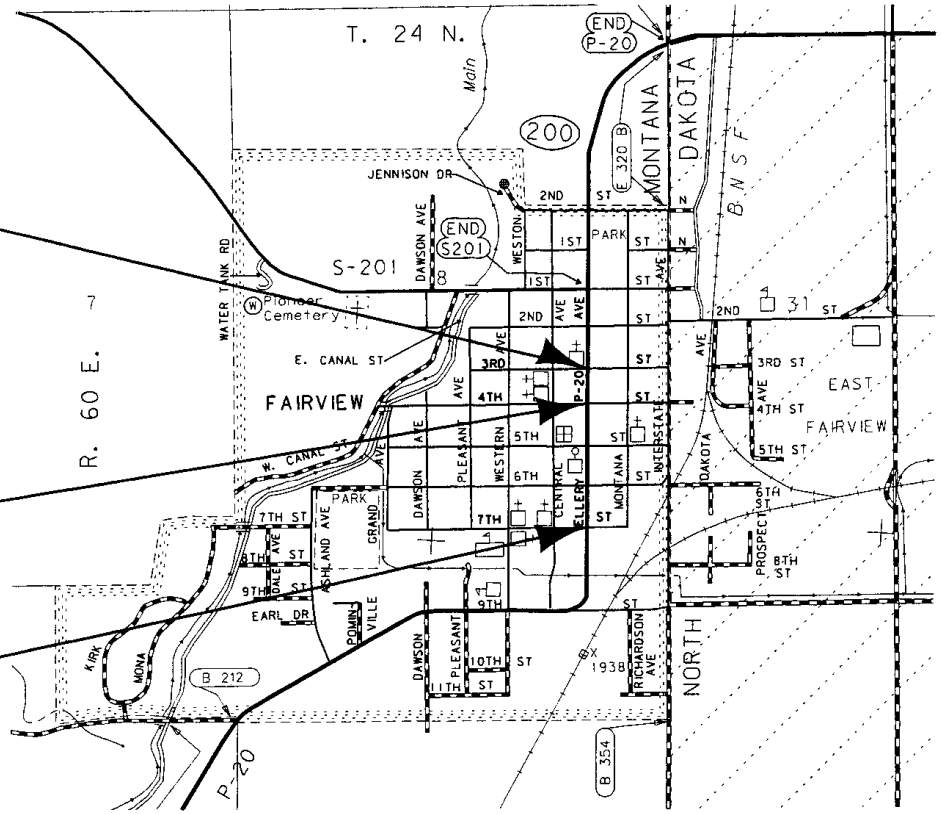
MONTANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE PROJECT
REMOVE GRATED TROUGH DRAINS
INSTALL NEW VALLEY GUTTERS, CURB & SIDEWALK
FAIRVIEW

SITE 3 – 3RD STREET

SITE 2 – 4TH STREET

SITE 1 – 7TH STREET



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SHEET 1 OF 12

SYMBOLS

DI — EXISTING DROP INLET

WV — EXISTING WATER VALVE

EXISTING POLE

EXISTING LUMINAIRE

EXISTING GRATED TROUGH

NEW PLANT MIX TAPER

NEW SIDEWALK

NEW DETECTABLE WARNING DEVICE
(AKA TRUNCATED DOMES)

10'

NEW VALLEY GUTTER

DETAILS

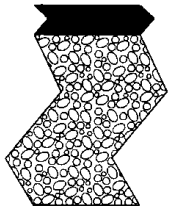
EXISTING SURFACING

0.4' PLANT MIX

1.2' CEMENT TREATED BASE

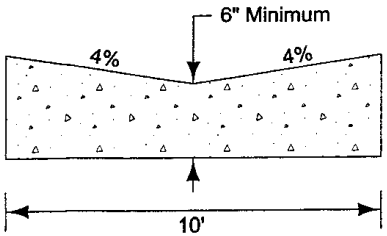
0.3' CRUSHED BASE COURSE

PROPOSED SURFACING



0.4' PLANT MIX

2.3' CRUSHED AGGREGATE COURSE



NEW VALLEY GUTTER

NOTES

ALL NEW BACK OF CURB RADII ARE 15'
MATCH EXISTING TOP OF CURB AT EACH END OF RADII.

SUMMARY

CURB

SITE	linear feet				square yards	REMARKS
	CONCRETE CURB AND GUTTER		REMOVE CURB AND GUTTER		CONCRETE VALLEY GUTTER	
	LEFT	RIGHT	LEFT	RIGHT		
SITE 1	24.5	24.5			95.0	7TH ST.
SITE 2	33.5	36.0	9.0	11.5	95.6	4TH ST.
SITE 3	35.5	34.5	11.0	10.0	95.5	3RD ST.
TOTAL	188.5		41.5		286.1	

SIDEWALK

SITE	square yards					linear feet	REMARKS
	CONCRETE SIDEWALK 4"		REMOVE SIDEWALK		DETECTABLE WARNING DEVICE	WIDTH	
	LEFT	RIGHT	LEFT	RIGHT			
SITE 1	3.0	3.0	8.0	8.1	2.2		7TH ST. - INCLUDES 2 PRIVATE APPROACH SIDEWALK CURB RAMPS
SITE 2	12.0	20.1	13.1	21.2	2.2		4TH ST. - INCLUDES 2 TYPE E ADA RAMPS
SITE 3	15.1	15.2	16.2	16.3	2.2		3RD ST. - INCLUDES 2 TYPE E ADA RAMPS
SUBTOTAL	30.1	38.3	37.3	45.6			
TOTAL	68.4		82.9		6.6	~	

Δ SURFACING

SITE	tons	AGGREGATE				BITUMINOUS MATERIAL		REMARKS
		square yards		tons	cubic yards	tons		
	HYDRATED LIME	REMOVE PAVEMENT ⊘	COVER TYPE 2	PLANT MIX BIT. SURF. GRADE D #	CRUSHED AGG. COURSE	ASPHALT CEMENT PG 64-28	SEAL CRS- 2P	
SITE 1		508	451	116	418	7.0	0.8	7TH ST.
SITE 2		299	237	59	250	3.5	0.4	4TH ST.
SITE 3		273	206	52	230	3.1	0.4	3RD ST.
TOTAL	* 3	1,080	894	227	898	* 13.6	1.6	

Δ QUANTITIES BASED ON PLAN AREAS
GRADE D COMMERCIAL
★ COST INCLUDED IN UNIT BID PRICE FOR GR. "D" COMMERCIAL PMBS
⊘ INCLUDES 1 ASPHALT FILLET AT SITE 2 AND 2 AT SITE 3 - REMOVE EXISTING PL MIX AND GRAVEL TO DEPTH OF NEW SURFACING

