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SIDE VIEW

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

## HALIFAX

STANDARD DETAIL
RAILING

| DATE: | 2021 | REFERENCE | APPROVED |
| :---: | :---: | :---: | :---: |
| SCALE: | 1:25 |  | FIG No.: |






NOTES:

1. ADDITIONAL SLOPE STABILIZATION AS PER GEOTECHNICAL REPORT.
2. SURFACE MATERIAL TO BE ASPHALTIC CONCRETE UNLESS DIRECTED BY THE ENGINEER.
3. RAILING REQUIRED IN FILL GREATER THAN 1.5 m , OR ADJACENT TO WATER.
4. FALSE DITCH REQUIREMENTS SHALL MEET HALIFAX WATER SPECIFICATIONS.
5. MINIMUM 3.0 m CLEAR WIDTH.

## HALIFAX

STANDARD DETAIL
ACTIVE TRANSPORTATION
OFF ROAD TRAIL

| DATE: | 2021 | REFERENCE | APPROVED |
| :---: | :---: | :---: | :---: |
| SCALE: |  |  | FIG No |
|  | 1:50 |  |  |





1. CONCRETE SIDEWALK AT COMMERCIAL DRIVEWAY TO BE 150 THICK WITH 150×150 WELDED WIRE MESH.
2. CRUSHED ROCK BASE TO EXTEND 150 BEYOND EDGE OF SIDEWALK STRUCTURE.
3. CONTROL JOINTS ARE TO BE SAW CUT.
4. SIDEWALKS ABUTTING COMMERCIAL AREAS ARE TO BE FULL WIDTH ( 3 m ) AND 150 mm THICKNESS.
5. EXPANSION JOINT BARS ARE TO BE GREASED ON ONE SIDE OF THE JOINT.
6. 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.
7. INSTALL A 9 m LONG CONCRETE LANDING PAD AT ALL BUS STOP LOCATIONS. INCREASE THIS TO 14.5 m FOR ARTICULATED BUS ROUTES.
8. WHEN BOULEVARD IS LESS THAN 1.5 m OR WHEN THE SIDEWALK ABUTS THE CURB \& GUTTER, REFER TO HRM 133.



SECTION A-A
(DRIVEWAY CROSS-SECTION)


SECTION B-B
(DRIVEWAY CROSS-SECTION)


H/LIFAX STANDARD DETAIL RURAL TYPE II SIDEWALK




NOTES:

1. WELDED WIRE MESH TO BE $150 \times 150$ - M.W. $18.7 \times$ M.W. 18.7 (WELDED WIRE FABRIC 4.88 MM DIA.)
2. PLACED 3000 EACH SIDE FROM CENTRE OF TREE AT $1 / 2$ THE SLAB DEPTH, FULL SIDEWALK WIDTH, CHAIRS REQUIRED TO ACHIEVE $1 / 2$ DEPTH PLACEMENT OF WWF.
3. NO TREE ROOTS TO BE REMOVED WITHOUT HRM APPROVAL.
4. ALL DIMENSIONS IN MILLIMETRES.

## HALIFAX

STANDARD DETAIL CONCRETE SIDEWALK REINFORCING

|  |  |  |  |
| :--- | :---: | :--- | :--- |
| DATE: | 2023 | REFERENCE | APPROVED |
|  |  |  | FIG No.: |
| SCALE: | $1: 50$ |  | HRM |
|  |  |  |  |




## NOTES:

1. GRAVEL DRIVEWAYS ARE TO BE PAVED 1 m BEHIND THE SIDEWALK OR TO THE STREETLINE WHICHEVER IS LESS. IF NO SIDEWALK EXISTS, 1 m ASPHALT PAVING IS REQUIRED.
2. FOR COMMERCIAL AND INDUSTRIAL DRIVEWAYS PLACE $150 \times$ 150 - M.W. $18.7 \times$ M.W. 18.7 PLACED 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, REFER TO HRM 133.
4. MINIMUM DISTANCE BETWEEN CONTROL JOINTS IS 1.2. PROVIDE CONTROL JOINTS WITHIN 150 mm OF CHANGE IN CROSS SECTION OF CURB.
5. DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.




## HALIFAX

## NOTES:

1. MINIMUM DISTANCE BETWEEN CONTROL JOINTS IS 1200 mm
2. PROVIDE CONTROL JOINTS WITHIN 150 mm OF CHANGE IN CROSS SECTION OF CURB.
3. IF SIDEWALK ABUTS THE CURB, THE TAPER SHALL BE 1300 mm .
4. DIMENSIONS ARE IN MILLIMETRES.



## TYPICAL CONCRETE ISLAND CROSS SECTION

NOTES:

1. MAXIMUM SPACING FOR CONTROL JOINTS IS TO BE 2.5 m .
2. SLOPE SLAB TO FACILITATE DRAINAGE.
3. SLOPE GUTTER TO MATCH STREET CROSS SECTION.
4. ENDS AND CORNERS OF TRAFFIC ISLANDS TO HAVE HIGH BACK CONCRETE CURB AND GUTTER.
5. GEOMETRIC DESIGN OF CONCRETE ISLANDS TO BE AS PER PART A OF THE MUNICIPAL DESIGN GUIDELINES AND/OR THE TAC GEOMETRIC DESIGN GUIDE.
6. DIMENSIONS ARE IN MILLIMETRES.

