

# DESIGN MANUAL INDEX

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PLATE NUMBER	TITLE	SIGNATURE DATE	SPEC REF#
R-Q	PANHANDLE DRIVEWAY/USE-IN-COMMON DRIVEWAY (RURAL ZONE)	09/28/2023	501, 504, 520
R-R	PANHANDLE DRIVEWAY LESS THAN 300 FEET (URBAN OR RURAL ZONES) – (1) LOT ONLY	09/28/2023	501, 504, 520
R-S	MINOR RESIDENTIAL STREET STANDARDS	09/28/2023	----
R-T	PEDESTRIAN RAMPS	09/28/2023	----

INLET TYPE	STD. DETAIL	DESIGN PLATE	CURB & GUTTER STREET		ALLEY	OPEN SECTION ROAD		YARD	SWALE	NOTES
			IN	SUMP ON GRADE		ROADSIDE	MEDIAN			
A, B	D-2.00 thru D-2.05	D-11 (sump) SHA 61.1-431.0, 1 (on-grade)	●	Note 1		Note 4			Note 7	
E GRATE	D-2.06	D-16			●			●		
E Comb. Inlet Dbl. E Comb.	D-207, 9, 10	D-11, 12, 13	●	●		Note 4			Note 7	
J Inlet Modified Grate	D-2.13, 4	Size spillway weirs under grates				Note 3	●		●	
Special K	D-2.15	Size spillway weirs under grates							●	
S Single Grate	D-2.16A, B	D-16			●		●	●	●	
Type S Combination Inlet	D-2.18	D-11 (sump)	●	●		Note 4			Note 7	Note 2
Type S Double Grate Tandem	D-2.19A, B	D-16			●		●	●	●	
Type S Comb. Double Tandem	D-2.20	D-11, 14, 15	●	●		Note 4			Note 7	Note 2
Y-1	D-2.22A, B	Check Weirs Cap'y. vs Pipe Cap'y.						●		Not for use adjacent to wooded areas. For use in sump only. Non-traffic bearing - Not for use on or near road or shoulder.
Y-2	D-2.23	Note 5						●		
Y-3	D-2.24A, B	Q <sub>max</sub> =3.0 cfs						●		
Y-4	D-2.25A, B	Q <sub>max</sub> =3.0 cfs						●		
Y-5	D-2.25C	Check Weirs Cap'y. vs Pipe Cap'y.						●		
MD SHA COG	MD SHA 374.51 through MD SHA 374.67	SHA 61.1-431.0								*For use in MD SHA Right-of-Way only.
MD SHA COS		SHA 61.1-431.1								

NOTES:

- Use curb opening inlets on-grade only where utilities are close to curb to allow placement of a Type E Combination or Type S Combination inlet.
- Indicated Combination inlets to be depressed per Standard Detail D-2.26 only when so noted on plans.
- Type J inlets for use in roadside swale only where curb and gutter will not be added later.
- Set face of inlet curb piece at ultimate location of curb and gutter.
- Use BPR "Hydraulic capacity of grate inlet in sump"(rev.8/68) with A=2.7 s.f. and P=8.8 ft. assume 50% clogging.
- The Director of Public Works will consider waiving any requirements hereon for reasonable cause upon receipt of a written request.
- Where swale is intercepted by road drain system, an opening in the rear wall of the inlet under headpiece or top slab is used to collect swale flow. Show special design on plans.



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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**STORM DRAINAGE DETAILS**  
**STORM DRAIN INLET SELECTION**

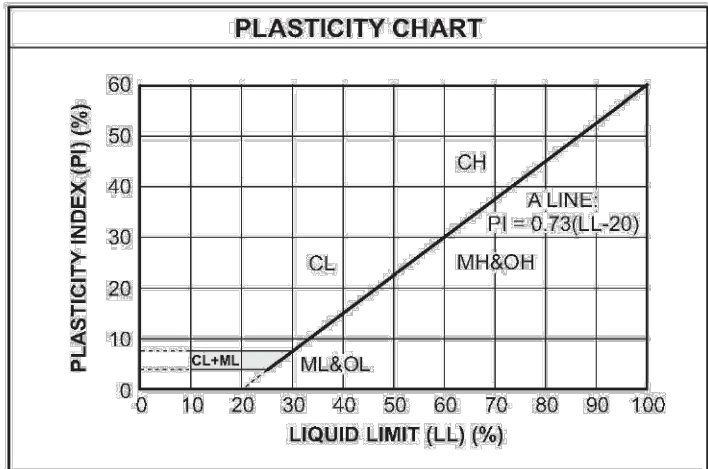
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 PLATE  
**D-22**



UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART		
<b>COARSE-GRAINED SOILS</b> (more than 50% of material is larger than No. 200 sieve size.)		
Clean Gravels (Less than 5% fines)		
<b>GRAVELS</b> More than 50% of coarse fraction larger than No. 4 sieve size	GW Well-graded gravels, gravel-sand mixtures, little or no fines	
	GP Poorly-graded gravels, gravel-sand mixtures, little or no fines	
	Gravels with fines (More than 12% fines)	
	GM Silty gravels, gravel-sand-silt mixtures	
	GC Clayey gravels, gravel-sand-clay mixtures	
Clean Sands (Less than 5% fines)		
<b>SANDS</b> 50% or more of coarse fraction smaller than No. 4 sieve size	SW Well-graded sands, gravelly sands, little or no fines	
	SP Poorly graded sands, gravelly sands, little or no fines	
	Sands with fines (More than 12% fines)	
	SM Silty sands, sand-silt mixtures	
	SC Clayey sands, sand-clay mixtures	
<b>FINE-GRAINED SOILS</b> (50% or more of material is smaller than No. 200 sieve size.)		
<b>SILTS AND CLAYS</b> Liquid limit less than 50%	ML Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity	
	CL Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
	OL Organic silts and organic silty clays of low plasticity	
<b>SILTS AND CLAYS</b> Liquid limit 50% or greater	MH Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
	CH Inorganic clays of high plasticity, fat clays	
	OH Organic clays of medium to high plasticity, organic silts	
<b>HIGHLY ORGANIC SOILS</b>	PT Peat and other highly organic soils	

LABORATORY CLASSIFICATION CRITERIA	
GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3
GP	Not meeting all gradation requirements for GW
GM	Atterberg limits below "A" line or P.I. less than 4
GC	Atterberg limits above "A" line with P.I. greater than 7
Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3
SP	Not meeting all gradation requirements for GW
SM	Atterberg limits below "A" line or P.I. less than 4
SC	Atterberg limits above "A" line with P.I. greater than 7
Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP  
 More than 12 percent ..... GM, GC, SM, SC  
 5 to 12 percent ..... Borderline cases requiring dual symbols



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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**GENERAL DESIGN**  
 UNIFIED SOIL CLASSIFICATIONS  
 WITH CRITERIA AND SYMBOL CHARTS

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**G-D**

DATE: 08/28/2023  
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**GEOTEXTILE SELECTION**

MARYLAND APPLICATION CLASS		GEOTEXTILE TYPE	GRAB STRENGTH (lb) D 4632	PUNCTURE STRENGTH (lb) D 6241	PERMITTIVITY sec <sup>1</sup> D 4491	APPARENT OPENING SIZE, max mm D 4751	TRAPEZOID TEAR STRENGTH (lb) D 4533
SD	TYPE II	NONWOVEN	160	56	0.20	0.25	55
	TYPE II	WOVEN, MONOFILAMENT	250	90	0.20	0.25	90
PE	TYPE I	NONWOVEN	200	80	0.70	0.43	80
	TYPE I	WOVEN, MONOFILAMENT	250	90	0.70	0.43	90
	TYPE II	NONWOVEN	200	80	0.20	0.25	80
	TYPE II	WOVEN, MONOFILAMENT	250	90	0.20	0.25	90
	TYPE III	NONWOVEN	200	80	0.10	0.22	80
	TYPE III	WOVEN, MONOFILAMENT	250	90	0.10	0.30	90
SE		NONWOVEN	200	80	0.20	0.30	80
		WOVEN	250	90	0.20	0.30	90
ST		WOVEN	300*	110	0.05	0.15**	110
F		WOVEN	100	-	0.05	0.60	-
E		NONWOVEN	90	30	0.50	0.30	30

APPLICATION TYPES

SD = Subgrade Drainage                      PE = Permanent Erosion Control  
 SE = Separation                                ST = Stabilization  
 E = Filtration                                    F = Silt Fence

Note 1: All property values are based on minimum average roll values in the weakest principle direction, except for apparent opening size.

Note 2: The ultraviolet stability shall be 50 percent after 500 hours of exposure for all classes, except Class F, which shall be 70 percent (D 4355).

\* Minimum 15 percent elongation.

\*\* This is the MINIMUM apparent opening size, not a maximum.

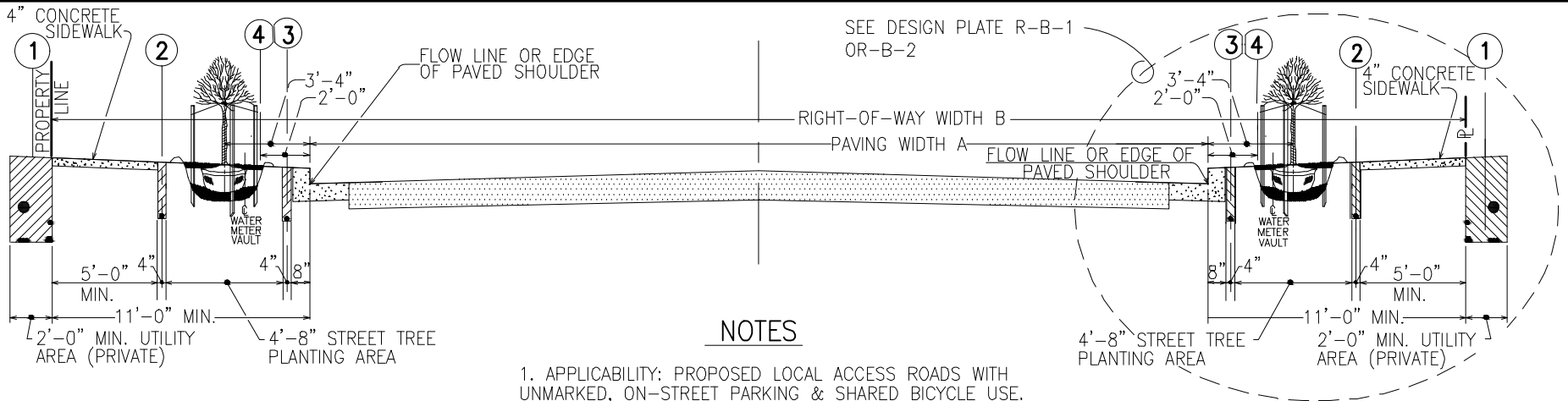


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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**GENERAL DESIGN**  
**GEOTEXTILE SELECTION**

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**G-E**

DATE: 08/28/2023 FILE: DM\_MASTER.DWG




**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'/50'.
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**

Avg. Road Frontage *	ADT		
	<750	750 - 2500	2500 - 5000
<65'	28'/50'	30'/52'	30'/52'
65' - 80'	28'/50'	28'/50'	30'/52'
>80'	22'/46'	28'/50'	28'/50'

\* 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.

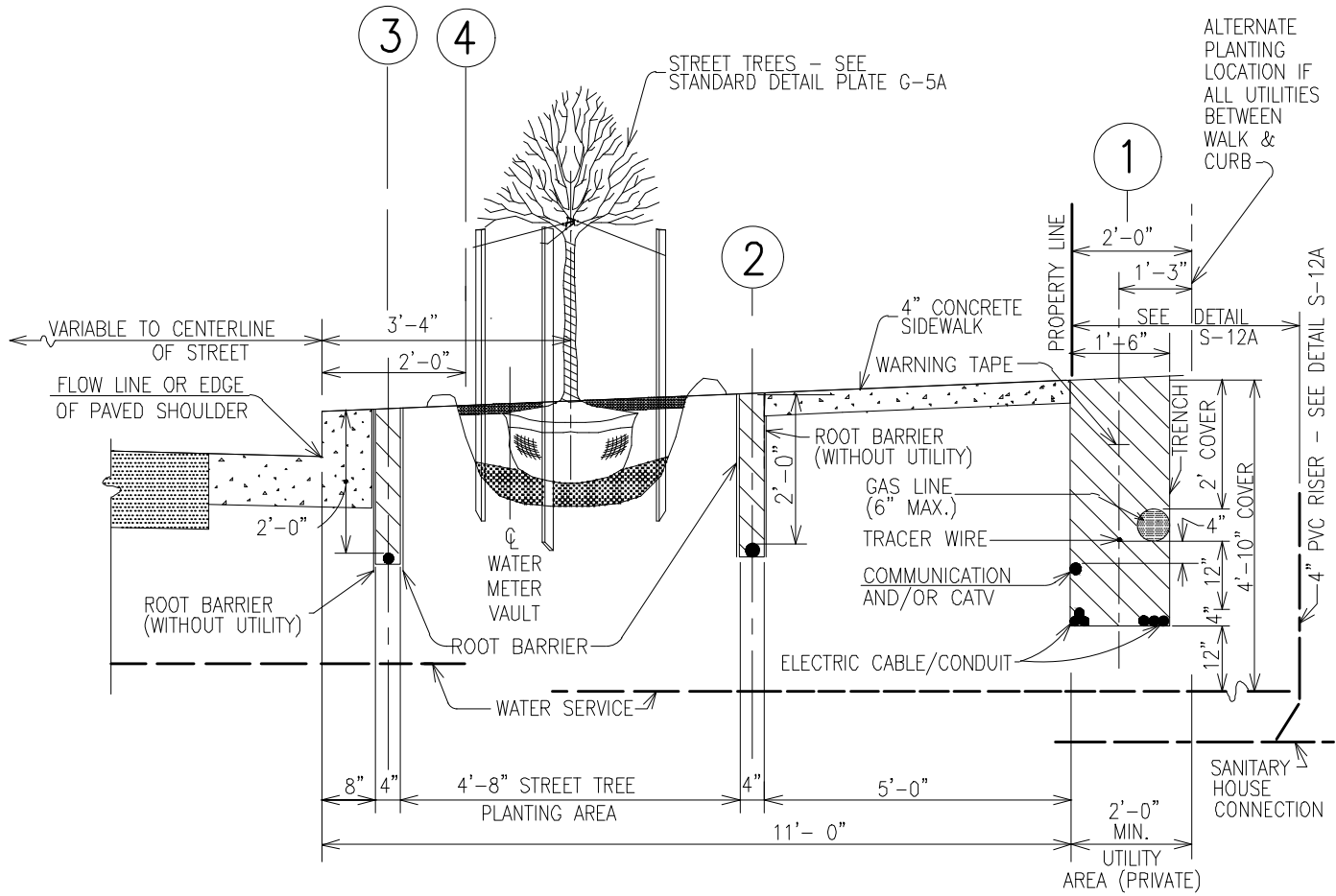


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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**STANDARD ROADWAY PAVING**  
**RIGHT-OF-WAY WIDTHS**  
**FOR URBAN RESIDENTIAL STREETS- POSTED 25 TO 35 MPH**

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-A**

FILE: DM\_MASTER.DWG DATE: 08/28/2023



**Notes**

- 1. 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.
- 2. ALL ROADS SHALL BE CONSISTENT WITH SECTION 260.4 OF THE BALTIMORE COUNTY ZONING REGULATIONS, LATEST ADOPTED VERSION.

