

## IRRIGATION NOTES

1. THE CONTRACTOR SHALL INSPECT THE SITE AND VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
2. IRRIGATION PLANS ARE SCHEMATIC REPRESENTATIONS ONLY. PLACE LINES IN A COMMON TRENCH WHENEVER POSSIBLE. FIELD ADJUST LINES TO AVOID CONFLICT WITH UTILITIES.
3. IRRIGATION IS COORDINATED WITH THE PLANTING PLAN AND SITE IMPROVEMENTS AND IS DESIGNED WITH TRIANGULAR SPACING GIVING HEAD TO HEAD COVERAGE. COORDINATE IRRIGATION HEAD LAYOUT WITH NEW PLANT MATERIALS, LOCATE SPRAY HEADS 30" FROM BASE OF TREE. DO NOT ALTER HEAD LOCATION, PIPE LAYOUT, OR VALVE LOCATION WITHOUT WRITTEN APPROVAL FROM THE CONSTRUCTION MANAGER. NOTIFY CONSTRUCTION MANAGER IF DISCREPANCIES OCCUR BETWEEN THE PLANS AND FIELD CONDITIONS.
4. ALL COMPONENTS OF IRRIGATION SYSTEM SHALL BE INSTALLED AND PROPERLY ADJUSTED TO PROVIDE ADEQUATE COVERAGE AND MINIMIZATION OF OVER SPRAY ONTO WALKS, BUILDINGS, PARKING AREAS, ETC.
5. ALL PIPE SIZES INDICATED ARE MINIMUMS. CONTRACTOR MAY NOT DECREASE PIPE SIZE. LARGER PIPE SIZES MAY BE USED AT NO ADDITIONAL COST TO OWNER. IRRIGATION LATERALS ARE SIZED BEGINNING AT THE AUTOMATIC VALVE AND CONTINUING IN DIRECTION OF FLOW. REDUCTIONS IN PIPE SIZE ARE LABELED BEGINNING DOWNSTREAM OF NEAREST FITTING. ALL LATERALS NOT SIZED ARE MINIMUM 3/4".
6. INSTALL ALL IRRIGATION PIPE AND CONTROL WIRES IN MINIMUM 4" PVC SLEEVE BELOW ALL PAVED SURFACES UNLESS OTHERWISE INDICATED ON THE PLANS. INSTALL SLEEVES PRIOR TO PLACEMENT OF PAVEMENTS AND PAVEMENT SUB-BASE. SEE **PIPE SLEEVING** DETAIL FOR FURTHER REQUIREMENTS.
7. COORDINATE IRRIGATION POINTS OF CONNECTION AND LOCATION OF AUTOMATIC CONTROL VALVES WITH PROJECT MANAGER. COORDINATE ALL WORK WITH OTHER TRADES, I.E. ELECTRICAL, MASONRY, ETC.
8. CONTRACTOR TO PROGRAM AUTOMATIC CONTROLLER TO ALLOW FOR THE EQUIVALENT OF 1" OF WATER PER WEEK.
9. ALL PIPES SHALL BE TRENCHED. PROVIDE POSITIVE DRAINAGE OF MAINLINE. PLACE MANUAL DRAIN AT LOW POINTS IN MAINLINE. IDENTIFY LOCATIONS ON AS-BUILTS.
10. USE 45° ELBOWS INSTEAD OF 90° ELBOWS ON ALL MAINLINES 2-1/2" AND LARGER. INSTALL CONCRETE THRUST BLOCKS AT ALL MAINLINE CHANGES IN DIRECTION. POUR MINIMUM OF 1 CUBIC FOOT OF CONCRETE ON UNDISTURBED SOIL. WRAP PIPE IN PLASTIC WRAP PRIOR TO COVERING WITH CONCRETE.
11. OWNER (OR CONTRACTOR) TO INSTALL CONTROLLER, CCU ELECTRICAL, PHONE AND ACCESSORIES AS REQUIRED. CONTRACTOR TO FURNISH CONTROL WIRES FROM VALVES TO CONTROLLER. THE OWNER WILL WIRE ALL INTERNAL COMPONENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING 110 VOLT SERVICE FROM BUILDING TO EXISTING JUNCTION BOX IN CONTROLLER HOUSING AND CONNECT CONTROLLER SERVICE.
12. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
13. WATER METER SHALL BE INSTALLED BY OWNER. CONTRACTOR RESPONSIBLE FOR CONNECTIONS DOWNSTREAM OF WATER METER.
14. IRRIGATION SYSTEM IS DESIGNED BASED ON CITY WATER PRESSURE OF 70 PSI PRIOR TO POINT OF CONNECTION. VERIFY CONDITION AND NOTIFY CONSTRUCTION MANAGER IF DIFFERENCES ARISE BETWEEN ACTUAL PRESSURE AND DESIGN PRESSURE.



### CONSTRUCTION NOTES FOR IRRIGATION WITHIN RIGHT-OF-WAY

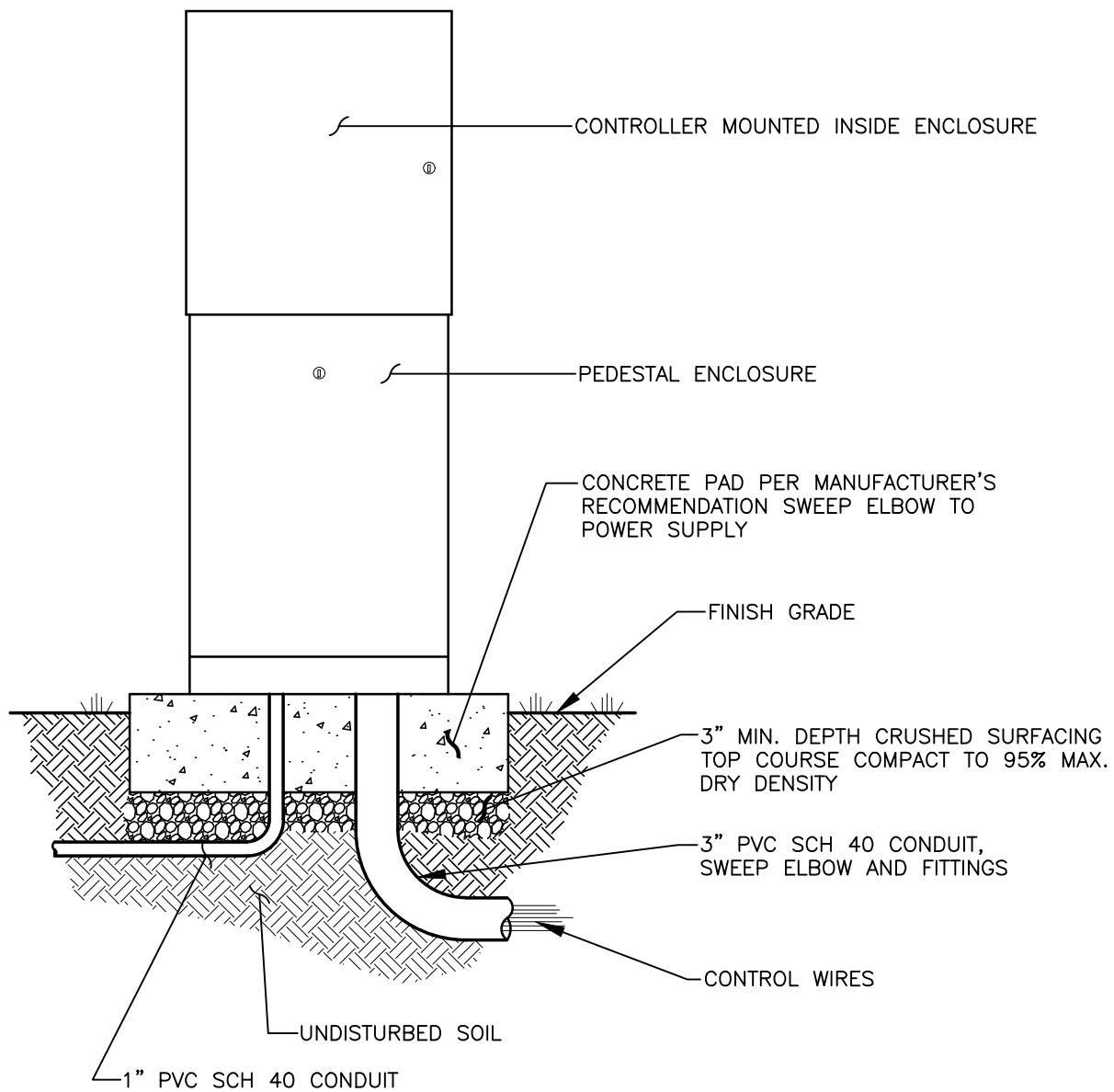
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-01**

I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-02.DWG



**CITY OF**  
**Vancouver**  
**WASHINGTON**

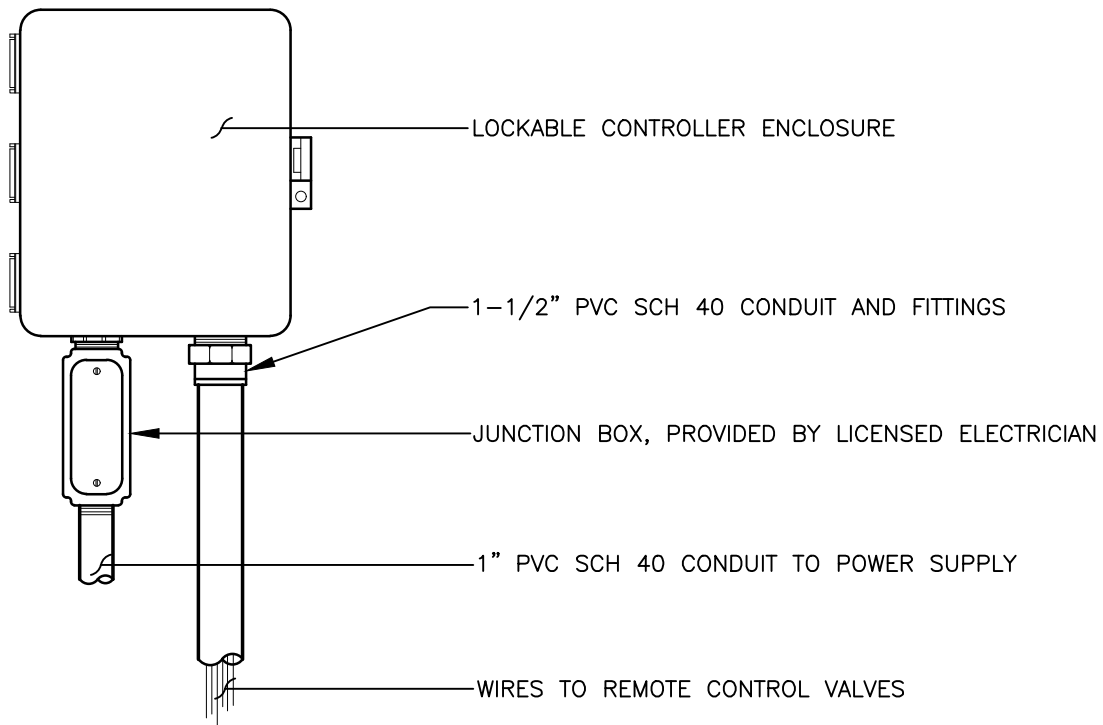
### IRRIGATION CONTROLLER ENCLOSURE

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
6	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-02**



I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-03.DWG



### IRRIGATION CONTROLLER WALL MOUNT

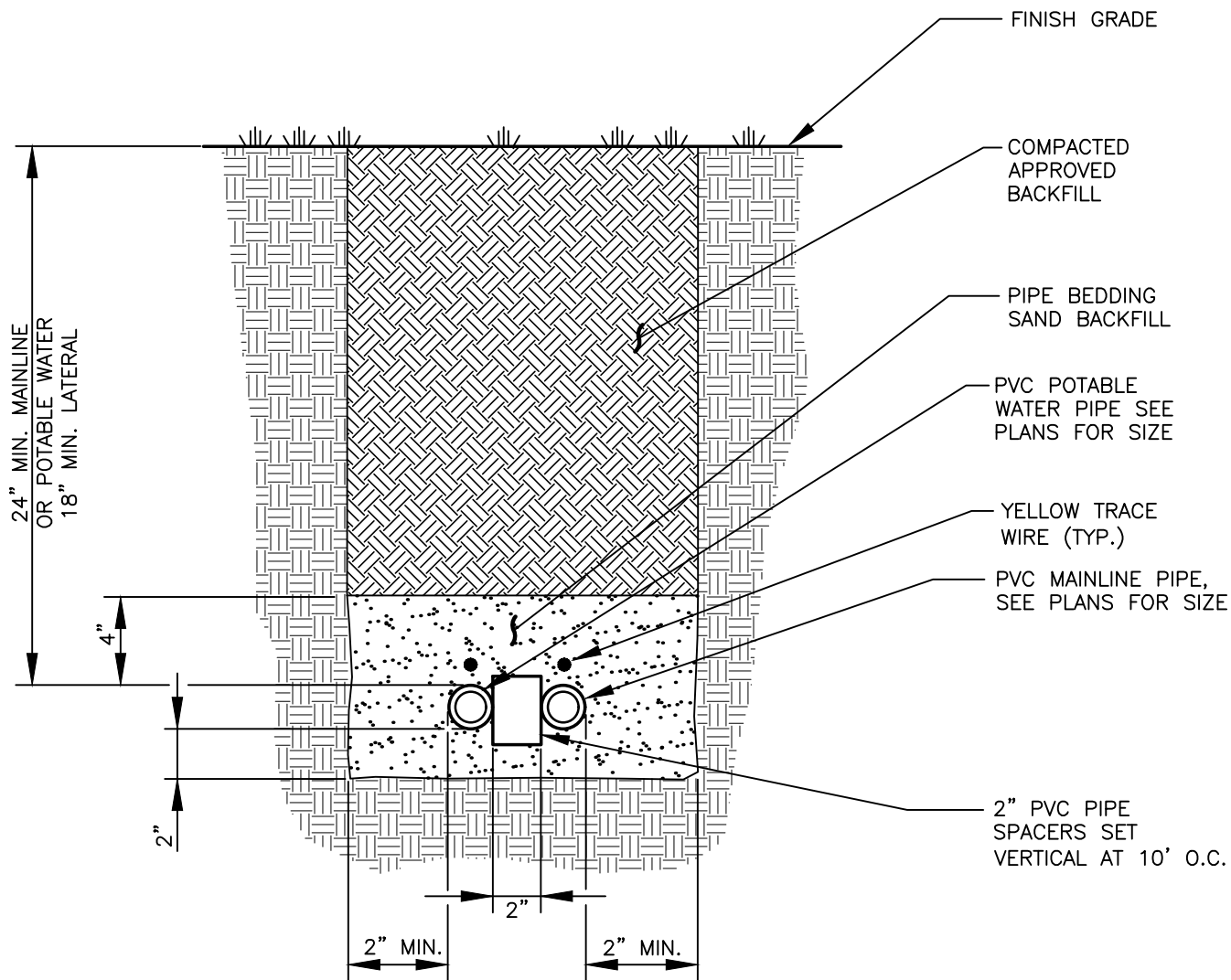
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-03**

I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\



**NOTE:**

1. PROVIDE A 48" COIL OF TRACE WIRE IN EACH VALVE BOX.



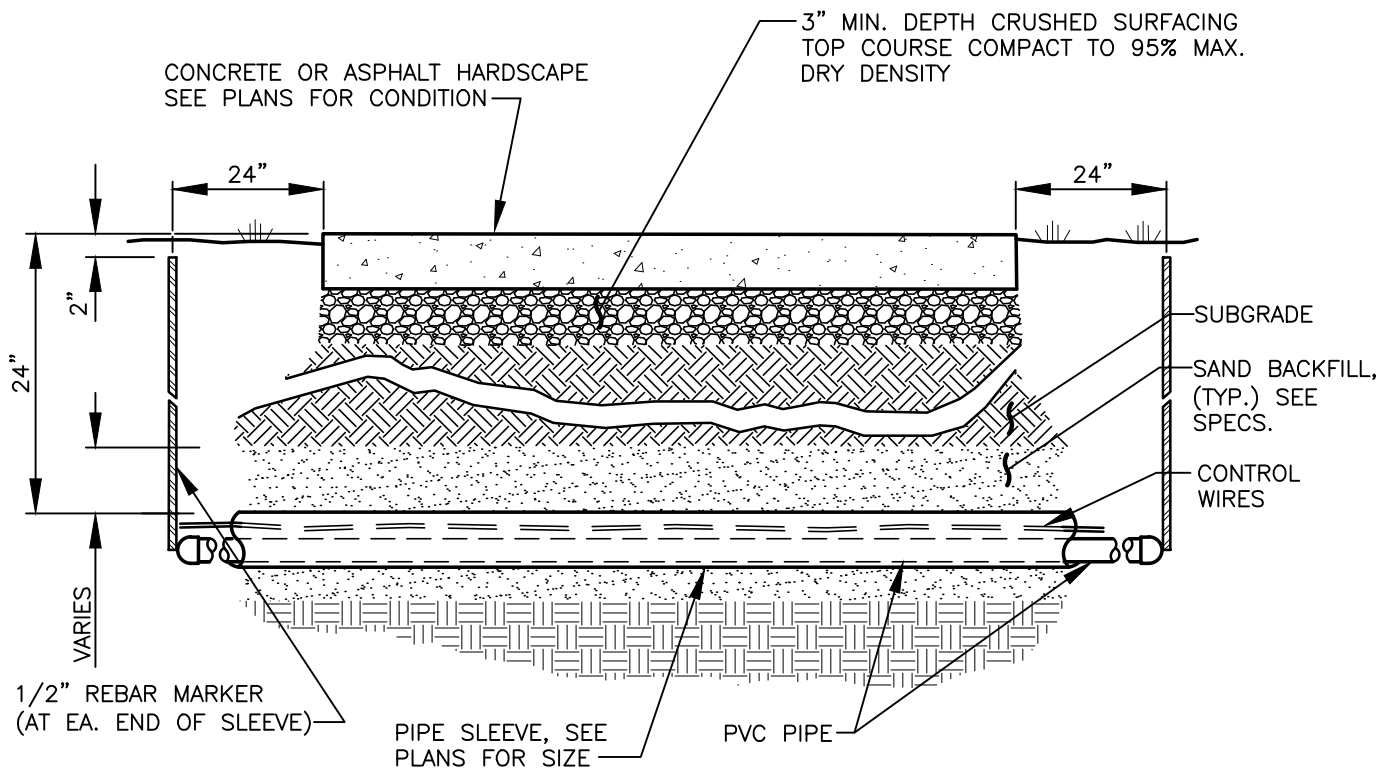
**IRRIGATION TRENCHING DETAIL**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAHE	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	MAHE	3/24

STD. PLAN NO.

