GENERAL REQUIREMENTS

GENERAL

1. STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS - INCLUDING ARCHITECTURAL, MECHANICAL, ELECTRICAL AND CIVIL DRAWINGS, GEOTECHNICAL REPORTS AND SPECIFICATIONS.
2. DO NOT SCALE THESE DRAWINGS.
3. ALL WORK MUST COMPLY WITH THE PROVISIONS OF THE ONTARIO BUILDING CODE, OCCUPATIONAL HEALTH & SAFETY ACT, RELEVANT CODES AND STANDARDS, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
4. DETAILS OF EXISTING CONDITIONS AND CONSTRUCTION ARE SHOWN BASED ON INFORMATION AVAILABLE AT THE TIME OF PREPARING DESIGN DRAWINGS. IF, PRIOR TO OR DURING CONSTRUCTION, CONDITIONS ARE REVEALED THAT DIFFER FROM CONDITIONS SHOWN, ADVISE THE STRUCTURAL ENGINEER BEFORE PROCEEDING.
5. THESE DRAWINGS SHOW THE COMPLETED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY ON THE JOB SITE AND THE DESIGN, INSTALLATION AND SUPERVISION OF ALL TEMPORARY WORKS REQUIRED TO SAFELY COMPLETE THE PROJECT.
6. DO NOT IMPOSE CONSTRUCTION LOADS ON THE STRUCTURE IN EXCESS OF THE DESIGN LOADS.
7. DO NOT CUT OR MAKE ADDITIONAL HOLES OR OPENINGS IN STRUCTURAL ELEMENTS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.
8. REFER TO ARCHITECTURAL, MECHANICAL OR ELECTRICAL DRAWINGS FOR EXACT LOCATIONS OF PITS, DEPRESSIONS, SUMPS, TRENCHES, CURBS, SLEEVES, CHAMFERS, SLOPES AND ROOF MOUNTED OR SUSPENDED EQUIPMENT.
9. SPECIFIC NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
10. FEATURES OF CONSTRUCTION NOT FULLY SHOWN SHALL BE AS INDICATED FOR SIMILAR CONDITIONS.
11. CONTRACTOR MUST VERIFY/COORDINATE ALL DIMENSIONS AND PENETRATIONS WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS PRIOR TO CONSTRUCTION. REPORT ANY INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK. ANY OPENINGS NOT INDICATED ON STRUCTURAL DRAWINGS MUST BE APPROVED BY STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.

DESIGN NOTES

1. THE STRUCTURE INDICATED ON THESE DRAWINGS HAS BEEN DESIGNED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE - ONTARIO REGULATION 332/12 (AS AMENDED), AND THE FOLLOWING CANADIAN DESIGN STANDARDS:
   - ■ CONCRETE STRUCTURE: CSA A23.3-14 (DESIGN OF CONCRETE STRUCTURES)
   - ■ STEEL STRUCTURE: CSA S16-14 (DESIGN OF STEEL STRUCTURES)
   - ■ MASONRY STRUCTURE: CSA S304-14 (R2019) (DESIGN OF MASONRY STRUCTURES)
   - ☐ WOOD STRUCTURE: CSA o86-14 (ENGINEERING DESIGN IN WOOD)
2. THE ROOF HAS BEEN DESIGNED FOR WATER ACCUMULATION TO A DEPTH OF 150mm (6") TO ALLOW FOR THE USE OF STORM WATER FLOW RESTRICTION.
3. UNIT LOADS AND PRESSURES GIVEN ARE SPECIFIED (UNFACTORED).
4. IMPORTANCE CATEGORY FOR STRUCTURAL DESIGN: NORMAL.
5. DEFLECTION: THE STRUCTURE HAS BEEN DESIGNED TO LIMIT SHORT-TERM AND LONG-TERM DEFLECTIONS TO GENERALLY ACCEPTED LIMITS OUTLINED IN CANADIAN DESIGN STANDARDS. CONTRACTOR MUST ALLOW FOR SUCH DEFLECTIONS IN THE DESIGN AND CONSTRUCTION OF ALL NON-STRUCTURAL ELEMENTS.
6. REFER TO SECTIONS RELATING TO SPECIALTY STRUCTURAL ELEMENTS OR TEMPORARY WORK BELOW FOR REQUIREMENTS FOR STRUCTURAL DESIGN BY OTHERS.

GRAVITY LOADS

ROOF:

DEAD LOAD:	STEEL STRUCTURE:	0.3 kPa
	STEEL DECK:	0.1 kPa
	CEILING:	0.1 kPa
	ROOFING:	0.4 kPa
	M & E:	0.4 kPa
	TOTAL:	1.3 kPa
SNOW LOAD:	GENERAL:	2.1 kPa
	+ ACCUMULATION AS SHOWN ON PLAN	

MEZZANINE:

DEAD LOAD:	STEEL STRUCTURE:	0.3 kPa
	CONC. ON DECK:	2.0 kPa
	PARTITIONS:	1.0 kPa
	FINISHES:	0.1 kPa
	M & E ALLOWANCE:	0.25 kPa + EQUIPMENT AS SHOWN ON PLAN
	FIRE-PROOFING:	0.1 kPa
	CEILING:	0.1 kPa
	TOTAL:	3.85 kPa
LIVE LOAD:	TOTAL:	4.8 kPa

CISTERN MEZZANINE:

DEAD LOAD:	STEEL STRUCTURE:	0.3 kPa
	CONC. ON DECK:	2.0 kPa
	TOTAL:	2.3 kPa
LIVE LOAD:	TOTAL:	4.8 kPa

SNOW LOADS

IMPORTANCE FACTORS FOR SNOW LOADS:	ULS:	1.0
	SLS:	0.9
1-IN-50 YEAR GROUND SNOW LOAD:	Ss:	2.1 kPa
1-IN-50 YEAR ASSOCIATED RAIN LOAD:	Sr:	0.4 kPa
BASIC ROOF SNOW LOAD FACTOR:	Cb:	0.8
WIND EXPOSURE FACTOR:	Cw:	1.0
SLOPE FACTOR (GENERAL CASE):	Cs:	1.0
ACCUMULATION FACTOR (GENERAL CASE):	Ca:	1.0
SPECIFIED LOAD DUE TO SNOW & ASSOCIATED RAIN:	S:	2.1 kPa

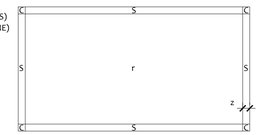
(PLUS ADDITIONAL LOADING DUE TO DRIFTING OR SLIDING AS NOTED ON PLANS)

WIND LOAD - INDIVIDUAL WALLS

WIND LOAD IMPORTANCE FACTORS:	ULS:	1.0
	SLS:	0.75
1-IN-50 YEAR REFERENCE PRESSURE:	q:	0.47 kPa
EXPOSURE FACTOR:	Ce:	0.93
EXTERNAL PRESSURE COEFFICIENTS:	CpCg:	± 1.95 (MAX)
INTERIOR WIND PRESSURE CATEGORY:		2
INTERNAL PRESSURE COEFFICIENTS:	CpiCgi:	± 0.9
RESULTING IN NEW WIND PRESSURE:	P:	1.26 kPa (ULS)
		0.92- kPa (SLS)

WIND LOAD - WIND UPLIFT (UNFACTORED):

r = (MAIN ROOF)
S = (EDGES)
C = (CORNERS)
Z = (END ZONE)



[KEY PLAN OF ROOF]

r= 0.8 kPa
S= 1.0 kPa
C= 1.2 kPa
Z= 2.8m

NOTE: WIND PRESSURES INCLUDE EXTERIOR AND INTERIOR WIND EFFECTS, AND ARE GROSS WIND PRESSURES

SPECIALTY STRUCTURAL ELEMENTS - DESIGNED BY OTHERS

1. SPECIALTY STRUCTURAL ELEMENTS SHALL BE DESIGNED AND DETAILED BY THE FABRICATORS OF THOSE ELEMENTS AND THEIR SPECIALTY STRUCTURAL ENGINEERS, INCLUDING THE FOLLOWING:
   - PRECAST CONCRETE
   - MANUFACTURED WOOD PRODUCTS
   - COLD FORMED STEEL STUD FRAMING
   - OPEN WEB STEEL JOISTS
   - STRUCTURAL STEEL CONNECTIONS
   - MISCELLANEOUS METALS, INCLUDING LADDERS AND STEEL STAIRS
   - GUARDS AND HANDRAILS
   - PRE-ENGINEERED STEEL BUILDINGS
   - SEISMIC RESTRAINTS OF NON-STRUCTURAL COMPONENTS AND EQUIPMENT
2. SPECIALTY STRUCTURAL ELEMENTS SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF THE ONTARIO BUILDING CODE, AND AS NOTED ON STRUCTURAL AND ARCHITECTURAL DRAWINGS.
3. GUARDS AND HANDRAILS SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE CLAUSES 3.4.6.5 & 3.4.6.6, AND 4.1.5.14. IN ADDITION, GLASS IN GUARDS SHALL COMPLY WITH THE ONTARIO BUILDING CODE SUPPLEMENTARY STANDARD SB-13.
4. ENGINEERED SHOP DRAWINGS OF SPECIALTY STRUCTURAL ELEMENTS MUST BE SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE ENGINEERING IN THE PROVINCE OR TERRITORY WHERE THE PROJECT IS LOCATED.
5. SEALED ENGINEERED SHOP DRAWINGS MUST BE SUBMITTED TO THE DESIGN CONSULTANT TEAM FOR REVIEW PRIOR TO FABRICATION.
6. SHOP DRAWINGS MUST BE REVIEWED BY THE GENERAL CONTRACTOR AND COORDINATED WITH OTHER SUB TRADES PRIOR TO SENDING TO CONSULTANTS. SHOP DRAWINGS NOT STAMPED, REVIEWED AND SUFFICIENTLY COORDINATED WILL BE RETURNED NOTED "NOT REVIEWED". ANY RESULTING DELAYS TO THE PROJECT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. SHOP DRAWINGS WILL BE REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN INTENT. REVIEW DOES NOT IMPLY APPROVAL OF DETAILED DESIGN OR QUANTITIES OUTLINED IN THE SHOP DRAWINGS. THE RESPONSIBILITY FOR THE QUANTITIES AND DETAILED DESIGN OF THE MATERIALS AND COMPONENTS AS REQUIRED TO PROVIDE THE COMPLETE AND SATISFACTORY JOB DESCRIBED IN THE DESIGN DOCUMENTS REMAINS WITH THE CONTRACTOR.
8. COPIES OF REVIEWED ENGINEERED SHOP DRAWINGS MUST BE KEPT ON SITE AND MADE AVAILABLE TO THE BUILDING INSPECTOR TO REVIEW UPON REQUEST.

TEMPORARY WORKS - DESIGNED BY OTHERS

1. THESE DRAWINGS SHOW THE COMPLETED STRUCTURE.
2. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY ON THE CONSTRUCTION SITE AND THE DESIGN, INSTALLATION AND SUPERVISION OF ANY TEMPORARY INSTALLATIONS REQUIRED TO PROVIDE ACCESS, PROTECTION, SUPPORT, OR SERVICES FOR WORKERS EQUIPMENT AND MATERIALS DURING CONSTRUCTION. THIS INCLUDES BUT IS NOT LIMITED TO BRACING, FORM WORK, SHORING, DEWATERING OPERATIONS, LIFTING OPERATIONS.
3. DESIGN AND FIELD REVIEW OF ALL TEMPORARY WORKS MUST BE UNDERTAKEN BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OR TERRITORY WHERE THE PROJECT IS LOCATED AND RETAINED BY THE GENERAL CONTRACTOR OR ONE OF THEIR SUB-CONTRACTORS.
4. DESIGN AND FIELD REVIEW OF ALL TEMPORARY WORKS MUST BE UNDERTAKEN IN ACCORDANCE WITH THE ONTARIO BUILDING CODE, APPLICABLE CODES AND STANDARDS, AND REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION.
5. SEALED ENGINEERING SHOP DRAWINGS OF THE FOLLOWING TEMPORARY WORKS SHALL BE SUBMITTED TO THE CONSULTANT DESIGN TEAM FOR REVIEW:
   - SHORING
   - FORM WORK
   - CRANE BASE(S)
   - HOISTING OR LIFTING OPERATIONS
6. SHOP DRAWINGS WILL BE REVIEWED FOR COMPLIANCE WITH DESIGN INTENT AND SPECIFICATIONS FOR PERMANENT WORKS AND LOADS APPLIED TO PERMANENT WORKS.
7. REVIEW OF SHOP DRAWINGS OF TEMPORARY WORKS DOES NOT IMPLY APPROVAL OR VERIFICATION OF THE DETAILED DESIGN, AND D+M STRUCTURAL LTD. ACCEPTS NO RESPONSIBILITY FOR THE DESIGN, INSTALLATION OR SUPERVISION OF TEMPORARY INSTALLATIONS.

