CITY OF SAN ANTONIO

DEPARTMENT OF PUBLIC WORKS
PLANNING AND ENGINEERING DIVISION

2014 ASPHALT OVERLAY WITH RUBBER (PKG 5)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2–6	GENERAL NOTES
7–8	ESTIMATE OF QUANTITIES
9–12	TREE PROTECTION STANDARDS
13–14	MISCELLANEOUS CONSTRUCTION STANDARDS
15	WHEELCHAIR RAMP
16	CONCRETE DRIVEWAY
17	CONCRETE BUS STOP PAD
18A–18B	DETAIL SHEET
19–20	SPEED HUMP TYPE II
21–36	STANDARD PAVEMENT MARKINGS
36A–36B	BICYCLE PAVEMENT MARKING PLACEMENT STANDARDS
37–40	CITY OF SAN ANTONIO BARRICADE AND CONSTRUCTION STANDARDS
41–44	TRAFFIC CONTROL PLAN STANDARDS: TCP(1–1 THROUGH 1–4) – 12
45–46	TRAFFIC CONTROL PLAN STANDARDS: TCP(2–1 AND 2–2) – 12
46A	TRAFFIC CONTROL PLAN STANDARDS: TCP(3–1)–13
47–48	TRAFFIC CONTROL PLAN STANDARDS: TCP(3–3 AND 3–4) – 13
48A	TRAFFIC CONTROL PLAN STANDARDS: TCP(7–1)–13
49–60	BARRICADE AND CONSTRUCTION STANDARDS: BC(1–12)–13

PROJECT LIST

15403	E. JOSEPHINE ST – N ALAMO ST TO AVENUE B
17096	MIDCROWN DR – EISENHAUER & MIDCROWN TO WALZEM RD
15075	VILLAMAIN – MISSION PKWY TO SE LP 410 ACCESS RD
26965	GOLIAD RD – PECAN VALLEY TO HOT WELLS
26966	GOLIAD RD – ARCHIMEDES TO HOT WELLS
18306	SOMERSET RD – LP 410 ACCESS TO PVT RD AT 9486 SOMERSET
26178	W. MARTIN ST – N COLORADO TO N MEDINA
27149	N. COLORADO ST – IH 10 W ACCESS RD TO ALICE ALLEY
28451	N. FRIO – IH 10 W ACCESS RD TO W COMMERCE ST
26999	INGRAM RD – WURZBACH RD TO 250' W OF NORTHWESTERN DR
15384	ECKHERT RD – BANDERA RD TO CARIBOU & SNOW FLAKE DR

STATE OF TEXAS
FERNANDO CAMARILLO
86882
LICENSED
PROFESSIONAL ENGINEER

11/6/2013
FERNANDO CAMARILLO, P.E. DATE

PROJECT MANAGER

POZNECKI CAMARILLO INC
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS, 78228
(210) 349-4395 (FAX)
(210) 349-3273 (PH)
www.pozcam.com

TBPE REG. NO. F-483

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

Plotted on: 11/6/2013 3:45:05 PM
Design Filename: \\pciserver2\datagate\Jobs\11\014\Techprod\2014 SMP\GENERAL\2014*SMP-PKG-5-OLAY-RBBR.dgn

CITY GENERAL NOTES FOR ASPHALT OVERLAY PROJECTS

1. ALL CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS, SPECIAL SPECIFICATIONS, AND SPECIAL PROVISIONS LISTED IN THE SPECIFICATIONS MANUAL OF THE CONTRACT DOCUMENTS.

2. THE CONTRACTOR SHALL PROVIDE ACCESS FOR RESIDENTS, BUSINESSES, AND OR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE WITH THE INSPECTOR FOR SOLID WASTE COLLECTION.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO THE ORIGINAL OR BETTER CONDITION FOR ANY DAMAGE DONE TO EXISTING FENCES, CONCRETE ISLANDS, STREET PAVING, CURBS, SHRUBS, BUSHES, DRIVEWAYS, OR ANY OTHER EXISTING ITEM. (NO SEPARATE PAY ITEM).

4. THE CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES, THEY SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

5. DO NOT PLACE ANY WASTE MATERIAL IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT. ALL WASTE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND IT SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THESE MATERIALS OFF THE LIMITS OF THE PROJECT AND RIGHT-OF-WAY. NO WASTE MATERIALS SHALL BE PLACED IN DESIGNATED FLOOD PLAINS OR IN LOW AREAS THAT WILL BLOCK OR ALTER FLOW OF EXISTING NATURAL OR ENGINEERED DRAINAGE.

6. IF THE CONTRACTOR ENCOUNTERS ANY ARCHAEOLOGICAL DEPOSITS DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST STOP EXCAVATION IMMEDIATELY, CONTACT THE CITY INSPECTOR, AND CALL THE CITY HISTORIC PRESERVATION OFFICE AT 207-7306 FOR AN ARCHAEOLOGICAL INVESTIGATION. THE CONTRACTOR CANNOT BEGIN EXCAVATION AGAIN WITHOUT WRITTEN PERMISSION FROM THE CITY.

   IF MORE THAN THREE (3) DAYS ARE REQUIRED FOR INVESTIGATION (NOT INCLUDING HOLIDAY AND WEEKENDS) AND IF THE CONTRACTOR IS UNABLE TO WORK IN OTHER AREAS, THEN THE CONTRACTOR WILL BE ALLOWED TO NEGOTIATE FOR ADDITIONAL CONSTRUCTION TIME UPON WRITTEN REQUEST WITHIN TEN (10) DAYS AFTER THE FIRST NOTICE TO THE CITY ARCHAEOLOGICAL INVESTIGATION FOR EACH EVENT.

   IF THE TIME REQUIRED FOR INVESTIGATION IS LESS THAN OR EQUAL TO THREE (3) DAYS FOR EACH EVENT, CONTRACT DURATION WILL NOT BE EXTENDED.

7. PROJECT LOCATIONS AND LIMITS MAY HAVE BEEN IDENTIFIED IN THE PLANS. HOWEVER, ADDITIONS, DELETIONS, AND MODIFICATIONS TO THE LOCATIONS AND LIMITS MAY OCCUR.

8. AS DIRECTED BY THE ENGINEER, THE STREET PAVEMENT, ADJACENT DRIVEWAYS, SIDEWALKS, AND WALKWAYS SHALL BE SWEPT AND ALL DEBRIS REMOVED FROM THE WORK AREA:

   SUBSEQUENT TO MILLING OPERATIONS,
   PRIOR TO LAYING A SURFACE COURSE,
   AS OFTEN AS NECESSARY TO REMOVE LOOSE MATERIAL,
   AND AT THE END OF EACH WORKDAY.

9. THE CONTRACTOR SHALL PROVIDE THE CITY AN EMERGENCY TELEPHONE NUMBER FOR EVENINGS, WEEKENDS AND HOLIDAYS BY THE FIRST WORKING DAY FOR THE PROJECT. THIS TELEPHONE NUMBER MUST BE A COMMERCIAL ANSWERING SERVICE. THE ANSWERING SERVICE MUST BE ABLE TO CONTACT THE CONTRACTOR AND HAVE THE CONTRACTOR RESPOND TO THE CITY STAFF WITHIN TWO (2) HOURS OF THE INITIAL CONTACT.

10. IF THE CONTRACTOR WISHES TO WORK WEEKENDS, HE SHALL SUBMIT A REQUEST TO THE ENGINEER AND CITY INSPECTOR FOR APPROVAL SEVENTY TWO (72) HOURS PRIOR TO WORKING THE WEEKEND THEY WISH TO WORK.

11. WHEN PERFORMING WORK OPERATIONS AT NIGHT, THE CONTRACTOR SHALL PROVIDE ADEQUATE LIGHTING TO PEFORM THE NECESSARY OPERATIONS. IN ADDITION, ALL VEHICLES MUST BE EQUIPPED WITH ONE OR MORE HIGH INTENSITY YELLOW FLASHING LIGHTS. (NO SEPARATE PAY ITEM).

12. UPON COMPLETION OF ALL WORK PROVIDED FOR IN THE CONTACT FOR ANY INDIVIDUAL STREET, THE ENGINEER WILL MAKE AN INSPECTION. AND, IF THE WORK IS FOUND TO BE SATISACTORY, THE CONTRACTOR WILL BE RELEASED FROM FURTHER MAINTENANCE OF THAT STREET AND WILL BE CONSIDERED A "PARTIAL ACCEPTANCE" OF THE WORK. SAID ACCEPTANCE WILL BE MADE IN WRITING AND SHALL IN NO WAY VOID OR ALTER ANY TERMS OF THE CONTRACT.

13. THE CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR AND Q.A. DEPARTMENT TWENTY FOUR (24) HOURS IN ADVANCE OF EACH DAY'S WORK. THIS NOTIFICATION SHALL INCLUDE THE MATERIAL SOURCE LOCATION AND THE LOCATION AT WHICH THE MATERIAL WILL BE PLACED. PHONE NUMBERS WILL BE PROVIDED AT THE PRECONSTRUCTION MEETING.

14. ALL COST ASSOCIATED WITH THE FOLLOWING ITEMS SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS, AND SHALL NOT BE SEPARATELY COMPENSATED:
    - 100.1 "MOBILIZATION"
    - 100.2 "INSURANCE AND BOND"
    - 101.1 "PREPARING RIGHT OF WAY"
    - 530.1 "BARRICADES, SIGNS & TRAFFIC HANDLING"
    - 540 "TEMPORARY EROSION, SEDIMENTATION, AND WATER POLLUTION PREVENTION AND CONTROL"

15. PROVIDE NEXT CONSTRUCTION SCHEDULE EVERY FRIDAY BY CLOSE OF BUSINESS, VIA E-MAIL FOR THE DURATION OF THE CONTRACT USING SMP TEMPLATE. THE CITY RESERVES THE RIGHT TO DIRECT THE CONTRACTOR WHERE TO WORK WHEN NECESSARY.

16. PLAN QUANTITIES ARE FOR ESTIMATING PURPOSES ONLY AND SUBJECT TO CHANGE PENDING APPROVAL OF THE ENGINEER.

17. THE CONTRACTOR IS RESPONSIBLE FOR OBEYING ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

18. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CITY RIGHT OF WAY PERMITS FOR CONSTRUCTION. ALL RIGHT OF WAY PERMIT FEES RELATED TO THIS PROJECT WILL BE WAIVED.

19. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER SUCH THAT TRUCKS AND OTHER VEHICLES DO NOT CREATE A DIRT NUISANCE OR SAFETY HAZARD IN ANY STREETS, PUBLIC OR PRIVATE. CLEAN UP OF STREETS SHALL BE DONE DAILY AT A MINUMUM.

20. CONSTRUCTION ON MORE THAN ONE STREET AT A TIME WILL NOT BE PEMITTED IF SATISFACTORY CONFORMANCE TO PLANS AND SPECIFICATIONS ARE NOT MAINTAINED.

21. THE CONTRACTOR IS MADE AWARE THAT THE BID QUANTITIES SHOWN IN THE BID PROPOSAL ARE APPROXIMATE AND MAY CHANGE. THE CITY RESERVES THE RIGHT TO MAKE ADJUSTMENTS IN THE FIELD. PAYMENT FOR PERFORMING THE WORK SHALL BE MADE AT THE ESTABLISHED BID UNIT PRICE IN THE CONTRACT.

22. THE CITY WILL PROVIDE A TEMPLATE/VERBAGE FOR THE DOOR HANGER. CONTRACTOR SHALL PLACE HANGERS ON EVERY BUSINESS OR RESIDENCE WITHIN EACH SEGMENT LIMITS AND ANY OTHER LOCATIONS AS SPECIFIED BY THE INSPECTOR. AN ADDITIONAL DOOR HANGER SHALL BE PLACED AT ALL CORNER LOTS THAT WILL BE RECEIVING CURB RAMPS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A REVIEW COPY OF THE DOOR HANGER TO THE CITY SEVEN (7) DAYS PRIOR TO DISTRIBUTION. PAY ITEM SP100

23. INCLUDE A MAILBOX POST BLOCKOUT FOR VACANT LOTS AND ALL RESIDENCES WHICH DO NOT HAVE MAILBOXES AT THE CURB. BLOCKOUTS ARE PROVIDED FOR FUTURE USE BY THE POST OFFICE.

24. THE CONTRACTOR SHALL NOT MILL OR OVERLAY A STREET BEYOND THE LONGITUDINAL LIMITS OF WHICH HE CANNOT MILL OR OVERLAY FOR ITS FULL WIDTH THAT SAME DAY UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

25. SHOULD EXISTING BASE MATERIALS BECOME EXPOSED DUE TO MILLING, THE CONTRACTOR SHALL PROTECT AND MAINTAN THE EXISTING COMPACTED BASE UNTIL WHICH TIME IT CAN BE OVERLAID (WITHIN 14 DAYS MAX). EXPOSED FLEX BASE SHALL BE ROLLED AND PRIME COATED AS DIRECTED BY THE ENGINEER. (NO SEPARATE PAY ITEM)

26. AS DIRECTED BY THE ENGINEER, "FEATHER" H.M.A.C. INTO DRIVEWAYS TO PREVENT SURFACE PONDING (NO SEPARATE PAY ITEM)

27. ALL AGGREGATE FOR SEAL COAT SHALL BE DELIVERED TO THE JOB SITE AT ATMOSPHERIC TEMPERATURES AND SHALL BE ADEQUATELY DRIED TO THE SATISFACTION OF THE ENGINEER.

    SEAL COAT MATERIAL DATA:

ASPHALT-TYPE/GRADE	BINDER OIL: AC5 OR AC10
ASPHALT-RATE	0.28 - 0.32 GAL/SY
AGGREGATE-TYPE/GRADE	CRUSHED LIMESTONE, GRADE 4, TYPE B NON-PRECOAT
AGGREGATE-RATE	18-20 LBS/SY

    IT IS THE INTENT THAT ASPHALT CEMENT BINDER OIL BE USED FOR ALL SEAL COATING; HOWEVER, IF WEATHER CONDITIONS ARE NOT CONDUCIVE FOR ITS APPLICATION, THEN AN EMULSION MAY BE USED AT NO EXTRA PAY.

28. THE PERCENT WEAR OF THE SEAL COAT AGGREGATE (TEST METHOD TEX-410-A) SHALL NOT EXCEED 25%.

29. THE CONTRACTOR SHALL MAINTAIN SEAL COAT (NO SEPARATE PAY ITEM)

30. OVERLAYING OF STREET SURFACES MAY COMMENCE AFTER AN ACCEPTABLE APPLICATION OF SEAL COAT HAS BEEN APPLIED AS DETERMINED BY THE ENGINEER.

31. COARSE AGGREGATE FOR ALL STREETS SHALL BE CLASS (B) UNLESS OTHERWISE NOTED WITHIN THESE PLANS.

STATE OF TEXAS
CRYSTAL BENAVIDES
86197
LICENSED
PROFESSIONAL ENGINEER

10/30/2013
CRYSTAL BENAVIDES, P.E. DATE

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NO	DATE	DESCRIPTION	DWG	CHK
		REVISIONS		

FY 2014 ASPHALT OVERLAY PROJECTS

GENERAL NOTES

1 OF 5

POZNECKI CAMARILLO INC
TBPE REG. NO. F-483
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS, 78228
(210) 349-3273 (210) 349-4395 (FAX) http:/www.pozcam.com/

DGN:				
CHK DGN:	FC			
DWG:		STATE	COUNTY	SHEET NO.
CHK DWG:	FC	TEXAS	BEXAR	2 OF 60

Plotted on: 10/30/2013 11:40:42 AM
Design Filename: \\pciserver2\datagate\Jobs\11\014\Techprod\2014 SMP\GENERAL\2014*SMP*GEN-NTS-03.dgn

CITY GENERAL NOTES FOR ASPHALT OVERLAY PROJECTS (CONTINUED)

32. ALL CONCRETE SURFACES AND CONSTRUCTION JOINTS THAT WILL CONTACT THE PROPOSED H.M.A.C. SHALL BE PAINTED WITH A THIN UNIFORM COAT OF SS-1H TACK COAT. TACK COAT SHALL MEET THE REQUIREMENTS OF ITEM 203 AND SHALL BE AT NO DIRECT PAY.

33. AT INTERSECTIONS WITH SIDEWALKS, THE FOLLOWING GUIDELINES WILL BE USED FOR THE PLACEMENT OF CURB RAMPS:

    ALL CURB RAMPS SHALL HAVE TRUNCATED DOMES INSTALLED.

    DESIGN DECISIONS ON CURB RAMPS WILL BE MADE IN THE FIELD WITH THE CITY INSPECTOR.

    TYPE 1 (1) AND TYPE III (3) SHALL BE PAID AS TWO (2) EACH ITEM 502.1A

    TYPE II, IV, & V (2,4 & 5) SHALL BE PAID AS ONE (1) EACH ITEM 502.1A

    EACH CURB RAMP SHALL INCLUDE THE LANDING PLUS WINGS UP TO TWENTY-FOUR (24) FEET TOTAL LENGTH.

    THE BID PRICE FOR THE CURB RAMPS SHALL INCLUDE ALL NECESSARY SUBSIDIARY WORK TO CONSTRUCT AND COMPLETE THE FOLLOWING:

    -SIDEWALK AND CURB DEMOLITION AND REMOVAL.

    -CURB RAMP LANDINGS AND WINGS UP TO 13 SY IN AREA. WHEN CURB RAMP LANDINGS PLUS WINGS TOTAL AREA EXCEEDS 13 SY, ANY ADDITIONAL AREA OF WINGS REQUIRED TO ACHIEVE MINIMUM SLOPE SHALL BE PAID AS SIDEWALK ITEM 502.1

    -DETECTABLE ADA APPROVED WARNINGS, SHALL BE CAST IN PLACE 24"X 60" MANUACTURED BY ARMOR TILE MODEL NUMBER 465C2460RD UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

    -NEW CURB INSTALLATION UP TO 24 L.F. ANY ADDITIONAL CURB LENGTH OVER 24 FEET SHALL BE PAID AS CURB ITEM 500.

    -CONCRETE RETAINING WALL UP TO 6" HIGH AS NECESSARY. RETAINING WALLS EXCEEDING 6" IN HEIGHT WILL BE PAID AS SIDEWALK.

    -SIGN ADJUSTMENT.

    -IRRIGATION RELOCATION AS NECESSARY.

    -LANDSCAPE RELOCATION AS NECESSARY.

34. SOME STREETS MAY HAVE EXISTING SPEED HUMPS. ALL EXISTING SPEED HUMPS SHALL BE REPLACED IN ACCORDANCE WITH THE DETAILS IN THE PLANS.

35. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL USE 64-22 ASPHALT MIX ON ALL PROJECTS AS NOTED IN REVISED SPECIFICATIONS 205.

36. USE VACUUM OR REGENERATIVE AIR SWEEPERS ONLY WHEN SWEEPING WORK AREA.

37. ALL ASPHALT CUTTINGS AND AGGREGATE SHALL BE CONFINED TO THE STREET SURFACE WHERE THEY SHALL BE SWEPT UP AND REMOVED FROM THE RIGHT-OF-WAY BY THE END OF EACH WORK DAY.

38. ALL BASE FAILURE REPLACEMENTS SHALL BE MARKED AND APPROVED BY THE ENGINEER.

39. PAVEMENT CUTS SHALL BE PERFORMED BY EQUIPMENT APPROVED BY THE ENGINEER. IT SHALL NOT PRESENT A HAZARD TO TRAFFIC. ALL SAW CUTS SHALL BE FULL DEPTH SAWCUTS.

40. THE DEPTH OF PAVEMENT FOR ITEM 230 (REPLACING BASE AND PAVEMENT) SHALL BE TO THE SPECIFIED DEPTH UNLESS DIRECTED OTHERWISE BY THE ENGINEER. PRIOR TO EXCAVATION, DESIGNATED BASE FAILURES SHALL BE CUT VERTICALLY FOR THE FULL DEPTH SPECIFIED WITH A ROCK SAW OR OTHER APPROVED EQUALLY CAPABLE EQUIPMENT. THE EDGES OF THE EXISTING ASPHALT WHICH ARE CUT BY THE ROCK SAW MUST BE VERTICAL, STRAIGHT, AND UNIFORM TO ENSURE THAT THE NEW ASPHALT ABUTS TO A SOLID, CLEAN VERTICAL SURFACE. PLACE ASPHALT TREATED BASE IN FOUR (4) INCH MAXIMUM LIFTS AND COMPACT EACH LIFT AND DOCUMENT THE DENSITY READING. TOP MAT REQUIRES APPROVAL/ACCEPTANCE OF THE ENGINEER.

41. DELIVER TRUCK TICKETS TO THE INSPECTOR FOR ALL ASPHALT TREATED BASE AND/OR HOT MIX ASPHALTIC PAVEMENT (TYPE A COARSE BASE) USED AS BASE MATERIAL. ALL TRUCK TICKETS SHALL HAVE THE NAME OF THE STREET THE MATERIAL WAS PLACED ON. THE YIELD FOR THE STREET WILL BE COMPUTED BY CONVERTING THE TONNAGE FOR THAT STREET TO SY AT THE RATE OF 110 LBS/SY PER INCH OF DEPTH. THE COMPUTATION OF THE YIELD WILL BE USED BY THE INSPECTOR TO CHECK THAT THE BASE REPAIR WAS COMPLETED TO THE SPECIFIED DEPTH FOR PAYMENT.

42. ALL DAILY BASE REPLACEMENTS SHALL BE PROPERLY EXCAVATED, BARRICADED, AND OPEN TO TRAFFIC THE SAME DAY. DO NOT EXCAVATE FOR BASE REPAIRS IF THE WORK CANNOT BE COMPLETED THAT DAY.

43. PLACE FLEXIBLE BASE AS DIRECTED BY THE ENGINEER WHERE BASE FAILURE EXCAVATION NECESSITATES EXCEEDING THE SPECIFIED DEPTH FOR ITEM 230 (REPLACING BASE AND PAVEMENT). (NO SEPARATE PAY ITEM)

44. ASPHALT TREATED "BASE AND PAVEMENT" MIXTURES SHALL BE AT A TEMPERATURE BETWEEN 225°F AND 350°F WHEN PLACED IN EXCAVATED CUTS. WHEN THE ASPHALT TEMPERATURES FALL BELOW 225°F, THE ASPHALT MUST BE DISCARDED AND PAYMENT WILL NOT BE MADE FOR THE DISCARDED MATERIAL.

45. FOR STREETS WITHOUT CURB AND GUTTER, THE CONTRACTOR SHALL INSTALL SHOULDER BACKING PER "SHOULDER BACKING DETAIL" PROVIDED ON DETAIL SHEET NO 18A OF 60. (NO SEPARATE PAY ITEM)

46. MILLING OF ASPHALTIC PAVEMENT SHALL BE PERFORMED THROUGHOUT TURNOUTS AND CUL DE SACS WHICH ARE ADJACENT TO STREETS WHICH HAVE BEEN IDENTIFIED IN THE PLANS TO BE MILLED.

47. ACTUAL DEPTHS OF MILLING ALONG CURB LINES AND ON BRIDGE DECKS SHALL BE AS DIRECTED BY THE ENGINEER. CONCRETE BRIDGE DECKS SHALL NOT BE MILLED.

48. EACH STREET SHALL BE SEAL COATED IN ITS ENTIRETY, INCLUDING ADJACENT TURNOUTS AND CUL DE SACS, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

49. TYPE "D" H.M.A.C. SHALL BE APPLIED AT AN AVERAGE RATE OF 190 LBS./S.Y. WITH A MINIMUM RATE OF 165 LBS./S.Y. A LEVEL UP H.M.A.C. COURSE MATERIAL MAY ALSO BE REQUIRED TO BE PLACED ON STREETS AT LOCATIONS AND DEPTHS AS DIRECTED BY THE ENGINEER TO REMOVE LOW SPOTS. THIS WORK WILL BE PAID BY THE TON UNDER ITEM 205.

50. ALL QUANTITIES SHALL BE PRE-APPROVED BY THE ENGINEER.

51. CARE SHOULD BE TAKEN TO PREVENT MILLING FROM ENTERING INLETS AND STORM SEWERS. ALL MATERIAL ENTERING INLETS AND STORM SEWERS SHALL BE REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST.

52. WHEN THE CONTRACTOR PLACES A STOCKPILE OF HMAC MATERIAL ON SITE, THE MATERIAL SHALL BE USED PRIOR TO THE END OF THE WORK DAY. IF THE MATERIAL IS NOT USED, IT SHALL NOT BE USED ON ANY STREET.

53. CONTRACTOR SHALL FURNISH ALL TRUCK TICKETS FOR ASPHALT AS PROVIDED BY THE MATERIAL SUPPLIER(S). THE FOLLOWING INFORMATION WILL BE PRINTED ON EACH TICKET BY THE SUPPLIER: DATE, TIME, AMOUNT (IN TONS), AND STREET NAME WHERE THE MATERIALS WILL BE USED. EACH TICKET MUST BE SUBMITTED TO CITY OFFICIALS.

54. WHEN A RUBBER ADDITIVE IS REQUIRED, THE ASPHALT BINDER SHALL MEET THE REQUIREMENTS OF PG 64-22 G.T.R 10 AS SPECIFIED IN THE SPECIAL PROVISIONS OF THE SPECIFICATIONS.

55. THE CONTRACTOR SHALL VIDEO TAPE ALL PROJECTS PRIOR TO ANY CONSTRUCTION. A BACK UP COPY WILL BE SUMITTED TO THE CITY OF SAN ANTONIO PAVEMENT ENGINEERING DIVISION BEFORE PROJECTS COMMENCE. ITEMS TO BE VIDEOTAPED NEED TO BE IDENTIFIED BY ADDRESS:

    FENCES
    MAILBOX FROM ALL SIDES
    DRIVEWAY ENTRIES
    CURBS, SIDEWALK, AND PEDESTRIAN WALKWAYS
    ANY FORM OF LANDSCAPING ON RIGHT OF WAY (TREES, PLANTS, ETC.)

56. THE CONTRACTOR SHALL PROVIDE A SCHEDULE OF WORK FOR THE ENTIRE PROJECT WITHIN FOURTEEN (14) DAYS OF THE NOTICE TO PROCEED. THE CONTRACTOR SHALL NOT SCHEDULE MORE THAN ONE WEEK GAP IN THE WORK IN THE BASE SCHEDULE.

57. THE CONTRACTOR SHALL UTILIZE AND MAINTAIN ITEM 1000-WEB PORTAL. PAYMENT IS SUBSIDARY TO OTHER ITEMS.

58. ALL WORK TO BE PERFORMED ON THE DOWNTOWN STREETS SHALL BE PERFORMED BETWEEN THE HOURS OF 8:00 PM AND 6:00 AM.

59. WHEN DIRECTED BY THE ENGINEER, FOG SEAL (TRMSS) SHALL BE APPLIED AT A RATE OF 0.08 TO 0.15 GAL/SY.

STATE OF TEXAS
CRYSTAL BENAVIDES
86197
LICENSED
PROFESSIONAL ENGINEER
11/4/2013
CRYSTAL BENAVIDES, P.E. DATE

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NO	DATE	DESCRIPTION	DWG	CHK
		REVISIONS		

FY 2014 ASPHALT OVERLAY PROJECTS

GENERAL NOTES

2 OF 5

POZNECKI CAMARILLO INC
TBPE REG. NO. F-483
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS, 78228
(210) 349-3273 (210) 349-4395 (FAX) http://www.pozcam.com/

DGN:				
CHK DGN:	FC			
DRG:		STATE	COUNTY	SHEET NO.
CHK DRG:	FC	TEXAS	BEXAR	3 OF 60

Design Filename: \\pciserver2\datagate\Jobs\11\014\Techprod\2014 SMP\GENERAL\2014*SMP*GEN-NTS-05.dgn
Plotted on: 11/4/2013 9:45:25 AM

UTILITY GENERAL NOTES

1. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181. THIS REQUIRES THAT C.P.S. MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. AT NO DIRECT PAY. THE CONTRACTOR MUST WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

2. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO EXCAVATION TO DETERMINE THE LOCATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO EXCAVATION OPERATION.

   SAN ANTONIO WATER SYSTEM 233-2010/2009
   COSA DRAINAGE 207-8048
   COSA SIGNAL OPERATIONS 207-7720
   TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005
   - CITY PUBLIC SERVICE
   - TIME WARNER
   - SOUTHWESTERN BELL TELEPHONE
   - SBC
   - AT&T
   - MCI

3. THE CONTRACTOR SHALL PROTECT TELEPHONE COMPANY EQUIPMENT AND OPERATIONS DURING CONSTRUCTION.

4. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE NOT GUARANTEED. CONTRACTOR SHALL INVESTIGATE AND VERIFY BEFORE STARTING WORK. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR THE MAINTANCE OF THE EXISTING UTILITIES, EVEN IF THEY ARE NOT SHOWN ON THE PLANS. LOCATION AND DEPTH OF UTILITIES SHOWN HERE ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED PRIOR TO CONSTRUCTION AND THE CONTRACTOR SHALL BE RESPONSIBLE OR THE PROTECTION OF THE SAME DURING CONSTRUCTION.

5. IF SPLIT CONSTRUCTION IS SHOWN, THEN THE SANITARY SEWER SHALL BE COMPLETED PRIOR TO BEGINNING STREET AND DRAINAGE CONSTRUCTION, AND TRAFFIC SHALL BE MAINTAINED OR DETOURED AS DIRECTED BY THE TRAFFIC ENGINEER. THERE WILL BE NO ADDITIONAL PAYMENT FOR THE MAINTAINING OF TRAFFIC OR DETOURS.

6. ALL AT&T MANHOLE ADJUSTMENTS WILL BE PAID FOR UNDER ITEM 512.1B. ALL MATERIALS INCLUDING RING RISERS SHALL BE PROVIDED BY AT&T.

7. IF ANY WORK IS REQUIRED WITHIN THE RAILROAD RIGHT-OF-WAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE REQUIRED INSURANCE. (LUMP SUM) PAY ITEM: SP2000

8. ALL MANHOLES AND OTHER UTILITY STRUCTURES IN THE CONSTRUCTION AREA SHALL BE ADJUSTED TO THE FINISHED GRADE. THIS ADJUSTMENT SHALL BE COMPLETED WITHIN ONE (1) WEEK AFTER PLACEMENT OF ASPHALT. ALL PAY ITEMS INCLUDED IN BID PROPOSAL SHALL BE ADJUSTED WITHIN SEVEN (7) DAYS.

9. BUILDING PAPER SHALL BE PLACED OVER ALL MANHOLES, VALVE BOXES, GRATES, ETC., SO AS TO PROTECT THE SURFACES FROM ASPHALTIC MATERIALS DURING APPLICATION OF SEAL COAT OR TACK COAT. ASPHALT MATERIALS SHALL NOT BE PLACED, LAPPED, OR SPLASHED ONTO ADJACENT STRUCTURES OR SURFACES. FOR STREETS THAT RECEIVE A FULL MILL APPLICATION, STREET SURFACES ADJACENT TO MANHOLES, WATER/GAS VALVES, DRAIN GATES, BRIDGE JOINTS, CURBS, ETC., SHALL BE COMPLETELY MILLED TO DEPTH AS SPECIFIED FOR THE STREET UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ALL MANHOLES AND VALVES SHALL BE ADJUSTED SO THAT THE RING AND COVER ARE WITHIN ½" MAXIMUM OF THE FINISHED GRADE OF THE NEW PAVEMENT. A SINGLE PAYMENT AT THE CONTRACTOR'S UNIT BID PRICE SHALL BE MADE FOR EACH MANHOLE ADJUSTED TO THE FINISHED GRADE OF NEW PAVEMENT. ALL UTILITY ADJUSTMENTS SHALL BE PERFORMED WITHIN 24 HOURS OF PAVING. ALL ADJUSTMENTS SHALL CONFORM TO THE "MANHOLE AND VALVE ADJUSTMENT" STANDARD DETAIL INCLUDED IN THE UTILITY EXCAVATION MANUAL GENERAL REQUIREMENTS AND PROCEDURES FOR EXCAVATION IN CITY OF SAN ANTONIO PUBLIC RIGHTS OF WAY, LATEST EDITION. DETAIL IS REVISED TO INSTALL A CIRCULAR CONCRETE COLLAR IN PLACE OF SQUARE CONCRETE COLLAR. CIRCULAR CONCRETE COLLAR TO BE 8-INCHES THICK CENTERED ON VALVE OR MANHOLE WITH FOUR RADIAL ½-INCH SCORE MARKS. COLLAR DIAMETER TO BE O.D. OF RING PLUS 12".

EROSION CONTROL AND SEDIMENTATION/STORM WATER POLLUTION PREVENTION PLAN GENERAL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING, IMPLEMENTING AND MAINTAINING A STORM WATER POLLUTION PREVENTION PLAN (SW3P) FOR THE DURATION OF THE CONSTRUCTION AS DESCRIBED IN ITEM NO. 540. COST OF PREPARING SW3P PLAN AND ALL COSTS FOR FURNISHING, IMPLEMENTING AND MAINTAINING ANY ON SITE POLLUTION CONTROL MEASURES REQUIRED BY THE SW3P (EG. SILT FENCING, CONSTRUCTION EXITS, GRAVEL FILTERS, ETC.) SHALL BE AT NO DIRECT PAY.

2. CONTRACTOR WILL BE RESPONSIBLE FOR COMPLETING WITH TCEQ'S TPDES PROGRAM FOR CONTROL OF SILT AND EROSION. CONTRACTOR SHALL PREPARE A SW3P AND SHALL UPDATE THE SW3P AS NECESSARY BASED ON FIELD CONDITIONS.

3. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION ACIVITIES. THE EROSION CONTROL MEASURES SHALL REMAIN IN PLACE AND FUNCTIONAL UNTIL AFTER THE PROPOSED IMPROVEMENTS ARE IN PLACE.

4. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND SIDEWALKS ADJACENT TO THE PROJECT FREE OF MUD AND DEBRIS FROM CONSTRUCTION AT ALL TIMES.

5. SEDIMENT CONTROL DEVICES SHALL BE INSTALLED PRIOR TO ANY EMBANKMENT OR EXCAVATION WORK BEING DONE. WHEN THE PROJECT IS COMPLETE AND THE ENTIRE SITE IS COMPLETELY STABILIZED, THE SEDIMENT CONTROL DEVICES AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER. THE CONTRACTOR HAS THE ULTIMATE RESPONSIBILITY FOR THE EFFECTIVE CONTROL OF EROSION AND SEDIMENTATION.

6. THE CONTRACTOR SHALL SEED OR SOD A COMPLETED EMBANKMENT AS SOON AS PRACTICABLE, BUT NO LATER THAN 14 DAYS AFTER AN EMBANKMENT IS COMPLETE. ALL SODDING SHALL BE PAID FOR UNDER ITEM NO. 516.1 "SODDING" AND AT THE SINGLE UNIT PRICE AS BID PER THE CONTRACT.

7. THE SITE SHALL BE REVIEWED WEEKLY AND AFTER ANY MAJOR STORM EVENTS. ADJUSTMENTS AND REPAIRS TO THE EROSION CONTROL DEVICES SHALL BE MADE AS NEEDED.

8. PROVIDE A COPY OF ANY REQUIRED SW3P TO THE CITY PRIOR TO BEGINNING CONSTRUCTION.

TREE PROTECTION AND PRESERVATION NOTES:

1. NO UTILITY OR STREET EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.

2. TREE PROTECTION FENCING SHALL BE REQUIRED AND TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED, AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION (NO SEPARATE PAY ITEM).

3. EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.

4. NO EQUIPMENT, VEHICLES OR MATERIALS SHALL OPERATE OR BE STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. ROOT PROTECTION ZONE IS ONE (1) FOOT OF RADIUS PER INCH OF DIAMETER OF THE TREE TRUNK. A 10-INCH DIAMETER TREE WOULD HAVE A 10-FOOT RADIUS PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. ALL OAK WOUNDS SHALL BE PAINTED OVER WITHIN 30 MINUTES TO PREVENT OAK WILT.

5. THE CITY ARBORIST SHALL APPROVE ANY TREE REMOVAL, 207-0278.

6. TREES, WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION, SHALL BE MITIGATED TO THE CITY'S SATISFACTION.

7. TREES, TREE LIMBS, BUSHES AND SHRUBS LOCATED IN THE CITY STREET OR ALLEY RIGHT OF WAY OR PERMANENT EASEMENTS WHICH INTERFERE WITH PROPOSED CONSTRUCTION ACTIVITIES MAY BE NEATLY TRIMMED BY THE CONTRACTOR ONLY AFTER APPROVAL FROM THE PAVEMENT ENGINEERING MANAGEMENT THROUGH THE INSPECTOR.

8. NO EXCESSIVE TREE TRIMMING WILL BE PERMITTED.

9. SAPLINGS, SHRUBS OR BUSHES TO BE CLEARED FROM THE PROTECTED ROOT ZONE AREA OF A LARGE TREE SHALL BE REMOVED BY HAND AS DESIGNATED BY THE INSPECTOR.

10. ALL DEBRIS GENERATED BY THE PRUNING AND TRIMMING OF THE TREES AND/OR BUSHES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY. (NO SEPARATE PAY ITEM)

STATE OF TEXAS
CRYSTAL BENAVIDES
86197
LICENSED
PROFESSIONAL ENGINEER

10/29/2013
CRYSTAL BENAVIDES, P.E. DATE

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NO	DATE	DESCRIPTION	DWG	CHK
		REVISIONS		

FY 2014 ASPHALT OVERLAY PROJECTS

GENERAL NOTES

3 OF 5

POZNECKI CAMARILLO INC
TBPE REG. NO. F-483
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS, 78228
(210) 349-3273
(210) 349-4395 (FAX)
http:/www.pozcam.com/

DGN:				
CHK DGN:	FC			
DWG:		STATE	COUNTY	SHEET NO.
CHK DWG:	FC	TEXAS	BEXAR	4 OF 60

Plotted on: 10/29/2013 9:16:30 AM
Design Filename: \\pciserver2\datagate\Jobs\11\014\Techprod\2014 SMP\GENERAL\2014*SMP*GEN-NTS-03.dgn

TRAFFIC NOTES AND SPECIAL CONDITIONS:

1. WORK AROUND SCHOOLS SHALL BE SCHEDULED TO ELIMINATE IMPACTS TO THE SCHOOL. LANES SHALL NOT BE CLOSED DURING THE TIME STUDENTS ARE BEING DROPPED OFF AND PICKED UP FROM SCHOOL. WORK WITHIN A SCHOOL ZONE CAN ONLY OCCUR BETWEEN THE HOURS OF 9 AM AND 2 PM.

