

NOTES

1. APPLICABILITY: PROPOSED LOCAL ACCESS ROADS WITH UNMARKED, ON-STREET PARKING & SHARED BICYCLE USE.
2. 30' PAVING WIDTH MAY BE REDUCED BY 2 FEET IF LOTS HAVE ALLEY ACCESS, TO A MINIMUM OF 28'/52'.
3. FOR TOWNHOUSES WITH PERPENDICULAR PARKING, THE TRAVELED-WAY PAVING WIDTH SHALL BE 24'. SEE DESIGN PLATES R-L-1, 2 AND 3.
4. RIGHT-OF-WAY WIDTHS MAY BE INCREASED TO PROVIDE ADDITIONAL OPEN SPACE BETWEEN SIDEWALK AND ROADWAY WHEN NO OTHER OPEN SPACE IS PROVIDED ON THE SITE.
5. OTHER VARIATIONS TO THESE WIDTHS MAY BE GRANTED BY THE DIRECTOR OF PUBLIC WORKS IF JUSTIFIED BY LOCAL CONDITIONS.
6. SEE DESIGN PLATE R-C WHERE PEDESTRIAN/BIKE TRAIL SHALL BE PLACED BEHIND CURB.
7. SEE DESIGN PLATE R-B-2 WHERE MOUNTABLE CURB PER STANDARD DETAIL R-21 IS TO BE USED IN LIEU OF STANDARD CURB AND GUTTER.
8. ONE-WAY STREETS WITH ON-STREET PARKING (1 SIDE) AND SHARED BICYCLE USE (25 mph, <1000 ADT) HAVING 20' WIDTH ON 42' RIGHT-OF-WAY ARE ALLOWED ONLY WITH WRITTEN APPROVAL OF THE DIRECTOR OF PUBLIC WORKS.
9. USE OF OPEN SECTION ROAD IN URBAN RESIDENTIAL AREAS SHALL BE ALLOWED ONLY WITH APPROVAL OF BUREAU OF DEVELOPMENT PLANS REVIEW IN LOCATIONS WHERE ADJACENT ROADS ARE ALSO OPEN SECTION. OPEN SECTION ROAD WIDTH & R/W WIDTH PER TABLE.

Std. Roadway Paving Width A / Right-of-Way Width B

ADT			
Avg. Road Frontage *	<750	750 - 2500	2500 - 5000
<65'	27'/51'	30'/54'	30'/54'
65' - 80'	27'/51'	27'/51'	30'/54'
>80'	24'/48'	27'/51'	27'/51'

* PER DWELLING UNIT, MEASURED AT THE RIGHT-OF-WAY LINE. FOR LOTS OR PARCELS CONTAINING MULTI-UNIT BUILDINGS, MEASURE THE ROAD FRONTAGE OF THE PARCEL AT THE RIGHT-OF-WAY LINE, OR FOR A PRIVATE STREET, AT THE CURB LINE AND DIVIDE BY THE NUMBER OF UNITS SERVED BY THE STREET.



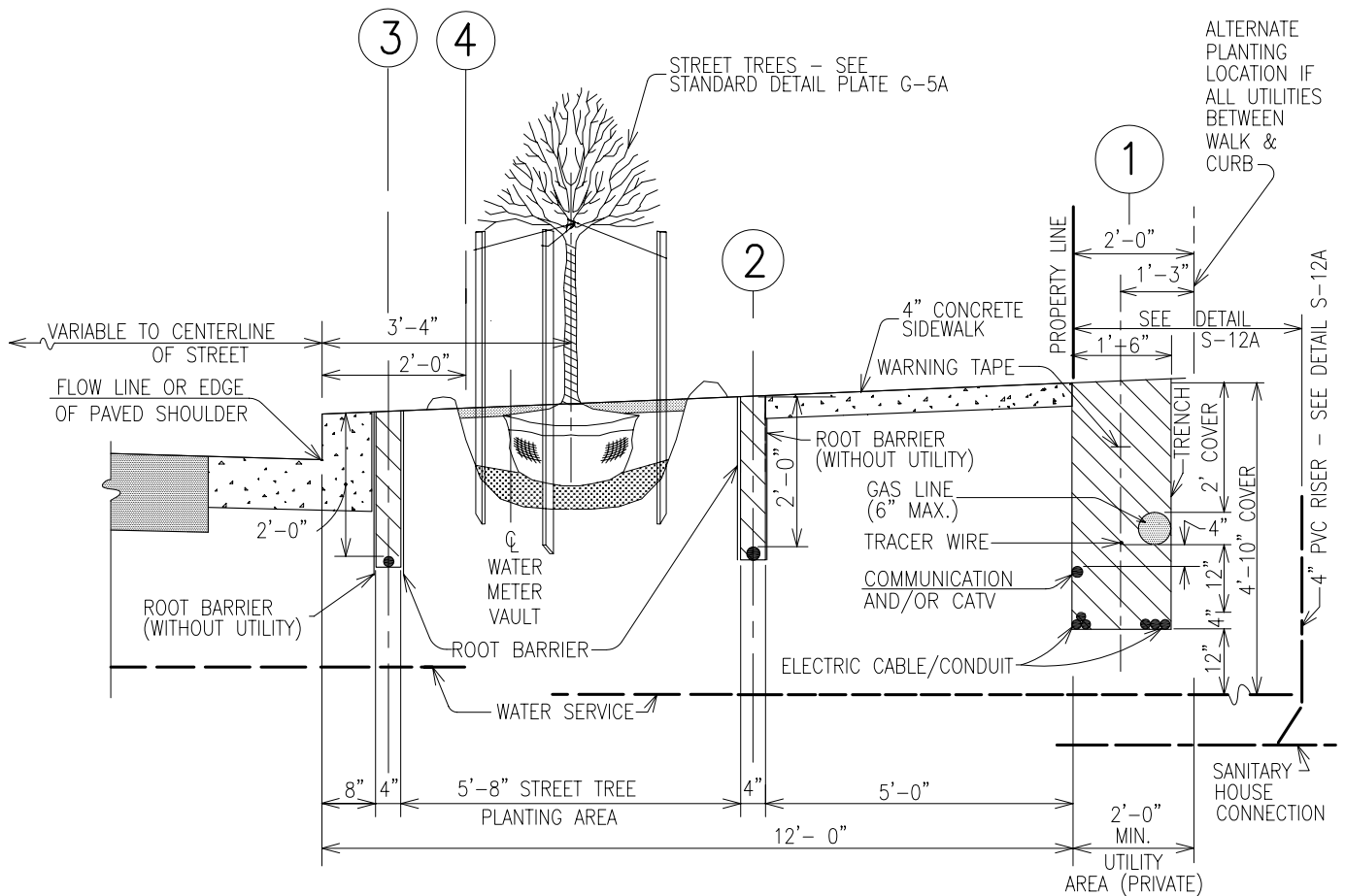
DEPARTMENT OF PUBLIC WORKS
ROAD AND STREET DESIGN

Std. Roadway Paving/Right-of-Way Widths

For Urban Residential Streets - Posted 25 to 30 MPH

ISSUED: SEPTEMBER 2008
REVISED: _____
REVISED: _____

PLATE
R-A



Notes

- RIGHT-OF-WAY SUFFICIENT FOR TREES AND SIDEWALK MUST BE DEDICATED TO COUNTY FOR THIS PURPOSE. A SIDEWALK WAIVER, IF GRANTED, APPLIES ONLY TO CONSTRUCTION OF THE SIDEWALK.
- ALL ROADS SHALL BE CONSISTENT WITH SECTION 260.4 OF THE BALTIMORE COUNTY ZONING REGULATIONS, LATEST ADOPTED VERSION.

- JOINT TRENCH FOR INSTALLATION OF GAS, ELECTRIC, COMMUNICATION AND CATV IN BG&E EASEMENT
- ALTERNATE LOCATION FOR COMMUNICATION AND/OR CATV
- RESERVED FOR STREET LIGHT POWER AND/OR SIGNALIZATION CABLES APPURTENANT TO HIGHWAY USE
- FIRE HYDRANTS & TRAFFIC SIGNS



DEPARTMENT OF PUBLIC WORKS
ROAD AND STREET DESIGN

Urban Residential Street Shoulder Area Incorporating 5' Concrete Sidewalk & Standard Curb

ISSUED: SEPTEMBER 2008

REVISED:

REVISED:

PLATE

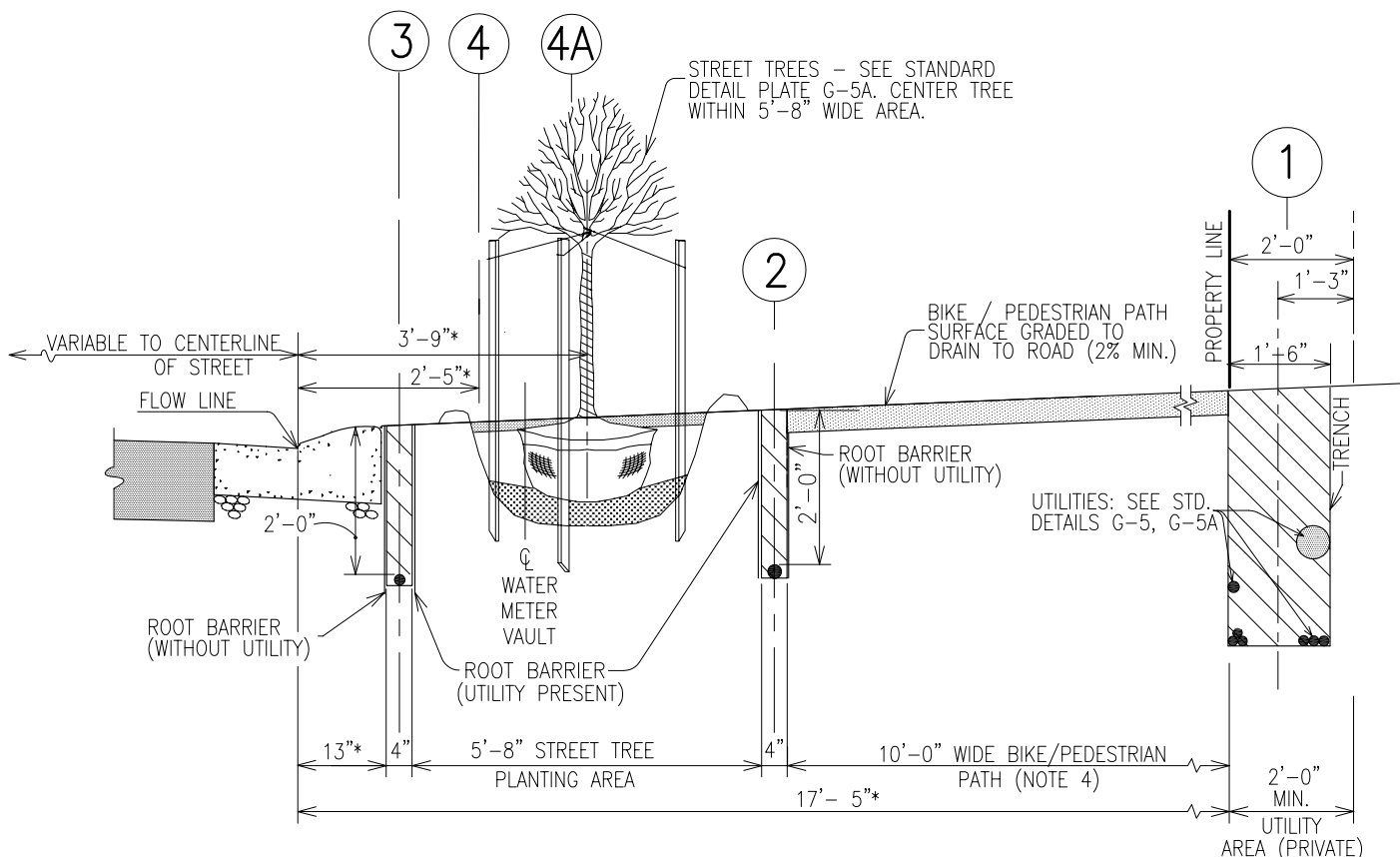
R-B-1



- 1 JOINT TRENCH FOR INSTALLATION OF GAS, ELECTRIC COMMUNICATION AND CATV IN BG&E EASEMENT. ALTERNATE PLANTING LOCATION IF ALL UTILITIES ARE BETWEEN WALK & CURB
- 2 ALTERNATE LOCATION FOR COMMUNICATION AND/OR CATV
- 3 RESERVED FOR STREET LIGHT POWER AND/OR SIGNALIZATION CABLES APPURTENANT TO HIGHWAY USE
- 4 TRAFFIC SIGNS
- 4A FIRE HYDRANTS (MOUNTABLE CURB) - SEE STD. DETAIL W-3A



