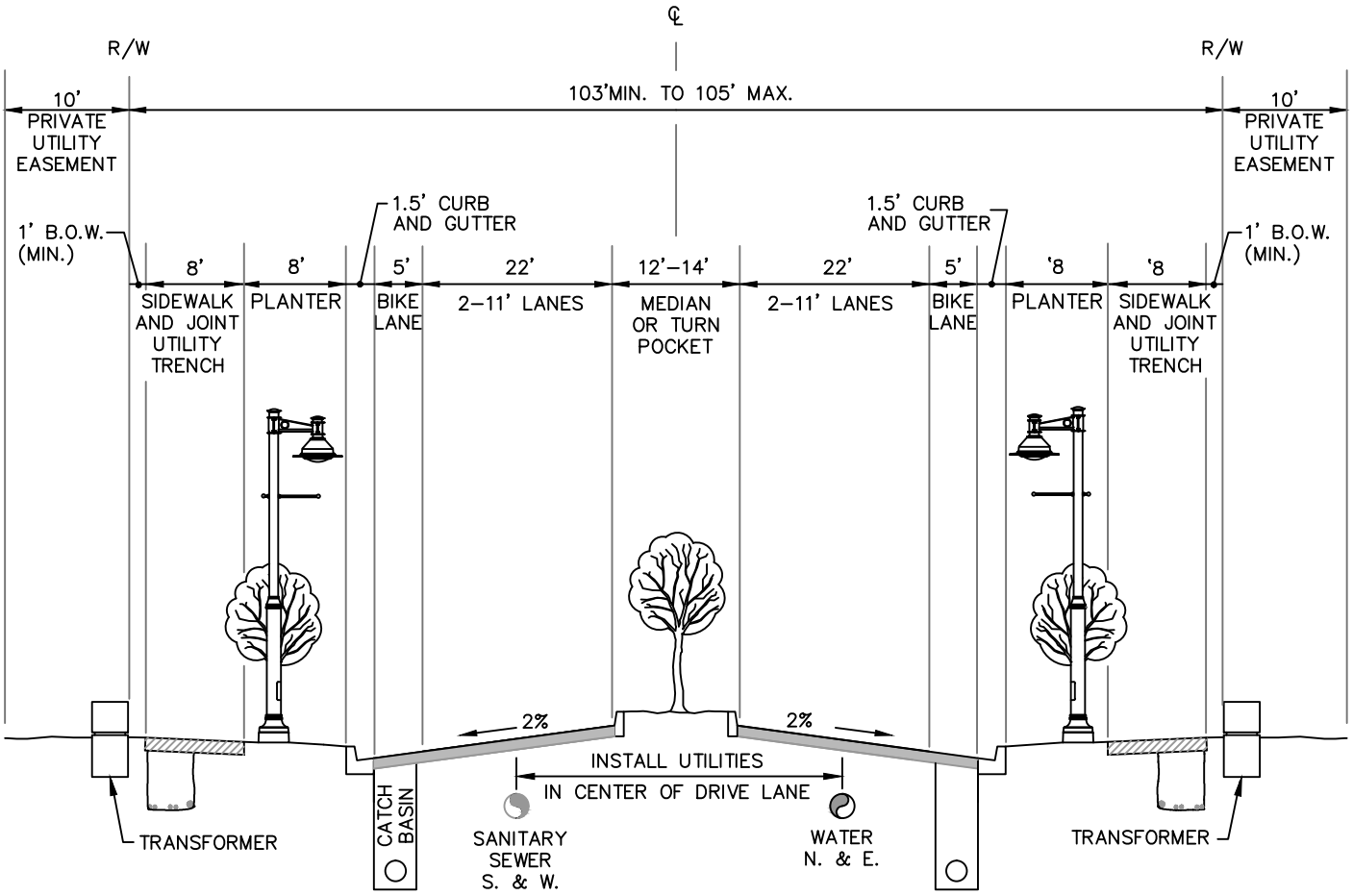


NOTES:

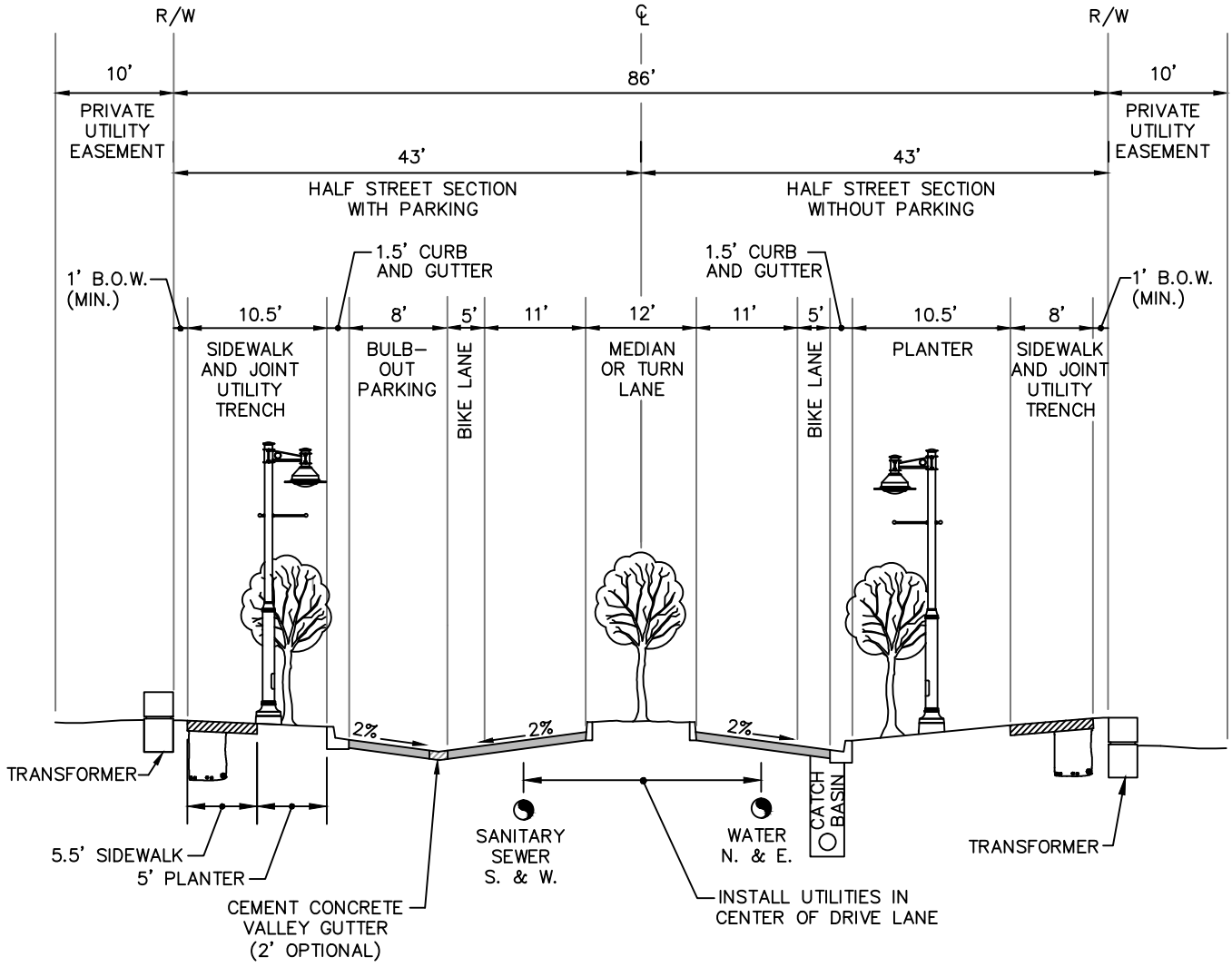
1. MOVE STREET LIGHTS TO BACK OF WALK WHERE PLANTER STRIP IS LESS THAN 8'.
2. ON–STREET PARKING PROHIBITED.
3. SEE DETAIL 2–13 FOR PAVEMENT DESIGN CONSTANTS.
4. MANHOLE LIDS AND WATER VALVE BOXES SHALL BE LOCATED IN THE MIDDLE OF THE OUTSIDE VEHICLE TRAVEL LANES.
5. STREET TREES IN THE PLANTER AND/OR MEDIAN SHALL BE CENTERED.
6. STREET LIGHTS MAY BE REQUIRED IN MEDIAN.
7. DESIGN SPEED SHALL BE CONSISTENT WITH ADJACENT LAND USE.

CITY OF GIG HARBOR
ENGINEERING DIVISION

ROADWAY SECTION PRINCIPAL ARTERIAL

DETAIL NO. 2-01

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018



NOTES:

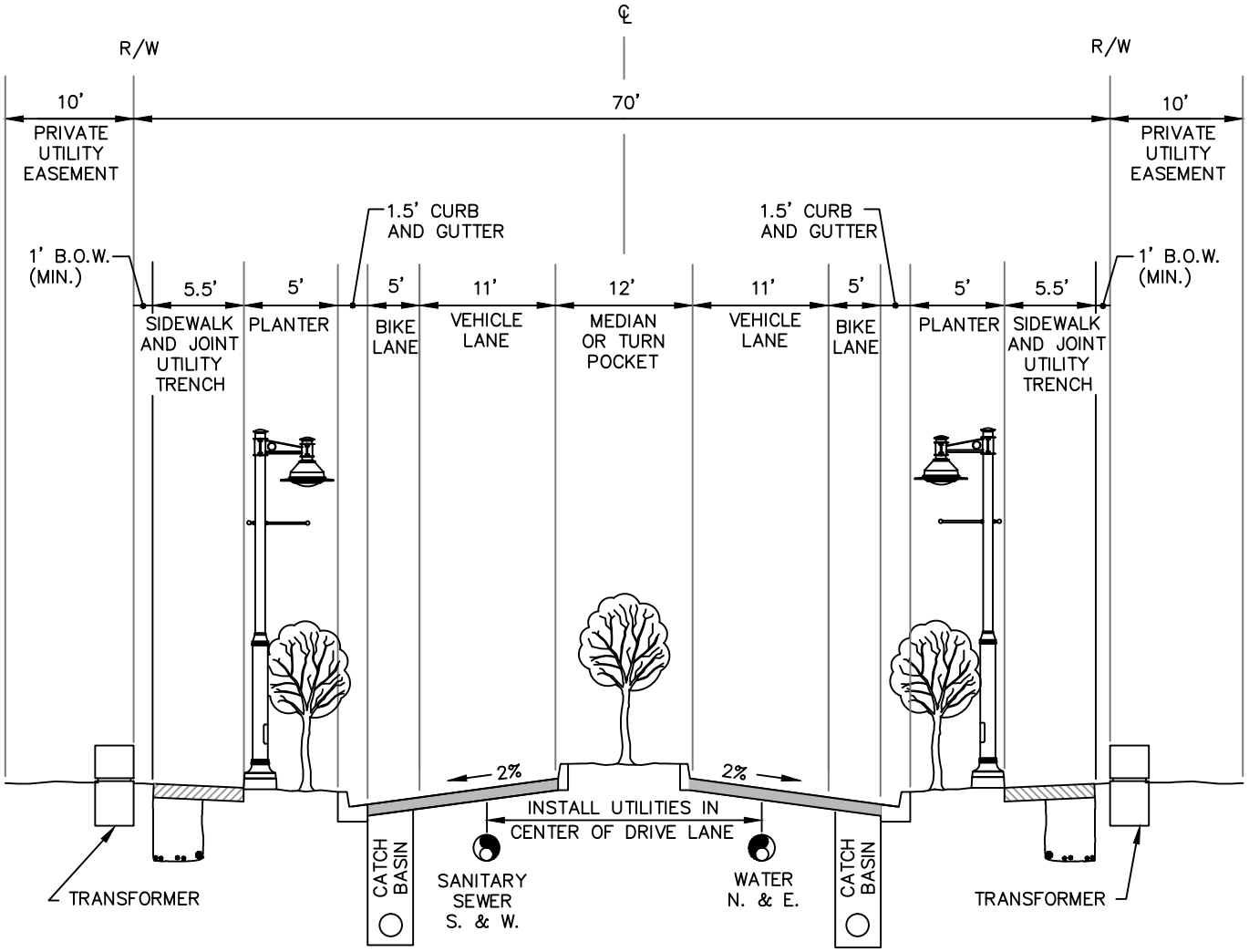
1. SEE DETAIL 2-13 FOR PAVEMENT DESIGN CONSTANTS.
2. MANHOLE LIDS AND WATER VALVE BOXES SHALL BE LOCATED IN THE MIDDLE OF THE OUTSIDE VEHICLE TRAVEL LANE.
3. THE OPTIONAL VALLEY GUTTERS WILL BE DETERMINED ON A CASE BY CASE BASIS.
4. STREET TREES IN THE PLANTER AND/OR MEDIAN SHALL BE CENTERED.
5. IF CONCRETE VALLEY GUTTER IS NOT USED, 8"WHITE THERMO PLASTIC WIDE LINE SHALL BE APPLIED TO DESIGNATE ON STREET PARKING FROM TRAVEL LANE.
6. DESIGN SPEED SHALL BE CONSISTENT WITH ADJACENT LAND USE.
7. ON-STREET PARKING SHALL BE PROVIDED ON ONE SIDE AND MAY BE REQUIRED ON BOTH SIDES AS DETERMINED BY THE CITY ENGINEER.

CITY OF GIG HARBOR
ENGINEERING DIVISION

ROADWAY SECTION MINOR ARTERIAL COMMERCIAL/MIXED USE

DETAIL NO. 2-02

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018



NOTES:

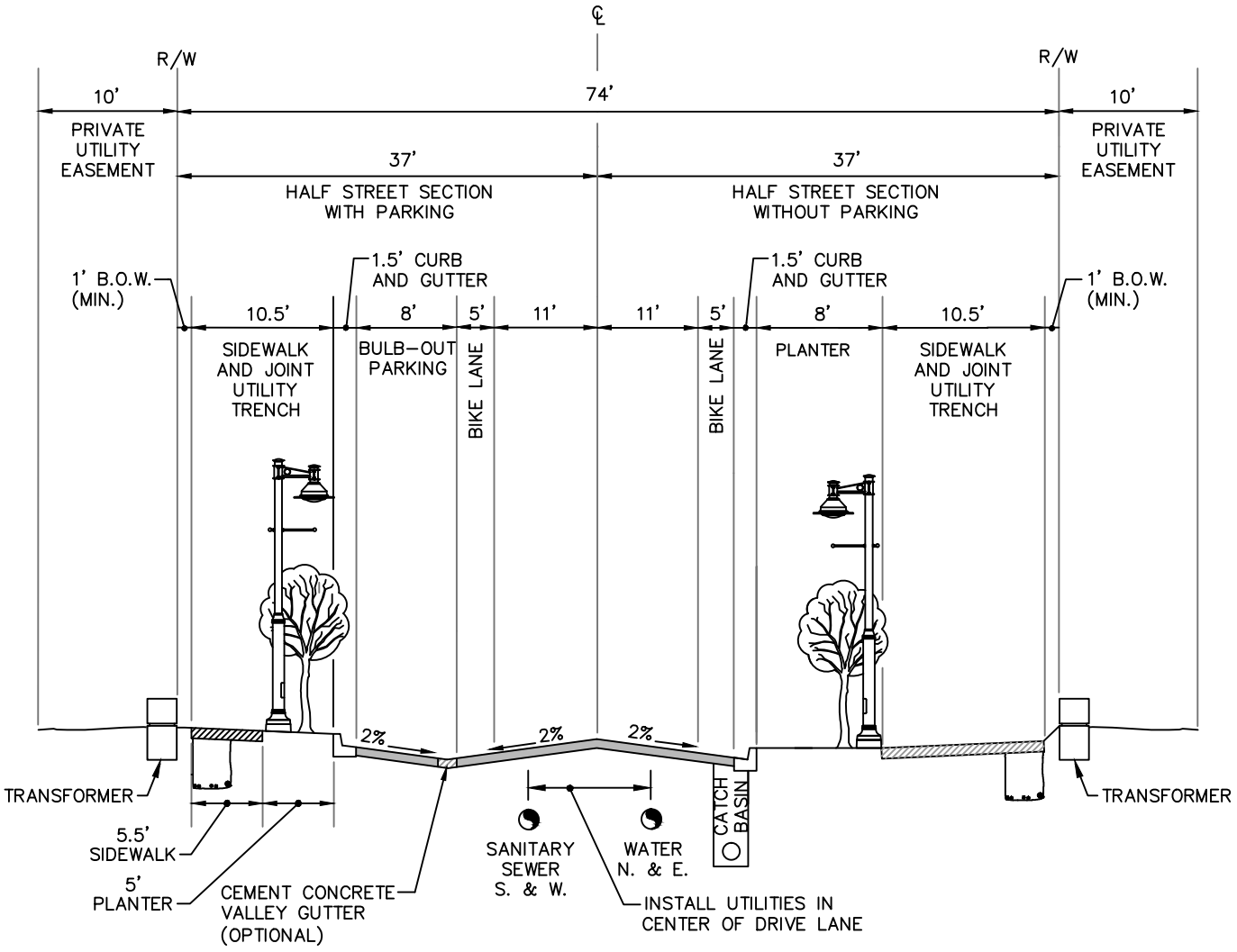
1. ON-STREET PARKING PROHIBITED.
2. SEE DETAIL 2-13 FOR PAVEMENT DESIGN CONSTANTS.
3. MANHOLE LIDS AND WATER VALVE BOXES SHALL BE LOCATED IN THE MIDDLE OF THE OUTSIDE VEHICLE TRAVEL LANES.
4. STREET TREES IN THE PLANTER AND/OR MEDIAN SHALL BE CENTERED.
5. DESIGN SPEED SHALL BE CONSISTENT WITH ADJACENT LAND USE.

CITY OF GIG HARBOR
ENGINEERING DIVISION

ROADWAY SECTION MINOR ARTERIAL REDISENTIAL

DETAIL NO. 2-03

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018



NOTES:

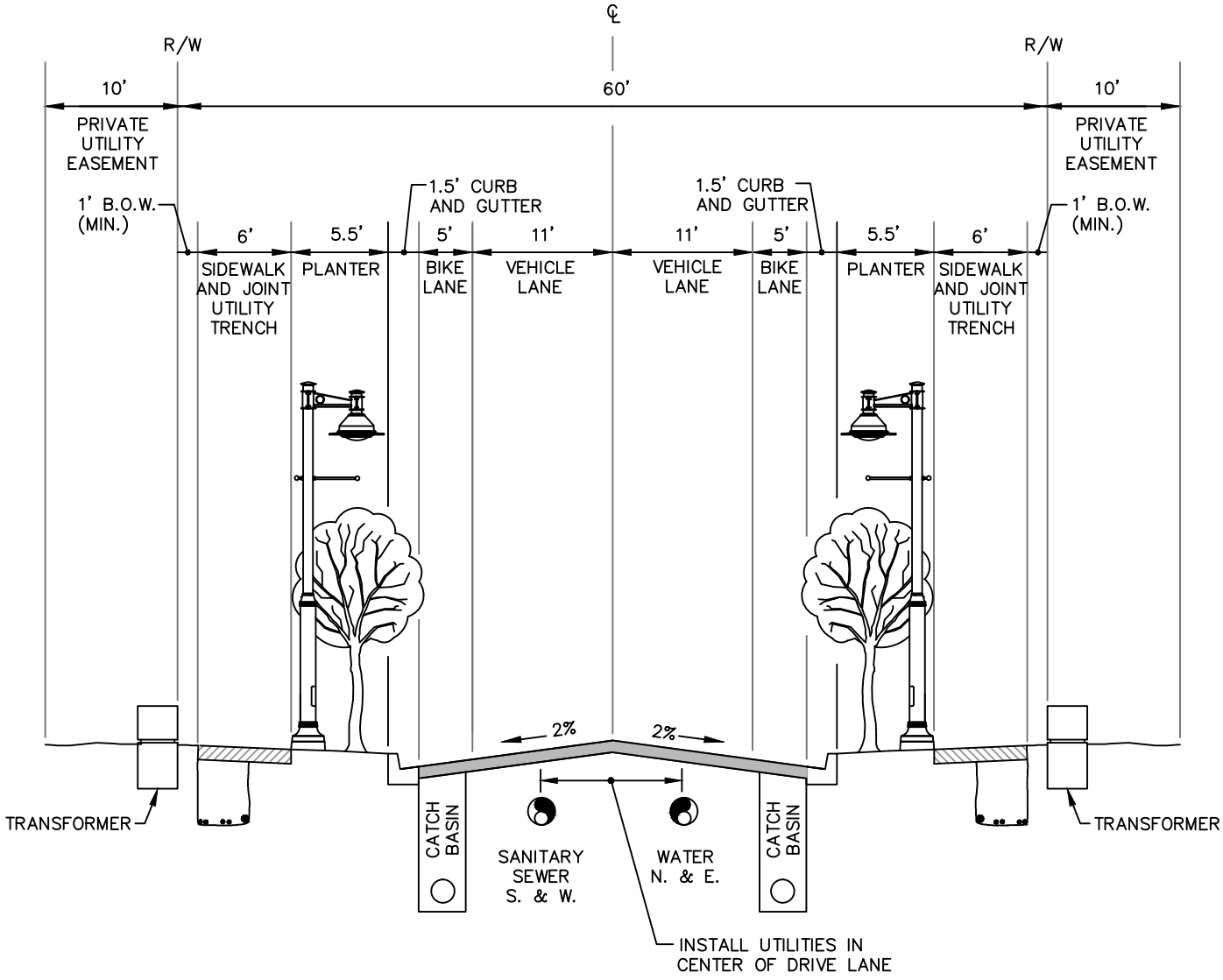
1. SEE DETAIL 2-13 FOR PAVEMENT DESIGN CONSTANTS.
2. MANHOLE LIDS AND WATER VALVE BOXES SHALL BE LOCATED IN THE MIDDLE OF THE OUTSIDE VEHICLE TRAVEL LANE.
3. THE OPTIONAL VALLEY GUTTERS WILL BE DETERMINED ON A CASE BY CASE BASIS.
4. STREET TREES IN THE PLANTER AND/OR MEDIAN SHALL BE CENTERED.
5. IF CONCRETE VALLEY GUTTER IS NOT USED, 8"WHITE THERMO PLASTIC WIDE LINE SHALL BE APPLIED TO DESIGNATE ON STREET PARKING FROM TRAVEL LANE.
6. DESIGN SPEED SHALL BE CONSISTENT WITH ADJACENT LAND USE.
7. ON-STREET PARKING SHALL BE PROVIDED ON ONE SIDE AND MAY BE REQUIRED ON BOTH SIDES AS DETERMINED BY THE CITY ENGINEER.

CITY OF GIG HARBOR
ENGINEERING DIVISION

ROADWAY SECTION
COLLECTOR
COMMERCIAL MIXED USE

DETAIL NO. 2-04

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018



NOTES:

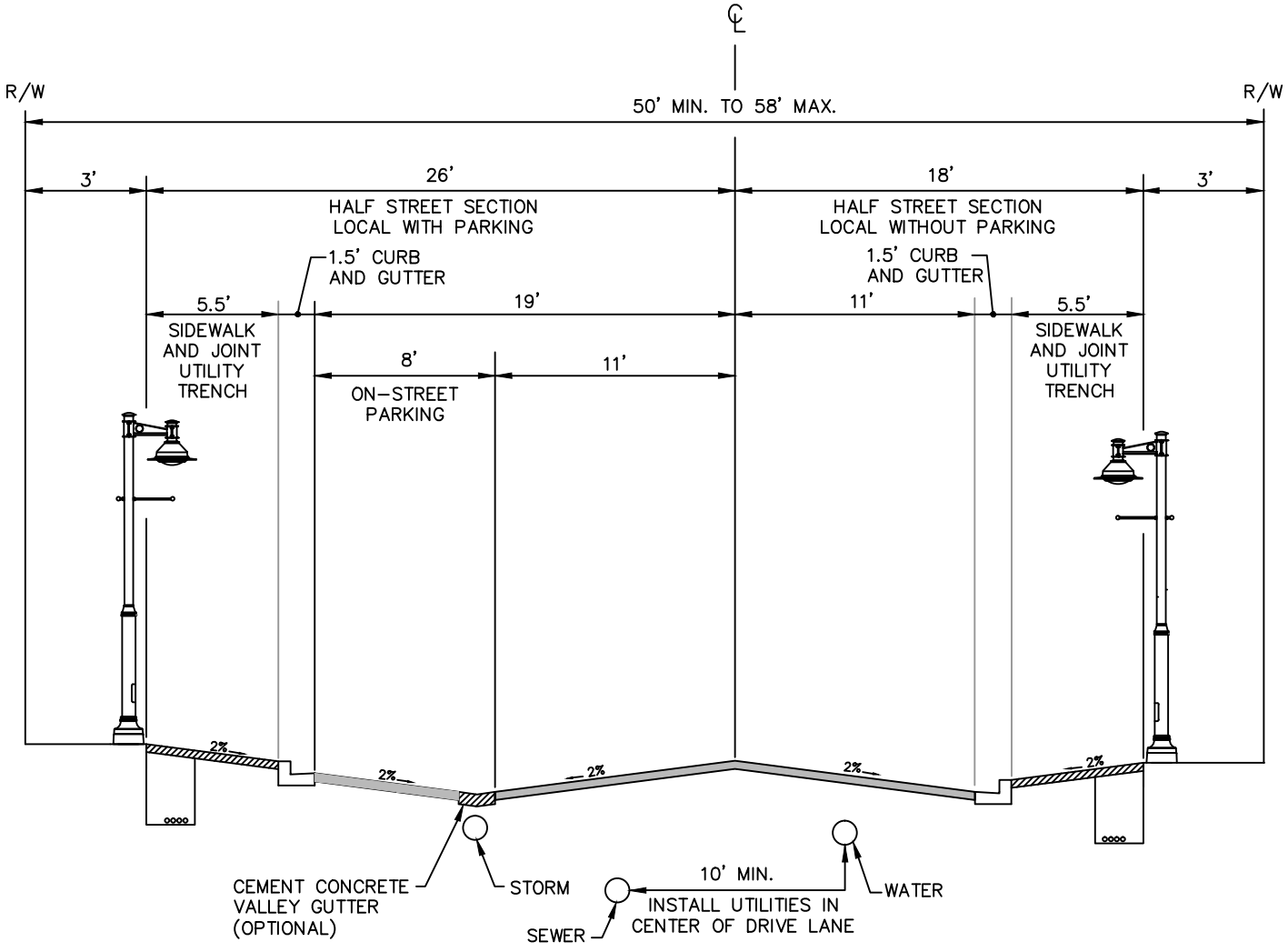
1. ON-STREET PARKING PROHIBITED.
2. SEE DETAIL 2-13 FOR PAVEMENT DESIGN CONSTANTS.
3. MANHOLE LIDS AND WATER VALVE BOXES SHALL BE LOCATED IN THE MIDDLE OF THE OUTSIDE VEHICLE TRAVEL LANES.
4. STREET TREES IN THE PLANTER AND/OR MEDIAN SHALL BE CENTERED.
6. DESIGN SPEED SHALL BE CONSISTENT WITH ADJACENT LAND USE.

CITY OF GIG HARBOR
ENGINEERING DIVISION

ROADWAY SECTION COLLECTOR RESIDENTIAL

DETAIL NO. 2-05

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018



NOTES:

1. ON-STREET PARKING SHALL BE PROVIDED ON ONE SIDE AND MAY BE REQUIRED ON BOTH SIDES AS DETERMINED BY THE CITY ENGINEER.
2. DELETION OF SIDEWALK ON ONE SIDE OF STREET ALLOWED IF UNITS ARE "SIDE- LOADED" AND IF PERMITTED BY THE CITY ENGINEER.
3. IF CONCRETE VALLEY GUTTER IS NOT USED, 8"WHITE THERMO PLASTIC WIDE LINE SHALL BE APPLIED TO DESIGNATE ON STREET PARKING FROM TRAVEL LANE.
4. DESIGN SPEED SHALL BE CONSISTENT WITH ADJACENT LAND USE.
5. SEE DETAIL 2-13 FOR PAVEMENT DESIGN STANDARDS.

CITY OF GIG HARBOR
ENGINEERING DIVISION

ROADWAY SECTION LOCAL

DETAIL NO.
2-06

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018

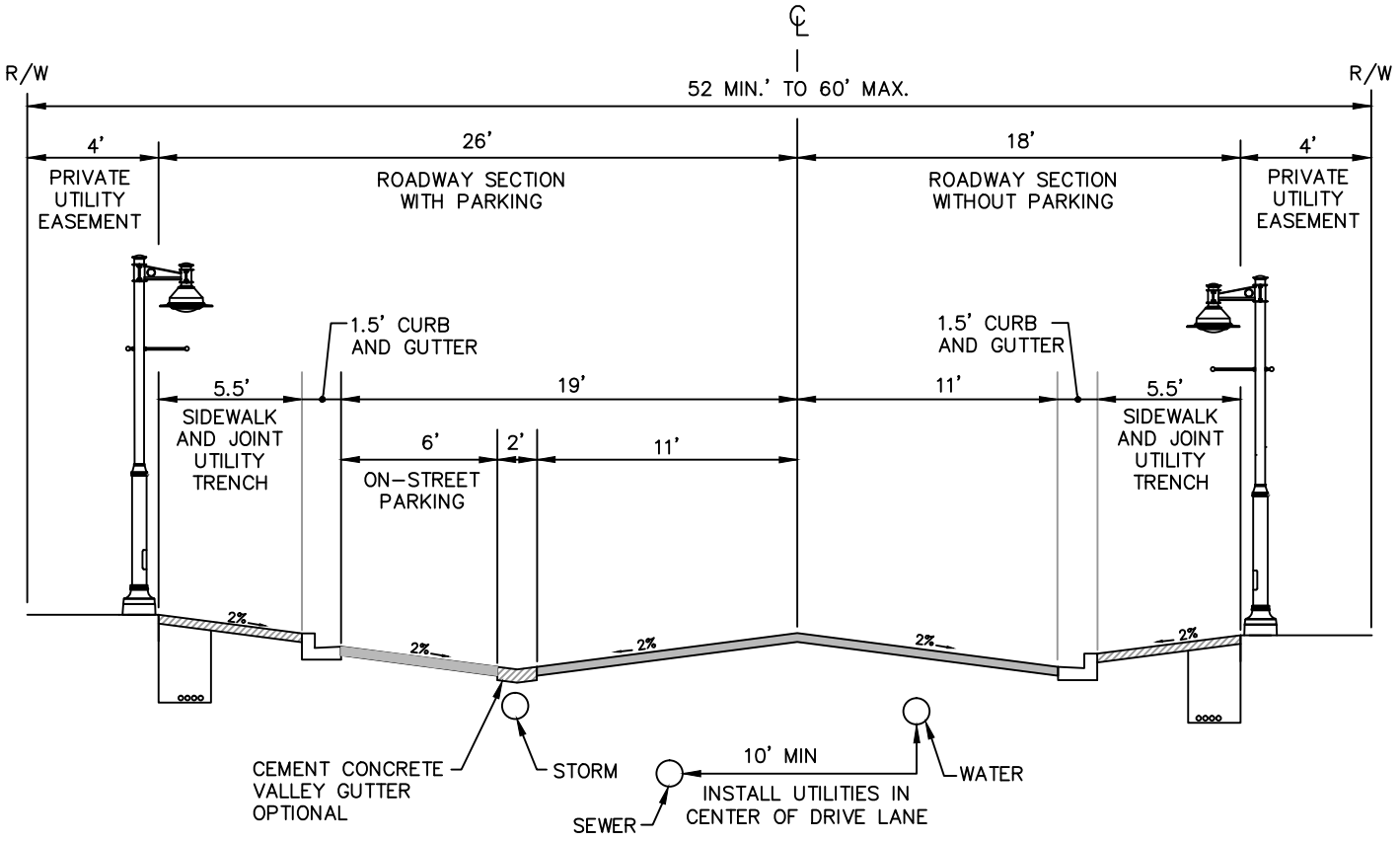
NOT USED

CITY OF GIG HARBOR
ENGINEERING DIVISION

DETAIL NO.

2-07

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE _____



NOTES:

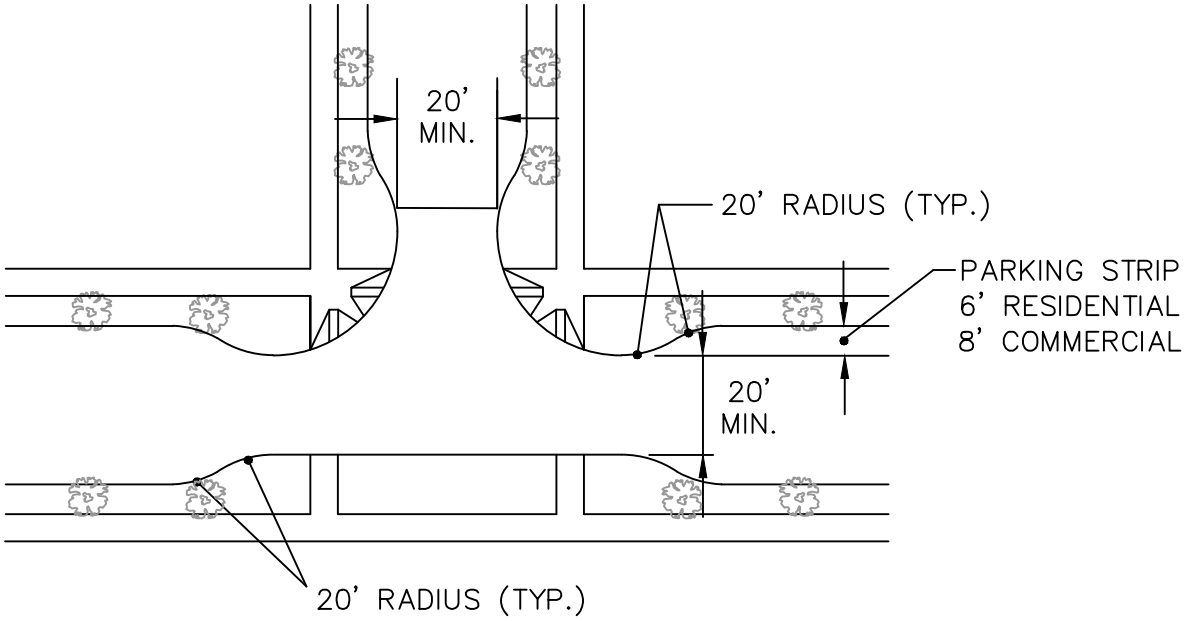
1. ON-STREET PARKING MAY BE DELETED IF SEPARATE TRACTS ARE DEDICATED TO PARKING WITHIN THE PROPOSED DEVELOPMENT.
2. DELETION OF SIDEWALK ON ONE SIDE OF STREET ALLOWED IF UNITS ARE "SIDE- LOADED" AND IF PERMITTED BY THE CITY ENGINEER.
3. VERTICAL CURB AND GUTTER COMPLYING WITH DETAIL 2-20 REQUIRED BOTH SIDES OF STREET.
4. DESIGN SPEED SHALL BE CONSISTENT WITH ADJACENT LAND USE.
5. SEE DETAIL 2-13 FOR PAVEMENT DESIGN CONSTANTS.

CITY OF GIG HARBOR
ENGINEERING DIVISION

ROADWAY SECTION PRIVATE

DETAIL NO. 2-08

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018

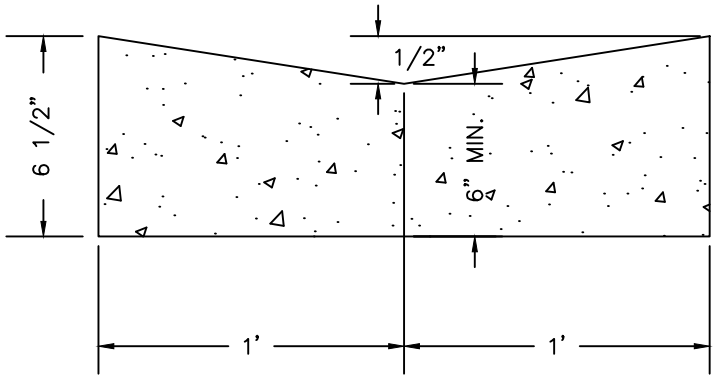


CITY OF GIG HARBOR
ENGINEERING DIVISION

BULB-OUT PARKING

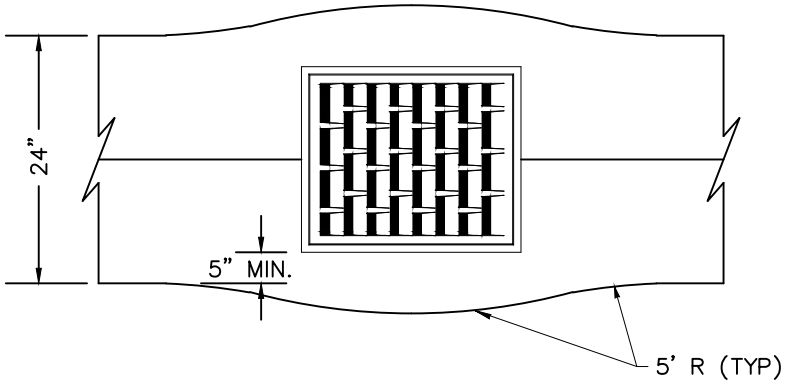
DETAIL NO.
2-09

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



VALLEY GUTTER

NOT TO SCALE



VALLEY GUTTER WITH CATCH BASIN

NOT TO SCALE

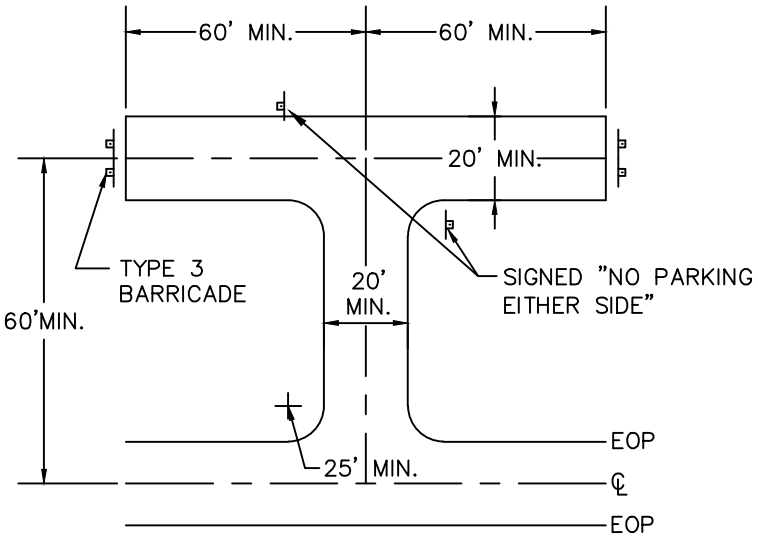
NOTES:

1. 4000 PSI WITH FIBER MESH ADDED
2. EXPANSION JOINT ⅜" THICK, FULL DEPTH, SPACED 15' AND SCORE EVERY 5'.

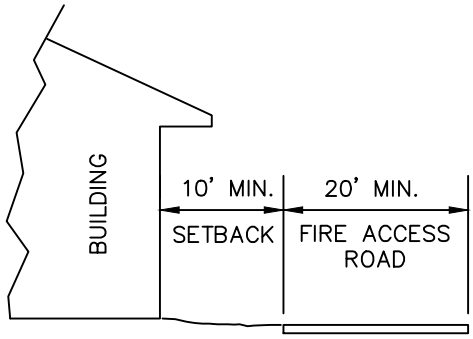
CITY OF GIG HARBOR
ENGINEERING DIVISION

CEMENT CONCRETE VALLEY GUTTER	DETAIL NO. 2-10

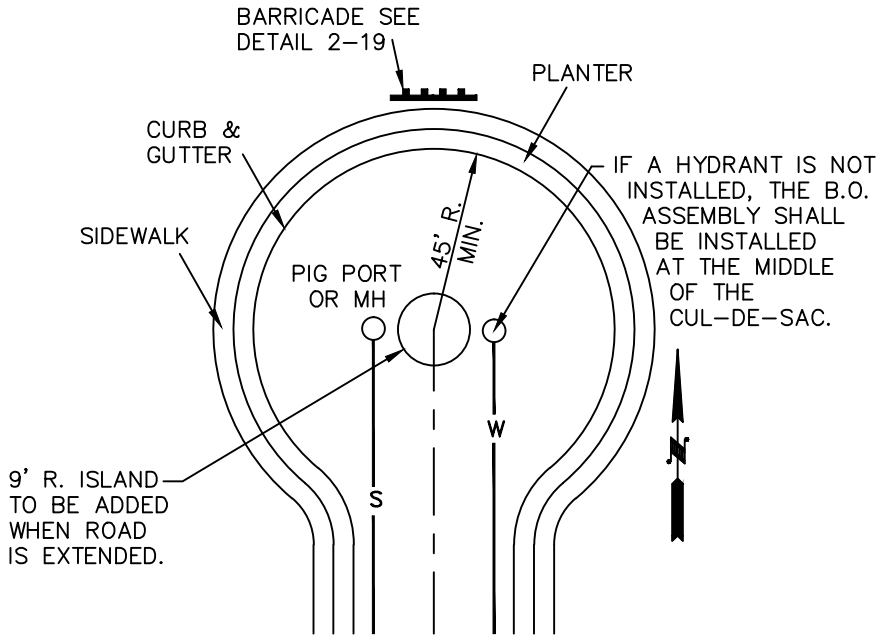
APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



HAMMERHEAD



FIRE ACCESS ROAD



DEAD END CUL-DE-SAC
AND FUTURE ROUND-ABOUT

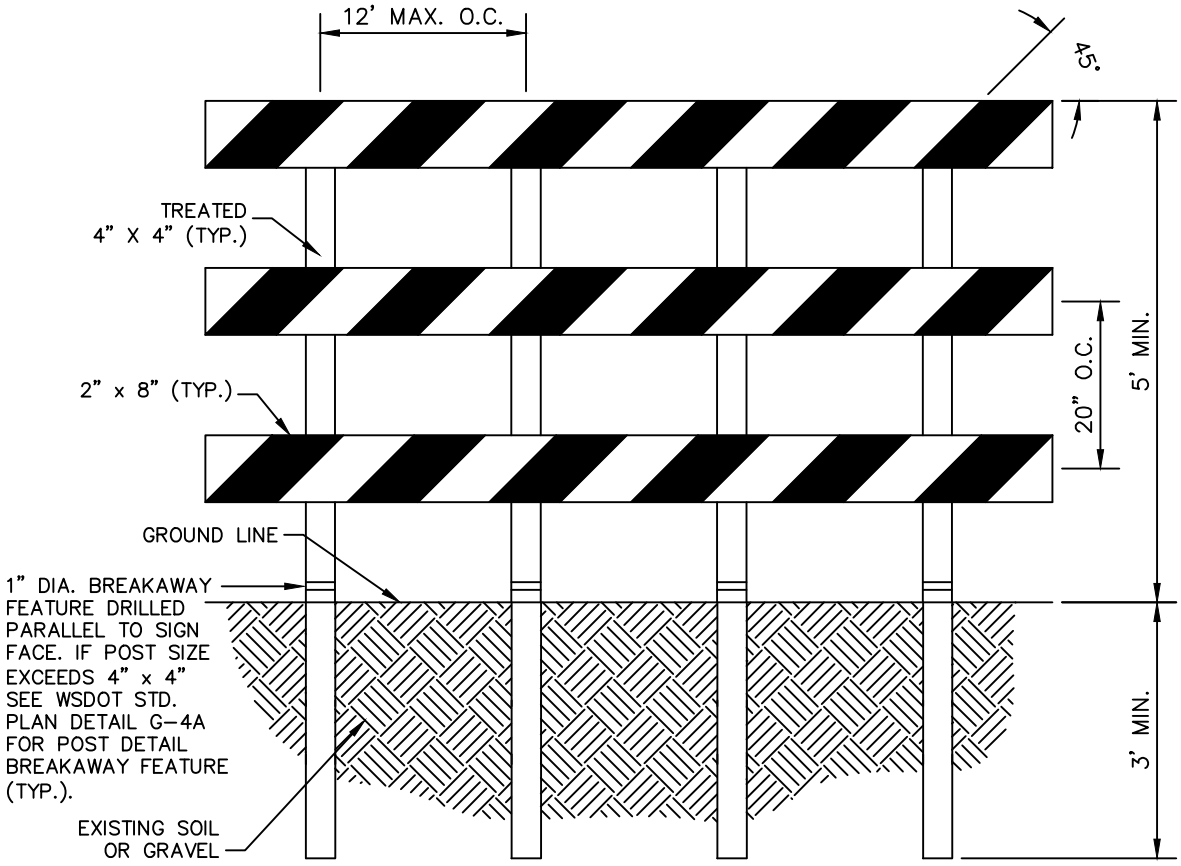
NOTES:

1. IF OVERHANG IS GREATER THAN 30", THE 10' SETBACK SHALL BE FROM EDGE OF THE OVERHANG.
2. THE 10' SETBACK MAY BE ENCROACHED UPON BY THE ACCESS ROAD AT THE CURVE RADII.

