D.

CO. 00. 160942 DFS. 01.



6

00-160942-DFS-01-CO Micro

RECEIVED

DEC 20 2000

DOCUMENT SERVICES

# JOIST GIRDER

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| RED | 1 BTF SHT 1 OF 1 | S00-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 5 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END | PITCH OR EDL | TYPE OR EDR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G1 | 1 | 48G5N13.0 | 51-8 5/8 | 7/8 | 1 3/4 | 51-6 | 5 7/8 | 6 3/4 | 6 | 6 | | | | |
| G2 | 3 | 48G5N17.5 | 51-8 5/8 | 7/8 | 1 3/4 | 51-6 | 5 7/8 | 6 3/4 | 6 | 6 | | | | |
| G3 | 1 | 48G5N25.0 | 51-8 5/8 | 7/8 | 1 3/4 | 51-6 | 5 7/8 | 6 3/4 | 6 | 6 | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | TOP CHORD HOLES HCL | LOCATION | HCR | LOCATION | FIXED MOMENT LEFT | FIXED MOMENT RIGHT | LATERAL MOMENT LEFT | LATERAL MOMENT RIGHT | BC Lyy DISTANCE | ADD. TC AXIAL FORCE | NET UPLIFT | # REQ'D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G1 | 8 | 5 3/8 | 8 | 6 1/4 | | | 1A | 1-3 1/4 (1-0) | | | | | | 87.0 | 348 | |
| G2 | 8 | 5 3/8 | 8 | 6 1/4 | | | 1A | 1-3 1/4 (1-0) | | | | | | 39.0 | 480 | |
| G3 | 8 | 5 3/8 | 8 | 6 1/4 | | | 1A | 1-3 1/4 (1-0) | | | | | | 55.0 | 634 | |

| MARK | "A" | "B" | "C" | ADDITIONAL CONCENTRATED LOADS—LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD | SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G1 | 9-10 | 11-8 | 10-0 | 0.9K | 19-10 | 13.0K | 49-10 | | | | | | |
| G2 | 9-10 | 11-8 | 10-0 | 1.2K | 19-10 | 17.5K | 49-10 | | | | | | |
| G3 | 9-10 | 11-8 | 10-0 | 1.1K | 9-10 | 2.5K △1 | 19-10 | 25.0K | 49-10 | | | | |

| MARK | REMARKS | REMARKS | REMARKS | REMARKS | REMARKS |
|---|---|---|---|---|---|
| G1 | NO AXIAL FORCE LE \| KNIFE PLATE RE, HOLD BACK 11" | | | | |
| G2 | NO AXIAL FORCE LE \| KNIFE PLATE RE, HOLD BACK 11" | | | | |
| G3 | NO AXIAL FORCE LE \| KNIFE PLATE RE, HOLD BACK 11" | | | | |

GENERAL NOTES

△ LL ≤ L/360

NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED ☐ REVISE AND RESUBMIT ☐ REJECTED

REVIEWED FOR GENERAL CONFORMITY WITH CONTRACT DOCUMENTS. SUBCONTRACTOR IS RESPONSIBLE FOR ALL QUANTITIES, DIMENSIONS, JOINERY AND COMPLETE COMPLIANCE WITH CONTRACT DOCUMENTS.

ANDERSEN CONSTRUCTION CO., INC.

BY Rick Jurado DATE 12/19/00

NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED ☐

REJECTED ☐ REVISE AND RESUBMIT ☐

SUBMIT SPECIFIED ITEM ☐

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR: DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE; FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

KRAMER, GEHLEN & ASSOC., INC.

CONSULTING STRUCTURAL ENGINEERS

DATE 12/18/00 BY RJ

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY SHOP ORDER CHECKED BY

ACCO JOB # 625

SUBMITTAL #

 WOOD-LAM P.O. # 00-02-200 ISSUED FOR APPROVAL 11/7/00 ISSUED FOR PRODUCTION 11/17/00

△1 Per contractor's approval 11/29/00

# JOIST GIRDER

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| RED | 2 BTF SHT 1 OF 1 | S00-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 9 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END | PITCH OR EDL | TYPE OR EDR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G4 | 1 | 48G6N13.0 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |
| G5 | 6 | 48G6N17.5 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |
| G6 | 2 | 48G6N25.0 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | TOP CHORD HOLES HCL | LOCATION | HCR | LOCATION | FIXED MOMENT LEFT | FIXED MOMENT RIGHT | LATERAL MOMENT LEFT | LATERAL MOMENT RIGHT | BC Lyy DISTANCE | ADD. TC AXIAL FORCE | NET UPLIFT | I REQ'D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G4 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-0 1-3 1/4 | 1A | 1-0 1-3 1/4 | | | | | | 87.0 | 310 △1 | |
| G5 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-0 1-3 1/4 | 1A | 1-0 1-3 1/4 | | | | | | 39.0 | 480 | |
| G6 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-0 1-3 1/4 | 1A | 1-0 1-3 1/4 | | | | | | 55.0 | 684 | |

| MARK | "A" | "B" | "C" | ADDITIONAL CONCENTRATED LOADS—LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD | SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G4 | 8-0 | 4-2 | 10-0 | | | | | | | | | | |
| G5 | 8-0 | 4-2 | 10-0 | | | | | | | | | | |
| G6 | 8-0 | 4-2 | 10-0 | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| G4 | KNIFE PLATE BE, HOLD BACK 11" |
| G5 | KNIFE PLATE BE, HOLD BACK 11" |
| G6 | KNIFE PLATE BE, HOLD BACK 11" |

GENERAL NOTES

△ LL ≤ L/360

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY _____ SHOP ORDER CHECKED BY _____

 WOCO-LAM P.O. # 00-02-200 ISSUED FOR APPROVAL 11/7/00 ISSUED FOR PRODUCTION 11/17/00

△1 Per contractor's approval 11/29/00

# JOIST GIRDER

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| RED | 3 BTF SHT 1 OF 1 | SCO-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 5 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END | PITCH OR EDL | TYPE OR EDR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G7 | 1 | 48G6N13.0 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |
| G8 | 3 | 48G6N17.5 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |
| G9 | 1 | 48G6N25.0 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | TOP CHORD HOLES HCL | LOCATION | HCR | LOCATION | FIXED MOMENT LEFT | FIXED MOMENT RIGHT | LATERAL MOMENT LEFT | LATERAL MOMENT RIGHT | BC Lyy DISTANCE | ADD. TC AXIAL FORCE | NET UPLIFT | I REQ'D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G7 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-3 1/4 | 1A | 1-3 1/4 | | | | | | 87.0 | 300 | |
| G8 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-3 1/4 | 1A | 1-3 1/4 | | | | | | 39.0 | 480 | |
| G9 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-3 1/4 | 1A | 1-3 1/4 | | | | | | 55.0 | 684 | |

| MARK | "A" | "B" | "C" | ADDITIONAL CONCENTRATED LOADS—LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD | SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G7 | 5-6 | 6-8 | 10-0 | | | | | | | | | | |
| G8 | 5-6 | 6-8 | 10-0 | | | | | | | | | | |
| G9 | 5-6 | 6-8 | 10-0 | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| G7 | KNIFE PLATE BE, HOLD BACK 11" |
| G8 | KNIFE PLATE BE, HOLD BACK 11" |
| G9 | KNIFE PLATE BE, HOLD BACK 11" |

GENERAL NOTES

$\Delta$ LL $\leq$ L/360

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY _____ SHOP ORDER CHECKED BY _____

# JOIST GIRDER

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| RED | 4 BTF SHT 1 OF 1 | S00-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 5 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END | PITCH OR EDL | TYPE OR EDR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G10 | 1 | 48G5N13.0 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |
| G11 | 3 | 48G5N17.5 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |
| G12 | 1 | 48G5N25.0 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | TOP CHORD HOLES HCL | LOCATION | HCR | LOCATION | FIXED MOMENT LEFT | FIXED MOMENT RIGHT | LATERAL MOMENT LEFT | LATERAL MOMENT RIGHT | BC Lyy DISTANCE | ADD. TC AXIAL FORCE | NET UPLIFT | 1 REQ'D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G10 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-3 1/4 | 1A | 1-3 1/4 | | | | | | 87.0 | 276 | |
| G11 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-3 1/4 | 1A | 1-3 1/4 | | | | | | 39.0 | 480 | |
| G12 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-3 1/4 | 1A | 1-3 1/4 | | | | | | 55.0 | 684 | |

| MARK | "A" | "B" | "C" | ADDITIONAL CONCENTRATED LOADS-LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD | SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G10 | 13-0 | 9-2 | 10-0 | 13.0K | 3-0 | 1.2K | 13-0 | | | | | | |
| G11 | 13-0 | 9-2 | 10-0 | 17.5K | 3-0 | 2.0K | 13-0 | | | | | | |
| G12 | 13-0 | 9-2 | 10-0 | 25.0K | 3-0 | 2.9K | 13-0 | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| G10 | KNIFE PLATE LE, HOLD BACK 11° \| TIE ROD RE |
| G11 | KNIFE PLATE BE, HOLD BACK 11° |
| G12 | KNIFE PLATE BE, HOLD BACK 11° |

GENERAL NOTES

$\Delta LL \leq L/360$

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY SHOP ORDER CHECKED BY

# JOIST GIRDER

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| RED | 5 BTF SHT 1 OF 1 | S00-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 5 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END | PITCH OR EDL | TYPE OR EDR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G13 | 3 | 48G5N17.5 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |
| G14 | 1 | 48G5N25.0 | 52-5 1/2 | 1 3/4 | 1 3/4 | 52-2 | 6 3/4 | 6 3/4 | 6 | 6 | | | | |
| G15 | 1 | 48G6N17.5 | 59-8 | | 1 3/4 | 59-6 1/4 | 5 | 6 3/4 | 6 | 6 | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | TOP CHORD HOLES HCL | LOCATION | HCR | LOCATION | FIXED MOMENT LEFT | FIXED MOMENT RIGHT | LATERAL MOMENT LEFT | LATERAL MOMENT RIGHT | BC Lyy DISTANCE | ADD. TC AXIAL FORCE | NET UPLIFT | I REQ'D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G13 | 8 | 5 1/4 | 8 | 6 1/4 | 1A | 1-0 1-3 1/4 | 1A | 1-0 1-3 1/4 | | | | | | 39.0 | 480 | |
| G14 | 8 | 6 1/4 | 8 | 6 1/4 | 1A | 1-0 1-3 1/4 | 1A | 1-0 1-3 1/4 | | | | | | 55.0 | 684 | |
| G15 | | | 8 | 6 1/4 | | | 1A | 1-0 1-3 1/4 | | | | | | 39.0 | 480 | |

| MARK | "A" | "B" | "C" | ADDITIONAL CONCENTRATED LOADS-LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD | SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G13 | 10-6 | 11-8 | 10-0 | 17.5K △ | 0-6 1/4 △ | 1.2K | 10-6 | 17.5K | 50-6 | | | | |
| G14 | 10-6 | 11-8 | 10-0 | 25.0K △ | 0-6 1/4 △ | 1.8K | 10-6 | 25.0K | 50-6 | | | | |
| G15 | 14-0 1/4 | 5-6 | 10-0 | 8.8K | 4-0 1/4 | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| G13 | KNIFE PLATE BE, HOLD BACK 11" |
| G14 | KNIFE PLATE BE, HOLD BACK 11" |
| G15 | NO AXIAL FORCE LE \| KNIFE PLATE RE, HOLD BACK 11" |

GENERAL NOTES

△ LL ≤ L/360

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY SHOP ORDER CHECKED BY

 WOOD-LAM P.O. # 00-02-200 ISSUED FOR APPROVAL 11/7/00 ISSUED FOR PRODUCTION 11/17/00

△1 Per contractor's approval 11/29/00

# JOIST GIRDER

## BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| RED | 6 BTF SHT 1 OF 1 | S00-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 3 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END | PITCH OR EDL | TYPE OR EDR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G16 | 1 | 48G6N17.5 | 55-9 3/4 | | 1 3/4 | 55-8 | 5 | 6 3/4 | 6 | 6 | | | | |
| G17 | 1 | 48G6N17.5 | 51-11 3/8 | | 1 3/4 | 51-9 5/8 | 5 | 6 3/4 | 6 | 6 | | | | |
| G18 | 1 | 48G5N25.0 △1 | 48-1 1/8 | | 1 3/4 | 47-11 3/8 | 5 | 6 3/4 | 6 | 6 | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | TOP CHORD HOLES HCL | LOCATION | HCR | LOCATION | FIXED MOMENT LEFT | FIXED MOMENT RIGHT | LATERAL MOMENT LEFT | LATERAL MOMENT RIGHT | BC Lyy DISTANCE | ADD. TC AXIAL FORCE | NET UPLIFT | 1 REQ'D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G16 | | | 8 | 6 1/4 | | | 1A | 1-0 / 1-3 1/4 | | | | | | 39.0 | 480 | |
| G17 | | | 8 | 6 1/4 | | | 1A | 1-0 / 1-3 1/4 | | | | | | 39.0 | 480 | |
| G18 | | | 8 | 6 1/4 | | | 1A | 1-0 / 1-3 1/4 | | | | | | 55.0 | 684 △1 | |

| MARK | "A" | "B" | "C" | ADDITIONAL CONCENTRATED LOADS—LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD | SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G16 | 10-2 | 5-6 | 10-0 | | | | | | | | | | |
| G17 | 6 3 5/8 | 5-6 | 10-0 | | | | | | | | | | |
| G18 | 12-5 3/8 | 5-6 | 10-0 | 8.8K | 2-5 3/8 | | | | | | | | |

| MARK | REMARKS - REMARKS -- REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| G16 | NO AXIAL FORCE LE \| KNIFE PLATE RE, HOLD BACK 11" |
| G17 | NO AXIAL FORCE LE \| KNIFE PLATE RE, HOLD BACK 11" |
| G18 | NO AXIAL FORCE LE \| KNIFE PLATE RE, HOLD BACK 11" |

GENERAL NOTES

△ LL ≤ L/360

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY SHOP ORDER CHECKED BY

 WOOD-LAM P.O. # 00-02-200 ISSUED FOR APPROVAL 11/7/00 ISSUED FOR PRODUCTION 11/17/00

△1 Per contractor's approval 11/29/00

# LONG SPAN JOIST

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| RED | 7 BTF SHT 1 OF 1 | S00-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 6 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END | PITCH OR EDL | TYPE OR EDR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | 5 | 44LH15 | 72-5 1/4 | | 1/4 | 72-5 | | | 3 3/4 | 3 3/4 | 1.125 | RE | | |
| | | | | | | | | | | | | | | |
| T2 | 1 | 44LH15 | 72-4 3/4 | | 1/4 | 72-4 1/2 | | | 3 3/4 | 3 3/4 | 1.125 | RE | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | FIXED MOMENT LEFT | FIXED MOMENT RIGHT | LATERAL MOMENT LEFT | LATERAL MOMENT RIGHT | BC Lyy DISTANCE | ADD. TC AXIAL FORCE | NET UPLIFT | I REQ'D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | 7 | 1 3/4 | 7 | 1 3/4 | | | | | | 11.0 | 120 | |
| | | | | | | | | | | | | |
| T2 | 7 | 1 3/4 | 7 | 1 3/4 | | | | | | 11.0 | 120 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

| MARK | ADDITIONAL CONCENTRATED LOADS—LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD | SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| T2 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| T1 | NO AXIAL FORCE LE \| TIE PLATE RE, HOLD BACK NAILER 6" |
| | |
| T2 | NO AXIAL FORCE LE \| TIE PLATE RE, HOLD BACK NAILER 6" |
| | |
| | |
| | |

GENERAL NOTES

1 3/4" LSL NAILER INSTALLED BY MFGR. USE #14 X 1 3/4" GRADE 5 SCREWS @ 24" O.C. SEE DETAIL 1/2.

$\Delta LL \leq L/360$

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY _____ SHOP ORDER CHECKED BY _____

# SHORT SPAN JOIST

## BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| RED | 8 BTF SHT 1 OF 1 | S00-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 19 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J1 | 5 | 30K10 | 40-0 3/4 | 1/4 | 2 1/4 | 39-10 1/4 | | | 3 3/4 | 3 3/4 | .875 | LE |
| | | | | | | | | | | | | |
| J2 | 1 | 30K10 | 39-11 3/4 | 1/4 | 2 1/4 | 39-9 1/4 | | | 3 3/4 | 3 3/4 | .875 | LE |
| | | | | | | | | | | | | |
| J3 | 13 | 30K10 | 39-11 1/2 | 1/4 | 1/4 | 39-11 | | | 3 3/4 | 3 3/4 | | |
| | | | | | | | | | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | ADD. TC AXIAL FORCE | BC Lyy DISTANCE | NET UPLIFT |
|---|---|---|---|---|---|---|---|
| J1 | 9 | 1 3/4 | 9 | 1 3/4 | 11.0 | | 120 |
| | | | | | | | |
| J2 | 9 | 1 3/4 | 9 | 1 3/4 | 11.0 | | 120 |
| | | | | | | | |
| J3 | 9 | 1 3/4 | 9 | 1 3/4 | 11.0 | | 120 |
| | | | | | | | |

| MARK | ADDITIONAL CONCENTRATED LOADS—LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J1 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| J2 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| J3 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| J1 | TIE PLATE BE, HOLD BACK NAILER 6" |
| | |
| J2 | TIE PLATE BE, HOLD BACK NAILER 6" |
| | |
| J3 | TIE PLATE BE, HOLD BACK NAILER 6" |
| | |

GENERAL NOTES

$\Delta LL \leq L/360$

1 3/4" LSL NAILER INSTALLED BY MFGR. USE #14 X 1 3/4" GRADE 5 SCREWS @ 24" O.C. SEE DETAIL 1/2.

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY _____ SHOP ORDER CHECKED BY _____

 WOOD-LAM P.O. # 00-02-200 ISSUED FOR APPROVAL 11/7/00

# SHORT SPAN JOIST

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| RED | 9 BTF SHT 1 OF 1 | S00-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 5 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J4 | 2 | 30K10 | 39-10 1/2 | 1/4 | 1/4 | 39-10 | | | 3 3/4 | 3 3/4 | | |
| | | | | | | | | | | | | |
| J5 | 1 | 30K10 | 39-11 | 1/4 | 1/4 | 39-10 1/2 | | | 3 3/4 | 3 3/4 | | |
| | | | | | | | | | | | | |
| J6 | 2 | 30K10 | 39-9 1/4 | | 1/4 | 39-9 | | | 3 3/4 | 3 3/4 | | |
| | | | | | | | | | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | ADD. TC AXIAL FORCE | BC Lyy DISTANCE | NET UPLIFT |
|---|---|---|---|---|---|---|---|
| J4 | 9 | 1 3/4 | 9 | 1 3/4 | 11.0 | | 120 |
| | | | | | | | |
| J5 | 9 | 1 3/4 | 9 | 1 3/4 | 11.0 | | 120 |
| | | | | | | | |
| J6 | 9 | 1 3/4 | 9 | 1 3/4 | 11.0 | | 120 |
| | | | | | | | |

| MARK | ADDITIONAL CONCENTRATED LOADS-LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J4 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| J5 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| J6 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| J4 | TIE PLATE BE, HOLD BACK NAILER 6" |
| | |
| J5 | TIE PLATE BE, HOLD BACK NAILER 6" |
| | |
| J6 | TIE PLATE BE, HOLD BACK NAILER 6" |
| | |

GENERAL NOTES

$\Delta LL \leq L/360$

1 3/4" LSL NAILER INSTALLED BY MFGR. USE #14 X 1 3/4" GRADE 5 SCREWS @ 24" O.C. SEE DETAIL 1/2.

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY _____ SHOP ORDER CHECKED BY _____

 WCCC-JAM P.O. # 00-02-200 ISSUED FOR APPROVAL 11/7/00

# LONG SPAN JOIST

## BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| BLUE | 10 BTF SHT 1 OF 1 | SCO-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 27 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END | PITCH OR EDL | TYPE OR EDR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T3 | 25 | 44LH15 | 72-5 1/4 | | 1/4 | 72-5 | | | 3 3/4 | 3 3/4 | 1.125 | RE | | |
| | | | | | | | | | | | | | | |
| T4 | 1 | 44LH542/291 | 72-5 1/4 | | 1/4 | 72-5 | | | 3 3/4 | 3 3/4 | 1.125 | RE | | |
| | | | | | | | | | | | | | | |
| T5 | 1 | 44LH562/311 | 72-5 1/4 | | 1/4 | 72-5 | | | 3 3/4 | 3 3/4 | 1.125 | RE | | |
| | | | | | | | | | | | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | FIXED MOMENT LEFT | FIXED MOMENT RIGHT | LATERAL MOMENT LEFT | LATERAL MOMENT RIGHT | BC Lyy DISTANCE | ADD. TC AXIAL FORCE | NET UPLIFT | 1 REQ'D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T3 | | | | | | | | | | 11.0 | 120 | |
| | | | | | | | | | | | | |
| T4 | | | | | | | | | | 11.0 | 120 | |
| | | | | | | | | | | | | |
| T5 | | | | | | | | | | 11.0 | 120 | |
| | | | | | | | | | | | | |

ADDITIONAL CONCENTRATED LOADS—LOCATED FROM BASE LENGTH LEFT END

| MARK | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD | SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T3 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| T4 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| T5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| T3 | NO AXIAL FORCE LE \| TIE PLATE RE, HOLD BACK NAILER 6" |
| | |
| T4 | NO AXIAL FORCE LE \| TIE PLATE RE, HOLD BACK NAILER 6" |
| | |
| T5 | NO AXIAL FORCE LE \| TIE PLATE RE, HOLD BACK NAILER 6" |
| | |

GENERAL NOTES

1 3/4" LSL NAILER INSTALLED BY MFGR. USE #14 X 1 3/4" GRADE 5 SCREWS @ 24" O.C. SEE DETAIL 1/2.

$\Delta LL \leq L/360$

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY SHOP ORDER CHECKED BY

# LONG SPAN JOIST

## BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| BLUE | 11 BTF SHT 1 OF 1 | SOO-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 2 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END | PITCH OR EDL | TYPE OR EDR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T6 | 1 | 44LH15 | 72-5 1/4 | | 1/4 | 72-5 | | | 3 3/4 | 3 3/4 | 1.125 | RE | | |
| | | | | | | | | | | | | | | |
| T7 | 1 | 44LH542/291 | 72-5 1/4 | | 1/4 | 72-5 | | | 3 3/4 | 3 3/4 | 1.125 | RE | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | FIXED MOMENT LEFT | FIXED MOMENT RIGHT | LATERAL MOMENT LEFT | LATERAL MOMENT RIGHT | BC Lyy DISTANCE | ADD. TC AXIAL FORCE | NET UPLIFT | I REQ'D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T6 | | | | | | | | | | 11.0 | 120 | |
| | | | | | | | | | | | | |
| T7 | | | | | | | | | | 11.0 | 120 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

ADDITIONAL CONCENTRATED LOADS—LOCATED FROM BASE LENGTH LEFT END

| MARK | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD | SPLICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T6 | 0.58K | 21-0 | 0.58K | 29-0 | 0.58K | 37-0 | 0.58K | 45-0 | | | | | | |
| | | | | | | | | | | | | | | |
| T7 | 0.15K | 21-0 | 0.15K | 29-0 | 0.15K | 37-0 | 0.15K | 45-0 | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| T6 | NO AXIAL FORCE LE \| TIE PLATE RE, HOLD BACK NAILER 6" |
| | |
| T7 | NO AXIAL FORCE LE \| TIE PLATE RE, HOLD BACK NAILER 6" |
| | |
| | |
| | |

GENERAL NOTES

1 3/4" LSL NAILER INSTALLED BY MFGR. USE #14 X 1 3/4" GRADE 5 SCREWS @ 24" O.C. SEE DETAIL 1/2.

$\Delta LL \leq L/360$

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY _____ SHOP ORDER CHECKED BY _____

# SHORT SPAN JOIST

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| BLUE | 12 BTF SHT 1 OF 1 | S00-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 30 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J7 | 27 | 30K10 | 40-0 3/4 | 1/4 | 2 1/4 | 39-10 1/4 | | | 3 3/4 | 3 3/4 | | |
| J8 | 2 | 30K468/345 | 40-0 3/4 | 1/4 | 2 1/4 | 39-10 1/4 | | | 3 3/4 | 3 3/4 | | |
| J9 | 1 | 30K488/365 | 40-0 3/4 | 1/4 | 2 1/4 | 39-10 1/4 | | | 3 3/4 | 3 3/4 | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | ADD. TC AXIAL FORCE | BC Lyy DISTANCE | NET UPLIFT |
|---|---|---|---|---|---|---|---|
| J7 | | | | | 11.0 | | 120 |
| J8 | | | | | 11.0 | | 120 |
| J9 | | | | | 11.0 | | 120 |

| MARK | ADDITIONAL CONCENTRATED LOADS—LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J7 | | | | | | | | | | | | | |
| J8 | | | | | | | | | | | | | |
| J9 | | | | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| J7 | TIE PLATE BE, HOLD BACK NAILER 6" |
| J8 | TIE PLATE BE, HOLD BACK NAILER 6" |
| J9 | TIE PLATE BE, HOLD BACK NAILER 6" |

GENERAL NOTES

$\Delta LL \leq L/360$

1 3/4" LSL NAILER INSTALLED BY MFGR. USE #14 X 1 3/4" GRADE 5 SCREWS @ 24" O.C. SEE DETAIL 1/2.

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY _____ SHOP ORDER CHECKED BY _____

 WOOD-LAM P.O. # 00-02-200 ISSUED FOR APPROVAL 11/7/00

# SHORT SPAN JOIST

## BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| BLUE | 13 BTF SHT 1 OF 1 | SCO-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 79 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCDL | TCDR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J10 | 70 | 30K10 | 39-11 1/2 | 1/4 | 1/4 | 39-11 | | | 3 3/4 | 3 3/4 | | |
| J11 | 6 | 30K468/345 | 39-11 1/2 | 1/4 | 1/4 | 39-11 | | | 3 3/4 | 3 3/4 | | |
| J12 | 3 | 30K488/365 | 39-11 1/2 | 1/4 | 1/4 | 39-11 | | | 3 3/4 | 3 3/4 | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | ADD. TC AXIAL FORCE | BC Lyy DISTANCE | NET UPLIFT |
|---|---|---|---|---|---|---|---|
| J10 | | | | | 11.0 | | 120 |
| J11 | | | | | 11.0 | | 120 |
| J12 | | | | | 11.0 | | 120 |

| MARK | ADDITIONAL CONCENTRATED LOADS-LOCATED FROM BASE LENGTH LEFT END LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J10 | | | | | | | | | | | | | |
| J11 | | | | | | | | | | | | | |
| J12 | | | | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| J10 | TIE PLATE BE, HOLD BACK NAILER 6" |
| J11 | TIE PLATE BE, HOLD BACK NAILER 6" |
| J12 | TIE PLATE BE, HOLD BACK NAILER 6" |

GENERAL NOTES

$\Delta LL \leq L/360$

1 3/4" LSL NAILER INSTALLED BY MFGR. USE #14 X 1 3/4" GRADE 5 SCREWS @ 24" O.C. SEE DETAIL 1/2.

DRAWN BY ADD CHECKED BY MKA SHOP ORDERED BY _____ SHOP ORDER CHECKED BY _____

 WOOD-LAM P.O. # CO-02-200 ISSUED FOR APPROVAL 11/7/00

# SHORT SPAN JOIST

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| BLUE | 14 BTF SHT 1 OF 1 | SCO-1359 |
| PIECE COUNT | PAINT | REFER TO DWG |
| 12 | GREY | 1 OF 2 |

| MARK | QTY | DESIGNATION | OVERALL LENGTH | TCXL | TCXR | BASE LENGTH | EXT BOTTOM CHORD LEFT | EXT BOTTOM CHORD RIGHT | BRG DEPTH LEFT | BRG DEPTH RIGHT | SLOPE RATE | HIGH END |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J13 | 12 | 30K10 | 39-9 1/4 | | 1/4 | 39-9 | | | 3 3/4 | 3 3/4 | | |

| MARK | BEARING SEAT SLOTS SCL | LOCATION | SCR | LOCATION | ADD. TC AXIAL FORCE | BC Lyy DISTANCE | NET UPLIFT |
|---|---|---|---|---|---|---|---|
| J13 | | | | | 11.0 | | 120 |

ADDITIONAL CONCENTRATED LOADS-LOCATED FROM BASE LENGTH LEFT END

| MARK | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | LOAD | LOCATION | ADLOAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J13 | | | | | | | | | | | | | |

| MARK | REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - REMARKS - - REMARKS |
|---|---|
| J13 | TIE PLATE BE, HOLD BACK NAILER 6" |

GENERAL NOTES

$\Delta LL \leq L/360$

1 3/4" LSL NAILER INSTALLED BY MFGR. USE #14 X 1 3/4" GRADE 5 SCREWS @ 24" O.C. SEE DETAIL 1/2.

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY SHOP ORDER CHECKED BY

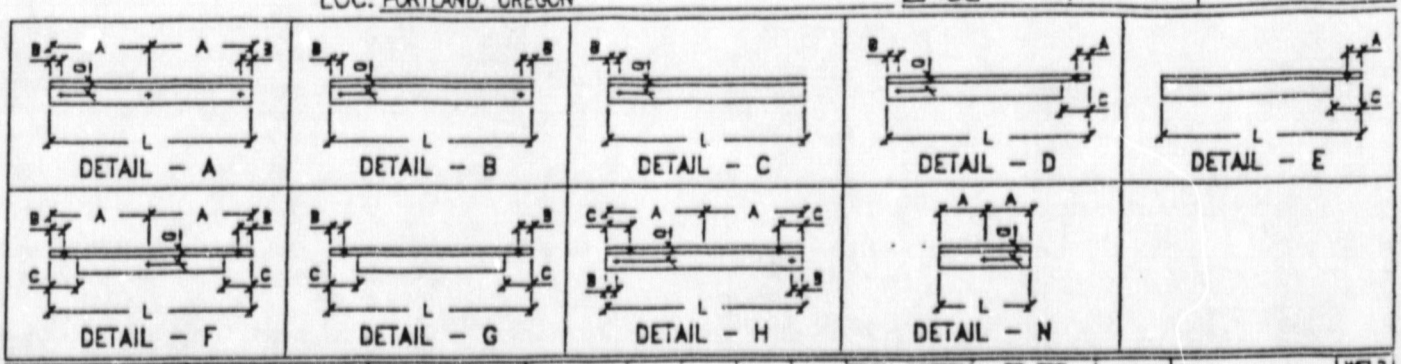
# BRIDGING/ACCESSORIES

BILL OF MATERIALS

JOB: COLUMBIA DISTRIBUTION

LOC: PORTLAND, OREGON

| COLOR CODE | LIST NUMBER | FILE NUMBER |
|---|---|---|
| BLUE | 15 END SHT 1 OF 1 | S00-1359 |
| SS TONS / LS TONS | PAINT GREY | REFER TO DWG 1 OF 2 |




| MARK | QTY | DESCRIPTION | L | A | B | C | G | DET | FROM BOTTOM OF MEMBER #1 | TO TOP OF MEMBER #2 | ELEV. Δ | SPACE | WELD OR BOLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UB1 | 20 | | | | | | | | 48G | 44LH | | | |
| UB2 | 160 | | | | | | | | 48G | 30K | | | |
| J4 | 580 | | | | | | | | 30K | 2x6 | | | |
| J5 | 210 | | | | | | | | 44LH | 2x6 | | | |

REMARKS:

| | | | | | |
|---|---|---|---|---|---|
| ____ | ____X____ | BOLTS | ____ | ____X____ | BOLTS |
| ____ | ____X____ | NUTS | ____ | ____X____ | NUTS |
| ____ | ____X____ | WASHERS | ____ | ____X____ | WASHERS |

DRAWN BY ADP CHECKED BY MKA SHOP ORDERED BY ____ SHOP ORDER CHECKED BY ____

canam steel Corporation

SOLUTIONS + SERVICE

00-160942-DFS-01-CO

# STRUCTURAL CALCULATIONS

THE STEEL JOISTS DESIGNATED BELOW WERE DESIGNED IN ACCORDANCE WITH STANDARD SPECIFICATIONS ESTABLISHED BY THE STEEL JOIST INSTITUTE.

- G1, G2, G3, G4, G5, G6, G7, G8, G9, G10, G11, G12, -
- G13, G14, G15, G16, G17, G18, C1, C2, C3, C4, C5, C6, -
- C7, J1, J2, J3, J4, J5, J6, J7, J8, J9, J10, J11, -
- J12, J13, - END -

NO EXCEPTION TAKEN ☑ MAKE CORRECTIONS NOTED ☐
REJECTED ☐ REVISE AND RESUBMIT ☐
SUBMIT SPECIFIED ITEM ☐

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR: DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

KRAMER, GEHLEN & ASSOC., INC.
CONSULTING STRUCTURAL ENGINEERS

DATE 12/18/00 BY RJ

RECEIVED
DEC 20 2000
DOCUMENT SERVICES
13 Dec 2000

REGISTERED PROFESSIONAL ENGINEER 16330 OREGON SEPT. 21, 1973 TIMOTHY W. BARDELL

Portland
APPROVED
08 2001

CUSTOMER: WOOD LANE COLUMBIA CONDOMINIUMS
JOB NO.: A04061

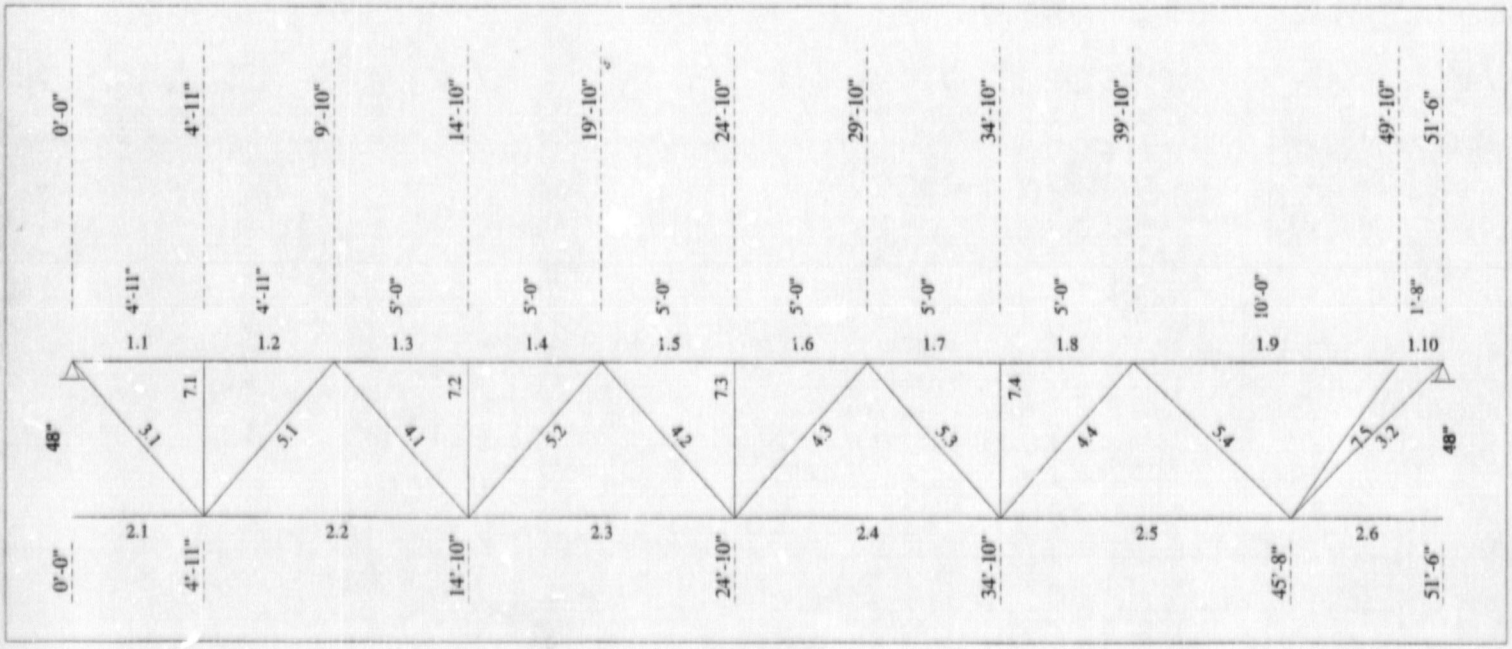
☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED
☐ REVISE AND RESUBMIT ☐ REJECTED
REVIEWED GENERAL CONFORMITY WITH CONTRACT DOCUMENTS. SUBCONTRACTOR IS RESPONSIBLE FOR ALL QUANTITIES, DIMENSIONS, JOINERY AND COMPLETE COMPLIANCE WITH CONTRACT DOCUMENTS.

ANDERSEN CONSTRUCTION CO., INC.
BY Rick Jukuda DATE 12/18/00
ACCO JOB # 625
SUBMITTAL #

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G1 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G5N13.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 13.00 | 9.10 | 3.48 | 9'-10" | 9'-10" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 13.00 | 9.10 | 3.48 | 19'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 13.00 | 9.10 | 3.48 | 29'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 13.00 | 9.10 | 3.48 | 39'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Far | 0.90 | 0.90 | 0.00 | 19'-10" | 19'-10" | 5 | 1 | 90 | 0 |
| 6 | 1 | Far | 13.00 | 13.00 | 0.00 | 49'-10" | 30'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -87.00 | 87.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 87.00 | -87.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

Mark: G1

canamsteel Corporation

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:24:01

## DEFLECTION

Allowed deflection under live load ..... = 1.71 in (L/ 360)
Calculated deflection under service live load .... = 1.11 in (L/ 551)
Joist inertia ..... = 5099.19 in^4
Required camber ..... = 1.08 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.87 in)

Left Reaction = 27.90/ -5.38 kips Right Reaction = 38.06/ -5.01 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 74.97 | -80.02 | | LL 4 X .375 | z 72 | 0.683 | 4'-11" | | |
| 1.2 | 74.97 | -80.02 | | do | z 75 | 0.699 | 4'-11" | | |
| 1.3 | 85.56 | -99.01 | | do | z 76 | 0.876 | 5'-0" | | |
| 1.4 | 85.56 | -99.01 | | do | z 76 | 0.876 | do | | |
| 1.5 | 89.45 | -110.71 | | do | z 76 | 0.979 | do | | |
| 1.6 | 89.45 | -110.71 | | do | z 76 | 0.979 | do | | |
| 1.7 | 86.54 | -101.61 | | do | z 76 | 0.899 | do | | |
| 1.8 | 86.54 | -101.61 | | do | z 76 | 0.899 | 5'-0" | | |
| 1.9 | 75.72 | -84.13 | x | do | xx 97 | 0.958 | 10'-0" | | |
| 1.10 | 75.72 | -94.76 | | LL 4 X .375 | z 23 | 0.592 | 1'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3.5 X .313 | z 83 | 0.564 | 4'-11" | | |
| 2.2 | 70.52 | -13.64 | | do | z 172 | 0.747 | 9'-11" | | |
| 2.3 | 109.44 | -20.93 | x | do | xx111 | 0.871 | 10'-0" | | |
| 2.4 | 111.96 | -21.42 | x | do | yy140 | 0.892 | 10'-0" | | |
| 2.5 | 80.46 | -15.11 | | do | z 188 | 0.858 | 10'-10" | | |
| 2.6 | 0.00 | 0.00 | | LL 3.5 X .313 | z 99 | 0.549 | 5'-10" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 44.49 | -11.12 | x | LL 2 X .216 | xx119 | 0.907 | 6'-2 1/2" | .216 - 7" | |
| 3.2 | 68.04 | -17.01 | | LL 3 X .25 | z 138 | 0.789 | 6'-11 1/4" | .250 - 9 1/4" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 24.50 | -6.13 | x | LLV 1.75 x .143 | xx139 | 0.851 | 6'-4 7/8" | .143 - 5 3/4" | |
| 4.2 | 15.67 | -3.92 | x | LL 2 X .216 | xx123 | 0.319 | do | .216 - 2 1/2" | |
| 4.3 | 0.31 | -15.67 | x | LL 2 X .216 | xx123 | 0.973 | do | .216 - 2 1/2" | |
| 4.4 | 19.84 | -4.96 | x | LLV 1.75 x .143 | xx139 | 0.689 | 6'-4 7/8" | .143 - 4 5/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 8.79 | -45.42 | x | LL 3 X .224 | xx 80 | 0.973 | 6'-4" | .224 - 6 7/8" | |
| 5.2 | 4.60 | -24.49 | x | LL 2.5 X .188 | xx 97 | 0.904 | 6'-4 7/8" | .188 - 4 3/8" | |
| 5.3 | 3.98 | -19.82 | x | LL 2.5 X .188 | xx 97 | 0.732 | 6'-4 7/8" | .188 - 3 5/8" | |
| 5.4 | 9.16 | -45.70 | x | LL 3 X .25 | xx 90 | 0.955 | 7'-0 7/8" | .250 - 6 1/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -1.68 | | U 1 x 1 x 0.118 | z 155 | 0.019 | 4'-0" | .118 - 1 1/2" | |
| 7.2 | 0.00 | -2.08 | d | U 1 3/8 x 0.118 | z 106 | 0.479 | do | do | |
| 7.3 | 0.00 | -2.33 | d | do | z 106 | 0.535 | do | do | |
| 7.4 | 0.00 | -2.14 | d | U 1 3/8 x 0.118 | z 106 | 0.491 | 4'-0" | .118 - 1 1/2" | |
| 7.5 | 0.00 | -19.23 | | LL 3 X .224 | z 114 | 0.650 | 5'-9 1/4" | .224 - 2 7/8" | |

## BRIDGING

Maximum spacing between rows of bridging
@ Top Chord: 40'-10 7/8" ==> 0 Row(s) Minimum

Laterals supports
Concentrated loads

@ Bottom Chord: 36'-10 1/8" ==> 2 Row(s) Minimum Acc. to the force

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 19'-10" |
| | | KB 29'-10" |

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v3.6 12/06/00

Fabrication code unless noted
-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar
-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

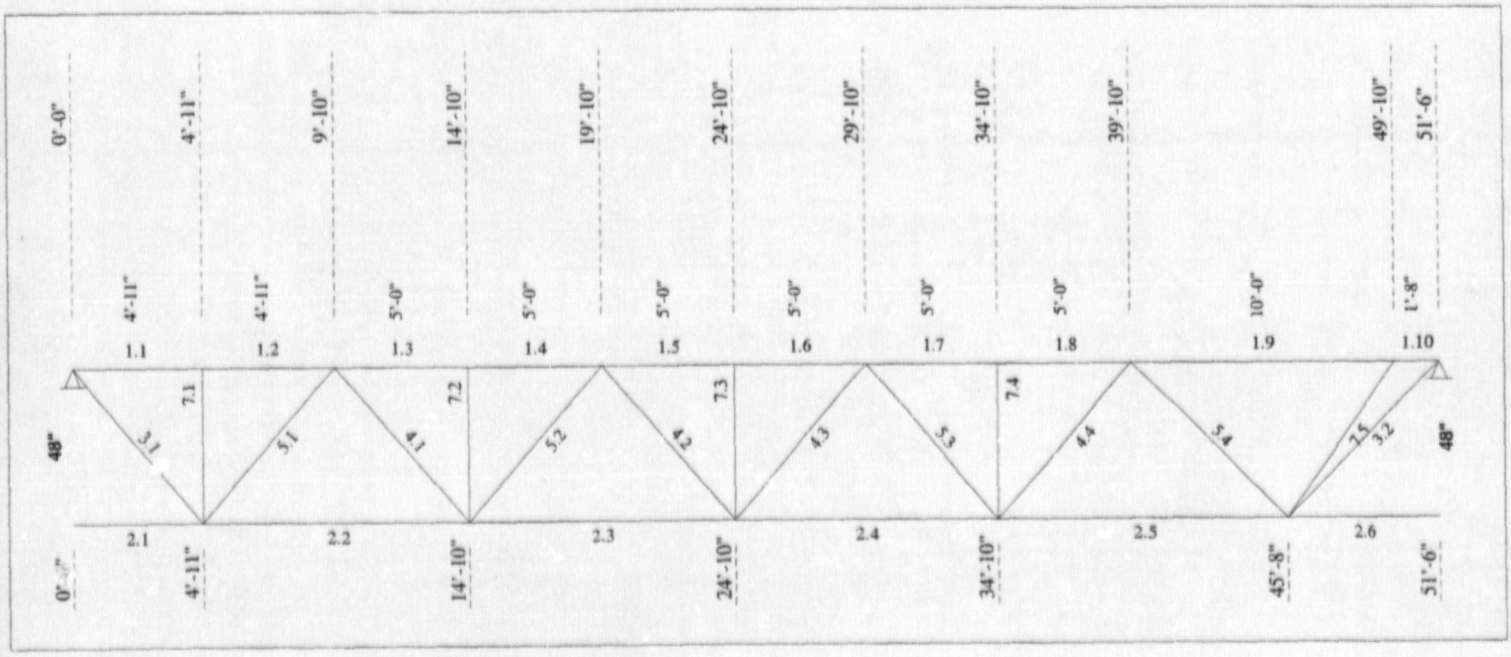
CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)
Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension
Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)
Definition of the categories (Cat.) 0 @ 6:
0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support
Chord: 1 = Top, 2 = Bottom
Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]
2165 ( 317.84) / 2288 ( 336.44)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G2 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G5N17.5 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 17.50 | 12.25 | 4.80 | 9'-10" | 9'-10" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 17.50 | 12.25 | 4.80 | 19'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 17.50 | 12.25 | 4.80 | 29'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 17.50 | 12.25 | 4.80 | 39'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Far | 1.20 | 1.20 | 0.00 | 19'-10" | 19'-10" | 5 | 1 | 90 | 0 |
| 6 | 1 | Far | 17.50 | 17.50 | 0.00 | 49'-10" | 30'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -39.00 | 39.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 39.00 | -39.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G2