**T03-04**



**NOTE:**

1. PROVIDE TRACER WIRE AT ALL PIPE SLEEVING.

I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-05.DWG



**CITY OF**  
**Vancouver**  
**WASHINGTON**

**IRRIGATION PIPE SLEEVE DETAIL**

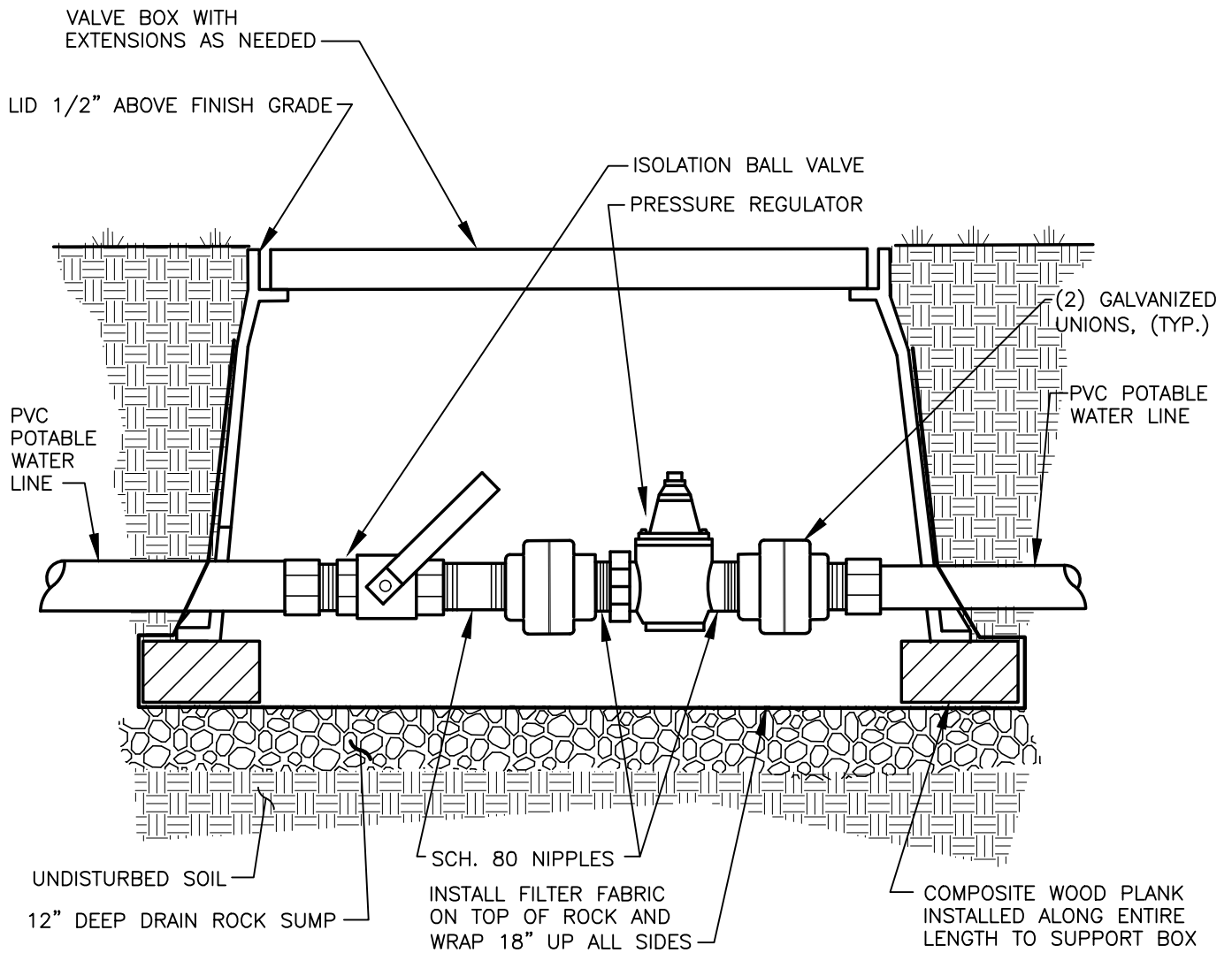
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
6	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-05**

I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-06.DWG



**NOTE:**

1. ADJUST NIPPLE LENGTHS TO ACCOMMODATE ALL EQUIPMENT INSIDE SINGLE VALVE BOX.



**PRESSURE REGULATOR FOR DRINKING FOUNTAIN**

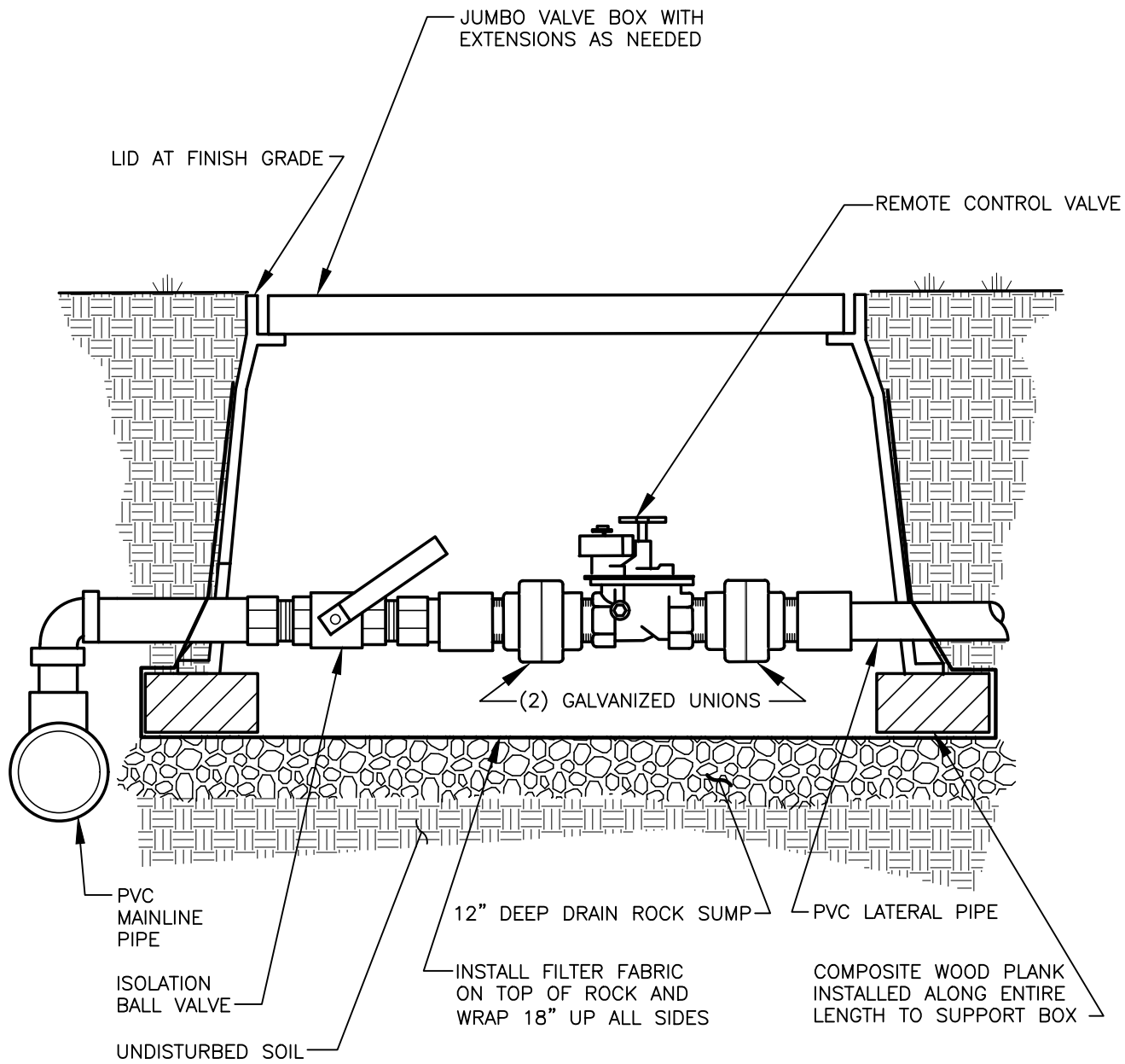
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-06**

I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-07.DWG



### AUTOMATIC CONTROL VALVE

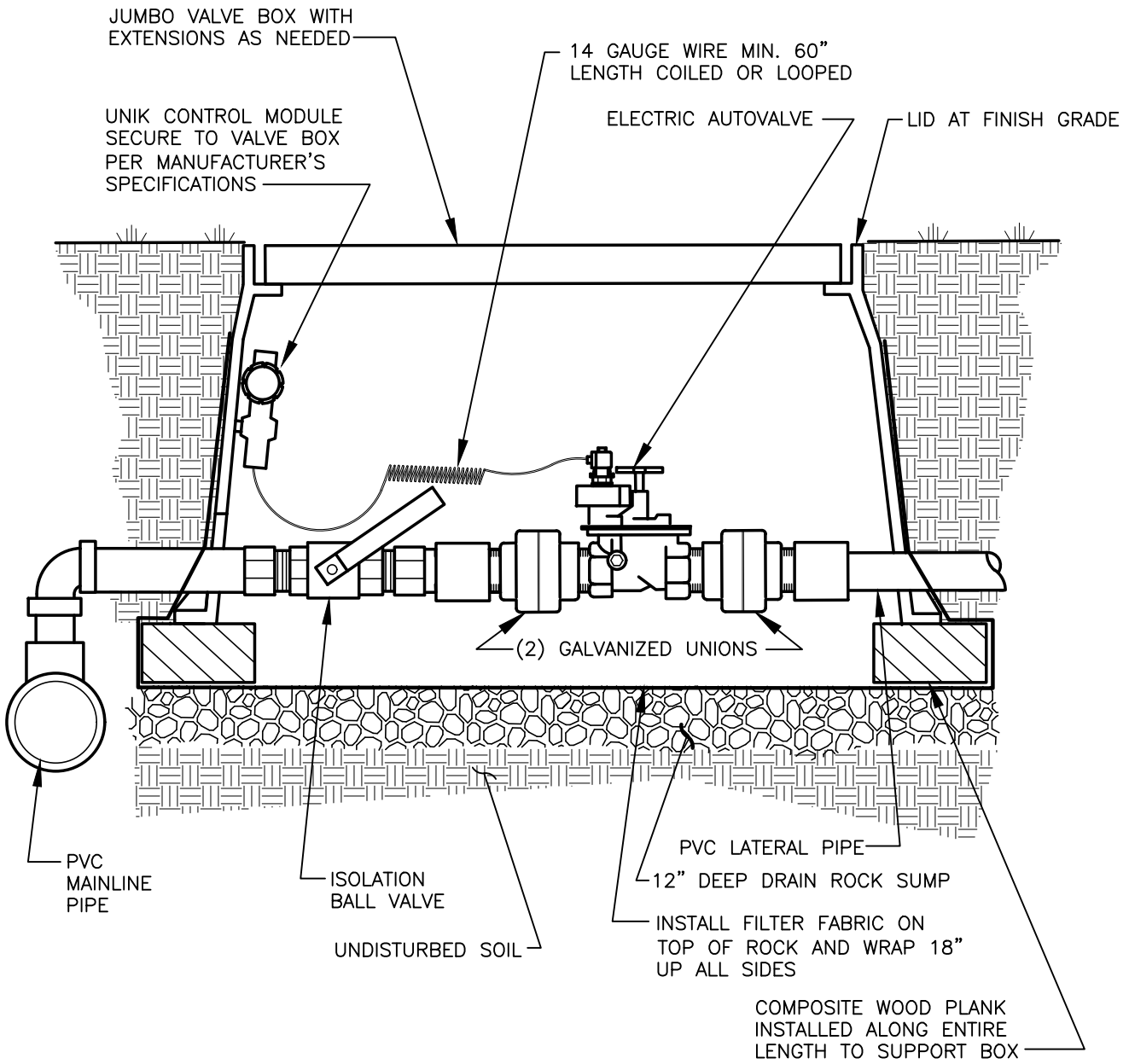
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAHE	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	MAHE	3/24

STD. PLAN NO.

**T03-07**

I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-08.DWG



### AUTOMATIC CONTROLLER VALVE WITH UNIK CONTROL MODULE

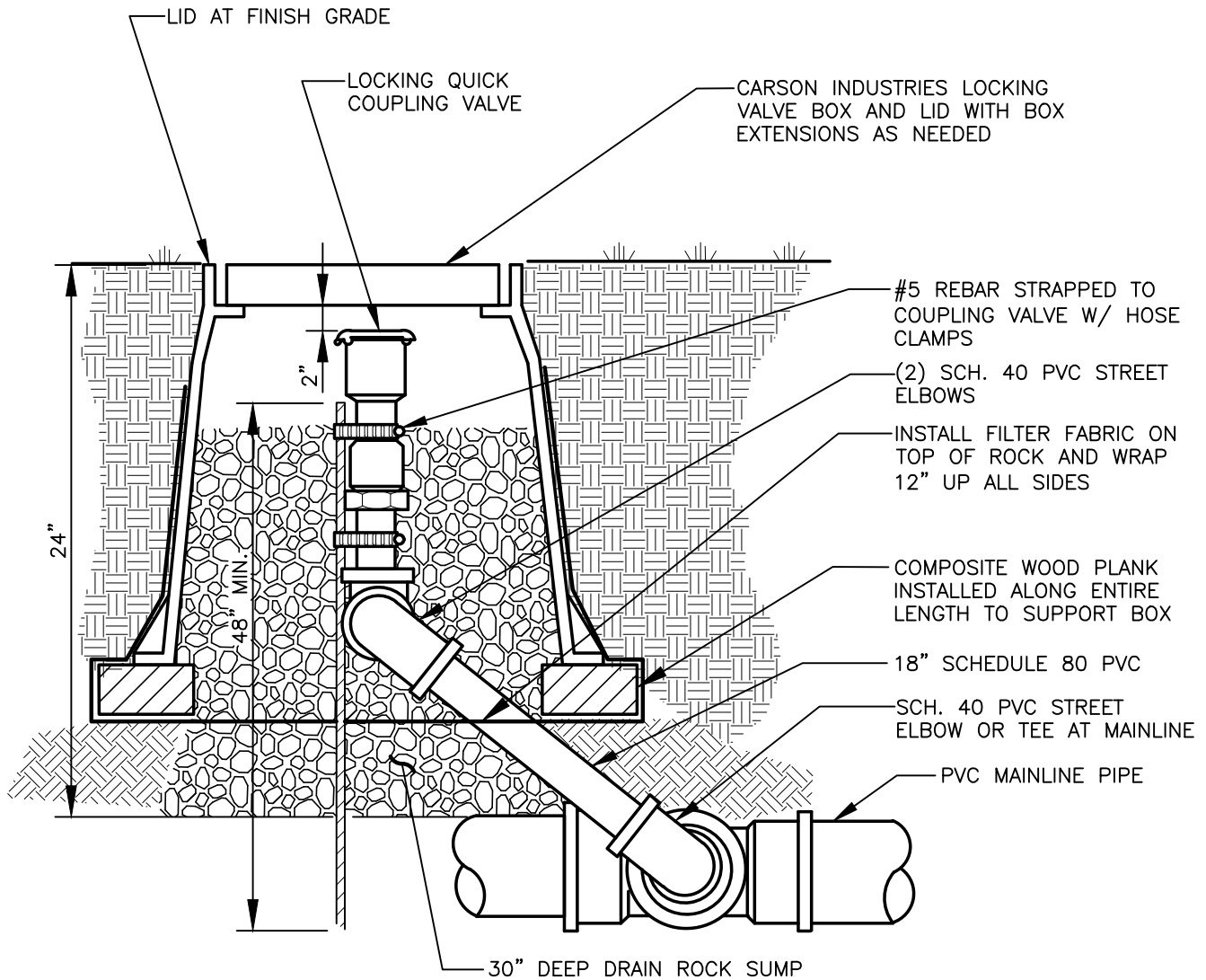
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAHE	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	MAHE	3/24

STD. PLAN NO.

