

SITE ABBREVIATIONS

AB	ANCHOR BOLT
ABAN	ABANDON
ABBRV	ABBREVIATION
ABC	AGGREGATE BASE COURSE
AC	ASPHALTIC CONCRETE
ACP	ASPHALTIC CONCRETE PAVING
ADA	AMERICANS WITH DISABILITIES ACT
ADDM	ADDENDUM
AGGR	AGGREGATE
ALLOW	ALLOWANCE
ALNMT	ALIGNMENT
ALT	ALTERNATE OR ALTITUDE
ALUM	ALUMINUM
AMT	AMOUNT
APPD	APPROVED
APPROX	APPROXIMATE
APPX	APPENDIX
ASB	ASBESTOS
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASI	ARCHITECT'S SUPPLEMENTAL INSTRUCTION
ASPH	ASPHALT
ASSY	ASSEMBLY
AVE	AVENUE
AWG	AMERICAN WIRE GAUGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&F	BELL AND FLANGE
B&S	BELL AND SPIGOT
BAL	BALANCE
BC	BACK OF CURB
BCV	BUTTERFLY CHECK VALVE
BDRY	BOUNDARY
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BITUM	BITUMINOUS
BKGD	BACKGROUND
BL	BASE LINE
BLDG	BUILDING



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DETAIL TITLE / SITE ABBREVIATIONS

SCALE :NONE

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SITE ABBREVIATIONS

BLR	BOILER
BLT	BUILT
BLVD	BOULEVARD
BM	BEAM OR BENCHMARK
BN	BULLNOSE
BRG	BEARING
BSTR	BOOSTER
BV	BALL VALVE
BW	BOTH WAYS
BWG	BIRMINGHAM WIRE GAUGE
C TO C	CENTER TO CENTER
CALC	CALCULATE
CAP	CAPACITY
CB	CATCH BASIN OR CEMENT BASE
CCTV	CLOSED CIRCUIT TELEVISION
CD	CONSTRUCTION DOCUMENTS OR CONTRACT DOCUMENTS
CDW	CHILLED DRINKING WATER
CDWR	CHILLED DRINKING WATER RETURN
CDWS	CHILLED DRINKING WATER SUPPLY
CEM	CEMENT CEMETERY
CEM	CEMETERY CEMENT
CF	CONTRACTOR FURNISHED
CFS	CUBIC FEET PER SECOND
CG	CENTER OF GRAVITY
CH	CHANNEL OR CHILLER
CHFR	CHAMFER
CHK	CHECK
CHKV	CHECK VALVE
CCHW	CHILLED WATER CIRCULATING HOT WATER
CHW	CIRCULATING HOT WATER CHILLED WATER
CHWP	CHILLED WATER PUMP
CHWPP	CHILLED WATER PRIMARY PUMP
CHWR	CHILLED WATER RETURN
CHWRP	CHILLED WATER RECIRCULATING PUMP
CHWS	CHILLED WATER SUPPLY
CHWSP	CHILLED WATER SECONDARY PUMP



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SITE ABBREVIATIONS

CI	CAST IRON OR CURB INLET
CIP	CAST-IN-PLACE OR CAST IRON PIPE
CIR	CIRCLE
CJ	CONSTRUCTION JOINT OR CONTROL JOINT
CL	CENTER LINE, CLASS, OR CLOSE
CLASS	CLASSIFICATION
CLL	CONTRACT LIMIT LINE
CLOS	CLOSURE
CLR	CLEAR
cm	CENTIMETER
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CNCL	CONCEALED
CND	CONDUIT
CNDS	CONDENSATE
CNR	CORNER
CNTOR	CONTACTOR
CO	CERTIFICATE OF OCCUPANCY, CLEANOUT, COMPANY, OR CUTOUT
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCENTRIC OR CONCRETE
CONC FLR	CONCRETE FLOOR
COND	CONDENSER OR CONDITION
CONDN	CONDENSATION
CONF	CONFERENCE
CONSTR	CONSTRUCTION
CONSULT	CONSULTANT
CONT	CONTINUE
CONTR	CONTRACT OR CONTRACTOR
COORD	COORDINATE
COR	CHANGE ORDER REQUEST
CORR	CORRIDOR
COTG	CLEANOUT TO GRADE
COV	COVER OR CUT OFF VALVE
COV PL	COVER PLATE
CP	CONCRETE PIPE OR CONTROL PANEL
CPLG	COUPLING
CPM	CRITICAL PATH METHOD
CRCMF	CIRCUMFERENCE



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SITE ABBREVIATIONS

CRN	CROWN
CRP	CONDENSATE RETURN PUMP
CRSI	CONCRETE REINFORCING STEEL
	INSTITUTE
CRT YD	COURTYARD
CSB	CONCRETE SPLASH BLOCK
CSI	CONSTRUCTION SPECIFICATIONS
	INSTITUTE
CSP	CONCRETE SEWER PIPE
CSTL	CAST STEEL
CTR	CENTER, CONTOUR, OR COOLING
	TOWER RETURN
CTRL	CONTROL
CTS	COOLING TOWER SUPPLY
CTV	CABLE TELEVISION
CU	COPPER OR CUBIC
CU FT	CUBIC FEET
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CV	CONTROL VALVE
CW	CLOCKWISE OR COLD WATER PIPING
CWP	CIRCULATING WATER PUMP OR
	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	PENNY (NAIL)
DA	DRAINAGE AREA
DAT	DATUM
D-B	DESIGN-BUILD
DBA	UNIT OF SOUND LEVEL
DBL	DOUBLE
DEG	DEGREE
DEL	DELETE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DESCR	DESCRIPTION
DET	DETAIL
DEV	DEVELOPMENT
DHW	DOMESTIC HOT WATER
DI	DROP INLET



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SITE ABBREVIATIONS

DIA	DIAMETER
DIAG	DIAGONAL DIAGRAM
DIAG	DIAGRAM DIAGONAL
DIFF	DIFFERENCE OR DIFFERENTIAL
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DIST	DISTANCE
DIV	DIVISION
DOC	DOCUMENT
DOM	DOMESTIC
DOUG FIR	DOUGLAS FIR
DOZ	DOZEN
DR	DRAIN OR DRIVE
DS	DOWNSPOUT
DSBL	DISABLE
DSGN	DESIGN
DW	DOMESTIC WATER
DWG	DRAWING
DWR	DOMESTIC WATER RETURN OR DRAWER
DWS	DOMESTIC WATER SUPPLY
E	EAST
EA	EACH
EC	EDGE OF CURB
EJ	EXPANSION JOINT
EL	EASEMENT LINE OR ELEVATION
ENGR	ENGINEER
ENTR	ENTRANCE
EOS	EDGE OF SLAB
EP	EDGE OF PAVEMENT (PAVING)
EPA	ENVIRONMENTAL PROTECTION AGENCY
EPT	EXTERNAL PIPE THREAD
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ERD	EXISTING ROOF DRAIN
ES	EDGE OF SHOULDER



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SITE ABBREVIATIONS

ESMT	EASEMENT
EST	ESTIMATE
EW	EACH WAY
EXCL	EXCLUDE
EXIST	EXISTING
EXP	EXPANSION
EXST GR	EXISTING GRADE
EXT	EXTERIOR
EXT GR	EXTERIOR GRADE
F	FAHRENHEIT FEMALE; FIRE LINE
F	FEMALE FAHRENHEIT; FIRE LINE
F	FIRE LINE
F METER	FLOWMETER
F/F	FACE TO FACE
FACIL	FACILITY
FD	FLOOR DRAIN
FF EL	FINISH FLOOR ELEVATION
FH	FIRE HYDRANT
FIG	FIGURE
FIL	FILLET
FIN	FINISH
FLG	FLANGE
FLL	FLOW LINE
FLR	FLOOR
FLRD	FLARED
FLTR	FILTER
FLUOR	FLUORESCENT
FN	FENCE
FOC	FACE OF CURB
FP	FIRE PROTECTION OR FLAGPOLE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPW	FIRE PROTECTION WATER SUPPLY
FSP	FIRE STANDPIPE
FSS	FLOW SENSING SWITCH
FT	FEET OR FOOT
FTG	FOOTING
FW	FLOOD WALL
G	GROUND OR NATURAL GAS



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SITE ABBREVIATIONS

G LN	GAS LINE
GA	GAGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GDR	GUARD RAIL
GEN	GENERATOR
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GL	GROUND LEVEL
GOVT	GOVERNMENT
GPD	GALLONS PER DAY
GR BM	GRADE BEAM
GT	GREASE TRAP
GTV	GATE VALVE
GUT	GUTTER
H&CW	HOT AND COLD WATER
HAZ MAT	HAZARDOUS MATERIALS
HB	HOSE BIBB
HC	HANDICAP
HCP	HANDICAPPED
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDWL	HEADWALL
HEX	HEXAGON
HH	HAND HOLE
HNDRL	HANDRAIL
HORIZ	HORIZONTAL
HP	HIGH PRESSURE
HT	HEIGHT
HTHW	HIGH TEMPERATURE HOT WATER
HTWR	HEATING WATER RETURN
HTWS	HEATING WATER SUPPLY
HV	HOSE VALVE
HW	HOT WATER
HWB	HOT WATER BOILER
HWL	HOT WATER LINE
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HWT	HOT WATER TANK



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SITE ABBREVIATIONS

HWY	HIGHWAY
HYD	HYDRANT
HYDR	HYDRAULIC
ID	INSIDE DIAMETER OR INSIDE DIMENSION
IMH	INLET MANHOLE
INCL	INCLUDED
INCR	INCREMENT
INFO	INFORMATION
INSTL	INSTALL
INSTR	INSTRUMENT
INV	INVERT
INV EL	INVERT ELEVATION
IP	IRON PIPE
IPS	IRON PIPE SIZE
IPT	IRON PIPE THREADED
IRREG	IRREGULAR
ISO	ISOMETRIC
IW	IRRIGATION WATER
KWY	KEYWAY
L	ANGLE
LAT	LATITUDE
LF	LINEAR FEET (FOOT)
LIN	LINEAR
LNG	LONGITUDE
LOC	LOCATION
LONG	LONGITUDINAL
LOS	LINE OF SIGHT
LPT	LOW POINT
LS	LUMP SUM
LT	LIGHT
LTG	LIGHTING
MAINT	MAINTENANCE
MATL	MATERIAL
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM



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SITE ABBREVIATIONS

MB	MAIL BOX
MED	MEDIUM
MEMO	MEMORANDUM
MER	MERIDIAN
MFD	MANUFACTURED
MFG	MANUFACTURING
MGT	MANAGEMENT
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
ML	MATERIALS LIST
MN	MAGNETIC NORTH
MOD	MODEL OR MODIFY
MON	MONUMENT
MTG	MEETING
MULT	MULTIPLE
MUNIC	MUNICIPAL
N	NORTH
NA	NOT APPLICABLE
NAT	NATURAL
NATL	NATIONAL
NBC	NATIONAL BUILDING CODE
NE	NOT EXCEEDING
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NORM	NORMAL
NRCP	NON-REINFORCED CONCRETE PIPE
NTP	NOTICE TO PROCEED
NTS	NOT TO SCALE
OC	ON CENTER
OFD	OVERFLOW DRAIN
OPNG	OPENING
OZ	OUNCE
P	PUMP
PA	PIPE ANCHOR
PAR	PARALLEL
PAT	PATTERN



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SITE ABBREVIATIONS

PB	PULL BOX
PC	POINT OF CURVE
PCA	PORTLAND CEMENT ASSOCIATION
PCC	PRECAST CONCRETE
PCCP	CONCRETE PAVEMENT
PCT	PERCENT
PED	PEDESTAL
PEN	PENETRATE
PERF	PERFORATED
PERIM	PERIMETER
PERM	PERMANENT
PERP	PERPENDICULAR
PG	PRESSURE GAGE OR PROFILE GRADE
PH	PHASE
PHOTO	PHOTOGRAPH
PHWR	PRIMARY HOT WATER RETURN
PHWS	PRIMARY HOT WATER SUPPLY
PI	POINT OF INTERSECTION
PIV	POST INDICATOR VALVE
PK GAR	PARKING GARAGE
PK LOT	PARKING LOT
PL	PROPERTY LINE
PLAS	PLASTIC PLASTER
PMPST	PUMP SUCTION
PN	PART NUMBER
PNEU	PNEUMATIC
PO	POST OFFICE OR PURCHASE ORDER
POLY	POLYETHYLENE (PLASTIC)
PORT	PORTABLE
POTW	POTABLE WATER
POW LN	POWER LINE
PP	POLYPROPYLENE (PLASTIC)
PR	PUMPED RETURN
PRCST	PRECAST
PREFMD	PREFORMED
PRELIM	PRELIMINARY
PREP	PREPARATION
PREV	PREVIOUS
PRKG	PARKING
PROJ	PROJECT
PROP	PROPERTY
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SITE ABBREVIATIONS

PRV	PRESSURE REGULATOR VALVE OR PRESSURE RELIEF VALVE
PS CONC	PRESTRESSED CONCRETE
PSI	POUNDS PER SQUARE INCH
PSL	PIPE SLEEVE
PT	POST TENSIONED
PT CONC	POST-TENSIONED CONCRETE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
PV	PAVED
PV RD	PAVED ROAD
PVC	POLYVINYL CHLORIDE (PLASTIC)
QTR	QUARTER
QTY	QUANTITY
QUAD	QUADRANT
QUAL	QUALITY
R	RADIUS OR RANGE
RAD	RADIAN
RC	REINFORCED CONCRETE
RCB	REINFORCED CONCRETE BOX
RCCP	REINFORCED CONCRETE CULVERT PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD OR ROOF DRAIN
RDC	REDUCER
REBAR	REINFORCING STEEL BARS
REP	REPAIR
REPL	REPLACE
REQ	REQUIRE
REQD	REQUIRED
RESIL	RESILIENT
RFI	REQUEST FOR INFORMATION
RFP	REQUEST FOR PROPOSAL
ROW	RIGHT OF WAY
RST	REINFORCING STEEL
RT	RIGHT
RV	RELIEF VALVE
RW	ROADWAY
RWL	RAIN WATER LEADER



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SITE ABBREVIATIONS

RWR	RECESSED WASTE RECEPTACLE
SAMP	SAMPLE
SAN	SANITARY
SB	SPLASH BLOCK
SCHED	SCHEDULE
SCP	SCUPPER
SD	STORM DRAIN
SDL	SADDLE
SDMH	STORM DRAIN MANHOLE
SECT	SECTION
SEG	SEGMENT
SEL	SELECT
SEP	SEPARATE
SEP TNK	SEPTIC TANK
SF	SQUARE FOOT (FEET)
SHLDR	SHOULDER
SJ	SCORED JOINT
SLV	SLEEVE
SM	SILTY SAND
SMH	STEAM MANHOLE
SMP	SUMP PUMP
SOV	SHUT OFF VALVE
SP	STANDPIPE OR SUMP PIT
SP EL	SPOT ELEVATION
SPEC	SPECIFICATION
SPKLR	SPRINKLER
SPLY	SUPPLY
SPR	SPRINKLER LINE
SQ	SQUARE
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SR	STEAM RETURN
SS	SANITARY SEWER, STEAM SUPPLY, OR STORM SEWER
SSP	STAINLESS STEEL PIPE
SST	STAINLESS STEEL
ST	STREET
ST W	STORM WATER
STA	STATION
STD	STANDARD



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SITE ABBREVIATIONS

STIR	STIRRUP
STM	STEAM
SUCT	SUCTION
SUPT	SUPPORT
SURF	SURFACE
SURV	SURVEY
SUTK	SUMP TANK
SW	SIDEWALK
SWG	SEWAGE
SWR	SEWER
SYM	SYMBOL
T&M	TIME AND MATERIALS
TAN	TANGENT
TBM	TEMPORARY BENCHMARK
TB-XX	TEST BORING-XX (E.G., TB-01)
TCP	TRAFFIC CONTROL PLAN
TD	TRENCH DRAIN
TE	TOP ELEVATION
TEL	TELEPHONE
TEMP	TEMPORARY
THK	THICKNESS
THRU	THROUGH
TMH	TOP OF MANHOLE
TN	TRUE NORTH
TNL	TUNNEL
TO	TOP OF ____
TO FDN	TOP OF FOUNDATION
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE OR TOP OF CURB
TOC FTG	TOP OF CONCRETE FOOTING
TOC WALL	TOP OF CONCRETE WALL
TOF	TOP OF FOOTING
TOP	TOP OF PAVEMENT
TOPO	TOPOGRAPHY
TOS	TOP OF SLAB
TP	TELEPHONE POLE
TR	TOP OF RIM
TWR	TREATED WATER RETURN
TWS	TREATED WATER SUPPLY



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SITE ABBREVIATIONS

TYP	TYPICAL
UFC	UNIFORM FIRE CODE
UGND	UNDERGROUND
UNFIN	UNFINISH
UNPV RD	UNPAVED ROAD
UON	UNLESS OTHERWISE NOTED
UP	UTILITY POLE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
VAR	VARIES
VB	VALVE BOX
VC	VERTICAL CURVE
VCO	VACUUM CLEANER OUTLET
VCT	VITRIFIED CLAY TILE VINYL COMPOSITION TILE
VERT	VERTICAL
VIC	VICINITY
VID	VIDEO
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WASTE, WEST, OR WIDE
W/	WITH
W/O	WITHOUT
WI	WROUGHT IRON
WL	WATER LINE
WLD	WELDED
WM	WATER METER WIRE MESH
WM	WIRE MESH WATER METER
WO	WORK ORDER
WP	WATER PUMP
WT	WATER TABLE
WT EL	WATER ELEVATION
WTR	WATER
WW	WASTE WATER
WW	WASTE WATER WARM WHITE; WIREWAY
XFMR	TRANSFORMER



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DETAIL TITLE / SITE ABBREVIATIONS

SCALE :NONE

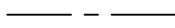
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CAD DETAIL NO.: SD320000-14.DWG

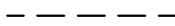
SITE SYMBOLS - GENERAL



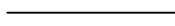
BENCHMARK



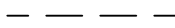
CENTER LINE INDICATOR



DEMOLITION LINE



EXISTING TO REMAIN LINE



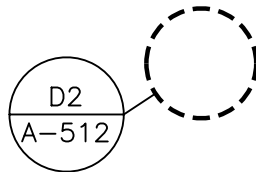
FEATURES ABOVE LINE INDICATOR



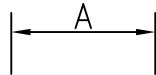
BREAK, ROUND (USER DEFINES SIZE)



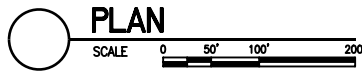
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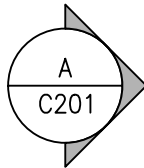
DETAIL INDICATOR



DIMENSION (CIVIL ONLY)



DRAWING BLOCK TITLE WITH GRAPHIC SCALE (SHOWN HALF ACTUAL SIZE)



ELEVATION INDICATOR



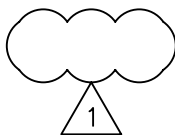
IDENTIFICATION DEVICE INDICATOR



KEYNOTE INDICATOR

MATCHLINE
SEE XX/XXX

FEATURES ABOVE LINE INDICATOR



REVISION INDICATOR (SHOWN WITH CLOUD)



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DETAIL TITLE / ELECTRICAL SYMBOLS - GENERAL

SCALE :NONE

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SITE SYMBOLS - CONCRETE/MASONRY

