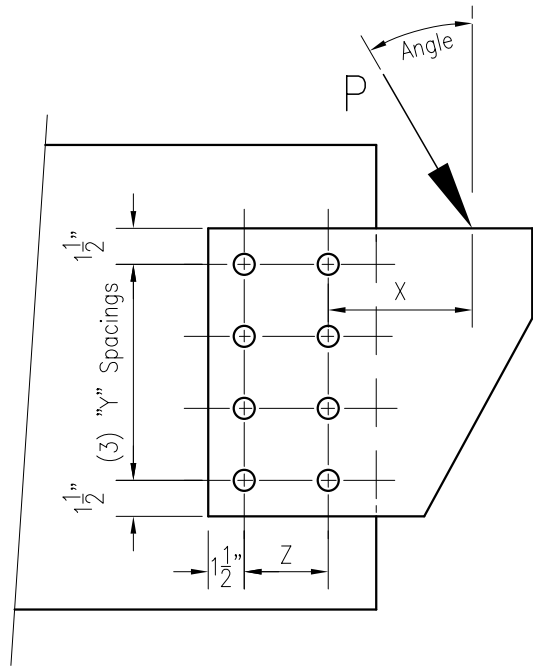
A Beginner's Guide to
Structural Engineering

Quimby &
Associates
Consulting Engineers
QandA@alaska.com

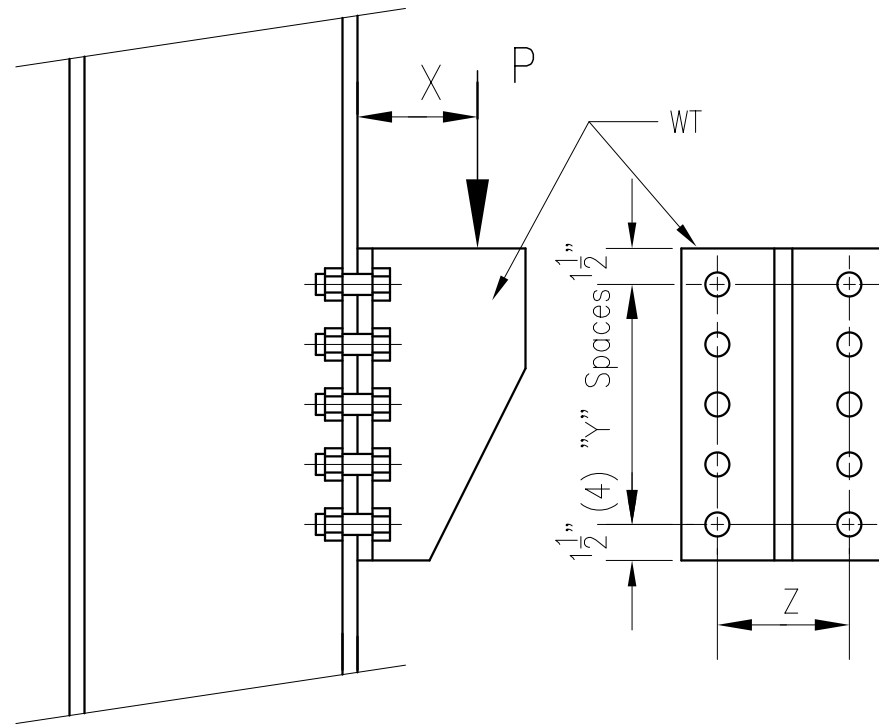


1 BEAM-BEAM CONNECTION
 BGSE: MiscDet-Stl SCALE: 1" = 1'-0"

By: TBQ	Date: 2007	Checked:	Date:	Scale: -----
---------	------------	----------	-------	--------------



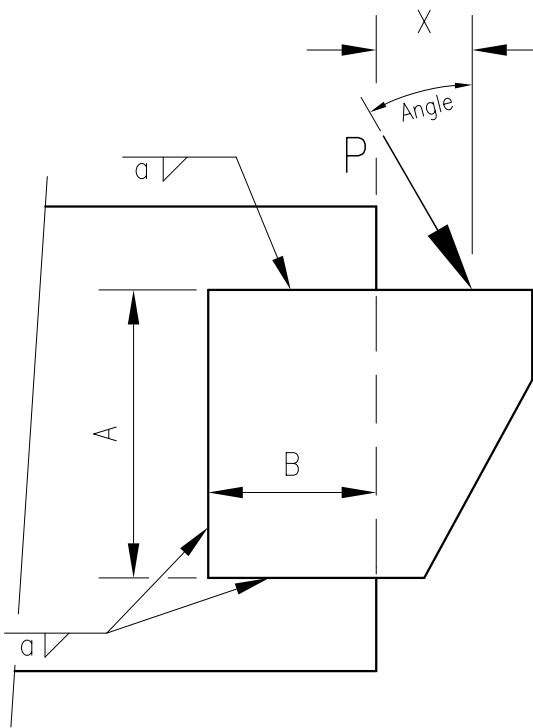
1 ECCENTRIC CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"



