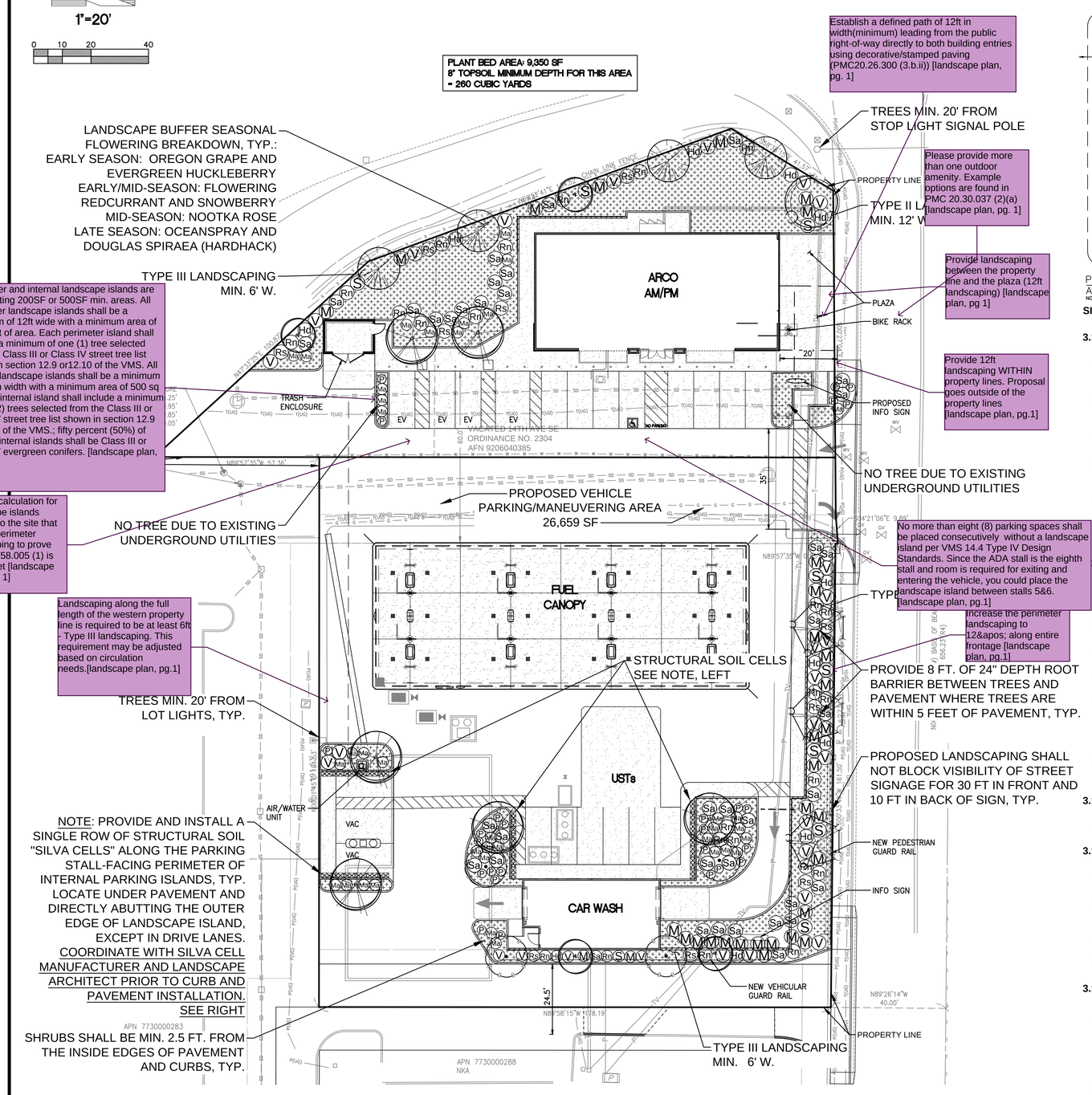
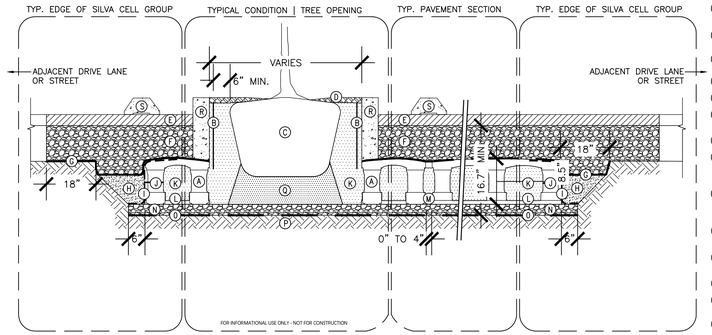
PRELIMINARY LANDSCAPE PLAN

1"=20'

0 10 20 40





PARKING APPLICATION | FLEXIBLE.1x | 1x SILVA CELL SYSTEM FOR PAVERS OR ASPHALT PAVING ON AGGREGATE BASE – SECTION
NOT TO SCALE

KEY PLAN

- (A) SILVA CELL SYSTEM (DECK, BASE, AND POSTS)
- (B) DEEPROOT UB24-2 ROOT BARRIER. INSTALL DIRECTLY ADJACENT TO CONCRETE EDGE RESTRAINT
- (C) TREE ROOT PACKAGE, SIZE VARIES
- (D) 1-2" MULCH, PLACED IN TREE OPENING
- (E) PAVERS OR ASPHALT, PER PROJECT
- (F) 12" MIN. AGGREGATE BASE COURSE
- (G) GEOTEXTILE TO EDGE OF EXCAVATION
- (H) BACKFILL, TO WITHIN 4-6" BELOW TOP OF SILVA CELL DECKS. INSTALL IN 8" LIFTS, EACH COMPACTED TO 95% PROCTOR.
- (I) GEOGRID TO LINE PERIMETER OF SYSTEM WITH 6" TOE (OUTWARD FROM BASE) AND 12" EXCESS (OVER TOP OF DECK)
- (J) 3/16"x14" ZIP TIES, SECURING GEOGRID TO SILVA CELLS
- (K) PLANTING SOIL. INSTALL IN 12" LIFTS, EACH COMPACTED TO 70-80% PROCTOR
- (L) SILVA CELL BASE SLOPE, 5% MAX
- (M) 0" to 4" SPACING BETWEEN SILVA CELLS AT BASE
- (N) 4" MIN. AGGREGATE SUB BASE, COMPACTED TO 95% PROCTOR
- (O) GEOTEXTILE FABRIC, PLACED BELOW AGGREGATE SUB BASE
- (P) SUBGRADE, COMPACTED TO 95% PROCTOR
- (Q) PLANTING SOIL BELOW TREE ROOT PACKAGE, COMPACTED TO 85-90% PROCTOR
- (R) CONCRETE EDGE RESTRAINT BETWEEN AGGREGATE BASE COURSE AND TREE OPENING
- (S) OPTIONAL WHEEL STOP, PER PROJECT. PROTECT SILVA CELLS FROM DAMAGE WHEN ANCHORING TO PAVEMENT

NOTES

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
2. DO NOT SCALE DRAWINGS
3. PROVIDE SUPPLEMENTAL IRRIGATION FOR SEASONAL DROUGHT SUPPORT OF TREES & SOIL

NOTE: SILVA CELL OR APPROVED EQUAL STRUCTURAL SOIL PRODUCT. ALTERNATIVE MANUFACTURER PRODUCT INFORMATION TO BE SUBMITTED TO LANDSCAPE ARCHITECT WITH OTHER REQUIRED SUBMITTALS

SILVA CELL SPECIFICATIONS, ADDTIONAL

3.14 INSTALLATION OF GEOTEXTILE AND AGGREGATE BASE COURSE OVER THE DECK

A. Place geotextile over the top of the deck and extend to the edge of the excavation. Overlap joints a minimum of 18 inches (450 mm). Leave enough slack in the geotextile for the aggregate base course to push the geotextile down in the gaps in between the decks.
B. Install the aggregate base course (including aggregate setting bed if installing unit pavers) over the geotextile immediately after completing the installation of the fabrics. Work the aggregate from one side of the layout to the other so that the fabric and aggregate conform to the Silva Cell deck contours.
C. Maintain equipment used to place aggregate base course completely outside the limits of the Silva Cell excavation area to prevent damage to the installed system.
D. For large or confined areas, where aggregate cannot easily be placed from the edges of the excavated area, obtain approval for the installation procedure and types of equipment to be used in the installation from the Silva Cell manufacturer.
E. Compact aggregate base course(s) to 95 percent of maximum dry density in accordance with ASTM D698, Standard Proctor Method. Utilize a vibration or plate compactor with a maximum weight of 800 lbs (362.87 kg).
F. Do not drive vehicles or operate equipment over the completed aggregate base course.

3.15 INSTALLATION OF CONCRETE CURBS AT TREE OPENINGS, AGGREGATE SUBBASE AND PAVEMENT ABOVE THE SILVA CELL SYSTEM

A. Place concrete curbs along planting areas and tree openings as shown on the Drawings to retain the aggregate base course from migrating into the planting soil.
B. When staking concrete forms (e.g. curbs around the tree openings), prevent stakes from penetrating the Silva Cell decks.
C. Turn down edge of concrete paving to the Silva Cell deck along the edges of tree openings or planting areas to retain the aggregate base course material.
D. When paving type is a unit paver or other flexible material, provide a concrete curb under the paving at the edge of the Silva Cell deck to retain the aggregate base course material at the tree opening.
E. Place paving material over Silva Cell system in accordance with the Drawings.
   1. The Silva Cell system does not fully meet loading strength until the final paving is installed. Do not operate construction equipment on top of the Silva Cell system until paving installation has been completed.

F. Use care when placing paving or other backfill on top of Silva Cell system to prevent damage to the Silva Cell system or its components.

3.16 INSTALLATION OF ROOT BARRIERS

A. Install root barrier in accordance with manufacturer's installation instructions.

3.17 INSTALLATION OF PLANTING SOIL WITHIN THE TREE PLANTING AREA

A. Remove rubble, debris, dust and silt from the top of the planting soil within the tree opening that may have accumulated after the initial installation of the planting soil within the Silva Cells.
B. Install additional planting soil within the tree openings, to the depths indicated on the Drawings.
   1. Use the same soil used within the Silva Cells for planting soil within the tree openings.

C. Compact planting soil under the tree root ball to between 85 and 90 percent of maximum dry density in accordance with ASTM D698, Standard Proctor Method, to prevent settlement of the root ball.
D. Place trees in accordance with the Drawings.

3.18 PROTECTION

A. Keep construction traffic away from the limits of the Silva Cells until the final pavement profile is in place. The Silva Cell system does not fully meet loading strength until the final paving is installed.
   1. Do not operate equipment directly on top of the Silva Cell system until paving installation has been completed.
   2. Provide fencing and other barriers to prevent vehicles from entering into the Silva Cell area.

B. When the Silva Cell installation is completed and the permanent pavement is in place, limit traffic and construction related activities to only loads less than the design loads.

3.19 CLEAN UP

A. Perform clean up during installation and upon completion of the Work. Maintain the site free of soil, sediment, trash and debris. Remove excess soil materials, debris, and equipment from the site following completion of the Work of this Section.
B. Repair damage to adjacent materials and surfaces resulting from installation of this Work using mechanics skilled in remedial work of the construction type and trades affected.