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:24:29

## DEFLECTION

Allowed deflection under live load ..... = 1.71 in (L/ 360)
Calculated deflection under service live load .... = 1.19 in (L/ 516)
Joist inertia ..... = 6428.75 in^4
Required camber ..... = 1.08 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.70 in)

Left Reaction = 37.54/ -7.43 kips Right Reaction = 51.22/ -6.92 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 40.00 | -46.81 | | LL 4 X .438 | z 73 | 0.346 | 4'-11" | | |
| 1.2 | 40.00 | -46.81 | | do | z 75 | 0.612 | 4'-11" | | |
| 1.3 | 54.67 | -121.53 | | do | z 76 | 0.931 | 5'-0" | | |
| 1.4 | 54.67 | -121.53 | | do | z 76 | 0.931 | do | | |
| 1.5 | 60.06 | -149.53 | x | do | yy 58 | 0.980 | do | | |
| 1.6 | 60.06 | -149.53 | x | do | yy 58 | 0.980 | do | | |
| 1.7 | 56.02 | -129.97 | | do | z 76 | 0.995 | do | | |
| 1.8 | 56.02 | -129.97 | | do | z 76 | 0.995 | 5'-0" | | |
| 1.9 | 41.03 | -57.05 | x | do | xx 98 | 0.654 | 10'-0" | | |
| 1.10 | 41.03 | -76.20 | | LL 4 X .438 | z 23 | 0.411 | 1'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 4 X .375 | z 72 | 0.476 | 4'-11" | | |
| 2.2 | 95.25 | -18.89 | | do | z 151 | 0.738 | 9'-11" | | |
| 2.3 | 147.81 | -29.00 | | do | z 152 | 0.862 | 10'-0" | | |
| 2.4 | 151.23 | -29.68 | | do | z 152 | 0.882 | 10'-0" | | |
| 2.5 | 108.68 | -20.93 | | do | z 165 | 0.756 | 10'-10" | | |
| 2.6 | 0.00 | 0.00 | | LL 4 X .375 | z 86 | 0.543 | 5'-10" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 60.00 | -15.00 | | LL 2.5 X .230 | z 148 | 1.007 | 6'-2 1/2" | .230 - 8 7/8" | T45 |
| 3.2 | 91.81 | -22.95 | | LL 3 X .313 | z 139 | 0.860 | 6'-11 1/4" | .313 - 9 7/8" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 33.04 | -8.26 | x | LL 2 X .142 | xx121 | 1.005 | 6'-4 7/8" | .142 - 7 7/8" | |
| 4.2 | 21.13 | -5.28 | x | LL 2.5 X .188 | xx 97 | 0.389 | do | .188 - 3 3/4" | |
| 4.3 | 0.43 | -21.13 | x | LL 2.5 X .188 | xx 97 | 0.779 | do | .188 - 3 3/4" | |
| 4.4 | 26.75 | -6.69 | x | LL 2 X .142 | xx121 | 0.814 | 6'-4 7/8" | .142 - 6 3/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 12.16 | -61.27 | x | LL 3 X .281 | xx 81 | 1.009 | 6'-4" | .281 - 7 3/8" | |
| 5.2 | 6.36 | -33.02 | x | LL 2.5 X .230 | xx 98 | 0.988 | 6'-4 7/8" | .230 - 4 7/8" | |
| 5.3 | 5.51 | -26.74 | x | LL 2.5 X .230 | xx 98 | 0.800 | 6'-4 7/8" | .230 - 3 7/8" | |
| 5.4 | 12.68 | -61.66 | x | LL 3.5 X .313 | xx 77 | 0.759 | 7'-0 7/8" | .313 - 6 5/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -0.98 | | U 1 x 1 x 0.090 | z 160 | 0.739 | 4'-0" | .091 - 1 1/2" | |
| 7.2 | 0.00 | -2.55 | d | U 1 3/8 x 0.118 | z 106 | 0.581 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -3.13 | d | do | z 106 | 0.715 | do | do | |
| 7.4 | 0.00 | -2.72 | d | U 1 3/8 x 0.118 | z 106 | 0.622 | 4'-0" | .118 - 1 1/2" | |
| 7.5 | 0.00 | -25.94 | | LL 3 X .224 | z 114 | 0.873 | 5'-9 1/4" | .224 - 3 7/8" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 41'-2" ==> 0 Row(s) Minimum Concentrated loads

@ Bottom Chord: 41'-0 3/8" ==> 2 Row(s) Minimum Acc. to the force

| POSITION | @ Top Chord | @ Bottom Chord | |
|---|---|---|---|
| | | KB | 19'-10" |
| | | KB | 29'-10" |

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v3.6 12/06/00

Fabrication code unless noted
-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar
-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

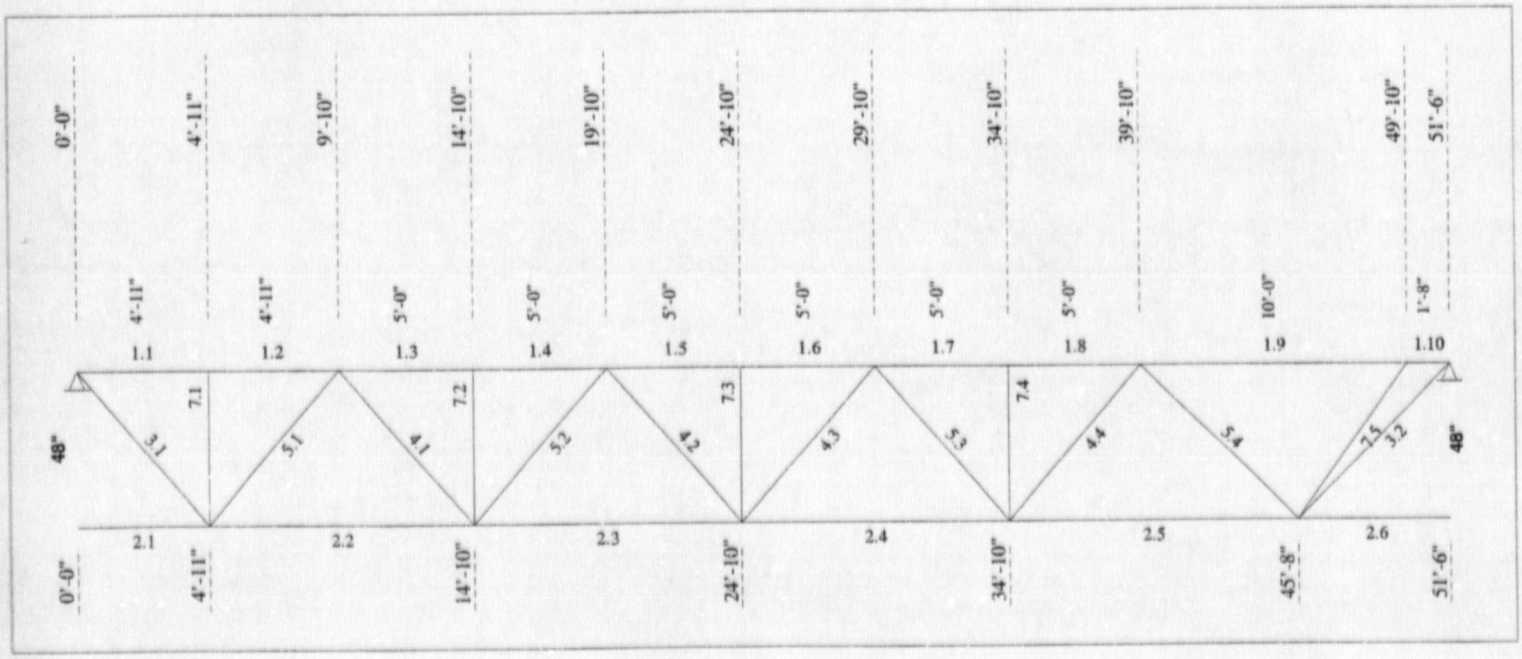
CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)
Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension
Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)
Definition of the categories (Cat.) 0 @ 6:
0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support
Chord: 1 = Top, 2 = Bottom
Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]
2663 ( 384.21) / 2825 ( 406.99)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G3 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G5N25.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 25.00 | 17.50 | 6.84 | 9'-10" | 9'-10" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 25.00 | 17.50 | 6.84 | 19'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 25.00 | 17.50 | 6.84 | 29'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 25.00 | 17.50 | 6.84 | 39'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Far | 1.10 | 1.10 | 0.00 | 9'-10" | 9'-10" | 5 | 1 | 90 | 0 |
| 6 | 1 | Far | 2.50 | 2.50 | 0.00 | 19'-10" | 10'-0" | 5 | 1 | 90 | 0 |
| 7 | 1 | Far | 25.00 | 25.00 | 0.00 | 49'-10" | 30'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -55.00 | 55.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 55.00 | -55.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

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Mark: G3

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:24:54

## DEFLECTION

Allowed deflection under live load ..... = 1.71 in (L/ 360)
Calculated deflection under service live load .... = 1.23 in (L/ 501)
Joist inertia ..... = 9118.51 in^4
Required camber ..... = 1.08 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.15 in)

Left Reaction = 54.99/ -10.60 kips Right Reaction = 73.67/ -9.87 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 57.24 | -69.40 | | LL 5 X .5 | z 58 | 0.317 | 4'-11" | | |
| 1.2 | 57.24 | -69.40 | | do | z 60 | 0.630 | 4'-11" | | |
| 1.3 | 78.41 | -179.59 | | do | z 61 | 0.839 | 5'-0" | | |
| 1.4 | 78.41 | -179.59 | | do | z 61 | 0.839 | do | | |
| 1.5 | 86.19 | -219.75 | x | do | yy 49 | 0.941 | do | | |
| 1.6 | 86.19 | -219.75 | x | do | yy 49 | 0.941 | do | | |
| 1.7 | 80.36 | -190.12 | | do | z 61 | 0.888 | do | | |
| 1.8 | 80.36 | -190.12 | | do | z 61 | 0.888 | 5'-0" | | |
| 1.9 | 58.73 | -83.25 | x | do | xx 78 | 0.667 | 10'-0" | | |
| 1.10 | 58.73 | -110.93 | | LL 5 X .5 | z 18 | 0.410 | 1'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 5 X .438 | z 58 | 0.482 | 4'-11" | | |
| 2.2 | 141.23 | -27.26 | | do | z 121 | 0.743 | 9'-11" | | |
| 2.3 | 217.94 | -41.86 | | do | z 122 | 0.867 | 10'-0" | | |
| 2.4 | 221.54 | -42.83 | | do | z 122 | 0.882 | 10'-0" | | |
| 2.5 | 158.68 | -30.20 | | do | z 132 | 0.809 | 10'-10" | | |
| 2.6 | 0.00 | 0.00 | | LL 5 X .438 | z 69 | 0.570 | 5'-10" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 88.54 | -22.14 | | LL 3 X .281 | z 123 | 0.918 | 6'-2 1/2" | .281 - 10 5/8" | |
| 3.2 | 133.16 | -33.29 | | LL 3.5 X .375 | z 119 | 0.893 | 6'-11 1/4" | .313 - 14 3/8" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 48.01 | -12.00 | x | LL 2 X .216 | xx122 | 0.979 | 6'-4 7/8" | .216 - 7 1/2" | |
| 4.2 | 30.63 | -7.66 | x | LL 2.5 X .230 | xx 97 | 0.465 | do | .230 - 4 1/2" | |
| 4.3 | 0.62 | -30.63 | x | LL 2.5 X .230 | xx 97 | 0.911 | do | .230 - 4 1/2" | |
| 4.4 | 39.35 | -9.84 | x | LL 2 X .216 | xx122 | 0.802 | 6'-4 7/8" | .216 - 6 1/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 17.47 | -90.45 | x | LL 3.5 X .344 | xx 69 | 0.934 | 6'-4" | .313 - 9 3/4" | |
| 5.2 | 9.14 | -48.00 | x | LL 3 X .25 | xx 81 | 0.905 | 6'-4 7/8" | .250 - 6 1/2" | |
| 5.3 | 7.91 | -39.33 | x | LL 3 X .25 | xx 81 | 0.742 | 6'-4 7/8" | .250 - 5 3/8" | |
| 5.4 | 18.23 | -89.77 | x | LL 3.5 X .344 | xx 77 | 1.002 | 7'-0 7/8" | .313 - 9 3/4" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -1.44 | | U 1 x 1 x 0.118 | z 153 | 0.761 | 4'-0" | .118 - 1 1/2" | |
| 7.2 | 0.00 | -3.72 | d | U 1 3/8 x 0.118 | z 104 | 0.831 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -4.55 | d | U 1 3/8 x 0.157 | z 102 | 0.554 | do | .158 - 1 1/2" | |
| 7.4 | 0.00 | -3.93 | d | U 1 3/8 x 0.118 | z 104 | 0.880 | 4'-0" | .118 - 1 1/2" | |
| 7.5 | 0.00 | -37.30 | | LL 3 X .313 | z 114 | 0.917 | 5'-9 1/4" | .313 - 4" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 49'-3 3/4" ==> 0 Row(s) Minimum Concentrated loads

canamsteel Corporation

Mark: G3

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:24:54

@ Bottom Chord: 49'-2 1/4" ==> 1 Row(s) Minimum Acc. to the force

POSITION @ Top Chord @ Bottom Chord

KB 19'-10"

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v3.6 12/06/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member 1 = within a panel with no reinforcement

2 = anywhere within a panel 3 = at any panel point along the joist

4 = anywhere along the joist 5 = transferred by an additional member and lateral support

6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

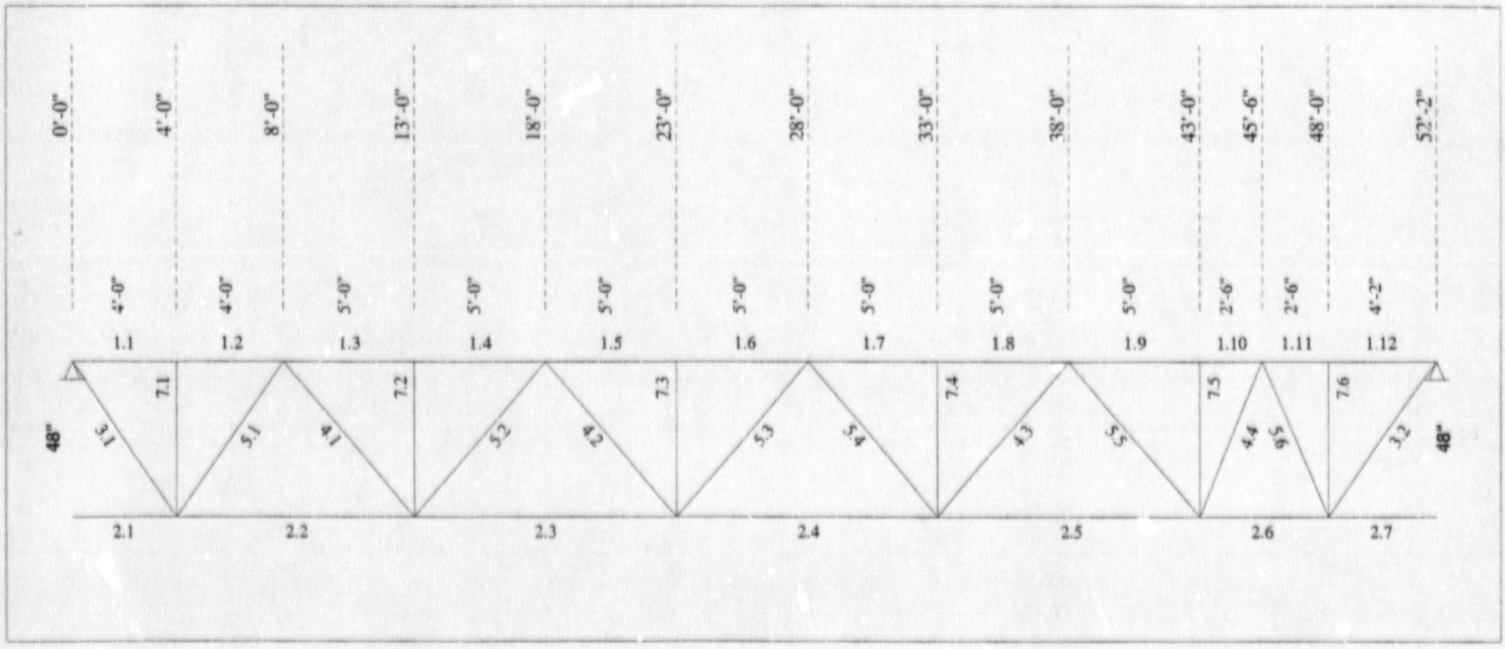
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

3785 ( 609.41) / 4002 ( 644.23)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G4 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G6N13.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 13.00 | 9.10 | 3.10 | 8'-0" | 8'-0" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 13.00 | 9.10 | 3.10 | 18'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 13.00 | 9.10 | 3.10 | 28'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 13.00 | 9.10 | 3.10 | 38'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Near | 13.00 | 9.10 | 3.10 | 48'-0" | 10'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -87.00 | 87.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 87.00 | -87.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

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Mark: G4

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 17:31:17

## DEFLECTION

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.16 in (L/ 538)
Joist inertia ..... = 5099.19 in^4
Required camber ..... = 1.11 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.87 in)

Left Reaction = 30.14/ -5.35 kips Right Reaction = 34.94/ -6.21 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 73.65 | -78.75 | | LL 4 X .375 | z 58 | 0.599 | 4'-0" | | |
| 1.2 | 73.65 | -78.75 | | do | z 61 | 0.611 | 4'-0" | | |
| 1.3 | 83.25 | -97.42 | | do | z 76 | 0.862 | 5'-0" | | |
| 1.4 | 83.25 | -97.42 | | do | z 76 | 0.862 | do | | |
| 1.5 | 88.19 | -111.85 | | do | z 76 | 0.990 | do | | |
| 1.6 | 88.19 | -111.85 | | do | z 76 | 0.990 | do | | |
| 1.7 | 87.07 | -105.56 | | do | z 76 | 0.934 | do | | |
| 1.8 | 87.07 | -105.56 | | do | z 76 | 0.934 | do | | |
| 1.9 | 79.88 | -90.89 | | do | z 76 | 0.804 | 5'-0" | | |
| 1.10 | 79.88 | -90.89 | | do | z 38 | 0.692 | 2'-6" | | |
| 1.11 | 74.79 | -80.95 | | do | z 38 | 0.692 | 2'-6" | | |
| 1.12 | 74.79 | -80.95 | | LL 4 X .375 | z 61 | 0.628 | 4'-2" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3.5 X .313 | z 67 | 0.507 | 4'-0" | | |
| 2.2 | 61.72 | -10.99 | | do | z 157 | 0.727 | 9'-0" | | |
| 2.3 | 106.48 | -18.96 | | do | z 174 | 0.918 | 10'-0" | | |
| 2.4 | 117.21 | -20.87 | x | do | yy156 | 0.933 | do | | |
| 2.5 | 93.90 | -16.72 | | do | z 174 | 0.816 | 10'-0" | | |
| 2.6 | 50.90 | -9.05 | | do | z 87 | 0.654 | 5'-0" | | |
| 2.7 | 0.00 | 0.00 | | LL 3.5 X .313 | z 70 | 0.354 | 4'-2" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 42.66 | -10.67 | x | LL 2 X .188 | xx105 | 0.992 | 5'-6 1/2" | .188 - 7 5/8" | |
| 3.2 | 50.56 | -12.64 | x | LL 2 X .250 | xx109 | 0.899 | 5'-7 7/8" | .250 - 6 7/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 28.18 | -7.05 | x | LLV 1.75 x .143 | xx139 | 0.978 | 6'-4 7/8" | .143 - 6 5/8" | |
| 4.2 | 14.38 | -3.60 | x | LL 1.5 X .156 | xx164 | 0.729 | do | .156 - 3 1/8" | |
| 4.3 | 14.68 | -3.67 | x | do | xx164 | 0.744 | 6'-4 7/8" | .156 - 3 1/4" | |
| 4.4 | 26.20 | -6.55 | x | LL 1.5 X .156 | xx119 | 0.984 | 4'-8 5/8" | .156 - 5 5/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 7.77 | -43.59 | x | LL 3 X .224 | xx 71 | 0.862 | 5'-7 7/8" | .224 - 6 5/8" | |
| 5.2 | 5.02 | -28.16 | x | LL 2.5 X .250 | xx 98 | 0.784 | 6'-4 7/8" | .250 - 3 7/8" | |
| 5.3 | 1.21 | -14.38 | x | LL 2 X .216 | xx123 | 0.893 | do | .216 - 2 1/4" | |
| 5.4 | 2.62 | -14.66 | x | LL 2 X .216 | xx123 | 0.910 | do | .216 - 2 1/4" | |
| 5.5 | 6.44 | -36.08 | x | LL 2.5 X .250 | xx 98 | 1.004 | 6'-4 7/8" | .250 - 4 7/8" | |
| 5.6 | 4.65 | -26.21 | x | LL 2 X .216 | xx 89 | 0.939 | 4'-8 5/8" | .216 - 4 1/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -1.66 | | LL 2 X .163 | z 116 | 0.119 | 4'-0" | .163 - 1 1/2" | |
| 7.2 | 0.00 | -2.05 | d | U 1 3/8 x 0.118 | z 106 | 0.471 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -2.35 | d | do | z 106 | 0.541 | do | do | |
| 7.4 | 0.00 | -2.22 | d | do | z 106 | 0.510 | do | do | |
| 7.5 | 0.00 | -1.91 | d | U 1 3/8 x 0.118 | z 106 | 0.439 | do | .118 - 1 1/2" | |

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Mark: G4

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 17:31:17

## F O R C E S I N M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|
| 7.6 | 2.33 | -13.00 | LL 2 X .163 | z 116 | 0.938 | 4'-0" | .163 - 2 5/8" | |

### BRIDGING

Maximum spacing between rows of bridging

| | | | Laterals supports |
|---|---|---|---|
| @ Top Chord: | 41'-0 3/8" ==> | 0 Row(s) Minimum | Concentrated loads |
| @ Bottom Chord: | 36'-10 1/8" ==> | 2 Row(s) Minimum | Acc. to the force |

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 18'-0" |
| | | KB 28'-0" |

v3.6 12/05/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

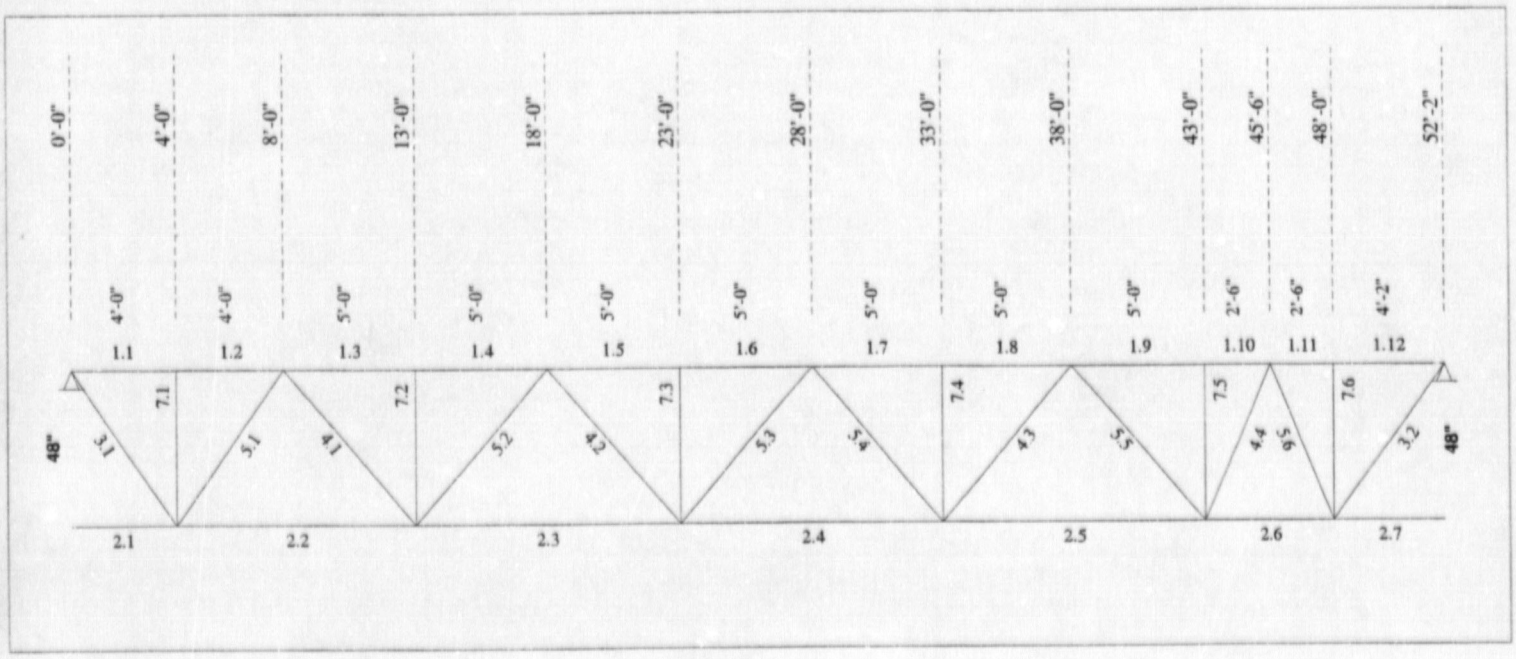
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

2180 ( 320.16) / 2266 ( 333.05)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G5 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G6N17.5 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 17.50 | 12.25 | 4.80 | 8'-0" | 8'-0" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 17.50 | 12.25 | 4.80 | 18'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 17.50 | 12.25 | 4.80 | 28'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 17.50 | 12.25 | 4.80 | 38'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Near | 17.50 | 12.25 | 4.80 | 48'-0" | 10'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -39.00 | 39.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 39.00 | -39.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

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Mark: G5

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 17:37:28

## DEFLECTION

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.23 in (L/ 504)
Joist inertia ..... = 6428.75 in^4
Required camber ..... = 1.11 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.70 in)

Left Reaction = 40.55/ -8.31 kips Right Reaction = 47.03/ -9.63 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 39.09 | -43.76 | | LL 4 X .438 | z 59 | 0.288 | 4'-0" | | |
| 1.2 | 39.09 | -43.76 | | do | z 61 | 0.572 | 4'-0" | | |
| 1.3 | 54.02 | -113.62 | | do | z 76 | 0.870 | 5'-0" | | |
| 1.4 | 54.02 | -113.62 | | do | z 76 | 0.870 | do | | |
| 1.5 | 61.71 | -151.10 | x | do | yy 58 | 0.990 | do | | |
| 1.6 | 61.71 | -151.10 | x | do | yy 58 | 0.990 | do | | |
| 1.7 | 59.97 | -142.60 | x | do | yy 58 | 0.935 | do | | |
| 1.8 | 59.97 | -142.60 | x | do | yy 58 | 0.935 | do | | |
| 1.9 | 48.79 | -88.13 | | do | z 76 | 0.718 | 5'-0" | | |
| 1.10 | 48.79 | -88.13 | | do | z 38 | 0.578 | 2'-6" | | |
| 1.11 | 40.85 | -49.38 | | do | z 38 | 0.578 | 2'-6" | | |
| 1.12 | 40.85 | -49.38 | | LL 4 X .438 | z 61 | 0.331 | 4'-2" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 4 X .375 | z 58 | 0.417 | 4'-0" | | |
| 2.2 | 83.38 | -17.11 | | do | z 137 | 0.719 | 9'-0" | | |
| 2.3 | 143.85 | -29.51 | | do | z 152 | 0.838 | 10'-0" | | |
| 2.4 | 158.34 | -32.48 | | do | z 152 | 0.923 | do | | |
| 2.5 | 126.85 | -26.02 | | do | z 152 | 0.791 | 10'-0" | | |
| 2.6 | 68.76 | -14.09 | | do | z 76 | 0.634 | 5'-0" | | |
| 2.7 | 0.00 | 0.00 | | LL 4 X .375 | z 61 | 0.344 | 4'-2" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 57.53 | -14.38 | | LL 2.5 X .230 | z 132 | 0.874 | 5'-6 1/2" | .230 - 8 1/2" | T45 |
| 3.2 | 68.18 | -17.05 | | LL 2.5 X .250 | z 135 | 0.957 | 5'-7 7/8" | .250 - 9 1/4" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 38.01 | -9.50 | x | LL 2 X .188 | xx122 | 0.884 | 6'-4 7/8" | .188 - 6 7/8" | |
| 4.2 | 19.40 | -4.85 | x | LL 1.5 X .156 | xx164 | 0.980 | do | .156 - 4 1/4" | |
| 4.3 | 19.80 | -4.95 | x | LL 1.5 X .156 | xx164 | 1.000 | 6'-4 7/8" | .156 - 4 1/4" | |
| 4.4 | 35.30 | -8.82 | x | LL 2 X .163 | xx 88 | 0.941 | 4'-8 5/8" | .163 - 7 3/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 12.07 | -58.78 | x | LL 3 X .281 | xx 72 | 0.886 | 5'-7 7/8" | .281 - 7 1/8" | |
| 5.2 | 7.80 | -38.00 | x | LL 3 X .25 | xx 81 | 0.719 | 6'-4 7/8" | .250 - 5 1/8" | |
| 5.3 | 1.87 | -19.40 | x | LL 2.5 X .188 | xx 97 | 0.715 | do | .188 - 3 1/2" | |
| 5.4 | 4.07 | -19.78 | x | LL 2.5 X .188 | xx 97 | 0.729 | do | .188 - 3 1/2" | |
| 5.5 | 10.00 | -48.68 | x | LL 3 X .25 | xx 81 | 0.921 | 6'-4 7/8" | .250 - 6 5/8" | |
| 5.6 | 7.23 | -35.31 | x | LL 2.5 X .188 | xx 70 | 0.990 | 4'-8 5/8" | .188 - 6 3/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -0.92 | | LL 2 X .216 | z 116 | 0.051 | 4'-0" | .216 - 1 1/2" | |
| 7.2 | 0.00 | -2.38 | d | U 1 3/8 x 0.118 | z 106 | 0.543 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -3.16 | d | do | z 106 | 0.723 | do | do | |
| 7.4 | 0.00 | -2.99 | d | do | z 106 | 0.682 | do | do | |
| 7.5 | 0.00 | -1.85 | d | U 1 3/8 x 0.118 | z 106 | 0.422 | do | .118 - 1 1/2" | |

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|
| 7.6 | 3.60 | -17.50 | LL 2 X .216 | z 116 | 0.972 | 4'-0" | .216 - 2 3/4" | |

**BRIDGING**

Maximum spacing between rows of bridging

| | | | | Laterals supports |
|---|---|---|---|---|
| @ Top Chord: | 41'-3 1/2" | ==> | 0 Row(s) Minimum | Concentrated loads |
| @ Bottom Chord: | 41'-0 3/8" | ==> | 2 Row(s) Minimum | Acc. to the force |

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 18'-0" |
| | | KB 28'-0" |

v3.6 12/05/00

Fabrication code unless noted
-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar
-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

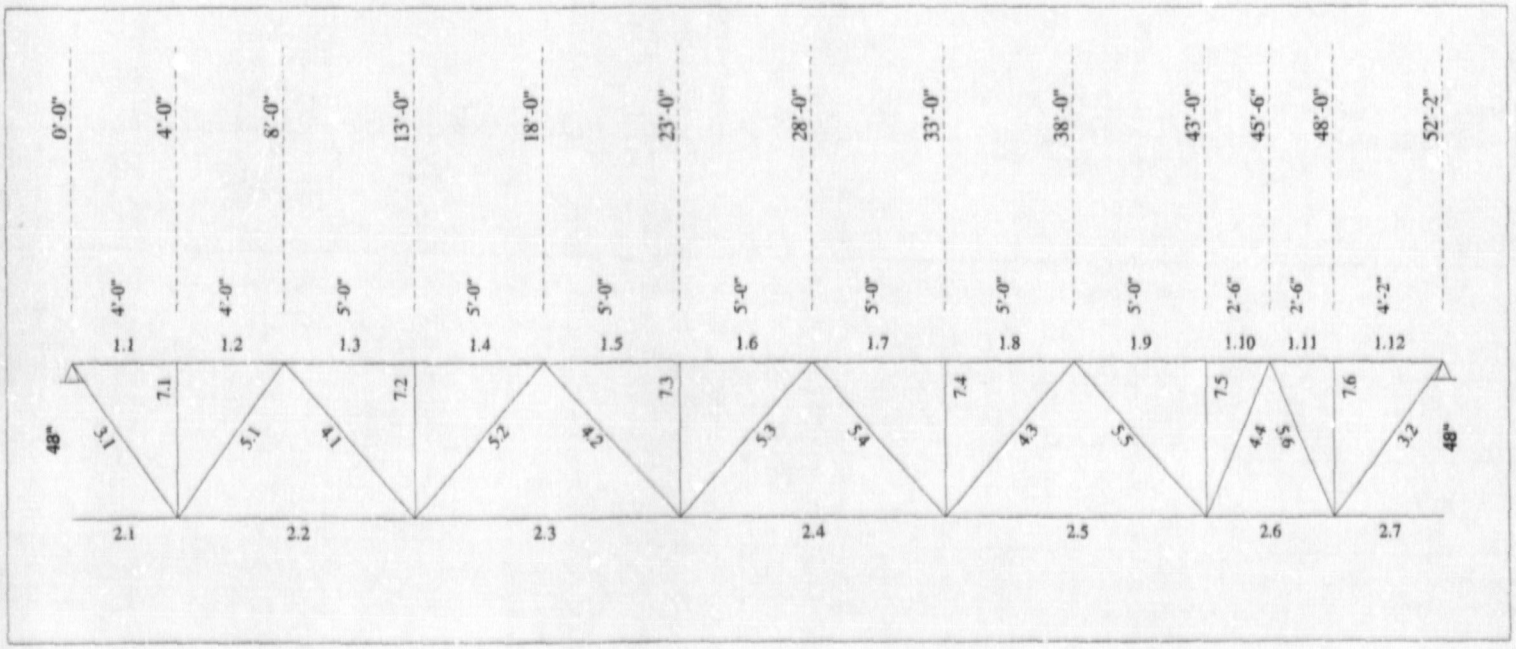
CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)
Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension
Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)
Definition of the categories (Cat.) 0 @ 6:
0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support
Chord: 1 = Top, 2 = Bottom
Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

Projects no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]
2688 ( 384.93) / 2798 ( 400.44)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G6 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G6N25.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 25.00 | 17.50 | 6.84 | 8'-0" | 8'-0" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 25.00 | 17.50 | 6.84 | 18'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 25.00 | 17.50 | 6.84 | 28'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 25.00 | 17.50 | 6.84 | 38'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Near | 25.00 | 17.50 | 6.84 | 48'-0" | 10'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -55.00 | 55.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 55.00 | -55.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

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Mark: G6

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 17:37:29

## DEFLECTION

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.17 in (L/ 533)
Joist inertia ..... = 9720.08 in^4
Required camber ..... = 1.11 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.13 in)

Left Reaction = 57.92/ -11.85 kips Right Reaction = 67.16/ -13.74 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 55.95 | -62.76 | | LL 5 X .5 | z 47 | 0.266 | 4'-0" | | |
| 1.2 | 55.95 | -62.76 | | do | z 49 | 0.577 | 4'-0" | | |
| 1.3 | 77.52 | -164.33 | | do | z 61 | 0.767 | 5'-0" | | |
| 1.4 | 77.52 | -164.33 | | do | z 61 | 0.767 | do | | |
| 1.5 | 88.62 | -218.54 | x | do | yy 49 | 0.936 | do | | |
| 1.6 | 88.62 | -218.54 | x | do | yy 49 | 0.936 | do | | |
| 1.7 | 86.10 | -206.25 | | do | z 61 | 0.963 | do | | |
| 1.8 | 86.10 | -206.25 | | do | z 61 | 0.963 | do | | |
| 1.9 | 69.96 | -127.45 | | do | z 61 | 0.724 | 5'-0" | | |
| 1.10 | 69.96 | -127.45 | | do | z 31 | 0.546 | 2'-6" | | |
| 1.11 | 58.50 | -71.42 | | do | z 31 | 0.546 | 2'-6" | | |
| 1.12 | 58.50 | -71.42 | | LL 5 X .5 | z 49 | 0.307 | 4'-2" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 5 X .5 | z 47 | 0.363 | 4'-0" | | |
| 2.2 | 120.60 | -24.70 | | do | z 110 | 0.626 | 9'-0" | | |
| 2.3 | 208.05 | -42.61 | | do | z 122 | 0.901 | 10'-0" | | |
| 2.4 | 229.01 | -46.90 | | do | z 122 | 0.901 | do | | |
| 2.5 | 183.47 | -37.57 | | do | z 122 | 0.901 | 10'-0" | | |
| 2.6 | 99.44 | -20.35 | | do | z 61 | 0.722 | 5'-0" | | |
| 2.7 | 0.00 | 0.00 | | LL 5 X .5 | z 49 | 0.391 | 4'-2" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 82.66 | -20.67 | | LL 3 X .25 | z 109 | 0.958 | 5'-6 1/2" | .250 - 11 1/8" | T45 |
| 3.2 | 98.01 | -24.50 | | LL 3 X .313 | z 112 | 0.918 | 5'-7 7/8" | .313 - 10 5/8" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 54.71 | -13.68 | x | LL 2.5 X .188 | xx 96 | 1.008 | 6'-4 7/8" | .188 - 9 7/8" | |
| 4.2 | 27.92 | -6.98 | x | LLV 1.75 x .143 | xx138 | 0.969 | do | .143 - 6 5/8" | |
| 4.3 | 28.49 | -7.12 | x | LLV 1.75 x .143 | xx138 | 0.989 | 6'-4 7/8" | .143 - 6 3/4" | |
| 4.4 | 50.60 | -12.65 | x | LL 2.5 X .188 | xx 70 | 0.932 | 4'-8 5/8" | .188 - 9 1/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 17.31 | -84.50 | x | LL 3.5 X .313 | xx 61 | 0.903 | 5'-7 7/8" | .313 - 9 1/8" | |
| 5.2 | 11.21 | -54.69 | x | LL 3.5 X .313 | xx 69 | 0.626 | 6'-4 7/8" | .313 - 5 7/8" | |
| 5.3 | 2.69 | -27.92 | x | LL 2.5 X .230 | xx 97 | 0.830 | do | .230 - 4 1/8" | |
| 5.4 | 5.84 | -28.48 | x | LL 2.5 X .230 | xx 97 | 0.847 | do | .230 - 4 1/8" | |
| 5.5 | 14.36 | -70.07 | x | LL 3.5 X .313 | xx 69 | 0.802 | 6'-4 7/8" | .313 - 7 1/2" | |
| 5.6 | 10.35 | -50.61 | x | LL 3 X .224 | xx 58 | 0.909 | 4'-8 5/8" | .224 - 7 5/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -1.30 | | LL 2.5 X .188 | z 91 | 0.045 | 4'-0" | .188 - 1 1/2" | |
| 7.2 | 0.00 | -3.40 | d | U 1 3/8 x 0.118 | z 104 | 0.759 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -4.52 | d | do | z 104 | 1.010 | do | do | |
| 7.4 | 0.00 | -4.27 | d | do | z 104 | 0.953 | do | do | |
| 7.5 | 0.00 | -2.64 | d | U 1 3/8 x 0.118 | z 104 | 0.589 | do | .118 - 1 1/2" | |

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|
| 7.6 | 5.13 | -25.00 | LL 2.5 X .188 | z 91 | 0.859 | 4'-0" | .188 - 4 1/2" | |

### BRIDGING

Maximum spacing between rows of bridging

| | | | | Laterals supports |
|---|---|---|---|---|
| @ Top Chord: | 49'-5 1/4" ==> | 0 Row(s) Minimum | | Concentrated loads |
| @ Bottom Chord: | 49'-5 1/4" ==> | 1 Row(s) Minimum | | Acc. to the force |

POSITION @ Top Chord @ Bottom Chord

KB 18'-0"

v3.6 12/05/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

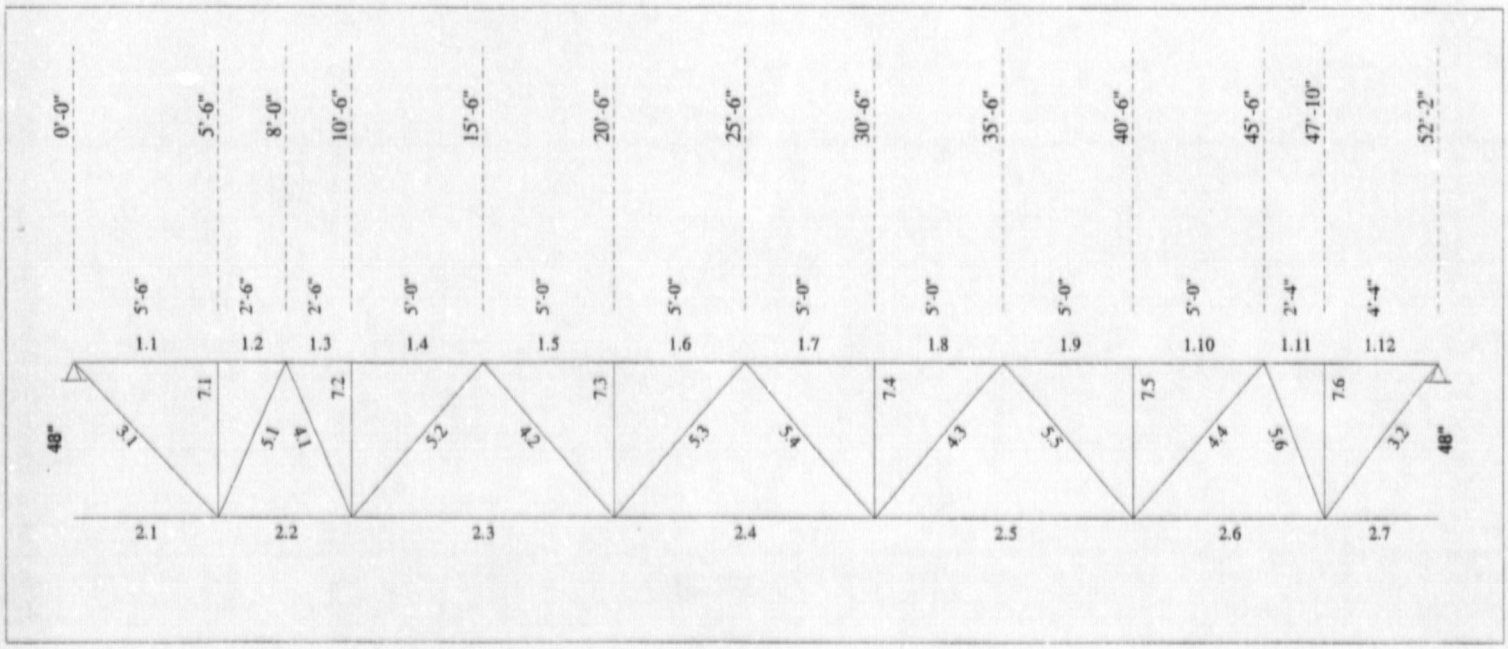
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

4012 ( 663.26) / 4172 ( 690.10)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G7 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G6N13.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 13.00 | 9.10 | 3.00 | 5'-6" | 5'-6" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 13.00 | 9.10 | 3.00 | 15'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 13.00 | 9.10 | 3.00 | 25'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 13.00 | 9.10 | 3.00 | 35'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Near | 13.00 | 9.10 | 3.00 | 45'-6" | 10'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -87.00 | 87.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 87.00 | -87.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth .. [in]: at left.: 7 1/2" at right: 7 1/2"

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Mark: G7

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 17:37:29

## DEFLECTION

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.16 in (L/ 534)
Joist inertia ..... = 5099.19 in^4
Required camber ..... = 1.11 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.87 in)

