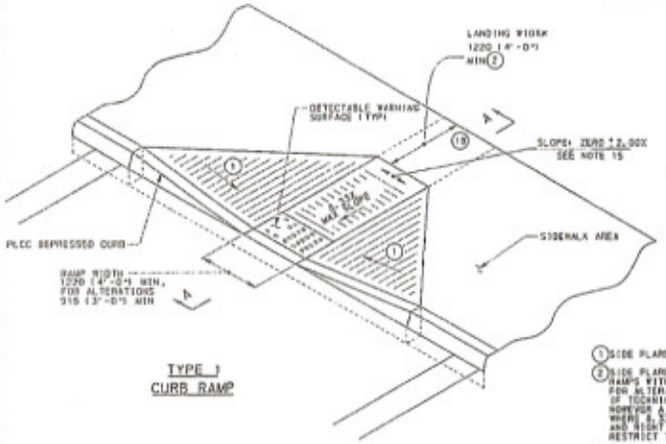
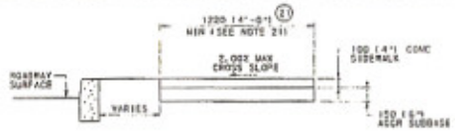
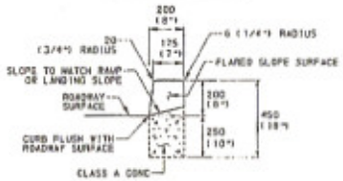


TYPE 1
CURB RAMP



SIDEWALK
TYPICAL SECTION



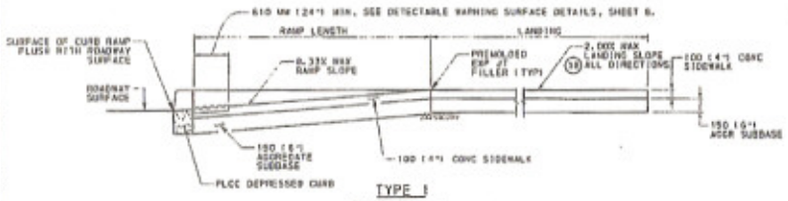
DEPRESSED CURB

(1) SIDE FLARES 10.00% MAX SLOPE

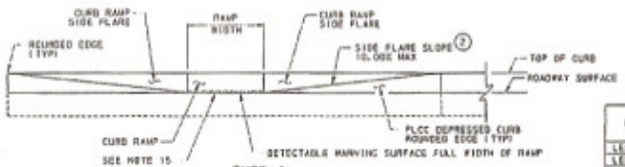
(2) SIDE FLARES 8.33% MAX FOR RAMPS WITH A LANDING LESS THAN 1220 (4'-0"). FOR ALTERATIONS OF TECHNICALLY FEASIBLE A LANDING IS REQUIRED. HOWEVER A LANDING IS NOT REQUIRED WHERE 8.33% SIDE FLARE SLOPES ARE PROVIDED AND RIGHT OF WAY OR OTHER STRUCTURAL FEATURES RESTRICT THE INSTALLATION OF A LANDING.

(18) CURB RAMPS REQUIRE A 1220 X 1220 (48" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIANS PERFORM TURNING MANEUVERS.

(21) FOR NEW CONSTRUCTION
MINIMUM SIDEWALK WIDTH 1220 (4'-0")
FOR ALTERATIONS:
MINIMUM SIDEWALK WIDTH 915 (3'-0")



TYPE 1
SECTION A-A



TYPE 1
ELEVATION

RECOMMENDED SLOPES	MAX ALLOWABLE SLOPES
8.33%	10.00%
7.14%	8.33%
1.00%	2.00%

DESIGN SLOPES

PERCENT SLOPE	EQUIVALENT SLOPE
10.00%	10:1 (1:10)
8.33%	12:1 (1:12)
7.14%	14:1 (1:14)
2.00%	50:1 (1:50)
1.00%	100:1 (1:100)

EQUIVALENT SLOPES

EXISTING CURB HEIGHT	MAX ALLOWABLE RAMP SLOPE	MAX ALLOWABLE FLARED SIDE SLOPE
LESS THAN OR EQUAL TO 3"	12.50%	12.50%
LESS THAN OR EQUAL TO 6"	10.00%	10.00%
GREATER THAN 6"	8.33%	8.33%

ALTERATION RAMP SLOPES BASED
ON EXISTING CURB HEIGHT
(SEE NOTES 18 AND 19)

NOTES

1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTIONS 350, 409, 630, 676, 694 AND 695.
2. PROVIDE EXPANSION JOINT MATERIAL (3 X 1 1/2") THICK WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE.
3. DIAGONAL CURB RAMPS IN LIEU OF SEPARATE CURB RAMPS ARE NOT TO BE INSTALLED, UNLESS APPROVED BY ADE OF DESIGN OR DELEGATE. THE BOTTOM OF DIAGONAL CURB RAMPS SHALL HAVE A 1220 X 1220 (48" X 48") CLEAR SPACE OUTSIDE OF TRAVEL LANES. IF DIAGONAL CURB RAMPS ARE PROVIDED AT MARKED CROSSINGS, THE 1220 X 1220 (48" X 48") CLEAR SPACE SHALL BE WITHIN THE MARKINGS AND OUTSIDE OF THE TRAVEL LANES. SEE SHEET 7 FOR CROSSWALK DETAILS.
4. SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.
5. PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.
6. MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB ALTERATIONS WHERE THE CURB IS LESS THAN THE STANDARD 200 (8") HEIGHT.
7. CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE.
8. IT MAY BE NECESSARY TO LIMIT THE RUN OF A PARALLEL OR PERPENDICULAR CURB RAMP IN ORDER TO AVOID CHASING GRADE INDEFINITELY. RAMP LENGTH MAY TO EXCEED 15'-0", ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT POSSIBLE.
9. MEASURE AND PAY FOR DEPRESSED CURB IN ACCORDANCE WITH SECTION 630.4.
10. WHENEVER POSSIBLE, CONSTRUCT THE TRANSITION SLOPE FROM THE CURB RAMP AND FLARE SIDES TO ADJOINING SURFACES WITH A GRADUAL ROUNDED SHAPE RATHER THAN AN ABRUPT ANGLE. ENSURE CONSTRUCTION DOES NOT EXCEED MAXIMUM SLOPES.
11. CONSTRUCT BUILT-UP CURB RAMP OF BITUMINOUS MATERIAL AS INDICATED, INCLUDING SURFACE PREPARATION AND TACK COAT, AS REQUIRED.
12. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. US CUSTOMARY UNITS IN () PARENTHESIS.
13. ALIGN DETECTABLE WARNING DOMES ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF THE RAMP AND PERPENDICULAR TO CURB.
14. PROVIDE DETECTABLE WARNING SURFACES THAT CONTRAST VISUALLY WITH ADJACENT WALKWAY SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT FOR THE FULL WIDTH OF RAMP.
15. NOWHERE SHALL THE CROSS SLOPE OF THE CURB RAMP OR ACCESSIBLE ROUTE EXCEED 2.00%.
16. FOR NEW CONSTRUCTION AND ALTERATION, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE. THE SLOPES INDICATED IN THE DETAILS SHOW THE MAX SLOPE ALLOWABLE. SLOPES THAT EXCEED THOSE INDICATED IN THE DETAILS WILL NOT BE ACCEPTED AND SHALL BE RECONSTRUCTED.
17. THE IMMEDIATE ADJOINING SURFACE AT THE BOTTOM AND TOP OF CURB RAMPS IS NOT TO EXCEED 5.00% LONGITUDINAL SLOPE AND 2.00% CROSS SLOPE. FOR LOCATIONS THAT REQUIRE A TURNING MANEUVER, THE MAXIMUM SLOPE IS 2.00% IN ALL DIRECTIONS.
18. FOR ALTERATIONS WHERE FEASIBLE, ALL SIDEWALK AND CURB RAMP WIDTHS AND SLOPES SHALL BE CONSTRUCTED TO THE REQUIREMENTS OF NEW CONSTRUCTION.
19. FOR NEW CONSTRUCTION AND ALTERATIONS, WHERE IT IS NOT FEASIBLE TO USE RECOMMENDED SLOPES, THE STEEPER MAXIMUM ALLOWABLE SLOPE MAY BE USED. FOR ALTERATIONS WHERE IT IS NOT FEASIBLE TO USE RECOMMENDED SLOPES OR MAXIMUM ALLOWABLE SLOPES, THE STEEPER SLOPES BASED ON EXISTING CURB HEIGHT MAY BE USED AS SHOWN IN THE TABLE.
20. ALL SLOPES ARE MEASURED WITH RESPECT TO SURROUNDING TERRAIN. THEREFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 6" CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 6' FOR A 12:1 SLOPE).
21. FOR SIDEWALK WIDTHS LESS THAN 1525 (5'-0"), PASSING AREAS 1525 X 1525 (5'-0" X 5'-0") NEED TO BE PROVIDED EVERY 61 METERS (200').

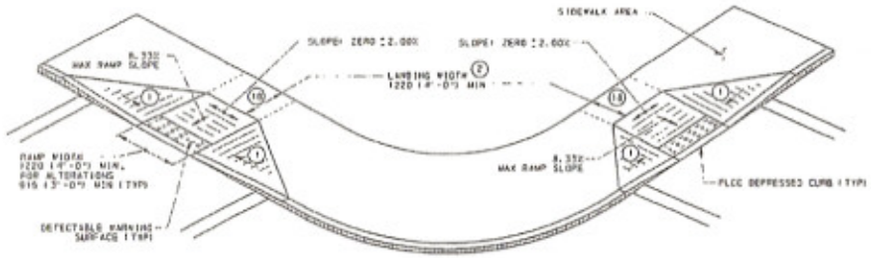
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

CURB RAMPS AND SIDEWALKS

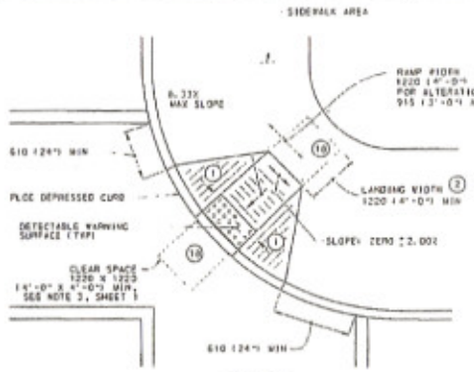
NEW CONSTRUCTION OR
ALTERATION DETAILS

RECOMMENDED XXX XX, 200Z	RECOMMENDED XXX XX, 200Z	SHT 1 OF 12
ACTING CHIEF, HWY. OP DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M

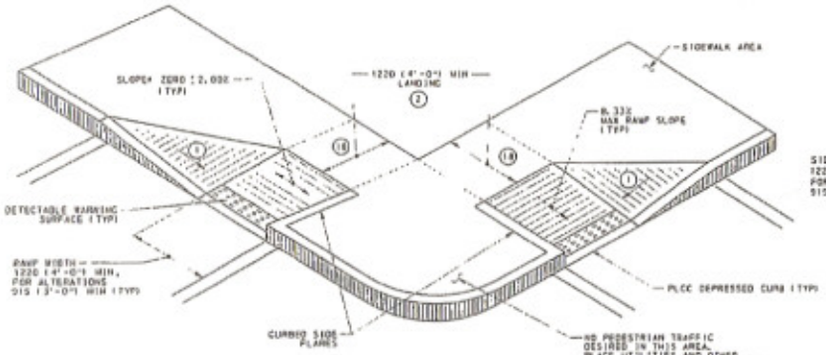


NOTE: IF SPACE IS LIMITED, IT MAY BE NECESSARY TO CURB THE SIDE FLARES OF THE TYPE 1 CURB RAMPS (SEE ALTERNATE INSTALLATION DETAIL BELOW). PEDESTRIAN TRAFFIC SHOULD NOT BE DIRECTED TO CROSS THE VERTICAL DROP.

