LANDSCAPE LEGEND

SYMBOL	COMMON NAME	SIZE/COND.	SPACING
TREES			
CSZ	City Sprite Zelkova Zelkova serrata 'City Sprite'	2" CAL.	AS SHOWN
GDA	Golden Desert Ash Fraxinus excelsior	2 CAL.	AS SHOWN
HC	Hogan Cedar Thuja plicata 'Hogan'	5' HT.	AS SHOWN
FT	Firestarter Tupelo Nyssa sylvatica 'JFS-red'	2" CAL.	AS SHOWN
KC	Kwanzan Cherry Prunus serrulata 'Kwanzan'	2" CAL.	AS SHOWN
OA	Oregon Ash Fraxinus latifolia	2" CAL.	AS SHOWN
PBM	Paperbark Maple Acer griseum	2" CAL.	AS SHOWN
WRC	Western Red Cedar Thuja plicate	5' HT.	AS SHOWN

GROUNDCOVER

Lawn - Seeded/Sod/Hydroseeded
Oregon Ryegrass Blend

A mix of shrubs and groundcover from the City of Camas Plant List to be determined at Final Engineering

TREE DENSITY CALCULATIONS

6.08 acres x 20 tree units/acre = 122 total tree units required
Tree Unit Credits for Existing Trees = 0 tree units
122 - 0 = 122 tree units required to be added

Proposed Street Trees - 16 trees @ 2" cal. (1 tree units per) = 16 tree units
Proposed Interior Deciduous Trees - 67 trees @ 2" cal. (1 tree unit per) = 67 tree units
Proposed Interior Conifer Trees - 39 trees @ 5-6' (1 tree units per) = 39 tree units Total
Proposed Tree Units - 16+67+39 = 122 tree units

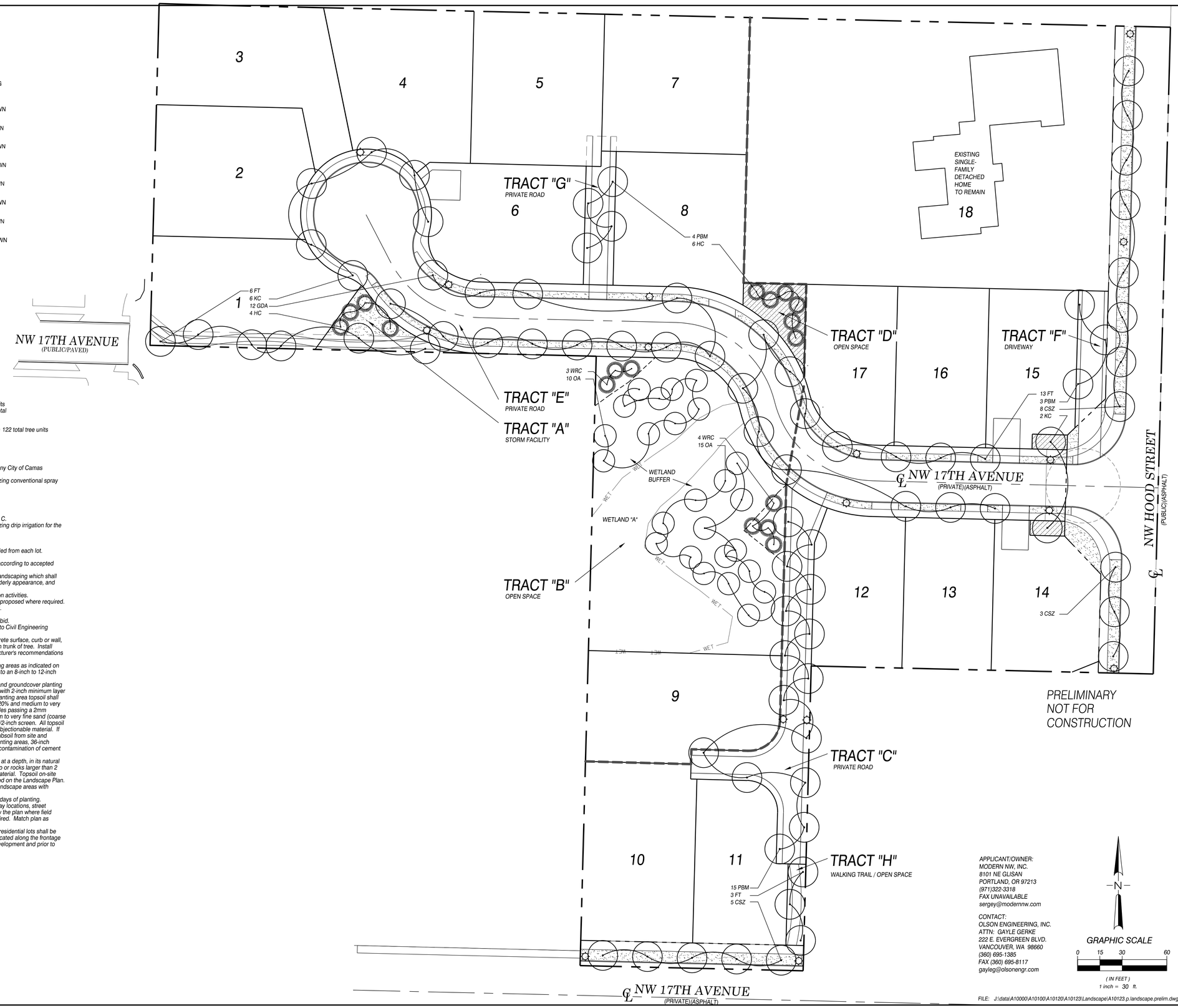
Total Tree Units Provided On Site - 122 proposed tree units + 0 existing tree units = 122 total tree units
122 - 0 = 0 tree units exceeded

