INDEX OF STANDARD DRAWINGS

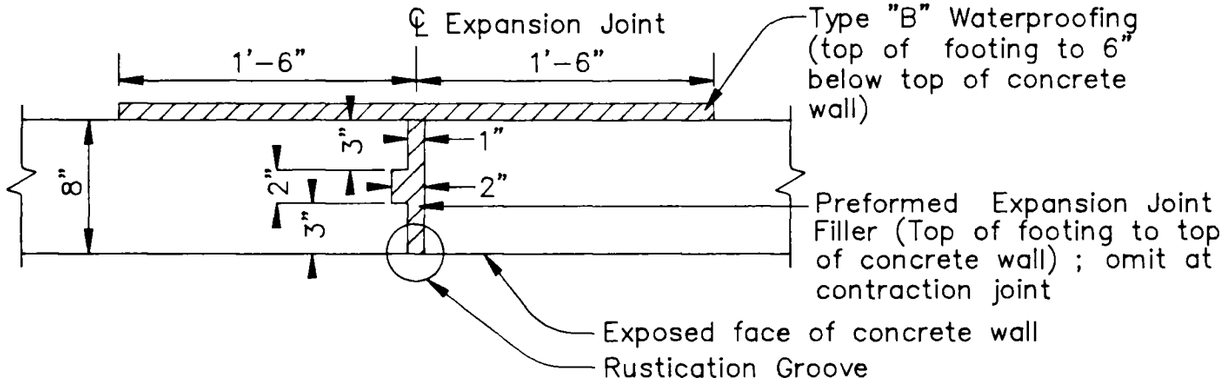
HIGHWAY ITEMS

REVISED SECTION 1 DETAILS AND PAGE NUMBERS

JANUARY 2003

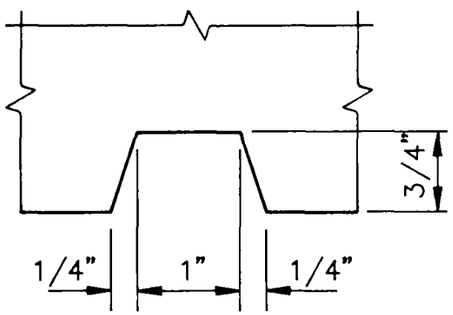
Page Deleted

March 2018



EXPANSION JOINT DETAIL

CONTRACTION JOINT DETAIL (SIMILIAR)



RUSTICATION GROOVE

NOTES:

1.) Concrete shall be Class "C."

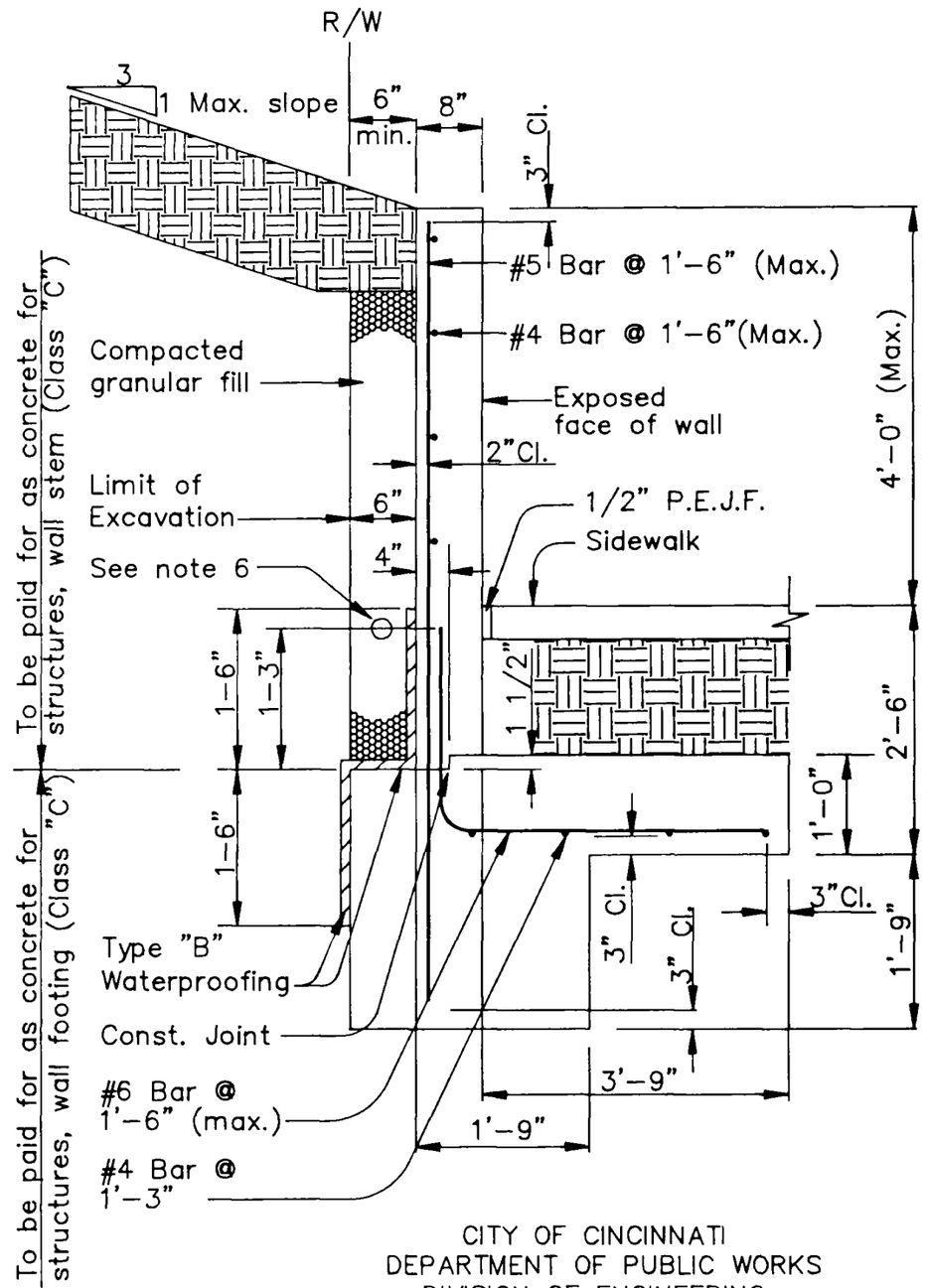
2.) Reinforcing steel shall be grade 60, epoxy–coated.

3.) Place concrete for footing against undisturbed earth.

4.) Contraction joints shall be provided at 30'–0" maximum and expansion joints at 90'–0" maximum.

5.) Earth placed on top of proposed footing shall be compacted in accordance with 203.12.

6.) Drain shall be 4" perforated PVC pipe 707.17 or equivalent strip drain. Connect drain to gutter in accordance with standard drawing Acc. No. 20622.

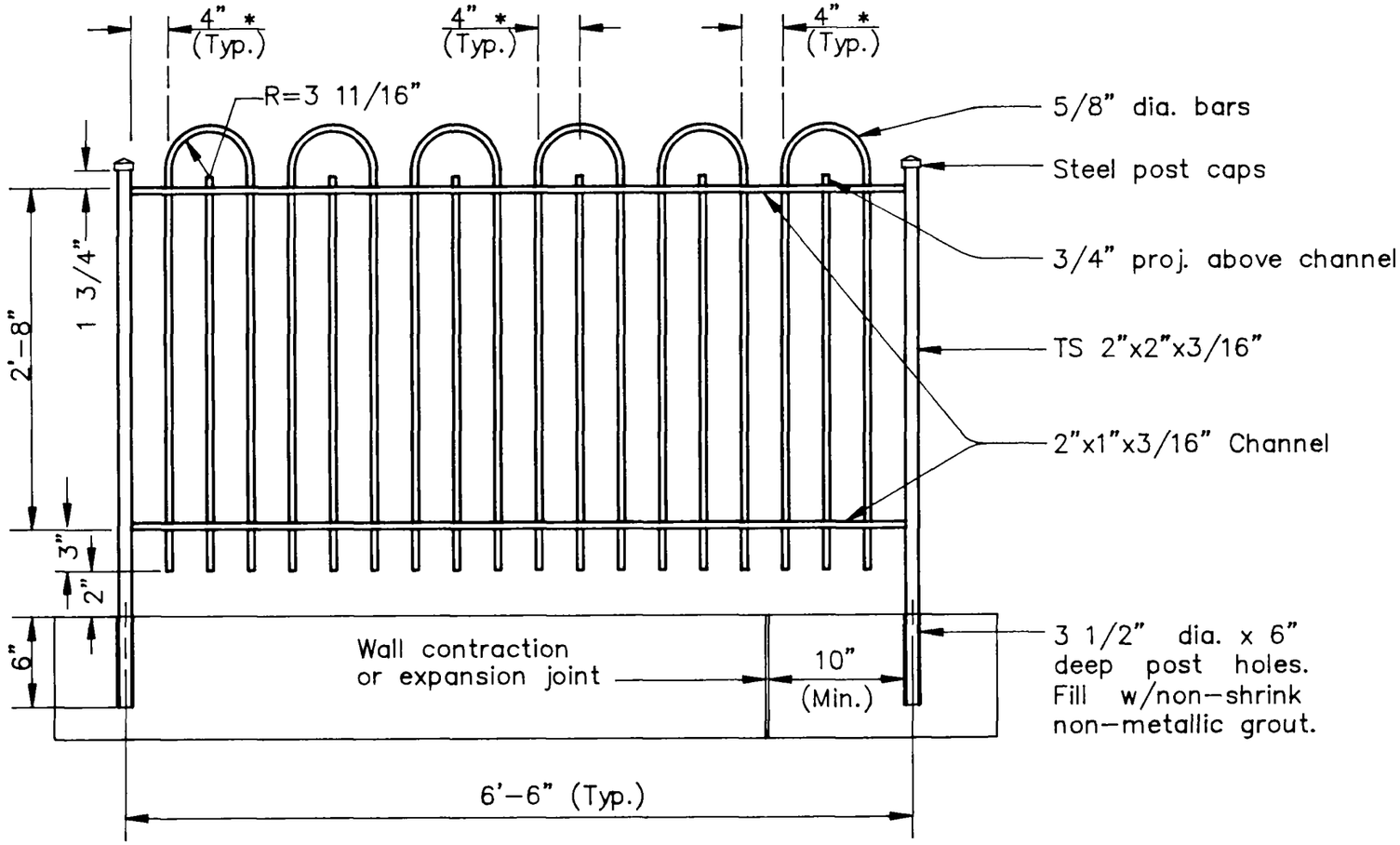


CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

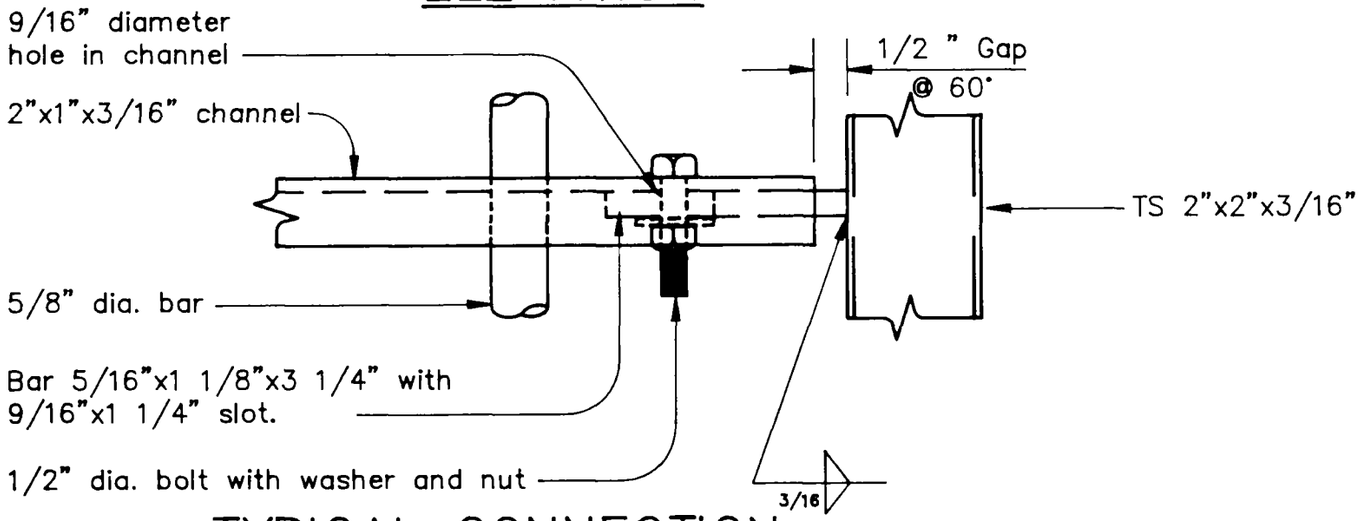
MODIFIED TOE WALL TYPICAL SECTION

City Engineer

ACC. NO. 26975



ELEVATION



TYPICAL CONNECTION

* Dimension may vary to fit specific location but shall be 6" maximum.

GENERAL NOTES:

1.) After fabricating, railing and post shall be hot-dip galvanized in accordance with 711.02. Sharp edges and burrs shall be removed before and after galvanization.

2.) Bars and channels in railing shall be fabricated from A36 steel. Posts shall be fabricated from A500 steel. All welds shall be made with E70XX electrodes by an A.W.S. certified welder.

3.) Fasteners shall be A307 bolts. Bolts, nuts, and washers shall be hot-dip galvanized in accordance with 711.02. Stainless steel hardware may be used at no additional cost to the city.

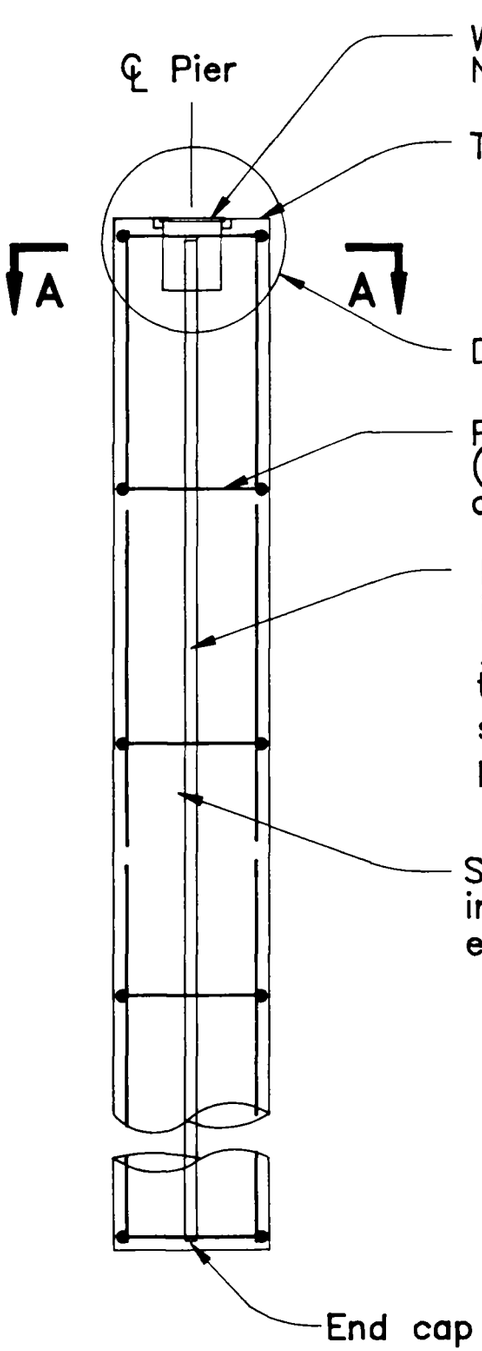
4.) Shop drawings shall be submitted and approved by the engineer prior to fabrication.

CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

STANDARD RAILING DETAIL

City Engineer

ACC. NO. 26999



Well casing, The Morrison Brothers No. 418xA or approved equal.

Top of pier

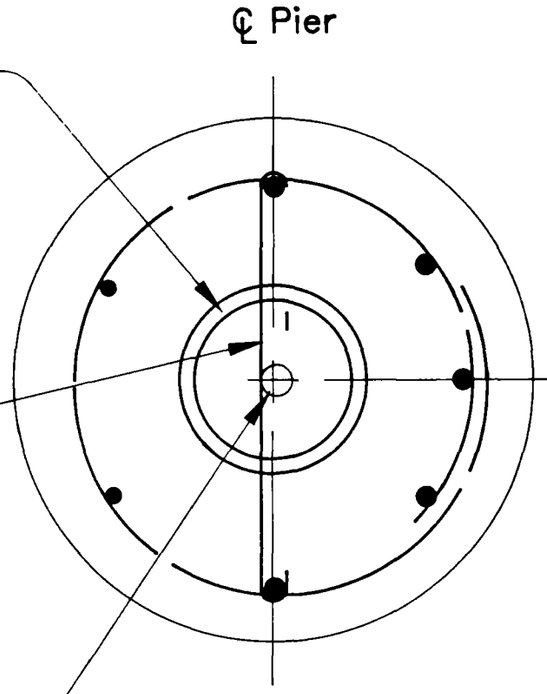
Detail B

Provide #4 bars @ 10' o.c. (max.) to secure inclinometer casing to reinforcing cage

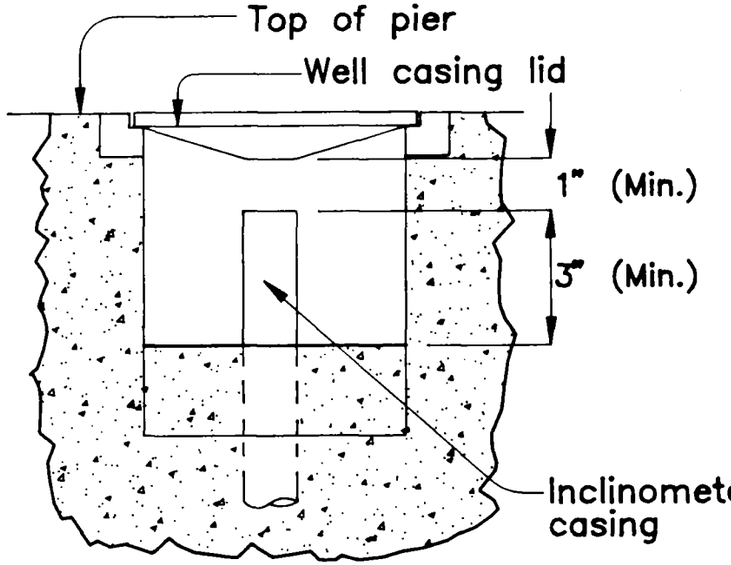
Pop rivet and wrap each inclinometer casing section joint/coupling with duct tape to 6" above and below section joint/coupling to provide a watertight seal.

Sinco 2 3/4" O.D. self–aligning inclinometer casing or approved equal.

TYPICAL PIER ELEVATION



SECTION A–A



DETAIL B

NOTES:

1.) Shape concrete inside well casing to provide a minimum 3" inclinometer projection as shown in Detail B. The top of inclinometer casing shall clear the bottom of well casing lid by 1".

2.) Crown top of pier from edge of well casing to edge of pier to ensure proper drainage.

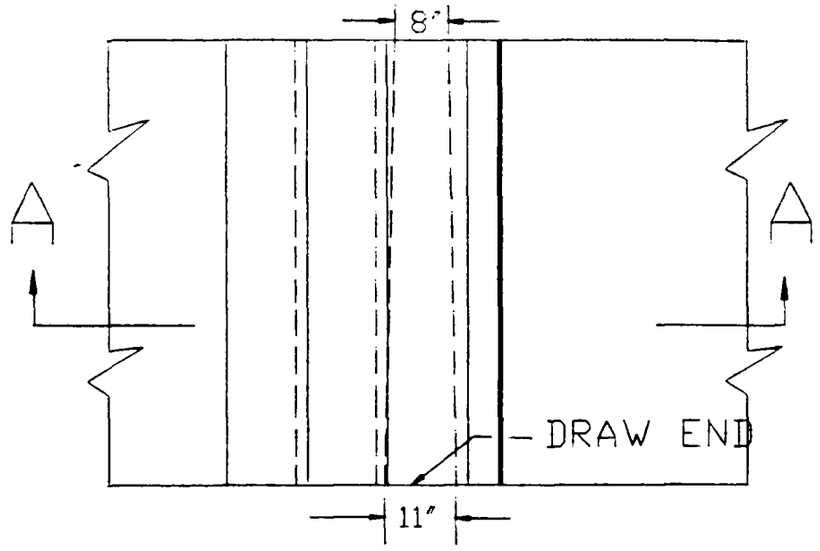
3.) Grooves in inclinometer are to be oriented perpendicular to the slope, or as directed by the engineer.

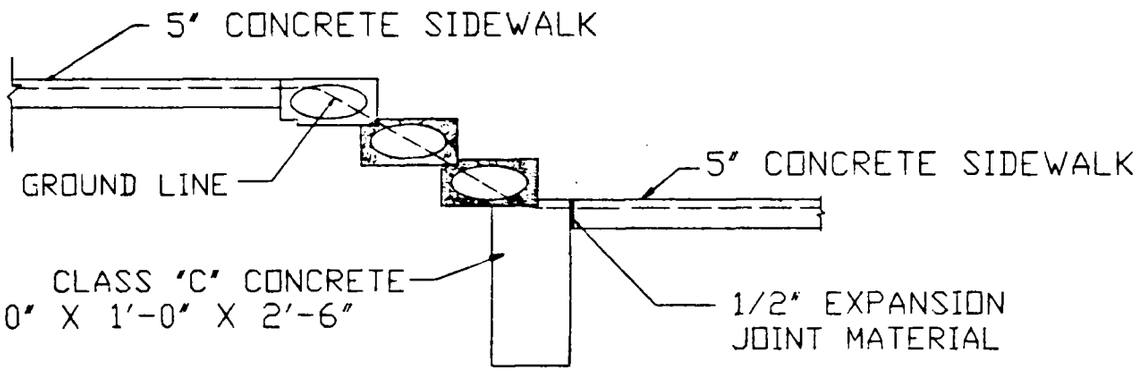
CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

INCLINOMETER INSTALLATION

City Engineer

ACC. NO. 27168





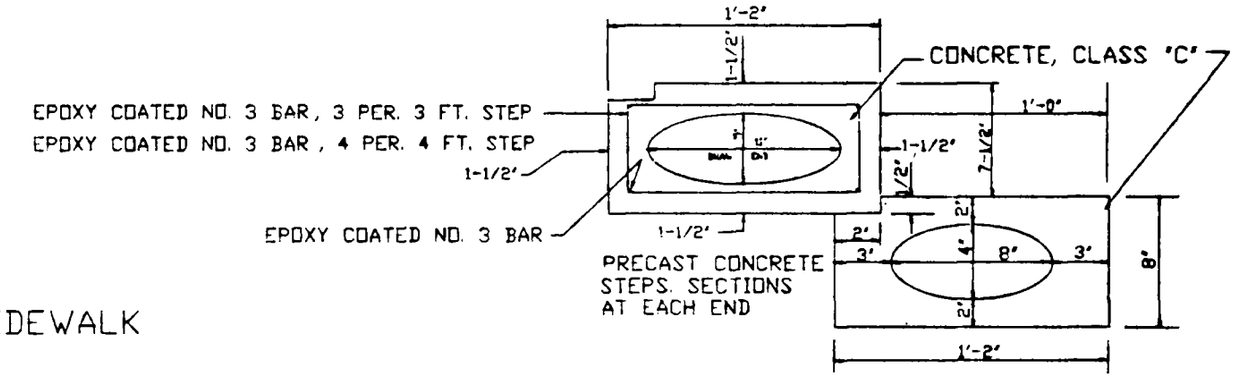
SECTION A-A

NOTES:

1) CAST IN PLACE CONCRETE STEPS AND WALKS SHALL BE CONSTRUCTED PER ODOT "CONTRUCTION AND MATERIAL SPECIFICATION," ITEM 608.

2) EPOXY COATED REINFORCING STEEL SHALL MEET REQUIREMENTS OF ODOT "CONSTRUCTION AND MATERIAL SPECIFICATIONS",ITEM 509, AND ITEM 709.

3) THE LENGTH AND WIDTH OF LANDINGS SHALL BE NO LESS THAN THE WIDTH OF THE STAIRS.



