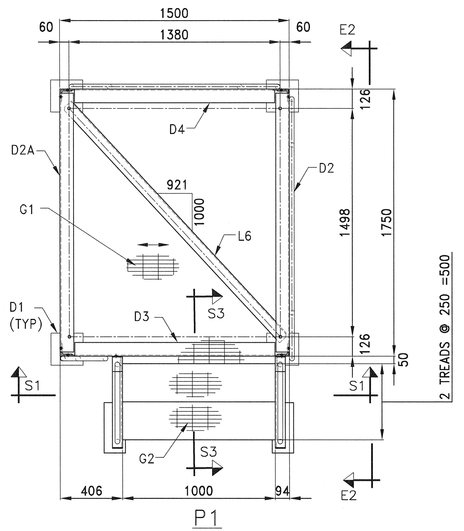
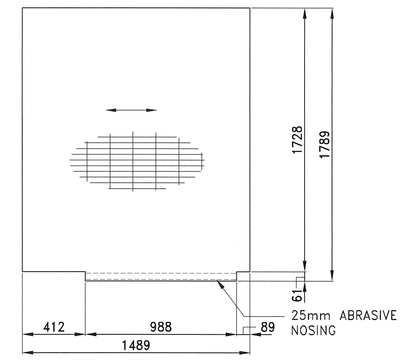


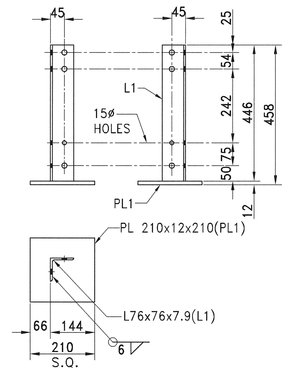
P1

SCALE 1:20



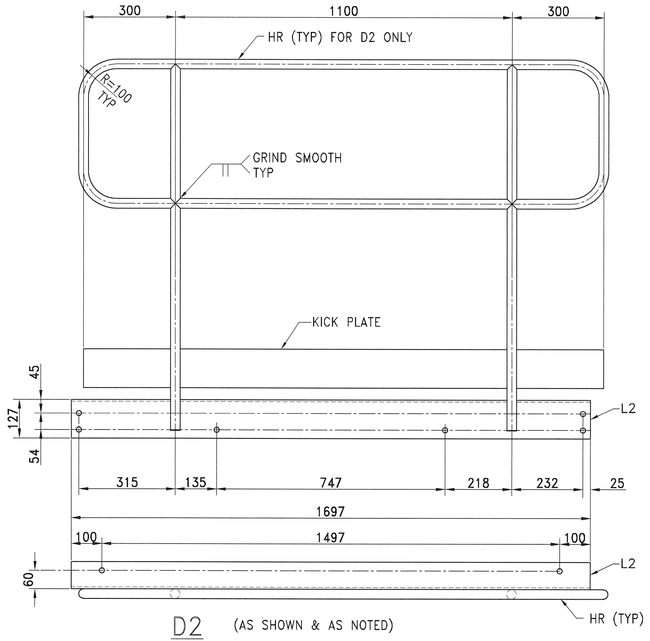
G1

SCALE 1:20



D1

SCALE 1:10



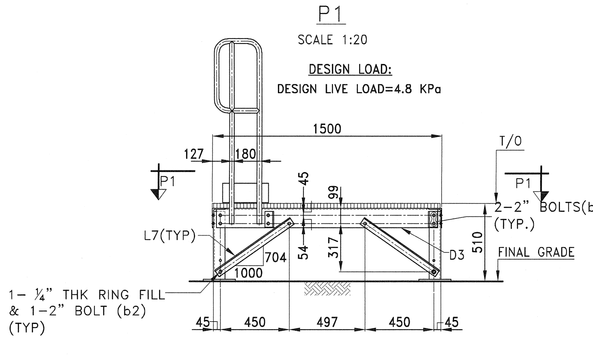
D2 (AS SHOWN & AS NOTED)

D2A (OPP. HAND & WITHOUT HANDRAIL)

