NUCOR BUILDING SYSTEMS
A DIVISION OF NUCOR CORPORATION

PROJECT NUMBER: W13P0023A
PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PROJECT LOCATION: PORT COLBORNE, ON COUNTY: ONTARIO
CUSTOMER: BROUWER CONSTRUCTION (1981) LTD. ST.CATHARINES, ON

MBMA MEMBER | CSSBI | CWB CERTIFIED CSA W47.1 | IAS ACCREDITED AC472 | CWB CERTIFIED CSA A660

NOTES AND SPECIFICATIONS

BUILDING ERECTION NOTES

1) THE GENERAL CONTRACTOR AND/OR ERECTOR IS RESPONSIBLE TO SAFELY AND PROPERLY ERECT THE METAL BUILDING SYSTEM IN CONFORMANCE WITH THESE DRAWINGS, OSHA REQUIREMENTS, AND MBMA STANDARDS PERTAINING TO PROPER ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE CORRECT USE OF TEMPORARY GUYS AND BRACING WHERE NEEDED FOR SQUARING, PLUMBING, AND SECURING THE STRUCTURAL AND SECONDARY FRAMING. SECONDARY WALL FRAMING MEMBERS (GIRTS OR BAR JOISTS) ARE NOT DESIGNED TO FUNCTION AS A WORK PLATFORM OR PROVIDE SAFETY TIE OFF ATTACHMENT IN ACCORDANCE WITH OSHA REQUIREMENTS. SECONDARY ROOF FRAMING MEMBERS (PURLINS OR BAR JOISTS) ARE NOT DESIGNED TO PROVIDE SAFETY TIE OFF ATTACHMENT IN ACCORDANCE WITH OSHA REQUIREMENTS.

2) ALL HIGH STRENGTH BOLTS ARE TYPE ASTM A325 AND ARE TO BE INSTALLED TO THE "SNUG-TIGHT" CONDITION AS DEFINED BY THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS, 2004 EDITION, SECTION 8.1, UNLESS NOTED OTHERWISE. ALSO, NOTE THAT BOLTS IN STANDARD HOLES DO NOT REQUIRE WASHERS PER THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS, SECTION 6.

3) ALL A307 MACHINE BOLTS ARE TO BE BROUGHT TO A "SNUG TIGHT" CONDITION TO ENSURE THAT THE MATERIALS IN THE JOINT ARE BROUGHT INTO GOOD CONTACT WITH EACH OTHER.

4) WASHERS ARE REQUIRED AT ALL SLOTTED CONNECTIONS AS FOLLOWS:
-HOLE TO SLOT CONNECTION, ONE WASHER REQUIRED ON SLOTTED SIDE.
-SLOT TO SLOT CONNECTION, TWO WASHERS REQUIRED, ONE ON EACH SIDE OF THE CONNECTION. HOWEVER AT LAPPED ZEE MEMBERS, WHETHER PURLINS OR GIRTS, NO WASHERS ARE REQUIRED IN THE 8-BOLT LAPPED REGION.

5) THE METAL BUILDING SUPPLIER SHALL BE NOTIFIED PRIOR TO ANY FIELD MODIFICATIONS. MODIFICATIONS SHALL BE APPROVED BY THE METAL BUILDING SUPPLIER BEFORE WORK IS UNDERTAKEN.

6) ALL WELDING MUST BE PERFORMED BY CWB QUALIFIED WELDERS FOR THE WELDING PROCESSES AND POSITIONS INDICATED. ALL WORK MUST BE COMPLETED AND INSPECTED IN ACCORDANCE WITH THE APPLICABLE CSA STANDARDS. WELD ELECTRODES USED FOR THE SMAW (OR STICK) WELD PROCESS MUST BE 70 KSI STEEL AND LOW HYDROGEN CONTENT.

7) COMMON ABBREVIATIONS:

a) TYP UNO-TYPICAL UNLESS NOTED OTHERWISE	f) SIM.-SIMILAR
b) SLV-SHORT LEG VERTICAL	g) NIC-NOT IN CONTRACT
c) LLV-LONG LEG VERTICAL	h) SL-STEEL LINE
d) NS & FS-NEAR SIDE AND FAR SIDE	i) N/A-NOT APPLICABLE
e) O.A.L.-OVERALL LENGTH	j) MBS-METAL BUILDING SUPPLIER

8) CONSTRUCTION LOADS SHALL NOT BE PLACED ON ANY STRUCTURAL STEEL FRAMEWORK UNLESS SUCH FRAMEWORK IS SAFELY BOLTED, WELDED, OR OTHERWISE ADEQUATELY SECURED.

9) PURLINS AND GIRTS SHALL NOT BE USED AS AN ANCHORAGE POINT FOR A FALL ARREST SYSTEM UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE METAL BUILDING SUPPLIER.

10) PURLINS MAY ONLY BE USED AS A WALKING/WORKING SURFACE WHEN INSTALLING SAFETY SYSTEMS, AFTER ALL PERMANENT BRIDGING HAS BEEN INSTALLED AND FALL PROTECTION IS PROVIDED.

11) CONSTRUCTION LOADS MAY BE PLACED ONLY WITHIN A ZONE THAT IS WITHIN 8 FEET OF THE CENTER-LINE OF THE PRIMARY SUPPORT MEMBER. CFR BUNDLES SHOULD BE PLACED DIRECTLY OVER THE RIGID FRAMES.

12) ALL LIFTING DEVICES MUST MEET OSHA OR MSHA STANDARDS AND IN NO CASE IS IT ACCEPTABLE TO USE STRUCTURAL MEMBERS SUPPLIED BY THE MBS AS A SPREADER BAR OR LIFTING DEVICE.

GENERAL DESIGN NOTES, ERECTION NOTES & MATERIAL SPECIFICATIONS

1) ALL STRUCTURAL STEEL SECTIONS AND WELDED PLATE MEMBERS ARE DESIGNED IN ACCORDANCE WITH CSA S16-01-LIMIT STATES DESIGN OF STEEL STRUCTURES AND CSA W59-03-WELDED STEEL CONSTRUCTION (METAL ARC WELDING).
2) ALL COLD-FORMED STEEL MEMBERS AND STRUCTURES ARE DESIGNED IN ACCORDANCE WITH CSA S136-07 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL MEMBERS.
3) ALL WELDING OF STRUCTURAL AND COLD-FORMED STEEL IS BASED ON CSA W59-03-WELDED STEEL CONSTRUCTION (METAL ARC WELDING) AND CSA W47.1-03-CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL.
4) NUCOR BUILDING SYSTEMS-IN, IS CERTIFIED TO WELD STRUCTURAL AND COLD-FORMED STEEL PER CSA W47.1-03-CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL.
5) NUCOR BUILDING SYSTEMS-IN, IS CERTIFIED TO MANUFACTURE STEEL BUILDING SYSTEMS PER CSA A660-CERTIFICATION OF MANUFACTURERS OF STEEL BUILDING SYSTEMS.
6) THE BUILDING ERECTOR SHOULD HOLD TO THE TOLERANCES SPECIFIED BY CSA S16-01-LIMIT STATES DESIGN OF STEEL STRUCTURES, CLAUSE 29.7 ON P. 112 DURING THE ERECTION OF THIS STRUCTURE.
7) MATERIAL SPECIFICATIONS:

PLATE AND FLANGE MATERIAL:	
5"-12" WIDE & THRU 1" THICK	A529, GRADE 55
OTHERS	A36
BUILT-UP STRUCTURAL WEB MATERIAL	A1011 SS (OR HSLAS CL1) GR 55
HOT-ROLLED STRUCTURAL	A572 OR A992 GRADE 50
STRUCTURAL TUBE	A500 GRADE B (46 KSI)
STRUCTURAL PIPE	A500 GRADE B (42 KSI)
COLD-FORMED STRUCTURAL	A1011 OR A1039 SS (OR HSLAS CL1) GR 55 MOD 57
RPB ROOF PANELS	A792 GRADE 80
STANDING SEAM ROOF PANELS	A792 GRADE 50, CLASS 1
R-PANEL AND A-PANEL SIDING	A653 GRADE 80, CLASS 1 OR A792 GRADE 80, CLASS 1
ROD BRACING	A529 GRADE 50
CABLE BRACING	A475 COATING CLASS A, GRADE EHS, 7-WIRE
WELDS	CSA W59 & W47.1 LATEST EDITION
HIGH-STRENGTH BOLTS	A325 TYPE 1 HEAVY HEX OR A490 TYPE 1 HEAVY HEX
MACHINE BOLTS	A-307 GRADE A HEX

TRADEMARK: 2011, NUCOR BUILDING SYSTEMS

PRIMARY AND SECONDARY STEEL PRIMER COLOR: GRAY
ROOF SHEETING, TYPE: CFR 24 GAGE, FINISH: GALVALUME
ROOF PANEL CLIP TYPE: ☐N/A ☒TALL ☐SHORT ☐UTILITY ☒FIXED ☐FLOATING
THERMAL BLOCKS: ☒YES ☐NO EPS FOAM SPACER: ☐YES ☒NO
SEAMING METHOD (FOR CFR ONLY): ☒"NUCOR ROLL LOCK"™ ☐"NUCOR VISE LOCK"™ ☐"NUCOR VISE LOCK 360"™ (REFER TO THE DETAIL PAGES FOR ADDITIONAL SEAMING INFORMATION) (CLASSIC AND CFR GUTTER HANGERS ARE PROVIDED IN GALVANIZED COLOR ONLY, VR16 GUTTER HANGERS ARE AVAILABLE COLORED.)
COMPOSITE ROOF DECK, TYPE: N/A GAGE, FINISH:
ROOF DECK ONLY, TYPE: N/A GAGE, FINISH:
ROOF LINE TRIM, PAINTED: POLAR WHITE
EXTERIOR WALL SHEETING, TYPE: REVERSE CLASSIC 26 GAGE, FINISH: AZTEC BLUE
EXTERIOR WALL CORNER TRIM FINISH: AZTEC BLUE
EXTERIOR BASE TRIM, PAINTED: AZTEC BLUE
FRAMED OPENING TRIM, PAINTED: AZTEC BLUE
FRAMED OPENING COVER TRIM, PAINTED: AZTEC BLUE
WALL FRAMED OPENING, SIZES: (4) 16'x18' (2) 18'x18' (1) 14'x14'
INTERIOR WALL SHEETING, TYPE: CLASSIC 26 GAGE, FINISH: POLAR WHITE
INTERIOR CEILING LINER, TYPE: N/A GAGE, FINISH:
INTERIOR WALL TRIM, PAINTED: POLAR WHITE

YES	NO	
☒	☐	DOWNSPOUTS PAINTED: POLAR WHITE GUTTERS PAINTED: POLAR WHITE
☒	☐	WALKDOORS, QUANTITY: (3) 3070 PAINTED: WHITE
☐	☒	WINDOWS: PAINTED:
☒	☐	INSULATION (NOT BY NBS), ROOF: 6" BATT WALLS: 4" BATT
☒	☐	CRANES (SEE CRANE PLAN FOR ADDITIONAL CRANE INFORMATION)
☐	☒	MEZZANINE (SEE MEZZANINE PLAN FOR ADDITIONAL MEZZANINE INFO)
☒	☐	WALL TRANSLUCENT PANELS, LENGTH: 5'-4" QUANTITY: 86
☐	☒	ROOF TRANSLUCENT PANELS, LENGTH: QUANTITY:
		INSULATED PANELS YES ☐ NO ☐
☐	☒	PIPE JACKS, SIZE: QUANTITY:
☐	☒	ROOF FRAMED OPENINGS, SEE ROOF FRAMING PLAN FOR SIZES
☐	☒	ROOF CURBS (BY NBS), SEE ROOF FRAMING PLAN FOR SIZES
☐	☒	RIDGE VENTS, 10'-0" LONG X ☐12" ☐9" THROAT. QUANTITY:
		SINGLE UNITS ☐ CONTINUOUS UNITS ☐

1 – CORRECTED DIMENSIONS

RECEIVED APR 10 2013 BUILDING DEPT.

Contact the following services before excavation:
BELL, HYDRO, CABLE, GAS & CITY WORKS

YES	NO	
☐	☒	FASCIA, PROJECTION: TOP OF FASCIA HEIGHT:
		FACE PANEL, TYPE: GAGE, FINISH:
		BACK PANEL, TYPE: GAGE, FINISH:
		CAP TRIM PAINTED: BASE TRIM PAINTED:
		☐ CLOSED SYSTEM, CLEAR UNDER SOFFIT TRIM:
		SOFFIT PANEL, TYPE: GAGE, FINISH:
		SOFFIT TRIM AT BUILDING LINE PAINTED:
		☐ OPEN SYSTEM, (NO SOFFIT PANEL PROVIDED)
		CLEAR UNDER FASCIA:
☐	☒	PARAPET SYSTEM
		☐ STRUCTURAL PARAPET ☐ NON-STRUCTURAL PARAPET ☐ NOT BY MBS
		TOP OF PARAPET HEIGHT:
		BACKER PANEL, TYPE: GAGE, FINISH:
☐	☒	CANOPY (EXPOSED BEAM), PROJECTION:
		AT EAVE LINE ☐ BELOW EAVE ☐
		ROOF PANEL, TYPE: GAGE, FINISH:
		SOFFIT PANEL, TYPE: GAGE, FINISH:
		SOFFIT TRIM AT BUILDING LINE PAINTED:
		CLEAR UNDER CANOPY BEAM:
☐	☒	BOXED-OUT CANOPY, PROJECTION: ☐ AT EAVE LINE ☐ BELOW EAVE
		ROOF PANEL, TYPE: GAGE, FINISH:
		FACE PANEL, TYPE: GAGE, FINISH:
		SOFFIT PANEL, TYPE: GAGE, FINISH:
		SOFFIT TRIM AT BLDG LINE PAINTED:
		CLEAR UNDER SOFFIT: BASE TRIM PAINTED:
☐	☒	EAVE EXTENSION (CONCEALED BEAM), PROJECTION:
		SOFFIT PANEL, TYPE: GAGE, FINISH:
		SOFFIT TRIM AT BUILDING LINE PAINTED:
☐	☒	RAKE EXTENSION, PROJECTION:
		SOFFIT PANEL, TYPE: GAGE, FINISH:
		SOFFIT TRIM AT BUILDING LINE PAINTED:
☐	☒	PARTITION WALL SHEETING
		PANEL TYPE: GAGE, FINISH:
		PARTITION WALL TRIM COLOR:

ALL ELECTRICAL WIRING MUST BE INSPECTED BY THE ELECTRICAL SAFETY AUTHORITY. SEPARATE INSPECTION APPLICATIONS (PERMITS) MUST BE FILED.

FOR MORE INFORMATION PLEASE CALL:
ELECTRICAL SAFETY AUTHORITY
CUSTOMER SERVICE CENTRE
PHONE 1-877-372-7233 | Electrical Safety Authority | FAX 1-800-667-4278
www.esasafe.com

BUILDING LOADS

DESIGN CODE: OBC 2006 BUILDING OCCUPANCY: II – Normal
ROOF LIVE LOAD: 1.00 KPa // 20.89 PSF
REDUCIBLE PER CODE
ROOF DEAD: 0.144 KPa // 3.00 PSF
PRI. COL: 0.144 KPa // 3.00 PSF
SEC. COL: 0.144 KPa // 3.00 PSF
GROUND SNOW LOAD: 2.30 KPa // 48.04 PSF
RAIN LOAD: 0.4 KPa // 8.35 PSF
SNOW EXP. FACTOR, Cw: 1.00 SNOW Cs: 1.00
SNOW IMPORTANCE FACTOR, Is: 1.00
ROOF SNOW: 2.240 KPa // 46.78 PSF
WIND LOAD 1/50: 0.460 KPa // 9.61 PSF
EXPOSURE: Open
WIND ENCLOSURE: Category 2
WIND IMPORTANCE FACTOR, Iw: 1.00
UL 90 ☐YES ☒NO
Classic Roof-Const. No. 161; Classic Roof w/ Translucent Panel-Const. No. 167
CFR Roof-Const. No. 552; CFR Roof w/ Translucent Panel-Const. No. 590;
Composite CFR Roof-Const. No. 552A; VR16 II Roof-Const. No. 332
SEISMIC INFORMATION SA (0.2): 0.380 SA (0.5): 0.190
SA (1.0): 0.068 SA (2.0): 0.020
FA: 1.25 FV: 1.40
Seismic Imp. Factor: 1.00 Site Class: D
Transverse Response Modification RD: 1.5
Longitudinal Response Modification RD: 1.5
Overstrength Factor RO: 1.3

NOTES:
1) COLLATERAL DEAD LOADS, UNLESS OTHERWISE NOTED, ARE ASSUMED TO BE UNIFORMLY DISTRIBUTED. WHEN SUSPENDED SPRINKLER SYSTEMS, LIGHTING, HVAC EQUIPMENT, CEILINGS, ETC., ARE SUSPENDED FROM ROOF MEMBERS, CONSULT THE M.B.S. IF THESE CONCENTRATED LOADS EXCEED 200 POUNDS, OR IF INDIVIDUAL MEMBERS ARE LOADED SIGNIFICANTLY MORE THAN OTHERS.

2) THE DESIGN OF STRUCTURAL MEMBERS SUPPORTING GRAVITY LOADS IS CONTROLLED BY THE MORE CRITICAL EFFECT OF ROOF LIVE LOAD OR ROOF SNOW LOAD, AS DETERMINED BY THE APPLICABLE CODE.