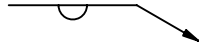


CONCRETE SECTION

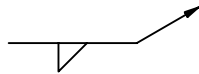


CONCRETE PLAN

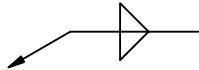
SITE SYMBOLS - METALS



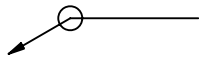
WELD, BASIC BACK, ARROW SIDE



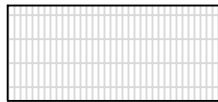
WELD, BASIC FILLET, ARROW SIDE



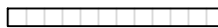
WELD, BASIC FILLET, BOTH SIDES



WELD, SUPPLEMENTARY, ALL AROUND



GRATING, PLAN



GRATING, SECTION



CHECKER PLATE, PLAN

SITE SYMBOLS - EARTHWORK



EARTH, CRUSHED ROCK GRAVEL



EARTH, UNDISTURBED



EARTHWORK, COMPACTED FILL



SAND



EARTHWORK, GRAVEL, POROUS FILL



EROSION AND SEDIMENTATION CONTROL,
FILTRATION BED



RIPRAP



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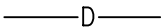
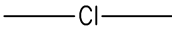
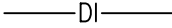




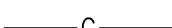
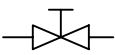

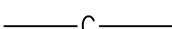






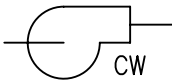
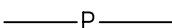

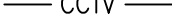

DETAIL TITLE / ELECTRICAL SYMBOLS - CONCRETE/MASONRY, METALS,
AND EARTHWORK

SCALE :NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD320000-16.DWG

SITE SYMBOLS - UTILITIES

	WATER VALVE
	DRAIN LINE
	PIPE LINE, CAST IRON
	PIPE LINE, DUCTILE IRON
	DRAIN LINE, STORM (ABOVE FLOOR)
	DRAIN LINE, STORM (BELOW FLOOR)
	PIPE LINE, REINFORCED CONCRETE
	COMPRESSED AIR LINE
	GAS LINE
	PIPING, SCREWED GATE VALVE
	BOILER BLOW DOWN LINE
	CONDENSATE LINE
	DRAIN LINE, CONDENSATE
	RETURN LINE, CONDENSER WATER
	RETURN LINE, HIGH PRESSURE CONDENSATE
	RETURN LINE, HIGH TEMPERATURE HOT WATER
	SUPPLY LINE, HIGH PRESSURE STEAM
	SUPPLY LINE, LOW TEMPERATURE HOT WATER
	PIPING, PUMP
	POWER LINE
	CABLE TELEVISION LINE
	CLOSED CIRCUIT TELEVISION LINE
	FIBEROPTICS LINE



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DETAIL TITLE / ELECTRICAL SYMBOLS - UTILITIES

SCALE :NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD320000-17.DWG

SITE SYMBOLS - UTILITIES

——T——	TELEPHONE LINE
⊙(W)	UTILITY, WATER MANHOLE
——CW——	WATER LINE, COLD
——HW——	WATER LINE, HOT
⊙(H)	HYDRANT, FIRE
⊙(FH)	HYDRANT PAN, FIRE
○	UTILITY, UTILITY POLE
⊙(S)	UTILITY, SANITARY MANHOLE
——SS——	WASTE LINE, SANITARY SOIL (ABOVE FLOOR)
⊙(CO)	UTILITY, SANITARY CLEANOUT
——>	ELECTRICAL, GUY WIRE
⊙(E)	UTILITY, ELECTRICAL MANHOLE



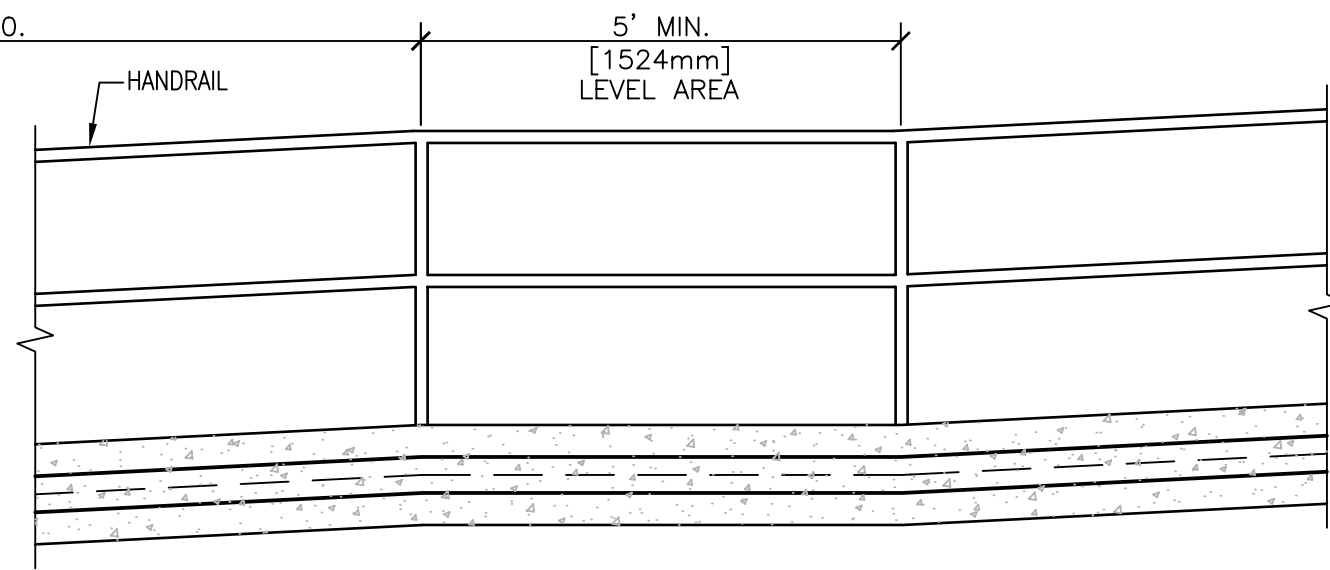
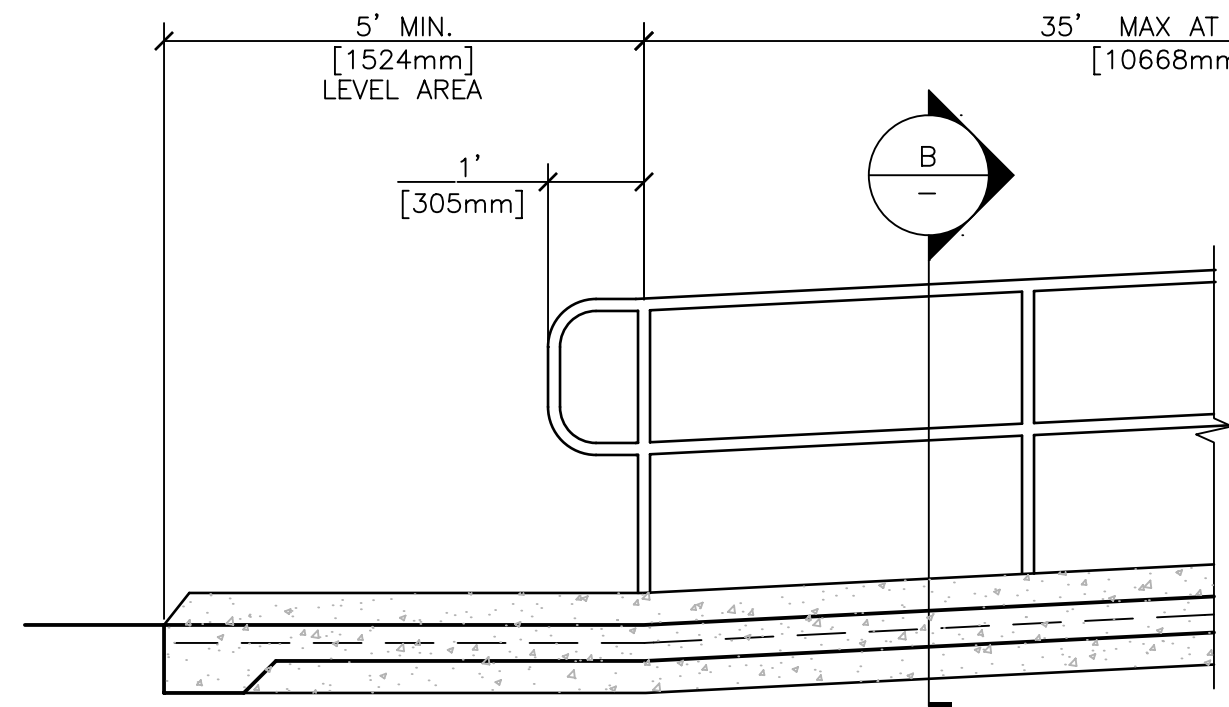
Department of
Veterans Affairs

DETAIL TITLE / ELECTRICAL SYMBOLS - UTILITIES

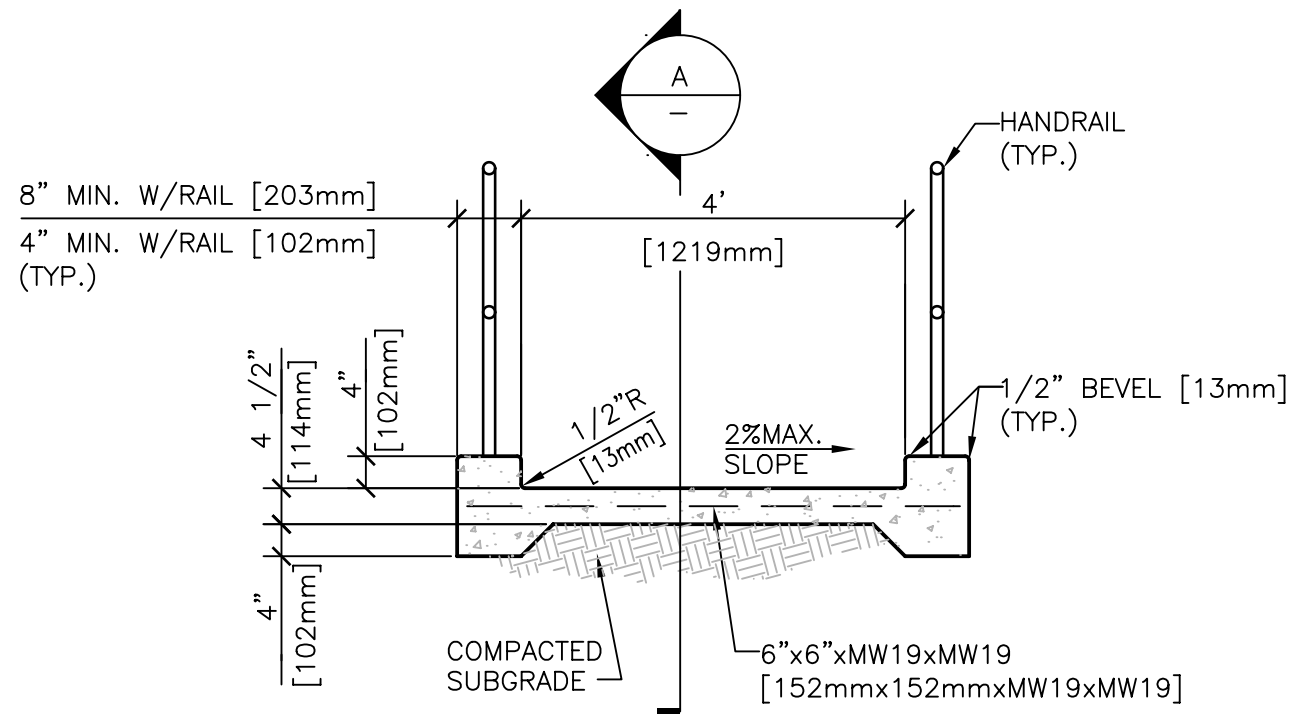
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DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD320000-18.DWG



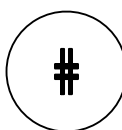
LONGITUDINAL SECTION A



TRAVERSE SECTION B

NOTE:

1. RAMP IS REQUIRED WHERE THE WALK EXCEEDS 3%.
2. IF A RAMP RUN HAS A RISE GREATER THAN 6" [152mm] OR A HORIZONTAL PROJECTION GREATER THAN 72" [1829mm], THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES.
3. MAXIMUM SLOPE OF RAMP SHALL NOT EXCEED 8.33%.
4. SEE ARCHITECTURAL STANDARDS FOR HANDRAIL DETAILS.
5. PROVIDE AN AGGREGATE BASE WHERE SUBSURFACE CONDITIONS WARRANT IT.
6. REFER TO PG-18-13 INDEX.



RAMP FOR DISABLED PERSONS

NTS

DETAIL TITLE / RAMP FOR DISABLED PERSONS

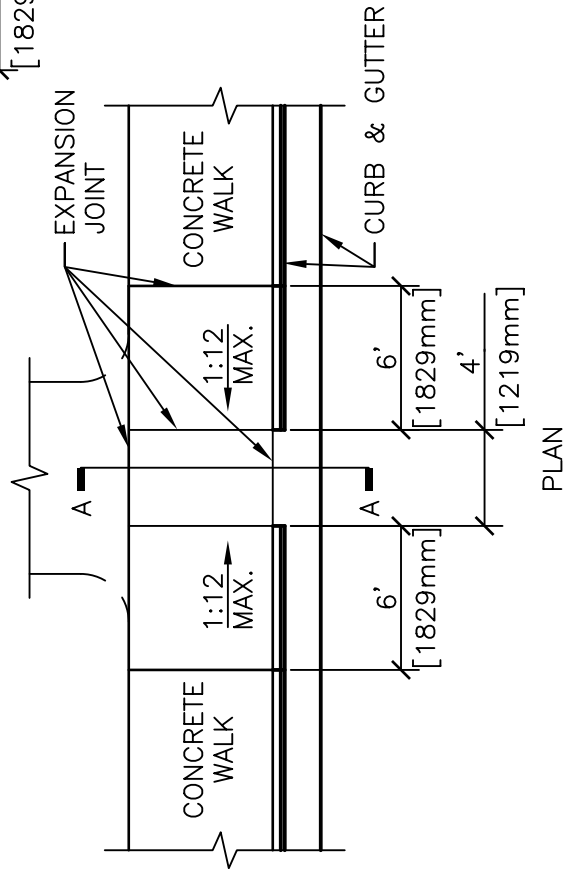
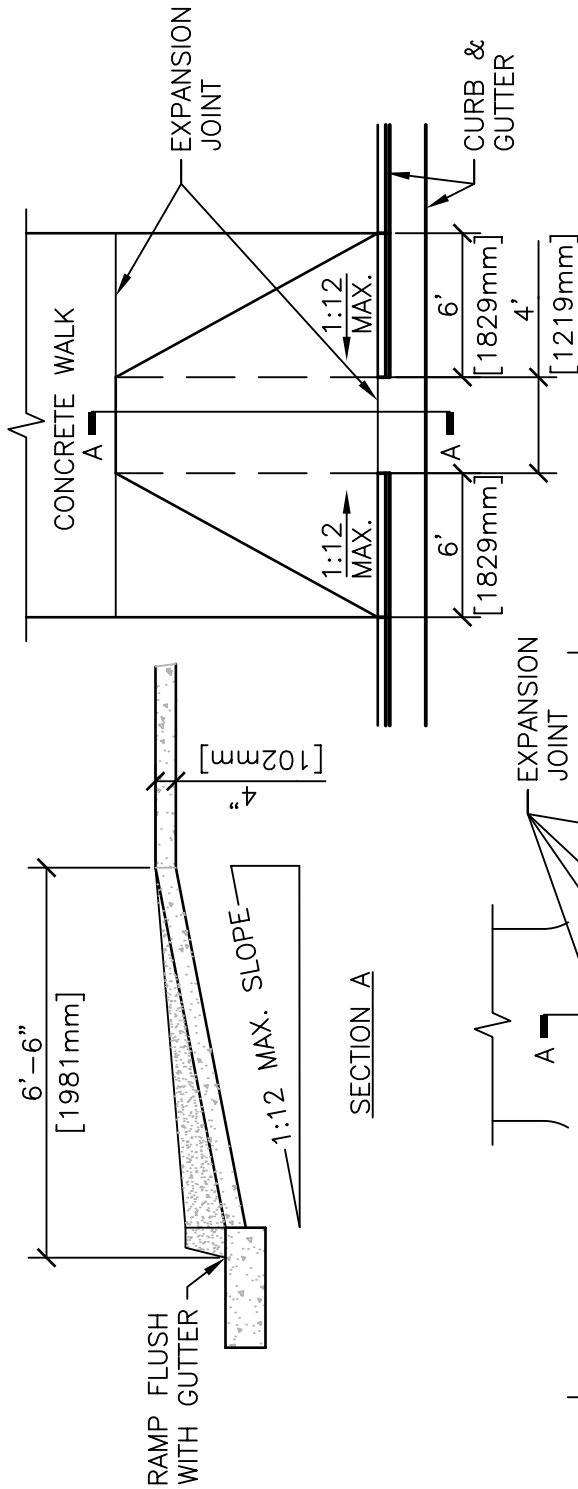
SCALE : NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD320523-01.DWG

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CURB RAMP

NTS

#



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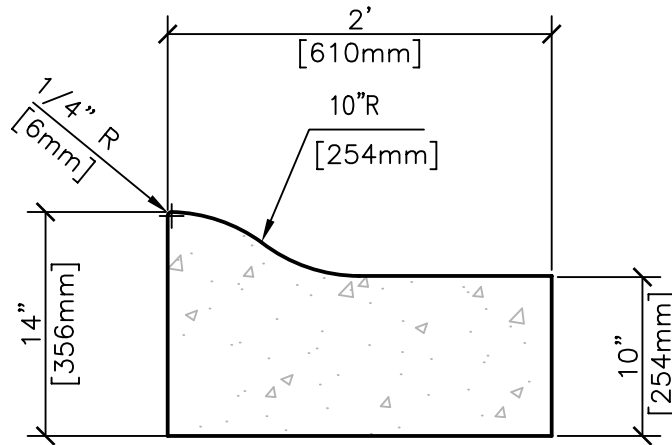
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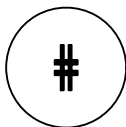
DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.:

SD320523-02.DWG



NOTE: CROSS SLOPE OF GUTTER
SAME AS PAVEMENT.