R-B-2



Notes

- RIGHT-OF-WAY SUFFICIENT FOR TREES AND BIKE/PEDESTRIAN PATH MUST BE DEDICATED TO COUNTY FOR THIS PURPOSE. A WAIVER OF BIKE/PEDESTRIAN PATH, IF GRANTED, APPLIES ONLY TO CONSTRUCTION OF THE PATH.
- ALL ROADS SHALL BE CONSISTENT WITH SECTION 260.4 OF THE BALTIMORE COUNTY ZONING REGULATIONS, LATEST ADOPTED VERSION.
- PATH PAVING MATERIAL MAY INCLUDE THE FOLLOWING, SUBJECT TO SELECTION BASED UPON CONTEXT AND LOCATION:
 - VEGETATED (GRASS) FOR "NO BUILD" (WAIVER).
 - 8" OF STONE PLACED IN 4" COMPACTED LAYERS ON GEOTEXTILE CLASS XX.
 - 8" OF CRUSHER RUN PLACED IN 4" COMPACTED LAYERS ON GEOTEXTILE CLASS XX.
 - ASPHALT (2" ON 4" BASE) DESIGNED PER DESIGN MANUAL SECTION 9, "PAVING DESIGN".
 - CONCRETE (TINTED/PATTERNED/PLAIN) 5" THICK MIX #2 ON 2" OF STONE.
- THIS SHOULDER SECTION IS FOR USE IN AREAS AS DIRECTED BY BALTIMORE COUNTY. REFER TO BALTIMORE COUNTY PEDESTRIAN AND BICYCLE ACCESS PLANS. CONSIDER FOR USE ALONG STREETS WITH POSTED SPEEDS OF 35 MPH OR MORE AND IN INTENSELY DEVELOPED AREAS.
- MAINTENANCE, REPLACEMENT AND SNOW REMOVAL FROM BIKE/PEDESTRIAN PATH SHALL BE THE RESPONSIBILITY OF BALTIMORE COUNTY GOVERNMENT.
- JOINT TRENCH FOR INSTALLATION OF GAS, ELECTRIC COMMUNICATION AND CATV IN BG&E EASEMENT. ALTERNATE PLANTING LOCATION IF ALL UTILITIES ARE BETWEEN WALK & CURB
- ALTERNATE LOCATION FOR COMMUNICATION AND/OR CATV
- RESERVED FOR STREET LIGHT POWER AND/OR SIGNALIZATION CABLES APPURTENANT TO HIGHWAY USE
- FIRE HYDRANTS ($7\frac{3}{16}$ " CURB) & TRAFFIC SIGNS
- FIRE HYDRANTS (MOUNTABLE CURB) - SEE STD. DETAIL W-3A
- BICYCLE / PEDESTRIAN PATH SHALL BE SIGNED TO PREVENT USE OF PATH BY MOTORIZED VEHICLES OF ALL TYPES.
- DIMENSIONS FOLLOWED BY * ARE 5" LESS WHEN STANDARD $7\frac{3}{16}$ " CURB IS USED.



DEPARTMENT OF PUBLIC WORKS
ROAD AND STREET DESIGN

Urban Residential Street Shoulder Area Incorporating 10' Wide Combined Bike & Pedestrian Path

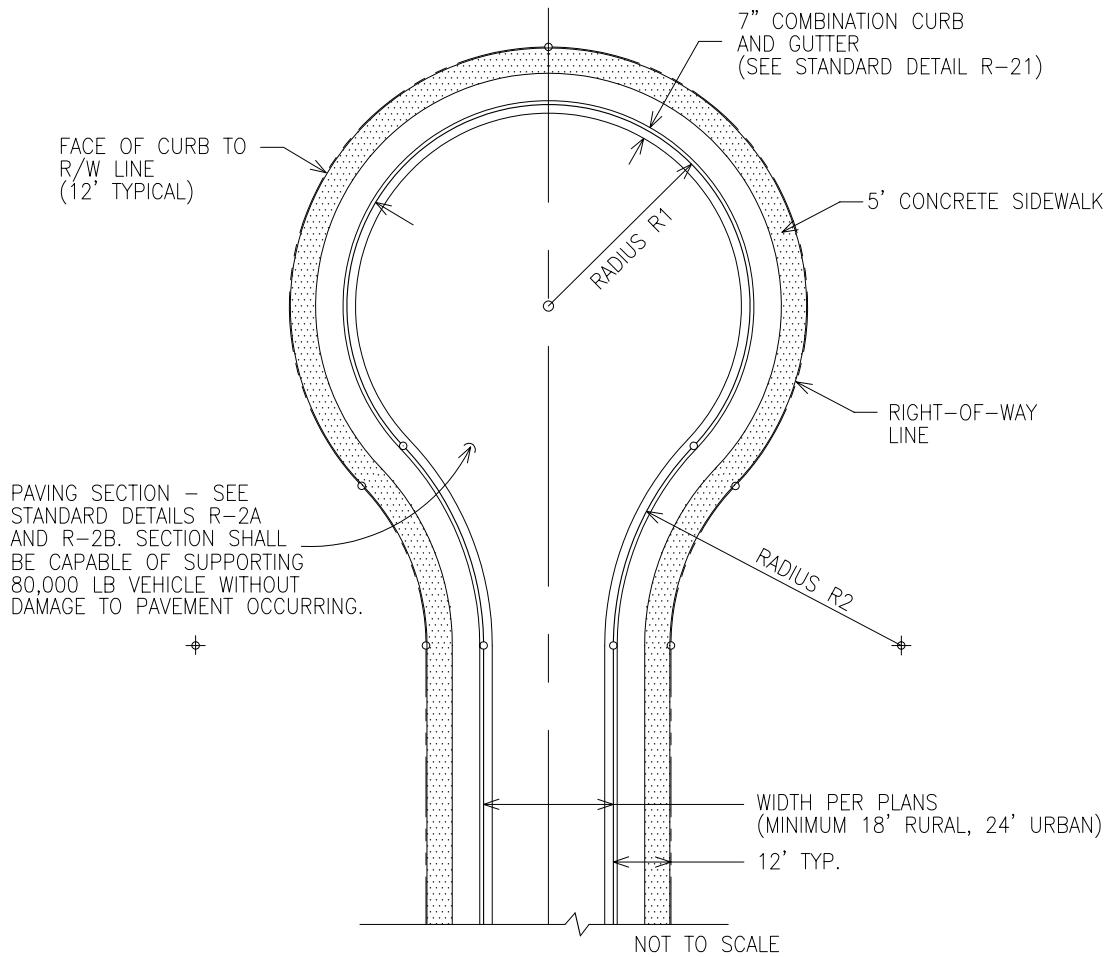
ISSUED: JANUARY 2010

REVISED:

REVISED:

PLATE

R-C



TYPE OF ROAD	RADIUS R1	RADIUS R2	SIDEWALK
RESIDENTIAL, RC ZONE	60'*	50'	NO
RESIDENTIAL, DR ZONE	60'*	50'	YES
COMMERCIAL	60'	50'	YES
INDUSTRIAL	60'	55'	YES

* REDUCTION BY EXCEPTION

NOTES

1. Residential property adjacent to cul-de-sac shall provide sufficient parking for a minimum of four vehicles.
2. "No Stopping" signs shall be posted within cul-de-sac in commercial and industrial areas.
3. Sidewalk not required in rural areas.
4. Where a curb radius R1 less than 60' is approved for use, mailboxes shall be placed outside of the 60' radius, and all of the area within a 60' radius shall be designed and certified by the Design Engineer as suitable for carrying a wheel load from an 80,000 LB. GWV vehicle without damages occurring to area paving, including sidewalk and drive entrances.
5. This Design Plate shall be used only by exception.



DEPARTMENT OF PUBLIC WORKS
ROAD & STREET DESIGN
CUL-DE-SAC
(No Island, Center-Aligned)

ISSUED: JANUARY 2010
REVISED: _____
REVISED: _____
PLATE
R-D

PAVING SECTION: SEE
STANDARD DETAILS R-2A
AND R-2B. SECTION SHALL
BE CAPABLE OF SUPPORTING
80,000 LB. VEHICLE WITHOUT
DAMAGE TO PAVEMENT OCCURRING.

OPTIONAL 6' WIDE
PARKING LANE

* WITH 6' WIDE PARKING LANE

5' WIDE CONCRETE SIDEWALK

H.O.A. OWNERSHIP
& MAINTENANCE

71' OR 77* RADIUS
(NOTES 7 & 8)

19' RADIUS

24' RADIUS

60' OR 66* RADIUS
(NOTES 7 & 8)

PROVIDE MOUNTABLE CURB &
GUTTER PER STANDARD DE-
TAIL R-21, USING REVER-
SED GUTTER SLOPE.

STANDARD CURB & GUTTER
PER STANDARD DETAIL R-21.
SEE NOTE 4.

40' RADIUS
TYP.

MATCH STREET SECTION-
18' MIN. WIDTH (RURAL),
24' MIN. WIDTH (URBAN)

12' TYP.

NOTES

1. Residential lots adjacent to cul-de-sac shall each provide sufficient parking for a minimum of three vehicles.
2. Plans shall indicate planting for central area of cul-de-sac. Central area may be eliminated with County approval.
3. Provide traffic signs/painted arrows to maintain one-directional traffic flow around central area.
4. With approval of Public Works, mountable curb (see Standard Detail R-21) may be used along outer arc.
5. Provide drainage for cul-de-sac per plans.
6. Sidewalk is not required in rural areas.
7. 60' Radius shown shall be increased to 66' where parking (parallel to curb) is to be provided. Where a curb radius less than 60' (with NO parking) is approved for use, area within a 60' radius shall be designed and certified by the Design Engineer as suitable for carrying a wheel load from an 80,000 lb. vehicle without damage to sidewalks, drive entrances, and paving. Place mailboxes outside of 60 foot radius.
8. Radii reduction by exception.