Base Shear: 177 Kn // 40 Kips

ERECTION MANUALS REQUIRED
(ERECTION MANUALS ARE SHIPPED WITH THE BUILDING IN A WAREHOUSE PACKING CRATE)

☒ CFR ROOF	☒ (H9600) OR ☐ (H8250)	☐ SINGLE CURB (H9850)
☐ CLASSIC ROOF	☐ (H9420) OR ☐ (H8201)	☐ DOUBLE CURB (H9800)
☒ WALL SHEETING	☒ (H9430) OR ☐ (H8300)	☐ VR16 II (H9925)

☐ JOIST BRIDGING PACKET (SENT SEPARATELY BY JOIST MANUFACTURER)

DRAWING INDEX

COVERSHEET C1, C2 A/BOLT DWGS F1, F2
COLUMN BASE REACTIONS (SEPARATE 8 1/2" X 11" SUBMITTAL)
STRUCTURAL/SHEETING DRAWINGS E1, E2, E3, E4, E5, E6, E7, E8, E9
CP-1
DETAILS D1, D2, D3, D4, D5

ISSUE	DWN	CHK	ENG	P.E.	DATE
CONSTRUCTION ANCHOR BOLT	GLS	LAF			2-6-13
CRANE CONFIRMATION	GLS	LAF			2-6-13
REVISED ANCHOR BOLT △1	BHW				2-11-13
PERMITS	BHW		ATH		2-19-13

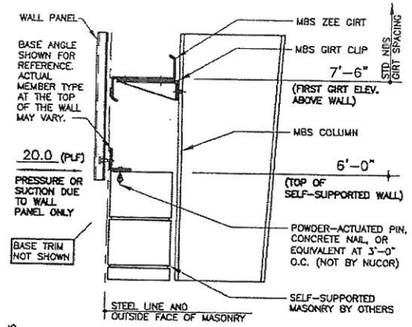
NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY
WATERLOO, IN 46793
PHONE: (260) 837-7891
FAX: (260) 837-7384

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, ON
CUSTOMER: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHARINES, ON

JOB NUMBER: W13P0023A
SHEET NO: C1 of 2

LICENSED PROFESSIONAL ENGINEER M. D. OAKES 100177581 2/19/13 PROVINCE OF ONTARIO

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DYNOTEOS

MBS WALL PANEL LOADS
SELF-SUPPORTED WALL BY OTHERS

REACTIONS ARE PROVIDED UNFACTORED AND BY LOAD CASE. THE FOUNDATION ENGINEER WILL HAVE TO COME UP WITH MAXIMUM FACTORED REACTIONS PER NBCC 2005-C.L.4.1.3.2.(2) FOR THE FOUNDATION DESIGN USING THE LOAD CASES GIVEN. WIND LOAD CASES ARE GIVEN FOR EACH PRIMARY WIND DIRECTION, AND THE CASE WHICH PRODUCES THE LARGEST REACTION AT A PARTICULAR COLUMN SHOULD BE USED FOR DESIGN. BRACING REACTIONS ARE TO BE COMBINED WITH THE APPROPRIATE WIND AND SEISMIC FRAME REACTIONS WHERE APPLICABLE. FORCES IN FOUNDATIONS WILL BE IN OPPOSITE DIRECTION OF THE REACTIONS SHOWN HERE.

THE FRAME AT LINE 6 IS DESIGNED FOR A FULL WIDTH, FUTURE BAY EXPANSION OF 21'-0" FROM THE CENTERLINE OF THAT FRAME TO THE CENTERLINE OF THE FUTURE FRAME. DUE TO THE UNLIMITED AMOUNT OF ENDWALL EXPANSION THAT THIS STRUCTURE COULD EXPERIENCE, THE APPLIED SNOW DRIFT AND SEISMIC DESIGN LOADINGS HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE ABOVE REFERENCED BUILDING CODE, CONSIDERING ONLY THE CURRENT BUILDING LENGTH, PLUS ONE ADDITIONAL BAY (TOTAL LENGTH = 121'-0"). ANY ADDITIONAL BUILDING EXPANSION BEYOND THIS LENGTH WILL REQUIRE AN ENGINEERING INVESTIGATION AND POSSIBLE BUILDING REINFORCEMENT.

■ THIS BUILDING SYSTEM DESIGN IS BASED ON UNIFORMLY APPLYING THE CONTRACT-SPECIFIED LIVE LOAD AND ROOF SNOW LOAD. IN ADDITION, THE DESIGN IS BASED ON APPLYING A CODE-DEFINED LIVE LOAD (INCLUDING APPLICABLE REDUCTIONS) AND A CODE-DEFINED SNOW LOAD (BASED ON CONTRACT-SPECIFIED GROUND SNOW) FOR ALL PARTIAL LOADING AND UNBALANCED SNOW LOAD CONDITIONS.

THE RIGID FRAME CONNECTIONS IN THIS PROJECT MUST BE TIGHTENED TO THEIR FULLY-PRETENSIONED STATE USING ANY OF THE ACCEPTABLE METHODS OUTLINED IN THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, 2004 EDITION. THE SCOPE OF THIS PROJECT PRECLUDES THE USAGE OF SNUG-TIGHT BOLTED CONNECTIONS AND ARE THUS NOT PERMITTED IN THIS CASE.

NUCOR BUILDING SYSTEMS (NBS) DOES NOT MANUFACTURE, SUPPLY OR RECOMMEND THE USE OF SNOW GUARDS OR OTHER DEVICES INTENDED TO HOLD SNOW AND/OR ICE ACCUMULATIONS ON THE ROOF SYSTEM. IF SNOW GUARDS OR OTHER DEVICES ARE TO BE USED ON THIS PROJECT THEY MUST BE INSTALLED UNDER THE GUIDANCE OF THE ENGINEER OF RECORD (NOT NBS) SO AS TO NOT EXCEED THE DESIGN ROOF SNOW LOAD ON THIS PROJECT.

ISSUE	DWN	CHK	ENG	P.E.	DATE
CONSTRUCTION ANCHOR BOLT	GLS	LAF			2-6-13
CRANE CONFIRMATION	GLS	LAF			2-6-13
REVISED ANCHOR BOLT ⚠1	BHW		AFH		2-11-13
PERMITS	BHW		AFH		2-19-13

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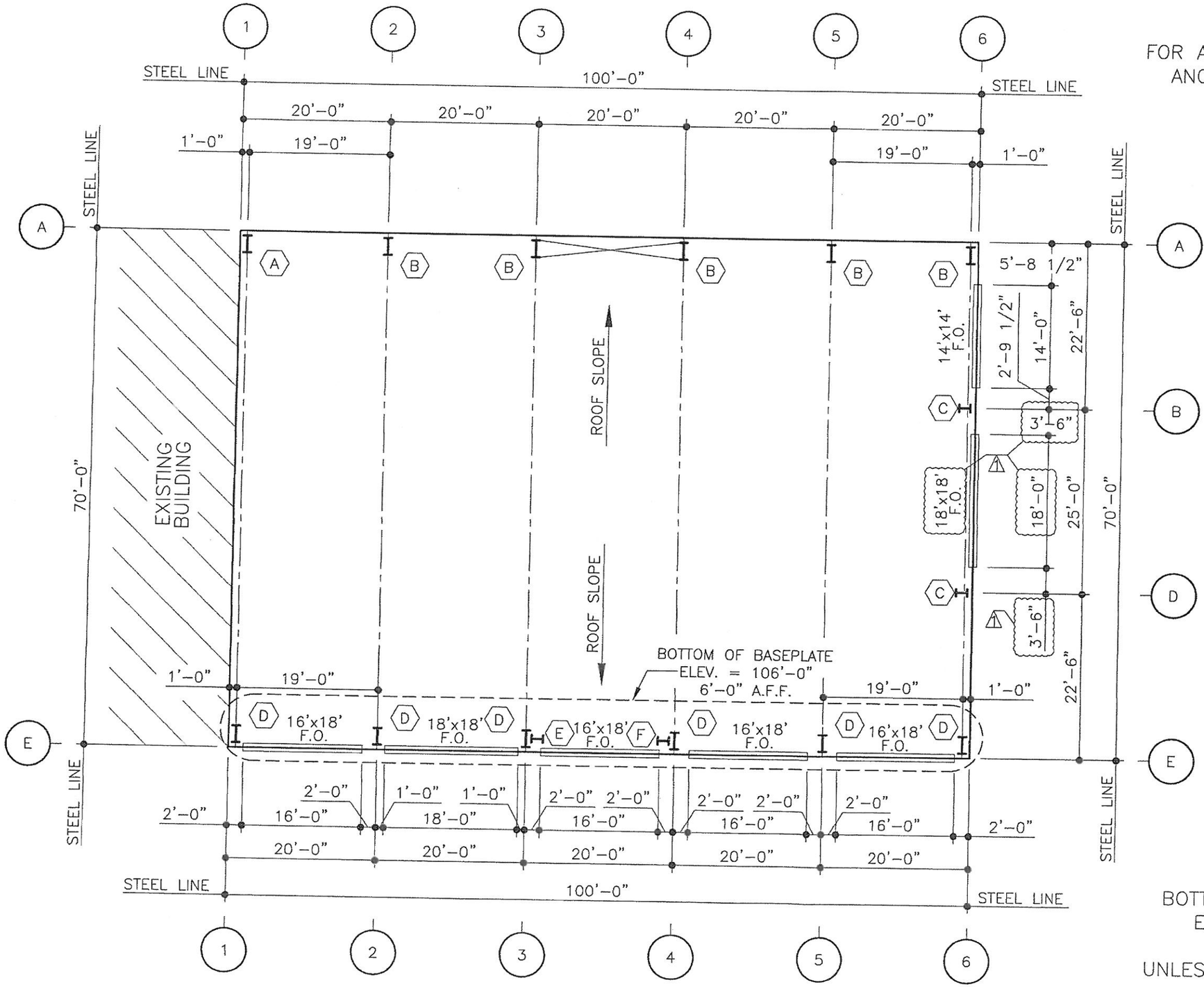
JOB NUMBER: W13P0023A

SHEET NO: C2 of 2

LICENSED PROFESSIONAL ENGINEER
M. D. OAKES
100177581
2/19/13
PROVINCE OF ONTARIO

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NOTE:
FOR ANCHOR BOLT NOTES AND ANCHOR BOLT QUANTITIES, SEE SHEET F2.



THE ANCHOR BOLT SETTINGS SHOWN ON THESE DRAWINGS NOT ONLY INDICATE WHERE THE ANCHOR BOLTS ARE TO BE PLACED, BUT ALSO THE FOOTPRINT OF THE METAL BUILDING. IT IS ESSENTIAL THAT THESE BOLT PATTERNS BE FOLLOWED. IN THE EVENT THAT THESE SETTINGS DIFFER FROM THE ARCHITECTURAL FOUNDATION PLANS, THE METAL BUILDING MANUFACTURER MUST BE CONTACTED IMMEDIATELY, BEFORE CONCRETE IS PLACED.

BOTTOM OF BASEPLATE
ELEV. = 99'-6""
6" B.F.F.
UNLESS NOTED OTHERWISE

ISSUE	DWN	CHK	ENG	P.E.	DATE
CONSTRUCTION ANCHOR BOLT	GLS	LAF			2-6-13
CRANE CONFIRMATION	CLS	LAF			2-6-13
REVISED ANCHOR BOLT ⚠	BHW				2-11-13
PERMITS	BHW				2-19-13

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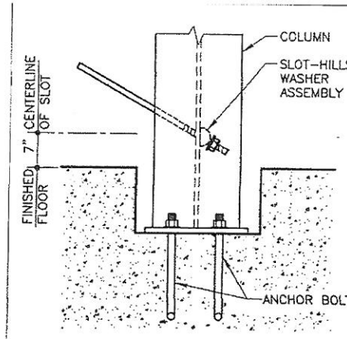
IMPORTANT NOTES ABOUT BASE PLATES BELOW FINISHED FLOOR ELEVATION

NUCOR BUILDING SYSTEMS ASSUMES THAT THE PRIMARY STRUCTURAL STEEL WILL BE ERECTED PRIOR TO THE FINISHED FLOOR BEING POURED.

THE FOLLOWING DETAILS SHOW THE STANDARD NUCOR BRACING LOCATIONS IN RELATION TO THE FINISHED FLOOR ELEVATION.

WHEN THE STANDARD WEB SLOT-HILLSIDE WASHER CONNECTION IS REQUIRED, (SECTION "A") THE SLOT WILL BE PLACED 7" ABOVE THE FINISHED FLOOR ELEVATION (NOMINAL DIMENSION).

WHEN A CLEVIS BRACING ATTACHMENT IS REQUIRED BY DESIGN (SECTION "B"), THE SHOP WELDED COLUMN STIFFENERS AT THIS CONNECTION WILL BE LOCATED AT THE FINISHED FLOOR ELEVATION. IT IS THE ERECTOR'S RESPONSIBILITY TO ALLOW ADEQUATE ROOM IN THE POURING OF THE SLAB FOR ACCESS TO THE ANCHOR BOLTS.



SECTION "A" AT SLOT-HILLSIDE WASHER CONNECTION

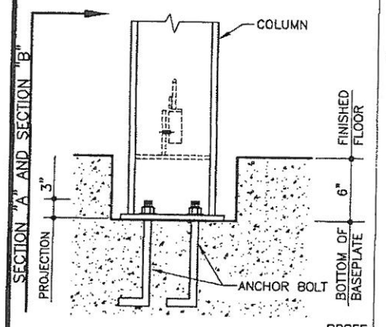
ANCHOR BOLT PLAN GENERAL NOTES

1. THE SPECIFIED ANCHOR ROD DIAMETER ASSUMES F1554 GRADE 36 UNLESS NOTED OTHERWISE. ANCHOR ROD MATERIAL OF EQUAL DIAMETER MEETING OR EXCEEDING THE STRENGTH REQUIREMENTS SET FORTH ON THESE DRAWINGS MAY BE UTILIZED AT THE DISCRETION OF THE FOUNDATION DESIGN ENGINEER. ANCHOR ROD EMBEDMENT LENGTH SHALL BE DETERMINED BY THE FOUNDATION DESIGN ENGINEER.
2. METAL BUILDING MANUFACTURER IS NOT RESPONSIBLE FOR PROJECT FOUNDATION DESIGN. THE FOUNDATION DESIGN IS THE RESPONSIBILITY OF A REGISTERED PROFESSIONAL ENGINEER, FAMILIAR WITH LOCAL SITE CONDITIONS.
3. ALL ANCHOR RODS, FLAT WASHERS FOR ANCHOR RODS, EXPANSION BOLTS, AS WELL AS ALL CONCRETE/MASONRY EMBEDMENT PLATES ARE NOT BY METAL BUILDING MANUFACTURER.
4. THIS DRAWING IS NOT TO SCALE.
5. FINISHED FLOOR ELEVATION = 100'-0" UNLESS NOTED OTHERWISE.
6. "SINGLE" CEE COLUMNS SHALL BE ORIENTED WITH THE "TOES" TOWARD THE LOW EAVE UNLESS NOTED OTHERWISE.
7. THE ANCHOR BOLT LOCATIONS PROVIDED BY METAL BUILDING MANUFACTURER SATISFY PERTINENT REQUIREMENTS FOR THE DESIGN OF THE MATERIALS SUPPLIED BY THE METAL BUILDING MANUFACTURER. PLEASE NOTE THAT THESE REQUIREMENTS MAY NOT SATISFY ALL ANCHOR BOLT CONCRETE EDGE DISTANCE REQUIREMENTS DEPENDING ON THE DETAILS OF THE FOUNDATION DESIGN. BECAUSE FOUNDATION DESIGN IS NOT WITHIN THE METAL BUILDING MANUFACTURER SCOPE OF WORK, IT IS THE RESPONSIBILITY OF THE QUALIFIED PROFESSIONAL DESIGNING THE FOUNDATION TO MAKE CERTAIN THAT SUFFICIENT CONCRETE EDGE DISTANCE IS PROVIDED FOR THE ANCHOR BOLTS IN THE DETAILS OF THE FOUNDATION DESIGN.