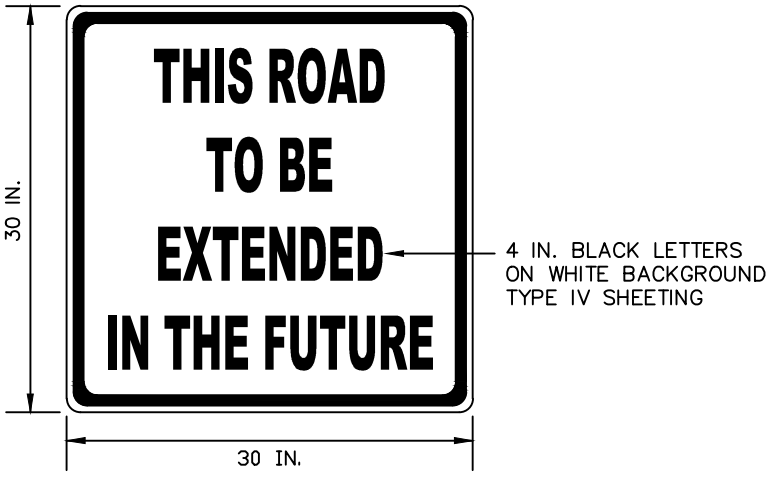
CITY OF GIG HARBOR
ENGINEERING DIVISION

DEAD END AND FIRE ACCESS	DETAIL NO. 2-11

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



TEMPORARY BARRICADE
NOT TO SCALE



NOTICE SIGN
NOT TO SCALE

NOTES:

1. MARKINGS FOR BARRICADE SHALL BE ALTERNATE RED AND WHITE STRIPES (SLOPING DOWNWARD, PER MUTCD, AT AN ANGLE OF 45° TO CURB).
2. THE ENTIRE AREA OF RED AND WHITE STRIPES SHALL BE REFLECTORIZED SO AS TO BE VISIBLE UNDER NORMAL ATMOSPHERIC CONDITIONS FROM A MINIMUM DISTANCE OF 1,000 FEET WHEN ILLUMINATED BY THE LOW BEAMS OF STANDARD AUTOMOBILE HEADLIGHTS, THE PREDOMINANT COLORS FOR OTHER BARRICADE COMPONENTS SHALL BE WHITE.
3. BARRICADE SECTION SHALL EXTEND TO LIMITS OF THE PAVED SURFACE.
4. CONSTRUCT BARRICADE PER MUTCD TYPE 3, SECTION 6C-8.

CITY OF GIG HARBOR
ENGINEERING DIVISION

TEMPORARY BARRICADE AND NOTICE SIGN	DETAIL NO. 2-12

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016

TYPE		Principal Arterial	Minor Arterial	Collector	Commercial Private Roads and Alleys	Local and Private	Local Alleys	Shared Use Paths and Trails (4)
AASHTO Flexible Pavement Design Standards	Initial ADT	30,000	20,000	15,000	10,000	2,000	500	1
	%ADTT	8	8	5	5	5	5	100
	%ADT, Bus	1	1	1	1	0	0	0
	GROWTH RATE (compound)	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	Assumed CBR	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	Assumed Mr	6,690	6,690	6,690	6,690	6,690	6,690	6,690
	Lanes in Design Direction	2	1	1	1	1	1	1
	Percent Trucks, Design Direction	50	50	50	50	100	100	100
	Percent Trucks, Design Lane	80	100	100	100	100	100	100
	DESIGN EAL	5,878,017	4,898,348	2,445,675	1,364,540	994,831	49,365	4,087
	Reliability, R%	95%	90%	90%	85%	85%	80%	80%
	Deviation, S_0	0.45	0.45	0.45	0.45	0.45	0.45	0.45
	Initial Serviceability, P_I	4.20	4.20	4.20	4.20	4.20	4.20	4.20
	Terminal Serviceability$_T$	3	2.7	2.5	2.4	2.3	2.2	2.2
	△ PSI	1.20	1.50	1.70	1.80	1.90	2.00	2.00
	Design SN	5.6	4.81	4.18	3.58	3.41	2.03	1.3
Standard Asphalt Pavement Section	HMA	8	6	6	5	4	2	2
	CSTC	2	2	2	2	2	2	2
	CSBC	14	14	9	8	10	6	2
Minimum Asphalt Pavement Section with Approved Design	HMA	6	6	4	4	3	2	2
	CSTC	2	2	2	2	2	2	2
	CSBC	8	6	6	6	5	4	
Minimum Concrete Pavement Section with Approved Design	**Concrete streets are allowed with approved supporting design.**							
	PCC	10	10	8	8	8	8	4
	CSBC	2	2	2	2	2	2	2

NOTES:

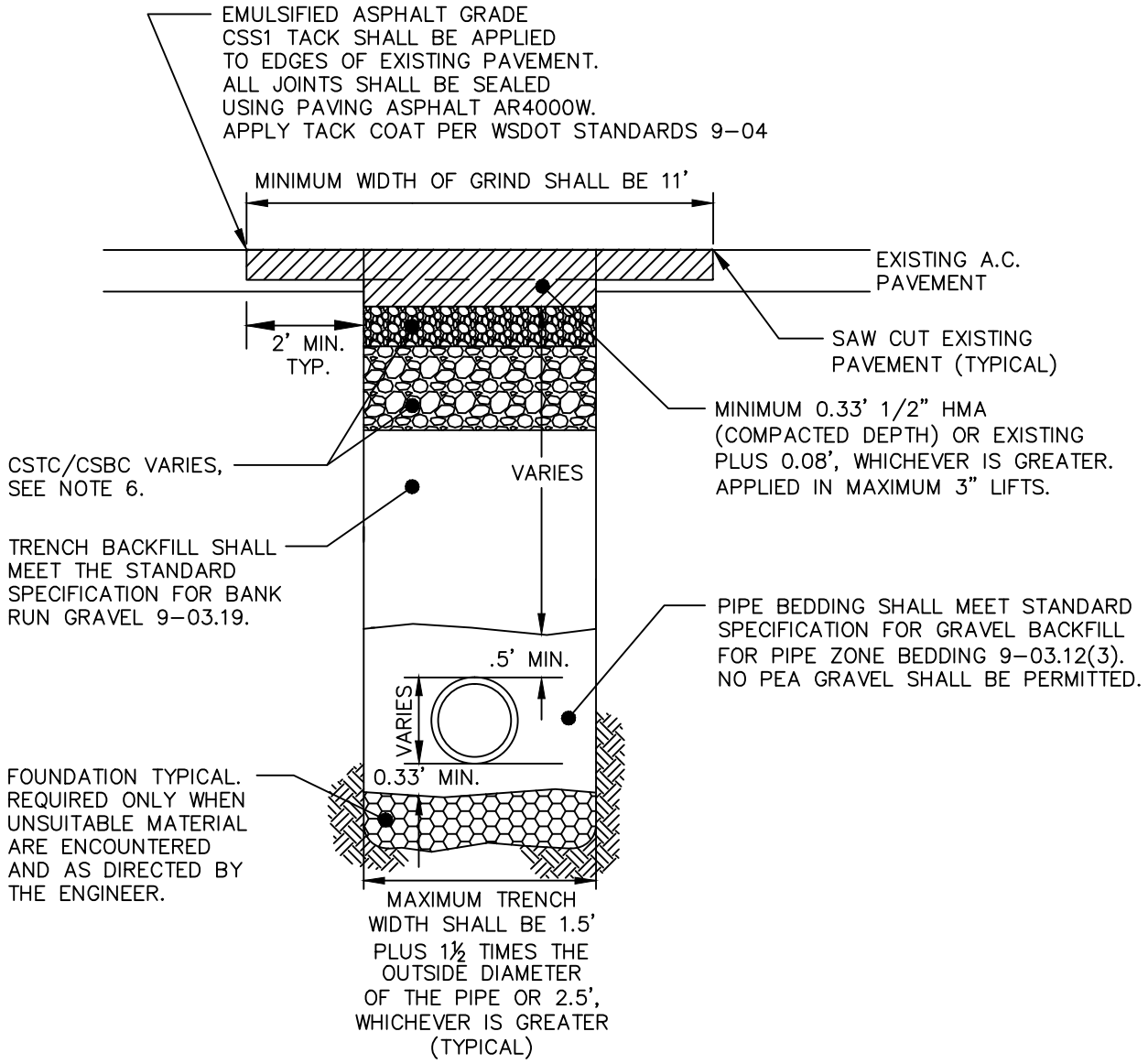
1. STANDARD ASPHALT PAVEMENT SECTION SHALL BE USED WHEN NO CUSTOM DESIGN IS PROVIDED.
2. MINIMUM PAVEMENT SECTIONS ARE THE MINIMUM ACCEPTABLE PAVEMENT SECTIONS FOR CUSTOM DESIGNS.
3. PAVEMENT SECTIONS FOR OTHER FACILITIES, SUCH AS LOW-IMPACT DESIGNS AND PARKING LOTS, SHALL BE SUBSTANTIATED BY GEOTECHNICAL ANALYSIS AND DESIGN DOCUMENTATION.
4. FOR POROUS ASPHALT OR PERVIOUS CONCRETE, REFER TO VOLUME III OF THE 2016 CITY OF GIG HARBOR STORM WATER AND SITE DEVELOPMENT MANUAL.

CITY OF GIG HARBOR
ENGINEERING DIVISION

PAVEMENT DESIGN STANDARDS

DETAIL NO. 2-13

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018



NOTES:

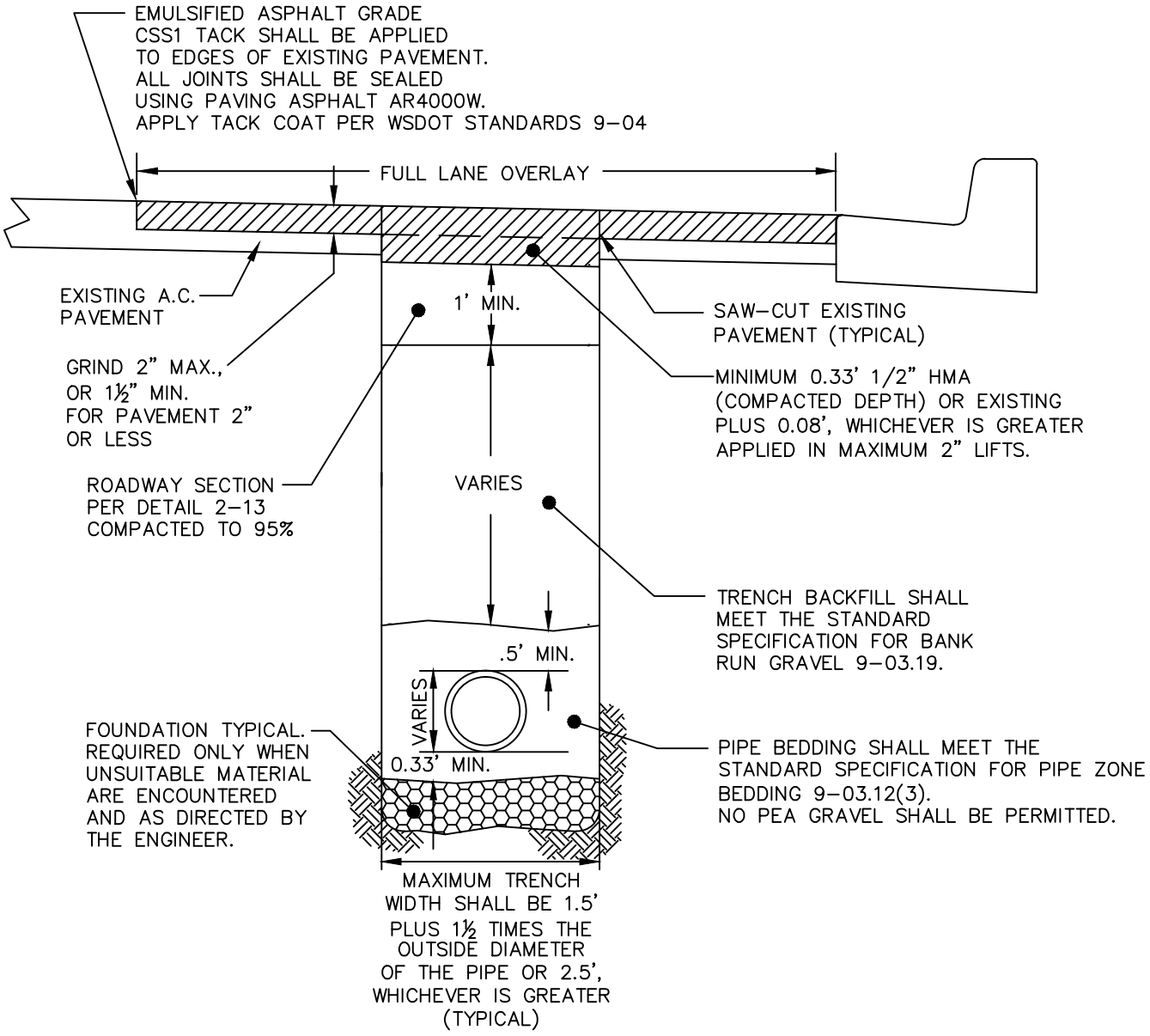
1. ALL MATERIALS EXCEPT HMA AND BEDDING MATERIAL SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY AS DETERMINED BY ASTM D1557.
2. ALL MATERIALS, WORKMANSHIP, AND INSTALL-ATION SHALL BE IN CONFORMANCE WITH THE MOST CURRENT WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION AS AMENDED BY CITY OF GIG HARBOR STANDARDS.
3. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.
4. SAW CUT PAVEMENT TO MAX. TRENCH WIDTH. BACKFILL AND PAVE TO TOP OF EXISTING PAVEMENT FOR TRENCH WIDTH. ALLOW 24 HOURS MINIMUM FOR TRENCH PATCH TO CURE. GRIND AND PAVE FINAL PATCH AS SHOWN.
5. CDF BACKFILL WILL BE REQUIRED AROUND DUCT BANKS THAT ARE STACKED VERTICALLY.
6. CSTC/CSBC DEPTHS VARIES PER ROAD CLASSIFICATION AS SHOWN ON DETAIL 2-13 - PAVEMENT DESIGN STANDARDS.

CITY OF GIG HARBOR
ENGINEERING DIVISION

PERPENDICULAR TRENCH RESTORATION FOR PAVED AREAS

DETAIL NO. 2-14

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018



NOTES:

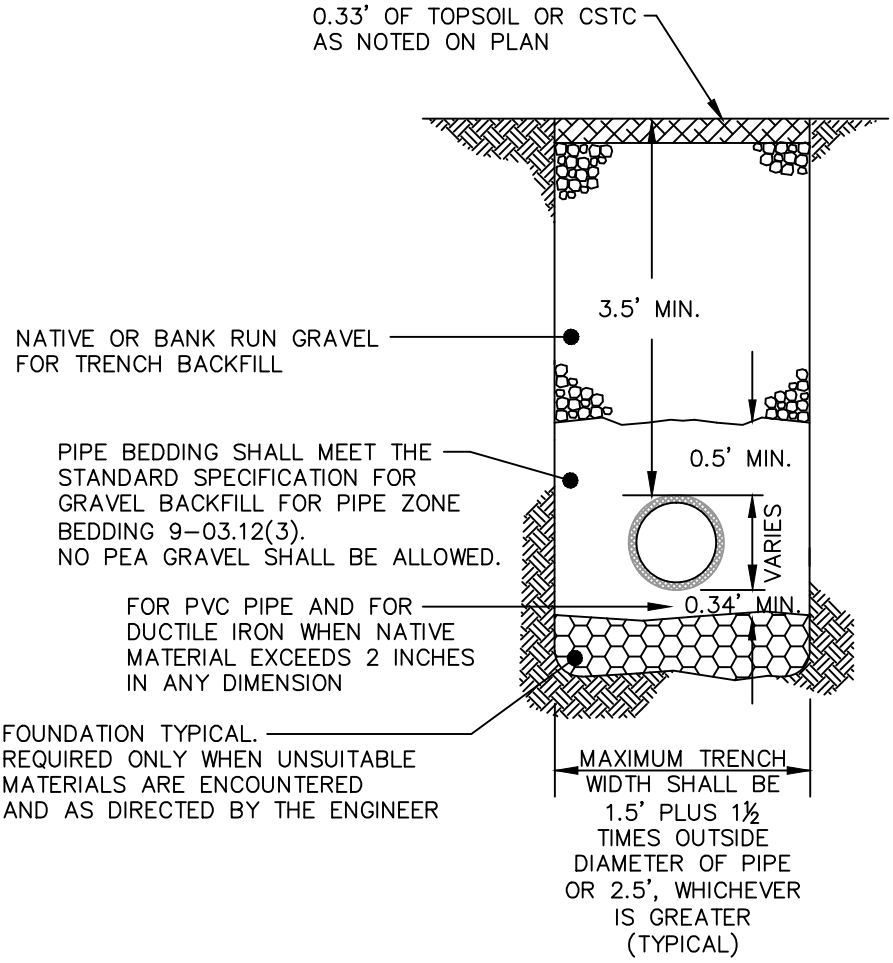
1. ALL MATERIALS EXCEPT A.C.P. AND BEDDING MATERIAL SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY AS DETERMINED BY ASTM D1557.
2. ALL MATERIALS, WORKMANSHIP, AND INSTALL-ATION SHALL BE IN CONFORMANCE WITH THE MOST CURRENT WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AS AMENDED BY CITY OF GIG HARBOR STANDARDS.
3. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.
4. SAW-CUT PAVEMENT TO MAX. TRENCH WIDTH. BACKFILL AND PAVE TO TOP OF EXISTING PAVEMENT FOR TRENCH WIDTH.
5. CDF BACKFILL WILL BE REQUIRED AROUND DUCT BANKS THAT ARE STACKED VERTICALLY.

CITY OF GIG HARBOR
ENGINEERING DIVISION

PARALLEL TRENCH RESTORATION FOR PAVED AREAS

DETAIL NO. 2-15

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE JULY, 2018



NOTES:

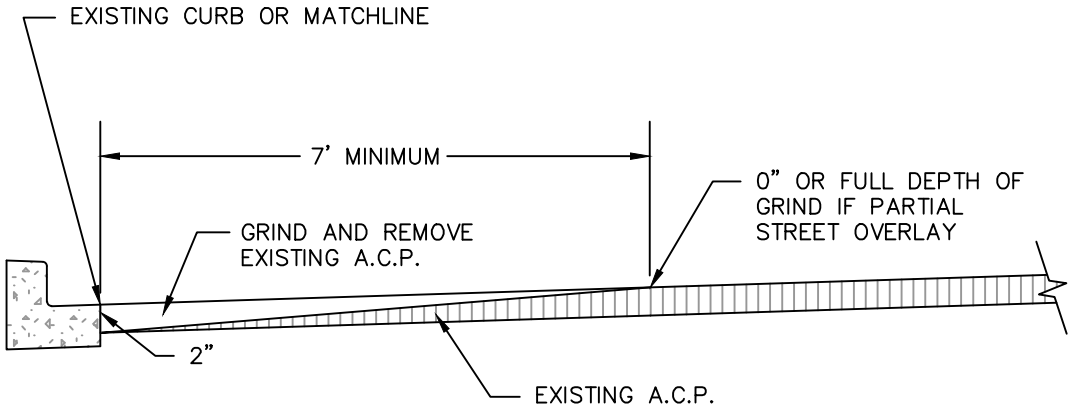
1. BEDDING SHALL CONFORM TO SECTION 9-03.12(3) OF STANDARD SPECIFICATIONS.
2. COMPACTION: BEDDING SHALL BE COMPACTED TO 95% MIN. AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE COMPACTED TO 85% MIN. IN UNPAVED AREA, AND 95% MIN. IN PAVED OR SHOULDER AREAS AS DETERMINED BY ASTM D1557.
3. ALL MATERIALS, WORKMANSHIP, AND INSTALL-ATION SHALL BE IN CONFORMANCE WITH THE MOST CURRENT WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION AS AMENDED BYCITY OF GIG HARBOR STANDARDS.
4. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. A BELL JOINT SHALL BE REQUIRED AT EACH JOINT FOR PROPER SUPPORT. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.

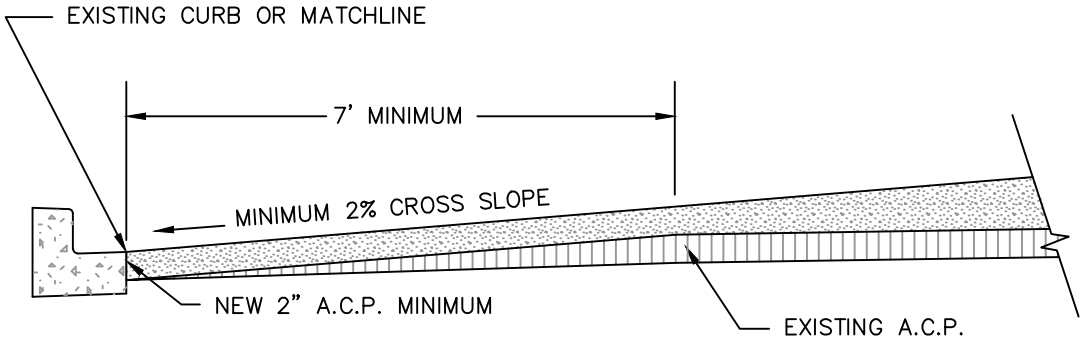
CITY OF GIG HARBOR
ENGINEERING DIVISION

TRENCH RESTORATION FOR UNPAVED AREAS

DETAIL NO. 2-16

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016





NOTES:

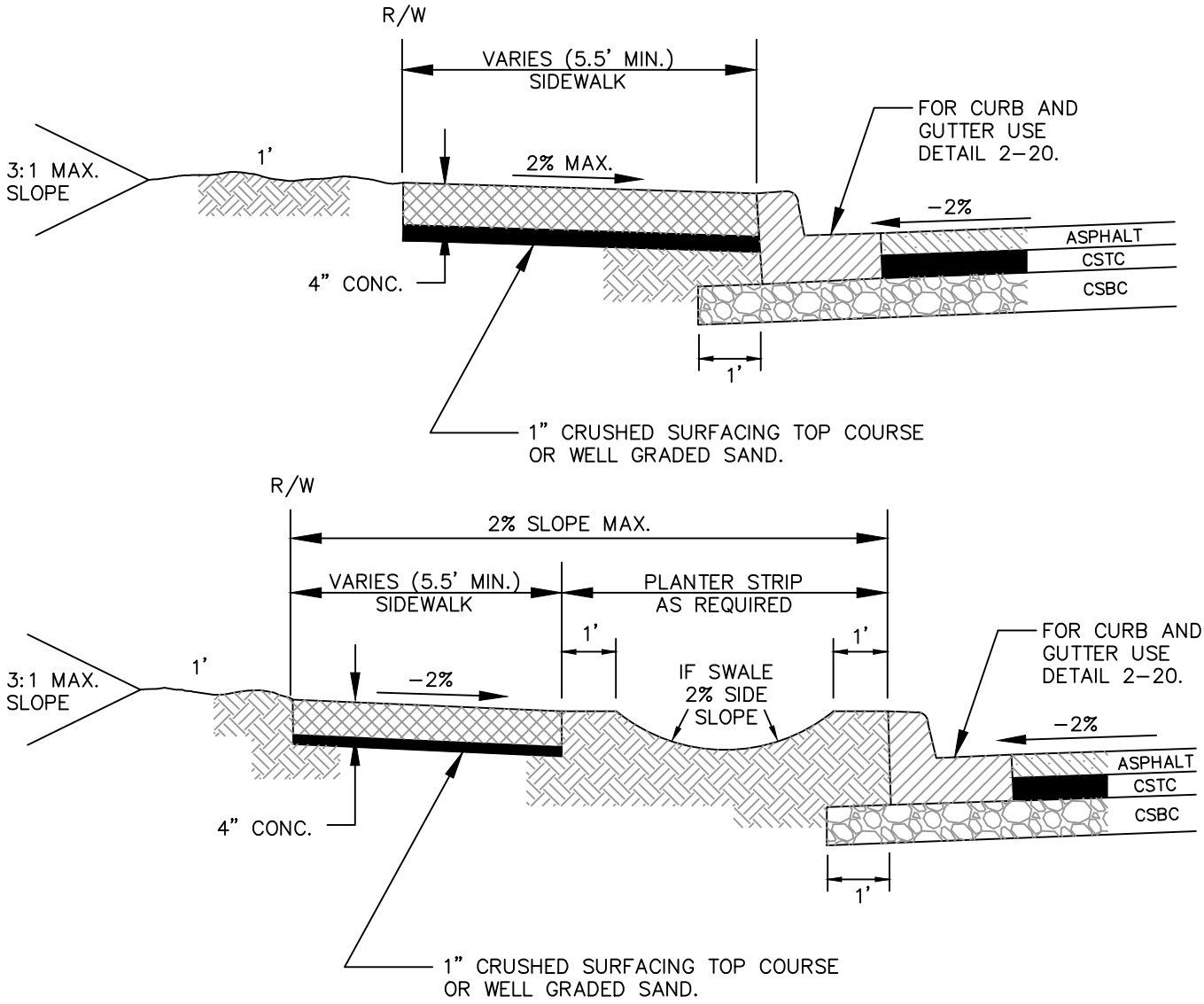
1. GRINDING SHALL BE DONE PER WSDOT 5-04.3(14) SPECIFICATIONS.
2. IDENTIFY AND PROTECT ALL LOOP AND LOOP LEAD-INS DURING GRINDING.
3. ALL PAVEMENT MARKINGS SHALL BE REMOVED PRIOR TO PAVING.
4. ALL INDUCTION LOOPS SHALL BE INSTALLED PRIOR TO FINAL OVERLAY.
5. EXISTING A.C.P. SHALL BE TACKED WITHEMULSIFIED ASPHALT TYPE CSS-1 PER WSDOT 5-04.3(5)A.
6. THE TRANSITION JOINT SHALL BE SEALED WITH A SAND SLURRY PER WSDOT 5-04.3(5)C.

CITY OF GIG HARBOR
ENGINEERING DIVISION

PAVEMENT EDGE GRINDING

DETAIL NO. 2-17

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



NOTES:

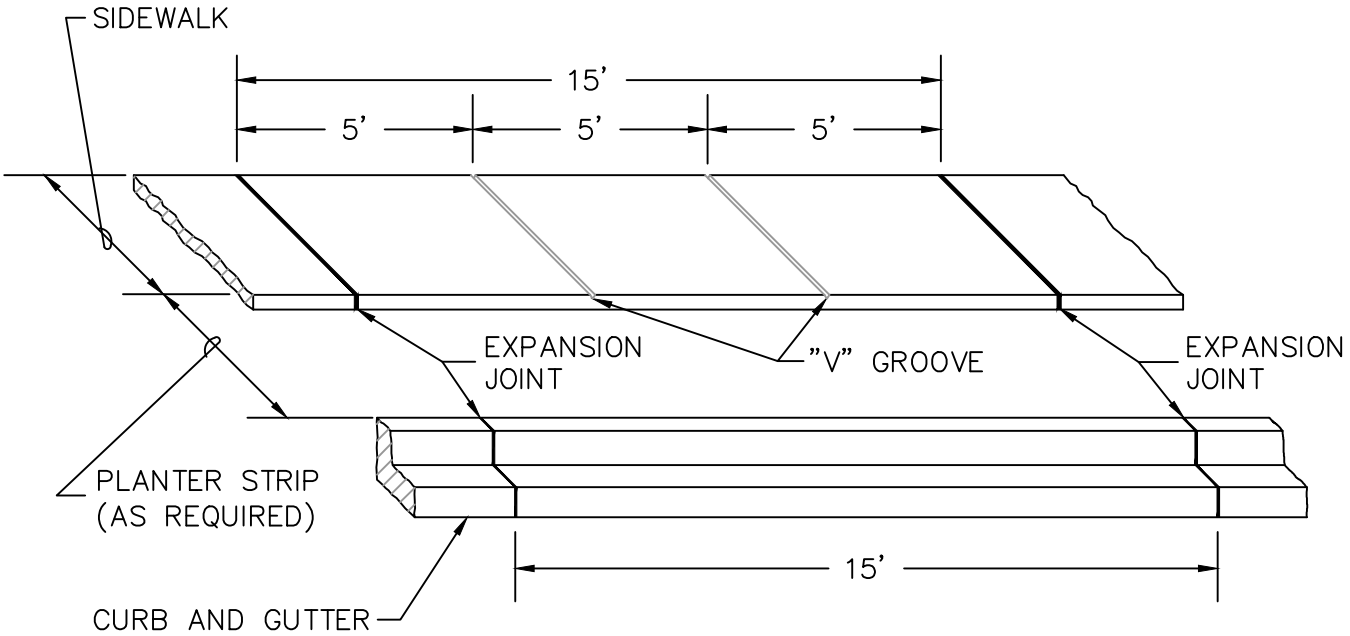
1. FOR JOINTS AND SCORINGS SEE DETAIL 2-30.
2. CONCRETE DRIVEWAYS REQUIRE A MINIMUM DEPTH OF 6" AT 4000 PSI 3 DAY.
3. SIDE SLOPES ON SWALES WITHIN PLANTERS SHALL START A MINIMUM OF 1' BACK FROM SIDEWALK AND CURB.
4. SEE ROADWAY SECTIONS FOR STREET TREE LOCATIONS.

CITY OF GIG HARBOR
ENGINEERING DIVISION

SIDEWALK

DETAIL NO. 2-18

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



NOTES:

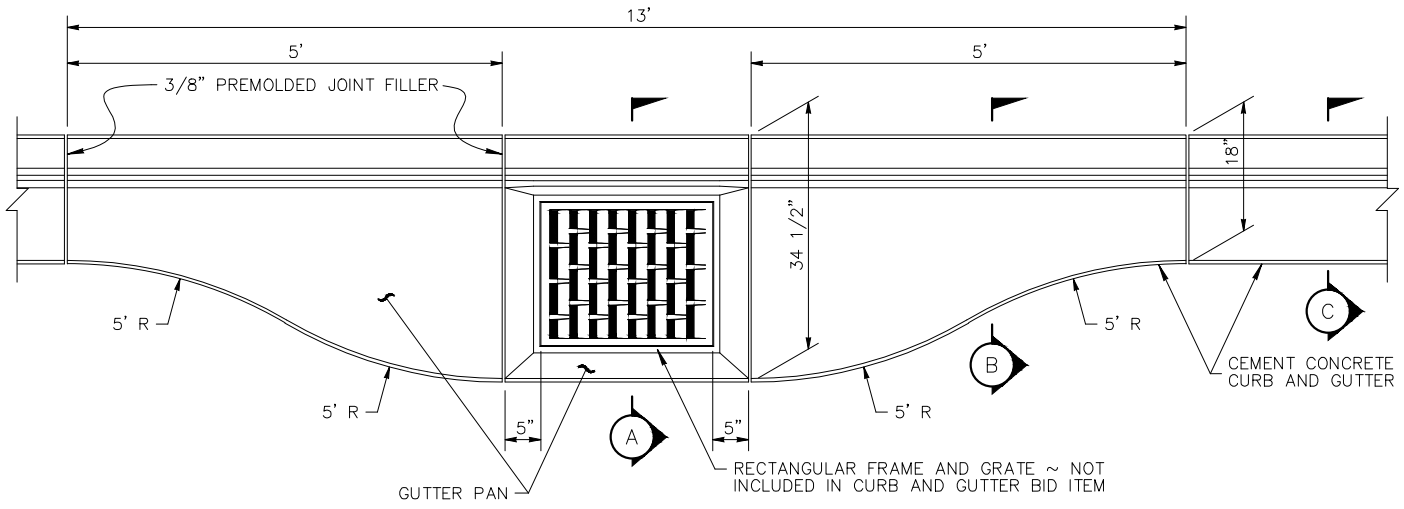
1. EXPANSION JOINT MATERIAL TO BE 3/8" THICK PRE-MOLDED JOINT FILLER TO FULL THICKNESS OF CONCRETE.
2. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE POURING CONCRETE.
3. EXPANSION JOINTS SHALL BE INSTALLED IN CURB AND GUTTER AND IN SIDEWALK AT PC AND PT OF ALL CURB RETURNS. EXPANSION JOINTS SHALL BE PLACED IN SIDEWALK AT SAME LOCATIONS AS THOSE IN CURB AND GUTTER WHEN SIDEWALK IS ADJACENT TO CURB AND GUTTER. UNLESS OTHERWISE DIRECTED BY ENGINEER.
4. ALL CONCRETE EDGES AND JOINTS SHALL HAVE A 4" SHINED FINISH APPLIED TO THEM FOLLOWING BROOM FINISH.

CITY OF GIG HARBOR
ENGINEERING DIVISION

SIDEWALK SPACING

DETAIL NO. 2-19

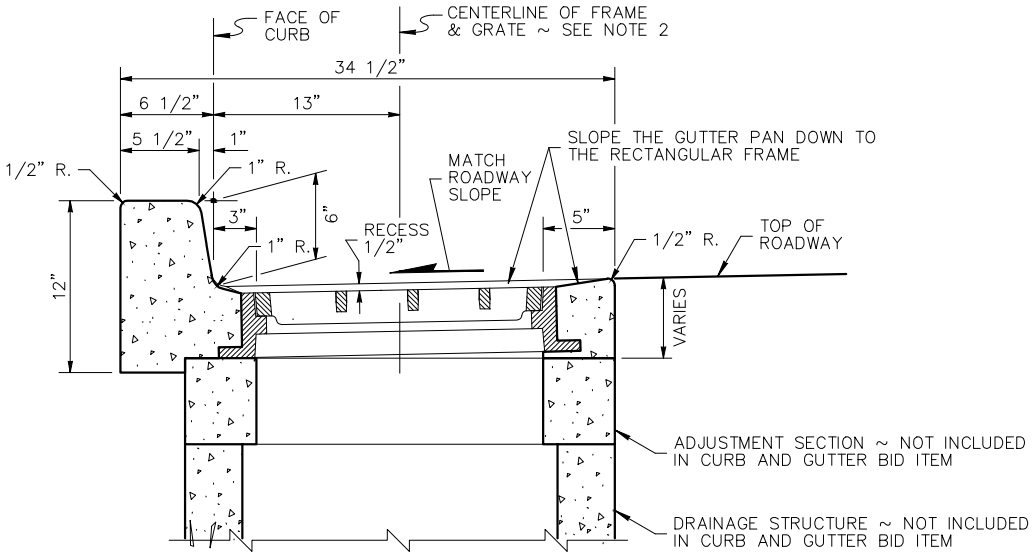
APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



PLAN VIEW

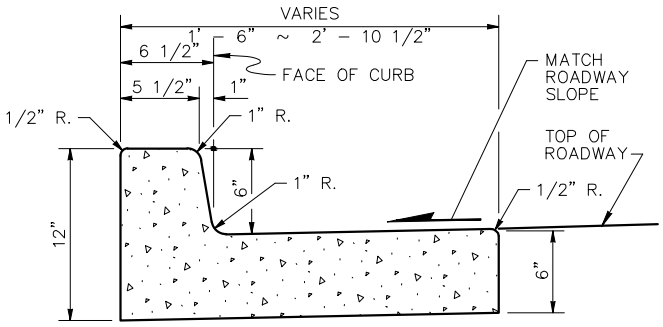
CATCH BASIN GUTTER PAN

NOT TO SCALE



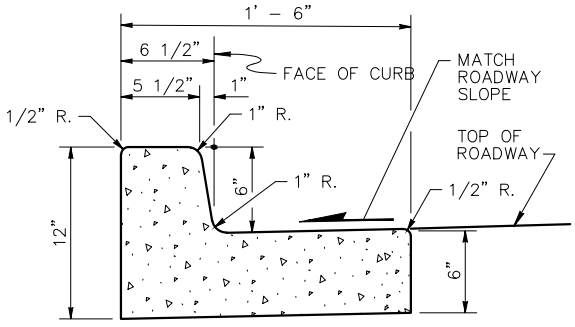
SECTION (A)

NOT TO SCALE



SECTION (B)

NOT TO SCALE



SECTION (C)

NOT TO SCALE

NOTES

1. THE INTENT OF THIS DESIGN IS TO FACILITATE THE COMPACTION OF HOT MIX ASPHALT PAVEMENT ADJACENT TO A DRAINAGE STRUCTURE.
2. THE CENTERLINE OF THE DRAINAGE STRUCTURE MAY DIFFER FROM THE CENTERLINE OF THE FRAME AND GRATE.

CITY OF GIG HARBOR
ENGINEERING DIVISION

CEMENT CONCRETE CURB & GUTTER PAN

DETAIL NO. 2-20

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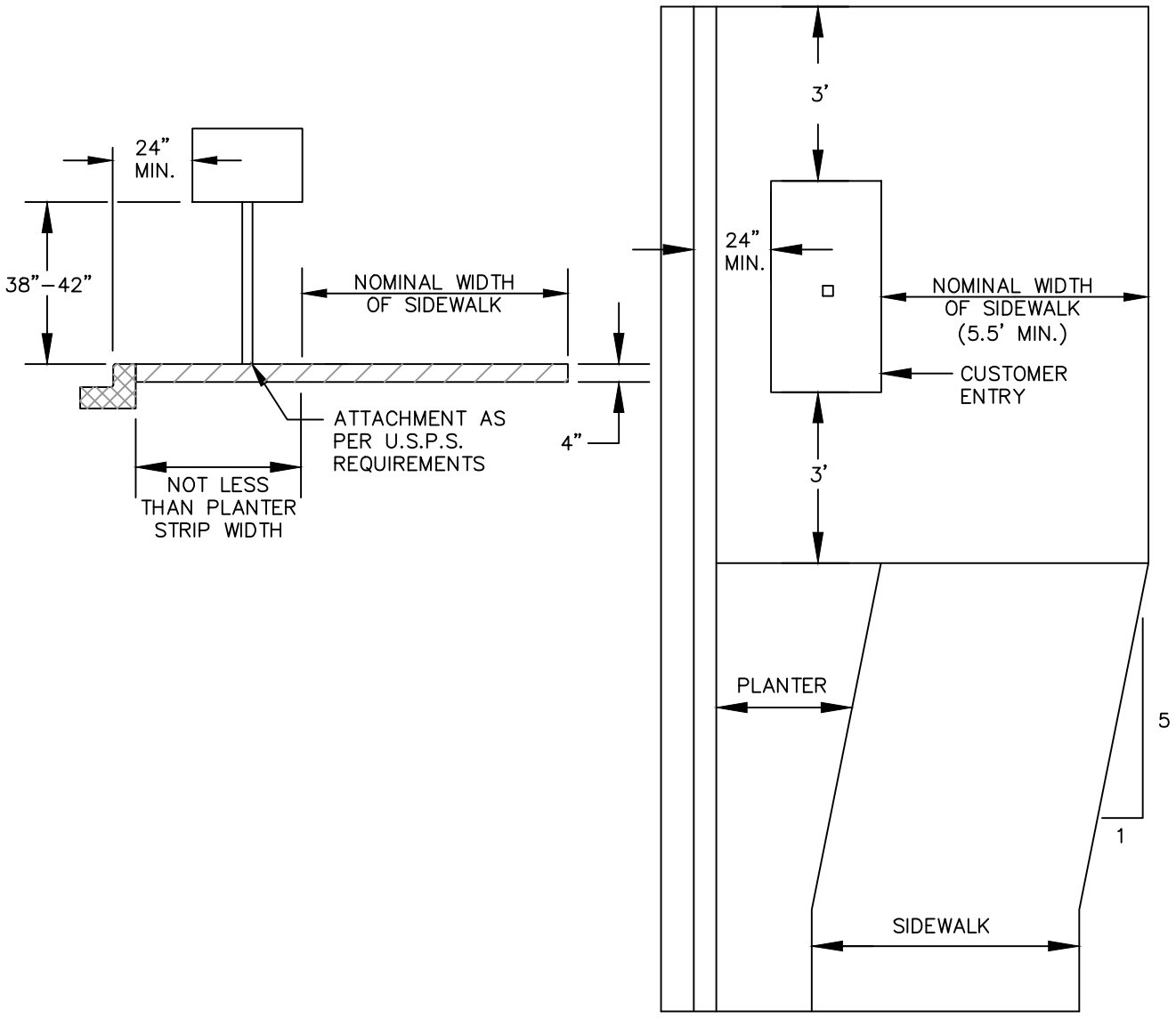

NOTES:

1. SEE DEVELOPMENT GUIDELINE 2H.070 FOR ADDITIONAL REQUIREMENTS.
2. IN THE EVENT THAT A ROOFED STRUCTURE IS CONSTRUCTED OVER RURAL STYLE BOXES, THE NOMINAL WIDTH OF THE SIDEWALK SHALL BE FROM THE BACK OF THE SIDEWALK TO THE OUTSIDE EDGE OF THE ROOF.
3. CLUSTER STYLE MAILBOX PROHIBITED ON COLLECTOR AND ARTERIAL STREETS.