NOTES

1. *Installation shall fully comply with all landscape code requirements and any City of Camas conditions of approval.*
2. *Irrigation shall be provided by a fully automatic underground system utilizing conventional spray irrigation for the following:*
   - *Tracts A and D;*
   - *Along the road frontages of Tracts A, B and D;*
   - *Along NW Hood Street;*
   - *Along NW 16th Avenue;*
   - *Along the south side of NW 17th Avenue between Tract A and Tract C.*

   Irrigation shall be provided by a fully automatic underground system utilizing drip irrigation for the trees within the following:
   - *Along the pedestrian access easement on Lot 1;*
   - *Tracts C, F and G;*

   Irrigation for trees along the frontages of single-family lots shall be provided from each lot.
3. *All landscaping shall be installed in a sound workman-like manner, and according to accepted good planting procedures with quality plant materials.*
4. *The owner, or his agent, shall be responsible for the maintenance of all landscaping which shall be maintained in good condition so as to present a healthy, neat, and orderly appearance, and shall be kept free from refuse and debris.*
5. *All existing vegetation shall be removed from areas to receive construction activities.*
6. *There are no berms or fences proposed at this time. Retaining walls are proposed where required.*
7. *The proposed stormwater facilities are below-ground water management.*
8. *There are no active or passive recreational features proposed.*
9. *Contractor shall verify species and quantities of all plant material prior to bid.*
10. *Install jute erosion control fabric on all slopes 2-1/2:1 and greater. Refer to Civil Engineering plans.*
11. *Install root control barrier on all trees located within 8' of any paved/concrete surface, curb or wall, 18"-inches deep, .08-inches or 2 mm thick, 10 feet long. Center barrier on trunk of tree. Install adjacent to back of sidewalk, pavement, curb and/or wall as per manufacturer's recommendations and specifications.*
12. *Prior to installation of topsoil in tree, shrub, groundcover and lawn planting areas as indicated on the Landscape Plan, cross-rip at 18 inches on center or rototill subgrade to an 8-inch to 12-inch depth.*
13. *Install minimum 12-inch depth on-site and/or imported topsoil in all tree and groundcover planting areas as indicated on the Landscape Plan. Amend planting area topsoil with 2-inch minimum layer composted yard debris prior to installation of plant material. Imported planting area topsoil shall be a sandy loam topsoil with a combined silt and clay content less than 20% and medium to very fine sand 60%-70% which shall be percentages by weight of those particles passing a 2mm screen. The remaining percentages shall be particles larger than medium to very fine sand (coarse or very coarse sand or gravel sized particles). All particles shall pass a 1/2-inch screen. All topsoil shall be free from subsoil, debris, turf, mushrooms, weeds or any other objectionable material. If subgrade is comprised of rock, rock fill or cement treated soil, remove subsoil from site and deposit topsoil to the following depths: 24-inch minimum depth in all planting areas, 36-inch minimum depth at all tree locations in a 5 foot diameter. Allow no cross contamination of cement treated soil with placed topsoil.*
14. *On-site topsoil shall be defined as being a friable loam surface soil found at a depth, in its natural state, of less than 12 inches. Topsoil shall be free from subsoil, clay lump or rocks larger than 2 inches, debris, turf, weeds, roots, contaminants or other objectionable material. Topsoil on-site meeting these specifications may be used in landscape areas as indicated on the Landscape Plan. Coordinate stockpiling of existing on-site topsoil strippings for reuse in landscape areas with Project Representative.*
15. *Install minimum 2-inches bark mulch in all new landscape areas within 2 days of planting.*
16. *Final placement of street trees shall be determined based on final driveway locations, street lighting, utilities and other appurtenances and shall not necessarily follow the plan where field conditions are not conducive for tree planting. Field adjust trees as required. Match plan as closely as possible.*
17. *Street trees and groundcover located along the frontage of single-family residential lots shall be installed prior to occupancy of each lot. Street trees and groundcover located along the frontage of open space tracts shall be installed at the time of open space tract development and prior to final plat recording.*



PRELIMINARY NOT FOR CONSTRUCTION

APPLICANT/OWNER:
MODERN NW, INC.
8101 NE GLISAN
PORTLAND, OR 97213
(971)322-3318
FAX UNAVAILABLE
sergey@modernnw.com

CONTACT:
OLSON ENGINEERING, INC.
ATTN: GAYLE GERKE
222 E. EVERGREEN BLVD.
VANCOUVER, WA 98660
(360) 695-1385
FAX (360) 695-8117
gayleg@olsonengr.com

N

GRAPHIC SCALE
0 15 30 60
(IN FEET)
1 inch = 30 ft.