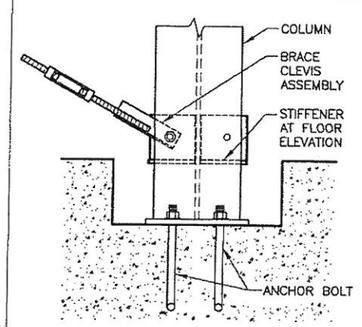
ANCHOR BOLT SCHEDULE

QUANTITY	SIZE	PROJECTION
16	3/4"	3" FROM BOTTOM OF BASE PLATE
0	1"	3" FROM BOTTOM OF BASE PLATE
48	1 1/4"	3" FROM BOTTOM OF BASE PLATE

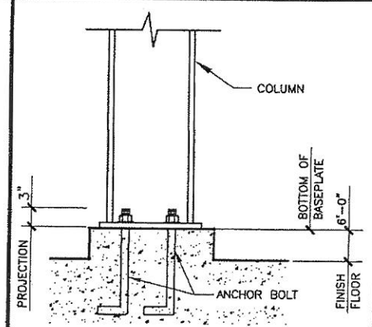
ISSUE	DWN	CHK	ENG	P.E.	DATE
CONSTRUCTION ANCHOR BOLT	GLS	LAF			2-6-13
CRANE CONFIRMATION	GLS	LAF			2-6-13
REVISED ANCHOR BOLT ⚠	BHW				2-11-13
PERMITS	BHW		ATH		2-19-13



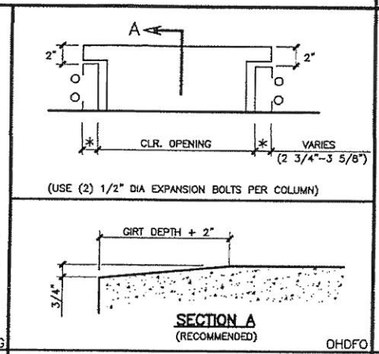
TYPICAL COLUMN BASE PLATE DETAIL UNLESS NOTED OTHERWISE



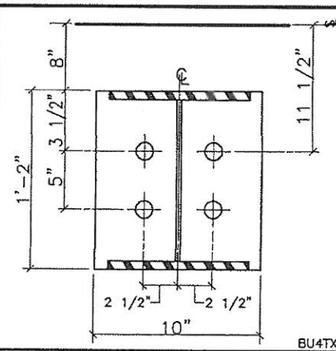
SECTION "B" AT BRACE CLEVIS CONNECTION



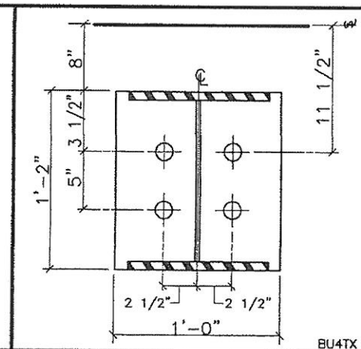
COLUMN BASE PLATE DETAIL



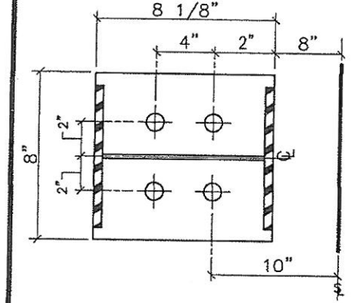
TYPICAL OVERHEAD DOOR FRAMED OPENING



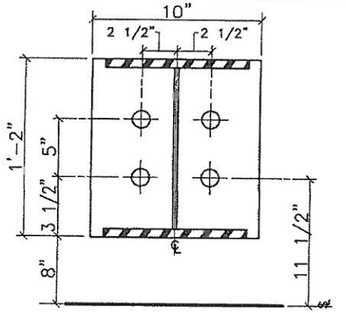
A	(4) 1 1/4" ø ANCHOR BOLTS WITH A 3" PROJECTION



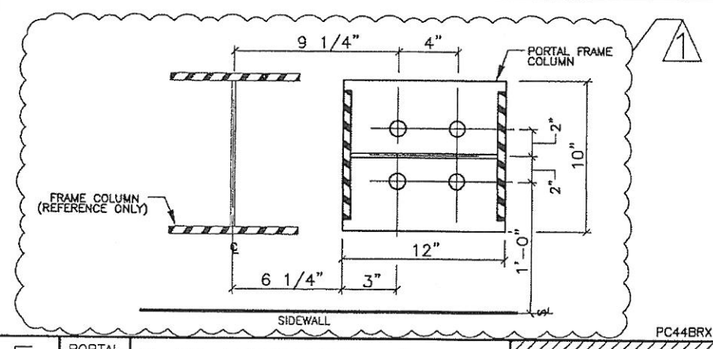
B	(4) 1 1/4" ø ANCHOR BOLTS WITH A 3" PROJECTION



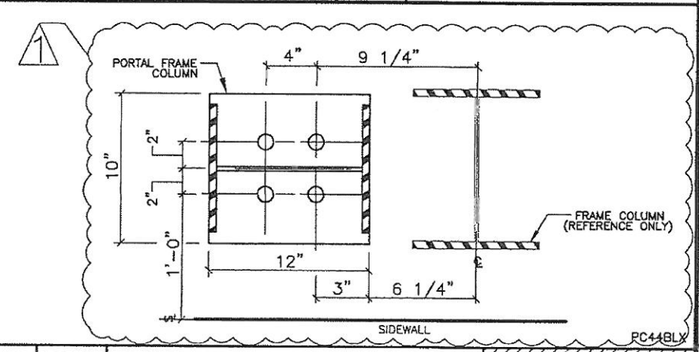
C	(4) 3/4" ø ANCHOR BOLTS WITH A 3" PROJECTION



D	(4) 1 1/4" ø ANCHOR BOLTS WITH A 3" PROJECTION



F	PORTAL COLUMN	(4) 3/4" ø ANCHOR BOLTS WITH A 3" PROJECTION



G	PORTAL COLUMN	(4) 3/4" ø ANCHOR BOLTS WITH A 3" PROJECTION

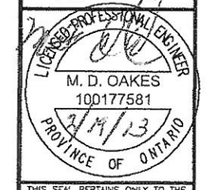
NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY
WATERLOO, IN 46793
PHONE: (260) 837-7891
FAX: (260) 837-7384

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, ON

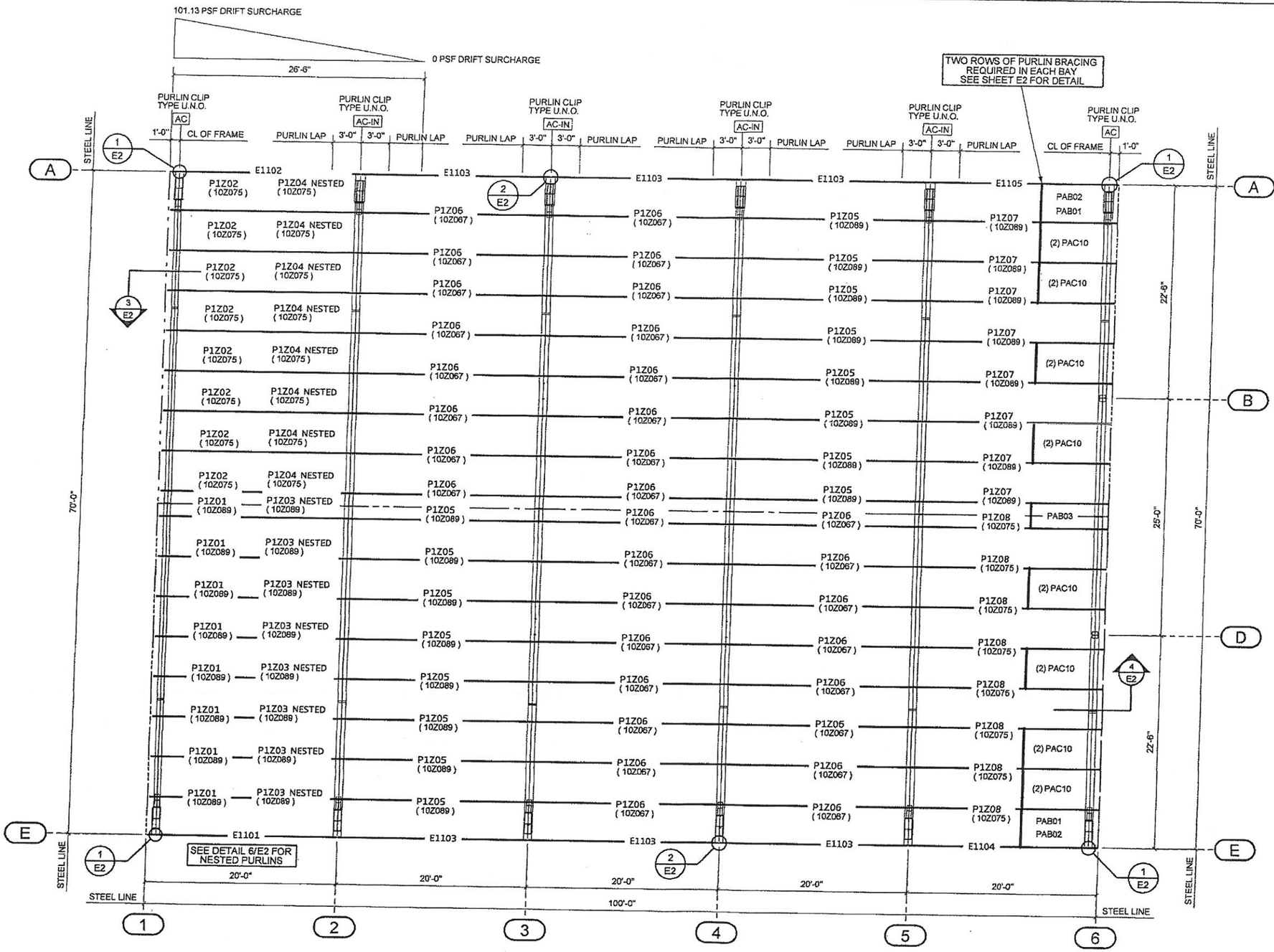
CUSTOMER: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHARINES, ON

JOB NUMBER: W13P0023A

SHEET NO: F2 of 2



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ROOF FRAMING PLAN

1) PURLIN AND EAVE STRUT CONNECTION BOLT REQUIREMENTS:
A307 AND A325 BOLTS ARE BOTH USED. REFER TO THE DETAILS FOR SPECIFIC BOLT USAGE REQUIREMENTS.

2) EAVE STRUTS ARE 10E060 MATERIAL U.N.O.

3) SEE CROSS-SECTIONS FOR MAIN FRAME FLANGE BRACING.

DATE 2/19/2013
DR
ENG
CHK BHW
DWN
SHEET Permits

NUCOR BUILDING SYSTEMS GROUP
305 Industrial Pkwy
Waterloo, IN 46793
Phone: (260) 837-7891
Fax: (260) 837-7384

PROJECT NAME
PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE,, ON

CUSTOMER NAME
BROUWER CONSTRUCTION (1981) LTD.
ST. CATHERINE'S, ON

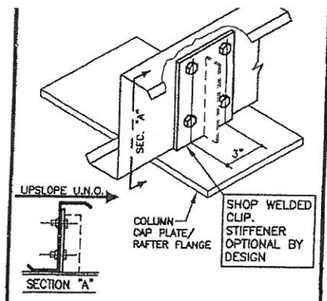
JOB NUMBER
W13P0023A

SHEET TITLE
Roof Framing Plan

LICENSED PROFESSIONAL ENGINEER
M. D. OAKES
100177581
3/19/13
PROVINCE OF ONTARIO

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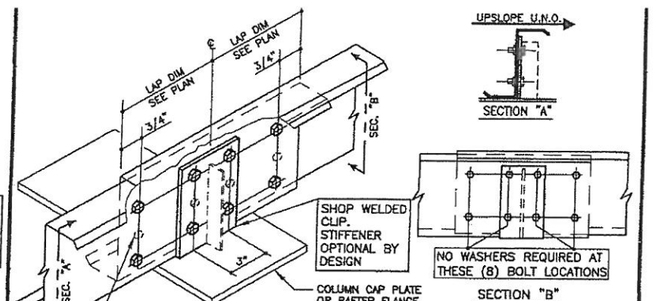
SHEET E1 OF 9



AC
WC
WS

WELDED CLIP @ END FRAME
USE (4) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400 U.N.O.
REFERENCE ERECTOR NOTE FOR TYP. WASHER REQUIREMENTS

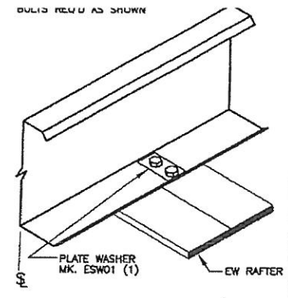
BB0050(X)



AC–IN
WC–IN
WS–IN

WELDED CLIP @ INTERIOR FRAME
USE (8) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400 U.N.O.

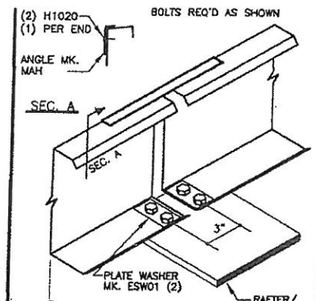
BB0055(X)



EAVE STRUT
BYPASS SIDEWALL CONDITION
LOW EAVE BUILT-UP EW CONDITION
USE (2) 1/2" X 2" A325 BOLT H0603/NUT H0300 U.N.O.

1 E2

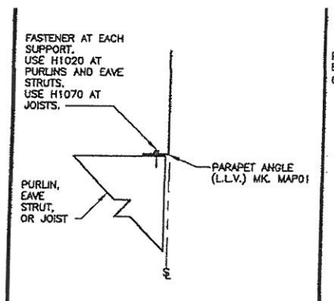
BA0030(W)



EAVE STRUT
LOW EAVE BY-PASS SW GIRT CONDITION
USE (4) 1/2"x 2" A325 BOLT H0603/NUT H0300 U.N.O.

2 E2

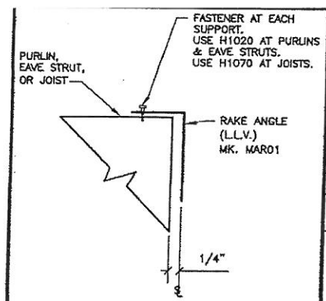
BA0020(1-4)(W)



PARAPET ANGLE ATTACHMENT

3 E2

BD0070 PAR_ANC

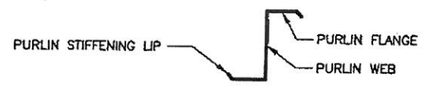


RAKE ANGLE ATTACHMENT
AT ENDWALL STEEL LINE

4 E2

RAKE_ANG BD0120

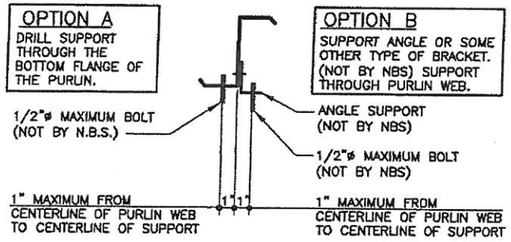
COLLATERAL DEAD LOADS, UNLESS OTHERWISE NOTED, ARE ASSUMED TO BE UNIFORMLY DISTRIBUTED. WHEN SUSPENDED SPRINKLER SYSTEMS, LIGHTING, HVAC EQUIPMENT, CEILINGS, ETC. ARE SUSPENDED FROM ROOF MEMBERS, CONSULT NUCOR ENGINEERING IF THESE CONCENTRATED LOADS EXCEED 200 POUNDS, OR IF INDIVIDUAL MEMBERS ARE LOADED SIGNIFICANTLY MORE THAN OTHERS.



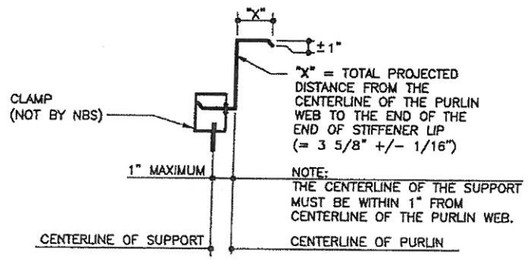
GENERAL RESTRICTION:

UNDER NO CIRCUMSTANCES CAN THE PURLIN STIFFENING LIP BE FIELD MODIFIED FROM THE FACTORY SUPPLIED CONDITION. ALSO DO NOT HANG ANYTHING FROM PURLIN STIFFENING LIP.

OPTIONS FOR SUPPORT ATTACHMENTS

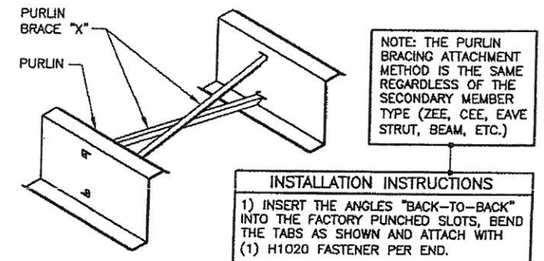


OPTION C:
IF PURLIN FLANGE SUPPORT CLAMPS ARE USED.



BD0130

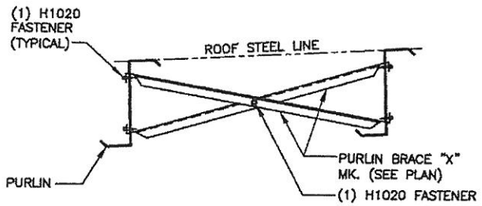
NBS PURLIN SUPPORT METHODS



INSTALLATION INSTRUCTIONS

1) INSERT THE ANGLES "BACK-TO-BACK" INTO THE FACTORY PUNCHED SLOTS, BEND THE TABS AS SHOWN AND ATTACH WITH (1) H1020 FASTENER PER END.

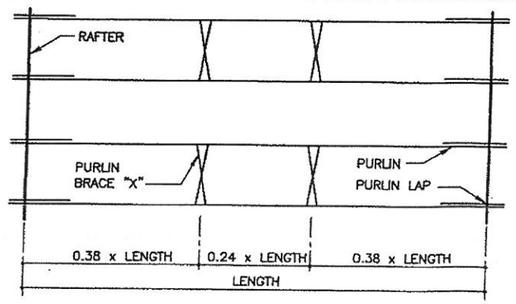
2) CONNECT THE PURLIN BRACES AT THE INTERSECTION WITH (1) H1020 FASTENER



PLAN VIEW OF PURLIN BRACING LOCATIONS PER BAY

1) THERE ARE ALWAYS (2) ROWS OF PURLIN BRACING REQUIRED REGARDLESS OF THE BAY LENGTH.

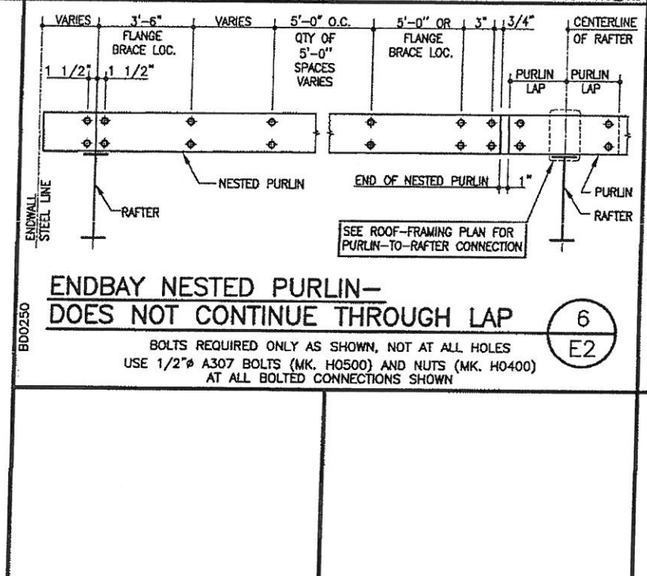
2) THE PURLIN BRACING IS ALWAYS SPACED AS SHOWN IN THE DETAIL BELOW.