CITY OF GIG HARBOR
ENGINEERING DIVISION

MAIL BOX
CLUSTER STYLE

DETAIL NO.
2-21

APPROVED FOR PUBLICATION
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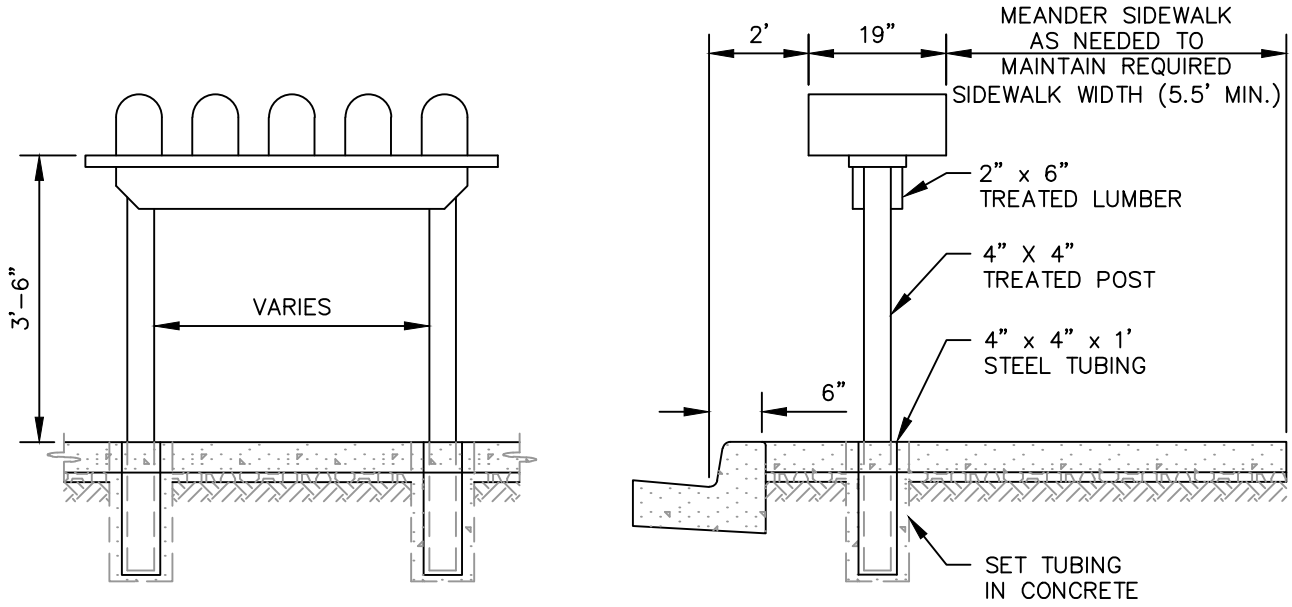
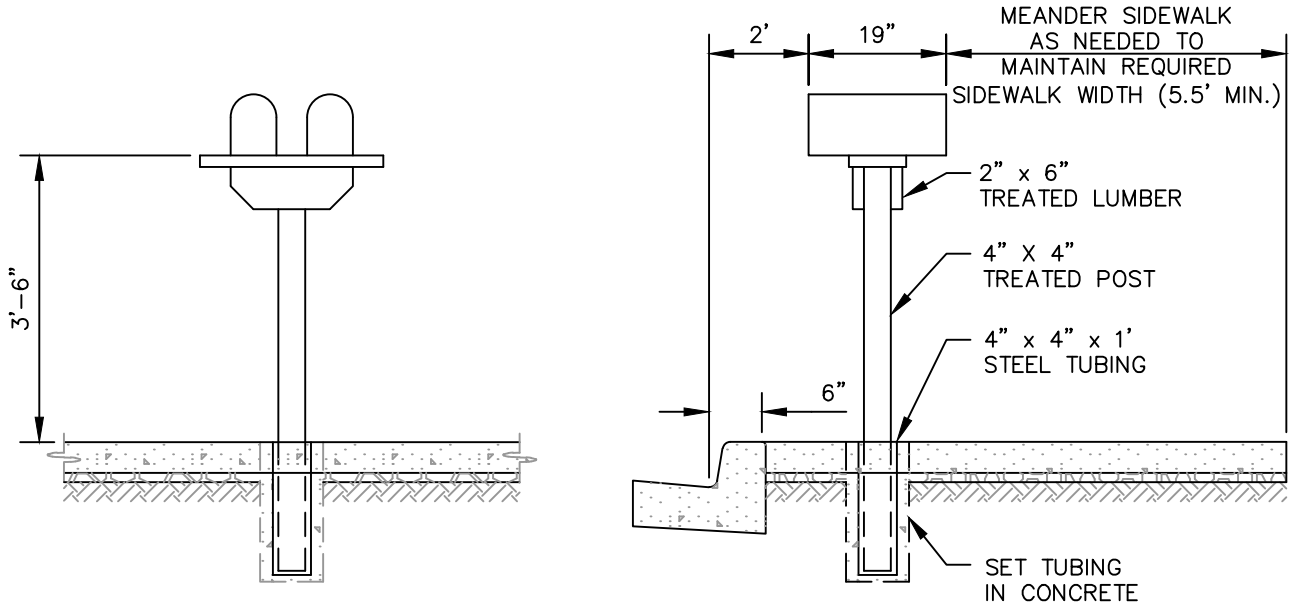


DOUBLE STAND

NOT TO SCALE



SINGLE STAND

NOT TO SCALE

CITY OF GIG HARBOR
ENGINEERING DIVISION

MAILBOX STAND

DETAIL NO.
2-22

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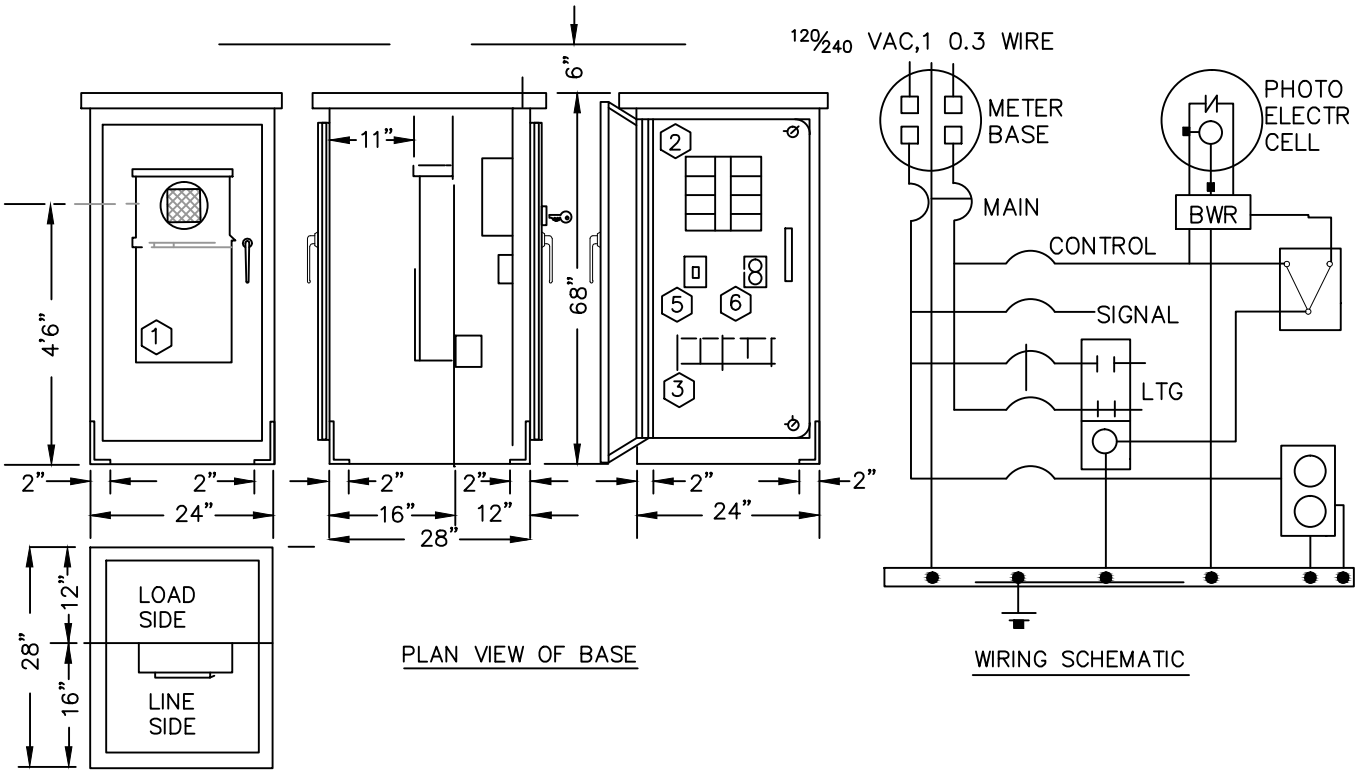
CITY ENGINEER _____ DATE MAY 16, 2016



SERVICE CABINET FOR STREET LIGHTING CONTROL AND TRAFFIC SIGNAL

NOT TO SCALE

COMPONENT SCHEDULE

1. METER BASE: 100 AMP, 4 JAW, AW #114TB, SAFETY SOCKET (CONTRACTOR TO VERIFY WITH SERVING UTILITY).
2. PANELBOARD: 120/240 VAC, 100 AMP. 1 PHASE, 3 WIRE, COPPER BUS, 12 POLE WESTINGHOUSE BAB BOLT–ON BREAKERS:
   - 1 – 100/2 MAIN
   - – 20/2 ILLUMINATION BRANCH
   - – 50/1 SIGNAL BRANCH
   - 1 – 20/1 GROUND FAULT RECEPTACLE BRANCH
   - 1 – 15/1 CONTROL CKT BRANCH
3. CONTACTOR: LIGHTING RATED, 30 AMP, 120 VAC COIL – REQUIRED 4 POLE
4. PHOTO ELECTRIC CELL: 1800 VA, 120 VAC, ALR #SST–IES (PER WSDOT SPEC) TO BE PLACED AT TOP OF NEAREST STREET LIGHT POLE
5. PHOTO–CELL BYPASS SWITCH, SPST, 15 AMP, 277 VAC
6. GROUND FAULT RECEPTACLE, 120 VAC, DUPLEX, 20 A

CABINET: NEMA 3R, PADMOUNT, 1/8" TYPE 50502–H32 ALUMINUM CONSTRUCTION
2 SCREENED AND GASKETED VENTS
DOORS: HEAVY DUTY CONCEALED HINGES (LIFT–OFF TYPE) STAINLESS STEEL VAULT HANDLES, PAD–LOCKABLE METER DOOR, BEST CX LOCK ON DISTRIBUTION DOOR, POLISHED WIRE GLASS WINDOW IN METER DOOR, CLOSED CELL NEO–PRENE GASKET, CARD HOLDER
FINISH INSIDE: WHITE
FINISH OUTSIDE: HUNTER GREEN

UL LISTED PER STANDARD #508
SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT

SERVICE CABINET SERIES 58309–GH R3
M.E. BELL S.O.#
SKYLINE ELECTRIC AND MFG COMPANY

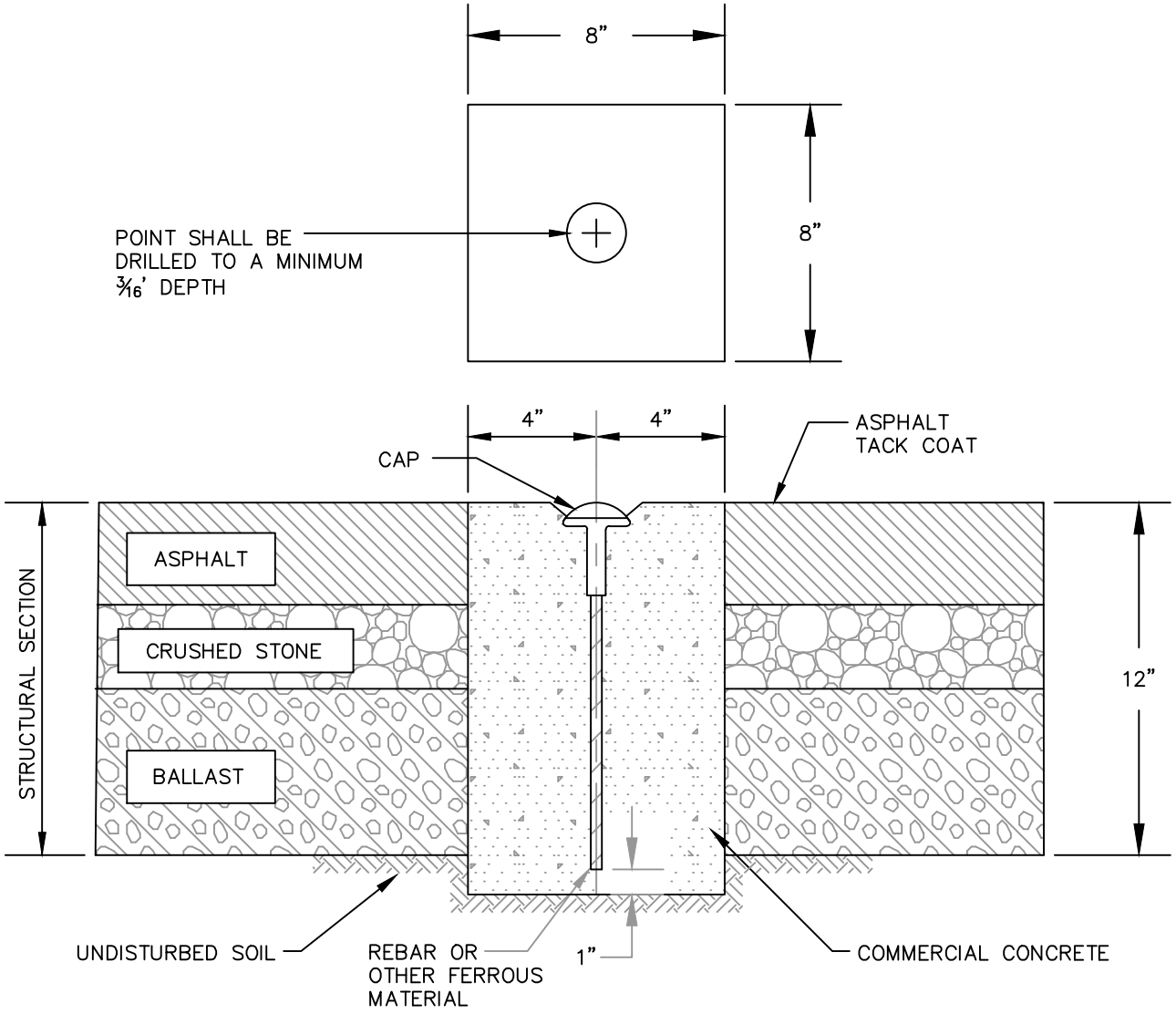
CONCRETE BASE PER MANUFACTURERS RECOMMENDATION OR WSDOT STANDARD PLAN

CITY OF GIG HARBOR
ENGINEERING DIVISION

METERED SERVICE DISCONNECT FOR STREET LIGHTING AND TRAFFIC SIGNALS

DETAIL NO. 2-23

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



NOTES:

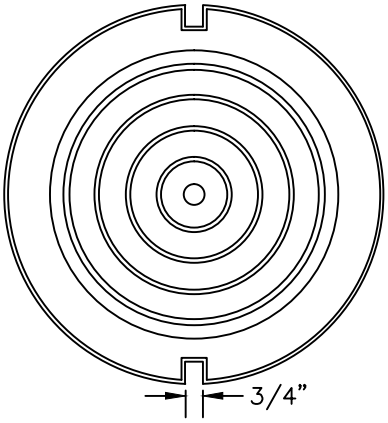
1. THIS MONUMENT TO BE USED PRIMARILY ON BITUMINOUS OR ASPHALT CONCRETE PAVEMENT FOR USE PRIMARILY IN SUBDIVISIONS AND MINOR ARTERIALS.
2. CONCRETE BASE DIMENSIONS SHOWN ARE MINIMUM. CONCRETE BASE NEED NOT BE FORMED.
3. CAP SHALL BE "BERNTSEN RB SERIES" OR BRASS PLUG MARKER.
4. CONCRETE TO BE PLACED ON A FIRM AND UNYIELDING FOUNDATION.
5. MONUMENT POSITION SHALL BE SET BY A PROFESSIONAL LAND SURVEYOR LICENSED BY THE STATE OF WASHINGTON WHOSE CERTIFICATE NUMBER SHALL BE STAMPED ON THE CAP.
6. SUFFICIENT FERROUS METAL SHALL BE PLACED IN CONCRETE TO ALLOW DETECTION BY A METAL DETECTOR.

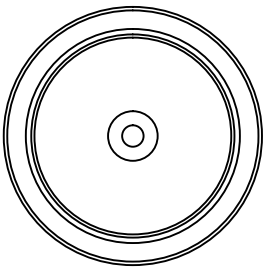
CITY OF GIG HARBOR
ENGINEERING DIVISION

CAST IN PLACE MONUMENT

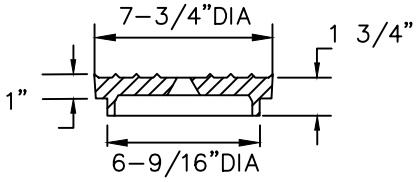
DETAIL NO. 2-24

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016

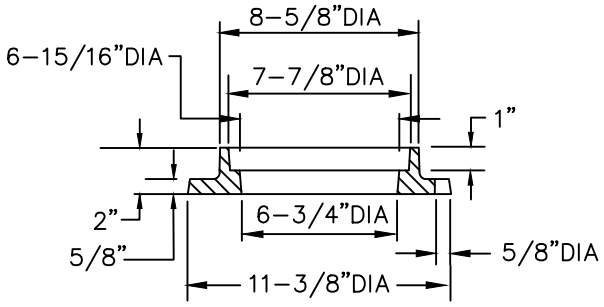




BOTTOM VIEW



COVER SECTION



FRAME SECTION

NOTES:

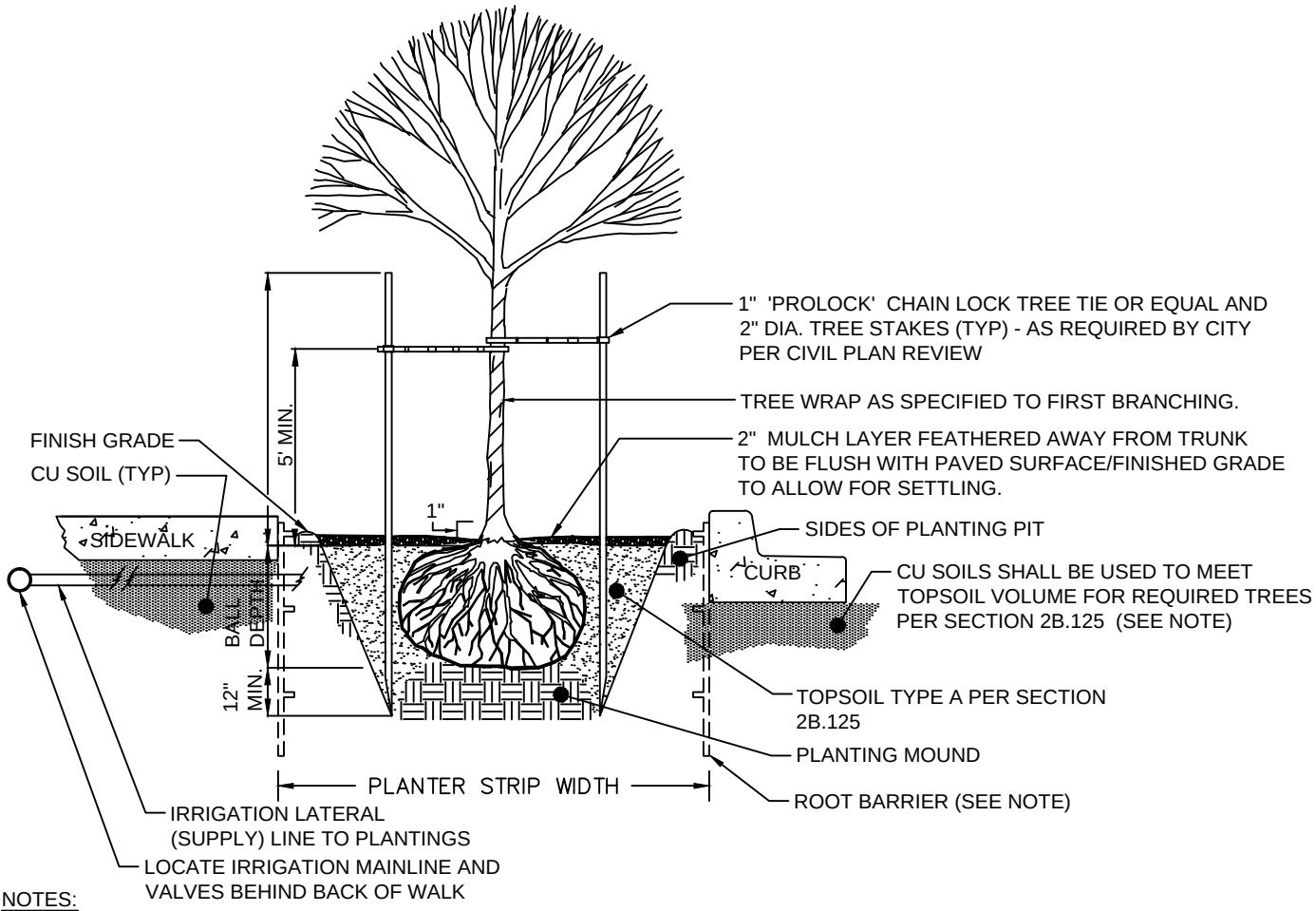
1. ESTIMATED WEIGHT:
   COVER = 17 LBS (8 KG)
   FRAME = 16 LBS (7 KG)
   UNIT = 33 LBS (15 KG)
2. MATERIAL SPECIFICATIONS:
   COVER – GRAY IRON, ASTM A48 CL35B
   FRAME – GRAY IRON, ASTM A48 CL35B
3. LOAD RATING: HEAVY DUTY
4. OPEN AREA: N/A

CITY OF GIG HARBOR
ENGINEERING DIVISION

MONUMENT CASE AND COVER WITH RISER

DETAIL NO. 2-25

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



NOTES:

1. TREES MUST BE IN GOOD HEALTH, NOT SHOW ANY FORM OF DISEASE, AND CONFORM TO CURRENT ANSI Z60 AMERICAN STANDARDS FOR NURSERY STOCK, OR TREE WILL BE REJECTED ON SITE.

2. TOPSOIL VOLUME PER APPENDIX A OF CHAPTER 2 SHALL BE DIMENSIONED AS FOLLOWS:
   DEPTH (MIN.) = 4 FT.
   WIDTH (MIN.) = PLANTER STRIP WIDTH (MEASURED FROM BACK OF CURB TO FACE OF SIDEWALK)
   LENGTH (MAX.) = 2 x WIDTH
   TOPSOIL VOLUME SHALL INCLUDE TOTAL VOLUME OF TOPSOIL TYPE A AND CU SOILS.

3. ROOT BARRIER SHALL BE DEEP ROOT 24-2 BY DEEP ROOT, TREE ROOT GUIDE RS-40 BY ROOT SOLUTIONS, ROOT BARRIER PANEL EP-1250 BY NDS, OR APPROVED EQUAL. ROOT BARRIER SHALL BE 15 FT. LONG CENTER ON THE TREE, 2' DEEP, AND ON BOTH SIDES OF THE TREE (TYP).

4. TREES SHALL BE LOCATED OUTSIDE ANY INTERSECTION SIGHT DISTANCE TRIANGLE. SEE SECTION 2B.150.

PLANTING DIRECTIONS:

1. THOROUGHLY SCARIFY SIDES AND BOTTOM OF PLANTING PIT. REMOVE ANY DEBRIS AND STONES LARGER THAN 1" IN ANY DIRECTION AND AMEND NATIVE SOIL AT BOTTOM WITH 10% COMPOST TO CREATE PLANTING MOUND. LIGHTLY COMPACT SOIL AND WATER BACKFILL TO PREVENT SETTLING.

2. AFTER THE PROPER DEPTH OF THE PLANT MATERIAL HAS BEEN ESTABLISHED, PLACE THE ROOT BALL IN THE CENTER OF THE HOLE WITH ROOT BALL 1 INCH HIGHER THAN DEPTH GROWN IN NURSERY.

3. RELEASE AND COMPLETELY REMOVE TREE FROM CONTAINER (BURLAP, WIRE, GROW BAG ETC.) AND DISCARD OFF-SITE.

4. SPREAD ROOTS TO A NATURAL SPREAD AND DISTRIBUTION. BACKFILL, WORKING THE SOIL AROUND THE ROOTS WITH TOPSOIL TYPE A.

5. PLACE FERTILIZER TABLETS AS SPECIFIED.

6. TAMP TO COMPACT THE BACKFILL AND PROVIDE A SLIGHT DEPRESSION AND WATERING SAUCER, TAKING CARE TO NOT INJURE THE ROOT SYSTEM WHILE BACKFILLING.

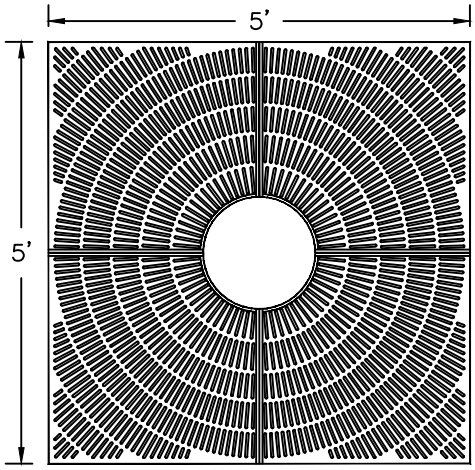
7. STREET TREES SHALL NOT BE LOCATED IN THE SIGHT DISTANCE TRIANGLE EXCEPT AS PROVIDED IN SECTION 2B.150.

CITY OF GIG HARBOR
ENGINEERING DIVISION

TREE PLANTER AND BARRIER IN PLANTER STRIP

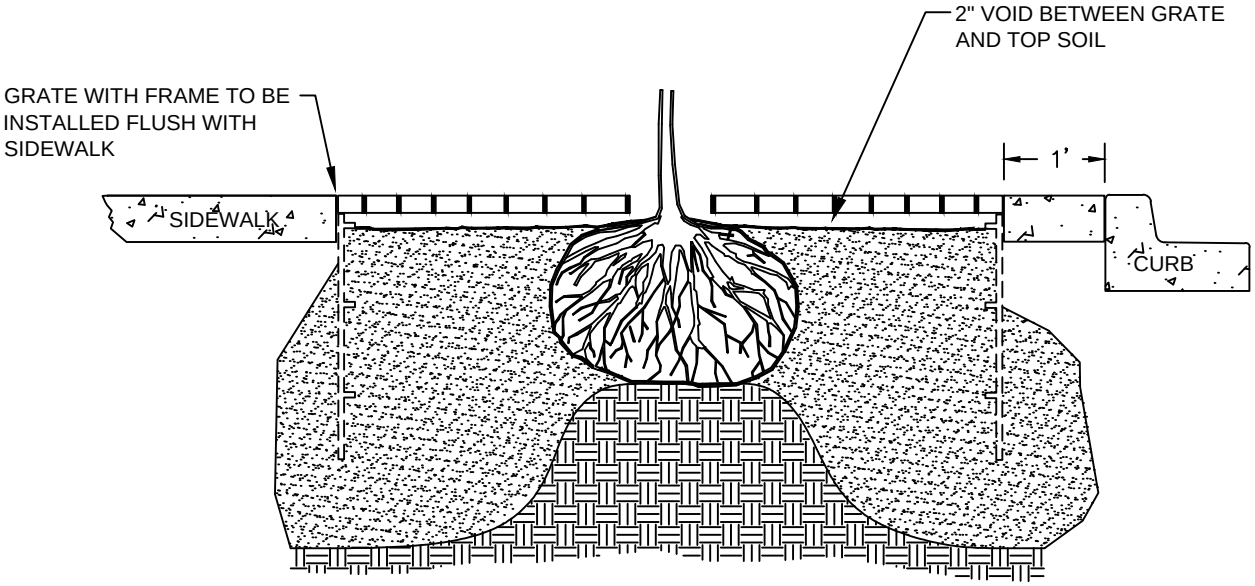
DETAIL NO. 2-26

APPROVED FOR PUBLICATION
CITY ENGINEER Stephen Misiurak DATE MAY 16, 2016



GRATE NOTES:

1. OPENING FOR TREE SHALL BE BETWEEN 16" AND 18" DIAM.
2. GRATES SHALL BE CAST IN TWO PIECES.
3. NO OPENING IN GRATE DESIGN SHALL BE GREATER THAN ½ ".
4. GRATE SHALL BE CAST IRON PER ASTM A48 CLASS 35B OR BETTER.
5. GRATE SHALL BE 5' SQUARE 'FAN' BY URBAN ACCESSORIES OR APPROVED EQUAL. GRATES SHALL BE INSTALLED WITH BRACKETS AND/OR FRAMES PER THE MANUFACTURER'S RECOMMENDATION. ALL GRATES SHALL SATISFY ADA STANDARDS.



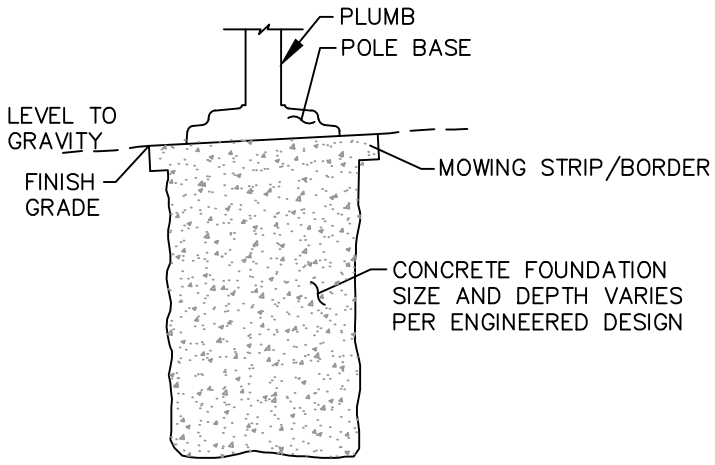
NOTE: REFER TO DETAIL 2-26 FOR TREE PLANTING AND SOIL REQUIREMENTS.

CITY OF GIG HARBOR
ENGINEERING DIVISION

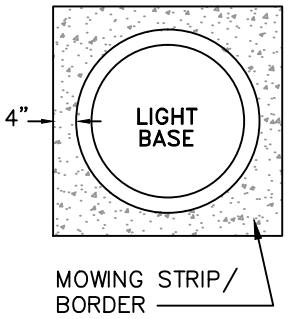
TREE WELL AND GRATE

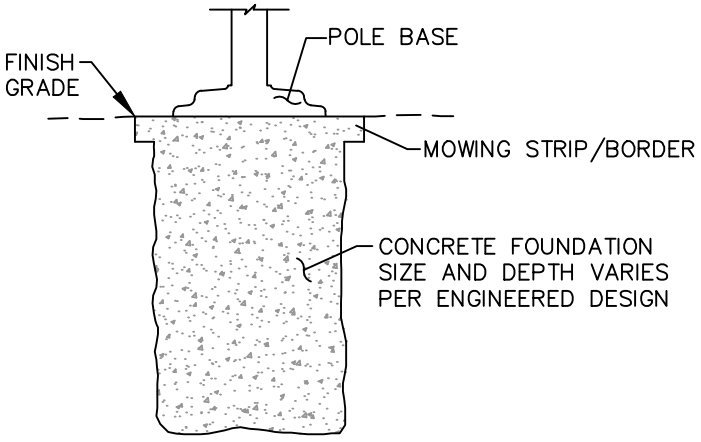
DETAIL NO. 2-27

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



SLOPED GRADE APPLICATION





LEVEL GRADE APPLICATION

NOTE:

1. SIZE OF MOWING STRIP/BORDER, ARE DETERMINED BY SIZE OF STREET LIGHT BASE.

CITY OF GIG HARBOR
ENGINEERING DIVISION

DECORATIVE LUMINAIRE BASE

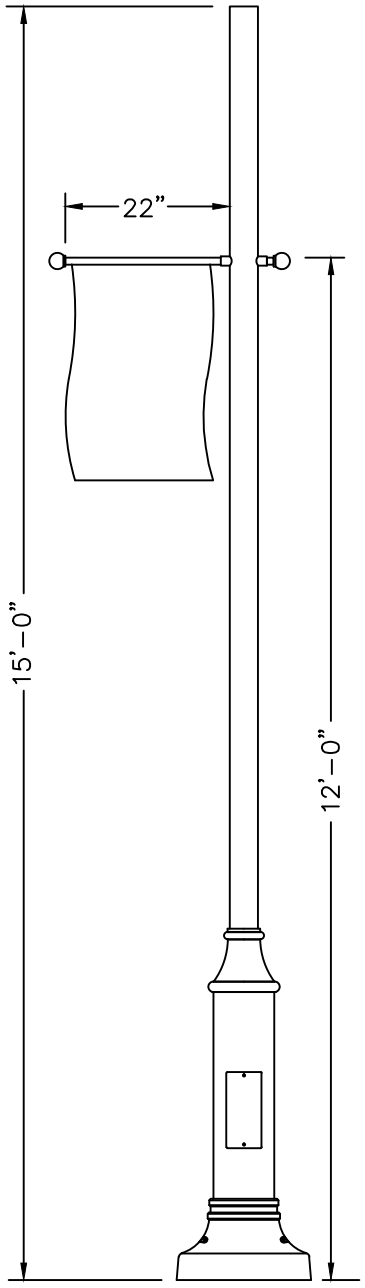
DETAIL NO. 2-28

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016

* LUMEC DESCRIPTION OF COMPONENTS:

* OR APPROVED EQUAL

BRACKET: MM–1A–R4–GN6TX
ARM: MADE OF CAST 365 ALUMINUM, WELDED.
ADAPTOR: CLAMPS MADE OF CAST ALUMINUM, WELDED TO THE ARM AND MECHANICALLY FASTENED TO THE POLE BY FOUR BOLTS AND NUTS.
POLE: AM8U–15–BA522–GN6TX
POLE SHAFT: MADE FROM A ONE–PIECE, SEAMLESS 4" ROUND (102mm) TUBE OF EX–TRUDED ALUMINUM WELDED OVER AND IN A 8⅝" ROUND (219mm) EXTRUDED ALUMINUM POLE BASE. THE ASSEMBLY IS WELDED TO BOTH THE TOP AND BOTTOM OF A CAST ALUMINUM ANCHOR PLATE.
JOINT COVER: MADE FROM TWO PIECES OF CAST ALUMINUM MECHANICALLY FASTENED TO THE JUNCTION WITH STAINLESS STEEL HARDWARE.
POLE BASE: SHALL BE MADE FROM A 219mm HIGH TENSILE STEEL RUBBING BASE HAVING A 0.180" WALL THICKNESS, WELDED TO BOTH THE BOTTOM AND TOP OF THE ANCHOR PLATE.
MAINTENANCE OPENING: THE POLE SHALL HAVE A 4½"x10" (114x254mm) MAINTENANCE OPENING CENTERED 25 1/4" FROM THE BOTTOM OF THE ANCHOR PLATE, COMPLETE WITH A WEATHERPROOF CAST 365 ALUMINUM COVER AND A FACTOR ASSEMBLED COPPER GROUND LUG.
BASE COVER: DECORATIVE BASE COVER MADE FROM CAST ALUMINUM PIECES MECHANIC–ALLY ASSEMBLED TOGETHER WITH STAINLESS STEEL HARDWARE AROUND THE BASE OF THE POLE.
POLE OPTIONS: BANNER ARM MADE OF ALUMINUM TUBING 1⅛" OUTSIDE DIAMETER, MECHANICALLY ASSEMBLED TO THE POLE. BANNER ARM PLACEMENT TO BE AT 12' 0" FROM BASE OF POLE.
MISCELLANEOUS:
WIRING: TYPE TIEW 14 GA. 12" MIN. EXCEEDING TOP OF POLE. ALL ELECTRICAL CONNECT–IONS SHALL BE MADE WITH QUICK–DISCONNECT CONNECTORS.
HARDWARE: ALL EXPOSED SCREWS WILL BE STAINLESS STEEL. NEOPRENE AND/OR SILICONE GASKETING IS APPLIED.
COLOR: FOREST GREEN. FINISH: TEXTURED. APPLICATION OF A POLYESTER POWDER COATED PAINT. (5mils/127 microns). THE CHEMICAL COMPOSITION PROVIDED A HIGHLY DURABLE UV AND SALT SPRAY RESISTANT FINISH IN ACCORDANCE TO THE ASTM–B117–73 STANDARD AND HUMIDITY PROOF IN ACCORDANCE TO THE ASTM–D2247–68 STANDARD.



CITY OF GIG HARBOR
ENGINEERING DIVISION

STANDARD
15 FOOT LIGHT POLE

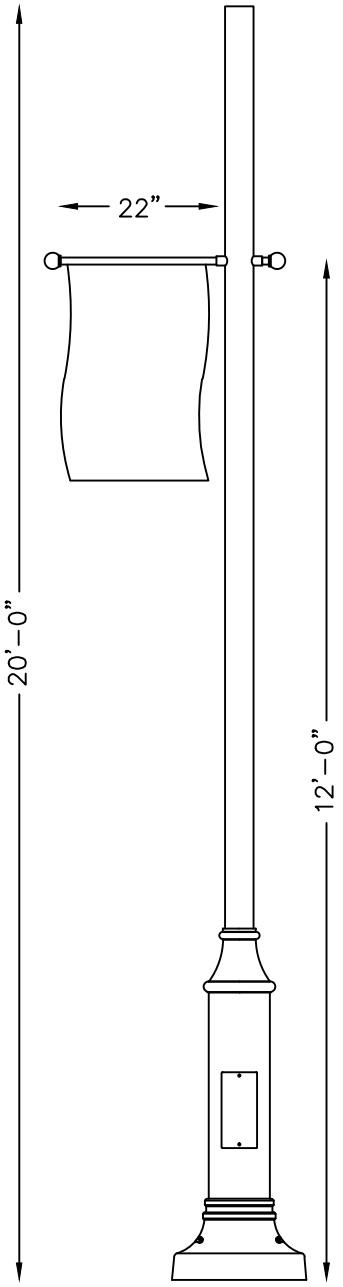
DETAIL NO.
2-29

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016

* LUMEC DESCRIPTION OF COMPONENTS:

* OR APPROVED EQUAL

BRACKET: TN12–1A–GN6TX–LMS19650A
ARM: MADE OF CAST 365 ALUMINUM, WELDED.
ADAPTOR: CLAMPS MADE OF CAST ALUMINUM, WELDED TO THE ARM AND MECHANICALLY FASTENED TO THE POLE BY FOUR BOLTS AND NUTS.
POLE: SSM8V–20 MADE FROM A ONE–PIECE, SEAMLESS 5 9/15" ROUND (141mm) HIGH TENSILE CARBON STEEL SHAFT SEALED BY A ROLLED AND FLATTENED VERTICAL WELD SEAM AND WELDED OVER AND IN A 8⅝" ROUND (219mm) HIGH–TENSILE CARBON–STEEL POLE BASE. THE ASSEMBLY IS WELDED TO BOTH THE TOP AND THE BOTTOM OF A STEEL ANCHOR PLATE. A 4½x10" (114x 254mm) MAINTENANCE OPENING IS COMPLETE WITH COVER AND COPPER GROUND LUG.
JOINT COVER: MADE FROM TWO PIECES OF CAST ALUMINUM MECHANICALLY FASTENED TO THE JUNCTION WITH STAINLESS STEEL HARDWARE.
BASE COVER: DECORATIVE BASE COVER MADE FROM CAST–ALUMINUM PIECES MECHANICALLY ASSEMBLED TOGETHER WITH STAINLESS STEEL HARDWARE AROUND THE BASE OF THE POLE.
MAINTENANCE OPENING: THE POLE SHALL HAVE A 4½"x10" (114x254mm) MAINTENANCE OPENING CENTERED 25 1/4" FROM THE BOTTOM OF THE ANCHOR PLATE, COMPLETE WITH A WEATHERPROOF CAST 365 ALUMINUM COVER AND A FACTOR ASSEMBLED COPPER GROUND LUG.
BASE COVER: DECORATIVE BASE COVER MADE FROM CAST ALUMINUM PIECES MECHANIC–ALLY ASSEMBLED TOGETHER WITH STAINLESS STEEL HARDWARE AROUND THE BASE OF THE POLE.
POLE OPTIONS: BANNER ARM MADE OF ALUMINUM TUBING 1 1/16" OUTSIDE DIAMETER, MECHANICALLY ASSEMBLED TO THE POLE. BANNER ARM PLACEMENT TO BE AT 12' 0" FROM BASE OF POLE.
MISCELLANEOUS:
WIRING: TYPE TIEW 14 GA. 12" MIN. EXCEEDING TOP OF POLE. ALL ELECTRICAL CONNECT–IONS SHALL BE MADE WITH QUICK–DISCONNECT CONNECTORS.
HARDWARE: ALL EXPOSED SCREWS WILL BE STAINLESS STEEL. NEOPRENE AND/OR SILICONE GASKETING IS APPLIED.
COLOR: FOREST GREEN. FINISH: TEXTURED. APPLICATION OF A POLYESTER POWDER COATED PAINT. (5mils/127 microns). THE CHEMICAL COMPOSITION PROVIDED A HIGHLY DURABLE UV AND SALT SPRAY RESISTANT FINISH IN ACCORDANCE TO THE ASTM–B117–73 STANDARD AND HUMIDITY PROOF IN ACCORDANCE TO THE ASTM–D2247–68 STANDARD.