DEPARTMENT OF PUBLIC WORKS
ROAD & STREET DESIGN

CENTER ISLAND CUL-DE-SAC With Optional Parking Parallel to Curb

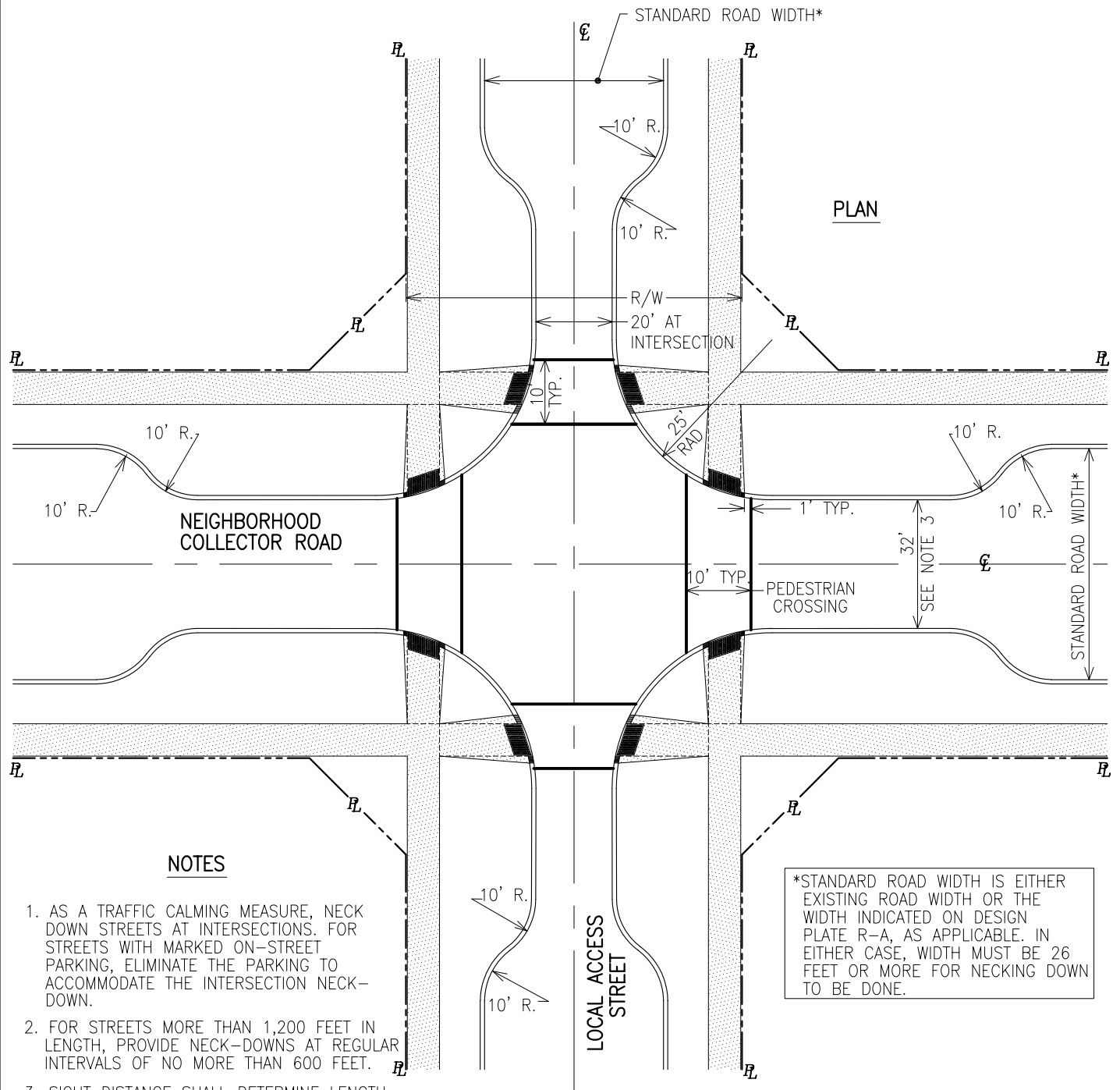
ISSUED: FEBRUARY, 2010

REVISED:

REVISED:

PLATE

R-E



NOTES

1. AS A TRAFFIC CALMING MEASURE, NECK DOWN STREETS AT INTERSECTIONS. FOR STREETS WITH MARKED ON-STREET PARKING, ELIMINATE THE PARKING TO ACCOMMODATE THE INTERSECTION NECK-DOWN.
2. FOR STREETS MORE THAN 1,200 FEET IN LENGTH, PROVIDE NECK-DOWNS AT REGULAR INTERVALS OF NO MORE THAN 600 FEET.
3. SIGHT DISTANCE SHALL DETERMINE LENGTH OF NECK-DOWN BETWEEN INTERSECTION AND FULL-WIDTH ROAD SECTION.
4. DESIGNERS SHALL CONSULT THE BUREAU OF TRAFFIC ENGINEERING PRIOR TO USE OF THIS DESIGN AT SPECIFIC LOCATIONS.

*STANDARD ROAD WIDTH IS EITHER EXISTING ROAD WIDTH OR THE WIDTH INDICATED ON DESIGN PLATE R-A, AS APPLICABLE. IN EITHER CASE, WIDTH MUST BE 26 FEET OR MORE FOR NECKING DOWN TO BE DONE.



DEPARTMENT OF PUBLIC WORKS
STORM DRAINAGE DESIGN

NECK-DOWNS AT INTERSECTIONS FOR STREETS 26 FEET AND WIDER

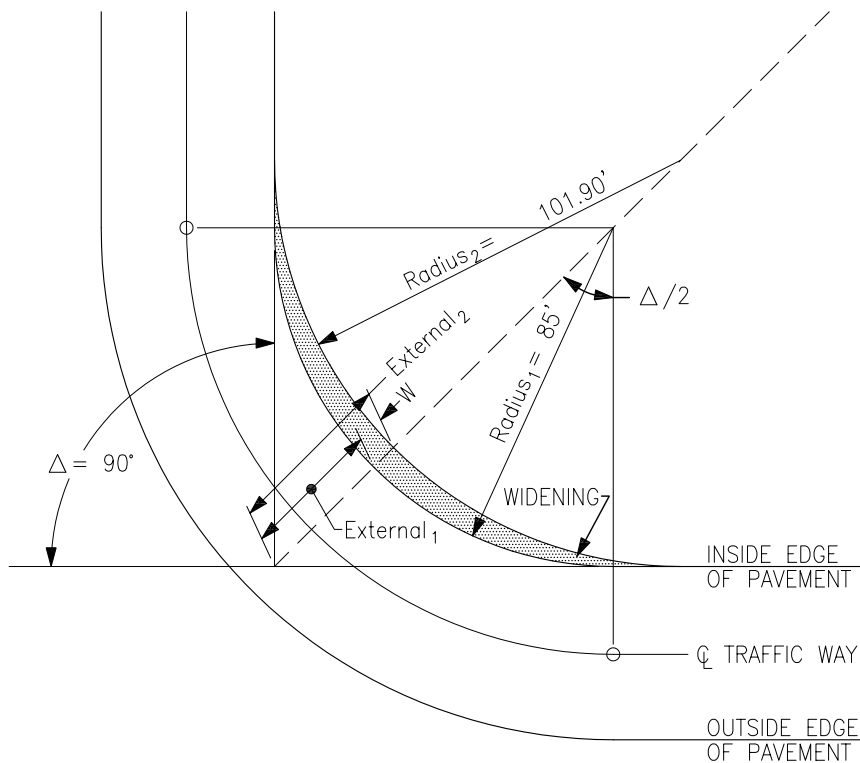
ISSUED: JUNE 23, 2008

REVISED:

REVISED:

PLATE

R-F



CENTERLINE RADIUS OF CURVE	MIN. LENGTH OF CURVE*	WIDENING W AT MIDPOINT
500' - 451'	400'	3'
450' - 351'	350'	4'
350' - 251'	300'	5'
250' - 151'	200'	6'
150' - 100'	150'	7'

* CURVES LESS THAN THIS LENGTH WILL NOT REQUIRE WIDENING.

METHOD

1. CHECK TABLE TO DETERMINE NEED FOR AND WIDTH W OF ROAD WIDENING IN CURVE.
2. FIND $EXTERNAL_1$ USING THE FOLLOWING FORMULA:
 $EXTERNAL_1 = RADIUS_1 \times EXSEC \Delta/2$
(WHERE $EXSEC \Delta/2 = SEC \Delta/2 - 1$)
3. ADD WIDENING W TO $EXTERNAL_1$. THIS WILL BE $EXTERNAL_2$.
4. FIND $RADIUS_2$ USING THE FOLLOWING FORMULA:
 $RADIUS_2 = \frac{EXTERNAL_2}{EXSEC \Delta/2}$

EXAMPLE

GIVEN: \mathcal{C} Radius = 100'

$\Delta = 90^\circ 00'$

Normal Pavement Width = 30'

Right of Way = 50'

FIND: Radius₂ of Widening

SOLUTION:

Widening W At Midpoint of Curve = 7' (Table, \mathcal{C} Radius = 100')

Radius₁ = \mathcal{C} Radius - Pavement Width/2 = 100' - 15' = 85'

External₁ = 85' x Exsec $\Delta/2$ = 85' x 0.41421 = 35.21'

External₂ = External₁ + W = 35.21' + 7' = 42.21'

Radius₂ = External₂/Exsec $\Delta/2$ = 42.21/0.41421 = 101.90'

NOTE

THE RADIUS OF THE INSIDE PROPERTY LINE IN THIS EXAMPLE WILL BE:
Radius₂ - (R/W Width - Normal Pavement Width)/2 = 101.90' - 10' = 91.90'



DEPARTMENT OF PUBLIC WORKS
ROAD & STREET DESIGN
WIDENING COMPUTATION

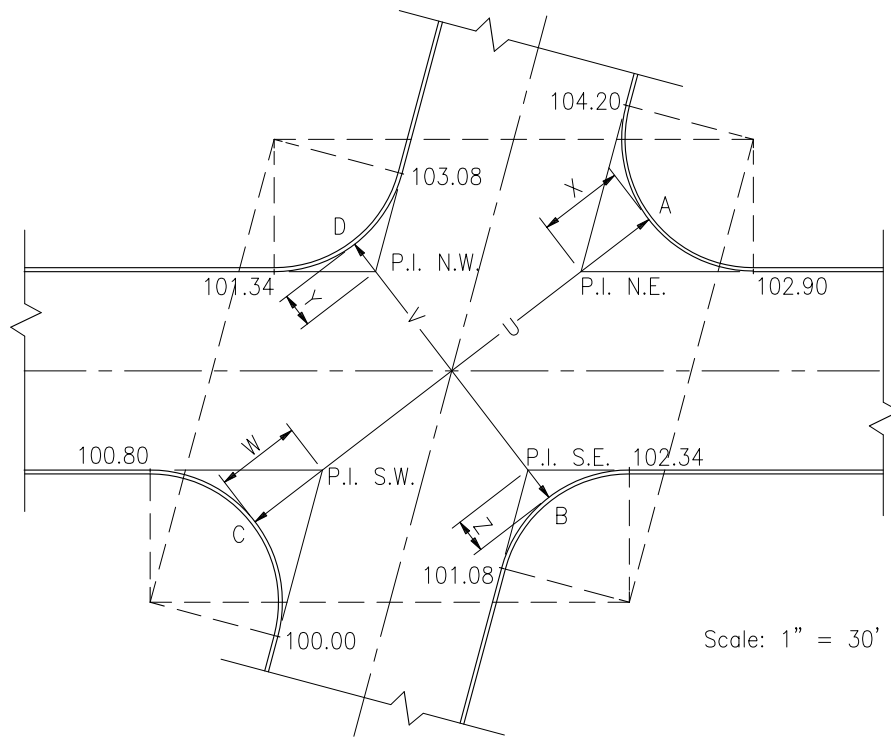
ISSUED: September 6, 1955

REVISED: April 30, 1956

REVISED: March, 2007

PLATE

R-G



TYPICAL SOLUTION OF ELEVATION OF TOP CURB P.I.

1. GIVEN: ELEVATIONS OF TOP OF CURB AT TANGENTS TO CURB RETURNS.
2. CALCULATE AVERAGE ELEVATIONS OF TOP OF CURB AT P.C & P.T. OF EACH CURB RETURN.
3. DETERMINE DISTANCE U.
4. DETERMINE DISTANCE V.
5. DETERMINE DISTANCE W & X.
6. DETERMINE DISTANCE Y & Z.
7. CALCULATE DIFFERENCE IN ELEVATION BETWEEN:
POINT A AND POINT C:
POINT B AND POINT D.
8. CALCULATE: $\frac{W \text{ (OR } X) \times \text{DIFFERENCE IN ELEVATION (A TO C)}}{U}$
9. CALCULATE: $\frac{Y \text{ (OR } Z) \times \text{DIFFERENCE IN ELEVATION (B TO D)}}{V}$
10. CENTER LINE ELEVATIONS (INTERSECTION OF CENTER LINES OF BOTH STREETS) MUST BE EQUAL.