BE0001

PURLIN BRACING ATTACHMENT <2:12 SLOPE

SEE ROOF FRAMING PLAN(S) FOR PURLIN BRACING MARK NUMBERS, QUANTITIES, AND LOCATIONS



BD0250

ENDBAY NESTED PURLIN– DOES NOT CONTINUE THROUGH LAP

BOLTS REQUIRED ONLY AS SHOWN, NOT AT ALL HOLES
USE 1/2"ø A307 BOLTS (MK. H0500) AND NUTS (MK. H0400) AT ALL BOLTED CONNECTIONS SHOWN

6 E2

ISSUE	DWN	CHK	ENG	P.E.	DATE
CRANE CONFIRMATION	GLS	LAF	ATH		2-6-13
PERMITS	BHW				2-19-13

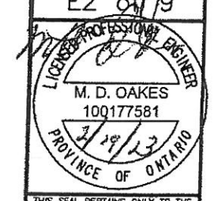
NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY
WATERLOO, IN 46793
PHONE: (260) 837-7891
FAX: (260) 837-7384

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, ON

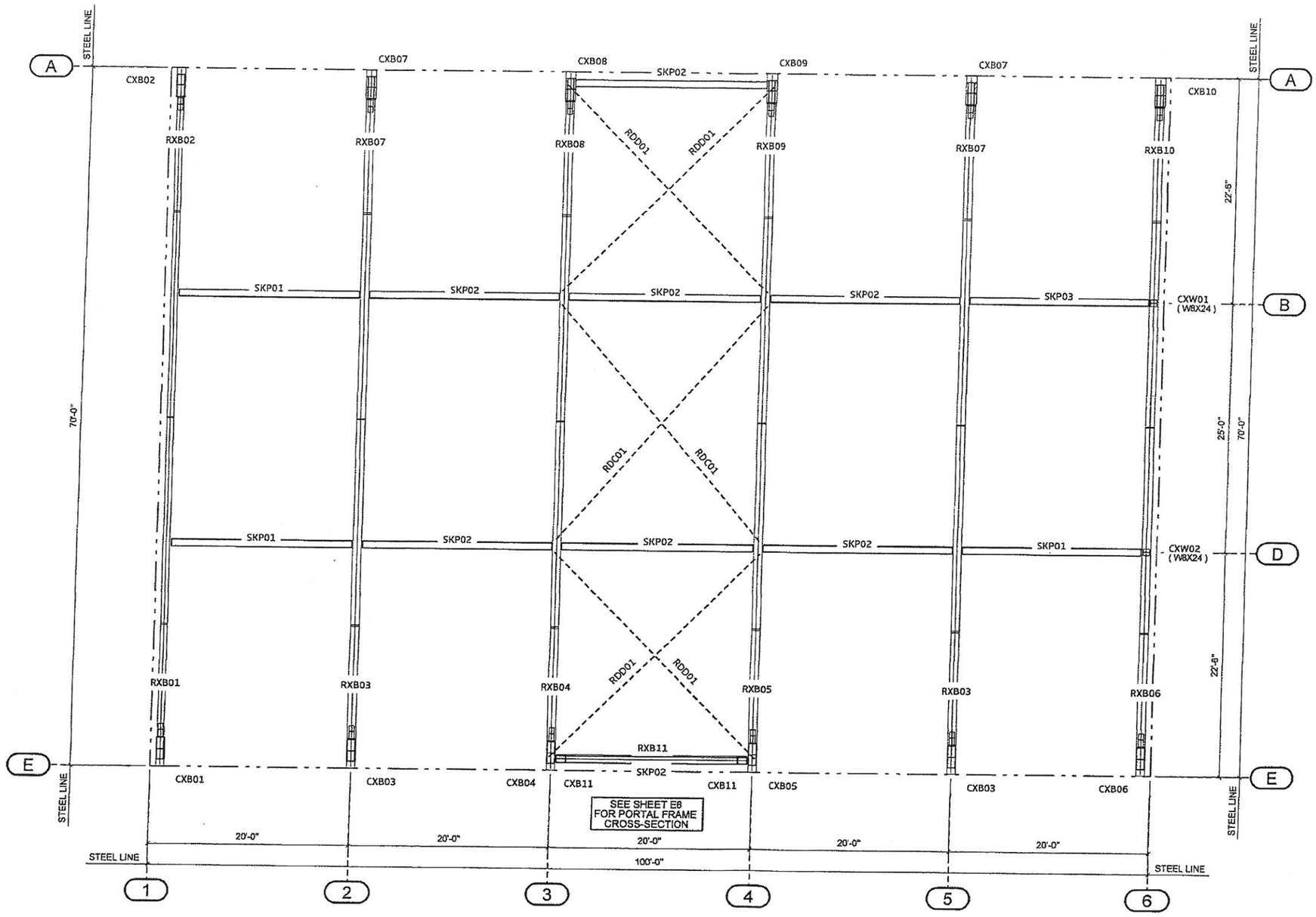
CUSTOMER: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHARINES, ON

JOB NUMBER: W13P0023A

SHEET NO: E2 of 9



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MARK NUMBER & BRACING PLAN

1) PLACE METAL TAGGED END OF RAFTERS TOWARD THE LOW EAVE.

2) RDC__ INDICATES ⅝" ROD BRACING.
RDD__ INDICATES ⅞" ROD BRACING.
SEE SHEET D1 FOR DETAIL.

3) SKP__ INDICATES (2)8S075 MATERIAL COLD-FORMED BOX STRUT.
SEE DETAIL X/ D1.

SHEET	CHK	ENG	PE	DATE
Permits	BHW	ATH		2/19/2013

NUCOR BUILDING SYSTEMS GROUP
305 Industrial Pkwy
Waterloo, IN 46793
Phone: (260) 837-7891
Fax: (260) 837-7384

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, , ON

CUSTOMER NAME: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHERINE'S, ON

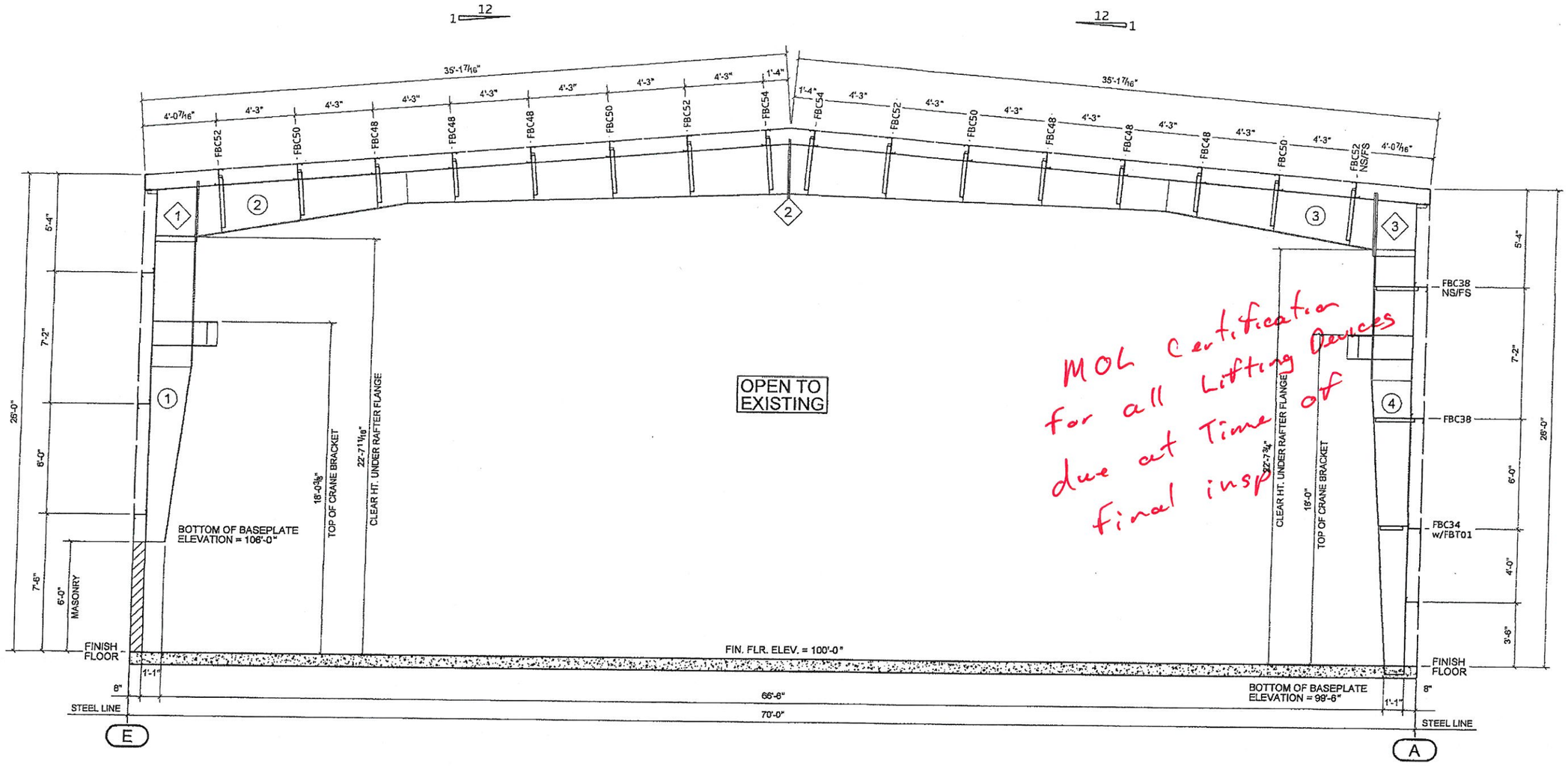
JOB NUMBER: W13P0023A

SHEET TITLE: Mark Number Plan

LICENSED PROFESSIONAL ENGINEER
M. D. OAKES
100177581
2/19/13
PROVINCE OF ONTARIO

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SHEET
E3 OF 9



MOL Certification for all Lifting Devices due at Time of Final inspection

CROSS SECTION AT LINE 1

Material Schedule

ID	Low Plate Width	Low Plate Thick	High Plate Width	High Plate Thick	Outside Flange Width	Outside Flange Thick	Inside Flange Width	Inside Flange Thick	Web Depth1	Web Thick	Web Depth2
1	10.00	0.50	10.00	0.75	10.00	0.50	10.00	0.50	12.00	0.22	25.75
							10.00	0.75	25.75	0.22	25.75
									25.75	0.25	25.75
2	8.00	0.63	8.00	0.63	8.00	0.50	8.00	0.63	32.00	0.28	20.00
					8.00	0.38	8.00	0.38	20.00	0.22	32.00
3	8.00	1.00	8.00	0.63	8.00	0.50	8.00	0.63	32.00	0.28	20.00
					8.00	0.38	8.00	0.38	20.00	0.22	32.00
4	10.00	0.50	12.00	1.00	10.00	0.50	10.00	0.50	12.00	0.22	25.75
							10.00	0.75	25.75	0.22	25.75
									25.75	0.37	25.75

Notes:

For column and rafter mark numbers, see Mark Number Plan.

NS/FS indicates that flange bracing is required on both sides of the frame line.

For expandable endwall rigid frames, if flange bracing is required on both sides (NSFS) of an expandable endframe, the opposite side flange brace will have to be installed at the time of expansion. These flange braces have been provided, as required, for this future condition.

If NS/FS is NOT indicated, only one flange brace is required and can be located on either side of the frame.

"*" indicates the long side of the interior columns. Columns at the ridge are typically "flat-top" columns, unless indicated by the "*" symbol.

Rigid frames shall have 50% of their bolts installed and tightened on both sides of the web adjacent to each flange before the hoisting equipment is released.

Bolt Schedule

ID	Qty	Bolt Description	Bolt #	Nut #
1	8	1" X 3 ¼" A325 BOLT	H0640	H0330
2	8	⅞" X 3" A325 BOLT	H0635	H0325
3	8	1 ¼" X 3 ½" A325 BOLT	H0660	H0340

DATE 2/19/2013
PE
CHK
ENGR MTH
DRWN BHW
SHEET Permits

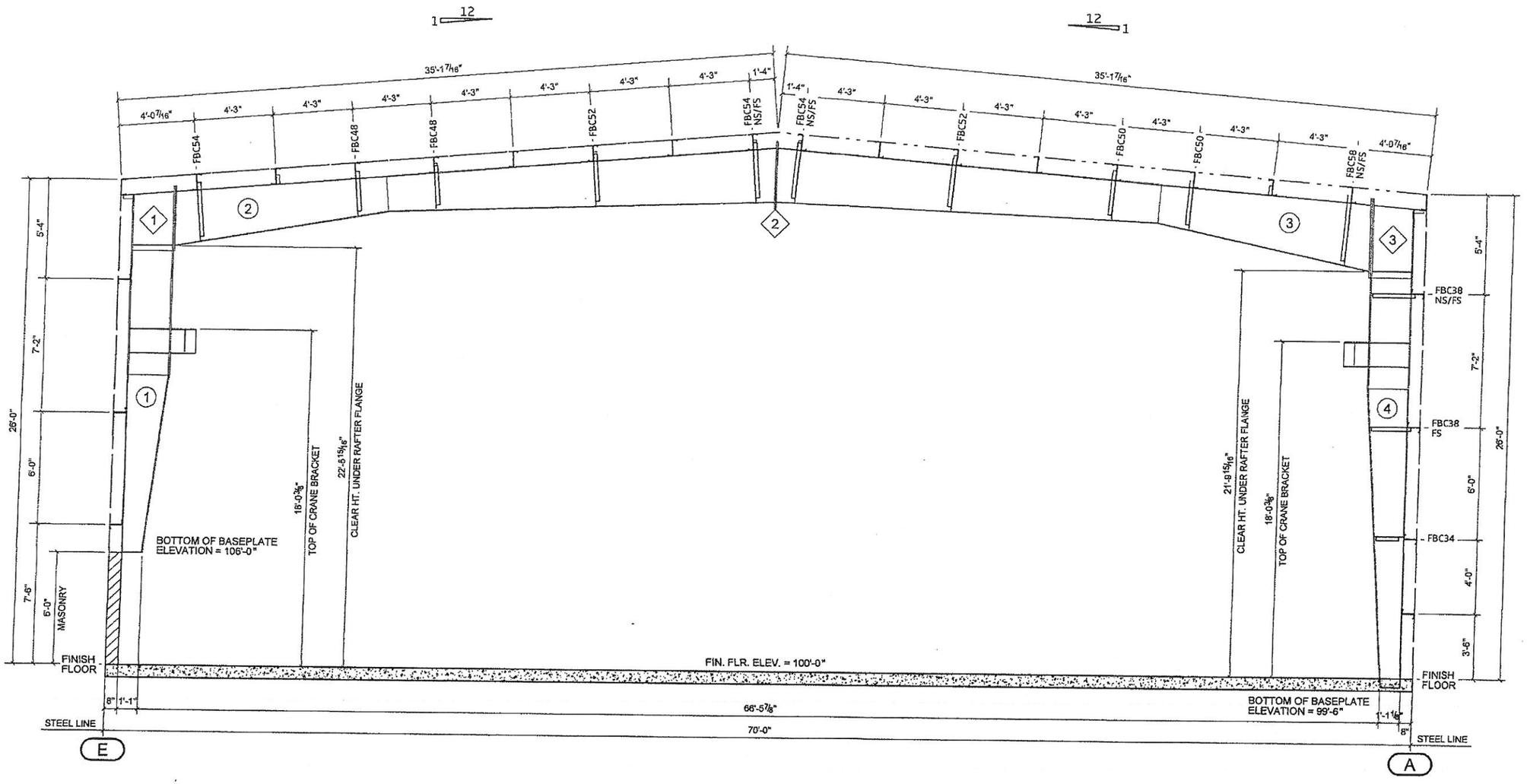
NUCOR BUILDING SYSTEMS GROUP
305 Industrial Pkwy
Waterloo, IN 46793
Phone: (260) 837-7891
Fax: (260) 837-7384

PROJECT NAME PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, , ON
CUSTOMER NAME BROUWER CONSTRUCTION (1981) LTD.
STO CATHERINE'S, ON
JOB NUMBER W13P0023A
SHEET TITLE Cross Section At Line 1

LICENCED PROFESSIONAL ENGINEER
M. D. OAKES
100177581
2/19/13
PROVINCE OF ONTARIO

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SHEET E4 OF 9



CROSS SECTION AT LINES 2-6

Material Schedule

ID	Low Plate Width	Low Plate Thick	High Plate Width	High Plate Thick	Outside Flange Width	Outside Flange Thick	Inside Flange Width	Inside Flange Thick	Web Depth1	Web Thick	Web Depth2
1	10.00	0.50	10.00	0.75	10.00	0.50	10.00	0.50	12.00	0.22	25.50
					10.00	0.75	10.00	0.75	25.50	0.22	25.50
									25.50	0.31	25.50
2	10.00	0.75	10.00	0.63	10.00	0.38	10.00	0.50	34.00	0.25	22.00
					10.00	0.50	10.00	0.38	22.00	0.25	34.00
3	12.00	1.00	10.00	0.63	10.00	0.38	10.00	0.50	42.00	0.25	24.00
					10.00	0.50	10.00	0.38	24.00	0.25	34.00
4	12.00	0.50	12.00	1.00	12.00	0.50	12.00	0.63	12.00	0.22	25.63
					12.00	0.63	12.00	0.75	25.63	0.22	25.63
									25.63	0.31	25.63

Notes:

For column and rafter mark numbers, see Mark Number Plan.

NS/FS indicates that flange bracing is required on both sides of the frame line.

For expandable endwall rigid frames, if flange bracing is required on both sides (NS/FS) of an expandable endframe, the opposite side flange brace will have to be installed at the time of expansion. These flange braces have been provided, as required, for this future condition.

If NS/FS is NOT indicated, only one flange brace is required and can be located on either side of the frame.

"*" indicates the long side of the interior columns. Columns at the ridge are typically "flat-top" columns, unless indicated by the "*" symbol.

Rigid frames shall have 50% of their bolts installed and tightened on both sides of the web adjacent to each flange before the hoisting equipment is released.