Preliminary Not For Construction

CLIENT: bp ARCO BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	5/13/22	PRELIM. LANDSC. SET
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SEAL: STATE OF WASHINGTON JEFF M. VARLEY LICENSED LANDSCAPE ARCHITECT NO. 774 EXP. 2/5/23 Not for Construction

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 8 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON
FACILITY #TBD

DESIGNED BY:	TCR	ALLIANCE Z&DM:	
CHECKED BY:	JMV	BP REPM:	
DRAWN BY:	TCR	ALLIANCE PM:	
VERSION:	-	PROJECT NO:	21730

DRAWING TITLE: PRELIMINARY LANDSCAPE PLAN

SHEET NO: L-1

File:P:\21000s\21730\preliminary\21730 L.dwg Date/Time:5/9/2022 11:36 AM Scale:1" = 1' JVARLEY Xref: ----

PRELIMINARY LANDSCAPE NOTES AND PLANT SCHEDULE

QUANTITY NATIVE SHRUBS AND GROUNDCOVERS:	1,494	99%
QUANTITY NON-NATIVE SHRUBS AND GROUNDCOVERS:	11	1%
TOTAL SHRUBS AND GROUNDCOVERS:	1,505	

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	CONT.	SIZE	WATER USE	ORIGIN	FOLIAGE	QTY
	ACER CIRCINATUM / VINE MAPLE 2" TOTAL CAL. IF MULTI-STEM. NURSERY GROWN. STAKE AND GUY ONE GROWING SEASON.	B & B	1" CAL	LOW	NATIVE	DECIDUOUS	4
	GLEDITSIA TRIACANTHOS INERMIS 'SKYCOLE' / SKYLINE HONEY LOCUST NURSERY GROWN FOR STREET TREE USE; BRANCHING AT 5'; STAKE AND GUY ONE GROWING SEASON	B & B	1" CAL	LOW	ADAPTIVE	DECIDUOUS	6
	PINUS CONTORTA VAR. CONTORTA / SHORE PINE FULL TO BASE; SINGLE, STRAIGHT UN-CUT LEADER; STAKE AND GUY ONE GROWING SEASON	B & B	5`-6` MIN. HT.	LOW	NATIVE	EVERGREEN	4
	THUJA PLICATA `EXCELSA` / EXCELSA CEDAR FULL TO BASE; SINGLE, STRAIGHT UN-CUT LEADER; STAKE AND GUY ONE GROWING SEASON	B & B	5`-6` MIN. HT.	LOW	NATIVE	EVERGREEN	4

STREET TREES	BOTANICAL / COMMON NAME	CONT.	SIZE	WATER USE	ORIGIN	FOLIAGE	QTY
	TILIA CORDATA 'PNI 6025' / LITTLELEAF LINDEN SYN. TILIA 'GREENSPIRE'. MEDIUM STREET TREE. NURSERY GROWN FOR STREET TREE USE; BRANCHED AT FIVE (5) FEET; STAKE AND GUY ONE GROWING SEASON	B & B	1" CAL	LOW	ADAPTIVE	DECIDUOUS	3
	ZELKOVA SERRATA 'VILLAGE GREEN' / SAWLEAF ZELKOVA MEDIUM STREET TREE. NURSERY GROWN FOR STREET TREE USE; BRANCHED AT FIVE (5) FEET; STAKE AND GUY ONE GROWING SEASON	B & B	1" CAL	LOW	ADAPTIVE	DECIDUOUS	2

SHRUBS	BOTANICAL / COMMON NAME	CONT.	WATER USE	ORIGIN	FOLIAGE	QTY
Hd	HOLODISCUS DISCOLOR / OCEAN-SPRAY	#2	LOW	NATIVE	DECIDUOUS	11
M	MAHONIA AQUIFOLIUM / OREGON GRAPE	#2	LOW	NATIVE	EVERGREEN	34
Ma	MAHONIA AQUIFOLIUM 'COMPACTA' / COMPACT OREGON GRAPE FULL AND BUSHY	#2	LOW	NATIVE	EVERGREEN	39
Rs	RIBES SANGUINEUM / RED FLOWERING CURRANT	#2	LOW	NATIVE	DECIDUOUS	11
Rn	ROSA NUTKANA / NOOTKA ROSE FULL AND BUSHY	#2	MEDIUM	NATIVE	DECIDUOUS	26
S	SPIRAEA DOUGLASII / HARDHACK FULL AND BUSHY	#2	MEDIUM	NATIVE	DECIDUOUS	9
Sa	SYMPHORICARPOS ALBUS / SNOWBERRY FULL AND BUSHY	#2	LOW	NATIVE	DECIDUOUS	42
V	VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY FULL AND BUSHY	#2	LOW	NATIVE	EVERGREEN	29

FERNS AND GRASSES	BOTANICAL / COMMON NAME	CONT.	WATER USE	ORIGIN	FOLIAGE	QTY
P	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	#2	LOW	NATIVE	EVERGREEN	34

GROUND COVERS	BOTANICAL / COMMON NAME	CONT.	WATER USE	ORIGIN	FOLIAGE	SPACING	QTY
	ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK	#1	LOW	NATIVE	EVERGREEN	24" o.c.	1,247

SEE SHEET L1 FOR ADDITIONAL PLANTING SPECIFICATIONS. CONFORM TO THE SPECIFICATIONS AND DRAWINGS IN THESE LANDSCAPE PLANS AND THE REQUIREMENTS OF CITY OF PUYALLUP VEGETATION MANAGEMENT STANDARDS (VMS). WHERE THERE IS A CONFLICT CONFORM TO THE MORE STRINGENT REQUIREMENTS.

CITY OF PUYALLUP MINIMUM SOIL REQUIREMENTS:

SOIL PREPARATION IN ALL DISTURBED AREAS WITH NEW LANDSCAPING SHALL CONFORM TO SPECIFICATIONS PROVIDED IN BMP T5.13 - THE "STORM WATER MANAGEMENT MANUAL OF WESTERN WASHINGTON", DEPARTMENT OF ECOLOGY, DATED AUGUST 2012, OR AS SUBSEQUENTLY AMENDED. COMPACTION OF LANDSCAPED AREAS FROM VEHICLES AND HEAVY EQUIPMENT SHALL BE AVOIDED AFTER TILLING.

SOIL AMENDMENT NOTES

ALL SOILS IN ALL LANDSCAPE INSTALLATIONS SHALL CONFORM TO THE FOLLOWING SOIL DEPTH AND QUALITY REQUIREMENTS. PLEASE REFER TO APPENDIX 2039 FOR FURTHER INSTALLATION GUIDANCE:

A. A MINIMUM OF EIGHT (8) INCHES OF TOP SOIL, CONTAINING TEN PERCENT DRY WEIGHT IN PLANTING BEDS, AND 5% ORGANIC MATTER CONTENT IN TURF AREAS, AND A pH FROM 6.0 TO 8.0 OR MATCHING THE pH OF THE ORIGINAL UNDISTURBED SOIL. THE TOPSOIL LAYER SHALL HAVE A MINIMUM DEPTH OF EIGHT INCHES (8") EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA. SUBSOILS BELOW THE TOPSOIL LAYER SHOULD BE SCARIFIED AT LEAST 6 INCHES WITH SOME INCORPORATION OF THE UPPER MATERIAL TO AVOID STRATIFIED LAYERS, WHERE FEASIBLE. INSTALLATION OF THE EIGHT INCHES (8") OF TOPSOIL, AS DESCRIBED ABOVE, SHALL GENERALLY BE ACHIEVED BY PLACING FIVE INCHES (5") OF IMPORTED SANDY-LOAM SOIL INTO PLANNED LANDSCAPE AREAS (SUB-BASE SCARIFIED FOUR INCHES (4") WITH A THREE INCH (3") LAYER OF COMPOST TILLED INTO THE ENTIRE DEPTH.

B. FOR STREET TREES IN THE RIGHT OF WAY PLANTER STRIP, THE FOLLOWING STANDARDS SHALL APPLY IN RELATION TO SOIL DEPTH, SOIL AMENDMENTS AND INSTALLATION OF NEW STREET TREES. THE FOLLOWING NOTES SHALL BE SHOWN ON THE FACE OF THE PRELIMINARY AND FINAL LANDSCAPE PLAN SHEETS:

(1) FOR NEW CONSTRUCTION: IN AREAS WHERE A NEW PLANTER STRIP AND STREET TREE SHALL BE ESTABLISHED OR RECONSTRUCTED DUE TO A STREET CONSTRUCTION PROJECT, THE PLANTER STRIP AREA SHALL BE EXCAVATED TO A DEPTH OF 24" AND BACKFILLED FOLLOWING THE STANDARD ABOVE TO ACHIEVE A TOPSOIL MIX WITH 40 PERCENT COMPOST BY VOLUME. THE CONTRACTOR OR INSTALLER SHALL:

(1)1) REVIEW THE CITY STANDARD PLANTING DETAIL – ALL CONTRACTORS/INSTALLERS AREA REQUIRED TO FOLLOW CITY STANDARD #01.02.07 (STREET TREE PLANTING) AND #01.02.03 (ROOT BARRIER INSTALLATION). THE CONTRACTOR/INSTALLER SHALL REVIEW THE PLANTING STANDARD DETAIL PRIOR TO INSTALLATION TO UNDERSTAND THE CITY'S REQUIREMENTS. FAILURE TO FOLLOW THE STANDARD MAY RESULT IN REJECTION OF THE WORK BY THE INSPECTOR AND/OR PLANNING DEPARTMENT.

(1)2) SCHEDULE A FIELD PRE-CONSTRUCTION MEETING – THE CONTRACTOR/INSTALLER SHALL CONTACT THE SITE INSPECTOR AND PLANNING DEPARTMENT 48 HOURS IN ADVANCE OF THE INSTALLATION OF STREET TREE(S) FOR A FIELD PRE-CONSTRUCTION MEETING ON-SITE TO REVIEW THE APPROVED PLAN SET AND CITY STANDARD DETAILS. IF STREET TREES ARE TO BE INSTALLED OVER A LONGER TIMELINE (SUCH AS A RESIDENTIAL PLAT WHERE TREES MAY BE INSTALLED OVER A MULTI-MONTH PERIOD OF TIME), THE CONTRACTOR/INSTALLER SHALL HOLD ONE CONSOLIDATED PRE-CON TO REVIEW PLANS. ALL STREET TREES SHALL BE INSPECTED AFTER PLANTING BY THE PLANNING DEPARTMENT.

(1)3) EXCAVATE ALL CONSTRUCTION MATERIALS – EXCAVATE ALL CONSTRUCTION MATERIALS, REMNANT SOIL, GRAVEL, PIT RUN, CONSTRUCTION DEBRIS, ETC. FROM THE PLANTER STRIP AREA TO A DEPTH OF 24" PRIOR TO PLANTING. DISCARD THIS MATERIAL AS THE PLACEMENT OF NEW COMPOST AMENDED TOP SOIL IS REQUIRED.

(1)4) PREPARE THE PLANTING STRIP – AFTER EXCAVATING ALL MATERIALS FROM THE PLANTER STRIP, SCARIFY AND RIP THE SUB-BASE WITH THE TEETH OF A BACKHOE BUCKET (OR OTHER MECHANICAL MEANS OR HAND TOOLS) TO A DEPTH OF 6" WITH MULTIPLE PASSES, 90-DEGREES TO EACH OTHER. PRIOR TO PLANTING THE TREE, RE-COMPACT THE TREE BASE WHERE THE STREET TREE WILL BE PLANTED TO AVOID SETTING OF THE ROOT BALL. AT THIS STAGE, IF THE TREE IS TO BE PLANTED WHEN THE PLANTER STRIP IS BACKFILLED WITH AMENDED TOPSOIL, THE CONTRACTOR/INSTALLER SHOULD MEASURE THE DEPTH OF THE ROOT BALL TO DETERMINE WHEN TO PLACE THE TREE IN THE PIT DURING THE BACKFILLING PROCESS. IF THE ROOTBALL OR ROOT MASS (IN THE CASE OF BARE ROOT TREES) IS LESS THAN 24", THE STREET TREE SHALL BE PLANTED IN A MANNER IN WHICH THE ROOT FLARE IS LEVEL WITH OR AT LEAST 1" ABOVE GRADE AT THE TIME OF FINISHED PLANTING. THE MAY REQUIRE THE ROOTBALL BE PLACED ON A COMPACTED SUB-BASE OF THE COMPOST AMENDED TOPSOIL AS BACKFILLING IS OCCURRING.

(1)5) INSTALL ROOT BARRIER PANELS – AT THIS STAGE THE CONTRACTOR/INSTALLER SHALL PLACE 24" DEEP ROOT BARRIER PANELS (UB-24) ALONG THE EDGE OF THE SIDEWALK AND CURB LINE FOR A TOTAL OF EIGHT FEET (8') OF LINEAL PROTECTION ALONG EITHER SIDE OF THE PLANTING AREA. THE PANELS SHALL BE INSTALLED PERPENDICULAR TO THE EDGE OF THE PLANTING AREA. THE PANELS SHALL BE INSTALLED PERPENDICULAR TO THE DGE OF PAVED SURFACE IN ACCORDANCE WITH THE MANUFACTURER'S STANDARDS FOR A 'LINEAR' APPLICATION; THE ROOT BARRIER PANELS SHALL NOT BE INSTALLED IN THE PLANTING PIT AS A 'SURROUND' APPLICATION, UNLESS SPECIFIED ON THE FINAL LANDSCAPE PLANS. THE TOP OF THE ROOT BARRIER PANEL SHALL BE INSTALLED SUCH THAT ½" OF THE ROOT BARRIER IS ABOVE THE FINISHED GRADE.