SCALE 1:10

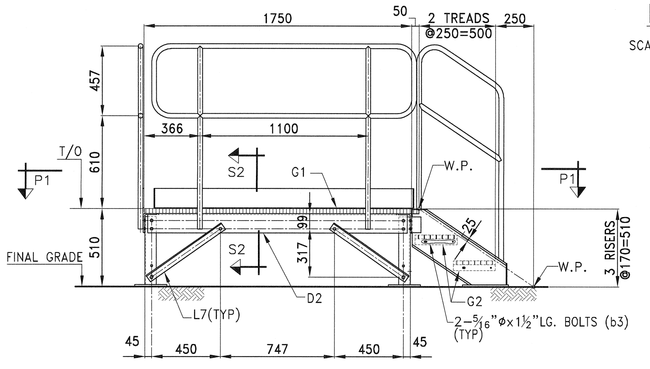
DESIGN LOAD:

DESIGN LIVE LOAD=4.8 KPa



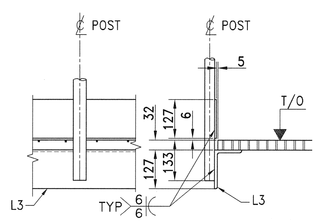
S1

SCALE 1:20



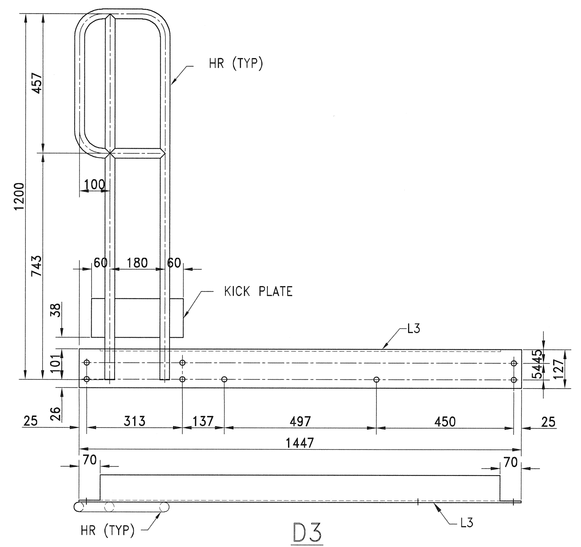
E2

SCALE 1:20



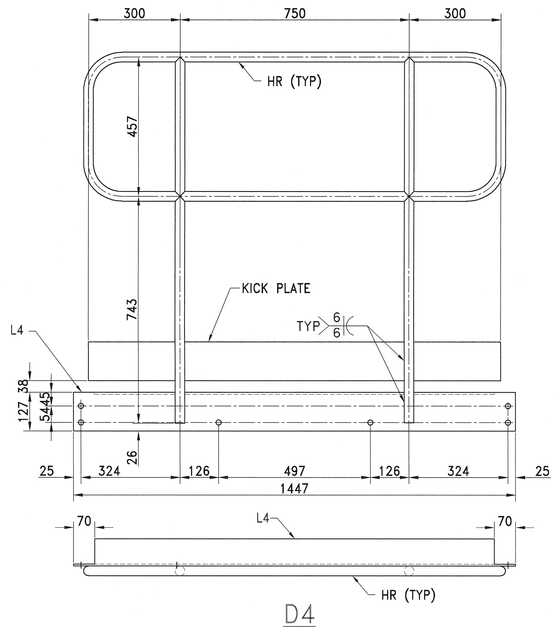
S2

SCALE 1:10



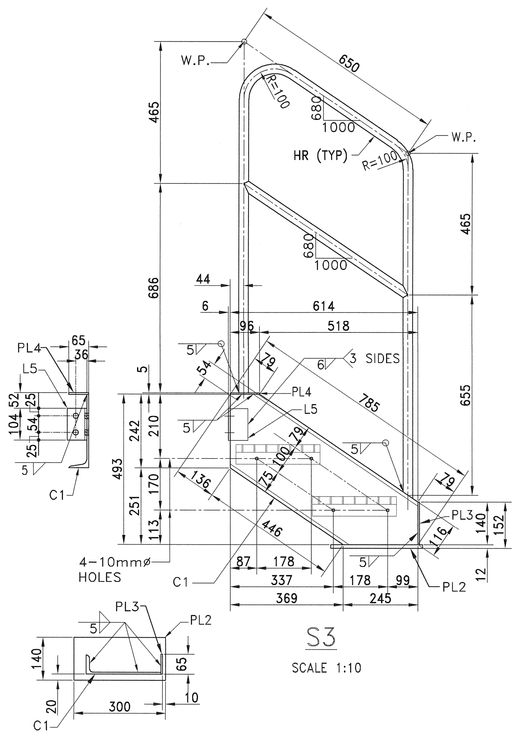
D3

SCALE 1:10



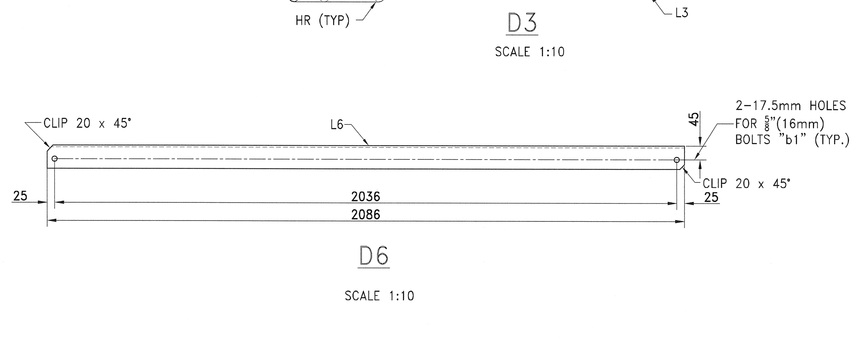
D4

SCALE 1:10



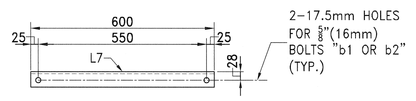
S3

SCALE 1:10



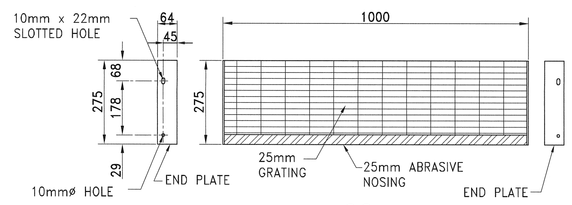
D6

SCALE 1:10



L7

SCALE 1:10



G2

SCALE 1:10

GENERAL NOTES:

1.0 GENERAL REQUIREMENTS:

1.1 CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, EQUIPMENT MOUNTING PATTERN AND CONDITIONS ON SITE AND ADVISE THE ENGINEER OF ANY ERROR OR OMISSION BEFORE WORK GETS UNDER WAY.
1.2 CONTRACTOR AND SUBCONTRACTOR SHALL TAKE INTO ACCOUNT THAT ALL WORK IS EFFECTED BY THE SITE'S STATE. ALL WORK SHALL BE COMPLETED FOLLOWING THE RULE OF ART OF THEIR SPECIFICATIONS AND MEET THE ENGINEER AND OTHER STANDARD.
1.3 THE WORKS MUST BE CONFORM TO ALL THE CODES AND REGULATIONS APPLICABLE TO THIS TYPE OF WORK AND IN EFFECT AT THE TIME THE WORK IS PERFORMED. AS A MINIMUM AND UNLESS OTHERWISE SPECIFIED, THE WORKS MUST BE PERFORMED IN ACCORDANCE WITH ONTARIO BUILDING CODE OF CANADA, THE 2012 EDITION.
1.4 ALL DIMENSIONS ARE IN MILLIMETERS U.N.O.
1.5 ALL DIMENSIONS MARKED ± BASED ON THE SURVEY SHALL BE VERIFIED BY THE GENERAL CONTRACTOR BEFORE STEEL FABRICATION & INSTALLATION.