CITY OF GIG HARBOR
ENGINEERING DIVISION

STANDARD
20 FOOT LIGHT POLE

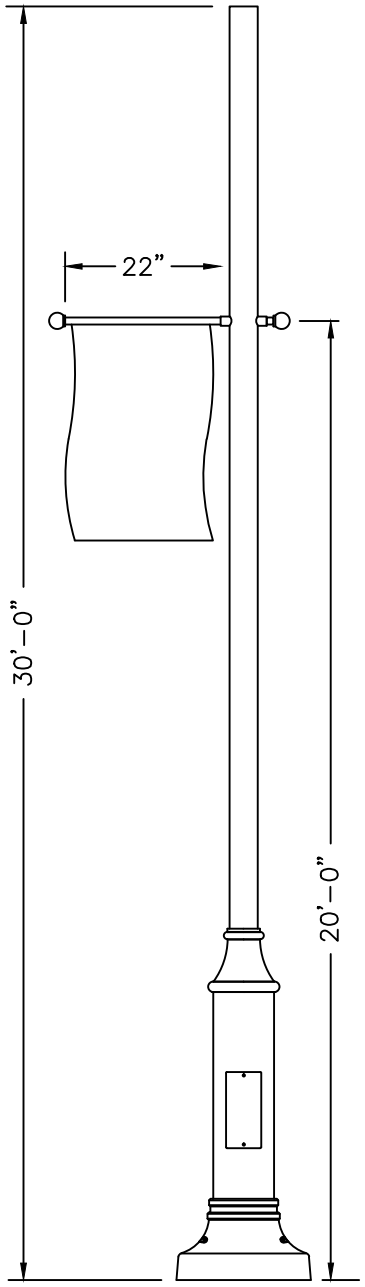
DETAIL NO.
2-30

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016

LUMEC DESCRIPTION OF COMPONENTS:

* OR APPROVED EQUAL

BRACKET: [TN-017]-1A-GN6TX
ARM: MADE OF CAST 365 ALUMINUM, WELDED.
ADAPTOR: CLAMPS MADE OF CAST ALUMINUM, WELDED TO THE ARM AND MECHANICALLY FASTENED TO THE POLE BY FOUR BOLTS AND NUTS.
POLE: SSM8V-30-BAS22-GN6TX.
CARBON STEEL TUBING, HAVING A 0.250" WALL THICKNESS, WELDED TO THE POLE BASE.
JOINT COVER: TWO-PIECE, ROUND JOINT COVER MADE FROM CAST 365 ALUMINUM, MECHANICALLY FASTENED WITH STAINLESS STEEL SCREWS.
POLE BASE: SHALL BE MADE FROM A 219mm HIGH TENSILE STEEL TUBING BASE HAVING A 0.180" WALL THICKNESS, WELDED TO BOTH THE BOTTOM AND TOP OF THE ANCHOR PLATE.
MAINTENANCE OPENING: THE POLE SHALL HAVE A 4½"x10" (114x254mm) MAINTENANCE OPENING CENTERED 25 1/4" FROM THE BOTTOM OF THE ANCHOR PLATE, COMPLETE WITH A WEATHERPROOF CAST 365 ALUMINUM COVER AND A FACTOR ASSEMBLED COPPER GROUND LUG.
BASE COVER: TWO-PIECE, ROUND BASE COVER MADE FROM SPUN 1100-0 ALUMINUM, MECHANICALLY FASTENED WITH STAINLESS STEEL SCREWS.
BREAK-AWAY COVER: ONE PIECE ROUND BASE MADE FROM SPUN 1100-0 ALUMINUM, MECHANICALLY FASTENED. ONLY ALLOWED ON ROADWAYS WITH POSTED 35 MILE PER HOUR SPEED LIMIT OR GREATER.
POLE OPTIONS: BANNER ARM MADE OF ALUMINUM TUBING 1 1/16" OUTSIDE DIAMETER, MECHANICALLY ASSEMBLED TO THE POLE. BANNER ARM PLACEMENT TO BE AT 20' 0" FROM BASE OF POLE.
MISCELLANEOUS:
WIRING: TYPE TIEW 14 GA. 12" MIN. EXCEEDING TOP OF POLE. ALL ELECTRICAL CONNECT-IONS SHALL BE MADE WITH QUICK-DISCONNECT CONNECTORS.
HARDWARE: ALL EXPOSED SCREWS WILL BE STAINLESS STEEL. NEOPRENE AND/OR SILICONE GASKETING IS APPLIED.
COLOR: FOREST GREEN. FINISH: TEXTURED. APPLICATION OF A POLYESTER POWDER COATED PAINT. (5mils/127 microns). THE CHEMICAL COMPOSITION PROVIDED A HIGHLY DURABLE UV AND SALT SPRAY RESISTANT FINISH IN ACCORDANCE TO THE ASTM-B117-73 STANDARD AND HUMIDITY PROOF IN ACCORDANCE TO THE ASTM-D2247-68 STANDARD.

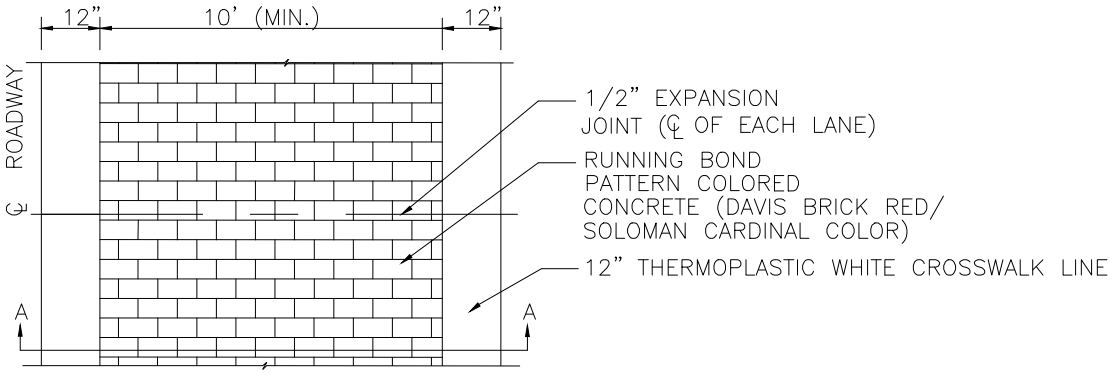


CITY OF GIG HARBOR
ENGINEERING DIVISION

STANDARD
30 FOOT LIGHT POLE

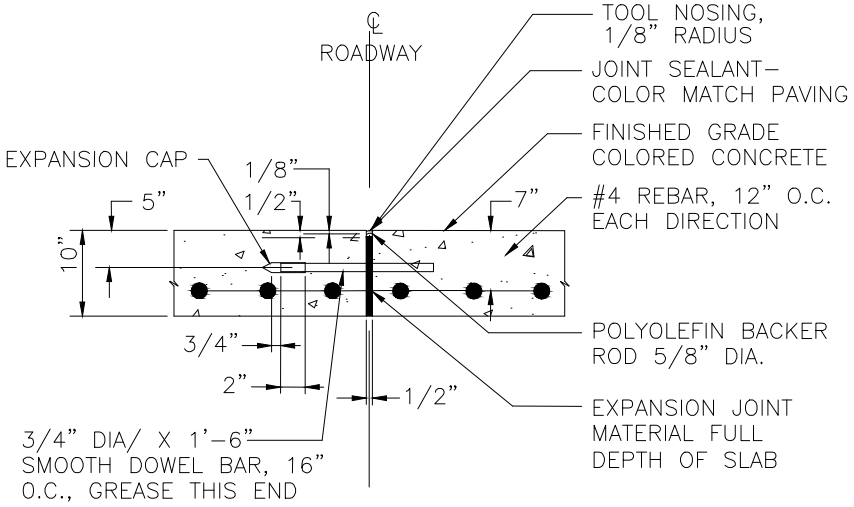
DETAIL NO.
2-31

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



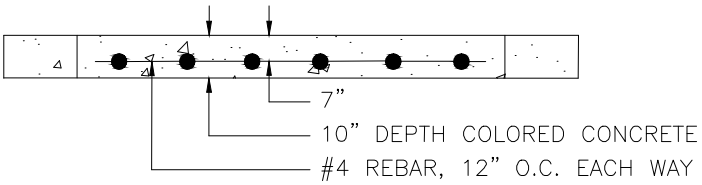
PLAN VIEW

NOT TO SCALE



ELEVATION

NOT TO SCALE



SECTION A–A

NOT TO SCALE

NOTES:

NO HORIZONTAL GAPS GREATER THAN 1/2".

NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

CONCRETE: 3 DAY CURE/4000 PSI

PATTERN: PERMACOLOR
PERMA BUILDING PRODUCTS
RUNNING BOND PT–515
SLATED 12" X 12" PT–330

COLOR: DAVIS BRICK RED OR SOLOMAN CARDINAL CONCRETE FROM PLANT

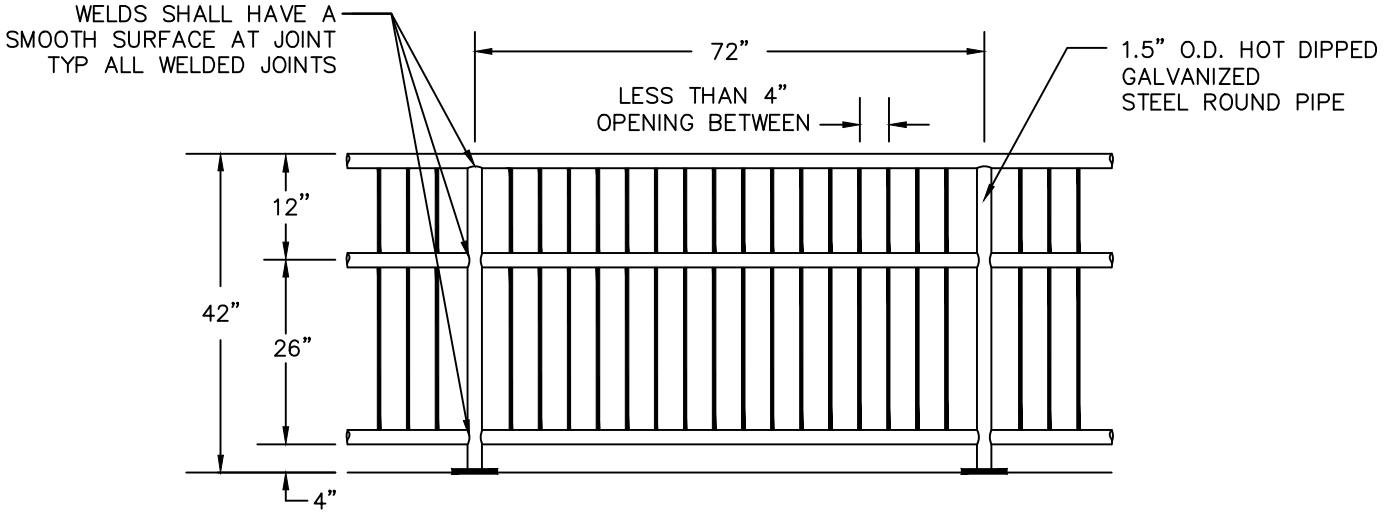
COMPRESSIVE STRENGTH CYLINDER TEST RESULTS WILL BE REQUIRED BEFORE OPENING TO VEHICULAR TRAFFIC.

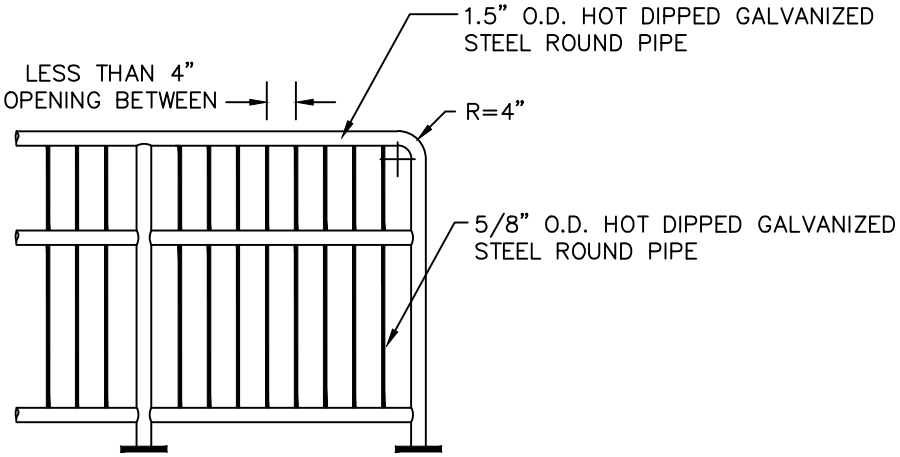
CITY OF GIG HARBOR
ENGINEERING DIVISION

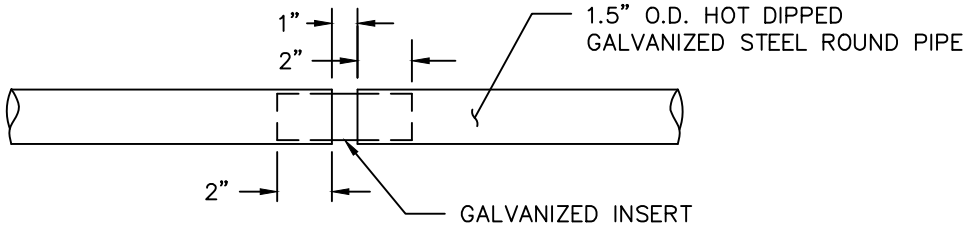
PATTERNED CEMENT CONCRETE CROSSWALK

DETAIL NO. 2-32

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016







PEDESTRIAN GUARD COUPLED SECTION CONNECTION DETAIL

NOT TO SCALE

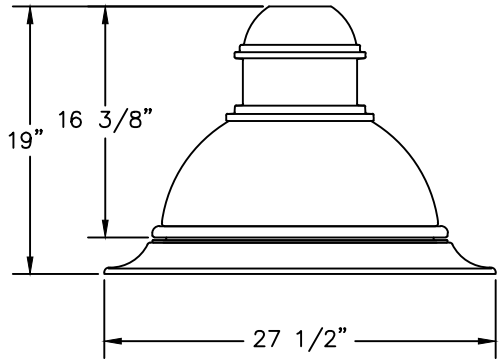
NOTES:

1. GALVANIZING 2 OUNCES PER SQUARE FOOT
2. NO FIELD WELDING OR COLD GALVANIZING PERMITTED.

CITY OF GIG HARBOR
ENGINEERING DIVISION

PEDESTRIAN GUARD	DETAIL NO. 2-33

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



* LUMINAIRE: DMS50-**55W48LED4K-R-LE3F-240-GN6TX

* OR APPROVED EQUAL
** OR CURRENT WATTAGE REPLACING 65W

DESCRIPTION OF COMPONENTS:

HOOD: A DIE CAST A360.1 ALUMINUM DOME COMPLETE WITH CAST-IN TECHNICAL RING WITH LATCH AND HINGE. THE MECHANISM SHALL OFFER TOOLFREE ACCESS TO THE INSIDE OF THE LUMINAIRE. AN EMBEDDED MEMORY-RETENTIVE GASKET SHALL ENSURE WATER-PROOFING.

SKIRT: A DIE CAST A360 ALUMINUM SKIRT COMPLETE WITH A CAST-IN TECHNICAL RING.

HOUSING: IN A ROUND SHAPE, THIS HOUSING IS MADE OF CAST 356 ALUMINUM, C/W A WATERTIGHT GROMMET, MECHANICALLY ASSEMBLED TO THE BRACKET WITH FOUR BOLTS 3/-16 UNC. THIS SUSPENSION SYSTEM PERMITS FOR A FULL ROTATION OF THE LUMINAIRE IN 90 DEGREE INCREMENTS.

LIGHT ENGINE: LIFELED COMPOSED OF 5 MAIN COMPONENTS. ELECTRICAL COMPONENTS ARE ROSH COMPLIANT.

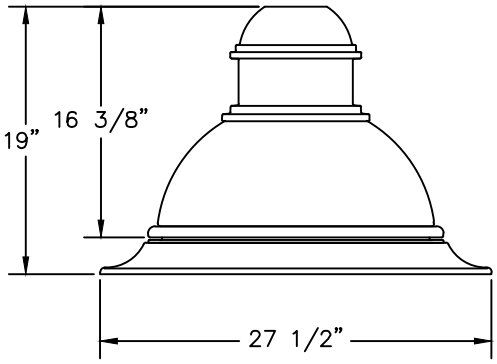
1. LENS: MADE OF SODA-LIME CLEAR TEMPERED GLASS, MECHANICALLY ASSEMBLED AND SEALED ONTO THE LOWER PART OF THE HEAT SINK.
2. LAMP: PHILIPS LUMILEDS REBEL ES. COMPOSED OF 49 HIGH-PERFORMANCE WHITE LEDS, 65W LAMP WATTAGE. COLOR TEMPERATURE OF 4000 KELVIN NOMINAL, 70 CRI. OPERATING LIFESPAN AFTER WHICH THE SYSTEM EMITS 70% OF ITS ORIGINAL LUMEN OUTPUT, ALL OF THOSE PARAMETERS ARE TESTED FOR 100% OF LIGHT ENGINES. USE OF A METAL CORE BOARD ENSURES GREATER HEAT TRANSFER AND LONGER LIFESPAN OF THE LIGHT ENGINE.
3. OPTICAL SYSTEM: (LE3F), I.E.S. TYPE III (ASYMMETRICAL). COMPOSED OF HIGH- PERFORMANCE COLLIMATORS, OPTIMIZED WITH VARYING BEAN ANGLES TO ACHIEVE DESIRED DISTRIBUTION. SYSTEM IS RATED IP66. PERFORMANCE SHALL BE TESTED PER LM63 AND LM 79 (IENSA) CERTIFYING ITS PHOTOMETRIC PERFORMANCE. STREET-SIDE INDICATED.

CITY OF GIG HARBOR
ENGINEERING DIVISION

LUMEC 5566 (MIN.) LUMEN LED LUMINAIRE

DETAIL NO. 2-34

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



* LUMINAIRE: DMS50-80W48LED4K-R-LE3F-240-MM-1A-R4-GN6TX

* OR APPROVED EQUAL
** OR CURRENT WATTAGE REPLACING 90W

DESCRIPTION OF COMPONENTS:

HOOD: A DIE CAST A360.1 ALUMINUM DOME COMPLETE WITH A CAST-IN TECHNICAL RING WITH LATCH AND HINGE. THE MECHANISM SHALL OFFER TOOLFREE ACCESS TO THE INSIDE OF THE LUMINAIRE. AN EMBEDDED MEMORY-RETENTIVE GASKET SHALL ENSURE WEATHERPROOFING.

SKIRT: A DIE CAST A 360 ALUMINUM SKIRT COMPLETE WITH A CAST-IN TECHNICAL RING.

HOUSING: IN A ROUND SHAPE, THIS HOUSING IS MADE OF CAST 356 ALUMINUM, C/W A WATERTIGHT GROMMET, MECHANICALLY ASSEMBLED TO THE BRACKET WITH FOUR BOLTS 3/8-16 UNC. THIS SUSPENSION SYSTEM PERMITS FOR A FULL ROTATION OF THE LUMINAIRE IN 90 DEGREE INCREMENTS.

LIGHT ENGINE: LIFELED COMPOSED OF 5 MAIN COMPONENTS. ELECTRICAL COMPONENTS ARE ROHS COMPLIANT.

LENS: MADE OF SODA-LIME CLEAR TEMPERED GLASS LENS, MECHANICALLY ASSEMBLED AND SEALED ONTO THE LOWER PART OF THE HEAT SINK.

LAMP: LAMP TYPE PHILIPS LUMILEDS REBEL ES. COMPOSED OF 49 HIGH-PERFORMANCE WHITE LEDS, 90W LAMP WATTAGE. COLOR TEMPERATURE OF 4000 KELVIN NOMINAL, 70 CRI. OPERATING LIFESPAN AFTER WHICH THE SYSTEM EMITS OVER 70% (L70) OF ITS ORIGINAL LUMEN OUTPUT ALL OF THOSE PARAMETERS ARE TESTED FOR 100% OF LIGHT ENGINES. USE OF A METAL CORE BOARD INSURES GREATER HEAT TRANSFER AND LONGER LIFESPAN OF THE LIGHT ENGINE.

OPTICAL SYSTEM: (LE3F), I.E.S. TYPE III (ASYMMETRICAL). COMPOSED OF HIGH-PERFORMANCE ACRYLIC COLLIMATORS, OPTIMIZED WITH VARYING BEAM ANGLES TO ACHIEVE DESIRED DISTRIBUTION. SYSTEM IS RATED IP66. PERFORMANCE SHALL BE TESTED PER LM63 AND LM79 (IESNA) CERTIFYING ITS PHOTOMETRIC PERFORMANCE. STREET-SIDE INDICATED.

HEAT SINK: MADE OF CAST ALUMINUM OPTIMIZING THE LEDS EFFICIENCY AND LIFE. PRODUCT DOES NOT USE ANY COOLING DEVICE WITH MOVING PARTS (ONLY PASSIVE COOLING DEVICE).

DRIVER: HIGH POWER FACTOR OF 90%. ELECTRONIC DRIVER, OPERATING RANGE 50-60 HZ. AUTO-ADJUSTING TO A VOLTAGE BETWEEN 120 AND 277 VOLT AC RATED FOR BOTH APPLICATION LINE TO LINE OR LINE TO NEUTRAL, CLASS II, THD OF 20% MAX. MAXIMUM AMBIENT OPERATING TEMPERATURE FROM -40°F (-40°C) TO 130°F (55°C). CERTIFIED IN COMPLIANCE TO CULUS REQUIREMENT. DRY AND DAMP LOCATION. ASSEMBLED ON A UNITIZED REMOVABLE TRAY WITH TYCO QUICK DISCONNECT PLUG RESISTING TO 221F (105C) DEGREES.

THE CURRENT SUPPLYING THE LEDS WILL BE REDUCED BY THE DRIVER IF THE INTERNAL TEMPERATURE EXCEEDS 185F (85C), AS A PROTECTION TO THE LEDS AND THE ELECTRICAL COMPONENTS. OUTPUT IS PROTECTED FROM SHORT CIRCUITS, VOLTAGE OVERLOAD AND CURRENT OVERLOAD. AUTOMATIC RECOVERY AFTER CORRECTION.

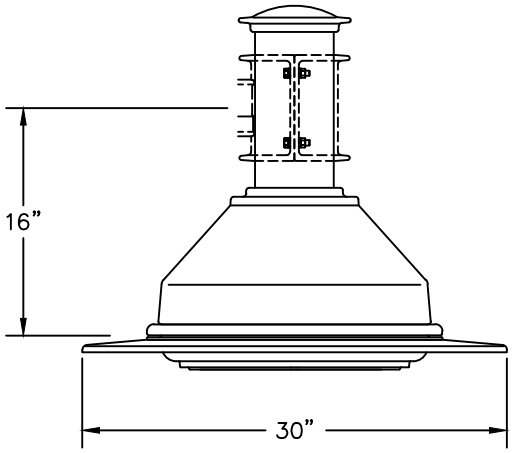
SURGE PROTECTOR: LED DRIVER 3 POLES 10KV SURGE PROTECTORS THAT PROTECT LINE-GROUND, LINE NEUTRAL, AND NEUTRAL-GROUND IN ACCORDANCE WITH IEEE/ANSI C62.41.2 GUIDELINES.

CITY OF GIG HARBOR
ENGINEERING DIVISION

LUMEC 7833 (MIN.) LUMEN LED LUMINAIRE

DETAIL NO. 2-35

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



* LUMINAIRE: TR20–009–135W80LED4K–R–LE3S–240–GN6TX

* OR APPROVED EQUAL
** OR CURRENT WATTAGE REPLACING 135W

DESCRIPTION OF COMPONENTS:

HOOD: CAST 356 ALUMINUM DOME, MECHANICALLY ASSEMBLED ON THE LUMINAIRE.

ACCESS–MECHANISM: A DIE CAST A360 ALUMINUM TECHNICAL RING WITH LATCH AND HINGE. THE MECHANISM SHALL OFFER TOOLFREE ACCESS TO THE INSIDE OF THE LUMINAIRE. AN EMBEDDED MEMORY–RETENTIVE GASKET SHALL ENSURE WEATHERPROOFING.

LENS: MADE OF SODA–LIME CLEAR TEMPERED GLASS LENS, MECHANICALLY ASSEMBLED AND SEALED ONTO THE LOWER PART OF THE HEAT SINK.

LAMP: COMPOSED OF 80 HIGH–PERFORMANCE WHITE LEDS, 135W LAMP WATTAGE. COLOR TEMPERATURE OF 4000 KELVIN NOMINAL, 70 CRI. OPERATING LIFESPAN BASED ON LM80 RESULTS AFTER WHICH 50% STILL EMITS OVER 70% (L70) OF ITS ORIGINAL LUMEN OUTPUT. USE OF A METAL CORE BOARD ENSURES GREATER HEAT TRANSFER AND LONGER LIFESPAN OF THE LIGHT ENGINE. THE LED CIRCUIT BOARD IS INCLUDED WITH A CONNECTOR, (NO CONNECTION WIRE REQUIRED FOR EASE OF REPLACEMENT).

OPTICAL SYSTEM: (LE3S), I.E.S. TYPE III (ASYMMETRICAL). COMPOSED OF HIGH–PERFORMANCE ACRYLIC REFRACTORS LENSES TO ACHIEVE DESIRED DISTRIBUTION OPTIMIZED TO GET MAXIMUM SPACING, TARGET LUMEN’S AND A PERFECT LIGHTING UNIFORMITY. SYSTEM IS RATED IP66. PERFORMANCE SHALL BE TESTED PER LM63 AND LM 79 AND TM15 (IENSA) CERTIFYING ITS PHOTOMETRIC PERFORMANCE.

HEAT SINK: MADE OF CAST ALUMINUM OPTIMIZING THE LEDS EFFICIENCY AND LIFE. PRODUCT DOES NOT USE ANY COOLING DEVICE WITH MOVING PARTS (ONLY PASSIVE COOLING DEVICE).

DRIVER: HIGH POWER FACTOR OF 95%. ELECTRONIC DRIVER, OPERATING RANGE 50–60 HZ. AUTO–ADJUSTING TO A VOLTAGE BETWEEN 120 AND 277 VOLT AC RATED FOR BOTH APPLICATION LINE TO LINE OR LINE TO NEUTRAL, CLASSI, THD OF 20% MAX. MAXIMUM AMBIENT OPERATING TEMPERATURE FROM –40°F (–40°C) TO 130°F (55°C). CERTIFIED IN COMPLIANCE TO CULUS REQUIREMENT. WEATHER TIGHTNESS RATING IP66. ASSEMBLED ON A UNITIZED REMOVABLE TRAY WITH TYCO QUICK DISCONNECT PLUG RESISTING TO 221°F (105°C).

CITY OF GIG HARBOR
ENGINEERING DIVISION

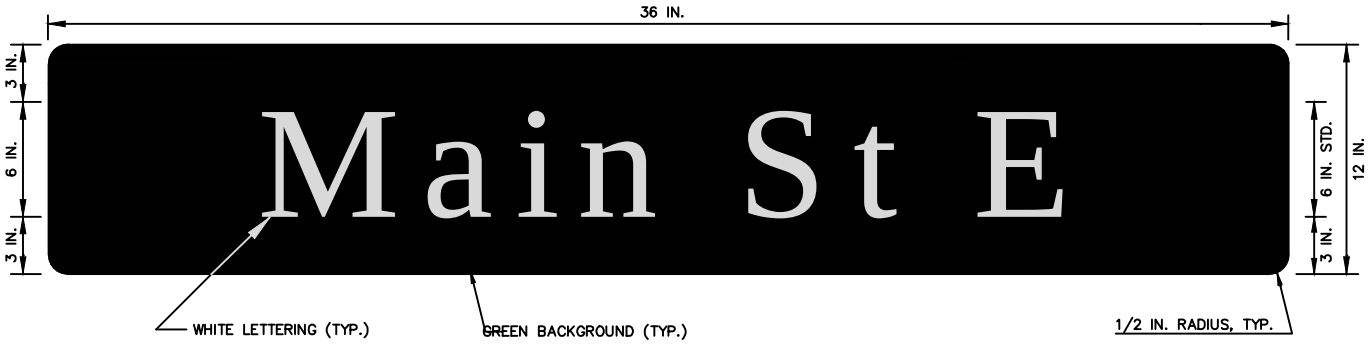
LUMEC 13544 (MIN.) LUMEN LED LUMINAIRE

DETAIL NO. 2-36

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016

AT LOCAL ROAD INTERSECTIONS ONLY

NOT TO SCALE



AT OR ALONG ARTERIALS AND COLLECTORS

NOT TO SCALE

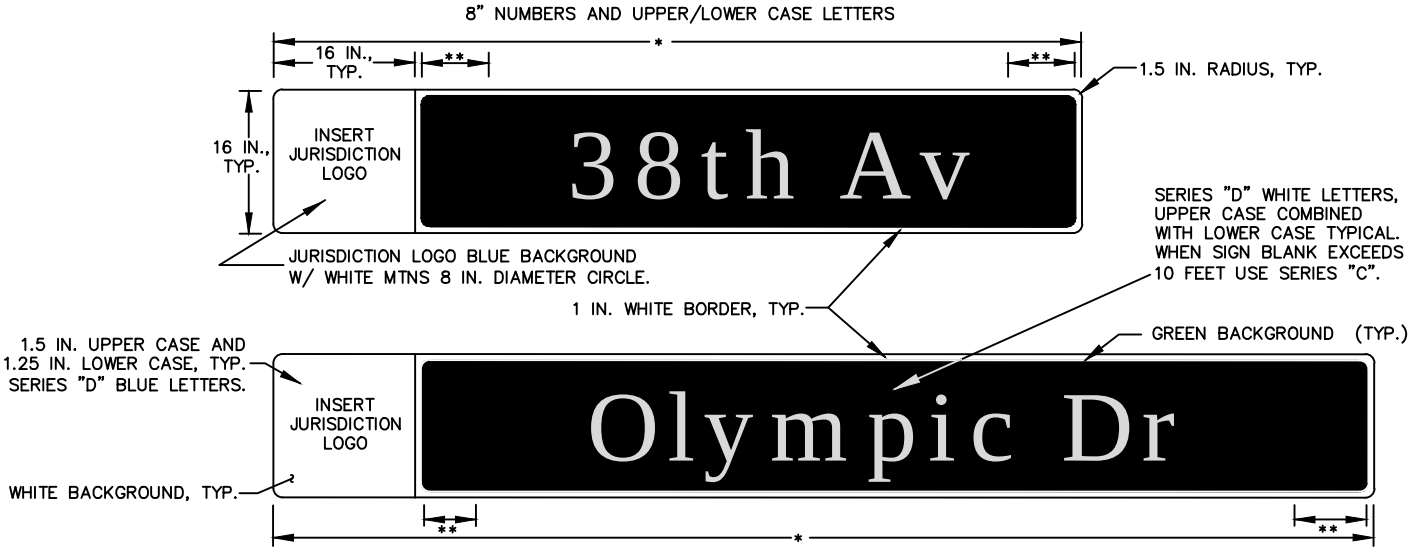
NOTE:

1. STREET NAME FONT SHALL BE UNITED STATES FEDERAL HIGHWAY ADMINISTRATION "HIGHWAY GOTHIC"

CITY OF GIG HARBOR
ENGINEERING DIVISION

SIGN - PUBLIC ROAD STREET NAME	DETAIL NO. 2-37

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



OVERHEAD MOUNT D3-301(mod) SIGN DETAIL

NOT TO SCALE

NOTES:

16 IN. SIGN HEIGHT WITH 8 IN. LETTER/NUMBER UPPER CASE.

JURISDICTION LOGO FONT SHALL BE "TIMES NEW ROMAN".

STREET NAME FONT SHALL BE UNITED STATES FEDERAL HIGHWAY ADMINISTRATION "HIGHWAY GOTHIC".

FOR MASTARM SIGNAL LOCATIONS – SIGNS ARE SINGLE SIDED. MOUNT SIGNS PER CURRENT WSDOT STANDARD PLAN G-30.10-03.

FOR SPANWIRE SIGNAL LOCATIONS – SIGNS ARE DOUBLE SIDED.

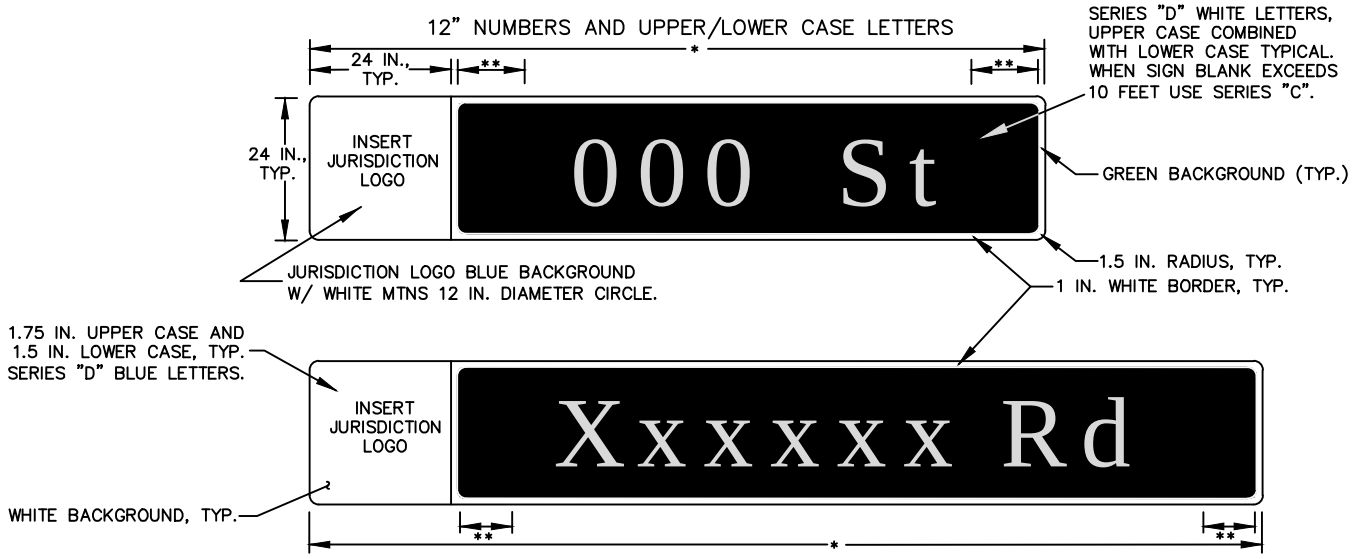
* SIGN LENGTH AS REQUIRED FOR LETTER SPACING.

** 8 IN. DESIRED WITH 5.25 IN. MINIMUM UNLESS OTHERWISE APPROVED BY ENGINEER.

CITY OF GIG HARBOR
ENGINEERING DIVISION

SIGN - 16" OVERHEAD STREET NAME	DETAIL NO. 2-38

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



OVERHEAD MOUNT SIGN DETAIL

NOT TO SCALE

NOTES:

24 IN. SIGN HEIGHT WITH 12 IN. LETTER/NUMBER UPPER CASE SHALL BE USED AT INTERSECTIONS ON ARTERIALS WITH FIVE LANES OR MORE.

JURISDICTION LOGO FONT SHALL BE "TIMES NEW ROMAN".

STREET NAME FONT SHALL BE UNITED STATES FEDERAL HIGHWAY ADMINISTRATION "HIGHWAY GOTHIC".

FOR MASTARM SIGNAL LOCATIONS – SIGNS ARE SINGLE SIDED. MOUNT SIGNS PER CURRENT WSDOT STANDARD PLAN G–30.10–03.

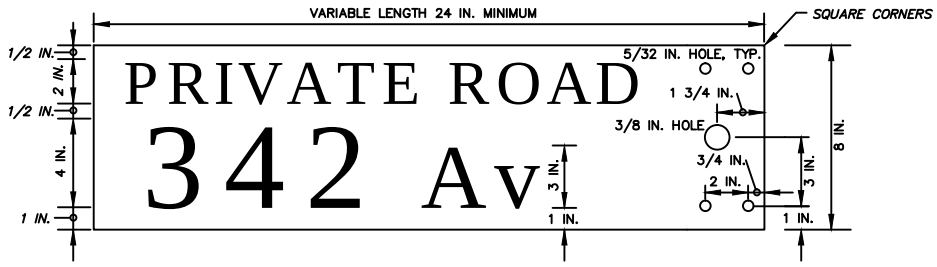
* SIGN LENGTH AS REQUIRED FOR LETTER SPACING.

