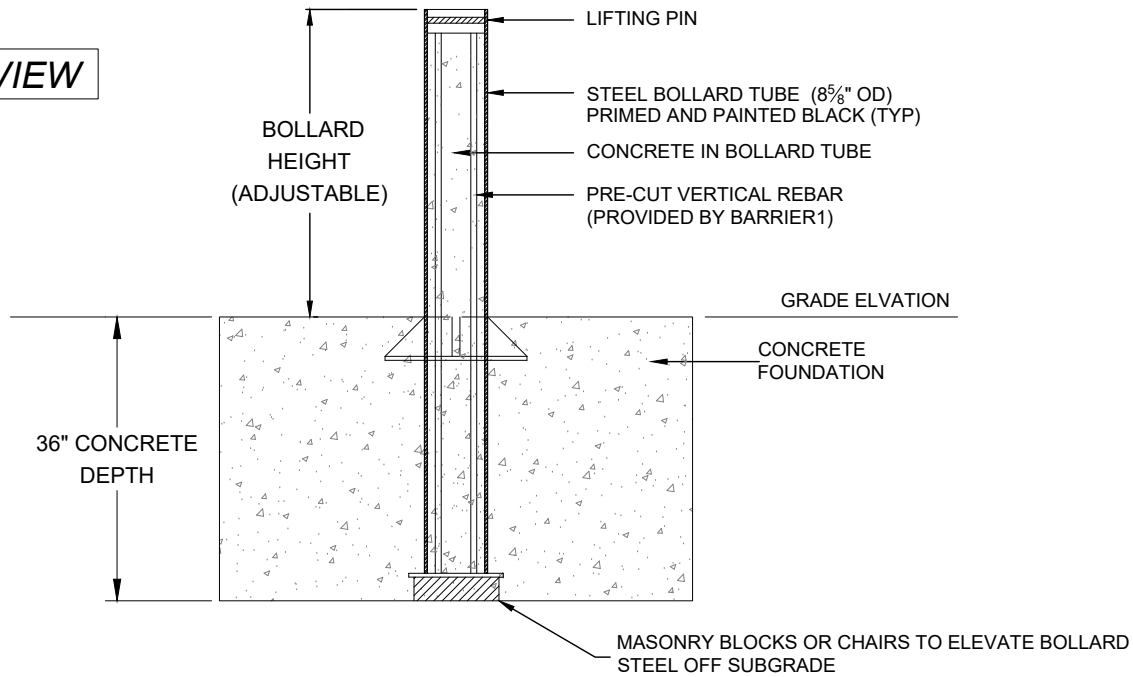


# SET & POUR BOLLARD - MODEL SPB-400 (PREFABRICATED SINGLE BOLLARD UNIT, NO REBAR IN FOUNDATION)

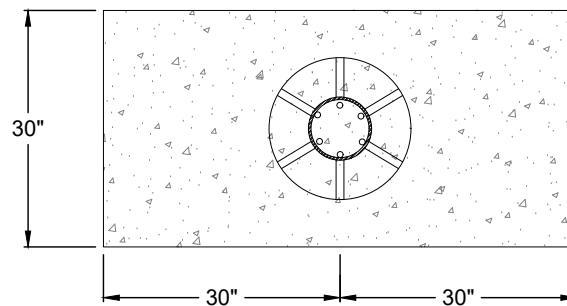
STOPS 15,000 LB. VEHICLE AT 30 MPH IMPACT (BOLLARD SPACING IS UNRESTRICTED)

ASTM F2656-07 M30(K4) CERTIFIED, APPROVED BY DoD AND ON ANTI-RAM LIST

**FRONT VIEW**



**TOP VIEW**



**KEY CAPABILITIES**

1. NO PLACING & TYING REBAR IN CONCRETE FOUNDATION. NO FIELD WELDING.
2. ONE (1) SINGLE PREFABRICATED BOLLARD UNIT, TO SET
3. QUICK INSTALLATION (EXCAVATE, THEN SET BOLLARD & POUR CONCRETE).
4. AVOIDS EXCAVATIONS BEING OPEN OVERNIGHT (SET & POUR BOLLARD ARRAY IN 1 DAY).
5. UNRESTRICTED BOLLARD SPACING (ONE BOLLARD STOPS VEHICLE IMPACT).



