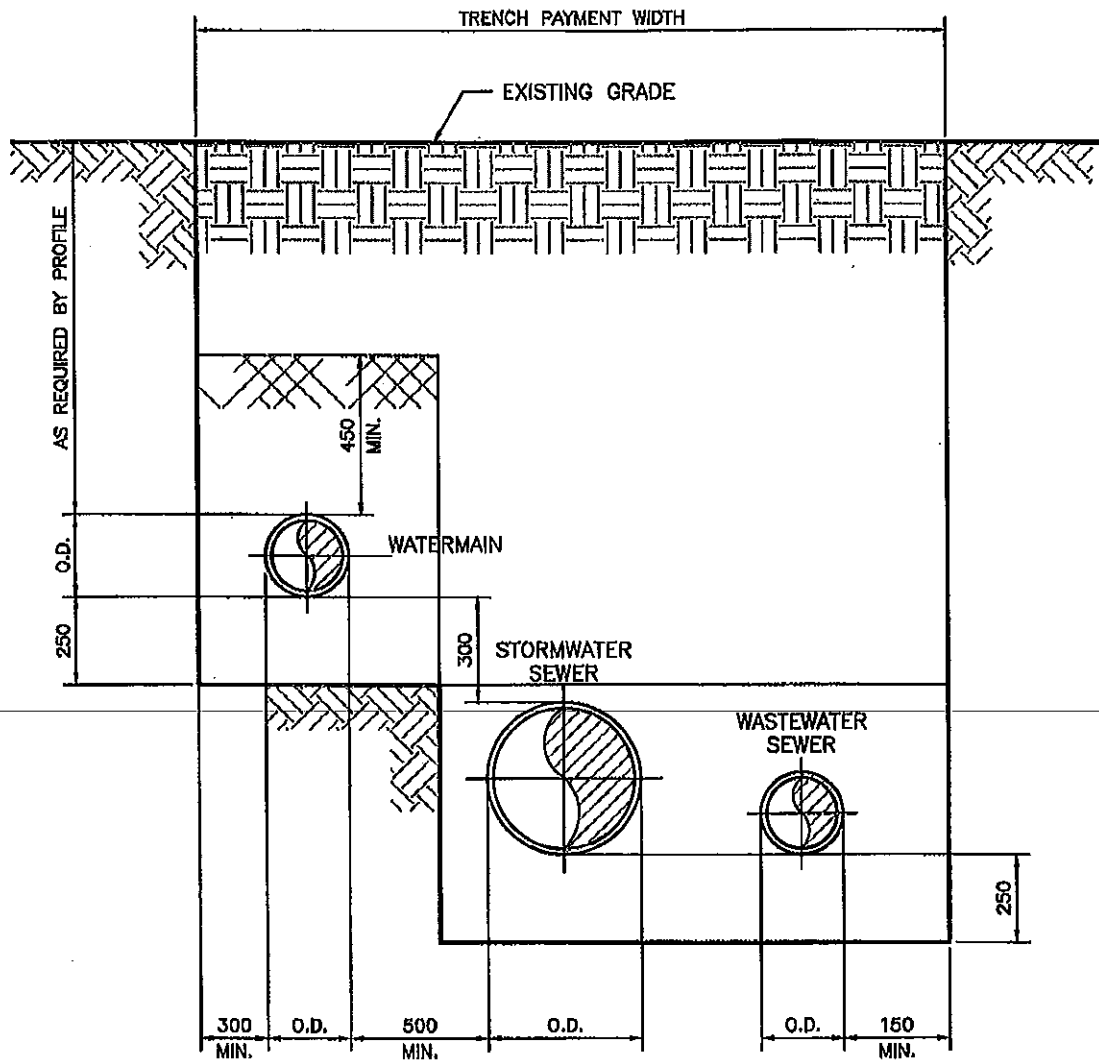


INDEX

<u>TITLE</u>	<u>DETAIL NO.</u>
Typical Trench Payment Width (Sewer and Water)	HWSD - 1000
Trench and Backfill Cross-Section	HWSD - 1440
Precast Manhole	HWSD - 1450
Manhole Frame and Cover	HWSD - 1460
1050 Precast Catchbasin	HWSD - 1570
Catchbasin Frame and Grate	HWSD - 1580
Area Catchbasins Grate Style	HWSD - 1590
Precast Concrete Headwall c/w Grating	HWSD - 1620
Urban Sidewalk Detail	HRM 40
Pedestrian Ramp Alignment Details	HRM 44
Concrete Sidewalk Reinforcing	HRM 45
Driveway Ramp	HRM 46
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Railing	HRM 97



REFER TO STANDARD
DRAWING HWSD - 1440
FOR TRENCH DETAILS

SCALE PLOTTED: 1=1 DATE PLOTTED: 4/18/2008 NOTES

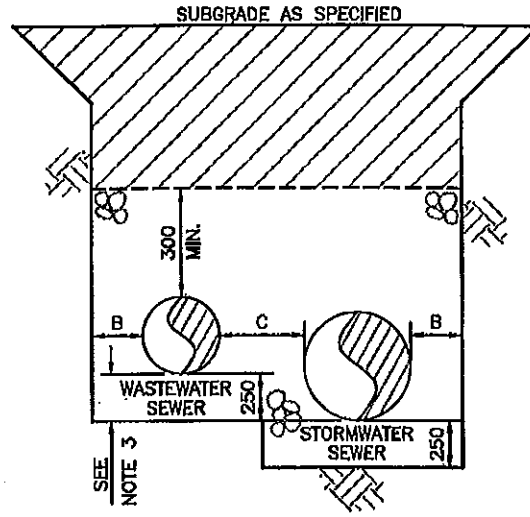
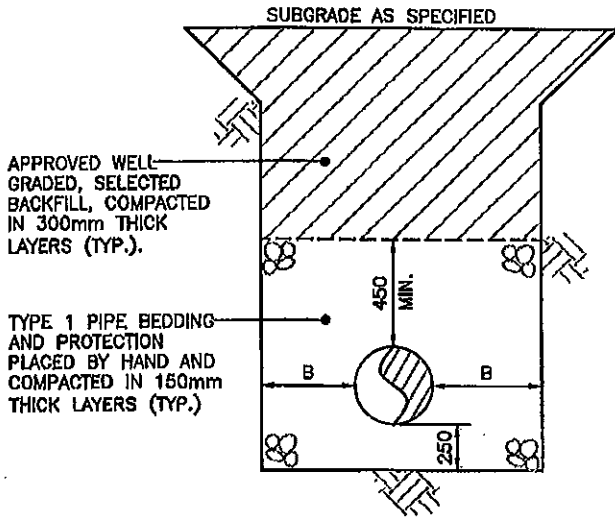
8	GENERAL REVISIONS FOR 2010	10/05/17	ML	
7	GENERAL REVISIONS FOR 2009	09/08/08	ML	
6	BACKFILL TYPE REVISED	04/04/01	BC	
5	TITLE BLOCK CLEANUP	03/04/08	BC	
4	HORIZONTAL SEPARATION REVISED	02/04/04	PSP	
3	BEDDING TYPE REVISED	00/03/20	MC	
2	BEDDING TYPE ADDED	09/12/20	RJ	
No.	DESCRIPTION	DATE	BY	CHKD



Halifax
Water

ENGINEERING DEPARTMENT

PROJECT	
TYPICAL TRENCH PAYMENT WIDTH (WATER AND SEWER)	
DRAWN MC	SCALE (PLAN) NTS
CHECKED HM	SCALE (PROFILE)
APPROVED	DATE 02/03/28
PROJECT No.	
DWG. No.	HWSD - 1000



PIPE SIZE NOM. DIA.	DIMENSIONS	
	B	C
UP TO 375	300	250
376 TO 500	300	300
501 TO 750	400	300
751 TO 1200	400	400
OVER 1200	SEE PROJECT DRAWINGS	

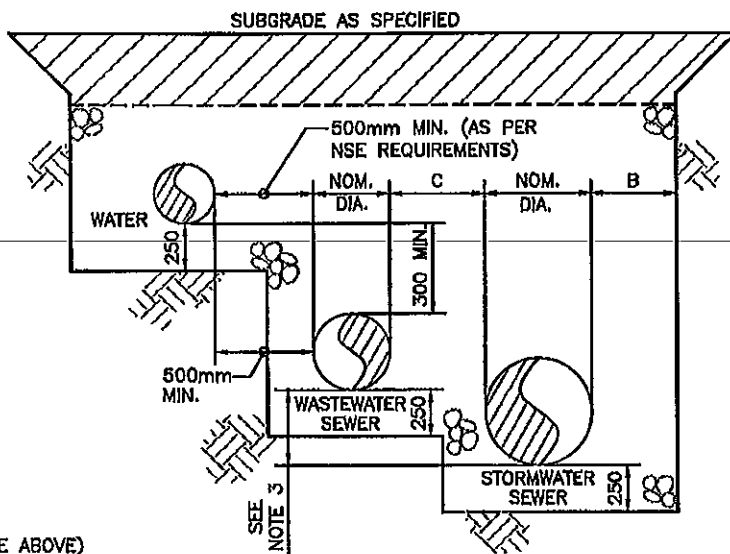
BEDDING REQUIREMENTS SHALL BE 250mm AS PER SECTIONS.

LEGEND

- UNDISTURBED NATIVE SOIL
- TYPE 1 GRAVEL (SEE NOTE ABOVE)
- SELECTED SITE MATERIALS (SEE NOTE ABOVE)

NOTES

1. DIMENSION "C" IS GOVERNED BY THE LARGER PIPE DIAMETER.
2. SIDES OF TRENCHES TO REQUIREMENTS OF DEPARTMENT OF LABOUR.
3. IF CROWNS OF STORMWATER AND WASTEWATER SEWER ARE NOT MATCHED, THE INVERT OF THE STORMWATER SEWER MUST BE AT LEAST 100 mm BELOW THE INVERT OF THE WASTEWATER SEWER.
4. WHEN CONCRETE PIPE IS SPECIFIED FOR A WASTEWATER SEWER, A GEOTECHNICAL REPORT BY A P.ENG. MUST BE UNDERTAKEN TO ENSURE STABILITY OF SUBBASE.
5. MINIMUM GRAVEL COVER OVER WASTEWATER AND STORMWATER SEWERS IS TO BE 300 mm.



SCALE PLOTTED: 1=1 DATE PLOTTED: 4/17/2008 NOTES

No.	DESCRIPTION	DATE	BY	CHKD
3	GENERAL REVISIONS FOR 2010	10 05 13	ML	
2	GENERAL REVISIONS FOR 2009	09 08 09	ML	
1	REVISION DETAILS	YY MM DD	XX	



ENGINEERING DEPARTMENT

PROJECT	
TRENCH AND BACKFILL CROSS SECTION	
DRAWN	SCALE (PLAN) NTS
CHECKED	SCALE (PROFILE) NTS
APPROVED	DATE 4/17/2008
PROJECT No.	
DWG. No.	HWSD - 1440

MIN. ALLOWABLE DEFLECTION ANGLES FOR CONCRETE PIPE

PIPE SIZE (mm)	MINIMUM ALLOWABLE DEFLECTION ANGLE				
	1050 M.H.	1200 M.H.	1500 M.H.	1800 M.H.	2100 M.H.
200	90	90	90	90	90
250	90	90	90	90	90
300	90	90	90	90	90
375	100	90	90	90	90
450	115	100	90	90	90
525	135	115	90	90	90
600	n/a	130	105	90	90
750	n/a	n/a	n/a	95	100
900	n/a	n/a	n/a	115	100
1050	n/a	n/a	n/a	130	110

MIN. ALLOWABLE DEFLECTION ANGLES FOR P.V.C. PIPE

PIPE SIZE (mm)	MIN. ALLOWABLE DEFLECTION ANGLE				
	1050 M.H.	1200 M.H.	1500 M.H.	1800 M.H.	2100 M.H.
200	90	90	90	90	90
250	90	90	90	90	90
300	90	90	90	90	90
375	95	90	90	90	90
450	95	90	90	90	90
525	110	90	90	90	90
600	n/a	110	n/a	n/a	90
750	n/a	n/a	n/a	n/a	90
900	n/a	n/a	n/a	n/a	90
1050	n/a	n/a	n/a	105	95