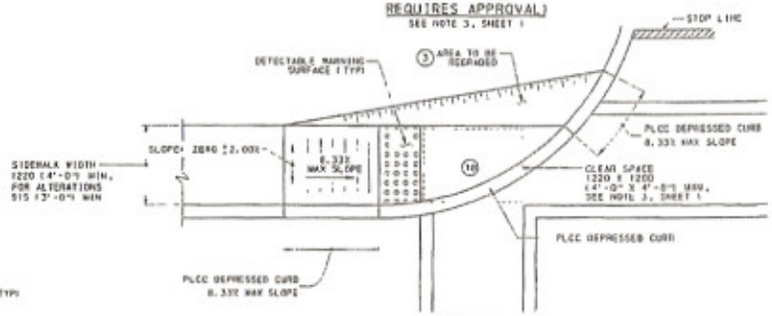
TYPE 1
DOUBLE CURB RAMPS
(PREFERRED INSTALLATION)



TYPE 1
CURB RAMP
(DIAGONAL - REQUIRES APPROVAL)
SEE NOTE 3, SHEET 1



TYPE 1
DOUBLE CURB RAMPS
(ALTERNATE INSTALLATION)



TYPE 1A
CURB RAMP
(DIAGONAL - REQUIRES APPROVAL)
SEE NOTE 3, SHEET 1

NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

① SIDE FLARES 10.00% MAX SLOPE

② SIDE FLARES 8.33% MAX FOR RAMPS WITH A LANDING LESS THAN 1220 (4'-0"). FOR ALTERATIONS: IF TECHNICALLY FEASIBLE A LANDING IS REQUIRED. HOWEVER A LANDING IS NOT REQUIRED WHERE 8.33% FLARE SLOPES ARE PROVIDED AND RIGHT OF WAY OR OTHER STRUCTURAL FEATURES RESTRICT THE INSTALLATION OF A LANDING.

③ OPTIONAL CURB RETURN OR ROLLED CONCRETE SURFACE CAN BE USED TO MEET THE ADJACENT SURFACES IN LIEU OF A REGRADED SLOPE AND DEPRESSED CURB.

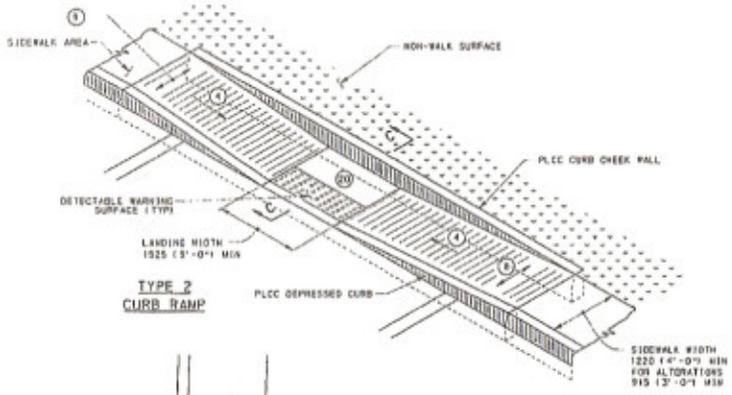
⑩ CURB RAMPS REQUIRE A 1220 X 1220 (48" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIAN PERFORM TURNING MANEUVERS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

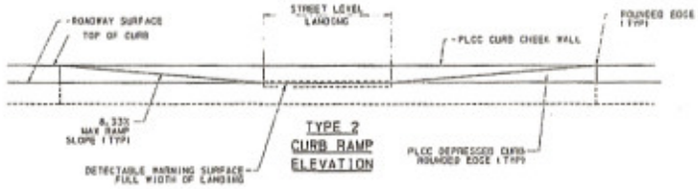
CURB RAMPS AND SIDEWALKS

NEW CONSTRUCTION OR ALTERATION DETAILS
TYPE 1 CURB RAMPS

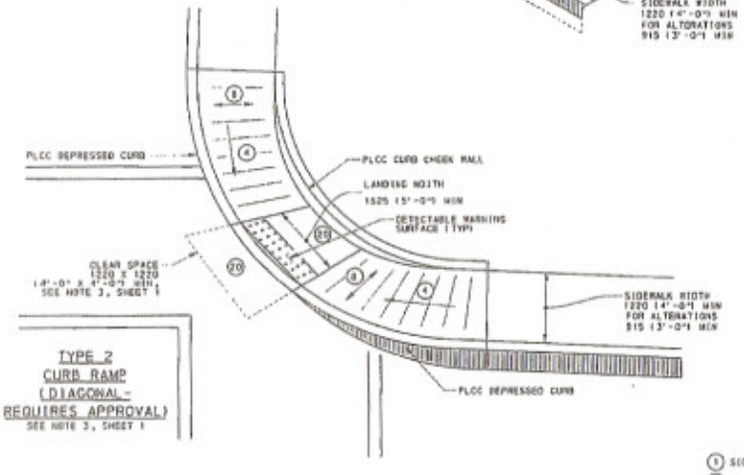
RECOMMENDED MM DD, 20YY	RECOMMENDED MM DD, 20YY	SHT 2 OF 12
ACTING CHIEF, ENG. OR DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M



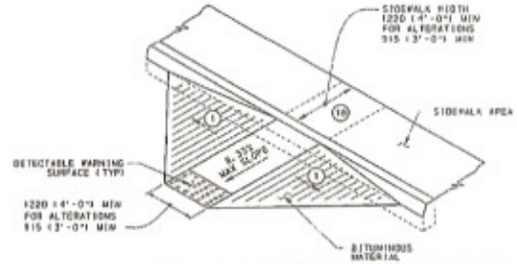
TYPE 2
CURB RAMP



TYPE 2
CURB RAMP
ELEVATION



TYPE 2
CURB RAMP
(DIAGONAL - REQUIRES APPROVAL)
SEE NOTE 3, SHEET 1



NOTES: DO NOT USE TYPE 3 CURB RAMPS IN VEHICULAR TRAFFIC LANES, PARKING SPACES, OR ACCESS AISLES.

TYPE 3
CURB RAMP
(BUILT-UP, FOR ALTERATIONS ONLY)
SEE NOTE 13, SHEET 1

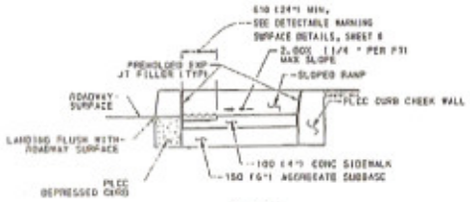
(1) SIDE FLARES 10.00% MAX SLOPE

(4) 8.33% MAX RAMP SLOPE

(8) SLOPES: ZERO ± 2.00%

(10) CURB RAMPS REQUIRE A 1220 X 1220 (48" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIANS PERFORM TURNING MANEUVERS.

(20) TYPE 2 AND TYPE 6 CURB RAMPS REQUIRE A 1525 X 1220 (60" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIANS PERFORM TURNING MANEUVERS.



TYPE 2
CURB RAMP
SECTION C-C

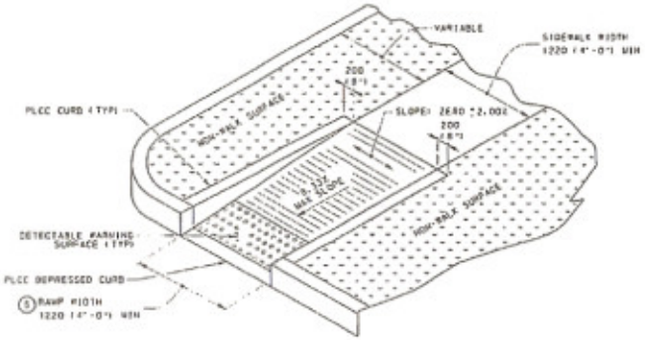
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

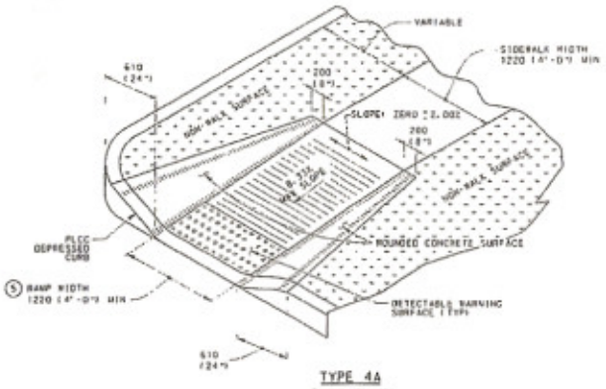
CURB RAMPS AND SIDEWALKS

NEW CONSTRUCTION OR
ALTERATION DETAILS
TYPE 2 AND TYPE 3 CURB RAMPS

RECOMMENDED XXX_XX, 2007	RECOMMENDED XXX_XX, 2007	SHT 3 OF 12
ACTING CHIEF, HWY. DN DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M



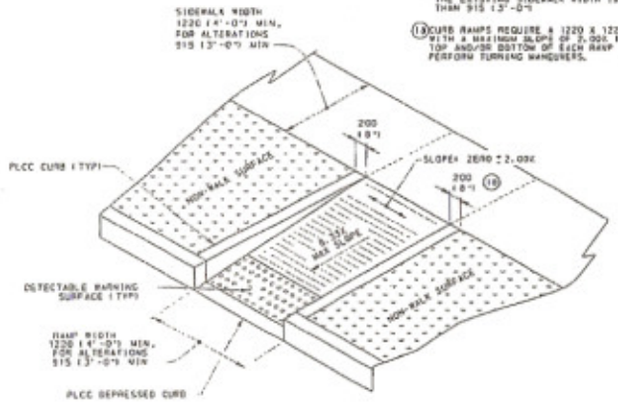
TYPE 4
CURB RAMP
(PARALLEL)



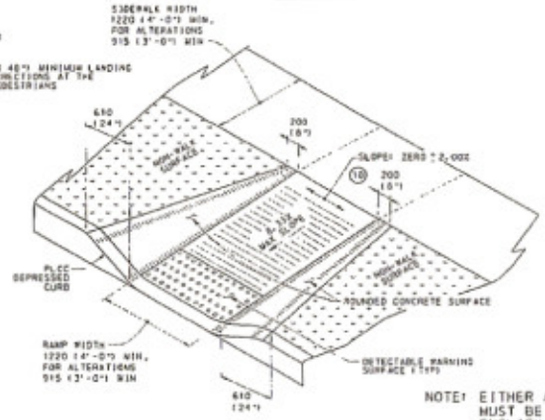
TYPE 4A
CURB RAMP
(PARALLEL)

(5) FOR ALTERATIONS, RAMP WIDTH IS EQUAL TO EXISTING SIDEWALK WIDTH WHEN THE EXISTING SIDEWALK WIDTH IS GREATER THAN 915 (3'-0")

(16) CURB RAMPS REQUIRE A 1220 X 1220 (48" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIANS PERFORM TURNING MANEUVERS.