Bolt Schedule

ID	Qty	Bolt Description	Bolt #	Nut #
1	8	1" X 3 1/4" A325 BOLT	H0640	H0330
2	8	1 1/4" X 3 1/2" A325 BOLT	H0660	H0340
3	8	1 1/4" X 3 1/2" A325 BOLT	H0660	H0340

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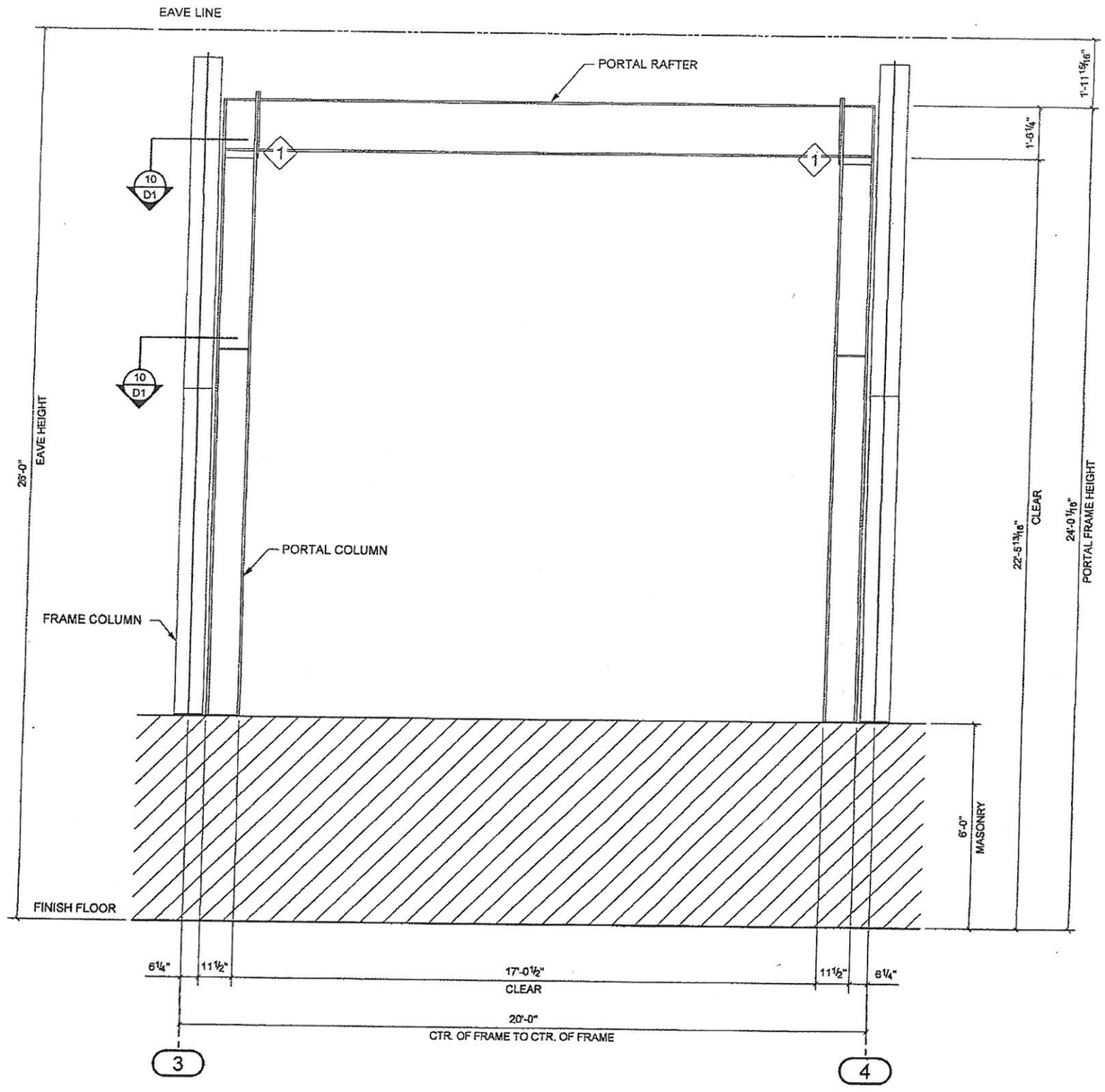
SHEET E5 OF 9

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Fax: (260) 837-7384

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M. D. OAKES
100177581
PROVINCE OF ONTARIO

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, , ON
CUSTOMER NAME: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHERINE'S, ON
JOB NUMBER: W13P0023A
SHEET TITLE: Cross Section At Line 2-6

SHEET	DWG	CHK	ENG	PE	DATE
Permits	BHW		ATH		2/19/2013



FULL HEIGHT PORTAL FRAME CROSS SECTION

Bolt Schedule

ID	Qty	Bolt Description	Bolt #	Nut #
1	8	3/4" X 3" A325 BOLT	H0633	H0320

SHEET		Permits	BHW	AH
DATE				
2/19/2013				

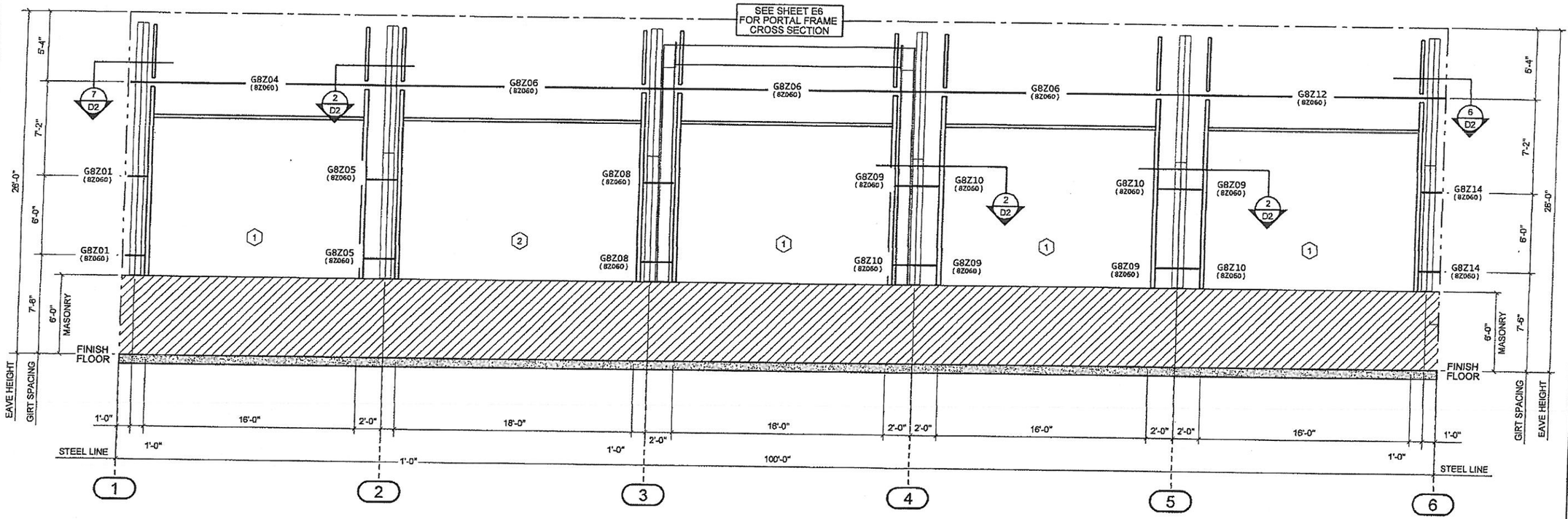
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PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, , ON
CUSTOMER NAME: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHERINE'S, ON
JOB NUMBER: W13P0023A
SHEET TITLE: Portal Frame Cross Section

LICENSED PROFESSIONAL ENGINEER
M. D. OAKES
100177581
2/19/13
PROVINCE OF ONTARIO

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SHEET E6 OF 9



WALL ELEVATION AT LINE E

NOTE: DOOR TRACK MUST BE BELOW ROOF LINE ENOUGH TO ALLOW REQUIRED FLANGE BRACES.

FRAMED OPENING SCHEDULE

I.D. NUMBER	F.O. SIZE WIDTH	F.O. SIZE HEIGHT	FRAMING MARK NUMBERS LEFT JAMB	RIGHT JAMB	HEADER	SILL	SEE DETAIL	SILL HEIGHT A.F.F.
1	16'-0"	18'-0"	J8S01(0.99)	J8S01(0.99)	H8C01 (0.75)	N/A	1/D3	N/A
2	18'-0"	18'-0"	J8S01(0.99)	J8S01(0.99)	H8C02 (0.75)	N/A	1/D3	N/A

SHEET	DWN	CHK	ENG	PE	DATE
Permits	BHW		ATH		2/19/2013

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PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, , ON

CUSTOMER NAME: BROUWER CONSTRUCTION (1981) LTD.
ST CATHERINE'S, ON

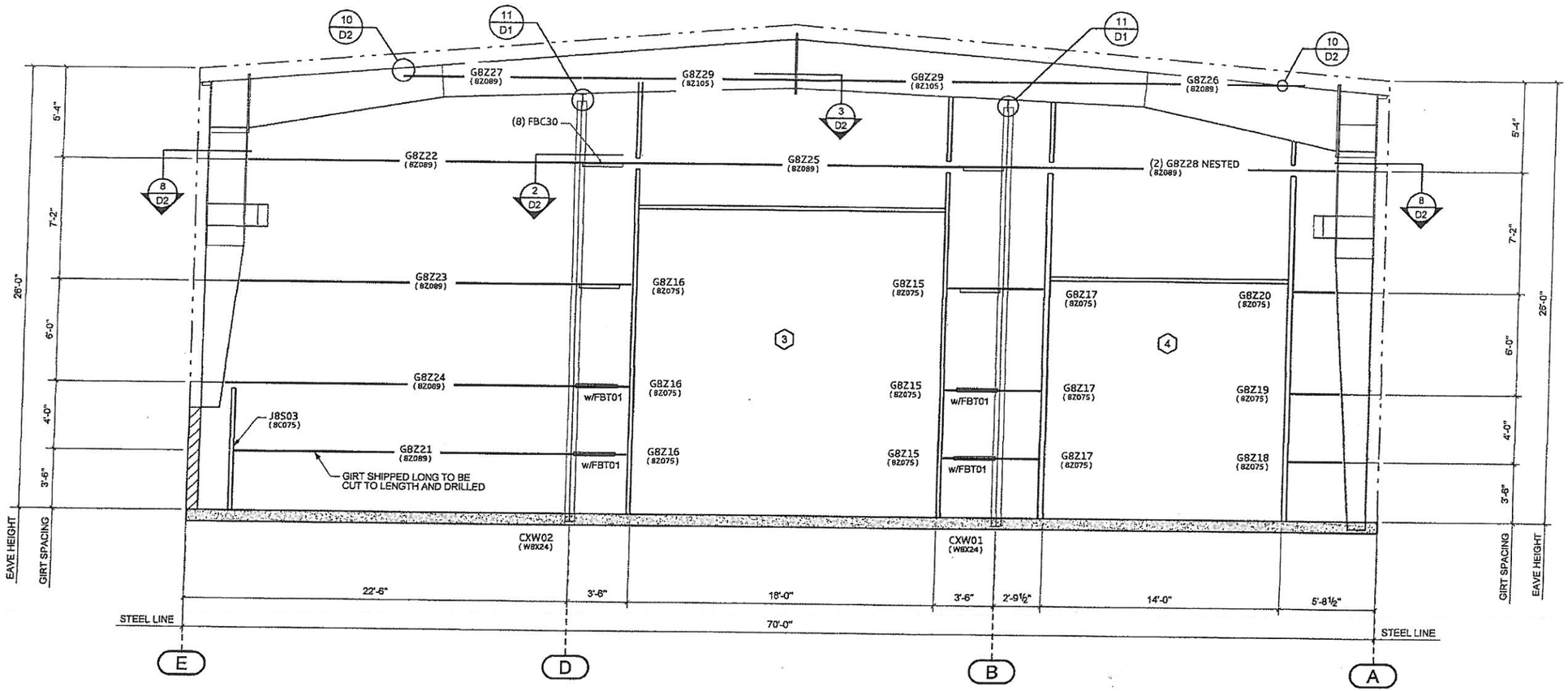
JOB NUMBER: W13P0023A

SHEET TITLE: Wall Framing Elevation at Line E

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2/19/13
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SHEET E7 OF 9



WALL ELEVATION AT LINE 6

1) FBC__/FBE__ - INDICATES FLANGE BRACING.

FRAMED OPENING SCHEDULE

I.D. NUMBER	FRAMED OPENING SIZE		FRAMING MARK NUMBERS				SEE DETAIL	SILL HEIGHT A.F.F.
	WIDTH	HEIGHT	LEFT JAMB	RIGHT JAMB	HEADER	SILL		
3	18'-0"	18'-0"	MXH01 (C8X18.7)	MXH01 (C8X18.7)	H8C02 (0.075)	N/A	2/D3	N/A
4	14'-0"	14'-0"	J8S02 (0.120)	J8S02 (0.120)	H8C03 (0.075)	N/A	3/D3	N/A

ISSUE	CHK	ENG	DATE
Permits	BHW	MM	2/19/2013

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PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, , ON

CUSTOMER NAME: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHERINE'S, ON

JOB NUMBER: W13P0023A

SHEET TITLE: Wall Framing Elevation at Line 6

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SHEET: E8 OF 9

WALL ELEVATION NOTES

1) RDG__ INDICATES 1 ¼" ROD BRACING. SEE SHEET D1 FOR DETAIL.
2) SPS__ INDICATES 6.134 PIPE STRUT. SEE DETAIL 8/ D1.

SHEET	DWN	CHK	PL	DATE
Permits	BHW	MDH		2/19/2013

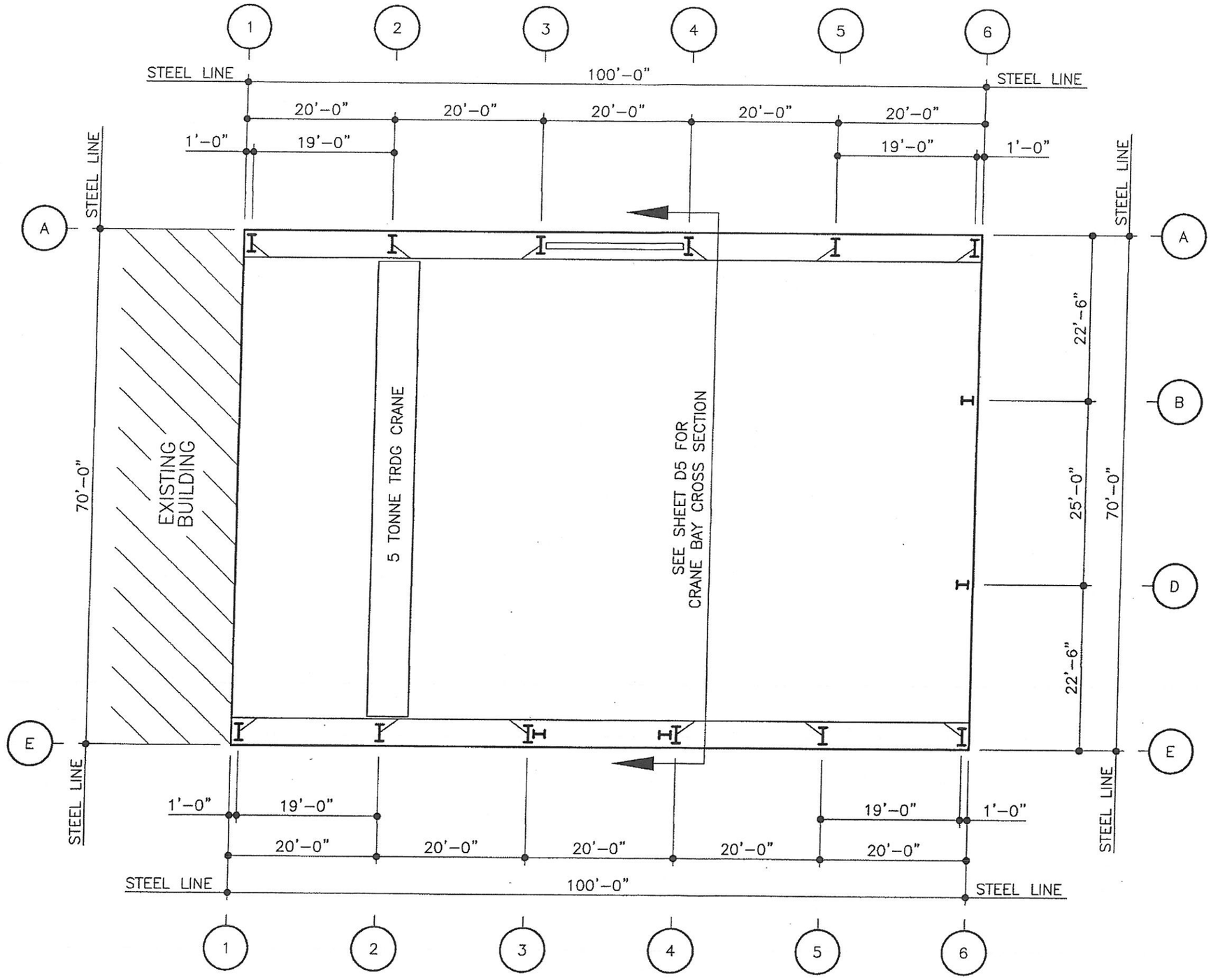
NUCOR BUILDING SYSTEMS GROUP
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Waterloo, IN 46793
Phone: (260) 837-7891
Fax: (260) 837-7384

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, , ON
CUSTOMER NAME: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHERINE'S, ON
JOB NUMBER: W13P0023A
SHEET TITLE: Wall Framing Elevation at Line A

LICENSED PROFESSIONAL ENGINEER
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2/19/13
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SHEET E9 OF 9



CRANE PLAN
(ADDITION)

ISSUE	DWN	CHK	ENG	P.E.	DATE
CRANE CONFIRMATION	GLS	LAF			2-6-13
PERMITS	BH#		ATH		2-19-13

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PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, ON

CUSTOMER: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHARINES, ON

JOB NUMBER: W13P0023A

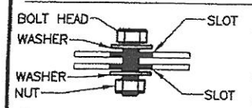
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2/19/13
PROVINCE OF ONTARIO

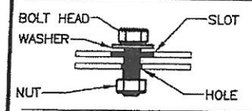
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TYPICAL WASHER REQUIREMENTS ERECTOR NOTE

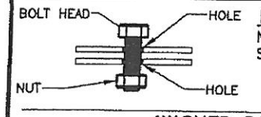
(UNLESS NOTED OTHERWISE ON DRAWINGS)



SLOT TO SLOT CONNECTIONS
WASHERS ARE REQUIRED ON BOTH SIDES OF MATERIAL IF SLOTS ARE USED ON BOTH SIDES. (SEE DETAIL AT RIGHT FOR LAPPED ZEE MEMBERS)



SLOT TO HOLE CONNECTIONS
ONE WASHER REQUIRED ON SLOTTED SIDE ONLY.

