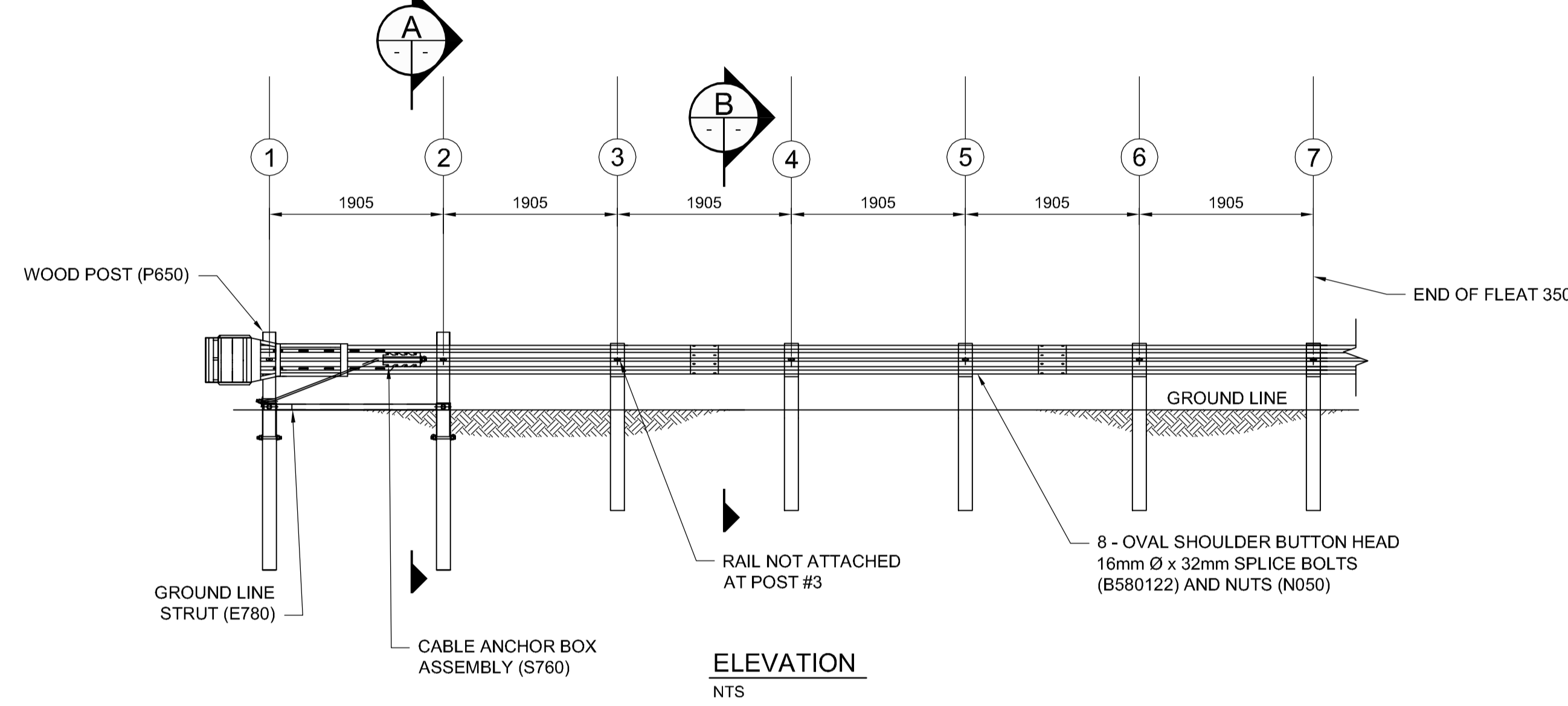