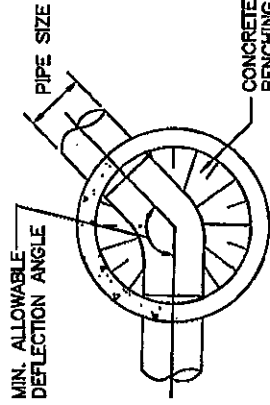
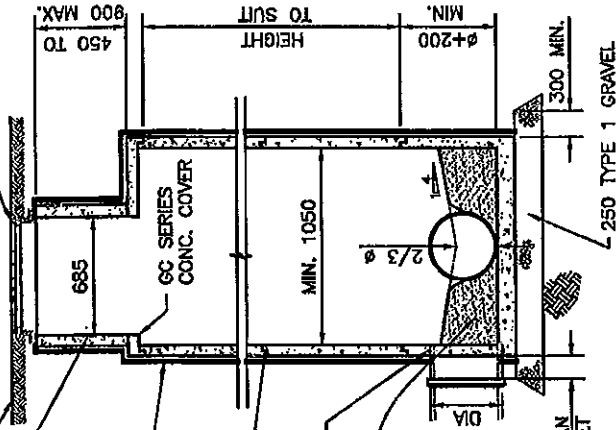
NOTES:

1. PRECAST SECTIONS MUST CONFORM TO SECTION 33 39 00 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL SERVICES.
2. CHANNELS IN DEAD END MANHOLES TO FINISH 225 mm FROM UPSTREAM WALL.
3. LIFT HOLES IN PRECAST SECTIONS TO BE GROUTED WITH CEMENT MORTAR PRIOR TO PLACING GRANULAR BACKFILL.
4. IF FINAL GRADE ADJUSTMENT EXCEEDS 150 mm IN HEIGHT, CIRCULAR 15M REBAR MUST BE INCORPORATED IN THE RAISED SECTION.
5. TABLES ARE ONLY PROVIDED AS A GUIDE AND NOT INTENDED FOR DESIGN PURPOSES. ALL SYSTEMS MUST BE APPROVED BY HRWC STAFF.
6. IN ADDITION TO O-RING GASKETS, JOINTS IN PRECAST SECTIONS BELOW THE CONCRETE MANHOLE COVER SHALL BE SEALED WITH 25 mm BUTYL RESIN CORD. THE CORD SHALL BE PLACED ON THE UPPER INSIDE LEDGE OF THE JOINT PRIOR TO PLACEMENT OF THE SUBSEQUENT SECTION. ALL WASTEWATER MANHOLES TO BE WRAPPED IN WATERPROOFING MEMBRANE.
7. PRECAST ECCENTRIC CONE SECTIONS NOT PERMITTED.
8. BACKFILL AROUND MANHOLES SHALL BE TYPE 2 GRAVEL EXTENDING A MIN. OF 300 mm OUTWARD FROM MANHOLE AND VERTICALLY FROM BEDDING MATERIAL TO UNDERSIDE OF ROADBED GRAVELS.
9. "A-LOK" OR APPROVED "O" RING GASKETS SHALL BE THOROUGHLY CLEANED, THEN COVERED GENEROUSLY WITH LUBRICANT SPECIFIED BY THE PIPE MANUFACTURER.

NOTES:

- FINISHED SURFACE TO BE LEVEL WITH TOP OF FRAME AND COVER
- CAST IN PLACE GRADE ADJ. TO BE CONSTRUCTED WITH AIR ENTRAINED 40MPa CONC. OR AN APPROVED NON-SHRINK GROUT
- WATERPROOFING MEMBRANE APPLIED TO GRADE RING COVER AND SHAFT (BAKOR BLUESKIN OR EQUIVALENT)
- O-RING GASKET & 25 mm BUTYL RESIN CORD (SEE NOTE 6)
- A-LOK GASKET OR APPROVED "O" RING GASKETS (TYPICAL) BENCHING TO BE 30 MPa CONCRETE AND START AT 2/3 THE HEIGHT OF THE PIPE AND SLOPE UPWARDS AT 4:1

PRECAST FLAT TOP MANHOLE



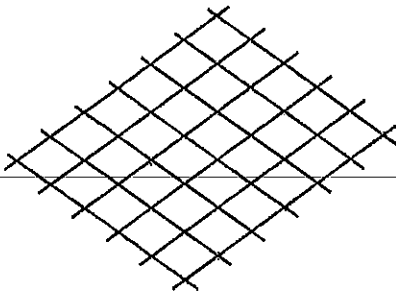
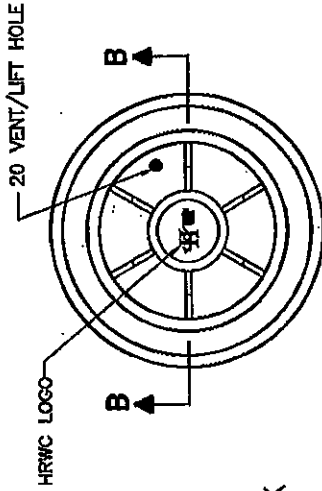
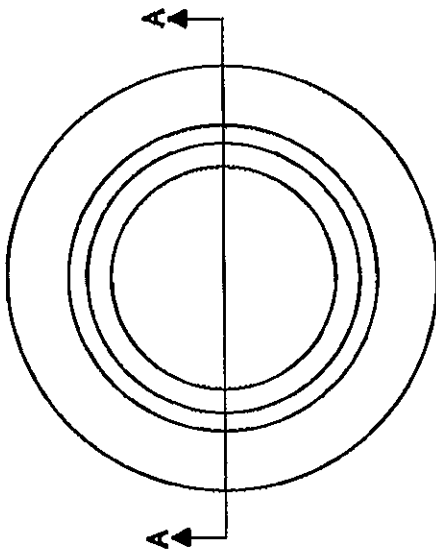
Halifax Water

ENGINEERING DEPARTMENT

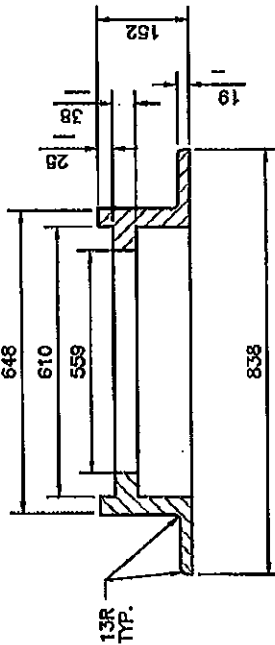
PROJECT: PRECAST MANHOLE

DRAWN	SCALE (PLAN)	NTS
CHECKED	SCALE (PROFILE)	NTS
APPROVED	DATE	04/17/08
PROJECT No.		
DWG. No.	HWSD - 1450	

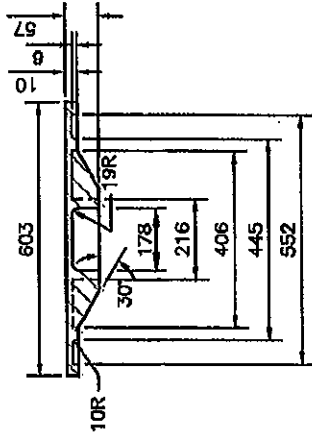
No.	DESCRIPTION	DATE	BY	CHKD
3	GENERAL REVISIONS FOR 2010	10/05/11	ML	
2	GENERAL REVISIONS FOR 2009	02/03/09	ML	
1	REVISION DETAILS	11/14/08	XX	



VIEW SHOWING PATTERN ON COVER



SECTION A-A



SECTION B-B

NOTES:

1. ALL MANHOLES ARE TO HAVE AN HRWC LOGO.
2. STANDARD MANHOLE FRAME AND COVER TO BE IMP R-10 OR EQUIVALENT.
3. MATERIAL - GRAY CAST IRON, A.S.T.M. A48/ A48M (2008).
LOAD CAPACITY - 7250Kg.
FRAME WEIGHT - 77.1 Kg.
COVER WEIGHT - 68.0 Kg.
4. ALL MANHOLES NOT LOCATED IN THE STREET ARE TO HAVE AN IMP RIZ FRAME AND COVER (WITH LOCKING SYSTEM) OR EQUIVALENT.
5. IN PARK AREAS AND AREAS SUBJECT TO FLOODING, THE FRAME AND COVER SHALL HAVE THE SAME GENERAL DIMENSIONS OF AN IMP R10, A WATERTIGHT GASKET BETWEEN THE FRAME AND COVER (INTEGRAL WITH THE COVER), AND THE VENT HOLE IS TO BE PLUGGED WITH A REMOVABLE, WATERTIGHT PLUG.
6. ADJUSTABLE MANHOLE FRAMES AND R10 COVERS AS PER HRWC SPECIFICATIONS SHALL BE USED IN ASPHALT SURFACES.

PROJECT

MANHOLE FRAME AND COVER



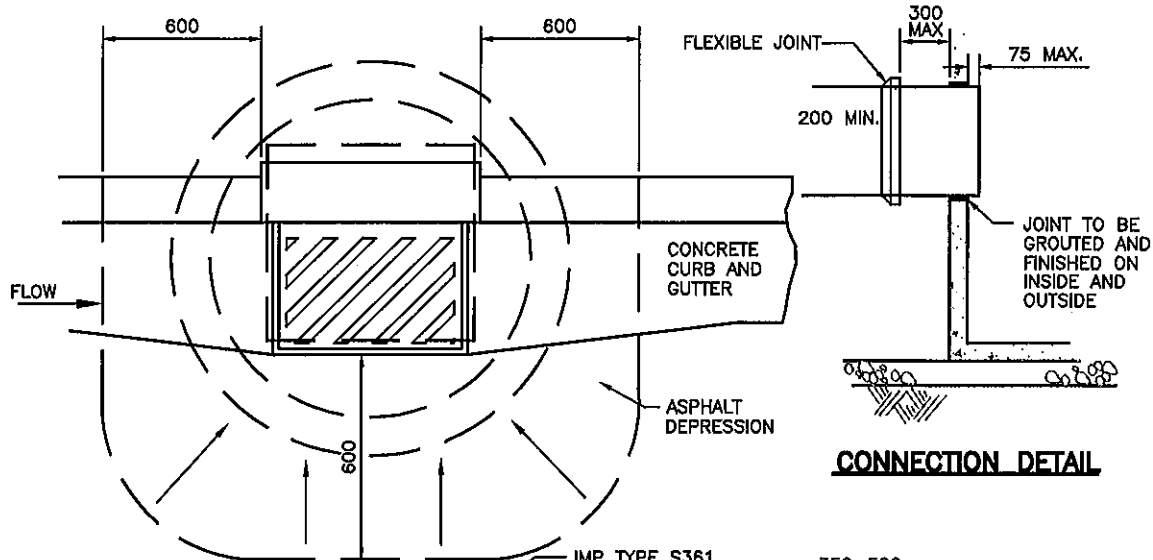
ENGINEERING DEPARTMENT

DRAWN	SCALE (FOOT)	NTS
CHECKED	SCALE (METER)	NTS
APPROVED	DATE	4/17/2008
PROJECT No.		