**BARRIER1 SYSTEMS, INC.**  
 8015 THORNDIKE ROAD  
 GREENSBORO, NC 27409  
 (336) 617-8478 (336) 617-8471 FAX  
 mlamore@barrier1.us www.barrier1.us

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DETAILS  
 ASTM M30 (K4)  
 SET & POUR BOLLARD

SAMPLE DRAWINGS

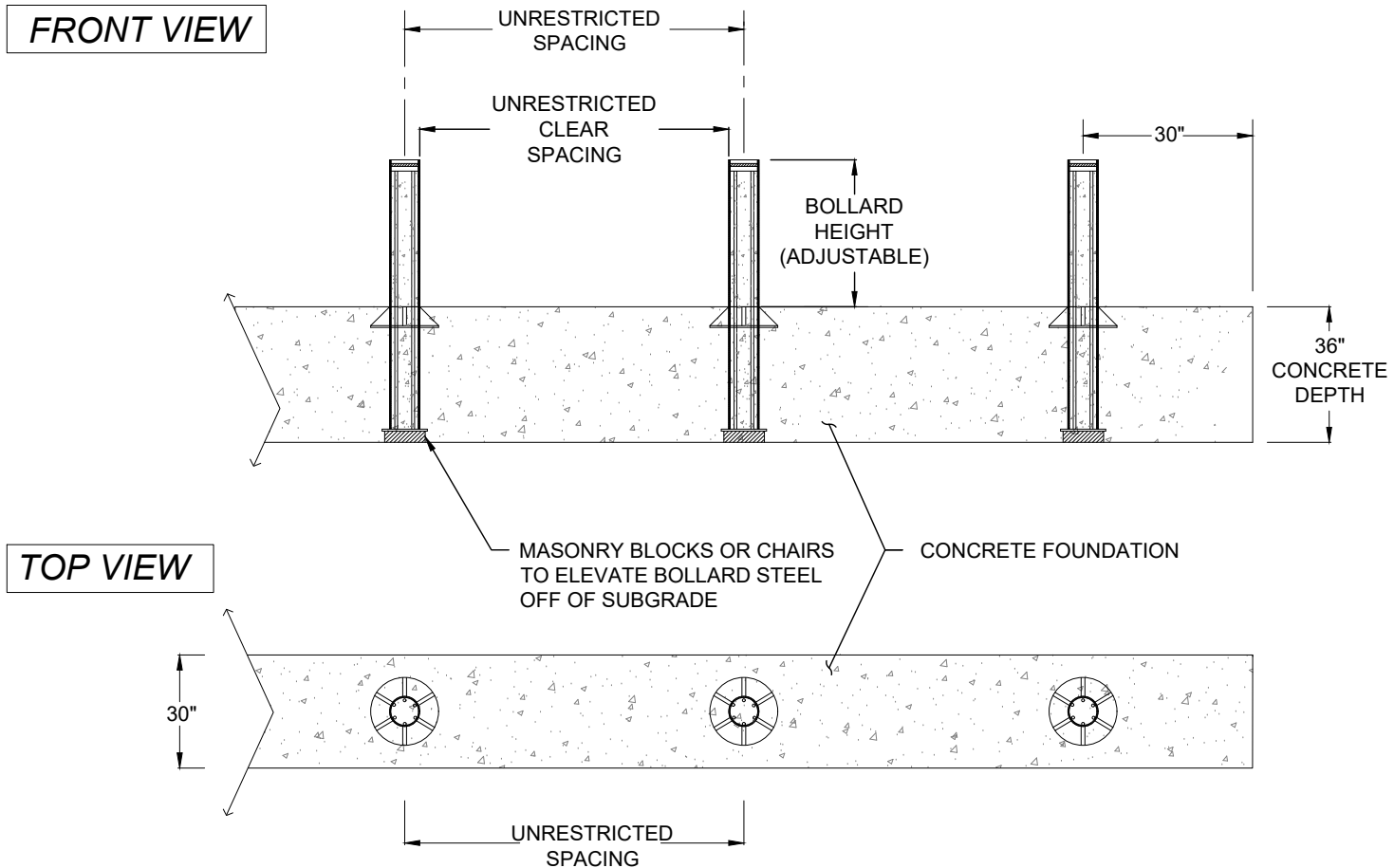
SHEET: 1 OF 9  
 20180302-01-PD  
 SCALE: N.T.S.

