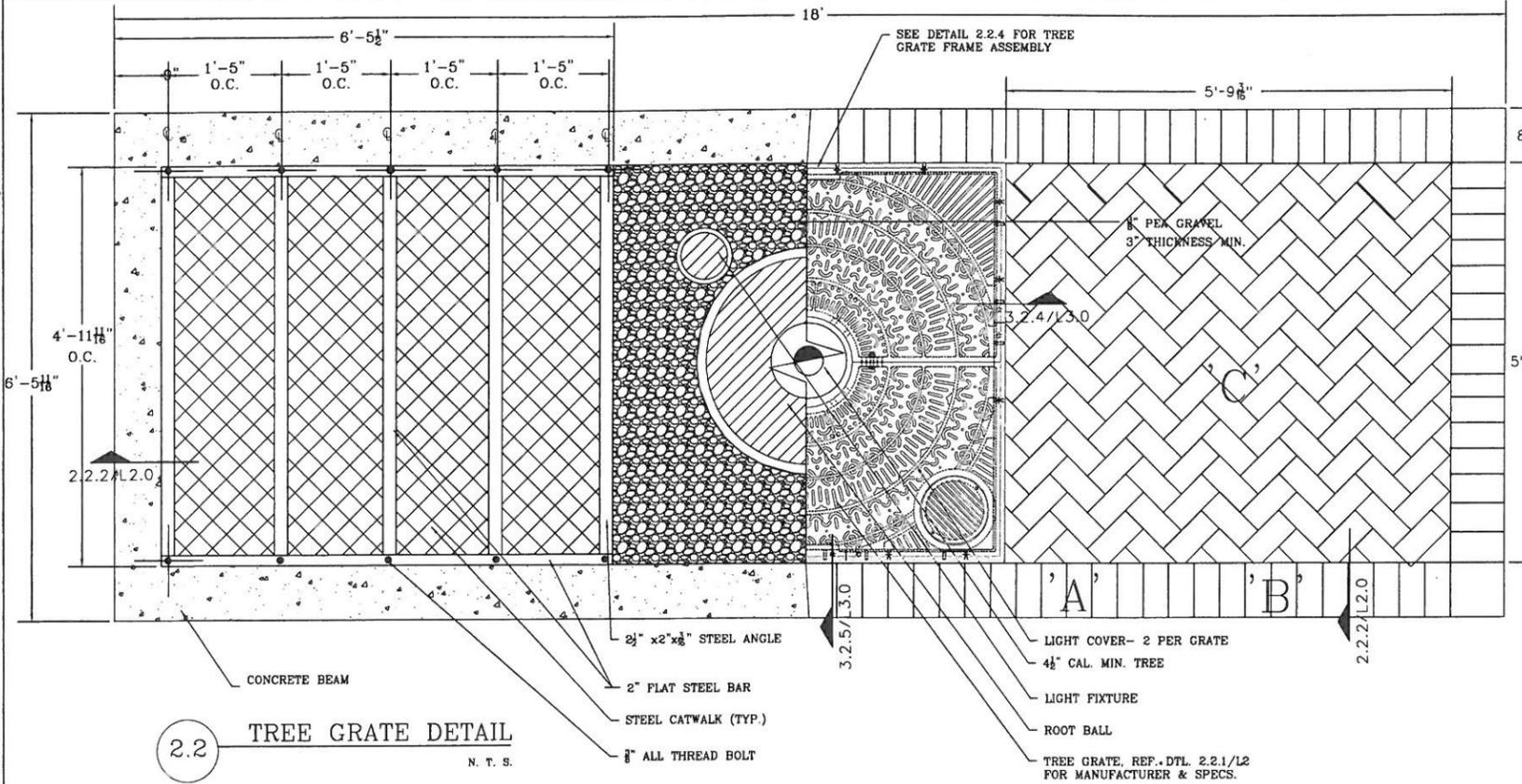


NOTE: ROOT ZONE OUTSIDE OF TREE PROTECTION BARRIER SHOULD BE COVERED AT ALL TIMES WITH 6" OF BARK MULCH THROUGHOUT THE CONSTRUCTION PHASE. EXISTING TREES SHOULD BE DEEP WATERED AS SPECIFIED IN ITEM 801 & 802

2.1 EXPOSED ROOT PROTECTION DETAIL

NOTE: FOR THOSE TREES THAT DO NOT MEET THE TREE PRESERVATION ORDINANCE REQUIREMENTS PRESERVATION SHALL BE DETERMINED ON A CASE BY CASE BASIS

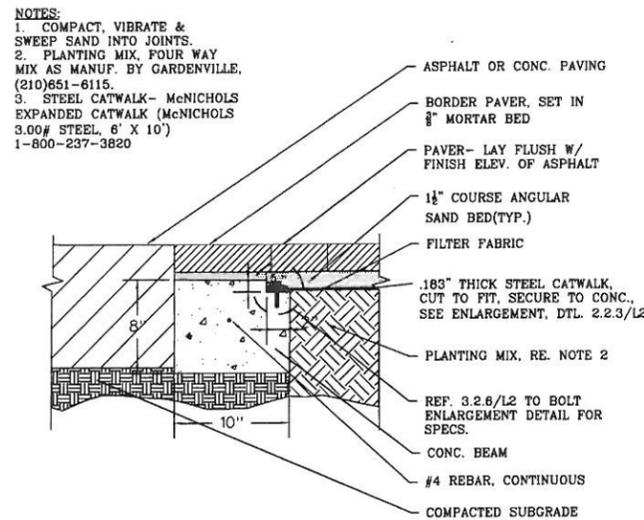
N. T. S.



2.2 TREE GRATE DETAIL

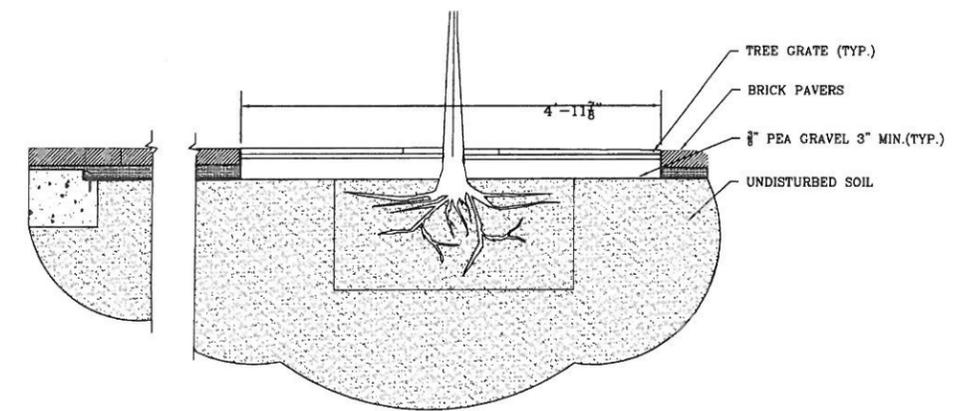
N. T. S.

- NOTES:
- PAVER 'A': 8 5/8" x 23 3/4" THICKNESS CONC. PAVER (CITY STONE II) CASTONE COLOR, BY PAVESTONE. 1-800-580-PAVE.
 - PAVER 'B': 4 5/8" x 8 5/8" x 2 3/8" THICKNESS, PATTERN AS SHOWN ON PLAN, CONC. PAVER (HOLLAND STONE) CAST STONE COLOR, MANUF. BY PAVESTONE.
 - PAVER 'C': 4 5/8" x 8 5/8" x 2 3/8" THICKNESS, 45° HERRINGBONE PATTERN, CONC. PAVER (HOLLAND STONE), ANTIQUE COLOR, MANUF. BY PAVESTONE.



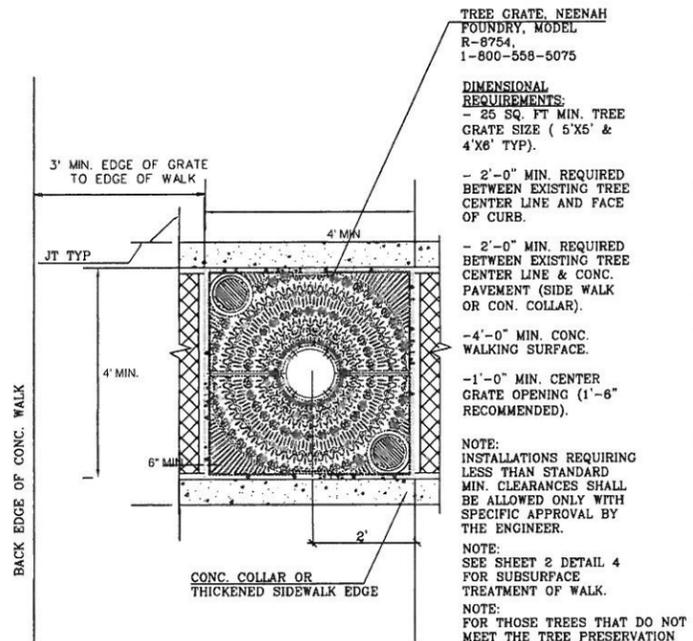
2.2.2 SECTION: PAVER @ ASPHALT

N. T. S.



2.2.3 TREE WELL SECTION

N. T. S.



2.2.1 TREE GRATE PLAN VIEW

N. T. S.

TREE GRATE, NEENAH FOUNDRY, MODEL R-8754, 1-800-558-5075

DIMENSIONAL REQUIREMENTS:
- 25 SQ. FT. MIN. TREE GRATE SIZE (5'x5' & 4'x8' TYP).

- 2'-0" MIN. REQUIRED BETWEEN EXISTING TREE CENTER LINE AND FACE OF CURB.

- 2'-0" MIN. REQUIRED BETWEEN EXISTING TREE CENTER LINE & CONC. PAVEMENT (SIDE WALK OR CON. COLLAR).

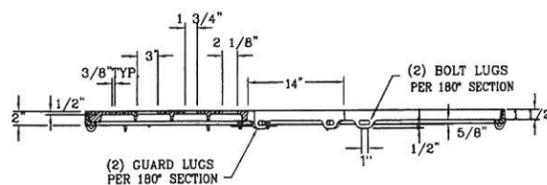
- 4'-0" MIN. CONC. WALKING SURFACE.

- 1'-0" MIN. CENTER GRATE OPENING (1'-6" RECOMMENDED).

NOTE: INSTALLATIONS REQUIRING LESS THAN STANDARD MIN. CLEARANCES SHALL BE ALLOWED ONLY WITH SPECIFIC APPROVAL BY THE ENGINEER.

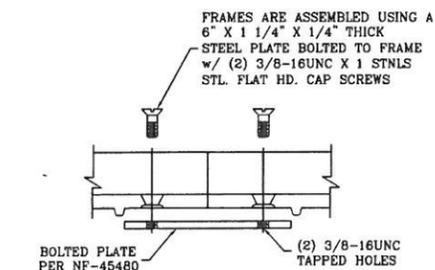
NOTE: SEE SHEET 2 DETAIL 4 FOR SUBSURFACE TREATMENT OF WALK.

NOTE: FOR THOSE TREES THAT DO NOT MEET THE TREE PRESERVATION ORDINANCE REQUIREMENTS PRESERVATION SHALL BE DETERMINED ON A CASE BY CASE BASIS



2.2.4 SECTION: TREE GRATE FRAME

N. T. S.



2.2.5 SECTION: GRATE FRAME ASSEMBLY

N. T. S.

PREPARED BY: FERNANDEZ FRAZER WHITE & ASSOC. INC. & C. F. ZAVALA GROUP

CITY OF SAN ANTONIO



DEPARTMENT OF PUBLIC WORKS

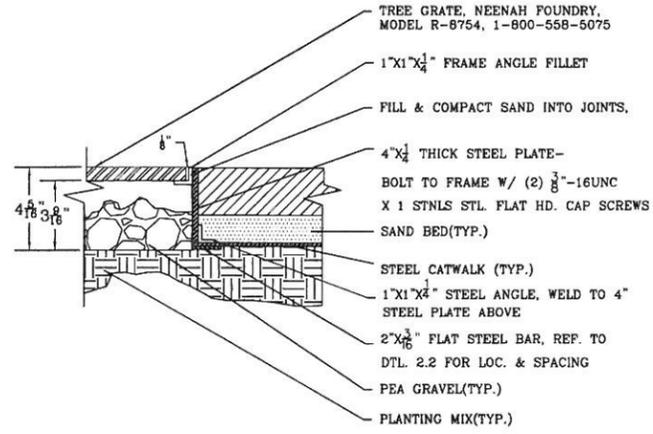
CITY OF SAN ANTONIO
TREE PROTECTION DETAILS

TREE PRESERVATION

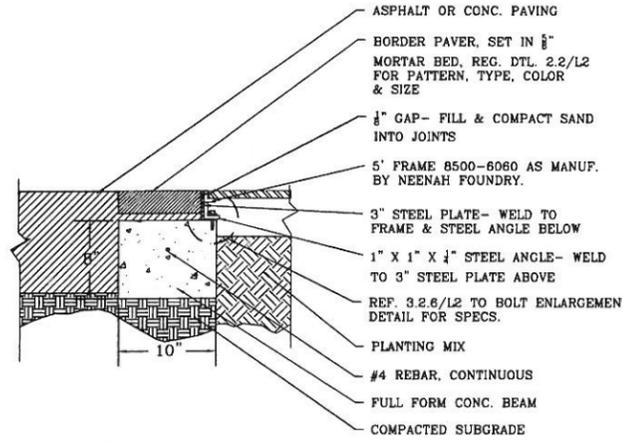
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CHECKED:		TEXAS		10
DRAWN:	STATE DIST. NO.	COUNTY	CONTROL NO.	SECT. NO.
CHECKED:		BEXAR		JOB NO. HIGHWAY NO.

NOTES:

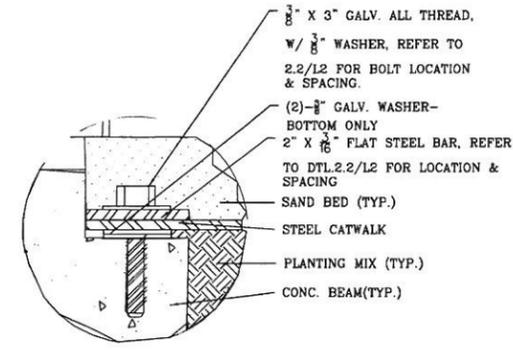
- 5' FRAME 8500-6080 AS MANUFACTURED BY NEENAH FOUNDRY.
- REMOVE CROSSBAR FROM FRAME BEFORE INSTALLATION.



