

# KEARY TOWNHOUSE

## ISSUED FOR BUILDING PERMINT

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### LANDSCAPE DRAWING INDEX PERMIT

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### GENERAL NOTES

- ALL PLANTING SHALL BE IN ACCORDANCE WITH BC LANDSCAPE STANDARD, LATEST EDITION.
- ALL PLANTING AREAS TO RECEIVE AUTOMATIC DRIP IRRIGATION, WITH TIME CLOCK AND RAIN SENSOR
- ALL LANDSCAPE ARCHITECTURAL DRAWINGS IN THIS PACKAGE SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANT DRAWINGS, DETAILS, SPECIFICATIONS, AND ANY OTHER CORRESPONDENCE THAT MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.
- IF A DISCREPANCY OCCURS BETWEEN THE DRAWINGS AND THE SPECIFICATIONS OR ANY OTHER DOCUMENT ASSOCIATED WITH THE PROJECT, THE CONFLICT SHALL BE REPORTED IN WRITING TO THE LANDSCAPE ARCHITECT TO OBTAIN CLARIFICATION AND APPROVAL BEFORE PROCEEDING WITH WORKS.
- ALL EXISTING INFORMATION IS BASED ON AVAILABLE RECORDS AND SHALL NOT BE CONSTRUED TO BE COMPLETE OR ACCURATE.
- THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY THE TRUE EXISTING CONDITIONS. ANY UNCLEAR ISSUES SHALL BE CLARIFIED WITH THE CONSULTANT TEAM. NO CLAIM SHALL BE ALLOWED FOR EXTRAS WHICH MAY ARISE THROUGH NEGLIGENCE OF THIS ADVICE.
- THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXISTENCE, LOCATION, AND ELEVATION OF ALL UTILITIES AND CONCEALED STRUCTURES, AND IS RESPONSIBLE FOR NOTIFYING THE APPROPRIATE COMPANY, DEPARTMENT OR PERSON(S) OF ITS INTENTION TO CARRY OUT ITS OPERATIONS.
- LAYOUT OF PAVING, WALLS, SITE FURNITURE, SOIL, PLANTING, AND ALL OTHER LANDSCAPE MATERIALS IS TO BE STAKED OUT AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- ALL DIMENSIONS AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED. VERIFY ALL ELEVATIONS WITH FIELD CONDITIONS. REPORT ANY DISCREPANCIES TO CONSULTANT TEAM FOR REVIEW AND RESPONSE.
- ALL UTILITIES TO BE STAKED OUT BY CONTRACTOR AND PROTECTED FOR DURATION OF CONSTRUCTION PERIOD.
- PROTECT ALL EXISTING STRUCTURES
- ALL SUBSTITUTIONS OF SPECIFIED MATERIALS TO BE APPROVED BY LANDSCAPE ARCHITECT.
- FINAL PLANT SPACING, QUANTITY AND TREE PLACEMENT HAS BEEN REVIEWED TO THE SATISFACTION OF GENERAL MANAGER OF ENGINEERING SERVICES.
- ALL WORKS ON CITY OF BURNABY PROPERTY TO BE AS PER THE CITY OF BURNABY STREET RESTORATION MANUAL.
- G | ALA LANDSCAPE ARCHITECTS DOES NOT GUARANTEE THE EXISTENCE, LOCATION, AND ELEVATION OF UTILITIES OR CONCEALED STRUCTURES AT THE PROJECT SITE.





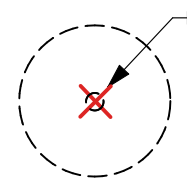
TREE MANAGEMENT PLAN

SYMBOL

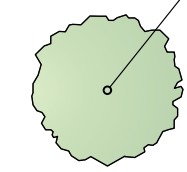
DESCRIPTION



TREE PROTECTION BARRIER FENCE  
 Refer to Tree Protection Notes for Requirements



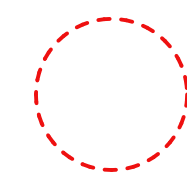
EXISTING TREE TO BE REMOVED  
 Refer to Arborist Report



EXISTING TREE TO BE RETAINED  
 Refer to Arborist Report



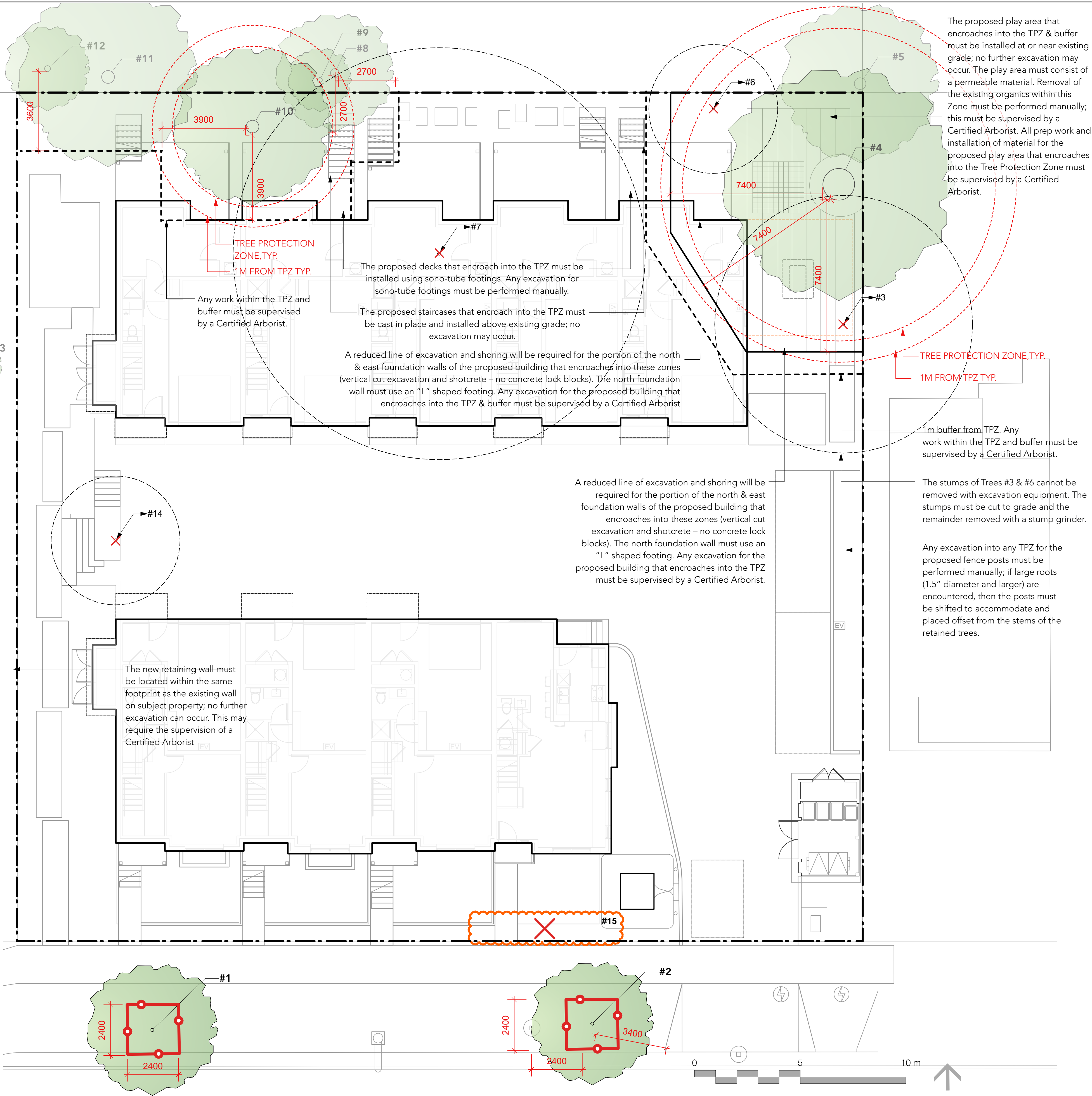
SHRUB TO BE REMOVED



ROOT EXTENT TREE PROTECTION ZONE  
 of existing trees to remain and protect

Tree No.	Botanical Name	Common Name	DBH (cm)	Height (m) est.	CRZ radius (ft.)	Recommendations
#1	Acer sp.	Maple	13	6	2.7	Retain. Install Tree Protection Zone fencing as directed by the City.
#2	Fraxinus sp.	Ash	11	6	2.3	RETAIN. Install Tree Protection Zone fencing as directed by the City.
#3	Prunus sp.	Plum	73 comb.	6	7.2	Remove. Remove tree due to poor condition and to enable the proposed walkway and bike storage. The stump of Tree #3 cannot be removed with excavation equipment as this will cause damage to the roots of Tree #4. The stump of Tree #3 must be cut to grade then the remainder removed with a stump grinder.
#4	Thuja plicata	Western red cedar	115	17	24.2	Retain. One large zone shall protect Trees #4 and #5. Install Tree Protection Zone fencing 20ft from the base of the stem on the south, southwest and west sides of Tree #4. Absolutely no further grade changes are to occur within this zone; the existing grade cannot be altered (raised or lowered).
#5	Thuja plicata	Western red cedar	53	14	11.3	Retain. This tree belongs to the neighbouring property. See recommendations for Tree #4.
#6	Ilex sp.	Holly	24 combined	4	3	Remove. Remove tree as it is considered an invasive species. Also, removal is necessary to enable the proposed deck and walkway.
#7	Thuja plicata	Western red cedar	160 est.	20	32.8	Remove. Removal of this tree is necessary to enable the proposed building.
#8	Acer macrophyllum	Big leaf maple	41	12	8.5	Retain. One large Zone shall protect Trees #8 - #12. Install Tree Protection Zone fencing 9ft from the base of the stem on the south and east sides of Tree #8, 13ft from the base of the stem on the south, east and west sides of Tree #10 and 12ft from the base of the stem on the south side of Tree #11. Absolutely no further grade changes are to occur within this zone; the existing grade cannot be altered (raised or lowered).
#9	Thuja plicata	Western red cedar	23	6	4.5	Retain. See recommendations for Tree #8. One large Zone shall protect Trees #8 - #12.
#10	Pseudotsuga menziesii	Douglas fir	58	12	12.4	Retain. See recommendations for Tree #8. One large Zone shall protect Trees #8 - #12.
#11	Acer macrophyllum	Big leaf maple	61	10	12.6	Retain. See recommendations for Tree #8. One large Zone shall protect Trees #8 - #12.
#12	Ficus sp.	Fig	28	5	5.8	Retain. See recommendations for Tree #8. One large Zone shall protect Trees #8 - #12.
#13	Prunus sp.	Cherry	36	8	7.4	Retain. Tree Protection Zone fencing is not necessary since the Critical Roots of this tree do not encroach into the subject site.
#14	Pyrus sp.	Pear	25	5	5	Remove. Remove tree, it is in decline. Also, removal is necessary to enable the proposed driveway and staircase.
#15	Ligustrum sp.	Privet hedge		2		Remove. Obtain consent from the Parks Division and remove hedge due to poor condition and to enable the proposed walkway and sidewalk.

NOTE:  
 ALL TREES AND ROOT ZONES TO BE RETAINED MUST BE PROTECTED AT ALL TIMES



G | ALA

Gauthier + Associates Landscape Architects Inc.

F Issued for BP  
 E Issued for DP Prior to Response  
 D Issued for Prior to Response

2022-10-12  
 2022-04-11  
 2022-03-04

337&339 Keary Street

Keary Street  
 New Westminster

2134

June 2021



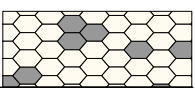
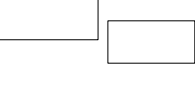

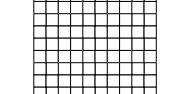
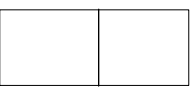
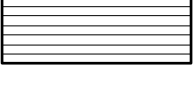


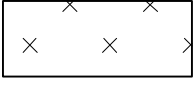

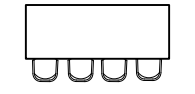
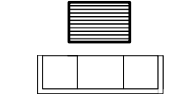

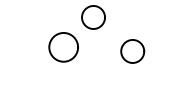
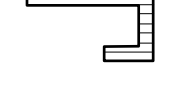












L1.0  
 TREE MANAGEMENT PLAN

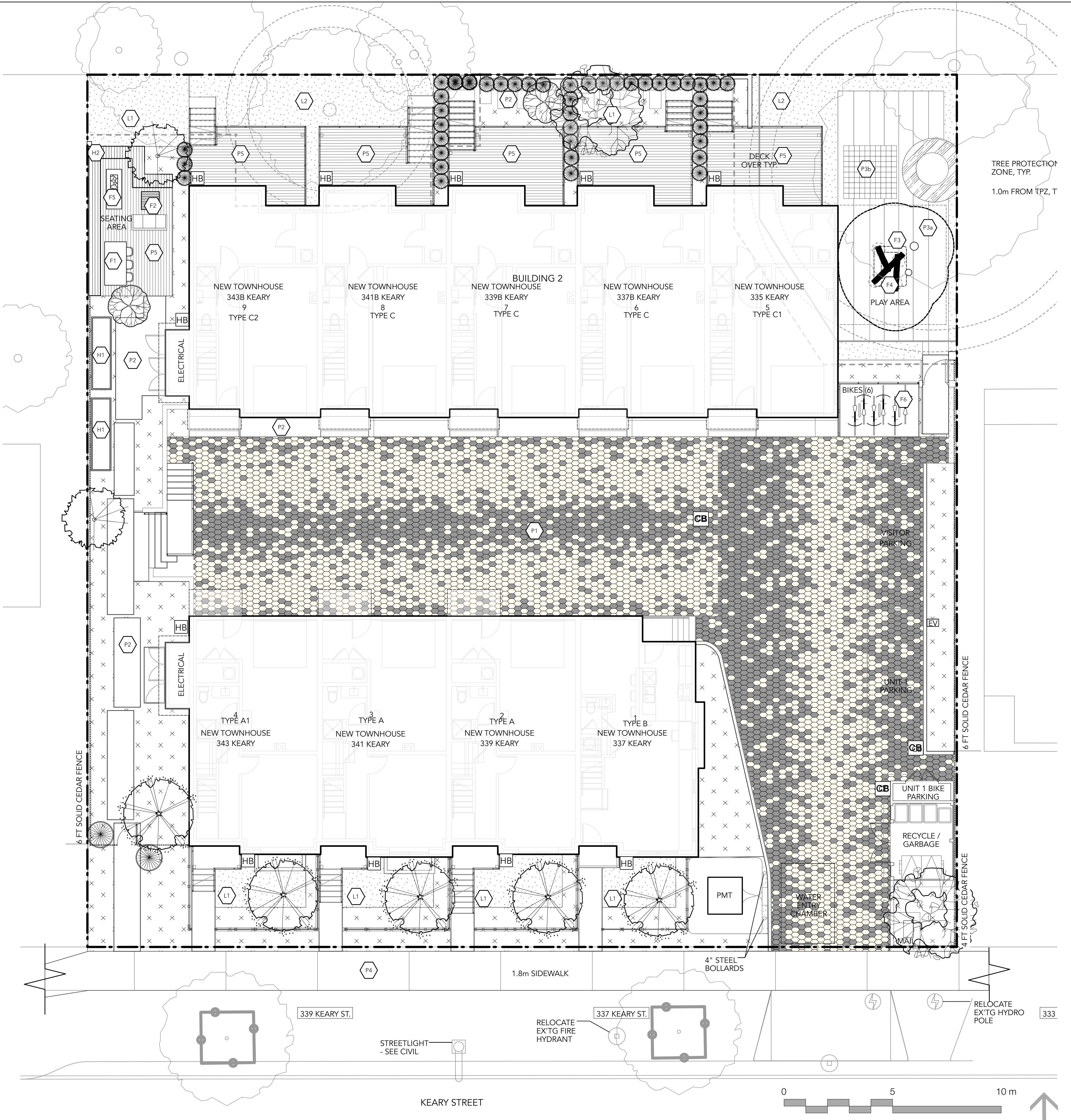


GENERAL LAYOUT + MATERIALS NOTES:

1. ALL DIMENSIONS ARE METRIC UNLESS OTHERWISE NOTED. VERIFY ALL DIMENSIONS WITH FIELD CONDITIONS. REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT FOR REVIEW AND RESPONSE.
2. ALL UTILITIES TO BE STAKED OUT BY CONTRACTOR AND PROTECTED FOR DURATION OF CONSTRUCTION PERIOD.
3. UNLESS OTHERWISE NOTED, PROVIDE A MINIMUM 2% SLOPE ON ALL HARD AND SOFT LANDSCAPE AREAS TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS OR TO DRAINAGE STRUCTURES. MAXIMUM 3:1 SLOPE IN SOFT LANDSCAPE AREAS.
4. THE LAYOUT OF ALL HARDSCAPE ITEMS, SITE FURNISHINGS, BOULDERS, LANDSCAPE LIGHTING, PLANTING BEDS AND OTHER MATERIALS IS TO BE STAKED OUT BY THE CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
5. ALL SUBSTITUTIONS OF SPECIFIED MATERIALS TO BE APPROVED BY LANDSCAPE ARCHITECT.
6. THIS PLAN IS "NOT FOR CONSTRUCTION" AND IS TO BE SUBMITTED FOR REVIEW TO ENGINEERING SERVICES A MINIMUM OF 8 WEEKS PRIOR TO THE START OF ANY CONSTRUCTION PROPOSED FOR PUBLIC PROPERTY. NO WORK ON PUBLIC PROPERTY MAY BEGIN UNTIL SUCH PLANS RECEIVE "FOR CONSTRUCTION" APPROVAL AND RELATED PERMITS ARE ISSUED. PLEASE CONTACT ENGINEERING, DEVELOPMENT SERVICES AND/OR YOUR ENGINEERING, BUILDING SITE INSPECTOR FOR DETAILS.
7. CONTRACTOR MUST ONLY EXCAVATE WITHIN TREE PROTECTION ZONE UNDER REVIEW OF ARBORIST
8. EXCAVATION MUST BE DONE BY HYDRO-VAC TO DETERMINE LOCATION OF ROOTS PRIOR TO INSTALLATION
9. ARBORIST TO SUPERVISE ALL WORK

MATERIALS LEGEND

SYMBOL	KEY	DESCRIPTION	DETAILS KEY
	P1	<b>PAVING TYPE 1: DRIVEWAY PAVING</b> w/roller curbs Techno-Bloc Hexa 100, 40% Beige Cream and 60% Greyed Nickel 3 15/16" x 9" x 15 3/16"	7 L4.1
	P2	<b>PAVING TYPE 2: PAVING SLABS</b> CIP Concrete Slab Paving, Size Refer to Plan	2 L4.1
	P3a	<b>PAVING TYPE 3a: PIP RUBBER</b> Permeable Pour In Place Rubber Surfacing Pour Over Existing Grade Without Grading Change	3 L4.1
	P3b	<b>PAVING TYPE 3b: PIP RUBBER CHECKERS</b> Permeable Pour In Place Rubber Surfacing Pour Over Existing Grade Without Grading Change	3 L4.1
	P4	<b>PAVING TYPE 4: CONCRETE SIDEWALK</b> Broom Finish w/ Sawcut Lines, as per City of New Westminster current standards	4 L4.1
	P5	<b>PAVING TYPE 5: ENGINEERED WOOD DECKING</b> Thermally Modified Wood Deck	5 L4.1
		<b>PAVING TYPE 6: STEPPING STONE</b> Concrete Step Stone, Broom Finish	
	L1	<b>PLANTING TYPE 1</b> Sodded Area	7 L4.0
	L2	<b>PLANTING TYPE 2</b> Planted Area	6 L4.0
	H1	<b>URBAN AGRICULTURE PLANTERS</b> Timber Frame	1 L4.2
	F1	<b>SITE FURNISHING</b> HARVEST TABLE, Neuhoove Dining Table by Article + Lucinda Dining Chair by CB2	
	F2	<b>SITE FURNISHING</b> SOFA SET, Naya Cast Iron Loveseat by CB2 + Lubek Tuscan Brown Coffee Table by Article	
	F3	<b>SITE FURNISHING</b> LOG PLAY STRUCTURE	2 L4.4
	F4	<b>SITE FURNISHING</b> Log Stepper, 8" ht. By Landscape Structures	
	H2	<b>SITE FURNISHING</b> WOOD BENCH	2 L4.2
	F5	<b>SITE FURNISHING</b> FIRE PIT, 72" Aluminum Rectangle Propane Fire Table by RealFlame	
	H3	GUARDRAIL	4 L4.2
	H4	6' HT SOLID CEDAR FENCE	5 L4.2
	H5	MAX 6' HT CIP CONCRETE WALL	
	H6	4' HT SOLID CEDAR FENCE	
	H7	4' HT FRONT YARD FENCE	
		WOOD STAIRS W/PREFAB METAL	1 L4.3
	F6	<b>SITE FURNISHING</b> BIKE RACKS, Ride by Landscapeforms	3 L4.3
		EXISTING TREES TO REMAIN	
		PROPOSED TREES Refer to Planting Plan	
		PROPOSED HOSE BIBS	
		MULCH	



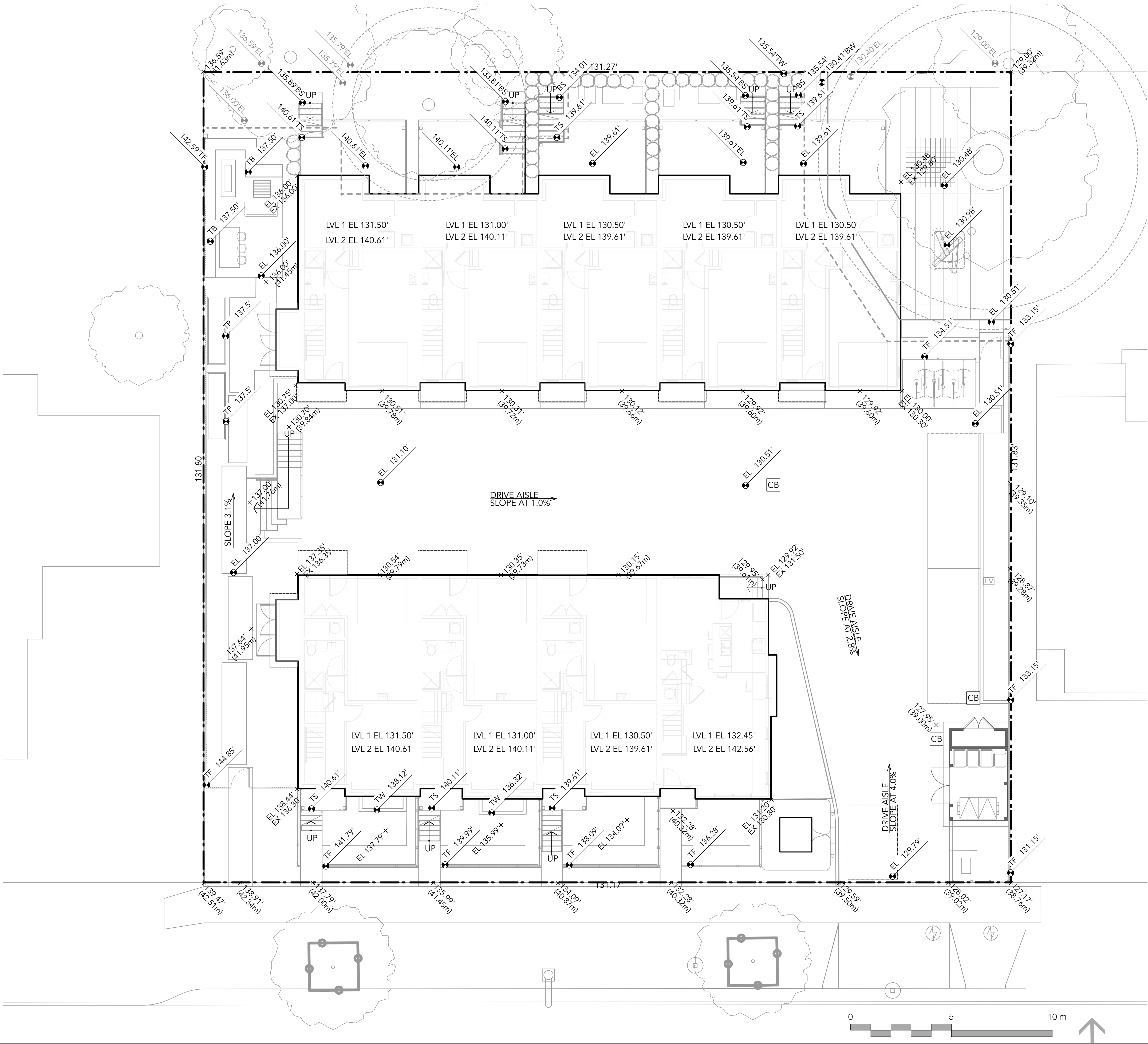


GENERAL GRADING NOTES:

1. ALL UTILITIES TO BE STAKED OUT BY CONTRACTOR AND PROTECTED FOR DURATION OF CONSTRUCTION PERIOD.
2. UNLESS OTHERWISE NOTED, PROVIDE A MINIMUM 2% SLOPE ON ALL HARD AND SOFT LANDSCAPE AREAS TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS OR TO DRAINAGE STRUCTURES. MAXIMUM 3:1 SLOPE IN SOFT LANDSCAPE AREAS.
3. THE LAYOUT OF ALL PROPOSED HARDSCAPE ITEMS, SITE FURNITURE, LIGHTING, PLANTING BEDS AND OTHER MATERIALS IS TO BE STAKED OUT BY THE CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
4. ALL SUBSTITUTIONS OF SPECIFIED MATERIALS TO BE APPROVED BY LANDSCAPE ARCHITECT.
5. REFER TO CIVIL FOR EXCAVATION DEPTHS, BACKFILL, AND BASE MATERIAL FOR ALL LANDSCAPE ITEMS SHOWN ON PLAN.
6. SLOPE SHALL MATCH EXISTING GRADE ALONG ALL PROPERTY LINES.
7. REFER TO CIVIL ENGINEER'S PRECISE GRADING PLANS FOR SITE GRADING, DRAINAGE, AND UTILITY LOCATIONS. IF ACTUAL SITE CONDITIONS VARY FROM WHAT IS SHOWN ON THE LANDSCAPE ARCHITECT'S PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT FOR DIRECTION AS TO HOW TO PROCEED.
8. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION AND ELEVATION IN THE FIELD PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION.
9. ALL PROPOSED GRADES ARE TO MEET AND BLEND IN WITH EXISTING GRADING AT PROJECT LIMITS, GRADING LIMITS, AND EXISTING SIDEWALK. PRECISE ELEVATIONS INDICATED ON PLANS TO BE VERIFIED IN FIELD TO AS-BUILT CONDITION.
10. THE DEBRIS CREATED BY LANDSCAPE GRADING OPERATIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF LEGALLY OFF SITE.
11. FINAL GRADING SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT IN THE FIELD PRIOR TO INSTALLATION OF PLANTING.

GRADING LEGEND

SYMBOL	DESCRIPTION
EL 0.00	PROPOSED ELEVATION
EL 0.00	EXISTING ELEVATION
TW 0.00	TOP OF WALL ELEVATION
BW 0.00	BOTTOM OF WALL ELEVATION
TS 0.00	TOP OF STAIRS ELEVATION
BS 0.00	BOTTOM OF STAIRS ELEVATION
TF 0.00	TOP OF FENCE ELEVATION
TB 0.00	TOP OF BENCH ELEVATION
→	SLOPE AND DIRECTION





GENERAL LIGHTING NOTES:

- 1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL ELECTRICAL WORK FOR THE LANDSCAPE ARCHITECTS APPROVAL. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY LICENSED ELECTRIACAL ENGINNER, OR MASTER ELECTRICIAN. PRIOR TO WORK COMMENCING/INSTALLATION.
- 2. ALL FIXTURE TYPES, SPACING, AND QUANTITIES TO BE CONFIRMED.
- 3. PRICE BASED ON LED LIGHT SOURCE FOR APPLICABLE LUMINARIES
- 4. REFER TO ELECTRICAL ENGINEER FOR SERVICING REQUIREMENTS
- 5. THE LIGHTING CONTRACTOR IS OBLIGATED TO REFER TO THE LANDSCAPE PLANS AND DETAILS FOR LOCATIONS OF FIXTURES RELATIVE TO THE PROPOSED HARDSCAPE AND PLANTING PLANS. NOTED DIMENSIONS ARE APPROXIMATE. REFER TO NOTE OR ENLARGEMENT, FOR FINAL PLACEMENT. CONTACT LANDSCAPE ARCHITECT FOR CLARIFICATION, IF NEEDED.
- 6. THE LANDSCAPE ARCHITECT OR CLIENT'S REPRESENTATIVE SHALL APPROVE THE FLAGGED LAYOUT OF THE FIXTURES AND ELECTRICAL SYSTEM PRIOR TO TRENCHING AND/OR FOUNDATION PREPARATION.
- 7. THE ELECTRICAL/LIGHTING CONTRACTOR IS RESPONSIBLE TO COORDINATE THE PLACEMENT OF SLEEVES PRIOR TO PAVING, SLEEVE MATERIAL SHALL BE SCHEDULE 40 AND AT A MINIMUM DEPTH TO MEET ALL ELECTRICAL CODES.
- 8. THE ELECTRICAL/LIGHTING CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, LICENSES, AND ASSOCIATED FEES REQUIRED TO INSTALL THE SYSTEM(S) INCLUDING ALL ELECTRICAL CONDUIT, LIGHT FIXTURES, WIRE, PANELS, JUNCTION BOXES AND NECESSARY EQUIPMENT FOR THE COMPLETION OF THE WORK.
- 9. THE ELECTRIACL/LIGHTING CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITY COMPANIES, COMMUNICATIONS PROVIDERS AND OTHERS TO IDENTIFY AND MARK LOCATIONS OF ALL UNDERGROUND UTILITIES WITHIN THE SCOPE OF WORK. KNOWN UTILITIES WHICH MAY BE ENCOUNTERED INCLUDE: ELECTRICAL, STORM SEWER, WATER, AND SANITARY SEWER.
- 10.VERIFY IN FIELD, ALL LOCATIONS OF FIXTURES, ELECTRICAL LINES OR OTHER LIGHTING SYSTEM ELEMENTS WITHIN THE DRIP LINE OF ANY EXISTING TREES. NOTIFY LANDSCAPE ARCHITECT OF SUCH OCCURRENCES PRIOR TO COMMENCEMENT OF WORK. HAND EXCAVATE WITHIN THE DRIPLINE OF ANY TREE, REFER TO SPECIFICATIONS.
- 11.ELECTRICAL CONDUIT LAYOUT IS DIAGRAMMATIC ON DOCUMENTS. ADJUST LOCATIONS ON SITE TO ACCOMMODATE EXISTING JOB CONDITIONS AND TO ACHIEVE MINIMAL IMPACT TO IN PLACE AND FUTURE ELEMENTS. AVOID INSTALLATIONS UNDER TREES.
- 12.THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING ELECTRIC POWER, AND PROPOSED CONNECTIONS AND METERS IN THE FIELD FOR APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- 13.THE CONTRACTOR SHALL PROVIDE CIRCUIT BREAKERS, AND PHOTO CELL CONTACTORS FOR ACTIVATION OF LIGHTING CIRCUITS.
- 14.THE CONTRACTOR SHALL PROVIDE CIRCUIT BREAKERS AND ASTRONOMIC TIME CLOCK FOR DE-ACTIVATION ON LIGHTING CIRCUITS.
- 15.THE LIGHTING SYSTEM SHALL BE PHOTOCELL ON, TIMER OFF.