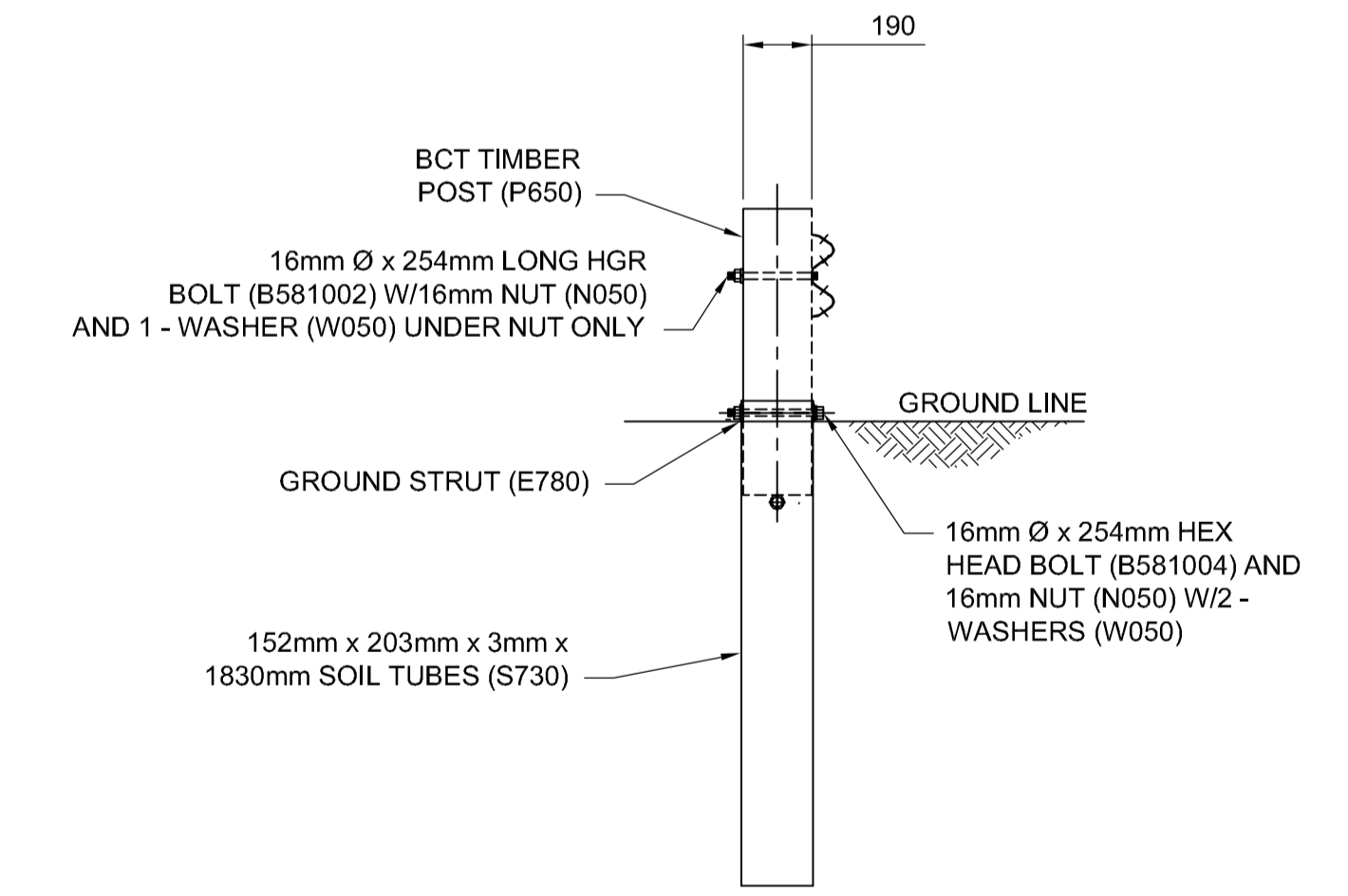