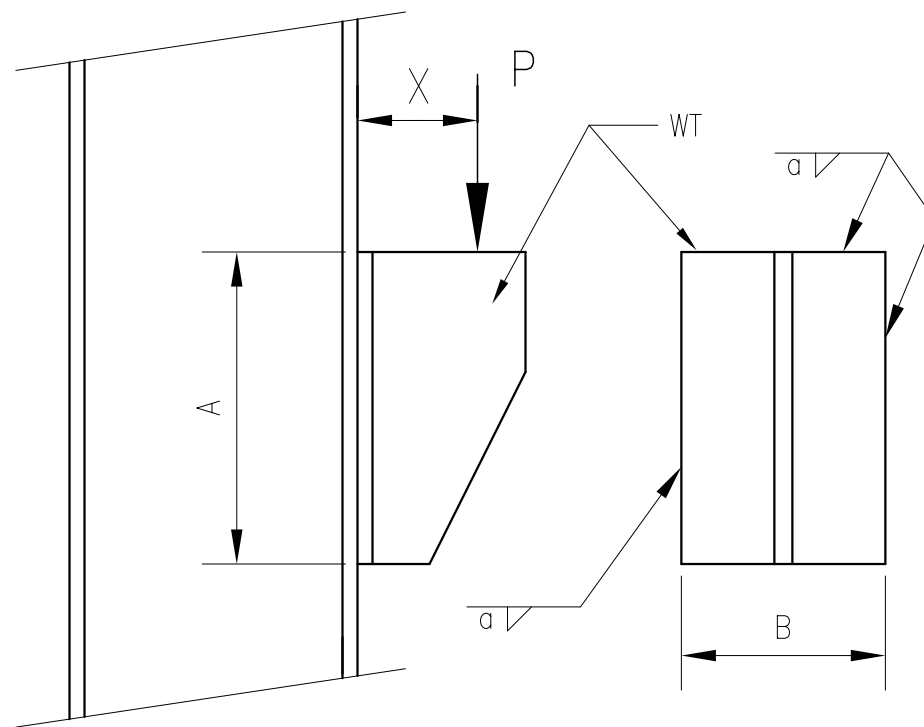
2 ECCENTRIC CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"

