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# LANDSCAPE NOTES & CALCULATIONS

FOR

## BROWN BEAR CAR WASH

SEC. 28, TWN. 31 N., RGE. 5 E. W.M.  
CITY OF ARLINGTON, SNOHOMISH COUNTY, WASHINGTON

### LANDSCAPE SHEET INDEX

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- L5: IRRIGATION NOTES & DETAILS
- L6: IRRIGATION DETAILS

### PROJECT CONTACTS

#### ENGINEER:

BARGHAUSEN CONSULTING ENGINEERS, INC.  
18215 72ND AVE. SOUTH  
KENT, WA 98032  
TEL: (425) 251-6222  
CONTACT: CHRIS JENSEN, P.E.

#### LANDSCAPE ARCHITECT:

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18215 72ND AVE. SOUTH  
KENT, WA 98032  
TEL: (425) 251-6222  
CONTACT: LAUREN PERRY, P.L.A.

#### ARCHITECT:

BARGHAUSEN CONSULTING ENGINEERS, INC.  
18215 72ND AVE. SOUTH  
KENT, WA 98032  
TEL: (425) 251-6222  
CONTACT: DAN GOALWIN

### PROJECT DATA:

LOCATION: 4221 172ND STREET N.E.  
ARLINGTON, WA 98223

APN: 310528-002-070-00 (XX AC (43,996 S.F.))

TOWNSHIP SECTION 28; TOWNSHIP 31 N; RANGE 5 E. W.M.  
SNOHOMISH COUNTY, WA

SITE ZONE: HC - HIGHWAY COMMERCIAL  
ADJACENT ZONES: HC TO NORTH, WEST & SOUTH  
LI (LIGHT INDUSTRIAL) TO EAST

### CALCULATIONS:

A. PER AMC 20, 76.130: VEHICLE ACCOMMODATION AREA = 15,458 SF;  
20% OF VEHICLE ACCOMMODATION AREA REQUIRED TO BE SHADED;  
15,458 X 0.2 = 3,092 SF SHADED AREA REQUIRED; 4,426 SF  
SHADED AREA PROVIDED.

No.	Date	By	Check	Appr.	Revision
08/04/23	08/16/23	LJP	LJP	LJP	DESIGN REVIEW SUBMITTAL

Title: LANDSCAPE NOTES & CALCULATIONS

BROWN BEAR CAR WASH  
SWC - 172ND STREET NE AND 43RD AVENUE NE  
ARLINGTON, WASHINGTON

CAR WASH ENTERPRISES, INC.  
3977 LEARY WAY NW  
SEATTLE, WASHINGTON 98107

For:



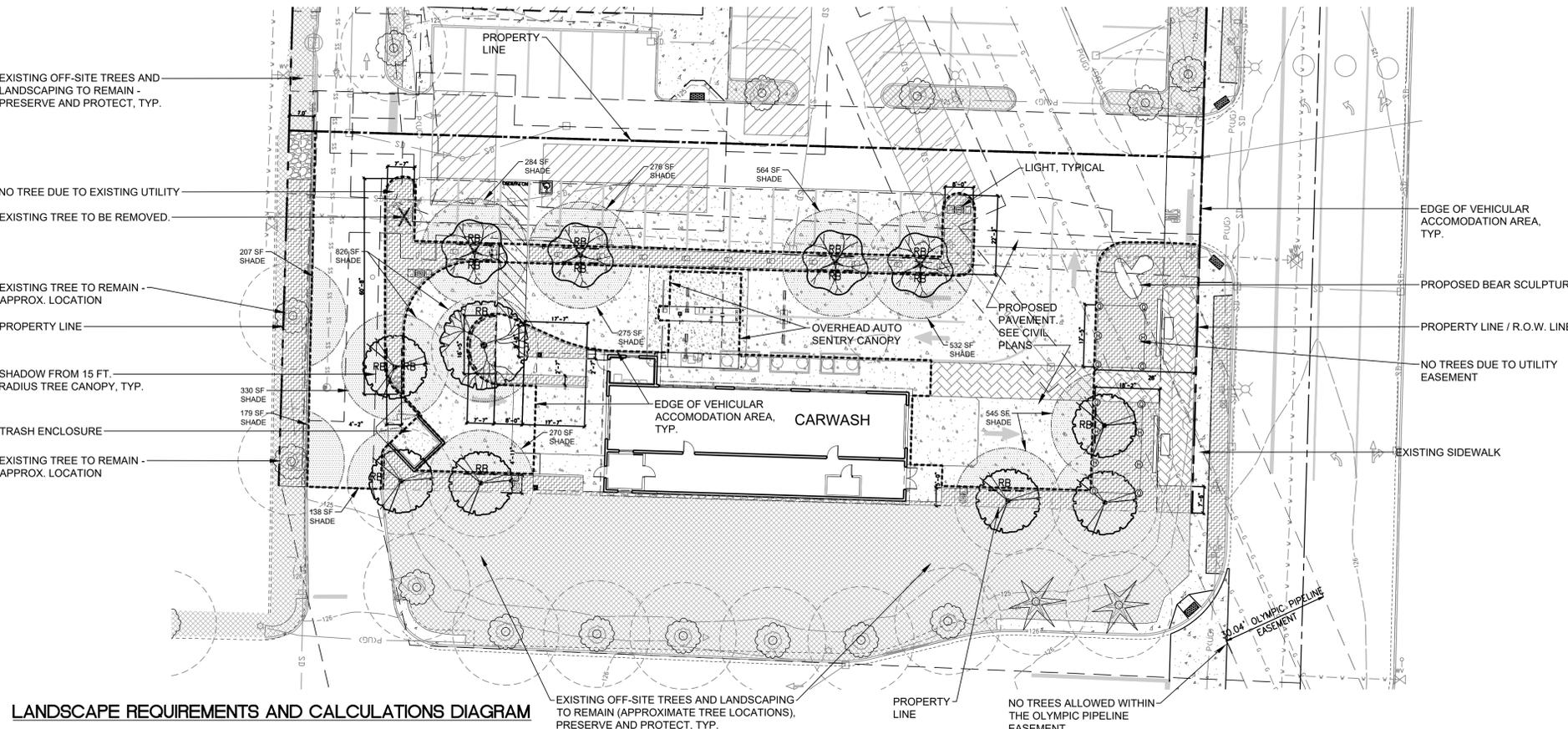
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Designed: LJP  
Drawn: LJP  
Checked: LJP/LJP  
Approved: LJP  
Date: 08/04/23

**Barghausen Consulting Engineers, Inc.**  
18215 72nd Avenue South  
Kent, WA 98032  
425.251.6222 [barghausen.com](http://barghausen.com)



Job Number: 21860  
Sheet: L-1 of 6



### LANDSCAPE MAINTENANCE NOTE:

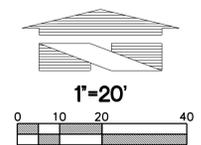
ALL LAWN AND LANDSCAPE BEDS ARE TO BE MAINTAINED BY A LANDSCAPE CONTRACTOR QUALIFIED TO CONDUCT LANDSCAPE MAINTENANCE OPERATIONS. PROPOSED WORK TO INCLUDE, BUT NOT LIMITED TO: RAKING BEDS, MOWING LAWN, REMOVING LAWN CLIPPINGS, PRUNING PLANTS, REPLACING DEAD PLANT MATERIAL.