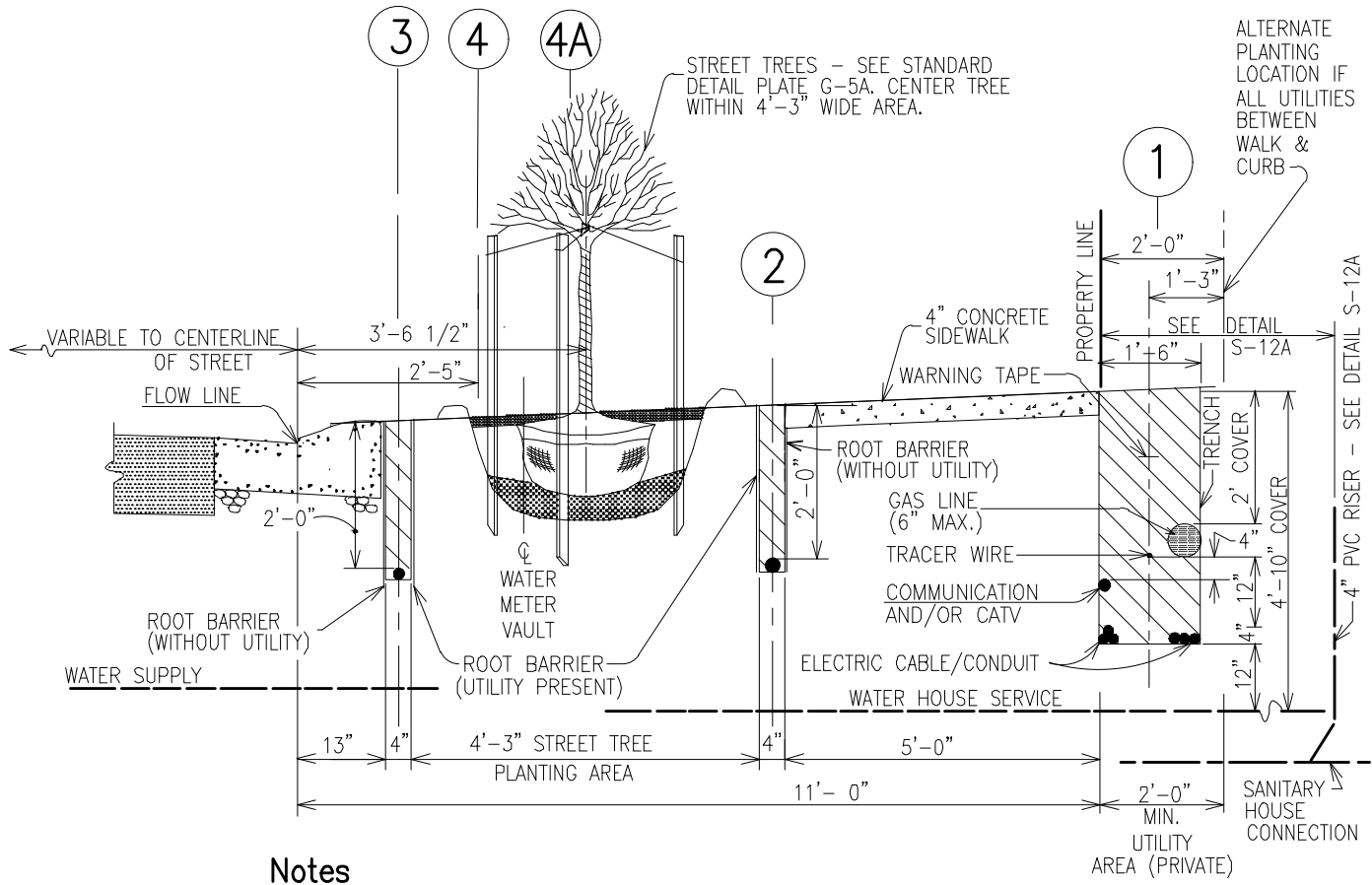
- 1 JOINT TRENCH FOR INSTALLATION OF GAS, ELECTRIC COMMUNICATION AND CATV IN BG&E EASEMENT
- 2 ALTERNATE LOCATION FOR COMMUNICATION AND/OR CATV
- 3 RESERVED FOR STREET LIGHT POWER AND/OR SIGNALIZATION CABLES APPURTENANT TO HIGHWAY USE
- 4 FIRE HYDRANTS & TRAFFIC SIGNS



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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**URBAN RESIDENTIAL STREET**  
 STANDARD 5' SIDEWALK AND STD. CURB

ISSUED: SEPTEMBER 2023  
 REVISED:  
 REVISED:  
 PLATE  
**R-B-1**



**Notes**

1. 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.
2. ALL ROADS SHALL BE CONSISTENT WITH SECTION 260.4 OF THE BALTIMORE COUNTY ZONING REGULATIONS, LATEST ADOPTED VERSION.

- 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

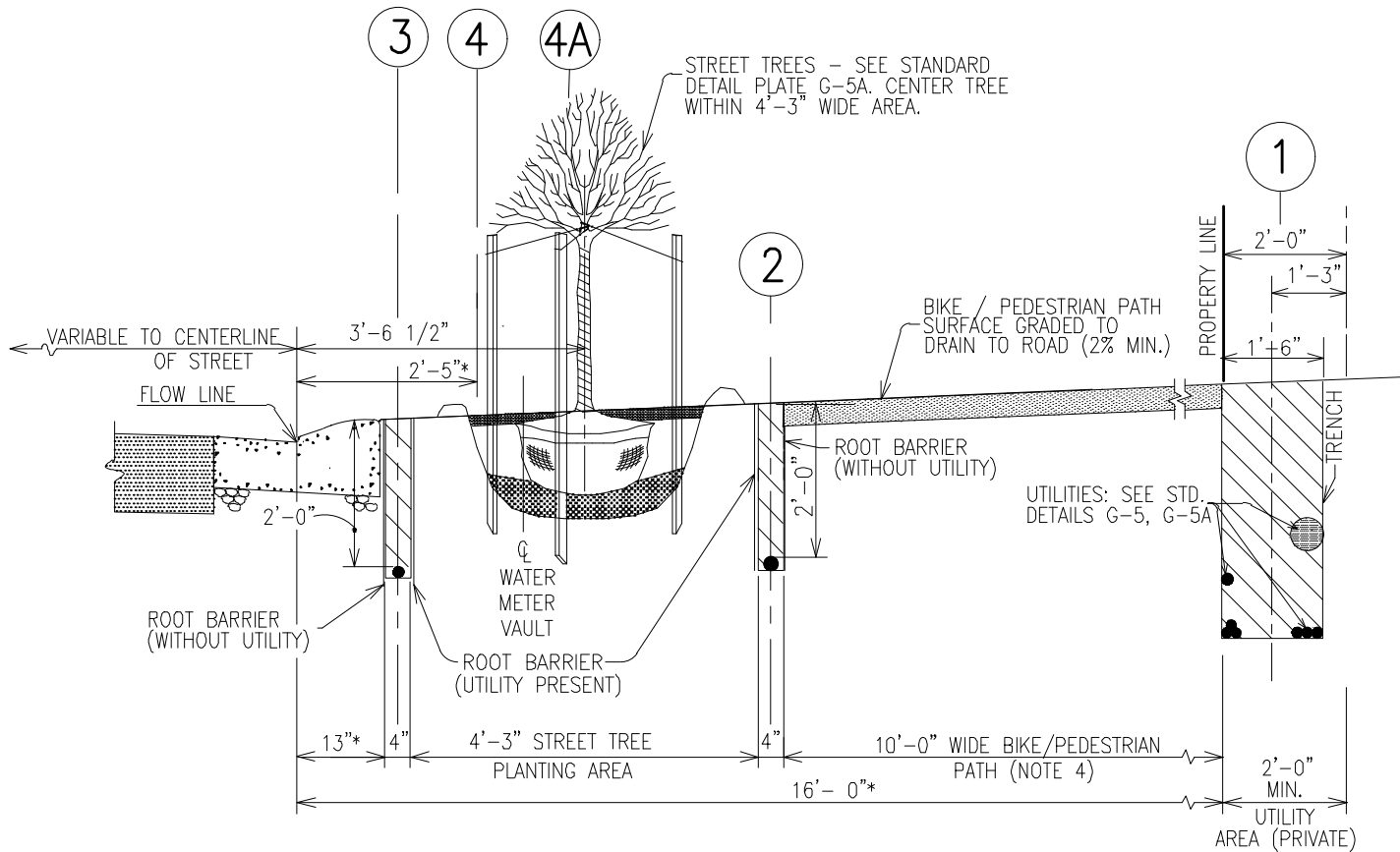


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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROAD AND STREET DETAILS  
 URBAN RESIDENTIAL STREET  
 STANDARD 5' SIDEWALK AND MOUNTABLE CURB

ISSUED: SEPTEMBER 2023  
 REVISED:  
 REVISED:  
 PLATE  
**R-B-2**





**Notes**

1. 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.
2. ALL ROADS SHALL BE CONSISTENT WITH SECTION 260.4 OF THE BALTIMORE COUNTY ZONING REGULATIONS, LATEST ADOPTED VERSION.
3. PATH PAVING MATERIAL MAY INCLUDE THE FOLLOWING, SUBJECT TO SELECTION BASED UPON CONTEXT AND LOCATION:
  - VEGETATED (GRASS) FOR "NO BUILD" (WAIVER).
  - 8" OF GAB PLACED IN 4" COMPACTED LAYERS ON GEOTEXTILE CLASS SE.
  - 8" OF CR-6 PLACED IN 4" COMPACTED LAYERS ON GEOTEXTILE CLASS SE.
  - ASPHALT (2" ON 4" BASE) DESIGNED PER DESIGN MANUAL SECTION 9, "FLEXIBLE PAVEMENT DESIGN".
  - CONCRETE (TINTED/PATTERNED/PLAIN) 5" THICK MIX #2 ON 2" OF GAB.
4. 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.
5. MAINTENANCE, REPLACEMENT AND SNOW REMOVAL FROM BIKE/PEDESTRIAN PATH SHALL BE THE RESPONSIBILITY OF BALTIMORE COUNTY GOVERNMENT.
6. BICYCLE / PEDESTRIAN PATH SHALL BE SIGNED TO PREVENT USE OF PATH BY MOTORIZED VEHICLES OF ALL TYPES.
7. DIMENSIONS FOLLOWED BY \* ARE 5" LESS WHEN STANDARD 7<sup>3</sup>/<sub>16</sub>" CURB IS USED.

- 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 FIRE HYDRANTS (7<sup>3</sup>/<sub>16</sub>" CURB) & TRAFFIC SIGNS
- 4A FIRE HYDRANTS (MOUNTABLE CURB) - SEE STD. DETAIL W-3A

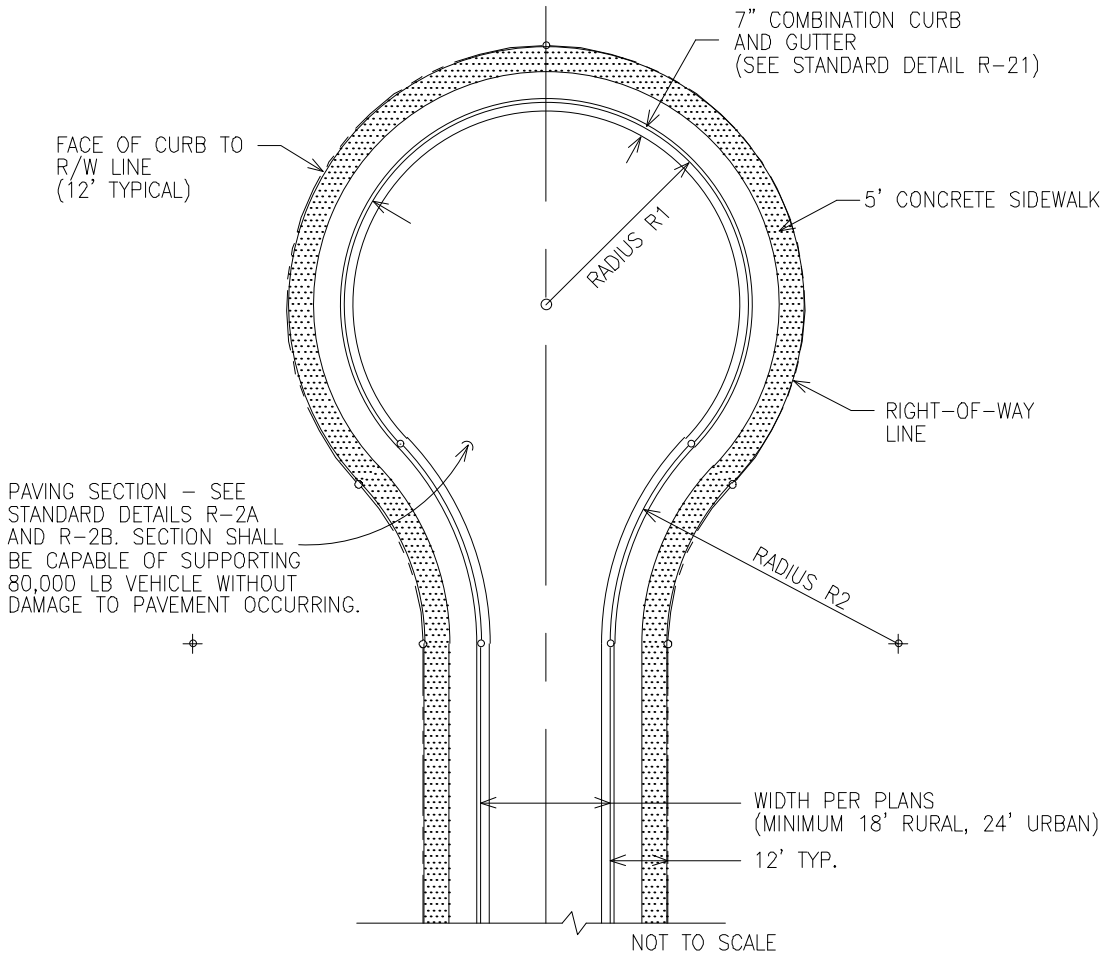


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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**URBAN RESIDENTIAL STREET**  
 10' WIDE COMBINED BIKE AND PEDESTRIAN PATH

ISSUED: SEPTEMBER 2023  
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 PLATE  
**R-C**

DATE: 08/28/2023 FILE: DM\_MASTER.DWG



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. GVW vehicle without damages occurring to area paving, including sidewalk and drive entrances.
5. This Design Plate shall be used only by exception.



