

ZONING COMPLIANCE LEGEND

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| | PRIMARY TREE 2" CAL MIN FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' / MARSHALL'S SEEDLESS GREEN ASH PSEUDOTSUGA MENZIESII / DOUGLAS FIR QUERCUS GARRYANA / OREGON WHITE OAK THUJA PLICATA / WESTERN RED CEDAR ZELKOYA SERATA 'GREEN VASE' / GREEN VASE SABLEAF ZELKOYA |
| | SECONDARY TREE 1.75" - 2" CAL MIN CALOCEDRUS DECURRENS / INCENSE CEDAR TILIA TOMENTOSA 'STERLING' / STERLING SILVER LINDEN ULMUS X 'FRONTIER' / FRONTIER ELM |
| | ACCENT TREE 1.75" CAL MIN ACER RUBRUM 'BONMALL' / BONMALL RED MAPLE AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' / SERVICEBERRY SINGLE STEM CORNUS KOUSA X NUTTALLII 'XNA-43' / STARLIGHT KOUSA DOGWOOD |
| | STREET TREE 3" CAL MIN ACER GRANDIDENTATUM 'SCHMIDT' TM / ROCKY MOUNTAIN GLOW MAPLE CORNUS KOUSA 'MILKY WAY' / MILKY WAY KOUSA DOGWOOD PARROTTIA TERRACA 'INGE'S RUBY VASE' TM / RUBY VASE PERSIAN PARROTTIA |
| | STORMWATER TREE 3" CAL MIN CORNUS X EDDIE'S 'WHITE WONDER' / EDDIE'S WHITE WONDER DOGWOOD FRAXINUS LATIFOLIA / OREGON ASH FRAXINUS LATIFOLIA / OREGON ASH PSEUDOTSUGA MENZIESII / DOUGLAS FIR RHAMNUS PURSHIANA / CASCARA BUCKTHORN |
| | HIGH SCREEN STANDARD |
| | LOW SCREEN STANDARD |
| | PARKING LANDSCAPE |
| | STORMWATER |
| | GEN. LANDSCAPE REQ. |
| | STREET PLANTING |
| | WAYSIDE |
| | VEGETATION PROTECTION AREA |

ZONING COMPLIANCE

| | |
|---|-------------------------|
| JURISDICTION | WILSONVILLE, OR |
| STORMWATER | CITY OF WILSONVILLE |
| SECTION 4.155(03) | |
| B. OFF-STREET PARKING LANDSCAPE REQS | |
| PARKING AREAS OVER 650 SF, EXCLUDING ACCESS AREAS, LOADING OR DELIVERY AREAS, SHALL BE LANDSCAPED TO 10% MIN. 1 TREE PER 8 STALLS AND ISLANDS SHALL BE AT LEAST 8 FT WIDE. | |
| TOTAL PARKING AREA | 19,884 SF |
| PARKING LANDSCAPE (10% MIN) | 3,160 SF (15.9%) |
| STALLS | 41 STALLS |
| TREES (1 PER 8 STALLS = 6 TREES) | 6 TREES |
| ISLANDS (8 FT WIDTH MIN) | 8 WIDTH |
| SECTION 4.176(02) | |
| C. GENERAL LANDSCAPING STANDARD | |
| WHERE LANDSCAPE IS GREATER THAN 30 FT DEEP, PROVIDE 1 TREE PER 800 SF AND 2 HIGH SHRUBS OR 3 LOW SHRUBS PER 400 SF. | |
| SW DAY ROAD EAST PARKING LOT PERIMETER LANDSCAPE AREA | |
| TREES (1 PER 800 SF = 6 TREES) | 4,770 SF |
| LOW SHRUBS (3 PER 400 SF = 36 SHRUBS) | 8 TREES |
| | 151 SHRUBS |
| SW DAY ROAD PERIMETER LANDSCAPE AREA | |
| TREES (1 PER 800 SF = 2 TREES) | 1,112 SF |
| LOW SHRUBS (3 PER 400 SF = 15 SHRUBS) | 7 TREES |
| | 88 SHRUBS |
| SOUTH SIDE OF LOADING DOCKS LANDSCAPE AREA | |
| TREES (1 PER 800 SF = 3 TREES) | 1,906 SF |
| LOW SHRUBS (3 PER 400 SF = 15 SHRUBS) | 2 TREES |
| | 21 SHRUBS |
| D. LOW SCREEN LANDSCAPING STANDARD | |
| ONE TREE PER 30 LF, 3-FT HT EVERGREEN HEDGE, AND GROUND COVER TO FULL COVERAGE. A 3-FT HIGH MASONRY WALL OR BERM MAY REPLACE THE SHRUBS. | |
| EAST AND SOUTH PERIMETER PERIMETER | |
| TREES (1 PER 30 LF = 3 TREES) | 986 LF |
| SHRUBS (EVERGREEN) | 40 TREES |
| | 3 FT HT |
| E. LOW BERM LANDSCAPING STANDARD | |
| STANDARD NOT FEASIBLE ALONG SW DAY ROAD. | |
| F. HIGH SCREEN LANDSCAPING STANDARD | |
| WAYSIDE PERIMETER | |
| TREES (1 PER 30 LF = 5 TREES) | 127 LF |
| HEDGE (EVERGREEN) | 12 TREES |
| GROUND COVER | 6 FT HT |
| | FULL COVERAGE |
| LOADING DOCKS | |
| TREES (1 PER 30 LF = 2 TREES) | 42 LF |
| ARCHITECTURAL SCREEN WALL | 3 TREES |
| GROUND COVER | 16 FT X 32 FT W |
| | FULL COVERAGE |
| TRASH ENCLOSURE | |
| TREES (1 PER 30 LF = 1 TREE) | 20 LF |
| HEDGE (EVERGREEN) | 1 TREE |
| GROUND COVER | 6 FT HT |
| | FULL COVERAGE |
| SECTION 4.176(03) | |
| LANDSCAPE AREA | |
| TOTAL DEVELOPMENT AREA | 336,851 SF (7.7 AC) |
| LANDSCAPE (15% MIN) | 117,433 SF (34.8%) |
| SECTION 4.176(04) | |
| BUFFERING AND SCREENING | |
| SITE ZONING | INDUSTRIAL |
| ADJACENT ZONING | INDUSTRIAL |
| OUTDOOR STORAGE | NONE |
| SITE ZONING | INDUSTRIAL |
| FENCE | NONE |
| ADDITIONAL SCREENING | N/A |
| SECTION 4.176(06) | |
| A. SHRUBS AND GROUND COVER | |
| SHRUBS (2 GAL MIN) | 2 GAL MIN |
| 9 YEAR GROUND COVERAGE (80% MIN) | 80% MIN |
| TURF OR LAWN (10% MAX) | 0% |
| B. TREES | |
| DECIDUOUS (2-INCH CAL, 10 FT HT MIN) | 2-INCH CAL, 10 FT HT |
| EVERGREEN (12 FT HT MIN) | 12 FT HT |
| C. LARGER PLANT MATERIAL | |
| PROPOSED DEVELOPMENT IS GREATER THAN 50,000 SF IN FOOTPRINT AREA / LARGER THAN 24 FEET IN HT AT MATURITY TREES WILL BE AT LEAST 50% THE HT OF THE BUILDING. DECIDUOUS TREES SHALL BE AT LEAST 10 FEET TALL AND 2-INCH CAL PER. EVERGREEN TREES MUST BE AT LEAST 12 FEET IN HT LARGER PLANT MATERIAL HAS BEEN PROVIDED ALONG THE FRONTAGE. | |
| BUILDING HT | 40 FT |
| SHORTEST MATURE TREE HT (50% OF BLDG HT MIN) | 40 FT (100%) |
| DECIDUOUS TREES (10 FT HT, 2-INCH CAL AT INSTALL) | YES |
| EVERGREEN TREES (12 FT HT AT INSTALL) | YES |
| D. STREET TREES | |
| ARTERIAL TREES SHALL BE 3-INCH CALIPER. STREET TREES SPECIES IS SHORT ENOUGH FOR OVERHEAD ELECTRICAL WIRES AND TOLERANT OF WET SOIL. | |
| E. PLANT SPECIES | |
| THE LANDSCAPE CONSISTS OF EXISTING LANDSCAPING AND/OR NATIVE VEGETATION TO BE PROTECTED AND MAINTAINED DURING CONSTRUCTION AND NATIVE AND DROUGHT TOLERANT PLANT MATERIAL PROVIDED HAS BEEN CROSS-REFERENCED WITH THE CITY FTS LIST OF PROHIBITED PLANT MATERIALS. | |
| F. TREE CREDITS | |
| SEE TREE PLAN SHEET L0.03. NONE REQUESTED. | |
| SECTION 4.176(07) | |
| INSTALLATION AND MAINTENANCE | |
| SEE PLANTING NOTES THIS SHEET. PLANT MATERIAL REQUIRED BY CODE SHALL BE CONTINUOUSLY MAINTAINED BY OWNER AND REPLACED IN KIND WITHIN ONE GROWN SEASON IF DEAD. | |
| IRRIGATION | |
| SEE IRRIGATION NOTES THIS SHEET. PERMANENT SYSTEM TO BE DESIGN BUILD. | |
| SECTION 4.176(09) | |
| PLANT MATERIAL LIST | |
| SEE PLANT SCHEDULE ON SHEET L0.02. | |
| CONDITION OF EXISTING PLANTINGS | |
| ALL VEGETATION IS PROPOSED FOR REMOVAL, OTHER THAN THAT WITHIN THE SIGNIFICANT RESOURCE OVERLAY ZONE. SEE ARBORIST REPORT FOR CONDITION OF EXISTING TREES TO REMAIN. | |
| WATER USAGE | |
| WATER USE CATEGORY | C |
| WAYSIDE AREA (8 TO 13 ACRES) | NATIVE/DROUGHT TOLERANT |
| COFFEE CREEK DESIGN GUIDELINES | |
| WAYSIDE ON ADDRESSING STREET | 736 SF PROVIDED |
| WAYSIDE AREA (8 TO 13 ACRES, 600 SF MIN.) | |
| BUFFER DEPTH ON 3 SIDES (20 FT MIN) | 20-30 LF PROVIDED |
| AMENITIES | |
| SEATING (1 LF PER 40 SF OF WAYSIDE = 18 LF) | 18 LF SEATING |
| PAVED WALKING SURFACE (5 FT MIN) | 7 FT WIDTH |

SHEET INDEX

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| L1.21 | IRRIGATION PLAN - EAST |
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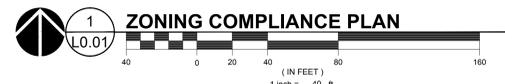
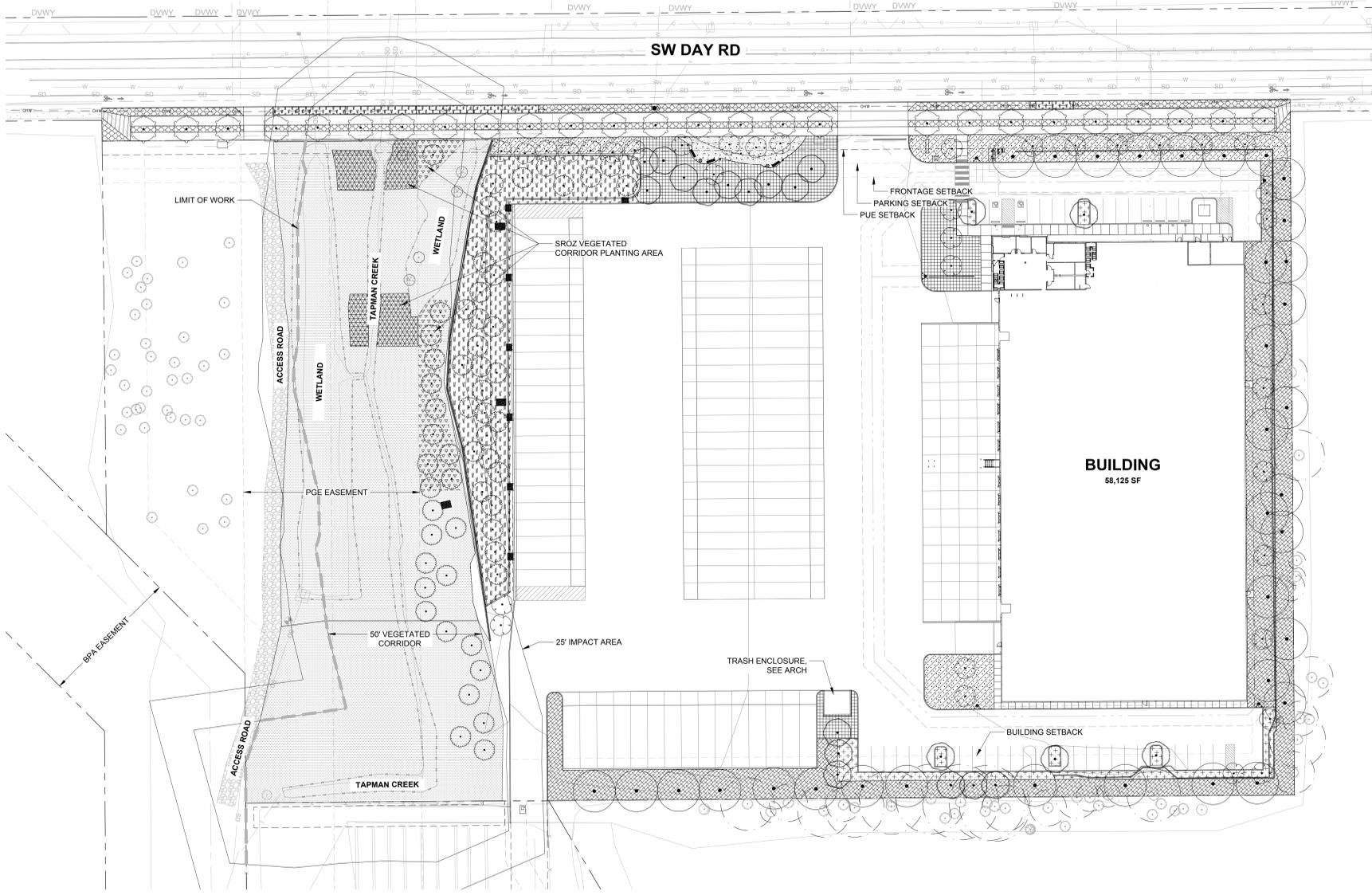
TABLE OF ABBREVIATIONS

| | | | |
|-------|---------------------------------------|------|---------------------|
| ANSI | AMERICAN NATIONAL STANDARDS INSTITUTE | MAX | MINIMUM |
| B&B | BALL AND BURLAP | MIX | MIXTURE |
| CAL | CALIPER | NTS | NOT TO SCALE |
| CONC | CONCRETE | OC | ON CENTER |
| DEG | DEGREE | POC | POINT OF CONNECTION |
| DIAMØ | DIAMETER | PVC | POLY VINYL CHLORIDE |
| DWGS | DRAWING | SCH | SCHEDULE |
| ELL | ELBOW | SF | SQUARE FOOT |
| EQ | EQUAL | SPEC | SPECIFICATION |
| FT | FEET/FOOT | TYP | TYPICAL |
| GAL | GALLON | X | TIMES |
| GALV | GALVANIZED | | |
| HHT | HEIGHT | | |

LANDSCAPE NOTES

- GENERAL**
- CONTRACTOR SHALL CONFIRM ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
 - CALL BEFORE YOU DIG. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF ALL UNDERGROUND UTILITIES AND NOTIFY LANDSCAPE ARCHITECT IF THERE ARE ANY DISCREPANCIES WITH PLANTING ROOT ZONES. TO REQUEST LOCATES FOR PROPOSED EXCAVATION CALL 1-800-332-2344 (OR 811) IN OREGON.
 - NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS WITH EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK.
 - LOCATION OF EXISTING TREES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
 - DAMAGE TO EXISTING CONCRETE CURB, ASPHALT PAVING, OR OTHER STRUCTURE SHALL BE REPAIRED OR REPLACED TO PRE CONSTRUCTION CONDITIONS.
 - CONTRACTOR SHALL COORDINATE WITH THE OWNER ANY DISRUPTION TO VEHICULAR CIRCULATION PRIOR TO COMMENCEMENT OF ANY WORK.
- PLANTING**
- ALL EXISTING TREES, PLANTS, AND ROOTS SHALL BE PROTECTED FROM DAMAGE FROM ANY CONSTRUCTION PREPARATION, REMOVAL OR INSTALLATION ACTIVITIES WITHIN AND ADJACENT TO PROJECT LIMITS.
 - SHRUBS ADJACENT TO PARKING AREAS SHALL BE PLANTED 2 FT MINIMUM AWAY FROM THE BACK OF CURB. SHRUBS AND GROUND COVER ALONG OTHER PAVEMENT EDGES SHALL BE PLANTED A MINIMUM OF ONE HALF THEIR ON CENTER SPACING AWAY FROM PAVEMENT EDGE.
 - ALL PLANT MATERIAL SHALL BE HEALTHY NURSERY STOCK, WELL BRANCHED AND ROOTED, FULL FOLIAGE, FREE FROM INSECTS, DISEASES, WEEDS, WEED ROT, INJURIES AND DEFECTS WITH NO LESS THAN MINIMUM SPECIFIED IN AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1-2004.
 - TREES IN THE RIGHT OF WAY SHALL BE TALL ENOUGH TO BE LIMBED UP TO AT LEAST 8 FT ABOVE DRIVE SURFACE GRADE WHILE MAINTAINING ENOUGH BRANCHES TO SUPPORT HEALTHY GROWTH.
 - DO NOT PLANT TREES ABOVE WATERLINES, UTILITIES, OR OTHER UNDERGROUND PIPING.
 - IF DISTURBANCE IS NECESSARY AROUND EXISTING TREES, CONTRACTOR SHALL PROTECT THE CROWN AND ALL WORK WITHIN THE TREE DRIP ZONE SHALL BE LIMITED TO THE USE OF HAND TOOLS AND MANUAL EQUIPMENT ONLY.
 - REPLACE, REPAIR AND RESTORE DISTURBED LANDSCAPE AREAS DUE TO GRADING, TRENCHING OR OTHER REASONS TO PRE-CONSTRUCTION CONDITION AND PROVIDE MATERIAL APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE.
 - EXISTING AREAS PROPOSED FOR NEW PLANT MATERIAL SHALL BE CLEARED AND LEGALLY DISPOSED UNLESS SO NOTED.
 - A SOILS ANALYSIS, BY AN INDEPENDENT SOILS TESTING LABORATORY RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE, SHALL BE USED TO RECOMMEND AN APPROPRIATE IRRIGATION SYSTEM AND/OR SPECIFIED SOIL AMENDMENTS.
 - TOPSOIL SHALL BE AMENDED AS RECOMMENDED BY AN INDEPENDENT SOILS TESTING LABORATORY AND AS OUTLINED IN THE SPECIFICATION.
 - ALL LANDSCAPED AREAS SHALL BE COVERED BY A LAYER OF ORGANIC MULCH TO A MINIMUM DEPTH OF 2-INCHES.

