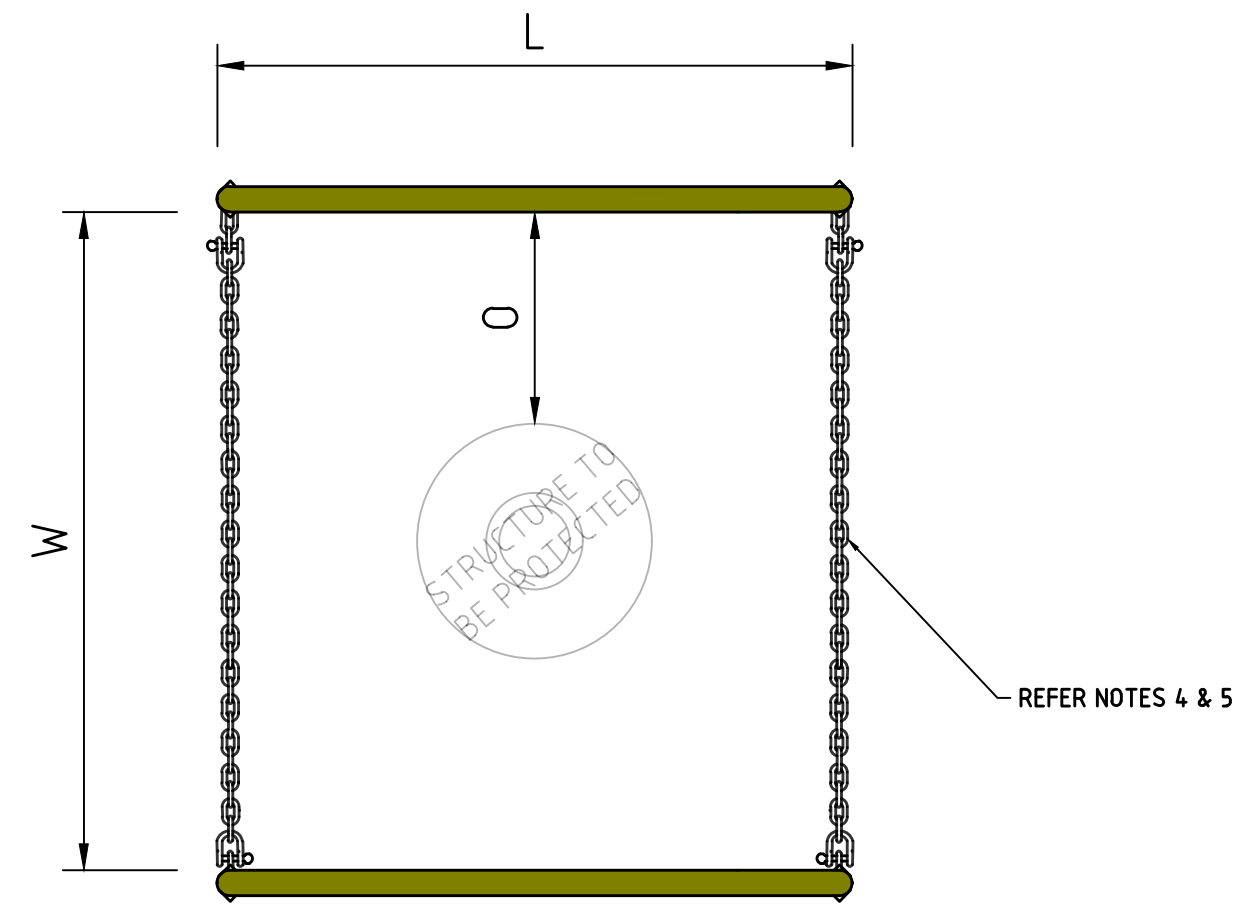


90 mm ϕ BOLLARDS
PLAN VIEW



48 mm ϕ BOLLARDS
PLAN VIEW

ITEM LIST

DIM	SIZE (mm)	DESCRIPTION
ϕ	48 (min)	MINIMUM DIAMETER OF BOLLARD
T	3 (min)	MINIMUM WALL THICKNESS OF BOLLARD
L	1200 (max)	MAXIMUM LENGTH OF BOLLARD RAIL
H	700 (min)	MINIMUM HEIGHT OF BOLLARD ABOVE NSL
D	500 (min)	MINIMUM DEPTH OF POLLARD BELOW NSL
O	400 (min)	MINIMUM OFFSET OF BOLLARDS FROM STRUCTURES
P	300 (min)	MINIMUM CLEARANCE FROM PIPE
W	900 (min)	MINIMUM CLEAR ACCESS AND WORK AREA

48Mmm (min) GALVANISE BOLLARDS TO BE USED WHERE LENGTH (L) DOES NOT EXCEED 1200mm (NOT TO BE USED WHERE PROTECTION FROM STOCK IS REQUIRED)

