

STRUCTURAL SPECIFICATIONS

1) GENERAL

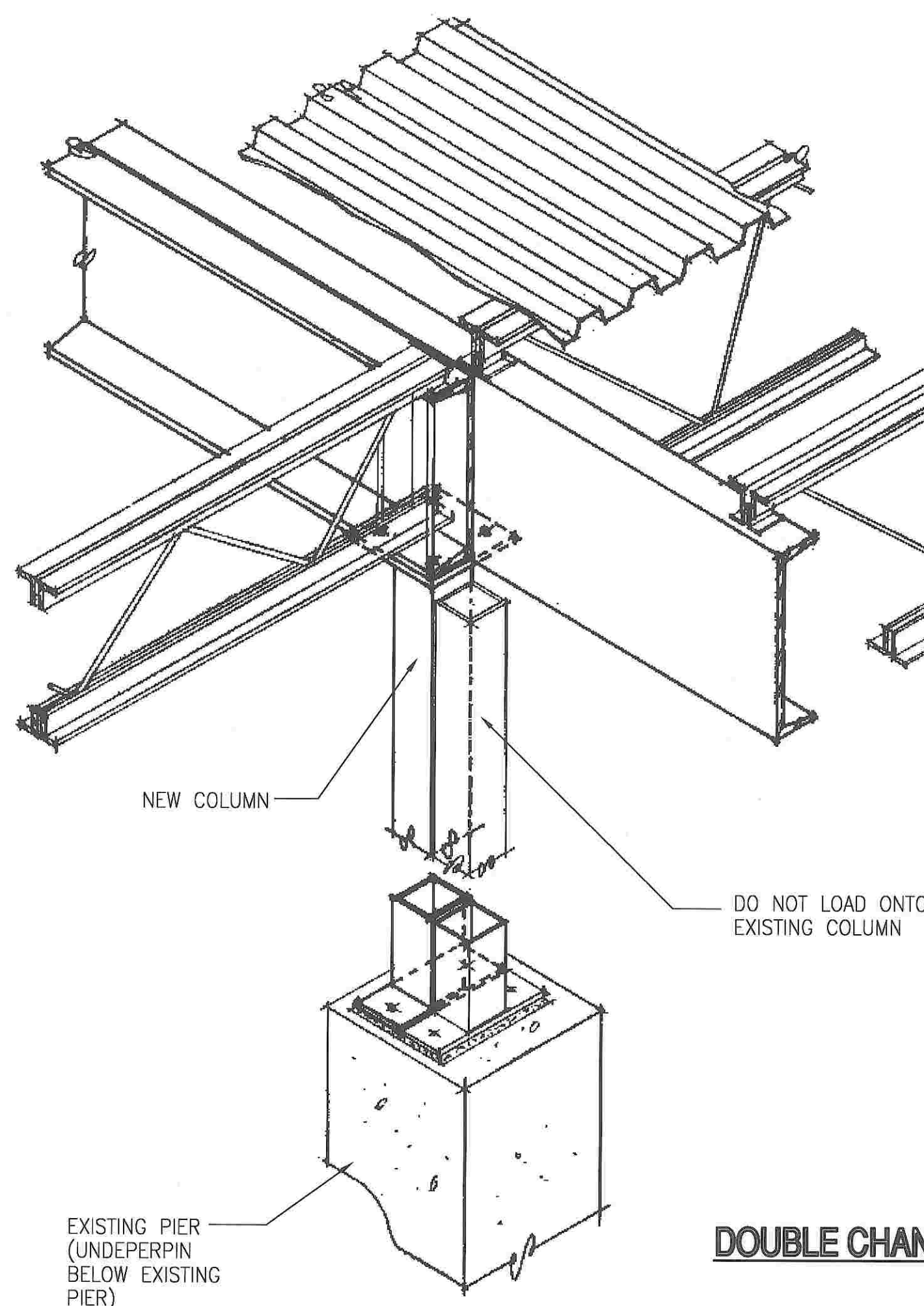
- 1.1 REFERENCE
A) USE ONLY THE LATEST ISSUES OF ANY GOVERNMENT CODES, STANDARDS OR REGULATIONS.
B) STRUCTURAL ELEMENTS SHOWN ON THESE DRAWINGS ARE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF ONTARIO REG. 403-(08.6)-1997.
- 1.2 DIMENSIONS
VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- 1.3 INSPECTION
GIVE MINIMUM 2 DAYS NOTICE TO ENGINEER'S REPRESENTATIVE FOR EACH INSPECTION.
- 1.4 EXCAVATION
EXCAVATIONS FOR FOUNDATIONS SHALL BE INSPECTED BY THE SOILS CONSULTANT AND APPROVED FOR THE NECESSARY ALLOWABLE BEARING PRESSURE BEFORE FOUNDATION CONCRETE IS POURED.
- 1.5 FOUNDATIONS
A) PROTECTED BY 1500 MM OF EARTH OR AN EQUIVALENT INSULATING VALUE.
B) PLACED ON UNFROZEN GROUND ONLY.
C) MAXIMUM STEP IN FOOTINGS 600 MM AND NOT EXCEEDING A RISE OF 1 IN RUN OF 15.
D) NO FOOTINGS TO ENCRUSH ON A PROJECTION LINE OF 1 VERTICAL TO 15 HORIZONTAL FROM SERVICE TRENCH OR LOWER FOOTING.
- 1.6 BACKFILLING
A) DO NOT BACKFILL BASEMENT WALLS UNTIL FLOOR FRAMING IS COMPLETED AND WRITTEN APPROVAL OBTAINED FROM ENGINEER.
B) BACKFILL EACH SIDE OF FOUNDATION WALLS SIMULTANEOUSLY WITH THE DIFFERENCE IN HEIGHT BETWEEN THE TWO SIDES NOT TO EXCEED 600 MM.
C) BEARING STRATA, GRANULAR FILL MATERIALS, COMPACTION, FOOTINGS, FROST PROTECTION TO BE INSPECTED AND APPROVED BY SOILS CONSULTANT PRIOR TO POURING CONCRETE.