- IRRIGATION**
- UNLESS OTHERWISE INDICATED, ALL NEW LANDSCAPE AREAS TO BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. PROVIDE LOOP SYSTEM FOR OPTIMUM EFFICIENCY.
 - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS (IRRIGATION PLANS) TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION. DRAWINGS TO INDICATE HEAD TYPE, GALLONS PER MINUTE, LATERAL LINES, AND BE AT MINIMUM SCALE OF 1"=20'
 - CONTRACTOR TO DETERMINE STATIC WATER PRESSURE AT THE P.O.C. PRIOR TO PREPARING SHOP DRAWINGS.
 - CONTRACTOR SHALL ESTABLISH MINIMUM PRESSURE AND MAXIMUM DEMAND REQUIREMENTS FOR IRRIGATION SYSTEM DESIGN, AND PROVIDE INFORMATION IN AN IRRIGATION SCHEDULE.
 - IRRIGATION SYSTEM AS DESIGNED AND INSTALLED SHALL PERFORM WITHIN THE TOLERANCES AND SPECIFICATIONS OF THE SPECIFIED MANUFACTURERS.
 - SYSTEM SHALL BE DESIGNED TO SUPPLY MANUFACTURER'S SPECIFIED MINIMUM OPERATING PRESSURE TO FARTHEST EMITTER FROM WATER METER.
 - SYSTEM SHALL PROVIDE HEAD TO HEAD COVERAGE WITHOUT OVERSPRAY ONTO BUILDING, FENCES, SIDEWALKS, PARKING AREAS, OR OTHER NON-VEGETATED SURFACES.
 - ALL IRRIGATION PIPE MATERIAL AND INSTALLATION SHALL CONFORM TO APPLICABLE CODE FOR PIPING AND COMPONENT REQUIREMENTS.
 - PROVIDE SLEEVING AT ALL AREAS WHERE PIPE TRAVELS UNDER CONCRETE OR HARD SURFACING.
 - VALVES SHALL BE WIRED AND INSTALLED PER MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND CONNECTED TO THE IRRIGATION CONTROLLER.
 - REFER TO CIVIL DETAILS AND DETAILS ON L5.11 FOR POINT OF CONNECTION AND BACKFLOW PREVENTION INFORMATION.
 - MAINLINE LAYOUT IS DIAGRAMMATIC ONLY.
 - CONTROLLER TO BE MOUNTED WITHIN BUILDING INTERIOR. GENERAL CONTRACTOR TO COORDINATE LOCATION WITH OWNER'S REPRESENTATIVE.
 - ZONE THE FOLLOWING AREAS SEPARATELY: TEMPORARY AREAS, PERMANENT LANDSCAPE AREAS, AND TREES.
 - QUICK COUPLERS TO BE PLACED EVERY 300 LINEAR FEET MAX.
 - IRRIGATION SHALL BE WINTERIZED THROUGH LOW PRESSURE, HIGH VOLUME AIR BLOWOUT CONNECTION THROUGH QUICK COUPLER.
 - THE SYSTEM SHALL BE GRAVITY DRAINED. THE CONTRACTOR SHALL PROVIDE APPROPRIATE MANUAL DRAINS AT LOW POINTS.



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| REVISION SCHEDULE | | |
|-------------------|-----------|------------|
| Delta | Issued As | Issue Date |
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GENERAL LANDSCAPE NOTES

City of Wilsonville
 Exhibit B1 (Part 5) DB22-0007

SHEET

L0.01

JOB NO. **2200502.00**

TREE PROTECTION NOTES

SEE G0.01 FOR PROJECT ARBORIST CONTACT INFORMATION.

1. PROTECTION FENCING: ESTABLISH TREE PROTECTION FENCING IN THE LOCATIONS SHOWN. THE INTENT OF THE TREE PROTECTION FENCING IS TO PROTECT THE MINIMUM ROOT PROTECTION ZONES DETAILED IN FIGURE 1. NOTE THAT THE TREE PROTECTION FENCING MAY BE MOVED TO ALLOW CONSTRUCTION ACCESS TO THE SIDE OF THE PROPOSED BUILDING FOLLOWING APPROVAL BY THE PROJECT ARBORIST.
2. DIRECTIONAL FELLING - FELL THE TREES TO BE REMOVED AWAY FROM THE TREES TO BE RETAINED SO THEY DO NOT CONTACT OR OTHERWISE DAMAGE THE TRUNKS OR BRANCHES OF THE RETAINED TREES. NO VEHICLES OR HEAVY EQUIPMENT SHOULD BE PERMITTED WITHIN THE TREE PROTECTION ZONES DURING TREE REMOVAL OPERATIONS.
3. STUMP REMOVAL - THE STUMPS OF THE TREES TO BE REMOVED FROM WITHIN THE TREE PROTECTION ZONES SHALL BE RETAINED OR CAREFULLY STUMP GROUND SO AS NOT TO DISTURB THE ROOT SYSTEMS OF THE RETAINED TREES.
4. PERIODIC RISK ASSESSMENTS: CONDUCT RISK ASSESSMENTS PERIODICALLY THROUGHOUT CONSTRUCTION TO DOCUMENT WHETHER TREES ARE ADAPTING TO THE NEW SITE CONDITIONS AND RISKS ARE MITIGATED APPROPRIATELY WITH CITY APPROVAL. THE RETAINED TREES WERE PREVIOUSLY PROTECTED WITHIN A STAND OF SURROUNDING TREES. THE REMOVAL OF ADJACENT TREES WILL EXPOSE THE RETAINED TREES TO CHANGES IN WIND FORCES WHICH WILL INCREASE THEIR RISK OF WINDTHROW. THE PROJECT ARBORIST SHALL CONDUCT A TREE RISK ASSESSMENT IMMEDIATELY FOLLOWING SITE CLEARING TO IDENTIFY TREES THAT POSE SIGNIFICANT RISKS. FOR TREES THAT POSE SIGNIFICANT RISKS, CONSULT PROJECT ARBORIST FOR RETENTION STRATEGIES, SUCH AS PRUNING OR SNAG CREATION. ANY RECOMMENDED TREE REMOVAL OR SNAG CREATION REQUIRES REVIEW AND APPROVAL OF THE CITY OF WILSONVILLE.
5. CONSTRUCTION ACCESS: WHEN ACCESSING THE SIDES OF THE BUILDING IN THE MODIFIED TREE PROTECTION ZONE, SOIL COMPACTION PREVENTION SUCH AS THE PLACEMENT OF STEEL PLATES IS REQUIRED TO PROTECT THE ROOT ZONES OF THE ADJACENT TREES.
6. ONSITE SUPERVISION OF PROJECT ARBORIST: THE PROJECT ARBORIST SHALL BE ONSITE TO OVERSEE THE RETAINING WALL EXCAVATION AND FOUNDATION CONSTRUCTION WITHIN AND ADJACENT TO THE TREE PROTECTION ZONES OF TREES PERIMETER TREES.

7. PROTECT CROWNS OF TREES: THE CROWNS OF THE TREES MAY EXTEND BEYOND THE TREE PROTECTION FENCING. CARE WILL NEED TO BE TAKEN TO NOT CONTACT OR OTHERWISE DAMAGE THE CROWNS OF THE TREES DURING CONSTRUCTION ACTIVITIES. ANY REQUIRED PRUNING SHALL BE COMPLETED BY AN ISA CERTIFIED ARBORIST CONSISTENT WITH ANSI A300 PRUNING STANDARDS AS DIRECTED BY THE PROJECT ARBORIST.
 8. SEDIMENT FENCING: SEDIMENT FENCING SHALL BE INSTALLED OUTSIDE THE PROTECTION ZONES OF THE TREES TO BE RETAINED TO MINIMIZE ROOT DISTURBANCES. IF EROSION CONTROL IS REQUIRED INSIDE THE ROOT ZONES, STRAW WATTLES SHALL BE USED ON THE SOIL SURFACE.
- BEFORE CONSTRUCTION BEGINS**
1. NOTIFY ALL CONTRACTORS OF TREE PROTECTION PROCEDURES. FOR SUCCESSFUL TREE PROTECTION ON A CONSTRUCTION SITE, ALL CONTRACTORS MUST KNOW AND UNDERSTAND THE GOALS OF TREE PROTECTION.
 - a. HOLD A TREE PROTECTION MEETING WITH ALL CONTRACTORS TO EXPLAIN THE GOALS OF TREE PROTECTION.
 - b. HAVE ALL CONTRACTORS SIGN MEMORANDA OF UNDERSTANDING REGARDING THE GOALS OF TREE PROTECTION. THE MEMORANDA SHOULD INCLUDE A PENALTY FOR VIOLATING THE TREE PROTECTION PLAN. THE PENALTY SHOULD EQUAL THE RESULTING FINES ISSUED BY THE LOCAL JURISDICTION PLUS THE APPRAISED VALUE OF THE TREE(S) WITHIN THE VIOLATED TREE PROTECTION ZONE PER THE CURRENT TRUNK FORMULA METHOD AS OUTLINED IN THE CURRENT EDITION OF THE 'GUIDE FOR PLANT APPRAISAL' BY THE COUNCIL OF TREE AND LANDSCAPE APPRAISERS. THE PENALTY SHOULD BE PAID TO THE OWNER OF THE PROPERTY.
 2. FENCING
 - a. TREE PROTECTION FENCING MAY BE SET AS SHOWN ON THE TREE PLAN.
 - b. THE FENCING SHOULD BE PUT IN PLACE BEFORE THE GROUND IS CLEARED TO PROTECT THE TREES AND THE SOIL AROUND THE TREE FROM DISTURBANCES.
 - c. FENCING SHOULD CONSIST OF 4-FOOT HIGH STEEL FENCING ON CONCRETE BLOCKS OR OTHER ANCHORING DEVICES, OR 4-FOOT METAL FENCING SECURED TO THE GROUND WITH 6-FOOT METAL POSTS TO PREVENT IT FROM BEING MOVED BY CONTRACTORS, SAGGING, OR FALLING DOWN.

TREE PROTECTION ZONE

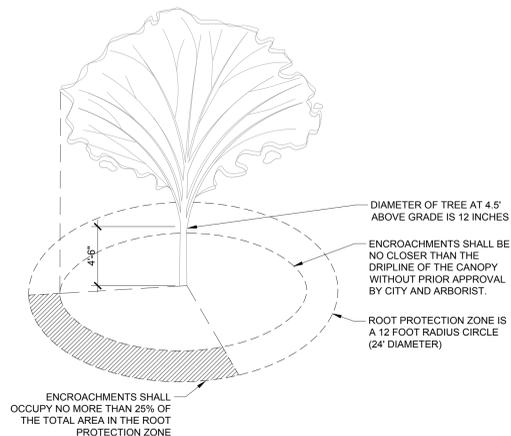
DO NOT REMOVE OR ADJUST THE LOCATION OF THIS TREE PROTECTION FENCING. UNAUTHORIZED ENCROACHMENT MAY RESULT IN FINES.

Please contact the project arborist if alterations to the location of the tree protection fencing are necessary.

Project Arborist: Teregan & Associates, Inc. (503) 697-1975

- b. SIGNAGE SHOULD BE PLACED EVERY 75-FEET OR LESS.
- DURING CONSTRUCTION**
1. PROTECTION GUIDELINES WITHIN THE TREE PROTECTION ZONES:
 - a. NO NEW BUILDINGS, GRADE CHANGES OR CUT AND FILL, DURING OR AFTER CONSTRUCTION, NEW IMPERVIOUS SURFACES, OR UTILITY OR DRAINAGE FILED PLACEMENT SHOULD BE ALLOWED WITHIN THE TREE PROTECTION ZONES.
 - b. NO TRAFFIC SHOULD BE ALLOWED WITHIN THE TREE PROTECTION ZONES. THIS INCLUDES BUT IS NOT LIMITED TO VEHICLE, HEAVY EQUIPMENT, OR EVEN REPEATED FOOT TRAFFIC.
 - c. NO STORAGE OF MATERIALS INCLUDING BUT NOT LIMITED TO SOIL, ON STRUCTION MATERIALS, OR WASTE FROM THE SITE SHOULD BE PERMITTED WITHIN THE TREE PROTECTION ZONES. WASTE INCLUDES BUT IS NOT LIMITED TO CONCRETE WASH OUT, GASOLINE, DIESEL, PAINT, CLEANER, THINNERS, ETC.
 - d. CONSTRUCTION TRAILERS SHOULD NOT BE PARKED/PLACED WITHIN THE TREE PROTECTION ZONES.

6. NO VEHICLES SHOULD BE ALLOWED TO PARK WITHIN THE TREE PROTECTION ZONES.
 7. NO OTHER ACTIVITIES SHOULD BE ALLOWED THAT WILL CAUSE SOIL COMPACTIONS WITHIN THE TREE PROTECTION ZONES.
 8. THE TREES SHOULD BE PROTECTED FROM ANY CUTTING, SKINNING, OR BREAKING OF BRANCHES, TRUNKS OR WOODY ROOTS.
 9. THE PROJECT ARBORIST SHOULD BE NOTIFIED PRIOR TO THE CUTTING OF WOODY ROOTS FROM TREES THAT ARE TO BE RETAINED TO EVALUATE AND OVERSEE THE PROPER CUTTING OF ROOTS WITH SHARP CUTTING TOOLS. CUT ROOTS SHOULD BE IMMEDIATELY COVERED WITH SOIL OR MULCH TO PREVENT THEM FROM DRYING OUT.
 10. TREES THAT HAVE WOODY ROOTS CUT SHOULD BE PROVIDED SUPPLEMENTAL WATER DURING THE SUMMER MONTHS.
 11. ANY NECESSARY PASSAGE OF UTILITIES WITHIN THE TREE PROTECTION ZONES SHOULD BE BY MEANS OF TUNNELING UNDER WOODY ROOTS BY HAND DIGGING OR BORING WITH OVERSIGHT BY THE PROJECT ARBORIST.
 12. ANY DEVIATION FROM THE RECOMMENDATIONS IN THIS SECTION SHOULD RECEIVE PRIOR APPROVAL FROM THE PROJECT ARBORIST.
- AFTER CONSTRUCTION**
1. CAREFULLY LANDSCAPE THE AREAS WITHIN THE TREE PROTECTION ZONES. DO NOT ALLOW TRENCHING FOR IRRIGATION OR OTHER UTILITIES WITHIN THE TREE PROTECTION ZONES.
 2. CAREFULLY PLANT NEW PLANTS WITHIN THE TREE PROTECTION ZONES. AVOID CUTTING THE WOODY ROOTS OF TREES THAT ARE RETAINED.
 3. DO NOT INSTALL PERMANENT IRRIGATION WITHIN THE TREE PROTECTION ZONES UNLESS IT IS DRIP IRRIGATION TO SUPPORT A SPECIFIC PLANTING OR THE IRRIGATION IS APPROVED BY THE PROJECT ARBORIST.
 4. PROVIDE ADEQUATE DRAINAGE WITHIN THE TREE PROTECTION ZONES AND DO NOT ALTER SOIL HYDROLOGY SIGNIFICANTLY FROM EXISTING CONDITIONS FOR THE TREES TO BE RETAINED.
 5. PROVIDE FOR THE ONGOING INSPECTION AND TREATMENT OF INSECT AND DISEASE POPULATIONS THAT CAN DAMAGE THE RETAINED TREES AND PLANTS.
 6. THE RETAINED TREES MAY NEED TO BE FERTILIZED IF RECOMMENDED BY THE PROJECT ARBORIST.
 7. ANY DEVIATION FROM THE RECOMMENDATIONS IN THIS SECTION SHOULD RECEIVE PRIOR APPROVAL FROM THE PROJECT ARBORIST.



1 ROOT PROTECTION ZONE

SCALE: NTS

TREE DATA

| ALL TREES (257 TREES) | QTY | RETAIN | REMOVE | MITIGATION |
|-----------------------|------------|-----------|------------|------------|
| ON SITE < 6" DBH | 200 | 46 | 154 | 154 |
| PUBLIC < 6" DBH | 21 | 0 | 21 | 21 |
| OFF SITE < 6" DBH | 36 | 36 | 0 | 0 |
| TOTAL | 257 | 82 | 175 | 175 |

TREE INVENTORY - ON SITE AND PUBLIC

| EXISTING | BOTANICAL / COMMON NAME | QTY |
|----------|----------------------------|-----|
| + | DOUGLAS FIR TO REMOVE | 155 |
| ○ | DOUGLAS FIR TO REMAIN | 40 |
| ○ | ENGLISH HAWTHORN TO REMAIN | 1 |
| ○ | OREGON ASH TO REMAIN | 3 |
| + | STREET TREES TO REMOVE | 18 |
| + | SWEET CHERRY TO REMOVE | 2 |
| ○ | WILLOW TO REMAIN | 2 |

TREE INVENTORY - OFF SITE PRIVATE

| EXISTING | BOTANICAL / COMMON NAME | QTY |
|----------|----------------------------|-----|
| ○ | BIGLEAF MAPLE TO REMAIN | 1 |
| ○ | DOUGLAS FIR TO REMAIN | 33 |
| ○ | OREGON WHITE OAK TO REMAIN | 1 |
| ○ | PACIFIC MADRONE TO REMAIN | 1 |



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REVISION SCHEDULE

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TREE REMOVAL PLAN

SHEET

L0.03

JOB NO. **2200502.00**

DEVELOPMENT REVIEW SET - 04/11/2023



MITIGATION PLANTING NOTES

NOTES PER EXHIBIT C NATURAL RESOURCE ASSESSMENT FOR 9710 SW DAY ROAD PREPARED BY SCHOTT AND ASSOCIATES (2022) AND AMENDED BY MACKENZIE (2023) TO REFLECT SITE PLAN CHANGES RESULTING IN LESS ENCROACHMENT ON THE VEGETATED CORRIDOR AND IMPACT AREA.