# SET & POUR BOLLARD - MODEL SPB-400 (PREFABRICATED SINGLE BOLLARD UNIT, NO REBAR IN FOUNDATION)

STOPS 15,000 LB. VEHICLE AT 30 MPH IMPACT (BOLLARD SPACING IS UNRESTRICTED)

ASTM F2656-07 M30(K4) CERTIFIED, APPROVED BY DoD AND ON ANTI-RAM LIST

## TYPICAL BOLLARD ARRAY INSTALLATION



### KEY CAPABILITIES

1. NO PLACING & TYING REBAR IN CONCRETE FOUNDATION. NO FIELD WELDING.
2. ONE (1) SINGLE PREFABRICATED BOLLARD UNIT.
3. QUICK INSTALLATION (EXCAVATE, THEN SET BOLLARD & POUR CONCRETE).
4. AVOIDS EXCAVATIONS BEING OPEN OVERNIGHT (SET & POUR BOLLARD ARRAY IN 1 DAY).
5. UNRESTRICTED BOLLARD SPACING (ONE BOLLARD STOPS VEHICLE IMPACT).



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TYPICAL ARRAY  
 ASTM M30(K4)  
 SET & POUR BOLLARD

SAMPLE DRAWINGS

SHEET: 2 OF 9  
 20180302-01-PD  
 SCALE: N.T.S.

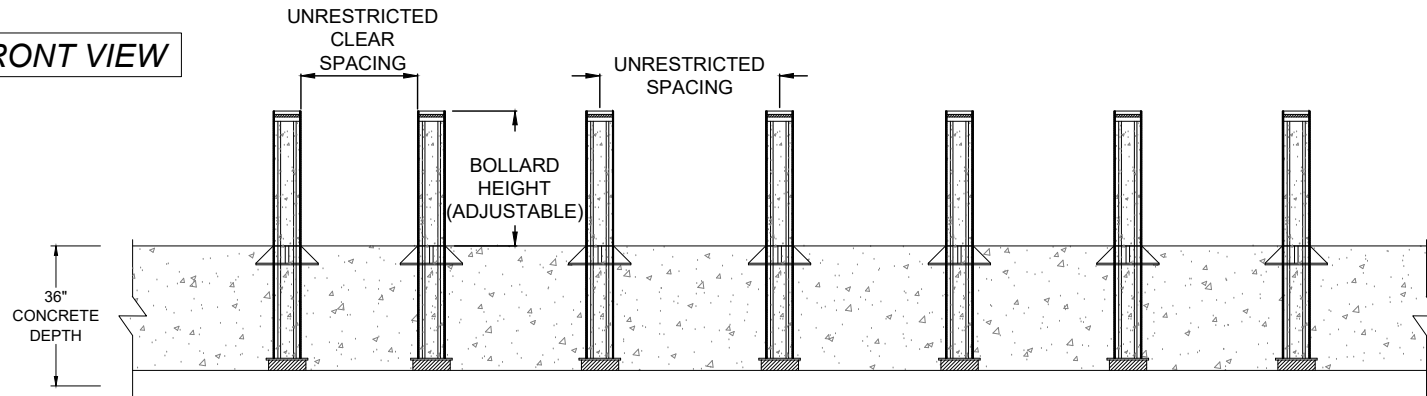
# SET & POUR BOLLARD - MODEL SPB-400 (PREFABRICATED SINGLE BOLLARD UNIT, NO REBAR IN FOUNDATION)