2) CONCRETE

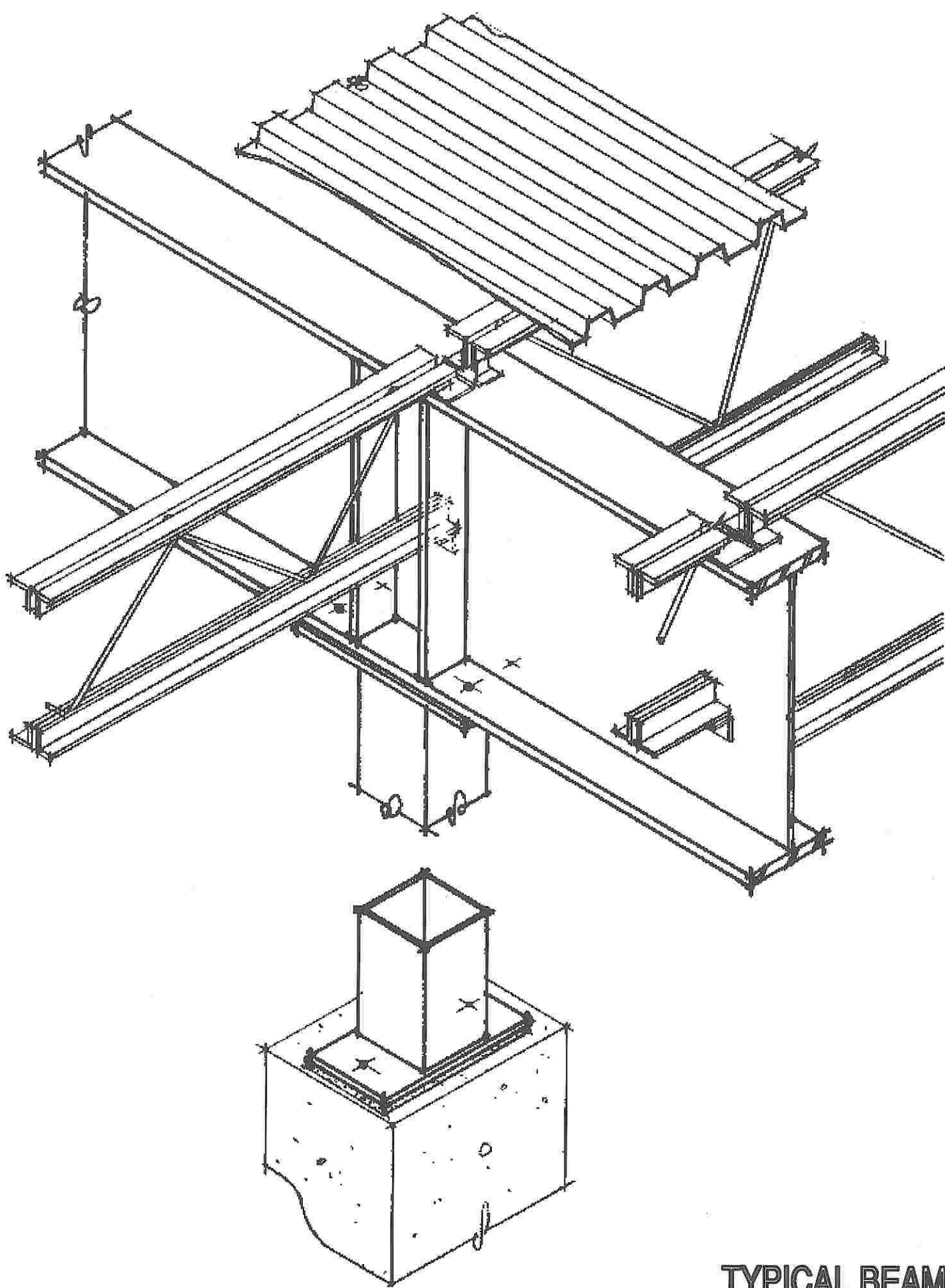
- 2.1 MATERIALS
A) REINFORCING STEEL
DEFORMED BAR : CSA G30.21M GRADE 400
WELDABLE BAR : CSA G30.21M GRADE 400
MESH : CSA G30.25
B) CONCRETE : CAN3-A23.1M NORMAL DENSITY CONCRETE
C) FORMWORK : CSA S16.91 & CAN3-A23.1M
- 2.2 CONCRETE COVER
A) CONCRETE CAST AGAINST EARTH : 75 MM
B) CONCRETE EXPOSED TO EARTH OR WEATHER : 50 MM
C) COLUMNS & BEAMS (TO TIES OR STIRRUPS) : 40 MM
D) TOP REINFORCING IN GARAGE SLABS : 40 MM
E) SLABS & WALLS NOT EXPOSED TO EARTH OR WEATHER : 25 MM
- 2.3 MIX DESIGN
A) MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS SPECIFIED IN STRUCTURAL DRAWINGS.
B) MAXIMUM AGGREGATE SIZE : 20 MM
C) SLUMP : CAN3-A23.1M TABLE 10
D) MAXIMUM WATER/CEMENT RATIO : CAN3-A23.1M TABLE 11
E) DO NOT USE CALCIUM OR OTHER CHEMICALS WITHOUT WRITTEN PERMISSION.
F) CONCRETE EXPOSED TO WEATHER TO HAVE 6% (+/- 1%) AIR CONTENT.
G) SUBMIT MIX DESIGN.
H) CONCRETE TO BE VIBRATED AT THE TIME OF POURING.
- 2.4 SHOP DRAWINGS
A) REINFORCEMENT
-SUBMIT MILL CERTIFICATE FOR STEEL.
-DETAILED AND BENT AS OUTLINED IN THE REINFORCING STEEL MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF ONTARIO.