ABBREVIATIONS

WHEN USED, THESE ABBREVIATIONS HAVE THE FOLLOWING MEANINGS:

ARCH.	ARCHITECTURAL	LLH	LONG LEG HORIZONTAL
B	BOTTOM	LLV	LONG LEG VERTICAL
BLL	BOTTOM LOWER LAYER	LVL	LAMINATED VENEER LUMBER
BPL	BASE PLATE	MAX	MAXIMUM
BUL	BOTTOM UPPER LAYER	MECH	MECHANICAL
C/C	CENTER-TO-CENTER	MIN	MINIMUM
CL	CENTER-LINE	NF	NEAR FACE
CONC	CONCRETE	NLB	NOT LOAD BEARING
CONT	CONTINUOUS	NTS	NOT TO SCALE
CW	CORE WALL	OF	OUTSIDE FACE
c/w	COMPLETE WITH	o.c	ON CENTER
EA	EACH	PL	PLATE
EF	EACH FACE	SF	STRIP FOOTING
EL	ELEVATION	SMR	STANDARD MASONRY REINFORCEMENT
ELEC	ELECTRICAL	SW	SHEAR WALL
ES	EACH SIDE	T	TOP
EW	EACH WAY	TLL	TOP LOWER LAYER
FF	FAR FACE	TOS	TOP OF STEEL
FFL	FINISHED FLOOR LEVEL	TUL	TOP UPPER LAYER
FW	FOUNDATION WALL	TYP	TYPICAL
H	HORIZONTAL	U/N	UNLESS NOTED OTHERWISE
HDMR	HEAVY DUTY MASONRY REINFORCEMENT	UL	UPPER LAYER
HORIZ	HORIZONTAL	U/S	UNDERSIDE
ICF	INSULATED CONCRETE FORM WORK	V	VERTICAL
IF	INSIDE FACE	VERT	VERTICAL
LB	LOAD BEARING	VSC	VERTICAL SLOTTED CONNECTION
LL	LOWER LAYER		

FOUNDATIONS

GENERAL / GEOTECHNICAL CONDITIONS

1. ALL FOOTINGS TO BE ON UNDISTURBED NATIVE MATERIAL WITH MINIMUM DESIGN BEARING STRENGTHS NOTED BELOW (OR IN THE FOUNDATION SCHEDULE, IF APPLICABLE).
2. ALL BEARING CONDITIONS MUST BE REVIEWED ON SITE BY THE GEOTECHNICAL ENGINEER TO CONFIRM ADEQUATE BEARING CONDITIONS, BEFORE PLACING CONCRETE.
3. REFERENCE GEOTECHNICAL REPORT: GEOTECHNICAL INVESTIGATION REPORT PROPOSED COMMERCIAL DEVELOPMENT 1533 MCADOO'S LANE, KINGSTON, ONTARIO BY GHD, MAY 2020
4. DESIGN BEARING STRENGTHS: ROCK: SERVICEABILITY LIMIT STATE (SLS): 720 kPa; ULTIMATE LIMIT STATE (ULS): 720 kPa

   ALL FOUNDATIONS MUST BEAR ON ROCK OR LEAN CONCRETE BEARING ON ROCK EXCEPT AS NOTED
5. PROVIDE MINIMUM FROST COVER TO UNDERSIDE OF FOUNDATIONS AS RECOMMENDED IN GEOTECHNICAL REPORT OR LISTED BELOW (WHICHEVER IS GREATER):

PERIMETER OF HEATED BUILDING:	1.2m (4'-0")
ISOLATED EXTERIOR FOOTINGS:	2.1m (7'-0")

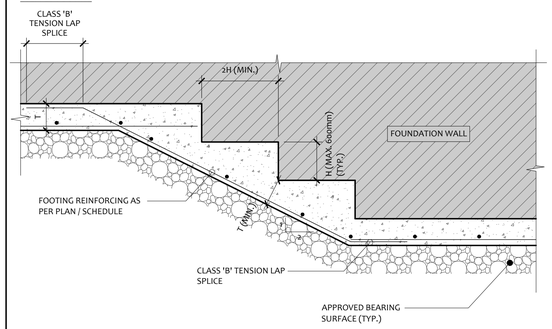
EXCAVATION AND BACKFILL:

1. PROTECT SUBGRADE FROM FREEZING AND FROST ACTION AT ALL TIMES DURING CONSTRUCTION. DO NOT POUR CONCRETE ON FROZEN GROUND OR GROUND THAT HAS FROZEN.
2. PRIOR TO ANY EXCAVATION OR PILING OPERATION, VERIFY LOCATION OF EXISTING SERVICES AND TAKE ALL NECESSARY MEASURES TO PROTECT AND MAINTAIN SERVICES. NOTIFY OWNER AND ENGINEER IF ANY SERVICES NOT SHOWN ON CIVIL PLANS OR OTHERWISE EXPECTED ARE ENCOUNTERED. DO NOT PROCEED FURTHER UNTIL DIRECTED.
3. CARE MUST BE TAKEN TO AVOID UNDERMINING EXISTING BUILDING FOUNDATIONS OR UNDERGROUND SERVICES.
4. IF EXISTING BUILDING FOUNDATIONS OR UNDERGROUND SERVICES ARE PRESENT WITHIN OR ADJACENT TO THE WORK AREA, CONFIRM LOCATION AND DEPTH BEFORE PROCEEDING WITH EXCAVATION.
5. UNLESS OTHERWISE OUTLINED IN GEOTECHNICAL REPORT, DO NOT EXCAVATE BELOW A LINE EXTENDING DOWNWARD FROM EXISTING FOUNDATIONS AT A SLOPE OF 1 VERTICAL TO 2 HORIZONTAL.
6. SIDES AND BASE OF EXCAVATION MUST BE FREE OF WATER, LOOSE OR REMOLDED MATERIAL BEFORE PLACING CONCRETE.
7. IF DEWATERING OPERATIONS ARE REQUIRED, DESIGN AND COORDINATE DEWATERING OPERATIONS TO PREVENT DAMAGE AND/OR SETTLEMENT OF ADJACENT FOUNDATIONS.

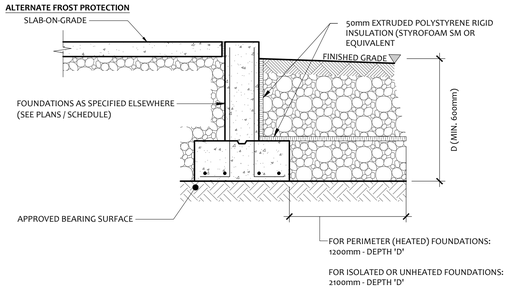
BACKFILLING:

1. RE-USE OF EXISTING MATERIAL IS SUBJECT TO REVIEW AND ACCEPTANCE BY THE PROJECT GEOTECHNICAL ENGINEER.
2. ENSURE MINIMUM CONCRETE STRENGTH HAS BEEN ATTAINED PRIOR TO BACKFILLING AGAINST STRUCTURES.
3. BACKFILL TO FOUNDATION WALLS AND WITHIN BUILDING FOOTPRINT AS RECOMMENDED IN GEOTECHNICAL REPORT. IF NOT NOTED, BACKFILL WITH OPSS GRANULAR B TYPE 2 MATERIAL IN LIFTS NOT EXCEEDING 300mm (1'-0"), COMPACTED TO MINIMUM 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD). FINAL LIFT BELOW SLAB-ON-GRADE TO BE 200mm (8") OF OPSS GRANULAR A, COMPACTED TO MINIMUM 98% SPMDD.
4. DO NOT PLACE BACKFILL AGAINST FOUNDATION WALLS WITHOUT SUPPORT UNLESS NOTED OTHERWISE.
5. IN AREAS WHERE HARD SURFACING WILL ABUT THE BUILDING, BACKFILL AGAINST THE OUTSIDE OF THE FOUNDATION WALL SHOULD BE PLACED TO FORM A FROST TAPER. THE FROST TAPER, CONSISTING OF FREE DRAINING GRANULAR BACKFILL, SHOULD BE BROUGHT UP TO PAVEMENT SUBGRADE LEVEL FROM 1.5m (5'-0") BELOW FINISHED EXTERIOR GRADE OR THE TOP OF BEDROCK (WHICH EVER IS HIGHER) AT A SLOPE OF 1 HORIZONTAL TO 1 VERTICAL, AWAY FROM THE WALL. BACKFILL SHOULD BE PLACED IN MAXIMUM 300mm (1'-0") THICK LIFTS AND COMPACTED TO MINIMUM 95% SPMDD.

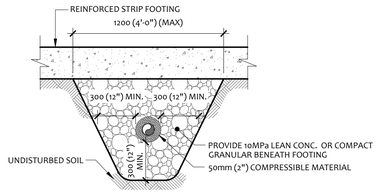
STEPPED FOOTING



ALTERNATE FROST PROTECTION

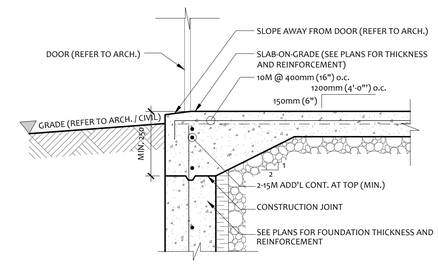


MECH. CROSSING UNDER STRIP FOOTING

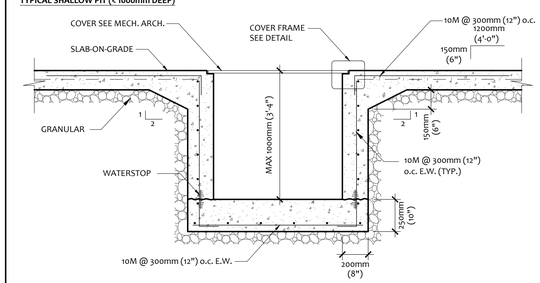


PIPE PERPENDICULAR UNDER STRIP FOOTING

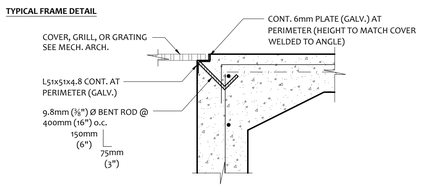
SLAB-ON-GRADE & FOUNDATION WALL AT DOOR



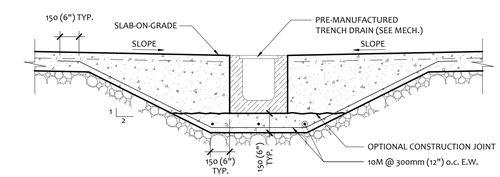
TYPICAL SHALLOW PIT (< 1000mm DEEP)



TYPICAL FRAME DETAIL



TYPICAL TRENCH DRAIN



D+M STRUCTURAL ENGINEERING

D+M Structural Ltd.
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#	DATE	DESCRIPTION
7	24 03 07	RE-ISSUED FOR TENDER
6	23 04 14	ISSUED FOR PERMIT
5	23 03 14	ISSUED FOR ADD S04
4	23 02 13	ISSUED FOR PERMIT/TENDER
3	22 12 19	ISSUED FOR COORDINATION
2	22 12 02	ISSUED FOR COORDINATION
1	22 09 16	ISSUED FOR PRELIMINARY COORD

STAMP:

NORTH ARROW:

PROJECT NAME AND ADDRESS:

METAL RECYCLING PLANT
AIM / KENNY U-PULL

1533 McADOO'S LANE
KINGSTON

DRAWING NAME:

GENERAL NOTES AND DETAILS

DESIGNED BY: R. MUNDEN

DRAWN BY: A. WITTICH

START DATE: 2022-01-31

D+M PROJECT #: 21-127

S-000

CONCRETE

GENERAL

1. ALL CONCRETE WORK, INCLUDING MATERIALS, MIXING, PLACING, CURING AND FORM WORK SHALL BE IN ACCORDANCE WITH CSA A23.1.
2. TESTING OF CONCRETE AND CONCRETE MATERIALS SHALL BE IN ACCORDANCE WITH CSA A23.2.
3. FALSE WORK AND FORM WORK SHALL BE IN ACCORDANCE WITH CSA S269.1.
4. UNLESS NOTED OTHERWISE, ALL EXPOSED CORNERS SHALL BE FINISHED WITH 20mm (¾") CHAMFER.
5. REFER TO ARCHITECTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR SIZES AND LOCATIONS OF ALL EQUIPMENT BASES, HOUSEKEEPING PADS, PITS, SUMPS, TRENCHES, DEPRESSIONS, CURBS, CHAMFERS AND SLOPES NOT SHOWN ON STRUCTURAL DRAWINGS.
6. MAINTAIN MINIMUM SLAB THICKNESS INDICATED AT SLOPES, DEPRESSIONS AND CHANGES IN ELEVATION.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE DEFORMED STEEL BARS IN ACCORDANCE WITH CSA G30.18, GRADE 400R.
2. WHERE SPECIFIED, EPOXY COATING SHALL BE IN ACCORDANCE WITH ASTM A775.
3. WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH CSA G30.5 (FLAT SHEETS ONLY).
4. ALL REINFORCING STEEL SHALL BE DETAILED, FABRICATED, PLACED AND SUPPORTED IN ACCORDANCE WITH THE REINFORCING STEEL INSTITUTE OF CANADA MANUAL OF STANDARD PRACTICE AND CSA A23.3, UNLESS INDICATED OTHERWISE.
5. UNLESS INDICATED OTHERWISE, REINFORCEMENT TO BE EXTENDED INTO ADJACENT CONCRETE ELEMENTS AND DEVELOPED WITH A STANDARD HOOK OR LAP SPLICE - PROVIDE DOWELS TO MATCH VERTICAL REINFORCEMENT IN ALL PIERS, COLUMNS, WALLS, CURBS.
6. DO NOT ELIMINATE OR DISPLACE REINFORCEMENT TO ACCOMMODATE HARDWARE. IF INSERTS CANNOT BE LOCATED AS SPECIFIED, OBTAIN APPROVAL OF ALL MODIFICATIONS FROM STRUCTURAL ENGINEER BEFORE PLACING CONCRETE.
7. SPLICE REINFORCEMENT AS INDICATED ON STRUCTURAL DRAWINGS OR OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.
8. WHERE TENSION LAPS ARE SPECIFIED, PROVIDE MINIMUM CLASS 'B' TENSION LAP SPLICE IN ACCORDANCE WITH CSA A23.3.
9. BARS MARKED AS CONTINUOUS SHALL BE DEVELOPED BY CLASS 'B' TENSION LAP SPLICE IN ACCORDANCE WITH CSA A23.3.
10. ALL SPLICES IN CORE AND SHEAR WALLS TO BE MINIMUM 1.5 x BASIC DEVELOPMENT LENGTH.
11. MINIMUM WIRE MESH LAPS SHALL BE 150mm (6").
12. STANDARD HOOKS SHALL BE USED UNLESS NOTED OTHERWISE.
13. REINFORCEMENT SHALL BE EFFECTIVELY CONTINUOUS AT ALL CORNERS AND INTERSECTIONS - HOOK AND SPLICE AS REQUIRED.
14. PROVIDE DOWELS TO ALL WALLS, PIERS AND COLUMNS TO MATCH WALL, PIER OR COLUMN REINFORCEMENT. PROVIDE CLASS 'B' TENSION LAP SPLICE UNLESS NOTED OTHERWISE, AND FULLY EMBED / DEVELOP REINFORCEMENT.
15. INSTALL ADHESIVE / EPOXY ANCHORS TO MANUFACTURER'S RECOMMENDATIONS. ALLOW TO REACH FULL DESIGN CAPACITY PRIOR TO LOADING.