SITE PREPARATION
 PRIOR TO ANY SITE CLEARING, GRADING OR CONSTRUCTION, THE SROZ AREA SHALL BE STAKED, AND FENCED PER APPROVED PLAN. DURING CONSTRUCTION, THE SROZ AREA SHALL REMAIN FENCED AND UNDISTURBED EXCEPT AS ALLOWED BY AN APPROVED DEVELOPMENT PERMIT.

PROPOSED ENCROACHMENTS
 ENCROACHMENTS ARE PROPOSED TO THE VEGETATED CORRIDOR AND IMPACT AREA.

- ENCROACHMENTS WILL OCCUR IN THE NORTHERN PORTION OF THE VEGETATED CORRIDOR FOR THE CITY REQUIRED WIDENING OF SW DAY RD AND IN THE SOUTHERN PORTION FOR THE TAPMAN CREEK CROSSING. THESE AREAS ARE VEGETATED ENTIRELY BY INVASIVE SPECIES INCLUDING HIMALAYAN BLACKBERRY AND REED CANARY GRASS. NO TREES OR NATIVE SPECIES WILL BE REMOVED AS A RESULT OF CONSTRUCTION.
- ENCROACHMENT WITHIN THE IMPACT AREAS WILL OCCUR ON THE EAST SIDE OF THE CREEK FOR THE CONSTRUCTION OF A VEGETATED WATER QUALITY AND STORMWATER DETENTION FACILITY. NO ENCROACHMENTS TO TAPMAN CREEK OR THE WETLANDS ARE PROPOSED. NO TREES WILL BE REMOVED FROM THE SROZ.
- DEVELOPMENT ACTIVITY HAS BEEN LIMITED TO THE IMPACT AREA WHERE PRACTICAL EXCEPT WHERE NECESSARY TO WIDEN SW DAY ROAD.

MITIGATION PLANTING
 THE MITIGATION PLANTING PLAN WAS DESIGNED ACCORDING SECTION 4.139.07.(02)(E) AND SHALL MEET THE FOLLOWING:

- THE PLANTING PLAN SHALL BE IMPLEMENTED PRIOR TO OR AT THE SAME TIME AS THE IMPACT ACTIVITY IS CONDUCTED.
- ALL TREES, SHRUBS AND GROUND COVER SHALL BE NATIVE VEGETATION.
- TREES AND SHRUBS SHALL BE AT LEAST ONE-GALLON IN SIZE AND SHALL BE AT LEAST TWELVE (12) INCHES IN HEIGHT.
- 2-GALLON TREES SHALL BE PLANTED BETWEEN EIGHT (8) AND TWELVE (12) FEET ON CENTER, AND SHRUBS SHALL BE PLANTED BETWEEN FOUR (4) AND FIVE (5) FEET ON CENTER, OR CLUSTERED IN SINGLE SPECIES GROUPS OF NO MORE THAN FOUR (4) PLANTS, WITH EACH CLUSTER PLANTED BETWEEN EIGHT (8) AND TEN (10) FEET ON CENTER. WHEN PLANTING NEAR EXISTING TREES, THE DRIP LINE OF THE EXISTING TREE SHALL BE THE STARTING POINT FOR PLANT SPACING MEASUREMENTS.
- SHRUBS SHALL CONSIST OF AT LEAST TWO (2) DIFFERENT SPECIES. IF FIVE (5) TREES OR MORE ARE PLANTED, THEN NO MORE THAN FIFTY (50) PERCENT OF THE TREES MAY BE OF THE SAME GENUS.
- INVASIVE NON-NATIVE OR NOXIOUS VEGETATION SHALL BE REMOVED WITHIN THE MITIGATION AREA PRIOR TO PLANTING AND SHALL BE REMOVED OR CONTROLLED FOR FIVE (5) YEARS FOLLOWING THE DATE THAT THE MITIGATION PLANTING IS COMPLETED.

MITIGATION GOALS AND PERFORMANCE STANDARDS

THE MITIGATION SITE GOAL IS AS FOLLOWS:

ENHANCE 32,890 SF OF VEGETATED CORRIDOR TO IMPROVE RIPARIAN CORRIDOR, WATER QUALITY PROTECTION, ECOLOGICAL INTEGRITY AND WILDLIFE HABITAT FUNCTIONS BY REMOVING INVASIVE SPECIES AND MAINTAINING A NATIVE, WOODY-DOMINATED PLANT COMMUNITY.

PERFORMANCE STANDARDS ARE BASED ON METRO'S TITLE 3 WATER QUALITY PERFORMANCE STANDARDS TO PROTECT AND IMPROVE WATER QUALITY AND PROTECT THE FUNCTIONS AND VALUES OF WATER QUALITY RESOURCE AREAS (METRO 2018). THIS PLAN'S PERFORMANCE STANDARDS FOR FOREST AND/OR SHRUB DOMINATED AREAS AND SHALL CONSIST OF THE FOLLOWING:

- ESTABLISHMENT OF PERMANENT MONITORING LOCATIONS DURING THE FIRST ANNUAL MONITORING.
- COVER OF NATIVE HERBACEOUS SPECIES IS AT LEAST 60%.
- COVER OF INVASIVE SPECIES IS NO MORE THAN 10%. AFTER THE SITE HAS MATURED TO THE STAGE WHEN DESIRABLE CANOPY SPECIES REACH 50% COVER, THE COVER OF INVASIVE SPECIES MAY INCREASE BUT MAY NOT EXCEED 30%.
- BARE SUBSTRATE REPRESENTS NO MORE THAN 20% COVER.
- DENSITY OF WOODY VEGETATION IS AT LEAST 1,600 LIVE TREES OR SHRUBS PER ACRE OR THE COVER OF NATIVE WOODY VEGETATION ON SITE IS AT LEAST 50%. NATIVE VOLUNTEER SPECIES MAY BE INCLUDED IN THE COVER OR DENSITY ESTIMATE.
- BY YEAR 3 AND THEREAFTER, AT LEAST 6 DIFFERENT NATIVE SPECIES MUST BE PRESENT. TO QUALIFY, A SPECIES MUST HAVE AT LEAST 5% AVERAGE COVER IN THE HABITAT CLASS AND OCCUR IN AT LEAST 10% OF THE PLOTS SAMPLED.
- BY YEAR 5, A MINIMUM OF EIGHTY (80) PERCENT OF THE TREES AND SHRUBS INITIALLY REQUIRED SHALL REMAIN ALIVE.

MAINTENANCE AND MONITORING

MONITORING WILL OCCUR ANNUALLY OVER A 5-YEAR MONITORING PERIOD TO ASSESS CONDITION OF PLANTINGS, IRRIGATION, MULCH ETC. MONITORING WILL BE CONDUCTED BY QUALIFIED PERSONNEL DURING PEAK GROWING SEASON (JULY-AUGUST). ANNUAL MONITORING REPORTS WILL BE PROVIDED TO THE PLANNING DIRECTOR FOR REVIEW BY DECEMBER OF EACH MONITORING YEAR. THE REPORT SHALL CONTAIN, AT A MINIMUM, PHOTOGRAPHS FROM ESTABLISHED PHOTO POINTS, QUANTITATIVE MEASURE OF SUCCESS CRITERIA, INCLUDING PLANT SURVIVAL AND VIGOR. THE YEAR 1 ANNUAL REPORT SHALL BE SUBMITTED ONE YEAR FOLLOWING MITIGATION ACTION IMPLEMENTATION. THE FINAL ANNUAL REPORT (YEAR 5 REPORT) SHALL DOCUMENT SUCCESSFUL SATISFACTION OF MITIGATION GOALS, AS PER THE STATED PERFORMANCE STANDARDS.

THE APPLICANT WILL BE RESPONSIBLE FOR COORDINATING ONGOING MAINTENANCE AND MANAGEMENT. IF THE OWNERSHIP OF THE MITIGATION SITE PROPERTY CHANGES, THE NEW OWNERS WILL HAVE THE CONTINUED RESPONSIBILITIES MAINTENANCE ACTIVITIES INCLUDING MULCHING, WEED REMOVAL, HERBIVORY CONTROL, AND SUPPLEMENTAL PLANTING WILL BE CONDUCTED BY A QUALIFIED CONTRACTOR AT LEAST TWICE PER GROWING SEASON AND ONCE PRIOR TO THE GROWING SEASON OR MORE FREQUENTLY AS INDICATED BY MONITORING RESULTS. ANY FAILED PLANTS WILL BE REPLACED IN-KIND WITH THE CAUSE OF LOSS (WILDLIFE DAMAGE, POOR PLANT STOCK, DROUGHT, WEED OVERGROWTH, ETC.) DOCUMENTED AND ADDITIONAL MAINTENANCE DONE TO ADDRESS THE CAUSE OF LOSS AND ENSURE FUTURE PLANT SURVIVAL.

SROZ ENCROACHMENT MITIGATION TABLE

| | ENCROACHMENT | MITIGATION RATE |
|--------------------|--------------|---|
| VEGETATED CORRIDOR | 1,850 SF | 3:2:1 6,305 SF |
| IMPACT AREA | 9,833.70 SF | N/A |
| | | RIPARIAN FOREST COMMUNITY 3,360 SF RIPARIAN SHRUB COMMUNITY 2,945 SF |

MITIGATION PLANT SCHEDULE PER SRIR

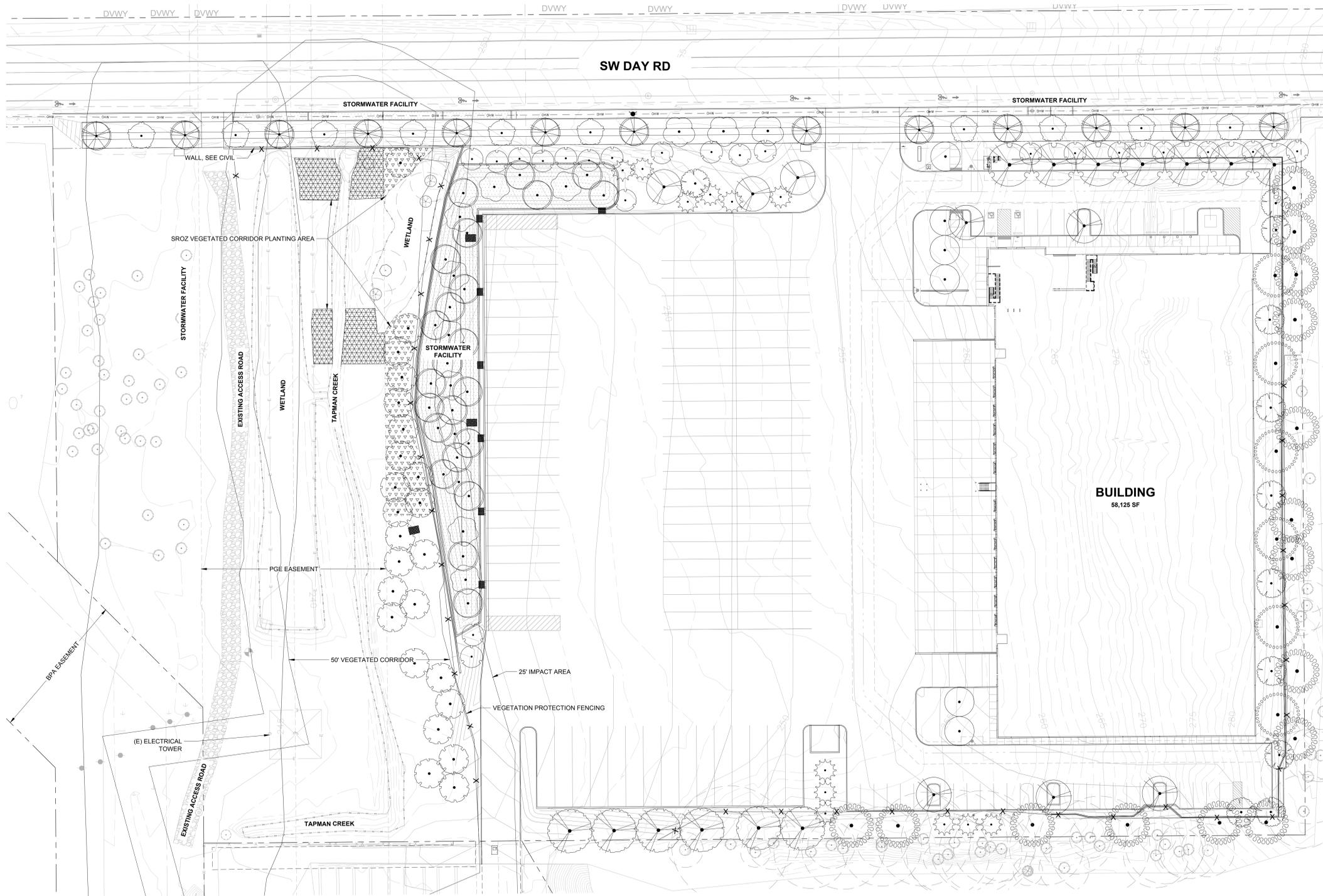
| RIPARIAN FOREST COMMUNITY: 3,360 SF | | | | | |
|-------------------------------------|-------|-----------------|----------|---------|------------|
| SPECIES | TYPE | MIN SIZE* | SPACING | QTY | TOTAL |
| OREGON ASH | TREE | 2-INCH CAL | 15 FT OC | 11 | |
| FRAXINUS LATTIFOLIA | TREE | 2 GAL OR | 8 FT OC | 31 | |
| SCOULEA PITS WILLOW | TREE | 2 GAL OR | 8 FT OC | 31 | |
| SALIX SCOULERIANA | TREE | 2 GAL OR | 8 FT OC | 31 | |
| WESTERN REDCEDAR | TREE | 2 GAL OR | 8 FT OC | 31 | 73 TREES |
| THUJA PLICATA | TREE | 2 GAL OR | 8 FT OC | 31 | |
| REDOSIER DOGWOOD | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| CORNUS STOLONIFERA | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| RED ELDERBERRY | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| SAMBUCUS RACEMOSA | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| SNOWBERRY | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| SYMPHORICARPOS ALBUS | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| SALMONBERRY | SHRUB | 1 GAL OR | 5 FT OC | 14 | |
| RUBUS SPECTABILIS | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| SWAMP ROSE | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| ROSA PISOCARPA | SHRUB | 1 GAL OR | 5 FT OC | 30 | 251 SHRUBS |
| RIPARIAN SHRUB COMMUNITY: 2,945 SF | | | | | |
| SPECIES | TYPE | MIN SIZE* | SPACING | QTY | TOTAL |
| REDOSIER DOGWOOD | SHRUB | 1 GAL OR | 5 FT OC | 15 | |
| CORNUS STOLONIFERA | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| RED ELDERBERRY | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| SAMBUCUS RACEMOSA | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| SNOWBERRY | SHRUB | 1 GAL OR | 5 FT OC | 15 | |
| SYMPHORICARPOS ALBUS | SHRUB | 1 GAL OR | 5 FT OC | 10 | |
| RUBUS SPECTABILIS | SHRUB | 1 GAL OR | 5 FT OC | 17 | |
| SWAMP ROSE | SHRUB | 1 GAL OR | 5 FT OC | 17 | |
| ROSA PISOCARPA | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| INDIAN PLUM | SHRUB | 1 GAL OR | 5 FT OC | 30 | |
| OSMORHIZA CERASIFORMIS | SHRUB | 1 GAL OR | 5 FT OC | 17 | |
| PROTOME 402 | HERB | 25 LBS PER ACRE | | 1.7 LBS | |

*NATIVE RIPARIAN MIX INCLUDES BLUE WILDRYE (ELYMUS GLAUCUS), MEADOW BARLEY (HORDEUM BRACHYANTHERUM), AND TUFTED HAIRGRASS (DESCHAMPSIA CESPITOSA)

PROPOSED PLANT LIST (REMAINDER OF SITE)

IN COMPLIANCE WITH THE MITIGATION REQUIREMENTS, NATIVE AND DROUGHT TOLERANT VEGETATION IS USED THROUGHOUT THE SITE.