3 NOT USED
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"

Not Used



4 ECCENTRIC CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"

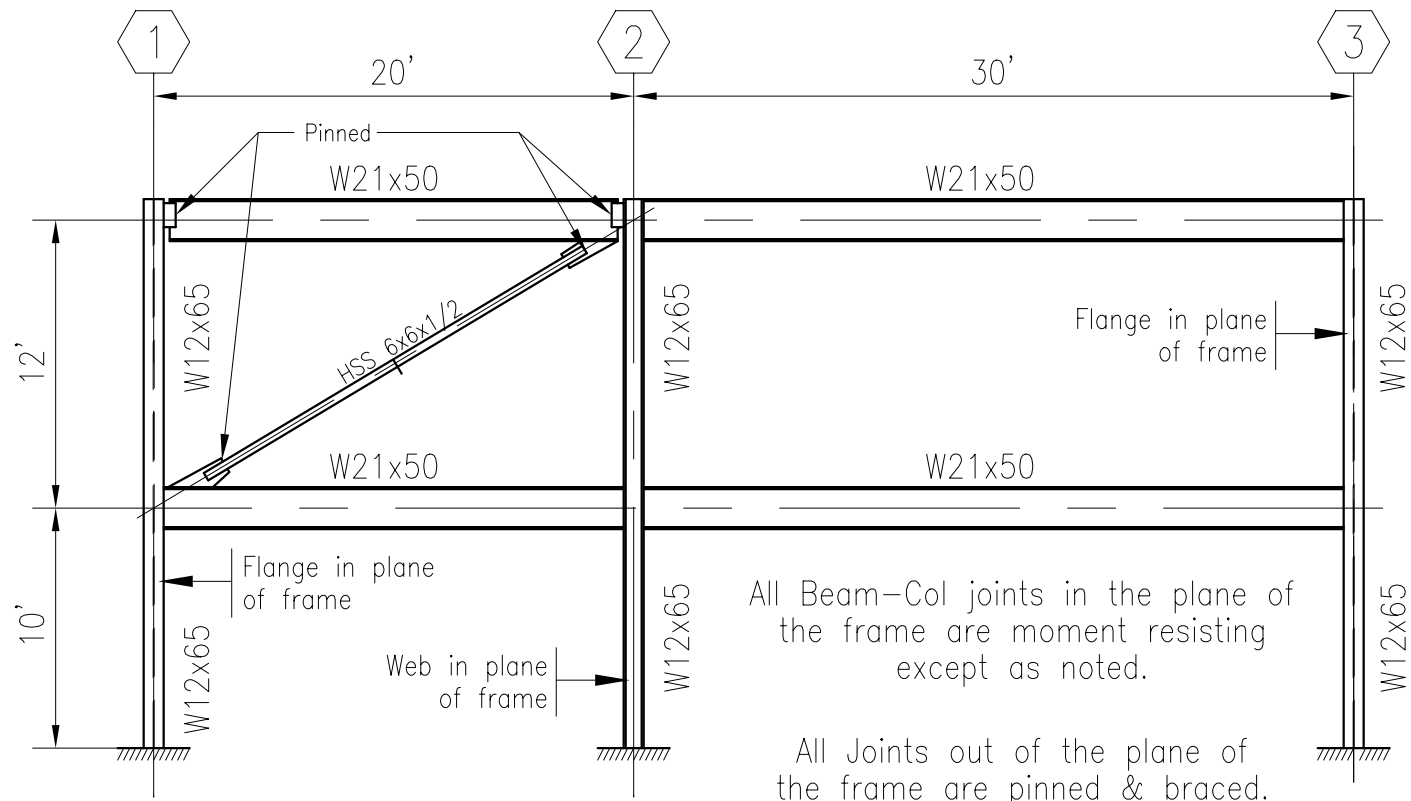


5 ECCENTRIC CONNECTION
 BGSE: MiscDet-Stl SCALE: 1.1/2" = 1'-0"

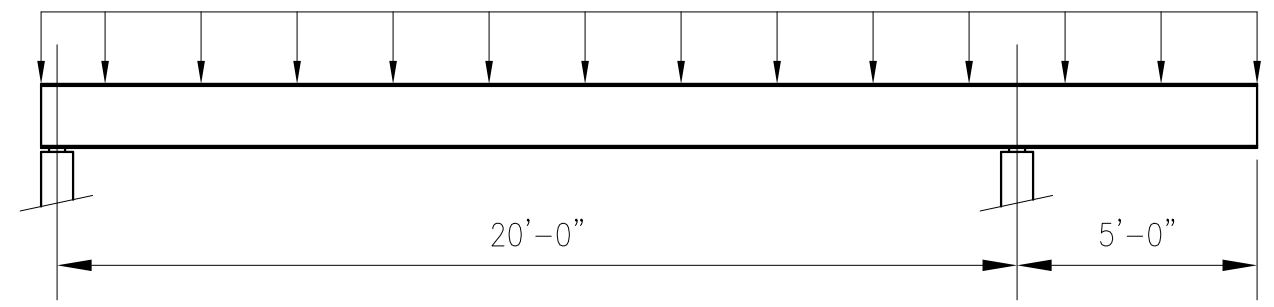
Project No:	MISCDET_STL
Sheet No.:	S5.1 of 3
Revisions:	0. 8/23/07
MISC. DETAILS	
By: TBO	Date: 2007
Checked:	Date: -----
	Scale: -----

A Beginner's Guide to
 Structural Engineering

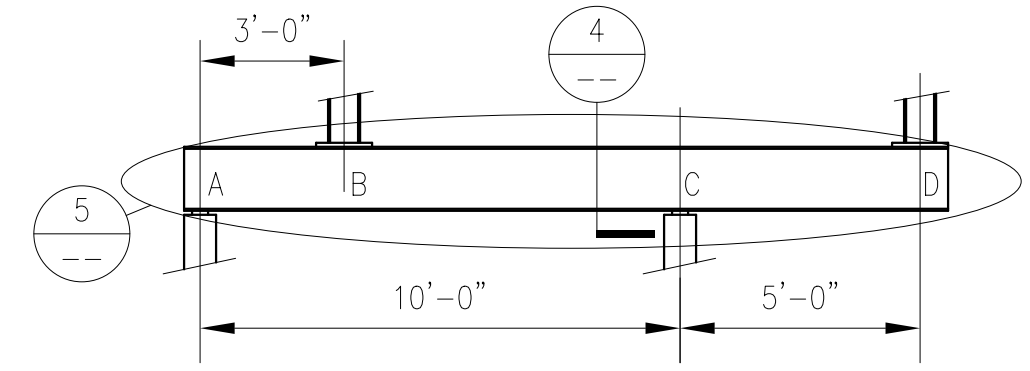
Quimby &
 Associates
 Consulting Engineers
 QandA@alaska.com



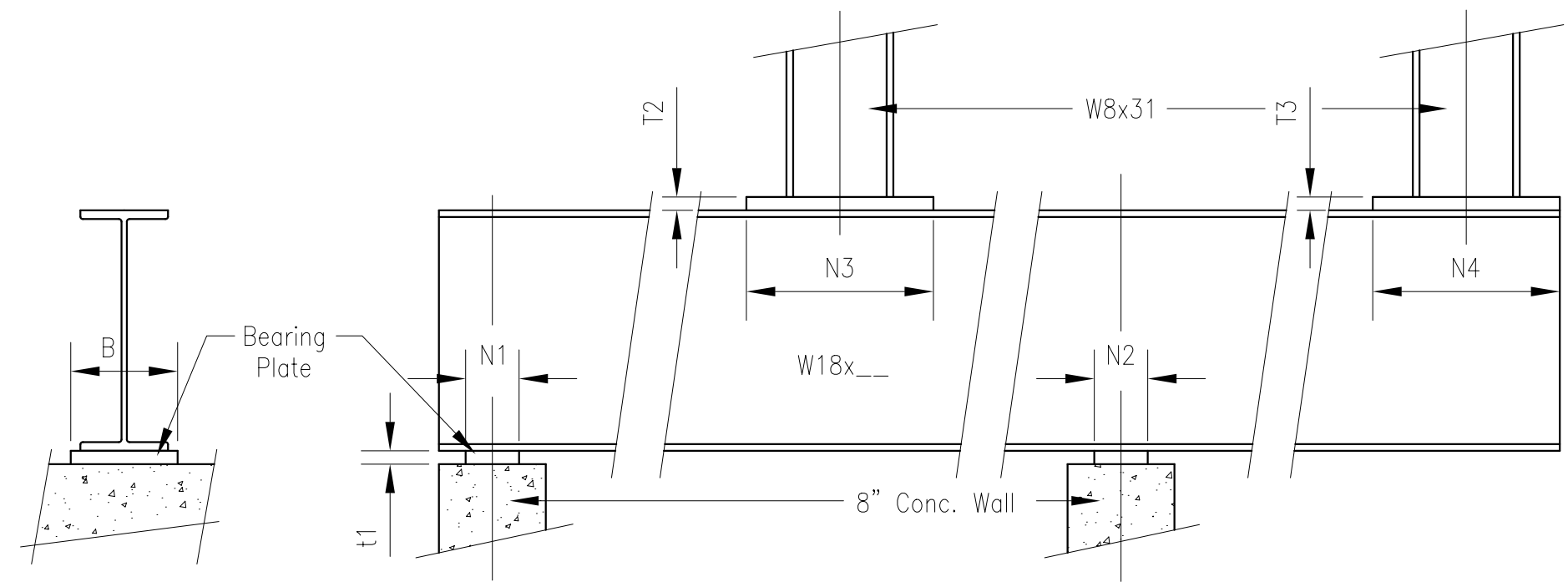
1 FRAME ELEVATION
 BGSE: MiscDet-Stl SCALE: 1/8" = 1'-0"