2. IT IS THE CONTRACTORS RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES WILL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

   MULTI LANE USE TXDOT TOP'S
   LOCAL STREET CLOSURES USE CITY STADARDS
   UNIQUE SITUATIONS USE TMUTCD, NEED PRIOR APPROVAL

   THE CITY'S CONSTRUCTION INSPECTOR AND TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF, IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED. IF THE NEED ARISES, ADDITIONAL BARRICADES AND DIRECTIONAL DEVICES MAY BE ORDERED BY THE TRAFFIC ENGINEERING REPRESENTATIVE AT THE CONTRACTORS EXPENSE.

3. IT IS THE CONTRACTOR'S SOLE RESPOSIBILITY TO SEE THAT ALL TRAFFIC CONTROL DEVICES ARE PROPERLY INSTALLED AND MAINTAINED AT THE JOB SITE IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND RELATED INDUSTRY STANDARDS AND REGULATIONS. THESE NOTES DO NOT, IN AND OF THEMSELVES, CONSTITUTE A TRAFFIC CONTROL PLAN. IN THE EVENT THAT THESE PLANS DO NOT INCLUDE TRAFFIC CONTROL, OR THAT THE CONTRACTOR WISHES TO VARY FROM TRAFFIC CONTROL INCLUDED WITH THESE PLANS, HE SHALL SUBMIT FOR REVIEW A TRAFFIC CONTROL PLAN SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS, INCLUDING A SIGN AND BARRICADE PLAN CONFORMING TO THE REQUIREMENTS OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CITY'S CONSTRUCTION OBSERVER/INSPECTOR (COI) AND THE TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT THE TRAFFIC CONTROL DEVICES BEING DEPLOYED. IF, IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE COI, THE TRAFFIC CONTROL DEVICES DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE COI SHALL HAVE THE OPTION TO STOP CONSTRUCTION OPERATIONS AT NO EXPENSE TO THE CITY UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED BY THE CONTRACTOR.

4. FOR STREETS LISTED ON THE CITY OF SAN ANTONO'S MAJOR THOROUGHFARE PLAN, THE CONTRACTOR SHALL SUBMIT A ENGINEERED TRAFFIC CONTROL PLAN TO THE CITY OF SAN ANTONIO TWO WEEKS PRIOR TO COMMENCING WORK.

5. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE CITY OF SAN ANTONIO TRAFFIC OPERATIONS SECTION AT 207-7765 FOR A TRAFFIC SIGN AND TRAFFIC SIGNAL INVENTORY, PRIOR TO COMPLETION OF THE CONTRACT AND REMOVAL OF THE BARRICADES. THE CONTRACTOR SHALL AGAIN CONTACT THE TRAFFIC OPERATIONS SECTION. THE BARRICADES SHALL NOT BE REMOVED UNTIL ALL APPLICABLE PERMANENT TRAFFIC SIGNS AND SIGNALS ARE IN PLACE.

6. IT IS THE CONTRACTOR'S RESPONSIILITY OF OBTAIN AND MAINTAIN TEMPORARY STOP SIGNS AND ALL OTHER TRAFFIC CONTROL DEVICES REQUIRED PROTECTING THE GENERAL PUBLIC. IF THE CITY OF SAN ANTONIO HAS REMOVED PERMANENT STOP SIGNS, THE CONTRACTOR SHALL REQUEST THAT THE SIGNS BE RETURNED TO THE CONSTRUCTION SITE TO BE REINSTALLED BY THE CONTRACTOR. ALL PERMANENT SIGNS OR TRAFFIC CONTROL DEVICES MISSING OR DAMAGED UPON COMPLETION OF CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

7. THE CONTRACTOR SHALL MAINTAIN TRAFFIC ON THE PROJECT STREETS THROUGHOUT CONSTRUCTION. IN THE EVENT THE CONTRACTOR MUST CLOSE A STREET TO TRAFFIC, HE SHALL OBTAIN PERMISSION FROM THE PUBLIC WORKS DEPARTMENT AND SHALL PROVIDE A MINIMUM FORTY EIGHT (48) HOURS NOTICE TO THE FIRE DEPARTMENT AND POLICE DEPARTMENT.

8. AS WORK PROGESSES, LOCATION OF TEMPORARY TRAFFIC CONTROL DEVICES WILL BE ADJUSTED AND MODIFIED, AS NECESSARY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL SUPPLY TWO CARRIABLE MESSAGE SIGN BOARDS FOR USE THROUGHOUT THE CONTRACT.

9. IF THE NEED ARISES, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES, SPECIAL DIRECTIONAL DEVICES AND/OR BUSINESS NAME SIGNS MAY BE ORDERED BY THE TRAFFIC ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL SUPPLY TWO VARIABLE MESSAGE SIGN BOARDS FOR USE THROUGHOUT THE DURATION OF THE CONTRACT.

10. THE CONTRACTOR MUST MAINTAIN ALL STREETS WITHIN PROJECT LIMITS OPEN TO THROUGH TRAFFIC BY REPAIRING TRENCHES, POTHOLES, LEVELING UP WITH ASPHALT, ETC. AT NO DIRECT PAYMENT, WITH THE COST TO BE INCLUDED IN OTHER ITEMS.

11. WHEN CONSTRUCTION WORK NECESSITATES THE UTILIZATION OF VEHICLE PATHS OTHER THAN THE LANES NORMALLY USED, TRAFFIC CONTROL MARKINGS NO LONGER APPLICABLE SHALL BE REMOVED AND APPROVED TEMPORARY PAVEMENT MARKINGS AND SIGNS INSTALLED IN ACCORDANCE WITH PART VI-D OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

12. ALL TEMPORARY TRAFFIC CONTROL DEVICES, ETC. SHALL BE PROVIDED BY THE CONTRACTOR WITHOUT DIRECT PAYMENT, UNLESS OTHERWISE NOTED OR STATED. TEMPORARY TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CITY'S "TYPICAL SIGN AND BARRICADE STANDARDS" SHEETS AND TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

13. THE COI WILL MONITOR THE CONTRACTOR'S TRAFFIC CONTROL DEVICES AND WILL BE RESPONSIBLE TO FURNISH ALL RESIDENTS AND BUSINESSES WITH AN INFORMATION FLYER ON ALL JOBS DURING CONSTRUCTION.

14. ANY DAMAGE TO PERMANENT TRAFFIC SIGNALS, THE CONTROLLER BOX, LOOPS OR CONDUITS DURING OR UPON COMPLETION OF THE PROJECT SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. THE DECISION TO REPAIR, AS OPPOSED TO REPLACE, THE DAMAGED EQUIPMENT SHALL BE MADE BY THE CITY'S TRAFFIC ENGINEER.

15. CONTRACTOR SHALL MAINTAIN A LEAST ONE LANE OPEN TO TRAFFIC AT ALL TIMES. UNIFORMED OFF-DUTY POLICE OFFICER SHALL BE ON SITE IF ONE LANE CANNOT REMAIN OPEN.

16. OFF DUTY POLICE OFFICERS WILL BE REQUIRED AS DIRECTED BY THE TAFFIC ENGINEER. PAYMENT WIL BE MADE UNDER ITEM SP500. THIS WILL BE A REQUIREMENT WHERE TWO-WAY TRAFFIC IS TO BE MAINTAINED. ALL OFF DUTY OFFICERS AND CONTRACTOR CREWS HANDLING TRAFFIC MUST BE LISTED AS CERTIFIED OR QUALIFIED FLAGGERS BY CONTRACTOR.

17. CONTRACTOR SHALL SCHEDULE HIS WORK SUCH THAT EACH STREET WILL BE SUBSTANTIALLY COMPLETE PRIOR TO MOVING HIS CONSTRUCTION OPERATION TO ANOTHER STREET. MORE THAN ONE STREET CAN BE UNDER CONSTRUCTION WITH THE PRIOR APPROVAL FROM THE CITY AND EACH STREET HAS CONTINUOUS, ACTIVE AND UNINTERRUPTED CONSTRUCTION OPERATION ON THAT STREET.

18. CONTACT THE CITY TRAFFIC OPERATIONS AT 210-207-7765 PRIOR TO ANY MILLING.

19. ALL EXISTING PAVEMENT MARKERS SHALL BE REMOVED BY THE CONTRACTOR ONLY AS THE WORK PROGRESSES AND AS APPROVED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPERATELY, BUT SHALL BE CONSIDERED SUBSIDARY TO THE VARIOUS BID ITEMS. MATERIALS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

20. THE CONTRACTOR SHALL NOT COMMENCE WORK ON A STREET PRIOR TO 8 AM. THE PLACEMENT AND MOVEMENT OF SIGNS AND BARRICADES CONSTITUTES WORK AND SHALL NOT BE STARTED UNTIL AFTER THE 8 AM TIME FRAME.

21. THE CONTRACTOR SHALL MAINTAIN CONTINUOUS ACCESS TO ALL INTERSECTING STREETS UNLESS OTHERWISE SHOWN ON THESE PLANS. WHEN CONTINUOUS ACCESS IS SCHEDULED TO BE BLOCKED, THE CONTRACTOR SHALL CONTACT THE DISPACHERS FOR THE FIRE DEPT AND EMS AT (210) 227-8341 AND THE POLICE DEPT AT (210) 207-2257, TO APPRISE THEM OF THE PENDING STREET CLOSURE AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE. IF THE CLOSURE FALLS ALONG A BUS ROUTE, THE CONTRACTOR SHALL ALSO CONTACT VIA AT (210) 362-5220. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUITABLE ACCESS ACCOMMODATIONS FOR SCHOOL CHILDREN AND PEDESTRIANS.

22. THE CONTRACTOR SHALL MAINTAIN EITHER THE EXISTING OR TEMPORARY STREET NAME SIGN AT EACH INTERSECTION ONSITE THROUGHOUT CONSTRUCTION. IF THE EXISTING STREET NAME SIGNS ARE USED, THEY MUST BE MAINTAINED IN THE CONDITION ENCOUNTERED PRIOR TO THE BEGINNING OF CONSTRUCTION, AND BE TURNED IN TO THE CITY INSPECTOR AT THE END OF THE PROJECT. IF TEMPORARY SIGNS ARE USED DURING THE CONSTRUCTION, THEY SHALL HAVE A MINIMUM OF 4-INCH LETTERS, AND MAY BE FABRICATED WITH CONSTRUCTION ZONE MATERIAL (BLACK LEGEND ON ORANGE BACKGROUND, USING PLYWOOD SUBSTRATE, ETC.)

23. AFTER ALL UTILITIES HAVE MADE THEIR REQUIRED MANHOLE AND VALVE ADJUSTMENTS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY BARRICADE AND MAINTAIN THE BARRICADES TO ENSURE THAT THE PUBLIC IS SAFEGUARDED WHILE TRAVELING WITHIN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEER FOR A REVIEW OF THE ADEQUACY OF THE BARRICADES. THERE WILL BE NO SEPARATE PAYMENT FOR THIS ITEM.

STATE OF TEXAS
CRYSTAL BENAVIDES
86197
LICENSED
PROFESSIONAL ENGINEER

CRYSTAL BENAVIDES, P.E. DATE 10/29/2013

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NO	DATE	DESCRIPTION	DWG	CHK
		REVISIONS		

FY 2014 ASPHALT OVERLAY PROJECTS

GENERAL NOTES

4 OF 5

POZNECKI CAMARILLO INC
TBPE REG. NO. F-483
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS, 78228
(210) 349-3273 (210) 349-4395 (FAX) http:/www.pozcam.com/

DGN:				
CHK DGN:	FC			
DWG:		STATE	COUNTY	SHEET NO.
CHK DWG:	FC	TEXAS	BEXAR	5 OF 60

Design Filename: \\pciserver2\datagate\Jobs\11\014\Techprod\2014 SMP\GENERAL\2014*SMP*GEN-NTS-03.dgn
Plotted on: 10/29/2013 9:16:34 AM

TRAFFIC NOTES AND SPECIAL CONDITIONS (CONTINUED):

24. ALL TRAFFIC CONTROL DEVICES, PLACEMENT AND ACTIVITIES SHALL BE AS PER THE LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TXMUTCD). IF THERE IS ANY CONFLICT BETWEEN THE TXMUTCD AND TRAFFIC CONTROL REQUIREMENTS WITHIN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.

25. FOR STREETS WHICH ACCOMMODATE FOUR (4) OR MORE TRAFFIC LANES, THE FOLLOWING RESTRICTIONS WILL APPLY:

    A. TWO-WAY TRAFFIC SHALL BE MAINTAINED.
    B. A MINIMUM OF TWO LANES SHALL REMAIN OPEN FOR TRAFFIC.
    C. NO MORE THAN 1,000 LINEAR FEET OF A ROADWAY LANE MAY BE CLOSED DURING CONSTRUCTION OPERATION.
    D. A MINIMUM OF ONE (1) OFF-DUTY POLICE OFFICER SHALL BE REQUIRED ON SITE DURING BASE FAILURE REPAIR, SLURRY SEALING, MILLING AND H.M.A.C. OVERLAY OPERATIONS.

26. FLASHING WARNING LIGHTS AND/OR FLAGS SHALL BE USED TO CALL ATTENTION TO ALL ADVANCE WARNING SIGNS.

27. SIGNS WHICH READ "FRESH OIL" SHALL BE PLACED AT EACH END OF WORK AREA AND ALL TURNOUTS ADJACENT TO WORK AREAS WHERE SLURRY SEALING IS BEING PERFORMED UNTIL SUCH TIME THAT THE ENGINEER GIVES PERMISSION FOR THEIR REMOVAL.

28. SIGNS WHICH READ "CONSTRUCTION AHEAD, TRAFFIC DELAYS TO BE EXPECTED" SHALL BE PLACED AT EACH END OF WORK AREA. SAID SIGNS SHALL BE 60"X30" AND SHALL BE ORANGE WITH BLACK LETTERING.

29. ALL TRAFFIC MARKINGS SHALL BE PLACED IN ACCORDANCE WITH THE CITY TRAFFIC ENGINEER. HE SHALL BE GIVEN A MINIMUM OF SEVENTY-TWO (72) HOURS NOTICE PRIOR TO THE APPLICATION OF ANY MARKINGS.

30. THE CONTRACTOR SHALL NOTIFY THE TEXAS DEPARTMENT OF TRANSPORTATION PRIOR TO WORKING AT THE INTERSECTION OF ANY STATE OWNED OR MAINTAINED ROADWAY.

31. ALL STREETS, FOR THEIR FULL WIDTH, SHALL BE OPENED TO TRAFFIC AT THE END OF EACH WORK PERIOD.

32. AT NO DIRECT PAYMENT, APPROVED TEMPORARY SHORT-TERM EXPENDABLE PAVEMENT MARKINGS SHALL BE PROVIDED TO DELINEATE LANE CONTINUITY PRIOR TO THE APPLICATION OF STANDARD MARKINGS BY THE USE OF FLEXIBLE RELECTIVE ROAD MARKER TABS. ONCE THE EXISTING STANDARD PAVEMENT MARKINGS HAVE BEEN OBLITERATED, SUCH TABS SHALL REMAIN IN PLACE FOR A MAXIMUM OF FOURTEEN (14) DAYS AFTER WHICH TIME STANDARD THERMOPLASTIC PAVEMENT MARKINGS MUST BE APPLIED. AT THE CONTRACTOR'S OPTION, THE CONTRACTOR MAY APPLY STANDARD PAINTED MARKINGS PRIOR TO THE APPLICATION OF THE THEMOPLASTIC MARKINGS FOR AN INTERIM PERIOD OF TIME. SUBSEQUENT TO AN INITIAL APPLICATION OF STANDARD PAINTED MARKING, REPEATED APPLICATIONS OF SUCH MAY BECOME NECESSARY UNTIL STANDARD THERMOPLASTIC TRAFFIC MARKINGS ARE IN PLACE. AS A FUNCTION OF THE MARKINGS EFFECTIVE VISIBILITY, THE ENGINEER WILL DETERMINE WHEN RE-APPLICATION OF THE PAINTED MARKINGS IS NECESSARY, PAINTED MARKINGS SHALL BE APPLIED TO DELINEATE FULL CENTERLINES AND LANE LINES AND WILL REQUIRE GLASS BEADS. PAVEMENT OF INITIAL PAINTED MARKING APPLICATION AND ALL REPEATED APPLICATIONS OF PAINTED MAKINGS SHALL BE AT NO DIRECT PAYMENT.

33. CONTRACTOR TO CONTACT THE CITY TRAFFIC ENGINEER OFFICE AT 207-7758 48 HOURS PRIOR TO SIDEWALK AND CURB CONSTRUCTION WHERE CITY OWNED TRAFFIC FACILITIES EXIST. CONTRACTOR SHALL SECURE APPROVAL FOR ENGINEER PRIOR TO SUCH CONSTRUCTION. NO WIRE SPLICES SHALL BE MADE OUTSIDE THE PULL BOX. IF WIRES SHOULD BE CUT OUTSIDE THE PULL BOX BY THE CONTRACTOR, SAID CONTRACTOR SHALL THEN REPLACE THE ENTIRE WIRE AT NO EXTRA PAY.

34. LOCATION AND LAYOUTS OF DETECTOR LOOP REPLACEMENTS SHALL BE VERIFIED BY THE CITY ENGINEER PRIOR TO THEIR REMOVAL AND INSTALLATION.

35. PAVEMENT MARKINGS ARE TO BE COMPLETED NO LATER THAN SEVEN (7) DAYS AFTER MAINTENANCE APPLICATION IS PLACED. PERMANENT PAVEMENT MARKINGS SHALL BE APPLIED PRIOR TO THE OPENING OF THE COMPLETED STREET TO TRAFFIC. TEMPORARY ADDITIONAL SHORT-TERM EXPENDABLE PAVEMENT MARKINGS MAY BE PROVIDED PRIOR TO THE APPLICATION OF PERMANENT MARKINGS IN MINIMUM LENGTHS OF 36", OR RAISED PAVEMENT MARKINGS TO DELINEATE CONTINUITY UNTIL SUCH TIME AS\ STANDARD PAVEMENT MARKINGS IN NORMAL LENGTHS CAN BE PLACED AT NO DIRECT PAYMENT.

36. CONTRACTOR TO CONTACT CITY TRAFFIC ENGINEER SEVEN (7) DAYS PRIOR TO COMMENCING WORK ON STREETS WITH BIKE LANES. BIKE LANE MARKING LAYOUT SHALL BE PROVIDED TO THE CONTRACTOR BY THE CITY TRAFFIC ENGINEER.

37. DURING ASPHALT OVERLAY, THE CONTRACTOR SHALL ALLOW RESIDENTS TRAFFIC ACCESS TO THE STREET WITH PROPER GUIDANCE, DIRECTION, FLAGMEN AND TRAFFIC CONTROL, AND ONLY AT SUCH TIME THAT DAMAGE WILL NOT OCCUR TO THE NEW ASPHALT OVERLAY OR TO THE VEHICLES. THIS INCLUDES BUT IS NOT LIMITED TO DAMAGE RESULTING FROM TACK COAT ON THE VEHICLES PAINTED SUFACES.

38. IN SO FAR AS POSSIBLE, THE CONTRACTOR SHALL SCHEDULE AND CONDUCT STREET OPERATIONS IN THE INTERSECTIONS AS RAPIDLY AS POSSIBLE TO MINIMIZE THE LENGTH OF TIME THE INTERSECTIONS WILL BE CLOSED TO TRAFFIC.

39. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL STREETS OUTSIDE OF THE PROJECT LIMITS WHICH ARE DAMAGED DUE TO CONSTRUCTION ACTIVITIES. THE CITY'S STREET ENGINEER MUST APPROVE THE REPLACED SECTION. THERE WILL BE NO DIRECT PAYMENT FOR THIS WORK. THE COST IS TO BE INCLUDED IN OTHER ITEMS.

40. IF REQUIRED, A BARRICADE COMPANY SHALL SUPPLY THE CONTRACTOR WITH A SUFFICIENT NUMBER OF QUALITY STANDARD BARRICADES AND OTHER TRAFFIC CONTROL DEVICES BY M.U.T.C.D. STANDARDS AS NEEDED. THE BARRICADE COMPANY SHALL ALSO SUPPLY THE CONTRACTOR WITH TWO (2) FULL TIME QUALIFIED PERSONNEL WHOSE SOLE RESPONSIBILITIES PERTAINING TO THIS PROJECT ARE TO ESTABLISH AND MAINTAIN PROPER CONSTRUCTION WORK ZONE TRAFFIC CONTROL AND RELATED DEVICES. THESE PERSONS SHALL PROVIDE DOCUMENTED EVIDENCE THEY HAVE RECEIVED SPECIALIZED TRAINING IN CONSTRUCTION WORK ZONE TRAFFIC CONTROL WITHIN TWO YEARS OF THE CONTRACT DATE. ANY AND ALL TRAFFIC CONTROL DEVICES NEEDED AND NECESSARY PERSONNEL WILL BE THE CONTRACTOR'S EXPENSE.

41. THE CONTRACTOR MUST CONTACT THE CITY'S COI 48 HOURS IN ADVANCE (NOT INCLUDING WEEKENDS) OF ANY MINOR STREET CLOSURE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ADVISE THE COI TEN (10) DAYS IN ADVANCE TO ARTERIAL TOTAL STREET CLOSURE. THIS MUCH TIME IS NECESSARY TO INSTALL ADVISORY SIGNS AND GIVE THE MOTORIST A MINIMUM OF SEVEN (7) DAYS NOTICE OF THE STREET CLOSURE. THE COI AFTER BEING NOTIFIED WILL CONTACT THE TRAFFIC ENGINEEING OFFICE TO MAKE THE NECESSARY ARRANGEMENTS.

STATE OF TEXAS
CRYSTAL BENAVIDES
86197
LICENSED
PROFESSIONAL ENGINEER

10/29/2013
CRYSTAL BENAVIDES, P.E. DATE

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NO	DATE	DESCRIPTION	DWG	CHK
		REVISIONS		

FY 2014 ASPHALT OVERLAY PROJECTS

GENERAL NOTES

5 OF 5

POZNECKI CAMARILLO INC
TBPE REG. NO. F-483
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS, 78228
(210) 349-3273 (210) 349-4395 (FAX) http:/www.pozcam.com/

DGN:				
CHK DGN:	FC			
DWG:		STATE	COUNTY	SHEET NO.
CHK DWG:	FC	TEXAS	BEXAR	6 OF 60

Plotted on: 10/29/2013 9:16:37 AM
Design Filename: \\pciserver2\datagate\Jobs\11\014\Techprod\2014 SMP\GENERAL\2014*SMP*GEN-NTS-03.dgn

2014 ASPHALT OVERLAY (PKG 5)
SUMMARY OF QUANTITIES

ITEM NO.	BID ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	E. JOSEPHINE ST from N Alamo St to Avenue B	MIDCROWN DR from Eisenhauer & Midcrown to Walzem Rd	VILLAMAIN from Mission Pkwy to SE LP 410 Access Rd	GOLIAD RD from Pecan Valley to Hot Wells	GOLIAD RD from Archimedes to Hot Wells	SOMERSET RD from LP410 Access to Pvt Rd at 9486 Somerset	W MARTIN ST from N Colorado to N Medina
			COUNCIL DISTRICT	1,2	2	3	3	3	4	5
			SMP PROJECT NUMBER	15403	17096	15075	26965	26966	18306	26178
103.1	Remove Concrete Curb	LF	1,980	50	600	0	100	100	50	200
103.3	Remove Sidewalks and Driveways	SY	1,000	20	300	0	30	30	0	100
203	Tack Coat	GAL	1,872	34	282	134	82	104	234	121
205.4	Hot Mix Asphaltic Pavement Type D (GTR Modified)	TON	17,787	325	2,675	1,271	783	987	2,223	1,153
205.4B	Hot Mix Asphaltic Pavement Type D (GTR Modified) (level-up)*	TON	889	16	135	64	39	49	111	57
208.2	Salv, Haul & Stockpile Reclaimable Asph Pvmt (Loose Vehicle Msm't)	CY	1,470	100	275	25	150	150	50	150
209.1	Bus Stop Concrete Pavement	SY	4,329	666	666	333	999	0	0	333
230.3	Replacing Base & Pvmt With Type A Pvmt (6" Compacted Depth)	SY	38,577	856	6,195	2,140	1,320	1,663	5,850	3,033
230.3	Replacing Base & Pvmt With Type A Pvmt (8" Compacted Depth)	SY	400	20	50	30	20	20	50	50
230.3	Replacing Base & Pvmt With Type A Pvmt (12" Compacted Depth)	SY	400	20	50	30	20	20	50	50
241	Emulsion Aggregate Slurry Seal Mix	SY	1,200	100	100	100	100	100	100	100
250	Seal Coat	SY	187,231	3,422	28,160	13,376	8,246	10,394	23,400	12,133
315	Fog Seal (TRMSS)	GAL	3,000	100	100	700	100	100	1,100	100
438	Cleaning Existing Joints	LF	100	-	-	-	-	-	-	-
454	Header Type Expansion Joint Sealant	LF	100	-	-	-	-	-	-	-
500	Concrete Curb, Gutter, and Concrete Curb and Gutter	LF	1,980	100	200	0	100	100	0	200
502.1	Concrete Sidewalks	SY	1,000	50	300	0	50	50	0	100
502.1A	Curb Ramps	EA	141	0	26	0	16	15	0	4
503.1	Portland Cement Concrete Driveways	SY	200	10	30	0	10	10	0	30
512.1	Adjusting Existing Manholes (Storm Sewer)	EA	10	-	-	-	-	-	-	-
512.1B	Adjusting Existing Manholes (AT&T)	EA	10	-	-	-	-	-	-	-
515.1	Top Soil	CY	200	5	28	0	5	5	0	5
516.1	Sodding	SY	200	10	30	0	10	10	0	30
533-A	Elim Exist Pav Mrk and Raised Markers (4")	LF	400	40	40	40	40	40	40	40
533-B	Elim Exist Pav Mrk and Raised Markers (8")	LF	200	-	-	-	-	-	-	-
533-C	Elim Exist Pav Mrk and Raised Markers (12")	LF	200	-	-	-	-	-	-	-
533-E	Elim Exist Pav Mrk and Raised Markers (24")	LF	200	0	20	0	20	20	0	20
533-F	Elim Exist Pav Mrk and Raised Markers (SYMBOL)	EA	2	-	-	-	-	-	-	-
533-G	Elim Exist Pav Mrk and Raised Markers (WORD)	EA	2	-	-	-	-	-	-	-
533-H	Elim Exist Pav Mrk and Raised Markers (RR-Xing)	EA	2	-	-	-	-	-	-	-
535.1	4" Wide Yellow Line	LF	61,600	2,200	12,000	10,000	3,000	3,800	12,000	2,200
535.2	4" Wide White Line	LF	17,800	2,200	2,000	0	800	1,000	0	1,000
535.4	8" Solid White Line	LF	200	-	-	-	-	-	-	-
535.5	12" Wide White Line	LF	200	-	-	-	-	-	-	-
535.7	24" Wide White Line	LF	3,660	0	300	0	100	100	0	200
535.12	Word "ONLY"	EA	3	0	1	0	0	0	0	0
535.14	Railroad Crossing Symbol (2 R's, crossbuck, 3 transverse bars)	EA	2	0	0	0	0	0	0	1
535.16	Straight White Arrow Bicycle Facility	EA	2	2	0	0	0	0	0	0
535.17	Bike Rider Symbol	EA	2	2	0	0	0	0	0	0
535.22	White Sharrow (Bike Shared Lane)	EA	4	-	-	-	-	-	-	-
535.23	White Arrow (Left/Right/Straight)	EA	36	0	32	0	0	0	0	0
537.1	Traffic Button (Type W)	EA	100	-	-	-	-	-	-	-
537.2	Traffic Button (Type Y)	EA	100	-	-	-	-	-	-	-
537.6	Traffic Button (Type I-C)	EA	1,000	-	-	-	-	-	-	-
537.8	Traffic Button (Type II A-A)	EA	1,000	-	-	-	-	-	-	-
537.9	Pavement Marker (Type II C-R)	EA	50	-	-	-	-	-	-	-
624.2	Ground Boxes Type B (122322)	EA	4	-	-	-	-	-	-	-
712	Joint and Crack Sealing	LB	3,000	50	500	200	150	200	300	200
799	Speed Hump, Type II, Modular Rubber Cushions (remov, furn. new, and instl.)	EA	4	-	-	-	-	-	-	-
SP100	Door Hangers	LS	1	-	-	-	-	-	-	-
SP500	Police Officer	HR	300	30	20	20	30	30	30	30
SP800	Project Signs	EA	6	-	-	-	-	-	-	-
SP2000	Railroad Insurance and Permit	LS	1	-	-	-	-	-	-	-
	SAWS Water Items									
826	Valve Box Adjustment (SAWS)	EA	151	3	19	5	4	11	0	17
826 A	Valve Box Locate and Adjustment (SAWS)	EA	7	0	1	0	0	1	0	1
	SAWS Sewer Items									
851	Adjusting Existing Manholes (SAWS)	EA	102	4	10	0	4	5	0	11
851 A	Locating and Adjusting Existing Manholes (SAWS)	EA	7	0	1	0	0	0	0	1

* THE QUANTITIES FOR ITEM 205.4B, HMAP TYPE D (GTR MODIFIED) (LEVEL UP) ARE APPROXIMATE AND ITS BID PRICE SHALL NOT EXCEED THE BID PRICE OF ITEM 205.4, HMAP TYPE D (GTR MODIFIED) BY MORE THAN 10%

NOTES:
QUANTITIES SHOWN ON THIS SHEET REPRESENT AN APPROXIMATE DISTRIBUTION OF THE TOTAL CONTRACT QUANTITY AMONG THE VARIOUS SMP PROJECTS IN THE PACKAGE. QUANTITIES WILL VARY FROM STREET TO STREET AS DIRECTED.

NO	DATE	DESCRIPTION	DWG	CHK
		REVISIONS		

FY 2014 ASPHALT OVERLAY

SUMMARY OF QUANTITIES

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

POZNECKI CAMARILLO INC
TBPE REG. NO. F-483
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS, 78228
(210) 349-3273
(210) 349-4395 (FAX)
http://www.pozcam.com/

Design Filename: \\pciserver2\datagate\Jobs\11\014\Techprod\2014 SMP\GENERAL\2014*SMP*SUMMARY-PKG-5.dgn
Plotted on: 11/4/2013 1:20:08 PM

2014 ASPHALT OVERLAY (PKG 5)
SUMMARY OF QUANTITIES

ITEM NO.	BID ITEM DESCRIPTION	UNIT	N COLORADO ST from IH 10 W Access Rd to Alice Alley	N FRIO from IH 10 W Access Rd to W Commerce St	INGRAM RD from Wurzbach Rd to 250' W of Northwestern Dr	ECKHERT RD from Bandera Rd to Caribou & Snow Flake Dr
	COUNCIL DISTRICT		5	5	6	7
	SMP PROJECT NUMBER		27149	28451	26999	15384
103.1	Remove Concrete Curb	LF	700	80	50	50
103.3	Remove Sidewalks and Driveways	SY	300	100	100	20
203	Tack Coat	GAL	309	325	107	140
205.4	Hot Mix Asphaltic Pavement Type D (GTR Modified)	TON	2,939	3,088	1,013	1,330
205.4B	Hot Mix Asphaltic Pavement Type D (GTR Modified) (level-up)*	TON	147	154	50	67
208.2	Salv, Haul & Stockpile Reclaimable Asph Pvmt (Loose Vehicle Msm't)	CY	150	250	85	85
209.1	Bus Stop Concrete Pavement	SY	666	0	666	0
230.3	Replacing Base & Pvmt With Type A Pvmt (6" Compacted Depth)	SY	7,733	5,200	2,347	2,240
230.3	Replacing Base & Pvmt With Type A Pvmt (8" Compacted Depth)	SY	50	50	30	30
230.3	Replacing Base & Pvmt With Type A Pvmt (12" Compacted Depth)	SY	50	50	30	30
241	Emulsion Aggregate Slurry Seal Mix	SY	150	150	100	100
250	Seal Coat	SY	30,933	32,500	10,667	14,000
315	Fog Seal (TRMSS)	GAL	250	250	100	100
438	Cleaning Existing Joints	LF	-	-	-	-
454	Header Type Expansion Joint Sealant	LF	-	-	-	-
500	Concrete Curb, Gutter, and Concrete Curb and Gutter	LF	200	580	400	100
502.1	Concrete Sidewalks	SY	300	50	50	50
502.1A	Curb Ramps	EA	40	28	8	4
503.1	Portland Cement Concrete Driveways	SY	60	20	20	10
512.1	Adjusting Existing Manholes (Storm Sewer)	EA	-	-	-	-
512.1B	Adjusting Existing Manholes (AT&T)	EA	-	-	-	-
515.1	Top Soil	CY	118	24	5	5
516.1	Sodding	SY	60	20	20	10
533-A	Elim Exist Pav Mrk and Raised Markers (4")	LF	40	0	40	40
533-B	Elim Exist Pav Mrk and Raised Markers (8")	LF	-	-	-	-
533-C	Elim Exist Pav Mrk and Raised Markers (12")	LF	-	-	-	-
533-E	Elim Exist Pav Mrk and Raised Markers (24")	LF	40	40	20	20
533-F	Elim Exist Pav Mrk and Raised Markers (SYMBOL)	EA	-	-	-	-
533-G	Elim Exist Pav Mrk and Raised Markers (WORD)	EA	-	-	-	-
533-H	Elim Exist Pav Mrk and Raised Markers (RR-Xing)	EA	-	-	-	-
535.1	4" Wide Yellow Line	LF	12,000	0	4,000	400
535.2	4" Wide White Line	LF	2,000	8,000	800	0
535.4	8" Solid White Line	LF	-	-	-	-
535.5	12" Wide White Line	LF	-	-	-	-
535.7	24" Wide White Line	LF	2,000	660	200	100
535.12	Word "ONLY"	EA	0	0	2	0
535.14	Railroad Crossing Symbol (2 R's, crossbuck, 3 transverse bars)	EA	1	0	0	0
535.16	Straight White Arrow Bicycle Facility	EA	0	0	0	0
535.17	Bike Rider Symbol	EA	0	0	0	0
535.22	White Sharrow (Bike Shared Lane)	EA	-	-	-	-
535.23	White Arrow (Left/Right/Straight)	EA	0	0	4	0
537.1	Traffic Button (Type W)	EA	-	-	-	-
537.2	Traffic Button (Type Y)	EA	-	-	-	-
537.6	Traffic Button (Type I-C)	EA	-	-	-	-
537.8	Traffic Button (Type II A-A)	EA	-	-	-	-
537.9	Pavement Marker (Type II C-R)	EA	-	-	-	-
624.2	Ground Boxes Type B (122322)	EA	-	-	-	-
712	Joint and Crack Sealing	LB	500	500	200	200
799	Speed Hump, Type II, Modular Rubber Cushions (remov, furn. new, and instl.)	EA	-	-	-	-
SP100	Door Hangers	LS	-	-	-	-
SP500	Police Officer	HR	20	30	30	30
SP800	Project Signs	EA	-	-	-	-
SP2000	Railroad Insurance and Permit	LS	-	-	-	-
	SAWS Water Items					
826	Valve Box Adjustment (SAWS)	EA	49	19	17	7
826 A	Valve Box Locate and Adjustment (SAWS)	EA	2	1	1	0
	SAWS Sewer Items					
851	Adjusting Existing Manholes (SAWS)	EA	26	24	9	9
851 A	Locating and Adjusting Existing Manholes (SAWS)	EA	2	2	0	1

* THE QUANTITIES FOR ITEM 205.4B, HMAP TYPE D (GTR MODIFIED) (LEVEL UP) ARE APPROXIMATE AND ITS BID PRICE SHALL NOT EXCEED THE BID PRICE OF ITEM 205.4, HMAP TYPE D (GTR MODIFIED) BY MORE THAN 10%

NOTES:
QUANTITIES SHOWN ON THIS SHEET REPRESENT AN APPROXIMATE DISTRIBUTION OF THE TOTAL CONTRACT QUANTITY AMONG THE VARIOUS SMP PROJECTS IN THE PACKAGE. QUANTITIES WILL VARY FROM STREET TO STREET AS DIRECTED.

NO	DATE	DESCRIPTION	DWG	CHK
		REVISIONS		

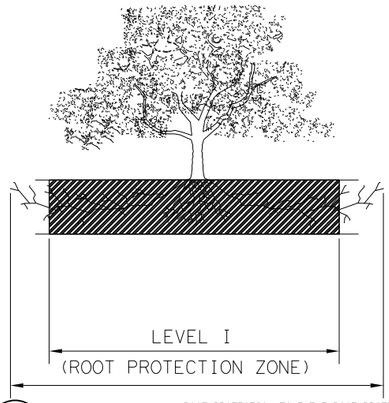
FY 2014 ASPHALT OVERLAY

SUMMARY OF QUANTITIES

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

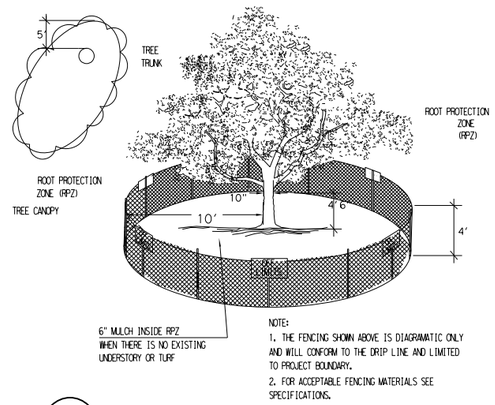
POZNECKI CAMARILLO INC
TBPE REG. NO. F-483
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS, 78228
(210) 349-3273 (210) 349-4395 (FAX) http://www.pozcam.com/

Design Filename: \\pciserver2\datagate\Jobs\11\014\Techprod\2014 SMP\GENERAL\2014*SMP*SUMMARY-PKG-5.dgn Plotted on: 11/4/2013 1:20:50 PM



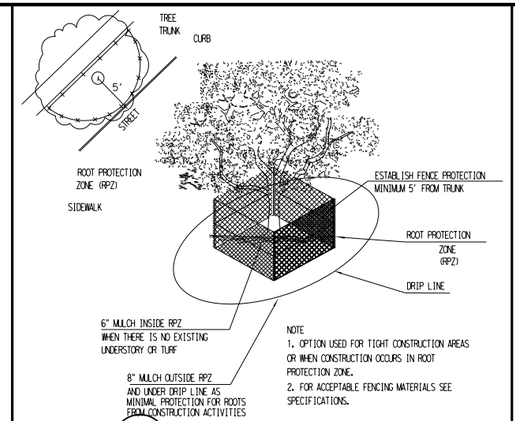
1.1.1 ELEVATION
N. T. S.

ROOT PROTECTION ZONE-THE ROOT PROTECTION ZONE IS A CIRCULAR AREA AROUND A TREE THAT IS BASED ON THE DIAMETER OF THE TREE. EACH 1 INCH DIAMETER OF THE TREE EQUALS 1 FOOT RADIUS FOR ROOT PROTECTION ZONE.