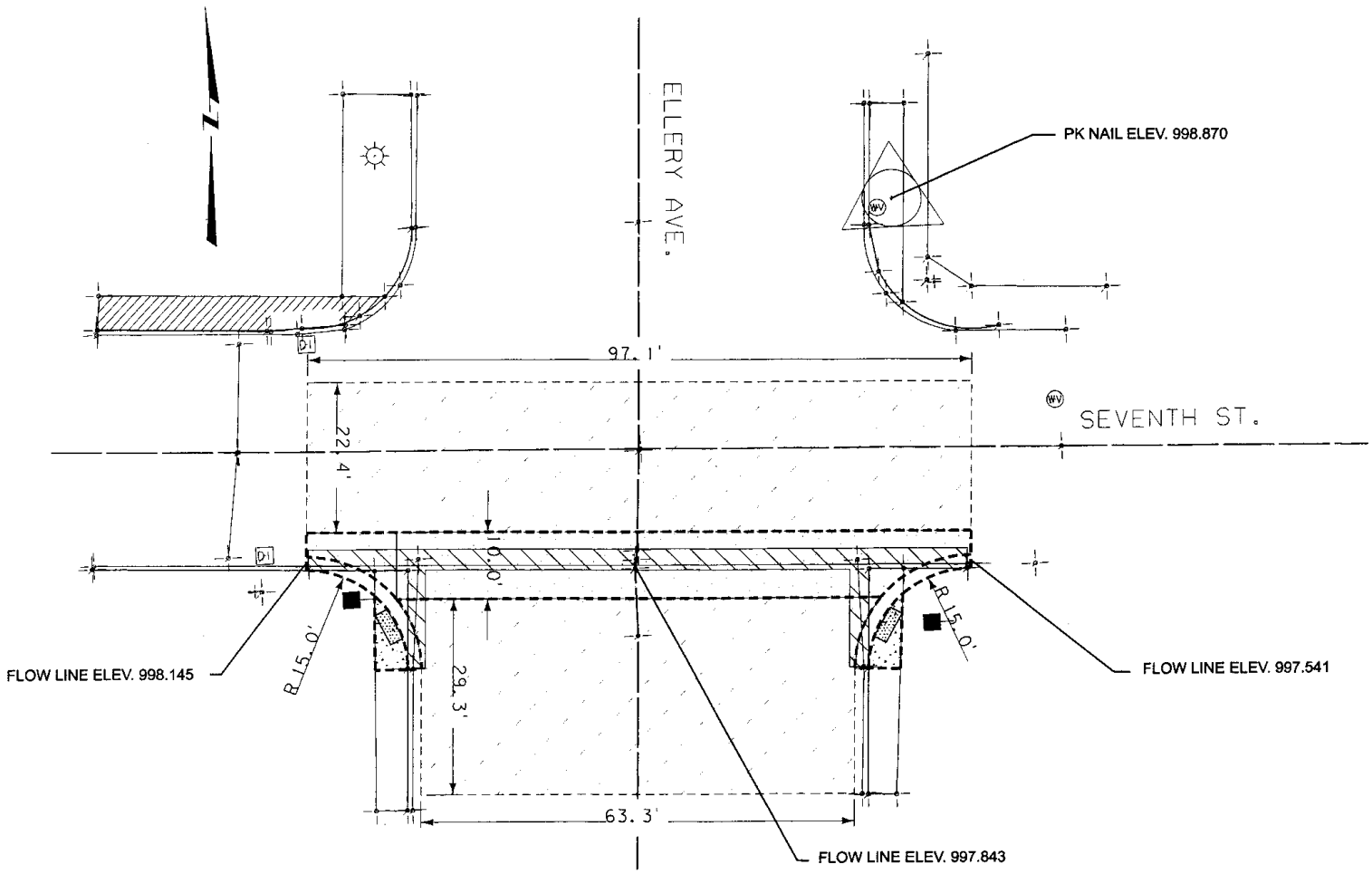
MISCELLANEOUS

SITE	lump sum	each					REMARKS
	* REMOVE MISCELLANEOUS ITEMS	REMOVE & RESET SIGN		REMOVE POLE STUB		ADJUST WATER VALVE	
		LEFT	RIGHT	LEFT	RIGHT		
SITE 1	.3						7TH ST.
SITE 2	.3		1		1	1	4TH ST.
SITE 3	.4	1				1	3RD ST.
TOTAL	1	2		** 1		2	

* REMOVE GRATED TROUGH
** INCLUDE COST IN OTHER ITEMS

SITE 1

7TH STREET INTERSECTION



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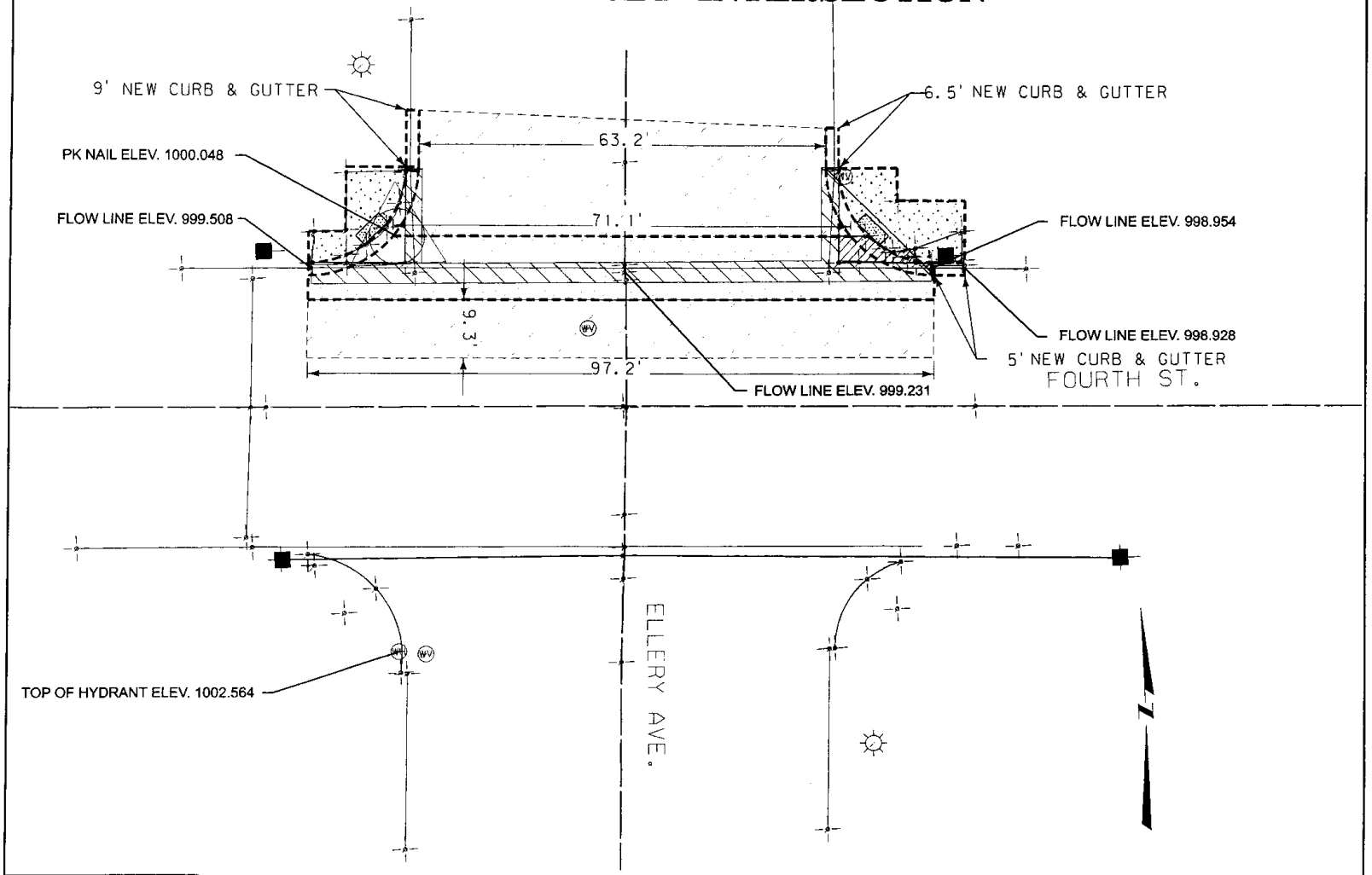
SITE 2