TYPE 4
CURB RAMP
(PERPENDICULAR)



TYPE 4A
CURB RAMP
(PERPENDICULAR)

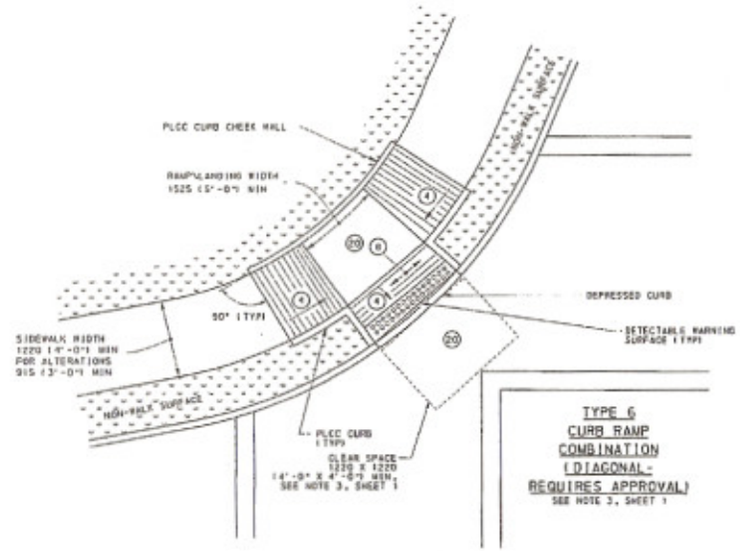
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

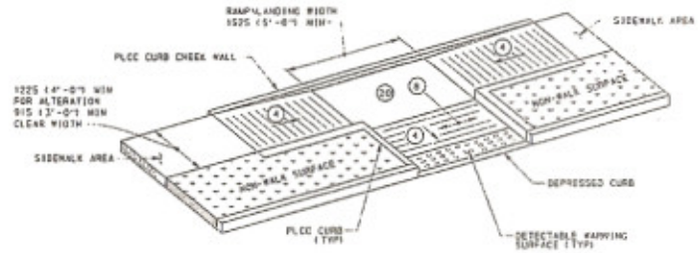
CURB RAMPS AND SIDEWALKS

NEW CONSTRUCTION OR
ALTERATION DETAILS
TYPE 4 CURB RAMPS

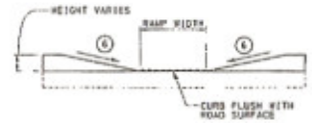
RECOMMENDED XXX XX, 2007	RECOMMENDED XXX XX, 2007	SHT 4 OF 12
ACTING CHIEF, ENG. DN DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M



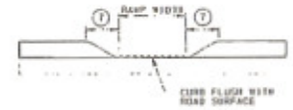
TYPE 6
CURB RAMP
COMBINATION
(DIAGONAL -
REQUIRES APPROVAL)
SEE NOTE 3, SHEET 1



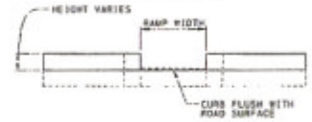
TYPE 6
CURB RAMP
COMBINATION



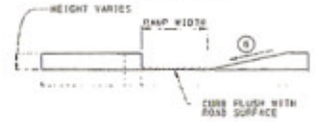
FLARED
TRANSITION



ROLLED
TRANSITION

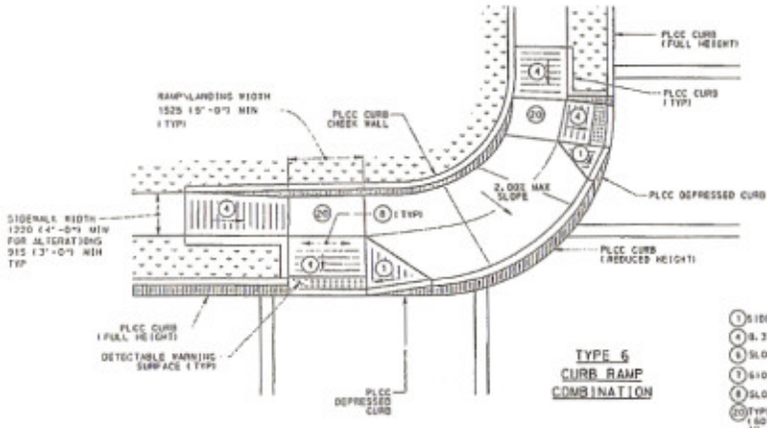


VERTICAL
TRANSITION



COMBINATION
TRANSITION

TYPICAL ELEVATIONS
FOR DEPRESSED CURBS



TYPE 6
CURB RAMP
COMBINATION

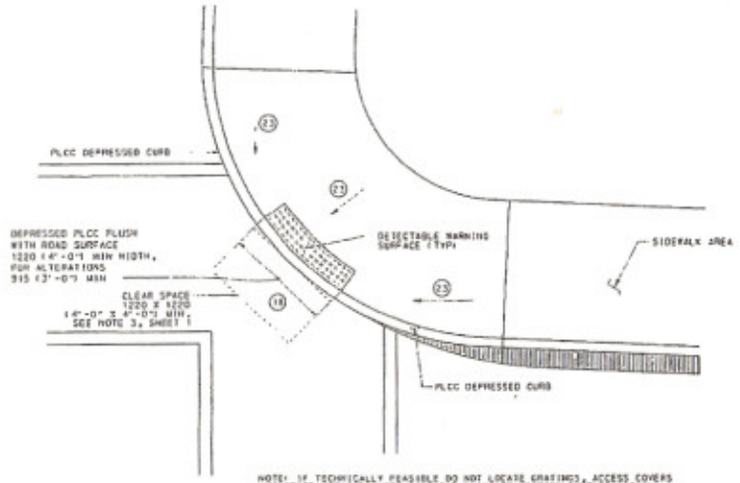
(1) SIDE FLARES (10.00% MAX SLOPE
(4) 8.33% MAX RAMP SLOPE
(6) SLOPE VARIES SEE RAMP DETAILS
(7) 610 (2'-0") ROLLED TRANSITION
(8) SLOPE: ZERO 2.00%
(20) TYPE 2 AND TYPE 6 CURB RAMPS RAMPS REQUIRE A 1525 X 1220 (60" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIANS PERFORM TURNING MANEUVERS.

NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

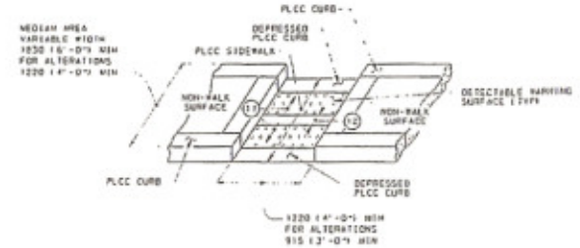
CURB RAMPS AND SIDEWALKS
NEW CONSTRUCTION OR
ALTERATION DETAILS
TYPE 6 CURB RAMPS
AND TYPICAL ELEVATIONS

RECOMMENDED XXX XX, 2007	RECOMMENDED XXX XX, 2007	SHT 5 OF 12
ACTING CHIEF, HWY. GA DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M

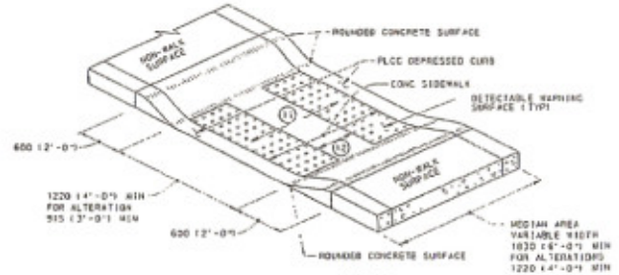


NOTE: IF TECHNICALLY FEASIBLE DO NOT LOCATE GRATINGS, ACCESS COVERS AND OTHER APPURTENANCES ON THE BLENDED TRANSITION SURFACE WITHIN THE PEDESTRIAN ACCESS ROUTE.
FOR ALTERATIONS: UTILITY COVERS IN THE PATH OF TRAVEL ARE ACCEPTABLE IF THE TOP SURFACE IS FLUSH (LESS THAN 1/4" IN ELEVATION DIFFERENCE), FIRM, STABLE AND SLIP RESISTANT. INLET GRATES MUST HAVE OPENINGS NO GREATER THAN 13 (1/2") IN DIRECTION OF TRAVEL.

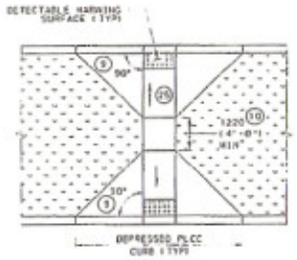
BLENDED TRANSITION
(DIAGONAL-
REQUIRES APPROVAL)
SEE NOTE 3, SHEET 1



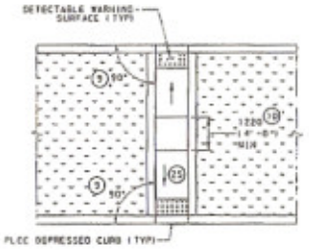
TYPE A
TYPICAL MEDIAN OR ISLAND
ACCESS OPENING
WITH CURB SIDES
(NARROW MEDIANS)



TYPE B
TYPICAL MEDIAN OR ISLAND
ACCESS OPENING
WITH FLARED SIDES
(NARROW MEDIANS)



RAMPED MEDIAN OR ISLAND
ACCESS OPENING
(TYPE 1 DOUBLE CURB RAMPS)



RAMPED MEDIAN OR ISLAND
ACCESS OPENING
(TYPE A DOUBLE CURB RAMPS)

(8) 90° DESIRABLE

(10) LANDINGS ARE NOT REQUIRED FOR RAMP LONGITUDINAL SLOPES 5.00% OR LESS

(11) PROVIDE ADEQUATE SLOPE FOR DRAINAGE (2.00% MAX)

(12) NO SEPARATION BETWEEN DETECTABLE WARNING SURFACES FOR MEDIAN AREAS LESS THAN 1525 (5'-0").

(18) CURB RAMPS REQUIRE A 1220 X 1220 (48" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIANS PERFORM TURNING MANEUVERS.

(23) 5.00% MAX RUNNING SLOPE

(24) FOR SLOPES GREATER THAN 5.00% A LEVEL LANDING WILL BE REQUIRED.

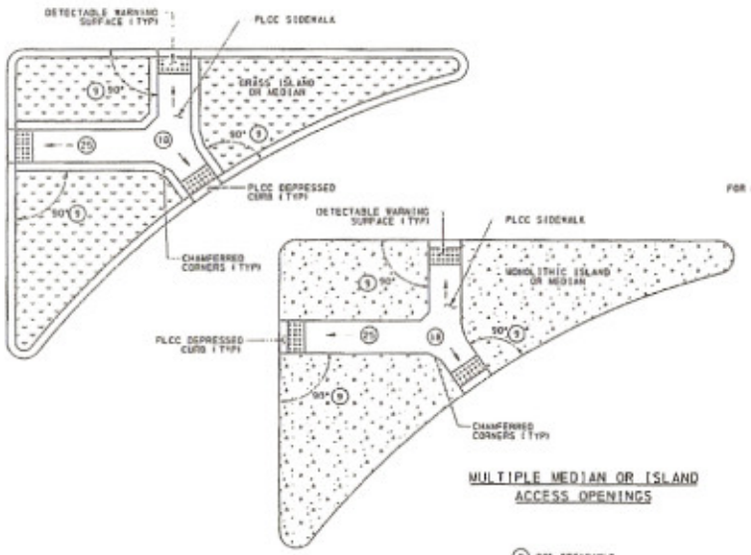
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