PRECAST STEP DETAIL

NOTES:

USE OF PRECAST CONCRETE STEPS RESTRICTED TO A MAXIMUM OF 3 CONSECUTIVE RISERS

CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

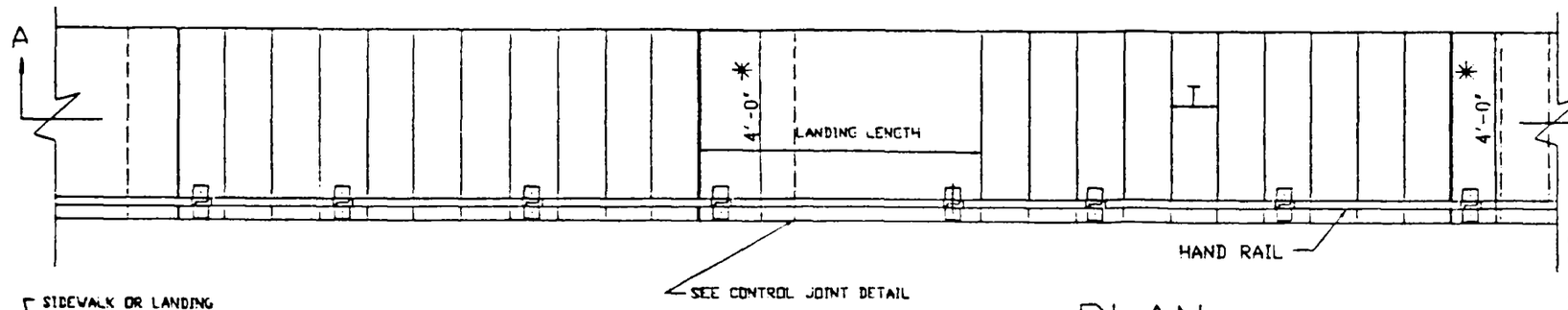
TYPICAL SECTIONS SHOWING WALK & STEP CONSTRUCTION FOR PRECAST CONCRETE STEPS

SCALE: NONE FEB.,1991

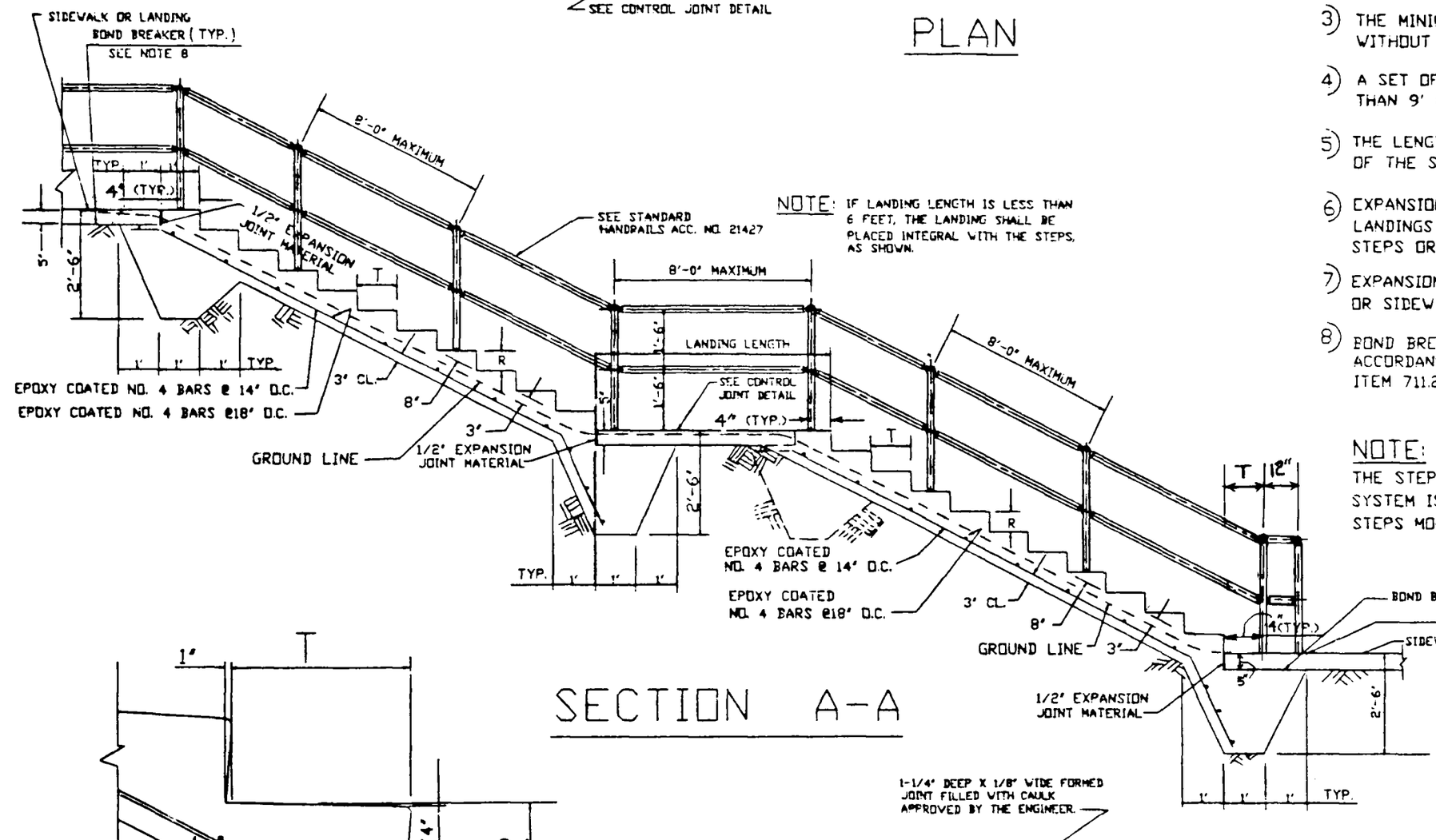
T.E. Young
CITY ENGINEER

101-1-36

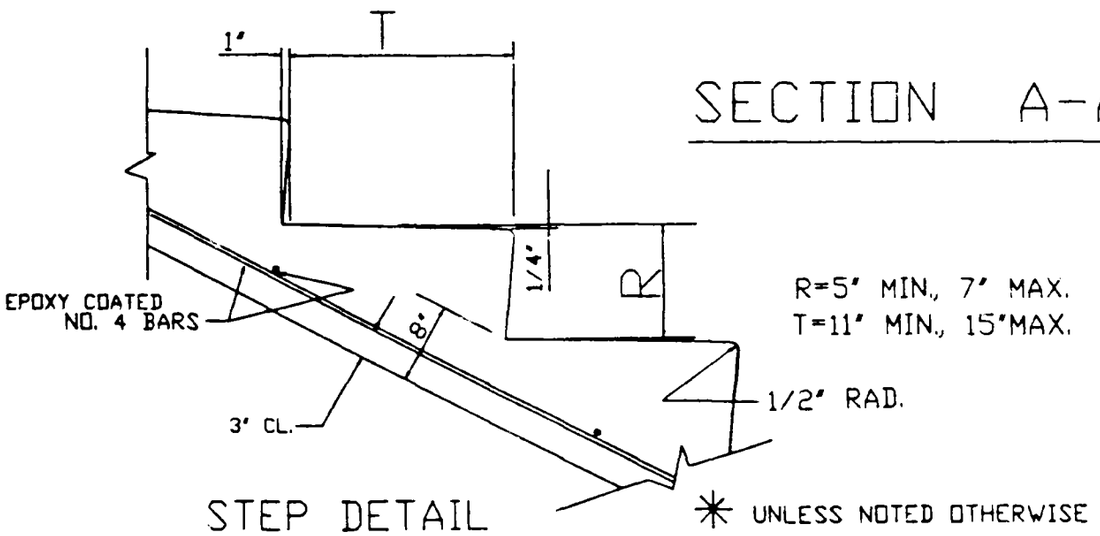
ACC. NO. 21427



PLAN



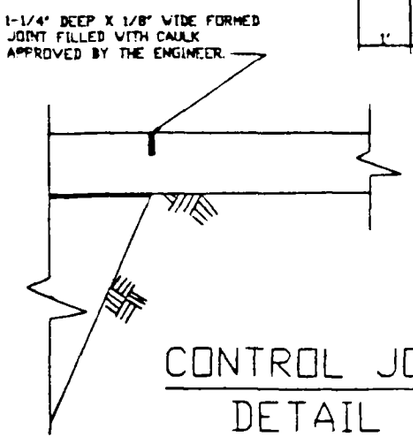
SECTION A-A



R=5" MIN., 7" MAX.
T=11" MIN., 15"MAX.

✱ UNLESS NOTED OTHERWISE

STEP DETAIL



CONTROL JOINT DETAIL

NOTES:

1) CAST IN PLACE CONCRETE STEPS AND WALKS SHALL BE CONSTRUCTED PER ODOT 'CONTRUCTION AND MATERIAL SPECIFICATION,' ITEM 608.
2) EPOXY COATED REINFORCING STEEL SHALL MEET REQUIREMENTS OF ODOT 'CONSTRUCTION AND MATERIAL SPECIFICATIONS',ITEM 509, AND ITEM 709.
3) THE MINIMUM WIDTH FOR CAST IN PLACE STEPS SHALL BE 36" FOR THOSE WITHOUT HANDRAIL, AND 48" FOR THOSE WITH HANDRAIL.
4) A SET OF STEPS SHALL NOT HAVE A HEIGHT OF VERTICAL RISE OF MORE THAN 9' BETWEEN LANDINGS.
5) THE LENGTH AND WIDTH OF LANDINGS SHALL BE NO LESS THAN THE WIDTH OF THE STAIRS.
6) EXPANSION JOINT FILLER SHALL BE INSTALLED BETWEEN THE STEPS OR LANDINGS AND ANY FIXED STRUCTURE, EXTENDING THE FULL DEPTH OF THE STEPS OR LANDING.
7) EXPANSION JOINTS SHALL BE INSTALLED BETWEEN STEPS AND LANDINGS OR SIDEWALKS AS SHOWN ON THE STANDARD DRAWING.
8) BOND BREAKER SHALL CONSIST OF ONE PLY OF WATERPROOFING FABRIC IN ACCORDANCE WITH ODOT 'CONSTRUCTION AND MATERIAL SPECIFICATIONS', ITEM 711.24.

NOTE:
THE STEP SYSTEM SHOWN IS ON-GRADE, THEREFORE, THE 2-RAIL HANDRAIL SYSTEM IS REQUIRED AS OPPOSED TO THE 4-RAIL SYSTEM REQUIRED FOR STEPS MORE THAN 2 FEET ABOVE GRADE.

CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

STANDARD CAST IN PLACE CONCRETE STEPS

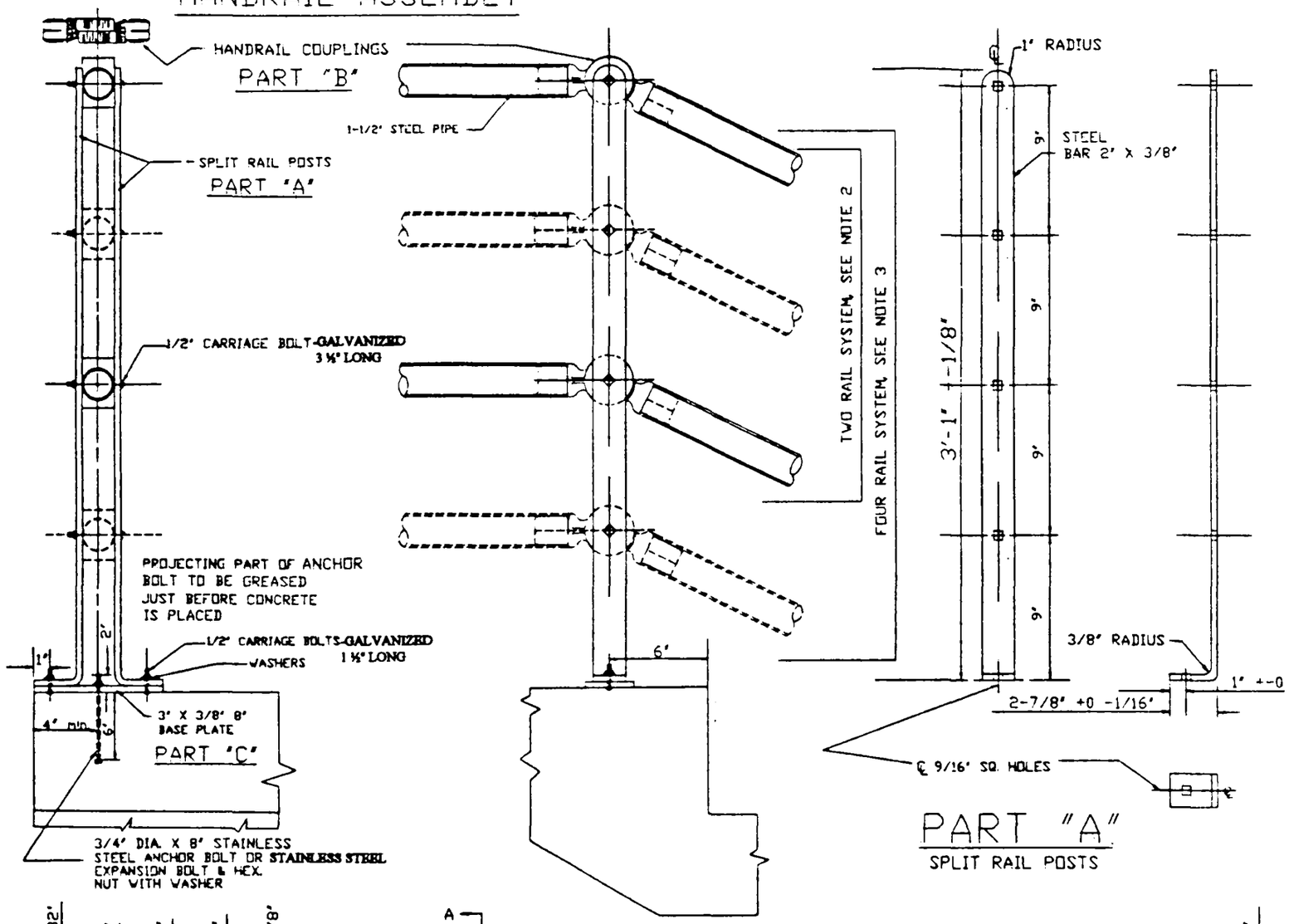
SCALE: NONE FEB.,1991

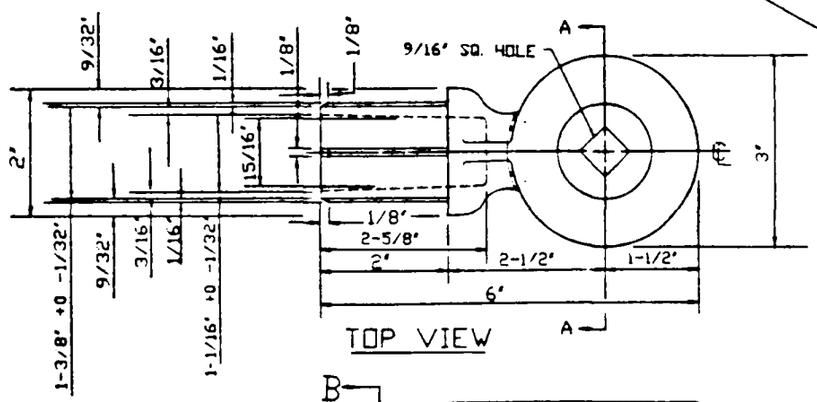
CITY ENGINEER

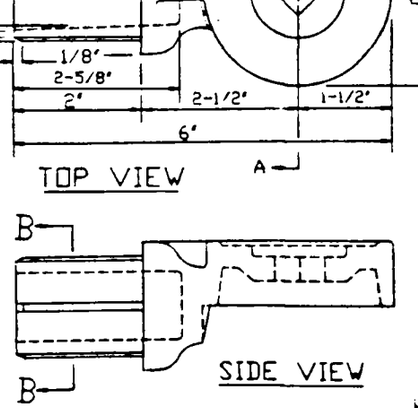
ACC. NO. 21427

FILE NO. 20-6-21

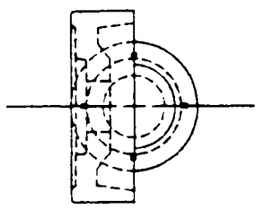
HANDRAIL ASSEMBLY

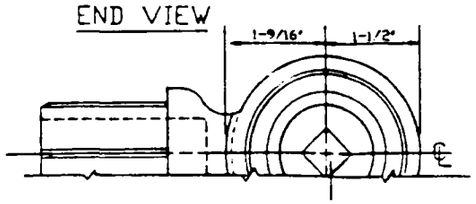




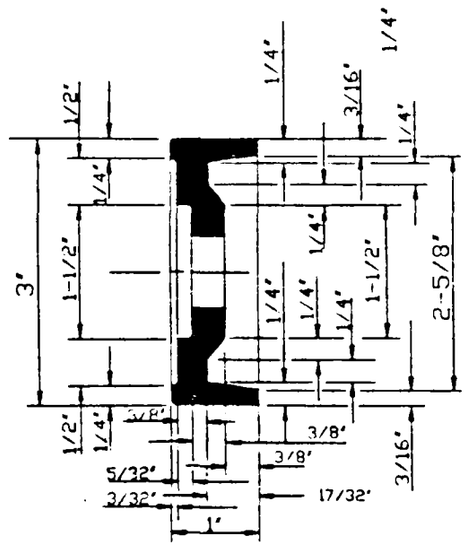


SECTION B-B





PART "B"
HANDRAIL COUPLINGS



SECTION A-A

HANDRAIL NOTES:

1) HANDRAIL IS REQUIRED FOR STEPS WHICH CONSIST OF 4 OR MORE RISERS.

2) HANDRAIL FOR STEPS ON GRADE SHALL BE INSTALLED ON ONE SIDE ONLY, UNLESS OTHERWISE SPECIFIED, THE HANDRAIL SHALL BE INSTALLED ON THE RIGHT SIDE GOING DOWN. HANDRAIL FOR STEPS ON GRADE SHALL CONSIST OF THE TWO RAIL SYSTEM.

3) STEPS WHICH ARE MORE THAN 2 FEET ABOVE GRADE REQUIRE HANDRAIL REGARDLESS TO THE NUMBER OF RISERS. THE HANDRAIL SHALL BE PLACED ON BOTH SIDES OF THE STEPS AND SHALL CONSIST OF THE FOUR RAIL SYSTEM. LANDINGS OR PAVED WALKWAY SURFACES WHICH ARE 2 FEET ABOVE GRADE ARE ALSO SUBJECT TO THE SAME HANDRAIL REQUIREMENTS AS STEPS ABOVE GRADE STEPS.

4) RAILING PANEL LENGTHS SHALL BE EQUAL HOWEVER, IF THE TOTAL LENGTHS IS NOT EASILY DIVISIBLE BY THE SELECTED NUMBER OF PANELS, THE UPPER PANEL SHALL BE SHORTER THAN THE LOWER PANELS, WHICH SHALL BE OF EQUAL LENGTHS.

5) RAILING SHALL BE FABRICATED FROM NORMAL SIZE 1-1/2"INCH, 0.145 INCH WALL THICKNESS STEEL PIPE MEETING THE REQUIREMENTS OF ASTM DESIGNATION A-53, STANDARD WEIGHT, SCHEDULE 40.

6) ALL HANDRAIL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH OHIO DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS. ITEM 711.02.

7) THE INSTALLED HANDRAILS SHALL BE FREE FROM BURRS OR SHARP PROJECTIONS. INSTALL CARRIAGE BOLTS SO THAT HEADS ARE ON PEDESTRIAN TRAFFIC SIDE.

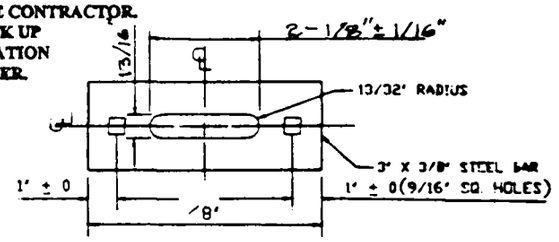
8) THE COST OF PROVIDING AND INSTALLING THE HANDRAILS SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE STEPS, AND NO EXTRA PAYMENT WILL BE MADE UNLESS SPECIFIED OTHERVISE.

9) THE HANDRAIL POSTS SHALL BE ERECTED PLUMB.

10) PIPE USED FOR HANDRAIL SHALL NOT HAVE THREADED ENDS.

11) PORTIONS OF THE HANDRAIL ASSEMBLY THAT WILL COME INTO CONTACT WITH FRESH CONCRETE SHALL BE GIVEN A CHROMATE TREATMENT IN ACCORDANCE WITH ODOT, CONSTRUCTION AND MATERIAL SPECIFICATIONS, ITEM 711.02.

12) HANDRAIL COUPLINGS AND BASE PLATES WILL BE PROVIDED BY THE CITY AT NO COST TO THE CONTRACTOR. THE CONTRACTOR MUST PICK UP THE COUPLINGS AT THE LOCATION DESIGNATED BY THE ENGINEER.



PART "C"
BASE PLATE

CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

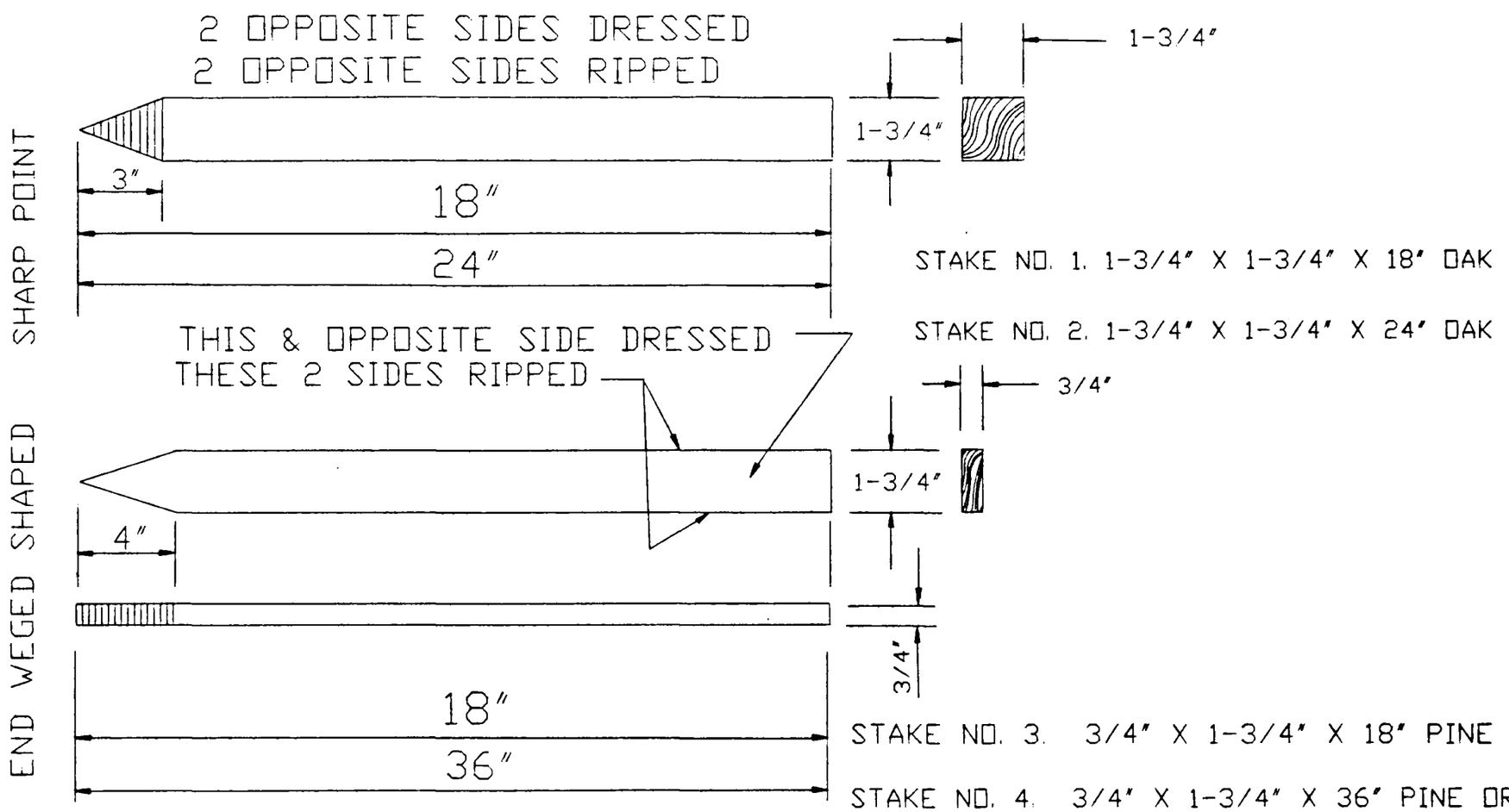
STANDARD HANDRAILS

SCALE: NONE FEB.,1991

T. Elfers
CITY ENGINEER

ACC. NO. 3555-A

101-1-32



SPECIFICATIONS

STAKES NO. 1 & 2 SHALL BE SOUND WELL SEASONED OAK, STRAIGHT GRAINED, FREE FROM KNOTS OR OTHER IMPERFECTIONS.

STAKES NO. 3 & 4 SHALL BE SOUND WELL SEASONED PINE OR POPLAR, STRAIGHT GRAINED, FREE FROM KNOTS OR OTHER IMPERFECTIONS.

STAKES SHALL BE SUBJECT TO INSPECTION AND ACCECTANCE OF THE HIGHWAY MAINTENANCE DIVISION.