| PLANT NAME | NATIVE STATUS |
|--|-----------------|
| ACCENT TREES | |
| ACER RUBRUM 'BOWHALL' | NATIVE CULTIVAR |
| AMELANCHIER ALNIFOLIA 'AUTUMN BRILLIANCE' | NATIVE CULTIVAR |
| CORNUS KOUSA X NUTTALLII 'KN4-43' | NATIVE CULTIVAR |
| PRIMARY TREES | |
| FRAXINUS PENNSYLVANICA 'MARSHALL'S SEEDLESS' | NATIVE |
| PSEUDOTSUGA MENZIESII | NATIVE |
| QUERCUS GARRYANA | NATIVE |
| THUJA PLICATA | NATIVE |
| SECONDARY TREES | |
| CALOCEDRUS DECURRENS | NATIVE |
| TILIA TOMENTOSA 'STERLING' | NATIVE |
| STORMWATER TREES | |
| CORNUS X EDDIE'S 'WHITE WONDER' | NATIVE CULTIVAR |
| FRAXINUS LATTIFOLIA | NATIVE |
| RHAMNUS PURSHIANA | NATIVE |
| STREET TREES | |
| ACER GRANDIDENTATUM 'SCHMIDT' TM | |
| CORNUS KOUSA 'MILKY WAY' | |
| PARROTIA PERSICA 'INGE'S RUBY VASE' TM | |
| SHRUBS | |
| ACER CIRCINATUM 'PACIFIC FIRE' | NATIVE CULTIVAR |
| ARBUTUS UNEDO 'COMPACTA' | NATIVE CULTIVAR |
| CORNUS SERICEA 'KELSEY' | NATIVE CULTIVAR |
| DEUTZIA GRACILIS 'NIKKO' | NATIVE |
| GALUTHERIA SHALLOM | NATIVE |
| MAHONIA AQUIFOLIUM | NATIVE CULTIVAR |
| MAHONIA AQUIFOLIUM 'COMPACTA' | NATIVE CULTIVAR |
| MYRICA CALIFORNICA | NATIVE |
| RIBES SANGUINEUM | NATIVE |
| SPIRAEA BETULIFOLIA 'TOR' | NATIVE CULTIVAR |
| SYMPHORICARPOS ALBUS | NATIVE |
| VACCINIUM OVATUM | NATIVE |
| VACCINIUM OVATUM 'SCARLET OVATION' | NATIVE CULTIVAR |
| VIBURNUM DAVIDI | NATIVE |
| VIBURNUM TINUS 'SPRING BOUQUET' | NATIVE CULTIVAR |
| PERENNIALS | |
| ACHILLEA MILLIFOLIUM 'ALABASTER' | NATIVE CULTIVAR |
| ASTER SUBSPICATUS | NATIVE |
| POLYSTICHUM MUNIUM | NATIVE |
| PTERIDIUM AQUILINUM | NATIVE |
| SALVIA X SUPERBA 'CARADONNA' | NATIVE |
| STORMWATER SHRUBS | |
| CORNUS SERICEA | NATIVE |
| HOLODISCUS DISCOLOR | NATIVE |
| MAHONIA AQUIFOLIUM | NATIVE |
| RIBES SANGUINEUM | NATIVE |
| ROSA PISOCARPA | NATIVE |
| RUBUS SPECTABILIS | NATIVE |
| SPIRAEA BETULIFOLIA 'TOR' | NATIVE CULTIVAR |
| SPIRAEA DOUGLASSII | NATIVE |
| SYMPHORICARPOS ALBUS | NATIVE |
| GROUND COVERS | |
| ARCTOSTAPHYLOS UVA-URSI | NATIVE |
| BOUTELOUA GRACILIS 'BLONDE AMBITION' | NATIVE |
| CRUSHED GRAVEL | NATIVE |
| FESTUCA OCCIDENTALIS | NATIVE |
| CERATILLUM X CANTABRIGIENSE 'BIKOVO' | NATIVE |
| MAHONIA REPENS | NATIVE |
| PROTOME 402 NATIVE RIPARIAN MIX | NATIVE |
| SEED MIX NATIVE POLLINATOR MEADOW MIX | NATIVE |
| SEED MIX NATIVE UPLANDS MEADOW MIX | NATIVE |
| STORMWATER PLANTING | |
| CAREX DENSA | NATIVE |
| JUNCUS PATENS | NATIVE |



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Client
DELTA LOGISTICS
 9835 SW COMMERCE
 CIRCLE
 WILSONVILLE, OR 97107

Project
DELTA LOGISTICS
 SITE EXPANSION
 9710 SW DAY RD.
 CITY OF
 WILSONVILLE, OR



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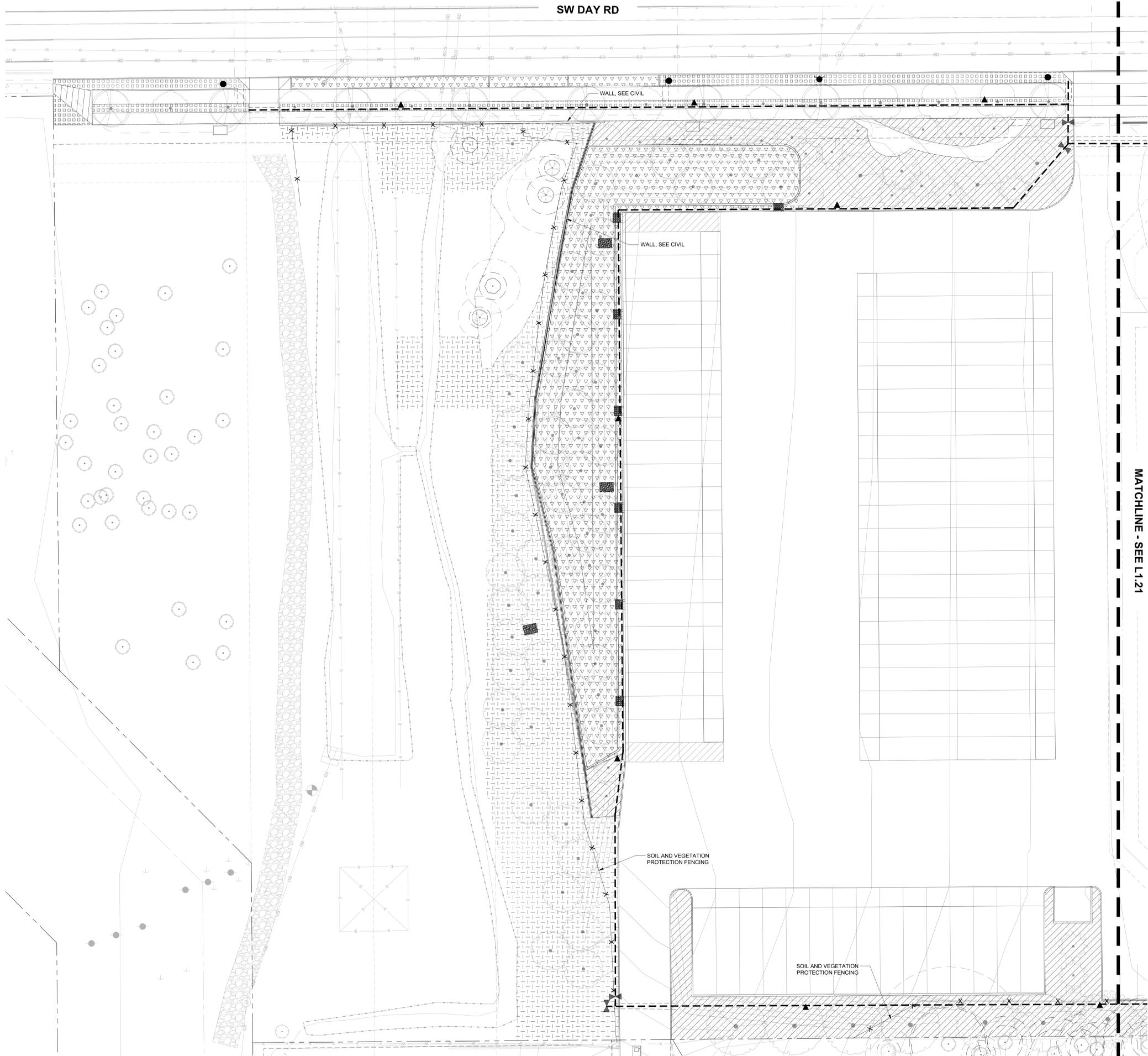
VEGETATED CORRIDOR ENHANCEMENT PLANTING PLAN

SHEET

L0.05

JOB NO. **2200502.00**

SW DAY RD



IRRIGATION LEGEND

-  POINT OF CONNECTION, INCLUDE DOUBLE CHECK BACKFLOW PREVENTOR, MASTER VALVE AND FLOW SENSOR - SEE DETAIL ON L5.11
-  IRRIGATION CONTROLLER
-  GATE VALVE
-  QUICK COUPLER AT 150' (INTERVALS MAX)
-  MAINLINE SLEEVE- DIAMETER AT LEAST TWICE DIAMETER OF PIPE BEING SLEEVED
-  MAINLINE-SCHEDULE 40 PVC
-  SHRUB AND GROUNDCOVER DRIP AREA
-  SHRUB AND GROUNDCOVER SPRAY AREA
-  STORMWATER AREA - ZONE SEPARATELY
-  LAWN AREA - ZONE SEPARATELY
-  TEMPORARY IRRIGATED AREA - ZONE SEPARATELY
-  RIGHT-OF-WAY - ZONE SEPARATELY
-  MEADOW AREA - ZONE SEPARATELY

REFERENCE NOTES

1. CAREFULLY EXCAVATE IRRIGATION TRENCHES IN VICINITY OF EXISTING TREES. SEE TREE PROTECTION NOTES L0.03 AND IN EXHIBIT D ARBORIST REPORT.



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MATCHLINE - SEE L1.21

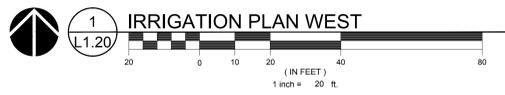
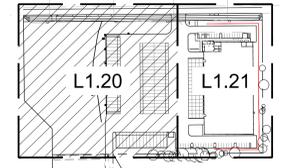
Project
**DELTA LOGISTICS
SITE EXPANSION**
9710 SW DAY RD.
CITY OF
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IRRIGATION PLAN - WEST



L1.20

JOB NO. **2200502.00**



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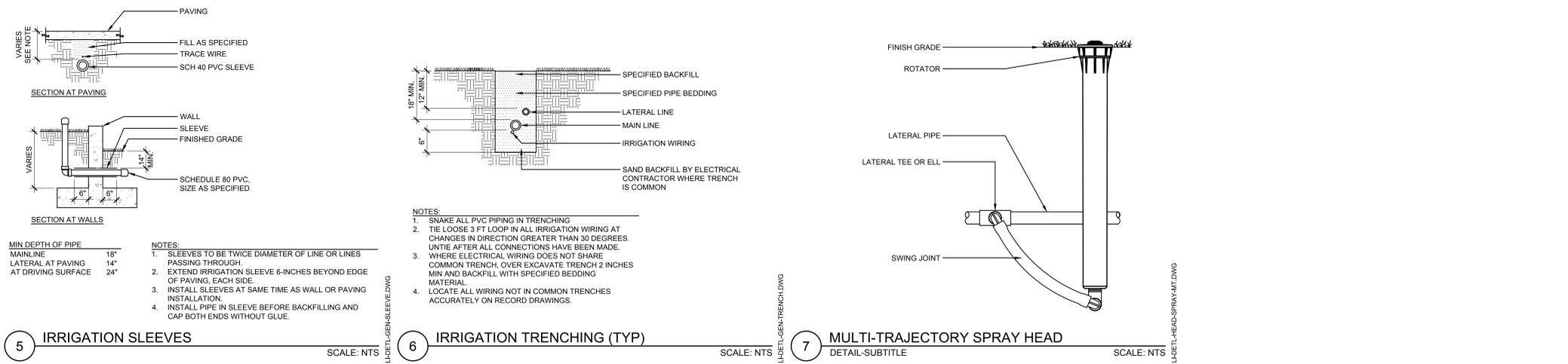
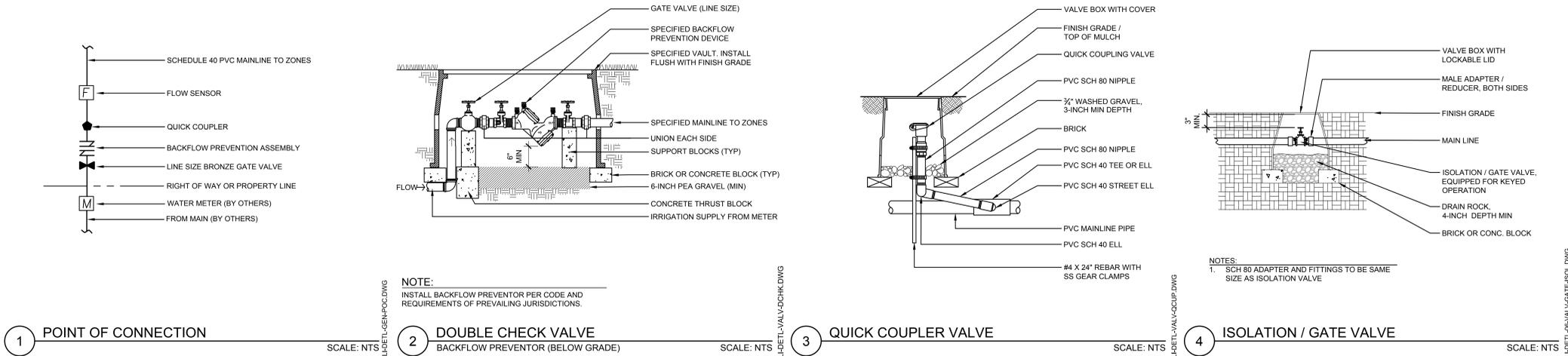
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**IRRIGATION
 DETAILS**

SHEET

L5.11

JOB NO. **2200502.00**

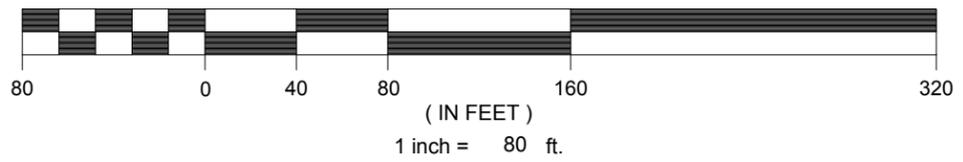
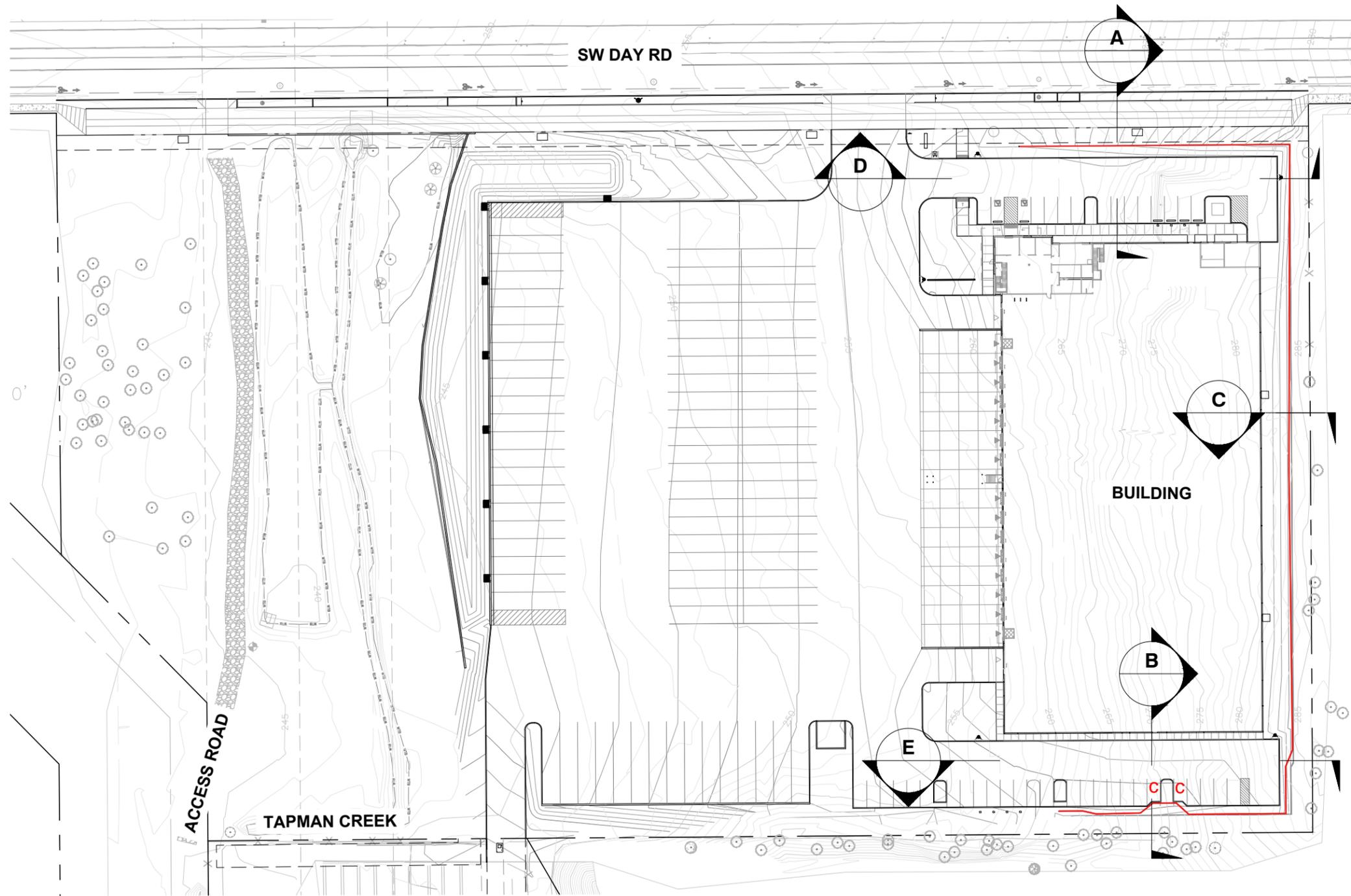


MIN DEPTH OF PIPE

| | |
|--------------------|-----|
| MAINLINE | 18" |
| LATERAL AT PAVING | 14" |
| AT DRIVING SURFACE | 24" |

NOTES:
 1. SLEEVES TO BE TWICE DIAMETER OF LINE OR LINES PASSING THROUGH.
 2. EXTEND IRRIGATION SLEEVE 6-INCHES BEYOND EDGE OF PAVING, EACH SIDE.
 3. INSTALL SLEEVES AT SAME TIME AS WALL OR PAVING INSTALLATION.
 4. INSTALL PIPE IN SLEEVE BEFORE BACKFILLING AND CAP BOTH ENDS WITHOUT GLUE.

NOTES:
 1. SNAKE ALL PVC PIPING IN TRENCHING
 2. TIE LOOSE 3 FT LOOP IN ALL IRRIGATION WIRING AT CHANGES IN DIRECTION GREATER THAN 30 DEGREES. UNTIE AFTER ALL CONNECTIONS HAVE BEEN MADE.
 3. WHERE ELECTRICAL WIRING DOES NOT SHARE COMMON TRENCH, OVER EXCAVATE TRENCH 2 INCHES MIN AND BACKFILL WITH SPECIFIED BEDDING MATERIAL.
 4. LOCATE ALL WIRING NOT IN COMMON TRENCHES ACCURATELY ON RECORD DRAWINGS.