4TH STREET INTERSECTION



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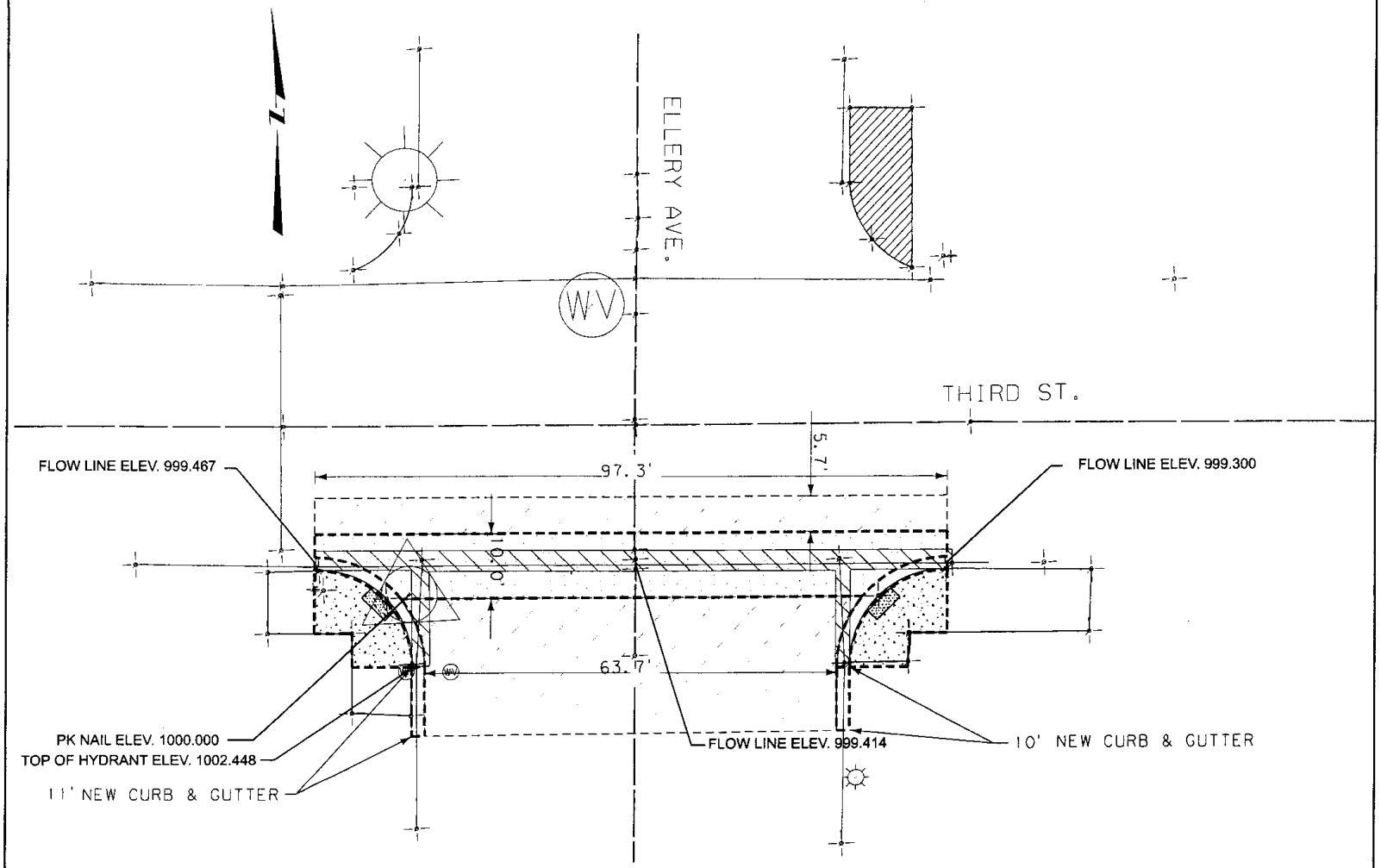
SITE 3

3RD STREET INTERSECTION



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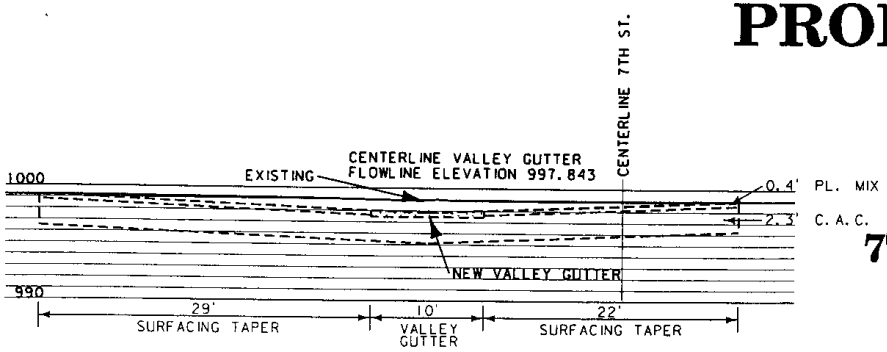
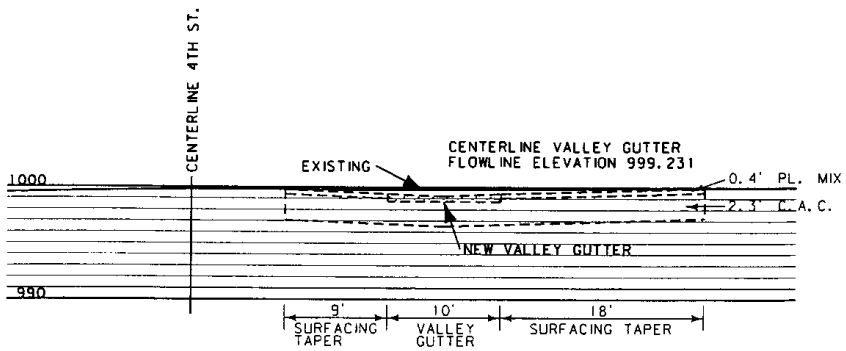
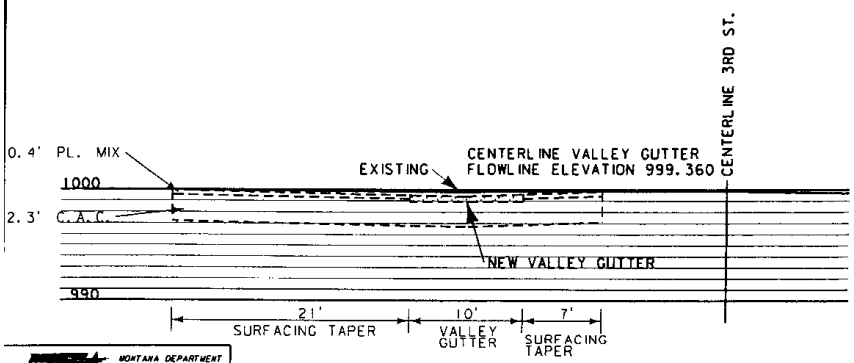
PROFILE VIEWS



7TH STREET INTERSECTION



4TH STREET INTERSECTION



3RD STREET INTERSECTION

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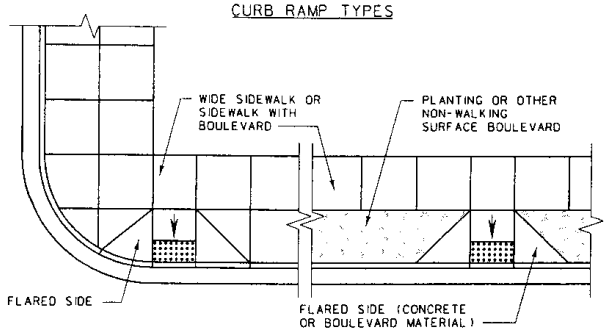
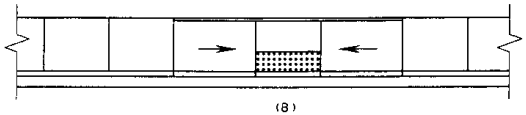
CURB RAMP TYPES



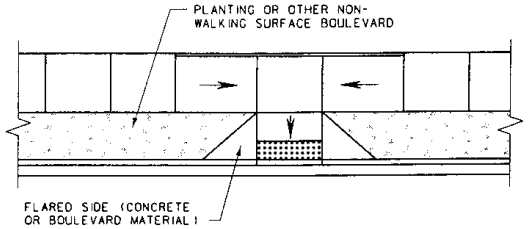
(A)

PERPENDICULAR PUBLIC SIDEWALK CURB RAMP (SEE DETAILED DRAWING NUMBER 608-25 FOR ADDITIONAL DETAILS)



(B)