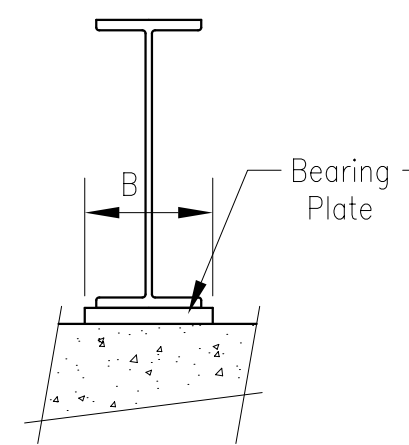
2 BEAM DIAGRAM
 BGSCM: MiscDet SCALE: 1/4" = 1'-0"



3 BEAM DIAGRAM
 BGSE: MiscDet-Stl SCALE: 1/4" = 1'-0"



5 BEARING DETAIL
 BGSE: MiscDet-Stl SCALE: 1" = 1'-0"

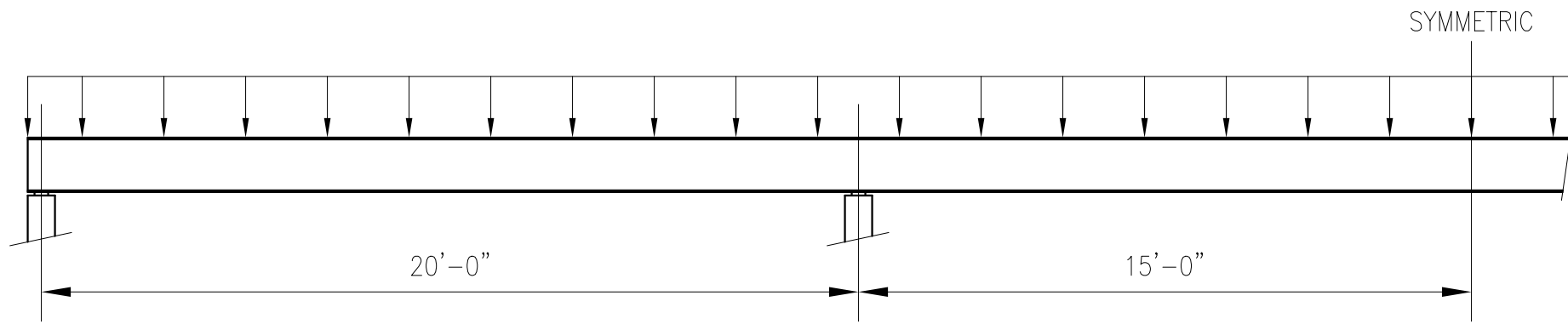


4 BEARING DETAIL
 BGSE: MiscDet-Stl SCALE: 1" = 1'-0"

Project No:	MISCDET_STL
Sheet No.:	S5.2 of 3
Revisions:	0. 8/23/07
MISC. DETAILS	
Date:	2007
Checked:	
Date:	
Scale:	
By:	TBQ