-SUBMIT SHOP DRAWINGS AND BAR BENDING SCHEDULE.
-ALLOW MINIMUM 5 DAYS FOR REVIEW BY ENGINEER.
B) FORMWORK
-PROVIDE SHOP DRAWINGS FOR SUSPENDED SLABS AND BEAMS AND RESHORING AS REQUIRED BY ONTARIO DEPARTMENT OF LABOUR. DRAWINGS SUBMITTED SHALL BE CHECKED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO.
- 2.5 CONCRETE PLACING
A) CONSTRUCTION JOINTS
TO BE CLEAN, SQUARE, FREE OF ALL LOOSE MATERIAL AND LAUNCE. WET THOROUGHLY BEFORE PLACING NEW CONCRETE. LOCATION TO BE APPROVED BY STRUCTURAL ENGINEER.
B) SLAB ON GRADE
-SAW CUT SLAB ON GRADE AT ALL GRID LINES AND AS SHOWN ON THE DRAWINGS. SAW CUTS TO BE 40 MM DEEP AND SHALL BE THOROUGHLY CLEANED AND FILLED WITH POLYSULPHIDE SEALANT.
-CUT BETWEEN 18 - 24 HOURS AFTER CONCRETE POURED.
C) PROVIDE ADEQUATE BAR SUPPORTS AS OUTLINED IN THE REINFORCING STEEL MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF ONTARIO.
- 2.6 TESTING
A) FIELD CONTROL TESTS OF CONCRETE TO CAN3-A23.1M
B) DO TESTS FOR EACH CLASS OF CONCRETE POURED EACH DAY:
- THREE TEST CYLINDERS
- SLUMP TEST
- AIR CONTENT WHERE APPLICABLE.
- JOB-CURE CYLINDERS, WHEN DIRECTED.
- AGGREGATE SOUNDNESS TESTS AND GRADING, WHEN DIRECTED.