Left Reaction = 33.27/ -5.72 kips Right Reaction = 31.81/ -5.47 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 76.27 | -84.63 | | LL 4 X .375 | z 81 | 0.789 | 5'-6" | | |
| 1.2 | 76.27 | -84.63 | | do | z 38 | 0.715 | 2'-6" | | |
| 1.3 | 80.83 | -93.96 | | do | z 38 | 0.715 | 2'-6" | | |
| 1.4 | 80.83 | -93.96 | | do | z 76 | 0.831 | 5'-0" | | |
| 1.5 | 87.03 | -108.85 | | do | z 76 | 0.963 | do | | |
| 1.6 | 87.03 | -108.85 | | do | z 76 | 0.963 | do | | |
| 1.7 | 87.36 | -110.76 | | do | z 76 | 0.980 | do | | |
| 1.8 | 87.36 | -110.76 | | do | z 76 | 0.980 | do | | |
| 1.9 | 81.82 | -95.98 | | do | z 76 | 0.849 | do | | |
| 1.10 | 81.82 | -95.98 | | do | z 76 | 0.849 | 5'-0" | | |
| 1.11 | 74.25 | -80.49 | | do | z 36 | 0.559 | 2'-4" | | |
| 1.12 | 74.25 | -80.49 | | LL 4 X .375 | z 63 | 0.636 | 4'-4" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3.5 X .313 | z 93 | 0.447 | 5'-6" | | |
| 2.2 | 59.66 | -10.27 | | do | z 87 | 0.746 | 5'-0" | | |
| 2.3 | 99.38 | -17.12 | | do | z 174 | 0.888 | 10'-0" | | |
| 2.4 | 118.31 | -20.38 | | do | z 174 | 0.987 | do | | |
| 2.5 | 103.20 | -17.78 | | do | z 174 | 0.972 | 10'-0" | | |
| 2.6 | 54.07 | -9.32 | | do | z 128 | 0.848 | 7'-4" | | |
| 2.7 | 0.00 | 0.00 | | LL 3.5 X .313 | z 72 | 0.444 | 4'-4" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 56.99 | -14.25 | x | LL 2.5 X .230 | xx102 | 0.866 | 6'-8" | .230 - 8 3/8" | |
| 3.2 | 46.97 | -11.74 | x | LL 2 X .216 | xx111 | 0.958 | 5'-9 1/4" | .216 - 7 3/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 24.18 | -6.04 | x | LL 1.5 X .156 | xx119 | 0.908 | 4'-8 5/8" | .156 - 5 1/4" | |
| 4.2 | 13.67 | -3.42 | x | do | xx164 | 0.693 | 6'-4 7/8" | .156 - 3" | |
| 4.3 | 13.67 | -3.42 | x | LL 1.5 X .156 | xx164 | 0.693 | do | .156 - 3" | |
| 4.4 | 30.88 | -7.72 | x | LL 1.75 X .155 | xx139 | 0.993 | 6'-4 7/8" | .155 - 6 3/4" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 4.15 | -24.19 | x | LL 2 X .188 | xx 89 | 0.981 | 4'-8 5/8" | .188 - 4 3/8" | |
| 5.2 | 5.74 | -33.27 | x | LL 2.5 X .230 | xx 98 | 0.998 | 6'-4 7/8" | .230 - 4 7/8" | |
| 5.3 | 2.06 | -13.67 | x | LL 2 X .188 | xx122 | 0.956 | do | .188 - 2 1/2" | |
| 5.4 | 1.64 | -13.67 | x | LL 2 X .188 | xx122 | 0.956 | do | .188 - 2 1/2" | |
| 5.5 | 5.33 | -30.87 | x | LL 2.5 X .230 | xx 98 | 0.925 | 6'-4 7/8" | .230 - 4 1/2" | |
| 5.6 | 6.42 | -37.22 | x | LL 2.5 X .230 | xx 70 | 0.809 | 4'-7 5/8" | .230 - 5 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 2.25 | -13.00 | | LL 2 X .163 | z 116 | 0.938 | 4'-0" | .163 - 2 5/8" | |
| 7.2 | 0.00 | -1.98 | d | U 1 3/8 x 0.118 | z 106 | 0.454 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -2.29 | d | do | z 106 | 0.526 | do | do | |
| 7.4 | 0.00 | -2.33 | d | do | z 106 | 0.535 | do | do | |
| 7.5 | 0.00 | -2.02 | d | U 1 3/8 x 0.118 | z 106 | 0.464 | do | .118 - 1 1/2" | |

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Mark: G7

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 17:37:29

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|
| 7.6 | 0.00 | -1.69 | LL 2 X .163 | z 116 | 0.122 | 4'-0" | .163 - 1 1/2" | |

---------- BRIDGING ----------

Maximum spacing between rows of bridging

| | | | Laterals supports |
|---|---|---|---|
| @ Top Chord: | 41'-0 3/8" ==> | 0 Row(s) Minimum | Concentrated loads |
| @ Bottom Chord: | 36'-10 1/8" ==> | 1 Row(s) Minimum | Acc. to the force |

POSITION @ Top Chord @ Bottom Chord

KB 25'-6"

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v3.6 12/05/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

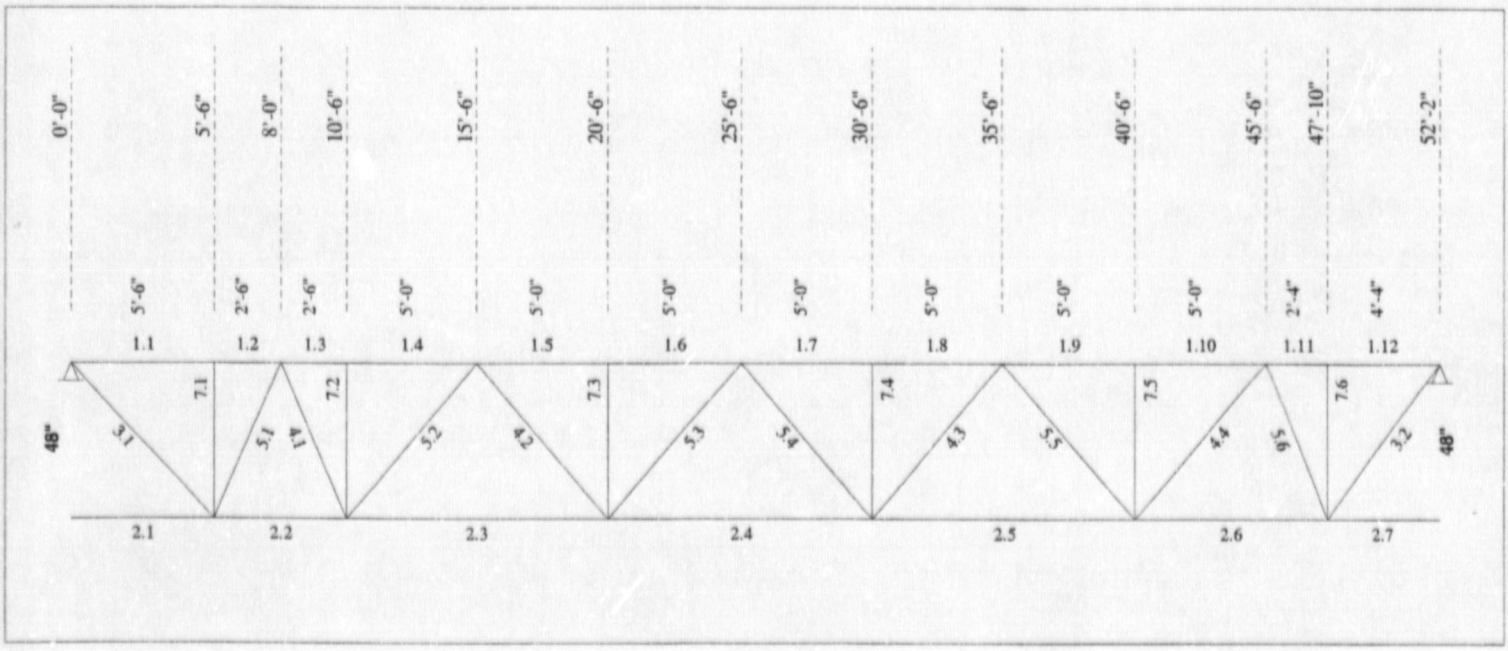
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

2139 ( 313.37) / 2249 ( 329.95)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G8 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G6N17.5 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 17.50 | 12.25 | 4.80 | 5'-6" | 5'-6" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 17.50 | 12.25 | 4.80 | 15'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 17.50 | 12.25 | 4.80 | 25'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 17.50 | 12.25 | 4.80 | 35'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Near | 17.50 | 12.25 | 4.80 | 45'-6" | 10'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -39.00 | 39.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 39.00 | -39.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

Mark: G8

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Project: COLUMBIA DISTRIBUTION A04061

12/05/00 17:37:28

---------- DEFLECTION ----------

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.24 in (L/ 500)
Joist inertia ..... = 6428.75 in^4
Required camber ..... = 1.11 in

---------- F O R C E S  I N  M E M B E R S  [kips] ----------

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.70 in)

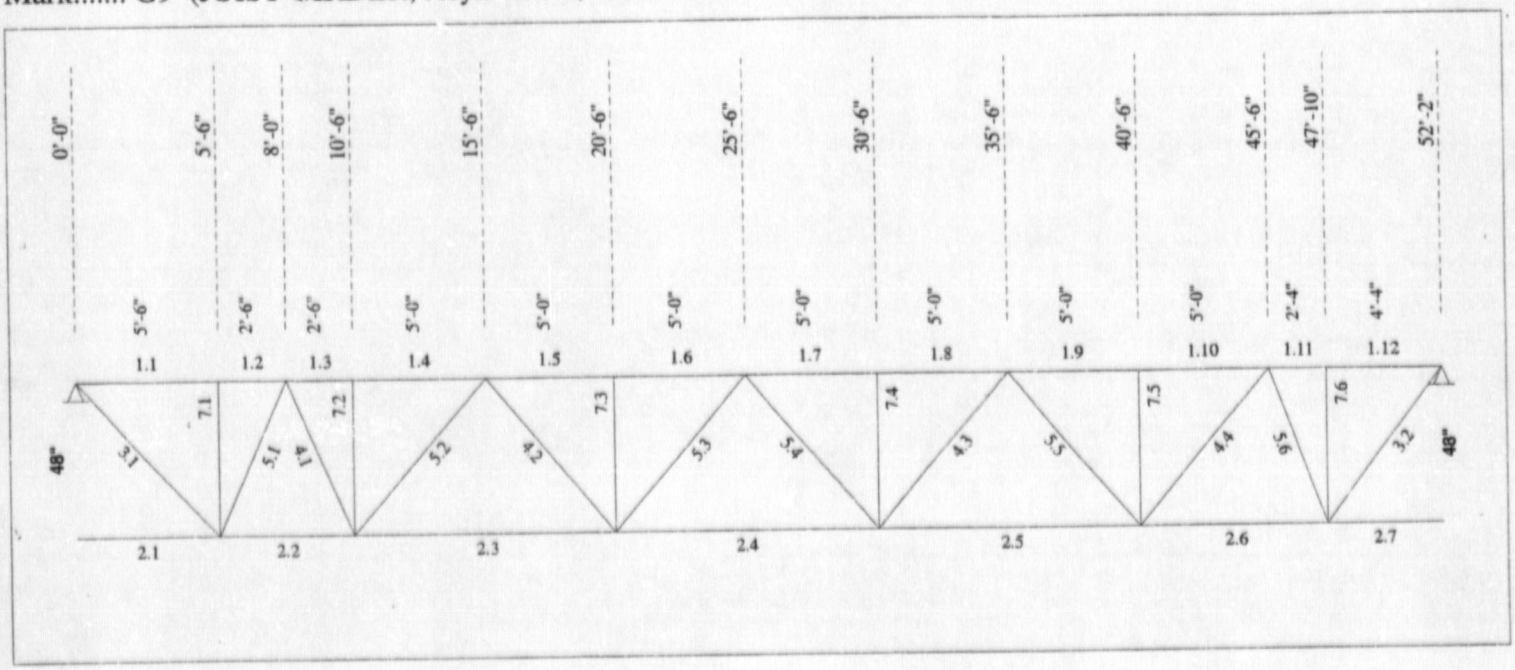
Left Reaction = 44.77/ -9.17 kips Right Reaction = 42.81/ -8.77 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 43.58 | -62.69 | | LL 4 X .438 | z 82 | 0.506 | 5'-6" | | |
| 1.2 | 43.58 | -62.69 | | do | z 38 | 0.645 | 2'-6" | | |
| 1.3 | 50.91 | -98.48 | | do | z 38 | 0.645 | 2'-6" | | |
| 1.4 | 50.91 | -98.48 | | do | z 76 | 0.754 | 5'-0" | | |
| 1.5 | 60.87 | -147.04 | x | do | yy 58 | 0.964 | do | | |
| 1.6 | 60.87 | -147.04 | x | do | yy 58 | 0.964 | do | | |
| 1.7 | 61.41 | -149.63 | x | do | yy 58 | 0.981 | do | | |
| 1.8 | 61.41 | -149.63 | x | do | yy 58 | 0.981 | do | | |
| 1.9 | 52.51 | -106.23 | | do | z 76 | 0.814 | do | | |
| 1.10 | 52.51 | -106.23 | | do | z 76 | 0.814 | 5'-0" | | |
| 1.11 | 40.32 | -46.82 | | do | z 36 | 0.535 | 2'-4" | | |
| 1.12 | 40.32 | -46.82 | | LL 4 X .438 | z 64 | 0.320 | 4'-4" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 4 X .375 | z 81 | 0.425 | 5'-6" | | |
| 2.2 | 80.59 | -16.52 | | do | z 76 | 0.708 | 5'-0" | | |
| 2.3 | 134.25 | -27.53 | | do | z 152 | 0.843 | 10'-0" | | |
| 2.4 | 159.82 | -32.78 | | do | z 152 | 0.932 | do | | |
| 2.5 | 139.42 | -28.60 | | do | z 152 | 0.922 | 10'-0" | | |
| 2.6 | 73.04 | -14.98 | | do | z 112 | 0.805 | 7'-4" | | |
| 2.7 | 0.00 | 0.00 | | LL 4 X .375 | z 63 | 0.422 | 4'-4" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 77.03 | -19.26 | | LL 3 X .281 | z 133 | 0.799 | 6'-8" | .281 - 9 1/4" | T45 |
| 3.2 | 63.43 | -15.86 | | LL 2.5 X .230 | z 138 | 0.964 | 5'-9 1/4" | .230 - 9 3/8" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 32.60 | -8.15 | x | LL 2 X .142 | xx 88 | 0.992 | 4'-8 5/8" | .142 - 7 3/4" | T45 |
| 4.2 | 18.47 | -4.62 | x | LL 1.5 X .156 | xx164 | 0.933 | 6'-4 7/8" | .156 - 4" | |
| 4.3 | 18.47 | -4.62 | x | LL 1.5 X .156 | xx164 | 0.933 | do | .156 - 4" | |
| 4.4 | 41.73 | -10.43 | x | LL 2 X .188 | xx122 | 0.970 | 6'-4 7/8" | .188 - 7 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 6.68 | -32.61 | x | LL 2.5 X .188 | xx 70 | 0.915 | 4'-8 5/8" | .188 - 5 7/8" | |
| 5.2 | 9.23 | -44.96 | x | LL 3 X .224 | xx 81 | 0.969 | 6'-4 7/8" | .224 - 6 3/4" | |
| 5.3 | 3.31 | -18.47 | x | LL 2.5 X .188 | xx 97 | 0.681 | do | .188 - 3 1/4" | |
| 5.4 | 2.64 | -18.47 | x | LL 2.5 X .188 | xx 97 | 0.681 | do | .188 - 3 1/4" | |
| 5.5 | 8.56 | -41.71 | x | LL 3 X .224 | xx 81 | 0.899 | 6'-4 7/8" | .224 - 6 1/4" | |
| 5.6 | 10.30 | -50.18 | x | LL 2.5 X .250 | xx 70 | 1.006 | 4'-7 5/8" | .250 - 6 3/4" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 3.60 | -17.50 | | LL 2 X .216 | z 116 | 0.972 | 4'-0" | .216 - 2 3/4" | |
| 7.2 | 0.00 | -2.06 | d | U 1 3/8 x 0.118 | z 106 | 0.471 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -3.08 | d | do | z 106 | 0.703 | do | do | |
| 7.4 | 0.00 | -3.13 | d | do | z 106 | 0.716 | do | do | |
| 7.5 | 0.00 | -2.23 | d | U 1 3/8 x 0.118 | z 106 | 0.508 | do | .118 - 1 1/2" | |

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G9 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G6N25.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 25.00 | 17.50 | 6.84 | 5'-6" | 5'-6" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 25.00 | 17.50 | 6.84 | 15'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 25.00 | 17.50 | 6.84 | 25'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 25.00 | 17.50 | 6.84 | 35'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Near | 25.00 | 17.50 | 6.84 | 45'-6" | 10'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -55.00 | 55.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 55.00 | -55.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

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Mark: G9

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 17:37:29

## F O R C E S I N M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|
| 7.6 | 0.00 | -1.40 | LL 2.5 X .188 | z 91 | 0.048 | 4'-0" | .188 - 1 1/2" | |

---------- BRIDGING ----------

Maximum spacing between rows of bridging

| | | | | Laterals supports |
|---|---|---|---|---|
| @ Top Chord: | 49'-5 1/4" ==> | 0 Row(s) Minimum | | Concentrated loads |
| @ Bottom Chord: | 49'-2 1/4" ==> | 1 Row(s) Minimum | | Acc. to the force |

POSITION @ Top Chord @ Bottom Chord

KB 25'-6"

---

v3.6 12/05/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member 1 = within a panel with no reinforcement

2 = anywhere within a panel 3 = at any panel point along the joist

4 = anywhere along the joist 5 = transferred by an additional member and lateral support

6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

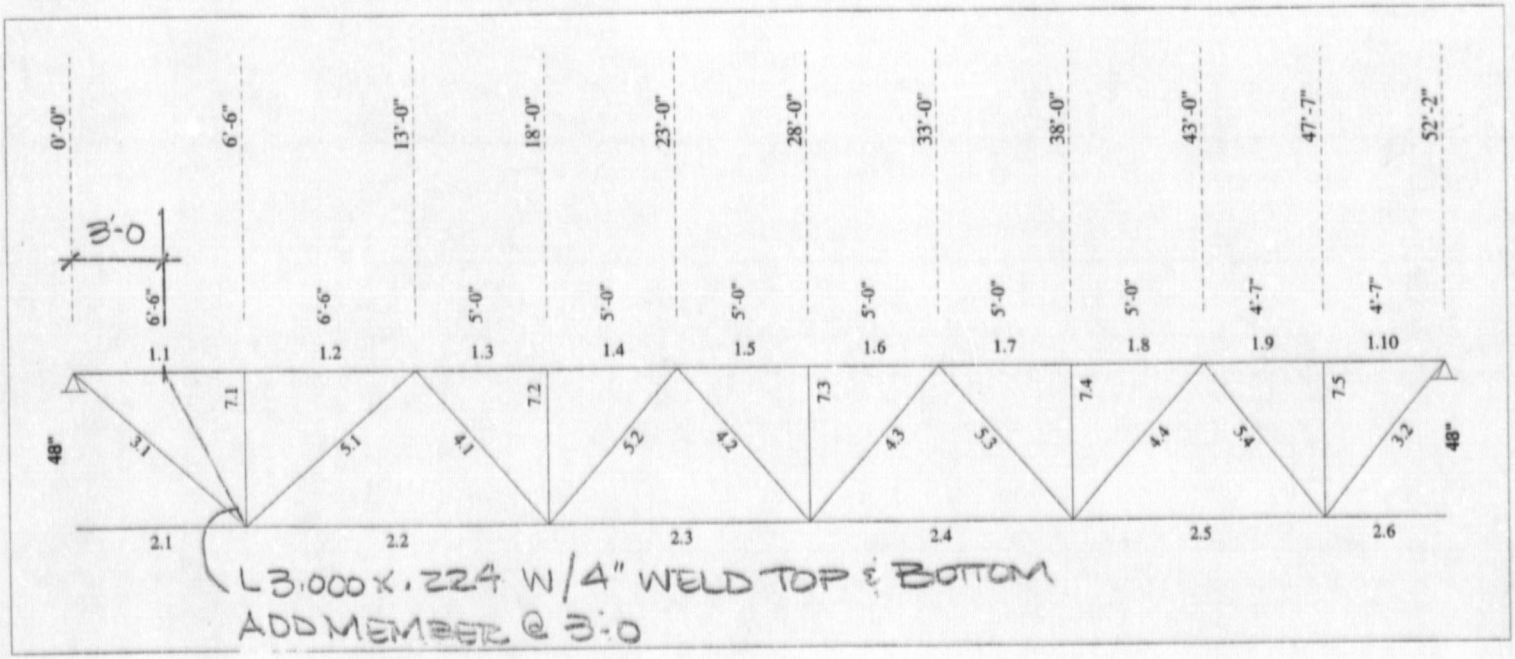
3742 ( 606.74) / 3932 ( 637.26)

# Project: COLUMBIA DISTRIBUTION A04061

ADD MEMBER

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G10 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G5N13.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 13.00 | 9.10 | 2.76 | 13'-0" | 13'-0" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 13.00 | 9.10 | 2.76 | 23'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 13.00 | 9.10 | 2.76 | 33'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 13.00 | 9.10 | 2.76 | 43'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Far | 13.00 | 13.00 | 0.00 | 3'-0"* | 3'-0" | 5 | 1 | 90 | 0 |
| 6 | 1 | Far | 1.20 | 1.20 | 0.00 | 13'-0" | 10'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -87.00 | 87.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 87.00 | -87.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G10

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 18:21:23

## DEFLECTION

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.21 in (L/ 516)
Joist inertia ..... = 5099.19 in^4
Required camber ..... = 1.11 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.87 in)

Left Reaction = 37.30/ -3.81 kips Right Reaction = 28.97/ -4.42 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 74.60 | -94.35 | x | LL 4 X .375 | xx 62 | 0.735 | 6'-6" | | |
| 1.2 | 74.60 | -90.36 | x | do | xx 63 | 0.718 | 6'-6" | | |
| 1.3 | 83.40 | -109.92 | | do | z 76 | 0.973 | 5'-0" | | |
| 1.4 | 83.40 | -109.92 | | do | z 76 | 0.973 | do | | |
| 1.5 | 85.30 | -113.71 | | do | z 76 | 1.006 | do | | |
| 1.6 | 85.30 | -113.71 | | do | z 76 | 1.006 | do | | |
| 1.7 | 81.80 | -102.29 | | do | z 76 | 0.905 | do | | |
| 1.8 | 81.80 | -102.29 | | do | z 76 | 0.905 | 5'-0" | | |
| 1.9 | 73.39 | -80.97 | | do | z 70 | 0.675 | 4'-7" | | |
| 1.10 | 73.39 | -80.97 | | LL 4 X .375 | z 67 | 0.661 | 4'-7" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3.5 X .313 | z 110 | 0.622 | 6'-6" | | |
| 2.2 | 91.17 | -12.82 | | do | z 200 | 0.821 | 11'-6" | | |
| 2.3 | 117.54 | -17.42 | | do | z 174 | 0.995 | 10'-0" | | |
| 2.4 | 109.87 | -16.62 | | do | z 174 | 0.995 | 10'-0" | | |
| 2.5 | 68.16 | -10.43 | | do | z 167 | 0.949 | 9'-7" | | |
| 2.6 | 0.00 | 0.00 | | LL 3.5 X .313 | z 77 | 0.596 | 4'-7" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 72.17 | -18.04 | | LL 3 X .281 | z 150 | 0.849 | 7'-5 7/8" | .281 - 8 5/8" | |
| 3.2 | 44.25 | -11.06 | x | LL 2 X .216 | xx114 | 0.902 | 5'-11 1/2" | .216 - 6 7/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 16.60 | -4.15 | x | LLV 1.75 x .143 | xx139 | 0.576 | 6'-4 7/8" | .143 - 3 7/8" | |
| 4.2 | 0.51 | -15.35 | x | LL 2 X .216 | xx123 | 0.953 | do | .216 - 2 3/8" | |
| 4.3 | 15.35 | -3.84 | x | LL 2 X .216 | xx123 | 0.313 | do | .216 - 2 3/8" | |
| 4.4 | 26.26 | -6.56 | x | LLV 1.75 x .143 | xx139 | 0.912 | 6'-4 7/8" | .143 - 6 1/4" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 7.54 | -47.90 | x | LL 3 X .281 | xx 98 | 0.979 | 7'-7 5/8" | .281 - 5 3/4" | |
| 5.2 | 2.90 | -16.59 | x | LL 2.5 X .188 | xx 97 | 0.612 | 6'-4 7/8" | .188 - 3" | |
| 5.3 | 3.90 | -26.24 | x | LL 2.5 X .188 | xx 97 | 0.969 | 6'-4 7/8" | .188 - 4 3/4" | |
| 5.4 | 6.92 | -45.19 | x | LL 3 X .224 | xx 77 | 0.938 | 6'-1" | .224 - 6 3/4" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -1.98 | d | U 1 3/8 x 0.118 | z 106 | 0.456 | 4'-0" | .118 - 1 1/2" | |
| 7.2 | 0.00 | -2.31 | d | do | z 106 | 0.531 | do | do | |
| 7.3 | 0.00 | -2.39 | d | do | z 106 | 0.550 | do | do | |
| 7.4 | 0.00 | -2.15 | d | do | z 106 | 0.494 | do | do | |
| 7.5 | 0.00 | -1.70 | d | U 1 3/8 x 0.118 | z 106 | 0.391 | 4'-0" | .118 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 41'-0 3/8" ==> 0 Row(s) Minimum Concentrated loads

@ Bottom Chord: 36'-10 1/8" ==> 1 Row(s) Minimum Acc. to the force

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 23'-0" |

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v3.6 12/05/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member

1 = within a panel with no reinforcement

2 = anywhere within a panel

3 = at any panel point along the joist

4 = anywhere along the joist

5 = transferred by an additional member and lateral support

6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

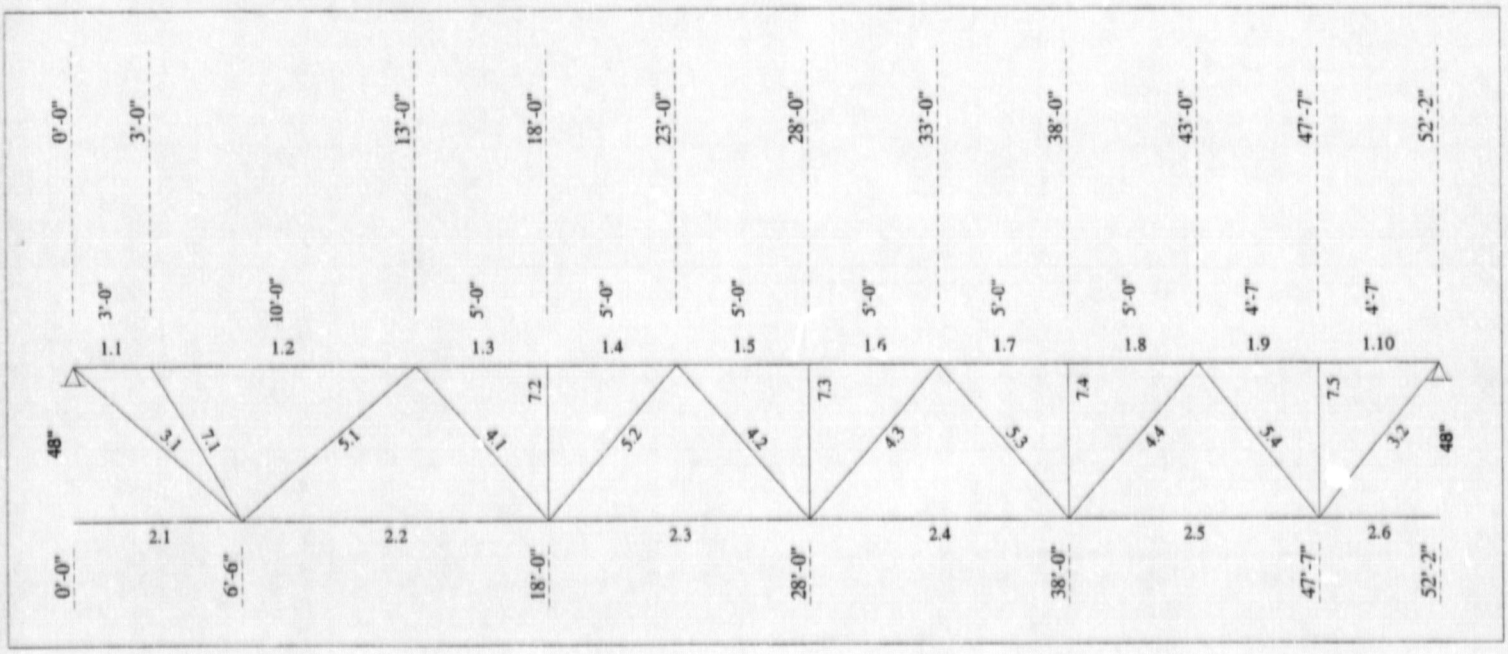
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

2164 ( 317.32) / 2293 ( 336.66)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G11 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G5N17.5 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 17.50 | 12.25 | 4.80 | 13'-0" | 13'-0" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 17.50 | 12.25 | 4.80 | 23'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 17.50 | 12.25 | 4.80 | 33'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 17.50 | 12.25 | 4.80 | 43'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Far | 17.50 | 17.50 | 0.00 | 3'-0" | 3'-0" | 5 | 1 | 90 | 0 |
| 6 | 1 | Far | 2.00 | 2.00 | 0.00 | 13'-0" | 10'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -39.00 | 39.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 39.00 | -39.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G11

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:28:26

## DEFLECTION

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.23 in (L/ 507)
Joist inertia ..... = 6789.90 in^4
Required camber ..... = 1.11 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.68 in)

Left Reaction = 50.48/ -6.65 kips Right Reaction = 39.08/ -7.71 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 41.81 | -83.98 | | LL 4 X .500 | z 43 | 0.442 | 3'-0" | | |
| 1.2 | 41.81 | -67.89 | x | do | xx 99 | 0.631 | 10'-0" | | |
| 1.3 | 57.19 | -141.90 | | do | z 77 | 0.962 | 5'-0" | | |
| 1.4 | 57.19 | -141.90 | | do | z 77 | 0.962 | do | | |
| 1.5 | 60.51 | -154.28 | x | do | yy 58 | 0.891 | do | | |
| 1.6 | 60.51 | -154.28 | x | do | yy 58 | 0.891 | do | | |
| 1.7 | 54.40 | -120.67 | | do | z 77 | 0.818 | do | | |
| 1.8 | 54.40 | -120.67 | | do | z 77 | 0.818 | 5'-0" | | |
| 1.9 | 39.69 | -45.95 | | do | z 70 | 0.536 | 4'-7" | | |
| 1.10 | 39.69 | -45.95 | | LL 4 X .500 | z 68 | 0.287 | 4'-7" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 4 X .375 | z 96 | 0.621 | 6'-6" | | |
| 2.2 | 124.20 | -22.44 | | do | z 175 | 0.807 | 11'-6" | | |
| 2.3 | 159.58 | -30.48 | | do | z 152 | 0.930 | 10'-0" | | |
| 2.4 | 148.97 | -29.08 | | do | z 152 | 0.868 | 10'-0" | | |
| 2.5 | 92.35 | -18.25 | | do | z 146 | 0.744 | 9'-7" | | |
| 2.6 | 0.00 | 0.00 | | LL 4 X .375 | z 67 | 0.461 | 4'-7" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 97.95 | -24.49 | x | LL 3 X .313 | xx 96 | 0.917 | 7'-5 7/8" | .313 - 10 5/8" | T45 |
| 3.2 | 59.82 | -14.96 | | LL 2.5 X .230 | z 142 | 0.921 | 5'-11 1/2" | .230 - 8 3/4" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 22.24 | -5.56 | x | LL 2 X .163 | xx121 | 0.593 | 6'-4 7/8" | .163 - 4 5/8" | |
| 4.2 | 0.88 | -20.83 | x | LL 2.5 X .188 | xx 97 | 0.768 | do | .188 - 3 3/4" | |
| 4.3 | 20.83 | -5.21 | x | LL 2.5 X .188 | xx 97 | 0.384 | do | .188 - 3 3/4" | |
| 4.4 | 35.57 | -8.89 | x | LL 2 X .163 | xx121 | 0.948 | 6'-4 7/8" | .163 - 7 3/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 13.17 | -65.23 | x | LL 3.5 X .313 | xx 84 | 0.857 | 7'-7 5/8" | .313 - 7" | |
| 5.2 | 5.06 | -22.22 | x | LL 2.5 X .250 | xx 98 | 0.617 | 6'-4 7/8" | .250 - 3" | |
| 5.3 | 6.81 | -35.56 | x | LL 2.5 X .250 | xx 98 | 0.987 | 6'-4 7/8" | .250 - 4 3/4" | |
| 5.4 | 12.08 | -61.11 | x | LL 3 X .281 | xx 77 | 0.972 | 6'-1" | .281 - 7 3/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -23.77 | | LL 3 X .224 | z 104 | 0.682 | 5'-3 3/4" | .224 - 3 5/8" | |
| 7.2 | 0.00 | -2.97 | d | U 1 3/8 x 0.118 | z 106 | 0.678 | 4'-0" | .118 - 1 1/2" | |
| 7.3 | 0.00 | -3.23 | d | do | z 106 | 0.737 | do | do | |
| 7.4 | 0.00 | -2.53 | d | U 1 3/8 x 0.118 | z 106 | 0.576 | do | .118 - 1 1/2" | |
| 7.5 | 0.00 | -0.96 | | U 1 x 1 x 0.090 | z 160 | 0.724 | 4'-0" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 41'-5 1/8" ==> 0 Row(s) Minimum Concentrated loads

@ Bottom Chord: 41'-0 3/8" ==> 2 Row(s) Minimum Acc. to the force

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 23'-0" |
| | | KB 33'-0" |

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v3.6 12/06/00

Fabrication code unless noted
-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar
-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

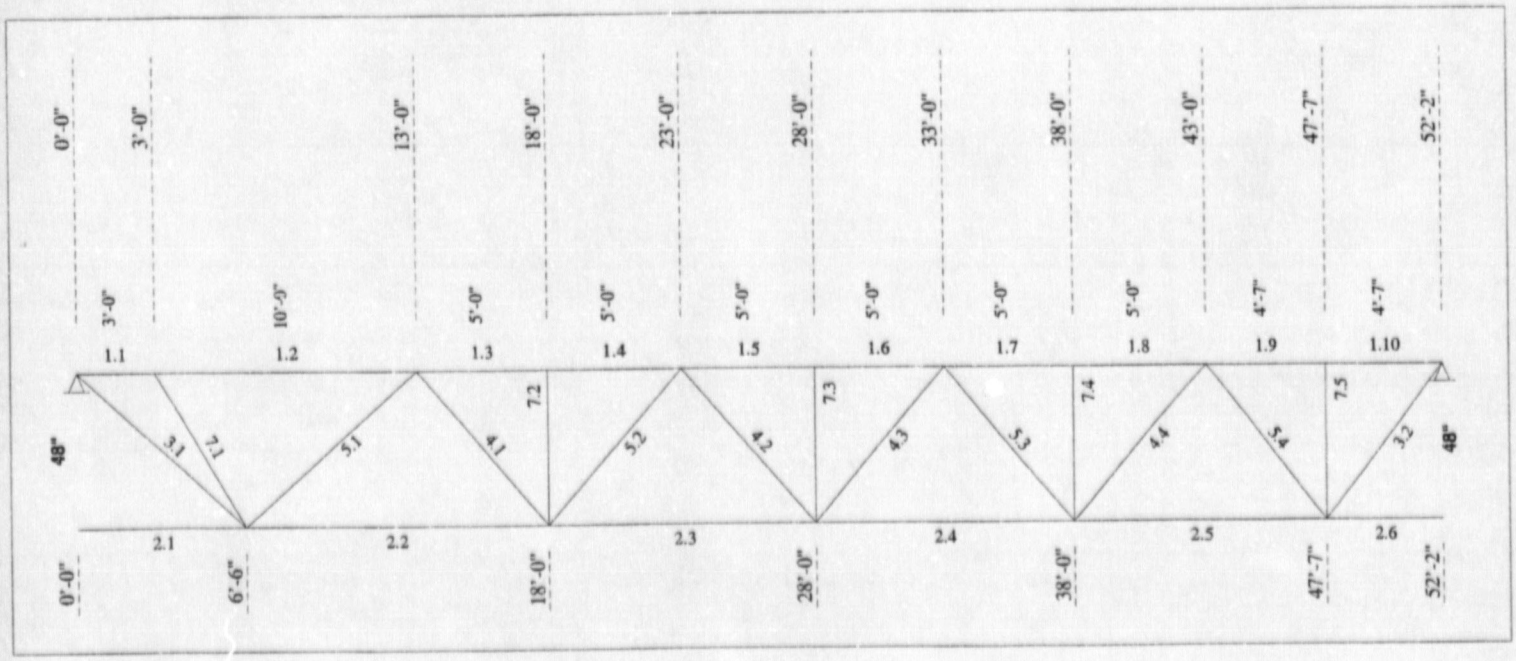
CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)
Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension
Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)
Definition of the categories (Cat.) 0 @ 6:
0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support
Chord: 1 = Top, 2 = Bottom
Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]
2868 ( 416.57) / 3036 ( 440.29)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G12 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G5N25.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 25.00 | 17.50 | 6.84 | 13'-0" | 13'-0" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 25.00 | 17.50 | 6.84 | 23'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 25.00 | 17.50 | 6.84 | 33'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 25.00 | 17.50 | 6.84 | 43'-0" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Far | 25.00 | 25.00 | 0.00 | 3'-0" | 3'-0" | 5 | 1 | 90 | 0 |
| 6 | 1 | Far | 2.90 | 2.90 | 0.00 | 13'-0" | 10'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -55.00 | 55.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 55.00 | -55.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G12

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:28:43

## DEFLECTION

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.31 in (L/ 476)
Joist inertia ..... = 9118.51 in^4
Required camber ..... = 1.11 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.15 in)

Left Reaction = 72.14/ -9.48 kips Right Reaction = 55.82/ -10.99 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 59.82 | -121.41 | | LL 5 X .5 | z 35 | 0.481 | 3'-0" | | |
| 1.2 | 59.82 | -98.15 | x | do | xx 78 | 0.720 | 10'-0" | | |
| 1.3 | 82.01 | -205.13 | | do | z 61 | 0.958 | 5'-0" | | |
| 1.4 | 82.01 | -205.13 | | do | z 61 | 0.958 | do | | |
| 1.5 | 86.80 | -222.99 | x | do | yy 49 | 0.955 | do | | |
| 1.6 | 86.80 | -222.99 | x | do | yy 49 | 0.955 | do | | |
| 1.7 | 77.98 | -174.39 | | do | z 61 | 0.814 | do | | |
| 1.8 | 77.98 | -174.39 | | do | z 61 | 0.814 | 5'-0" | | |
| 1.9 | 56.76 | -65.86 | | do | z 56 | 0.612 | 4'-7" | | |
| 1.10 | 56.76 | -65.86 | | LL 5 X .5 | z 54 | 0.292 | 4'-7" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 5 X .438 | z 77 | 0.613 | 6'-6" | | |
| 2.2 | 179.57 | -32.37 | | do | z 140 | 0.787 | 11'-6" | | |
| 2.3 | 230.67 | -43.96 | | do | z 122 | 0.918 | 10'-0" | | |
| 2.4 | 215.30 | -41.95 | | do | z 122 | 0.857 | 10'-0" | | |
| 2.5 | 133.47 | -26.32 | | do | z 117 | 0.734 | 9'-7" | | |
| 2.6 | 0.00 | 0.00 | | LL 5 X .438 | z 54 | 0.455 | 4'-7" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 141.22 | -35.30 | | LL 3.5 X .375 | z 129 | 0.947 | 7'-5 7/8" | .313 - 15 1/4" | T45 |
| 3.2 | 86.05 | -21.51 | | LL 3 X .25 | z 118 | 0.998 | 5'-11 1/2" | .250 - 11 5/8" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 31.98 | -8.00 | x | LL 2.5 X .188 | xx 96 | 0.589 | 6'-4 7/8" | .188 - 5 3/4" | |
| 4.2 | 1.27 | -29.99 | x | LL 2.5 X .230 | xx 97 | 0.892 | do | .230 - 4 3/8" | |
| 4.3 | 29.99 | -7.50 | x | LL 2.5 X .230 | xx 97 | 0.456 | do | .230 - 4 3/8" | |
| 4.4 | 51.22 | -12.80 | x | LL 2.5 X .188 | xx 96 | 0.944 | 6'-4 7/8" | .188 - 9 1/4" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 18.94 | -94.08 | x | LL 4 X .375 | xx 73 | 0.807 | 7'-7 5/8" | .313 - 10 1/8" | |
| 5.2 | 7.26 | -31.97 | x | LL 3 X .25 | xx 81 | 0.603 | 6'-4 7/8" | .250 - 4 3/8" | |
| 5.3 | 9.79 | -51.20 | x | LL 3 X .25 | xx 81 | 0.966 | 6'-4 7/8" | .250 - 6 7/8" | |
| 5.4 | 17.35 | -87.93 | x | LL 3.5 X .313 | xx 66 | 0.977 | 6'-1" | .313 - 9 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -34.14 | | LL 3 X .224 | z 104 | 0.970 | 5'-3 3/4" | .224 - 5 1/8" | |
| 7.2 | 0.00 | -4.25 | d | U 1 3/8 x 0.118 | z 104 | 0.949 | 4'-0" | .118 - 1 1/2" | |
| 7.3 | 0.00 | -4.61 | d | U 1 3/8 x 0.157 | z 102 | 0.562 | do | .158 - 1 1/2" | |
| 7.4 | 0.00 | -3.61 | d | U 1 3/8 x 0.118 | z 104 | 0.807 | do | .118 - 1 1/2" | |
| 7.5 | 0.00 | -1.36 | | U 1 x 1 x 0.090 | z 158 | 1.003 | 4'-0" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 49'-3 3/4" ==> 0 Row(s) Minimum Concentrated loads

canamsteel Corporation

Mark: G12

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:28:43

@ Bottom Chord: 49'-2 1/4" ==> 1 Row(s) Minimum Acc. to the force

POSITION @ Top Chord @ Bottom Chord

KB 23'-0"

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v3.6 12/06/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member 1 = within a panel with no reinforcement

2 = anywhere within a panel 3 = at any panel point along the joist

4 = anywhere along the joist 5 = transferred by an additional member and lateral support

6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

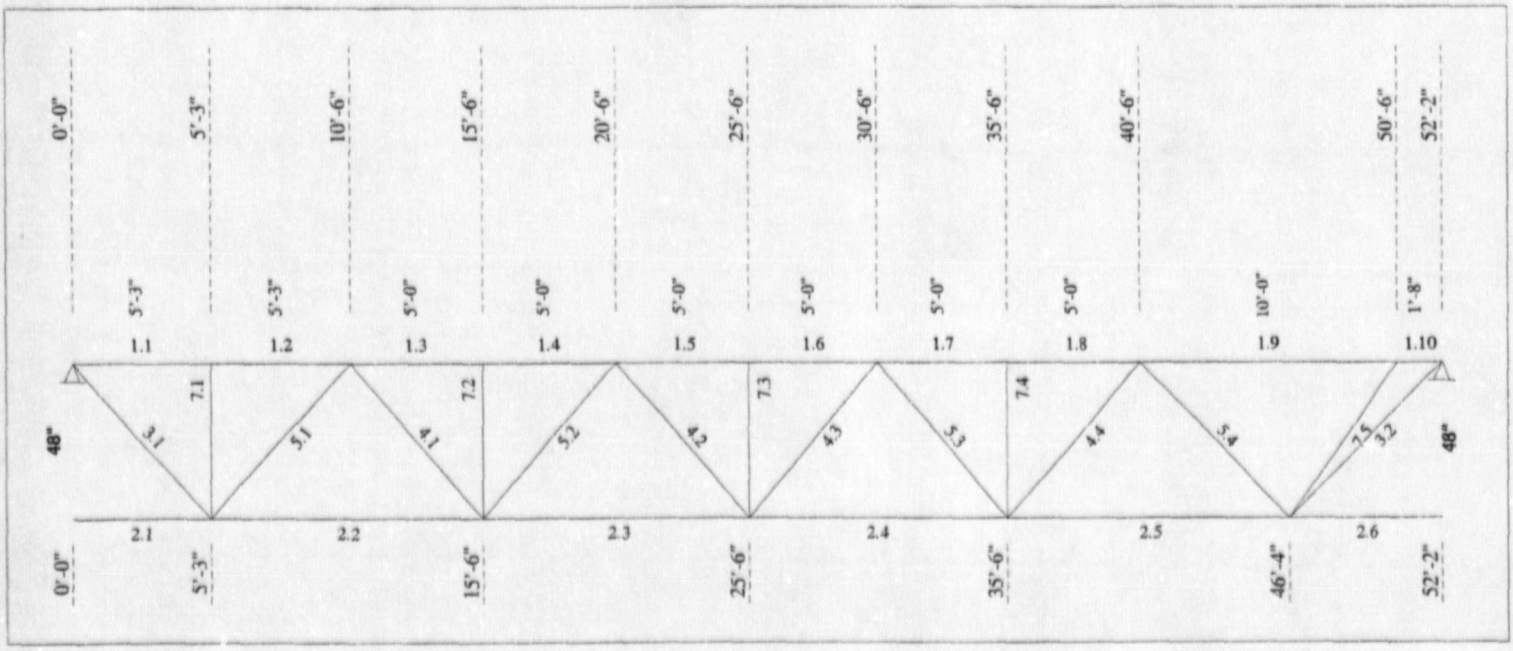
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

3828 ( 618.16) / 4054 ( 654.55)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G13 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




**LOADING CONDITIONS**

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G5N17.5 LIVE LOAD ..: 0.00 lb/ft

**CONCENTRATED LOADS**

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 17.50 | 12.25 | 4.80 | 10'-6" | 10'-6" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 17.50 | 12.25 | 4.80 | 20'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 17.50 | 12.25 | 4.80 | 30'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 17.50 | 12.25 | 4.80 | 40'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Far | 17.50 | 17.50 | 0.00 | 0'-6 1/4"* | 0'-6 1/4" | 6 | 1 | 90 | 0 |
| 6 | 1 | Far | 1.20 | 12.00 | 0.00 | 10'-6" | 9'-11 3/4" | 5 | 1 | 90 | 0 |
| 7 | 1 | Far | 17.50 | 17.50 | 0.00 | 50'-6" | 40'-0" | 5 | 1 | 90 | 0 |