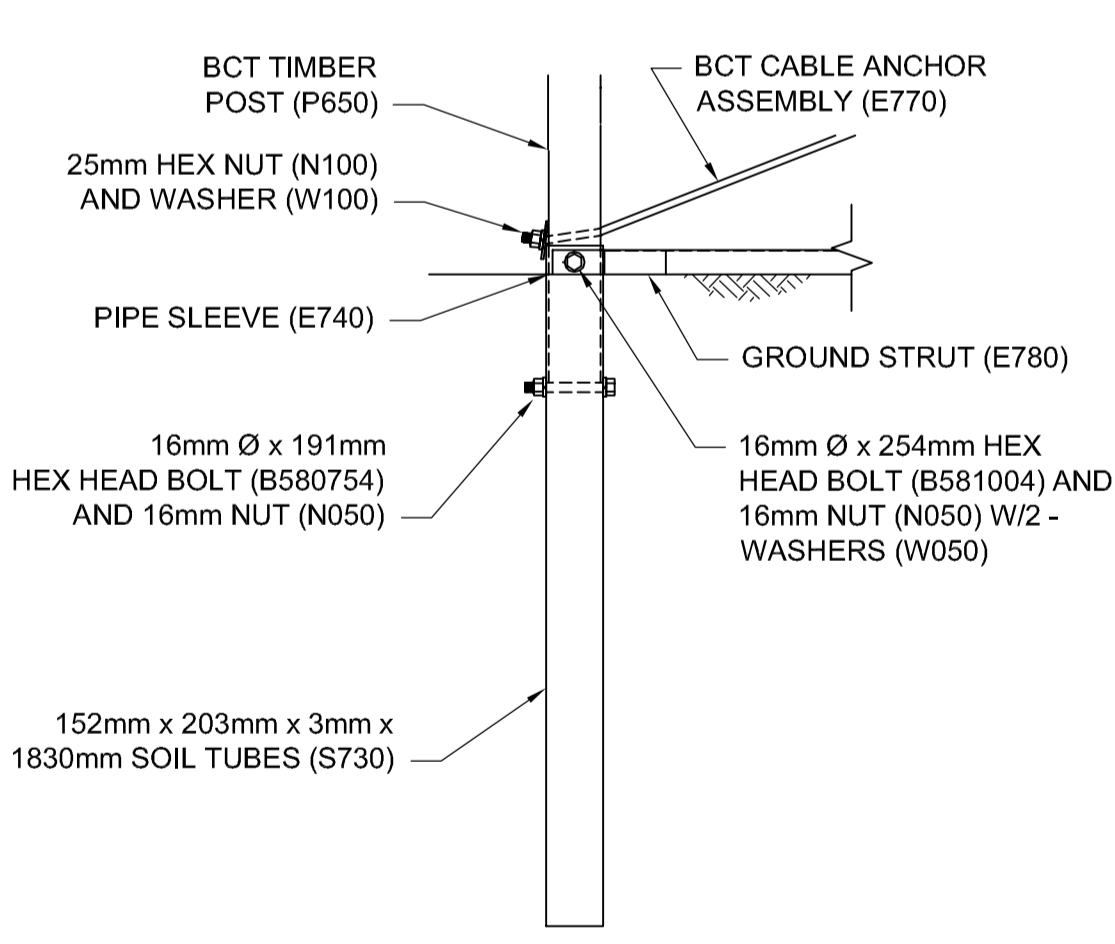
PLAN
NTS



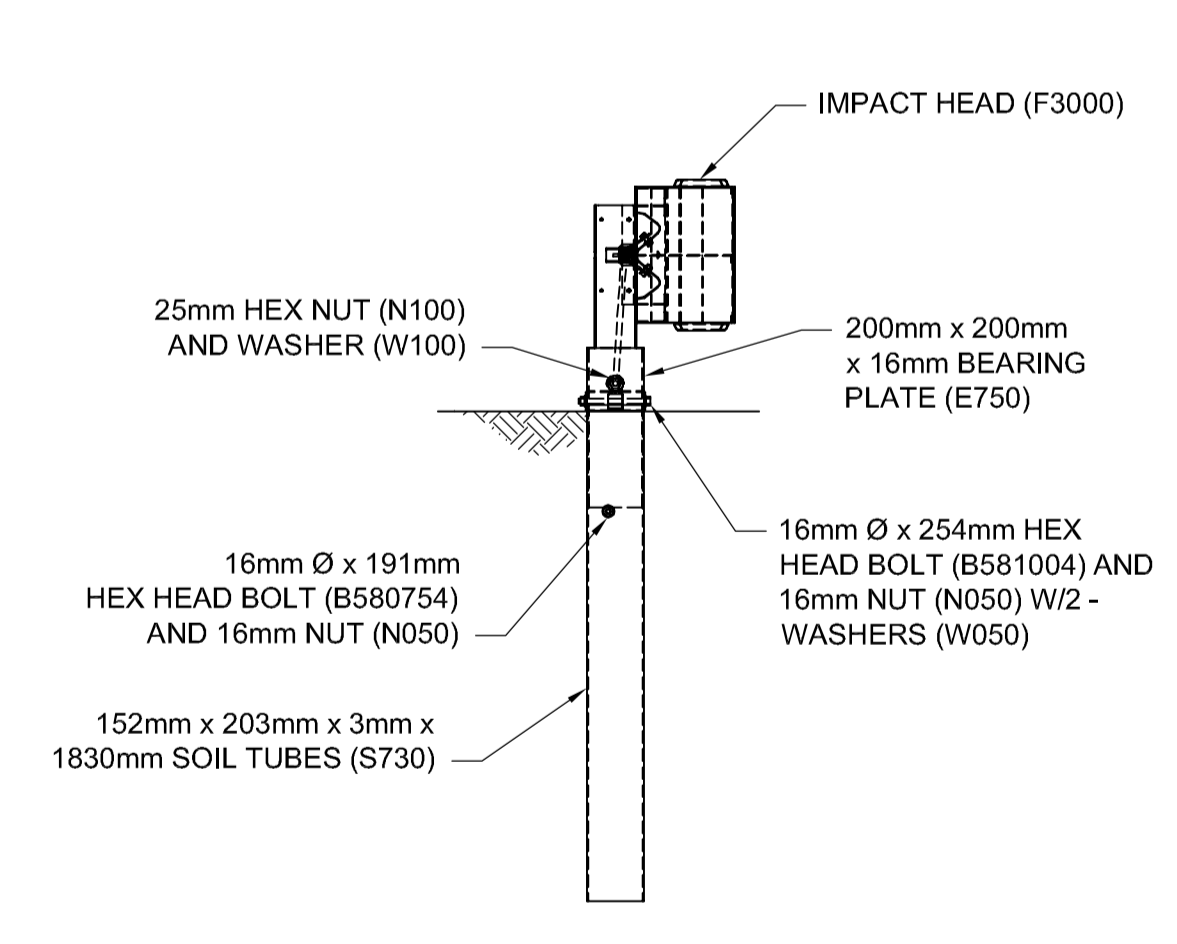
ELEVATION
NTS



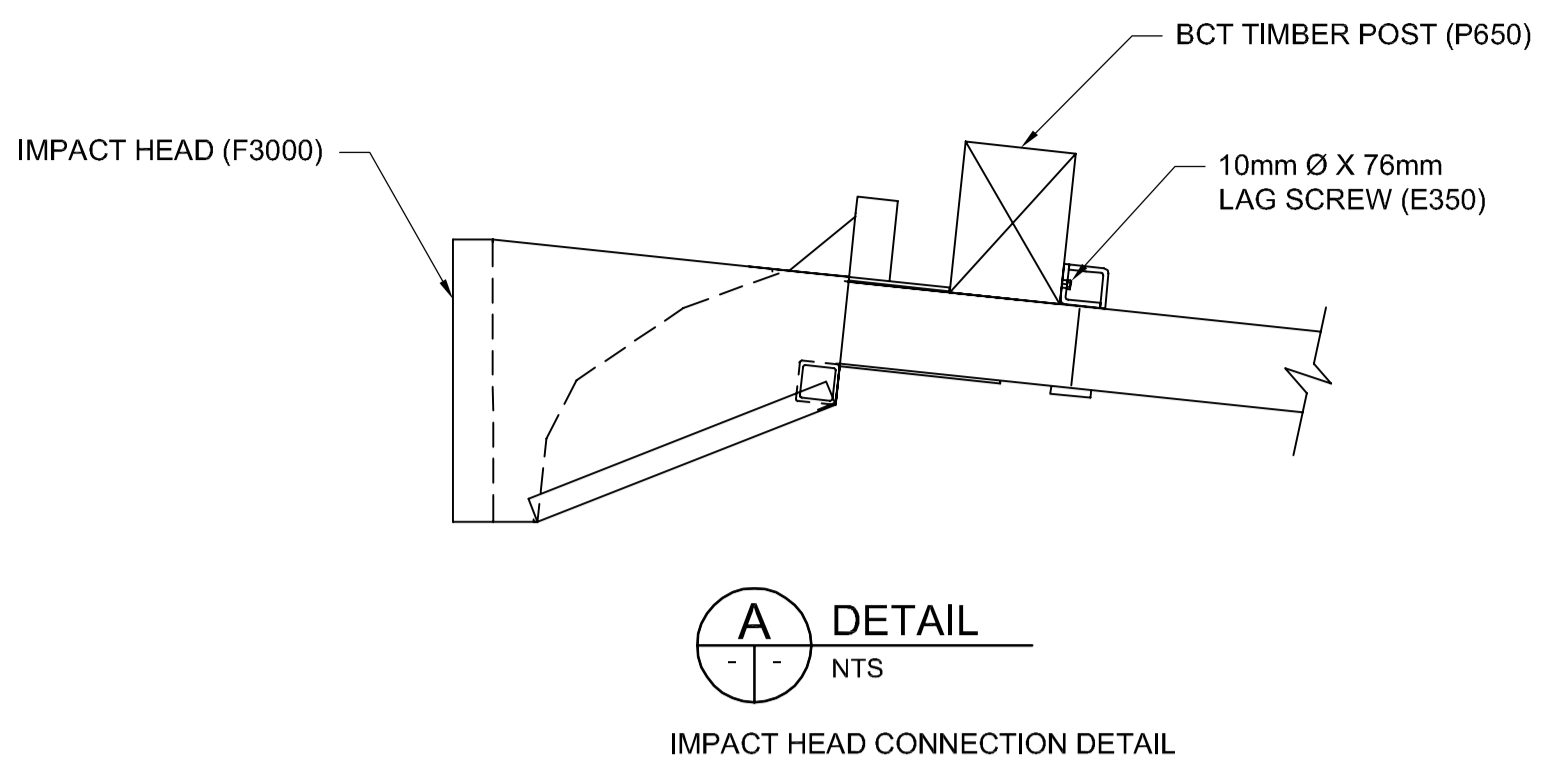
SECTION
A
NTS



PARTIAL VIEW OF POST #1
NTS

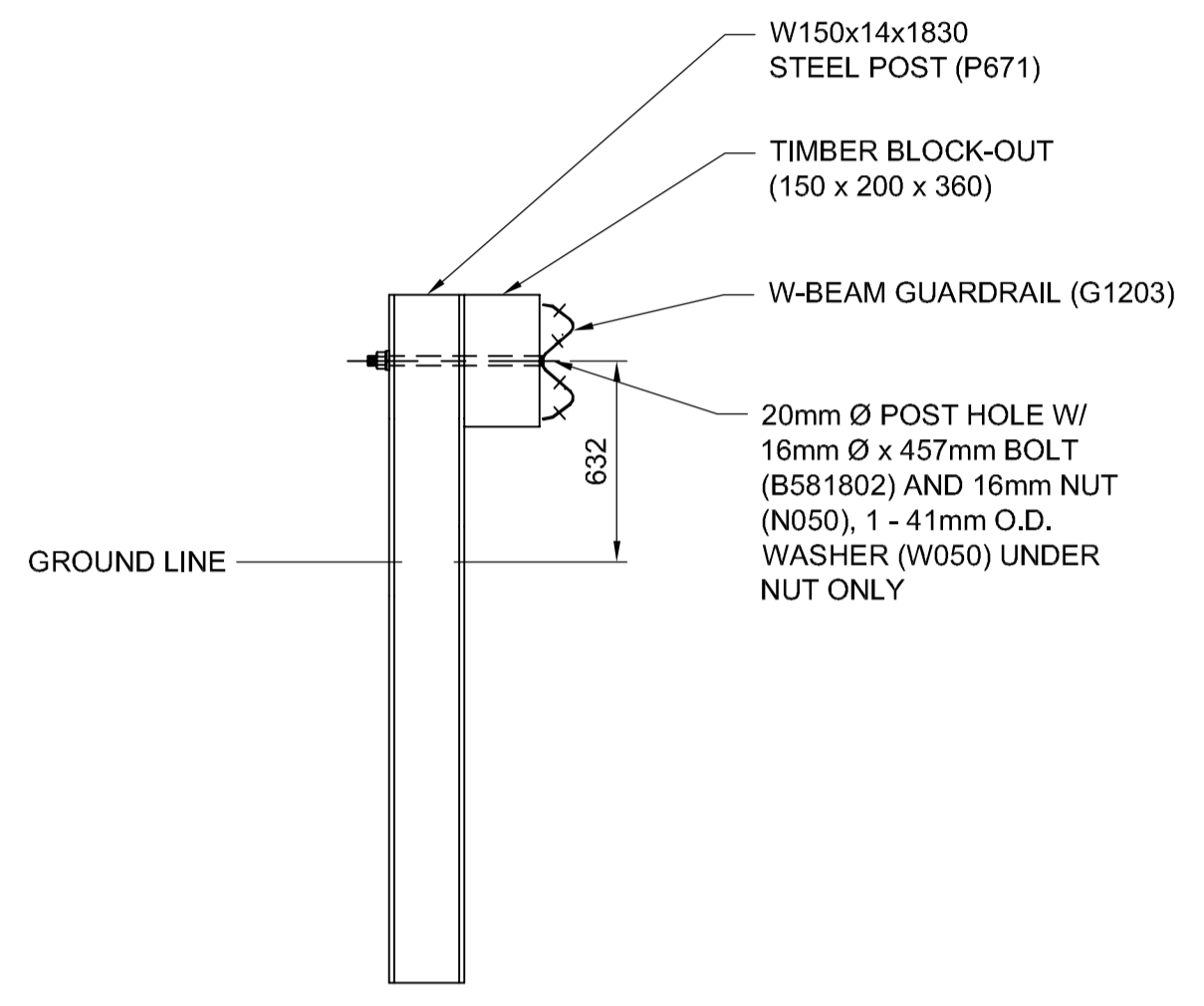


FRONT VIEW OF POST #1
NTS



DETAIL
A
NTS

IMPACT HEAD CONNECTION DETAIL



SECTION
B
NTS