CONCRETE COVER

1. CONCRETE COVER TO REINFORCING BARS SHALL BE AS FOLLOWS OR AS NOTED ON THE DRAWINGS (WHICHEVER IS GREATER):

FOUNDATIONS - CAST AGAINST SOIL:	75 mm (3")	
FOUNDATIONS - NOT CAST AGAINST SOIL:	50 mm (2")	
WALLS:	40 mm (1 ½")	
SLABS:	25 mm (1")	
BEAMS:	40 mm (1 ½")	(TO TIES)
COLUMNS:	40 mm (1 ½")	(TO TIES)
BALCONIES:	40 mm (1 ½")	(TO TOP STEEL)

2. IN AREAS REQUIRING OR SUPPORTING 2- OR 3-HOUR FIRE RESISTANCE RATINGS, ENSURE THAT CONCRETE COVER TO REINFORCING BARS ALSO SATISFIES THE FOLLOWING MINIMUM REQUIREMENTS:

SLAB BOTTOM STEEL:	32mm (1 ¼")	
COLUMNS:	50mm (2")	(TO TIES)

CONCRETE MIXES

1. PROPORTION NORMAL DENSITY CONCRETE IN ACCORDANCE WITH CSA A23.1 TO ACHIEVE THE FOLLOWING PERFORMANCE CHARACTERISTICS:

LOCATION	28-DAY STRENGTH	EXPOSURE CLASS	ENTRAINED AIR CONTENT
SLAB-ON-GRADE (EXTERIOR)	32 MPa	C-2	5-8%
SLAB-ON-GRADE (INTERIOR, PARKING)	25 MPa	C-4	-
SLAB-ON-GRADE (INTERIOR, NOT PARKING)	25 MPa	N	-
FOOTINGS	25 MPa	N	-
FOUNDATION WALLS	25 MPa	F-2	4-7%
COLUMNS / PIERS / WALLS IN PARKING AREAS	35 MPa	C-1	5-8%
EXTERIOR COLUMNS / PIERS	25 MPa	F-2	4-7%
INTERIOR COLUMNS / PIERS	25 MPa	N	-
CONCRETE ON STEEL DECK	25 MPa	N	-
STAIRS AND LANDINGS	25 MPa	N	-
PAVEMENTS & SIDEWALKS	32 MPa	C-2	5-8%
RETAINING WALLS	35 MPa	C-1	5-8%
OTHER	25 MPa	N	-

2. NOTE THAT CONCRETE STRENGTHS NOTED ON SPECIFIC PLANS TAKE PRECEDENCE OVER ABOVE VALUES.
3. CONCRETE SHALL BE TYPE GU OR GUb PORTLAND CEMENT UNLESS SPECIFIED OTHERWISE.
4. IF BLENDED PORTLAND CEMENT / SLAG IS USED, SLAG CONTENT SHALL NOT BE MORE THAN 25% OF TOTAL MASS OF CEMENT.
5. STAIRS AND LANDINGS IN PARKING AREAS SHALL HAVE CORROSION INHIBITOR INCORPORATED IN CONCRETE MIX.
6. USE OF CALCIUM CHLORIDE NOT PERMITTED.
7. NON-SHRINK CEMENTITIOUS GROUT SHALL BE AN APPROVED PRE-MIXED PROPRIETARY PRODUCT. COMPRESSIVE STRENGTH AT 28-DAYS: 50 MPa.
8. REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR EXPOSED CONCRETE FINISHES.

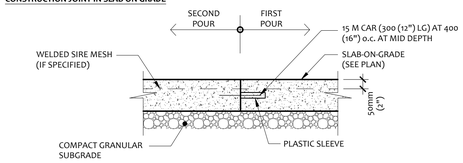
SLAB AND WALL OPENINGS

1. COORDINATE INSTALLATION OF OPENINGS, SLEEVES, CONDUITS AND OTHER CAST-IN INSERTS WITH SIZES AND LOCATIONS SHOWN ON ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. OBTAIN APPROVAL OF STRUCTURAL ENGINEER FOR ANY OPENINGS, SLEEVES, CONDUITS, OR INSERTS NOT SHOWN ON STRUCTURAL DRAWINGS.
2. DO NOT PLACE SLEEVES OR OPENINGS THROUGH STRUCTURAL ELEMENTS UNLESS APPROVED BY STRUCTURAL ENGINEER.
3. DO NOT DISPLACE OR ELIMINATE REINFORCEMENT TO ACCOMMODATE OPENINGS.
4. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCING REQUIRED AROUND OPENINGS.

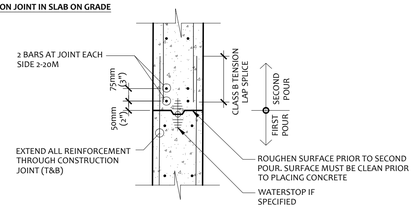
CONSTRUCTION JOINTS

1. PROVIDE CONSTRUCTION JOINTS AS INDICATED ON STRUCTURAL DRAWINGS.
2. CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED CONSTRUCTION JOINT LOCATIONS NOT INDICATED TO THE STRUCTURAL ENGINEER FOR REVIEW.
3. REFER TO TYPICAL DETAILS FOR CONSTRUCTION JOINT DETAILS.

CONSTRUCTION JOINT IN SLAB ON GRADE

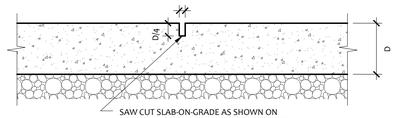


CONSTRUCTION JOINT IN SLAB ON GRADE

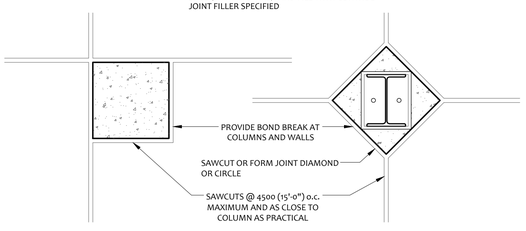


TYPICAL SAWCUT PATTERNS

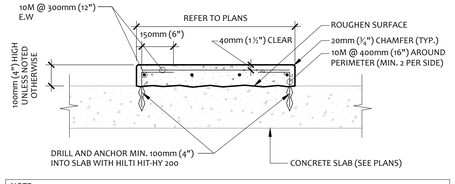
1. SLAB-ON-GRADE TO BE PLACED ON COMPACTED GRANULAR MATERIAL IN STRICT ACCORDANCE WITH THE GEOTECHNICAL REPORT. COMPACTION TESTS ON FILL MATERIAL TO BE CARRIED OUT PRIOR TO SLAB-ON-GRADE PLACEMENT.
2. PROVIDE APPROVED PRE-FORMED KEYED CONTROL JOINTS OR SAWCUTS (WITHIN 24 HOURS) AT MAXIMUM SPACING 4.5m (15'-0") CUT ⅓ DEPTH OF SLAB AND FILL WITH APPROVED MASTIC JOINT FILLER.
3. BREAK BOND AT SURFACES OF CONTACT WITH OTHER CONCRETE (USE ASPHALT WATERPROOFING, HEAVY DUTY POLYETHYLENE OR SAND LAYER).
4. DO NOT PLACE SLAB-ON-GRADE IN ONE CONTINUOUS POUR IN LENGTHS EXCEEDING 30m (100'-0") EITHER DIRECTION, U/N ON PLAN.
5. SUBMIT FOR REVIEW LAYOUT DRAWINGS WITH CONSTRUCTION JOINT LOCATIONS AND SAWCUT PATTERNS.
6. MAINTAIN MINIMUM SPECIFIED THICKNESS AT ALL DEPRESSIONS AND CHANGES IN ELEVATIONS.
7. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS OF ALL FINISHES AND DEPRESSIONS.



SAW CUT SLAB-ON-GRADE AS SHOWN ON TYPICAL DETAIL AS SOON AS CONCRETE HAS SUFFICIENTLY SET TO AVOID RAVELLING THE EDGE (WITH IN 24HRS). AND FILL WITH CONTROL JOINT FILLER SPECIFIED

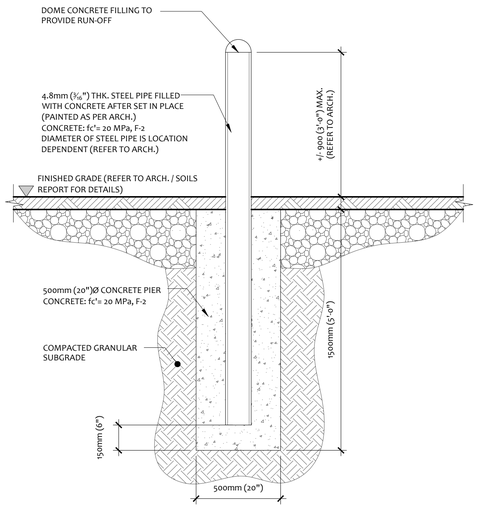


HOUSEKEEPING PAD

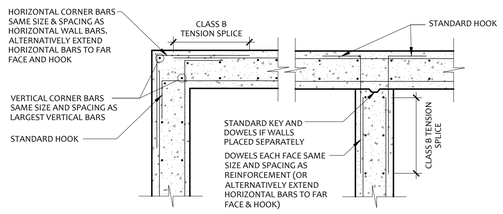


NOTE:
REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL FOR PADS NOT SHOWN ON STRUCTURAL DRAWINGS.

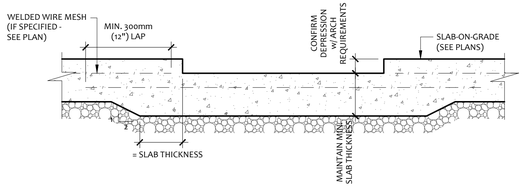
TYPICAL BOLLARD



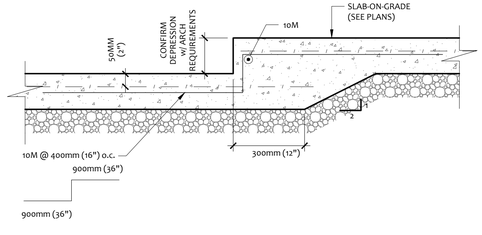
HORIZONTAL WALL REINFORCING AT CORNER/ INTERSECTIONS



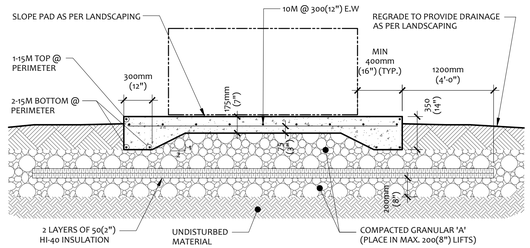
TYPICAL DEPRESSION IN SLAB-ON-GRADE



TYPICAL DETAILS - STEP IN SLAB-ON-GRADE

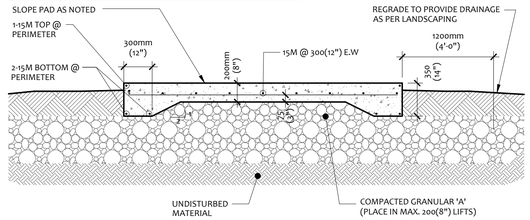


TYPICAL DETAILS - EXTERIOR EQUIPMENT PAD



NOTE:
PROVIDE EXTERIOR PADS AS REQUIRED . REFER TO ARCH/LANDSCAPE DWG. FOR LOCATIONS/ DIMENSIONS

TYPICAL DETAILS - EXTERIOR CONCRETE SLAB ON GRADE/CONCRETE RAMPS



MASONRY

GENERAL

1. ALL MASONRY WORK SHALL CONFORM TO THE ONTARIO BUILDING CODE AND CSA S304 (DESIGN OF MASONRY STRUCTURES) AND CSA A371 (MASONRY CONSTRUCTION FOR BUILDINGS).
2. ALL CONCRETE MASONRY UNITS SHALL CONFORM TO CSA A165 SERIES AND AS FOLLOWS:
   CLASSIFICATION: H / 15 / A / M
3. GROUT SHALL CONFORM TO CSA A179 AND AS FOLLOWS:
   TYPE: COARSE GROUT, NON-SHRINK
   MINIMUM STRENGTH: 20 MPa AT 28 DAYS
   SLUMP: 200 - 250 mm
4. FILL ALL CELLS CONTAINING ANCHORS OR REINFORCEMENT WITH GROUT.
5. MORTAR SHALL CONFORM TO CSA A179, TYPE S.
6. REINFORCE MASONRY AS INDICATED.
7. VERTICAL REINFORCING BARS SHALL BE PLACED IN THE CENTRE OF GROUTED CORES.
8. VERTICAL AND BOND BEAM REINFORCEMENT SHALL BE LAPPED, SPLICED AND HOOKED AS REQUIRED TO ACHIEVE FULL DEVELOPMENT.
9. MINIMUM REINFORCEMENT (UNLESS INDICATED OTHERWISE ON STRUCTURAL DRAWINGS):

	LOAD-BEARING WALLS	NON-LOAD-BEARING WALLS
140	SMR EVERY COURSE 15M AT 800 VERT.	SMR ALT. COURSES 15M @600 VERT.
190	HDMR EVERY COURSE 15M AT 800 VERT.	HDMR ALT. COURSES 15M @ 600 VERT.
240	HDMR EVERY COURSE 15M AT 600 VERT.	HDMR ALT. COURSES 15M @ 600 VERT.
290	HDMR EVERY COURSE 20M AT 600 VERT.	HDMR ALT. COURSES 15M @ 600 VERT.