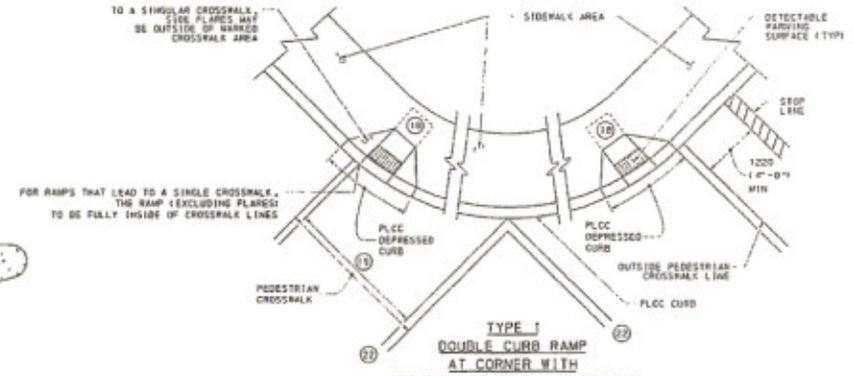
CURB RAMPS AND SIDEWALKS

NEW CONSTRUCTION OR
ALTERATION DETAILS

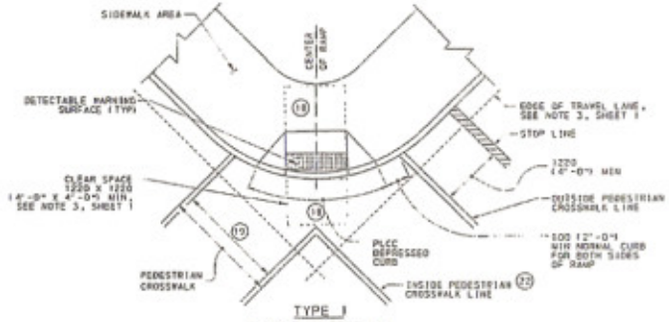
RECOMMENDED XXX XX, 2001	RECOMMENDED XXX 29, 2002	SHT 6 OF 12
ACTING CHIEF, HWY. DN DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M



MULTIPLE MEDIAN OR ISLAND ACCESS OPENINGS



TYPE J
DOUBLE CURB RAMP
AT CORNER WITH
SEPARATE CROSSWALK MARKINGS
PLAN



TYPE J
SINGLE CURB RAMP
AT CORNER WITH
CROSSWALK MARKINGS
PLAN
(DIAGONAL - REQUIRES APPROVAL)
SEE NOTE 3, SHEET 1

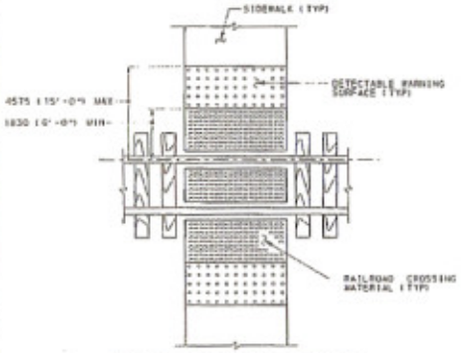
(9) 90° DESIRABLE

(18) CURB RAMPS REQUIRE A 1220 X 1220 (48" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIANS PERFORM TURNING MANEUVERS.

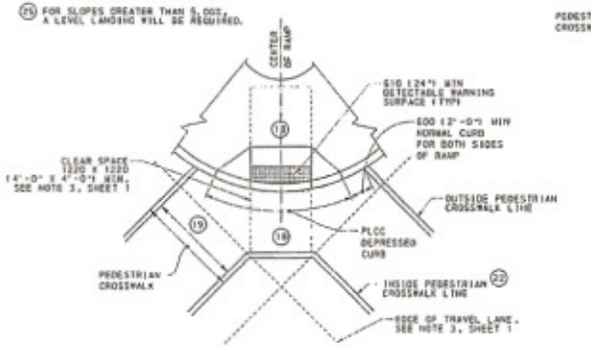
(19) 1830 (6'-0") MIN MEASURED FROM INSIDE OF PAINTED EDGE TO INSIDE OF PAINTED EDGE

(22) THE INSIDE PEDESTRIAN CROSSWALK LINES MUST BE OUTSIDE OF THE PROJECTED CURB LINES.

(25) FOR SLOPES GREATER THAN 5.00%, A LEVEL LANDING WILL BE REQUIRED.



TYPICAL DETECTABLE WARNING SURFACE AT RAILROAD CROSSING



DETAIL A
CLEAR SPACE
AT CROSSWALK MARKINGS
PLAN
(DIAGONAL - REQUIRES APPROVAL)
SEE NOTE 3, SHEET 1

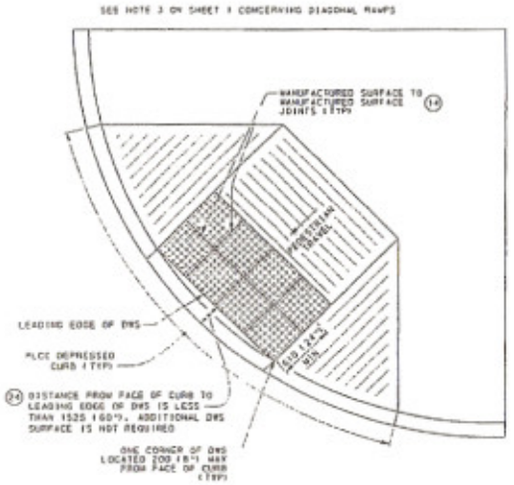
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

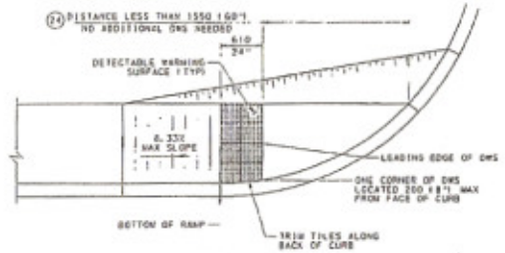
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

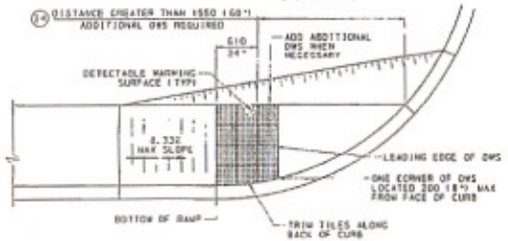
CURB RAMPS AND SIDEWALKS

NEW CONSTRUCTION OR ALTERATION DETAILS

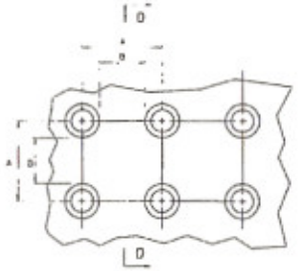
RECOMMENDED XXX XX, 2007	RECOMMENDED XXX XX, 2007	SHT 7 OF 12
ACTING CHIEF, ENG. DA DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M

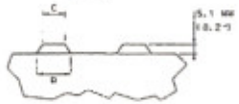






DETECTABLE WARNING SURFACE (DWS)
ON CURVED SURFACES





SECTION D-D

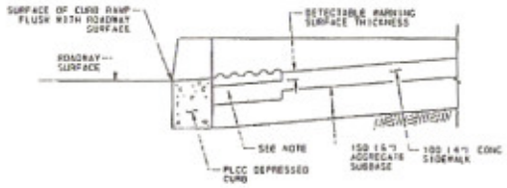
TRUNCATED DOME DIMENSIONS		
DIM	MIN mm (inch)	MAX mm (inch)
A	41 (1.6")	61 (2.4")
B	17 (0.65")	38 (1.5")
C	(13)	(13)
D	23 (0.9")	36 (1.4")

DETECTABLE WARNING SURFACE (DWS)
TRUNCATED DOME DETAILS

(13) THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

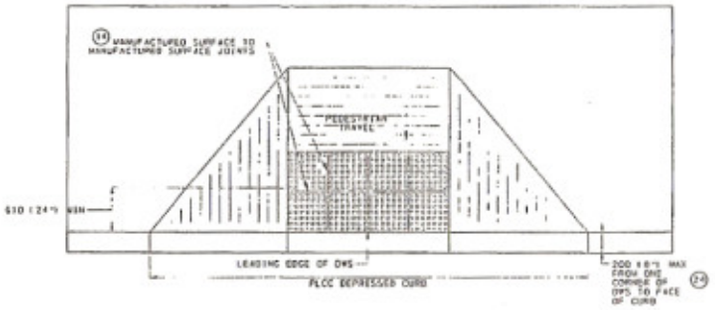
(14) CONSTRUCTION JOINTS ARE SHOWN TO DEPICT THE 50 DEGREE GRID. ACTUAL SIZE AND SHAPE MAY VARY.

(24) ONE CORNER OF THE DWS MUST BE WITHIN 200 (8") OF THE FACE OF CURB. NO OTHER POINT ON THE LEADING EDGE OF THE DWS MAY BE MORE THAN 1550 (60") FROM THE FACE OF CURB.

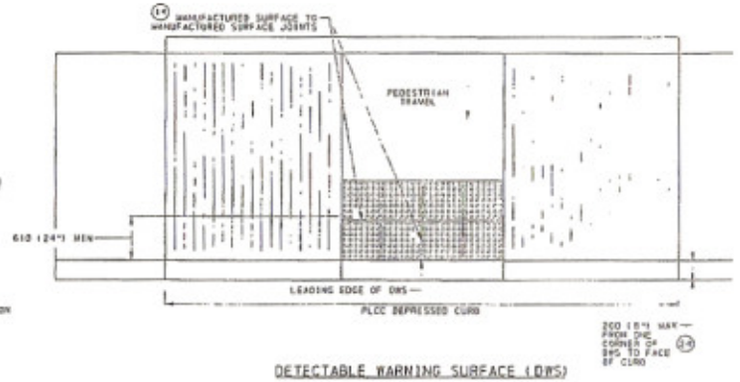


NOTE: CONSTRUCT NOTCH AS SHOWN TO PROVIDE FULL THICKNESS SIDEWALK, WHEN THE THICKNESS OF THE DETECTABLE WARNING SURFACE EXCEEDS 25 (1").

DETECTABLE WARNING SURFACE
EMBEDDING DETAIL



DETECTABLE WARNING SURFACE (DWS)
ON TYPE 1 CURB RAMP



DETECTABLE WARNING SURFACE (DWS)
ON TYPE 2 CURB RAMP

NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

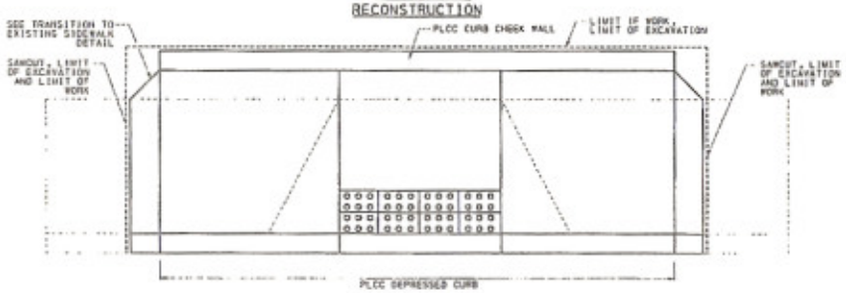
CURB RAMPS AND SIDEWALKS

NEW CONSTRUCTION OR ALTERATION DETAILS

RECOMMENDED XXX XX, 2001	RECOMMENDED XXX XX, 2001	SHT 8 OF 12
ACTING CHIEF, HWY. GA DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M

DETAIL ILLUSTRATES FLARE REMOVAL AND REPLACEMENT.

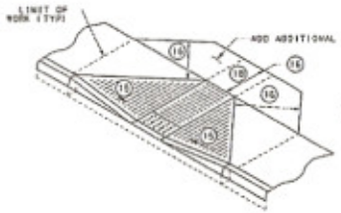
PARTIAL RAMP RECONSTRUCTION



DETAIL ILLUSTRATES A TYPE 1 EXISTING RAMP REPLACED WITH A TYPE 2 RAMP. USE THIS DETAIL AS AN EXAMPLE TO REPLACE ANY RAMP WITH SAME TYPE OR DIFFERENT TYPE RAMP.