(1)6) COMPOST AMENDED TOP SOILS REQUIRED – TOPSOIL SOURCE SHALL BE REVIEWED AND APPROVED DURING THE PRE-CONSTRUCTION MEETING; ALL TOPSOIL SHALL BE A TOP QUALITY SANDY-LOAM MIX, OR EQUIVALENT AS APPROVED BY THE PLANNING DEPARTMENT. THE TOPSOIL SHALL BE AMENDED ON SITE DURING INSTALLATION WITH COMPOST TO ACHIEVE A 40 PERCENT BY VOLUME TOPSOIL MIX IN THE RIGHT-OF-WAY PLANTER STRIP. IMPORTED TOPSOIL MAY BE USED BY THE CONTRACTOR IF DATA 'CUT SHEETS' ARE AVAILABLE FROM THE SUPPLIER CERTIFYING COMPOST AMENDMENT EQUALING 40 PERCENT BY VOLUME USING ONE OF THE APPROVED COMPOST SOURCES BELOW. COMPOST SHALL ONLY BE SOURCED FROM:

-CASCADE COMPOST (ALSO KNOWN AS PREP/LRI) (AVAILABLE THROUGH PIERCE COUNTY RECYCLING, COMPOSTING & DISPOSAL, 10308 SALES ROAD, TACOMA, WASHINGTON 98499, OR RETAIL/WHOLESALE LANDSCAPE MATERIAL SUPPLIERS)
-TAGRO COMPOST MIX (AVAILABLE THROUGH CITY OF TACOMA, 2201 EAST PORTLAND AVENUE, GATE 6, TACOMA, WA 98421, OR RETAIL/WHOLESALE LANDSCAPE MATERIAL SUPPLIERS)
-CEDAR GROVE COMPOST (AVAILABLE THROUGH CEDAR GROVE COMPOST, 17825 CEDAR GROVE ROAD SE, MAPLE VALLEY, 98038, OR RETAIL/WHOLESALE LANDSCAPE MATERIAL SUPPLIERS)

(1)7) INSTALL AND AMEND TOPSOILS – TO AVOID STRATIFIED LAYERS, FIRST PLACE SEVEN INCHES (7") OF APPROVED TOPSOIL IN THE PREPARED/SCARIFIED PLANTING STRIP AREA AND MECHANICALLY TILL IN FIVE INCHES (5") OF APPROVED COMPOST; FOLLOW THIS PROCEDURE TWICE TO ACHIEVE THE TOTAL 24" TOPSOIL DEPTH. FINISHED GRADE OF TOPSOIL SHOULD BE ½" BELOW THE EDGE OF SIDEWALK TO ALLOW THE ROOT BARRIER PANEL TO BE PROPERLY INSTALLED ABOVE FINISHED GRADE.

(1)8) INSTALL TREE STAKES AND FINISH MULCH – PLACEMENT OF FOUR INCHES (4") OF WOOD CHIP MULCH, WATER BASIN RINGS, TREE STAKING AND TEMPORARY IRRIGATION BAGS (WHERE REQUIRED) SHALL FOLLOW CITY STANDARD #01.02.07

LANDSCAPE PLANTING NOTES AND MATERIALS

FURNISH ALL MATERIALS, LABOR, EQUIPMENT AND RELATED ITEMS NECESSARY TO ACCOMPLISH TOPSOIL, TREATMENT AND PREPARATION OF SOIL, FINISH GRADING, PLACEMENT OF SPECIFIED PLANT MATERIALS, FERTILIZER, STAKING, MULCH, CLEAN-UP, DEBRIS REMOVAL, AND 60-DAY MAINTENANCE.

QUALIFICATIONS:
LANDSCAPE CONTRACTOR TO BE SKILLED AND KNOWLEDGEABLE IN THE FIELD OF WORK AND HAVE A MINIMUM OF FIVE (5) YEAR'S EXPERIENCE INSTALLING SIMILAR WORK. CONTRACTOR TO BE LICENSED TO PERFORM THE WORK SPECIFIED WITHIN THE PRESIDING JURISDICTION.

JOB CONDITIONS:
IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE SITE AND REPORT ANY DISCREPANCIES TO THE OWNER OR THE OWNER'S REPRESENTATIVES. ALL PLANT MATERIAL AND FINISH GRADES ARE SUBJECT TO APPROVAL BY THE OWNER.

PROTECTION:
SAVE AND PROTECT ALL EXISTING PLANTINGS SHOWN TO REMAIN AND ALL ON-SITE AND OFF-SITE TREES TO BE RETAINED. DO NOT PLANT UNTIL OTHER CONSTRUCTION OPERATIONS WHICH CONFLICT HAVE BEEN COMPLETED. IF AN IRRIGATION SYSTEM IS TO BE INSTALLED DO NOT PLANT UNTIL THE SYSTEM HAS BEEN INSTALLED, TESTED, AND APPROVED BY THE OWNER. HANDLE PLANTS WITH CARE - DO NOT DAMAGE OR BREAK ROOT SYSTEM, BARK, OR BRANCHES. REPAIR AND/OR REPLACE ITEMS DAMAGED AS A RESULT OF WORK, OR WORK NOT IN COMPLIANCE WITH PLANS AND SPECIFICATIONS, AS DIRECTED BY OWNER AT NO ADDITIONAL COST TO THE OWNER.

REPAIR OF EXISTING PLANTINGS:
DURING THE COURSE OF WORK, REPAIR ALL EXISTING PLANTING AREAS BY PRUNING DEAD GROWTH, RE-ESTABLISHING FINISH GRADE AND RE-MULCHING TO SPECIFIED DEPTH.

REPAIR OF IRRIGATION SYSTEM:
DURING THE COURSE OF WORK, REPAIR ANY DAMAGE TO THE IRRIGATION SYSTEM TO MATCH CONDITIONS PRIOR TO THE DAMAGE.

GUARANTEE:
GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE JOB BY OWNER.

60-DAY MAINTENANCE:
CONTRACTOR TO PROVIDE OWNER WITH A SCOPE OF WORK AT TIME OF INITIAL PROJECT BID TO PROVIDE LANDSCAPE AND IRRIGATION MAINTENANCE FOR 60 DAYS FOLLOWING OCCUPANCY. WORK TO INCLUDE MAINTENANCE AS DESCRIBED BELOW, IN PLANTING AND IRRIGATION MAINTENANCE.

SUBMITTALS:
SUBMIT THE FOLLOWING TO THE LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO THE START OF ANY WORK:
A) DOCUMENTATION THAT ALL PLANT MATERIAL HAS BEEN ORDERED.
B) TOPSOIL ANALYSIS AND RECOMMENDED AMENDMENTS.
C) TREE STAKING AND GUYING MATERIALS.
D) ONE (1) QUART SIZE OF TOPSOIL AND MULCH.
E) PLANTING SCHEDULE INCLUDING DATES AND TIMES.
F) MAINTENANCE INSTRUCTIONS FOR ONE (1) FULL YEAR.

MATERIALS:

PLANT MATERIALS:
PLANT MATERIALS TO BE GRADE NO. 1, SIZED IN ACCORDANCE WITH (AAN) AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z-60-2014). PRUNE PLANTS RECEIVED FROM THE NURSERY ONLY UPON AUTHORIZATION BY THE LANDSCAPE ARCHITECT. "B & B" INDICATES BALLED AND BURLAPPED; "CONT." INDICATES CONTAINER; "BR" INDICATES BARE ROOT; "CAL" INDICATES CALIPER AT 6" ABOVE SOIL LINE; "GAL" INDICATES GALLON.
A) SPECIFIED PLANT CANOPY SIZE OR CALIPER IS THE MINIMUM ACCEPTABLE CONTAINER OR BALL SIZE AND ESTABLISHES MINIMUM PLANT CONDITION TO BE PROVIDED.
B) QUALITY:
PLANT MATERIAL TO COMPLY WITH STATE AND FEDERAL LAWS FOR DISEASE INSPECTION. PLANTS TO BE FULLY LIVE, VIGOROUS, WELL FORMED, WITH WELL DEVELOPED FIBROUS ROOT SYSTEMS. ROOT BALLS OF PLANTS TO BE SOLID AND FIRMLY HELD TOGETHER, SECURELY CONTAINED AND PROTECTED FROM INJURY AND DESICCATION. PLANTS DETERMINED BY LANDSCAPE ARCHITECT TO HAVE BEEN DAMAGED; HAVE DEFORMITIES OF STEM, BRANCHES, OR ROOTS; LACK SYMMETRY, HAVE MULTIPLE LEADERS OR "Y" CROTCHES LESS THAN 30 DEGREES IN TREES, OR DO NOT MEET SIZE OR ANSI STANDARDS WILL BE REJECTED. PLANT MATERIAL TO BE FROM A SINGLE NURSERY SOURCE FOR EACH SPECIFIED SPECIES/HYBRID. NURSERY SOURCES TO BE THOSE LOCATED IN THE SAME REGION AS THE JOB SITE.
C) SUBSTITUTION:
NO SUBSTITUTION OF PLANT MATERIAL, SPECIES OR VARIETY, WILL BE PERMITTED UNLESS WRITTEN EVIDENCE IS SUBMITTED TO THE OWNER FROM TWO QUALIFIED PLANT BROKERAGE OFFICES. SUBSTITUTIONS WHICH ARE PERMITTED TO BE IN WRITING FROM THE OWNER AND LANDSCAPE ARCHITECT. THE SPECIFIED SIZE, SPECIES AND NEAREST VARIETY, AS APPROVED, TO BE FURNISHED. SUBSTITUTIONS MAY REQUIRE SUBMITTAL TO REVISED LANDSCAPE PLAN TO CITY FOR APPROVAL.
D) LABEL AT LEAST ONE (1) TREE, SHRUB, AND GROUNDCOVER OF EACH VARIETY WITH A SECURELY ATTACHED WATERPROOF TAG BEARING LEGIBLE DESIGNATION OF BOTANICAL AND COMMON NAMES.
E) DELIVER PLANT MATERIAL AFTER PREPARATION OF PLANTING AREAS HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN SIX (6) HOURS AFTER DELIVERY, SET MATERIAL IN SHADE, PROTECT FOR WEATHER AND MECHANICAL DAMAGE, AND KEEP ROOT BALLS MOIST BY COVERING WITH MULCH, BURLAP OR OTHER ACCEPTABLE MEANS OF RETAINING MOISTURE.

SOIL PREPARATION:
TOPSOIL, AMENDMENT, AND BACKFILL, ARE GENERAL REQUIREMENTS FOR ALL LANDSCAPE AREAS, UNLESS NOTED OTHERWISE ON THE PLANS. FOR SOIL PREPARATION AND INSTALLATION REQUIREMENTS, SEE CITY OF PUYALLUP VEGETATION MANAGEMENT STANDARDS SECTION 8.2, SOIL QUANTITY AND QUALITY STANDARDS. SOIL AMENDMENTS AND FERTILIZER ARE TO BE USED FOR BID PRICE BASIS ONLY. SPECIFIC AMENDMENTS AND FERTILIZERS WILL BE MADE AFTER SOIL SAMPLES ARE LABORATORY TESTED BY THE CONTRACTOR. PROVIDE CHANGE ORDER FOR ADDITIONAL OR REDUCTION OF MATERIALS REQUIRED OR NOT REQUIRED BY THE SOILS REPORT.

SOIL FERTILITY AND AGRICULTURAL SUITABILITY ANALYSIS:
AFTER ROUGH GRADING AND PRIOR TO SOIL PREPARATION, CONTRACTOR TO OBTAIN TWO REPRESENTATIVE SOIL SAMPLES, FROM LOCATIONS AS DIRECTED BY THE LANDSCAPE ARCHITECT, TO AN ACCREDITED SOIL TESTING LABORATORY FOR TESTING. SUBMIT RESULTS TO LANDSCAPE ARCHITECT FOR REVIEW. TESTS TO INCLUDE FERTILITY AND SUITABILITY ANALYSIS WITH WRITTEN RECOMMENDATIONS FOR SOIL AMENDMENT, FERTILIZER, CONDITIONERS, APPLICATION RATES, AND POST-CONSTRUCTION MAINTENANCE PROGRAM. TESTS TO BE CONTRACTED WITH AND PAID FOR BY THE CONTRACTOR.

ORGANIC MULCH (TOPDRESSING):
PER CITY OF PUYALLUP VEGETATION MANAGEMENT STANDARDS SECTION 8.3, MULCHING, ALL PLANTING AREAS SHALL BE MULCHED WITH A UNIFORM FOUR INCH (4") LAYER OF ORGANIC COMPOST MULCH MATERIAL OR WOOD CHIPS OVER A PROPERLY CLEANED, AMENDED AND GRADED SUBSURFACE. FOUR INCHES (4") OF MULCH IN PLANTING AREAS SHALL BE MAINTAINED THROUGH THE LIFE OF THE PROJECT.