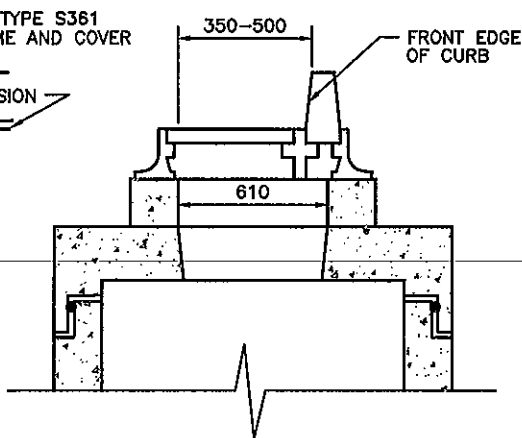
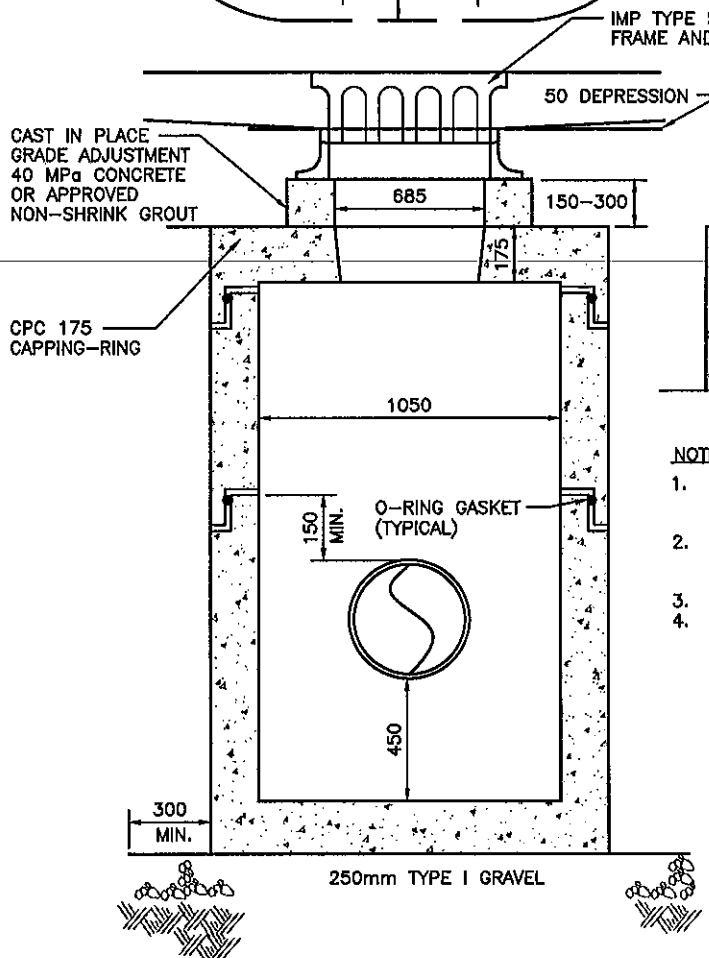
DWG. No.

HWSD - 1460

No.	DESCRIPTION	DATE	BY	CHKD
3	GENERAL REVISIONS FOR 2010	10/05/13	ML	
2	GENERAL REVISIONS FOR 2009	09/06/09	ML	
1	REVISION DETAILS	10/10/08	XX	



CONNECTION DETAIL



- NOTES:**
1. PRECAST SECTIONS MUST CONFORM TO SECTION 33 39 00 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL SERVICES.
 2. IF FINAL GRADE ADJUSTMENT EXCEEDS 150 mm HEIGHT, CIRCULAR 15M REBAR MUST BE INCORPORATED IN THE SECTION.
 3. ANGLE GRATE TO DIRECT WATER TOWARDS CURB.
 4. FOR DOUBLE GRATE INSTALLATIONS A CPC 175D SHALL BE REQUIRED.

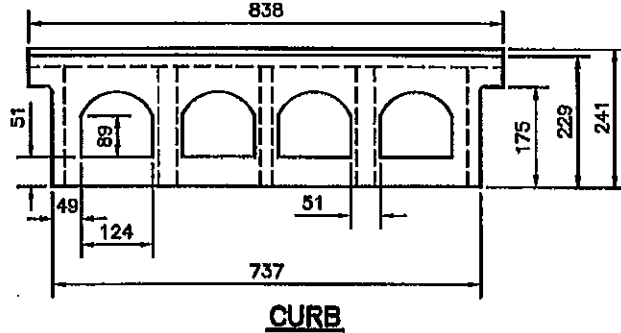
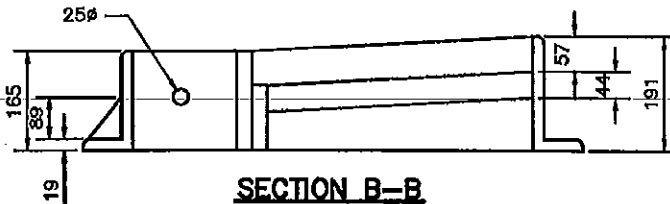
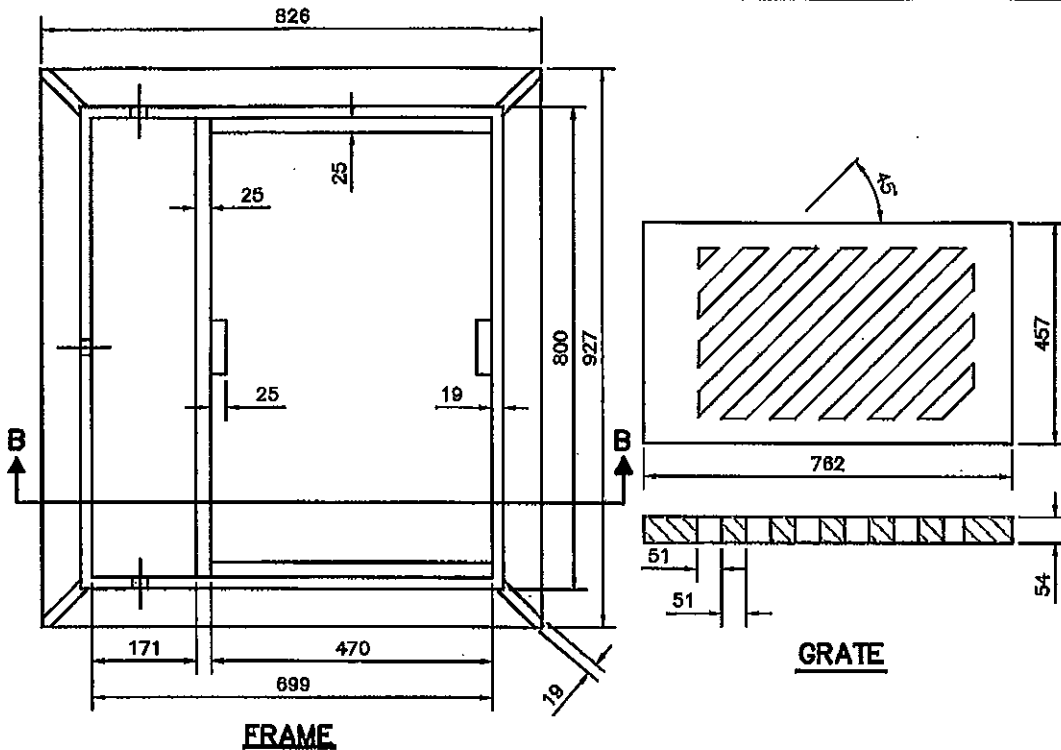
SCALE PLOTTED: 1=1 DATE PLOTTED: 4/17/2008 NOTES

No.	DESCRIPTION	DATE	BY	CHKD
3	ADD NOTE #4	11 03 21	BDC	
2	GENERAL REVISIONS FOR 2009	09 06 09	ML	
1	REVISION DETAILS	YY MM DD	XX	



ENGINEERING DEPARTMENT

PROJECT		1050 PRECAST CATCHBASIN	
DRAWN	SCALE (PLAN)	NTS	
CHECKED	SCALE (PROFILE)	NTS	
APPROVED	DATE	4/17/2008	
PROJECT No.			
DWG. No.		HWSD - 1570	



1. STANDARD CATCHBASIN FRAME AND GRATE SHALL BE IMP S381 OR EQUIVALENT.
2. MATERIAL GREY CAST IRON, A.S.T.M. A48/A48M (2008)
- | | |
|------------------|------------------------------|
| GRATE WEIGHT | 86 kg |
| FRAME WEIGHT | 143 kg |
| CURB WEIGHT | 54 kg |
| LOAD CAPACITY | 7260 kg |
| GRATE WATER FLOW | 1342 cm ² OPENING |
| CURB WATER FLOW | 629 cm ² OPENING |

SCALE PLOTTED: 1=1 DATE PLOTTED: 4/17/2008 NOTES

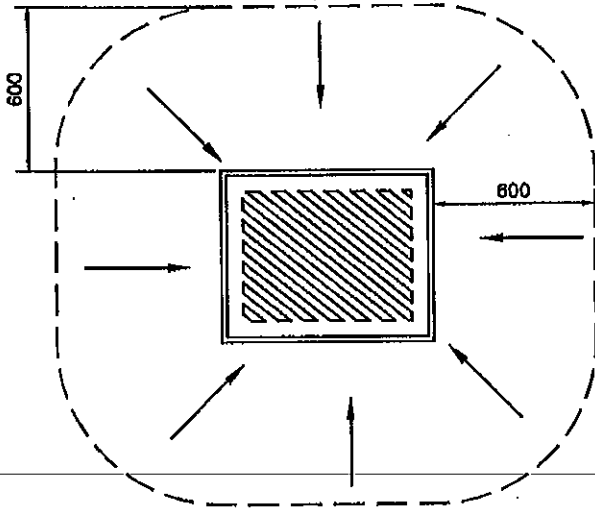
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2	GENERAL REVISIONS FOR 2009	09/08/08	ML	
1	REVISION DETAILS	YY/MM/DD	XX	



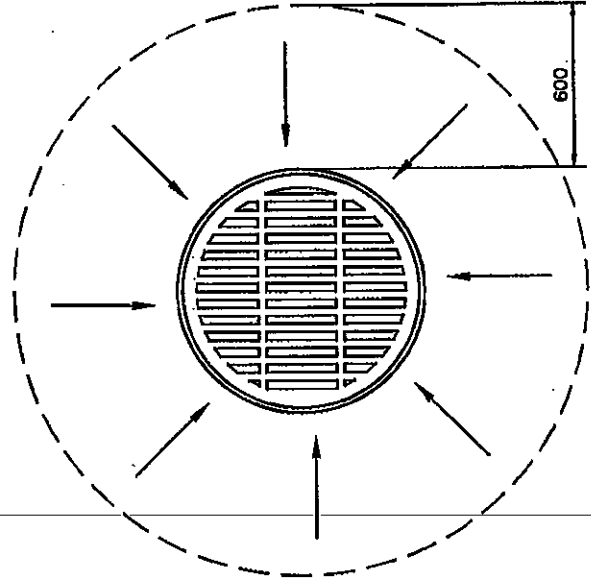
ENGINEERING DEPARTMENT

PROJECT	
CATCHBASIN FRAME AND GRATE	
DRAWN	SCALE (PLAN) NTS
CHECKED	SCALE (PROFILE) NTS
APPROVED	DATE 4/17/2008
PROJECT No.	
DWG. No.	HWSD - 1580

IMP S441 FRAME & GRATE



IMP R361 GRATE (FOR BELL END OF 750 DIA. PIPE)



EDGE OF DRAINAGE DEPRESSION

NOTES:

1. TOP OF CATCHBASIN COVER TO BE DEPRESSED 50 mm (MIN.) FROM SURROUNDING FINISHED GRADE.

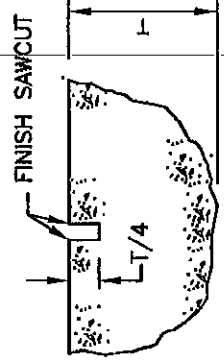
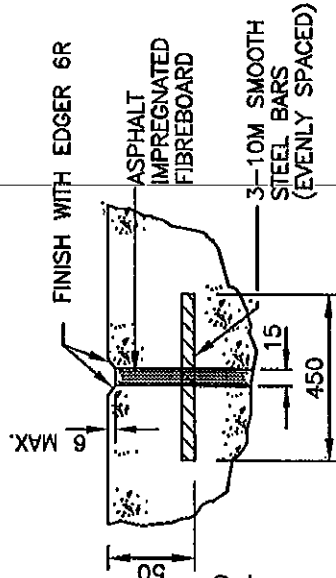
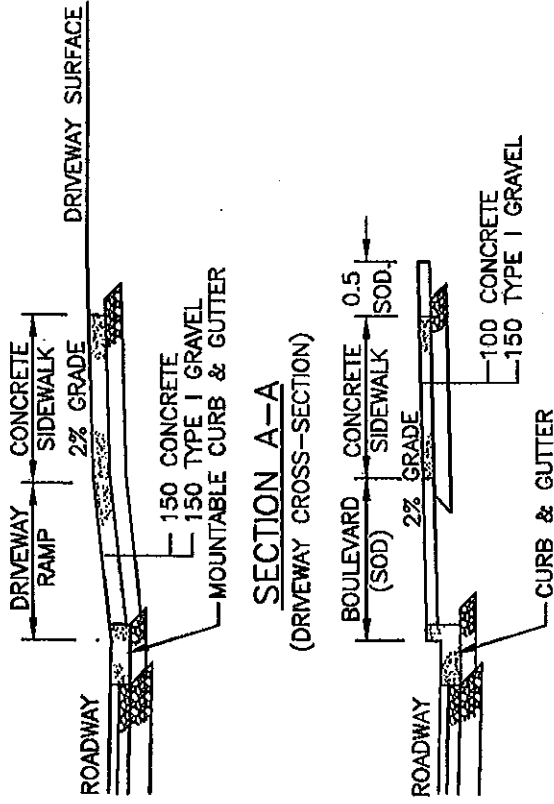
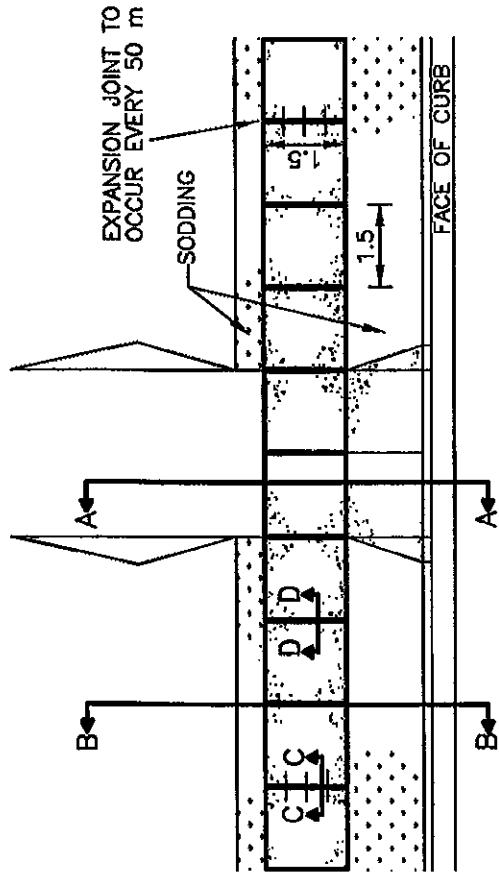
SCALE PLOTTED: 1=1 DATE PLOTTED: 4/17/2008 NOTES:

No.	DESCRIPTION	DATE	BY	CHKD
2	GENERAL REVISIONS FOR 2009	09 08 08	ML	
1	REVISION DETAILS	YY MM DD	XX	



ENGINEERING DEPARTMENT

PROJECT		
AREA CATCHBASINS GRATE STYLE		
DRAWN	SCALE (PLAN)	NTS
CHECKED	SCALE (PROFILE)	NTS
APPROVED	DATE	4/17/2008
PROJECT No.		
DWG. No. HWSD - 1590		



NOTES:

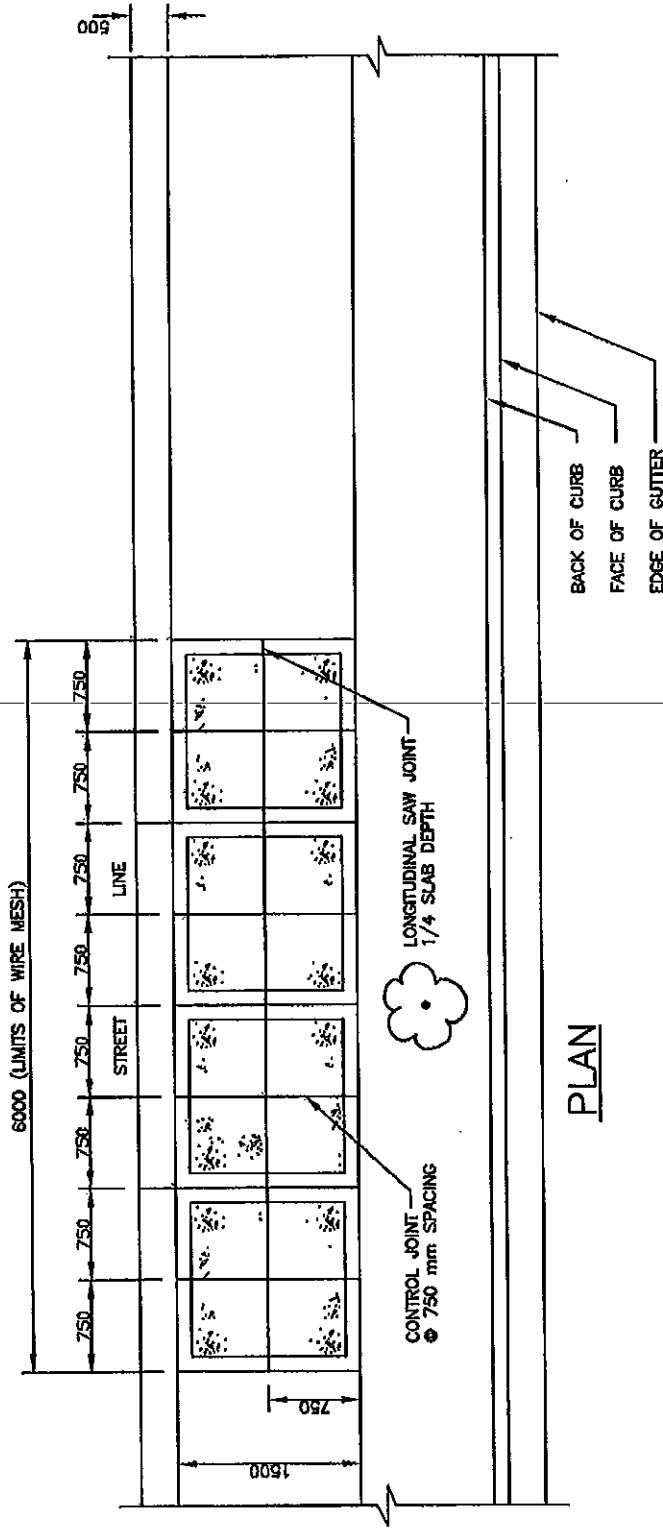
1. CONCRETE SIDEWALK AT COMMERCIAL DRIVEWAY TO BE 150 THICK WITH 150x150 WELDED WIRE MESH.
2. CRUSHED ROCK BASE TO EXTEND 150 BEYOND EDGE OF SIDEWALK STRUCTURE.
3. CONTROL JOINTS ARE TO BE SAW CUT.
4. SIDEWALK ABUTTING HIGH DENSITY AREAS SHALL HAVE FULL WIDTH (3 m) SIDEWALKS.
5. SIDEWALKS ABUTTING COMMERCIAL AREAS ARE TO BE FULL WIDTH (3 m) AND 150 mm THICKNESS.
6. EXPANSION JOINT BARS ARE TO BE GREASED ON ONE SIDE OF THE JOINT.
7. DURING CONSECUTIVE POURS, THE END OF EACH POUR IS TO OCCUR AT AN EXPANSION JOINT. WHERE THIS IS NOT FEASIBLE, AN ADDITIONAL EXPANSION JOINT IS TO BE INSTALLED.
8. INSTALL A 9 m LONG CONCRETE LANDING PAD AT ALL BUS STOP LOCATIONS. INCREASE THIS TO 16 m FOR ARTICULATED BUS ROUTES.
9. WHEN BOULEVARD IS LESS THAN 1.5 m OR WHEN THE SIDEWALK ABUTS THE CURB & GUTTER, SLOPE SIDEWALK AND DRIVEWAY RAMP IN A STRAIGHT LINE GRADE FROM BACK OF SIDEWALK TO LIP ON CURB OPENING.

HALIFAX
REGIONAL MUNICIPALITY

STANDARD DETAIL
URBAN SIDEWALK
DETAIL

DATE: 2009
SCALE: NTS

REFERENCE
APPROVED
FIG. NO.
HRM 40



PLAN

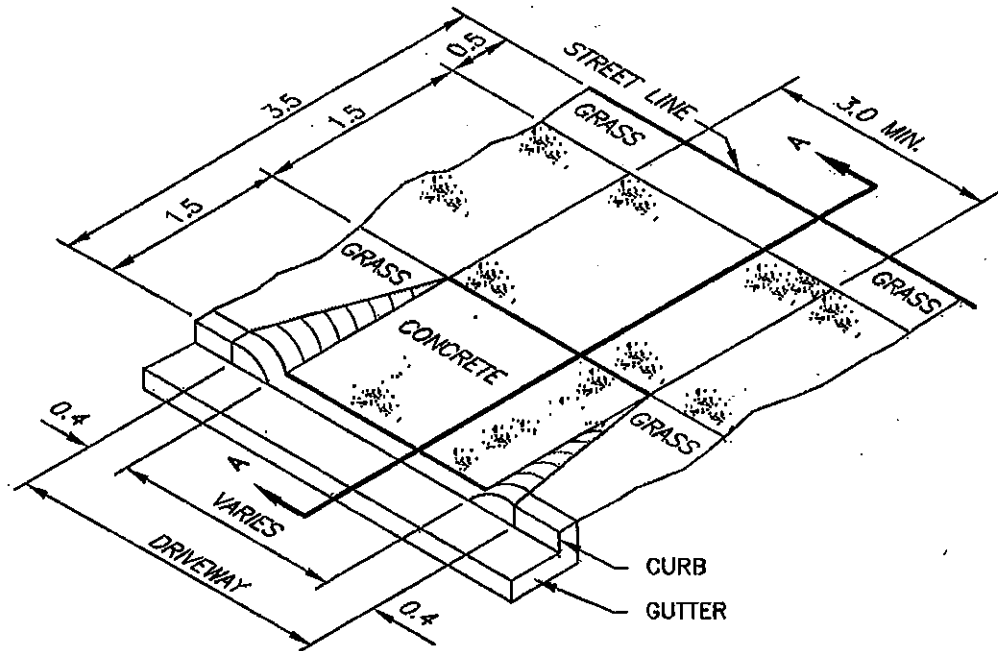
NOTES:

1. 150 X 150 - M.W. 18.7 X M.W. 18.7 (WELDED WIRE FABRIC) PLACED AT 1/2 THE SLAB DEPTH.
2. NO TREE ROOTS TO BE REMOVED WITHOUT HRM APPROVAL

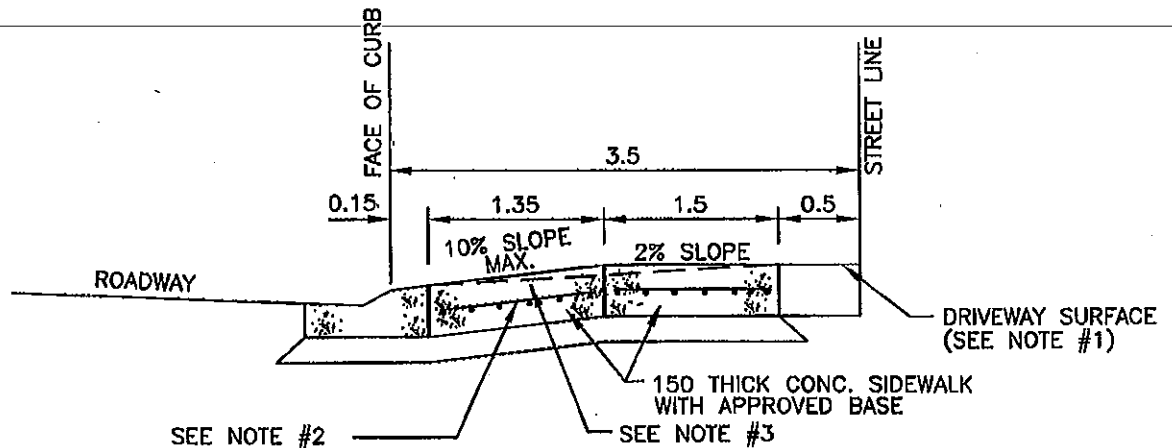
HALIFAX
REGIONAL MUNICIPALITY

STANDARD DRAWING
CONCRETE SIDEWALK
REINFORCING

DATE: 2009	REFERENCE	APPROVED
SCALE: NTS		FIG. NO. HRM 45



VIEW PLAN



SECTION A-A

NOTES:

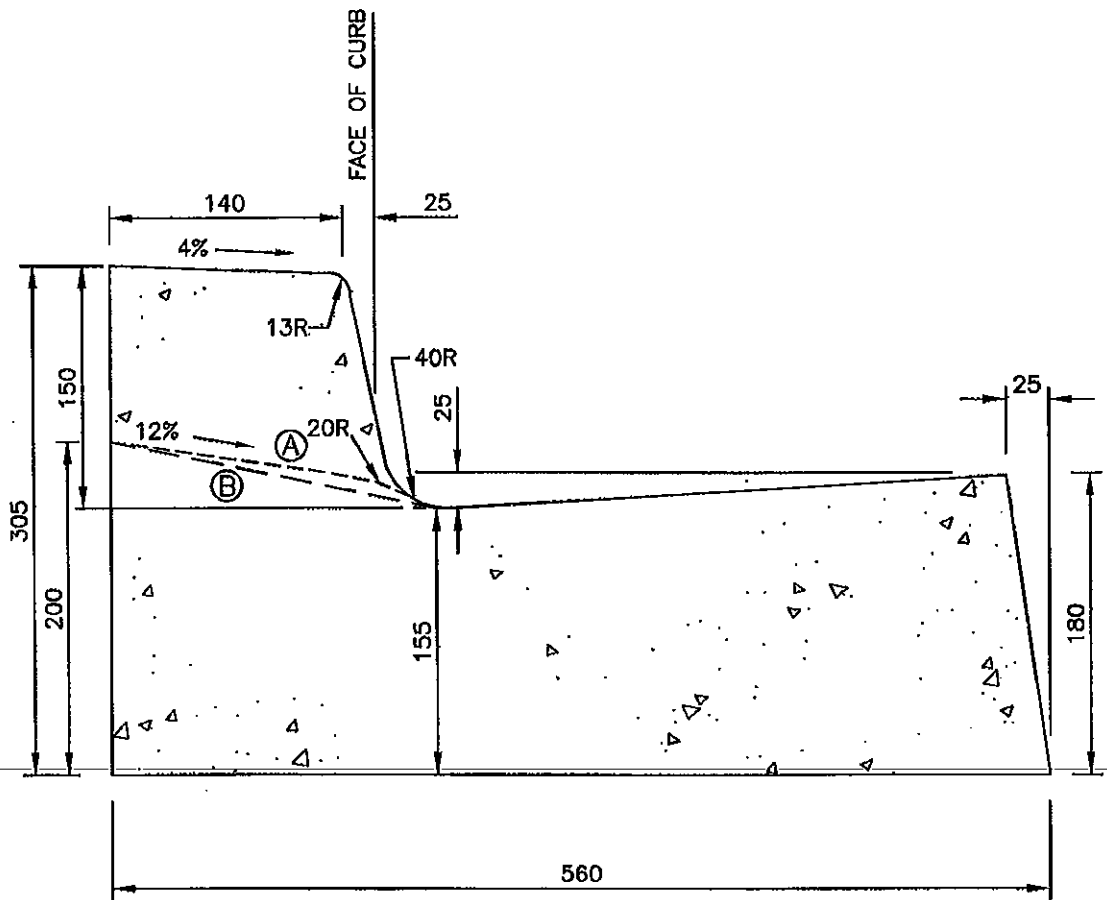
1. IF DRIVEWAY SURFACE IS GRAVEL, THIS SHALL BE ASPHALT CONCRETE.
2. FOR COMMERCIAL AND INDUSTRIAL DRIVEWAYS PLACE 150 x 150 - M.W. 18.7 X M.W. 18.7 50 mm FROM BOTTOM OF CONCRETE RAMP AND SIDEWALK.
3. WHEN BOULEVARD IS LESS THAN 1.5 m OR WHEN THE SIDEWALK ABUTS THE CURB & GUTTER, SLOPE SIDEWALK IN A STRAIGHT LINE GRADE FROM BACK OF SIDEWALK TO LIP ON CURB OPENING.

HALIFAX
REGIONAL MUNICIPALITY

STANDARD DETAIL

DRIVEWAY RAMP

DATE: 2009	REFERENCE	APPROVED
SCALE: NTS		FIG. NO. HRM 46



CURB & GUTTER SECTION

NOTES:

1. DASHED LINE "A" INDICATES CURB AT DRIVEWAYS.
2. DASHED LINE "B" INDICATES CURB AT PEDESTRIAN RAMPS.

HALIFAX
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STANDARD DETAIL

CONCRETE CURB
& GUTTER

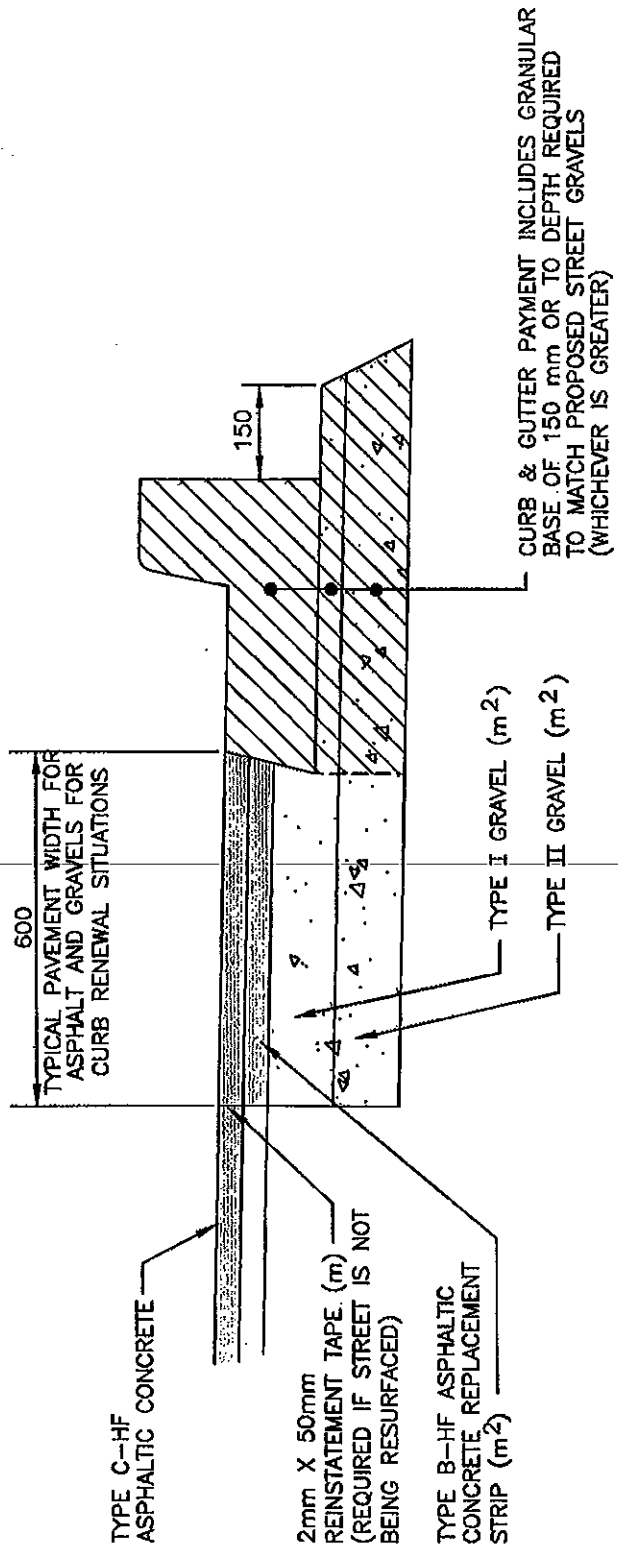
DATE: 2009

REFERENCE

APPROVED

SCALE: NTS

FIG. NO.
HRM 48



NOTES:

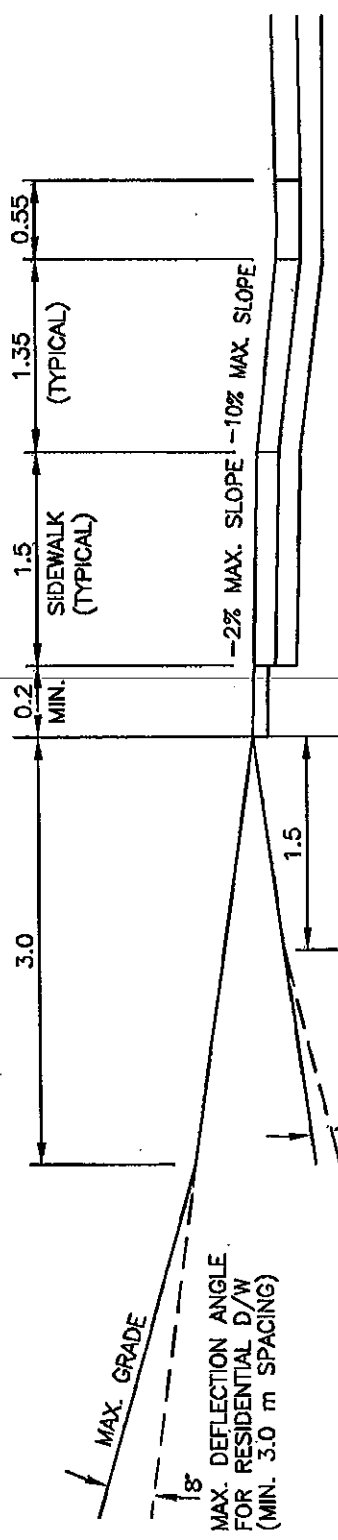
- 1 CURB AND GUTTER PAYMENT INCLUDES ALL ITEMS AS INDICATED IN HATCHED AREA.
- 2 ASPHALT AND GRAVEL THICKNESS AS INDICATED ON DRAWINGS.

HALIFAX
REGIONAL MUNICIPALITY

STANDARD DETAIL

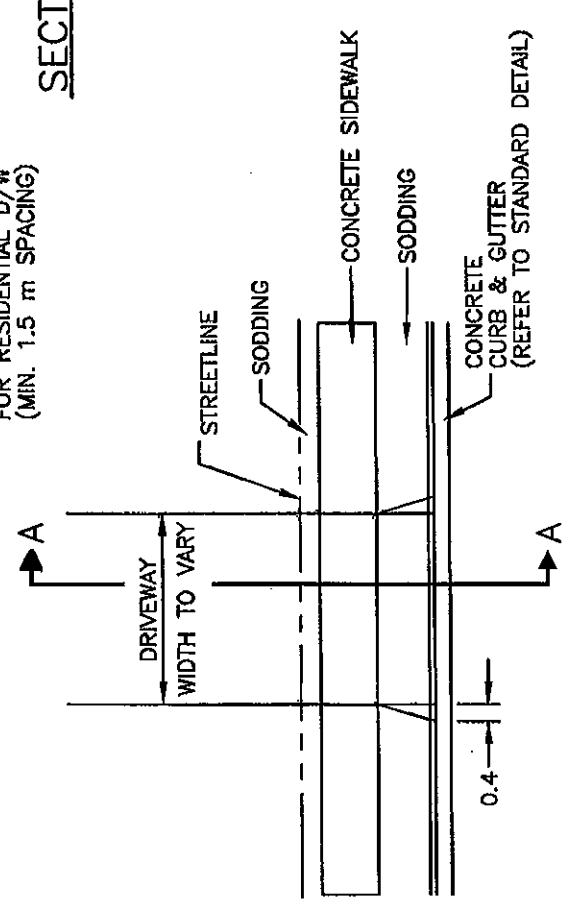
CURB RENEWAL/
PAYMENT DETAILS

DATE: 2009	REFERENCE	APPROVED
SCALE: NTS		FIG. NO. HRM 49



MAX. DEFLECTION ANGLE FOR RESIDENTIAL D/W (MIN. 1.5 m SPACING)