MOUNTABLE CONCRETE CURB AND GUTTER

NTS



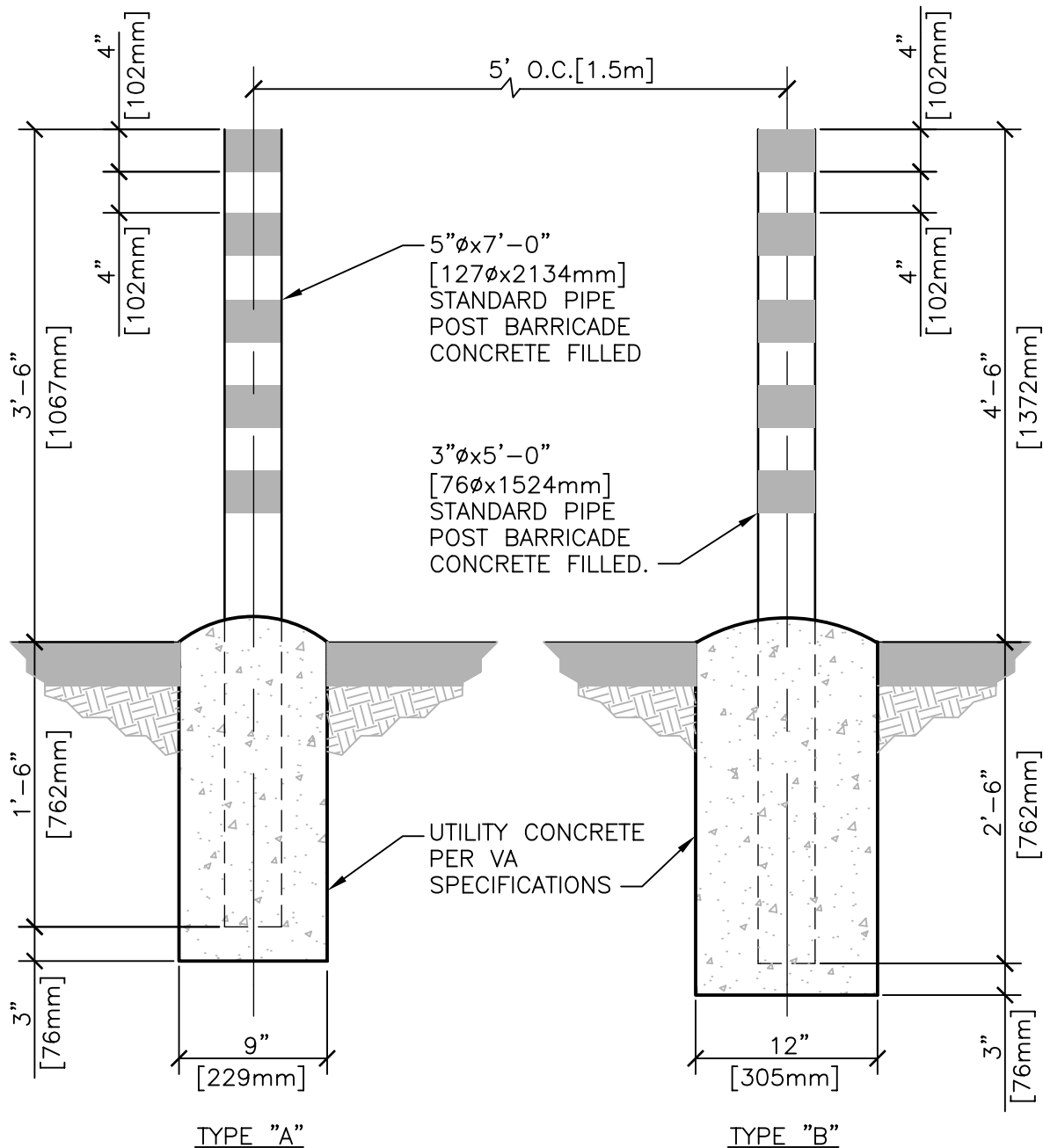
Department of
Veterans Affairs

DETAIL TITLE / MOUNTABLE CONCRETE CURB AND GUTTER

SCALE :NONE

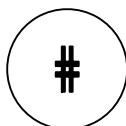
DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD320523-03.DWG



NOTES:

1. POST BARRICADES SHALL BE PAINTED WITH ONE PRIME COAT OF RED OXIDE (PAINT NO.1). ONE FINISH COAT OF DULL BLACK ENAMEL PER VA SPECIFICATIONS AND STRIPES CONSISTING OF 4" [102mm] BANDS OF YELLOW REFLECTORIZED TAPE SHALL BE USED UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. FINISH COLOR COMBINATIONS, OTHER THAN THAT SPECIFIED ABOVE, SHALL BE SUBMITTED TO THE AGENCY FOR APPROVAL.



CONCRETE POST BARRICADES

NTS



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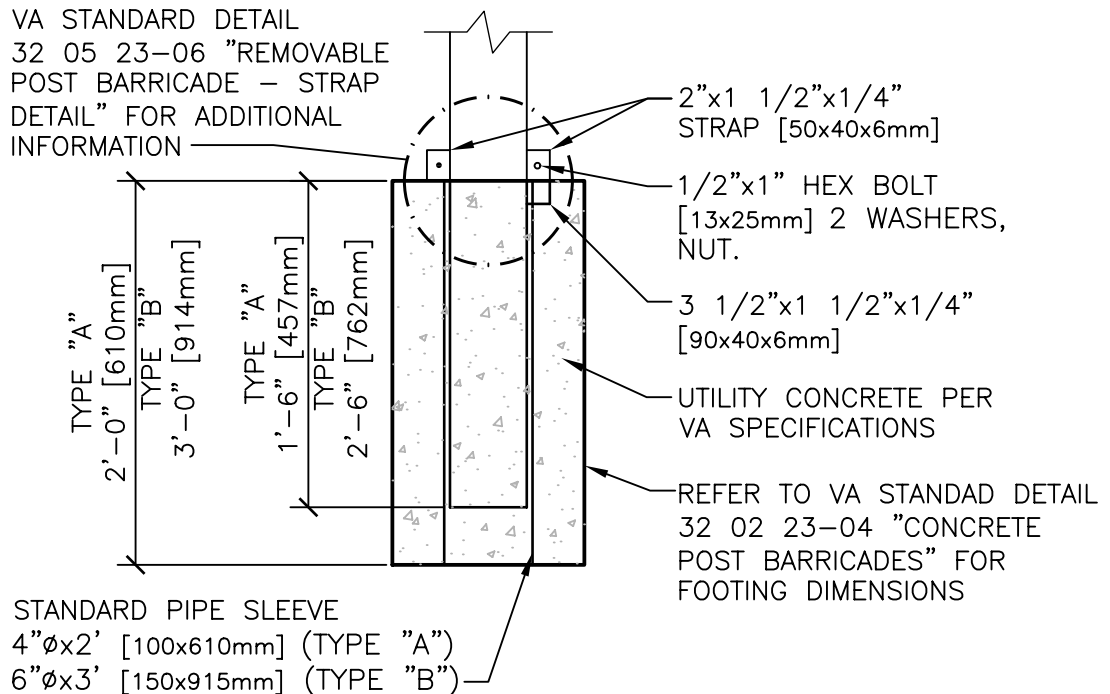
DETAIL TITLE / CONCRETE POST BARRICADES

SCALE : NONE

DATE ISSUED: DECEMBER 2008

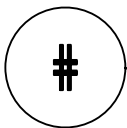
CAD DETAIL NO.: SD320523-04.DWG

VA STANDARD DETAIL
32 05 23-06 "REMOVABLE
POST BARRICADE - STRAP
DETAIL" FOR ADDITIONAL
INFORMATION



NOTES:

1. REMOVABLE POST BARRICADE SHALL NOT BE CONCRETE FILLED.
2. HAND TIGHTEN BOLT & NUT USING WASHERS EACH SIDE OF STRAPS. CUT BOLT APPROX. 1/8" [6mm] FROM FACE OF NUT & PEEN EXPOSED END OF BOLT.
3. REFER TO VA STANDARD DETAIL 32 02 23-04 "CONCRETE POST BARRICADES" FOR POST DETAILS.



REMOVABLE POST BARRICADE

NTS



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Veterans Affairs

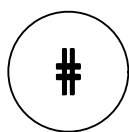
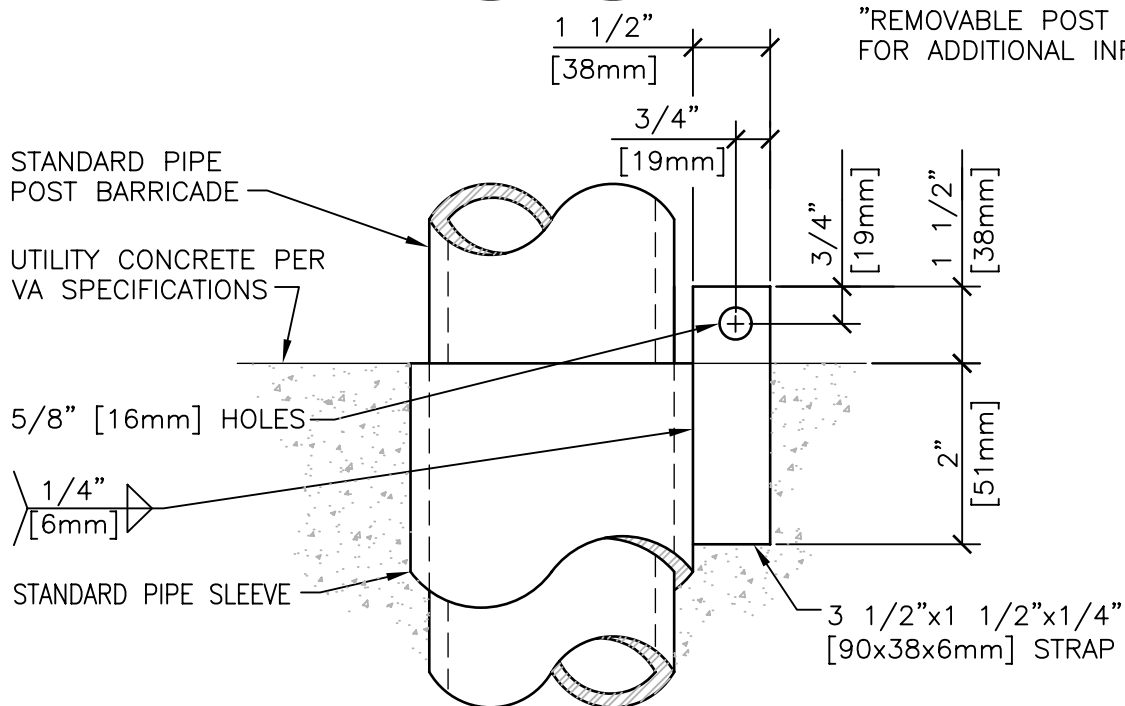
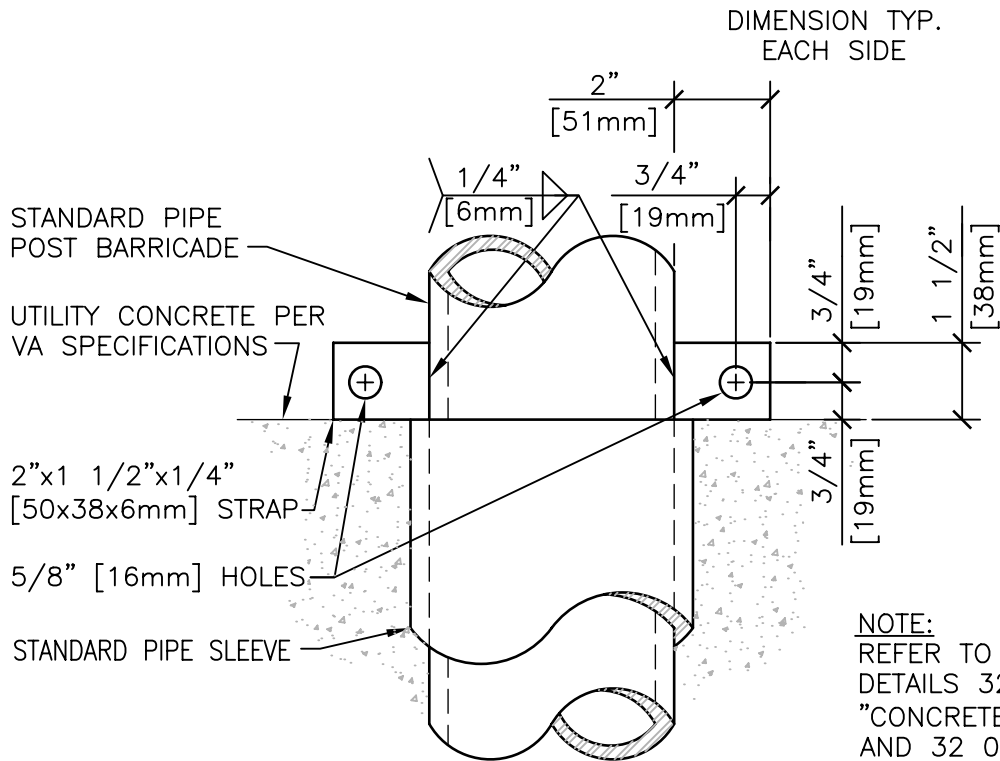
DETAIL TITLE / REMOVABLE POST BARRICADE

SCALE :NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.:

SD320523-05.DWG



REMOVABLE POST BARRICADE - STRAP DETAIL

NTS



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Veterans Affairs

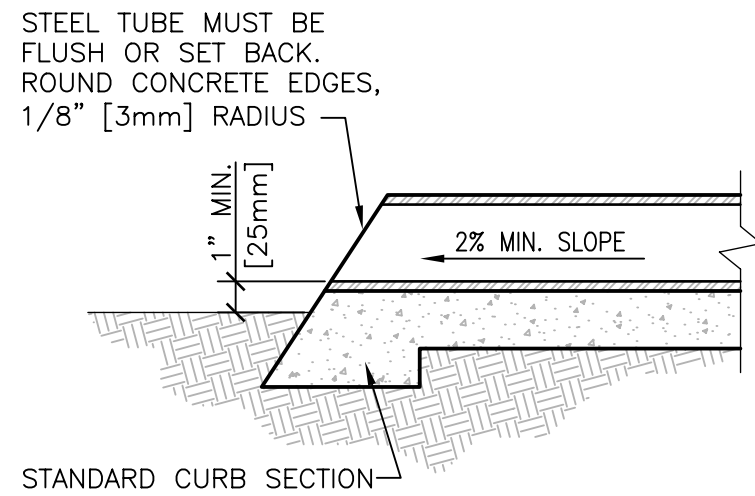
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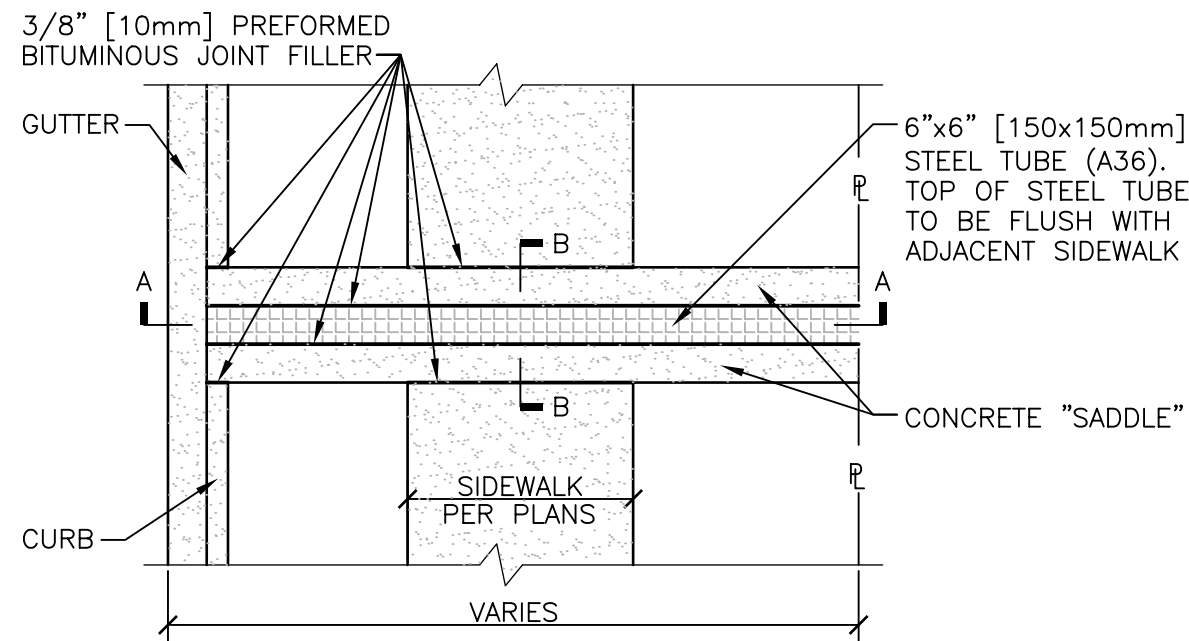
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CAD DETAIL NO.:

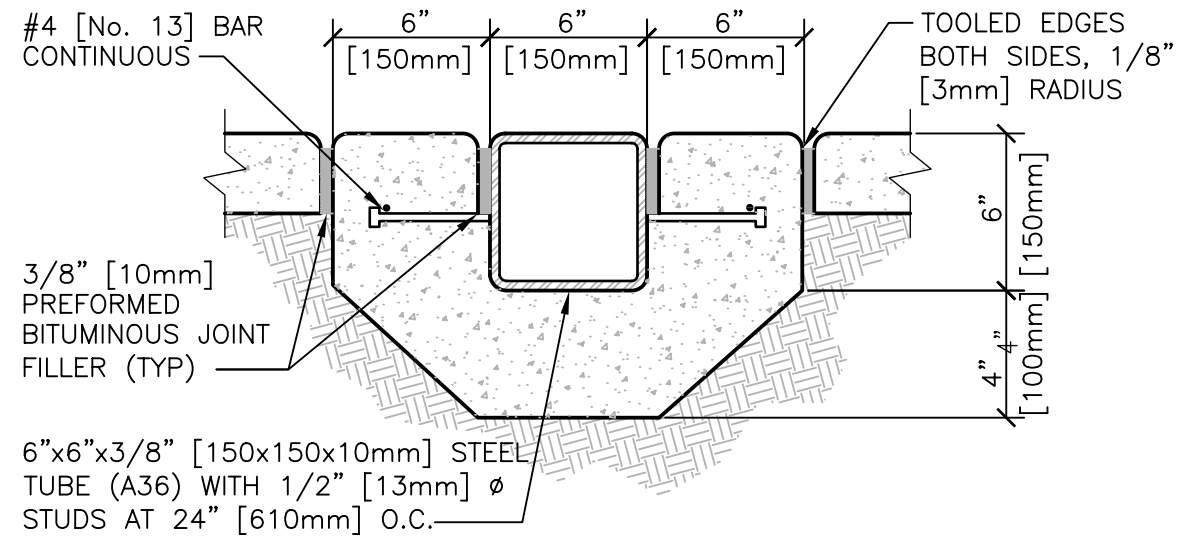
SD320523-06.DWG



SECTION A-A



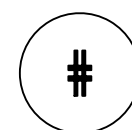
PLAN



SECTION B-B

NOTE:

1. EXISTING CURB AND/OR SIDEWALK SHALL BE SAWCUT TO ITS FULL DEPTH, REMOVED AND DISPOSED OF AS PART OF SIDEWALK SCUPPER INSTALLATION.
2. STEEL TUBE SHALL BE GIVEN ONE SHOP COAT OF PAINT NO. 1 PER VA SPECIFICATION. PAINT EXPOSED METAL WITH TWO COATS OF SSPC PAINT NO. 5 PER VA SPECIFICATION.



