CITY OF ASPEN

Parks and Open Space

THE FOLLOWING EXAMPLE PLANS SIMPLY DEMONSTRATE POSSIBLE FORMATTING OF SHEETS AND **DO NOT CONSITUTE PLANS THAT NECESSARILY COMPLY WITH THE ACTUAL WATER EFFICIENT LANDSCAPING STANDARDS** (WELS).

IT IS UNDERSTOOD THAT EVERY PROJECT IS DIFFERENT AND REQUIRE SLIGHTLY DIFFERENT FORMATTING, CONTENT, and NUMBER OF SHEETS.

THERE ARE FOUR MAIN COMPONENTS OF A COMPLETE WELS PLANS SET, THEY INCLUDE:

1. SITE PLAN
2. LANDSCAPE/PLANTING DESIGN PLAN
3. IRRIGATION DESIGN PLAN
4. WATER BUDGET ANAYSIS AND CALCULATION WORKSHEET (INSERT THIS WORKSHEET ON ONE OF THE ABOVE THREE PLANS)

THE FOLLOWING PAGES CONTAIN EXAMPLES OF THE ABOVE FOUR MAIN COMPONENTS.

PLANTING AND TRANSPLANTING

1. PLANT MATERIAL IS TO BE HEALTHY SPECIMENS FREE FROM DISEASE OR DAMAGE. MAINTAINED IN EXCELLENT CONDITION WHILE ON THE JOBSITE. THE LANDSC… INSPECT PLANT MATERIAL UPON ARRIVAL TO JOBSITE AND WILL REJECT PL… DOES NOT MEET THE STANDARDS DESCRIBED WITHIN THE CONTRACT DOCUMENT…
2. LANDSCAPE MATERIALS TO BE STORED UNDER SECURED TARPS OR SHEE… PROTECT AGAINST WIND, RAIN AND SNOW DAMAGE.
3. STOCKPILED PLANT MATERIAL TO BE PLACED IN THE SHADE AND PROPERLY HAND-WATERED UNTIL PLANTED.
4. THE LANDSCAPE ARCHITECT WILL PERIODICALLY INSPECT PLANT MATERIAL STOCKPILED AND/OR PLANTED ON SITE DURING THE COURSE OF CONSTRUCTION. PLANT MATERIAL NOT MEETING THE STANDARDS CONTAINED WITHIN THE CONTRACT DOCUMENTS SHALL BE REPLACED AT NO COST TO THE OWNER.
5. PROVIDE MATCHING SIZES AND FORMS FOR EACH PLANT OF THE SAME SPECIES UNLESS OTHERWISE INDICATED.
6. THE CONTRACTOR IS TO VERIFY ALL QUANTITIES. IN CASE OF DISCREPANCIES, GRAPHICALLY SHOWN QUANTITIES SHALL TAKE PRECEDENCE.
7. ALL MATERIALS USED SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARDS FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
8. ALL TREES MUST BE SOURCED FROM A REGION COMPARABLE IN CLIMATE TO THE HIGH ROCKIES (I.E. WY,ID, CO, UT, MT)
9. TREES TO BE HEALTHY, FREE OF DISEASE AND … SINGLE-STEMMED UNLESS OTHERWISE NOTED.
10. ALL PLANT MATERIAL SHALL BE INSTALL… SPECIFICATIONS CONTAINED WITHIN THE CONTRACT DOCUMENTS. ANY NECE… CONTRACTOR SUPPORTS MATERIALS/METHODS SHALL BE SUBMITTED TO THE L… REVIEW AND APPROVAL PRIOR TO INSTALLATION.
11. THE CONTRACTOR … FOR NEW TREES ONLY PER LANDSCAPE ARCHITECT DIRECTION.
12. THE CO… LOCATIONS OF ALL TREES AND B&B SHRUBS FOR LANDSCAPE AP… AL PRIOR TO INSTALLATION.
13. …TERIALS THAT ARE NOT BIO-DEGRADABLE SHALL BE REMOVED FROM THE ROOT B… BALL BE FREE OF WEEDS.
14. SPE… PLANT MATERIAL SIZES SHALL BE CONSIDERED MINIMUM SIZES.
15. FINISH GRADE OF PLANTING BEDS SHALL BE ONE (1) INCH BELOW ADJACENT FLATWORK UNLESS SPECIFIED OTHERWISE.
16. ALL VEGETATION PROPOSED FOR INSTALLATION OUTSIDE THE BUILDING ENVELOPE TO BE NATIVE UNLESS OTHERWISE NOTED. PLANTING PROPOSED TO OCCUR OUTSIDE THE BUILDING ENVELOPE IS FOR RESTORATION PURPOSES ONLY OR IS SPECIFIC TO UTILITIES RESTORATION.
17. SIX (6) INCH TOPSOIL SHALL BE PROVIDED FOR ALL LAWN, TURF, AND NATIVE PLANTING ZONES. EIGHTEEN (18) INCH PLANT MIX SHALL BE PROVIDED FOR ALL PERENNIAL PLANTING BEDS UNLESS OTHERWISE NOTED.