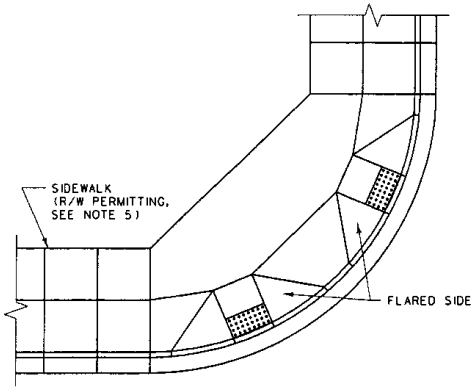
PARALLEL PUBLIC SIDEWALK CURB RAMP (SEE DETAILED DRAWING NUMBER 608-30 FOR ADDITIONAL DETAILS)



(C)

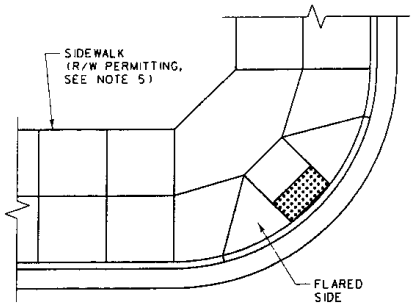
COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP (SEE DETAILED DRAWING NUMBERS 608-25 AND 608-30 FOR ADDITIONAL DETAILS)

CURB RAMP TYPES



(D)

DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP (SEE DETAILED DRAWING NUMBER 608-35 FOR ADDITIONAL DETAILS)



(E)

SINGLE DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP (SEE DETAILED DRAWING NUMBER 608-35 FOR ADDITIONAL DETAILS)

4th & 3rd Street

GENERAL NOTES:

1. WHEN ALTERING EXISTING FACILITIES, USE PUBLIC SIDEWALK CURB RAMPS IN THE FOLLOWING ORDER OF PREFERENCE:

   A. PERPENDICULAR PUBLIC SIDEWALK CURB RAMP
   B. PARALLEL PUBLIC SIDEWALK CURB RAMP
   C. COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP
   D. DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP
   E. SINGLE DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP

   NOTE: USE DIAGONAL PUBLIC SIDEWALK CURB RAMPS AS THE LAST OPTION AND CONSTRUCT TO COMPLY WITH ALL ADA SLOPE AND CONSTRUCTION CRITERIA TO THE GREATEST EXTENT POSSIBLE.

2. PLACE CURB RAMPS TO AVOID EXISTING DRAINAGE STRUCTURES AND OTHER OBSTRUCTIONS TO THE GREATEST EXTENT POSSIBLE.

3. USE THE FLATTEST SLOPES POSSIBLE FOR ALL CURB RAMPS. MAXIMUM SLOPES ARE SHOWN FOR GUIDANCE AT DIFFICULT SITES AND SHOULD BE AVOIDED IF POSSIBLE.

4. FINAL FIELD LOCATION OF THE CURB RAMPS WILL BE DETERMINED BY THE ENGINEER.

5. IF R/W DOES NOT PERMIT LANDINGS FOR THESE RAMPS, USE ANOTHER RAMP DESIGN.

6. PEDESTRIAN ACCESS POINTS AT CROSSWALKS ARE TO BE WHOLLY CONTAINED WITHIN THE CROSSWALK LINES.

7. FOR ADDITIONAL INFORMATION CONSULT:

   APPENDIX IV
   AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES
   AUGUST, 1994 EDITION

CONSTRUCTION REQUIREMENTS:

1. OBTAIN A SURFACE TEXTURE ON THE RAMP BY COARSE BROOMING, TRANSVERSE TO THE RAMP SLOPE.

2. TAKE CARE DURING CONSTRUCTION TO ASSURE UNIFORM RAMP GRADES, FREE OF SAGS AND SHARP GRADE CHANGES.

608 608-20

ALTERATIONS TO EXISTING FACILITIES - PUBLIC SIDEWALK CURB RAMPS

FEBRUARY 2005

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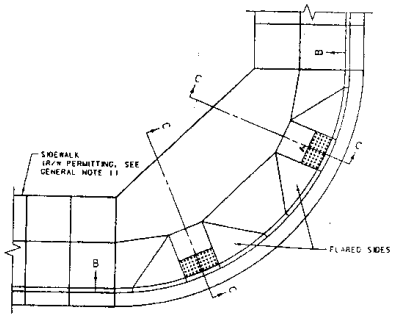
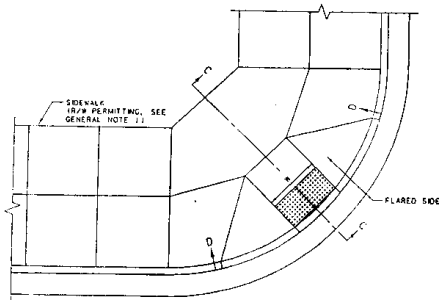
7th street

DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP

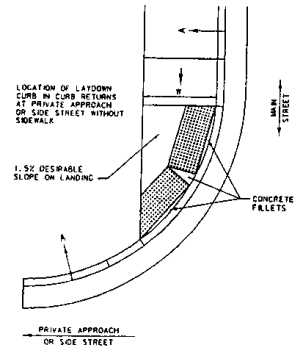


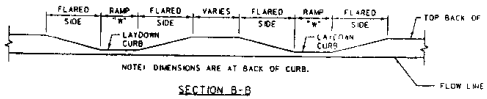
SINGLE DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP

NOTE: SINGLE DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMPS SERVING TWO STREET CROSSING DIRECTIONS ARE NOT PERMITTED IN NEW CONSTRUCTION.



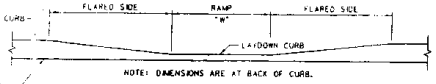
PRIVATE APPROACH SIDEWALK CURB RAMP





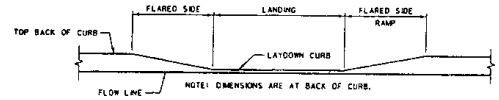
NOTE: DIMENSIONS ARE AT BACK OF CURB.

SECTION B-B



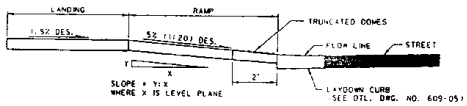
NOTE: DIMENSIONS ARE AT BACK OF CURB.

SECTION D-D



NOTE: DIMENSIONS ARE AT BACK OF CURB.

SECTION A-A



SECTION C-C

NEW CONSTRUCTION REQUIREMENTS:

1. THE DESIRABLE WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 4 FEET OR WIDER. THE MINIMUM WIDTH ("W") IS 3 FEET.
2. THE DESIRABLE LENGTH OF THE LANDING AT THE TOP OF THE CURB RAMP (DIMENSION "L" ABOVE) IS 5 FEET. THE MINIMUM LENGTH "L" IS 4 FEET. THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.
3. THE DESIRABLE SLOPE FOR THE CURB RAMP IS 5% (1:20) OR FLATTER. THE MAXIMUM CURB RAMP SLOPE IS 8.3% (1:12).
4. THE DESIRABLE SLOPE FOR THE FLARED SIDE OF THE CURB RAMP IS 8.3% (1:12) OR FLATTER. THE MAXIMUM FLARED SIDE SLOPE IS 10% (1:10).
5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 1.5% (1:66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OF LANDING IS 2% (1:50).
6. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OF EACH RAMP AS SHOWN ABOVE. SEE DETAILED DRAWING NUMBER 608-40 FOR TRUNCATED DOMES DETAILS.

REQUIREMENTS FOR ALTERATIONS TO EXISTING FACILITIES:

NOTE: WHEREVER POSSIBLE, ALTER EXISTING FACILITIES TO COMPLY WITH THE NEW CONSTRUCTION REQUIREMENTS.