STOPS 15,000 LB. VEHICLE AT 30 MPH IMPACT (BOLLARD SPACING IS UNRESTRICTED)

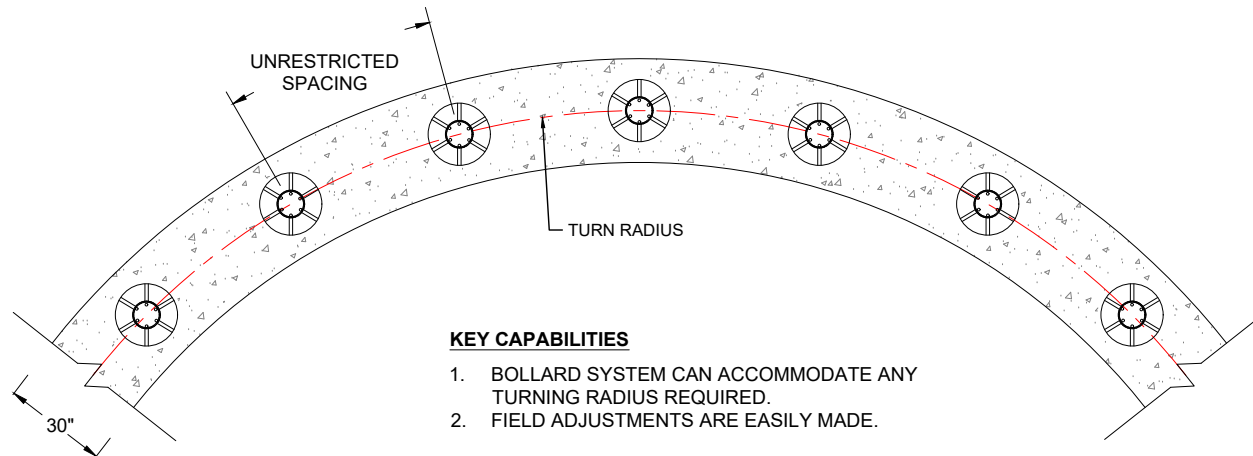
ASTM F2656-07 M30(K4) CERTIFIED, APPROVED BY DoD AND ON ANTI-RAM LIST

## BOLLARD INSTALLATION WITH TURN

FRONT VIEW



TOP VIEW



### KEY CAPABILITIES

1. BOLLARD SYSTEM CAN ACCOMMODATE ANY TURNING RADIUS REQUIRED.
2. FIELD ADJUSTMENTS ARE EASILY MADE.



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ARRAY ON CURVE  
ASTM M30(K4)  
SET & POUR BOLLARD

SAMPLE DRAWINGS

SHEET: 3 OF 9

20180302-01-PD

SCALE: N.T.S.

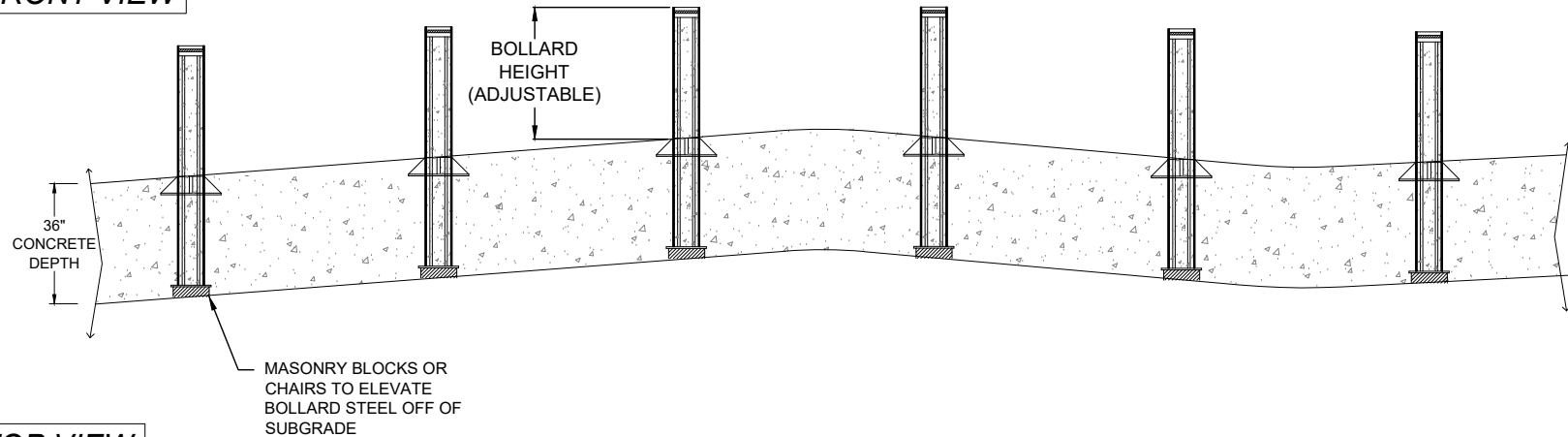
# SET & POUR BOLLARD - MODEL SPB-400 (PREFABRICATED SINGLE BOLLARD UNIT, NO REBAR IN FOUNDATION)