SIDEWALK SCUPPER - TYPE 1

NTS

DETAIL TITLE / SIDEWALK SCUPPER - TYPE 1

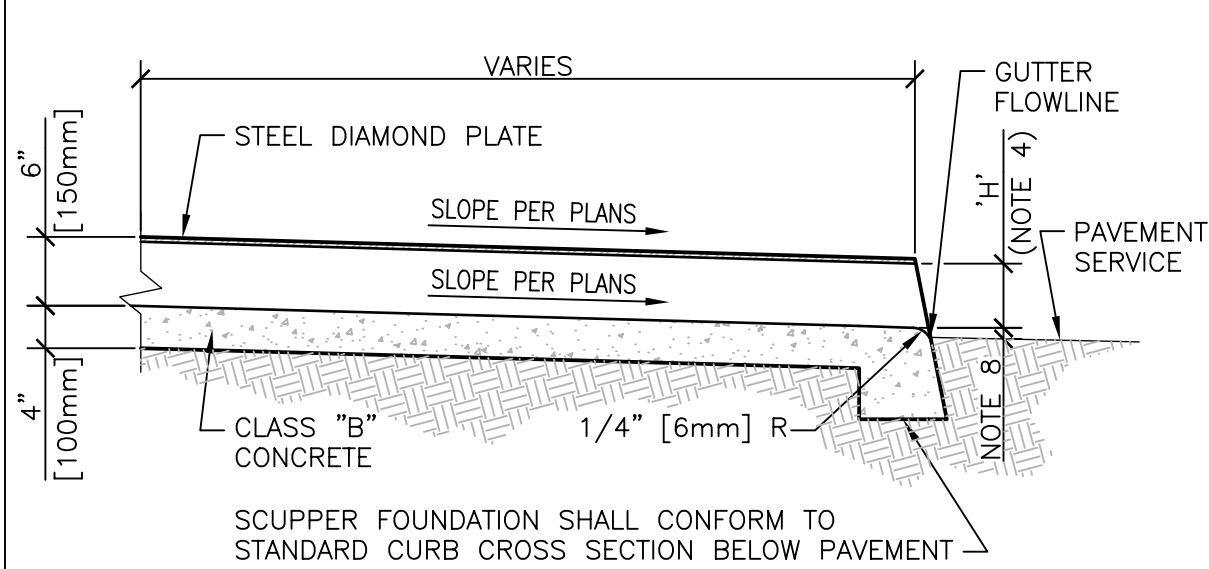
Department of
Veterans Affairs



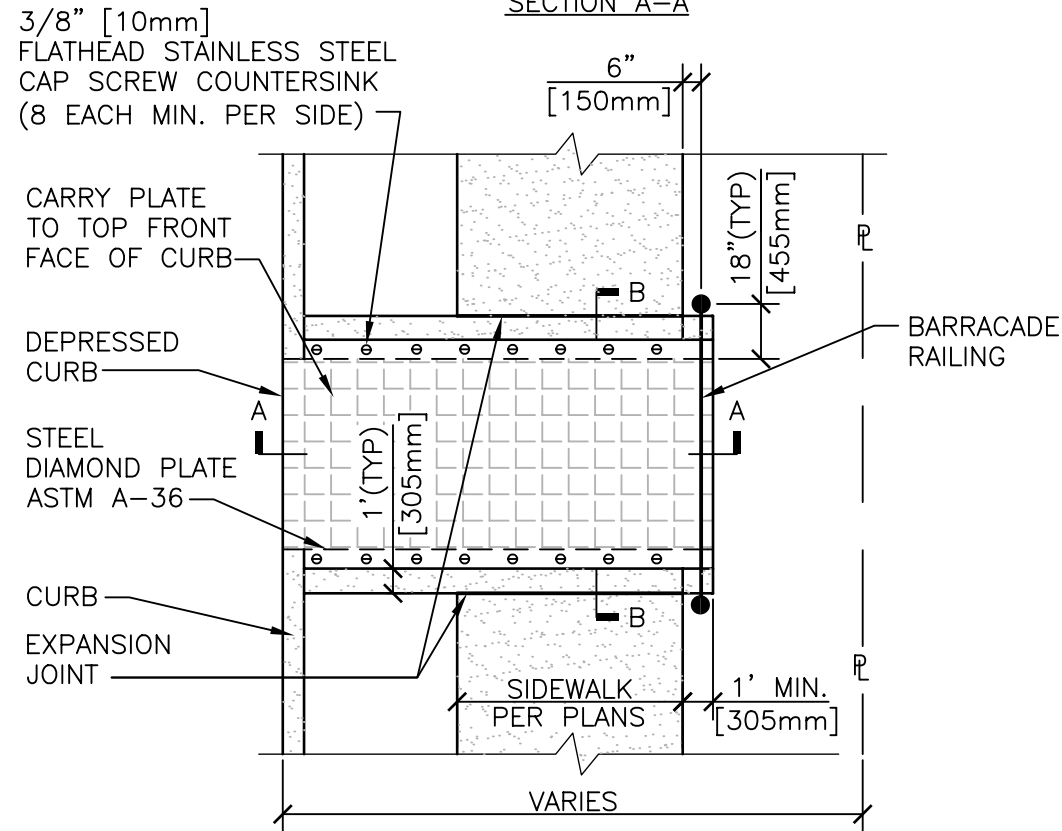
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DATE ISSUED: DECEMBER 2008

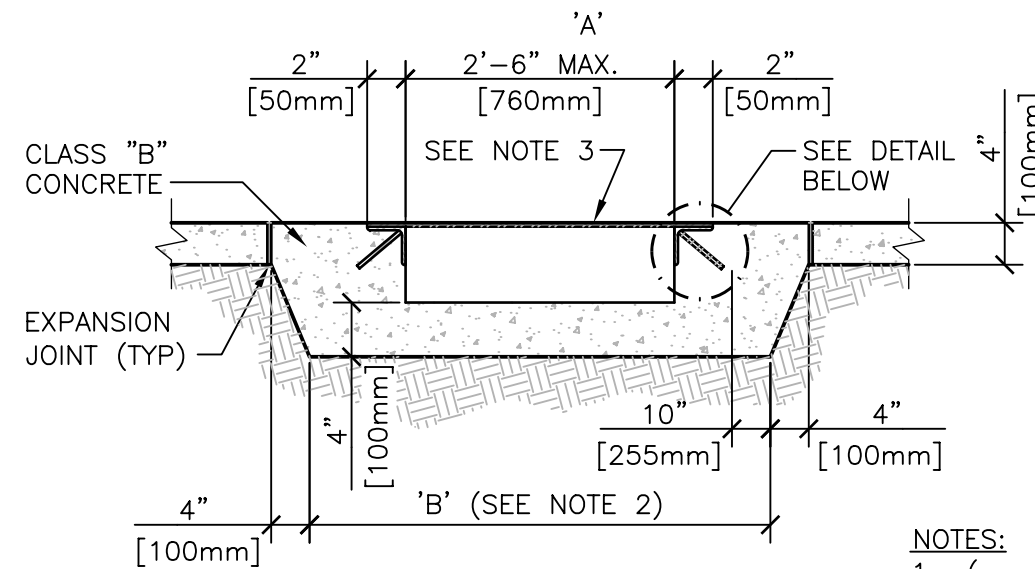
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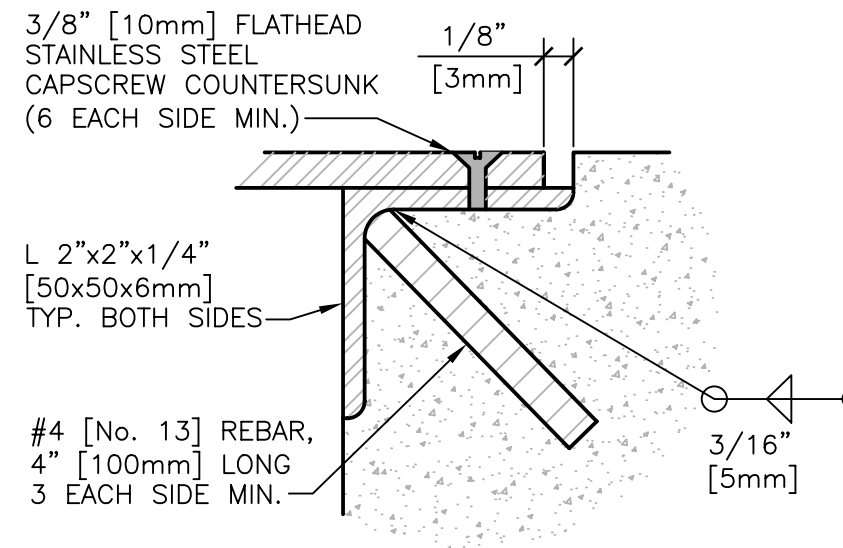
SECTION A-A



PLAN



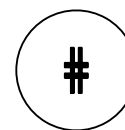
SECTION B-B



DETAIL

NOTES:

1. (—>) INDICATES DIRECTION OF FLOW.
2. DIMENSION 'B' EQUALS 'A'+1' [305mm].
3. 1/2" [13mm] THICK STEEL DIAMOND PLATE ASTM A-36. STEEL DIAMOND PLATE SHALL BE GIVEN ONE SHOP COAT OF PAINT NO.1 PER VA SPECIFICATIONS. EXPOSED METAL SHALL BE PAINTED WITH TWO COATS OF SSPC PAINT NO. 5 PER VA SPECIFICATIONS.
4. 'H' EQUALS CURB FACE HEIGHT. DIMENSION TO BE NOTED ON PLANS OR ESTABLISHED IN THE FIELD.
5. FOR CURB AND GUTTER, USE 2' [610mm] TRANSITIONS TO VERTICAL CURB.
6. FOR MULTIPLE SCUPPERS PROVIDE 4" [100mm] BETWEEN ADJACENT PANELS OF STEEL DIAMOND PLATE. INTERMEDIATE POSTS FOR BARRICADE RAILINGS SHALL BE PLACED MIDWAY IN 4" [100mm] AREA BETWEEN ADJACENT PANELS.
7. STEEL DIAMOND PLATE SHALL BE DELIVERED AS ONE PIECE, CONFORMING TO THE REQUIRED SCUPPER DIMENSIONS. PLATES SHALL NOT BE SPLICED.
8. PROVIDE A MIN. 1" [25mm] LIP BETWEEN FLOW LINE OF SCUPPER AND PAVEMENT SURFACE.



SIDEWALK SCUPPER - TYPE 2

NTS

DETAIL TITLE / SIDEWALK SCUPPER - TYPE 2

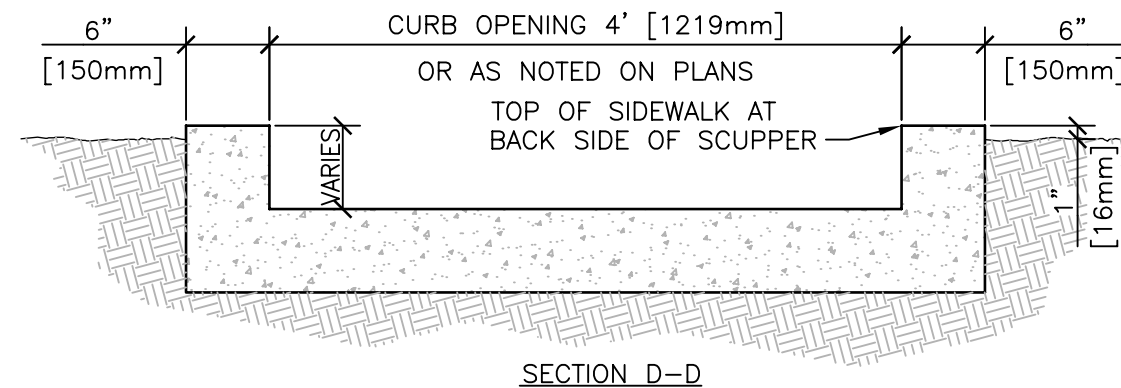
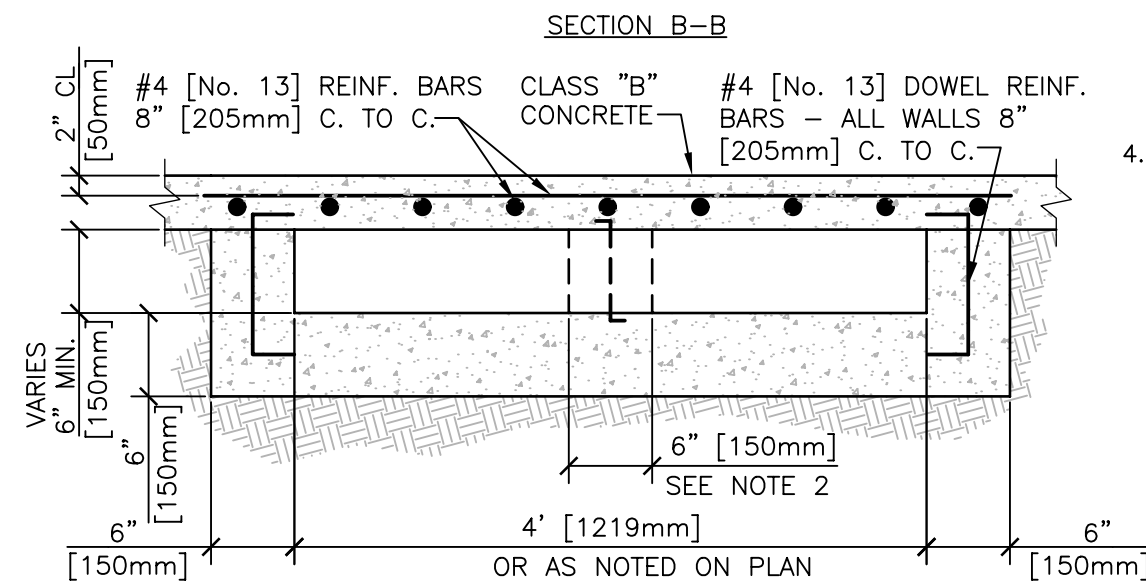
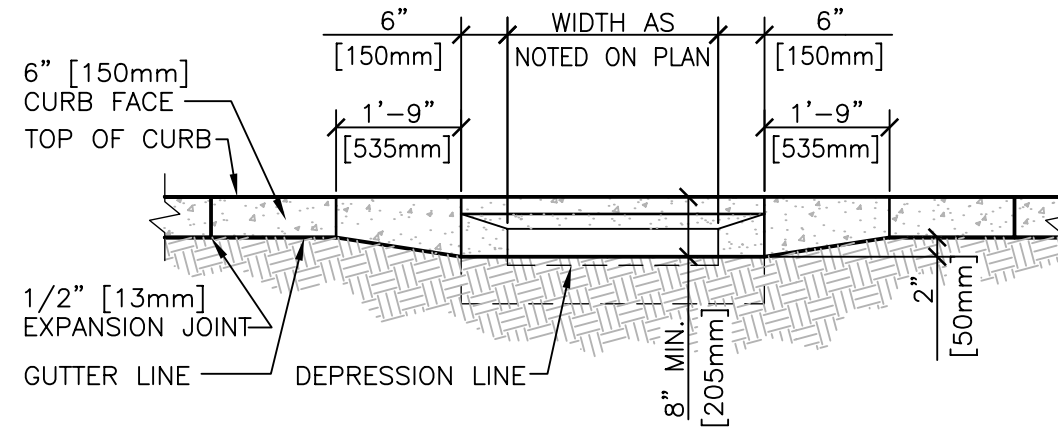
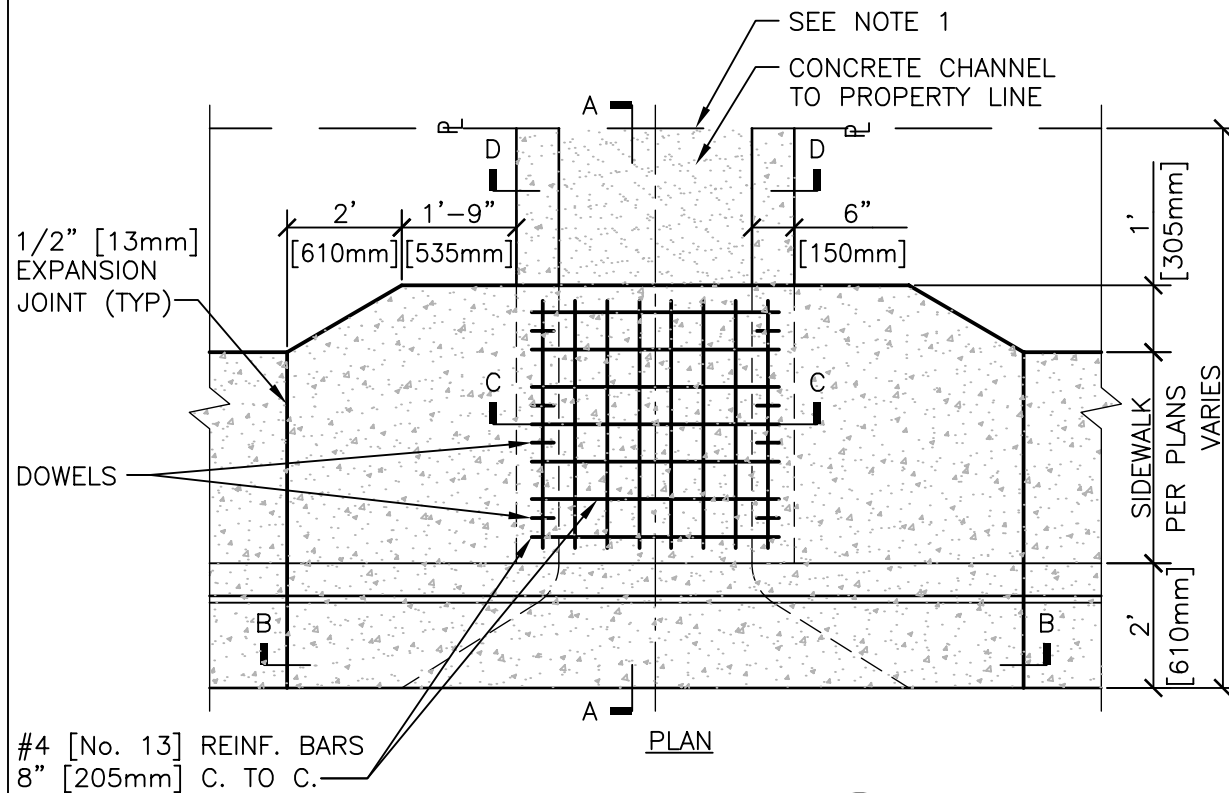
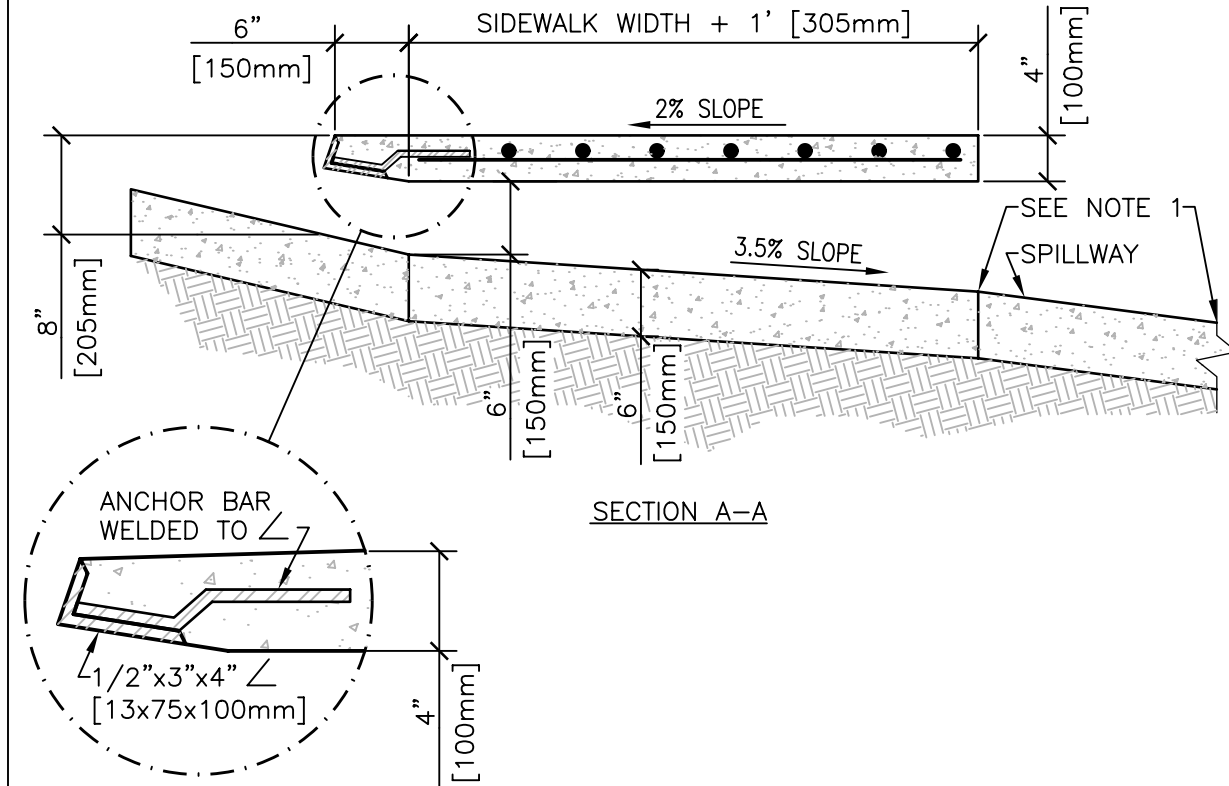
SCALE : NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD320523-08.DWG