STAKES:
2-INCH DIAMETER BY 8-FOOT MINIMUM LODGEPOLE PINE STAKES.

GUY MATERIAL:
1-INCH WIDE POLYETHYLENE CHAIN LOCK TYPE TIES; OR, 3/8" DIAMETER RUBBER. NO WIRE.

LAWN:
COMMERCIAL SEED OR SOD.

HERBICIDE:
HERBICIDE IS NOT RECOMMENDED FOR THE FIRST YEAR AFTER INSTALLATION.

ANTI-DESICCANT:
"WILT-PROOF." 48 HOURS PRIOR TO SHIPMENT TO SITE FROM JUNE 1 THROUGH SEPTEMBER. THOROUGHLY ROOT WATER PLANTS PRIOR TO DELIVERY. PLANT MATERIAL DELIVERED TO SITE TO BE KEPT CONTINUALLY MOIST THROUGH INSTALLATION.

EXECUTION:

CONTAMINANTS:
VERIFY THAT ALL SOIL CONTAMINANTS (E.G., PAINT, SEALANTS, SOLVENTS, OILS, GREASES, CONCRETE/ASPHALT SPOILS, ETC.) HAVE BEEN SATISFACTORY REMOVED FROM ALL PLANTING AREAS. DO NOT BEGIN WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

FINISH GRADES:
FINE GRADE AND REMOVE ROCKS, DEBRIS, AND FOREIGN OBJECTS OVER 2 INCHES DIAMETER FROM TOP SURFACE OF PREPARED LANDSCAPE AREAS. FINISH ELEVATIONS TO BE DEFINED AS 3 INCHES BELOW CURBS, WALKS AND/OR OTHER ADJACENT HARDSCAPE FOR ALL PLANTING BED AREAS AND 1-INCH BELOW CURBS, WALKS AND/OR OTHER ADJACENT HARDSCAPE FOR ALL LAWN AREAS. FINISH GRADE REFER TO GRADES PRIOR TO INSTALLATION OF MULCH OR LAWN. ALL FINISH GRADES TO BE SMOOTH EVEN GRADES, LIGHTLY COMPACTED, AS SHOWN ON THE PLAN AND DETAILED. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND STRUCTURES. SITE CIVIL DRAWINGS IDENTIFY FINAL ELEVATIONS. MOISTEN PREPARED AREAS BEFORE PLANTING IF SOIL IS DRY. WATER THOROUGHLY AND ALLOW SURFACE TO DRY BEFORE PLANTING. DO NOT CREATE MUDDY SOIL.

TREES AND SHRUBS:
ARRANGE TREES AND SHRUBS ON SITE IN PROPOSED LOCATIONS PER DRAWINGS. EXCAVATE PIT, PLANT AND STAKE OR GUY, AS CALLED OUT AND DETAILED. ALL TREES, SHRUBS, AND SUPPORTS TO STAND VERTICAL. BACKFILL SHALL BE PIT SPOILS. SETTLE BACKFILL USING WATER ONLY. NO MECHANICAL COMPACTION.

GROUNDCOVERS:
EXCAVATE PITS TO A MINIMUM OF 3 INCHES BELOW, AND TWICE THE ROOT BALL DIAMETER. WATER THOROUGHLY AND TAKE CARE TO ENSURE THAT ROOT CROWN IS AT PROPER GRADE, AS DETAILED.

UTILITY CLEARANCES:
FIELD ADJUST PLANT LOCATIONS FOR 5-FOOT SEPARATION OF TREES/SHRUBS AND 2-FOOT SEPARATION FOR GROUNDCOVER FROM FIRE HYDRANTS AND UTILITY VAULTS.

CLEANUP AND PROTECTION:
DURING LANDSCAPE WORK, KEEP ALL PAVEMENT CLEAN AND WORK AREAS IN AN ORDERLY CONDITION. PROTECT LANDSCAPE WORK AND MATERIALS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS AND TRESPASSERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIOD. TREAT, REPAIR, OR REPLACE DAMAGE LANDSCAPE WORK AS DIRECTED BY THE OWNER.

PLANTING MAINTENANCE:
PROVIDE FULL MAINTENANCE BY SKILLED EMPLOYEES OF LANDSCAPE INSTALLERS. CONTRACTOR TO MAINTAIN PLANTINGS THROUGH COMPLETED INSTALLATION, AND UNTIL ACCEPTANCE OF LANDSCAPE INSTALLATION. PLANTING MAINTENANCE TO INCLUDE WATERING, WEEDING, CULTIVATING, TIGHTENING AND REPAIRING OF TREE GUYS, RESETTING PLANTS TO PROPER GRADES OR POSITION, RE-ESTABLISHING SETTLED GRADES; AND MOWING LAWNS WEEKLY AFTER LAWN ESTABLISHMENT. HERBICIDE IS NOT RECOMMENDED FOR ONE YEAR FOLLOWING LANDSCAPE INSTALLATION. INCLUDED IS REPLACEMENT OF DEAD PLANTS AND PLANTS SHOWING LOSS OF 40 PERCENT OR MORE OF CANOPY.

IRRIGATION MAINTENANCE:
THE IRRIGATION SYSTEM TO BE MAINTAINED INCLUDING ADJUSTMENTS FOR BALANCED WATER DISTRIBUTION AND PRECIPITATION. FAILED OR MALFUNCTIONING IRRIGATION EQUIPMENT SHALL BE REPLACED AND/OR CORRECTED. PLANTING AND IRRIGATION MAINTENANCE TO INCLUDE THOSE OPERATIONS NECESSARY TO THE PROPER GROWTH AND SURVIVAL OF ALL PLANT MATERIALS. CONTRACTOR TO PROVIDE THIS WORK IN ADDITION TO SPECIFIC WARRANTY/GUARANTEES.

Preliminary Not For Construction

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	5/13/22	PRELIM. LANDSC. SET
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SEAL:

STATE OF WASHINGTON
JEFF M. VANLEY
NO. 774
REGISTERED LANDSCAPE ARCHITECT
Not for Construction

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 8 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

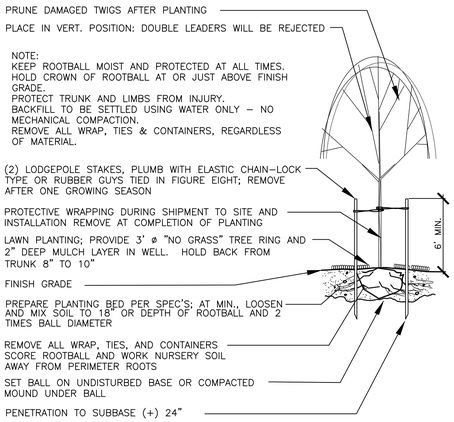
DESIGNED BY:	TCR	ALLIANCE Z&DM:	
CHECKED BY:	JMV	BP REPM:	
DRAWN BY:	TCR	ALLIANCE PM:	
VERSION:	-	PROJECT NO:	21730

DRAWING TITLE:
PRELIMINARY LANDSCAPE NOTES/SCHEDULE

SHEET NO:
L-2

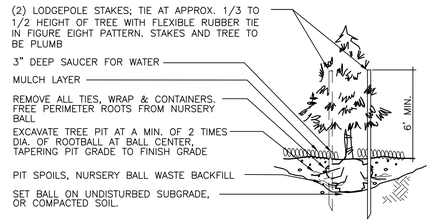
File:P:\21000s\21730\preliminary\21730_L.dwg Date/Time:5/9/2022 11:36 AM Scale:1" = 1' JVARLEY Xref: ----

PRELIMINARY LANDSCAPE DETAILS



DECIDUOUS TREE PLANTING/STAKING DETAIL

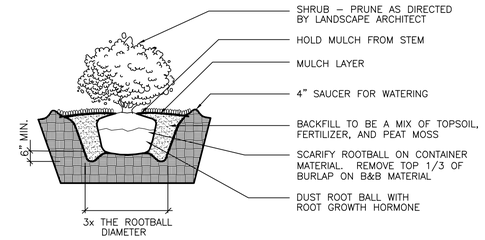
NOT TO SCALE



NOTE:
LIGHT FERTILIZER OVER PLANTING BED AFTER BACKFILL ONLY; NO FERTILIZER IN PLANTING PIT.
WORK PERIMETER ROOTS FREE OF NURSERY BALL.
BALL & PIT TO BE COURSELY SCARIFIED.

EVERGREEN TREE PLANTING/STAKING DETAIL

NOT TO SCALE



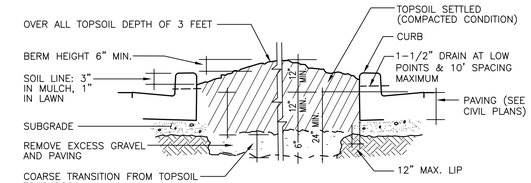
NOTE:
APPLY ADDITIONAL 4 OZ. 8–32–16 FERTILIZER INTO TOP 2" OF PLANTING MIX.

PLANT SHRUB HIGH ENOUGH TO ALLOW POSITIVE DRAINAGE AWAY FROM ROOTBALL. ROUGHEN ALL SURFACES OF PIT.

CUT AND REMOVE BURLAP FROM ROOT BALL

SHRUB PLANTING DETAIL

NOT TO SCALE

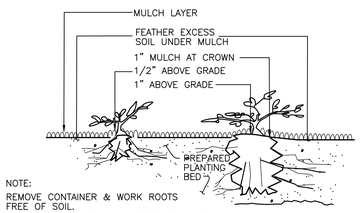


NOTE:
OVER EXCAVATE PARKING LOT PLANTERS TO LOOSEN COMPACTED SUBBASE

GRADING @ PARKING LOT PLANTERS DETAIL

NOT TO SCALE

DEDUCT ALT #1: IF LANDSCAPE CONTRACTOR CAN DEMONSTRATE THAT PLANTER ISLANDS ARE NOT FULL OF NON-SOIL MATERIALS (CONCRETE WASTE, LUMBER, ROAD BASE, GRAVEL), FULL EXCAVATION AND REPLACE WITH 18"-21" OF TOPSOIL CAN BE ELIMINATED AND IN ITS PLACE, 6" OF COMPOST CAN BE PLACED ON SUB-GRADE AND CULTIVATED INTO TOP 12" OF EXISTING SOIL. TOP OF FINISH GRADE AND DEPTH OF MULCH STILL APPLIES



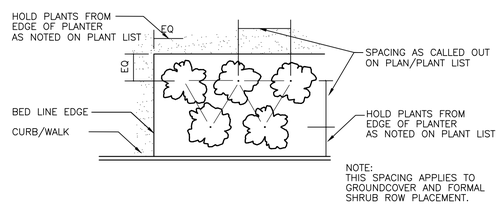
NOTE:
REMOVE CONTAINER & WORK ROOTS FREE OF SOIL.
BACKFILL TO BE SETTLED USING WATER ONLY
SEE PLANT LIST FOR PLANT SPACING

LESS THAN 1 GAL. (PLANTED BEFORE MULCH)

1 GAL. CONTAINER and LARGER (PLANTED BEFORE MULCH)

GROUNDCOVER PLANTING DETAIL

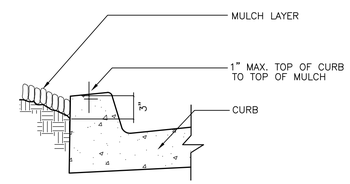
NOT TO SCALE



NOTE:
THIS SPACING APPLIES TO GROUNDCOVER AND FORMAL SHRUB ROW PLACEMENT.