SEEDING/ FERTILIZER/ SODDING

1. ALL NEWLY REGRADED OR OTHERWISE DISTURBED SLOPES ARE TO BE REVEGETATED.
2. SEED MIXTURES AND FERTILIZER SHALL BE APPLIED PER THE REQUIREMENTS OF THE GOVERNING JURISDICTIONS, UNLESS OTHERWISE NOTED.
3. ALL SEED MUST BE CERTIFIED WEED FREE. NO SEED CAN CONTAIN ANY SPECIES ON THE CITY, COUNTY OR STATE NOXIOUS WEED LISTS. SEED MIX SUPPLY SHALL HAVE THE CERTIFIED SEED (BLUE TAG) OR SOURCE IDENTIFIED SEED (YELLOW TAG) ATTACHED. ONLY SEED WITH A COMPLETE ANALYSIS LABEL ON THE BAG AND A CURRENT GERMINATION TEST CONDUCTED BY AN ACCREDITED LABORATORY WILL BE ACCEPTED.
4. SEEDING SHALL OCCUR IN THE EARLY SPRING AND LATE FALL. SEEDING SHALL NOT BE PERFORMED WHEN THE GROUND IS FROZEN. FOR WARM SEASON SPECIES, SEEDING IN LATE SPRING OR EARLY SUMMER IS MORE LIKELY TO ACCOMPANY TEMPERATURES WARM ENOUGH TO SUPPORT GERMINATION. SEED THE SITE AS SOON AS FINAL GRADING AND TOPSOIL PLACEMENT HAVE OCCURRED TO MINIMIZE EROSION AND WEED ESTABLISHMENT ON THE PROJECT. DURING PERIODS OF TIME WHEN SEEDING CANNOT BE ACCOMPLISHED, SOILS SHALL NOT REMAIN UNPROTECTED.
5. UNLESS OTHERWISE NOTED, HAND BROADCAST OF SEED SHALL BE USED ON ALL SLOPES, INCLUDING THOSE THAT ARE STEEP (GREATER THAN 33%), EXTREMELY ROCKY, REMOTE OR INACCESSIBLE. SEED RATE WILL VARY PER SEED MIXTURE SPECIFIED. BROADCAST SEEDING REQUIRES DOUBLE OR TRIPLE THE SEEDING RATE OF DRILL SEEDING, AND CALIBRATION OF SEEDING RATES IS LESS PRECISE THAN WITH DRILL SEEDING. SOILS TO BE RAKED OR HARROWED TO ELIMINATE CRUSTING BEFORE ACCEPTING BROADCAST SEED. CARE SHALL BE TAKEN TO ENSURE UNIFORM COVERAGE (EVEN SEED APPLICATION RATES) OVER THE AREA. SEEDING SHALL NOT OCCUR DURING WINDY WEATHER.
6. HAND RAKE SEED INTO TOPSOIL NO MORE THAN 3/4 INCH DEEP TO COVER. SOIL / SEED CONTACT IS CRITICAL FOR GROWTH.
7. DRILL SEEDING, WHEN INDICATED IN THE CONTRACT DOCUMENTS, MAY OCCUR ON SLOPES OF 33% OR FLATTER BUT NOT IN AREAS OF EXTREMELY ROCKY SOILS. SEED TO A DEPTH OF 1/4 TO 1/2 INCH. DRILL TUBE SPACING SHOULD BE SIX (6) TO SEVEN (7) INCHES. SEEDING SHOULD BE CONDUCTED ALONG THE CONTOUR OF THE SLOPE TO AVOID EROSION FROM WATER FLOWING DOWN DRILL FURROWS. SEEDING RATE INDICATED IN THE DRAWINGS IS CONSIDERED A MINIMUM RATE.
8. HYDROSEEDING, WHEN INDICATED IN THE CONTRACT DOCUMENTS, SHALL BE SPRAYED ON A ROUGHENED SLOPE USING A HYDROSEEDING MACHINE AND SHALL BE USED TO REACH AREAS THAT ARE INACCESSIBLE BY BROADCAST METHODS. USE SHALL BE LIMITED TO STEEP (GREATER THAN 33%), INACCESSIBLE SLOPES IN AREAS WITH ADEQUATE AND DEPENDABLE MOISTURE DURING THE GROWING SEASON. HYDROMULCHING MUST OCCUR AS A SEPARATE PROCESS AFTER HYDROSEEDING. DO NOT MIX MULCH TOGETHER IN ONE WATER APPLICATION PROCESS AS THIS WILL PREVENT SEEDS FROM INTO CONTACT WITH THE SOIL.
9. SEEDED AREAS SHALL BE MAINTAINED FREE OF WEEDS TO ALLOW THE DESI… THRIVE WITHOUT THE CROWDING TENDENCIES OF AGGRESSIVE WEEDS.
10. ALL PLANT MATERIAL SHOULD RECEIVE AN ORGANIC FERTILIZER … ION FOLLOWING INSTALLATION. TYPE AND APPLICATION RATE AND METHOD OF AP… SPECIFIED BY THE CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT.
11. EXCESS FERTILIZER SHALL BE DISPOSED OF PROPERLY OFF-SITE. IT SHALL NOT BE DISPOSED OF IN STORM DRAINS AND/OR DRYWELLS.