	DAY	MONTH	YEAR
ORDER PLACED	___	_____	____
CUSTODIAN	_____		

101-2-53

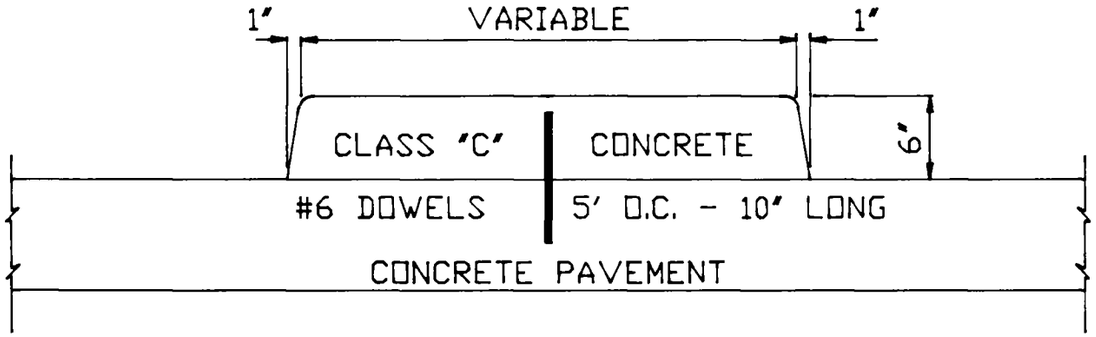
CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

STAKE STANDARDS

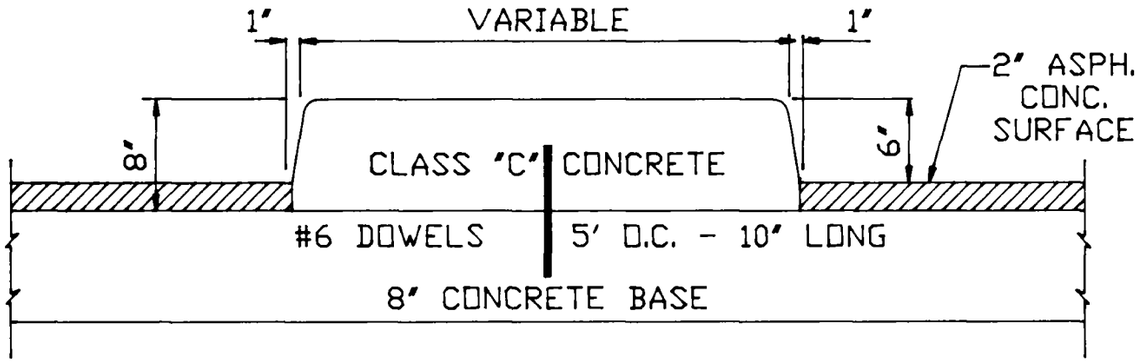
SCALE: NONE FEB.,1991

T E Young
CITY ENGINEER

ACC. NO. 5578



TYPICAL SECTION FOR CONCRETE PAVEMENT



TYPICAL SECTION FOR CONC. BASE & ASPH. CONC. SURFACE

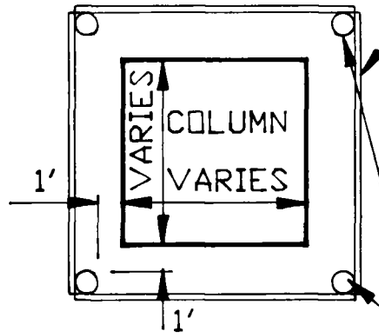
CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

TYPICAL SECTIONS TRAFFIC ISLAND

SCALE: 1"=1' FEB. 1991

APPROVED _____ CITY ENGINEER

ACC. NO. 21438

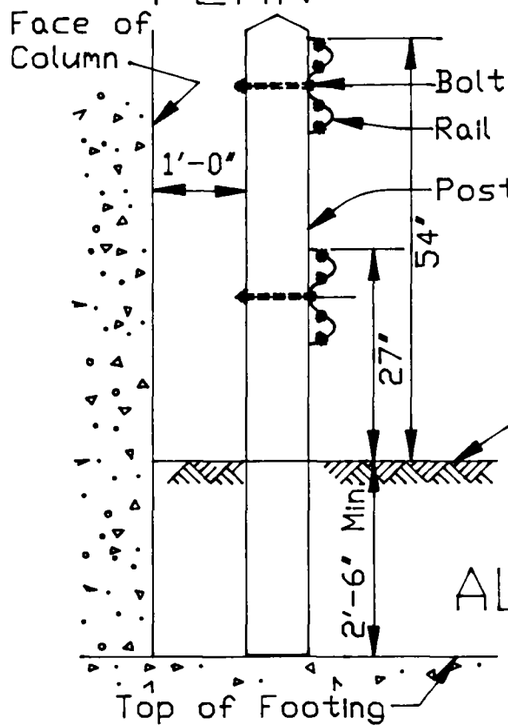


Guardrail - State of Ohio Item 606 Type 4 or 5.

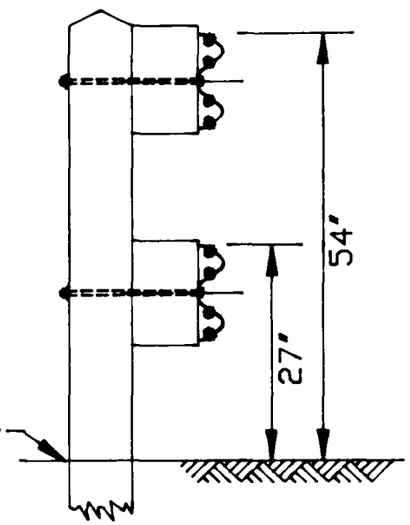
NOTE: All materials and Construction shall be in accordance with State of Ohio Construction and Material Specification Item 606 and Standard Construction Drawings GR-1.1 , 1.2 1.3 , 2.1 , 2.2 , 2.3 & 1.1M , 1.3M , 2.1M 2.3M .

POSTS

PLAN



ELEVATION TYPE 4 GUARDRAIL



ALTERNATE ELEVATION TYPE 5 GUARDRAIL

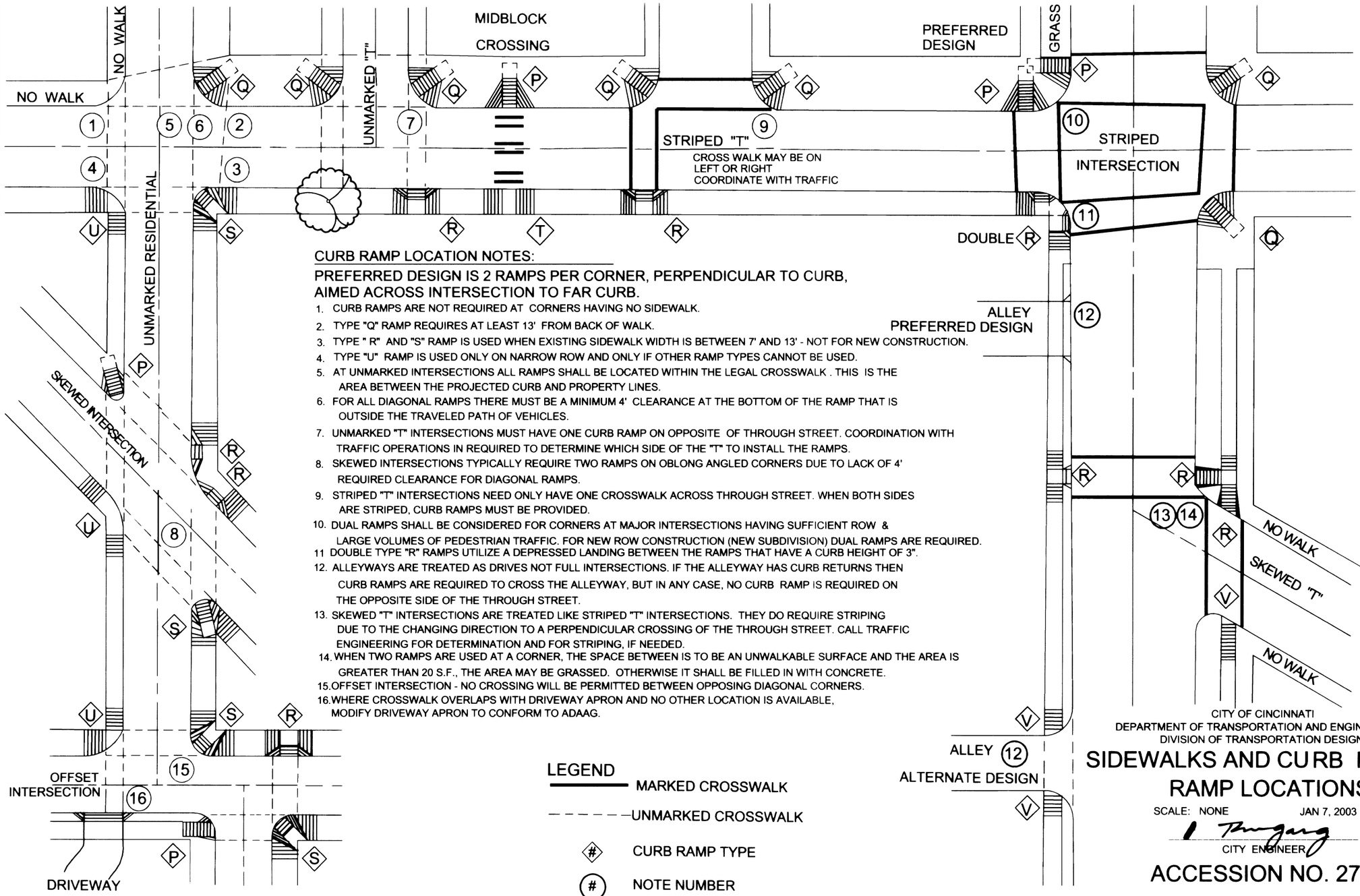
CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DETAIL COLUMN PROTECTION

SCALE: NONE MAY , 1995

_____ CITY ENGINEER

ACC. NO. 21504



CURB RAMP LOCATION NOTES:

PREFERRED DESIGN IS 2 RAMPS PER CORNER, PERPENDICULAR TO CURB, AIMED ACROSS INTERSECTION TO FAR CURB.

1. CURB RAMPS ARE NOT REQUIRED AT CORNERS HAVING NO SIDEWALK.
2. TYPE "Q" RAMP REQUIRES AT LEAST 13' FROM BACK OF WALK.
3. TYPE " R" AND "S" RAMP IS USED WHEN EXISTING SIDEWALK WIDTH IS BETWEEN 7' AND 13' - NOT FOR NEW CONSTRUCTION.
4. TYPE "U" RAMP IS USED ONLY ON NARROW ROW AND ONLY IF OTHER RAMP TYPES CANNOT BE USED.
5. AT UNMARKED INTERSECTIONS ALL RAMPS SHALL BE LOCATED WITHIN THE LEGAL CROSSWALK . THIS IS THE AREA BETWEEN THE PROJECTED CURB AND PROPERTY LINES.
6. FOR ALL DIAGONAL RAMPS THERE MUST BE A MINIMUM 4' CLEARANCE AT THE BOTTOM OF THE RAMP THAT IS OUTSIDE THE TRAVELED PATH OF VEHICLES.
7. UNMARKED "T" INTERSECTIONS MUST HAVE ONE CURB RAMP ON OPPOSITE OF THROUGH STREET. COORDINATION WITH TRAFFIC OPERATIONS IN REQUIRED TO DETERMINE WHICH SIDE OF THE "T" TO INSTALL THE RAMPS.
8. SKEWED INTERSECTIONS TYPICALLY REQUIRE TWO RAMPS ON OBLONG ANGLED CORNERS DUE TO LACK OF 4' REQUIRED CLEARANCE FOR DIAGONAL RAMPS.
9. STRIPED "T" INTERSECTIONS NEED ONLY HAVE ONE CROSSWALK ACROSS THROUGH STREET. WHEN BOTH SIDES ARE STRIPED, CURB RAMPS MUST BE PROVIDED.
10. DUAL RAMPS SHALL BE CONSIDERED FOR CORNERS AT MAJOR INTERSECTIONS HAVING SUFFICIENT ROW & LARGE VOLUMES OF PEDESTRIAN TRAFFIC. FOR NEW ROW CONSTRUCTION (NEW SUBDIVISION) DUAL RAMPS ARE REQUIRED.
11. DOUBLE TYPE "R" RAMPS UTILIZE A DEPRESSED LANDING BETWEEN THE RAMPS THAT HAVE A CURB HEIGHT OF 3".
12. ALLEYWAYS ARE TREATED AS DRIVES NOT FULL INTERSECTIONS. IF THE ALLEYWAY HAS CURB RETURNS THEN CURB RAMPS ARE REQUIRED TO CROSS THE ALLEYWAY, BUT IN ANY CASE, NO CURB RAMP IS REQUIRED ON THE OPPOSITE SIDE OF THE THROUGH STREET.
13. SKEWED "T" INTERSECTIONS ARE TREATED LIKE STRIPED "T" INTERSECTIONS. THEY DO REQUIRE STRIPING DUE TO THE CHANGING DIRECTION TO A PERPENDICULAR CROSSING OF THE THROUGH STREET. CALL TRAFFIC ENGINEERING FOR DETERMINATION AND FOR STRIPING, IF NEEDED.
14. WHEN TWO RAMPS ARE USED AT A CORNER, THE SPACE BETWEEN IS TO BE AN UNWALKABLE SURFACE AND THE AREA IS GREATER THAN 20 S.F., THE AREA MAY BE GRASSED. OTHERWISE IT SHALL BE FILLED IN WITH CONCRETE.
15. OFFSET INTERSECTION - NO CROSSING WILL BE PERMITTED BETWEEN OPPOSING DIAGONAL CORNERS.
16. WHERE CROSSWALK OVERLAPS WITH DRIVEWAY APRON AND NO OTHER LOCATION IS AVAILABLE, MODIFY DRIVEWAY APRON TO CONFORM TO ADAAG.

LEGEND

- MARKED CROSSWALK
- UNMARKED CROSSWALK
- (#) CURB RAMP TYPE
- (#) NOTE NUMBER

CITY OF CINCINNATI
DEPARTMENT OF TRANSPORTATION AND ENGINEERING
DIVISION OF TRANSPORTATION DESIGN

SIDEWALKS AND CURB RAMPS
RAMP LOCATIONS

SCALE: NONE JAN 7, 2003

CITY ENGINEER

ACCESSION NO. 27256

PAGE 053A

GENERAL NOTES FOR
CURB RAMPS AND DETECTABLE WARNINGS

GENERAL

1. ALL AREAS, ELEMENTS, AND FACILITIES FOR PEDESTRIANS ACCESS, CIRCULATION AND USE THAT ARE CONSTRUCTED, INSTALLED OR ALTERED IN THE PUBLIC RIGHT-OF-WAY AND WHICH ARE SUBJECT TO TITLE II OF THE AMERICANS WITH DISABILITIES ACT (ADA) SHALL COMPLY WITH ALL CURRENT FEDERAL REGULATIONS INCLUDING THE ADA ACCESSIBLITY GUIDELINES (ADAAG).
2. NEWLY CONSTRUCTED AND ALTERED STREETS OR PEDESTRIAN WALKWAYS MUST CONTAIN CURB RAMPS AT INTERSECTIONS. (28 CFR 35.151(d)) ALTERATIONS INCLUDE RESURFACING AND ANY WORK THAT IMPACTS THE MAJORITY OF THE STREET OR WALKWAY. THE ENTIRE INTERSECTION EFFECTED MUST BE BROUGHT INTO COMPLIANCE.
3. ALL MATERIALS SHALL CONFORM TO THE CITY OF CINCINNATI SUPPLEMENT TO THE OHIO DEPARTMENT OF TRANSPORTATION "CONSTRUCTION AND MATERIAL SPECIFICATIONS, CURRENT EDITION.
4. ALL SLOPES REFERRED TO ARE REFERENCED TO A HORIZONTAL PLANE.
5. FOR SIDESWALKS, CURB RAMPS, AND DRIVEWAYS THE "PREFERRED" DIMENSION SHALL BE THE NORMAL STANDARD TO BE MET, UNLESS EXISTING RIGHT OF WAY OR FEATURES MAKE COMPLIANCE INFEASABLE. IN THIS CASE THE "MINIMUM" STANDARD MUST BE MET.

PUBLIC SIDEWALKS

1. MINIMUM WIDTH OF NEW SIDEWALKS SHALL BE FIVE FEET.
2. PREFERRED CLEAR WIDTH OF A CONTINUOUS PASSAGE SHALL BE 48 INCHES; FOR ALTERATIONS TO EXISTING RIGHTS OF WAY, WHERE THE PREFERRED CLEAR WIDTH CANNOT BE MET, THE MINIMUM CLEAR WIDTH OF A CONTINUOUS PASSAGE SHALL BE 36 INCHES.
3. IN NEW CONSTRUCTION, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%. IN ALTERATIONS, STEEPER SIDEWALK CROSS SLOPES MAY BE USED AT THE DIRECTION OF THE ENGINEER FOR SHORT DISTANCES, TO MEET EXISTING DOORSTEPS.

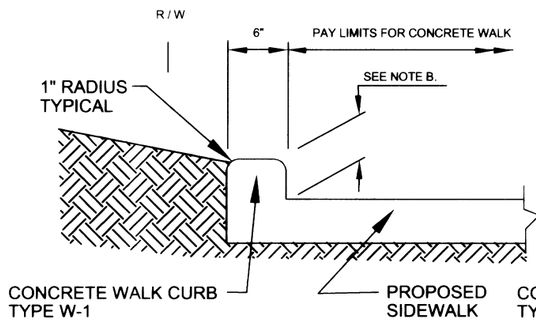
CURB RAMPS

1. A TYPICAL CURB RAMP IS COMPOSED OF THE FOLLOWING ELEMENTS: RAMP, LANDING, SIDES, SURFACE, AND INTERSECTIONS WITH THE ROADWAY.
2. RAMP. THE CURB RAMP MUST HAVE A SLOPE OF NO GREATER THAN 12:1 IN THE DIRECTION OF TRAVEL AND A CROSS SLOPE OF NO MORE THAN 2%. IF THE LONGITUDINAL SLOPE OF THE ACCESSIBLE ROUTE IS 5% OR LESS AND SPACE FOR A LANDING IS LIMITED, THE SIDEWALK LANDING MAY BE OMITTED. THE MINIMUM WIDTH FOR A RAMP IS 48-INCHES (NOT INCLUDING SIDES).
3. THE LANDING IS THE LEVEL AREA AT THE TOP OF A RAMP AND MUST NOT HAVE A SLOPE OF MORE THAN 2% IN ANY DIRECTION. THE LANDING AREA IS USED FOR TURNING AND MUST MAINTAIN A PREFERRED LENGTH AND WIDTH OF 60"X60" FOR ALTERATIONS IN EXISTING RIGHTS OF WAY WHERE PREFERRED CLEAR WIDTH CANNOT BE MET, THE MINIMUM LENGTH AND WIDTH SHALL BE 48"X48". IN ALL CASES, TYPE T CURB RAMP MUST HAVE A LANDING LENGTH OF 60-INCHES.
4. SIDES. THE CURB RAMP SHALL BE FLARED WHEN PEDESTRIANS ARE TO CROSS THE RAMP, OR HAVE CURBING IF THE ADJACENT AREA IS A NON-PEDESTRIAN SURFACE SUCH AS A LAWN STRIP, BRICKWORK, OR OBSTACLE. MAXIMUM FLARE SLOPES ARE 10:1 OR AS DIRECTED BY THE ENGINEER, DIAGONAL CURB RAMPS MUST HAVE WELL DEFINED EDGES THAT ARE TO BE PARALLEL TO THE DIRECTION OF PEDESTRIAN FLOW. A DIAGONAL CURB RAMP MAY ALSO HAVE A MINIMUM 36-INCH SEGMENT OF FULL HEIGHT CURB ON EACH SIDE OF THE RAMP WHICH IS WITHIN THE CROSSWALK LINES OR PEDESTRIAN RIGHT-OF-WAY.
5. FLARE TREATMENTS. VARIOUS FLARE TREATMENTS ARE SHOWN IN THE DRAWINGS. IN GENERAL A 10:1 FLARE IS PREFERRED. THIS PROVIDES A CONCRETE WALKING SURFACE FOR THE ENTIRE SIDEWALK WIDTH IN THE DIRECTION OF TRAVEL. WALK CURB TYPE W-1 OR RW-1 MAY BE USED WHERE A RAMP IS ADJACENT TO A LAWN STRIP, BRICKWORK OR OBSTACLE .
6. SURFACE. THE CURB RAMP SURFACE MUST BE STABLE, FIRM, AND SLIP-RESISTANT. CHANGE IN LEVEL UP TO 0.25-INCH MAY BE VERTICAL WITHOUT EDGE TREATMENT. CHANGES BETWEEN 0.25 AND 0.5-INCHES MUST BE BEVELED WITH A SLOPE OF NO GREATER THAN 12:1. CHANGES IN LEVEL ABOVE 0.5-INCH MUST BE ACCOMPLISHED BY A RAMP.
7. LIP. THE INTERSECTION OF THE RAMP WITH THE ROADWAY SHALL BE PERPENDICULAR AND EDGES SHALL BE FLUSH. THE COUNTER SLOPE FROM THE END OF RAMP UP THE CROSS SLOPE OF THE ROADWAY SHALL BE NO MORE THAN 20:1 FOR THE FIRST 24-INCHES.
8. NO OBSTACLES OR PROTRUSIONS SHALL BE PLACED WITHIN THE CURB RAMP AREA. EXISTING MANHOLE COVERS, VALVE BOXES SHALL BE FLUSH MOUNTED WITH WALKING SURFACE.
9. THE THICKNESS OF ALL NEW CURB RAMPS SHALL BE 5-INCHES.
10. TRANSITIONAL SECTIONS OF SIDEWALK SHALL BE INSTALLED TO CONNECT NEW OR REPLACED CURB RAMPS WITH EXISTING SIDEWALKS THAT DO NOT MEET CURRENT STANDARDS AND SPECIFICATIONS. THESE TRANSITION SEGMENTS OF SIDEWALK SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING AND NEW CONCRETE. MAXIMUM WARPING (ROTATION) RATE SHALL BE 1/8" VERTICAL CHANGE PER LINEAR FOOT. HORIZONTAL DISTANCE TRAVELLED AND MINIMUM DISTANCE SHALL BE ONE FULL SIDEWALK BLOCK OR 5 (FIVE) FEET.
11. FOR PARALLEL AND COMBINATION RAMPS WHERE A RAMP IS LOCATED WITHIN THE PUBLIC SIDEWALK, THE MINIMUM LENGTH FOR THE RAMPS SHALL BE ONE SIDEWALK BLOCK LENGTH OR FIVE FEET; AND THE MAXIMUM LENGTH SHALL BE WHAT IS REQUIRED TO MAINTAIN A 12:1 SLOPE TO MEET EXISTING SIDEWALK GRADE. WHEN THIS IS DETERMINED UNFEASIBLE DUE TO STEEP PITCH OF EXISTING ROADWAY, IN NO CASE SHALL THE RAMP BE MORE THAN 15 FEET.
12. STEEP SLOPES. ALL RAMPS LOCATED ON STREETS WITH A RUNNING PROFILE GRADE GREATER THAN 5% MUST BE REVIEWED AND APPROVED BY THE ENGINEER.
13. RAMP SHALL BE CONSTRUCTED WITHIN THE CROSSWALK AND NOT BEHIND AN EXISTING INLET.
14. JOINTS SHALL BE PROVIDED IN THE CURB RAMP AS EXTENSIONS OF THE WALK JOINTS AND CONSISTENT WITH 608.03 REQUIREMENTS FOR FOR NEW CONCRETE WALK. A 1/2" 705.03 EXPANSION JOINT FILLER SHALL BE PROVIDED WHERE NEW CONCRETE MEETS THE EXISTING CONCRETE WALK. LINES SHOWN ON THIS DRAWING TO INDICATE THE RAMP EDGE AND SLOPE CHANGES ARE NOT NECESSARY JOINT LINES.
15. DIMENSIONS, LOCATIONS AND TYPE OF CURB RAMP MAY BE MODIFIED TO ACCOMMODATE EXISTING CONDITIONS, WITH APPROVAL OF THE CITY ENGINEER.

