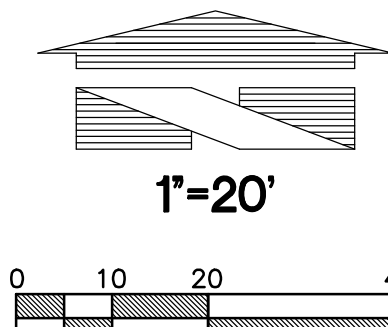
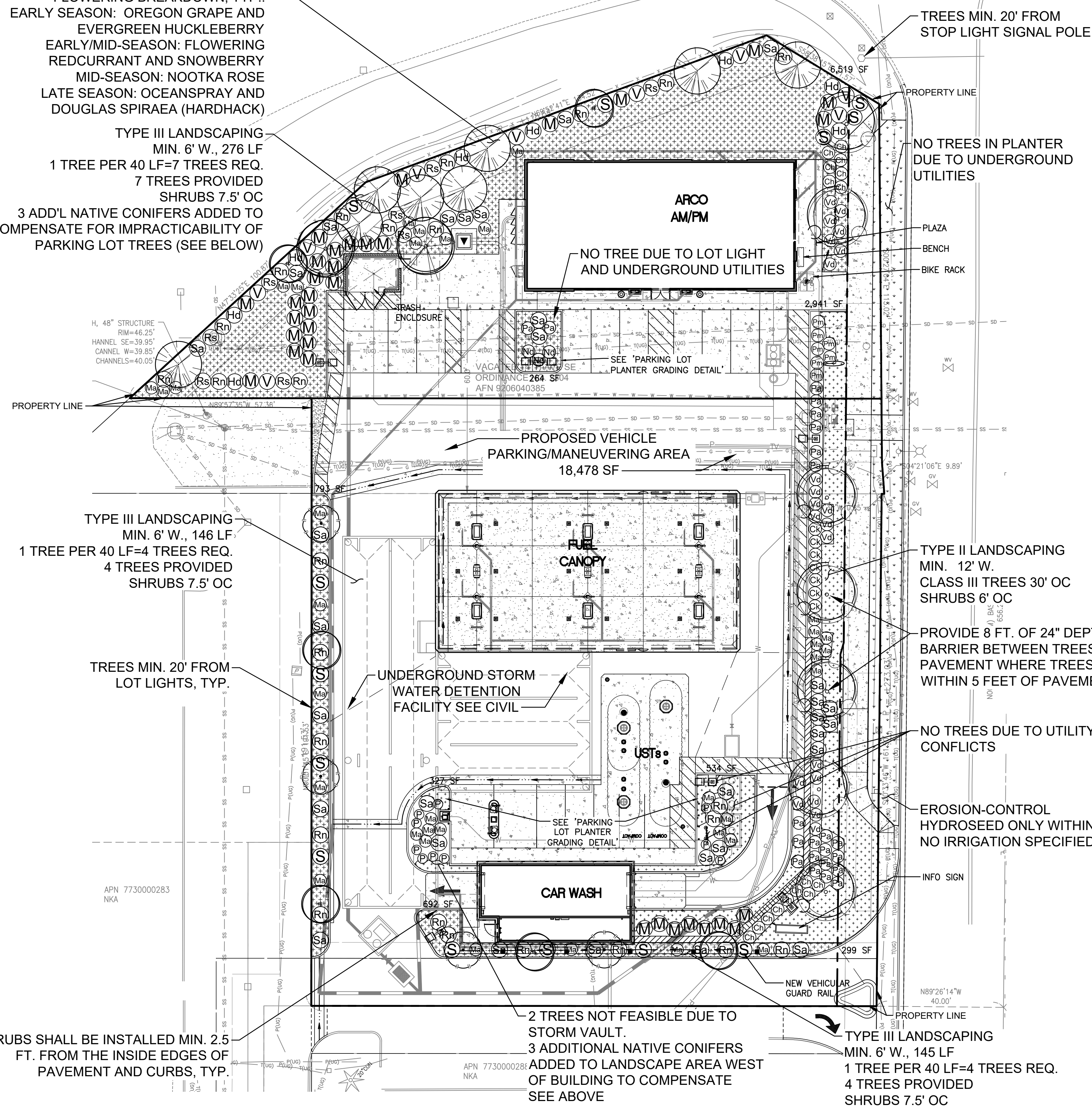


LANDSCAPE PLAN

FOR
ARCO ampm PUYALLUP
 SEC. 33, TWN. 20 N, RGE. 4 E, W.M.
 CITY OF PUYALLUP, PIERCE COUNTY



LANDSCAPE BUFFER SEASONAL
 FLOWERING BREAKDOWN, TYP.:
 EARLY SEASON: OREGON GRAPE AND
 EVERGREEN HUCKLEBERRY
 EARLY/MID-SEASON: FLOWERING
 REDCURRANT AND SNOWBERRY
 MID-SEASON: NOOTKA ROSE
 LATE SEASON: OCEANSPRAY AND
 DOUGLAS SPIRAEA (HARDHACK)
 TYPE III LANDSCAPING
 MIN. 6' W., 276 LF
 1 TREE PER 40 LF=7 TREES REQ.
 7 TREES PROVIDED
 SHRUBS 7.5' OC
 3 ADD'L NATIVE CONIFERS ADDED TO
 COMPENSATE FOR IMPRACTICABILITY OF
 PARKING LOT TREES (SEE BELOW)



PAVED AREA 18,478 SF
 18,478 X 0.05 = 924 SF INTERIOR PARKING
 LOT LANDSCAPING REQUIRED
 1,125 SF PROVIDED

PLANT BED AREA: 12,412 SF
 8" TOPSOIL MINIMUM DEPTH FOR THIS AREA
 = 345 CUBIC YARDS

REQUIRED TREE CLEARANCES FOR CLASS III TREES, PER PUYALLUP VMS 12.4	
BUILDINGS	10'
UTILITY AND STREET LIGHT POLES	10'
FIRE HYDRANTS	5'
DRIVEWAY (OUTER PAVING EDGE)	7.5'
STOP LIGHT SIGNAL POLES	20'
UNDERGROUND WATER, SANITARY SEWER OR STORM SEWER LINES	10'
UNDERGROUND GAS, POWER OR OTHER CONDUIT	3'
INTERSECTION (FACE OF CURB LINE CORNER AT INTERSECTION)	30'
STREET SIGNS (EXCL. PARKING SIGNS)	30' LEADING SIDE, 10' TRAILING SIDE

TYPE III LANDSCAPING
 MIN. 6' W., 146 LF
 1 TREE PER 40 LF=4 TREES REQ.
 4 TREES PROVIDED
 SHRUBS 7.5' OC

TREES MIN. 20' FROM
 LOT LIGHTS, TYP.

UNDERGROUND STORM
 WATER DETENTION
 FACILITY SEE CIVIL

TYPE II LANDSCAPING
 MIN. 12' W.
 CLASS III TREES 30' OC
 SHRUBS 6' OC

PROVIDE 8 FT. OF 24" DEPTH ROOT
 BARRIER BETWEEN TREES AND
 PAVEMENT WHERE TREES ARE
 WITHIN 5 FEET OF PAVEMENT, TYP.

NO TREES DUE TO UTILITY
 CONFLICTS

EROSION-CONTROL
 HYDROSEED ONLY WITHIN R/W.
 NO IRRIGATION SPECIFIED

SHRUBS SHALL BE INSTALLED MIN. 2.5
 FT. FROM THE INSIDE EDGES OF
 PAVEMENT AND CURBS, TYP.

2 TREES NOT FEASIBLE DUE TO
 STORM VAULT.
 3 ADDITIONAL NATIVE CONIFERS
 ADDED TO LANDSCAPE AREA WEST
 OF BUILDING TO COMPENSATE
 SEE ABOVE

TYPE III LANDSCAPING
 MIN. 6' W., 145 LF
 1 TREE PER 40 LF=4 TREES REQ.
 4 TREES PROVIDED
 SHRUBS 7.5' OC

UTILITY CONFLICT NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POT-HOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 48 HOURS IN ADVANCE AND THEN POT-HOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.



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

CITY OF PUYALLUP
 Planning Division
 Approved Landscape Plan
 (253) 864-4165

Staff:
 Date:

THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE PLANNING MANAGER, DESIGNER, OR PROJECT PLANNER.