AS SHOWN.

$$A: \frac{104.20 + 102.90}{2} = 103.55; \text{ SIMILARLY, } B: 101.71; \\ C: 100.40; D: 102.21.$$

MEASURES 75 FEET
MEASURES 48 FEET
MEASURES 13 FEET
MEASURES 5 FEET

$$103.55 - 100.40 = 3.15 \\ 102.21 - 101.71 = 0.50$$

$$\frac{13 \times 3.15}{75} = 0.55$$

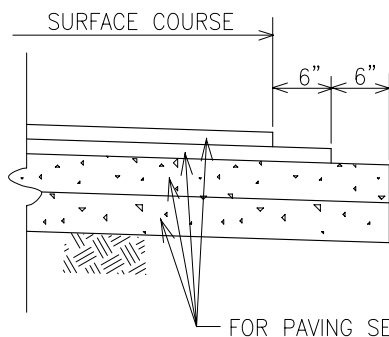
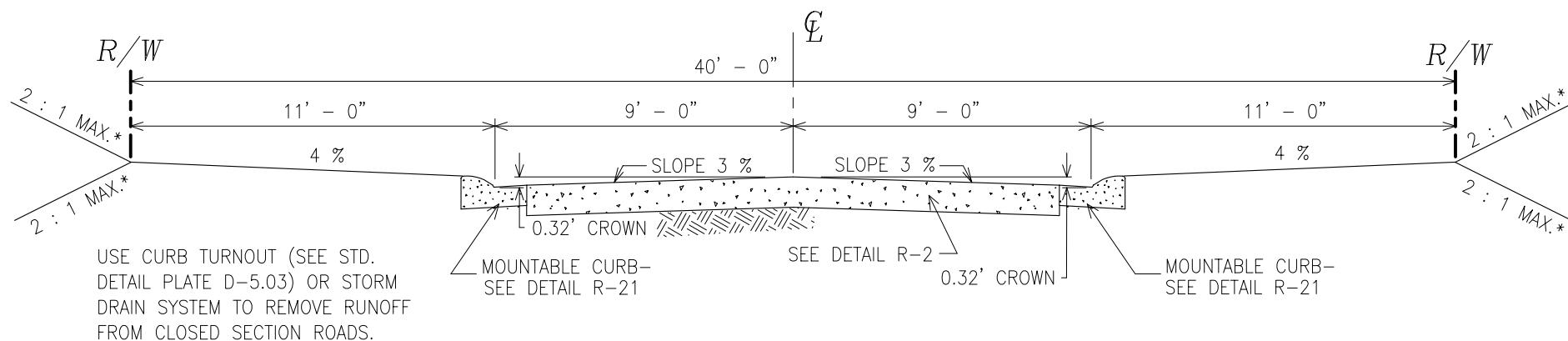
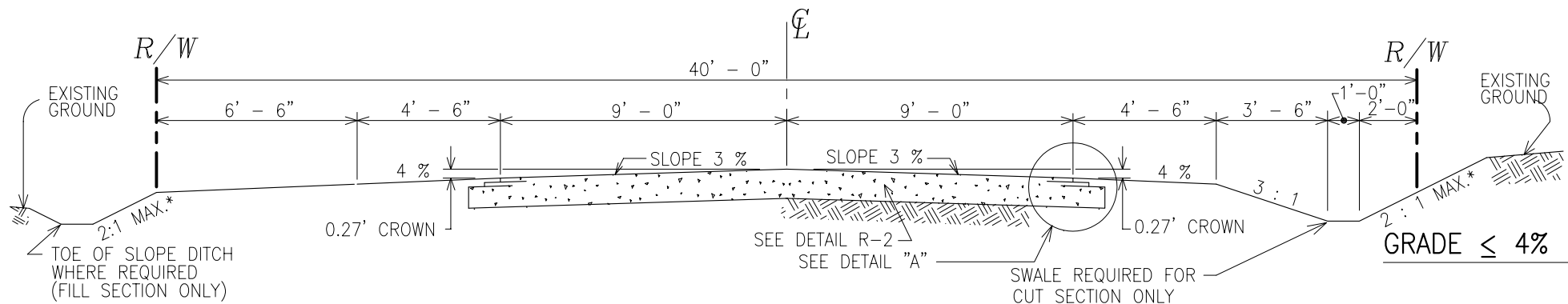
$$\frac{5 \times 0.50}{48} = 0.05$$



DEPARTMENT OF PUBLIC WORKS
ROAD & STREET DESIGN
ELEVATION OF CURB TOP P.I.
FOUR CORNER INTERSECTION

ISSUED: SEPTEMBER 6, 1955
REVISED: AUGUST 22, 1961
REVISED: MARCH, 2007

PLATE
R-H



NOTES

1. THIS DETAIL SHALL BE USED ONLY IN RC ZONES FOR ROADS WITH AN ADT OF 2000 OR LESS.
2. STABILIZATION OF SLOPES & GRADES SHALL BE IN ACCORDANCE WITH THE PLANS OR AS DIRECTED BY THE ENGINEER.

* CUT & FILL SLOPE GRADES SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF A REGISTERED GEOTECHNICAL ENGINEER.



DEPARTMENT OF PUBLIC WORKS
ROAD AND STREET DESIGN
MINOR RURAL STREET
LOTS \geq 1 ACRE & FRONTAGE \geq 150 FEET

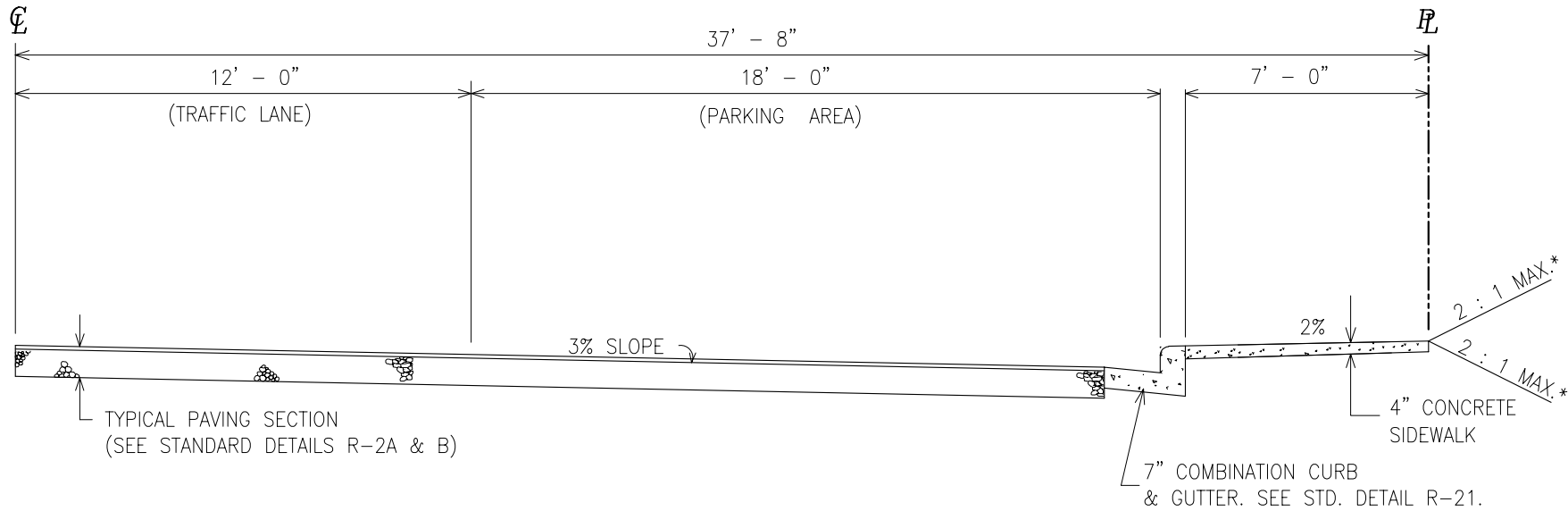
ISSUED: AUGUST 25, 2008

REVISED:

REVISED:

PLATE
R-1
(RURAL 1)

* CUT & FILL SLOPE GRADES SHALL
BE IN ACCORDANCE WITH RECOM-
MENDATIONS OF A REGISTERED
GEOTECHNICAL ENGINEER.



- NOTES:**
1. CONCRETE SIDEWALKS TO BE BUILT BY OTHERS, EXCEPT AS NOTED.
 2. PROVIDE A MINIMUM OF 1 HANDICAPPED PARKING SPACE WITH ACCESSIBLE PEDESTRIAN RAMP AT EACH PARKING AREA.



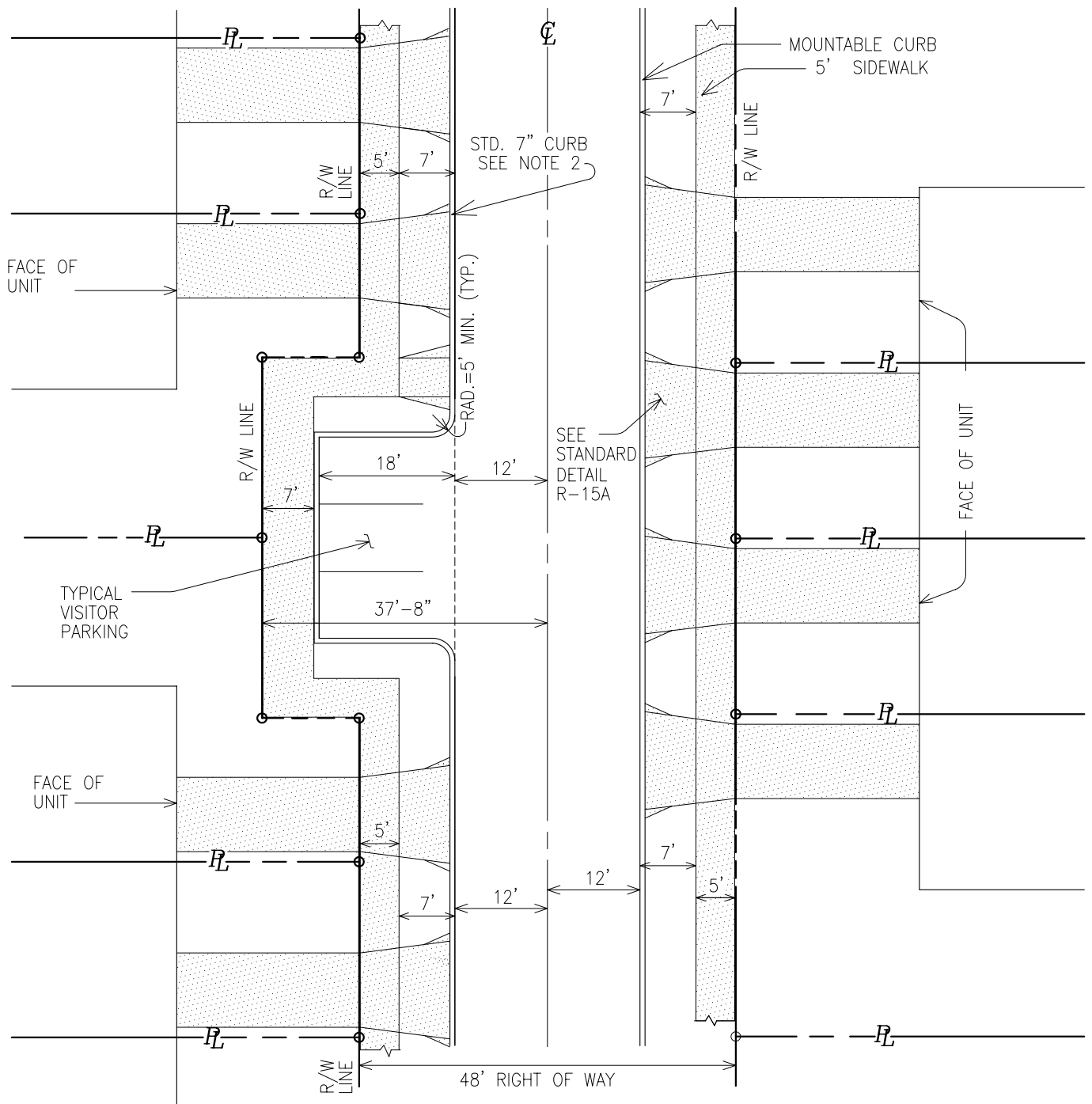
DEPARTMENT OF PUBLIC WORKS
ROAD & STREET DESIGN

**24' STREET
WITH PERPENDICULAR PARKING
HALF-SECTION**

ISSUED: AUGUST 1997
REVISED: SEPTEMBER 2008
REVISED: _____

PLATE

R-L-1



TYPICAL LAYOUT FOR GARAGED TOWNHOUSE DEVELOPMENT

NOTES:

1. NO ON-STREET PARALLEL PARKING IS ALLOWED.
2. MOUNTABLE CURB MAY BE USED IN AREAS WITH INDIVIDUAL DRIVEWAY ENTRANCES. SEE DESIGN PLATE R-B-2.