TOTAL RAMP RECONSTRUCTION

DETECTABLE WARNING SURFACE (DWS) INSTALLATION DETAIL



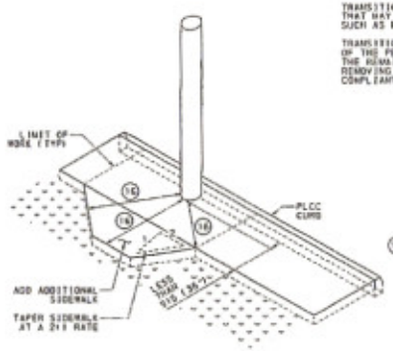
TYPE 1 CURB RAMP LANDING INSTALLATION

TRANSITION TO EXISTING SIDEWALK DETAIL

* SLOPE TRANSITION AREA LENGTH BASED ON THE DIFFERENCE OF PROPOSED SIDEWALK CROSS SLOPE AND EXISTING SIDEWALK SLOPE AT THE LOCATION OF TIE IN. THIS LENGTH TO BE DETERMINED BY THE FOLLOWING FORMULA:
DELTA X SLOPE X 0.5

TRANSITION AREAS MAY NOT TIE INTO NON-COMPLIANT FEATURES THAT MAY EASILY BE REMOVED BY EXTENDING THE LIMIT OF WORK, SUCH AS NON-COMPLIANT FLARES, RAMPS, OR LANDINGS.

TRANSITION AREAS ARE TO SERVE AS TEMPORARY CONNECTIONS OF THE PEDESTRIAN ACCESS ROUTE. FUTURE IMPROVEMENTS TO THE REMAINING PORTION OF EXISTING SIDEWALK SHALL INCLUDE REMOVING THE TRANSITION AREA AND CONSTRUCTING A FULLY COMPLIANT SIDEWALK.



SIDEWALK ADDITION DUE TO OBSTRUCTIONS

(15) SIDE FLARES 10.00% MAX FOR RAMPS WITH LANDINGS 1220 (4'-0") OR GREATER.
SIDE FLARES 8.33% MAX FOR RAMPS WITH LANDINGS LESS THAN 1220 (4'-0").

FOR ALTERATIONS:
IF TECHNICALLY FEASIBLE A LANDING WILL BE REQUIRED. HOWEVER A LANDING WILL NOT BE REQUIRED WHERE 8.33% FLARE SLOPES ARE PROVIDED AND ROW RESTRICTS THE INSTALLATION OF A LANDING.

(16) 1220 (4'-0") MIN

FOR ALTERATIONS 915 (3'-0") MIN

(18) CURB RAMPS REQUIRE A 1220 X 1220 (48" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIAN PERFORM TURNING MANEUVERS.

DETECTABLE WARNING SURFACE (DWS) INSTALLATION INSTRUCTIONS

1. SAW CUT EXISTING CURB RAMP SURFACE WHERE THE DWS WILL BE PLACED.
2. REMOVE EXISTING CONCRETE FROM THIS AREA.
3. REPLACE AND COMPACT ANY DISTURBED AGGREGATE SUBBASE.
4. PLACE NEW CEMENT CONCRETE AND LEVEL TO A 100 MM (4 INCH) DEPTH.
5. REMOVE DEPTH OF FRESH CONCRETE EQUIVALENT TO THE DEPTH OF THE EMBEDED UNIT TO BE INSTALLED.
6. LAY-OUT AND PROPERLY FIT EACH UNIT PRIOR TO SETTING IN WET CONCRETE.
7. CUT UNITS AS NECESSARY.
8. PLACE UNITS ACROSS THE ENTIRE WIDTH OF THE CURB RAMP SURFACE.
9. ALLOW FOR SMALL EXPANSION GAP BETWEEN EACH UNIT.
10. PRESS UNITS INTO FULL CONTACT WITH THE FRESH CONCRETE.
11. ADJUST HEIGHT OF EACH UNIT EDGE TO BE LEVEL WITH ADJACENT RAMP SURFACES.
12. ONLY TRUNCATED DOMES SHOULD BE ABOVE THE FINISHED CONCRETE.
13. FILL ANY SAW CUT GAPS WITH APPROVED JOINT SEALANT MATERIAL.
14. DO NOT ALLOW FOOT TRAFFIC ON DWS UNTIL DEPTH OF CONCRETE HAS CURED.

NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

CURB RAMPS AND SIDEWALKS

ALTERATION DETAILS

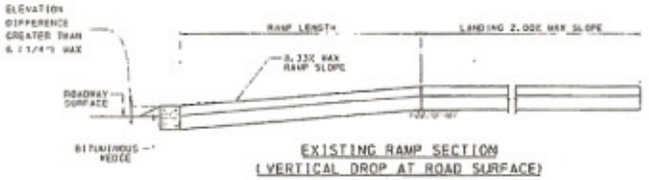
RECOMMENDED XXX XX, 2007	RECOMMENDED XXX XX, 2007	SHT 9 OF 12
ACTING CHIEF, HWY. GR DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M

EXISTING RAMP SECTION
(VERTICAL DROP AT RAMP)

RECOMMENDED CORRECTION:

OPTION 1: REMOVE EXISTING RAMP AND RECONSTRUCT AT 8.33% MAX PARTIAL RAMP RECONSTRUCTION DETAIL.

OPTION 2: RECONSTRUCT THE ENTIRE RAMP WITH LANDINGS. SEE TOTAL RAMP RECONSTRUCTION DETAIL.



EXISTING RAMP SECTION
(VERTICAL DROP AT ROAD SURFACE)

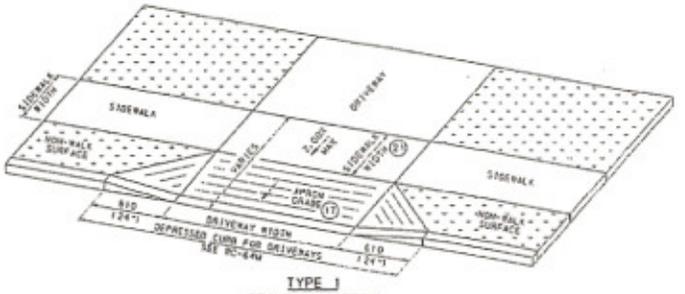
RECOMMENDED CORRECTION:

PLACE BITUMINOUS MATERIAL AT FACE OF CURB TO BEVEL TRANSITION.
ELEVATION DIFFERENCE OF 6 (1/4") TO 12 (1/2").
USE A 2 HORIZ (1 VERTICAL RATE
ELEVATION DIFFERENCE GREATER THAN 12 (1/2"), USE 8.33% MAX

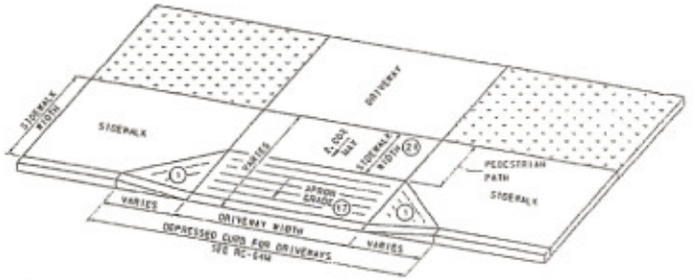
EXISTING RAMP SECTION
(RAMP SETTLEMENT)

RECOMMENDED CORRECTION:

REMOVE EXISTING RAMP AND RECONSTRUCT AT 8.33% MAX PARTIAL RAMP RECONSTRUCTION DETAIL.



TYPE I
DRIVEWAY APRON



TYPE IA
DRIVEWAY APRON

DRIVEWAY CROSSINGS ON A WIDE SIDEWALK CORRIDOR SHOULD BE DESIGNED TO INCLUDE LEVEL LANDINGS.

(1) SIDE FLARES 10.00% MAX SLOPE

(17) 8% MAX CHANGE IN GRADE BETWEEN ROAD SURFACE AND DRIVEWAY

(21) FOR NEW CONSTRUCTION
MINIMUM SIDEWALK WIDTH 1220 (4'-0")
FOR ALTERATIONS:
MINIMUM SIDEWALK WIDTH 915 (3'-0")

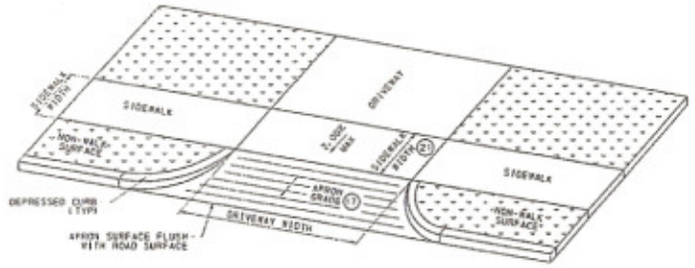
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

CURB RAMPS AND SIDEWALKS

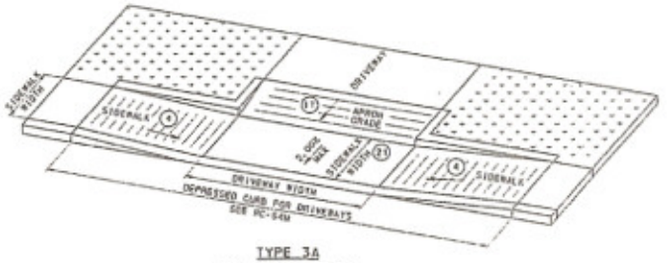
ALTERATION DETAILS
AND DRIVEWAY APRONS

RECOMMENDED XXX XX, 2002	RECOMMENDED XXX XX, 2002	SHT 10 OF 12
ACTING CHIEF, ENG. DA DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M



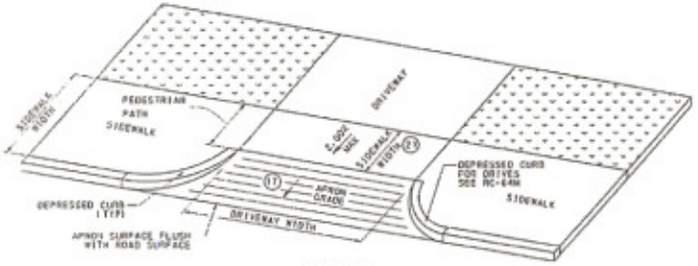
TYPE 2
DRIVEWAY APRON

DRIVEWAY CROSSINGS ON SIDEWALKS WITH PLANTING STRIPS SHOULD BE DESIGNED WITH LEVEL LANDINGS AND RETURNED CURBS INSTEAD OF FLARES. THIS BENEFITS PEDESTRIANS BY FORCING MOTORISTS TO ENTER THE DRIVEWAY CROSSING AT MORE OF A RIGHT ANGLE AND THUS AT A SLOWER SPEED.



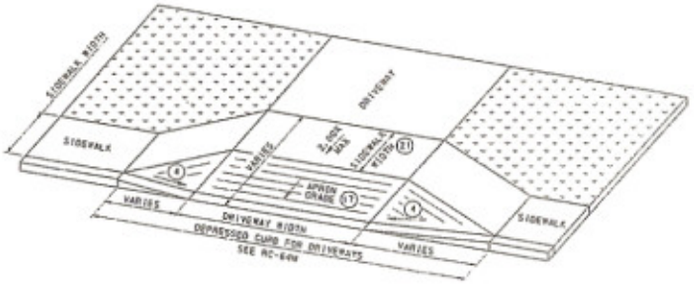
TYPE 3A
DRIVEWAY APRON

PARALLEL DRIVEWAY CROSSINGS ENHANCE PEDESTRIAN ACCESS AT A DRIVEWAY CROSSING WHEN THERE IS NO ROOM TO PROVIDE A LEVEL LANDING. PARALLEL DRIVEWAY CROSSINGS ARE NOT AS DESIRABLE AS OTHER ACCESSIBLE DRIVEWAY CROSSINGS BECAUSE USERS ARE FORCED TO NEGOTIATE TWO RAMPS INSTEAD OF A LEVEL SURFACE.