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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROAD AND STREET DETAILS  
 CUL-DE-SAC  
 NO ISLAND, CENTER ALIGNED

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
 R-D

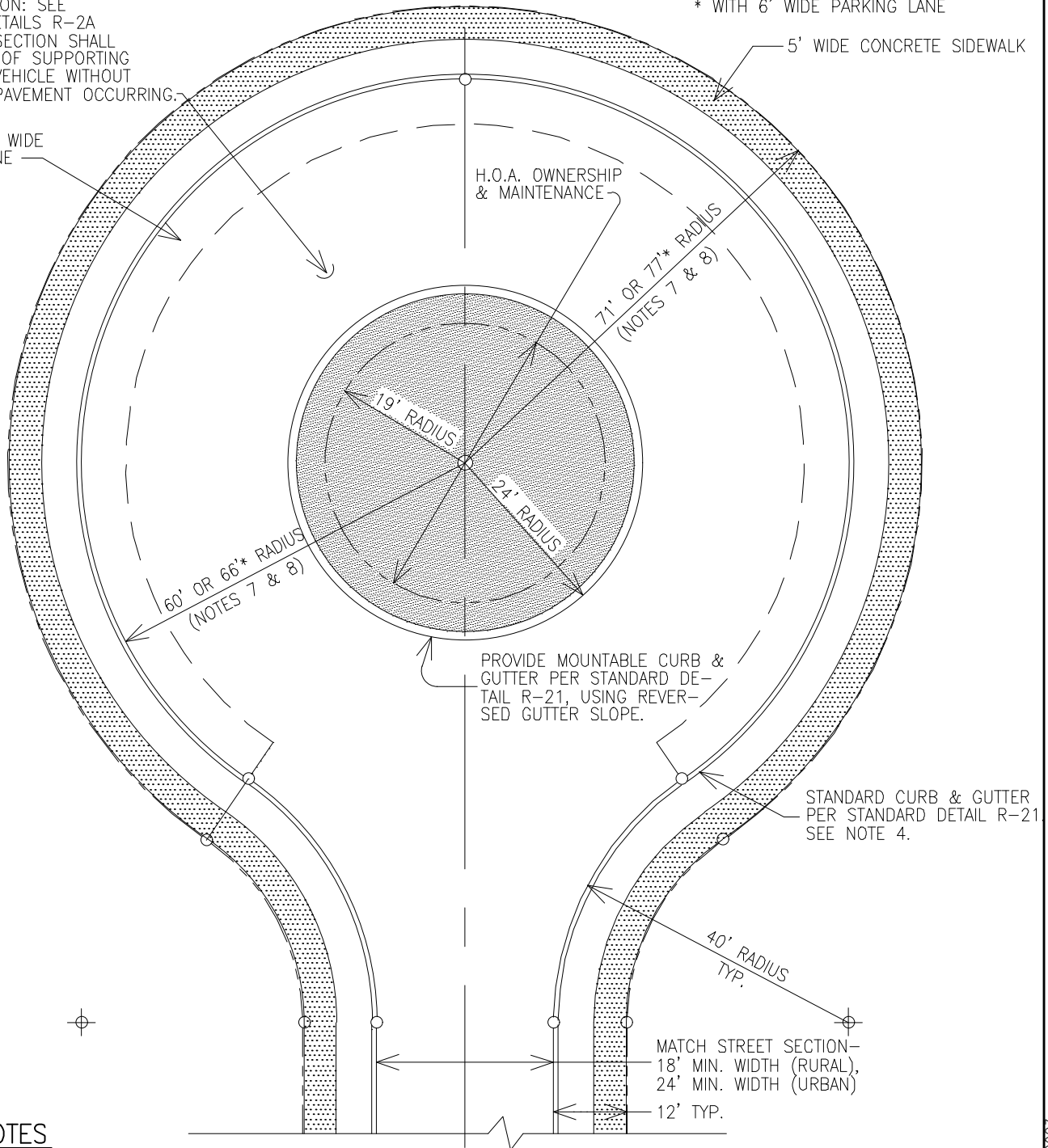
DATE: 08/28/2023

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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.

\* WITH 6' WIDE PARKING LANE

OPTIONAL 6' WIDE PARKING LANE



PROVIDE MOUNTABLE CURB & GUTTER PER STANDARD DETAIL R-21, USING REVERSED GUTTER SLOPE.

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

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

**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. GVW vehicle without damage to sidewalks, drive entrances, and paving. Place mailboxes 18" outside of 60 foot radius.
8. Radii reduction by exception.

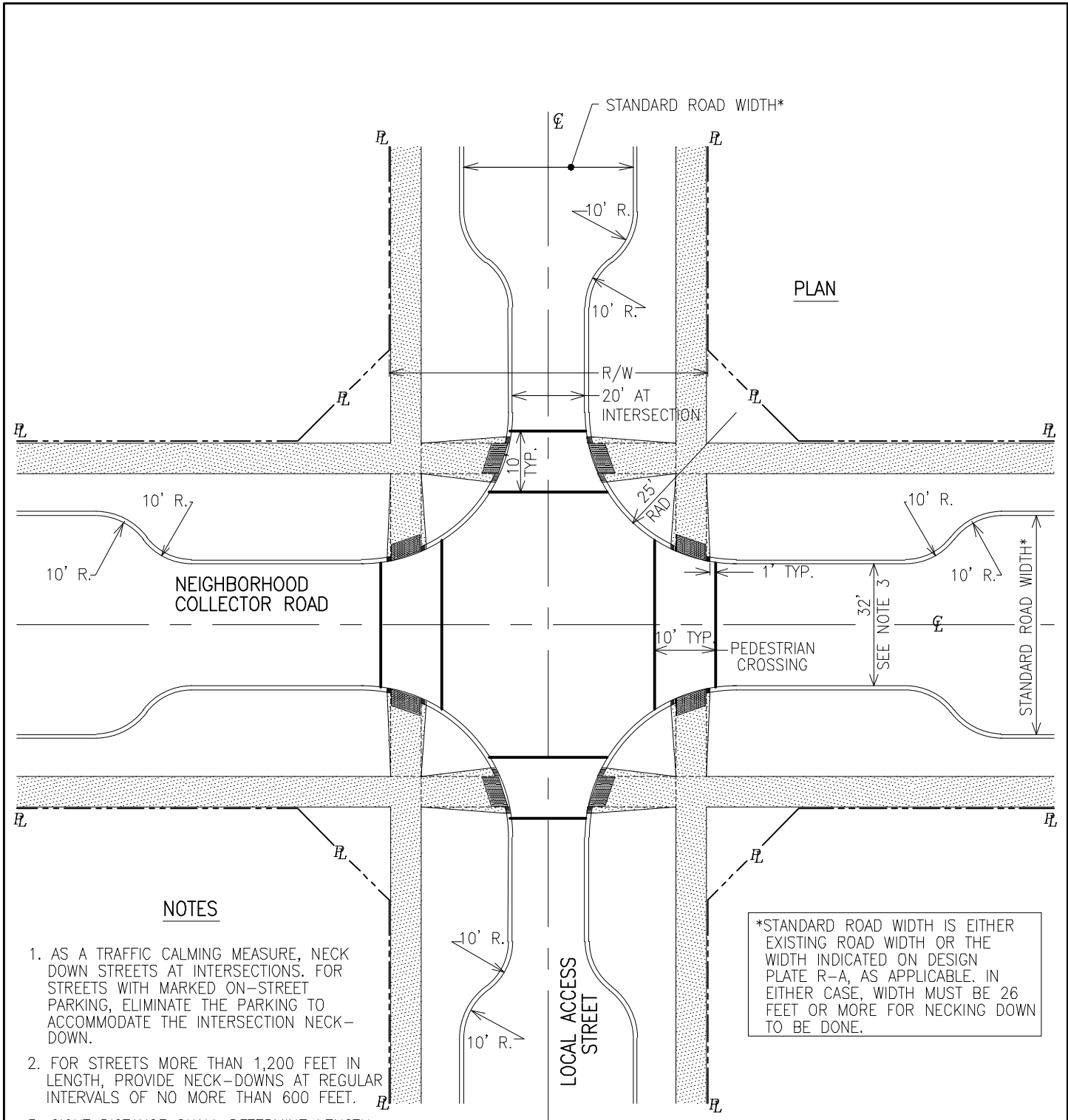


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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**CENTER ISLAND CUL-DE-SAC**  
**OPTIONAL PARALLEL PARKING TO CURB**

ISSUED: SEPTEMBER 2023  
REVISED: \_\_\_\_\_  
REVISED: \_\_\_\_\_  
PLATE  
**R-E**

DATE: 08/28/2023 FILE: DM\_MASTER.DWG



**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.

APPROVAL

*[Signature]*

DIRECTOR

*[Signature]*

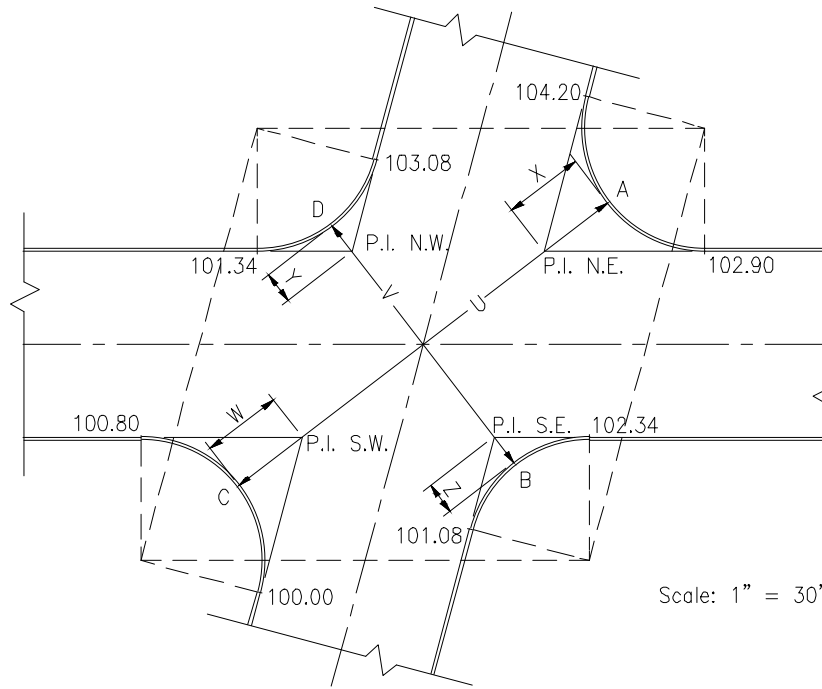
BUR. OF ENGINEERING/CONSTRUCTION

DATE \_\_\_\_\_

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**NECK-DOWNS AT INTERSECTIONS**  
 FOR STREETS 26 FEET AND WIDER

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-F**

FILE: DM\_MASTER.DWG DATE: 08/28/2023



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

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

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

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

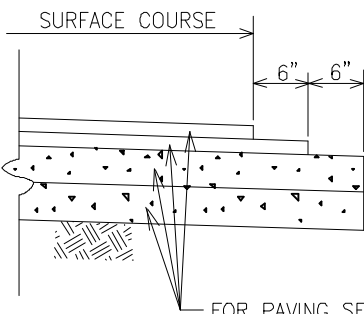
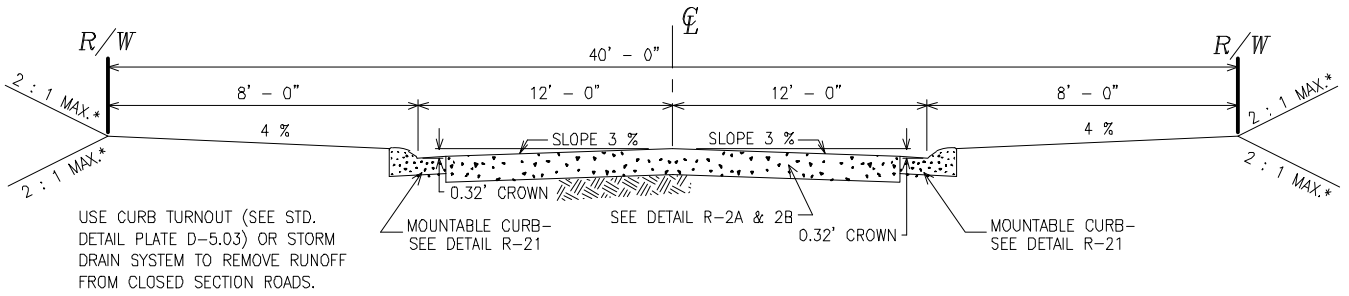
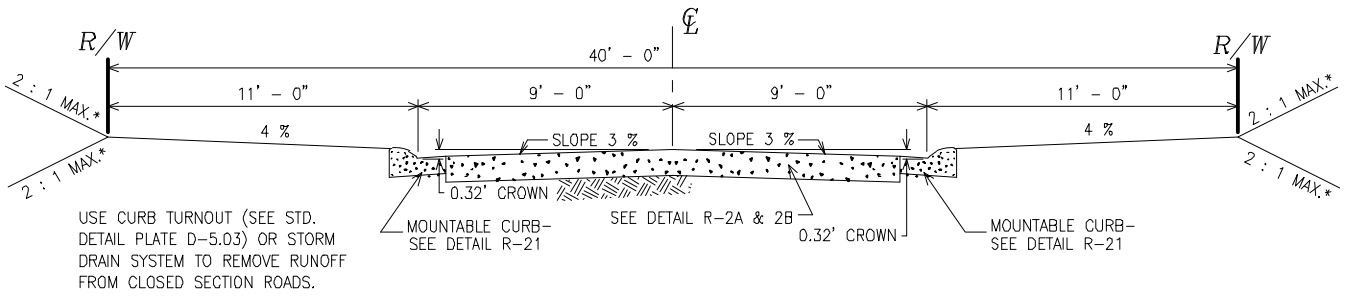
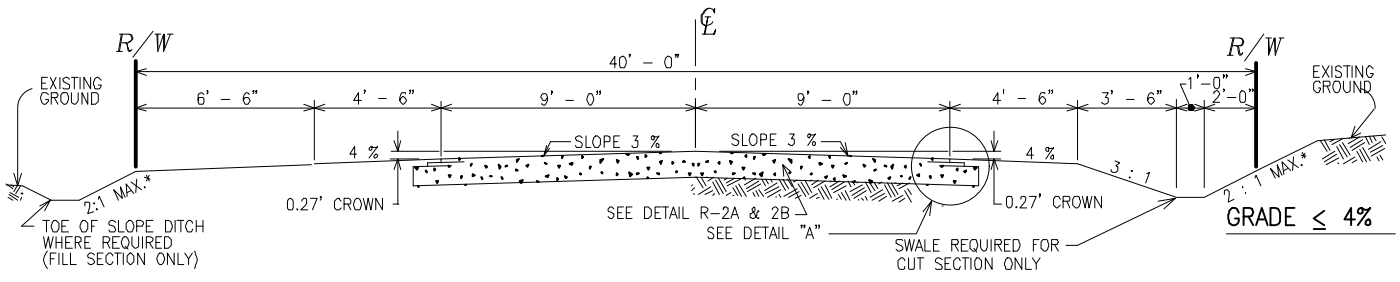
$\frac{5 \times 0.50}{48} = 0.05$