## HALIFAX

| STANDARD DETAIL |  |  |  |
| :---: | :---: | :---: | :---: |
| CONCRETE TRAFFIC ISLAND |  |  |  |
| DATE: | 2021 | Reference | APPROVED |
| SCALE: | 1:20 |  | FIG No.: <br> HRM |



## CURB \& GUTTER SECTION

## NOTES:

1. DASHED LINE "A" INDICATES CURB AT DRIVEWAYS.
2. DASHED LINE "B" INDICATES CURB AT PEDESTRIAN RAMPS.
3. TRANSITION TAPERS SHALL BE PROVIDED AT

DRIVEWAYS AND PEDESTRIAN RAMPS AS PER THE "PEDESTRIAN RAMP ALIGNMENT" DETAIL AND "DRIVEWAY RAMP" DETAIL.
4. DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

| - $\square_{\text {- }}^{\text {- }}$ - |  |  |  |
| :---: | :---: | :---: | :---: |
| STANDARD DETAIL |  |  |  |
| CONCRETE CURB \& GUTTER |  |  |  |
| DATE: | 202 | REFERENCE | APPROVED |
| SCALE: | 1:5 |  |  |




| - ¢ ¢ ¢ ( |  |  |  |
| :---: | :---: | :---: | :---: |
| STANDARD DETAIL |  |  |  |
| ASPHALT CURB |  |  |  |
| DATE: | 2021 | REFERENCE | APPROVED |
| SCALE: | 1:5 |  | FIG No.: HRM |




# TRENCH BACKFILL AND REINSTATEMENT - TESTING REQUIREMENTS 

| TEST REQUIRED | COMPACTION REQUIRED | MINIMUM TEST FREQUENCY |  |
| :---: | :---: | :---: | :---: |
|  |  | TRENCH LESS THAN 1.5 m WIDE | TRENCH GREATER THAN 1.5 m WIDE |
| COMPACTION OF BEDDING, <br> HAUNCH AND COVER MATERIALS <br> (ASTM D698) <br> *SEE NOTE 3 | 95\% MINIMUM AT $3 \% \pm$ OF OPTIMUM MOISTURE. <br> (SEE NOTES) | 1 PER 25 m AT THE CENTRELINE OF THE TRENCH (AND EACH BENCH OR SECTION OF TRENCH LESS THAN 25 m IN LENGTH) FOR EACH 600 | 3 PER 25 m (AND EACH BENCH OR SECTION OF TRENCH LESS THAN 25 m IN LENGTH) FOR EACH 600 VERTICAL DEPTH OF BACKFILL MATERIAL 1 TEST SHALL BE TAKEN AT THE CENTRELINE OF THE |
| COMPACTION OF STRUCTURAL FILL TO SUBGRADE ELEVATION (ASTM D698) *SEE NOTE 3 | TOP 300 98\% COMPACTION MINIMUM AT $3 \% \pm$ OF OPTIMUM MOISTURE. (SEE NOTES) | MATERIAL A MINIMUM OF 3 TESTS PER TRENCH SHALL BE PERFORMED. | EDGE OF THE TRENCH). A MINIMUM OF 3 TESTS PER TRENCH SHALL BE PERFORMED. |
|  | BELOW 300 95\% COMPACTION MINIMUM AT $3 \% \pm$ OF OPTIMUM MOISTURE. (SEE NOTES) |  |  |
| COMPACTION OF TYPE 1 \& TYPE 2 BASE \& SUB-BASE MATERIALS <br> (ASTM D698) | $100 \%$ COMPACTION MINIMUM AT $3 \% \pm$ OF OPTIMUM MOISTURE <br> (SEE NOTES) | FOR EACH MATERIAL, 1 PER 25 m AT THE CENTRELINE OF THE TRENCH (AND EACH BRANCH OR SECTION OF THE TRENCH LESS THAN 25 m IN LENGTH) FOR EACH 300 VERTICAL DEPTH OF BACKFILL MATERIAL. A MINIMUM OF 3 TESTS PER TRENCH SHALL BE PERFORMED. | FOR EACH MATERIAL, 3 PER 25 m (AND EACH BRANCH OR SECTION OF TRENCH LESS THAN 25 m IN LENGTH) FOR EACH 300 VERTICAL IN DEPTH OF BACKFILL MATERIAL. 1 TESTS SHALL BE TAKEN AT THE CENTRELINE OF THE TRENCH AND 1 AT EACH EDGE OF THE TRENCH (SET BACK AT LEAST 300 mm FROM THE EDGE OF THE TRENCH). A MINIMUM OF 3 TESTS PER TRENCH SHALL BE PERFORMED. |
| COMPACTION OF HOT MIX ASPHALT PAVEMENT (ASTM D3549 \& 2726) | 95\% OF MAXIMUM THEORETICAL DENSITY OF COMPARATIVE MARSHALL LABORATORY SAMPLE. | ONE TEST FOR EACH $75 \mathrm{~m}^{2}$ OF PAVEMENT SURFACE. A MINIMUM OF 1 TEST PER TRENCH. | ONE TEST FOR EACH $75 \mathrm{~m}^{2}$ OF PAVEMENT SURFACE. A MINIMUM OF 1 TEST PER TRENCH. |

## NOTES:

1. THE TRENCH WIDTH FOR DETERMINATION OF THE TEST SHALL BE THE WIDTH OF THE TRENCH AT THE LEVEL OF THE TEST BEING PERFORMED.
2. IF MINIMUM MOISTURE DENSITY REQUIREMENTS ARE NOT MET BY THESE TESTS, THE CONTRACTOR SHALL RECOMPACT THE TRENCH AS NEEDED TO ACHIEVE THE SPECIFIED COMPACTION. SUCH RECOMPACTION SHALL EXTEND ON BOTH SIDES OF THE FAILED TEST SECTION A DISTANCE
EQUAL TO $1 / 2$ THE DISTANCE FROM WHERE THE LAST TEST WAS TAKEN OR 50 m , WHICHEVER IS LEAST. AN ALTERNATIVE PROCEDURE WOULD BE TO MORE CLEARLY DEFINE THE LIMITS OF THE FAILED AREA TO ADDITIONAL TESTS.
3. TESTING FOR BEDDING, HAUNCH AND STRUCTURAL FILL ARE NOT ONLY REQUIRED WHEN THE TOTAL LENGTH OF TRENCH EXCEEDS 100 m , OR WHEN REQUESTED BY THE HRM INSPECTOR.