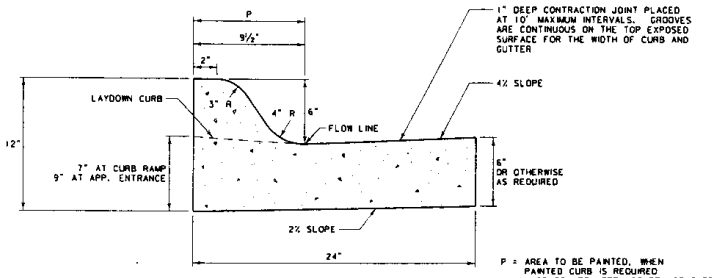
1. THE MINIMUM WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 3 FEET.
2. WHERE PUBLIC PEDESTRIAN RIGHT-OF-WAY WIDTH IS INSUFFICIENT TO ACCOMMODATE A TOP LANDING OF 4 FEET, PROVIDE A TOP LANDING OF 3 FEET. THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.
   NOTE: IF EXISTING RIGHT-OF-WAY OR OTHER OBSTRUCTIONS REDUCE THE LANDING LENGTH TO LESS THAN 4 FEET, THE MAXIMUM FLARED SIDE SLOPE IS 8.3% (1:12).
3. THE MAXIMUM CURB RAMP SLOPE IS 10% (1:10), PROVIDED THE RISE (DIMENSION "Y" ABOVE) IS 6 INCHES OR LESS. AN 8.3% (1:12) OR FLATTER SLOPE IS DESIRABLE.
4. THE MAXIMUM FLARED SIDE SLOPE IS 10% (1:10).
5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 1.5% (1:66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1:50).
6. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OF EACH RAMP AS SHOWN ABOVE. SEE DETAILED DRAWING NUMBER 608-40 FOR TRUNCATED DOMES DETAILS.
7. WHERE EXISTING SITE DEVELOPMENT CONDITIONS PROHIBIT THE STRICT AND FULL COMPLIANCE OF ALL ADA CRITERIA, PROVIDE ACCESSIBILITY TO THE MAXIMUM EXTENT FEASIBLE.

GENERAL NOTES:

1. WHERE THE PUBLIC PEDESTRIAN RIGHT-OF-WAY WILL NOT ACCOMMODATE A DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP AND LANDING MEETING THESE REQUIREMENTS, USE ANOTHER RAMP DESIGN.
2. TRIM PRECAST TRUNCATED DOME PANELS TO FIT ON PRIVATE APPROACH SIDEWALK CURB RAMPS AS SHOWN ABOVE.

DETAILED DRAWING	
REFERENCE STANDARD SPEC. SECTION 608	DWG. NO. 608-35
DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMPS	
EFFECTIVE: FEBRUARY 2005	
APPROVED FOR THIS DRAWING	MONTANA DEPARTMENT OF TRANSPORTATION

CONCRETE CURBS



P = AREA TO BE PAINTED, WHEN PAINTED CURB IS REQUIRED (102 SQ. FT. PER 100 FT. OF CURB)

CURB & GUTTER SECTION
0.048 C.Y. CONC. PER 1.0' OF CURB FOR 6" GUTTER. *

JOINTS:

(A) WHEN INTEGRAL WITH, TIED TO, OR PLACED AGAINST PORTLAND CEMENT CONCRETE PAVEMENT (P.C.C.P.): MATCH TRANSVERSE CONTRACTION AND/OR EXPANSION JOINTS IN THE ADJACENT P.C.C.P. SLAB. IF REQUIRED, EXTEND ½" MIN. WIDTH PREFORMED EXPANSION JOINTS COMPLETELY THROUGH CURB AND GUTTER THE SAME WIDTH AS THE P.C.C.P. SLAB JOINT. FILL CURB AND GUTTER EXPANSION JOINTS WITH PREFORMED EXPANSION JOINT FILLER.

(B) ALL OTHER CASES:
SPACE CONTRACTION JOINTS IN CURB AND GUTTER AT 10 FOOT INTERVALS OR LESS EXCEPT AS SPECIFIED IN (A) ABOVE. EXTEND ½" MIN. WIDTH EXPANSION JOINTS COMPLETELY THROUGH CURB AND GUTTER EVERY 100 FEET (± 30 FEET), AT INTERVALS EQUAL TO THE NEAREST MULTIPLE OF THE CONTRACTION JOINT INTERVAL, AND FILL WITH EXPANSION JOINT FILLER.

(C) CONTRACTION JOINTS:
CONTRACTION JOINTS ARE ¼" MIN. AND ⅜" MAX. IN WIDTH. FORM JOINTS BY SAWING OR SCORING TO A MINIMUM DEPTH OF 1". FORM SCORED JOINTS BY A TOOL WHICH WILL LEAVE ROUNDED CORNERS AND DESTROY AGGREGATE INTERLOCK TO A MINIMUM DEPTH OF 1".

(D) OTHER JOINTS:
SEPARATE THE CURB AND GUTTER FROM ADJACENT SIDEWALK AT POINTS SHOWN ON DTL. DWG. NO. 608-05 WITH A BOND BREAKER MATERIAL, EXCEPT AT APPROACH LAYDOWN CURB LOCATIONS, WHICH REQUIRE SEPARATION USING ½" MIN. WIDTH PREFORMED EXPANSION JOINT MATERIAL. PLACE ½" MIN. WIDTH PREFORMED EXPANSION JOINT MATERIAL AT ALL CURB RETURNS, BRIDGES, DROP INLETS, AND WHERE MEETING CURB AND GUTTER IN PLACE.

EXPANSION JOINT FILLER MATERIAL:

USE PREFORMED EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STD. SPEC. 707.

BOND BREAKER MATERIAL:

USE A 15 OR 30 POUND ROOFING FELT MATERIAL, OR OTHER PRODUCT AS APPROVED BY THE ENGINEER. DO NOT USE EXPANSION JOINT MATERIAL.

RADII:

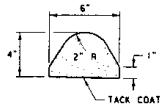
MINIMUM CURB RETURN RADII = 10'. 15' RADII ARE DESIRABLE FOR STREETS.

CONCRETE:

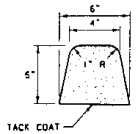
UNLESS OTHERWISE SPECIFIED, CONSTRUCT CONCRETE CURBS AND CONCRETE INTEGRAL CURB AND GUTTER WITH CLASS "D" CONCRETE OR APPROVED EQUAL.

* QUANTITIES FOR ESTIMATING PURPOSES ONLY.

BITUMINOUS CURBS



CURB SECTION
1 CUBIC FOOT OF MATERIAL WILL MAKE ABOUT 8 LINEAR FEET OF CURB. *



CURB SECTION
1 CUBIC FOOT OF MATERIAL WILL MAKE ABOUT 5 LINEAR FEET OF CURB. *

NOTES:

WHEN CURB IS USED IN CONJUNCTION WITH GUARDRAIL, USE THE 4" TYPE. OTHERWISE, THE CONTRACTOR MAY USE EITHER SECTION.

CONFORM ALL MATERIALS AND CONSTRUCTION TO THE STANDARD SPECIFICATIONS FOR BITUMINOUS CURB.

CONCRETE MAY BE SUBSTITUTED FOR THE BITUMINOUS MATERIAL. WHEN CONCRETE IS USED, CONSTRUCT CURB IN ACCORDANCE WITH STANDARD SPECIFICATION 609.