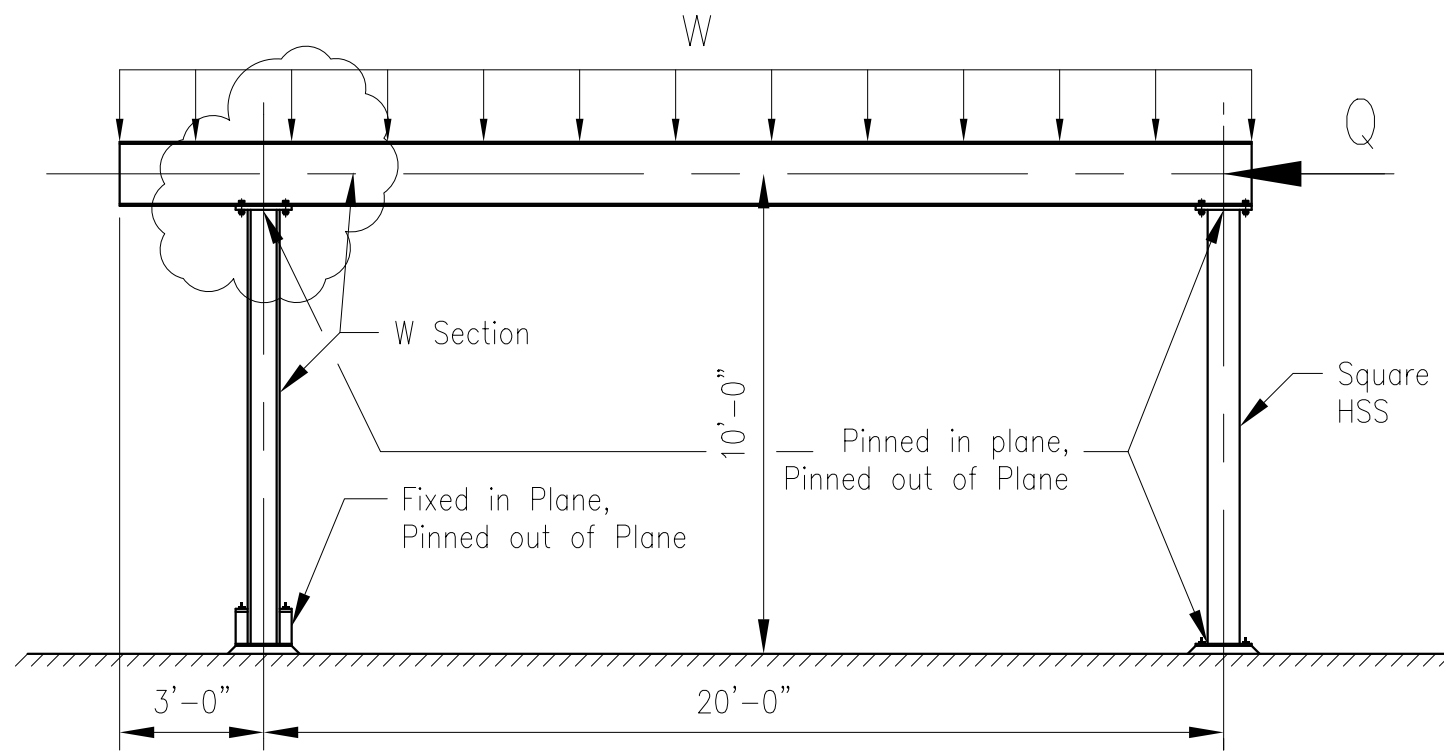
A Beginner's Guide to
 Structural Engineering

Quimby &
 Associates
 Consulting Engineers
 QandA@alaska.com



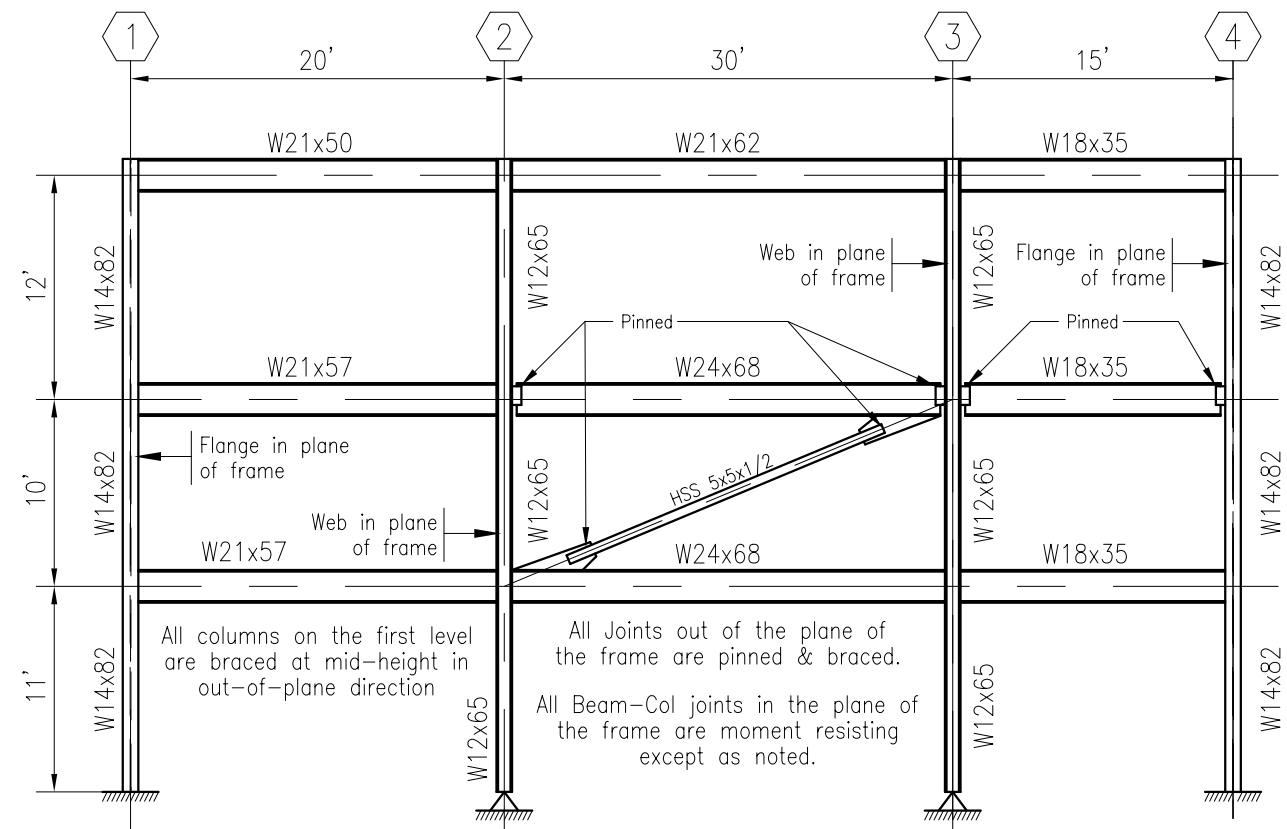
1 BEAM DIAGRAM
BGSE: MiscDet-Stl

SCALE: 1/4" = 1'-0"