3) STRUCTURAL STEEL

- 3.1 MATERIALS
A) ROLLED SECTIONS : G4021M - 300W
B) HOLLOW STRUCTURAL SECTIONS : G4021M - 350W, CLASS H
C) PLATES & ANCHOR BOLTS : G4021M - 250W
D) HIGH STRENGTH BOLTS AND ASTM A307
NUTS AND WASHERS : AND ASTM A307
E) WELDING ELECTRODES : CSA W48.1 TO W48.6
F) SHOP PAINT PRIMER : CGSB 1-6P-A0M
G) GALVANIZING : CSA G164M
- 3.2 DESIGN
A) DO STRUCTURAL STEEL WORK IN ACCORDANCE WITH CSA CAN 3 S16.1 M84 AND CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL EXCEPT WHERE SPECIFIED OTHERWISE.
B) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND DETAIL ALL CONNECTIONS IN ACCORDANCE WITH CSA CAN 3 S16.1 M84 AND CISC HANDBOOK OF STEEL CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE STRUCTURAL ADEQUACY OF THE CONNECTIONS.
C) PROVIDE ALL REQUIRED GUSSETS, SPACERS, FILLERS AND BATTEN PLATES.
D) BOLTS: ASTM A325
USE BEARING TYPE CONNECTIONS (MINIMUM 2-M20 BOLTS PER CONNECTION UNLESS NOTED OTHERWISE).
E) ANCHOR BOLTS : ASTM GRADE A307
PROVIDE 2-20 MM x 250 MM HOOKED ANCHOR BOLTS FOR EACH STEEL BEAM BEARING PLATE.
F) WELD CONNECT ALL BEAMS TO END BEARING PLATES WITH A MIN. OF 50 MM LENGTH OF 6 MM FILLET WELD EACH SIDE.
G) LOOSE ANGLE LINTELS
PAINT 1 COAT SHOP PRIMER.
MINIMUM BEARING 150 MM EACH END UNLESS NOTED OTHERWISE.
SPAN UP TO 1200 MM : 90 x 90 x 6L
SPAN 1200 TO 2000 MM : 125 x 90 x 8L
SPAN OVER 2000 MM : REFER TO STRUCTURAL DRG.
- 3.3 ERECTION & FABRICATION
A) PRIMING PREPARATION TO CSA-S16, CLAUSE 32.
B) FIELD TOUCH UP ALL WELDS, DAMAGED AREAS AND BOLTS.
C) FABRICATION : CSA-S16
D) ARC WELDING : CSA-W59
E) RESISTING WELDING : CSA-W552 & W553
F) CONNECTIONS : CSA-S16
G) TOLERANCES : CSA-S16 & G4021M
H) FABRICATOR SHALL BE FULLY QUALIFIED TO THE CONDITIONS OF CSA QUALIFICATION CODE W471-0893, DIVISION 1 OR 2.
I) MAKE NO HOLES IN ANY STRUCTURAL STEEL MEMBER OTHER THAN THOSE SHOWN ON REVIEWED SHOP DRAWINGS.
J) SUBMIT SHOP DRAWINGS.
K) STRUCTURAL STEEL CONTRACTOR TO CHECK AND VERIFY ALL SITE CONDITIONS AND TAKE SITE DIMENSIONS BEFORE FABRICATION.
L) OBTAIN WRITTEN PERMISSION OF CONSULTANT PRIOR TO FIELD CUTTING OR ALTERING OF STRUCTURAL MEMBERS.
M) EXPOSED WELDS TO BE CONTINUOUS FOR LENGTH OF EACH JOINTS. FILL OR GRIND EXPOSED WELDS SMOOTH AND FLUSH.