LIGHTING LEGEND

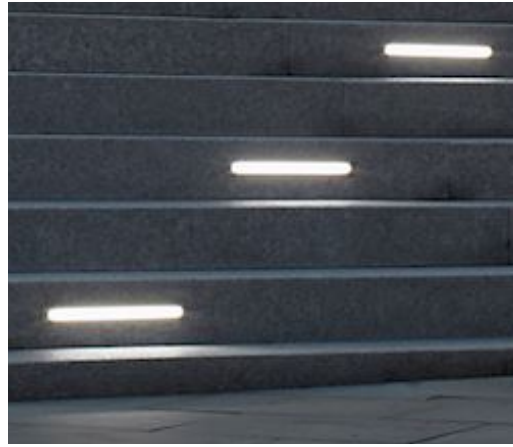
SYMBOL	DESCRIPTION
	TYPE 1 STEP WALL LIGHT
	TYPE 2 STRIP LIGHTING
	TYPE 3 GARDEN LUMINAIRE WITH EARTH SPIKE
	TYPE 4 GARDEN BOLLARD



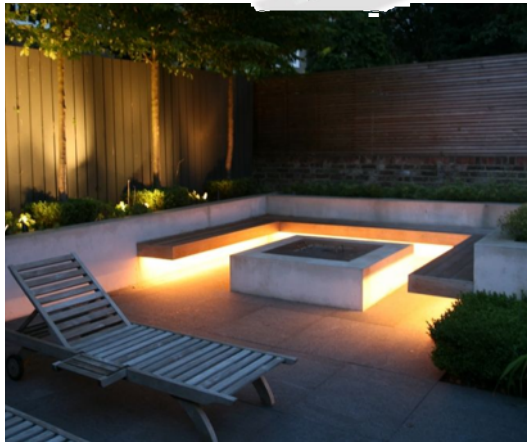
TYPE 1: GARDEN BOLLARD



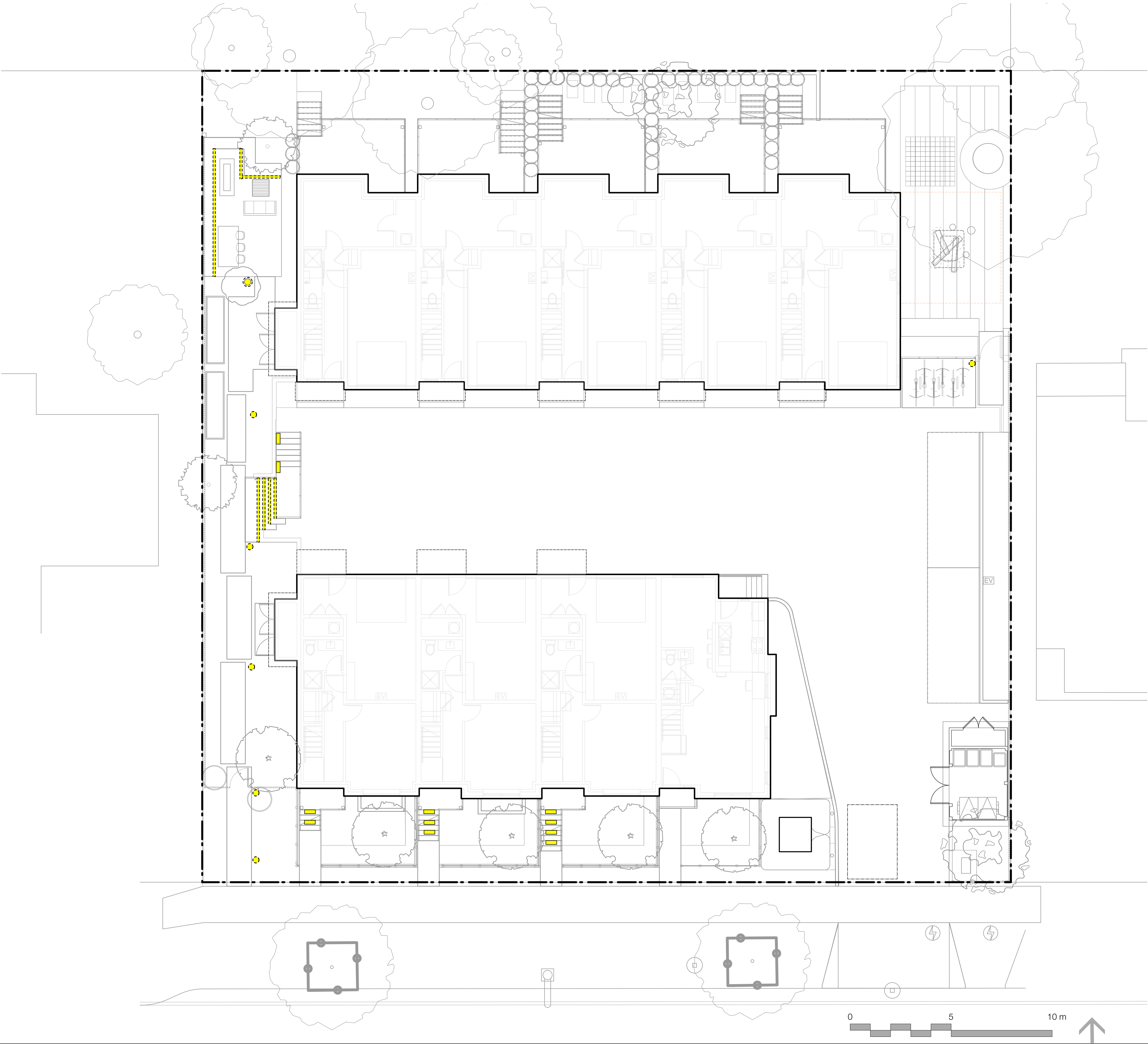
TYPE 2: GARDEN LUMINAIRE WITH EARTH SPIKE



TYPE 3: STEP WALL LIGHT



TYPE 4: STRIP LIGHTING





GENERAL PLANTING NOTES:

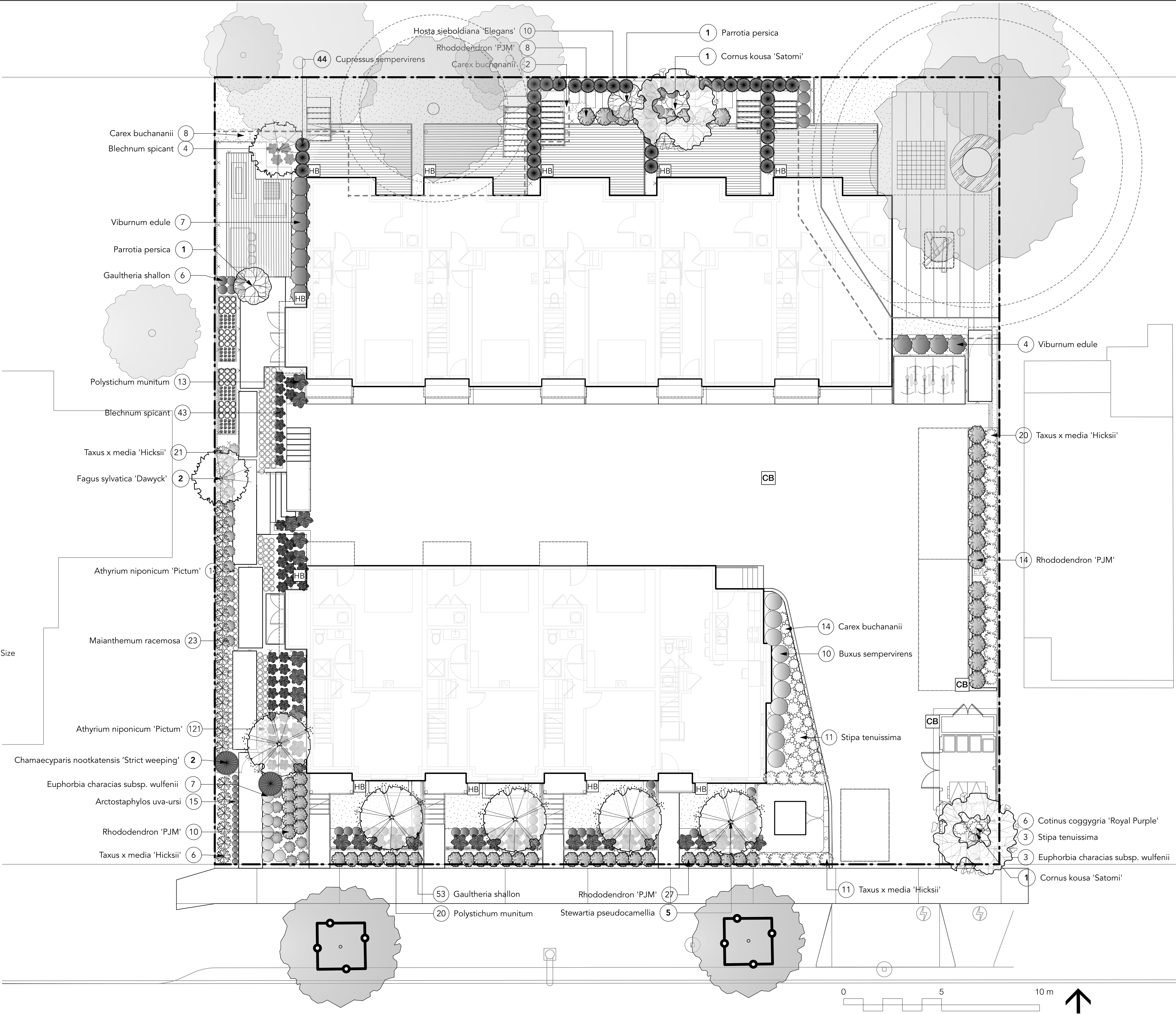
1. ALL PLANTING SHALL BE IN ACCORDANCE WITH BC LANDSCAPE STANDARD, LATEST EDITION
2. ALL TREE AND SHRUB AREAS TO BE MULCHED WITH 50MM (2") OF MEDIUM FINE MULCH, LESS THAN 50MM (2") DIAMETER.
3. ROOTZONE TO REST ON TAMPED PLANTING SOIL
4. SHRUBS: PREPARE PLANTING HOLES AS SPECIFIED. PLANT AT THE SAME GRADE AS NURSERY. WATER AND FERTILIZE AS SPECIFIED. ENSURE POSITIVE DRAINAGE THROUGHOUT PLANTING BED
5. TREE SIZE AND SPACING TO BE AS PER CITY OF VANCOUVER ARBORIST
6. TREE: PREPARE PLANTING HOLES AS SPECIFIED INSTALL TOP OF ROOTZONE 6" ABOVE FINISHED GRADE OF GROWING MEDIUM. WATER AND FERTILIZE AS SPECIFIED BY NURSERY.
7. FINAL SOFTSCAPE AND GRADING LAYOUTS AS WELL AS LOCATION SPACING TO BE APPROVED BY LANDSCAPE ARCHITECTS IN THE FIELD PRIOR TO INSTALLATION
8. IN CASE OF A DISCREPANCY BETWEEN PLANT INFORMATION ON THE LIST AND ON THE PLAN, THE LATTER SHALL PREVAIL
9. ALL PLANT MATERIAL TO BE MANUALLY WATERED FROM START OF INSTALLATION THROUGH THE END OF THE WARRANTY PERIOD
- 10.INSTALL TREE PROTECTION FENCING AROUND ALL EXISTING TREES TO CITY OF VANCOUVER STANDARDS. INSTALL TREE PROTECTION FENCING ON NEW PLANTING IF PHASED INSTALLATION IS REQUIRED.
- 11.FINAL PLANT SPACING, QUANTITY AND TREE PLACEMENT HAS BEEN REVIEWED TO THE SATISFACTION OF GENERAL MANAGER OF ENGINEERING SERVICES
- 12.ALL PLANTING BEDS TO RECEIVE AUTOMATIC DRIP IRRIGATION

MATERIALS LEGEND

SYMBOL	KEY	DESCRIPTION
	L1	PLANTING TYPE 1 Sodded Area
		EXISTING TREES TO REMAIN
		TREE PROTECTION BARRIER FENCE Refer to Tree Protection Notes for Requirements

TREE REPLACEMENT LIST

Symbol	Quantity	Latin Name	Common Name	Scheduled Size
CONIFERS:				
	2	Chamaecyparis nootkatensis 'Strict weeping'	Strict Weeping Alaska cedar	3m ht.
DECIDUOUS TREES:				
	5	Stewartia pseudocamellia	Japanese Stewartia	4cm cal.
	2	Parrotia persica	Persian Ironwood	7cm cal.
	2	Fagus sylvatica 'Dawyc'	Fastigate Beech	7cm cal.
	2	Cornus kousa 'Satomi'	Pink Japanese Dogwood	6cm cal.



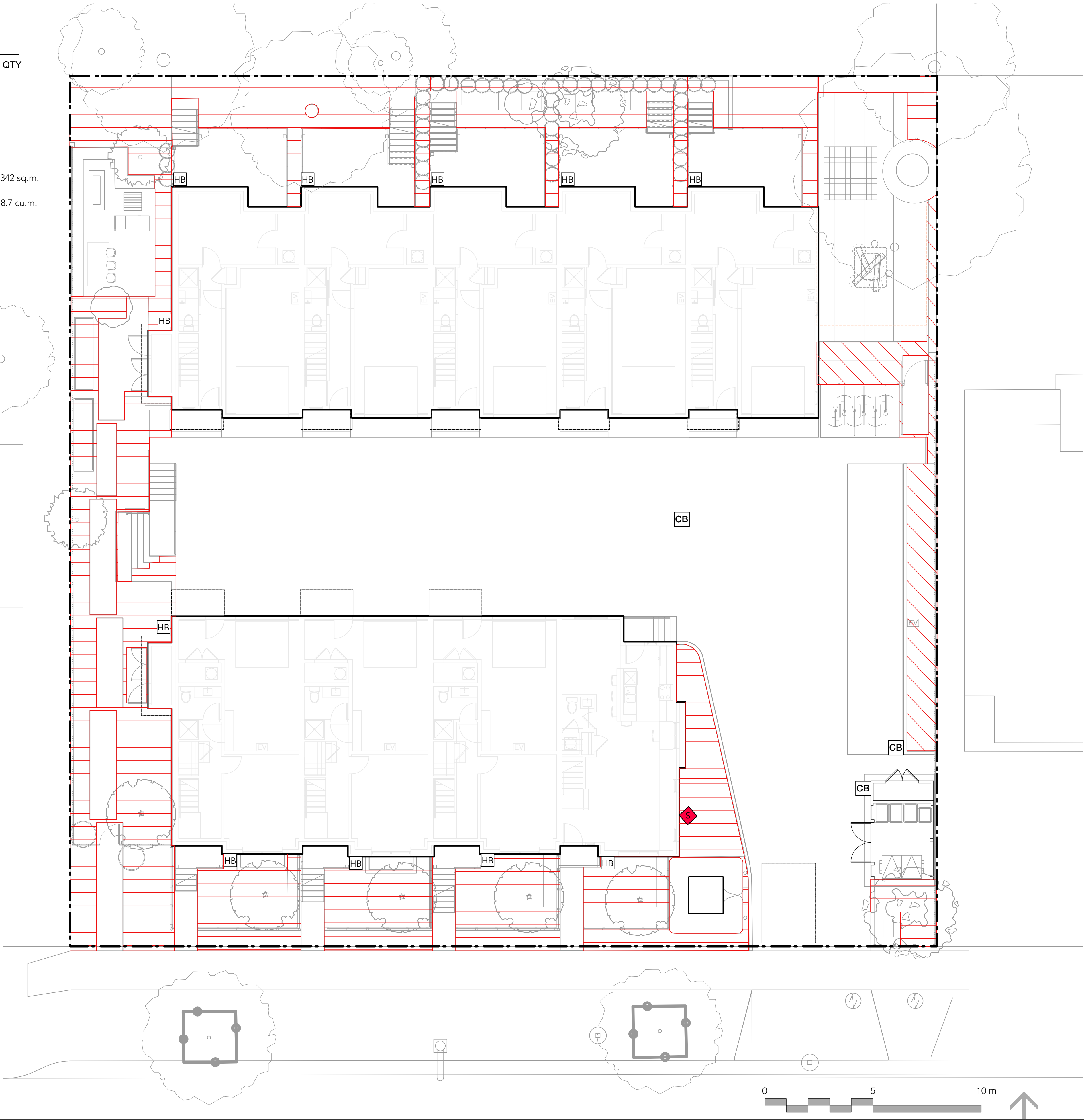


GENERAL IRRIGATION NOTES:

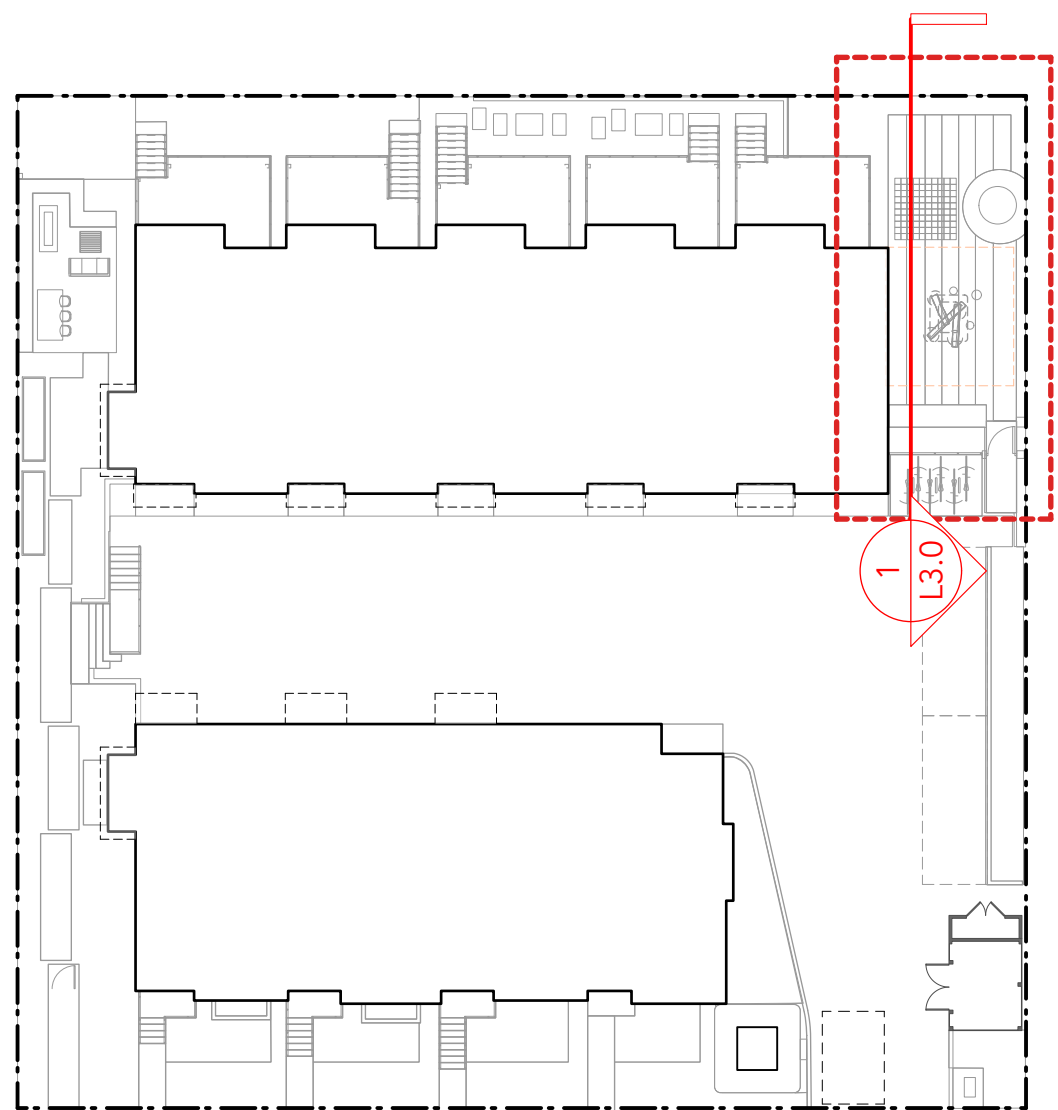
1. INSTALL POP-UP SPRINKLER HEADS POSITIONED WITHIN SHRUB OR GROUND COVER AREAS WITH THE TOP OF SPRINKLER ABOVE FINISH GRADE AS SHOWN IN THE DETAILS
2. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE OF AREA TO IRRIGATED UNLESS INDICATED OTHERWISE ON THE DRAWINGS
3. SPRINKLER SYSTEM WILL BE BASED ON MINIMUM PRESSURE AND MAXIMUM FLOW DEMAND SHOWN ON IRRIGATION DRAWINGS. VERIFY PERMANENT WATER PRESSURE BEFORE THE START OF CONSTRUCTION. REPORT DIFFERENCES BETWEEN WATER PRESSURE INDICATED ON DRAWINGS AND ACTUAL SITE PRESSURE READING AT IRRIGATION POINT-OF-CONNECTION TO OWNER'S AUTHORIZED REPRESENTATIVE FOR RESOLUTION. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO START OF CONSTRUCTION, ASSUME ALL RESPONSIBILITY FOR REVISIONS.
4. FLUSH AND ADJUST SPRINKLER HEADS FOR OPTIMUM PERFORMANCE. PREVENT OVERSPRAY ONTO WALKS, ROADWAYS, WALLS, FENCES AND BUILDINGS. SELECT THE MOST APPROPRIATE PART CIRCLE PATTERN NOZZLE TO FIT THE SITE CONDITIONS AND THROTTLE THE FLOW CONTROL ADJUSTMENT AT EACH CONTROL VALVE TO OBTAIN OPTIMUM SPRINKLER HEAD PRESSURE.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH GRADE DIFFERENCES, WALL/HARDSCAPE LOCATIONS, ETC. COORDINATE WORK FOR THE INSTALLATION OF IRRIGATION PIPE SLEEVES THROUGH WALLS, UNDER PAVEMENT AND STRUCTURES ETC.
6. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF SUFFICIENTLY SIZED SLEEVES FOR CONTROL WIRES AND NON-PRESSURE LATERAL LINE PIPING UNDER PAVED AREAS, IN ADDITION TO CONTROL WIRES AND LATERAL LINE PIPING SLEEVES SHOWN ON THE DRAWINGS.
7. TEST ALL PRESSURE MAIN LINES UNDER HYDROSTATIC PRESSURE OF 150 PSI FOR PERIOD OF 3 HOURS. TESTING OF PRESSURE MAIN LINE PIPING SHALL OCCUR PRIOR TO THE INSTLLTION OF ANY ELECTRONIC CONTROL VALVE, BASKET STRAINERS, QUICK COUPLING VALVES AND OTHER PRESSURE-SIDE IRRIGATION FACILITIES. PRESSURE TESTING RESULTS SHALL BE SUBMITTED TO LANDSCAPE ARCHITECT
8. REFER TO PLANTING LEGEND FOR PLANT MATERIAL NAMES, ABBREVIATIONS, SPECIFIC SIZES, ON-CENTRE SPACING, AND ADDITIONAL INFORMATION.
9. DO NOT INSTALL DRIPLINE TUBING UNDER PAVED SURFACES. CONNECT DRIPLINE TUBING TO SCHEDULE 40 PVC LATERAL LINE PIPING FOR ROUTING UNDER PAVED SURFACES AND SCHEDULE 80 PVC PIPING ROUTING THROUGH PLANTER WALLS. ADAPT DRIPLINE TUBING TO PVC PIPING AS REQUIRED WITH COMPRESSION ADAPTER FITTINGS
- 10.CONNECT DRIPLINE PIPING TO PRESSURE REGULATOR UNITS WITH SCHEDULE 40 PVC MALE ADAPTER FITTINGS AND COMPRESSION ADAPTER FITTINGS
- 11.PROVIDE COMPRESSION SERIES FITTINGS FOR TUBING CONNECTIONS AND CONNECTIONS TO PVC PIPING AS INDICATED IN THE EQUIPMENT LEGEND IN THIS SHEET. THE IRRIGATION DESIGN SHALL BE DONE BY A LICENSED IRRIGATION CONTRACTOR AND BE FULLY COMPLIANT WITH THE CONSULTANT'S SPECIFICATIONS. THE LANDSCAPE OR GENERAL CONTRACTOR SHALL SUBMIT THE IRRIGATION DESIGN AS A SHOP DRAWING FOR REVIEW BY THE LANDSCAPE ARCHITECT AT LEAST TWO MONTHS PRIOR TO INSTALLATION. NO WORK SHALL BEGIN UNTIL THE SHOP DRAWING IS APPROVED BY THE LANDSCAPE ARCHITECT. THE SHOP DRAWINGS MUST BE COMPLIANT WITH ALL MUNICIPAL BYLAWS AND PROVINCIAL HEALTH AND BUILDING CODES.
- 12.SYSTEM TO BE DESIGN BUILD. CONTRACTOR SHALL REFER TO SPECIFICATIONS FOR ALL WORK.
- 13.CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT DRAWINGS FOR ALL COMPLETED WORK ONCE APPROVED BY LANDSCAPE ARCHITECT.
- 14.IRRIGATION COMMAND CONTROLLER WITH RAIN SENSOR SYSTEM TO BE MOUNTED IN MECHANICAL ROOM.
- 15.ALL PIPE TO BE SCHEDULE 40.
- 16.IRRIGATION CONTROLLER TO BE INSTALLED IN VANDAL RESISTANT METAL LOCK BOX.
- 17.INSTALL PRECISION SOIL SENSOR ON SYSTEM
- 18.ALL PIPING RUNS ARE DIAGRAMMATIC, AVOID TRENCHING NEAR EXISTING TREE DRIP LINE.
- 19.UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE IRRIGATION SYSTEM SHALL BE DESIGNED AT 65PSI AND 18GPM.
- 20.THE SYSTEM SHALL INCLUDE A RAIN SENSOR.
- 21.THE SYSTEM SHALL BE A HIGH EFFICIENCY SYSTEM WITH A BUILT-IN RAIN SENSOR.

IRRIGATION LEGEND

SYMBOL	DESCRIPTION	QTY
<div>HB</div>	HOSE BIB CONNECTION C/W BACK FLOW PREVENTER COMPLIANT MUST MEET ALL PROVINCIAL AND MUNICIPAL BY-LAWS AND BUILDING CODES. IT IS UP TO THE INSTALLER TO DETERMINE COMPLIANCE WITH ALL CODES, NOT THE CONSULTANT.	
<div></div>	IRRIGATION AREA	342 sq.m.
	THE VOLUME OF WATER That much water for irrigation every week of the year during the drought period (12 weeks).	8.7 cu.m.
<div>CB</div>	CATCH BASIN	
<div>S</div>	IRRIGATION STUBOUT	



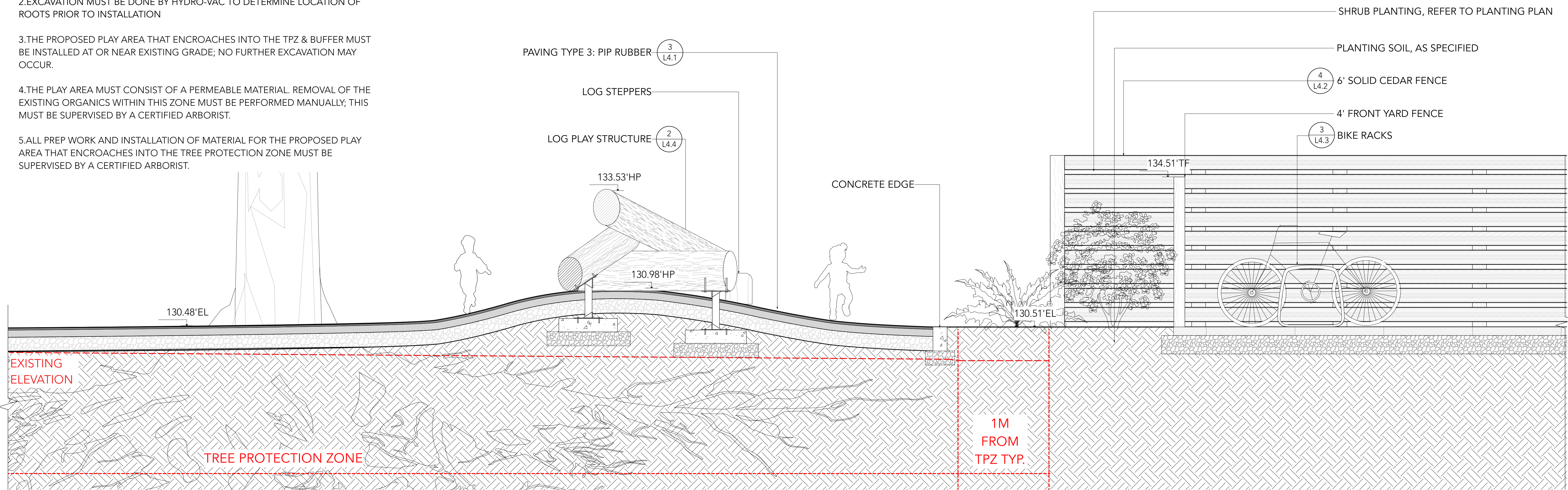




KEY PLAN  
↑

NOTE:

- 1.CONTRACTOR MUST ONLY EXCAVATE WITHIN TREE PROTECTION ZONE UNDER REVIEW OF ARBORIST
- 2.EXCAVATION MUST BE DONE BY HYDRO-VAC TO DETERMINE LOCATION OF ROOTS PRIOR TO INSTALLATION
- 3.THE PROPOSED PLAY AREA THAT ENCROACHES INTO THE TPZ & BUFFER MUST BE INSTALLED AT OR NEAR EXISTING GRADE; NO FURTHER EXCAVATION MAY OCCUR.
- 4.THE PLAY AREA MUST CONSIST OF A PERMEABLE MATERIAL. REMOVAL OF THE EXISTING ORGANICS WITHIN THIS ZONE MUST BE PERFORMED MANUALLY; THIS MUST BE SUPERVISED BY A CERTIFIED ARBORIST.
- 5.ALL PREP WORK AND INSTALLATION OF MATERIAL FOR THE PROPOSED PLAY AREA THAT ENCROACHES INTO THE TREE PROTECTION ZONE MUST BE SUPERVISED BY A CERTIFIED ARBORIST.

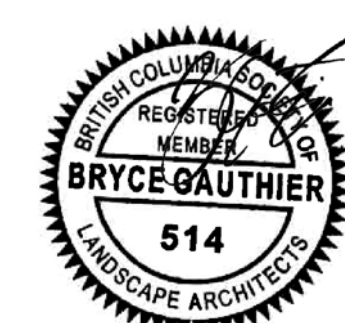


1 SECTION  
Scale: 1:20

G | ALA  
Gauthier + Associates Landscape Architects Inc.

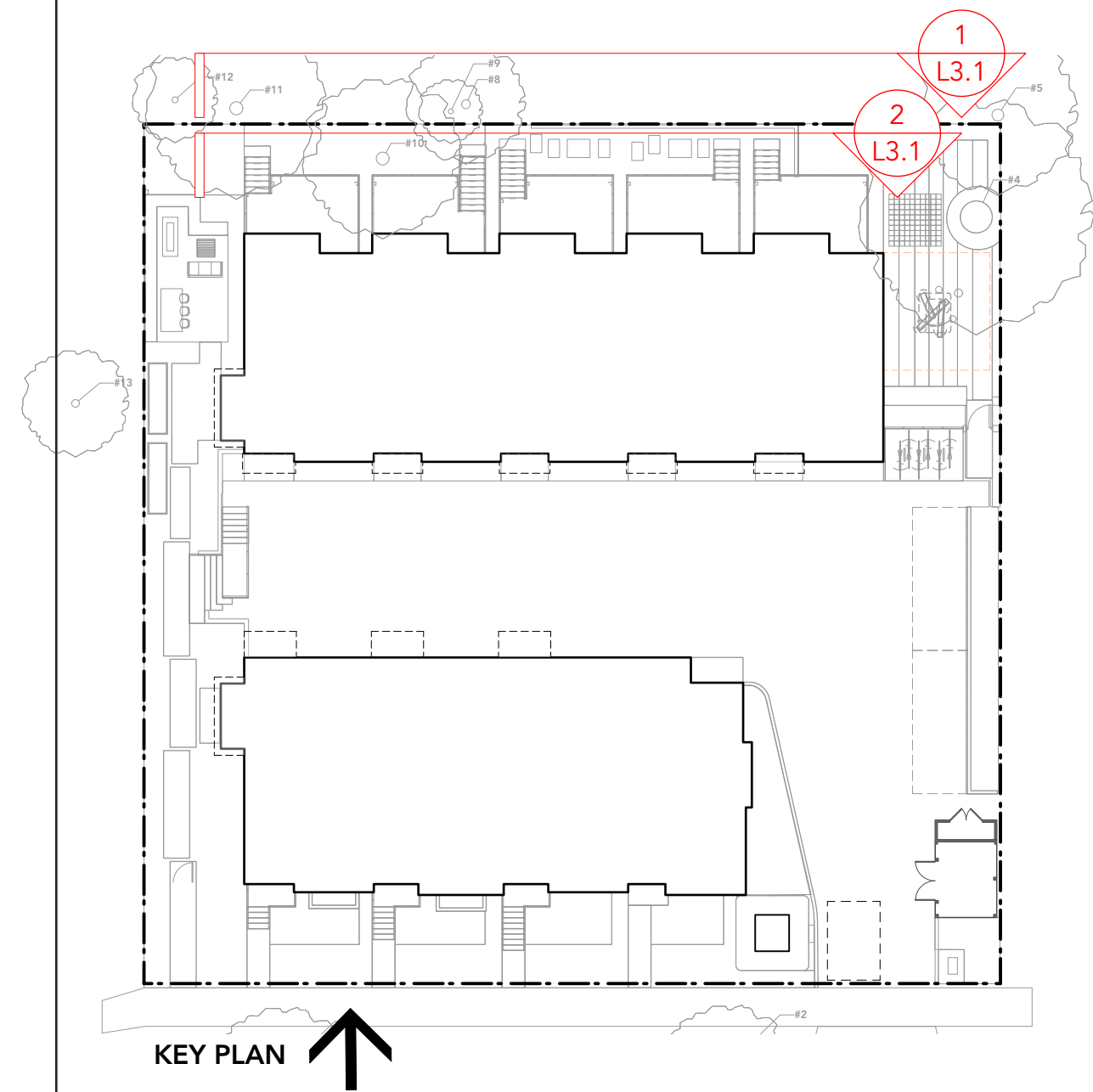
F	Issued for BP	2022-10-12
E	Issued for DP Prior to Response	2022-04-11
D	Issued for Prior to Response	2022-03-04

337&339 Keary Street  
Keary Street  
New Westminster  
2134  
June 2021



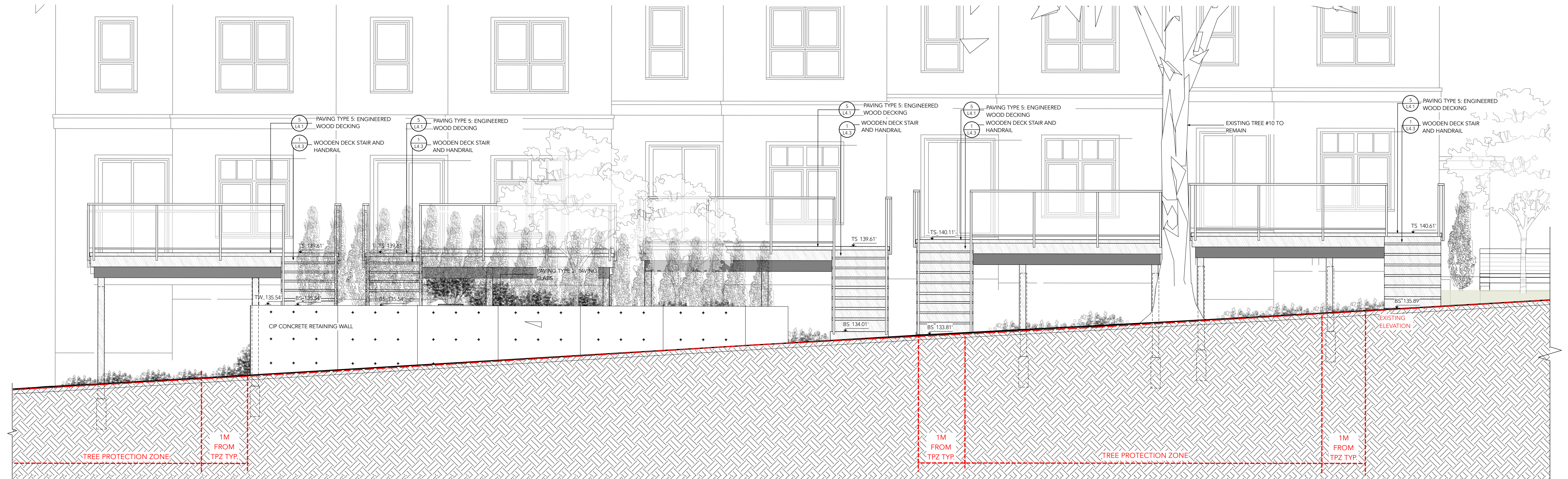
L3.0  
SECTION: PLAY AREA



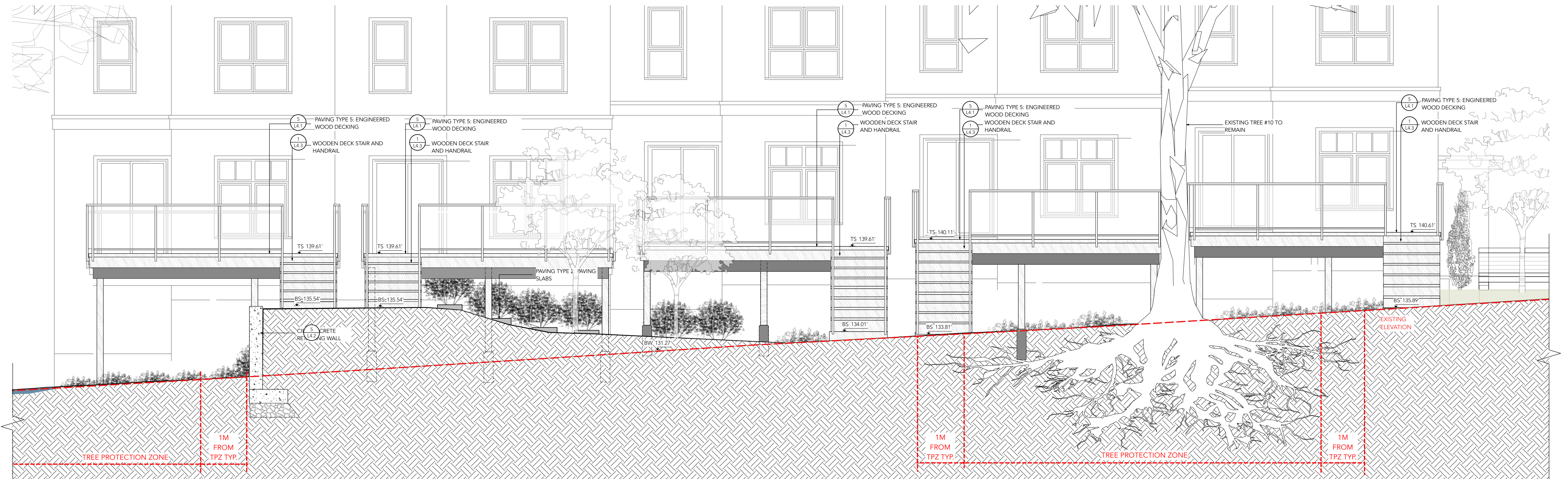


#### NOTE:

- 1.CONTRACTOR MUST ONLY EXCAVATE WITHIN TREE PROTECTION ZONE UNDER REVIEW OF ARBORIST
- 2.EXCAVATION MUST BE DONE BY HYDRO-VAC TO DETERMINE LOCATION OF ROOTS PRIOR TO INSTALLATION
- 3.THE PROPOSED DECKS THAT ENCROACH INTO THE TPZ MUST BE INSTALLED USING SONO-TUBE FOOTINGS. ANY EXCAVATION FOR SONO-TUBE FOOTINGS MUST BE PERFORMED MANUALLY.
- 4.THE PROPOSED STAIRCASES THAT ENCROACH INTO THE TPZ MUST BE CAST IN PLACE AND INSTALLED ABOVE EXISTING GRADE; NO EXCAVATION MAY OCCUR.
- 5.A REDUCED LINE OF EXCAVATION AND SHORING WILL BE REQUIRED FOR THE PORTION OF THE NORTH & EAST FOUNDATION WALLS OF THE PROPOSED BUILDING THAT ENCROACHES INTO THESE ZONES (VERTICAL CUT EXCAVATION AND SHOTCRETE – NO CONCRETE LOCK BLOCKS). THE NORTH FOUNDATION WALL MUST USE AN “L” SHAPED FOOTING. ANY EXCAVATION FOR THE PROPOSED BUILDING THAT ENCROACHES INTO THE TPZ & BUFFER MUST BE SUPERVISED BY A CERTIFIED ARBORIST