FILE: J:\data\A10000\A10100\A10120\A10123\Landscape\A10123.p.landscape.prelim.dwg

PRELIMINARY LANDSCAPE PLAN FOR:

HOOD ST. SUBDIVISION

OLSON ENGINEERING INC.
LAND SURVEYORS
ENGINEERS
360-695-1385
503.989.9696
222 E. EVERGREEN BLVD., VANCOUVER, WA 98660

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
MICHAEL R. ODREN
CERTIFICATE NO. 891
EXP. 1/5/23

CHANGES / REVISIONS

DESCRIPTION:	DATE:

DESIGNED: JWC, MRO

DRAWN: JWC

CHECKED: MRO

DATE: FEBRUARY 2022

SCALE: H: 1" = 30'
V:

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HOOD ST. SUBDIVISION

JOB NO. A10123.01.01

SHEET

LS1.0

LANDSCAPING GENERAL NOTES:

1. DEVELOPER SHALL SUBMIT A LANDSCAPE PLAN SHOWING PLANT TYPE, LOCATION, AND QUANTITY OF PLANTS, THAT IS DESIGNED BY A QUALIFIED LANDSCAPE DESIGNER.
2. SHOW THE LOCATION OF SIDEWALK, LIGHT POLES, MAIL BOXES, DRIVEWAYS, FIRE HYDRANTS, INTERSECTIONS, AND ANY OTHER APPURTENANCE THAT MAY INFLUENCE THE PLACEMENT OF PLANTS.
3. LANDSCAPING SHALL BE SELECTED AND LOCATED TO DETER SOUND, FILTER AIR CONTAMINANTS, CURTAIL EROSION, MINIMIZE STORM WATER RUN-OFF, CONTRIBUTE TO LIVING PRIVACY, REDUCE THE VISUAL IMPACTS OF BUILDINGS/EQUIPMENT AND PAVED AREAS, SCREEN, REDUCE GLARE, AND EMPHASIZE OR SEPARATE OUTDOOR SPACES OF DIFFERENT USES OR CHARACTER.
4. LANDSCAPING SHALL BE DESIGNED TO BE HARMONIOUS WITH THE LOCAL SETTING AND WITH NEIGHBORING DEVELOPMENTS.
5. PLANTS AND TREES SHALL COMPLEMENT OR SUPPLEMENT SURROUNDING NATURAL VEGETATION.
6. PLANTS AND TREES CHOSEN SHALL BE IN SCALE WITH THE STRUCTURES AND EQUIPMENT DEVELOPMENT, KEEPING IN MIND THE MATURE SIZE OF PLANTINGS.
7. MINIMUM LANDSCAPING AS A PERCENT OF GROSS SITE AREA SHALL BE 15%.
8. DEVELOPER SHALL PROVIDE AN IRRIGATION PLAN.
   - 8.1 APPROPRIATE IRRIGATION SYSTEMS SHALL BE INSTALLED WHERE NEEDED TO ASSURE LANDSCAPING SUCCESS.
   - 8.2 DESIGN OF LANDSCAPING THAT INCLUDES XERISCAPE PRINCIPLES IS ENCOURAGED TO REDUCE LONG-TERM MAINTENANCE DEMANDS AND TO CONSERVE WATER.
   - 8.3 XERISCAPE IS DEFINED AS LANDSCAPE DESIGN, WHICH WOULD INCORPORATE PLANT MATERIALS THAT REQUIRE LITTLE OR NO IRRIGATION AND RELY ON NATURAL MOISTURE AND RAINFALL FOR SURVIVAL ONCE ESTABLISHED.
9. LANDSCAPE SHALL BE DESIGNED WITH MAINTENANCE IN MIND:
   - 9.1 DEVELOPER SHALL PROVIDE A MAINTENANCE PLAN DESCRIBING FUNDING, RESPONSIBILITY, AND FREQUENCY OF MAINTENANCE.
   - 9.2 PLANTS AND TREES THAT MINIMIZE UPKEEP AND MAINTENANCE SHALL BE SELECTED.
   - 9.3 TREES, AS THEY GROW, SHALL BE PRUNED TO THEIR NATURAL FORM TO PROVIDE AT LEAST 10 FEET OF CLEARANCE ABOVE SIDEWALKS AND 12 FEET ABOVE STREET ROADWAY SURFACES.
   - 9.4 SHRUBS SHALL BE MAINTAINED TO A MAXIMUM HEIGHT OF 42 INCHES FROM TOP OF CURB TO TOP OF PLANT. ENSURE THAT SHRUBS ARE TRIMMED BACK FROM FACE OF CURB.
10. WHERE THERE ARE OVERHEAD UTILITY LINES, TREE SPECIES THAT WILL NOT INTERFERE WITH THOSE LINES SHALL BE CHOSEN. DEVELOPER IS TO VERIFY WITH UTILITY ON SPECIES SELECTION.
11. TREES SHALL NOT BE PLANTED WITHIN 2 FEET OF ANY PERMANENT HARD SURFACE PAVING OR WALKWAY.
12. PARKING AND LOADING AREAS SHALL BE SCREENED FROM HORIZONTAL VIEW WITH THE USE OF DENSE LANDSCAPING, MOUNDS OR BERMS.
13. PERIMETER AND SECURITY FENCING SHALL BE CONSTRUCTED TO MINIMIZE VISUAL IMPACT. WALLS OR FENCES SEPARATING ADJOINING PARCELS MAY BE LOCATED AT THE PROPERTY LINE. SECURITY FENCING SHALL BLEND INTO AND BE COMPATIBLE WITH LANDSCAPING AND SURROUNDING ENVIRONMENT. FENCING SHALL HAVE EARTH TONE COLORS OF BROWN, TAN GRAY, OR GREEN. WALLS SHALL BE CONSTRUCTED OF MATERIALS COMPATIBLE WITH THE BUILDING ACRHITECTURE, LANDSCAPING, AND SURROUNDING ENVIRONMENT.
14. SITE AND BUILDING LIGHTING SHALL BE DESIGNED TO MINIMIZE GLARE OR OBJECTIONABLE EFFECTS TO THE ADJACENT PROPERTIES. SITE LIGHTING POLES SHALL NOT EXCEED 20 FEET IN HEIGHT AND SHALL DIRECT THE LIGHT DOWNWARD. LIGHTING SOURCES VIEWED FROM ABOVE OR BELOW ON ADJACENT PROPERTY SHALL BE SHIELDED. BUILDING LIGHTING IS TO BE CONCEALED AND INDIRECT SITE LIGHTING IS TO BE DESIGNED TO PROVIDE UNIFORM DISTRIBUTION AND THE LIGHT LEVELS SHALL BE ADEQUATE FOR REASONABLE SECURITY AND SAFETY ON THE PREMISES.
15. EARTH BERMS MAY BE USED TO PROVIDE VARIATION IN THE GROUND PLANE AND FOR SCREENING INTERIOR PROTIONS OF THE SITE. CARE MUST BE TAKEN IN THEIR DESIGN TO AVOID CREATING AN ARTIFICIAL APPEARING LANDSCAPE. THE BERMED AREAS SHALL BE AS LONG AS GRADUAL, AND AS GRACEFUL AS SPACE WILL ALLOW, AND SHOULD HAVE A MINIMUM HEIGHT ABOVE SURROUNDING GRADE OF THREE FEET. MAXIMUM SLOPES FOR BERMED AREAS SHALL BE 3:1 FOR TURF AREAS AND 2:1 FOR GROUNDCOVER AREAS.

