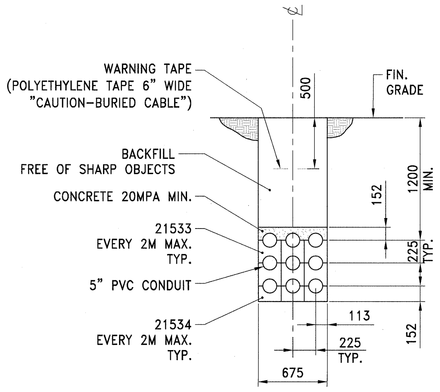
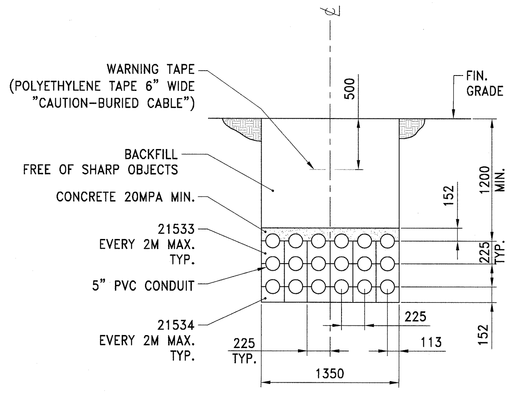




SECTION S1–S1
CONCRETE ENCASED
CABLE DUCT INSTALLATION
SCALE: 1:30



SECTION S2–S2
CONCRETE ENCASED
CABLE DUCT INSTALLATION
SCALE: 1:30

BILL OF MATERIAL (NOTE 2)

ITEM	SHORT DESCRIPTION	UNIT	QTY.
00020	CONN-GRD-SWG-OFFSET SPLIT CROSS/TEE-CU-#4/0 RUN-500KCMIL TAP	EA	2
00385	INS SP-110BIL,394LK,254H,2000LB,76-76BC	EA	2
02913	CONNECTOR,WEBBED,90°,LH,3-1/2"X4-1/8"	EA	AR
02925	CHANNEL,41.2MMX41.2MM, 6M LG,GALV	M	2
02964	NUT,1/2" 13 UNC, WITH SPRING	EA	AR
02965	CLAMP,CBL, PORCELAIN FOR 2-3/8" OD	EA	AR
03007	COVER,SOLID, 300 MMX3M,GALV	EA	2
03068	CBL TRAY,VO BND,S,3"D,12"W,90°,12"R,G,HG	EA	AR
05882	BLDG WIRE-600V-CU-500KCMIL-RWU90-1COND, 37STRD	M	10
05884	BLDG WIRE-600V-CU-4/0AWG-TWU-1COND, 19STRD	M	90
05997	BLDG WIRE-1000V-CU-1000KCMIL-RWU90-1COND	M	38
06690	PLUG,230KV,2-1/2"NPS,INTERNAL,62.68MM ID	EA	2
07171	CH BUS SUPP-BLTD-AL-2.5"NPS-76/127MMBC	EA	2
07266	CONN,TAP,WELD,AL,P-PAD,2.5"NPS-4HO PAD	EA	7
10138	UGRND CAB-28KV-2/0AWG-CU-1 COND	M	165

BILL OF MATERIAL (NOTE 2)

ITEM	SHORT DESCRIPTION	UNIT	QTY.
16174	BUS PIPE-ALUM-2-1/2"NPS-73MM OD	FT	10
17726	UGRND CAB-28KV-1250KCMIL-CU-1 COND	M	1700
20850	CONN-TERM BLTD PAD-CU-4/0-1000KCMIL-4HOL	EA	7
21533	SPACER, DUCT SADDLE,5"DUCT,3"SPACE	EA	426
21534	SPACER, DUCT SADDLE,5"DUCT,3"SPACE	EA	213
24561	BASE, SQ, STL PST, 6 HOLES	EA	AR
24642	CBL TRAY,PKD CVR,12"W,72" LG,HDG	EA	4
27595	CBL TRAY,SFC,VO BND,3"D,12"W,90°,12"R,HG	EA	2
27602	CBL TRAY, SPLICE PLATE, 3"H, SS	EA	2
28985	CBL TRAY,PKD END CAP,12"W,HDG	EA	2
33904	OUT-LTG,LUMINAIRE,120V,98W,LED	EA	5
33905	OUT-LTG,LUMINAIRE,120V,74W,LED	EA	5
34042	OUT-LTG,LUMINAIRE, ARM, DOUBLE	EA	5
90010	ANCHOR HILTI ITEM#2160187, HAS-E-B HDG 1/2"-8", HY200 ADHESIVE, EMBEDMENT -70MM MIN.	EA	4