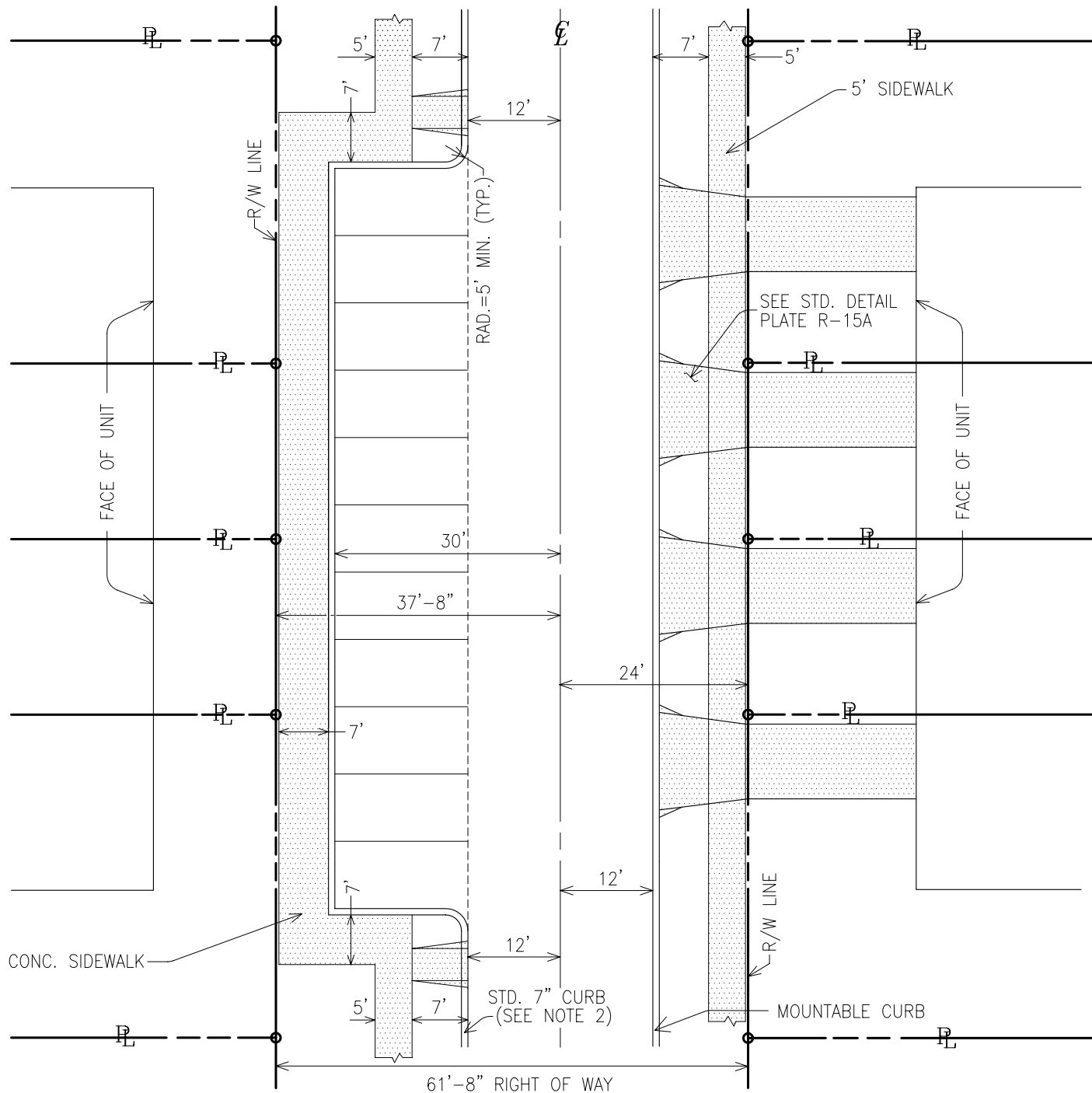
DEPARTMENT OF PUBLIC WORKS
ROAD & STREET DESIGN

**MINOR STREET
GARAGED TOWNHOUSES**

ISSUED: AUGUST, 1997
REVISED: JANUARY, 2010
REVISED:

PLATE

R-L-2



TYPICAL LAYOUT FOR MIXED GARAGED & NON-GARAGED TOWNHOUSE DEVELOPMENTS

NOTES:

1. NO ON-STREET PARALLEL PARKING IS ALLOWED.
2. MOUNTABLE CURB MAY BE USED IN AREAS WITH INDIVIDUAL DRIVEWAY ENTRANCES. SEE DESIGN PLATE R-B-2.



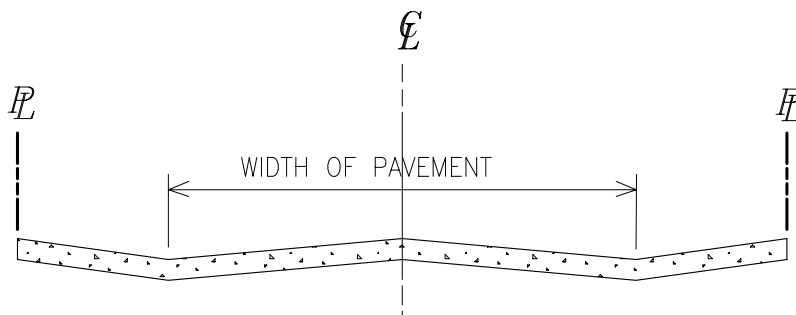
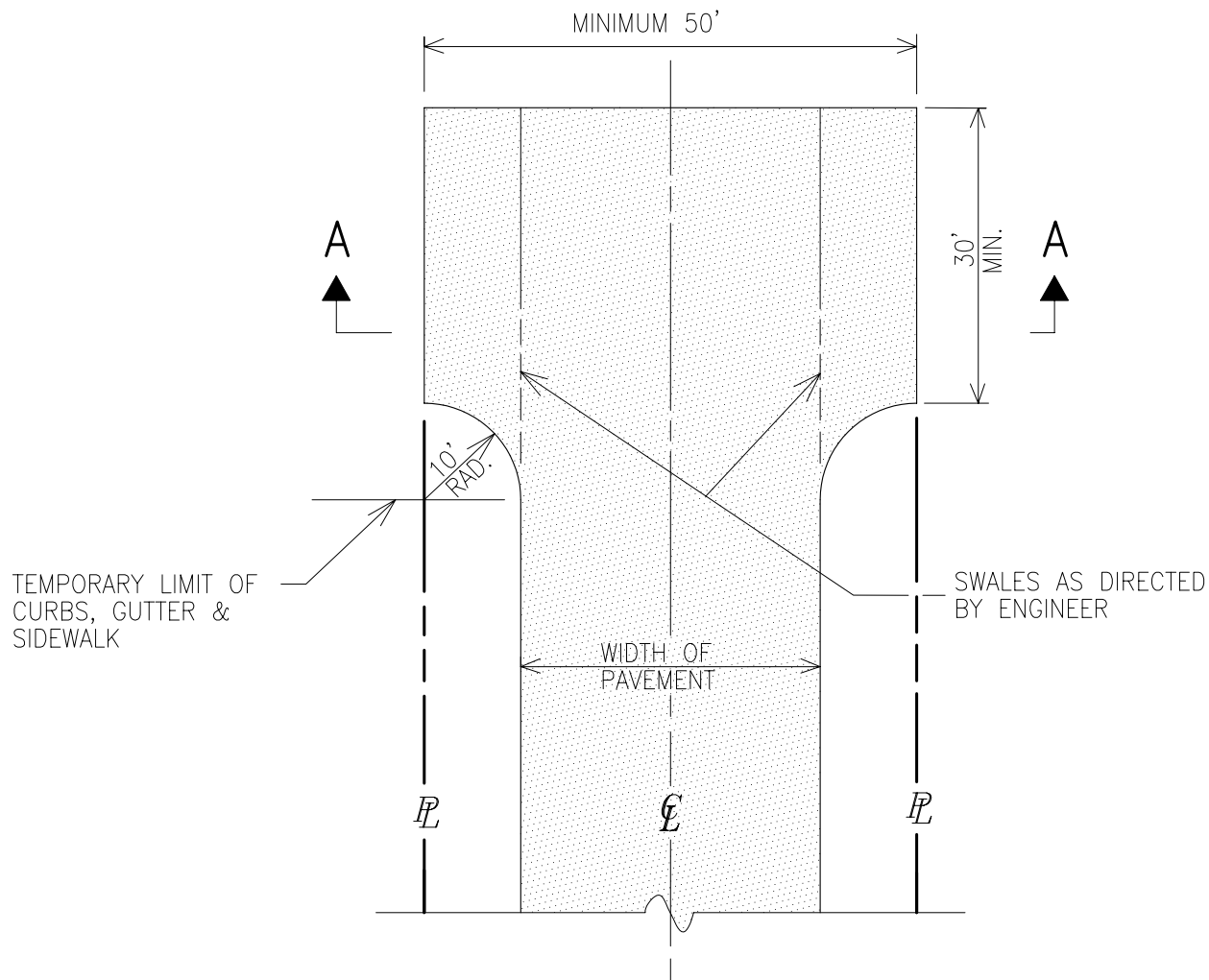
DEPARTMENT OF PUBLIC WORKS
STANDARD ROAD & STREET DESIGN

MINOR STREET MIXED GARAGED & NON-GARAGED TOWNHOUSES

ISSUED: AUGUST, 1997
REVISED: SEPTEMBER 2008
REVISED:

PLATE

R-L-3



SECTION A - A

NOTES:

A TEMPORARY TEE TURN-AROUND SHALL BE USED IN LIEU OF A CUL-DE-SAC ONLY IF THE STREET IS TO BE EXTENDED IN THE FUTURE.