LANDSCAPING W/IN R.O.W. NOTES:

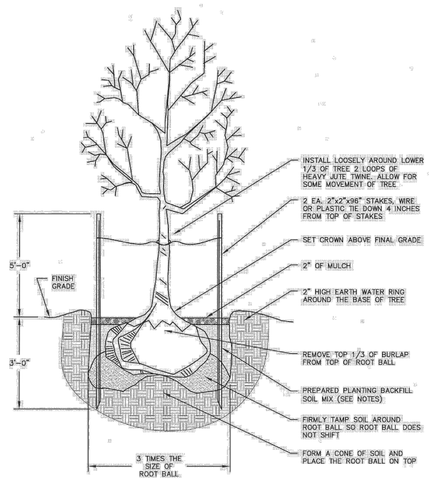
1. TREES SHALL NOT BE PLANTED CLOSER THAN 25 FEET FROM THE CURB LINE OF THE INTERSECTIONS OF STREETS OR ALLEYS, AND NOT CLOSER THAN 10 FEET FROM DRIVEWAYS, FIRE HYDRANTS, OR UTILITY POLES.
2. STREET TREES SHALL NOT BE PLANTED CLOSER THAN 20 FEET TO LIGHT STANDARDS. EXCEPT FOR PUBLIC SAFETY, NO NEW LIGHT STANDARD SHOULD BE POSITIONED CLOSER THAN 10 FEET TO ANY EXISTING STREET TREE, AND PREFERABLY SUCH LOCATIONS WILL BE AT LEAST 20 FEED DISTANCE.
3. TREES SHALL NOT BE PLANTED CLOSER THAN 2-1/2 FEET FROM THE FACE OF THE CURB EXCEPT AT INTERSECTIONS, WHERE IT SHOULD BE 25 FEET FROM THE CURB IN A CURB RETURN AREA.
4. EXISTING TREES MAY BE USED AS STREET TREES IF THERE WILL BE NO DAMAGE FROM THE DEVELOPMENT WHICH WILL KILL OR WEAKEN THE TREE.
5. VISION CLEARANCE HAZARDS SHALL BE AVOIDED AND VISION CLEARANCE STANDARDS SHALL BE ADHERED TO.

City of Camas WASHINGTON — LANDSCAPE DETAIL: LANDSCAPING NOTES — NOT TO SCALE — DETAIL NO. LS1 — DETAIL APPROVED BY — DATE 5-17-19 — REVISION: 3 — DATE: 5/17/2019 — ST-PLANTING.DWG

PLANTING NOTES:

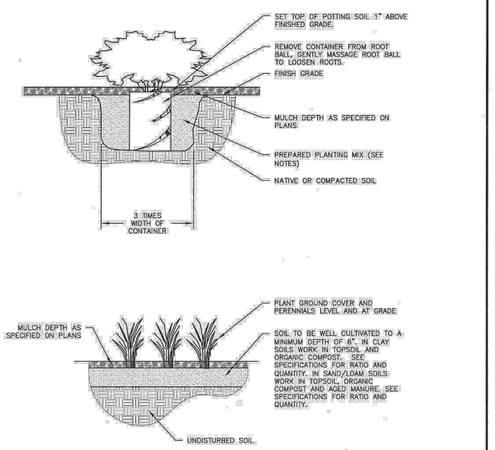
1. ALL PLANTING TO BE OF NURSERY STOCK GRADE NO. 1 OR BETTER AND MUST BE APPROVED PRIOR TO PLANTING.
2. ALL PLANTING HOLES SHALL BE EXCAVATED THREE TIMES THE DIAMETER OF THE TREE ROOT BALL OR ROOT SYSTEM.
3. DECIDUOUS TREES SHALL HAVE STRAIGHT TRUNKS, BE FULL BRANCHED, HAVE A MINIMUM CALIPER OF 2 INCHES AND BE ADEQUATELY STAKED FOR PLANTING. CALIPER OF TREES SHALL BE LARGER WHEN REQUIRED BY OTHER CITY STANDARDS OR PLANS.
4. EVERGREEN TREES SHALL BE A MINIMUM OF THREE FEET IN HEIGHT, FULLY BRANCHED AND ADEQUATELY STAKED FOR PLANTING.
5. DECIDUOUS TREES SHALL BE A MINIMUM 2" CALIPER UNLESS APPROVED BY THE CITY.
6. POTTED OR B&B PLANTS SHALL BE A MINIMUM SIZE OF 3 GALLONS UNLESS APPROVED BY THE CITY.
7. SHRUBS SHALL BE PLANTED ACCORDING TO RECOGNIZED LANDSCAPE STANDARD PRACTICE FOR MAINTENANCE, APPEARANCE, HEALTH OF THE PLANTS, AND OVERALL AESTHETICS.
8. PLANT UPRIGHT AND FACE TO GIVE BEST APPEARANCE OR RELATIONSHIP TO OTHER PLANTS AND STRUCTURES.
   - 8.1. LOOSEN AND REMOVE TWINE BINDING AND BURLAP FROM AROUND THE TOP OF EACH ROOT BALL.
   - 8.2. SET TREES AN INCH ABOVE FINISH GRADE.
   - 8.3. STAKE OR GUY TREES IMMEDIATELY AFTER PLANTING (SEE DETAIL PL3, PL4, & PL5).
   - 8.4. REMOVE STAKES OR GUY WIRES ONE YEAR AFTER INSTALLATION.
9. PLACE AND COMPACT BACKFILL SOIL MIXTURE CAREFULLY TO AVOID INJURY TO ROOTS, AND TO FILL ALL VOIDS. BACKFILL MIX SHALL CONSIST OF 1/4 APPROVED HUMUS MATERIAL TO 3/4 TOPSOIL, PLUS SOIL AMENDMENTS/FERTILIZERS AS PER SOIL ANALYSIS (TO BE PERFORMED PRIOR TO PLANTING TREES).
10. WHEN HOLE IS NEARLY FILLED, COMPLETELY SOAK AND ALLOW WATER TO DRAIN AWAY. FILL HOLE TO FINISH GRADE. PROVIDE 2 INCH HIGH BERM WATER RING AT THE BASE OF EACH TREE. REMOVE BERM AT THE END OF CONTRACT MAINTENANCE PERIOD.
11. GROUND COVER, SHALL BE PLANTED ACCORDING TO RECOGNIZED LANDSCAPE STANDARD PRACTICE FOR MAINTENANCE, APPEARANCE, OVERALL AESTHETICS, AND HEALTH OF THE PLANTS.
12. TREES, AS THEY GROW, SHALL BE PRUNED TO THEIR NATURAL FORM TO PROVIDE AT LEAST 10 FEET OF CLEARANCE ABOVE SIDEWALKS AND 14 FEET ABOVE STREET ROADWAY SURFACES.
13. TREE MAINTENANCE — IN ORDER TO INSURE ESTABLISHMENT, SURVIVAL AND GROWTH, TREES SHALL BE MULCHED WITH 4" DEEP COMPOST AND WATERED AS NECESSARY DURING THE FIRST TWO GROWING SEASONS. PRUNING TO BE AS FOLLOWS:
   - 13.1. YEAR 1 — ONLY DEAD, BROKEN, OR CROSSING BRANCHES SHALL BE PRUNED.
   - 13.2. YEAR 2 — A CLASS 1 PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDEWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
   - 13.3. YEAR 3 — A CLASS 1 PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED, THE PURPOSE OF THIS PRUNING IS TO CONTINUE TO ESTABLISH THE PROPER SCAFFOLD BRANCHING, CONTINUE TO RAISE THE CROSSING FOR ROAD/SIDEWALK CLEARANCE, AND TO REMOVE ANY DEAD, DYING, OR CROSSING BRANCHES.
14. DEFINITIONS:
   - 14.1. BALLED AND BURLAPPED (B&B) — TREES AND SHRUBS WITH A LARGE BALL OF SOIL AROUND THE ROOTS WRAPPED IN BURLAP.
   - 14.2. BARE-ROOT — OFFERED BY NURSERIES IN WINTER AND EARLY SPRING WITH ALL THE SOIL REMOVED FROM THEIR ROOTS.
   - 14.3. CALIPER — THE DIAMETER OF THE TRUNK MEASURED AT 4-FEET FROM THE GROUND.
   - 14.4. GROUND COVER — LIVING MATERIAL THAT DOES NOT INCLUDE BARK CHIPS OR OTHER MULCH.

City of Camas WASHINGTON — LANDSCAPE DETAIL: PLANTING NOTES — NOT TO SCALE — DETAIL NO. LS2 — DETAIL APPROVED BY — DATE 5-17-19 — REVISION: 3 — DATE: 5/17/2019 — ST-PLANTING.DWG



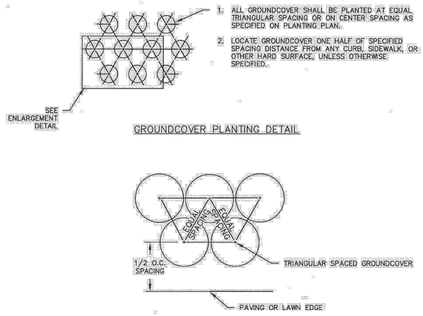
NOTES:
1. A ROOT BARRIER SHOULD BE INSTALLED AT THE EDGE OF PAVEMENT OR 4 FEET WIDE AND 8 FEET WIDE RECTANGLE AROUND THE TREE. SEE DETAILS PL7, PL8 & PL9
2. BACKFILL MIX SHALL CONSIST OF THE FOLLOWING: 0.75 PART TOPSOIL, 0.25 PART APPROVED HUMUS MATERIAL, SOIL AMENDMENTS/FERTILIZERS AS PER SOIL ANALYSIS (TO BE PERFORMED BEFORE PLANTING TREES).