NOTE:
1. THE FENCING SHOWN ABOVE IS DIAGRAMATIC ONLY AND WILL CONFORM TO THE DRIP LINE AND LIMITED TO PROJECT BOUNDARY.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

1.1.2 LEVEL I & FENCE PROTECTION
N. T. S.



NOTE
1. OPTION USED FOR TIGHT CONSTRUCTION AREAS OR WHEN CONSTRUCTION OCCURS IN ROOT PROTECTION ZONE.
2. FOR ACCEPTABLE FENCING MATERIALS SEE SPECIFICATIONS.

1.1.3 LEVEL II A FENCE PROTECTION
N. T. S.

GENERAL NOTES

1. ALL PROTECTED SIZE TREES AFFECTED BY CONSTRUCTION SHALL HAVE THE LIMBS AND ROOTS TRIMMED AND PRUNED ACCORDING TO ITEM No. 802. (TREE PRUNING, SOIL AMENDING AND FERTILIZATION), UNLESS SPECIFIED TREES SHALL RECEIVE LEVEL 1 PROTECTION AS PER ITEM No. 801. (TREE AND LANDSCAPE PROTECTION) AND AS DETAILED IN 1.1.2.

2. ALL TREES SHALL REMAIN UNLESS NOTED ON THE CITY APPROVED PLANS.

3. NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND PROTECTION MEASURES HAVE NOT BEEN COMPLETED AND APPROVED BY THE CITY ARBORIST OFFICE.

4. TREE PROTECTION FENCING SHALL BE MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.

5. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES (3") IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR IF ROOTS LARGER THAN THREE INCHES (3") WITHIN THE FIVE FOOT (5') ROOT PROTECTION ZONE NEED TO BE PRUNED.

6. THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS ONE FOOT (1') PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A TEN INCH (10") DIAMETER TREE WOULD HAVE A TEN FOOT (10') RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER, WITHIN TWENTY (20) MINUTES TO PREVENT OAK WILT.

7. NO DISTURBANCE SHALL OCCUR CLOSER TO THE TRUNK THAN HALF THE ROOT PROTECTION ZONE AREA.

8. TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND.

9. TREES DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED.

10. EXPOSED ROOTS SHALL BE COVERED AT THE END OF EACH DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.

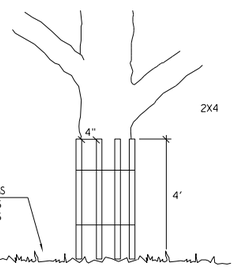
11. ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST OFFICE PRIOR TO ITS REMOVAL.

1.3 GENERAL NOTES

TREE PROTECTION TABLE (SEE SHEET 2 FOR TREE TABLE)

PROTECTION MEASURE						
TREE SHEET #	TREE/CALIPER SHEET #	STATION OR NUMBER	LOCATION	ITEM 80	ITEM 802 MAINTENCE/ TREATMENTS/ PROTECTION	REMOVAL SEE GENERAL NOTE No. 2

1.3 TREE PROTECTION TABLE

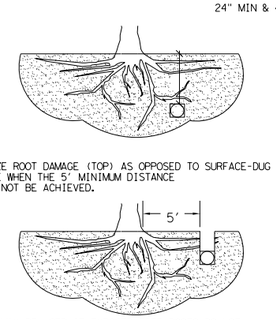


NOTE
WRAP TREE TRUNK WITH 2"X4" STUDS AND ROPE OR BAND IN PLACE AS NEEDED TO PROTECT TREES IN WORK AREAS.

1.1.4 LEVEL II B FENCE PROTECTION
N. T. S.

TREES THAT ARE MARKED TO BE PRESERVED ON A SITE PLAN AND FOR WHICH UTILITIES MUST PASS TROUGH THEIR ROOT PROTECTION ZONES MAY REQUIRE BOREING AS OPPOSED TO OPEN TRENCHES. THE DECISION TO BORE WILL BE DETERMINED ON A CASE BY CASE BASIS BY THE CITY.

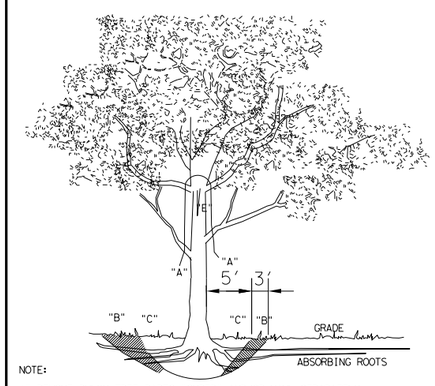
BORES
SHALL BE DUG THROUGH THE ROOT PROTECTION ZONE IN ORDER TO MINIMIZE ROOT DAMAGE.



BORE TO MINIMIZE ROOT DAMAGE (TOP) AS OPPOSED TO SURFACE-DUG TRENCHES IN ROOT PROTECTION ZONE WHEN THE 5' MINIMUM DISTANCE FROM TRUNK CAN NOT BE ACHIEVED.

OPEN TRENCHING MAY BE USED IF EXPOSED TREE ROOTS DO NOT EXCEED 3" OR ROOTS CAN BE BENT BACK.

1.2 BORING THRU TREE ROOT ZONE
N. T. S.



NOTE:

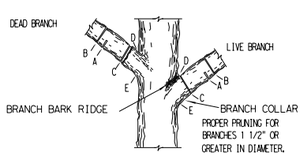
A" REMOVE BULKY TREE PARTS "SHRED" AND/OR HAUL SEPARATELY.

"B" BEGIN EXCAVATION APPROX. 8' FROM THE TRUNK - CUT THRU ANCHOR ROOTS AT AN ANGLE - 3' TO 4' DEEP

"C" USING TREE TRUNK AS A LEVER PUSH AT POINT "E" TO REMOVE TREE BOLE AND LARGE FEEDER ROOTS (4" TO 10" IN DIAM.)

"D" BACKFILL HOLE AND CLEAN UP.

1.3 TREE REMOVAL DIAGRAM
N. T. S.



NOTE: DO NOT CUT FROM D to E.

A. FIRST CUT - TO PREVENT THE BARK FROM BEING PEELED WHEN THE BRANCH FALLS.

B. SECOND CUT - TO REDUCE THE WEIGHT OF BRANCH.

C. FINAL CUT - ALLOW FOR HEALING COLLAR BUT NO STUBS

D. BRANCH RIDGES - INDENT PROPERLY BRANCH RIDGES WHICH ARE SITE FOR DECAY.

FOR OAKS ONLY: PAINT ALL WOUNDS OR CUTS WITH PRUNING PAINT WITHIN 20 MIN TO PREVENT THE SPREAD OF OAK WILT.

1.4 BRANCH PRUNING DETAIL
N. T. S.

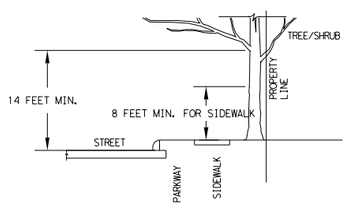
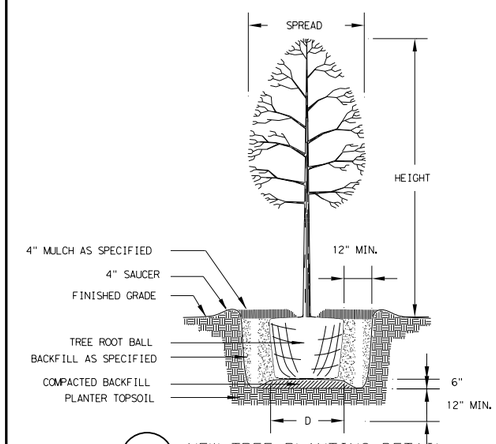


FIGURE No. 2:

A MINIMUM BRANCH CLEARANCE OF 14 FEET ABOVE STREET ELEVATION MUST BE MAINTAINED FROM THE PROPERTY LINE TO THE CURB LINE AS PRESCRIBED BY PROJECT MANAGER.

1.5 BRANCH CLEARANCE DETAIL
N. T. S.



1.6 NEW TREE PLANTING DETAIL
N. T. S.

TREE INVENTORY SUMMARY
(8" DIAMETER AND LARGER)

TOTAL DIAMETER INCHES, R.O.W _____

TOTAL DIAMETER INCHES REMOVED _____

TOTAL DIAMETER INCHES PRESERVED _____

TOTAL PERCENTAGE INCHES PRESERVED _____

TOTAL INCHES TO BE MITIGATED _____

1.3 TREE INVENTORY SUMMARY

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

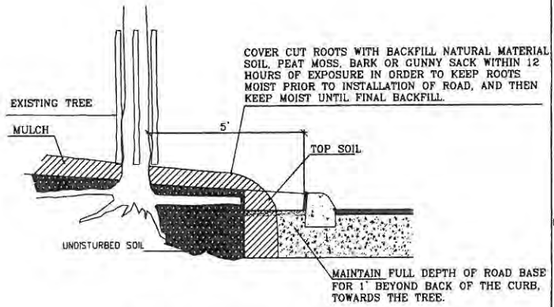
CITY OF SAN ANTONIO

DEPARTMENT OF PUBLIC WORKS

CITY OF SAN ANTONIO
TREE PROTECTION DETAILS

TREE PRESERVATION

DESIGNED:	FED. RD. DIV. NO.	STATE				SHT. NO.
CHECKED:		TEXAS				9 OF 60
DRAWN:	STATE DIST. NO.	COUNTY	CONTROL NO.	SECT. NO.	JOB NO.	HIGHWAY NO.
CHECKED:		BEXAR				

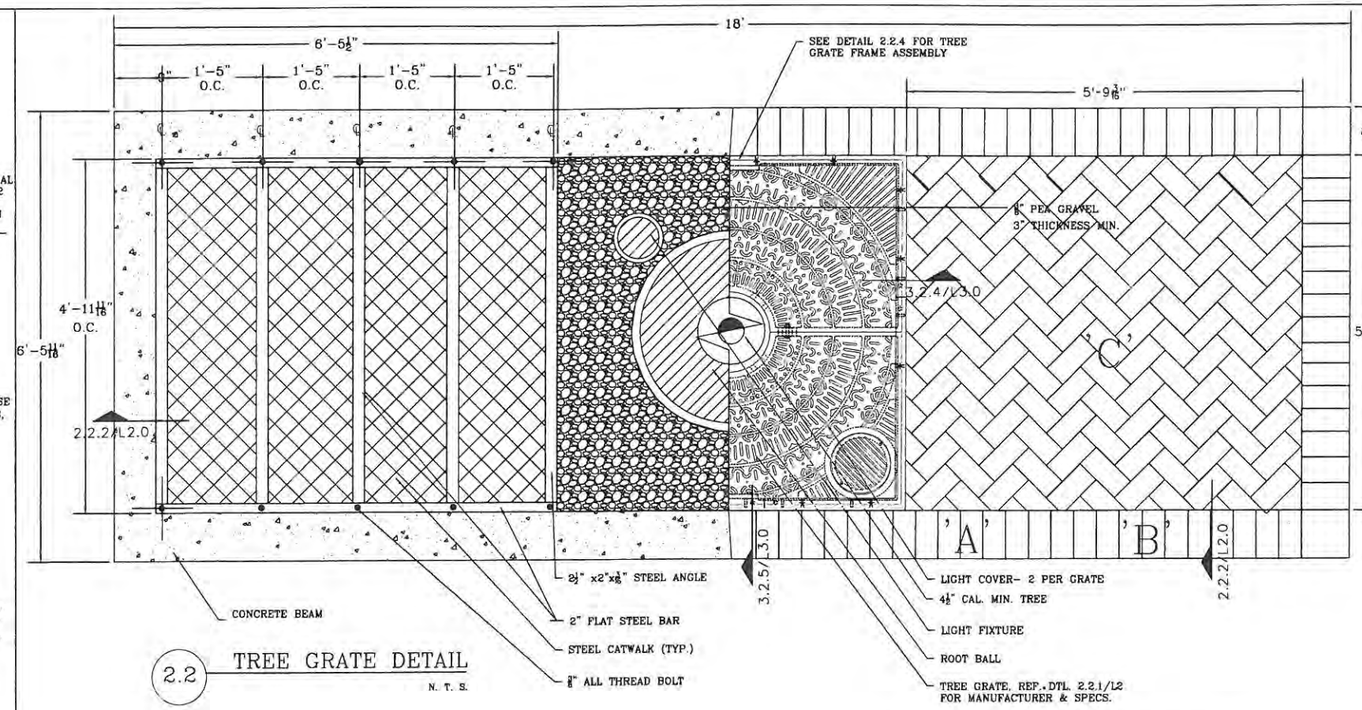


NOTE: ROOT ZONE OUTSIDE OF TREE PROTECTION BARRIER SHOULD BE COVERED AT ALL TIMES WITH 8" OF BARK MULCH THROUGHOUT THE CONSTRUCTION PHASE. EXISTING TREES SHOULD BE DEEP WATERED AS SPECIFIED IN ITEM 801 & 802

2.1 EXPOSED ROOT PROTECTION DETAIL

N. T. S.

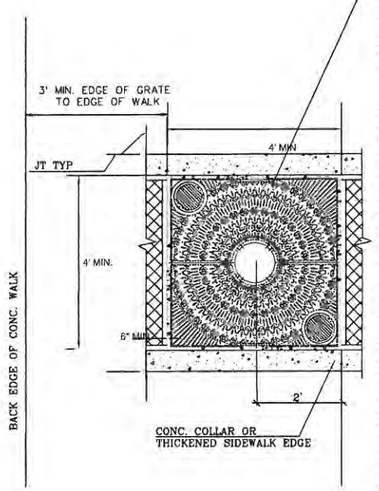
NOTE:
FOR THOSE TREES THAT DO NOT MEET THE TREE PRESERVATION ORDINANCE REQUIREMENTS PRESERVATION SHALL BE DETERMINED ON A CASE BY CASE BASIS



NOTES:
1. PAVER 'A': 8 5/16" -2⅜"
THICKNESS CONC. PAVER(CITY STONE II) CASTONE COLOR, BY PAVESTONE. 1-800-580-PAVE.
2. PAVER 'B': 4 5/16" X 8 5/16"- 2⅜"
THICKNESS, PATTERN AS SHOWN ON PLAN, CONC. PAVER(HOLLAND STONE) CAST STONE COLOR, MANUF. BY PAVESTONE.
3. PAVER 'C': 4 5/16" X 8 5/16"- 2⅜"
THICKNESS, 45° HERRINGBONE PATTERN, CONC. PAVER(HOLLAND STONE), ANTIQUE COLOR, MANUF. BY PAVESTONE.

2.2 TREE GRATE DETAIL

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'X6' 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.

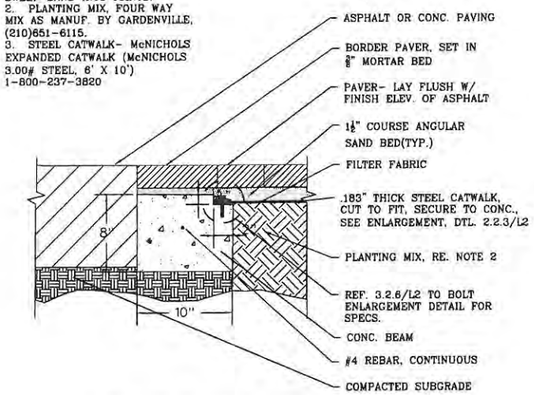
NOTE:
SEE SHEET 2 DETAIL 4 FOR SUBSURFACE TREATMENT OF WALK.

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

2.2.1 TREE GRATE PLAN VIEW

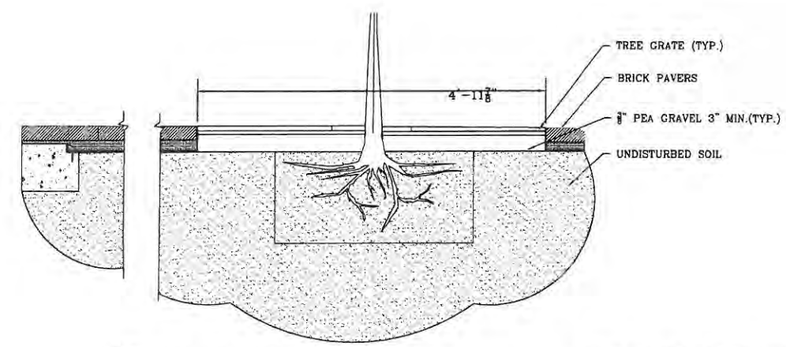
N. T. S.

NOTES:
1. COMPACT, VIBRATE & SWEEP SAND INTO JOINTS.
2. PLANTING MIX, FOUR WAY MIX AS MANUF. BY GARDENVILLE, (210)651-6115.
3. STEEL CATWALK- McNICHOLS EXPANDED CATWALK (McNICHOLS 3.00# STEEL, 6' X 10') 1-800-237-3820



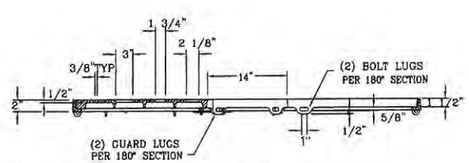
2.2.2 SECTION: PAVER @ ASPHALT

N. T. S.



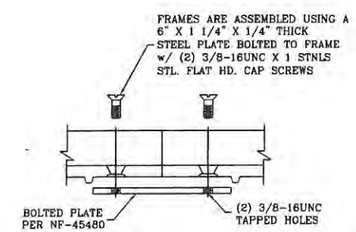
2.2.3 TREE WELL SECTION

N. T. S.



2.2.4 SECTION: TREE GRATE FRAME

N. T. S.



2.2.5 SECTION: GRATE FRAME ASSEMBLY

N. T. S.

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

CITY OF SAN ANTONIO

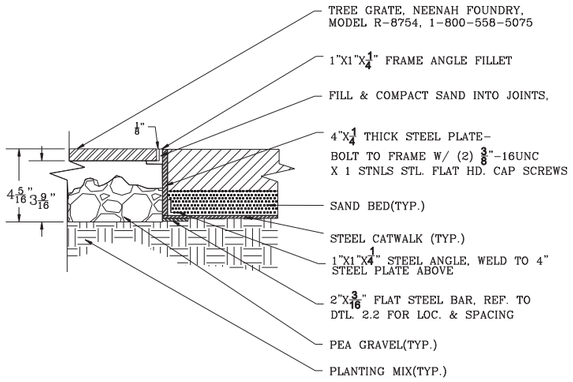
DEPARTMENT OF PUBLIC WORKS

CITY OF SAN ANTONIO
TREE PROTECTION DETAILS

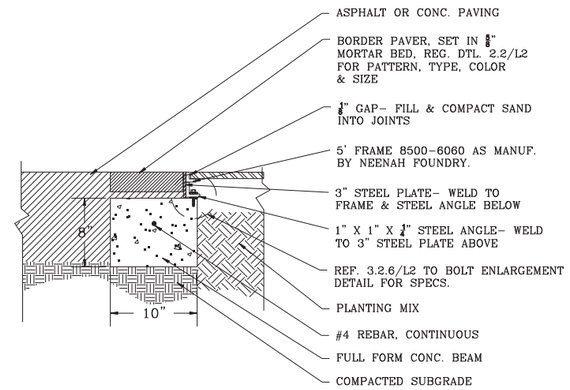
TREE PRESERVATION

DESIGNED:	FED. RD. DIV. NO.	STATE				SHT. NO.
CHECKED:		TEXAS				10
DRAWN:	STATE DIST. NO.	COUNTY	CONTROL NO.	SECT. NO.	JOB NO.	HIGHWAY NO.
CHECKED:		BEXAR				

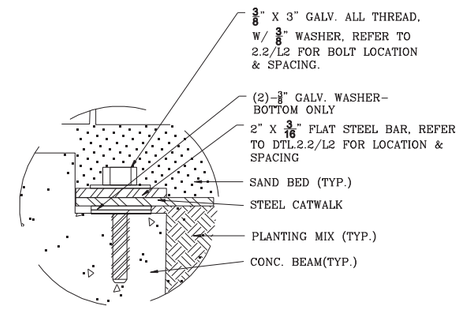
NOTES:
1. 5' FRAME 8500-6060 AS MANUFACTURED BY NEENAH FOUNDRY.
2. REMOVE CROSSBAR FROM FRAME BEFORE INSTALLATION.



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

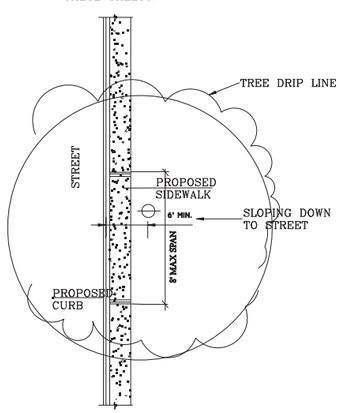


3.2.5 SECTION: PAVER @ TREE GRATE
N. T. S.



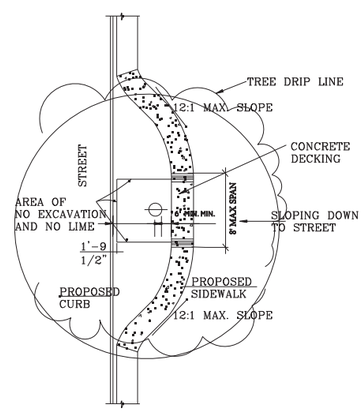
3.2.6 DETAIL: BOLT/CONC. CONNECTION
N. T. S.

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



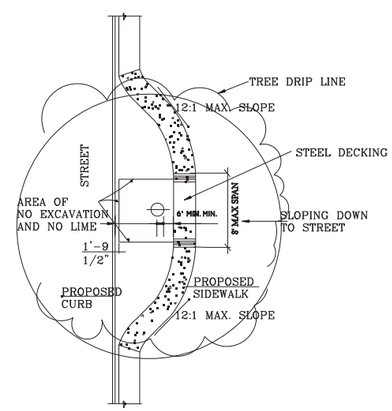
3.3 ELEVATED WALKWAY
N. T. S.

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



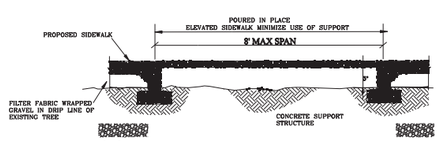
3.3.1 ELEVATED WALKWAY /CONCRETE DECKING
N. T. S.

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.

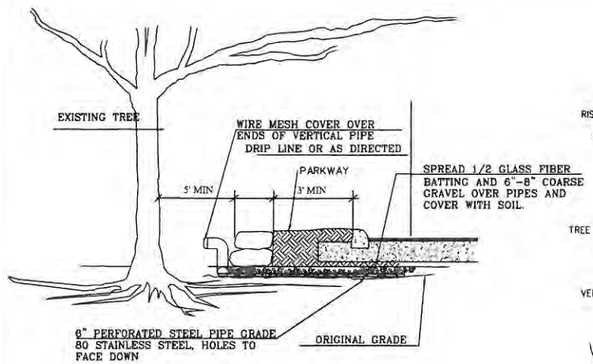
PREPARED BY: FERNANDEZ FRAZER WHITE & ASSOC. INC. & C. F. ZAVALA GROUP

CITY OF SAN ANTONIO

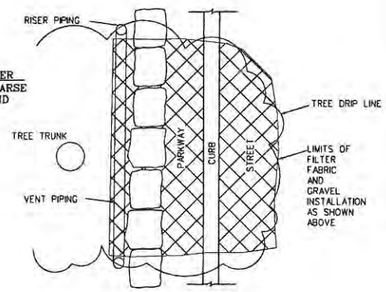
DEPARTMENT OF PUBLIC WORKS

CITY OF SAN ANTONIO
TREE PROTECTION

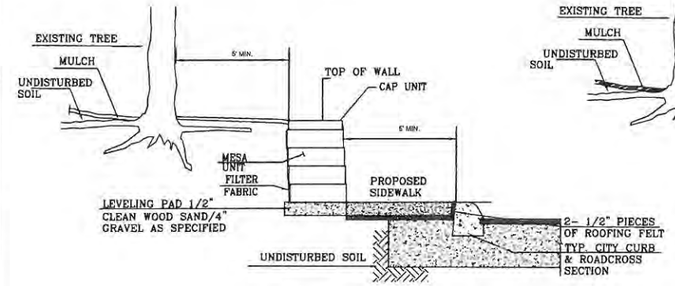
DESIGNED: ABFJR	FED. RD. DIV. NO.	STATE				SHT. NO.
CHECKED:		TEXAS				11
DRAWN: ABFJR	STATE DIST. NO.	COUNTY	CONTROL NO.	SECT. NO.	JOB NO.	HIGHWAY NO.
CHECKED:						



4.2 TREE AERATION DETAIL B
N. T. S.

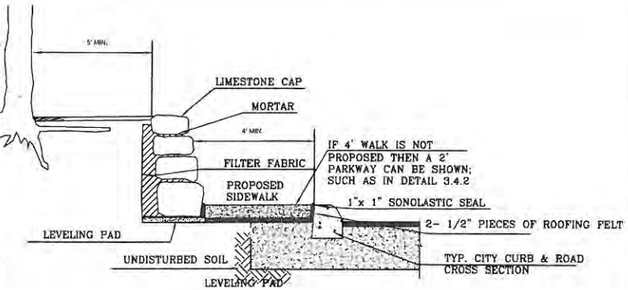


4.2.2 PLAN VIEW B
N. T. S.



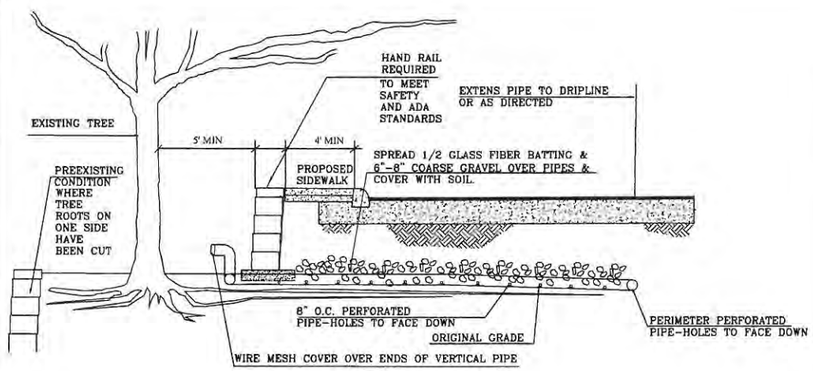
4.3 SEGMENTAL GRAVITY WALL
ADJACENT TO CURB
N. T. S.

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

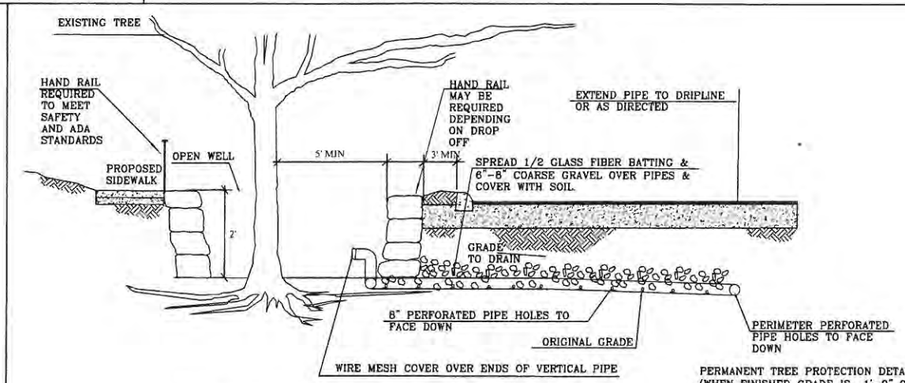


4.3.2 LIMESTONE BOULDER GRAVITY WALL
ADJACENT TO CURB
N. T. S.

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.



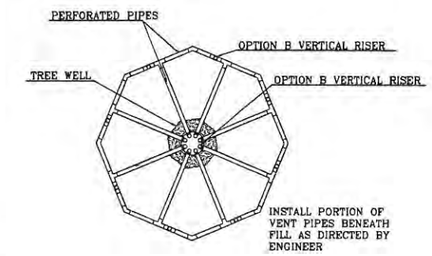
4.4.2 TREE AERATION DETAIL C
N. T. S.

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.

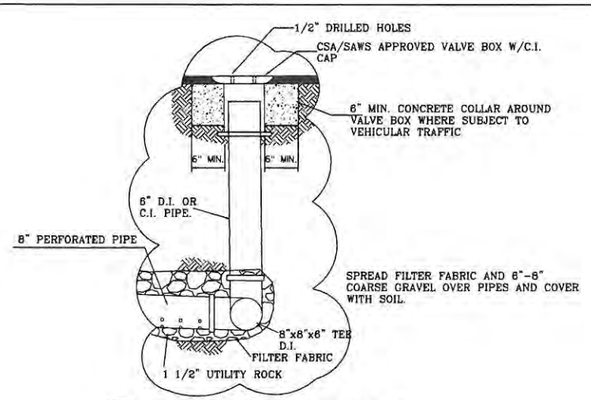
PERMANENT TREE PROTECTION DETAIL (WHEN FINISHED GRADE IS 1'-0" OR MORE ABOVE EXISTING GRADE)

NOTE:

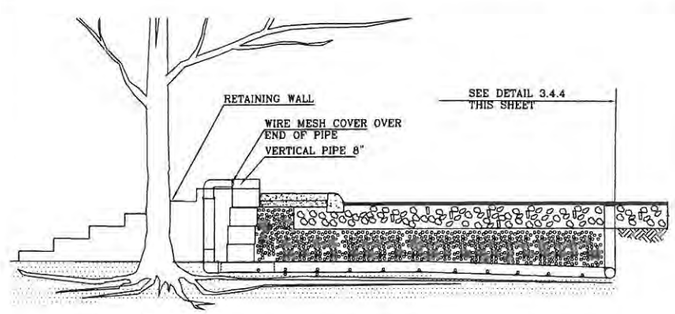
WELL TO BE CONSTRUCTED OF STONE, BLOCK OR BRICK. IF BRICK IS USED, VERTICAL JOINTS LEFT OPEN FOR DRAINAGE 1/2" MAXIMUM INSIDE FACE OF WALL.



4.4.3 PLAN VIEW C
N. T. S.

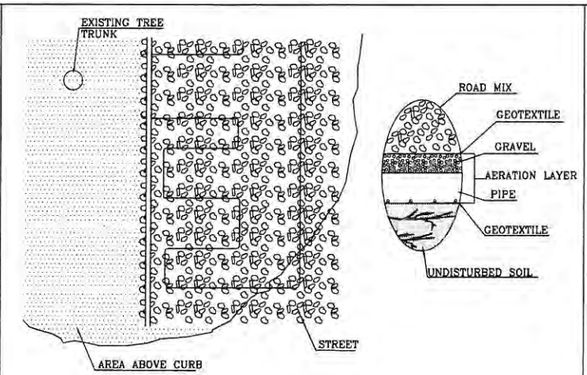


4.4.4 TREE AERATION SECTION C
N. T. S.



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 FRAZIER WHITE & ASSOC. INC. & C. F. ZAVALA GROUP

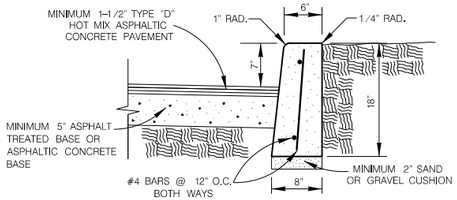
CITY OF SAN ANTONIO

DEPARTMENT OF PUBLIC WORKS

CITY OF SAN ANTONIO
TREE PROTECTION DETAILS

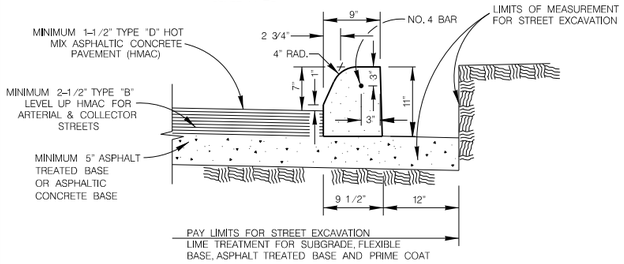
TREE PRESERVATION

DESIGNED: ABF,JR	FED. RD. DIV. NO.	STATE				SHT. NO.
CHECKED:		TEXAS				17
DRAWN:	STATE DIST. NO.	COUNTY	CONTROL NO.	SECT. NO.	JOB NO.	HIGHWAY NO.
CHECKED:		BEXAR				



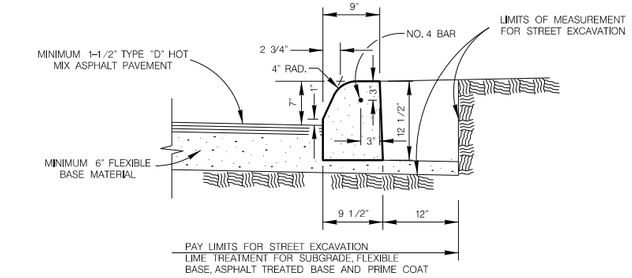
HEADER CURB

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



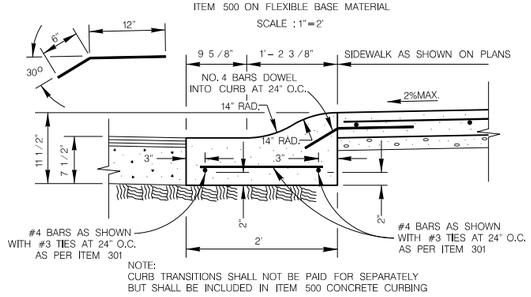
CONCRETE CURB

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



CONCRETE CURB

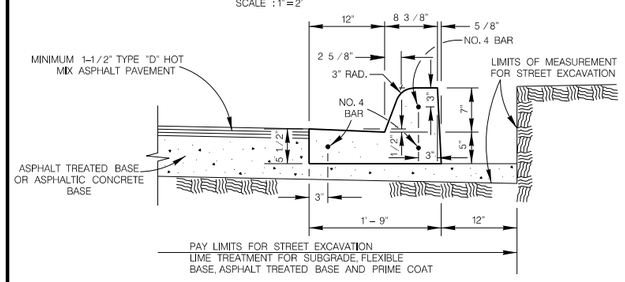
ITEM 500 ON FLEXIBLE BASE MATERIAL
SCALE : 1"=2'



NOTE:
CURB TRANSITIONS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN ITEM 500 CONCRETE CURBING

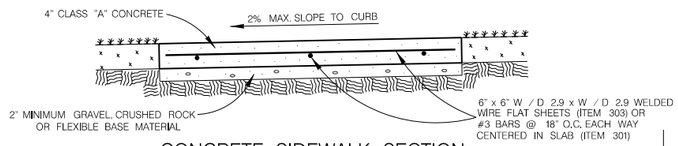
MOUNTABLE CURB

ITEM 500 ON COMPACTED SUBGRADE
SCALE : 1"=2'



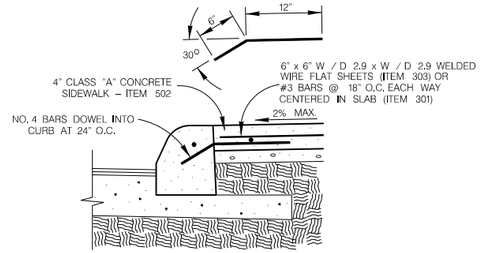
TYPICAL CURB & GUTTER DETAIL

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



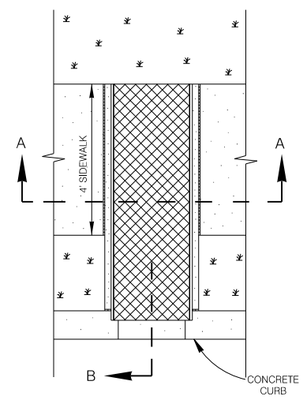
CONCRETE SIDEWALK SECTION

ITEM 502
SCALE : 1"=2'



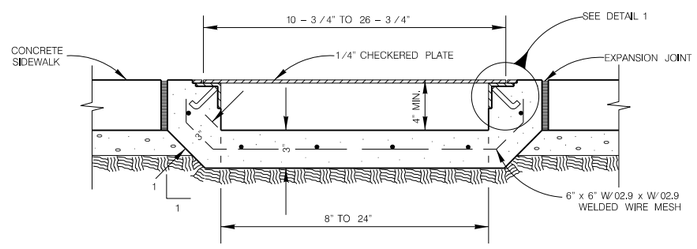
CONCRETE SIDEWALK ABUTTING CURB SECTION

ITEM 502
SCALE : 1"=2'



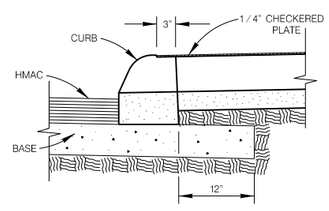
CONCRETE SIDEWALK DRAIN DETAIL

SCALE : 1"=4'



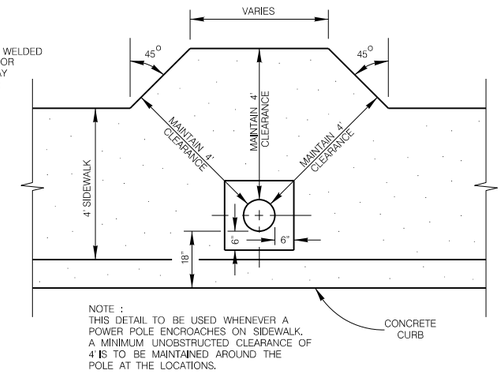
SECTION A-A

SCALE = 1 : 12



SECTION B

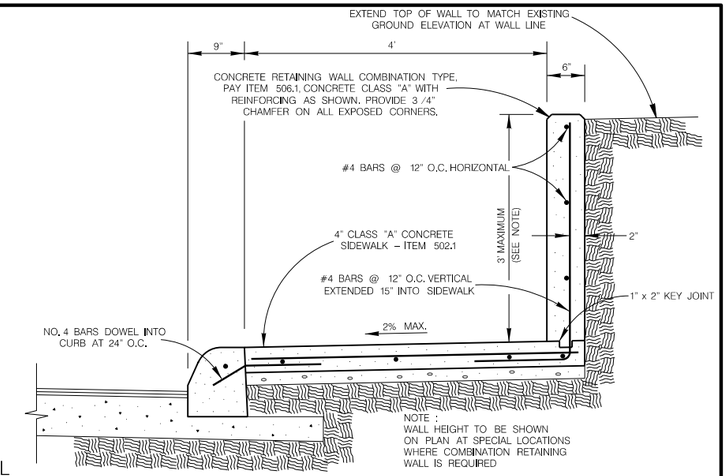
SCALE : 1"=2'



NOTE :
THIS DETAIL TO BE USED WHENEVER A POWER POLE ENCROACHES ON SIDEWALK. A MINIMUM UNOBSTRUCTED CLEARANCE OF 4' IS TO BE MAINTAINED AROUND THE POLE AT THE LOCATIONS.