STOPS 15,000 LB. VEHICLE AT 30 MPH IMPACT (BOLLARD SPACING IS UNRESTRICTED)

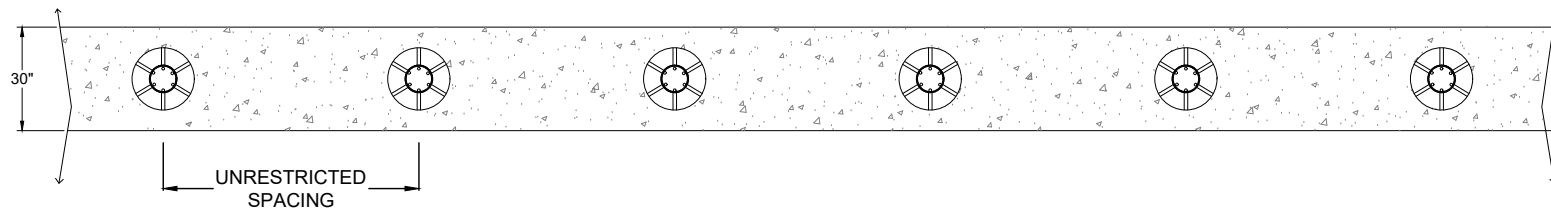
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## BOLLARD INSTALLATION ACROSS GRADE CHANGES

FRONT VIEW



TOP VIEW



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ARRAY ON SLOPE  
ASTM M30(K4)  
SET & POUR BOLLARD

SAMPLE DRAWINGS

SHEET: 4 OF 9

20180302-01-PD

SCALE: N.T.S.

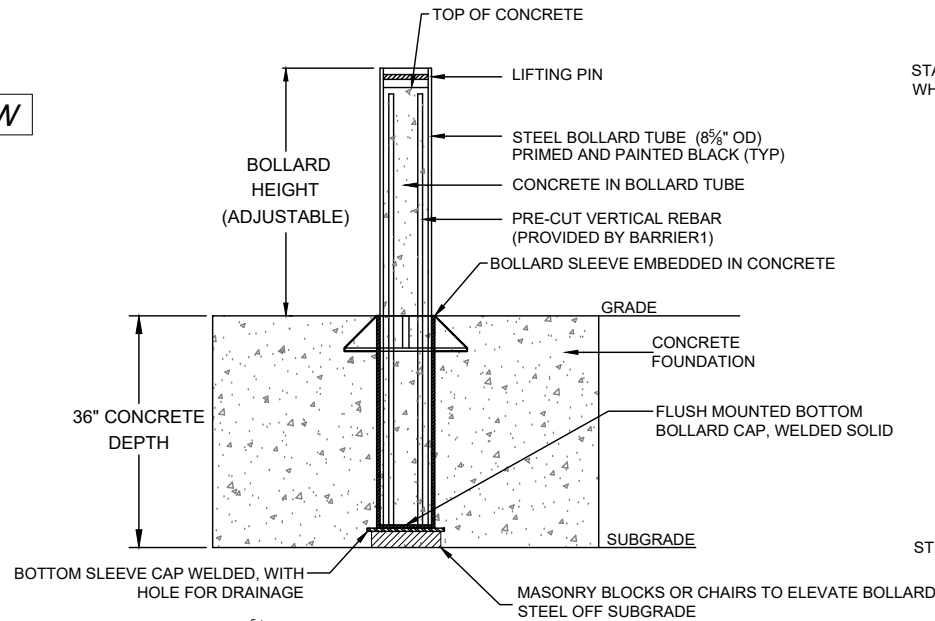
# SET & POUR BOLLARD - MODEL SPB-400 (PREFABRICATED SINGLE BOLLARD UNIT, NO REBAR IN FOUNDATION)