SECTION A-A

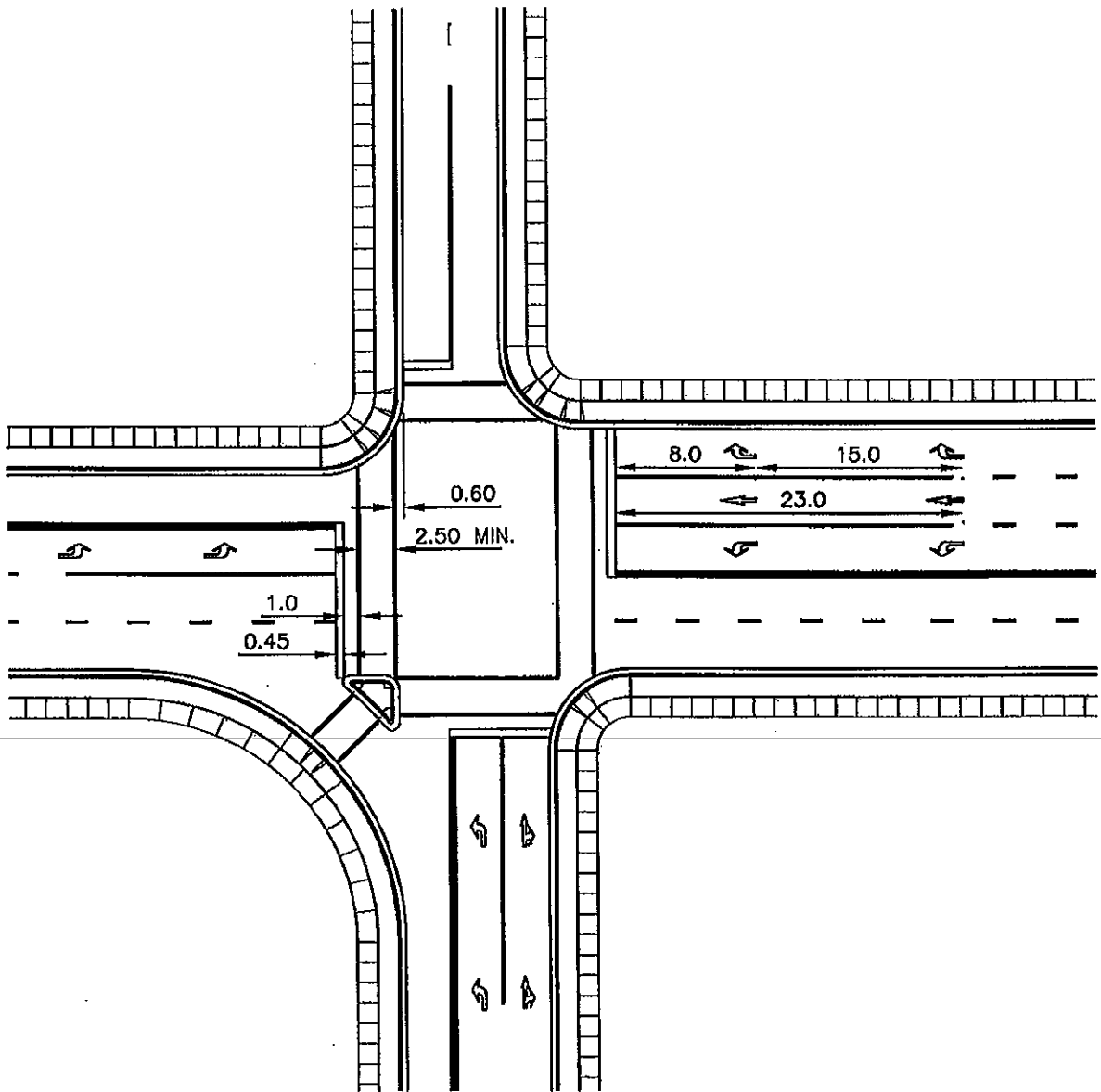


PLAN

NOTE:
THIS DETAIL IS INTENDED FOR RETROFIT SITUATIONS, I.E. WHERE EXISTING DRIVEWAY GRADES MUST BE ADJUSTED TO MATCH NEW CONDITIONS IN THE STREET RIGHT-OF-WAY.



STANDARD DETAIL		APPROVED	FIG. NO. HRM 57
DATE	REFERENCE		
2009			
SCALE	NTS		



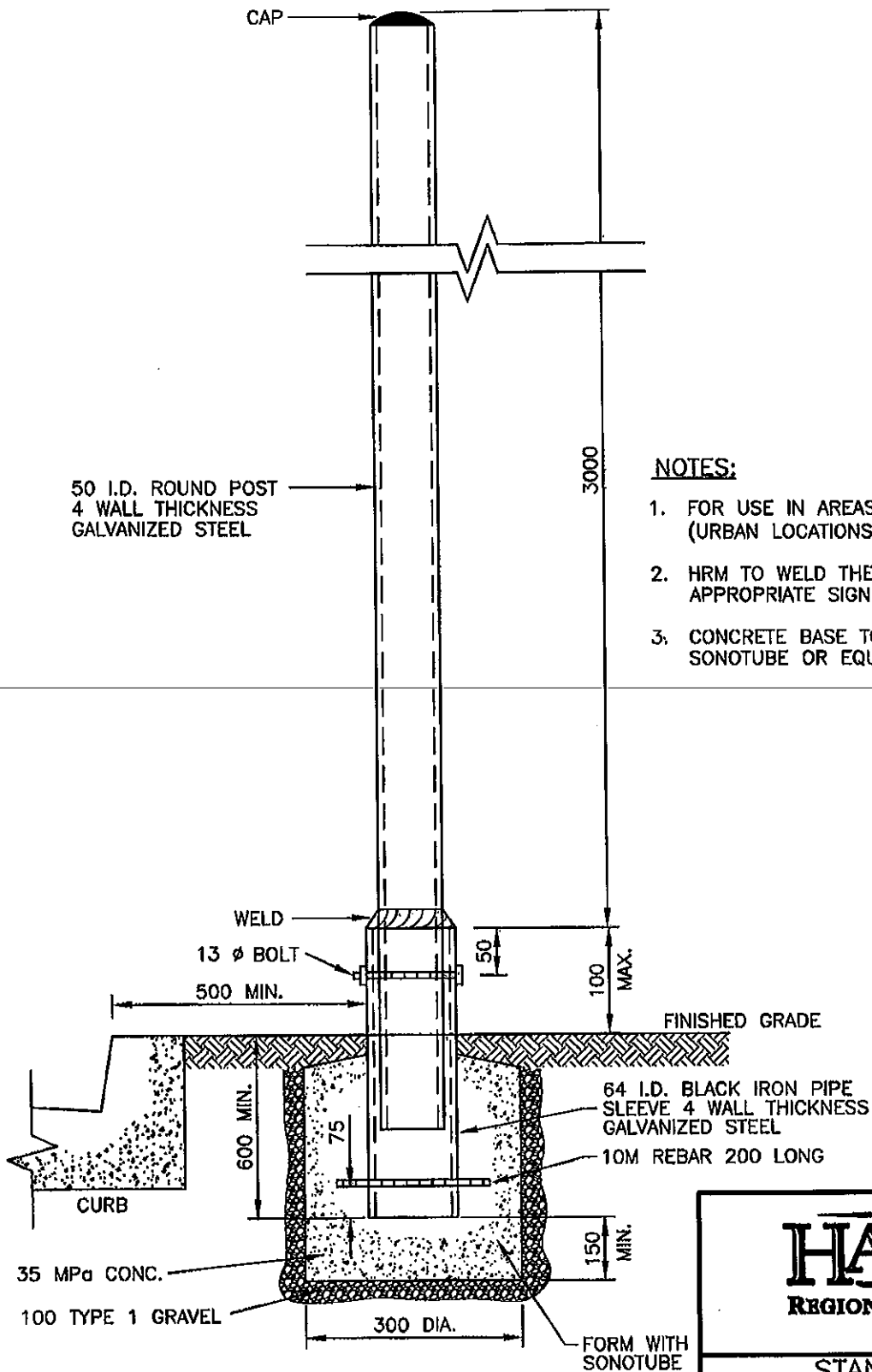
NOTES:

1. ALL PAVEMENT MARKINGS EXCEPT ARROWS, DIAMONDS AND LETTERING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
2. PAVEMENT ARROWS, DIAMONDS AND LETTERING TO BE 3/4 SIZE OF STANDARD LISTED IN MUTCD.
3. WHEN REQUIRED, THIRD AND SUBSEQUENT ARROWS TO BE SPACED AT 15.0 m INTERVALS.
4. CROSSWALK LINES TO BE 150 mm WIDE.

HALIFAX
REGIONAL MUNICIPALITY

STANDARD DETAIL
URBAN INTERSECTION
LANE MARKINGS

DATE: 2009	REFERENCE	APPROVED
SCALE: NTS		FIG. NO. HRM 59



HALIFAX
REGIONAL MUNICIPALITY

STANDARD DETAIL

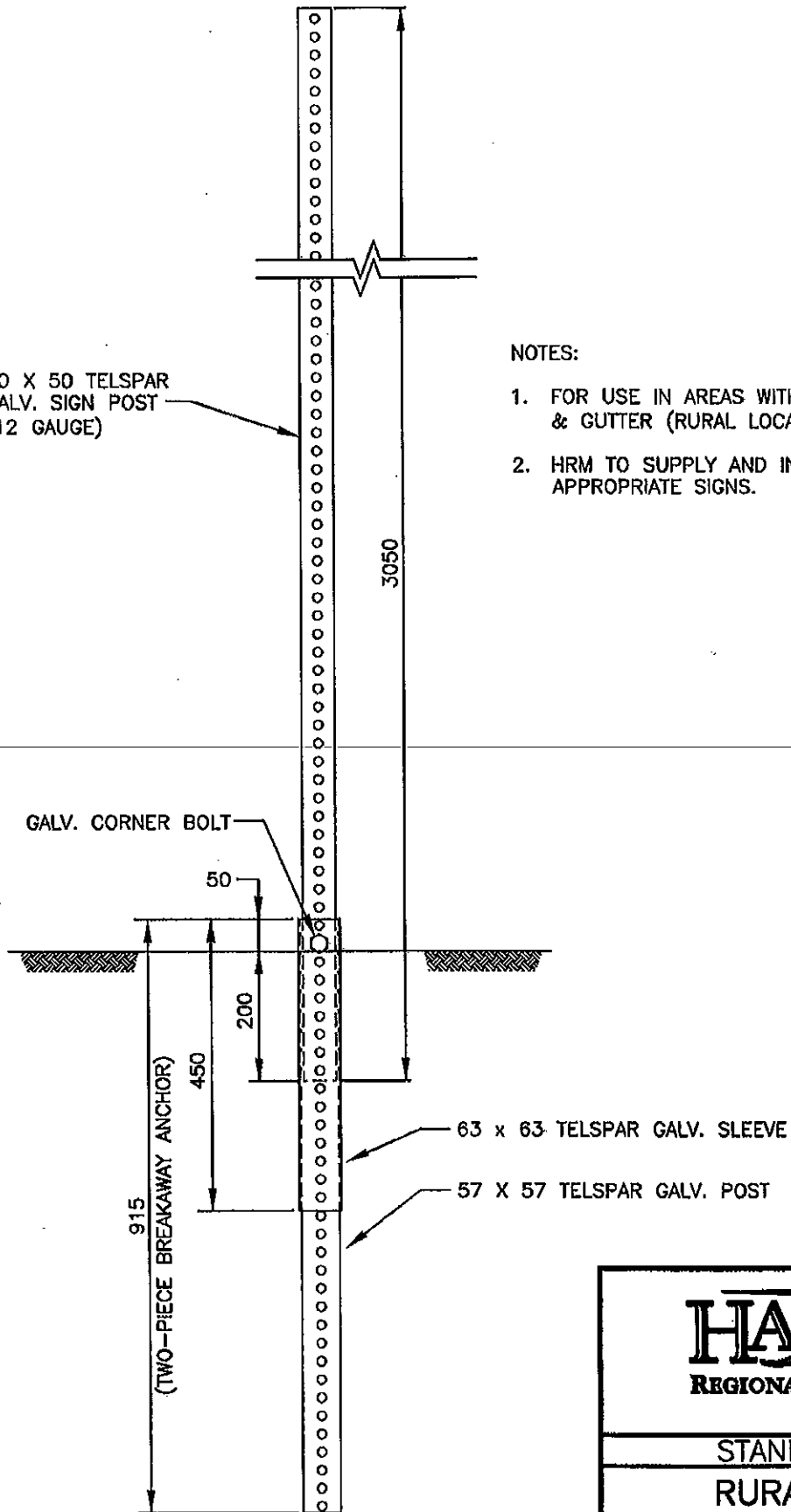
URBAN TRAFFIC SIGN POST

DATE: 2009	REFERENCE	APPROVED
SCALE: NTS		FIG. NO. HRM 61

50 X 50 TELSPAR
GALV. SIGN POST
(12 GAUGE)

NOTES:

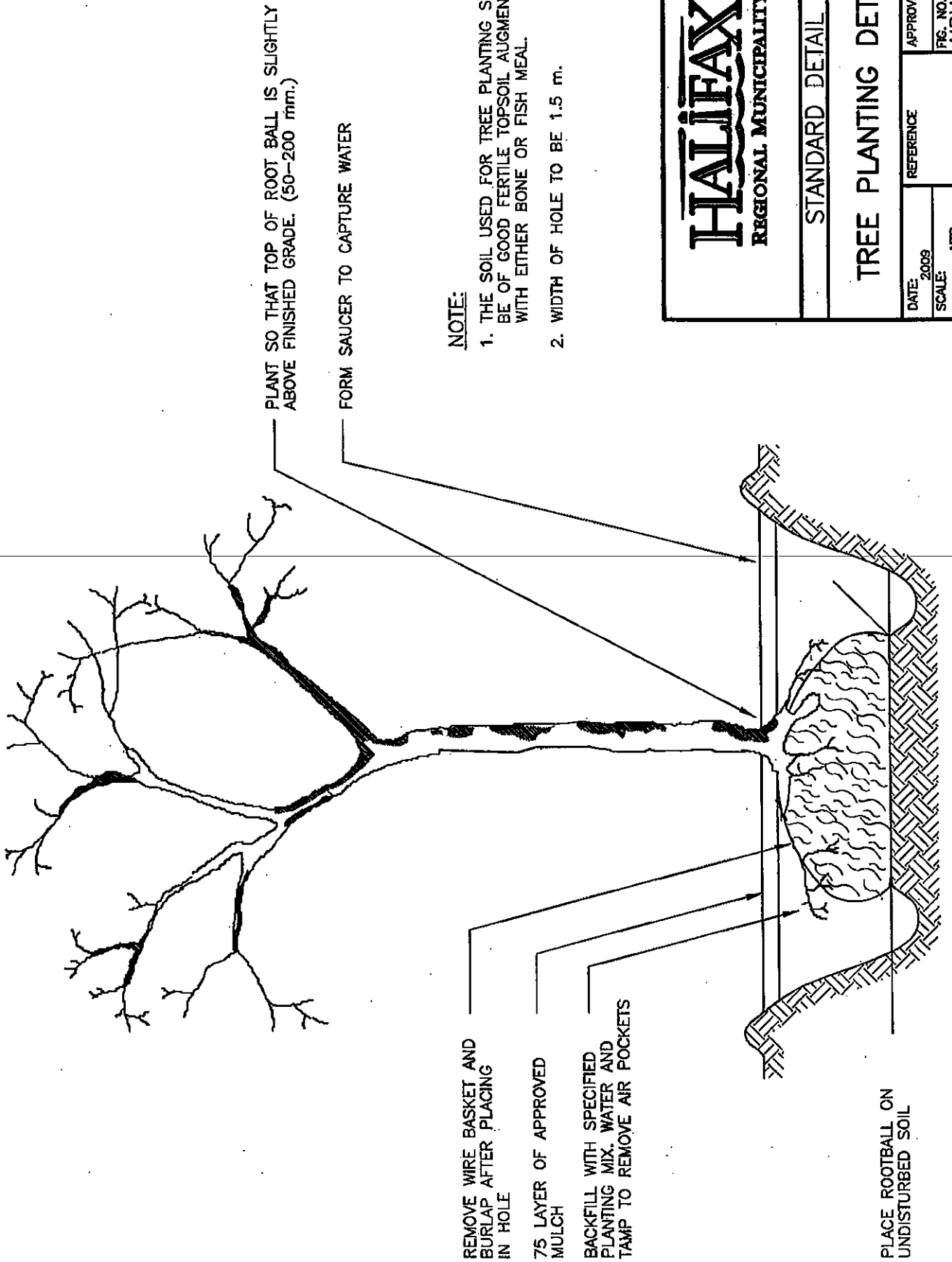
1. FOR USE IN AREAS WITHOUT CURB & GUTTER (RURAL LOCATIONS)
2. HRM TO SUPPLY AND INSTALL APPROPRIATE SIGNS.



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STANDARD DETAIL
RURAL TRAFFIC
SIGN POST

DATE:	2009	REFERENCE	APPROVED
SCALE:	NTS		FIG. NO. HRM 62



PLANT SO THAT TOP OF ROOT BALL IS SLIGHTLY ABOVE FINISHED GRADE. (50-200 mm.)

FORM SAUCER TO CAPTURE WATER

NOTE:

1. THE SOIL USED FOR TREE PLANTING SHALL BE OF GOOD FERTILE TOPSOIL AUGMENTED WITH EITHER BONE OR FISH MEAL.
2. WIDTH OF HOLE TO BE 1.5 m.

REMOVE WIRE BASKET AND BURLAP AFTER PLACING IN HOLE

75 LAYER OF APPROVED MULCH

BACKFILL WITH SPECIFIED PLANTING MIX. WATER AND TAMP TO REMOVE AIR POCKETS

PLACE ROOTBALL ON UNDISTURBED SOIL



STANDARD DETAIL

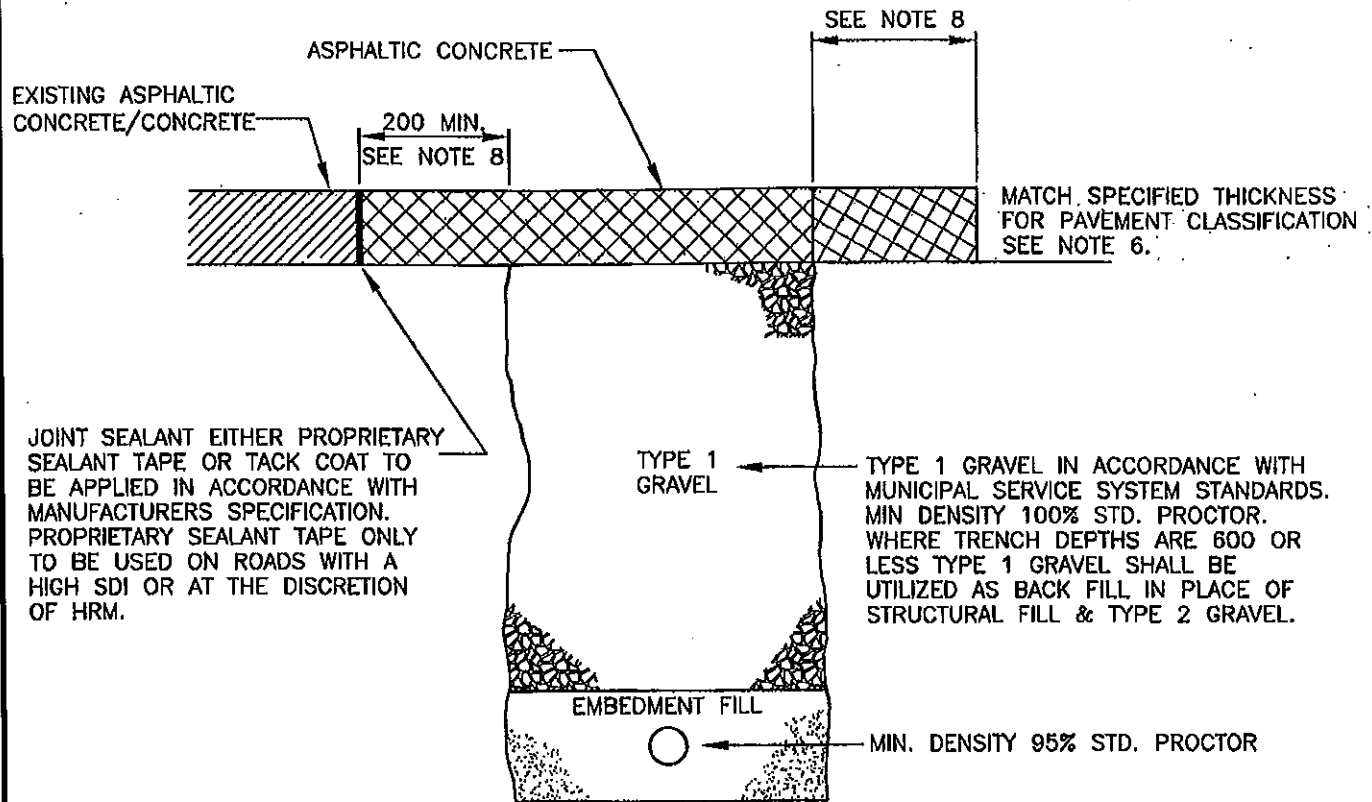
TREE PLANTING DETAIL

DATE: 2009
SCALE: NTS

REFERENCE

APPROVED

FIG. NO. HRM 90



SHALLOW TRENCH (1.2 m OR LESS) REINSTATEMENT

NOTE:

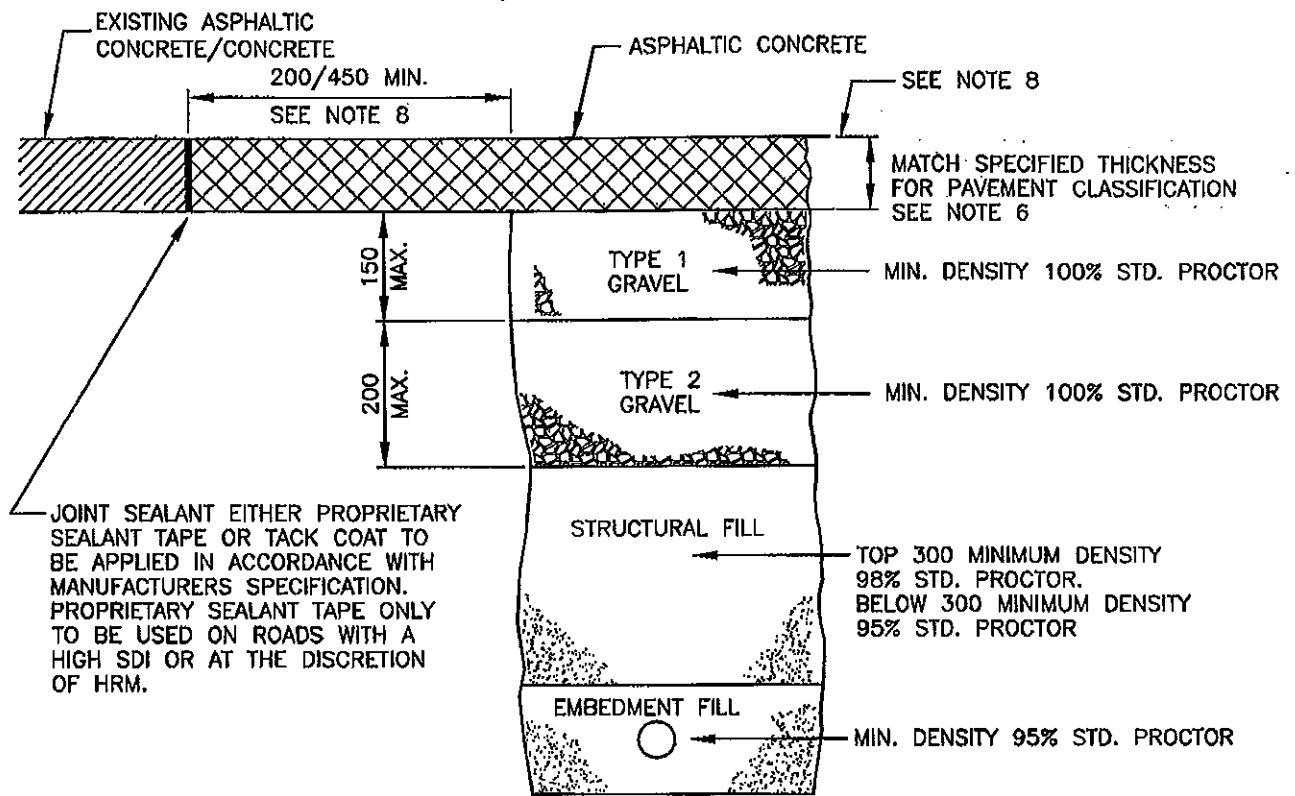
1. MAKE VERTICAL SAW CUT OR ZIPPER CUT TO FULL DEPTH OF ASPHALT CONCRETE IN STRAIGHT LINES CUT BACK BACK 200 MIN. FROM EDGE OF UNDISTURBED SUBGRADE. MINIMUM CUT WIDTH TO BE 600.
2. TYPE 1 GRAVEL SHALL BE COMPACTED TO THE MINIMUM SPECIFIED DENSITY IN LAYERS NOT EXCEEDING 200.
3. TYPE 1 GRAVEL SHALL BE PRIMED AND ALLOWED TIME TO CURE PRIOR TO THE PLACEMENT OF ASPHALT PAVEMENT. PRIME SHALL BE APPLIED AT THE RATE SPECIFIED BY THE MANUFACTURER.
4. EXISTING ASPHALT PAVEMENT EDGES SHALL BE THOROUGHLY CLEANED AND TACKED PRIOR TO THE PLACEMENT OF ASPHALT PAVEMENT. TACK SHALL BE SUFFICIENTLY CURED BEFORE ANY ASPHALT PLACEMENT.
5. HOT MIX ASPHALTIC CONCRETE SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 92% MAX. THEORETICAL DENSITY IN UNIFORM LAYERS. THE ASPHALT TYPE AND MINIMUM COMPACTED LAYER THICKNESS SHALL BE IN ACCORDANCE WITH THE STREET CLASSIFICATION STANDARD DETAIL.
6. FOR ALL ROAD TYPES HAVING EXISTING ASPHALT THICKNESS EXCEEDING THE ROAD TYPE DESIGN THICKNESS THE MAXIMUM REQUIRED REPLACEMENT THICKNESS SHALL NOT EXCEED THE ROAD TYPE DESIGN THICKNESS. TYPE 1 GRAVEL SHALL BE PLACED AND COMPACTED WITHIN THE PAVEMENT CUT TO THE SPECIFIED DENSITY RATHER THAN ADDITIONAL ASPHALT PAVEMENT.
7. FOR ADDITIONAL EARTHWORK REQUIREMENTS, REFER TO THE STANDARD SPECIFICATIONS FOR MUNICIPAL SERVICES.
8. WHERE TRENCH SIDEWALL CUTS RUN PARALLEL TO AND ARE WITHIN 1.0 m OF AN EXISTING CURB, CURB AND GUTTER OR ASPHALT EDGE THAT PARTICULAR SIDE OF ASPHALT SHALL BE REMOVED FOR THE FULL LENGTH OF THE TRENCH CUT WHILE TRAFFIC SIDE ASPHALT SHALL BE CUT BACK A MINIMUM OF 200 mm FROM THE EDGE OF THE TRENCH EXCAVATION. WHERE THE TRAFFIC SIDE TRENCH IS WITHIN 1.0 m OF A LONGITUDINAL JOINT ALL ASPHALT SHALL BE REMOVED AND REINSTATED TO THE EXISTING JOINT. TYPICAL TRENCH TYPES INCLUDE SHALLOW GAS LINES AND OTHER UTILITIES. WHERE TOTAL TRENCH DEPTHS ARE 0.6 m OR LESS TYPE 1 GRAVEL SHALL BE UTILIZED AS BACKFILL IN PLACE OF STRUCTURAL FILL AND FALL WITHIN THE CONFINES OF WHEEL TRACK AREAS.
9. WHERE A CONCRETE LAYER DIRECTLY UNDERLIES THE ASPHALT PAVEMENT THE REPLACEMENT THICKNESS SHALL BE THE LESSER OF 250 OR THE COMBINED THICKNESS OF THE EXISTING CONCRETE AND ASPHALT STRUCTURE.
10. CROSS-CUT FREQUENCY - WHERE ASPHALT PATCHES ARE REQUIRED IN PROXIMITY TO EACH OTHER THE REMOVAL OF THE EXISTING ASPHALT PAVEMENT SEPARATING THE AREAS TO BE PATCHED SHALL BE GOVERNED BY THE SEPARATION DISTANCE BETWEEN PATCHES USING THE FOLLOWING CRITERIA: WHERE THE SEPARATION DISTANCE OF EXISTING TRIMMED BACK ASPHALT EXCEEDS THE WIDTH OF THE TRENCH BY A FACTOR OF 3 THE ASPHALT WILL BE LEFT IN PLACE.