## HALIFAX

STANDARD DETAIL
TRENCH BACKFILL \& REINSTATEMENT-TESTING

| DATE: 2021 | REFERENCE | APPROVED |
| :--- | :--- | :--- |

2021



## NOTES:

1. $50 \mathrm{~mm} \times 150 \mathrm{~mm}$ WOOD PLANK TO BE PRESSURE TREATED WOOD.
2. "CAUTION BURIED ELECTRICAL LINE" TAPE TO BE PLACED OVER CONDUIT 150 mm TO 250 mm BELOW FINISHED GRADE.
3. SURROUND SAND WITH GEOTEXTILE SEPARATOR IN AREAS OF HIGH GROUNDWATER MOVEMENT (PERVIOUS SUB GRADE).

## HALIFAX

STANDARD DETAIL UNDERGROUND CONDUIT

| DATE: | 2021 | REFERENCE | APPROVED |
| :--- | :---: | :--- | :--- |
|  |  |  |  |
|  | SCALE: |  | FIG No.: |
|  |  |  | HRM 78 |








| NAME OF LINE |  |
| :---: | :---: |
| SOLID | - EDGE LINES (WHITE OR YELLOW) - DIRECTIONAL DIVIDING LINES (YELLOW) - LANE LINES, PROHIBITING LINES (WHITE) - BIKE LINES (WHITE) |
| $3 \mathrm{~m} \times 6 \mathrm{~m}$ |  |
| $3 \mathrm{~m} \times 3 \mathrm{~m}$ |  |
| $\begin{aligned} & \text { SIMULTANEOUS } \\ & \text { SOLID \& } \\ & \text { BROKEN } \end{aligned}$ | 3.00 DIRECTIONAL DIVIDING LINES (YELLOW) <br> - TWO-WAY LEFT TURN LINES (YELLOW)  |
| DOUBLE SOLID | $\qquad$ |
| DOUBLE <br> BROKEN <br> $3 \mathrm{~m} \times 6 \mathrm{~m}$ | 3.00 $\bullet$ REVERSIBLE LANE (YELLOW) |
| YIELD |  <br> - SINGLE LANE ROUNDABOUT YIELD LINES (WHITE) $0.60 \mathrm{~m} \times 0.60 \mathrm{~m}$ |
|  | - DOUbLE LANE ROUNDABOUT YIELD LINES (WHITE) $1.00 \mathrm{~m} \times 0.60 \mathrm{~m}$ |

## NOTE:

1. DIMENSIONS ARE IN METRES.

| NAME OF LINE |  |
| :---: | :---: |
| $1.8 \mathrm{~m} \times 1.8 \mathrm{~m}$ |  |
| $1.5 \mathrm{~m} \times 1.5 \mathrm{~m}$ |  |
| DASHED $1.0 \mathrm{~m} \times 1.0 \mathrm{~m}$ | $=-\frac{\Gamma^{-1}}{1.00}-10$ |
| $0.5 \mathrm{~m} \times 0.5 \mathrm{~m}$ | - GUIDING LINES (WHITE) |
| ADVANCED YIELD TO PEDESTRIANS LINE |  |
| STOP BAR | - $\frac{1}{\square} 0.45$ <br> - INTERSECTION STOP BAR (WHITE) |

## HALIFAX

STANDARD DETAIL
LONGITUDINAL \& TRANSVERSE PAVEMENT MARKINGS

| DATE: | 2021 | REFERENCE | APPROVED |  |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
|  | SCALE: |  | FIG No.: |  |
|  |  |  | HRM 90 |  |




# HALIFAX 

## NOTE:

1. DIMENSIONS MAY BE SLIGHTLY ALTERED FOR THERMOPLASTIC IF APPROVED BY THE ENG.
2. DIMENSIONS ARE IN MILLIMETRES.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| STANDARD DETAIL |  |  |  |
| BICYCLE SYMBOL \& SHARED USE LANE SYMBOL |  |  |  |
| DATE: | 2023 | REFERENCE | APPROVED |
| SCALE: | 1:25 |  | FIG No.:  <br> HRM  <br>   |




SECTION

NOTES:

1. ALL PIPE TO BE GALVANIZED EXCEPT 75 mm GROUND SLEEVE (BLACK IRON)
2. ALL WORK TO BE DONE ACCORDING TO HRM SPECIFICATIONS
3. ALL METAL TO RECEIVE ONE COAT OF RUST INHIBITING PRIMER AND TWO COATS OF R\&M PAINT E1245 CODE L (HOLLY GREEN) ENAMEL AUTOMOTIVE PAINT OR EQUIVALENT.

| - / - ¢ / |  |  |  |
| :---: | :---: | :---: | :---: |
| STANDARD DETAIL |  |  |  |
| PEDESTRIAN GATE |  |  |  |
| DATE: | 2023 | REFERENCE | APPROVED |
| SCALE | NTS |  | $\begin{array}{\|c\|c\|} \hline \text { FIG No.: } \\ \text { HRM } \end{array}$ |



## NOTES:

1. SIGN POST AND BASE AS PER STANDARD DETAIL HRM 38
2. HRM TO SUPPLY APPROPRIATE SIGNS.
3. WELD SHALL BE COMPLETED AROUND BASE AND POST.
4. CONTRACTOR TO USE 9.5 DIA. X 75MM LAG SCREW, COMPLETE WITH 13 DIA. GALV. AND 9.5 DIA. GALV. WASHERS WHEN INSTALLING SIGN TO UTILITY POLE.
5. ALL DIMENSIONS ARE IN MILLIMETRES.

## HALIFAX

STANDARD DETAIL
URBAN TRAFFIC SIGN INSTALLATION

| DATE: | 2024 | REFERENCE | APPROVED |  |
| :---: | :---: | :---: | :---: | :---: |
| SCALE: | NTS |  | FIG No.: HRM | $129$ |



## NOTES:

1. NATURAL CAST IRON ATTENTION TWSI (TACTILE WALKING SURFACE INDICATOR) PLATES. TO CSA B651, AND AS INDICATED IN THE PROJECT DOCUMENTS.
2. NO GAP BETWEEN ADJACENT PLATES.
3. MAXIMUM DISTANCE FROM CURB TAPER TO BE 100 mm .
4. PLATES SHALL BE PLACED WITH THE TOP OF THE BASE PLATE (BOTTOM OF DOMES) LEVEL WITH CONCRETE SURFACE.
5. ALL PLATES TO BE 610 mm LONG.
6. TO BE READ IN CONJUNCTION WITH HRM DETAIL 49 PEDESTRIAN RAMP ALIGNMENT.
7. SIZE AND SHAPE OF PLATES TO MANUFACTURER'S SPECIFICATION.
8. CONCRETE THICKNESS AT PEDESTRIAN RAMPS TO BE 150 mm .
9. DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.