** 12 IN. DESIRED WITH 8 IN. MINIMUM UNLESS OTHERWISE APPROVED BY ENGINEER.

CITY OF GIG HARBOR
ENGINEERING DIVISION

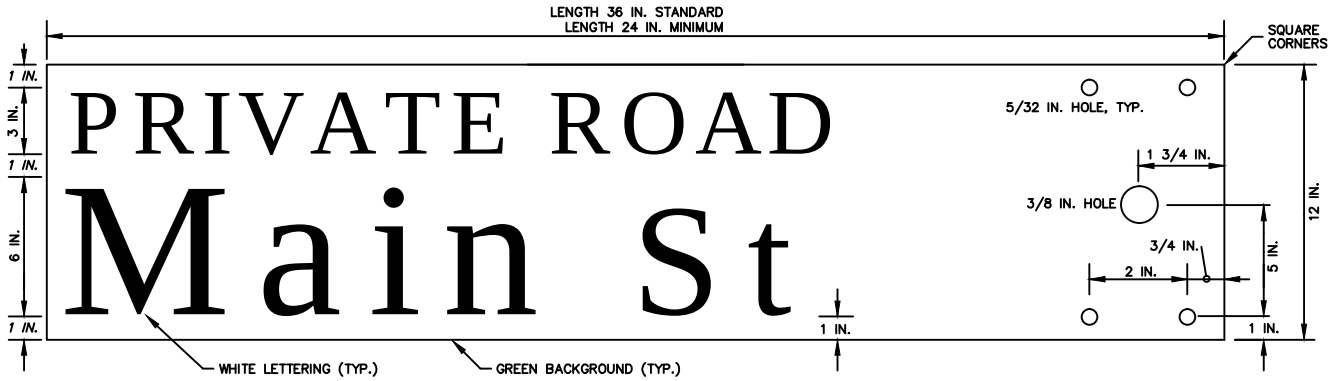
SIGN - 24" OVERHEAD STREET NAME	DETAIL NO. 2-39

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



AT NON–ARTERIAL INTERSECTIONS ONLY

NOT TO SCALE



AT OR ALONG ARTERIALS

NOT TO SCALE

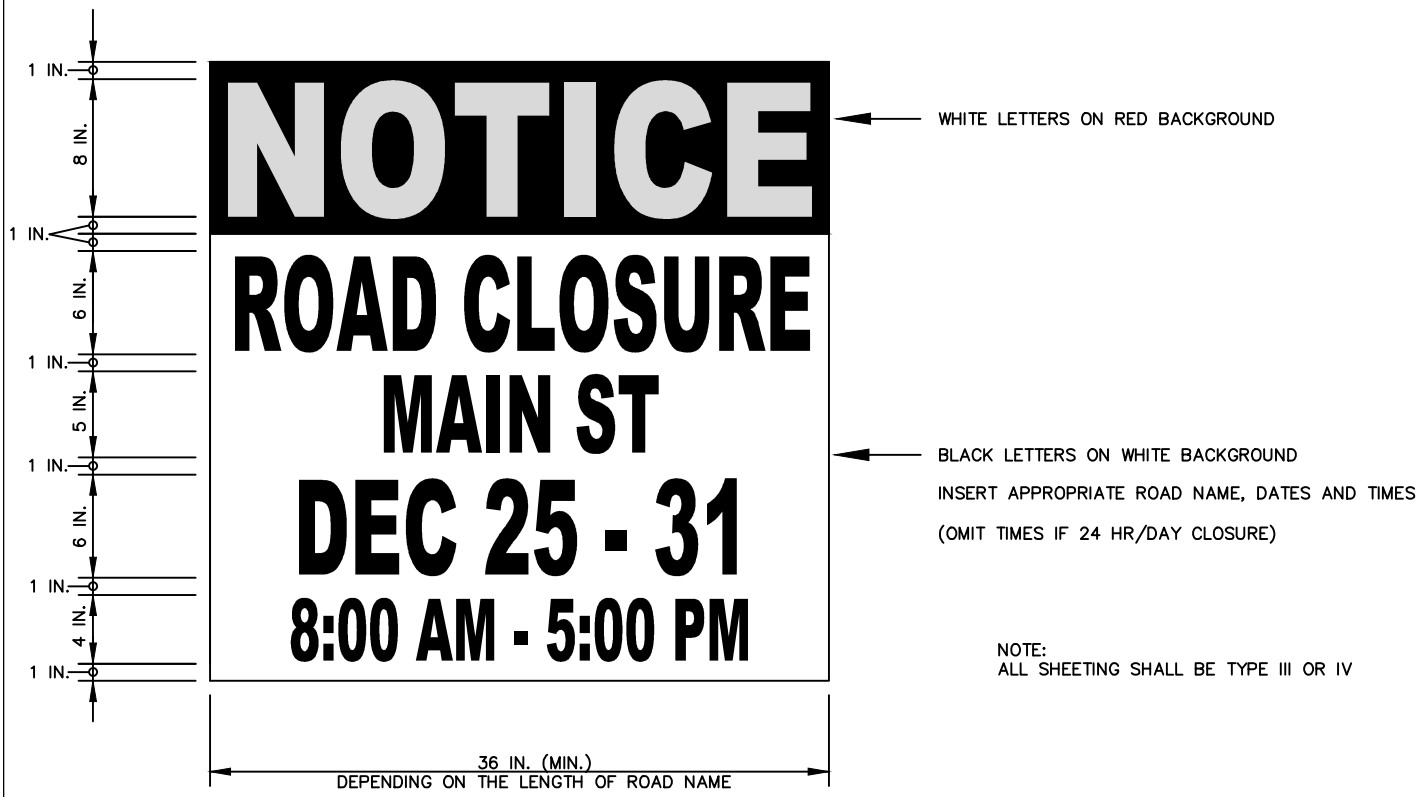
NOTE:

STREET NAME FONT SHALL BE UNITED STATES FEDERAL HIGHWAY ADMINISTRATION "HIGHWAY GOTHIC"

CITY OF GIG HARBOR
ENGINEERING DIVISION

SIGN - PRIVATE ROAD STREET NAME	DETAIL NO. 2-40

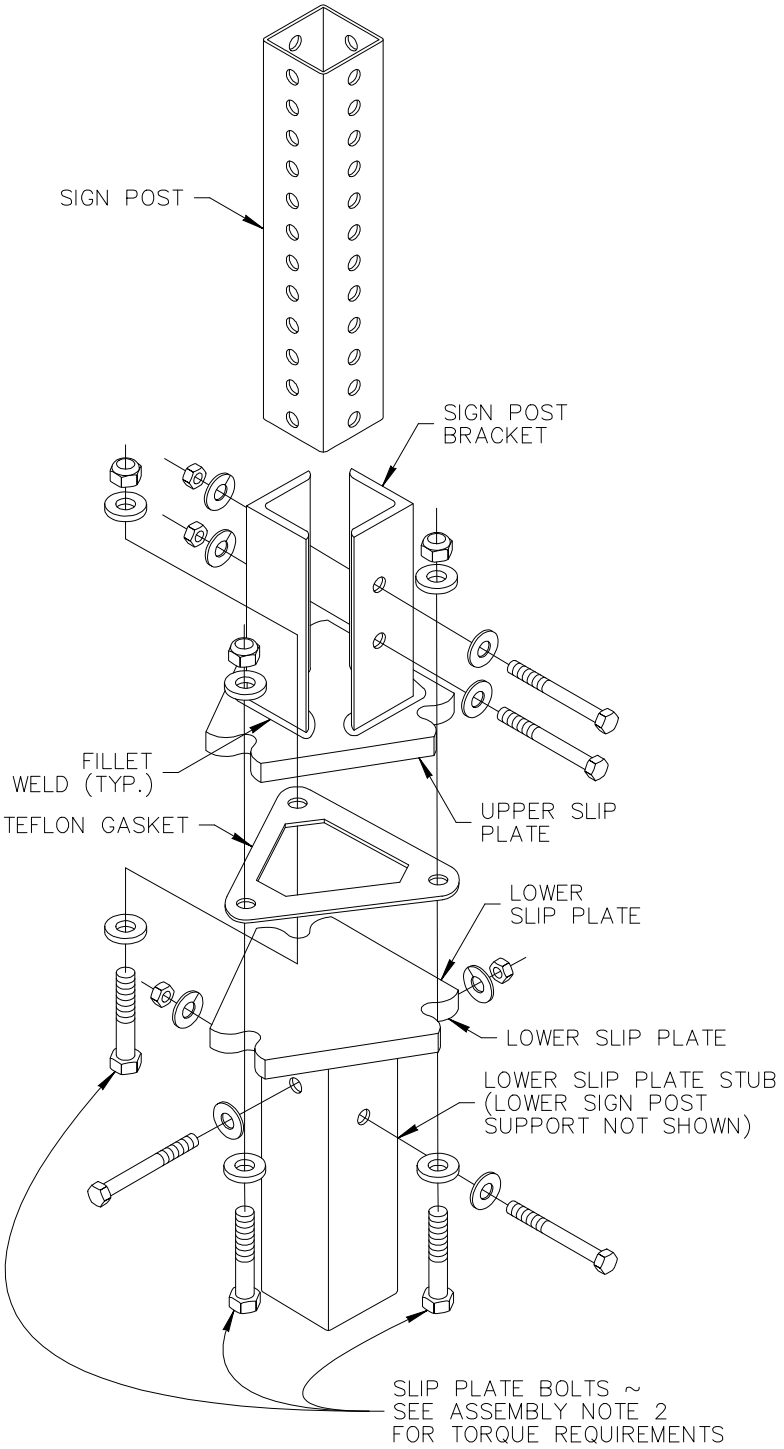
APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



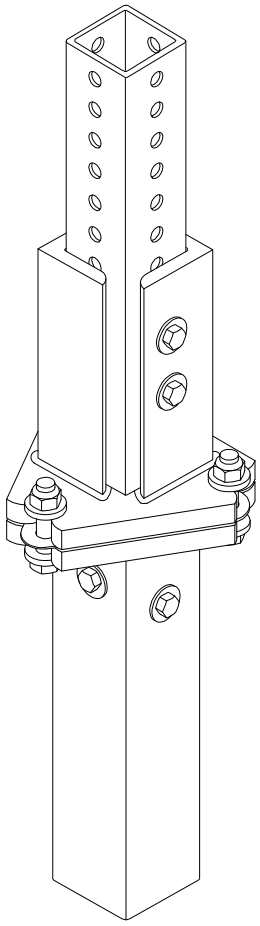
NOTICE SIGN FOR TEMPORARY ROAD CLOSURE

NOT TO SCALE

CITY OF GIG HARBOR ENGINEERING DIVISION	
SIGN - TEMPORARY ROAD CLOSURE	DETAIL NO. 2-41
APPROVED FOR PUBLICATION CITY ENGINEER _____	DATE MAY 16, 2016



EXPLODED VIEW



ISOMETRIC VIEW

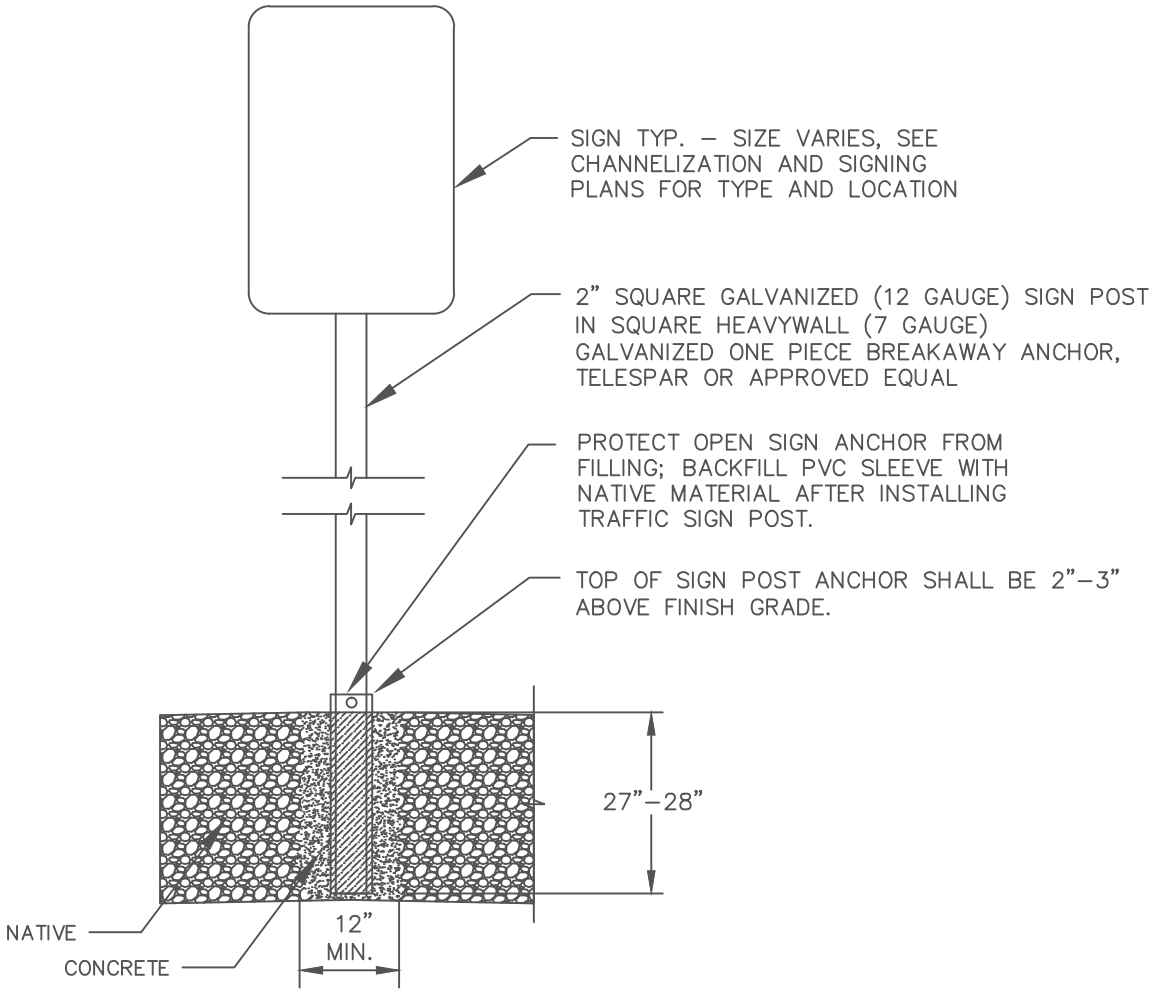
TYPE SB–1
SLIP BASE ASSEMBLY

NOT TO SCALE

CITY OF GIG HARBOR
ENGINEERING DIVISION

SIGN POST - SLIP BASE FOR CLASSIFIED ROADWAYS	DETAIL NO. 2-42

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



GALVANIZED SIGN POST DETAIL

NOT TO SCALE

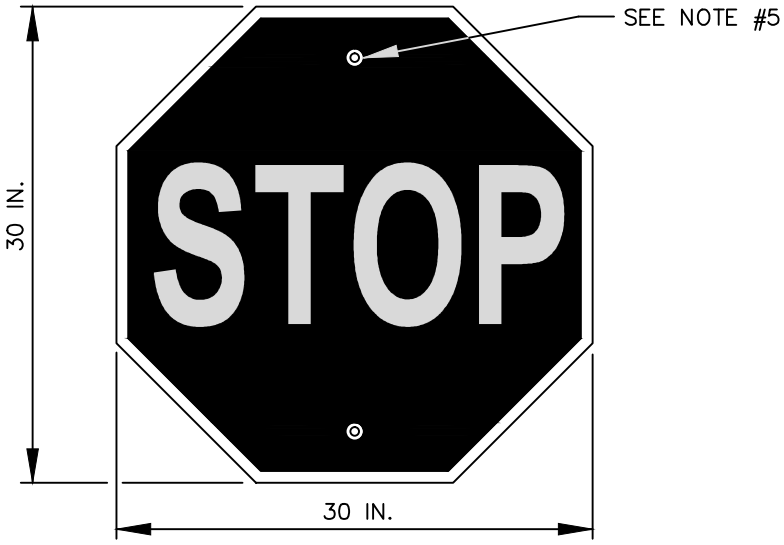
NOTE

VERIFY AND STAKE LOCATIONS OF TRAFFIC SIGNS FOR ENGINEER APPROVAL AND ADJUSTMENT PRIOR TO INSTALLING.

CITY OF GIG HARBOR
ENGINEERING DIVISION

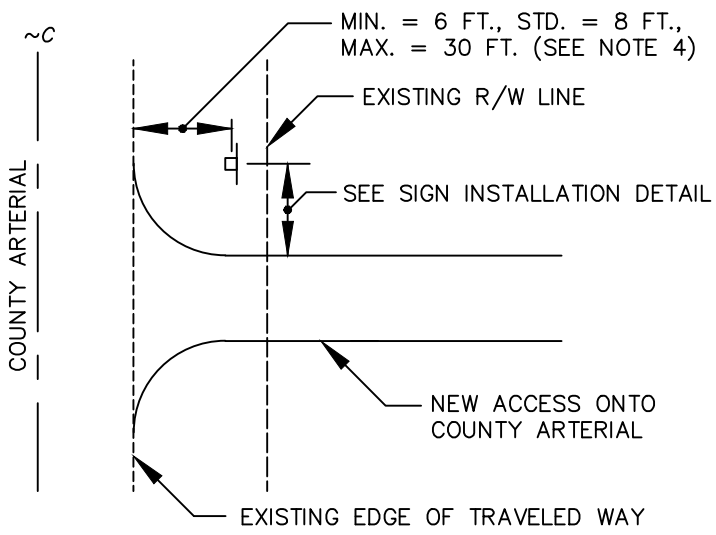
SIGN POST - NON SLIP BASE FOR NON CLASSIFIED ROADWAYS	DETAIL NO. 2-43

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



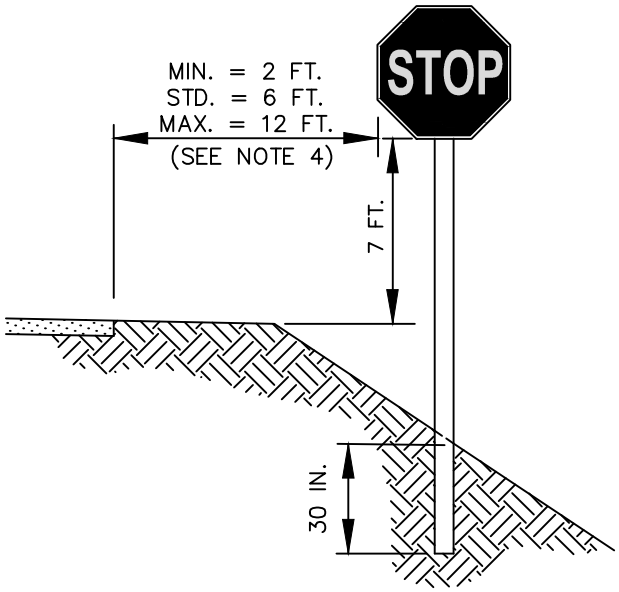
STOP SIGN R1–1

NOT TO SCALE



SIGN PLACEMENT

NOT TO SCALE



SIGN INSTALLATION DETAIL

NOT TO SCALE

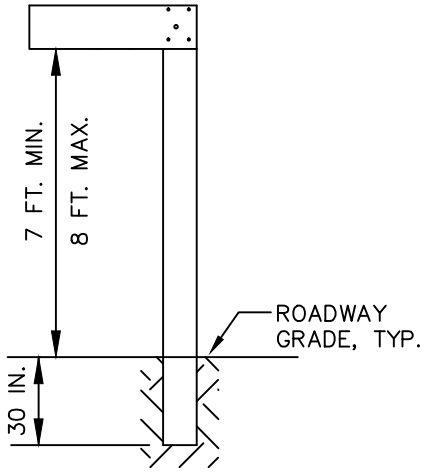
NOTES:

1) SIGN FACE MATERIAL SHALL BE TYPE IV SHEETING. SIGN POST SHALL BE HIGH INTENSITY PRISMATIC 2 IN. GALVANIZED METAL AS DIRECTED BY THE CITY ENGINEER.
2) THE STOP SIGN SHALL BE VISIBLE FROM A DISTANCE OF AT LEAST 240 FT. BACK ON THE APPROACHING ROADWAY, WHEN THE LEGAL SPEED LIMIT IS 25 M.P.H.
3) ALL CLEARING WITHIN CITY RIGHT OF WAY TO MAKE THE SIGN VISIBLE IS THE RESPONSIBILITY OF THE APPLICANT. APPROVED ROAD CONSTRUCTION PLANS OR A PERMIT FROM THE CITY IS NECESSARY BEFORE WORK COMMENCES.
4) VARIATION FROM THIS LOCATION BY WRITTEN APPROVAL OF THE CITY ENGINEER.
5) MOUNT WITH TWO 3/8 IN. X 3 IN. GALVANIZED LAG SCREW AGAINST 1 IN. DIA. GALVANIZED FLAT WASHER AGAINST 1 IN. DIA. NYLON WASHER.
6) LEGEND, BACKGROUND AND BORDER SHALL MEET WSDOT SIGN FABRICATION MANUAL.

CITY OF GIG HARBOR
ENGINEERING DIVISION

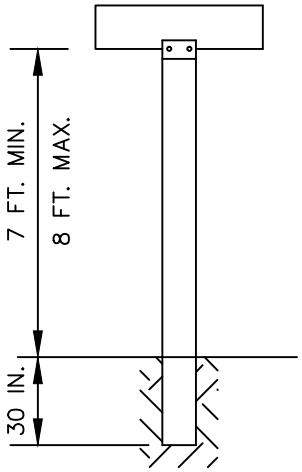
STOP SIGN INSTALLATION	DETAIL NO. 2-44

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016

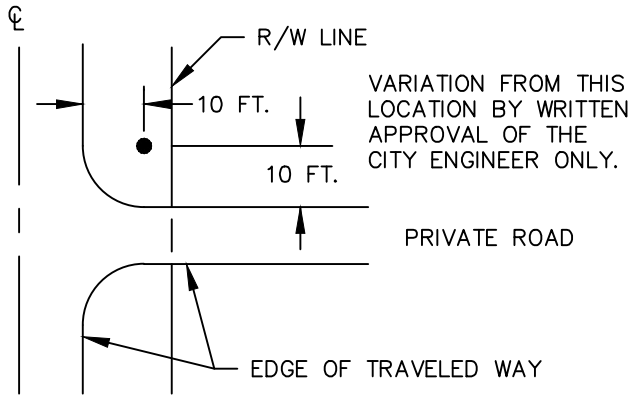


SIGN INSTALLATION
PRIVATE ROAD
NOT TO SCALE

CENTER SIGN ON POST



SIGN INSTALLATION
PUBLIC ROAD
NOT TO SCALE



SIGN PLACEMENT
PRIVATE ROAD
NOT TO SCALE

NOTES:

LETTERING REQUIREMENTS

1) STANDARD LETTER SERIES "B" OR "C" FOR POST MOUNTED SIGNS.

2) DO NOT USE ORDINATE SUFFIXES (1ST, 2ND, 3RD, etc.) WITH NUMBERED STREET NAMES (e.g., 110 AV E, NOT 110TH AV E).

3) USE STANDARD ROADWAY DESIGNATION AND AREA ABBREVIATIONS AS LISTED ON THIS SHEET. WHEN STREET NAME WITH STANDARD ROADWAY DESIGNATION AND AREA IS LARGER THAN STANDARD BLANK SIZE THE ROADWAY DESIGNATION AND AREA HEIGHT MAY BE REDUCED BY 25%.

SIGN MATERIAL REQUIREMENTS

1) FOR OVERHEAD SIGNS THE SHEET ALUMINUM SIGN SHALL BE CONSTRUCTED OF ALLOY 6061–T6, 5052–H36 OR 5052–H38 WITH A THICKNESS OF 0.125 IN.

2) FOR POST MOUNTED SIGNS THE SHEET ALUMINUM SIGN SHALL BE CONSTRUCTED OF ALLOY 6061–T6, 5052–H36 OR 5052–H38 WITH A THICKNESS OF 0.080 IN. OR 14 GAUGE.

3) SIGN FACE MATERIAL FOR POST MOUNTED STREET NAME SIGNS SHALL BE TYPE IV WHITE SHEETING OVERLAID WITH GREEN ELECTRO CUT FILM WITH THE STREET NAME CUT OUT. FOR OVERHEAD MOUNTED STREET NAME SIGNS THE MATERIAL SHALL BE TYPE IX SHEETING.

SIGN POST REQUIREMENTS

1) GALVANIZED SIGN POSTS SHALL MEET REQUIREMENTS SPECIFIED IN DETAIL 2–42 AND 2–43.

HARDWARE PUBLIC ROAD SIGNS

1) SIGN BRACKET SHALL BE DIE CAST HIGH STRENGTH ALUMINUM ALLOY DESIGNED FOR MOUNTING ON TOP OF THE 4 IN. X 4 IN. WOODEN POST. SLOTS FOR SIGNS SHALL HAVE A NOMINAL 6 IN. LENGTH (3 IN. FOR 8 IN. TALL SIGNS) WITH TWO 5/16 IN. ZINC PLATED STANDARD ALLEN WRENCH SET SCREWS.

2) ALL OTHER HARDWARE AND FASTENERS SHALL BE GALVANIZED STEEL.

HARDWARE PRIVATE ROAD SIGNS

1) USE 3/8 IN. X 2 IN. GALVANIZED LAG BOLT WITH NYLON WASHER FOR CENTER MOUNTING HOLE. SUPPLEMENT LAG BOLT WITH FOUR 2–1/2 IN. 8 D GALVANIZED NAILS IN THE OUTER HOLES.

ROADWAY DESIGNATION ABBREVIATIONS

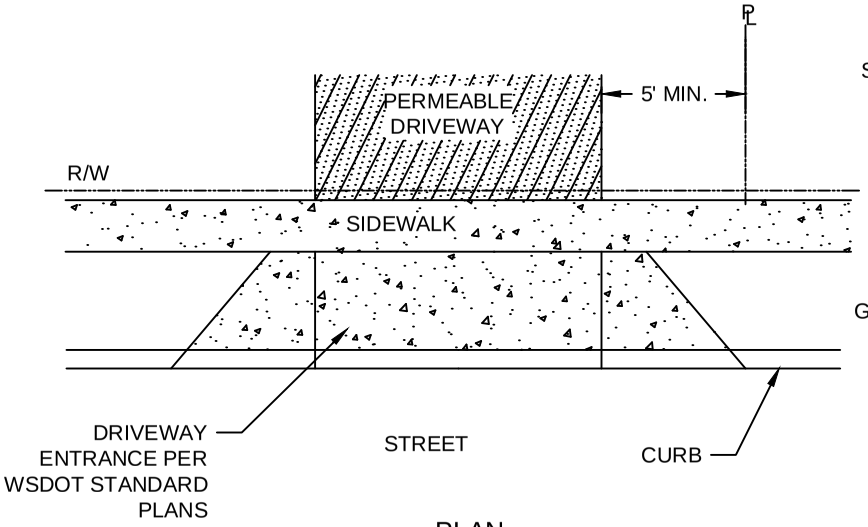
AVE – AVENUE
ST – STREET
CT – COURT
BLVD – BOULEVARD
DR – DRIVE
PL – PLACE
LN – LANE
RD – ROAD
WAY – WAY
LP – LOOP

CITY OF GIG HARBOR
ENGINEERING DIVISION

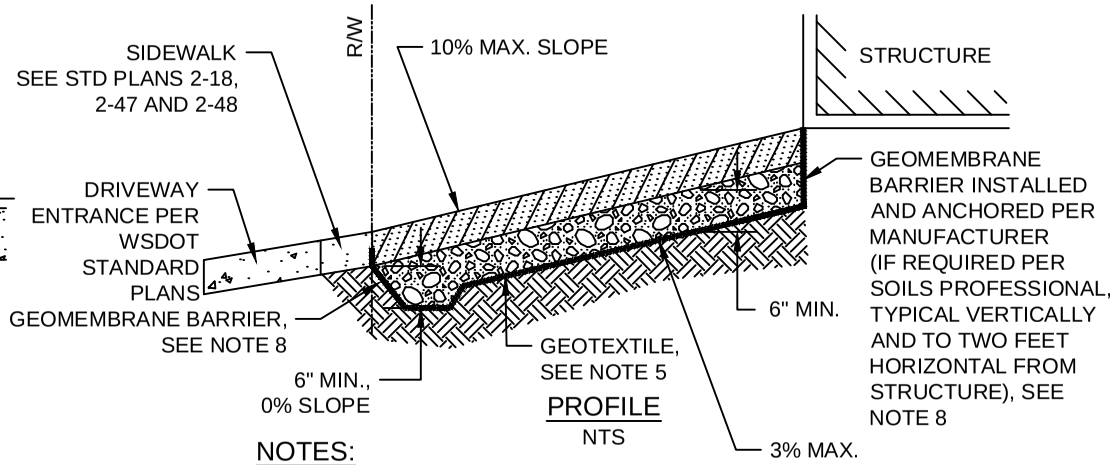
SIGN NOTES AND DETAILS

DETAIL NO. 2-45

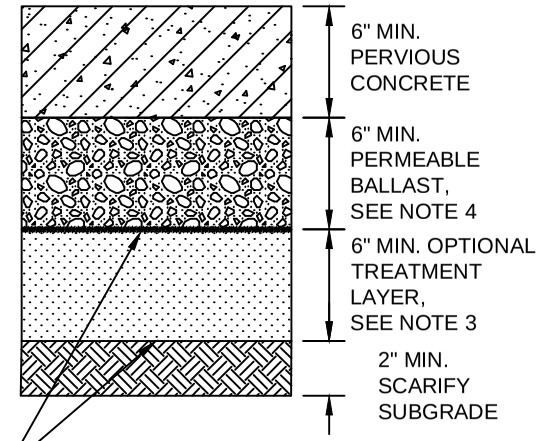
APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



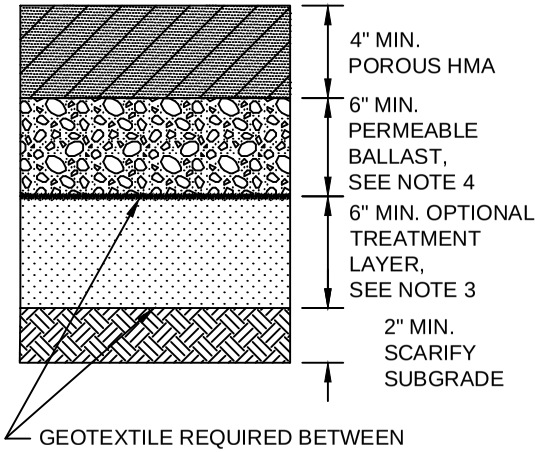
PLAN
NTS



PROFILE
NTS



PERVIOUS CONCRETE SECTION
NTS



POROUS HMA SECTION
NTS

NOTES:

1. Permeable pavers may be allowed. Cross section shall meet manufacturer's recommendations and include an appropriate reservoir layer and scarification of subgrade per SWSDM.
2. Limit run-on to permeable pavement surfaces to the maximum extent practicable. Run-on shall only be allowed from fully stabilized areas.
3. 6-inch minimum treatment layer of sand or media if required per SWSDM.
4. Thicker section of ballast may be required to establish sufficient reservoir capacity. Engineer to provide calculations per SWSDM.
5. Geotextile may be required between native soils and permeable pavement section, per soils professional recommendation. Geotextile will be required between permeable ballast and sand layer. Non-woven geotextile to conform to WSDOT Spec. 9-33.2(1), Tables 1 and 2.
6. Refer to Volume III Section 3.5 of the SWSDM (Ecology BMP T5.15 for design criteria and soils suitability.
7. Work within right-of-way shall be in compliance with the SWSDM for subgrade and permeable ballast. It is recommended to follow the Stormwater Management and Site Development Manual for work on private property.
8. Geomembrane barrier shall provide an impermeable barrier between standard and permeable section. It shall be installed below finished grade and per Std. Plan 2-65. Geomembrane barrier seams shall overlap at least 18" or per manufacturer's recommendations. Geomembrane barrier shall extend the length of the permeable section when adjacent to standard pavement.
9. This figure applicable to driveways that are flat or slope away from the structure. Additional design considerations are required when the driveway slopes toward the structure.

CITY OF GIG HARBOR ENGINEERING DIVISION

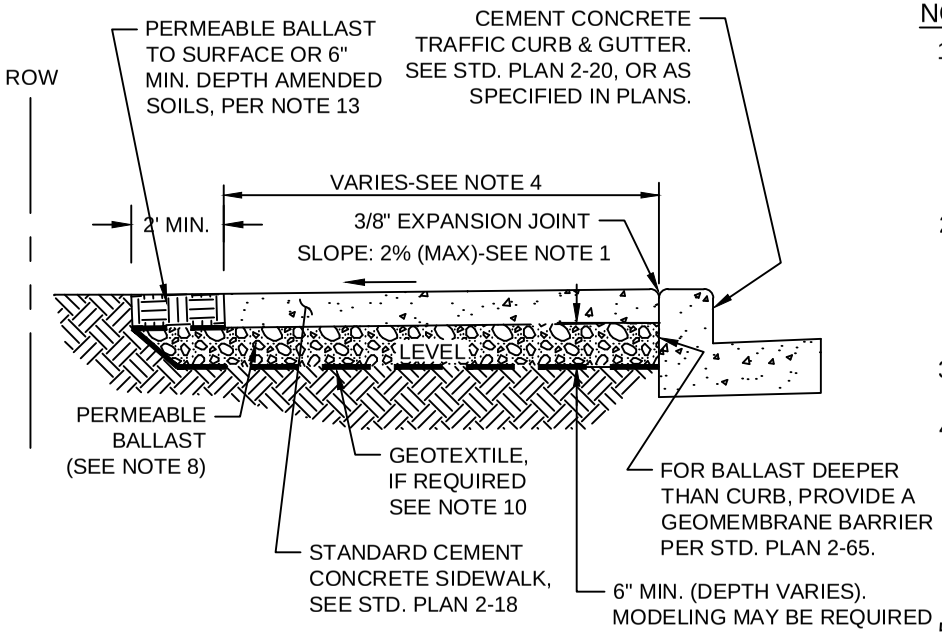
DETAIL NAME

PERMEABLE DRIVEWAY

DETAIL NO.

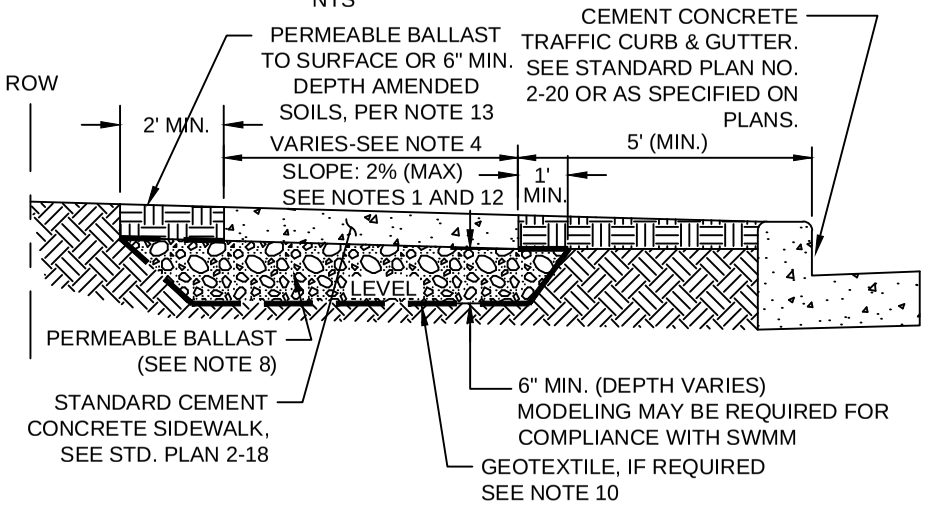
2-46

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE 08/16



COMBINATION WALK SECTION

NTS



SIDEWALK WITH PLANTER STRIP SECTION

NTS

NOTES:

1. Sidewalks shall be designed and constructed in accordance with ADA standards for accessible design, 28 CFR, Part 35 and as supplemented by the public right of way accessibility guidelines (PROWAG).
2. When placing walk adjacent to existing curb and gutter, curb and gutter will be repaired as necessary before placing concrete forms for walk per City of Gig Harbor Public Works standards.
3. Staking is required where no curb is present.
4. Combination walk shall be 7' min. on all commercial sites and arterial streets. Combination walk shall be a minimum of 5' on non arterial streets. Dimensions are from back of curb to back of walk. See contract plans for width and placement of sidewalk.
5. All expansion joints shall be full depth with 3/8" premolded joint filler.
6. All joints shall be cleaned and edged. External edges shall be 1/2" radius. Internal joints shall be 1/4" radius.
7. Subgrade preparation shall meet APWA GSP 2-06.3(3) Subgrade for Permeable Pavements.
8. Permeable ballast shall meet APWA GSP 4-04.2 Gravel Base and 9-03.9(2).Opt1 Pavement Ballast.
9. All soft and yielding foundation material shall be removed and replaced with ballast per APWA GSP 4-04.2 Gravel Base and 9-03.9(2).Opt1 Permeable Ballast.
10. Geotextile fabric may be required between native soils or amended soils and permeable ballast per the recommendation of the geotechnical professional. Geotextile shall be per WSDOT 9.33.2(1), Tables 1 and 2, nonwoven, moderate survivability.
11. For plan view refer to City of Gig Harbor Standard Plan 2-18.
12. Sidewalk with planter strip may slope in either direction.
13. Planting strip soils shall be per Volume III Section 3.1 of the SWSDM (Ecology BMP T5.13) see SWSDM Quality Design Details 34.1-34.4, if applicable; or scarify or till subgrade to 3 inch depth. Place 3-inches of topsoil on surface and till into 5-inches of site soil. Install 3-inches of arborist wood chip mulch or as specified on plans. Topsoil layer with a minimum organic matter content of 10% dry weight in planting beds, and 5% in turf areas, and a pH from 6.0 to 8.0 or matching the pH of the original undisturbed soil.
14. All disturbed areas not covered with hard surfaces shall be stabilized by planting or mulching.
15. Where needed, adjust ballast in planting strip to accommodate plants. Keep permeable ballast a minimum 2 feet from trunk of trees.
16. Where ballasted sidewalk is installed adjacent to permeable roadway, the permeable ballast may extend from the sidewalk to the roadway section. See Std. Plan 2-51b.
17. Refer to Std. Plan 2-52 for subgrade terracing, as applicable.

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME

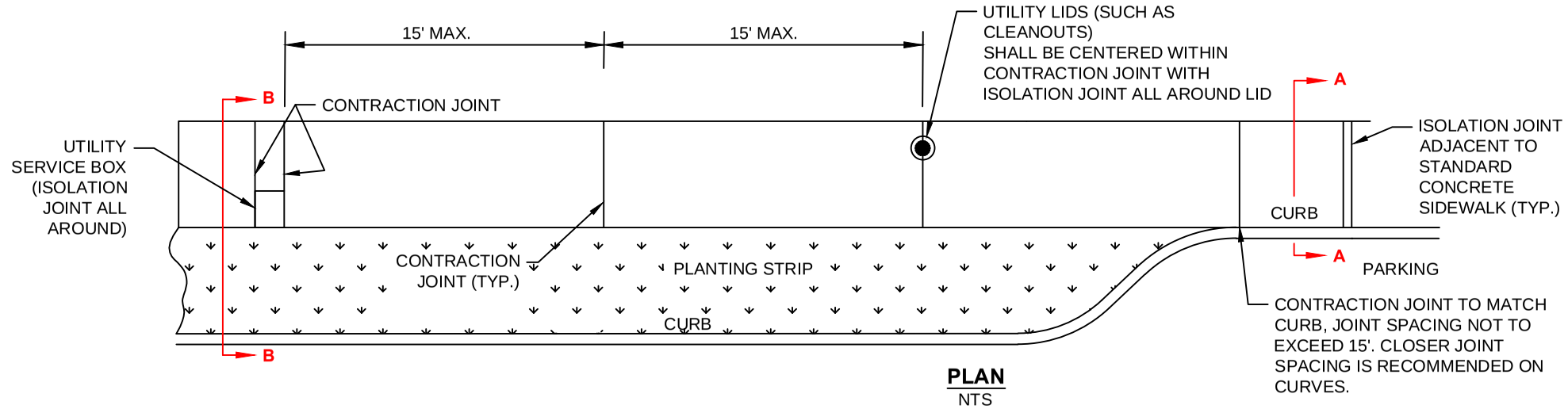
BALLASTED CEMENT CONCRETE SIDEWALK

DETAIL NO. 2-47

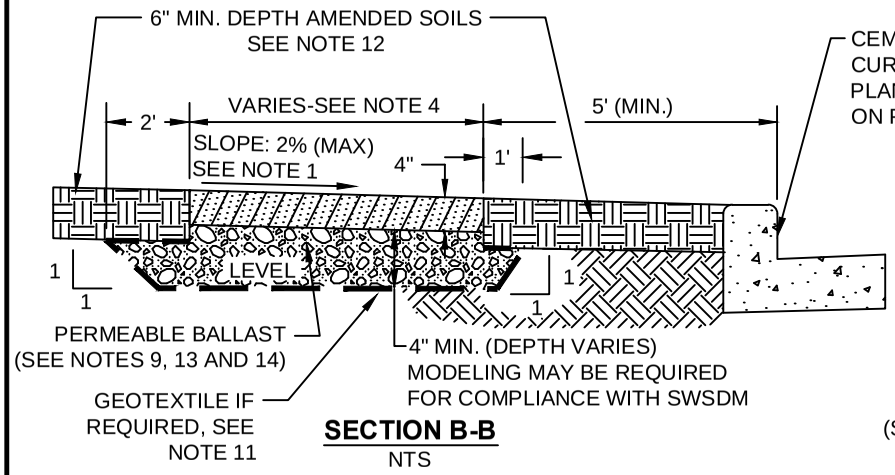
APPROVED FOR PUBLICATION

CITY ENGINEER _____

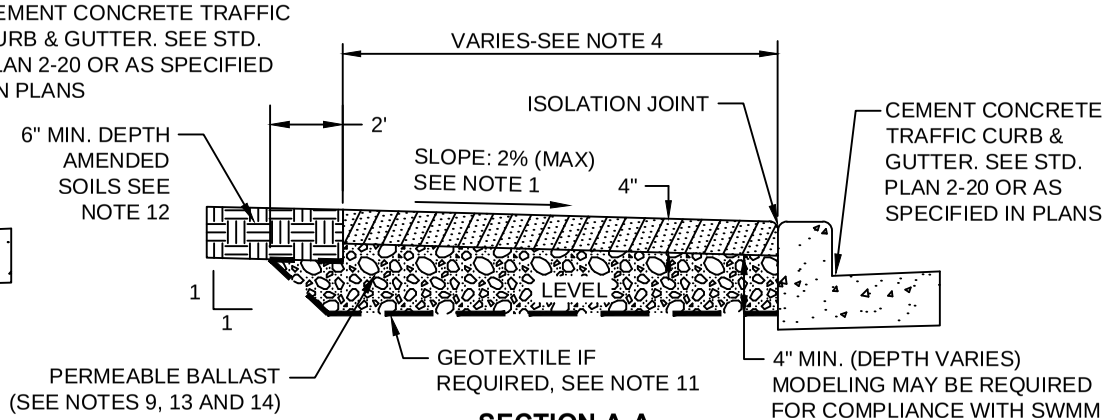
DATE 08/16



PLAN
NTS



SECTION B-B
NTS



SECTION A-A
NTS

NOTES:

1. See 2-48b for Notes.

CITY OF GIG HARBOR ENGINEERING DIVISION	
DETAIL NAME **PERVIOUS CONCRETE SIDEWALK**	DETAIL NO. **2-48a**
APPROVED FOR PUBLICATION CITY ENGINEER _____	DATE **08/16**

NOTES:

1. Sidewalks shall be designed and constructed in accordance with ADA standards for accessible design, 28 CFR, Part 35 and as supplemented by the public right of way accessibility guidelines (PROWAG).
2. When placing walk adjacent to existing curb and gutter, curb and gutter will be repaired as necessary before placing concrete forms for walk per City of Gig Harbor Public Works standards.
3. Staking is required where no curb is present.
4. Combination walk shall be 7' min. on all commercial sites and arterial streets. Combination walk shall be a minimum of 5' on non arterial streets. Dimensions are from back of curb to back of walk. See contract plans for width and placement of sidewalk.
5. All isolation joints shall be full depth with 3/8" premolded joint filler.
6. All joints shall be clean and edged. Joint edges shall be 1/2" radius.
7. Subgrade preparation shall meet APWA GSP 2-06.3(3) Subgrade for Permeable Pavements.
8. All soft and yielding foundation material shall be removed and replaced with ballast per APWA GSP 4-04.2 Gravel Base and 9-03.9(2).Opt1 Permeable Ballast.
9. Permeable ballast shall meet APWA GSP 4-04.2 Gravel Base and 9-03.9(2).Opt1 Permeable Ballast.
10. All pervious surfaces shall be vacuumed immediately after completion of sawcutting to prevent clogging per Std. Plan 2-49.
11. Geotextile fabric may be required between native soils and permeable ballast per the recommendation of the geotechnical professional. Geotextile shall be per WSDOT 9.33.2(1) Tables 1 and 2, nonwoven, moderate survivability.
12. Planting strip soils shall be per Volume III Section 3.1 of the SWSDM (Ecology BMP T5.13) see SWSDM Quantity Design Details 34.1-34.4, if applicable; or scarify or till subgrade to 3 inch depth. Place 3 inches of topsoil on surface and till into 5-inches of site soil. Install 3-inches of arborist wood chip mulch or as specified on plans. Topsoil layer with a minimum organic matter content of 10% dry weight in planting beds, and 5% in turf areas, and a pH from 6.0 to 8.0 or matching the pH of the original undisturbed soil.
13. Where needed, adjust ballast in planting strip to accommodate plants. Keep permeable ballast a minimum 2 feet from trunk of trees.
14. For ballast deeper than curb, provide a geomembrane barrier per Std. Plan 2-65 between permeable ballast and road section unless adjacent road is permeable.
15. All disturbed areas not covered with hard surfaces shall be stabilized by planting or mulching.
16. Refer to Std. Plan 2-52 for subgrade terracing, as applicable.

CITY OF GIG HARBOR ENGINEERING DIVISION	
DETAIL NAME **PERVIOUS CONCRETE SIDEWALK**	DETAIL NO. **2-48b**
APPROVED FOR PUBLICATION CITY ENGINEER _____	DATE **08/16**

NOTES:

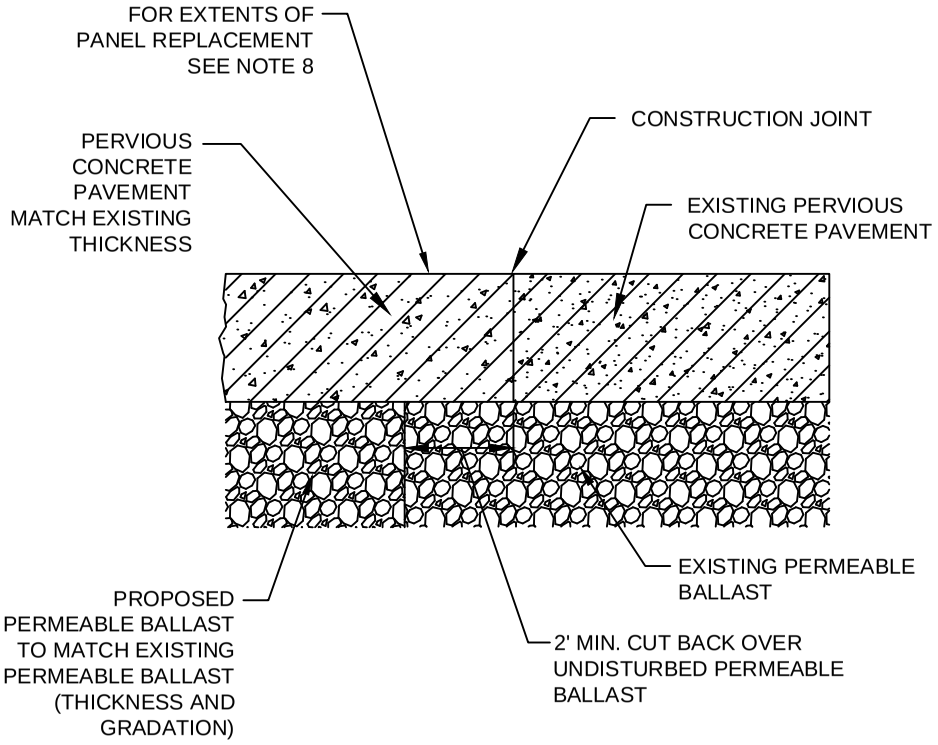
1. To be used only where abutting surfaces are pervious concrete or as directed in writing by City of Gig Harbor. Permeable roads may be required to be patched in an alternate material as directed in writing by City of Gig Harbor.
2. All pavement restoration work shall also meet the requirements of the City of Gig Harbor Public Works standards.
3. Temporary Surface Restoration:

   Arterials, industrial areas and/or roads with bus traffic: Temporary patches shall be compacted and leveled to a minimum of 3-inches of hot-mix asphalt (HMA).