SOIL AMENDMENT CRITERIA AND PREPARATION

1. TOPSOIL OF GRASSES (INCLUDING TURF), SHRUBS, PERENNIALS, AND ANNUALS SHALL BE A SANDY LOAM TO A DEPTH OF AT LEAST 6 INCHES (6") CONTAINING AT LEAST 5 PERCENT (5%) ORGANIC MATTER BY VOLUME. TOPSOIL TO BE GOOD CLEAN ORGANIC SOIL (FREE OF WEEDS AND ROCKS).
2. TREE SOIL SHOULD HAVE A MINIMUM DEPTH OF 3 FEET (3'). BOTH TOPSOIL AND SUBSOIL LAYERS SHALL BE SANDY LOAM. THE TOP SOIL SHALL BE AT LEAST 6 INCHES (6") AND HAVE 5 PERCENT (5%) ORGANIC MATTER BY VOLUME AND SUBSOIL SHALL HAVE AT LEAST ONE TO THREE PERCENT (1 - 3%) ORGANIC MATTER BY VOLUME. IN GOOD EXISTING SOILS, DIG AND TURN THE SOILS TO THREE TIMES THE DIMENSION OF THE ROOT BALL. HARD OR COMPACTED SUB SOIL OR LOWER SOIL LAYERS SHOULD BE BROKEN UP TO CREATE ADEQUATE DRAINAGE AND AVOID TRAPPING WATER, CREATING SATURATED AND ANAEROBIC CONDITIONS IN THE UPPER SOIL LAYER. IN NEWLY DEVELOPED PLANTING SITES, SOIL DEPTH SHALL BE 20' DIAMETER AROUND THE TREES WHEN FEASIBLE AND TO A DEPTH OF 36".
3. A MINIMUM OF FOUR (4) CUBIC YARDS OF ORGANIC MATTER SOIL AMENDMENT PER ONE-THOUSAND SQUARE FEET OF LANDSCAPED AREA SHALL BE REQUIRED AS NECESSARY TO MEET THE 5 PERCENT (5%) ORGANIC MATTER SPECIFICATION.
4. SOIL AMENDMENT ORGANIC MATTER SHALL CONSIST OF EITHER CLASS I AND CLASS II COMPOST.
5. AMENDMENT SHALL BE TILLED TO A MINIMUM DEPTH OF SIX INCHES (6").
6. SITE SHALL BE GRADED TO WITHIN TWO-TENTHS OF A FOOT (2/10TH') OF THE GRADING PLAN.
7. SITE SHALL BE FREE OF ROCKS AND DEBRIS OVER ONE INCH (1") DIAMETER IN SIZE. ROCKS AND DEBRIS 0.5 INCH (0.5") TO ONE INCH (1") SHALL NOT EXCEED 5 PERCENT (5%) BY VOLUME AND GRAVEL 0.6 INCH (0.6") TO 1.25 INCHES (1.25") SHALL NOT EXCEED 5 PERCENT (5%) BY VOLUME. PARTICLES SUCH AS CONCRETE, BRICK, GLASS, METAL, WOOD OR PLASTIC GREATER THAN ONE INCH (1") SHALL NOT BE ALLOWED. THE TOTAL VOLUME OF THESE MATERIALS SMALLER THAN ONE INCH (1") SHALL NOT EXCEED 5 PERCENT (5%).
8. SITE SHALL BE FREE OF DIRT CLODS OVER THREE-QUARTER INCH (3/4") DIAMETER IN SIZE. DRYLAND SEED AREAS MAY CONTAIN DIRT CLODS UP TO TWO INCH (2") DIAMETER IN SIZE.
9. STOCKPILING - STRIPPING AND STOCKPILING OF INDIGENOUS SOIL (TOPSOIL) SHALL BE REQUIRED DURING CONSTRUCTION (EXCEPT AS WAIVED BY THE CITY OF ASPEN). THE REPLACEMENT OF THIS SOIL, PLUS ADDITIONAL SOIL AMENDMENTS, ARE CRITICAL TO SUCCESSFUL PLANT MATERIAL ESTABLISHMENT, ONGOING HEALTH, AND EFFICIENT USE OF WATER THROUGH THE LIFE OF THE PROJECT.
10. THE SOIL SHALL HAVE NO HERBICIDES, HEAVY METALS, BIOLOGICAL TOXINS OR HYDROCARBONS THAT IMPACT PLANT GROWTH OR EXCEED THE EPA'S STANDARDS FOR SOIL CONTAMINANT.
11. WRITTEN VERIFICATION OF APPROVED SOIL AMENDMENT TYPE AND VOLUME IS REQUIRED PRIOR TO INSPECTION.
12. REMOVING SOD AND AMENDING SOIL UNDER PROTECTED TREES REQUIRES HAND GRUBBING NO DEEPER THAN 4 INCHES (4"). ANY ADDITIONAL SOIL ABOVE EXISTING GRADE IS LIMITED TO A MAXIMUM 3 INC… (3").
13. ALL IRRIGATION WORK PERFORMED UNDER PROTECTED TREES REQUIRES HAND GRUBBING NO… THAN 4 INCHES (4").