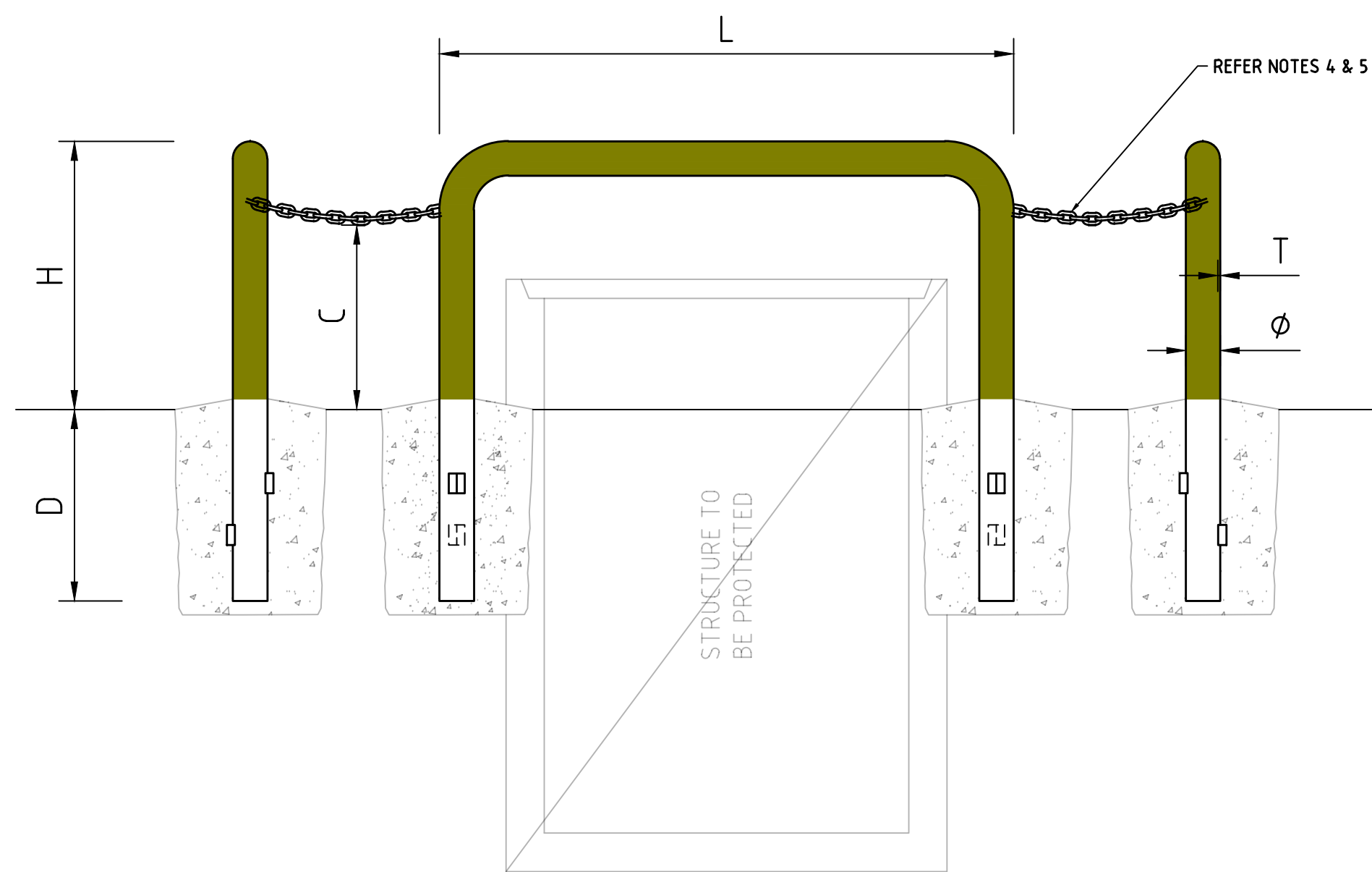
ITEM LIST

DIM	SIZE (mm)	DESCRIPTION
ϕ	90 (min)	MINIMUM DIAMETER OF BOLLARD
T	2 (min)	MINIMUM WALL THICKNESS OF BOLLARD
L	3000 (max)	MAXIMUM LENGTH OF BOLLARD RAIL
H	700 (min)	MINIMUM HEIGHT OF BOLLARD ABOVE NSL
D	500 (min)	MINIMUM DEPTH OF POLLARD BELOW NSL
O	600 (min)	MINIMUM OFFSET OF BOLLARDS FROM STRUCTURES