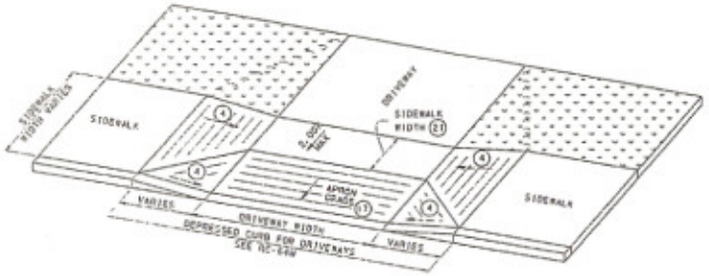


TYPE 2A
DRIVEWAY APRON

DRIVEWAY CROSSINGS ON SIDEWALKS WITH PLANTING STRIPS SHOULD BE DESIGNED WITH LEVEL LANDINGS AND RETURNED CURBS INSTEAD OF FLARES. THIS BENEFITS PEDESTRIANS BY FORCING MOTORISTS TO ENTER THE DRIVEWAY CROSSING AT MORE OF A RIGHT ANGLE AND THUS AT A SLOWER SPEED.



TYPE 4
DRIVEWAY APRON



TYPE 3
DRIVEWAY APRON

(4) 8.33% MAX RAMP SLOPE

(1) 5% MAX CHANGE IN GRADE BETWEEN ROAD SURFACE AND DRIVEWAY

(2) FOR NEW CONSTRUCTION MINIMUM SIDEWALK WIDTH 1220 (4'-0")
FOR ALTERATIONS: MINIMUM SIDEWALK WIDTH 915 (3'-0")

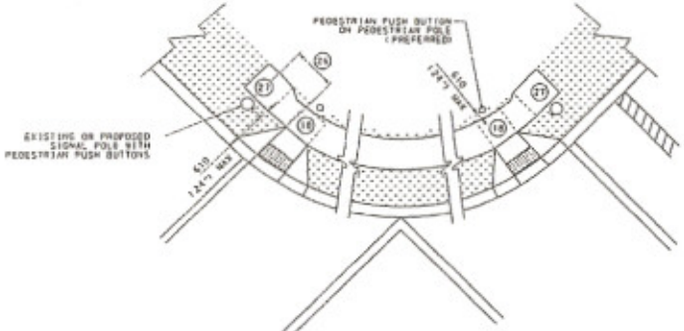
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

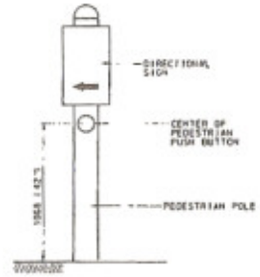
CURB RAMPS AND SIDEWALKS

DRIVEWAY APRONS

RECOMMENDED XXX XX, 2007	RECOMMENDED XXX XX, 2007	SHT 11 OF 12
ACTING CHIEF, HWY. SA DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M



PEDESTRIAN PUSHBUTTON
LOCATIONS FOR
SEPARATE CURB RAMPS
PLAN

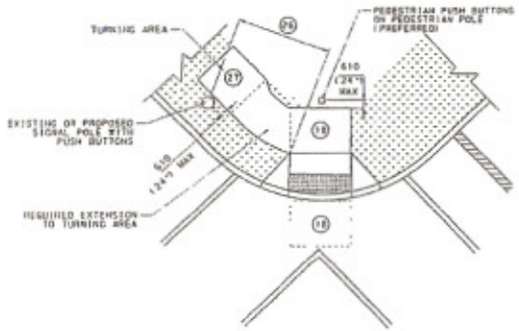


PEDESTRIAN PUSHBUTTON
DETAIL

(18) CURB RAMPS REQUIRE A 1220 X 1220 (48" X 48") MINIMUM LANDING WITH A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS AT THE TOP AND/OR BOTTOM OF EACH RAMP WHERE PEDESTRIANS PERFORM TURNING MANEUVERS.

(26) 3050 (10'-0") MAX. MEASURED FROM WHERE PEDESTRIAN WOULD WAIT FOR SIGNAL CHANGE TO THE LOCATION OF THE PUSH BUTTON.
IF THE DISTANCE IS GREATER THAN 3050 (10'-0"), THE SIGNAL POLE MUST BE RELOCATED OR A PEDESTRIAN POLE MUST BE INSTALLED.

(27) 1525 X 1525 (60" X 60") MINIMUM LANDING WITH 2.00% MAX SLOPE IN ALL DIRECTIONS WHERE PEDESTRIANS PERFORM 180 DEGREE TURNING MANEUVERS.



PEDESTRIAN PUSHBUTTON
LOCATIONS FOR
DIAGONAL CURB RAMPS
PLAN
(DIAGONAL-REQUIRES APPROVAL)
SEE NOTE 3, SHEET 1

NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

CURB RAMPS AND SIDEWALKS

DRIVEWAY APRONS

RECOMMENDED XXX XX, 2007	RECOMMENDED XXX XX, 2007	SHT 12 OF 12
ACTING CHIEF, HWY. BR DIVISION	ACTING DIR., BUREAU OF DESIGN	RC-67M

Last Revision 01/23/2007

ADA Design Check List

ADA Feature or Curb Ramp Asset Management Number

Designer: _____ (Print Name) Date: _____

- [ ] Identify where pedestrian access is required
- [ ] Identify need for crosswalks and stopbar locations
- [ ] Curb ramp provided at all desired crosswalks. One curb ramp at each crossing direction (as feasible)
- [ ] 2.00% max. curb ramp and sidewalk cross-slope maintained in direction of pedestrian traffic
- [ ] 2.00% max. slope all directions where pedestrian makes a turning maneuver
- [ ] 5.00% max. longitudinal slope maintained in direction of pedestrian traffic (roadway pitch)
- [ ] 8.33% max. curb ramp slope.
- [ ] 8.33% max. flare slope in pedestrian path (10% max. for alterations with a 4'-0" landing)
- [ ] Curb ramps installed at 90° to the face of curb (or maximum extent feasible)
- [ ] Identify utility locations crossing pedestrian pathways.
- [ ] Utility box covers installed away from curb ramp surface to maximum extent feasible
- [ ] Utility box covers at grade in the path of travel are flush and surface is firm, stable, and slip resistant
- [ ] Utility, signal, & light poles, fire hdyrants, sign posts, pull boxes, other street furniture, etc. located away from the curb ramp to the maximum extent feasible.
- [ ] Min. 36" (48" desirable) unobstructed, continuous, clear width maintained
- [ ] Wheelchair passing areas of 60" x 60" provided every 200' for sidewalk widths less than 5'
- [ ] Depressed curb is flush with roadway and bottom of curb ramp or landing. (no lip)
- [ ] Adequate drainage provided to prevent ponding at bottom of curb ramp
- [ ] 48" x 48" clear space provided within crosswalk marking and out of travel lanes for diagonal curb ramp locations.
- [ ] Curb ramp surface areas are firm, stable and slip resistant.
- [ ] Grate openings or walkway surface gaps less than 1/2" wide measured in the direction of ped. traffic
- [ ] 24" (min) DWS strip installed for full width of ramp or to nearest 1 foot increment
- [ ] DWS domes arranged parallel to direction of pedestrian traffic.
- [ ] One corner of DWS within 8" of face of curb, other leading edge no more than 60" from face of curb
- [ ] DWS field (not dome top) is flush with adjacent curb ramp surface. DWS surface is slip resistant.
- [ ] DWS creates a dark-on-light or light-on-dark visual contrast to adjacent pavement.
- [ ] Ped buttons located 10'-0" min apart
- [ ] Ped buttons located 5'-0" max from crosswalk line, 10'-0" from face of curb
- [ ] Ped button perpendicular to path of travel and sign face located parallel to path of travel
- [ ] Technically Infeasible Report Forms need to be completed and filed with project documents.

PennDOT Form XXXXX

Last Revision 01/23/2007

ADA Construction Inspection Check List

Curb Ramp Asset Management Number

(check list to suppliment the field form)

CI Inspector: _____ (Print Name) Date: _____

- [ ] 2.00% max. curb ramp and sidewalk cross slope maintained in direction of pedestrian traffic
- [ ] 2.00% max. slope all directions where pedestrian makes a turning maneuver
- [ ] 5.00% max. longitudinal slope maintained in direction of pedestrian traffic (roadway pitch)
- [ ] 8.33% max. curb ramp slope.
- [ ] 8.33% max. flare slope in pedestrian path (10% max. for alterations with a 4'-0" landing)
- [ ] Curb ramps installed at 90° to the face of curb (or max. extent feasible)
- [ ] Curb ramps provided at all crosswalk locations
- [ ] All utility covers installed away from curb ramp surface to maximum extent feasible
- [ ] Utility poles, fire hydrants, light poles, signal poles, sign posts, pull boxes, etc. installed away from curb ramp surface to maximum extent feasible
- [ ] Utility box covers in the pathway are flush with sidewalk and surface is firm, stable and slip resistant
- [ ] Min. 36" (48" desirable) unobstructed, continuous, clear width maintained
- [ ] Depressed curb is flush with roadway and bottom of curb ramp or landing. (no lip)
- [ ] Adequate drainage provided. No ponding of water at bottom of ramp anticipated.
- [ ] 48" x 48" clear space provided within crosswalk marking and out of travel lanes for diagonal curb ramp locations.
- [ ] Curb ramp surface is firm, stable and slip resistant
- [ ] Grate openings or walkway surface gaps less than 1/2" wide measured in the direction of ped. traffic
- [ ] 24" (min) DWS strip installed for full width of ramp or to nearest 1 foot increment
- [ ] DWS domes arranged parallel to direction of pedestrian traffic
- [ ] One corner of DWS within 8" of face of curb, leading edge no more than 60" from face of curb
- [ ] DWS field (not top of dome) is flush with adj. ramp surface. DWS surface is slip resistant.
- [ ] DWS creates a dark-on-light or light-on-dark visual contrast to adjacent pavement
- [ ] Ped buttons located 10'-0" min apart
- [ ] Ped buttons located 5'-0" max from crosswalk line, 10'-0" from face of curb
- [ ] Ped button perpendicular to path of travel and sign face located parallel to path of travel
- [ ] Technically Infeasible Report Form needs to be completed and filed w/ project documents

ADA Technically Infeasible Form

General Information

General Description of Project:

Overlay project from SR 0000 to SR 0000. ADT is 10,000 vehicles per day. Pedestrian traffic is present and project contains multiple trip generators within the limit of work

*District: 08
*County: Adams
*Twshp/Boro: Gettysburg Boro

Submitted By: J Redding
*Submitter Company: Greenhorne & O'Mara Inc
Street Address 5000 Ritter Road Ste 102
City State Zip Mechanicsburg Pa 17320
Telephone 717-691-3355

*Date Submitted: December 3, 2007

Investigated design alternatives	Why alternative was not selected
1.) Separate curb ramps	Utilities limit placement
2.) Reduce radi at return	Sidewalk width to narrow and R/W not available
3.)	

Alternative selected and description of what requirement is not met

Diagonal ramp, landing is not totally outside of travel lanes.