**END MOMENTS [ft-kip] & AXIAL LOADS [kips]**

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -39.00 | 39.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 39.00 | -39.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G13

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:30:03

## DEFLECTION

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.44 in (L/ 432)
Joist inertia ..... = 6428.75 in^4
Required camber ..... = 1.11 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.70 in)

Left Reaction = 54.65/ -7.35 kips Right Reaction = 51.59/ -7.02 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 40.53 | -57.22 | | LL 4 X .438 | z 78 | 0.850 | 5'-3" | | |
| 1.2 | 40.53 | -57.22 | | do | z 80 | 0.658 | 5'-3" | | |
| 1.3 | 55.59 | -126.66 | | do | z 76 | 0.980 | 5'-0" | | |
| 1.4 | 55.59 | -126.66 | | do | z 76 | 0.976 | do | | |
| 1.5 | 60.73 | -152.10 | x | do | yy 58 | 0.998 | do | | |
| 1.6 | 60.73 | -152.10 | x | do | yy 58 | 0.998 | do | | |
| 1.7 | 56.44 | -131.57 | | do | z 76 | 1.008 | do | | |
| 1.8 | 56.44 | -131.57 | | do | z 76 | 1.008 | 5'-0" | | |
| 1.9 | 41.18 | -57.60 | x | do | xx 98 | 0.662 | 10'-0" | | |
| 1.10 | 41.18 | -76.75 | | LL 4 X .438 | z 23 | 0.414 | 1'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 4 X .375 | z 77 | 0.512 | 5'-3" | | |
| 2.2 | 102.43 | -19.94 | | do | z 156 | 0.754 | 10'-3" | | |
| 2.3 | 150.87 | -29.80 | | do | z 152 | 0.879 | 10'-0" | | |
| 2.4 | 153.32 | -30.23 | | do | z 152 | 0.894 | 10'-0" | | |
| 2.5 | 109.80 | -21.22 | | do | z 165 | 0.766 | 10'-10" | | |
| 2.6 | 0.00 | 0.00 | | LL 4 X .375 | z 86 | 0.549 | 5'-10" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 64.00 | -16.00 | x | LL 2.5 X .230 | xx 99 | 0.972 | 6'-5 5/8" | .230 - 9 3/8" | T45 |
| 3.2 | 92.47 | -23.12 | | LL 3 X .313 | z 139 | 0.866 | 6'-11 1/4" | .313 - 10" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 30.45 | -7.61 | x | LL 1.75 X .155 | xx139 | 0.979 | 6'-4 7/8" | .155 - 6 5/8" | |
| 4.2 | 22.55 | -5.64 | x | LL 2.5 X .188 | xx 97 | 0.415 | do | .188 - 4" | |
| 4.3 | 2.07 | -22.55 | x | LL 2.5 X .188 | xx 97 | 0.831 | do | .188 - 4" | |
| 4.4 | 27.36 | -6.84 | x | LL 1.75 X .155 | xx139 | 0.880 | 6'-4 7/8" | .155 - 6" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 12.52 | -63.27 | x | LL 3 X .313 | xx 84 | 0.981 | 6'-7 1/4" | .313 - 6 7/8" | |
| 5.2 | 6.20 | -30.43 | x | LL 2.5 X .230 | xx 98 | 0.911 | 6'-4 7/8" | .230 - 4 1/2" | |
| 5.3 | 5.67 | -27.35 | x | LL 2.5 X .230 | xx 98 | 0.818 | 6'-4 7/8" | .230 - 4" | |
| 5.4 | 12.85 | -62.34 | x | LL 3.5 X .313 | xx 77 | 0.767 | 7'-0 7/8" | .313 - 6 3/4" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -1.22 | | U 1 x 1 x 0.090 | z 160 | 0.921 | 4'-0" | .091 - 1 1/2" | |
| 7.2 | 0.00 | -2.65 | d | U 1 3/8 x 0.118 | z 106 | 0.606 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -3.19 | d | do | z 106 | 0.728 | do | do | |
| 7.4 | 0.00 | -2.76 | d | U 1 3/8 x 0.118 | z 106 | 0.629 | 4'-0" | .118 - 1 1/2" | |
| 7.5 | 0.00 | -25.94 | | LL 3 X .224 | z 114 | 0.873 | 5'-9 1/4" | .224 - 3 7/8" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 41'-2" ==> 0 Row(s) Minimum Concentrated loads

canamsteel Corporation

Mark: G13

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:30:03

@ Bottom Chord: 41'-0 3/8" ==> 2 Row(s) Minimum Acc. to the force

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 20'-6" |
| | | KB 30'-6" |

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v3.6 12/06/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member

1 = within a panel with no reinforcement

2 = anywhere within a panel

3 = at any panel point along the joist

4 = anywhere along the joist

5 = transferred by an additional member and lateral support

6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

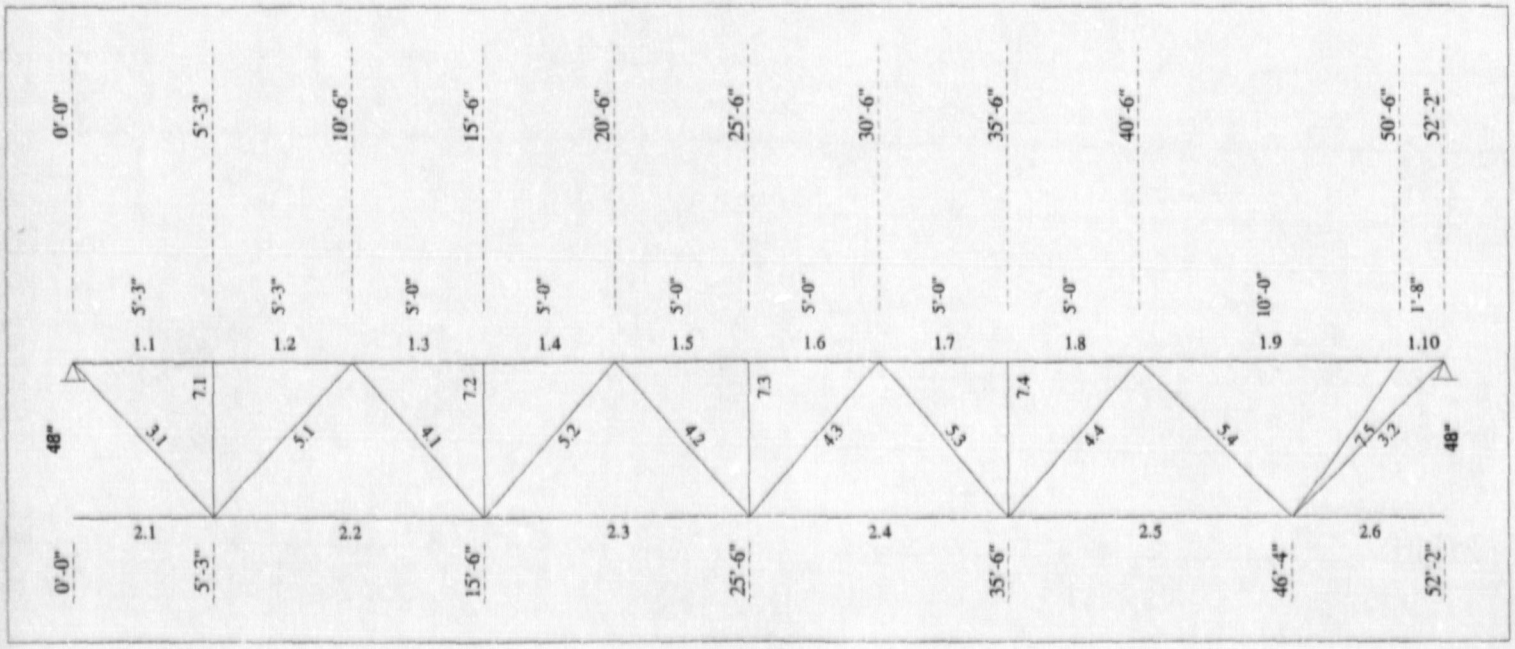
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

2696 ( 389.32) / 2864 ( 413.05)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G14 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G5N25.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 25.00 | 17.50 | 6.84 | 10'-6" | 10'-6" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 25.00 | 17.50 | 6.84 | 20'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 25.00 | 17.50 | 6.84 | 30'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 25.00 | 17.50 | 6.84 | 40'-6" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Far | 25.00 | 25.00 | 0.00 | 0'-6 1/4"* | 0'-6 1/4" | 6 | 1 | 90 | 0 |
| 6 | 1 | Far | 1.80 | 1.80 | 0.00 | 10'-6" | 9'-11 3/4" | 5 | 1 | 90 | 0 |
| 7 | 1 | Far | 25.00 | 25.00 | 0.00 | 50'-6" | 40'-0" | 5 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -55.00 | 55.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 55.00 | -55.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G14

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:30:34

## DEFLECTION

Allowed deflection under live load ..... = 1.73 in (L/ 360)
Calculated deflection under service live load .... = 1.26 in (L/ 495)
Joist inertia ..... = 9118.51 in^4
Required camber ..... = 1.11 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.15 in)

Left Reaction = 78.13/ -10.48 kips Right Reaction = 73.71/ -10.01 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 58.01 | -74.14 | | LL 5 X .5 | z 62 | 0.716 | 5'-3" | | |
| 1.2 | 58.01 | -74.14 | | do | z 64 | 0.659 | 5'-3" | | |
| 1.3 | 79.74 | -183.27 | | do | z 61 | 0.863 | 5'-0" | | |
| 1.4 | 79.74 | -183.27 | | do | z 61 | 0.860 | do | | |
| 1.5 | 87.16 | -220.00 | x | do | yy 49 | 0.943 | do | | |
| 1.6 | 87.16 | -220.00 | x | do | yy 49 | 0.943 | do | | |
| 1.7 | 80.96 | -190.28 | | do | z 61 | 0.889 | do | | |
| 1.8 | 80.96 | -190.28 | | do | z 61 | 0.889 | 5'-0" | | |
| 1.9 | 58.94 | -83.30 | x | do | xx 78 | 0.668 | 10'-0" | | |
| 1.10 | 58.94 | -110.98 | | LL 5 X .5 | z 18 | 0.410 | 1'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 5 X .438 | z 62 | 0.506 | 5'-3" | | |
| 2.2 | 148.27 | -28.78 | | do | z 125 | 0.753 | 10'-3" | | |
| 2.3 | 218.24 | -43.00 | | do | z 122 | 0.869 | 10'-0" | | |
| 2.4 | 221.75 | -43.62 | | do | z 122 | 0.882 | 10'-0" | | |
| 2.5 | 158.79 | -30.62 | | do | z 132 | 0.756 | 10'-10" | | |
| 2.6 | 0.00 | 0.00 | | LL 5 X .438 | z 69 | 0.542 | 5'-10" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 92.24 | -23.06 | | LL 3 X .281 | z 128 | 0.957 | 6'-5 5/8" | .281 - 11 1/8" | T45 |
| 3.2 | 133.22 | -33.31 | | LL 3.5 X .375 | z 119 | 0.894 | 6'-11 1/4" | .313 - 14 3/8" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 43.79 | -10.95 | x | LL 2 X .216 | xx122 | 0.893 | 6'-4 7/8" | .216 - 6 7/8" | |
| 4.2 | 32.48 | -8.12 | x | LL 2.5 X .230 | xx 97 | 0.493 | do | .230 - 4 3/4" | |
| 4.3 | 0.39 | -32.48 | x | LL 2.5 X .230 | xx 97 | 0.966 | do | .230 - 4 3/4" | |
| 4.4 | 39.41 | -9.85 | x | LL 2 X .216 | xx122 | 0.804 | 6'-4 7/8" | .216 - 6 1/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 17.99 | -91.21 | x | LL 3.5 X .344 | xx 72 | 0.968 | 6'-7 1/4" | .313 - 9 7/8" | |
| 5.2 | 8.91 | -43.78 | x | LL 3 X .224 | xx 80 | 0.941 | 6'-4 7/8" | .224 - 6 5/8" | |
| 5.3 | 8.14 | -39.39 | x | LL 3 X .224 | xx 80 | 0.846 | 6'-4 7/8" | .224 - 6" | |
| 5.4 | 18.48 | -89.83 | x | LL 3.5 X .344 | xx 77 | 1.003 | 7'-0 7/8" | .313 - 9 3/4" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -1.75 | | U 1 x 1 x 0.118 | z 153 | 0.924 | 4'-0" | .118 - 1 1/2" | |
| 7.2 | 0.00 | -3.79 | d | U 1 3/8 x 0.118 | z 104 | 0.848 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -4.55 | d | U 1 3/8 x 0.157 | z 102 | 0.555 | do | .158 - 1 1/2" | |
| 7.4 | 0.00 | -3.94 | d | U 1 3/8 x 0.118 | z 104 | 0.880 | 4'-0" | .118 - 1 1/2" | |
| 7.5 | 0.00 | -37.30 | | LL 3 X .313 | z 114 | 0.917 | 5'-9 1/4" | .313 - 4" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 49'-3 3/4" ==> 0 Row(s) Minimum Concentrated loads

canamsteel Corporation

Mark: G14

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 13:30:34

@ Bottom Chord: 49'-2 1/4" ==> 1 Row(s) Minimum Acc. to the force

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 30'-6" |

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v3.6 12/06/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member

1 = within a panel with no reinforcement

2 = anywhere within a panel

3 = at any panel point along the joist

4 = anywhere along the joist

5 = transferred by an additional member and lateral support

6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

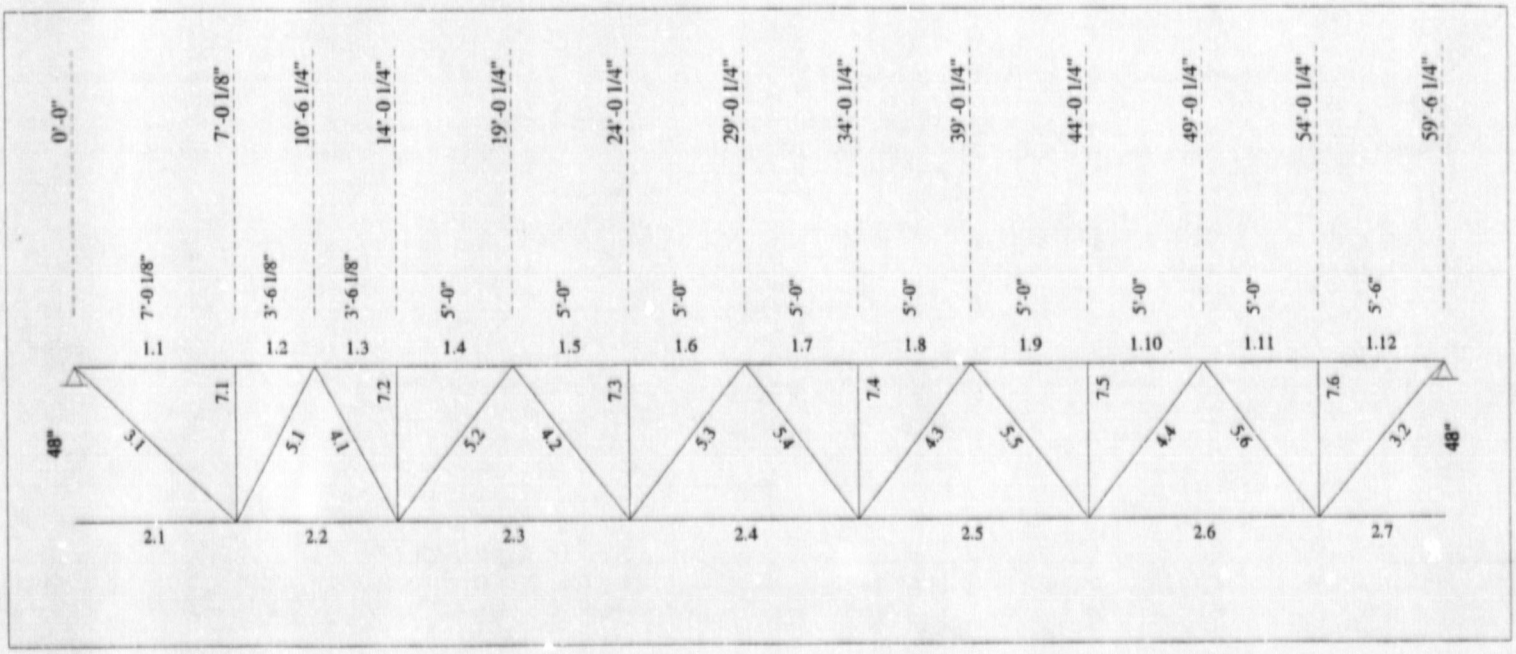
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

3811 ( 618.39) / 4037 ( 654.78)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G15 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




**LOADING CONDITIONS**

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G6N17.5 LIVE LOAD ..: 0.00 lb/ft

**CONCENTRATED LOADS**

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 17.50 | 12.25 | 4.80 | 14'-0 1/4" | 14'-0 1/4" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 17.50 | 12.25 | 4.80 | 24'-0 1/4" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 17.50 | 12.25 | 4.80 | 34'-0 1/4" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 17.50 | 12.25 | 4.80 | 44'-0 1/4" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Near | 17.50 | 12.25 | 4.80 | 54'-0 1/4" | 10'-0" | 5 | 1 | 90 | 0 |
| 6 | 1 | Far | 8.80 | 8.80 | 0.00 | 4'-0 1/4"* | 4'-0 1/4" | 6 | 1 | 90 | 0 |

**END MOMENTS [ft-kip] & AXIAL LOADS [kips]**

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -39.00 | 39.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 39.00 | -39.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G15

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 18:21:24

## DEFLECTION

Allowed deflection under live load ..... = 1.97 in (L/ 360)
Calculated deflection under service live load .... = 1.74 in (L/ 408)
Joist inertia ..... = 7663.38 in^4
Required camber ..... = 1.48 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.43 in)

Left Reaction = 45.70/ -7.69 kips Right Reaction = 50.66/ -10.27 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 44.80 | -75.68 | | LL 5 X .438 | z 83 | 0.942 | 7'-0 1/8" | | |
| 1.2 | 44.80 | -75.68 | | do | z 43 | 0.942 | 3'-6 1/8" | | |
| 1.3 | 59.04 | -144.02 | | do | z 43 | 0.760 | 3'-6 1/8" | | |
| 1.4 | 59.04 | -144.02 | | do | z 61 | 0.953 | 5'-0" | | |
| 1.5 | 69.86 | -195.24 | x | do | yy 49 | 0.968 | do | | |
| 1.6 | 69.86 | -195.24 | x | do | yy 49 | 0.974 | do | | |
| 1.7 | 71.19 | -200.20 | x | do | yy 49 | 0.991 | do | | |
| 1.8 | 71.19 | -200.20 | x | do | yy 49 | 0.991 | do | | |
| 1.9 | 63.03 | -158.90 | | do | z 61 | 0.974 | do | | |
| 1.10 | 63.03 | -158.90 | | do | z 61 | 0.854 | do | | |
| 1.11 | 45.39 | -71.35 | | do | z 61 | 0.773 | 5'-0" | | |
| 1.12 | 45.39 | -71.35 | | LL 5 X .438 | z 65 | 0.396 | 5'-6" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 4 X .438 | z 105 | 0.474 | 7'-0 1/8" | | |
| 2.2 | 109.86 | -21.01 | | do | z 107 | 0.732 | 7'-0 1/8" | | |
| 2.3 | 169.64 | -33.54 | | do | z 153 | 0.854 | 10'-0" | | |
| 2.4 | 197.72 | -39.62 | | do | z 153 | 0.995 | do | | |
| 2.5 | 179.56 | -36.20 | | do | z 153 | 0.904 | do | | |
| 2.6 | 115.14 | -23.30 | | do | z 153 | 0.794 | 10'-0" | | |
| 2.7 | 0.00 | 0.00 | | LL 4 X .438 | z 82 | 0.511 | 5'-6" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 86.49 | -21.62 | x | LL 3 X .281 | xx101 | 0.897 | 7'-11 1/8" | .281 - 10 3/8" | |
| 3.2 | 87.50 | -21.88 | | LL 3 X .313 | z 133 | 0.819 | 6'-8" | .313 - 9 1/2" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 50.28 | -12.57 | x | LL 2.5 X .188 | xx 80 | 0.926 | 5'-3 7/8" | .188 - 9" | |
| 4.2 | 32.11 | -8.03 | x | LL 2 X .142 | xx121 | 0.977 | 6'-4 7/8" | .142 - 7 5/8" | |
| 4.3 | 25.89 | -6.47 | x | LL 2 X .142 | xx121 | 0.788 | do | .142 - 6 1/8" | |
| 4.4 | 54.90 | -13.72 | x | LL 2 X .250 | xx124 | 0.976 | 6'-4 7/8" | .250 - 7 3/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 10.47 | -50.30 | x | LL 3 X .224 | xx 66 | 0.958 | 5'-3 7/8" | .224 - 7 5/8" | |
| 5.2 | 6.78 | -32.13 | x | LL 2.5 X .230 | xx 97 | 0.958 | 6'-4 7/8" | .230 - 4 3/4" | |
| 5.3 | 0.83 | -20.98 | x | LL 2.5 X .188 | xx 97 | 0.771 | do | .188 - 3 3/4" | |
| 5.4 | 20.98 | -5.25 | x | LL 2.5 X .188 | xx 97 | 0.387 | do | .188 - 3 3/4" | |
| 5.5 | 5.11 | -25.91 | x | LL 2.5 X .230 | xx 97 | 0.773 | do | .230 - 3 7/8" | |
| 5.6 | 11.06 | -54.91 | x | LL 3 X .281 | xx 81 | 0.911 | 6'-4 7/8" | .281 - 6 5/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -4.96 | | LL 2 X .216 | z 116 | 0.272 | 4'-0" | .216 - 1 1/2" | |
| 7.2 | 3.60 | -17.50 | | do | z 116 | 0.961 | do | .216 - 2 3/4" | |
| 7.3 | 3.60 | -17.50 | | do | z 116 | 0.961 | do | do | |
| 7.4 | 3.60 | -17.50 | | do | z 116 | 0.961 | do | do | |
| 7.5 | 3.60 | -17.50 | | do | z 116 | 0.961 | do | do | |

## F O R C E S I N M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|
| 7.6 | 3.60 | -17.50 | LL 2 X .216 | z 116 | 0.961 | 4'-0" | .216 - 2 3/4" | |

### BRIDGING

Maximum spacing between rows of bridging

| | | | | Laterals supports |
|---|---|---|---|---|
| @ Top Chord: | 49'-2 1/4" | ==> | 0 Row(s) Minimum | Concentrated loads |
| @ Bottom Chord: | 41'-3 1/2" | ==> | 2 Row(s) Minimum | Acc. to the force |

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 24'-0 1/4" |
| | | KB 34'-0 1/4" |

v3.6 12/05/00

**Fabrication code unless noted**

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar
-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

**CONCENTRATED LOADS** (* indicates that the conc. load is not directly on the panel point.)
Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension
Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)
Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support

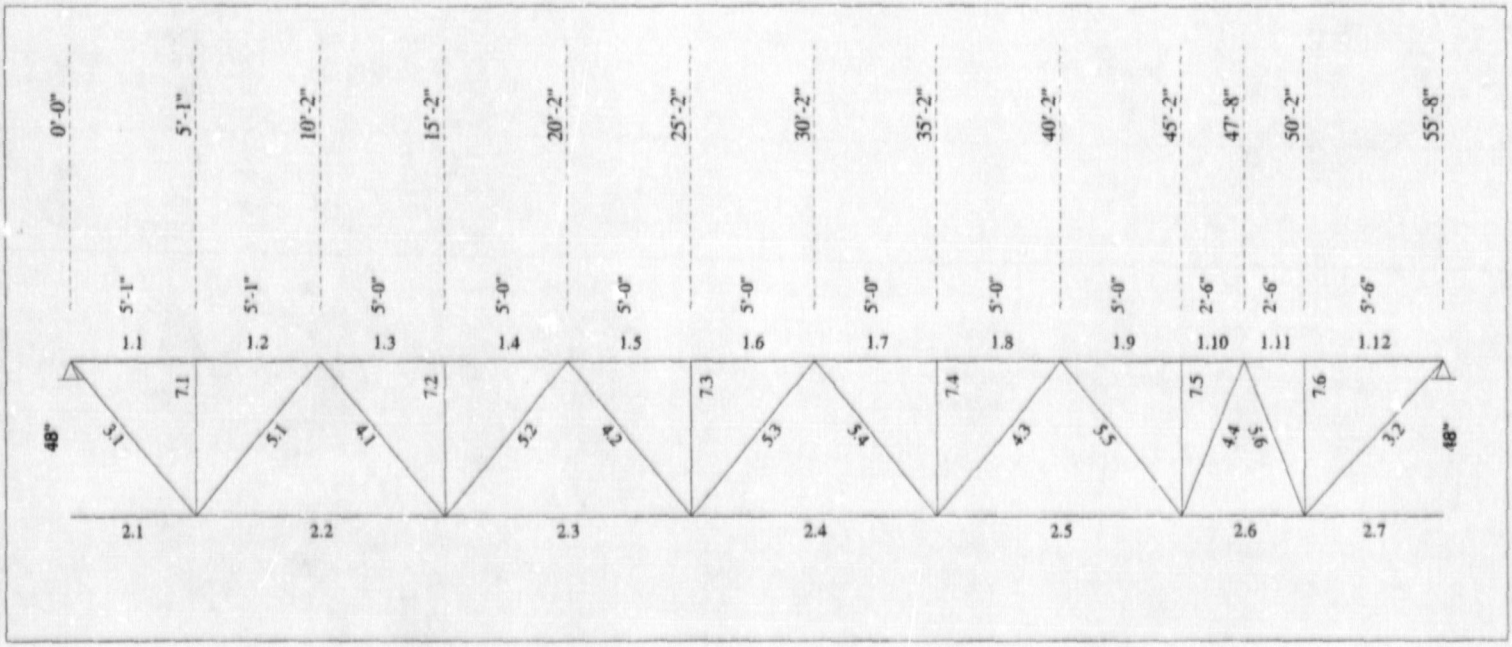
Chord: 1 = Top, 2 = Bottom
Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]
3609 ( 548.39) / 3836 ( 580.73)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G16 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




**LOADING CONDITIONS**

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G6N17.5 LIVE LOAD ..: 0.00 lb/ft

**CONCENTRATED LOADS**

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 17.50 | 12.25 | 4.80 | 10'-2" | 10'-2" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 17.50 | 12.25 | 4.80 | 20'-2" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 17.50 | 12.25 | 4.80 | 30'-2" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 17.50 | 12.25 | 4.80 | 40'-2" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Near | 17.50 | 12.25 | 4.80 | 50'-2" | 10'-0" | 5 | 1 | 90 | 0 |

**END MOMENTS [ft-kip] & AXIAL LOADS [kips]**

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -39.00 | 39.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 39.00 | -39.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G16

Project: COLUMBIA DISTRIBUTION A04061

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## DEFLECTION

Allowed deflection under live load ..... = 1.84 in (L/ 360)
Calculated deflection under service live load .... = 1.38 in (L/ 480)
Joist inertia ..... = 7353.08 in^4
Required camber ..... = 1.28 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.66 in)

Left Reaction = 40.10/ -8.21 kips Right Reaction = 47.48/ -9.73 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 41.37 | -51.81 | | LL 4 X .500 | z 75 | 0.347 | 5'-1" | | |
| 1.2 | 41.37 | -51.81 | | do | z 78 | 0.600 | 5'-1" | | |
| 1.3 | 58.45 | -135.03 | | do | z 77 | 0.916 | 5'-0" | | |
| 1.4 | 58.45 | -135.03 | | do | z 77 | 0.916 | do | | |
| 1.5 | 65.90 | -171.35 | x | do | yy 58 | 0.989 | do | | |
| 1.6 | 65.90 | -171.35 | x | do | yy 58 | 0.989 | do | | |
| 1.7 | 63.90 | -161.65 | x | do | yy 58 | 0.933 | do | | |
| 1.8 | 63.90 | -161.65 | x | do | yy 58 | 0.933 | do | | |
| 1.9 | 52.47 | -105.93 | | do | z 77 | 0.718 | 5'-0" | | |
| 1.10 | 52.47 | -105.93 | | do | z 38 | 0.612 | 2'-6" | | |
| 1.11 | 44.40 | -66.54 | | do | z 38 | 0.612 | 2'-6" | | |
| 1.12 | 44.40 | -66.54 | | LL 4 X .500 | z 82 | 0.476 | 5'-6" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 4 X .438 | z 75 | 0.454 | 5'-1" | | |
| 2.2 | 105.36 | -21.61 | | do | z 154 | 0.710 | 10'-1" | | |
| 2.3 | 164.69 | -33.78 | | do | z 153 | 0.829 | 10'-0" | | |
| 2.4 | 178.00 | -36.51 | | do | z 153 | 0.896 | do | | |
| 2.5 | 145.29 | -29.80 | | do | z 153 | 0.800 | 10'-0" | | |
| 2.6 | 86.24 | -17.68 | | do | z 76 | 0.653 | 5'-0" | | |
| 2.7 | 0.00 | 0.00 | | LL 4 X .438 | z 82 | 0.388 | 5'-6" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 65.51 | -16.38 | x | LL 2.5 X .230 | xx 97 | 0.995 | 6'-4" | .230 - 9 5/8" | T45 |
| 3.2 | 81.74 | -20.44 | | LL 3 X .313 | z 133 | 0.765 | 6'-8" | .313 - 8 7/8" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 37.29 | -9.32 | x | LL 2 X .163 | xx121 | 0.994 | 6'-4 7/8" | .163 - 7 3/4" | |
| 4.2 | 19.60 | -4.90 | x | LLV 1.75 x .143 | xx139 | 0.681 | do | .143 - 4 5/8" | |
| 4.3 | 20.56 | -5.14 | x | LLV 1.75 x .143 | xx139 | 0.714 | 6'-4 7/8" | .143 - 4 7/8" | |
| 4.4 | 35.85 | -8.96 | x | LL 2 X .163 | xx 88 | 0.955 | 4'-8 5/8" | .163 - 7 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 13.73 | -66.89 | x | LL 3.5 X .313 | xx 70 | 0.773 | 6'-5 5/8" | .313 - 7 1/4" | |
| 5.2 | 7.65 | -37.27 | x | LL 3 X .25 | xx 81 | 0.705 | 6'-4 7/8" | .250 - 5" | |
| 5.3 | 1.72 | -19.60 | x | LL 2.5 X .188 | xx 97 | 0.722 | do | .188 - 3 1/2" | |
| 5.4 | 4.22 | -20.54 | x | LL 2.5 X .188 | xx 97 | 0.757 | do | .188 - 3 3/4" | |
| 5.5 | 10.16 | -49.46 | x | LL 3 X .25 | xx 81 | 0.936 | 6'-4 7/8" | .250 - 6 3/4" | |
| 5.6 | 7.34 | -35.86 | x | LL 2.5 X .188 | xx 70 | 1.005 | 4'-8 5/8" | .188 - 6 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -1.08 | | LL 2 X .216 | z 116 | 0.060 | 4'-0" | .216 - 1 1/2" | |
| 7.2 | 0.00 | -2.83 | d | U 1 3/8 x 0.118 | z 106 | 0.644 | do | .118 - 1 1/2" | |
| 7.3 | 0.00 | -3.59 | d | do | z 106 | 0.817 | do | do | |
| 7.4 | 0.00 | -3.38 | d | do | z 106 | 0.771 | do | do | |
| 7.5 | 0.00 | -2.22 | d | U 1 3/8 x 0.118 | z 106 | 0.505 | do | .118 - 1 1/2" | |

## F O R C E S I N M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|
| 7.6 | 3.60 | -17.50 | LL 2 X .216 | z 116 | 0.970 | 4'-0" | .216 - 2 3/4" | |

---------- BRIDGING ----------

Maximum spacing between rows of bridging

| | | | Laterals supports |
|---|---|---|---|
| @ Top Chord: | 41'-6 5/8" ==> | 0 Row(s) Minimum | Concentrated loads |
| @ Bottom Chord: | 41'-3 1/2" ==> | 2 Row(s) Minimum | Acc. to the force |

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 20'-2" |
| | | KE 30'-2" |

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v3.6 12/05/00

Fabrication code unless noted
-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar
-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

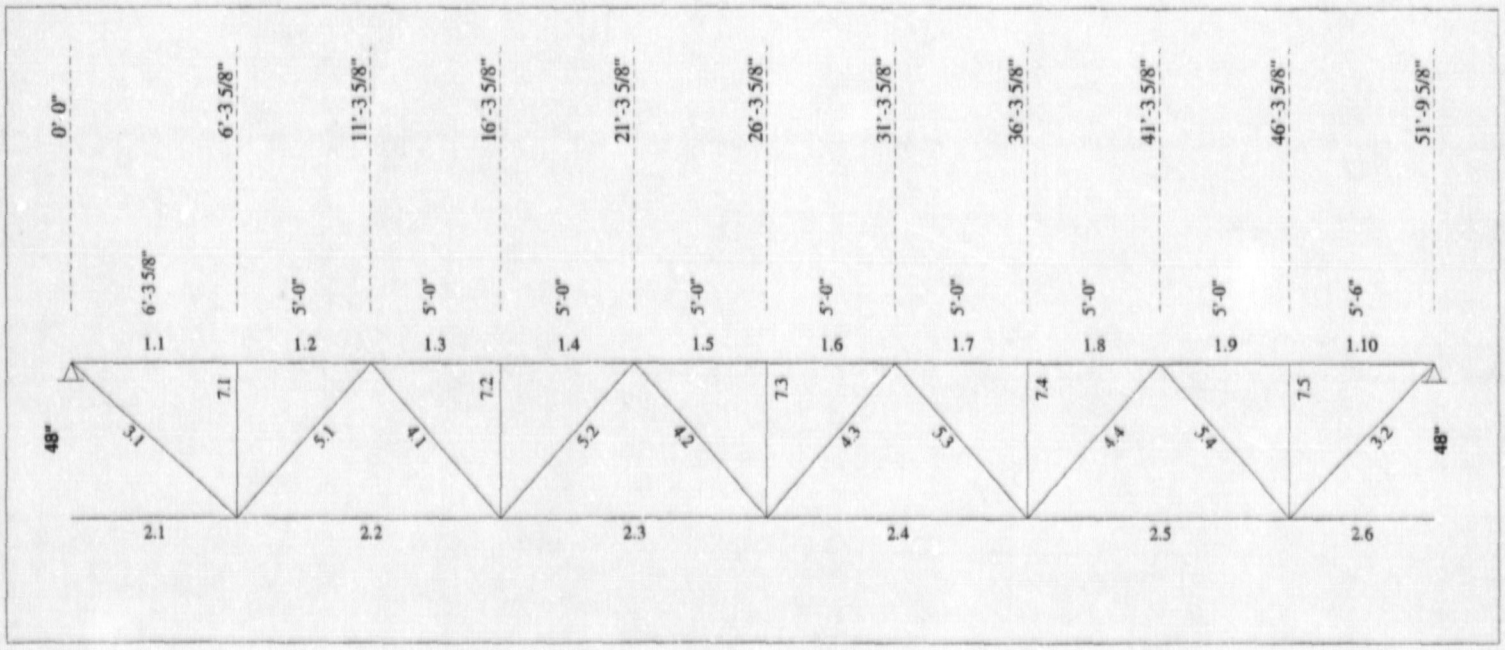
CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)
Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension
Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)
Definition of the categories (Cat.) 0 @ 6:
0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support
Chord: 1 = Top, 2 = Bottom
Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]
3179 ( 461.05) / 3361 ( 487.05)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G17 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G6N17.5 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 17.50 | 12.25 | 4.80 | 6'-3 5/8" | 6'-3 5/8" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 17.50 | 12.25 | 4.80 | 16'-3 5/8" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 17.50 | 12.25 | 4.80 | 26'-3 5/8" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 17.50 | 12.25 | 4.80 | 36'-3 5/8" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Near | 17.50 | 12.25 | 4.80 | 46'-3 5/8" | 10'-0" | 5 | 1 | 90 | 0 |

---------- ***END MOMENTS [ft-kip] & AXIAL LOADS [kips]*** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -39.00 | 39.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 39.00 | -39.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G17

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 18:39:57

## DEFLECTION

Allowed deflection under live load ..... = 1.72 in (L/ 360)
Calculated deflection under service live load .... = 1.24 in (L/ 499)
Joist inertia ..... = 6287.13 in^4
Required camber ..... = 1.09 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.80 in)

Left Reaction = 43.10/ -8.84 kips Right Reaction = 44.46/ -9.12 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 44.87 | -69.26 | | LL 4 X .500 | z 94 | 0.576 | 6'-3 5/8" | | |
| 1.2 | 44.87 | -69.26 | | do | z 77 | 0.787 | 5'-0" | | |
| 1.3 | 58.62 | -136.28 | | do | z 77 | 0.924 | do | | |
| 1.4 | 58.62 | -136.28 | | do | z 77 | 0.924 | do | | |
| 1.5 | 62.96 | -157.43 | x | do | yy 58 | 0.909 | do | | |
| 1.6 | 62.96 | -157.43 | x | do | yy 58 | 0.909 | do | | |
| 1.7 | 57.89 | -132.71 | | do | z 77 | 0.909 | do | | |
| 1.8 | 57.89 | -132.71 | | do | z 77 | 0.900 | do | | |
| 1.9 | 43.40 | -62.11 | | do | z 77 | 0.766 | 5'-0" | | |
| 1.10 | 43.40 | -62.11 | | LL 4 X .500 | z 82 | 0.444 | 5'-6" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3.5 X .375 | z 107 | 0.591 | 6'-3 5/8" | | |
| 2.2 | 102.77 | -21.09 | | do | z 175 | 0.867 | 10'-0" | | |
| 2.3 | 146.86 | -30.13 | x | do | yy129 | 0.985 | do | | |
| 2.4 | 145.08 | -29.77 | x | do | yy129 | 0.973 | do | | |
| 2.5 | 97.42 | -19.99 | | do | z 175 | 0.834 | 10'-0" | | |
| 2.6 | 0.00 | 0.00 | | LL 3.5 X .375 | z 93 | 0.560 | 5'-6" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 81.57 | -20.39 | | LL 3.5 X .375 | z 126 | 0.547 | 7'-3 7/8" | .313 - 8 7/8" | T45 |
| 3.2 | 76.38 | -19.09 | | LL 3 X .313 | z 134 | 0.715 | 6'-8" | .313 - 8 1/4" | T45 |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 42.15 | -10.54 | x | LL 2 X .216 | xx123 | 0.860 | 6'-4 7/8" | .216 - 6 5/8" | |
| 4.2 | 18.32 | -4.58 | x | LL 1.5 X .156 | xx164 | 0.927 | do | .156 - 4" | |
| 4.3 | 18.32 | -4.58 | x | LL 1.5 X .156 | xx164 | 0.927 | do | .156 - 4" | |
| 4.4 | 44.40 | -11.10 | x | LL 2 X .216 | xx123 | 0.905 | 6'-4 7/8" | .216 - 6 7/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 8.64 | -42.17 | x | LL 3 X .224 | xx 81 | 0.910 | 6'-4 7/8" | .224 - 6 3/8" | |
| 5.2 | 2.72 | -18.32 | x | LL 2.5 X .188 | xx 97 | 0.676 | do | .188 - 3 1/4" | |
| 5.3 | 3.18 | -18.32 | x | LL 2.5 X .188 | xx 97 | 0.676 | do | .188 - 3 1/4" | |
| 5.4 | 9.11 | -44.42 | x | LL 3 X .224 | xx 81 | 0.958 | 6'-4 7/8" | .224 - 6 3/4" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 3.60 | -17.50 | | LL 2 X .216 | z 117 | 0.977 | 4'-0" | .216 - 2 3/4" | |
| 7.2 | 3.60 | -17.50 | | do | z 117 | 0.977 | do | do | |
| 7.3 | 3.60 | -17.50 | | do | z 117 | 0.977 | do | do | |
| 7.4 | 3.60 | -17.50 | | do | z 117 | 0.977 | do | do | |
| 7.5 | 3.60 | -17.50 | | LL 2 X .216 | z 117 | 0.977 | 4'-0" | .216 - 2 3/4" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 41'-6 5/8" ==> 0 Row(s) Minimum Concentrated loads

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Mark: G17

Project: COLUMBIA DISTRIBUTION A04061

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@ Bottom Chord: 37'-1 1/4" ==> 2 Row(s) Minimum Acc. to the force

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | | KB 16'-3 5/8" |
| | | KB 36'-3 5/8" |

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v3.6 12/05/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member 1 = within a panel with no reinforcement

2 = anywhere within a panel 3 = at any panel point along the joist

4 = anywhere along the joist 5 = transferred by an additional member and lateral support

6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

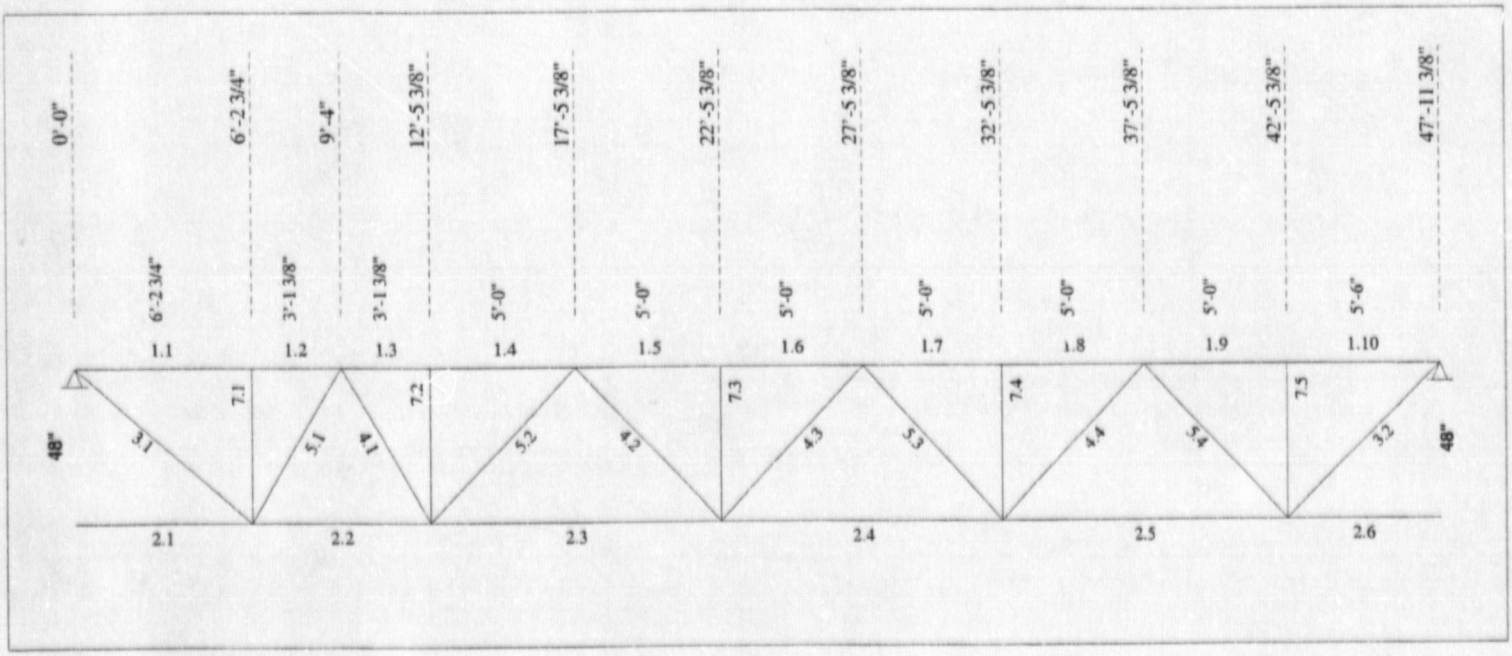
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

2717 ( 399.88) / 2881 ( 424.26)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: G18 (JOIST GIRDER, Asymetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 0.00 lb/ft 48G5N25.0 LIVE LOAD ..: 0.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 25.00 | 17.50 | 6.84 | 12'-5 3/8" | 12'-5 3/8" | 5 | 1 | 90 | 0 |
| 2 | 1 | Near | 25.00 | 17.50 | 6.84 | 22'-5 3/8" | 10'-0" | 5 | 1 | 90 | 0 |
| 3 | 1 | Near | 25.00 | 17.50 | 6.84 | 32'-5 3/8" | 10'-0" | 5 | 1 | 90 | 0 |
| 4 | 1 | Near | 25.00 | 17.50 | 6.84 | 42'-5 3/8" | 10'-0" | 5 | 1 | 90 | 0 |
| 5 | 1 | Far | 8.80 | 8.80 | 0.00 | 2'-5 3/8"* | 2'-5 3/8" | 6 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -55.00 | 55.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 55.00 | -55.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 7 1/2" at right: 7 1/2"

canamsteel Corporation

Mark: G18

Project: COLUMBIA DISTRIBUTION A04061

12/06/00 11:48:49

## DEFLECTION

Allowed deflection under live load ..... = 1.59 in (L/ 360)
Calculated deflection under service live load .... = 1.03 in (L/ 554)
Joist inertia ..... = 7663.38 in^4
Required camber ..... = 0.92 in