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STANDARD DETAIL

SHALLOW TRENCH
REINSTATEMENT DETAIL

DATE:	2008	REFERENCE	APPROVED
SCALE:	NTS		FIG. NO. HRM 95



DEEP TRENCH (GREATER THAN 1.2m) REINSTATEMENT

NOTE:

1. MAKE VERTICAL SAW-CUT OR ZIPPER-CUT TO FULL DEPTH OF ASPHALT CONCRETE IN STRAIGHT LINES CUT-BACK BACK 200 MIN. FROM EDGE OF UNDISTURBED SUBGRADE. MINIMUM CUT WIDTH TO BE 450.
2. BACKFILL SOILS SHALL BE COMPACTED TO THE MINIMUM SPECIFIED DENSITY. BACKFILL SOILS SHALL BE PLACED IN UNCOMPACTED UNIFORM LAYERS AT THE FOLLOWING MAXIMUM THICKNESS, EMBEDMENT ZONE - 200 MAX. STRUCTURAL FILL ZONE - 300 MAX.
3. TYPE 1 & TYPE 2 GRAVELS SHALL BE COMPACTED TO THE MINIMUM SPECIFIED DENSITY. GRANULAR SOILS SHALL BE PLACED IN UNCOMPACTED UNIFORM LAYERS AT A THICKNESS NOT EXCEEDING 200.
4. TYPE 1 GRAVEL SHALL BE PRIMED AND ALLOWED TIME TO CURE PRIOR TO THE PLACEMENT OF ASPHALT PAVEMENT. PRIME SHALL BE APPLIED AT THE RATE SPECIFIED BY THE MANUFACTURER.
5. HOT MIX ASPHALTIC CONCRETE SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 92% MAX. THEORETICAL DENSITY IN UNIFORM LAYERS. THE ASPHALT TYPE AND MINIMUM COMPACTED LAYER THICKNESS SHALL BE IN ACCORDANCE WITH THE STREET CLASSIFICATION STANDARD DETAIL.
6. FOR ALL ROAD TYPES HAVING EXISTING ASPHALT THICKNESS EXCEEDING THE ROAD TYPE DESIGN THICKNESS THE MAXIMUM REQUIRED REPLACEMENT THICKNESS SHALL NOT EXCEED THE ROAD TYPE DESIGN THICKNESS. TYPE 1 GRAVEL SHALL BE PLACED AND COMPACTED WITHIN THE PAVEMENT CUT TO THE SPECIFIED DENSITY RATHER THAN ADDITIONAL ASPHALT PAVEMENT.
7. FOR ADDITIONAL EARTHWORK REQUIREMENTS, REFER TO THE STANDARD SPECIFICATIONS FOR MUNICIPAL SERVICES.
8. WHERE TRENCH SIDEWALL CUTS RUN PARALLEL TO AND ARE WITHIN 1.0 m OF AN EXISTING CURB, CURB AND GUTTER OR ASPHALT EDGE THAT PARTICULAR SIDE OF ASPHALT SHALL BE REMOVED FOR THE FULL LENGTH OF THE TRENCH CUT WHILE TRAFFIC SIDE ASPHALT SHALL BE CUT BACK A MINIMUM OF 200 mm FROM THE EDGE OF THE TRENCH EXCAVATION. WHERE LATERAL OR UTILITY TRENCHES INTRUDE INTO TRAFFICKED AREAS THE ASPHALT PAVEMENT SHALL BE CUT BACK A MINIMUM DISTANCE OF 450 mm FROM THE EDGE OF TRENCH AND SHALL BE EXTENDED INTO THE ROADWAY TO MATCH THE NEAREST LONGITUDINAL PAVEMENT JOINT. NO LONGITUDINAL JOINT SHALL FALL WITHIN THE CONFINES OF WHEEL TRACK AREAS.
9. WHERE A CONCRETE LAYER DIRECTLY UNDERLIES THE ASPHALT PAVEMENT THE REPLACEMENT THICKNESS SHALL BE THE LESSER OF 250 OR THE COMBINED THICKNESS OF THE EXISTING CONCRETE AND ASPHALT STRUCTURE.
10. CROSS-CUT FREQUENCY - WHERE ASPHALT PATCHES ARE REQUIRED IN PROXIMITY TO EACH OTHER THE REMOVAL OF THE EXISTING ASPHALT PAVEMENT SEPARATING THE AREAS TO BE PATCHED SHALL BE GOVERNED BY THE SEPARATION DISTANCE BETWEEN PATCHES USING THE FOLLOWING CRITERIA: WHERE THE SEPARATION DISTANCE OF EXISTING TRIMMED BACK ASPHALT EXCEEDS THE WIDTH OF THE TRENCH BY A FACTOR OF 3 THE ASPHALT WILL BE LEFT IN PLACE.

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STANDARD DETAIL

DEEP TRENCH
REINSTATEMENT DETAIL

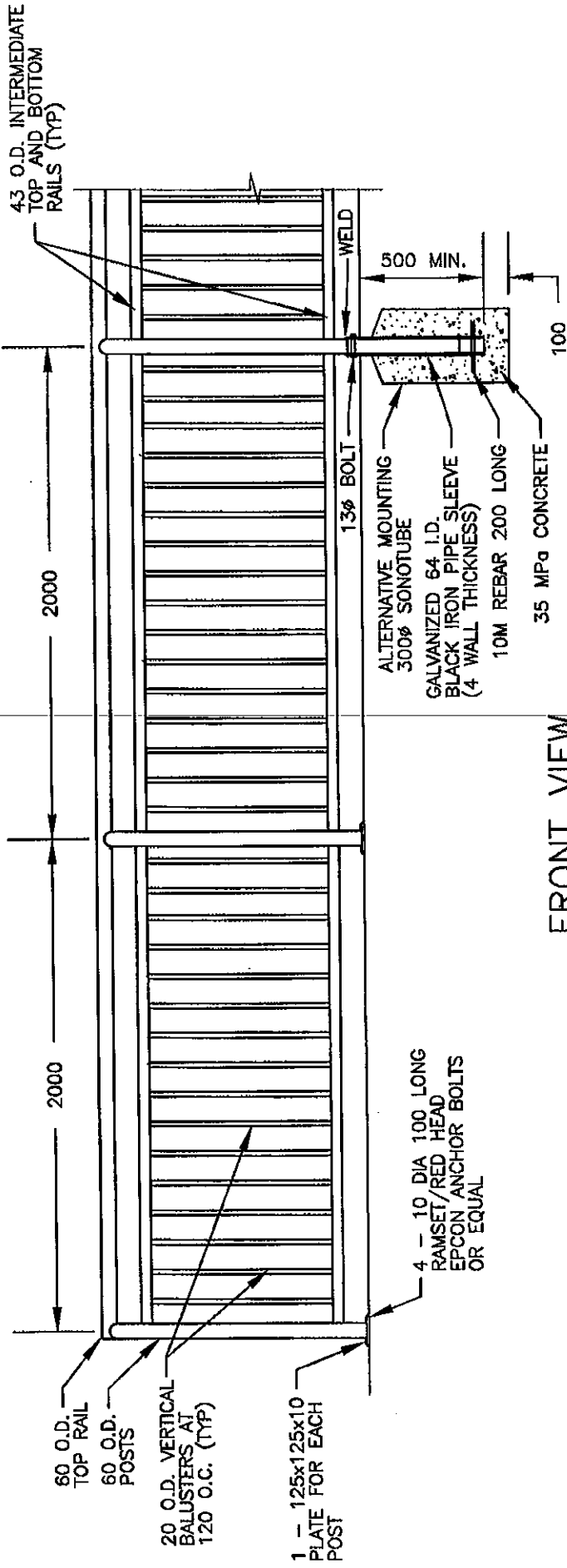
DATE: 2009

REFERENCE

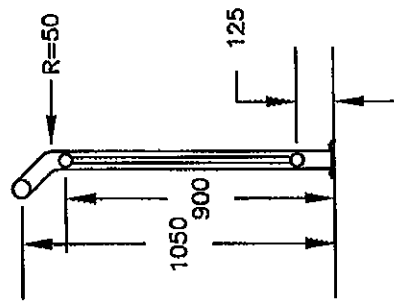
APPROVED

SCALE: NTS

FIG. NO.
HRM 96



FRONT VIEW



SIDE VIEW

NOTE:
RAILING SYSTEM TO BE HOT DIPPED GALVANIZED AFTER FABRICATION. FIELD WELDS, IF NECESSARY SHALL BE PROTECTED WITH COLD GALVANIZING.

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STANDARD DETAIL

RAILING

DATE: 2009	REFERENCE	APPROVED
SCALE: NTS		FIG. NO. HRM 97