TYPICAL @ POSTS #3 THRU #7
NOTE: RAIL NOT BOLTED @ POST 3

**BILL OF MATERIAL
FOR FLEAT 350**

PC	NO.	DESCRIPTION
F3000	1	IMPACT HEAD
F1303	1	W-BEAM GUARDRAIL END SECTION, 12 GA.
G1203	2	W-BEAM GUARDRAIL, 12 GA.
S730	2	FOUNDATION SOIL TUBE (152 x 203 x 3 x 1830)
E740	1	PIPE SLEEVE
E750	1	BEARING PLATE (200 x 200 x 16)
S760	1	CABLE ANCHOR BOX
E770	1	BCT CABLE ANCHOR ASSEMBLY
E780	1	GROUND STRUT
P650	2	WOOD POST (140 x 190 x 1143)
P671	5	W150x14x1830 STEEL POST
P675	5	TIMBER BLOCK-OUT (150 x 200 x 360)
HARDWARE		
B580122	24	16mm Ø x 32mm SPLICE BOLT
B580754	2	16mm Ø x 191mm HEX BOLT
B581004	2	16mm Ø x 254mm HEX BOLT
B581002	1	16mm Ø x 254mm H.G.R. BOLT (POST #2 ONLY)
B581802	5	16mm Ø x 457mm H.G.R. BOLT (POSTS # 3 - #7)
N050	34	16mm H.G.R. NUT
W050	10	H.G.R. WASHER
N100	2	25mm ANCHOR CABLE HEX NUT
W100	2	25mm ANCHOR CABLE WASHER
E350	2	10mm x 76mm LAG SCREW
SB58A	8	CABLE ANCHOR BOX SHOULDER BOLT
N055A	8	13mm A325 STRUCTURAL NUT
W050A	16	27mm OD x 14mm ID A325 STRUCTURAL WASHER