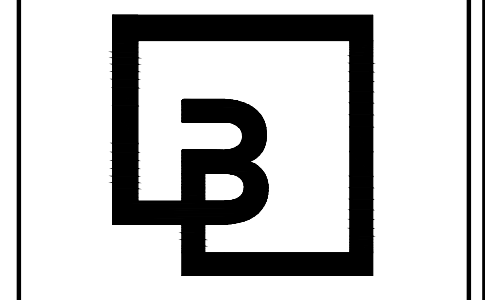
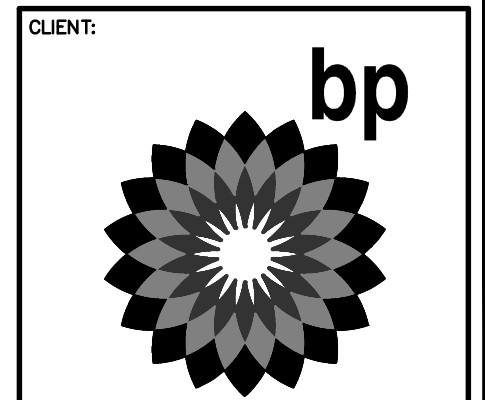
NOTE: If street trees are required, Call Planning Division for final inspection: (253) 864-4165 (Option 3). Root Barriers are required around street trees in accordance with city standard detail. Top soil shall be installed in accordance with city standards - field verification required. Failure to install top soil and root barriers in accordance with city standard may result in rejection of installation.

APPROVED

BY: _____
 CITY OF PUYALLUP
 WATER PURVEYOR

DATE: _____

NOTE: THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE WATER PURVEYOR.



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

NO.	DATE	REVISION DESCRIPTION



DEVELOPMENT INFORMATION:
ARCO NTI
 3400 am/pm
 FUEL CANOPY w/ 6 MPD's

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

FACILITY #TBD

DESIGNED BY: ALLIANCE Z&M
 CHECKED BY: BP REP:
 DRAWN BY: ALLIANCE PM:
 VERSION: PROJECT NO:
 21730

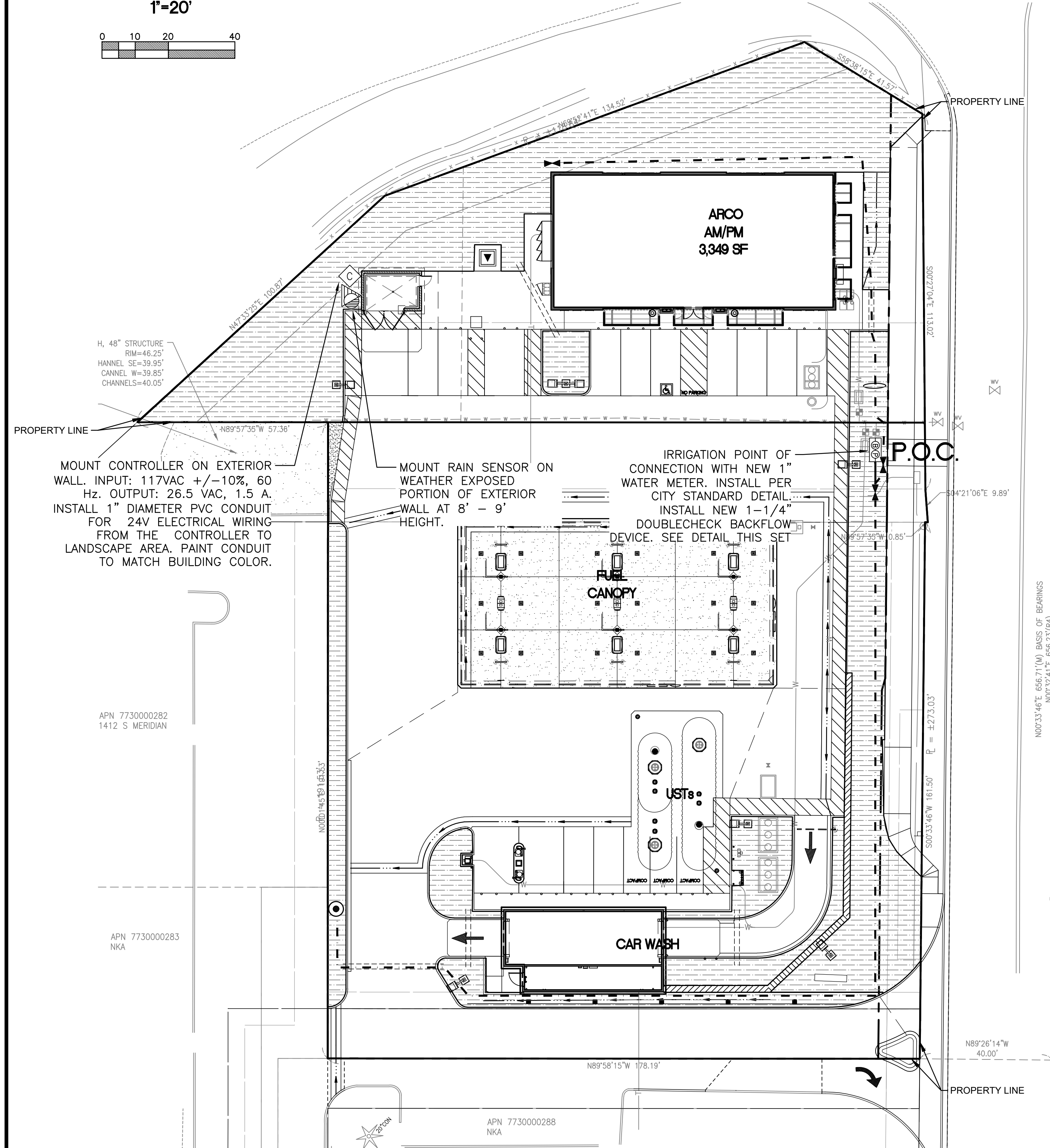
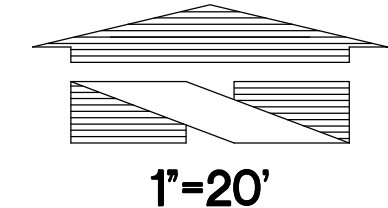
DRAWING TITLE:
LANDSCAPE PLAN

SHEET NO:
L-1

PW: 21730-0005-21730-Engineering 21730-L-Draw 10/3/2023 4:51 PM J.VARLEY

IRRIGATION PLAN

FOR
ARCO ampm PUYALLUP
 SEC. 33, TWN. 20 N, RGE. 4 E, W.M.
 CITY OF PUYALLUP, PIERCE COUNTY



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- 1-1/4" 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 DIAGRAMMATICALLY 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"	GPM (MAX.)
FLOW	1-8	8.1-13	13.1-23	23.1-32	32.1-53	53.1-74	
GPM							

LANDSCAPE IRRIGATION NOTES

- GENERAL CONTRACTOR AND LANDSCAPE CONTRACTOR TO COORDINATE:
 - 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.
 - 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.
 - 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.
 - INSTALLATION OF SLEEVING.
- 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.
- COORDINATE IRRIGATION INSTALLATION WITH GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR, LANDSCAPE CONTRACTOR, OWNER, ARCHITECT, AND LANDSCAPE ARCHITECT.
- LANDSCAPE CONTRACTOR TO TEST AVAILABLE WATER PRESSURE PRIOR TO BEGINNING ANY WORK. PROVIDE LANDSCAPE ARCHITECT WITH WRITTEN PSI RESULTS.**
- ALL WORK PER LOCAL CODE. INSTALLATION PER MANUFACTURER'S WRITTEN SPECIFICATIONS.
- CONTRACTOR TO OBTAIN AND PAY FOR ALL PERMITS, FEES, AND REQUIRED CITY INSPECTIONS.
- SUBMITTALS:
 - SUBMIT EACH ITEM LISTED BELOW FOR LANDSCAPE ARCHITECT'S REVIEW AND APPROVAL.
 - PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
 - CONTROL WIRING PATH DIAGRAM.
 - "AS-BUILT" DRAWINGS.
 - OPERATION AND MAINTENANCE MANUALS.
- 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:
 - CONNECTION TO WATER LINES (P.O.C.),
 - CONNECTIONS TO ELECTRICAL POWER,
 - GATE VALVE, QUICK COUPLERS, AND REMOTE CONTROL VALVE,
 - ROUTING OF MAINLINE (DIMENSION MAXIMUM 100' ALONG ROUTING),
 - ROUTING OF CONTROL WIRING,
 - OTHER RELATED EQUIPMENT AS DIRECTED BY THE LANDSCAPE ARCHITECT.
- PREPARE AND PROVIDE PRIOR TO COMPLETION OF CONSTRUCTION, A THREE RING BINDER CONTAINING THE FOLLOWING INFORMATION:
 - 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.
 - CATALOG AND PARTS SHEETS ON EVERY MATERIAL AND EQUIPMENT INSTALLED UNDER THIS CONTRACT.
 - GUARANTEE STATEMENT.
 - COMPLETE OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL MAJOR EQUIPMENT.
 - CONSTRUCTION DETAILS FROM THE PROJECT.
 - COMPLETE TROUBLE-SHOOTING GUIDE TO COMMON IRRIGATION PROBLEMS.
 - WINTERIZATION AND SPRING START-UP PROCEDURES.
 - CHART OF APPROXIMATE WATERING TIMES FOR SPRING, SUMMER, AND FALL.
 - A COPY OF THE "AS-BUILT" DRAWINGS AND CONTROLLER CHART.
- 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.
- 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.
- 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.
- FAMILIARIZE OWNERS FACILITY OPERATOR WITH IRRIGATION SYSTEM FUNCTION, CONTROLLER PROGRAMMING, SYSTEM OPERATION AND MAINTENANCE REQUIREMENTS.
- SPRINKLERS ON RISERS WILL NOT BE ALLOWED UNLESS NOTED ON PLANS.
- 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.
- 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.
- 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.
- ALL ELECTRICAL EQUIPMENT TO BE U.L. TESTED AND APPROVED, AND BEAR THE U.L. LABEL.
- 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.
- 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.