C	500 (min)	MINIMUM HIGHT OF CHAIN ABOVE NSL
A	800 (min)	MINIMUM CLEAR OPENING
	800 (min) & 1000(max)	CLEAR OPENING WHERE BOLLARDS ARE TO PROTECT STRUCTURES FROM STOCK AND CHAINS ARE TO BE INSTALLED

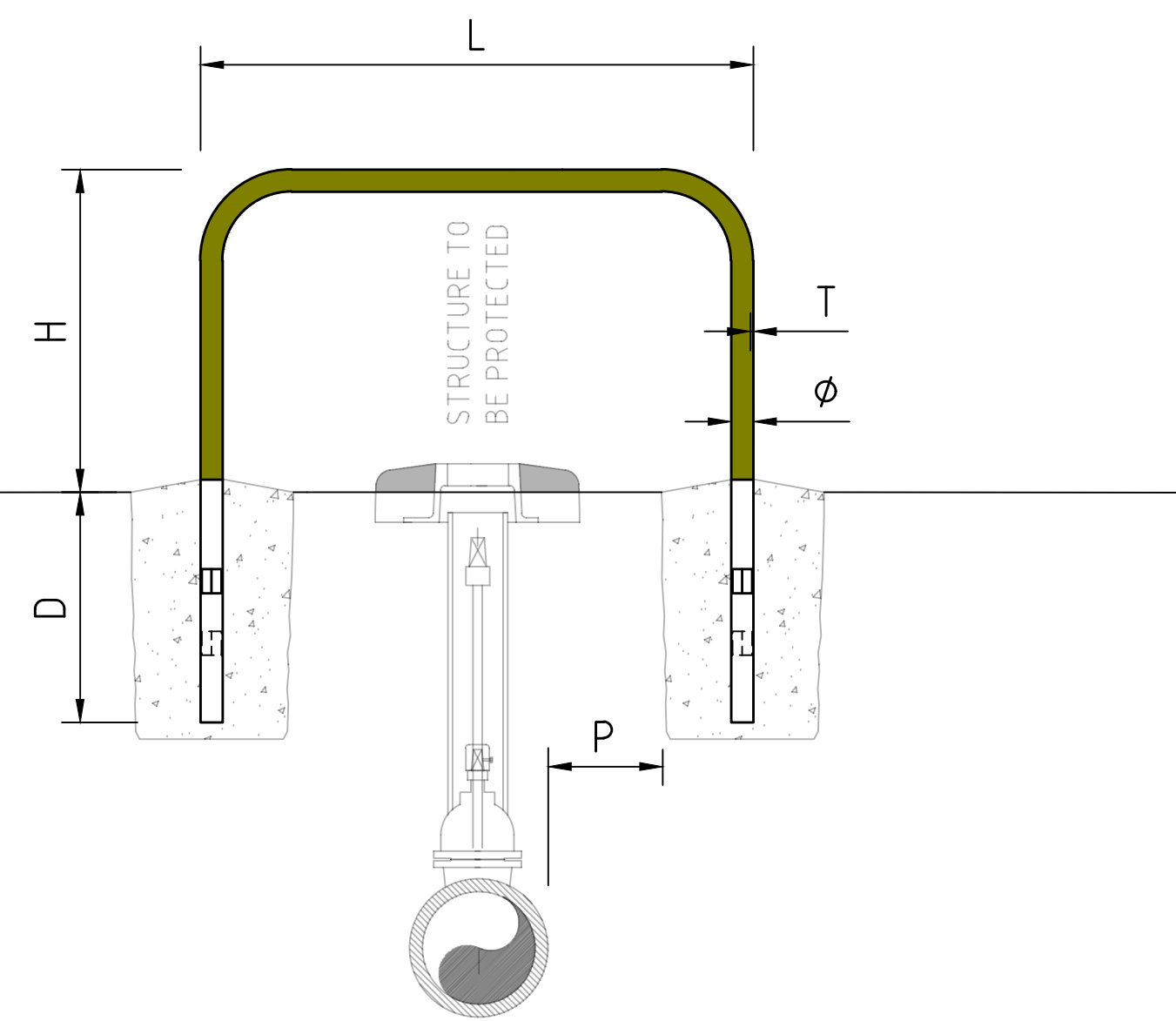
90mm (min) GALVANISED BOLLARDS TO BE USED WHERE LENGTH (L) EXCEEDS 1200mm OR WHERE PROTECTION FROM STOCK IS REQUIRED