SECTION A - 5 years
LOOKING EAST THROUGH NORTH PARKING AREA



SECTION B - 5 years
LOOKING EAST THROUGH SOUTH PARKING AREA



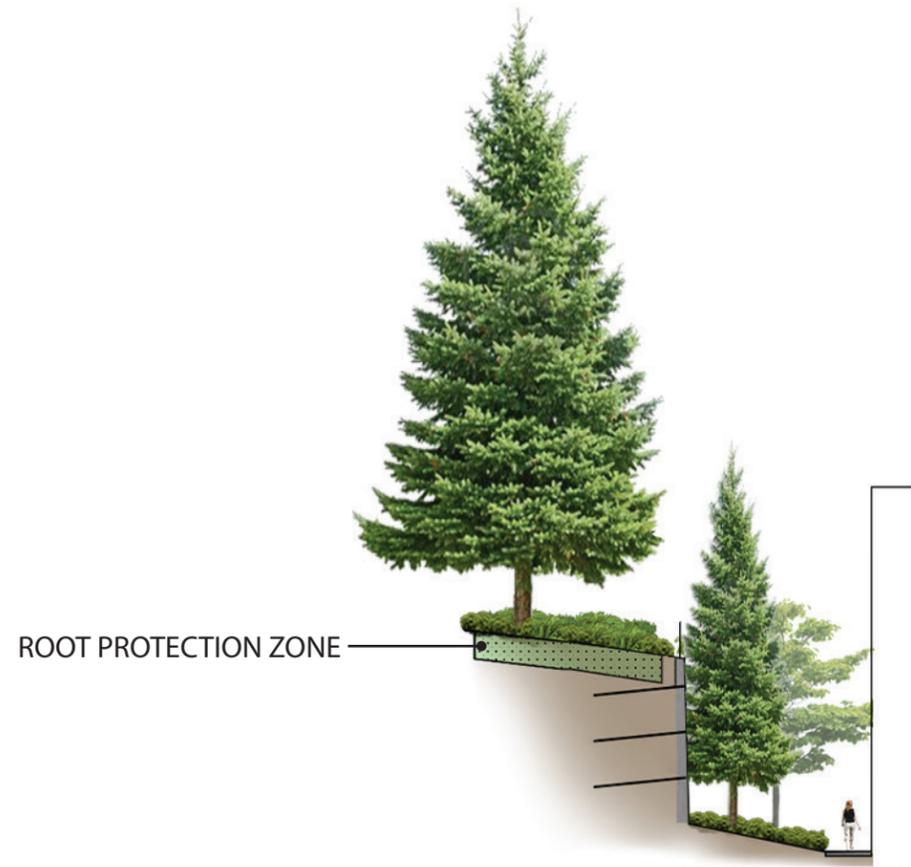
SECTION A - 20 years
LOOKING EAST THROUGH NORTH PARKING AREA



SECTION B - 20 years
LOOKING EAST THROUGH SOUTH PARKING AREA



SECTION C - 5 years
LOOKING SOUTH THROUGH CORRIDOR BEHIND PROPOSED BUILDING



SECTION C - 20 years
LOOKING SOUTH THROUGH CORRIDOR BEHIND PROPOSED BUILDING



SECTION D - 5 years
LOOKING NORTH TOWARDS SW DAY RD



SECTION D - 20 years
LOOKING NORTH TOWARDS SW DAY RD



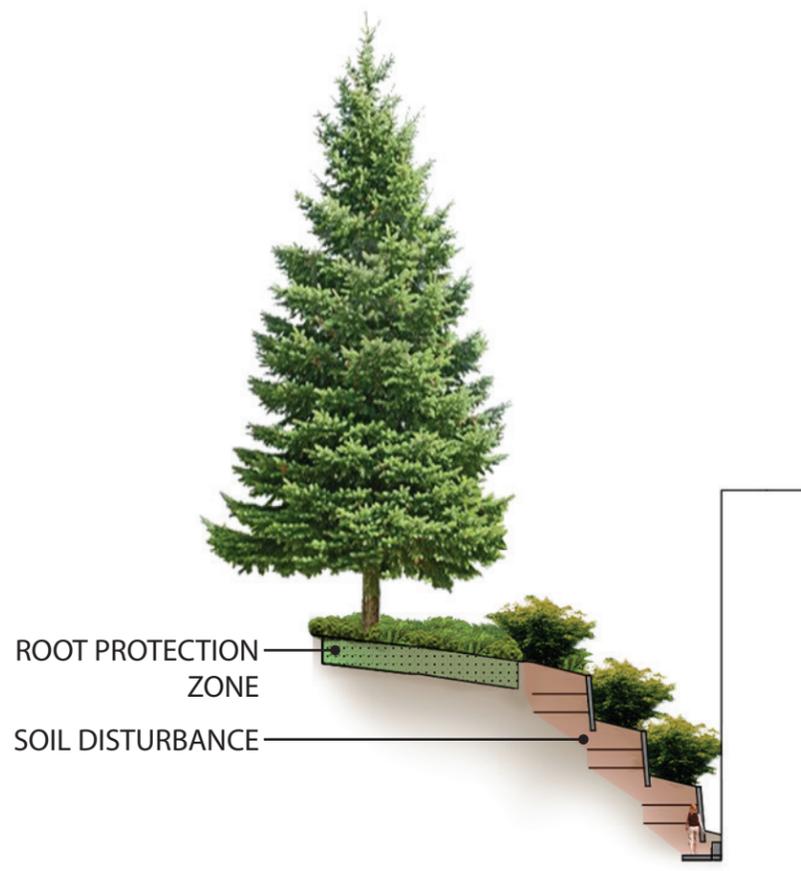
SECTION E - 5 years
LOOKING SOUTH TOWARDS SOUTH PROPERTY LINE



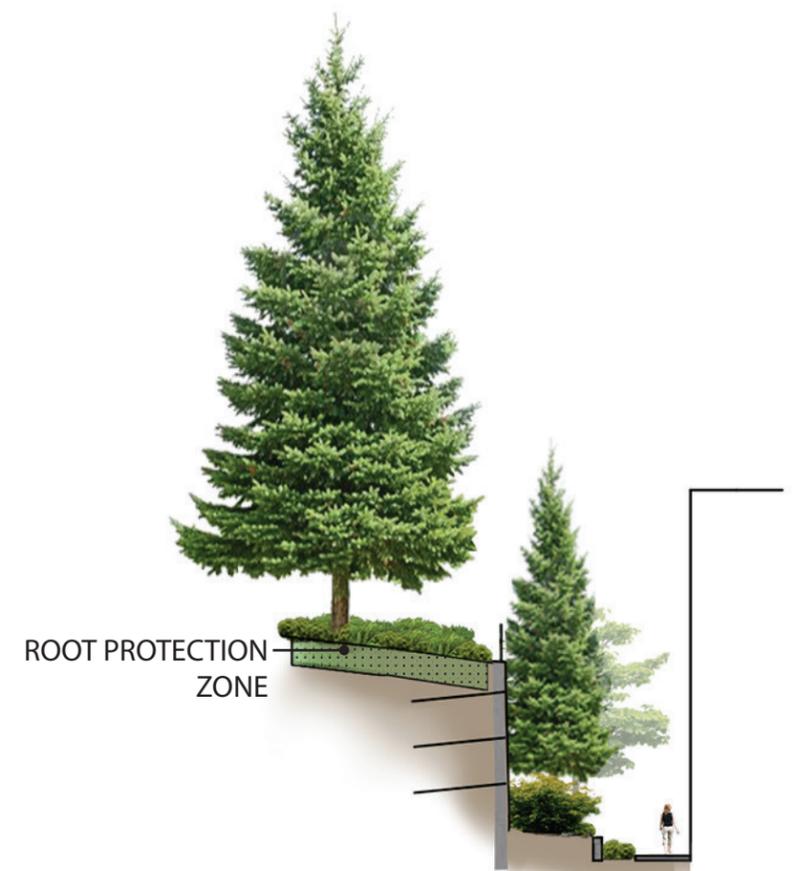
SECTION E - 20 years
LOOKING SOUTH TOWARDS SOUTH PROPERTY LINE



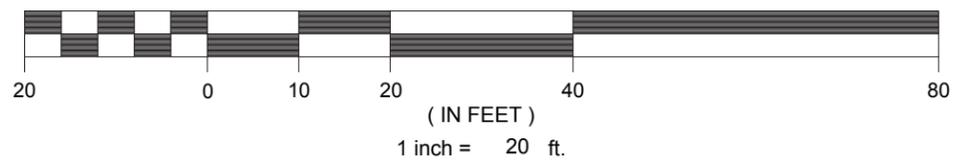
SECTION C - Option 1
PROPOSED WAIVER USING SOIL NAIL WALL



SECTION C - Option 2
D.R. MODIFICATION, NO WAIVER,
4.8' WALLS WITH 5' OFFSETS



SECTION C - Option 3
SOIL NAIL WALL WITH 24" LANDSCAPE SEAT
WALL AT BASE





April 10, 2023

Lee Leighton AICP
Mackenzie
1515 SE Water Ave., Suite 100
Portland, OR 97214

Re: Tree Protection Standards in Development Situations for the Project at 9710 SW Day Rd., Wilsonville, Oregon

I was asked to discuss the needed tree protection measures for the Delta Logistics project at 9710 SW Day Rd. Wilsonville, Oregon.

The tree inventory that was initially done indicated the possible tree protection zone at 6 times the diameter on one side of the trees as well as 12 times the trees' main stem diameter (as measured 4.5' above the ground) on three other sides of each of the trees. Most jurisdictions will waive the need for an arborist tree plan if a developer or property owner can show demonstrate a tree protection zone that stays 12 times the tree diameter away from the tree's center on three sides of the tree and at least 6 times the diameter of the tree on one side of the tree.

The Wilsonville code defines the dripline as the extent of the area that requires protection, unless an arborist creates a tree plan indicating the required tree protection area that will adequately protect the tree(s) from undue long-term harm.

As the project arborist, I have assessed the condition of the trees that are to remain and be protected during construction and feel that encroachment up to 6 times the tree diameter on one side of the trees will be adequate in preventing long term impacts from construction trauma on the trees as long as 12 times the tree diameters are protected on the other three sides of the trees.

On this project, along the south property line, there will be no future development of the property to the south as the property is already developed and is not likely to be redeveloped in a time frame where the project's trees won't have the opportunity to adapt should encroachment come within the dripline of the trees.

Along the east property line, there is a property to the east that is likely to be developed in the future so the ability to guarantee that the tree protection areas will be equal to 12 times the tree diameters to the east of those trees cannot be guaranteed by the applicant for this development; however, the City has the opportunity to ensure their protection through its required land use review and approval procedures. The extent of the driplines to the west was measured by me recently, and the designers have been able to adjust the position of the proposed retaining wall to protect those trees to the edge of the driplines. In addition, the City may condition that the project arborist is to be on site to observe construction activity, guide any root pruning if roots do extend beyond the dripline and document the presence and/or absence of roots from the trees that are to be retained. We are protecting the root zone as indicated by the extent of the trees' dripline by

adjusting the wall location on the project side of the property line to allow the neighbor flexibility for future development on their side.

The parameters of the site consist of boulders where the trees are growing that are to be retained. Roots tend to form deeper along the edges of the boulders and not extend laterally as they would normally in most typical soils in our region.

Along the south side where the driplines do extend beyond the edges of the planned parking lot to the west of the point where the retaining wall ends (meets grade), there is to be fill. Although fill over the roots of the trees may lead to root decline, it will occur over time allowing the trees to adapt to the new growing conditions gradually as long as the fill does not encroach within 6 times the diameter of the tree.

I find that the designers of this project have provided tree protection areas that are greater than needed given the site parameters and that the conditions on the site will allow for encroachment within the planned tree protection areas if needed as long as observation and review by this project arborist is completed.

Please call if you have any questions/concerns regarding the information in this report.

Sincerely,



Terrence P. Flanagan

ISA Board Certified Master Arborist PN-0120BMTL

ISA Tree Risk Assessment Qualified

P: 503.697.1975 | E: terry@teragan.com

Enclosures:

- Appendix 1: Certification of Performance
- Appendix 2: Assumptions and Limiting Conditions
- Appendix 3: Tree Protection Specifications

Appendix 1: Certification of Performance

I, Terrence P. Flanagan, certify:

- That a representative of Teragan & Associates, Inc., has inspected the tree(s) and/or the property referred to in this report. The extent of the evaluation is stated in the attached report.
- Teragan & Associates, Inc. has no current or prospective interest in the vegetation of the property that is the subject of this report, and Teragan & Associates, Inc. has no personal interest or bias with respect to the parties involved.
- That Teragan & Associates, Inc.'s compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, or upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.
- That the analysis, opinions, and conclusions that were developed as part of this report have been prepared according to commonly accepted arboricultural practices.
- That a Board-Certified Master Arborist has overseen the gathering of data.

Appendix 2: Assumptions and Limiting Conditions

- Any legal description provided to the consultant is assumed to be correct. Teragan and Associates, Inc. checked the species identification and tree diameters in the field.
- It is assumed that this property is not in violation of any codes, statutes, ordinances, or other governmental regulations.
- The consultant is not responsible for information gathered from others involved in various activities pertaining to this project. Care has been taken to obtain information from reliable sources.
- Loss or alteration of any part of this delivered report invalidates the entire report.
- The drawings and information contained in this report may not be to scale and are intended to be used as display points of reference only.
- The consultants' role is only to make recommendations. Inaction on the part of those receiving the report is not the responsibility of the consultant.
- This report is to certify the trees that are on site, their size and condition and create a tree plan. Tree plans are to include the measurements necessary to protect trees that are to be retained during the construction process.

Appendix 3: Tree Protection Specifications

It is critical that the following steps be taken to ensure that they are retained and protected. This section is a template for all tree protection plans so aspects, such as tree removals, will not apply to this project.

Before Construction Begins

1. **Complete tree removals within the tree protection area.**
 - a. Prior to construction, allow tree removal within the tree protection area to occur.
 - i. The project arborist shall oversee the removal of any trees within the tree protection zones *if* they require use of heavy equipment. Ideally, no heavy/mechanized equipment should be used to remove trees or their debris within the tree protection zones.
 - b. Prior to construction, allow any pruning of tree branches that may need to occur.
 - c. Install tree protection fencing immediately following the removal of trees within the tree protection area (see 3 below). Tree protection fencing shall be installed after removals to ensure:
 - i. Tree removals are performed safely.
 - ii. Tree protection fencing is not accidentally or intentionally moved.
2. **Notify all contractors of the tree protection procedures.** For successful tree protection on a construction site, all contractors must know and understand the goals of tree protection. It can only take one mistake with a misplaced trench or other action to destroy the future of a tree.
 - a. Hold a Tree Protection meeting with all contractors to fully explain the goals of tree protection.
 - b. Have all subcontractors sign memoranda of understanding regarding the goals of tree protection. Memoranda to include penalty for violating tree protection plan. Penalty to equal appraised value of tree(s) within the violated tree protection zone per the current Trunk Formula Method as outlined by the Council of Tree & Landscape Appraisers current edition of the *Guide for Plant Appraisal*.
3. **Fencing.**
 - a. Establish fencing around each tree or grove of trees to be retained as shown on the Tree Protection Plan.
 - b. The fencing is to be put in place before the ground is cleared to protect the trees and the soil around the trees from any disturbance at all. Exception is if trees are to be removed that are located within the tree protection zones, they should be removed prior to installing the tree protection fencing without the use of mechanized wheeled or tracked equipment being allowed to operate within the identified tree protection area.
 - c. Fencing is to be placed at the edge of the root protection zone as shown on the Tree Protection Plan. Root protection zones are established by the project arborist based on the needs of the site and the tree to be protected.
 - d. Protection fencing consisting of a minimum 4-foot-high metal fence, secured with 6-foot metal posts shall be established at the edge of the root protection zone and permissible encroachment area on the development site.
 - e. Fencing is to remain in the position that is established by the project arborist and not to be moved without written permission from the city or issuance of the final certificate of occupancy (4.620.10.01D)

4. Signage

- a. All tree protection fencing should have signage as follows in addition to signage provided by the city so that all contractors understand the purpose of the fencing:

TREE PROTECTION ZONE

DO NOT REMOVE OR ADJUST THIS FENCING. THE FENCE LOCATIONS ARE APPROVED TO PROTECT VEGETATION & TREES.

NOTE: Moving these fences is a civil violation and may result in fines.

Please contact the Code Enforcement Specialist and project arborist. If alterations to the approved location of the protection fencing is needed.

Project Arborist: Teragan & Associates Inc
503-697-1975 info@teragan.com

- b. Signage should be placed so as to be visible from all sides of a tree protection area and spaced every 75 feet.

During Construction

1. Protection guidelines within the Root Protection Zone

- a. No traffic shall be allowed within the root protection zone. No vehicle, heavy equipment, or even repeated foot traffic.
- b. No storage of materials including but not limited to soil, construction material, or waste from the site.
 - i. Waste includes but is not limited to concrete wash out, gasoline, diesel, paint, cleaner, thinners, etc.
- c. Construction trailers are not to be parked / placed within the root protection zone without written clearance from the project arborist.
- d. No vehicles shall be allowed to park within the root protection areas.
- e. No activity shall be allowed that will cause soil compaction within the root protection zone.

2. Tree protection. Retained trees shall be protected from any cutting, skinning, or breaking of branches, trunks, or roots.

3. Root pruning. Any roots that are to be cut from existing trees that are to be retained, the project consulting arborist shall be notified to evaluate, document, and oversee the proper cutting of roots with sharp cutting tools. Cut roots are to be immediately covered with soil or mulch to prevent them from drying out.

4. Grade changes. No grade change should be allowed within the root protection zone.

5. Root protection zone changes. Any necessary deviation of the root protection zone shall be cleared by the project consulting arborist in writing.