10. PROVIDE ADDITIONAL 15M BARS IN GROUT FILLED CORES EACH SIDE OF EVERY OPENING EXCEEDING 1000mm IN ANY DIMENSION AND AT EVERY CORNER, END OF WALL OR OTHER DISCONTINUITY.
11. FIRST TWO COURSE OF MASONRY SHOULD BE GROUTED SOLID.
12. PROVIDE FULLY GROUTED BOND BEAMS AT THE TOP OF EVERY WALL AND AT EVERY FLOOR: MINIMUM 2 COURSES DEEP, REINFORCED WITH MINIMUM 1-20M.
13. PROVIDE LATERAL SUPPORTS (DEFLECTION CLIPS) AT THE TOP OF ALL MASONRY WALLS AS INDICTED IN TYPICAL DETAILS OR ON STRUCTURAL DRAWINGS.
14. PROVIDE LINTELS OVER ALL OPENINGS OR RECESSES IN MASONRY WALLS EXCEEDING 400mm IN WIDTH, AS INDICATED IN TYPICAL DETAILS OR ON STRUCTURAL DRAWINGS.
15. CENTRE BEARING PLATES OR WALL PLATES ON BEAM CENTERLINE AND CENTERLINE OF WALL (UNLESS INDICATED OTHERWISE).
16. PLACE BEARING PLATES AND SHELF ANGLES BACK MINIMUM 12mm FROM FACE OF WALL.
17. PROVIDE +/-20mm GROUT UNDER ALL WALL PLATES AND BEARING PLATES.

D+M STRUCTURAL ENGINEERING

D+M Structural Ltd.
110-333 Preston Street, Ottawa, ON, K1S 5N4
Phone: (613) 651-9490

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#	DATE	DESCRIPTION
7	24 03 07	RE-ISSUED FOR TENDER
6	23 04 14	ISSUED FOR PERMIT
5	23 03 14	ISSUED FOR ADD S04
4	23 02 13	ISSUED FOR PERMIT/TENDER
3	22 12 19	ISSUED FOR COORDINATION
2	22 12 02	ISSUED FOR COORDINATION
1	22 09 16	ISSUED FOR PRELIMINARY COORD

STAMP:

NORTH ARROW:

PROJECT NAME AND ADDRESS:

METAL RECYCLING PLANT
AIM / KENNY U-PULL

1533 McADOO'S LANE
KINGSTON

DRAWING NAME:

GENERAL NOTES AND DETAILS

DESIGNED BY: R. MUNDEN

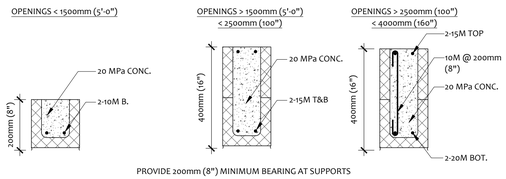
DRAWN BY: A. WITTICH

START DATE: 2022-01-31

D+M PROJECT #: 21-127

S-001

MASONRY LINTELS FOR NON-LOADBEARING WALL

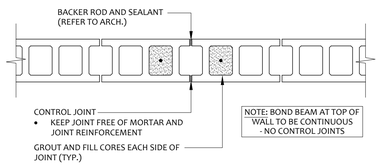


LOOSE LINTEL SCHEDULE - 90mm (3 ½") BRICK / MASONRY

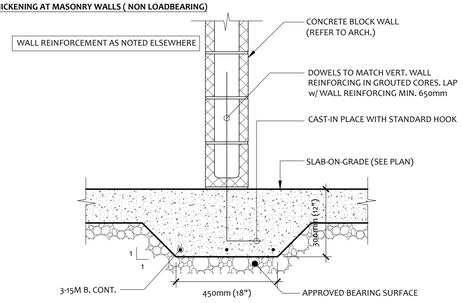
SPANS < 1200mm (48")	L 90x90x6.4 (L 3 ½"x3 ½"x¼")
SPANS < 1800mm (72")	L 102x90x7.9 (L 4"x3 ½"x⅝")
SPANS < 2400mm (96")	L 127x90x7.9 (L 5"x3 ½"x⅝")
SPANS < 3000mm (120")	L 152x102x10 (L 6"x4"x⅜")
SPANS < 3600mm (144")	L 152x102x12 (L 6"x4"x½")

PROVIDE LOOSE LINTELS ABOVE ALL MASONRY CLADDING OPENINGS U/N.
ALL LOOSE LINTELS TO BE HOT DIPPED GALVANIZED U/N.
BEND ANGLE TO PROFILE OF ARCHED WINDOW (IF APPLICABLE).

MOVEMENT JOINTS IN CONCRETE BLOCK WALLS



SLAB THICKENING AT MASONRY WALLS (NON LOADBEARING)



NOTE:
- REFER TO ARCHITECTURAL DRAWINGS FOR WALL LOCATIONS.
- DO NOT LOCATE CONSTRUCTION OR CONTROL JOINTS IN SLAB (ORIENTED PARALLEL TO WALL) WITHIN 1000mm (40") OF WALL

STEEL

GENERAL

1. ALL STRUCTURAL STEEL DESIGN, FABRICATION AND CONSTRUCTION SHALL COMPLY WITH CSA S16 AND CANADIAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STANDARD PRACTICE.
2. STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING MATERIAL STANDARDS (UNLESS NOTED OTHERWISE):

TYPE	SPECIFICATION & GRADE
HOT-ROLLED SECTIONS (EXCEPT PLATES AND CHANNELS)	CSA G40.21 - GRADE 350 W OR ASTM A992, A572 GRADE 50
HOT-ROLLED SECTIONS (PLATES AND CHANNELS)	CSA G40.21 - GRADE 300 W
HOLLOW STEEL SECTIONS (HSS)	ASTM A500 - GRADE C
COLD FORMED STEEL SECTIONS	ASTM A607 - GRADE 50
CONNECTION BOLTS	ASTM A325 - BEARING TYPE
ANCHOR RODS	ASTM F1554 - GRADE AS PER BASEPLATE SCHEDULE

3. ALL STEEL WORK SHALL BE GIVEN ONE COAT OF APPROVED PRIMER (UNLESS GALVANIZED OR TO RECEIVE SPRAY-APPLIED FIREPROOFING).
4. FIELD AND SHOP CONNECTIONS SHALL BE WELDED OR HIGH TENSILE BOLTED (ASTM A325).
5. WELDING SHALL CONFORM TO CSA W59 AND BE UNDERTAKEN BY A FABRICATOR APPROVED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1.
6. ALL EXPOSED WELDS SHALL BE CONTINUOUS AND BE GROUND SMOOTH.
7. ALL EXTERIOR EXPOSED STRUCTURAL STEEL SHALL BE GALVANIZED.
8. STRUCTURAL STEEL MEMBERS SHALL NOT BE SPLICED UNLESS APPROVED BY THE STRUCTURAL ENGINEER IN WRITING.
9. WHERE STRUCTURAL STEEL MEMBERS SPECIFIED ON THE STRUCTURAL DRAWINGS ARE UNAVAILABLE TO THE CONTRACTOR, THE STRUCTURAL STEEL CONTRACTOR SHALL PROVIDE MEMBERS HAVING ALL SECTION PROPERTIES EQUAL TO OR BETTER THAN THAT OF THE SPECIFIED MEMBERS AT NO ADDITIONAL COST. CONTACT ENGINEER FOR ACCEPTANCE OF ANY AND ALL SUBSTITUTIONS.
10. HSS SECTIONS TO BE GALVANIZED SHALL BE APPROPRIATELY HEAT TREATED.

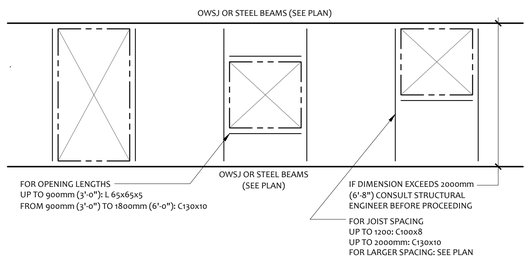
STEEL DECK

1. STEEL DECK SHALL BE 38mm (1 ½") DEEP, BASE STEEL DESIGN THICKNESS AS INDICATED ON PLANS (MINIMUM 0.76mm (1/32"), WITH DECK FLUTES AT 152mm (6") SPACING, FORMED FROM SHEET STEEL CONFORMING TO CSSBI 10M/12M (AS APPLICABLE), MINIMUM GRADE 230.
2. UNLESS NOTED OTHERWISE, DECK SHALL HAVE A GALVANIZED COATING TO ASTM A653M WITH ZINC THICKNESS CORRESPONDING TO Z275 (G90).
3. STEEL DECK UTILIZED FOR COMPOSITE FLOOR SLABS SHALL HAVE EMBOSSED WEBS.
4. STEEL DECK DESIGNATED AS ACOUSTIC DECK SHALL HAVE PERFORATED WEBS.
5. STEEL DECK SHALL BE INSTALLED CONTINUOUSLY OVER A MINIMUM OF THREE SPANS WHEREVER POSSIBLE.
6. DECK CONNECTIONS TO SUPPORTING STRUCTURE SHALL BE AS INDICATED ON PLANS. IF NOT NOTED, DECK CONNECTIONS SHALL BE AS FOLLOWS:
   - FLOORS: HILTI X-ENP-A9 L15 FASTENERS (OR HILTI X-ENP-A9 FASTENERS IF BASE STEEL THICKNESS IS LESS THAN 6mm (1/4") AT EVERY FLUTE (MAX. 150mm (6") c/c) AND HILTI S-SLC 01 M MWH SIDE LAP CONNECTORS AT MAX. 300mm (12") c/c.
   - ROOFS: HILTI X-ENP-A9 L15 FASTENERS (OR HILTI X-ENP-A9 FASTENERS IF BASE STEEL THICKNESS IS LESS THAN 6mm (1/4") ALTERNATE FLUTES (MAX. 300mm (12") c/c) AND HILTI S-SLC 01 M MWH SIDE LAP CONNECTORS AT MAX. 600mm (24") c/c.
7. ALL WELDS SHALL BE PRIME PAINTED BY DECK CONTRACTOR.
8. STEEL DECK CLOSURES AND ACCESSORIES SHALL BE SUPPLIED AND INSTALLED BY THE DECK CONTRACTOR.
9. STEEL DECK CONTRACTOR SHALL REINFORCE ALL DECK OPENINGS 450mm (18") OR SMALLER.
10. WEDGE THE FLUTES OF THE STEEL ROOF DECK UNDER WOOD SLEEPERS AND/OR PRE-MANUFACTURED ROOF CURBS TO PREVENT CRUSHING.
11. NO MECHANICAL OR ELECTRICAL EQUIPMENT OR ACCESSORIES SHALL BE HUNG FROM THE STEEL DECK.

ELEVATOR RAIL SUPPORTS

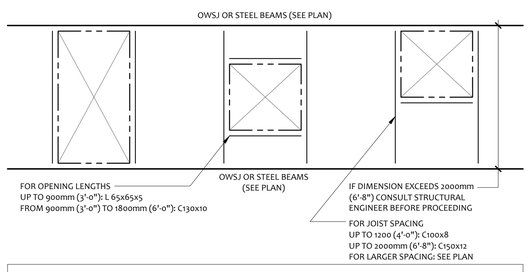
1. CONTRACTOR'S ENGINEER SHALL DESIGN AND DETAIL OUTRIGGERS FROM ELEVATOR DIVIDER AND SUPPORT BEAMS TO SUPPORT ELEVATOR RAIL BRACKETS. COORDINATE ELEVATOR RAIL BRACKET SUPPORT REQUIREMENTS (LOCATIONS, OFFSETS AND DESIGN FORCES) WITH ELEVATOR SUPPLIER. DESIGN SHALL ALSO TAKE INTO ACCOUNT POTENTIAL EFFECTS ON SUPPORT BEAM (E.G. TORSION) - LOCATE SUPPORTS ACCORDINGLY.
2. SUBMIT SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OR TERRITORY WHERE THE PROJECT IS LOCATED FOR REVIEW.
3. INSTALL OUTRIGGERS FOR ELEVATOR RAIL SUPPORT AS INDICATED ON REVIEWED SHOP DRAWINGS, TO THE SATISFACTION OF THE ELEVATOR CONTRACTOR.

TYPICAL DETAILS FOR TRIMMING TO OPENINGS THROUGH STEEL ROOF DECK



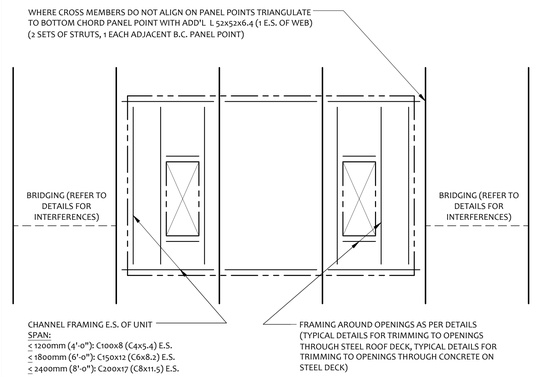
NOTES:
- TOP OF ALL TRIMMING STEEL AT UNDERSIDE OF STEEL DECK NOTED OTHERWISE.
- LOCATIONS OF ALL MECHANICAL UNITS AND OPENINGS THROUGH ROOF IS BASED ON INFORMATION SHOWN ON MECHANICAL DRAWINGS. THE STRUCTURAL STEEL SUB-CONTRACTOR MUST CONFIRM ALL THESE DIMENSIONS AND SIZES WITH THE MECHANICAL CONTRACTOR.
- OWSJ MUST BE DESIGNED FOR ADDITIONAL LOADS FROM MECHANICAL UNITS.
- IF ACTUAL LOCATIONS OR DETAILS VARY FROM THOSE SHOWN, THE STRUCTURAL ENGINEER MUST BE INFORMED AND INSTRUCTIONS RECEIVED BEFORE PROCEEDING WITH THE WORK.
- THE STRUCTURAL STEEL SUB-CONTRACTOR IS TO SUBMIT ERECTION DRAWINGS TO THE MECHANICAL ENGINEER AND/OR CONTRACTOR FOR APPROVAL OF SIZE AND LOCATIONS OF OPENINGS FOR MECHANICAL UNITS.