### IRRIGATION NOTE:

ALL LAWN AND LANDSCAPE PLANTS ARE TO BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM. IRRIGATION SYSTEM SHALL BE BIDDER-DESIGN BY LANDSCAPE CONTRACTOR. LANDSCAPE CONTRACTOR TO COORDINATE ALL PROPOSED IRRIGATION EQUIPMENT WITH OWNER AND GENERAL CONTRACTOR. NOTE THAT THE PROPOSED LIGHT POLES ARE TO ALSO RECEIVE IRRIGATION. COORDINATE

### LANDSCAPE LEGEND

SYMBOL	DESCRIPTION
	EXISTING EVERGREEN TREE TO REMAIN, PRESERVE AND PROTECT. DASHED LINE REPRESENTS THE DRIP LINE.
	EXISTING DECIDUOUS TREE TO REMAIN, PRESERVE AND PROTECT. DASHED LINE REPRESENTS THE DRIP LINE.
	EXISTING DECIDUOUS TREE TO BE REMOVED
	EXISTING LANDSCAPING TO BE RETAINED
	ROOT BARRIER. "DEEP ROOT" PRODUCT NO. UB-16-2, 10' LENGTH CENTERED ON TRUNK OF TREE AS SHOWN. INSTALL PER MANUFACTURER'S SPECIFICATIONS
	LAWN / PLANT BED EDGE - SHOVEL CUT TRANSITION
	TREE SHADE FOR PARKING LOT
	STONE MULCH - SEE SHEET L-2 FOR SPECIFICATION
	PROPOSED PLANTED AREA - SEE SHEET L-2
	PROPOSED VEHICULAR ACCOMMODATION AREA (DOES NOT INCLUDE COVERED AREAS)



CONSTRUCTION DRAWING APPROVAL

THIS PLAN SHEET HAS BEEN REVIEWED AND APPROVED PER THE CONDITIONS ON THE TITLE SHEET.

BY: \_\_\_\_\_  
City Engineer, CITY OF ARLINGTON

DATE: \_\_\_\_\_

THIS APPROVAL VALID FOR 18 MONTHS

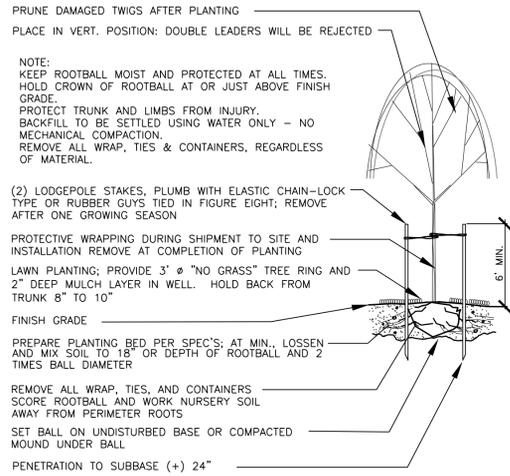




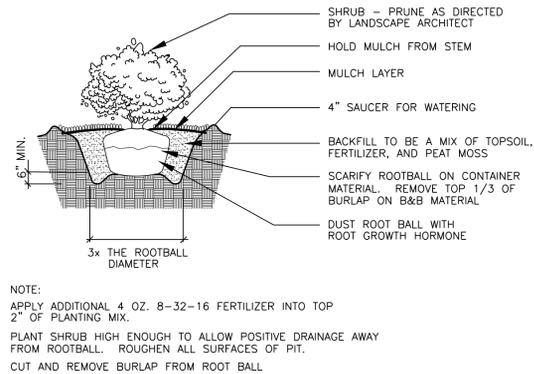
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# PRELIMINARY LANDSCAPE DETAILS & NOTES

FOR  
**BROWN BEAR CAR WASH**  
SEC. 28, TWN. 31 N., RGE. 5 E. W.M.  
CITY OF ARLINGTON, SNOHOMISH COUNTY, WASHINGTON



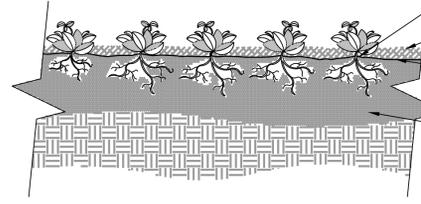
**DECIDUOUS TREE PLANTING/STAKING DETAIL**  
NOT TO SCALE



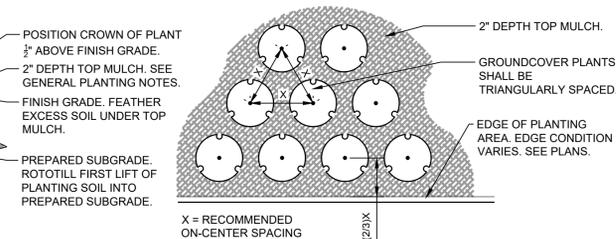
**SHRUB PLANTING DETAIL**  
NOT TO SCALE

**NOTES**

- SEE PLANT SCHEDULE FOR GROUNDCOVER SPECIES, SIZE AND SPACING DIMENSIONS. REMOVE CONTAINER AND WORK ROOTS FREE OF SOIL.
- HOLD PLANTS TWO-THIRDS (2/3) OF THE RECOMMENDED O.C. PLANT SPACING FROM EDGE OF PLANTING AREA.
- SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING. SOIL SHALL BE SETTLED USING WATER ONLY.
- DO NOT PLANT IN WET CONDITIONS. PROVIDE DRAINAGE FROM EACH PLANTING PIT IF NECESSARY.
- ALL PLANTS SHALL BE INSTALLED PRIOR TO MULCHING.



**SECTION**



**PLAN**

**GROUNDCOVER PLANTING AND SPACING**  
NOT TO SCALE

**LANDSCAPE PLANTING NOTES AND MATERIALS**

**SCOPE OF WORK**

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 30-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. 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.

30-DAY MAINTENANCE:  
CONTRACTOR TO PROVIDE OWNER WITH A SCOPE OF WORK AT TIME OF INITIAL PROJECT BID TO PROVIDE LANDSCAPE AND IRRIGATION MAINTENANCE FOR 30 DAYS FOLLOWING STORE OPENING. 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:

- DOCUMENTATION THAT ALL PLANT MATERIAL HAS BEEN ORDERED.
- TOPSOIL ANALYSIS AND RECOMMENDED AMENDMENTS.
- TREE STAKING AND GUYING MATERIALS.
- ONE (1) QUART SIZE OF TOPSOIL AND MULCH.
- PLANTING SCHEDULE, INCLUDING DATES AND TIMES.
- 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 Z60.1-2004). 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; "GAL" INDICATES GALLON.