## HALIFAX

STANDARD DETAIL
TACTILE WALKING SURFACE INDICATOR RAMP PLACEMENT

| DATE: 2023 | REFERENCE | APPROVED |
| :---: | :---: | :---: |
| SCALE: $\begin{array}{ll} \\ & \text { AS NOTED }\end{array}$ |  | FIG No.: HRM |



NOTES:

1. CONCRETE PEDESTRIAN RAMP TO HRM DETAIL 49.
2. CONCRETE CURB \& GUTTER TO HRM DETAIL 53.
3. TACTILE WALKING SURFACE INDICATOR PLATES TO HRM DETAIL 131.
4. ASPHALT WALKWAY TO HRM DETAIL 40.

| DATE: |  | REFERENCE | APPROVED |
| :---: | :---: | :---: | :---: |
| SCALE: | 1:50 |  | $\begin{aligned} & \text { FIG No.: } \\ & \text { HRM } 132 \end{aligned}$ |




NOTE:

1. PERMANENT PAVEMENT MARKING FOR IN-LAY SHALL BE RED.
2. PERMANENT PAVEMENT MARKING FOR RESERVED LANE SYMBOL SHALL BE WHITE.
3. DIMENSIONS ARE IN METRES.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| STANDARD DETAIL |  |  |  |
| RED IN-LAY RESERVED LANE |  |  |  |
|  | 2021 | referecer | Appe |
|  | 1.50 |  | ${ }^{\text {Fico. }}$ |

## NOTES:

1. POSTS 60 mm O.D. HOT DIPPED GALVANIZED COLD ROLLED STEEL (ASTM A53 GRADE A, SCHEDULE 40), ZINC-COATED AT MINIMUM $550 \mathrm{G} / \mathrm{SM}$.
2. UNLESS OTHERWISE APPROVED BY ENGINEER, DRILL POST HOLES WITH 125 mm MAXIMUM DIAMETER BIT. STABILIZE GROUND AROUND POSTS WITH CEMENT GROUT AND MECHANICAL COMPACTOR.
3. THERE SHALL BE NO EXPOSED (NON-GALVANIZED) STEEL, EXCEPT THE TOP OF THE POSTS (PRIOR TO PLACEMENT OF CAPS).
4. POST SPACING OF 2.4 m EXCEPT LESS ON TIGHT TURNS TO MAINTAIN TRAIL WIDTH.
5. GALVANIZED STEEL CAPS TO BE SET SECURELY OVER TOP OF POSTS (WELDING NOT PERMITTED).
6. RAILS $95-115 \mathrm{~mm}$ DIAMETER SMOOTH UNTREATED HEMLOCK WOOD (NO CHECKS, SPLITS OR WIND SHAKES). OUTSIDE EDGES OF ABUTTING ENDS OF RAILS SHALL BE FLUSH (WITHIN 5 mm ). PROVIDE FLAT SURFACE FOR FASTENERS 20 mm FROM BACK OF RAILS WHICH CAN BE THE FULL LENGTH OF THE RAILS.
7. ENDS OF RAILS SHALL LINE UP WITH CENTRE OF POSTS EXCEPT AT END POSTS WHERE THE RAILS SHALL EXTEND 100 mm PAST THE CENTRE OF POSTS.
8. FENCE BRACKETS TO BE GALVANIZED STEEL AND DESIGNED TO ATTACH WOODEN FENCE RAILS WITH A FLAT FASTENING SURFACE TO 60 mm O.D. FENCE POSTS. BRACKETS TO HAVE A BASE AND STRAP. BRACKETS TO HAVE 8 mm LAG SCREWS ( 38 mm LONG) FOR FASTENING BRACKET BASE TO WOOD RAIL, AND 8 mm CARRIAGE BOLTS WITH NUTS FOR FASTENING BRACKET BASE AND STRAP AROUND POST. BASE TO BE BENDABLE TO ALLOW FOR VARIED HORIZONTAL ANGLES BETWEEN SUCCESSIVE RAILS.
9. PRE-DRILL WOODEN RAILS FOR INSTALLATION OF BRACKETS.
10. BEND FLANGES OF BRACKETS TO ANGLE REQUIRED WHEN FENCE IS ON A HORIZONTAL CURVE.
11. MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE NOVA SCOTIA BUILDING CODE REGULATIONS AND THE NATIONAL BUILDING CODE OF CANADA.
12. DIMENSIONS ARE IN MILLIMETRES.


FENCE SECTION

FLAT SURFACE
FOR BRACKET
(SEE NOTE 6)


WOODEN RAIL SECTION AT POST

## HALIFAX

STANDARD DETAIL
FENCE DETAIL (ROUND WOODEN
RAILS \& STEEL POSTS)

| DATE: | 2021 | REFERENCE | APPROVED |
| :---: | :---: | :---: | :---: |
| SCALE: | NTS |  | $\begin{array}{\|ll} \hline \text { FIG. NO. } & \\ \text { HRM } & 135 \end{array}$ |




## CROSS SECTION

SCALE 1:50

NOTES:

* 1. FOR LOW VOLUME BUS ROUTES ON LOCAL STREETS
-DECREASE PAD LENGTH TO 4.0 m .
* 2. FOR ARTICULATED BUS ROUTES
-INCREASE PAD LENGTH TO 14.5 m .