DEPARTMENT OF PUBLIC WORKS
STANDARD ROAD & STREET DESIGN

**TEMPORARY
TEE TURN-AROUND**

ISSUED: AUGUST, 1997
REVISED: SEPTEMBER 2008
REVISED: _____

PLATE

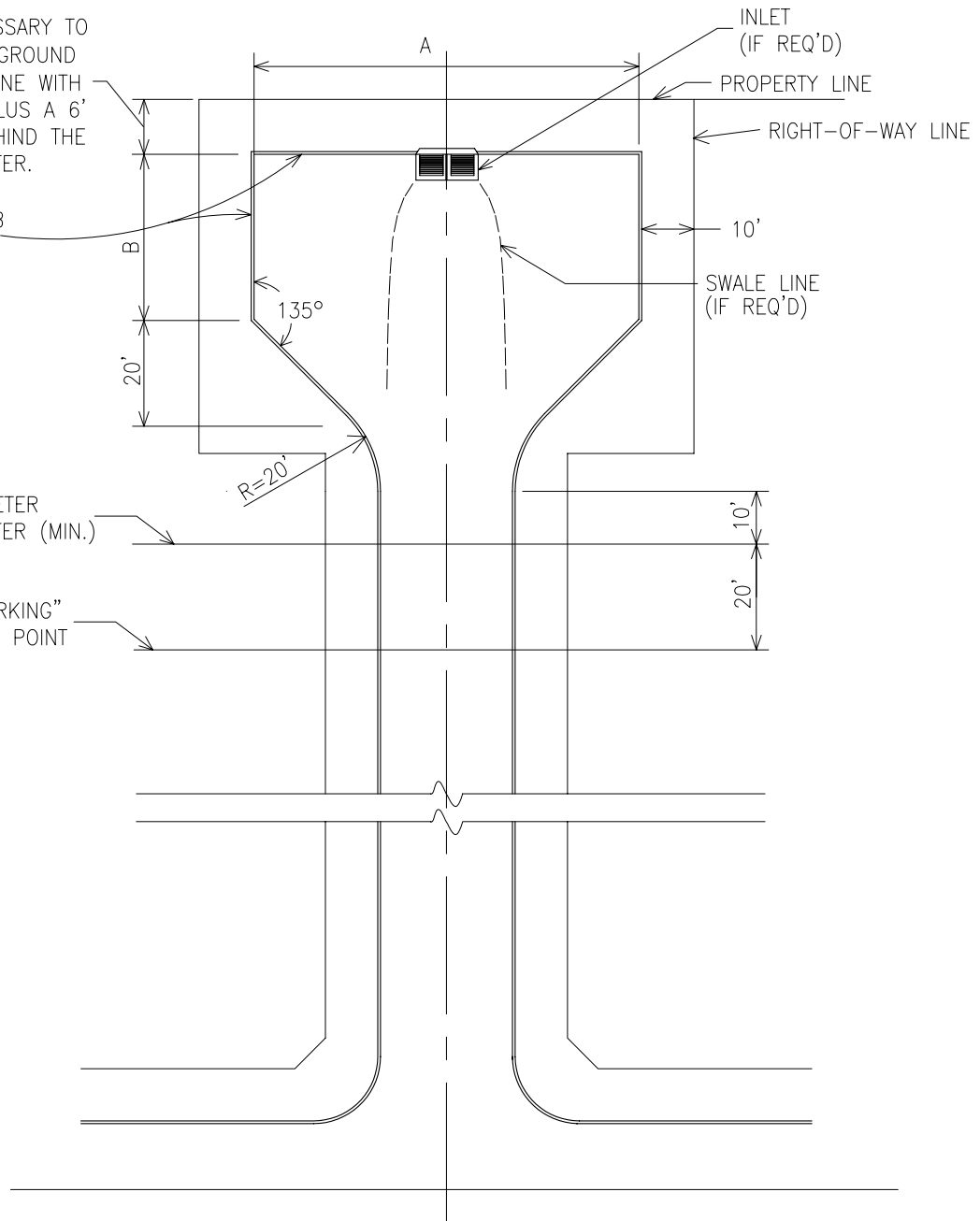
R-N-1

DISTANCE NECESSARY TO MEET EXISTING GROUND AT PROPERTY LINE WITH A 2:1 SLOPE PLUS A 6' LEVEL AREA BEHIND THE CURB AND GUTTER.

CONCRETE CURB AND GUTTER

LIMIT OF PERIMETER CURB AND GUTTER (MIN.)

"NO PARKING" BEYOND THIS POINT



NOTES

1. GUARD POSTS TO BE PLACED AROUND PERIMETER OF TEE AND 6' MINIMUM BEHIND CURB AND GUTTER WHERE NECESSARY.
2. "NO PARKING" TO BE POSTED WITHIN 20' OF TEE.
3. SEE STANDARD DETAIL PLATE R-2 FOR TYPICAL PAVING SECTION.

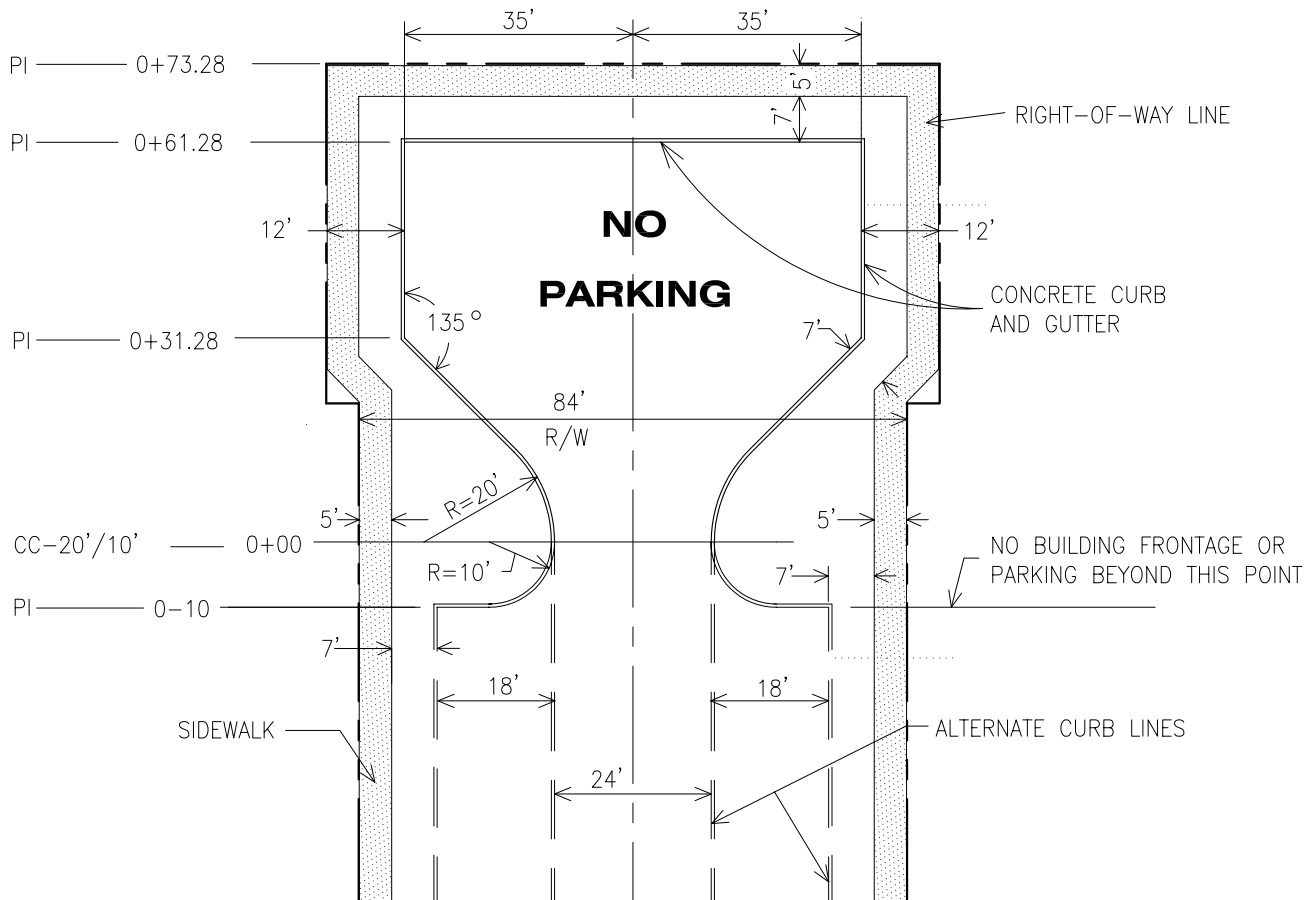
A	B	
70'	30'	WITH 4' CONC. WALK AND 2' LEVEL AREA
80'	40'	WITHOUT WALK



DEPARTMENT OF PUBLIC WORKS
ROAD & STREET DESIGN
**PERMANENT
TEE TURN-AROUND
RURAL AREAS**

ISSUED: AUGUST, 1997
REVISED: SEPTEMBER 2008
REVISED: _____
PLATE

R-N-2



NOTES:

1. NO OBSTRUCTIONS ABOVE GRADE WITHIN RIGHT-OF-WAY, STATION 0-10 TO STATION 0+71.28. OBSTRUCTIONS INCLUDE FIRE HYDRANTS, SIGNS, MAIL BOXES, NEWSPAPER DISPENSERS, UTILITY JUNCTION BOXES, ETC.
2. SURFACE DRAINAGE SHALL BE BY DESIGN FOR THE SPECIFIC PROJECT.

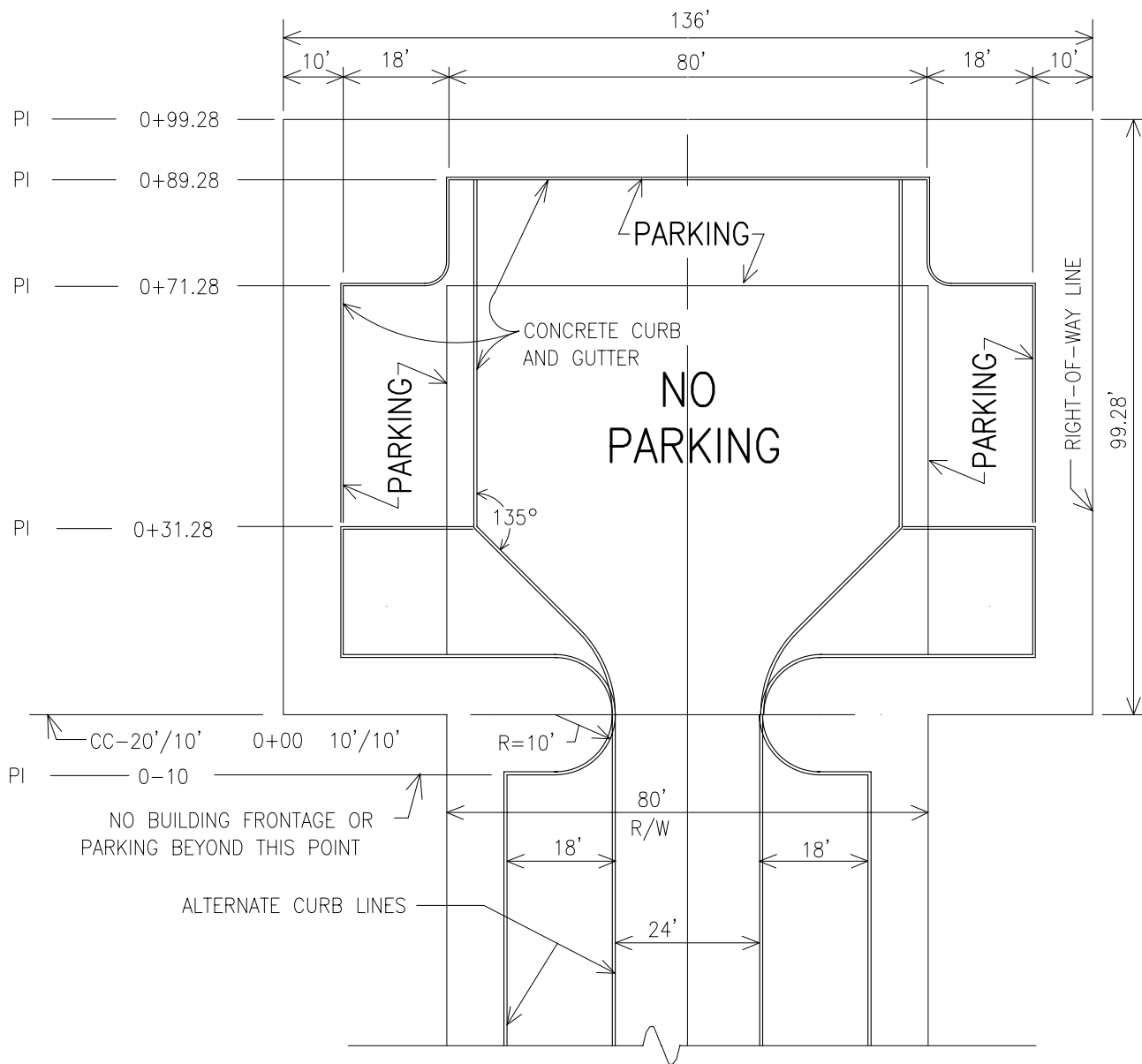


DEPARTMENT OF PUBLIC WORKS
ROAD & STREET DESIGN
PERMANENT TEE TURNAROUND
MINIMUM REQUIREMENTS
URBAN AREAS

ISSUED: AUGUST, 1997
REVISED: SEPTEMBER 2008
REVISED:

PLATE

R-N-3



NOTES

1. NO OBSTRUCTIONS ABOVE GRADE WITHIN RIGHT-OF-WAY, STATION 0-10 TO STATION 0+71.28. OBSTRUCTIONS INCLUDE FIRE HYDRANTS, SIGNS, MAIL BOXES, NEWSPAPER DISPENSERS, UTILITY JUNCTION BOXES, ETC.
2. THIS DETAIL IS NOT FOR USE WITH SINGLE FAMILY DETACHED OR SEMI-DETACHED HOUSES.
3. ANY COMBINATION OF PARKING BAYS MAY BE USED WITH MINIMUMS SHOWN ON PLATE R-N-3.
4. SURFACE DRAINAGE SHALL BE BY DESIGN FOR THE SPECIFIC PROJECT.