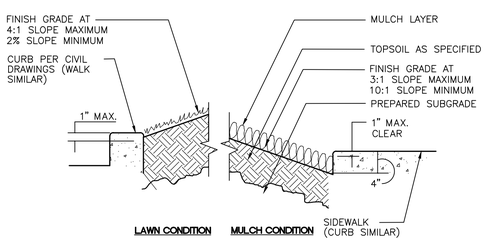
PLANT MATERIAL SPACING DETAIL

NOT TO SCALE



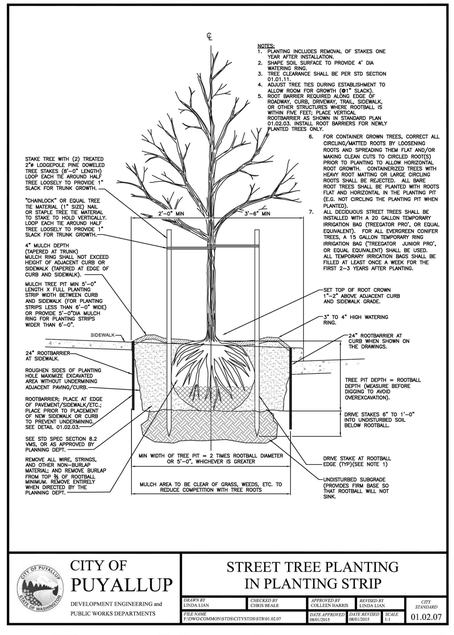
MULCH AT CURB DETAIL

NOT TO SCALE



PLANTER SECTION DETAIL

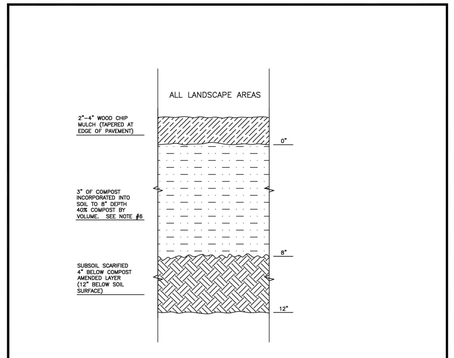
NOT TO SCALE



CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

STREET TREE PLANTING IN PLANTING STRIP

DRAWN BY	CHECKED BY	APPROVED BY	REVISED BY	CITY STANDARD
LINDA LIAN	CHRIS BEALE	COLLEEN HARRIS	LINDA LIAN	01.02.07
FILE NAME: F:\DWG\COMMON\STDSCITY\STDSHT\01-02.07		DATE APPROVED: 06/01/2015	DATE REVISED: 08/01/2017	SCALE: 1:1

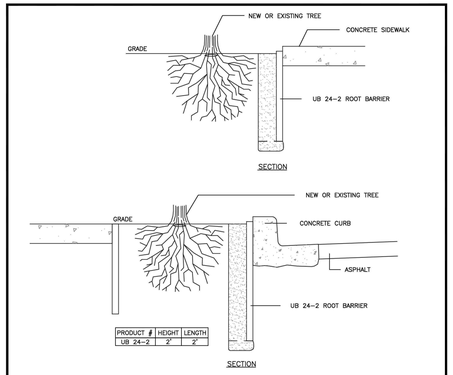


NOTES:
1. ALL SOIL AREAS DISTURBED OR COMPACTED DURING CONSTRUCTION, AND NOT COVERED BY BUILDINGS OR PAVEMENT, SHALL BE AMENDED WITH COMPOST AS DESCRIBED BELOW.
2. SUBSOIL SHOULD BE SCARIFIED (LOOSENED) 4 INCHES BELOW AMENDED LAYER, TO PRODUCE 12–INCH DEPTH OF UN–COMPACTED SOIL, EXCEPT WHERE SCARIFICATION WOULD DAMAGE TREE ROOTS OR AS DETERMINED BY THE ENGINEER. SEE NOTE BELOW REGARDING PLANTING STEPS FOR STREET TREES.
3. COMPOST SHALL BE TILLED IN TO 8 INCH DEPTH INTO EXISTING SOIL, OR PLACE 8 INCHES OF COMPOST–AMENDED SOIL, PER SOIL SPECIFICATION.
4. PLANTING BEDS SHALL RECEIVE 3 INCHES OF COMPOST TILLED IN TO 8–INCH DEPTH, OR MAY SUBSTITUTE 8" OF IMPORTED SOIL CONTAINING 35–40% COMPOST BY VOLUME. MULCH AFTER PLANTING, WITH 4 INCHES OF ARBORIST WOOD CHIP MULCH OR APPROVED EQUAL (8" OF LOOSE WOOD CHIPS AT THE TIME OF PLANTING TO ALLOW SETTLING TO 4").
5. SETBACKS TO PREVENT UNDER SETTLING, DO NOT COMPOST–AMEND SOILS WITHIN 3 FEET OF UTILITY INFRASTRUCTURES (POLES, VAULTS, METERS ETC.), WITHIN ONE FOOT OF PAVEMENT EDGE, CURBS AND SIDEWALKS SOIL SHOULD BE COMPACTED TO APPROXIMATELY 95% PROCTOR TO ENSURE A FIRM SURFACE.
6. SEE SECTION 8.2(B) OF THE VMS FOR SOIL AMENDMENT AND INSTRUCTION PROCEDURES FOR STREET TREE PLANTER STRIPS. ALL STREET TREE PLANTER STRIPS SHALL RECEIVE 40% COMPOST AMENDED SOIL TO THE FULL DEPTH OF THE STREET TREE ROOTBALL.

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

SOIL AMENDMENT AND DEPTH

DRAWN BY	CHECKED BY	APPROVED BY	REVISED BY	CITY STANDARD
LINDA LIAN	CHRIS BEALE	COLLEEN HARRIS	XXXXX	01.02.08a
FILE NAME: F:\DWG\COMMON\STDSCITY\STDSHT\01-02.08		DATE APPROVED: 06/01/2015	DATE REVISED: XX/XX/XX	SCALE: 1:1



PRODUCT #	HEIGHT	LENGTH
UB 24-2	2'	2'

NOTES:
1. ROOT BARRIERS SHALL BE REQUIRED IN ALL STREET TREE PLANTING INSTALLATIONS WHETHER NEW OR EXISTING, WHEN STREET TREES ARE INSTALLED IN RIGHT–OF–WAY OR IN A PLANTING EASEMENT*.
2. ROOT BARRIERS USED SHALL BE DeepRoot ROOT BARRIERS OR EQUIVALENT.
3. UB – 24 SHALL BE USED
4. ROOT BARRIERS SHALL BE INSTALLED IF REQUIRED BY THE CITY.
5. INSTALLATION OF ROOT BARRIERS TO BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
6. THE PANEL SHALL BE INSTALLED SO THE VERTICAL RIBS FACE THE ROOTS OF THE TREE. A MINIMUM OF FOUR (4) PANELS SHALL BE INSTALLED ON EACH SIDE OF ROOT BALL FOR 8' OF PROTECTION.
7. FOR PRODUCT INFORMATION VISIT:
http://www.deeproot.com/template.php?sec=products&nov=treeRoot&content=rb_opp&sub=2&tsel=1

*"PLANTING EASEMENT" SHALL MEAN THAT PORTION OF LAND MADE AVAILABLE AS A PUBLIC EASEMENT FOR THE PURPOSE OF PLANTING AND MAINTAINING CITY STREET TREES. ALL STREET TREES PLANTED WITHIN A PLANTING EASEMENT SHALL BE PLANTED WITHIN THREE FEET OF RIGHT–OF–WAY.

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

ROOT BARRIER DETAIL

DRAWN BY	CHECKED BY	APPROVED BY	REVISED BY	CITY STANDARD
JIM EDWARDS-EVGENEVA	CHRIS BEALE	COLLEEN HARRIS	LINDA LIAN	01.02.03
FILE NAME: F:\DWG\COMMON\STDSCITY\SMP\01_STD01-02\01-02.03		DATE APPROVED: 09/01/2009	DATE REVISED: 08/01/2017	SCALE: 1:1

Preliminary Not For Construction

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL:

STATE OF WASHINGTON
JEFF M. VARLEY
CERTIFICATE NO. 774 EXP. 12/31/22
LICENSED LANDSCAPE ARCHITECT
Not for Construction

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 8 MPD's

SITE ADDRESS:

SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY:	TCR	ALLIANCE ZAOM:	
CHECKED BY:	JMV	BP REPM:	
DRAWN BY:	TCR	ALLIANCE PM:	
VERSION:		PROJECT NO:	21730

DRAWING TITLE:

PRELIMINARY LANDSCAPE DETAILS

SHEET NO:

L-3

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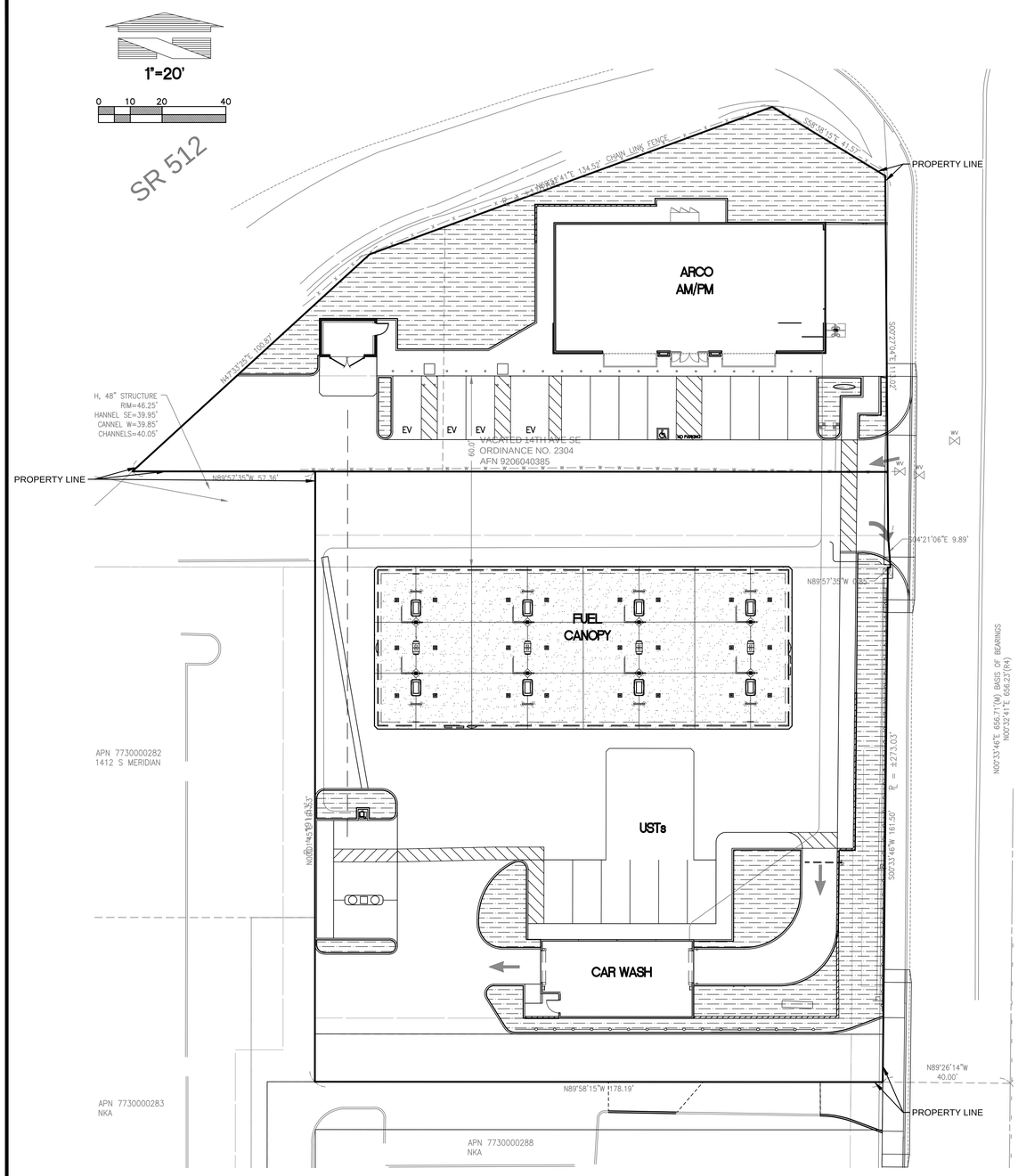
PRELIMINARY IRRIGATION PLAN



IRRIGATION LEGEND

DESCRIPTION

DRIP IRRIGATION:

HUNTER LANDSCAPE DRIPLINE COMPONENTS

HDL-06-12-250-CV SUB-SURFACE DRIPLINE TUBING 0.6 GPH PRESSURE COMPENSATING EMITTERS WITH CHECK VALVE AT 12" ON-CENTER SPACING – ALL TUBING SHALL BE INSTALLED ON GRADE W/ 9" WIRE STAKES FOUR (4) FEET ON-CENTER; VERIFY THE LAYOUT AND 18" ON-CENTER SPACING IN THE FIELD PRIOR TO STARTING WORK. INSTALL ALL COMPONENTS PER MANUF. SPECIFICATIONS.