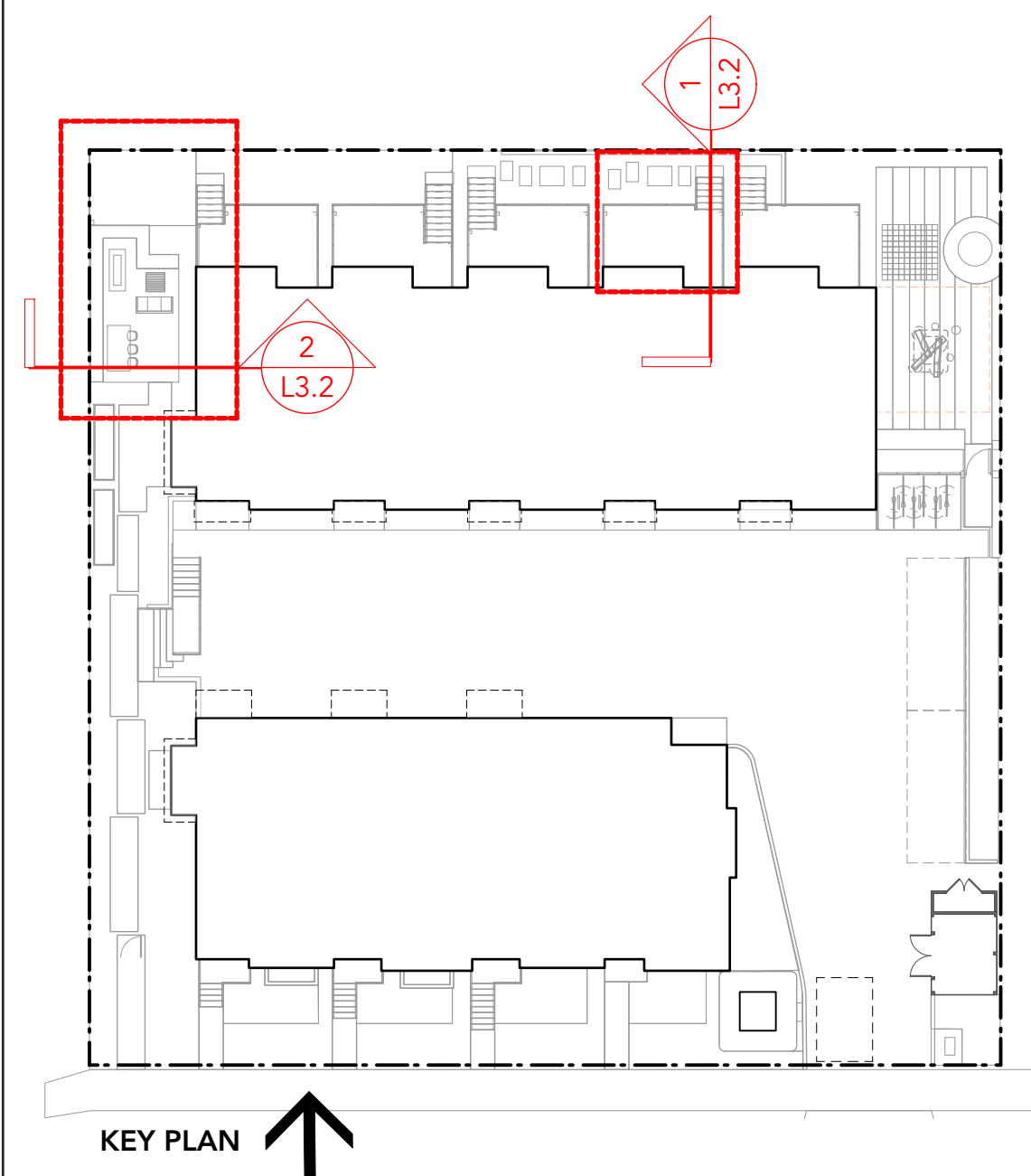


1 NORTH ELEVATION  
Scale: 1:50

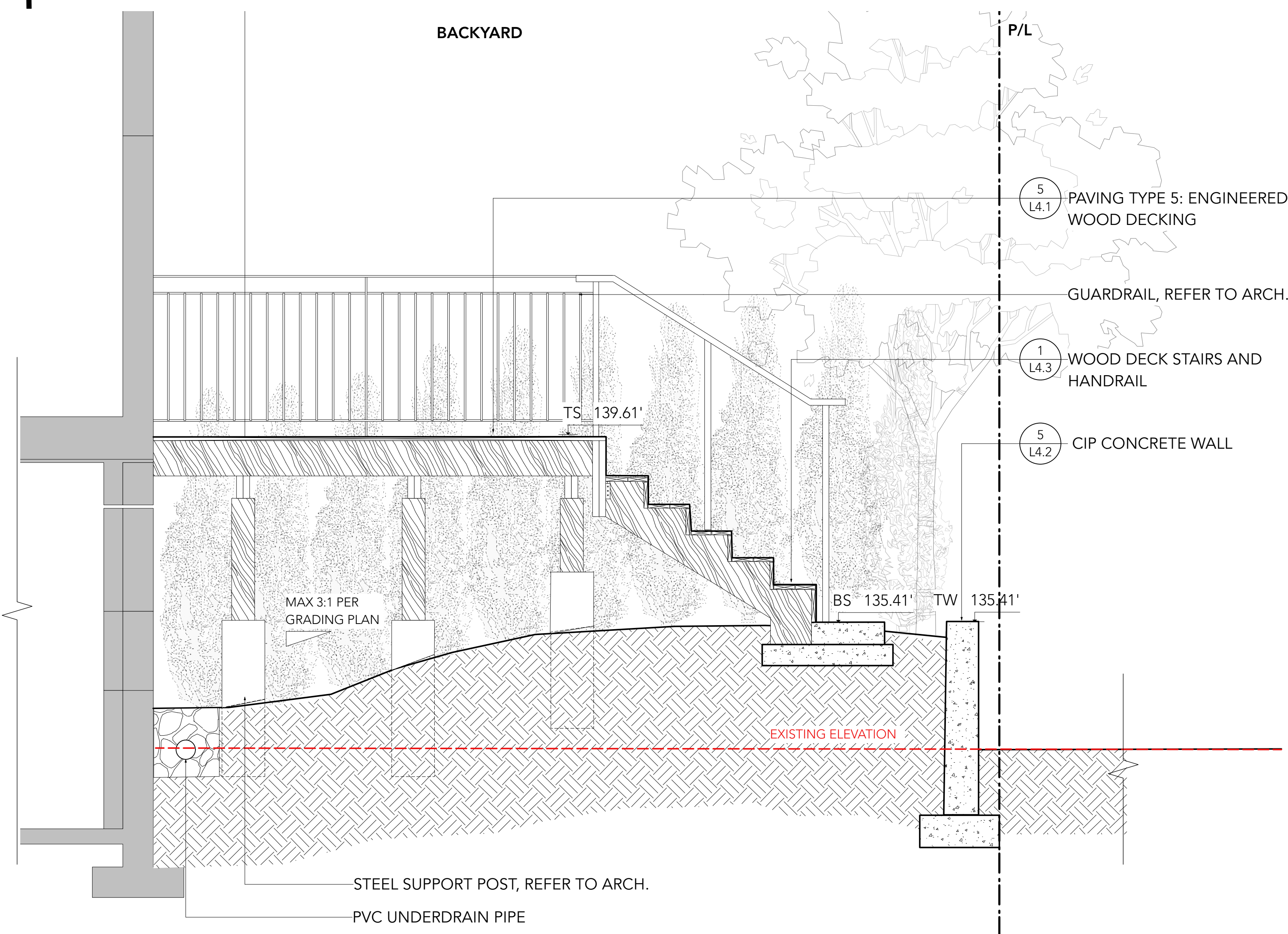


2 NORTH SECTION  
Scale: 1:50





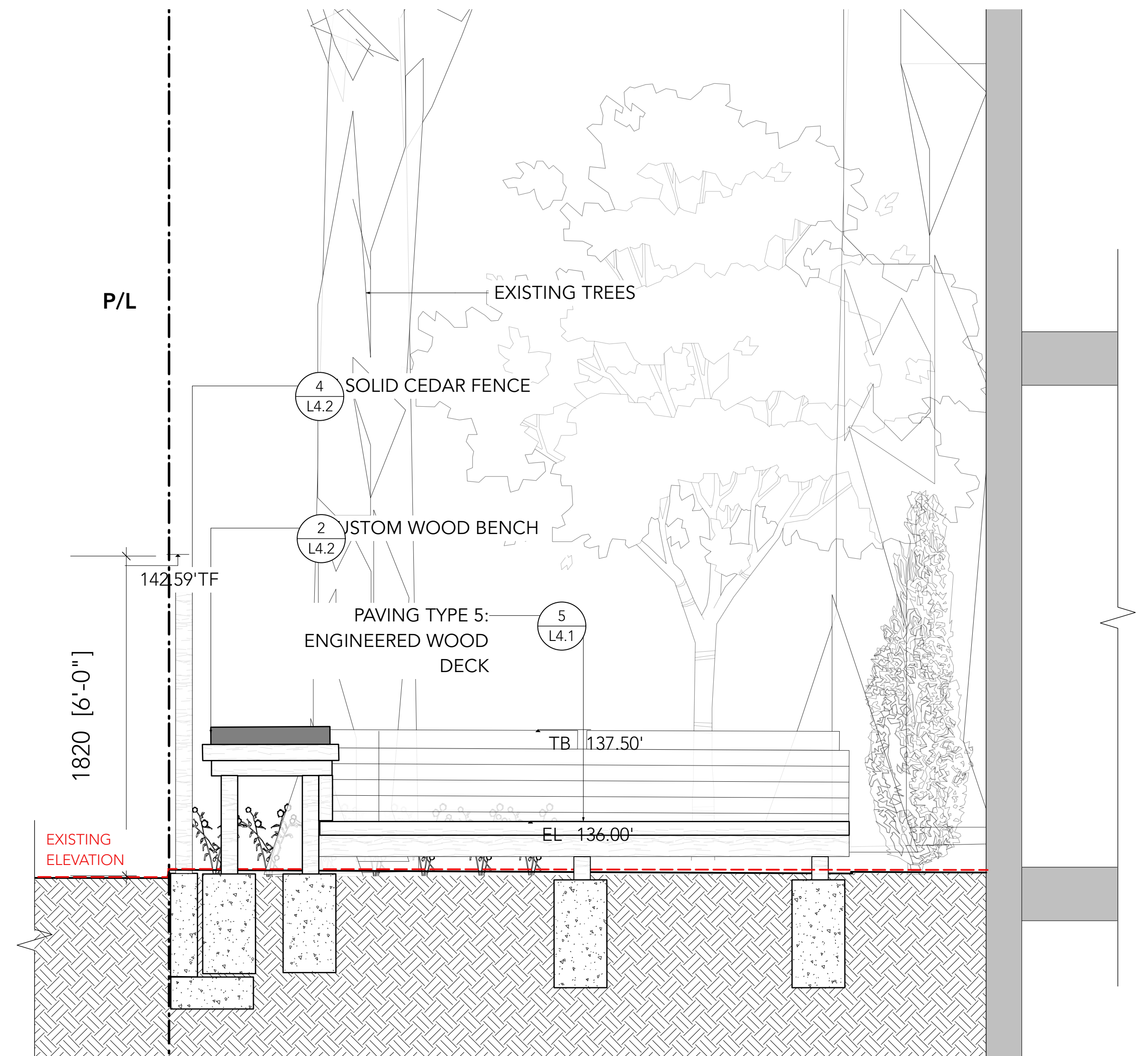
KEY PLAN



1 WOOD PATIO DECK TYP.  
Scale: 1:20

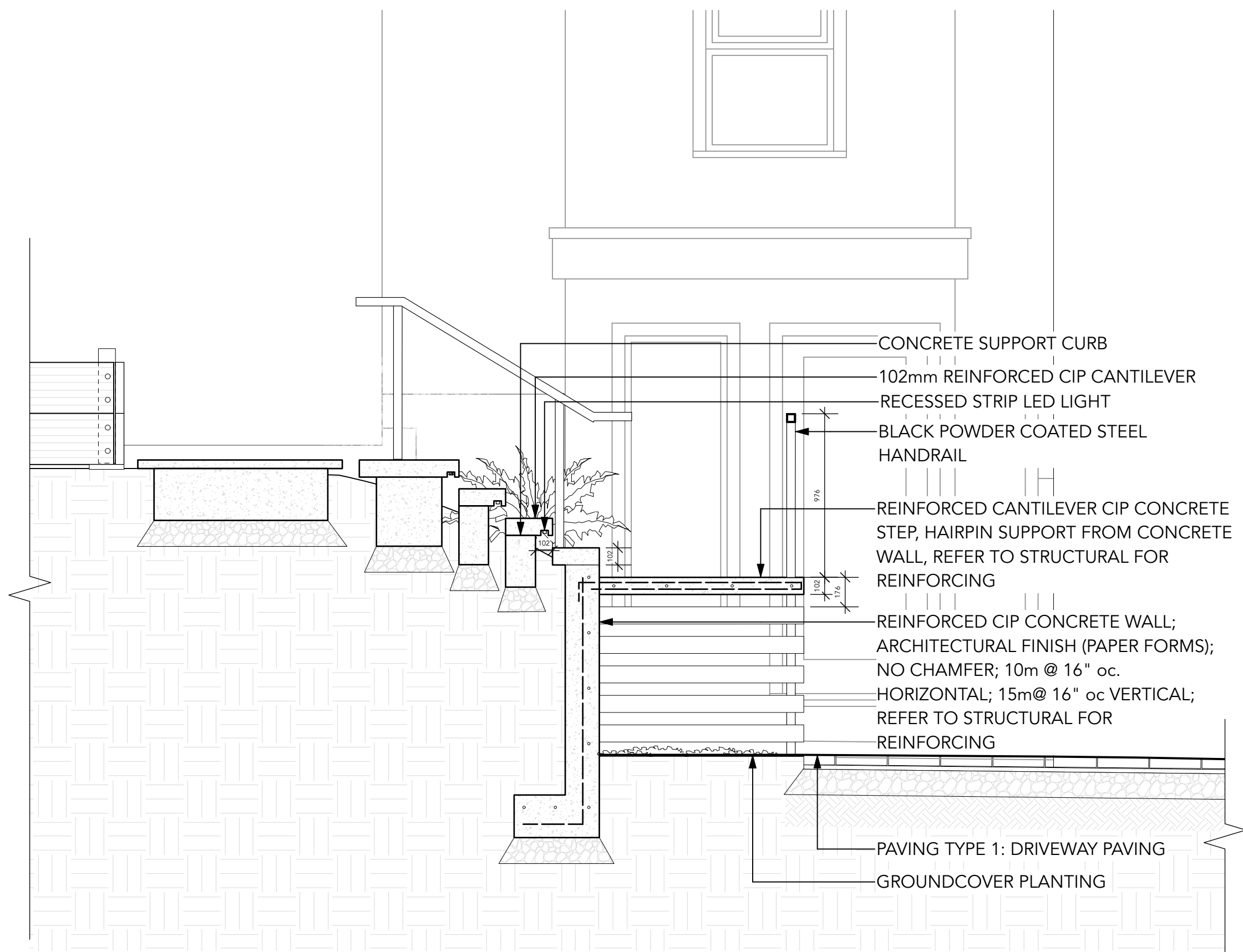
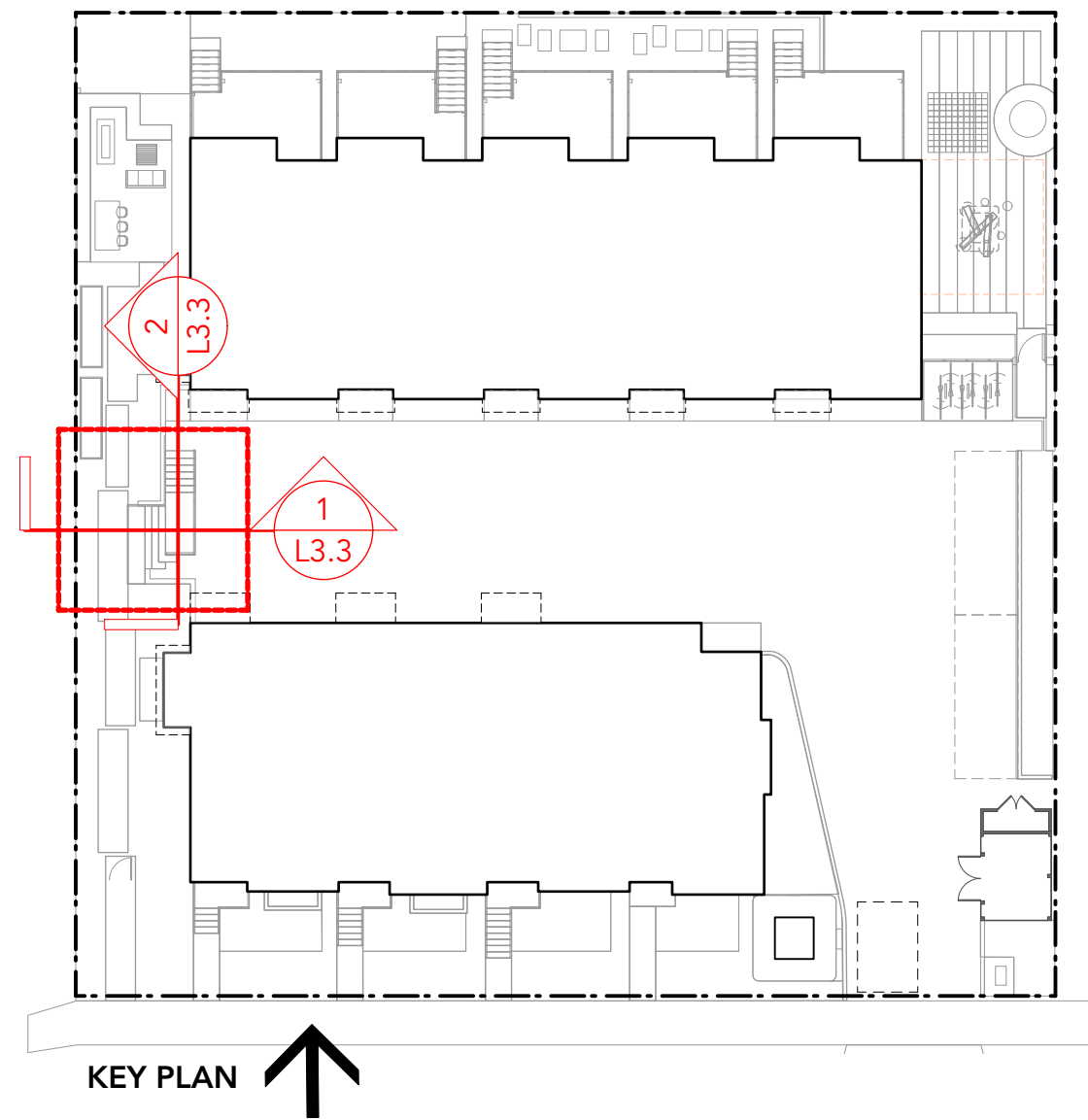
NOTE:

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- 2.EXCAVATION MUST BE DONE BY HYDRO-VAC TO DETERMINE LOCATION OF ROOTS PRIOR TO INSTALLATION
- 3.THE PROPOSED DECKS THAT ENCROACH INTO THE TPZ MUST BE INSTALLED USING SONO-TUBE FOOTINGS. ANY EXCAVATION FOR SONO-TUBE FOOTINGS MUST BE PERFORMED MANUALLY.
- 4.THE PROPOSED STAIRCASES THAT ENCROACH INTO THE TPZ MUST BE CAST IN PLACE AND INSTALLED ABOVE EXISTING GRADE; NO EXCAVATION MAY OCCUR.
- 5.A REDUCED LINE OF EXCAVATION AND SHORING WILL BE REQUIRED FOR THE PORTION OF THE NORTH & EAST FOUNDATION WALLS OF THE PROPOSED BUILDING THAT ENCROACHES INTO THESE ZONES (VERTICAL CUT EXCAVATION AND SHOTCRETE – NO CONCRETE LOCK BLOCKS). THE NORTH FOUNDATION WALL MUST USE AN “L” SHAPED FOOTING. ANY EXCAVATION FOR THE PROPOSED BUILDING THAT ENCROACHES INTO THE TPZ & BUFFER MUST BE SUPERVISED BY A CERTIFIED ARBORIST

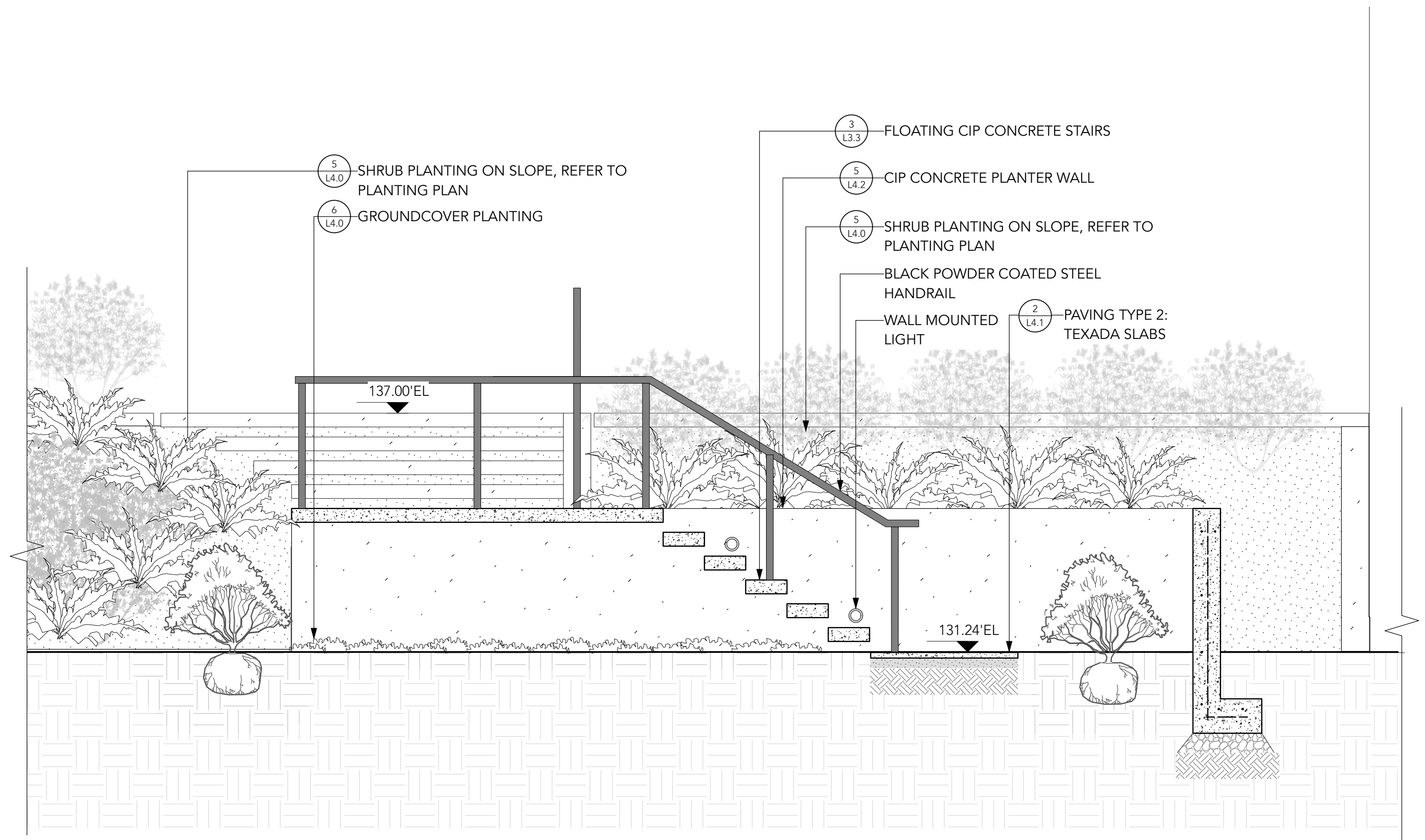


2 LOUNGE AREA: SECTION  
Scale: 1:20



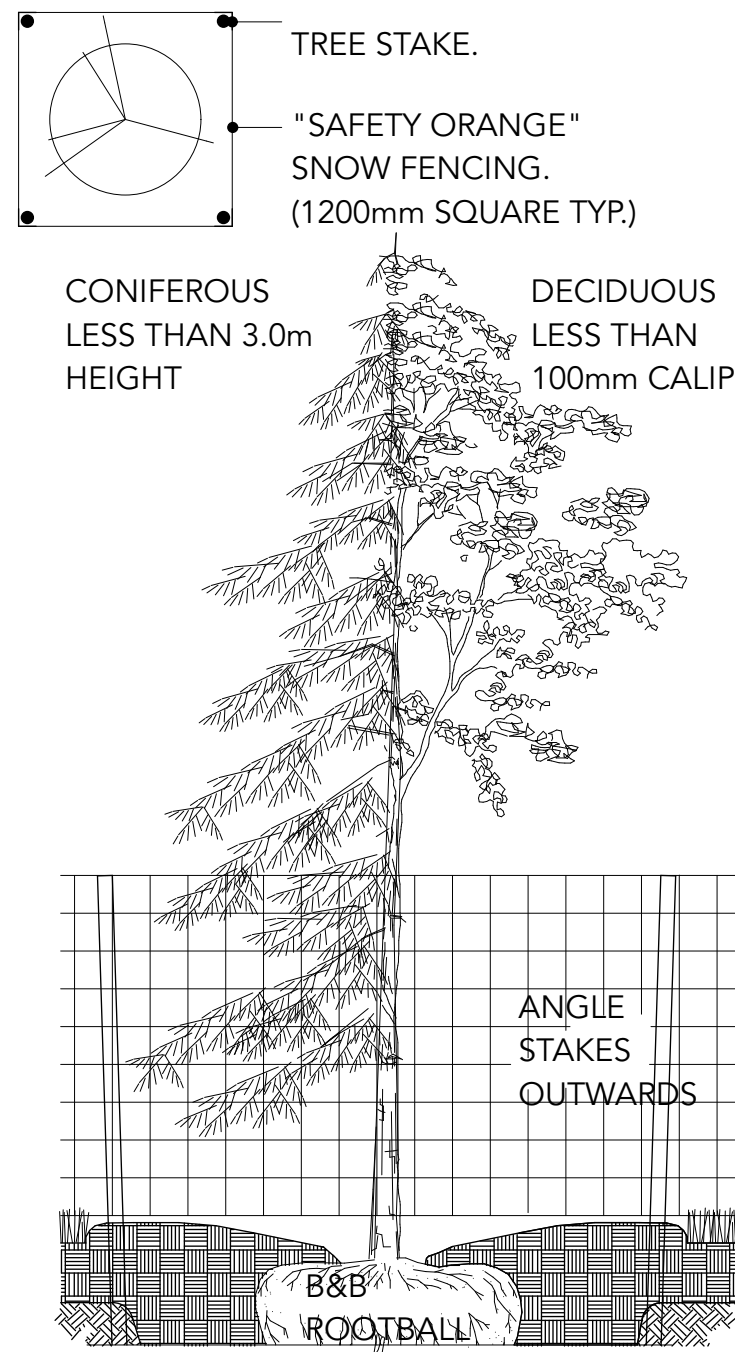


1 CIP CONCRETE FLOATING STAIRS  
Scale: 1:25



2 CIP CONCRETE FLOATING STAIRS  
Scale: 1:25

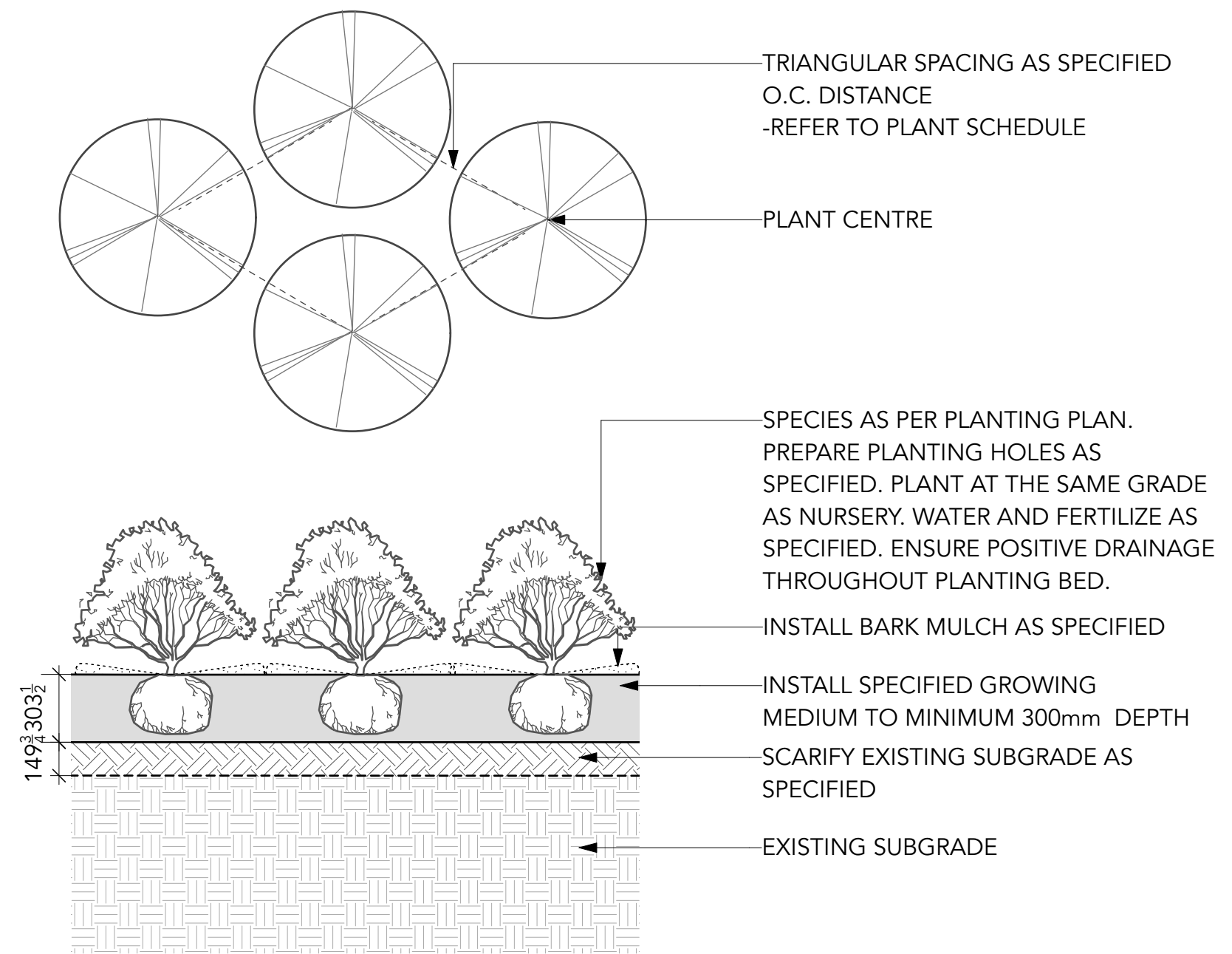




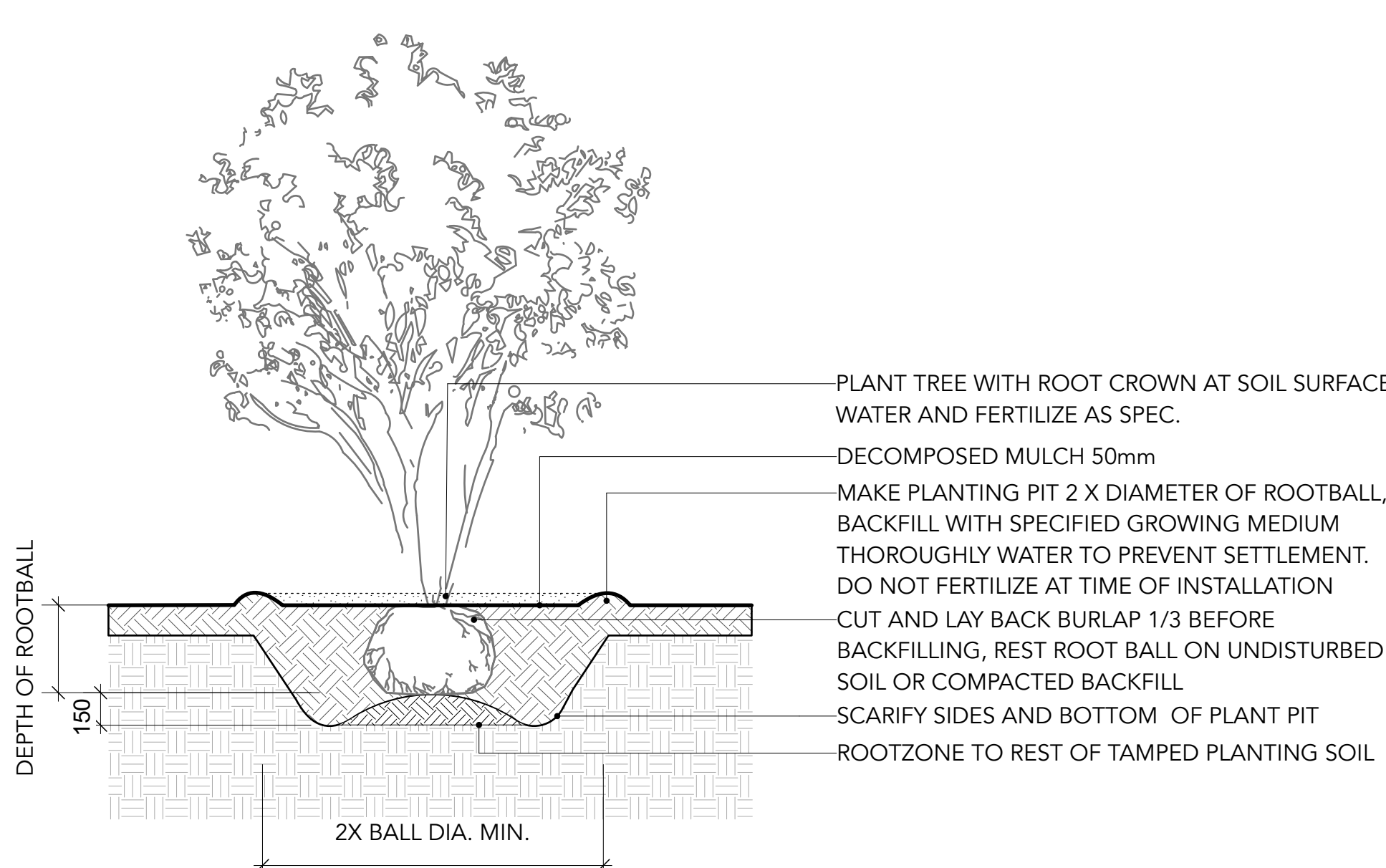
NOTES:

- SPECIFICATIONS: ALL COMPONENTS AND WORKMANSHIP TO CONFORM TO BCLNA STANDARDS TYPICAL.
- POSITION TREE STAKES INTO DIRECTION OF PREVAILING WINDS IF MINIMUM UTILITY SETBACKS PERMIT.
- ALL TREE STAKES TO HAVE A MINIMUM 1.0m CLEARANCE FROM ALL U/G POWER, TELEPHONE AND GAS ALIGNMENTS.
- ALL ROOTBALL HOLES TO BE DUG BY HAND WHEN CLOSER THAN 1.0m TO U/G POWER, TELEPHONE AND GAS ALIGNMENTS.
- FOR TREES WITH DRIPLINES FROM 3m -5m FROM CONSTRUCTION ACTIVITY, PLACE STANDARD 'SAFETY ORANGE' SNOW FENCE MIN. OF 4.5m FROM TREE TRUNK. EXACT SIZE/SHAPE TO BE DETERMINED ON SITE.
- FOR EXCAVATION WITHIN 1-3m OF ANY TREE'S DRIPLINE, ROOT PRUNING REQUIRED TO A DEPTH OF 500mm.
- IMMEDIATELY AFTER EXCAVATION, PRUNE ALL EXPOSED ROOTS FLUSH WITH THE EXCAVATION WALL. A MINIMUM OF 25% OF ANY TREE'S ROOTS AT THE DRIPLINE SHOULD BE IMPACTED BY EXCAVATION IF THE TREE IS EXPECTED TO SURVIVE.
- INSTALL AND MAINTAIN HOARDING IN CLEAN AND SAFE CONDITION THROUGHOUT CONSTRUCTION PROCESS. HOARDING REQUIREMENTS ARE ON ALL EXISTING TREES THROUGHOUT CONSTRUCTION.
- ALL EQUIPMENT, SOIL, BUILDING MATERIAL AND OTHER DEBRIS SHALL BE KEPT OUTSIDE THE HOARDING.
- IF HOARDING IS PUNCTURED AND DAMAGE OCCURS TO HOARDED TREE(S), NOTIFY LANDSCAPE ARCHITECT.