**T03-08**





**NOTES:**

1. WRAP ALL THREADED FITTINGS W/ 5 WRAPS OF TEFLON TAPE.
2. SWING JOINT SIZE SHALL BE SAME SIZE AS VALVE BOTTOM INLET.

I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-09.DWG



**QUICK COUPLING VALVE**

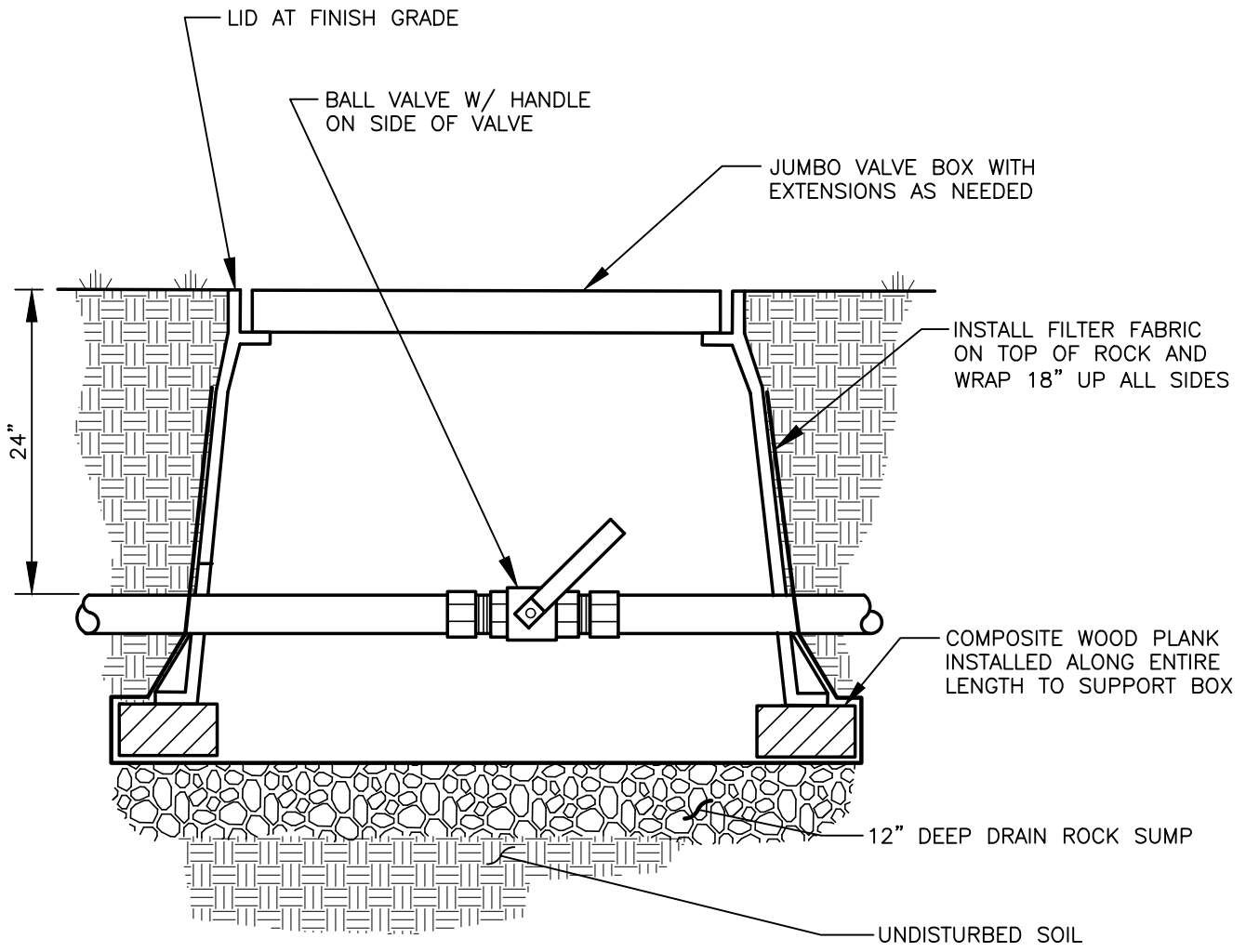
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-09**

I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-10.DWG



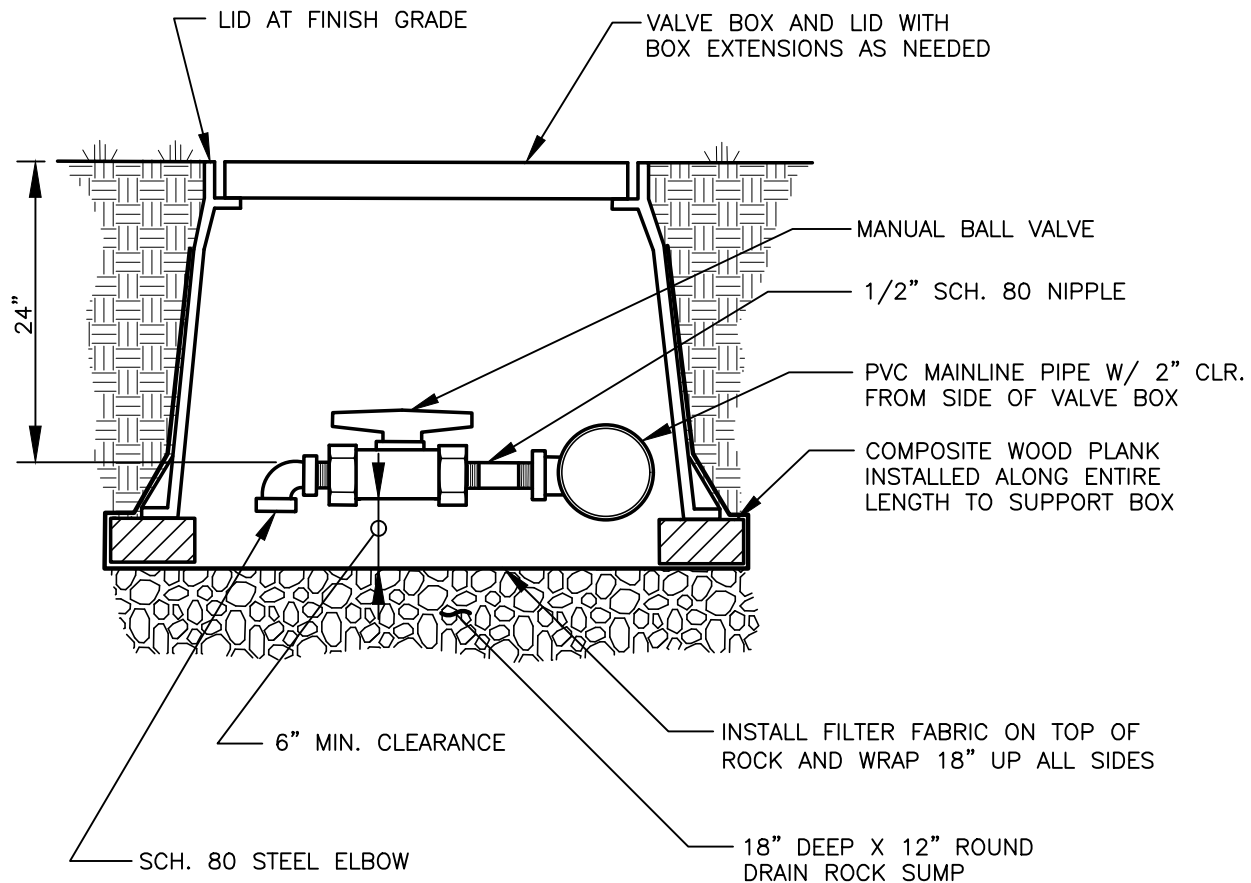
### ISOLATION BALL VALVE

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-10**



#### NOTES:

1. CONTRACTOR RESPONSIBLE FOR LOCATING DRAIN VALVE AT LOWEST POINT OF MAINLINE TO ENSURE POSITIVE DRAINAGE.
2. ALLOW FOR 1" CLEARANCE FROM HOLE IN BOX TO TOP OF PIPE.



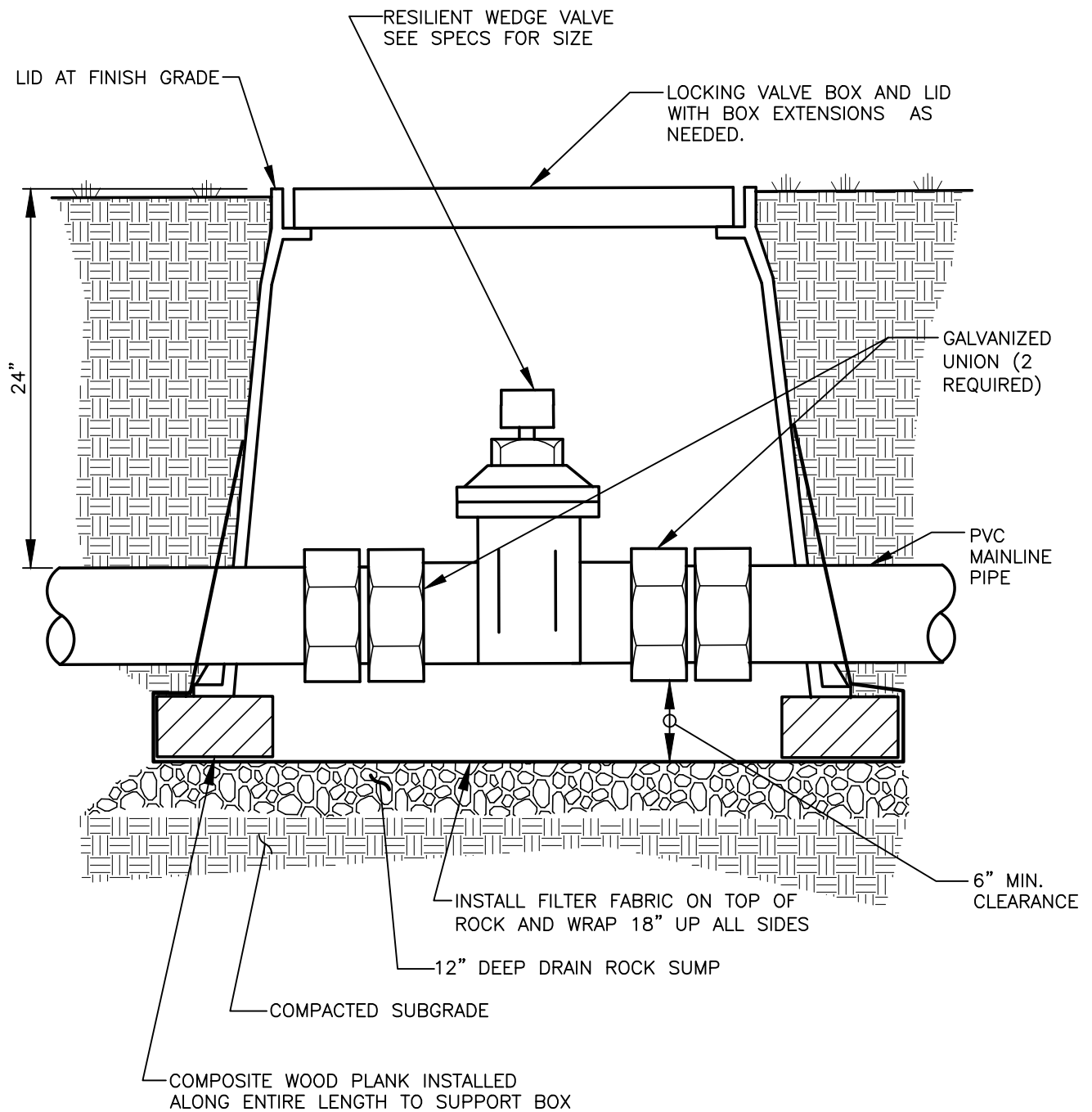
#### MANUAL DRAIN VALVE

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-11**



### MANUAL WEDGE GATE VALVE

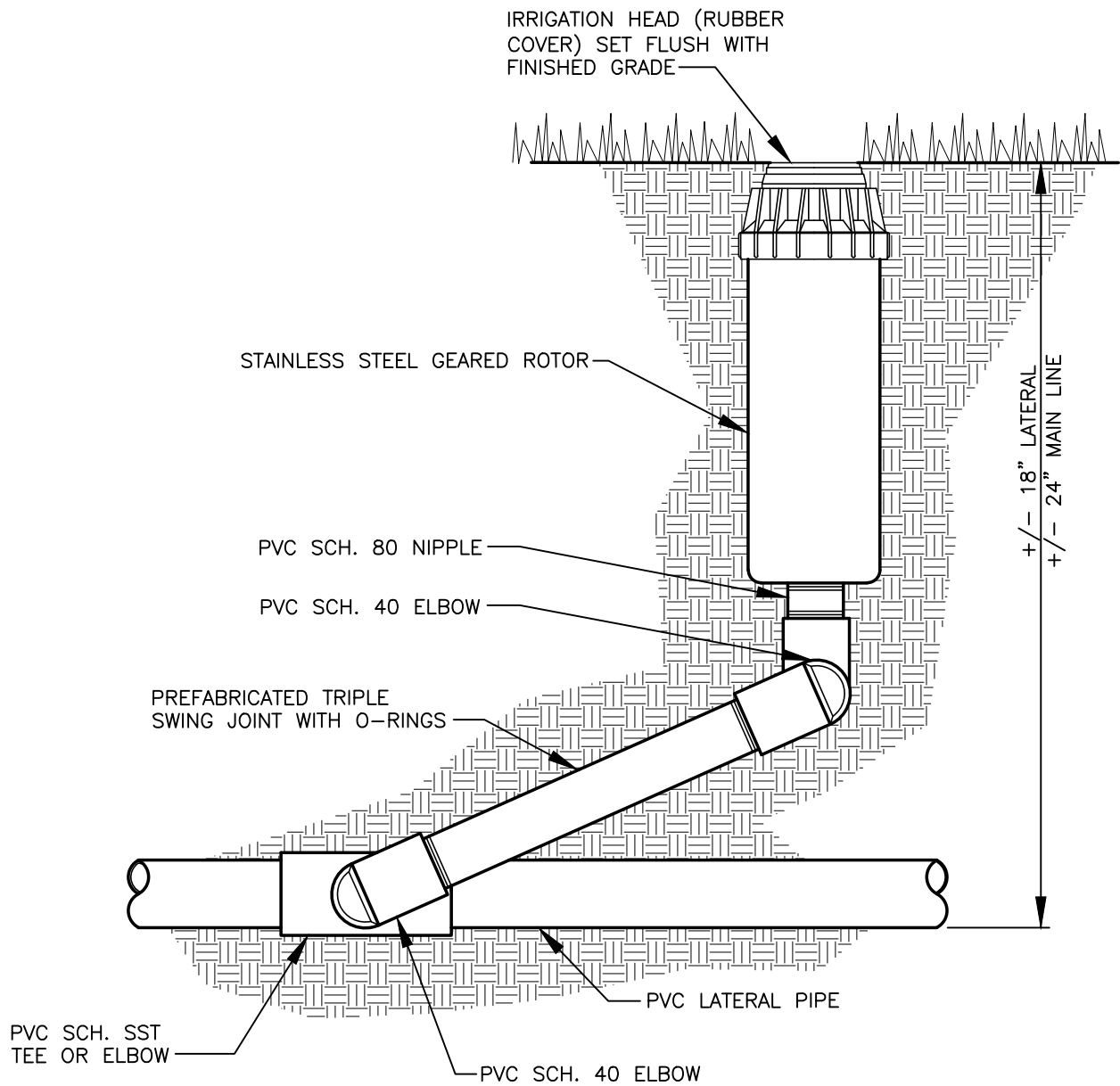


CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAHE	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	MAHE	3/24

STD. PLAN NO.

**T03-12**



**NOTES:**

1. WRAP ALL THREADED FITTINGS WITH TEFLON TAPE.
2. MINIMUM SWING JOINT SIZE SHALL BE HEAD BOTH INLET SIZE.
3. WHEN SPRAY HEADS ARE RUNNING ALONG SIDEWALK OR CURBS, HEADS SHOULD BE 3" AWAY AND PIPES 6" OR MORE AWAY.