2 FRAME ELEVATION
BGSE: MiscDet-Stl

SCALE: 1/4" = 1'-0"



3 FRAME ELEVATION
BGSE: MiscDet-Stl

SCALE: -----

Project No.: MISCDET_STL
Sheet No.: 55.3 of 3

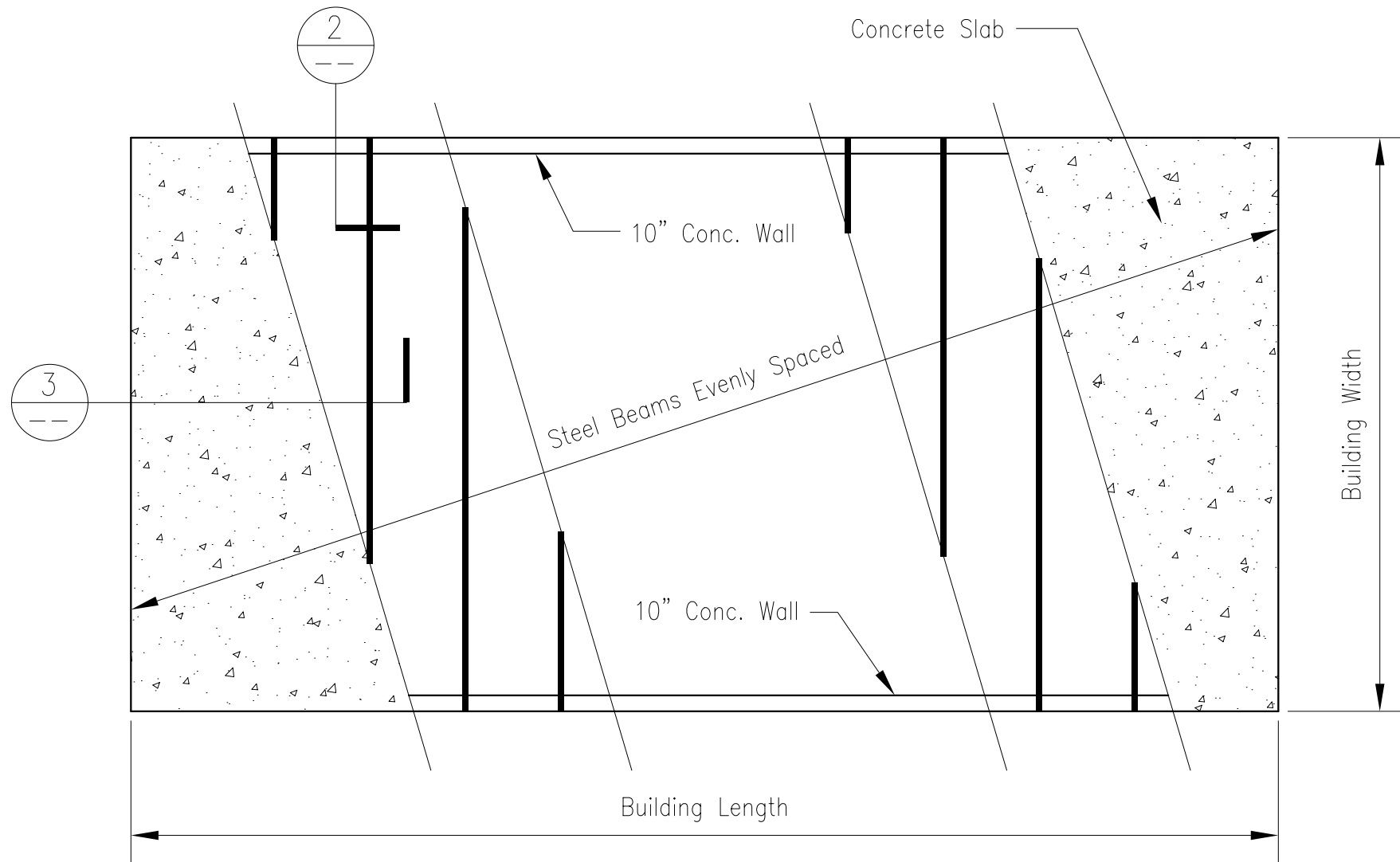
Revisions:
0. 8/23/07
1. 11/13/07

MISC. DETAILS

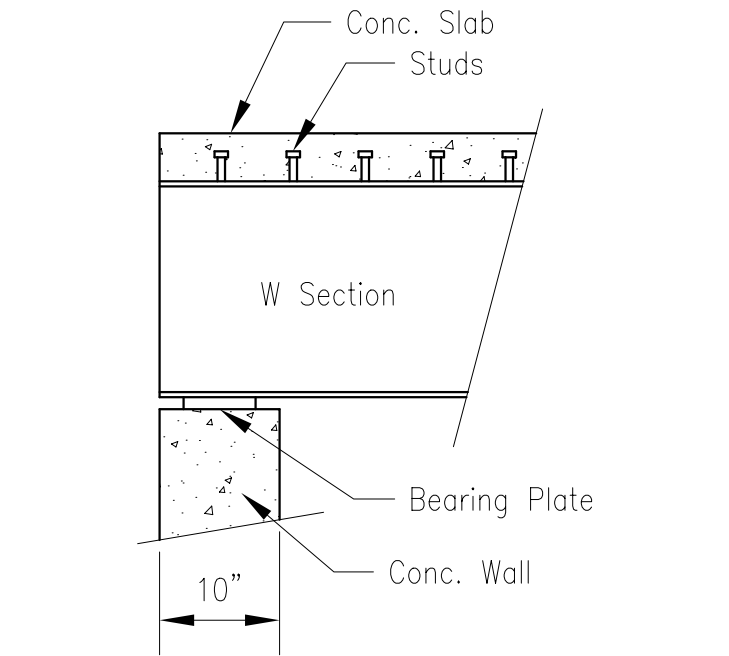
By: TBQ Date: 2007 Checked: Date: Scale: -----