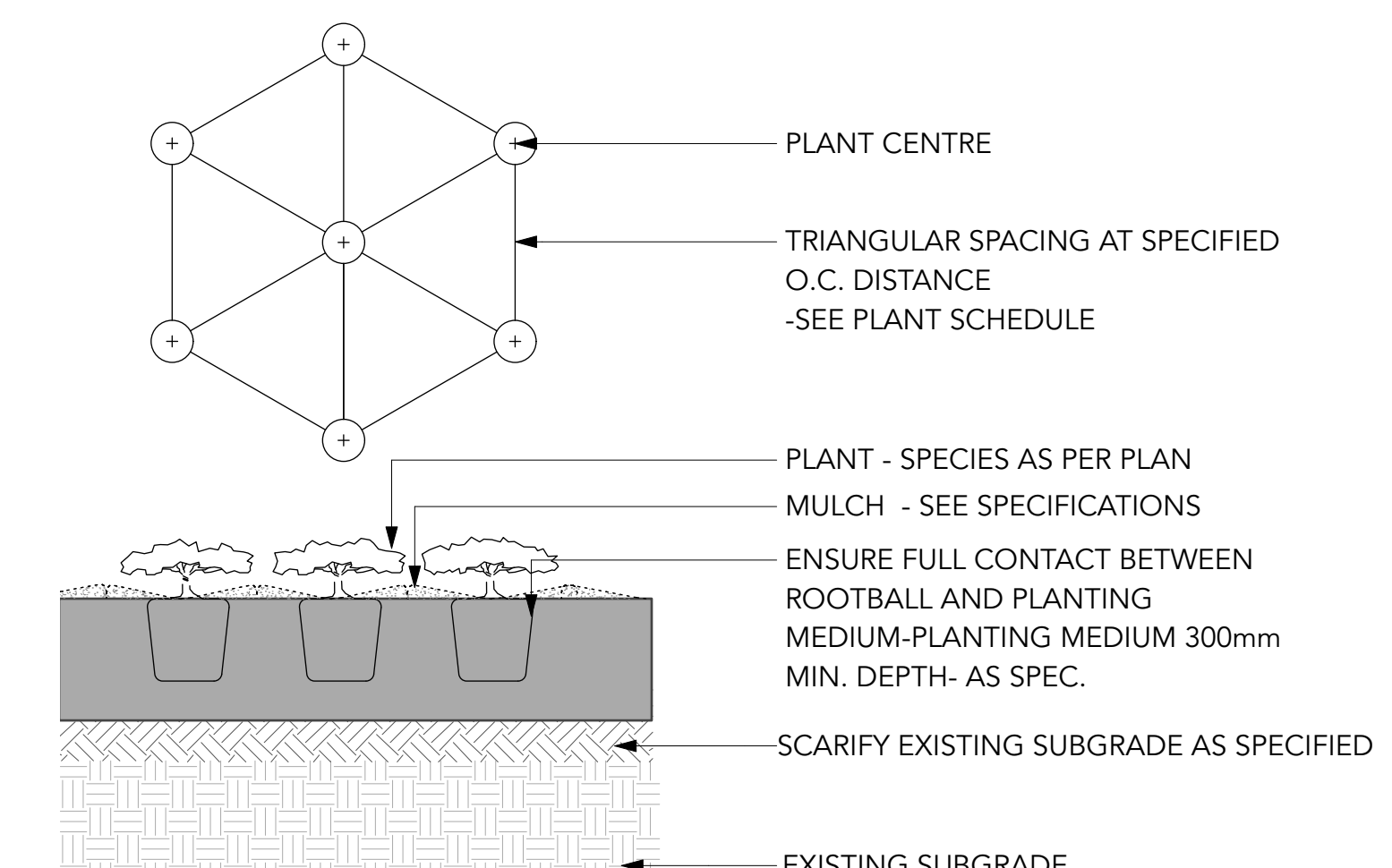
1 **TREE PROTECTION FENCE, TYP.**  
Scale: 1:25



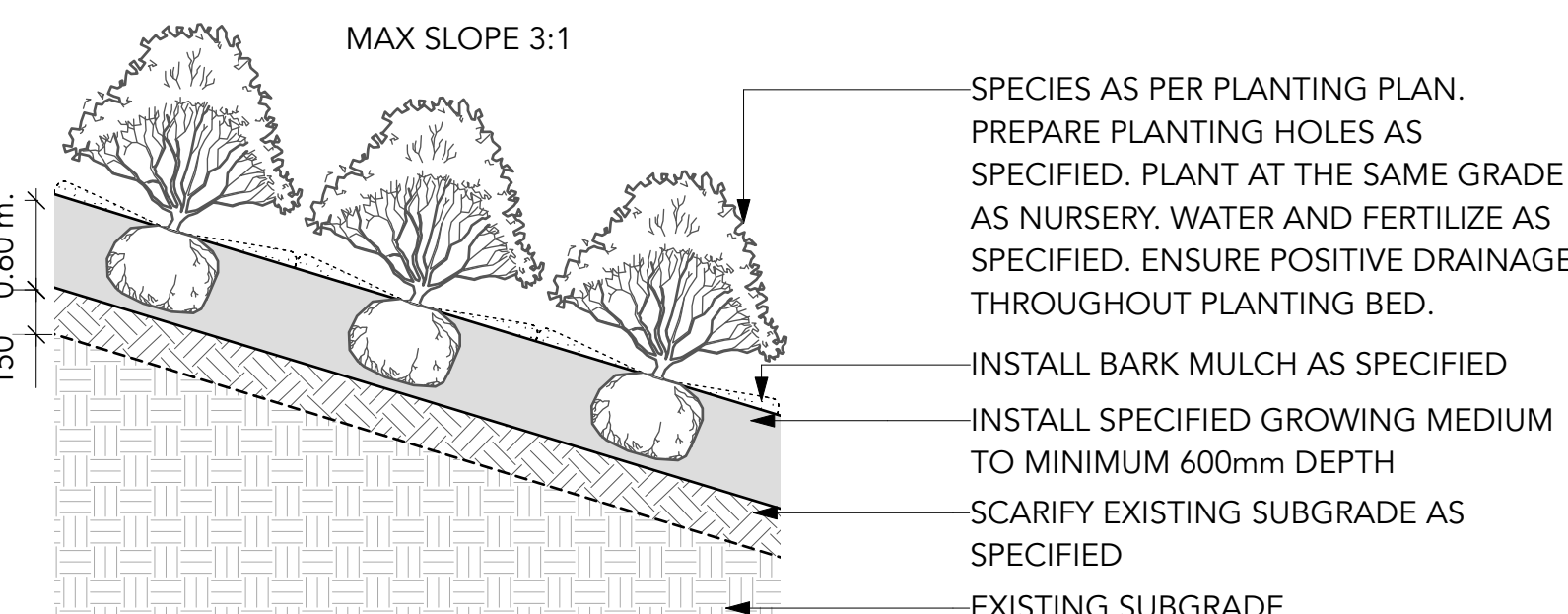
4 **SHRUB PLANTING, TYP.**  
Scale: 1:25



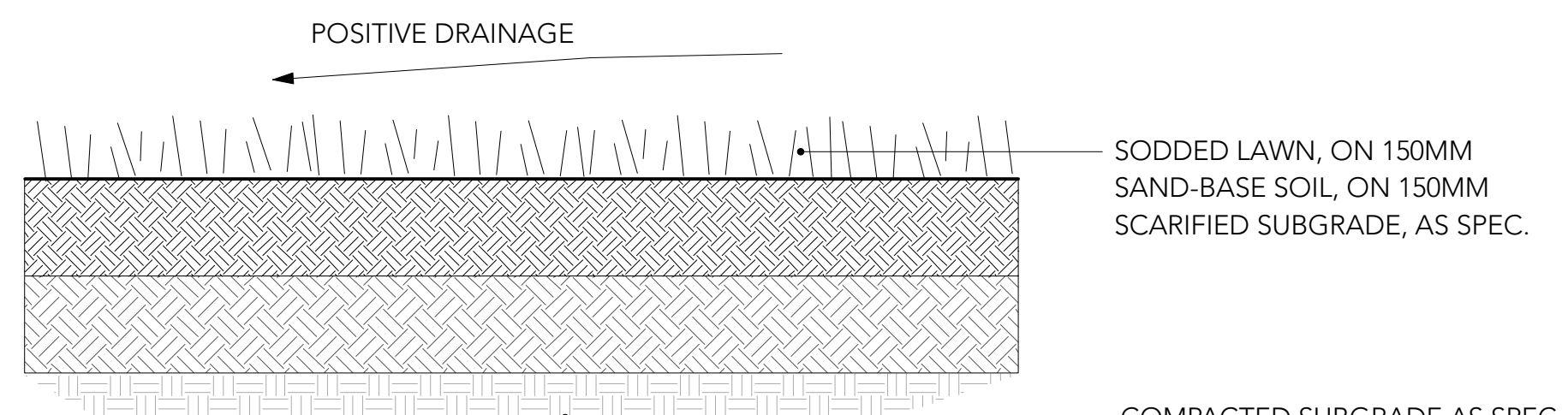
3 **DECIDUOUS TREE PLANTING**  
Scale: 1:25



6 **GROUNDCOVER PLANTING, TYP.**  
Scale: 1:25



5 **SHRUB PLANTING ON SLOPE TYP.**  
Scale: 1:25

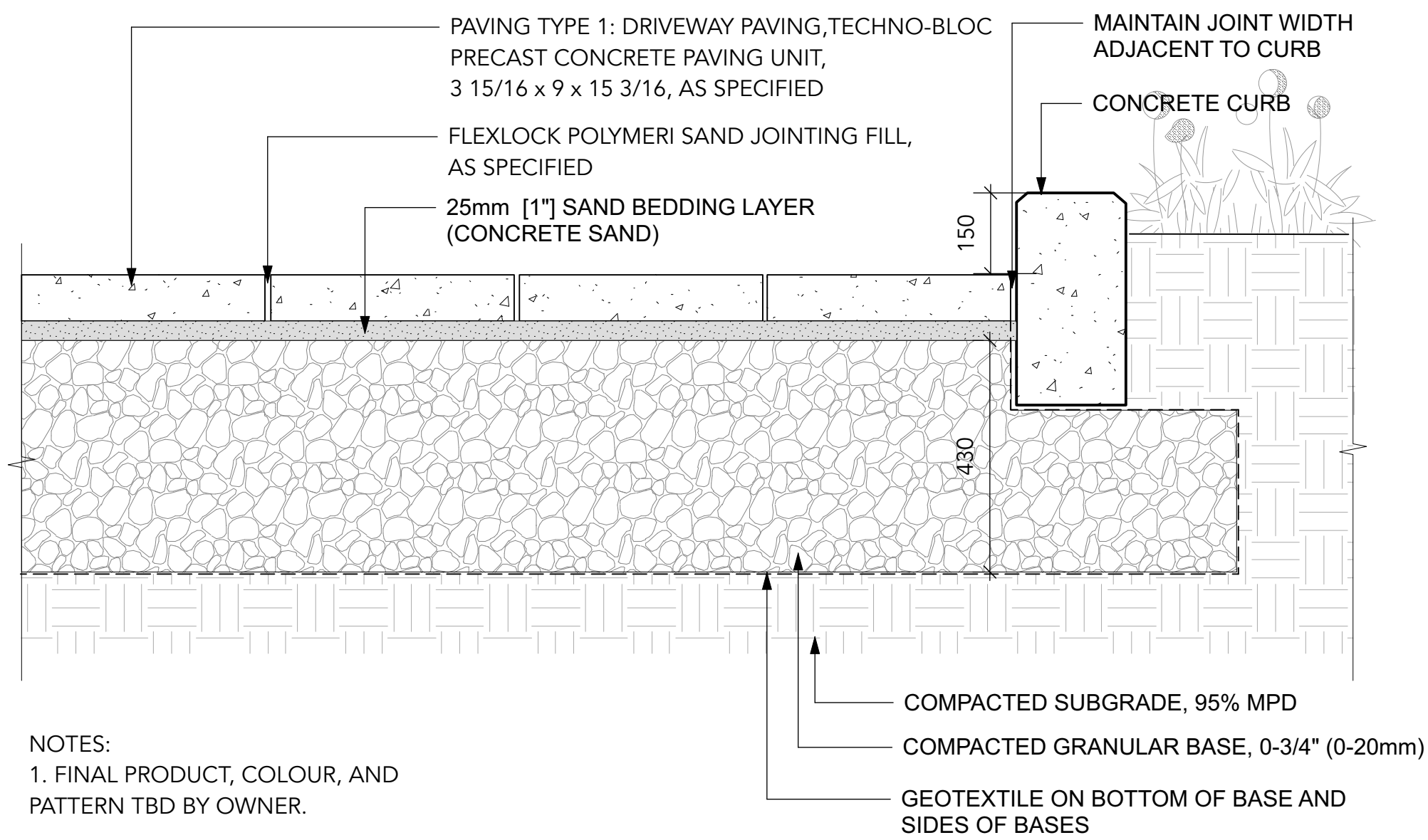


NOTES:

1. WHERE SLOPES EXCEED 3:1, SURFACE OF SUB-GRADE TO BE TEXTURED WITH HORIZONTAL TRACKS OF BULLDOZER OR SIMILAR EQUIPMENT, AS DIRECTED BY ENGINEER.
2. COMPACTED SUB-GRADE OR PLANTING SOIL TO BE SCARIFIED AS FOLLOWS: 150mm DEPTH SUBGRADE, AND FULL DEPTH OF PLANTING SOIL.
3. MULCH 100mm DEPTH SOUTH EXPOSURE AND SLOPES STEEPER THAN 3:1. MULCH 50mm DEPTH ALL OTHER AREAS.

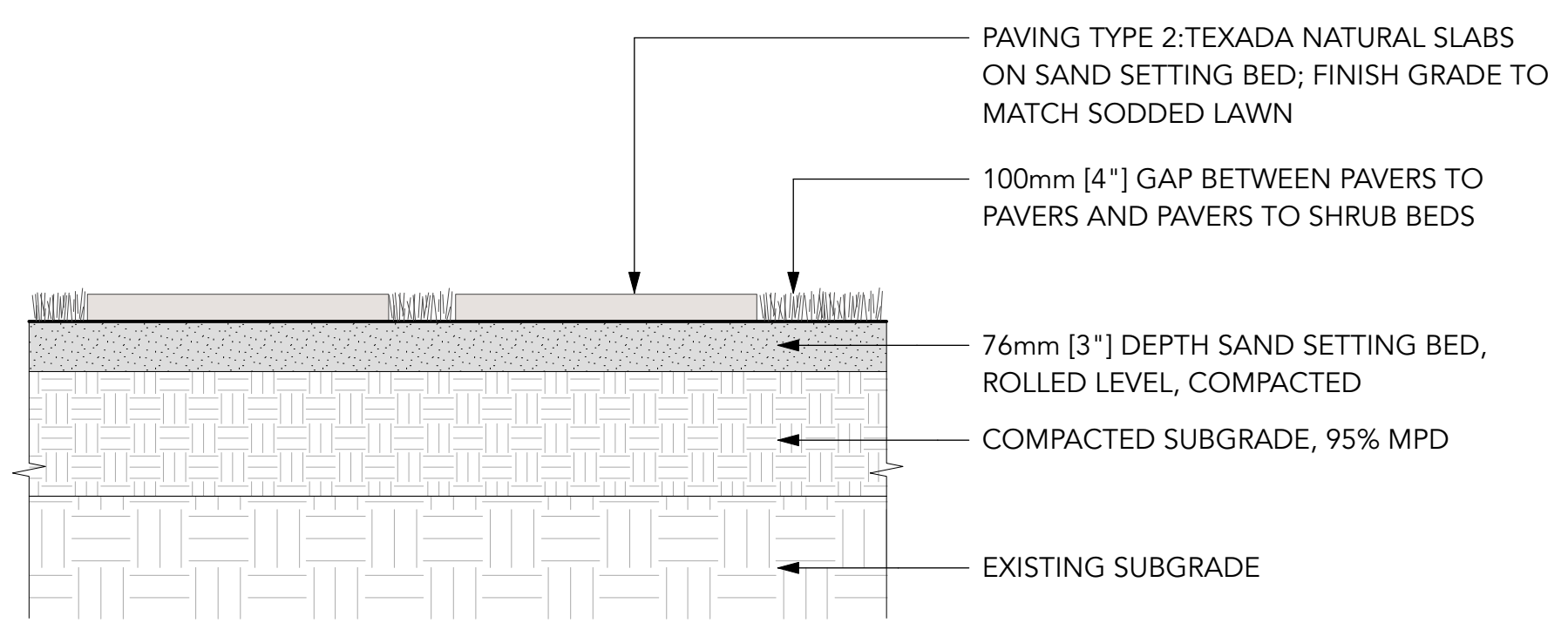
7 **SODDED LAWN, TYP.**  
Scale: 1:10





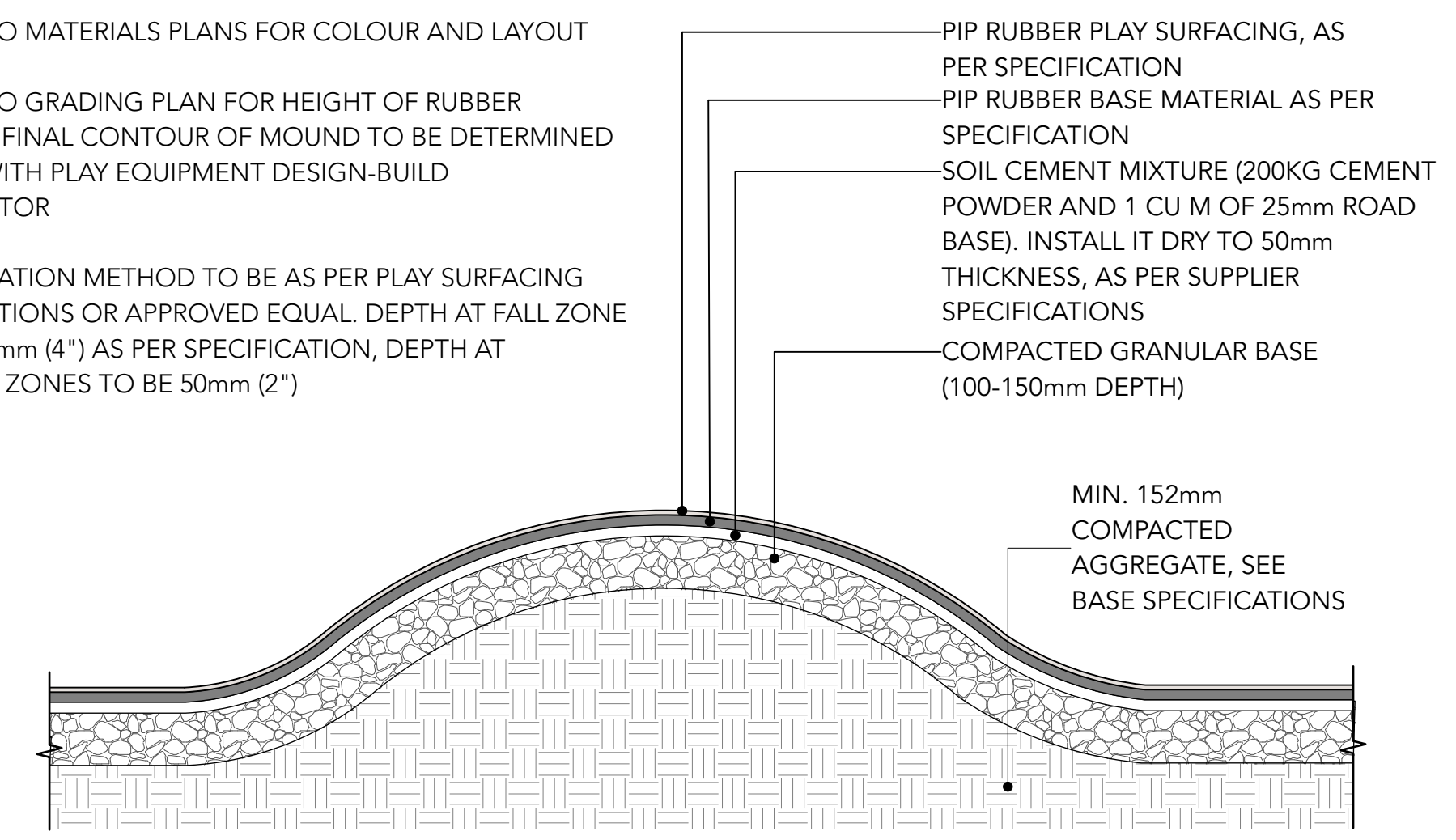
NOTES:  
1. FINAL PRODUCT, COLOUR, AND PATTERN TBD BY OWNER.

1 **PAVING TYPE 1: DRIVEWAY PAVING, TYP.**  
Scale: 1:10

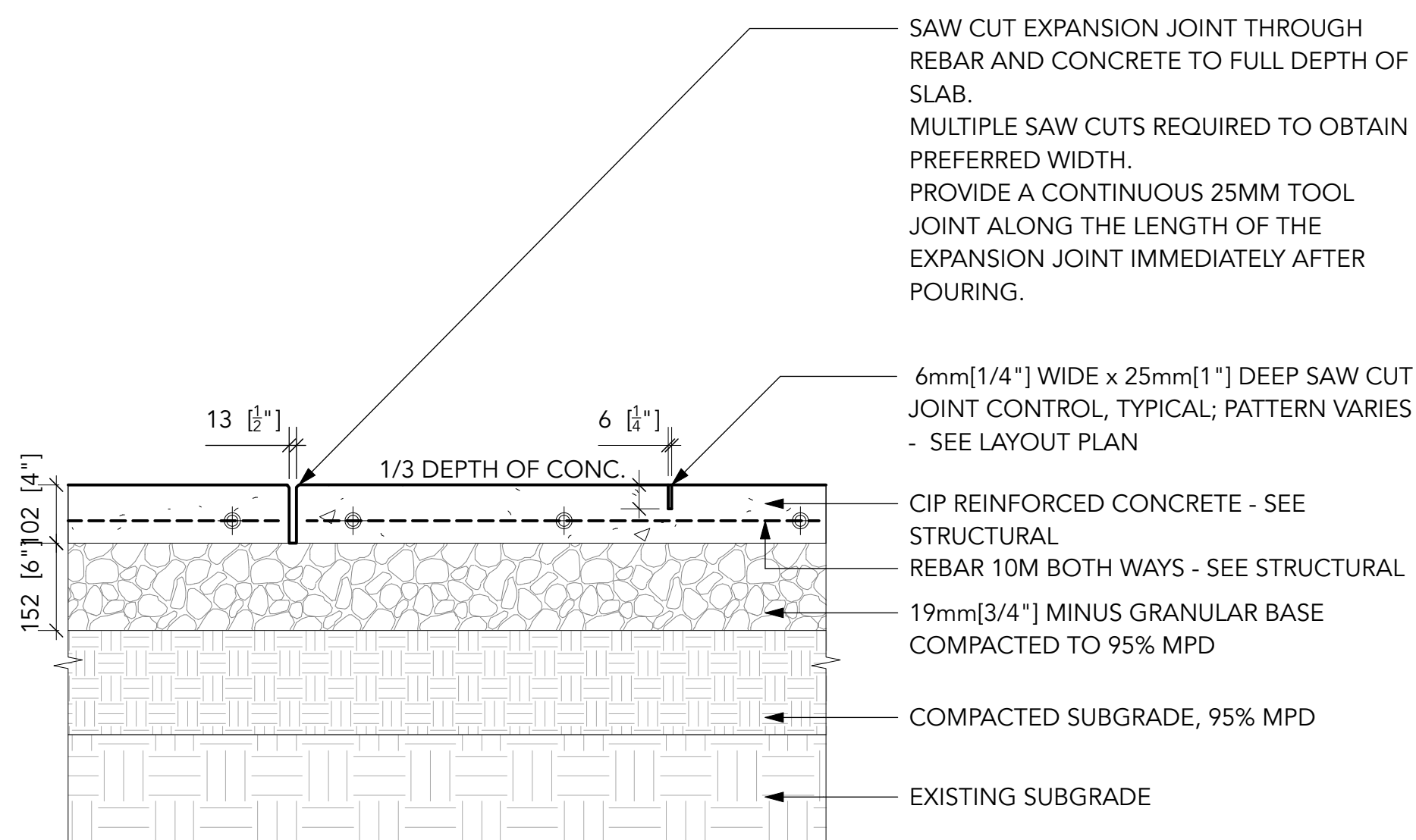


2 **PAVING TYPE 2: PAVING SLABS, TYP.**  
Scale: 1:10

**NOTE:**  
1. REFER TO MATERIALS PLANS FOR COLOUR AND LAYOUT  
2. REFER TO GRADING PLAN FOR HEIGHT OF RUBBER MOUNDS. FINAL CONTOUR OF MOUND TO BE DETERMINED ON SITE WITH PLAY EQUIPMENT DESIGN-BUILD CONTRACTOR  
3. INSTALLATION METHOD TO BE AS PER PLAY SURFACING SPECIFICATIONS OR APPROVED EQUAL. DEPTH AT FALL ZONE TO BE 100mm (4\") AS PER SPECIFICATION, DEPTH AT NON-FALL ZONES TO BE 50mm (2\")

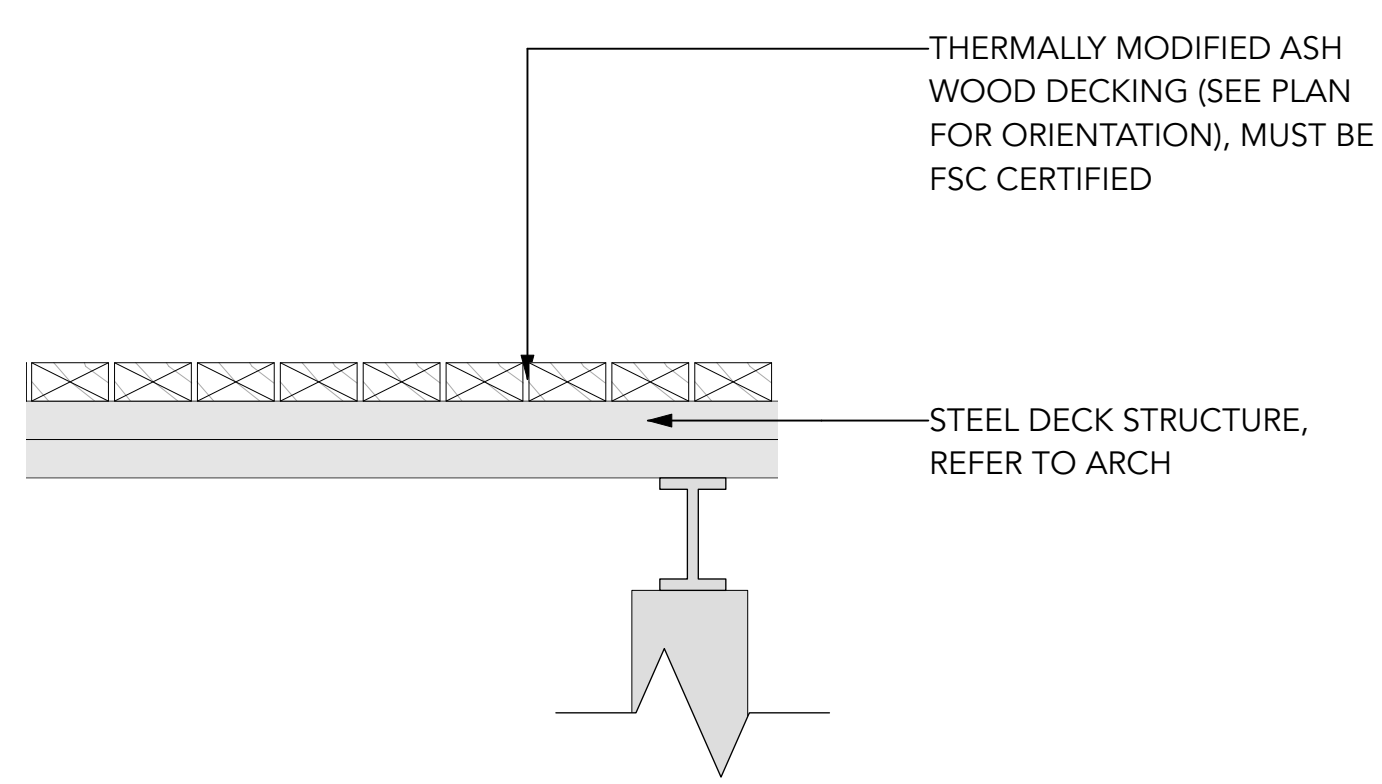


3 **PAVING TYPE 3: RUBBER SURFACING, TYP.**  
Scale: 1:10



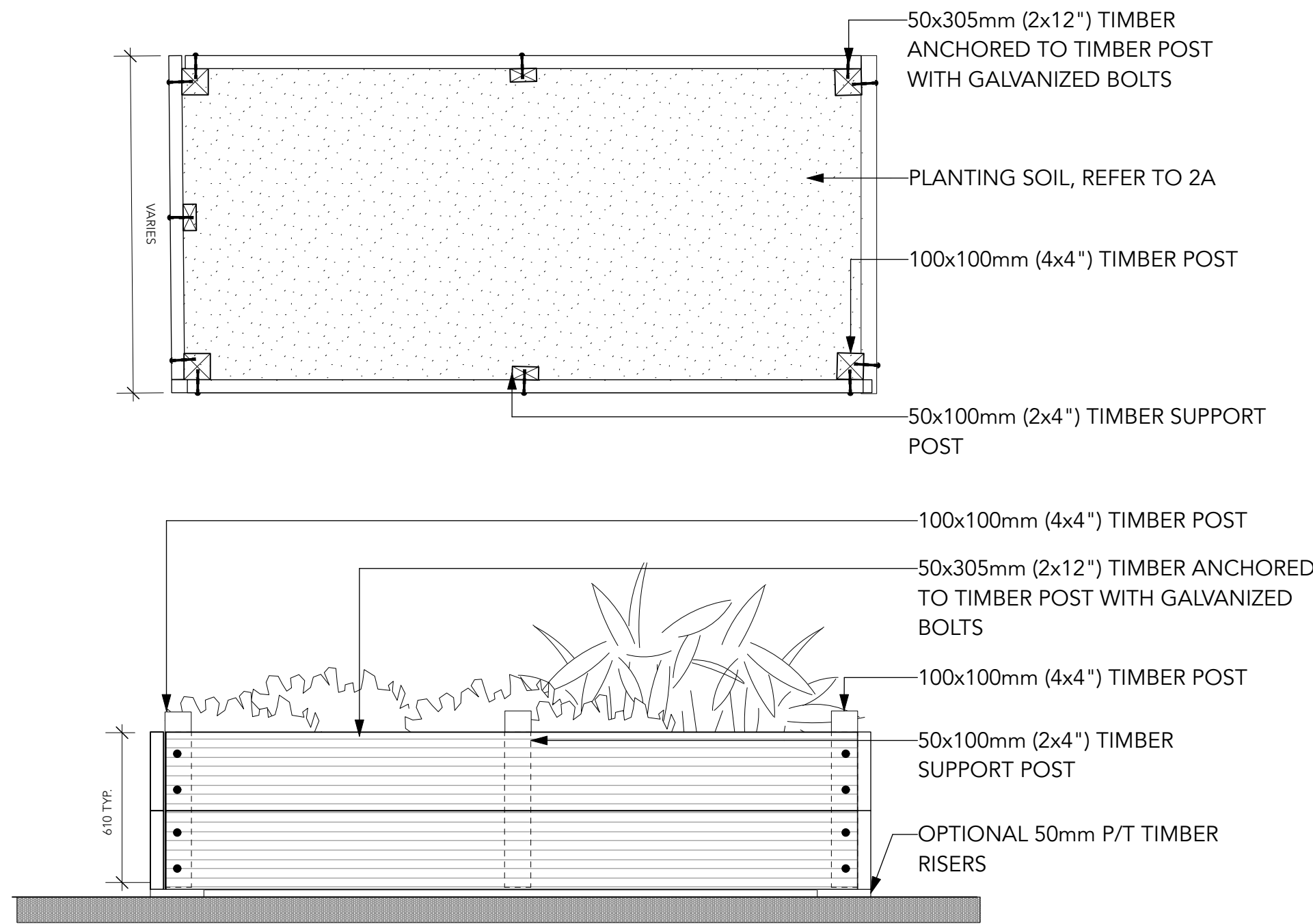
NOTES:  
1. TROWEL WITH LIGHT SANDBLAST  
2. SEE TYPICAL LAYOUT PLAN FOR JOINT PATTERN AND BAND WIDTH  
3. EXP. JOINTS 6096mm [20'0\"] O.C. MAX (@ CURB, BUILDING EDGE CUT LINES, CHANGES IN MATERIALS. SPACING TO COINCIDE W/ PATTERN)  
4. CONTROL JOINTS @ 1524mm [5'0\"] O.C. MAX  
5. FINAL LOCATIONS TO BE CONFIRMED ON SITE  
6. STRUCTURAL ENGINEER TO CONFIRM DEPTH AND REINFORCEMENT

