



BOLLARD DETAIL
 1' 9" 6" 3" 0 1'
 1"=1'-0"

GENERAL NOTES:

- IF THIS SHEET IS NOT 24"x36" USE GRAPHIC SCALE ACCORDINGLY.

NOTES FOR ENGINEER OF RECORD:

(DO NOT INCLUDE ON CONSTRUCTION DRAWINGS)

- THIS DETAIL CAN BE USED TO PROVIDE PROTECTION OF IBC RISK CATEGORY I - IV STRUCTURES, SYSTEMS, AND COMPONENTS (SSCs) FROM ACCIDENTAL/ UNINTENTIONAL VEHICLE IMPACT.
- THE TECHNICAL BASIS FOR THE DETAIL IS IBC PARA. 912.4.3 / IFC SECT. 312.
- GIVEN NOTE 2, IF THE DETAIL IS USED FOR THE PURPOSE DESCRIBED IN NOTE 1, PRIOR TO DELETING OR CHANGING ANY ASPECT OF THIS DETAIL THAT'S REQUIRED BY IFC PARA. 312.2, A VARIANCE MUST BE REQUESTED AND APPROVED.
- WHEN EDITING DETAIL FOR PROJECT SPECIFICITY, ADD PROJECT-SPECIFIC REQUIREMENTS. AMONGST OTHER THINGS, AS APPLICABLE, BE SURE TO COMPLETE THE DRAWING-REFERENCE BUBBLE IN THE DETAIL TITLE/ NAME. FINALLY, BE SURE TO INDICATE THE NUMBER OF BOLLARDS REQUIRED AT EACH LOCATION ON THIS SHEET AND/ OR THE SHEET(S) REFERENCED IN THE BUBBLE.
- IF THE SSC TO BE PROTECTED IS A FIRE DEPARTMENT CONNECTION, OR ANY OTHER OBJECT THAT'S REQUIRED BY THE IFC TO HAVE VEHICLE-IMPACT PROTECTION, THEN THE MINIMUM NUMBER OF BOLLARDS SHALL BE TWO (2)*. BOLLARDS SHALL BE SPACED < FOUR (4) FEET ON CENTER, AND EACH BOLLARD SHALL BE LOCATED ≥ THREE (3) FEET FROM THE PROTECTED OBJECT.
- WITHOUT SUBSTANTIATING DOCUMENTATION (E.G., CALCULATION, TEST DATA, ETC.) THIS DETAIL CAN'T BE USED TO PROTECT SSCs FROM INTENTIONAL VEHICLE IMPACT, TO PROTECT NUCLEAR SSCs FROM ANY TYPE OF VEHICLE IMPACT, OR TO RESTRAIN VEHICLES (I.E., THIS BOLLARD ISN'T AN IBC "VEHICLE BARRIER").

*USE OF JUST 2 BOLLARDS IS ACCEPTABLE ONLY WHEN THE OBJECT BEING PROTECTED IS ADJACENT TO A SUBSTANTIAL STRUCTURE (E.G., A BUILDING, ETC.) THAT IS NO FARTHER AWAY FROM THE OBJECT THAN ONE (1) FOOT, OR WHEN THE TOPOGRAPHY IS SUCH THAT IT EFFECTIVELY "REPLACES" A SUBSTANTIAL STRUCTURE WITH REGARD TO PROTECTING THE OBJECT FROM VEHICLE IMPACT.

THIS DETAIL IS BASED ON CALCULATION MEMO ES-EPD-16-018.

DRAWING DEVELOPED FOR ML-3/ML-4 PROJECTS. FOR ML-1/ML-2, ADDITIONAL REQUIREMENTS AND QA REVIEWS ARE REQUIRED. (REMOVE THIS NOTE WHEN INSERTED INTO A DRAWING PACKAGE)

NO	DATE	CLASS REV	DC	DESCRIPTION	DWN	DSGN	CHKD	SUB	APP
5	08/04/2016	UNCLASS		ADMIN. CHANGES TO NEW FORMAT CAD STD REV#5. MINOR DESIGN CHANGES	EJS	MS	MS	CRR	TO
4	01/28/2014	U		GENERAL REVISION	KT	MS	JG	EH	TO
3	01/18/2006	U	DY	DELETED BOLLARD LOCATION DETAIL AND GENERAL REVISIONS	RP	MS	MS	EH	TO
2	12/12/2012	U	DY	ADDED KEYED NOTE 1 & REVISED BOLLARD FOUNDATION	RP	GP	TH	EH	TO
1	08/23/2002	U		GENERAL REVISIONS & CHANGED DWG NUMBER FROM ST3011	RP	EH	MS	EH	TO

ENGINEERING STANDARDS

CIVIL

DRAWN	R.PEARSON
DESIGN	E.HOTH
CHECKED	M.SMITHOUR
DATE	06/28/99

TA- XX BLDG XXXX

APPROVED FOR RELEASE
 STANDARDS MANAGER: TOBIN ORUCH

SHEET **1**

1 OF **1**

D.C.: UNCLASSIFIED REVIEWER: LARRY BAYS DATE:

PROJECT ID DRAWING NO **CHAPTER 3 ST-G30GEN-1** REV **5**

00% REVIEW
 NOT FOR CONSTRUCTION