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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
ROAD AND STREET DETAILS  
ELEVATION OF CURB TOP P.I.  
AT FOUR CORNER INTERSECTION

ISSUED: SEPTEMBER 2023  
REVISED:  
REVISED:  
PLATE  
R-H



**DETAIL "A"**

**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.



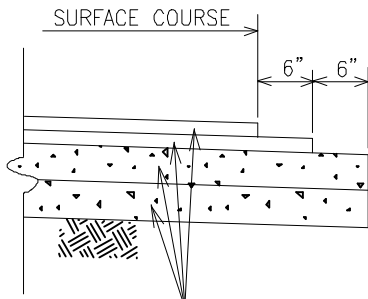
APPROVAL  
*[Signature]*  
 DIRECTOR  
*[Signature]*  
 BUR. OF ENGINEERING/CONSTRUCTION  
 DATE

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**MINOR RURAL STREET**  
 LOTS ≥ 1 ACRE & FRONTAGE ≥ 150 FEET

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-1-1**

DETAIL "A"

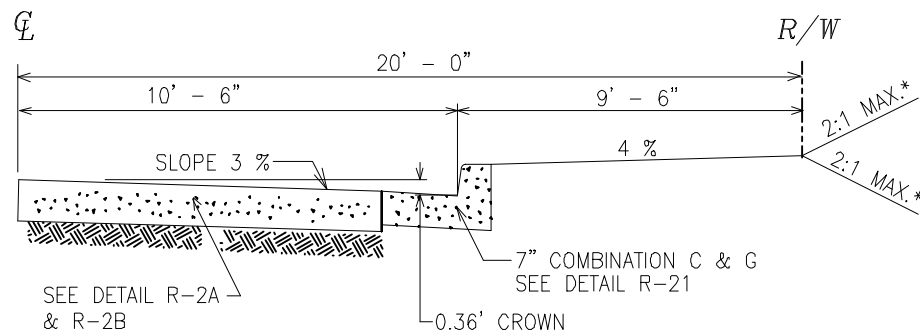
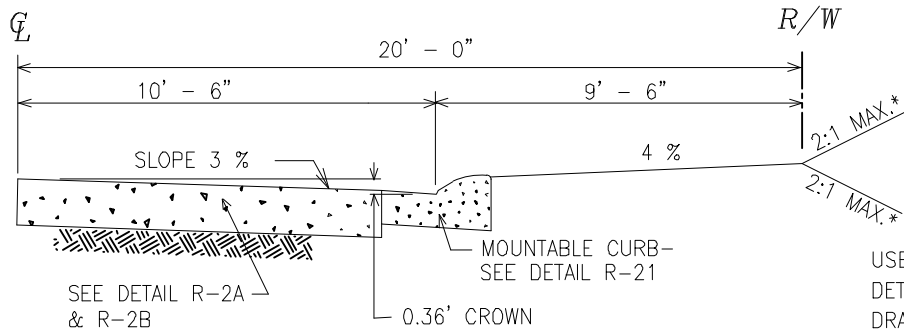
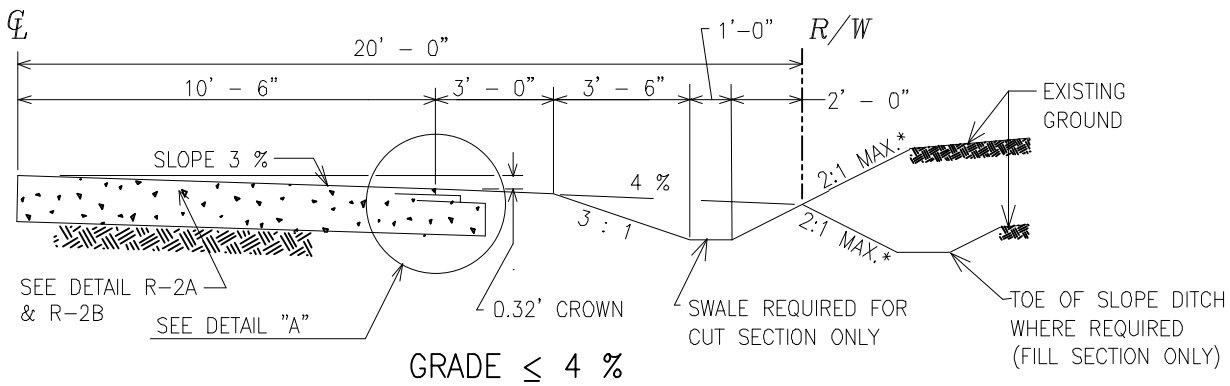
NOTES



FOR PAVING SECTION, SEE DETAIL R-2A & R-2B  
FOR APPLICABILITY, SEE PLATE R-S

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.



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DIRECTOR  
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BUR. OF ENGINEERING/CONSTRUCTION  
DATE

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
ROAD AND STREET DETAILS  
MINOR RESIDENTIAL STREET  
FRONTAGE  $\geq$  100 FEET

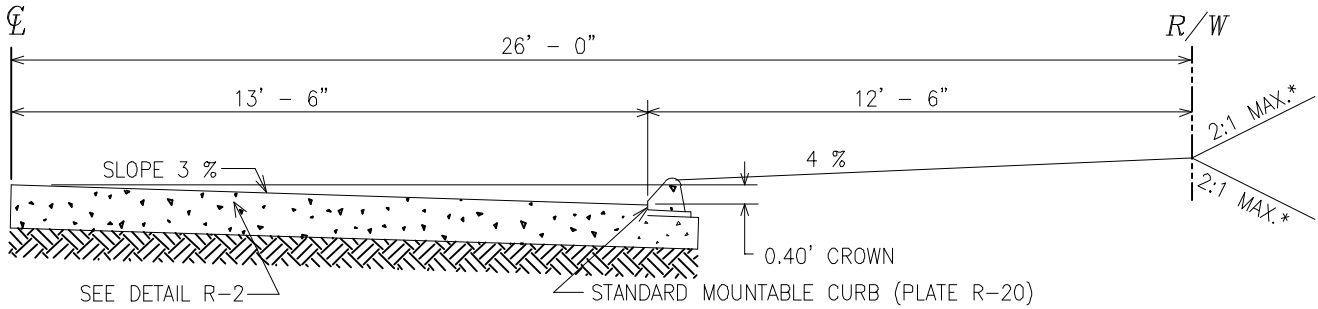
ISSUED: SEPTEMBER 2023  
REVISED: \_\_\_\_\_  
REVISED: \_\_\_\_\_  
PLATE  
R-J-1

DATE: 08/28/2023

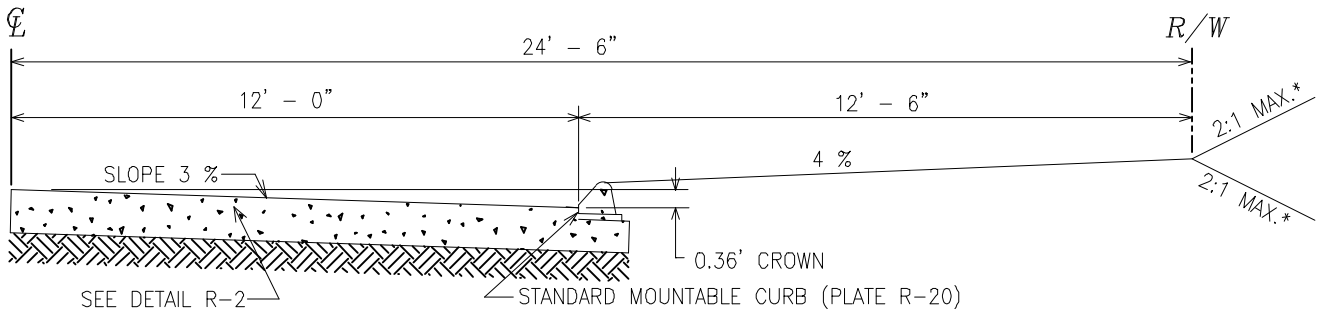
FILE: DM\_MASTER.DWG

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

PUBLIC SIDEWALK SHOWN ON PLATE R-A IS WAIVED FOR THESE SECTIONS.



27' PAVEMENT



24' PAVEMENT



APPROVAL  
*[Signature]*  
 DIRECTOR  
*[Signature]*  
 BUR. OF ENGINEERING/CONSTRUCTION  
 \_\_\_\_\_  
 DATE

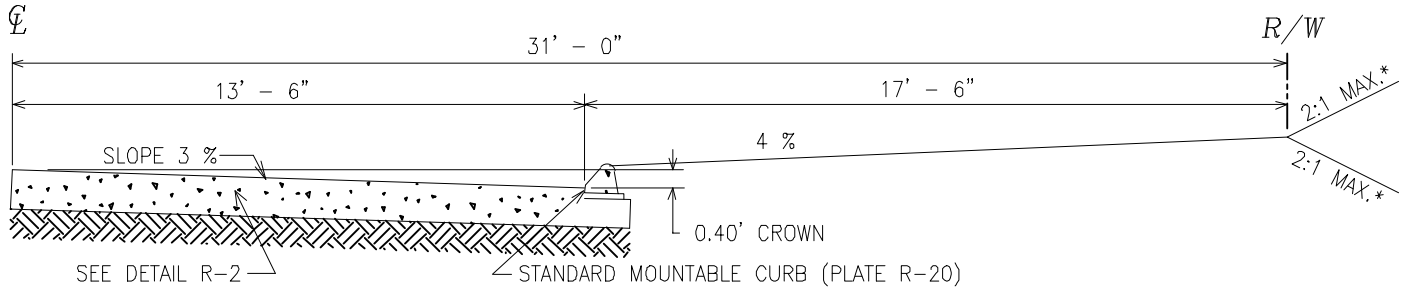
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROADS AND STREET DETAILS  
 24' AND 27' STREETS  
 50' RIGHT-OF-WAY  
 USING MOUNTABLE CURB

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_

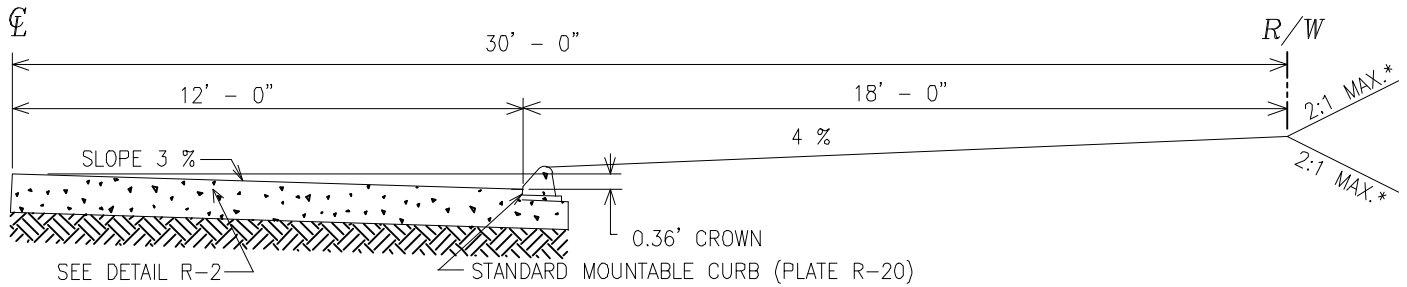
PLATE  
**R-J-2**



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



27' PAVEMENT



24' PAVEMENT

RIGHT-OF-WAY AND ROAD WIDTHS MAY BE REDUCED IN ACCORDANCE WITH DESIGN PLATE R-A. THESE SECTIONS MAY BE USED WITH PEDESTRIAN/BIKE PATH AS SHOWN ON DESIGN PLATE R-C.