IRRIGATION

1. REFERENCE IRRIGATION SHEETS IR100 - IR103 FOR IRRIGATION PLAN AND DETAILS. SUPPLEMENTAL INFORMATION IS INCLUDED IN NOTES BELOW.
2. ALL NEW TREES AND SHRUBS TO RECEIVE DRIP-TYPE IRRIGATION.
3. ALL REVEGETATED AREAS TO RECEIVE SPRAY-TYPE IRRIGATION FOR FIRST TWO GROWING SEASONS MINIMUM.
4. THE USE OF LOW FLOW IRRIGATION IS REQUIRED FOR ANY VEGETATION THAT WILL EXCEED TWELVE (12) INCHES MATURE HEIGHT.
5. ALL SPRAY-TYPE IRRIGATION TO BE DIRECTED AWAY FROM STRUCTURES.
6. INSTALL SPRAY HEADS ALONG SIDEWALKS ON POP-UP RISERS.
7. LOCATE HEADS SO THEY ARE PROTECTED FROM TRAVEL AND DO NOT CAUSE WATER TO FALL ON PAVERS, MASONRY OR OTHER ARCHITECTURAL SURFACES.
8. ADJUST HEAD LOCATION IF SPRAY IS DETRIMENTAL TO OR BLOCKED BY TREE, SHRUB OR STRUCTURE, MAINTAINING EVEN COVERAGE OF PLANTING AREAS.
9. THE GENERAL CONTRACTOR IS TO COORDINATE SIZE AND LOCATION OF SLAB PENETRATIONS FOR IRRIGATION EQUIPMENT WITH THE MECHANICAL CONTRACTORS.
10. INSTALL MAIN LINES TO SLOPE AT 1% MINIMUM TO MANUAL DRAIN VALVES LOCATED AT LOW POINTS OF THE MAIN SYSTEM.
11. INSTALL 3/4 INCH POLYETHYLENE LATERAL LINES TO SLOPE AT 1% MINIMUM TO AUTOMATIC DRAIN VALVES LOCATED AT LOW POINTS OF LATERAL SYSTEMS.
12. TRENCHES TO BE OF SUFFICIENT DEPTH TO PROVIDE 18 INCHES OF COVER OVER LATERAL LINES. SLEEVED LINES SHALL HAVE A MINIMUM COVER OF 24 INCHES. TRENCHES ARE TO BE BACKFILLED WITH MATERIAL FREE OF ROCKS GREATER THAN 3/4 INCH IN DIAMETER.
13. INSTALL BACKFLOW PREVENTER(S) IN COORDINATION WITH THE GC. BACKFLOW PREVENTERS SHALL BE INSTALLED PLUMB AND SQUARE WITH ADJACENT PAVEMENT EDGES OR STRUCTURES. COLOR, BLACK.
14. CONTROL VALVE BOX AND HEAD BOX LOCATIONS TO BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. COLOR, BLACK.
15. THE FINAL LOCATION AND EXACT POSITIONING OF THE CONTROL STATION SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE OR GENERAL CONTRACTOR PRIOR TO INSTALLATION.
16. VALVE BOXES SHALL BE INSTALLED FLUSH WITH FINISH GRADE. ALIGN VALVE BOXES WITH ADJACENT PAVEMENT EDGES OR STRUCTURES. VALVE BOXES TO BE PLACED A MINIMUM OF 12 INCHES FROM AND PARALLEL TO CURBS AND WALKS. GROUPED VALVES TO BE EQUALLY SPACED AND PARALLEL. CONCEAL ALL BOXES IN PLANTING BEDS WHERE POSSIBLE AND COVER WITH MULCH. VALVE BOXES SHALL BE INTEGRAL PLASTIC WITH BOLT DOWN LID; COLOR, BLACK.
17. CONTRACTOR TO MAINTAIN A SET OF "AS-BUILT" DRAWINGS THROUGHOUT CONSTRUCTION AND DELIVER THESE DRAWINGS TO THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT UPON COMPLETION.
18. EXCAVATIONS TO BE BACKFILLED TO PROCTOR DRY DENSITY, MINIMUM. THE CONTRACTOR SHALL REPAIR SETTLED TRENCHES AND WARRANT THAT THE SYSTEM WILL REMAIN FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER COMPLETION OF WORK.
19. EXERCISE EXTREME CARE IN EXCAVATING AND WORKING NEAR EXISTING UTILITIES AND IN EXISTING TREE ROOT ZONES. CONTRACTOR MUST VERIFY THE LOCATION AND CONDITION OF ALL UTILITIES AND BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES. DAMAGE CAUSED BY OR DURING THE PERFORMANCE OF WORK IS TO BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. FIELD ADJUST SPRINKLER LOCATIONS SO AS TO AVOID CONFLICTS WITH UTILITIES (FIRE HYDRANTS, TRANSFORMERS, ETC).
20. FLUSH AND ADJUST SPRINKLER HEADS FOR OPTIMUM PERFORMANCE. THIS SHALL INCLUDE THROTTLING THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH SYSTEM.
21. IRRIGATION SYSTEM ARE TO BE COMPLETELY DRAINED ANNUALLY TO PROTECT PIPES FROM BURSTING PRIOR TO FREEZING TEMPERATURES.
22. PROVIDE CONDUIT/SLEEVES AS REQUIRED FOR IRRIGATION LINES THROUGH PAVEMENT AND OTHER HARDSCAPE ELEMENTS. COORDINATE INSTALLATION OF WORK TO ENSURE ALL ISOLATED PLANTING AREAS RECEIVE ACCESS TO THE IRRIGATION SYSTEM.