## F O R C E S I N M E M B E R S [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 45.43 in)

Left Reaction = 51.10/ -8.75 kips Right Reaction = 57.75/ -11.74 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 57.58 | -72.99 | | LL 5 X .438 | z 74 | 0.964 | 6'-2 3/4" | | |
| 1.2 | 57.58 | -72.99 | | do | z 38 | 0.781 | 3'-1 3/8" | | |
| 1.3 | 71.97 | -142.54 | | do | z 38 | 0.738 | 3'-1 3/8" | | |
| 1.4 | 71.97 | -142.54 | | do | z 61 | 0.918 | 5'-0" | | |
| 1.5 | 81.56 | -188.21 | x | do | yy 49 | 0.933 | do | | |
| 1.6 | 81.56 | -188.21 | x | do | yy 49 | 0.933 | do | | |
| 1.7 | 77.61 | -167.81 | | do | z 61 | 0.916 | do | | |
| 1.8 | 77.61 | -167.81 | | do | z 61 | 0.902 | do | | |
| 1.9 | 60.13 | -81.34 | | do | z 61 | 0.816 | 5'-0" | | |
| 1.10 | 60.13 | -81.34 | | LL 5 X .438 | z 65 | 0.451 | 5'-6" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 4 X .438 | z 93 | 0.465 | 6'-2 3/4" | | |
| 2.2 | 107.77 | -21.19 | | do | z 95 | 0.713 | 6'-2 3/4" | | |
| 2.3 | 165.38 | -33.17 | | do | z 153 | 0.832 | 10'-0" | | |
| 2.4 | 178.02 | -35.99 | | do | z 153 | 0.896 | do | | |
| 2.5 | 124.58 | -25.28 | | do | z 153 | 0.789 | 10'-0" | | |
| 2.6 | 0.00 | 0.00 | | LL 4 X .438 | z 82 | 0.554 | 5'-6" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 86.07 | -21.52 | | LL 3 X .313 | z 145 | 0.857 | 7'-3 1/8" | .313 - 9 1/4" | |
| 3.2 | 99.75 | -24.94 | | LL 3.5 X .375 | z 114 | 0.669 | 6'-8" | .313 - 10 3/4" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 54.75 | -13.69 | x | LL 2 X .250 | xx 97 | 0.973 | 5'-0 7/8" | .250 - 7 3/8" | |
| 4.2 | 28.63 | -7.16 | x | LLV 1.75 x .143 | xx139 | 0.994 | 6'-4 7/8" | .143 - 6 3/4" | |
| 4.3 | 23.92 | -5.98 | x | LLV 1.75 x .143 | xx139 | 0.830 | do | .143 - 5 5/8" | |
| 4.4 | 54.22 | -13.55 | x | LL 2.5 X .188 | xx 97 | 0.999 | 6'-4 7/8" | .188 - 9 3/4" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 11.32 | -54.76 | x | LL 3 X .25 | xx 63 | 0.886 | 5'-0 7/8" | .250 - 7 3/8" | |
| 5.2 | 6.00 | -28.65 | x | LL 2.5 X .230 | xx 97 | 0.855 | 6'-4 7/8" | .230 - 4 1/4" | |
| 5.3 | 2.47 | -23.92 | x | LL 2.5 X .230 | xx 97 | 0.713 | do | .230 - 3 1/2" | |
| 5.4 | 10.96 | -54.24 | x | LL 3 X .281 | xx 81 | 0.900 | 6'-4 7/8" | .281 - 6 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.00 | -3.31 | | LL 2.5 X .188 | z 92 | 0.115 | 4'-0" | .188 - 1 1/2" | |
| 7.2 | 5.13 | -25.00 | | do | z 92 | 0.865 | do | .188 - 4 1/2" | |
| 7.3 | 5.13 | -25.00 | | do | z 92 | 0.865 | do | do | |
| 7.4 | 5.13 | -25.00 | | do | z 92 | 0.865 | do | do | |
| 7.5 | 5.13 | -25.00 | | LL 2.5 X .188 | z 92 | 0.865 | 4'-0" | .188 - 4 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 49'-2 1/4" ==> 0 Row(s) Minimum Concentrated loads

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Mark: G18

Project: COLUMBIA DISTRIBUTION A04061

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@ Bottom Chord: 41'-3 1/2" ==> 1 Row(s) Minimum Acc. to the force

POSITION @ Top Chord @ Bottom Chord

KB 22'-5 3/8"

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v3.6 12/06/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member 1 = within a panel with no reinforcement

2 = anywhere within a panel 3 = at any panel point along the joist

4 = anywhere along the joist 5 = transferred by an additional member and lateral support

6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal Composite (Cmp): 0 = standard, 1 = non-composite

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

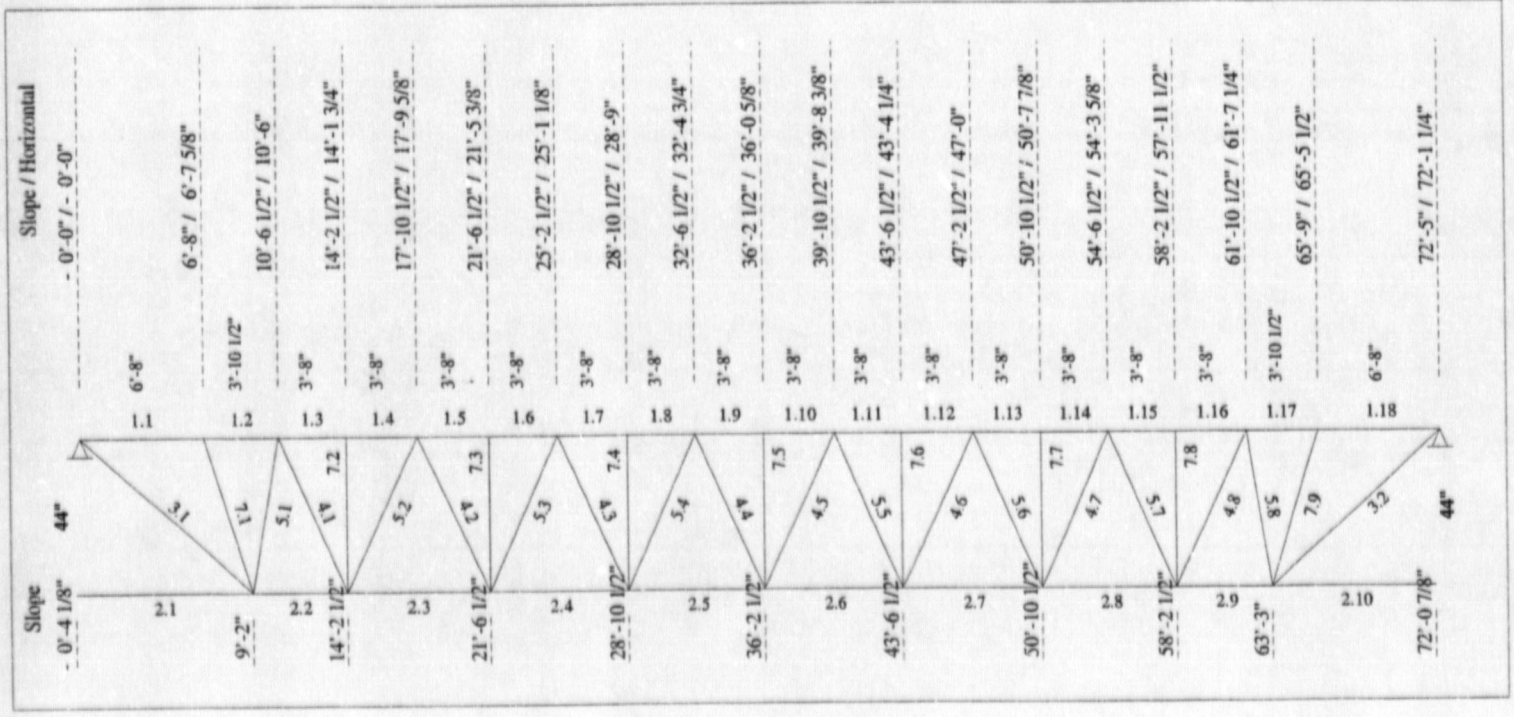
2961 ( 450.39) / 3170 ( 480.15)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: C1 (W-N LONG SPAN, Symmetrical, Parallel, Free ends)

Δ = 81 1/8 / 12 | 1 1/8"




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 652.02 lb/ft  44LH15  LIVE LOAD ..: 382.29 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes  Imposed Rows of Bridging Y/N.: No
Bearing Depth... [in]: at left.: 5"  at right: 5"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 2.40 in (L/ 360)
Calculated deflection under service live load .... = 2.27 in (L/ 379)
Joist inertia ..... = 4017.73 in^4
Required camber ..... = 2.18 in

canamsteel Corporation

Mark: C1

Project: COLUMBIA DISTRIBUTION A04061

12/08/00 15:03:19

---------- **F O R C E S  I N  M E M B E R S  [kips]** ----------

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 42.00 in)

Left Reaction = 23.60/ -4.00 kips Right Reaction = 23.60/ -4.00 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 16.49 | -57.07 | x | LL 3.5 X .375 | xx 73 | 0.827 | 6'-8" | | |
| 1.2 | 16.11 | -54.32 | | do | z 68 | 0.827 | 3'-10 1/2" | | |
| 1.3 | 19.28 | -77.43 | | do | z 48 | 0.673 | 3'-8" | | |
| 1.4 | 19.24 | -77.19 | | do | z 48 | 0.806 | do | | |
| 1.5 | 22.64 | -102.00 | | do | z 48 | 0.862 | do | | |
| 1.6 | 22.61 | -101.77 | | do | z 48 | 0.908 | do | | |
| 1.7 | 24.63 | -116.56 | | do | z 48 | 0.980 | do | | |
| 1.8 | 24.60 | -116.33 | | do | z 48 | 0.978 | do | | |
| 1.9 | 25.25 | -121.10 | x | do | zz 32 | 0.939 | do | | |
| 1.10 | 25.22 | -120.86 | x | do | zz 32 | 0.939 | do | | |
| 1.11 | 24.50 | -115.62 | | do | z 48 | 0.972 | do | | |
| 1.12 | 24.47 | -115.39 | | do | z 48 | 0.971 | do | | |
| 1.13 | 22.38 | -100.13 | | do | z 48 | 0.900 | do | | |
| 1.14 | 22.35 | -99.89 | | do | z 48 | 0.844 | do | | |
| 1.15 | 18.89 | -74.61 | | do | z 48 | 0.792 | do | | |
| 1.16 | 18.86 | -74.38 | | do | z 48 | 0.648 | 3'-8" | | |
| 1.17 | 15.63 | -50.79 | | do | z 68 | 0.799 | 3'-10 1/2" | | |
| 1.18 | 15.92 | -52.87 | x | LL 3.5 X .375 | xx 73 | 0.799 | 6'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3.5 X .313 | z 163 | 0.407 | 9'-6 1/8" | | |
| 2.2 | 59.62 | -8.16 | | do | z 88 | 0.612 | 5'-0 1/2" | | |
| 2.3 | 89.68 | -12.27 | | do | z 128 | 0.749 | 7'-4" | | |
| 2.4 | 109.71 | -15.01 | | do | z 128 | 0.874 | do | | |
| 2.5 | 119.73 | -16.38 | | do | z 128 | 0.953 | do | | |
| 2.6 | 119.73 | -16.38 | | do | z 128 | 0.953 | do | | |
| 2.7 | 109.71 | -15.01 | | do | z 128 | 0.874 | do | | |
| 2.8 | 89.68 | -12.27 | | do | z 128 | 0.749 | 7'-4" | | |
| 2.9 | 59.62 | -8.16 | | do | z 88 | 0.612 | 5'-0 1/2" | | |
| 2.10 | 0.00 | 0.00 | | LL 3.5 X .313 | z 151 | 0.407 | 8'-9 7/8" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 58.98 | -8.07 | x | LL 2.5 X .230 | zz118 | 0.896 | 9'-8 5/8" | .230 - 8 5/8" | |
| 3.2 | 58.98 | -8.07 | x | LL 2.5 X .230 | zz118 | 0.896 | 9'-8 5/8" | .230 - 8 5/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 22.50 | -3.08 | x | LL 1.5 X .156 | zz103 | 0.845 | 5'-2 1/4" | .156 - 4 7/8" | |
| 4.2 | 15.58 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.895 | do | .158 - 3 3/8" | |
| 4.3 | 8.66 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.977 | do | .118 - 2 1/2" | |
| 4.4 | 8.54 | -0.24 | | do | yy161 | 0.965 | do | do | |
| 4.5 | 8.54 | -0.24 | | do | yy161 | 0.965 | do | do | |
| 4.6 | 8.66 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.977 | do | .118 - 2 1/2" | |
| 4.7 | 15.58 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.895 | do | .158 - 3 3/8" | |
| 4.8 | 22.50 | -3.08 | x | LL 1.5 X .156 | zz103 | 0.845 | 5'-2 1/4" | .156 - 4 7/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 2.65 | -19.33 | x | LLV 1.75 x .143 | zz 65 | 0.957 | 3'-11" | .143 - 4 5/8" | |
| 5.2 | 2.61 | -19.04 | x | LL 2 X .142 | zz 77 | 0.949 | 5'-2 1/4" | .142 - 4 1/2" | |
| 5.3 | 1.66 | -12.12 | x | LL 1.5 X .156 | zz103 | 0.979 | do | .156 - 2 5/8" | |
| 5.4 | 0.71 | -8.54 | x | do | zz103 | 0.990 | do | .156 - 1 7/8" | |
| 5.5 | 0.71 | -8.54 | x | do | zz103 | 0.990 | do | .156 - 1 7/8" | |
| 5.6 | 1.66 | -12.12 | x | LL 1.5 X .156 | zz103 | 0.979 | do | .156 - 2 5/8" | |
| 5.7 | 2.61 | -19.04 | x | LL 2 X .142 | zz 77 | 0.949 | 5'-2 1/4" | .142 - 4 1/2" | |

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 5.8 | 2.65 | -19.33 | x | LLV 1.75 x .143 | zz 65 | 0.957 | 3'-11" | .143 - 4 5/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.57 | -4.46 | d | U 1 3/8 x 0.118 | z 119 | 0.807 | 4'-5 1/4" | .118 - 1 1/2" | |
| 7.2 | 0.33 | -2.80 | | U 1 x 1 x 0.090 | z 147 | 1.001 | 3'-8" | .091 - 1 1/2" | |
| 7.3 | 0.33 | -2.93 | | U 1 x 1 x 0.118 | yy111 | 0.815 | do | .118 - 1 1/2" | |
| 7.4 | 0.33 | -3.00 | | do | yy111 | 0.836 | do | do | |
| 7.5 | 0.33 | -3.03 | | do | yy111 | 0.843 | do | do | |
| 7.6 | 0.33 | -3.00 | | do | yy111 | 0.835 | do | do | |
| 7.7 | 0.33 | -2.92 | | U 1 x 1 x 0.118 | yy111 | 0.812 | do | .118 - 1 1/2" | |
| 7.8 | 0.33 | -2.78 | | U 1 x 1 x 0.090 | z 147 | 0.996 | 3'-8" | .091 - 1 1/2" | |
| 7.9 | 0.57 | -4.44 | d | U 1 3/8 x 0.118 | z 119 | 0.803 | 4'-5 1/4" | .118 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging

| | | | | Laterals supports |
|---|---|---|---|---|
| @ Top Chord: | 26'-2 3/8" | ==> | 3 Row(s) Minimum | Deck (36") |
| @ Bottom Chord: | 36'-8 5/8" | ==> | 5 Row(s) Minimum | Acc. to the code |

| POSITION | @ Top Chord | | @ Bottom Chord | | |
|---|---|---|---|---|---|
| | XB | 18'-1 1/4" | ( 18'-0 1/4") | | 9'-2" ( 9'-1 1/2") |
| | XB | 36'-2 1/2" | ( 36'-0 5/8") | XB | 18'-1 1/4" ( 18'-0 1/4") |
| | XB | 54'-3 3/4" | ( 54'-0 7/8") | XB | 36'-2 1/2" ( 36'-0 5/8") |
| | | | | XB | 54'-3 3/4" ( 54'-0 7/8") |
| | | | | | 63'-3" ( 62'-11 3/4") |

v3.6 12/08/00

**Fabrication code unless noted**

**-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar**

**-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle**

**Value of the forces reduced by 25% when there are some wind loads**

**Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]**

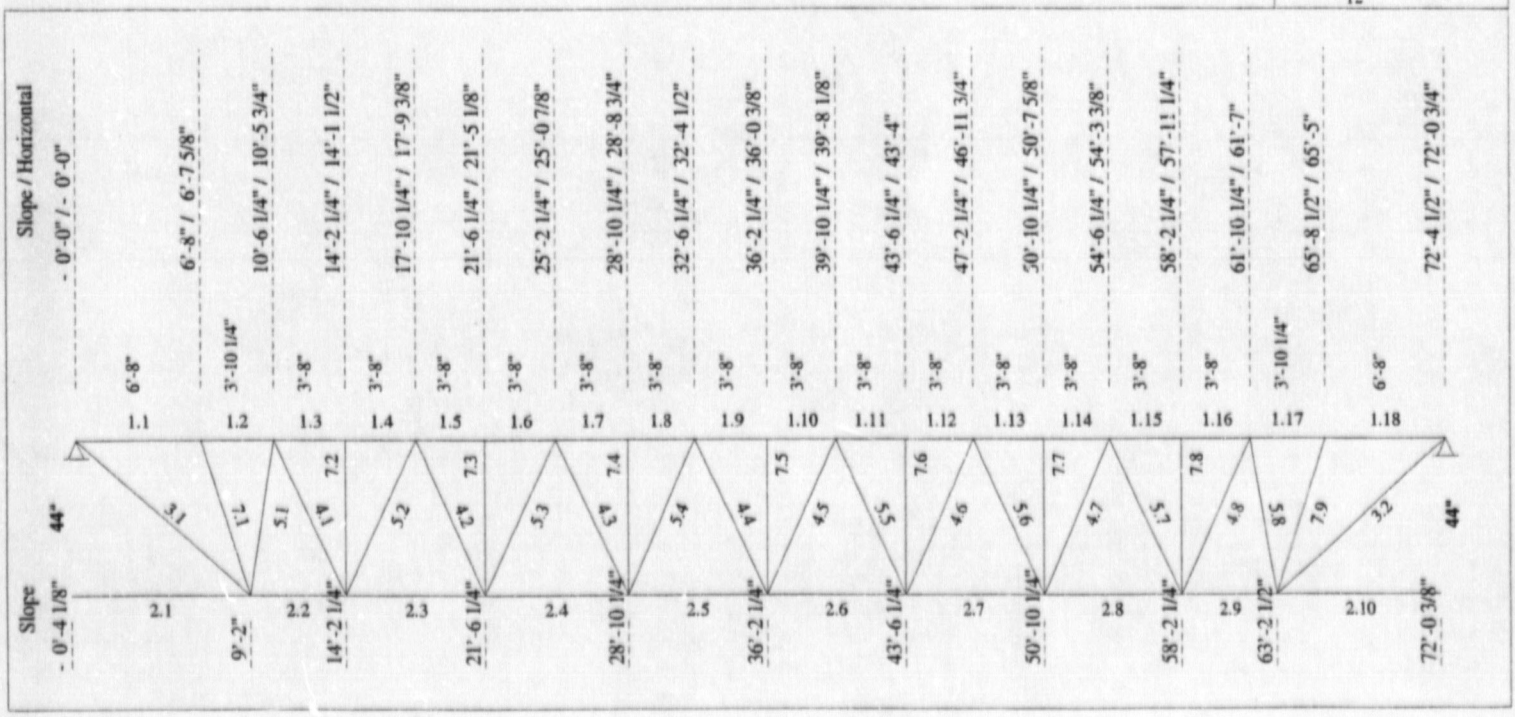
**2477 ( 378.17) / 2712 ( 413.53)**

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: C2 (W-N LONG SPAN, Symmetrical, Parallel, Free ends)

Δ = 81 1/8 / 12 | 1 1/8"




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 652.40 lb/ft 44LH15 LIVE LOAD ..: 382.73 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 5" at right: 5"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 2.40 in (L/ 360)

Calculated deflection under service live load .... = 2.27 in (L/ 380)

Joist inertia ..... = 4017.73 in^4

Required camber ..... = 2.18 in

canamsteel Corporation

Mark: C2

Project: COLUMBIA DISTRIBUTION A04061

12/08/00 15:03:20

---------- F O R C E S  I N  M E M B E R S  [kips] ----------

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 42.00 in)

Left Reaction = 23.60/ -4.00 kips Right Reaction = 23.60/ -4.00 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 16.49 | -57.07 | x | LL 3.5 X .375 | xx 73 | 0.827 | 6'-8" | | |
| 1.2 | 16.11 | -54.32 | | do | z 67 | 0.827 | 3'-10 1/4" | | |
| 1.3 | 19.26 | -77.33 | | do | z 48 | 0.672 | 3'-8" | | |
| 1.4 | 19.22 | -77.10 | | do | z 48 | 0.805 | do | | |
| 1.5 | 22.62 | -101.92 | | do | z 48 | 0.861 | do | | |
| 1.6 | 22.59 | -101.69 | | do | z 48 | 0.908 | do | | |
| 1.7 | 24.61 | -116.49 | | do | z 48 | 0.980 | do | | |
| 1.8 | 24.58 | -116.25 | | do | z 48 | 0.978 | do | | |
| 1.9 | 25.23 | -121.03 | x | do | zz 32 | 0.939 | do | | |
| 1.10 | 25.20 | -120.79 | x | do | zz 32 | 0.939 | do | | |
| 1.11 | 24.48 | -115.55 | | do | z 48 | 0.972 | do | | |
| 1.12 | 24.45 | -115.31 | | do | z 48 | 0.970 | do | | |
| 1.13 | 22.36 | -100.04 | | do | z 48 | 0.900 | do | | |
| 1.14 | 22.33 | -99.81 | | do | z 48 | 0.844 | do | | |
| 1.15 | 18.87 | -74.51 | | do | z 48 | 0.791 | do | | |
| 1.16 | 18.84 | -74.28 | | do | z 48 | 0.647 | 3'-8" | | |
| 1.17 | 15.63 | -50.79 | | do | z 67 | 0.799 | 3'-10 1/4" | | |
| 1.18 | 15.91 | -52.87 | x | LL 3.5 X .375 | xx 73 | 0.799 | 6'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3.5 X .313 | z 163 | 0.406 | 9'-6 1/8" | | |
| 2.2 | 59.52 | -8.14 | | do | z 87 | 0.611 | 5'-0 1/4" | | |
| 2.3 | 89.59 | -12.25 | | do | z 128 | 0.748 | 7'-4" | | |
| 2.4 | 109.64 | -14.99 | | do | z 128 | 0.873 | do | | |
| 2.5 | 119.66 | -16.36 | | do | z 128 | 0.953 | do | | |
| 2.6 | 119.66 | -16.36 | | do | z 128 | 0.953 | do | | |
| 2.7 | 109.64 | -14.99 | | do | z 128 | 0.873 | do | | |
| 2.8 | 89.59 | -12.25 | | do | z 128 | 0.748 | 7'-4" | | |
| 2.9 | 59.52 | -8.14 | | do | z 87 | 0.611 | 5'-0 1/4" | | |
| 2.10 | 0.00 | 0.00 | | LL 3.5 X .313 | z 151 | 0.406 | 8'-9 7/8" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 58.98 | -8.07 | x | LL 2.5 X .230 | zz118 | 0.896 | 9'-8 5/8" | .230 - 8 5/8" | |
| 3.2 | 58.98 | -8.07 | x | LL 2.5 X .230 | zz118 | 0.896 | 9'-8 5/8" | .230 - 8 5/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 22.52 | -3.08 | x | LL 1.5 X .156 | zz103 | 0.846 | 5'-2 1/4" | .156 - 4 7/8" | |
| 4.2 | 15.59 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.895 | do | .158 - 3 3/8" | |
| 4.3 | 8.66 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.978 | do | .118 - 2 1/2" | |
| 4.4 | 8.54 | -0.24 | | do | yy161 | 0.965 | do | do | |
| 4.5 | 8.54 | -0.24 | | do | yy161 | 0.965 | do | do | |
| 4.6 | 8.66 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.978 | do | .118 - 2 1/2" | |
| 4.7 | 15.59 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.895 | do | .158 - 3 3/8" | |
| 4.8 | 22.52 | -3.08 | x | LL 1.5 X .156 | zz103 | 0.846 | 5'-2 1/4" | .156 - 4 7/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 2.64 | -19.30 | x | LLV 1.75 x .143 | zz 65 | 0.954 | 3'-10 7/8" | .143 - 4 5/8" | |
| 5.2 | 2.61 | -19.05 | x | LL 2 X .142 | zz 77 | 0.949 | 5'-2 1/4" | .142 - 4 1/2" | |
| 5.3 | 1.66 | -12.12 | x | LL 1.5 X .156 | zz103 | 0.980 | do | .156 - 2 5/8" | |
| 5.4 | 0.71 | -8.54 | x | do | zz103 | 0.690 | do | .156 - 1 7/8" | |
| 5.5 | 0.71 | -8.54 | x | do | zz103 | 0.690 | do | .156 - 1 7/8" | |
| 5.6 | 1.66 | -12.12 | x | LL 1.5 X .156 | zz103 | 0.980 | do | .156 - 2 5/8" | |
| 5.7 | 2.61 | -19.05 | x | LL 2 X .142 | zz 77 | 0.949 | 5'-2 1/4" | .142 - 4 1/2" | |

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 5.8 | 2.64 | -19.30 | x | LLV 1.75 x .143 | zz 65 | 0.954 | 3'-10 7/8" | .143 - 4 5/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.57 | -4.45 | d | U 1 3/8 x 0.118 | z 119 | 0.806 | 4'-5 1/4" | .118 - 1 1/2" | |
| 7.2 | 0.33 | -2.80 | | U 1 x 1 x 0.090 | z 147 | 1.001 | 3'-8" | .091 - 1 1/2" | |
| 7.3 | 0.33 | -2.93 | | U 1 x 1 x 0.118 | yy111 | 0.815 | do | .118 - 1 1/2" | |
| 7.4 | 0.33 | -3.00 | | do | yy111 | 0.837 | do | do | |
| 7.5 | 0.33 | -3.03 | | do | yy111 | 0.843 | do | do | |
| 7.6 | 0.33 | -3.00 | | do | yy111 | 0.835 | do | do | |
| 7.7 | 0.33 | -2.92 | | U 1 x 1 x 0.118 | yy111 | 0.813 | do | .118 - 1 1/2" | |
| 7.8 | 0.33 | -2.78 | | U 1 x 1 x 0.090 | z 147 | 0.996 | 3'-8" | .091 - 1 1/2" | |
| 7.9 | 0.57 | -4.43 | d | U 1 3/8 x 0.118 | z 119 | 0.802 | 4'-5 1/4" | .118 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging — Laterals supports

| | | | |
|---|---|---|---|
| @ Top Chord: | 26'-2 3/8" ==> | 3 Row(s) Minimum | Deck (36") |
| @ Bottom Chord: | 36'-8 5/8" ==> | 5 Row(s) Minimum | Acc. to the code |

| POSITION | @ Top Chord | | @ Bottom Chord | |
|---|---|---|---|---|
| | XB 18'-1 1/8" | ( 18'-0 1/8") | 9'-2" | ( 9'-1 1/2") |
| | XB 36'-2 1/4" | ( 36'-0 3/8") | XB 18'-1 1/8" | ( 18'-0 1/8") |
| | XB 54'-3 3/8" | ( 54'-0 1/2") | XB 36'-2 1/4" | ( 36'-0 3/8") |
| | | | XB 54'-3 3/8" | ( 54'-0 1/2") |
| | | | 63'-2 1/2" | ( 62'-11 1/4") |

v3.6 12/08/00

**Fabrication code unless noted**

**-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar**

**-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle**

**Value of the forces reduced by 25% when there are some wind loads**

**Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]**

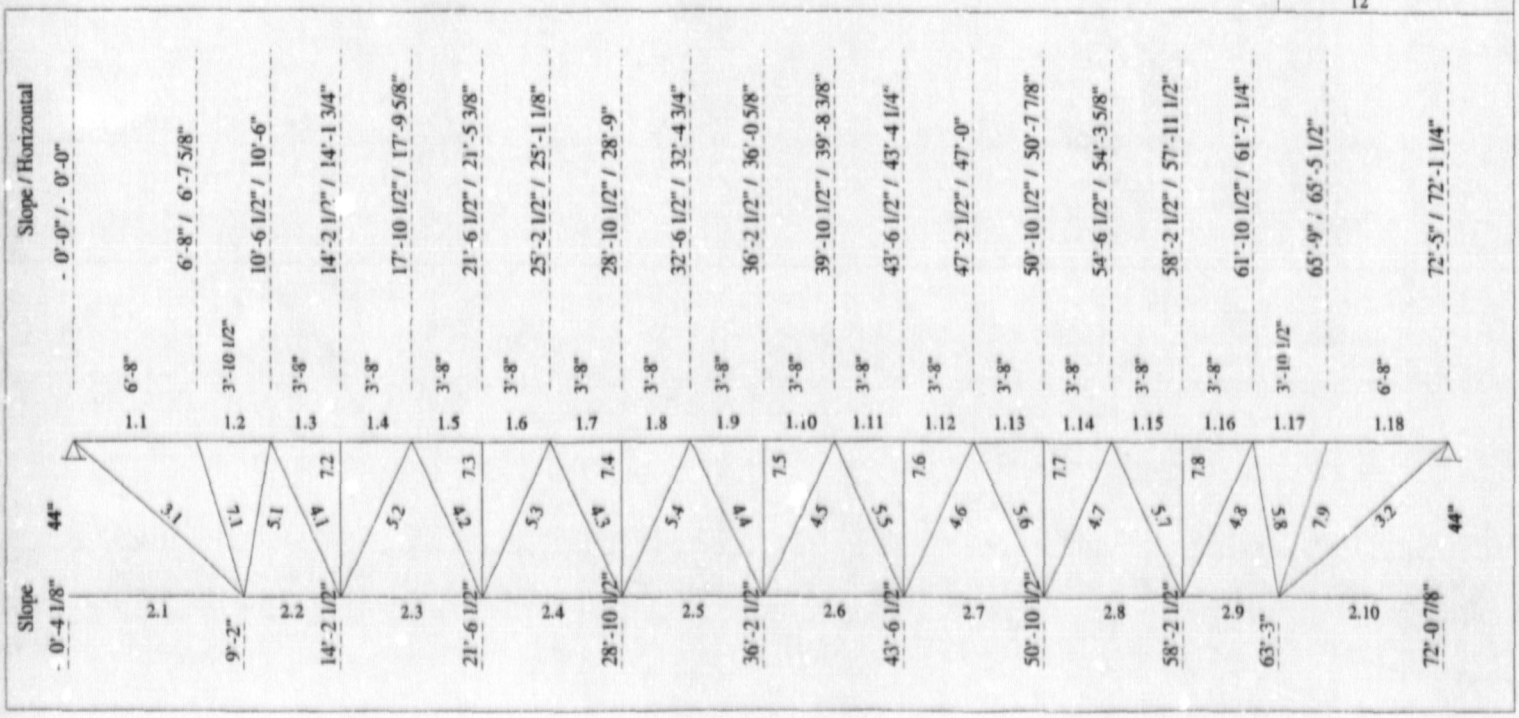
**2475 ( 377.96) / 2710 ( 413.32)**

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: C3 (W-N LONG SPAN, Symmetrical, Parallel, Free ends)

Δ = 81 1/8 | 1 1/8" / 12




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 652.02 lb/ft  44LH15  LIVE LOAD ..: 382.29 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes  Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 5"  at right: 5"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 2.40 in (L/ 360)

Calculated deflection under service live load .... = 2.27 in (L/ 379)

Joist inertia ..... = 4017.73 in^4

Required camber ..... = 2.18 in

canamsteel Corporation

Mark: C3

Project: COLUMBIA DISTRIBUTION A04061

12/08/00 15:03:21

---------- **F O R C E S  I N  M E M B E R S  [kips]** ----------

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 42.00 in)

Left Reaction = 23.60/ -4.00 kips Right Reaction = 23.60/ -4.00 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 16.49 | -57.07 | x | LL 3.5 X .375 | xx 73 | 0.827 | 6'-8" | | |
| 1.2 | 16.11 | -54.32 | | do | z 68 | 0.827 | 3'-10 1/2" | | |
| 1.3 | 19.28 | -77.43 | | do | z 48 | 0.673 | 3'-8" | | |
| 1.4 | 19.24 | -77.19 | | do | z 48 | 0.806 | do | | |
| 1.5 | 22.64 | -102.00 | | do | z 48 | 0.862 | do | | |
| 1.6 | 22.61 | -101.77 | | do | z 48 | 0.908 | do | | |
| 1.7 | 24.63 | -116.56 | | do | z 48 | 0.980 | do | | |
| 1.8 | 24.60 | -116.33 | | do | z 48 | 0.978 | do | | |
| 1.9 | 25.25 | -121.10 | x | do | zz 32 | 0.939 | do | | |
| 1.10 | 25.22 | -120.86 | x | do | zz 32 | 0.939 | do | | |
| 1.11 | 24.50 | -115.62 | | do | z 48 | 0.972 | do | | |
| 1.12 | 24.47 | -115.39 | | do | z 48 | 0.971 | do | | |
| 1.13 | 22.38 | -100.13 | | do | z 48 | 0.900 | do | | |
| 1.14 | 22.35 | -99.89 | | do | z 48 | 0.844 | do | | |
| 1.15 | 18.89 | -74.61 | | do | z 48 | 0.792 | do | | |
| 1.16 | 18.86 | -74.38 | | do | z 48 | 0.648 | 3'-8" | | |
| 1.17 | 15.63 | -50.79 | | do | z 68 | 0.799 | 3'-10 1/2" | | |
| 1.18 | 15.92 | -52.87 | x | LL 3.5 X .375 | xx 73 | 0.799 | 6'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3.5 X .313 | z 163 | 0.407 | 9'-6 1/8" | | |
| 2.2 | 59.62 | -8.16 | | do | z 88 | 0.612 | 5'-0 1/2" | | |
| 2.3 | 89.68 | -12.27 | | do | z 128 | 0.749 | 7'-4" | | |
| 2.4 | 109.71 | -15.01 | | do | z 128 | 0.874 | do | | |
| 2.5 | 119.73 | -16.38 | | do | z 128 | 0.953 | do | | |
| 2.6 | 119.73 | -16.38 | | do | z 128 | 0.953 | do | | |
| 2.7 | 109.71 | -15.01 | | do | z 128 | 0.874 | do | | |
| 2.8 | 89.68 | -12.27 | | do | z 128 | 0.749 | 7'-4" | | |
| 2.9 | 59.62 | -8.16 | | do | z 88 | 0.612 | 5'-0 1/2" | | |
| 2.10 | 0.00 | 0.00 | | LL 3.5 X .313 | z 151 | 0.407 | 8'-9 7/8" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 58.98 | -8.07 | x | LL 2.5 X .230 | zz118 | 0.896 | 9'-8 5/8" | .230 - 8 5/8" | |
| 3.2 | 58.98 | -8.07 | x | LL 2.5 X .230 | zz118 | 0.896 | 9'-8 5/8" | .230 - 8 5/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 22.50 | -3.08 | x | LL 1.5 X .156 | zz103 | 0.845 | 5'-2 1/4" | .156 - 4 7/8" | |
| 4.2 | 15.58 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.895 | do | .158 - 3 3/8" | |
| 4.3 | 8.66 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.977 | do | .118 - 2 1/2" | |
| 4.4 | 8.54 | -0.24 | | do | yy161 | 0.965 | do | do | |
| 4.5 | 8.54 | -0.24 | | do | yy161 | 0.965 | do | do | |
| 4.6 | 8.66 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.977 | do | .118 - 2 1/2" | |
| 4.7 | 15.58 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.895 | do | .15[illegible] 3 3/8" | |
| 4.8 | 22.50 | -3.08 | x | LL 1.5 X .156 | zz103 | 0.845 | 5'-2 1/4" | .156 - 4 7/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 2.65 | -19.33 | x | LLV 1.75 x .143 | zz 65 | 0.957 | 3'-11" | .143 - 4 5/8" | |
| 5.2 | 2.61 | -19.04 | x | LL 2 X .142 | zz 77 | 0.949 | 5'-2 1/4" | .142 - 4 1/2" | |
| 5.3 | 1.66 | -12.12 | x | LL 1.5 X .156 | zz103 | 0.979 | do | .156 - 2 5/8" | |
| 5.4 | 0.71 | -8.54 | x | do | zz103 | 0.690 | do | .156 - 1 7/8" | |
| 5.5 | 0.71 | -8.54 | x | do | zz103 | 0.690 | do | .156 - 1 7/8" | |
| 5.6 | 1.66 | -12.12 | x | LL 1.5 X .156 | zz103 | 0.979 | do | .156 - 2 5/8" | |
| 5.7 | 2.61 | -19.04 | x | LL 2 X .142 | zz 77 | 0.949 | 5'-2 1/4" | .142 - 4 1/2" | |

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 5.8 | 2.65 | -19.33 | x | LLV 1.75 x .143 | zz 65 | 0.957 | 3'-11" | .143 - 4 5/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.57 | -4.46 | d | U 1 3/8 x 0.118 | z 119 | 0.807 | 4'-5 1/4" | .118 - 1 1/2" | |
| 7.2 | 0.33 | -2.80 | | U 1 x 1 x 0.090 | z 147 | 1.001 | 3'-8" | .091 - 1 1/2" | |
| 7.3 | 0.33 | -2.93 | | U 1 x 1 x 0.118 | yy111 | 0.815 | do | .118 - 1 1/2" | |
| 7.4 | 0.33 | -3.00 | | do | yy111 | 0.836 | do | do | |
| 7.5 | 0.33 | -3.03 | | do | yy111 | 0.843 | do | do | |
| 7.6 | 0.33 | -3.00 | | do | yy111 | 0.835 | do | do | |
| 7.7 | 0.33 | -2.92 | | U 1 x 1 x 0.118 | yy111 | 0.812 | do | .118 - 1 1/2" | |
| 7.8 | 0.33 | -2.78 | | U 1 x 1 x 0.090 | z 147 | 0.996 | 3'-8" | .091 - 1 1/2" | |
| 7.9 | 0.57 | -4.44 | d | U 1 3/8 x 0.118 | z 119 | 0.803 | 4'-5 1/4" | .118 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging

| | | | | Laterals supports |
|---|---|---|---|---|
| @ Top Chord: | 26'-2 3/8" | ==> | 3 Row(s) Minimum | Deck (36") |
| @ Bottom Chord: | 36'-8 5/8" | ==> | 5 Row(s) Minimum | Acc. to the code |

| POSITION | @ Top Chord | | @ Bottom Chord | | |
|---|---|---|---|---|---|
| | XB | 18'-1 1/4" ( 18'-0 1/4") | | 9'-2" ( 9'-1 1/2") | |
| | XB | 36'-2 1/2" ( 36'-0 5/8") | XB | 18'-1 1/4" | ( 18'-0 1/4") |
| | XB | 54'-3 3/4" ( 54'-0 7/8") | XB | 36'-2 1/2" | ( 36'-0 5/8") |
| | | | XB | 54'-3 3/4" | ( 54'-0 7/8") |
| | | | | 63'-3" | ( 62'-11 3/4") |

v3.6 12/08/00

**Fabrication code unless noted**

**-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar**

**-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle**

**Value of the forces reduced by 25% when there are some wind loads**

**Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]**

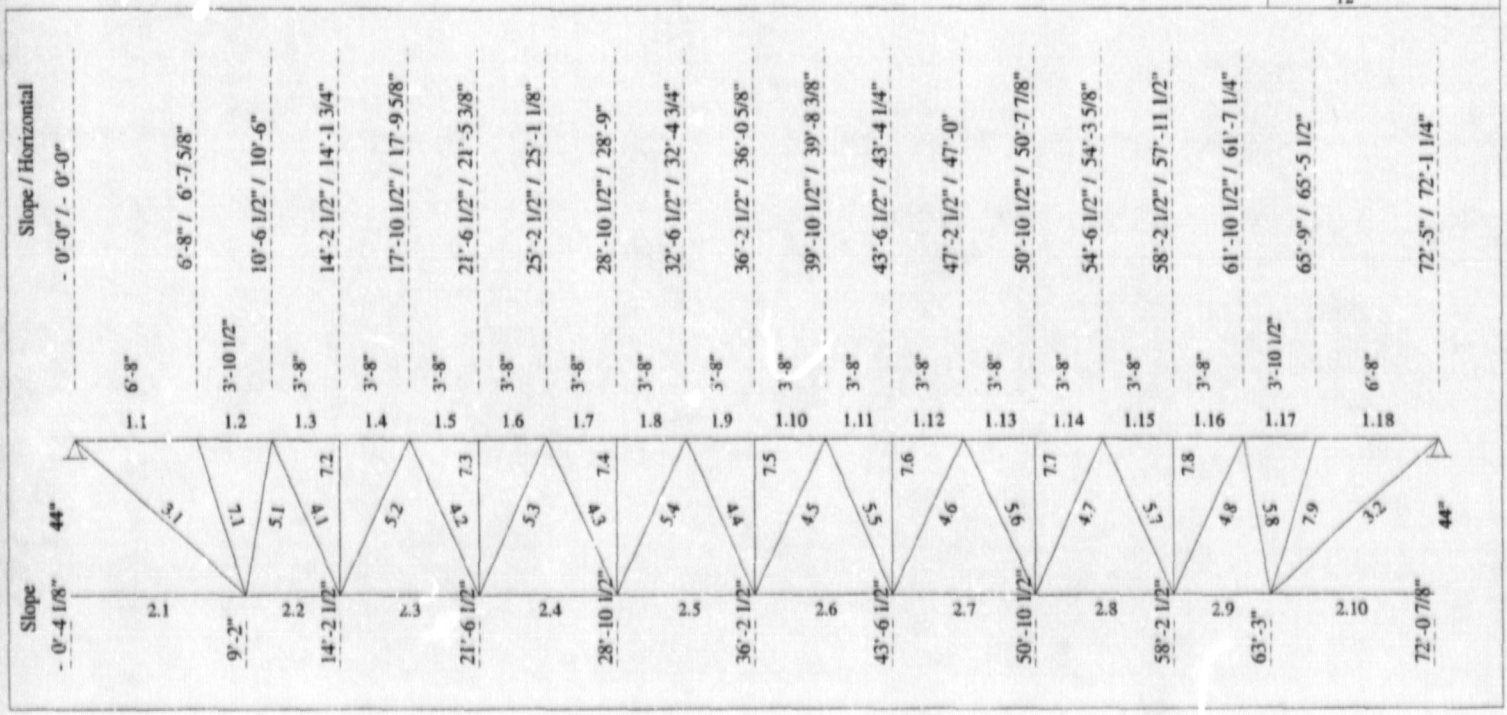
**2477 ( 378.17) / 2712 ( 413.53)**

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: C4 (W-N LONG SPAN, Symmetrical, Parallel, Free ends)

Δ = 81 1/8 / 12 | 1 1/8"




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 542.00 lb/ft  44LHSP542/291  LIVE LOAD ..: 291.00 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes  Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 5"  at right: 5"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 2.40 in (L/ 360)

Calculated deflection under service live load .... = 2.01 in (L/ 429)

Joist inertia ..... = 3425.01 in^4

Required camber ..... = 2.18 in

canamsteel Corporation

Mark: C4

Project: COLUMBIA DISTRIBUTION A04061

12/08/00 15:03:22

---------- F O R C E S  I N  M E M B E R S  [kips] ----------

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 42.14 in)

