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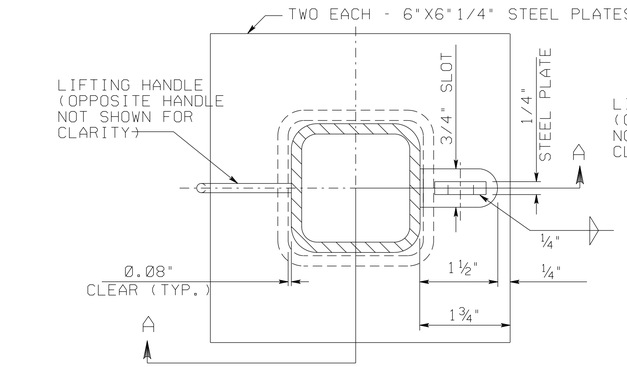
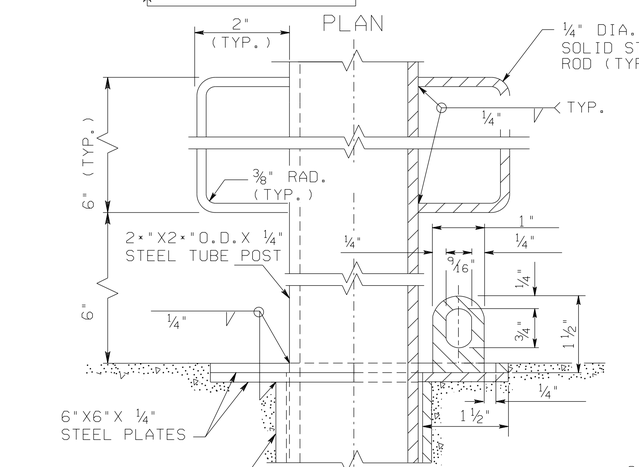
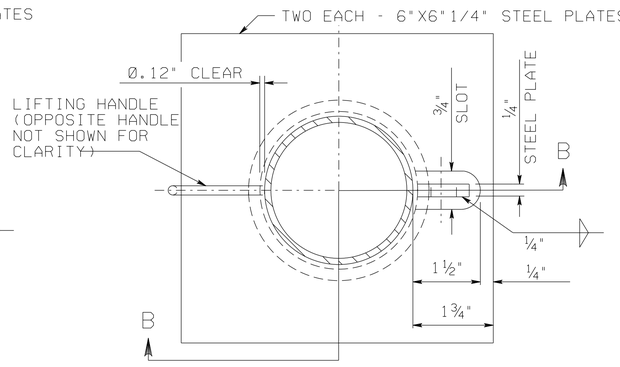
PROJECT REFERENCE NO.	SHEET NO.
U-2524D	2C-9

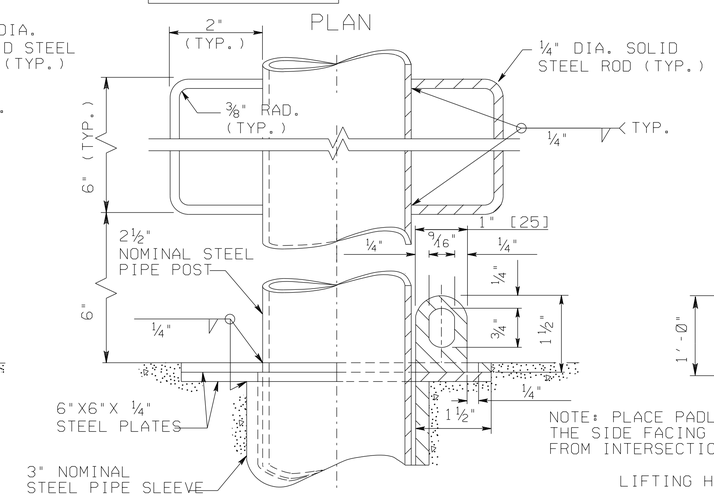




SECTION A-A

REMOVABLE SQUARE BOLLARD





SECTION B-B

REMOVABLE ROUND BOLLARD

NOTES

GENERAL: MOUNT ALL BOLLARD SLEEVES FLUSH WITH THE BIKEWAY PAVEMENT.

CONCRETE ENCASEMENT: SLEEVE ENCASEMENT SHALL BE SQUARE AS SHOWN, IN CONCRETE PAVEMENT, BUT MAY BE SQUARE OR ROUND IN FLEXIBLE PAVEMENT. ROUND ENCASEMENT SHOULD BE 1'-0" DIAMETER.

PREFORMED EXPANSION JOINT FILLER: IS REQUIRED WHEN BOLLARDS ARE SET IN CONCRETE PAVEMENT.