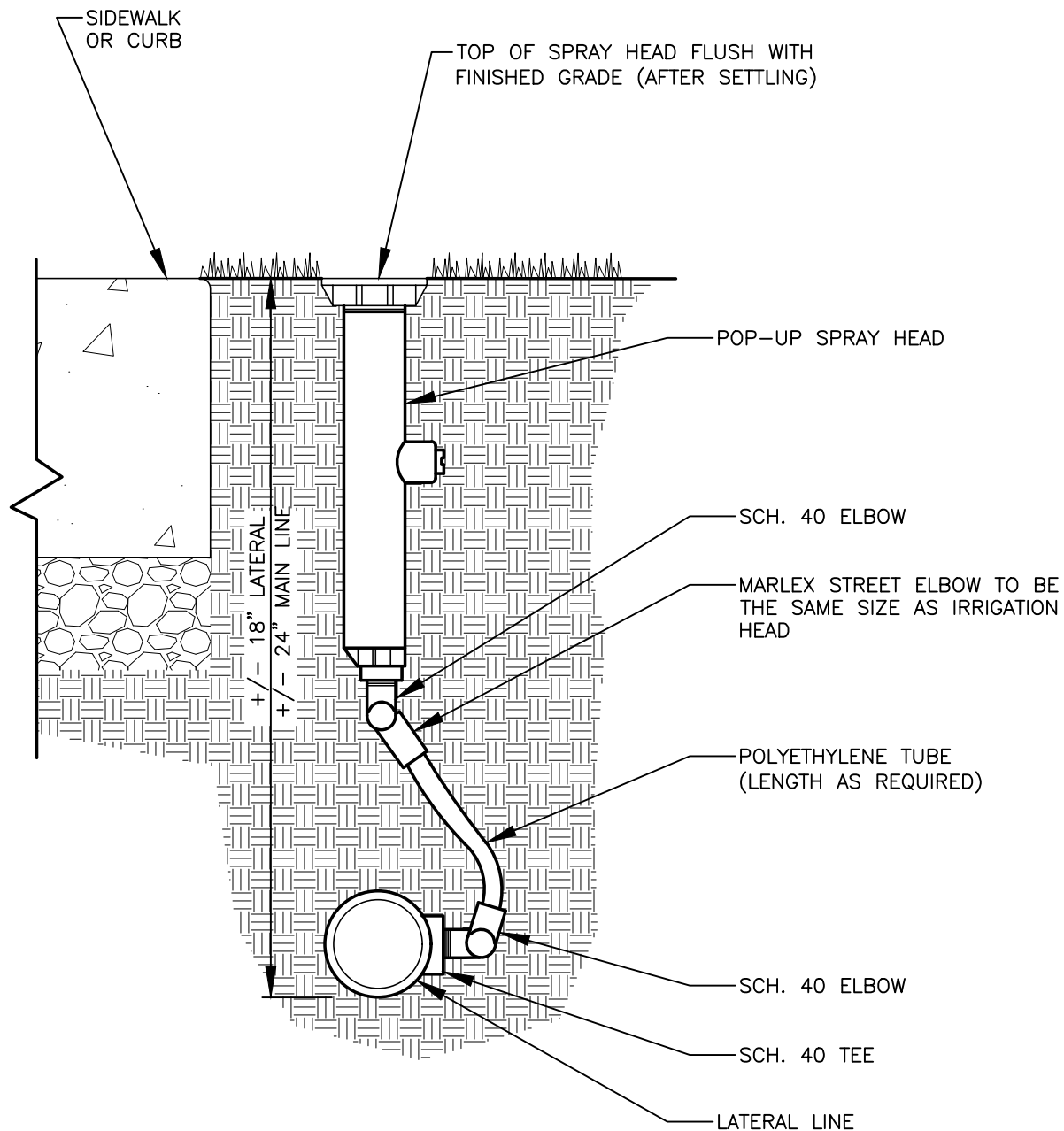
**ROTARY SPRAY HEAD**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-14**

**NOTES:**

1. WRAP ALL THREADED FITTINGS WITH TEFLON TAPE.
2. MINIMUM SWING JOINT SIZE SHALL BE HEAD BOTH INLET SIZE.
3. WHEN SPRAY HEADS ARE RUNNING ALONG SIDEWALK OR CURBS, HEADS SHOULD BE 3" AWAY AND PIPES 6" OR MORE AWAY.

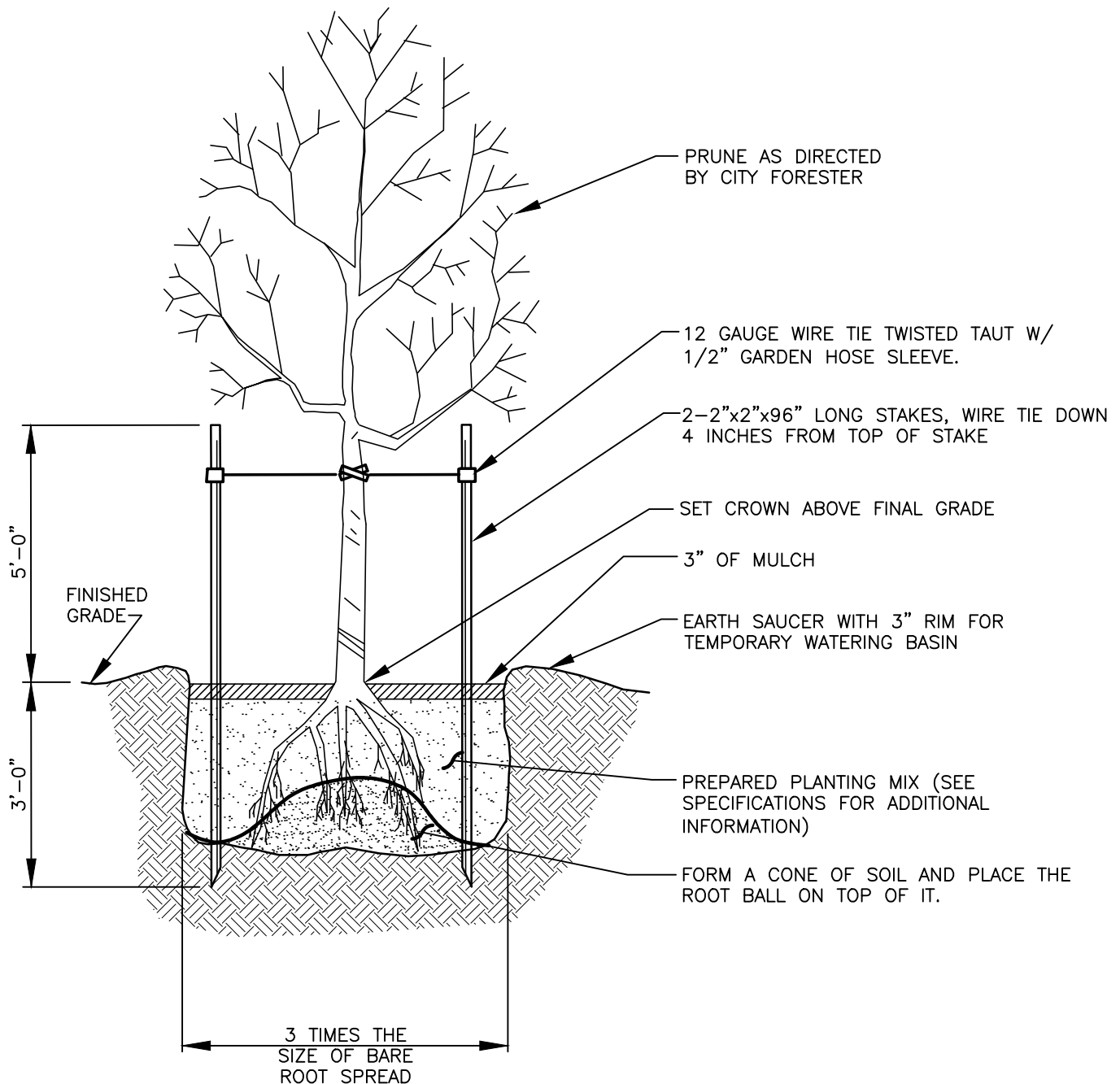
**POP-UP SPRAY HEAD**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-15**



# **NOTES:**

1. FOR TREE SPACING, TYPES AND CALIPER, SEE VMC 20.925.060.
2. A ROOT BARRIER SHOULD BE INSTALLED AT THE EDGE OF PAVEMENT OR 4 FEET WIDE AND 6 FEET WIDE RECTANGLE AROUND THE TREE.



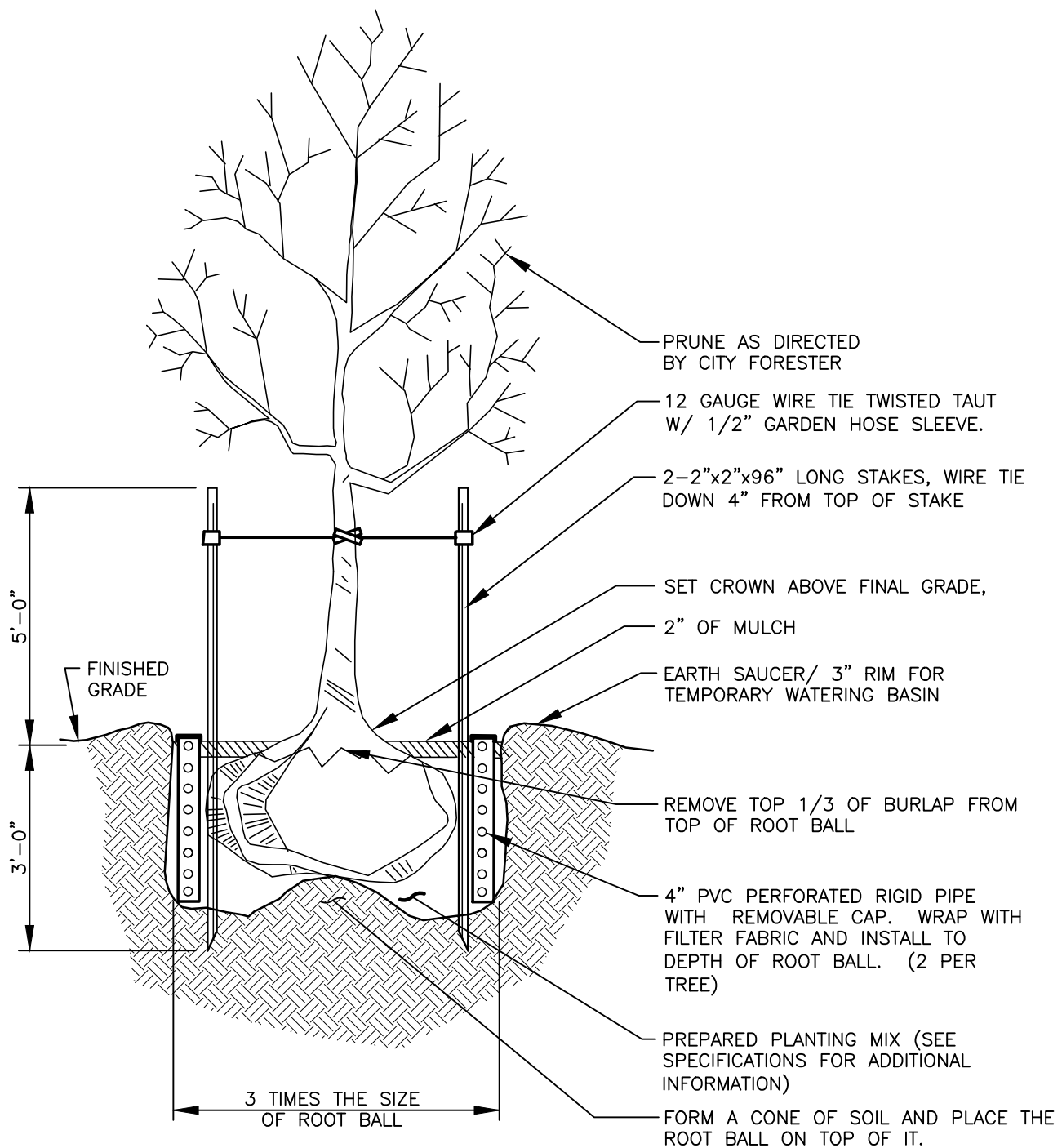
## **BARE ROOT PLANTING**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAHE	2/07
REVISION	APPROVED BY	APPROVAL DATE
6	MAHE	3/24

STD. PLAN NO.

**T03-16A**

**NOTES:**

1. FOR TREE SPACING, TYPES AND CALIPER, SEE VMC 20.925.060.
2. A ROOT BARRIER SHOULD BE INSTALLED AT THE EDGE OF PAVEMENT OR 4 FEET WIDE AND 6 FEET WIDE RECTANGLE AROUND THE TREE.

**TREE PLANTING PERFORATED PIPE INSTALLATION**

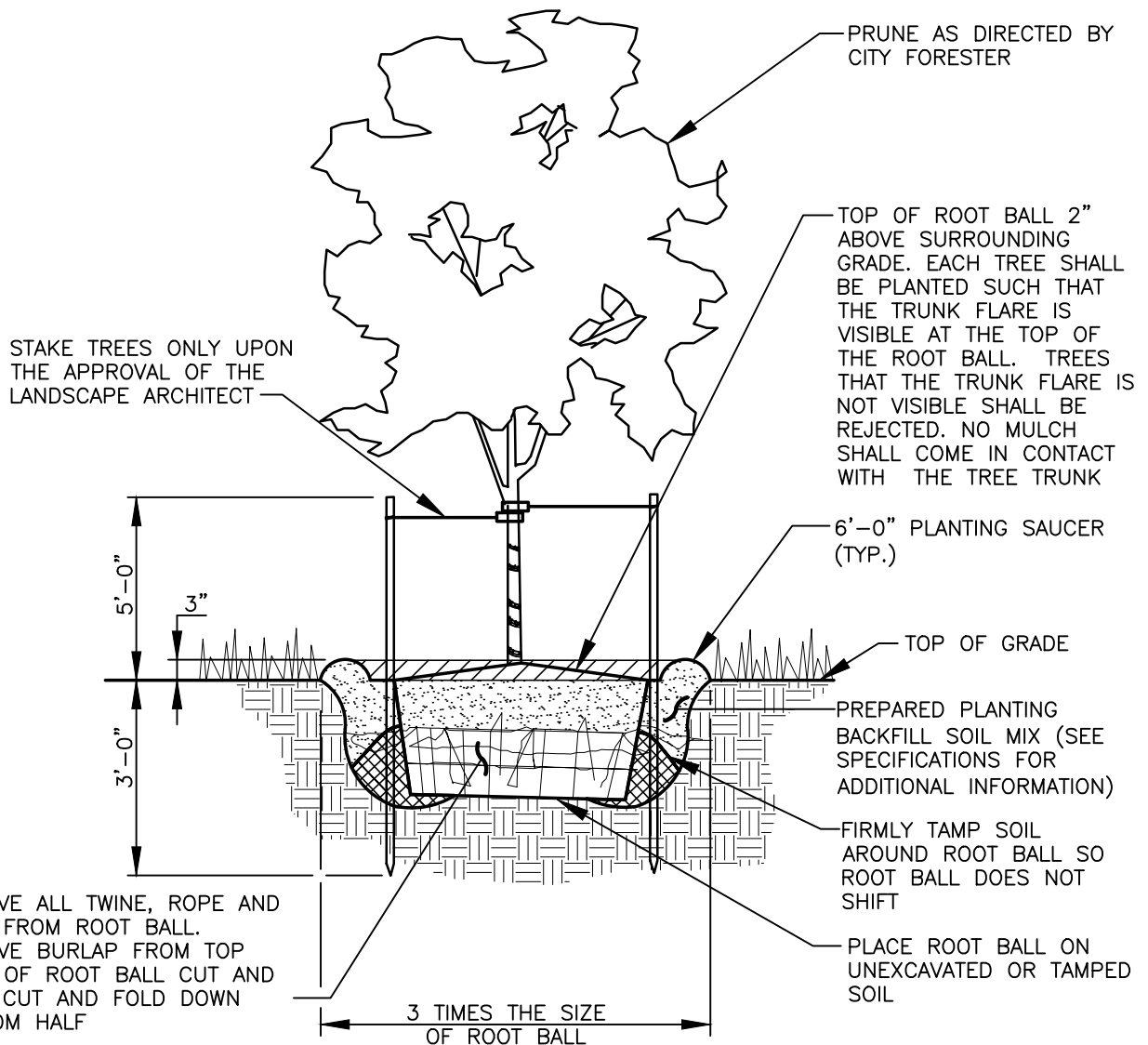
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/21
REVISION	APPROVED BY	APPROVAL DATE
3	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-16B**





REMOVE ALL TWINE, ROPE AND WIRE FROM ROOT BALL.  
REMOVE BURLAP FROM TOP HALF OF ROOT BALL CUT AND BALL CUT AND FOLD DOWN BOTTOM HALF

#### NOTES:

1. FOR TREE SPACING, TYPES AND CALIPER, SEE VMC 20.925.060.
2. A ROOT BARRIER SHOULD BE INSTALLED AT THE EDGE OF PAVEMENT OR 4 FEET WIDE AND 6 FEET WIDE RECTANGLE AROUND THE TREE.
3. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.