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609-05

MISCELLANEOUS CURBS

FEBRUARY 2005

--REVISED--
January 2008

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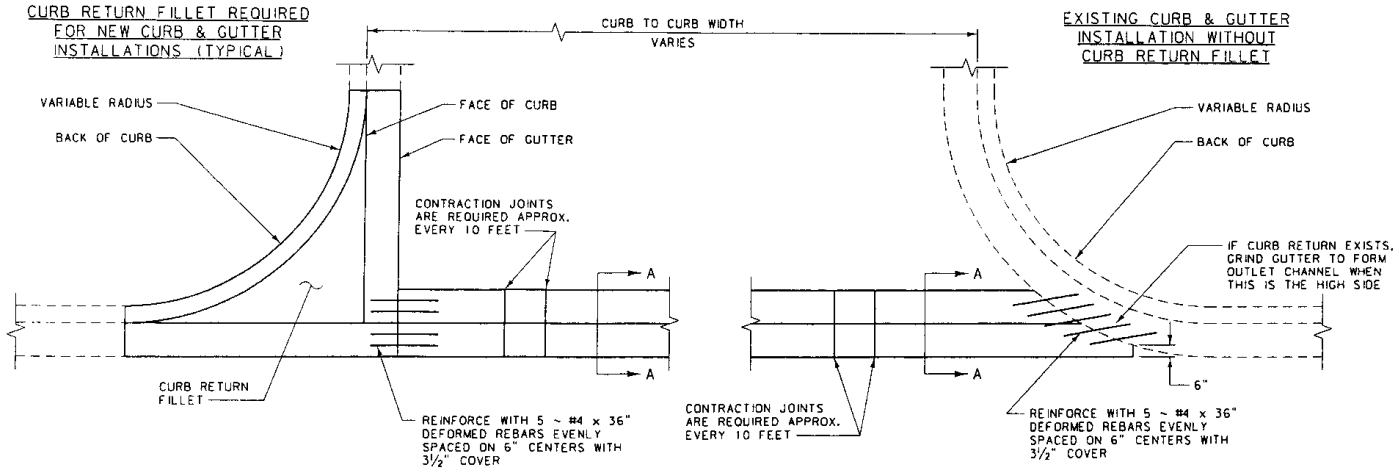
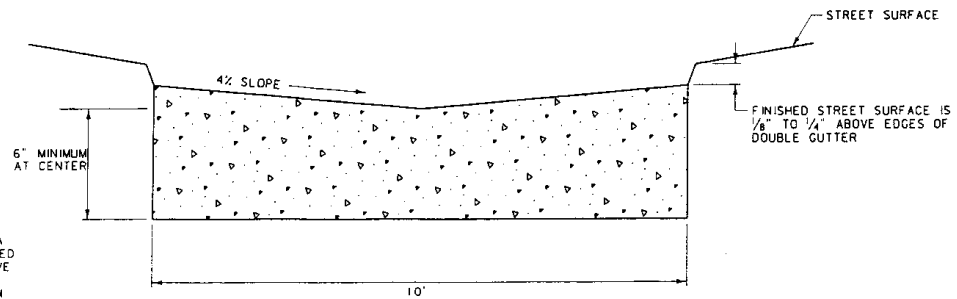


PLAN



SECTION A-A

NOTES:

INDIVIDUAL LOCATIONS MAY REQUIRE MORE DETAILS FOR ELEVATIONS AND DIMENSIONS.

INSTALL REINFORCEMENT AT ALL CONSTRUCTION JOINTS.

CONTRACTION JOINTS ARE ⅛" MIN. AND ⅜" MAX. IN WIDTH. FORM JOINTS BY SAWING OR SCORING TO A MINIMUM DEPTH OF 1". FORM SCORED JOINTS BY A TOOL WHICH WILL LEAVE ROUNDED CORNERS AND DESTROY AGGREGATE INTERLOCK TO A MINIMUM DEPTH OF 1".

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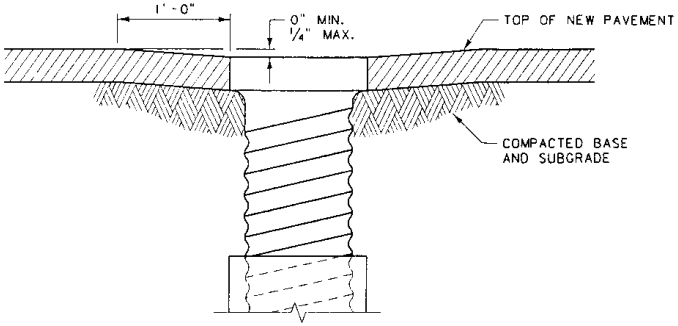
609-00

CONCRETE VALLEY GUTTER

FEBRUARY 2005

MONTANA DEPARTMENT OF TRANSPORTATION
serving you with pride



NOTES:

ADJUST WATER VALVES UPWARD OR DOWNWARD AS REQUIRED.

MAKE FINAL ADJUSTMENT BEFORE PAVING.

VALVE BOX ADJUSTMENT DETAIL

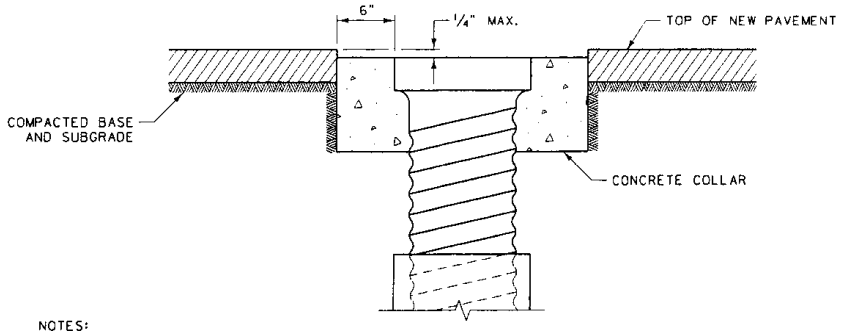
604, 621

621-00

MANHOLE AND
VALVE BOX
ADJUSTMENT DETAILS

FEBRUARY 2005

MONTANA DEPARTMENT OF TRANSPORTATION
serving you with pride



NOTES:

ADJUST WATER VALVES UPWARD OR DOWNWARD AS REQUIRED.

MAKE FINAL ADJUSTMENT BEFORE PAVING.

VALVE BOX ADJUSTMENT DETAIL

604, 621

621-05

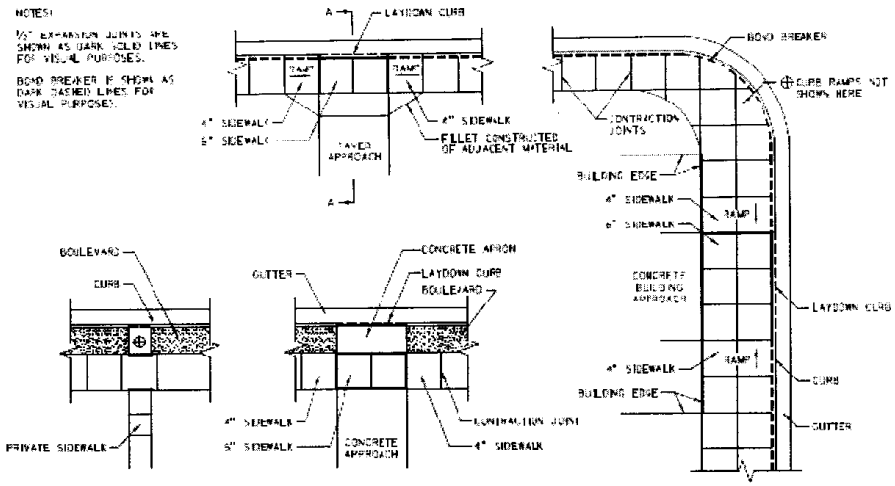
OPTIONAL MANHOLE AND
VALVE BOX
ADJUSTMENT DETAILS

FEBRUARY 2005

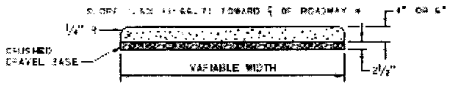
NOTES:

1/2" EXPANSION JOINTS ARE SHOWN AS DARK SOLID LINES FOR VISUAL PURPOSES.

BOND BREAKER IS SHOWN AS DARK DASHED LINES FOR VISUAL PURPOSES.

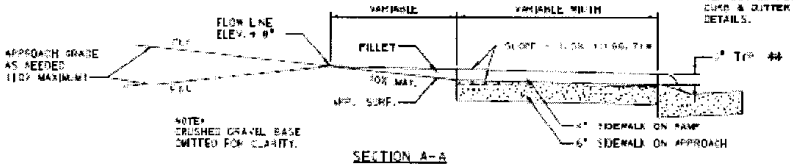


PLAN



SECTION OF SIDEWALK

NOTE:
SEE STD. DWG. NO. 608-05 FOR CURB & GUTTER DETAILS.