Department of
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- NOTES:**
1. TRANSITION TO SPILLWAY/ CHANNEL AS PER APPROVED PLANS. SCUPPER GRADE MAY BE MODIFIED TO ALLOW FOR RUNOFF TO FLOW FROM RIGHT-OF-WAY INTO ROADWAY.
 2. A CENTER WALL SHALL BE INSTALLED IN SCUPPERS WIDER THAN 4' [1219mm] OR IF MORE THAN ONE SCUPPER IS BUILT IN SERIES.
 3. EXPANSION JOINT FILLER SHALL BE 1/2" [13mm] BITUMINOUS TYPE PREFORMED EXPANSION JOINT FILLER PER VA SPECIFICATIONS.
 4. CONCRETE SHALL BE CLASS 'S', $f'_c=3,000$ psi [20.7 MPa]

SIDEWALK SCUPPER - TYPE 3

NTS

DETAIL TITLE / SIDEWALK SCUPPER - TYPE 3

SCALE : NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD320523-09.DWG

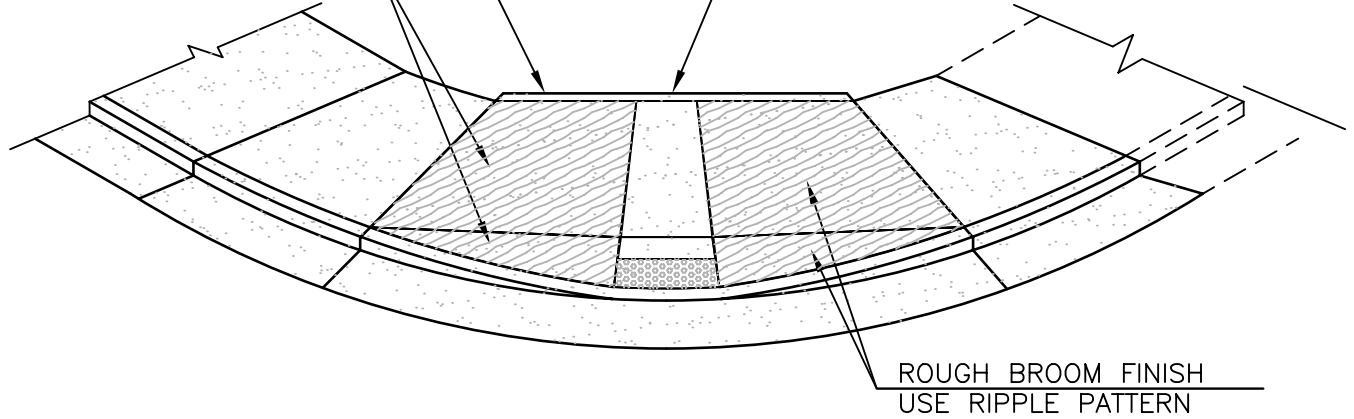
Department of
Veterans Affairs



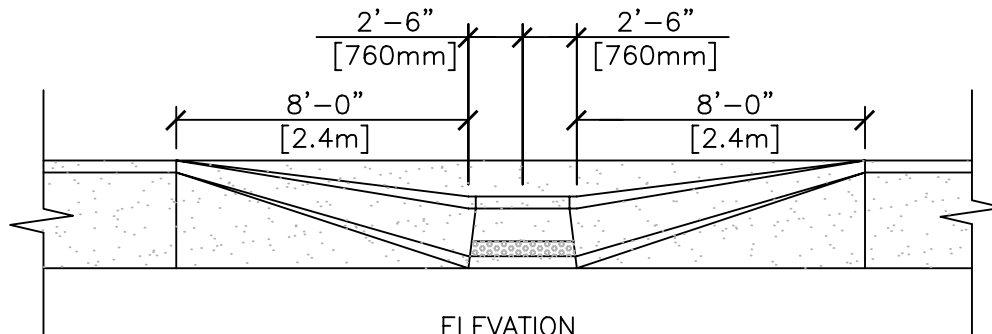
RAMP CURB HEIGHT TO
MATCH ADJACENT BACK OF
SIDEWALK ELEVATION

ROUGH BROOM FINISH
USE RIPPLE PATTERN

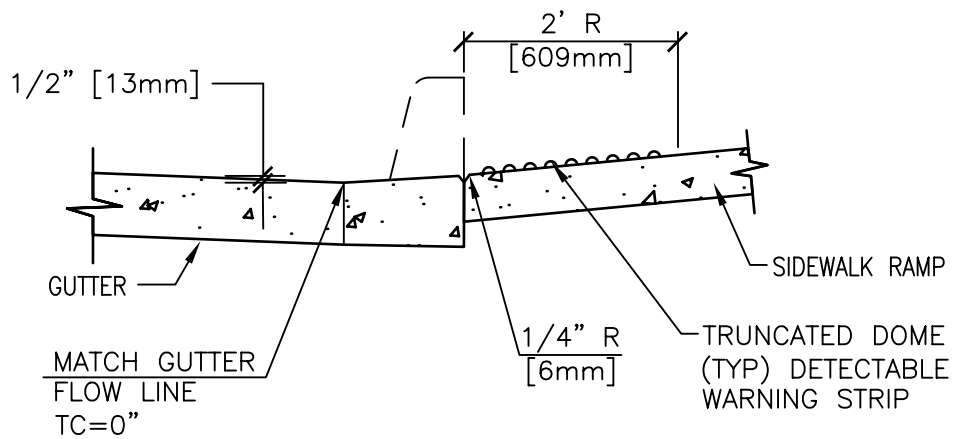
RAMP CURB



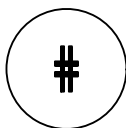
PERSPECTIVE



ELEVATION
DEPRESSED CURB AT SIDEWALK RAMP



TRUNCATED DOME DETAIL



CURB ACCESS RAMP

NTS



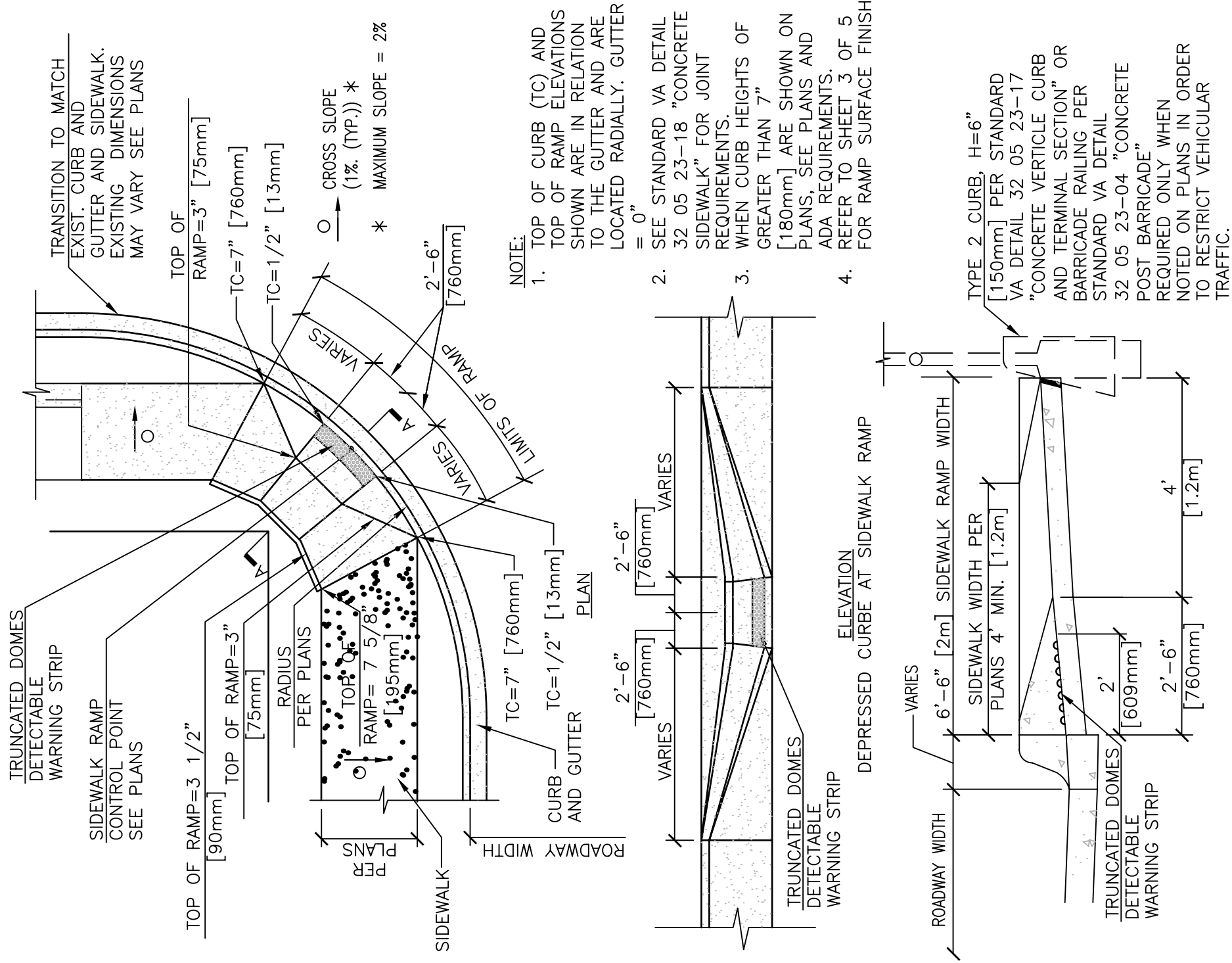
Department of
Veterans Affairs

DETAIL TITLE / CURB ACCESS RAMP

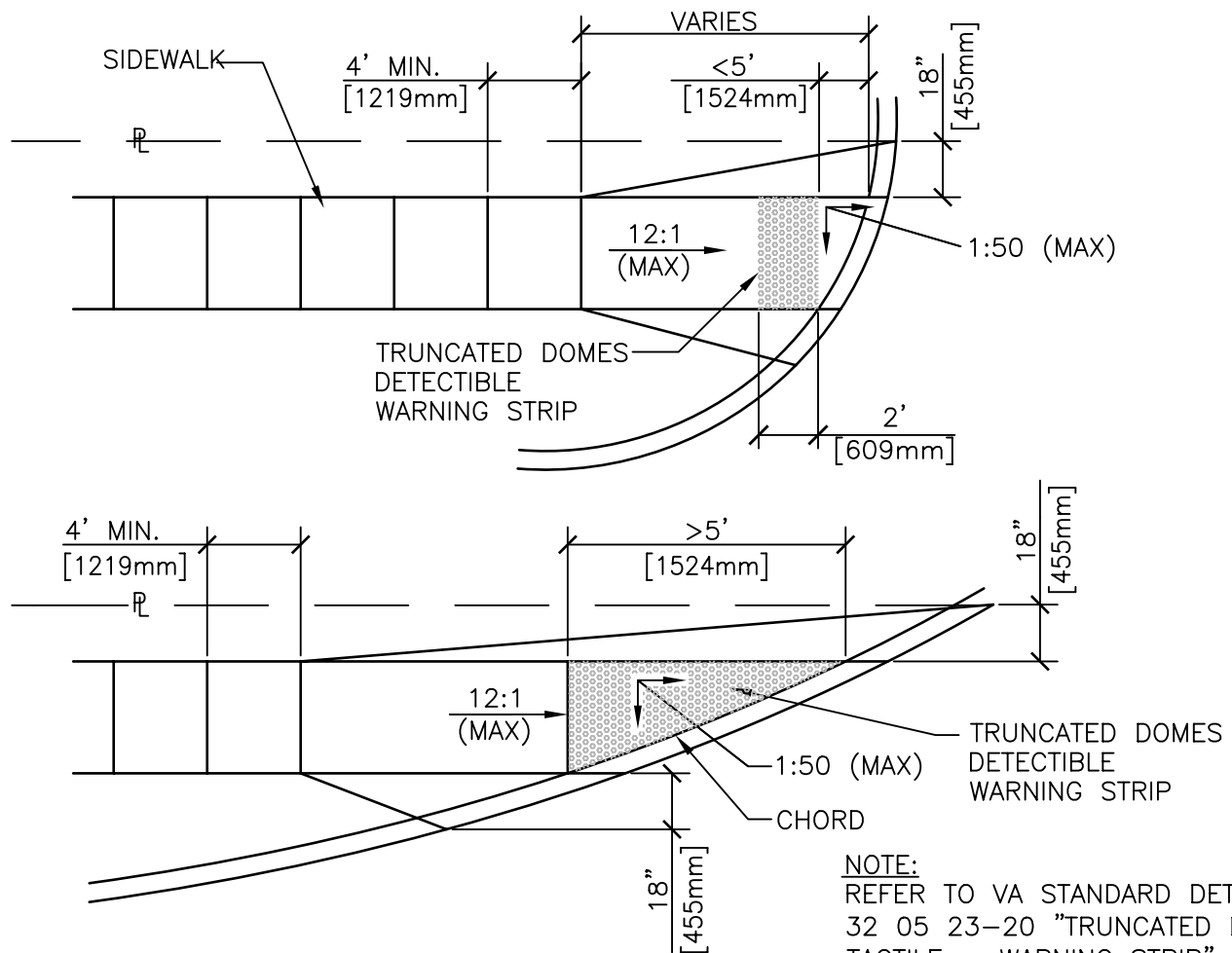
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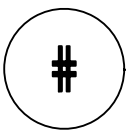
CAD DETAIL NO.: SD320523-11.DWG



CURB ACCESS RAMP - LIMITED RIGHT-OF-WAY



NOTE:
REFER TO VA STANDARD DETAIL
32 05 23-20 "TRUNCATED DOME
TACTILE - WARNING STRIP" FOR
ADDITIONAL INFORMATION.



CURB ACCESS RAMP ALTERNATIVES

NTS



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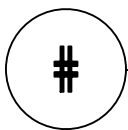
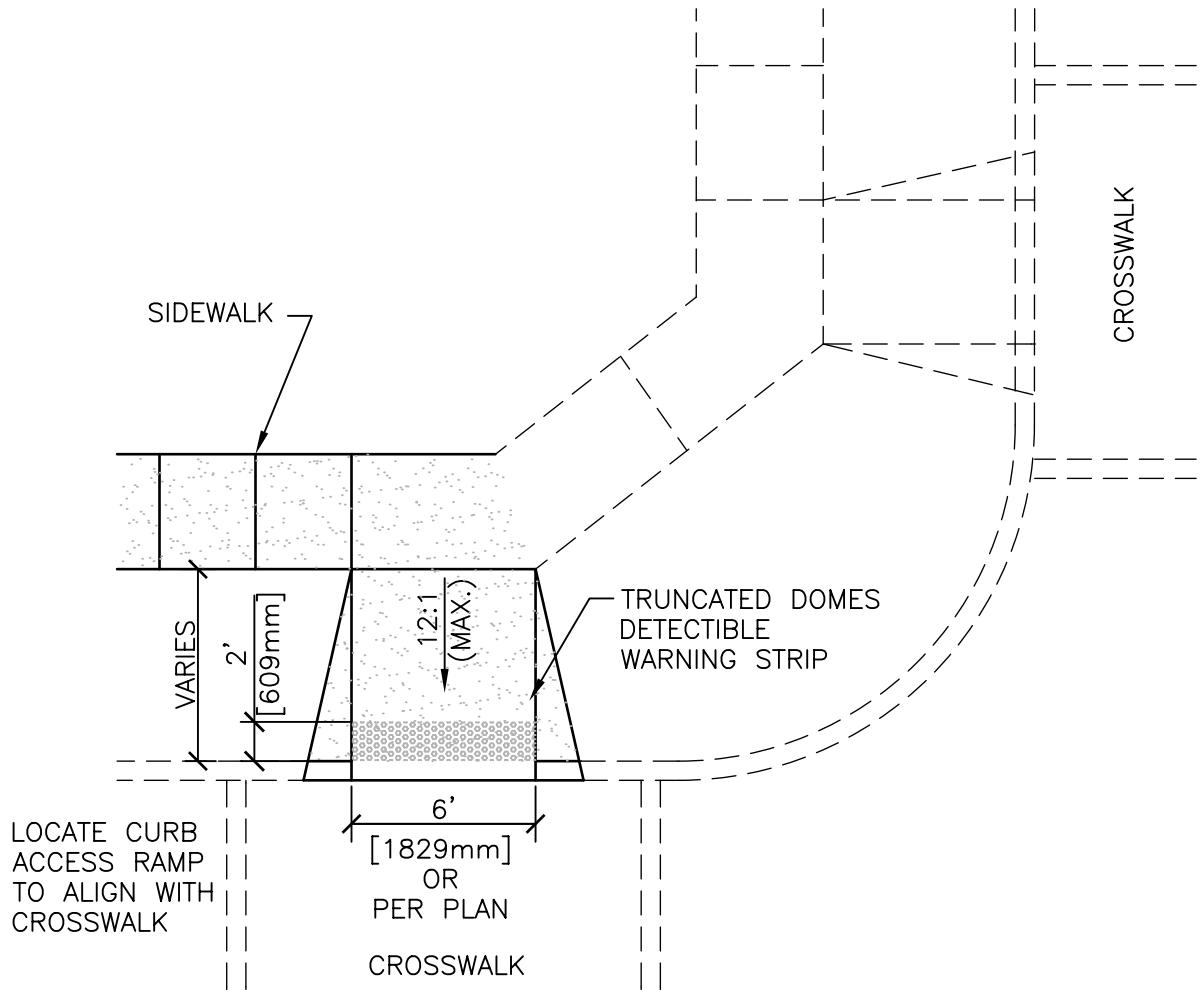
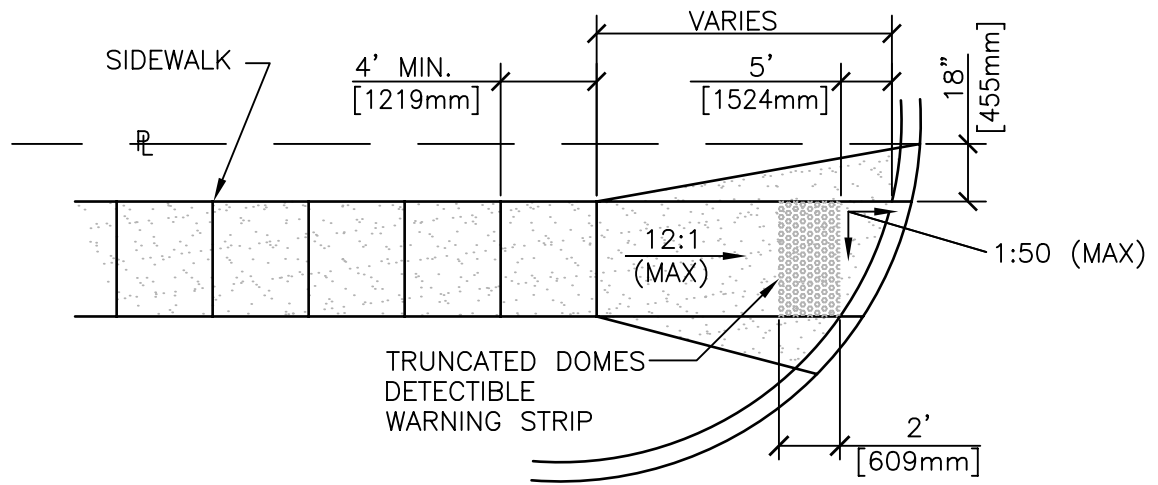
DETAIL TITLE / CONCRETE HEADER