TYPICAL DETAILS FOR TRIMMING TO OPENINGS THROUGH CONCRETE ON STEEL DECK

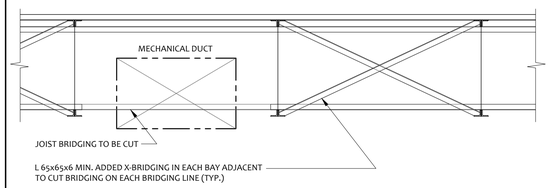


NOTES:
- TOP OF ALL TRIMMING STEEL AT UNDERSIDE OF STEEL DECK UNLESS OTHERWISE NOTED.
- LOCATION OF ALL MECHANICAL OPENINGS THROUGH FLOOR IS BASED ON INFORMATION SHOWN ON MECHANICAL DRAWINGS. THE STRUCTURAL STEEL SUB-CONTRACTOR MUST CONFIRM ALL THESE DIMENSIONS AND SIZES WITH THE MECHANICAL CONTRACTOR.
- IF ACTUAL LOCATIONS OR DETAILS VARY FROM THOSE SHOWN, THE STRUCTURAL ENGINEER MUST BE INFORMED AND INSTRUCTIONS RECEIVED BEFORE PROCEEDING WITH THE WORK.
- THE STRUCTURAL STEEL SUB-CONTRACTOR IS TO SUBMIT ERECTION DRAWINGS TO THE MECHANICAL ENGINEER AND / OR CONTRACTOR FOR APPROVAL OF SIZE AND LOCATIONS OF OPENINGS FOR MECHANICAL UNITS.

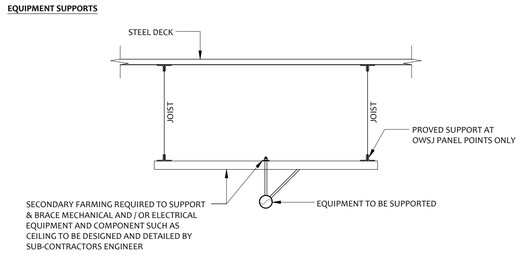
TYPICAL DETAIL FOR MECHANICAL UNIT FRAMING



TYPICAL DETAIL WHERE BOTTOM CHORD JOIST BRIDGING AND/OR BRACING IS REQUIRED TO BE CUT DUE TO INTERFERENCE BY MECHANICAL DUCTWORK



EQUIPMENT SUPPORTS



SCHEDULES

FOOTING SCHEDULE

MARK	SIZE (LxW)	THICKNESS (THK)	REINFORCING	NOTES
SF1	800	300	3-15M BOT. LONG 15M @ 300mm BOT TRANS	FOOTING TO BE CENTERED ON GRIDLINE
SF2	750	300	3-15M BOT. LONG 15M @ 300mm BOT TRANS	FOOTING TO BE CENTERED ON FOUNDATION WALL/BLOCK WALL
F1	1000x1000	300	3-15M B.E.W.	
F2	1600x1000	300	15M @ 350mm o.c. B.E.W.	
F3	4000x1500	300	15M @ 350mm o.c. B.E.W.	

NOTES:
1. PROVIDE HOOKED DOWELS TO MATCH REINFORCING IN WALL / PIER ABOVE.
2. FOOTINGS ARE DESIGNED TO BEAR ON BEDROCK OR LEAN CONCRETE BEARING ON ROCK . DESIGN BEARING CAPACITY: 720 kPa (SLS) / 720 kPa (ULS).
3. LOCATE FOOTINGS AS SHOWN ON PLAN.

PIER SCHEDULE

MARK	SIZE (LxW)	REINFORCING
P1	550x550	12-20M VERTS & 3-10M TIES @ 250mm o.c.
P2	600x600	8-20M VERTS & 10M TIES @ 300mm o.c. NOTE: PIERS TO EXTEND 6" ABOVE GRADE
P3	1200x600	12-20M VERTS & 10M TIES @ 300mm o.c.

BASEPLATE SCHEDULE

MARK	SIZE (LxW)	THICKNESS (THK)	NOTES
BP1	350x350	19mm	4 - 16mm Ø. ANCHOR
BP2	400x400	19mm	4 - 16mm Ø. ANCHOR
BP3	325x325	19mm	4 - 19mm Ø A307 BOLTS
BP4	400x275	19mm	4 - 19mm Ø A307 BOLTS
BP5	152x300	16mm	2 - 16mm Ø HILTI KWIK BOLT (100mm EMBED)

NOTES:
1. LENGTH GIVEN IS EMBEDMENT DEPTH- ADD BOLT PROJECTION ABOVE CONCRETE.

STEEL COLUMN SCHEDULE

MARK	SIZE	NOTES
C1	HSS203x203x8.0	
C2	HSS152x152x6.4	
C3	HSS127x127x6.4	

CONCRETE BLOCK LINTEL SCHEDULE

MARK	SIZE (WxD)	REINFORCING
CBL1	240mm x 400mm DP (3-COURSE DEEP)	2-10M T&B + SINGLE LEG 10M STIRRUP @ 200mm o.c.
CBL2	240mm x 600mm DP (3-COURSE DEEP)	2-10M T&B + SINGLE LEG 10M STIRRUP @ 200mm o.c.
CBL3	240mm x 800mm DP (4-COURSE DEEP)	2 LAYERS OF 3-10M TOP 2-15M BOTTOM 1-15M INTERMEDIATE + SINGLE LEG 10M STIRRUP @ 200mm o.c PROVIDE 400mm BEARING E.S. OF LINTEL c/w 2 FULLY GROUTED CORES E.S. WITH 1-20M IN EACH CORE

NOTE:
1. PROVIDE MIN. 200mm BEARING E.S. OF LINTEL
2. ENSURE CORES E.S. OF OPENING ARE FULLY GROUTED c/w 1-15M MIN.

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D+M Structural Ltd.
110-333 Preston Street, Ottawa, ON, K1S 5N4
Phone: (613) 651-9490

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STAMP:

NORTH ARROW:

PROJECT NAME AND ADDRESS:

METAL RECYCLING PLANT
AIM / KENNY U-PULL

1533 McADOO'S LANE
KINGSTON

DRAWING NAME:

GENERAL NOTES AND DETAILS

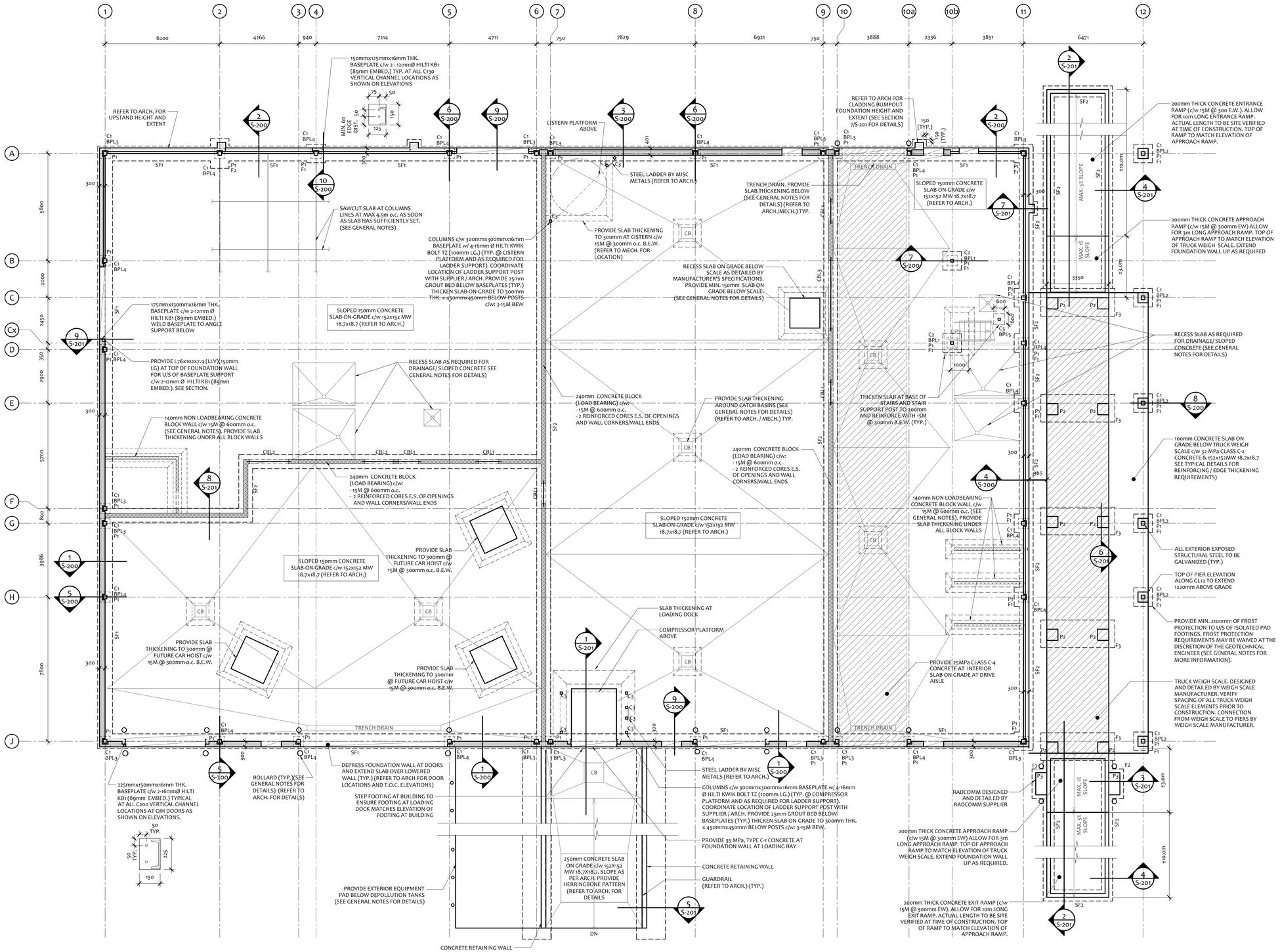
DESIGNED BY: R. MUNDEN

DRAWN BY: A. WITTICH

START DATE: 2022-01-31

D+M PROJECT #: 21-127

S-002



PLAN: GROUND FLOOR

SCALE: 1:100

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NOTE:

PROVIDE PRICING FOR STANDARD FORM AND POUR FOUNDATION CONSTRUCTION AS OUTLINED IN THESE DRAWINGS. PROVIDE OPTIONAL PRICING FOR TRENCH AND POUR FOUNDATION CONSTRUCTION APPROACH

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STAMP:

NORTH ARROW:

PROJECT NAME AND ADDRESS:

METAL RECYCLING PLANT AIM / KENNY U-PULL

1533 McADOO'S LANE
KINGSTON

DRAWING NAME:

FOUNDATION PLAN

DESIGNED BY: R. MUNDEN

DRAWN BY: A. WITTICH

START DATE: 2022-01-31

D+M PROJECT #: 21-127

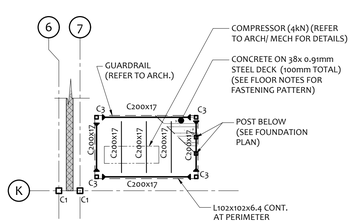
S-100

FLOOR DECK NOTES

COMPOSITE SLAB:
64mm CONCRETE ON 38mm x 0.91mm GALV.. COMPOSITE STEEL DECK (100mm TOTAL), REINFORCING WITH 6x6 6/6 WIRE MESH
- HILTI X-HSN 24 OR HILTI X-ENP-19 FASTENERS AS SPECIFIED BELOW
- 3&7 PATTERN (EVERY FLUTE)
- SIDE LAP WITH HILTI S-SLC 01 M HWH SIDE LAP CONNECTOR @ 600mm o.c.