3.2.4 TREE GRATE/FRAME @ PAVERS
N. T. S.

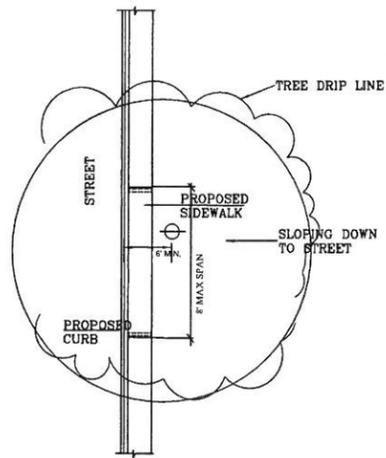


3.2.5 SECTION: PAVER @ TREE GRATE
N. T. S.



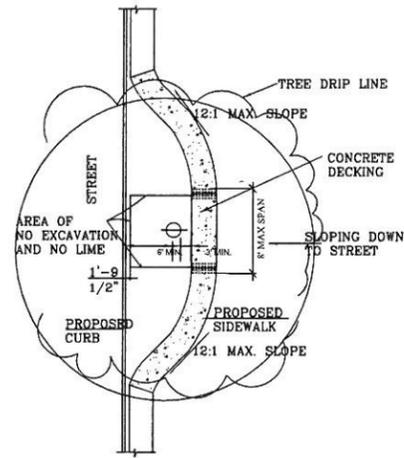
3.2.6 DETAIL: BOLT/CONC. CONNECTION
N. T. S.

AREA BENEATH PROPOSED SIDEWALKS IN THE DRIP LINE OF AN EXISTING TREE SHALL RECEIVE TREE VENTING AS PER OPTIONS ON THESE SHEETS.



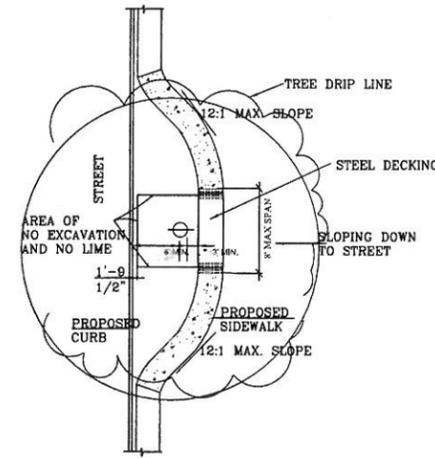
3.3 ELEVATED WALKWAY
N. T. S.

AREA BENEATH PROPOSED SIDEWALKS IN THE DRIP LINE OF AN EXISTING TREE SHALL RECEIVE TREE VENTING AS PER OPTIONS ON THESE SHEETS.



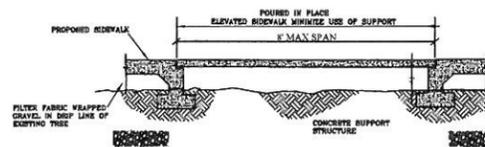
3.3.1 ELEVATED WALKWAY / CONCRETE DECKING
N. T. S.

AREA BENEATH PROPOSED SIDEWALKS IN THE DRIP LINE OF AN EXISTING TREE SHALL RECEIVE TREE VENTING AS PER OPTIONS ON THESE SHEETS.



3.3.2 ELEVATED WALKWAY / STEEL DECKING
N. T. S.

NOTE: DESIGN STEEL PLATE SUPPORT ACCORDING TO SPECIFIED WIDTH AND LENGTH.



3.3.4 ELEVATED WALKWAY SECTION
N. T. S.

NOTE: FOR THOSE TREES THAT DO NOT MEET THE TREE PRESERVATION ORDINANCE REQUIREMENTS PRESERVATION SHALL BE DETERMINED ON A CASE BY CASE BASIS

NOTE: FOR TREE AERATION SYSTEMS LOCATED UNDER A PRIVATE OR PUBLIC ROADWAY - THE PROJECT ENGINEER SHALL SUBMIT FOR APPROVAL, A PAVEMENT DESIGN SUPPORTED BY A GEOTECHNICAL REPORT THAT MEETS THE REQD. STRUCTURAL NUMBERS AND COMPACTION OF THE SUBGRADE, ABOVE THE PROPOSED SYSTEM OF TREE AERATION, IN ACCORDANCE WITH UDC 35-506(P) PAVEMENT STANDARDS, AND CITY OF SAN ANTONIO'S STANDARD SPECS. FOR PUBLIC WORKS CONSTRUCTION.

PREPARED BY: FERNANDEZ PRAZER WHITE & ASSOC. INC. & C. F. ZAVALA GROUP

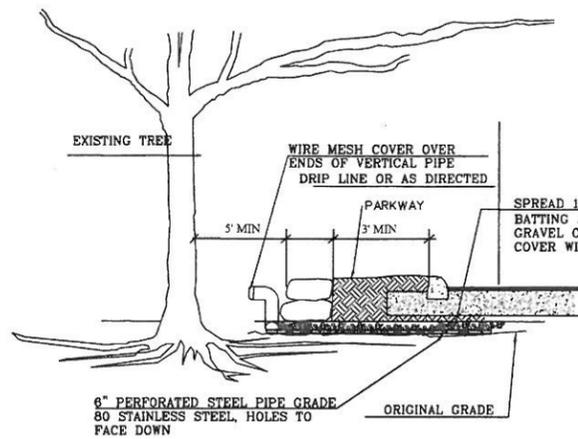
CITY OF SAN ANTONIO



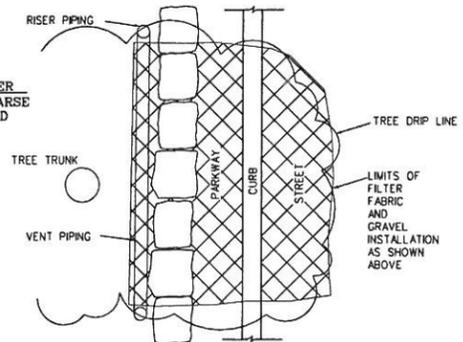
DEPARTMENT OF PUBLIC WORKS

CITY OF SAN ANTONIO
TREE PROTECTION

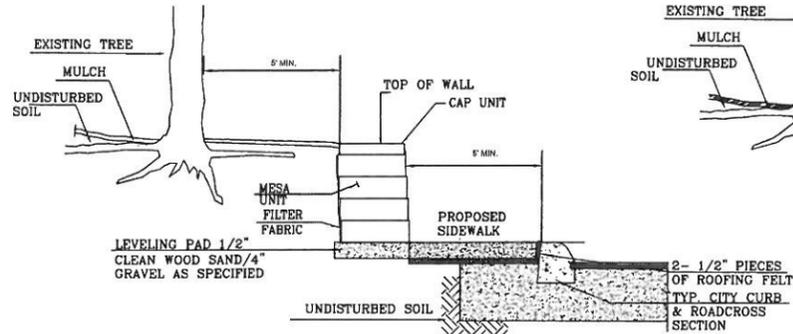
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CHECKED:		TEXAS		11
DRAWN: ABF:JR	STATE DIST. NO.	COUNTY	CONTROL NO.	SECT. NO.
CHECKED:		BEAR		



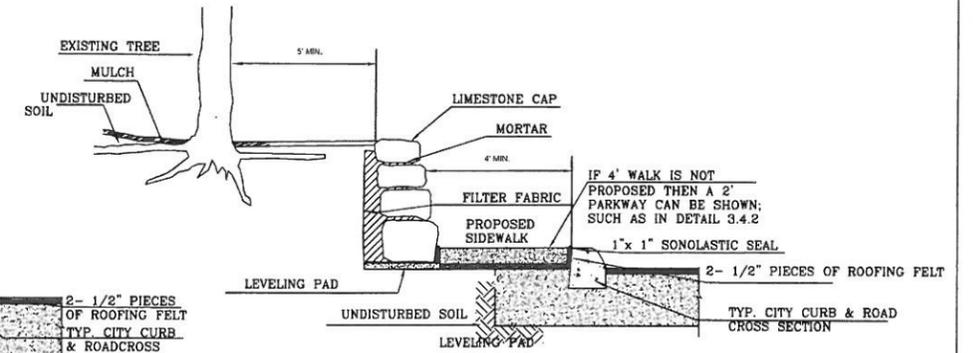
4.2 TREE AERATION DETAIL B
N. T. S.



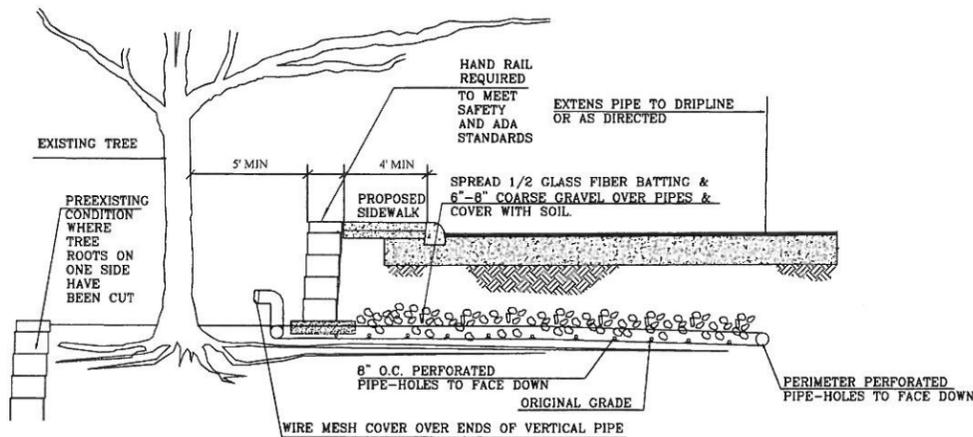
4.2.2 PLAN VIEW B
N. T. S.



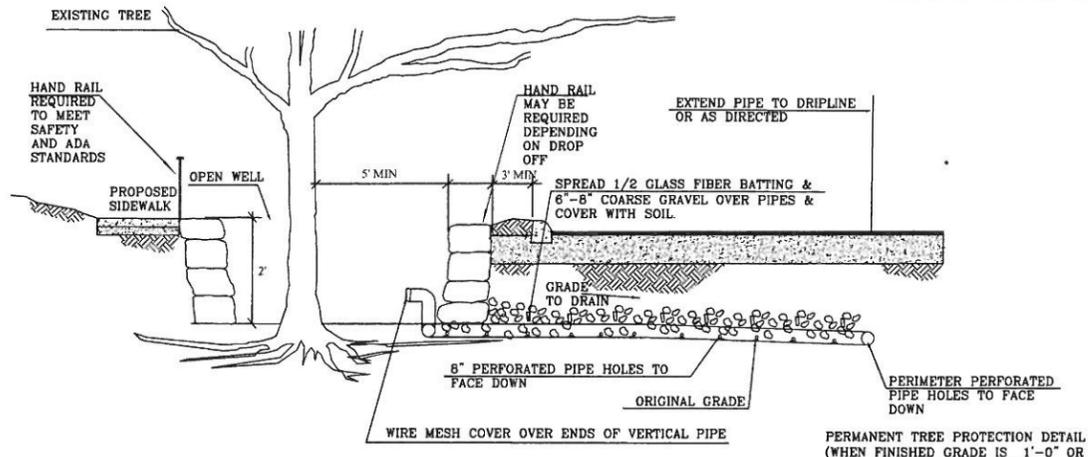
4.3 SEGMENTAL GRAVITY WALL
ADJACENT TO CURB
N. T. S.
NOTE:
THIS TYPE OF WALL CAN BE USED ON OTHER APPLICATIONS
TREES CANNOT BE PRESERVED IF THEY ARE CLOSER THAN 5 FEET
TO THE WALL



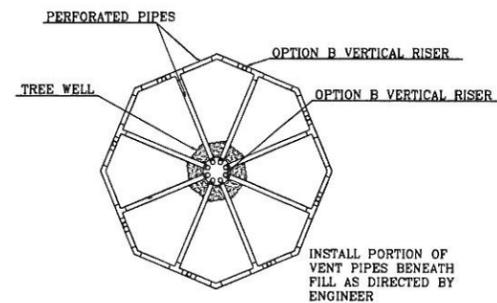
4.3.2 LIMESTONE BOULDER GRAVITY WALL
ADJACENT TO CURB
N. T. S.
NOTE:
THIS TYPE OF WALL CAN BE USED ON OTHER APPLICATIONS
TREES CANNOT BE PRESERVED IF THEY ARE CLOSER THAN 5 FEET
TO THE WALL



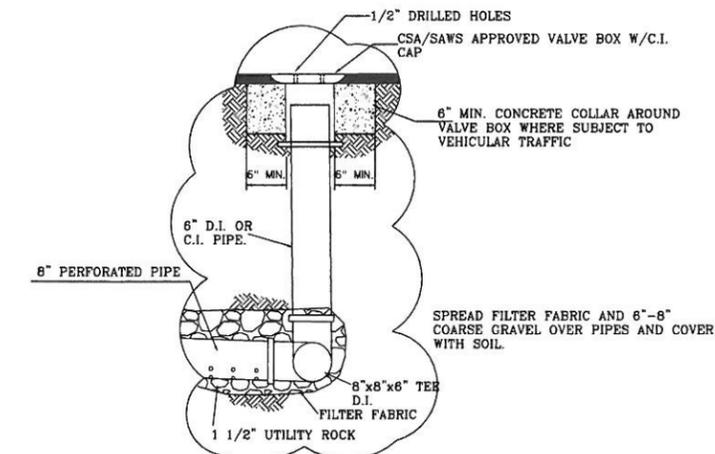
4.4 TREE AERATION DETAIL C
N. T. S.



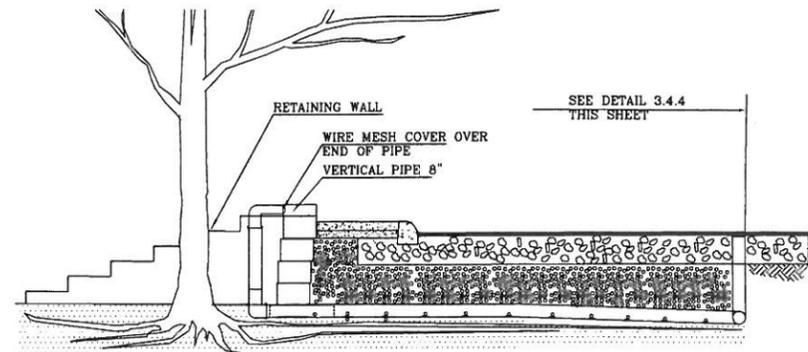
4.4.2 TREE AERATION DETAIL C
N. T. S.
NOTE: THIS AERATION SYSTEM CAN BE USED FOR NEW PROJECTS WHERE FILL IS OCCURRING SUCH AS PARKING LOTS OR CONSTRUCTION. DRAIN AWAY FROM EXISTING TREE.



4.4.3 PLAN VIEW C
N. T. S.

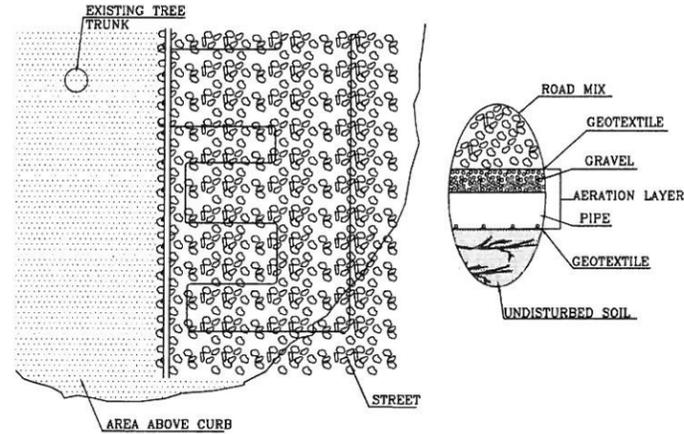


4.4.4 TREE AERATION SECTION C
N. T. S.



4.4.5 TREE AERATION DETAIL D
N. T. S.

NOTE: THIS AERATION SYSTEM CAN BE USED FOR NEW PROJECTS WHERE FILL IS OCCURRING SUCH AS PARKING LOTS OR ROADWAY CONSTRUCTION. DRAIN AWAY FROM EXISTING TREE.