- SPECIFIED PLANT CANOPY SIZE OR CALIPER IS THE MINIMUM ACCEPTABLE CONTAINER OR BALL SIZE AND ESTABLISHES MINIMUM PLANT CONDITION TO BE PROVIDED.
- 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.

- 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.
- 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.
- 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. SOIL AMENDMENTS AND FERTILIZER NOTED BELOW 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 A SOIL TESTING LABORATORY. SUBMIT RESULTS TO LANDSCAPE ARCHITECT FOR REVIEW. TESTS TO INCLUDE FERTILITY ANALYSIS WITH WRITTEN RECOMMENDATIONS FOR SOIL AMENDMENT, FERTILIZER, CONDITIONS, APPLICATION RATES, AND POST-CONSTRUCTION MAINTENANCE PROGRAM. TESTS TO BE CONTRACTED WITH AND PAID FOR BY THE CONTRACTOR.

- CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ALL TOPSOIL AND FOR DETERMINING THE VOLUME OF TOPSOIL REQUIRED PER THE INFORMATION ON PLANS AND NOTED HERE-IN. CONTRACTOR IS RESPONSIBLE FOR ANY NECESSARY WEED CONTROL RESULTING FROM CONTAMINATED OFF SITE SOURCES.
- TOPSOIL TO CONSIST OF 1/3 BY VOLUME SANDY LOAM, 1/3 BY VOLUME COMPOSTED GARDEN MULCH, AND 1/3 BY VOLUME COARSE WASHED SAND OR EQUIVALENT. AT MINIMUM, TOPSOIL PRODUCTS BROUGHT ON SITE TO CONTAIN AMENDMENTS AS LISTED IN "C".
- TOPSOIL TO INCLUDE THE FOLLOWING AMENDMENTS AS NECESSARY:  
THE FOLLOWING AMOUNT PER 1,000 SQUARE FEET:  
1. 6-CUBIC YARDS ORGANIC COMPOST. COMPOST TO BE FREE OR NON-FARM ANIMAL SOURCES, NOR TO BE FROM SOURCES CONTAINING REDWOOD OR CEDAR PRODUCTS.  
2. 30-POUNDS NITROFORM (38-0-0)  
3. 5-POUNDS AMMONIUM SULFATE  
4. 40-POUNDS CALCIUM CARBONATE LIMESTONE  
5. 40-POUNDS DOLOMITE LIMESTONE  
6. 5-OUNCES BORON (AS BORAX)  
ALL AMENDMENTS TO BE THOROUGHLY MIXED PRIOR TO INCORPORATION INTO TOPSOIL.

- PLANTING BACKFILL FOR ALL TREES, SHRUBS, AND GROUNDCOVERS:  
1. 0.6-CUBIC YARDS PER VOLUME TOPSOIL  
2. 0.4-CUBIC YARDS ORGANIC COMPOST.  
3. 1-POUNDS NITROFORM (38-0-0)  
4. 1-POUNDS AMMONIUM SULFATE  
5. 2-POUNDS CALCIUM CARBONATE LIMESTONE  
6. 2-POUNDS DOLOMITE LIMESTONE
- TOPSOIL PREPARATION AND INSTALLATION:  
1. VERIFY SUBGRADES TO -7 INCHES IN LANDSCAPE AREAS AND -18/24 INCHES IN PARKING LOT ISLANDS BELOW FINISH ELEVATION, OR AS INDICATED ON PLANS. THIS ACCOMMODATES TOPSOIL, AMENDMENTS, AND MULCH.  
2. ERADICATE ANY SURFACE VEGETATION ROOTED IN THE SUB-GRADE PRIOR TO SUB-GRADE PREPARATION.  
3. THOROUGHLY SCARIFY AND RIP ALL LANDSCAPE SUB-GRADES WHICH HAVE BECOME COMPACTED TO A DEPTH OF 12 INCHES WITH MULTIPLE PASSES, 90 DEGREES TO EACH OTHER. SCARIFY AREAS ACCESSIBLE TO MECHANIZED EQUIPMENT AND AROUND EXISTING PLANTINGS NOTED TO REMAIN WITH HAND TOOLS.  
4. REMOVE SOIL LUMPS, ROCK, VEGETATION AND/OR DEBRIS LARGER THAN 2 INCHES FROM ALL SUB-GRADE PRIOR TO PLACEMENT OF SPECIFIED TOPSOIL.  
5. REMOVE ANY ASPHALT EXTENDING BEYOND 6 INCHES FROM CURBS INTO ADJACENT LANDSCAPE AREAS.  
6. PARKING LOT PLANTER ISLANDS TO BE OVER EXCAVATED BY BACKHOE. REMOVE PAVING WASTE, GRAVEL BASE MATERIAL AND UNDERLYING SUBSOIL TO 18 INCHES BELOW TOP OF PAVING. SCARIFY AND OVER EXCAVATE PLANT PIT BOTTOM 12 INCHES TO MINIMIZE STRUCTURAL COMPACTION.

- TOPSOIL PLACEMENT:  
1. PROVIDE A TOTAL FINISH COURSE OF 4 INCHES OF TOPSOIL FOR LANDSCAPE AREAS AND 18/24 INCHES IN PARKING LOT ISLANDS.  
2. IN ALL LANDSCAPE AREAS, PLACE 2 INCHES (6 INCHES IN PARKING LOT ISLANDS) OF TOPSOIL MIX WITH AMENDMENTS OVER THE PREPARED SUB-GRADE AND THOROUGHLY ROTOTILL WITH MULTIPLE PASSES INTO THE TOP 6 INCHES OF SUB-GRADE FOR A TOTAL DEPTH OF 8 INCHES IN LANDSCAPE AREAS (12 INCHES IN PARKING LOT ISLANDS). PLACE AN ADDITIONAL 2 INCH LIFT OF TOPSOIL, IN ALL LANDSCAPE AREAS AND A MINIMUM 12 INCH LIFT IN ALL PARKING LOT ISLANDS, FOR THE FINAL TOPSOIL DEPTH OF 4 INCHES IN LANDSCAPE AREAS AND 18/24 INCHES IN PARKING LOT ISLANDS.  
3. PLACE ADDITIONAL TOPSOIL AND SOIL MIX AS REQUIRED TO MEET FINISH ELEVATIONS.

ORGANIC MULCH (TOPDRESSING):  
ONE-HALF-INCH (1/2"), TO ONE-QUARTER (1/4"), HEMLOCK/FIR BARK. FINE TEXTURED AND DARK BROWN IN COLOR.