O Street Address of Site

Street Address _____

City _____

Zip _____

(Area) - Phone Number _____

● Intersection

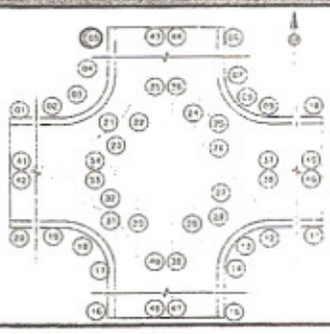
*SR North 0003

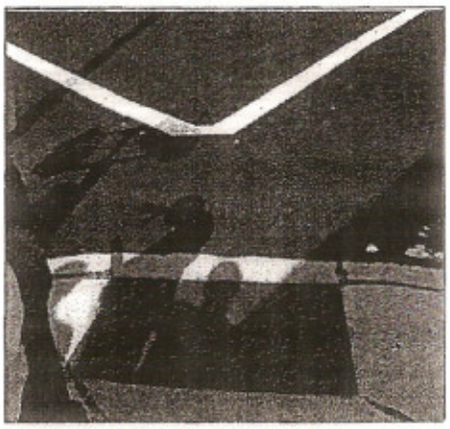
*SR South 0002

*SR East 0003

*SR West 0002

*Location # 05





ADE Approval Status

O Approved District ADE Design
O Denied

ADA Coordinator Approval Status

O Approved
O Denied

ADA Coordinator, Christopher Drda, P.E.
Consultant Agreement Section
400 North Street, 7th Floor
Harrisburg, PA 17120-0094

TIF #: *TIF-06-Adams-Gettysburg Boro-Greenhorne & O'Mara Inc-05-0003-0002-0003-0002-39419*

*(all fields marked with * provide data for TIF #)*

ITEM 9695-2001 (9695-0001) SIDEWALK DETECTABLE WARNING SURFACES, CAST IRON; ITEM 9695-2002 (9695-2002) SIDEWALK DETECTABLE WARNING SURFACES, POLYMER CONCRETE; ITEM 9695-2003 (9695-0003) SIDEWALK DETECTABLE WARNING SURFACES, POLYMER COMPOSITE

Instructions for Usage: For use on all new construction or alteration projects where American's with Disability Act (ADA) pedestrian accessibility using curb ramps is required. Use in accordance with letter dated April 18, 2007. The materials: cast iron, polymer concrete, and polymer composite should be listed as alternates to each other.

For projects let after June 22, 2007.

695.1 DESCRIPTION – This work is furnishing all material, equipment, tools, and labor required for the placement and installation of detectable warning surfaces on cement concrete sidewalk curb ramps and other designated surfaces in order to provide a tactile warning for pedestrians with visual impairments under the provisions of the Americans with Disabilities Act (ADA).

695.2 MATERIAL –

(a) Detectable Warning Surfaces (DWS). Provide a DWS product from a manufacturer listed in Bulletin 15 and meeting the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Provide certification as specified in Section 106.03(b)3 that the DWS meets the following ADAAG criteria:

- **General.** Detectable warning surface with the surface comprised of truncated domes. Dome size and spacing as specified and as indicated on Standard Drawing RC-67M.
- **Surface.** Slip resistant.
- **Contrast.** Provide a DWS color, as approved by the Representative, that contrasts visually with adjacent walking surfaces either light-on-dark or dark-on-light.

(b) Other Material.

- **Class A Cement Concrete** – Section 704
- **Subbase** – Section 350
- **Joint Sealant Material** – Section 705.4(a), (b), or (c)

695.3 CONSTRUCTION –

(a) General. Provide a copy of the DWS manufacturer's written installation instructions.

(b) New Construction. Coordinate this work with the requirements for new Cement Concrete Sidewalks, Section 676. Follow DWS manufacturer's instructions for a cast-in-place installation at the locations indicated and in accordance with the requirements of Standard Drawing RC-67M for the designated curb ramp type or other designated surface.

(c) Alteration or Retrofit Construction. Saw cut and remove the entire depth of existing concrete from the area where the DWS will be placed. Replace any removed or disturbed aggregate subbase and compact before placing new concrete.

Place new cement concrete and follow the DWS manufacturer's installation instructions for a cast-in-place installation.

Fill any saw cut gaps with approved joint sealant material. Fill any gaps around the DWS edge installation with the joint material if necessary.

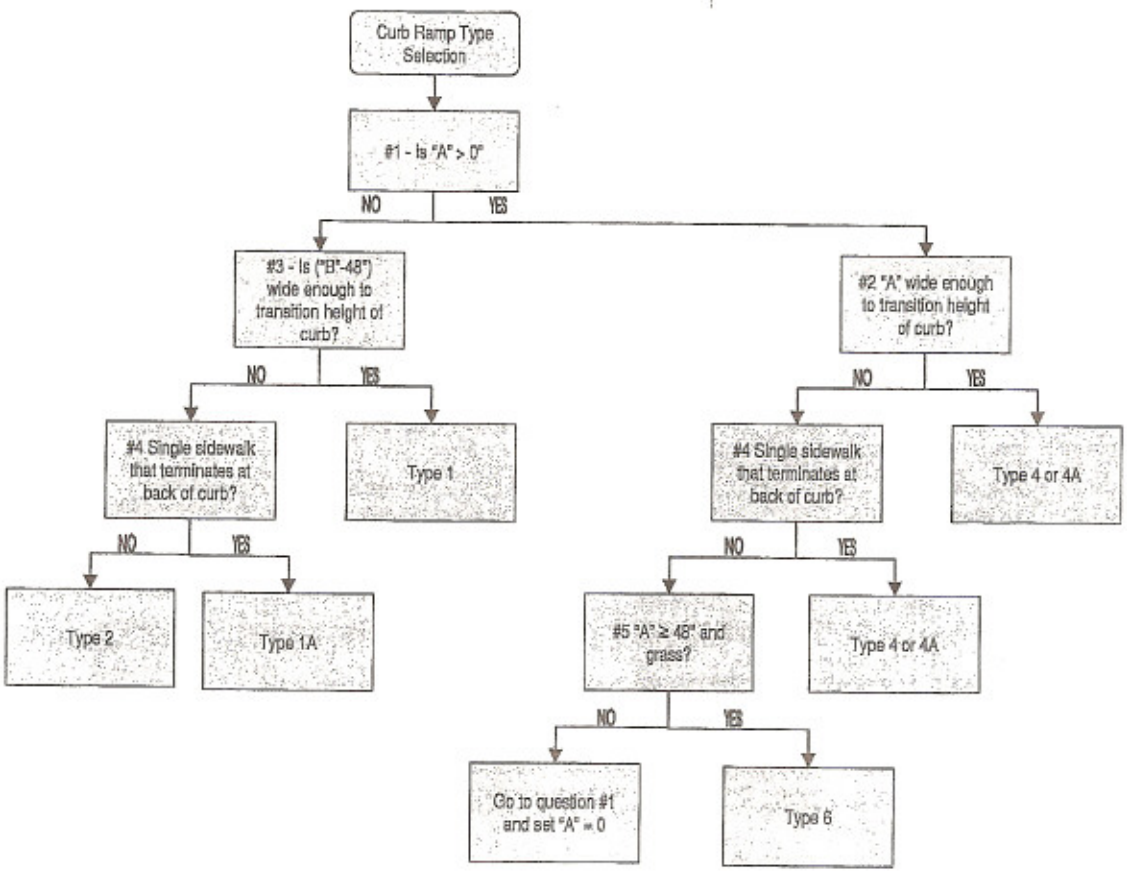
(d) Protection. Protect the new sidewalk and DWS surface from pedestrian traffic until the adjoining cement concrete surfaces have properly cured and work is complete at the curb ramp location. Clean the DWS surface using a method recommended by the manufacturer.

695.4 MEASUREMENT AND PAYMENT – Square Meter (Square Foot)

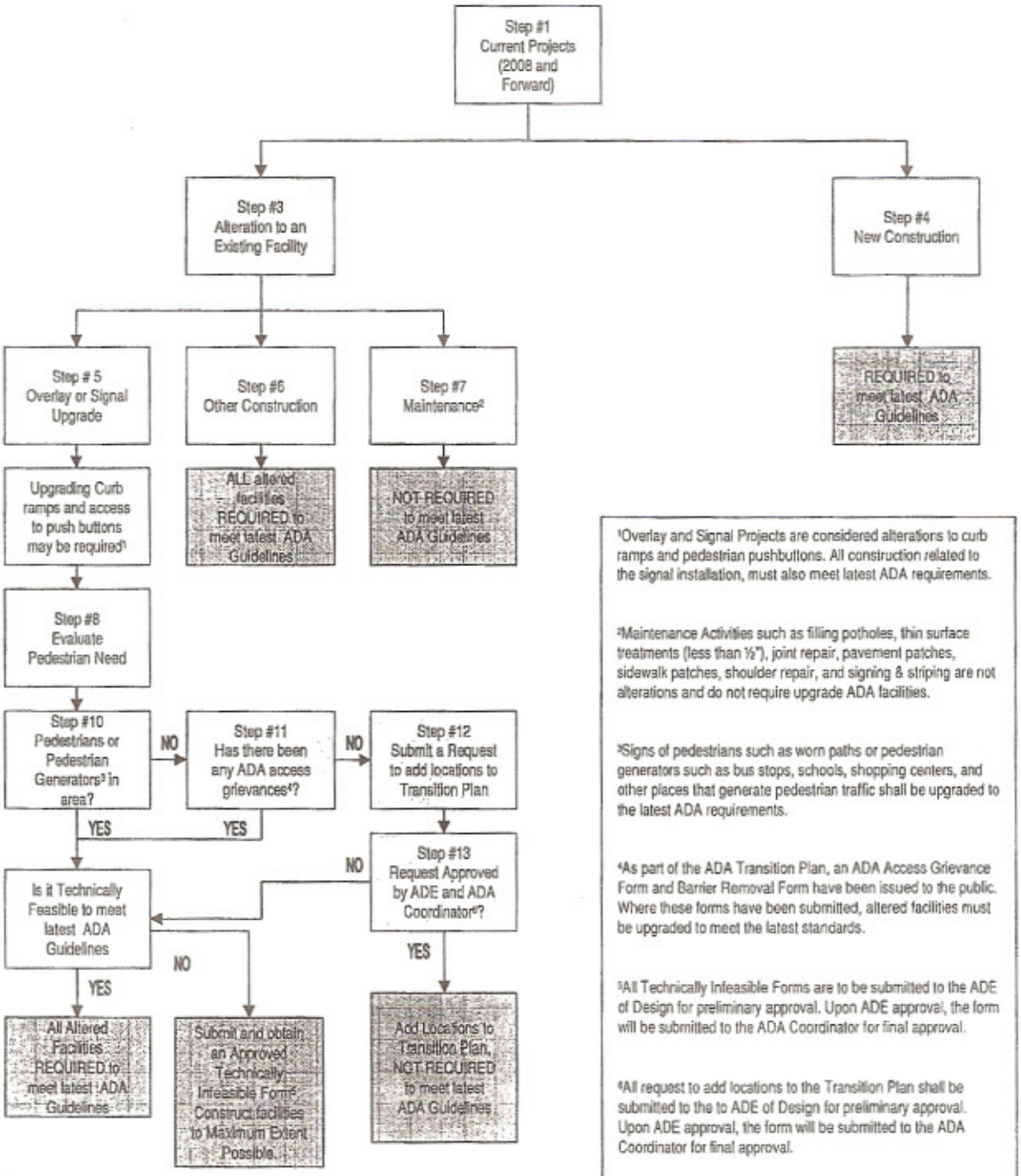
Curb Ramp Selection Work Flow

"A" – Distance from back of curb to face of sidewalk or distance from back of curb to pedestrian path.

"B" - Distance from back of curb to back of sidewalk.



Determining Level of ADA Accommodations



[1]Overlay and Signal Projects are considered alterations to curb ramps and pedestrian pushbuttons. All construction related to the signal installation, must also meet latest ADA requirements.

[2]Maintenance Activities such as filling potholes, thin surface treatments (less than ½"), joint repair, pavement patches, sidewalk patches, shoulder repair, and signing & striping are not alterations and do not require upgrade ADA facilities.