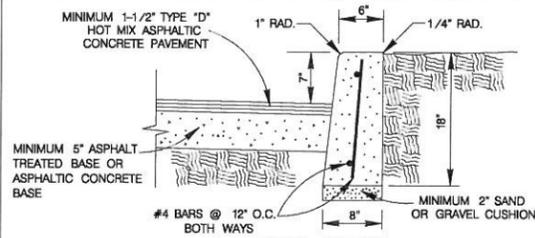
4.4.1 TREE AERATION PLAN VIEW D
N. T. S.

PREPARED BY: FERNANDEZ FRAZER WHITE & ASSOC. INC.
& C. F. ZAVALA GROUP

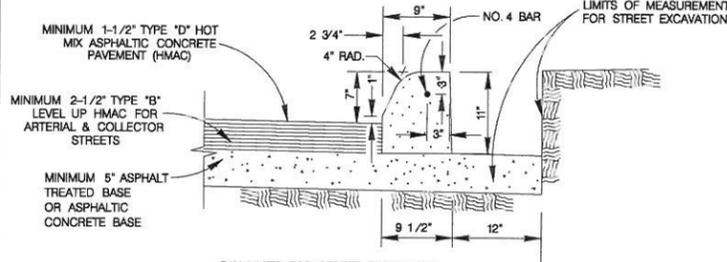
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

CITY OF SAN ANTONIO
TREE PROTECTION DETAILS
TREE PRESERVATION

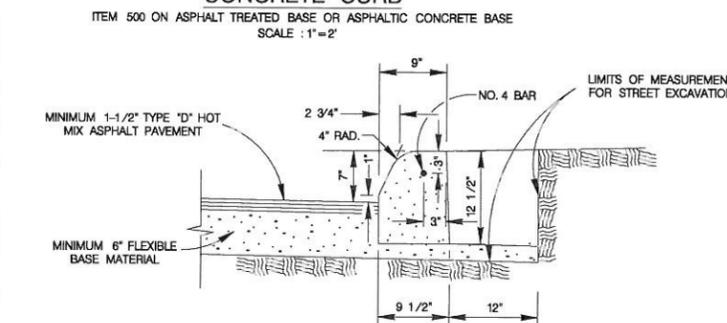
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CHECKED:	TEXAS		12
DRAWN:	STATE DIST. NO.	COUNTY	CONTROL SECT. NO.
CHECKED:	BEKAR		JOB NO. HIGHWAY NO.



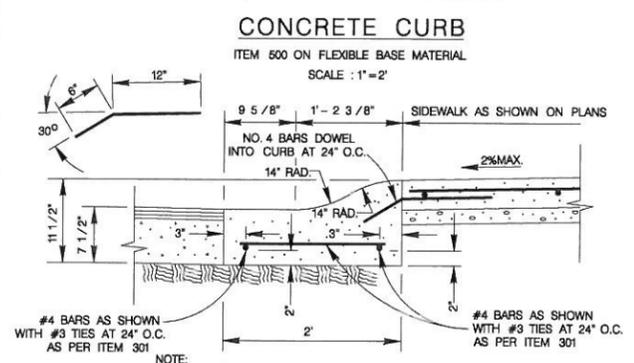
HEADER CURB
ITEM 500 ON SAND OR GRAVEL
SCALE: 1"=2"



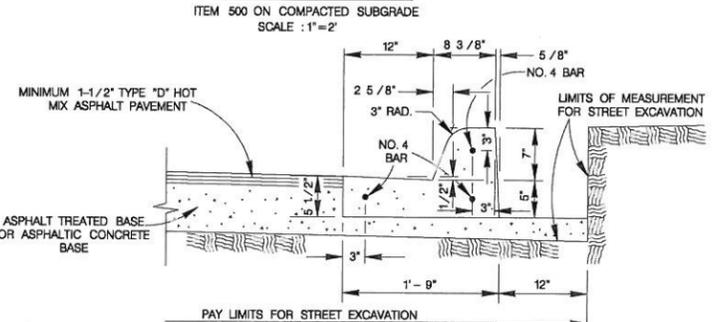
CONCRETE CURB
ITEM 500 ON ASPHALT TREATED BASE OR ASPHALTIC CONCRETE BASE
SCALE: 1"=2"



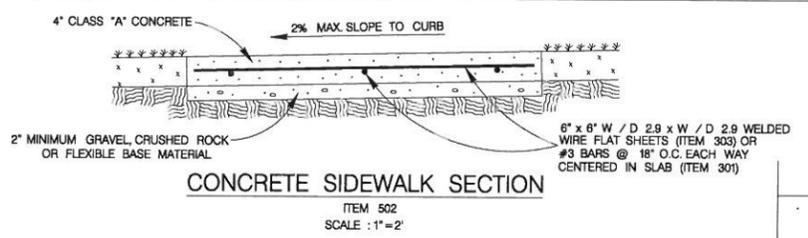
CONCRETE CURB
ITEM 500 ON FLEXIBLE BASE MATERIAL
SCALE: 1"=2"



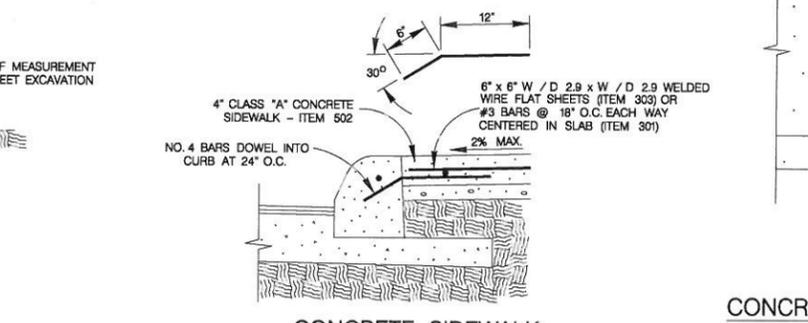
MOUNTABLE CURB
ITEM 500 ON COMPACTED SUBGRADE
SCALE: 1"=2"



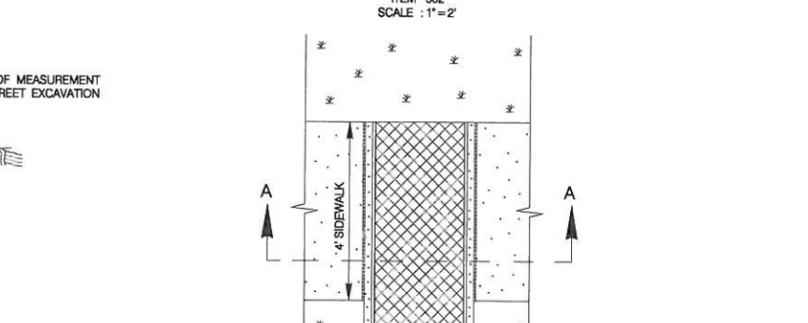
TYPICAL CURB & GUTTER DETAIL
ITEM 500 ON ASPHALT TREATED BASE OR ASPHALTIC CONCRETE BASE
SCALE: 1"=2"



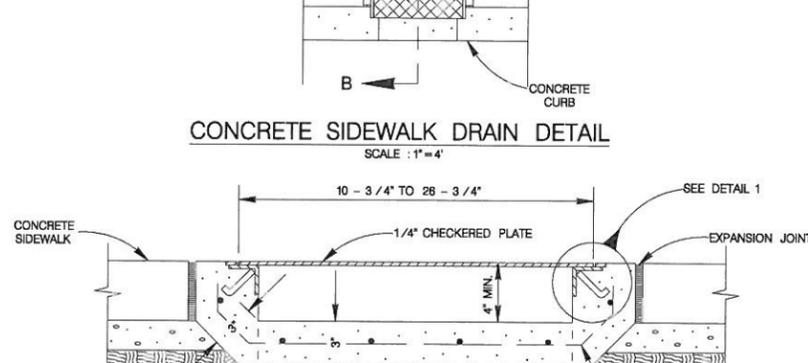
CONCRETE SIDEWALK SECTION
ITEM 502
SCALE: 1"=2"



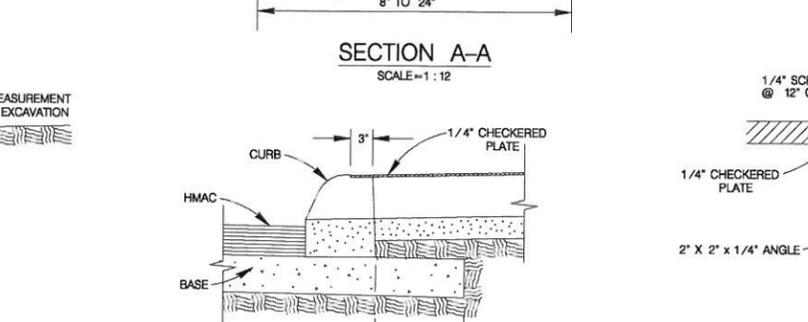
CONCRETE SIDEWALK ABUTTING CURB SECTION
ITEM 502
SCALE: 1"=2"



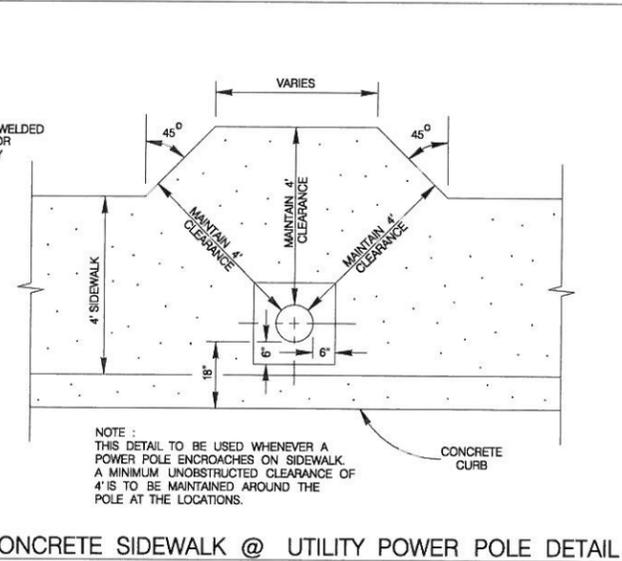
CONCRETE SIDEWALK DRAIN DETAIL
SCALE: 1"=4"



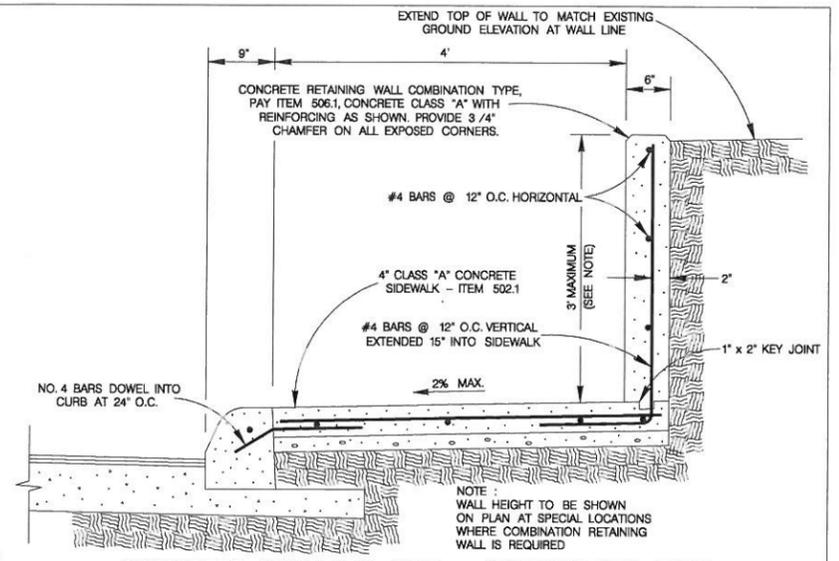
SECTION A-A
SCALE: 1:12



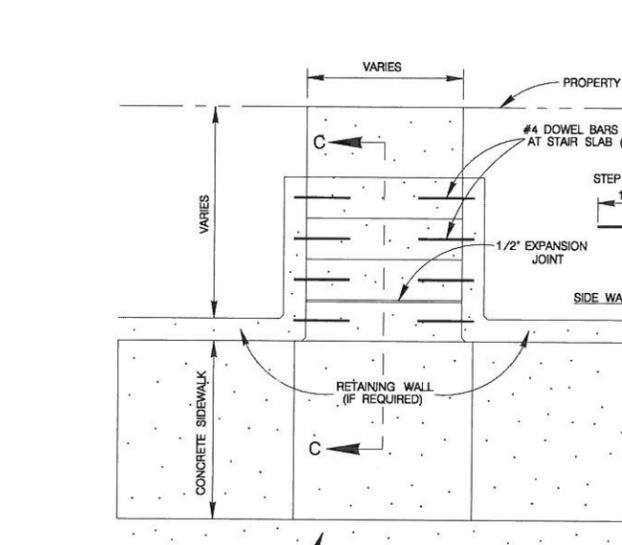
SECTION B
SCALE: 1"=2"



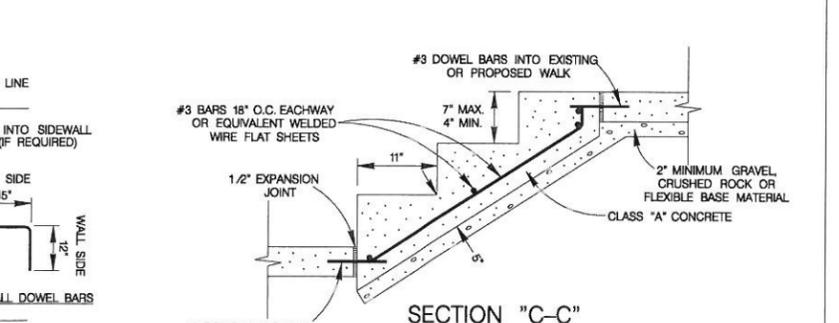
CONCRETE SIDEWALK @ UTILITY POWER POLE DETAIL
SCALE: 1"=4"



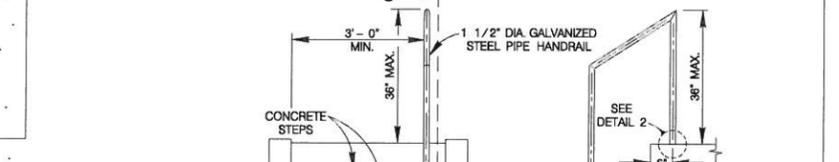
CONCRETE RETAINING WALL - COMBINATION TYPE
ITEM 506
SCALE: 1"=2"