NOTES

- BOLLARDS ARE TO BE CONCRETED INTO A HOLE OF MINIMUM 450mm DIAMETER
 - CONCRETE TO BE 20MPa (min)
 - CONCRETE TO BE BEVELED DOWN FROM POST TO SHED WATER
- BOLLARDS ARE TO HAVE 2x SECURING LUGS ON EACH LEG EVENLY SPACED WITHIN CONCRETED REGION
- BOLLARDS ARE TO BE THE STANDARD OLIVE GREEN (G25 to AS 2700 (REF WWD20, WW COLOUR PROCEDURE))
- 12mm GALVANISED CHAINS ARE TO BE USED WHERE BOLLARDS ARE REQUIRED TO PROTECT SRTUCTURES FROM STOCK
- CHAINS ARE TO BE FIXED TO THE BOLLARDS WITH 12mm GAUGE WELDED RINGS AND AND 12mm GALVANISED D-SHACKLES



90 mm ϕ BOLLARDS
ELEVATION



48 mm ϕ BOLLARDS
ELEVATION

CONSTRUCTION ISSUE

				CONSULTANT DETAILS:		DESIGNED: R.D. DATE: 23-6-16 COMPANY: S.W.		TITLE: STANDARD DRAWING WASTEWATER ABOVE GROUND ASSETS TYPICAL BOLLARD PROTECTION ARRANGEMENT	
						DRAWN: R.D. DATE: 23-6-16 COMPANY: S.W.			
						CHECKED: D.B. DATE: 22-10-19 COMPANY: S.W.			
						APPROVED: D.B. DATE: 22-10-19 COMPANY: S.W.			
0 MODIFIED REMS DRAWING 24.066-004-1 R.D. 22-10-19				CONSULTANT REFERENCE No.		SIZE: A1 SCALE: N.T.S. INDEX No.		DRAWING No. 25350 SHEET 054 REV No. 0	
REVISION DETAILS				DWN DATE					