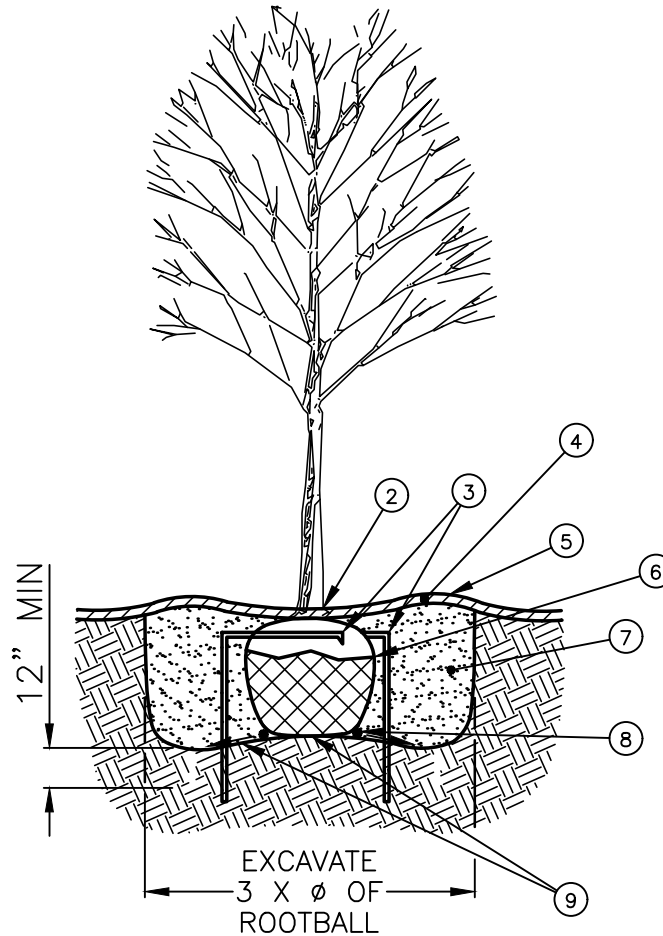
#### DECIDUOUS BALLED / BURLAP TREE PLANTING

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/21
REVISION	APPROVED BY	APPROVAL DATE
3	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-16C**



## BROADLEAF TREE DETAIL – STAPLED

### NOTES:

- ① AFTER PLANTING AND THOROUGHLY WATERING, APPLY ANTI-DESICCANT SPRAY IF TREE IS IN LEAF.
- ② INSTALL TRUNK GROWTH BASE AT 1" ABOVE FINISH GRADE
- ③ TREE STAPLES, INSTALL 2 PER TREE FOR 2" CAL. & SMALLER TREES & 3 PER TREE FOR LARGER TREES OR IN HIGH WIND LOCATIONS
- ④ 3" DEPTH BARK MULCH OVER COMPOST LAYER IN LAWN AREAS, INSTALL 3' Ø BARK MULCH RING
- ⑤ CONSTRUCT A 3" WATERING BASIN USING SOIL
- ⑥ REMOVE BURLAP FROM TOP 1/2 OF ROOTBALL. REMOVE ANY NON-BIOGRADABLE MATERIAL
- ⑦ BACKFILL: 100% EXTG SOIL FROM HOLE SCARIFY SIDES OF HOLE BEFORE BACKFILLING
- ⑧ TEA BAG TYPE FERTILIZER PACKETS, 20-10-15 W/ MINORS FOLLOW MANUFACTURERS INSTRUCTIONS FOR PLACEMENT; INSTALL 6 PER TREE CALIPER INCH JR SIMPLOT BEST PAKS, OR APPROVE EQUAL
- ⑨ DO NOT OVER-EXCAVATE DIRECTLY UNDER ROOTBALL LOOSEN SOIL NEXT TO ROOTBALL AND SLOPE BOTTOM OF HOLE AWAY FROM ROOTBALL FOR DRAINAGE



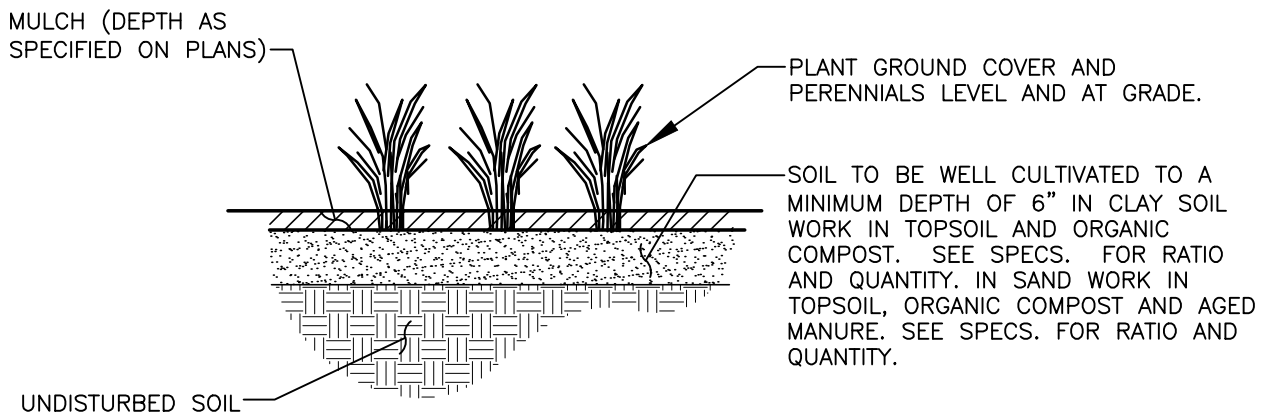
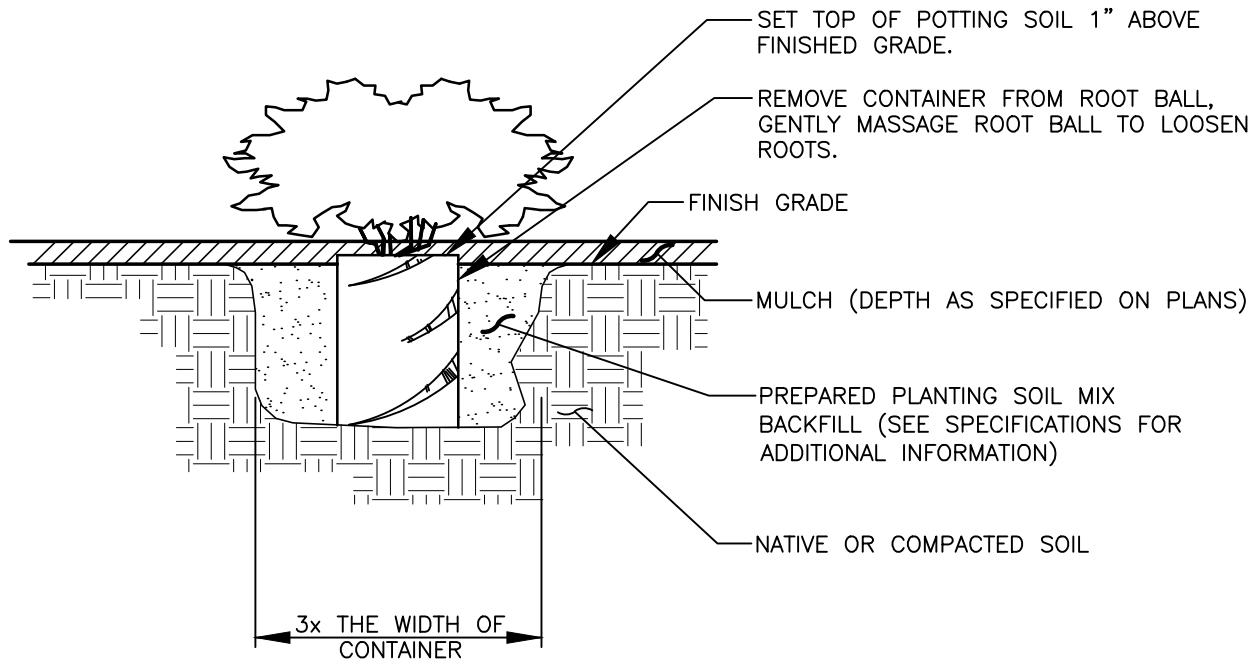
### BROADLEAF BALLED / BURLAP TREE PLANTING

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/21
REVISION	APPROVED BY	APPROVAL DATE
3	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-16D**



**NOTE:**

1. SCARIFY BOTTOM AND SIDES OF HOLE, PRIOR TO PLANTING.
2. KEEP PLANTS MOIST AND SHADED UNTIL PLANTING.



**SHRUB CONTAINER PLANTING, PERENNIAL AND GROUNDCOVER DETAILS**

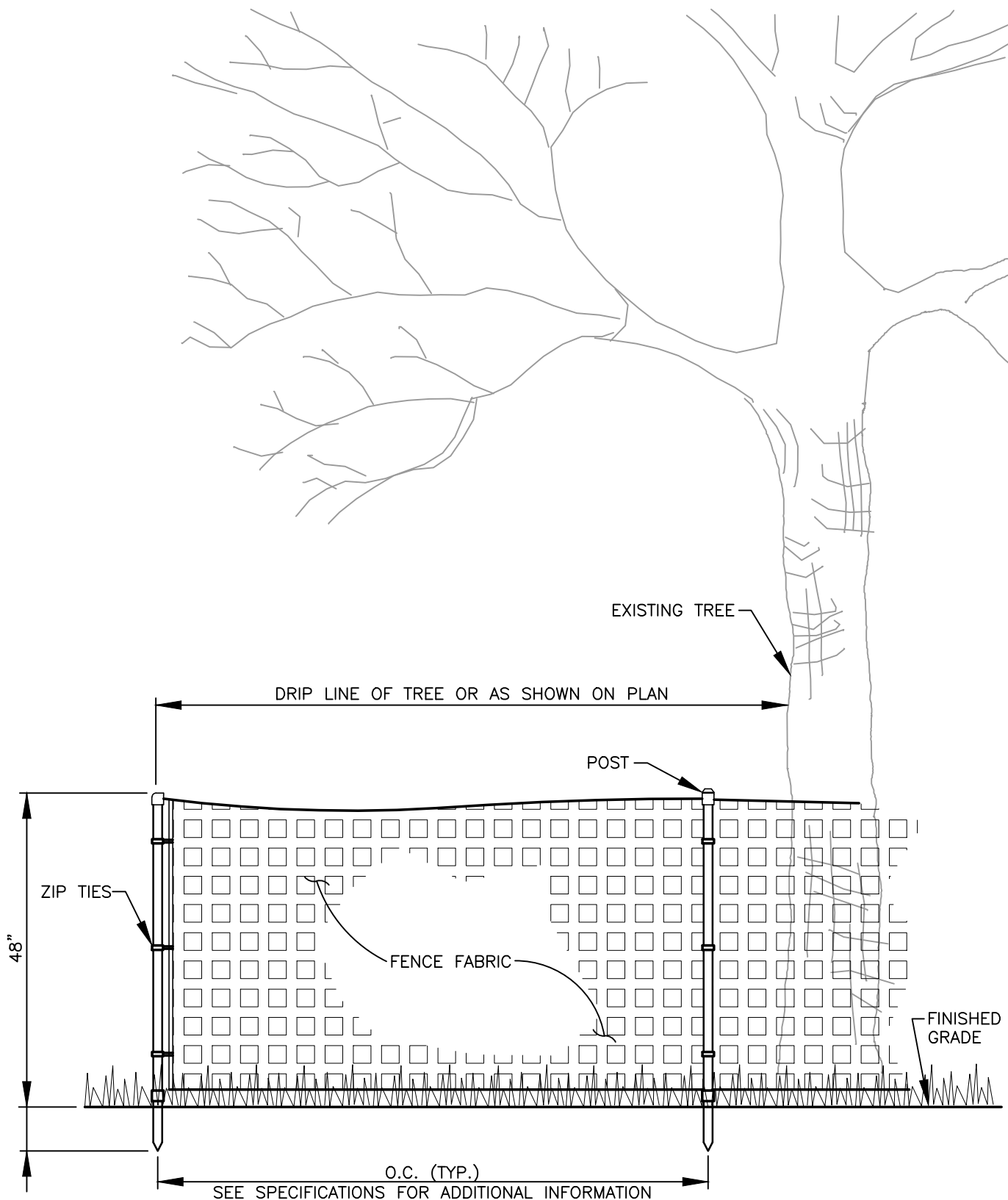
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	8/08
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-19**

I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-20.DWG



**CITY OF**  
**Vancouver**  
**WASHINGTON**

### TREE PROTECTION FENCE DETAIL

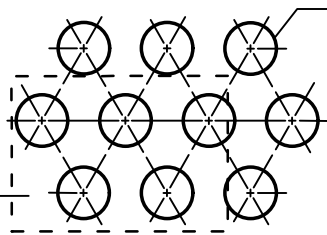
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	8/08
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

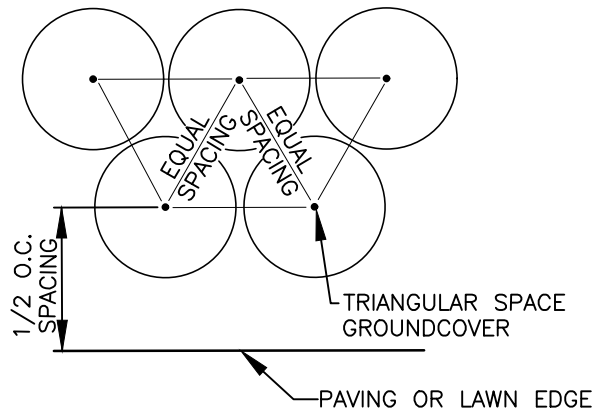
**T03-20**

SEE  
ENLARGEMENT  
DETAIL



1. ALL GROUNDCOVER SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING OR ON CENTER SPACING AS SPECIFIED ON PLANTING PLAN.
2. LOCATE GROUNDCOVER ONE HALF OF SPECIFIED SPACING DISTANCE FROM ANY CURB, SIDEWALK, OR OTHER HARD SURFACE, UNLESS OTHERWISE SPECIFIED.

### GROUNDCOVER PLANTING DETAIL



### ENLARGEMENT—TRIANGULAR SPACING



CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

### GROUNDCOVER PLANTING DETAIL

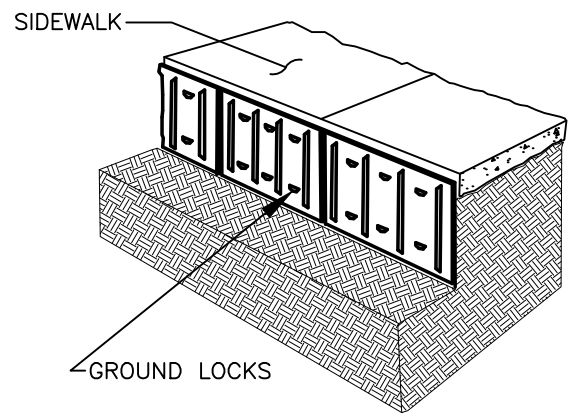
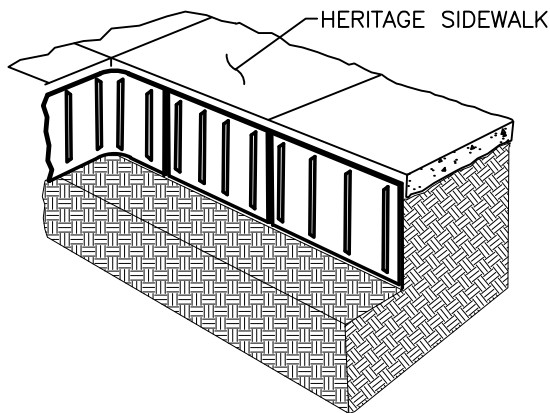
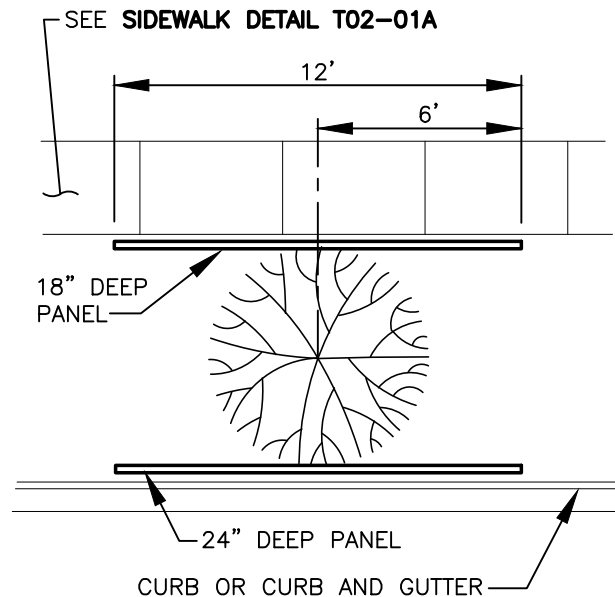
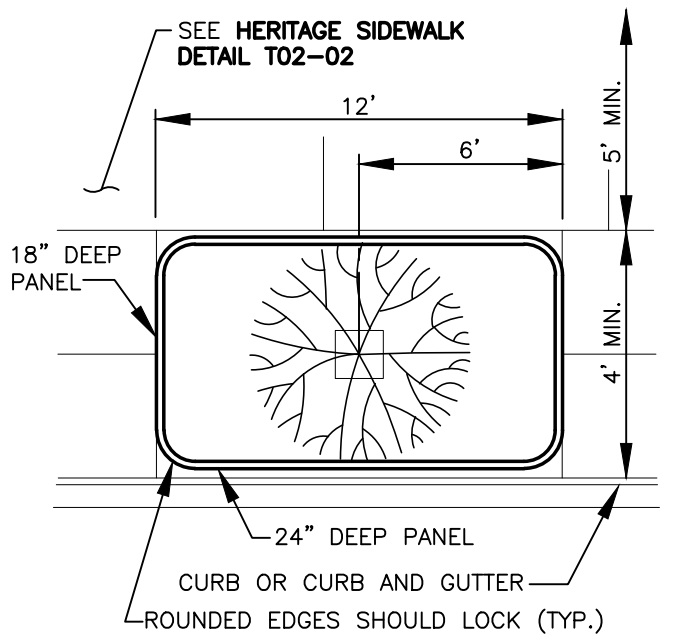
DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/07
REVISION	APPROVED BY	APPROVAL DATE
5	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-21**

# **NOTES:**

1. DETERMINE THE CORRECT NUMBER OF PANELS TO BE USED. DEPENDING UPON THE ACTUAL PLANTING PLAN AND THE NUMBER OF TREES INVOLVED THE LENGTH OF LINEAR BARRIER WILL VARY, BUT AS A GENERAL RULE OF THUMB TAKE THE ANTICIPATED MATURE CANOPY DIAMETER OF THE TREE AND ADD 2 FEET (61CM). THIS WILL BE THE NUMBER OF FEET NECESSARY FOR A LINEAR STYLE PLANTING APPLICATION. (SEE CHART BELOW.)
2. CHOOSE THE BARRIER THAT BEST SUITS THE APPLICATION. GENERALLY IF A SIDEWALK, PATIO OR DRIVEWAY IS TO BE PROTECTED, 18" IS SUFFICIENT DEPTH, WITH 12" AS AN ALTERNATE CHOICE FOR NON-AGGRESSIVE, DEEPER ROOTING TREES. HOWEVER FOR CURB AND GUTTER PROTECTION OR MORE AGGRESSIVE ROOTS 24" IS GENERALLY THE BETTER CHOICE.
3. DIG THE TRENCH TO THE DEPTH BASED UPON THE PARTICULAR BARRIER CHOSEN.
4. NEXT PLACE THE BARRIER IN THE TRENCH WITH THE VERTICAL RIBS FACING TOWARD THE TREE AND ALIGN IN A STRAIGHT FASHION. IT IS HELPFUL TO PLACE THE BARRIER AGAINST THE HARDSCAPE. USE THE HARDSCAPE AS A GUIDE AND BACKFILL AGAINST THE BARRIERS TO PROMOTE A CLEAN SMOOTH FIT TO THE HARDSCAPE. BE SURE TO KEEP THE BARRIER'S DOUBLE TOP EDGE AT LEAST 1/2" ABOVE GRADE TO ENSURE ROOTS DO NOT GROW OVER THE TOP.
5. PLANT THE TREE(S). THE LINEAR STYLE OFFERS A MORE EXPANSIVE ROOTING GROWTH AREA, HOWEVER ADVERSE SOIL AND DRAINAGE CONDITIONS MAY EXIST IN THE ACTUAL PLANTING AREA. TAKE STEPS TO ENSURE HEALTHY GROWTH OF THE TREE AT PLANTING. CONSULT WITH A LOCAL ARBORIST FOR PLANTING TIPS AND RECOMMENDATIONS.