City of Camas WASHINGTON — LANDSCAPE DETAIL: DECIDUOUS BALLED/BURLAP TREE PLANTING — NOT TO SCALE — DETAIL NO. LS4 — DETAIL APPROVED BY — DATE 5-17-19 — REVISION: 2 — DATE: 5/17/2019 — ST-PLANTING.DWG



NOTES:
1. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
2. KEEP PLANTS MOIST AND SHADED UNTIL PLANTING.
3. BACKFILL MIX SHALL CONSIST OF THE FOLLOWING: 0.75 PART TOPSOIL, 0.25 PART APPROVED HUMUS MATERIAL, SOIL AMENDMENTS/FERTILIZERS AS PER SOIL ANALYSIS (TO BE PERFORMED BEFORE PLANTING).

City of Camas WASHINGTON — LANDSCAPE DETAIL: SHRUB CONTAINER PLANTING — NOT TO SCALE — DETAIL NO. LS5 — DETAIL APPROVED BY — DATE 5-17-19 — REVISION: 2 — DATE: 5/17/2019 — ST-PLANTING.DWG



City of Camas WASHINGTON — LANDSCAPE DETAIL: GROUNDCOVER PLANTING DETAIL — NOT TO SCALE — DETAIL NO. LS7 — DETAIL APPROVED BY — DATE 5-17-19 — REVISION: 2 — DATE: 5/17/2019 — ST-PLANTING.DWG

ROOT BARRIER GENERAL NOTES:

1. SPECIFIED TREE ROOT BARRIERS ARE A MECHANICAL BARRIER AND ROOT DEFLECTOR TO PREVENT TREE ROOTS FROM DAMAGING HARDSCAPES AND LANDSCAPES. ASSEMBLED IN 2' LONG MODULES WITH RIGID JOINER STRIPS TO CREATE VARYING SIZES OF CYLINDERS FOR SURROUNDING ROOT BALLS (SURROUND PLANTING STYLE) OR FOR LINEAR APPLICATIONS DIRECTLY BESIDE A HARDSCAPE ADJACENT TO ONE SIDE OF THE TREES (LINEAR PLANTING STYLE).
2. DIMENSIONS ARE APPROXIMATE. SUBMIT SAMPLE FOR ENGINEERS APPROVAL PRIOR TO INSTALLATION.

A. MATERIALS

1. THE CONTRACTOR SHALL FURNISH AND INSTALL TREE ROOT BARRIERS AS SPECIFIED. THE TREE ROOT BARRIERS SHALL BE BLACK, INJECTION MOLDED PANELS, OF MINIMUM 0.080" WALL THICKNESS IN MODULES 24" LONG BY 18" DEEP, MANUFACTURED WITH A MINIMUM 50% POST CONSUMER RECYCLED POLYPROPYLENE PLASTIC WITH ADDED ULTRAVIOLET INHIBITORS; RECYCLABLE. EACH PANEL SHALL HAVE: NOT LESS THAN 4 MOLDED INTEGRAL VERTICAL ROOT DEFLECTING RIBS OF AT LEAST 0.06" THICKNESS PROTRUDING 1/2" AT 90° FROM INTERIOR OF THE BARRIER PANEL, SPACED 6" APART. (SEE PANEL DRAWING BELOW) A DOUBLE TOP EDGE CONSISTING OF TWO PARALLEL, INTEGRAL, HORIZONTAL RIBS AT THE TOP OF THE PANEL OF A MINIMUM 0.06" THICKNESS, 7/16" WIDE AND 1/4" APART WITH THE LOWER RIB ATTACHED TO THE VERTICAL ROOT DEFLECTING RIBS. (SEE DETAIL "A") A MINIMUM OF 9 ANTI-LIFT GROUND LOCK TABS CONSISTING OF INTEGRAL HORIZONTAL RIDGES OF A MINIMUM 0.06" THICKNESS IN THE SHAPE OF A SEGMENT OF A CIRCLE, THE 2 1/4" CHORD OF THE SEGMENT JOINING THE PANEL WALL AND THE SEGMENT, PROTRUDING 3/8" FROM THE PANEL. THE NINE GROUND LOCKS ON EACH PANEL SHALL BE ABOUT EQUALLY SPACED BETWEEN EACH OF THE VERTICAL ROOT DEFLECTING RIBS (3 BETWEEN EACH SET OF RIBS, SEE DETAIL "B"). A SELF LOCKING RIGID JOINER STRIP TO CONNECT ONE PANEL TO ANOTHER WITH A SEPARATION STRESS TEST OF 1000 POUNDS AT THE MOMENT OF SEPARATION. (SEE DETAIL "C"). TREE ROOT BARRIERS SHALL BE BY DEEPROOT OR APPROVED EQUAL.
2. THE BASIC PROPERTIES OF THE MATERIAL SHALL BE:

TEST	ASTM TEST METHOD	VALUE COPOLYMER POLYPROPYLENE
TENSILE STRESS AT YIELD	D638	3800 PSI
ELONGATION AT YIELD	D638	6.3%
FLEXURAL MODULUS	D790B	155,000 PSI
NOTCHED IZOD IMPACT	D256A	7.1
ROCKWELL HARDNESS R. SCALE	D785A	68

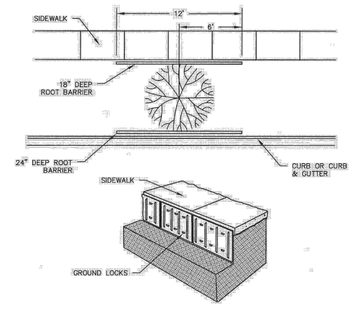
B. CONSTRUCTION AND INSTALLATION

1. THE CONTRACTOR SHALL INSTALL THE TREE ROOT BARRIERS WITH THE NUMBER OF PANELS AND IN THE MANNER SHOWN ON THE DRAWINGS. THE VERTICAL ROOT DEFLECTING RIBS SHALL BE FACING INWARDS TO THE ROOT BALL AND THE TOP OF THE DOUBLE EDGE SHALL BE 1/2" ABOVE GRADE. EACH OF THE REQUIRED NUMBER OF PANELS SHALL BE CONNECTED WITH THE RIGID JOINER STRIPS TO FORM A CIRCLE AROUND THE ROOT BALL OR WHERE SPECIFIED JOINED IN A LINEAR FASHION AND PLACED ALONG THE ADJACENT HARDSCAPE.
2. EXCAVATION AND SOIL PREPARATION SHALL CONFORM TO THE DRAWINGS.
3. THE TREE ROOT BARRIERS SHALL BE BACKFILLED ON THE OUTSIDE WITH 3/4" TO 1 1/2" GRAVEL OR CRUSHED ROCK AS SHOWN ON THE DRAWINGS. NO GRAVEL BACKFILL IS REQUIRED FOR A LINEAR PLANTING.

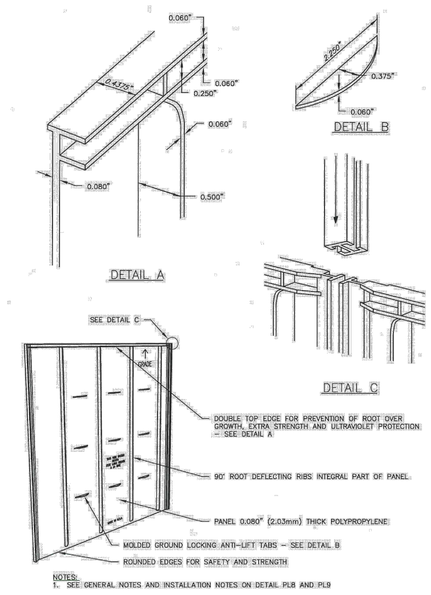
City of Camas WASHINGTON — LANDSCAPE DETAIL: ROOT BARRIER GENERAL NOTES — NOT TO SCALE — DETAIL NO. LS9 — DETAIL APPROVED BY — DATE 5-17-19 — REVISION: 2 — DATE: 5/17/2019 — ST-PLANTING.DWG

NOTES:

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



City of Camas WASHINGTON — LANDSCAPE DETAIL: ROOT BARRIER INSTALLATION — NOT TO SCALE — DETAIL NO. LS10 — DETAIL APPROVED BY — DATE 5-17-19 — REVISION: 2 — DATE: 5/17/2019 — ST-PLANTING.DWG



NOTES:
1. SEE GENERAL NOTES AND INSTALLATION NOTES ON DETAIL PL8 AND PL9

City of Camas WASHINGTON — LANDSCAPE DETAIL: ROOT BARRIER DETAIL — NOT TO SCALE — DETAIL NO. LS8 — DETAIL APPROVED BY — DATE 5-17-19 — REVISION: 2 — DATE: 5/17/2019 — ST-PLANTING.DWG

CITY OF CAMAS LANDSCAPE DETAILS FOR:

HOOD ST. SUBDIVISION

OLSON ENGINEERING INC.
LAND SURVEYORS
ENGINEERS
222 E. EVERGREEN BLVD., VANCOUVER, WA 98660
360-695-1385
503.989.9696

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT — EXP. 1/5/23
MICHAEL R. OLSEN
CERTIFICATE NO. 991

CHANGES / REVISIONS

DESCRIPTION:	DATE:

DESIGNED: JWC, MRO
DRAWN: JWC
CHECKED: MRO
DATE: FEBRUARY 2022
SCALE: H: NA V:

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HOOD ST. SUBDIVISION
JOB NO. A10123.01.01

SHEET
LS2.0

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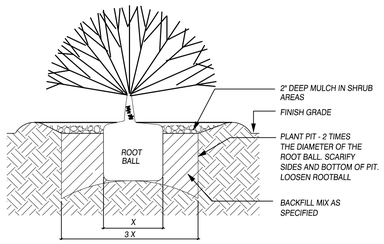
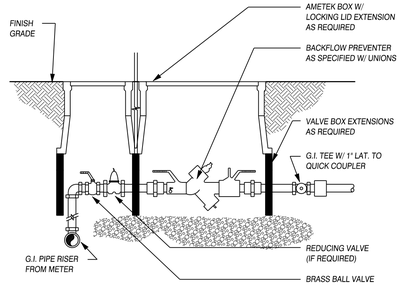
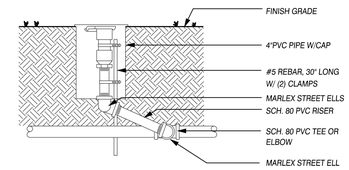


1 TRACT SHRUB PLANTING
SCALE: NTS



NOTE: THIS INSTALLATION DETAIL MUST COMPLY WITH ALL LOCAL AND STATE CODES. LANDSCAPE CONTRACTOR MUST VERIFY CORRECT INSTALLATION WITH LOCAL WATER JURISDICTION.