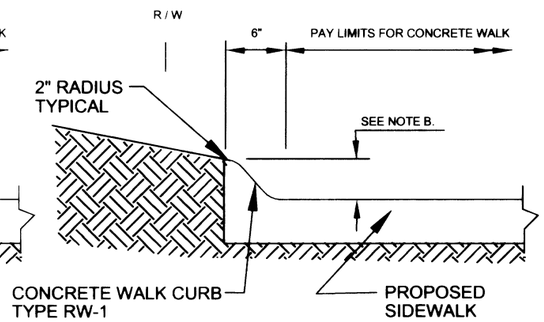
16. SLOPE AND CROSS-SLOPE CONVERSION TABLE:

RATIO	PERCENT	INCH/FOOT	DEGREES	WHERE UTILIZED
1:12	8.3	1	4.8	MAXIMUM SLOPE FOR RAMPS
1:10	10.0	1 1/4	5.7	MAXIMUM SLOPE FOR FLARES
1:48	2.0	1/4	1.1	MAXIMUM SLOPE FOR LANDING AND CROSS-SLOPE OF LANDINGS, RAMPS AND SIDEWALK

17. FOR CURB RAMP STANDARD DRAWINGS TYPICAL DIMENSIONS ARE USED BASED ON A FULL CURB HEIGHT OF 6-INCHES. ADJUSTMENTS MAY BE MADE TO LENGTH OF RAMPS AND FLARES BASED ON ACTUAL CURB REVEAL HEIGHT. REQUIRED SLOPES MUST BE MAINTAINED.
18. WHEN TWO RAMPS ARE USED AT A CORNER IF THE SPACE BETWEEN IS TO BE AN UNWALKABLE SURFACE IT MAY BE GRASSED IF GREATER THAN 20 S.F., OTHERWISE IT SHALL BE FILLED IN CONCRETE.
19. TYPES R & T RAMPS. INSTALL CURB TYPE W-1 AT THE BACK OF WALK UNLESS DETAILED ON PLAN SHEETS. THE PURPOSE OF THIS CURB IS TO CONTAIN STORMWATER WITHIN RIGHT OF WAY, MEET EXISTING CONDITIONS OR CONTROL ACCESS.
20. DETECTABLE WARNING IS REQUIRED FOR ALL CURB RAMPS. TRUNCATED DOMES SHALL HAVE A DIAMETER OF 0.9 INCH AT THE BOTTOM, A DIAMETER OF 0.4 INCH AT THE TOP. A HEIGHT OF 0.2 INCH AND A CENTER-TO-CENTER SPACING OF 2.35 INCHES MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.
21. DOME ALIGNMENT. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
22. DRAINAGE. ALL CURB RAMPS SHALL BE DESIGNED AND CONSTRUCTED TO PROVIDE POSITIVE DRAINAGE SO AS TO PREVENT PONDING. PARTICULAR ATTENTION IS TO BE GIVEN TO RAMPS LOCATED IN EITHER FLAT OR STEEP AREAS, AND CURB RAMP TYPES R, S, & V THAT HAVE LANDINGS AT STREET LEVEL.



CONCRETE WALK CURB
TYPE W - 1



CONCRETE WALK CURB
TYPE RW - 1

A. SEE NOTE 17 ABOVE.
B. CURB HEIGHT VARIES FROM 0" TO 6". 6" MAXIMUM.
C. 608 CONCRETE WALK WILL BE MEASURED TO THE FACE OF CURB TYPE W OR RW-1 WILL BE CONSIDERED UNIFORMLY 5" THICK. MEASUREMENT FOR ITEM 609 WALK CURB TYPE W-1 OR RW-1 WILL BE THE ACTUAL NUMBER OF LINEAR FEET OF CURB. PAYMENT AT THE PRICE BID PER LINEAR FOOT SHALL COVER THE NECESSARY FURNISHING, FORMING AND PLACING OF CONCRETE WHICH SHALL BE CONSIDERED TO BE ALL OF THE CONCRETE UNDER THE CURB.

CITY OF CINCINNATI
DEPARTMENT OF TRANSPORTATION AND ENGINEERING
DIVISION OF TRANSPORTATION DESIGN

SIDEWALKS AND CURB RAMPS
GENERAL NOTES

SCALE: NONE JAN 7, 2003

Prem Garg
CITY ENGINEER

ACCESSION NO. 27256

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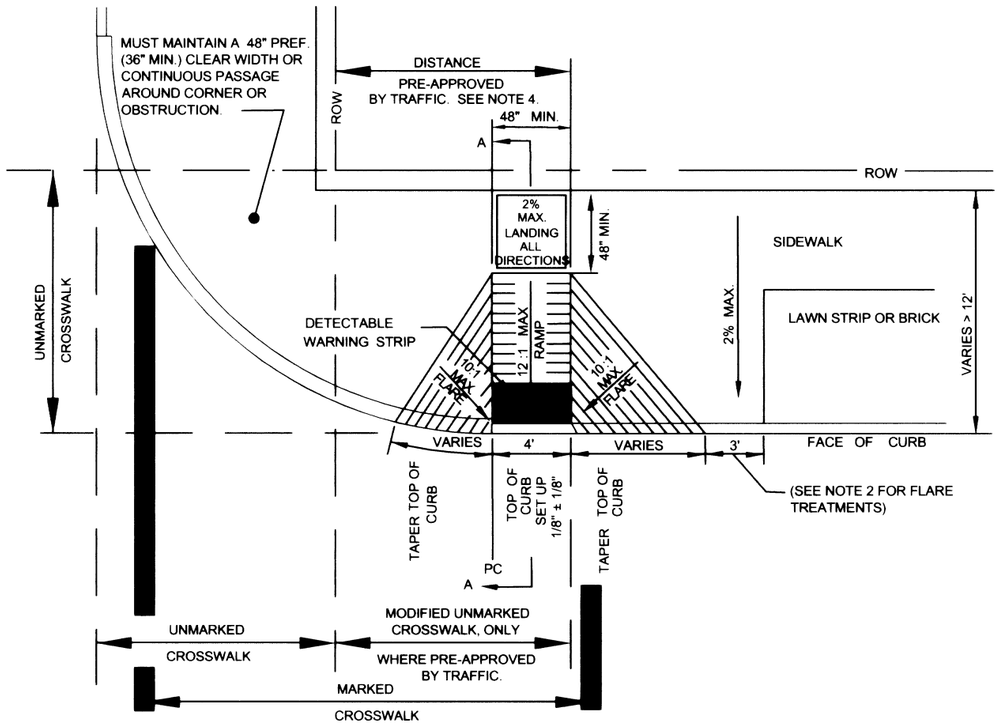
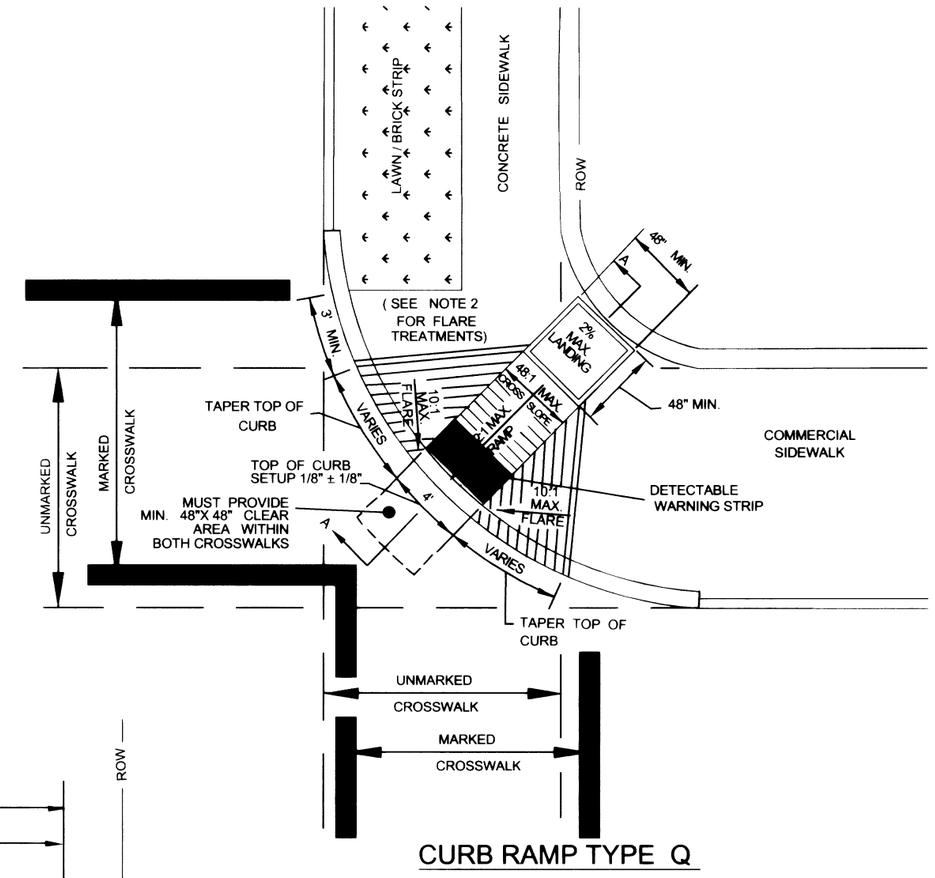
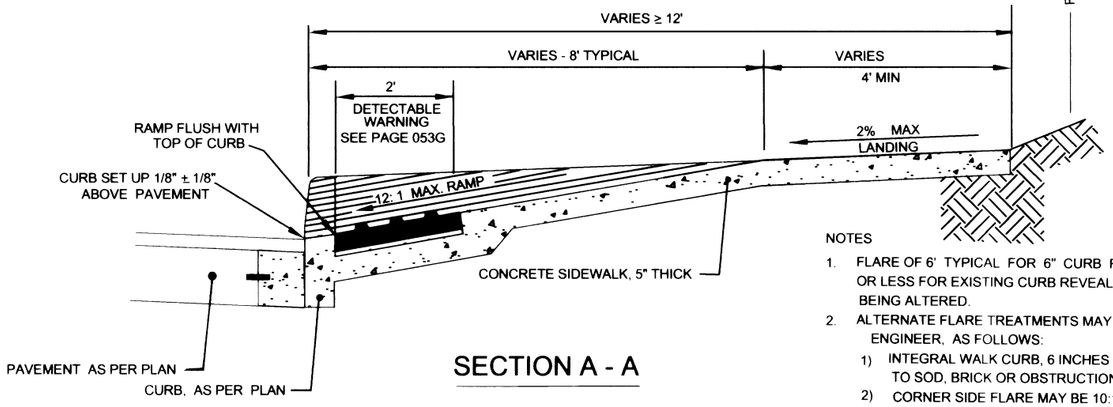


CURB RAMP TYPE P



CURB RAMP TYPE Q



SECTION A - A

NOTES

1. FLARE OF 6' TYPICAL FOR 6" CURB REVEAL AND 12:1 SLOPE, MAY BE MORE OR LESS FOR EXISTING CURB REVEALS WHEN CURB REVEAL HEIGHT IS NOT BEING ALTERED.
2. ALTERNATE FLARE TREATMENTS MAY BE USED UPON APPROVAL BY THE ENGINEER, AS FOLLOWS:
   1) INTEGRAL WALK CURB, 6 INCHES WIDE, IF RAMP IS ADJACENT TO SOD, BRICK OR OBSTRUCTION.
   2) CORNER SIDE FLARE MAY BE 10:1 TO CONCRETE WALK; PROVIDE MIN. 3' CONCRETE AT THE TOP OF FLARE TO EXTENDED SIDEWALK LINE.
   3) ON ALTERATIONS, FLARES STEEPER THAN 10:1 MAY BE CONSTRUCTED IF PRE-APPROVED BY THE ENGINEER.
3. FOR DETECTABLE WARNING DETAILS, SEE PAGE O53G
4. WHERE EXISTING R/W WIDTH IS NOT SUFFICIENT FOR LANDING AND RAMP, CURB HEIGHT MAY BE REDUCED TO 4" AND CROSS SLOPE REDUCED TO 1% TO REDUCE RAMP LENGTHS.
4. RAMP MAY BE MOVED OUTSIDE THE LIMITS OF THE UNMARKED CROSSWALK BUT ONLY IF PRE-APPROVED BY TRAFFIC ENGINEERING.

CITY OF CINCINNATI
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DIVISION OF TRANSPORTATION DESIGN

CURB RAMPS
TYPES P, Q - HIGH LANDING

SCALE: NONE JAN 7, 2003

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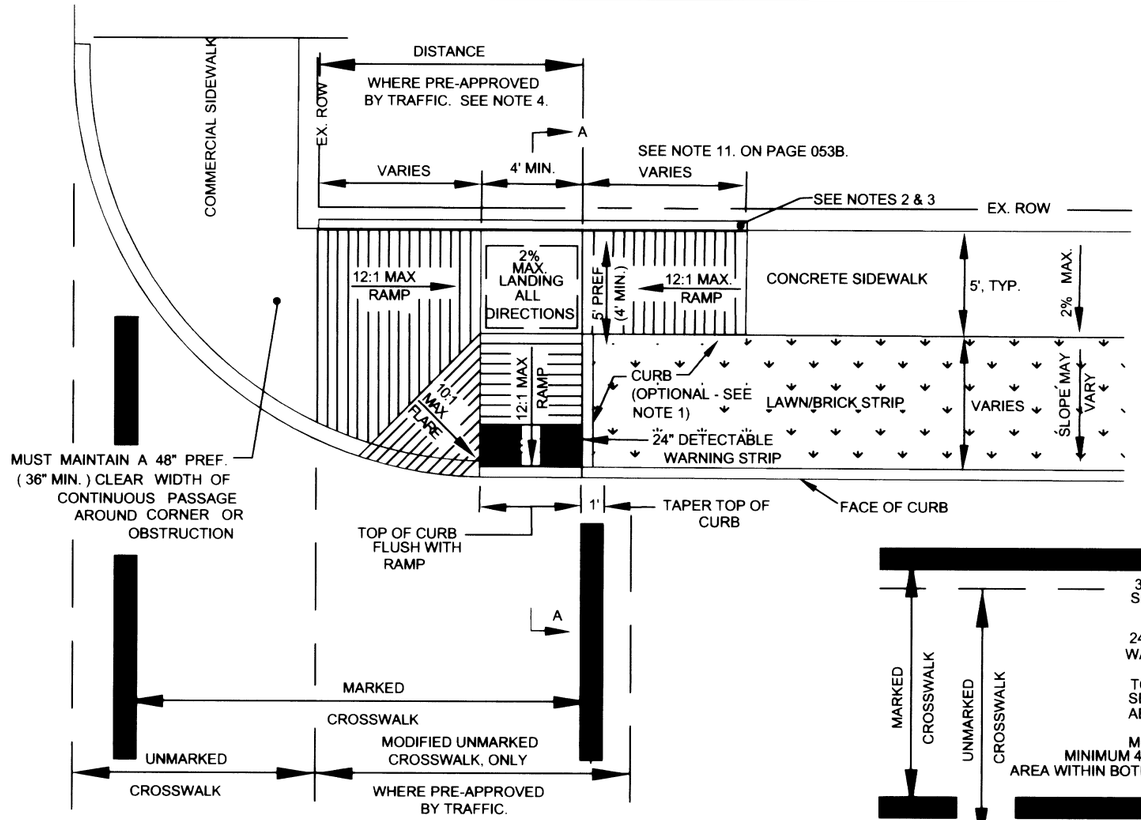
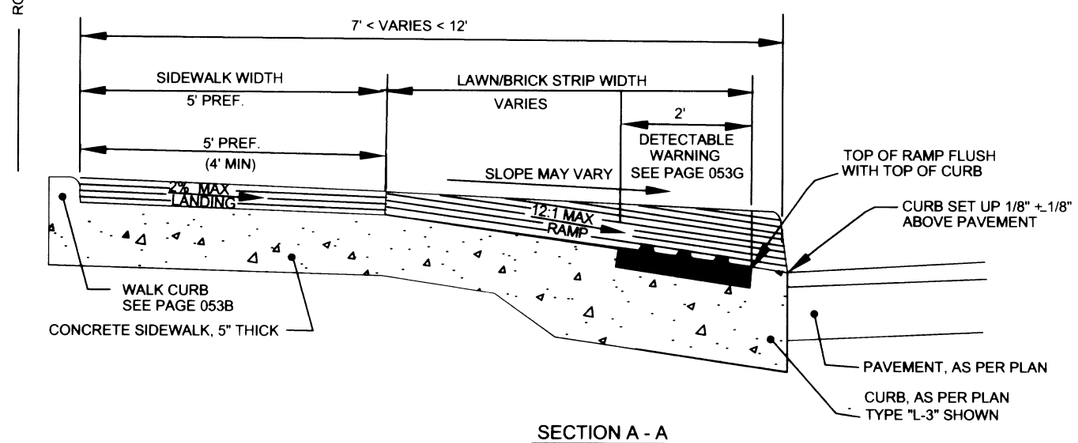
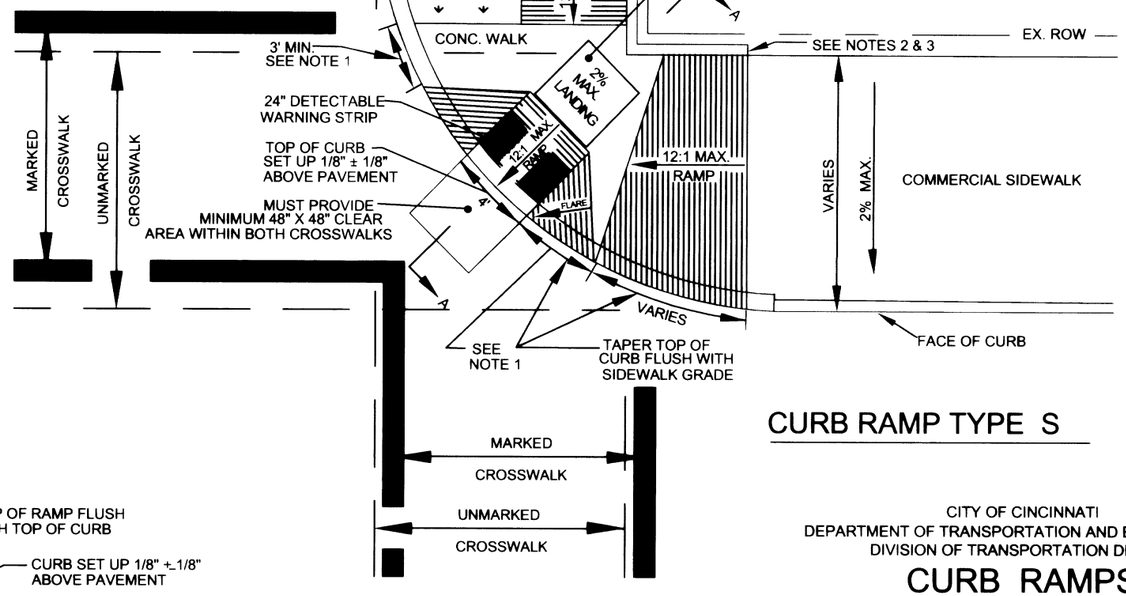


CURB RAMP TYPE R



SECTION A - A



CURB RAMP TYPE S

NOTES:
1. ALTERNATE FLARE TREATMENTS MAY BE USED UPON APPROVAL BY THE ENGINEER, AS FOLLOWS:
   1) INTEGRAL ROLLED CURBING AT 6-INCHES WIDTH IF RAMP IS ADJACENT TO SOD, BRICK OR OBSTRUCTION .
   2) CORNER SIDE FLARE MAY BE 10:1 TO CONCRETE WALK; PROVIDE MIN. 3' CONCRETE AT TOP OF FLARE TO EXTENDED SIDEWALK LINE.
   3) ON ALTERATIONS, FLARES STEEPER THAN 10:1 MAY BE CONSTRUCTED IF PRE-APPROVED BY ENGINEER.
2. TYPE W-1 AND RW -1 CURB AT BACK OF WALK IS FLUSH AT TOP OF SIDEWALK RAMPS. REVEAL IS GREATEST AT LANDING AND LENGTH IS BASED ON RAMPS SLOPES AND LENGTHS.
3. CURB AT BACK OF WALK MAY OR MAY NOT BE REQUIRED BASED ON GRADING. WALK CURBS WILL BE AS DIRECTED BY THE ENGINEER.
4. RAMP MAY BE MOVED OUTSIDE THE LIMITS OF UNMARKED CROSSWALK ONLY IF PRE-APPROVED BY TRAFFIC ENGINEERING.

CITY OF CINCINNATI
DEPARTMENT OF TRANSPORTATION AND ENGINEERING
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CURB RAMPS
TYPE R, S - MEDIUM LANDING

SCALE: NONE JAN 7, 2003

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ACCESSION NO. 27256

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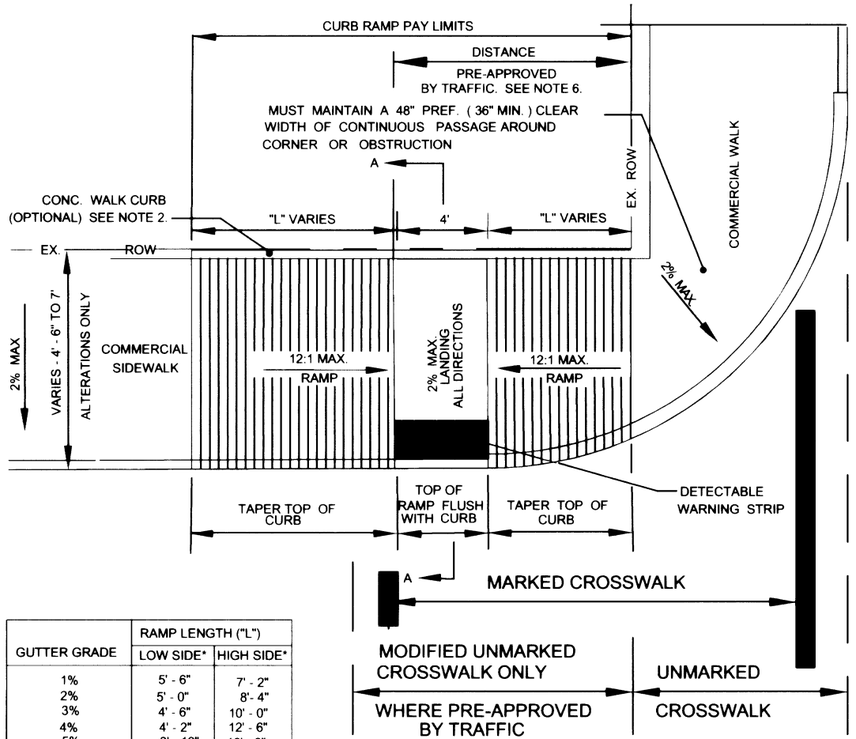
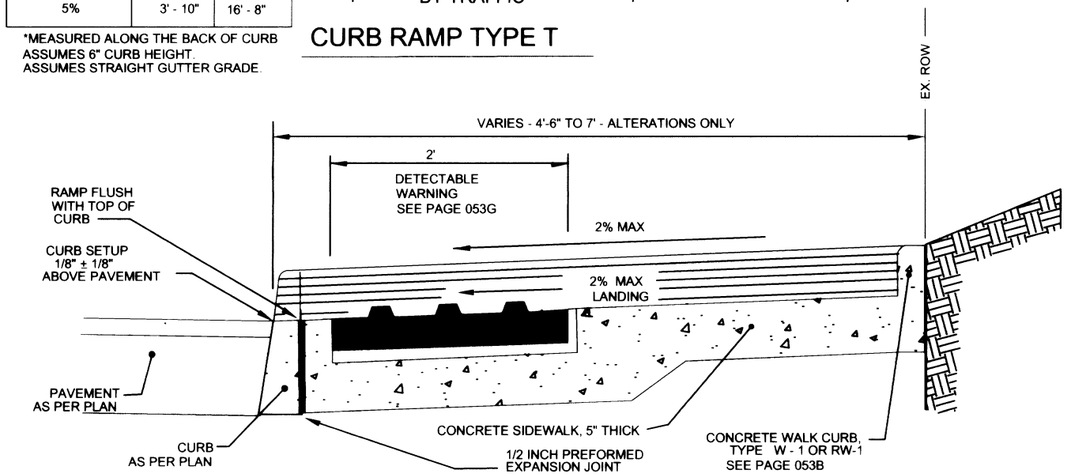


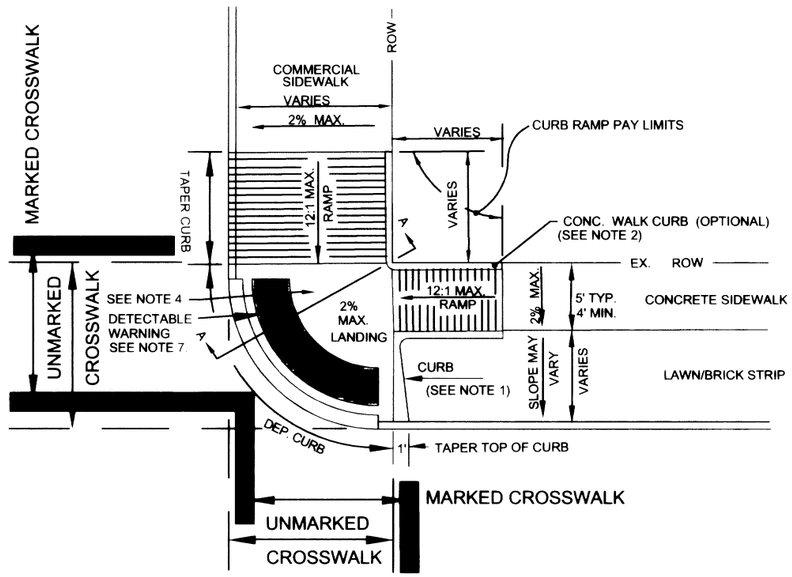
GUTTER GRADE	RAMP LENGTH ("L")	
	LOW SIDE*	HIGH SIDE*
1%	5' - 6"	7' - 2"
2%	5' - 0"	8' - 4"
3%	4' - 6"	10' - 0"
4%	4' - 2"	12' - 6"
5%	3' - 10"	16' - 8"

*MEASURED ALONG THE BACK OF CURB
ASSUMES 6" CURB HEIGHT.
ASSUMES STRAIGHT GUTTER GRADE.