   Residentials and alleys: Temporary patches shall be compacted and leveled to a minimum of 2-inches of either HMA or cold-mix asphalt. Temporary patches between October 1st and March 31st shall be made with HMA unless otherwise approved.
4. All permanent final patches shall be rectangular in shape and constructed parallel and perpendicular to the road centerline.
5. Where existing pavement defects are in close proximity to the new cut, the inspector may require additional pavement removal to eliminate the pavement defect.
6. The final cut edge of paved surfaces shall be smooth and straight, consistent with grinding or saw cutting devices. No jagged, broken or undermined edges are allowed. Cutting wheel run-out beyond the limits of the opening shall be filled in accordance with WSDOT Standard Specification 5-05.3(8)B for cement concrete surfaces. Joint sealant shall not migrate beyond run-out areas.
7. All pervious surfaces shall be vacuumed immediately after completion of sawcutting to prevent clogging.
8. Permanent Panel Replacement:

   Arterials, industrial areas and/or roads with bus traffic:
   100% panel replacement is required for all affected panels. Monolithic curbs will be poured at time of panel replacement.

   Residential and Alleys: Panels cut greater than ½ the panel length, width, or total area, including the 2-foot cut back, will require 100% panel replacement. Panels cut less than ½ the panel length, width, or total area, including the 2-foot cut back will require 50% panel replacement. Three-piece panels are not acceptable and will require 100% panel replacement.
9. Pervious concrete pavement mix shall be approved in writing by the City of Gig Harbor.
10. Where geotextile fabric or geomembrane liner exist under the permeable ballast, replace with same material. Additional width of excavation may be necessary to overlay fabric or liner. Where a liner is used to create a watertight barrier, repair per manufacturer's specifications to maintain a watertight barrier.



CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME

TYPICAL PAVEMENT RESTORATION FOR PERVIOUS CONCRETE

DETAIL NO. 2-49

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE 08/16

NOTES:

1. To be used only where abutting surfaces are porous asphalt or as directed in writing by City of Gig Harbor. Permeable roads may be required to be patched in an alternate material as directed in writing by City of Gig Harbor.
2. All pavement restoration work shall also meet the requirements of the City of Gig Harbor Public Works standards. For any streets exempt from this policy, compliance with notes 8 and 9 is not required, compliance with note 12 is required.
3. Temporary Surface Restoration:
   Arterials, industrial areas and/or roads with bus traffic: Temporary patches shall be compacted and leveled to a minimum of 3-inches of hot-mix asphalt (HMA).
   Residentials and alleys: Temporary patches shall be compacted and leveled to a minimum of 2-inches of either HMA or cold-mix asphalt. Temporary patches between October 1st and March 31st shall be made with HMA unless otherwise approved.
4. All permanent final patches shall be rectangular in shape and constructed parallel and perpendicular to the road centerline.
5. Where existing pavement defects are in close proximity to the new cut, the City Inspector may require additional pavement removal to eliminate the pavement defect.
6. The final cut edge of paved surfaces shall be smooth and straight, consistent with grinding or saw cutting devices. No jagged, broken or undermined edges are allowed. Cutting wheel run-out beyond the limits of the opening shall be filled in accordance with WSDOT Standard Specification 5-04.3(5)C for asphalt concrete surfaces. Joint sealant shall not migrate beyond run-out areas.
7. Final compaction of porous HMA shall meet APWA GSP 5-04.3(10)A General.

   Isolated patches: Minimum 1 test per patch up to 150 square feet, and 1 test required every additional 300 square feet, thereafter.

   Trench patches: 1 test every 150 linear feet of trench with a minimum of 2 tests per trench.

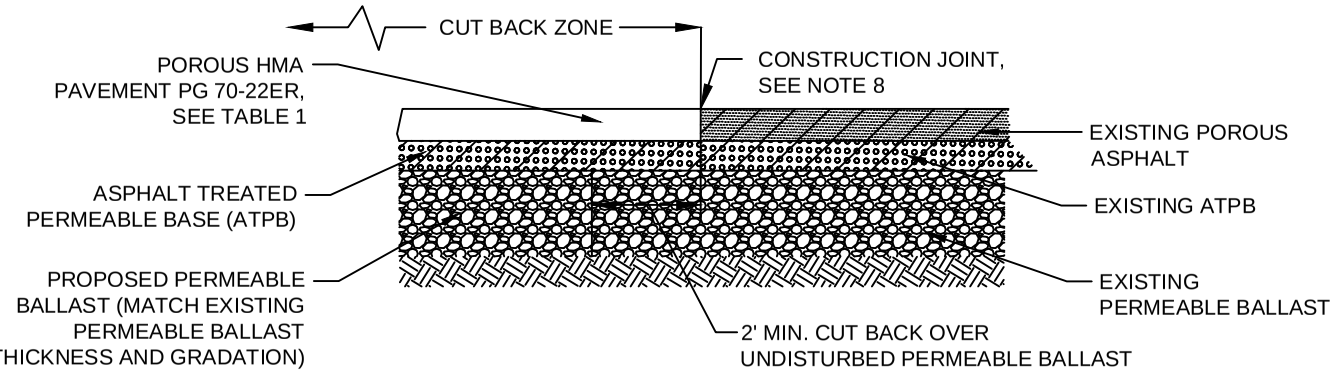
   Testing shall be performed by a certified independent testing laboratory or certified tester, as approved by the City's Inspector. Tests shall be completed and reports identifying the project number submitted to the City's Inspector within 48 hours of test.
8. Longitudinal construction joints shall only be located at the center or edge of affected lanes.

   Roadways 20 feet or less in width and all alleys are considered one-lane streets. Non-arterial roadways greater than 20 feet in width with no traffic channelization are considered two-lane streets with one-lane either side of the centerline of the street.

   Non-arterial streets greater than 32 feet in width with no traffic channelization may be considered three lane streets upon prior approval from the City Engineer.
9. Transverse construction joints terminate at the edge of the 2' cut back.
10. Porous HMA and Asphalt Treated Permeable Base (ATPB) pavement shall not be placed over CDF until approved by the City.
11. Where geotextile fabric or geomembrane liner exist under the permeable ballast, replace with same material. Additional width of excavation may be necessary to overlay fabric or liner. Where a liner is used to create a watertigtht barrier, repair per manufacturer's specifications and to maintain a watertight barrier.
12. If remaining pavement adjacent to the patch is less than 3' wide, remove and replace asphalt concrete pavement to match existing (minimum 2").
13. All pervious surfaces shall be vacuumed immediately after completion of sawcutting to prevent clogging.

TABLE 1

PAVEMENT REPLACEMENT DEPTH IN CUT BACK ZONE	
ARTERIALS & INDUSTRIAL AREAS	PER WRITTEN AUTHORIZATION ONLY
RESIDENTIALS AND ALLEYS	MATCH EXISTING, OR 2" POROUS HMA OVER 3" ATPB, WHICHEVER IS GREATER



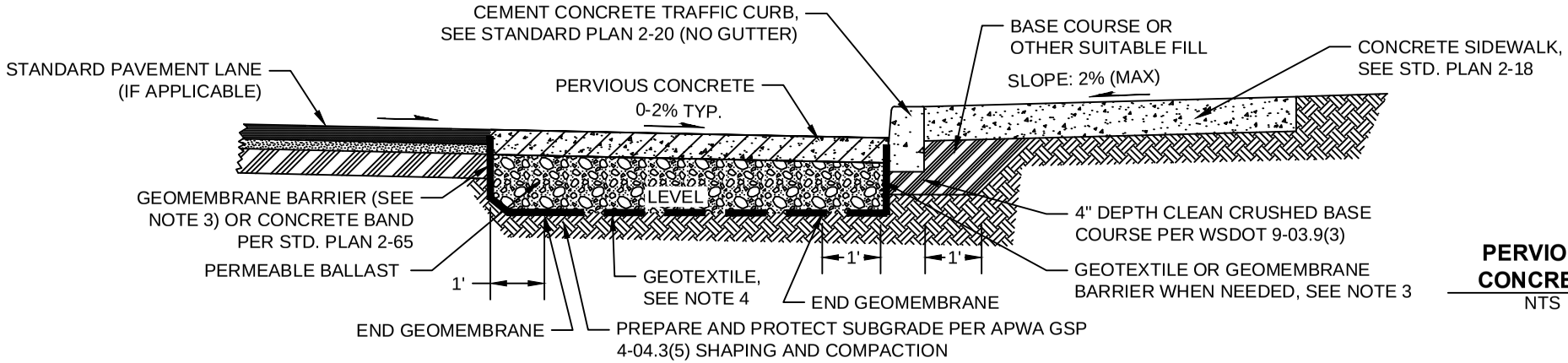
CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME

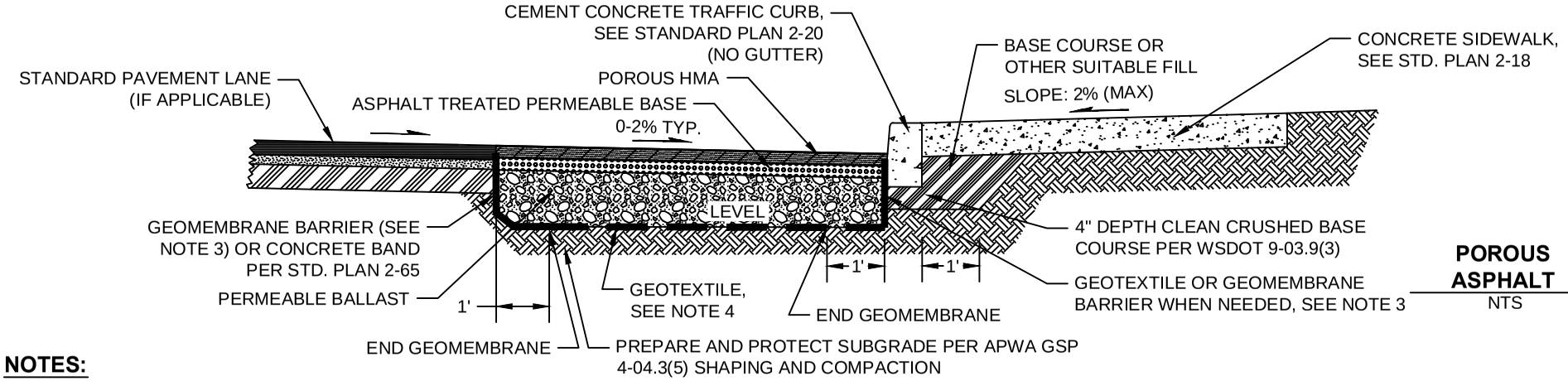
TYPICAL PAVEMENT RESTORATION FOR POROUS ASPHALT PAVEMENT

DETAIL NO. 2-50

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE 08/16



PERVIOUS CONCRETE
NTS



POROUS ASPHALT
NTS

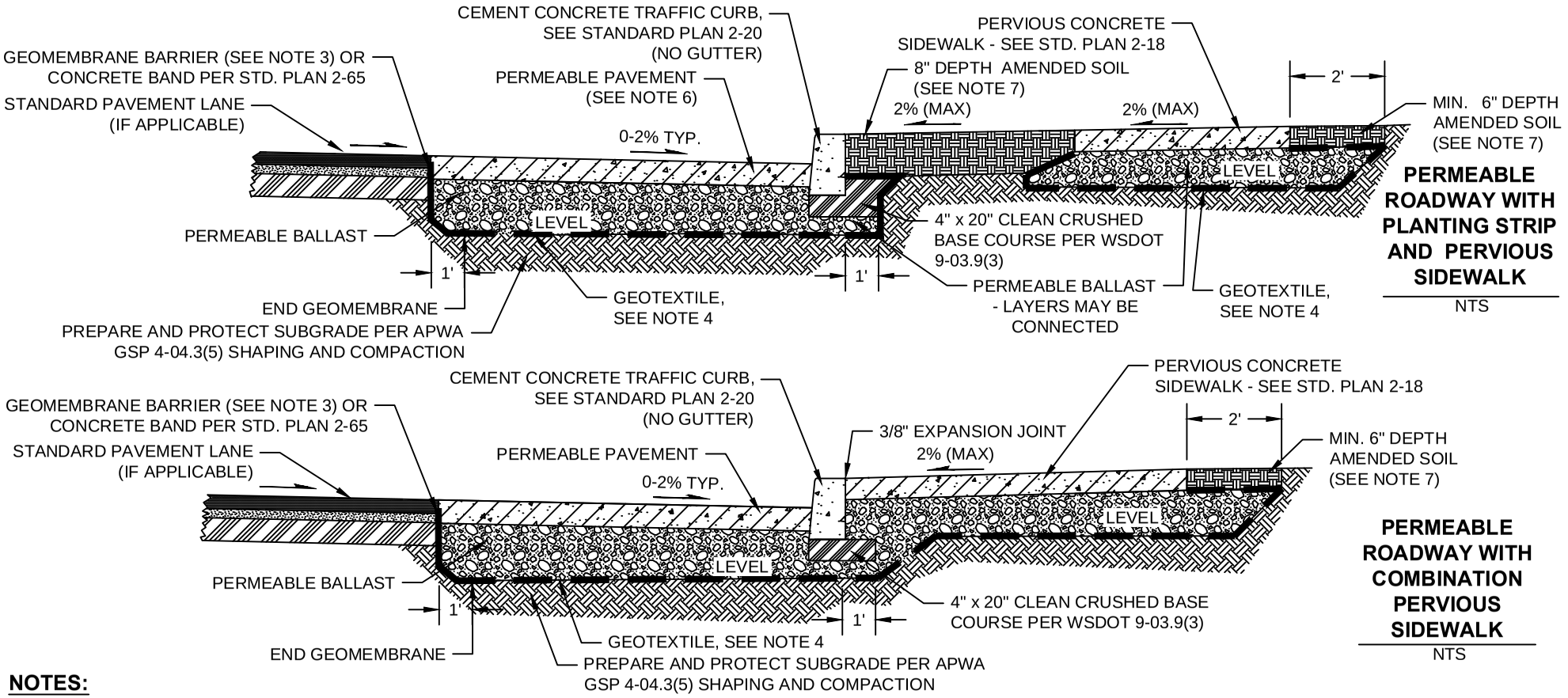
NOTES:

1. Permeable ballast shall meet APWA GSP 4-04.2 Gravel Base and 9-03.9(2) Permeable Ballast Opt1 and shall be installed per APWA GSP 4-04.3(5) Shaping and Compaction.
2. Minimum surface longitudinal slope shall be 0.5%.
3. Geomembrane barrier shall provide an impermeable barrier between standard and permeable section. Geomembrane may also be required at the shoulder side of the road. It shall be installed 1" below finished grade of surfacing, as shown. Alternatively, the liner shall fold over the permeable ballast a minimum of 6". Geomembrane barrier seams shall overlap at least 18" or per manufacturer's recommendations. Geomembrane barrier shall extend the length of the permeable section when adjacent to standard pavement. See Std. Plan 2-65.
4. Geotextile to be provided when recommended by geotechnical professional and shall be required when fines in native subgrade exceed 7% on the #200 sieve.
5. Geotextile for separation per WSDOT 9.33.2(1), woven, Table 3 and installed per WSDOT 2-12.3(1).
6. See Std. Plan 2-13 for minimum pavement section.
7. Permeable pavement surfacing shall meet APWA GSP 5-04.3 Construction Requirements Porous Asphalt (PHMA/PWMA) Acceptance Infiltration Test for porous asphalt or 5-06.3(6)A Infiltration Rate of the Placed Pavement for pervious concrete.
8. Permeable ballast may be extended under curb and sidewalk when approved, see Std. Plan 2-51b.

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME	DETAIL NO.
PERMEABLE ROADWAY WITH IMPERVIOUS SIDEWALK	**2-51a**

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **08/16**



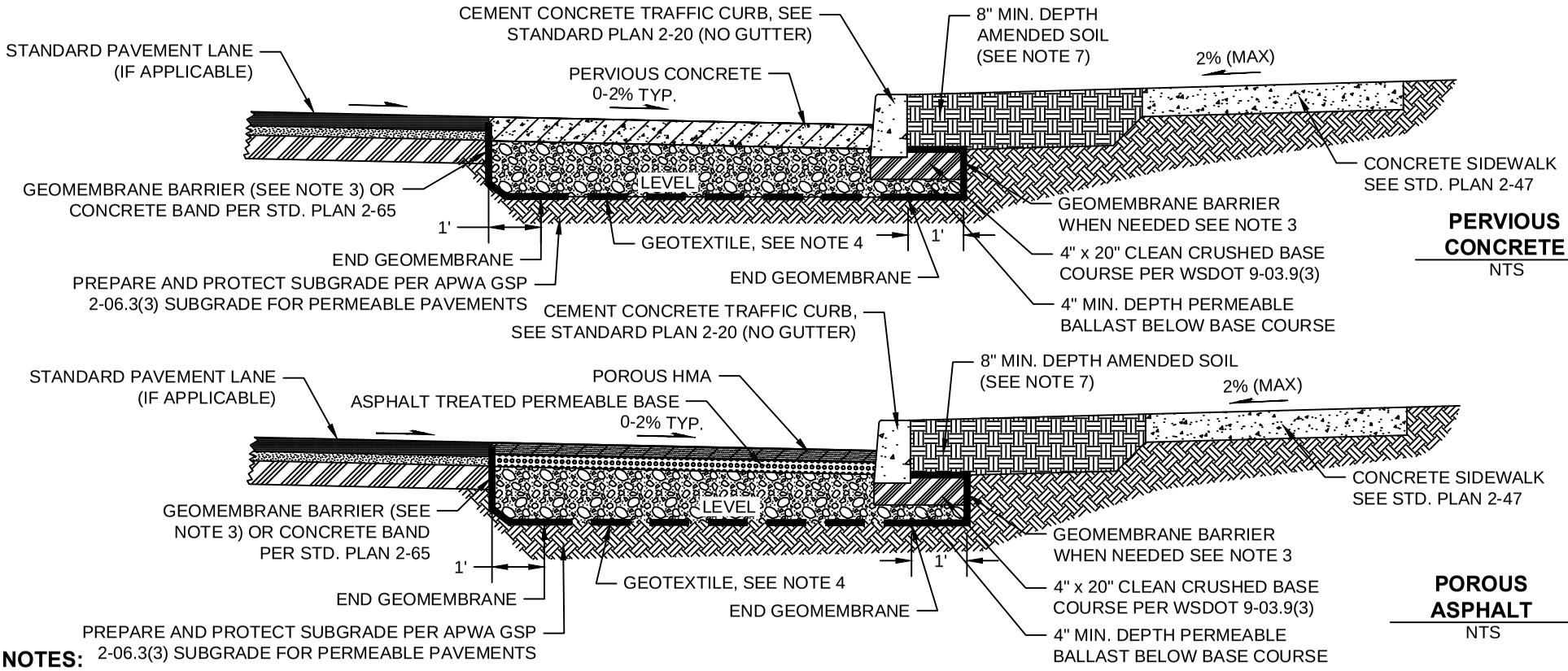
NOTES:

1. Permeable ballast shall meet APWA GSP 4-04.2 Gravel Base and 9-03.9(2) Permeable Ballast Opt1 and shall be installed per APWA GSP 4-04.3(5) Shaping and Compaction.
2. Minimum surface longitudinal slope shall be 0.5%.
3. Geomembrane barrier shall provide an impermeable barrier between standard and permeable section. Geomembrane may also be required at the shoulder side of the road. It shall be installed 1" below finished grade of surfacing, as shown. Alternatively, the liner shall fold over the permeable ballast a minimum of 6". Geomembrane barrier seams shall overlap at least 18" or per manufacturer's recommendations. Geomembrane barrier shall extend the length of the permeable section when adjacent to standard pavement. See Std. Plan 2-65.
4. Geotextile to be provided when recommended by geotechnical professional and shall be required when fines in native subgrade exceed 7% on the #200 sieve.
5. Geotextile for separation per WSDOT 9.33.2(1), woven, Table 3 and installed per WSDOT 2-12.3(1). Geotextile under sidewalk may be same as under road or WSDOT 9.33.2(1), Tables 1 and 2, nonwoven, moderate survivability.
6. See Std. Plan 2-13 for minimum pavement section.
7. Planting strip soils shall be per BMP L613 (see SWSDM Quantity Design Details 7.1-7.4), if applicable; or scarify or till subgrade to 3-inch depth; place 3-inches of topsoil on surface and till into 5-inches of site soil. Install 3-inches of arborist wood chip mulch or as specified on plans. Topsoil layer with a minimum organic matter content of 10% dry weight in planting beds, and 5% in turf areas, and a pH from 6.0 to 8.0 or matching the pH of the original undisturbed soil.
8. Permeable pavement surfacing shall meet APWA GSP 5-04.3 Construction Requirements Porous Asphalt (PHMA/PWMA) Acceptance Infiltration Test for porous asphalt or 5-06.3(6)A Infiltration Rate of the Placed Pavement for pervious concrete.
9. Permeable ballast may be extended under curb and sidewalk when approved.

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME	DETAIL NO.
PERMEABLE ROADWAY WITH PERVIOUS SIDEWALK	**2-51b**

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **08/16**



NOTES:

1. Permeable ballast shall meet APWA GSP 4-04.2 Gravel Base and 9-03.9(2) Permeable Ballast Opt1 and shall be installed per APWA GSP 4-04.3(5) Shaping and Compaction.
2. Minimum surface longitudinal slope shall be 0.5%.
3. Geomembrane barrier shall provide an impermeable barrier between standard and permeable section. Geomembrane may also be required at the shoulder side of the road. It shall be installed 1" below finished grade of surfacing, as shown. Alternatively, the liner shall fold over the permeable ballast a minimum of 6". Geomembrane barrier seams shall overlap at least 18" or per manufacturer's recommendations. Geomembrane barrier shall extend the length of the permeable section when adjacent to standard pavement. See Std. Plan 2-65.
4. Geotextile to be provided when recommended by geotechnical professional and shall be required when fines in native subgrade exceed 7% on the #200 sieve.
5. Geotextile for separation per WSDOT 9.33.2(1), woven, Table 3 and installed per WSDOT 2-12.3(1). Geotextile under sidewalk may be same as under road or WSDOT 9.33.2(1), Tables 1 and 2, nonwoven, moderate survivability.
6. See Std. Plan 2-13 for minimum pavement section.
7. Planting strip soils shall be per BMP L613 (see SWSDM Quantity Design Details 7.1-7.4), if applicable; or scarify or till subgrade to 3-inch depth; place 3-inches of topsoil on surface and till into 5-inches of site soil. Install 3-inches of arborist wood chip mulch or as specified on plans. Topsoil layer with a minimum organic matter content of 10% dry weight in planting beds, and 5% in turf areas, and a pH from 6.0 to 8.0 or matching the pH of the original undisturbed soil.
8. Permeable pavement surfacing shall meet APWA GSP 5-04.3 Construction Requirements Porous Asphalt (PHMA/PWMA) Acceptance Infiltration Test for porous asphalt or 5-06.3(6)A Infiltration Rate of the Placed Pavement for pervious concrete.
9. Permeable ballast may be extended under curb and sidewalk when approved, see Std. Plan 2-51b.

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME

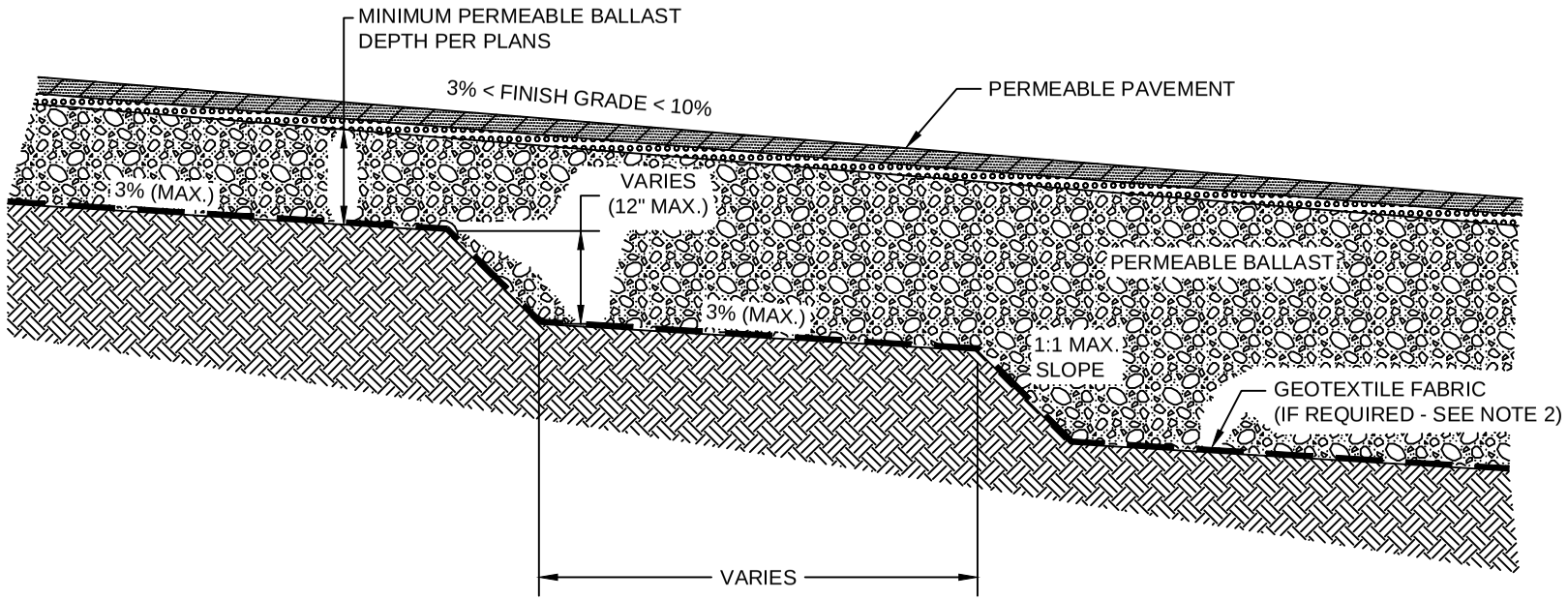
PERMEABLE ROADWAY WITH PLANTING STRIP

DETAIL NO. 2-51c

APPROVED FOR PUBLICATION

CITY ENGINEER _____

DATE 08/16



NOTES:

1. For finish grade no steeper than 10%.

2. Geotextile to be provided between native soil and permeable ballast when recommended by geotechnical professional and shall be required when fines in native subgrade exceed 7% on the #200 sieve.

3. Geotextile for separation under roadways shall be per WSDOT 9.33.2(1), woven, Table 3 and installed per WSDOT 2-12.3(1). Geotextile under sidewalk may be same as under road or WSDOT 9.33.2(1), Tables 1 and 2, nonwoven, moderate survivability.

4. See Std. Plans 2-51a, b and c for permeable roadway sections.

6. See Std. Plans 2-48a and b for permeable sidewalk sections.

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME

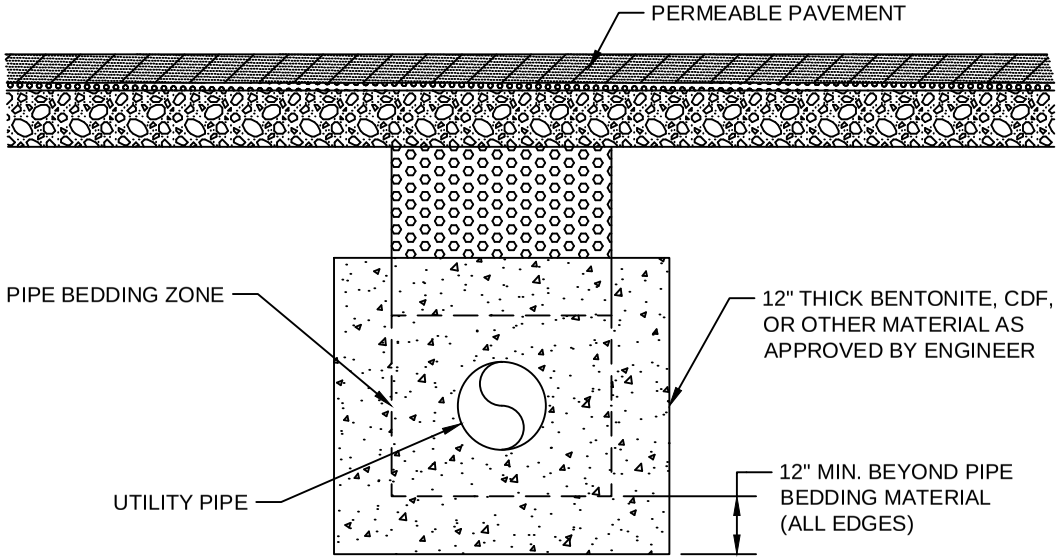
PERVIOUS PARKING LANE TERRACED SUBGRADE

DETAIL NO. 2-52

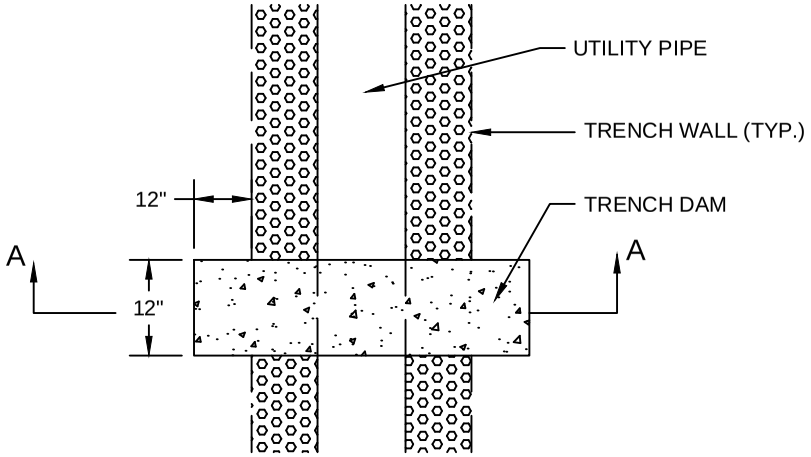
APPROVED FOR PUBLICATION

CITY ENGINEER _____

DATE 08/16



SECTION
NTS



PLAN
NTS

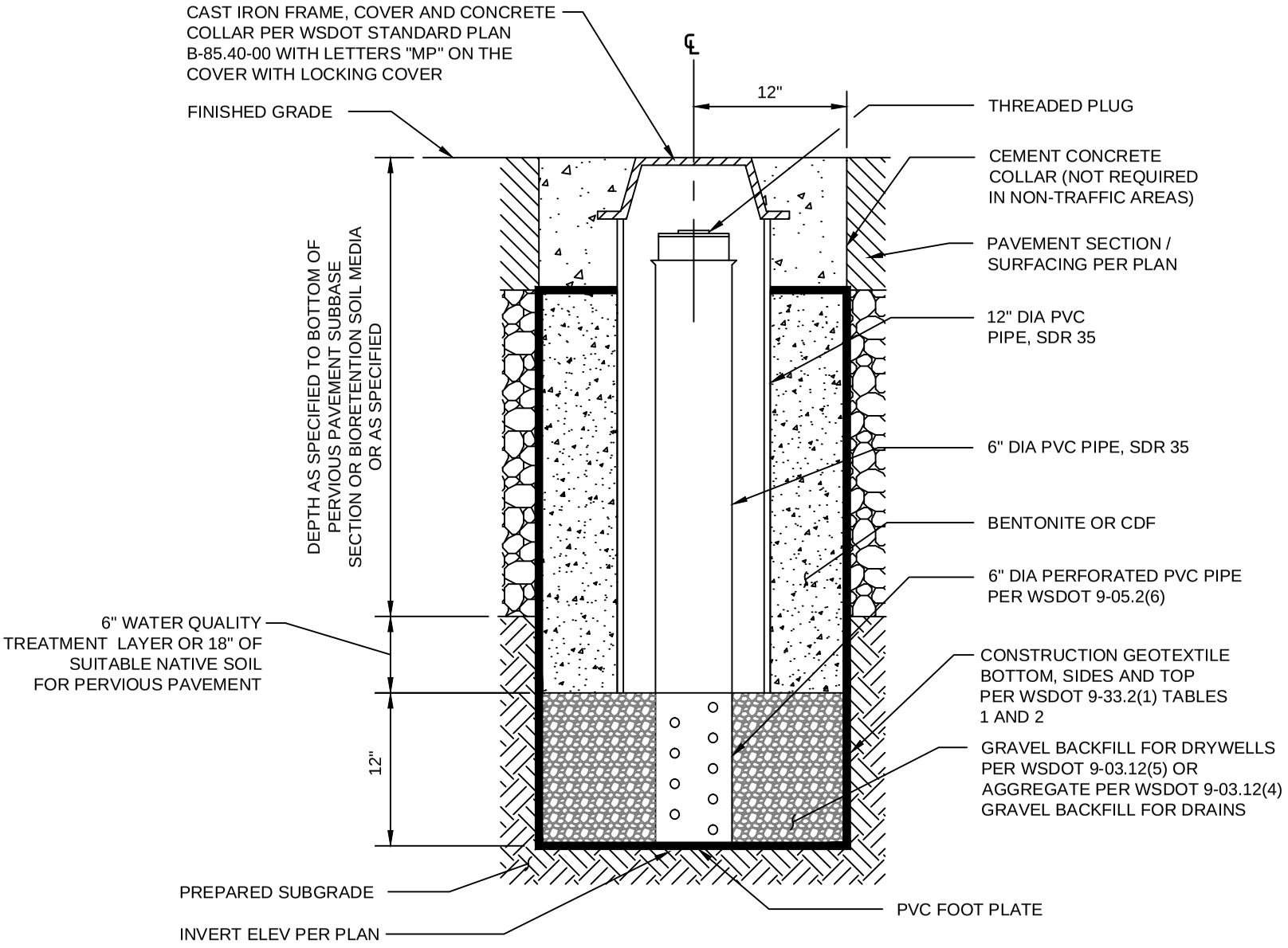
NOTES:

1. Location on mains per plan sheet.
2. Review design with the City for utilities greater than 36 inches in diameter.
3. For service lines, install trench dams at approximate back of walk where utility services are installed beyond the permeable ballast section.
4. Ductile iron pipe shall be encased in a polyethylene sleeve, meeting the requirements of American Waterworks Association (AWWA).

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME	DETAIL NO.
TRENCH DAM	**2-53**

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **08/16**



CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME

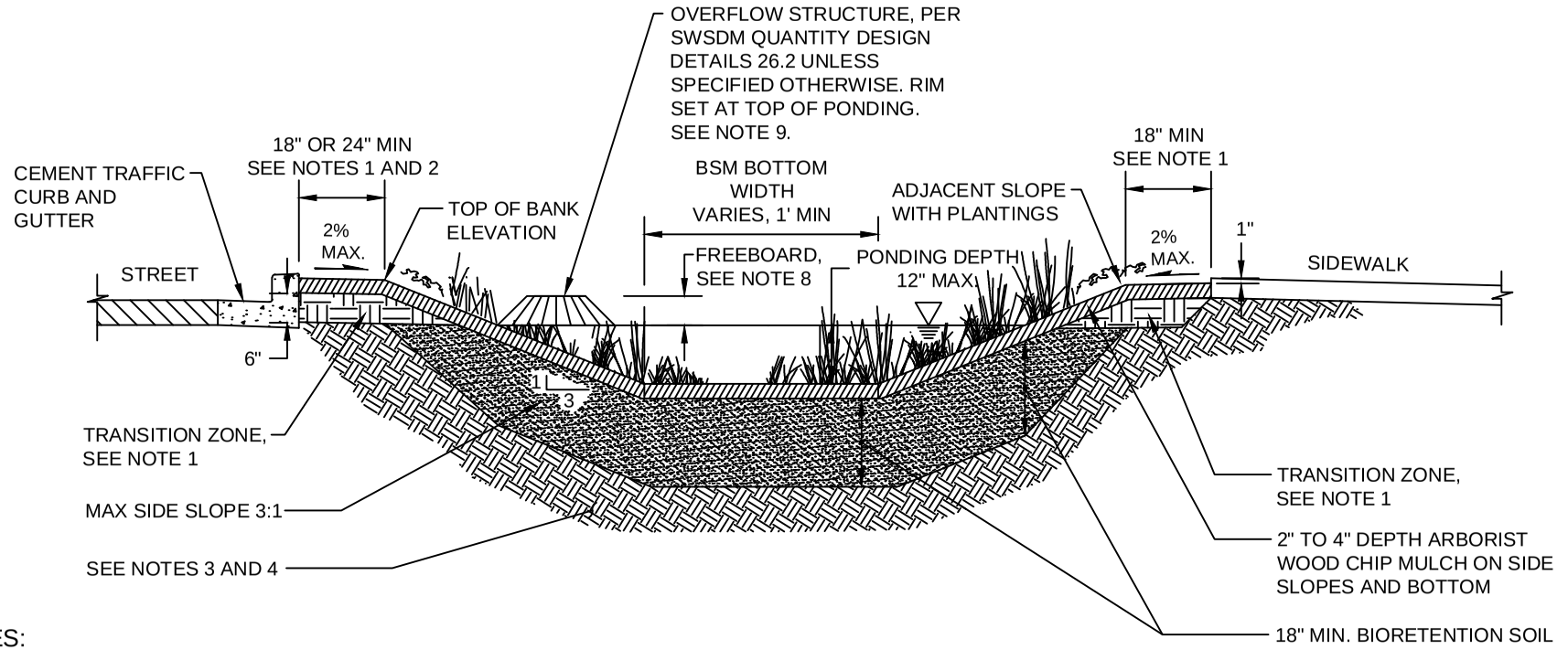
OBSERVATION/MONITORING PORTS FOR STORMWATER FACILITIES

DETAIL NO. 2-54

APPROVED FOR PUBLICATION

CITY ENGINEER _____

DATE 08/16



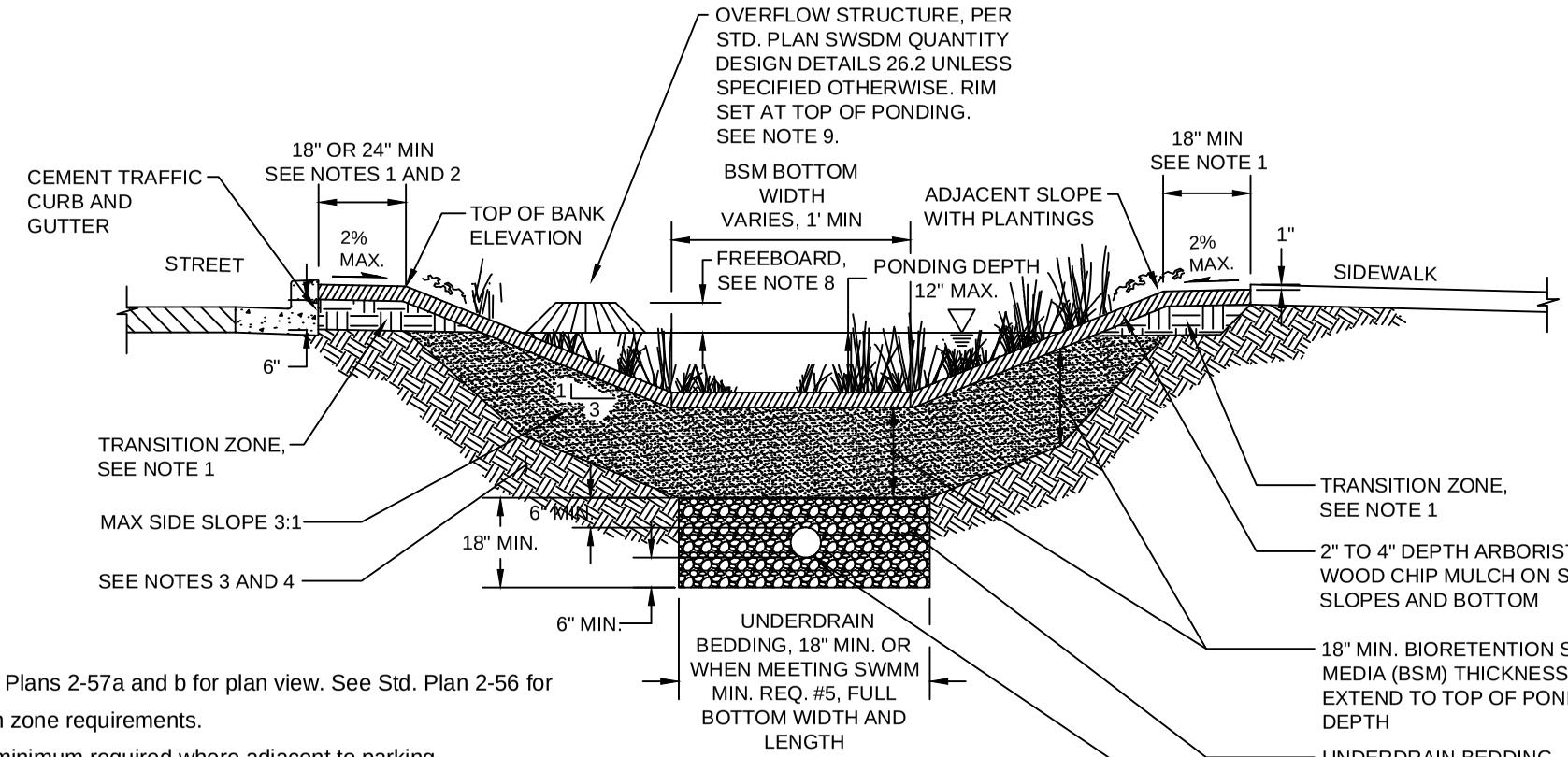
NOTES:

1. See Std. Plans 2-57a and b for plan view. See Std. Plan 2-56 for transition zone requirements.
2. 24-inch minimum required where adjacent to parking.
3. Avoid compaction of existing subgrade below facility.
4. Scarify subgrade 3-inches minimum before bioretention soil media installation.
5. Plantings per Std. Plan 2-66 and plans.
6. Plantings adjacent to parking shall be selected and spaced to allow pedestrian access to vehicles.
7. Sizing and design of facility per Volume III Section 3.4 of the SWSDM.
8. Freeboard depth varies (2-inches or 6-inches) depending upon size of drainage area. For freeboard, ponding and overflow depth, see Volume III section 3.4 of the SWSDM.
9. Overflow type depends on project design. See SWSDM Quantity Design Details 26.2. Alternate overflow type may be allowed.
10. Side slopes steeper than 3:1 may be approved if overall facility depth is less than 3 feet from top of mulch to top of facility.
11. Inlet elevation to be above freeboard elevation.