SCALE :NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.:

SD320523-13.DWG



CURB ACCESS RAMP ALTERNATIVES

NTS



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DETAIL TITLE / CURB ACCESS RAMP ALTERNATIVES

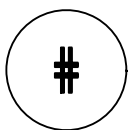
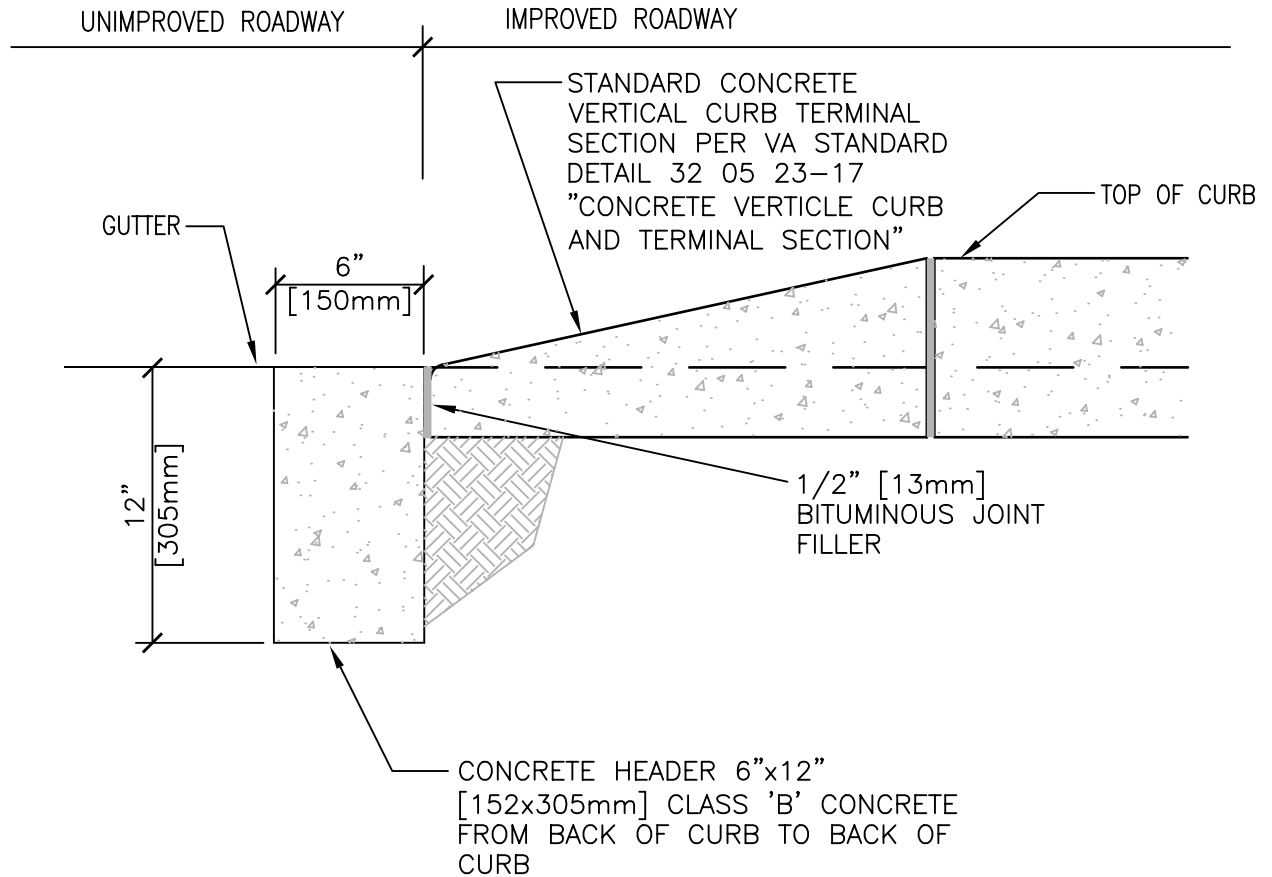
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DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.:

SD320523-14.DWG

CAD DETAIL NO.: SD320523-15.DWG



CONCRETE HEADER

NTS



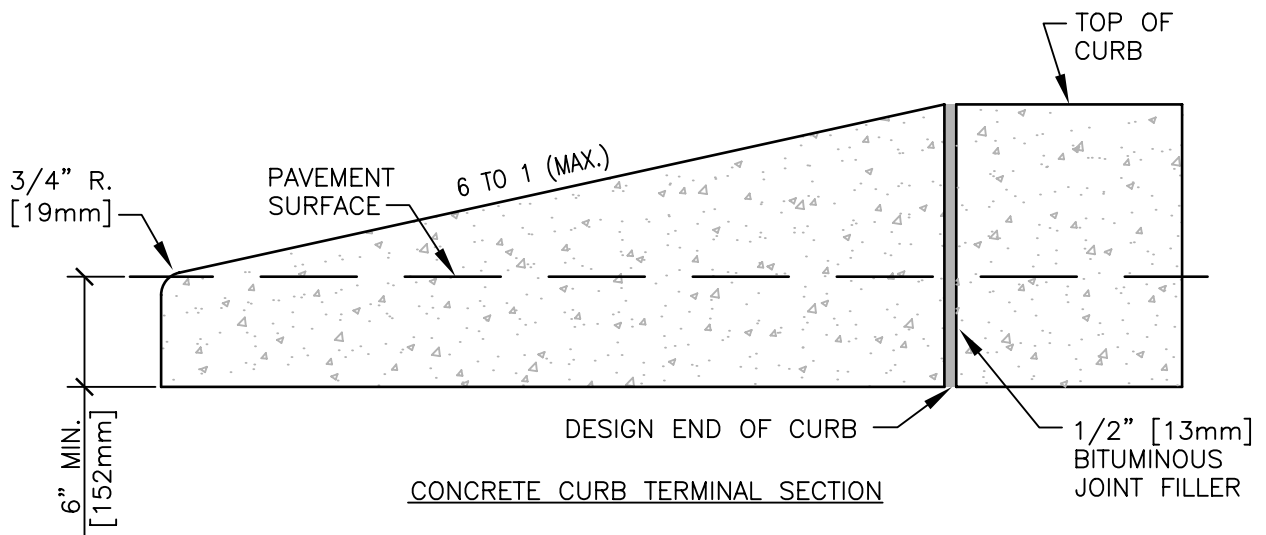
Department of
Veterans Affairs

DETAIL TITLE / CONCRETE HEADER

SCALE :NONE

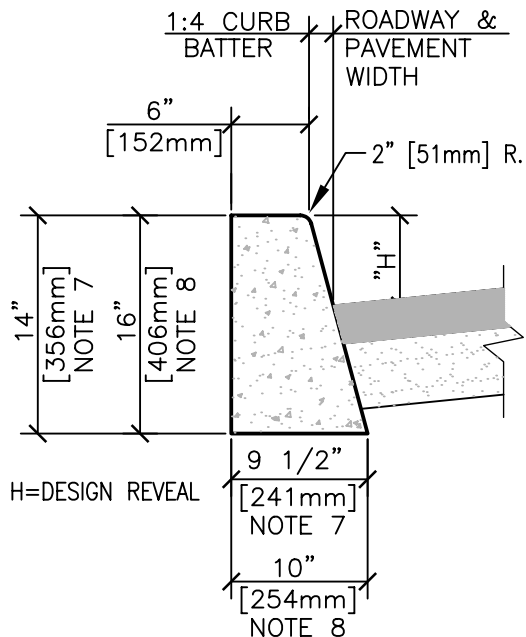
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CAD DETAIL NO.: SD320523-16.DWG

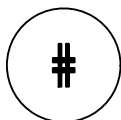


NOTES:

1. ALL CONCRETE CURBS AND TRANSITIONS, SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI.
2. MAXIMUM SPACING ON SCORED JOINTS SHALL BE 15' [4572mm].
3. 1/2" [13mm] THICK EXPANSION JOINTS SHALL BE LOCATED AT TANGENT POINTS IN CURB RETURNS, TRANSITIONS, AND AT A MAXIMUM OF 60' [1828.8cm] INTERVALS. EXPANSION MATERIAL SHALL ALSO BE PLACED BETWEEN CURBS AND ADJACENT STRUCTURES, SIDEWALKS, DRIVEWAYS AND CURB ACCESS RAMPS. THE 1/2" [13mm] JOINT FILLER SHALL EXTEND THE FULL DEPTH OF THE CONCRETE.
4. CONCRETE SHALL BE FINISHED WITH A STEEL TROWEL FOLLOWED BY BRUSHING WITH A FINE BRUSH ALONG THE LENGTH OF THE CURB OR CURB AND GUTTER.
5. SINGLE CURB MAY BE CONSTRUCTED BY THE USE OF FORMS OR MAY BE SLIP FORMED.
6. ALL EXPOSED EDGES AND HAND TOOLED JOINTS SHALL BE FINISHED WITH A TOOL HAVING A 1/4" [6mm] RADIUS UNLESS A LARGER RADIUS IS INDICATED BY THE APPLICABLE STANDARD DETAIL OR PROJECT PLANS.
7. FOR REVEALS OF 6" [152mm] TO LESS THAN 8" [203mm].
8. FOR REVEALS OF 8" [203mm] TO 10" [254mm].



CONCRETE VERTICAL CURB



CONCRETE CURB AND TERMINAL SECTION

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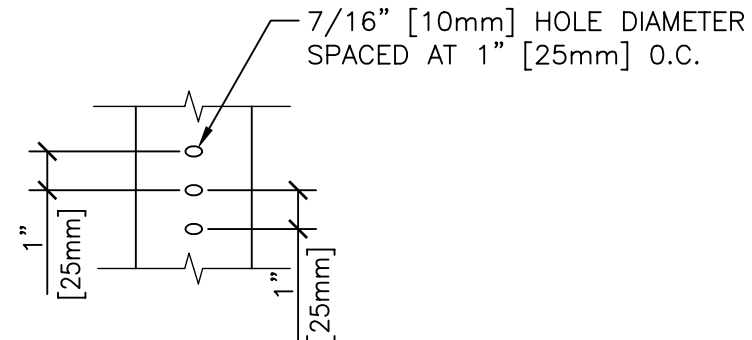
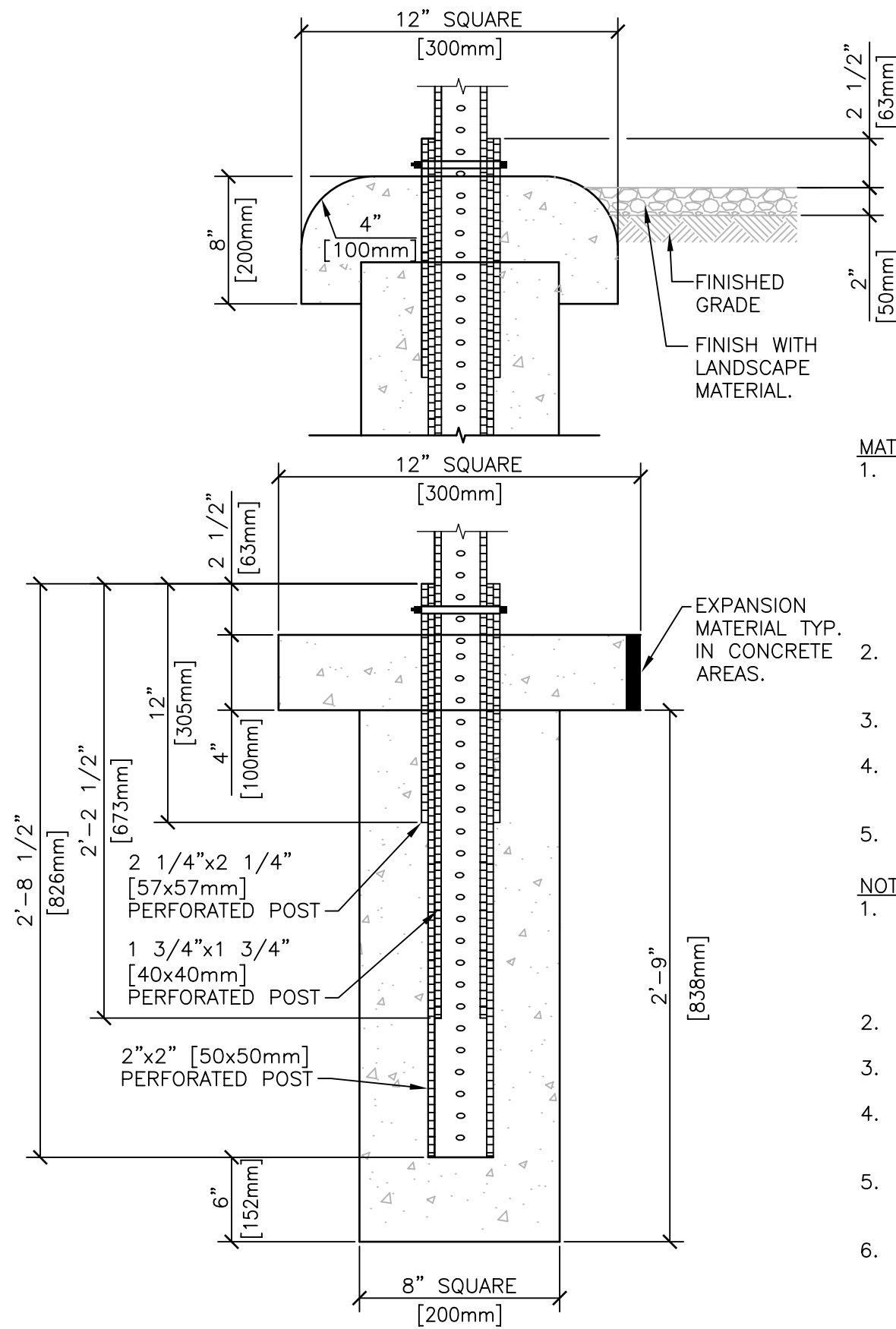
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DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD320523-17.DWG



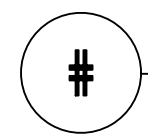


MATERIALS:

1. PERFORATED POSTS SHALL BE SQUARE TUBE FORMED FROM 0.105 U.S.S. GAUGE ASTM A-366 COLD ROLLED CARBON STEEL. THE SQUARE TUBES SHALL BE WELDED DIRECTLY IN THE CORNER BY HIGH FREQUENCY RESISTANCE WELDING OR EQUAL. THE POSTS SHALL BE EXTERNALLY SCARFED TO AGREE WITH STD. CORNER RADII OF 5/32" [4mm] TO 1/64" [.3mm].
2. PERFORATED POSTS SHALL BE GALVANIZED TO CONFORM TO ASTM A-525. COATING DESIGNATION G-90.
3. ALL HARDWARE SHALL CONFORM TO ASTM A-307 CLASS A.
4. ALL HARDWARE SHALL BE GALVANIZED TO CONFORM TO ASTM A-153 OR CADMIUM PLATED TO CONFORM TO ASTM A-165.
5. ALL CONCRETE SHALL BE 2500 PSI.

NOTES:

1. FOUNDATION WILL BE CONSTRUCTED WITH 1 3/4"x1 3/4" STARTER SIGN POST. STARTER SIGN POST SHALL BE REMOVED AFTER CONCRETE HAS SET AND EXPOSED SQUARE TUBING WRAPPED AND SEALED WITH DUCT TAPE.
2. FOUNDATION LOCATED 1' FROM EDGE OF PAVEMENT.
3. FOUNDATION LOCATION TO BE APPROVED BY ENGINEERING.
4. POST FOUNDATIONS SHALL BE PERPENDICULAR TO THE PAVED SURFACE.
5. BOLT WITH NUT AND LOCK WASHER TO BE 7/16"x3" GALVANIZED.
6. REFER TO SIGN POST LOCATION DETAIL, DETAIL 4, THIS SHEET FOR INSTALLATION LOCATION.