NOTES:

- BREAKAWAY POSTS ARE REQUIRED WITH THE FLEAT 350.
- ALL BOLTS, NUTS, CABLE ASSEMBLIES, CABLE ANCHORS AND BEARING PLATES SHALL BE GALVANIZED.
- THE SOIL TUBES SHALL NOT PROTRUDE MORE THAN 100 MM ABOVE GROUND (MEASURED ALONG 1500 MM CORD). SITE GRADING MAY BE NECESSARY TO MEET THIS REQUIREMENT.
- THE SOIL TUBES MAY BE DRIVEN WITH AN APPROVED DRIVING HEAD. SOIL TUBES SHOULD NOT BE DRIVEN WITH THE POST IN THE TUBE. IF THE TUBES ARE PLACED IN DRILLED HOLES, APPROVED BACKFILL MATERIAL MUST BE SATISFACTORILY COMPACTED TO PREVENT SETTLEMENT.
- WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 300 MM Ø POST HOLE, 500 MM DEEP MAY BE USED IF APPROVED BY THE ENGINEER. APPROVED GRANULAR MATERIAL WILL BE PLACED IN THE BOTTOM OF THE HOLE APPROX. 65 MM DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES WILL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.
- THE BREAKAWAY CABLE ASSEMBLY MUST BE TAUT. A LOCKING DEVICE (VICE GRIPS OR CHANNEL LOCK PLIERS) SHOULD BE USED TO PREVENT THE CABLE FROM TWISTING WHEN TIGHTENING NUTS.

NOTE:

THIS SHEET INTENDED FOR CLARITY ONLY. "FLEAT 350" GUARDRAIL SYSTEMS ARE SUPPLIED AS COMPLETE UNITS INCLUDING ALL HARDWARE. CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION PROCEDURES.



METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

WARNING

IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:

- NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
- TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS SEE PROVINCIAL REGULATION 210/72 FOR DETAILS.
- OBTAIN EXCAVATION PERMITS PRIOR TO CONSTRUCTION.

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150 W.M.	150 W.M.	MTS	M.T.S.	MTS	150 mm W.M.	150 mm W.M.	150 mm W.M.
HYDRANT VALVE	HYDRANT VALVE		CONCRETE ASPHALT PLANING		HYDRANT VALVE		HYDRANT VALVE
LAND DRAINAGE SEWER	LAND DRAINAGE SEWER		SIDWALK PAVING STONES		LAND DRAINAGE SEWER		LAND DRAINAGE SEWER
WASTE WATER SEWER	WASTE WATER SEWER		PROPERTY LINE SURVEY BAR		WASTE WATER SEWER		WASTE WATER SEWER
MANHOLE	MANHOLE		CURB RAMP		MANHOLE		MANHOLE
CATCH BASIN	CATCH BASIN		DITCH		CATCH BASIN		CATCH BASIN
CURB INLET	CURB INLET		SWALE		CURB INLET		CURB INLET
TEST HOLES	TEST HOLES				TEST HOLES		TEST HOLES
CULVERT	CULVERT				CULVERT		CULVERT
GAS	GAS				GAS		GAS
EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PROFILE

UNDERGROUND STRUCTURES

SUPPLY U/G STRUCTURES COMMITTEE DATE

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

B.M. 654008 N: 5515764.610 E: 633359.697
ELEV. 232.463 m

DESIGNED BY	
DRAWN BY	JD
CHECKED BY	
APPROVED BY	
HOR. SCALE	
VERTICAL	
DATE	2013-04-05

DESIGN TEAM

DILLON CONSULTING

ENGINEER'S SEAL

N/A

RELEASER FOR CONSTRUCTION

DATE

CONSULTANT PROJECT NUMBER

12-6606

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

Winnipeg

WWARP III - KENASTON BLVD EXTENSION
CONTRACT 3

CITY DRAWING NUMBER
S769-2013-05

SHEET 21 OF 23

CONSULTANT DRAWING NUMBER

S769 - FLEAT 350 DETAILS