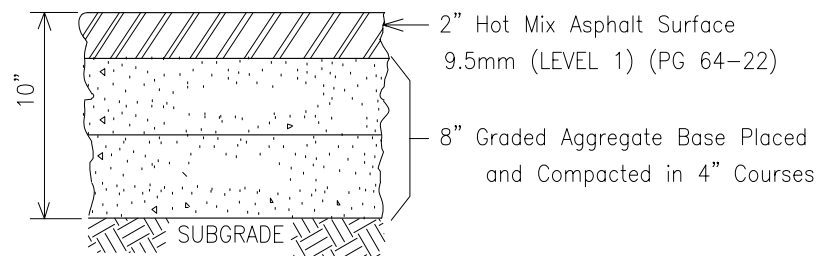
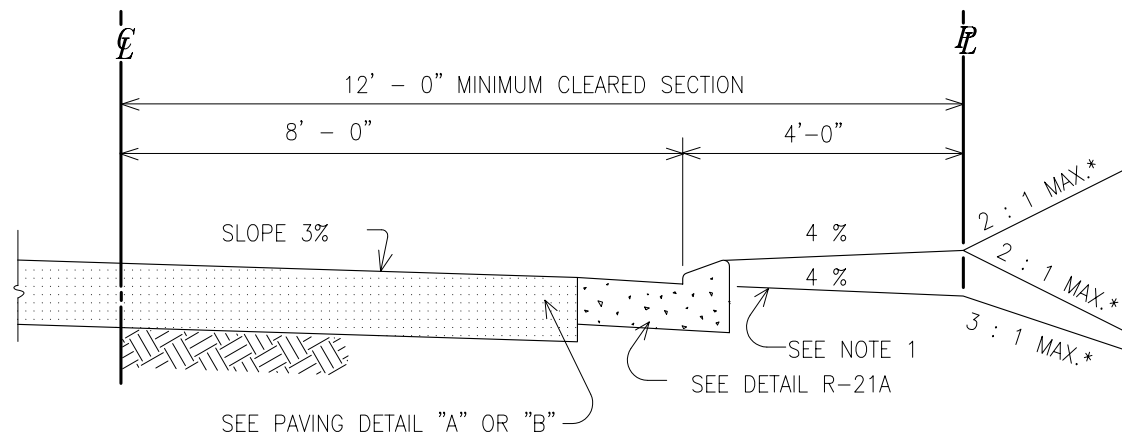
DEPARTMENT OF PUBLIC WORKS
ROAD & STREET DESIGN

PERMANENT 'TEE' TURNAROUND PARKING ALTERNATIVES URBAN AREAS

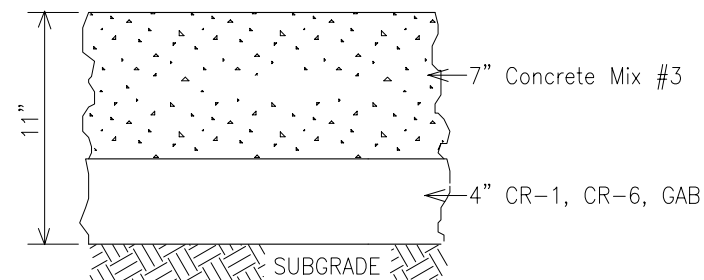
ISSUED: AUGUST, 1997
REVISED: SEPTEMBER 2008
REVISED:

PLATE

R-N-4



DETAIL "A"



DETAIL "B"

NOTES

1. STORM WATER FROM DRIVEWAY MAY BE REMOVED BY INSTALLATION OF COMBINATION INLETS CONNECTED TO THE CULVERT UNDER THE DRIVEWAY, OR BY USE OF CURB TURNOUTS SIMILAR TO DETAIL PLATE D-5.03, DISCHARGING TO A STABILIZED DRAINAGE SWALE.
2. MINIMUM HORIZONTAL CURVATURE = 30 FOOT \mathcal{E} RADIUS
3. MAXIMUM ABRUPT CHANGE IN GRADE \mathcal{E} AT ROAD R/W LINE = 8° OR 13%.
4. MAXIMUM VERTICAL CURVATURE ON \mathcal{E} PROFILE SHALL BE ESTABLISHED BY PLOTTING A 3-1/2" RADIUS CIRCULAR CURVE ON A 5 FOOT VERTICAL SCALE BY 50 FOOT HORIZONTAL SCALE PROFILE (20 MILE / HOUR DESIGN SPEED).
5. SIDEWALKS MAY BE DEPRESSED 4 INCHES BELOW STANDARD GRADE THROUGH PANHANDLE PROFILE.
6. MAXIMUM GRADE = 14%.
7. A RURAL PANHANDLE DESIGN (SEE PLATE R-Q) MAY BE PERMITTED WHEN DRAINAGE AND OTHER CONDITIONS NOT ADVERSE TO RESIDENTIAL CONSTRUCTION ARE FOUND TO ENCOURAGE DISPERSION AND/OR INFILTRATION OF RUNOFF.
8. LIMIT GROUND IRON BLAST FURNACE SLAG CONTENT TO 35% MAXIMUM IN MIX #3 CONCRETE.

* CUT & FILL SLOPE GRADES SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF A REGISTERED GEOTECHNICAL ENGINEER.



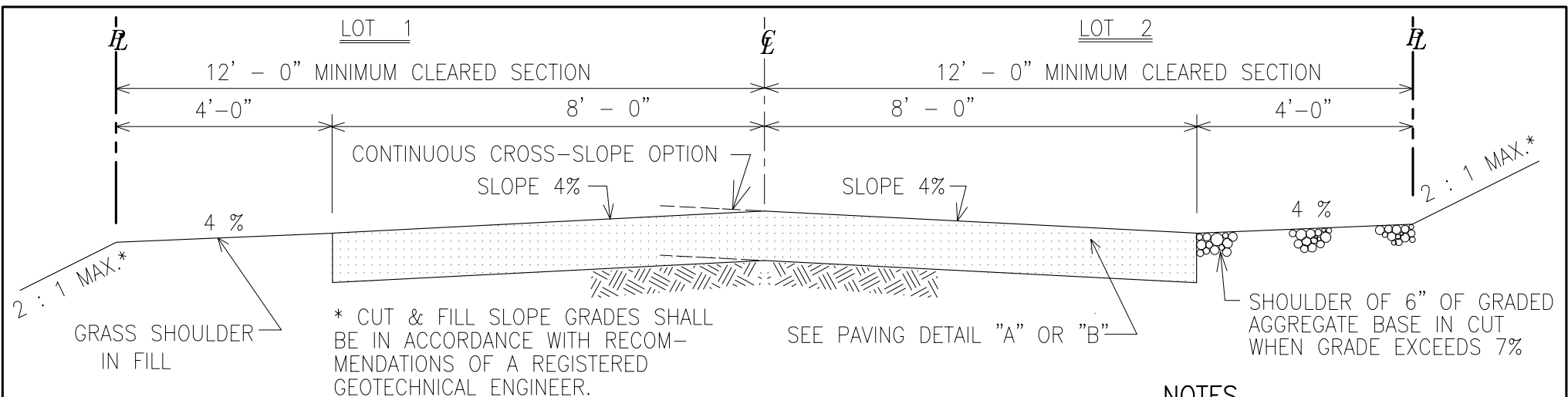
DEPARTMENT OF PUBLIC WORKS
STANDARD ROAD & STREET DESIGN

PANHANDLE DRIVEWAY / USE-IN-COMMON DRIVEWAY URBAN ZONING

ISSUED: AUGUST, 1997
REVISED: MARCH, 2002
REVISED: NOVEMBER, 2005

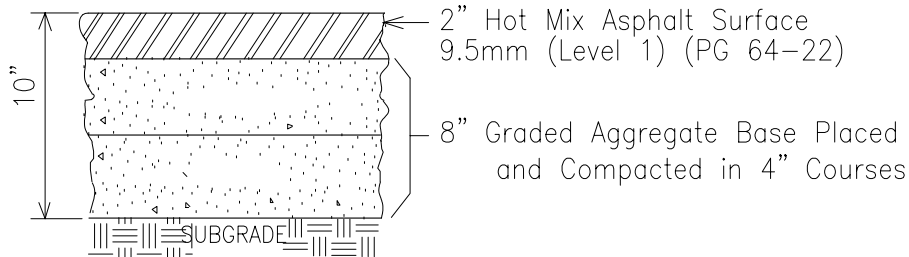
PLATE

R-P

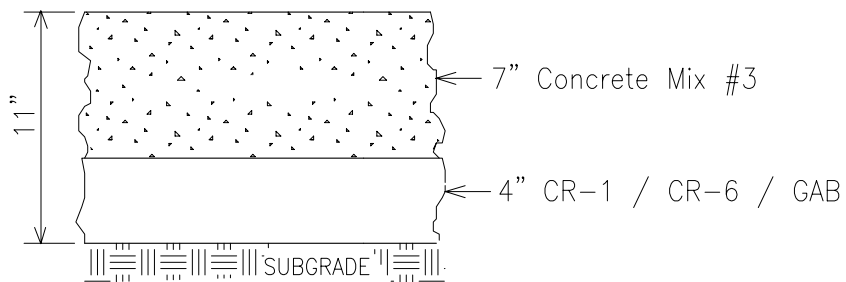


NOTES

1. STORM WATER FROM DRIVEWAY SUMPS MAY BE REMOVED BY REVERSED SLOPE SHOULDERS DRAINING TO NATURAL, STABLE DRAINAGE COURSES.
2. MINIMUM HORIZONTAL CURVATURE = 30 FOOT ϵ RADIUS
3. MAXIMUM ABRUPT CHANGE IN GRADE ϵ AT ROAD R/W LINE = 8° OR 13%.
4. MAXIMUM VERTICAL CURVATURE ON ϵ PROFILE SHALL BE ESTABLISHED BY PLOTTING A 3-1/2" RADIUS CIRCULAR CURVE ON A 5 FOOT VERTICAL SCALE BY 50 FOOT HORIZONTAL SCALE PROFILE (20 MILE PER HOUR DESIGN SPEED).
5. MAXIMUM GRADE = 14%.
6. WHERE DRAINAGE, ENVIRONMENTAL PROTECTION AND OTHER CONDITIONS PERMIT, A NON-CROWN SECTION WITH CROSS-SLOPE AT 4% (1/2" TO 1") MAY BE UTILIZED TO ENCOURAGE DISPERSION AND/OR INFILTRATION OF RUNOFF.
7. DESIGN STANDARD PLATE R-P MAY BE UTILIZED IN ALL RURAL ZONES.