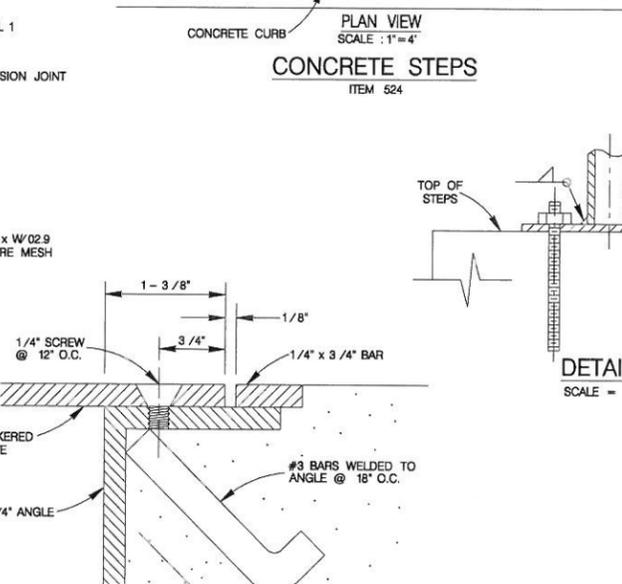
CONCRETE STEPS
ITEM 524
SCALE: 1"=4"



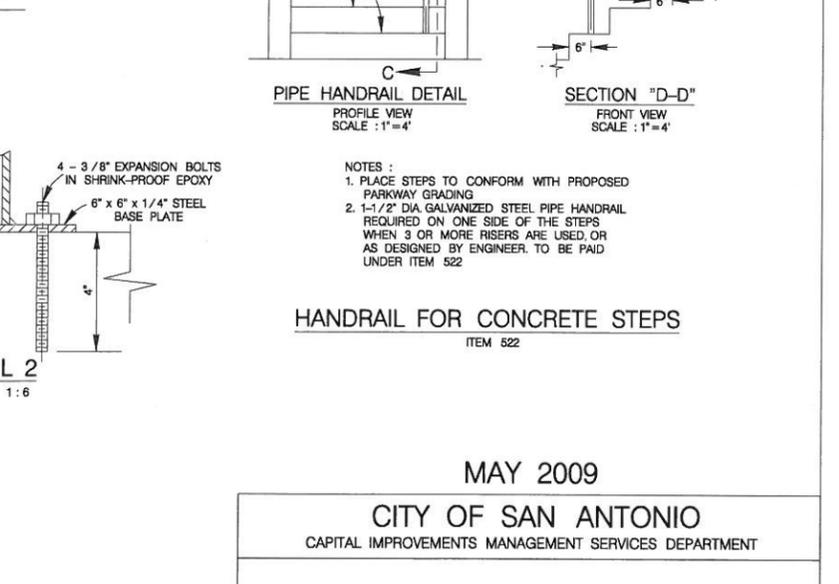
PIPE HANDRAIL DETAIL
SCALE: 1"=2"



HANDRAIL FOR CONCRETE STEPS
ITEM 522
SCALE: 1"=4"

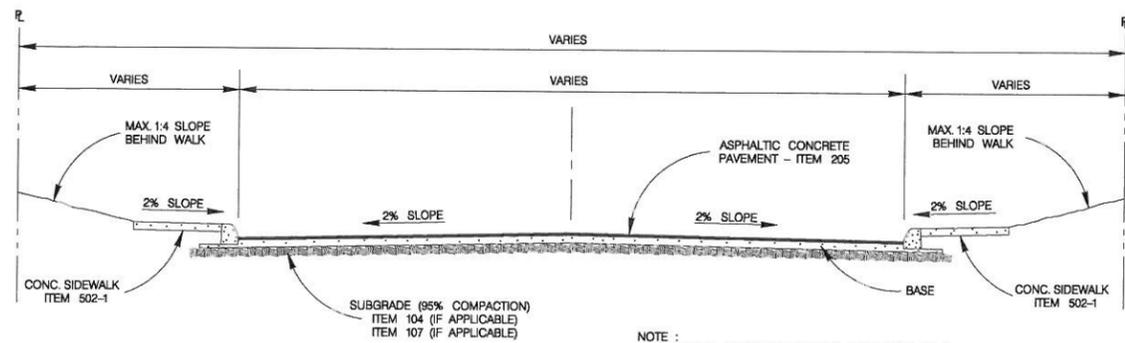


DETAIL 1
SCALE: 1:1



DETAIL 2
SCALE: 1:6

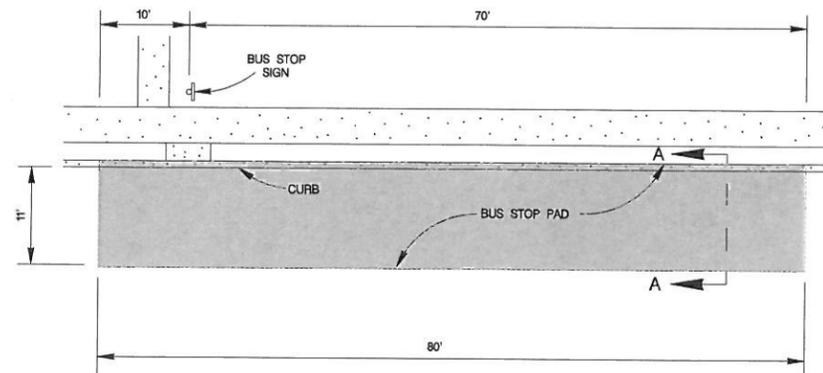
NOTES:
1. PLACE STEPS TO CONFORM WITH PROPOSED PARKWAY GRADING
2. 1-1/2" DIA. GALVANIZED STEEL PIPE HANDRAIL REQUIRED ON ONE SIDE OF THE STEPS WHEN 3 OR MORE RISERS ARE USED, OR AS DESIGNED BY ENGINEER, TO BE PAID UNDER ITEM 522



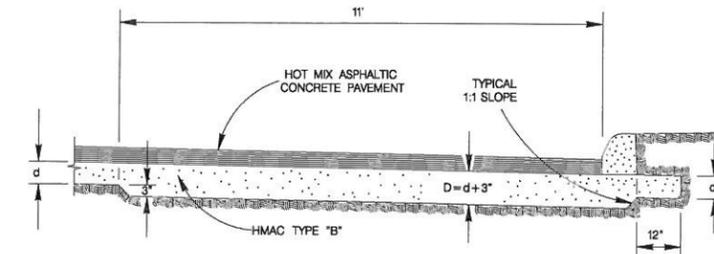
TYPICAL STREET SECTION

SCALE : 1" = 8'

NOTE :
FOR STREETS OTHER THAN LOCAL TYPE "A" STREETS,
THE EDGE OF THE SIDEWALK MUST BE LOCATED A
MINIMUM OF TWO FEET AWAY FROM THE BACK OF
THE CURB.

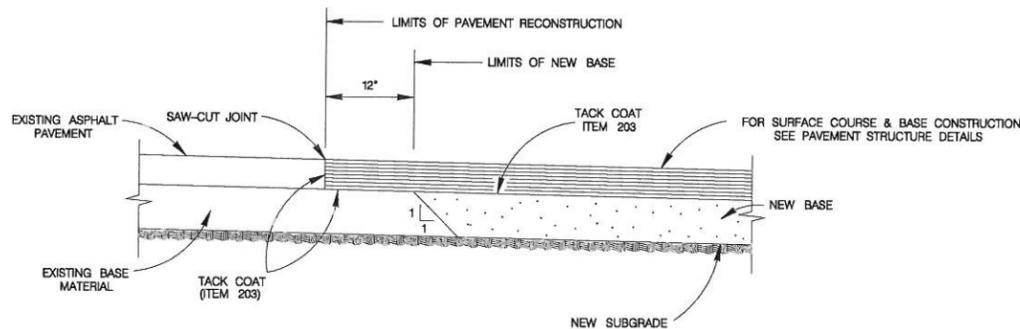


PLAN VIEW
SCALE : 1" = 20'



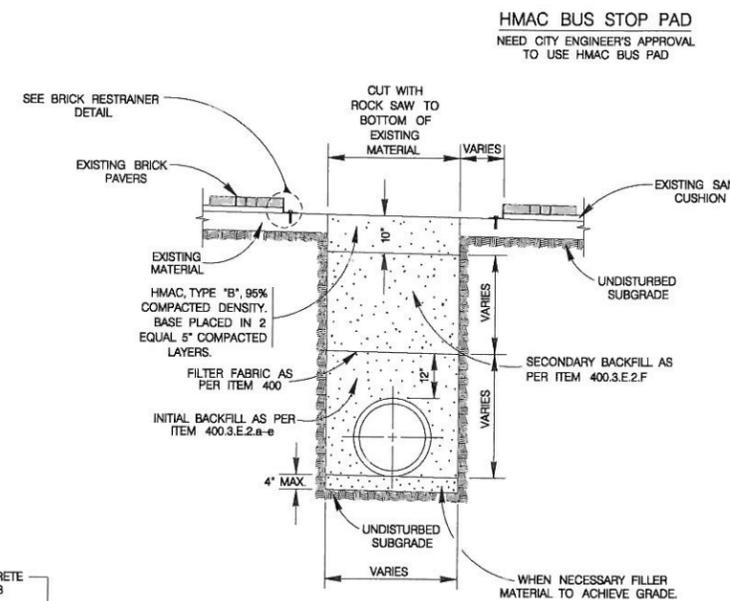
SECTION "A-A"
SCALE : 1" = 4'

NOTES :
1. EXCAVATION FOR THICKENED PAVEMENT SECTION WILL BE PAID UNDER ITEM NO. 104 "STREET EXCAVATION".
2. BASE MATERIALS :
A.) IF THE MEASUREMENT FOR THE HMAC MATERIAL IS PER TON, THICKENED PAVEMENT SECTION WILL BE PAID FOR UNDER ITEM NO. 205, TYPE "B" - PER TON.
B.) IF THE MEASUREMENT FOR THE HMAC MATERIAL IS PER SQUARE YARD, NO EXTRA PAYMENT WILL BE MADE FOR THE THICKENED PAVEMENT.



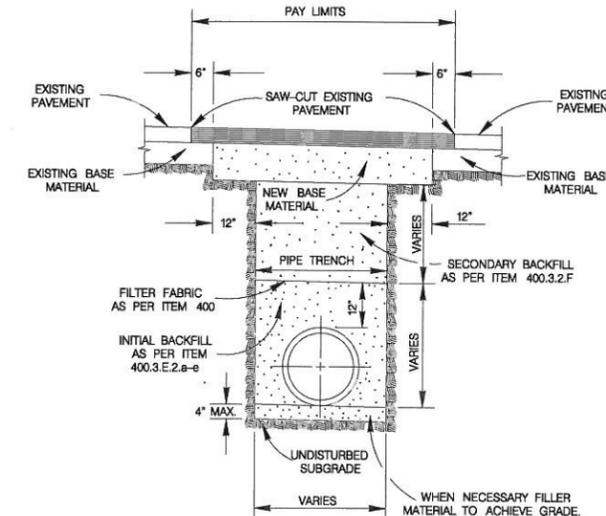
PAVEMENT JUNCTION DETAILS

SCALE : 1" = 2'



TYPICAL BASE REPLACEMENT FOR BRICK SURFACED STREET SECTION

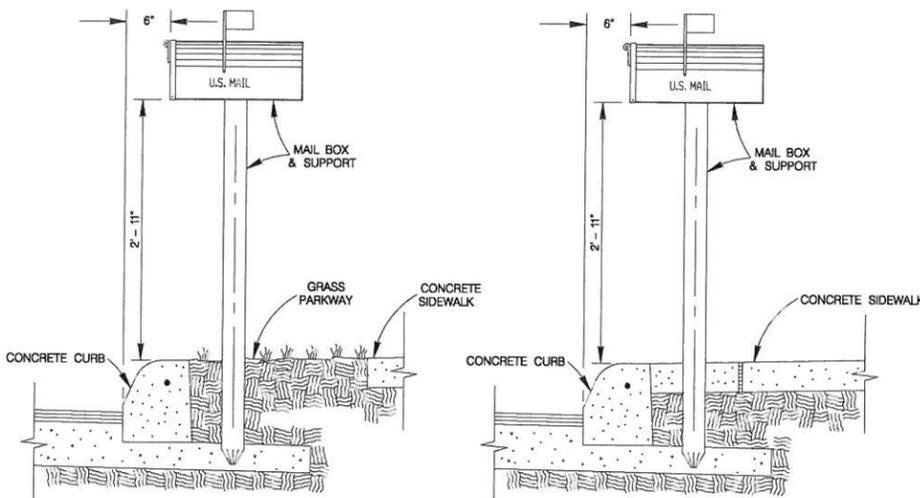
ITEM 511.3
SCALE : 1" = 4'



NOTES :
1. FOR LOCAL TYPE "A" & "B" STREETS (RESIDENTIAL) USE 6" ASPHALT CONCRETE BASE TYPE "B" WITH 1-1/2" TYPE "D" HOT MIX ASPHALTIC CONCRETE PAVEMENT.
2. FOR ARTERIAL & SECONDARY STREETS (COMMERCIAL) USE 12.5" TYPE "B" HOT MIX ASPHALTIC CONCRETE PAVEMENT LEVELING-UP COURSE & 1-1/2" TYPE "D" HOT MIX ASPHALTIC CONCRETE PAVEMENT SURFACE COURSE.

TYPICAL PAVEMENT REPLACEMENT

ITEM 511
SCALE : 1" = 4'



MAIL BOX PERPENDICULAR TO CURB

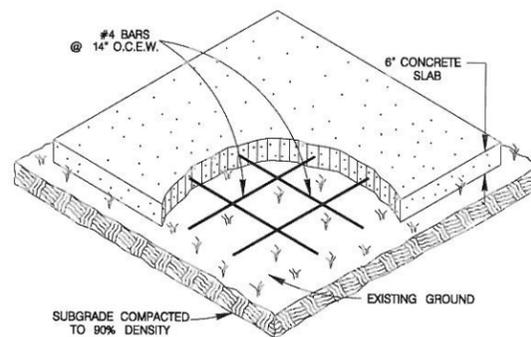
WHEN SIDEWALK IS DETACHED FROM CURB
SCALE : 1" = 2'

MAIL BOX PERPENDICULAR TO CURB

WHEN SIDEWALK IS ATTACHED TO CURB
SCALE : 1" = 2'

MAIL BOX LOCATION

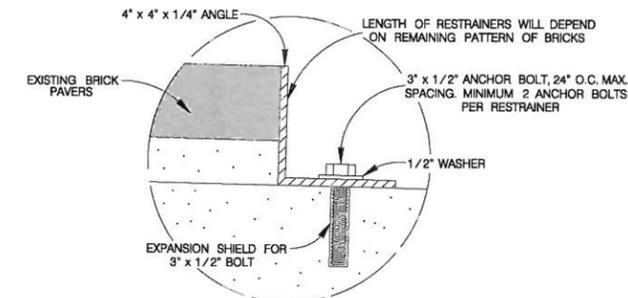
ITEM 513.1



MAIL BOX PAD NOTES :
1. THE CONTRACTOR WILL CONSTRUCT SLABS FOR "TEMPORARY MAIL BOX COLLECTION PAD" FOR THE UNITED STATES POSTAL SERVICE WITH LOCATIONS AND SIZES SPECIFIED BY THE CITY ENGINEER DURING CONSTRUCTION.
2. THE CONSTRUCTION OF SLABS SHALL CONFORM TO ITEM 513 "REMOVING AND RELOCATING MAILBOXES".
3. PAYMENT WILL BE MADE UNDER ITEM 513.2 "COMMUNITY MAILBOX SLAB - PER SQUARE YARD".
4. UNIT PRICE WILL INCLUDE REMOVAL OF "TEMPORARY MAIL BOX COLLECTION PAD" SLABS AT THE END OF THE PROJECT. NO SEPARATE PAY ITEM.