CONCRETE SIDEWALK @ UTILITY POWER POLE DETAIL

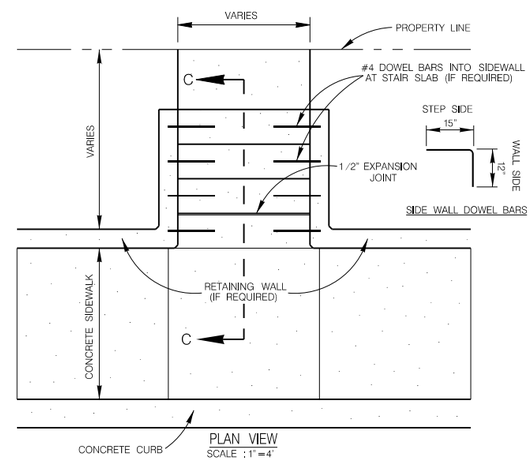
SCALE : 1"=4'



NOTE :
WALL HEIGHT TO BE SHOWN ON PLAN AT SPECIAL LOCATIONS WHERE COMBINATION RETAINING WALL IS REQUIRED

CONCRETE RETAINING WALL - COMBINATION TYPE

ITEM 506
SCALE : 1"=2'

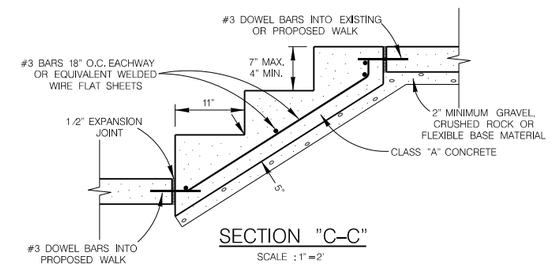


PLAN VIEW

SCALE : 1"=4'

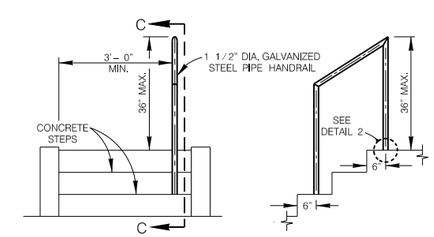
CONCRETE STEPS

ITEM 524



SECTION "C-C"

SCALE : 1"=2'



PIPE HANDRAIL DETAIL

PROFILE VIEW
SCALE : 1"=4'

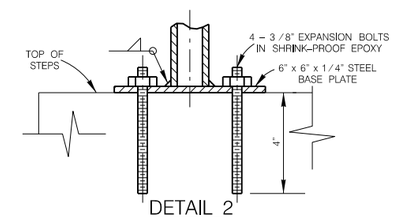
SECTION "D-D"

FRONT VIEW
SCALE : 1"=4'

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

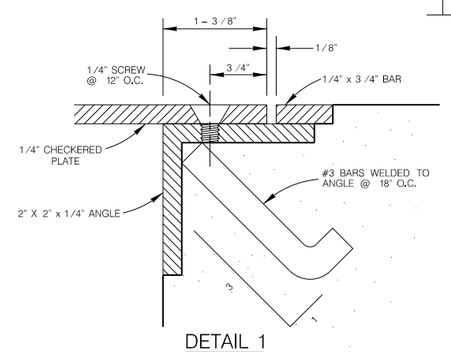
HANDRAIL FOR CONCRETE STEPS

ITEM 522



DETAIL 2

SCALE = 1 : 6



DETAIL 1

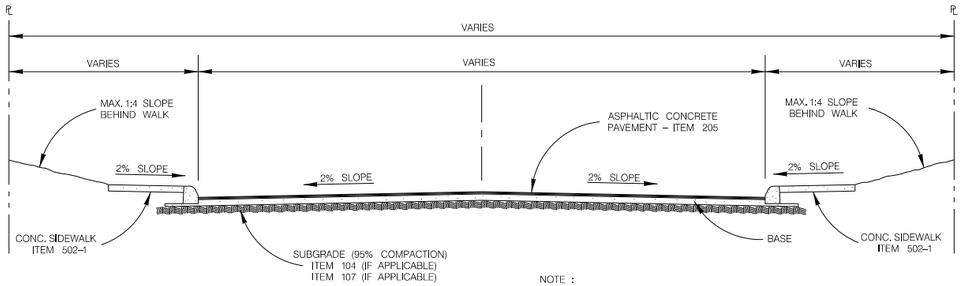
SCALE = 1 : 1

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MISCELLANEOUS CONSTRUCTION STANDARDS I

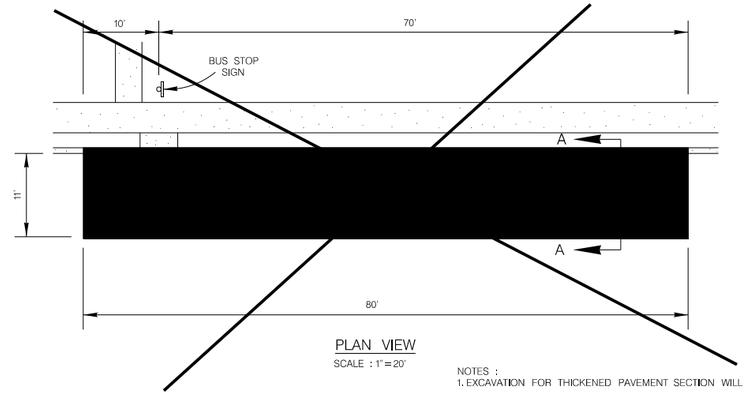
	PROJECT NO.: 2014 SMP	DATE: 10/29/2013
DRWN. BY: V. VASQUEZ	DSGN. BY:	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET: 13 OF 60



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.

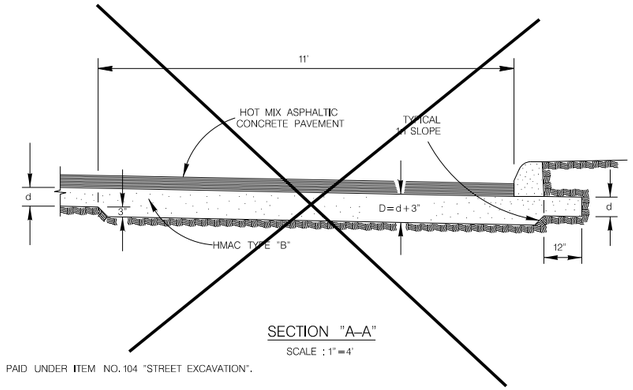
TYPICAL STREET SECTION

SCALE : 1" = 8'



PLAN VIEW

SCALE : 1" = 20'



SECTION "A–A"

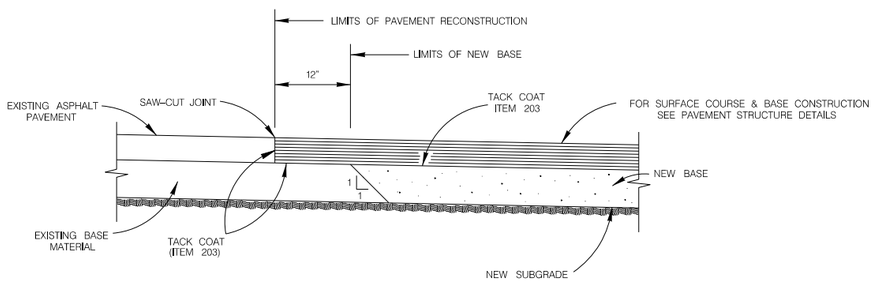
SCALE : 1" = 4'

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.

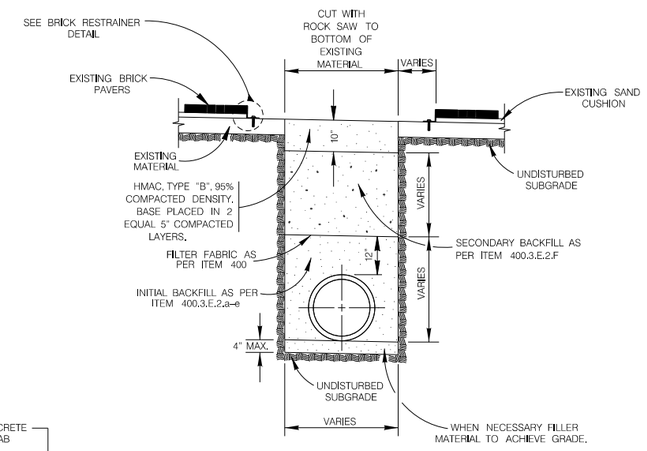
HMAC BUS STOP PAD

NEED CITY ENGINEER'S APPROVAL TO USE HMAC BUS PAD



PAVEMENT JUNCTION DETAILS

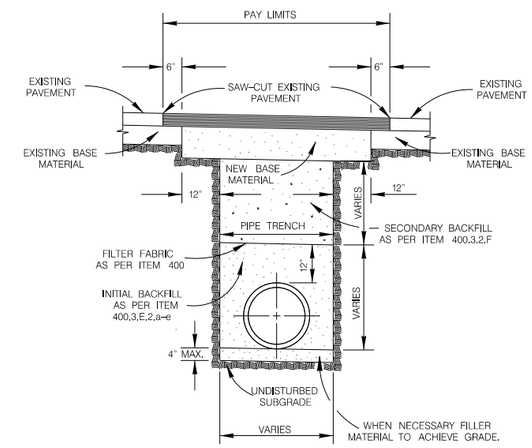
SCALE : 1" = 2'



TYPICAL BASE REPLACEMENT FOR BRICK SURFACED STREET SECTION

ITEM 511.3

SCALE : 1" = 4'



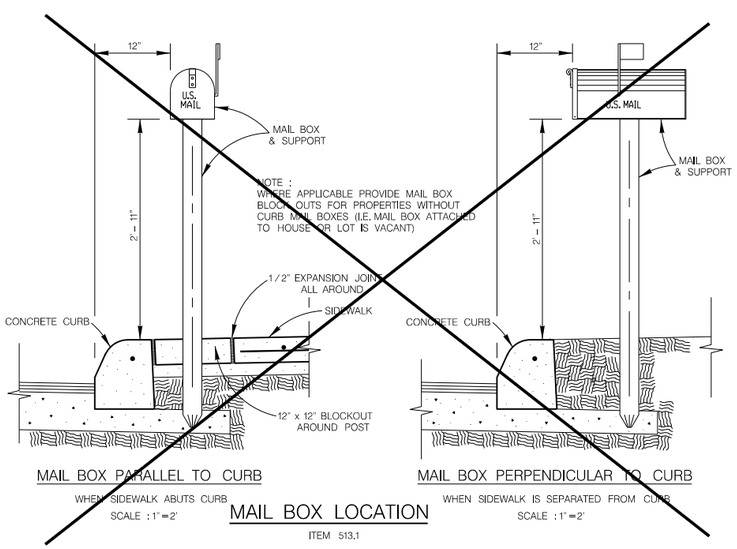
NOTES :
1. FOR LOCAL TYPE "A" & "B" STREETS (RESIDENTIAL) USE 6" ASPHALT CONCRETE BASE TYPE "B" WITH 1–1/2" TYPE "D" HOT MIX ASPHALTIC CONCRETE PAVEMENT.

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 PARALLEL TO CURB

WHEN SIDEWALK ABUTS CURB

SCALE : 1" = 2'

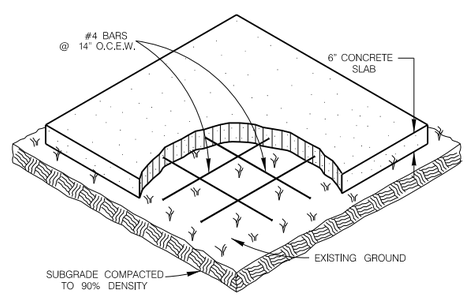
MAIL BOX PERPENDICULAR TO CURB

WHEN SIDEWALK IS SEPARATED FROM 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".

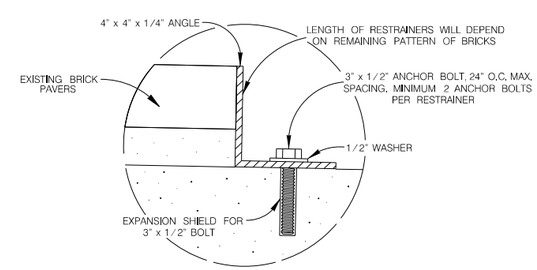
3. PAYMENT WILL BE MADE UNDER ITEM 513.2 "COMMUNITY MAILBOX SLAB – PER SQUARE YARD".

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

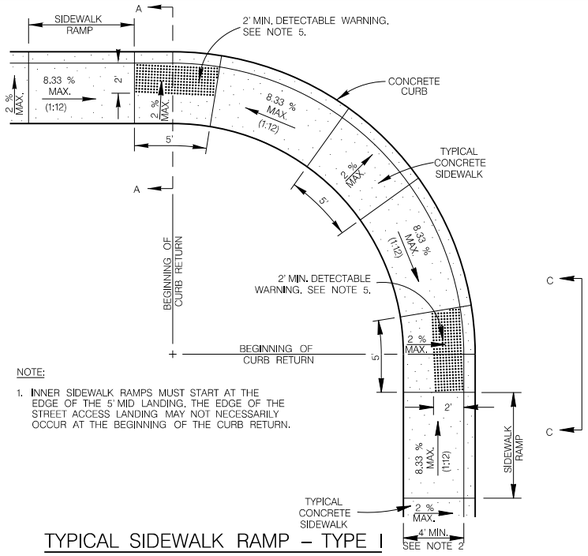
MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MISCELLANEOUS CONSTRUCTION STANDARDS II

	PROJECT NO.: 2014 SMP	DATE: 10/29/2013
DRWN. BY: V. VASQUEZ	DSGN. BY:	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET: 14 OF 60



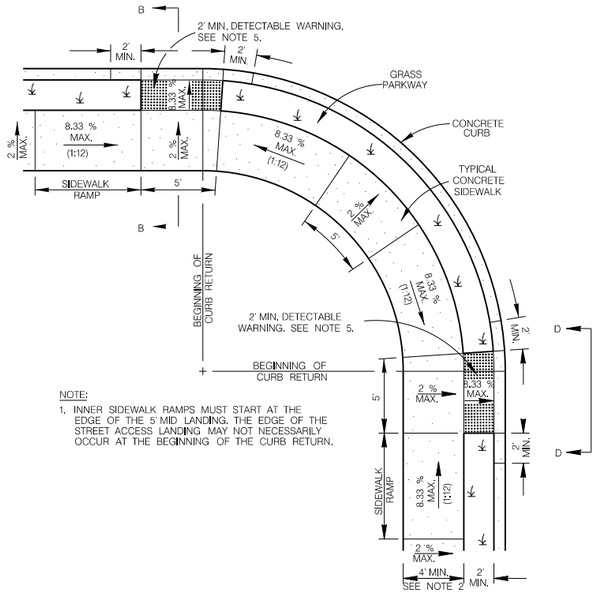
NOTE:

1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

TYPICAL SIDEWALK RAMP – TYPE I

SIDEWALK ABUTS THE CURB

SCALE : 1" = 10'



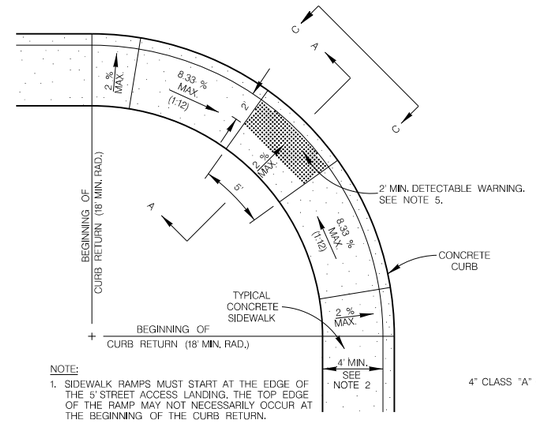
NOTE:

1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

TYPICAL SIDEWALK RAMP – TYPE III

SIDEWALK SEPARATED FROM CURB

SCALE : 1" = 10'



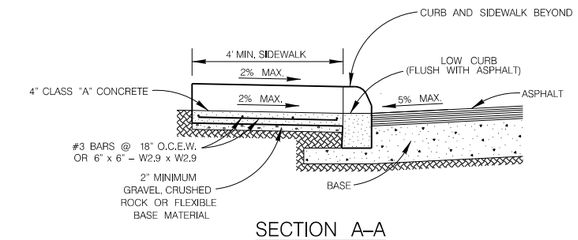
NOTE:

1. SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' STREET ACCESS LANDING. THE TOP EDGE OF THE RAMP MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.
2. TYPE V RAMPS MUST HAVE 18' MIN. RADIUS.

TYPICAL SIDEWALK RAMP – TYPE V

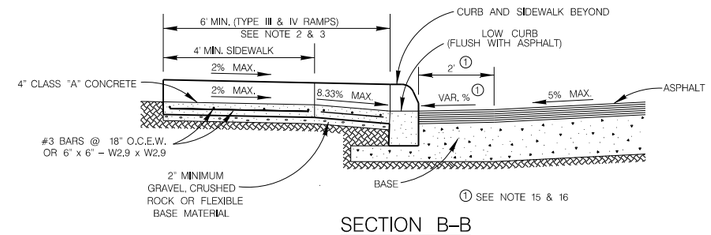
SIDEWALK ABUTS CURB

SCALE : 1" = 10'



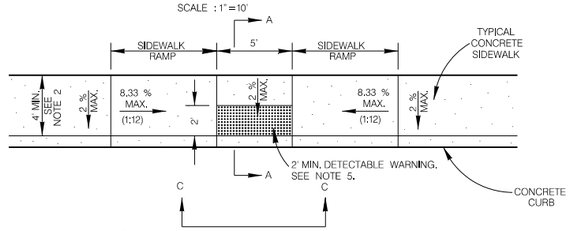
SECTION A–A

SCALE : 1" = 4'



SECTION B–B

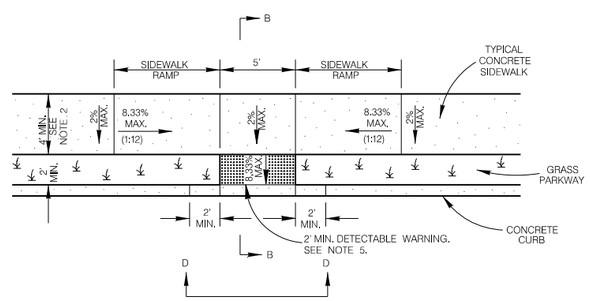
SCALE : 1" = 4'



TYPICAL SIDEWALK RAMP – TYPE II

USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB

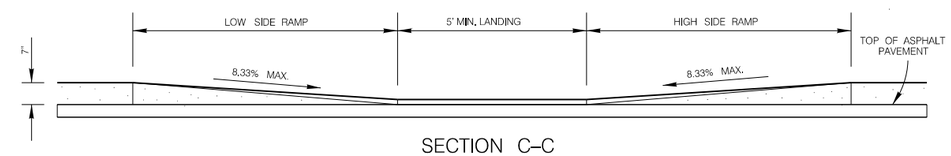
SCALE : 1" = 10'



TYPICAL SIDEWALK RAMP – TYPE IV

USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB

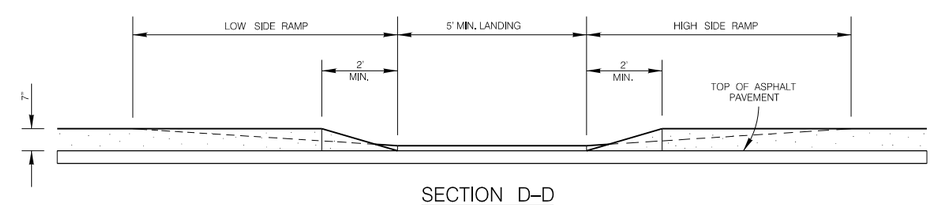
SCALE : 1" = 10'



SECTION C–C

CURB PROFILE WHERE SIDEWALK ABUTS CURB

SCALE : 1" = 4'



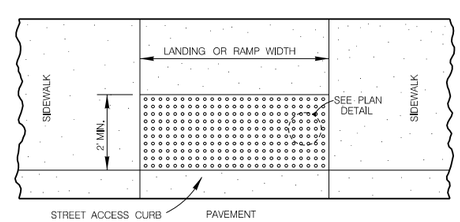
SECTION D–D

CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB

SCALE : 1" = 4'

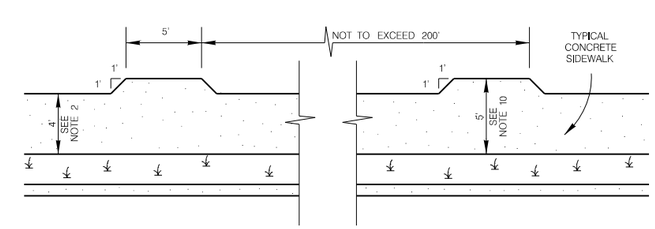
GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MININMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. 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.
9. 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.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" – W2.9 x W2.9 WIRE MESH.
13. 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.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. 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%.
16. 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.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT.



DETECTABLE WARNING SURFACE

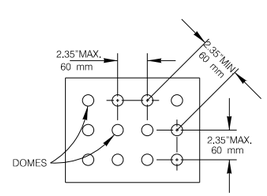
SCALE : 1" = 4'



SIDEWALK PASSING SPACE

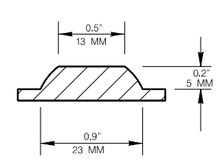
SCALE : 1" = 10'

TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	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"



PLAN DETAIL

NO SCALE



DOME SECTION

NO SCALE

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.

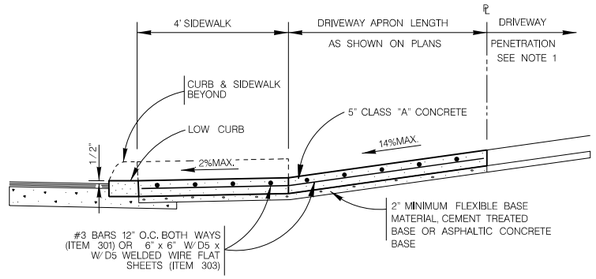
MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

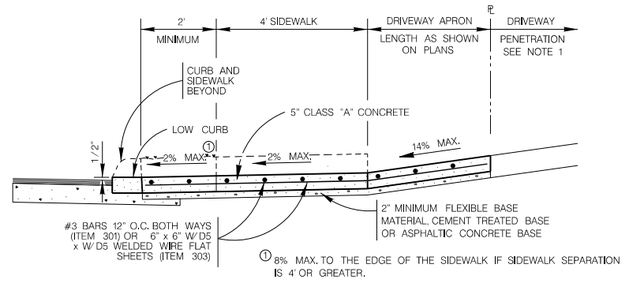
	PROJECT NO.: 2014 SMP	DATE: 10/29/2013
DRWN. BY: V. VASQUEZ	DSGN. BY:	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET: 15 OF 60



TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB

ITEM 503.1

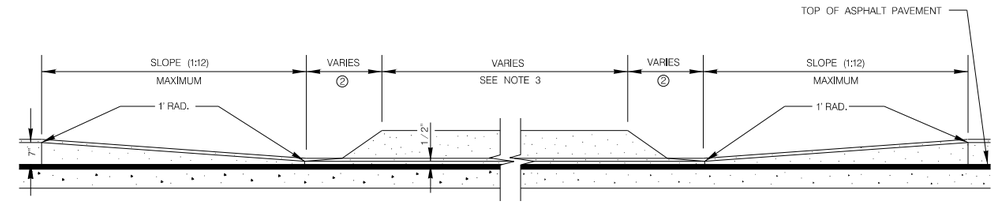


① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB

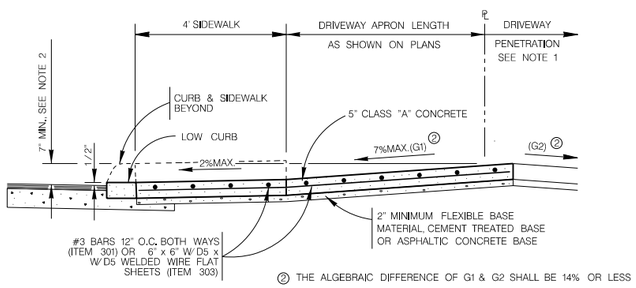
ITEM 503.1



② RESIDENTIAL : 2' MAXIMUM; COMMERCIAL: SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK ABUTTING CURB

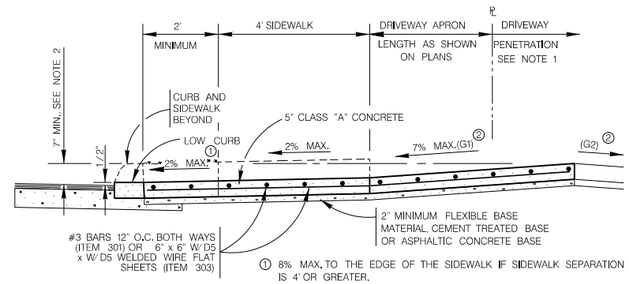


② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB

ITEM 503.1



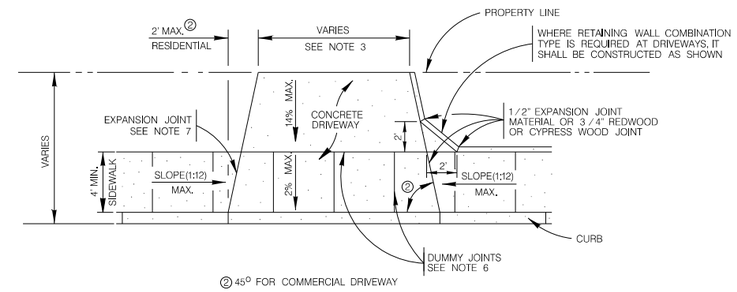
① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION

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

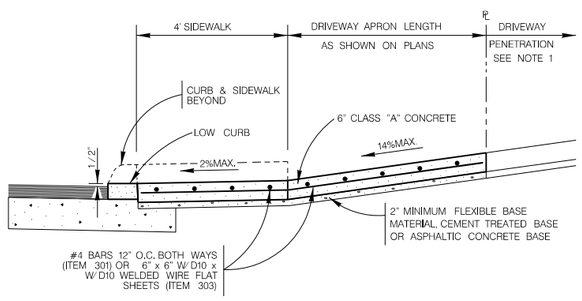
ITEM 503.1



② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

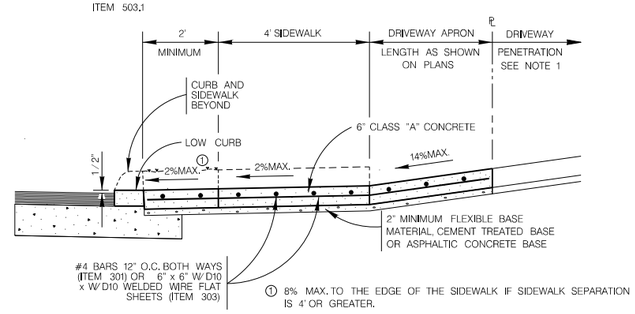
WITH SIDEWALK ABUTTING CURB



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB

ITEM 503.2

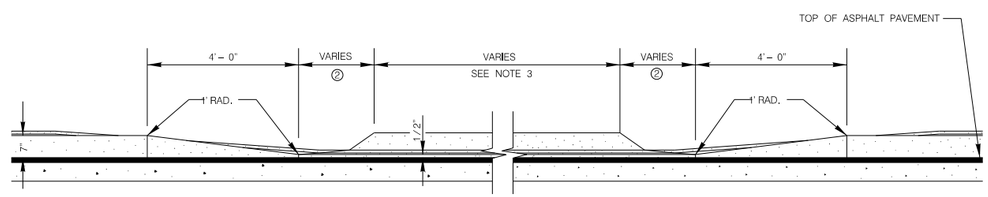


① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB

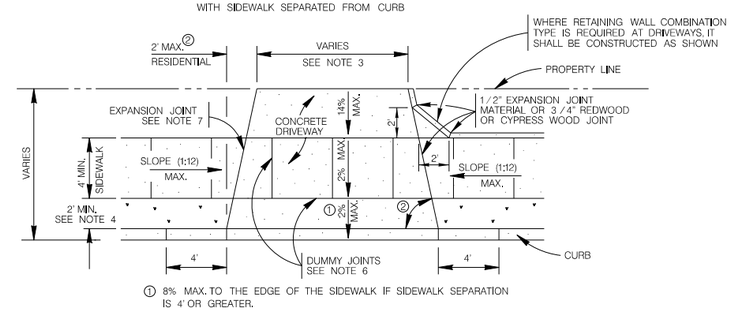
ITEM 503.2



② RESIDENTIAL : 2' MAXIMUM; COMMERCIAL: SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

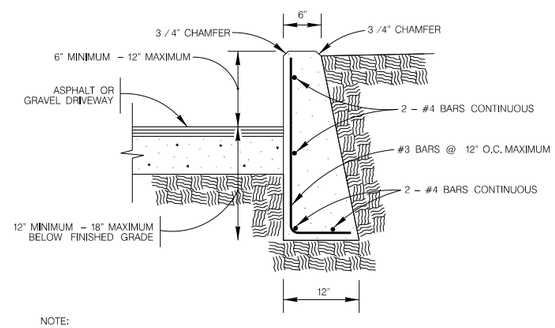
WITH SIDEWALK SEPARATED FROM CURB

CONCRETE DRIVEWAY NOTES

1. 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
2. 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.
3. 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'

4. 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.
5. 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.
6. 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.
7. 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.
8. 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%.
9. 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

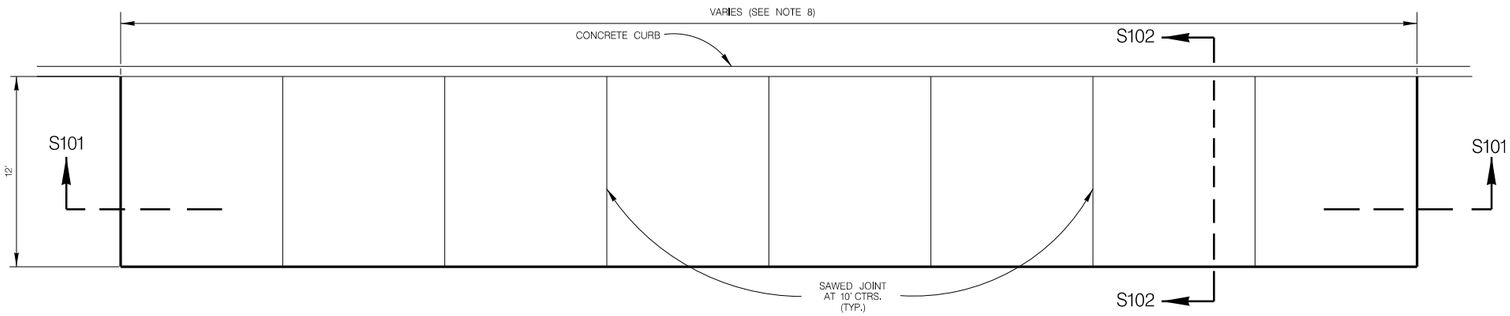
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

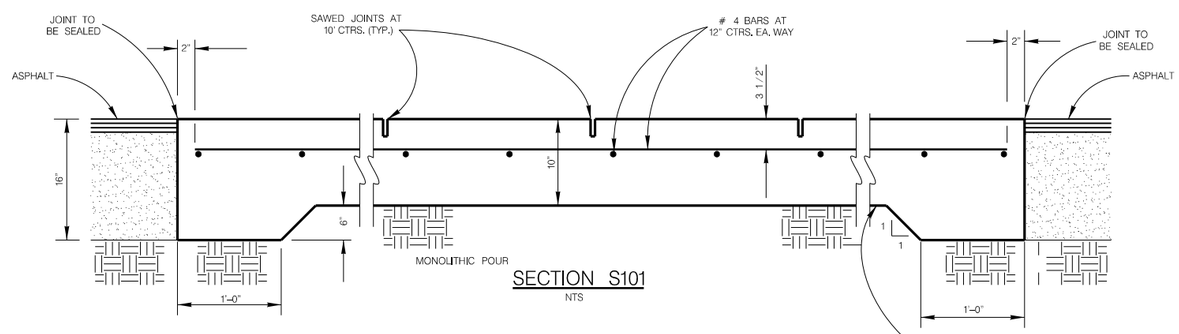
	PROJECT NO.: 2014 SMP	DATE: 10/29/2013
DRWN. BY: V. VASQUEZ	DSGN. BY:	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET: 16 OF 60

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'

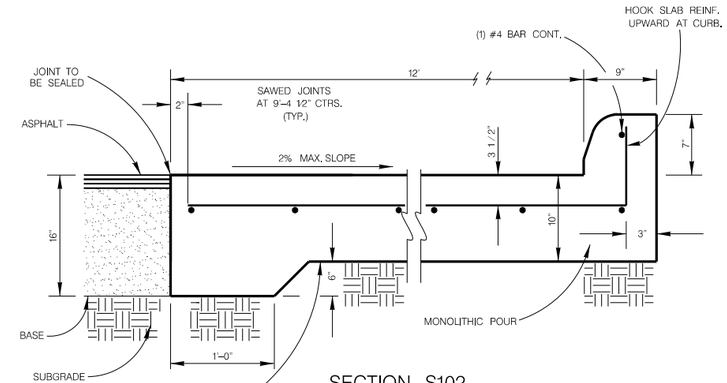


PLAN VIEW
NTS

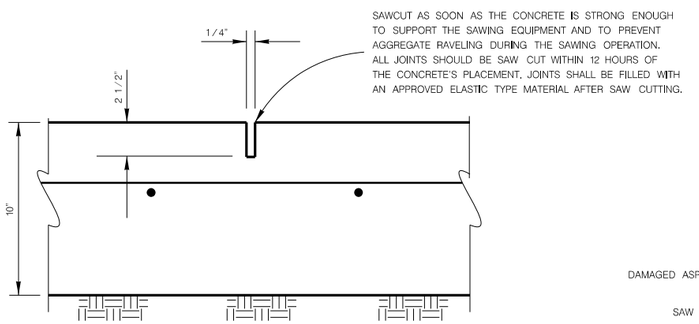


SECTION S101
NTS

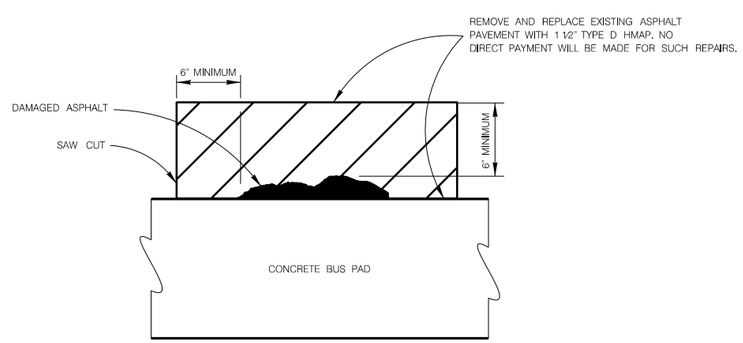
PROOFROLL EXISTING SUBGRADE WITH BACKHOE OR SIMILAR EQUIPMENT TO LOCATE POTENTIAL SOFT REGIONS OF SUBGRADE . REPLACE SOFT AREAS WITH 12" OF SUITABLE MATERIAL.