MULCHING

1. MULCH OR PLANTING BED DRESSING SHALL BE PLACED IN ALL PLANTING AREAS AS SPECIFIED. MULCH OR PLANTING BED DRESSING SHALL NOT BE PLACED WITHIN SIX (6) INCHES OF TREE TRUNKS. MULCHING SHOULD BE REPEATED ANNUALLY DURING THE AUTUMN TO A FOUR (4) INCH DEPTH.
2. THE SITE MUST BE MULCHED WITH WEED-FREE MULCH (HAY TO A FOUR (4) INCH DEPTH OR HYDROMULCH) AFTER SEEDING.
3. HYDROMULCH MUST BE APPLIED SEPARATELY FOLLOWING SEED APPLICATION. DO NOT OVERSPRAY AS THIS MAY RESULT IN EROSION. AN ORGANIC TACKIFIER SHALL BE ADDED TO THE SLURRY TO ENHANCE THE DURABILITY OF THE APPLIED MULCH COVER. APPLY AT A RATE OF 3,000 LBS PER ACRE (3360 KG/HA). ADD AN ORGANIC-BASED TACKIFIER AT THE RATE OF 150 LBS PER ACRE TO PREVENT EROSION.
4. HAY MULCH MUST BE WEED-FREE. HAY TO BE "CRIMPED" INTO THE SOIL SURFACE BY HAND ON STEEP SLOPES. ON FLAT SURFACES A MODIFIED DISC PLOW MAY BE UTILIZED TO DRIVE THE HAY STEMS INTO THE SOIL TO REDUCE SURFACE WIND SPEEDS AND SOIL DESICCATION. APPLY AT THE RATE OF 3,000 TO 4,000 LBS PER ACRE (3360-4480 KG/HA). ADD AN ORGANIC-BASED TACKIFIER AT THE RATE OF 150 LBS PER ACRE TO PREVENT EROSION.
5. FINE GRADE MULCH WITH INTEGRATED SOIL CONDITIONER SHALL BE USED IN AREAS PROXIMATE TO ARCHITECTURAL STRUCTURES TO RETURN NUTRIENTS TO THE SOIL, REDUCE MAINTENANCE AND MINIMIZE EVAPORATION. MINI-NUGGET TYPE DECORATIVE BARK MULCH MAY BE USED IN CONJUNCTION WITH SOIL CONDITIONER WHEN SPECIFIED IN THE CONTRACT DOCUMENTS.