3. THE 2.5 m WIDE BUS STOP LANDING PAD MAY INCLUDE A PORTION OF THE SIDEWALK AS REQUIRED.

HALIFAX

STANDARD DETAIL CONCRETE BUS STOP ANDING PAD (WITH SIDEWALK)

| DATE: | REFERENCE | APPROVED |
| :---: | :---: | :---: |
|  |  |  |
| SCALE: <br> AS NOTED |  | FIG No.: HRM 138 |









NOTES:

1. BREAKER MUST BE A DOUBLE POLE, NO SPARE SERVICE WIRES ARE ALLOWED.
2. CIRCUITS RATED AT MORE THAN 15Amps REQUIRE A CONTACTOR.
3. ALL WORK MUST BE IN COMPLIANCE WITH THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE AND INSPECTED BY NSPI
4. UNDERGROUND SERVICE CONDUIT AND GROUND MUST BE PROTECTED BY A U-GUARD AND BONDED AS PER CEC.
5. ALL SCREWS IN THE SERVICE SWITCH ARE TO BE NEVER SEIZED, AND MOUNTING SCREWS ARE TO BE STAINLESS STEEL ONLY.








## PROPOSED SOIL GROUPINGS



NOTES:

1. SOIL TEXTURE CLASSES. PERCENTAGES OF CLAY AND SAND IN THE MAIN TEXTURAL CLASSES OF SOIL; THE REMAINDER OF EACH CLASS IS SILT.

HALIFAX

STANDARD DETAIL
SOIL TEXTURE TRIANGLE

| DATE: 2021 | REFERENCE | APPROVED |
| :---: | :---: | :---: |
| SCALE: <br> NTS |  | FIG No.: HRM 181 |





NOTES:

1. CLEAR SPACE SHALL BE PROVIDED WITH NO OBSTRUCTIONS AT PASSENGER SIDE DOOR LOCATIONS.
2. REFER TO HRM DETAIL 49 FOR CURB RAMP DETAILS.
3. TACTILE WALKING SURFACE INDICATOR (TWSI) PLATES REQUIRED AT ALL NEW RAMPS AS PER HRM DETAIL 131.
4. CONCRETE LANDING SHALL BE INSTALLED WITH NEW CONSTRUCTION, STREET/SIDEWALK REHABILITATION WHEN GRASS BOULEVARD SEPARATES PARKING AND ADJACENT SIDEWALK
5. IN RETROFIT SITUATIONS WHERE IT IS NOT TECHNICALLY FEASIBLE TO PROVIDE THE REQUIRED WIDTH FOR THE REAR ACCESS AISLE OR CLEAR SPACE LENGTH DUE TO TREE OR UTILITY POLE LOCATIONS, WIDTH MAY BE REDUCED TO 1500 MIN.
6. IN ABSENCE OF SIGN POST INSTALLATION, UNMARKED REAR ACCESS AISLE CAN BE REDUCED TO 1500 MIN WHERE 2000 MIN IS NOT FEASIBLE.
7. WHEN DRIVEWAY USED AS SIDEWALK ACCESS INSTEAD OF CURB RAMP, NO TWSI PLATES SHALL BE REQUIRED.
8. WHERE SIDEWALK ABUTS THE CURB THE ADJACENT SIDEWALK SHALL BE 2400 MINIMUM WIDTH.

## HALIFAX

STANDARD DETAIL ACCESSIBLE PARALLEL PARKING MID-BLOCK AND END OF BLOCK PEDESTRIAN REALM 4.5 m OR LESS
DATE: 2023 REFERENCE $\quad$ APPROVED

|  | 2023 |
| :--- | :--- |
| SCALE: |  |
|  | NTS |

 GRAVEL BEDDING OR COMPACTED UNDISTURBED SOIL

## SECTION

## HALIFAX

NOTES:

1. SEE HRM 68N3, SELECTION GUIDE, FOR PERMITTED POLES AND TRAFFIC SIGNAL EQUIPMENT.
2. FOR NOTES REFER TO HRM 68N1.
3. DIMENSIONS ARE IN MILLIMETRES.

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## NOTES FOR SHAFT FOUNDATIONS ONLY:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. CONCRETE 28 DAY STRENGTH TO BE 35 MPa , CLASS OF EXPOSURE 'C1', AIR CONTENT 5 $8 \%$.
3. ENGINEER TO CONFIRM SOIL PARAMETERS BEFORE PROCEEDING WITH WORK.
4. DESIGN IS FOR DRY SOIL CONDITIONS (NO GROUND WATER TABLE) WITH A MINIMUM $\gamma$ soll $=$ $18 \mathrm{kN} / \mathrm{m}^{3}, \mathrm{Kp}=3.5, \varnothing=34^{\circ}$.
5. WHERE SOUND BEDROCK IS ENCOUNTERED, FOUNDATION CONSTRUCTION MAY BE MODIFIED TO USE ROCK ANCHORS DOWELED INTO ROCK. REFER TO DRAWING No. 74B. 1 AND 74B.2.
6. ANCHORS TO BE MINIMUM GRADE A307, PLATE WASHERS MINIMUM GRADE 300W.
7. CONTRACTOR TO CONFIRM ANCHOR BOLT DIAMETER, LENGTH AND BOLT CIRCLE PRIOR TO PROCEEDING WITH WORK.
8. PROPOSED PVC CONDUIT SIZE AND CONFIGURATION INDICATED ON DRAWINGS. CONDUITS ARE ASSUMED TO BE "BUNCHED" AND IN CENTRE OF PEDESTAL. FOR PEDESTAL WITH NOMINAL DIAMETER OF D-NOM, DIAMETER OF "BUNCHED" CONDUIT AT TOP OF CONCRETE SHALL BE D-B MAXIMUM. IF "BUNCHED" DIAMETER AT TOP OF CONCRETE IS GREATER THAN D-B, USE D-ADJ DIA. PEDESTAL.