UTILITY CONFLICT NOTE:

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 Planning Division
 Approved Landscape Plan
 (253) 864-4165

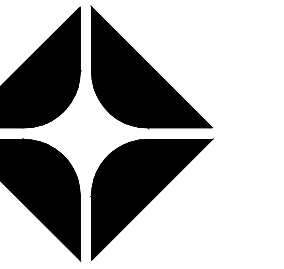
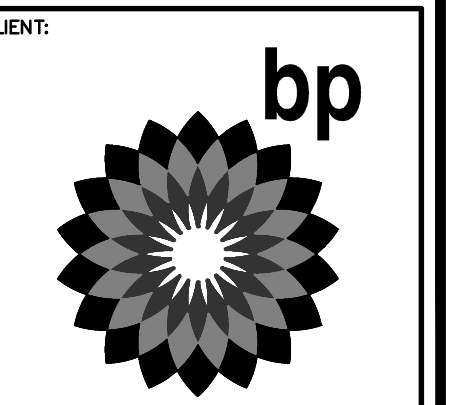
Staff: _____
 Date: _____
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APPROVED

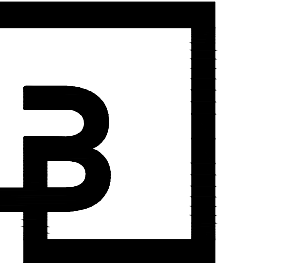
BY: _____
 CITY OF PUYALLUP
 WATER PURVEYOR

DATE: _____

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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



DEVELOPMENT INFORMATION:

ARCO NTI
 3400 am/pm
 FUEL CANOPY w/ 6 MPD'S

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

FACILITY #TBD

DESIGNED BY: _____ ALLIANCE TEAM:
 CHECKED BY: _____ BP REP:
 DRAWN BY: _____ ALLIANCE PM:
 VERSION: _____ PROJECT NO.: **21730**

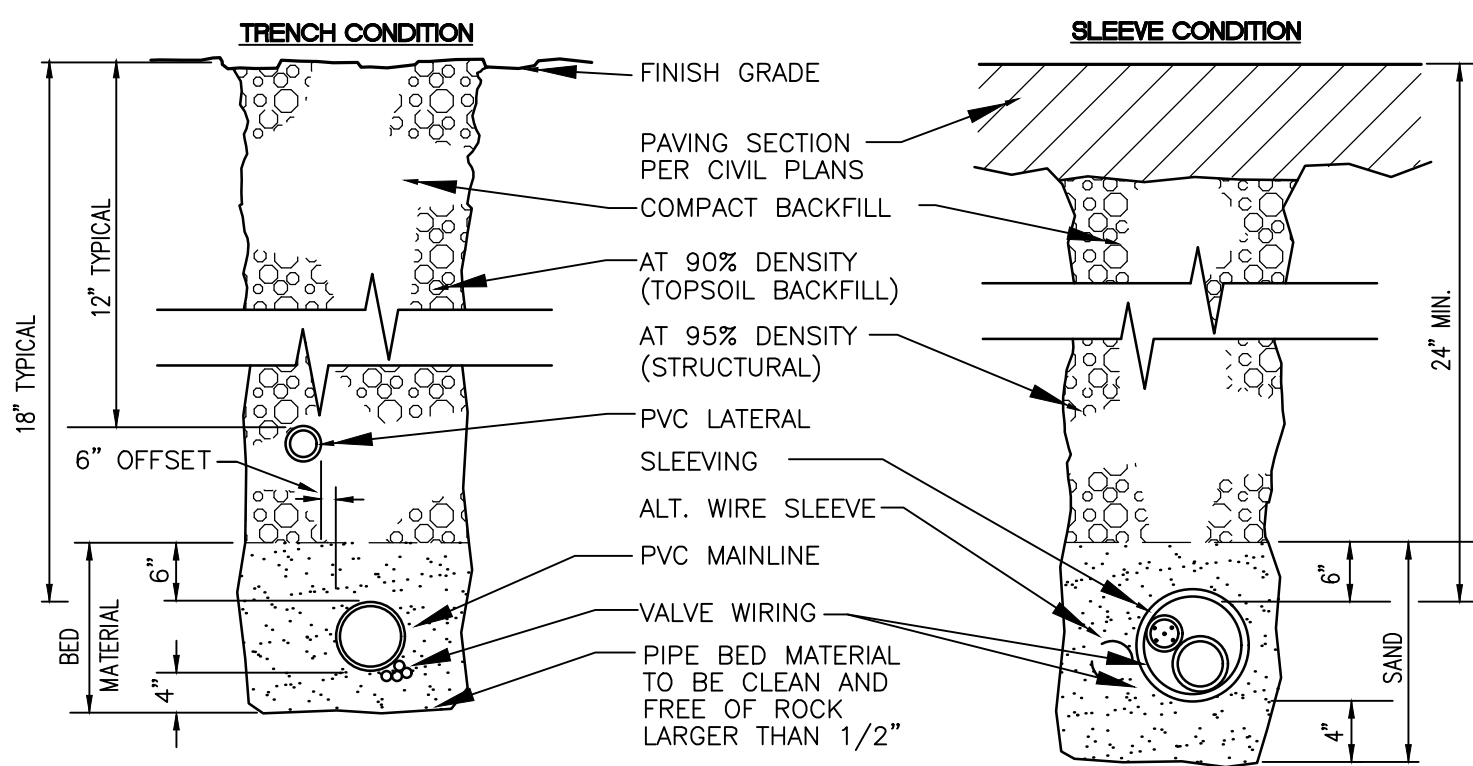
DRAWING TITLE:
IRRIGATION PLAN

SHEET NO.: **L-4**

Scale: 1" = 10' - J. WARLEY - Xref: -

IRRIGATION DETAILS

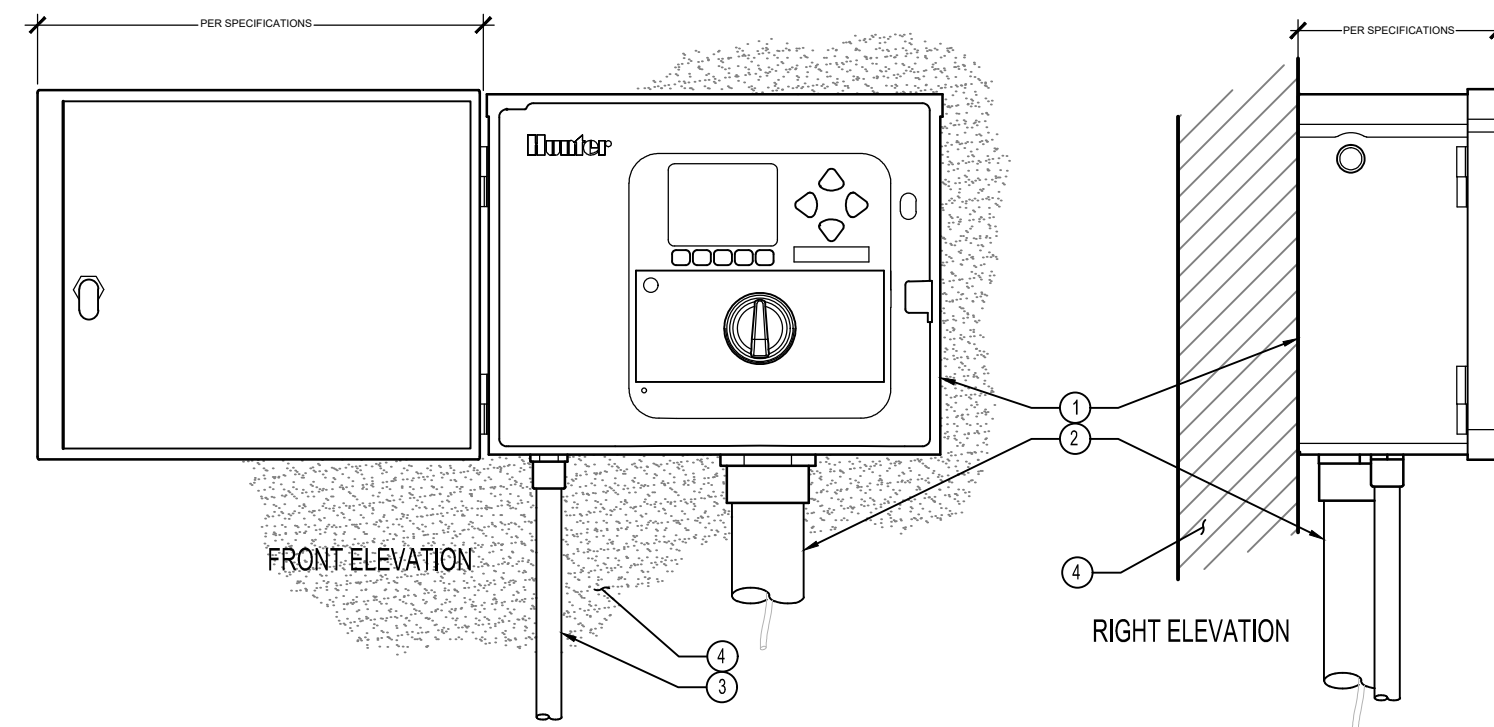
FOR
ARCO ampm PUYALLUP
 SEC. 33, TWN. 20 N, RGE. 4 E, W.M.
 CITY OF PUYALLUP, PIERCE COUNTY