CURB RAMP TYPE T



SECTION A - A



CURB RAMP TYPE U

NOTES:
1. ALTERNATE FLARE TREATMENTS MAY BE USED UPON APPROVAL BY THE ENGINEER. AS FOLLOWS:
   1) INTEGRAL WALK CURB AT 6-INCHES WIDTH IF RAMP IS ADJACENT TO SOD, BRICK, OR OBSTRUCTION.
   2) CORNER SIDE FLARE MAY BE 10:1 TO CONCRETE WALK; PROVIDE MIN. 3' CONCRETE AT TOP OF FLARE TO EXTENDED SIDEWALK LINE.
   3) ON ALTERATIONS, FLARES STEEPER THAN 10:1 MAY BE CONSTRUCTED IF PRE-APPROVED BY ENGINEER.
2. OPTIONAL CURB TYPE W-1 OR RW-1 AT BACK OF SIDEWALK IS FLUSH AT TOP OF SIDEWALK RAMPS. REVEAL IS GREATEST AT LANDING AND IS BASED ON RAMP'S EDGE SLOPES AND LENGTH. CURB MAY NOT BE REQUIRED TO MEET EXISTING GRADING.
3. RAMP LENGTHS FOR STREET GRADES GREATER THAN 5% MUST BE REVIEWED AND APPROVED BY THE ENGINEER.
4. MAINTAIN A PREFERRED 4' X 4' MIN. LANDING PERPENDICULAR TO THE CURB. FOR RAMP TYPE T, NOT IN DIAGONAL POSITION (TRANSITION RAMPS FACE EACH OTHER), A 5' MIN. LANDING LENGTH BETWEEN TRANSITION RAMPS MUST BE MAINTAINED.
5. WHEN SIDEWALK WIDTH IS 4'-6" OR LESS, THE SIDEWALK MAY BE INACCESSIBLE AND CONSIDERATION SHOULD BE GIVEN TO OBTAINING RIGHT OF WAY TO PROPERLY CONSTRUCT A CURB RAMP. ANY RAMPS LOCATED IN AREAS WITH 4' -6" SIDEWALK OR LESS MUST BE REVIEWED AND APPROVED BY THE ENGINEER.
6. RAMP MAY BE MOVED OUTSIDE LIMITS OF UNMARKED CROSSWALK ONLY IF PRE-APPROVED BY TRAFFIC ENGINEERING.
7. DETECTABLE WARNING TYPE "O" MAY BE CONSTRUCTED FOR SMALL RADII ON TYPE U RAMPS MUST BE APPROVED BY ENGINEER.

CITY OF CINCINNATI
DEPARTMENT OF TRANSPORTATION AND ENGINEERING
DIVISION OF TRANSPORTATION DESIGN

CURB RAMPS
TYPE "T", " U" LOW LANDING

SCALE: NONE JAN 7, 2003

CITY ENGINEER

ACCESSION NO. 27256

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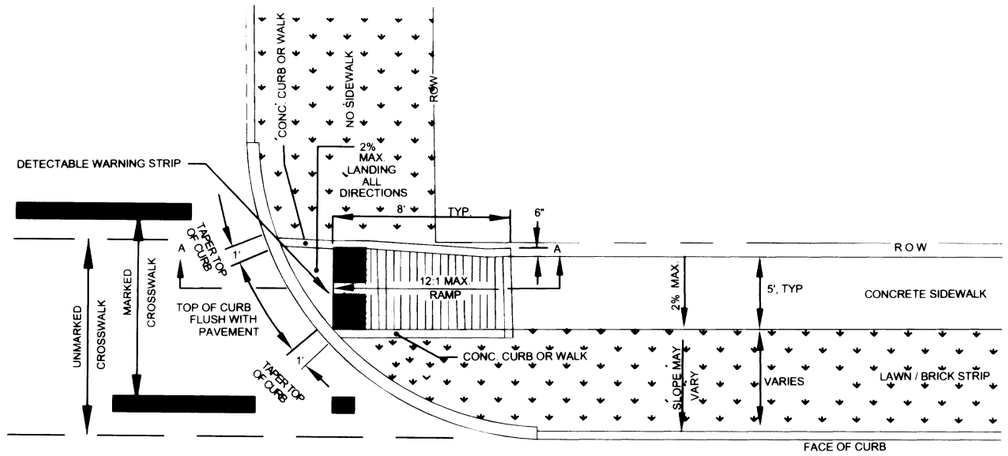
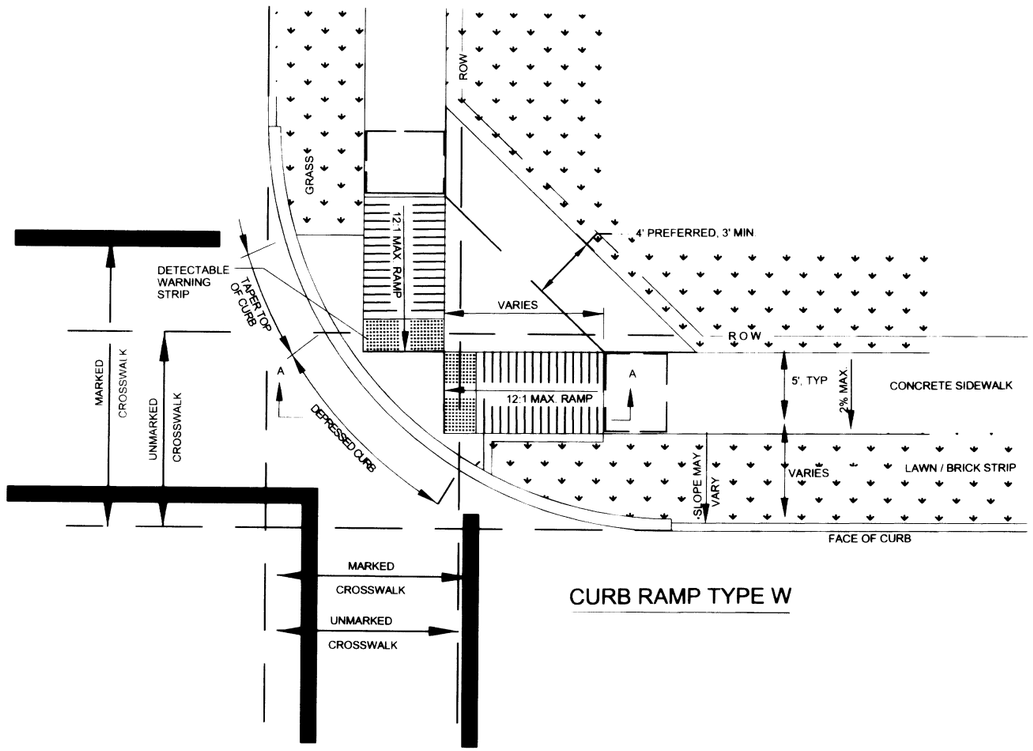
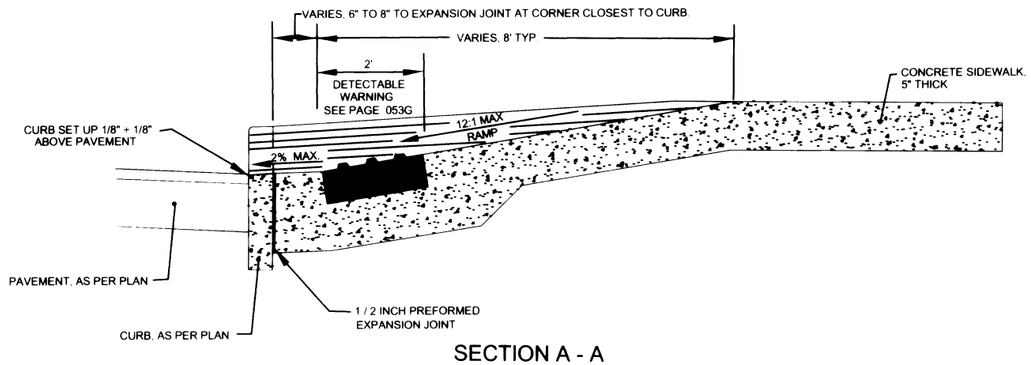


CURB RAMP TYPE V



CURB RAMP TYPE W



SECTION A - A

CITY OF CINCINNATI
DEPARTMENT OF TRANSPORTATION AND ENGINEERING
DIVISION OF TRANSPORTATION DESIGN

SIDEWALKS AND CURB RAMPS TYPE V AND W, LOW LANDING

SCALE: NONE JAN 7, 2003

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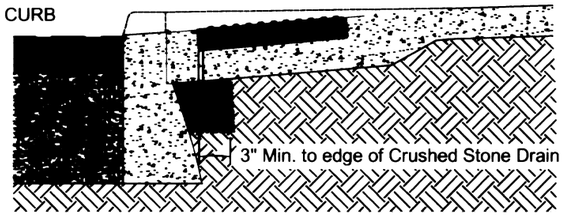
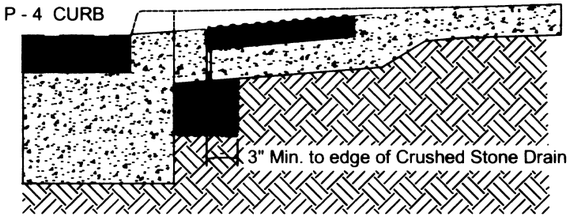
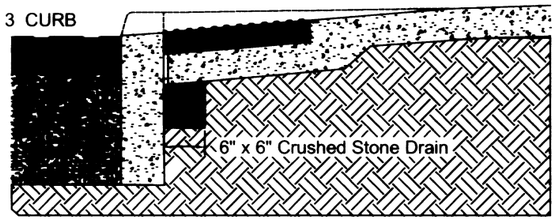
S - CURB



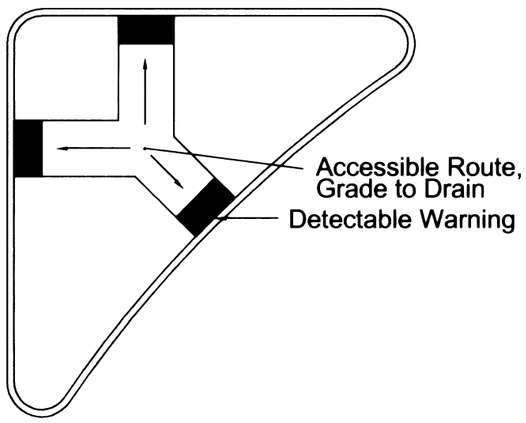
B -3 or P - 4 CURB



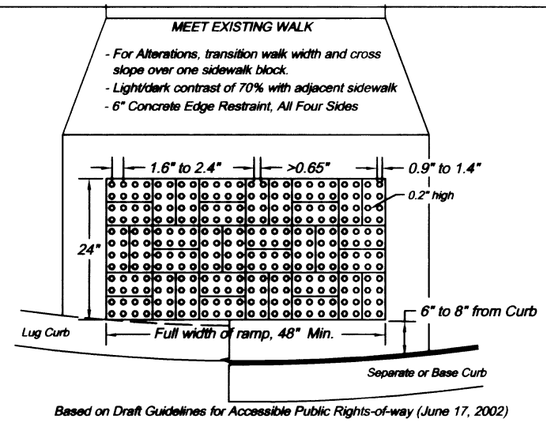
L - 3 CURB



NEW CONSTRUCTION DETECTABLE WARNING TYPE B

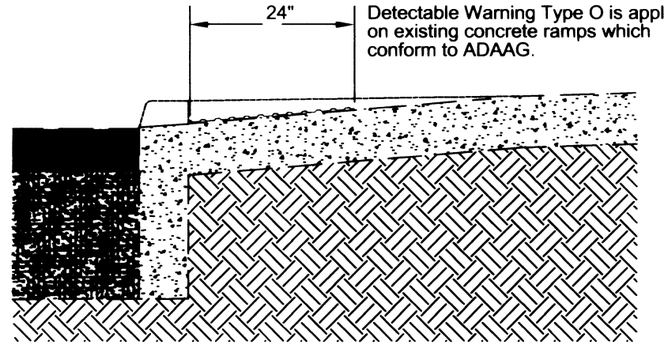


DETECTABLE WARNING AT MEDIAN ISLANDS

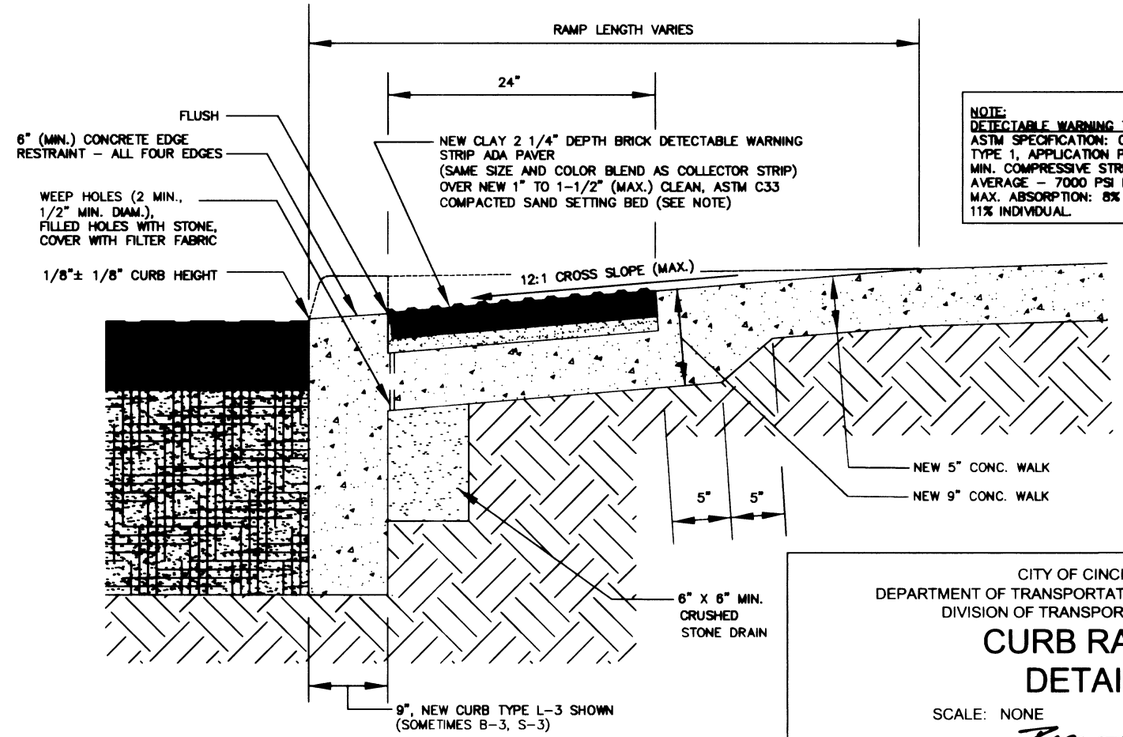


Based on Draft Guidelines for Accessible Public Rights-of-way (June 17, 2002)

TRUNCATED DOME SPACING



ALTERATION DETECTABLE WARNING TYPE O



NOTE:
DETECTABLE WARNING TYPE B:
ASTM SPECIFICATION: C 902, CLASS SX, TYPE 1, APPLICATION PS.,
MIN. COMPRESSIVE STRENGTH: 8000 PSI, AVERAGE – 7000 PSI INDIVIDUAL.
MAX. ABSORPTION: 8% AVERAGE 11% INDIVIDUAL.

BRICK DETAILS

CITY OF CINCINNATI
DEPARTMENT OF TRANSPORTATION AND ENGINEERING
DIVISION OF TRANSPORTATION DESIGN

CURB RAMPS DETAILS

SCALE: NONE JAN 7, 2003

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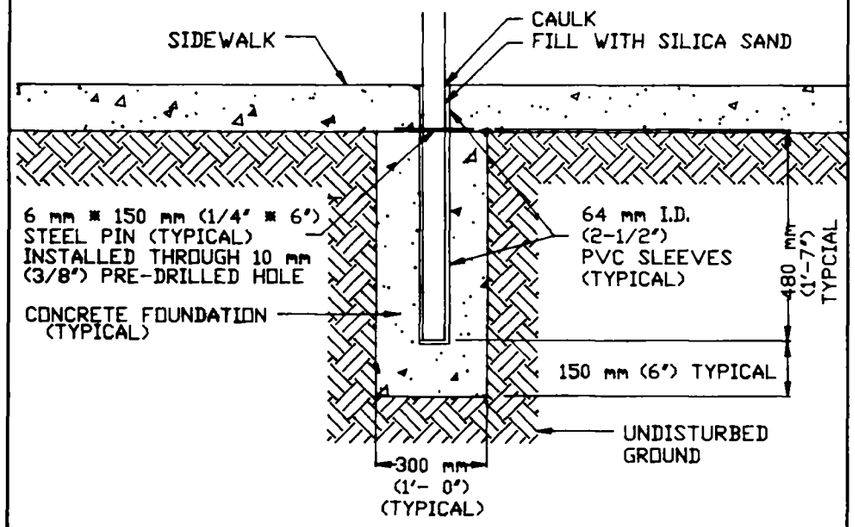
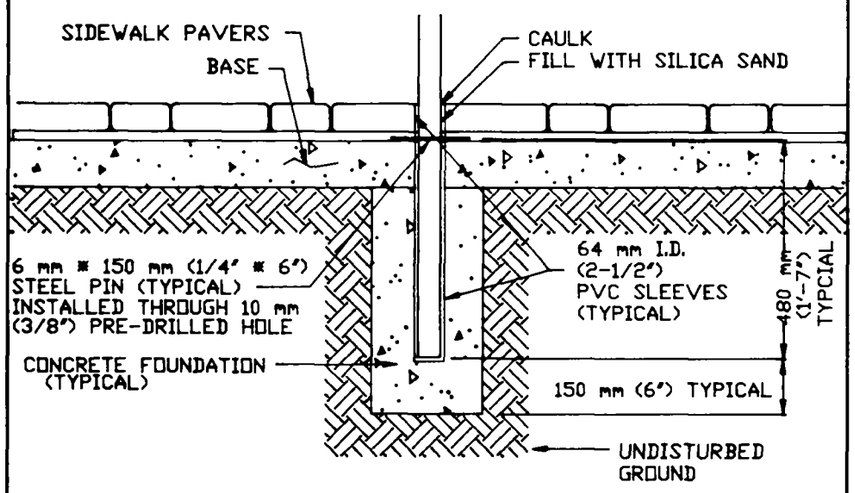
EMBEDDED POST MOUNTING DETAILS

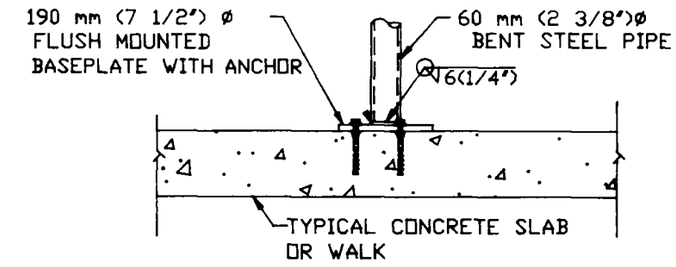


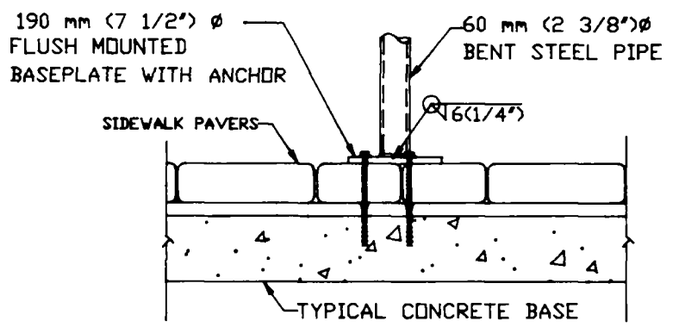


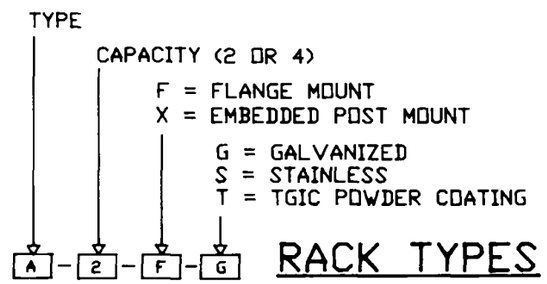
NOTES:

1. FABRICATION AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CITY OF CINCINNATI SUPPLEMENT TO THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.
2. RACKS SHALL BE INSTALLED VERTICALLY. FLANGE MOUNTED RACKS SHALL BE SHIMMED TO VERTICAL USING GROUT.
3. CONCRETE ANCHORS SHALL BE INTERNALLY THREADED EPOXY SYSTEM ANCHORS 12mm (1/2") BOLT SIZE (EPCON OR APPROVED EQUAL).
4. RACKS IN PUBLIC RIGHT OF WAY ARE TYPICALLY INSTALLED PARALLEL TO THE CURB LINE. SEE "BICYCLE RACKS IN PUBLIC RIGHT OF WAY" FOR GUIDELINES.

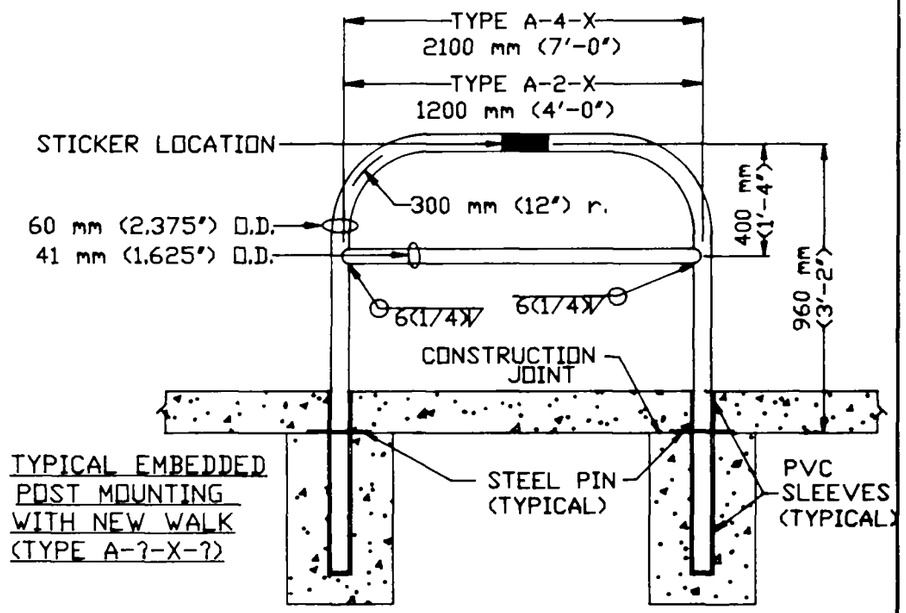
FLANGE MOUNTING DETAILS



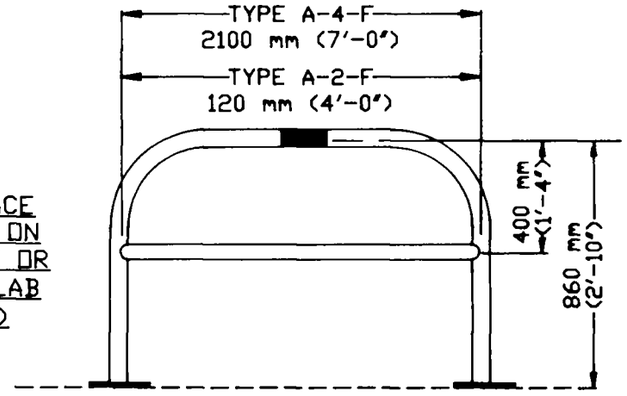




RACK TYPES



TYPICAL EMBEDDED POST MOUNTING WITH NEW WALK (TYPE A-?-X-?)



TYPICAL SURFACE FLANGE MOUNT ON EXISTING WALK OR STRUCTURAL SLAB (TYPE A-?-F-?)