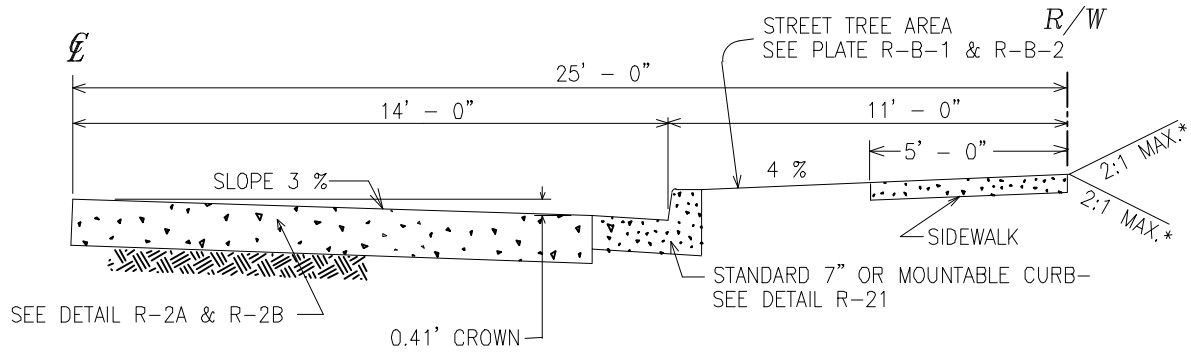
APPROVAL  
*[Signature]*  
 DIRECTOR  
*[Signature]*  
 BUR. OF ENGINEERING/CONSTRUCTION  
 \_\_\_\_\_  
 DATE

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROADS AND STREET DETAILS**  
**24' AND 27' STREETS**  
**60' RIGHT-OF-WAY**  
**USING MOUNTABLE CURB**

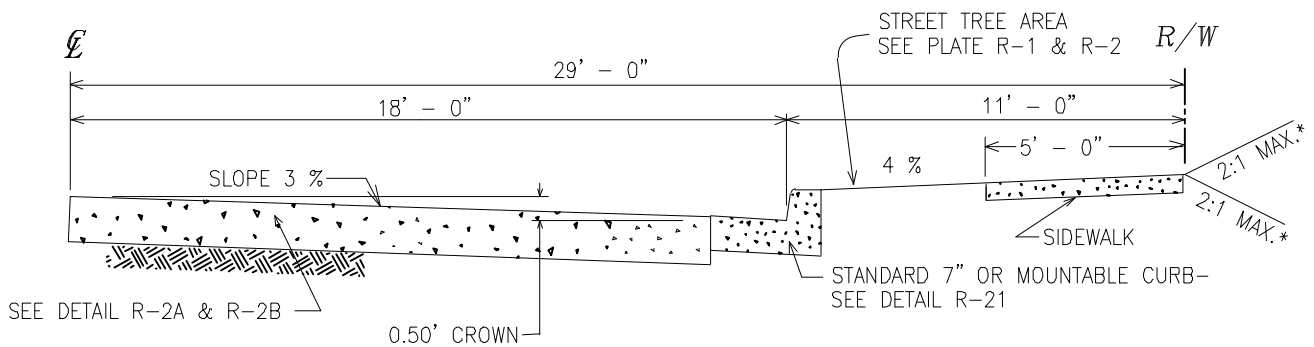
ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-J-3**

DATE: 08/28/2023 FILE: DM\_MASTER.DWG

DETACHED HOUSING:



DUPLEX HOUSING & GROUP HOUSING WITH PARALLEL PARKING (NO GARAGES):



NOTES

RIGHT-OF-WAY AND PAVING WIDTHS MAY BE REDUCED IN ACCORDANCE WITH PLATE R-S.

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.

USE CURB TURNOUT (SEE STD. DETAIL D-5.03) OR STORM DRAIN SYSTEM TO REMOVE RUNOFF FROM CLOSED SECTION ROADS.

SIDEWALK LOCATION PER DESIGN PLATE R-B-1, R-B-2, & STANDARD DETAIL PLATE R-19.



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 DIRECTOR  
*[Signature]*  
 BUR. OF ENGINEERING/CONSTRUCTION  
 \_\_\_\_\_  
 DATE

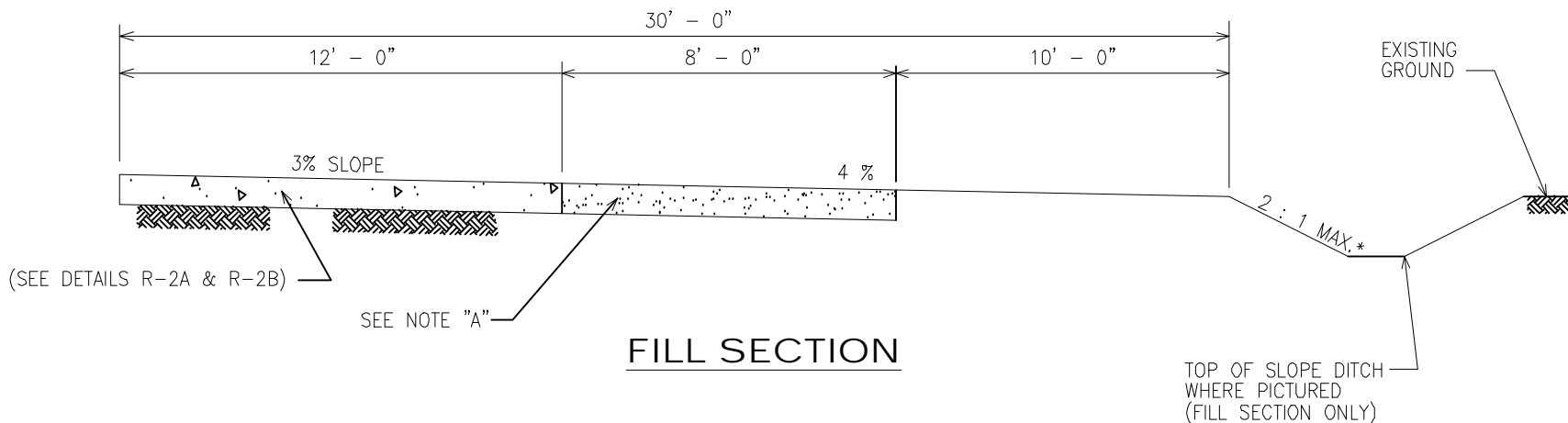
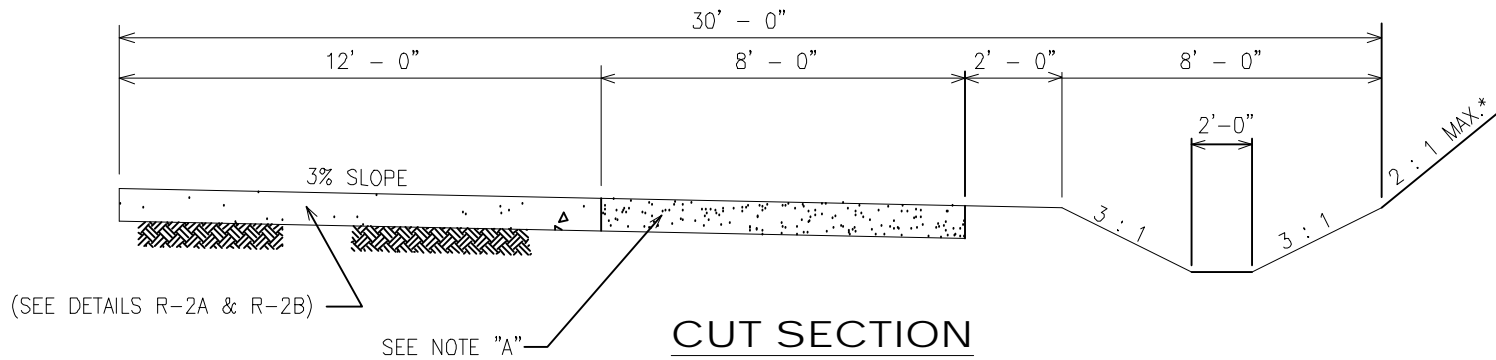
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROADS AND STREET DETAILS  
**MINOR RESIDENTIAL STREET**  
 30' STREET WITH 50' RIGHT-OF-WAY  
 36' STREET WITH 56' RIGHT-OF-WAY

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-J-4**

DATE: 08/28/2023

FILE: DM\_MASTER.DWG

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



NOTE "A": THE SHOULDER PAVING SECTION SHALL HAVE THE SAME OVERALL THICKNESS AS THE ROADWAY PAVING SECTION. THE MINIMUM BITUMINOUS CONCRETE SURFACE THICKNESS SHALL BE 3". THE ROADWAY PAVING SECTION MAY BE SPECIFIED FOR USE AS THE SHOULDER SECTION.



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 \_\_\_\_\_  
 DATE

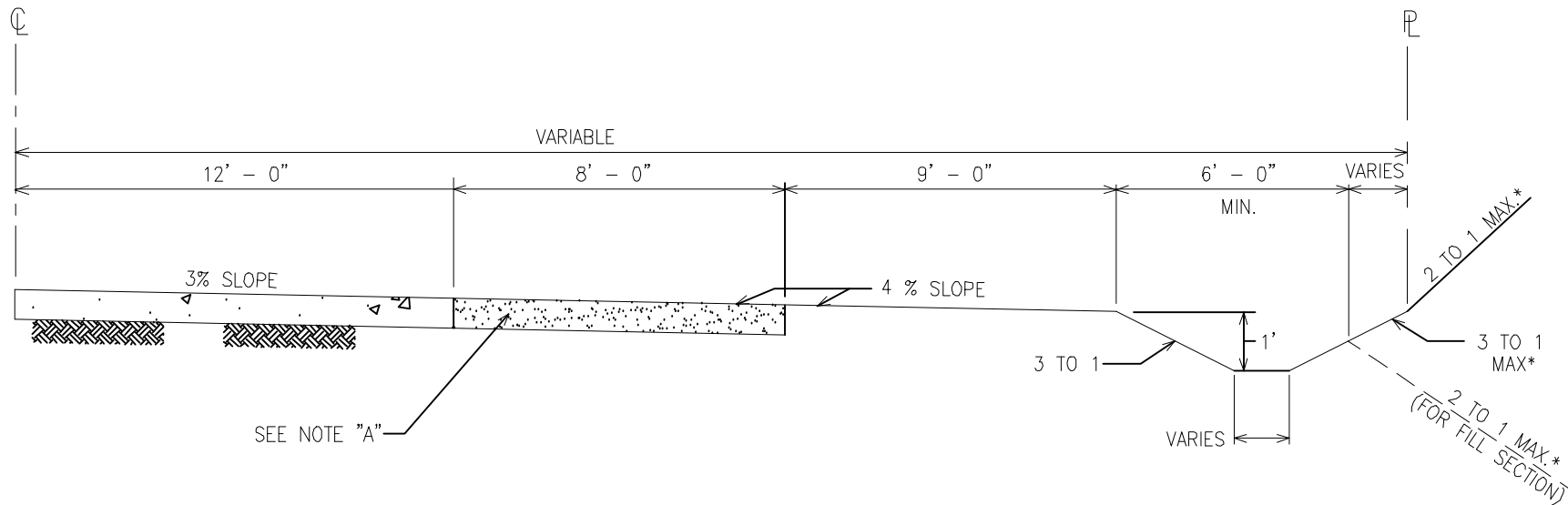
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**24' COLLECTOR STREET**

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE

**R-K-1**

FILE: DM\_MASTER.DWG DATE: 08/28/2023

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



SEE NOTE "A"

NOTE "A": THE SHOULDER PAVING SECTION SHALL HAVE THE SAME OVERALL THICKNESS AS THE ROADWAY PAVING SECTION. THE MINIMUM BITUMINOUS CONCRETE SURFACE THICKNESS SHALL BE 3". THE ROADWAY PAVING SECTION MAY BE SPECIFIED FOR USE AS THE SHOULDER SECTION.



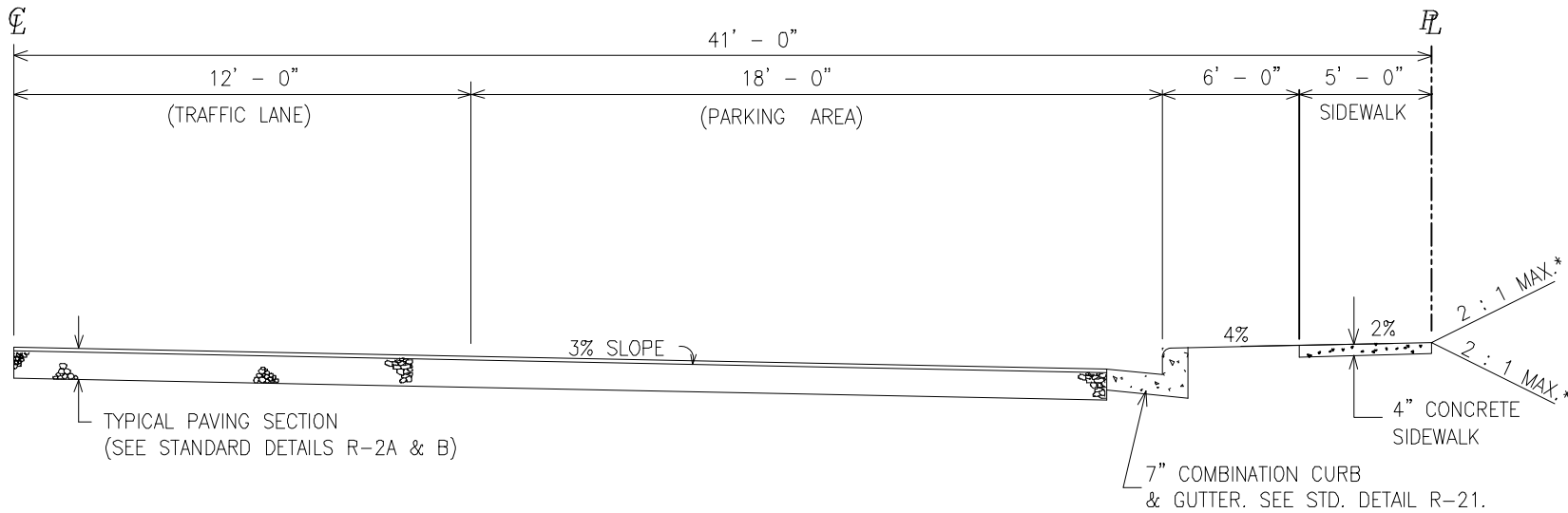
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 \_\_\_\_\_  
 DATE

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROAD AND STREET DETAILS  
 24' THOROUGHFARE

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE

R-K-2

\* CUT & FILL SLOPE GRADES SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS 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.