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

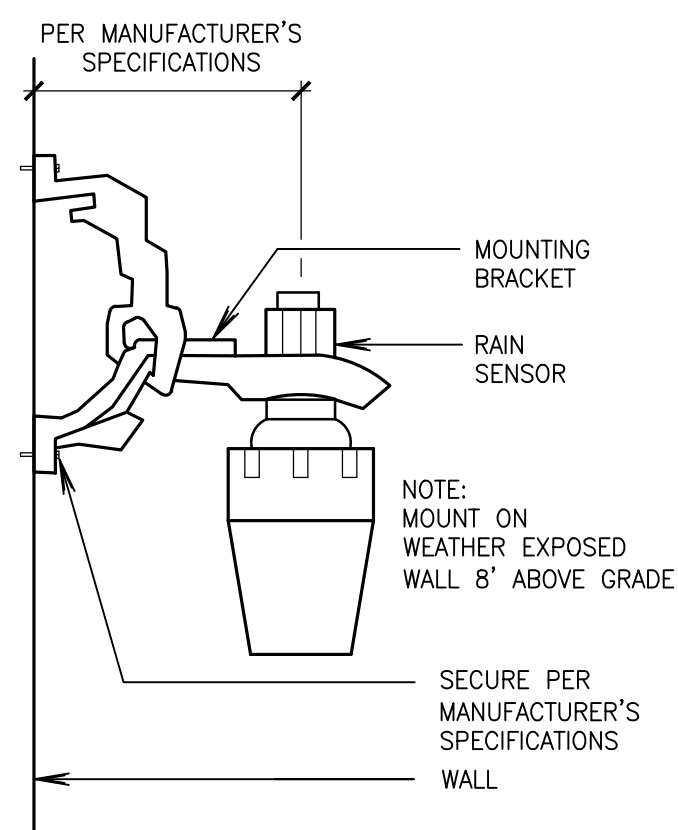


IRRIGATION CONTROLLER, WALL MOUNT

NOT TO SCALE

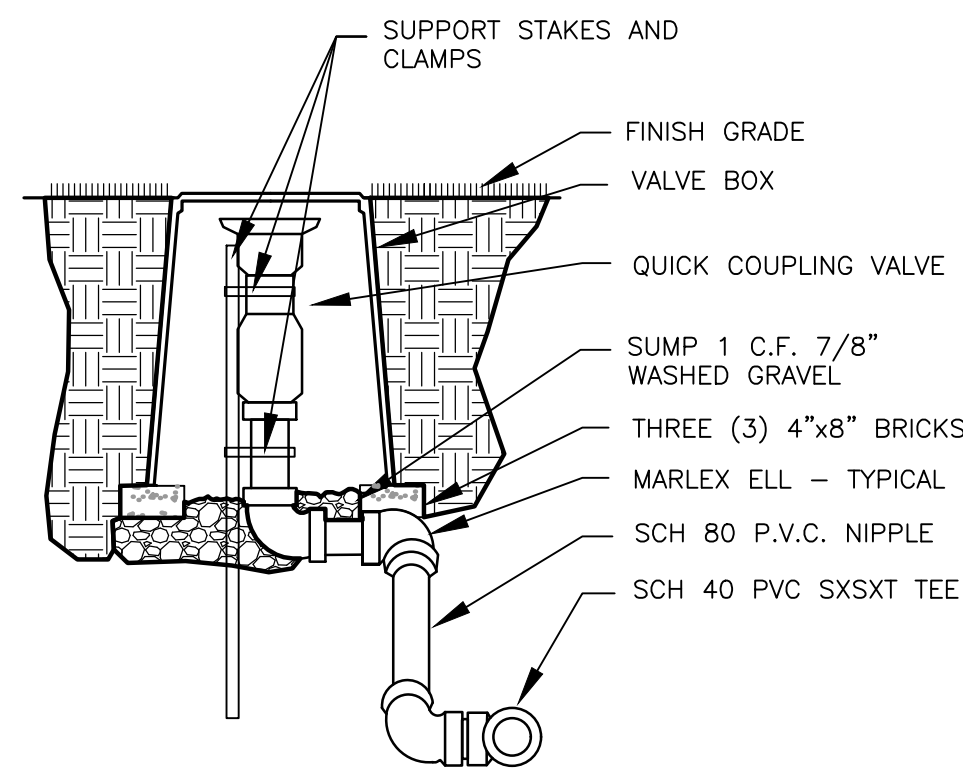
- LEGEND:
- 1 IRRIGATION CONTROLLER (ACC) PER PLAN
 - 2 IRRIGATION CONTROL WIRE IN CONDUIT SIZE AND TYPE PER LOCAL CODES
 - 3 ELECTRICAL SUPPLY CONDUIT CONNECT TO POWER SOURCE, IN BOX INSIDE CONTROLLER
 - 4 ADJACENT SURFACE TO MOUNT CONTROLLER PER PLAN