ELEVATION

CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

BICYCLE RACK - TYPE A

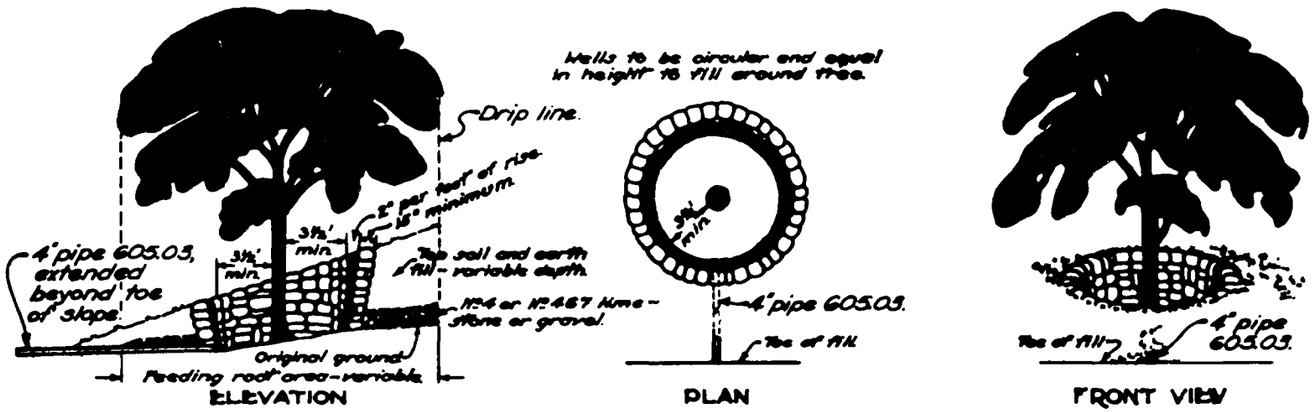
SCALE: NONE

MAY, 1995

CITY ENGINEER

ACC. NO. 22854

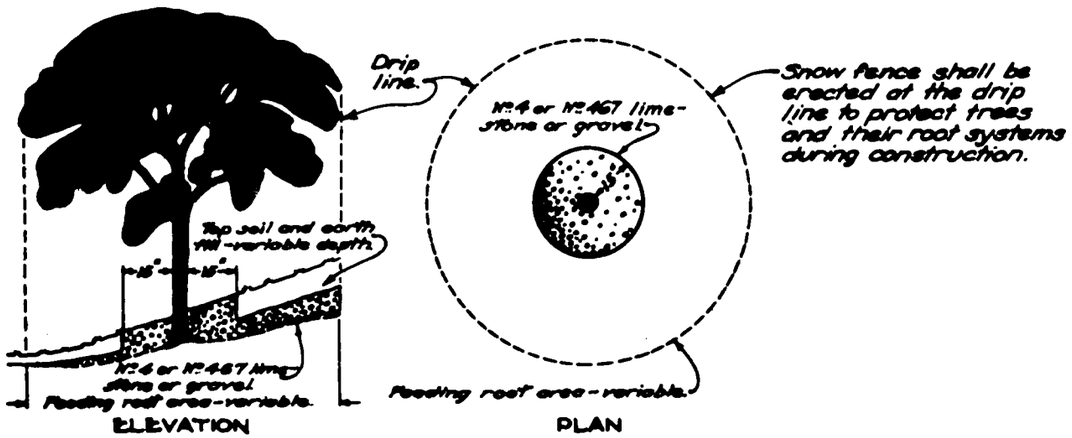
[6] C:\FILES\ACCN\RACHSTDM.DWG Rev.5/25/95



ELEVATION PLAN FRONT VIEW

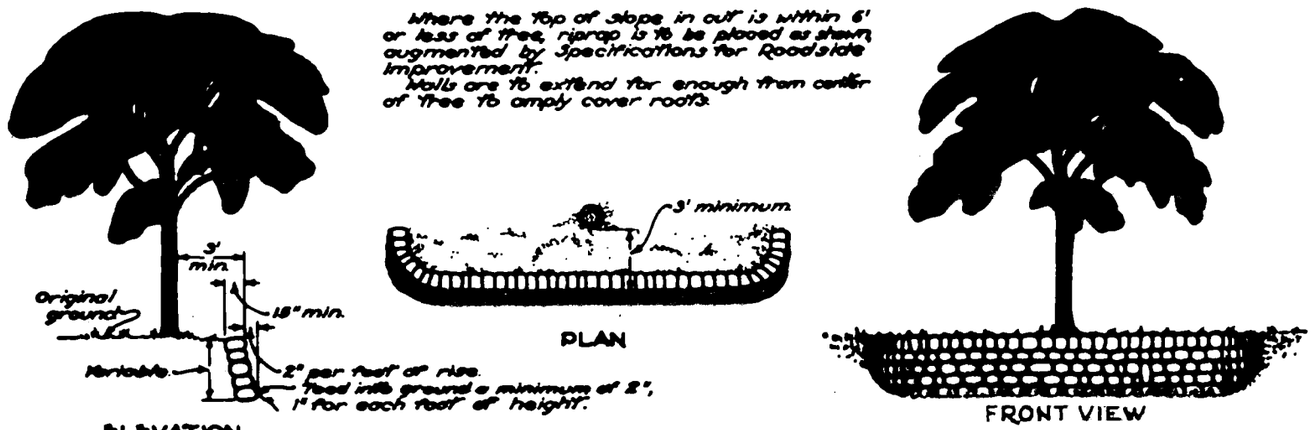
Where fill around tree is 12" or more in depth over any part of feeding root area or periphery of the tree, wells are to be constructed as shown

RIPRAP AND AGGREGATE FOR TREE PROTECTION AND AERATION IN FILL



ELEVATION PLAN

AGGREGATE FOR TREE ROOT AERATION IN FILL



PLAN

ELEVATION FRONT VIEW

RIPRAP FOR TREE PROTECTION IN CUT

Approved: _____ Supervisor of Urban Forestry

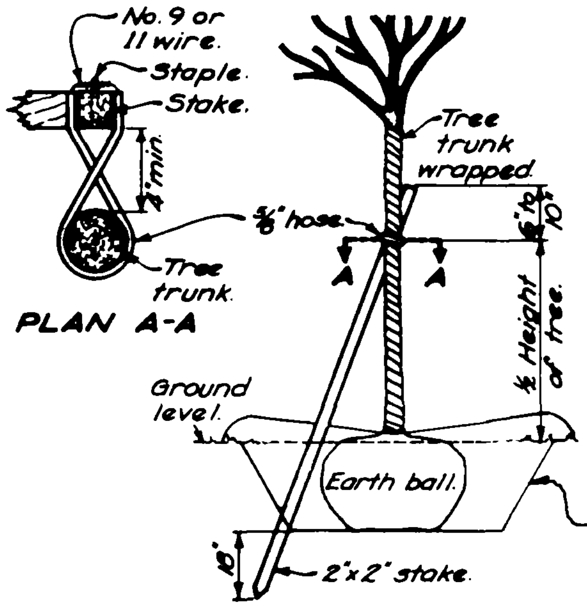
Approved: _____ City Engineer

CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

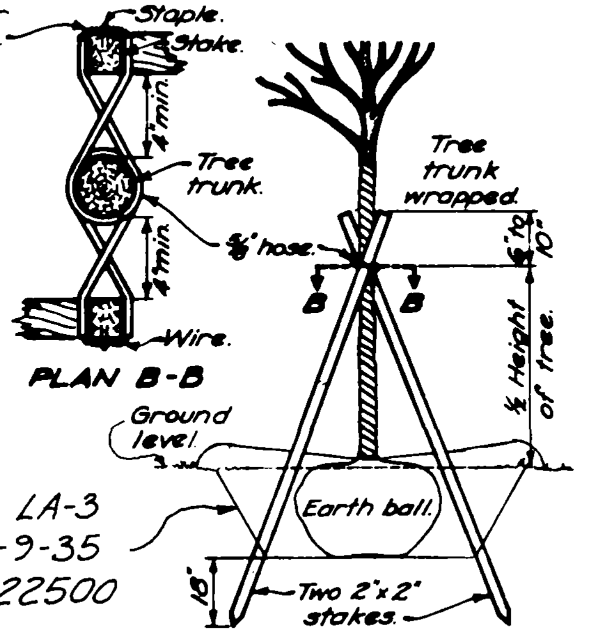
LANDSCAPING	DATE 1/85 4/91
TREE WELLS	
STANDARD CONSTRUCTION DRAWING LA-1	

Acc. No. 22498 20-9-33 Page G3

Approved [signature]
Super. of Urban Foresty



See LA-3
20-9-35
Acc. 22500

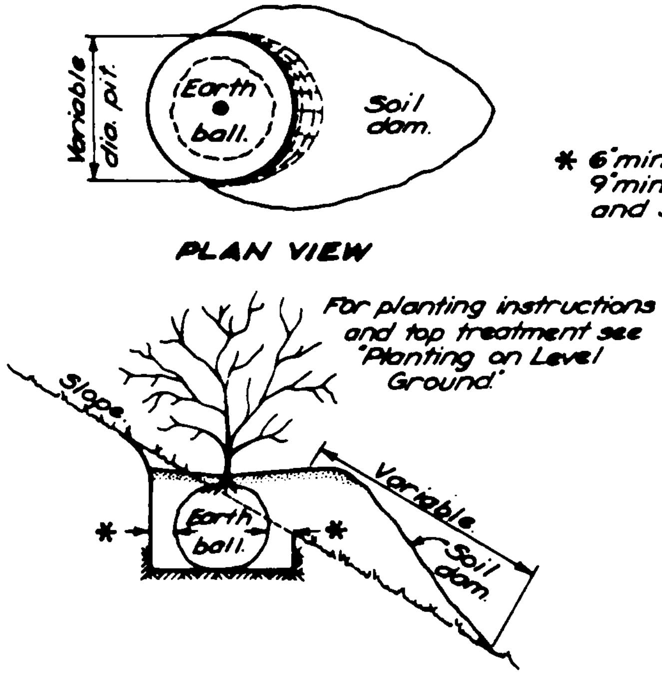


For bare root and B&B trees 4' to 6' in height; for low headed trees of 2" caliper or less; and for other trees less than 8' in height if so specified.

SINGLE STAKE BRACING

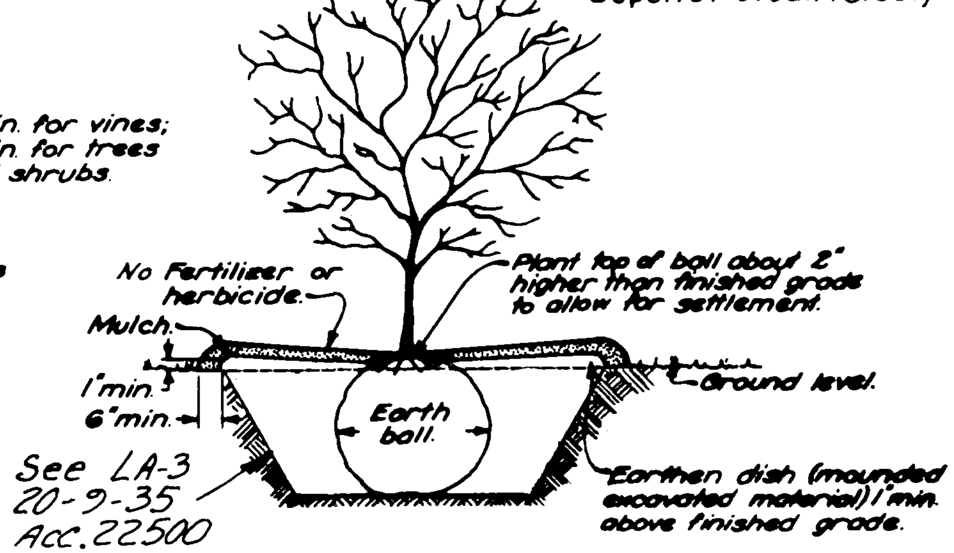
For bare root and B&B trees 6' to 8' in height, and for low headed trees over 2" in caliper.

DOUBLE STAKE BRACING



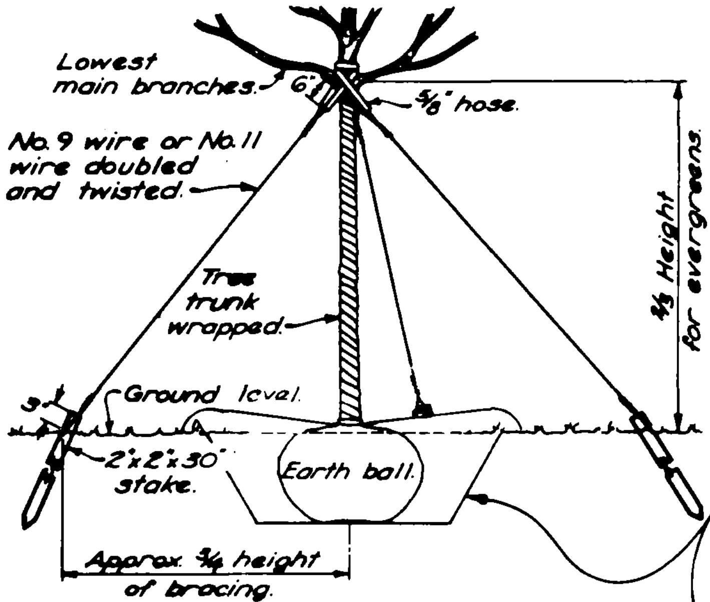
* 6" min. for vines; 9" min. for trees and shrubs.

PLANTING ON SLOPE



See LA-3
20-9-35
Acc. 22500

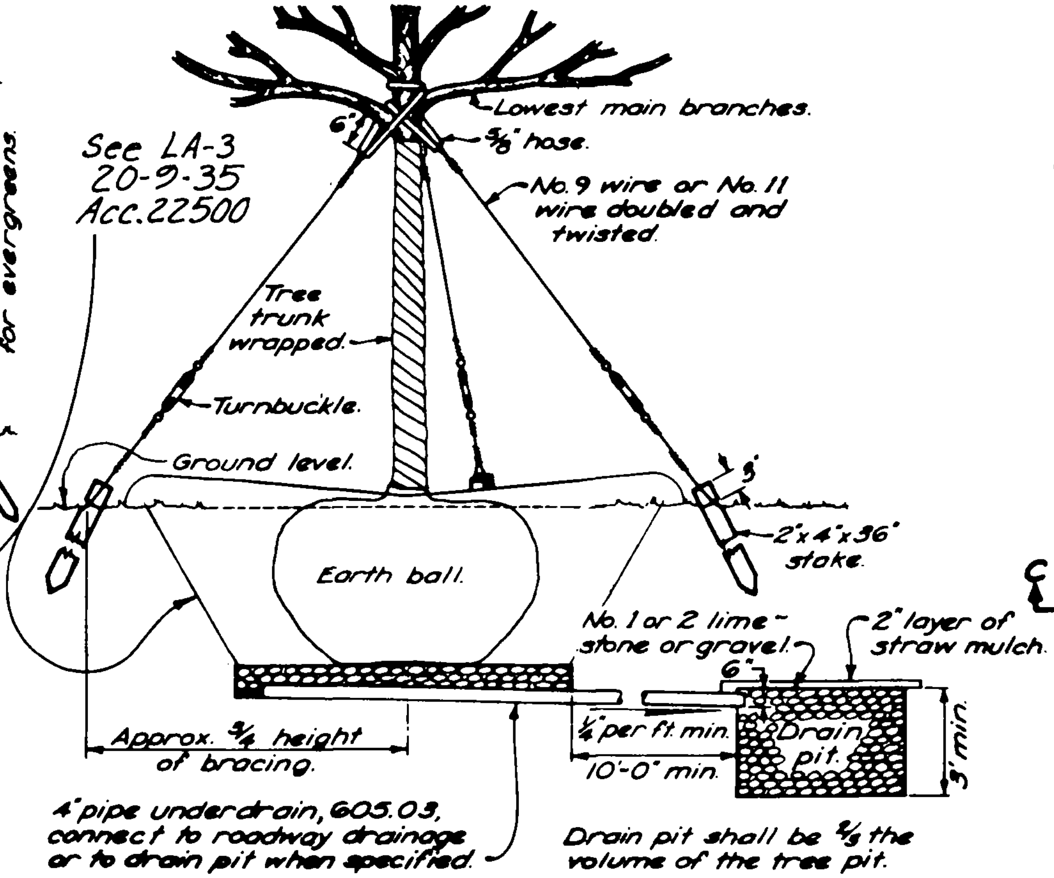
PLANTING ON LEVEL GROUND



For trees less than 3" in caliper and over 8' in height, unless otherwise specified.

TRIPOD BRACING

See LA-3
20-9-35
Acc. 22500



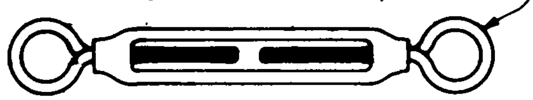
4" pipe underdrain, 605.03, connect to roadway drainage or to drain pit when specified.

Drain pit shall be ⅛ the volume of the tree pit.

For trees 3" or over in caliper and over 8' in height when specified.

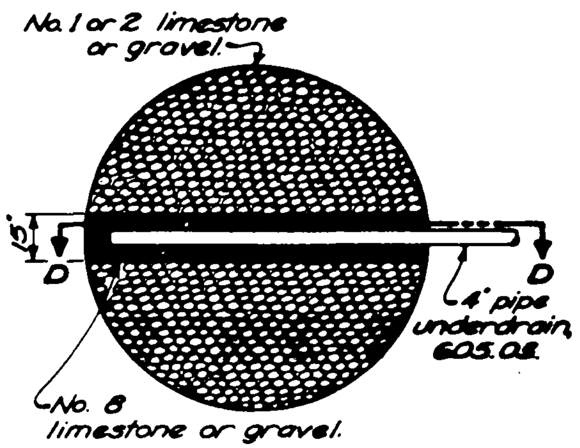
TRIPOD BRACING WITH PIT DRAINAGE

¼" min. stock Eye-Bolt or size specified.

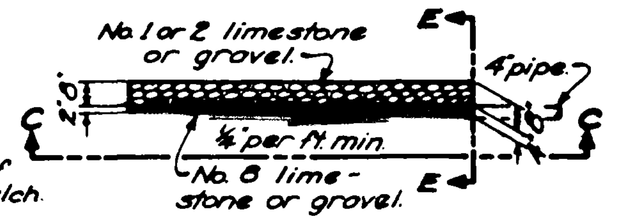


TURNBUCKLE

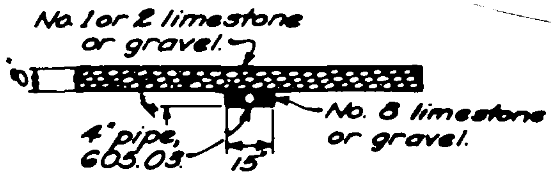
Galvanized steel with a 4" min. takeup.



SECTION C-C



SECTION D-D



SECTION E-E

DRAINAGE DETAIL

NOTES

GENERAL: This drawing shall govern wherever a conflict arises with the Construction and Materials Specifications.

PLANTING DETAILS: Because of varying soil and weather conditions, the types and quantities of soil amendments, mulch and backfill, and the cost shall be included in the unit price bid for planting items.

Pit diameter and depth shall vary with the type and size of plant.

BACKFILL unless otherwise specified shall be in accordance with 661 or 662.

HOSE shall be new garden hose (rubber and fabric) or steam hose. The 5/8" dimension is inside diameter.

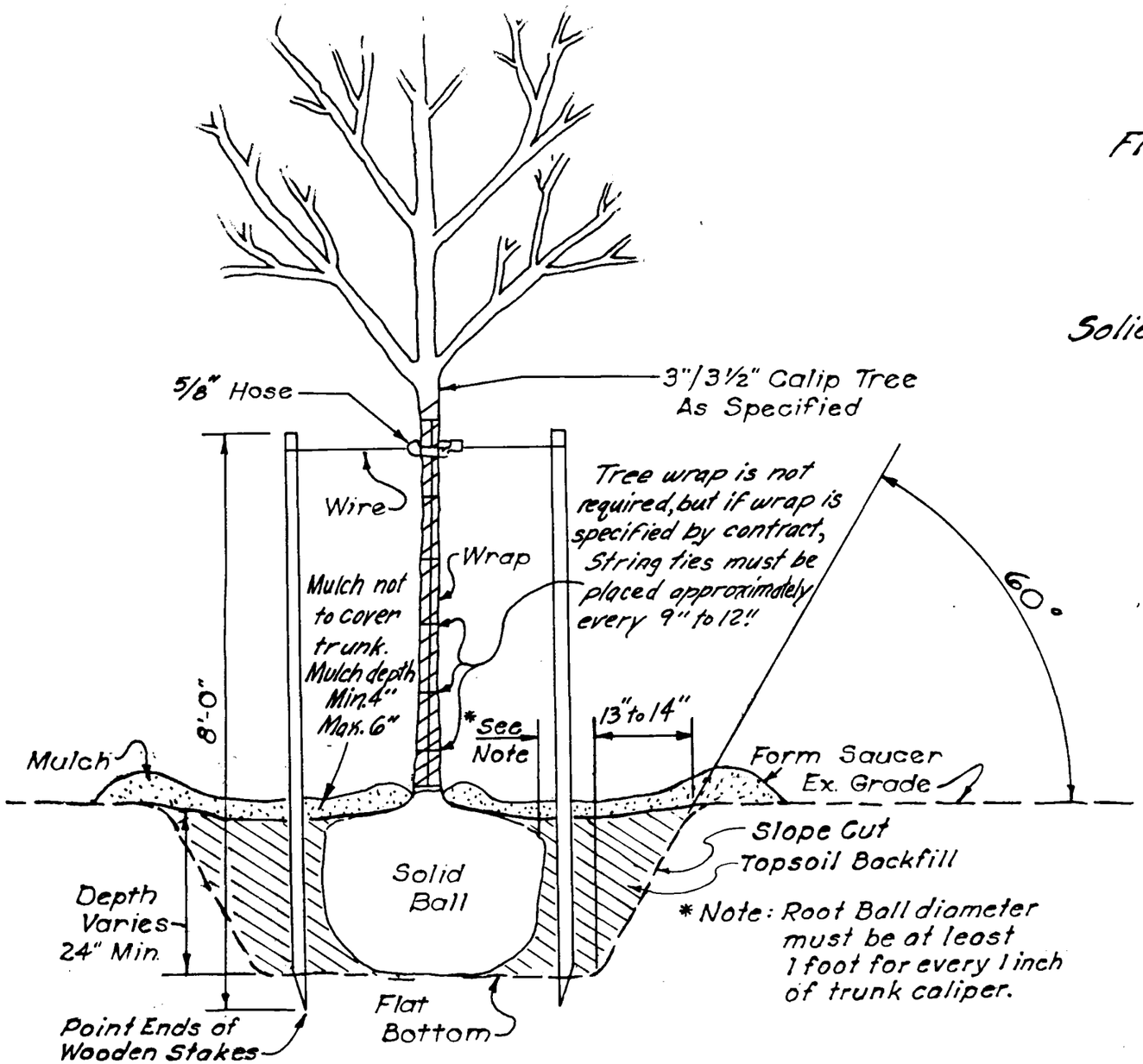
WIRE furnished for tree bracing shall be of the type described as "Regular Galvanized Soft Wire of Common Quality."