## **ROOT BARRIER INSTALLATION**



CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAH	3/16
REVISION	APPROVED BY	APPROVAL DATE
3	MAH	3/24

STD. PLAN NO.

**T03-22A**

## GENERAL NOTES:

1. SPECIFIED TREE ROOT BARRIERS ARE A MECHANICAL BARRIER AND ROOT DEFLECTOR TO PREVENT TREE ROOTS FROM DAMAGING HARDSCAPES AND LANDSCAPES. ASSEMBLE IN 24 INCHES LONG PANELS WITH RIDGED LOCKING MECHANISMS (JOINER STRIPS OR MALE/FEMALE) TO LINE THE PERIMETER OF THE TREE WELL (SURROUND PLANTING STYLE) OR FOR LINEAR APPLICATIONS DIRECTLY BESIDE A HARDSCAPE ADJACENT TO ONE SIDE OF THE TREES (LINEAR PLANTING STYLE).
  2. DIMENSIONS ARE APPROXIMATE, SUBMIT SAMPLE FOR ENGINEERS APPROVAL PRIOR TO INSTALLATION.
- A. MATERIALS
1. THE CONTRACTOR SHALL FURNISH AND INSTALL TREE ROOT BARRIERS AS SPECIFIED. THE TREE ROOT BARRIERS SHALL BE BLACK, INJECTED MOLDED OR EXTRUDED MODULAR COMPONENT MADE OF HIGH DENSITY POLYPROPYLENE OR POLYETHYLENE PLASTIC OF MINIMUM 0.08 INCH WALL THICKNESS IN PANELS 24 INCHES BY 18 INCHES DEEP; PLASTIC SHALL BE RECYCLEABLE AND CONTAIN ULTRA-VIOLET INHIBITORS. EACH PANEL SHALL HAVE: NOT LESS THAN FOUR RAISED ROOT DEFLECTING RIBS PROTRUDING .5 INCH AT 90 DEGREES RUNNING THE LENGTH OF THE PANEL SPACED 6 INCHES APART. EACH PANEL SHALL HAVE AN INTEGRAL RIDGED LOCKING MECHANISMS.
  2. THE BASIC PROPERTIES OF THE MATERIAL SHALL BE:

TEST	ASTM TEST METHOD	VALUE COPOLYMER POLYPROPYLENE	VALUE HOMOPOLYMER POLYETHYLENE
TENSILE STRESS AT YIELD	D638	3800 PSI	3800 PSI
ELONGATION AT YIELD	D638	6.3%	10.0%
TENSILE MODULUS	D638	N/A	155,000
FLEXURAL MODULUS	D790B	155,000 PSI	N/A
NOTCHED IZOD IMPACT	D256A	7.1	0.4 – 4.0
ROCKWELL HARDNESS R. SCALE	D785A	68	68
FLEXUAL MODULOUS 73 PSI	0790	N/A	145,000
HARDNESS	D2240	N/A	P66

B. CONSTRUCTION AND INSTALLATION

1. THE CONTRACTOR SHALL INSTALL THE TREE ROOT BARRIER WITH THE NUMBER OF PANELS AND IN THE MANNER SHOWN. THE VERTICAL ROOT DEFLECTING RIBS SHALL BE FACING TOWARDS THE TREE AND TOP OF THE PANEL SHALL BE .5 INCH ABOVE SOIL GRADE AND AT LEAST 1 INCH BELOW TOP OF HARDSCAPE SUCH AS PAVER, CURB OR SIDEWALK. PANELS SHALL BE CONNECTED BY RIDGED LOCKING MECHANISMS TO FORM A CIRCLE AROUND THE TREE WELL OR WHERE SPECIFIED JOINED IN A LINEAR FASHION AND PLACED ALONG THE ADJACENT HARDSCAPE.
2. EXCAVATION AND SOIL PREPARATION SHALL CONFORM TO THE DRAWING.
3. IN THE CASE OF SURROUND STYLE PLANTING, THE TREE ROOT BARRIER SHALL BE BACKFILLED ON THE OUTSIDE WITH .75 INCHES TO 1.5 INCH GRAVEL OR CRUSHED ROCK AS SHOWN ON THE DRAWINGS. NO GRAVEL IS REQUIRED FOR A LINEAR PLANTING.



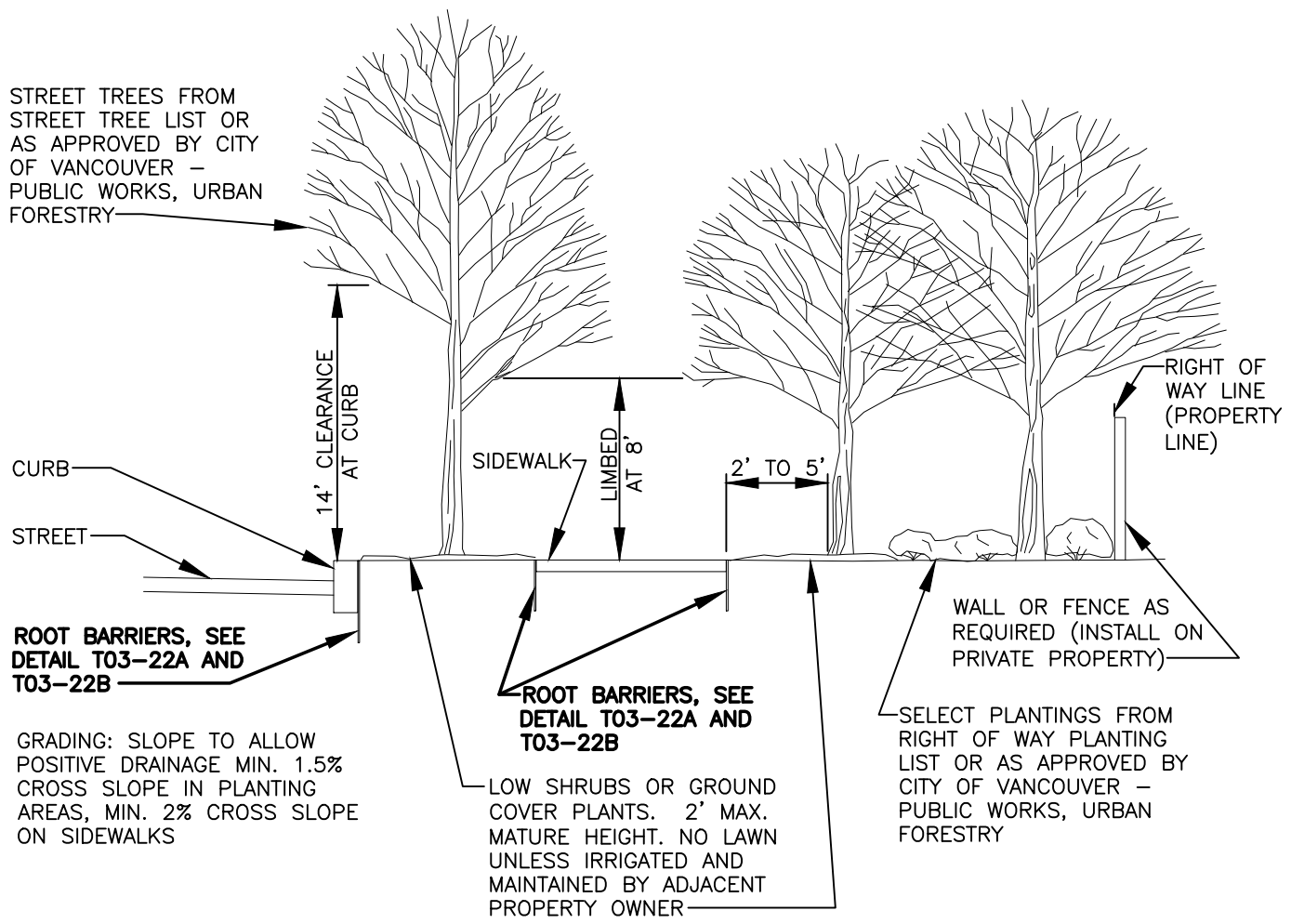
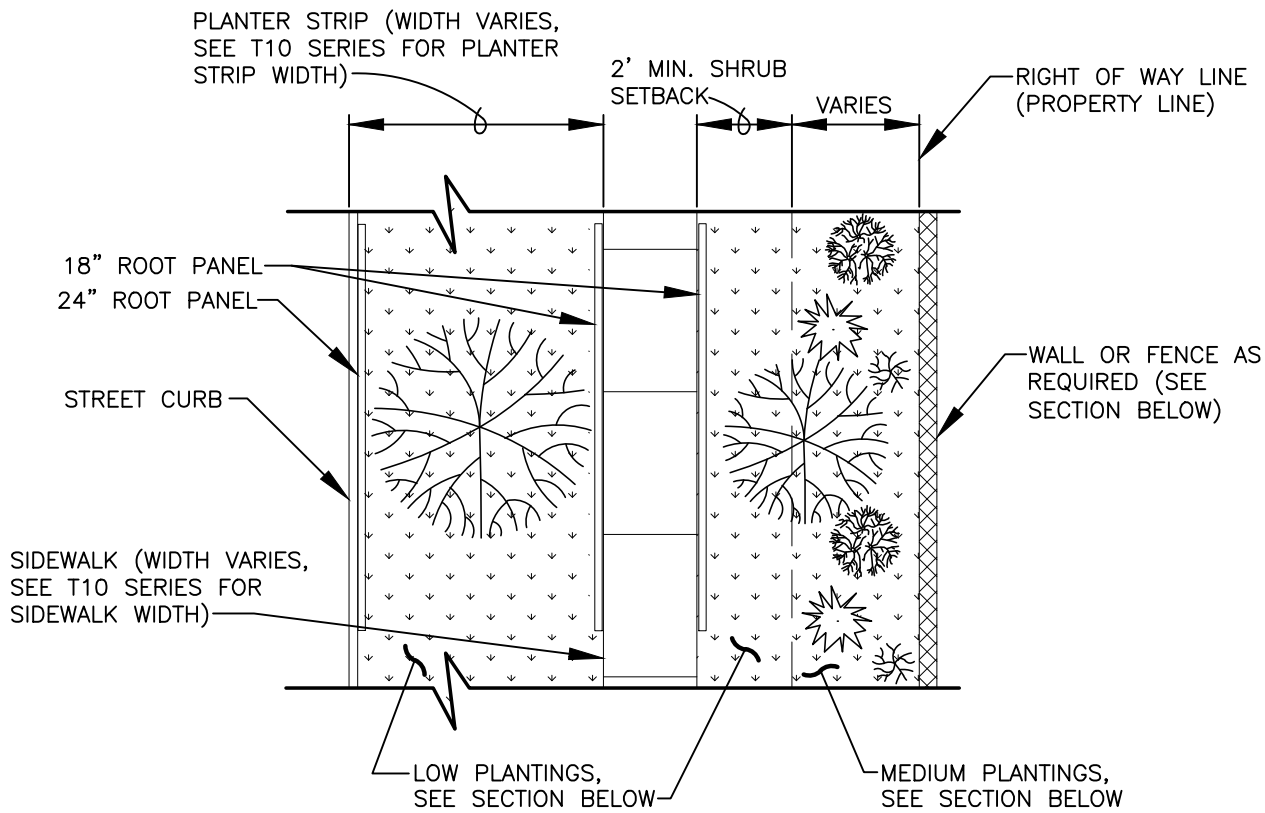
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

## ROOT BARRIER GENERAL NOTES

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAHE	8/08
REVISION	APPROVED BY	APPROVAL DATE
5	MAHE	3/24

STD. PLAN NO.

**T03-22B**



I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-23.DWG

**CITY OF**  
**Vancouver**  
WASHINGTON

**PLANTING AT RIGHT OF WAYS**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAHE	7/14
REVISION	APPROVED BY	APPROVAL DATE
4	MAHE	3/24

STD. PLAN NO.

T03-23



## **PLANTING AND PRUNING NOTES:**

### **INSTALLATION:**

- THE CONTRACTOR SHALL INSTALL THE LANDSCAPE ACCORDING TO THESE PLANS, DETAILS, NOTES AND THE SPECIFICATIONS.

### **PLANTING NOTES, SPECIFICATIONS, DETAIL, AND LEGEND:**

- GENERAL NOTES, TREE PROTECTION REQUIREMENTS AND PLANT LIST ARE ON THIS SHEET.
- SEE PLANTING DETAILS FOR ADDITIONAL INFORMATION AND SPECIAL PROVISIONS.

### **STREET TREE REQUIREMENTS:**

- WHEN PLANTING OR PROPOSING SUBSTITUTIONS STREET TREES MUST ADHERE TO SECTION 20.925.060 OF THE VANCOUVER MUNICIPAL CODE AND STREET TREE LIST OR APPROVED BY CITY OF VANCOUVER PUBLIC WORKS URBAN FORESTRY.

### **ROOT BARRIERS:**

- TREES PLANTED WITHIN MEDIANS AND/OR PLANTING STRIPS WITH LESS THAN 8' WIDTH SHALL BE INSTALLED WITH ROOT BARRIERS AT EDGE OF WALKS AND CURBS.

## **STANDARD PLANTING NOTES:**

1. TOP SOIL REMOVED FROM THE SURFACE IN PREPARATION FOR GRADING AND CONSTRUCTION IS TO BE STORED ON OR NEAR THE SITE AND PROTECTED FROM EROSION WHILE GRADING OPERATIONS ARE UNDERWAY. AFTER COMPLETION OF GRADING, THE TOPSOIL IS TO BE RESTORED TO EXPOSED CUT AND FILL EMBANKMENTS TO PROVIDE A SUITABLE BASE FOR SEEDING AND PLANTING.
2. ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO ACCEPTED PLANTING PROCEDURES SHOWN IN THESE PLANS AND SPECIFICATIONS.
3. THE PLANT MATERIALS SHALL BE OF HIGH GRADE, AND SHALL MEET THE QUALITY AND SIZE STANDARDS OF THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60, 1-1986, AS UPDATED).
4. LANDSCAPING SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 20.925.050 VMC.
5. ALL REQUIRED TREES SHALL BE AT LEAST 2" IN CALIPER AND SHRUBS AT LEAST 1 GALLON.
6. TREES SHALL NOT BE PLANTED CLOSER THAN 2' FROM THE FACE OF THE CURB AND 2' FROM ANY PERMANENT HARD SURFACE PAVING OR WALKWAY: SPACE BETWEEN THE TREE AND THE HARD SURFACE MAY BE COVERED BY A NON-PERMANENT HARD SURFACE SUCH AS BRICKS ON SAND, PAVED BLOCKS AND COBBLESTONES.
7. TREES, SHRUBS, PERENNIALS, PERENNIAL GRASSES AND GROUNDCOVERS SHALL BE LOCATED AND SPACED AS SHOWN ON PLANS AND PER DETAILS.
8. A MINIMUM OF 12" DEPTH OF NON-MECHANICALLY COMPACTED SOIL SHALL BE AVAILABLE FOR WATER ABSORPTION AND ROOT GROWTH IN PLANTED AREAS.
9. A 3" LAYER OF BARK MULCH OVER A 3" LAYER OF COMPOST SHALL BE APPLIED TO ALL EXPOSED SOIL SURFACES OF NON-TURF AREAS WITHIN THE LANDSCAPE AREA. PLANT TYPES THAT ARE INTOLERANT OF MULCH, SHALL BE EXEMPT FROM THIS REQUIREMENT. NON-POROUS MATERIAL, SUCH AS PLASTIC SHEETING, SHALL NOT BE PLACED UNDER THE MULCH.
10. INSTALL TEA BAG TYPE FERTILIZERS FOR ALL TREES AND SHRUBS INSTALLED. INSTALL 4 BAGS PER TREE CALIPER INCH AND 3 BAGS PER SHRUB. INSTALL BAGS EQUALLY SPACED AROUND ROOT BALL.
11. THE OWNER OR ASSIGNED AGENT SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPING AND SCREENING, WHICH SHALL BE MAINTAINED IN GOOD CONDITION SO AS TO PRESENT A HEALTHY, NEAT AND ORDERLY APPEARANCE, SHALL BE REPLACED OR REPAIRED AS NECESSARY, AND SHALL BE KEPT FREE FROM REFUSE AND DEBRIS.
12. CARE OF THE LANDSCAPE ALONG PUBLIC RIGHTS-OF-WAY SHALL ADHERE TO SECTION 20.925.030.F OF THE VANCOUVER MUNICIPAL CODE.
13. ALL LANDSCAPED AREAS SHALL BE PROVIDED WITH AN IRRIGATION SYSTEM OR A READILY AVAILABLE WATER SUPPLY WITH AT LEAST ONE OUTLET LOCATED WITHIN 50' OF ALL PLANT MATERIAL.