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME	DETAIL NO.
BIORETENTION	**2-55a**

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **8/16**



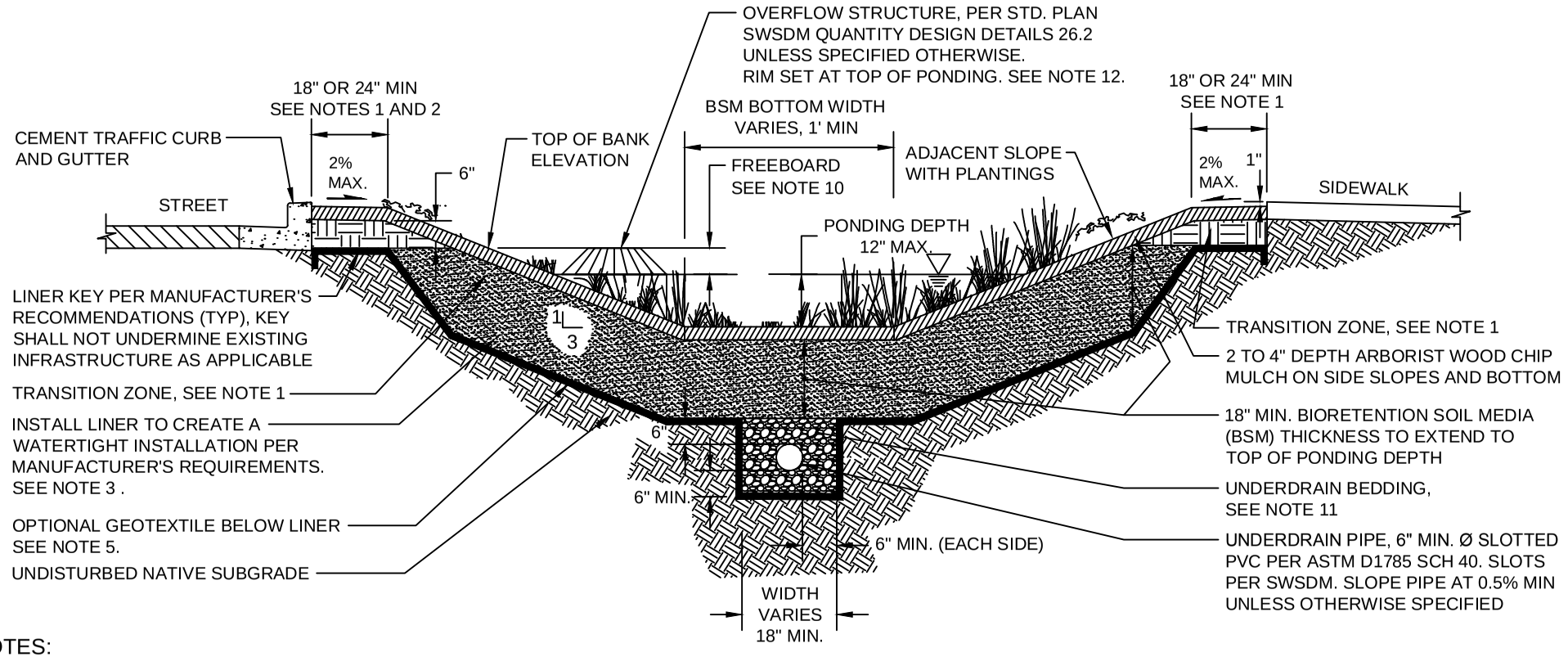
NOTES:

1. See Std. Plans 2-57a and b for plan view. See Std. Plan 2-56 for transition zone requirements.
2. 24-inch minimum required where adjacent to parking.
3. Avoid compaction of existing subgrade below facility.
4. Scarify subgrade 3-inches minimum before bioretention soil media installation.
5. Plantings per Std. Plan 2-66 and plans.
6. Plantings adjacent to parking shall be selected and spaced to allow pedestrian access to vehicles.
7. Sizing and design of facility per Volume III Section 3.4 of the SWSDM.
8. Freeboard depth varies (2-inches or 6-inches) depending upon size of drainage area. For freeboard, ponding and overflow depth, see Volume III Section 3.4 of the SWSDM.
9. Overflow type depends on project design. See SWSDM Quantity Design Details 26.2. Alternate overflow type may be allowed.
10. Side slopes steeper than 3:1 may be approved if overall facility depth is less than 3 feet from top of mulch to top of facility.
11. Inlet elevation to be above freeboard elevation.
12. Underdrain bedding per WSDOT 9-03.12(4) Gravel Backfill for Drains.

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME	DETAIL NO.
BIORETENTION WITH UNDERDRAIN	**2-55b**

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **08/16**



NOTES:

1. See Std. Plans 2-57 and b for plan view. See Std. Plan 2-56 for transition zone requirements.
2. 24-inch minimum required where adjacent to parking.
3. Geomembrane liner per SWSDM and shall be PVC with a minimum thickness of 30 mils and in accordance with ASTM D7176. Seams shall be waterproof. Liner to create a watertight installation to top of freeboard. Prepare subgrade for liner per Engineer. Liner specification may vary based on site conditions.
4. Penetrations through facility liner shall be watertight and shall prevent preferential flow into utility trenches (e.g. water stop, trench block, or trench collar), as appropriate.
5. Provide geotextile under PVC liner to protect liner from sharp rocks if recommended by liner manufacturer. Geotextile per liner manufacturer.
6. Liner secured at top and/or keyed per manufacturer. All seams to be sealed and waterproof per manufacturer and all penetrations to be booted. Liner shall be installed and seamed to create a watertight installation to top of freeboard.
7. Plantings per Std. Plan 2-66 and plans.
8. Plantings adjacent to parking shall be selected and spaced to allow pedestrian access to vehicles.
9. Sizing and design of facility per Volume III Section 3.4 of the SWSDM.
10. Freeboard depth varies (2-inches or 6-inches) depending upon size of drainage area. For freeboard, ponding and overflow depth, see SWSDM BMP L630.
11. Underdrain bedding per WSDOT 9-03.12(4) Gravel Backfill for Drains.
12. Overflow type depends on project design. See SWSDM Quatity Design Details 26.2. Alternate overflow type may be allowed.
13. Side slopes steeper than 3:1 may be approved if overall facility depth is less than 3 feet from top of mulch to top of facility.
14. Inlet elevation to be above freeboard elevation.

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME

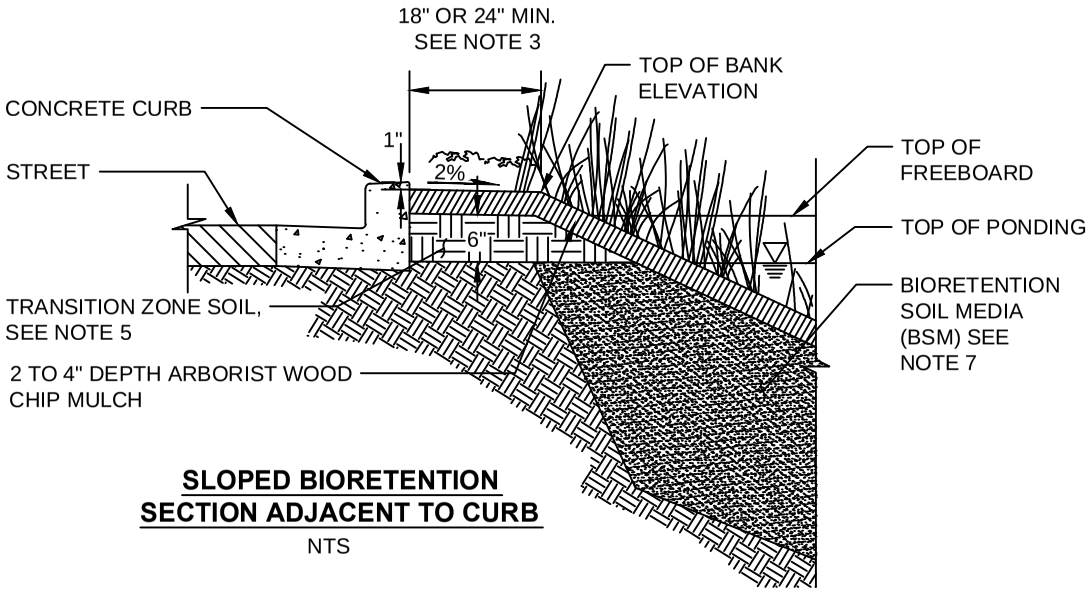
BIORETENTION WITH LINER AND UNDERDRAIN

DETAIL NO. **2-55c**

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **08/16**

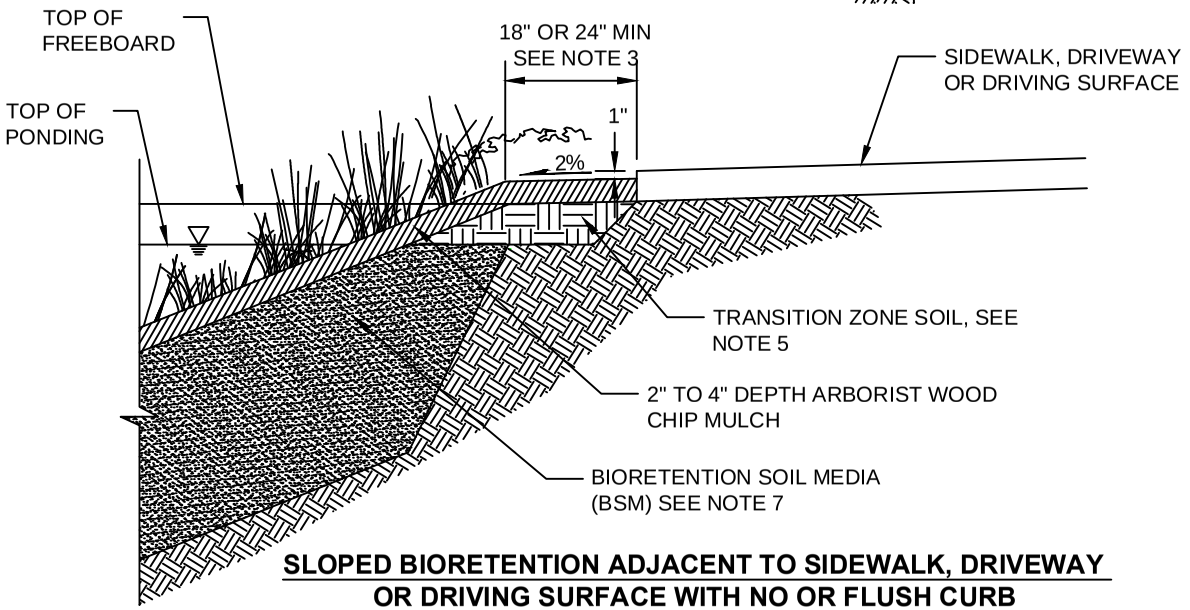
NOTES:

1. 1-inch grade change from edge of sidewalk, curb and/or other hard surface.
2. 2% max. slope for shoulder / level area.
3. Shoulder / level area width to be 24-inches minimum when adjacent to driveway, on street parking or driving surface with flush or no curb. Plantings adjacent to parking shall be selected and spaced to allow access to vehicles.
4. Compact transition zone soil to 90% max. modified proctor density (ASTM D1557).
5. Transition zone soil shall be per Volume III Section 3.1 of the SWSDM (Ecology BMP T5.13) option 2 or 4 (SWSDM Quantity Design Details 34.2 and 34.4) as applicable or per Note 6.
6. Soil amendment: scarify or till subgrade to 3-inch depth. Place 3-inches of topsoil on surface and till into 5-inches of site soil. Install 3-inches woodchip mulch or as specified on plans. Scarification does not apply to lined facilities. Topsoil shall have a minimum organic matter content of 10% dry weight in planting beds, and 5% in turf areas and a pH from 6.0 to 8.0 or matching the pH of the original undisturbed soil.
7. 18" minimum bioretention soil media (BSM) to top of ponding depth.
8. See Std. Plan 2-55a, b, and c for bioretention cross sections and Std. Plans 2-57a and b for plan views.
9. See Std. Plan 2-60 for curb cuts or Std. Plan 2-61 for trench drain inlets.
10. For facilities with liners, provide liner anchor per manufacturer's recommendations, see Std. Plan 2-55c.



SLOPED BIORETENTION SECTION ADJACENT TO CURB

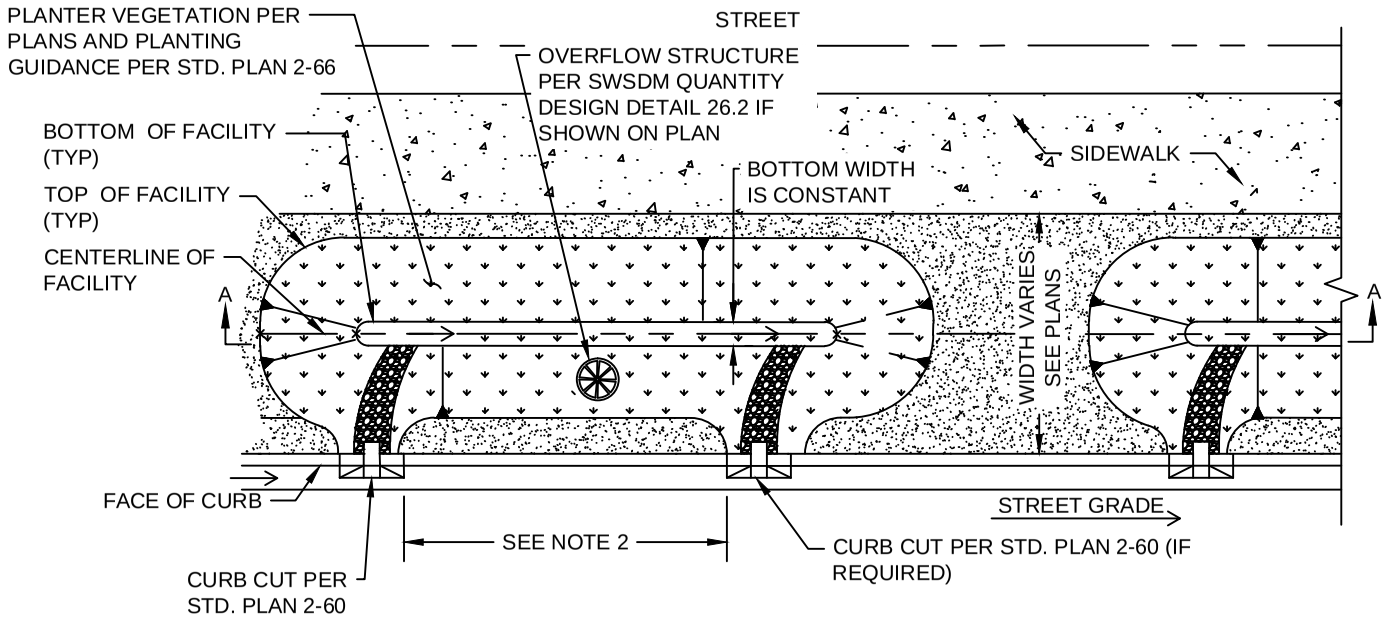
NTS



SLOPED BIORETENTION ADJACENT TO SIDEWALK, DRIVEWAY OR DRIVING SURFACE WITH NO OR FLUSH CURB

NTS

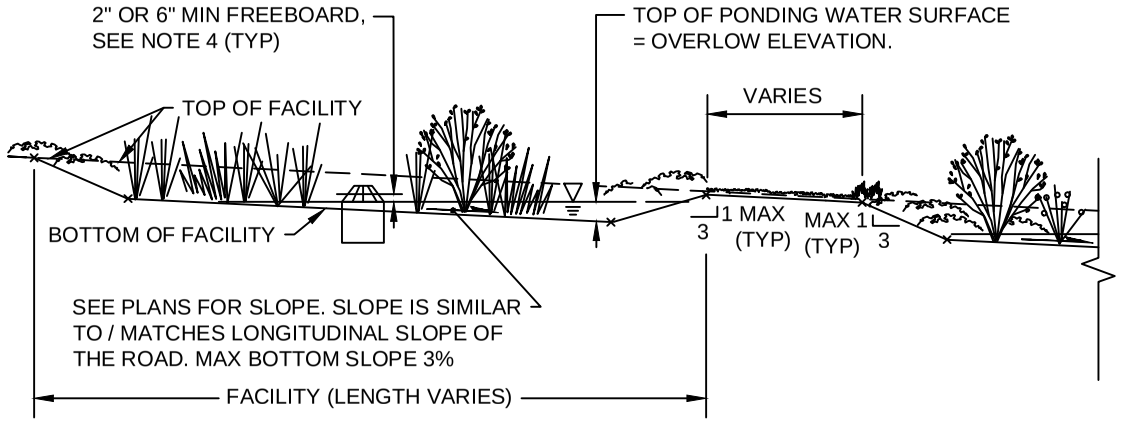
CITY OF GIG HARBOR ENGINEERING DIVISION	
DETAIL NAME **TRANSITION ZONE SECTIONS**	DETAIL NO. **2-56**
APPROVED FOR PUBLICATION CITY ENGINEER _____	DATE **08/16**



PLAN
NTS

NOTES:

1. Plantings per Std. Plan 2-66 and plans.
2. Location, distance between curb cuts, and number of curb cuts vary with facility length and road slope. See plan for location.
3. Inlet and overflow elevation per plans.
4. Freeboard depth varies (2-inches to 6-inches) depending upon size of drainage area. See Volume III Section 3.4 of the SWSDM. Freeboard depth per plans.
5. Weirs or terracing may also be used, see plans.
6. See Std. Plan 2-56 for transition zone beyond top of facility.
7. See Std. Plans 2-55a, b and c for section view.



SECTION A-A
NTS

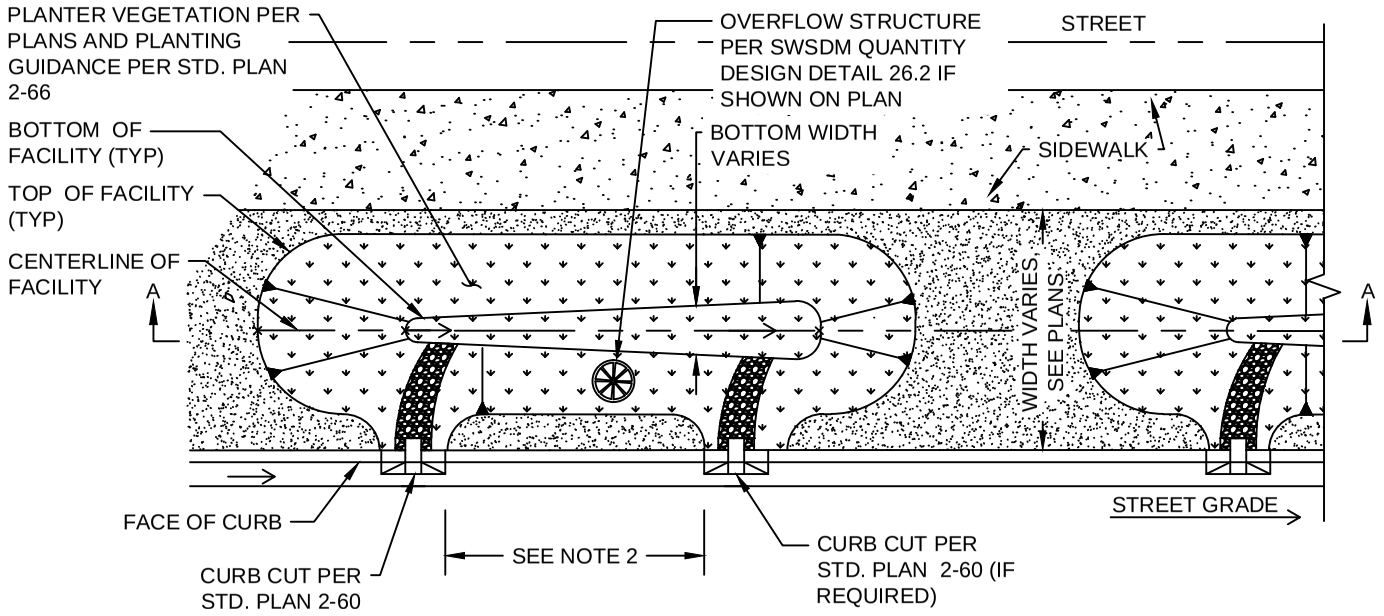
CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME
BIORETENTION WITH SLOPED SIDES, CONSTANT BOTTOM WIDTH

DETAIL NO.
2-57a

APPROVED FOR PUBLICATION
CITY ENGINEER _____

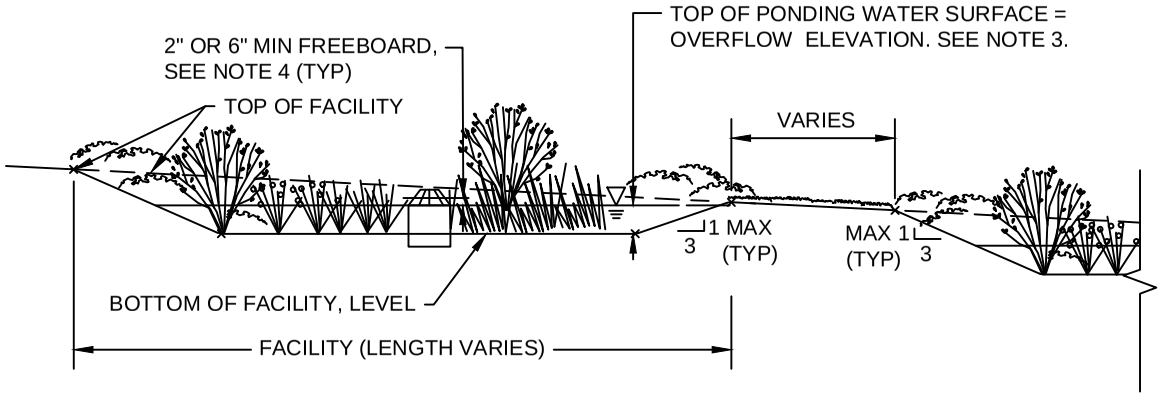
DATE **08/16**



PLAN
NTS

NOTES:

1. Plantings per Std. Plan 2-66 and plans.
2. Location, distance between curb cuts, and number of curb cuts vary with facility length and road slope. Provide a minimum one curb cut per facility. See plan for location.
3. Inlet and overflow elevation per plans.
4. Freeboard depth varies (2-inches to 6-inches) depending upon size of drainage area. See Volume III Section 3.4 of the SWSDM. Freeboard depth per plans.
5. See Std. Plan 2-56 for transition zone beyond top of facility.
6. Weirs or terracing may also be used, see plans.
7. See Std. Plans 2-55a, b and c for section view.



SECTION A-A
NTS

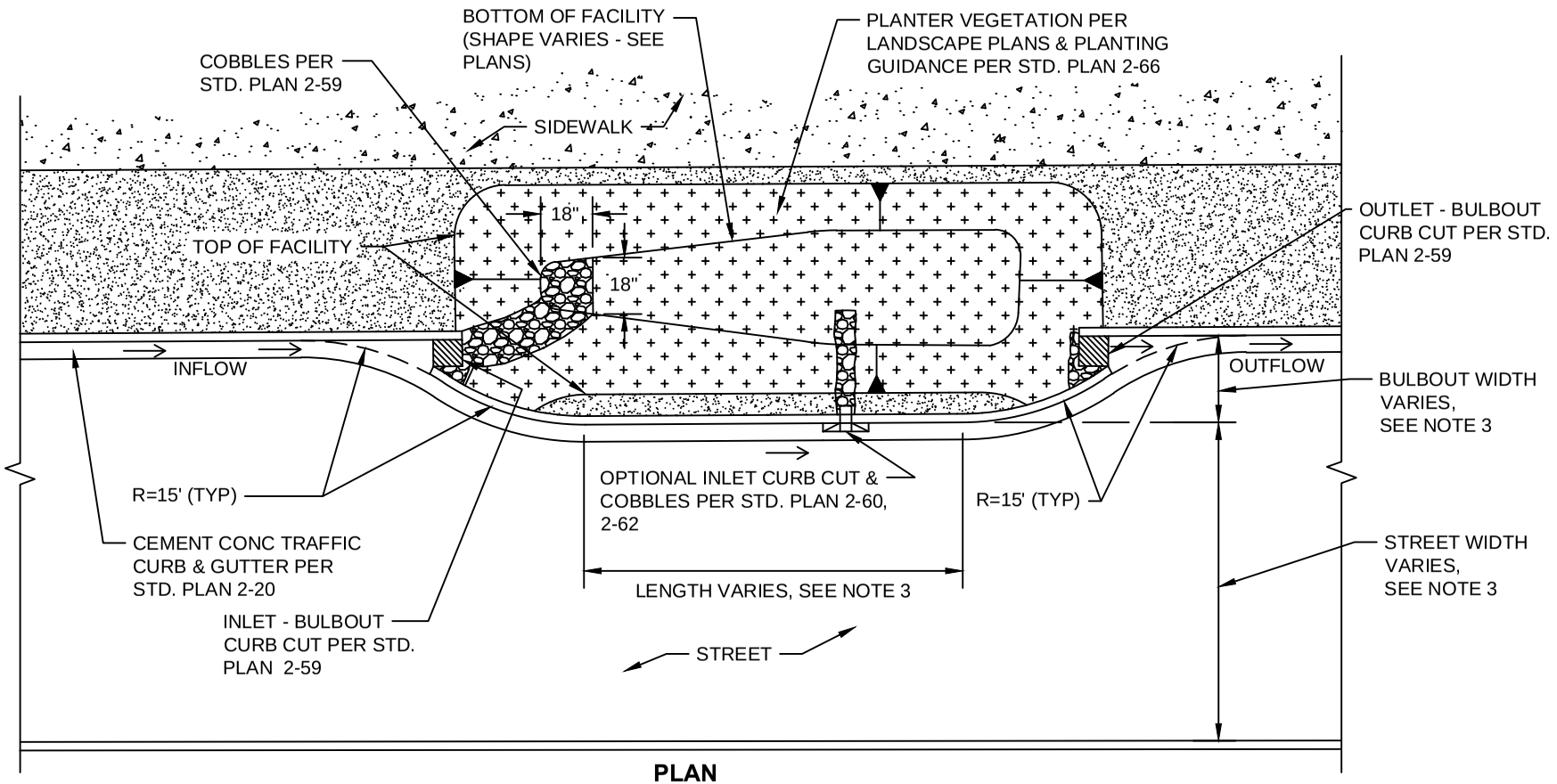
CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME
BIORETENTION WITH SLOPED SIDES, VARYING BOTTOM WIDTH

DETAIL NO.
2-57b

APPROVED FOR PUBLICATION
CITY ENGINEER _____

DATE **08/16**



PLAN
NTS

NOTES:

1. Existing and proposed utility lines shall be located out of facility unless otherwise approved by Engineer.
2. Abandoned utilities within footprint of facility shall be removed as needed. Coordinate with utility provider and Engineer.
3. Curb bulbout width and street width varies with street type (e.g. arterial vs. residential). Maximum widths and lengths to be determined by City based on street.
4. See Standard Plans 2-55a, 2-55b, 2-55c for section.
5. Overflow structure per SWSDM Quantity Design Details 26.2, if shown on plans. Both curb cuts may be inlets if shown on plans and alternate overflow is provided.

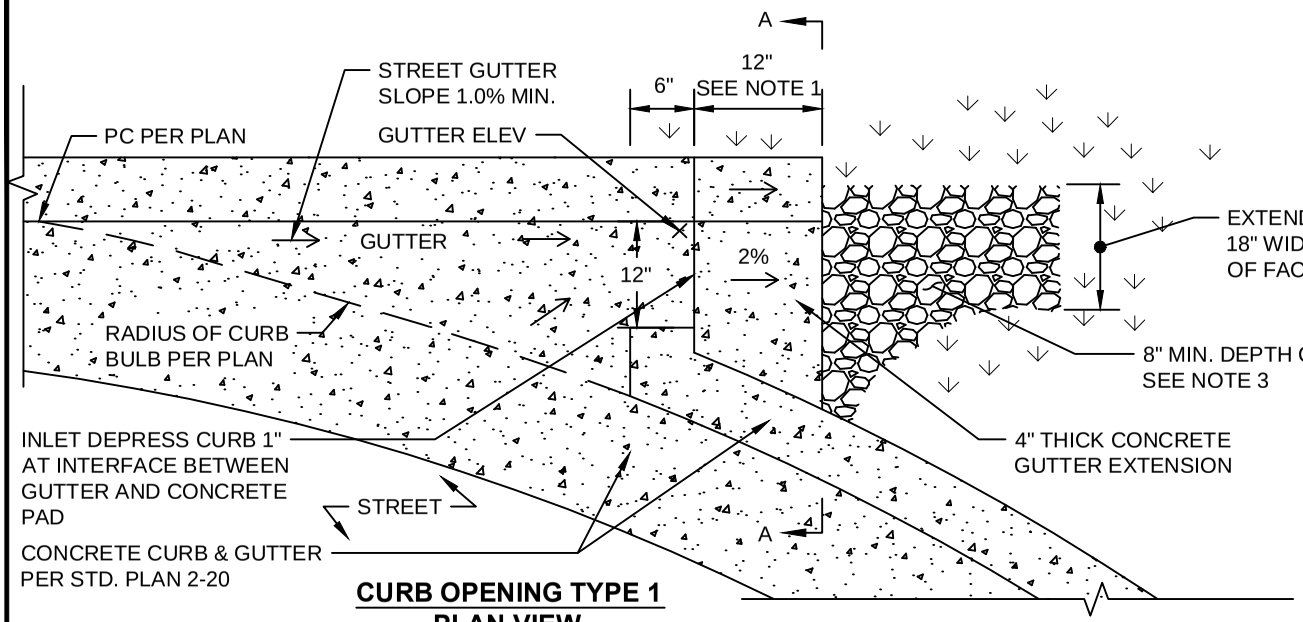
CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME
CURB BULBOUT WITH SLOPED SIDES BIORETENTION

DETAIL NO.
2-58

APPROVED FOR PUBLICATION
CITY ENGINEER _____

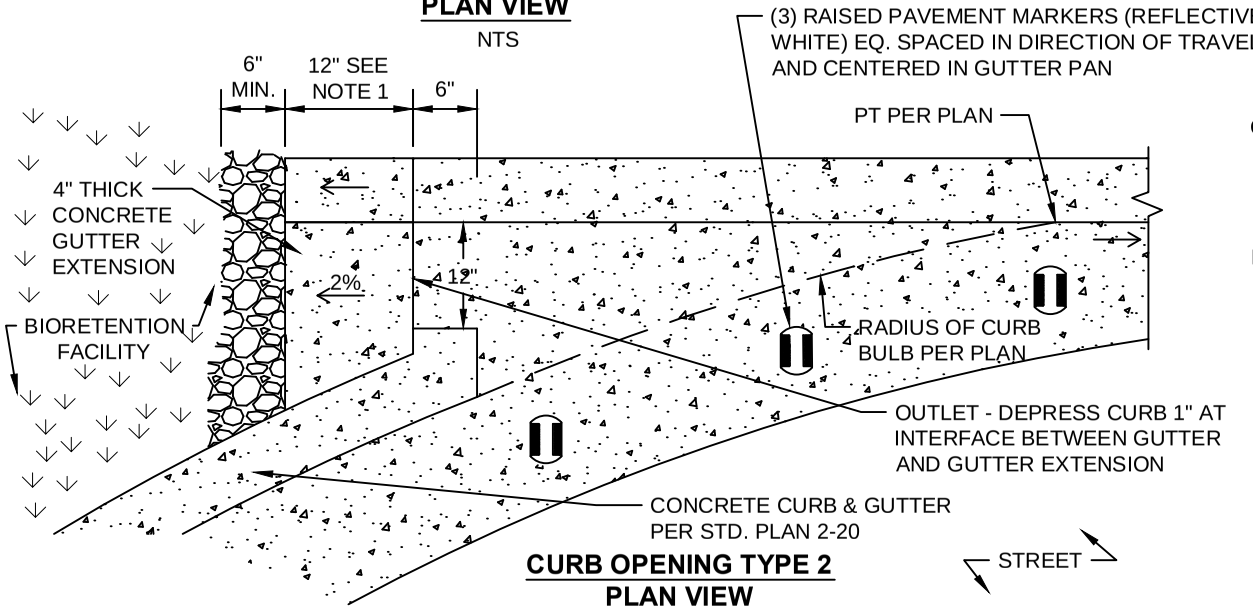
DATE **08/16**



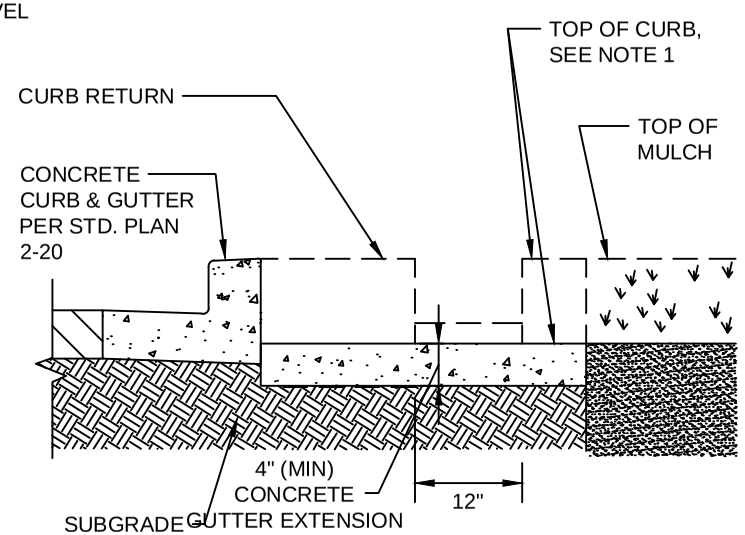
CURB OPENING TYPE 1
PLAN VIEW
NTS

NOTES:

1. Taper curb height from top of curb to top of concrete gutter extension.
2. See City of Gig Harbor Public Works standards for limits of restoration on existing roadways.
3. Cobbles shall be 6" cobbles per WSDOT 9-03.11(2).
4. See Std. Plan 2-58for curb bulb with bioretention.
5. Type 1 for traffic flow from bulbout toward standard road section. Type 2 for traffic flow from standard road section toward bulbout.
6. Pavement marking may be required per City of Gig Harbor Public Works.



CURB OPENING TYPE 2
PLAN VIEW
NTS

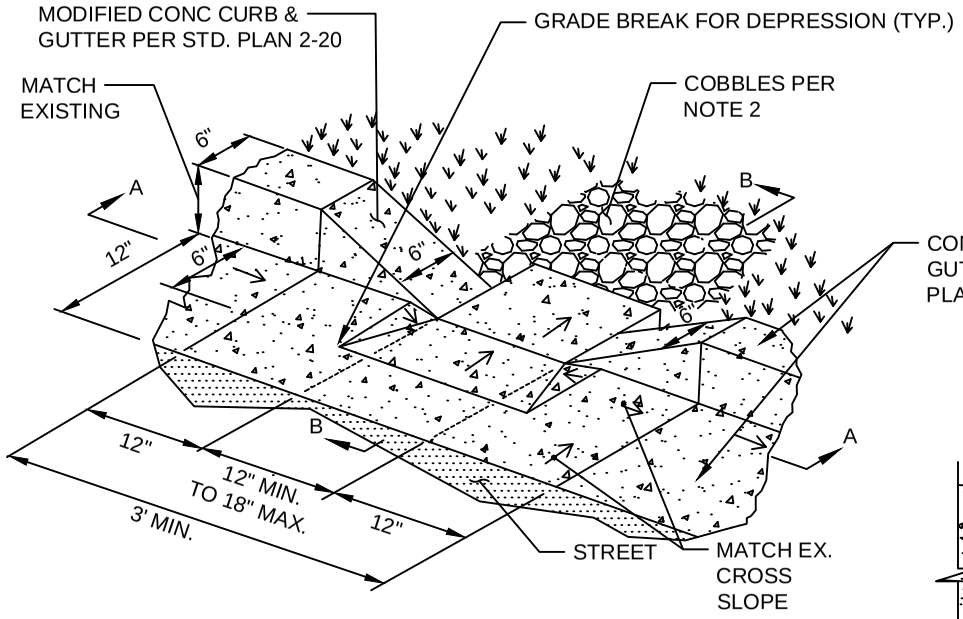


SECTION A-A
NTS

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME	DETAIL NO.
Bulbout (inline) Curb Cut	**2-59**

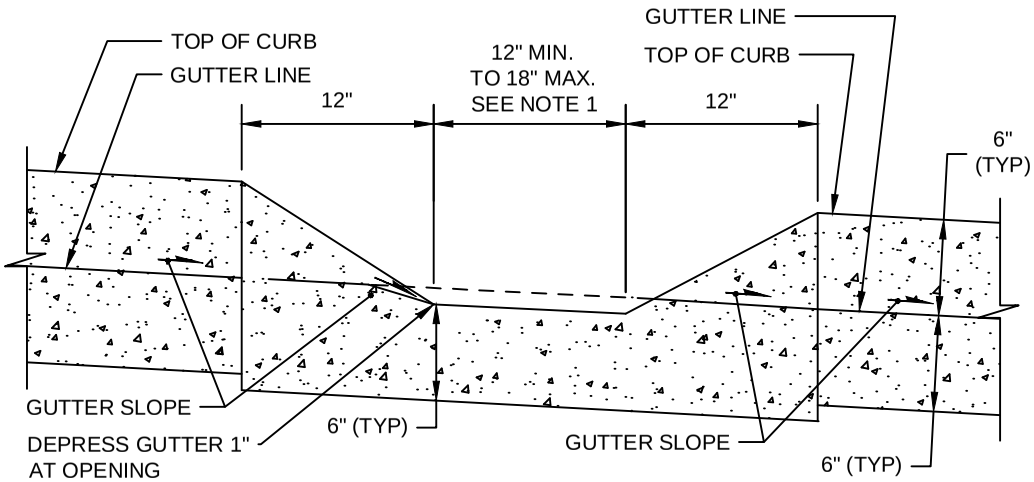
APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **08/16**



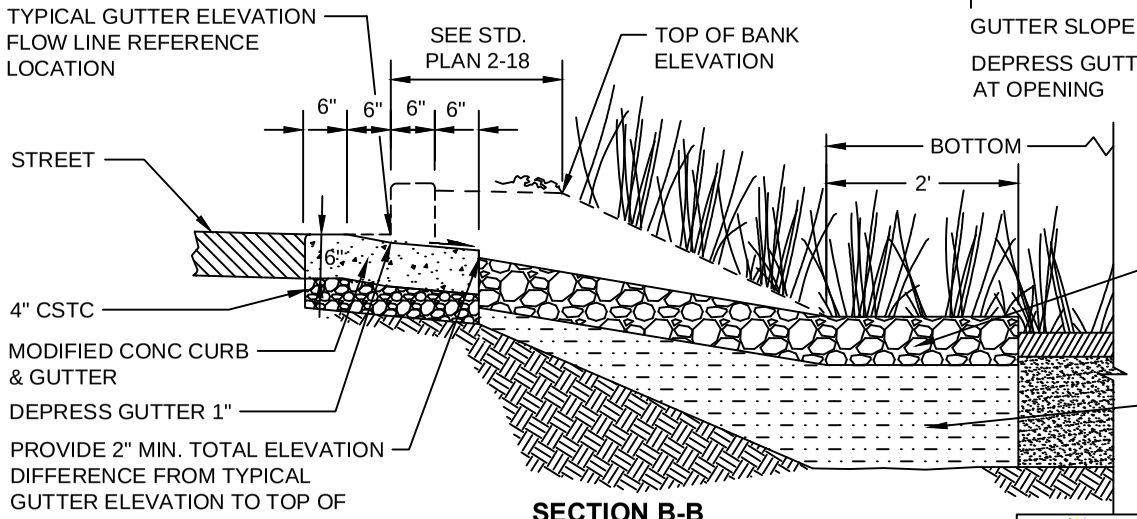
INLET CURB CUT OPENING
NTS

NOTES:

1. For curb cuts into bioretention see SWSDM BMP L630.
2. Cobbles shall be 6" cobbles per WSDOT 9-03.11(2). Cobble pad to be 8" thick by the width of the concrete pad plus 6 inches on either side (width 24" min. to 30" max.) for 12" from opening then taper to 12" wide.