WIRE LOOP DETAIL

CITY OF CINCINNATI DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING	
LANDSCAPING	DATE 1/85 3/91
PLANTING & BRACING	
STANDARD CONSTRUCTION DRAWING L-A-2	
Approved: [signature] City Engineer	

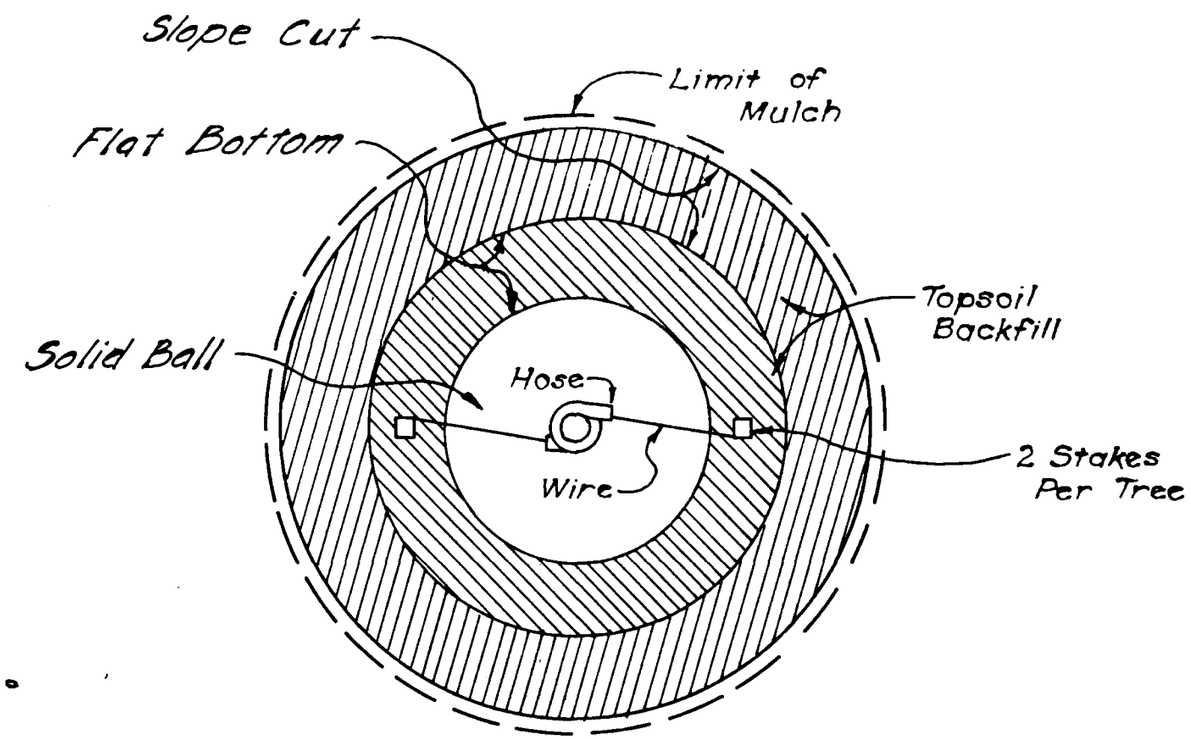
Acc. No. 22499

20-9-34



STAKING DETAIL

Scale ½"=1'0"



PLAN VIEW

No Scale

CITY OF CINCINNATI -
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

STANDARD FOR TREE PLANTING
2-STAKE (WOOD) METHOD

Scales as Indicated

Jan, 1983

Approved: Steve Sandfort
Supervisor of Urban Forestry

Approved: J. A. Bischoff
City Engineer

Revised 3-8-91

Acc. No 22500

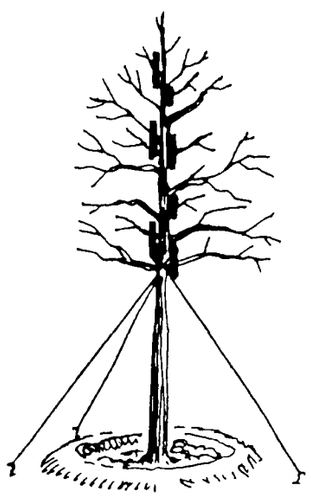
LA-3

20-9-35

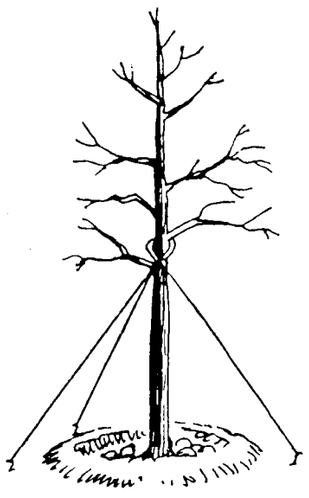
4-9-91

Pruning for Form

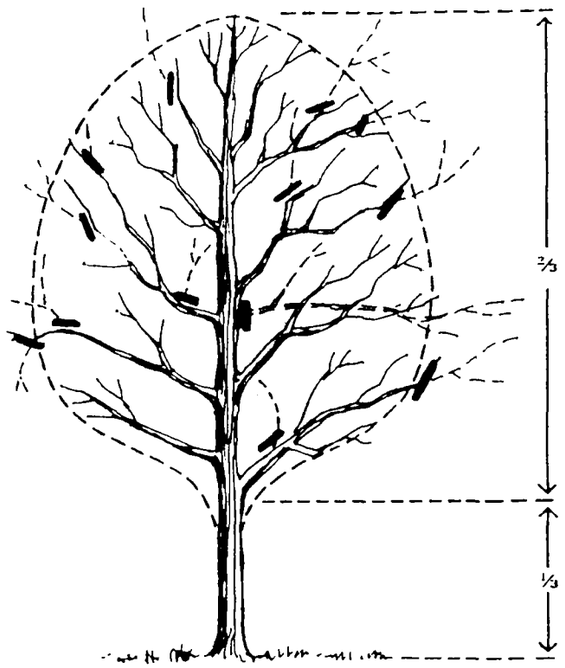
The objective in pruning for form is to help shape a tree that is aesthetically pleasing and serves well in the space it is to occupy. After pruning with strength in mind, look for ways to help shape the most desirable tree.



Before pruning

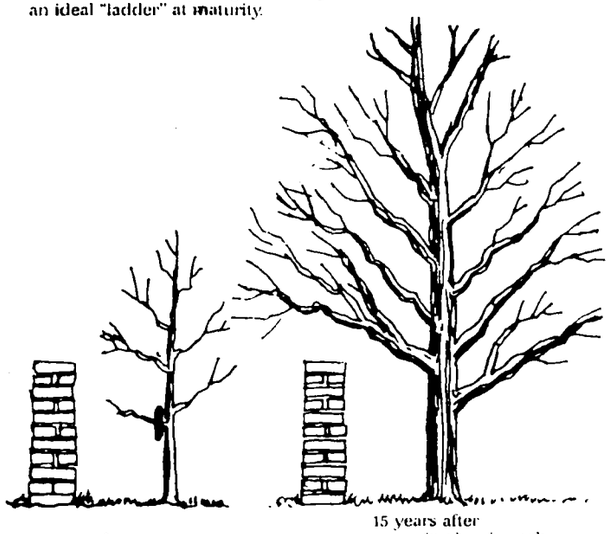


After



Thinning and Spacing

Most trees benefit from thinning — removing a portion of the limbs that compete for space and light. Evenly spaced laterals, 8-12 inches apart in the young tree, is a good rule of thumb to help assure an ideal "ladder" at maturity.



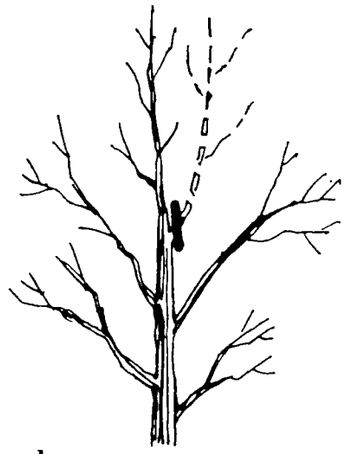
15 years after removing low branch

Function

Try to imagine what the tree will look like when it is larger. If a limb is headed toward trouble (the house, walkway, sign, etc.), remove as early as possible in the life of the tree. Closure of the wound will be more complete when the limb is small, and it is less trouble and expense. Remember; limbs do not move upward as a tree grows in height.

Ingrowers Protruders and Crown Ratio

When a crown is dense, look for limbs that turn inward, and those that extend beyond the "natural" outline of the crown. Prune at the trunk or down to an appropriate lateral branch. Over-pruning can damage or even kill your tree. Always maintain at least ⅔ of the tree as the live crown.



Double Leaders

Protect the leader from competition. In trees with co-dominant leaders, remove the one with a crook or other defects, or that creates a lop-sided appearance.

Caution: Do not prune too high too quickly. To "lift" (raise) the crown, remove lower limbs over several years. No more than 1/3 of the live crown should ever be removed in a single cutting.

Approved: Steve Sandhorst
SUPERVISOR OF URBAN FORESTRY

4-9-91

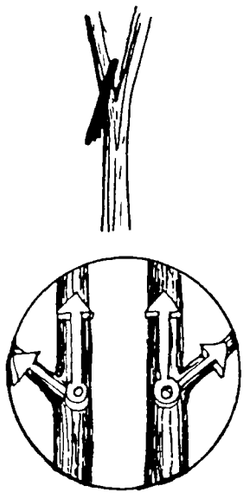
Pruning for Strength

The first guide to pruning a young shade tree is to have a clear understanding about what pruning can do for the tree — and you.

For example, we know to prune modestly — if at all — when transplanting a new tree. An immediate objective must be to strengthen and expand the root system which is usually reduced by 80-90 percent during transplanting. To meet this objective, as much as possible of the leaf surface (the tree's food factories) is left intact. Only damaged or dead limbs should be removed.

After the first year, pruning should begin in earnest. Pruning with strength as the objective is the best way to avoid weak branches later on, and to prevent expensive corrections that will otherwise become necessary.

What to look for:

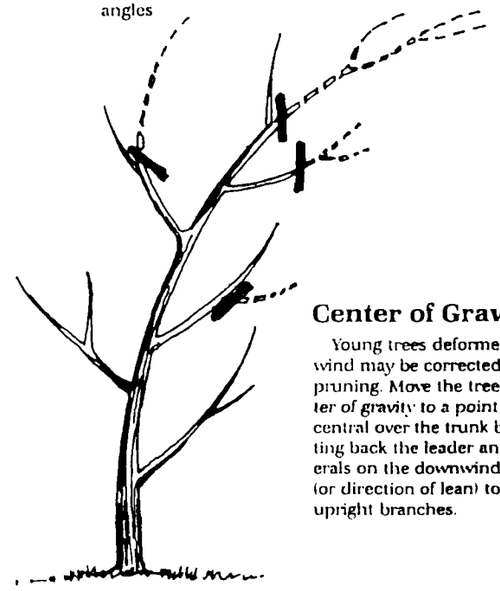


Ideal angles

Branch Angles and Size

Narrow angles signal a point of future weakness, whether in the trunk or crown. The reason is that as the two branches grow, neither has sufficient space to add the wood needed for strength. Instead, they grow against each other. The effect is similar to hammering in a wedge. To prevent this and the expensive problems that are sure to follow, simply remove one of the two branches. For strength, the ideal branching angle approximates 10 or 2 o'clock.

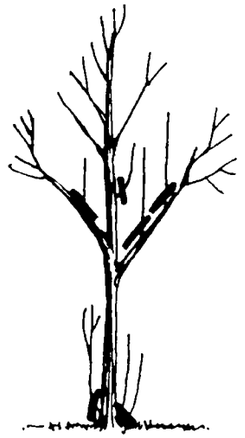
Lateral branches should be no more than ½ to ¾ the diameter of the trunk. As the trunk grows it will strengthen the joint by adding wood around the branch — like a dowel in a chair leg.



Center of Gravity

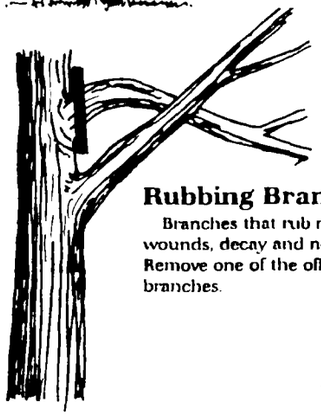
Young trees deformed by wind may be corrected by pruning. Move the tree's center of gravity to a point more central over the trunk by cutting back the leader and laterals on the downwind side (or direction of lean) to more upright branches.

Injured or obviously diseased limbs should also be promptly removed. *Caution: When pruning diseased trees, dip your shears in household bleach or rubbing alcohol before storing or moving to the next tree. Be sure to rinse and wipe dry before storage.*



Watersprouts and Suckers

These "parasite" sprouts can occur at the base or inside the crown. They are rapidly growing, weakly attached, and upright. Usually they use more energy than they return to the tree. It is best to remove them as soon as possible when it is obvious they are vigorous sprouts.

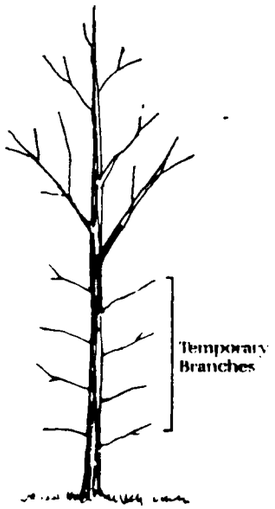


Rubbing Branches

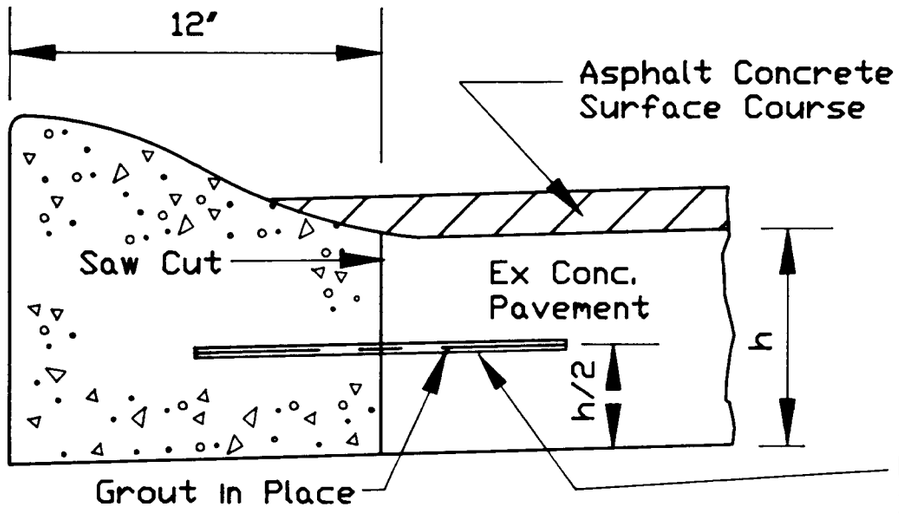
Branches that rub result in wounds, decay and notches. Remove one of the offending branches.

Temporary Branches

Branches below the lowest permanent branch can protect young bark from injury from the sun and add taper and strength to the trunk. Particularly in lawn plantings where lower limbs do not block passage or tempt vandals, the limbs may be left for 3-4 years after planting. Then remove over the next 2-3 years, beginning with the larger temporaries. Don't let the temporary branches become large and vigorous. Shorten the larger temporary branches, or remove vigorous temporaries if less vigorous ones can be selected.

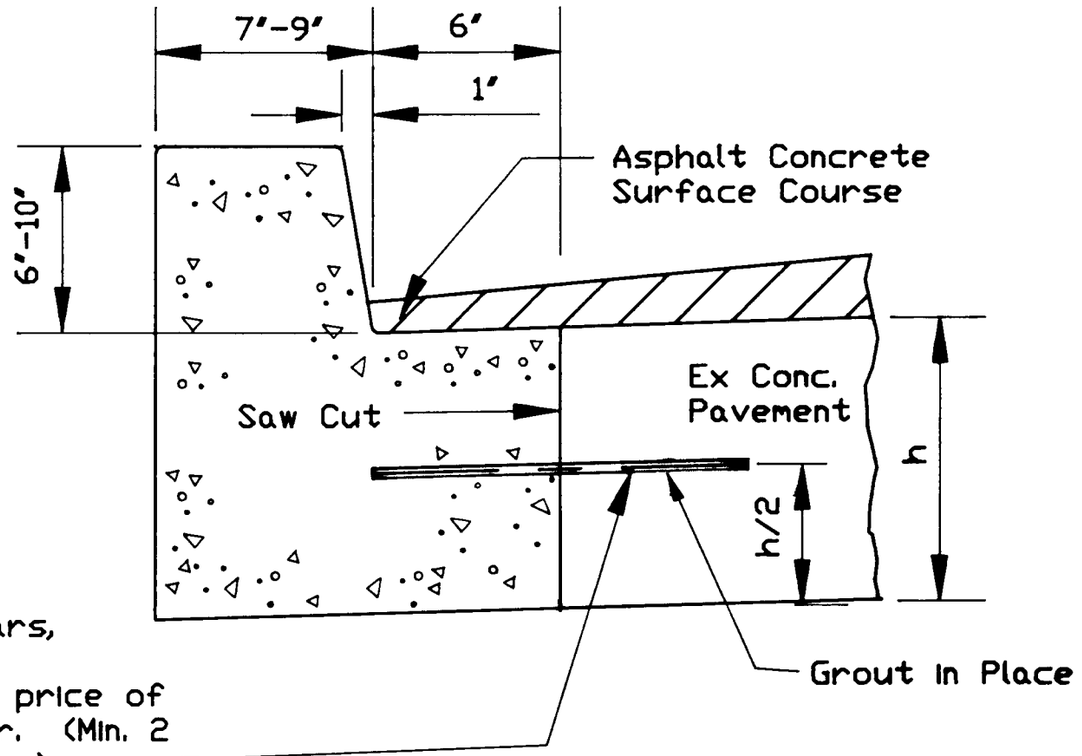


Approved: T E Young
CITY ENGINEER



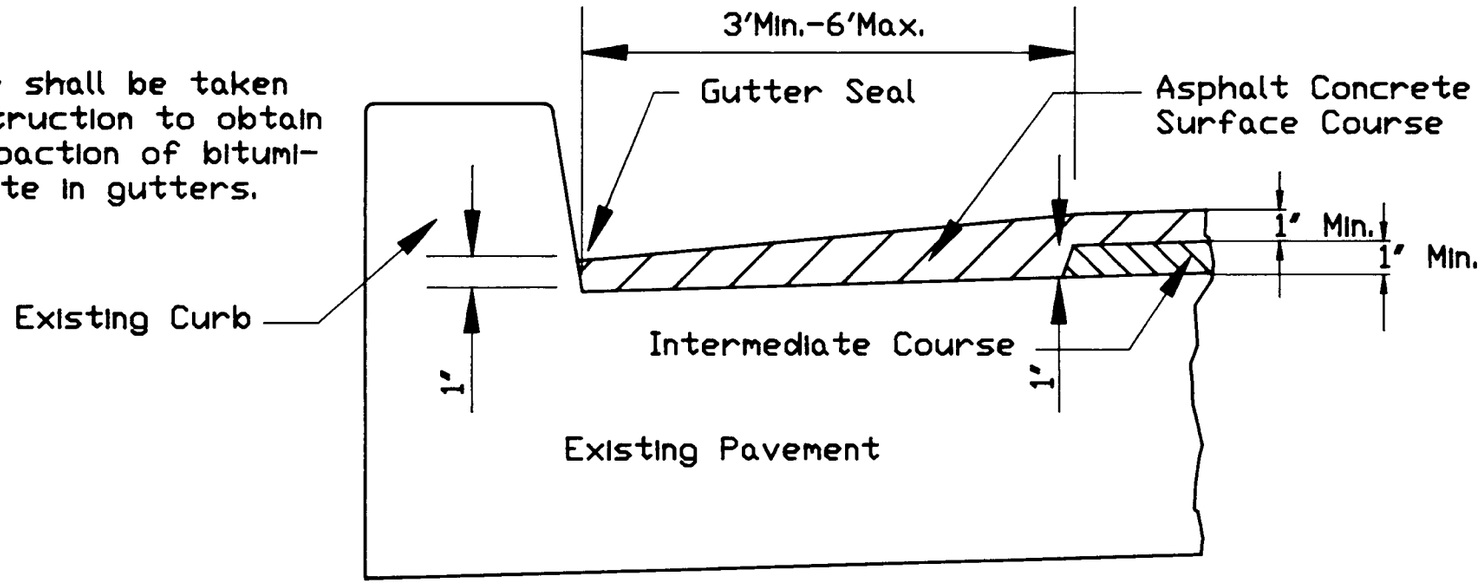
Epoxy Coated No. 5 Bars,
12″ long @ 36″ o.c.
Cost to be included in price of
Item 609 - Curb Repair. (Min. 2
Bars per Repair Section.)

TYPE R-2



TYPE P-4

Special care shall be taken during construction to obtain maximum compaction of bituminous concrete in gutters.



GUTTER FINISH

CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

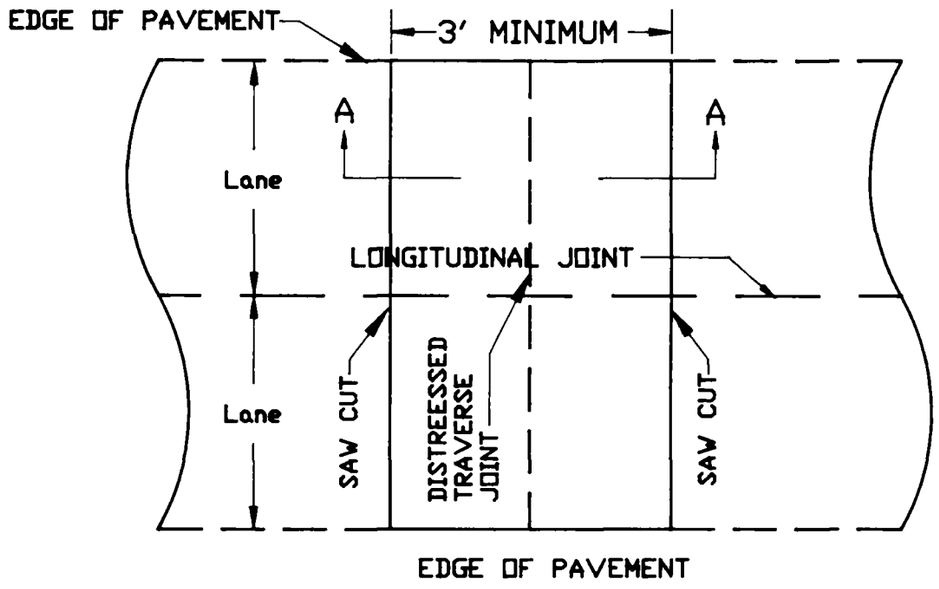
CONCRETE CURB REPAIR

SCALE: 3/16″= 1″ FEBRUARY, 1991

APPROVED: T. Young 4-4-91
CITY ENGINEER

ACC. NO. 21511

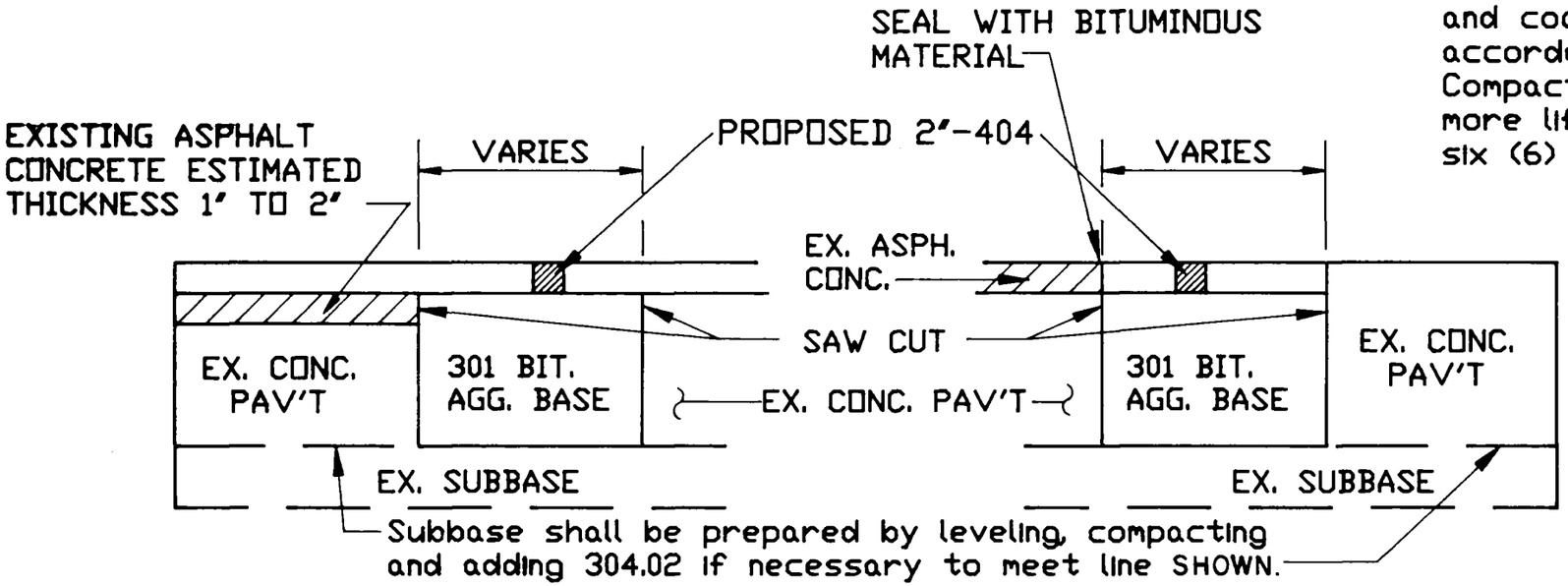
HALF OR FULL WIDTH TRANSVERSE JOINT REPAIR



PLAN

These details are for the repair of deteriorated transverse pavement joints and other small deteriorated areas. The locations and size of the repairs shall be at the direction of the Engineers. When half width replacements are used, the longitudinal joints shall be sawed full depth and any bars or hook bolts encountered shall be cut off flush with the existing pavement. In repair areas where existing curb is to remain, the pavement shall be saw cut full depth parallel to the curb to prevent damage to the curb. Any damage to the existing curb shall be repaired at the contractor's expense as directed by the Engineer.

Saw existing pavement full depth on each side of deteriorated joint and cut existing dowels and reinforcing. Prior to placing the Bituminous Aggregate Base, all vertical faces shall be cleaned and coated with bituminous material in accordance with 401.12. Placement & Compaction of 301 shall be in two or more lifts with a maximum lift of six (6) inches.