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



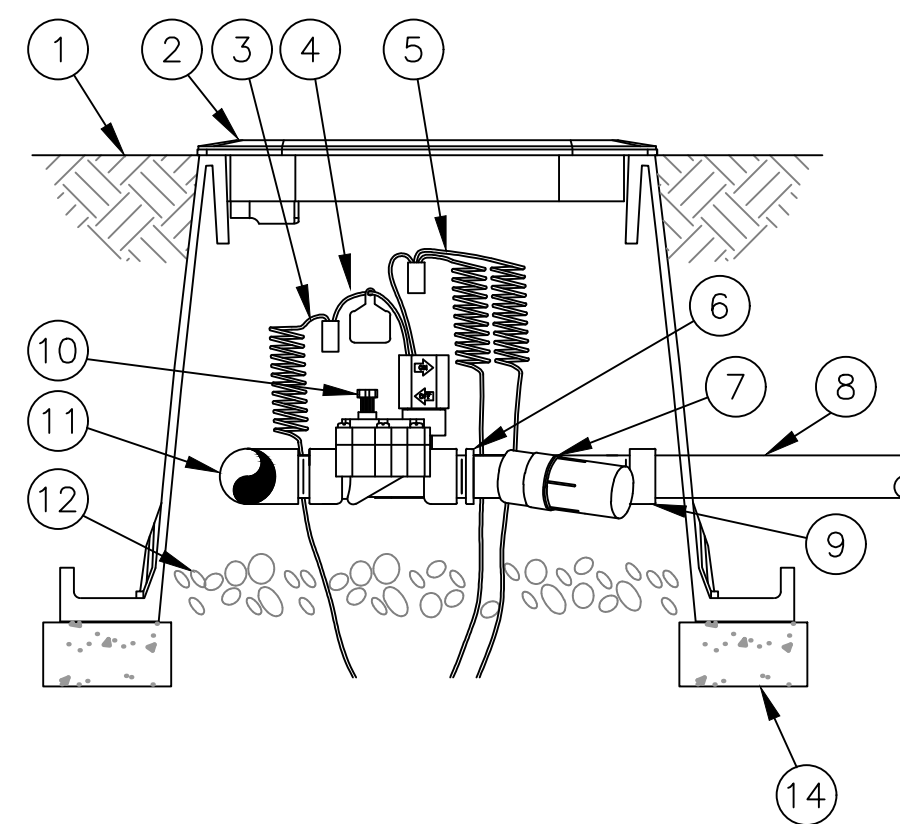
RAIN SENSOR DETAIL

NOT TO SCALE



QUICK COUPLING VALVE DETAIL

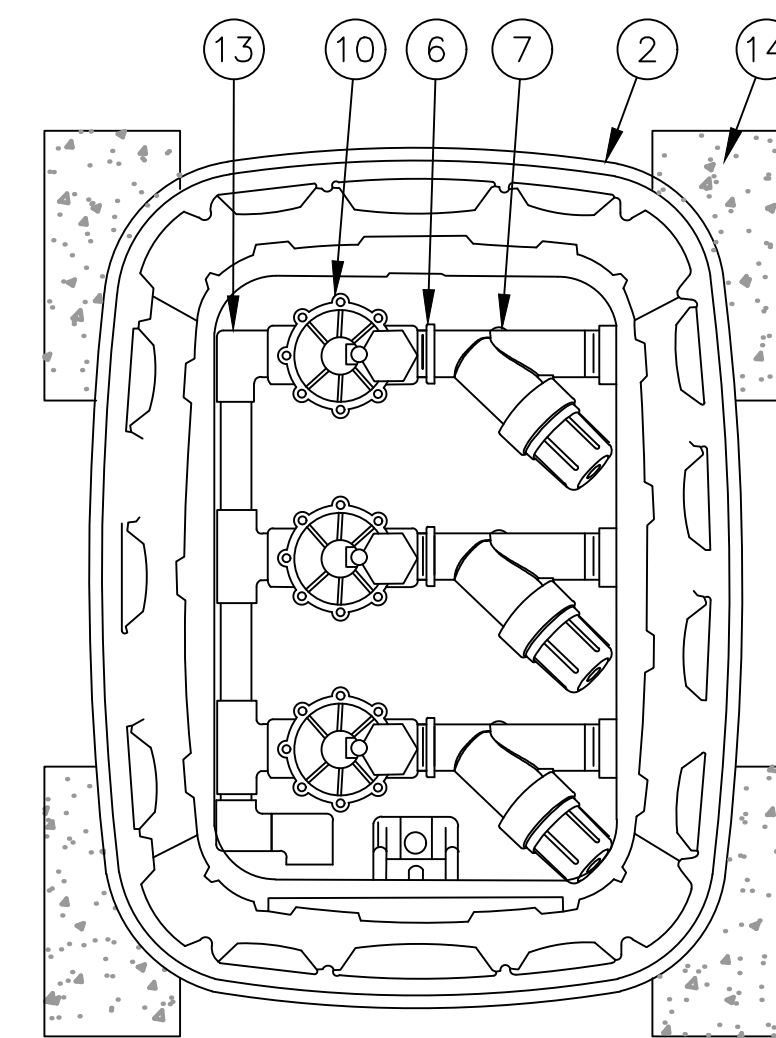
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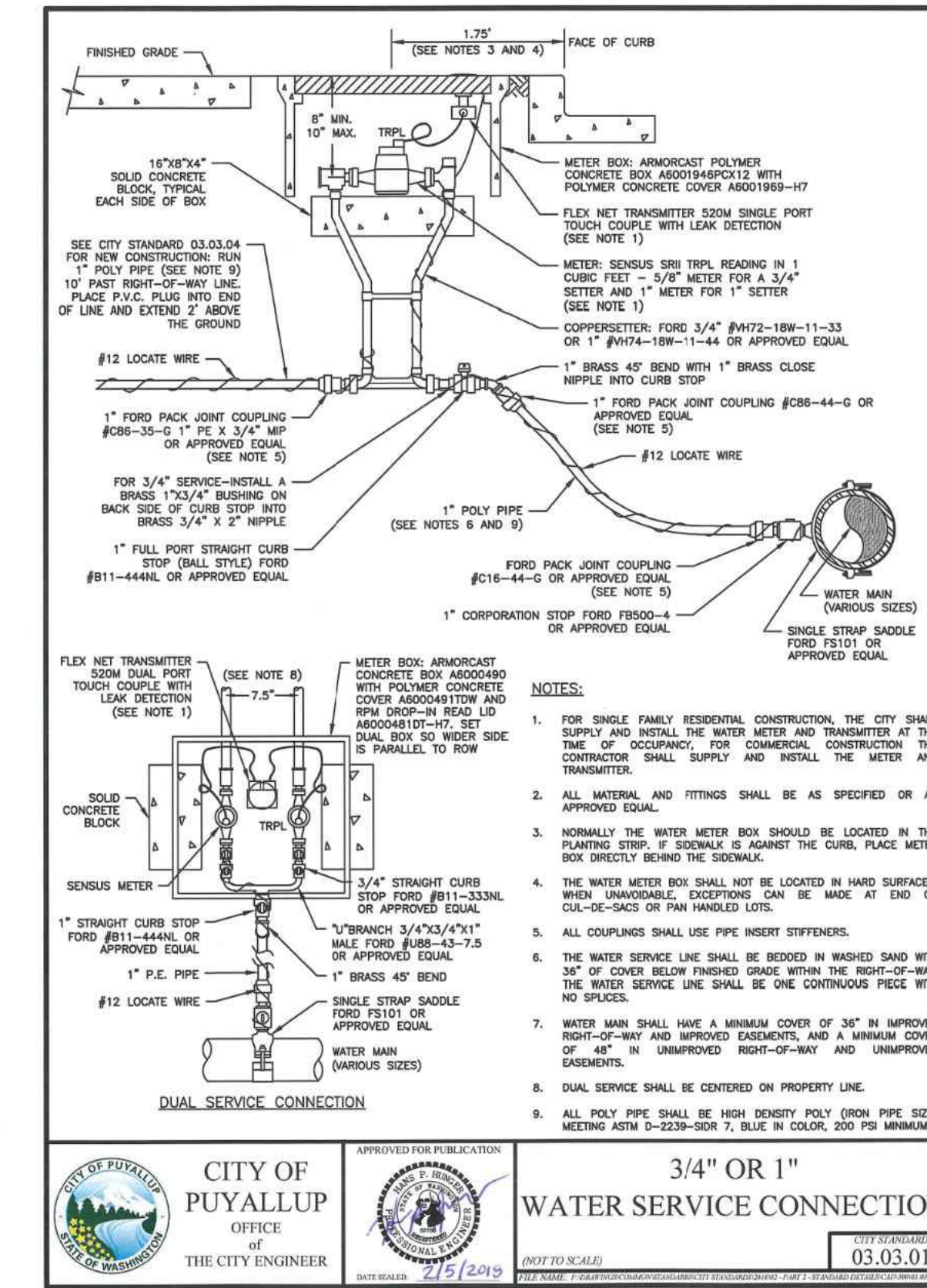
DRIP IRRIGATION VALVE

NOT TO SCALE

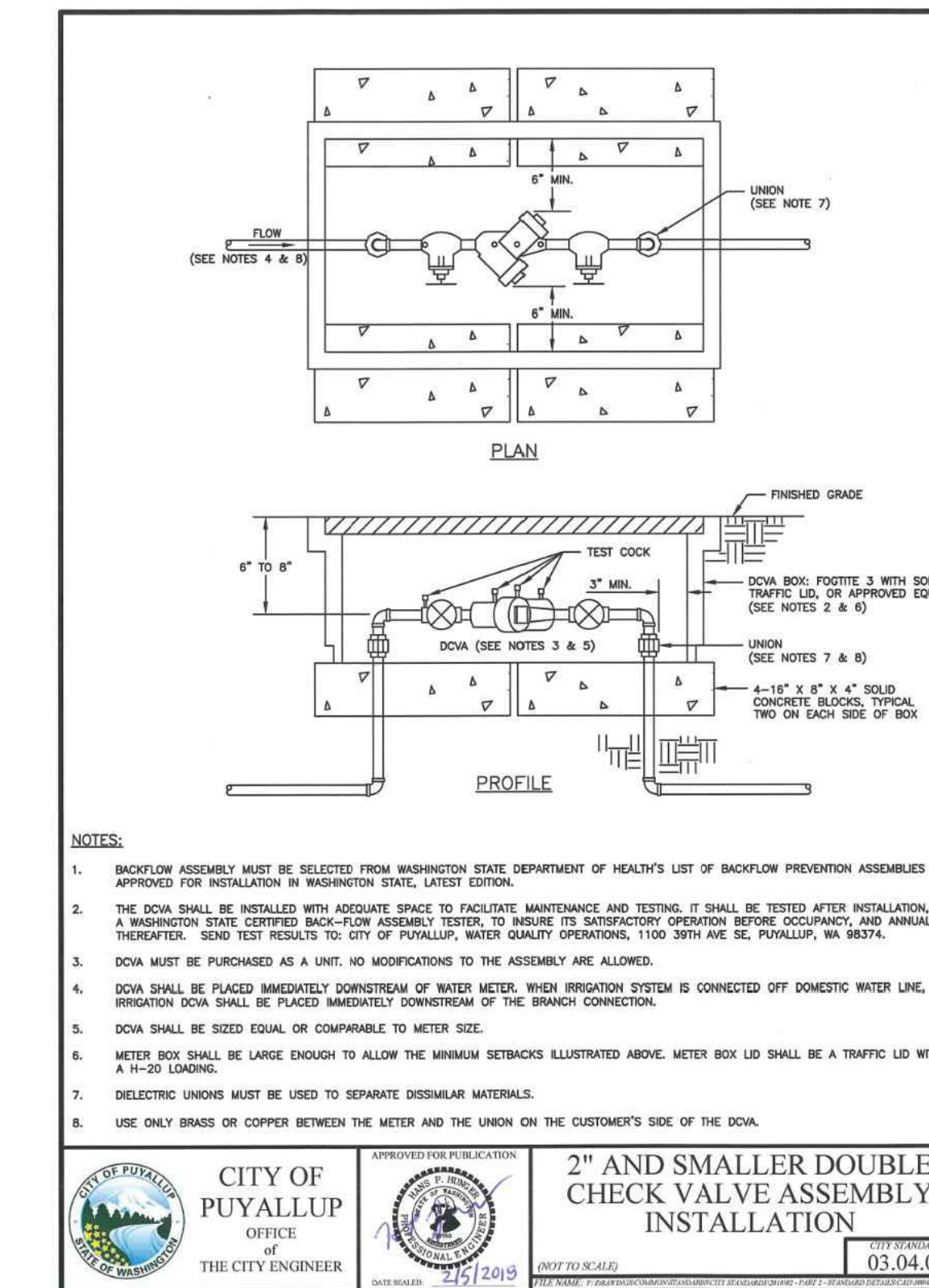
- 1 FINISH GRADE
- 2 STANDARD VALVE BOX WITH COVER: RAIN BIRD VB-STD
- 3 WATERPROOF CONNECTION: RAIN BIRD DB SERIES
- 4 VALVE ID TAG
- 5 30-INCH LINEAR LENGTH OF WIRE, COILED
- 6 1" X 3/4" REDUCING COUPLING (INCLUDED IN XCZ-LF-100-PRF KIT)
- 7 PRESSURE REGULATING FILTER: RAIN BIRD PRF-100-RBY (INCLUDED IN XCZ-LF-100-PRF KIT)
- 8 LATERAL PIPE
- 9 PVC SCH 40 FEMALE ADAPTOR OR REDUCER
- 10 REMOTE CONTROL VALVE: RAIN BIRD LRV-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