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:  
TURFGRASS SEED MIX TOLERANT OF PACIFIC NORTHWEST CLIMATE.

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

ANTI-DESICCANT:  
"WLT-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 SATISFACTORILY 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" REFERS 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.

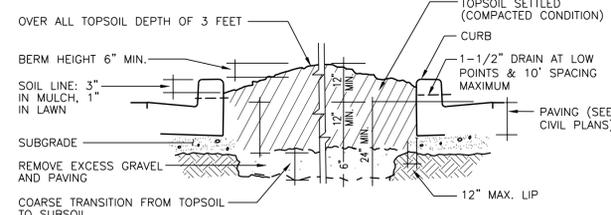
TREES AND SHRUBS:  
ARRANGE TREES AND SHRUBS ON SITE IN PROPOSED LOCATIONS PER DRAWINGS. EXCAVATE PIT, PLANT AND STAKE OR GUY, AS CALLED OUT AND DETAILED. ALL TREES, SHRUBS, AND SUPPORTS TO STAND VERTICAL. BACKFILL SHALL BE PIT SPOILS. SETTLE BACKFILL USING WATER ONLY. NO MECHANICAL COMPACTION.

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.

MULCH:  
MULCH ALL LANDSCAPE AREAS NOT COVERED BY LAWN AND/OR SEED. APPLY SUFFICIENT QUANTITY TO PROVIDE A 2-INCH DEPTH.

UTILITY CLEARANCES:  
FIELD ADJUST PLANT LOCATIONS FOR 8-FOOT SEPARATION OF TREES/SHRUBS AND 2-FOOT SEPARATION FOR GROUNDCOVER FROM FIRE HYDRANTS AND UTILITY VAULTS.

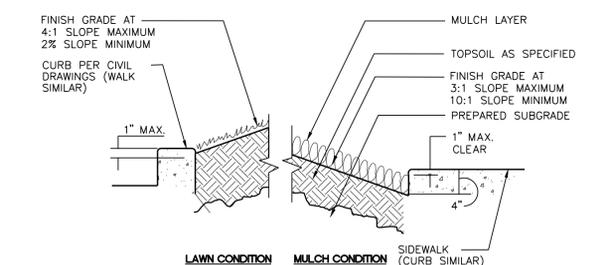
CLEANUP AND PROTECTION:  
DURING LANDSCAPE WORK, KEEP ALL PAVEMENT CLEAN AND WORK AREAS IN AN ORDERLY CONDITION. PROTECT LANDSCAPE WORK AND MATERIALS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS AND TRESPASSERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIOD. TREAT, REPAIR, OR REPLACE DAMAGE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



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



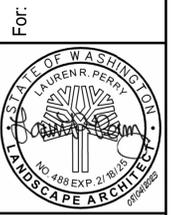
**PLANTER SECTION DETAIL**  
NOT TO SCALE

REVISED	DESIGN REVIEW SUBMITTAL	LP/AN	JW	Appr.
08/04/23	LP/AN	LP/AN	JW	
08/16/23	LP/AN	LP/AN	JW	
No.	Date	By		

**PRELIMINARY LANDSCAPE DETAILS & NOTES**

**BROWN BEAR CAR WASH**  
SWC - 172ND STREET NE AND 43RD AVENUE NE  
ARLINGTON, WASHINGTON

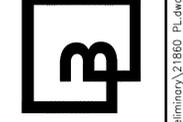
**CAR WASH ENTERPRISES, INC.**  
3977 LEARY WAY NW  
SEATTLE, WASHINGTON 98107



Scale: Horizontal 1"=20' Vertical N/A

Designed: LRP  
Drawn: LRP  
Checked: LP/AN  
Approved: LRP  
Date: 08/04/23

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



Job Number: 21860  
Sheet: L-3 of 6

CONSTRUCTION DRAWING APPROVAL

THIS PLAN SHEET HAS BEEN REVIEWED AND APPROVED PER THE CONDITIONS ON THE TITLE SHEET.