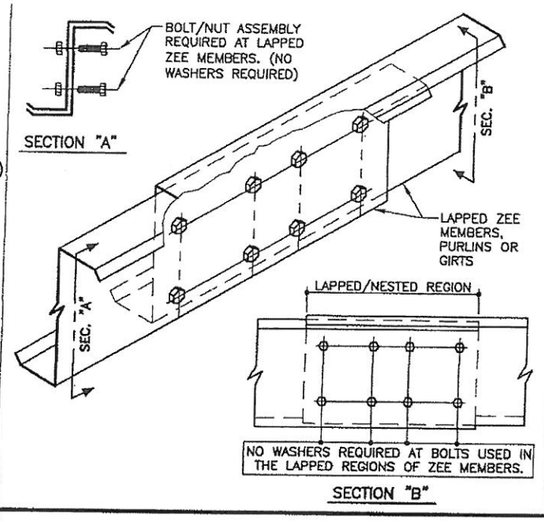


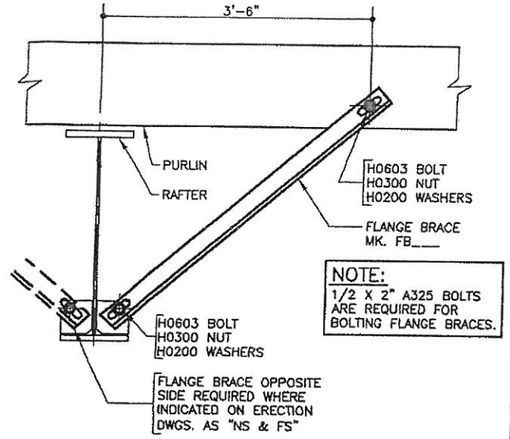
HOLE TO HOLE CONNECTIONS
NO WASHERS ARE REQUIRED WHEN SLOTS ARE NOT USED.

WASHER PART NUMBERS

H0200 – 1/2" FLAT WASHER	H0240 – 1" FLAT WASHER
H0210 – 5/8" FLAT WASHER	H0250 – 1 1/8" FLAT WASHER
H0220 – 3/4" FLAT WASHER	H0260 – 1 1/4" FLAT WASHER
H0230 – 7/8" FLAT WASHER	

AG0001

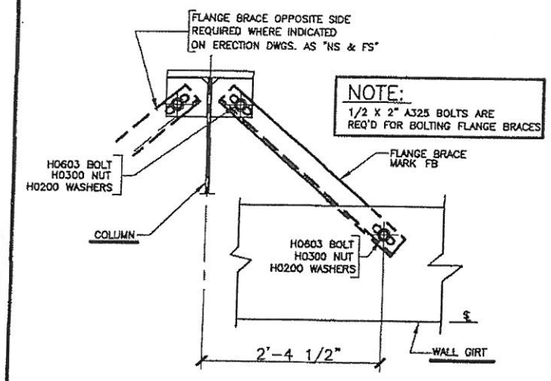




AG0010

TYPICAL FLANGE BRACE AT PURLIN & RAFTER

SEE PLANS AND ELEVATIONS FOR FLANGE BRACE PART MARKS



AG0030

TYP FLANGE BRACE @ BU COL & GIRT

NOTE: SEE PLANS AND ELEVATIONS FOR FLANGE BRACE PART MARKS

ISSUE	DWN	CHK	ENG	P.E.	DATE
CRANE CONFIRMATION	GLS	LAF	ATH		2-6-13
PERMITS	BHW				2-19-13

NUCOR BUILDING SYSTEMS
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TYPICAL FIELD WELD REQUIREMENTS ERECTOR NOTE:

(UNLESS NOTED OTHERWISE ON DRAWINGS)

ALL FIELD WELDING MUST BE PERFORMED BY AWS/CWB CERTIFIED WELDERS WHO ARE QUALIFIED FOR THE WELDING PROCESSES AND POSITIONS INDICATED. ALL WORK MUST BE COMPLETED AND INSPECTED IN ACCORDANCE WITH THE APPLICABLE AWS/CWB SPECIFICATIONS. WELD ELECTRODES USED FOR THE SMAW (OR STICK) WELD PROCESS MUST BE 70 KSI/483 MPa MATERIAL AND LOW HYDROGEN CONTENT.

GALVANIZED STEEL FIELD WELDING RECOMMENDATIONS

PREPARATION OF WELD AREA

AWS D-19.0, WELDING ZINC COATED STEEL, CALLS FOR WELDS TO BE MADE ON STEEL THAT IS FREE OF ZINC IN THE AREA TO BE WELDED. FOR GALVANIZED STRUCTURAL COMPONENTS, THE ZINC COATING SHOULD BE REMOVED AT LEAST ONE TO FOUR INCHES (2.5-10 CM) FROM EITHER SIDE OF THE INTENDED WELD ZONE AND ON BOTH SIDES OF THE WORKPIECE. GRINDING BACK THE ZINC COATING IS THE PREFERRED AND MOST COMMON METHOD; BURNING THE ZINC AWAY OR PUSHING BACK THE MOLTEN ZINC FROM THE WELD AREA ALSO ARE EFFECTIVE.

TOUCH-UP OF WELD AREA

WELDING ON GALVANIZED SURFACES DESTROYS THE ZINC COATING ON AND AROUND THE WELD AREA. RESTORATION OF THE AREA WILL BE PERFORMED IN ACCORDANCE WITH ASTM A 780, STANDARD PRACTICE FOR REPAIR OF DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS, WHICH SPECIFIES THE USE OF PAINTS CONTAINING ZINC DUST, ZINC-BASED SOLDERS OR SPRAYED ZINC. ALL TOUCHUP AND REPAIR METHODS ARE CAPABLE OF BUILDING A PROTECTIVE LAYER TO THE THICKNESS REQUIRED BY ASTM A 780.

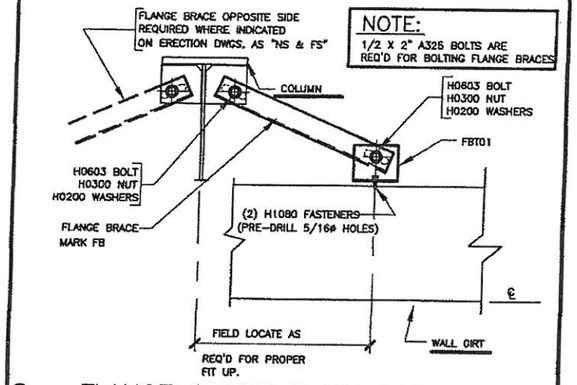
SAFETY & HEALTH

WHEN WELDING DIRECTLY ON GALVANIZED STEEL IS UNAVOIDABLE, OSHA PERMISSIBLE EXPOSURE LIMITS (PELS) MAY BE EXCEEDED AND EVERY PRECAUTION, INCLUDING HIGH-VELOCITY CIRCULATING FANS WITH FILTERS, AIR RESPIRATORS AND FUME-EXTRACTION SYSTEMS SUGGESTED BY AWS, SHOULD BE EMPLOYED. FUMES FROM WELDING GALVANIZED STEEL CAN CONTAIN ZINC, IRON AND LEAD. FUME COMPOSITION TYPICALLY DEPENDS ON THE COMPOSITION OF MATERIALS USED, AS WELL AS THE HEAT APPLIED BY THE PARTICULAR WELDING PROCESS. IN ANY EVENT, GOOD VENTILATION MINIMIZES THE AMOUNT OF EXPOSURE TO FUMES.

PRIOR TO WELDING ON ANY METAL, CONSULT ANSI/ASC Z-49.1, SAFETY IN WELDING, CUTTING AND ALLIED PROCESSES, WHICH CONTAINS INFORMATION ON THE PROTECTION OF PERSONNEL AND THE GENERAL AREA, VENTILATION AND FIRE PREVENTION.

INFORMATION COURTESY OF AMERICAN GALVANIZERS ASSOCIATION

AG0002



FLANGE BRACE @ BU COL

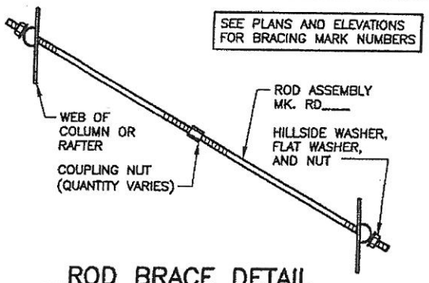
SINGLE CEE GIRT @ MASONRY OR DOUBLE CEE GIRT

NOTES: SEE PLANS AND ELEVATIONS FOR FLANGE BRACE PART MARKS
PRE-DRILL (2) 5/16ø PILOT HOLES IN GIRT

AG0050

ROD DIAMETER	MARK NUMBER	HILLSIDE WASHERS	FLAT WASHERS	A307/A325 NUTS	COUPLING NUTS
5/8" ø	RDB___	(2) H0930	(2) H0210	(2) H0310	H0810
3/4" ø	RDC___	(2) H0930	(2) H0220	(2) H0320	H0820
7/8" ø	RDD___	(2) H0930	(2) H0230	(2) H0325	H0830
1" ø	RDE___	(2) H0960	(2) H0240	(2) H0330	H0840
1 1/8" ø	RDF___	(2) H0960	(2) H0250	(2) H0450	H0850
1 1/4" ø	RDG___	(2) H0960	(2) H0260	(2) H0340	H0860

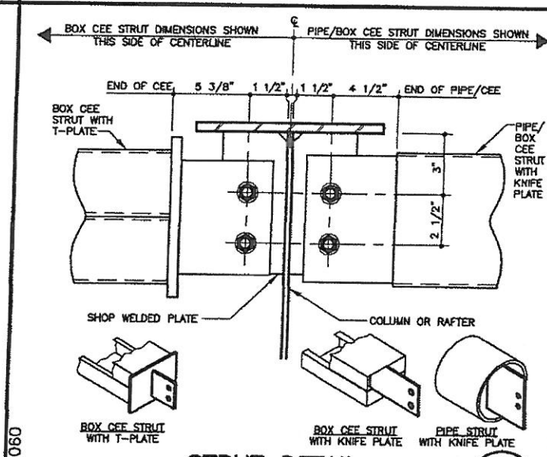
SEE PLANS AND ELEVATIONS FOR BRACING MARK NUMBERS



AF0010

ROD BRACE DETAIL

(WEB TO WEB)

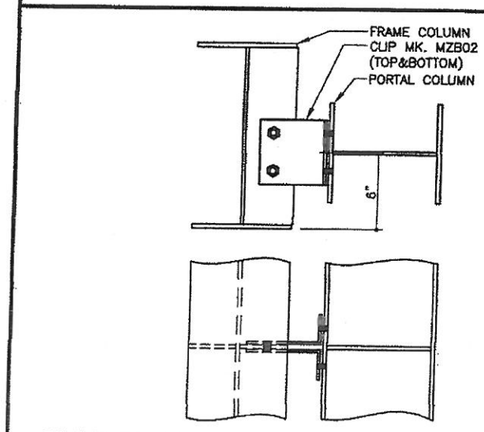


AK0060

STRUT DETAIL

8 / D1

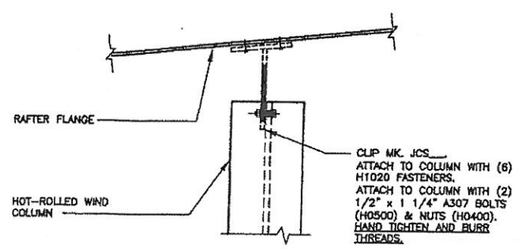
6" PIPE STRUT OR BOX CEE STRUT AT 8" (MIN.) COLUMN OR RAFTER
NOTE: USE (2) 1" X 3 1/4" A325 BOLTS H0840/NUTS H0330
SEE PLANS & ELEVATIONS FOR MARK NUMBERS AND LOCATIONS



FRAME TO PORTAL COLUMN ATTACHMENT

10 / D1

USE (6) 1/2" x 2" A325 BOLTS (MK. H0603) AND NUTS (MK. H0300)



WIND COLUMN DETAIL

11 / D1

H0016

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, ON

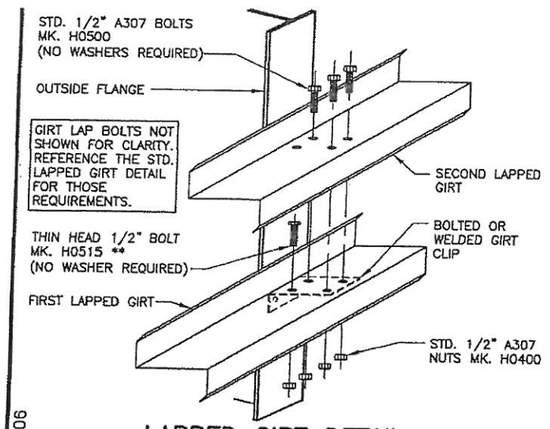
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JOB NUMBER: W13P0023A

SHEET NO: D1 of 5

LICENSED PROFESSIONAL ENGINEER
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2/19/13
PROVINCE OF ONTARIO

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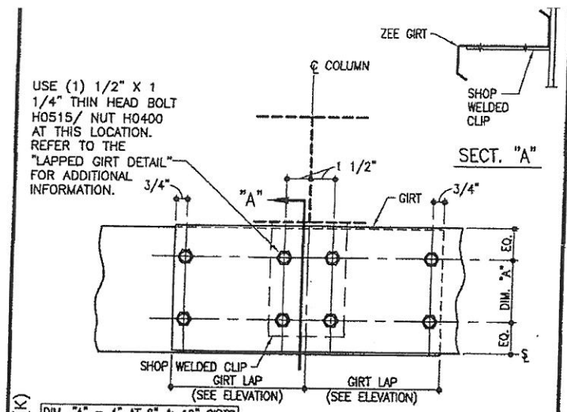


LAPPED GIRT DETAIL

LAPPED GIRTS @ INTERIOR BAY COLUMNS

** THE THIN HEAD 1/2" A307 BOLT MUST BE INSTALLED INTO THE FIRST GIRT AND CLIP OF A LAPPED CONDITION. THE BOLT/NUT ASSEMBLY MUST BE WRENCH TIGHT PRIOR TO THE SECOND LAPPED GIRT BEING INSTALLED.

CC0006



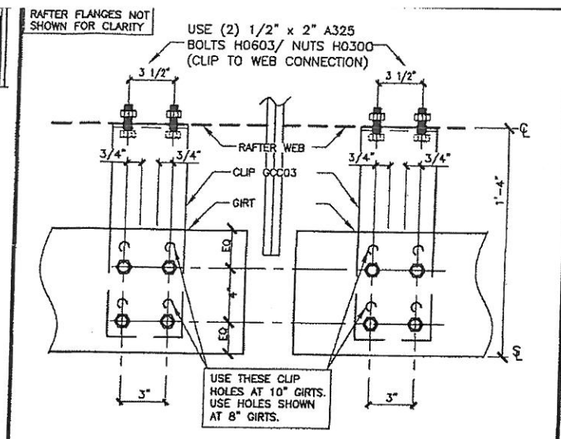
DIM. "A" = 4" AT 8" & 10" GIRTS
= 8" AT 12" GIRTS

SW OR EW GIRT DETAIL

LAPPED BYPASS GIRTS AT INTERIOR BAY COLUMNS
NOTE: USE (7) 1/2"x 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE ERECTOR NOTE FOR TYPICAL WASHER REQUIREMENTS

2 D2

CC1010(K)

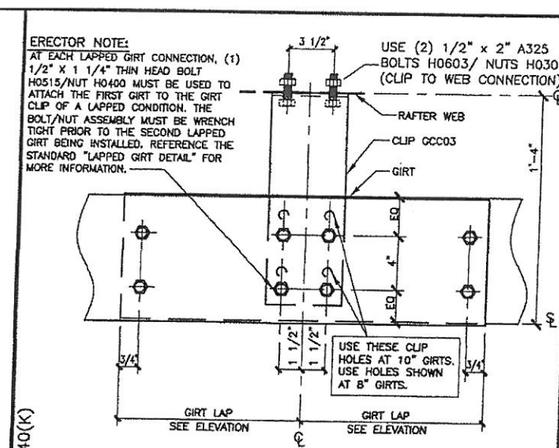


SW OR EW GIRT DETAIL

LAPPED GIRTS AT BUILT-UP INTERIOR COLUMNS
NOTE: USE (4) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

4 D2

CC0240(K)

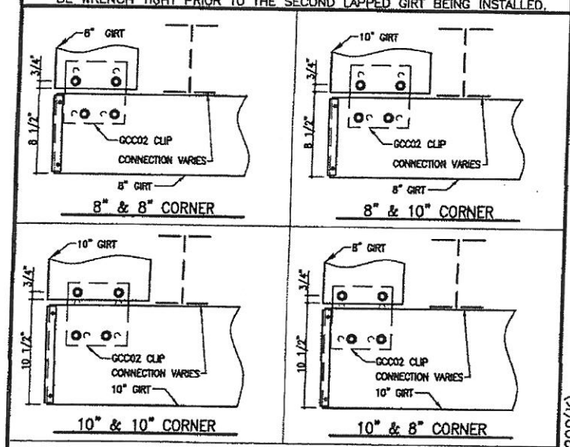


SW OR EW GIRT DETAIL

LAPPED GIRTS AT BUILT-UP INTERIOR COLUMNS
NOTE: USE (7) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

4 D2

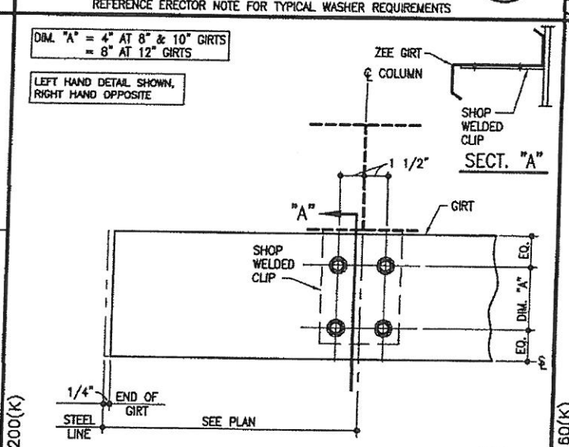
CC0240(K)



BYPASS GIRT BOLT PLACEMENT DETAIL

REFERENCE WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS
GIRT CLIPS ARE FACTORY PUNCHED TO BE USED WITH MULTIPLE GIRT DEPTHS. REFER TO THE DETAILS ABOVE TO DETERMINE WHICH HOLES ARE UTILIZED.