7.0 STRUCTURAL STEEL:

7.1 UNLESS OTHERWISE INDICATED ON THE JOB SPECIFICATIONS OR ON THE DRAWINGS, ALL STEEL FRAMEWORKS SHALL COMPLY WITH CSA STANDARDS CAN/CSA-S16-0-, W59, W48 AND W47.1 LATEST EDITION.

7.2 MATERIAL

1. STEEL FRAMEWORKS SHALL COMPLY WITH CSA STANDARDS CAN/CSA-G40.21, CAN/CSA-G40.20 GRADE 350W FOR PROFILE HSS.
2. STEEL FRAMEWORKS SHALL COMPLY WITH CSA STANDARDS CAN/CSA-G40.21 GRADE 300W FOR PLATES, ANGLES, CHANNELS AND OTHERS.
3. STRUCTURAL BOLTS: ASTM A325; NUTS: ASTM A563 AND WASHERS: ASTM F436
4. NON-SHRINK GROUT UNDER BASE PLATES: 50MPa AT 28 DAYS, IF REQUIRED

7.3 CONNECTIONS

1. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, ALL SHOP CONNECTIONS MUST BE WELDED.
2. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, ALL FIELD CONNECTIONS MUST BE BOLTED.
3. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FIELD CONNECTIONS CAN ONLY BE WELDED ON ENGINEER'S APPROVAL.
4. ALL BOLTED CONNECTIONS MUST BE BEARING TYPE.
5. HIGH STRENGTH BOLTS IN DIAMETER ACCORDING TO THE ASTM STANDARD A325.
6. SHEAR CONNECTIONS OF BEAMS MUST BE CALCULATED FOR THE REACTION CORRESPONDING TO THE FULL BENDING CAPACITY OF THE BEAM.

7.4 WELDING

1. ALL WELDING SHALL COMPLY WITH CSA STANDARD W59. THE FABRICATOR AND ERECTOR SHALL BE CERTIFIED BY THE CANADIAN WELDING BUREAU IN THE DIVISION 1 OR 2.1, IN ACCORDANCE WITH CSA STANDARD W47.1.
2. ALL BUTT WELDS MUST BE FULL PENETRATION.
3. NO WELDING IS ALLOWED ON SITE UNLESS OTHERWISE SPECIFIED IN THE DRAWING OF RECORD.

7.5 SHOP DRAWINGS

1. SHOP AND ERECTION DRAWINGS, SHOWING ALL THE ERECTION AND FABRICATION DETAILS OF THE STEEL WORK, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE THE FABRICATION IN A MINIMUM OF 5 COPIES.
2. THE SHOP DRAWINGS MUST BEAR THE STAMP AND SIGNATURE OF AN ENGINEER RECOGNIZED IN THE PROVINCE OF ONTARIO. THE DRAWINGS MUST ALSO INDICATE THE NAME AND THE GENERAL INFORMATION OF THE FABRICATOR.

7.6 GALVANIZATION

1. ALL NEW STEEL SHALL BE HOT-DIP GALVANIZED IN CONFORMITY TO CAN/CSA G164 STANDARD AND HYDRO-ONE SPEC A-9.
2. ALL DAMAGED DRILLED OR WELDED STEEL SHALL BE TOUCHED-UP USING "GALVICON" APPLIED WITH A BRUSH.