BY: \_\_\_\_\_  
City Engineer, CITY OF ARLINGTON

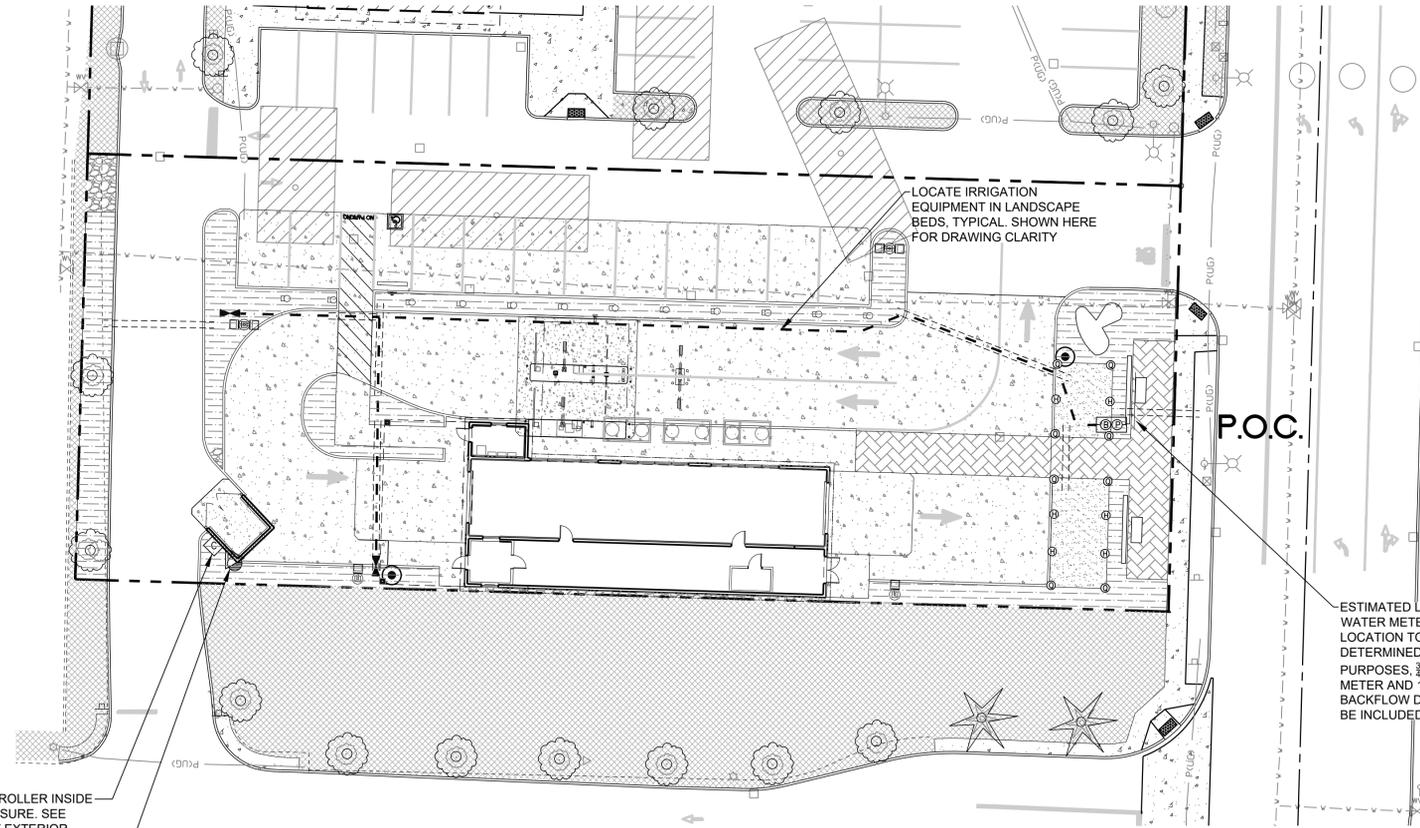
DATE: \_\_\_\_\_

THIS APPROVAL VALID FOR 18 MONTHS



Know what's below.  
Call before you dig.  
Dial 811

# PRELIMINARY IRRIGATION PLAN FOR BROWN BEAR CAR WASH SEC. 28, TWN. 31 N., RGE. 5 E. W.M. CITY OF ARLINGTON, SNOHOMISH COUNTY, WASHINGTON



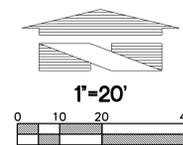
MOUNT CONTROLLER INSIDE STEEL ENCLOSURE. SEE DETAIL. PAINT EXTERIOR GREEN OR APPROVED OTHER COLOR. INPUT: 117VAC +/-10%, 60 HZ. OUTPUT: 26.5 VAC, 1.5 A.  
HUNTER SOLAR SYNC

### IRRIGATION LEGEND

SYMBOL	DESCRIPTION			
<b>DRIP IRRIGATION:</b>				
	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				
<b>SPRINKLER HEADS:</b>				
	HUNTER MP ROTATOR WITH PRO-SPRAY POP-UP BODY AND CV DRAIN CHECK VALVE, 4" LAWN, 6" SHRUB			
SYMBOL	NOZZLE	PSI	GPM	RADIUS
	HUNTER-6Q and 6H H, Q SERIES	30	0.98, 0.51	6'
	HUNTER-1000 8-15 F, TH, TT, H, Q SERIES	35	0.65, 0.48, 0.37, 0.32, 0.16	8'
	HUNTER-1000 8-15 F, TH, TT, H, Q SERIES	35	0.65, 0.48, 0.37, 0.32, 0.16	10'
	HUNTER-1000 8-15 F, TH, TT, H, Q SERIES	35	0.65, 0.48, 0.37, 0.32, 0.16	12'
	HUNTER-2000 13-21 F, TO, TT, H, Q SERIES	30	1.29, 0.95, 0.74, 0.63, 0.33	15'
	HUNTER ES515, S5530 SERIES	35	1.41, 0.65	5'x30' 5'x15'
	HUNTER-3000 22-30 F, TO, TT, H, Q SERIES	35	2.88, 2.19, 1.68, 1.44, 0.69 0.43	22'
	SPRAY IRRIGATION: HUNTER ICV 101/151G REMOTE CONTROL VALVE, IN VALVE BOX, ONE VALVE PER BOX MAXIMUM 2 VALVES PER BOX			
	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			
	<b>P.O.C.</b> WILKINS 950 XLT- 1-1/4" 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.)



CONSTRUCTION DRAWING APPROVAL

THIS PLAN SHEET HAS BEEN REVIEWED AND APPROVED PER THE CONDITIONS ON THE TITLE SHEET.

BY: \_\_\_\_\_  
City Engineer, CITY OF ARLINGTON

DATE: \_\_\_\_\_

THIS APPROVAL VALID FOR 18 MONTHS

REVISED	DESIGN REVIEW SUBMITTAL	DATE	BY	APP.
		08/04/23	LRP	JMW
		08/16/23	LRP	JMW

Title: **PRELIMINARY IRRIGATION PLAN**  
**BROWN BEAR CAR WASH**  
**SWC - 172ND STREET NE AND 43RD AVENUE NE**  
**ARLINGTON, WASHINGTON**

For: **CAR WASH ENTERPRISES, INC.**  
**3977 LEARY WAY NW**  
**SEATTLE, WASHINGTON 98107**



Scale: Horizontal 1"=20' Vertical N/A

Designed: LRP  
Drawn: LRP  
Checked: LE/JV  
Approved: LRP  
Date: 08/04/23

**Barghausen Consulting Engineers, Inc.**  
18215 72nd Avenue South  
Kent, WA 98032  
425.251.6222 [barghausen.com](http://barghausen.com)

Job Number: **21860**  
Sheet: **L-4** of **6**



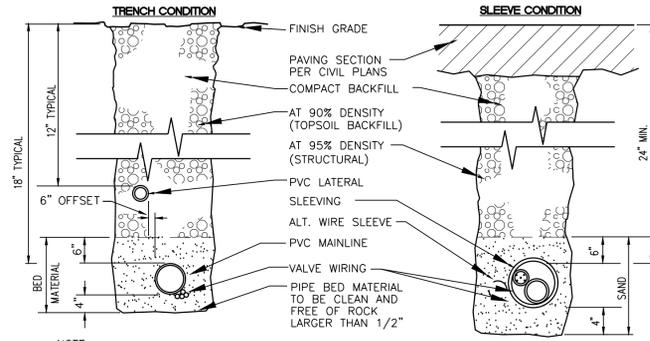
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# PRELIMINARY IRRIGATION NOTES & DETAILS

FOR  
**BROWN BEAR CAR WASH**  
SEC. 28, TWN. 31 N., RGE. 5 E. W.M.  
CITY OF ARLINGTON, SNOHOMISH COUNTY, WASHINGTON

## LANDSCAPE IRRIGATION NOTES

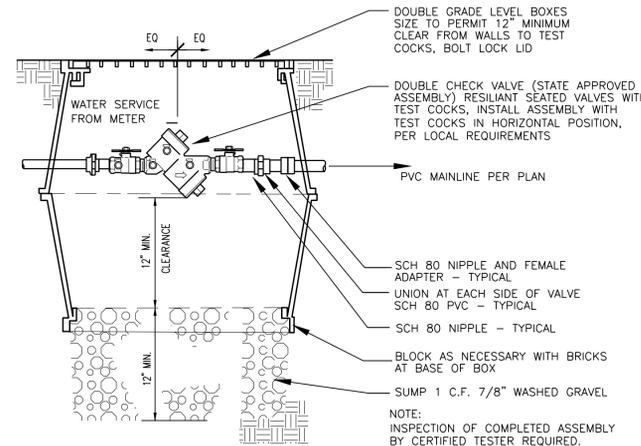
1. GENERAL CONTRACTOR AND LANDSCAPE CONTRACTOR TO COORDINATE:
  - A) INSTALLATION OF 110V ELECTRICAL SERVICE FROM ELECTRICAL SOURCE TO AUTOMATIC CONTROLLER, INCLUDING WIRE HOOK-UP INTO MOUNTED CONTROLLER. IRRIGATION CONTRACTOR WILL MOUNT CONTROLLER PER DESIGN AND COORDINATE WITH GENERAL CONTRACTOR.
  - B) INSTALLATION OF IRRIGATION/SERVICE METER AND STUB TO IRRIGATION POINT OF CONNECTION, PER UTILITY PLANS. 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 FIVE (5) COPIES OF 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 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 INITIAL 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 TO THE ABOVE DATES, OR AS FREEZE/PRECIPITATION CONDITIONS DETERMINE SERVICE NEED.