## **PLANTING AND PRUNING NOTES**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAH	1/15
REVISION	APPROVED BY	APPROVAL DATE
4	MAH	3/24

STD. PLAN NO.

**T03-24A**

**PLANTING AND PRUNING NOTES CONT.:**

**STANDARD PRUNING NOTES:**

**TREE, SHRUB, AND GROUNDCOVER PRUNING:**

- ALL PLANT GROWTH IN LANDSCAPE AREAS SHALL BE CONTROLLED BY PRUNING, TRIMMING OR OTHERWISE SO THAT:
  - IT WILL NOT INTERFERE WITH THE MAINTENANCE OR REPAIR OF ANY PUBLIC UTILITY.
  - IT WILL NOT RESTRICT PEDESTRIAN OR VEHICULAR ACCESS.
  - IT WILL NOT CONSTITUTE A TRAFFIC HAZARD BECAUSE OF REDUCED VISIBILITY.

**TREE PRUNING:**

- ALL PRUNING OF DECIDUOUS STREET TREES ADJACENT TO STREETS AND SIDEWALKS SHALL BE CONSISTENT WITH ANSI A300 PRUNING STANDARDS AND BE PERFORMED PURSUANT TO THE FOLLOWING SCHEDULE AND STANDARDS:
- YEAR 1: ONLY DEAD, BROKEN OR CROSSING BRANCHES SHALL BE PRUNED WHEN THE TREE IS PLANTED.
- YEAR 2: A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR 2. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD / SIDEWALK CLEARANCE, AND REMOVE ANY DEAD DYING OR CROSSING BRANCHES.
- SUCCEEDING YEARS: PERFORM A CLASS I PRUNE DURING SUCCEEDING YEARS TO CONTINUE TO ESTABLISH PROPER SCAFFOLD BRANCHING, REMOVE ANY DEAD, DYING, OR CROSSING BRANCHES, AND CONTINUE TO RAISE THE CROWN UNTIL ROAD AND SIDEWALK CLEARANCES STANDARDS HAVE BEEN MET.
- ALL PRUNING SHALL BE COMPLETED BY PROPERTY OWNER OR A LANDSCAPE CONTRACTOR HIRED BY THE PROPERTY OWNER.

**TREES AND SHRUBS IN SIGHT TRIANGLES:**

- ALL SHRUBS WITHIN SIGHT DISTANCE TRIANGLES SHALL BE MAINTAINED SO THAT FOLIAGE HEIGHT ABOVE PAVEMENT DOES NOT EXCEED 2'-6". TREES WITHIN SIGHT TRIANGLES SHALL BE LIMBED UP AS FOLLOWS FOR SIGHT DISTANCE VISIBILITY:
- IN CITY OF VANCOUVER: 10' ABOVE STREET GRADE (PER VANCOUVER MUNICIPAL CODE, CHAPTER 20.985; ALSO APPLIES TO TREES OVER SIDEWALKS IF IN SIGHT TRIANGLES).

**TREES NOT IN SIGHT DISTANCE TRIANGLES:**

- IN CITY OF VANCOUVER: 8' ABOVE SIDEWALK FOR PEDESTRIAN CLEARANCE, 13' ABOVE A LOCAL STREET, 15' ABOVE A COLLECTOR STREET, AND 18' ABOVE AN ARTERIAL STREET ROADWAY SURFACES (PER VANCOUVER MUNICIPAL CODE, CHAPTER 20.925.030.C, PRUNING REQUIRED).



**PLANTING AND PRUNING NOTES**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAHE	1/15
REVISION	APPROVED BY	APPROVAL DATE
3	MAHE	3/24

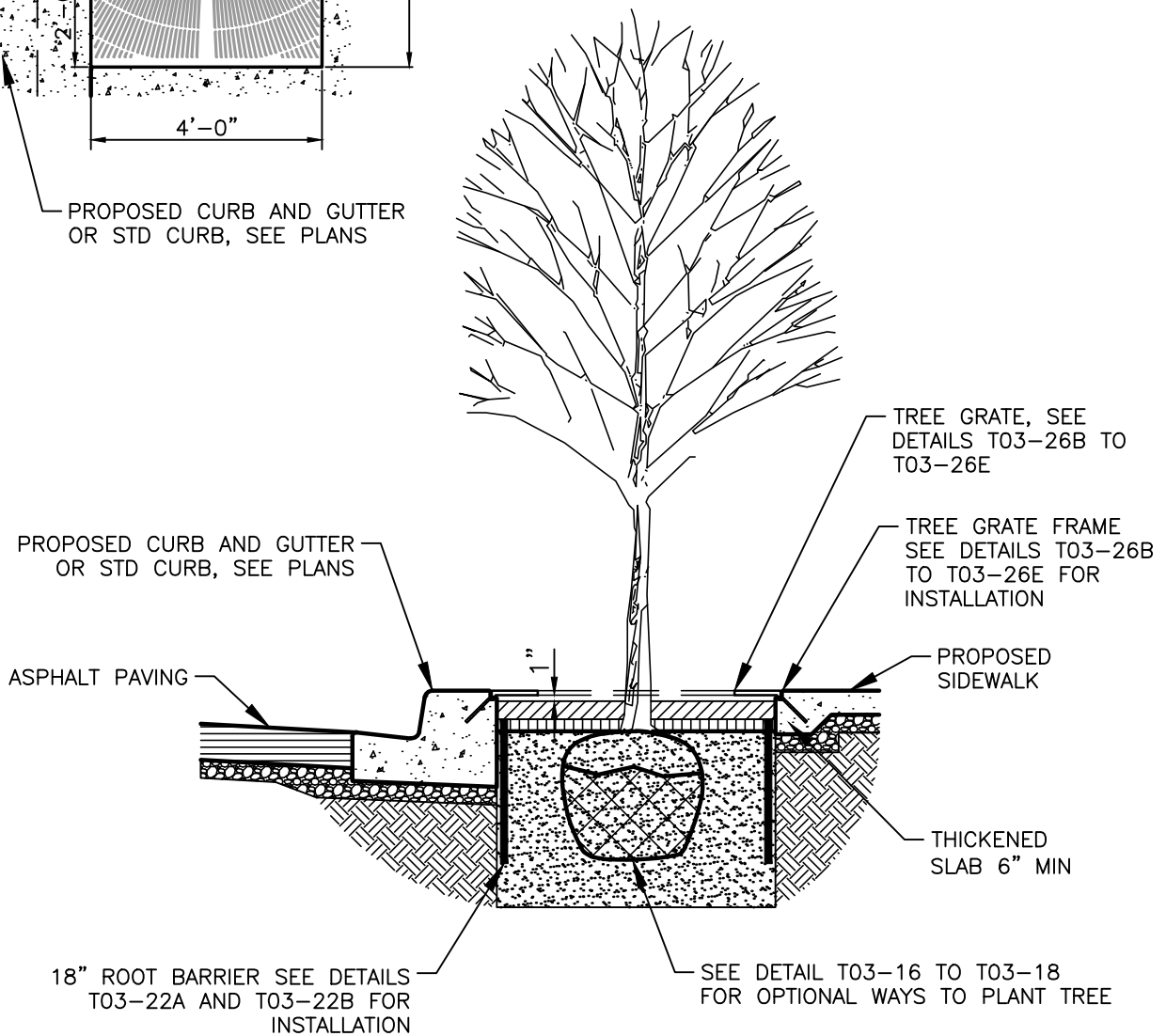
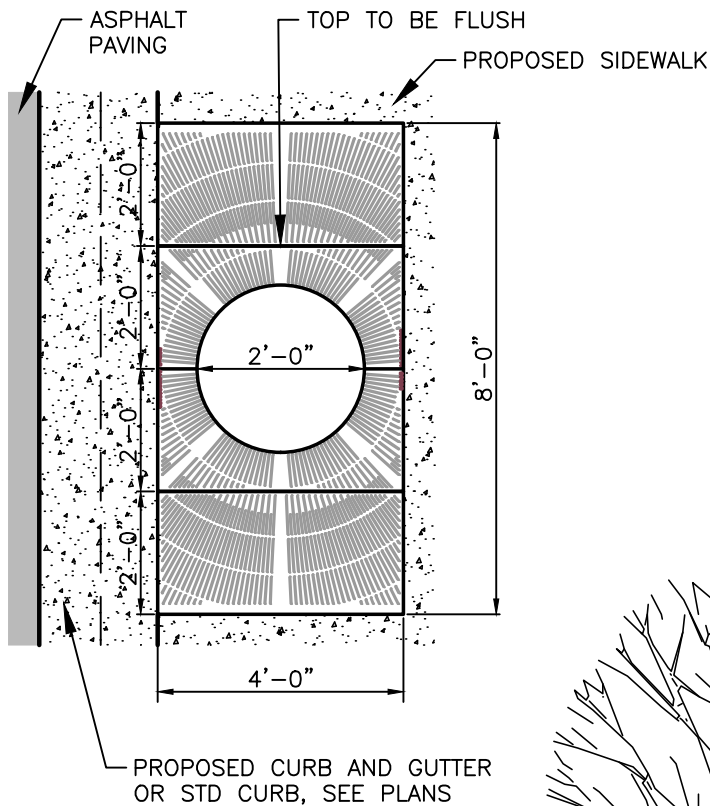
STD. PLAN NO.  
**T03-24B**



- 
- CITY OF**  
**Vancouver**  
**WASHINGTON**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

STD. PLAN NO.  
**T03-25**



I:\CITYAPPS\AUTOCAD\STD\_DETAILS\DRAWING\_FILES\T03-26A.DWG



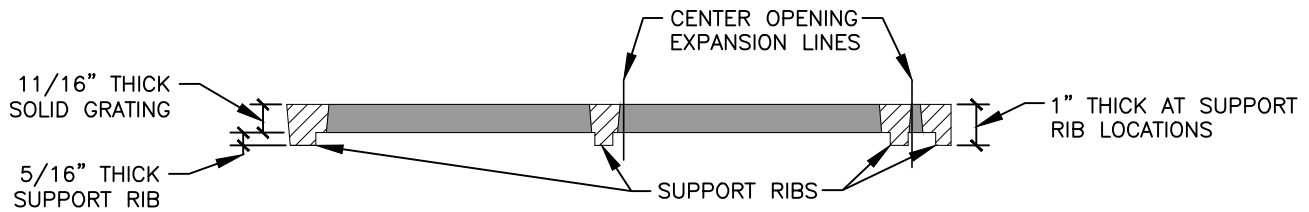
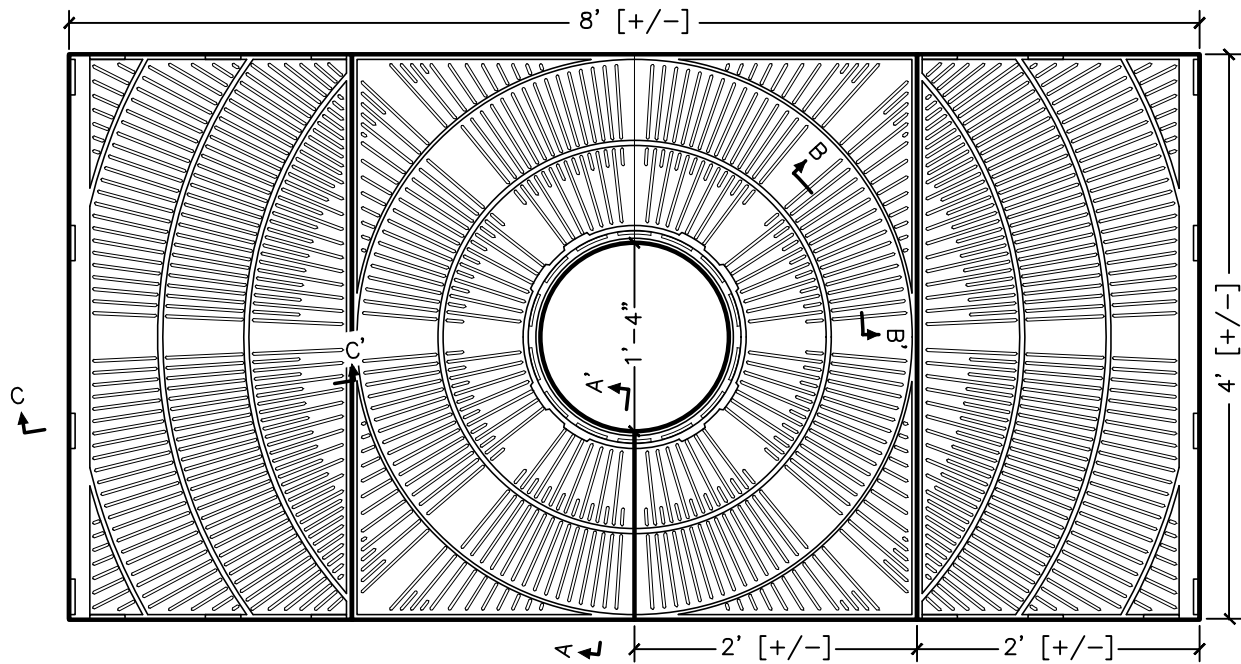
CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

#### 4' X 8' TREE GRATE

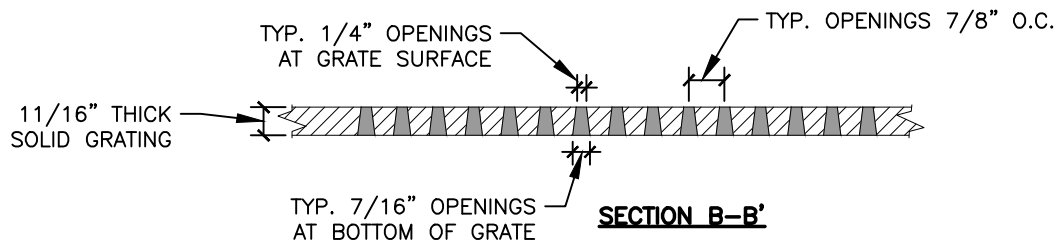
DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	MAH	2/21
REVISION	APPROVED BY	APPROVAL DATE
3	MAH	3/24

STD. PLAN NO.

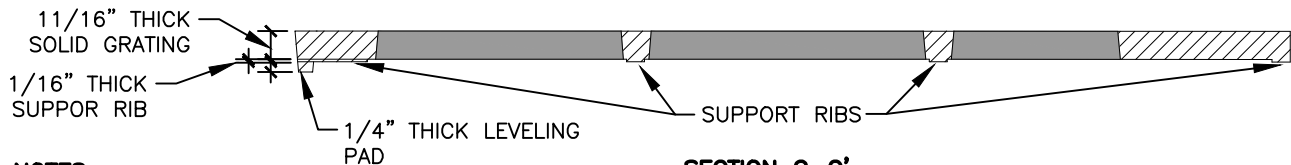
**T03-26A**



**SECTION A-A'**



**SECTION B-B'**



**SECTION C-C'**

**NOTES:**

1. CAST IN FOUR PIECES.
2. GRATE IS 1" THICK AT EDGE.
3. CENTER OPENING EXPANSIONS AT 1'-6" AND 2'-8".
4. NO OPENINGS GREATER THAN 1/4", IN CONFORMANCE WITH ADA ACCESSIBILITY GUIDELINES.
5. GRATE WEIGHS 604 LBS.
6. MATERIAL WILL BE HIGH QUALITY 100% RECYCLED GREY IRON; ASTM A48 CLASS 35B OR BETTER; HARDNESS 170-223 BRINNEL (UNLESS SPECIFIED OTHERWISE).
7. FINISH WILL BE NATURAL PATINA OF RAW IRON (UNLESS SPECIFIED OTHERWISE).
8. DIMENSIONS ARE NOMINAL.