Left Reaction = 19.45/ -4.00 kips Right Reaction = 19.45/ -4.00 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 16.43 | -46.86 | x | LL 3.5 X .313 | xx 72 | 0.805 | 6'-8" | | |
| 1.2 | 16.06 | -44.61 | | do | z 67 | 0.805 | 3'-10 1/2" | | |
| 1.3 | 19.21 | -63.58 | | do | z 48 | 0.661 | 3'-8" | | |
| 1.4 | 19.18 | -63.39 | | do | z 48 | 0.785 | do | | |
| 1.5 | 22.56 | -83.76 | | do | z 48 | 0.847 | do | | |
| 1.6 | 22.53 | -83.57 | | do | z 48 | 0.885 | do | | |
| 1.7 | 24.54 | -95.71 | | do | z 48 | 0.964 | do | | |
| 1.8 | 24.51 | -95.52 | | do | z 48 | 0.962 | do | | |
| 1.9 | 25.16 | -99.44 | | do | z 48 | 1.000 | do | | |
| 1.10 | 25.13 | -99.25 | | do | z 48 | 0.998 | do | | |
| 1.11 | 24.42 | -94.94 | | do | z 48 | 0.956 | do | | |
| 1.12 | 24.38 | -94.75 | | do | z 48 | 0.954 | do | | |
| 1.13 | 22.30 | -82.22 | | do | z 48 | 0.877 | do | | |
| 1.14 | 22.27 | -82.02 | | do | z 48 | 0.830 | do | | |
| 1.15 | 18.82 | -61.27 | | do | z 48 | 0.771 | do | | |
| 1.16 | 18.79 | -61.07 | | do | z 48 | 0.636 | 3'-8" | | |
| 1.17 | 15.58 | -41.70 | | do | z 67 | 0.777 | 3'-10 1/2" | | |
| 1.18 | 15.86 | -43.41 | x | LL 3.5 X .313 | xx 72 | 0.777 | 6'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3 X .313 | z 190 | 0.393 | 9'-6 1/8" | | |
| 2.2 | 48.96 | -8.13 | | do | z 103 | 0.591 | 5'-0 1/2" | | |
| 2.3 | 73.64 | -12.23 | | do | z 149 | 0.723 | 7'-4" | | |
| 2.4 | 90.09 | -14.96 | | do | z 149 | 0.950 | do | | |
| 2.5 | 98.31 | -16.33 | | do | z 149 | 0.967 | do | | |
| 2.6 | 98.31 | -16.33 | | do | z 149 | 0.967 | do | | |
| 2.7 | 90.09 | -14.96 | | do | z 149 | 0.950 | do | | |
| 2.8 | 73.64 | -12.23 | | do | z 149 | 0.723 | 7'-4" | | |
| 2.9 | 48.96 | -8.13 | | do | z 103 | 0.591 | 5'-0 1/2" | | |
| 2.10 | 0.00 | 0.00 | | LL 3 X .313 | z 176 | 0.393 | 8'-9 7/8" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 48.45 | -8.05 | x | LL 2 X .216 | zz148 | 0.988 | 9'-8 5/8" | .216 - 7 5/8" | |
| 3.2 | 48.45 | -8.05 | x | LL 2 X .216 | zz148 | 0.988 | 9'-8 5/8" | .216 - 7 5/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 18.51 | -3.07 | d | U 1 3/8 X 0.176 | yy115 | 0.959 | 5'-2 1/4" | .176 - 3 1/2" | |
| 4.2 | 12.81 | -2.13 | d | U 1 3/8 x 0.118 | z 141 | 0.975 | do | .118 - 3 5/8" | |
| 4.3 | 7.12 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.804 | do | .118 - 2" | |
| 4.4 | 7.03 | -0.24 | | do | yy161 | 0.793 | do | do | |
| 4.5 | 7.03 | -0.24 | | do | yy161 | 0.793 | do | do | |
| 4.6 | 7.12 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.804 | do | .118 - 2" | |
| 4.7 | 12.81 | -2.13 | d | U 1 3/8 x 0.118 | z 141 | 0.975 | do | .118 - 3 5/8" | |
| 4.8 | 18.51 | -3.07 | d | U 1 3/8 X 0.176 | yy115 | 0.959 | 5'-2 1/4" | .176 - 3 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 2.64 | -15.92 | x | LL 1.5 X .156 | zz 77 | 0.914 | 3'-11" | .156 - 3 1/2" | |
| 5.2 | 2.60 | -15.66 | x | LLV 1.75 x .143 | zz 88 | 0.962 | 5'-2 1/4" | .143 - 3 3/4" | |
| 5.3 | 1.65 | -9.97 | x | LL 1.5 X .156 | zz103 | 0.808 | do | .156 - 2 1/8" | |
| 5.4 | 0.71 | -7.03 | d | U 1 3/8 X 0.176 | yy115 | 0.973 | do | .176 - 1 1/2" | |
| 5.5 | 0.71 | -7.03 | d | U 1 3/8 X 0.176 | yy115 | 0.973 | do | .176 - 1 1/2" | |
| 5.6 | 1.65 | -9.97 | x | LL 1.5 X .156 | zz103 | 0.808 | do | .156 - 2 1/8" | |
| 5.7 | 2.60 | -15.66 | x | LLV 1.75 x .143 | zz 88 | 0.962 | 5'-2 1/4" | .143 - 3 3/4" | |

canamsteel Corporation

Mark: C4

Project: COLUMBIA DISTRIBUTION A04061

12/08/00 15:03:22

## F O R C E S I N M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 5.8 | 2.64 | -15.92 | x | LL 1.5 X .156 | zz 77 | 0.914 | 3'-11" | .156 - 3 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.57 | -3.67 | d | U 1 3/8 x 0.118 | z 120 | 0.666 | 4'-5 1/4" | .118 - 1 1/2" | |
| 7.2 | 0.33 | -2.30 | | U 1 x 1 x 0.090 | z 147 | 0.831 | 3'-8" | .091 - 1 1/2" | |
| 7.3 | 0.33 | -2.41 | | do | z 147 | 0.869 | do | do | |
| 7.4 | 0.33 | -2.47 | | do | z 147 | 0.892 | do | do | |
| 7.5 | 0.33 | -2.49 | | do | z 147 | 0.899 | do | do | |
| 7.6 | 0.33 | -2.47 | | do | z 147 | 0.890 | do | do | |
| 7.7 | 0.33 | -2.40 | | do | z 147 | 0.866 | do | do | |
| 7.8 | 0.33 | -2.29 | | U 1 x 1 x 0.090 | z 147 | 0.826 | 3'-8" | .091 - 1 1/2" | |
| 7.9 | 0.57 | -3.65 | d | U 1 3/8 x 0.118 | z 120 | 0.663 | 4'-5 1/4" | .118 - 1 1/2" | |

---------- **BRIDGING** ----------

Maximum spacing between rows of bridging — Laterals supports

| | | | |
|---|---|---|---|
| @ Top Chord: | 26'-0 1/8" ==> | 2 Row(s) Minimum | Deck (36") |
| @ Bottom Chord: | 32'-9 3/4" ==> | 4 Row(s) Minimum | Acc. to the code |

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| XB | 24'-1 5/8" ( 24'-0 3/8") | 9'-2" ( 9'-1 1/2") |
| | 48'-3 3/8" ( 48'-0 3/4") XB | 24'-1 5/8" ( 24'-0 3/8") |
| | | 48'-3 3/8" ( 48'-0 3/4") |
| | | 63'-3" ( 62'-11 3/4") |

---

v3.6 12/08/00

**Fabrication code unless noted**

**-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar**

**-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle**

**Value of the forces reduced by 25% when there are some wind loads**

**Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]**

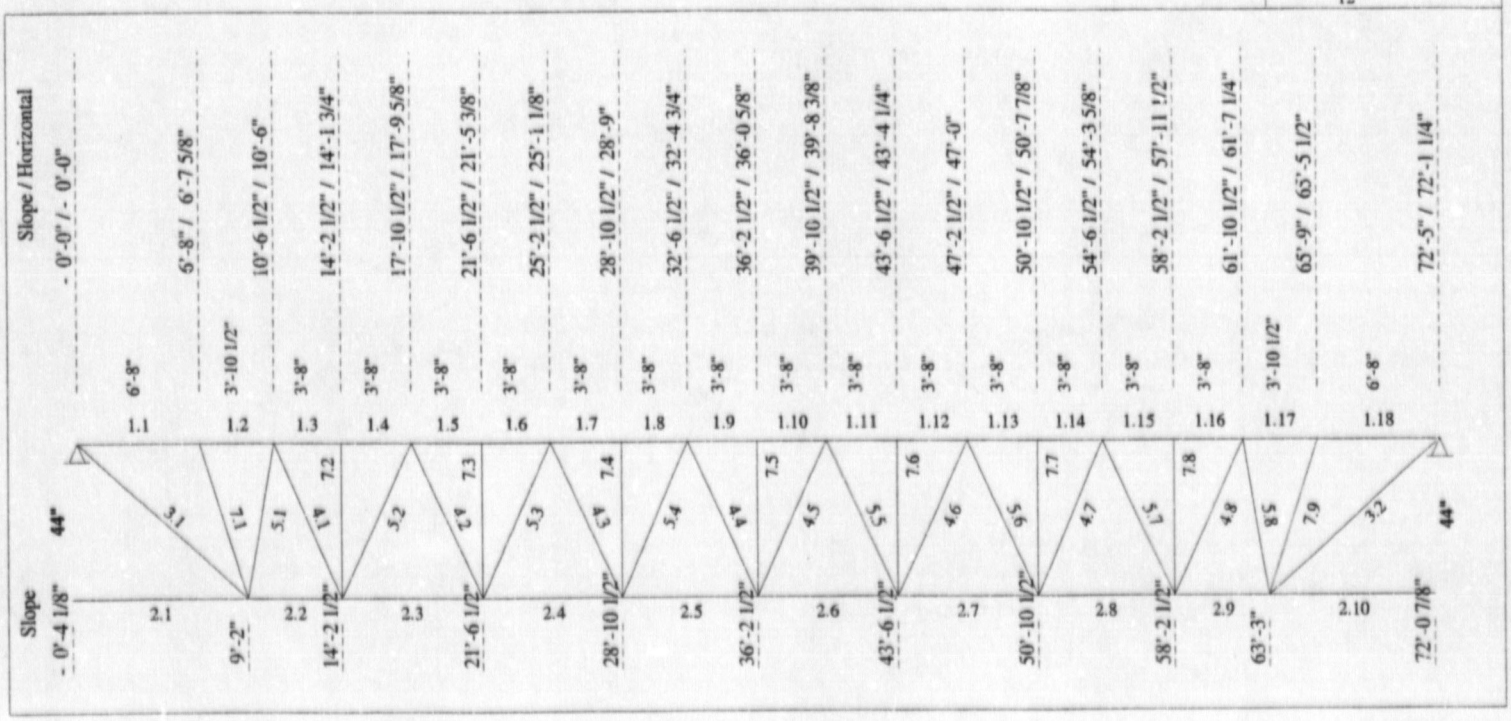
**2082 ( 317.96) / 2285 ( 346.92)**

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: C5 (W-N LONG SPAN, Symmetrical, Parallel, Free ends)

Δ = 81 1/8 / 12 | 1 1/8"




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 562.00 lb/ft  44LHSP562/311  LIVE LOAD ..: 311.00 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS ---L--- | MOMENTS ---R--- | AXIAL LOADS <<< Top Chord >>> ---L--- | AXIAL LOADS ---R--- | AXIAL LOADS < Bottom Chord > ---L--- | AXIAL LOADS ---R--- |
|---|---|---|---|---|---|---|
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes  Imposed Rows of Bridging Y/N.: No
Bearing Depth... [in]: at left.: 5"  at right: 5"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 2.40 in (L/ 360)
Calculated deflection under service live load .... = 2.15 in (L/ 401)
Joist inertia ..... = 3425.01 in^4
Required camber ..... = 2.18 in

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Mark: C5

Project: COLUMBIA DISTRIBUTION A04061

12/08/00 15:03:22

---------- **F O R C E S  I N  M E M B E R S  [kips]** ----------

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 42.14 in)

Left Reaction = 20.16/ -4.00 kips Right Reaction = 20.16/ -4.00 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 16.43 | -48.59 | x | LL 3.5 X .313 | xx 72 | 0.834 | 6'-8" | | |
| 1.2 | 16.06 | -46.25 | | do | z 67 | 0.834 | 3'-10 1/2" | | |
| 1.3 | 19.21 | -65.93 | | do | z 48 | 0.685 | 3'-8" | | |
| 1.4 | 19.18 | -65.73 | | do | z 48 | 0.814 | do | | |
| 1.5 | 22.56 | -86.85 | | do | z 48 | 0.879 | do | | |
| 1.6 | 22.53 | -86.65 | | do | z 48 | 0.918 | do | | |
| 1.7 | 24.54 | -99.24 | | do | z 48 | 0.999 | do | | |
| 1.8 | 24.51 | -99.04 | | do | z 48 | 0.997 | do | | |
| 1.9 | 25.16 | -103.11 | x | do | zz 32 | 0.955 | do | | |
| 1.10 | 25.13 | -102.91 | x | do | zz 32 | 0.953 | do | | |
| 1.11 | 24.42 | -98.44 | | do | z 48 | 0.991 | do | | |
| 1.12 | 24.38 | -98.24 | | do | z 48 | 0.990 | do | | |
| 1.13 | 22.30 | -85.25 | | do | z 48 | 0.910 | do | | |
| 1.14 | 22.27 | -85.05 | | do | z 48 | 0.861 | do | | |
| 1.15 | 18.82 | -63.53 | | do | z 48 | 0.800 | do | | |
| 1.16 | 18.79 | -63.33 | | do | z 48 | 0.660 | 3'-8" | | |
| 1.17 | 15.58 | -43.24 | | do | z 67 | 0.806 | 3'-10 1/2" | | |
| 1.18 | 15.86 | -45.02 | x | LL 3.5 X .313 | xx 72 | 0.806 | 6'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3 X .313 | z 190 | 0.407 | 9'-6 1/8" | | |
| 2.2 | 50.77 | -8.13 | | do | z 103 | 0.613 | 5'-0 1/2" | | |
| 2.3 | 76.35 | -12.23 | | do | z 149 | 0.750 | 7'-4" | | |
| 2.4 | 93.41 | -14.96 | | do | z 149 | 0.950 | do | | |
| 2.5 | 101.94 | -16.33 | | do | z 149 | 0.967 | do | | |
| 2.6 | 101.94 | -16.33 | | do | z 149 | 0.967 | do | | |
| 2.7 | 93.41 | -14.96 | | do | z 149 | 0.950 | do | | |
| 2.8 | 76.35 | -12.23 | | do | z 149 | 0.750 | 7'-4" | | |
| 2.9 | 50.77 | -8.13 | | do | z 103 | 0.613 | 5'-0 1/2" | | |
| 2.10 | 0.00 | 0.00 | | LL 3 X .313 | z 176 | 0.407 | 8'-9 7/8" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 50.24 | -8.05 | x | LL 2.5 X .188 | zz117 | 0.926 | 9'-8 5/8" | .188 - 9" | |
| 3.2 | 50.24 | -8.05 | x | LL 2.5 X .188 | zz117 | 0.926 | 9'-8 5/8" | .188 - 9" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 19.19 | -3.07 | d | U 1 3/8 X 0.176 | yy115 | 0.994 | 5'-2 1/4" | .176 - 3 3/4" | |
| 4.2 | 13.29 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.763 | do | .158 - 2 7/8" | |
| 4.3 | 7.38 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.833 | do | .118 - 2 1/8" | |
| 4.4 | 7.29 | -0.24 | | do | yy161 | 0.823 | do | do | |
| 4.5 | 7.29 | -0.24 | | do | yy161 | 0.823 | do | do | |
| 4.6 | 7.38 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.833 | do | .118 - 2 1/8" | |
| 4.7 | 13.29 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.763 | do | .158 - 2 7/8" | |
| 4.8 | 19.19 | -3.07 | d | U 1 3/8 X 0.176 | yy115 | 0.994 | 5'-2 1/4" | .176 - 3 3/4" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 2.64 | -16.51 | x | LL 1.5 X .156 | zz 77 | 0.947 | 3'-11" | .156 - 3 5/8" | |
| 5.2 | 2.60 | -16.24 | x | LLV 1.75 x .143 | zz 88 | 0.998 | 5'-2 1/4" | .143 - 3 7/8" | |
| 5.3 | 1.65 | -10.33 | x | LL 1.5 X .156 | zz103 | 0.837 | do | .156 - 2 1/4" | |
| 5.4 | 0.71 | -7.29 | d | U 1 3/8 X 0.176 | yy115 | 1.009 | do | .176 - 1 1/2" | |
| 5.5 | 0.71 | -7.29 | d | U 1 3/8 X 0.176 | yy115 | 1.009 | do | .176 - 1 1/2" | |
| 5.6 | 1.65 | -10.33 | x | LL 1.5 X .156 | zz103 | 0.837 | do | .156 - 2 1/4" | |
| 5.7 | 2.60 | -16.24 | x | LLV 1.75 x .143 | zz 88 | 0.998 | 5'-2 1/4" | .143 - 3 7/8" | |

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 5.8 | 2.64 | -16.51 | x | LL 1.5 X .156 | zz 77 | 0.947 | 3'-11" | .156 - 3 5/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.57 | -3.81 | d | U 1 3/8 x 0.118 | z 120 | 0.690 | 4'-5 1/4" | .118 - 1 1/2" | |
| 7.2 | 0.33 | -2.39 | | U 1 x 1 x 0.090 | z 147 | 0.861 | 3'-8" | .091 - 1 1/2" | |
| 7.3 | 0.33 | -2.50 | | do | z 147 | 0.901 | do | do | |
| 7.4 | 0.33 | -2.57 | | do | z 147 | 0.924 | do | do | |
| 7.5 | 0.33 | -2.59 | | do | z 147 | 0.932 | do | do | |
| 7.6 | 0.33 | -2.56 | | do | z 147 | 0.923 | do | do | |
| 7.7 | 0.33 | -2.49 | | do | z 147 | 0.898 | do | do | |
| 7.8 | 0.33 | -2.38 | | U 1 x 1 x 0.090 | z 147 | 0.857 | 3'-8" | .091 - 1 1/2" | |
| 7.9 | 0.57 | -3.79 | d | U 1 3/8 x 0.118 | z 120 | 0.687 | 4'-5 1/4" | .118 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging — Laterals supports

@ Top Chord: 26'-0 1/8" ==> 2 Row(s) Minimum — Deck (36")

@ Bottom Chord: 32'-9 3/4" ==> 4 Row(s) Minimum — Acc. to the code

POSITION

@ Top Chord

XB 24'-1 5/8" ( 24'-0 3/8")

48'-3 3/8" ( 48'-0 3/4") XB

@ Bottom Chord

9'-2" ( 9'-1 1/2")

24'-1 5/8" ( 24'-0 3/8")

48'-3 3/8" ( 48'-0 3/4")

63'-3" ( 62'-11 3/4")

v3.6 12/08/00

**Fabrication code unless noted**

**-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar**

**-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle**

**Value of the forces reduced by 25% when there are some wind loads**

**Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]**

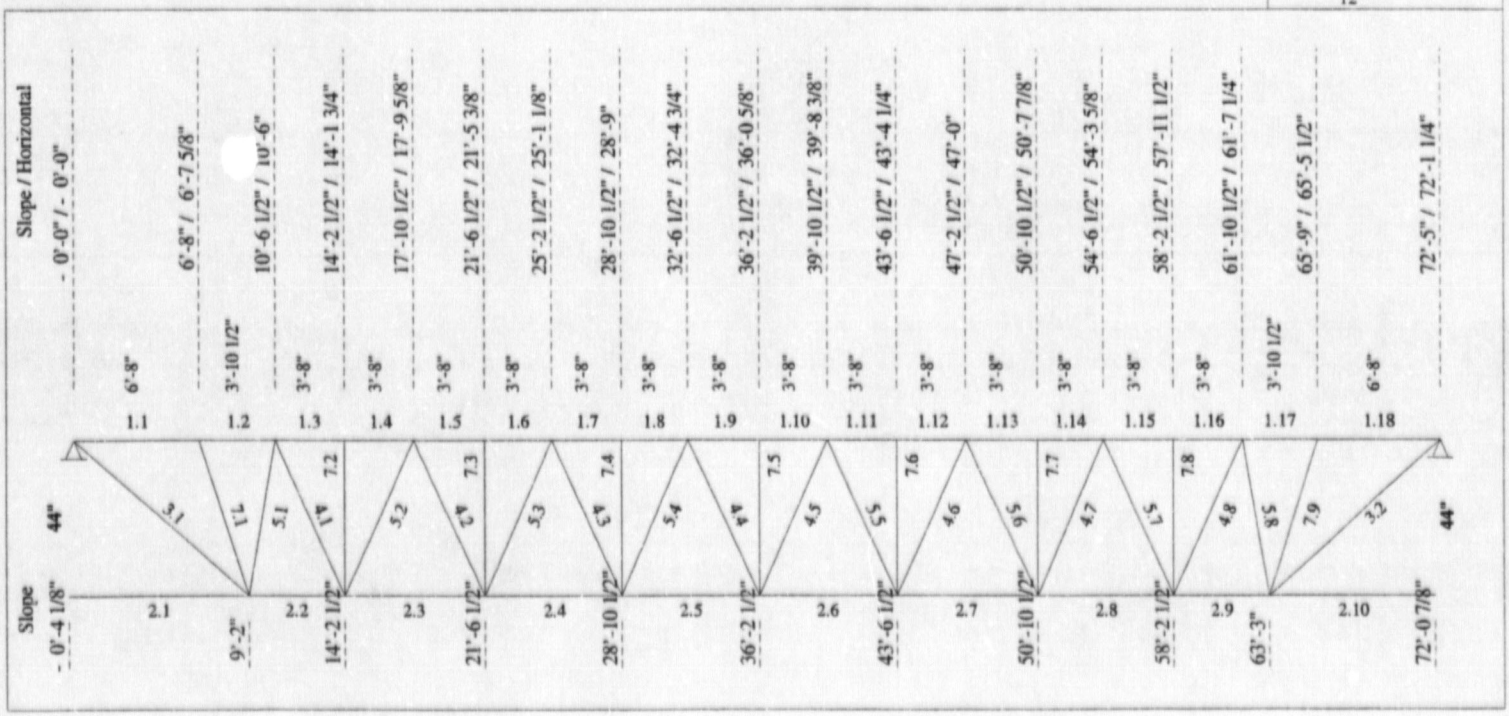
**2099 ( 322.26) / 2302 ( 351.22)**

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: C6 (W-N LONG SPAN, Symmetrical, Parallel, Free ends)

Δ = 81 1/8 / 12 | 1 1/8"




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 652.02 lb/ft 44LH15 LIVE LOAD ..: 382.29 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 0.58 | 0.58 | 0.00 | 21'-0"* | 21'-0" | 0 | 1 | 90 | 0 |
| 2 | 1 | Near | 0.58 | 0.58 | 0.00 | 29'-0"* | 8'-0" | 0 | 1 | 90 | 0 |
| 3 | 1 | Near | 0.58 | 0.58 | 0.00 | 37'-0"* | 8'-0" | 0 | 1 | 90 | 0 |
| 4 | 1 | Near | 0.58 | 0.58 | 0.00 | 45'-0"* | 8'-0" | 0 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 5" at right: 5"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 2.40 in (L/ 360)
Calculated deflection under service live load .... = 2.40 in (L/ 360)
Joist inertia ..... = 4211.80 in^4
Required camber ..... = 2.18 in

---------- **F O R C E S I N M E M B E R S [kips]** ----------

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 41.99 in)

Left Reaction = 24.86/ -4.00 kips Right Reaction = 24.66/ -4.00 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 16.49 | -60.43 | x | LL 3.5 X .375 | xx 73 | 0.849 | 6'-8" | | |
| 1.2 | 16.12 | -57.68 | | do | z 68 | 0.849 | 3'-10 1/2" | | |
| 1.3 | 19.28 | -82.60 | | do | z 48 | 0.715 | 3'-8" | | |
| 1.4 | 19.25 | -82.37 | | do | z 48 | 0.858 | do | | |
| 1.5 | 22.64 | -109.79 | | do | z 48 | 0.926 | do | | |
| 1.6 | 22.61 | -109.44 | | do | z 48 | 0.969 | do | | |
| 1.7 | 24.64 | -125.65 | x | do | zz 32 | 0.970 | do | | |
| 1.8 | 24.60 | -125.41 | x | do | zz 32 | 1.001 | do | | |
| 1.9 | 25.26 | -130.39 | x | do | zz 32 | 1.004 | do | | |
| 1.10 | 25.23 | -130.22 | x | do | zz 32 | 1.003 | do | | |
| 1.11 | 24.51 | -124.00 | x | do | zz 32 | 1.000 | do | | |
| 1.12 | 24.48 | -123.88 | x | do | zz 32 | 0.959 | do | | |
| 1.13 | 22.39 | -106.50 | | do | z 48 | 0.957 | do | | |
| 1.14 | 22.36 | -106.27 | | do | z 48 | 0.897 | do | | |
| 1.15 | 18.90 | -78.77 | | do | z 48 | 0.834 | do | | |
| 1.16 | 18.86 | -78.53 | | do | z 48 | 0.682 | 3'-8" | | |
| 1.17 | 15.63 | -53.41 | | do | z 68 | 0.816 | 3'-10 1/2" | | |
| 1.18 | 15.92 | -55.50 | x | LL 3.5 X .375 | xx 73 | 0.816 | 6'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3.5 X .344 | z 163 | 0.395 | 9'-6 1/8" | | |
| 2.2 | 63.36 | -8.16 | | do | z 88 | 0.599 | 5'-0 1/2" | | |
| 2.3 | 96.04 | -12.27 | | do | z 128 | 0.736 | 7'-4" | | |
| 2.4 | 118.03 | -15.02 | | do | z 128 | 0.859 | do | | |
| 2.5 | 128.90 | -16.39 | | do | z 128 | 0.938 | do | | |
| 2.6 | 128.66 | -16.39 | | do | z 128 | 0.937 | do | | |
| 2.7 | 117.30 | -15.02 | | do | z 128 | 0.854 | do | | |
| 2.8 | 95.05 | -12.27 | | do | z 128 | 0.732 | 7'-4" | | |
| 2.9 | 62.77 | -8.16 | | do | z 88 | 0.593 | 5'-0 1/2" | | |
| 2.10 | 0.00 | 0.00 | | LL 3.5 X .344 | z 151 | .392 | 8'-9 7/8" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 62.45 | -8.07 | x | LL 2.5 X .230 | zz118 | 0.949 | 9'-8 5/8" | .230 - 9 1/8" | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3.2 | 61.91 | -8.07 | x | LL 2.5 X .230 | zz118 | 0.940 | 9'-8 5/8" | .230 - | 9 1/8" |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 24.32 | -3.08 | x | LL 1.5 X .156 | zz103 | 0.914 | 5'-2 1/4" | .156 - | 5 1/4" |
| 4.2 | 17.40 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.999 | do | .158 - | 3 3/4" |
| 4.3 | 9.63 | -1.18 | d | U 1 3/8 x 0.118 | z 141 | 0.733 | do | .118 - | 2 3/4" |
| 4.4 | 9.00 | -0.24 | d | do | z 141 | 0.685 | do | .118 - | 2 1/2" |
| 4.5 | 9.00 | -0.24 | d | do | z 141 | 0.685 | do | .118 - | 2 1/2" |
| 4.6 | 10.17 | -1.18 | d | U 1 3/8 x 0.118 | z 141 | 0.774 | do | .118 - | 2 7/8" |
| 4.7 | 17.11 | -2.13 | d | U 1 3/8 x 0.157 | yy113 | 0.983 | do | .158 - | 3 5/8" |
| 4.8 | 24.04 | -3.08 | x | LL 1.5 X .156 | zz103 | 0.903 | 5'-2 1/4" | .156 - | 5 1/4" |

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ex.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 2.65 | -20.68 | x | LL 1.75 X .155 | zz 65 | 0.927 | 3'-11" | .155 - 4 1/2" | |
| 5.2 | 2.61 | -20.86 | x | LL 2 X .163 | zz 77 | 0.876 | 5'-2 1/4" | .163 - 4 3/8" | |
| 5.3 | 1.66 | -13.10 | x | LLV 1.75 x .143 | zz 88 | 0.803 | do | .143 - 3 1/8" | |
| 5.4 | 0.71 | -9.00 | x | LL 1.5 X .156 | zz103 | 0.727 | do | .156 - 2" | |
| 5.5 | 0.71 | -9.00 | x | LL 1.5 X .156 | zz103 | 0.727 | do | .156 - 2" | |
| 5.6 | 1.66 | -13.65 | x | LLV 1.75 x .143 | zz 88 | 0.837 | do | .143 - 3 1/4" | |
| 5.7 | 2.61 | -20.57 | x | LL 2 X .163 | zz 77 | 0.864 | 5'-2 1/4" | .163 - 4 1/4" | |
| 5.8 | 2.65 | -20.47 | x | LL 1.75 X .155 | zz 65 | 0.917 | 3'-11" | .155 - 4 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.57 | -4.48 | d | U 1 3/8 x 0.118 | z 119 | 0.810 | 4'-5 1/4" | .118 - 1 1/2" | |
| 7.2 | 0.33 | -2.82 | | U 1 x 1 x 0.090 | z 147 | 1.010 | 3'-8" | .091 - 1 1/2" | |
| 7.3 | 0.33 | -2.96 | | U 1 x 1 x 0.118 | yy111 | 0.823 | do | .118 - 1 1/2" | |
| 7.4 | 0.33 | -3.05 | | do | yy111 | 0.849 | do | do | |
| 7.5 | 0.33 | -3.08 | | do | yy111 | 0.858 | do | do | |
| 7.6 | 0.33 | -3.05 | | do | yy111 | 0.850 | do | do | |
| 7.7 | 0.33 | -2.95 | | U 1 x 1 x 0.118 | yy111 | 0.821 | do | .118 - 1 1/2" | |
| 7.8 | 0.33 | -2.80 | | U 1 x 1 x 0.090 | z 147 | 1.003 | 3'-8" | .091 - 1 1/2" | |
| 7.9 | 0.57 | -4.45 | d | U 1 3/8 x 0.118 | z 119 | 0.805 | 4'-5 1/4" | .118 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging — Laterals supports

@ Top Chord: 26'-2 3/8" ==> 3 Row(s) Minimum — Deck (36")

@ Bottom Chord: 36'-11 5/8" ==> 5 Row(s) Minimum — Acc. to the code

| POSITION | @ Top Chord | | @ Bottom Chord | |
|---|---|---|---|---|
| | XB | 18'-1 1/4" ( 18'-0 1/4") | | 9'-2" ( 9'-1 1/2") |
| | XB | 36'-2 1/2" ( 36'-0 5/8") | XB | 18'-1 1/4" ( 18'-0 1/4") |
| | XB | 54'-3 3/4" ( 54'-0 7/8") | XB | 36'-2 1/2" ( 36'-0 5/8") |
| | | | XB | 54'-3 3/4" ( 54'-0 7/8") |
| | | | | 63'-3" ( 62'-11 3/4") |

v3.6 12/08/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

Value of the forces reduced by 25% when there are some wind loads

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

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Project: COLUMBIA DISTRIBUTION A04061

12/08/00 18:00:02

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)
Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom
Inclination (Incl.): 90 = Vertical, 0 = Horizontal  Composite (Cmp): 0 = standard, 1 = non-composite

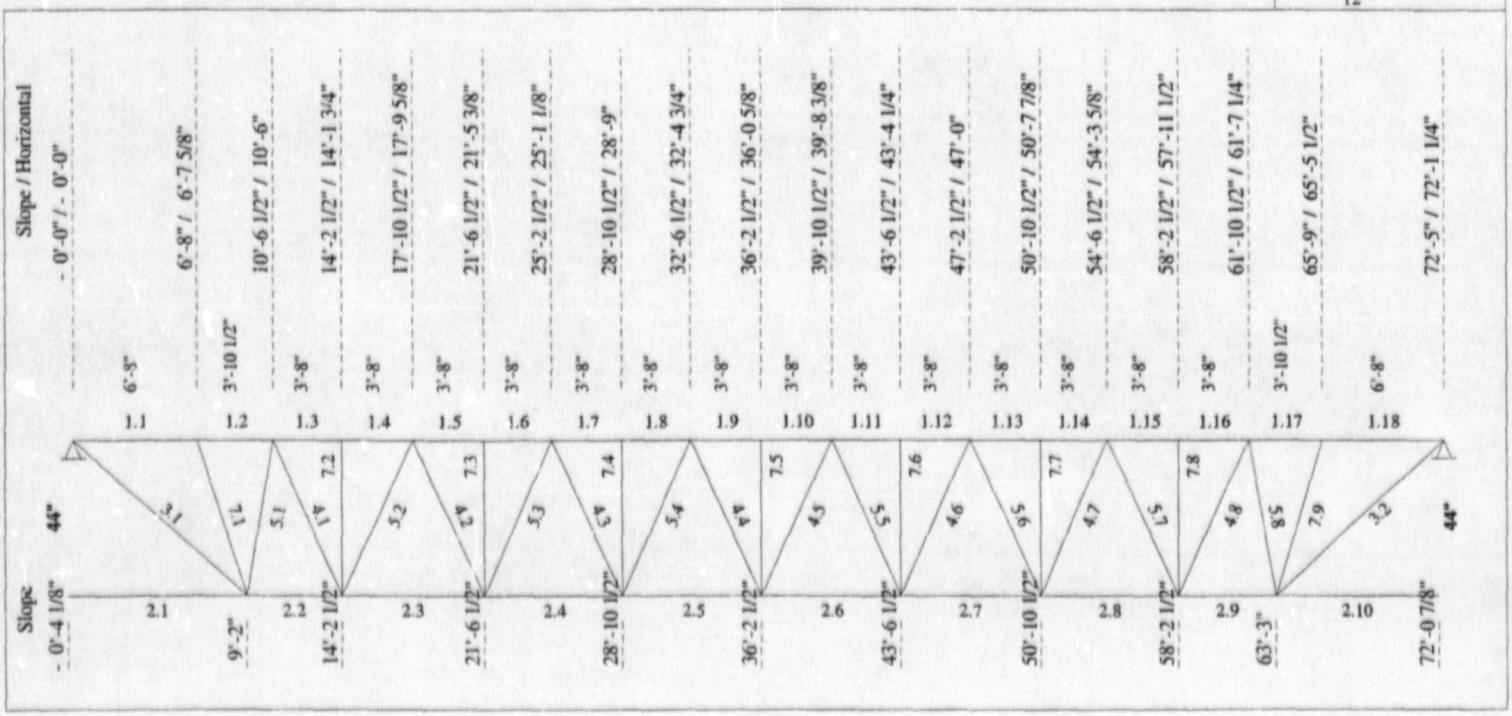
Projets no.: A04061  Designer: Phillppe Theriault  Shop: Canam Sunnyside [Production]
2565 ( 388.69) / 2819 ( 425.94)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: C7 (W-N LONG SPAN, Symmetrical, Parallel, Free ends)

Δ = 81 1/8 / 12 — 1 1/8"




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 542.00 lb/ft  44LHSP542/291  LIVE LOAD ..: 291.00 lb/ft

---------- **CONCENTRATED LOADS** ----------

| No | Sp | Side | Total load [kips] | Live load [kips] | Net uplift [kips] | Position [ft] | Spacing [ft] | Cat. 0-6 | Chord 1/2 | Incl. [deg] | Cmp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Near | 0.15 | 0.15 | 0.00 | 21'-0"* | 21'-0" | 1 | 1 | 90 | 0 |
| 2 | 1 | Near | 0.15 | 0.15 | 0.00 | 29'-0"* | 8'-0" | 1 | 1 | 90 | 0 |
| 3 | 1 | Near | 0.15 | 0.15 | 0.00 | 37'-0"* | 8'-0" | 1 | 1 | 90 | 0 |
| 4 | 1 | Near | 0.15 | 0.15 | 0.00 | 45'-0"* | 8'-0" | 1 | 1 | 90 | 0 |

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes  Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 5"  at right: 5"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 2.40 in (L/ 360)
Calculated deflection under service live load .... = 2.09 in (L/ 412)
Joist inertia ..... = 3425.01 in^4
Required camber ..... = 2.18 in

---------- **F O R C E S I N M E M B E R S [kips]** ----------

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 42.14 in)

Left Reaction = 19.77/ -4.00 kips Right Reaction = 19.72/ -4.00 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 16.43 | -47.72 | x | LL 3.5 X .313 | xx 72 | 0.811 | 6'-8" | | |
| 1.2 | 16.06 | -45.47 | | do | z 67 | 0.811 | 3'-10 1/2" | | |
| 1.3 | 19.21 | -64.91 | | do | z 48 | 0.674 | 3'-8" | | |
| 1.4 | 19.18 | -64.71 | | do | z 48 | 0.803 | do | | |
| 1.5 | 22.56 | -85.74 | | do | z 48 | 0.868 | do | | |
| 1.6 | 22.53 | -85.54 | | do | z 48 | 0.901 | do | | |
| 1.7 | 24.54 | -98.05 | | do | z 48 | 0.986 | do | | |
| 1.8 | 24.51 | -97.84 | | do | z 48 | 0.986 | do | | |
| 1.9 | 25.16 | -101.82 | x | do | zz 32 | 0.943 | do | | |
| 1.10 | 25.13 | -101.62 | x | do | zz 32 | 0.944 | do | | |
| 1.11 | 24.42 | -97.09 | | do | z 48 | 0.975 | do | | |
| 1.12 | 24.38 | -96.89 | | do | z 48 | 0.983 | do | | |
| 1.13 | 22.30 | -83.85 | | do | z 48 | 0.903 | do | | |
| 1.14 | 22.27 | -83.66 | | do | z 48 | 0.847 | do | | |
| 1.15 | 18.82 | -62.33 | | do | z 48 | 0.785 | do | | |
| 1.16 | 18.79 | -62.14 | | do | z 48 | 0.647 | 3'-8" | | |
| 1.17 | 15.58 | -42.38 | | do | z 67 | 0.782 | 3'-10 1/2" | | |
| 1.18 | 15.86 | -44.09 | x | LL 3.5 X .313 | xx 72 | 0.782 | 6'-8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 3 X .313 | z 190 | 0.401 | 9'-6 1/8" | | |
| 2.2 | 49.92 | -8.13 | | do | z 103 | 0.604 | 5'-0 1/2" | | |
| 2.3 | 75.27 | -12.23 | | do | z 149 | 0.740 | 7'-4" | | |
| 2.4 | 92.22 | -14.96 | | do | z 149 | 0.950 | do | | |
| 2.5 | 100.67 | -16.33 | | do | z 149 | 0.967 | do | | |
| 2.6 | 100.61 | -16.33 | | do | z 149 | 0.967 | do | | |
| 2.7 | 92.04 | -14.96 | | do | z 149 | 0.950 | do | | |
| 2.8 | 75.01 | -12.23 | | do | z 149 | 0.739 | 7'-4" | | |
| 2.9 | 49.77 | -8.13 | | do | z 103 | 0.602 | 5'-0 1/2" | | |
| 2.10 | 0.00 | 0.00 | | LL 3 X .313 | z 176 | 0.303 | 8'-9 7/8" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 49.34 | -8.05 | x | LL 2 X .216 | zz148 | 1.006 | 9'-8 5/8" | .216 - 7 3/4" | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3.2 | 49.20 | -8.05 | x | LL 2 X .216 | zz148 | 1.003 | 9'-8 5/8" | .216 - 7 3/4" |
| **Diagonal Towards End** | | | | | | | | |
| 4.1 | 18.98 | -3.07 | d | U 1 3/8 X 0.176 | yy115 | 0.983 | 5'-2 1/4" | .176 - 3 5/8" |
| 4.2 | 13.26 | -2.13 | d | U 1 3/8 x 0.118 | z 141 | 1.008 | do | .118 - 3 3/4" |
| 4.3 | 7.37 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.832 | do | .118 - 2 1/8" |
| 4.4 | 7.15 | -0.24 | | do | yy161 | 0.807 | do | .118 - 2" |
| 4.5 | 7.15 | -0.24 | | do | yy161 | 0.807 | do | .118 - 2" |
| 4.6 | 7.42 | -1.18 | | U 1 x 1 x 0.118 | yy161 | 0.837 | do | .118 - 2 1/8" |
| 4.7 | 13.21 | -2.13 | d | U 1 3/8 x 0.118 | z 141 | 1.005 | do | .118 - 3 3/4" |
| 4.8 | 18.90 | -3.07 | d | U 1 3/8 X 0.176 | yy115 | 0.979 | 5'-2 1/4" | .176 - 3 5/8" |

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 2.64 | -16.27 | x | LL 1.5 X .156 | zz 77 | 0.934 | 3'-11" | .156 - 3 1/2" | |
| 5.2 | 2.60 | -16.13 | x | LLV 1.75 x .143 | zz 88 | 0.991 | 5'-2 1/4" | .143 - 3 7/8" | |
| 5.3 | 1.65 | -10.22 | x | LL 1.5 X .156 | zz103 | 0.828 | do | .156 - 2 1/4" | |
| 5.4 | 0.71 | -7.15 | d | U 1 3/8 X 0.176 | yy115 | 0.989 | do | .176 - 1 1/2" | |
| 5.5 | 0.71 | -7.15 | d | U 1 3/8 X 0.176 | yy115 | 0.989 | do | .176 - 1 1/2" | |
| 5.6 | 1.65 | -10.36 | x | LL 1.5 X .156 | zz103 | 0.840 | do | .156 - 2 1/4" | |
| 5.7 | 2.60 | -16.06 | x | LLV 1.75 x .143 | zz 88 | 0.986 | 5'-2 1/4" | .143 - 3 1/4" | |
| 5.8 | 2.64 | -16.22 | x | LL 1.5 X .156 | zz 77 | 0.931 | 3'-11" | .156 - 3 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.57 | -3.68 | d | U 1 3/8 x 0.118 | z 120 | 0.667 | 4'-5 1/4" | .118 - 1 1/2" | |
| 7.2 | 0.33 | -2.31 | | U 1 x 1 x 0.090 | z 147 | 0.833 | 3'-8" | .091 - 1 1/2" | |
| 7.3 | 0.33 | -2.55 | | do | z 147 | 0.920 | do | do | |
| 7.4 | 0.33 | -2.63 | | do | z 147 | 0.946 | do | do | |
| 7.5 | 0.33 | -2.62 | | do | z 147 | 0.943 | do | do | |
| 7.6 | 0.33 | -2.56 | | do | z 147 | 0.924 | do | do | |
| 7.7 | 0.33 | -2.41 | | do | z 147 | 0.869 | do | do | |
| 7.8 | 0.33 | -2.30 | | U 1 x 1 x 0.090 | z 147 | 0.828 | 3'-8" | .091 - 1 1/2" | |
| 7.9 | 0.57 | -3.66 | d | U 1 3/8 x 0.118 | z 120 | 0.663 | 4'-5 1/4" | .118 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging

| | | | Laterals supports |
|---|---|---|---|
| @ Top Chord: | 26'-0 1/8" ==> | 2 Row(s) Minimum | Deck (36") |
| @ Bottom Chord: | 32'-9 3/4" ==> | 4 Row(s) Minimum | Acc. to the code |

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | XB 24'-1 5/8" ( 24'-0 3/8") | 9'-2" ( 9'-1 1/2") |
| | 48'-3 3/8" ( 48'-0 3/4") XB | 24'-1 5/8" ( 24'-0 3/8") |
| | | 48'-3 3/8" ( 48'-0 3/4") |
| | | 63'-3" ( 62'-11 3/4") |

v3.6 12/08/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

Value of the forces reduced by 25% when there are some wind loads

CONCENTRATED LOADS (* indicates that the conc. load is not directly on the panel point.)