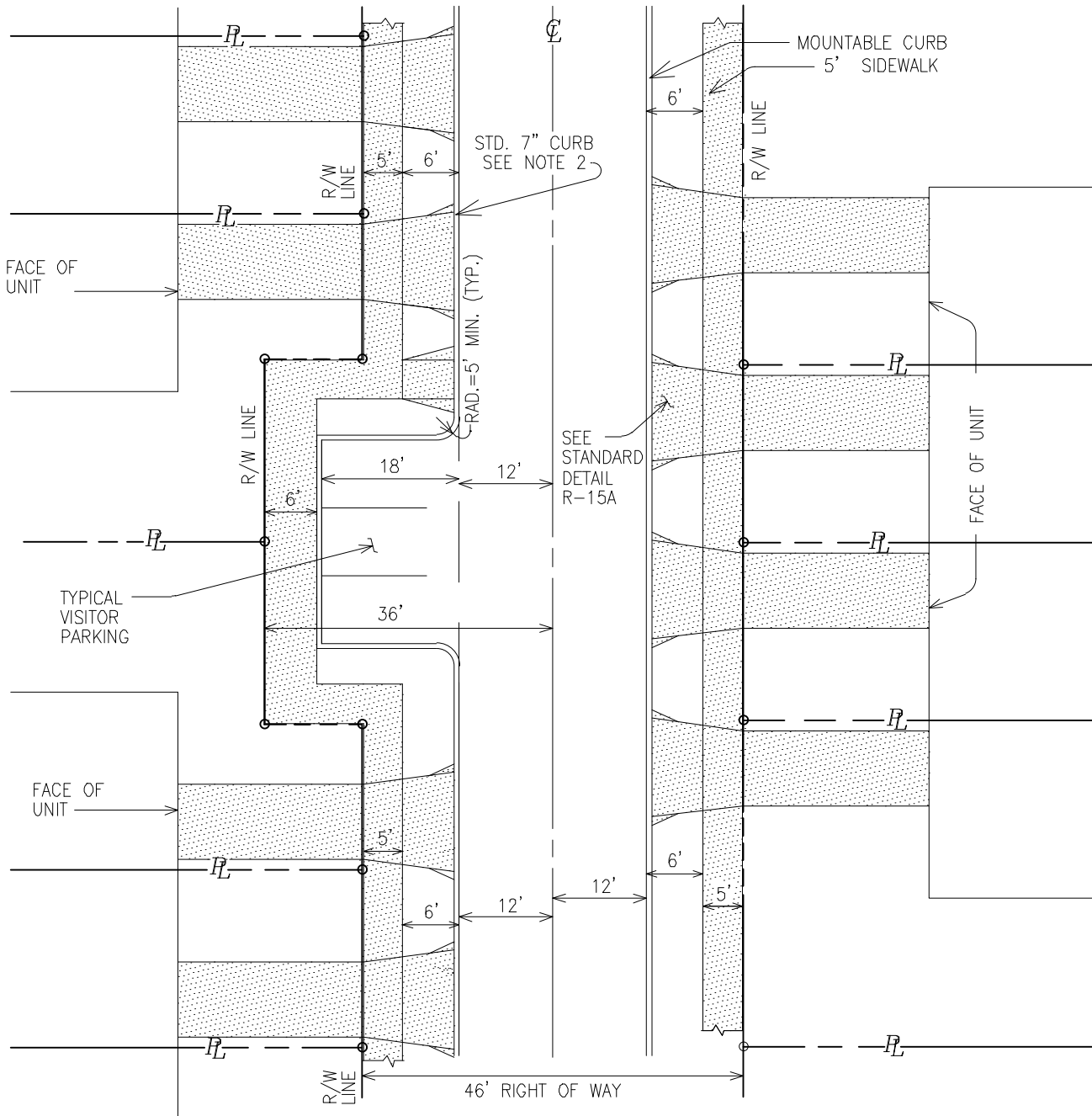


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 \_\_\_\_\_  
 DATE

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROAD AND STREET DETAILS  
 24' STREET  
 80' RIGHT-OF-WAY  
 PERPENDICULAR PARKING ON BOTH SIDES

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
 R-L-1

FILE: DM\_MASTER.DWG DATE: 08/28/2023



TYPICAL LAYOUT FOR GARAGED TOWNHOUSE/DUPLEX 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.



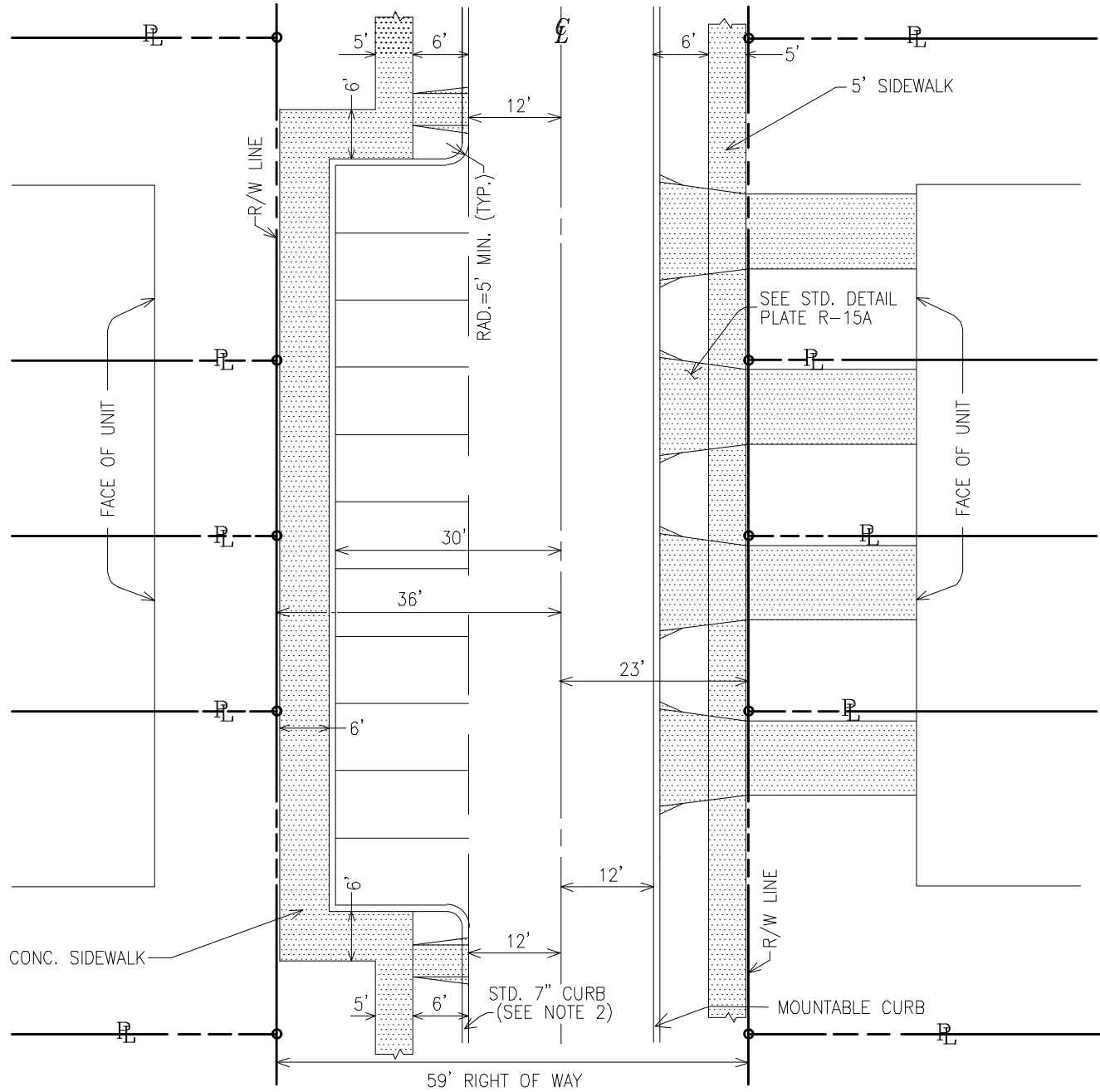
APPROVAL  
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 DIRECTOR  
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 BUR. OF ENGINEERING/CONSTRUCTION  
 DATE \_\_\_\_\_

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROADS AND STREET DETAILS  
 MINOR STREET  
 GARAGED TOWNHOUSE/DUPLEX

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-L-2**

DATE: 08/28/2023

FILE: DM\_MASTER.DWG



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.



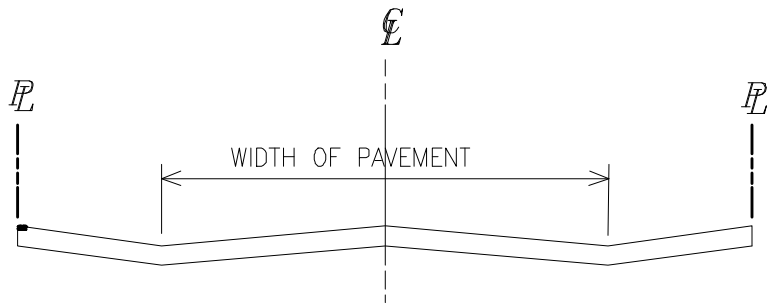
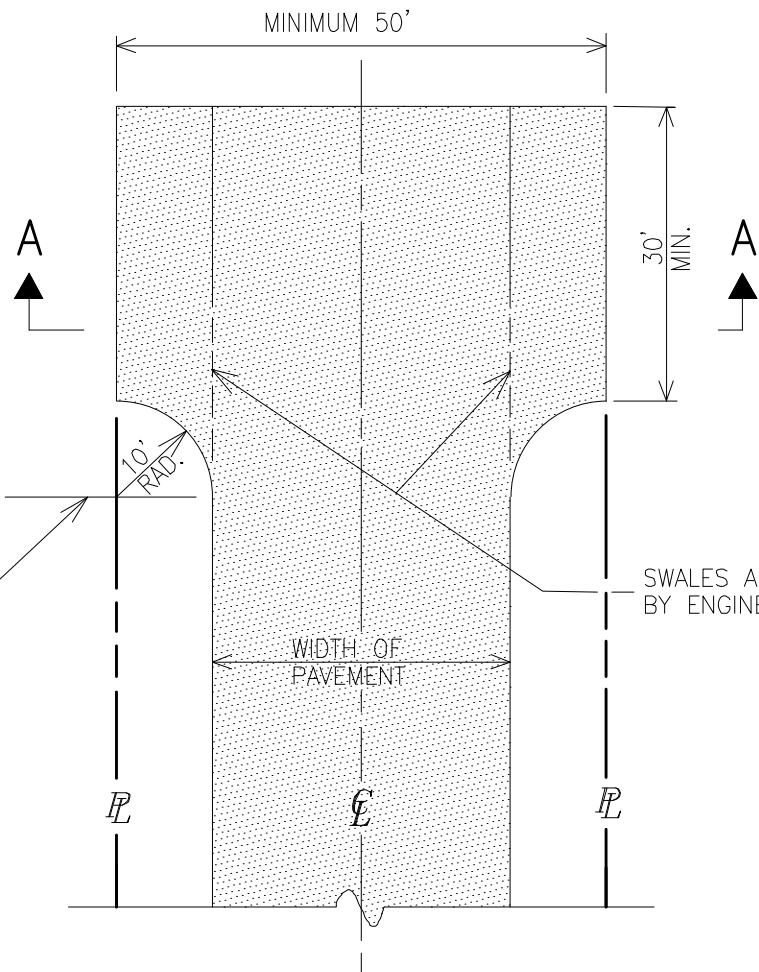
APPROVAL  
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 DATE

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROADS AND STREET DETAILS  
 MINOR STREET  
 MIXED GARAGED AND NON-GARAGED  
 TOWNHOUSES

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
 R-L-3

DATE: 08/28/2023

FILE: DM\_MASTER.DWG



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.



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 \_\_\_\_\_  
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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROADS AND STREET DETAILS  
**TEMPORARY TEE  
 TURN-AROUND**

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-N-1**

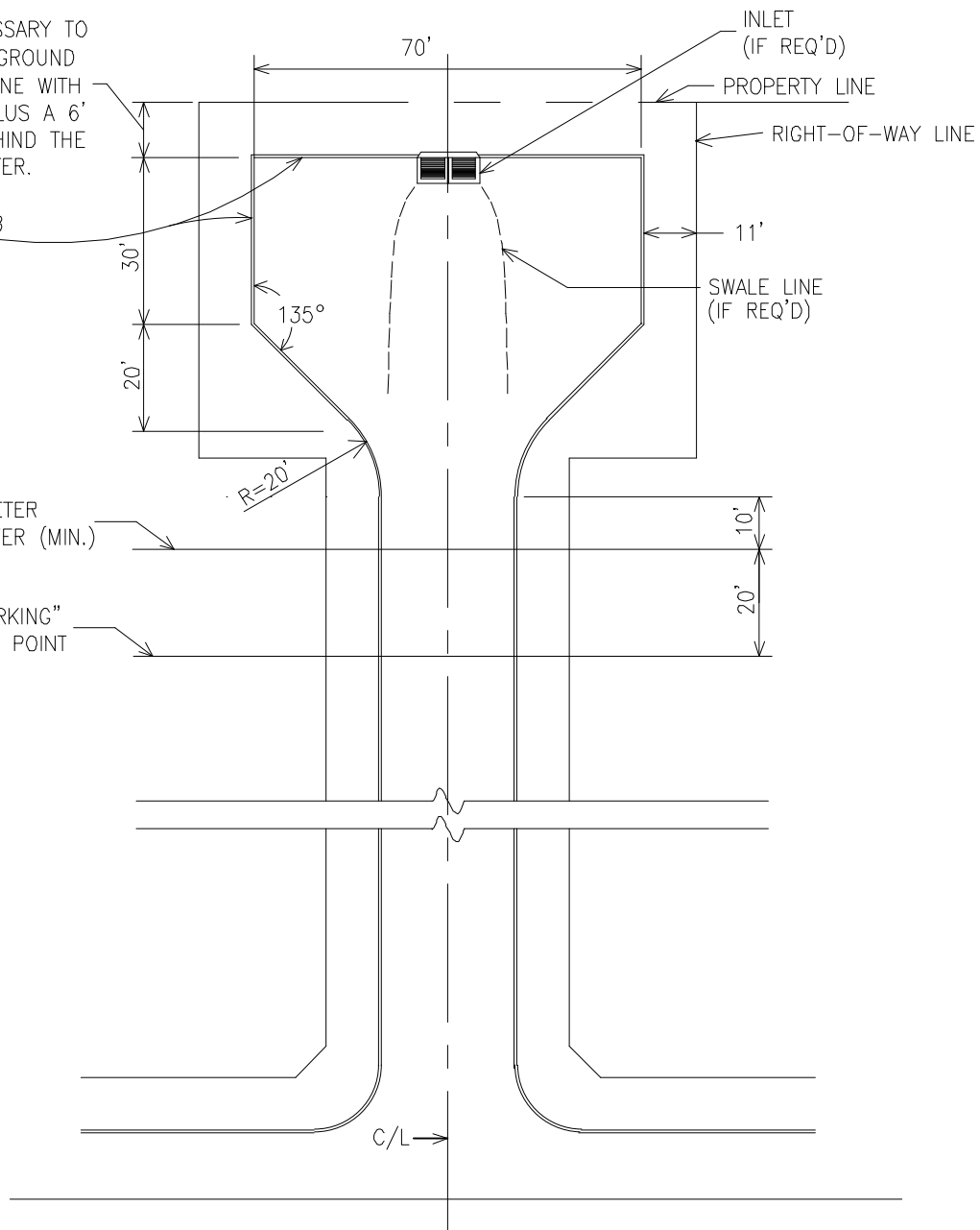


DISTANCE NECESSARY TO MEET EXISTING GROUND AT PROPERTY LINE WITH A 2:1 SLOPE PLUS A 6' LEVEL AREA BEHIND THE CURB AND GUTTER.