STOPS 15,000 LB. VEHICLE AT 30 MPH IMPACT (BOLLARD SPACING IS UNRESTRICTED)

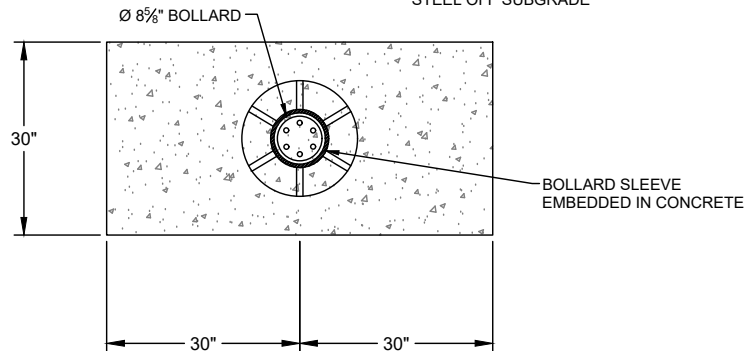
ASTM F2656-07 M30(K4) CERTIFIED, APPROVED BY DoD AND ON ANTI-RAM LIST

## REMOVABLE BOLLARD OPTION

FRONT VIEW

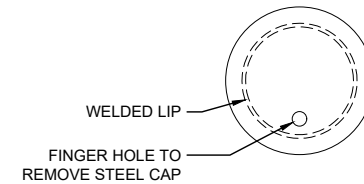
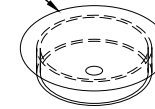


TOP VIEW

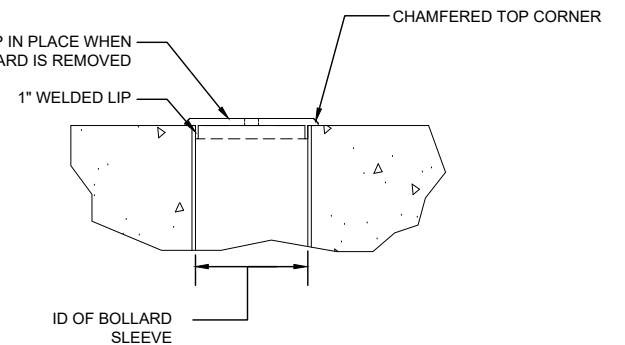


BOLLARD CAP DETAILS

STAINLESS STEEL CAP, USED WHEN BOLLARD IS REMOVED



STEEL CAP IN PLACE WHEN BOLLARD IS REMOVED



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DETAILS  
 ASTM M30 (K4)  
 SET & POUR BOLLARD

SAMPLE DRAWINGS

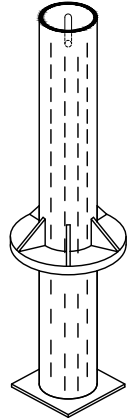
SHEET: 5 OF 9  
 20180302-01-PD  
 SCALE: N.T.S.