COMMUNITY MAIL BOX SLAB

ITEM 513.2
SCALE : 1" = 4'

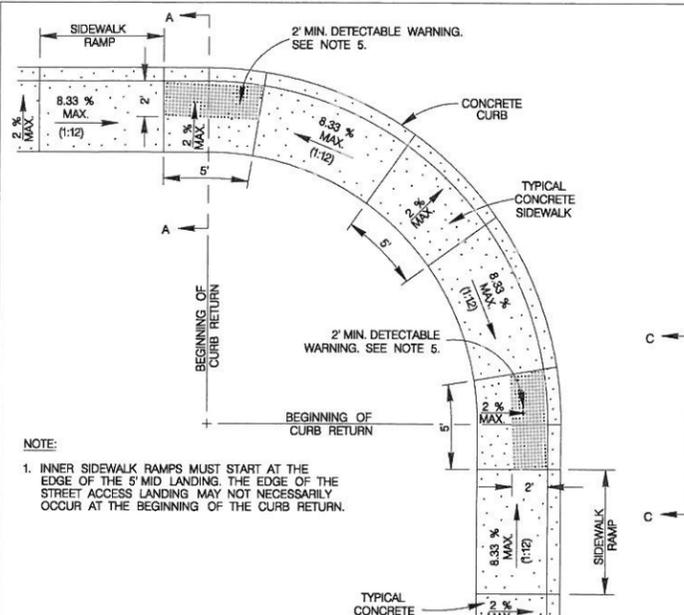


BRICK RESTRAINER DETAIL

SCALE = 1 : 6

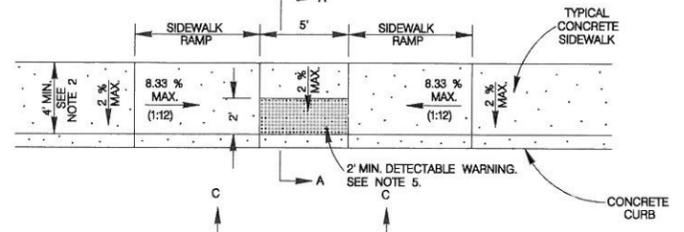
FEBRUARY 2010
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MISCELLANEOUS
CONSTRUCTION STANDARDS II



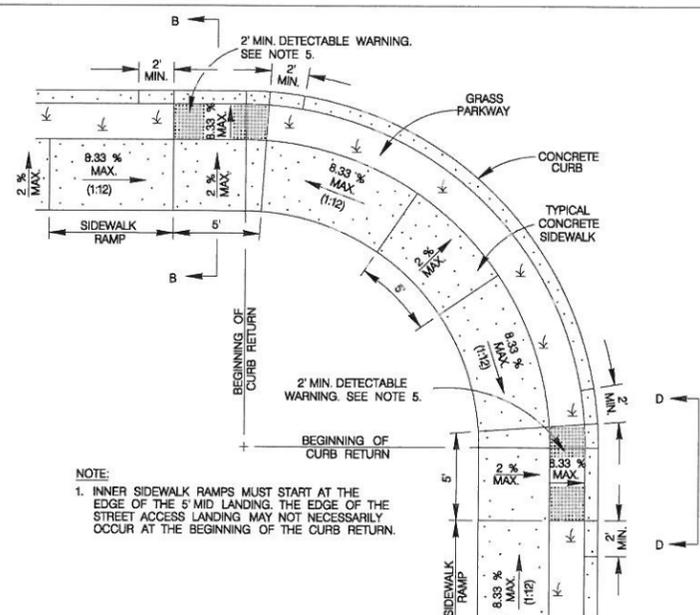
TYPICAL SIDEWALK RAMP - TYPE I

SCALE : 1"=10'



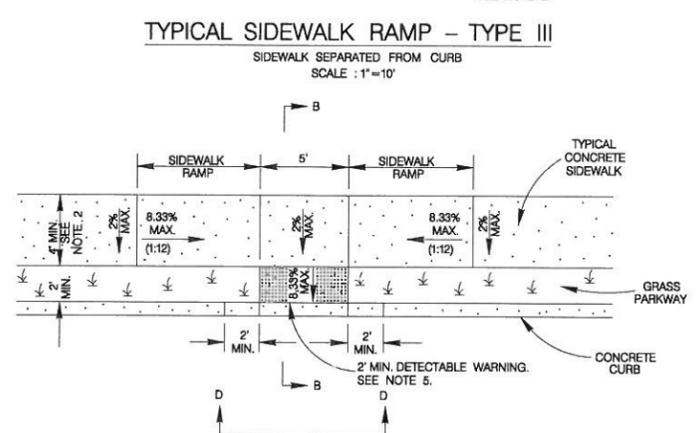
TYPICAL SIDEWALK RAMP - TYPE II

SCALE : 1"=10'



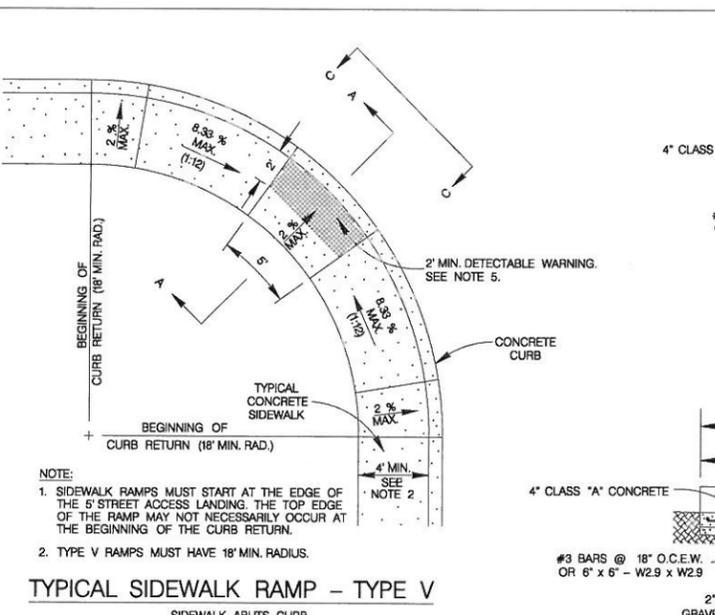
TYPICAL SIDEWALK RAMP - TYPE III

SCALE : 1"=10'



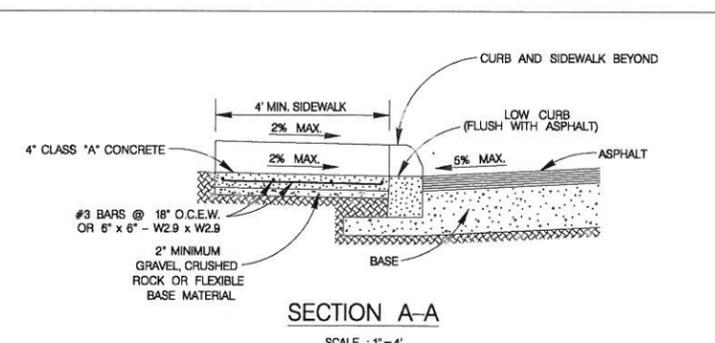
TYPICAL SIDEWALK RAMP - TYPE IV

SCALE : 1"=10'



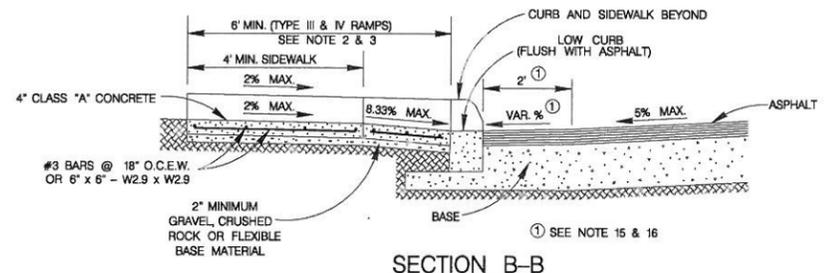
TYPICAL SIDEWALK RAMP - TYPE V

SCALE : 1"=10'



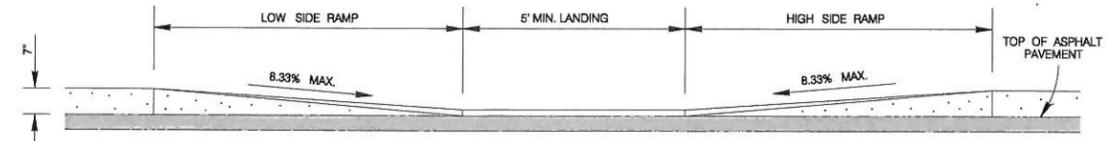
SECTION A-A

SCALE : 1"=4'



SECTION B-B

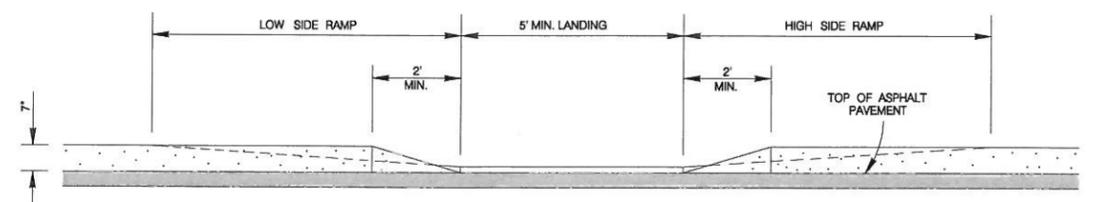
SCALE : 1"=4'



SECTION C-C

CURB PROFILE WHERE SIDEWALK ABUTS CURB

SCALE : 1"=4'

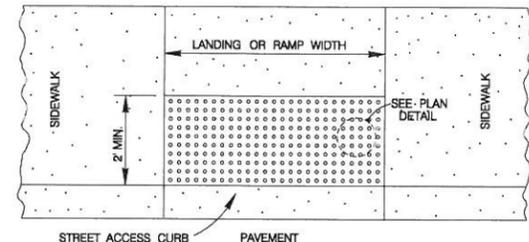


SECTION D-D

CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB

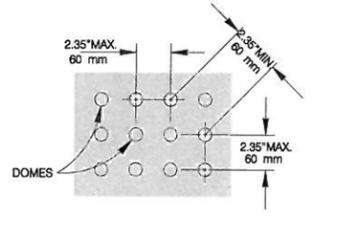
SCALE : 1"=4'

- GENERAL NOTES**
- WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
 - FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.
 - FOR OTHER THAN LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE BACK OF CURB OR AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
 - SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
 - ALL CURB-RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23 MM), A HEIGHT OF NOMINAL 0.2 INCHES (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE A CAST-IN-PLACE TILE CONFORMING TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS OR PAVERS CONFORMING TO TxDOT STANDARD PED-05, PEDESTRIAN FACILITIES.
 - DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
 - SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
 - CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS *500 - CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER AND /OR *502 - CONCRETE SIDEWALKS, RAMP SURFACE SHALL BE BRUSH FINISHED.
 - THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
 - SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
 - WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
 - REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" - W2.9 x W2.9 WIRE MESH.
 - SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
 - SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
 - THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33-(2.67)=11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
 - IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
 - ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT.



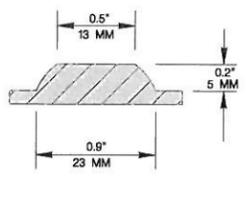
DETECTABLE WARNING SURFACE

SCALE : 1"=4'



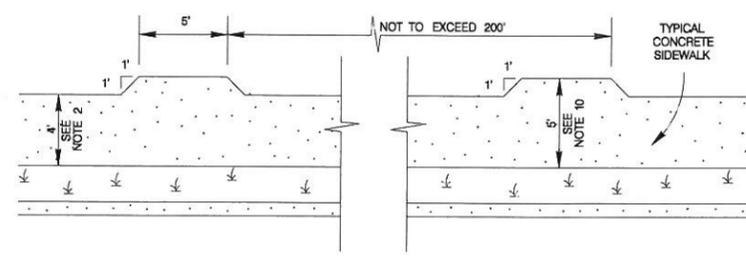
PLAN DETAIL

NO SCALE



DOMES SECTION

NO SCALE



SIDEWALK PASSING SPACE

SCALE : 1"=10'

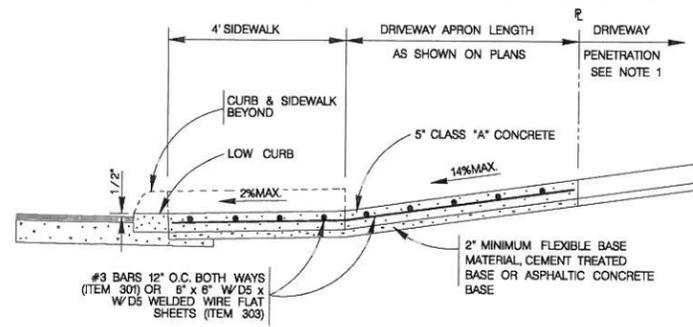
GUTTER SLOPE	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

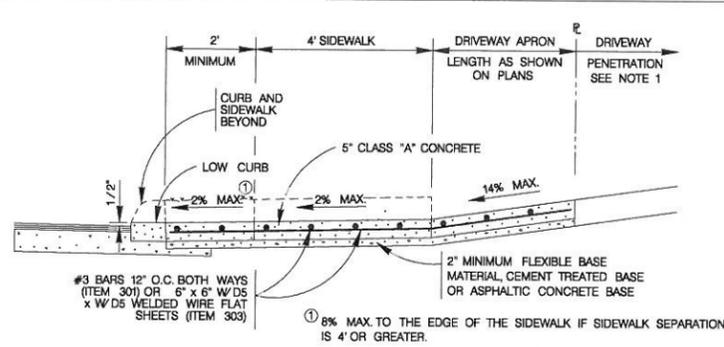
WHEELCHAIR RAMP STANDARDS

NOTE:
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED FOR DETECTABLE WARNING ON WHEELCHAIR RAMPS. CONTRACTOR MUST SUBMIT TRUNCATED DOME INFORMATION THAT IS TO BE USED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.