NOTE:  
SLEEVING MATERIAL SHALL BE PVC SCH 40 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)

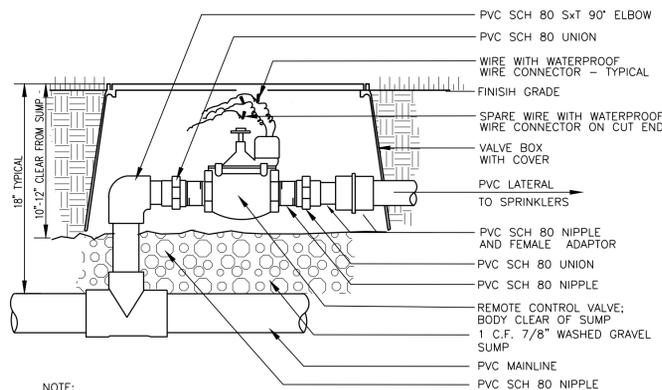
## SLEEVE/TRENCHING DETAIL

NOT TO SCALE



## CHECK VALVE ASSEMBLY DETAIL

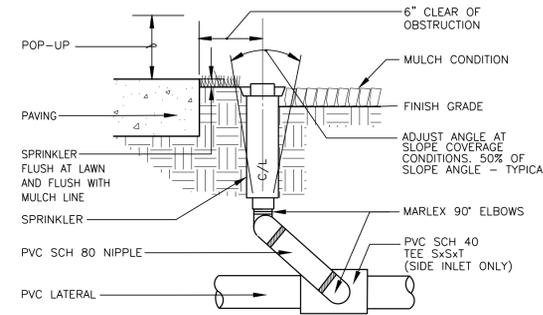
NOT TO SCALE



NOTE:  
ONE VALVE PER BOX.  
PROVIDE EXTRA COILS (18") OF EACH WIRE IN VALVE BOX.  
COMPACT SOIL AROUND VALVE BOX.  
USE TEFLON OR FLOWABLE SEALANT IN ALL THREADED FITTINGS, PER MANUFACTURER'S SPECS.

## REMOTE CONTROL VALVE ASSEMBLY

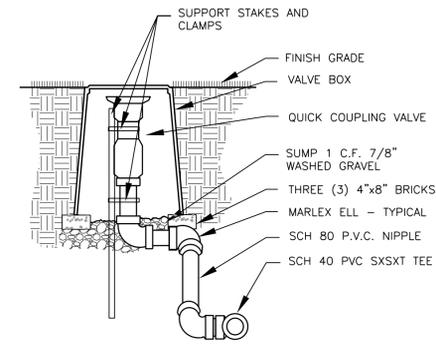
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NOTE:  
MANUFACTURER'S LIMITS PREVAIL FOR INSTALLATION AND ADJUSTMENTS.  
PROVIDE SWING JOINT RISERS AT WALKS AND CURBS. 24" FLEXIBLE RISERS ACCEPTABLE ELSEWHERE.

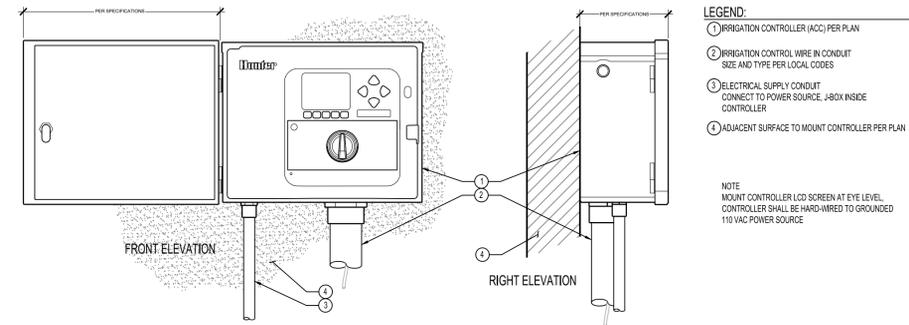
## POP-UP RISER ASSEMBLY

NOT TO SCALE



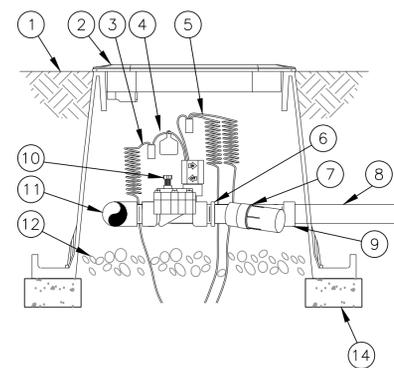
## QUICK COUPLING VALVE DETAIL

NOT TO SCALE



## IRRIGATION CONTROLLER, WALL MOUNT

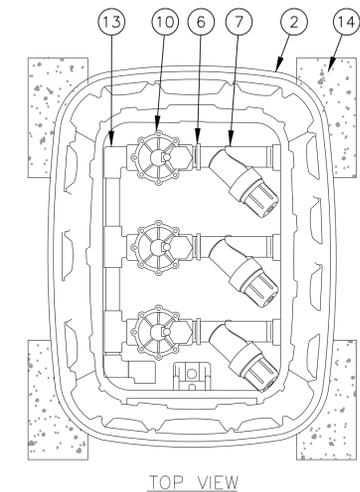
NOT TO SCALE



## DRIP IRRIGATION VALVE

NOT TO SCALE

- 1 FINISH GRADE
- 2 STANDARD VALVE BOX WITH COVER:
- 3 WATERPROOF CONNECTION:
- 4 VALVE ID TAG
- 5 30-INCH LINEAR LENGTH OF WIRE, COILED
- 6 1" x 3/4" REDUCING COUPLING
- 7 PRESSURE REGULATING FILTER:
- 8 LATERAL PIPE
- 9 PVC SCH 40 FEMALE ADAPTOR OR REDUCER
- 10 REMOTE CONTROL VALVE:
- 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

## CONSTRUCTION DRAWING APPROVAL

THIS PLAN SHEET HAS BEEN REVIEWED AND APPROVED PER THE CONDITIONS ON THE TITLE SHEET.