A Beginner's Guide to Structural Engineering

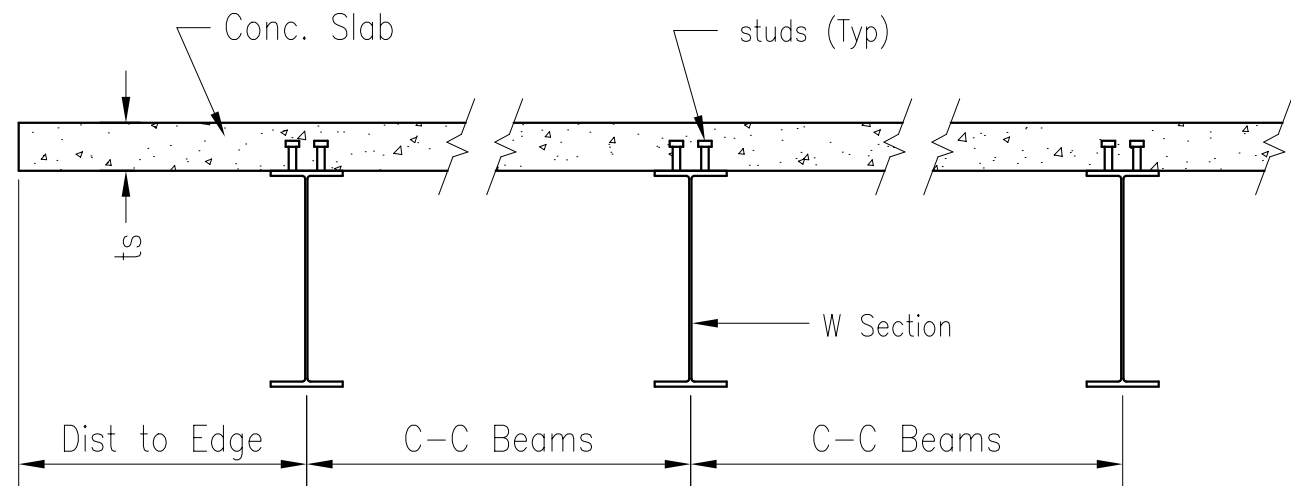
Quimby & Associates
Consulting Engineers
QandA@alaska.com