- 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 SOONER IS AGAINST THE CURB, PLACE METER BOX DIRECTLY BEHIND THE SIDEWALK.
 4. THE WATER METER BOX SHALL NOT BE LOCATED IN HARD SURFACES. WHEN UNDESIRABLE LOCATIONS CAN BE MADE AT END OF CURB-DE-SACS OR PAN HANDLED LOTS.
 5. ALL COUPLINGS SHALL USE PIPE INSERT STIFFENERS.
 6. THE WATER SERVICE LINE SHALL BE BORED IN WASHED SAND WITH 1" OF COVER BELOW FINISHED GRADE WITHIN THE RIGHT-OF-WAY. THE WATER SERVICE LINE SHALL BE ONE CONTINUOUS PIECE WITH NO JOINTS.
 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 COVERED ON PROPERTY LINE.
 9. ALL POLY PIPE SHALL BE HIGH DENSITY POLY (HDN PIPE SIZE) MEETING ASTM D-2239-SDR 7, BLUE IN COLOR, 200 PSI MINIMUM.



NOTE: 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.

NOTE: THE DOWA 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 VERIFY ITS SATISFACTION OPERATING BEFORE OCCUPANCY AND ANNUALLY THEREAFTER. SEND TEST RESULTS TO: CITY OF PUYALLUP, WATER QUALITY OPERATIONS, 1100 59TH AVE SE, PUYALLUP, WA 98374.

NOTE: DOWA MUST BE PURCHASED AS A UNIT. NO MODIFICATIONS TO THE ASSEMBLY ARE ALLOWED.

NOTE: DOWA SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF WATER METER. WHEN IRRIGATION SYSTEM IS CONNECTED OFF DOMESTIC WATER LINE, IRRIGATION DOWA SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF THE BRANCH CONNECTION.

NOTE: DOWA SHALL BE SIZED EQUAL OR COMPARABLE TO METER SIZE.

NOTE: METER BOX SHALL BE LARGE ENOUGH TO ALLOW THE MINIMUM SETBACKS ILLUSTRATED ABOVE. METER BOX LID SHALL BE A TRAFFIC LID WITH A 10-20 LBS LOAD.

NOTE: ELECTRICAL UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.

NOTE: USE ONLY BRASS OR COPPER BETWEEN THE METER AND THE UNION ON THE CUSTOMER'S SIDE OF THE DOWA.

CLIENT:

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

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD'S

SITE ADDRESS:

SWC S MERIDIAN
 @ HIGHWAY 512
 PUTALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: ALLIANCE ZADM
 CHECKED BY: BP REP
 DRAWN BY: ALLIANCE PM
 VERSION: PROJECT NO:
21730

DRAWING TITLE:
IRRIGATION DETAILS

SHEET NO:
L-5

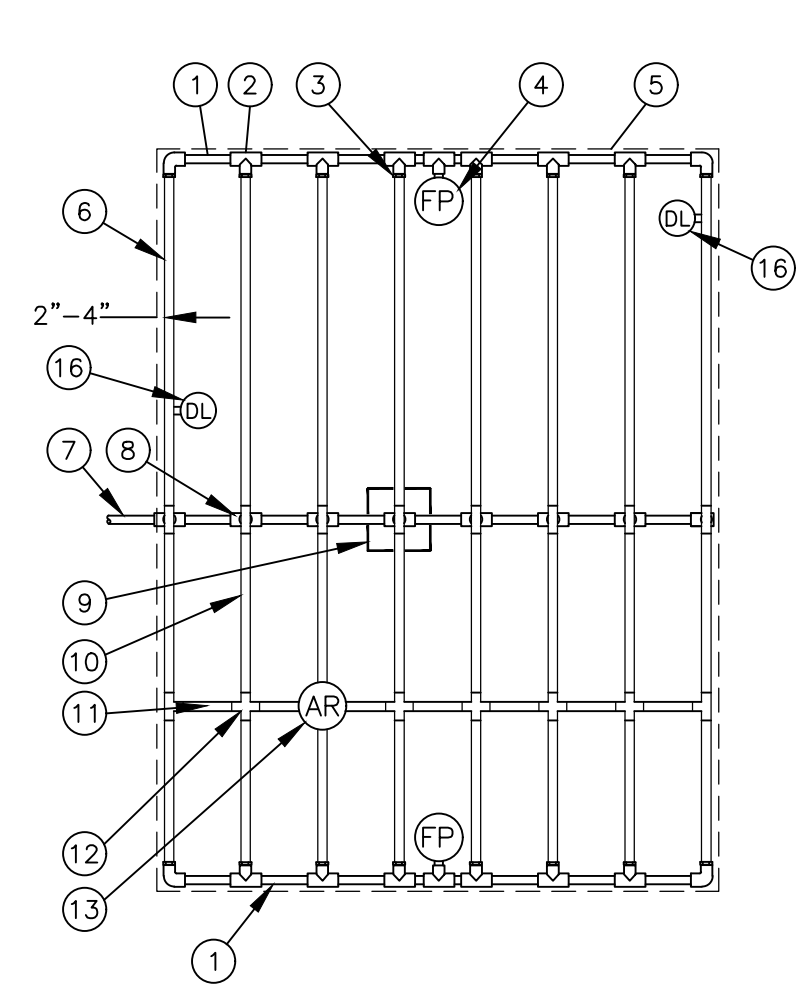
UTILITY CONFLICT NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POT-HOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 48 HOURS IN ADVANCE AND THEN POT-HOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

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

Scale: 1" = 1' J. VARLEY, Xref: 11/15/2015 10:06:06 AM

IRRIGATION DETAILS

FOR
ARCO ampm PUYALLUP
SEC. 33, TWN. 20 N, RGE. 4 E, W.M.
CITY OF PUYALLUP, PIERCE COUNTY

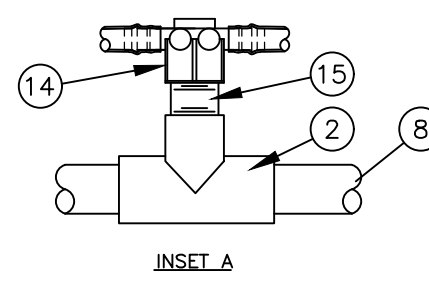


- 1 PVC EXHAUST HEADER
- 2 PVC SCH 40 TEE OR EL (TYPICAL)
- 3 BARB X MALE FITTING
- 4 FLUSH POINT (TYPICAL) SEE DETAIL
- 5 PERIMETER OF AREA
- 6 PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
- 7 PVC SUPPLY PIPE FROM CONTROL ZONE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- 8 PVC SUPPLY MANIFOLD
- 9 CONNECTION FROM SUPPLY MANIFOLD TO DRIPLINE (TYPICAL)- SEE INSET A

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.