SITEWORK ABBREVIATIONS

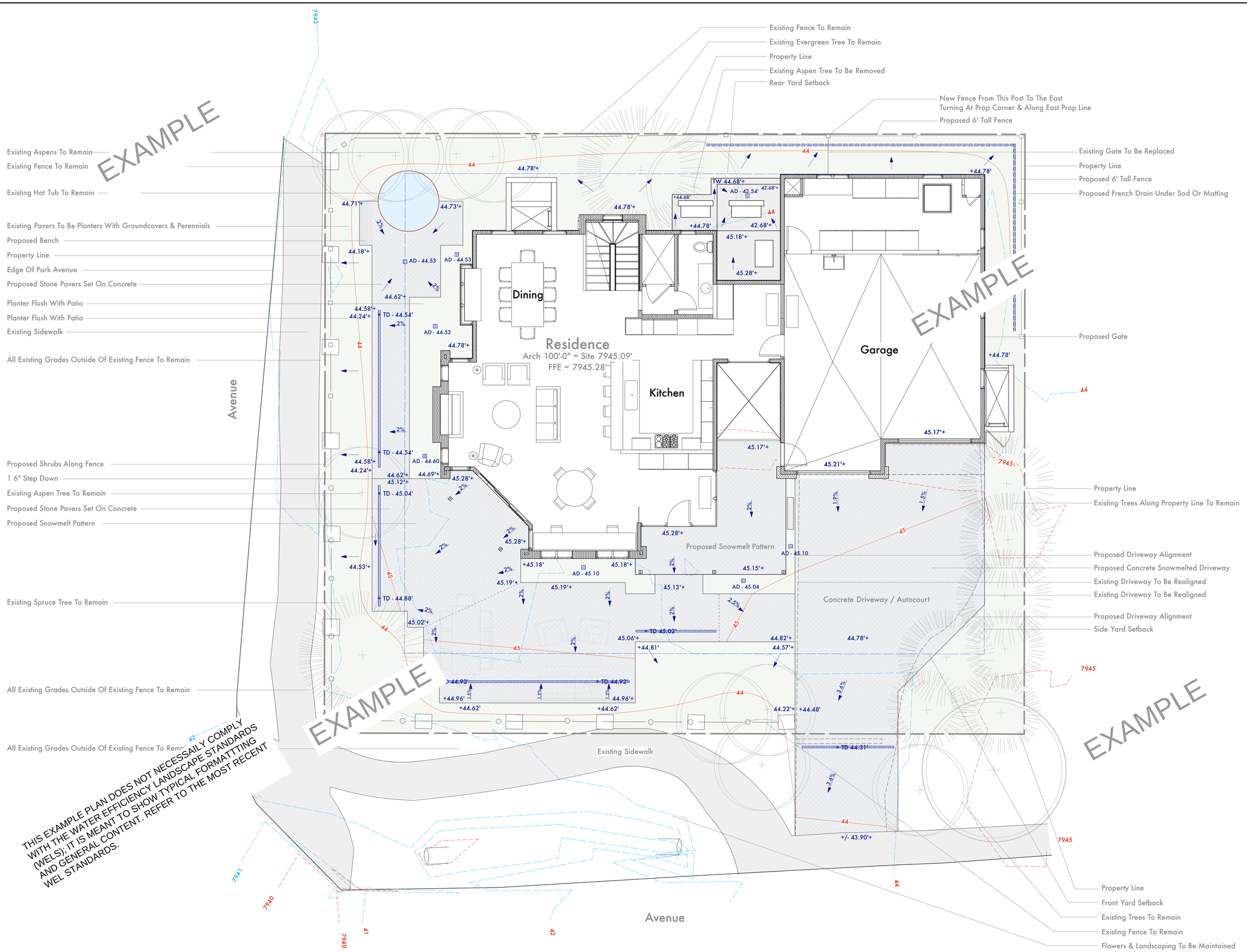
ARCH	ARCHITECTURE
AVG	AVERAGE
B&B	BALLED AND BURLAPPED
BC	BOTTOM OF CURB
BW	BOTTOM OF WALL
CAL	CALIPER
CF	CUBIC FOOT (FEET)
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTERLINE
CONC	CONCRETE
CONT	CONTINUOUS
CU	CUBIC
DEG	DEGREE
DEMO	DEMOLISH, DEMOLITION
DIA	DIAMETER
DTL	DETAIL
DWG	DRAWING
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ENG	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
EXP	EXPOSED
FFE	FINISH FLOOR ELEVATION
FG	FINISHED GRADE
FIN	FINISH
FL	FLOW LINE
FT	FOOT (FEET)
GA	GAUGE
GC	GENERAL CONTRACTOR
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HP	HIGH POINT
HT (H)	HEIGHT
IN	INCH (INCHES)
IRR	IRRIGATION
JT	JOINT
L	LENGTH
LP	LOW POINT
LT	LIGHT
MAX	M…
MIN	
MISC	
NIC	
	BEGINNING
	…, OF CURVATURE
	…DESTRIAN
	PERFORATED
	PROPERTY LINE
	POLYVINYL CHLORIDE
PVMT	PAVEMENT
QTY	QUANTITY
R	RADIUS
RE	REFERENCE
REV	REVISION, REVISED
ROW	RIGHT OF WAY
SF	SQUARE FOOT (FEET)
SIM	SIMILAR
SPECS	SPECIFICATIONS
SQ	SQUARE
STA	STATION
STD	STANDARD
TBD	TO BE DECIDED
TC	TOP OF CURB
THK	THICK
TOPO	TOPOGRAPHY
TP	TOP OF PAVEMENT/PAVER
TR	TOP OF RAMP
TS	TOP OF STEP
TW	TOP OF WALL
TYP	TYPICAL
VAR	VARIES
VEH	VEHICULAR
VIF	VERIFY IN FIELD
W	WIDTH
W/	WITH
W/O	WITHOUT
WT	WEIGHT
YD	YARD (YARDS)