N) MAKE ADEQUATE PROVISION FOR ALL LOADS ACTING ON THE STRUCTURE DURING ERECTION. PROVIDE TEMPORARY BRACING TO KEEP THE STRUCTURE DURING CONSTRUCTION.
- 3.4 JOIST
A) MATERIAL & DESIGN
i) DESIGN JOISTS AND BRIDGING TO CAN3-161 AND S16.
ii) TOTAL LOAD DEFLECTION OF JOISTS SHALL NOT EXCEED 1/240 OF THE SPAN AND LIVE LOAD DEFLECTION 1/360 OF THE SPAN.
iii) CENTRE REACTION POINTS OF JOISTS FRAMING FROM ONE SIDE ONLY OVER CENTROID OF SUPPORTING BEAM. PROVIDE SHOE DEPTHS REQUIRED TO SUIT THE ELEVATION OF JOISTS BEARING SURFACES.
B) SHOP DRAWING
SUBMIT JOIST DESIGN AND CALCULATIONS FOR ENGINEERS REVIEW. CALCULATIONS SUBMITTED SHALL BE CHECKED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO.
- 3.5 STEEL DECK
A) MATERIAL AND DESIGN
i) CONFORM TO THE REQUIREMENTS OF CSA STANDARD CAN3-S16 AND CANADIAN SHEET STEEL BUILDING INSTITUTE STANDARDS.
ii) ALL STEEL DECK HAVING CONCRETE TOPPING SHALL BE COMPOSITE GALVANIZED DECK.
iii) ALL OTHER STEEL DECK SHALL BE STANDARD GALVANIZED DECK.
iv) DEFLECTION UNDER LIVE LOAD ONLY SHALL NOT EXCEED 1/360 OF SPAN.
B) ERECTION
i) -ERECT METAL DECKING AS INDICATED TO MANUFACTURER'S INSTRUCTIONS.
-ERECTOR SHALL BE FULLY QUALIFIED TO REQUIREMENT OF W471 AND SHEET STEEL WELDING.
ii) MINIMUM BEARING OF DECK UNIT TO BE 50 MM.
iii) PROVIDE SUPPORT FOR THE UNSUPPORTED EDGE PARALLEL TO THE FLUTES WITH A CONTINUOUS L 65 x 65 x 6 UNLESS NOTED OTHERWISE.
iv) STEEL DECKING SHALL SAFELY CARRY DEAD AND LIVE AND DIAPHRAGM LOADS AS INDICATED.
DECK ATTACHMENTS UNLESS OTHERWISE:
- WELD THE DECK TO ALL SUPPORTING STEEL WITH 20 MM DIAMETER FUSION WELDS THROUGH LOW RIPS AT ALTERNATE FLUTES OR 300 MM O.C. MAXIMUM.
- WELD THE DECK TO STEEL WORK PARALLEL TO THE FLUTES WITH 20 MM DIAMETER FUSION WELDS THROUGH LOW RIPS OF THE DECKING OR 300 MM O.C. MAXIMUM.
- MECHANICALLY CLINCH ALL SIDE LAPS AT 300 MM C.C.
- LAP ENDS 50 MM MINIMUM.
v) IMMEDIATELY AFTER DECKING IS PERMANENTLY SECURED IN PLACE TOUCH-UP GALVANIZED SURFACE WITH PRIMER WHERE BURNED BY WELDING.
vi) OPENINGS
PROVIDE ANGLE REINFORCING TO FRAME ACROSS EACH SIDE OF OPENING.
FOR HOLES UP TO 150 MM DIA : NO REINFORCEMENT
150 MM TO 450 MM DIA : L 55 x 55 x 6
450 MM TO 750 MM DIA : L 90 x 90 x 8