4 **PAVING TYPE 5: CIP SIDEWALK, TYP.**  
Scale: 1:10

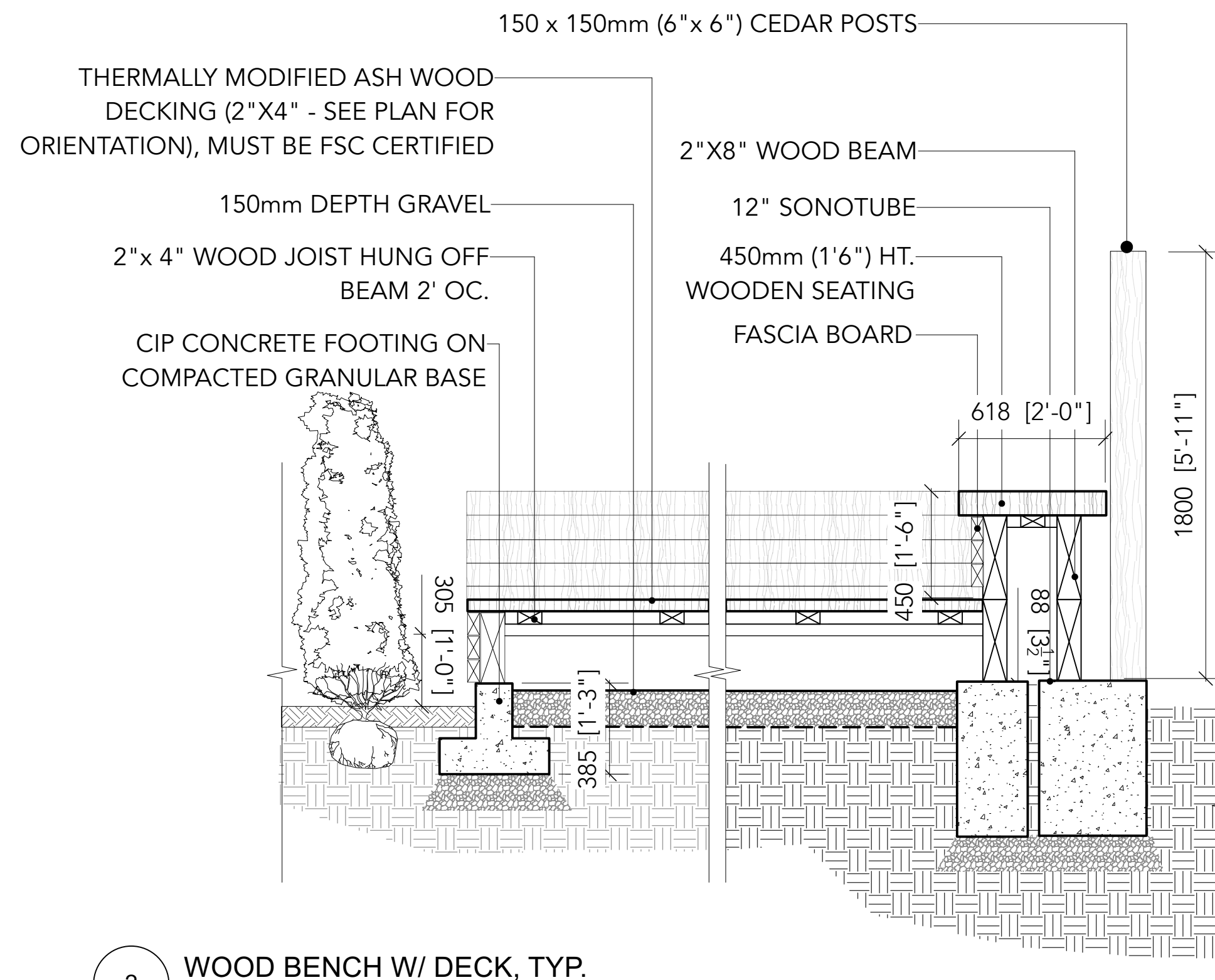


5 **PAVING TYPE 6: WOOD DECKING, TYP.**  
Scale: 1:10

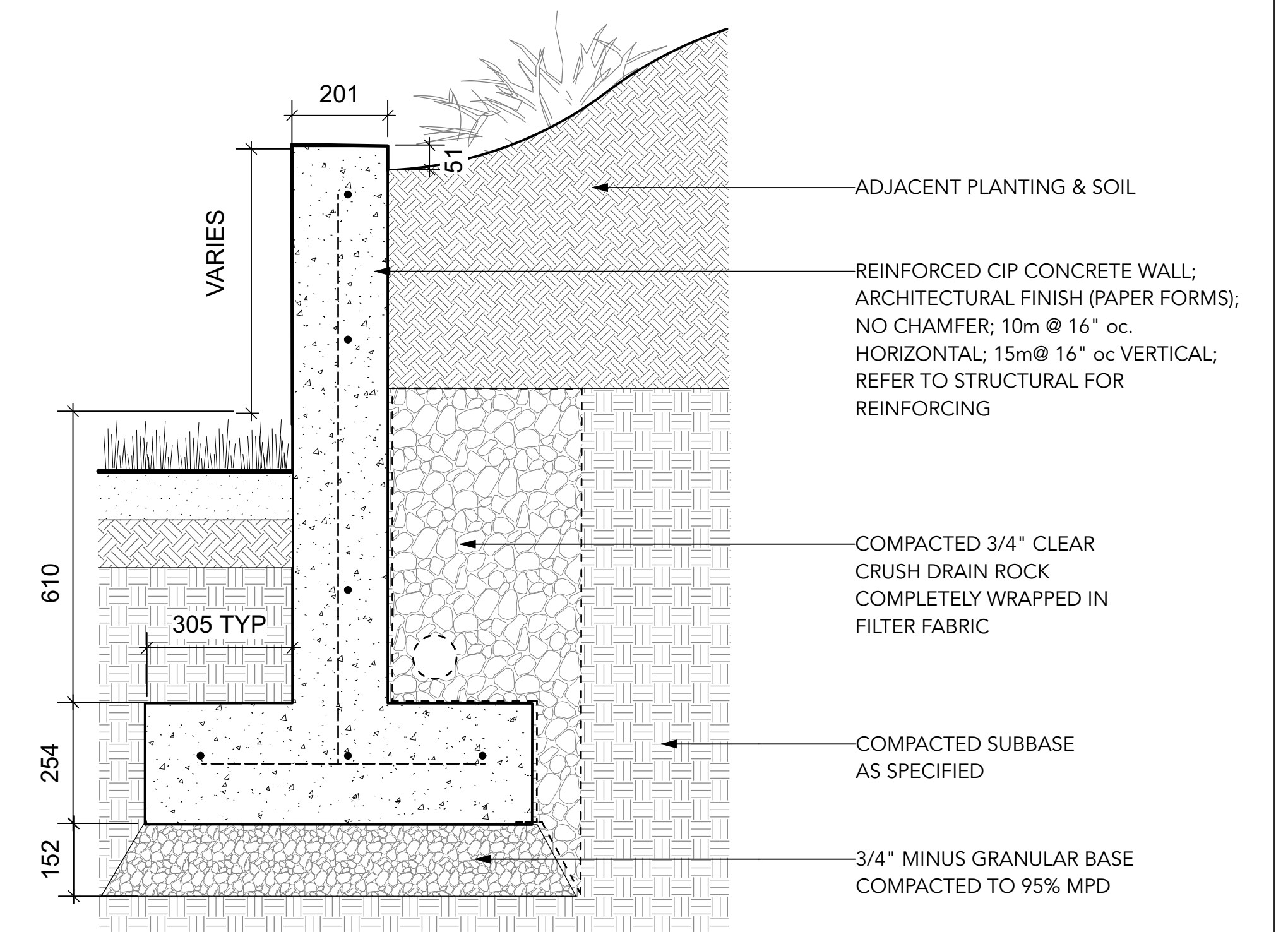




1 **URBAN AGRICULTURE PLANTER DETAIL**  
Scale: 1:20



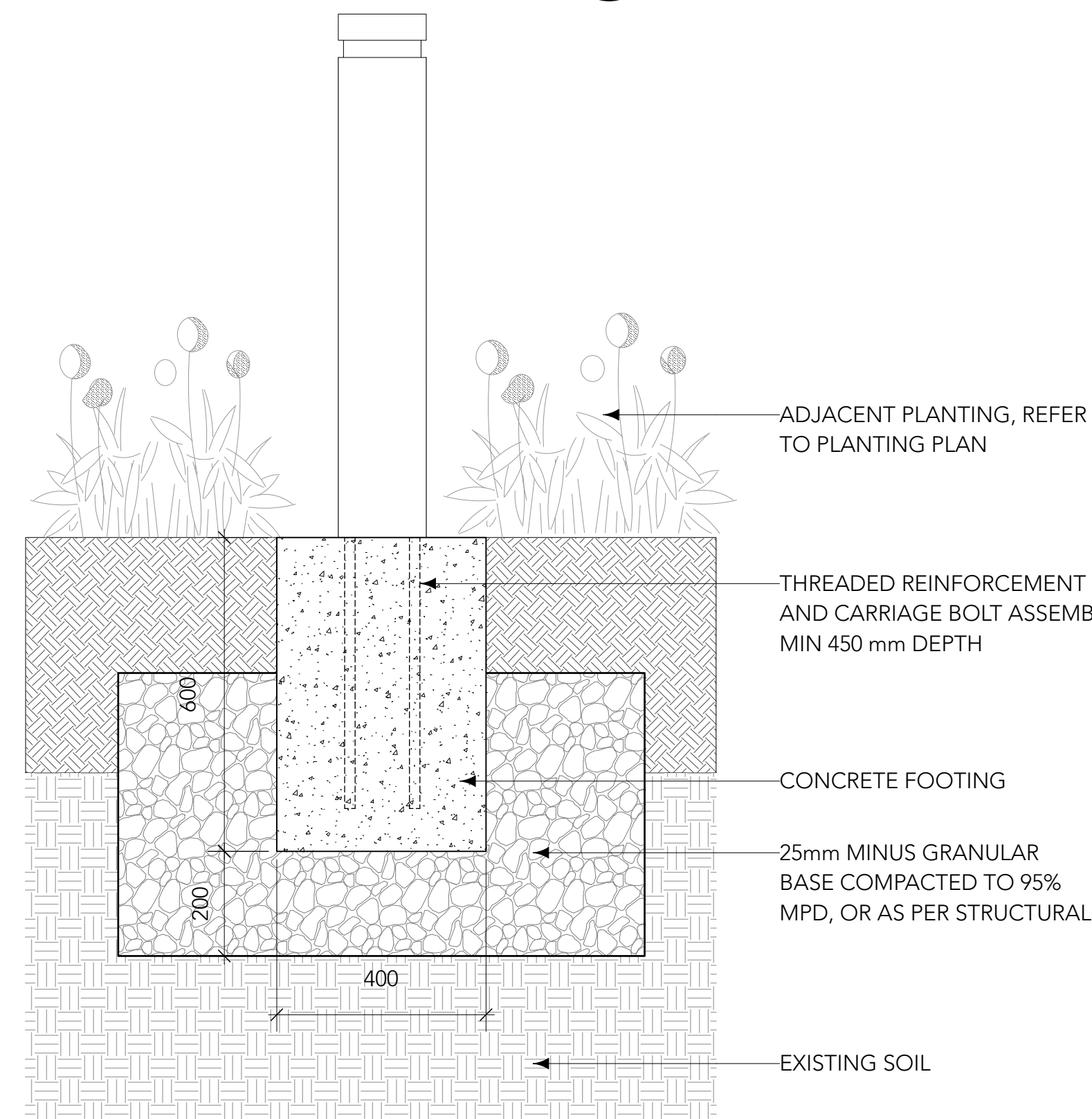
2 **WOOD BENCH W/ DECK, TYP.**  
Scale: 1:20



5 **CIP CONCRETE RETAINING WALL ON GRADE**  
Scale: 1:10

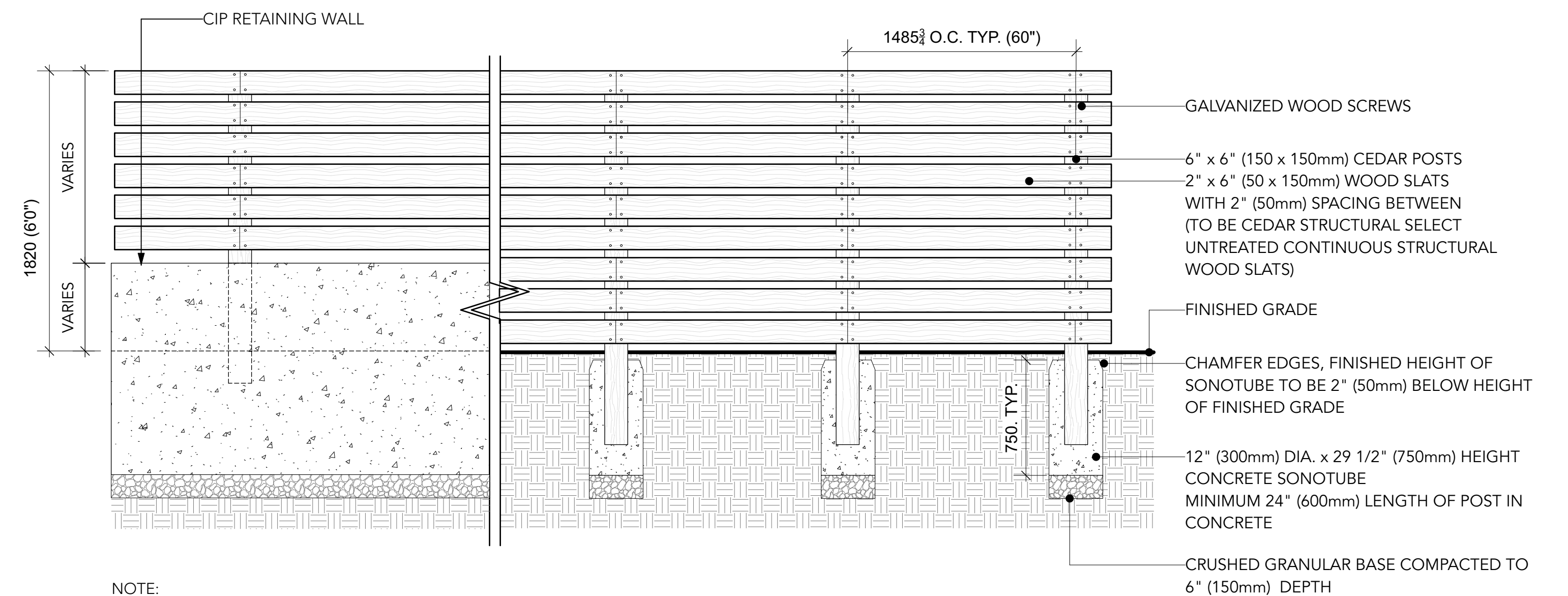
#### NOTE:

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- 2.EXCAVATION MUST BE DONE BY HYDRO-VAC TO DETERMINE LOCATION OF ROOTS PRIOR TO INSTALLATION
- 3.THE PROPOSED DECKS THAT ENCROACH INTO THE TPZ MUST BE INSTALLED USING SONO-TUBE FOOTINGS. ANY EXCAVATION FOR SONO-TUBE FOOTINGS MUST BE PERFORMED MANUALLY.
- 4.THE PROPOSED STAIRCASES THAT ENCROACH INTO THE TPZ MUST BE CAST IN PLACE AND INSTALLED ABOVE EXISTING GRADE; NO EXCAVATION MAY OCCUR.
- 5.A REDUCED LINE OF EXCAVATION AND SHORING WILL BE REQUIRED FOR THE PORTION OF THE NORTH & EAST FOUNDATION WALLS OF THE PROPOSED BUILDING THAT ENCROACHES INTO THESE ZONES (VERTICAL CUT EXCAVATION AND SHOTCRETE – NO CONCRETE LOCK BLOCKS). THE NORTH FOUNDATION WALL MUST USE AN “L” SHAPED FOOTING. ANY EXCAVATION FOR THE PROPOSED BUILDING THAT ENCROACHES INTO THE TPZ & BUFFER MUST BE SUPERVISED BY A CERTIFIED ARBORIST



**NOTE:**  
REFER TO MANUFACTURERS SPECIFICATIONS FOR INSTALLATION.

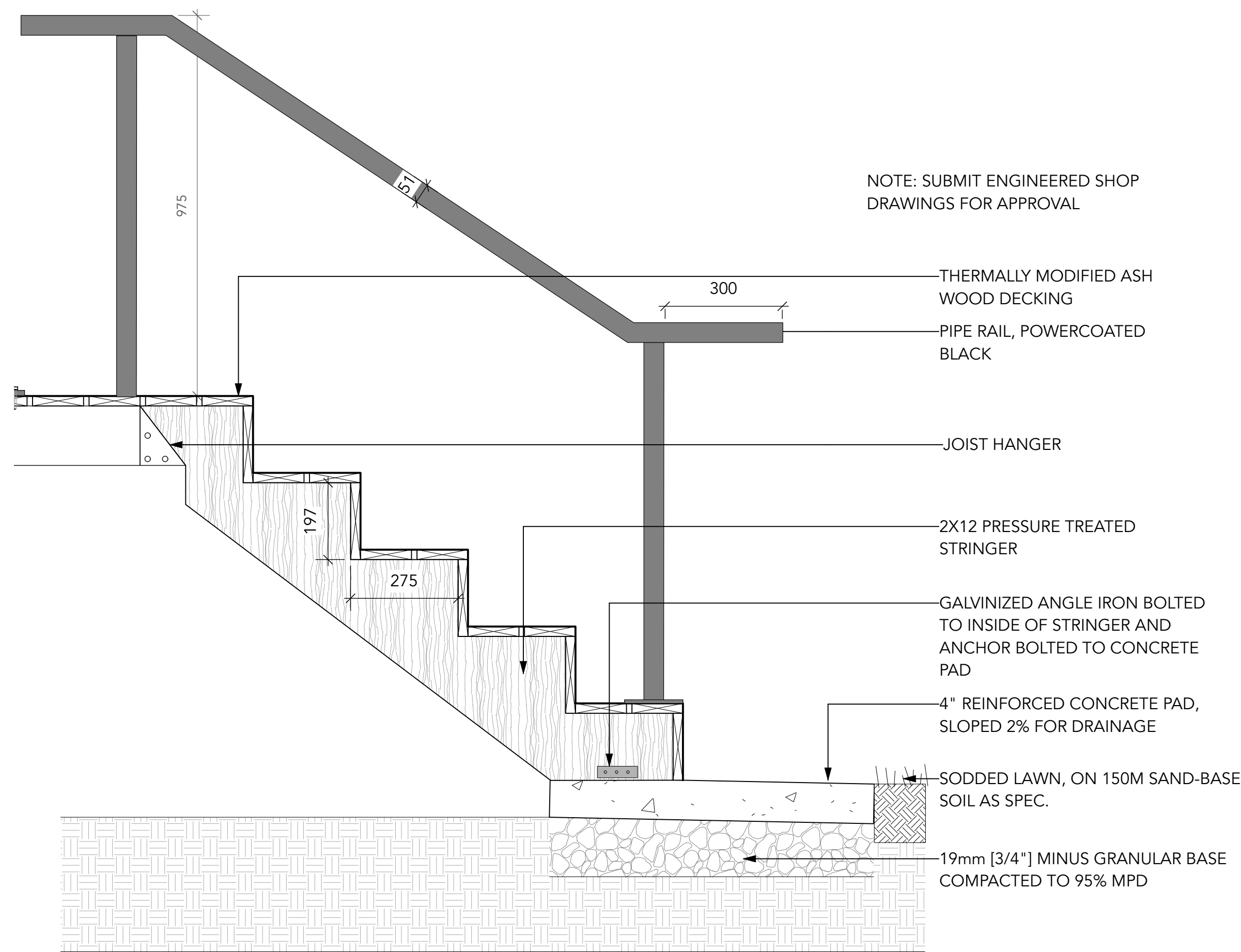
3 **GARDEN BOLLARD, TYP.**  
Scale: 1:10



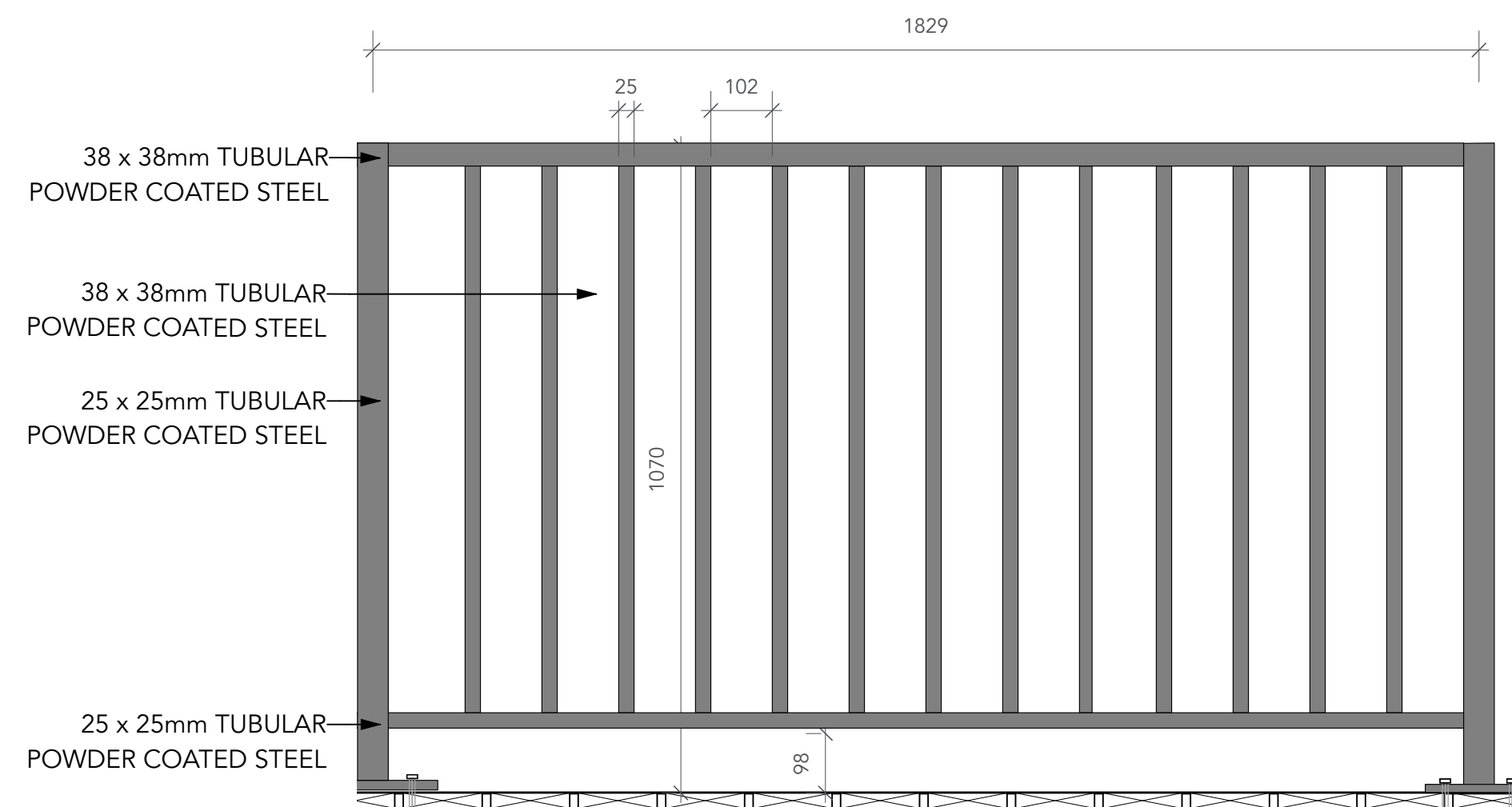
- NOTE:**
- 1 - ALL WOOD POSTS TO BE PRESSURE TREATED HEMLOCK / FIR.
  - ALL OTHER COMPONENTS TO BE CEDAR.
  - 2 - WOOD STAIN COLOUR TO MATCH ARCHITECTURE. PROVIDE STAINED SAMPLE FOR LANDSCAPE ARCHITECT APPROVAL.
  - 3 - ALL FASTENERS TO BE HOT DIPPED GALVANIZED.