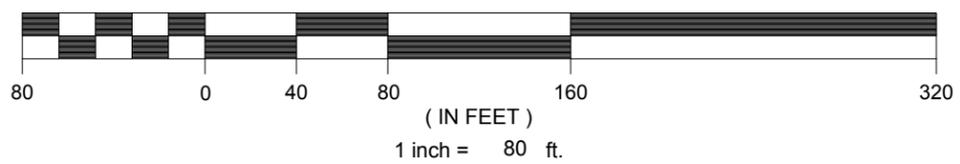
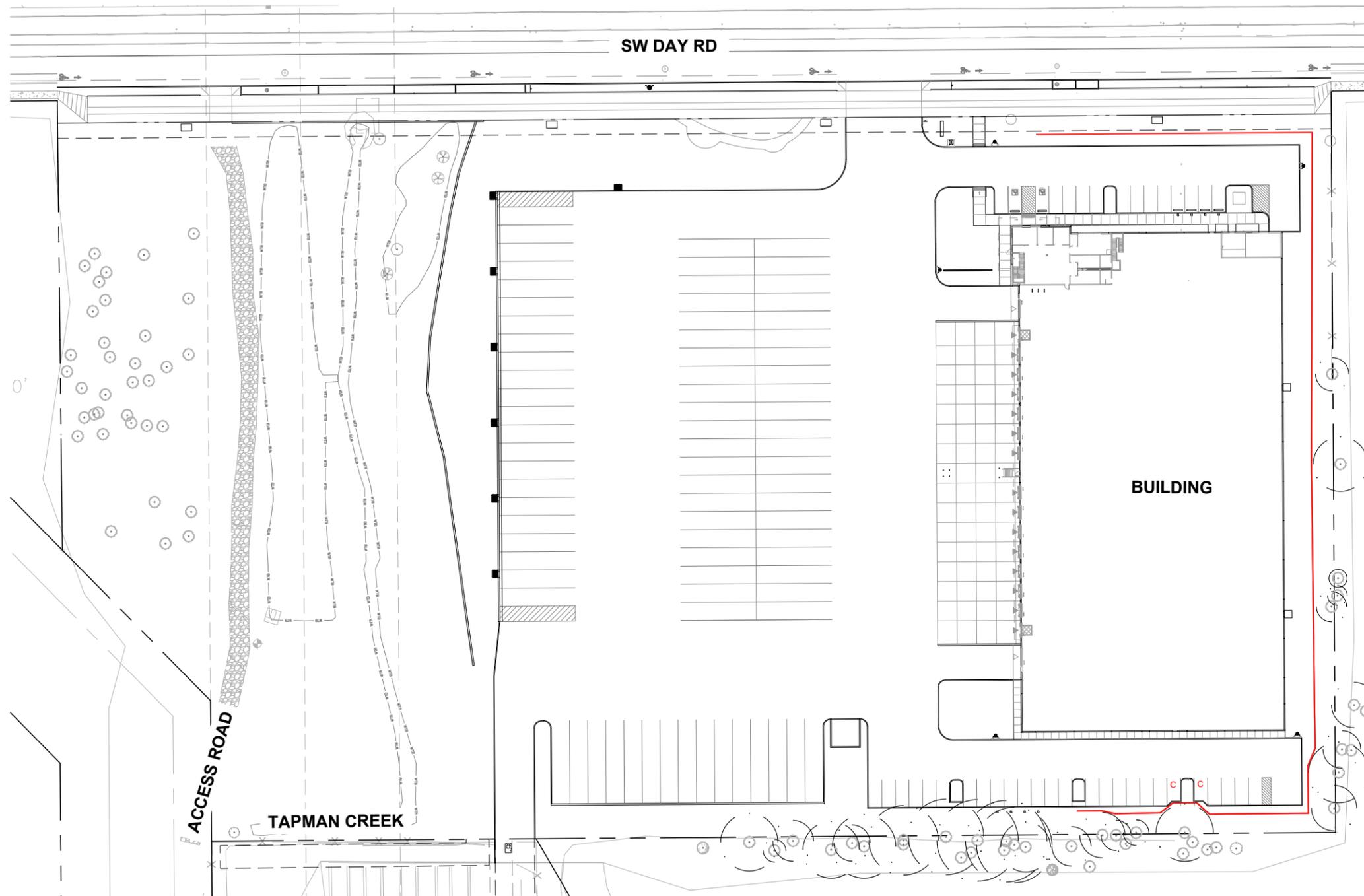
6. Utilities. Any necessary passage of utilities through the root protection zone shall be by means of tunneling under roots by hand digging or boring.

7. Re-inspection of fencing. Tree protection fencing is subject to inspection by the city. The project arborist highly recommends monthly inspections of tree protection fencing to ensure compliance with the permit and protection of the trees.

After Construction

1. Fences are to remain standing until the completion of the project.
2. Carefully landscape around the tree. Do not allow trenching within the root protection zone which still exists even though the tree protection fencing has been removed for landscape installation. Carefully plant new plants within the root protection zone. Avoid cutting the roots of the existing trees.

3. Do not plan for irrigation within the root protection zone of existing trees unless it is drip irrigation for a specific planting or cleared by the project arborist.
4. Provide for or ensure that adequate drainage will occur around the retained trees.
5. Pruning of the trees should be completed as one of the steps of the landscaping process before the final placement of trees, shrubs, ground covers, mulch, or turf.
6. Provide for inspection and treatment of insect and disease populations that can damage the retained trees and plants.
7. Trees that are retained may need to be fertilized as called for by project arborist after final inspection.



April 11, 2023

City of Wilsonville
Attention: Cindy Luxhoj
29799 SW Town Center Loop E
Wilsonville, OR 97070

Re: **Delta Logistics Annex [DB22-0007 et al.]**
Supplemental Evidence: Coffee Creek Pattern Book Compliance, Tree Root Zone Protection
Project Number 2200502.00

Dear Ms. Luxhoj:

Thank you to you and all the Wilsonville staff who have provided guidance for the completion and refinement of the Delta Logistics Design Review and associated land use permit applications.

This letter provides recommended supplemental findings to support the Waiver 1 request to allow construction of a single, tall cut retaining wall in the eastern part of the site.

Also submitted with this letter, identified as Exhibit V of the applicant's submittal materials, are the following additional exhibits (Exhibits A-Q were attached to the submittal of the revised February 2023 Plan and/or prior materials):

- R. Updated Tree Plan sheet(s) with Drip Line dimensions for off-site trees near the eastern/southern retaining wall.
- S. Section/Elevation figures – views of retaining wall configuration and proposed plantings.
- T. Arborist's Report supplement.
- U. Conceptual plan for horizontal realignment of retaining wall to protect root zones.

Waiver 1 – Consistency with Intent of the Coffee Creek DOD Pattern Book

Of the two Waivers requested from specific Code standards, Waiver 1 is to allow linear segments of retaining walls that are taller than 4' and do not incorporate 5' horizontal offsets. Waiver 1 is eligible for approval under the Guidelines in the Coffee Creek Industrial Design Overlay District Pattern Book, pursuant to WDO Section 4.134(.08)B: ¹

¹ Waiver 2 is a request to provide limited employee vehicle parking between the proposed building and SW Day Road (an Addressing Street). It is subject to the additional evidence requirements of WDO Section 4.134(.08)A, which are addressed in the applicant's submitted narrative report. Waiver 2 does not affect the physical form of the proposed parking, which complies with setbacks, landscaping, lighting, and the numeric limits in the development standards; it only affects who will be allowed to use it (specifically, allowing a larger allotment of the allowed spaces to be used by on-site employees). Because the physical parking configuration complies with the development standards and the Waiver only affects utilization of the spaces, detailed findings with respect to the form-based guidelines in the Patten Book would be redundant.



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WDO 4.134(.08) Waivers. The Development Review Board may waive standards as listed in Section 4.134 (.11), consistent with the provisions of Section 4.118 (.03).

...

- A. *In addition to meeting the purposes and objectives of Section 4.140, any waivers granted in the Coffee Creek DOD must be found to be consistent with the intent of the Coffee Creek DOD Pattern Book.*

The applicant's narrative/findings report provides detailed responses to 4.140.B.1 through 8, which are not reproduced here. Please refer to that report for those findings.

Responding to guidance from Wilsonville staff, the applicant's design team has prepared the following additional information to explain how the proposed development plan, including, in particular, the proposed retaining wall configuration for which Waiver 1 is needed, is *consistent with the intent of the Coffee Creek DOD Pattern Book*.

Site Analysis/Context

The need for retaining walls has come to attention in the context of the applicant's proposed development plan; however, the reasons extensive site grading is necessary are primarily due to the physical characteristics of the site itself, when compared to the practical needs of the "typically permitted" uses the City's Planned Development – Regionally Significant Industrial Area (PD-RSIA) designation of the property it is intended to support. The following site characteristics make it impractical to develop the site for its intended use, comparable to recent approved developments on other parcels in the Coffee Creek area, without the use of retaining walls that differ from the height limits and horizontal offset standards in WDO Section 4.134(11.)/Table CC-3/5 Grading and Retaining Walls (maximum height of 4' or 4.8' with modification, and 5' horizontal offsets between retaining walls exceeding 50 linear feet in length).

- **Significant Natural Resource Overlay Zone (SROZ) Area:** Tapman Creek flows from north to south through the site, with a required 50' vegetated corridor (protective buffer) on both sides of the wetland resource. The applicant has retained a field biologist to identify resource boundaries and provide recommendations for plantings within the resource area and protective buffers. The low-lying western portion of the property is dominated by this designated significant natural resource feature.
- **Constrained East-West Dimension:** The larger part of the property's upland developable area is located east of the Tapman creek corridor. Measuring between the east property boundary and the eastern edge of the 50' vegetated corridor around the Tapman Creek wetland, the developable area's east-west dimension varies between about 555' and 600'.
- **Slope:** The portion of the site east of the protected Tapman Creek riparian corridor has grade elevation of about 244' at the west (along the Tapman Creek 50' buffer edge) and about 285' along the east property boundary. Over the approximately 575' east-west width, that 41' vertical difference results in an overall cross-slope of about 7.1%. By contrast, large-floor industrial buildings generally require flat floors (zero percent slope) with egress or fire/emergency access doors at multiple locations around the perimeter. Additionally, site operational areas for semi-truck and trailer circulation should not exceed cross-slope of 3%. In this context, creating a pad area capable of supporting industrial use at scale requires cutting into the uphill side of the site and filling on the downhill side, to form a sufficiently level platform area of adequate size.
- **Grade Transition along Street Frontage:** Along the north frontage of the eastern development area described above, SW Day Road's centerline elevation transitions from about elevation 249' at the west to about 280' near the northeast property corner. Additionally, the centerline slope is steeper in the eastern part of the segment,

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and there is an apex vertical curve east of the subject property that limits sight distance to the east. For these reasons, site design needs to identify a building finish floor elevation and site contouring that allow the site driveway to be located at a safe location along the SW Day Road property frontage (i.e., far enough west to provide adequate sight distances for vehicular movements at the driveway).

Design Responses to Site Characteristics

The site features described above complicate the effort to design for industrial use while satisfying all the standards in Chapter 4.134, Coffee Creek Industrial Design Overlay District.

Applicable Provisions of the Coffee Creek DOD Pattern Book

Based on review of the Intent Statements and Design Guidelines (DGs) in the Coffee Creek Industrial Design Overlay District Pattern Book, the applicant has prepared the following responses discussing consistency with the Intent Statements and, where appropriate, particulars regarding specific DGs to the extent they are relevant to the Waiver 1 request.

Section A | Street Design and Connectivity

Intent Statement – Streets do much more than provide access to buildings, blocks, parcels, and sites. Streets are the primary generators of urban form and their design determines the quality of the public realm and the character of our neighborhoods and cities. The Form-based Code sets standards for streets as well as standards for development of sites, parcels, and buildings. In the Form-based Code, the Regulating Plan establishes an overall framework for access and mobility in the Coffee Creek Industrial Area by building upon those roads that already exist. Existing rural roads and new streets will become the major streets of Coffee Creek and will set the character for its development. The Regulating Plan sets forth only a rough framework for new development with standards for Connection Spacing that are appropriate to the large scale of industrial development, and to ensure that connectivity to, and through, all sites is supported. The Form-based Code sets minimum standards for connectivity, and establishes a hierarchy of Addressing Streets, Supporting Streets, and Through Connections. The nature of many of these connections, their function, and their typology is flexible so that their ultimate design can be a reflection of their unique context. Supporting Streets and Through Connections should work together to provide a complete network that serves people getting around no matter what form of transportation they use. It is not necessary for every connection to serve everyone, but the network should make it possible to get to, through and around parcels and the district.

Addressing Streets – Addressing Streets are the structural framework of the street network in Coffee Creek. They link Supporting Streets and Through Connections to each other and to the larger community of Wilsonville. In addition to this essential network role, Addressing Streets are the front doors for all development in Coffee Creek. They define the quality of the public realm and create the first impression of Coffee Creek for new visitors. Where new development includes planning and construction of an Addressing Street, the design must reinforce the distinctive regional landscape and support the intent of high-quality urban design for the public realm with a park-like atmosphere.

DESIGN GUIDELINES - 2. ADDRESSING STREETS

2.1 Park-like character – Design Addressing Streets to establish and support a park-like character of the public realm. Addressing Streets shall provide continuous sidewalks on both sides of the street that protect the pedestrian with a planting strip landscaped with shade trees. Addressing Streets may also include a planted central median.

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2.3 Prominent address – Design Addressing Streets to serve as the “front door” or “address” for new buildings and development. New Addressing Streets shall include sidewalks on both sides that provide safe, continuous access for pedestrians to all abutting sections of the primary street network of Addressing Streets. Unless interrupted by another Addressing Street or a Supporting Street, the sidewalks shall be protected by a continuous landscape strip planted with shade trees.

2.4 Enclosed public realm – Orient building massing, form, architecture, and programmatic function along Addressing Streets to help define the public realm, create a distinctive enclosure of the public realm, and support the sense of place in Coffee Creek.

Response: The subject property has frontage on SW Day Road, which is an Addressing Street but also a designated Arterial. In addition to widening the public right-of-way, constructing the paved roadway to full future width, and providing both a bike path and sidewalk separated by landscape strips within the right-of-way, the applicant’s proposed site plan provides street trees, dense site landscaping, and a wayside along the street frontage. Although the Pattern Book indicates that on-street parallel parking can be appropriate for Addressing Streets, SW Day Road is not suitable for parallel parking because having vehicles stop in the travel lane and make reversing movements to parallel park is inconsistent with its function as a designated Arterial Street.

Along the eastern part of the street frontage, the slope of the curb line, sidewalk, and bike path are determined by the street’s centerline profile, which steepens as the roadway climbs to the east. The primary effect of the proposed site excavation and grading will be to lower the eastern portion of the property, allowing the building to appear to be embedded into the west-facing hillside, where Douglas fir trees are the dominant tree species. This will tend to visually integrate the building into the topography of the area: rather than standing alone, popping up exposed within a flat surrounding area, the size and scale of the building will visually tend to merge with the rising hillside contour of the site and the tree community – consisting of both retained trees and new replacement tree plantings that will grow in over time – at the east side (back) of the building.

As the Day Road street frontage climbs proceeding to the east, the flat elevation of the building’s finish floor and the northern parking area beside it will become progressively lower in relation to street level. As a result, for motorists, cyclists and pedestrians traveling along SW Day Road, the parking area on the north side of the building will be mostly obscured from view by the combination of landscape plantings along the street edge, canopies of trees planted at grade along the base of the inner side of the cut retaining wall (the wall faces the interior of the site – its face can scarcely even be seen from the public right-of-way), and the lower relative elevation of the building and the parking area. The resulting visual impression will be of a building set back from the street edge, integrated into the site’s landform, and separated from the public realm by tiers of green trees within a narrow canyon-like feature. Similarly, tree plantings at the back of the building, between the building and the retaining wall near the east property boundary, will create a green landscaped corridor within a narrow valley running perpendicular to the street. As the planted trees’ canopies mature, any visual gap will grow less and less noticeable over time.

The vertical grade difference between street and site is greatest at the eastern boundary, but at roughly the mid-point of the development area’s street frontage, site- and street grades will align at the driveway. To provide access for pedestrians, an ADA-compliant path to the main entrance will go through the landscape area just east of the driveway. Both passenger vehicles and trucks will use the driveway, with paths diverging just within the site: visitors in passenger vehicles will turn east to park by the main entrance, but trucks and employees will go straight or turn right and proceed to the site’s operational areas. Cyclists will have the option to ride into the site by way of the driveway or use the pedestrian path as an alternative route. The driveway thus becomes the focal point that frames the dominant view into

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the site from SW Day Road, making the main entrance at the northwest building corner the primary visual element and helping people clearly identify where to park and enter the building.

Just west of the driveway, the proposed wayside will provide an attractive landscaped area along the street edge for use by pedestrians and by employees who work within the building. Additional perimeter tree and shrub plantings along the street frontage will screen the site and create a dense, naturalistic landscape character along the remainder of the street edge. Just west of the proposed development area, passers-by will enjoy views into the protected Tapman Creek SROZ corridor. The adjacent rain garden for stormwater treatment and detention will be planted with native species plants to complement the vegetated corridor (buffer) along the protected creek and contribute to habitat values.

The proposed retaining wall configuration involves a wall taller than the standards allow; however, for the reasons discussed above, the overall design helps to integrate the building into the existing landform and creates a strong visual and functional relationship between the street and the main entrance. This overall approach is consistent with the intent to prioritize the Addressing Street as the priority orientation for the principal visual and functional connections to buildings' main entrances.

Section B | District-Wide Site Planning and Landscaping

Intent Statement – *The impact of the Ice Age floods on the Willamette Valley defies the imagination. The cataclysmic effects of the Missoula Floods created the modern-day landscape that includes Coffee Lake Wetlands and Coffee Lake Creek. These remnants of the geologic events of 12,000 years ago and the landscape that has emerged since that time are authentic elements that establish our sense of place and contribute to creating a distinctive image and identity that is unique to the City of Wilsonville. In Coffee Creek, the oak savanna is the most distinctive and significant landscape feature visible today that emerged as a result of the Missoula Floods. The effects of settlement have diminished the extent of this oak forest and groves of fir trees are now a distinctive part of the skyline. There may well be elements of the floods still to be discovered; the glacial erratics of the Willamette Valley were scattered here as the ice rafts that they arrived with melted.*

The City's commitment to preserving and enhancing the heritage of this distinctive landscape is reflected in several of the patterns and guidelines. At the scale of the district, the City expects development to promote visual and physical connections from the industrial district to the Coffee Lake Creek Natural Area and the future Tonquin Ice Age Trail.

The themes that express the unique character, quality, and culture of Coffee Creek are still emerging as the district becomes fully integrated with the larger, more established city. Existing stands of Douglas Fir acknowledge both the city's status as a Tree City USA and its commitment to maintaining its natural beauty. The city is also home to three water features by the celebrated Pacific Northwest landscape architect Bob Murase: water features are strongly encouraged as part of the Coffee Creek Industrial Master Plan.

Within the Coffee Creek Industrial Area the design of individual buildings should be linked by unifying elements. The public realm of Addressing Streets provides unity to the district by establishing a pastoral character of place with the regular planting of street trees, sidewalks, and front yard setbacks. Trees help to define place, and enhance the public realm by giving context and scale to the Coffee Creek Industrial Area.

Improving existing and providing new pedestrian and bicycle connections to and through natural areas strengthens the sense of place by developing the character of place.