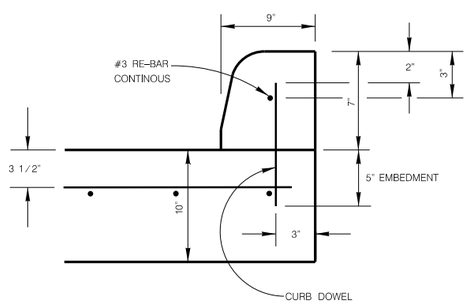
SECTION S102
NTS



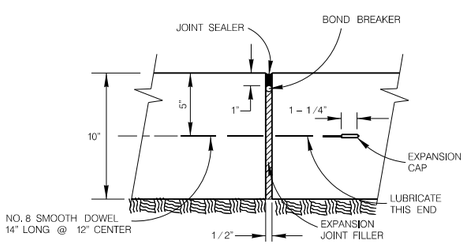
SAWED JOINT DETAIL
NTS



REPAIR OF DAMAGED ASPHALT
NTS

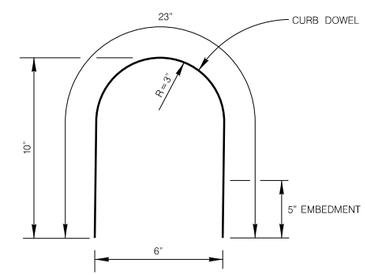


CONCRETE CURB OPTION
NEED CITY ENGINEER'S APPROVAL
NTS



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'



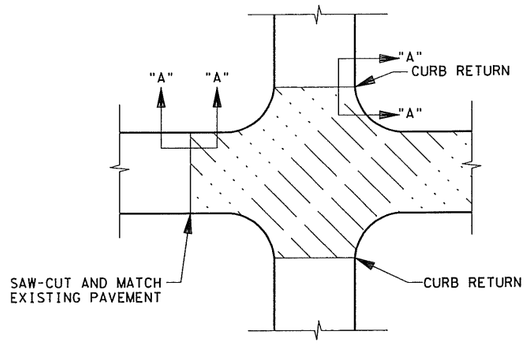
CURB DOWEL
NO. 3 RE–BAR @ 30" C–C
NTS

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

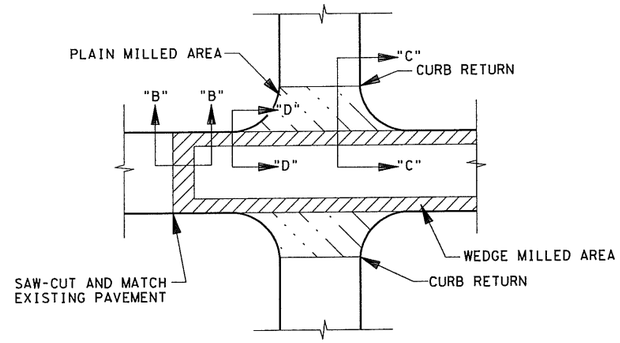
CONCRETE
BUS STOP PAD

	PROJECT NO.: 2014 SMP	DATE: 10/29/2013
DRWN. BY: V. VASQUEZ	DSGN. BY: L. MALTOS	CHKD. BY: R.S. HOSSEINI, P.E. / SHEET: 17 OF 60



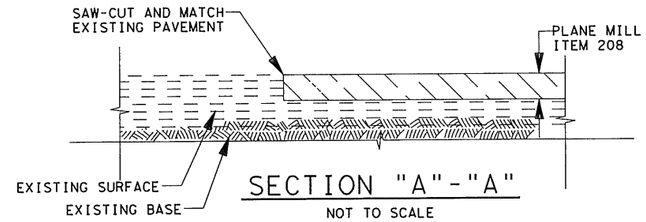
PLAN AT
CROSS STREET

PLANE MILL
NOT TO SCALE



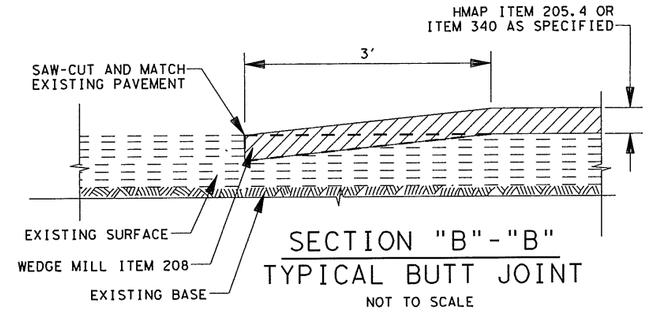
PLAN AT
CROSS STREET

WEDGE MILL
NOT TO SCALE



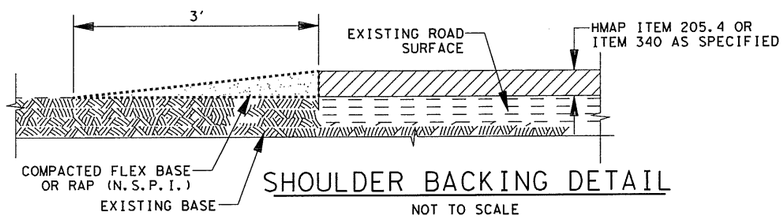
SECTION "A"-"A"

NOT TO SCALE



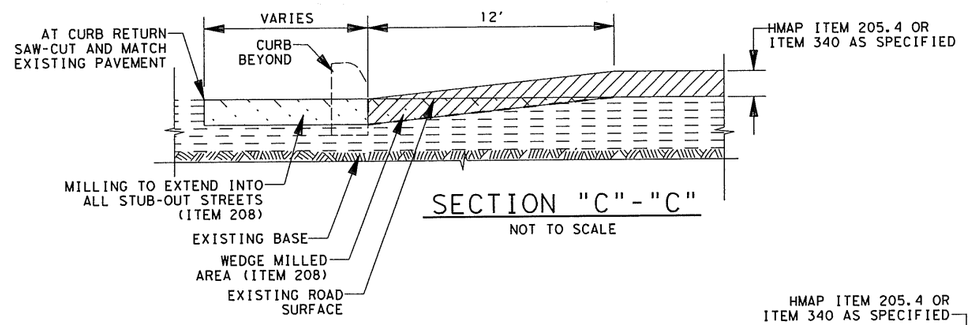
SECTION "B"-"B"
TYPICAL BUTT JOINT

NOT TO SCALE



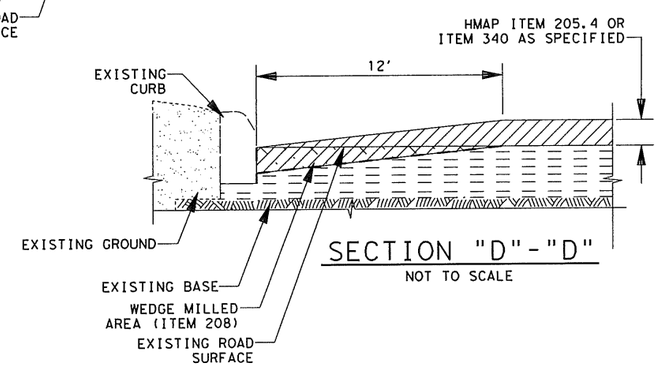
SHOULDER BACKING DETAIL

NOT TO SCALE



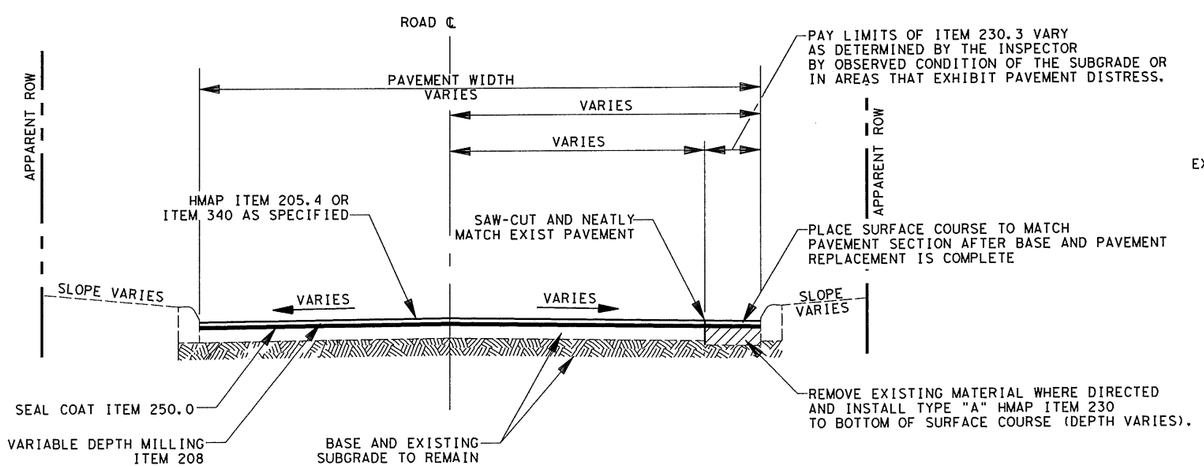
SECTION "C"-"C"

NOT TO SCALE



SECTION "D"-"D"

NOT TO SCALE



ASPHALT OVERLAY SECTION

NOT TO SCALE

NOTES:

1. SECTIONS SHOWN ON THIS SHEET ARE NOT TYPICAL AND DO NOT REPRESENT ALL STREET LOCATIONS. SOME STREETS MAY HAVE CURB ON BOTH SIDES OR NO CURB PRESENT AT ALL.
2. SOME SECTIONS MAY BE CROWNED OR HAVE STRAIGHT CROSS SLOPES.
3. FOR SEAL COAT (ITEM 250.0) SEE GENERAL NOTES FOR MATERIAL DATA.
4. HOT PAVER LAID MICRO SURFACE MILL ONLY FOR DRAINAGE AND BUTT JOINTS.
5. ASPHALT OVERLAY PROJECT MILL DEPTH IS VARIABLE AS DIRECTED.

STATE OF TEXAS
CRYSTAL BENAVIDES
86197
LICENSED
PROFESSIONAL ENGINEER

11/6/2013
CRYSTAL BENAVIDES, P.E. DATE

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NO	DATE	DESCRIPTION	DWG	CHK
		REVISIONS		

FY 2014 ASPHALT OVERLAY PROJECTS

DETAIL SHEET

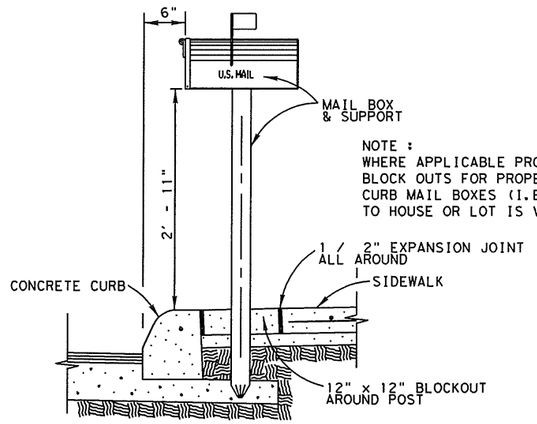
1 OF 2

POZNECKI CAMARILLO INC
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS, 78228
(210) 349-3273 (210) 349-4395 (FAX)
TBPE REG. NO. F-483
http:/www.pozcam.com/

DGN:				
CHK DGN:	FC			
DWG:		STATE	COUNTY	SHEET NO.
CHK DWG:	FC	TEXAS	BEXAR	18 A OF 60

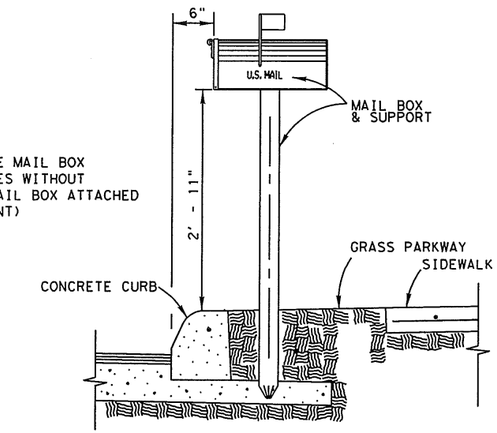
Plotted on: 11/6/2013 9:13:48 AM

Design Filename: \\pciserver2\datagate\Jobs\11\014\Techproj\2014 SMP\GENERAL\2014*SMP*TYP.dgn



NOTE :
WHERE APPLICABLE PROVIDE MAIL BOX BLOCK OUTS FOR PROPERTIES WITHOUT CURB MAIL BOXES (I.E. MAIL BOX ATTACHED TO HOUSE OR LOT IS VACANT)

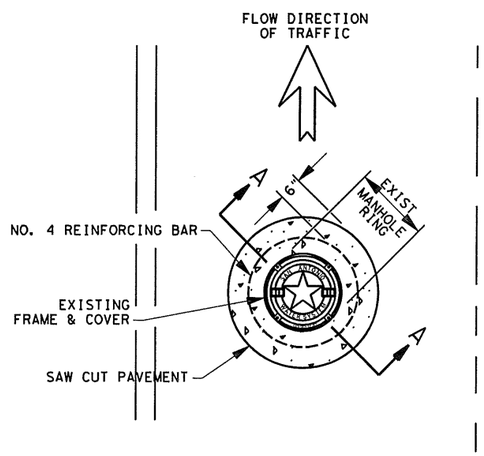
WHEN SIDEWALK ABUTS CURB



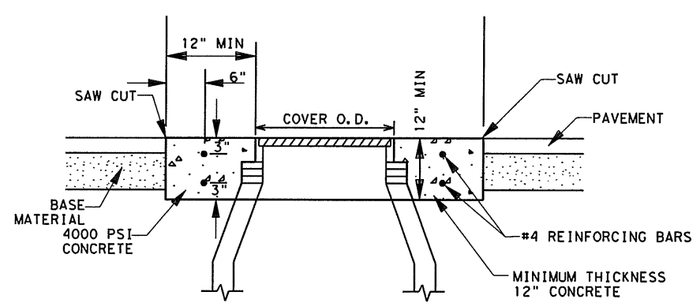
WHEN SIDEWALK IS SEPARATED FROM CURB

MAIL BOX RELOCATION DETAILS

NOT TO SCALE



PLAN



SECTION A–A

NOTE:
1. THE CONCRETE SHALL BE 4000 PSI, MIN, AND REINFORCED WITH # 4 BARS AS SHOWN.
2. THE CONCRETE SHALL EXTEND TO THE EDGE OF SAW CUT PAVEMENT.
3. MANHOLE RING ENCASEMENT IS REQUIRED ON ALL NEW OR ADJUSTED MANHOLES.

MANHOLE / VALVE BOX ADJUSTMENT DETAIL

NOT TO SCALE

STATE OF TEXAS
CRYSTAL BENAVIDES
86197
LICENSED
PROFESSIONAL ENGINEER

10/16/2013
CRYSTAL BENAVIDES, P.E. DATE

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NO	DATE	DESCRIPTION	DWG	CHK
		REVISIONS		

FY 2014 ASPHALT OVERLAY PROJECTS

DETAIL SHEET

2 OF 2

POZNECKI CAMARILLO INC
5835 CALLAGHAN RD. SUITE 200
SAN ANTONIO, TEXAS. 78228
(210) 349-3273 (210) 349-4395 (FAX) http:/www.pozcam.com/
TBPE REG. NO. F-483

DGN:				
CHK DGN:	FC			
DWG:		STATE	COUNTY	SHEET NO.
CHK DWG:	FC	TEXAS	BEXAR	18 B OF 60

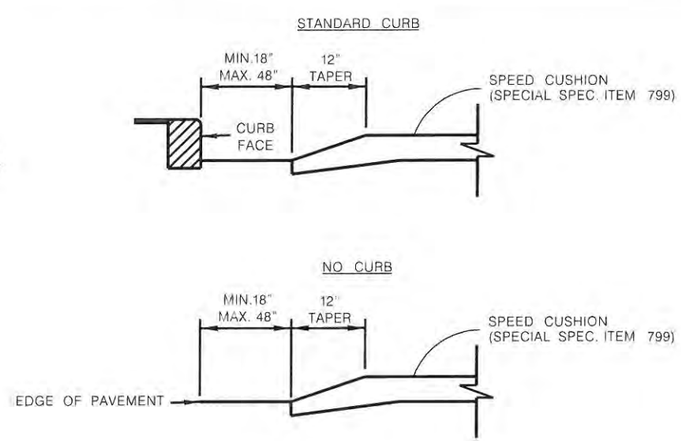
Plotted on: 10/16/2013 1:31:55 PM

Design Filename: \\pciserver2\datagate\Jobs\11\014\Techprod\2014 SMP\GENERAL\2014*SMP*DTL.dgn

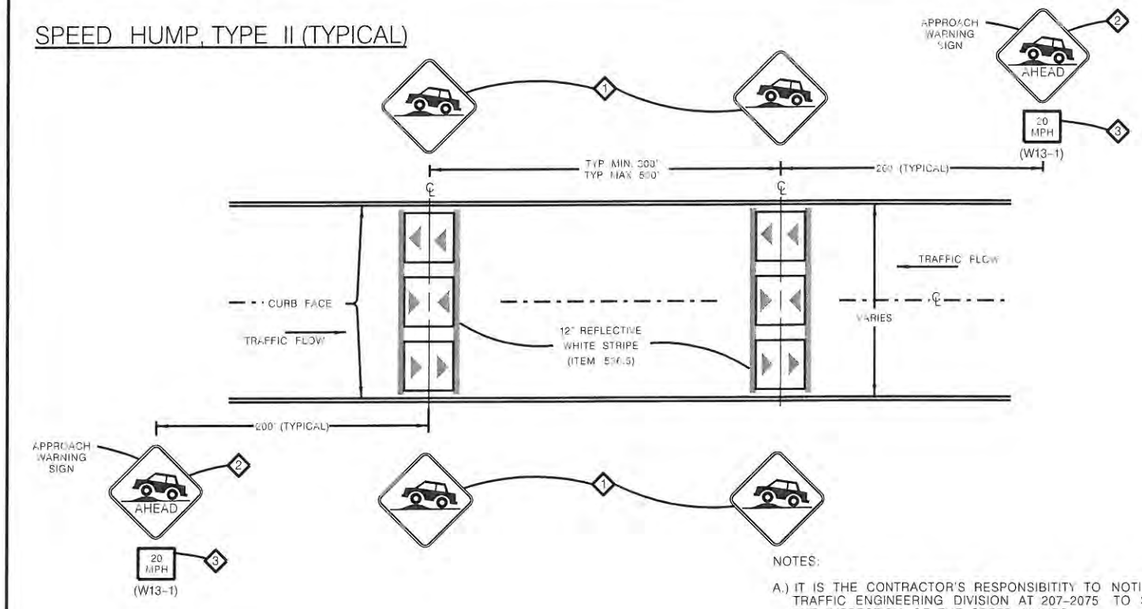
GENERAL NOTES

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

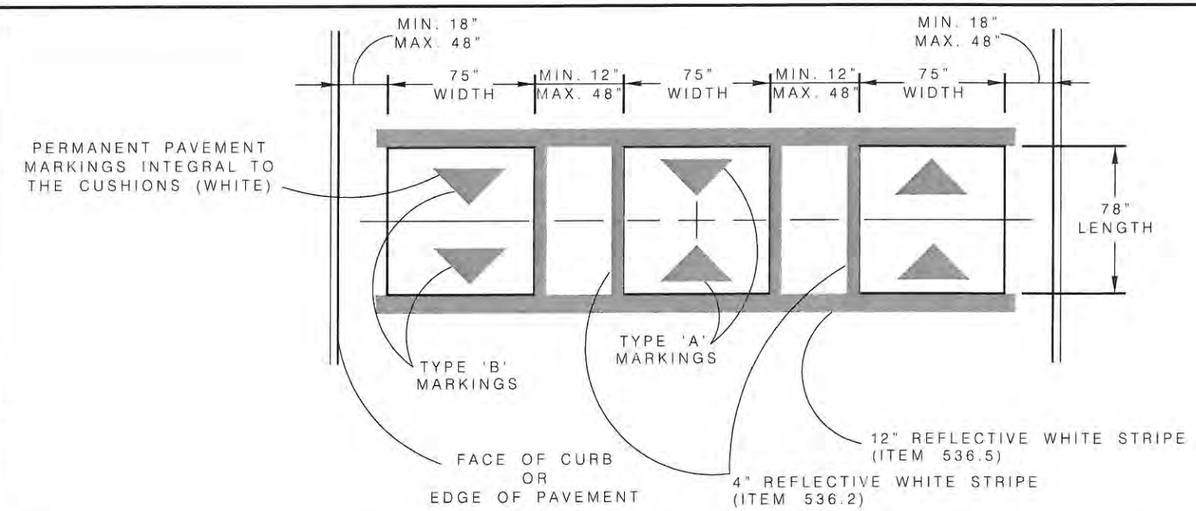


SPEED HUMP, TYPE II (TYPICAL)



NOTES:

A.) IT IS THE CONTRACTOR'S RESPONSIBITITY 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)	CUSHION (IN)	GAP (IN)	CUSHION (IN)	GAP (IN)	CUSHION (IN)	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

No:	DATE:	REVISION:	DRWN:	CHKD:	APPR:
1	12.5.02	MARKINGS	JB	KB	KB
2	2.21.03	LOCATION DETAIL	JB	KB	KB
3	8.26.03	GENERAL NOTES	JB	KB	KB
4	6.30.05	DETAIL	DH	KB	KB
5	3.22.11	SPACING CHARTS	BT	BT	KB

CITY OF SAN ANTONIO, TEXAS
DEPARTMENT OF PUBLIC WORKS TRAFFIC ENGINEERING DIVISION
SPEED HUMP, TYPE II

UPDATE BY: W. THORPE MAR 2011
DSGN.BY: K.M. BUCKNELEW JAN 2002
CHKD.BY: K. BUCKNELEW MAR 2011
APPR.BY: K.M. BUCKNELEW JAN 2002
TRAFFIC DESIGN ENGINEER
APPR.BY: JAN 2002
REF.NO: SCALE: NTS
PLAN NO. 19 OF 60

1 of 2

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.

~~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.~~

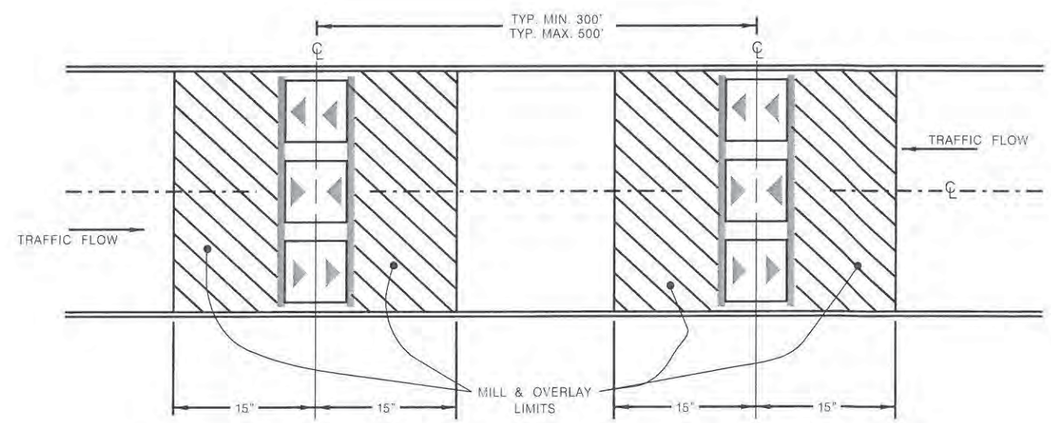
~~3. CONTRACTOR WILL CONTACT SPEED HUMP COORDINATOR, KENNARD GIVENS AT 215-5127 AT LEAST 24 HOURS IN ADVANCE TO SCHEDULE A TIME TO PICK UP THE MATERIAL.~~

~~4. INSPECTOR MUST BE PRESENT WHEN MATERIAL IS COLLECTED.~~

SPEED CUSHION SPACING

Pavement Width (ft)	Pavement Width (in)	No. of Cushions	Gap (in)	Cushion (in)	Gap (in)	Cushion (in)	Gap (in)	Cushion (in)	Gap (in)	Cushion (in)	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



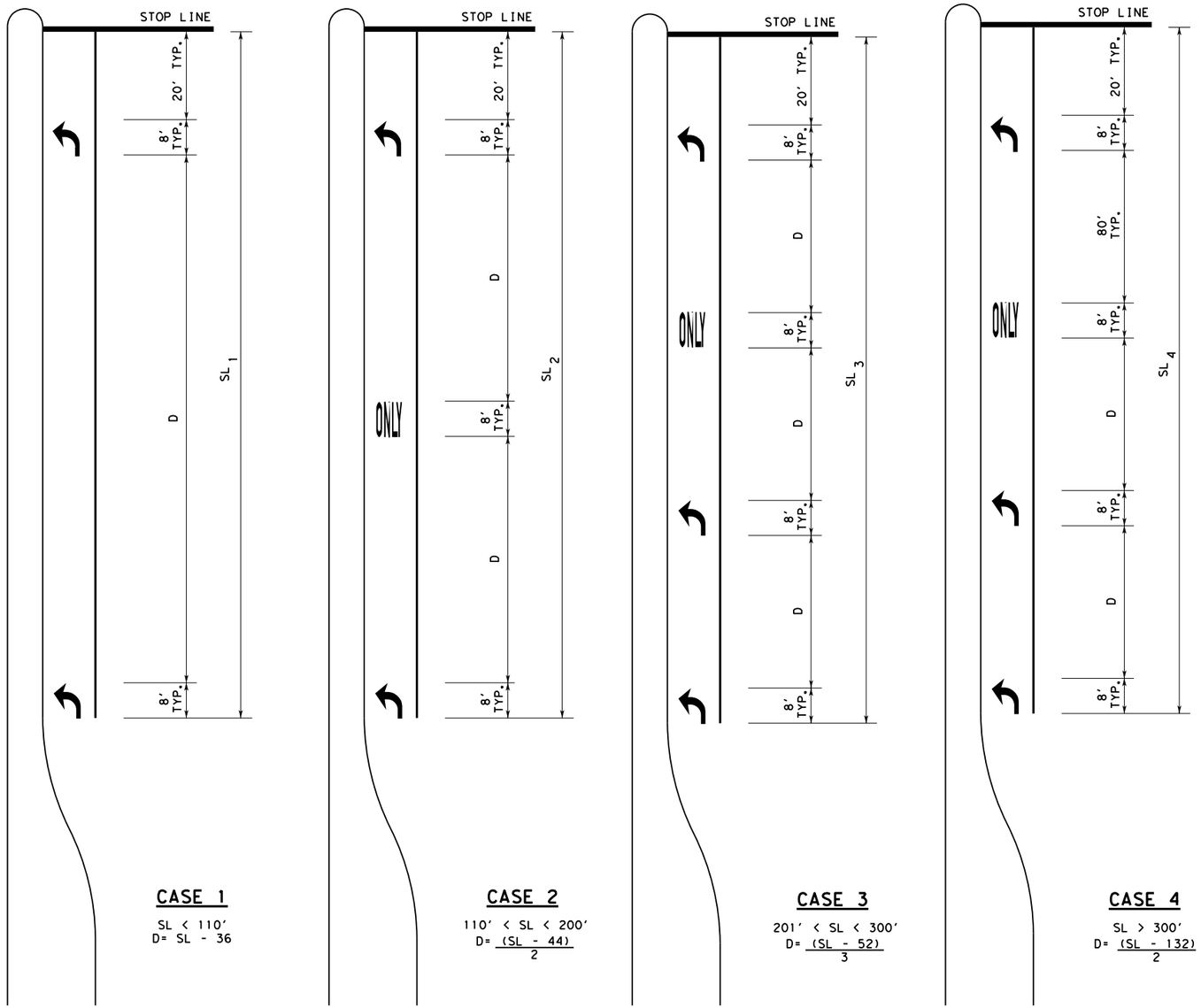
MILL AND OVERLAY LIMITS

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

SPEED HUMP, TYPE II

2 of 2

DRWN.BY: RC MAY 2004
DSGN.BY:
CHKD.BY:
APPR.BY: TRAFFIC DESIGN ENGINEER
APPR.BY:
REF.NO: SCALE: NTS
PLAN NO. 20 OF 60



CASE 1

SL < 110'
D= SL - 36

CASE 2

110' < SL < 200'
$D = \frac{(SL - 44)}{2}$

CASE 3

201' < SL < 300'
$D = \frac{(SL - 52)}{3}$

CASE 4

SL > 300'
$D = \frac{(SL - 132)}{2}$

KEY:

SL - STORAGE LENGTH (FEET)

D - DISTANCE BETWEEN ARROWS AND LEGENDS (FEET)

GENERAL NOTES:

1. THESE DETAILS ALSO APPLY TO RIGHT-TURN LANES.
2. FOR DUAL-TURN LANES, DIMENSIONS SHALL BE THE SAME FOR EACH LANE.
3. SL DIMENSION IS FROM STOP LINE TO END OF TURN LANE, WHICH DOES NOT INCLUDE TAPER LENGTH.
4. PAVEMENT ARROWS AND "ONLY" LEGEND MARKINGS ARE TYPICALLY USED AT SIGNALIZED INTERSECTIONS AND AT UNSIGNALIZED INTERSECTIONS WHERE A DEMONSTRATED NEED EXISTS.
5. MINIMUM SL= 110'. SL MAY BE LESS THAN 110 FEET AS DIRECTED BY THE CITY TRAFFIC ENGINEER.

SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC ENGINEERING STANDARDS

LEFT-TURN "ONLY" AND ARROW SPACING WORKSHEET

SHEET 1 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.R.V.	CHKD. BY: M.E.	SHEET NO.: 21 OF 60

SEPTEMBER 2009

CITY OF SAN ANTONIO

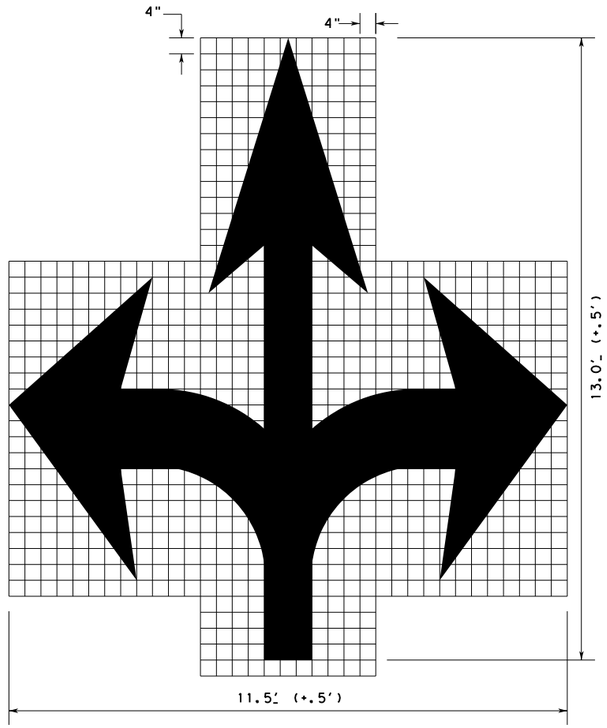
DEPARTMENT OF PUBLIC WORKS

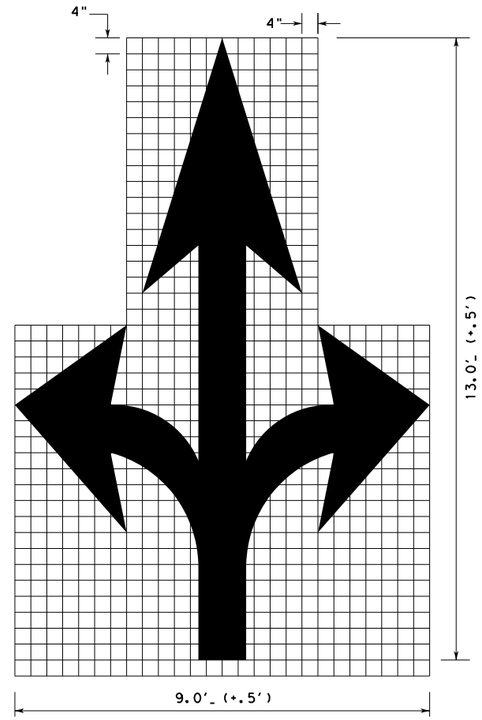
TRAFFIC ENGINEERING STANDARDS

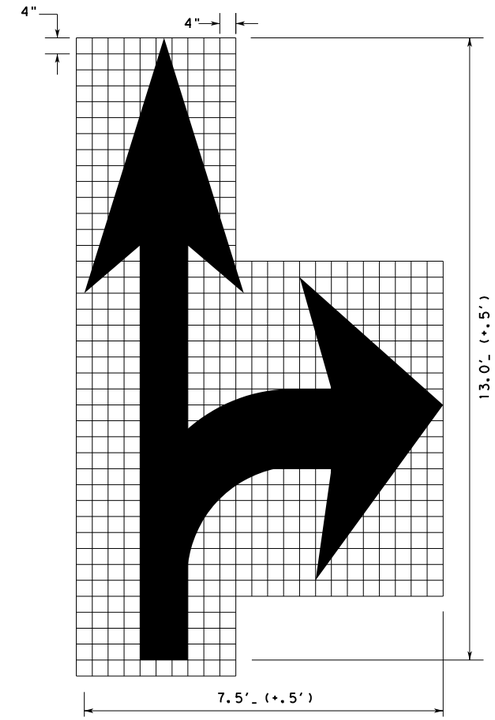
STANDARD PAVEMENT MARKINGS (WORDS)

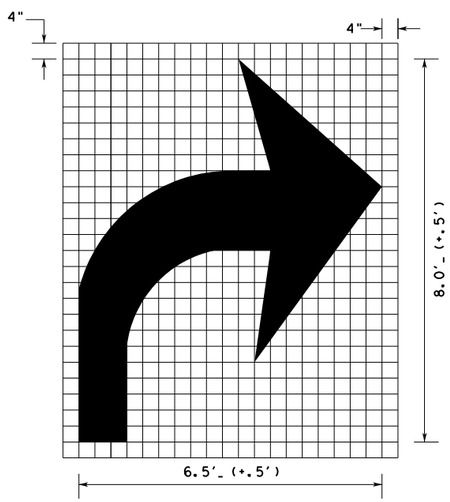
SHEET 2 OF 16

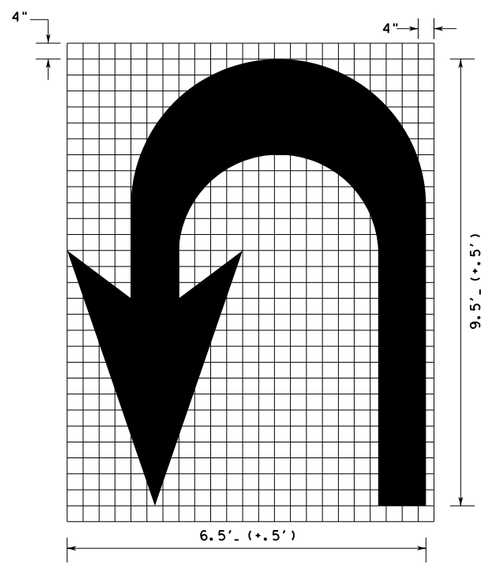
___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.R.V.	CHKD. BY: M.E.	SHEET NO.: 22 OF 60

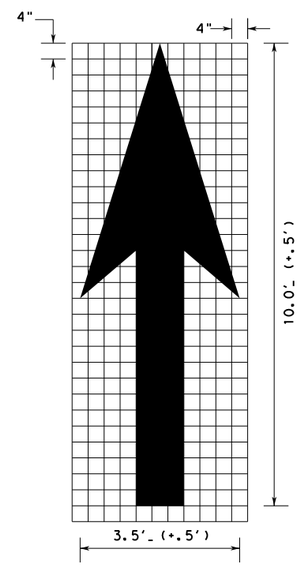


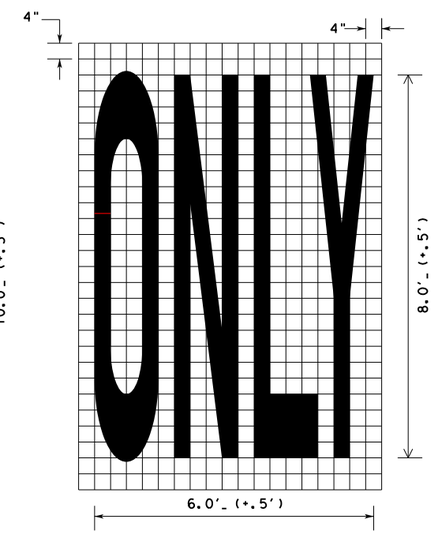












NOTES:

1. MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.

2. THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD DEPENDING ON CONDITIONS.

3. THE LONGITUDINAL SPACE BETWEEN MARKINGS SHOULD BE 30 FEET.

4. MARKINGS CONSIDERED APPROPRIATE FOR USE WHEN WARRANTED INCLUDE THE FOLLOWING:

   A. REGULATORY
      STOP
      RIGHT (LEFT) TURN ONLY
      25 MPH
      SYMBOL ARROWS
   B. WARNING
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X-ING
      PED X-ING
      R X R (SEE RCPM DETAIL)
      OTHER WORDS OR SYMBOLS MAY BE NECESSARY UNDER CERTAIN CONDITIONS

5. UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.

6. THE WORD "STOP" SHALL NOT BE USED ON THE PAVEMENT UNLESS ACCOMPANIED BY A STOP LINE AND STOP SIGN. THE WORD "STOP" SHALL NOT BE PLACED ON THE PAVEMENT IN ADVANCE TO A STOP LINE, UNLESS EVERY VEHICLE IS REQUIRED TO STOP AT ALL TIMES.

7. PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VII OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

8. SPACING BETWEEN LETTERS SHOULD BE APPROXIMATELY 4 INCHES. THE WIDTH OF LETTERS MAY VARY DEPENDING ON THE WIDTH OF THE TRAVEL LANES.

9. LANE-USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANIED BY STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".

10. PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED ELSEWHERE IN THE PLANS.

SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

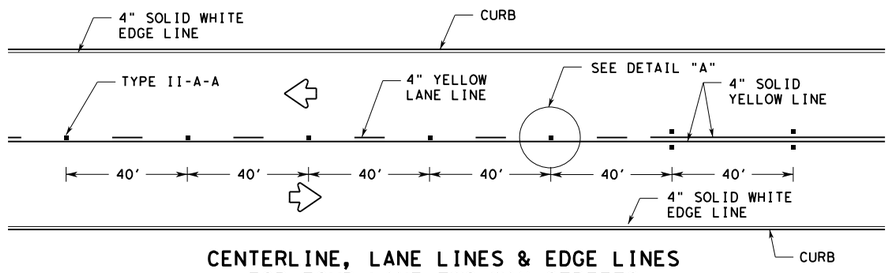
TRAFFIC ENGINEERING STANDARDS

STANDARD PAVEMENT MARKINGS (ARROWS)

SHEET 3 OF 16

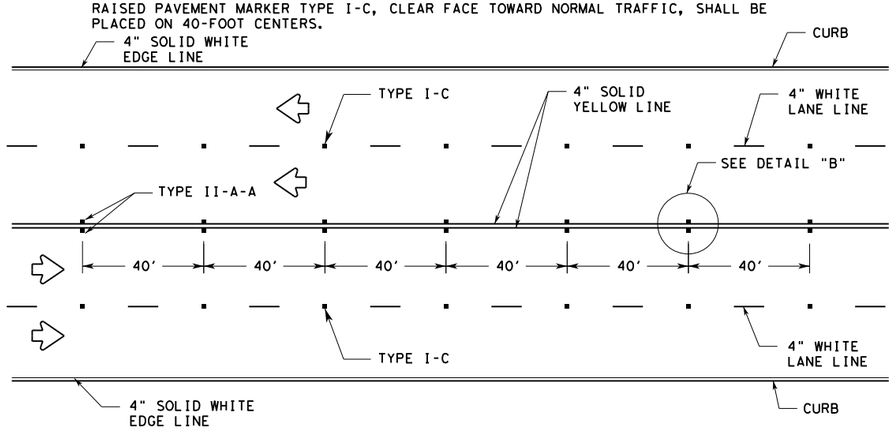
___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.R.V.	CHKD. BY: M.E.	SHEET NO.: 23 OF 60

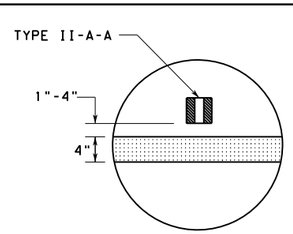
CENTERLINE & EDGE FOR ALL TWO LANE STREETS WITH PASSING ZONE



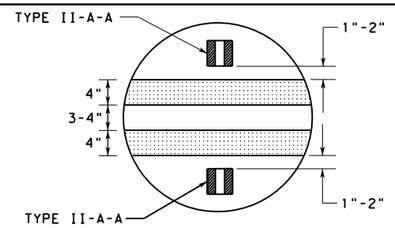
CENTERLINE, LANE LINES & EDGE LINES FOR FOUR LANE TWO-WAY STREETS

RAISED PAVEMENT MARKER TYPE I-C, CLEAR FACE TOWARD NORMAL TRAFFIC, SHALL BE PLACED ON 40-FOOT CENTERS.



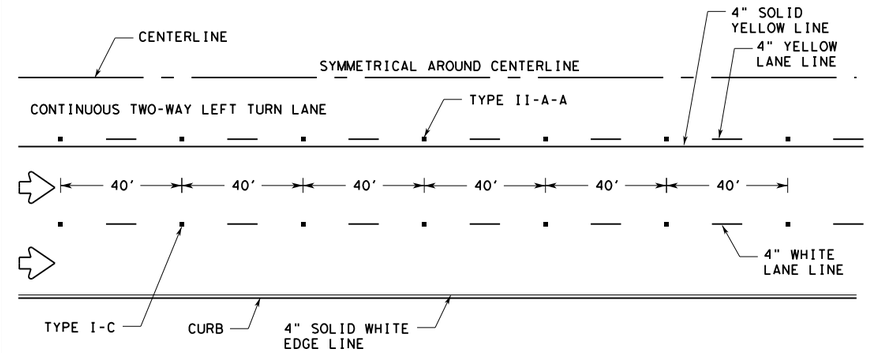


DETAIL "A"



DETAIL "B"

CENTERLINE, LANE LINES, & EDGE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES & EDGE LINES FOR ONE-WAY MULTILANE STREET

RAISED PAVEMENT MARKERS TYPE II-C-R SHALL HAVE CLEAR FACE TOWARD NORMAL TRAFFIC AND RED FACE TOWARD WRONG-WAY TRAFFIC.