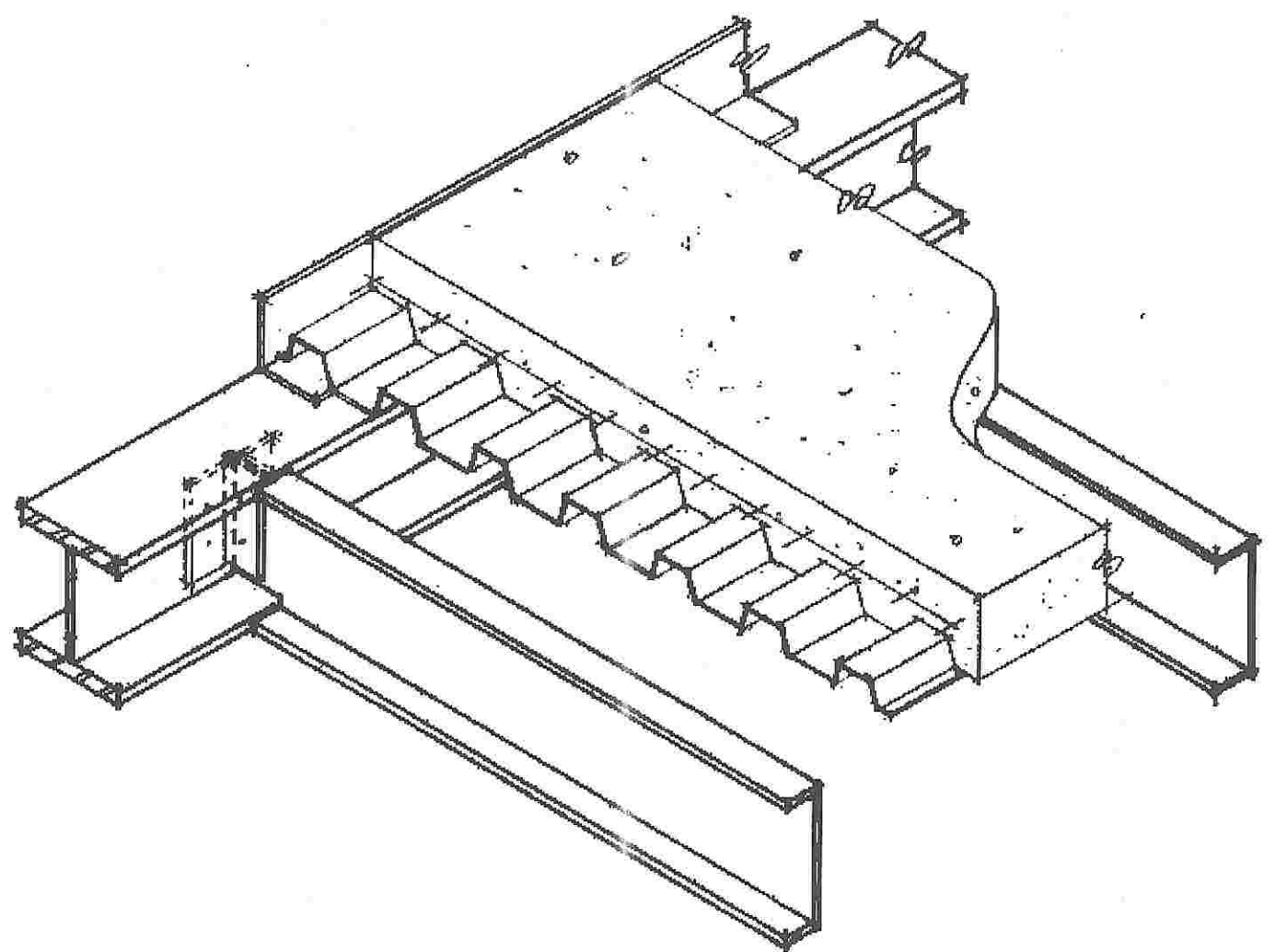


DOUBLE CHANNEL @ LINE (D1) (13A) DETAILS



TYPICAL BEAM CANTILEVER DETAILS

SEE SECTION (B/S3)

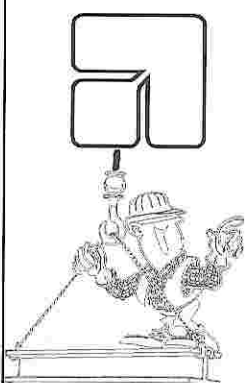


TYPICAL MEZZANINE FRAMING DETAILS

SEE SECTION (D/S4)

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NOTE:
READ THIS SET OF DRAWINGS TOGETHER WITH STRUCTURAL SPECIFICATIONS, ARCHITECTURAL AND MECHANICAL DRAWINGS.



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REV. NO.	DESCRIPTION	DATE
1	PERMIT APPLICATION	9 March 2001
2	PRELIMINARY	January 2001

PROJECT TITLE
**ADDITION TO THE
RON MASLIN PLAYHOUSE
KANATA, ONTARIO**

DRAWING TITLE
**ROOF FRAMING PLAN
FOUNDATION PLAN**

SCALE 1:100 (A1 SIZE)	DATE JANUARY 2001
DRAWN BY T. TAI	DESIGNED BY T. TAI
DISCipline Structural	APPROVED BY SITE COPY
PROJECT NO. cadfile/ron/ronsp	DRAWING NO. S5 OF 5

CITY OF KANATA
REVIEWED

FOR THE PURPOSE OF
ISSUING A PERMIT

MAY 02 2001

BUILDING SERVICES DEPT.
PROJ. NO. 0000000000