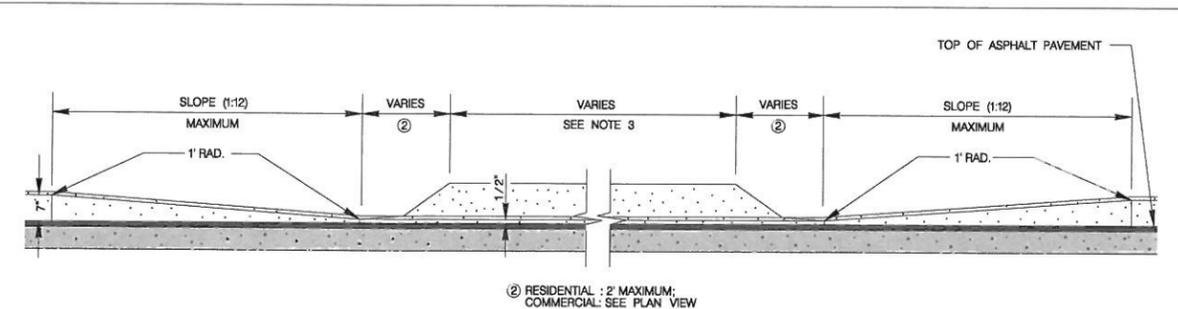
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.1



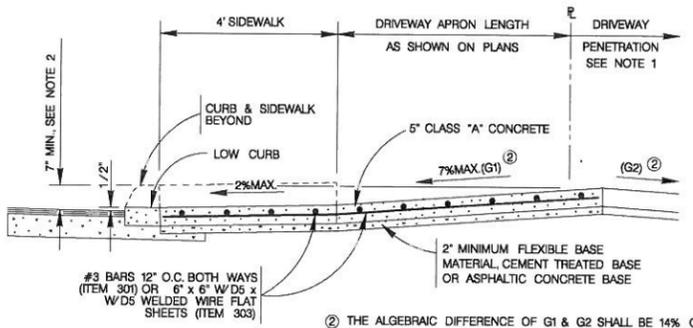
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1



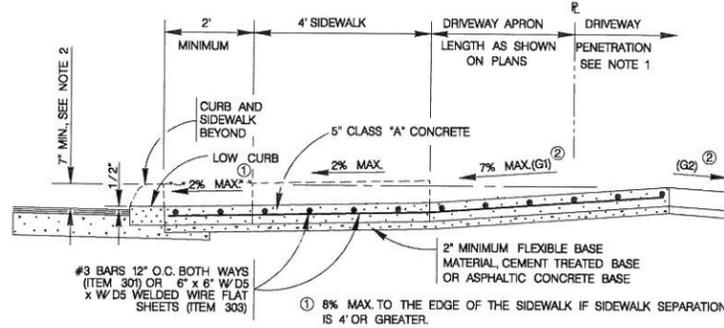
CURB PROFILE AT DRIVEWAY

WITH SIDEWALK ABUTTING CURB



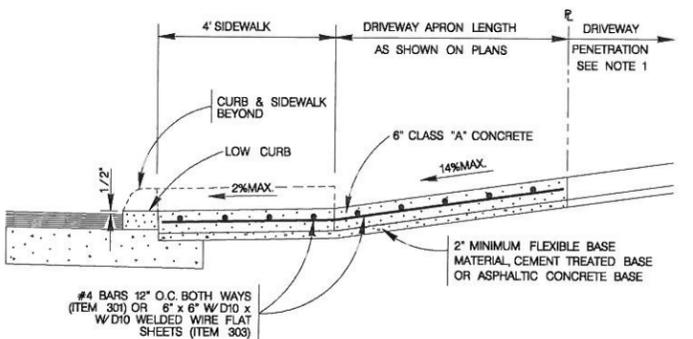
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB
ITEM 503.1



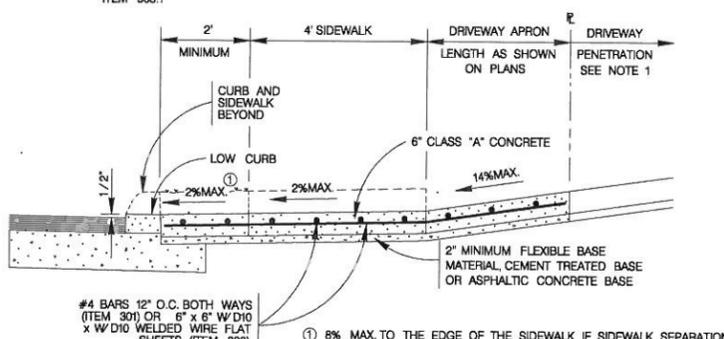
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB
ITEM 503.1



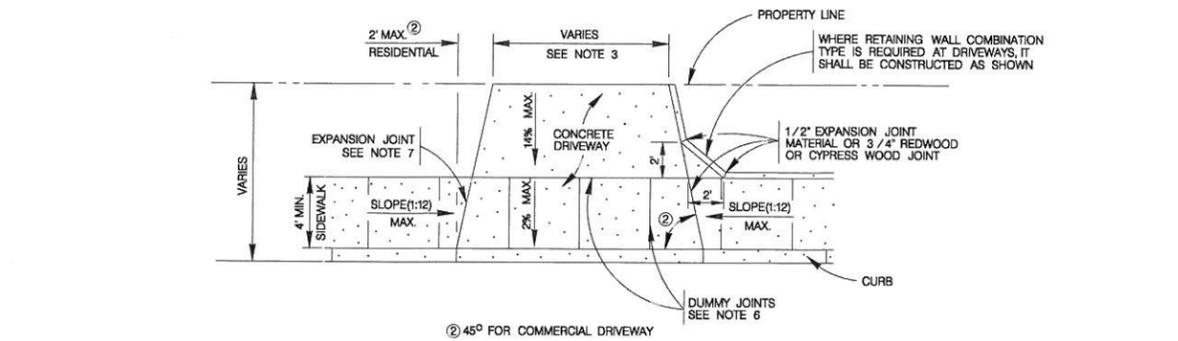
TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.2



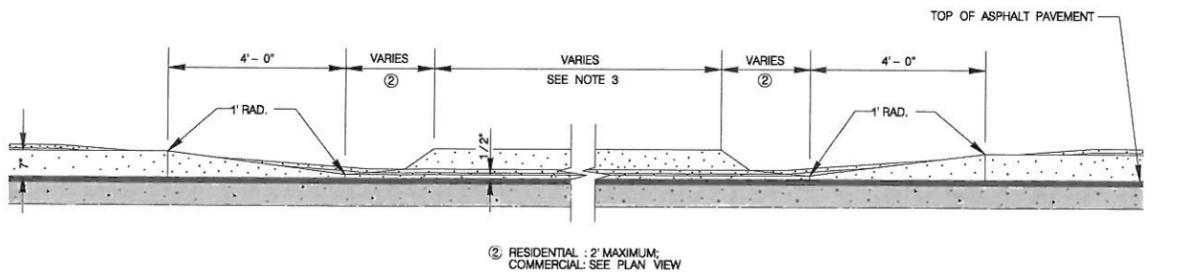
TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2



TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK ABUTTING CURB

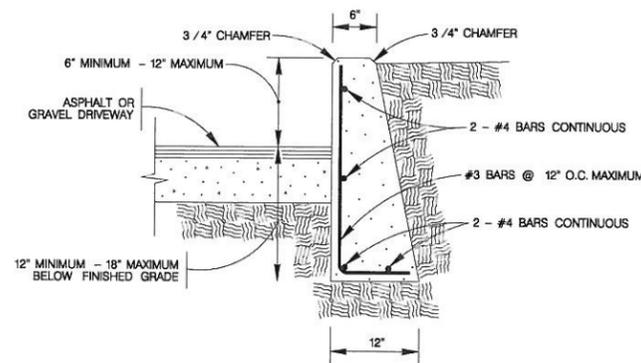


CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB

CONCRETE DRIVEWAY NOTES

- DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2.
B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.4 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
C.) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503.5 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE
 - 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
 - THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:
- | TYPE | MINIMUM | MAXIMUM |
|----------------------|---------|---------|
| RESIDENTIAL | 10' | 20' |
| COMMERCIAL - ONE WAY | 12' | 20' |
| COMMERCIAL - TWO WAY | 24' | 30' |
- FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.
 - FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
 - DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
 - A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3/8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
 - SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
 - SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



NOTE:
1. COST OF REINFORCEMENT TO BE INCLUDED IN UNIT COST OF ITEM 307.1.
2. CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR CONCRETE DRIVEWAYS.

DRIVEWAY - CONCRETE RETAINING WALL
ON COMPACTED SUBGRADE
ITEM 307.1

MAY 2009

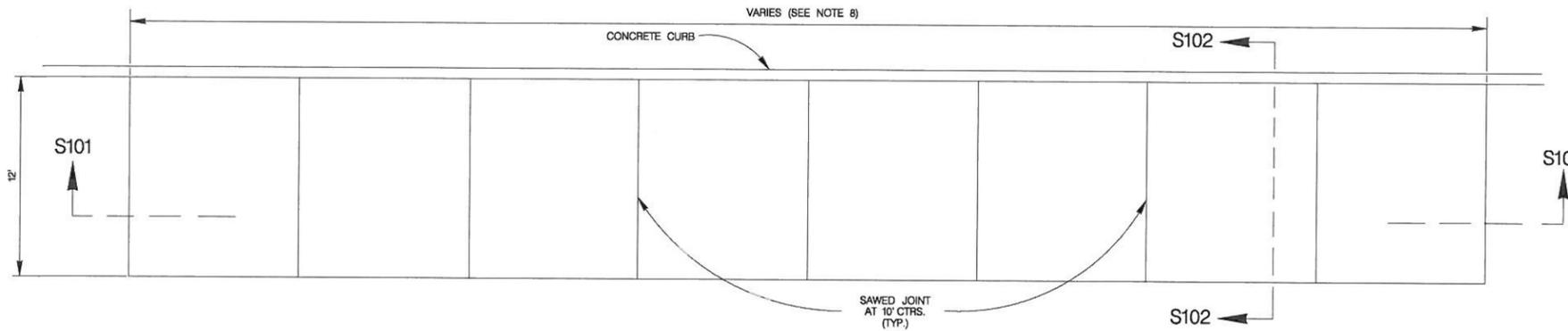
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

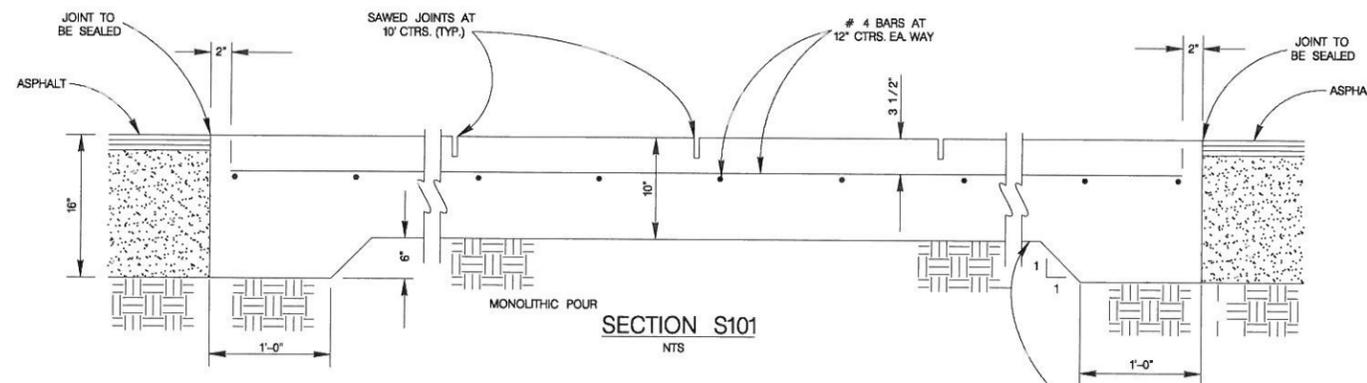
% SUBMITTAL PROJECT NO.: DATE:
DRWN. BY: V. VASQUEZ DSGN. BY: CHKD. BY: R.S. HOSSEINI, P.E. SHEET NO. 16 OF 60

GENERAL NOTES

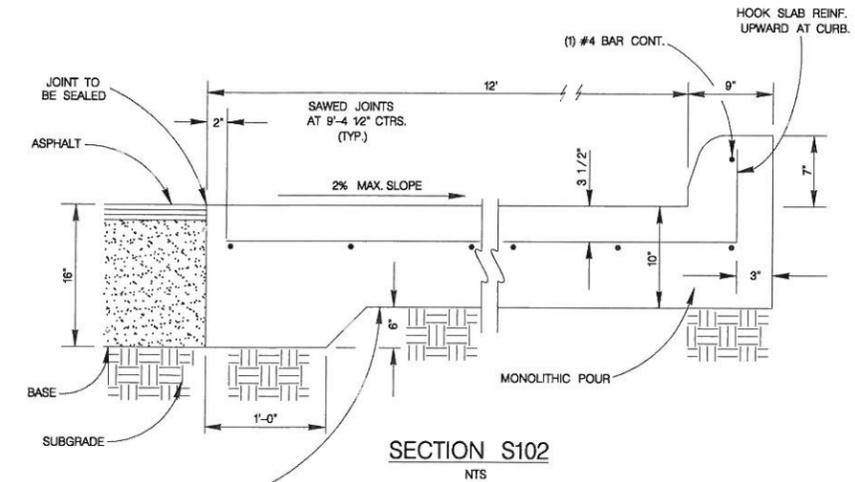
1. ALL CONCRETE SHALL TEST 4,000 P.S.I. AT 28 DAYS.
2. BUS STOP CONCRETE PAD CONSTRUCTION SHALL BE PAID UNDER ITEM 209 AT THE UNIT PRICE BID, WHICH PRICE SHALL BE FULL COMPENSATION FOR ALL DEMOLITION, REMOVAL OF EXISTING CURB, EXCAVATION, HAULING, CRUSHED LIMESTONE, REINFORCING STEEL, CONCRETE, CONCRETE CURB, JOINTS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
3. BUS PAD AND CURB SHALL BE MONOLITHICALLY POURED. ALL EXISTING CURBING SHALL BE REMOVED AND REPLACED AS PER STANDARD DETAILS.
4. THE CONTRACTOR SHALL CONSTRUCT AN EXPANSION JOINT MIDWAY IF THE "CONCRETE BUS STOP PAD" IS LONGER THAN 150 FEET. NO DIRECT PAYMENT SHALL BE MADE FOR CONSTRUCTION OF AN EXPANSION JOINT.
5. ACTUAL BUS PAD LENGTH AND WIDTH TO BE FIELD DETERMINED BY CITY ENGINEER OR HIS DESIGNATED REPRESENTATIVE.
6. DO NOT DRIVE ON PAD UNTIL CONCRETE HAS REACHED A STRENGTH OF 2,800 P.S.I.
7. BREAK TEST CYLINDERS AS FOLLOWS:
2 AT 3 DAYS
2 AT 7 DAYS
2 AT 28 DAYS
8. CONCRETE BUS PAD LENGTH (OR AS SHOWN ON THE PLANS):
30 M.P.H. - 100'
35 M.P.H. - 160'
40 M.P.H. - 160'
45 M.P.H. - 200'