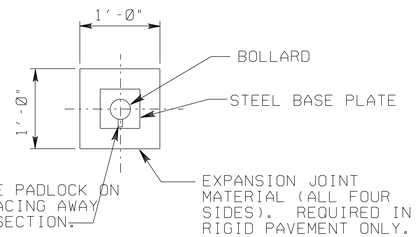
STEEL PIPE: ASTM A 53 SCHEDULE 40.,

CONCRETE: USE CLASS B CONCRETE.

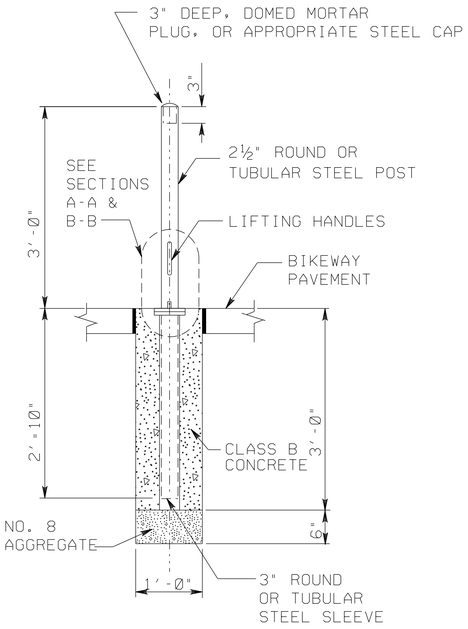
GALVANIZING: AFTER FABRICATING, HOT-DIP GALVANIZE ALL STEEL PARTS, INCLUDING STEEL PIPE, AS SPECIFIED IN ASTM A 123.

ALUMINUM: ALL STEEL COMPONENTS MAY BE REPLACED BY ALUMINUM COMPONENTS MEETING THE FOLLOWING ASTM SPECIFICATIONS: B 209 (PLATE), B 210 OR B 241 (DRAWN SEAMLESS TUBES & PLATES), B 211 (RODS), AND F 901 (BOLTS).

PERMANENT BOLLARDS: PERMANENT BOLLARDS SHALL BE THE SAME AS REMOVABLE BOLLARDS, EXCEPT THAT THE STEEL PLATES, SLEEVES AND LIFTING HANDLES SHALL BE OMITTED. ENCASE POSTS DIRECTLY IN CONCRETE.

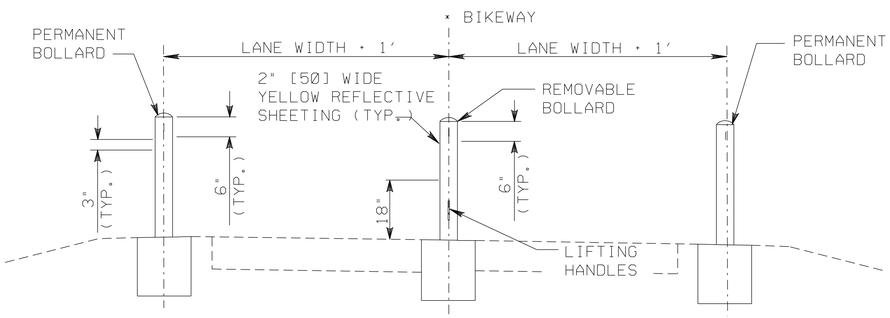


DETAIL "A" PLAN VIEW

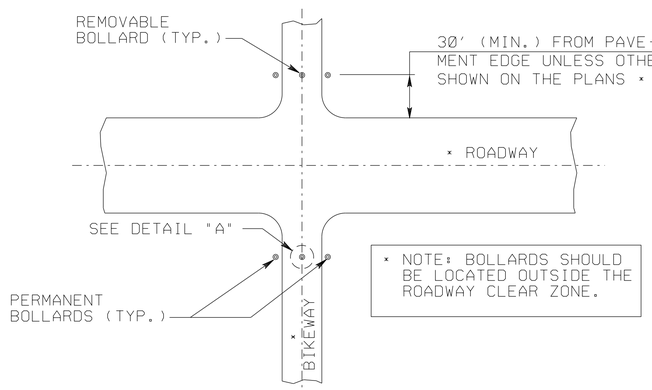


DETAIL "A" ELEVATION VIEW

REMOVABLE BOLLARD



BOLLARD PLACEMENT - ELEVATION VIEW



BOLLARD PLACEMENT - PLAN VIEW

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

6/2/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-707-6950 FAX 919-250-4119

STEEL BOLLARDS

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: nbritt\english\misc\bollards steel.dgn

$$$$$SYSTIME$$$$$
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