MASTER FINISH SCHEDULE

DESCRIPTION/ DETAIL	SPECIFICATION
CONCRETE FLATWORK	UNDYED CONCRETE; EXPOSED AGGREGATE 3/8"- GREY AGGREGATE FROM WHITEWATER BUILDING MATERIALS (970) 242-7538, MEDIUM EXPOSURE; ETCH AGGREGATE SIZE TO EXPOSURE 1/8"-3/8"
STEEL PLANTER 1 & 6/L801	BLUED STEEL FINISH
BIKE RACKS 3/L800	DERO SWERVE BIKE RACK, SURFACE MOUNT, GALVANIZED FINISH
FIRE FEATURE 2/L800	UNDYED CONCRETE; SMOOTH FINISH
SEATWALL 4/L800	UNDYED CONCRETE; SMOOTH FINISH
AGGREGATE BAND	1/2" - 1" GUNNISON RIVER WASHED RO… …R BUILDING MATERIALS
SPA DECK	TREX COMPOSITE DECKI…
CONCRETE SITE WALLS	UNDYED CONCR…

THIS EXAMPLE PLAN DOES NOT NECESSAILY COMPLY WITH THE WATER EFFICIENCY LANDSCAPE STANDARDS (WELS); IT IS MEANT TO SHOW TYPICAL FORMATTING AND GENERAL CONTENT. REFER TO THE MOST RECENT WEL STANDARDS.

L



THIS EXAMPLE PLAN DOES NOT NECESSAILY COMPLY WITH THE WATER EFFICIENCY LANDSCAPE STANDARDS (WELS). IT IS MEANT TO SHOW TYPICAL FORMATTING AND GENERAL CONTENT. REFER TO THE MOST RECENT WEL STANDARDS.

Site Plan

(aka: LAYOUT PLAN)

Date:
Scale: 3/16"=1'-0"
Drawn By:
Revised:

Sheet:
L

PLANTING LEGEND

SYMBOL	ABBR.	COMMON NAME	BOTANICAL NAME	SIZE	QUANTITY	SPACING
TREES						
	Pt	ASPEN	POPULUS TREMULOIDES	2.5" CAL.	5	PER PLAN
	Pt	ASPEN	POPULUS TREMULOIDES	2" CAL.	14	PER PLAN
	PtE	COLUMNAR ASPEN	POPULUS TREMULA 'ERECTA'	2.5" CAL.	2	PER PLAN
	PtE	COLUMNAR ASPEN	POPULUS TREMULA 'ERECTA'	2" CAL.	11	PER PLAN
	PaC	NARROWLEAF COTTONWOOD	POPULUS ANGUSTIFOLIA 'CREEKSIDE'	2.5" CAL.	4	PER PLAN
	PaC	NARROWLEAF COTTONWOOD	POPULUS ANGUSTIFOLIA 'CREEKSIDE'	2" CAL.	1	PER PLAN
SHRUBS						
	CsI	COMPACT REDTWIG DOGWOOD	CORNUS SERICEA 'ISANTI'	#1 GAL.	30	PER PLAN
	Vm	DIABLO NINEBARK	PHYSOCARPUS OPULIFOLIUS 'DIABLO'	#1 GAL.	45	PER PLAN
	Ss	URAL FALSE SPIREA	SORBARIA SORBIFOLIA	#5 GAL.	36	PER PLAN
PERENNIALS						
	Bm	FALSE FORGET-ME-NOT	BRUNNERA MACROPHYLLA	#1 GAL.	83 SF	12" O.C. TRIANGULATED
	CaO	WHITE BLEEDING HEART	DICENTRA SPECTABALLIS 'ALBA'	#1 GAL.		12" O.C. TRIANGULATED
	PvH	HEAVY METAL SWITCHGRASS	PANICUM VIRGATUM 'HEAVY METAL'	#1 GAL.	321 SF	18" O.C. TRIANGULATED
	Ps	HUSKER RED PENSTEMON	PENSTEMON DIGITALIS 'HUSKER RED'	#1 GAL.	395 SF	12" O.C. TRIANGULATED
	Im	ROCKY MOUNTAIN IRIS	IRIS MISSOURIENSIS	#1 GAL.		12" O.C. TRIANGULATED
	Ps	HUSKER RED PENSTEMON	PENSTEMON DIGITALIS 'HUSKER RED'	#1 GAL.	214 SF	12" O.C. TRIANGULATED
	Dc	TUFTED HAIRGRASS	DECHAMPSIA CAESPITOSA	#1 GAL.	982 SF	18" O.C. TRIANGULATED
GROUNDCOVER						
	Bc	BERGENIA-HEARTI PIG SQUEAK			:	12" O.C. TRIANGULATED
NATIVE GRASS						
	Bd	BOUTELOUA DACT			SF	