**SET & POUR BOLLARD - MODEL SPB-400 (PREFABRICATED SINGLE BOLLARD UNIT, NO REBAR IN FOUNDATION)**

STOPS 15,000 LB. VEHICLE AT 30 MPH IMPACT (BOLLARD SPACING IS UNRESTRICTED)

ASTM F2656-07 M30(K4) CERTIFIED, APPROVED BY DoD AND ON ANTI-RAM LIST

PREFABRICATED BOLLARD MATERIALS PROVIDED BY BARRIER1 SYSTEMS



(QTY 1) EACH:  
BOLLARD TUBE



(QTY 6) EACH:  
PRE-CUT VERTICAL REBAR  
(INSIDE BOLLARD)



(QTY 1) EACH:  
BOLLARD COVER

MATERIALS PROVIDED BY INSTALLER

1. CONCRETE, 1.5 CUBIC YARDS PER BOLLARD
2. CHAIRS TO ELEVATE BOLLARDS ABOVE SUBGRADE



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**MATERIALS PROVIDED  
(FIXED BOLLARDS)**

**SAMPLE DRAWINGS**

SHEET: 6 OF 9

20180302-01-PD

SCALE: N.T.S.

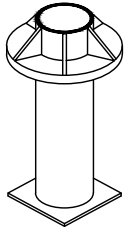
**SET & POUR BOLLARD - MODEL SPB-400 (PREFABRICATED SINGLE BOLLARD UNIT, NO REBAR IN FOUNDATION)**

STOPS 15,000 LB. VEHICLE AT 30 MPH IMPACT (BOLLARD SPACING IS UNRESTRICTED)

ASTM F2656-07 M30(K4) CERTIFIED, APPROVED BY DoD AND ON ANTI-RAM LIST

**REMOVABLE BOLLARDS**

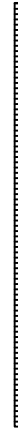
**PREFABRICATED BOLLARD MATERIALS PROVIDED BY BARRIER1 SYSTEMS**



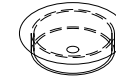
(QTY 1) EACH:  
BOLLARD SLEEVE



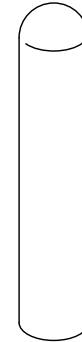
(QTY 1) EACH:  
BOLLARD TUBE



(QTY 6) EACH:  
PRE-CUT VERTICAL REBAR  
(INSIDE BOLLARD)



(QTY 1) EACH:  
BOLLARD SLEEVE CAP



(QTY 1) EACH:  
BOLLARD COVER

**MATERIALS PROVIDED BY INSTALLER**

1. CONCRETE. 1.5 CUBIC YARDS PER BOLLARD.
2. CHAIRS TO ELEVATE BOLLARD ABOVE SUBGRADE



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**MATERIALS PROVIDED  
(REMOVABLE BOLLARDS)**

**SAMPLE DRAWINGS**

SHEET: 7 OF 9

20180302-01-PD

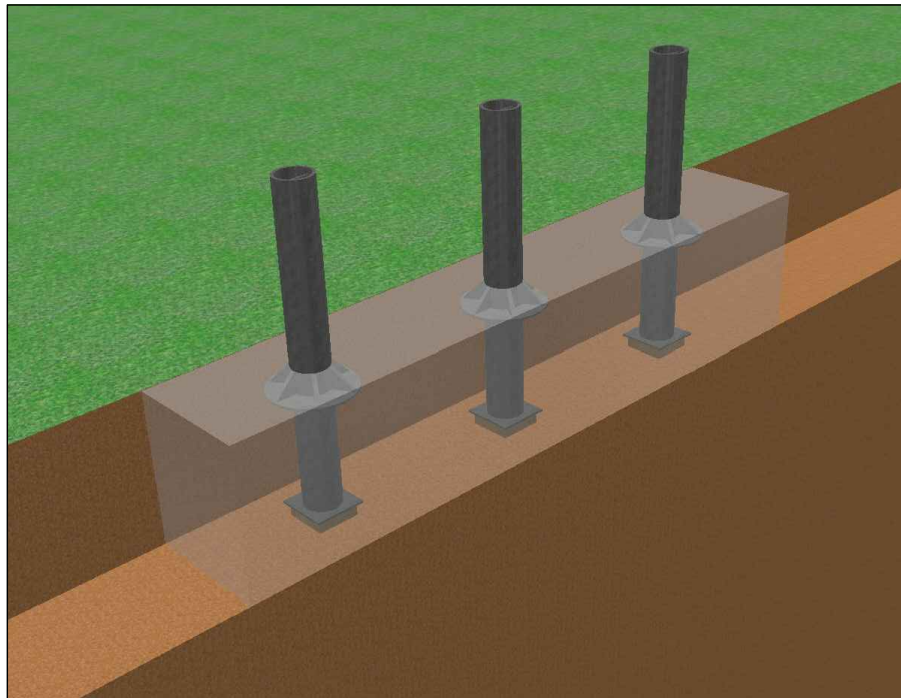
SCALE: N.T.S.