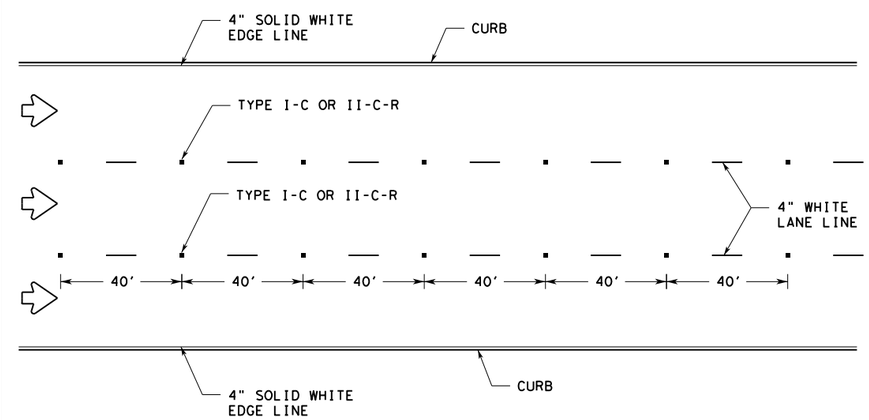


TABLE 1 - TYPICAL LENGTH (L)

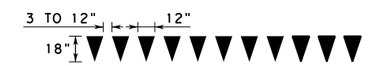
* POSTED SPEED	FORMULA
45>	$L = \frac{WS^2}{60}$
≥45	L= WS

* 85TH PERCENTILE SPEED MAY BE USED ON ROADS WHERE TRAFFIC SPEEDS NORMALLY EXCEED THE POSTED SPEED LIMIT. CROSSHATCHING LENGTH SHOULD BE ROUNDED UP TO NEAREST 5 FOOT INCREMENT.

L= LENGTH OF CROSSHATCHING (FT)
W= WIDTH OF OFFSET (FT)
S= POSTED SPEED (MPH)

EXAMPLES:
AN 8 FOOT SHOULDER IN ADVANCE OF A BRIDGE REDUCES TO 4 FEET ON A 70 MPH ROADWAY. THE LENGTH OF THE CROSS-HATCHING SHOULD BE:
L=8X70=560 FT
A 4 FOOT SHOULDER IN ADVANCE OF A BRIDGE REDUCES TO 2 FEET ON A 40 MPH ROADWAY. THE LENGTH OF THE CROSS-HATCHING SHOULD BE:
L= $4(40^2)$ / 60= 106.67 FT ROUNDED TO 110 FT

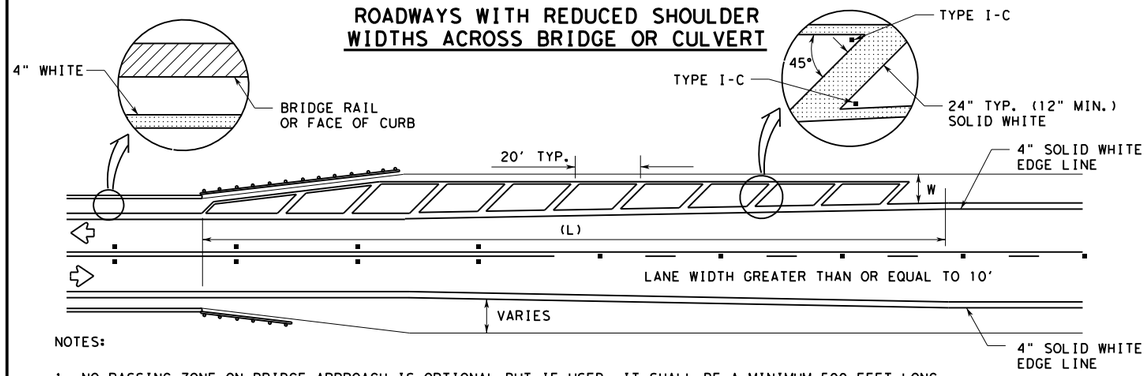
YIELD LINES



GENERAL NOTES:

1. EDGELINE ADJACENT TO CURB AND GUTTER IS NOT REQUIRED IN ALL CASES, HOWEVER SHALL BE PLACED AS DIRECTED BY CITY TRAFFIC ENGINEER.
2. THE TRAVELED WAY INCLUDES ONLY THAT PORTION OF THE ROADWAY USED FOR VEHICULAR TRAVEL AND NOT THE PARKING LANES, SIDEWALKS, BERMS AND SHOULDERS. THE TRAVELED WAYS SHALL BE MEASURED FROM THE INSIDE OF EDGELINE TO INSIDE OF EDGELINE OF A TWO LANE ROADWAY.
3. ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
4. ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
5. ALL PAVEMENT MARKING MATERIAL SHALL MEET THE REQUIRED MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF SAN ANTONIO STANDARD SPECIFICATIONS.
6. 4" SOLID WHITE EDGE LINES ARE OPTIONAL AS DIRECTED BY THE CITY TRAFFIC ENGINEER.

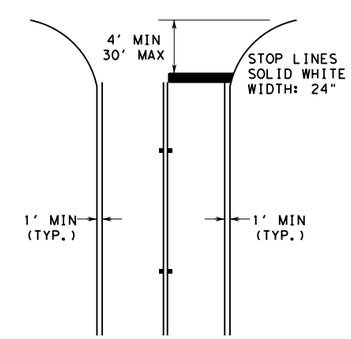
ROADWAYS WITH REDUCED SHOULDER WIDTHS ACROSS BRIDGE OR CULVERT



NOTES:

1. NO-PASSING ZONE ON BRIDGE APPROACH IS OPTIONAL BUT IF USED, IT SHALL BE A MINIMUM 500 FEET LONG.
2. FOR CROSSHATCHING LENGTH (L) SEE TABLE 1.
3. THE WIDTH OF THE OFFSET (W) AND THE REQUIRED CROSSHATCHING WIDTH IS THE FULL SHOULDER WIDTH IN ADVANCE OF THE BRIDGE.
4. THE CROSSHATCHING SHOULD BE REQUIRED IF THE SHOULDER WIDTH IN ADVANCE OF THE BRIDGE IS 4 FOOT OR WIDER AND ANY REDUCTION IN SHOULDER WIDTH ACROSS THE BRIDGE OCCURS.

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE



SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

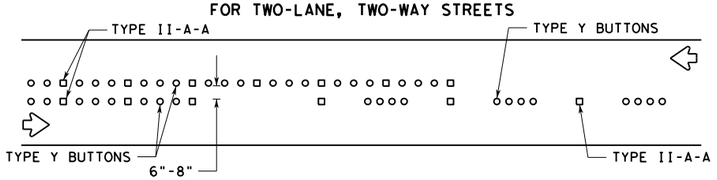
TRAFFIC ENGINEERING STANDARDS
STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE 1
SHEET 4 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 24 OF 60

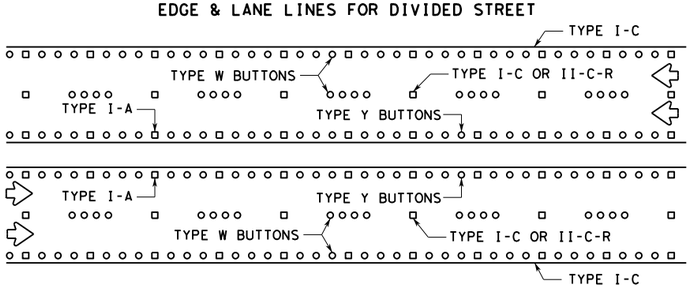
RAISED PAVEMENT MARKING PLACEMENT PATTERNS

PLACED W/ REFLECTION PAVEMENT MARKERS (OPTIONAL)

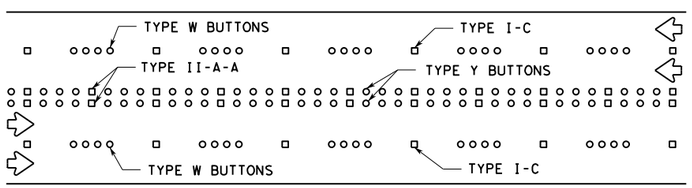
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY STREETS



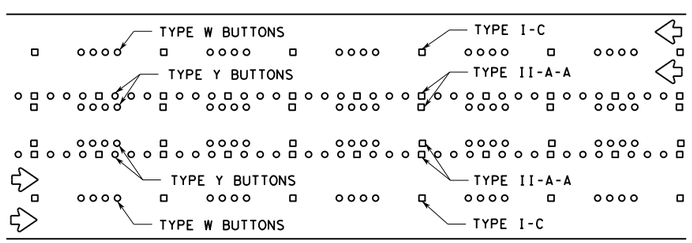
EDGE & LANE LINES FOR DIVIDED STREET



LANE & CENTER LINES FOR MULTILANE UNDIVIDED STREETS

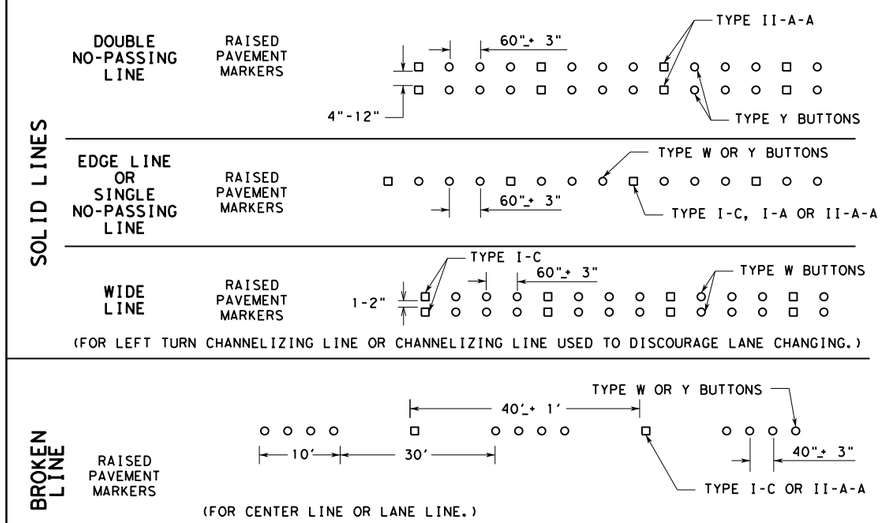


TWO-WAY LEFT TURN LANE



RAISED PAVEMENT MARKINGS PLACEMENT DETAILS

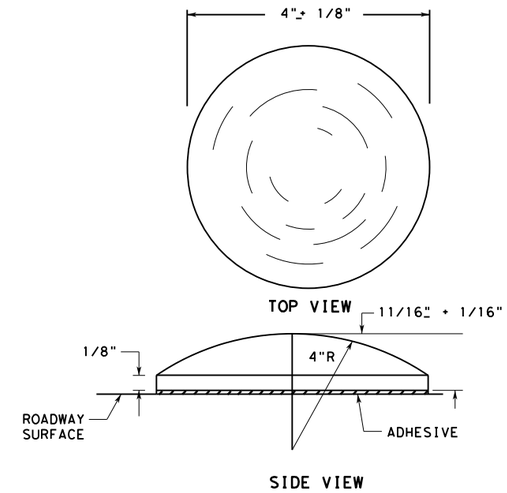
PLACED W/ REFLECTION PAVEMENT MARKERS (OPTIONAL)



TRAFFIC BUTTONS

(NON-REFLECTORIZED)

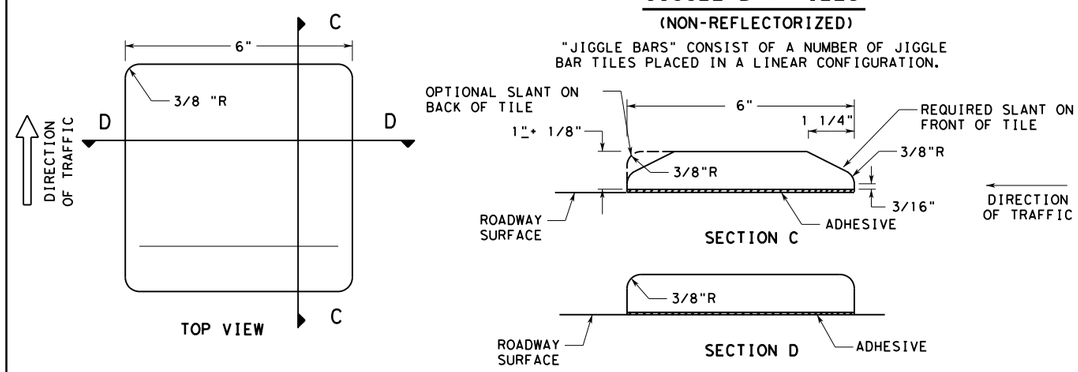
NOTE: MINIMUM AREA OF MARKERS SHALL BE NOT LESS THAN 12.5 SQUARE INCHES.



JIGGLE BAR TILES

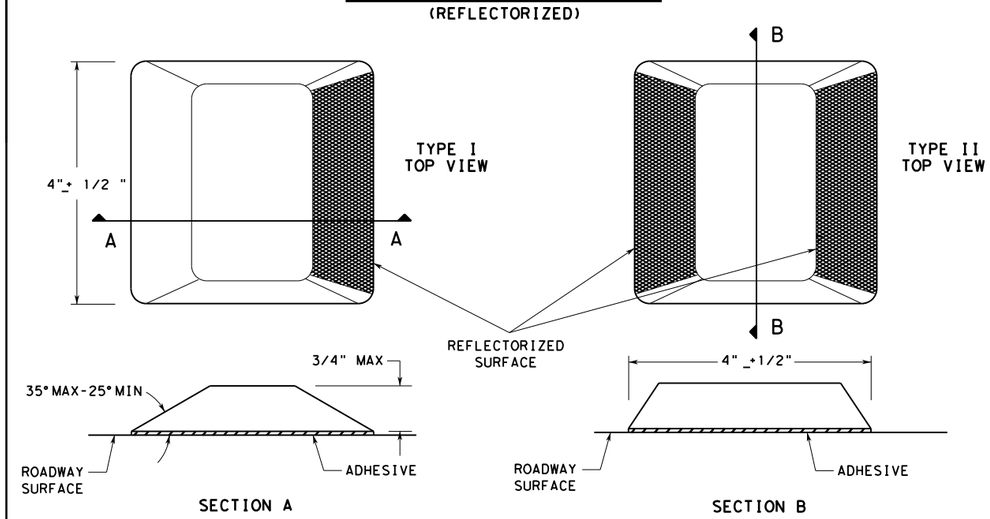
(NON-REFLECTORIZED)

"JIGGLE BARS" CONSIST OF A NUMBER OF JIGGLE BAR TILES PLACED IN A LINEAR CONFIGURATION.



RAISED PAVEMENT MARKERS

(REFLECTORIZED)



NOTES:

1. RAISED PAVEMENT MARKERS (RPMs) MAY CONSIST OF TRAFFIC BUTTONS, PAVEMENT MARKERS AND/OR JIGGLE BAR TILES. PAVEMENT SURFACE SHALL BE PREPARED AND CLEANED SUBJECT TO APPROVAL OF THE CITY TRAFFIC ENGINEER BEFORE ADHESIVE AND RPMs ARE PLACED.
2. JIGGLE BARS SHALL BE ORIENTED PERPENDICULAR TO ROADWAY. JIGGLE BARS SHALL ALSO BE PLACED AT SUCH OTHER LOCATIONS AS SHOWN IN PLANS OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
3. MARKERS, BUTTONS AND JIGGLE BAR TILES SHOWN ARE FOR ILLUSTRATION PURPOSES ONLY AND NOT INTENDED TO SPECIFY ANY PARTICULAR PRODUCT. ALL PAVEMENT MARKERS PROVIDED SHALL BE OF THE SAME MANUFACTURER.
4. ALL DIMENSIONS ARE +/- 1/8" UNLESS OTHERWISE NOTED.
5. ALL PAVEMENT MARKING MATERIALS SHALL MEET MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF SAN ANTONIO STANDARD SPECIFICATIONS.
6. TRAFFIC BUTTONS AND JIGGLE BAR TILES ARE TO BE USED ONLY FOR TEMPORARY TRAFFIC CONTROL OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER.

SEPTEMBER 2009

CITY OF SAN ANTONIO

DEPARTMENT OF PUBLIC WORKS

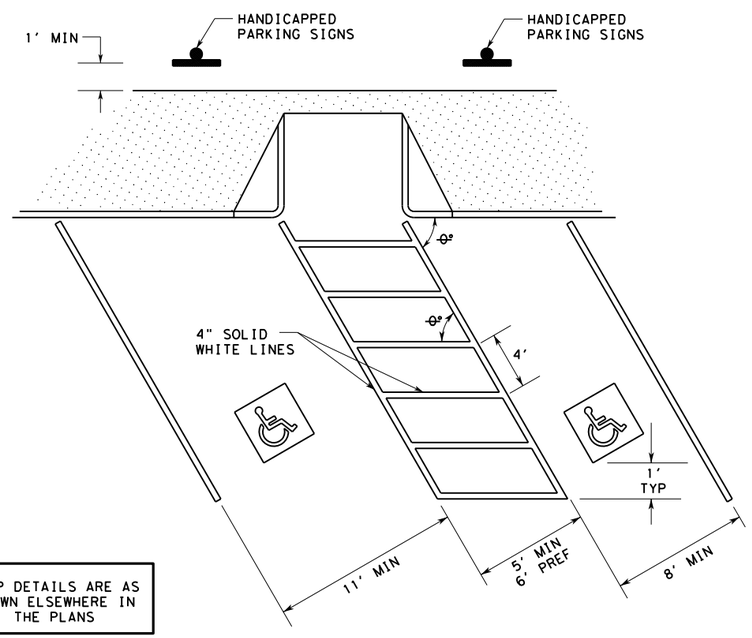
TRAFFIC ENGINEERING STANDARDS

RAISED PAVEMENT MARKERS, REFLECTIVE PAVEMENT MARKERS, TRAFFIC BUTTONS & JIGGLE BAR TILES 2

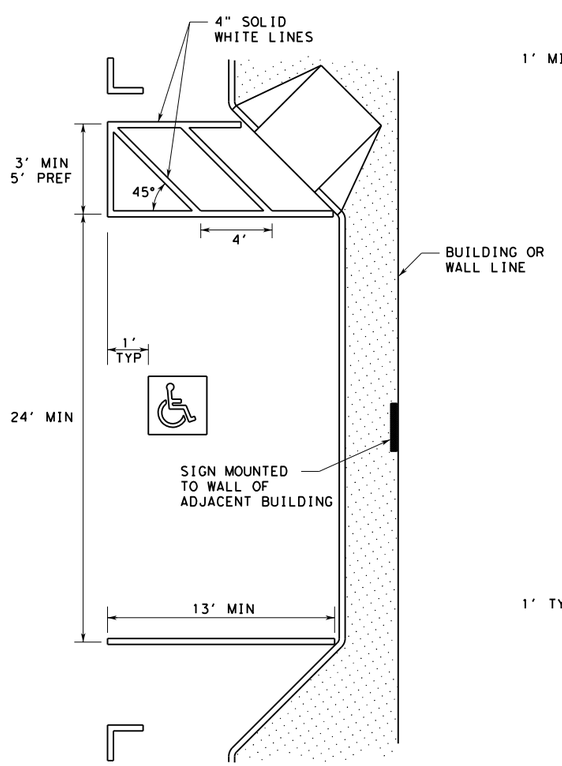
SHEET 5 OF 16

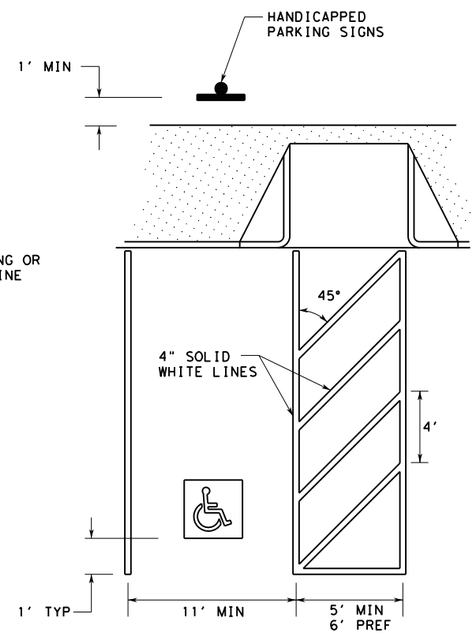
___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.R.V.	CHKD. BY: M.E.	SHEET NO.: 25 OF 60

TYPICAL ACCESSIBLE PARKING SPACE DIMENSIONS

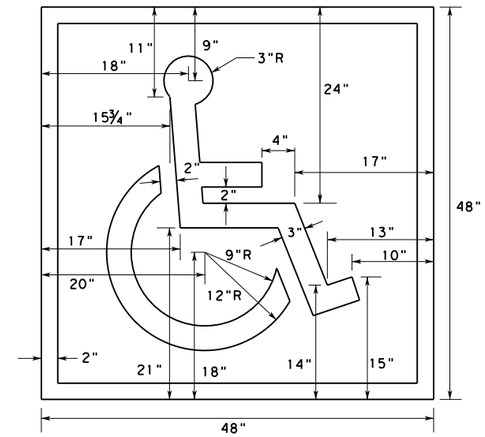


RAMP DETAILS ARE AS SHOWN ELSEWHERE IN THE PLANS



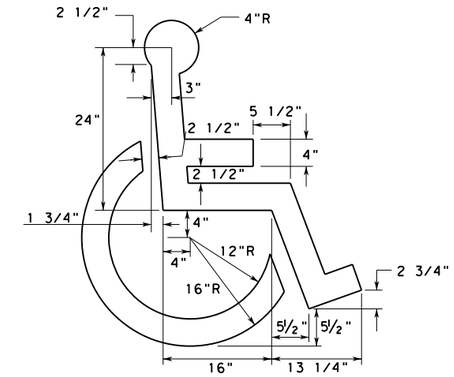


PAVEMENT MARKINGS



WITH BACKGROUND

SYMBOL & BORDER: WHITE
BACKGROUND: BLUE



SYMBOL ONLY

SYMBOL: BLUE OR WHITE

NOTES:

1. ALL PARKING SPACE LIMIT LINES SHALL BE 4" SOLID WHITE LINES.
2. AISLE MARKINGS SHOWN ARE EXAMPLES ONLY. OTHER METHODS TO INDICATE A NO PARKING AREA ARE ACCEPTABLE. AISLE MARKINGS SHALL BE WHITE.
3. DIMENSIONS OF LIMIT LINES, AISLE MARKINGS, AND SYMBOL (WITH OR WITHOUT BACKGROUND) MAY VARY ± 10%.
4. PAVEMENT MARKING SYMBOLS (WITH BACKGROUND):
   A) ARE REQUIRED UNLESS STATED ELSEWHERE IN THE PLANS,
   B) SHOULD BE PLACED TOWARD THE FAR END OF THE PARKING SPACES SO AS TO BE VISIBLE TO MOTORISTS IN THE TRAVEL LANE,
   C) MAY BE PAINTED OR PREFABRICATED MATERIAL, AND
   D) SHALL BE 30"x30" MINIMUM.
5. WITH APPROVAL OF THE CITY TRAFFIC ENGINEER, PREFABRICATED PAVEMENT MARKING SYMBOLS WITH BACKGROUND OF OTHER DIMENSIONS EXCEEDING THE 30"x30" MINIMUM MAY BE USED. ALTERNATIVE DESIGNS SHALL INCLUDE A PROPORTION SIZED SYMBOL OF ACCESSIBILITY, AND SHALL CONFORM TO THE ILLUSTRATED COLORS FOR BACKGROUND, SYMBOL AND BORDER.
6. ALL SLOPE IN AND AROUND EXPECTED WHEEL CHAIR PATH SHALL NOT EXCEED 2% X-SLOPES.

SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

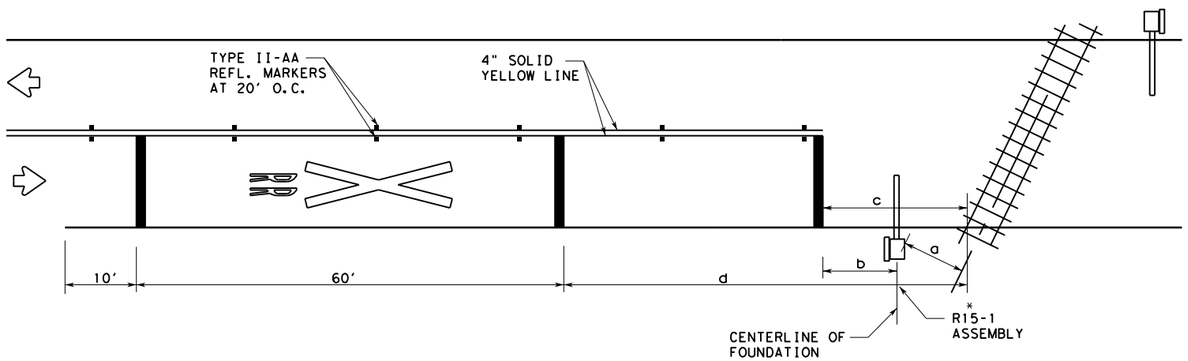
TRAFFIC ENGINEERING STANDARDS

PAVEMENT MARKINGS FOR ACCESSIBLE PARKING

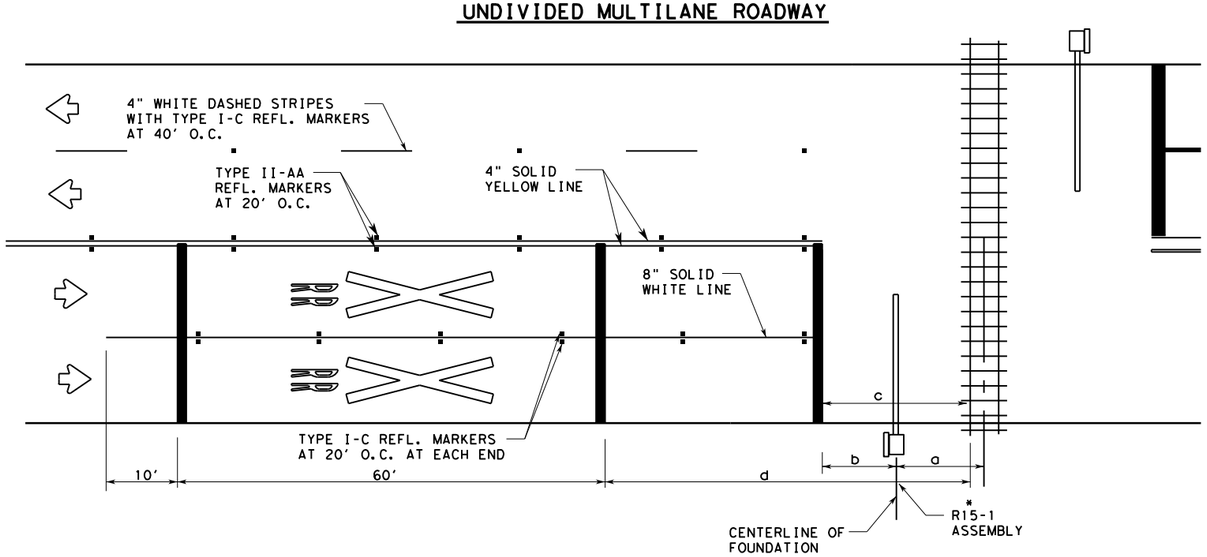
SHEET 6 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 26 OF 60

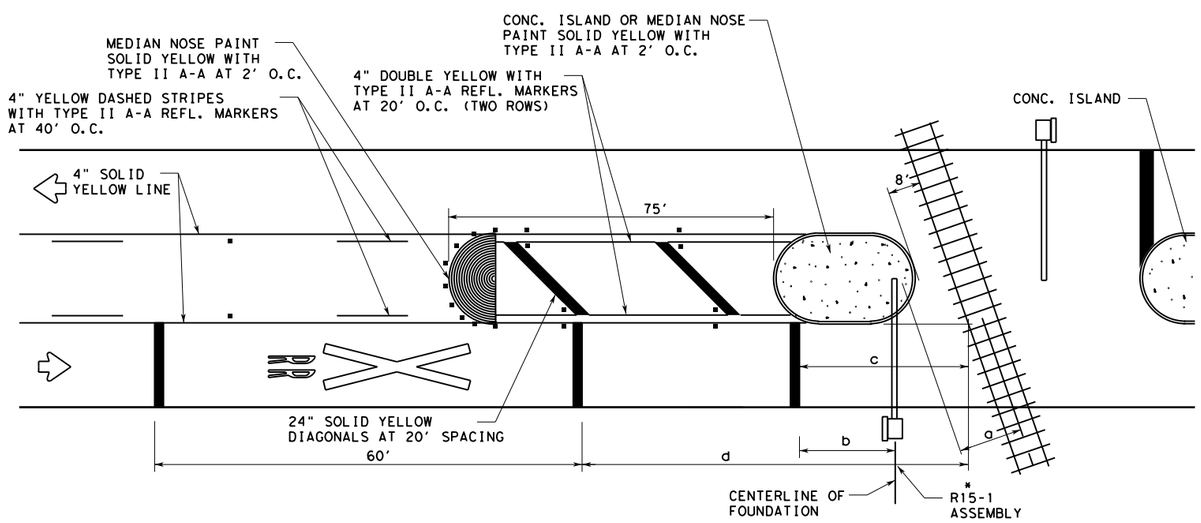
TWO LANE, TWO-WAY



UNDIVIDED MULTILANE ROADWAY



TWO-WAY LEFT-TURN LANE (TWLTL)



a = 12 FEET MINIMUM, 15 FEET USUAL, IF ACTIVE WARNING DEVICES ARE PRESENT. DISTANCE "a" SHOULD BE MEASURED FROM THE CENTERLINE OF * R15-1 ASSEMBLY TO THE CENTER-LINE OF NEAREST TRACK.

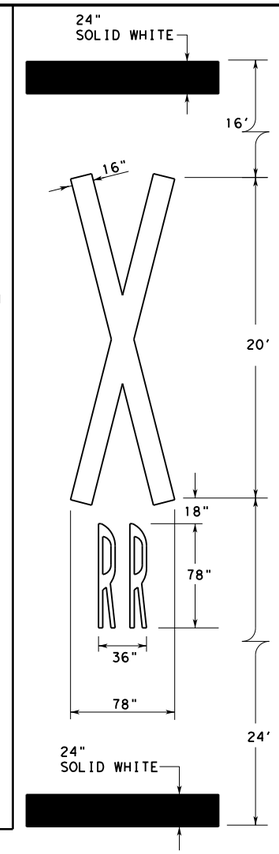
b= STOP LINES SHOULD BE APPROX-IMATELY 8 FEET IN ADVANCE OF ACTIVE WARNING DEVICES (TYPE A, E OR F). STOP LINE SHOULD BE APPROXIMATELY 15 FEET FROM NEAR RAIL IF ONLY PASSIVE DEVICES (R15-1, PLUS R15-2 WHEN APPLICABLE) ARE PRESENT.

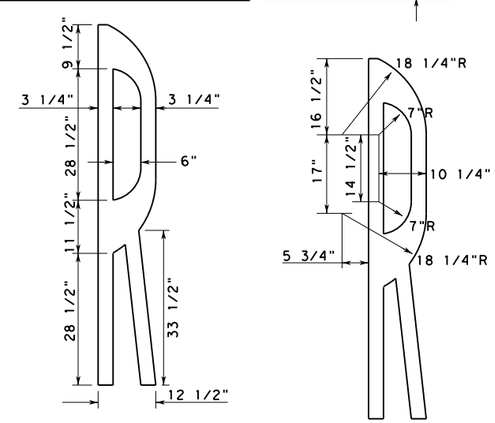
c= 15 FEET DESIRABLE MINIMUM IF NO GATE OR SIGNAL IS PRESENT. R15-1 SHOULD BE PLACED BETWEEN STOP LINE AND RAILS WITH ADEQUATE DISTANCE PROVIDED FOR "a".

d*=

APPROACH SPEED (MPH)	DESIRABLE PLACEMENT (FEET)
20	145
25	220
30	295
35	370
40	445
45	520
50	595
55	670
60	745
65	820
70	900

* LOCAL CONDITIONS MAY REQUIRE ALTERNATE PLACEMENT LOCATIONS.





NOTES:

1. THE PAVEMENT MARKINGS ON AN APPROACH TO A RAILROAD GRADE CROSSING SHALL CONSISTS OF:
   A) THE RR X-ING SYMBOL,
   B) THREE TRANSVERSE 24" LINES, AND
   C) LANE LINES: A SOLID NO PASSING LINE FOR TWO-WAY TRAFFIC APPROACHES, OR SOLID LAND LINES FOR MULTILANE APPROACHES.
2. FOR BIDDING PURPOSES, THE RR X-ING SYMBOL WILL BE MEASURED AND PAID FOR AS FOR EACH LANE IN PLACE. THE TRANSVERSE MARKINGS AND LANE LINES WILL BE MEASURED AND PAID FOR BY THE LINEAL FOOT.
3. CENTERLINES SHALL BE YELLOW, OTHER MARKINGS SHALL BE WHITE.
4. APPROACH LANES LESS THAN 8 FOOT WIDTH SHALL NOT HAVE MARKINGS.
5. MARKINGS SHOULD NOT BE PLACED WHERE LESS THAN 110 FEET OF APPROACH ROADWAY IS AVAILABLE FOR PLACEMENT UNLESS DIRECTED BY CITY TRAFFIC ENGINEER.
6. RR X-ING SYMBOLS SHOULD BE PLACED APPROXIMATELY IN THE CENTER OF THE APPROACH LANE.
7. ALL TRANSVERSE MARKINGS, INCLUDING STOP LINES, SHALL BE PLACED AT RIGHT ANGLES TO THE CENTERLINE AND ACROSS ALL APPROACH LANES.
8. EXISTING NON-STANDARD MARKINGS SHALL BE REMOVED TO THE FULLEST EXTENT POSSIBLE SO AS NOT TO LEAVE A DISCERNABLE MARKING, BY ANY METHOD APPROVED BY THE CITY TRAFFIC ENGINEER. OVERPAINTING WILL NOT BE ALLOWED.
9. ADDITIONAL MARKINGS AND PLACEMENT DETAILS MAY BE FOUND IN THE TMUTCD, APPENDIX H.
10. THE CITY TRAFFIC ENGINEER MAY REQUIRE ADDITIONAL LONGITUDINAL MARKINGS IF THE DISTANCE BETWEEN THE STOP LINES IS GREATER THAN 80 FEET. MARKINGS ARE NOT REQUIRED ACROSS OR BETWEEN THE RAILS UNLESS SPECIFIED ELSEWHERE IN THE PLANS.