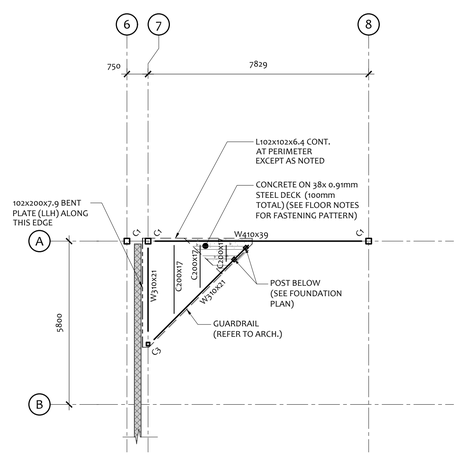
NOTE:

- WHERE STEEL THICKNESS IS BETWEEN 3.2mm & 9.5mm, HILTI X-HSN 24 FASTENERS ARE SUITABLE
- WHERE STEEL THICKNESS IS GREATER THAN 6.4mm , HILTI X-ENP-19 FASTENERS ARE SUITABLE

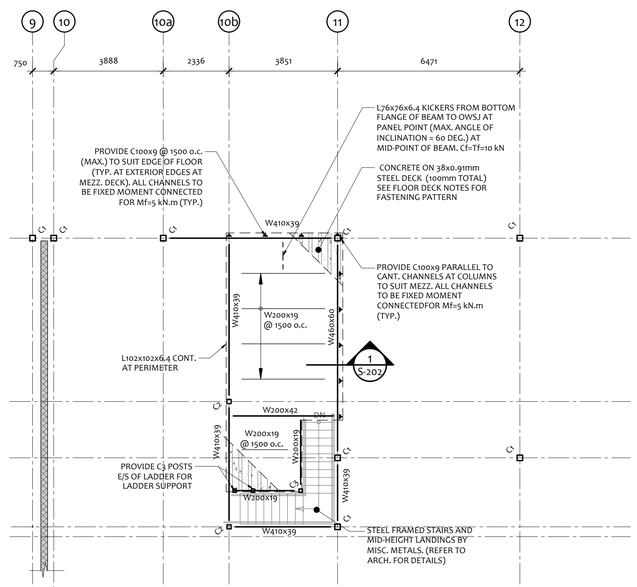


COMPRESSOR PLATFORM
SCALE: 1:100

ALL MOMENT CONNECTIONS TO BE FOR Mf=5kN•m



PLAN: CISTERN PLATFORM
SCALE: 1:100



PLAN: MEZZANINE
SCALE: 1:100

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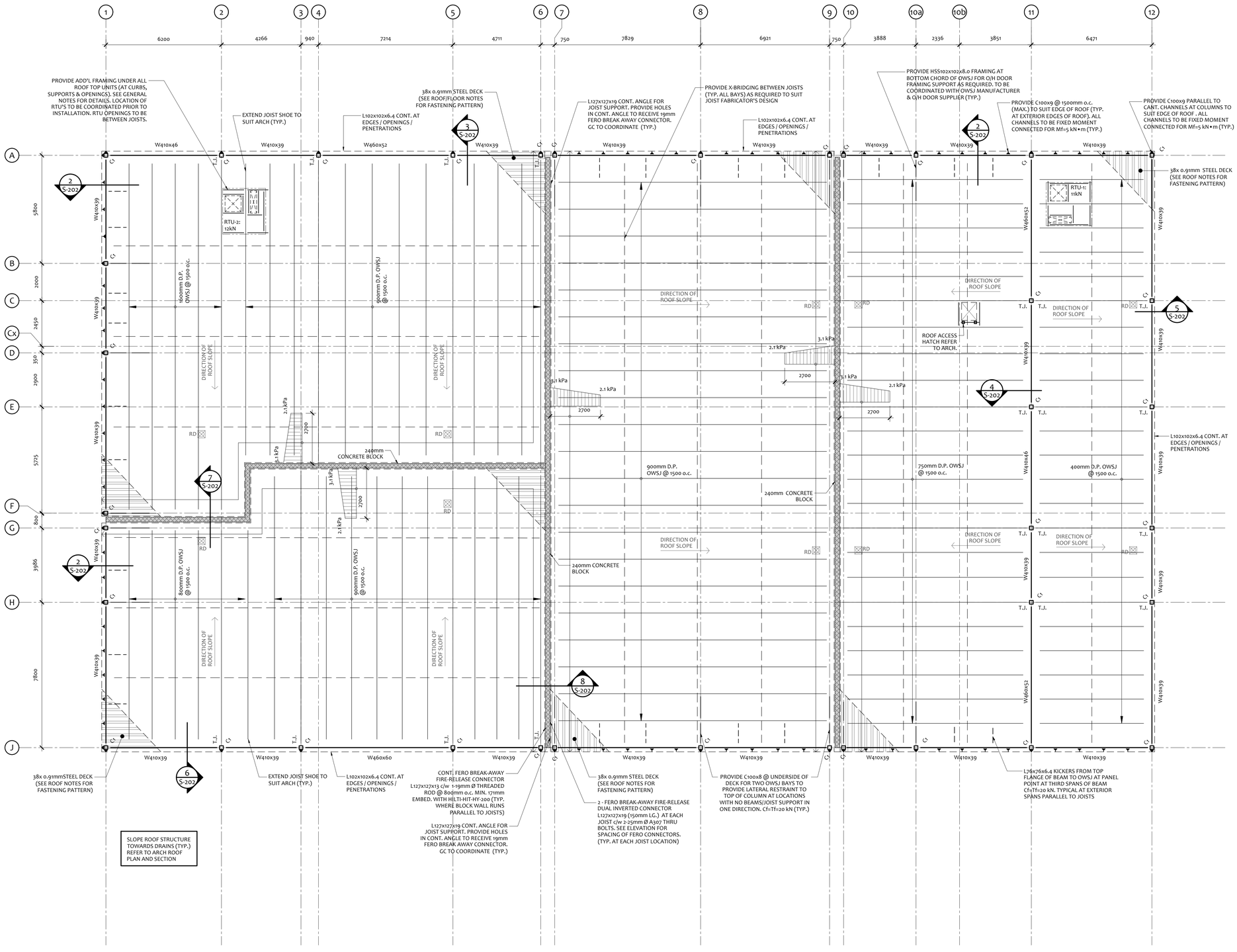
METAL RECYCLING PLANT
AIM / KENNY U-PULL
1533 McADOO'S LANE
KINGSTON

DRAWING NAME:
MEZZANINE/COMPRESSOR PLATFORM PLANS

DESIGNED BY: R. MUNDEN
DRAWN BY: A. WITTICH
START DATE: 2022-01-31
D+M PROJECT #: 21-127

S-101



PLAN: GROUND FLOOR

SCALE: 1:100

ROOF NOTES

T.J	DENOTES TIE JOIST
OP. WT	DENOTES OPERATING WEIGHT OF ROOFTOP UNIT (kN)
150	DENOTES TOP OF STEEL ELEVATION (i.e. UNDERSIDE OF DECK) AT END OF BEAM/OWSJ RELATIVE TO HIGH POINT (REFER TO ARCH. FOR ADD'L INFO.) BEAMS SUPPORTING OWSJ TO BE LOWERED BY OWSJ SHOE DEPTH
	DENOTES MOMENT/SHEAR CONNECTION. REFER TO PLANS FOR LOCATIONS AND DESIGN LOAD

- 100mm OWSJ SHOES (TYP.) UNLESS NOTED OTHERWISE.
- MINIMUM OWSJ TOP CHORD LEG THICKNESS: 6.4mm (¼")
- ALL OWSJ FRAMING INTO COLUMNS TO BE TIE JOISTS
- PROVIDE ADDITIONAL FRAMING UNDER ROOFTOP UNIT CURB AND AROUND OPENINGS. REFER TO TYPICAL DETAILS.

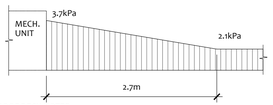
RTU NOTES:

UNIT WEIGHTS (REFER TO MECH.): (MAX.)

- DESIGN SUPPORTING FRAMING AROUND UNIT FOR SNOW DRIFTS WHERE APPLICABLE (ALL LOCATIONS)
- CONTRACTOR TO PROVIDE ALL MECH. UNIT WEIGHTS/CURB ATTACHMENTS/SEISMIC LOADS/ANCHOR CONNECTIONS TO JOIST FABRICATOR PRIOR TO JOIST FABRICATION/SHOP DRAWING APPROVAL. (NOTE: CONTRACTOR'S ENGINEER IS RESPONSIBLE FOR ALL SEISMIC DESIGN/DETAILING IN ACCORDANCE WITH 2012 OBC INCLUDING VERIFICATION OF CAPACITY OF STRUCTURAL MEMBER OUTLINED ON THIS DRAWING). TYPICAL ALL LOCATIONS
- VERIFY ALL DIMENSIONS/WEIGHTS/CURB HEIGHTS WITH MECH./ARCH./UNIT SUPPLIER PRIOR TO JOIST DESIGN
- CONTRACTOR'S ENGINEER IS RESPONSIBLE TO VERIFY/CERTIFY/DESIGN ALL INFORMATION PRESENTED

SNOW DRIFT AT MECHANICAL UNITS OVER 3.0m LONG (U.N.O):

- UP TO 2.0m ABOVE ROOF
- CONTRACTOR TO CONFIRM UNIT/CURB HEIGHT PRIOR TO FABRICATING JOISTS



ROOF DECK NOTES

ROOF DECK:

38mm x 0.91mm GALV. STEEL ROOF DECK (TYP. U.N.O.) c/w:
- HILTI X-HSN 24 OR HILTI X-ENP-19 FASTENERS AS SPECIFIED BELOW
- 36/7 PATTERN (EVERY FLUTE)
- SIDE LAP WITH HILTI S-SLC 01 M HWH SIDE LAP CONNECTOR @ 300mm o.c.

NOTE:

- WHERE STEEL THICKNESS IS BETWEEN 3.2mm & 9.5mm, HILTI X-HSN 24 FASTENERS ARE SUITABLE
- WHERE STEEL THICKNESS IS GREATER THAN 6.4mm , HILTI X-ENP-19 FASTENERS ARE SUITABLE

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AIM / KENNY U-PULL

1533 McADOO'S LANE
KINGSTON

DRAWING NAME:

ROOF PLAN

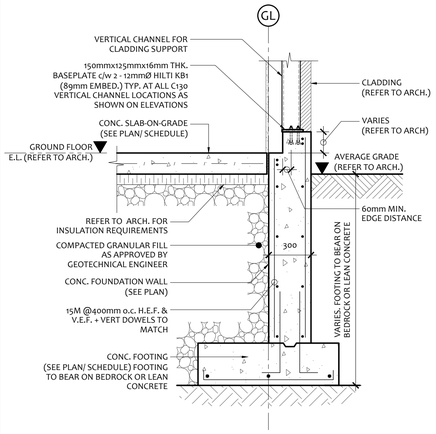
DESIGNED BY: R. MUNDEN

DRAWN BY: A. WITTICH

START DATE: 2022-01-31

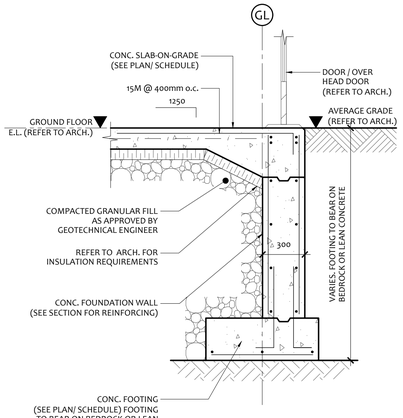
D+M PROJECT #: 21-127

S-102



PROVIDE MIN. 1200mm FROST COVER TO U/S OF FOOTING. FROST PROTECTION REQUIREMENTS MAY BE WAIVED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER (SEE GENERAL NOTES FOR MORE INFORMATION)

10 S-200 SECTION: TYP. FOUNDATION WALL @ VERTICAL CLADDING SUPPORT (LOW CONC. UPSTAND)
SCALE: 1:20



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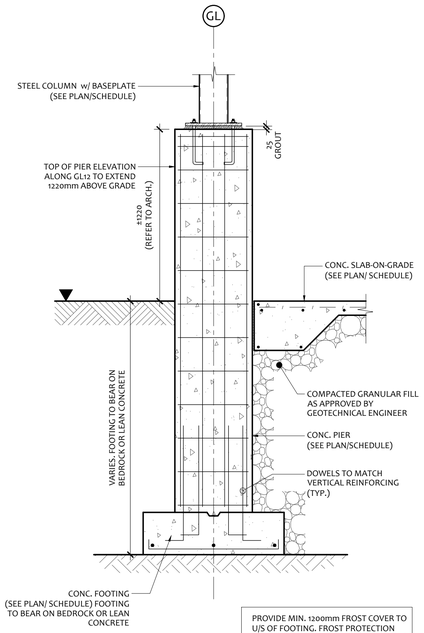
9 S-200 SECTION: TYP. FOUNDATION WALL AT DOOR
SCALE: 1:20



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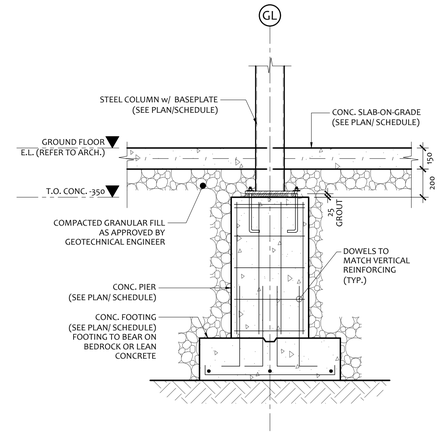
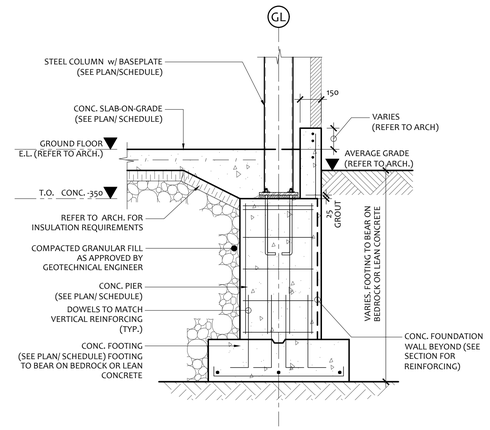
8 S-200 SECTION: TYP. EXTERIOR PIER
SCALE: 1:20



7 S-200 SECTION: TYP. INTERIOR PAD FOOTING
SCALE: 1:20



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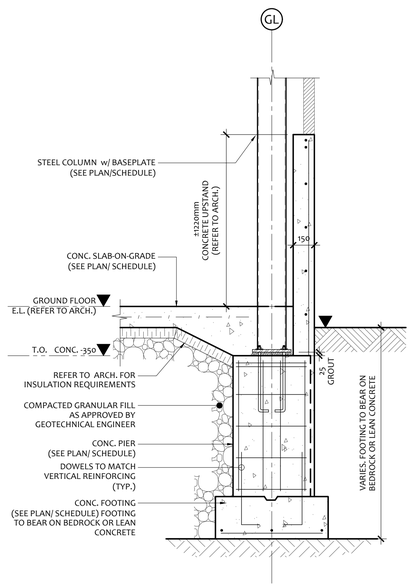
6 S-200 SECTION: TYP. PIER @ FOUNDATION WALL (LOW CONC. UPSTAND & ADJACENT TO INTERIOR CONCRETE UPSTAND)
SCALE: 1:20