1 ROOF PLAN
 BGSE: MiscDet-Stl SCALE: 1/8" = 1'-0"



2 ROOF SECTION
 BGSE: MiscDet-Stl SCALE: 1/4" = 1'-0"

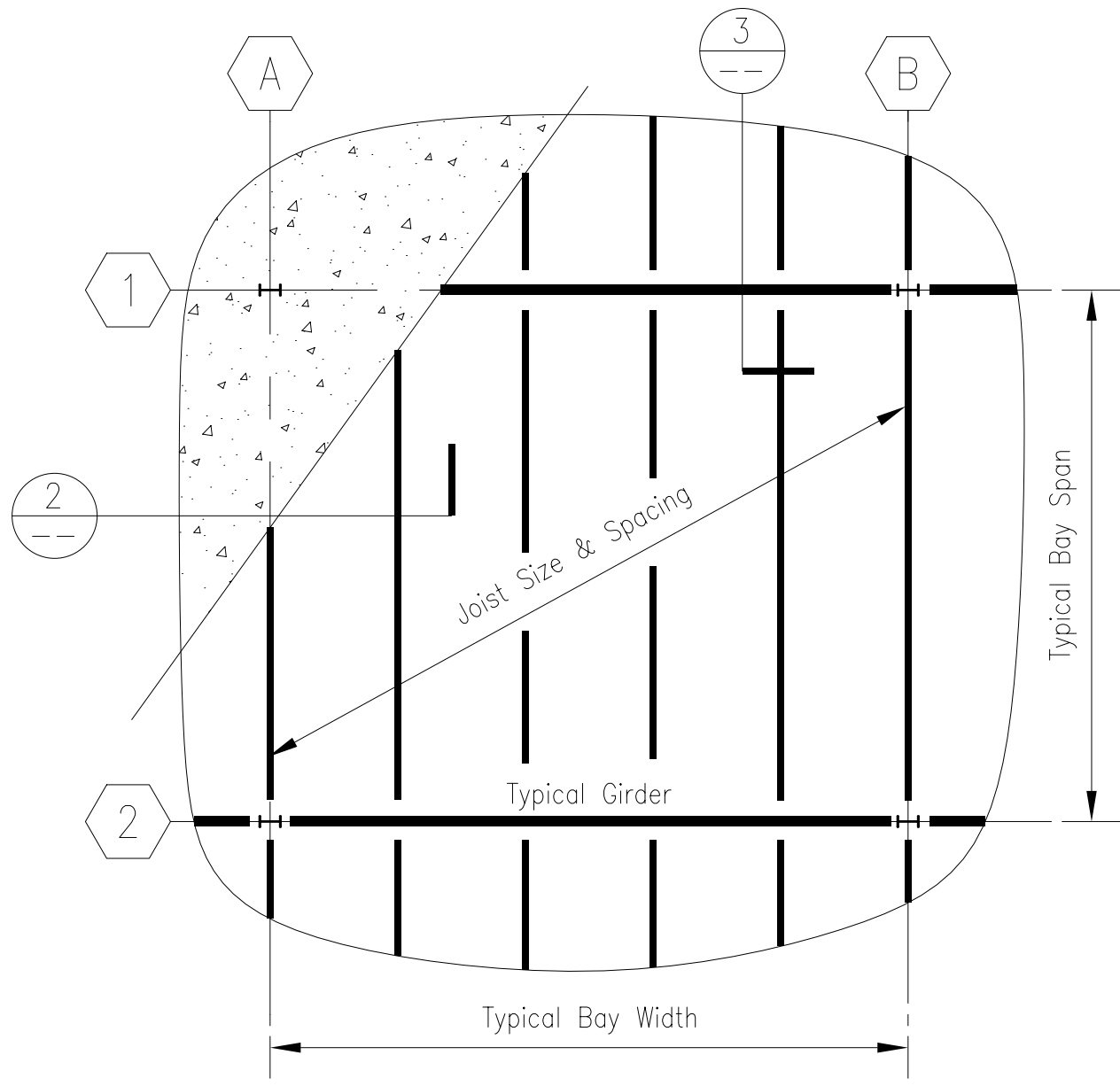


3 ROOF SECTION
 BGSE: MiscDet-Stl SCALE: 1" = 1'-0"

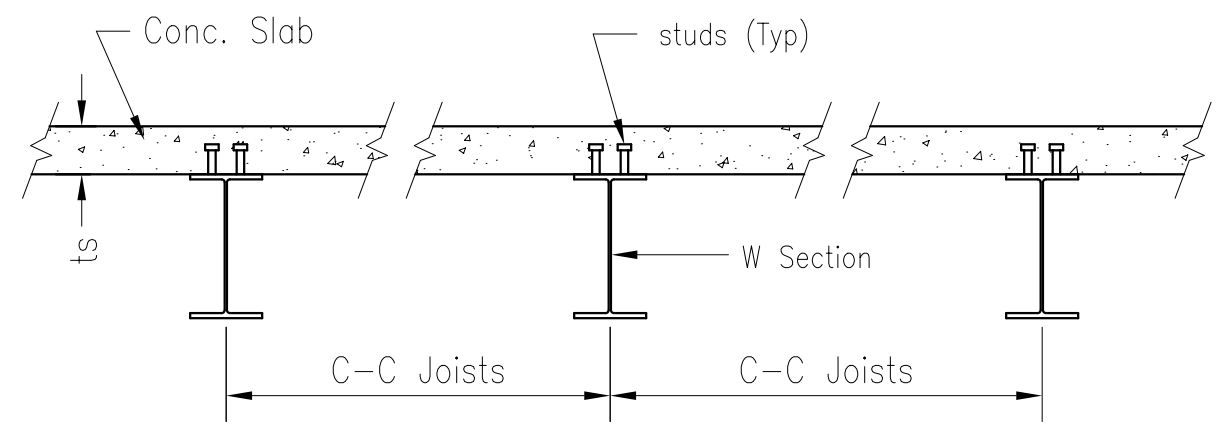
Project No.: MISCDET_STL		Sheet No.: S6.1 of 2	
Revisions: 0. 8/23/07			
By: TBQ	Date: 2007	Checked:	Date:
COMPOSITE BEAMS		Scale:	

A Beginner's Guide to Structural Engineering

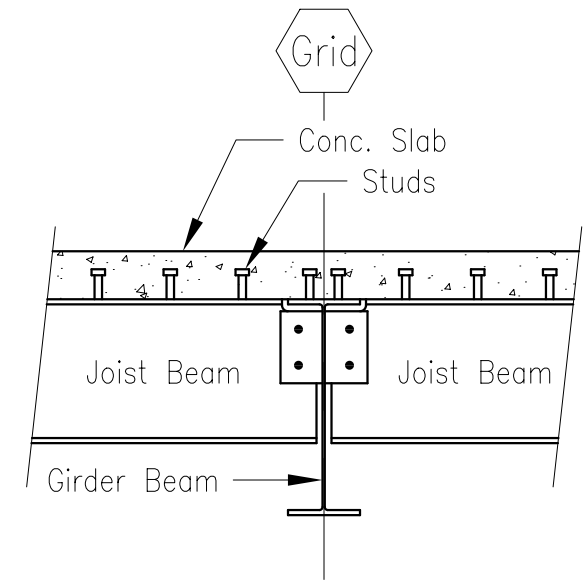
Quimby & Associates
 Consulting Engineers
 QandA@alaska.com



1 FLOOR PLAN
 BGSE: MiscDet-Stl SCALE: 1/8" = 1'-0"



2 JOIST SECTIONS
 BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"



3 JOIST/GIRDER SECTION
 BGSE: MiscDet-Stl SCALE: 3/4" = 1'-0"

Project No.:	MISCDET_STL
Sheet No.:	S6.2 of 2
Revisions:	0. 8/23/07
COMPOSITE BEAMS	
By: IBQ	Date: 2007
Checked:	Date:
Scale:	---

A Beginner's Guide to
 Structural Engineering

Quimby & Associates
 Consulting Engineers
 QandA@alaska.com