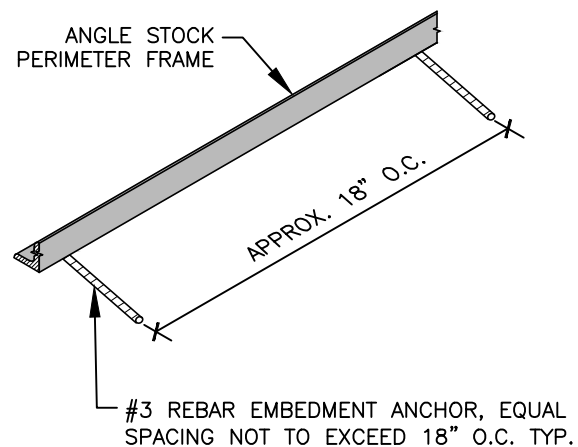
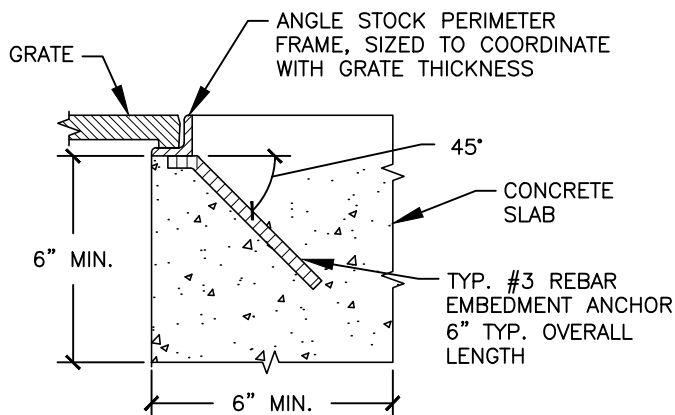
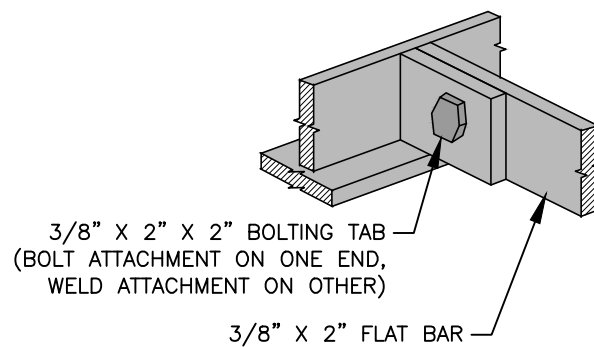
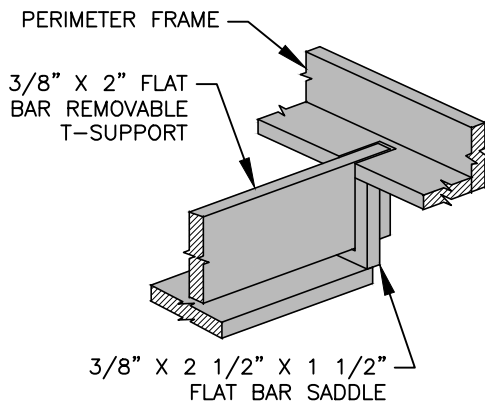
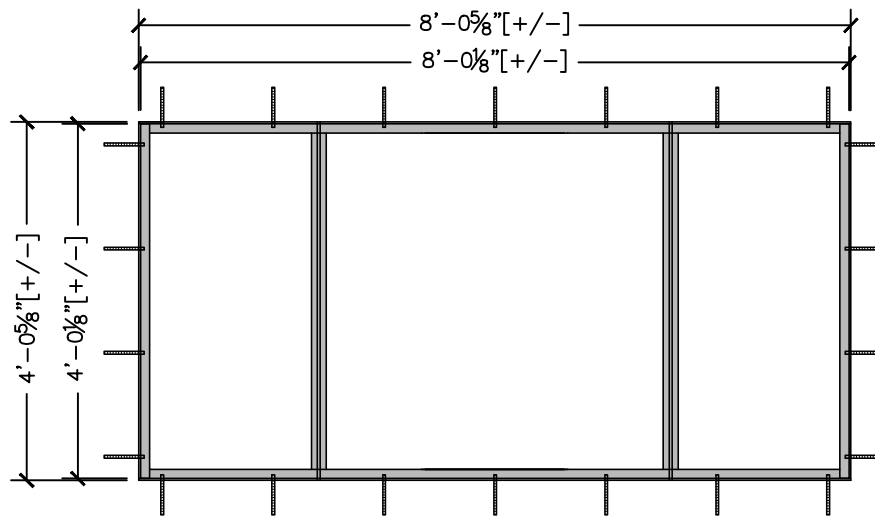
**4' X 8' TREE GRATE**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAH</i>	2/21
REVISION	APPROVED BY	APPROVAL DATE
3	<i>MAH</i>	3/24

STD. PLAN NO.

**T03-26B**



#### NOTES:

1. FRAMES ARE CONSTRUCTED OF MILD STEEL ASTM A36 (UNLESS SPECIFIED OTHERWISE).
2. FINISH WILL BE NATURAL PATINA OF RAW STEEL (UNLESS SPECIFIED OTHERWISE).
3. FRAME IS LOAD RATED FOR PEDESTRIAN TRAFFIC ONLY (UNLESS SPECIFIED OTHERWISE).
4. TYPICAL 1/8" HORIZONTAL GAP BETWEEN GRATE AND FRAME. ALL VISIBLE WELDS TO BE GROUND SMOOTH ON OUTSIDE EDGES. FRAMES WILL BE TRUE TO SQUARE OR DIAMETER. TOP OF GRATE FLUSH WITH GRADE OF SURROUNDING TOPPING MATERIAL (PAVER, CONCRETE SLAB, ETC.).
5. DIMENSIONS ARE NOMINAL.



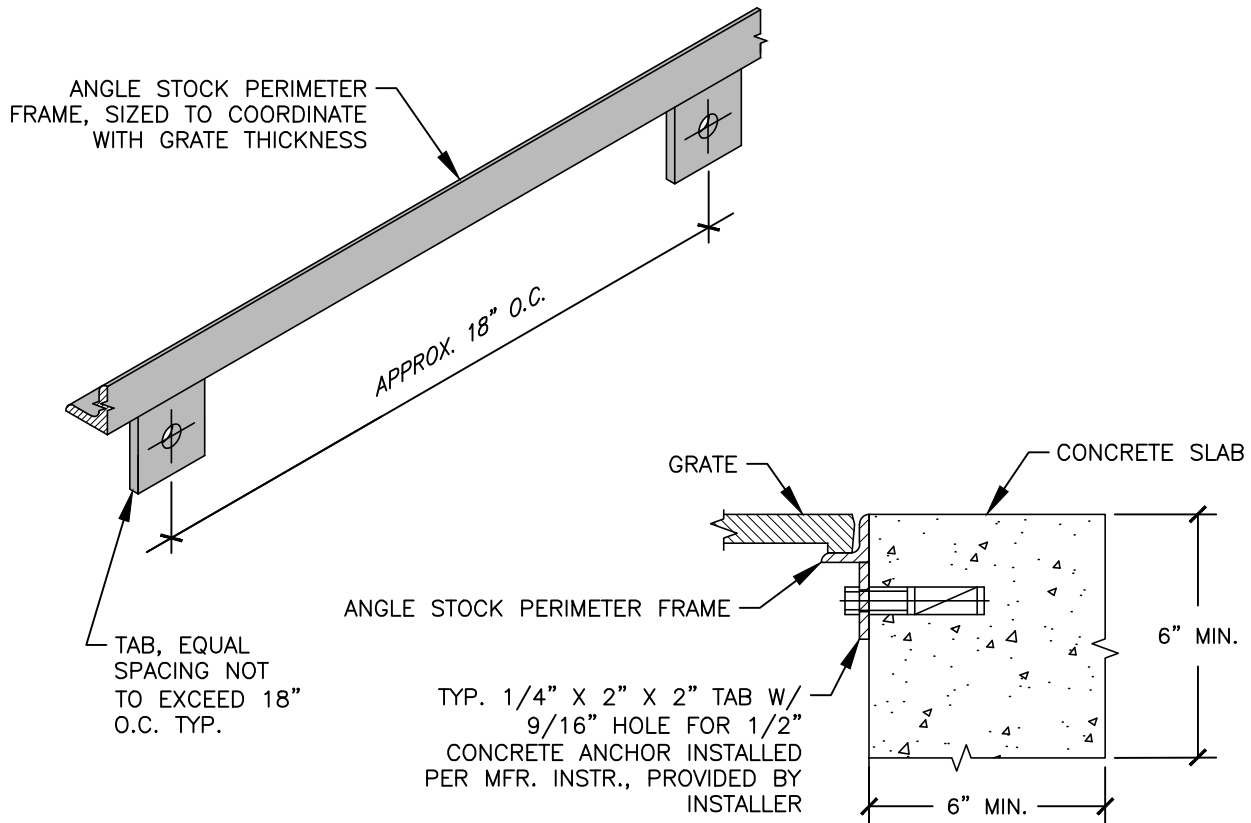
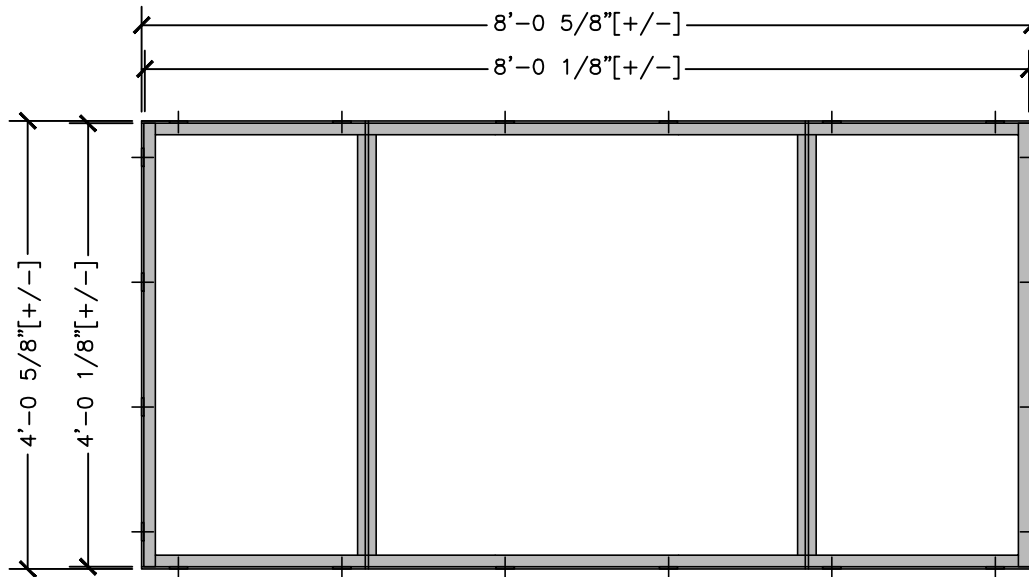
#### 4' X 8' TREE GRATE FRAME PREFERRED OPTION

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/21
REVISION	APPROVED BY	APPROVAL DATE
3	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-26C**



#### NOTES:

1. FRAMES ARE CONSTRUCTED OF MILD STEEL ASTM A36 UNLESS SPECIFIED OTHERWISE.
2. FINISH WILL BE NATURAL PATINA OF RAW STEEL UNLESS SPECIFIED OTHERWISE.
3. FRAME IS LOAD RATED FOR PEDESTRIAN TRAFFIC ONLY UNLESS SPECIFIED OTHERWISE.
4. TYPICAL 1/8" HORIZONTAL GAP BETWEEN GRATE AND FRAME. ALL VISIBLE WELDS TO BE GROUND SMOOTH ON OUTSIDE EDGES. FRAMES WILL BE TRUE TO SQUARE OR DIAMETER. TOP OF GRATE FLUSH WITH GRADE OF SURROUNDING TOPPING MATERIAL (PAVER, CONCRETE SLAB, ETC.).
5. DIMENSIONS ARE NOMINAL.



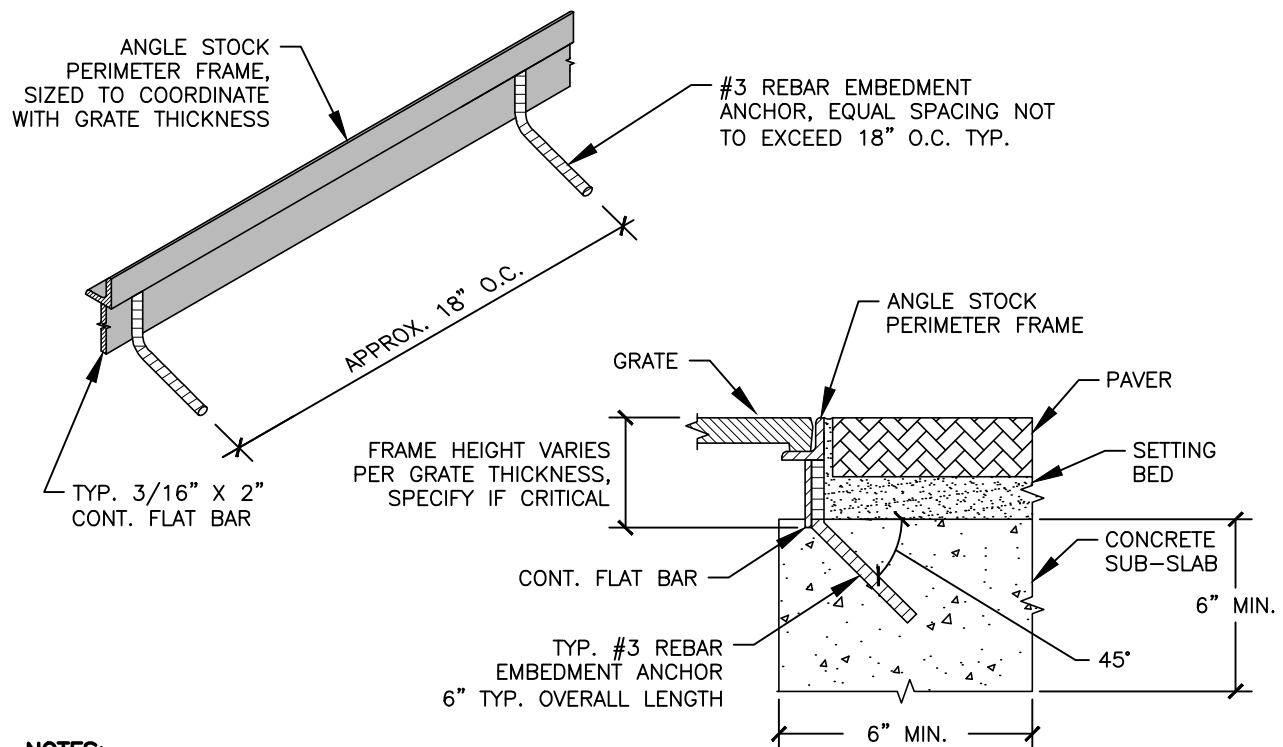
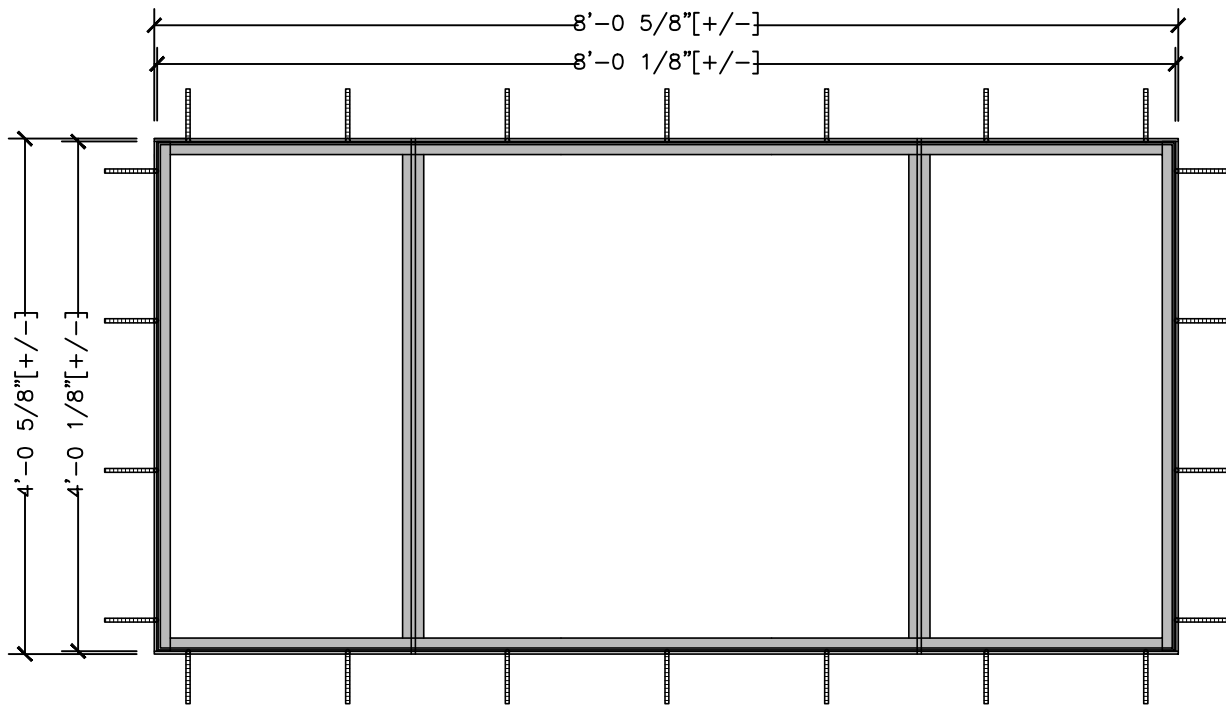
#### 4' X 8' TREE GRATE FRAME RETRO-FIT

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/21
REVISION	APPROVED BY	APPROVAL DATE
3	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-26D**



**NOTES:**

1. FRAMES ARE CONSTRUCTED OF MILD STEEL ASTM A36 (UNLESS SPECIFIED OTHERWISE).
2. FINISH WILL BE NATURAL PATINA OF RAW STEEL (UNLESS SPECIFIED OTHERWISE).
3. FRAME IS LOAD RATED FOR PEDESTRIAN TRAFFIC ONLY (UNLESS SPECIFIED OTHERWISE).
4. TYPICAL 1/8\"
5. DIMENSION ARE NOMINAL.



**TREE GRATE FRAME FOR PAVER SIDEWALK AREAS**

CITY OF VANCOUVER  
DEPARTMENT OF PUBLIC WORKS  
TRANSPORTATION DIVISION

DRAWN BY	APPROVED BY	APPROVAL DATE
CDC	<i>MAHE</i>	2/21
REVISION	APPROVED BY	APPROVAL DATE
3	<i>MAHE</i>	3/24

STD. PLAN NO.

**T03-26E**