SIGN POST DETAIL SQUARE TUBE FOUNDATION

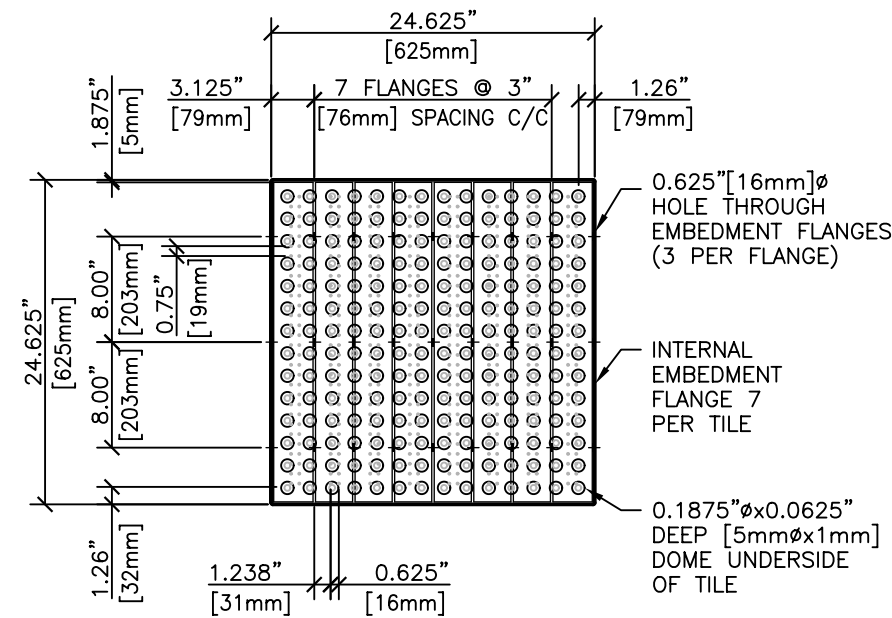
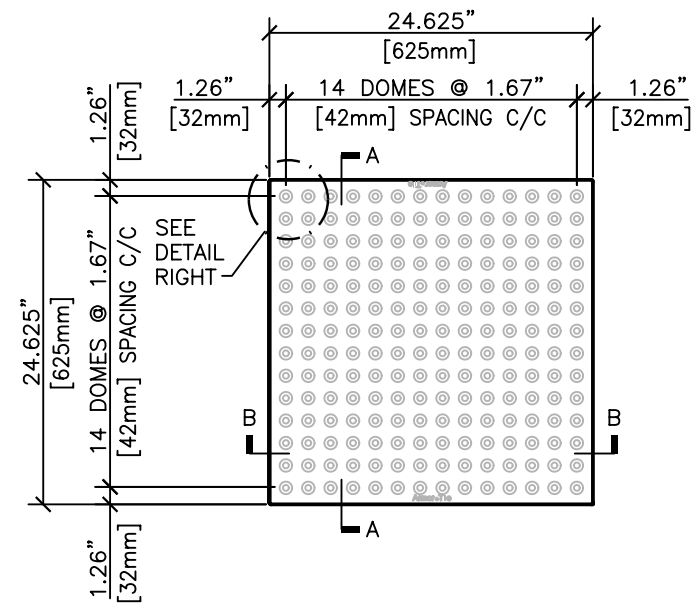
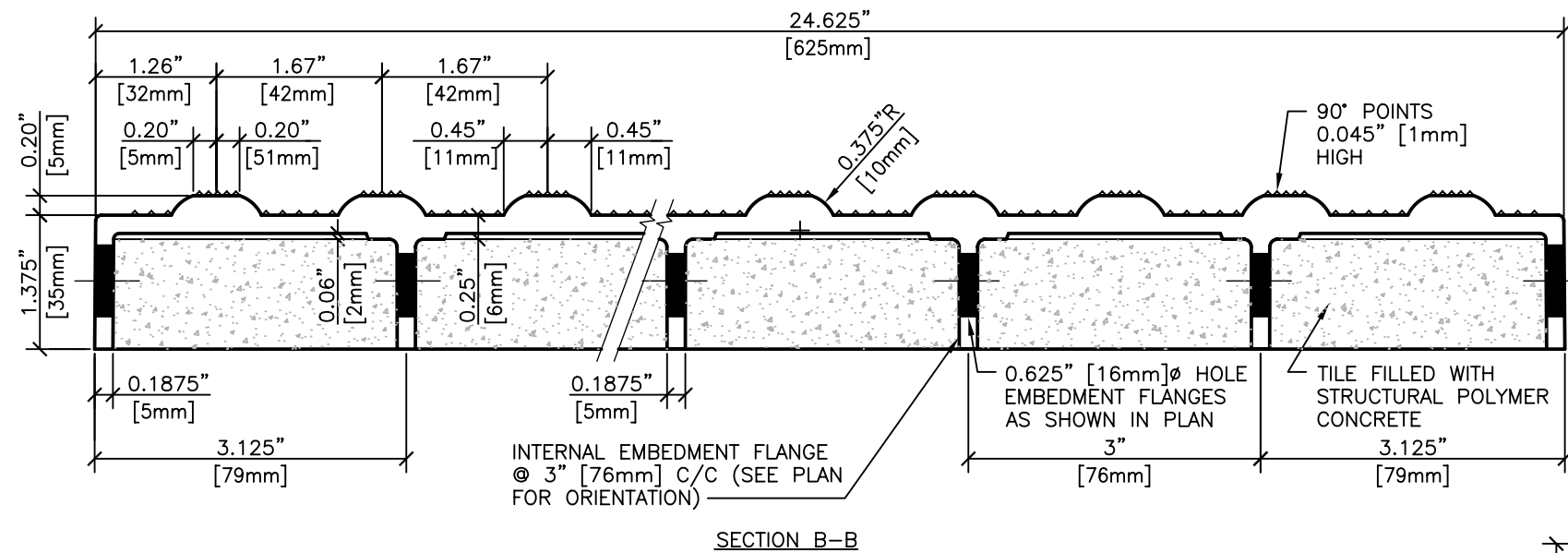
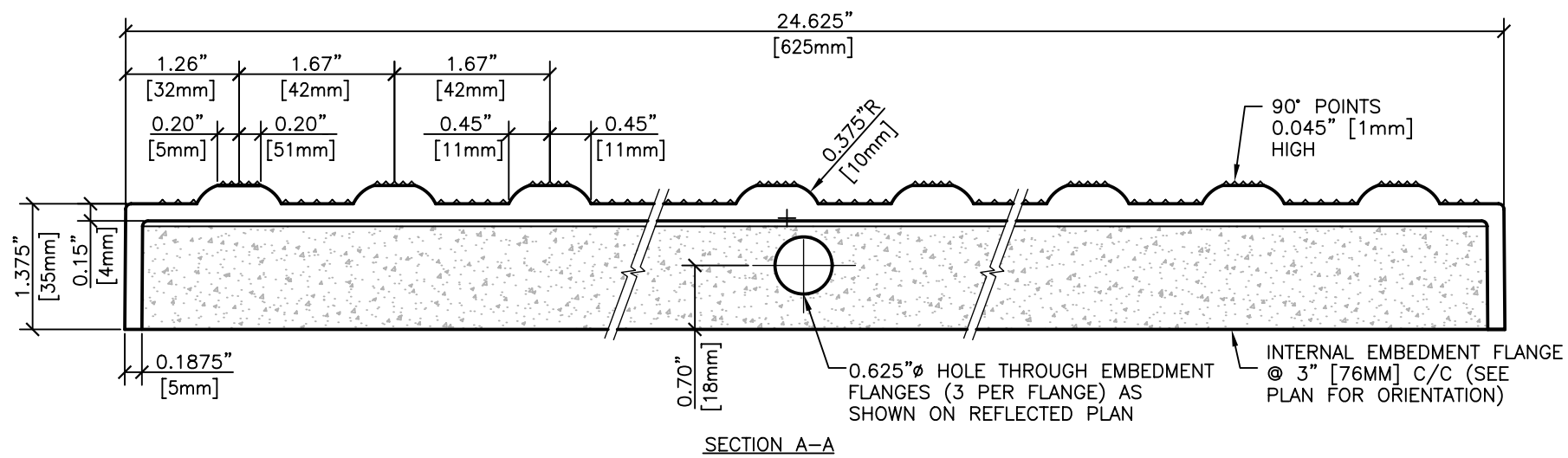
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DETAIL TITLE / SIGN POST DETAIL SQUARE TUBE FOUNDATION

SCALE : NONE

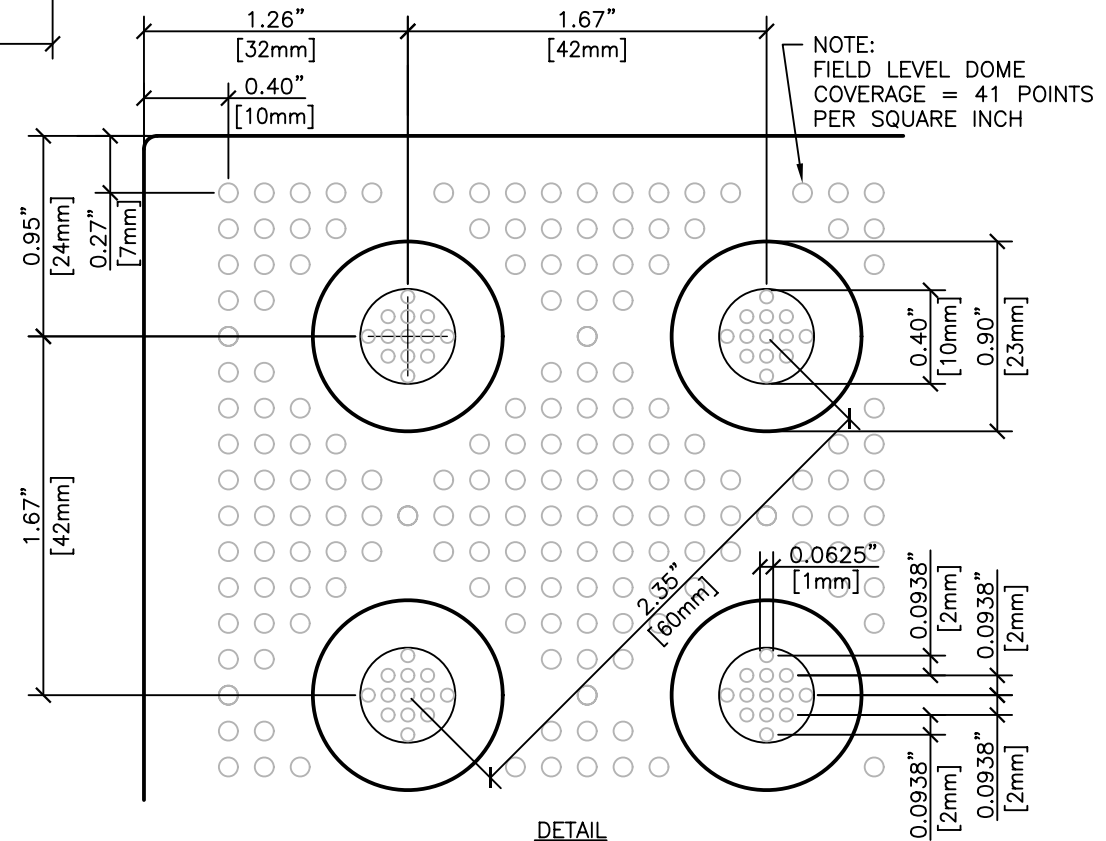
DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD320523-19.DWG



DETECTABLE WARNING NOTES:

THE DETECTABLE WARNING STRIP MUST COVER THE ENTIRE WIDTH OF THE RAMP OPENING, EXCLUDING THE WINGS. ALL DOMES MUST BE ALIGNED IN THE DIRECTION OF TRAVEL. ONE CORNER OF THE LEADING EDGE OF THE DETECTABLE WARNING MAY BE MORE THAN 5 FEET FROM THE BACK OF THE CURB. WHEN LOCATED ALONG A CURB RETURN, THE LEADING EDGE OF THE DETECTABLE WARNING MAY BE DEFINED BY THE CHORD DRAWN BETWEEN THE LEADING EDGES OF THE RAMP OPENING.



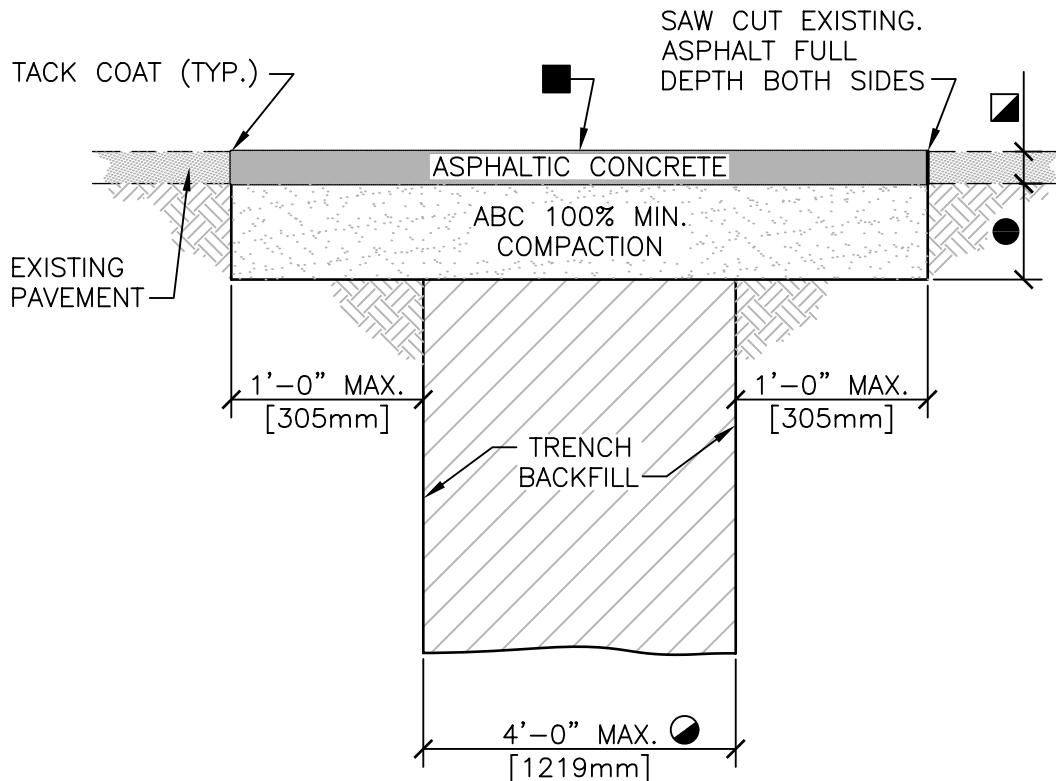
DETAIL TITLE / TRUNCATED DOME TACTILE – WARNING STRIP

SCALE : NONE

DATE ISSUED: DECEMBER 2008

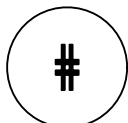
CAD DETAIL NO.: SD320523-20.DWG





- FOR TRENCH WIDTHS EXCEEDING 4' [1219mm] REFER TO VA STANDARD DETAIL 32 12 16-02 "TYPE 2 UTILITY TRENCH PATCH". FOR TRENCH WHERE PORTLAND CEMENT CONCRETE (PCC) PAVEMENT EXISTS, REFER TO 32 12 16-03 "TYPE 3 UTILITY TRENCH PATCH".
- ▣ 2" [50mm] MINIMUM OR THICKNESS OF EXISTING PAVEMENT WHICHEVER IS GREATER.
- BITUMINOUS SURFACE TREATMENT (CHIPSEAL) REQUIRED ONLY FOR LONGITUDINAL TRENCHES WITH WIDTHS GREATER THAN 6' [1829mm].
- 4" [100mm] MINIMUM ABC OR THICKNESS OF EXISTING GRANULAR BASE COURSE MATERIALS (E.G. ABC & SELECT MATERIAL) WHICHEVER IS GREATER.

REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.



TYPE 1 UTILITY TRENCH PATCH

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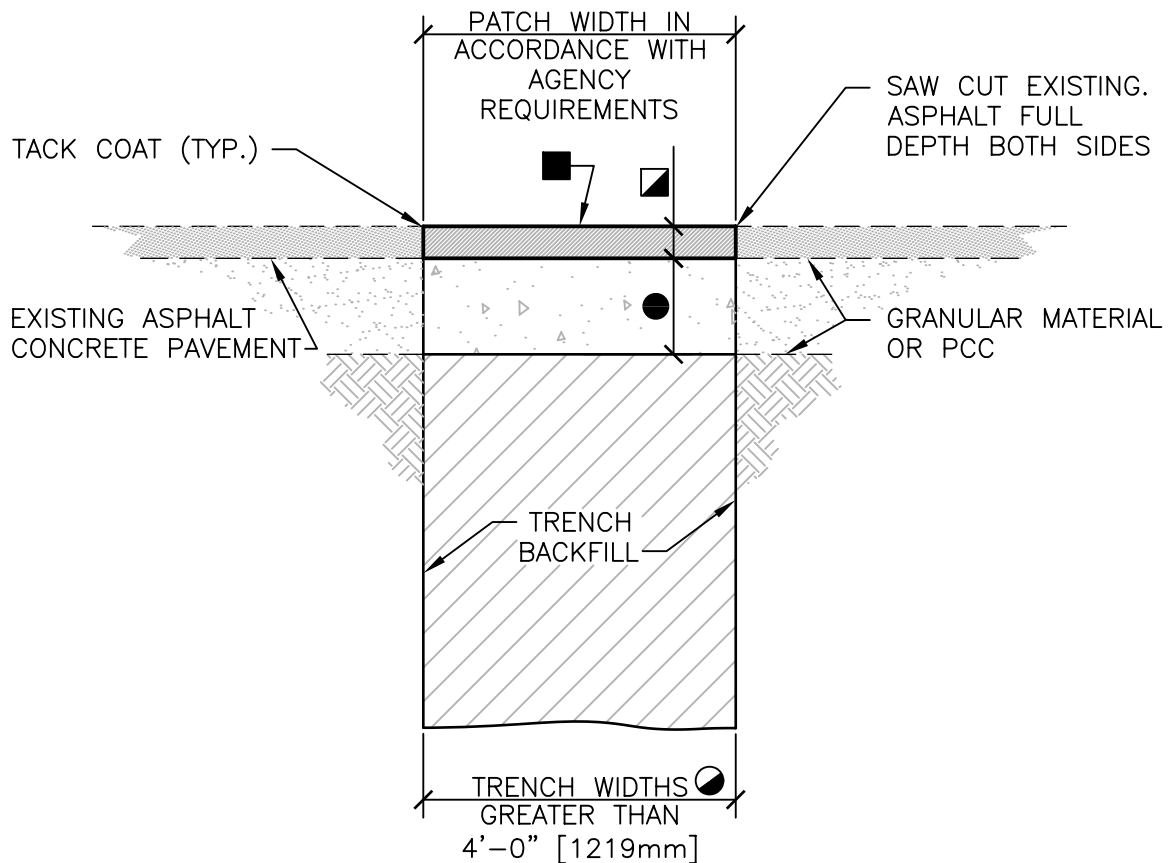
Department of
Veterans Affairs

DETAIL TITLE / TYPE 1 UTILITY TRENCH PATCH

SCALE :NONE

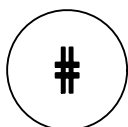
DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD321216-01.DWG



- FOR TRENCH WIDTHS 4' [1219mm] OR LESS REFER TO VA STANDARD DETAIL 32 12 16-01 "TYPE 1 UTILITY TRENCH PATCH". FOR TRENCH WHERE PORTLAND CEMENT CONCRETE (PCC) PAVEMENT EXISTS, REFER TO 32 12 16-03 "TYPE 3 UTILITY TRENCH PATCH".
- ▣ 2" [50mm] MINIMUM OR THICKNESS OF EXISTING PAVEMENT WHICHEVER IS GREATER.
- BITUMINOUS SURFACE TREATMENT (CHIPSEAL) REQUIRED ONLY FOR LONGITUDINAL TRENCHES WITH WIDTHS GREATER THAN 6' [1829mm].
- 4" [100mm] MINIMUM ABC OR THICKNESS OF EXISTING GRANULAR BASE COURSE MATERIALS (E.G. ABC & SELECT MATERIAL) WHICHEVER IS GREATER.
PORTLAND CEMENT CONCRETE (PCC) THICKNESS EQUAL TO EXISTING.

REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.



TYPE 2 UTILITY TRENCH PATCH

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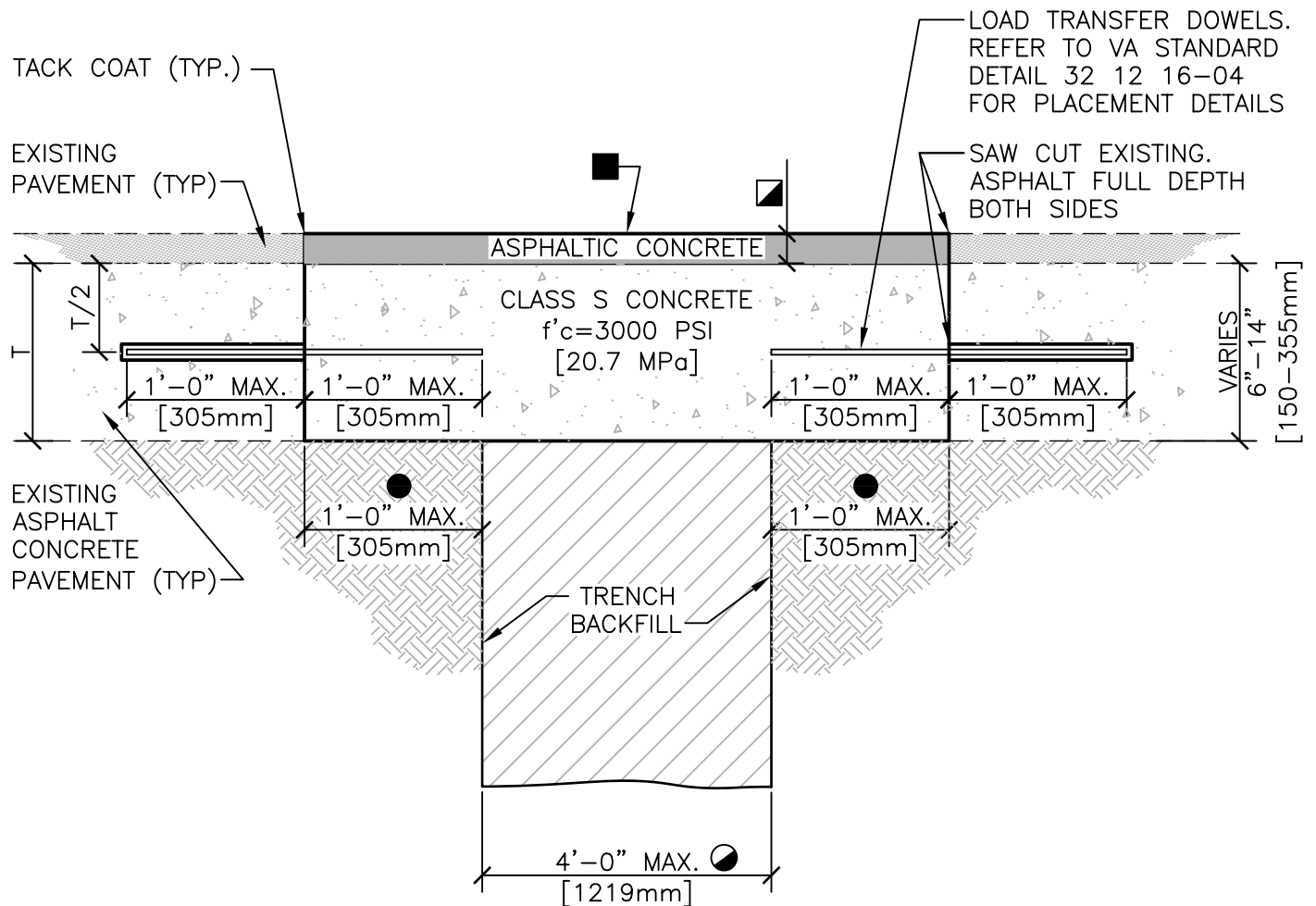
Department of
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DETAIL TITLE / TYPE 2 UTILITY TRENCH PATCH

SCALE :NONE

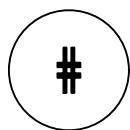
DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD321216-02.DWG



- FOR TRENCH WIDTHS EXCEEDING 4' [1219mm] DELETE LOAD TRANSFER DOWELS.
- 2" [50mm] MINIMUM OR THICKNESS OF EXISTING PAVEMENT WHICHEVER IS GREATER.
- BITUMINOUS SURFACE TREATMENT (CHIPSEAL) REQUIRED ONLY FOR LONGITUDINAL TRENCHES WITH WIDTHS GREATER THAN 6' [1829mm].
- REFER TO NOTE 13 ON VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES".

REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.



TYPE 3 UTILITY TRENCH PATCH

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DETAIL TITLE / TYPE 3 UTILITY TRENCH PATCH

SCALE :NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD321216-03.DWG

GENERAL NOTES

1. MATERIAL AND COMPACTION REQUIREMENTS FOR PIPE BEDDING/SHADING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE APPLICABLE UTILITY PIPE.
2. TRENCH BACKFILL SHALL COMMENCE 1 FOOT [305mm] ABOVE THE TOP OF PIPE AND SHALL BE PER SECTION XXX.
3. BACKFILL COMPACTION REQUIREMENTS SHALL BE PER SECTION XXX.
4. THE 1 FOOT [305mm] TRENCH "SHOULDER" AREAS SHALL BE DELETED FOR TYPE 2 TRENCHES.
5. ABC SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX.
6. PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX.
7. ASPHALTIC TACK MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX.
8. ASPHALTIC CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX FOR THE TYPE SPECIFIED.
9. BITUMINOUS SURFACE TREATMENT (CHIP SEAL) SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX FOR THE TYPE SPECIFIED.
10. LOAD TRANSFER DOWELS FOR JOINTS TRANSVERSE TO THE ROADWAY CENTERLINE SHALL BE SMOOTH STEEL DOWELS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX. DOWELS SHALL BE SIZED AND SPACED AS FOLLOWS:

<u>PCCP THICKNESS</u>	<u>DOWEL SIZE</u>	<u>DOWEL LENGTH</u>	<u>DOWEL SPACING</u>
6" [150mm]	#5 [No. 16]	12" [305mm]	18" [455mm]
7" [180mm]	#6 [No. 19]	15" [380mm]	15" [380mm]
8" [180mm]	#8 [No. 19]	15" [380mm]	12" [305mm]
10" [180mm]	#10 [No. 19]	15" [380mm]	12" [305mm]

11. DEFORMED TIE BARS SHALL BE USED IN TRENCH PATCHES LONGITUDINAL TO THE ROADWAY CENTERLINE WHEN THE TRENCH LENGTH IS GREATER THAN 50 FEET [15240mm]. TIE BARS SHALL BE 24 INCHES [610mm] LONG. DEFORMED #4 [No. 13] BARS FOR PCCP LESS THAN 8 INCHES [205mm] THICK AND #5 [No. 16] BARS IF 8 INCHES [205mm] THICK OR MORE. TIE BARS SHALL BE PLACED 30 INCHES [760mm] CENTER-TO-CENTER.
12. HOLES SHALL BE DRILLED 1 FOOT [305mm] INTO THE EXISTING SLAB FOR TIE BARS AND 7 INCHES [180mm] FOR DOWELS. HOLES SHALL BE OF A DIAMETER SUFFICIENT TO ACCOMMODATE THE TIE BAR ANCHORAGE OR DOWEL CAP. TIE BARS SHALL BE ANCHORED WITH AN APPROVED HIGH VISCOSITY EPOXY.
13. IF THE CONCRETE SLAB REMAINING NEXT TO A LONGITUDINAL OR TRANSVERSE JOINT IS LESS THAN 6 FEET [1829mm] AT ITS NARROWEST WIDTH, REMOVE AND REPLACE THE EXISTING CONCRETE TO THE JOINT.



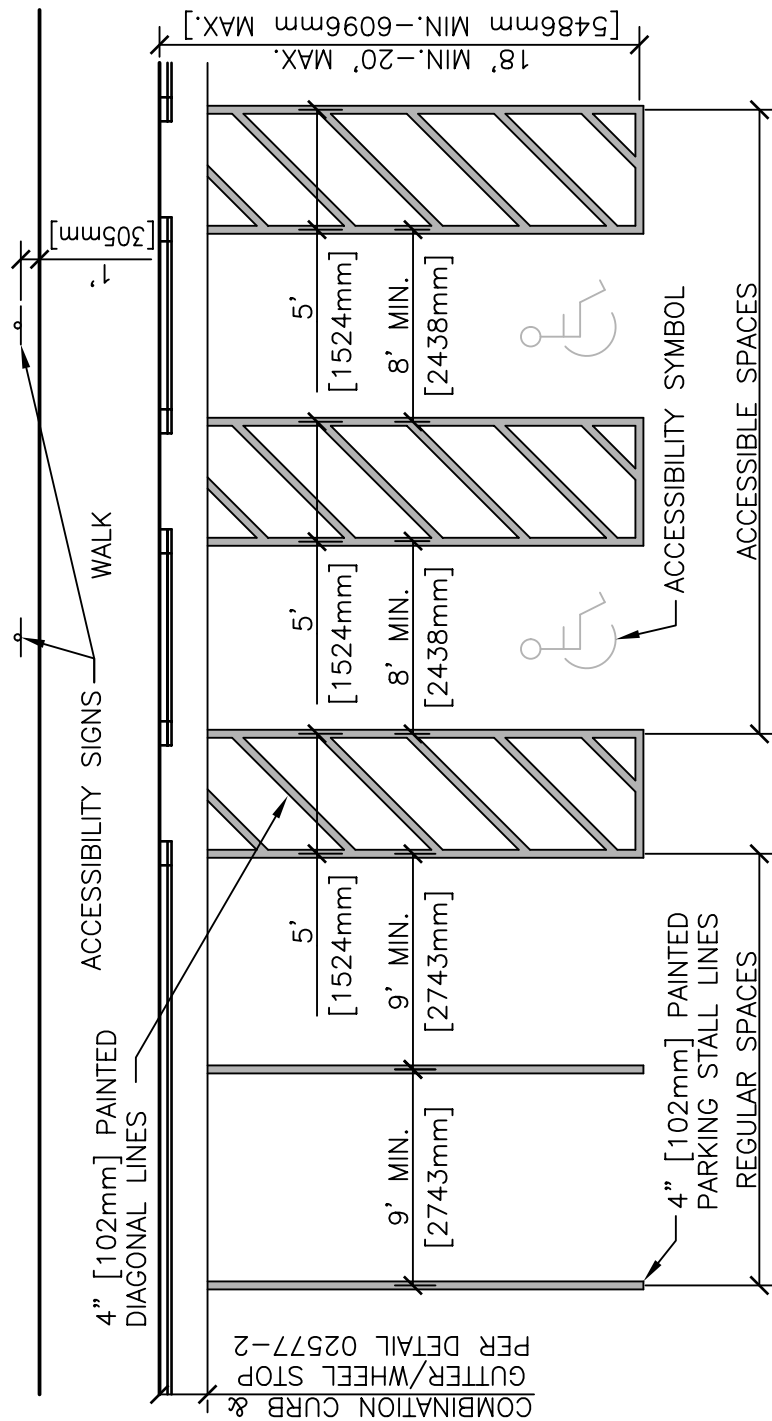
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DETAIL TITLE / UTILITY TRENCH PATCH NOTES

SCALE :NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.: SD321216-04.DWG



NOTE:

1. SEE SITE AND ENGINEERING DESIGN MANUAL FOR PARKING BAY WIDTHS.
2. SEE VA BARRIER FREE DESIGN HANDBOOK H-08-13 FOR ACCESSIBLE SPACE QUANTITIES AND SIGNAGE.
3. ACCESSIBLE SPACE FOR VANS MUST BE 11' [3300mm] WIDE WITH 5' [1524mm] ACCESS AISLES AND BE DESIGNATED FOR VANS ONLY.

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PARKING STALL LAYOUT



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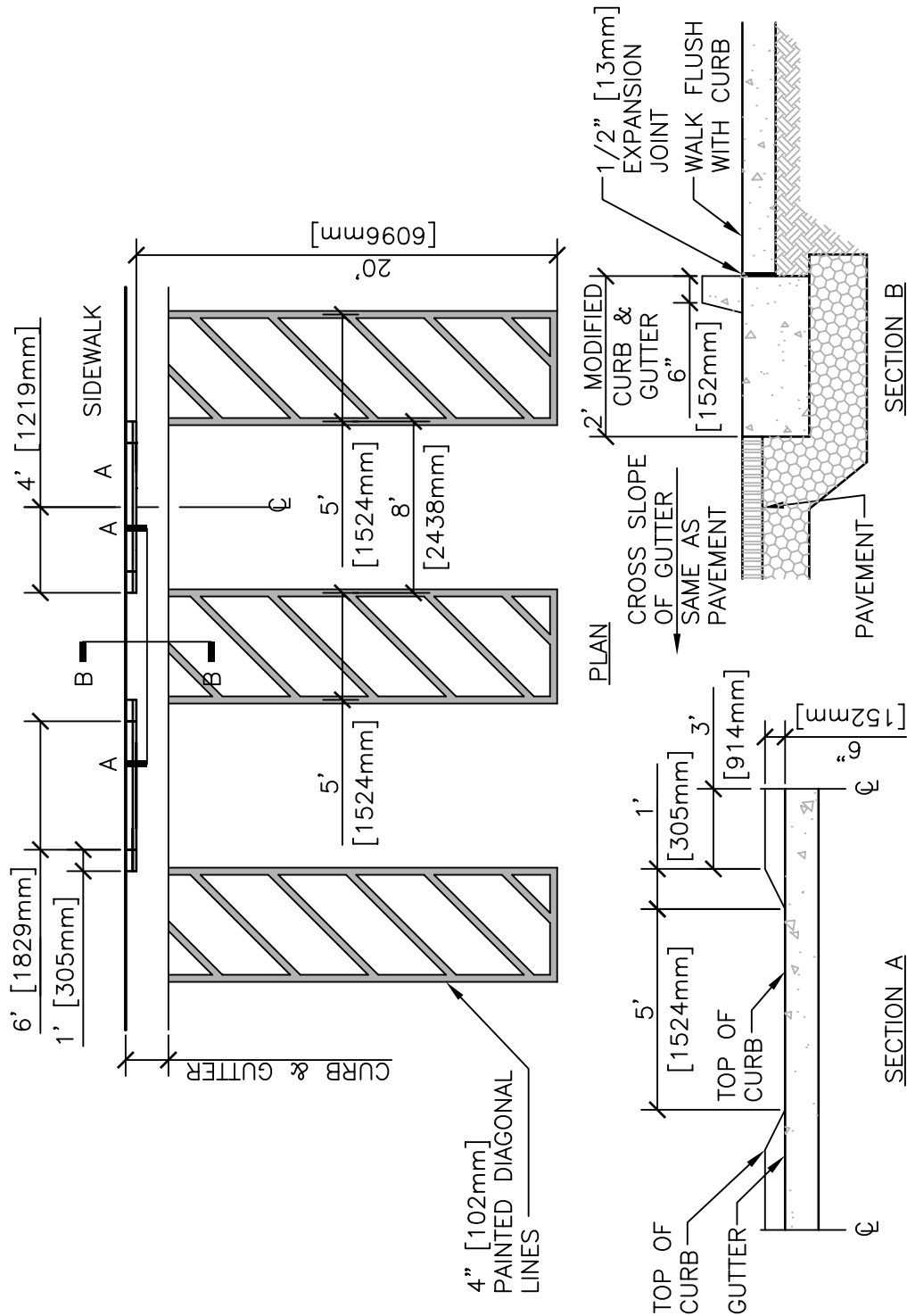
DETAIL TITLE / COMBINATION CURB-WHEEL STOP

SCALE :NONE

DATE ISSUED: DECEMBER 2008

CAD DETAIL NO.:

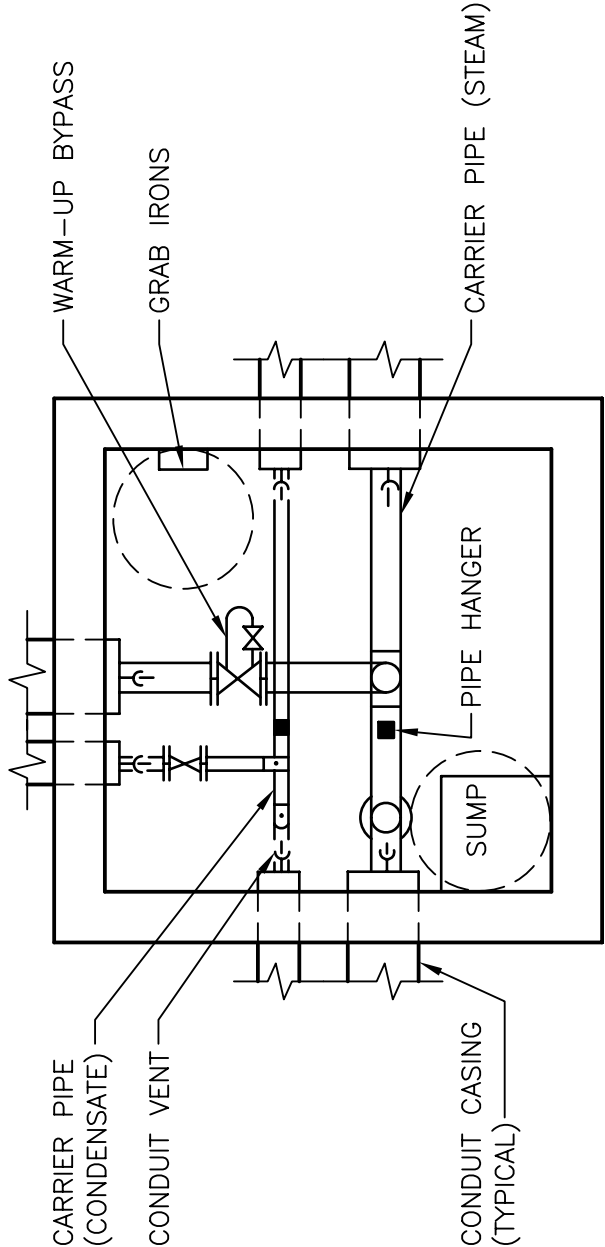
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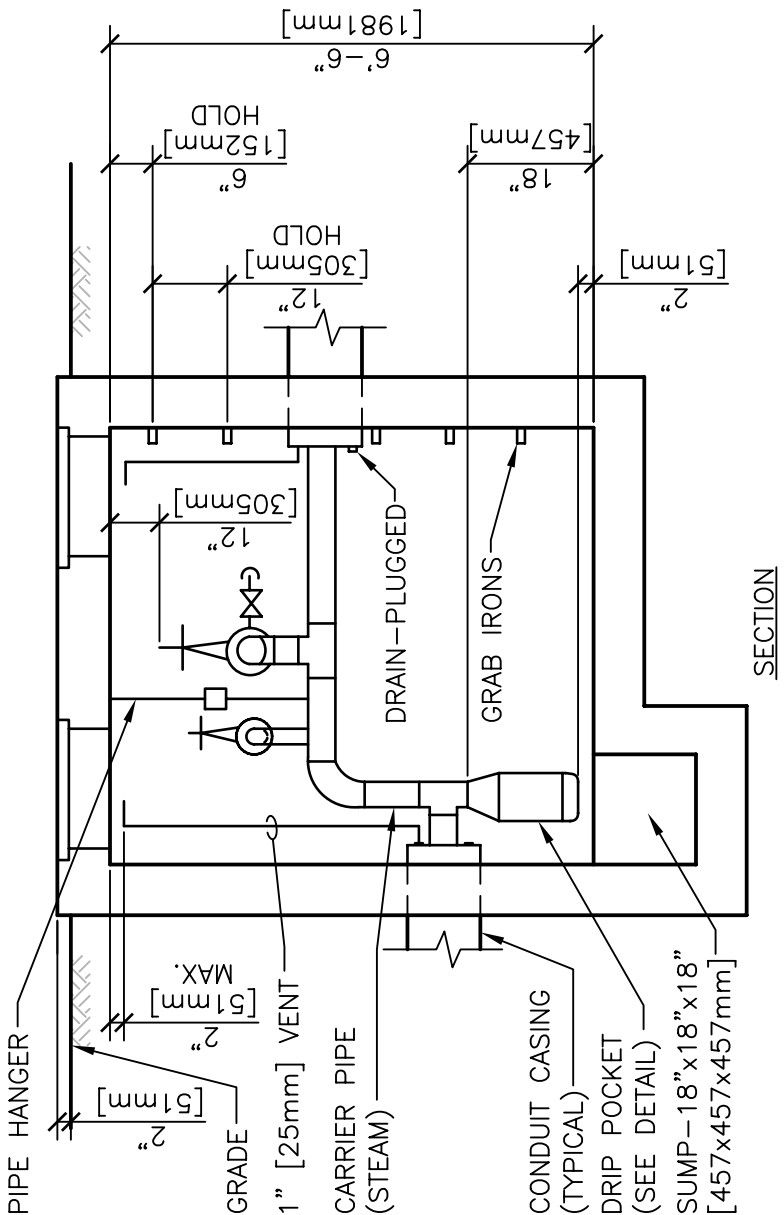
COMBINATION CURB-WHEEL STOP

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PLAN VIEW



NOTES:

- 1. DIMENSIONS ARE MINIMUM UNLESS OTHERWISE NOTED.
- 2. PROVIDE STRUCTURAL DESIGN SUITABLE FOR SITE LOCATION.
- 3. FOR ADDITIONAL MANHOLE DETAILS INCLUDING STRUCTURE, VENTILATION, AND DRAINAGE CONSULT ARMY TECHNICAL MANUAL, TM-5-810-7.
- 4. MINIMUM FLOOR SPACE 6'x6' [1829x1829mm].

CONCRETE STEAM MANHOLE
WITH TYPICAL PIPING

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