CF0001

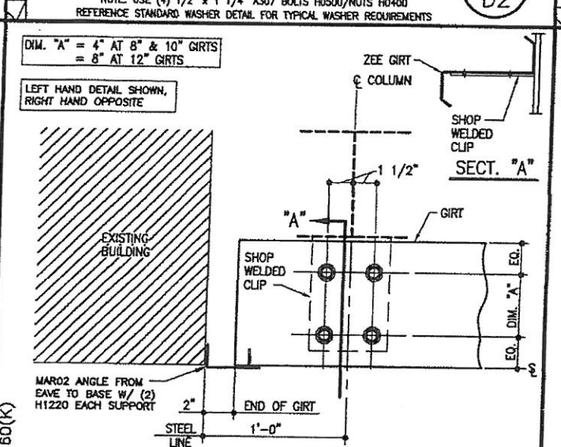


GIRT TERMINATION DETAIL

LEFT HAND DETAIL SHOWN, RIGHT HAND OPPOSITE
NOTE: USE (4) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

6 D2

CF1200(K)

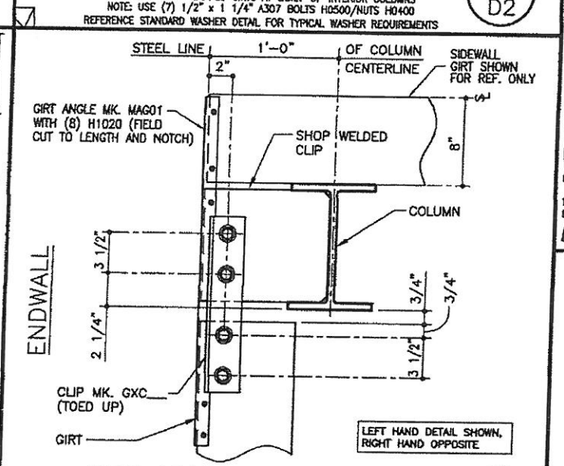


GIRT TERMINATION DETAIL

LEFT HAND DETAIL SHOWN, RIGHT HAND OPPOSITE
NOTE: USE (4) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

7 D2

CF1260(K)



GIRT CONNECTION DETAIL

NOTE: USE (4) 1/2" x 1 1/2" A307 BOLTS H0500/NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

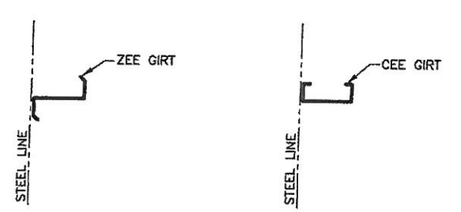
8 D2

ERECTOR NOTE:

UNLESS SPECIFICALLY NOTED OTHERWISE, STANDARD ZEE GIRT ORIENTATION IS TO HAVE THE GIRT TOED DOWN AT THE STEEL LINE AS SHOWN IN THE DETAIL BELOW.

UNLESS SPECIFICALLY NOTED OTHERWISE, STANDARD CEE GIRT ORIENTATION IS TO HAVE THE GIRT TOED UP AS SHOWN IN THE DETAIL BELOW. STANDARD CLIP ATTACHMENT IS BELOW THE GIRT, HOWEVER SOME DETAILS REQUIRE THAT THE CLIP BE ABOVE THE GIRT OR THAT THE GIRT BE TOED DOWN.

(REFER TO THE GIRT DETAILS FOR SPECIFIC CONNECTION REQUIREMENTS).

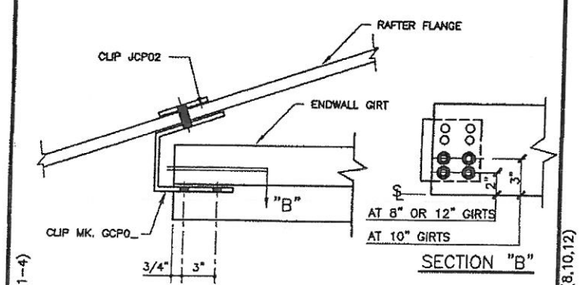


ZEE GIRT ORIENTATION CEE GIRT ORIENTATION

STANDARD GIRT ORIENTATION DETAIL

SEE GIRT DETAILS FOR GIRT CONNECTIONS (COLUMNS NOT SHOWN)

CC0005

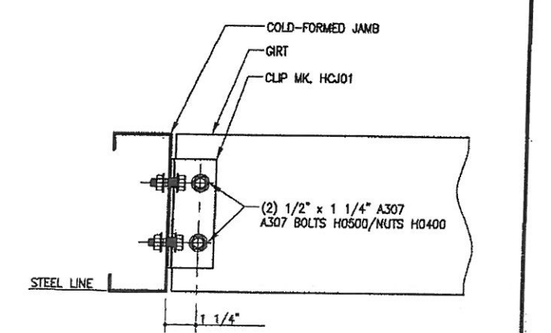


GIRT TO RAFTER CONN

BYPASS GIRT AT ENDWALL PURLIN
USE (8) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE ERECTOR NOTE FOR TYPICAL WASHER REQUIREMENTS

10 D2

CC0075(1-4)



GIR TO SUPPORT JAMB

USE (2) 1/2" x 1 1/4" A307 BOLTS H0500 / NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

11 D2

CC0067(8,10,12)

ISSUE	DWN	CHK	ENG	P.E.	DATE
CRANE CONFIRMATION	GLS	LAF	ATH		2-6-13
PERMITS	BHW				2-19-13

NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY
WATERLOO, IN 46793
PHONE: (260) 837-7891
FAX: (260) 837-7384

PROJECT NAME: SHOP EXTENSION
PORT COLBORNE QUARRY
PORT COLBORNE, ON

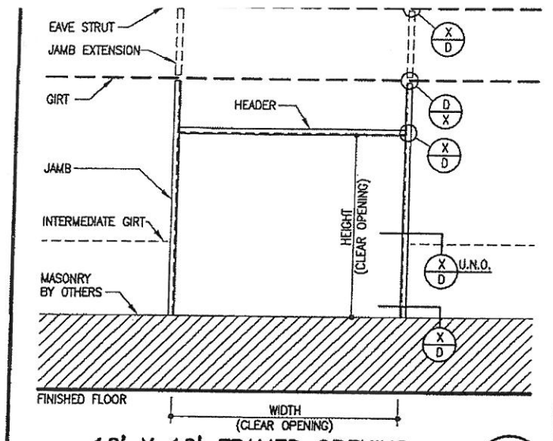
CUSTOMER: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHARINES, ON

JOB NUMBER: W13P0023A

SHEET NO: D2 of 5

LICENCE PROFESSIONAL ENGINEER
M. D. OAKES
100177581
2/19/13
PROVINCE OF ONTARIO

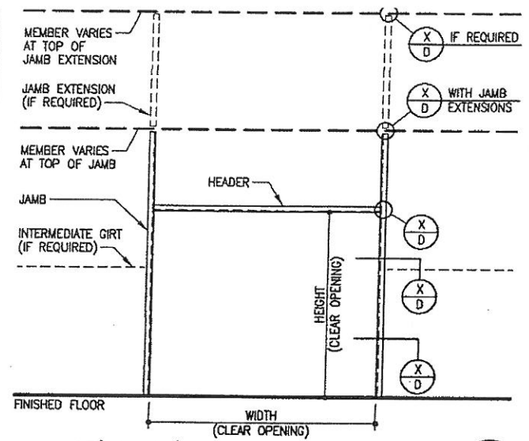
THIS SEAL PERTAINS ONLY TO THE MATERIALS DESIGNED AND SUPPLIED BY NUCOR BUILDING SYSTEMS, A DIVISION OF NUCOR CORPORATION. THE DRAWINGS AND THE METAL BUILDING WHICH THEY REPRESENT ARE THE PRODUCT OF NUCOR BUILDING SYSTEMS. THE REGISTERED PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS IS EMPLOYED BY NUCOR BUILDING SYSTEMS AND DOES NOT SERVE AS OR REPRESENT THE PROJECT ENGINEER OF RECORD AND SHALL NOT BE CONSTRUED AS SUCH.



16' X 18' FRAMED OPENING
18' X 18' FRAMED OPENING

1 D3

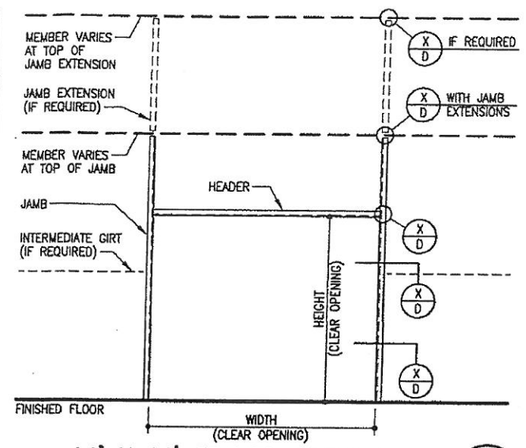
CG0001



18' X 18' FRAMED OPENING

2 D3

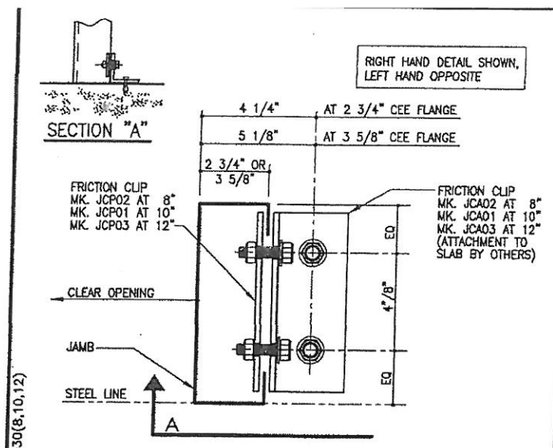
CG0001



14' X 14' FRAMED OPENING

3 D3

CG0001



JAMB TO FINISHED FLOOR CONNECTION

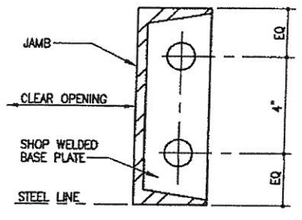
NOTE: USE (2) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

4 D3

CG0030(8,10,12)

ISSUE	DWN	CHK	ENG	P.E.	DATE
CRANE CONFIRMATION	GLS	LAF	ATH		2-6-13
PERMITS	BHW				2-19-13

NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY
WATERLOO, IN 46793
PHONE: (260) 837-7891
FAX: (260) 837-7384

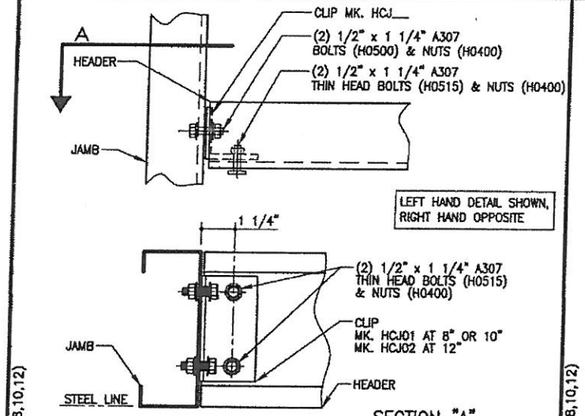


HOT-ROLLED JAMB BASE CONNECTION

1/2" ø EXPANSION BOLTS (BY OTHERS)

5 D3

CG0046

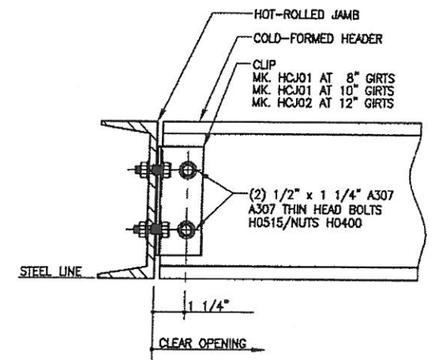


HEADER TO JAMB CONNECTION

NOTE: USE (2) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

6 D3

CG0050(8,10,12)

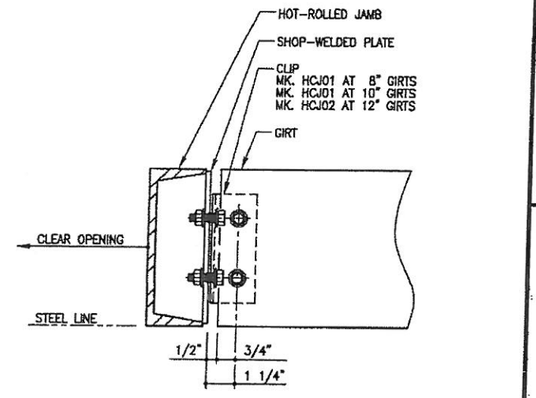


COLD FORM HEADER TO HOT-ROLLED JAMB

USE (2) 1/2" x 1 1/4" A307 BOLTS H0500 / NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

7 D3

CG0067(8,10,12)

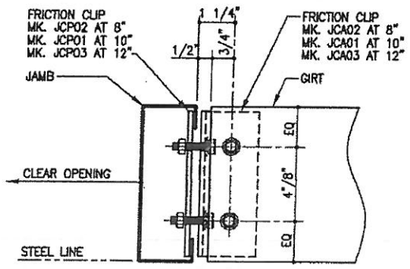


GIRT TO HOT-ROLLED JAMB

NOTE: USE (4) 1/2" x 1 1/4" A307 BOLTS H0500 / NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

8 D3

CG0068(8,10,12)



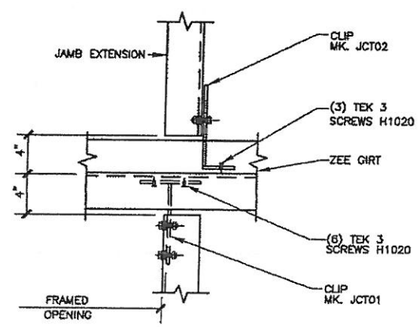
GIRT TO JAMB CONNECTION

NOTE: USE (4) 1/2" x 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE STANDARD WASHER DETAIL FOR TYPICAL WASHER REQUIREMENTS

9 D3

CG0060(8,10,12)

ERECTOR NOTE:
-IF THE T-CLIP IS LOCATED IN THE SAME LOCATION AS NESTED GIRT BOLTS, THE NESTED GIRT BOLTS CAN BE REMOVED.

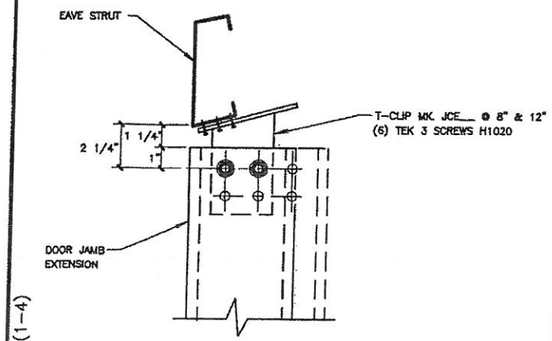


JAMB WITH EXTENSION DETAIL

JAMB & EXTENSION TO ZEE GIRT CONNECTION
NOTE: USE (6) 1/2" X 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE ERECTOR NOTE FOR TYPICAL WASHER REQUIREMENTS

10 D3

CG0064(K)

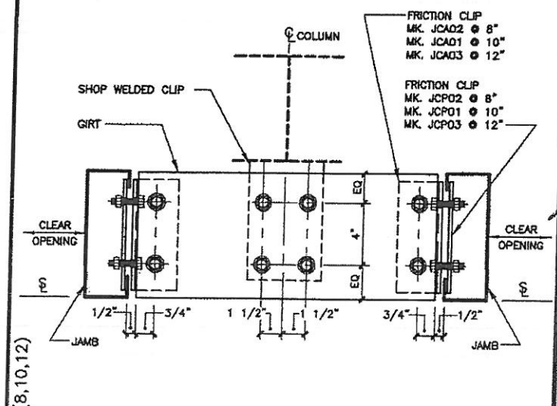


JAMB EXT. (8"/12") TO EAVE STRUT

NOTE: USE (2) 1/2"X 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE ERECTOR NOTE FOR TYPICAL WASHER REQUIREMENTS

11 D3

CG0090(1-4)



SW OR EW GIRT DETAIL

FRAMED OPENING (BOTH SIDES OF COLUMN) @ BYPASS GIRT CONDITION
NOTE: USE (12) 1/2" X 1 1/4" A307 BOLTS H0500/NUTS H0400
REFERENCE ERECTOR NOTE FOR TYPICAL WASHER REQUIREMENTS

12 D3

CG0306(8,10,12)

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, ON

CUSTOMER: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHARINES, ON

JOB NUMBER: W13P00237A

SHEET NO: D3 of 5

LICENCED PROFESSIONAL ENGINEER
M. D. OAKES
100177581
2/19/13
PROVINCE OF ONTARIO

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CRANE SYSTEM GENERAL NOTES

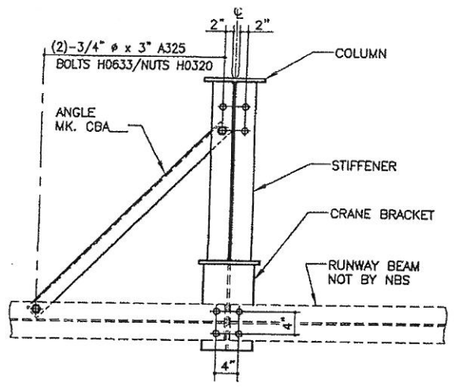
1) COORDINATION OF OTHER TRADES: SUPPORTS AND BRACING FOR THE CRANE SYSTEM SHALL BE PROVIDED AND ARE REQUIRED AS SHOWN IN THE SECTIONS AND AS NOTED IN THESE GENERAL NOTES. NECESSARY CLEARANCE DIMENSIONS FOR PROPER ELEVATIONS RELATIVE TO THE CRANE SYSTEMS HAVE BEEN SHOWN. THE BUYER SHALL BE RESPONSIBLE FOR COORDINATING THESE DIMENSIONAL REQUIREMENTS WITH OTHER TRADES ASSOCIATED WITH THE BUILDING SYSTEM.