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. QUANTITIES ARE PROVIDED FOR REFERENCE ONLY.
3. NEUTRAL CABLES BURIED AS PER DETAIL 1.
4. CABLE TRAY SUPPORT LOCATION CAN BE ADJUSTED BASED ON SITE CONDITION.
5. CABLE TRAY EXTENDED TO FINISHED GRADE.
6. CABLE OPENING SHALL BE SIZED & PERFORMED AT SITE.
7. FIELD TO WEEP 6MM HOLES IN THE BOTTOM AND SIDES OF CABLE TRAY AT 1M INTERVALS.
8. CABLE TRAY SUPPORTS, WHETHER BOLTED TO FOUNDATIONS OR FREE STANDING, TO BE LOCATED NOT MORE THAN 760MM FROM THE END OF EACH TRAY SECTION.
9. CABLE TRAY SUPPORT TO BE INSTALLED AT INTERVALS OF 3 METERS. CABLE TRAY SUPPORT LOCATION CAN BE ADJUSTED BASED ON SITE CONDITION.

REFERENCE DRAWINGS:

1. 115/13.8KV STATION, BASIC LAYOUT, ELECTRICAL ARRANGEMENT — --F1731664-300-EA001
2. 115/13.8KV STATION, ELEVATIONS, ELECTRICAL ARRANGEMENT — --F1731664-300-EA009

NORTH-SOUTH REF. LINE & TOWERS

EAST-WEST, REF. LINE & TRANSFO. FDN

6000 ROAD

05997 DETAIL 1

2 X 4C #4/0 AWG TECK DIRECT BURIED

37000

TRENCH 300 X 180 TYP.

6000

135° TYP.

1930

TSS1

TSS2

S3

S3

T1

T2

3000 TYP.

STATION NEUTRAL BUS SEE DETAIL 1 & 2

CABLE TRAY SEE DETAIL 4 TYP.

10138
1 X 2/0AWG PVC INSULATED PER ø DIRECT BURIED

17726
3 X 1250kCMIL PVC INSULATED PER ø

NEUTRAL REACTOR

NEUTRAL REACTOR

TO CT/PT COMBO

TO CT/PT COMBO

05884

05997

05884

S2

S2

S1

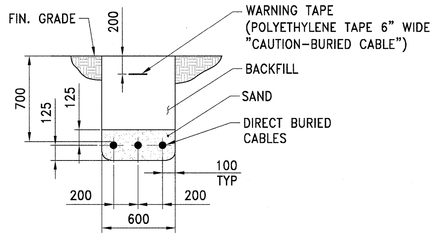
S1

18 X 5", 42"RADIUS, 45° TYP.

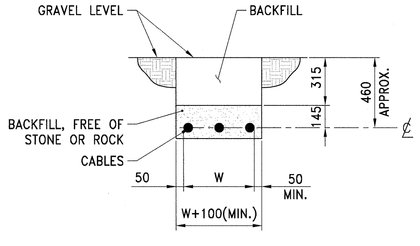
18 X 5" PVC CONDUIT ENCASED IN CONCRETE DUCT BANK TYP.