4 **SOLID CEDAR FENCE, TYP.**  
Scale: 1:25



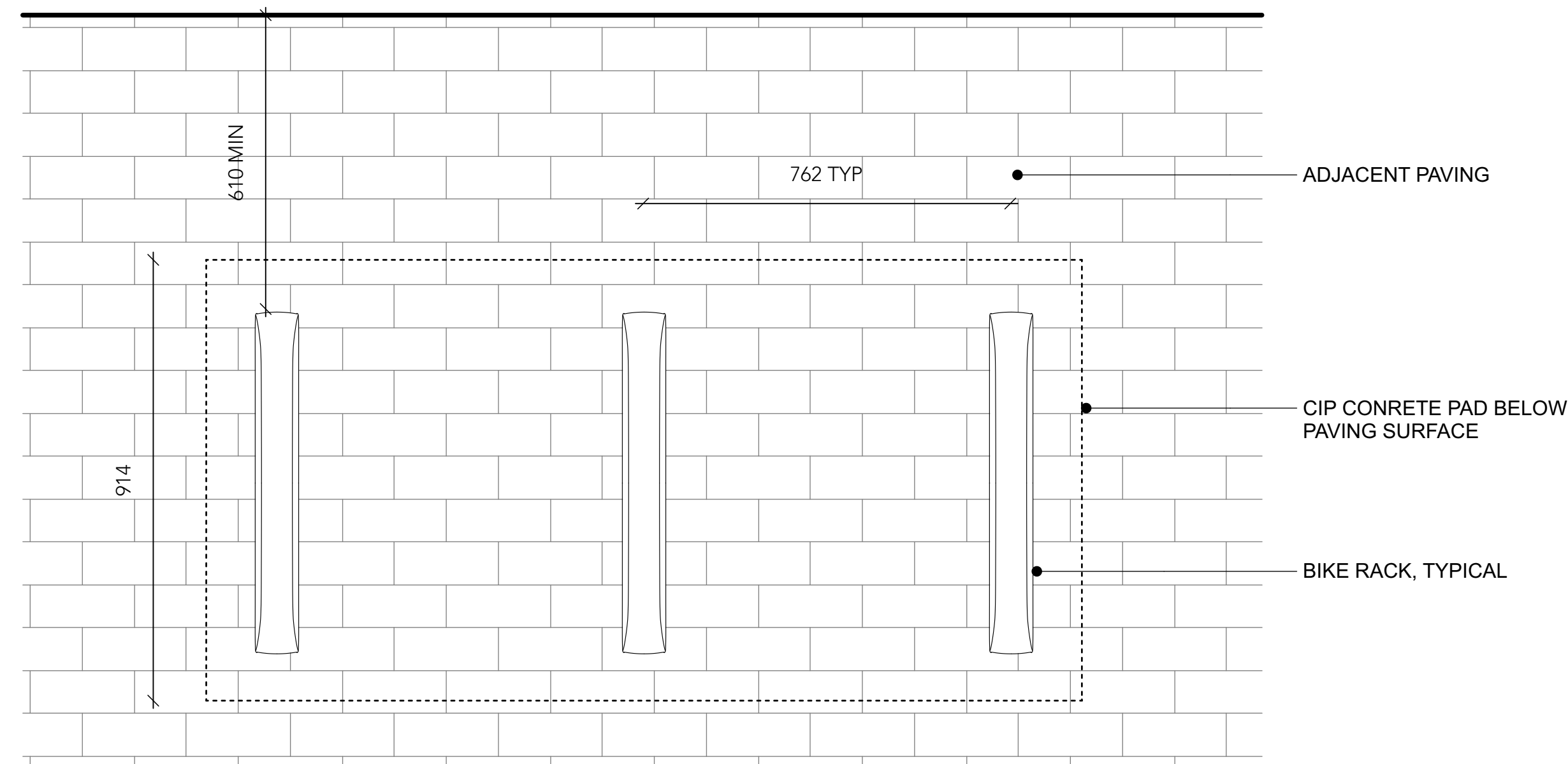


1 DECK STAIR & HANDRAIL  
Scale: 1:10



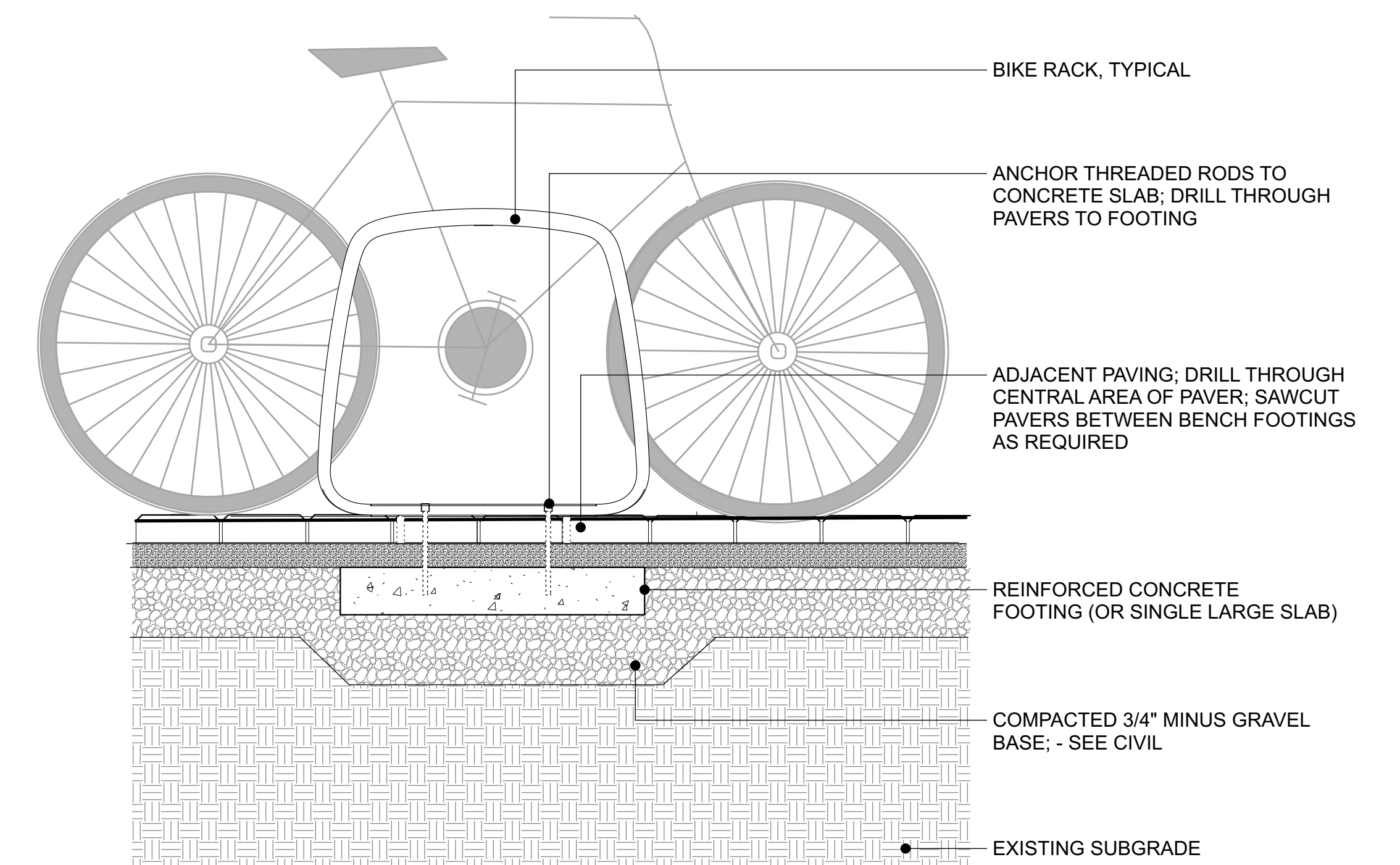
2 DECK GUARDRAIL, TYP.  
Scale: 1:10

NOTE: SUBMIT ENGINEERED SHOP DRAWINGS FOR APPROVAL

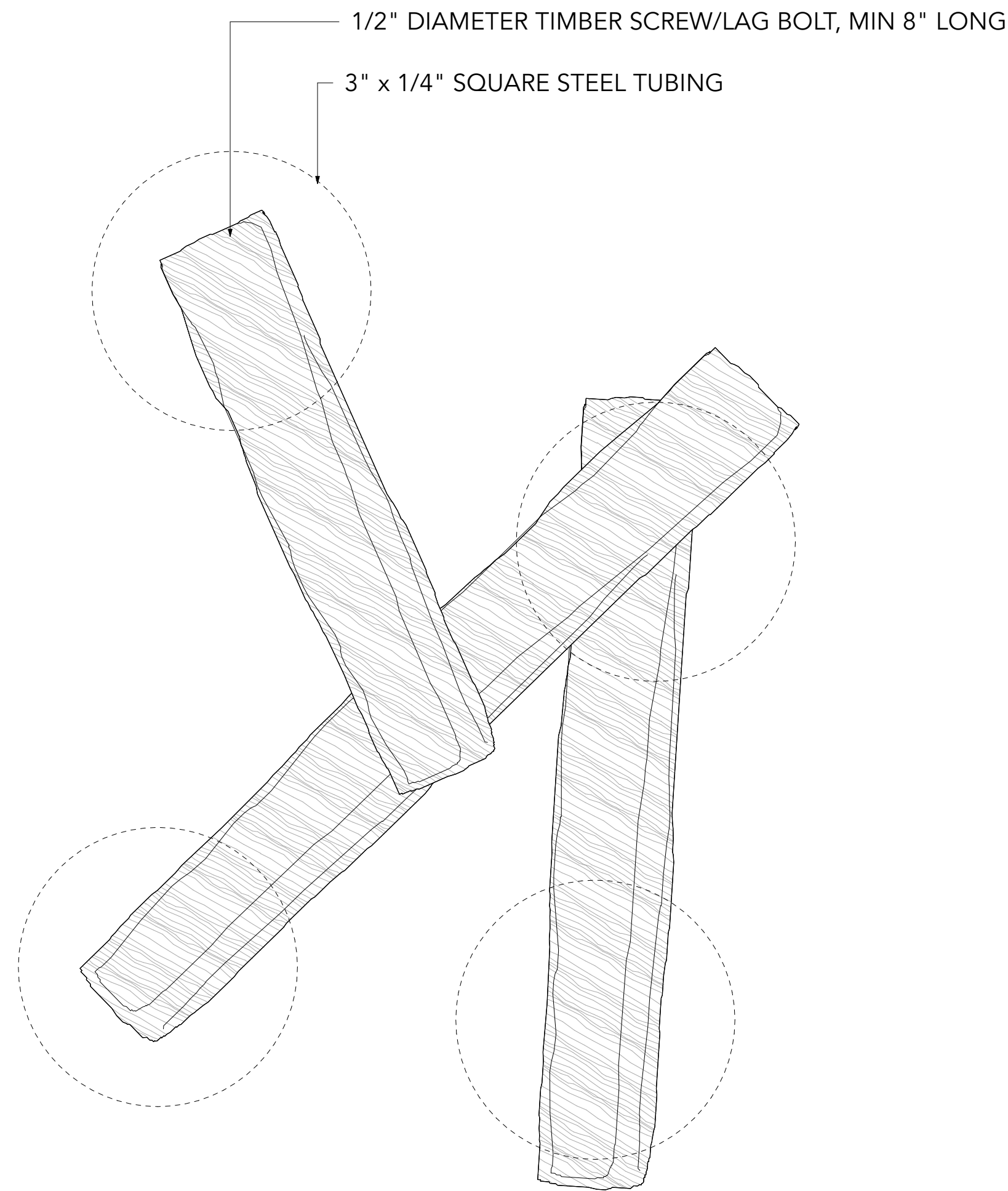


MODEL: RIDE BIKE RACK, EMBEDDED  
SUPPLIER: LANDSCAPEFORMS (1.800.521.2546)  
FINISH: STAINLESS STEEL

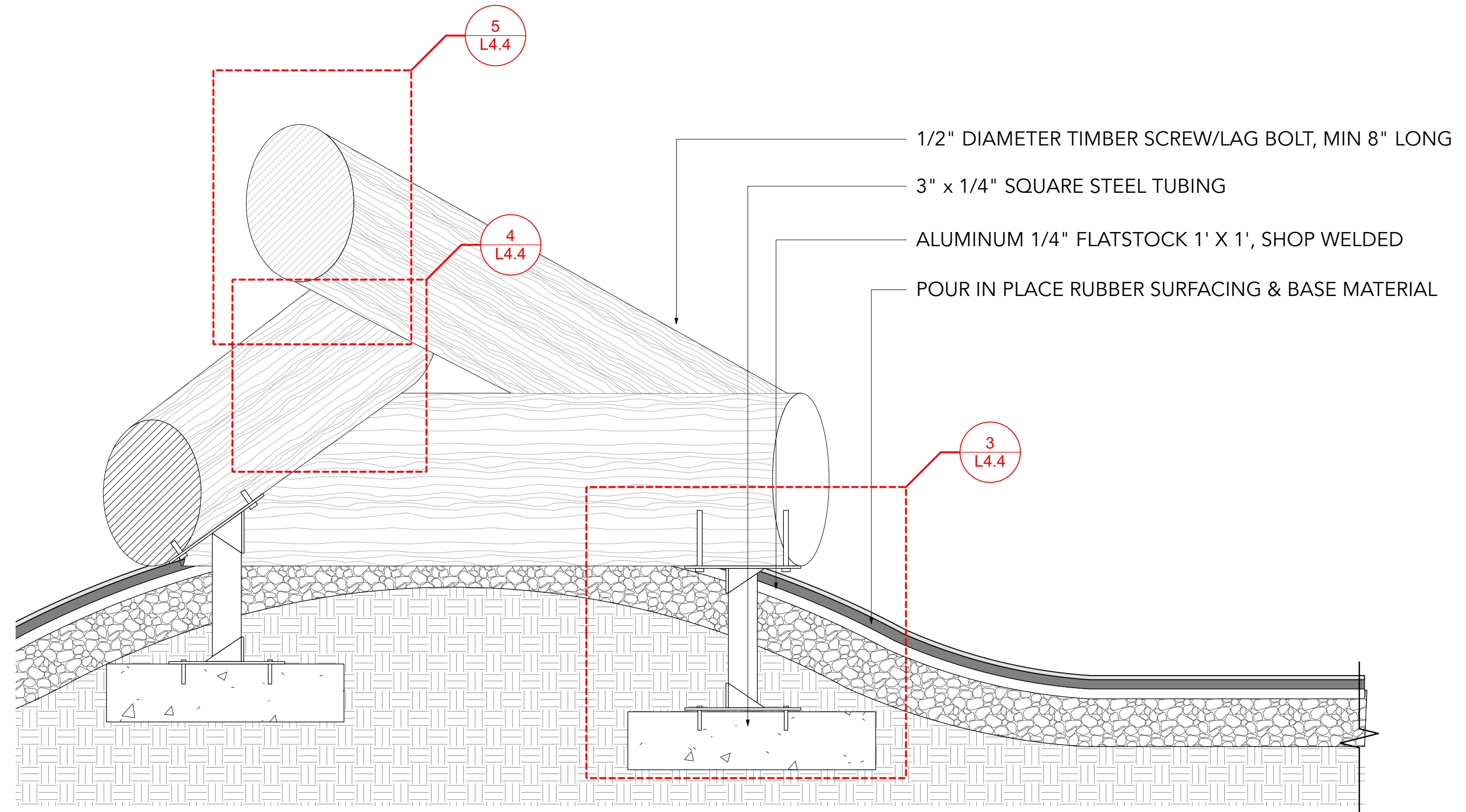
3 BIKE RACK, TYP.  
Scale: 1:10





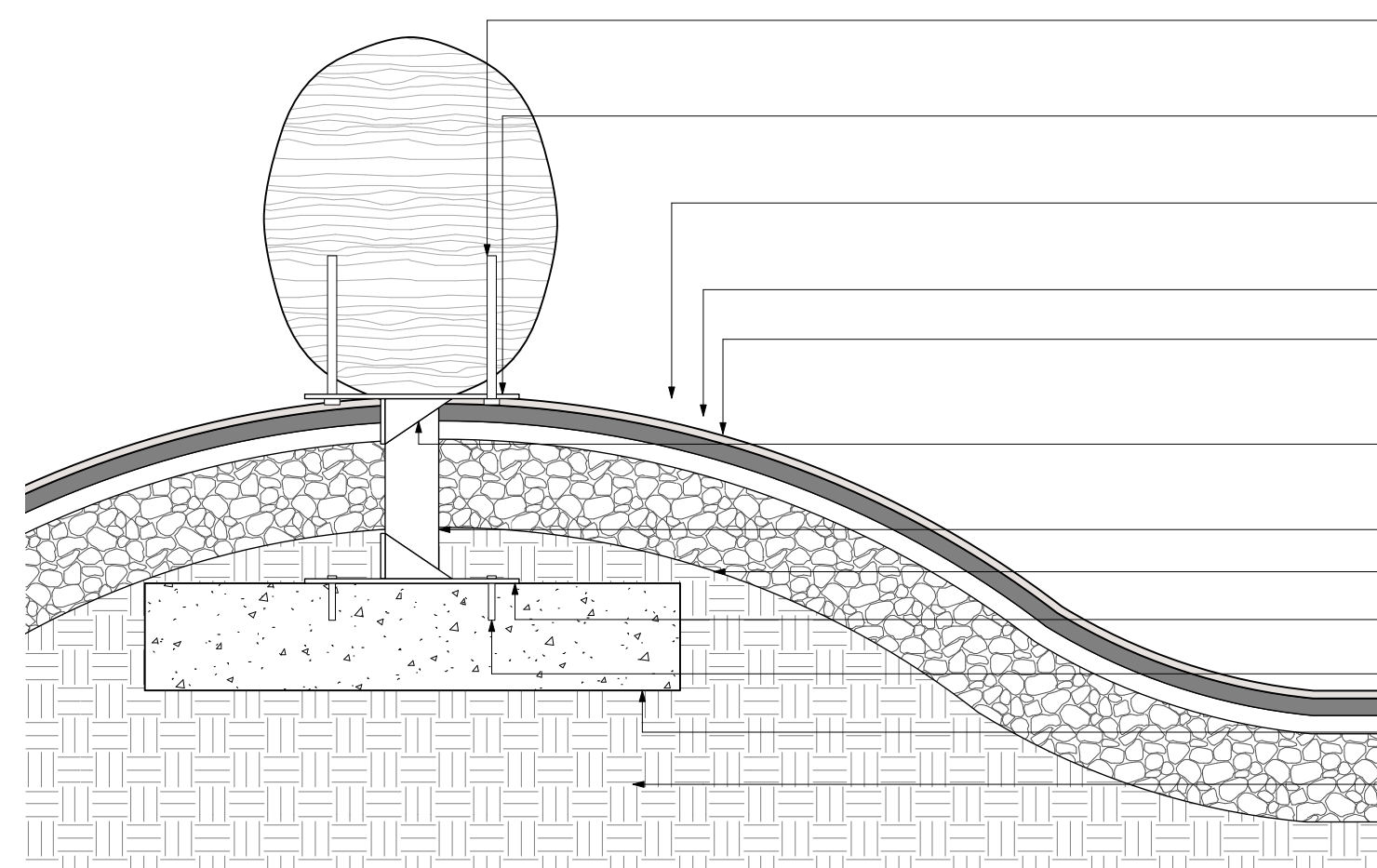


1 **LOG TANGLE SECTION**  
Scale: 1:10

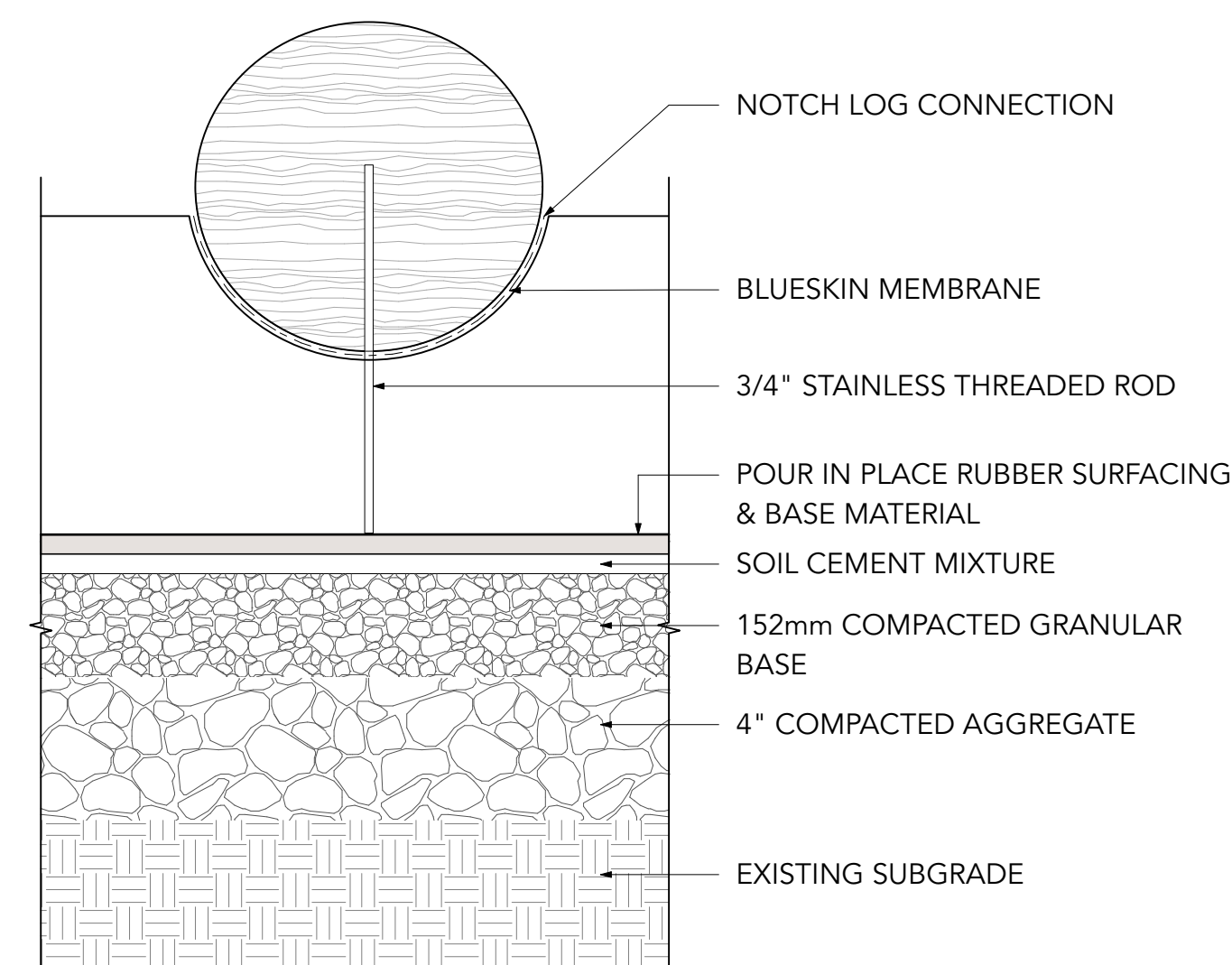


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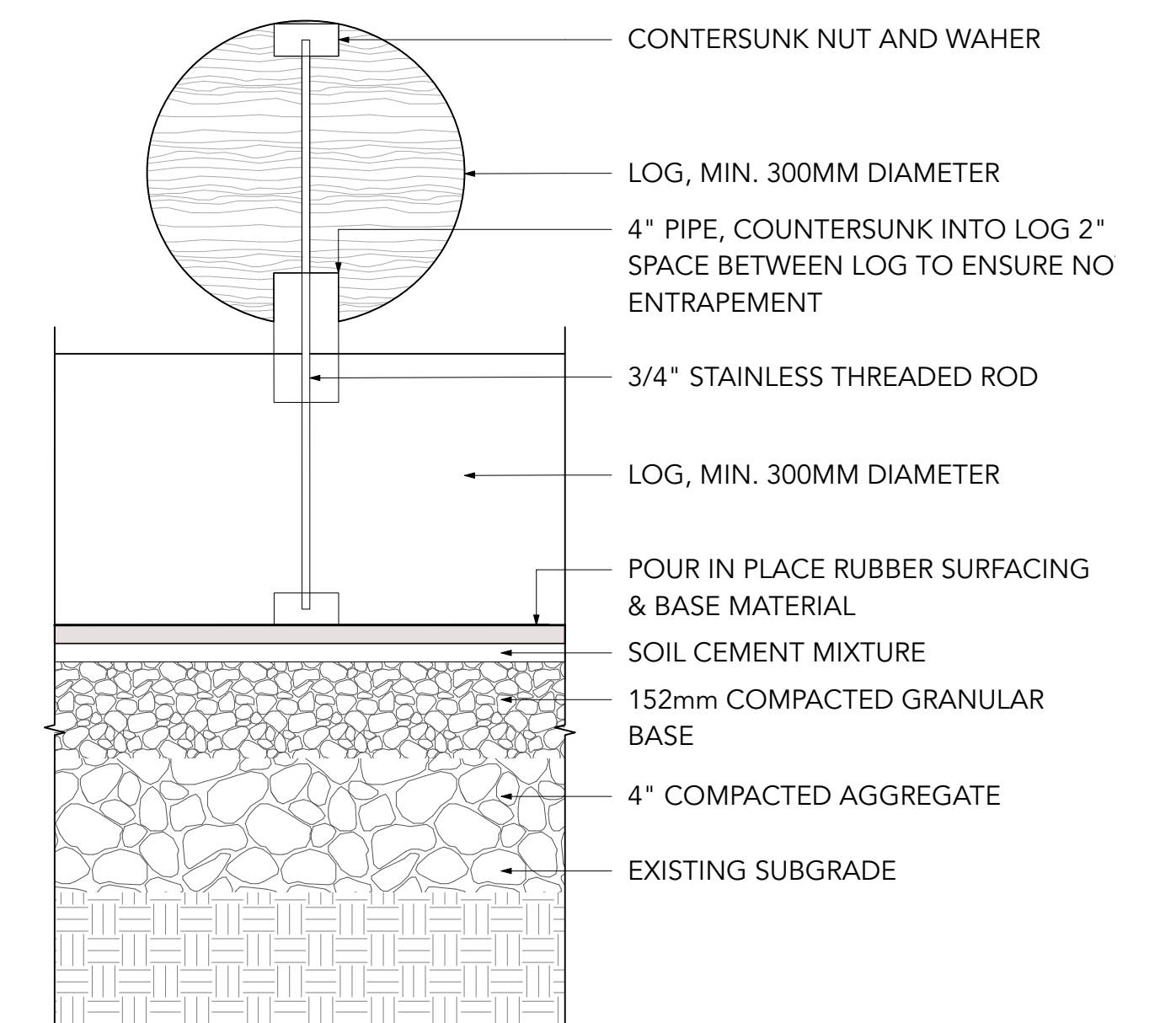
NOTE:  
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3.ARBORIST TO SUPERVISE ALL WORK



3 **LOG TO FLOOR CONNECTION DETAIL, TYP.**  
Scale: 1:10























4 **LOG NOTCH CONNECTION DETAIL, TYP.**  
Scale: 1:10



5 **LOG TO LOG CONNECTION DETAIL, TYP.**  
Scale: 1:10



OVERALL PLANT LIST

Symbol	Quantity	Latin Name	Common Name	Scheduled Size	Spacing	Notes
CONIFERS:						
	2	Chamaecyparis nootkatensis 'Strict weeping'	Strict Weeping Alaska cedar	3m ht.	As Shown	
	44	Cupressus sempervirens	Mediterranean cypress	6' Height, Min	As Shown	
DECIDUOUS TREES:						
	5	Stewartia pseudocamellia	Japanese Stewartia	4cm cal.	As Shown	B&B Specimen
	2	Parrotia persica	Persian Ironwood	7cm cal.	As Shown	B&B Specimen. Columnar/upright form.
	2	Fagus sylvatica 'Dawyck'	Fastigate Beech	7cm cal.	As Shown	B&B Specimen
	2	Cornus kousa 'Satomi'	Pink Japanese Dogwood	6cm cal.	As Shown	B&B Specimen. Min. 3.0m Ht.
SHRUBS:						
	11	Viburnum edule	Highbush Cranberry	4cm	150 o.c.	
	58	Taxus x media 'Hicksii'	Hick's Yew	900mm h.t.	500 o.c.	
	59	Rhododendron 'PJM'	PJM Rhododendron	#3Pot	700 o.c.	Specimen.
	23	Maianthemum racemosa	False Solomon's Seal	#1 Pot	400 o.c.	
	59	Gaultheria shallon	Salal	#1 Pot	250 o.c.	
	6	Cotinus coggygria 'Royal Purple'	Royal Purple Smoke Tree	#5 Pot	900 'o.c.	Specimen.
	10	Buxus sempervirens	Common Boxwood	#3 Pot	700 o.c.	
PERENNIALS, GRASSES, GROUNDCOVER:						
	347	Arctostaphylos uva-ursi	Bearberry, Kinnikinnick	#1 Pot	150 o.c.	
	135	Athyrium niponicum 'Pictum'	Japanese Painted Fern	#1 pot	300 o.c.	
	47	Blechnum spicant	Deer Fern	#1Pot	400 o.c.	
	24	Carex buchananii	Fox Red Curly Sedge	#2 pot	500 o.c.	
	10	Euphorbia characias subsp. wulfenii	Spurge	#1 Pot	400 o.c.	
	10	Hosta sieboldiana 'Elegans'	Blue Leaf Hosta	#1 Pot	600 o.c.	
	80	Polystichum munitum	Western sword fern	#3Pot	700 o.c.	
	14	Stipa tenuissima	Mexican Feather Grass	#2 pot	500 o.c.	

- NOTES:
- 1. ALL PLANT MATERIAL AND LANDSCAPING PRACTICES SHALL BE COMPLIANT WITH THE LATEST EDITION OF THE BCLNA NURSERY STANDARD.
  - 2. IN CASE OF DISCREPANCY BETWEEN PLANT INFORMATION ON THE LIST AND ON THE PLAN, THE LATTER SHALL PREVAIL.
  - 3. FINAL SOFTSCAPE AND GRADING LAYOUTS AS WELL AS LOCATION AND SPACING TO BE APPROVED BY LANDSCAPE ARCHITECT IN THE FIELD PRIOR TO INSTALLATION.
  - 4. ALL PLANT MATERIAL TO BE MANUALLY WATERED FROM START OF INSTALLATION THROUGH THE END OF THE WARRANTY PERIOD.
  - 5. INSTALL TREE PROTECTION FENCING AROUND ALL EXISTING TREES TO CITY STANDARDS, INSTALL TREE PROTECTION FENCING ON NEW PLANTING IF PHASED INSTALLATION IS REQUIRED.
  - 6. FINAL LOCATION, QUANTITY, TREE SPECIES TO THE SATISFACTION OF THE GENERAL MANAGER OF ENGINEERING.
  - 7. NEW TREE MUST BE OF GOOD STANDARD, MINIMUM 6 CM CALLIPER AND INSTALLED WITH APPROVED ROOT BARRIERS, TREE GUARDS AND APPROPRIATE SOIL.
  - 8. ROOT BARRIERS SHALL BE 8'-0" (2.4M) LONG AND 18" (0.46M) DEEP. PLANTING DEPTH OF ROOT BALL MUST BE BELOW SIDEWALK GRADE. NEW STREET TREES TO BE CONFIRMED PRIOR TO ISSUANCE OF THE BUILDING PERMIT.





SECTION 06 20 13  
EXTERIOR FINISH CARPENTRY

1. GENERAL  
1.1 DOCUMENTS

1. This section of the Specifications forms part of the Contract Documents and is to be read, interpreted, and coordinated with all other parts.

1.2. SECTION INCLUDES

1. All labour, materials, and equipment necessary for fabrication, supply, and installation of landscape carpentry as specified herein and as indicated on Drawings.
2. Work shall include but not be limited to stage decking, raised vegetable beds, hardware and fastenings including bolts, washers, rods, clips, and any other required accessories.

1.3. REFERENCES

1. American Society for Testing and Materials International (ASTM)
1. ASTM A123/A123M-[02], Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
2. ASTM A653/A653M-[06], Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated by the Hot-Dip Process.
2. Canada Green Building Council (CaGBC)
1. LEED Canada-NC Version 1.0-[2004], LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
3. Canadian Standards Association (CSA International)
1. CSA B111[1974 (R2003)], Wire Nails, Spikes and Staples.
2. CAN/CSAG164[M92(R2003)], Hot Dip Galvanizing of Irregularly Shaped Articles.
3. CSA O121[M1978(R2003)], Douglas Fir Plywood.
4. CSA O141[05], Softwood Lumber.
5. CAN/CSAO325.0[92(R2003)], Construction Sheathing.
4. Forest Stewardship Council (FSC)
1. FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.
2. FSC-STD-20-002-[2004], Structure and Content of Forest Stewardship Standards V2-1.
3. FSC Accredited Certified Bodies.
5. Health Canada/Workplace Hazardous Materials Information System (WHMIS)
1. Material Safety Data Sheets (MSDS).
6. National Lumber Grades Authority (NLGA)
1. Standard Grading Rules for Canadian Lumber [2005].
7. South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
1. SCAQMD Rule 1113-[04], Architectural Coatings.
2. SCAQMD Rule 1168-[05], Adhesives and Sealants Applications.

1.4. SUBMITTALS

1. Co-ordinate and provide submittals required as per City of Vancouver standards.

1.5. QUALITY ASSURANCE

1. Lumber identification: by grade stamp certified by Canadian Lumber Standards Accreditation Board.
2. Plywood identification: by grade mark in accordance with applicable CSA standards.
3. Plywood, OSB and wood based composite panel construction sheathing identification: by grademark in accordance with applicable CSA standards.
4. LEED Credit MR 7 and Living Building Challenge: Wood materials to be certified by Forest Stewardship Council (FSC). Provide Forest Stewardship Council Chain of Custody certificates for wood materials in compliance with LEED credit MR 7.

1.6. DELIVERY, STORAGE, AND HANDLING

1. Waste Management and Disposal:
1. Separate waste materials for reuse and recycling in accordance with Construction/Demolition Waste Management and Disposal Requirements.

1.7. MEASUREMENT FOR PAYMENT

1. Payment for Exterior Finish Carpentry will be by lump sum based on Price Bid. Payment shall be for all labour, equipment, materials and incidentals required for the specified work as shown on drawings and Specified herein.

2. PRODUCTS

2.1. SUSTAINABLE REQUIREMENTS

1. Materials and products in accordance with City of Vancouver standards.

2.2. LUMBER MATERIAL

1. Material and Resources Credit MR - 7 Certified Wood co-ordinate with Section 01 35 21 - LEED Requirements.

2. Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
1. CAN/CSAO141.
2. NLGA Standard Grading Rules for Canadian Lumber.
3. Forest Stewardship Council (FSC) certified.
3. Structural lumber, not exposed to view, shall be construction grade pressure treated hem/fir with the following average maximum moisture contents:
1. Lumber greater than 50mm (2") in thickness 20%
2. Lumber 50mm (2") or less in thickness 15%
4. All lumber above grade and exposed to view shall be No. 1 Grade full dimension D-Cedar unless noted on Drawings with average moisture content not exceeding 12%.
5. All lumber shall be straight, sound, and free of splits, warps, cracks, large knots, and other defects.
6. Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:
1. S2S is acceptable for all.
2. Board sizes: "Standard" or better grade.
3. Dimension sizes: "Standard" light framing or better grade.
4. Post and timbers sizes: "Standard" or better grade.

2.3. PANEL MATERIALS

1. Composite Wood and Laminates Adhesives as per Section 01 35 21 - LEED Requirements.
2. Douglas fir plywood: to CSA O121, standard construction.
3. LEED projects pursuing EQ credit 4.4:
1. Urea-formaldehyde free.
2. Forest Stewardship Council (FSC) certified.
4. LEED projects pursuing MR credit 7
1. Canadian softwood plywood (CSP): to CSA O151, standard construction, urea-formaldehyde free.

2.4. ACCESSORIES

1. Metal includes all metals and finishes required in the fabrication of wooden items.
2. Connectors, nails, spikes, bolts, lagscrews, nuts, and washers shall be stainless steel, galvanized or an approved non-ferrous type meeting LBC requirements.
3. Nails, spikes and staples: to CSA B111.
4. Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
5. Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.

2.5. FINISHES

1. Stainless steel: stainless steel alloy for exterior fasteners or as indicated on Drawings.
2. Galvanizing: to [CAN/CSA G164] [ASTM A653/A653M], use galvanized fasteners for exterior work if approved for LBC requirements.

2.6. WOOD PRESERVATIVE

1. Wood preservative to be used shall be copper wood preservative referred to as CCA-C50 by B.C. Clean Wood Preserving Ltd., or approved with vacuum pressure impregnation to manufacturer's specifications CSA-080-15 with absorption rates as follows:
1. General - 6.4 kg/m
2. SCAQMD Rule 1113 - Architectural Coatings.
3. Maximum allowable VOC limit 350g/L.
2. Surface applied wood preservative: clear, or copper naphthenate, or 5% pentachlorophenol solution, water repellent preservative. Sikkens matte finish or approved alternative. Provide treated wood sample for approval.
3. Pentachlorophenol use is restricted to building components that are in ground contact and subject to decay or insect attack only. Where used, pentachlorophenol treated wood must be covered with two coats of an approved sealer.
4. Structures built with wood treated with pentachlorophenol and inorganic arsenicals must not be used for storing food nor should the wood come in contact with drinking water.
5. All lumber which has been pressure-treated shall bear the inspection and classification label of the Underwriter's Laboratories of Canada.
6. All treated lumber shall carry certificate from treatment company, certifying the treatment amount and moisture percentage after kiln drying.
7. Where at all possible, wood preservative treated wood shall be cut and machined prior to application of preservative. Where pre-cutting is not feasible then untreated surfaces exposed due to cutting or boring shall be thoroughly soaked with the same preservative used in the initial treatment.

3. EXECUTION

3.1. PREPARATION

1. Workmanship: due to high visibility of all timber components, very high quality workmanship will be expected. All decking planks to be square and evenly spaced. Contractor to work with Drawings and adjust to suit site conditions.
2. Treat surfaces of material with wood preservative, before installation.

3. Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum three minute soak on lumber and one minute soak on plywood.
4. Retreat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.
5. Treat material as follows:
1. Wood cants, fascia backing, curbs, nailers, sleepers on roof deck.
2. Wood furring for outside surface of exterior masonry and concrete walls.
3. Wood sleepers supporting wood subflooring over concrete slabs in contact with ground or fill.

3.2. INSTALLATION

1. Install members to lines, levels and elevations indicated. Space members uniformly. Refer to Drawings.
2. Install required steel connectors; all to be stainless steel or approved alternative.
3. Joints to be butt joints unless otherwise noted. All joints to have neat finished edges, square, plumb and true.
4. Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
5. Countersink bolts where necessary to provide clearance for other work.
6. Remove all splinters, burrs, rough edges, and other hazards to users.
7. All exposed wood to be oriented for best side visible.
8. Install furring and blocking as required to spaceout and support fascia, soffit, siding and other work as required. Align and plumb faces of furring and blocking to tolerance of 1:600.
9. Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
10. Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using stainless steel fasteners or approved alternative.

\*\*\*END OF SECTION\*\*\*

SECTION 12 93 00  
EXTERIOR SITE FURNISHINGS

1. GENERAL

1.1. SCOPE

1. This section of the Specifications forms part of the Contract Documents and is to be read, interpreted, and coordinated with all other parts.
2. Materials and installation of standard manufactured catalogue items including but not limited to benches, bollards, waste containers, trash receptacles, picnic tables, flagpoles, benches, bike racks and playground equipment. Refer to Drawings for locations.

1.2. RELATED SECTIONS

1. Section 05 50 00 Misc Metal Work.
2. Section 32 05 23 Concrete for Exterior Improvements.
3. Section 32 14 13 Precast concrete unit paving.

1.3. SUBMITTALS

1. Submit Product Data and Shop Drawings in accordance with Section 01 33 00 Submittal Procedures. All pre-manufactured products must be submitted with complete samples to Consultant 120 days in advance of installation. Consultant must approve sample and any relevant colours, finishes and sizes prior to Subcontractor placing final orders.
2. Indicate dimensions, sizes, assembly, anchorage and installation details for each furnishing specified. This approved sample will be the standard to be maintained throughout the Work.
3. Provide maintenance data for care and cleaning of site furnishings for incorporation into manual specified.

1.4. WASTE MANAGEMENT AND DISPOSAL

1. Remove from site and dispose of packaging materials at appropriate recycling facilities.
2. Collect and separate paper plastic polystyrene corrugated cardboard packaging material in appropriate on site bins for disposal.
3. Fold up metal banding, flatten and place in designated area for recycling.

2. PRODUCTS

2.1. GENERAL

1. A manufacturer's warranty is required for all pre-manufactured site furnishings specified in this section.
2. Provide maintenance data for care and cleaning of Site Furnishings for incorporation into manual specified in accordance with Section 01330 - Submittals.

2.2. DELIVERY AND STORAGE

1. All furnishings shall be stored at source until installation on Site and all delivery of site furnishings shall be coordinated by the Subcontractor with the supplier.

2.3. MATERIALS

1. Wood Bench: Bancal Bench. Manufactured by Landscape Forms.

2.4. EXECUTION

1. All Materials and/or components damaged or deteriorated during delivery and storage will be rejected and shall be removed from the site and replaced at no extra cost to the Owner.
2. The Contractor shall be responsible for protection and maintenance of all completed work and finishes from time of completion until acceptance of work and shall make good all damage to work caused during protection and maintenance period, at no extra cost to the Owner.

2.5. INSTALLATION

1. Assemble furnishings in accordance with manufacturer's instructions.
2. Install true, plumb, and anchored, as directed by Consultant or as shown on Drawings.
3. Touch up damaged and clean exposed finishes to approval of Consultant.

\*\*\*END OF SECTION\*\*\*

SECTION 32 01 90  
TREE PRESERVATION

1. GENERAL

1.1. DOCUMENTS

1. This section of the Specifications forms part of the Contract Documents and is to be read, interpreted, and coordinated with all other parts.

1.2. SECTION INCLUDES

1. Provide labour, materials, and equipment necessary for tree protection and to fertilize root systems of existing plant materials affected by changing grades, excavation, and building construction as specified herein, and as indicated on Drawings.
2. Sustainable requirements for construction and verification as directed by Consultant.

1.3. APPROVALS

1. The intent of tree preservation measures is to minimize changes or damage to branching habit, the health, and root areas of these trees. A certified Arborist will be engaged to oversee all tree protection strategies and will provide on-site consultation during the initial stages of the construction work.
2. Do not remove any trees or branches from existing trees, or excavate around trees to be retained without prior approval by the Consultant.
3. Layout of protective fencing to City of Vancouver Tree Protection Standards.
4. Protection areas must be fenced at all times. Do not encroach, dispose waste materials, or store construction materials within designated tree protection areas unless directed by designated representative of the Owner, as approved by the Consultant. Failure to comply shall infer the responsibility of the Contractor to damaging of retained existing trees.
5. Obtain approval from Consultant of schedule indicating beginning of Work.

1.4. REFERENCES

1. BCSLA Landscape Standards Latest Edition
2. ISA Arboriculture Standards

1.5. PRICE AND PAYMENT PROCEDURES

1. Payment for all work will be incidental to payment for work described in other Sections.

1.6. SUBMITTALS

1. Make submittals in accordance with Section 01 33 00 Submittal Procedures.
2. Submit monthly written reports on maintenance during Warranty Period, to Consultant identifying:
1. Maintenance work carried out.
2. Development and condition of plant material.
3. Preventative or corrective measures required which are outside Contractor's responsibility.

1.7. QUALITY ASSURANCE

1. Verification requirements in accordance with industry standards for the following:
1. Materials and resources.
2. Storage and collection of recyclables.
3. Construction waste management.
4. Local/regional materials.
5. Low-emitting materials.

1.8. DELIVERY, STORAGE AND HANDLING

1. Store and manage hazardous materials in accordance with City of New Westminster Standards.
2. Waste Management and Disposal:
1. Separate waste materials for recycling in accordance with City of New Westminster standards. Remove from site and dispose of packaging materials at appropriate recycling facilities.
2. Place materials defined as hazardous or toxic in designated containers and dispose of unused fertilizer material at official hazardous material collections site. Do not dispose of unused fertilizer material into sewer system, into streams, lakes, onto ground or in any other location where they will pose health or environmental hazard.

1.9. MAINTENANCE DURING WARRANTY PERIOD

1. From time of acceptance by Consultant to end of warranty period, perform following maintenance operations:
1. Water to maintain soil moisture conditions for optimum growth and health of plant material without causing erosion.
2. Apply pesticides in accordance with Provincial and Municipal regulations as and when required to control insects, fungus and disease. Obtain product approval from Consultant prior to application.
3. Apply fertilizer in early spring at manufacturer's suggested rate.
4. Remove dead, broken or hazardous branches from plant material. Dispose of debris through alternative disposal, composting or mulching.