BY: \_\_\_\_\_  
City Engineer, CITY OF ARLINGTON

DATE: \_\_\_\_\_  
THIS APPROVAL VALID FOR 18 MONTHS

PRELIMINARY IRRIGATION NOTES & DETAILS

BROWN BEAR CAR WASH  
SWC - 172ND STREET NE AND 43RD AVENUE NE  
ARLINGTON, WASHINGTON

CAR WASH ENTERPRISES, INC.  
3977 LEARY WAY NW  
SEATTLE, WASHINGTON 98107

For:



Scale:

Horizontal 1"=20'

Vertical N/A

Designed: LBP

Drawn: LBP

Checked: LBP

Approved: LBP

Date: 08/04/23

Job Number

21860

Sheet

L-5

6

L-5 of

6

Job Number

21860

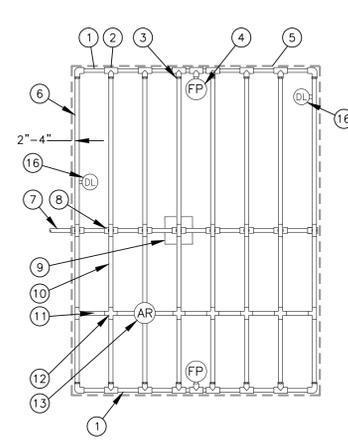
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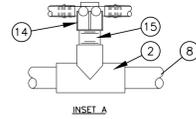


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# PRELIMINARY IRRIGATION DETAILS FOR BROWN BEAR CAR WASH SEC. 28, TWN. 31 N., RGE. 5 E. W.M. CITY OF ARLINGTON, SNOHOMISH COUNTY, WASHINGTON



- PVC EXHAUST HEADER
- PVC SCH 40 TEE OR EL (TYPICAL)
- BARB X MALE FITTING
- FLUSH POINT (TYPICAL) SEE DETAIL
- PERIMETER OF AREA
- PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
- PVC SUPPLY PIPE FROM CONTROL ZONE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- PVC SUPPLY MANIFOLD
- CONNECTION FROM SUPPLY MANIFOLD TO DRIPLINE (TYPICAL) - SEE INSET A
- SUB-SURFACE DRIPLINE
- BLANK TUBING
- BARB X BARB INSERT TEE OR CROSS:
- 1/2" AIR RELIEF VALVE
- BARB X FEMALE FITTING:
- 3/4" PVC NIPPLE, LENGTH AS NECESSARY
- DRIPLINE INDICATOR. SEE DETAIL FOR ADDTL INFO

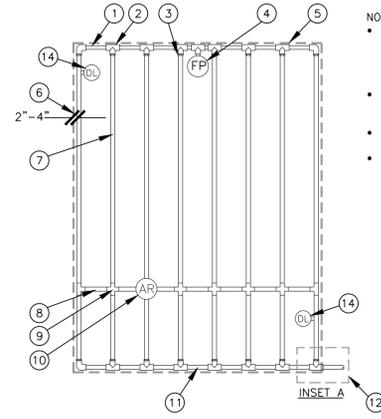


- NOTES:
- DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE IRRIGATION SCHEDULE FOR SPACING.
  - LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM LENGTH SHOWN IN THE ACCOMPANYING TABLE.
  - AIR RELIEF VALVE TO BE 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.

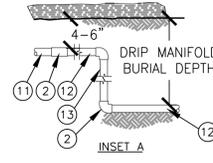
Inlet Pressure psi	12" Spacing		18" Spacing		24" Spacing	
	Normal Flow (gph)					
15	273	155	314	250	424	322
20	318	169	353	294	508	368
30	360	230	413	350	586	414
40	395	255	455	402	652	474
50	417	285	529	420	720	498
60	460	290	596	455	780	514

**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.

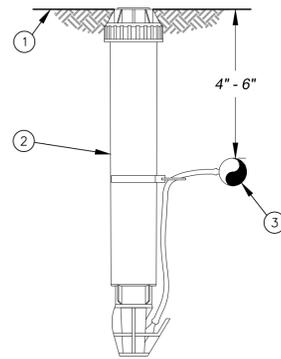


- PVC EXHAUST HEADER
- PVC SCH 40 TEE OR EL (TYPICAL)
- BARB X MALE FITTING:
- FLUSH POINT (TYPICAL) SEE RAIN BIRD DETAIL 'FLUSH POINT WITH BALL VALVE'
- PERIMETER OF AREA
- PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
- SUB-SURFACE DRIPLINE
- BLANK TUBING
- BARB X BARB INSERT TEE OR CROSS:
- 1/2" AIR RELIEF VALVE
- PVC SUPPLY MANIFOLD
- PVC DRIPLINE FROM CONTROL ZONE VALVE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- PVC SCH 40 RISER PIPE
- DRIPLINE INDICATOR. SEE DETAIL FOR ADDTL INFO

Inlet Pressure psi	12" Spacing		18" Spacing		24" Spacing	
	Normal Flow (gph)					
15	273	155	314	250	424	322
20	318	169	353	294	508	368
30	360	230	413	350	586	414
40	395	255	455	402	652	474
50	417	285	529	420	720	498
60	460	290	596	455	780	514

**DRIPLINE END FEED LAYOUT**

NOT TO SCALE

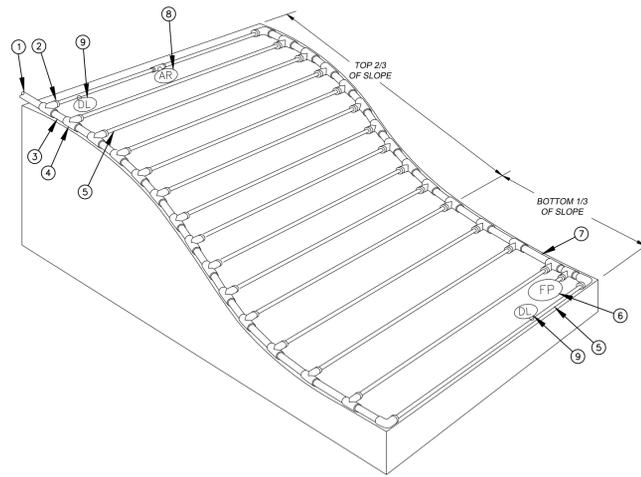


- FINISH GRADE/TURF
- OPERATION INDICATOR
- SUB-SURFACE DRIPLINE: SEE IRRIGATION SCHEDULE

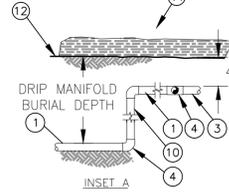
- NOTE:
- INSERT BARB TRANSFER FITTING DIRECTLY INTO DRIPLINE TUBING.
  - VAN NOZZLE MAY BE SET TO CLOSED, OR IF IT IS DESIRED TO SEE SPRAY FROM THE NOZZLE, SET THE ARC TO 1/4 PATTERN. THE FLOW FROM THE NOZZLE, 0.3 GPM, SHOULD BE ACCOUNTED FOR IN THE SYSTEM DESIGN.