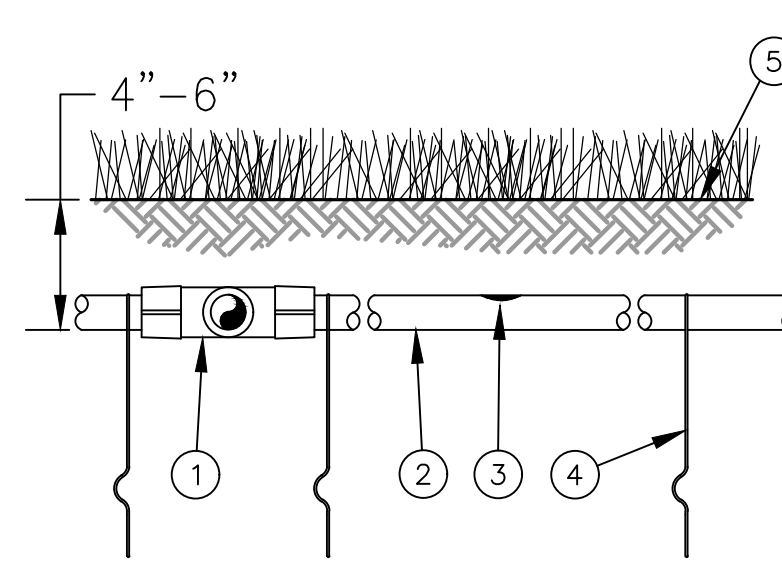
- 10 SUB-SURFACE DRIPLINE
- 11 BLANK TUBING
- 12 BARB X BARB INSERT TEE OR CROSS:
- 13 1/2" AIR RELIEF VALVE
- 14 BARB X FEMALE FITTING:
- 15 3/4" PVC NIPPLE, LENGTH AS NECESSARY
- 16 DRIPLINE INDICATOR. SEE DETAIL FOR ADDITIONAL INFORMATION

Inlet Pressure psi	Dripline Maximum Lateral Lengths (Feet)		
	12" Spacing Nominal Flow (gph)	18" Spacing Nominal Flow (gph)	24" Spacing Nominal Flow (gph)
15	273	155	314
20	318	169	353
30	360	230	413
40	395	255	465
50	417	285	528
60	450	290	596



DRIPLINE CENTER FEED LAYOUT

NOT TO SCALE

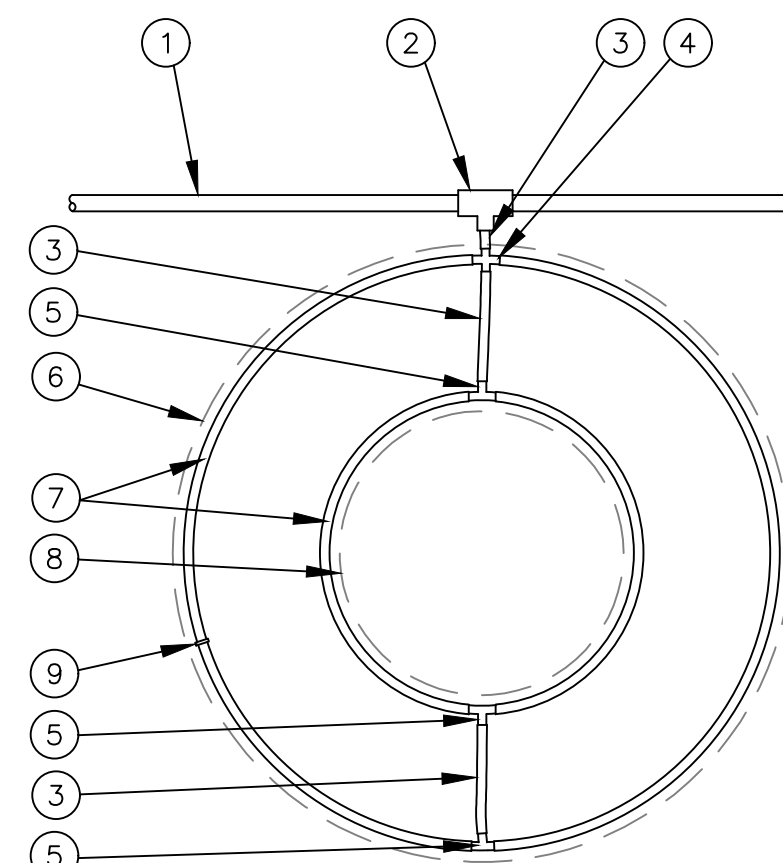


- 1 EASY FIT COMPRESSION TEE
- 2 SUB-SURFACE DRIPLINE
- 3 INLINE DRIP EMITTER
- 4 TIE DOWN STAKE
- 5 TURF/FINISH GRADE OR SHRUB BED WITH MULCH

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

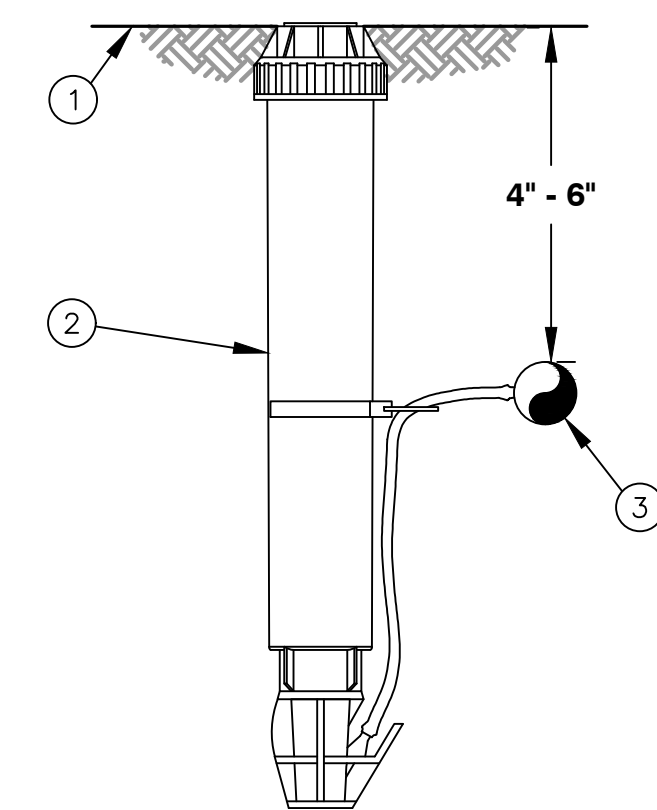
NOTES:
1. DISTANCE BETWEEN LATERAL RINGS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, AND TREE CANOPY. SEE MANUFACTURER DRIPLINE INSTALLATION GUIDE FOR SUGGESTED SPACINGS.
2. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
3. AT FITTINGS WHERE THERE IS A CHANGE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