SECTION A-A

NOTES:

INSTALL PREFORMED EXPANSION JOINT FILLER, STD. SPEC. 707-01.3, AT ALL EXPANSION JOINTS, FOR THE FULL THICKNESS OF THE SIDEWALK AND USE AT ALL JOINTS BETWEEN NEW CONCRETE SIDEWALK AND STRUCTURES IN PLACE.

INSTALL A BOND BREAKER FOR THE FULL THICKNESS OF THE SIDEWALK AT LOCATIONS SPECIFIED ON THIS DETAIL. USE A 15 LB. 30 POUND KRAFT PAPER, MATERIAL OR OTHER PRODUCT AS APPROVED BY THE ENGINEER, FOR THE BOND BREAKER. DO NOT USE EXPANSION JOINT MATERIAL AS A BOND BREAKER.

ALL JOINTS MUST BE STRAIGHT AND PERPENDICULAR TO THE CENTERLINE AND THE SURFACE OF THE SIDEWALK. WHERE PRACTICAL, ALIGN ALL JOINTS WITH JOINTS IN ADJOINING WORK. USE JOINTS TO DIVIDE ALL PANELS IN THE SIDEWALK, WHICH ARE TO BE, SQUARE AS POSSIBLE. SQUARE, THE LENGTHS OF THE PANELS ARE DETERMINED BY THE WIDTH OF THE SIDEWALK.

WHERE RIGHT-OF-WAY PERMITS, NEW SIDEWALKS LESS THAN 5 FEET IN WIDTH MUST HAVE A PASSING AREA AT A MAXIMUM SPACING OF 200 FEET. THE PASSING AREA IS A MINIMUM OF 5 FEET BY 5 FEET IN SIZE.

CONTRACTION JOINTS MAY NOT BE MORE THAN 3/8" WIDE AND NOT LESS THAN 1" IN DEPTH AND MAY BE CUT BY A GROOVE FORMING TOOL.

LOCATE EXPANSION JOINTS EVERY 60 FEET (± 30 FEET) AT INTERVALS EQUAL TO THE NEAREST MULTIPLE OF THE CONTRACTION JOINT INTERVAL.

USE A LONGITUDINAL CONTRACTION JOINT IN THE CENTERLINE OF ALL SIDEWALKS WIDER THAN 5 FEET.

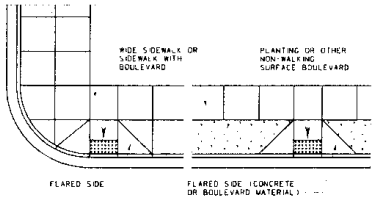
* THE MAXIMUM CROSS SLOPE OF THE SIDEWALK IS 2% (1:50).

** THIS DEPTH IS STANDARD IN NEW CONSTRUCTION. ALTERATIONS TO EXISTING FACILITIES MAY RESULT IN A LARGER DEPTH, WHICH WILL REQUIRE A GREATER RAMP LENGTH.

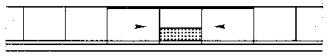
⊕ SEE STD. DWG. NO. 608-15 AND 608-20 FOR GUIDELINES ON RAMP DESIGN WHEN RAMPS ARE REQUIRED FOR ADA ACCESSIBILITY.

DETAILED DRAWING	
REFERENCE STANDARD SPEC SECTION 608	DWG. NO. 608-35
CONCRETE SIDEWALK	
EFFECTIVE: FEBRUARY 2005	
MONTANA DEPARTMENT OF TRANSPORTATION	

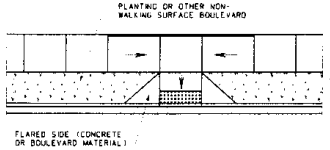
CURB RAMP TYPES



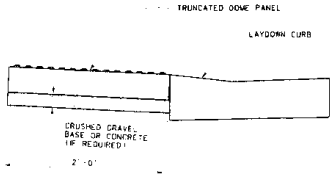
PERPENDICULAR PUBLIC SIDEWALK CURB RAMP (SEE DETAILED DRAWING NUMBER 608-25 FOR ADDITIONAL DETAILS)



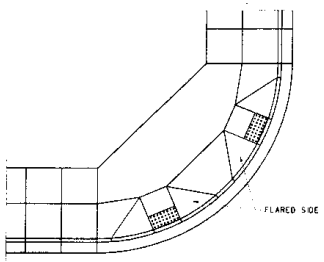
PARALLEL PUBLIC SIDEWALK CURB RAMP (SEE DETAILED DRAWING NUMBER 608-30 FOR ADDITIONAL DETAILS)



COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP (SEE DETAILED DRAWING NUMBERS 608-25 AND 608-30 FOR ADDITIONAL DETAILS)

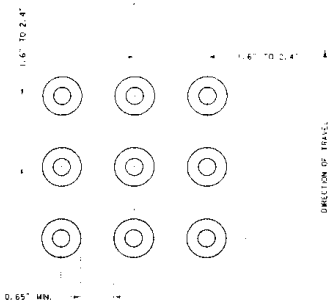


SIDE VIEW



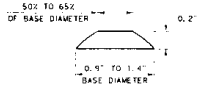
DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP (SEE DETAILED DRAWING NUMBER 608-35 FOR ADDITIONAL DETAILS)

TRUNCATED DOMES ALIGNMENT AND PATTERN



SQUARE PATTERN PARALLEL ALIGNMENT

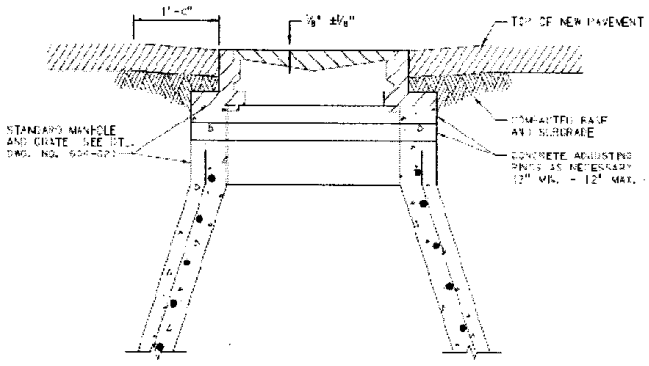
DOME PROFILE



CONSTRUCTION REQUIREMENTS:

1. USE ONLY DETECTABLE WARNING DEVICES (ALSO KNOWN AS TRUNCATED DOMES) THAT ARE ON THE DEPARTMENT'S QUALIFIED PRODUCTS LIST.
2. USE DETECTABLE WARNING DEVICES THAT ARE A BRICK RED COLOR.
3. INSTALL DETECTABLE WARNING DEVICES THAT EXTEND THE FULL WIDTH OF THE RAMP, 2 FEET IN DEPTH.
4. INSTALL THE DOME PANEL ADJACENT TO THE BACK OF CURB. IF THE PANEL IS OFFSET, LOCATE THE EDGE OF THE PANEL NO MORE THAN 6 INCHES FROM THE BACK OF CURB.
5. IF THE DETECTABLE WARNING DEVICE IS EMBEDDED IN CONCRETE, INSTALL SO THE TOP OF THE PANEL IS FLUSH WITH THE ADJACENT CONCRETE AND THE DOMES WILL PROTRUDE ABOVE THE ADJACENT SURFACE.
6. ENSURE A UNIFORM GRADE ON THE DETECTABLE WARNING DEVICES FREE OF SAGS AND IRREGULAR SURFACES.

DETAILED DRAWING	
REFERENCE STANDARD SPEC. SECTION 608	DWG. NO. 608 40
DETECTABLE WARNING DEVICES	
--REVISED-- MAY 2009	EFFECTIVE: FEBRUARY 2005
	MDT serving your needs MONTANA DEPARTMENT OF TRANSPORTATION



NOTES:

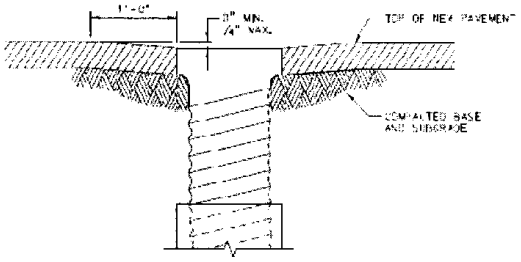
ADJUST MANHOLES UPWARD WITH ADJUSTING RINGS UNDER FRAME.