<div><div><div>2. PRODUCTS</div><div>2.1. SUSTAINABLE REQUIREMENTS</div><div>1. To City of New Westminster standards.</div></div><div><div>2.2. MATERIALS</div><div>1. Fill:<div><div>1. Sand: clean, natural river sand and gravel material, free from silt, clay, loam, friable or soluble materials and organic matter.</div><div>2. Soil: pervious soil, free from roots, rocks larger than 75 mm, building debris, and toxic ingredients (salt, oil, etc). Excavated material must not affect soil pH levels and shall be approved by Consultant before use as fill.</div><div>3. Adding mycorrhiza during planting operation might improve better root system and provide stress relief in plant growth. It is important that new root growth be in contact with mycorrhiza. Use as recommended by the manufacturer.</div><div>4. Coarse washed stones: 3575 mm diameter clean round hard stone.</div><div>5. Drain tile: 100 mm diameter HDPE or approved alternative perforated piping complete with snap couplings. Fill vents with 20 mm clear stone.</div><div>6. Peatmoss: Derived from partially decomposed species of Sphagnum Mosses. Elastic and homogeneous, free of wood and deleterious material which could prohibit growth. Shredded minimum particle size: ¼” (5 mm).</div></div></div><div><div>2.3. FERTILIZER:</div><div>1. To Canada Fertilizer Act and Fertilizers Regulations.</div><div>2. Complete, commercial, slow release with 35 % of nitrogen content in water-insoluble form.</div><div>3. Antidesiccant: commercial, waxlike emulsion, to be approved by consultant.</div><div>4. Filter Cloth: 100 % nonwoven or biodegradable burlap.</div><div>5. Recycled Wood posts or recycled composite plastic posts: 38 x 89 x 2400 m (1-1/2”x 3-1/2” x 95” ) length.</div><div>6. Welded wire fabric (WWF): 100 x 100 mm (4’x 4’), MW x MW, to CSA G30.5.</div></div><div><div>3. EXECUTION</div><div>3.1. IDENTIFICATION AND PROTECTION</div><div>1. Construction Occupational Health and Safety in accordance with City of New Westminster Standards.</div><div>2. Identify plants and limits of root systems to be preserved as indicated on Drawings and approved by Consultant.</div><div>3. Protect plant and root systems from damage, compaction and contamination resulting from construction as approved by Consultant.</div><div>4. Ensure no pruning is done inside drip line. If pruning inside drip line is required consult an Arborist or Canadian Certified Horticultural Technician (CCHT) as approved by Consultant.</div></div><div><div>3.2. ROOT CURTAIN SYSTEM (if applicable)</div><div>1. Identify Extent of Disturbance limits for required construction excavation as indicated on Drawings and approved by Consultant.</div><div>2. Prior to construction excavation, hand dig trench minimum 500 mm wide x 150 mm (20” x 6”) deep, along perimeter of excavation limits.</div><div>3. When depth of excavation for walls, foundations, and footings exceeds 1500mm, provide additional support for posts and curtain as required.</div><div>4. Prune exposed roots cleanly at side of trench nearest plants to be preserved. Pruned ends to point obliquely downwards.</div><div>5. Install wooden posts or recycled composite plastic posts and welded wire fabric against construction edge of trench.</div><div>6. Securely attach filter fabric on plant side of wire mesh.</div><div>7. Prepare homogeneous mixture of fertilizer, parent material and organic matter.<div><div>1. Add organic matter to mixture to achieve 79% organic matter content by weight.</div><div>2. Incorporate with mixture grade 2:12:8 ratio fertilizer (dry) at rate of 1.5 kg/m3 or per manufacturer specifications.</div></div></div><div>8. Backfill with homogeneous mixture between curtain wall and plants to be preserved in layers not exceeding 150 mm (6”) in depth. Compact each layer to 85 % Standard Proctor Density.</div><div>9. Protect root curtain from damage during construction operations.</div><div>10. Water plants and root curtain sufficiently during construction to maintain optimum soil moisture condition until backfill operations are complete.</div><div>11. Protect root curtain during backfill operations. Ensure root curtain is cut down to 300 mm 1 foot below finished grade and remove cut material.</div></div><div><div>3.3. AIR LAYERING SYSTEM (RAISING GRADES) (if applicable)</div><div>1. Using manual methods, carefully remove turf, plants, leaves and organic matter in area of root system, dispose of plant matter through compost site and slightly loosen topsoil surface. Avoid damage to root system.</div><div>2. Lay horizontal system of perforated drain pipe on surface of existing grade.<div><div>1. Slope drain tile minimum 3% for drainage away from trunk of tree.</div><div>2. Connect system with general site drainage system or drain to low point on site.</div></div></div><div>3. Install vent pipes vertically over joints in horizontal pipe system. Top of vent pipe to be 20 mm (3/4”) above finished grade of fill. Keep top of vent pipe covered during construction.</div></div><div>4. Cover joints with filter fabric and place coarse washed stone around joints and vertical pipes to secure their position.</div><div>5. Construct stone drywell around trunk of tree.<div><div>1. Ensure open ends of vertical vent pipes are left exposed for air circulation to root system.</div><div>2. Protect openings from blockage during construction.</div><div>3. Install protective caps on exposed horizontal openings.</div></div></div><div>6. Place 200 mm (8 inches)’ depth of coarse washed stone on surface of original ground and horizontal pipe system to limits.</div><div>7. Place filter fabric over surface of granular layer.</div><div>8. Place washed stone mulch over filter fabric to required depth without disturbing or damaging drain pipe system. Avoid damage to filter fabric.</div><div>9. Complete topsoil and sodding or finished paving over area of sub surface system within one week of placing fill.</div><div>10. Remove temporary protective covering from vent pipe openings. Install protective caps flush with finished grade.</div></div><div><div>3.4. TRENCHING AND TUNNELLING FOR UNDERGROUND SERVICES</div><div>1. Centre line location and limits of trench/tunnel excavation to be approved by Arborist / Consultant prior to excavation. Tunnel excavation to extend 2000 mm (6-1/2 feet) from edge of trunk on either side.</div><div>2. Excavate manually within zone of root system. Do not sever roots greater than 40 mm (1 ½ inches) diameter except at greater than 500 mm (20 inches) below existing grade. Protect roots, and cut roots cleanly with sharp disinfected tools.</div><div>3. Excavate tunnel under centre of tree trunk using methods and equipment approved by Arborist / Consultant.</div><div>4. Minimum acceptable depth to top of tunnel: 1000 mm (40 inches).</div><div>5. Backfill for tunnel and trench to 85 % Standard Proctor Density. Avoid damage to trunk and roots of tree.</div><div>6. Complete tunnelling and backfilling at tree within 2 weeks of beginning Work.</div></div><div><div>3.5. LOWERING GRADE AROUND EXISTING TREE</div><div>1. Schedule work at time appropriate for plant species to be approved by Arborist.</div><div>2. Cut slope not less than 500 mm (20 inches) from tree trunk to new grade level or retaining wall.</div><div>3. Excavate to depths as indicated on Drawings. Protect from damage root zone which is to remain.</div><div>4. When severing roots at excavation level, cut roots with sharp tools.</div><div>5. Cultivate excavated surface manually to 1/6” (15 mm) depth.</div><div>6. Prepare homogeneous soil mixture consisting by volume of:<div><div>1. 60 % excavated soil cleaned of roots, plant matter, stones, debris.</div><div>2. 25 % coarse, clean sterile sand.</div><div>3. 15 % organic matter.</div><div>4. Grade 2:12:8 fertilizer at rate of 1.5 kg/m3.</div></div></div><div>7. Place soil mixture over area of excavation to finished grade level. Compact to 85 % Standard Proctor Density.</div><div>8. Water entire root zone to optimum soil moisture level.</div></div><div><div>3.6. PRUNING</div><div>1. Prune in accordance with Section 32 93 43 Tree Pruning.</div><div>2. Prune crown to compensate for root loss while maintaining general form and character of plant. Dispose of debris through alternative disposal, composting, or mulching.</div><div>3. Prune in dormant season but not during heavy frost using clean sharp tools only.</div><div>4. Make cuts across the leading edge of the bark branch ridge to allow for a complete circle of callus to form around the cut. Do not make flush cuts and do not leave little stubs on trunks or main branches.</div><div>5. Remove dead and injured branches that rub together causing damage to bark. Sterilize tools before commencing pruning on each separate tree and shrub.</div><div>6. Thin out crown of trees and/or shrubs without changing their natural shape or habitat. Do not damage Lead branches. Remove smaller branches at juncture of limb from which they originate or cut at twig or bud pointing toward. Undercut larger branches to prevent tearing of bark.</div><div>7. Root pruning to be undertaken by designated Arborist under direction of Consultant.</div><div>8. Where excavation is required, root prune during winter months one year in advance before excavation. Any exposed woody roots to be pruned cleanly.</div><div>9. Buffer area between new grade and protected root area to be backfilled with pumped river sand and composted manure as approved by Consultant.</div></div><div><div>3.7. ANTI DESICCANT</div><div>1. Apply anti desiccant to foliage where applicable and as directed by Consultant.</div></div><div>***END OF SECTION***</div></div>	<div><div>SECTION 32 14 13</div><div>PRECAST CONCRETE UNIT PAVING (LANDSCAPE)</div><div><div>1. GENERAL</div><div>1.1. DOCUMENTS</div><div>1. This section of the Specifications forms part of the Contract Documents and is to be read, interpreted, and coordinated with all other parts.</div></div><div><div>1.2. SECTION INCLUDES</div><div>1. Labour, materials, equipment necessary to supply and install unit pavers including at grade subbase and base preparation, gravels, sand setting bed, jointing sand, edge restraints; and hydra pressed pavers on granular base as specified herein and as indicated on Drawings.</div></div><div><div>1.3. RELATED SECTIONS</div><div>1. Section 31 23 05 Site Preparation and Rough Grading</div><div>2. Section 32 05 23 Concrete for exterior improvements</div></div><div><div>1.4. PRICE AND PAYMENT PROCEDURES</div><div>1. Measurement and payment of precast unit paving will be by the square metre of unit paving supplied and installed. Tender price to include labour, equipment, materials and incidentals required for the supply and installation of unit paving as outlined in Section 1.2.</div></div><div><div>1.5. REFERENCES</div><div>1. American Society for Testing and Materials International, (ASTM).<div><div>1. ASTM C 33, Specification for Concrete Aggregates.</div><div>2. ASTM C 13605, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.</div><div>3. ASTM C 140 - Sampling and Testing Concrete Masonry Units.</div><div>4. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.</div><div>5. ASTM C 936 – 08 – Solid Concrete Interlocking Paving Units.</div><div>6. ASTM C 97905, Standard Specification for Pigments for Integrally Coloured Concrete.</div><div>7. ASTM D 698, Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures using a 5.5 lb (2.49 kg) Rammer and 12 in. (305 mm) drop.</div><div>8. ASTM D 1557, Test Methods for Moisture Density Relations of Soil and Soil Aggregate. Mixtures using a 10-lb (4.54 kg) Rammer and 18 in. (457 mm) drop.</div></div></div><div>2. Canadian Standards Association (CSA International).<div><div>1. CSA A23.1/A23.204, Concrete Materials and Methods of Concrete Construction/Method of Test for Concrete.</div><div>2. CSAA231.206, Precast Concrete Pavers.</div><div>3. CSA-A23.2A Sieve Analysis of Fine and Coarse Aggregates.</div><div>4. CSA A28304, Qualification Code for Concrete Testing Laboratories.</div><div>5. CAN/CSA-A82.56M-1976, Aggregate for Masonry Mortar.</div></div></div><div>3. Geotechnical Report – Upon request from Owner</div></div><div><div>1.6. SUBMITTALS</div><div>1. Product Data and Sampling:<div><div>1. Submit Product and Installation Data: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.</div></div></div><div>2. Submit Shop Drawings indicating layout, pattern and relationship of paving joints to fixtures, project edges, and where cut pavers will be required to suit detail and layout for Consultant review and acceptance.</div><div>3. Submit (1) full size sample of each type, size, texture, and colour paver for Consultant approval.</div><div>4. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties including:<div><div>1. Sieve analysis for gradation of bedding and joint material</div><div>2. Unit paver sampling and testing</div><div>3. Evaluation of cleaning and sealing compound</div></div></div></div><div><div>1.7. QUALITY ASSURANCE</div><div>1. Qualifications: Installer, company or person specializing in precast concrete paver installations with 5 years documented experience and approved by Consultant.</div><div>2. Sample MockUps:<div><div>1. Construct Test mockups 2 x 2 m minimum area mockup sample of each paving pattern, texture, colour, and or edge condition shown on Drawings for approval prior to paving works. Mock-up will be used to:<div><div>1. Judge minimum acceptance standard for all paving workmanship, substrate preparation, operation of equipment and material application.</div><div>2. To determine surcharge of bedding layer, joint sizes, lines, laying patterns, colours and texture for compliance with performance requirements. Final Compaction as approved by Engineer.</div><div>3. Approved mockup may not remain as part of finished work.</div></div></div></div><div>3. Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer’s installation instructions and manufacturer’s warranty requirements.</div></div></div><div>4. A manufacturer’s warranty is required for the unit concrete pavers specified in this section.</div></div> <div><div>1.8. DELIVERY, STORAGE, &amp; HANDLING</div><div>1. Pavers shall be delivered to and stored at the work site on pallets, metal strapped, or wrapped in recyclable materials by the paver manufacturer.</div><div>2. Sand shall be protected against rain, snow, and standing water when stockpiled on site.</div><div>3. Protect all existing items to remain due to equipment and material storage. If damaged, restore to original condition unless specified otherwise at no cost to owner. Notify the Consultant immediately if any damage occurs.</div><div>4. Coordinate paving schedules to minimize interference with normal use of premises.</div></div> <div><div>1.9. WASTE MANAGEMENT AND DISPOSAL</div><div>1. Separate and recycle waste materials in accordance with Section 01 74 21 Construction/Demolition Waste Management and Disposal. Fold up metal banding, flatten and place in designated area for recycling.</div></div> <div><div>2. PRODUCTS</div><div>2.1. CONCRETE PAVERS</div><div>1. Uniform in material colour, size, and from one manufacturer to CSA A231.1 Precast Concrete Paving delivered on site with palette and protective wrapping. Pigment in concrete pavers: to ASTM C979.</div><div>2. Concrete Paver Types: Refer to Drawings for type, locations, and patterns:<div><div>1. Paving Type 1: Techno-Bloc Hexa 100, 3 15/16” x 9” x 15 3/16”, 40% Beige Cream and 60% Greyed Nickel</div><div>2. Paving Type 2: Concrete Step Stone. Manufactured by Abbotsford Concrete Products. Random size.</div></div></div></div> <div><div>2.2. BEDDING SAND, GRAVELS AND JOINT MATERIAL</div><div>1. Bedding Sand: clean, sharp, natural or manufactured from crushed rock or gravel, free from deleterious foreign matter or soluble salts. Do not use limestone screenings or stone dust.</div><div>2. Joint Sand filling shall be Polymeric Joint Sand, Techni-Seal HP Polymeric Sand or approved alternative. Joint sand must be free of soluble salts or contaminants that contribute to efflorescence.</div><div>3. Gradation: to CSA A23.1, Table 4 Grading Limits for Fine Aggregate, and CSA A179 as follows:</div></div> <table><tr><th>Sieve Designation</th><th>% Passing for Bedding Sand</th><th>% Passing Joint Sand</th></tr><tr><td>10 mm (No 2)</td><td></td><td></td></tr><tr><td>5 mm (No 4)</td><td>95 100</td><td>100</td></tr><tr><td>2.5 mm (No 8)</td><td>80 100</td><td>95 100</td></tr><tr><td>1.25 mm (No 16)</td><td>50 85</td><td>70 100</td></tr><tr><td>0.630 mm (No 30)</td><td>25 60</td><td>40-75</td></tr><tr><td>0.315 mm (No 50)</td><td>10-30</td><td>10-35</td></tr><tr><td>0.160 mm (No 100)</td><td>2-10</td><td>2-15</td></tr></table> <div><div>4. Granular base for roof paving to be washed bird’s eye gravel. See Section 32 14 43 -Rocks, Gravels, Stone.</div></div> <div><div>2.3. SUB-BASE MATERIALS</div><div>1. Base and sub-base materials shall be specified under Excavation, Backfill, Compaction and Grading, and shall be approved by Engineer.</div></div> <div><div>2.4. EDGE RESTRAINTS</div><div>1. All edges of unit paving shall be restrained. Type of edge restraint shall be approved and locations noted on Drawings. Pavers shall be restrained to withstand heavy vehicular traffic according to manufacturers’ specification and as shown on Drawings.</div><div>2. Structural Curb:<div><div>1. Concrete curb: As indicated on Drawings</div><div>2. Concrete walls: As indicated on Drawings</div><div>3. Mortar: Type 10 Portland cement mixed with 3:1 sand to cement.</div></div></div><div>3. Aluminum edge restraint.<div><div>1. Cleanline, Permaloc. 8” Height.</div><div>2. Anchoring: to manufacturer’s instructions.</div></div></div></div> <div><div>2.5. DRAIN MAT, ROOT BARRIER, PROTECTION BOARD ASSEMBLY</div><div>1. As per Architectural Drawings.</div></div> <div><div>2.6. FILTER FABRIC</div><div>1. Heat bonded woven polypropylene fabric: Mirafi P 150 , Terrafix 270R, or Nilix C-14 (or approved alternative).</div></div> <div><div>2.7. PADS AND SPACERS (if applicable)</div><div>1. High density polyethylene pads 3/8” (10mm) thick with ridges at quarter points to provide equal joints between pavers as supplied by Envirospec , Wegu Terring, or approved alternative.</div></div>	Sieve Designation	% Passing for Bedding Sand	% Passing Joint Sand	10 mm (No 2)			5 mm (No 4)	95 100	100	2.5 mm (No 8)	80 100	95 100	1.25 mm (No 16)	50 85	70 100	0.630 mm (No 30)	25 60	40-75	0.315 mm (No 50)	10-30	10-35	0.160 mm (No 100)	2-10	2-15	<div><div>3. EXECUTION</div><div>3.1. MANUFACTURER’S INSTRUCTIONS</div><div>1. Compliance: comply with manufacturer’s written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.</div></div> <div><div>3.2. STRUCTURAL BASE</div><div>1. Verify that structural surfaces conform to levels and compaction required for installation of unit pavers. If discrepancies occur, notify Consultant and do not commence work until instructed by Consultant. Base Course shall be well drained and compacted to 98% Standard Proctor Density or as directed by Engineer. Compaction testing to be conducted by qualified Testing Agency.</div><div>2. Verify that top of subgrade is uniform to within plus or minus 0.5% grade or within 1” (25mm) of desired grade and cross section.</div><div>3. Ensure that subgrade is not frozen or standing water is present during installation. Unsuitable material shall be removed and replaced with approved fill and or subbase material.</div><div>4. Sub-base shall not be less than 6” (150mm) in thickness for pedestrian areas unless otherwise shown on Drawings and shaped to a uniform surface within +/- 3/8” of desired grade and cross section.</div><div>5. Sub-base material shall be spread in layers not exceeding 6” (150mm) loose depths, brought to optimum moisture content and compacted to 98% Standard Proctor density as determined by compaction control tests conducted by a qualified Testing Agency.</div><div>6. Sub-base shall be inspected and have written approval by the Consultant prior to sand and paver installation.</div></div> <div><div>3.3. STRUCTURAL CURBS AND EDGE RESTRAINTS</div><div>1. Install continuous edge restraint at edges of unit pavers. Verify that structural curbs and edge restraints conform to elevations and alignments required for installation of unit pavers. If discrepancies occur, notify Consultant and do not commence work until instructed by Consultant.</div></div> <div><div>3.4. PLACING OF BEDDING MATERIAL</div><div>1. Ensure bedding material is not saturated or frozen at all times until installation is complete.</div><div>2. Spread and screed material on structural surface to achieve minimum 19mm (¾”) to maximum 38mm (1-1/2”) compacted thickness after vibrating pavers in place. Do not use joint sand for bedding sand.</div><div>3. Do not disturb screeded material or use bedding material to fill depressions in structural surface.</div></div> <div><div>3.5. INSTALLATION OF CONCRETE PAVERS</div><div>1. Lay pavers to patterns indicated on Drawings on sand levelling course on approved compacted granular base course. Joints between pavers shall not exceed 1/8” (3mm) or as recommended by Manufacturer.</div><div>2. Paver to ensure radii, joint space standard, and to ensure ½ stagger pattern where possible and as determined in mock-up. Note: minimum ½ full size standard pieces at ends and edges.</div><div>3. Pavers shall be cut using an approved concrete saw to a straight even surface without cracks or chips. Guillotine cuts are not permitted. Fractured or broken pavers will not be accepted.</div><div>4. Place paver pallets and other materials without exceeding load bearing capacity, or otherwise detrimentally affecting installations.</div><div>5. Tamp and level pavers to their final level by 2 or 3 passes with low amplitude, high frequency plate compactor capable of at least 22 kN centrifugal compaction force. Use a minimum 19mm thick plywood or neoprene pad under plate compactor to vibrate pavers into bedding sand, to correct elevations and gradients. Do not tamp restrained edges.</div><div>6. Sweep jointing sand material over paver surface and vibrating pavers with plate compactor. Continue application of joint material and vibrating of pavers until joints are full. Do not vibrate within 1 m of unrestrained edges of pavers. Leave a thin layer if sand on the pavers until occupancy.</div></div> <div><div>3.6. ALIGNMENT CONTROL</div><div>1. Final surface elevations not to exceed plus or minus 1/4” (6 mm) under 16’ (4.8 m) long straightedge.</div><div>2. Surface elevation of pavers: 1/4” inch or 6 mm above adjacent drainage inlets, concrete collars or channels. Ensure conformance of final elevation.</div></div> <div><div>3.7. CLEANUP</div><div>1. Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.</div></div> <div>***END OF SECTION***</div>
Sieve Designation	% Passing for Bedding Sand	% Passing Joint Sand																								
10 mm (No 2)																										
5 mm (No 4)	95 100	100																								
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SECTION 32 91 19  
GROWING MEDIA AND FINISHED GRADING

1. GENERAL  
1.1. NOTES TO THE CONSULTANT

1. The Consultant's own specifications shall form part of the Contract Documents and are to be read, interpreted, and coordinated with all parts.

1.2. SCOPE

1. This guideline addresses the materials, methodology and services necessary for complete installation of growing media and finish grading;  
2. This section of the Specifications forms part of the Contract Documents and is to be read, interpreted, and coordinated with all other parts;  
3. Convene pre-installation meeting one week prior to beginning work;  
4. Verify project requirements prior to attending the meeting.

1.3. SECTIONS INCLUDES

1. Supply labour, materials, equipment necessary for growing medium placement, including amendments, preparation of existing grades, placement, and finish grading as specified herein and as indicated on Drawings.

1.4. DEFINITIONS

1. For the purpose of this guideline, the term "Growing Medium" shall mean a mixture of mineral particulates, microorganisms and organic matter which provides suitable medium for supporting intended plant growth. Commercially available landscape soils or native site soils, if proposed for use, will also be subject to landscape soil assessment analysis.  
2. "On-Site Topsoil" refers to topsoils (native or commercially processed) on location at project site, or reallocated, stockpiled and transported from elsewhere. On-Site Topsoil may be excavated, stockpiled, protected and amended in-situ as required by the project. If proposed for project use, On-Site Topsoil will also be subject to landscape soil assessment analysis and amendment. "Compost" refers to mixture of soil and decomposing organic matter used as fertilizer, mulch, or soil conditioner containing 40% or more organic matter. Product must be sufficiently decomposed (i.e. stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below (25:50), and contain no toxic or growth inhibiting contaminants.  
3. "Soil Consultant" refers to the professional Agrologist with training in landscape soil analysis and rough grading rough grading interpretation, who is responsible for laboratory services and recommendations.  
4. "Contractor" refers to the Contractor responsible for the Landscape Works on a project, whether this is the General Contractor, a Landscape Contractor, or a Landscape Sub-Contractor, or a combination of Contractors and Sub-Contractors.  
5. Compost:  
1. Mixture of soil and decomposing organic matter used as fertilizer, mulch, or soil conditioner.  
2. Compost is processed organic matter containing 40% or more organic matter.  
3. Product must be sufficiently decomposed (i.e. stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below (25:50), and contain no toxic or growth inhibiting contaminants.

1.5. DEFINITIONS

1. Latest Edition of British Columbia Landscape Standards (BCSLA) and Canadian Nursery Landscape Association (CNLA).  
2. Canadian System of Soil Classification

1.6. SUBMITTALS

1. Provide Soil Sample for approval of Consultant complete with soil analysis.

1.7. WASTE MANAGEMENT AND DISPOSAL

1. Separate waste materials for reuse and recycling. Handle and dispose of hazardous in accordance with Regional and Municipal regulations. Dispose of unused fertilizer and unused anti desiccant at official hazardous material collection site.  
2. Divert unused wood and mulch materials from landfill to composting facility.

1.8. SCHEDULING

1. Obtain approval from Consultant of schedule 7 days in advance of shipment of plant material.  
2. Provide Scheduling and timing of all planting works as specified and shown on Drawings, including confirmation of the lead time required prior to planting to obtain, grow, develop harvest, and/or transplant. These lead times shall be fully incorporated into the Contractor's Construction Schedule.  
3. Schedule to include:  
1. Date for selection of representative sample at source by the Consultant  
2. Quantity and type of plant material  
3. Shipping dates and arrival dates on site  
4. Planting Dates

4. Scheduling to be organized to ensure a minimum duration of on-site storage of plant material, minimum movement and compaction of growing medium, and prompt mulching and watering operations.  
5. The contractor shall submit a plan for delivery, loading, stockpiling and placement of stockpile. The plan shall include locations of all soil and bulk material stockpile areas and consideration of vehicle and pedestrian traffic. No work shall proceed until after this plan has been approved by the consultant.

1.9. EXISTING CONDITIONS

1. On-site topsoil designated to remain undisturbed in-situ, must be assessed, tested, amended, protected from compaction and weed infestation, and otherwise managed for the duration of the project as required and/or directed according to project drawings, specifications, soil test results or as directed by the Project Landscape Architect;  
2. On-site topsoil infested with pernicious perennial weeds such as horsetail, vetch or morning glory etc. shall be excavated to depth necessary to prohibit future recurrence. Alternative remedial strategies must be presented in writing and reviewed and approved by the Project Landscape Architect;  
3. On-site topsoil intended for use as growing medium, or as component of growing medium, shall be protected against contamination from invasive or pernicious weeds, insect pests, plant pathogenic organisms and other extraneous and non-organic materials and environmental toxins or contaminants.  
4. Onsite subsoil must not be used as a component of growing medium unless endorsed by Soil Consultant and whereby it can be amended to meet requirements of growing medium.  
5. Following rough grading, examine existing sub-grade conditions and signify acceptance in writing to the Project Landscape Architect.  
6. Ascertain the size and location of all existing services and sub-grades prior to the work.  
7. Repair any damage resulting from failure to exercise such precautions immediately at no cost to the owner.

1.10. SOIL TESTING

1. Advise Project Landscape Architect of sources of Growing Medium and manufactured topsoil to be utilized with sufficient lead time for testing (Minimum 7 days in advance).  
2. The Contractor who is responsible for supply of growing media and/or conservation of on-site topsoil should be responsible for the testing of the growing media. Testing shall be carried out by Pacific Soil Analysis Inc., at #5 - 11720 Voyager Way, Richmond, B.C. (Ph. 604-273-8226), or an equal approved prior to closing of tender.  
3. Separate tests and analysis shall be conducted for the following:  
1. All distinct types of growing media used on the project including imported soil, retained on-site topsoil, relocated or mixed on-site media, any other distinct formulated soil substitute or mixture.  
2. All media formulated or designated for a special purpose including but not limited to planting, lawns, sports fields, on-slab, extensive or intensive green roofs, living walls, structural soils for street tree planting.  
4. The test shall determine the characteristics and quantity of the amendments to be used to bring the growing media and/or on-site topsoil to a satisfactory chemical and physical condition.  
5. Sand shall be tested for sieve size analysis.  
6. Before adjusting the growing media and/or on-site topsoil as required by the soils testing, submit soils analysis to the Project Landscape Architect for approval. The Project Landscape Architect shall confirm in writing the growing media and/or on-site topsoil amendments and fertilizer to be applied. The Contractor is responsible for amendment of the growing media and/or on-site topsoil as per the confirmed recommendations. Soil analysis shall include reasons for any rejection of submitted soil, required amendments such as sand, organic matter, fertilizers and lime to achieve adequate growing conditions. All submitted soil analysis results must be dated and include project name and submitted to Consultant for approval prior to commencing work.  
7. Soil testing must be completed and recommendations approved by Project Landscape Architect prior to installation of any plant material. Failure to do so may result in the rejection of the growing media and/or retained topsoil, removal of growing media or retained topsoil from the site at no cost to the owner, and replacement with approved growing media as required. Advise Consultant of sources of Growing Medium and manufactured topsoil to be utilized with sufficient lead time for testing (Minimum 7 days in advance).  
8. Soil analysis shall include reasons for any rejection of submitted soil, required amendments such as sand, organic matter, fertilizers and lime to achieve adequate growing conditions. All submitted soil analysis results must be dated and include project name and submitted to Consultant for approval prior to commencing work.  
9. The Contractor shall guarantee that the Growing Medium submitted for laboratory analysis will be representative sample of the soil delivered to the site. The Contractor shall provide receipts (upon request) to the Consultant. Failure to have the Growing Medium tested as indicated may result in the removal of substandard soils at Contractor's expense.  
10. The Contractor shall submit to the consultant a copy of growing medium analysis from one of the specified laboratories or a pre-approved alternate.

11. The analysis shall be of tests done on the proposed growing medium from samples taken at the supply source within three weeks immediately prior to soil placement.  
12. Results of these tests shall be presented to the consultant for review and approval prior to any growing medium is delivered. Any placed prior to approval of the soil will result in the rejection and subsequent removal of material by the contractor at no cost to the owner.  
13. The growing medium analysis shall:  
1. Measure all of the called out in this specification for each type of growing medium specified.  
2. Outline the testing laboratory's recommendations for amendments, fertilizer and other required modifications to make the proposed growing medium meet the specifications.  
3. Urban Agriculture Growing Medium: Submit to the Owner's Representative confirmation that that the organic material component of the Urban Agriculture Growing medium is derived from an organic source free of heavy metals, contaminants, animal or plant chemical additives or supplements. The confirmation shall be in the form of a letter on company letterhead or written confirmation from provincial or regulatory agency.  
4. Once all soil types have been tested the contractor shall submit to the consultant a physical sample in sealed (minimum 1 litre) containers for each soil type specified. Samples must be submitted at least twenty-one (21) days before placement of growing medium to allow for evaluation of samples and testing for noxious weed content by Owner. Owner's Representative will advise of test results. Each sample shall be a composite of at least three samples from the proposed source and shall be at least one (1) litre in volume.  
5. Samples shall be clearly marked with the date, project name, sample name and supplier name and telephone number.

1.11. QUALITY ASSURANCE

1. The Contractor shall guarantee that the growing medium submitted for laboratory analysis is a representative sample taken from the growing medium and delivered to the site.  
2. Failure to test and provide appropriate documentation of test results may be considered grounds for rejection of a proposed growing medium and may result in removal and replacement of the rejected material at the Contractor's expense.  
3. The contractor will contact the consultant to review the site for growing medium placement at the following stages:  
1. Existing Site: To review existing conditions prior to any works that will modify the existing soil.  
2. Excavation: To review each area prior to excavation.  
3. Utility Review: After BC One Call has been initiated and contractor has obtained all relevant As-Built drawings showing existing utilities and after those utilities have been flagged or otherwise clearly marked on site;  
4. After installation of utilities as per the consultants' drawings;  
5. Mock-Up: To review a 8x8m soil mock-up area that constitutes a representative sample for each soil type called out in the specifications;  
6. Upon completion of soil placement;  
7. Upon completion of all installation of all lawns, planting areas, but prior to installation of mulch.  
4. The contractor shall prepare the site and place growing medium such that the final product matches the standard set by the samples submitted, within a range of variation that may reasonably be expected with good quality control while incorporating the recommendations for amendment by the testing laboratory.  
5. The consultant may request an independent testing laboratory to ascertain compliance with this specification and to recommend modifications to make the growing medium meet the requirements of this specification. The costs of replacing or amending the growing medium shall be borne entirely by the contractor should the independent testing determine any of the following conditions exist:  
1. That any areas of growing medium did not meet the criteria of the specifications;  
2. That any areas of growing medium were deemed to not be consistent with the submittals and samples provided by the contractor and approved by the consultant;  
3. If the growing medium was placed during times of poor weather;  
4. If the contractor failed to alert the consultant of poor drainage or other problems associated with sub base;  
5. Growing medium has been disturbed or damaged throughout the construction process such that it's structure no longer meets these specifications.  
6. All areas to be graded to the contours and elevations indicated on the Contract Documents. Ensure positive drainage.  
7. Finish grade shall be to within 15mm of proposed grades within 3.0m of any adjacent fixed elevation and to within 15mm of proposed grades over any other 3.0m length. Finish grades shall not be uniformly high or low.

1.12. REVIEW

1. Verify the size, location and depth of all existing site services and sub-surface utilities prior to commencement of the work. Repair all damage as result of failure to perform adequate review at no cost to the owner.  
2. Notify Owner's Representative when the site is prepared for growing medium placement. Do not place growing medium until subgrades have been reviewed and approved.  
3. Provide at least two days (48 hours) notice in advance of each required reviewed.

1.13. WASTE MANAGEMENT AND DISPOSAL

1. Divert unused soil amendments from landfill to official hazardous material collections. Do not dispose of unused soil amendments into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

2. PRODUCTS

2.1. MATERIALS

1. Growing Medium: shall mean a mixture of mineral particulates, micro organisms and organic matter which provides suitable medium for supporting intended plant growth. Soil texture is based on the Canadian system of Soil Classification.  
2. On site-imported soil shall be friable "A Horizon" topsoil to the requirements of the B.C. Landscape Standard, stripped and stockpiled on site in an approved location.  
1. Mineral particle sizes shall be within the following ranges by weight:  
1. 100% shall pass a 10 mm (3/8") sieve.  
2. Maximum of 10% shall pass a #200 sieve. (Silt and clay)  
2. Soil shall be of a sandy loam or loamy sand texture containing between 3% and 15% organic matter (dry weight basis).  
3. Growing Medium shall be free from subsoil, plants or their roots, building materials, wood, non-composted wood, wood waste, woody plant parts, insect pests, plant patronage if organisms, chemical pollutants or substances at levels toxic to plants, stones (in excess of 10mm in maximum dimensions), foreign objects, and other extraneous materials that detract from the desirable physical and chemical properties required for landscape purposes.  
4. All soil supplied is to be free of Neonicotinoid.

2.2. ADDITIVES

1. Supply and handle all additives, such as dolomite, lime, fertilizer, stabilizer, fertilizer and other amendments shall be delivered in standard, sealed, waterproof containers with net weight and product analysis clearly marked on the packaging.  
2. Manure: Well rotted farm animal manure or compost, to the requirements of the BCSLA/BCLNA B.C. Landscape Standard. Animal manures and compost often have excessive levels of water-soluble salts. The growing medium shall be leached via fresh water from the irrigation system or through natural rainfall until an electrical conductivity of 3.0mmho/cm or less is achieved.  
3. Compost: A uniform blend of natural source-separated organic materials, composted such that it is brown-black in colour and has carbon to nitrogen ratio of 25 to 1 or lower, pH 6 to 7. Substantially free from subsoil, pests, roots, wood, construction debris, undesirable grasses or weeds, and seeds or parts thereof. Free from toxic materials, crabgrass, couch grass, equisetum, weeds, and seeds or parts thereof. The Owner does not allow use of any paper fibre amended compost products. Approved Suppliers include Fraser Richmond Biocycle and Stream Organics.  
4. Sand: Approved medium river pump sand, well washed and free of contaminants, chemical and organic matter. Gradation of particle sizes shall fall within the following range ("Percent" to be reported as the mass of the particles whose size is less than the designated sieve opening but greater than the next designated sieve opening):  
1. USBS Sieve Sieve Size Number (mm) for Coarse Sand

USBS Sieve Size Pazing Number (mm)	Percent
3/8" (9.5mm)	100
No 4 (4.75mm)	95-100
No 8 (2.36mm)	80-100
No 16 (1.18mm)	50-85
No 30 (.60mm)	25-60
No 50 (.30mm)	10-30
No 100 (.15mm)	2-10
No 200 (0.75)	2-5

2. Sand shall have a saturated hydraulic conductivity between 100 mm. and 300 mm. per hour. Test conditions shall be for saturated sand, 15 blows compaction. Sand shall have:  
1. Organic content  
2. Water Soluble Salt content Ph of between < 0.5% by weight. < 0.5mmhos/cm 5.0 and 7.0.  
3. Available copper, zinc and manganese following acid digest test in 0.1N HC1 and shaken for 1/2 hour shall be less than 25 PPM when analysed by atomic absorption spectroscopy.  
5. Peat moss: Is not to be used.  
6. Wood Residuals: Content of wood residuals such as fir or hemlock sawdust shall not cause a Carbon to Nitrogen ratio higher than 25:1. Cedar or redwood sawdust shall not be present in the growing medium mix.

7. Dolomite Lime: Approved commercial brands for horticultural purposes, coarsely ground; containing not less than 20% calcium by weight. Provide product literature that meets the requirements.

2.3. FERTILIZERS

1. Standard commercial brands, meeting the requirements of the Canada Fertilizer Act, packed in waterproof containers, clearly marked with the name of the manufacturer, weight and analysis.  
2. Generally Fertilizers must be those fertilizers specified in the soils analysis report/ recommendations. Contractor shall not make any substitutions without prior written approval from Owner's Representative.

2.4. MATERIAL TOLERANCES:

1. Samples of growing medium taken just before planting shall meet the properties set out in the tables below.  
1. The following charts are a typical guide to growing medium composition. The consultant retains the right to approve or reject any growing medium based on the soil analysis. Nutrient requirements and deficiencies shall be prepared from Compost Materials, Sand and other Soil Amendments as required to meet the specifications herein.  
2. Nutrient Requirements and deficiencies shall be prepared from Compost Material, Sand and other Soil Amendments as required to meet the specifications herein.  
3. Nutrient requirements shall meet the CSLNA Landscape Standard Growing Medium requirements for Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, sulfur and micronutrients present in balanced ratios to support germination and/or establishment of intended vegetation.  
4. Growing Medium shall not contain toxic substances or growth inhibiting materials. If unexplained plant loss occurs before the Warranty Period expires, soil will be tested for toxicity. If toxicity is determined, the Contractor will be responsible for replacement of affected plant material and soil, at no cost to the Owner.

2.5. SOIL TYPES

1. Tree and Shrub Areas (Planting Beds), Non-Irrigated to City of Vancouver Standards:  
1. Boron: the concentration in the saturation extract shall not exceed 1.0 ppm  
2. Sodium: the sodium absorption ratio (SAR) as calculated from analysis of the saturation extract shall not exceed 8.0  
3. Shrub Areas (Planting Bed) growing medium shall consist of the following AFTER MIXING (% BY DRY WEIGHT):  
4. All shrub areas shall meet or exceed City of New Westminster Standards, as per the following soil composition Table:

TEXTURE: Particle Size Classes By The Canadian Soil Classification, And Other Parameters	PERCENT OF Dry Weight of Mineral Fraction (% UNO)
GRAVEL greater than 2mm less than 25mm	0%
SAND greater than 0.05 less than 2mm	80-88%
SILT Greater than 0.002mm less than 0.05mm	10-35%
CLAY less than 0.002mm	5-15%
SAND percent by dry weight	30-60%
FINES: SILT AND CLAY	40% max
ORGANIC CONTENT percent by dry weight	12-20%
POTASSIUM (K) ppm	2114
PHOSPHOROUS @ ppm	443
ACIDITY pH	4.5 – 6.5 pH
C/N RATIO	20:1-10:1
NITROGEN (N) ppm	2
DRAINAGE minimum saturated hydraulic conductivity (cm/hr)	2.0 (cm/hr)
SAR	2.34%
Sodium Absorption Level	
Max Particle Size	100% Passing 0.5" Sieve

2. Tree and Shrub Areas (Planting Beds), For Level 1, "Well Groomed" Areas On Grade:  
1. As per the CSLA Standard, Growing Media for Level 1, Well Groomed Areas, 1L:  
2. All shrub areas shall meet the following soil composition Table:





TEXTURE: Particle Size Classes By The Canadian Soil Classification, And Other Parameters	PERCENT of Dry Weight of Mineral Fraction (% , UNO)
GRAVEL greater than 2mm less than 25mm	0%
SAND greater than 0.05 less than 2mm	50-75%
SILT Greater than 0.002mm less than 0.05mm	10-25%
CLAY less than 0.002mm	0-20%
FINES: SILT AND CLAY	40% max
ORGANIC CONTENT percent by dry weight	3-10%
ACIDITY PH	4.5 – 6.5 pH
DRAINAGE	Percolation shall be such that no standing water is visible 60 minutes after at least 10 minutes of moderate or heavy rain.

3.

As per the CSLA Standard, Growing Media for Level 1, Well Groomed Areas, 1L:

3.

Tree and Shrub Areas (Planting Beds), For Level 1, “Well Groomed” Areas On Slab:

1.

As per the CSLA Standard, Growing Media for Level 1, Well Groomed Areas, 1L:

2.

All shrub areas shall meet the following soil composition Table:

TEXTURE: Particle Size Classes By The Canadian Soil Classification, And Other Parameters	PERCENT of Dry Weight of Mineral Fraction (% , UNO)
GRAVEL greater than 2mm less than 25mm	0%
SAND greater than 0.05 less than 2mm	50-75%
SILT Greater than 0.002mm less than 0.05mm	10-25%
CLAY less than 0.002mm	5-10%
FINES: SILT AND CLAY	35% max
ORGANIC CONTENT percent by dry weight	3-10%
ACIDITY PH	4.5 – 6.5 pH
DRAINAGE	Percolation shall be such that no standing water is visible 60 minutes after at least 10 minutes of moderate or heavy rain.

3.

As per the CSLA Standard, Growing Media for Level 1, Well Groomed Areas, 1L:

4.

Organic Material (urban agriculture):

1.

Shall be derived from an organic source free of sewage biowaste, heavy metals, contaminants, animal or plant chemical additives or supplements.

2.

Shall be fully composted material that does not contain cedar or redwood bark or wood, black/brown in colour.

3.

The organic component shall not contain mushroom manure compost or mushroom starter.

5.

Engineered (Structural) Soils:

1.

Base Ratio of Materials

1.

4m3 of aggregate stone

2.

1.25m3 of growing medium

3.

2kg of stabilizer as per specifications

2.

Combine aggregate, growing medium and stabilizer product into a thorough, homogeneous mixture with fine spray of clean, potable water while mixing to activate stabilizer product.

3.

Ensure consistent, even distribution of all components by thorough mixing. The ratio of components will vary and may require adjustment to ensure the soil volume is adequate to fill all voids in the stone.

4.

Do not handle or place engineered soil mix in rain or in freezing conditions.

5.

Place engineered soil in 300mm lifts. Compact each light of structural soil.

6.

Engineered soil shall be moist but not saturated with water when places de. Please and handle material to a void damage to drainage structures, irrigation equipment, sidewalks, concrete structures or pavement.

7.

Installation of engineered soil within .4m of the tree root ball is not recommended. Various techniques/containment's such as reinforced wood boxes, steel boxes and large diameter PVC pipe, have been employed to allow for sand to be installed at the tree location with the compacted engineered soil.

8.

Install filter fabric following approval by the Consultant. Ensure minimum 60cm overlap of all fabric seams and beyond edge of engineered soil.

9.

Place a minimum of 75mm granular base on top of the filter fabrics over the engineered soil layer. Compact granular base as per Section 31 23 01 Excavating, Trenching and Backfilling.
- x

10.

Provide a firm level surface with rock touching rock. Do NOT compact or alter the structure of the Structural Soil. If the Structural Soil arrives wet or excessively dry, or if the rock is smaller than 50mm (2”) in size, the material will be rejected. 80% of the rock shall be (60 - 75mm (2.5 - 3”) in size.

11.

Scarify the bottom of the trench to a depth of 150mm (6”).

12.

If required, install structural filter layer. Ensure a minimum of 60cm overlap of all fabric seams and beyond edge of Structural Soil.

13.

Place minimum 40 cubic meters of Structural Soil per tree, 30 cubic meters if the tree is positioned within a continuous tree trench.

2.5. SOIL DEPTHS

1.

Tree Pit Soil. Minimum 900mm depth. Growing medium as specified in drawings or by proprietary system. If proprietary system, refer to manufacturer's specifications.
2.