DETAIL "A"



DETAIL "B"



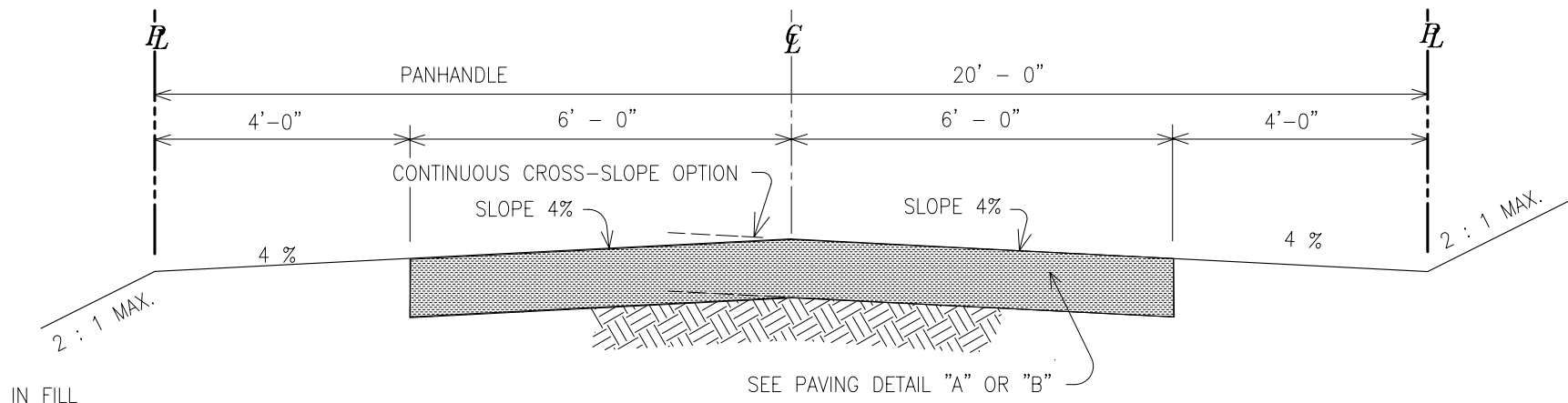
DEPARTMENT OF PUBLIC WORKS
STANDARD ROAD & STREET DESIGN

PANHANDLE DRIVEWAY / USE-IN-COMMON DRIVEWAY RURAL ZONING

ISSUED: AUGUST, 1997
REVISED: MARCH, 2002
REVISED:

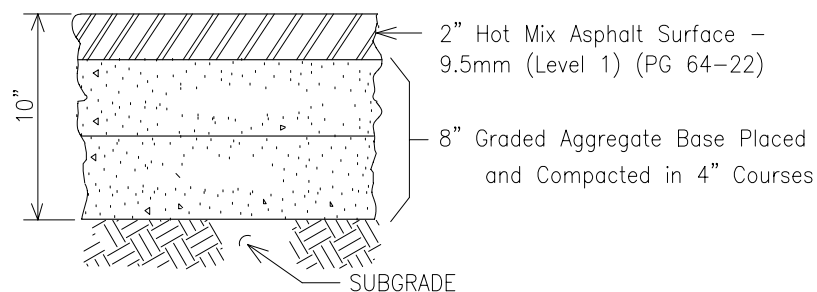
PLATE

R-Q

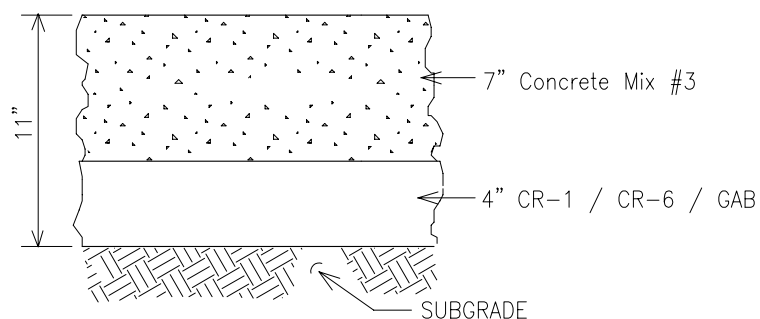


NOTES

1. MINIMUM HORIZONTAL CURVATURE = 30 FOOT \mathcal{E} RADIUS
2. MAXIMUM ABRUPT CHANGE IN GRADE \mathcal{E} AT ROAD R/W LINE = 8° OR 13%.
3. MAXIMUM VERTICAL CURVATURE ON \mathcal{E} PROFILE SHALL BE ESTABLISHED BY PLOTTING A 3-1/2" RADIUS CIRCULAR CURVE ON A 5 FOOT VERTICAL SCALE BY 50 FOOT HORIZONTAL SCALE PROFILE (20 MILE PER HOUR DESIGN SPEED).
4. SIDEWALKS MAY BE DEPRESSED 4 INCHES BELOW STANDARD GRADE THROUGH PANHANDLE FRONTAGE.
5. MAXIMUM GRADE = 14%.
6. WHERE DRAINAGE, ENVIRONMENTAL PROTECTION & OTHER CONDITIONS PERMIT, A NON-CROWN SECTION WITH CROSS-SLOPE AT 4% (1/2" TO 1") MAY BE UTILIZED TO ENCOURAGE DISPERSION AND/OR INFILTRATION OF RUNOFF.
7. THREE FOOT SHOULDER OF 6" CRUSHER RUN STONE IS REQUIRED FOR CUT SECTIONS WHERE GRADE EXCEEDS 7 %.
8. LIMIT GROUND IRON BLAST FURNACE SLAG CONTENT TO 35% MAXIMUM IN MIX #3 CONCRETE.



DETAIL "A"



DETAIL "B"

DEPARTMENT OF PUBLIC WORKS
STANDARD ROAD AND STREET DESIGN

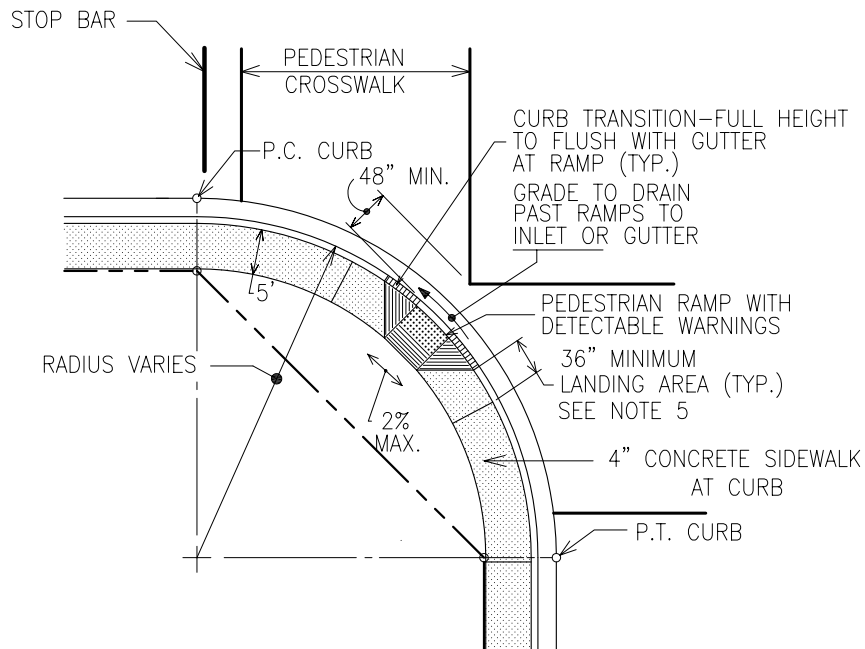
PANHANDLE DRIVEWAY
DRIVEWAY LESS THAN 300 FEET
URBAN OR RURAL ZONES, 1 LOT ONLY

ISSUED: AUGUST, 1997
REVISED: MARCH, 2002
REVISED: NOVEMBER, 2005

PLATE

R-R

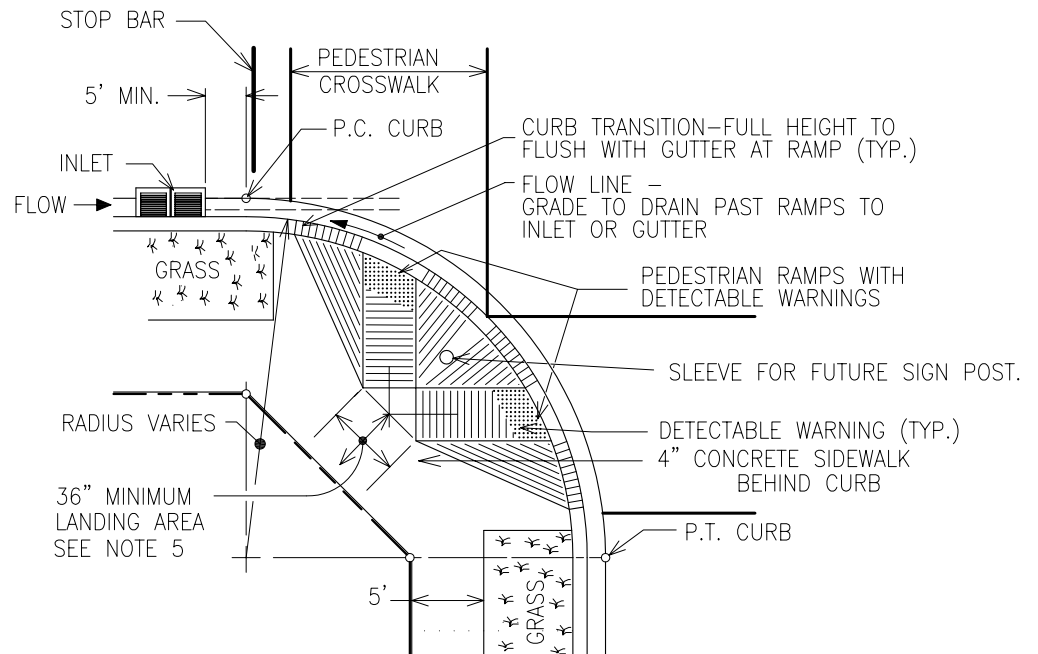




MINOR STREETS OR AS DIRECTED

NOTES :

1. PEDESTRIAN RAMPS SHALL BE PROVIDED WHEREVER A PUBLIC SIDEWALK CROSSES A CURB. ALIGN RAMPS AND LEVEL AREAS AS MUCH AS POSSIBLE WITH THE CENTER LINES OF APPROACHING SIDEWALKS.
2. MINIMUM 36" CLEAR SIDEWALK AND RAMP REQUIRED AROUND ALL OBSTRUCTIONS. REMOVE OR RELOCATE PROTRUDING OBJECTS, EXISTING HYDRANTS, POLES, INLETS AND OTHER OBSTRUCTIONS WITHIN 36" MINIMUM SPACE WHEREVER PRACTICAL. AVOID ANY PROTRUSIONS OVER 4" (12" IF ON POLE). PEDESTRIAN RAMPS REQUIRE SPECIAL DESIGN AT SUMPS TO AVOID RAMP FLOODING AND SILTATION FOLLOWING STORMS.
3. NO SLOPE SHALL EXCEED 8.3% (1 VERTICAL TO 12 HORIZONTAL) ON RAMP (1 TO 10 ON FLARES).
4. MINIMUM RAMP WIDTH = 36" EXCLUSIVE OF FLARED SIDES.
5. LANDING AREAS SHALL HAVE A MAXIMUM OF 2% SLOPE IN ALL DIRECTIONS. LANDING AREA ON MINOR STREETS MAY



THOROUGHFARES & COLLECTOR ROADS (PREFERRED CONFIGURATION)

6. BE LOCATED AS SHOWN FOR THOROUGHFARES IF SIDEWALK IS SUFFICIENTLY BEHIND CURB TO ALLOW 36" MINIMUM LANDING WIDTH AT THIS LOCATION.
7. USE OF A CURB RETURN IN LIEU OF FLARES IS ALLOWED ONLY WHERE THE CURB RETURN WILL BE PARALLEL TO PEDESTRIAN FLOW.
8. ALL PAVEMENT MARKINGS TO BE IN ACCORDANCE WITH THE LATEST EDITION OF MUTCD.
9. SIDEWALK RAMPS, FLARES & TRANSITION AREAS ADJACENT TO DEPRESSED CURB SHALL BE 7" THICK CONCRETE. SIDEWALK BEHIND FULL HEIGHT CURB SHALL BE 4" THICK CONCRETE, EXCEPT WHERE ENGINEER DETERMINES THAT SIDEWALK COULD BE SUBJECT TO TRAFFIC LOADING REQUIRING 7" THICKNESS.



DEPARTMENT OF PUBLIC WORKS ROAD & STREET DESIGN **PEDESTRIAN RAMPS**

ISSUED: OCTOBER, 2002
REVISED: _____
REVISED: _____

PLATE

R-T