CONCRETE CURB AND GUTTER

LIMIT OF PERIMETER CURB AND GUTTER (MIN.)

"NO PARKING" BEYOND THIS POINT



**NOTES**

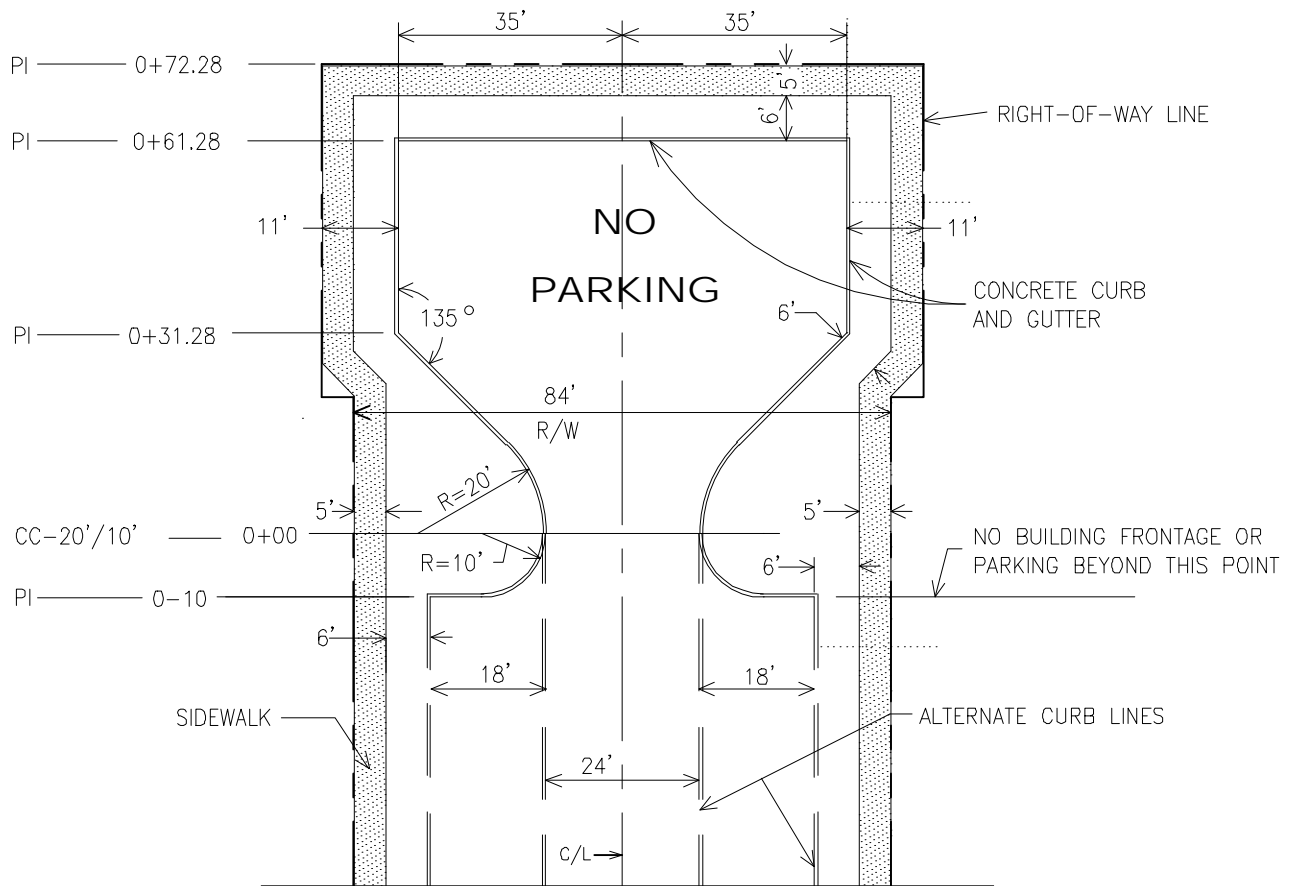
1. GUARD POSTS TO BE PLACED AROUND PERIMETER OF TEE AND 6' MINIMUM BEHIND CURB AND GUTTER WHERE NECESSARY.
2. "NO PARKING" TO BE POSTED WITHIN 20' OF TEE.
3. SEE STANDARD DETAIL PLATE R-2A & R-2B FOR TYPICAL PAVING SECTION.



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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROADS AND STREET DETAILS  
**PERMANENT TEE  
 TURN-AROUND  
 RURAL AREAS**

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-N-2**



NOTES:

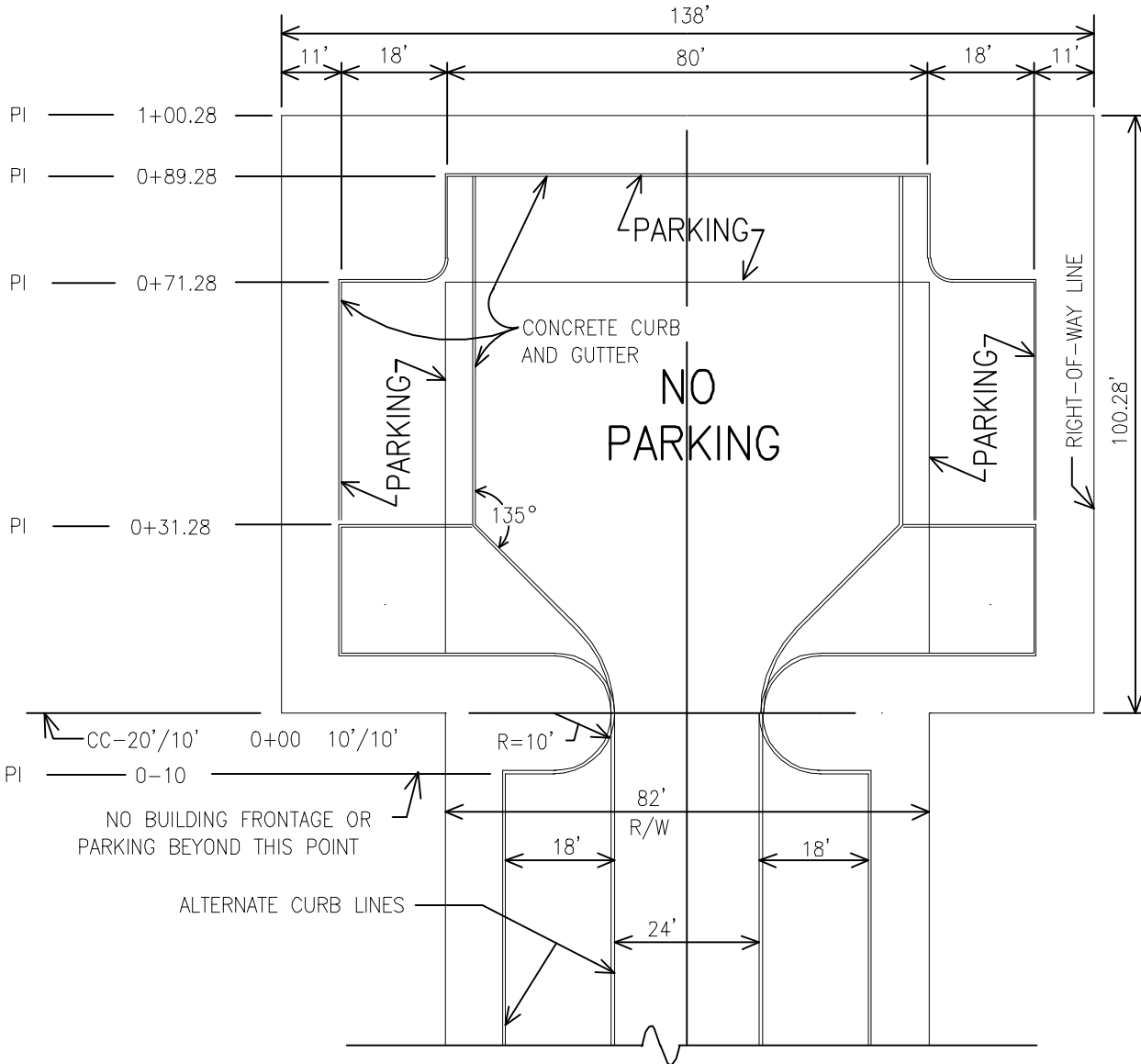
1. NO OBSTRUCTIONS ABOVE GRADE WITHIN RIGHT-OF-WAY, STATION 0-10 TO STATION 0+72.28. OBSTRUCTIONS INCLUDE FIRE HYDRANTS, SIGNS, MAIL BOXES, NEWSPAPER DISPENSERS, UTILITY JUNCTION BOXES, ETC.
2. SURFACE DRAINAGE SHALL BE BY DESIGN FOR THE SPECIFIC PROJECT.



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 \_\_\_\_\_  
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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROADS AND STREET DETAILS  
**PERMANENT TEE  
 TURN-AROUND  
 URBAN AREAS**

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-N-3**



**NOTES**

1. NO OBSTRUCTIONS ABOVE GRADE WITHIN RIGHT-OF-WAY, STATION 0-10 TO STATION 1+00.28. 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.
5. SIDEWALKS NOT SHOWN, BUT ARE REQUIRED.

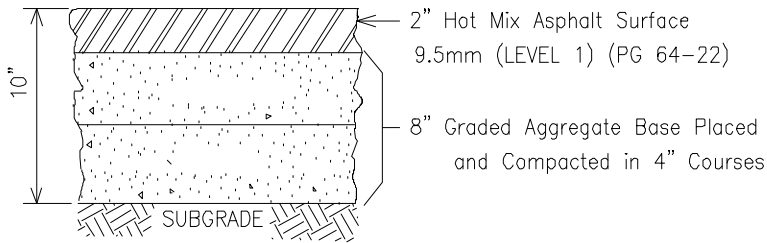
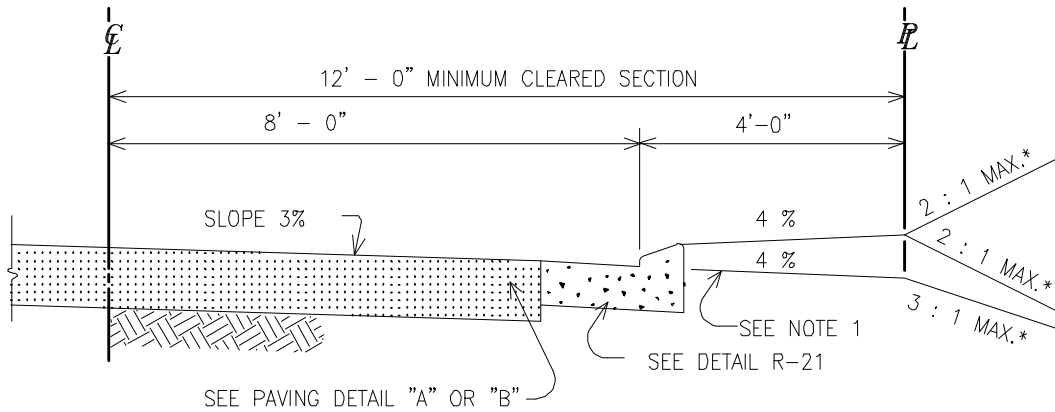


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 BUR. OF ENGINEERING/CONSTRUCTION  
 \_\_\_\_\_  
 DATE

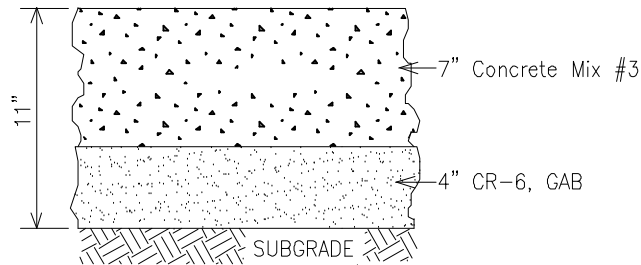
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROADS AND STREET DETAILS**  
**PERMANENT TEE TURN-AROUND**  
**PARKING ALTERNATIVES**  
 URBAN AREAS

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 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 =  $8^\circ$  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.



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 DATE

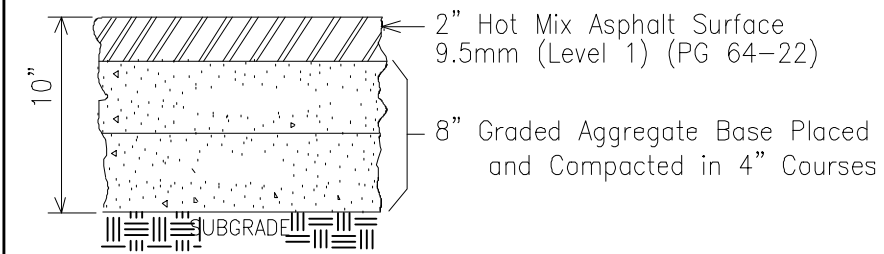
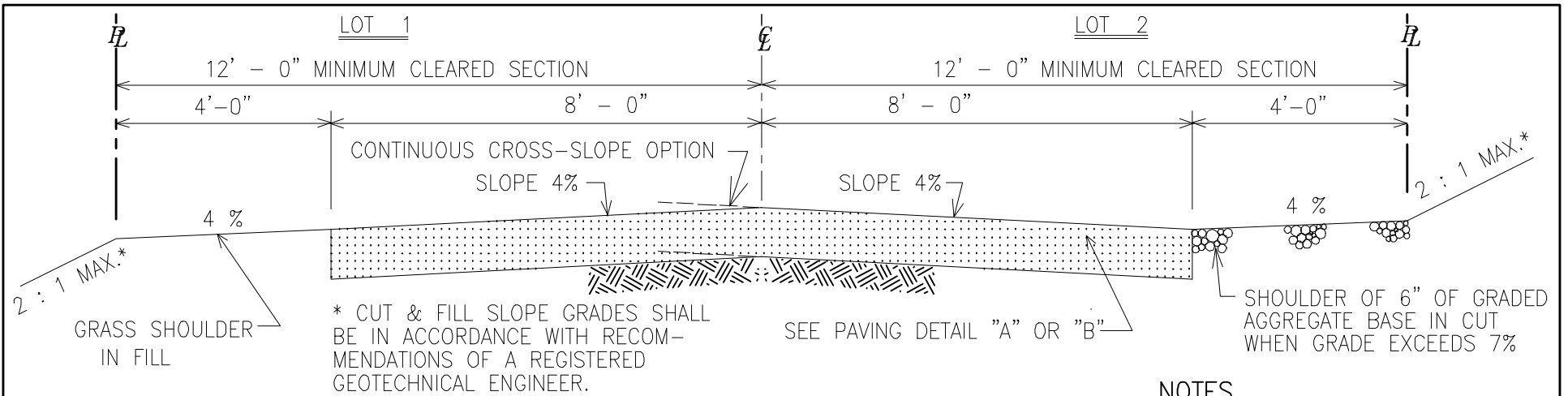
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