**SET & POUR BOLLARD - MODEL SPB-400 (PREFABRICATED SINGLE BOLLARD UNIT, NO REBAR IN FOUNDATION)**

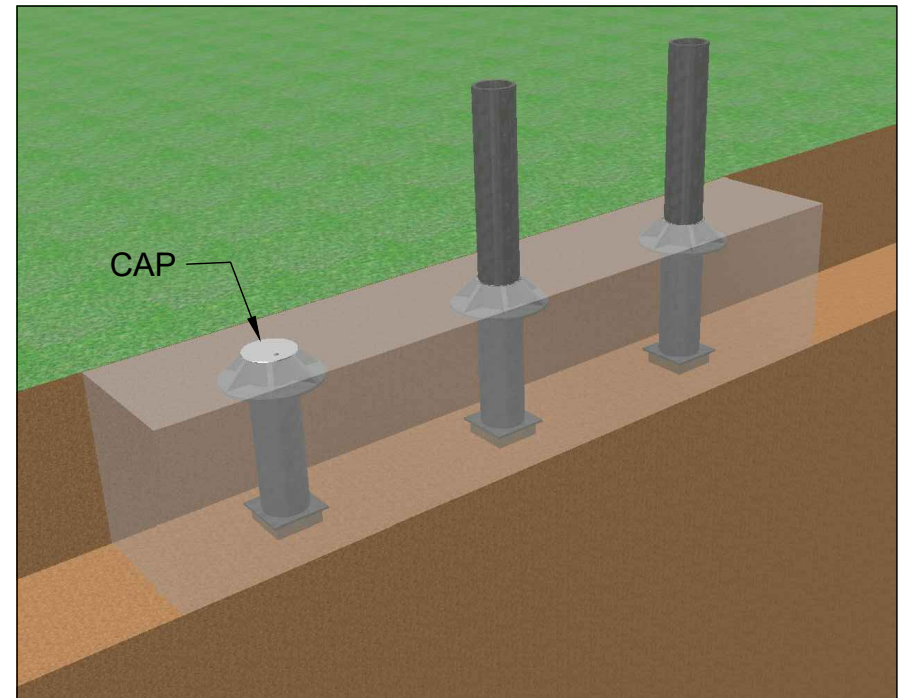
STOPS 15,000 LB. VEHICLE AT 30 MPH IMPACT (BOLLARD SPACING IS UNRESTRICTED)

ASTM F2656-07 M30(K4) CERTIFIED, APPROVED BY DoD AND ON ANTI-RAM LIST

FIXED BOLLARDS IN ARRAY



REMOVABLE BOLLARDS IN ARRAY



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3D VIEW PRIOR  
TO POURING CONCRETE

SAMPLE DRAWINGS

SHEET: 8 OF 9

20180302-01-PD

SCALE: N.T.S.



**SET & POUR BOLLARD - MODEL SPB-400 (PREFABRICATED SINGLE BOLLARD UNIT, NO REBAR IN FOUNDATION)**

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BOLLARD COVER EXAMPLES - CUSTOM TYPES, SHAPES, SIZES AND COLORS ARE AVAILABLE



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BOLLARD COVER  
EXAMPLES

SAMPLE DRAWINGS

SHEET: 9 OF 9

20180302-01-PD

SCALE: N.T.S.