| D-NOM | D-B | D-ADJ |
| :---: | :---: | :---: |
| 609 | 150 | 762 |
| 762 | 250 | 914 |
| 914 | 300 | 1067 |

9. CONCRETE MUST BE PLACED IN A SINGLE POUR.
10. EMBEDMENT DEPTH OF THE FOUNDATION WAS DERIVED FROM THE ONTARIO MINISTRY OF TRANSPORTATION ENGINEERING STANDARDS BRANCH - GUIDELINES FOR THE DESIGN OF HIGH MAST POLE FOUNDATIONS, 4TH Ed. 2004.
11. TORSIONAL RESISTANCE OF THE FOUNDATION WAS COMPLETED BASED ON BROM'S TORSION LOADING ANALYSIS OF SHORT SINGLE SHAFT FOUNDATIONS.
12. RESIDUAL FRICTIONAL COEFFICIENT $(\mu)$ BETWEEN THE CIRCUMFERENCE OF THE FOUNDATION AND SOIL IS TO BE 0.3.
13. WHERE FINISHED GRADE IS LOWER NEAR POLE BASE, HEIGHT OF FOUNDATION TO BE INCREASED AS FOLLOWS:

- 'A' UP TO 0.3 m , NO INCREASE.
- 'A' UP TO 0.6 m , INCREASE HEIGHT BY 0.2 m .
- 'A' UP TO 1.0 m , INCREASE HEIGHT BY 0.4 m .



## NOTES FOR SPREAD FOUNDATIONS ONLY:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. CONCRETE 28 DAY STRENGTH TO BE 35 MPa , CLASS OF EXPOSURE 'C1', AIR CONTENT 5 $8 \%$.
3. ENGINEER TO CONFIRM SOIL PARAMETERS BEFORE PROCEEDING WITH WORK.
4. DESIGN IS FOR DRY SOIL CONDITIONS (NO GROUND WATER TABLE) WITH A MINIMUM $\gamma$ sOIL $=$ $18 \mathrm{kN} / \mathrm{m}^{3}, \mathrm{Kp}=3.5, \varnothing=34^{\circ}$.
5. WHERE SOUND BEDROCK IS ENCOUNTERED, FOUNDATION CONSTRUCTION MAY BE MODIFIED TO USE ROCK ANCHORS DOWELED INTO ROCK. REFER TO DRAWING No. 74B. 1 AND 74B.2.
6. ANCHORS TO BE MINIMUM GRADE A307, PLATE WASHERS MINIMUM GRADE 300W.
7. CONTRACTOR TO CONFIRM ANCHOR BOLT DIAMETER, LENGTH AND BOLT CIRCLE PRIOR TO PROCEEDING WITH WORK.
8. PROPOSED PVC CONDUIT SIZE AND CONFIGURATION INDICATED ON DRAWINGS. CONDUITS ARE ASSUMED TO BE "BUNCHED" AND IN CENTRE OF PEDESTAL. FOR PEDESTAL WITH NOMINAL DIAMETER OF D-NOM, DIAMETER OF "BUNCHED" CONDUIT AT TOP OF CONCRETE SHALL BE D-B MAXIMUM. IF "BUNCHED" DIAMETER AT TOP OF CONCRETE IS GREATER THAN D-B, USE D-ADJ DIA. PEDESTAL.

| D-NOM | D-B | D-ADJ |
| :---: | :---: | :---: |
| 609 | 150 | 762 |
| 762 | 250 | 914 |
| 914 | 300 | 1067 |

9. FOOTINGS SHALL BEAR ON UNDISTURBED SOIL, STRUCTURAL FILL OR BEDROCK WITH A MINIMUM SERVICEABILITY LIMIT STATES (SLS) BEARING CAPACITY OF 150 kPa AND A MINIMUM ULTIMATE LIMIT STATES (ULS) BEARING CAPACITY OF 250kPa.
10. TORSIONAL RESISTANCE ANALYSIS WAS COMPLETED CONSIDERING PASSIVE SOIL PRESSURE AT THE VERTICAL FACE OF THE FOOTINGS AND A FRICTION ( $\mu$ ) BETWEEN THE UNDERSIDE OF THE FOOTING AND SOIL OF 0.4.
11. FINISHED GRADE ELEVATIONS SHALL NOT VARY MORE THAN 150 mm OVER A DISTANCE EQUAL TO TWICE THE EMBEDMENT DEPTH.
12. AFTER CONSTRUCTION, CUT OFF TOP OF CMP FORMWORK TO 150 mm BELOW FINISHED GRADE.

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| :---: | :---: | :---: | :---: |
| STANDARD DETAIL |  |  |  |
| STANDARD NOTES SPREAD FOOTINGS |  |  |  |
| DATE: | 2021 | REFERENCE | APPROVE |
| SCALE: | NTS |  | FIG No.: HRM |

traffic signal pole base design selection guide for type of pole base MAXIMUM DESIGN CRITERIA USED FOR DIFFERENT TYPES OF POLE BASES