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Gateways reinforce a sense of arrival or departure and mark the transition from one precinct of the city to another.

Response: The site's existing conditions compel a designer to prioritize competing goals and weigh impacts on site features when preparing a plan for industrial development and use:

- The City has designated Tapman Creek as a Significant Resource Overlay Zone (SROZ) corridor. It is the dominant feature of the western portion of the property, although there is some upland area in the northwest corner of the site that is also outside the SROZ.
- The design team has treated the Tapman Creek corridor as the primary natural resource feature of the site, keeping proposed development outside 50' wide vegetated corridor areas on both sides of the creek.
- The design includes native plant species in the proposed rain garden (for on-site storm water quality treatment and detention) adjacent to the Tapman Creek vegetate corridor, effectively widening the buffer between the creek and the developed area.
- Ideally, the creek corridor would be suitable for planting of large canopy trees; however, due to existing power lines (both Bonneville Power Administration and Portland General Electric), only shrubs can be planted within most of the on-site SROZ.
- Existing trees within the site are predominantly Douglas fir, and they are located mainly on the west-facing hillside in the eastern part of the site.
- As explained above in the *Street Design and Connectivity* section response, substantial regrading is necessary to flatten the site's usable area. This cannot be accomplished without removing existing trees within the proposed development area; however, the proposal will configure post-development site areas to support successful replanting and establishment of large trees, including Douglas firs, to restore the dominant tree canopy character at perimeter locations.
- Specifically, the proposed single tall retaining wall at the eastern perimeter of the site provides a relatively wide flat area between the back of the building and the base of the wall, which is wide enough to support planting of large canopy trees at grade. Specifically, the proposed planting plan (L-Series sheets in Exhibit B) includes replacement planting of Douglas firs within the property within the space between the top of the retaining wall and the property boundary, and planting of western red cedars and smaller Kousa dogwoods in the low area between the rear wall of the building and the retaining wall. Over a number of years, the Douglas fir and western red cedar trees can grow up to be taller than the proposed building, thereby re-forming the visual impression of a consolidated grove of coniferous trees along the property's eastern boundary.
- The applicant's design team has explored alternative configurations for retaining walls that would break the change in elevation into two or three shorter walls with 5' offsets, in an effort to comply with two specific development standards in *WDO Chapter 4.134(11.)/Table CC-3/5. Grading and Retaining Walls: The Maximum Height* standard (4' or 4.8' with Design Review Modification) and the *Retaining Wall Design* standard (requiring retaining walls longer than 50' to "introduce a 5-foot, minimum horizontal offset to reduce their apparent mass").
 - A compliant wall could be achieved by constructing three 4.8' high walls separated by 5' lateral offsets with a 4-to-1 grade slope (4' of horizontal distance for each 1' of vertical elevation change) between them; however, this configuration would not provide any surface with soil conditions capable of supporting the root zones of large trees, such as the proposed western red cedars, because their root growth would exceed the available space between the walls and ultimately compromise the integrity of the retaining walls themselves. As a result, plantings would need to be limited to shrubs and small shade trees. (See section diagrams in Exhibit S for a visual comparison of the three concepts.)

- Assuming a different Waiver approval, a wall theoretically closer to compliance could incorporate a tall upper retaining wall with a low planter wall at a seating height, 30" or less, in the foreground area between it and the east wall of the building. The lower wall could not be high enough to require geotechnical fabric for support stabilization, because tree roots would compromise it over time. This alternative configuration, illustrated as Section C Option 3 in Exhibit S, could support root zones for planting of large trees in the terrace area. The terrace would make the wall appear a bit shorter by raising the point where the bottom of the wall meets grade; however, it also splits the area behind the building into two tiers: one at the building's finish floor elevation, where fire access doors are located, and a slightly elevated terrace beyond that.
- Because the proposed single tall retaining wall can be constructed using soil nails for its support, no over-excavation into the root zones of trees near the perimeter of the site is necessary. Additionally, large trees can be planted both at the top elevation and at grade in the resulting wider space between the base of the wall and the back of the building, because their long-term root growth will not compromise the wall's structure or capacity.
- Finally, a further complication of using divided, offset walls would be that the resulting terrace(s) between the walls would be difficult to maintain because there are no good locations where a ramp could be built to allow access by maintenance workers and equipment. For walls exceeding 30" (2.5') above grade, safety railings or fences could be needed at each level due to the difference in vertical height and potential fall hazard. While the single tall retaining wall will also require a safety rail or fence at the top, the part of the property at the top of the wall can be accessed at grade from the SW Day Road frontage to perform maintenance.
- The position and the construction method of the proposed retaining wall has been determined in consultation with the project's Geotechnical Engineer and Arborist to ensure that effects on the root zones of existing trees will not compromise the trees' survival. Specifically, no excavation is proposed within the critical root zone (i.e., within a radius six times each tree's diameter at breast height (dbh)), and outside that critical root zone excavation will occur on only one of four sides (e.g., north, east, south, and west). The Arborist's report supplement (see Exhibit T) explains in greater detail how this best-practice methodology has been applied in this proposal. Tree protection fencing locations and specific instructions for construction management, including observation by the arborist during construction in specific areas, are based on the measured dripline radii of the trees to be protected.

To summarize, the requested Waiver – to allow construction of a single tall retaining wall, consistent with the proposed excavation in the eastern part of the site – is consistent with the intent of the Pattern Book because (1) it allows the building to occupy the eastern part of the site, allowing the site plan to prioritize protection and enhancement of the Tapman Creek corridor at the west, and (2) it provides soil conditions in the eastern part of the site that are suitable for planting, establishment, and long-term survival of large trees including western red cedars and Douglas firs in perimeter areas. While other possible wall retaining configurations could achieve the necessary grade difference in the area behind the building, they cannot provide root zone areas capable of supporting the replanting of western red cedars, Douglas firs, or other large trees to establish and sustain the desired naturalistic character.

Wilsonville Development Ordinance 4.134(.08)A, quoted above, requires findings that Waiver 1 is *consistent with the intent of the Coffee Creek DOD Pattern Book*. Additionally, however, because the retaining wall configuration and site

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landscaping plan are integral to the overall development plan, the applicant includes the following specific response statements to address the Guidelines for District-Wide Site Planning and Landscaping in more detail:

Guidelines

1. THE NATURAL LANDSCAPE

1.1 Water flow to Coffee Lake Creek – Design landscapes to acknowledge the Ice Age heritage of Coffee Creek by orienting patterns of new landscape plantings reflecting the natural flows of water from the industrial district to Coffee Lake Creek.

Response: The proposed site plan conveys surface drainage to a rain garden adjacent to the east side of the Tapman Creek SROZ corridor. That feature, planted with native plant species, provides storm water quality treatment as well as detention before releasing storm water into Tapman Creek, the natural drainageway. This system design is consistent with the natural flow of water within the site (as well as accommodating through-flows coming from the north, across SW Day Road).

1.2 Natural landscape as visual unifier – Use the unifying elements of the natural landscape to visually connect and functionally integrate the industrial district.

Response: The proposed single, tall retaining wall is an element of a proposed site plan that prioritizes protection and visibility of the Tapman Creek SROZ corridor, consistent with incorporating the principal natural landscape feature into the visual character of the industrial district.

1.3 Naturalistic landscape, native planting – Promote a landscape that supports ecological function and habitat by using native species in a naturalized manner.

Response: The proposed single, tall retaining wall is an element of a proposed site plan that prioritizes protection and visibility of the Tapman Creek SROZ corridor, including planting of native plant materials in areas adjacent to Tapman Creek.

1.4 Access to nature – Pedestrian and bicycle connection is critical and incorporating public connections through large-scale industrial sites is encouraged. Access connections to the creek, natural areas, and greenway trails should be clearly marked and provide safe and convenient passage.

Response: The proposed single, tall retaining wall is an element of a proposed site plan that prioritizes protection and visibility of the Tapman Creek SROZ corridor, consistent with its identification in the Transportation System Plan as a corridor for a north-south pedestrian and bicycle connection on both sides of SW Day Road.

1.5 Ice Age artifacts – Identify, preserve, and enhance any Ice Age elements found on site, such as erratics the foreign boulders carried to the site on ice rafts as elements that influence site design and development.

Response: Site investigations, including topographic survey, geotechnical investigation, and field biological assessment/delineation of Tapman Creek and associated wetlands, have produced no surface indication of Ice Age elements within the subject property. Subsurface geotechnical sampling indicates the presence of substantial basaltic rock formations, which could potentially include one or more boulders or possibly glacial erratics within the eastern part of the site, where excavation is proposed. In case one or more such objects are unearthed whose size will allow them to be incorporated within a proposed on-site landscape area, the applicant requests approval from the DRB to work with staff to make minor changes in the landscape planting plan to achieve that objective without necessitating a Design Review Modification or Amendment.

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1.6 Tree preservation within setbacks – Whether individually or in groves of native species, preserve trees within the setbacks of the development, particularly when they occur within the setback of an Addressing Street, or a Supporting Street that serves as the development’s primary access street.

Response: As discussed above, the site grading necessary to produce a flat operational area within the site and make the necessary grade transition to the sloping profile of SW Day Road along the street frontage complicates efforts to conserve existing trees, particularly along the street frontage and in the eastern portion of the property. The applicant’s plan for replanting will re-establish tree specimens including large conifers that can grow in place to establish the desired landscape character.

1.7 Informal park-like landscaping – The park-like character of the design of the Addressing Streets should be complemented by landscaping around buildings, parking lots, and open space that reflects the informal, natural, and original landscape that preceded development and persists in places across the site.

Response: Tree plantings in the eastern part of the property will include Douglas firs near the property boundary, at the top of the retaining wall, and a combination of western red cedars and smaller, deciduous Kousa dogwoods at the base of the retaining wall. These plantings will create an insular, shady corridor behind the building that will be consistent with the pre-development character, which was dominated by Douglas fir trees.

2. SPECIAL LANDSCAPE FEATURES

2.1 City of Wilsonville themes – Integrate the themes related to the City of Wilsonville as unifying elements in the conceptual design for new development, and into the landscape design.

Response: The development plan of incorporating the tall, single retaining wall provides protection and enhancement of the Tapman Creek corridor, which contributes to the naturalistic theme associated with intended Coffee Creek development.

2.2 Existing tree groves at points of access – Incorporate elements such as existing stands of native trees to emphasize points of site access and/ or building access.

Response: Unfortunately, in this case, there is not a stand of existing native trees that could be conserved at a location proximate to the limited area along the frontage suitable for driveway access on SW Day Road. Instead, the proposed development plan incorporates replacement plantings, including large conifers that can grow in place to establish the desired character on a sustainable basis for the future.

2.3 Water features – Integrate fountains and water features to emphasize important places, such as parcel access, building entries, and employee amenities.

Response: As noted above, the Tapman Creek riparian corridor is the primary natural resource feature within the site. The proposed development plan will provide views into the Tapman Creek corridor from points along the SW Day Road frontage (the public realm) as well as from points within the site, including the wayside located west of the proposed driveway. The intersection of SW Day Road and the Tapman Creek corridor, which is associated with an identified north-south pedestrian-bicycle path in the Transportation System Plan, is an important place in the greater context of the Coffee Creek Regulating Plan. In this instance, it is preferable to emphasize that public-realm juncture and separate it from the private driveway and entrance to the building, located farther to the east.

2.4 Selective use of non-native plants – Non-native, ornamental plants, shrubs, and trees should be used sparingly and strategically as elements that accent special elements of the site or building, such as entries.

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Response: The applicant's planting plan specifies some non-native shrubs and ground covers at selected locations including entrances to the site and the building, and within parking islands. The remainder of the site is to be planted with native plant material.

2.5 Intentional aesthetic use of industrial materials – Integrate the materials of industry at an industrial scale. This guideline may be accomplished by designing buildings, enclosures, and retaining walls with the simple, natural, unembellished materials common to industry. Use unfinished steel, raw aluminum, and plain concrete as the finish materials for the construction of site and building elements.

Response: The proposed development incorporates an industrial metal screen material both on the building and in a landscape area adjacent to the main entrance, which helps to visually screen the truck dock area to its south; however, that use of materials is not germane to the proposed retaining wall configuration.

3. STRENGTHEN GATEWAYS

3.1 Coffee Creek gateways – Design gateway locations to promote a sense of place and to reinforce the distinct identity of Coffee Creek. This guideline may be accomplished by placing new buildings strategically at areas that define boundaries and edges to create gateways in conjunction with other buildings or with significant landscape features.

3.2 Buildings as gateway markers – Develop gateway buildings at strategic intersections.

3.3 Monument signs – Use freestanding monument signs to mark gateways.

3.4 Iconic elements – Install iconic elements within the right-of-way, such as signs, monuments, or art, that help identify a specific address as a district-wide or site-specific gateway to Coffee Creek.

Response: The subject property is not identified as a gateway location; however, as noted above, the SW Day Road/Tapman Creek intersection is the intersection of an Arterial Street and a north-south pedestrian-bicycle path identified in the Transportation System Plan.

Section C | Site Design

Intent Statement | Access and mobility – Access and mobility are essential elements of successful industrial development. We tend to think of tractor-trailer rigs as essential to industry, and they are, but equally essential to industry is an educated work force that can get to their shifts with a full range of transportation options: options that offer employees real choices that include driving alone, but also support and encourage transit, walking, and biking.

Automobile and freight access from Addressing Streets and Supporting Streets to a parcel should be obvious, clear, simple, and safe. Parcel access provides an opportunity to create a gateway and reinforce a strong sense of place.

Bicycle and pedestrian access to a parcel from Addressing Streets and Supporting Streets can also reinforce the sense of place in Coffee Creek. Bicycle and pedestrian access from an Addressing Street to a parcel should be convenient, direct, and complete. Cyclists and walkers should be able to clearly perceive their ultimate destination from the Addressing Street.

Access and mobility are for all people. The pedestrian system is successful only when all people can conveniently reach their destinations. Universal and equitable barrier-free design is most successful when designed and developed systematically from initial site design through final building design and construction.

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Response: The proposed development plan, including the Waiver 1 proposal to use a single, tall retaining wall at the east, positions the driveway at a suitable horizontal and vertical location for level access to SW Day Road with sufficient sight distances, and provides a separate ADA-accessible path between the public sidewalk and the main building entrance, located just a few feet east of the driveway.

The proposed configuration brings the driveway, the pedestrian path, and the main building entrance as close together as it is feasible to do while achieving the grade transitions that are necessary between the sloping street and the level area within the industrial site itself. Upon entering the driveway, the driver of a vehicle or a truck immediately has visual clues indicating where to proceed: vehicles turn left to enter the parking area adjacent to the main building entrance, and trucks either proceed straight ahead to the docking apron area or turn right to enter the trailer storage area.

To provide pedestrian safety, the proposed pedestrian path alignment between the public sidewalk and the main building entrance is completely segregated from truck circulation routing within the site. A pedestrian on the sidewalk near the driveway will be able to see and proceed to the pedestrian walkway, located 34' east of the driveway, and directly aligned with the plaza at the building entrance. The walkway alignment satisfies maximum slope requirements for accessibility; it is separated from the driveway by landscaping and a striped crossing of the passenger vehicle drive aisle is provided. (See Sheet C1.10 in Exhibit B.)

An approaching cyclist can choose whether to ride directly into the driveway (if no conflicting movement is occurring as they approach), or alternatively enter the driveway and then proceed to the pedestrian walkway by way of the sidewalk just east of the driveway.

Intent Statement | Parking Design – *Surface parking is permitted in the front yard setback for development along Addressing Streets with limitations. Surface parking lots are limited in scale and designated for short-term parking for visitors, people with disabilities, and deliveries. The design guidelines are intended to establish the character for surface parking lots in a manner that supports the City's goals for pedestrian convenience, comfort, and safety. Ensure that the parking lot landscape is planned, installed, and maintained to promote the informal design character associated with each landscape frontage type.*

Response: The proposed development plan of incorporating the proposed single, tall retaining wall at the east, is consistent with the Parking Design intent to limit the scale and visual prominence of surface parking lots. The surface parking area on the north side of the building – adjacent to the main entrance, between the building and SW Day Road – will be at a lower elevation than the road surface as it, along with the bike path and sidewalk, climbs to the east. Being at a depressed relative elevation reduces the visual prominence of the parking area, and the proposed on-site plantings – adjacent to the sidewalk on the high side of the cut retaining wall as well as in the landscape area at the foot of the wall – will create a tree canopy that further screens the parking area (as well as the building) as seen from SW Day Road.

Intent Statement | Design that Contributes to the Site – *Minimize site grading to preserve the natural character of the site. Contoured slopes are generally preferred to the installation of retaining walls. Where retaining walls are necessary to support site development, ensure that they facilitate surface drainage, limit soil erosion, and avoid increasing instability of native soils. Integrate retaining walls with other site design features, such as stairs, ramps, and planters wherever possible.*

To the extent possible, site development should maintain and enhance natural drainage patterns. Incorporate features for the storage, cleaning, transport, and re-infiltration of stormwater into site design and landscaping. Stormwater facilities such as swales should be designed to reinforce the natural quality and visual continuity of the landscape at the scale of the site and the district.

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Trees help to define place. Whether individually, or in groves of native species, trees enhance the public realm by giving context and scale to the Coffee Creek Industrial Area. Landscape planting in front, side, and rear yards and as screening for parking lots, service drives, and service enclosures gives form and defines the public realm and parcels. Landscape design, installation, and maintenance helps to define the Coffee Creek Industrial District and to diminish the large scale of industrial buildings. Landscaping also helps direct people to building entries. The native plant materials are climate adaptive, have low water and maintenance requirements, and visually blend with adjacent, undisturbed landscapes. Native trees should be preserved and employed as the visual anchors of new landscapes.

Industrial building types typically need extensive, relatively flat surfaces for buildings, parking lots, service yards, access lanes, and truck maneuvering areas. It may still be possible to fit a multistory building into the terrain of Coffee Creek. Integrating buildings with their sites is strongly encouraged.

Landscape that Contributes to the Building – Building designs should acknowledge and respect the natural character of their sites. The Coffee Creek Industrial Area has a strong character that derives from context, topography, and native vegetation. New site development, landscaping, and building design can reinforce this distinctive character.