DRIPLINE END FEED LAYOUT

NOT TO SCALE

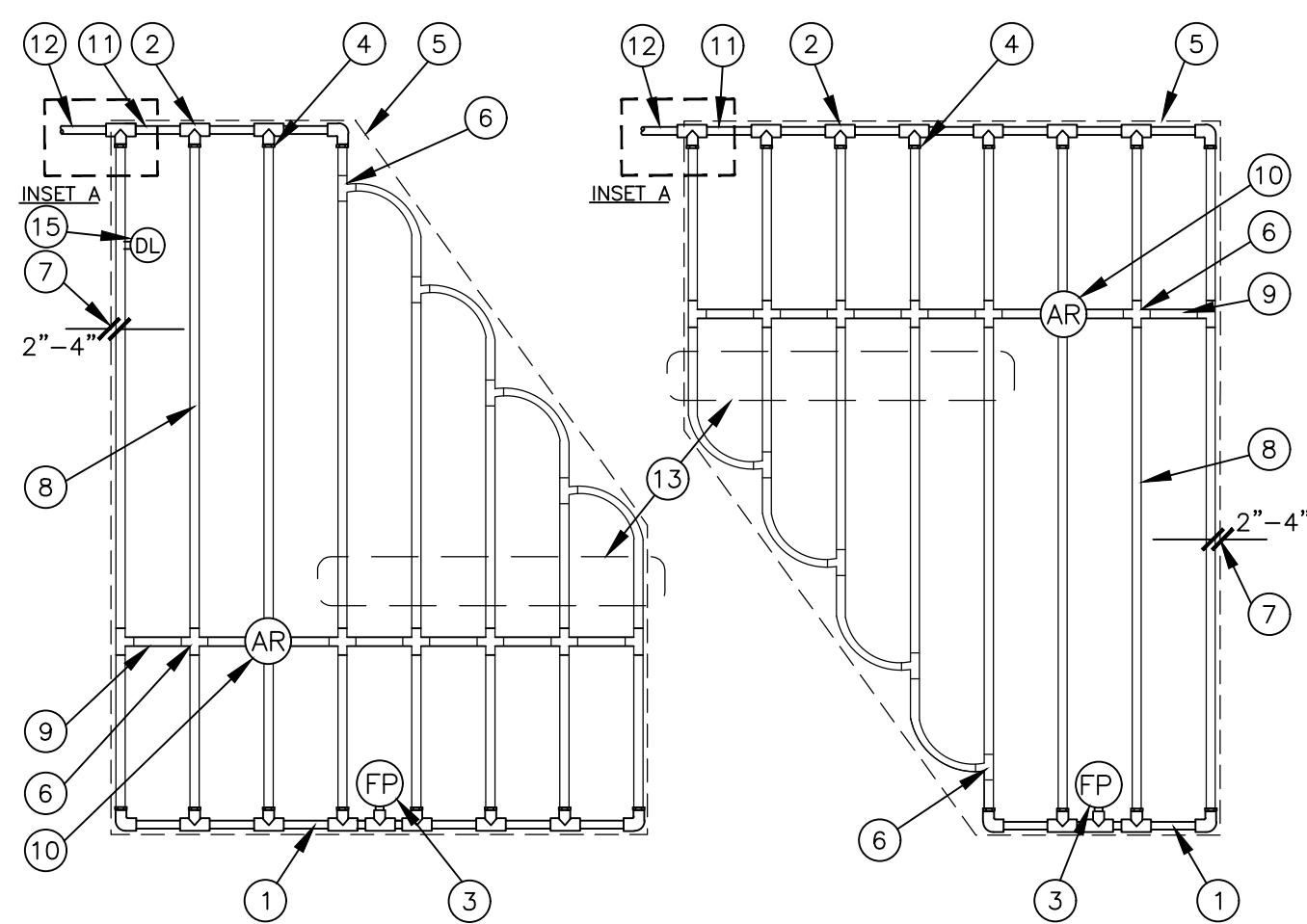


- 1 FINISH GRADE/TURF
- 2 OPERATION INDICATOR
- 3 SUB-SURFACE DRIPLINE: SEE IRRIGATION SCHEDULE

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 1/4 PATTERN. THE FLOW FROM THE NOZZLE, 0.3 GPM, SHOULD BE ACCOUNTED FOR IN THE SYSTEM DESIGN.

DRIP IRRIGATION DRIPLINE INDICATOR

NOT TO SCALE



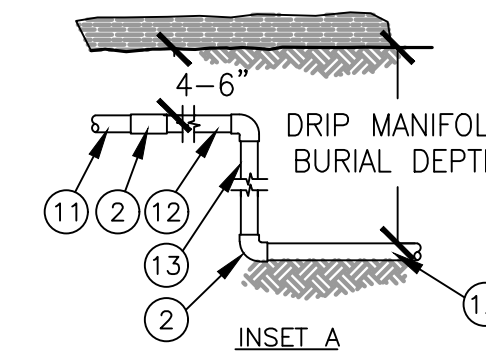
DRIPLINE IRREGULAR SHAPED LAYOUT

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 1/2" 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 ADD'L INFO

Inlet Pressure psi	Dripline Maximum Lateral Lengths (Feet)		
	12" Spacing Nominal Flow (gph)	18" Spacing Nominal Flow (gph)	24" Spacing Nominal Flow (gph)
15	273	155	314
20	318	169	353
30	360	230	413
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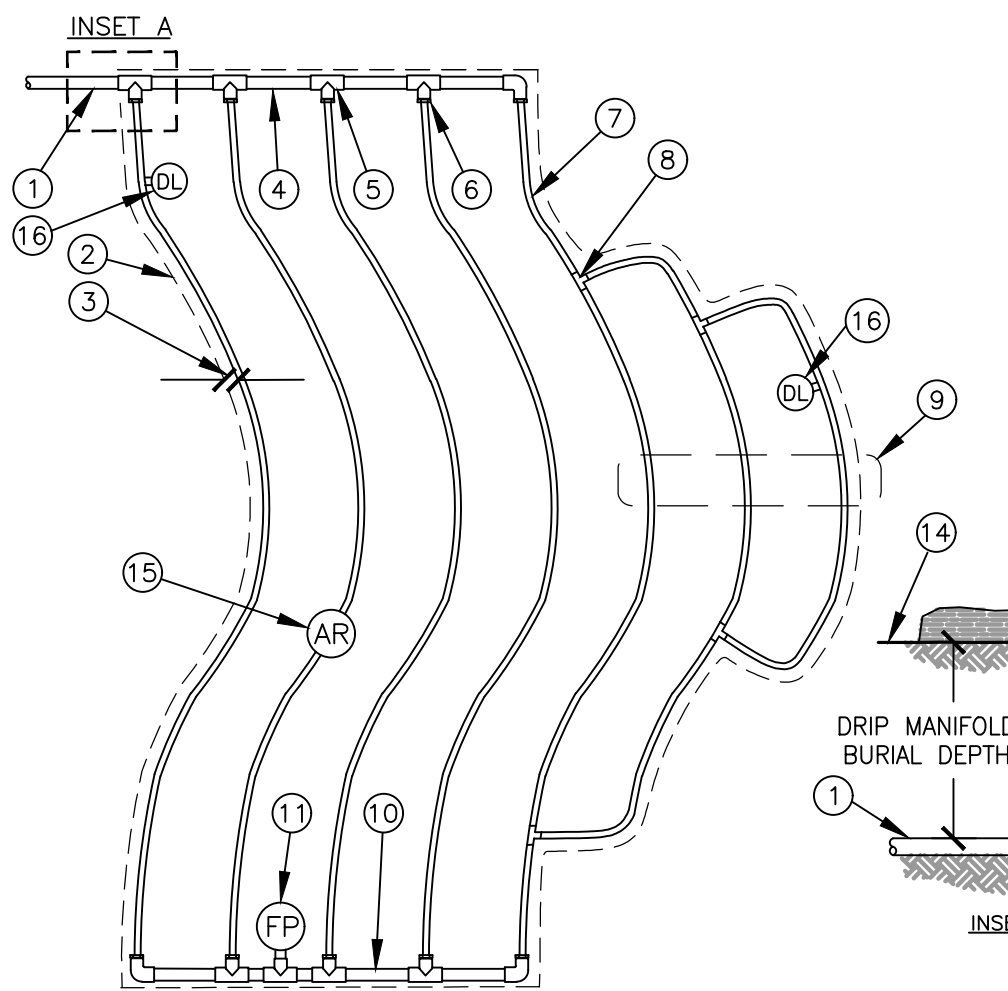
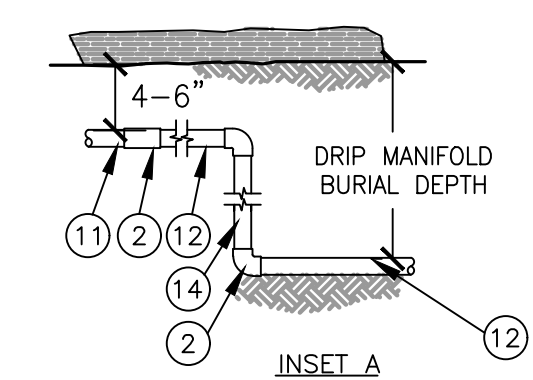


NOTE:
AIR/VACUUM RELIEF VALVE CANNOT BE CONNECTED LOWER THAN DRIPLINE LATERALS. FOR USE ON ZONES OF 7 GPM OR LESS ONLY (PLUMBED TO TUBING).

1/2" AIR/VACUUM RELIEF VALVE DETAIL

NOT TO SCALE

- NOTES:
- 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.



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 BARB 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 ADD'L INFO

DRIPLINE ODD CURVES LAYOUT

NOT TO SCALE

UTILITY CONFLICT NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POT-HOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 48 HOURS IN ADVANCE AND THEN POT-HOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.



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

CITY OF PUYALLUP
Planning Division
Approved Landscape Plan
(253) 864-4165

Staff: _____
Date: _____

THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE PLANNING MANAGER, DESIGNER, OR PROJECT PLANNER.

NOTE: If street trees are required, Call Planning Division for final inspection: (253) 864-4165 (Option 3). Street trees are required around street trees in accordance with city standard detail. Top soil shall be installed in accordance with city standards - field verification required. Failure to install top soil and root barriers in accordance with city standard may result in rejection of installation.

APPROVED

BY: _____
CITY OF PUYALLUP
WATER PURVEYOR

DATE: _____

NOTE: THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE WATER PURVEYOR.

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

SWC S MERIDIAN
@ HIGHWAY 512
PUTALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: ALLIANCE TEAM:
CHECKED BY: BP REP:
DRAWN BY: ALLIANCE PM:
VERSION: _____ PROJECT NO.: **21730**

DRAWING TITLE:
IRRIGATION DETAILS

SHEET NO.: **L-6**

CLIENT:

bp

ARCO
BP WEST COAST PRODUCTS, LLC

B

Barghausen Consulting Engineers, Inc.

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

NO.	DATE	REVISION DESCRIPTION

SEAL:

STATE OF WASHINGTON
JEFF M. VARLEY, ON
LICENSED LANDSCAPE ARCHITECT
LICENSE NO. 17460-0203-2015

Scale: 1" = 1'-0"

10/12/2015 10:06:06 AM C:\projects\irrigation\3400 am/pm\3400 am/pm.dwg: 8/15/2015 10:06:06 AM