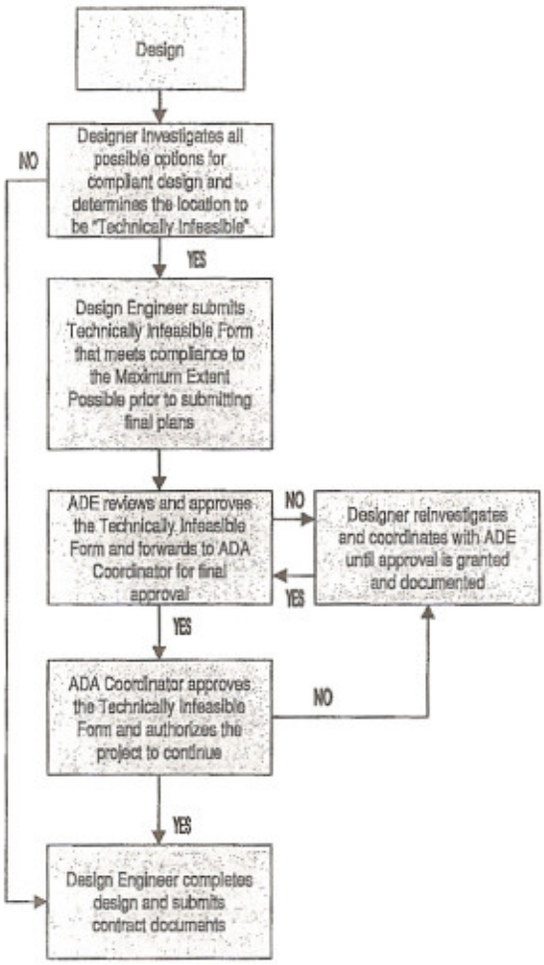
[3]Signs of pedestrians such as worn paths or pedestrian generators such as bus stops, schools, shopping centers, and other places that generate pedestrian traffic shall be upgraded to the latest ADA requirements.

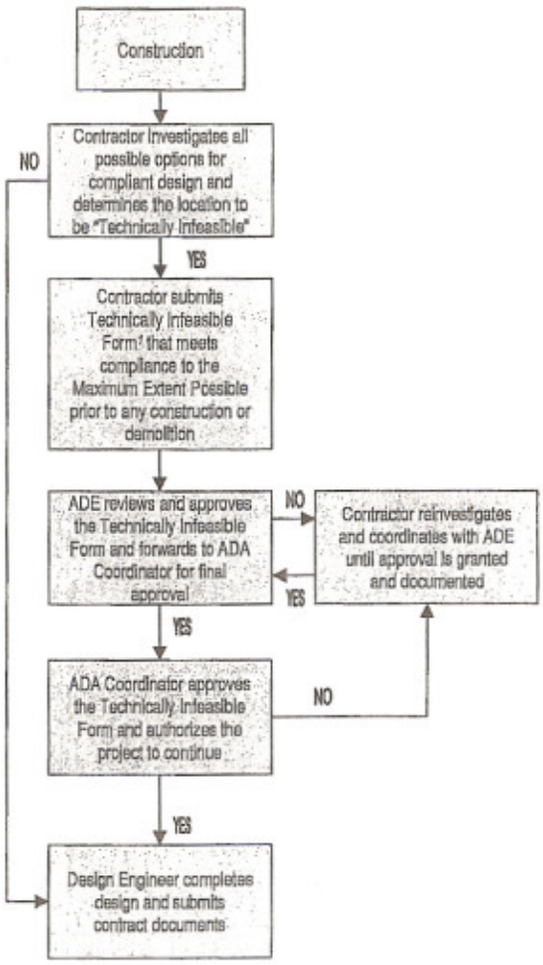
[4]As part of the ADA Transition Plan, an ADA Access Grievance Form and Barrier Removal Form have been issued to the public. Where these forms have been submitted, altered facilities must be upgraded to meet the latest standards.

[5]All Technically Infeasible Forms are to be submitted to the ADE of Design for preliminary approval. Upon ADE approval, the form will be submitted to the ADA Coordinator for final approval.

[6]All request to add locations to the Transition Plan shall be submitted to the to ADE of Design for preliminary approval. Upon ADE approval, the form will be submitted to the ADA Coordinator for final approval.

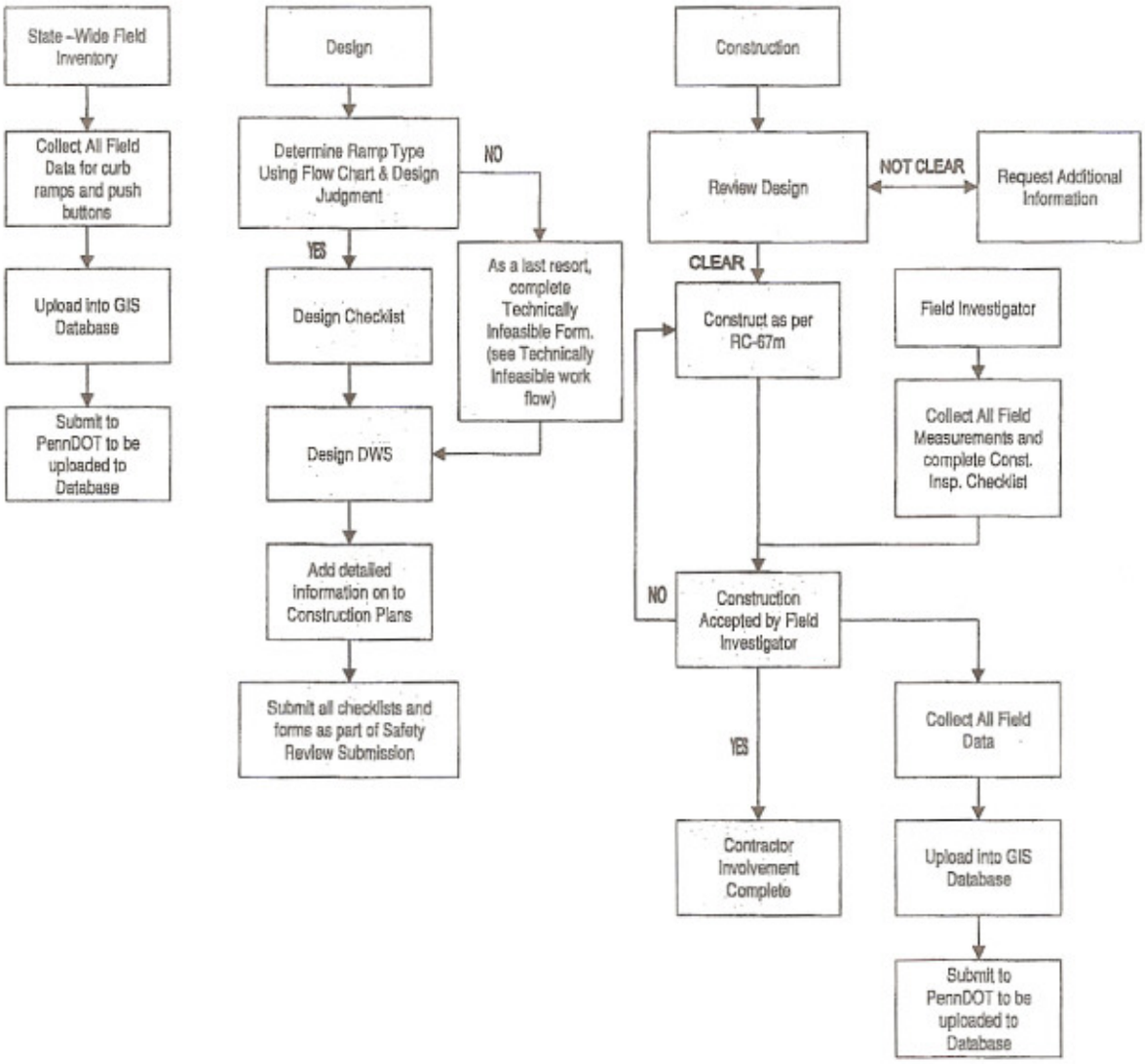
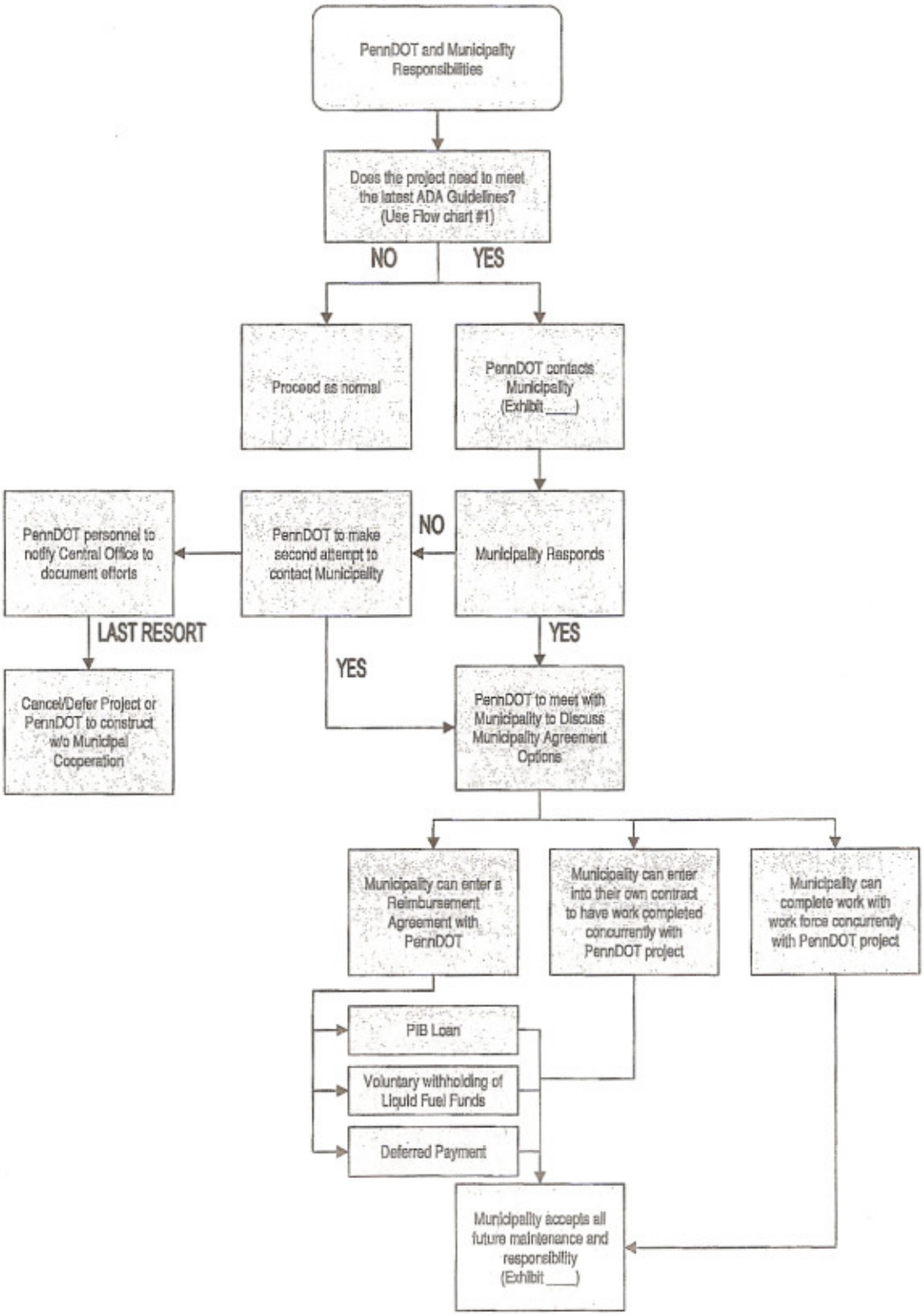
Technically Infeasible Work Flow





[1]Contractor may also submit an RFI. For this scenario, the designer may need to complete the Technically Infeasible Form.

Curb Ramp Asset Management Work Flow



PennDOT/Municipality Course of Action