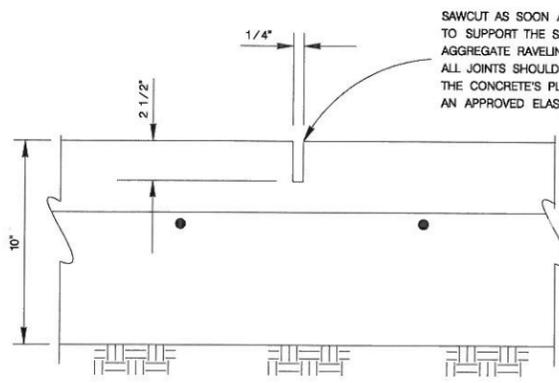
PLAN VIEW
NTS



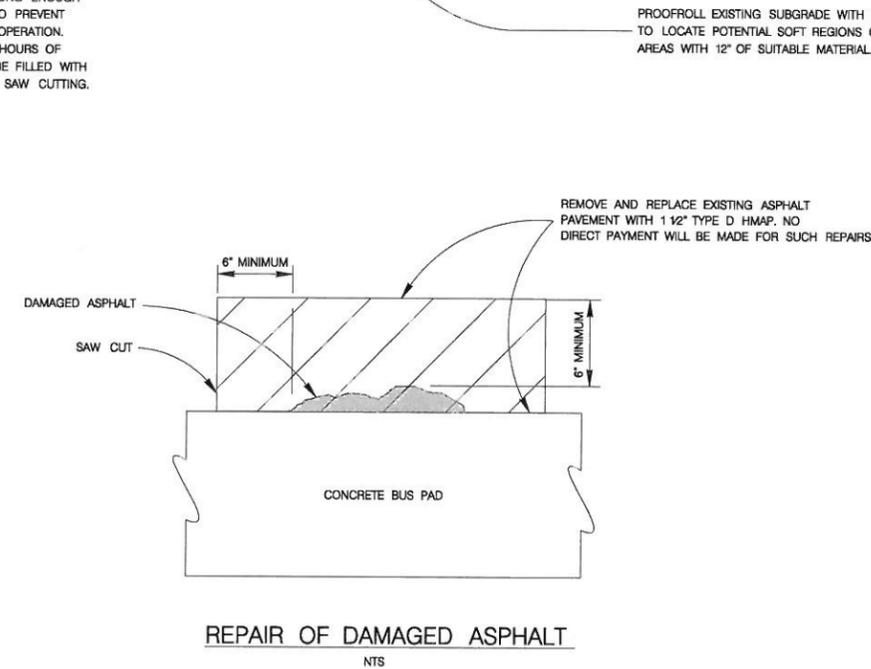
SECTION S101
NTS



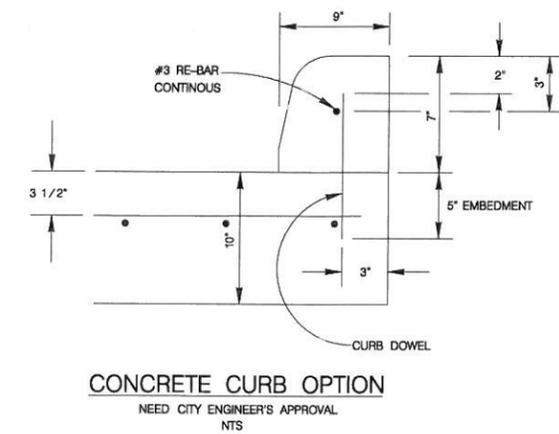
SECTION S102
NTS



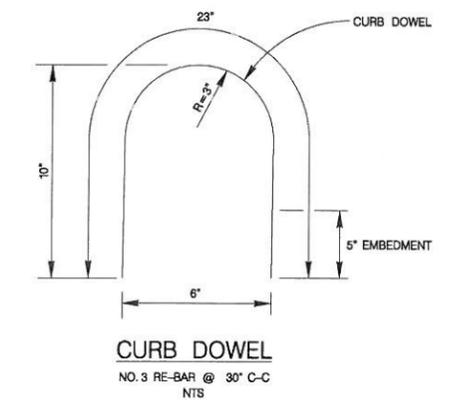
SAWED JOINT DETAIL
NTS



REPAIR OF DAMAGED ASPHALT
NTS



CONCRETE CURB OPTION
NEED CITY ENGINEER'S APPROVAL
NTS



CURB DOWEL
NO. 3 RE-BAR @ 30\"/>

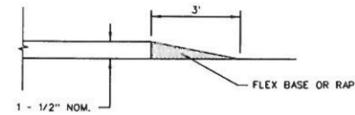
NOTE:
THE CONTRACTOR SHALL CONSTRUCT AN EXPANSION JOINT MIDWAY IF THE "CONCRETE BUS STOP PAD" IS LONGER THAN 150 FEET. NO DIRECT PAYMENT SHALL BE MADE FOR CONSTRUCTION OF AN EXPANSION JOINT.

EXPANSION JOINT DETAIL
SCALE : 1" = 1'

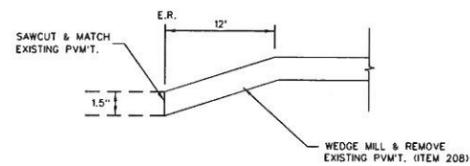
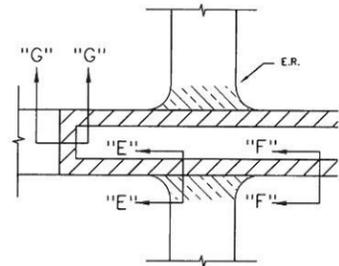
MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

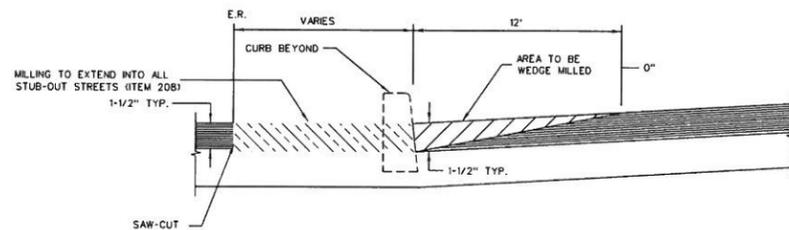
**CONCRETE
BUS STOP PAD**



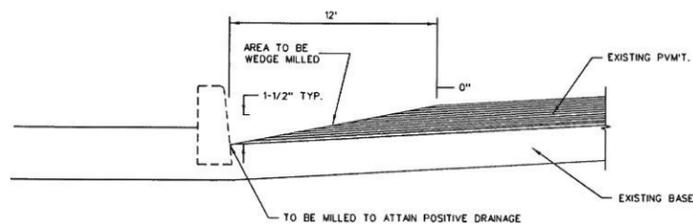
SHOULDER BACKING DETAIL
NSPI



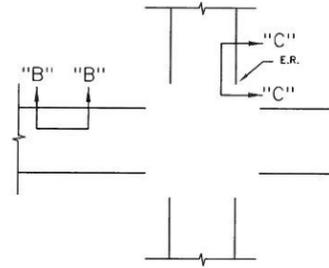
SECTION "C"- "C"
TYPICAL WEDGE MILL



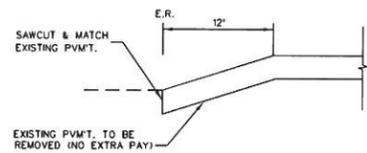
SECTION "E"- "E"



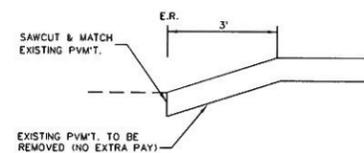
SECTION "F"- "F"
PAVEMENT MILLING
(ITEM 240)



CROSS STREET

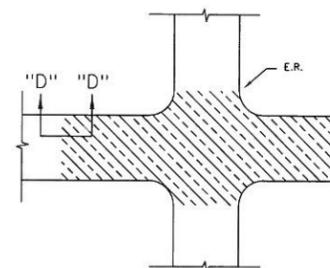


SECTION "C"- "C"

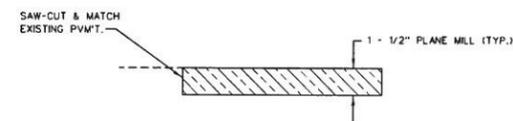


SECTION "C"- "C"

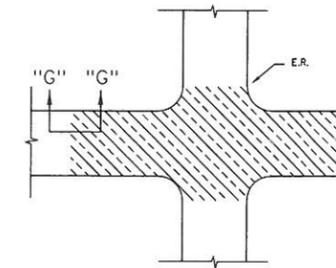
TYPICAL BUTT JOINT



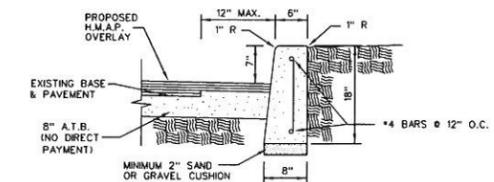
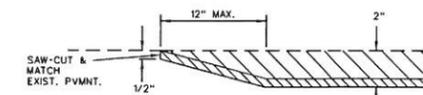
CROSS STREET



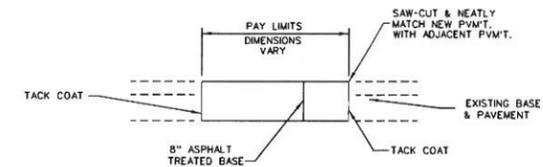
SECTION "D"- "D"
TYPICAL PLANE MILL



SECTION "G"- "G"



CONCRETE CURB
(ITEM 500)



BASE & PAVEMENT REPLACEMENT
(ITEM 257)

LEGEND

-  OVERLAY
-  WEDGE MILL (ITEM 208)
-  PLANE MILL (ITEM 208)