2) CRANE RAIL SPLICES MUST BE ARRANGED SO THAT JOINTS ON OPPOSITE RUNWAY BEAMS FOR THE CRANE AISLE ARE STAGGERED WITH RESPECT TO EACH OTHER AND WITH RESPECT TO THE WHEEL BASE OF THE CRANE. REFER TO CMAA OR AISC GUIDELINES FOR FURTHER INSTALLATION REQUIREMENTS.

3) PERIODIC MAINTENANCE IS REQUIRED. DUE TO THE NATURE OF THE CRANE SYSTEM, MAINTENANCE INCLUDING BUT NOT LIMITED TO, TIGHTENING OF BOLTS AND NUTS MUST BE DONE AS REQUIRED BY BUILDER OR THE BUILDING OWNER TO INSURE THAT THE CRANE SYSTEM REMAINS IN SAFE, OPERATING CONDITION. REFER TO CMAA OR AISC GUIDELINES FOR PERIODIC MAINTENANCE REQUIREMENTS.

4) SEE RAIL TO RUNWAY BEAM CONNECTION DETAILS FOR HOOK BOLT OR SLIDING CLAMP REQUIREMENTS.

AH0001

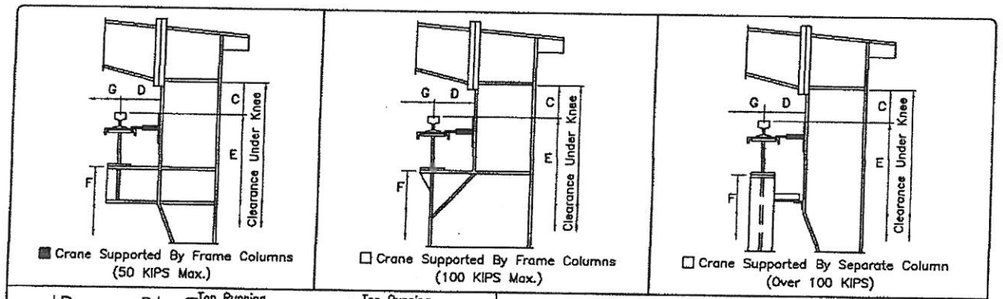


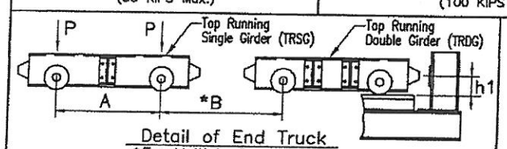
AH0050

TOP RUNNING BRIDGE CRANE DETAIL

2 / D4

RUNWAY BEAM TO COLUMN BRACING (TYPICAL UNLESS NOTED OTHERWISE)





MATERIALS PROVIDED BY NUCOR BUILDING SYSTEMS

Y	N	
□	■	Design For Crane Loads Only
■	□	Brackets or Auxiliary Columns
□	■	Runway Beam & Channel
□	■	Crane Rail & Method of Attachment
□	■	Crane Stops

Crane I.D. (A, B, C...) A

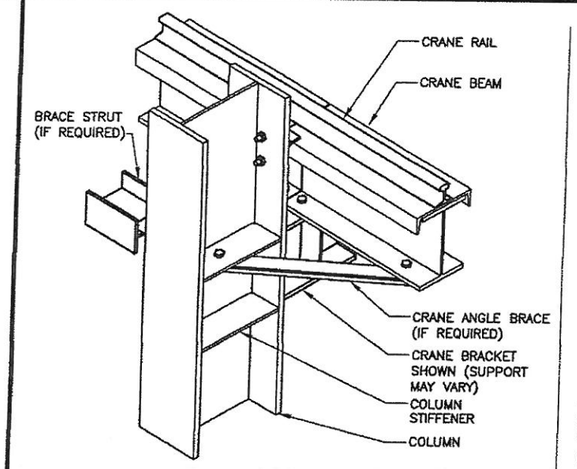
Information Provided/Confirmed By Customer

Quantity of Cranes:	ONE		Length of Runway:	100'-0"	ft.
Crane Type (TRSG/TRDG):	TRDG		No. of Wheels Per Endtruck:	2	
Rated Capacity:	5 (TONNE)	tons	Adjacent Crane ID:	N/A	
CMAA Service Duty Class:	C		Crane Rail Size (ASCE):	30	lbs/yd
Operation Control Type:	PENDANT		A Wheel Spacing:	10'-4"	ft.-in.
Hoist and Trolley Weight:	2400	lbs.	B Center to Center of Adj. Crane Wheels:	N/A	ft.-in.
Bridge Weight:	15,500	lbs.	C Minimum Clear Dist from Top of Rail:	3'-4"	ft.-in.
P Max. Wheel Load w/o Impact:	12,280	lbs.	D Minimum Side Clear Distance:	0'-9"	ft.-in.
Bumper Type:	N/A		E Top of Rail to Finished Floor:	19'-7 3/8"	ft.-in.
Bumper Stroke:	N/A	in.	F Top of Bracket to Finished Floor:	18'-0 3/8"	ft.-in.
Bridge Travel Speed:	N/A	fpm	G Center To Center of Rail:	62'-8"	ft.-in.
Crane End Stop Force:	** 2500	lbs.			
h1 Top of Rail to Center of Stop:	2'-0"	ft.-in.			

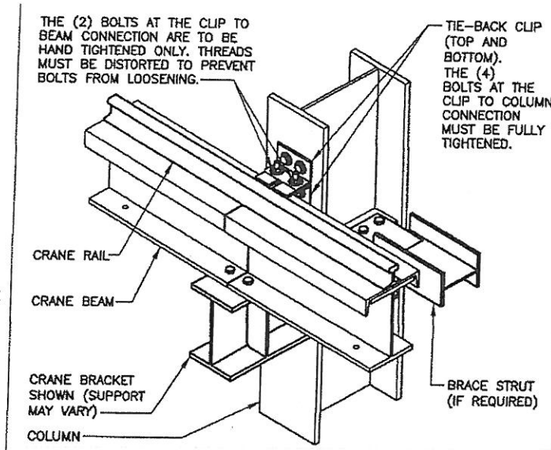
** - AS REQUIRED TO OBTAIN CRANE STOP FORCE AS SHOWN ABOVE.

AH0002

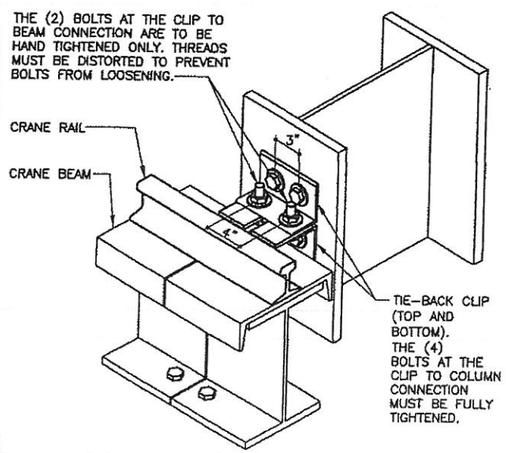
TOP RUNNING CRANE DESIGN INFORMATION DETAIL



VIEW A



VIEW B



VIEW C

AH0009

GENERAL NOTES

THE INTENTION OF THIS DETAIL IS TO MORE COMPLETELY SHOW THE FINISHED ASSEMBLY OF CRANE BEAM TO COLUMN CONNECTIONS. REFER TO THE CRANE PLAN AND/OR STRUCTURAL ELEVATIONS FOR LOCATIONS OF ANGLE BRACING AND BRACE STRUTS, AS WELL AS PART NUMBERS.

VIEW A SHOWS THE ANGLE BRACE CONNECTION FROM THE COLUMN STIFFENER TO THE CRANE BEAM.

VIEW B SHOWS THE TIE-BACK CLIP CONNECTION FROM THE CRANE BEAM TO THE COLUMN.

VIEW C IS AN ENGLARGED VIEW OF THE TIE-BACK CLIP CONNECTION.

SEE THE RAIL TO RUNWAY BEAM CONNECTION DETAILS (EITHER HOOK BOLT OR FLOATING CLAMP DETAIL) FOR ADDITIONAL CONNECTION REQUIREMENTS.

SEE THE ADDITIONAL CRANE DETAILS, PLANS, OR FRAME CROSS SECTIONS FOR MATERIAL SIZES, CRITICAL DIMENSIONS, AND LOAD INFORMATION.

IMPORTANT NOTE: FIELD SLOTTING OF LATERAL TIE BACK PLATE OR ANGLES IS NOT PERMITTED. FIELD MODIFICATION OF THIS CONNECTION WILL ADVERSELY AFFECT THE STRUCTURAL PERFORMANCE AND INTEGRITY OF THE CRANE RUNWAY SYSTEM.

TOP-RUNNING BRIDGE CRANE ASSEMBLY DETAILS

12 / D4

(RUNWAY BEAM CONNECTION, SUPPORT VARIES, BRACKET SHOWN)

ISSUE	DWN	CHK	ENG	P.E.	DATE
CRANE CONFIRMATION	GLS	LAF	MTH		2-6-13
PERMITS	BHW				2-19-13

NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY
WATERLOO, IN 46793
PHONE: (260) 837-7891
FAX: (260) 837-7384

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, ON

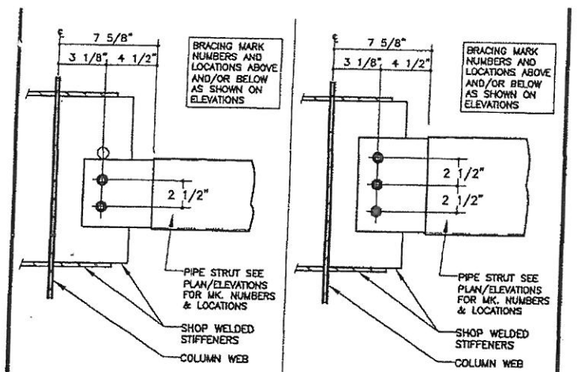
CUSTOMER: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHARINES, ON

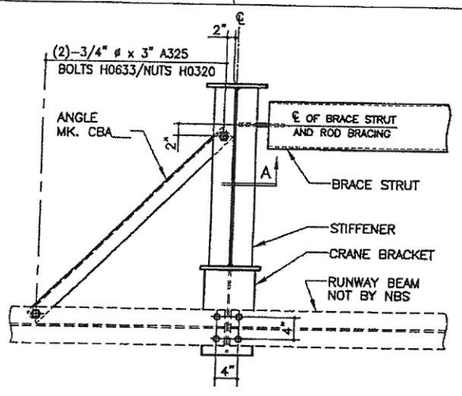
JOB NUMBER: W13P0023A

SHEET NO: D4 of 5

LICENSED PROFESSIONAL ENGINEER
M. D. OAKES
100177581
2/19/13
PROVINCE OF ONTARIO

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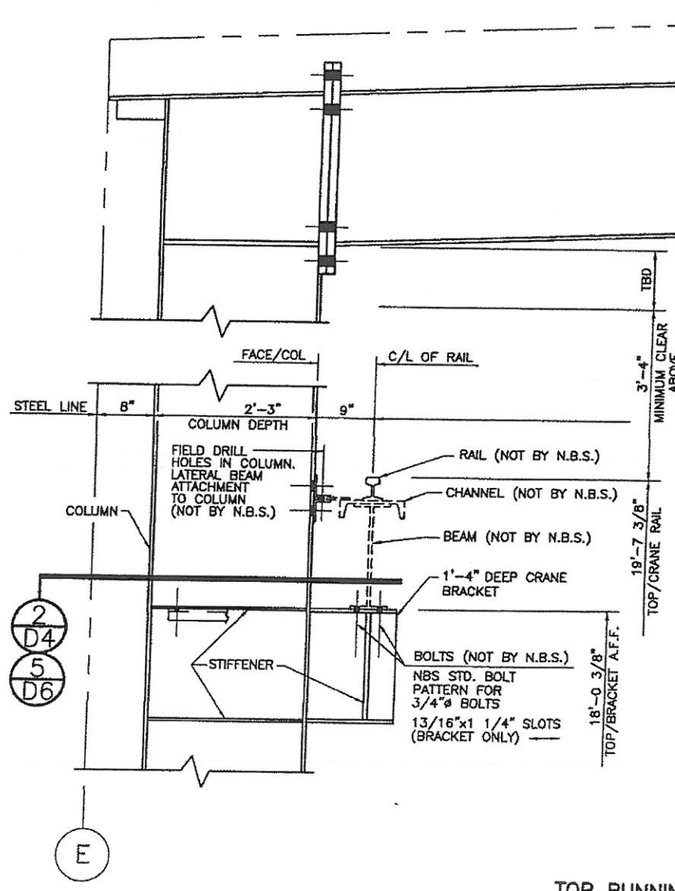


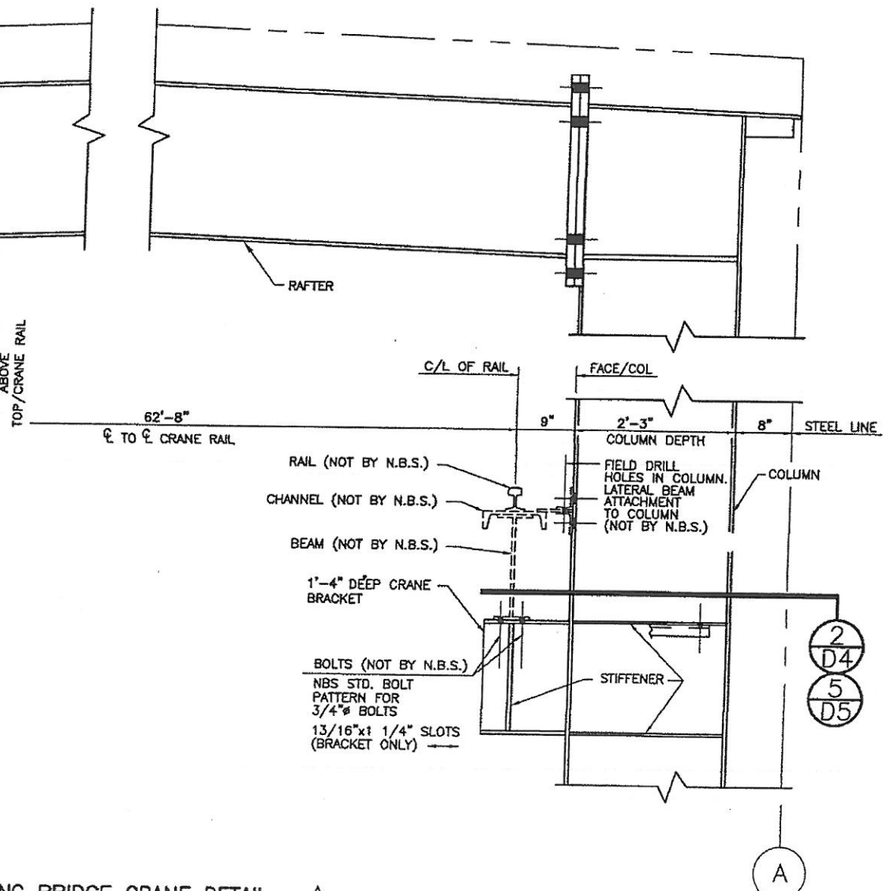


AH0085

TOP RUNNING BRIDGE CRANE DETAIL 5 D5

RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)





TOP RUNNING BRIDGE CRANE DETAIL A

CRANE BRACKETS, SIDEWALL – CRANE STEEL (NOT BY N.B.S.)

ISSUE	DWN	CHK	ENG	P.E.	DATE
CRANE CONFIRMATION	GLS	LAF			2-6-13
PERMITS	BHW		ATH		2-19-13

NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY
WATERLOO, IN 46793
PHONE: (260) 837-7891
FAX: (260) 837-7384

PROJECT NAME: PORT COLBORNE QUARRY SHOP EXTENSION
PORT COLBORNE, ON

CUSTOMER: BROUWER CONSTRUCTION (1981) LTD.
ST. CATHARINES, ON

JOB NUMBER: W13P0023A

SHEET NO: D5 of 5

LICENSED PROFESSIONAL ENGINEER
M. D. OAKES
100177581
2/19/13
PROVINCE OF ONTARIO

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