SECTION A-A
NTS



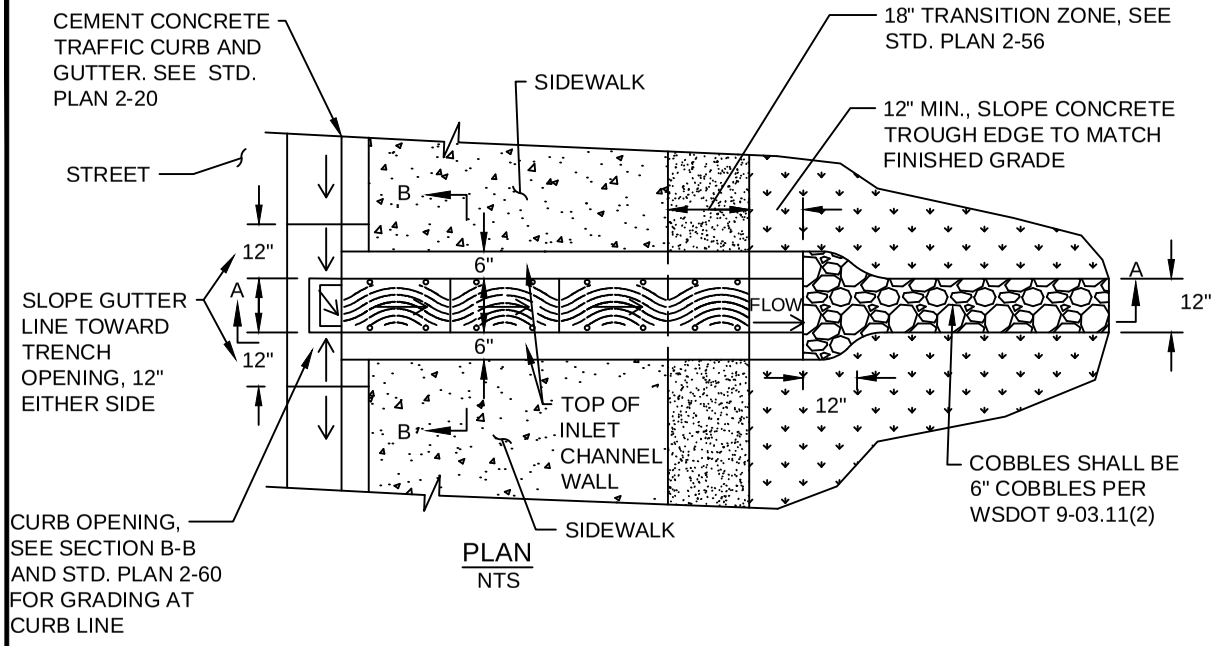
SECTION B-B
NTS

CITY OF GIG HARBOR ENGINEERING DIVISION

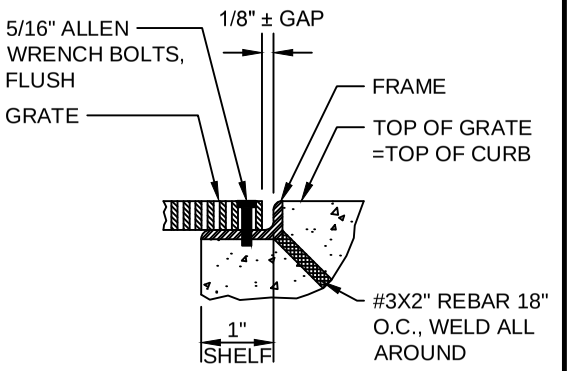
DETAIL NAME
CURB CUT FOR FACILITY WITH GRADED SIDE SLOPES

DETAIL NO.
2-60

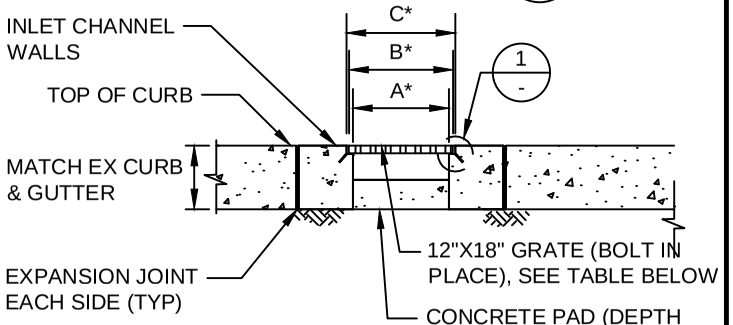
APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **08/16**



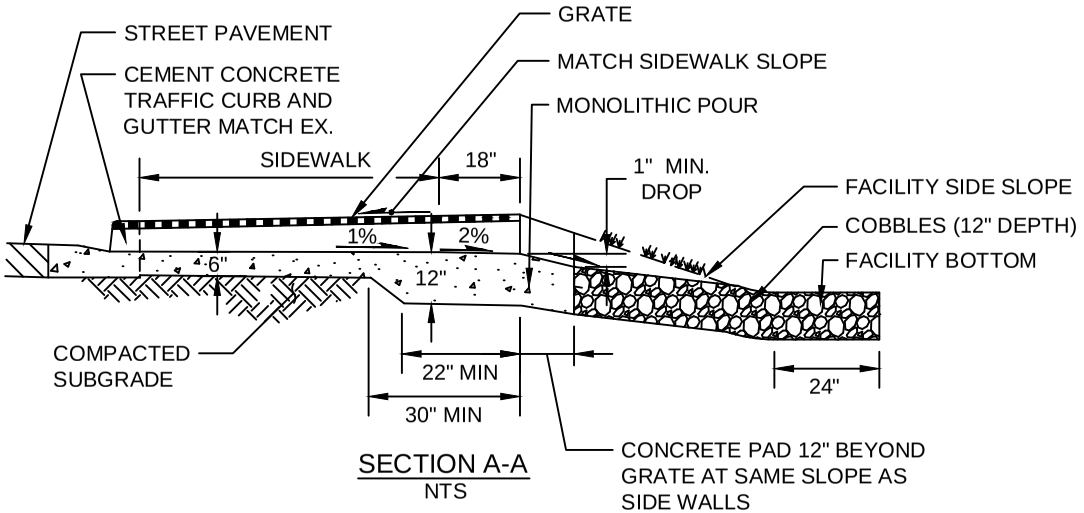
PLAN
NTS



GRATING & FRAME 1/- NTS



SECTION B-B
NTS



SECTION A-A
NTS

*TRENCH GRATING DIMENSIONS

A* TRENCH WIDTH	B* GRATE WIDTH	C* FRAME WIDTH
10"	11⅞"	12⅛"

NOTES:

1. Maximum grate hole width (open) ¼". Grate shall be Urban Accessories 12"x18" title wave trench grate and 12" wide type "S" pedestrian duty trench grate frame, or approved equal.
2. Grate finish shall be raw or powder coated to achieve a minimum coefficient of friction of 0.60. Use of powder coating and color in public right of way shall be approved in writing by the City of Gig Harbor.

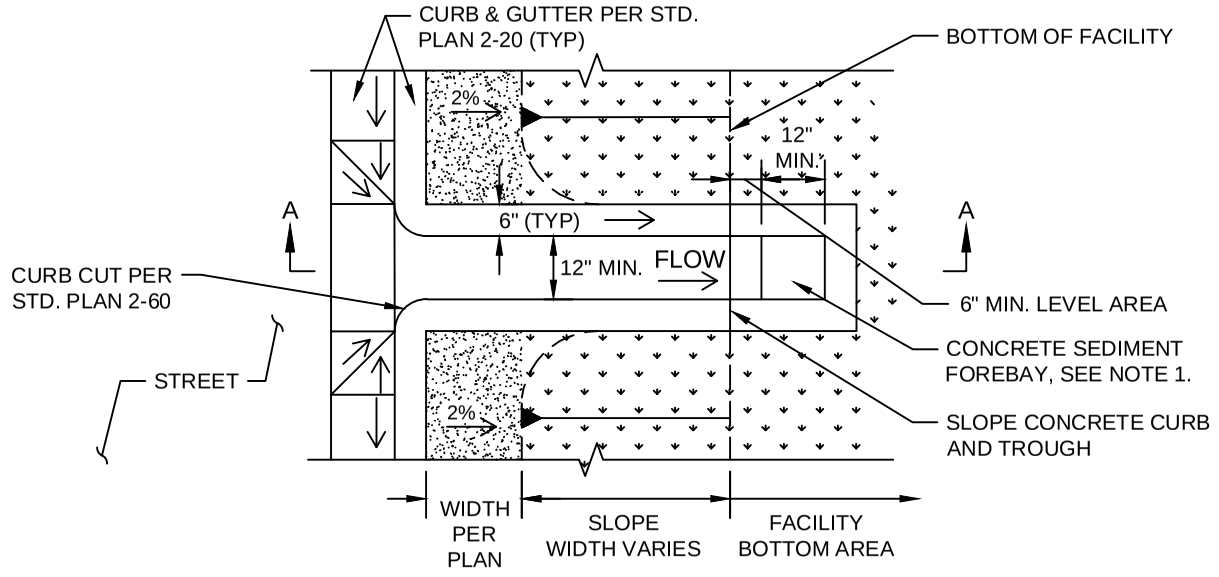
CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME
INLET TRENCH DRAIN INTO SLOPED FACILITY

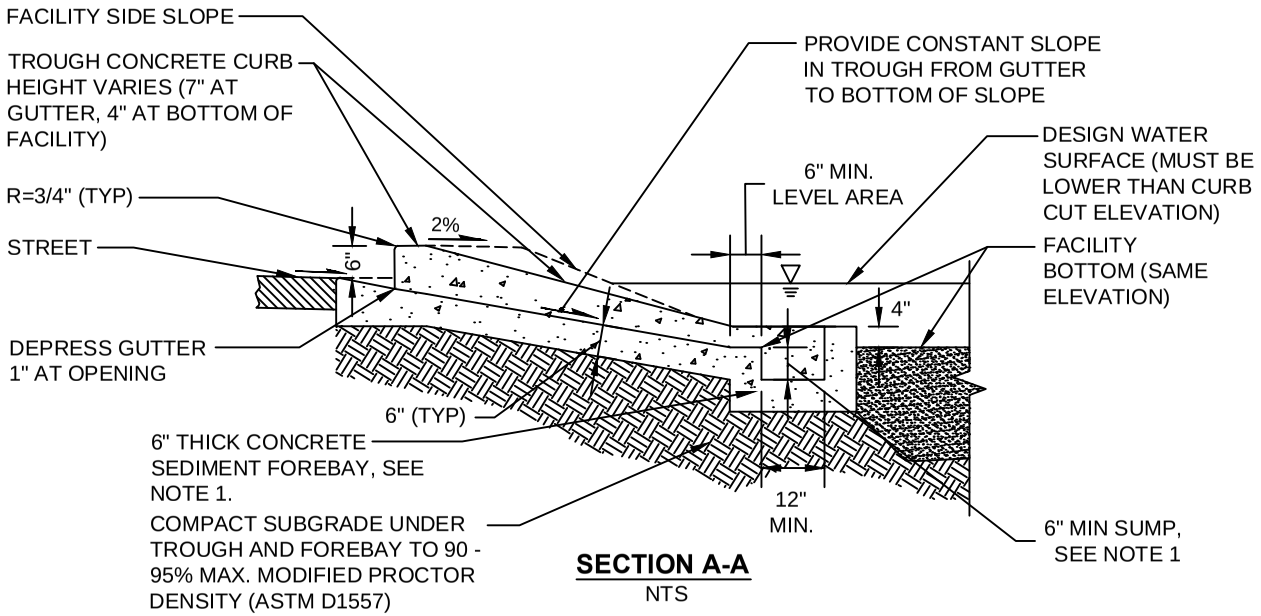
DETAIL NO.
2-61

APPROVED FOR PUBLICATION
CITY ENGINEER _____

DATE **08/16**



PLAN
NTS



SECTION A-A
NTS

NOTES:

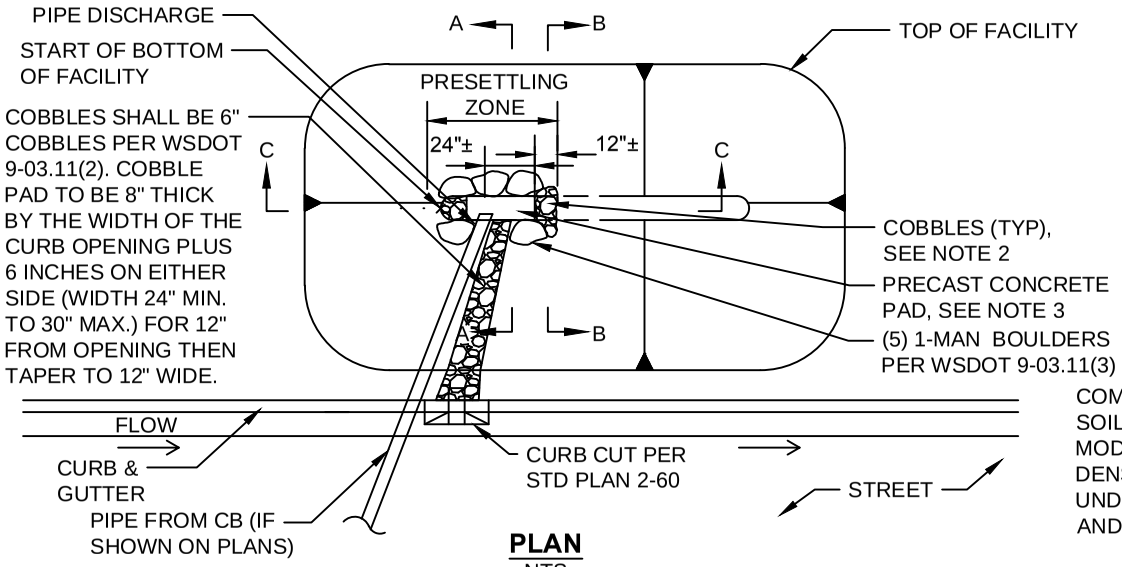
1. If sediment forebay depth is greater than 12", use WSDOT Concrete Inlet Std. Plan B-25.60-00 with frame and vaned grate.

CITY OF GIG HARBOR ENGINEERING DIVISION

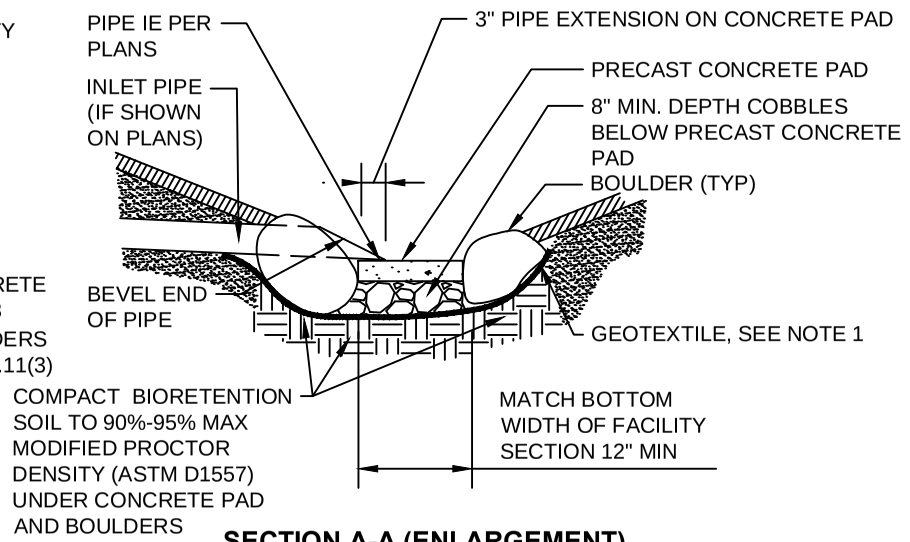
DETAIL NAME
STORMWATER SEDIMENT FOREBAY WITH CONCRETE THROUGH

DETAIL NO.
2-62

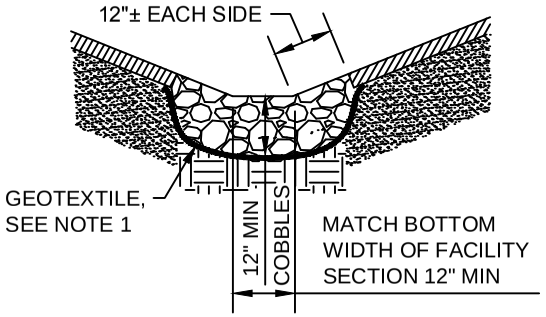
APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **08/16**



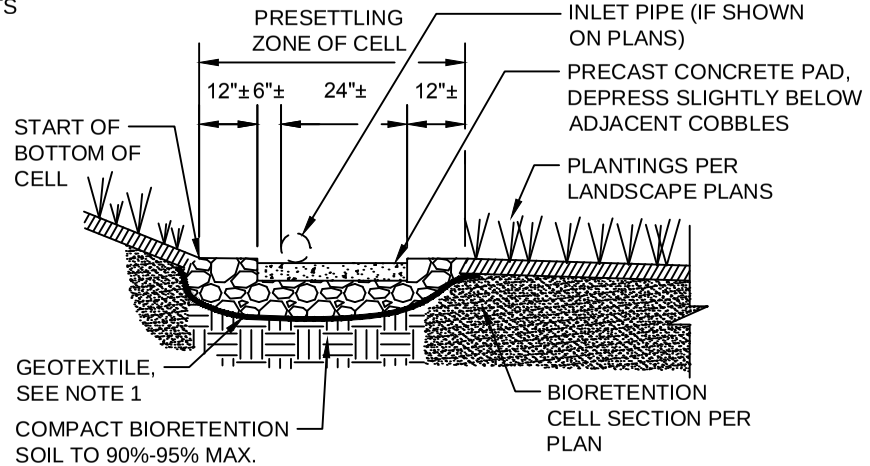
PLAN
NTS



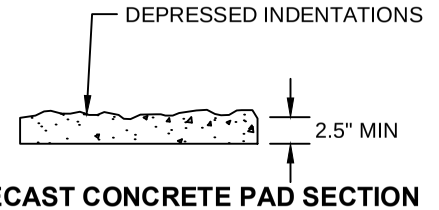
SECTION A-A (ENLARGEMENT)
NTS



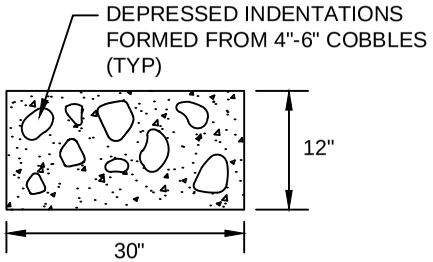
SECTION B-B (ENLARGEMENT)
NTS



SECTION C-C (ENLARGEMENT)
NTS



PRECAST CONCRETE PAD SECTION
NTS



PRECAST CONCRETE PAD PLAN
NTS

NOTES:

1. Geotextile shall be non-woven, moderate survivability per WSDOT 9-33.2(1), Tables 1 and 2.
2. Cobbles shall be 6" cobbles per WSDOT 9-03.11(2).
3. Purchased concrete pad with dimensions of similar size may be used.

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME
PRESETTLING CELL WITH PIPE OR CURB CUT

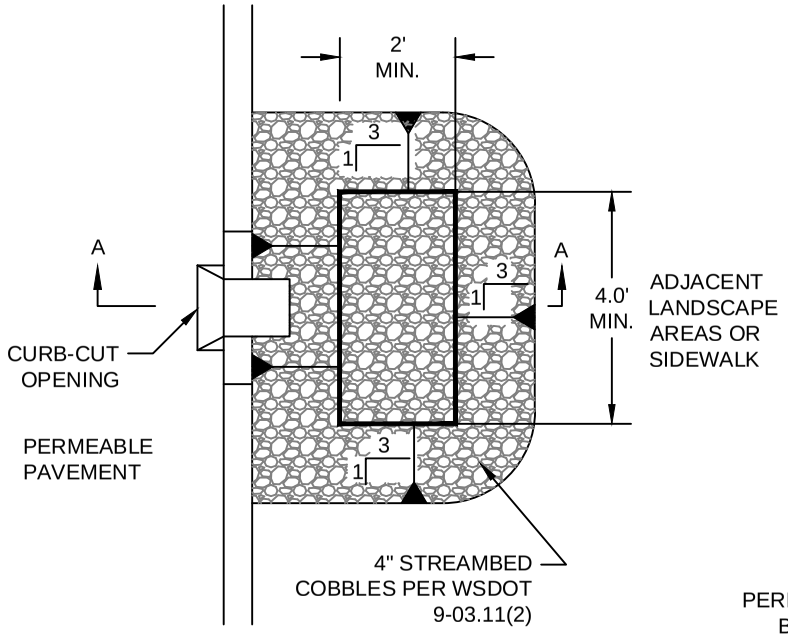
DETAIL NO.
2-63

APPROVED FOR PUBLICATION
CITY ENGINEER _____

DATE **08/16**

NOTES:

1. Overflow infiltration gallery may be used adjacent to low points in permeable pavements.
2. Dimensions shown are minimums. Design conditions may warrant larger dimensions.
3. Location and spacing of overflow infiltration gallery per plans.
4. See Std. Plan 2-60 for curb cut.
5. See Volume III Section 3.5 of the SWSDM (Ecology BMP T5.15) and Std. Plans 2-51a, b, c for permeable pavements.
6. For use in planter strips, minimum bottom width may be adjusted to 1.5 feet if needed.



PLAN
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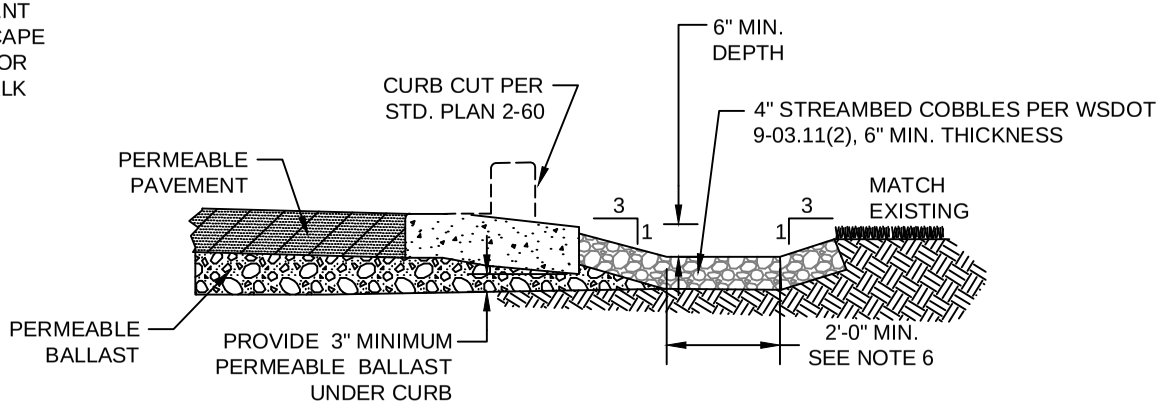
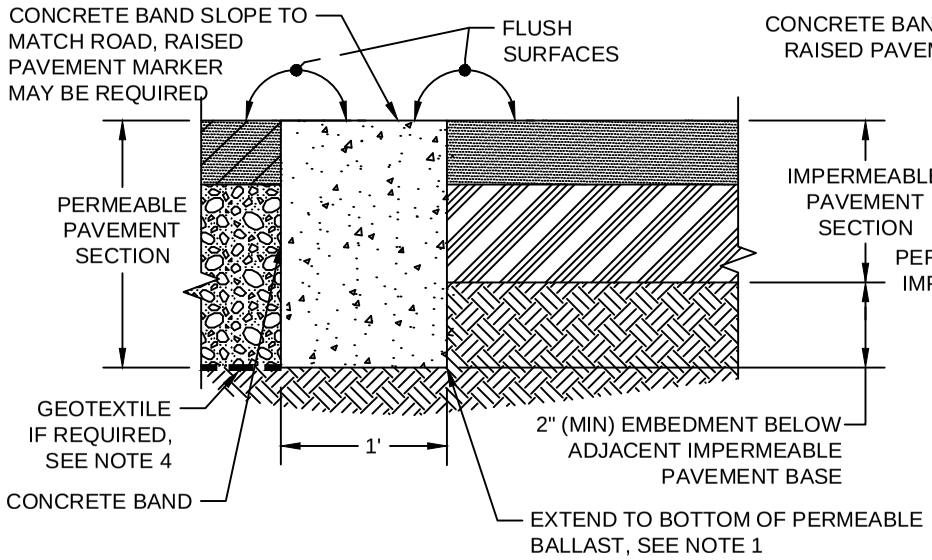


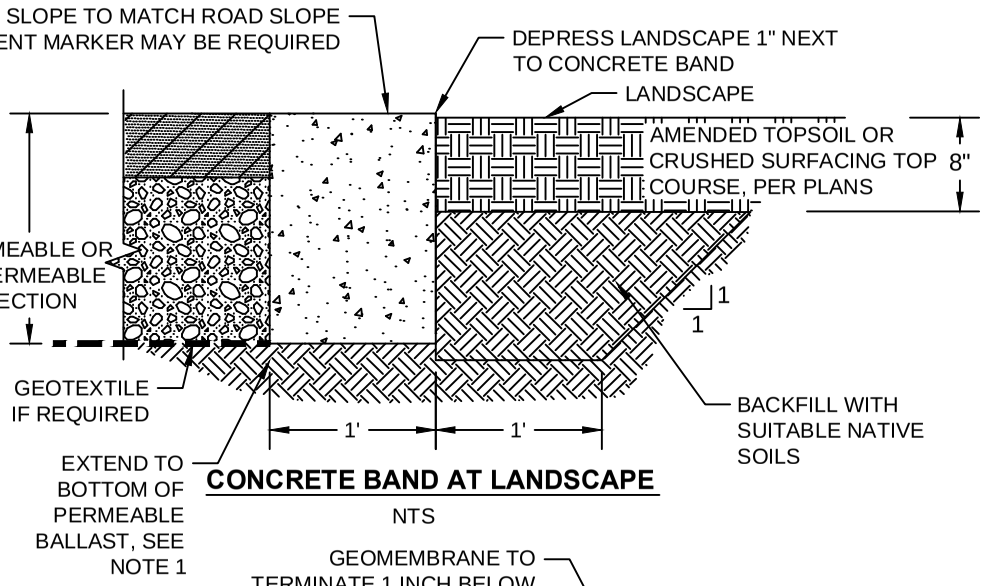
SECTION A-A
NTS

CITY OF GIG HARBOR ENGINEERING DIVISION	
DETAIL NAME **PERMEABLE PAVEMENT OVERFLOW INFILTRATION GALLERY**	DETAIL NO. **2-64**
APPROVED FOR PUBLICATION CITY ENGINEER _____	DATE **08/16**



CONCRETE BAND BETWEEN PAVEMENT TYPES

NTS



CONCRETE BAND AT LANDSCAPE

NTS

NOTES:

1. When used as a visual separation or to stabilize surfacing material, edge treatment is not required to extend more than 12 inches below top of wearing course unless the permeable pavement section is adjacent to a standard pavement section. When permeable pavement is adjacent to a standard pavement section, edge treatment shall extend to the bottom of the permeable pavement section or 2 inches below the impermeable pavement section, whichever is deeper and as approved by the geotechnical engineer.

   When used as a barrier to lateral water flow, edge treatment depth shall be 12 inches minimum or to the bottom of the permeable pavement section, whichever is deeper or deeper as recommended by the geotechnical engineer.

2. Expansion joint in band spaced @ 15' max.

3. Geomembrane barrier shall provide an impermeable barrier between standard and permeable section. It shall be installed 1" below finished grade of surfacing, as shown. Alternatively, the liner shall fold over the permeable ballast a minimum of 6" or further if recommended by the geotechnical engineer. Geomembrane barrier seams shall overlap at least 18" or per manufacturer's recommendations. Geomembrane barrier shall extend the linear length of the permeable section when adjacent to standard pavement.

4. Geotextile for separation per WSDOT 9.33.2(1), woven, Table 3.

5. All joints shall be cleaned and edged. External edges shall be 1/2" radius. Internal joints shall be 1/2" radius.

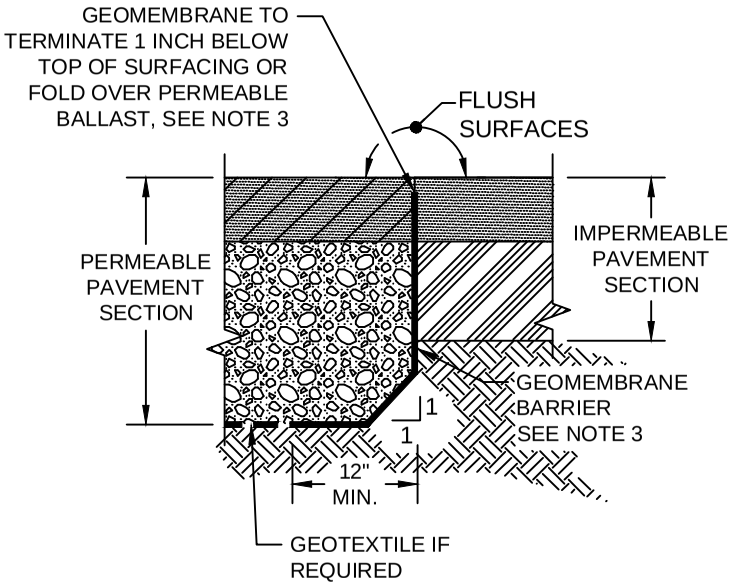
6. All expansion joints shall be full depth with 3/8" premolded joint filler.

7. All soft and yielding foundation material beneath band shall be removed and replaced with crushed surfacing top course (CSTC) per WSDOT Section 9-03.9(3).

8. Maximum depth of concrete band shall be 30 inches.

9. A combination of geomembrane liner and concrete band may be used, if required. Liner to be placed between permeable section and concrete band.

10. Concrete band shall not be used perpendicular to the flow of traffic.



GEOMEMBRANE BARRIER BETWEEN PAVEMENT TYPES

NTS

CITY OF GIG HARBOR ENGINEERING DIVISION

DETAIL NAME

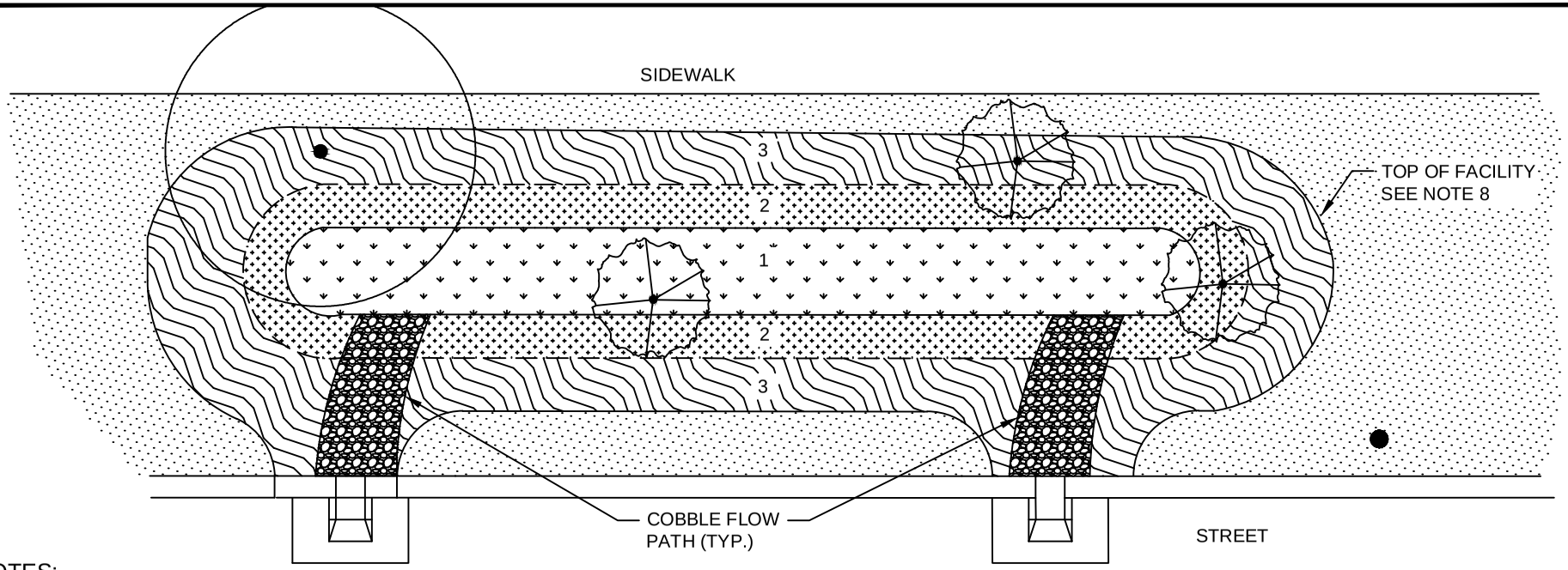
GREEN STORMWATER INFRASTRUCTURE EDGE TREATMENTS

DETAIL NO. **2-65**

APPROVED FOR PUBLICATION

CITY ENGINEER _____

DATE **08/16**



NOTES:

1. All plantings shall be selected with a maximum mature height not greater than 30 inches above the top of facility, with the exception of trees and accent shrubs.
2. See Std. Plans 2-55a, 2-55b, or 2-55c for plan and section views of bioretention with sloped sides.
3. See Rain Garden Handbook for Western Washington: A Guide for Design, Maintenance, and Installation for plant selection, spacing and densities.
4. Choose a minimum 50% evergreen plants.
5. Provide mulch per Volume III Section 3.4 of the SWSDM and Std. Plans 2-55a, 2-55b or 2-55c.
6. Plantings adjacent to street, driveway or sidewalk shall be selected and spaced to allow access to vehicles and not impede pedestrians.
7. Plants shall be spaced to ensure clear access and unimpeded flow from inlets, outlets and overflows.
8. Continue mulch for a minimum of 2-feet past the top of bank elevation or install landscape edging if facility is adjacent to turf.

SYMBOL	ZONE	PLANT TYPE	LOCATION
	1	Emergents, Perennials & Low Shrubs (Plants that can tolerate standing water)	Facility Bottom
	2	Emergents, Perennials & Low Shrubs (Plants that can tolerate occasional standing water)	Lower Slope to top of ponding
	3	Groundcovers / Shrubs	Upper Slope / Sidewalk Grade
	1,2,3	Accent Shrub (Select appropriate shrub based on zone)	Sidewalk Grade / Lower Slope / Facility Bottom
	1,2,3	Tree	Upper Slope Locate trees to allow for pedestrian and vehicular clearances. Trees to be located outside of liner for lined facilities.

CITY OF GIG HARBOR ENGINEERING DIVISION

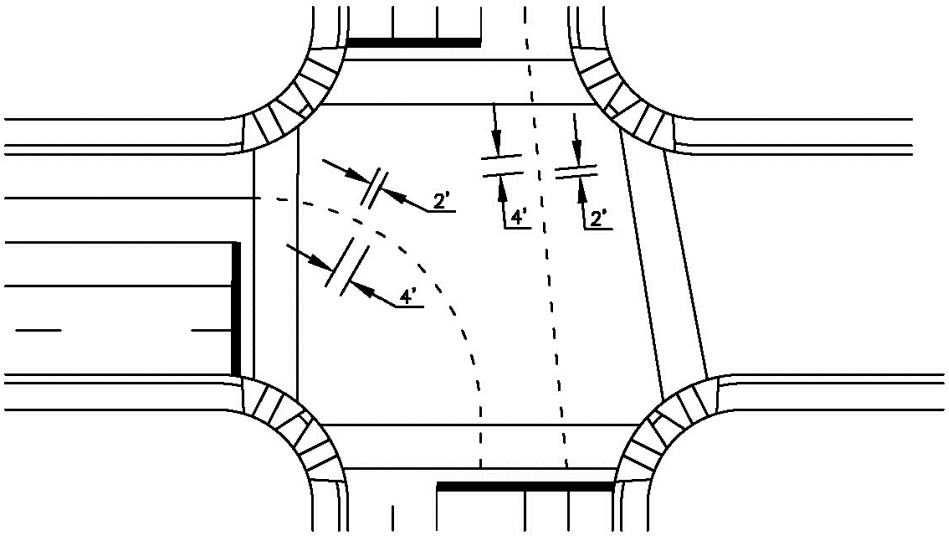
DETAIL NAME

PLANTING ZONE DIAGRAM
BIORETENTION WITH SIDE SLOPES

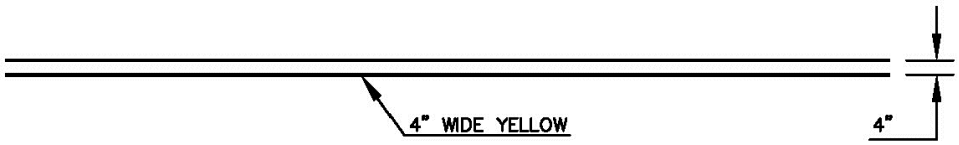
DETAIL NO. **2-66**

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE **08/16**

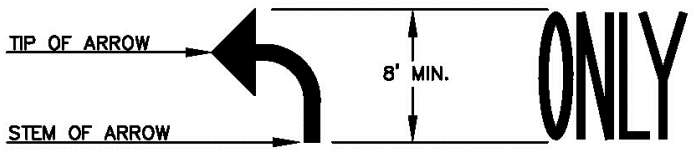
MINI–SKIP LINE THROUGH INTERSECTION: MINI–SKIP LINES SHALL BE SEPARATED BY 4' GAPS WHEN USED THROUGH AN INTERSECTION, i.e. FOR DUAL TURNS OR TO DELINEATE AN OFFSET.



CENTER LINES: CENTER LINES SHALL BE A DOUBLE YELLOW LINE. A DOUBLE YELLOW LINE SHALL CONSIST OF TWO SOLID 4" SIDE YELLOW LINES PLACED 4" APART. WHEN WARRANTED, CENTER LINES SHALL BE USED TO SEPARATE TRAFFIC TRAVELING IN OPPOSITE DIRECTIONS WHERE A MEDIAN ISLAND IS NOT PRESENT.



TURN ARROWS AND "ONLY" LEGENDS: TURNS ARROWS AND "ONLY" LEGENDS SHALL BE WHITE. ALTHOUGH ALL TURN LANES MUST HAVE ARROWS IN THEM, SOME MUST ALSO HAVE "ONLY" LEGENDS. THE LOCATIONS OF ARROWS AND "ONLY" LEGENDS AND THE USE OF THE "ONLY" LEGEND SHALL DEPEND ON WHETHER THE TURN LANE IS CONSIDERED A "BAY TURN LANE" OF A "DROP TURN LANE" (SEE DEFINITIONS SECTION).

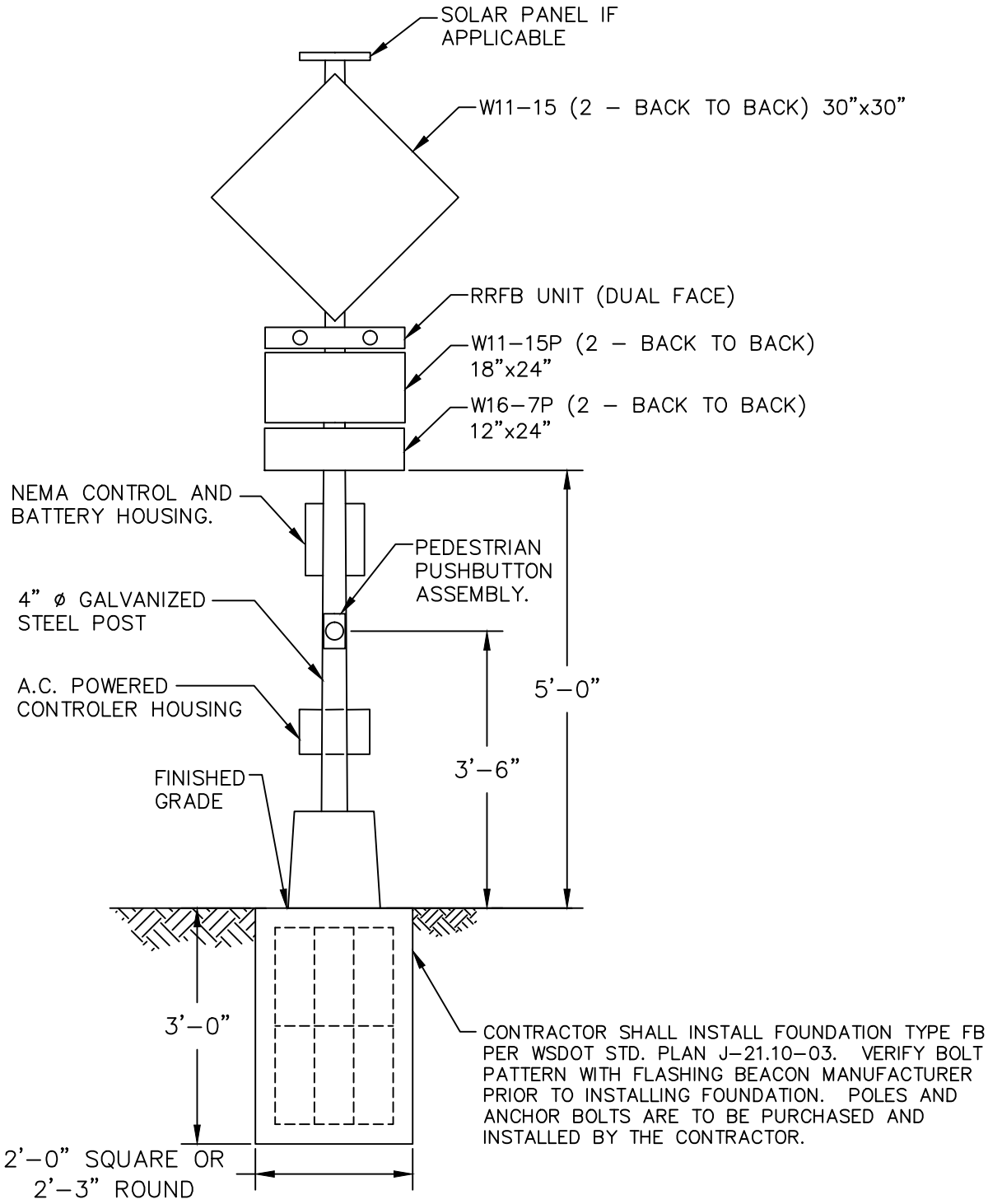


CITY OF GIG HARBOR
ENGINEERING DIVISION

PAVEMENT MARKINGS

DETAIL NO. 2-67

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016



NOTES:

1) ALL RRFB SYSTEMS SHALL BE A.C. POWERED. SOLAR UNITS MAY BE PERMITTED AT THE DISCRESION OF THE CITY ENGINEER.
2) RRFB SIGNS SHALL BE "HIGH INTENSITY PRIZMATIC.
3) RRFB SYSTEM SHALL BE MANUFACTURED BY "CARMANAH©"

CITY OF GIG HARBOR
ENGINEERING DIVISION

RECTANGULAR RAPID FLASHING BEACON WITH SIGNAGE (RRFB)	DETAIL NO. 2-68

APPROVED FOR PUBLICATION
CITY ENGINEER _____ DATE MAY 16, 2016