ROAD AND STREET DETAILS  
 PANHANDLE DRIVEWAY  
 USE IN COMMON DRIVEWAY  
 URBAN ZONING

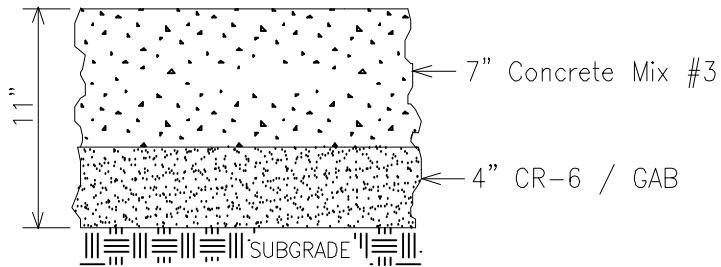
ISSUED: SEPTEMBER 2023  
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PLATE

R-P




DETAIL "A"



DETAIL "B"

**NOTES**

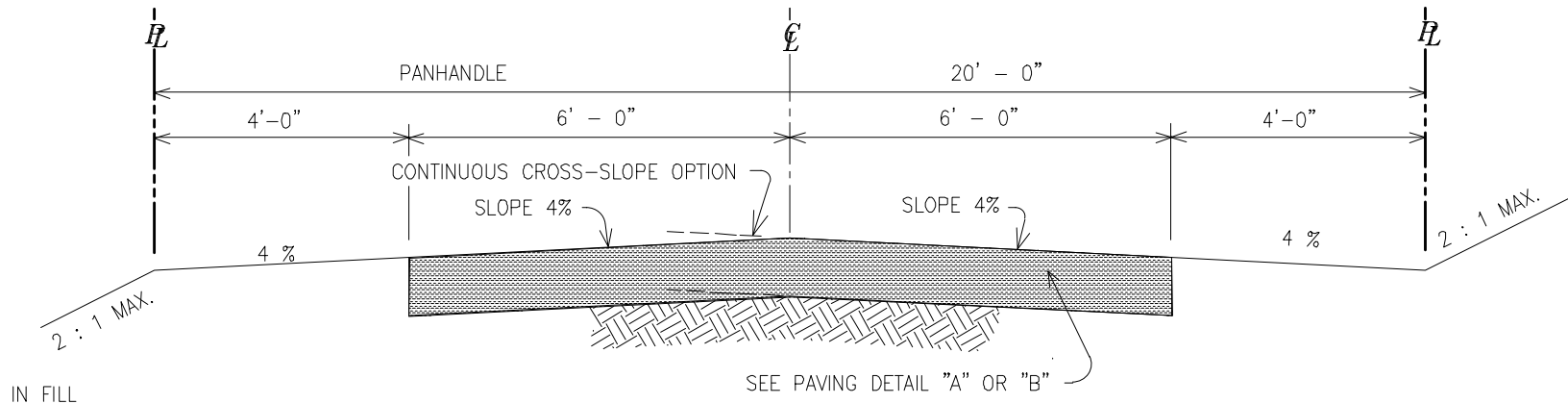
1. STORM WATER FROM DRIVEWAY SUMPS MAY BE REMOVED BY REVERSED SLOPE SHOULDERS DRAINING TO NATURAL, STABLE DRAINAGE COURSES.
2. MINIMUM HORIZONTAL CURVATURE = 30 FOOT  $\epsilon$  RADIUS
3. MAXIMUM ABRUPT CHANGE IN GRADE  $\epsilon$  AT ROAD R/W LINE = 8° OR 13%.
4. MAXIMUM VERTICAL CURVATURE ON  $\epsilon$  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. STANDARD DESIGN PLATE R-P MAY BE UTILIZED IN ALL RURAL ZONES.



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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**PANHANDLE DRIVEWAY**  
**USE IN COMMON DRIVEWAY**  
**RURAL ZONING**

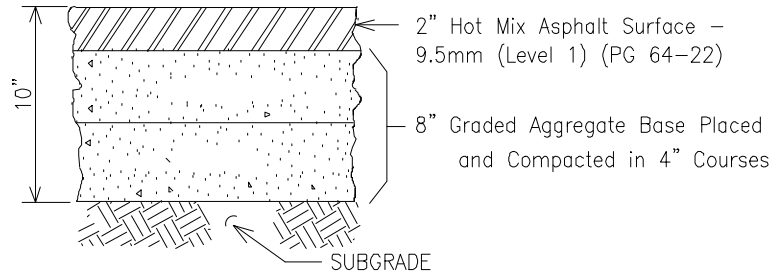
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**R-Q**



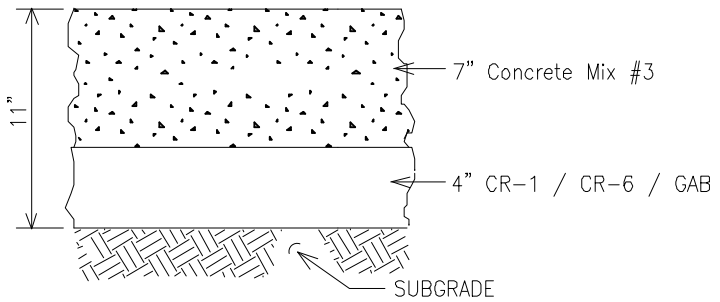
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**NOTES**

1. MINIMUM HORIZONTAL CURVATURE = 30 FOOT  $\epsilon$  RADIUS
2. MAXIMUM ABRUPT CHANGE IN GRADE  $\epsilon$  AT ROAD R/W LINE = 8° OR 13%.
3. MAXIMUM VERTICAL CURVATURE ON  $\epsilon$  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"**



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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**PANHANDLE DRIVEWAY**  
**DRIVEWAY LESS THAN 300 FEET**  
**URBAN OR RURAL ZONES - 1 LOT ONLY**

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_  
 PLATE  
**R-R**

FILE: DM\_MASTER.DWG DATE: 08/28/2023

THE FOLLOWING TABLE INDICATES MINIMUM STANDARDS FOR RESIDENTIAL DEVELOPMENT LOCAL STREET CROSS-SECTION.  
THIS TABLE SUPERSEDES PAGE E-29 OF THE *DEVELOPMENT PROCEDURES & POLICY MANUAL* (11/18/85, REV. 3/26/93)

LOT SIZE	WIDTH R/W (6)	GRADE	TRAFFIC WAY & PARKING LANE	CURB & GUTTER	SIDEWALK WIDTH	DESIGN STD.	REMARKS
<b>GROUP HOUSING</b>							
PARALLEL PARKING	58'	0.6% to 10%	2 - 18' Lanes	7" Std. (1)	5'	R-J-4	Less than 1501 ADT + alley access for off street parking
PERPENDICULAR PARKING	82'	0.6% to 5%	2 - 12' Lanes + 18' Bays	7" Std. (1)	5'	R-L-1	
	(Parking on one side only - less than 800 ADT)						
	(Parking on both sides - less than 600 ADT)						
GARAGE TOWNHOUSE DUPLEX HOUSING W/GAR.	46' 59'	-	2 - 12' Lanes	Mountable (2)	5'	R-L-2, 3	No Parking
	(An additional 30 % of the Development's parking requirements must be provided within the street system)						
DUPLEX HOUSING (Non-Garage)	58'	-	2 - 18' Lanes	7" Std. (1)	5'	R-J-4	Less than 1501 ADT
<b>DETACHED HOUSING</b>							
Frontage Less Than 100' DR ZONES	50'	-	2 - 14' Lanes	7" Std. (1)(5)	5'	R-J-4	Less than 1501 ADT
Frontage Greater Than or Equal to 100'	40' 40' 40'	0.6% to 4% 0.6% to 10% 1.0% to 10%	2 - 10.5' Lanes (4) 2 - 10.5' Lanes 2 - 12' Lanes	None (4) Mountable (2) Std. or Mountable	5' 5' 5'	R-J-1 R-J-1 R-J-1	Less than 751 ADT Less than 751 ADT Less than 1501 ADT
Frontage Greater Than or Equal to 150' AND 1 Acre or Larger; ONLY IN RC ZONES	40' 40' 40'	0.6% to 4% 0.6% to 12% 1.0% to 12%	2 - 9' Lanes (4) 2 - 9' Lanes 2 - 12' Lanes	None (4) Mountable (2) Std. or Mountable	- - -	R-I-1 R-I-1 R-I-1	Less than 251 ADT Less than 251 ADT Less than 1501 ADT

**NOTES**

MOUNTABLE CURB & GUTTER SHALL NOT BE USED ON DEVELOPER PROJECTS UNLESS EXPLICITLY APPROVED ON A CASE-BY-CASE BASIS BY BUREAU OF DEVELOPMENT PLANS REVIEW.

THE DIRECTOR OF PUBLIC WORKS RESERVES THE RIGHT TO REQUIRE HIGHER STANDARDS AND / OR GREATER WIDTHS THAN THOSE INDICATED HEREON.

LOCAL COLLECTOR STREETS AND THOROUGHFARES WILL BE CONSTRUCTED TO SECTIONS DEVELOPED BY THE DIRECTOR OF PUBLIC WORKS BASED UPON LOCAL CONDITIONS, FUNCTION AND PRESENT AND FUTURE TRAFFIC VOLUMES.

**FOOTNOTES**

- (1) - See Standard 7" Curb & Gutter, Detail R-21
- (2) - See Mountable Curb & Gutter, Detail R-21
- (3) - See Curb and Gutter, Detail R-21.
- (4) - Emergency Stopping Only - No On-Street Parking Lane is provided. Grade and clear for 6' minimum grass shoulder on each side of pavement or as required for sight distance.
- (5) - Mountable Curb and Gutter (Detail R-21) may be used where proposed ADT < 251.
- (6) - Width shown for non-rural sections is based upon shoulder section shown on Plate R-B to facilitate planting of street trees. Width will vary for other shoulder sections (no street trees; ped/bike path).

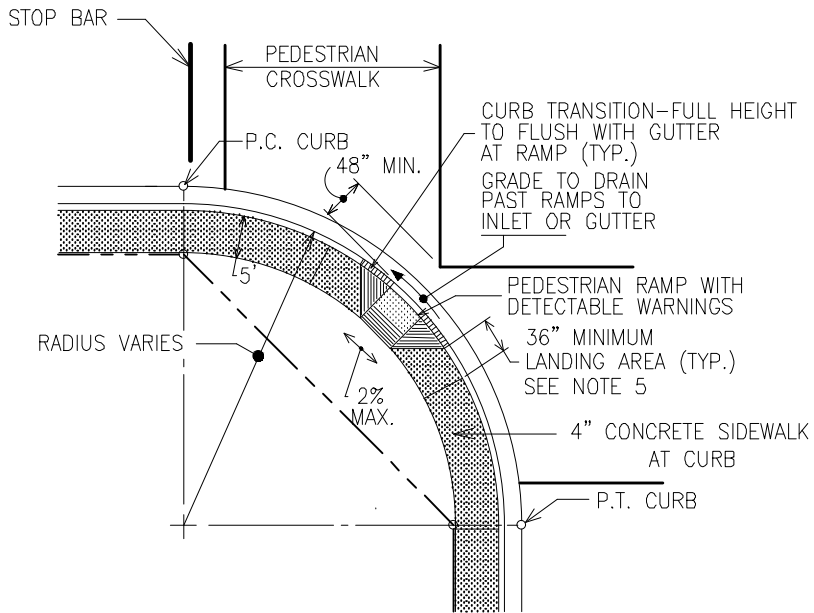


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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
**ROAD AND STREET DETAILS**  
**MINOR RESIDENTIAL**  
**STREET STANDARDS**

ISSUED: SEPTEMBER 2023  
REVISED: \_\_\_\_\_  
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PLATE  
**R-S**

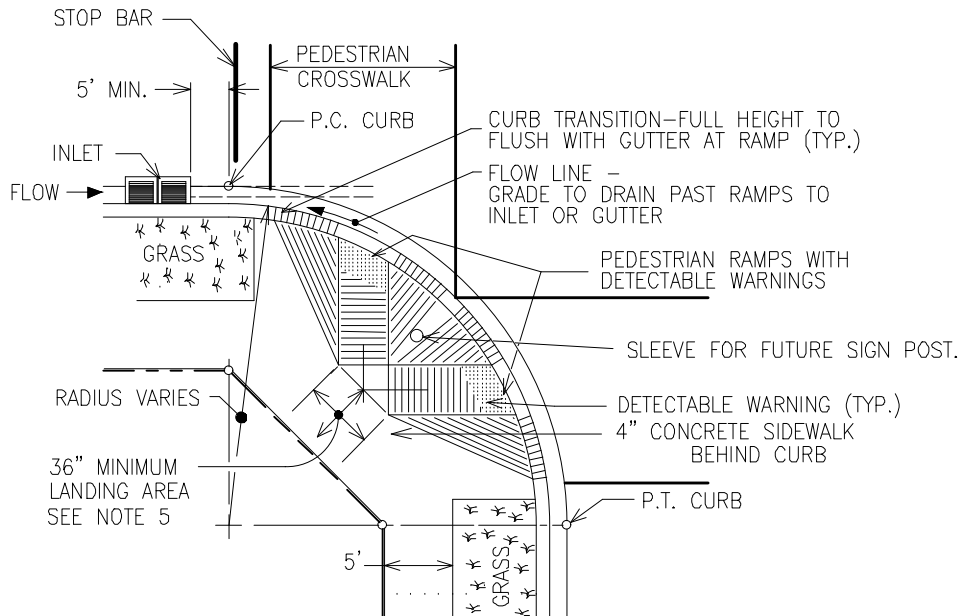
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MINOR STREETS OR AS DIRECTED

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.
6. USE OF A CURB RETURN IN LIEU OF FLARES IS ALLOWED ONLY WHERE THE CURB RETURN WILL BE PARALLEL TO PEDESTRIAN FLOW.
7. ALL PAVEMENT MARKINGS TO BE IN ACCORDANCE WITH THE LATEST EDITION OF MUTCD.
8. 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.



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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 ROAD AND STREET DETAILS  
 PEDESTRIAN RAMPS

ISSUED: SEPTEMBER 2023  
 REVISED: \_\_\_\_\_  
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 PLATE  
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