Planting Bed Soil. Growing medium minimum 450 mm depth unless specifically called out otherwise in drawings;
3.

Sod soil / Hydroseed Areas (if applicable): Sand base growing medium as specified by turf suppliers, 150 mm min depth.
4.

Raingarden/Infiltration soil as specified, otherwise 450 mm. min.
5.

Berm soil (over slab) as specified in drawings.
6.

Growing medium as spec. 150 mm min depth on lightweight landscape fill 150-900 mm min depth.
7.

Vegetable Garden/Urban Agricultural Planters: Min 600mm depth or as specified by manufacturer.
8.

Trees:

1.

Natural Areas: 2x root ball diameter; min. 300 mm (12”) all sides;

2.

Ornamental Areas and On Slab Conditions: Minimum 900mm depth minimum; min 18” all sides.
9.

Shrubs:

1.

Natural Areas: 300 mm (12 inches)

2.

Ornamental 450 mm (18 inches)
10.

Groundcover:

1.

Min 300mm (12”) depth:
11.

Lawns

1.

Hydroseeding 50 mm (2 inches) minimum.

2.

Seed/Sod Lawn 150mm (6 inches); on slab - 250mm (10 inches)
12.

Structural Soil: Recommend 100/m3 media per tree unless otherwise specified on drawings or in municipal standards.
13.

Boulevard Soil shall be placed at a minimum depth of 300mm in turf areas and 450mm depth in planted areas. Underground utilities and conduits shall maintain their required minimum granular cover as specified by the utility. In these areas, at least 150mm of boulevard growing medium shall be placed over the granular cover.

2.6. TABLE 1: GROWING MEDIUM COMPOSITION TABLES

1.

Growing Medium for Infiltration Gallery

NITROGEN	<1.2%
CARBON: NITROGEN	<30%
ELECTRICAL CONDUCTIVITY	<1.5dS/m max.
ORGANIC CONTENT: percent of dry weight	3-5%
ACIDITY pH	<6-7.5pH
DRAINAGE: minimum saturated hydraulic conductivity (mm/hr)	300mm/hr
LOW FINES	Silt and clay (3% by dry weight)
SAND	92-95% by dry weight
AVAILABLE NUTRIENT TARGET	Phosphorous: 50ppm Potassium 175ppm Calcium: 700ppm Magnesium: 170ppm
DRAINAGE minimum saturated hydraulic conductive (mm/hr)	300mm/hr

2.

Growing Medium for Rain Garden Areas: Sandy Organic Blend

Texture: Particle size classes by percent: dry weight of mineral fraction (as the Canadian soil per BCSCLA Standards) classification, and other parameters	Percent of Dry Weight of Mineral Fraction (% , UNO)
SAND	60-70%
FINES: SILT AND SAND	10-25%
ORGANIC CONTENT percent of dry weight	15-20%
ACIDITY pH	6-7pH
DRAINAGE minimum saturated hydraulic conductive (cm/hr)	2.0 (cm/hr)

2.7. GROWING MEDIUM SHALL BE FREE FROM:

1.

Contamination by excessive weed seeds. The use of herbicides is not permitted. Weed control shall be carried out as required to prevent competition with establishing plant material and to maintain the desired aesthetic. The presence of weeds in planted areas and seeded areas is limited to a maximum of 5% of surface area during the Warranty Period.
2.

Debris and stones over 50 mm (2 inches) diameter.

3.

Course vegetative material, 10 mm (3/8 inches) diameter and 100 mm (4 inches) length, occupying more than 2% of soil volume.
4.

Consistency: friable when moist.
5.

The electrical conductivity of the liquid taken from the soil pH evaluation shall not exceed 1.0 millimhos/cm before additions of fertilizers and/or liming agents.
6.

Mulch:

1.

Minimum 75mm depth finishing mulch to all planted areas (do not use on sodded lawn, seeded areas, rain gardens or veggie garden plots on rooftop) using Answer Garden Products 'Nutri-Mulch' or approved alternative.

2.

Free of all soil, stones, roots or other extraneous matter, and free of weeds, seeds and spores.

2.8. PRODUCT HANDLING AND STORAGE

1.

All materials to be transported, delivered, stored and handled in accordance with BC Ministry of Environment Guidelines.
2.

Stockpile materials in bulk form in paved area(s) approved by Project Landscape Architect. Take all precautions to prevent contamination of basic materials from wind blown soil particles, weed seeds and from insects. Contamination of the ingredients may result in their rejection for use. Where paved surfaces are not available prevent contamination of on-site soil or sub-soil or construction materials.
3.

Store fertilizer and chemical ingredients in the manufacturer's original containers.
4.

Store growing medium and/or excavated topsoil in a dry area or covered and protected from weed infestation, contamination, damage, water saturation, compaction or erosion.
5.

Maintain all stockpiled growing medium, excavated topsoil and all related amendments free of weed infestation prior to installation and throughout the duration of the project.
6.

Stockpile materials in bulk form in paved areas and provide protection by storing under roof or tarpaulins if stored longer than 24 hours. Take all necessary precautions to prevent contamination of component materials from wind blown soils, weed seeds and insects.
7.

While transporting, delivering and storing materials on-site, prevent any form of damage or separation of the materials.

2.9. INSPECTION

1.

The contractor must submit a written soil analysis from Pacific Soil Analysis or approved equal for each planting condition to the landscape architect for final approval at least two weeks prior to installation. No soil shall be delivered to the site without approval from the Project Landscape Architect.
2.

The Project Landscape Architect should be notified prior to soil placement to inspect the growing medium. The contractor shall have samples of all soil types sent to PacificSoil Analysis for testing (See 7.4.3, “Samples”).
3.

Samples

1.

Samples should be submitted for any amendments that are to be used: Sample size will be approximately 2 litres volume and be representative of the stockpile (properly sampled). Samples must be submitted, tested, and approved by the Project Landscape Architect in writing before the growing medium is amended. Failure to do so may result in the rejection of the growing medium, removal of the growing medium from the site at no cost to owner, and replacement with approved growing medium.

2.10. GROWING MEDIA FOR STANDARD APPLICATIONS

1.

All growing media must conform to the Canadian Landscape Standard Current addition as well as the following guidelines and specifications.
2.

The following guidelines apply to standard applications where media are formulated for use on-grade, over sub-soil, and designated for application to on-grade lawns, trees and plantings as per Canadian Landscape Standard, Table 6-2: Properties of Growing Medium for Level 1 “Well Groomed” Area.
3.

Growing medium shall be composed of proportions of mushroom manure or mushroom manure / peat moss mix, silts and clays, and sand, which provides suitable medium for supporting intended plant growth. Amendments shall be required based on the soil analysis.
4.

Growing medium shall be free of pernicious weeds or their roots, sticks, building materials, wood chips, chemical pollutants and other substances at levels toxic to plants, and other extraneous materials which detract from the desirable physical and chemical properties for landscaping purposes. Death of plants during the first year which may be attributed to nematodes or toxic materials in the growing medium did not meet this requirement at the time of installation, and may result in a requirement that the Contractor remove and replace dead plants and faulty growing medium. Excessive growth of weeds (as determined by the Project Landscape Architect) in a growing medium may be an indication that unacceptable levels of weed seeds or weed parts were present in the growing medium at the time of installation. Such a determination may result in a requirement that the Contractor remove and replace all affected medium and/or all weeds and weed roots and reduce the growth of weeds to acceptable levels.
5.

Organic matter: mushroom manure, composts, or mixtures of manure, compost or peat will be considered for organic matter amendment. Provide samples to Pacific Soil Analysis (or pre-approved equal), for testing and approval. Approved sample shall be standard throughout.

6.

Pump river sand: sand shall be pumped from a river and free of salt, debris, weeds and toxic chemicals. Sand shall be minimum 50% medium (< 0.5 mm and > .25 mm). Provide sample to Pacific Soil Analysis (or pre-approved equal) for inspection and approval. Approved sample shall be standard throughout. Sand must be mixed into growing medium prior to placement. Rototilling of sand into installed growing medium is not acceptable.
7.

Growing medium shall require not more than 0.5 kg / sq. m. (100 lb. / 1,000 sq. ft.) of dolomite lime to reach the required pH level.
8.

Organic content shall be within the ranges as per Canadian Landscape Standard, Table 6-2: Properties of Growing Medium for Level 1 “Well Groomed” Area, for the intended application. This requirement may be met by mixing growing medium components or by topdressing and Rototilling in an approved type of organic matter, based on the recommendation from the soil testing laboratory. (See Section 32 93 00 Plants, 3.6.2 - Fertilizer Application and Soil Amendments).
9.

Drainage of growing medium can be measured only after the growing medium is in place. Mixing and handling of growing medium shall be done in such a manner that the minimum saturated hydraulic conductivity as per Canadian Landscape Standard, Table 6-2: Properties of Growing Medium for Level 1 “Well Groomed” Area is achieved. Areas with compacted soil after installation must be cultivated to restore the uncompacted nature found throughout the project.

2.11. SPECIAL PURPOSE MEDIA FOR NON-STANDARD APPLICATIONS

1.

Special Purpose Media includes all media for specialized application that requires formulation or amendment which diverges from the generalized specifications and tolerances shown above under Growing Media for Standard Applications and Canadian Landscape Standard, Table 6-2: Properties of Growing Medium for Level 1 “Well Groomed” Area. Special Purpose Media may include, but not be limited to: on-slab plantings, modular planters, extensive and intensive green roofs, living walls and street tree plantings in pavement.
2.

Complete specifications and details for Special Purpose Media shall be developed collaboratively with the Project Landscape Architect and the Manager of Exterior Services following the recommendations of a Soil Consultant, Structural Engineer, and related project consultants as required before inclusion in contract specifications and drawings.
3.

Specifications and details for Special Purpose Media shall be reviewed and approved by the Project Landscape Architect;
4.

Structural Soils used for the installation of trees in urban pavements, plazas and streets will be the preferred planting medium for this type of tree planting. Alternatively, Structural Cell technologies and associated medium may be used if authorized by the Project Landscape Architect;
5.

Specifications and details for Specialized Media shall be provided by Project Landscape Architect in contract documents congruent in scope and equivalent with specifications above detailing Growing Media for Standard Applications and Canadian Landscape Standard, Table 2.2.1: Properties of Growing Medium for Level 1 “Well Groomed” Area.

2.12. GROWING MEDIA AMENDMENTS

1.

Required amendments for any landscape growing media or soils, will be the result of:

1.

Recommendations from Soil Consultant made after growing media testing and analysis.

2.

Availability of organic matter amendment.

3.

The presence or absence of an irrigation system.

4.

The following amendment materials may be required to be added to the growing medium to conform to Soil Test findings.

1.

Organic matter: as per 2.5.8 above.

2.

Pump river sand: as per 2.5.6 above.

2.

Fertilizer and Chemical Ingredients: Fertilizer and chemical Ingredients may be required by the Project Landscape Architect based on growing media test results to be added to each growing medium to conform to the growing medium standards specified above, and/or as based on the Soil Testing findings as recommended by Soil Consultant.

1.

Fertilizers must be those detailed in the landscape soil analysis report. The Landscape Contractor will not make any substitutions or change of application rates unless having attained written approval of the Project Landscape Architect.

2.

Fertilizers and liming ingredients will be delivered to the site in their original manufacturer's packaging. All materials will be dry and free flowing to facilitate uniform distribution.

3.

Mulch: refer to Section 32 93 00 Plants.

4.

Drainage and Filter Fabric:

1.

Drain rock: 3/4" - 1" diameter round rock washed free of all fines and organic materials.

2.

Filter fabric: heat bonded, rot-proof, non-woven fabric, or approved equal.
- 2.13. EXCAVATION AND PREPARATION OF SUB BASE
1.

Verify that grades are correct. If discrepancies occur, notify Project Landscape Architect and do not commence work until instructed;

2.

Eliminate uneven areas and low spots, ensuring positive and free drainage.

3.

Excavate trenches in accordance with Municipal requirements for Excavating, Trenching and Backfilling.
4.

Excavate subgrade to establish tree pit/trench as indicated on drawings and as per Section 32 93 01 Planting of Trees, Shrubs and Ground Covers allowing for the design depth and width of the engineered soil mix.

5.

Areas indicated as engineered soil tree pits for street tree planting shall be compacted to the equivalent of 95% Modified Proctor Density and shall be free of stones, debris, root branches, toxic materials building materials, and other deleterious materials to the approval of the Consultant.

6.

Grade soil, eliminating uneven areas and low spots, ensuring positive drainage. Sub-grade elevations shall slope parallel to the finished grades and/or toward subsurface drain lines.

7.

Sub-grade shall be approved by the Consultant prior to the placement of soil.

8.

Confirm location of all existing sub-drain connections to storm sewer and other drainage facilities prior to excavation.

9.

Install sub drains prior to installation of growing medium and ensure all sub drains are reviewed and approved by the Landscape Architect prior to placement of growing medium.

10.

Install irrigation of main lines, if specified, in coordination with installation of engineered soil. Submit schedule for approval by consultant proper to excavation and grading.
- 2.14. PLACEMENT
1.

Commercial processing and mixing of soil components shall be done thoroughly by a mechanized screening process. No hand mixing shall occur unless approved by Consultant.

2.

Notify the Consultant at least forty-eight (48) hours prior to Growing Medium placement for inspection. Place Growing Medium only after Consultant has accepted subgrade.

3.

Do not handle Growing Medium in a wet or frozen condition or in any manner in which structure may be adversely affected. Growing medium whose structure has been destroyed by handling under these conditions will be rejected and shall be replaced by the contractor at no cost to the owner.

4.

Spread topsoil in uniform layers not exceeding 150 mm (6 inches) over unfrozen subgrade free of standing water.

5.

Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials. Remove soil contaminated with calcium chloride, toxic materials and petroleum products. Remove debris which protrudes more than 25 mm above surface. Dispose of removed material off site, at no expense to the owner.

6.

Scarify entire area which is to receive growing medium to depth of 100 mm. Scarify those areas where equipment used for hauling and spreading has compacted soil.

7.

No growing medium shall be loaded, transported or spread when it is so wet that its structure is likely to be altered, or risk of compaction exists.

8.

Spread growing medium with adequate moisture in uniform layers over approved, unfrozen subgrade, where sodding and planting is indicated.

9.

Manually spread growing medium to achieve final grades around trees, shrubs and obstacles.

10.

Increase sand content to 90% in the planting soil below lawns where heavy wear by pedestrians or maintenance equipment is anticipated. Increase sand content in a 5' (1.5m) wide strip at the bottom of swales, banks or other wet areas and as directed by the Consultant. On steep south or west facing banks, reduce sand content in lawns and planting beds to 50 - 60% to improve moisture retention.

11.

During hauling and spreading, the paved roadway and other finished surfaces shall be kept clean and free of all Growing Medium, dust and debris.

12.

Test topsoil for NPK to determine fertilizer requirements and application rates.

13.

Installed growing medium to 25 mm above design grades to allow for settlement 80% compaction as shown on Drawings.

14.

Place the growing medium to the following dimensions (Refer to Canadian Landscape Standard Table 6-5 Current Edition):
- 2.15. FINISH GRADING
1.

Leave surfaces smooth, uniform and firm against deep foot printing.

2.

Fine grade growing medium to 25 mm above finished grades shown on drawings. Eliminate rough spots and low areas to ensure positive drainage. Prepare loose, friable beds by means of cultivation and subsequent raking. Final grades to be approved by Project Landscape Architect prior to further work proceeding.

3.

After planting, spread 75 mm layer of specified approved mulch evenly over all exposed growing medium finished grades, to the satisfaction of the Project Landscape Architect. Refer to Section 32 93 00 Trees, Shrubs and Groundcovers for guidelines on mulch specification.

4.

The desired cross fall through a grass or planted boulevard shall be between 2-6%. If there is settlement over 6mm in the boulevard during the warranty period, the areas must be re-graded and top dressed to prevent a trip hazard.
- 2.16. ACCEPTANCE
1.

Project Landscape Architect will inspect growing medium in place and determine acceptance of material, depth of growing medium and finish grading, prior to plant installation.
- G | ALA  
Gauthier + Associates Landscape Architects Inc.
- |   |                                 |            |
|---|---------------------------------|------------|
| F | Issued for BP                   | 2022-10-12 |
| E | Issued for DP Prior to Response | 2022-04-11 |
| D | Issued for Prior to Response    | 2022-03-04 |
- |                      |           |
|----------------------|-----------|
| 337&339 Keary Street | 2134      |
| Keary Street         |           |
| New Westminster      | June 2021 |
- 
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SPECIFICATIONS
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2.17. SURPLUS MATERIAL

1. Dispose of materials not required by Project Landscape Architect off site, at no cost to owner.

\*\*\*END OF SECTION\*\*\*

SECTION 32 93 10

TREES, SHRUBS AND GROUND COVER PLANTING (LANDSCAPE)

1. GENERAL

1.1. DOCUMENTS

1. This section of the Specifications forms part of the Contract Documents and is to be read, interpreted, and coordinated with all other parts.

1.2. SECTION INCLUDES

1. Labour, materials and installation for plant material, accessories, mulch, planting, tree support, and maintenance.

1.3. RELATED SECTIONS

1. Section 31 23 05 – Site preparation and rough grading  
2. Section 32 91 19 – Growing medium and finish grading  
3. Section 32 92 21 – Hydraulic Seeding  
4. Section 32 94 21 – Landscape Establishment Maintenance

1.4. MEASUREMENT FOR PAYMENT

1. Trees, Shrubs, and Planting will not be measured for payment. Trees, Shrubs, and Planting will be paid for the lump sum price tendered as shown on the Contract Drawings.  
2. Payment includes all preparatory work, supply and planting, mulching, staking, and all related activities necessary to complete the work including Landscape Establishment Maintenance Section 32 94 21 to meet Conditions of Final Completion.  
3. During Landscape Maintenance Periods, the Contractor shall submit monthly written log reports to Consultant for approval prior to payment identifying Maintenance work carried out, development and condition of plant material and identifying preventative or corrective measures required which are outside Contractor's responsibility.

1.5. REFERENCES

1. BCLNA Guide Latest Edition Specifications for Nursery Stock and Specifications for Landscape Construction, and BCSLA Landscape Standards, Latest Edition.  
2. Invasive Plant Council of BC

1.6. DEFINITIONS

1. Mycorrhiza: association between fungus and roots of plants. This symbiosis, enhances plant establishment in newly landscaped and imported soils.  
2. Weeds: Any plant life not specified.  
3. Landscape Maintenance: Refer to Section 32 94 21 - Landscape Maintenance

1.7. SUBMITTALS

1. Submit product data in accordance with Section 01 33 00 Submittal Procedures (if applicable) for review by Consultant:  
1. Materials and resources.  
2. Storage and collection of recyclables.  
3. Construction waste management.  
4. Local/regional materials.  
5. Low-emitting materials.

1.8. QUALITY ASSURANCE

1. Identification of the nursery (or nurseries) and any other sources of planting material for the site planting, including plugs, bulbs and seed. Nursery must have minimum (3) years documented experience specializing in growing and cultivating plants.  
2. Installation Qualifications: Company must specialize in installation and planting with a minimum of (5) years documented experience. Contractor to consider all equipment required for planting including fueling procedures, frequency and emergency spill plans.  
1. Tree Pruning Qualifications: provide proof of Arborist Certification.  
2. Qualified Maintenance Services.  
3. Health and Safety  
1. Submit inspection certificates for each shipment of plant material and fertilizers. Plants to be free of disease or hazardous insects.

1.9. SUBSTITUTIONS

1. Before substitutions of plant material are proposed, documented proof that materials are not available through search on the west coast of Canada and Western United States must be provided. Area of supply shall include but not be limited to the area as mentioned herein.  
2. Contractor may be permitted to suggest substitutions with types and variations possessing the same characteristics. The Landscape Sub-Contractor must request in writing any substitutions of trees at least two (2) months and shrubs and groundcover at least two (2) months prior to planting. All substitutions must be approved by the Consultant.

1.10. DELIVERY STORAGE AND PROTECTION

1. Protect plant material from frost, excessive heat, wind and sun damage during delivery. Replace, at no expense to the Owner, any plant material damaged as a result of the work of this section

1. For bare root plant material, preserve moisture around roots by heeling in or burying roots in topsoil and watering to full depth of root zone.  
2. For pots and containers, maintain moisture level in containers. Heelin fibre pots.  
3. For balled and burlapped and wire basket root balls, place to protect branches from damage. Maintain moisture level in root zones.  
2. Immediately store and protect plant material which will not be installed within 1 hour after arrival at site in storage location approved by Consultant.  
3. Deliver Store and manage hazardous materials in accordance with City of Vancouver standards.  
4. Plant material that has been located by the consultant and tagged for the project is to have the identification tags removed only after inspection and instruction by the consultant after delivery to the site.

1.11. WASTE MANAGEMENT AND DISPOSAL

1. Separate waste materials for reuse and recycling in accordance with City of New Westminster standards.  
2. Place materials defined as hazardous or toxic in designated containers. Handle and dispose of hazardous materials in accordance with Regional and Municipal regulations. Dispose of unused fertilizer and unused anti desiccant at official hazardous material collection site approved by Consultant.  
3. Divert unused wood and mulch materials from landfill to composting facility approved by Consultant.

1.12. SCHEDULING

1. Provide Scheduling and timing of all planting works as specified and shown on Drawings, including confirmation of the lead time required prior to planting to obtain, grow, develop harvest, and/or transplant. These lead times shall be fully incorporated into the Contractor's Construction Schedule.  
2. Schedule to include:  
1. Date for selection of representative sample at source by the Consultant  
2. Quantity and type of plant material  
3. Shipping dates and arrival dates on site  
4. Planting Dates  
3. Scheduling to be organized to ensure a minimum duration of on-site storage of plant material, minimum movement and compaction of growing medium, and prompt mulching and watering operations. Work schedule to be coordinated with other trades on-site.

1.13. WARRANTY

1. The Contractor hereby warrants that plant material as itemized on plant list will remain free of defects in accordance with General Conditions for (1) one full year from date of Substantial Completion to date of Final Acceptance, providing adequate maintenance has been provided.  
2. End-of-warranty inspection will be conducted by Consultant. The Consultant reserves the right to extend Contractor's warranty responsibilities for an additional one year if, at end of initial warranty period, leaf development and growth is not sufficient to ensure future survival.

1.14. MAINTENANCE

1. Specific maintenance requirements shall be as outlined in section 32 94 21 – Landscape Establishment Maintenance. The maintenance period begins at time of Final Completion or when Substantial deficiencies have been corrected to approval of Owner and continues to the end of the defined Maintenance Period, except as noted in this specification. In cases where Landscape Maintenance Period is not required, maintenance shall continue for 45 days after Substantial Completion.  
2. Maintenance includes necessary watering, cultivation, weeding, pruning, mowing, aerating, disease and insect control, protective spraying, replacement of unacceptable material, straightening plants which lean or sag, adjustment of plants which settle or are planted too low, and any other procedures consistent with good horticultural practice necessary to insure normal, vigorous and healthy growth of all work under this contract.  
3. Maintain all accessories such as tree stakes, etc., in good condition including adjustment to keep tree stakes tight and repair or replace all such accessories when required.

1.15. INSPECTION

1. Make all planting available for inspection at one location at least six (6) months for inspection by the Consultant prior to scheduled planting.  
2. Notify the Consultant at the completion of work for an Inspection for Substantial Performance.  
3. All plants are subject to inspection and may be rejected for failure to comply with this specification at any time until Substantial Completion, and the end of the Warranty Period. Rejected material to be replaced and removed from the site at no cost to the Owner.  
4. Final inspection of all planting will be made at the end of the specified Warranty Period. For release from the Contract, all plant materials supplied or transplanted must be alive and in a healthy, satisfactory growing condition at the time of inspection.  
1. The Contractor shall be present during all required inspections as specified, or as required by the Consultant.

2. PRODUCTS

2.1. SUSTAINABLE REQUIREMENTS

1. Materials and products in accordance with BCNLA Standards. Products with recycled content or resource efficiency will be preferred.

2.2. PLANT MATERIAL

1. Type of root preparation, sizing, grading and quality: comply with BCLNA and Canadian Standards for Nursery Stock.  
2. Refer to Plant List on Drawings. Nursery stock shall be true to name, and of the size or grade stated and to the measurements specified in the plant list. Measurements specified are minimum size acceptable for each variety.  
3. Plant material: free of disease, insects, defects or injuries and structurally sound with strong fibrous root system. Root balls shall be free from pernicious perennial weeds.  
4. Plant material: Transplant or root-prune regularly, but not later than one growing season prior to arrival on site.  
5. Bare root stock: nursery grown, in dormant stage, not balled and burlapped or container grown.  
6. Collected stock: maximum 40 mm in calliper, with well developed crowns and characteristically branched; no more than 40% of overall height may be free of branches.  
7. Bulb Plantings – as shown on Drawings (if applicable).

2.3. SOIL AND AMENDMENT MATERIALS

1. Growing Medium to depths as indicated on Drawings. Refer also to Section 32 91 19 - Growing Medium and Finish Grading.  
2. Fertilizer, Peat Moss, Bone Meal, Lime and Mulch: refer to Section 32 91 19 – Growing Medium and Finish Grading.  
3. Soils collected from site for reuse to be tested and approved by Consultant prior to installation.  
4. Water: Potable and free of impurities that would inhibit plant growth.

2.4. ACCESSORIES

1. Wrapping Materials: Burlap and twine fastener.  
2. Stakes:  
1. Wood Tree stakes: dressed 4 sides, 50 mm (2") diam. treated fir stakes, lengths as detailed or approved alternative.  
2. Metal Angle: ½" (13 mm) x 3" (75 mm) long aluminum, as detailed or approved alternative.  
3. Cable, Wire, Eye Bolts and Turnbuckles: Non corrosive of sufficient strength to withstand wind pressures and movement of plant life  
4. Plant Protectors: wire, covered with black rubber to protect plant stems, trunks, and branches.  
5. Mulch: 75mm depth finishing mulch to all planted areas except Seeded areas using Answer Garden Products "Nutri-Mulch", Yardworks "Enviromulch" or approved alternative.  
6. Tree ties: Arbour Tie by Deeproot- or approved alternative. Flat woven Poly Propylene Material. ¾" (20 mm) wide, 544kg Break Strength  
7. Anti dessicant: horticulturally accepted non toxic, non hardening emulsion registered for use under Pest Control.  
8. Adding mycorrhiza during planting operation might improve better root system and provide stress relief in plant growth. It is important that new root growth be in contact with mycorrhiza. Use as recommended by supplier.  
9. Flagging tape: Fluorescent colour to be removed at Substantial Completion.

2.5. SOURCE QUALITY CONTROL

1. Testing is not required if recent tests are available as per Section 32 91 19 – Growing Medium and Finish Grading.

3. EXECUTION

3.1. PRE PLANTING PREPARATION

1. Construction occupational health and safety in accordance with City of New Westminster standards.  
2. Verify that prepared subsoil is ready to receive planting  
3. Ensure plant material is acceptable to Consultant and plant only during the season or seasons normal for such work determined by weather conditions and or as approved by Consultant.  
4. Remove damaged roots and branches from plant material.

3.2. EXCAVATION AND PREPARATION OF PLANTING BEDS

1. Establishment of sub grade for planting beds is specified in Section 31 23 05 Site Preparation and Rough Grading. Subgrade conditions **must** be approved by Consultant prior to planting.  
2. Preparation of planting beds, soil placement and finish grading is specified in Section 32 91 19 Growing Medium Placement and Finish Grading. For individual planting holes:  
1. Stake out location and obtain approval from Consultant prior to excavating. On-site adjustments may be necessary. Contractor to coordinate with Consultant.  
2. Excavate to depth and width as indicated. Remove subsoil, rocks, roots, debris and toxic material from excavated material that will be used as planting soil for trees and individual shrubs. Dispose of excess material.

3. Scarify sides of planting hole and loosen bottom 6" – 12" (150 – 300 mm). Contractor to ensure positive drainage at bottom of planting hole prior to installation – refer to Drawings. Remove ground water which enters excavations prior to planting. Notify Consultant if water source, ground water is present.

3.3. PLANTING

1. For bare root stock, place 50 mm backfill soil in bottom of hole. Plant trees and shrubs with roots placed straight out in hole.  
2. For jute burlapped root balls, loosen and cut away top one third of wrapping and wire basket without damaging root ball. Do not pull burlap or rope from under root ball. Non-biodegradable wrappings must be removed.  
3. Install all plant material vertically in locations as indicated on Drawings. Consultant reserves the right to modify the planting plan and layout if site conditions warrant a change. Orient plant material to give best appearance in relation to structure, roads and walks. Plant in growing medium depth as per Drawings.  
4. Trees and Shrubs:  
1. Backfill soil in 6" (150 mm) lifts. Tamp each lift to eliminate air pockets. When two thirds of depth of planting pit has been backfilled, fill remaining space with water. After water has penetrated into soil, backfill to finish grade.  
2. Form watering saucer as indicated. Water thoroughly. Ensure saturation of root ball.  
5. Ground Covers, backfill soil evenly to finish grade and tamp to eliminate air pockets.  
6. Bulbs (if applicable): plant at a depth of two to three times bulb's width. Add handful of growing medium, compost, and bone meal to the planting hole. Plant up to 4-8 bulbs in random clumps for every square metre prior to seeding.  
7. Water plant material thoroughly. After soil settlement has occurred, fill with soil to finish grade.  
8. Dispose of burlap, wire, tags and labels, and container material off site.  
9. Water plants shall be transplanted into perforated plastic planting baskets lined with filter fabric and mulched with pea gravel as detailed with materials specified.

3.4. FERTILIZER APPLICATION (if applicable)

1. Fertilize as per recommendations based on soil testing. Place planting tablets at the following rates in prepared planting holes. Spread the tablets in each hole before planting trees:

CONTAINER SIZE	TABLET SIZE	TABLETS PER PLANT
	21 g (0.75 oz)	1/25 calliper
#15 / 45 cm (18") Tub	21 g (0.75 oz)	3
#7 / 35 cm (14") Tub	21 g (0.75 oz)	3
#5 / 30 cm (12") Pot	21 g (0.75 oz)	2
#3 / 27 cm (10") Pot	21 g (0.75 oz)	2
#2 / 21 cm (8") Pot	21 g (0.75 oz)	1
#1 / 15 cm (6") Pot	21 g (0.75 oz)	1
2. Other sizes as per manufacturer's recommendations.		

3.5. ACCESSORIES

1. Install trunk protection prior to installation of tree supports when used.

3.6. TREE SUPPORTS

1. Install tree supports as indicated on Drawings. If staking is not specified, it becomes the option of the contractor with the Consultant's approval and if staking is neither specified nor shown on the Drawings then it will be at the discretion of the Contractor.  
2. Use double stake tree support for deciduous trees less than 3 m (10') and evergreens less than 2 m (6-1/2').  
1. Place stake on prevailing wind side and 150 mm (6") from trunk.  
2. Drive stake minimum 1200 mm (4') below finish grade. Ensure stake is secure, vertical and unsplit. Do not penetrate root ball.  
3. Install guying collar approximately 1.2 m (4') above grade.  
4. Thread Type 1 guying wire through guying collar tube. Twist wire to form collar and secure firmly to stake. Cut off excess wire.  
3. Use 3 guy wires and anchors for deciduous trees greater than 10' (3 m) and evergreens greater than 6-1/2' (2 m).  
1. Install guying collars above branch to prevent slipping at approximately 2/3 height for evergreens and 1/2 height for deciduous trees. Collar mounting height not to exceed 8' (2.5 m) above grade.  
2. Guying collars to be of sufficient length to encircle tree plus 2" (50 mm) space for trunk clearance. Thread guy wire through collar encircling tree trunk and secure to lead wire by clamp or multi wraps; cut wire ends close to wrap. Spread lead wires equally proportioned about trunk at 120 degrees.  
3. Install anchors at equal intervals about tree and away from trunk so that guy wire will form 30 degree angle with ground. Install anchor at angle to achieve maximum resistance for guy wire.  
4. Attach guy wire to anchors Tension wire and secure by multi wraps and installing clamps. Install wire tightener ensuring that guys are secure and leave room for slight movement of tree.





5.

After tree supports have been installed, install flagging tape to guys as indicated, remove broken branches with clean, sharp tools.
- 3.7. MULCHING

1.

Ensure soil settlement has been corrected prior to mulching.

2.

Mulch all trees, tree surrounds, shrub and groundcover planting areas to a 3" (75mm) depth.
- 3.8. PRUNING

1.

No pruning of any plant material shall commence without prior approval of Consultant. Refer also to Section 32 93 43 – Pruning. Prune trees and shrubs according to accepted horticulture practises as outlined in the “Pruning Manual, Publication No. 1505,” by Agriculture Canada.

2.

Prune each tree and shrub planted to preserve the natural character of the plant and in a manner appropriate to its particular requirement in the landscape design. Pruning in general shall be heavier on collected than on nursery-grown plants. Remove all soft wood sucker growth and all broken or badly bruised branches with a clean cut.

3.

Prune only with sharp tools. All pruning to be made to the bark branch ridge. No flush cutting or branch stubs to be left.
- 3.9. MAINTENANCE DURING ESTABLISHMENT PERIOD (UNTIL CERTIFICATE OF SUBSTANTIAL IS ISSUED)

1.

Perform following maintenance operations from time of planting to acceptance by Consultant:

1.

Water to maintain soil moisture conditions for optimum establishment, growth and health of plant material without causing erosion.

2.

For evergreen plant material, water thoroughly in late fall prior to freeze up to saturate soil around root system.

3.

Remove weeds and invasive plants monthly.

4.

Replace or re-spread damaged, missing or disturbed mulch.

5.

For non mulched areas, cultivate as required to keep top layer of soil friable.

6.

If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations Obtain product approval from Consultant prior to application.

7.

Remove dead or broken branches from plant material.

8.

Keep trunk protection and guy wires in proper repair and adjustment.

9.

Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.
- 3.10. MAINTENANCE DURING WARRANTY PERIOD

1.

From time of acceptance by Consultant to end of Warranty Period, perform following maintenance operations:

1.

Water to maintain soil moisture conditions for optimum growth and health of plant material without causing erosion.

2.

Reform damaged watering saucers.

3.

Remove weeds monthly.

4.

Replace or re-spread damaged, missing or disturbed mulch.

5.

For non mulched areas, cultivate monthly to keep top layer of soil friable.

6.

If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations. Obtain product approval from Consultant prior to application.

7.

Apply fertilizer in early spring as indicated by soil test.

8.

Remove dead, broken or hazardous branches from plant material.

9.

Keep trunk protection and tree supports in proper repair and adjustment.

10.

Remove trunk protection, tree supports and level watering saucers at end of warranty period.

11.

Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.

12.

Submit monthly written reports to Consultant identifying:

1.

Maintenance work carried out.

2.

Development and condition of plant material.

3.

Preventative or corrective measures required which are outside Contractor's responsibility.

3.11. REPLACEMENTS

1.

Replace each defective or dead plant within 72 hours after notification by the Consultant and continue to replace each plant until it has established itself to the satisfaction of the Consultant.

2.

All required replacements shall be plants of the same size and species as specified on the plant list and shall be supplied and planted in accordance with the Drawings, Specifications and Change Orders thereto or as directed by Consultant.

3.

The cost of replacements resulting from theft, accidental damage, vandalism, carelessness, neglect on the part of others, shall be borne by the Landscape Contractor until the certified date of Substantial Performance.

4.

The cost of replacements resulting from theft, accidental damage, vandalism, carelessness or neglect on the part of others after the certified date of Substantial Performance shall be borne by the Owner.
- 3.12. ACCEPTANCE

1.

Planting will be accepted by Consultant at the end of Maintenance Period provided that all deficiencies have been corrected to the satisfaction of the Consultant. Plant material will be accepted by the Consultant provided that plant material exhibits healthy growing condition and is free from disease, insects, and fungal organisms.

2.

Plant material installed less than 4 days prior to frost will be accepted in following spring, 30days after start of growing season provided that acceptance conditions are fulfilled.

3.13. VERIFICATION

1.

Verification requirements in accordance with Clty of New Westminster standards.

1.

Materials and resources.

2.

Storage and collection of recyclables.

3.

Construction waste management.

4.

Local/regional materials.

5.

Low-emitting materials.

3.14. CLEAN-UP

1.

Remove from the site all pots, cans, surplus materials, and other debris resulting from planting operations. Ensure complete removal of planting tags, labels, strings, or other materials prior to Substantial Completion. Neatly dress and finish all planting areas and flush all walks and paved areas clean to the satisfaction of the Consultant and Owner.
- \*\*\*END OF SECTION\*\*\*
- G | ALA

Gauthier + Associates Landscape Architects Inc.
- F

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- 337&339 Keary Street

Keary Street

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- 2134

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SPECIFICATIONS
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