**DRIPLINE SLOPED LAYOUT**

NOT TO SCALE



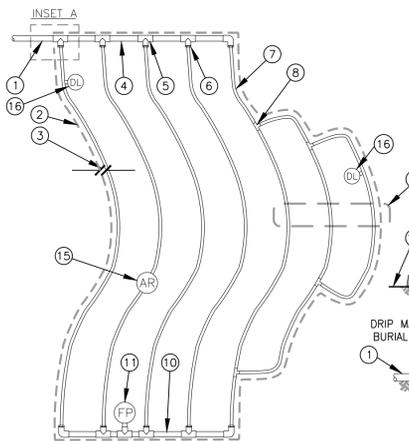
- NOTES:
- DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. DISTANCE BETWEEN LATERAL ROWS FOR BOTTOM 1/3 OF SLOPE TO BE SPACED GREATER THAN OPTIMAL ROW DISTANCE. SEE MANUFACTURER DRIPLINE INSTALLATION GUIDE FOR SUGGESTED SPACING.
  - LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM LENGTH SHOWN IN THE ACCOMPANYING TABLE.
  - WHEN ELEVATION CHANGE EXCEEDS 8 FEET IT IS RECOMMENDED THAT A NEW DRIPLINE ZONE BE CREATED.
  - INSTALL AIR RELIEF VALVE AT HIGH POINTS IN DRIP LATERAL.
  - WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.



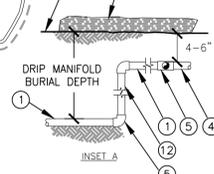
- PVC DRIPLINE FROM CONTROL ZONE VALVE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- BARB X MALE FITTING
- PVC SUPPLY HEADER
- PVC SCH 40 TEE OR EL (TYPICAL)
- SUB-SURFACE DRIPLINE: SEE IRRIGATION SCHEDULE
- FLUSH POINT: SEE DETAIL
- PVC FLUSH HEADER
- 1/2" AIR RELIEF VALVE: RSEE DETAIL
- DRIPLINE INDICATOR. SEE DETAIL FOR ADDTL INFORMATION
- PVC RISER PIPE
- TURF OR MULCH
- FINISH GRADE

**DRIPLINE SLOPED LAYOUT**

NOT TO SCALE



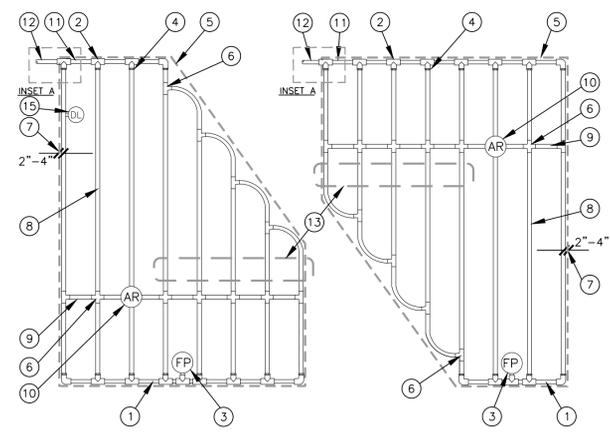
- NOTES:
- DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE INSTALLATION SPECIFICATIONS FOR SPACING.
  - LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM SPACING SHOWN IN THE ACCOMPANYING TABLE.
  - INSTALL AIR RELIEF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



- PVC SUPPLY PIPE FROM RAIN BIRD CONTROL ZONE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- PERIMETER OF AREA
- PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
- PVC SUPPLY MANIFOLD
- PVC SCH 40 TEE OR EL (TYPICAL)
- BARB X MALE FITTING
- SUB-SURFACE DRIPLINE: SEE IRRIGATION SCHEDULE
- ARB X BARB INSERT TEE
- TOTAL LENGTH OF SELECTED DRIPLINE SHOULD NOT EXCEED LENGTH SHOWN IN TABLE
- PVC FLUSH HEADER
- FLUSH POINT: SEE DETAIL
- PVC RISER PIPE
- TURF OR MULCH
- FINISH GRADE
- 1/2" AIR RELIEF VALVE: SEE DETAIL
- DRIPLINE INDICATOR. SEE DETAIL FOR ADDTL INFO

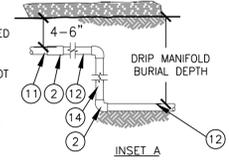
**DRIPLINE ODD CURVES LAYOUT**

NOT TO SCALE



- PVC EXHAUST HEADER
- PVC SCH 40 TEE OR EL (TYPICAL)
- FLUSH POINT (TYPICAL) SEE DETAIL
- BARB X MALE FITTING
- PERIMETER OF AREA
- BARB X BARB INSERT TEE OR CROSS
- PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
- SUB-SURFACE DRIPLINE: SEE IRRIGATION SCHEDULE
- BLANK TUBING
- 1/2" AIR RELIEF VALVE: SEE DETAIL
- PVC SUPPLY MANIFOLD
- PVC SUPPLY PIPE FROM CONTROL ZONE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- TOTAL LENGTH OF SELECTED DRIPLINE SHOULD NOT EXCEED LENGTH SHOWN IN TABLE
- PVC SCH 40 RISER PIPE
- DRIPLINE INDICATOR. SEE DETAIL FOR ADDTL 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

**CONSTRUCTION DRAWING APPROVAL**

THIS PLAN SHEET HAS BEEN REVIEWED AND APPROVED PER THE CONDITIONS ON THE TITLE SHEET.

BY: \_\_\_\_\_  
City Engineer, CITY OF ARLINGTON

DATE: \_\_\_\_\_  
THIS APPROVAL VALID FOR 18 MONTHS

Title: **PRELIMINARY IRRIGATION DETAILS**

**BROWN BEAR CAR WASH**  
SWC - 172ND STREET NE AND 43RD AVENUE NE  
ARLINGTON, WASHINGTON

For: **CAR WASH ENTERPRISES, INC.**  
3977 LEARY WAY NW  
SEATTLE, WASHINGTON 98107



Scale: Horizontal 1"=20' Vertical N/A

Designed: LRP Drawn: LRP Checked: LE/JV Approved: LRP Date: 08/04/23

**Barghausen Consulting Engineers, Inc.**  
18215 72nd Avenue South  
Kent, WA 98032  
425.251.6222 [barghausen.com](http://barghausen.com)



Job Number: **21860**  
Sheet: **6**  
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