NOTES

1. FOR RECYCLE PROJECT, MILL DEPTH IS 1"
2. HOT PAVEMENT LAID MICRO SURFACE MILL ONLY FOR DRAINAGE AND BUTT JOINTS.

CITY OF SAN ANTONIO, TEXAS
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

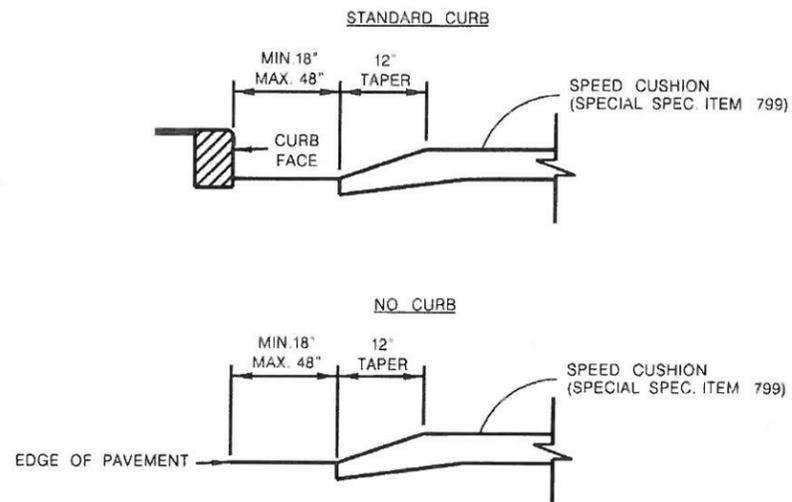
DETAIL SHEET

DRAWN BY:	DATE:	REVISIONS:	SCALE: SEE ABOVE
CHECKED BY:			DATE:
			SHEET: 18 OF 60

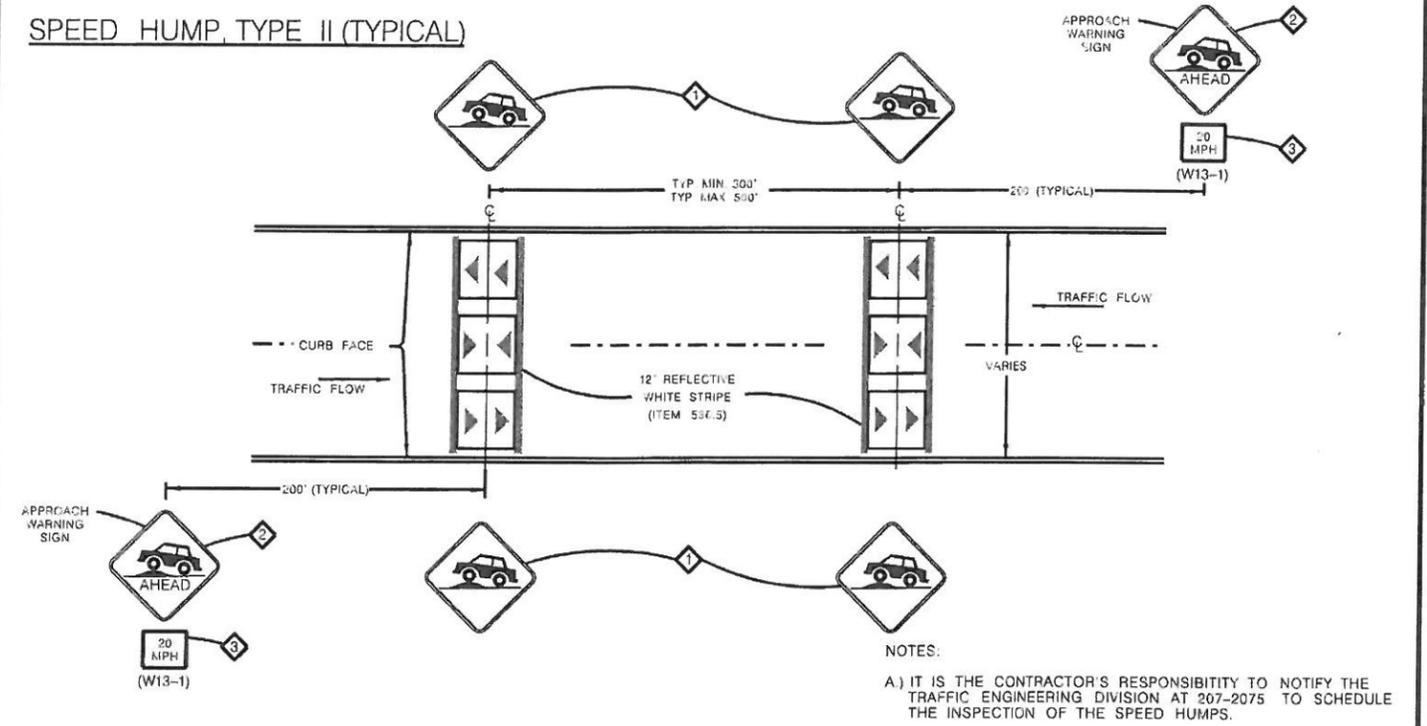
GENERAL NOTES

1. SPEED HUMPS WILL BE CONSTRUCTED AT LOCATIONS DESIGNATED BY THE TRAFFIC ENGINEERING DIVISION.
2. SPEED HUMPS, TYPE II SHALL BE COMPRISED OF MODULAR RUBBER CUSHIONS AS OUTLINED IN SPECIAL SPECIFICATION ITEM 799.
3. CONTRACTOR SHALL CONTACT THE CONSTRUCTION COORDINATOR AT 207-2075 BEFORE ANY STREET IS TEMPORARILY CLOSED FOR CONSTRUCTION.
4. THE DISTANCE BETWEEN SPEED HUMPS WILL BE DETERMINED BY THE TRAFFIC ENGINEERING DIVISION.
5. TRAFFIC ENGINEERING DIVISION WILL IDENTIFY THE LOCATIONS OF ALL SIGNS RELATED TO THE SPEED HUMPS.
6. NO PART OF A SPEED HUMP SHALL BE LOCATED IN FRONT OF A DRIVEWAY APPROACH, RATHER THEY SHOULD BE A MINIMUM OF 6 FEET FROM THE EDGE OF DRIVEWAY, WHEN PRACTICAL.
7. SEE TRAFFIC SIGN DETAILS FOR INFORMATION ON 1 2 3
8. SPEED HUMPS SHOULD BE PLACED AS CLOSE AS POSSIBLE TO PROPERTY LINES INSTEAD OF MID-LOT, WHERE PRACTICAL.
9. SPEED HUMPS SHOULD BE INSTALLED AT A RIGHT ANGLE TO THE CENTERLINE TANGENT OF THE ROADWAY.
10. TRAFFIC CONTROL CONSISTING OF SIGNS AND MARKINGS SHALL BE PROVIDED TO ADVISE ROADWAY USERS OF A SPEED HUMP'S PRESENCE AND TO GUIDE THERE SUBSEQUENT ACTIONS. TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
11. ALL SIGNS AND MARKINGS WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AS PER ITEM 531, 533, 536.2, 536.5.
12. CONTRACTOR SHALL NOT OPEN SPEED HUMP TO TRAFFIC UNTIL ALL REQUIRED WARNING SIGNS AND MARKINGS ARE COMPLETE.
13. CONTRACTOR WILL MAINTAIN TEMPORARY MARKINGS UNTIL PERMANENT MARKINGS ARE INSTALLED.
14. CONTRACTOR WILL CHECK WITH TRAFFIC OPERATIONS FOR THE SPECIFICATIONS ON THE SIGN EMBLEM AND THE SPEED HUMP MARKINGS AT 207-3951.
15. CONTRACTOR SHALL COMPLETE THE CUSHION INSTALLATION TO FORM ONE COMPLETE HUMP BEFORE LEAVING THE JOBSITE.
16. CONTRACTOR SHALL WORK ONE HALF OF THE STREET AT A TIME AND MAINTAIN TWO-WAY TRAFFIC WITH CERTIFIED FLAGGERS.
17. ROADWAYS 36' WIDE OR WIDER, MINIMUM CURB TO CUSHION EDGE SHALL BE 48"

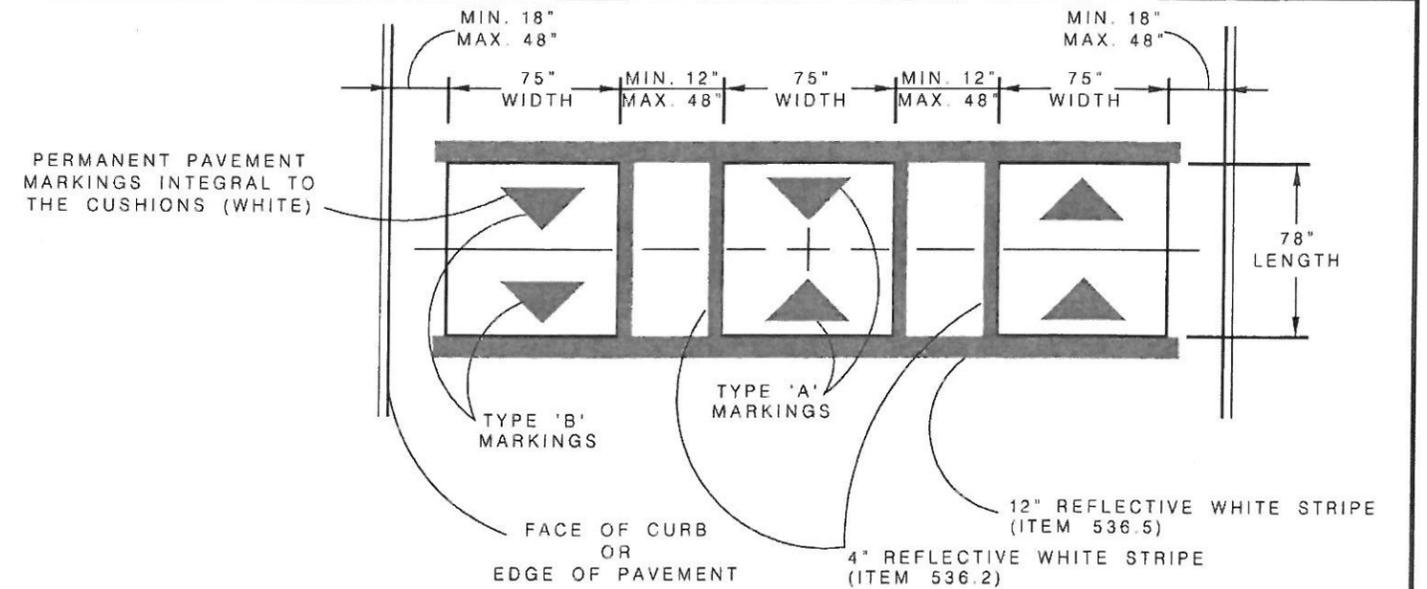
EDGE DETAIL



SPEED HUMP, TYPE II (TYPICAL)



NOTES:
A.) IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE TRAFFIC ENGINEERING DIVISION AT 207-2075 TO SCHEDULE THE INSPECTION OF THE SPEED HUMPS.



PAVEMENT WIDTH (FT)	NO. OF CUSHIONS	GAP (IN)	CUSHION (IN)	GAP (IN)								
30	3	33.5	75	34	75	34	75	33.5	-	-	-	-
36	4	48	75	12	75	12	75	12	75	48	-	-
40	4	48	75	28	75	28	75	28	75	48	-	-
44	4	48	75	44	75	44	75	44	75	48	-	-

* REFER TO SHEET 2 OF 2 FOR ADDITIONAL STREET WIDTHS

CITY OF SAN ANTONIO, TEXAS DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION SPEED HUMP, TYPE II				1 of 2
No. DATE REVISION ORIGINATOR APPR: 1 02.02 MARKINGS JB HB HB 2 2.21.03 LOCATION DETAIL JB HB HB 3 8.26.03 GENERAL NOTES JB HB HB 4 6.30.05 DETAIL OH HB HB 5 3.22.11 SPACING CHARTS BT BT HB	UPDATE BY: W. THORPE MAR 2011 DESIGNED BY: K. M. BUCKLEW JUN 2002 CHECKED BY: K. BUCKLEW MAR 2011	APPR. BY: P. M. BUCKLEW JUN 2002 TRAFFIC DESIGN ENGINEER APPR. BY: JUN 2002	REF. NO. SCALE: NTS PLAN NO. 19	

TYPICAL INSTALLATION PROCEDURE FOR MODULAR RUBBER CUSHION

1. LAY OUT PIECES FOR THE CUSHION (REFER TO MODULAR RUBBER CUSHION SPEED HUMP MARKINGS SHEETS AND TO SPEED HUMP CUSHION SPACING CHART). PLACE THE ANGLE IRONS IN THE INDENTATION/GROOVE OF THE CUSHION. ALL JOINTS BETWEEN PIECES SHOULD BE TIGHTLY JOINED. THE ARROW MARKINGS ON THE RAMP PIECES SHOULD FACE THE CORRECT DIRECTION ON THE STREET (ARROWS POINT IN THE DIRECTION OF TRAFFIC)
2. SLIDE THE CORNER AND THE TWO CENTER RAMP PIECES OUT TO EXPOSE THE HOLES IN THE ANGLE IRONS.
3. DRILL THROUGH THE ANGLE IRON HOLES TO A DEPTH OF 4 INCHES INTO THE PAVEMENT.
4. BLOW ALL DEBRIS OUT OF HOLES.
5. INSERT TWO (2) PUMPS OF RESIN INTO EACH HOLE FOLLOWED BY A FLAT, TORQUE HEAD BOLT AND PLASTIC ANCHOR (ASSEMBLE THE BOLT AND ANCHOR AND HAMMER IN IMMEDIATELY AFTER PLACING RESIN BECAUSE THE RESIN WILL SET QUICKLY IN BOTH THE HOLE AND RESIN GUN - APPROX. 2-4 MINUTES)
6. USE IMPACT WRENCH TO DRILL BOLTS INTO THE ANGLE IRON. DO NOT OVER IMPACT BOLTS BECAUSE STRIPPING WILL OCCUR.
7. REPLACE CORNER PIECES AND TWO CENTER RAMP PIECES.
8. DRILL THE PAVEMENT APPROX. 7 INCHES THROUGH EACH OF THE HOLES IN THE CUSHION PIECES (4 INCHES INTO PAVEMENT).
9. BLOW ALL DEBRIS OUT OF HOLES.
10. INSERT TWO (2) PUMPS OF RESIN INTO EACH HOLE FOLLOWED BY A HEX HEAD BOLT, WASHER AND PLASTIC ANCHOR (ASSEMBLE THE WASHER, BOLT, AND ANCHOR THEN HAMMER IN THE HOLE IMMEDIATELY AFTER PLACING RESIN BECAUSE THE RESIN WILL SET QUICKLY IN BOTH THE HOLE AND RESIN GUN - APPROX. 2-4 MINUTES)
11. USE IMPACT WRENCH TO DRILL BOLTS INTO THE CUSHION PIECES. DO NOT OVER TIGHTEN BOLTS BECAUSE STRIPPING WILL OCCUR.
12. INSERT RUBBER PLUGS.
13. BOLT INSTALLATIONS SHALL BE VERIFIED BY THE INSPECTOR BEFORE THE RUBBER PLUGS ARE INSTALLED.

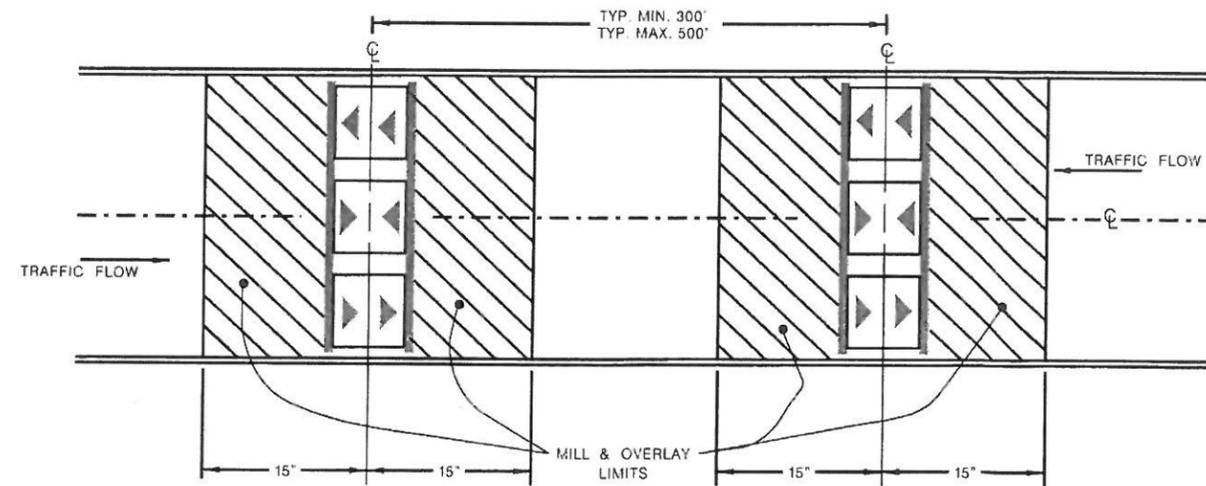
SPEED CUSHION SPACING

Pavement Width (ft)	Pavement Width (in)	No. of Cushions	Gap (in)	Cushion (in)	Gap (in)								
20	240	2	30	75	30	75	30						
21	252	2	34	75	34	75	34						
22	264	2	39	75	36	75	39						
23	276	2	45	75	36	75	45						
24	288	2	48	75	42	75	48						
25	300	2	51	75	48	75	51						
26	312	3	21.5	75	22	75	22	75	21.5				
27	324	3	24	75	25.5	75	25.5	75	24				
28	336	3	27.5	75	28	75	28	75	27.5				
29	348	3	30.5	75	31	75	31	75	30.5				
30	360	3	33.5	75	34	75	34	75	33.5				
31	372	3	37.5	75	36	75	36	75	37.5				
32	384	3	40.5	75	39	75	39	75	40.5				
33	396	3	42.5	75	43	75	43	75	42.5				
34	408	3	45.5	75	46	75	46	75	45.5				
35	420	3	48	75	49.5*	75	49.5*	75	48				
36	432	4	48	75	12	75	12	75	12	75	48		
37	444	4	48	75	16	75	16	75	16	75	48		
38	456	4	48	75	20	75	20	75	20	75	48		
39	468	4	48	75	24	75	24	75	24	75	48		
40	480	4	48	75	28	75	28	75	28	75	48		
41	492	4	48	75	32	75	32	75	32	75	48		
42	504	4	48	75	36	75	36	75	36	75	48		
43	516	4	48	75	40	75	40	75	40	75	48		
44	528	4	48	75	44	75	44	75	44	75	48		

* INDICATES THAT MEASUREMENTS ARE ABOVE MAX. SPACING

PROCEDURE FOR PICKING UP SPEED HUMP MATERIAL AT COSA FACILITY

1. THE SPEED HUMP MATERIAL WILL BE STORED AT THE TRAFFIC OPERATIONS FACILITY AT 223 S. CHERRY ST., SAN ANTONIO, TX 78203.
2. SPEED HUMP MATERIAL MAY ONLY BE COLLECTED DURING THE WEEKDAY BETWEEN THE HOURS OF 7:30AM AND 4:30PM.
3. CONTRACTOR WILL CONTACT SPEED HUMP COORDINATOR, KENNARD GIVENS AT 215-5127 AT LEAST 24 HOURS IN ADVANCE TO SCHEDULE A TIME TO PICK UP THE MATERIAL.
4. INSPECTOR MUST BE PRESENT WHEN MATERIAL IS COLLECTED.



MILL AND OVERLAY LIMITS

CITY OF SAN ANTONIO, TEXAS DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION SPEED HUMP, TYPE II				2 / 2
DRAWN BY: RC DATE: MAY 2004 CHECKED BY:	APPR. BY: TRAFFIC DESIGN ENGINEER	REF. NO.:	SCALE: NTS	
PLAN NO. 20				