Span: 1 = Main Joist, 2 = Left Extension, 3 = Right Extension

Side: Near Side, Far Side (if the side Far is not present, the side Near is not applicable)

canamsteel Corporation

Mark: C7

Project: COLUMBIA DISTRIBUTION A04061

12/08/00 15:03:24

Definition of the categories (Cat.) 0 @ 6:

0 = transfered by an additional member
1 = within a panel with no reinforcement
2 = anywhere within a panel
3 = at any panel point along the joist
4 = anywhere along the joist
5 = transferred by an additional member and lateral support
6 = within a panel with no reinforcement and lateral support

Chord: 1 = Top, 2 = Bottom

Inclination (Incl.): 90 = Vertical, 0 = Horizontal

Composite (Cmp): 0 = standard, 1 = non-composite

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

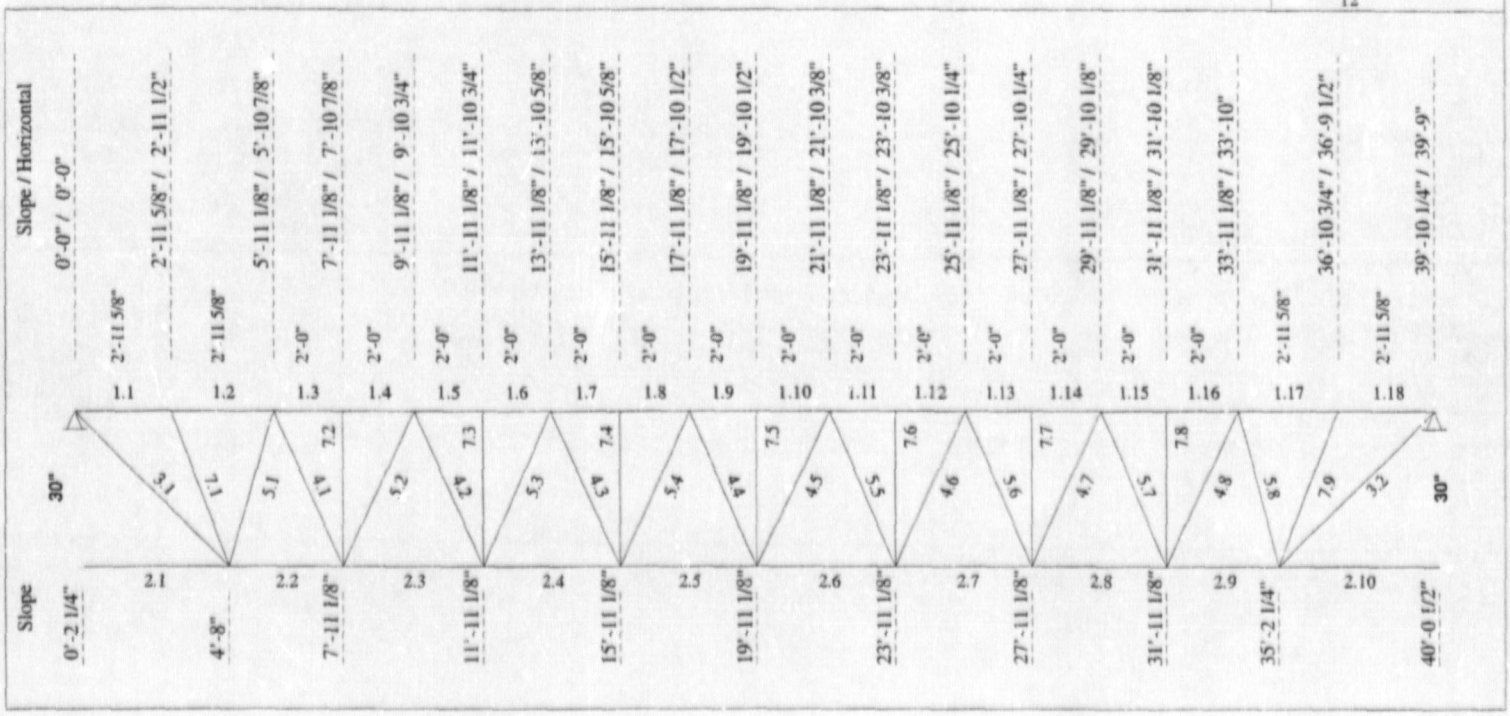
2082 ( 317.96) / 2285 ( 346.92)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J1 (W-N MID SPAN, Symmetrical, Parallel, Free ends)

Δ = 35/12 - 0 7/8"




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 439.61 lb/ft 30K10 LIVE LOAD ..: 317.63 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)

Calculated deflection under service live load .... = 1.26 in (L/ 376)

Joist inertia ..... = 545.35 in^4

Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J1

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:18

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.87 in)

Left Reaction = 8.71/ -2.38 kips Right Reaction = 8.71/ -2.38 kips

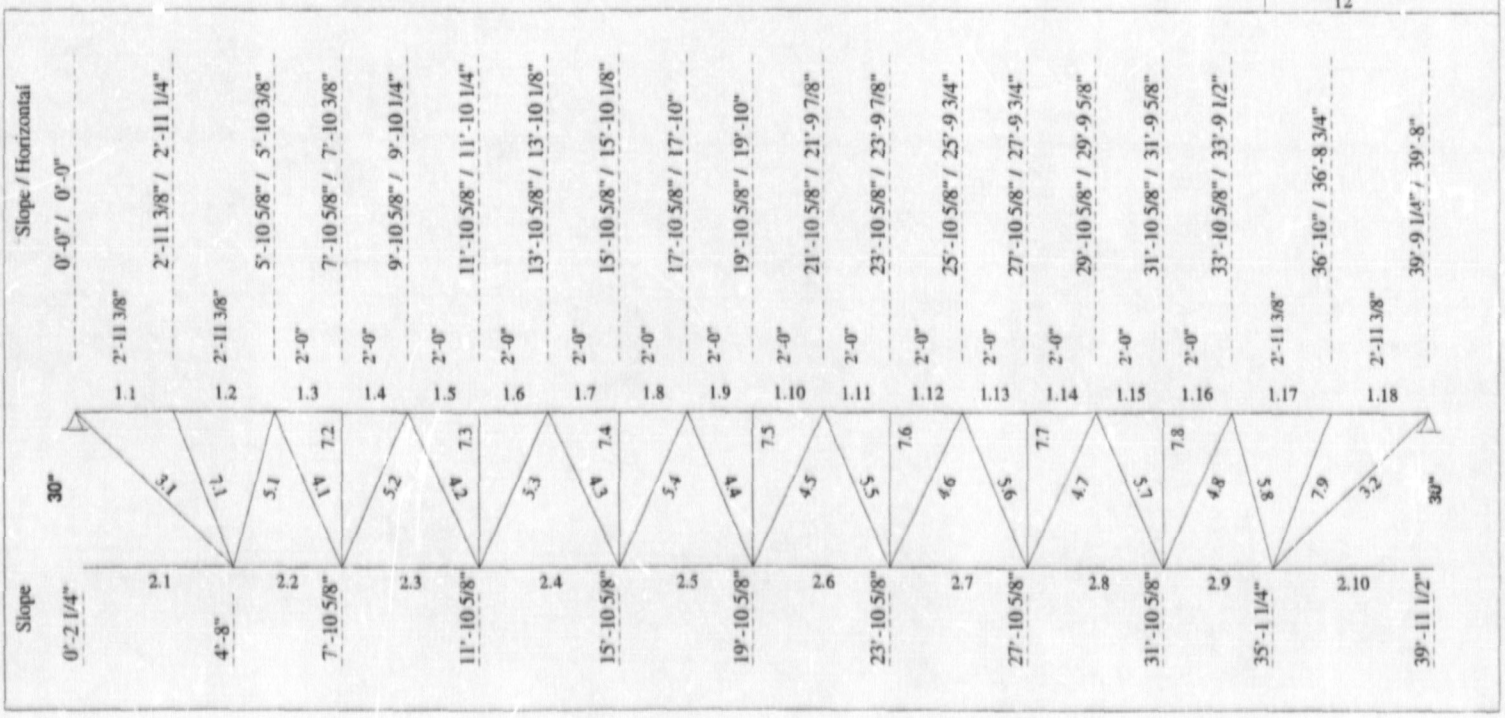
| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.54 | -14.48 | | LL 2 X .188 | z 85 | 0.836 | 2'-11 1/2" | | |
| 1.2 | 11.38 | -13.68 | | do | z 90 | 0.842 | 2'-11 5/8" | | |
| 1.3 | 13.09 | -22.08 | | do | z 61 | 0.758 | 2'-0" | | |
| 1.4 | 13.10 | -22.14 | | do | z 61 | 0.686 | do | | |
| 1.5 | 14.61 | -29.52 | | do | z 61 | 0.913 | do | | |
| 1.6 | 14.62 | -29.58 | | do | z 61 | 0.915 | do | | |
| 1.7 | 15.53 | -34.04 | x | do | xx 39 | 0.914 | do | | |
| 1.8 | 15.54 | -34.10 | x | do | xx 39 | 0.916 | do | | |
| 1.9 | 15.85 | -35.63 | x | do | xx 39 | 0.957 | do | | |
| 1.10 | 15.86 | -35.70 | x | do | xx 39 | 0.958 | do | | |
| 1.11 | 15.58 | -34.30 | x | do | xx 39 | 0.921 | do | | |
| 1.12 | 15.59 | -34.37 | x | do | xx 39 | 0.923 | do | | |
| 1.13 | 14.71 | -30.05 | | do | z 61 | 0.930 | do | | |
| 1.14 | 14.73 | -30.12 | | do | z 61 | 0.932 | do | | |
| 1.15 | 13.25 | -22.88 | | do | z 61 | 0.708 | do | | |
| 1.16 | 13.27 | -22.95 | | do | z 61 | 0.778 | 2'-0" | | |
| 1.17 | 11.59 | -14.71 | | do | z 90 | 0.868 | 2'-11 5/8" | | |
| 1.18 | 11.79 | -15.71 | | LL 2 X .188 | z 85 | 0.868 | 2'-11 1/2" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .156 | z 131 | 0.423 | 4'-5 7/8" | | |
| 2.2 | 17.76 | -3.62 | | do | z 99 | 0.632 | 3'-3 1/8" | | |
| 2.3 | 26.53 | -5.40 | | do | z 121 | 0.771 | 4'-0" | | |
| 2.4 | 32.38 | -6.59 | | do | z 121 | 0.900 | do | | |
| 2.5 | 35.30 | -7.19 | | do | z 121 | 0.981 | do | | |
| 2.6 | 35.30 | -7.19 | | do | z 121 | 0.981 | do | | |
| 2.7 | 32.38 | -6.59 | | do | z 121 | 0.900 | do | | |
| 2.8 | 26.53 | -5.40 | | do | z 121 | 0.771 | 4'-0" | | |
| 2.9 | 17.76 | -3.62 | | do | z 99 | 0.632 | 3'-3 1/8" | | |
| 2.10 | 0.00 | 0.00 | | LL 2 X .156 | z 142 | 0.423 | 4'-10 1/4" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 17.12 | -3.49 | | SQUARE BAR 1" (50 ksi) | z 208 | 0.649 | 5'-1 3/4" | .250 - 2 3/8" | |
| 3.2 | 17.12 | -3.49 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.652 | 5'-1 3/4" | .250 - 2 3/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.43 | -1.51 | | U 1 x 1 x 0.118 | z 124 | 0.839 | 3'-2 3/8" | .118 - 2 1/8" | |
| 4.2 | 5.14 | -1.05 | | U 1 x 1 x 0.090 | z 127 | 0.757 | do | .091 - 1 7/8" | |
| 4.3 | 2.86 | -0.58 | | do | z 127 | 0.421 | do | .091 - 1 1/2" | |
| 4.4 | 2.83 | -0.12 | | do | z 127 | 0.417 | do | do | |
| 4.5 | 2.83 | -0.12 | | do | z 128 | 0.417 | do | do | |
| 4.6 | 2.86 | -0.58 | | do | z 128 | 0.421 | do | .091 - 1 1/2" | |
| 4.7 | 5.14 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.757 | do | .091 - 1 7/8" | |
| 4.8 | 7.43 | -1.51 | | U 1 x 1 x 0.118 | z 124 | 0.839 | 3'-2 3/8" | .118 - 2 1/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.56 | -7.68 | d | U 1 3/8 x 0.157 | z 72 | 0.642 | 2'-9 5/8" | .158 - 1 5/8" | |
| 5.2 | 1.28 | -6.29 | d | U 1 3/8 x 0.157 | z 83 | 0.589 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.81 | -4.00 | d | U 1 3/8 x 0.118 | z 85 | 0.684 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -2.83 | | U 1 x 1 x 0.118 | z 124 | 0.985 | do | do | |
| 5.5 | 0.35 | -2.83 | | U 1 x 1 x 0.118 | z 124 | 0.979 | do | do | |
| 5.6 | 0.81 | -4.00 | d | U 1 3/8 x 0.118 | z 84 | 0.682 | do | .118 - 1 1/2" | |
| 5.7 | 1.28 | -6.29 | d | U 1 3/8 x 0.157 | z 83 | 0.587 | 3'-2 3/8" | .158 - 1 1/2" | |

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J2 (W-N MID SPAN, Symmetrical, Parallel, Free ends)

Δ = -34 7/8 / 12 - 0 7/8"




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 440.52 lb/ft 30K10 LIVE LOAD ..: 319.13 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.31 in (L/ 360)

Calculated deflection under service live load .... = 1.26 in (L/ 376)

Joist inertia ..... = 545.35 in^4

Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J2

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:19

---------- **F O R C E S  I N  M E M B E R S  [kips]** ----------

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.87 in)

Left Reaction = 8.71/ -2.37 kips Right Reaction = 8.71/ -2.37 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.54 | -14.48 | | LL 2 X .188 | z 85 | 0.830 | 2'-11 3/8" | | |
| 1.2 | 11.37 | -13.68 | | do | z 90 | 0.837 | 2'-11 3/8" | | |
| 1.3 | 13.06 | -21.97 | | do | z 61 | 0.753 | 2'-0" | | |
| 1.4 | 13.07 | -22.04 | | do | z 61 | 0.684 | do | | |
| 1.5 | 14.58 | -29.43 | | do | z 61 | 0.910 | do | | |
| 1.6 | 14.59 | -29.49 | | do | z 61 | 0.912 | do | | |
| 1.7 | 15.50 | -33.95 | x | do | xx 39 | 0.912 | do | | |
| 1.8 | 15.51 | -34.02 | x | do | xx 39 | 0.913 | do | | |
| 1.9 | 15.82 | -35.55 | x | do | xx 39 | 0.954 | do | | |
| 1.10 | 15.83 | -35.62 | x | do | xx 39 | 0.956 | do | | |
| 1.11 | 15.55 | -34.22 | x | do | xx 39 | 0.919 | do | | |
| 1.12 | 15.56 | -34.29 | x | do | xx 39 | 0.921 | do | | |
| 1.13 | 14.68 | -29.96 | | do | z 61 | 0.927 | do | | |
| 1.14 | 14.70 | -30.03 | | do | z 61 | 0.929 | do | | |
| 1.15 | 13.22 | -22.78 | | do | z 61 | 0.705 | do | | |
| 1.16 | 13.24 | -22.84 | | do | z 61 | 0.774 | 2'-0" | | |
| 1.17 | 11.59 | -14.71 | | do | z 90 | 0.862 | 2'-11 3/8" | | |
| 1.18 | 11.79 | -15.71 | | LL 2 X .188 | z 85 | 0.862 | 2'-11 3/8" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .156 | z 131 | 0.420 | 4'-5 7/8" | | |
| 2.2 | 17.65 | -3.59 | | do | z 98 | 0.630 | 3'-2 5/8" | | |
| 2.3 | 26.43 | -5.37 | | do | z 121 | 0.769 | 4'-0" | | |
| 2.4 | 32.29 | -6.56 | | do | z 121 | 0.897 | do | | |
| 2.5 | 35.22 | -7.16 | | do | z 121 | 0.979 | do | | |
| 2.6 | 35.22 | -7.16 | | do | z 121 | 0.979 | do | | |
| 2.7 | 32.29 | -6.56 | | do | z 121 | 0.897 | do | | |
| 2.8 | 26.43 | -5.37 | | do | z 121 | 0.769 | 4'-0" | | |
| 2.9 | 17.65 | -3.59 | | do | z 98 | 0.630 | 3'-2 5/8" | | |
| 2.10 | 0.00 | 0.00 | | LL 2 X .156 | z 142 | 0.420 | 4'-10 1/4" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 17.12 | -3.48 | | SQUARE BAR 1" (50 ksi) | z 208 | 0.648 | 5'-1 3/4" | .250 - 2 3/8" | |
| 3.2 | 17.12 | -3.48 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.651 | 5'-1 3/4" | .250 - 2 3/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.45 | -1.51 | | U 1 x 1 x 0.118 | z 124 | 0.841 | 3'-2 3/8" | .118 - 2 1/8" | |
| 4.2 | 5.15 | -1.05 | | U 1 x 1 x 0.090 | z 127 | 0.759 | do | .091 - 1 7/8" | |
| 4.3 | 2.86 | -0.58 | | do | z 127 | 0.421 | do | .091 - 1 1/2" | |
| 4.4 | 2.83 | -0.12 | | do | z 127 | 0.417 | do | do | |
| 4.5 | 2.83 | -0.12 | | do | z 128 | 0.417 | do | do | |
| 4.6 | 2.86 | -0.58 | | do | z 128 | 0.421 | do | .091 - 1 1/2" | |
| 4.7 | 5.15 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.759 | do | .091 - 1 7/8" | |
| 4.8 | 7.45 | -1.51 | | U 1 x 1 x 0.118 | z 124 | 0.841 | 3'-2 3/8" | .118 - 2 1/8" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.55 | -7.64 | d | U 1 3/8 x 0.157 | z 71 | 0.636 | 2'-9 3/8" | .158 - 1 5/8" | |
| 5.2 | 1.28 | -6.30 | d | U 1 3/8 x 0.157 | z 83 | 0.590 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.81 | -4.01 | d | U 1 3/8 x 0.118 | z 85 | 0.686 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -2.83 | | U 1 x 1 x 0.118 | z 124 | 0.985 | do | do | |
| 5.5 | 0.35 | -2.83 | | U 1 x 1 x 0.118 | z 124 | 0.979 | do | do | |
| 5.6 | 0.81 | -4.01 | d | U 1 3/8 x 0.118 | z 84 | 0.684 | do | .118 - 1 1/2" | |
| 5.7 | 1.28 | -6.30 | d | U 1 3/8 x 0.157 | z 83 | 0.588 | 3'-2 3/8" | .158 - 1 1/2" | |

## F O R C E S  I N  M E M B E R S (Cont.) [kips]

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 5.8 | 1.55 | -7.64 | d | U 1 3/8 x 0.157 | z 71 | 0.635 | 2'-9 3/8" | .158 - 1 5/8" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.31 | -1.63 | | U 1 x 1 x 0.090 | z 120 | 0.698 | 3'-0 1/2" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.00 | | do | z 97 | 0.288 | 2'-6" | do | |
| 7.3 | 0.18 | -1.04 | | do | z 97 | 0.299 | do | do | |
| 7.4 | 0.18 | -1.06 | | do | z 97 | 0.306 | do | do | |
| 7.5 | 0.18 | -1.07 | | do | z 97 | 0.309 | do | do | |
| 7.6 | 0.18 | -1.06 | | do | z 97 | 0.307 | do | do | |
| 7.7 | 0.18 | -1.04 | | do | z 97 | 0.300 | do | do | |
| 7.8 | 0.18 | -1.00 | | do | z 97 | 0.289 | 2'-6" | do | |
| 7.9 | 0.31 | -1.63 | | U 1 x 1 x 0.090 | z 121 | 0.704 | 3'-0 1/2" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging — Laterals supports

| | | | |
|---|---|---|---|
| @ Top Chord: | 14'-10" ==> | 3 Row(s) Minimum | Deck (36") |
| @ Bottom Chord: | 24'-4 7/8" ==> | 5 Row(s) Minimum | Acc. to the code |

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 9'-11 3/8" ( 9'-11") | 4'-8" ( 4'-7 7/8") |
| | 19'-10 5/8" ( 19'-10") | 9'-11 3/8" ( 9'-11") |
| | 29'-9 7/8" ( 29'-9") | 19'-10 5/8" ( 19'-10") |
| | | 29'-9 7/8" ( 29'-9") |
| | | 35'-1 1/4" ( 35'-0 1/8") |

v3.6 11/29/00

**Fabrication code unless noted**

**-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar**

**-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle**

**Value of the forces reduced by 25% when there are some wind loads**

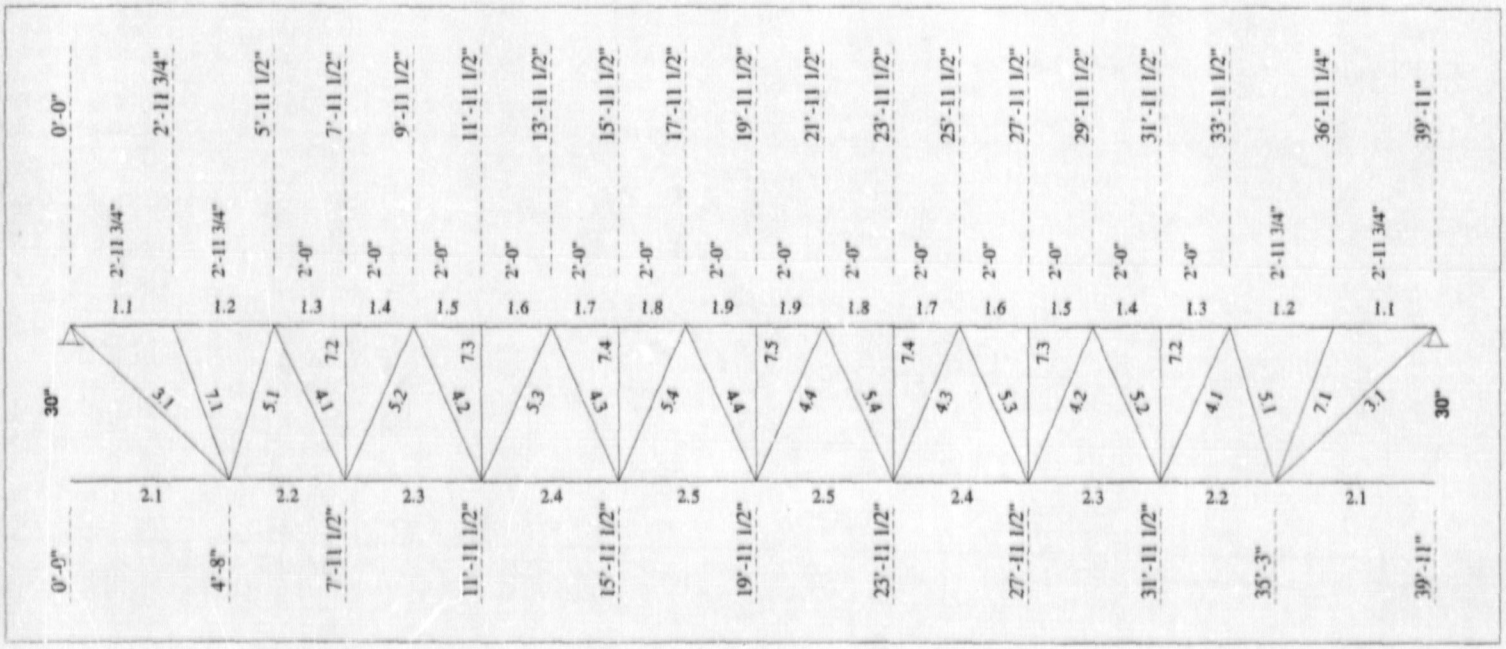
**Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]**

**449 ( 76.25) / 482 ( 81.25)**

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J3 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 438.92 lb/ft 30K10 LIVE LOAD ..: 316.50 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)

Calculated deflection under service live load .... = 1.27 in (L/ 374)

Joist inertia ..... = 545.35 in^4

Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J3

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:20

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.87 in)

Left Reaction = 8.69/ -1.78 kips Right Reaction = 8.69/ -1.78 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.67 | -15.09 | | LL 2 X .188 | z 86 | 0.857 | 2'-11 3/4" | | |
| 1.2 | 11.48 | -14.20 | | do | z 91 | 0.857 | 2'-11 3/4" | | |
| 1.3 | 13.20 | -22.59 | | do | z 61 | 0.772 | 2'-0" | | |
| 1.4 | 13.20 | -22.59 | | do | z 61 | 0.699 | do | | |
| 1.5 | 14.70 | -29.89 | | do | z 61 | 0.924 | do | | |
| 1.6 | 14 70 | -29.89 | | do | z 61 | 0.924 | do | | |
| 1.7 | 15.60 | -34.26 | x | do | xx 39 | 0.920 | do | | |
| 1.8 | 15.60 | -34.26 | x | do | xx 39 | 0.920 | do | | |
| 1.9 | 15.90 | -35.72 | x | LL 2 X .188 | xx 39 | 0.959 | 2'-0" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .156 | z 137 | 0.425 | 4'-8" | | |
| 2.2 | 17.85 | -3.66 | | do | z 100 | 0.634 | 3'-3 1/2" | | |
| 2.3 | 26.60 | -5.45 | | do | z 121 | 0.773 | 4'-0" | | |
| 2.4 | 32.44 | -6.65 | | do | z 121 | 0.902 | do | | |
| 2.5 | 35.36 | -7.25 | | LL 2 X .156 | z 121 | 0.983 | 4'-0" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 17.11 | -3.51 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.655 | 5'-1 3/4" | .250 - 2 3/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.42 | -1.52 | | U 1 x 1 x 0.118 | z 124 | 0.838 | 3'-2 3/8" | .118 - 2 1/8" | |
| 4.2 | 5.14 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.756 | do | .091 - 1 7/8" | |
| 4.3 | 2.85 | -0.59 | | do | z 128 | 0.420 | do | .091 - 1 1/2" | |
| 4.4 | 2.82 | -0.12 | | U 1 x 1 x 0.090 | z 128 | 0.416 | 3'-2 3/8" | .091 - 1 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.58 | -7.72 | d | U 1 3/8 x 0.157 | z 72 | 0.647 | 2'-9 3/4" | .158 - 1 5/8" | |
| 5.2 | 1.29 | -6.28 | d | U 1 3/8 x 0.157 | z 83 | 0.587 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.82 | -3.99 | d | U 1 3/8 x 0.118 | z 85 | 0.682 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -2.82 | | U 1 x 1 x 0.118 | z 124 | 0.979 | 3'-2 3/8" | .118 - 1 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.32 | -1.63 | | U 1 x 1 x 0.090 | z 120 | 0.692 | 3'-0 1/4" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.00 | | U 1 x 5/8 x 0.090 | z 159 | 1.007 | 2'-6" | do | |
| 7.3 | 0.18 | -1.04 | | U 1 x 1 x 0.090 | z 97 | 0.299 | do | do | |
| 7.4 | 0.18 | -1.06 | | do | z 97 | 0.306 | do | do | |
| 7.5 | 0.18 | -1.07 | | U 1 x 1 x 0.090 | z 97 | 0.308 | 2'-6" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging — Laterals supports

@ Top Chord: 14'-10" ==> 3 Row(s) Minimum — Deck (36")

@ Bottom Chord: 24'-4 7/8" ==> 5 Row(s) Minimum — Acc. to the code

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 9'-11 3/4" | 4'-8" |
| | 19'-11 1/2" | 9'-11 3/4" |
| | 29'-11 1/4" | 19'-11 1/2" |
| | | 29'-11 1/4" |
| | | 35'-3" |

canamsteel Corporation

Mark: J3

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:20

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v3.6 11/29/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

Value of the forces reduced by 25% when there are some wind loads

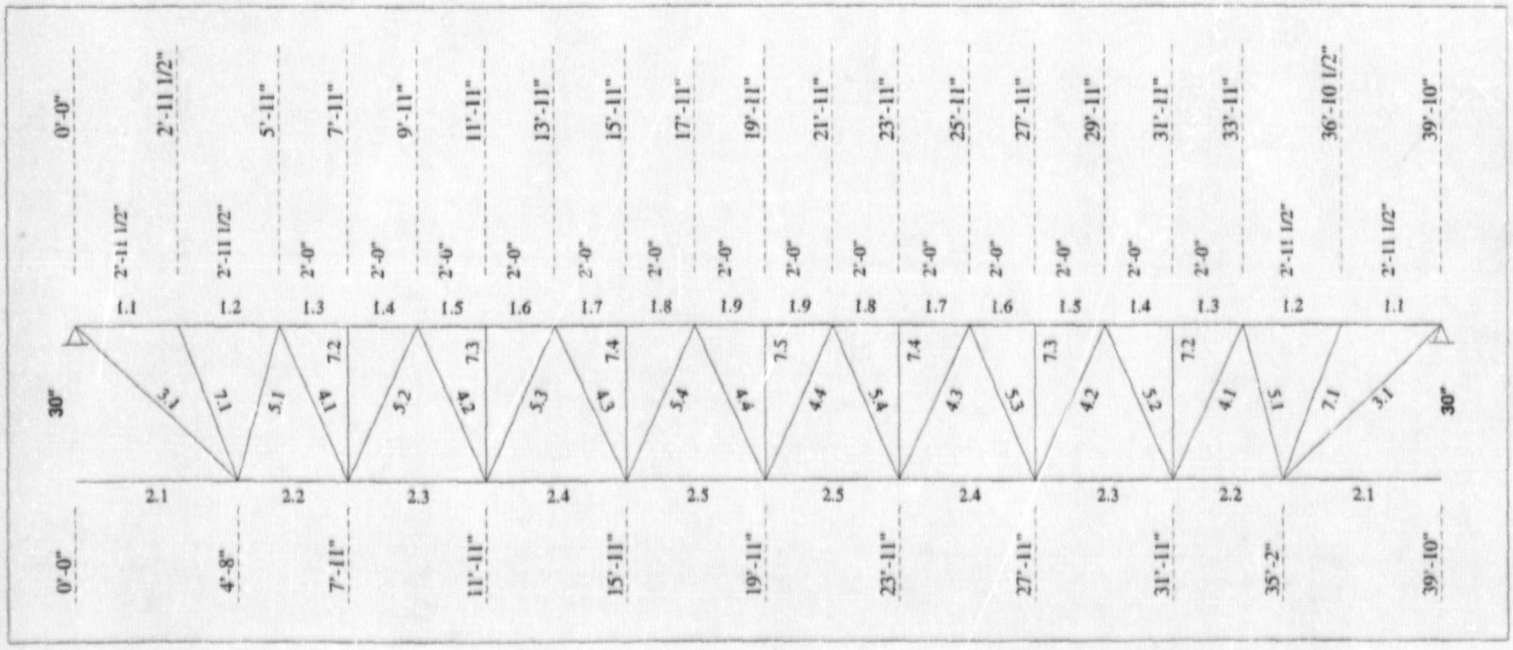
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

450 ( 76.24) / 483 ( 81.23)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J4 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 439.83 lb/ft 30K10 LIVE LOAD ..: 318.00 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS | | | |
|---|---|---|---|---|---|---|
| | | | <<< Top Chord >>> | | < Bottom Chord > | |
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No
Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)
Calculated deflection under service live load .... = 1.26 in (L/ 375)
Joist inertia ..... = 545.35 in^4
Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J4

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:21

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.87 in)

Left Reaction = 8.69/ -1.78 kips Right Reaction = 8.69/ -1.78 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.66 | -15.10 | | LL 2 X .188 | z 85 | 0.851 | 2'-11 1/2" | | |
| 1.2 | 11.48 | -14.20 | | do | z 90 | 0.852 | 2'-11 1/2" | | |
| 1.3 | 13.17 | -22.49 | | do | z 61 | 0.767 | 2'-0" | | |
| 1.4 | 13.17 | -22.49 | | do | z 61 | 0.696 | do | | |
| 1.5 | 14.67 | -29.80 | | do | z 61 | 0.922 | do | | |
| 1.6 | 14.67 | -29.80 | | do | z 61 | 0.922 | do | | |
| 1.7 | 15.57 | -34.18 | x | do | xx 39 | 0.918 | do | | |
| 1.8 | 15.57 | -34.18 | x | do | xx 39 | 0.918 | do | | |
| 1.9 | 15.87 | -35.65 | x | LL 2 X .188 | xx 39 | 0.957 | 2'-0" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .156 | z 137 | 0.423 | 4'-8" | | |
| 2.2 | 17.73 | -3.63 | | do | z 99 | 0.631 | 3'-3" | | |
| 2.3 | 26.51 | -5.42 | | do | z 121 | 0.771 | 4'-0" | | |
| 2.4 | 32.36 | -6.62 | | do | z 121 | 0.899 | do | | |
| 2.5 | 35.28 | -7.22 | | LL 2 X .156 | z 121 | 0.981 | 4'-0" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 17.12 | -3.50 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.654 | 5'-1 3/4" | .250 - 2 3/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.43 | -1.52 | | U 1 x 1 x 0.118 | z 124 | 0.839 | 3'-2 3/8" | .118 - 2 1/8" | |
| 4.2 | 5.15 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.757 | do | .091 - 1 7/8" | |
| 4.3 | 2.86 | -0.59 | | do | z 128 | 0.421 | do | .091 - 1 1/2" | |
| 4.4 | 2.82 | -0.12 | | U 1 x 1 x 0.090 | z 128 | 0.416 | 3'-2 3/8" | .091 - 1 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.57 | -7.67 | d | U 1 3/8 x 0.157 | z 72 | 0.640 | 2'-9 1/2" | .158 - 1 5/8" | |
| 5.2 | 1.29 | -6.29 | d | U 1 3/8 x 0.157 | z 83 | 0.588 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.82 | -4.00 | d | U 1 3/8 x 0.118 | z 85 | 0.684 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -2.82 | | U 1 x 1 x 0.118 | z 124 | 0.979 | 3'-2 3/8" | .118 - 1 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.32 | -1.63 | | U 1 x 1 x 0.090 | z 120 | 0.697 | 3'-0 3/8" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.00 | | U 1 x 5/8 x 0.090 | z 159 | 1.008 | 2'-6" | do | |
| 7.3 | 0.18 | -1.04 | | U 1 x 1 x 0.090 | z 97 | 0.299 | do | do | |
| 7.4 | 0.18 | -1.06 | | do | z 97 | 0.306 | do | do | |
| 7.5 | 0.18 | -1.07 | | U 1 x 1 x 0.090 | z 97 | 0.308 | 2'-6" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging Laterals supports
@ Top Chord: 14'-10" ==> 3 Row(s) Minimum Deck (36")
@ Bottom Chord: 24'-4 7/8" ==> 5 Row(s) Minimum Acc. to the code

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 9'-11 1/2" | 4'-8" |
| | 19'-11" | 9'-11 1/2" |
| | 29'-10 1/2" | 19'-11" |
| | | 29'-10 1/2" |
| | | 35'-2" |

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v3.6 11/29/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

Value of the forces reduced by 25% when there are some wind loads

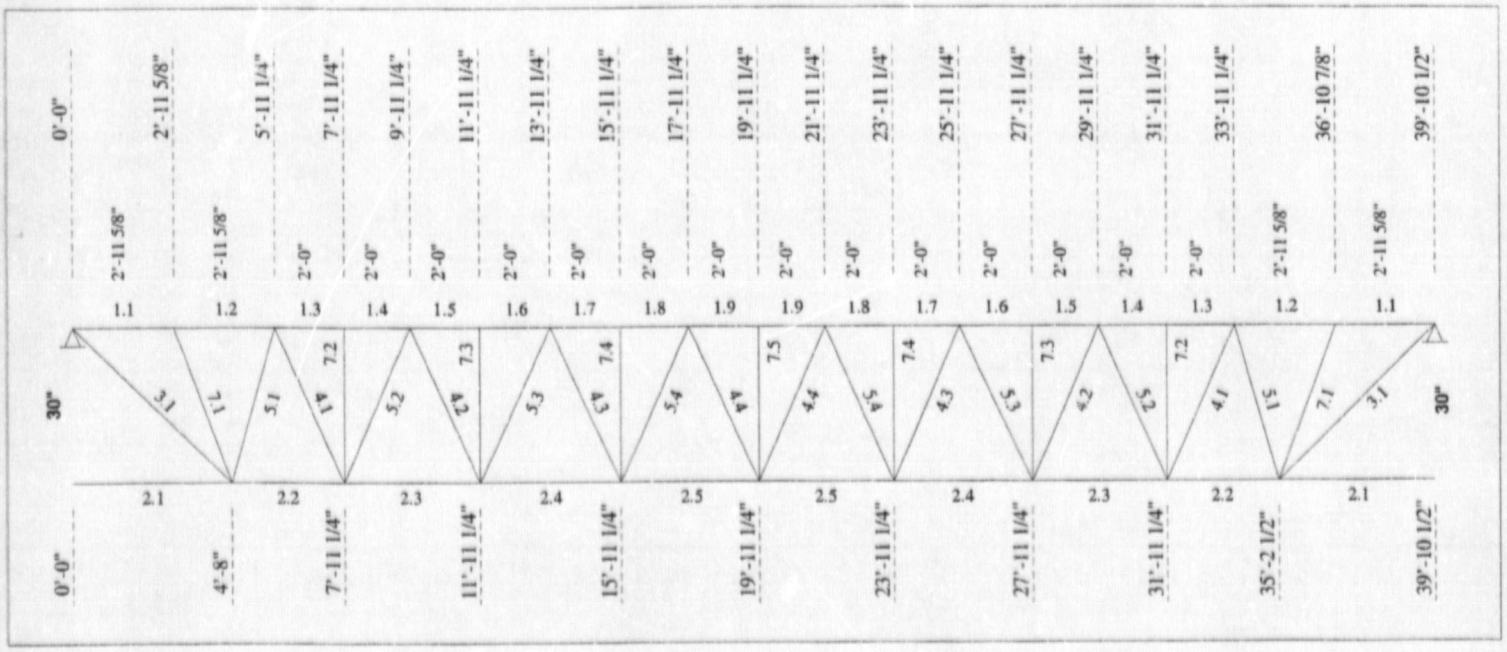
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

449 ( 76.11) / 482 ( 81.10)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J5 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 439.38 lb/ft 30K10 LIVE LOAD ..: 317.25 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No
Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)
Calculated deflection under service live load .... = 1.27 in (L/ 374)
Joist inertia ..... = 545.35 in^4
Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J5

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:22

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.87 in)

Left Reaction = 8.69/ -1.78 kips Right Reaction = 8.69/ -1.78 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.66 | -15.09 | | LL 2 X .188 | z 85 | 0.854 | 2'-11 5/8" | | |
| 1.2 | 11.48 | -14.20 | | do | z 90 | 0.855 | 2'-11 5/8" | | |
| 1.3 | 13.19 | -22.54 | | do | z 61 | 0.769 | 2'-0" | | |
| 1.4 | 13.19 | -22.54 | | do | z 61 | 0.697 | do | | |
| 1.5 | 14.68 | -29.84 | | do | z 61 | 0.923 | do | | |
| 1.6 | 14.68 | -29.84 | | do | z 61 | 0.923 | do | | |
| 1.7 | 15.58 | -34.22 | x | do | xx 39 | 0.919 | do | | |
| 1.8 | 15.58 | -34.22 | x | do | xx 39 | 0.919 | do | | |
| 1.9 | 15.88 | -35.68 | x | LL 2 X .188 | xx 39 | 0.958 | 2'-0" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .156 | z 137 | 0.424 | 4'-8" | | |
| 2.2 | 17.79 | -3.64 | | do | z 99 | 0.633 | 3'-3 1/4" | | |
| 2.3 | 26.55 | -5.44 | | do | z 121 | 0.772 | 4'-0" | | |
| 2.4 | 32.40 | -6.64 | | do | z 121 | 0.900 | do | | |
| 2.5 | 35.32 | -7.23 | | LL 2 X .156 | z 121 | 0.982 | 4'-0" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 17.11 | -3.51 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.654 | 5'-1 3/4" | .250 - 2 3/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.43 | -1.52 | | U 1 x 1 x 0.118 | z 124 | 0.838 | 3'-2 3/8" | .118 - 2 1/8" | |
| 4.2 | 5.14 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.757 | do | .091 - 1 7/8" | |
| 4.3 | 2.86 | -0.59 | | do | z 128 | 0.420 | do | .091 - 1 1/2" | |
| 4.4 | 2.82 | -0.12 | | U 1 x 1 x 0.090 | z 128 | 0.416 | 3'-2 3/8" | .091 - 1 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.58 | -7.69 | d | U 1 3/8 x 0.157 | z 72 | 0.643 | 2'-9 5/8" | .158 - 1 5/8" | |
| 5.2 | 1.29 | -6.28 | d | U 1 3/8 x 0.157 | z 83 | 0.587 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.82 | -4.00 | d | U 1 3/8 x 0.118 | z 85 | 0.683 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -2.82 | | U 1 x 1 x 0.118 | z 124 | 0.979 | 3'-2 3/8" | .118 - 1 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.32 | -1.63 | | U 1 x 1 x 0.090 | z 120 | 0.694 | 3'-0 1/4" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.00 | | U 1 x 5/8 x 0.090 | z 159 | 1.007 | 2'-6" | do | |
| 7.3 | 0.18 | -1.04 | | U 1 x 1 x 0.090 | z 97 | 0.299 | do | do | |
| 7.4 | 0.18 | -1.06 | | do | z 97 | 0.306 | do | do | |
| 7.5 | 0.18 | -1.07 | | U 1 x 1 x 0.090 | z 97 | 0.308 | 2'-6" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging
@ Top Chord: 14'-10" ==> 3 Row(s) Minimum
@ Bottom Chord: 24'-4 7/8" ==> 5 Row(s) Minimum

Laterals supports
Deck (36")
Acc. to the code

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 9'-11 5/8" | 4'-8" |
| | 19'-11 1/4" | 9'-11 5/8" |
| | 29'-10 7/8" | 19'-11 1/4" |
| | | 29'-10 7/8" |
| | | 35'-2 1/2" |

canamsteel Corporation

Mark: J5

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:22

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v3.6 11/29/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

Value of the forces reduced by 25% when there are some wind loads

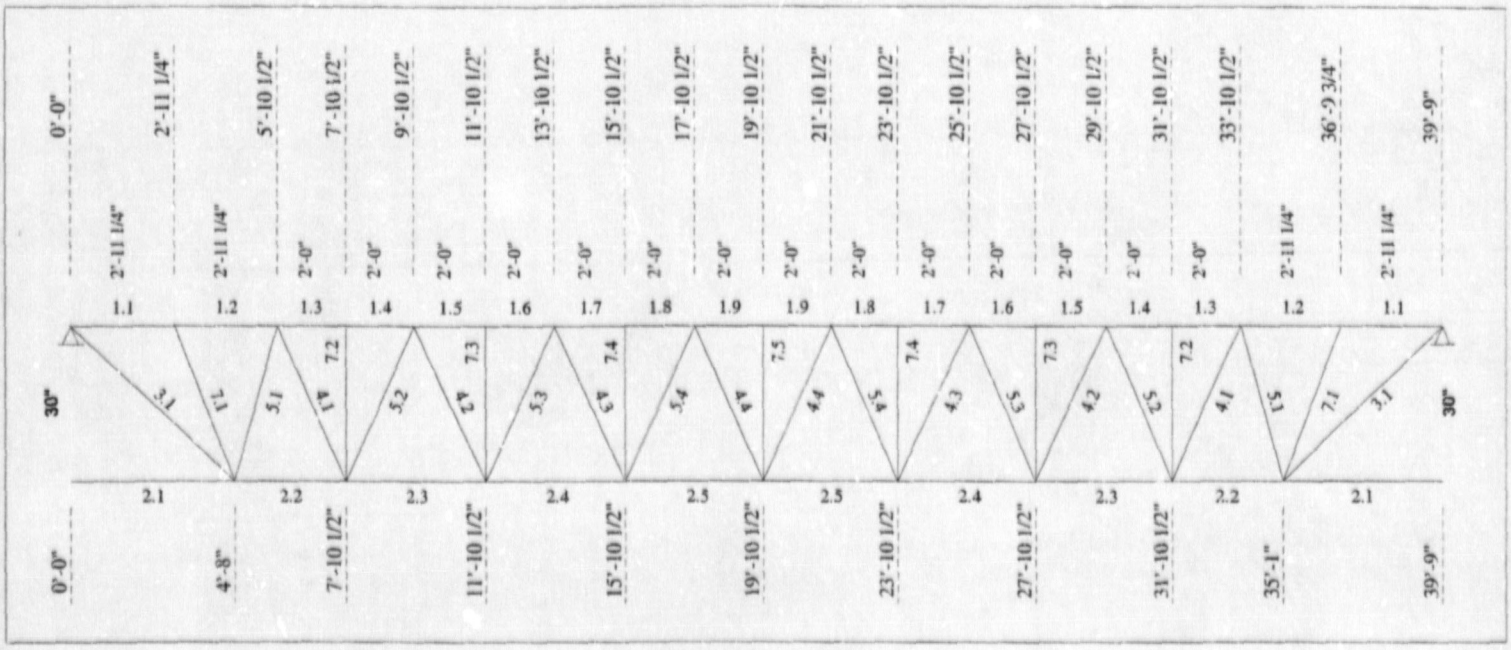
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

449 ( 76.17) / 482 ( 81.17)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J6 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 440.75 lb/ft 30K10 LIVE LOAD ..: 319.50 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | AXIAL LOADS < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.31 in (L/ 360)

Calculated deflection under service live load .... = 1.26 in (L/ 375)

Joist inertia ..... = 545.35 in^4

Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J6

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:23

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.87 in)

Left Reaction = 8.68/ -1.77 kips Right Reaction = 8.68/ -1.77 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.66 | -15.10 | | LL 2 X .188 | z 84 | 0.845 | 2'-11 1/4" | | |
| 1.2 | 11.47 | -14.20 | | do | z 90 | 0.847 | 2'-11 1/4" | | |
| 1.3 | 13.14 | -22.38 | | do | z 61 | 0.762 | 2'-0" | | |
| 1.4 | 13.14 | -22.38 | | do | z 61 | 0.692 | do | | |
| 1.5 | 14.64 | -29.71 | | do | z 61 | 0.919 | do | | |
| 1.6 | 14.64 | -29.71 | | do | z 61 | 0.919 | do | | |
| 1.7 | 15.54 | -34.10 | x | do | xx 39 | 0.916 | do | | |
| 1.8 | 15.54 | -34.10 | x | do | xx 39 | 0.916 | do | | |
| 1.9 | 15.84 | -35.57 | x | LL 2 X .188 | xx 39 | 0.955 | 2'-0" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .156 | z 137 | 0.420 | 4'-8" | | |
| 2.2 | 17.62 | -3.60 | | do | z 97 | 0.629 | 3'-2 1/2" | | |
| 2.3 | 26.41 | -5.39 | | do | z 121 | 0.769 | 4'-0" | | |
| 2.4 | 32.27 | -6.59 | | do | z 121 | 0.897 | do | | |
| 2.5 | 35.20 | -7.19 | | LL 2 X .156 | z 121 | 0.978 | 4'-0" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 17.12 | -3.50 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.652 | 5'-1 3/4" | .250 - 2 3/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.45 | -1.52 | | U 1 x 1 x 0.118 | z 124 | 0.841 | 3'-2 3/8" | .118 - 2 1/8" | |
| 4.2 | 5.16 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.759 | do | .091 - 1 7/8" | |
| 4.3 | 2.87 | -0.59 | | do | z 128 | 0.422 | do | .091 - 1 1/2" | |
| 4.4 | 2.82 | -0.12 | | U 1 x 1 x 0.090 | z 128 | 0.415 | 3'-2 3/8" | .091 - 1 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.56 | -7.63 | d | U 1 3/8 x 0.157 | z 71 | 0.633 | 2'-9 3/8" | .158 - 1 5/8" | |
| 5.2 | 1.29 | -6.30 | d | U 1 3/8 x 0.157 | z 83 | 0.589 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.82 | -4.01 | d | U 1 3/8 x 0.118 | z 85 | 0.685 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -2.82 | | U 1 x 1 x 0.118 | z 124 | 0.979 | 3'-2 3/8" | .118 - 1 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.32 | -1.63 | | U 1 x 1 x 0.090 | z 121 | 0.702 | 3'-0 1/2" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.00 | | U 1 x 5/8 x 0.090 | z 159 | 1.009 | 2'-6" | do | |
| 7.3 | 0.18 | -1.04 | | U 1 x 1 x 0.090 | z 97 | 0.300 | do | do | |
| 7.4 | 0.18 | -1.06 | | do | z 97 | 0.306 | do | do | |
| 7.5 | 0.18 | -1.07 | | U 1 x 1 x 0.090 | z 97 | 0.309 | 2'-6" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging — Laterals supports

@ Top Chord: 14'-10" ==> 3 Row(s) Minimum — Deck (36")

@ Bottom Chord: 24'-4 7/8" ==> 5 Row(s) Minimum — Acc. to the code

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 9'-11 1/4" | 4'-8" |
| | 19'-10 1/2" | 9'-11 1/4" |
| | 29'-9 3/4" | 19'-10 1/2" |
| | | 29'-9 3/4" |
| | | 35'-1" |

canamsteel Corporation

Mark: J6

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:23

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v3.6 11/29/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