* R15-1 ASSEMBLY

MAY CONSIST OF ONE OR MORE OF THE FOLLOWING:

R15-1	CROSSBUCK SIGN
R15-2	MULTIPLE TRACK SIGN
TYPE A	MAST FLASHERS
TYPE E	CANTILEVERS
TYPE F	GATES

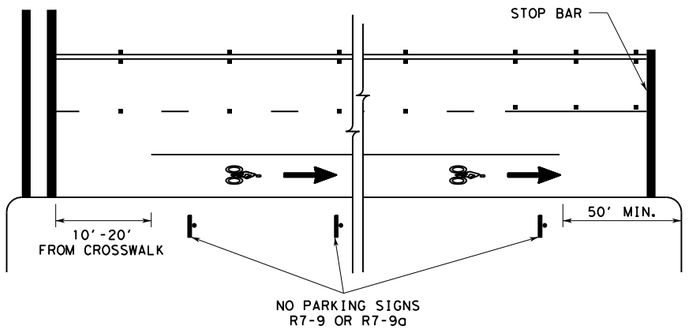
SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

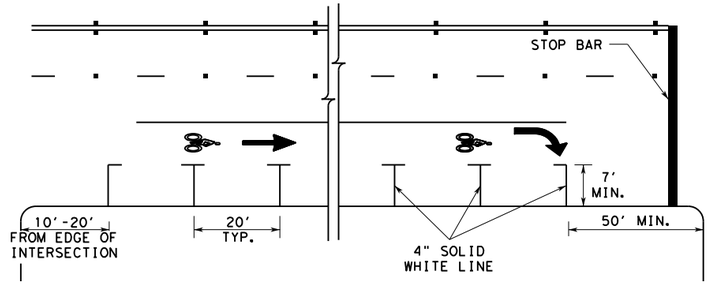
TRAFFIC ENGINEERING STANDARDS
RAILROAD CROSSING PAVEMENT MARKING (RCPM) DETAILS
SHEET 7 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.R.V.	CHKD. BY: M.E.	SHEET NO.: 27 OF 60

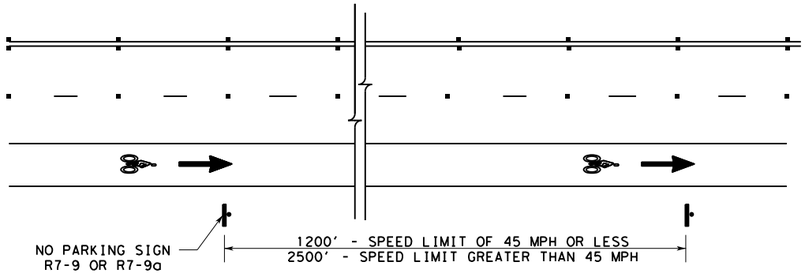
NO PARKING ALONG BICYCLE LANE

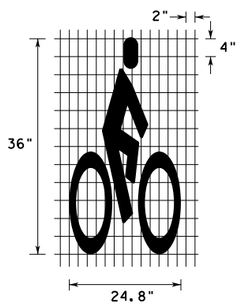


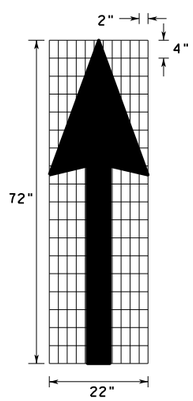
PARKING ALONG BICYCLE LANE

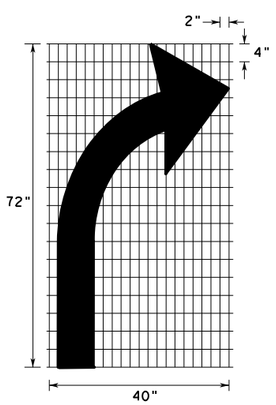


ROADWAYS WITH FEW INTERSECTIONS

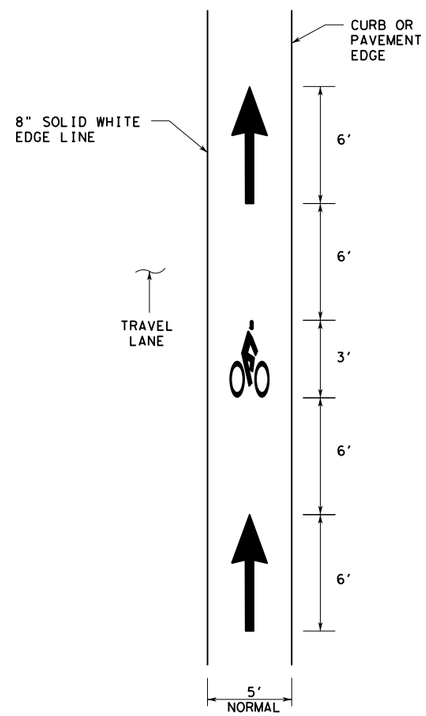






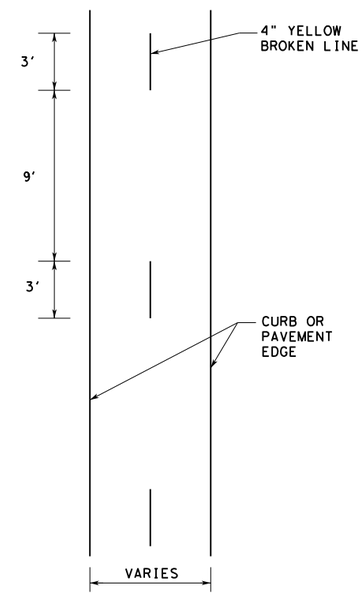


ADJACENT TO TRAVEL LANE

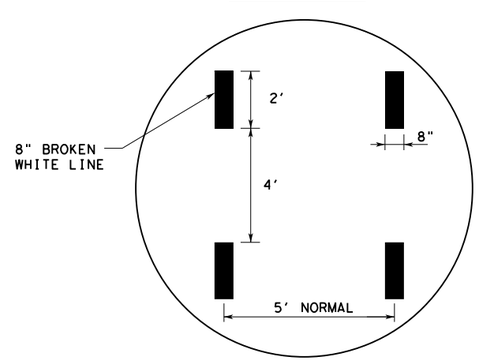


SHARED USE PATH

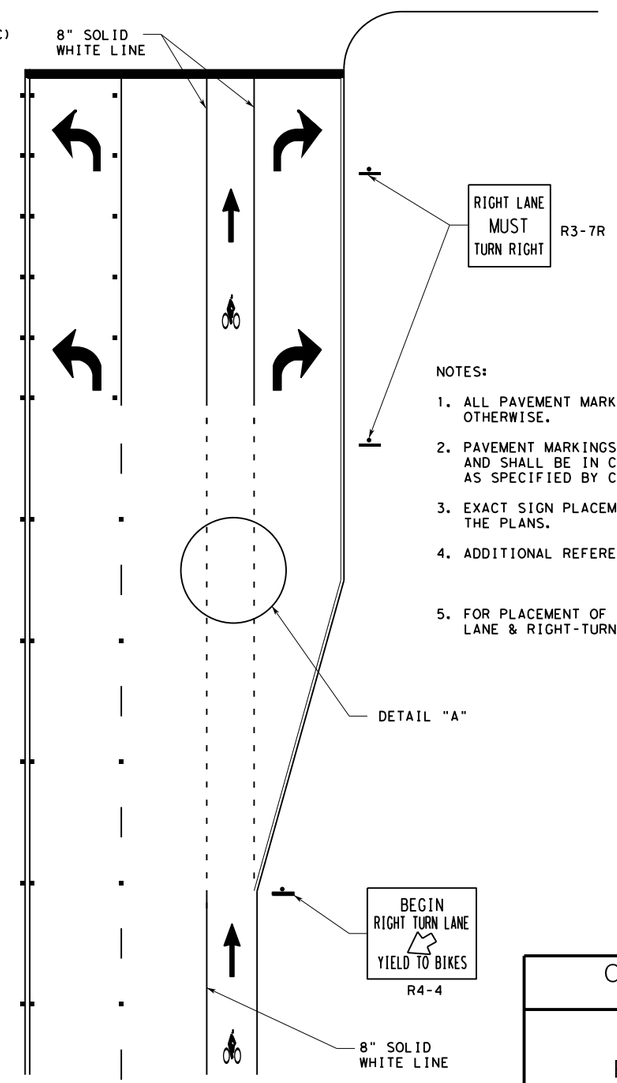
(SEPERATE FROM ROADWAY WITH NO MOTORIZED TRAFFIC)



DETAIL "A"



RIGHT-TURN LANE AT INTERSECTION



NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE WHITE EXCEPT WHEN NOTED OTHERWISE.
2. PAVEMENT MARKINGS SHALL BE OF THE MATERIALS SPECIFIED AND SHALL BE IN CONFORMANCE WITH MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF SAN ANTONIO STANDARD SPECIFICATIONS.
3. EXACT SIGN PLACEMENT AND DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.
4. ADDITIONAL REFERENCES: TMUTCD
   GUIDE FOR THE DEVELOPMENT OF BICYCLES FACILITIES, AASHTO, 1991.
5. FOR PLACEMENT OF PAVEMENT ARROWS AND WORDS SEE LEFT-TURN LANE & RIGHT-TURN LANE DESIGN WORKSHEET.

SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

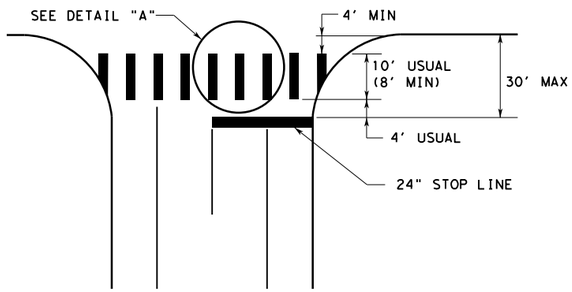
TRAFFIC ENGINEERING STANDARDS

BICYCLE LANE
PAVEMENT MARKINGS

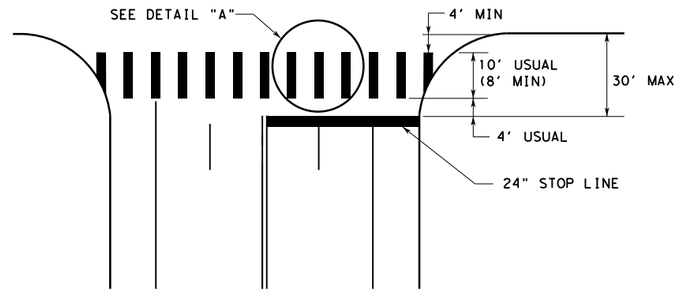
SHEET 8 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 28 OF 60

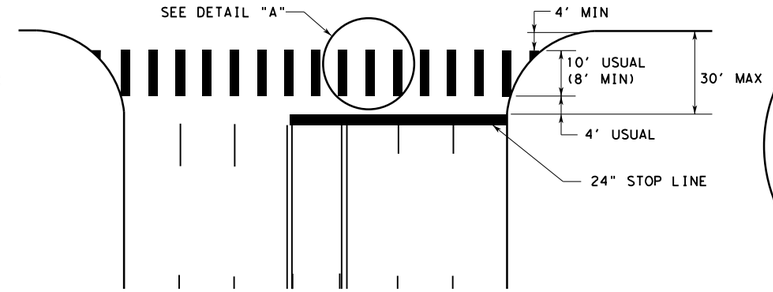
TWO LANES WITH SHOULDERS



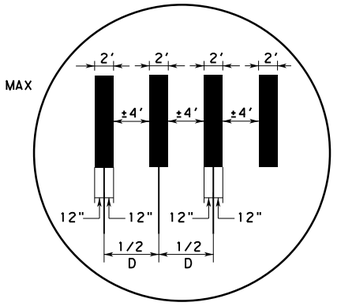
FOUR LANES WITH SHOULDERS



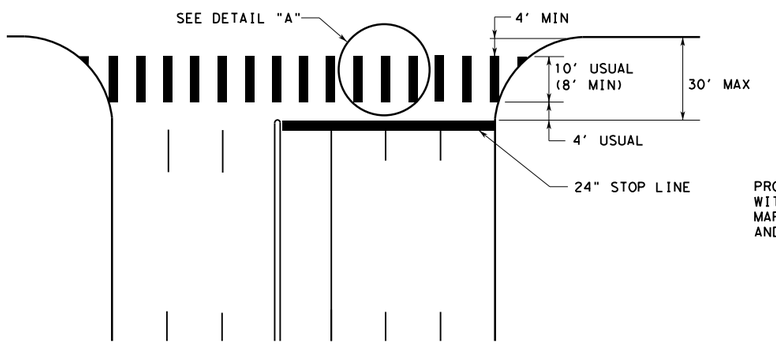
MULTI - LANES



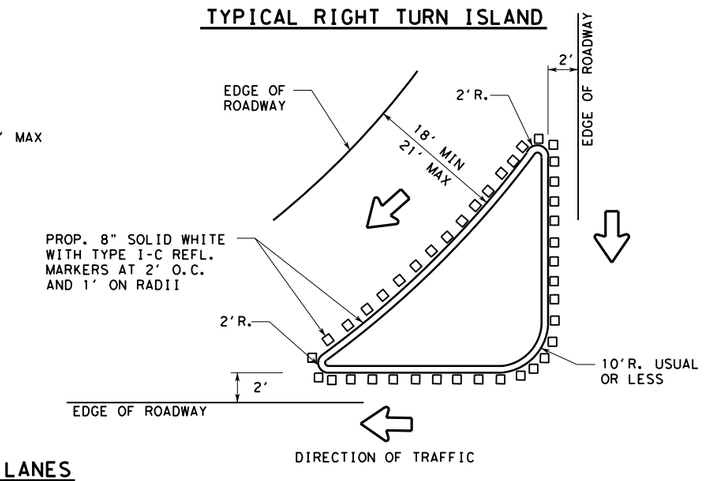
DETAIL "A"



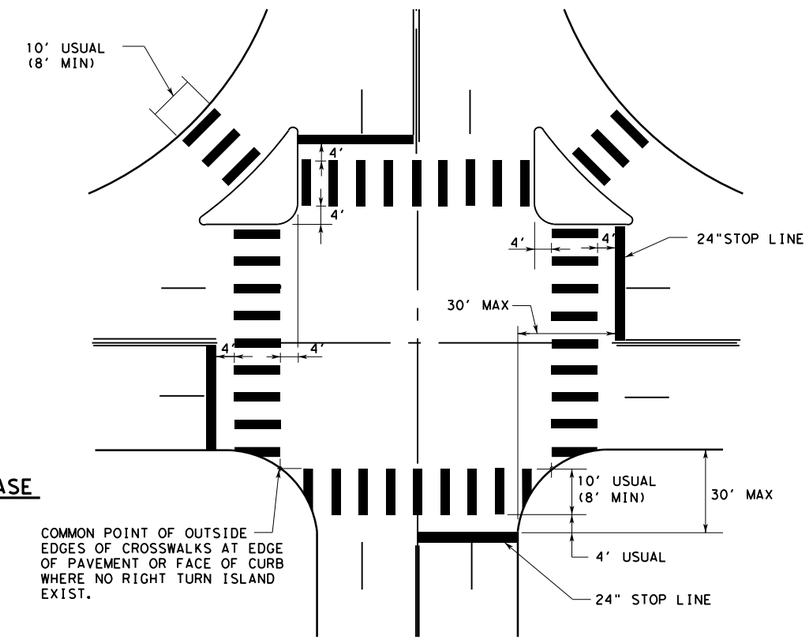
MULTI - LANE WITH MEDIAN



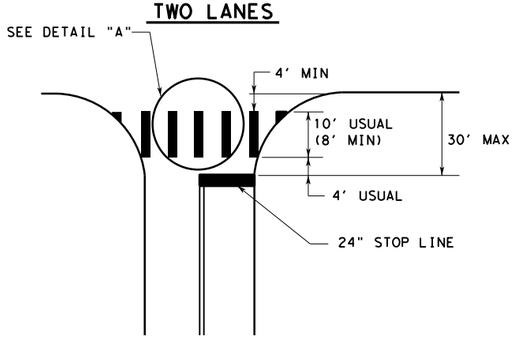
TYPICAL RIGHT TURN ISLAND



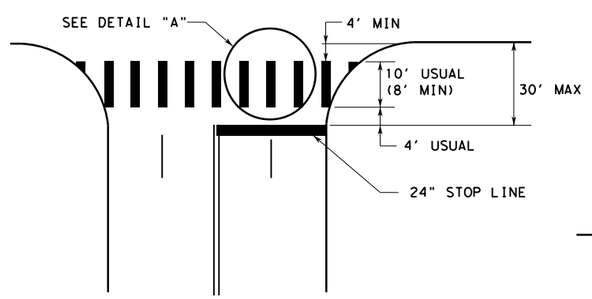
INTERSECTION WITH RIGHT - TURN ISLANDS



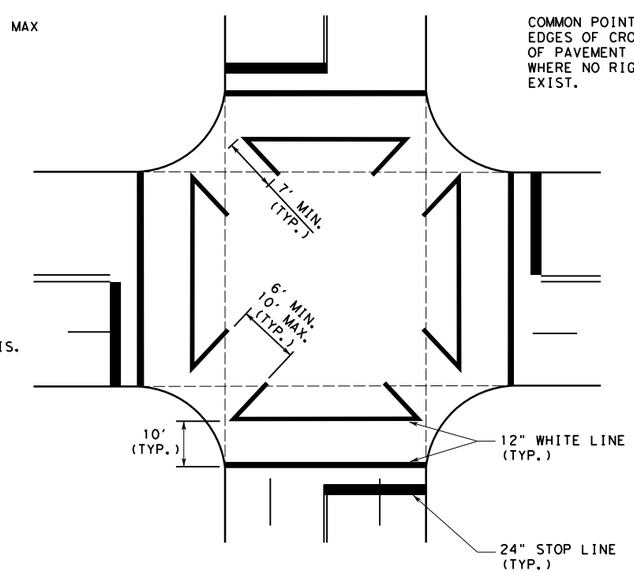
TWO LANES



FOUR LANES



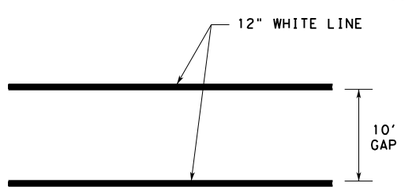
EXCLUSIVE PEDESTRIAN PHASE



NOTES:

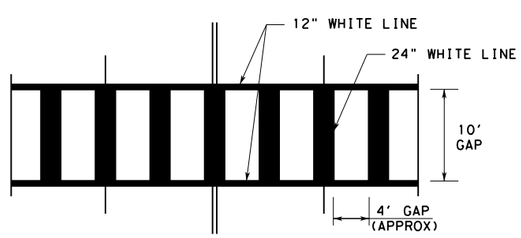
1. CROSSWALKS AND STOP LINES SHALL BE WHITE.
2. "D" IS EQUAL TO ONE HALF THE WIDTH OF TRAVEL LANE.

CENTRAL BUSINESS DISTRICT CROSSWALK DETAIL



HIGH VISIBILITY CROSSWALK DETAIL

TYPICALLY USED AT SIGNALIZED AND NON-SIGNALIZED MID-BLOCK CROSSINGS FOR COLLECTOR AND ARTERIAL ROADWAYS AND AT LOCATIONS REQUIRING EXTRA EMPHASIS.



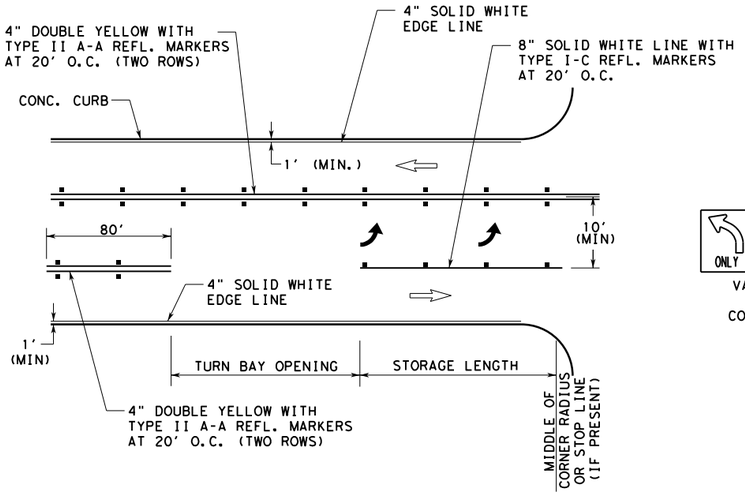
SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC ENGINEERING STANDARDS
TYPICAL CROSSWALK DETAILS
SHEET 9 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 29 OF 60

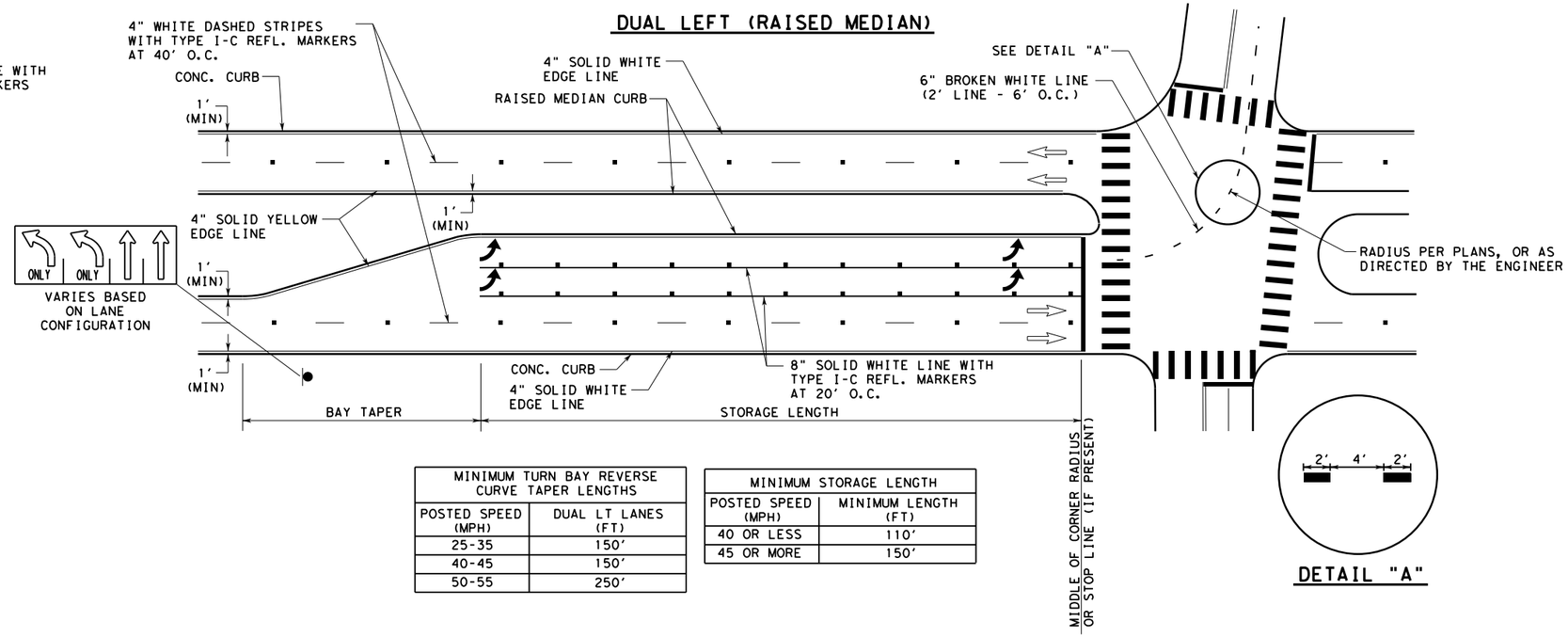
LEFT-TURN LANE



MINIMUM TURN BAY OPENINGS	
POSTED SPEED (MPH)	MINIMUM OPENING (FT)
25-35	60'
≥ 40	100'

MINIMUM STORAGE LENGTH	
POSTED SPEED (MPH)	MINIMUM OPENING (FT)
40 OR LESS	110'
45 OR MORE	150'

DUAL LEFT (RAISED MEDIAN)

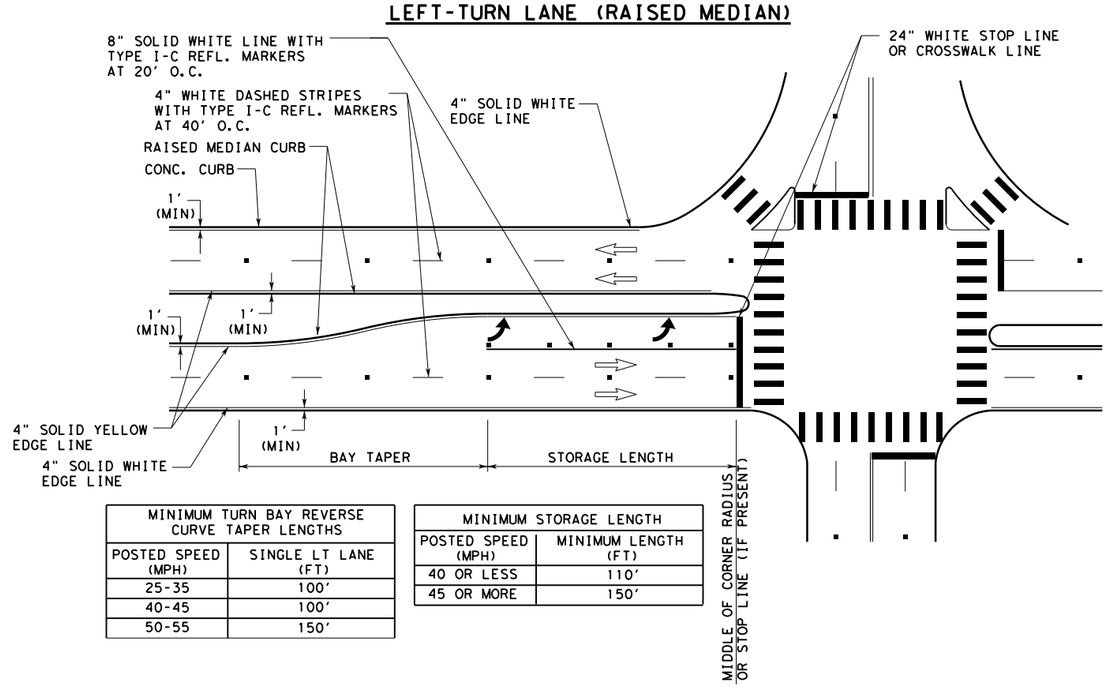


MINIMUM TURN BAY REVERSE CURVE TAPER LENGTHS	
POSTED SPEED (MPH)	DUAL LT LANES (FT)
25-35	150'
40-45	150'
50-55	250'

MINIMUM STORAGE LENGTH	
POSTED SPEED (MPH)	MINIMUM LENGTH (FT)
40 OR LESS	110'
45 OR MORE	150'

DETAIL "A"

LEFT-TURN LANE (RAISED MEDIAN)



MINIMUM TURN BAY REVERSE CURVE TAPER LENGTHS	
POSTED SPEED (MPH)	SINGLE LT LANE (FT)
25-35	100'
40-45	100'
50-55	150'

MINIMUM STORAGE LENGTH	
POSTED SPEED (MPH)	MINIMUM LENGTH (FT)
40 OR LESS	110'
45 OR MORE	150'

NOTES:

1. THE POSTED SPEED LIMIT IS TYPICALLY EQUAL TO THE DESIGN SPEED MINUS 5 MPH.
2. THE DIMENSIONS GIVEN FOR DUAL LEFT (RAISED MEDIAN) IN THE MINIMUM LENGTH TABLES ON THIS SHEET ARE ALSO APPLICABLE FOR DUAL RIGHT-TURN LANES.
3. STORAGE LENGTHS LONGER THAN THE MINIMUMS LISTED ON THIS DRAWING MAY BE DETERMINED USING TRAFFIC ENGINEERING ANALYSIS OR APPROXIMATE CALCULATIONS.
4. FOR THE PLACEMENT OF PAVEMENT ARROWS AND WORDS SEE LEFT-TURN "ONLY" AND ARROW SPACING WORKSHEET.
5. REFER TO APPLICABLE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE AND LEFT-TURN & RIGHT-TURN LANE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKINGS.
6. REFER TO BICYCLE LANE PAVEMENT MARKINGS STANDARD FOR TYPE AND PLACEMENT.
7. 4" SOLID WHITE AND YELLOW EDGE LINES ARE OPTIONAL AS DIRECTED BY THE CITY TRAFFIC ENGINEER.

SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC ENGINEERING STANDARDS

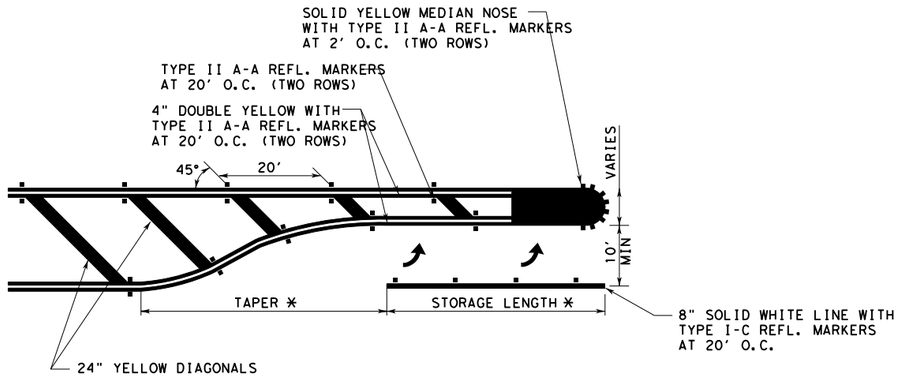
LEFT-TURN LANE & RIGHT-TURN LANE DESIGN WORKSHEET 1

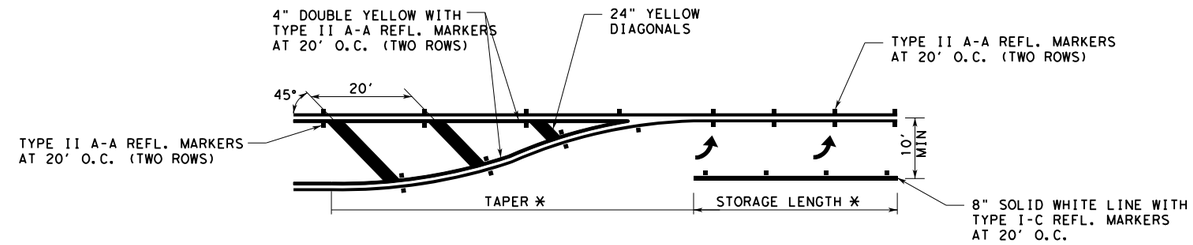
SHEET 10 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.R.V.	CHKD. BY: M.E.	SHEET NO.: 30 OF 60

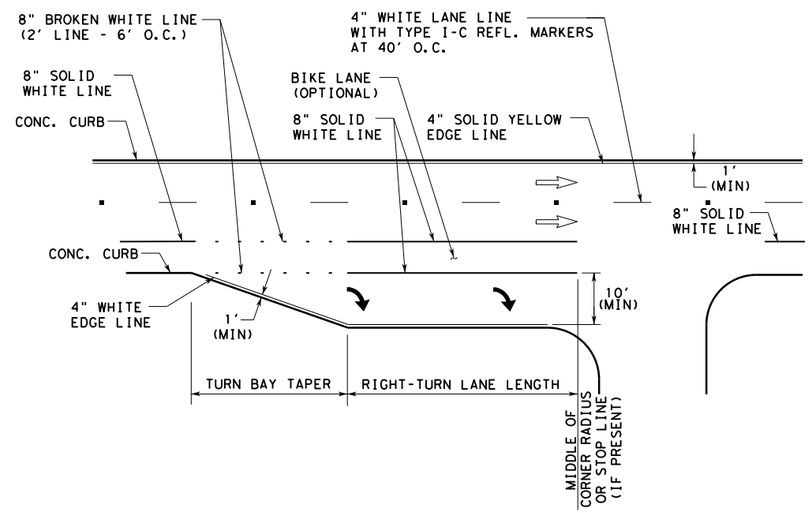
PAINTED MEDIAN LEFT TURN BAY DETAILS

* – USE MINIMUM TURN BAY REVERSE CURVE TAPER LENGTH AND MINIMUM STORAGE LENGTH TABLES FOR "LEFT-TURN LANE (RAISED MEDIAN)" ON SHEET 10 OF 16.





UNSIGNALIZED RIGHT-TURN LANE



MINIMUM TURN BAY TAPER LENGTH	
POSTED SPEED (MPH)	LENGTH (FT)
30 OR LESS	90′
35 OR MORE	120′

MINIMUM RIGHT-TURN LANE LENGTH	
POSTED SPEED (MPH)	LENGTH (FT)
40 OR LESS	110′
45 OR MORE	150′

NOTES:

1. THE POSTED SPEED LIMIT IS TYPICALLY EQUAL TO THE DESIGN SPEED MINUS 5 MPH.
2. THE DIMENSIONS GIVEN FOR DUAL LEFT (RAISED MEDIAN) IN THE MINIMUM LENGTH TABLES ON THIS SHEET ARE ALSO APPLICABLE FOR DUAL RIGHT-TURN LANES.
3. STORAGE LENGTHS LONGER THAN THE MINIMUMS LISTED ON THIS DRAWING MAY BE DETERMINED USING TRAFFIC ENGINEERING ANALYSIS OR APPROXIMATE CALCULATIONS.
4. FOR THE PLACEMENT OF PAVEMENT ARROWS AND WORDS SEE LEFT-TURN "ONLY" AND ARROW SPACING WORKSHEET.
5. REFER TO APPLICABLE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE AND LEFT-TURN & RIGHT-TURN LANE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKINGS.
6. REFER TO BICYCLE LANE PAVEMENT MARKINGS STANDARD FOR TYPE AND PLACEMENT.
7. 4" SOLID WHITE AND YELLOW EDGE LINES ARE OPTIONAL AS DIRECTED BY THE CITY TRAFFIC ENGINEER.

SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

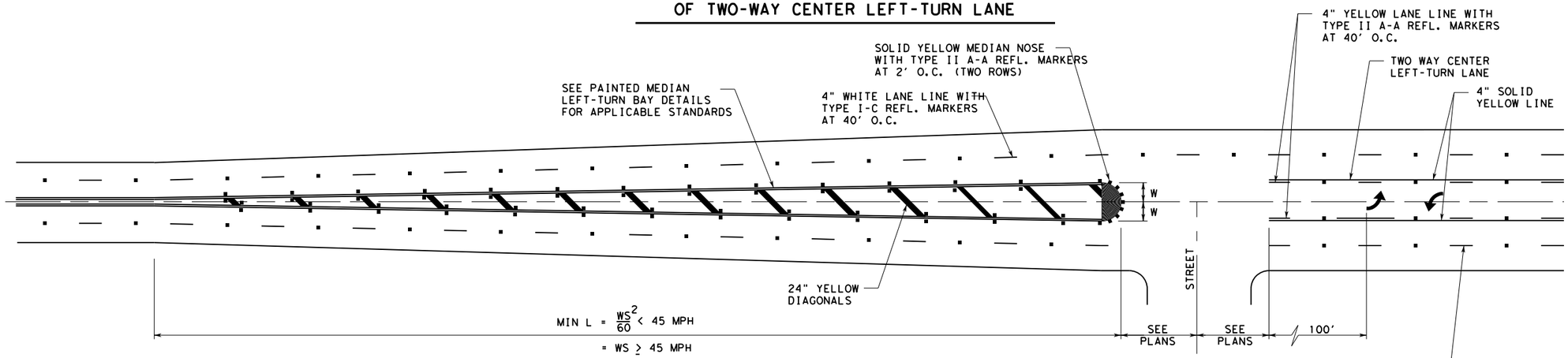
TRAFFIC ENGINEERING STANDARDS

LEFT–TURN LANE & RIGHT–TURN LANE DESIGN WORKSHEET 2

SHEET 11 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 31 OF 60

TYPICAL TRANSITION AT BEGINNING AND END OF TWO-WAY CENTER LEFT-TURN LANE



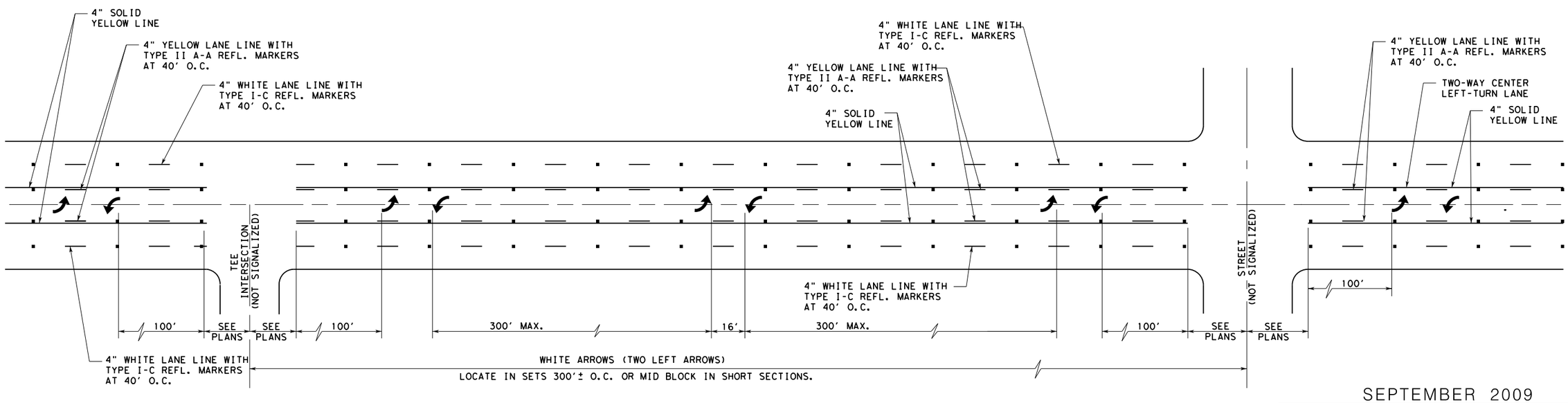
W = WIDTH OF OFFSET (FT)
S = POSTED SPEED (MPH)
L = LENGTH OF CROSSHATCHING (FT)

LEGEND
TYPICAL DETAIL
(PLACE LEGENDS IN ACCORDANCE TO LEFT TURN "ONLY" AND ARROW SPACING WORKSHEET)

NOTE:

1. REFLECTIVE RAISED PAVEMENT MARKERS SHOULD BE IN ACCORDANCE WITH STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE AND LEFT-TURN & RIGHT-TURN LANE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS.
2. SEE LEFT-TURN & RIGHT-TURN LANE DESIGN WORKSHEET FOR APPLICABLE INFORMATION.
3. SEE LEFT-TURN "ONLY" AND ARROW SPACING WORKSHEET.

TWO-WAY LEFT-TURN LANE DETAILS NON-SIGNALIZED INTERSECTIONS



SEPTEMBER 2009

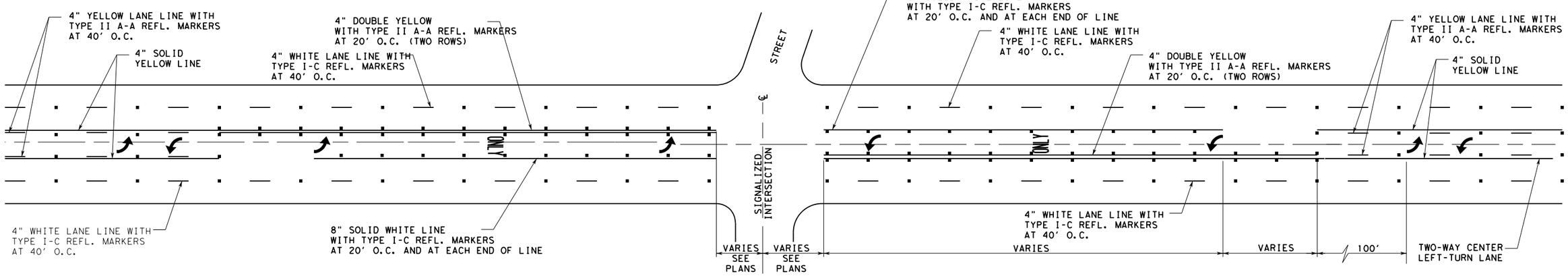
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC ENGINEERING STANDARDS
TWO-WAY LEFT-TURN LANE DETAILS 1
SHEET 12 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 32 OF 60

TYPICAL TWO-WAY LEFT-TURN LANE DETAILS

SIGNALIZED INTERSECTION



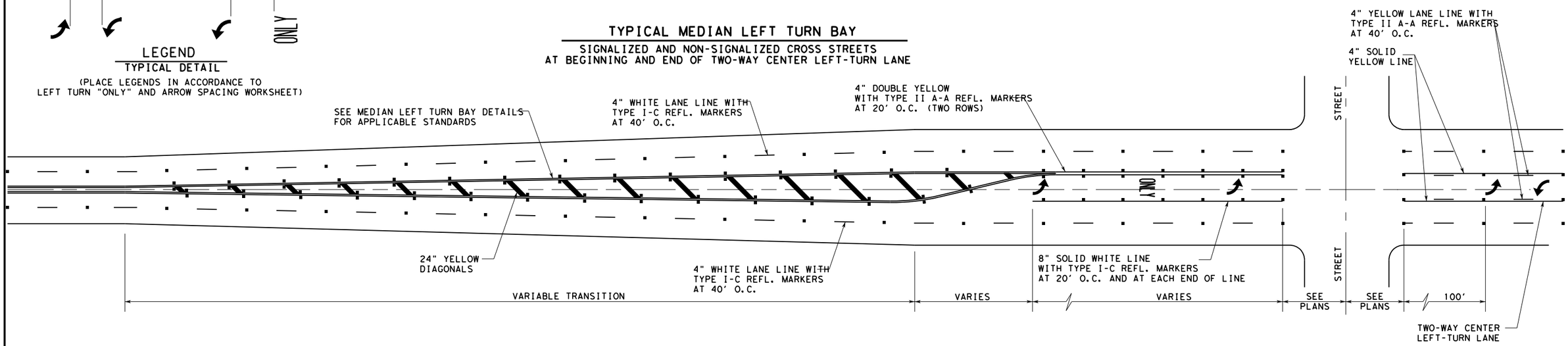
LEGEND

TYPICAL DETAIL

(PLACE LEGENDS IN ACCORDANCE TO LEFT TURN "ONLY" AND ARROW SPACING WORKSHEET)

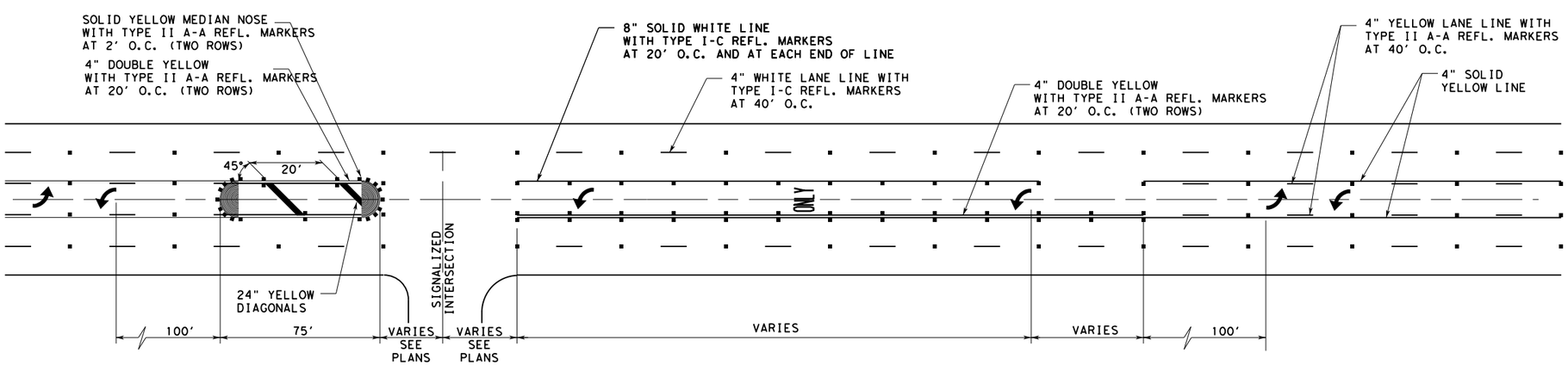
TYPICAL MEDIAN LEFT TURN BAY

SIGNALIZED AND NON-SIGNALIZED CROSS STREETS AT BEGINNING AND END OF TWO-WAY CENTER LEFT-TURN LANE



TYPICAL TWO-WAY LEFT-TURN LANE DETAILS

SIGNALIZED TEE INTERSECTION



NOTE:

1. REFLECTIVE RAISED PAVEMENT MARKERS SHOULD BE IN ACCORDANCE WITH STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE AND LEFT-TURN & RIGHT-TURN LANE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS.
2. SEE LEFT-TURN & RIGHT-TURN LANE DESIGN WORKSHEET FOR APPLICABLE INFORMATION.
3. SEE LEFT-TURN "ONLY" AND ARROW SPACING WORKSHEET.