Provide a consistent and high-quality environment for the Coffee Creek Industrial Area by obscuring views of loading areas, work yards, above-grade utilities and services, and recycling and refuse areas from Addressing Streets, Supporting Streets and Through Connections. Whenever possible, group utilities and services to minimize visual clutter.

The primary building entry is a significant element of building design in Coffee Creek. The design guidelines recommend that the primary entrance for all buildings front on an Addressing Street. This is not a requirement of the Form-based Code; an entrance on a Supporting Street or Through Connection is acceptable provided the entry is clearly visible from the Addressing Street and a clear public route to the entry is provided. Emphasize the importance of the primary building entry with glass, canopies, signage, public art, landscaping, and lighting.

Response: The intent statement for Design that Contributes to the Site leads by expressing a preference for site design that avoids or minimizes the use of retaining walls, but it immediately adds, “Where retaining walls are necessary to support site development, ensure that they facilitate surface drainage, limit soil erosion, and avoid increasing instability of native soils. Integrate retaining walls with other site design features, such as stairs, ramps, and planters wherever possible.” The applicant understands this direction to mean that large retaining walls are not prohibited, and that, where used in a site development plan, they should not be allowed to cause bad impacts such as disrupting surface drainage or causing soil erosion, or to become a dominant visual feature as viewed from the public realm or from points where people will circulate within the site itself.

The proposed site plan reduces the steepness of site’s west-facing slope, but it does not seek to flatten it entirely – doing that would require even taller retaining walls on both the east (cut) and west (fill) sides of the site. Instead, the building is oriented lengthwise on the north-south axis, so the east-west width necessary to provide a flat floor is the shorter dimension. West of the building, site grading will slope downhill to the west at a cross slope of 3% or less, making the site compatible with maneuvering of semi tractor-trailer trucks, an essential function for the proposed industrial use of the property.

The resulting overall west-facing slope maintains the existing drainage condition (i.e., flowing to the west toward Tapman Creek), but the development plan provides storm water quality treatment and detention in a rain garden located at the northwest perimeter of the development area, adjacent to the Tapman Creek SROZ corridor. Stormwater runoff from the building roof and paved surfaces will flow to and through that rain garden, meeting the City’s stormwater management

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requirements, before being released into Tapman Creek, the natural drainageway. Significantly, in addition to meeting the stormwater quality treatment requirement, the rain garden's design provides storm runoff detention (slowing the rate of outfall to match pre-development site conditions) for storms including a "100-year" design storm event (i.e., a storm with a 1% chance of occurring in a given year).

To mitigate for tree removal necessitated by industrial use of the site, as well as to provide immediate screening and, over time, re-establish an evergreen-tree dominated character similar to the existing conditions, the applicant's planting plan uses multi-tiered tree plantings at site perimeter locations:

North Property Boundary (SW Day Road frontage):

- See the Sections A and D illustrations in Exhibit S, submitted with these supplemental findings.
- Street trees within the public right-of-way (in the strip between the bike path and the sidewalk).
- On-site trees in the parking lot perimeter landscape strip at the bottom of the proposed cut retaining wall that wraps around the east side of the site.

East and South Property Boundaries:

- See the Sections B, C, and E illustrations in Exhibit S, submitted with these supplemental findings.
- The proposed cut retaining wall is designed for construction using the soil-nail stabilization technique, which does not require over-excavation that could affect critical root zones of existing trees where they may extend into the subject property. Soil nail installation will be performed under the supervision of the project arborist to minimize potential for damage to the roots of established trees.
- The alignment of the cut retaining wall in the eastern part of the site is designed to avoid or minimize potential root damage within the critical root zones of existing Douglas fir trees on neighboring properties. At several locations, the applicant's design team has specifically adjusted the proposed alignment in collaboration with the project Arborist. (See Exhibit U.)
- In addition to positioning the retaining wall to avoid compromising the root zones of off-site trees, the applicant proposes to replant Douglas fir trees within the property between the top of the retaining wall and the property boundary. The undisturbed soil conditions will be capable of supporting root growth consistent with long-term growth and survival of these specimens. (See Section C, option 1 in Exhibit S.)
- The single, tall retaining wall also makes it possible to plant trees behind the building, near the base of the wall. A combination of large evergreen/conifer (western red cedar) and smaller deciduous (Kousa dogwood) trees is proposed within the corridor; the corridor width will vary between approximately 15' and 20' wide at the base, because the wall position will be adjusted to provide root zone protection for trees on neighboring properties.
- Significantly, alternative configurations for the eastern segment of the proposed retaining wall would not enable replanting of trees at a comparable number or mature size of trees. In Exhibit S, Section C options 1, 2, and 3 provide comparative illustrations for alternative possible retaining wall configurations:
 - Option 1 depicts the applicant's proposed configuration. The soil-nail anchoring technology allows the wall to be located at the edge of the trees' critical root zones (shaded area just below surface at the base of the tree) and supported by nails that are inserted primarily below the typical depth of the root zone. Trees can be planted in the area at the top of the wall, as well as within the corridor behind the building, near the base of the wall. (Trees are depicted at mature height/canopy size, or a typical 20-year growth interval after

planting.) To perform maintenance, the top-of-wall area can be accessed at grade from the SW Day Road street frontage, and the lower area can be accessed from within the site's parking areas at both the north and south.

- Option 2 shows an attempt to achieve the required vertical difference using a configuration that would not require a Waiver (i.e., 4.8' high walls (with a Design Review Modification) with 5' horizontal offsets at a 4:1 grade slope between them). Retaining walls of this type require over-excavation for installation of geotechnical fabric for anchoring, so the top-level wall must be located farther from the trees' root zones to avoid potential structural failure risk due to root growth. The resulting lateral width necessary to achieve the vertical transition cannot be made to fit within the 33' setback between the building and the east property boundary; in the figure, you can see that the lowest wall would be too close to the building wall to fit the swing-out of the required fire-access doors along the east wall. To construct this configuration, the building would need to be shifted to the west, but for multiple reasons discussed above, such a shift would be problematic with respect to overall site grading as well as matching grade at an appropriate driveway access location on SW Day Road. The small terraces formed by the series of retaining walls would not be suitable for tree planting due to the limited soil area and the risk of root-growth damage to layers of geotechnical fabric necessary for anchoring, so plantings near the top of each retaining wall would have to be limited to shrubs and groundcovers. Additionally, maintenance of the resulting narrow terraces would be difficult because there is no location where grade-level access can be achieved to the middle tiers.
- Option 3 shows an attempt to achieve the required vertical difference using a two-wall configuration that would also require a Waiver, i.e., approximately 10' high walls with 5' horizontal offsets at a 4:1 grade slope between them. As in the case of Option 2, retaining walls of this type require over-excavation for installation of geotechnical fabric for anchoring, so the top-level wall must be located farther from the trees' root zones to avoid potential structural failure risk due to root growth. This configuration could achieve the vertical transition within the 33' setback between the building and the east property boundary while accommodating the swing-out of the required fire-access doors along the east wall. However, as in the case of Option 2, plantings would have to be limited to shrubs and groundcovers because the small terrace formed between the two retaining walls, as well as the area at the top of the wall, would not be suitable for tree planting due to the limited soil area and the risk of root-growth damage to layers of geotechnical fabric necessary for anchoring. Additionally, maintenance of the resulting narrow terrace would be difficult because there is no location where grade-level access can be achieved to the middle tier.
- Based on this comparative analysis, the proposed single, tall retaining wall concept provides the best opportunity to re-establish and sustain the kind of naturalistic character desired by the Coffee Creek Pattern Book, consistent with the intent statement for Design that Contributes to the Site.
- The proposed tree plantings will soften the appearance of the corridor behind the building, as well as provide shade and seasonal change in the area's appearance.
- Views of the cut retaining wall from the public realm, SW Day Road, are quite limited. Because the cut retaining wall faces away from SW Day Road at the north, it cannot be seen from the public right-of-way. The cut retaining wall at the east (behind the building) is below grade relative to the street level, and it will be screened by the canopies of the proposed tree plantings at the street edge and within the corridor behind the building, at both the top and bottom of the wall. The retaining wall at the south will be mostly concealed behind the building itself, except the lower segment as it extends west of the building until it matches grade and terminates.

- For visitors within the site, the canopies of trees, as well as shrubs and ground covers, will soften the appearance of the proposed cut retaining wall surfaces. See Exhibit S for illustrations characterizing the appearance of the retaining wall surface and plantings as they will appear from points within the site.

Over time, particularly as the new Douglas fir and western red cedar trees mature in the eastern perimeter planting areas of the site, their canopies will grow taller and broader until they visually fill much of the gap between the proposed building and the remaining Douglas firs to the east on the neighboring property to the east. (There are also established Douglas firs on neighboring properties to the south, but the distance to the building will be larger because of the proposed a parking area on the south side of the building.) The relative sizes of the proposed trees in proportion to the building, a person, and typical existing neighboring trees, are characterized in the 5-year and 20-year illustrations for Sections A and D in Exhibit S.

The overall perceptual effect will be to make the building appear to emerge from the west-facing forested hillside topography on the south side of SW Day Road. The main entrance to the building, with transparent window and door glazing and a canopy that wraps around the building corner, faces the street at the building's northwest corner. That feature, which will be prominently visible from SW Day Road at the driveway and the pedestrian walkway, will mark the visual transition between the western edge of the (re-established) forested hillside grove surrounding the building on its north, east, and south sides, and the active human-use area necessary to meet the economic development goals of the Coffee Creek Industrial District.

For the above reasons, the proposed development plan, including Waiver 1 to allow a single, large cut retaining wall in the eastern part of the property, is consistent with the intent statement for ***Design that Contributes to the Site***.

Section D | Building Design

Intent Statement – *Building massing and the architectural expression of building design elements define the scale, quality, and character of the built environment. The design guidelines for buildings focus on the following elements:*

- *Prominent building entrance visible from an Addressing Street*
- *Overall building mass and bulk*
- *Composition of building elevations*
- *Roof forms*
- *Materials and colors*
- *Sustainable building design*

The massive size, enormous bulk, and large surface areas of many industrial buildings represent design challenges and opportunities. Not all of the buildings developed in the Coffee Creek will be warehouses or factories. Some will be office buildings or industrial hybrid buildings that incorporate office, research, assembly, manufacturing, distribution or warehousing. Buildings designed to support industrial or warehouse functions should have strong, simple forms and use windows and doors to create visual interest. Office buildings may have more varied forms that emphasize windows into, and views from, the office floors. While methods for reducing building bulk, mass, and scale will differ, the design for all buildings should consider architectural techniques that reduce their perceived scale along streets and adjacent to public spaces and help them blend into the district-wide landscape context for the aesthetic benefit of motorists, bicyclists, and pedestrians.

Interaction between the private enterprise inside of a building and the public contributes to the vitality of the streets in the Coffee Creek Industrial Area. Transparency in front façade of buildings adds a subtle message that behavior in the public

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realm is being observed which contributes to the overall safety of the neighborhood. When passersby can sense activity that occurs inside of a building, they get a sense of people participating in their community.

Many types of businesses incorporate programmatic functions that require and benefit from daylighting. These functions include dining areas, lobbies, lounges, fitness centers, waiting rooms, conference rooms, lunch/break rooms, as well as related outdoor seating areas. Placing these types of rooms within view of Addressing and Supporting Streets and Through Connections enhances safety of the public realm and creates a sense of connection.

Every address, business, and destination in Coffee Creek deserves a good entrance. Every destination is ultimately reached on foot, so making every building entrance clearly visible and fully accessible is fundamental. The intent of the design guidelines is that every primary entrance of every building will contribute to the quality and vitality of the public realm by creating a clear sense of entry.

Response: As discussed in the section above, the proposed building is located in the eastern part of the site, including partial excavation into the hillside, to make the building appear to emerge from the west-facing forested hillside topography on the south side of SW Day Road. The building's prominent main entrance will face the street, providing transparent window and door glazing and a protective canopy for pedestrians that wraps around the northwest building corner and makes the transition between the building and the adjacent outdoor entry plaza and pedestrian walkway from SW Day Road. The main entrance plaza and entrance, which will be prominently visible from SW Day Road at the driveway and the pedestrian walkway, will mark the visual transition between the western edge of the (re-established) forested hillside grove surrounding the building on its north, east and south sides, and the active human-use area necessary to meet the economic development goals of the Coffee Creek Industrial District.

The proposed site plan, including Waiver request #1 to allow a single, tall retaining wall, supports the proposed design of the building, which locates the glazed main entrance close to the Addressing Street, with good vehicular, pedestrian, and bicycle access, and clear way-finding cues for visitors as they enter the site. The proposal is consistent with the intent of the Building Design section of the Coffee Creek Pattern Book.

Response Summary: Based on the above analysis, the proposed configuration, including the Waiver 1 request for a single, tall retaining wall, is consistent with the Intent Statements in the *Pattern Book – Design Guidelines for Coffee Creek Industrial Design Overlay District*.

Comparison with Other Coffee Creek Projects Involving Waiver Approvals

The need for retaining walls has come to attention in the context of the applicant's development plan; however, the reasons extensive site grading is necessary are due to the physical characteristics of the site itself, when compared to the practical needs of the "typically permitted" uses the City's Planned Development – Regionally Significant Industrial Area designation of the property is intended to support. It may be helpful to gauge how this proposal, including the Waiver #1 request, compares to other recently approved projects in the Coffee Creek Industrial District.

"Typically Permitted" Uses in the PD-RSIA Zone

The purpose statement of the PD-RSIA Zone specifically emphasizes ***protect[ing] industrially zoned lands for industrial uses, primarily in those areas near significant transportation facilities for the movement of freight***. The PD-RSIA Zone standards also explicitly limit the allowed size of any Service Commercial, Office, or Retail uses (per § 4.135.5(.03)I.1 through 4) to 3,000 square feet (SF) per building or 20,000 SF per multi-building development.

Section 4.135.5. – Planned Development Industrial—Regionally Significant Industrial Area.

[emphasis added]

(.01) Purpose. The purpose of the PDI-RSIA Zone is to provide opportunities for regionally significant industrial operations along with a limited and appropriate range of related and compatible uses; to provide the flexibility to accommodate the changing nature of industrial employment centers, **to protect industrially zoned lands for industrial uses, primarily in those areas near significant transportation facilities for the movement of freight** and to facilitate the redevelopment of under-utilized industrial sites.

(.02) The PDI-RSIA Zone shall be governed by [Section 4.140](#), Planned Development Regulations, and as otherwise set forth in this Code.

(.03) Uses that are typically permitted:

- A. **Wholesale houses, storage units, and warehouses.**
- B. Laboratories, storage buildings, warehouses, and cold storage plants.
- C. Assembly of electrical equipment, including the manufacture of small parts.
- D. The light manufacturing, simple compounding or processing packaging, assembling and/or treatment of products, cosmetics, drugs, and food products, unless such use is inconsistent with air pollution, excess noise, or water pollution standards.
- E. Office Complexes-Technology (as defined in [Section 4.001](#)).
- F. Experimental, film or testing laboratories.
- G. Storage and distribution of grain, livestock feed, provided dust and smell is effectively controlled.
- H. Motor vehicle service facilities complementary or incidental to permitted uses.
- I. Any use allowed in a PDC Zone or any other light industrial uses provided that any such use is compatible with industrial use and is planned and developed in a manner consistent with the purposes and objectives of Sections 4.130 to [4.140](#) and is subject to the following criteria:
 1. Service Commercial (defined as professional services that cater to daily customers such as financial, insurance, real estate, legal, medical or dental offices) shall not exceed 3,000 square feet of floor space in a single building or 20,000 square feet of combined floor area within a multiple building development.
 2. Office Use (as defined in [Section 4.001](#)) shall not exceed 20 percent of total floor area within a project site.
 3. Retail uses not to exceed 3,000 square feet of indoor and outdoor sales, service, or inventory storage area for a single building or 20,000 square feet of indoor and outdoor sales, service or inventory storage area for multiple buildings.
 4. Combined uses under I.1 and 3. Above shall not exceed a total of 3,000 square feet of floor area in a single building or 20,000 square feet of combined floor area within a multi-building development.
- J. Residential uses shall not exceed ten percent of total floor area.
- K. Accessory uses, buildings and structures customarily incidental to any of the aforesaid principal permitted uses.
- L. Temporary buildings or structures for uses incidental to construction work, which buildings or structures shall be removed upon completion or abandonment of the construction work.
- M. Expansion of a building, structure or use approved prior to October 25, 2004 of up to 20 percent additional floor area and/or ten percent additional land area.

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N. *Other similar uses which in the judgment of the Planning Director are consistent with the purpose of the PDI-RSIA Zone.*

The subject property is located close to the North Wilsonville Interstate 5 interchange, making it a prime example of a site whose location is suitable for warehousing and distribution use, consistent with Section 4.135.5(.03)A.

Table 1 summarizes characteristics of the scale and intensity of recently approved industrial development projects in the Coffee Creek area, for comparison to the Delta Logistics application:

| Table 1. Approved Projects in Coffee Creek Industrial District | | | | | |
|--|-----------|--------------------------------|-------------|------------------------|------------|
| Applicant | Casefile | Acres | Building SF | Floor Area Ratio (FAR) | Dock Doors |
| Panattoni Development | DB20-0019 | 5.85 | 110,366 | 0.43 | 19 |
| Black Creek Group/Ares | DB21-0085 | 8.12 | 148,279 | 0.42 | 20 |
| Delta Logistics (Proposed) | DB22-0009 | 7.73 ² (of 9.17) | 62,107 | 0.18 (0.16) | 13 |

Significantly, the proposed grading and retaining walls at the Delta Logistics site will enable it to accommodate a building that is considerably smaller than either of the other two approved development projects' buildings, on a piece of property that is larger than either of the other two.

Based on the above findings, the applicant respectfully requests approval of the development application, including the Waiver 1 request.

Sincerely,



Lee Leighton, AICP
 Project Planner IV

Enclosure(s): Exhibit R – Updated Tree Plan sheet(s) with Drip Line dimensions for off-site trees near the eastern/southern retaining wall
 Exhibit S – Section/Elevation figures – views of retaining wall configuration and proposed plantings
 Exhibit T – Arborist's Report supplement
 Exhibit U – Conceptual plan for horizontal realignment of retaining wall to protect root zone

² The development area east of the Tapman Creek wetland corridor and its protective buffer contains 7.73 of the site's total 9.17 acres.

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- c: Igor Nichiporchik – Delta Logistics
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