9 X 5" PVC CONDUIT ENCASED IN CONCRETE DUCT BANK TYP.

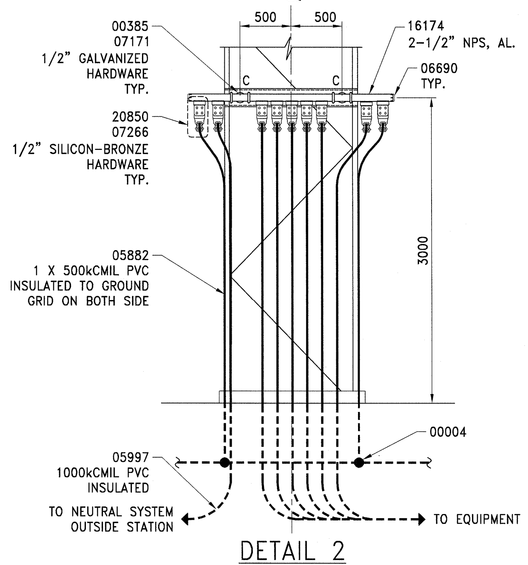
9 X 5", 42"RADIUS, 45° TYP.



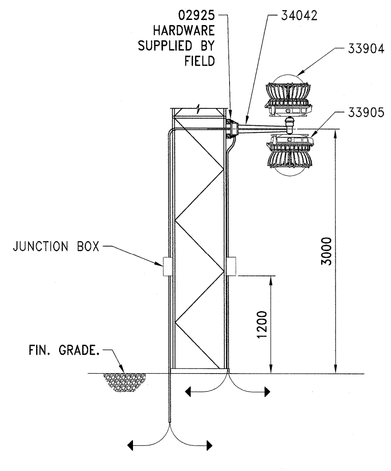
SECTION S3–S3
DIRECT BURIED CABLE INSTALLATION
SCALE: 1:25



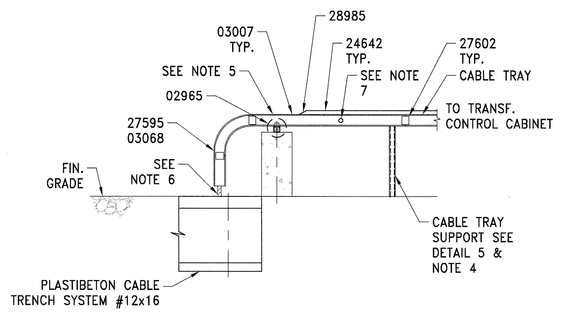
DETAIL 1
TYPICAL INSTALLATION
FOR NEUTRAL CABLE
SCALE: 1:20



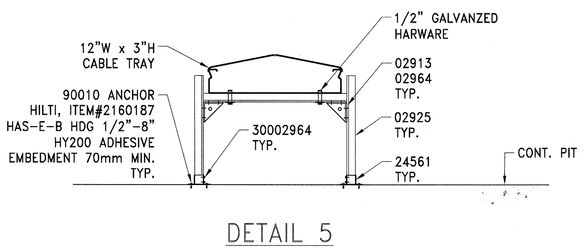
DETAIL 2
STATION NEUTRAL BUS
SCALE: 1:30



DETAIL 3
TYPICAL ARRANGEMENT ON FIVE STRUCTURE
COLUMNS WITH DISCONNECT SWITCH HANDLE
N.T.S



DETAIL 4
CABLE TRAY MOUNTING ON SPILL PIT WALL.
N.T.S.



DETAIL 5
TYPICAL FOR T1 & T2
CABLE TRAY SUPPORT ASSEMBLY IN CONT. PIT.
SEE NOTE 8 & 9.
N.T.S.

PROFESSIONALS:

N°	DATE	TRANSMISSION	BY ENG

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6205B Airport rd, Suite 205, Mississauga (Ontario) L4V 1E3
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Y. LESSARD
100128983
PROVINCE OF ONTARIO

CLIENT:

PROJECT:

MCMASTER UNIVERSITY–NF91

TITLE:

115/13.8KV STATION
CABLE, CONDUITS, NEUTRAL & LIGHTING PLAN & DETAILS
ELECTRICAL ARRANGEMENT

PREPARED BY: M. LAROCQUE	DATE: 2018-08-21
DRAWN BY: C.BAZINET	SCALE: 1:75 & AS SHOWN
VERIFIED BY: M. LAROCQUE	DISCIPLINE: ELECTRICAL ARRANGEMENT
APPROVED BY: Y. LESSARD	CAD FILE NAME: F1731664-300-EA011.dwg

PROJECT No	LOT:	DWG.#	REV:	PAGE:
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