ADJUST MANHOLES DOWNWARD BY REMOVING CONE AND BARREL SECTIONS AS NECESSARY AND REPLACING WITH SECTIONS OF LENGTH REQUIRED TO MATCH GRADE.

SLOPE MANHOLE FRAME AS REQUIRED TO MATCH SLOPE OF STREET.

MAKE FINAL MANHOLE ADJUSTMENTS BEFORE PAVING.

MANHOLE ADJUSTMENT DETAIL



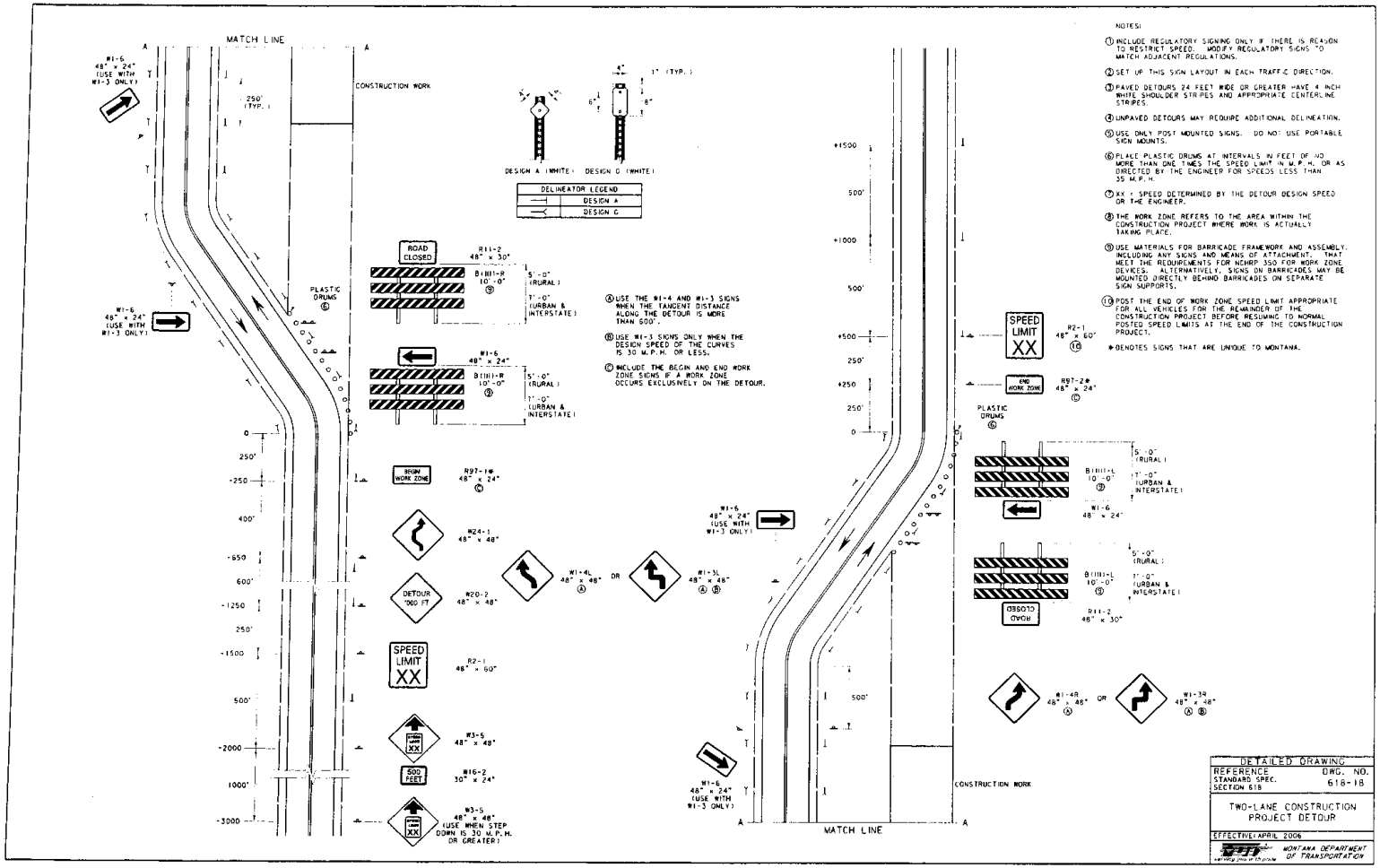
NOTES:

ADJUST WATER VALVES UPWARD OR DOWNWARD AS REQUIRED.

MAKE FINAL ADJUSTMENT BEFORE PAVING.

VALVE BOX ADJUSTMENT DETAIL

DETAILED DRAWING	
REFERENCE STANDARD SPEC. SECTION 604 621	DWG. NO. 621-00
MANHOLE AND VALVE BOX ADJUSTMENT DETAILS	
EFFECTIVE FEBRUARY 2005	
MONTANA DEPARTMENT OF TRANSPORTATION	



NOTES:

1. INCLUDE REGULATORY SIGNING ONLY IF THERE IS REASON TO RESTRICT SPEED. MODIFY REGULATORY SIGNS TO MATCH ADJACENT REGULATIONS.
2. SET UP THIS SIGN LAYOUT IN EACH TRAFFIC DIRECTION.
3. PAVED DETOURS 24 FEET WIDE OR GREATER HAVE 4 INCH WHITE SHOULDER STRIPES AND APPROPRIATE CENTERLINE STRIPES.
4. UNPAVED DETOURS MAY REQUIRE ADDITIONAL DELINEATION.
5. USE ONLY POST MOUNTED SIGNS. DO NOT USE PORTABLE SIGN MOUNTS.
6. PLACE PLASTIC DRUMS AT INTERVALS IN FEET OF NO MORE THAN ONE TIMES THE SPEED LIMIT IN M.P.H. OR AS DIRECTED BY THE ENGINEER FOR SPEEDS LESS THAN 35 M.P.H.
7. XX = SPEED DETERMINED BY THE DETOUR DESIGN SPEED OR THE ENGINEER.
8. THE WORK ZONE REFERS TO THE AREA WITHIN THE CONSTRUCTION PROJECT WHERE WORK IS ACTUALLY TAKING PLACE.
9. USE MATERIALS FOR BARRICADE FRAMEWORK AND ASSEMBLY, INCLUDING ANY SIGNS AND MEANS OF ATTACHMENT, THAT MEET THE REQUIREMENTS FOR NCHRP 350 FOR WORK ZONE DEVICES. ALTERNATIVELY, SIGNS ON BARRICADES MAY BE MOUNTED DIRECTLY BEHIND BARRICADES ON SEPARATE SIGN SUPPORTS.
10. POST THE END OF WORK ZONE SPEED LIMIT APPROPRIATE FOR ALL VEHICLES FOR THE REMAINDER OF THE CONSTRUCTION PROJECT BEFORE RESUMING TO NORMAL POSTED SPEED LIMITS AT THE END OF THE CONSTRUCTION PROJECT.

*DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.

A. USE THE W1-4 AND W1-3 SIGNS WHEN THE TANGENT DISTANCE ALONG THE DETOUR IS MORE THAN 600'.

B. USE W1-3 SIGNS ONLY WHEN THE DESIGN SPEED OF THE CURVES IS 30 M.P.H. OR LESS.

C. INCLUDE THE BEGIN AND END WORK ZONE SIGNS IF A WORK ZONE OCCURS EXCLUSIVELY ON THE DETOUR.

DETAILED DRAWING

REFERENCE STANDARD SPEC. SECTION 618 — DWG. NO. 618-18

TWO-LANE CONSTRUCTION PROJECT DETOUR

EFFECTIVE: APRIL 2006

MONTANA DEPARTMENT OF TRANSPORTATION