BILL OF MATERIAL FOR ONE STEEL PLATFORM FOR TRANSFORMER

MARK	QUANT	DESCRIPTION	MATERIAL	LENGTH (mm)	WEIGHT (kg)	REMARK
G1	1	FISHOLOW ALUMINIUM GRATING (SERRATED TOP) WIDTH:1489mm±	ALUMINIUM GRATING TYPE 30x102M, 32x4.8 BEARING BAR	1789±	115.3	FISHER & LUDLOW
G2	2	FISHOLOW ALUMINIUM GRATING STAIR TREADS SERRATED TOP ABRASIVE NOSING TYPE B WIDTH:275mm	ALUMINIUM GRATING TYPE 30x102M, 38x4.8 BEARING BAR	1000	19.4	FISHER & LUDLOW
L1	4	L 76x76x7.9	G40.21-300W	446	16.1	HOP DIP GALV.
L2	2	L 127x89x6.4	G40.21-300W	1697	35.3	HOP DIP GALV.
L3	1	L 127x89x6.4	G40.21-300W	1447	15.1	HOP DIP GALV.
L4	1	L 127x89x6.4	G40.21-300W	1447	15.1	HOP DIP GALV.
L5	2	L 64x64x6.4	G40.21-300W	99	1.2	HOP DIP GALV.
L6	1	L 76x76x6.4	G40.21-300W	2086	15.1	HOP DIP GALV.
L7	8	L 51x51x4.8	G40.21-300W	600	22.8	HOP DIP GALV.
PL1	4	PL 210x12	G40.21-300W	210	16.6	HOP DIP GALV.
PL2	2	PL 140x12	G40.21-300W	300	7.9	HOP DIP GALV.
PL3	2	PL 65x5	G40.21-300W	140	0.7	HOP DIP GALV.
PL4	2	PL 65x5	G40.21-300W	96	0.5	HOP DIP GALV.
C1	2	C250X23	G40.21-300W	785	36.1	HOP DIP GALV.
HR	–	DN32 STD SCHEDULE 40 PIPE	ASTM A53	28500	96.6	HOP DIP GALV.
KICK PLATE	–	PL 6x125	G40.21-300W	3350	19.7	HOP DIP GALV.
TOTAL WEIGHT (INCLUDING 3.5% FOR GALVANIZATION)					444.0	

BILL OF MATERIAL FOR BOLT

MARK	QUANT	DESCRIPTION	MATERIAL	LENGTH (mm)	WEIGHT (kg)	REMARK
b1	26	16mm(5/8") BOLTS WASHER AND NUTS	A325	45	–	GALV.
b2	10	16mm(5/8") BOLTS WASHER AND NUTS	A325	51	–	GALV.
b3	8	8mm(5/16") BOLTS WASHER AND NUTS	A325	38	–	GALV.

2 SERVICE PLATFORMS FOR TRANSFORMERS REQUIRED. (PF-1 & 2)
BOM FOR REFERENCE ONLY

REFERENCE DRAWINGS:

1. 115/13.8kV STATION
STEEL KEY PLAN & LIST
STRUCTURE F1731664-200-S001

2. 115kV AREA
CONTAINMENT PIT FOR "T1"
CONC. & REINF. DETAILS
FOUNDATION F1731664-100-F003

3. 115kV AREA
CONTAIN. PIT FOR "T2"& FIREWALL FOOTINGS
CONC. & REINF. DETAILS
FOUNDATION F1731664-100-F004

4. 115/13.8kV STATION
BASIC LAYOUT
ELECTRICAL ARRANGEMENT F1731664-300-EA001

5. 115/13.8kV STATION
ELEVATIONS
ELETRICAL ARRANGEMENT F1731664-300-EA009

LEGEND:

W.P.: WORK POINT
HR: HAND RAIL
PL: PLATE
T/O: TOP OF GRATING

NO	DATE	TRANSMISSION	BY ENG
00	2018/09/27	RELEASED FOR CONSTRUCTION	SYM

PROFESSIONALS:

SMi THE S.M. GROUP INTERNATIONAL INC.
6205B Airport rd, Suite 205, Mississauga (Ontario) L4V 1E3
Tel.: 905 677.9009 / Fax.: 905 677.9014
www.groupesmi.com

STAMP:

LICENSED PROFESSIONAL ENGINEER
S.Y. WANG
100139367
PROVINCE OF ONTARIO

CLIENT:

PROJECT:
MCMASTER UNIVERSITY-NF91

TITLE:
115kV AREA
SERVICE. PLATF. FOR TRANSF. "PF-1&2"
STEEL DESIGN
STRUCTURE

PREPARED BY:	DATE:
Z. WANG	2018-09-27
DRAWN BY:	SCALE:
G. TUDELA	1:100
VERIFIED BY:	DISCIPLINE:
Z. WANG	STRUCTURE
APPROVED BY:	CAD FILE NAME:
S.Y. WANG	F1731664-200-S005.dwg

PROJECT No. | LOT: | DWG # | REV: | PAGE:
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