USE HUNTER PLD-LOC FITTINGS FOR CONNECTION BETWEEN PVC LATERAL LINES AND INLINE DRIP TUBING

DRIP IRRIGATION: ICZ-101/151-XL REMOTE CONTROL DRIP ZONE KIT WITH FILTER AND PRESSURE REGULATOR MAXIMUM 2 VALVES PER BOX

HUNTER SOLAR SYNC WIRE RAIN SENSOR COMBO

HUNTER PRO-C CONTROLLER 3 TO 15 STATIONS, (HARDWIRE CONNECTION); PROVIDE GROUND AND BATTERIES PER MANUFACTURER'S SPECIFICATIONS

P.O.C. WILKINS 950 XLT– 1" DOUBLE CHECK VALVE (STATE APPROVED); TEST AND CERTIFICATION BY LICENSED BACKFLOW TESTER
WILKINS 850 – BALL VALVE, SIZE TO MATCH PIPE
CARSON INDUSTRIES #1730 (TWO AT P.O.C.) GRADE LEVEL VAULT WITH BOLT LOCK LID

PLASTIC BALL VALVE, MATCH LINE SIZE, IN VALVE BOX

HUNTER HQ-33DLRC 3/4" QUICK COUPLING VALVE, IN VALVE BOX, PROVIDE TWO KEYS AND SWIVELS

MAINLINE – SCH 40 PVC (18" COVER); SIZE PER PLAN, 1-1/2" SIZE MINIMUM

LATERAL – SCH 40 PVC (12" COVER); SIZE PER PLAN, 3/4" SIZE MINIMUM

SLEEVE – SCH 40 PVC; 24" MINIMUM COVER AT VEHICLE CROSSINGS AND 18" MINIMUM COVER IN LANDSCAPE AREAS, 6" SIZE WHERE IRRIGATION MAINLINE TRAVELS THROUGH PIPE. 4" SIZE WHERE ONLY LATERALS TRAVEL THROUGH PIPE

IRRIGATION SHOWN DIAGRAMATICALLY FOR PLAN CLARITY. COMMON TRENCH AND PLACE EQUIPMENT IN LANDSCAPE; MANIFOLD GROUPED VALVES IN ADJACENT SHRUB AREAS WHERE FEASIBLE.

SCH 40 PIPE SIZING CHART

PIPE SIZE	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	
FLOW GPM	1–8	8.1–13	13.1–23	23.1–32	32.1–53	53.1–74	GPM (MAX.)

LANDSCAPE IRRIGATION NOTES

1. GENERAL CONTRACTOR AND LANDSCAPE CONTRACTOR TO COORDINATE:
   - A) INSTALLATION OF 110V ELECTRICAL SERVICE FROM ELECTRICAL SOURCE TO AUTOMATIC CONTROLLER, INCLUDING WIRE HOOK-UP INTO MOUNTED CONTROLLER. IRRIGATION CONTRACTOR WILL MOUNT CONTROLLER PER DESIGN AND COORDINATE WITH GENERAL CONTRACTOR.
   - B) INSTALLATION OF IRRIGATION/SERVICE METER AND STUB TO IRRIGATION POINT OF CONNECTION, PER UTILITY PLAN(S). PROVIDE STANDARD THREADED STUB-OUT WITH THREADED CAP ON DISCHARGE SIDE OF METER. STUB-OUT TO BE INSTALLED APPROXIMATELY 18 INCHES BELOW FINISH GRADE.
   - C) VERIFICATION OF STATIC WATER PRESSURE AT POINT-OF-CONNECTION (P.O.C.) CONTRACTOR SHALL NOTIFY OWNER AND BARGHAUSEN CONSULTING ENGINEERS, INC., OF ANY VARIATION IN STATIC PRESSURE OVER 5 PSI GREATER/LESS THAN DESIGN PRESSURE.
   - D) INSTALLATION OF SLEEVING.
2. PROVIDE ALL LABOR, MATERIALS, TRANSPORTATION, AND SERVICES NECESSARY TO FURNISH AND INSTALL A COMPLETE IRRIGATION SYSTEM AS INDICATED ON THE DRAWINGS AND/OR NOTES. PROVIDE A ONE (1) YEAR WARRANTY/GUARANTEE FROM FINAL ACCEPTANCE AGAINST ALL DEFECTS IN MATERIALS, EQUIPMENT, AND WORKMANSHIP.
3. COORDINATE IRRIGATION INSTALLATION WITH GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR, LANDSCAPE CONTRACTOR, OWNER, ARCHITECT, AND LANDSCAPE ARCHITECT.
4. **LANDSCAPE CONTRACTOR TO TEST AVAILABLE WATER PRESSURE PRIOR TO BEGINNING ANY WORK. PROVIDE LANDSCAPE ARCHITECT WITH WRITTEN PSI RESULTS.**
5. ALL WORK PER LOCAL CODE. INSTALLATION PER MANUFACTURER'S WRITTEN SPECIFICATIONS.
6. CONTRACTOR TO OBTAIN AND PAY FOR ALL PERMITS, FEES, AND REQUIRED CITY INSPECTIONS.
7. SUBMITTALS:
   - A) SUBMIT EACH ITEM LISTED BELOW FOR LANDSCAPE ARCHITECT'S REVIEW AND APPROVAL,
   - B) PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED,
   - C) CONTROL WIRING PATH DIAGRAM,
   - D) "AS-BUILT" DRAWINGS.
   - E) OPERATION AND MAINTENANCE MANUALS.
8. PROVIDE AND KEEP UP TO DATE A COMPLETE "AS-BUILT" RECORD SET OF PRINTS WHICH ARE TO BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL DRAWINGS AND NOTES AND EXACT "AS-BUILT" LOCATIONS, SIZES AND KIND OF EQUIPMENT. THIS SET OF DRAWINGS. ARE TO BE KEPT ON SITE AND ARE TO BE USED ONLY AS THE RECORD SET. ALL WORK IS TO BE NEAT AND LEGIBLE ANNOTATIONS THEREON DAILY AS THE WORK PROCEEDS, SHOWING WORK AS ACTUALLY INSTALLED.
   DIMENSION FORM TWO (2) PERMANENT POINTS OF REFERENCE, BUILDING CORNERS, WALKS, OR ROAD INTERSECTIONS, ETC., THE LOCATION OF THE FOLLOWING:
   - A) CONNECTION TO WATER LINES (P.O.C.),
   - B) CONNECTIONS TO ELECTRICAL POWER,
   - C) GATE VALVE, QUICK COUPLERS, AND REMOTE CONTROL VALVE,
   - D) ROUTING OF MAINLINE (DIMENSION MAXIMUM 100' ALONG ROUTING),
   - E) ROUTING OF CONTROL WIRING,
   - F) OTHER RELATED EQUIPMENT AS DIRECTED BY THE LANDSCAPE ARCHITECT.
9. PREPARE AND PROVIDE PRIOR TO COMPLETION OF CONSTRUCTION, A THREE RING BINDER CONTAINING THE FOLLOWING INFORMATION:
   - A) INDEX SHEET STATING CONTRACTOR'S ADDRESS, TELEPHONE NUMBER, FAX, E-MAIL AND A, LIST OF EQUIPMENT WITH NAME AND ADDRESS OF LOCAL MANUFACTURER'S REPRESENTATIVES,
   - B) CATALOG AND PARTS SHEETS ON EVERY MATERIAL AND EQUIPMENT INSTALLED UNDER THIS, CONTRACT,
   - C) GUARANTEE STATEMENT,
   - D) COMPLETE OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL MAJOR EQUIPMENT.
   - E) CONSTRUCTION DETAILS FROM THE PROJECT,
   - F) COMPLETE TROUBLE-SHOOTING GUIDE TO COMMON IRRIGATION PROBLEMS,
   - G) WINTERIZATION AND SPRING START-UP PROCEDURES,
   - H) CHART OF APPROXIMATE WATERING TIMES FOR SPRING, SUMMER, AND FALL,
   - I) A COPY OF THE "AS-BUILT" DRAWINGS AND CONTROLLER CHART.
10. ALL VALVES TO BE PLACED IN "CARSON" GRADE LEVEL BOXES WITH BOLT-LOCK LIDS (OR APPROVED EQUIVALENT). SET BOXES 2 INCHES HIGHER THAN FINISH GRADE IN MULCH AREAS AND FLUSH WITH FINISH GRADE IN LAWN AREAS. JUMBO BOX FOR CHECK VALVE, 10" ROUND BOX FOR GATE/QUICK COUPLER/WIRE SPLICES, AND 12" STANDARD FOR CONTROL VALVES. PROVIDE BOX EXTENSIONS AS REQUIRED.
11. MAINLINE PIPE TO BE BURIED 18 INCHES, LATERALS 12 INCHES, AND SLEEVES 24" INCHES BELOW FINISH GRADE. NO ROCK OR DEBRIS TO BE BACKFILLED OVER PIPE.
12. HEAD AND LINE POSITIONING IS DIAGRAMMATIC ON PLAN. ADJUST IN FIELD AS NECESSARY FOR 100 PERCENT COVERAGE. VALVES TO BE POSITIONED ADJACENT TO PAVEMENT/CURBS, IN SHRUB BEDS WHERE POSSIBLE.
13. FAMILIARIZE OWNERS FACILITY OPERATOR WITH IRRIGATION SYSTEM FUNCTION, CONTROLLER PROGRAMMING, SYSTEM OPERATION AND MAINTENANCE REQUIREMENTS.
14. SPRINKLERS ON RISERS WILL NOT BE ALLOWED UNLESS NOTED ON PLANS.
15. RADIUS REDUCTION TO BE MADE BY USE OF PRESSURE ADJUSTMENT, SCREENS, AND/OR ALTERNATE NOZZLES. IN-NOZZLE ADJUSTMENT IS LIMITED TO 10 PERCENT FOR SPRAY HEADS AND PER MANUFACTURER'S LIMITS FOR OTHER SPRINKLERS. SPRINKLER SPACING NOT EXCEED 60% OF THE DIAMETER OF THE PUBLISHED DATA.
16. ALL CONTROL WIRE SPLICES TO BE MADE AT VALVE BOXES WITH WATER TIGHT ELECTRICAL SPLICES, 3M, SCOTT'S LOCK SEAL TACK 3576-78, OR EQUIVALENT.
17. EACH VALVE BOX TO CONTAIN A MINIMUM OF TWO (2) SPARE ORANGE CONTROL WIRES FOR JACKETED WIRE. ROUTE SPARE WIRES FROM THE CONTROLLER TO THE LAST VALVE OF EACH MAINLINE BRANCH. COMMON WIRE TO BE WHITE. SINGLE STRAND WIRE TO BE A MINIMUM OF 14 GAUGE.
18. ALL ELECTRICAL EQUIPMENT TO BE U.L. TESTED AND APPROVED, AND BEAR THE U.L. LABEL.
19. CROSS CONNECTION PROTECTION INSPECTION REQUIRED. THE BACKFLOW DEVICE TO BE TESTED UPON THE ORIGINAL INSTALLATION. THE TESTING TO BE PERFORMED BY A PERSON HOLDING A CURRENT CERTIFICATE AS A BACKFLOW TESTER. THE TEST REPORT TO BE SUBMITTED TO THE LOCAL WATER DISTRICT, OR PURVEYOR, AND OWNER WITH A COPY TO BARGHAUSEN CONSULTING ENGINEERS, INC. CONTRACTOR TO INCLUDE TESTING IN THE SCOPE OF WORK. OWNER IS RESPONSIBLE FOR ANNUAL INSPECTIONS AFTER THE INTIAL INSPECTION.
20. CONTRACTOR TO PROVIDE SYSTEM WINTERIZATION/SPRING SERVICE WHEN INSTALLATION HAS BEEN COMPLETED WITHIN 90 DAYS OF NOVEMBER 1 FOR WINTERIZATION, OR MAY 15 FOR SPRING SERVICE. SERVICE TO BE PERFORMED AS NEAR AS PRACTICAL

Preliminary Not For Construction

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	5/13/22	PRELIM. LANDSC. SET
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SEAL:

STATE OF WASHINGTON
JEFF M. VARLEY
CERTIFICATE NO. 774 EXPIRES 12/31/22
LICENSED LANDSCAPE ARCHITECT

Not for Construction

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm

FUEL CANOPY w/ 8 MPD's

SITE ADDRESS:

SWC S MERIDIAN

@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY:	TCR	ALLIANCE ZAOM:	
CHECKED BY:	JMV	BP REPM:	
DRAWN BY:	TCR	ALLIANCE PM:	
VERSION:	- -	PROJECT NO:	21730

DRAWING TITLE:

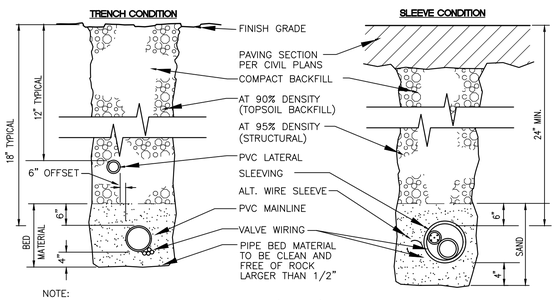
PRELIMINARY IRRIGATION PLAN

SHEET NO:

L-4

File:P:\21000s\21730\preliminary\21730 L.dwg Date/Time:5/9/2022 11:36 AM Scale:1" = 1' JVARLEY Xref: ----

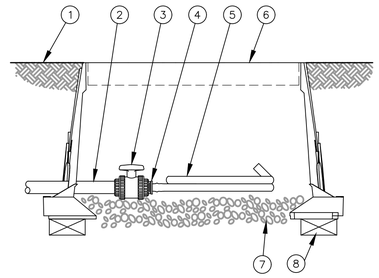
PRELIMINARY IRRIGATION DETAILS



NOTE:
SLEEVING MATERIAL SHALL BE PVC CLASS 160(SDR-26).
DIMENSIONS ARE MIN. CLEARANCES.
ALL IRRIGATION SLEEVING TRENCH BACKFILL MATERIAL SHALL BE CLASS "B" OR BETTER (MAX. OF 10% PASSING NO.40 SCREEN) AND BE COMPACTED TO MIN. 95% OPTIMUM DENSITY PER ASTM D-1557-70 (MODIFIED PROCTOR)

SLEEVE/TRENCHING DETAIL

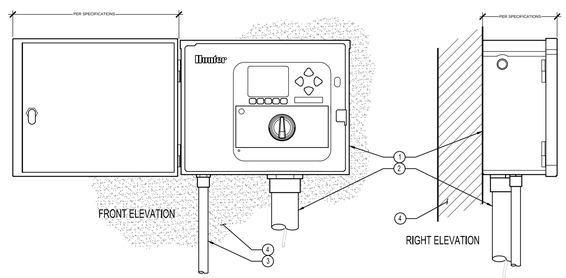
NOT TO SCALE



1. FINISH GRADE
2. PVC DRIP MANIFOLD PIPE
3. PVC 1" X 3/4" TRUE UNION BALL VALVE
4. EASY FIT MALE X BARB ADAPTER
5. SUB-SURFACE DRIPLINE:
6. 12-INCH VALVE BOX WITH COVER
7. 3-INCH MINIMUM DEPTH OF 3/4" WASHED GRAVEL
8. BRICK (1 OF 2)

FLUSH POINT WITH BALL VALVE

NOT TO SCALE

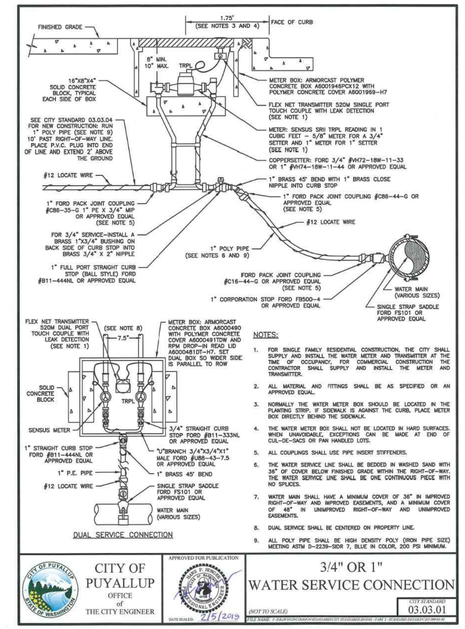


LEGEND:
1. IRRIGATION CONTROLLER (ACC) PER PLAN
2. IRRIGATION CONTROL WIRE IN CONDUIT SIZE AND TYPE PER LOCAL CODES
3. ELECTRICAL SUPPLY CONDUIT CONNECT TO POWER SOURCE, J-BOX INSIDE CONTROLLER
4. ADJACENT SURFACE TO MOUNT CONTROLLER PER PLAN

NOTE
MOUNT CONTROLLER LCD SCREEN AT EYE LEVEL.
CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 VAC POWER SOURCE

IRRIGATION CONTROLLER, WALL MOUNT

NOT TO SCALE



NOTES:
1. FOR SINGLE FAMILY RESIDENTIAL CONSTRUCTION, THE CITY SHALL SUPPLY AND INSTALL THE WATER METER AND TRANSMITTER AT THE TIME OF OCCUPANCY. FOR COMMERCIAL CONSTRUCTION THE CONTRACTOR SHALL SUPPLY AND INSTALL THE METER AND TRANSMITTER.
2. ALL MATERIAL AND FITTINGS SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
3. NORMALLY THE WATER METER BOX SHOULD BE LOCATED IN THE PLANTING STRIP. IF SIDEWALK IS AGAINST THE CURB, PLACE METER BOX DIRECTLY BEHIND THE SIDEWALK.
4. THE WATER METER BOX SHALL NOT BE LOCATED IN HARD SURFACES. WHEN UNAVOIDABLE, EXCEPTIONS CAN BE MADE AT END OF CUL-DE-SACS OR PAR HANDLED LOTS.
5. ALL COUPLINGS SHALL USE PIPE INSERT STIFFENERS.
6. THE WATER SERVICE LINE SHALL BE BEDDED IN WASHED SAND WITH 36" OF COVER BELOW FINISHED GRADE WITHIN THE RIGHT-OF-WAY. THE WATER SERVICE LINE SHALL BE ONE CONTINUOUS PIECE WITH NO SPLICES.
7. WATER MAIN SHALL HAVE A MINIMUM COVER OF 36" IN IMPROVED RIGHT-OF-WAY AND IMPROVED EASEMENTS, AND A MINIMUM COVER OF 48" IN UNIMPROVED RIGHT-OF-WAY AND UNIMPROVED EASEMENTS.
8. DUAL SERVICE SHALL BE CENTERED ON PROPERTY LINE.
9. ALL POLY PIPE SHALL BE HIGH DENSITY POLY (IRON PIPE SIZE) MEETING ASTM D-2239-SIDR 7, BLUE IN COLOR, 200 PSI MINIMUM.

CITY OF PUYALLUP OFFICE of THE CITY ENGINEER
APPROVED FOR PUBLICATION — DATE ISSUED 2/5/2019
3/4" OR 1" WATER SERVICE CONNECTION
(NOT TO SCALE) — CITY STANDARD 03.03.01
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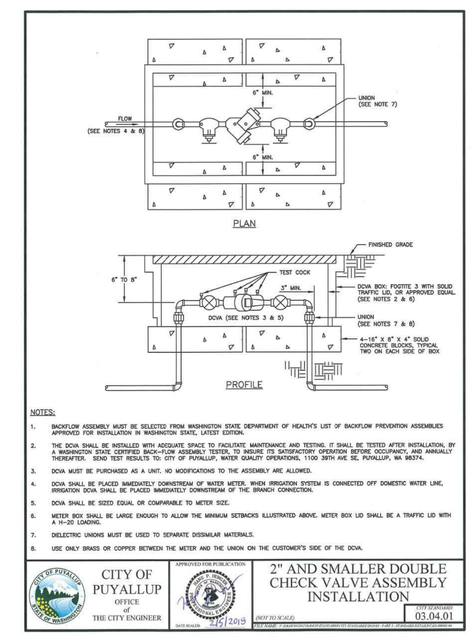

NOTES:
1. BACKFLOW ASSEMBLY MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH'S LIST OF BACKFLOW PREVENTION ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE, LATEST EDITION.
2. THE DCVA SHALL BE INSTALLED WITH ADEQUATE SPACE TO FACILITATE MAINTENANCE AND TESTING. IT SHALL BE TESTED AFTER INSTALLATION, BY A WASHINGTON STATE CERTIFIED BACK-FLOW ASSEMBLY TESTER, TO INSURE ITS SATISFACTORY OPERATION BEFORE OCCUPANCY, AND ANNUALLY THEREAFTER. SEND TEST RESULTS TO: CITY OF PUYALLUP, WATER QUALITY OPERATIONS, 1100 39TH AVE SE, PUYALLUP, WA 98374.
3. DCVA MUST BE PURCHASED AS A UNIT. NO MODIFICATIONS TO THE ASSEMBLY ARE ALLOWED.
4. DCVA SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF WATER METER. WHEN IRRIGATION SYSTEM IS CONNECTED OFF DOMESTIC WATER LINE, IRRIGATION DCVA SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF THE BRANCH CONNECTION.
5. DCVA SHALL BE SIZED EQUAL OR COMPARABLE TO METER SIZE.
6. METER BOX SHALL BE LARGE ENOUGH TO ALLOW THE MINIMUM SETBACKS ILLUSTRATED ABOVE. METER BOX LID SHALL BE A TRAFFIC LID WITH A H-20 LOADING.
7. DIELECTRIC UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.
8. USE ONLY BRASS OR COPPER BETWEEN THE METER AND THE UNION ON THE CUSTOMER'S SIDE OF THE DCVA.

CITY OF PUYALLUP OFFICE of THE CITY ENGINEER
APPROVED FOR PUBLICATION — DATE ISSUED 2/5/2019
2" AND SMALLER DOUBLE CHECK VALVE ASSEMBLY INSTALLATION
(NOT TO SCALE) — CITY STANDARD 03.04.01
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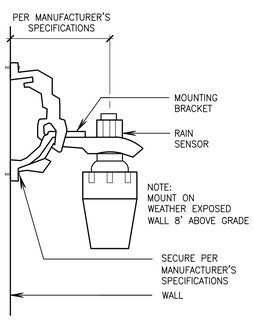
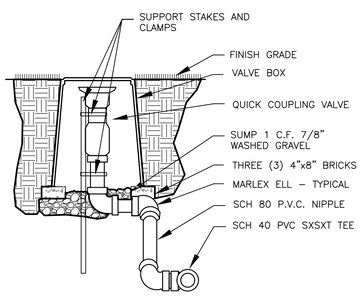


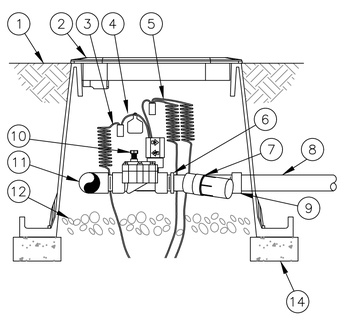
RAIN SENSOR DETAIL

NOT TO SCALE



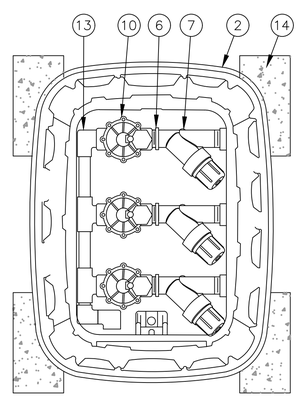
QUICK COUPLING VALVE DETAIL

NOT TO SCALE



SIDE VIEW

1. FINISH GRADE
2. STANDARD VALVE BOX WITH COVER: RAIN BIRD VB-STD
3. WATERPROOF CONNECTION: RAIN BIRD DB SERIES
4. VALVE ID TAG
5. 30-INCH LINEAR LENGTH OF WIRE, COILED
6. 1" X 3/4" REDUCING COUPLING (INCLUDED IN XCZ-LF-100-PRF KIT)
7. PRESSURE REGULATING FILTER: RAIN BIRD PRF-100-RBY (INCLUDED IN XCZ-LF-100-PRF KIT)
8. LATERAL PIPE
9. PVC SCH 40 FEMALE ADAPTOR OR REDUCER
10. REMOTE CONTROL VALVE: RAIN BIRD LFV-100 (INCLUDED IN XCZ-LF-100-PRF KIT)
11. PVC SCH 40 TEE OR ELL TO MANIFOLD
12. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
13. MANIFOLD PIPE AND FITTINGS
14. MINIMUM FOUR (4) 4"x8" BRICKS



TOP VIEW

DRIP IRRIGATION VALVE

NOT TO SCALE

Preliminary Not For Construction

CLIENT:
bp
ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL:
STATE OF WASHINGTON — JEFF M. VARLEY — REGISTERED LANDSCAPE ARCHITECT — Not for Construction

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 8 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY:	TCR	ALLIANCE ZAOM:	
CHECKED BY:	JMV	BP REPM:	
DRAWN BY:	TCR	ALLIANCE PM:	
VERSION:	-	PROJECT NO:	21730