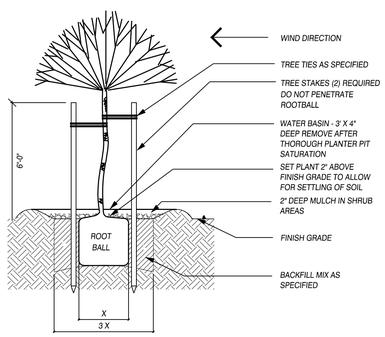
4 BACKFLOW PREVENTION DEVICE
SCALE: NTS



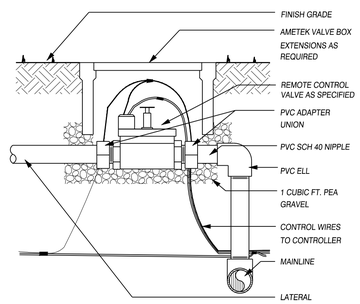
7 QUICK COUPLER
SCALE: NTS

GALLON PER MINUTE		PIPE SIZE & CLASS	
0 - 8	GALLONS	3/4"	SCH. 40
9 - 13	GALLONS	1"	SCH. 40
14 - 20	GALLONS	1 1/4"	SCH. 40
21 - 30	GALLONS	1 1/2"	SCH. 40
31 - 50	GALLONS	2"	SCH. 40
51 - 70	GALLONS	2 1/2"	SCH. 40
71 - 110	GALLONS	3"	SCH. 40

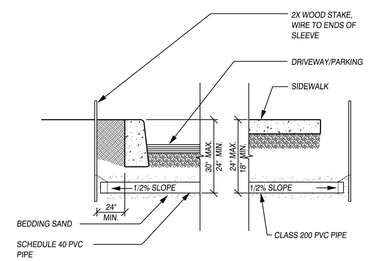
10 PIPE SIZE SCHEDULE - SUPPLY LINES
SCALE: NTS



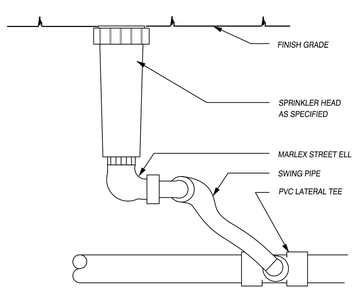
2 TRACT DECIDUOUS/CONIFER TREE PLANTING
SCALE: NTS



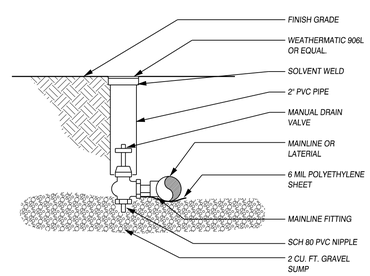
5 ELECTRIC VALVE ASSEMBLY
SCALE: NTS



8 SLEEVE
SCALE: NTS



3 POP-UP SPRINKLER
SCALE: NTS



6 MANUAL DRAIN VALVE
SCALE: NTS

GALLON PER MINUTE		PIPE SIZE & CLASS	
0 - 10	GALLONS	3/4"	CLASS 200
11 - 15	GALLONS	1"	CLASS 200
16 - 25	GALLONS	1 1/4"	CLASS 200
26 - 40	GALLONS	1 1/2"	CLASS 200
41 - 55	GALLONS	2"	CLASS 200
56 - 85	GALLONS	2 1/2"	CLASS 200
86 - 125	GALLONS	3"	CLASS 200

9 PIPE SIZE SCHEDULE - LATERAL LINES
SCALE: NTS

APPLICANT/OWNER:
MODERN NW, INC.
8101 NE GLISAN
PORTLAND, OR 97213
(971)322-3318
FAX UNAVAILABLE
sergey@modernnw.com

CONTACT:
OLSON ENGINEERING, INC.
ATTN: GAYLE GERKE
222 E. EVERGREEN BLVD.
VANCOUVER, WA 98660
(360) 695-1385
FAX (360) 695-8117
gayleg@olsonengr.com

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PRELIMINARY LANDSCAPE AND IRRIGATION DETAILS FOR:

HOOD ST. SUBDIVISION

OLSON LAND SURVEYORS ENGINEERS ENGINEERING INC.
360-695-1385
503.989.9696
222 E. EVERGREEN BLVD., VANCOUVER, WA 98660

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
EXP. 1/5/23
MICHAEL R. ODREN
CERTIFICATE NO. 891

CHANGES / REVISIONS

DESCRIPTION:	DATE:

DESIGNED: JWC, MRO
DRAWN: JWC
CHECKED: MRO
DATE: FEBRUARY 2022
SCALE: H: NA V:

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HOOD ST. SUBDIVISION
JOB NO. A10123.01.01

SHEET
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