RESURFACING OVER REPAIR AREA

SPOT REPAIR AREA

SECTION A-A

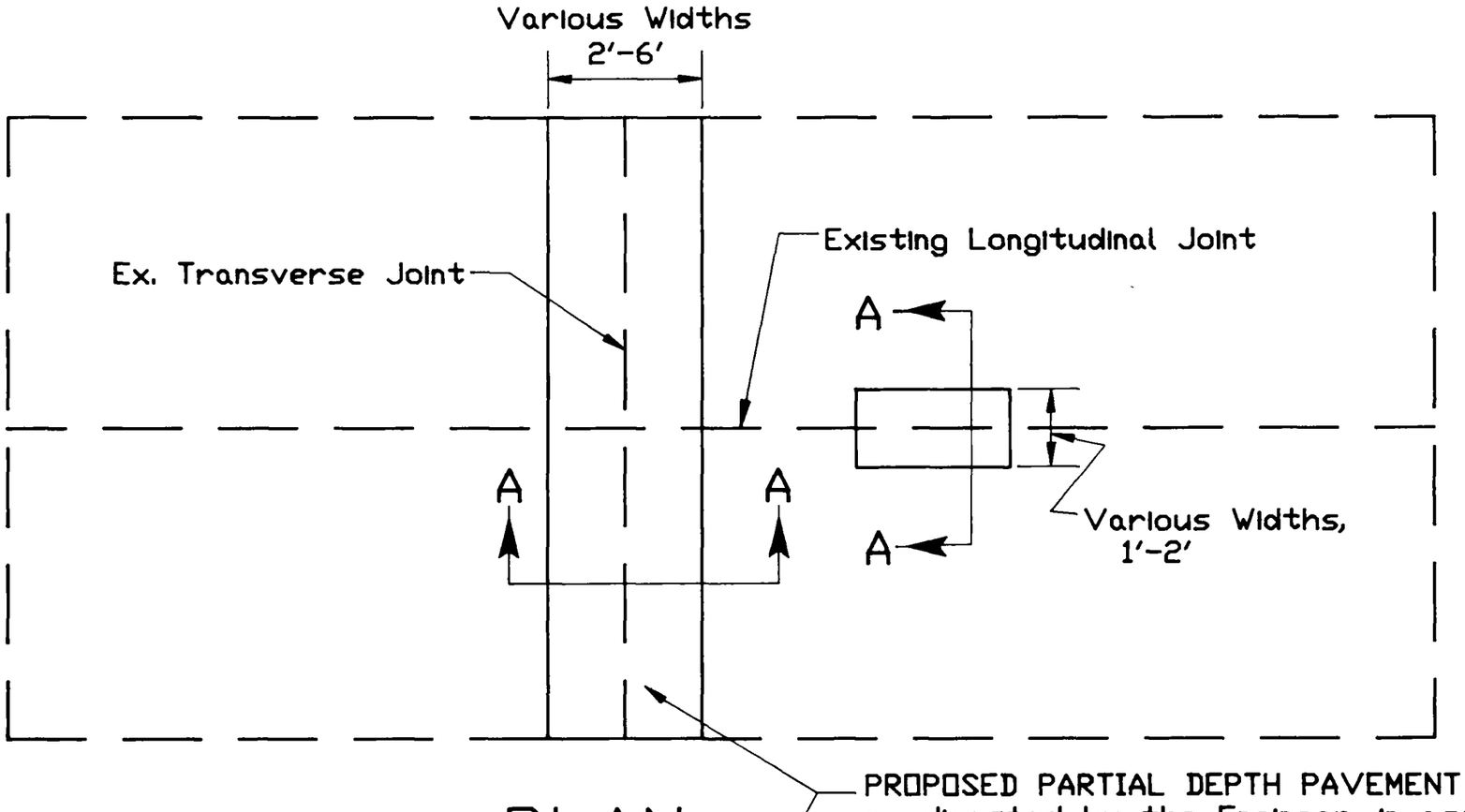
CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

FULL DEPTH ASPHALT REPAIR IN CONCRETE PAVEMENT

FEBRUARY, 1991

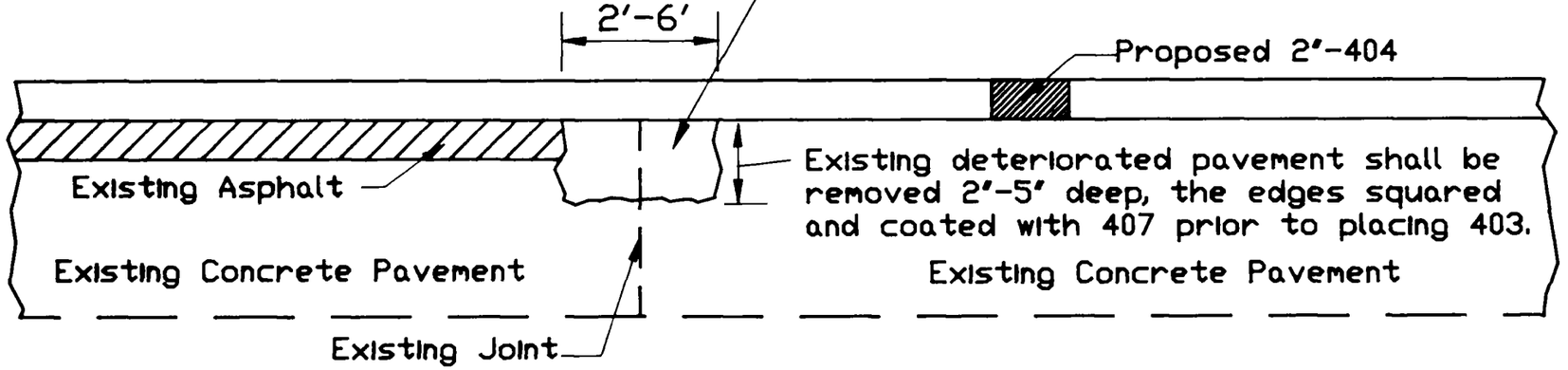
T E Young 4-5-91
CITY ENGINEER

ACC. NO. 21512



PLAN

PROPOSED PARTIAL DEPTH PAVEMENT REPAIR as directed by the Engineer, in accordance with the proposal note for "ITEM SPECIAL-PARTIAL DEPTH PAVEMENT REPAIR (CONCRETE PAVEMENT)".



TYPICAL SECTION A-A

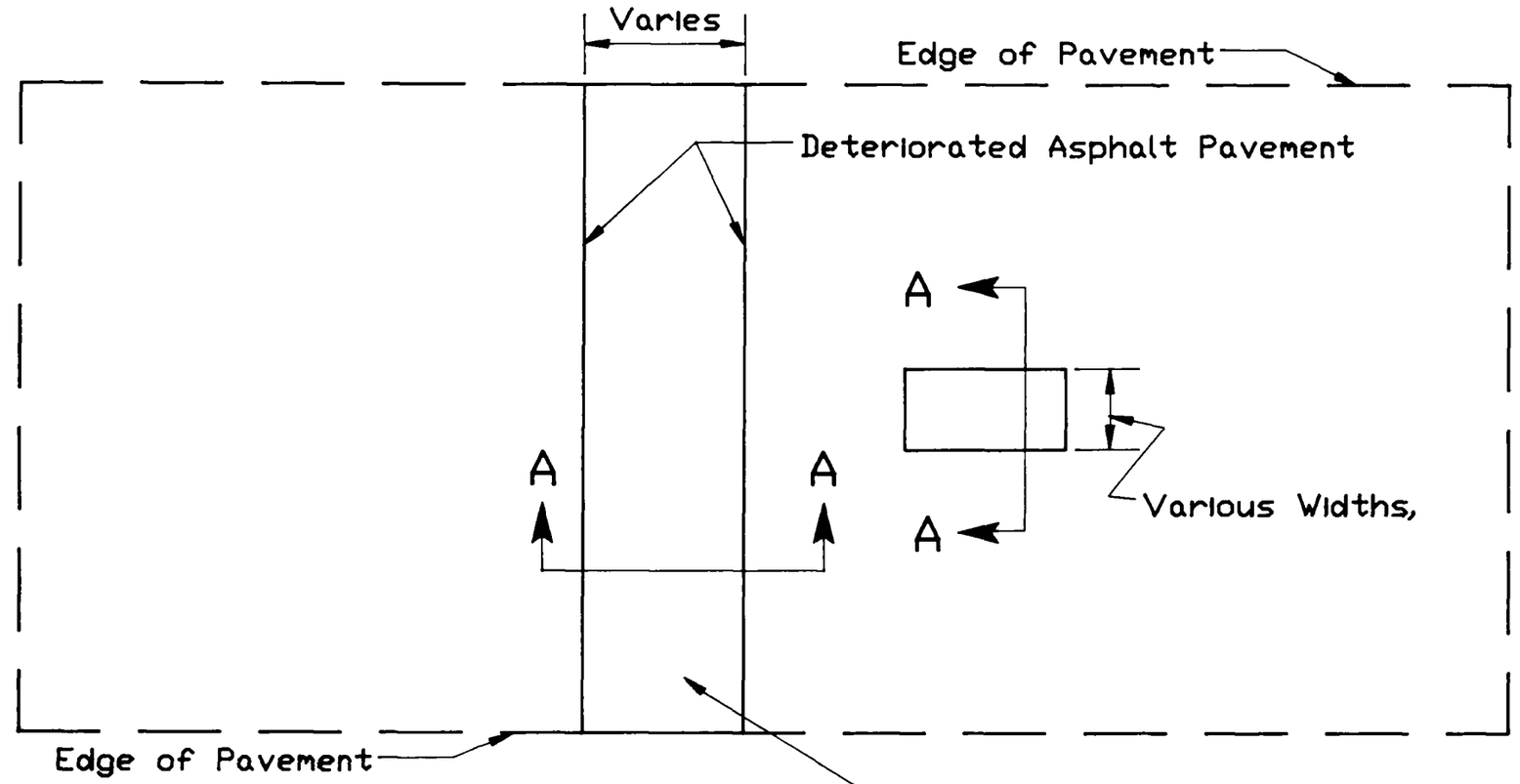
CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

PARTIAL DEPTH ASPHALT REPAIR IN CONCRETE PAVEMENT

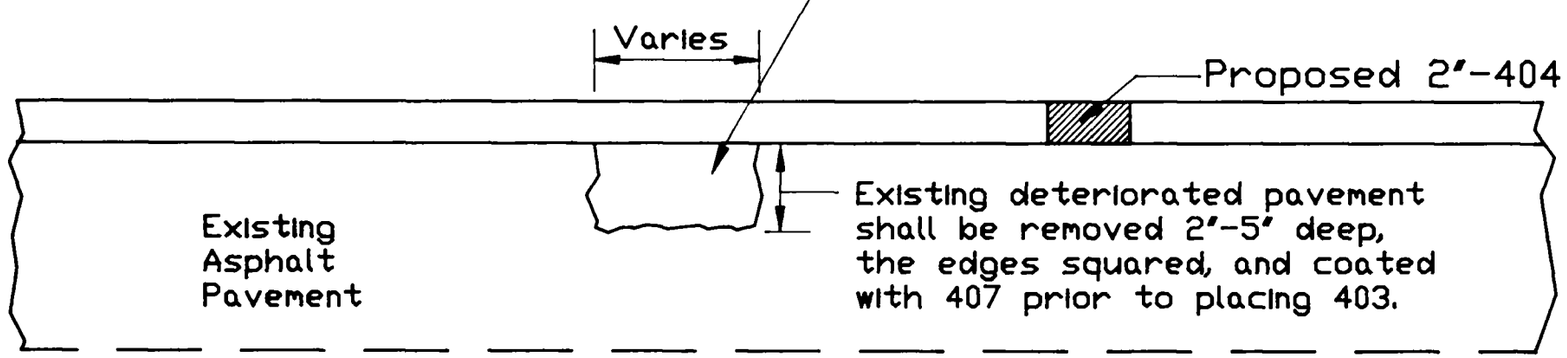
FEBRUARY, 1991

T.E. Young 4-8-91
CITY ENGINEER

ACC. NO. 21513



PLAN



TYPICAL SECTION A-A

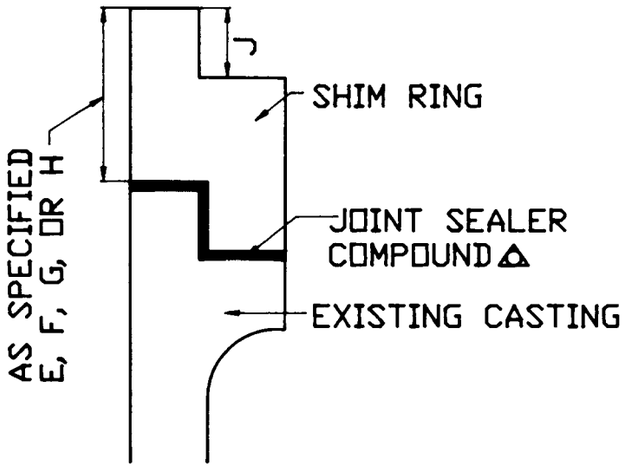
CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

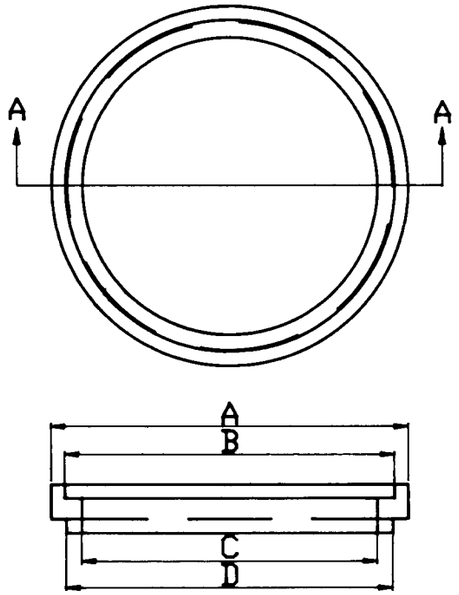
PARTIAL DEPTH ASPHALT REPAIR IN ASPHALT PAVEMENT

February, 1991

T. Young 4.8.91
CITY ENGINEER

ACC. NO. 21514



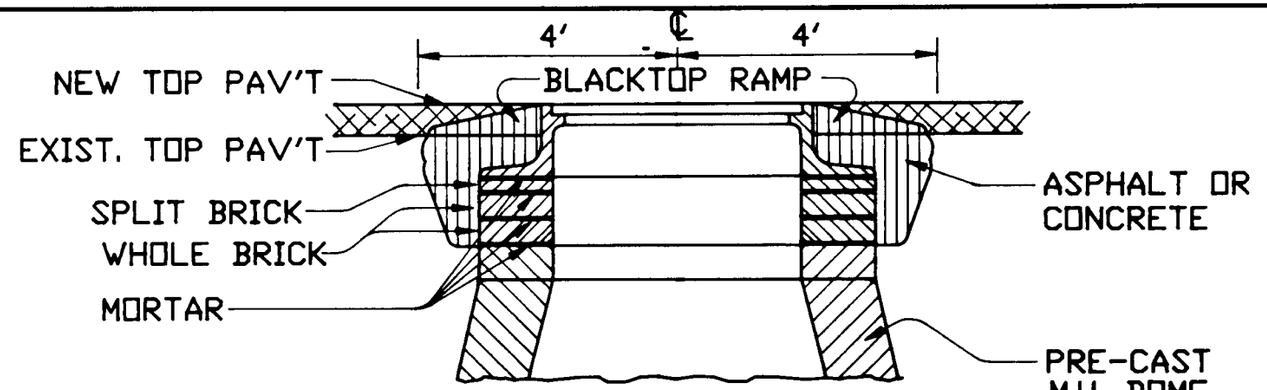


CASTINGS	DIMENSIONS IN INCHES								
	A	B	C	D	E	F	G	H	J
MANHOLE	26	24	21 1/2	23 3/4	1 1/2	2	2 1/2	3	1

MATERIAL - ASTM DESIGNATION
A-48, CLASS 40 CAST IRON

INSTALLATION

#1 CLEAN CASTING WITH WIRE BRUSH.
#2 INSERT SHIM AND CHECK FIT.
#3 IF SHIM DOES NOT FIT PROPERLY, CASTING SHALL BE ADJUSTED BY USING BRICK AND MORTAR.
#4 REMOVE SHIM AND APPLY JOINT SEALER COMPOUND TO CASTING SEATING SURFACE.
#5 INSERT SHIM ON CASTING. - STACKING OF RINGS SHALL NOT BE PERMITTED.
#6 USE PAVING BREAKER TO CUT OUT AROUND CASTING. - 6"W. X 1 1/2"D.
#7 ADD STORAGE MIX BLACKTOP TO CUT AND FORM RAMP TO LIP OF CASTING. TAMP FIRMLY. - RAMP SHALL BE REMOVED IMMEDIATELY PRIOR TO MACHINE PAVING.
#8 ALL MANHOLE FRAMES AND COVERS OTHER THAN STANDARD SHALL BE REPLACE WITH STANDARD CASTINGS. (ACC. # 49005)
IN ACCORDANCE WITH 706.10 OF THE STATE OF OHIO CONSTRUCTION AND MATERIALS SPECIFICATION.



INSTALLATION

#1 ALL M.H.s ADJUSTED WITH BRICK AND MORTAR PRIOR TO MACHINE PAVING ARE PERMITTED TO BE GROUND CUT.
#2 IF NEW ADJUSTMENT OF M.H. ELEVATES CASTING GREATER THAN 12" ABOVE DOME SECTION OF M.H., THAT M.H. SHALL BE RECONSTRUCTED IN ACCORDANCE WITH 604.03 OF THE CITY SUPPLEMENT OF THE STATE OF OHIO CONSTRUCTION AND MATERIAL SPECIFICATIONS.
#3 IF NEW ADJUSTMENT OF EXISTING M.H. IS LESS THAN 12" ABOVE DOME THE CASTING SHALL BE CUT OUT TO TOP OF EXISTING MASONRY.
#4 THE CASTING SHALL THEN BE RAISED WITH A COMBINATION OF WHOLE AND/OR HALF BRICKS AND MORTAR TO DESIRED HEIGHT. THESE ADJUSTMENTS SHALL BE IN ACCORDANCE WITH 604.05 OF THE CITY SUPPLEMENT OF OHIO CONSTRUCTION AND MATERIAL SPECIFICATIONS.
#5 DRY MIX CONCRETE SHALL BE USED FROM BOTTOM OF CUT TO EXISTING STREET PAVEMENT.
#6 ADD HOT MIX BLACKTOP TO FORM RAMP TO LIP OF CASTING. TAMP FIRMLY. - RAMP SHALL BE REMOVED IMMEDIATELY PRIOR TO MACHINE PAVING.
#7 ALL MANHOLE FRAMES AND COVERS OTHER THAN STANDARD SHALL BE REPLACED WITH STANDARD CASTINGS.
(ACC. # 49005)

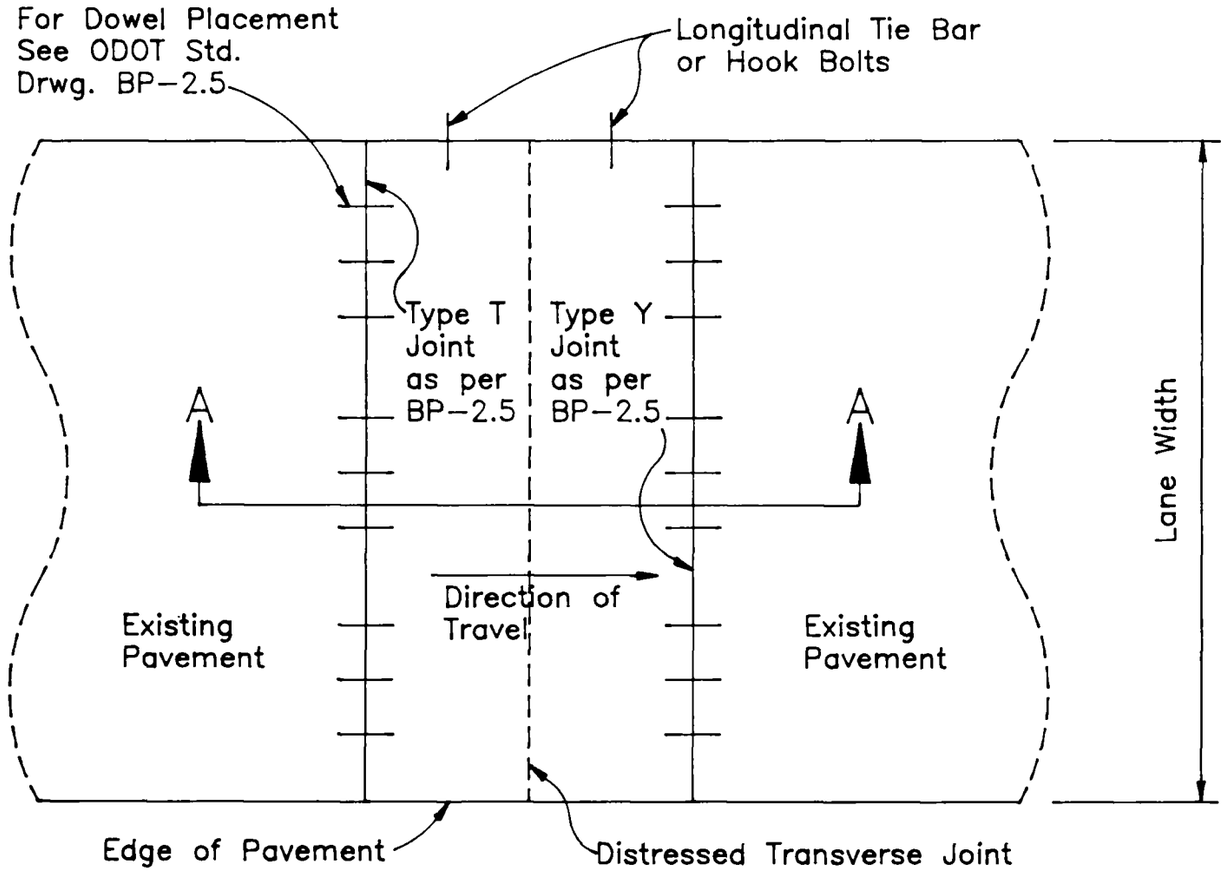
CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

ADJUSTING MANHOLES

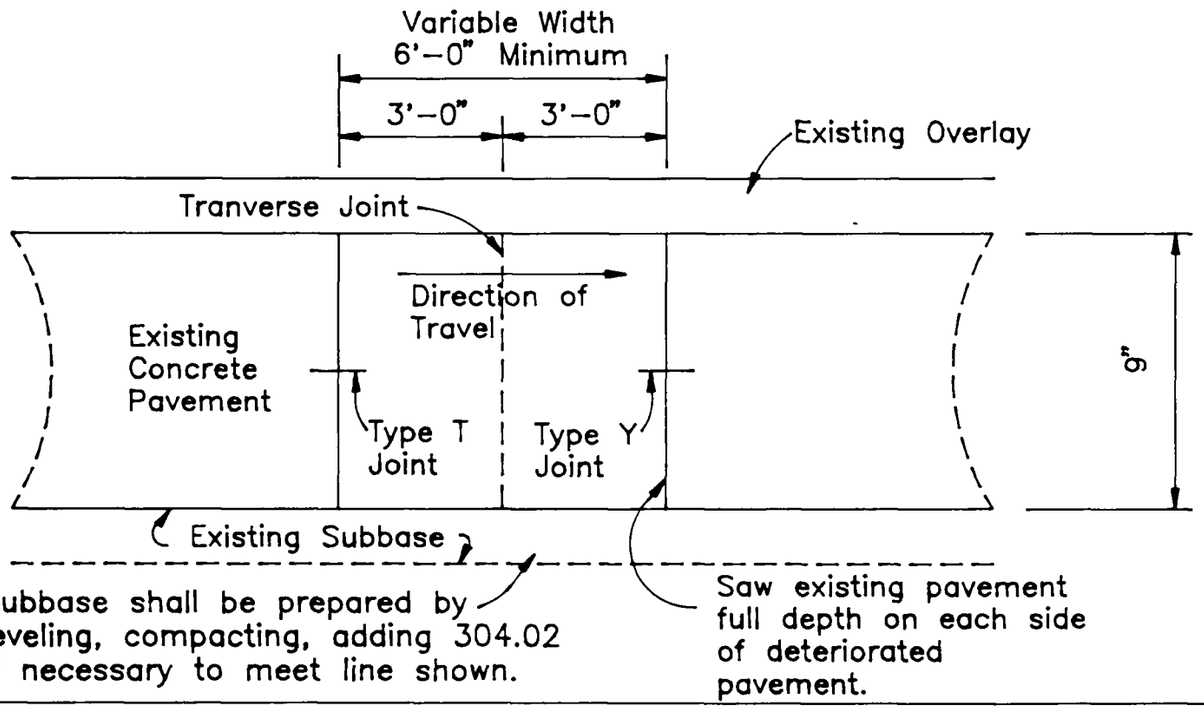
SCALE: NONE FEBRUARY , 1991

T. Young 4-3-91
CITY ENGINEER

ACC. NO. 21502



PLAN VIEW



SECTION A-A

CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

CONCRETE PAVEMENT-FULL DEPTH REPAIR

SCALE: NONE MAY 1995

CITY ENGINEER

ACC. NO. 21515