DRAWING TITLE:
PRELIMINARY IRRIGATION DETAILS

SHEET NO:
L-5

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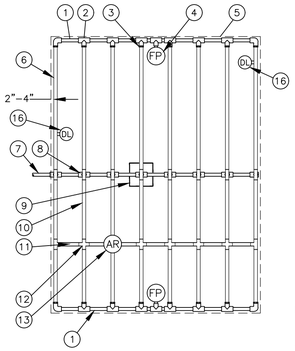
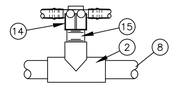
PRELIMINARY IRRIGATION DETAILS



1. PVC EXHAUST HEADER
2. PVC SCH 40 TEE OR EL (TYPICAL)
3. BARB X MALE FITTING
4. FLUSH POINT (TYPICAL) SEE DETAIL
5. PERIMETER OF AREA
6. PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"–4" FROM PERIMETER OF AREA
7. PVC SUPPLY PIPE FROM CONTROL ZONE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
8. PVC SUPPLY MANIFOLD
9. CONNECTION FROM SUPPLY MANIFOLD TO DRIPLINE (TYPICAL)– SEE INSET A
10. SUB–SURFACE DRIPLINE
11. BLANK TUBING
12. BARB X BARB INSERT TEE OR CROSS:
13. ½" AIR RELIEF VALVE
14. BARB X FEMALE FITTING:
15. ¾" PVC NIPPLE, LENGTH AS NECESSARY
16. DRIPLINE INDICATOR. SEE DETAIL FOR ADDITIONAL INFORMATION



INSET A

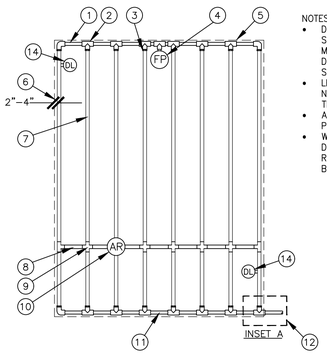
Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	12" Spacing Nominal Flow (gph)		18" Spacing Nominal Flow (gph)		24" Spacing Nominal Flow (gph)	
	0.6	0.9	0.6	0.9	0.6	0.9
15	273	155	314	250	424	322
20	318	169	353	294	508	368
30	360	230	413	350	586	414
40	395	255	465	402	652	474
50	417	285	528	420	720	488
60	460	290	596	455	780	514

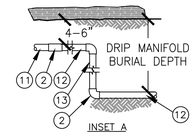
NOTES:
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE IRRIGATION SCHEDULE FOR SPACING.
2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM LENGTH SHOWN IN THE ACCOMPANYING TABLE.
3. AIR RELIEF VALVE TO BE INSTALLED AT HIGH POINT OF AREA.
4. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.

DRIPLINE CENTER FEED LAYOUT

NOT TO SCALE



NOTES:
- DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE DRIPLINE INSTALLATION GUIDE FOR SUGGESTED SPACINGS.
- LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM LENGTH SHOWN IN THE ACCOMPANYING TABLE.
- AIR RELIEF VALVE TO BE INSTALLED AT HIGH POINT OF AREA.
- WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.



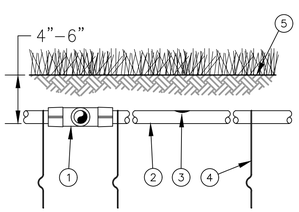
1. PVC EXHAUST HEADER
2. PVC SCH 40 TEE OR EL (TYPICAL)
3. BARB X MALE FITTING:
4. FLUSH POINT (TYPICAL) SEE RAIN BIRD DETAIL 'FLUSH POINT WITH BALL VALVE'
5. PERIMETER OF AREA
6. PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"–4" FROM PERIMETER OF AREA
7. SUB–SURFACE DRIPLINE
8. BLANK TUBING
9. BARB X BARB INSERT TEE OR CROSS:
10. ½" AIR RELIEF VALVE
11. PVC SUPPLY HEADER
12. PVC DRIP MANIFOLD FROM CONTROL ZONE VALVE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
13. PVC SCH 40 RISER PIPE
14. DRIPLINE INDICATOR. SEE DETAIL FOR ADDT'L INFO

Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	12" Spacing Nominal Flow (gph)		18" Spacing Nominal Flow (gph)		24" Spacing Nominal Flow (gph)	
	0.6	0.9	0.6	0.9	0.6	0.9
15	273	155	314	250	424	322
20	318	169	353	294	508	368
30	360	230	413	350	586	414
40	395	255	465	402	652	474
50	417	285	528	420	720	488
60	460	290	596	455	780	514

DRIPLINE END FEED LAYOUT

NOT TO SCALE

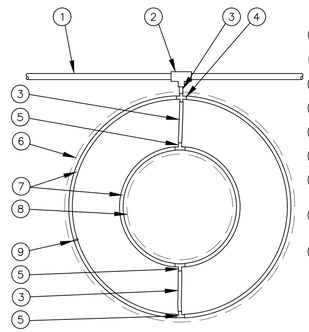


1. EASY FIT COMPRESSION TEE
2. SUB–SURFACE DRIPLINE
3. INLINE DRIP EMITTER
4. TIE DOWN STAKE
5. TURF/FINISH GRADE OR SHRUB BED WITH MULCH

NOTES:
1. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
2. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE–DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.
3. INSERTION PLOW AND TRENCHED INSTALLATIONS DO NOT REQUIRE TIE DOWN STAKES.

DRIPLINE BURIAL

NOT TO SCALE

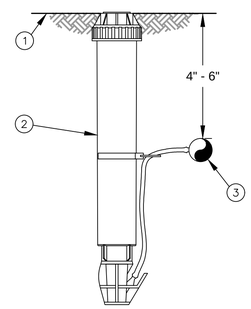


1. PVC DRIP MANIFOLD PIPE
2. PVC SCH 40 TEE OR EL
3. BLANK TUBING
4. BARB CROSS INSERT FITTING
5. BARB TEE INSERT FITTING
6. PROJECTED CANOPY LINE OF TREE
7. SUB–SURFACE DRIPLINE: SEE IRRIGATION SCHEDULE
8. PLACE AS SHOWN (LENGTH AS REQUIRED) ROOT BALL
9. TIE DOWN STAKE: QUANTITY AS REQUIRED, SEE NOTES 2–3 BELOW)

NOTES:
1. DISTANCE BETWEEN LATERAL RINGS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, AND TREE CANOPY. SEE MANUFACTURER DRIPLINE INSTALLATION GUIDE FOR SUGGESTED SPACINGS.
2. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
3. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE–DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.

DRIPLINE AROUND TREE

NOT TO SCALE

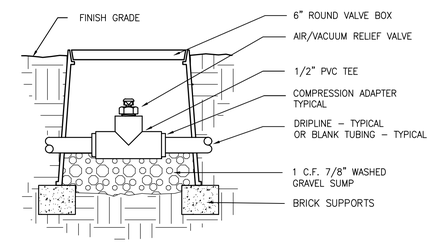


1. FINISH GRADE/TURF
2. OPERATION INDICATOR
3. SUB–SURFACE DRIPLINE: SEE IRRIGATION SCHEDULE

NOTE:
1. INSERT BARB TRANSFER FITTING DIRECTLY INTO DRIPLINE TUBING.
2. VAN NOZZLE MAY BE SET TO CLOSED, OR IF IT IS DESIRED TO SEE SPRAY FROM THE NOZZLE, SET THE ARC TO ¼ PATTERN. THE FLOW FROM THE NOZZLE, 0.3 GPM, SHOULD BE ACCOUNTED FOR IN THE SYSTEM DESIGN.

DRIP IRRIGATION DRIPLINE INDICATOR

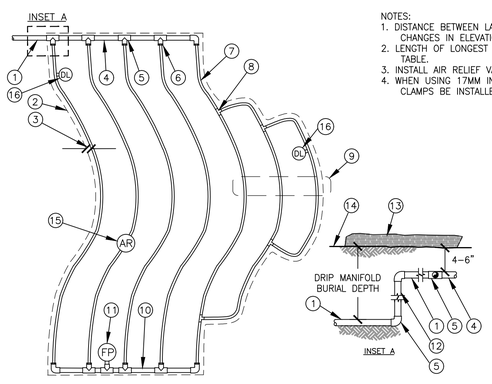
NOT TO SCALE



NOTE:
AIR/VACUUM RELIEF VALVE CANNOT BE CONNECTED LOWER THAN DRIPLINE LATERALS. FOR USE ON ZONES OF 7 GPM OR LESS ONLY (PLUMBED TO TUBING).

1/2" AIR/VACUUM RELIEF VALVE DETAIL

NOT TO SCALE

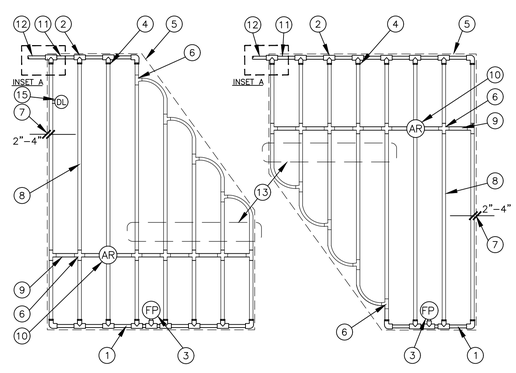


NOTES:
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE INSTALLATION SPECIFICATIONS FOR SPACING
2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM SPACING SHOWN IN THE ACCOMPANYING TABLE.
3. INSTALL AIR RELIEF VALVE AT HIGH POINTS IN DRIP LATERAL.
4. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.

1. PVC SUPPLY PIPE FROM RAIN BIRD CONTROL ZONE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
2. PERIMETER OF AREA
3. PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"–4" FROM PERIMETER OF AREA
4. PVC SUPPLY MANIFOLD
5. PVC SCH 40 TEE OR EL (TYPICAL)
6. BARB X MALE FITTING
7. SUB–SURFACE DRIPLINE: SEE IRRIGATION SCHEDULE
8. ARB X BARB INSERT TEE
9. TOTAL LENGTH OF SELECTED DRIPLINE SHOULD NOT EXCEED LENGTH SHOWN IN TABLE
10. PVC FLUSH HEADER
11. FLUSH POINT: SEE DETAIL
12. PVC RISER PIPE
13. TURF OR MULCH
14. FINISH GRADE
15. 1/2" AIR RELIEF VALVE: SEE DETAIL
16. DRIPLINE INDICATOR. SEE DETAIL FOR ADDT'L INFO

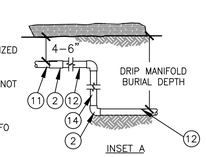
DRIPLINE ODD CURVES LAYOUT

NOT TO SCALE



1. PVC EXHAUST HEADER
2. PVC SCH 40 TEE OR EL (TYPICAL)
3. FLUSH POINT (TYPICAL) SEE DETAIL
4. BARB X MALE FITTING
5. PERIMETER OF AREA
6. BARB X BARB INSERT TEE OR CROSS
7. PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"–4" FROM PERIMETER OF AREA
8. SUB–SURFACE DRIPLINE: SEE IRRIGATION SCHEDULE
9. BLANK TUBING
10. ½" AIR RELIEF VALVE: SEE DETAIL
11. PVC SUPPLY MANIFOLD
12. PVC SUPPLY PIPE FROM CONTROL ZONE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
13. TOTAL LENGTH OF SELECTED DRIPLINE SHOULD NOT EXCEED LENGTH SHOWN IN TABLE
14. PVC SCH 40 RISER PIPE
15. DRIPLINE INDICATOR. SEE DETAIL FOR ADDT'L INFO

NOTES:
- DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE MANUFACTURER DRIPLINE INSTALLATION GUIDE FOR SUGGESTED SPACINGS.
- LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM LENGTH SHOWN IN THE ACCOMPANYING TABLE.
- AIR RELIEF VALVE TO BE INSTALLED AT HIGH POINT OF AREA.
- WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.



DRIPLINE IRREGULAR SHAPED LAYOUT

NOT TO SCALE

Preliminary Not For Construction

CLIENT: bp ARCO BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	5/13/22	PRELIM. LANDSC. SET
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SEAL: STATE OF WASHINGTON JEFF M. VARLEY LICENSED LANDSCAPE ARCHITECT CERTIFICATE NO. 774 EXPIRES 2/5/23 Not for Construction

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 8 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: TCR	ALLIANCE Z&DM:
CHECKED BY: JMV	BP REPM:
DRAWN BY: TCR	ALLIANCE PM:
VERSION:	PROJECT NO: 21730

DRAWING TITLE:
PRELIMINARY IRRIGATION DETAILS

SHEET NO:
L-6

File:P:\21000s\21730\preliminary\21730 L.dwg Date/Time:5/9/2022 11:36 AM Scale:1" = 1' JVARLEY Xref: ---