| $\begin{aligned} & \text { z } \\ & \frac{0}{1} \\ & \frac{1}{4} \\ & \frac{1}{3} \\ & \frac{0}{4} \\ & \frac{2}{2} \end{aligned}$ | POLE TYPE |  |  | TRAFFIC SIGNAL EQUIPMENT |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | MAST ARMS |  |  |  |  |  |  |  |  |
|  | $\begin{aligned} & \frac{1}{4} \\ & \frac{\underset{\sim}{4}}{\underset{\sim}{4}} \end{aligned}$ |  |  | $\stackrel{\circ}{Z}$ |  |  |  |  |  |  |  |  |
| A | ALUM． | 203 | 5.2 | 0 | N．A． | N．A． | 2 | 2 | $1 @ 0.4$ | 0 | 1 | 68 |
| B | ALUM． | 203 | 5.8 | 1 | 4.6 | N．A． | 2 | 2 | NONE | 0.7 | 2 | 69 |
| C | ALUM． | 203 | 5.8 | 2 | 4．6，TOTAL | $180^{\circ}$ | 2 | 2 | NONE | 0.7 | 2 | 69 |
| D | ALUM． | 203 | 5.8 | 2 | 3.1 EACH | $90^{\circ}$ | 2 | 2 | NONE | 0.7 | 2 | 69 |
| E | ALUM． | 254 | 8.2 | 0 | N．A． | N．A． | 0 | 0 | 2＠1．85 | 0 | 2 | 69 |
| F | ALUM． | 254 | 6.7 | 1 | 6.1 | N．A． | 2 | 2 | NONE | 0.7 | 3 | 70 |
| G | ALUM． | 254 | 6.7 | 2 | 6．1，TOTAL | $180^{\circ}$ | 2 | 2 | NONE | 0.7 | 3 | 70 |
| H | ALUM． | 254 | 6.7 | 2 | 3.6 EACH | $90^{\circ}$ | 2 | 2 | NONE | 0.7 | 3 | 70 |
| 1 | ALUM． | 254 | 6.7 | 1 | 7.6 | N．A． | 2 | 2 | NONE | 0.7 | 4 | 71 |
| $J$ | ALUM． | 254 | 6.7 | 2 | 7．6，TOTAL | $180^{\circ}$ | 2 | 2 | NONE | 0.7 | 4 | 71 |
| K | ALUM． | 254 | 6.7 | 2 | 4．6 EACH | $90^{\circ}$ | 2 | 2 | NONE | 0.7 | 4 | 71 |
| L | ALUM． | 254 | 11.3 | 0 | N．A． | N．A． | 3 | 2 | 2＠1．85 | 0 | 4 | 71 |
| M | ALUM． | 254 | 9.7 | 1 | 7.6 | N．A． | 2 | 2 | 1＠1．8 | 0.7 | 4A | 71A |
| N | STEEL | 254 | 6.1 | 1 | 12.2 | N．A． | 4 | 2 | NONE | 0.7 | 5 | 72 |
| 0 | STEEL | 254 | 6.1 | 2 | 12．2，TOTAL | $180^{\circ}$ | 5 | 2 | NONE | 0.7 | 5 | 72 |
| P | STEEL | 254 | 6.1 | 2 | 7.6 EACH | $90^{\circ}$ | 5 | 2 | NONE | 0.7 | 5 | 72 |
| Q | STEEL | 343 | 10.7 | 1 | 12.2 | N．A． | 4 | 2 | 2＠3．6m | 0.7 | 5A | 72A |
| R | STEEL | 343 | 10.7 | 2 | 12．2，TOTAL | $180^{\circ}$ | 5 | 2 | 2＠3．6m | 0.7 | 5A | 72A |
| S | STEEL | 343 | 10.7 | 2 | 7.6 EACH | $90^{\circ}$ | 5 | 2 | 2＠3．6m | 0.7 | 5A | 72A |
| T | STEEL | 343 | 6.1 | 1 | 18.3 | N．A． | 4 | 2 | NONE | 0.7 | 6 | 73 |
| U | STEEL | 343 | 6.1 | 2 | 18．3，TOTAL | $180^{\circ}$ | 5 | 2 | NONE | 0.7 | 6 | 73 |
| V | STEEL | 343 | 6.1 | 2 | 10．7 EACH | $90^{\circ}$ | 5 | 2 | NONE | 0.7 | 6 | 73 |
| W | STEEL | 343 | 10.7 | 1 | 18.3 | N．A． | 4 | 2 | 2＠3．6m | 0.7 | 6A | 73A |
| X | STEEL | 343 | 10.7 | 2 | 18．3，TOTAL | $180^{\circ}$ | 5 | 2 | 2＠3．6m | 0.7 | 6A | 73A |
| Y | STEEL | 343 | 10.7 | 2 | 10．7 EACH | $90^{\circ}$ | 5 | 2 | 2＠3．6m | 0.7 | 6A | 73A |
| Z | STEEL | 343 | 6.1 | 1 | 21.3 | N．A． | 4 | 2 | NONE | 0.7 | 7 | 74 |
| AA | STEEL | 343 | 6.1 | 2 | 21．3，TOTAL | $180^{\circ}$ | 5 | 2 | NONE | 0.7 | 7 | 74 |
| AB | STEEL | 343 | 6.1 | 2 | 12．2 EACH | $90^{\circ}$ | 5 | 2 | NONE | 0.7 | 7 | 74 |
| AC | STEEL | 343 | 10.7 | 1 | 21.3 | N．A． | 4 | 2 | 2＠3．6m | 0.7 | 7A | 74A |
| AD | STEEL | 343 | 10.7 | 2 | 21．3，TOTAL | $180^{\circ}$ | 5 | 2 | 2＠3．6m | 0.7 | 7A | 74A |
| AE | STEEL | 343 | 10.7 | 2 | 12．2 EACH | $90^{\circ}$ | 5 | 2 | 2＠3．6m | 0.7 | 7A | 74A |
| AF | ALUM． | 254 | 13.4 | 0 | N．A． | N．A． | 0 | 0 | 2＠3．6m | 0.7 | 8 | 74X |

NOTES
1．REFER TO hallifax standard drawings 68 to 74X FOR ADditional NOTES AND DESIGN CRITERIA．
2．SEE STANDARD DRAWING NO．HRM 74B FOR REVISED POLE BASE FOUNDATION DESIGN WHICH MAY BE PERMITTED IN ROCK CONDITIONS．
3．TRAFFIC SIGNAL POLE DESIGN CRITERIA MAY DIFFER FROM THAT AS shown on this table．should this occur，design engineer SHALL BE CONSULTED FOR INTERPRETATION OF TABLE AND SELECTION OF POLE BASE TYPE，OR ADDITIONAL DESIGN IF REQURED．
4．TOTAL POLE HEIGHT INDICATED INCLUDES A 0.61 m HIGH TRANSFORMER BASE．




150 THK. TYPE 1
COMPACTED GRAVEL
BEDDING OR COMPACTED UNDISTURBED SOIL

SECTION

## NOTES:

1. SEE HRM 68N3, SELECTION GUIDE, FOR
PERMITTED POLES AND TRAFFIC SIGNAL
2. SEE HRM 68N3, SELECTION GUIDE, FOR
PERMITTED POLES AND TRAFFIC SIGNAL EQUIPMENT.
3. FOR NOTES REFER TO HRM 68N1.
4. DIMENSIONS ARE IN MILLIMETRES.