Value of the forces reduced by 25% when there are some wind loads

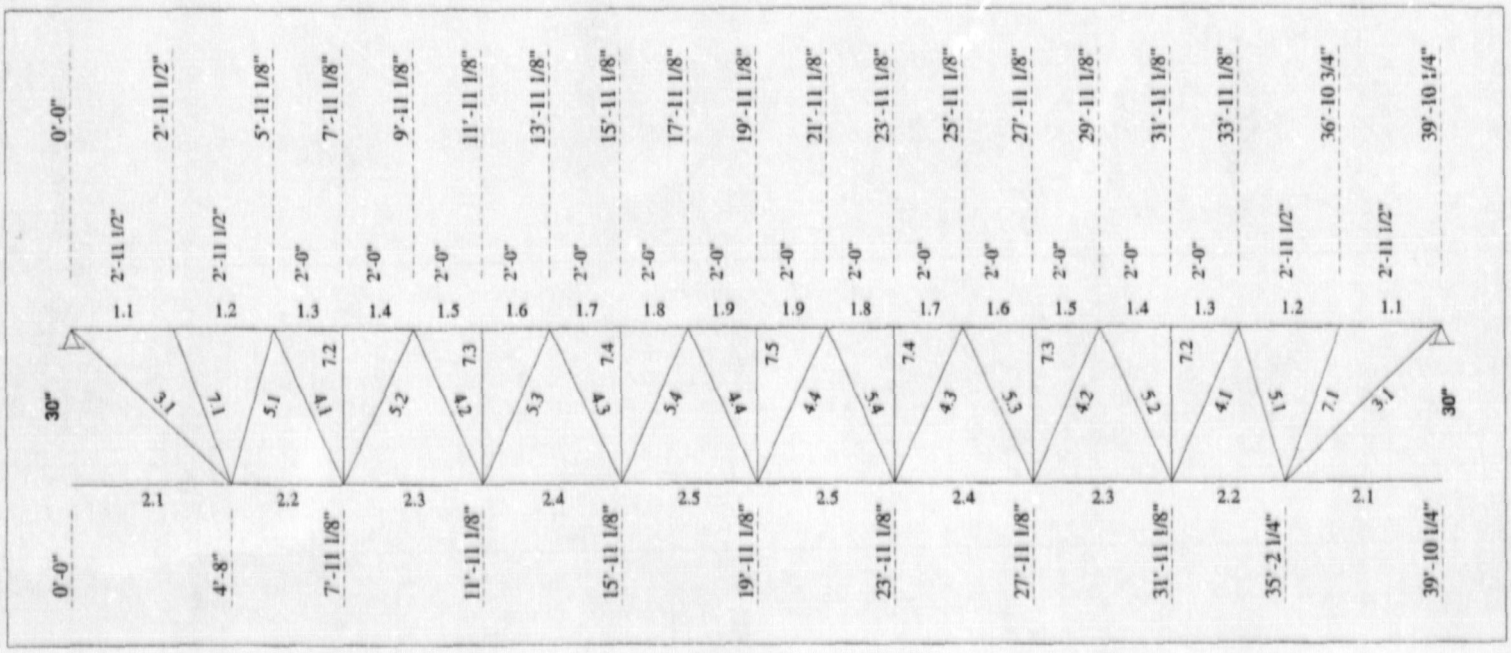
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

448 ( 75.98) / 481 ( 80.98)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J7 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 439.60 lb/ft 30K10 LIVE LOAD ..: 317.63 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No
Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)
Calculated deflection under service live load .... = 1.26 in (L/ 375)
Joist inertia ..... = 545.35 in^4
Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J7

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:24

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.87 in)

Left Reaction = 8.69/ -1.78 kips Right Reaction = 8.69/ -1.78 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.66 | -15.09 | | LL 2 X .188 | z 85 | 0.852 | 2'-11 1/2" | | |
| 1.2 | 11.48 | -14.20 | | do | z 90 | 0.853 | 2'-11 1/2" | | |
| 1.3 | 13.18 | -22.51 | | do | z 61 | 0.768 | 2'-0" | | |
| 1.4 | 13.18 | -22.51 | | do | z 61 | 0.696 | do | | |
| 1.5 | 14.68 | -29.82 | | do | z 61 | 0.922 | do | | |
| 1.6 | 14.68 | -29.82 | | do | z 61 | 0.922 | do | | |
| 1.7 | 15.57 | -34.20 | x | do | xx 39 | 0.918 | do | | |
| 1.8 | 15.57 | -34.20 | x | do | xx 39 | 0.918 | do | | |
| 1.9 | 15.87 | -35.66 | x | LL 2 X .188 | xx 39 | 0.957 | 2'-0" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .156 | z 137 | 0.423 | 4'-8" | | |
| 2.2 | 17.76 | -3.64 | | do | z 99 | 0.632 | 3'-3 1/8" | | |
| 2.3 | 26.53 | -5.43 | | do | z 121 | 0.771 | 4'-0" | | |
| 2.4 | 32.38 | -6.63 | | do | z 121 | 0.900 | do | | |
| 2.5 | 35.30 | -7.23 | | LL 2 X .156 | z 121 | 0.981 | 4'-0" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 17.12 | -3.50 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.654 | 5'-1 3/4" | .250 - 2 3/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.43 | -1.52 | | U 1 x 1 x 0.118 | z 124 | 0.839 | 3'-2 3/8" | .118 - 2 1/8" | |
| 4.2 | 5.14 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.757 | do | .091 - 1 7/8" | |
| 4.3 | 2.86 | -0.59 | | do | z 128 | 0.421 | do | .091 - 1 1/2" | |
| 4.4 | 2.82 | -0.12 | | U 1 x 1 x 0.090 | z 128 | 0.416 | 3'-2 3/8" | .091 - 1 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.57 | -7.68 | d | U 1 3/8 x 0.157 | z 72 | 0.642 | 2'-9 5/8" | .158 - 1 5/8" | |
| 5.2 | 1.29 | -6.29 | d | U 1 3/8 x 0.157 | z 83 | 0.588 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.82 | -4.00 | d | U 1 3/8 x 0.118 | z 85 | 0.683 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -2.82 | | U 1 x 1 x 0.118 | z 124 | 0.979 | 3'-2 3/8" | .118 - 1 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.32 | -1.63 | | U 1 x 1 x 0.090 | z 120 | 0.696 | 3'-0 1/4" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.00 | | U 1 x 5/8 x 0.090 | z 159 | 1.008 | 2'-6" | do | |
| 7.3 | 0.18 | -1.04 | | U 1 x 1 x 0.090 | z 97 | 0.299 | do | do | |
| 7.4 | 0.18 | -1.06 | | do | z 97 | 0.306 | do | do | |
| 7.5 | 0.18 | -1.07 | | U 1 x 1 x 0.090 | z 97 | 0.308 | 2'-6" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging

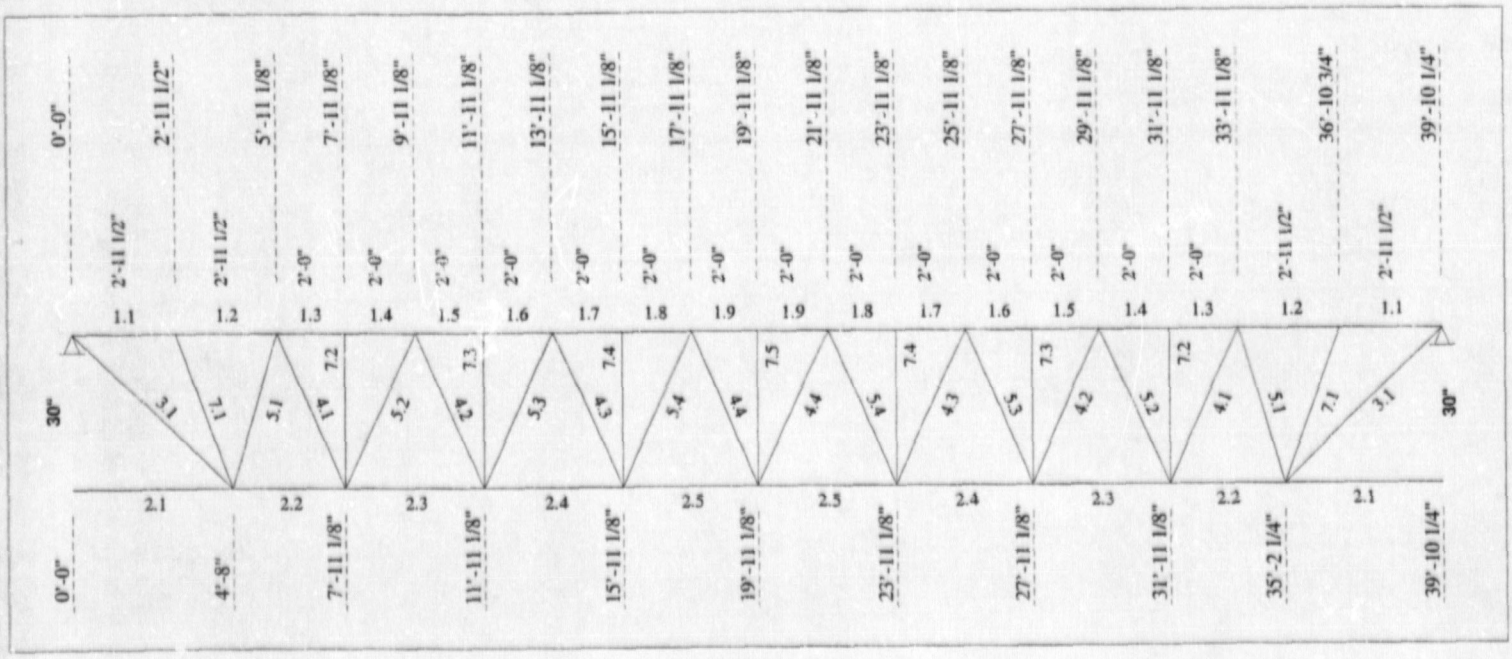
| | | | | Laterals supports |
|---|---|---|---|---|
| @ Top Chord: | 14'-10" | ==> | 3 Row(s) Minimum | Deck (36") |
| @ Bottom Chord: | 24'-4 7/8" | ==> | 5 Row(s) Minimum | Acc. to the code |

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 9'-11 5/8" | 4'-8" |
| | 19'-11 1/8" | 9'-11 5/8" |
| | 29'-10 5/8" | 19'-11 1/8" |
| | | 29'-10 5/8" |
| | | 35'-2 1/4" |

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J8 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 468.00 lb/ft 30KSP468/345 LIVE LOAD ..: 345.00 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No
Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)
Calculated deflection under service live load .... = 1.27 in (L/ 374)
Joist inertia ..... = 591.32 in^4
Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J8

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 16:45:58

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.86 in)

Left Reaction = 9.25/ -1.78 kips Right Reaction = 9.25/ -1.78 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.67 | -16.08 | | LL 2 X .216 | z 86 | 0.798 | 2'-11 1/2" | | |
| 1.2 | 11.48 | -15.12 | | do | z 91 | 0.798 | 2'-11 1/2" | | |
| 1.3 | 13.19 | -23.98 | | do | z 61 | 0.718 | 2'-0" | | |
| 1.4 | 13.19 | -23.98 | | do | z 61 | 0.651 | do | | |
| 1.5 | 14.68 | -31.76 | | do | z 61 | 0.863 | do | | |
| 1.6 | 14.68 | -31.76 | | do | z 61 | 0.863 | do | | |
| 1.7 | 15.58 | -36.43 | | do | z 61 | 0.990 | do | | |
| 1.8 | 15.58 | -36.43 | | do | z 61 | 0.990 | do | | |
| 1.9 | 15.88 | -37.99 | x | LL 2 X .216 | xx 39 | 0.895 | 2'-0" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .163 | z 137 | 0.432 | 4'-8" | | |
| 2.2 | 18.92 | -3.64 | | do | z 99 | 0.645 | 3'-3 1/8" | | |
| 2.3 | 28.26 | -5.43 | | do | z 121 | 0.788 | 4'-0" | | |
| 2.4 | 34.48 | -6.63 | | do | z 121 | 0.919 | do | | |
| 2.5 | 37.60 | -7.23 | | LL 2 X .163 | z 121 | 1.002 | 4'-0" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 18.23 | -3.51 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.675 | 5'-1 3/4" | .250 - 2 1/2" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.91 | -1.52 | | U 1 x 1 x 0.118 | z 124 | 0.893 | 3'-2 3/8" | .118 - 2 1/4" | |
| 4.2 | 5.48 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.806 | do | .091 - 2" | |
| 4.3 | 3.04 | -0.59 | | do | z 128 | 0.448 | do | .091 - 1 1/2" | |
| 4.4 | 3.01 | -0.12 | | U 1 x 1 x 0.090 | z 128 | 0.442 | 3'-2 3/8" | .091 - 1 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.57 | -8.18 | d | U 1 3/8 x 0.157 | z 72 | 0.683 | 2'-9 5/8" | .158 - 1 3/4" | |
| 5.2 | 1.29 | -6.69 | d | U 1 3/8 x 0.157 | z 83 | 0.626 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.82 | -4.26 | d | U 1 3/8 x 0.118 | z 85 | 0.727 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -3.01 | d | U 1 3/8 x 0.118 | z 85 | 0.513 | 3'-2 3/8" | .118 - 1 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.32 | -1.74 | | U 1 x 1 x 0.090 | z 120 | 0.740 | 3'-0 1/4" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.06 | | do | z 97 | 0.306 | 2'-6" | do | |
| 7.3 | 0.18 | -1.10 | | do | z 97 | 0.318 | do | do | |
| 7.4 | 0.18 | -1.13 | | do | z 97 | 0.325 | do | do | |
| 7.5 | 0.18 | -1.14 | | U 1 x 1 x 0.090 | z 97 | 0.328 | 2'-6" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging
@ Top Chord: 14'-11" ==> 2 Row(s) Minimum
@ Bottom Chord: 24'-5 1/4" ==> 4 Row(s) Minimum

Laterals supports
Deck (36")
Acc. to the code

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 13'-3 3/8" | 4'-8" |
| | 26'-6 7/8" | 13'-3 3/8" |
| | | 26'-6 7/8" |
| | | 35'-2 1/4" |

Mark: J8

canamsteel Corporation

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 16:45:58

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v3.6 12/05/00

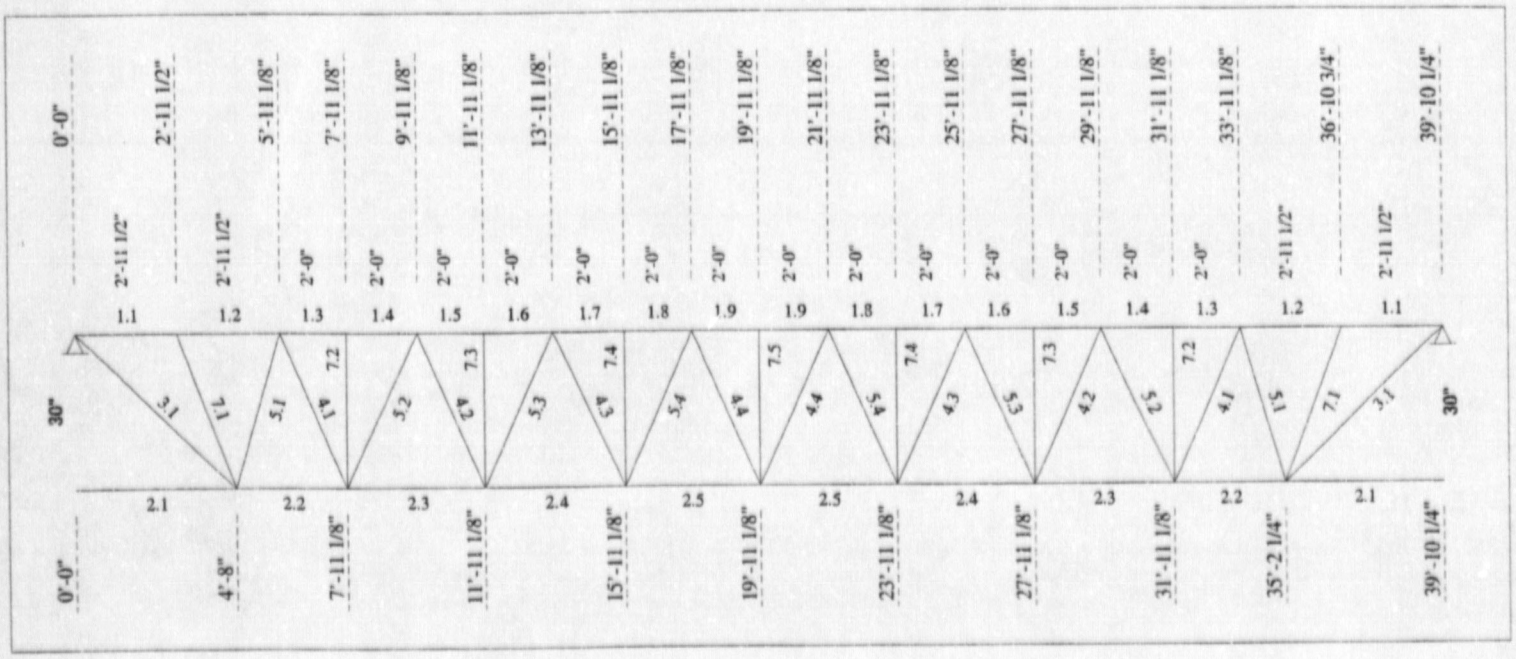
Fabrication code unless noted
-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar
-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle
Value of the forces reduced by 25% when there are some wind loads

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]
486 ( 79.59) / 521 ( 84.80)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J9 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 488.00 lb/ft 30KSP488/365 LIVE LOAD ..: 365.00 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No
Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)
Calculated deflection under service live load .... = 1.24 in (L/ 381)
Joist inertia ..... = 636.86 in^4
Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J9

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:25

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.85 in)

Left Reaction = 9.64/ -1.78 kips Right Reaction = 9.64/ -1.78 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.67 | -16.77 | | LL 2 X .216 | z 86 | 0.832 | 2'-11 1/2" | | |
| 1.2 | 11.49 | -15.77 | | do | z 91 | 0.833 | 2'-11 1/2" | | |
| 1.3 | 13.19 | -25.01 | | do | z 61 | 0.749 | 2'-0" | | |
| 1.4 | 13.19 | -25.01 | | do | z 61 | 0.679 | do | | |
| 1.5 | 14.69 | -33.13 | | do | z 61 | 0.900 | do | | |
| 1.6 | 14.69 | -33.13 | | do | z 61 | 0.900 | do | | |
| 1.7 | 15.59 | -38.00 | x | do | xx 39 | 0.896 | do | | |
| 1.8 | 15.59 | -38.00 | x | do | xx 39 | 0.896 | do | | |
| 1.9 | 15.89 | -39.62 | x | LL 2 X .216 | xx 39 | 0.934 | 2'-0" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .188 | z 137 | 0.393 | 4'-8" | | |
| 2.2 | 19.73 | -3.64 | | do | z 99 | 0.588 | 3'-3 1/8" | | |
| 2.3 | 29.47 | -5.44 | | do | z 122 | 0.717 | 4'-0" | | |
| 2.4 | 35.97 | -6.63 | | do | z 122 | 0.836 | do | | |
| 2.5 | 39.22 | -7.23 | | LL 2 X .188 | z 122 | 0.912 | 4'-0" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 19.01 | -3.51 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.704 | 5'-1 3/4" | .250 - 2 1/2" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 8.25 | -1.52 | | U 1 x 1 x 0.118 | z 124 | 0.931 | 3'-2 3/8" | .118 - 2 3/8" | |
| 4.2 | 5.71 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.841 | do | .091 - 2 1/8" | |
| 4.3 | 3.17 | -0.59 | | do | z 128 | 0.467 | do | .091 - 1 1/2" | |
| 4.4 | 3.14 | -0.12 | | U 1 x 1 x 0.090 | z 128 | 0.461 | 3'-2 3/8" | .091 - 1 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.57 | -8.53 | d | U 1 3/8 x 0.157 | z 72 | 0.712 | 2'-9 5/8" | .158 - 1 3/4" | |
| 5.2 | 1.29 | -6.98 | d | U 1 3/8 x 0.157 | z 83 | 0.652 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.82 | -4.44 | d | U 1 3/8 x 0.118 | z 85 | 0.758 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -3.14 | d | U 1 3/8 x 0.118 | z 85 | 0.535 | 3'-2 3/8" | .118 - 1 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.32 | -1.81 | | U 1 x 1 x 0.090 | z 120 | 0.772 | 3'-0 1/4" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.11 | | do | z 97 | 0.319 | 2'-6" | do | |
| 7.3 | 0.18 | -1.15 | | do | z 97 | 0.332 | do | do | |
| 7.4 | 0.18 | -1.18 | | do | z 97 | 0.339 | do | do | |
| 7.5 | 0.18 | -1.19 | | U 1 x 1 x 0.090 | z 97 | 0.342 | 2'-6" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging
@ Top Chord: 14'-11" ==> 2 Row(s) Minimum
@ Bottom Chord: 24'-6 3/4" ==> 4 Row(s) Minimum

Laterals supports
Deck (36")
Acc. to the code

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 13'-3 3/8" | 4'-8" |
| | 26'-6 7/8" | 13'-3 3/8" |
| | | 26'-6 7/8" |
| | | 35'-2 1/4" |

Mark: J9

canamsteel Corporation

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:25

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v3.6 11/29/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

Value of the forces reduced by 25% when there are some wind loads

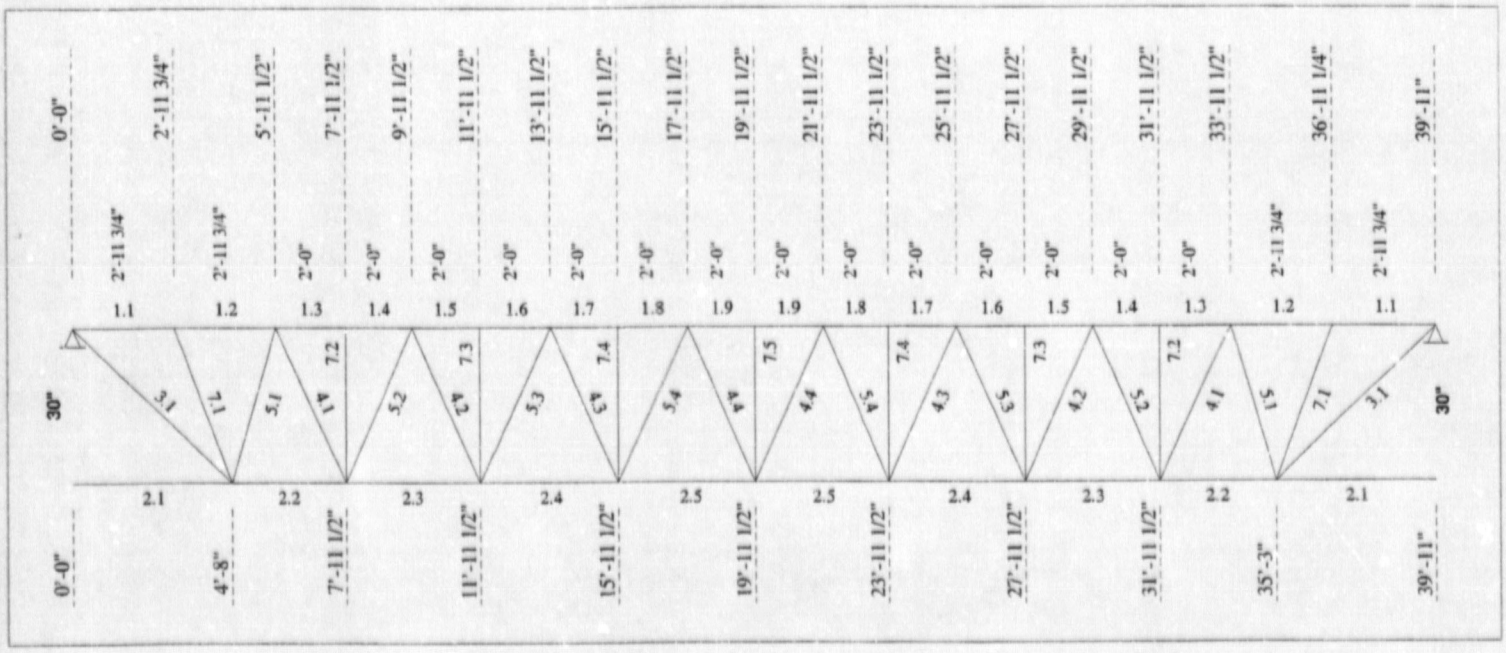
Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

507 ( 82.41) / 547 ( 88.32)

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J10 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 438.92 lb/ft 30K10 LIVE LOAD ..: 316.50 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No
Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)
Calculated deflection under service live load .... = 1.27 in (L/ 374)
Joist inertia ..... = 545.35 in^4
Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J10

Project: COLUMBIA DISTRIBUTION A04061

12/01/00 19:47:26

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.87 in)

Left Reaction = 8.69/ -1.78 kips Right Reaction = 8.69/ -1.78 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.67 | -15.09 | | LL 2 X .188 | z 86 | 0.857 | 2'-11 3/4" | | |
| 1.2 | 11.48 | -14.20 | | do | z 91 | 0.857 | 2'-11 3/4" | | |
| 1.3 | 13.20 | -22.59 | | do | z 61 | 0.772 | 2'-0" | | |
| 1.4 | 13.20 | -22.59 | | do | z 61 | 0.699 | do | | |
| 1.5 | 14.70 | -29.89 | | do | z 61 | 0.924 | do | | |
| 1.6 | 14.70 | -29.89 | | do | z 61 | 0.924 | do | | |
| 1.7 | 15.60 | -34.26 | x | do | xx 39 | 0.920 | do | | |
| 1.8 | 15.60 | -34.26 | x | do | xx 39 | 0.920 | do | | |
| 1.9 | 15.90 | -35.72 | x | LL 2 X .188 | xx 39 | 0.959 | 2'-0" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .156 | z 137 | 0.425 | 4'-8" | | |
| 2.2 | 17.85 | -3.66 | | do | z 100 | 0.634 | 3'-3 1/2" | | |
| 2.3 | 26.60 | -5.45 | | do | z 121 | 0.773 | 4'-0" | | |
| 2.4 | 32.44 | -6.65 | | do | z 121 | 0.902 | do | | |
| 2.5 | 35.36 | -7.25 | | LL 2 X .156 | z 121 | 0.983 | 4'-0" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 17.11 | -3.51 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.655 | 5'-1 3/4" | .250 - 2 3/8" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.42 | -1.52 | | U 1 x 1 x 0.118 | z 124 | 0.838 | 3'-2 3/8" | .118 - 2 1/8" | |
| 4.2 | 5.14 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.756 | do | .091 - 1 7/8" | |
| 4.3 | 2.85 | -0.59 | | do | z 128 | 0.420 | do | .091 - 1 1/2" | |
| 4.4 | 2.82 | -0.12 | | U 1 x 1 x 0.090 | z 128 | 0.416 | 3'-2 3/8" | .091 - 1 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.58 | -7.72 | d | U 1 3/8 x 0.157 | z 72 | 0.647 | 2'-9 3/4" | .158 - 1 5/8" | |
| 5.2 | 1.29 | -6.28 | d | U 1 3/8 x 0.157 | z 83 | 0.587 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.82 | -3.99 | d | U 1 3/8 x 0.118 | z 85 | 0.682 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -2.82 | | U 1 x 1 x 0.118 | z 124 | 0.979 | 3'-2 3/8" | .118 - 1 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.32 | -1.63 | | U 1 x 1 x 0.090 | z 120 | 0.692 | 3'-0 1/4" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.00 | | U 1 x 5/8 x 0.090 | z 159 | 1.007 | 2'-6" | do | |
| 7.3 | 0.18 | -1.04 | | U 1 x 1 x 0.090 | z 97 | 0.299 | do | do | |
| 7.4 | 0.18 | -1.06 | | do | z 97 | 0.306 | do | do | |
| 7.5 | 0.18 | -1.07 | | U 1 x 1 x 0.090 | z 97 | 0.308 | 2'-6" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging
@ Top Chord: 14'-10" ==> 3 Row(s) Minimum
@ Bottom Chord: 24'-4 7/8" ==> 5 Row(s) Minimum

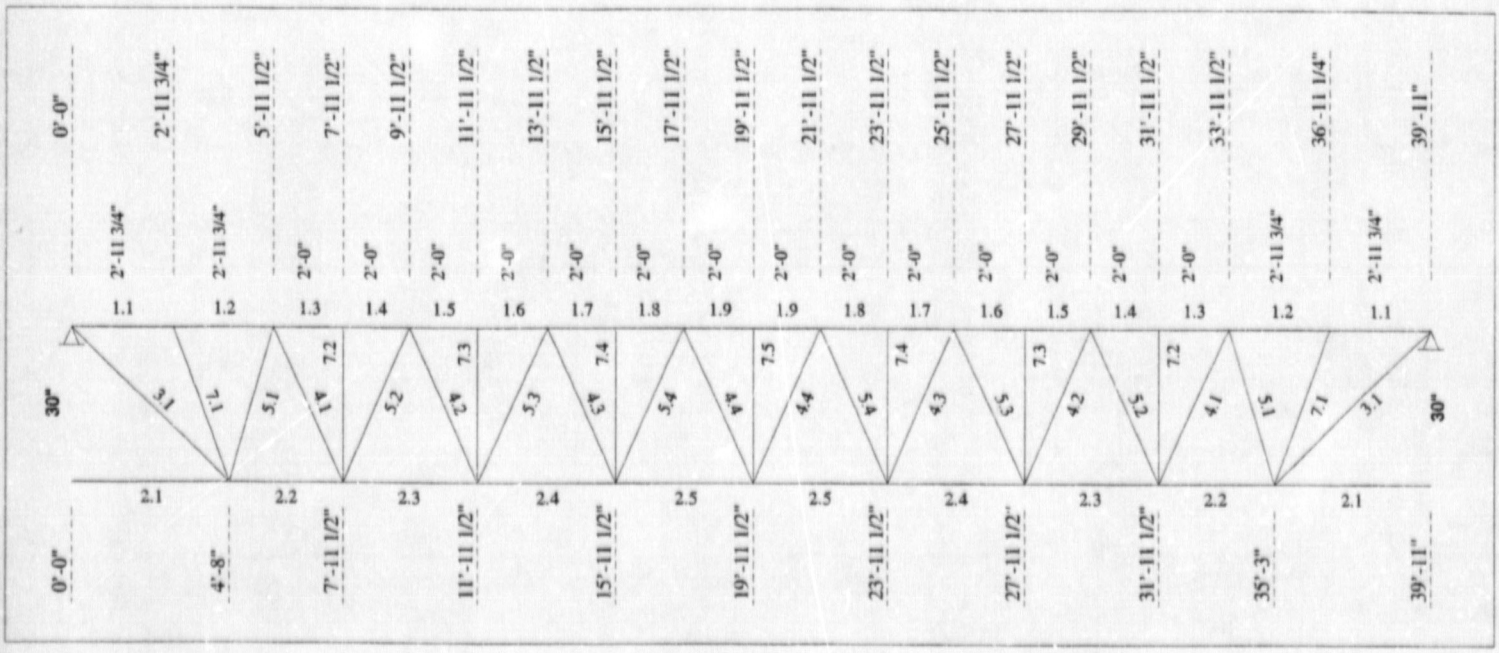
Laterals supports
Deck (36")
Acc. to the code

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 9'-11 3/4" | 4'-8" |
| | 19'-11 1/2" | 9'-11 3/4" |
| | 29'-11 1/4" | 19'-11 1/2" |
| | | 29'-11 1/4" |
| | | 35'-3" |

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J11 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 468.00 lb/ft 30KSP468/345 LIVE LOAD ..: 345.00 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)

Calculated deflection under service live load .... = 1.28 in (L/ 372)

Joist inertia ..... = 591.32 in^4

Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J11

Project: COLUMBIA DISTRIBUTION A04061

12/05/00 16:50:36

## FORCES IN MEMBERS [kips]

(THE SHOWN FORCES ARE REALS)
(Fy = 50 Ksi U/N) (Eff. depth = 28.86 in)

Left Reaction = 9.26/ -1.78 kips Right Reaction = 9.26/ -1.78 kips

| No | Tension | Compres. | | REQUIRED MATERIAL x = tied at mid-length | Slend. | Util. | Length | REQUIRED WELD Weld-Ea.Side | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **Top Chord** | | | | | | | | | |
| 1.1 | 11.67 | -16.10 | | LL 2 X .216 | z 86 | 0.803 | 2'-11 3/4" | | |
| 1.2 | 11.49 | -15.15 | | do | z 91 | 0.803 | 2'-11 3/4" | | |
| 1.3 | 13.21 | -24.10 | | do | z 61 | 0.723 | 2'-0" | | |
| 1.4 | 13.21 | -24.10 | | do | z 61 | 0.655 | do | | |
| 1.5 | 14.71 | -31.88 | | do | z 61 | 0.866 | do | | |
| 1.6 | 14.71 | -31.88 | | do | z 61 | 0.866 | do | | |
| 1.7 | 15.60 | -36.55 | | do | z 61 | 0.993 | do | | |
| 1.8 | 15.60 | -36.55 | | do | z 61 | 0.993 | do | | |
| 1.9 | 15.90 | -38.11 | x | LL 2 X .216 | xx 39 | 0.898 | 2'-0" | | |
| **Bottom Chord** | | | | | | | | | |
| 2.1 | 0.00 | 0.00 | | LL 2 X .163 | z 137 | 0.435 | 4'-8" | | |
| 2.2 | 19.04 | -3.66 | | do | z 100 | 0.648 | 3'-3 1/2" | | |
| 2.3 | 28.38 | -5.46 | | do | z 121 | 0.790 | 4'-0" | | |
| 2.4 | 34.60 | -6.65 | | do | z 121 | 0.922 | do | | |
| 2.5 | 37.72 | -7.25 | | LL 2 X .163 | z 121 | 1.005 | 4'-0" | | |
| **End Diagonal** | | | | | | | | | |
| 3.1 | 18.25 | -3.51 | | SQUARE BAR 1" (50 ksi) | z 209 | 0.676 | 5'-1 3/4" | .250 - 2 1/2" | |
| **Diagonal Towards End** | | | | | | | | | |
| 4.1 | 7.91 | -1.52 | | U 1 x 1 x 0.118 | z 124 | 0.893 | 3'-2 3/8" | .118 - 2 1/4" | |
| 4.2 | 5.48 | -1.05 | | U 1 x 1 x 0.090 | z 128 | 0.806 | do | .091 - 2" | |
| 4.3 | 3.04 | -0.59 | | do | z 128 | 0.448 | do | .091 - 1 1/2" | |
| 4.4 | 3.01 | -0.12 | | U 1 x 1 x 0.090 | z 128 | 0.443 | 3'-2 3/8" | .091 - 1 1/2" | |
| **Diagonal Towards Center** | | | | | | | | | |
| 5.1 | 1.58 | -8.23 | d | U 1 3/8 x 0.157 | z 72 | 0.690 | 2'-9 3/4" | .158 - 1 3/4" | |
| 5.2 | 1.29 | -6.69 | d | U 1 3/8 x 0.157 | z 83 | 0.626 | 3'-2 3/8" | .158 - 1 1/2" | |
| 5.3 | 0.82 | -4.26 | d | U 1 3/8 x 0.118 | z 85 | 0.727 | do | .118 - 1 1/2" | |
| 5.4 | 0.35 | -3.01 | d | U 1 3/8 x 0.118 | z 85 | 0.514 | 3'-2 3/8" | .118 - 1 1/2" | |
| **Secondary Web Member** | | | | | | | | | |
| 7.1 | 0.32 | -1.74 | | U 1 x 1 x 0.090 | z 120 | 0.737 | 3'-0 1/4" | .091 - 1 1/2" | |
| 7.2 | 0.18 | -1.06 | | do | z 97 | 0.307 | 2'-6" | do | |
| 7.3 | 0.18 | -1.10 | | do | z 97 | 0.319 | do | do | |
| 7.4 | 0.18 | -1.13 | | do | z 97 | 0.326 | do | do | |
| 7.5 | 0.18 | -1.14 | | U 1 x 1 x 0.090 | z 97 | 0.328 | 2'-6" | .091 - 1 1/2" | |

## BRIDGING

Maximum spacing between rows of bridging — Laterals supports

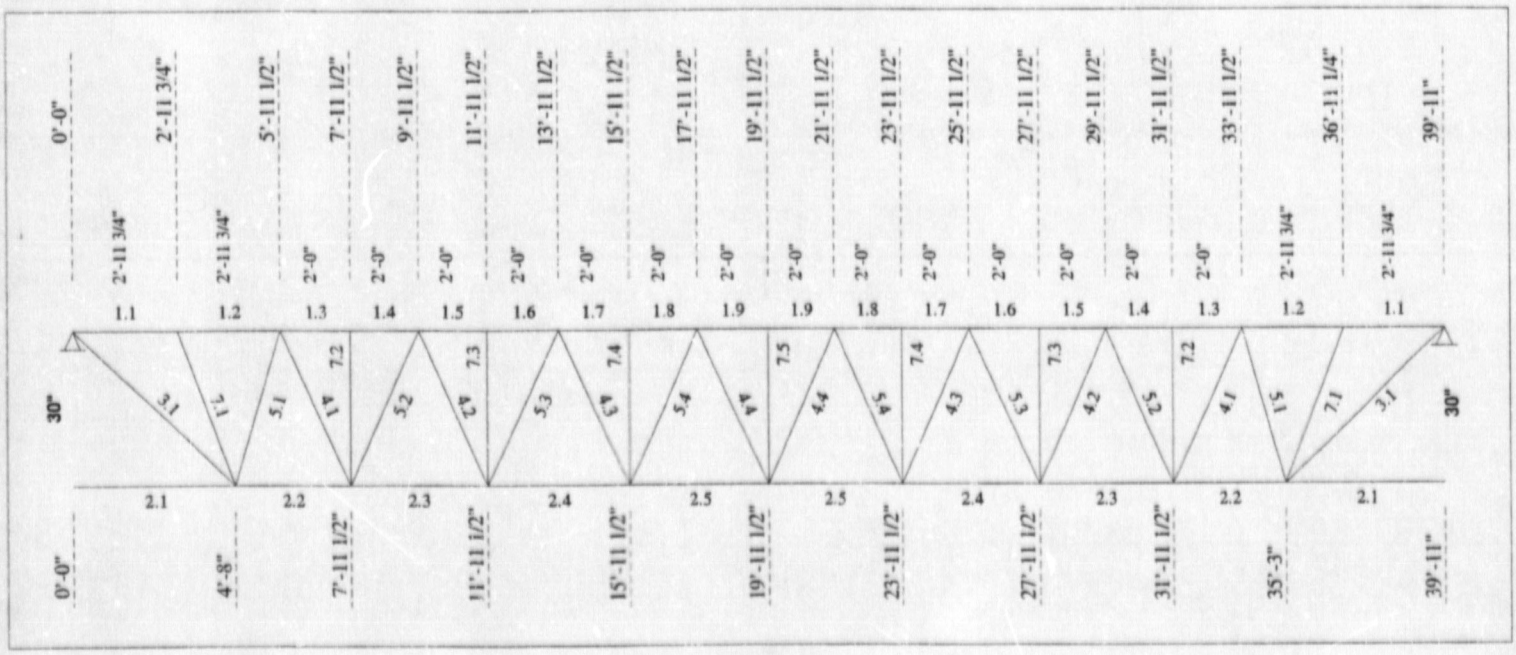
| | | | |
|---|---|---|---|
| @ Top Chord: | 14'-11" ==> | 2 Row(s) Minimum | Deck (36") |
| @ Bottom Chord: | 24'-5 1/4" ==> | 4 Row(s) Minimum | Acc. to the code |

| POSITION | @ Top Chord | @ Bottom Chord |
|---|---|---|
| | 13'-3 5/8" | 4'-8" |
| | 26'-7 3/8" | 13'-3 5/8" |
| | | 26'-7 3/8" |
| | | 35'-3" |

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J12 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 488.00 lb/ft 30KSP488/365 LIVE LOAD ..: 365.00 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No
Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

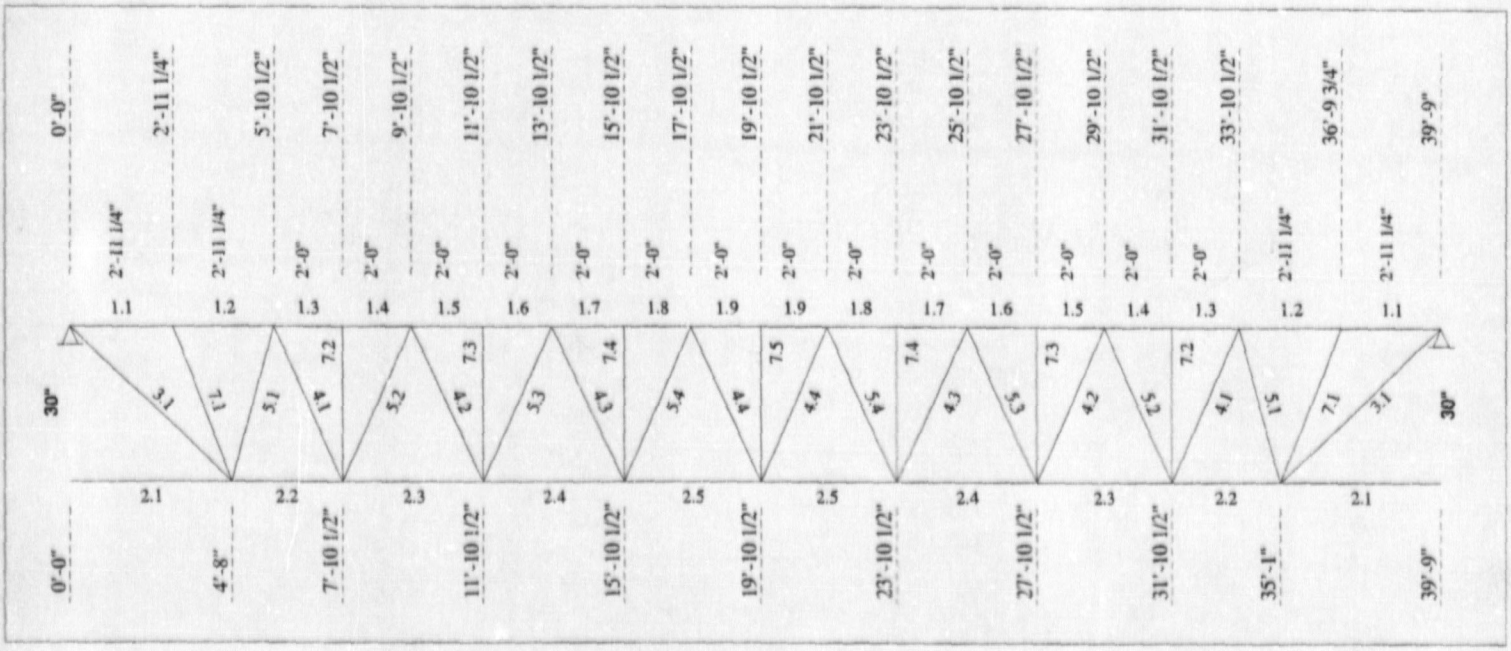
---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.32 in (L/ 360)
Calculated deflection under service live load .... = 1.25 in (L/ 379)
Joist inertia ..... = 636.86 in^4
Required camber ..... = 0.62 in

# Project: COLUMBIA DISTRIBUTION A04061

## JOIST CALCULATION ACCORDING TO SJI CODE

Mark.....: J13 (W-N MID SPAN, Symmetrical, Parallel, Free ends)




---------- **LOADING CONDITIONS** ----------

( THE SHOWN VALUES ARE REAL )

TOTAL LOAD ...: 440.75 lb/ft 30K10 LIVE LOAD ..: 319.50 lb/ft

---------- **END MOMENTS [ft-kip] & AXIAL LOADS [kips]** ----------

| | MOMENTS | | AXIAL LOADS <<< Top Chord >>> | | < Bottom Chord > | |
|---|---|---|---|---|---|---|
| | ---L--- | ---R--- | ---L--- | ---R--- | ---L--- | ---R--- |
| (Q) Wind or Seism (case 1)..: | 0.00 | 0.00 | -11.00 | 11.00 | 0.00 | 0.00 |
| (case 2)..: | 0.00 | 0.00 | 11.00 | -11.00 | 0.00 | 0.00 |
| (L) Live Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (D) Dead Load.....: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Weld Plate required Y/N.....: Yes Imposed Rows of Bridging Y/N.: No

Bearing Depth... [in]: at left.: 2 1/2" at right: 2 1/2"

---------- **UPLIFT** ----------

Net uplift uniform load : 120.00 lb/ft

---------- **DEFLECTION** ----------

Allowed deflection under live load ..... = 1.31 in (L/ 360)

Calculated deflection under service live load .... = 1.26 in (L/ 375)

Joist inertia ..... = 545.35 in^4

Required camber ..... = 0.62 in

canamsteel Corporation

Mark: J13

Project: COLUMBIA DISTRIBUTION A04061

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v3.6 11/29/00

Fabrication code unless noted

-LL = 2 angles short legs back to back, BL = 2 angles welded in box, BR = Round bar

-U = 1 U profile, UU = 2 U profiles one inside the other, -CL = Crimped angle

Value of the forces reduced by 25% when there are some wind loads

Projets no.: A04061 Designer: Philippe Theriault Shop: Canam Sunnyside [Production]

448 ( 75.98) / 481 ( 80.98)