SEPTEMBER 2009

CITY OF SAN ANTONIO

DEPARTMENT OF PUBLIC WORKS

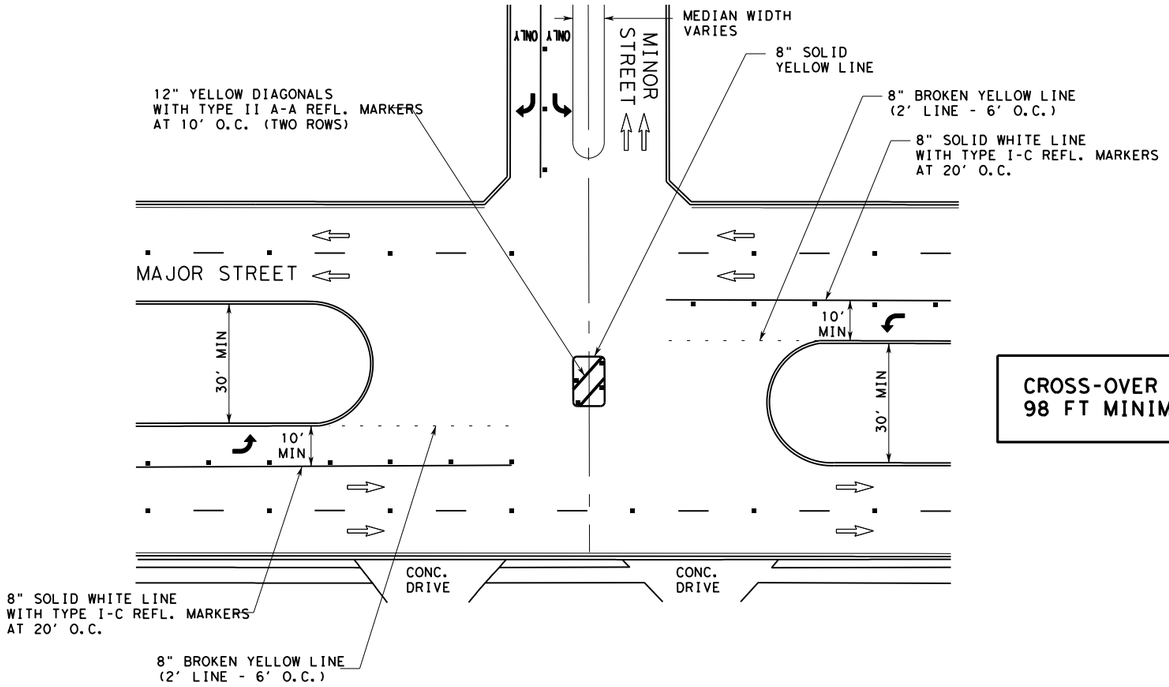
TRAFFIC ENGINEERING STANDARDS

TWO-WAY LEFT-TURN LANE DETAILS 2

SHEET 13 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 33 OF 60

CROSS-OVER MEDIAN OPENING WITHOUT TURN AROUND STRIPING "TEE" INTERSECTION

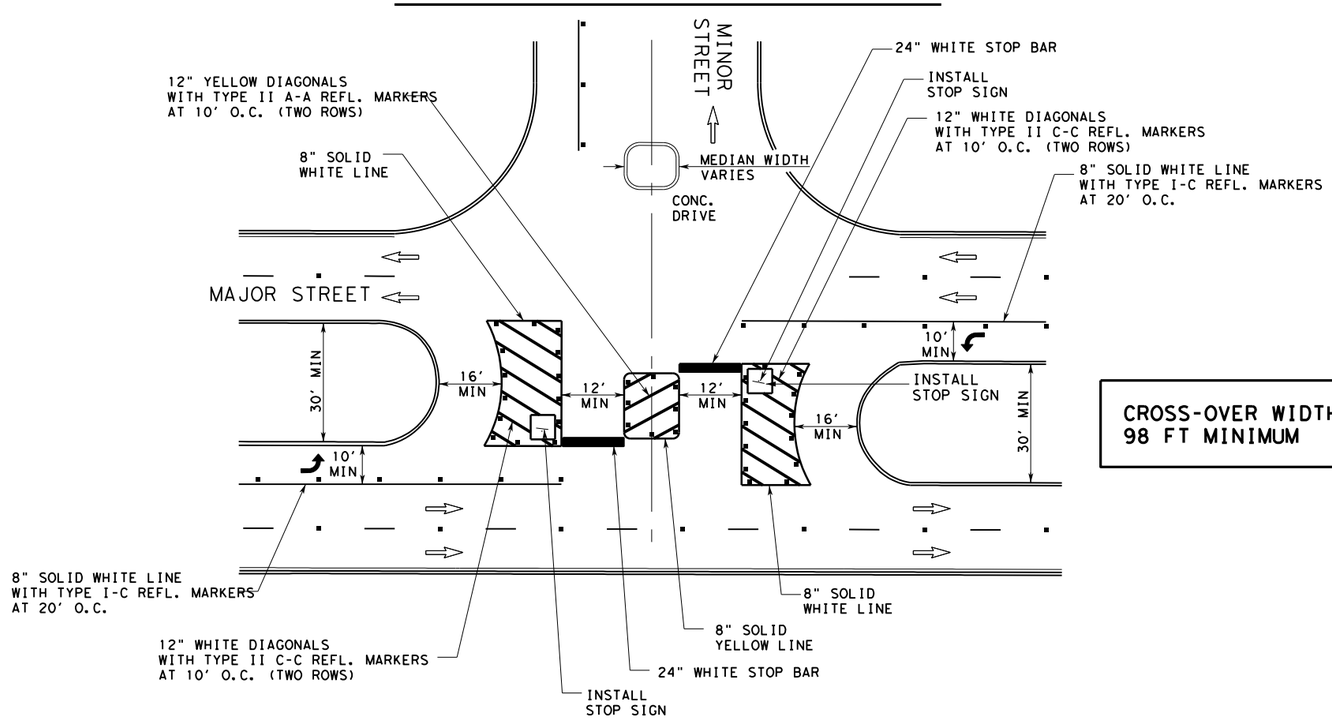


CROSS-OVER WIDTH 98 FT MINIMUM

NOTE:

1. REFER TO LEFT TURN "ONLY" AND ARROW SPACING WORKSHEET.
2. SEE MISC. CROSS-OVER DETAIL FOR APPLICABLE INFORMATION.
3. ALL MEDIANS SHALL BE FIELD MEASURED TO DETERMINE THE LOCATION OF NECESSARY STRIPING. STOP BARS AND CENTERLINES SHALL BE PLACED WHEN THE MEDIAN WIDTH IS GREATER THAN 30 FT.
4. THE MEDIAN WIDTH IS DEFINED AS THE AREA BETWEEN TWO ROADWAYS OF A DIVIDED HIGHWAY MEASURED FROM EDGE OF TRAVELED WAY TO EDGE OF TRAVELED WAY. THE MEDIAN EXCLUDES TURN LANES.
5. THE MEDIAN WIDTH MIGHT BE DIFFERENT BETWEEN INTERSECTIONS, INTERCHANGES AND OF OPPOSITE APPROACHES OF THE SAME INTERSECTION.
6. THE NARROW MEDIAN WIDTH WILL BE THE CONTROLLING WIDTH TO DETERMINE IF MARKINGS ARE REQUIRED.

CROSS-OVER MEDIAN OPENING WITH TURN AROUND STRIPING "TEE" INTERSECTION



CROSS-OVER WIDTH 98 FT MINIMUM

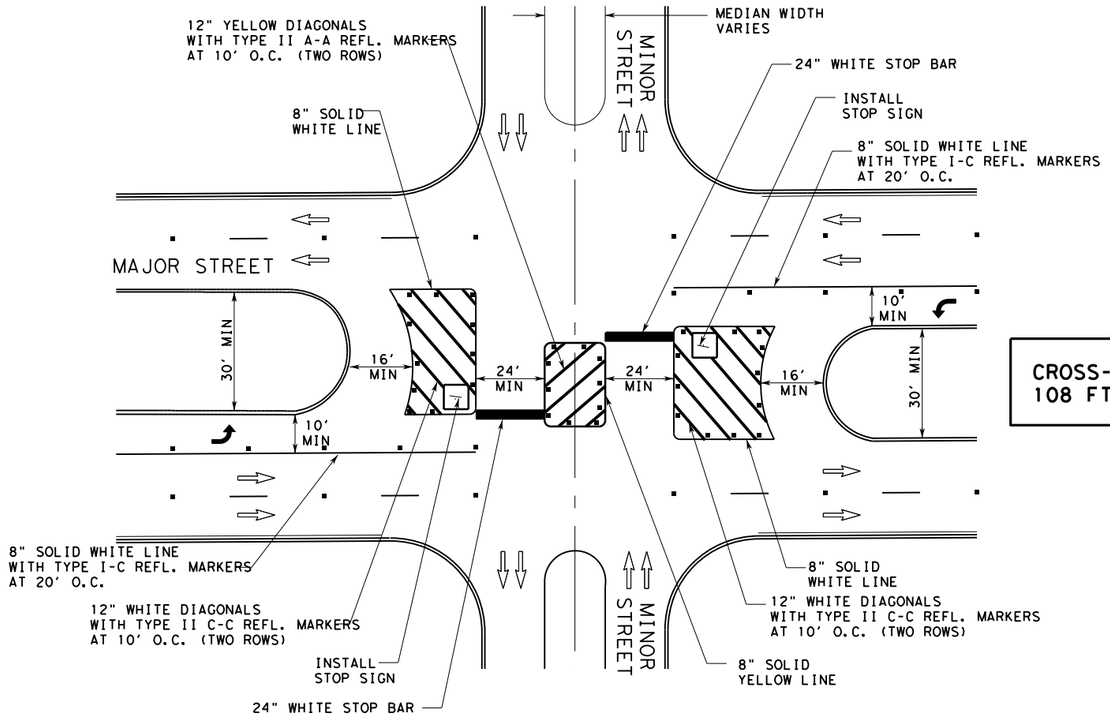
SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC ENGINEERING STANDARDS
STANDARD CROSS-OVER MEDIAN OPENING 1
SHEET 14 OF 16

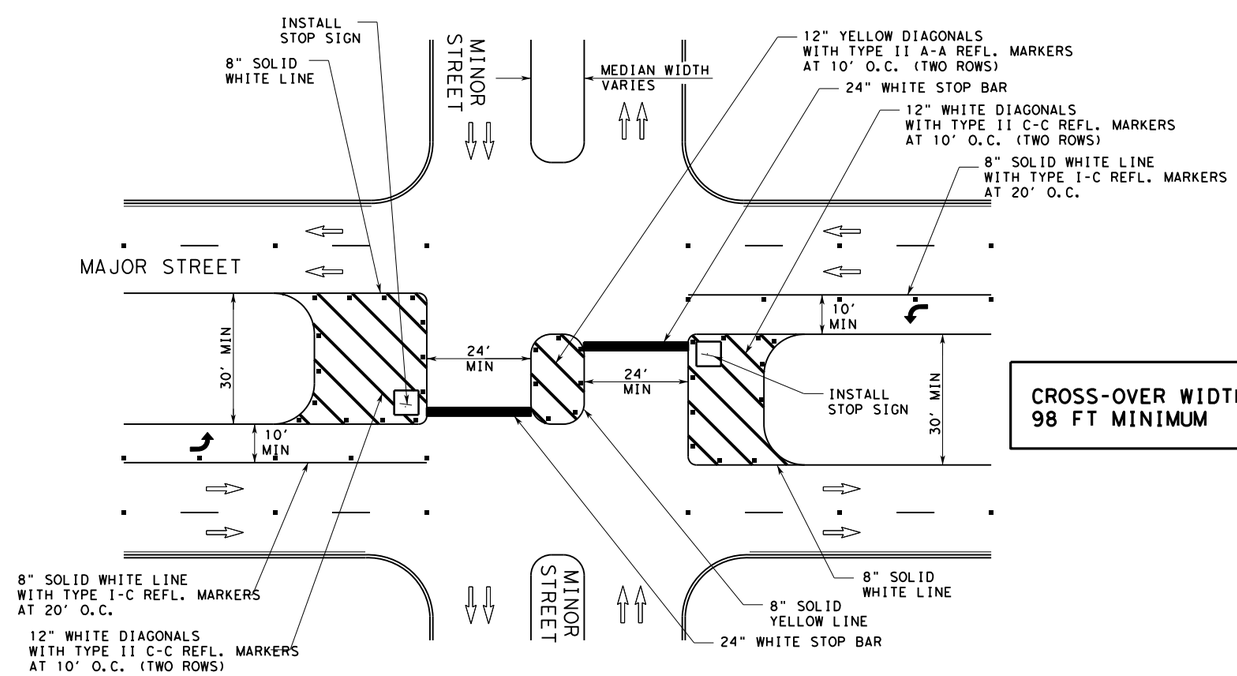
___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 34 OF 60

CROSS-OVER MEDIAN OPENING WITH TURN AROUND STRIPING FOUR-WAY INTERSECTION



CROSS-OVER WIDTH
108 FT MINIMUM

CROSS-OVER MEDIAN OPENING WITHOUT TURN AROUND STRIPING FOUR-WAY INTERSECTION



CROSS-OVER WIDTH
98 FT MINIMUM

NOTE:

1. REFER TO LEFT TURN "ONLY" AND ARROW SPACING WORKSHEET.
2. SEE MISC. CROSS-OVER DETAIL FOR APPLICABLE INFORMATION.
3. ALL MEDIANS SHALL BE FIELD MEASURED TO DETERMINE THE LOCATION OF NECESSARY STRIPING. STOP BARS AND CENTERLINES SHALL BE PLACED WHEN THE MEDIAN WIDTH IS GREATER THAN 30 FT.
4. THE MEDIAN WIDTH IS DEFINED AS THE AREA BETWEEN TWO ROADWAYS OF A DIVIDED HIGHWAY MEASURED FROM EDGE OF TRAVELED WAY TO EDGE OF TRAVELED WAY. THE MEDIAN EXCLUDES TURN LANES.
5. THE MEDIAN WIDTH MIGHT BE DIFFERENT BETWEEN INTERSECTIONS, INTERCHANGES AND OF OPPOSITE APPROACHES OF THE SAME INTERSECTION.
6. THE NARROW MEDIAN WIDTH WILL BE THE CONTROLLING WIDTH TO DETERMINE IF MARKINGS ARE REQUIRED.

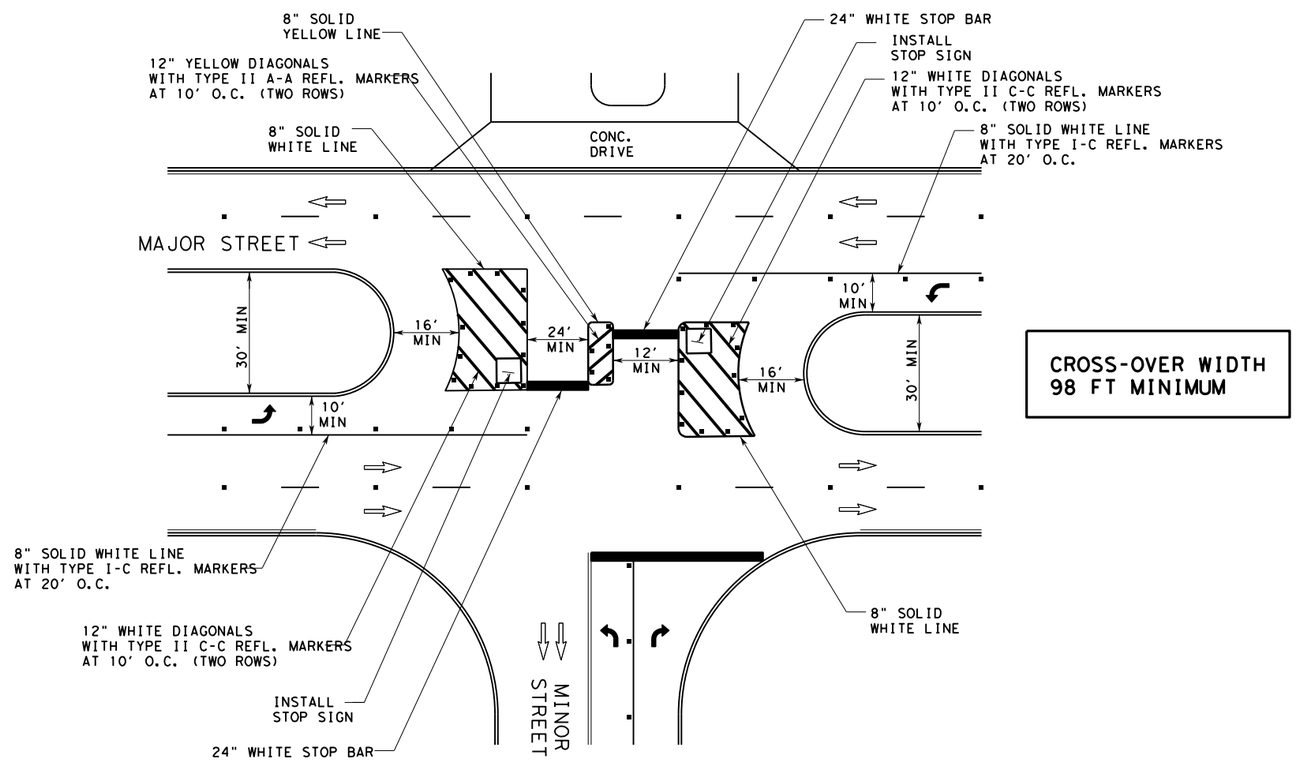
SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC ENGINEERING STANDARDS
STANDARD CROSS-OVER MEDIAN OPENING 2
SHEET 15 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 35 OF 60

CROSS-OVER MEDIAN OPENING WITH TURN AROUND STRIPING "TEE" INTERSECTION



CROSS-OVER WIDTH 98 FT MINIMUM

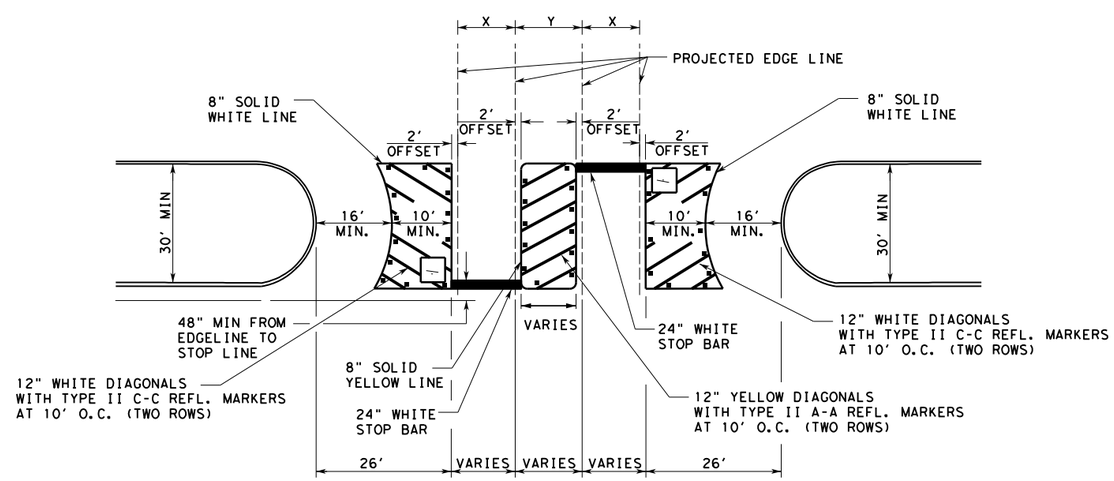
NOTE:

1. REFER TO LEFT TURN "ONLY" AND ARROW SPACING WORKSHEET.
2. SEE MISC. CROSS-OVER DETAIL FOR APPLICABLE INFORMATION.
3. ALL MEDIANS SHALL BE FIELD MEASURED TO DETERMINE THE LOCATION OF NECESSARY STRIPING. STOP BARS AND CENTERLINES SHALL BE PLACED WHEN THE MEDIAN WIDTH IS GREATER THAN 30 FT.
4. THE MEDIAN WIDTH IS DEFINED AS THE AREA BETWEEN TWO ROADWAYS OF A DIVIDED HIGHWAY MEASURED FROM EDGE OF TRAVELED WAY TO EDGE OF TRAVELED WAY. THE MEDIAN EXCLUDES TURN LANES.
5. THE MEDIAN WIDTH MIGHT BE DIFFERENT BETWEEN INTERSECTIONS, INTERCHANGES AND OF OPPOSITE APPROACHES OF THE SAME INTERSECTION.
6. THE NARROW MEDIAN WIDTH WILL BE THE CONTROLLING WIDTH TO DETERMINE IF MARKINGS ARE REQUIRED.

MISCELLANEOUS CROSS-OVER DETAIL WITH TURN AROUND STRIPING

NOTE:

1. X - ROADWAY WIDTH AND NUMBER OF LANES VARIES
2. Y - MEDIAN WIDTH VARIES



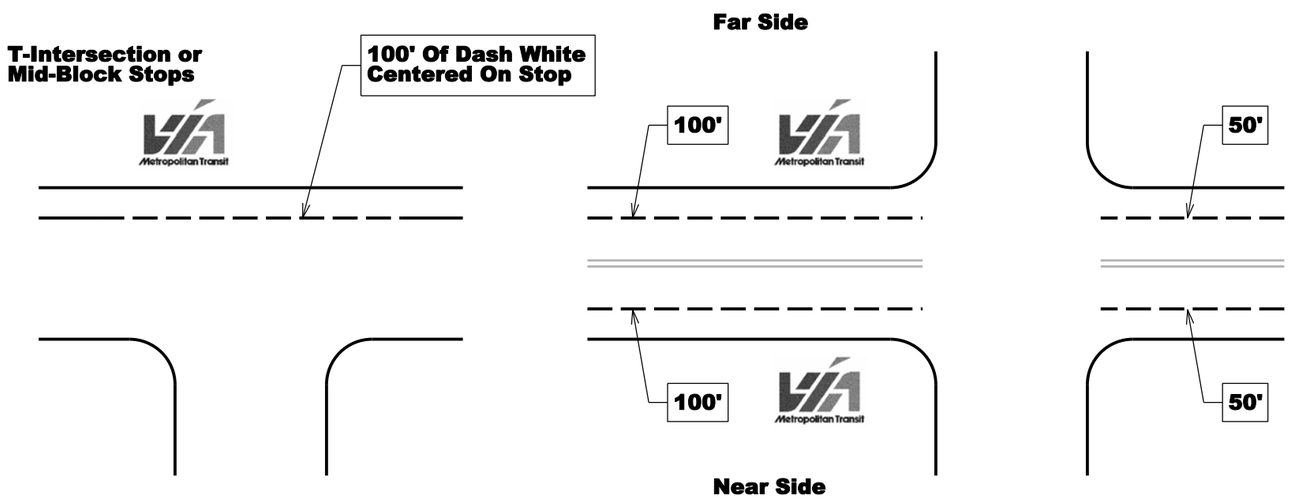
SEPTEMBER 2009

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

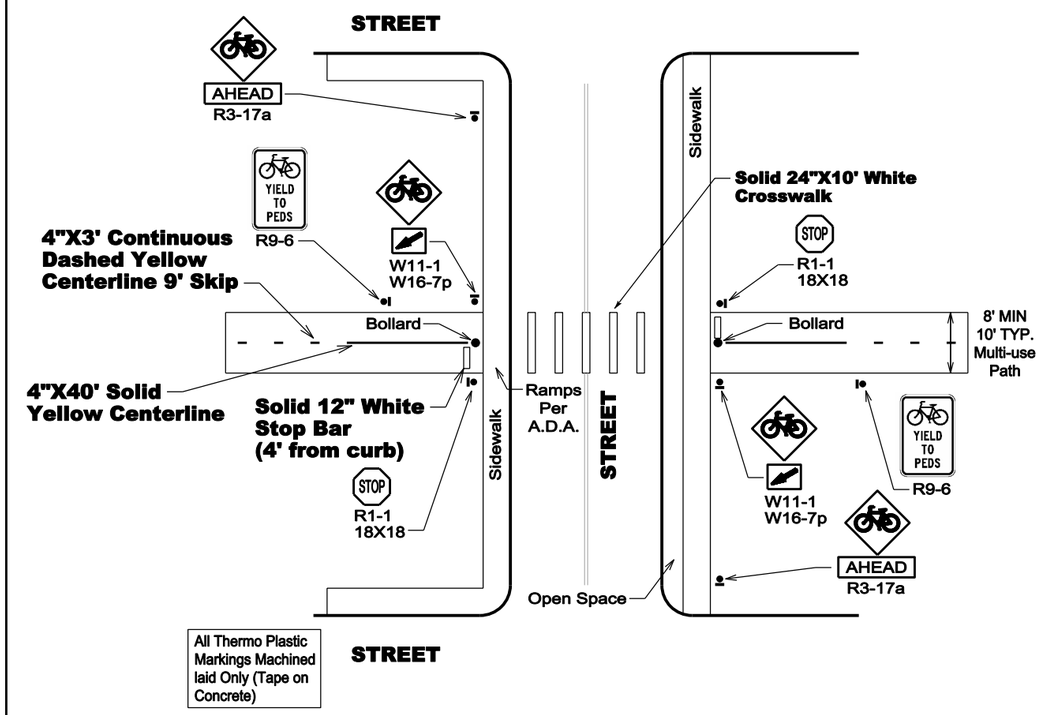
TRAFFIC ENGINEERING STANDARDS
STANDARD CROSS-OVER MEDIAN OPENING 3
SHEET 16 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.B.V.	CHKD. BY: M.E.	SHEET NO.: 36 OF 60

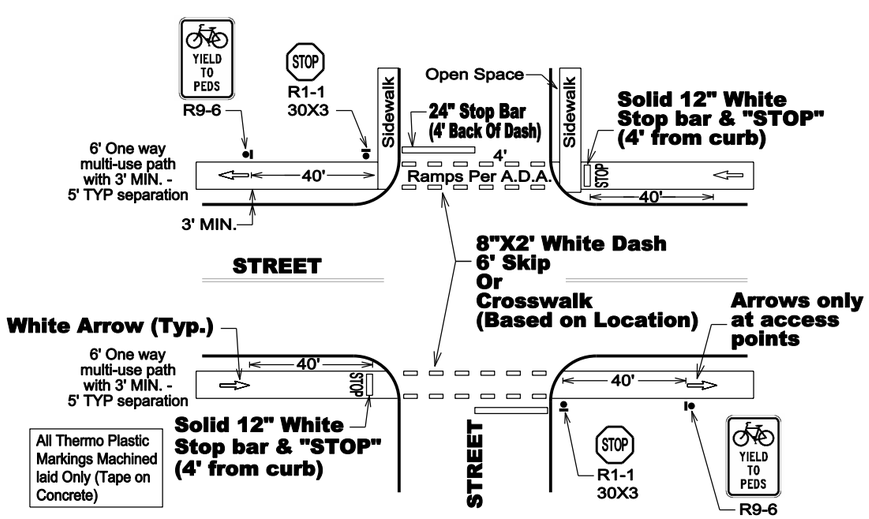
Intersection Approach Standards With/Without VIA



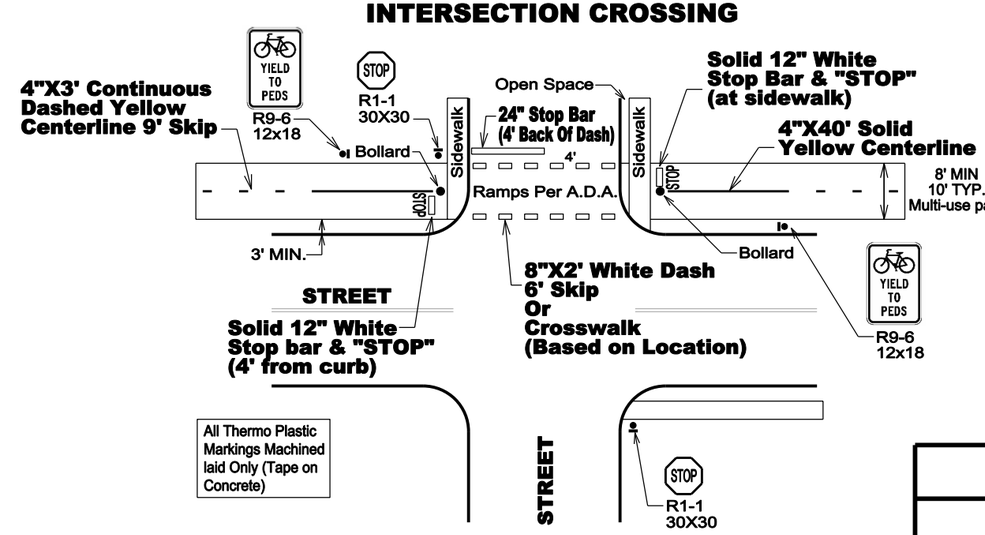
TWO-WAY MULTI-USE PATH MID BLOCK CROSSING



ONE-WAY MULTI-USE PATH AT INTERSECTION CROSSING



TWO-WAY MULTI-USE PATH AT INTERSECTION CROSSING



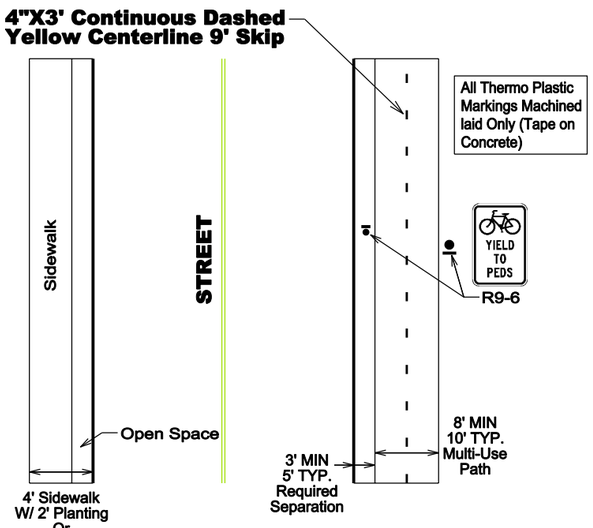
FEBRUARY 2012

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC ENGINEERING BICYCLE STANDARDS
PAVEMENT MARKING
PLACEMENT STANDARDS

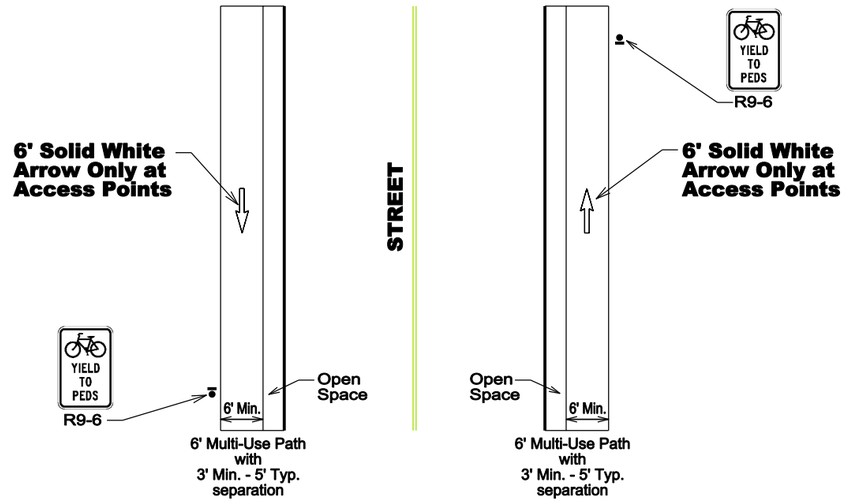
___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: B.C.	DSGN. BY: W.T.	CHKD. BY: J.S. W.T.	SHEET NO.: ___OF___

TWO-WAY MULTI-USE PATH ON A COLLECTOR OR ARTERIAL



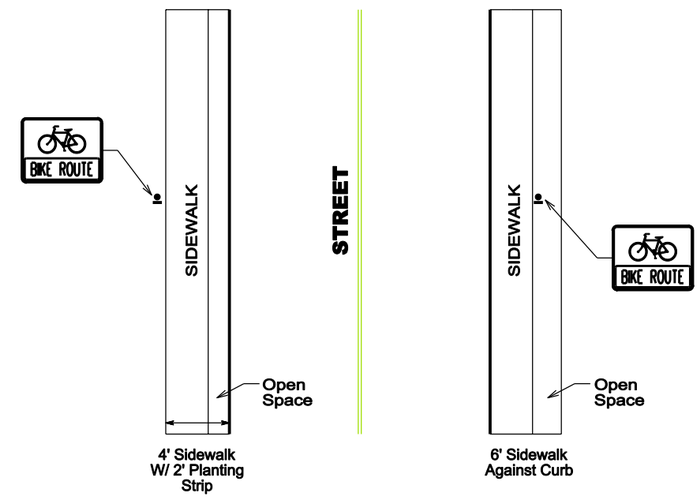
Sign spacing is 300' to 500' based on area density,roadway condition and engineering judgement

ONE-WAY MULTI-USE PATH



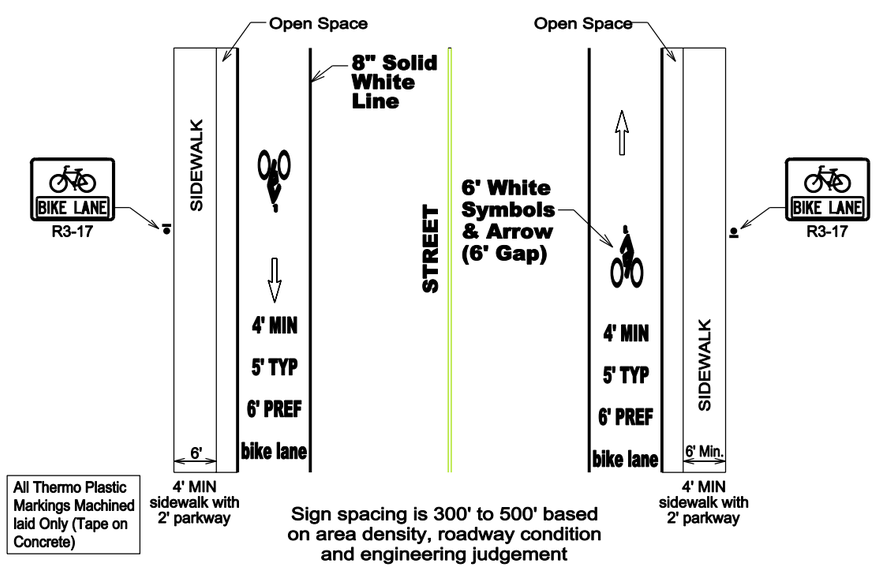
Sign spacing is 300' to 500' based on area density,roadway condition and engineering judgement

BICYCLE ROUTE ON A COLLECTOR OR ARTERIAL



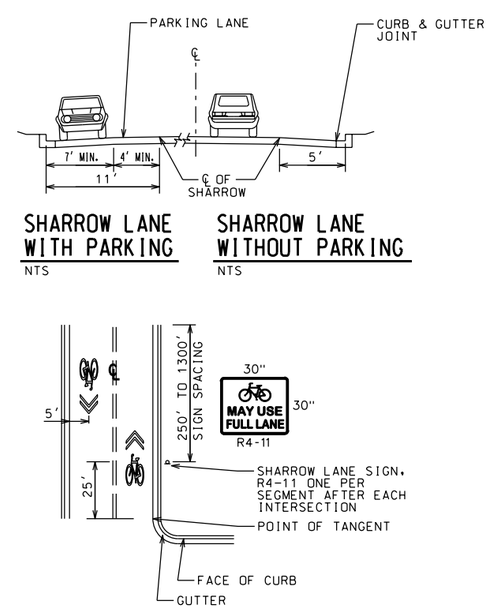
Sign spacing is 300' to 500' based on area density,roadway condition and engineering judgement

ONE-WAY BICYCLE LANE



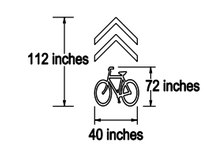
Sign spacing is 300' to 500' based on area density, roadway condition and engineering judgement

TYPICAL SHARROW LAYOUT



SHARROW DETAIL

Figure 9C-9. Shared Lane Marking



FEBRUARY 2012

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC ENGINEERING BICYCLE STANDARDS
PAVEMENT MARKING PLACEMENT STANDARDS

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: B.C.	DSGN. BY: W.T.	CHKD. BY: J.S. W.T.	SHEET NO.: ___OF___