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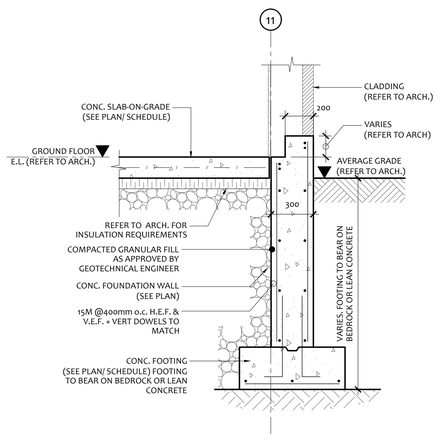
5 S-200 SECTION: TYP. PIER @ FOUNDATION WALL (HIGH CONC. UPSTAND)
SCALE: 1:20



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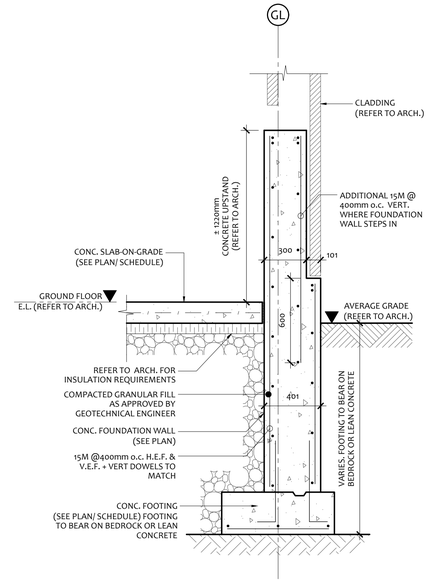
4 S-200 SECTION: FOUNDATION WALL @ LOW UPSTAND GL11 - FOOTING F2 CENTERED ON FDN WALL
SCALE: 1:20



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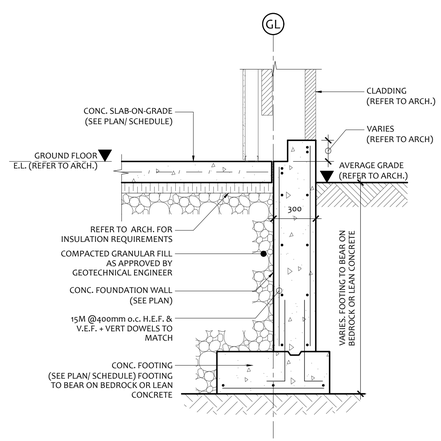
3 S-200 SECTION: TYP. FOUNDATION WALL @ INTERIOR CONCRETE UPSTAND
SCALE: 1:20



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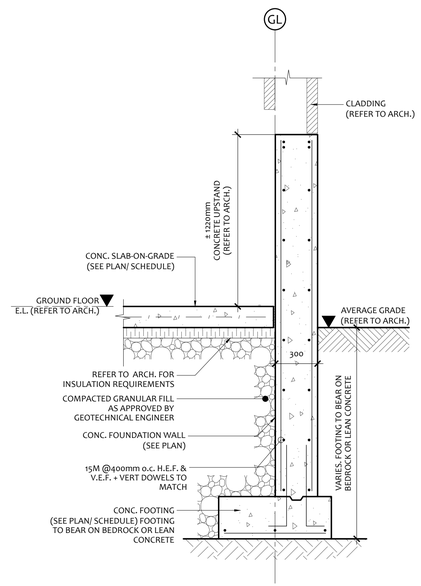
2 S-200 SECTION: TYP. FOUNDATION WALL @ LOW CONC. UPSTAND
SCALE: 1:20



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1 S-200 SECTION: TYP. FOUNDATION WALL @ HIGH CONC. UPSTAND
SCALE: 1:20

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1533 McADOO'S LANE
KINGSTON

DRAWING NAME:

SECTIONS

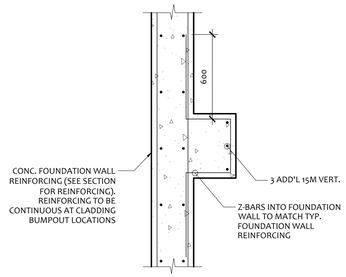
DESIGNED BY: R. MUNDEN

DRAWN BY: A. WITTICH

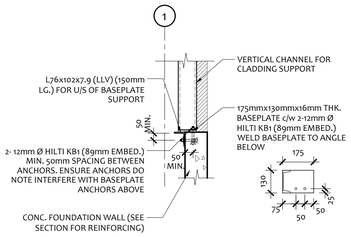
START DATE: 2022-01-31

D+M PROJECT #: 21-127

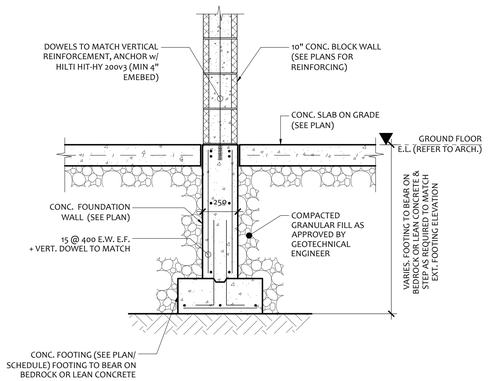
S-200



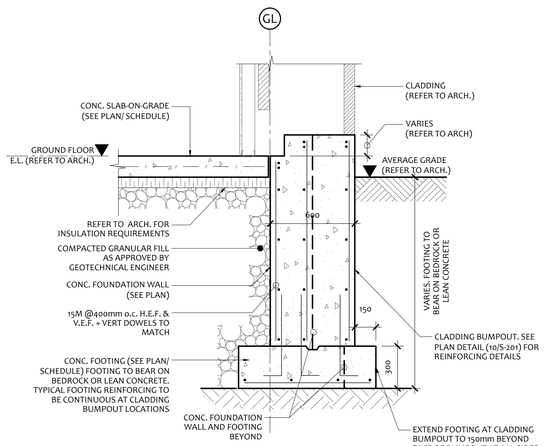
10 S-201 PLAN DETAIL: REINFORCING AT CLADDING BUMPOUT LOCATIONS
SCALE: 1:20



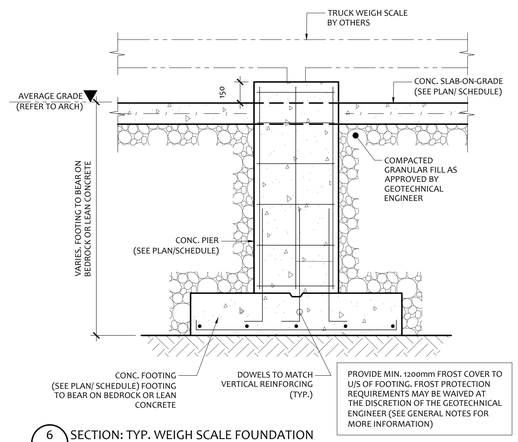
9 S-201 SECTION: VERTICAL CHANNEL CONNECTION TO FOUNDATION AT DOOR D120
SCALE: 1:20



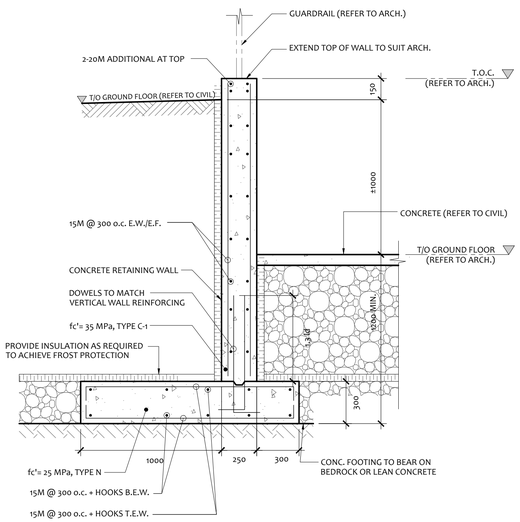
8 S-201 SECTION: TYPICAL FIREWALL / LOADBEARING BLOCK WALL FOUNDATION
SCALE: 1:20



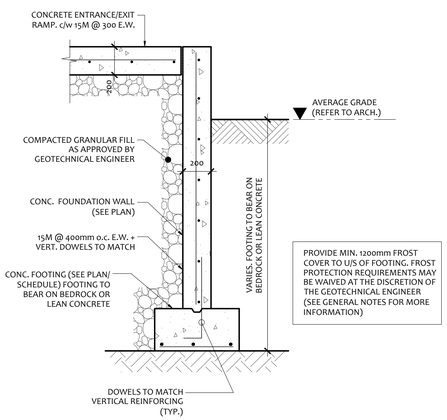
7 S-201 SECTION: TYP. FOUNDATION WALL @ CLADDING BUMPOUT
SCALE: 1:20



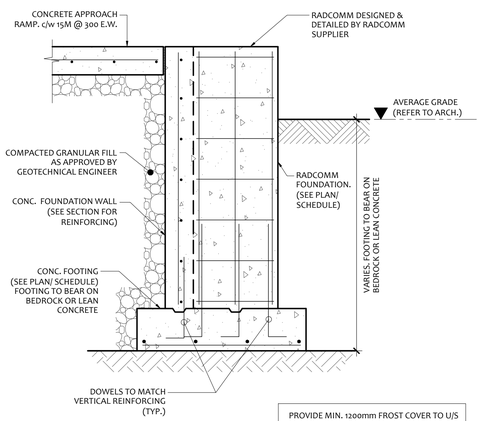
6 S-201 SECTION: TYP. WEIGH SCALE FOUNDATION
SCALE: 1:20



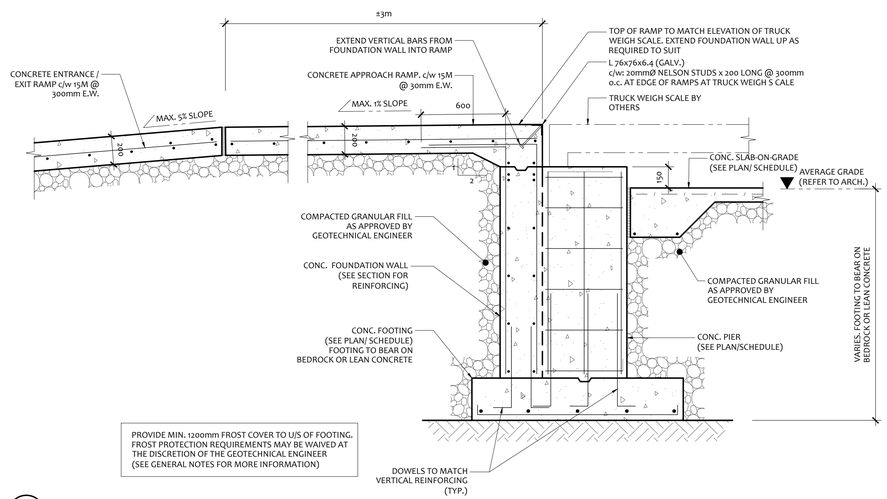
5 S-201 SECTION: TYPICAL RETAINING WALL (AT LOADING DOCK)
SCALE: 1:20



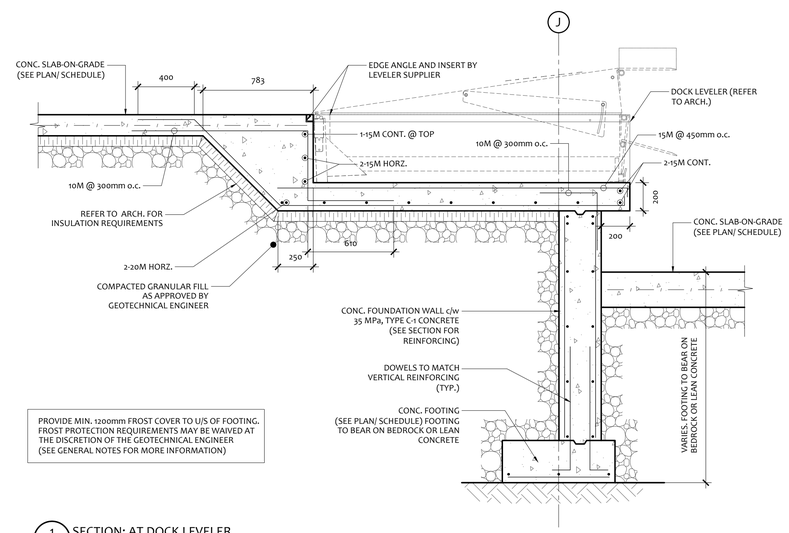
4 S-201 SECTION: TYP. FOUNDATION @ ENTRANCE/EXIT RAMP
SCALE: 1:20



3 S-201 SECTION: RADCOMM FOUNDATION (AT TRUCK WEIGH SCALE)
SCALE: 1:20



2 S-201 SECTION: TRUCK WEIGH SCALE RAMP FOUNDATION
SCALE: 1:20



1 S-201 SECTION: AT DOCK LEVELER
SCALE: 1:20

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NOTE:

PROVIDE PRICING FOR STANDARD FORM AND POUR FOUNDATION CONSTRUCTION AS OUTLINED IN THESE DRAWINGS. PROVIDE OPTIONAL PRICING FOR TRENCH AND POUR FOUNDATION CONSTRUCTION APPROACH

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7	24 03 07	RE-ISSUED FOR TENDER
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NORTH ARROW:

PROJECT NAME AND ADDRESS:

METAL RECYCLING PLANT AIM / KENNY U-PULL

1533 McADOO'S LANE
KINGSTON

DRAWING NAME:

SECTIONS

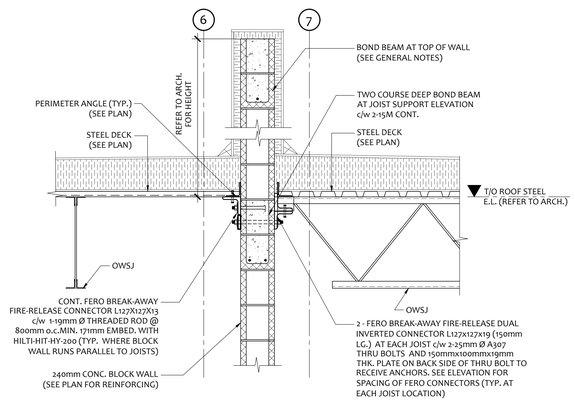
DESIGNED BY: R. MUNDEN

DRAWN BY: A. WITTICH

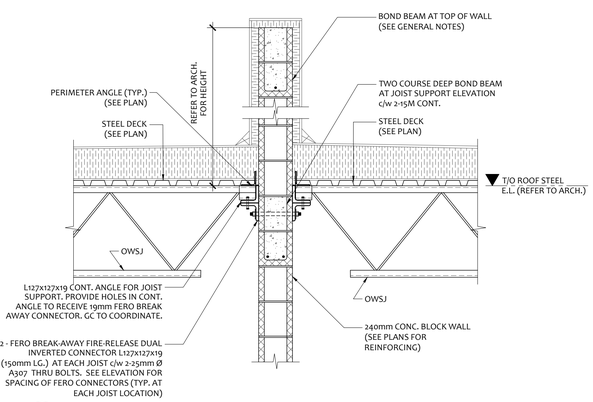
START DATE: 2022-01-31

D+M PROJECT #: 21-127

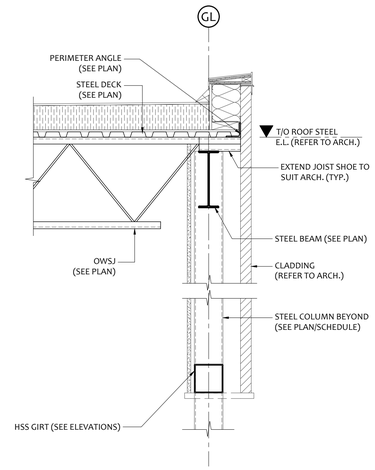
S-201



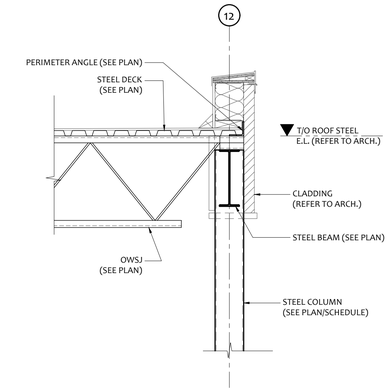
8 S-202 SECTION: TYPICAL FIREWALL @ ROOF (CHANGE IN JOIST DIRECTION)
SCALE: 1:20



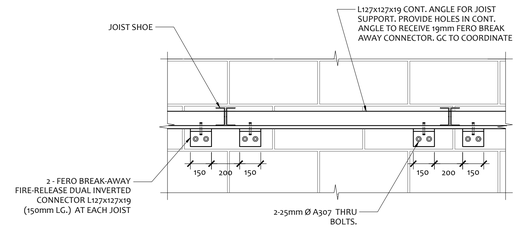
7 S-202 SECTION: TYPICAL FIREWALL @ ROOF
SCALE: 1:20



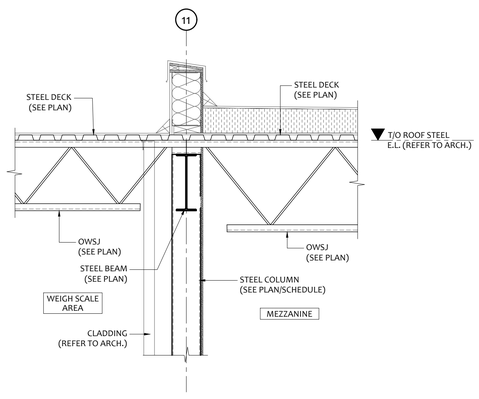
6 S-202 SECTION: TYP. FRAMING @ O/H DOOR (PERP. TO JOIST)
SCALE: 1:20



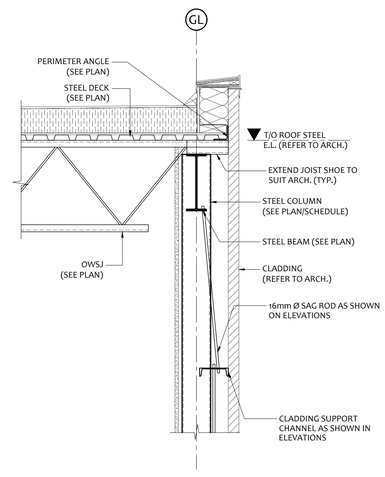
5 S-202 SECTION: TYP. ROOF FRAMING @ WEIGH SCALE AREA
SCALE: 1:20



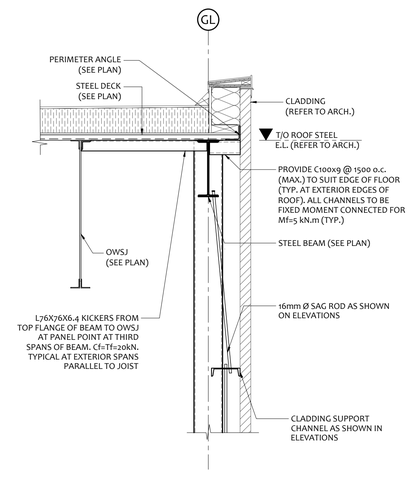
9 S-202 ELEVATION: FERO BREAKWAY FIRE RELEASE CONNECTOR @ JOIST
SCALE: 1:20



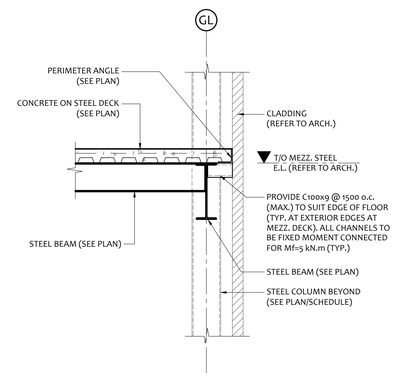
4 S-202 SECTION: TYP. ROOF FRAMING @ GL11
SCALE: 1:20



3 S-202 SECTION: TYP. FRAMING @ ROOF (PERP. TO JOIST)
SCALE: 1:20



2 S-202 SECTION: TYP. FRAMING @ ROOF (PARALLEL TO JOIST)
SCALE: 1:20



1 S-202 SECTION: TYP. FRAMING @ MEZZANINE
SCALE: 1:20

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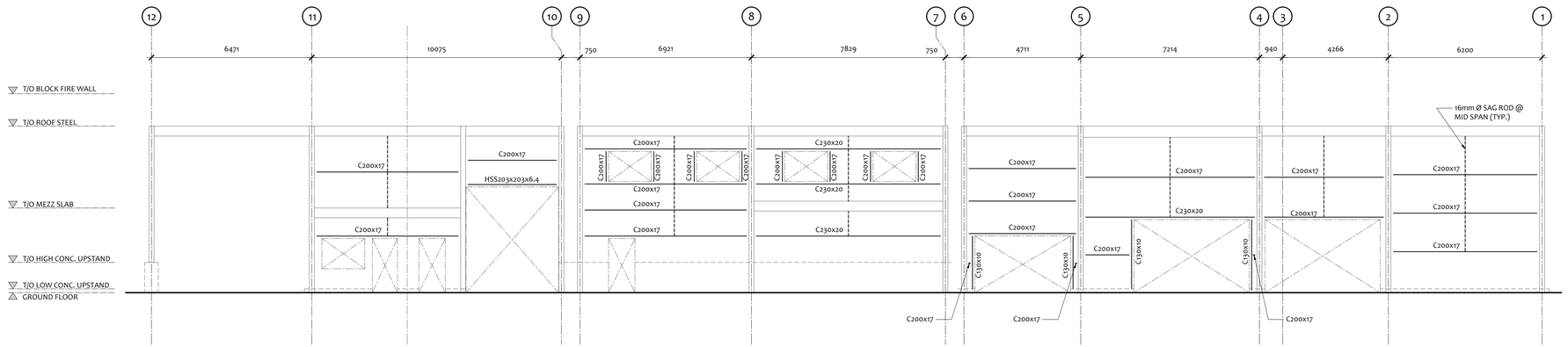
AIM / KENNY U-PULL
1533 McADOO'S LANE
KINGSTON

DRAWING NAME:
SECTIONS

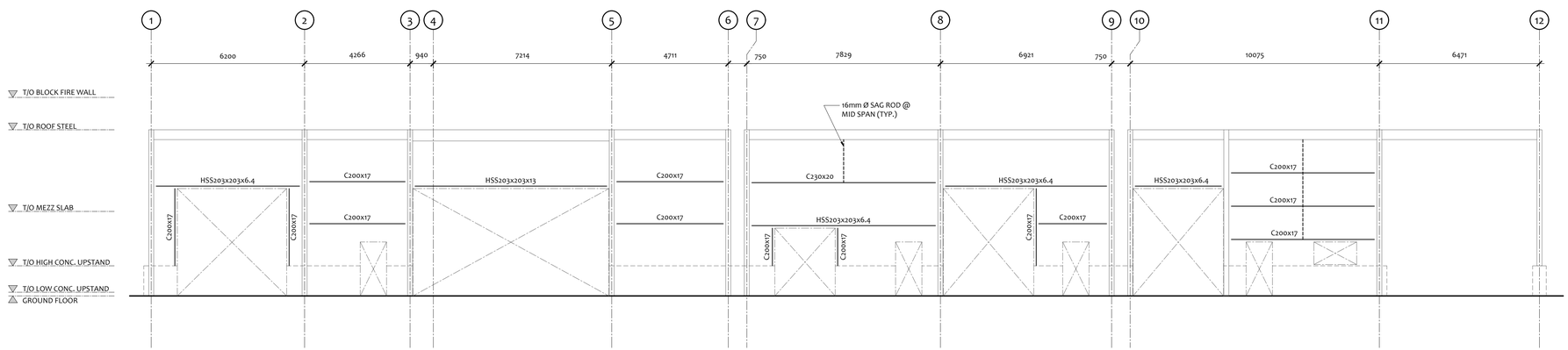
DESIGNED BY: R. MUNDEN
DRAWN BY: A. WITTICH
START DATE: 2022-01-31
D+M PROJECT #: 21-127

S-202



ELEVATION: NORTH (GL A)

SCALE: 1:100



ELEVATION: SOUTH (GL J)

SCALE: 1:100

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KINGSTON

DRAWING NAME:

BUILDING ELEVATIONS

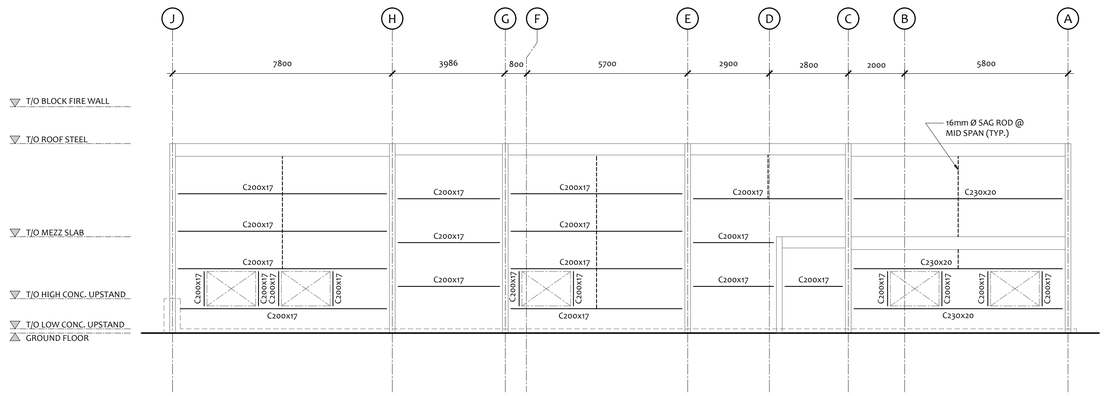
DESIGNED BY: R. MUNDEN

DRAWN BY: A. WITTICH

START DATE: 2022-01-31

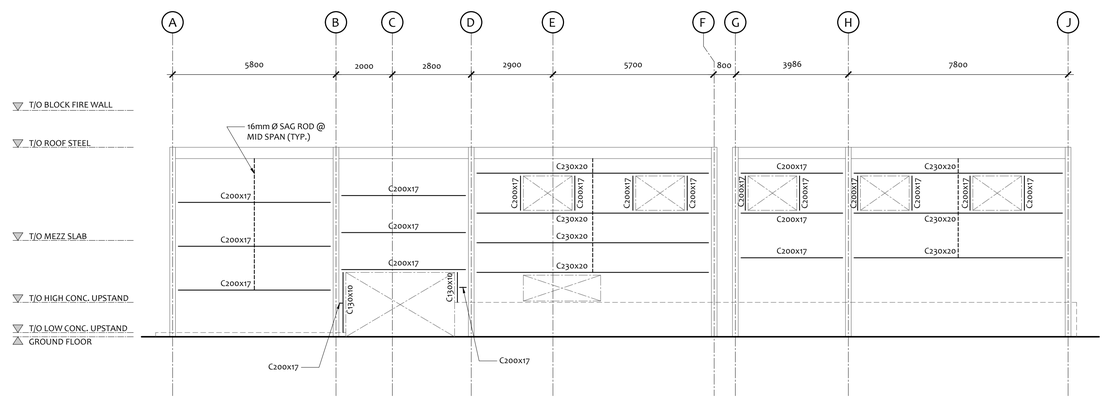
D+M PROJECT #: 21-127

S-300



ELEVATION: EAST (GL 11)

SCALE: 1:100



ELEVATION: WEST (GL 1)

SCALE: 1:100

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S-301