# HALIFAX 

| - ¢ - / |  |  |  |
| :---: | :---: | :---: | :---: |
| STANDARD DETAIL |  |  |  |
| TRAFFIC SIGNAL BASE FOR CONFIGURATIONS B, C, D AND E |  |  |  |
| DATE: | 2021 | REFERENCE | APPROVED |
| SCALE | 1:25 |  | $\begin{gathered} \text { FIG No.: } \\ \text { HRM } 69 \\ \hline \end{gathered}$ |


$4-31 \times 1000$ LONG GALVANIZED
ANCHOR BOLTS (PLUMBED) PROVIDE $76 \times 76 \times 10$ GALVANIZED PLATE WASHER


## NOTES:

1. SEE HRM 68N3, SELECTION GUIDE, FOR PERMITTED POLES AND TRAFFIC SIGNAL EQUIPMENT.
2. FOR NOTES REFER TO HRM 68N1.
3. DIMENSIONS ARE IN MILLIMETRES.

# HALIFAX 

STANDARD DETAIL
TRAFFIC SIGNAL BASE FOR CONFIGURATIONS F, G AND H

| DATE: | 2021 | REFERENCE | APPROVED |
| :--- | :---: | :--- | :--- |
|  | SCALE: | $1: 25$ |  |
|  |  | FIG No.: <br> HRM 70 |  |





## NOTES:

1. SEE HRM 68N3, SELECTION GUIDE, FOR PERMITTED POLES AND TRAFFIC SIGNAL EQUIPMENT.
2. FOR NOTES REFER TO HRM 68 N 2.
3. DIMENSIONS ARE IN MILLIMETRES.




NOTES:

1. SEE HRM 68N3, SELECTION GUIDE, FOR PERMITTED POLES AND TRAFFIC SIGNAL EQUIPMENT.
2. FOR NOTES REFER TO HRM 68 N 2 .
3. DIMENSIONS ARE IN MILLIMETRES.



NOTES:

1. SEE HRM 68N3, SELECTION GUIDE, FOR PERMITTED POLES AND TRAFFIC SIGNAL EQUIPMENT.
2. FOR NOTES REFER TO HRM 68N2.
3. DIMENSIONS ARE IN MILLIMETRES.

## HALIFAX

 STANDARD DETAIL TRAFFIC SIGNAL BASE FOR CONFIGURATION T, U AND V| DATE: | 2021 | REFERENCE | APPROVED |
| :--- | :---: | :--- | :--- |
|  | SCALE: | $1: 25$ |  |
|  |  | FIG No.: <br> HRM 73 |  |



NOTES:

1. SEE HRM 68N3, SELECTION GUIDE, FOR PERMITTED POLES AND TRAFFIC SIGNAL EQUIPMENT.
2. FOR NOTES REFER TO HRM 68 N 2 .
3. DIMENSIONS ARE IN MILLIMETRES.

| HALIFAX |
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NOTE:

1. SEE HRM 74B. 2 FOR ANCHORAGE DETAILS.
2. PEDESTAL REINFORCING NOT SHOWN FOR CLARITY.
3. ANCHOR BOLTS TO BE DESIGNED BY AND STAMPED BY AN ENGINEER LICENSED TO PRACTICE IN NS.

| HMLEMX |  |  |
| :---: | :---: | :---: |
| STANDARD DETAIL |  |  |
| FOUNDATION REVISIONS FOR DOWELING INTO ROCK |  |  |
| TE: 2021 | Referenc | APPROVIE |
| ${ }^{\text {SCaCE: }}$ 1:25 |  |  |


| ANCHORAGE SCHEDULE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| REF. DWG. | MIN. <br> MIN. | 'D' | ${ }^{\prime}$ d' $^{\prime}$ | 'A' <br> MIN | DOWELS |
| 68 | 1200 | 610 | 425 | 2500 | $4-25 M$ |
| 69 | 1200 | 760 | 575 | 2500 | $4-25 \mathrm{M}$ |
| $70,71,71 \mathrm{~A}$ | 1300 | 760 | 570 | 3000 | $4-30 \mathrm{M}$ |
| $72,72 \mathrm{~A}$ | 1500 | 760 | 565 | 3500 | $4-35 \mathrm{M}$ |
| $73,73 A$ | 1800 | 760 | 565 | 3500 | $6-35 \mathrm{M}$ |
| $74,74 \mathrm{~A}$ | 1800 | 910 | 715 | 4000 | $6-35 \mathrm{M}$ |
| 74 X | 1300 | 760 | 570 | 3000 | $4-30 \mathrm{M}$ |

## NOTES:

1. SOUND ROCK TO BE CONFIRMED BY ENGINEER.
2. MIN. LENGTH 'L' IS REQUIRED TO SUIT LENGTH OF ANCHOR BOLTS.
3. DRILLED HOLE IN ROCK TO BE CLEAN AND DRY BEFORE GROUTING. GROUT TO BE MASTERFLOW 816 CABLE GROUT OR APPROVED EQUAL, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.
4. THIS DRAWING TO BE USED IN CONJUNCTION WITH HRM 74B.1.
5. ANCHOR BOLTS TO BE DESIGNED BY AND STAMPED BY AN ENGINEER LICENSED TO PRACTICE IN NS.

| DATE: | 2021 | REFERENCE | APPROVE |  |
| :---: | :---: | :---: | :---: | :---: |
| SCALE: | NTS |  | $\begin{aligned} & \text { FIG No.: } \\ & \text { HRM } \end{aligned}$ | $\text { 74B. } 2$ |



## NOTES:

1. SEE HRM 68N3, SELECTION GUIDE, FOR PERMITTED POLES AND TRAFFIC SIGNAL EQUIPMENT.
2. FOR NOTES REFER TO HRM 68 N 2.
3. DIMENSIONS ARE IN MILLIMETRES.

HALIFAX

STANDARD DETAIL
TRAFFIC SIGNAL BASE FOR CONFIGURATION AF

| DATE: | 2021 | REFERENCE |
| :--- | :---: | :--- |
|  |  |  |
| SCALE: | $1: 25$ |  |
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APPROVED