NOTES

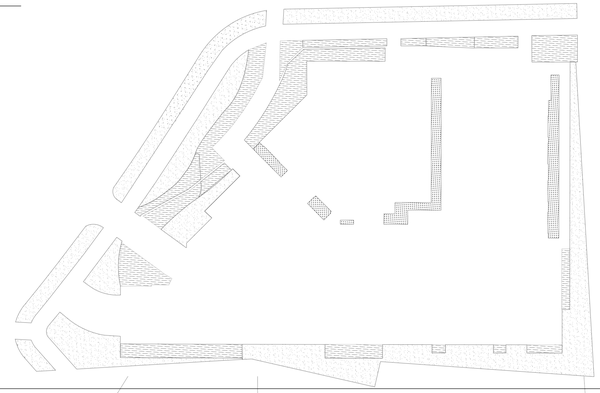
I HAVE COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPING STANDARDS AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE IN THE PLANTING PLAN

DATE

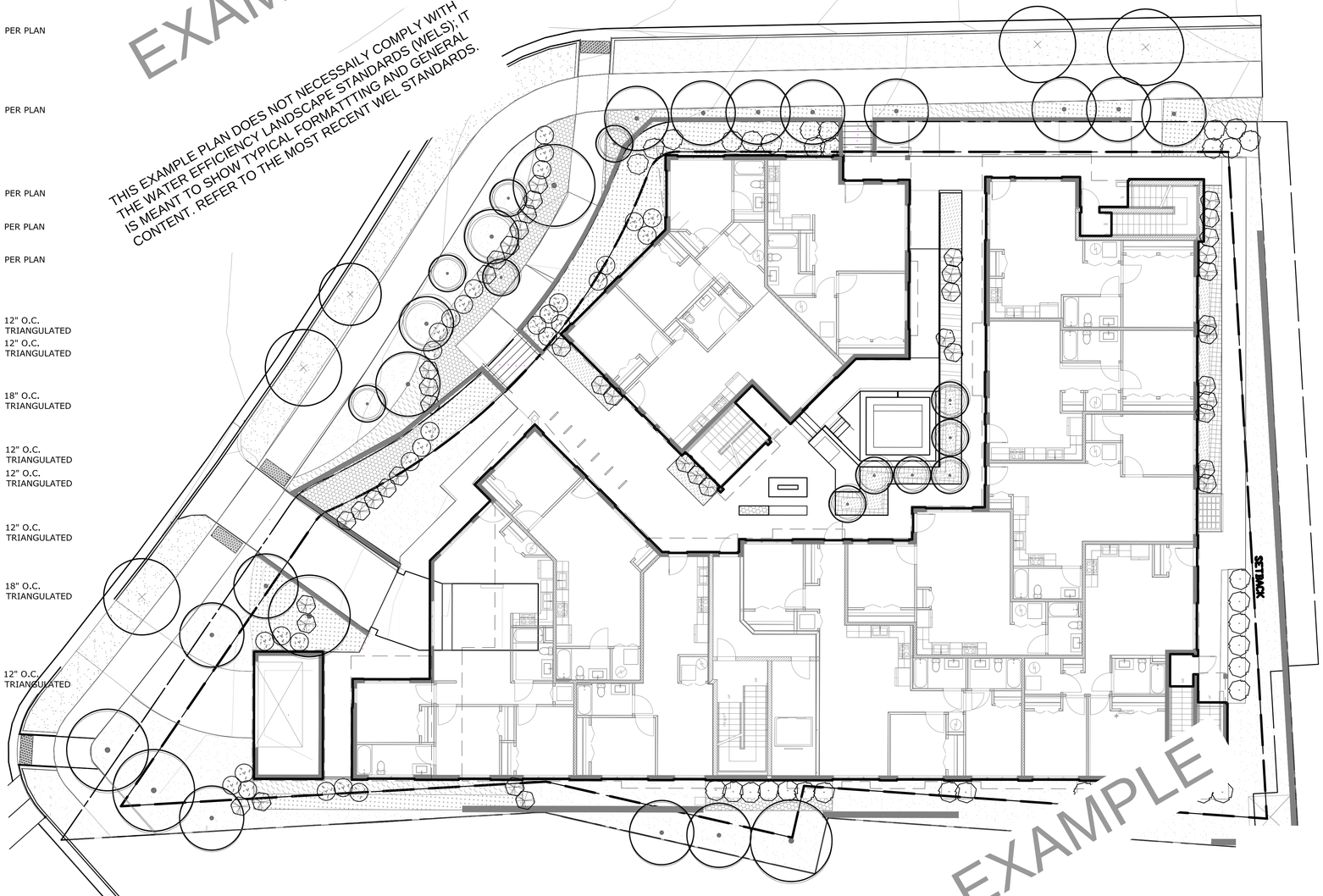
SIGNATURE, PRINTED NAME, AND CREDENTIALS

HYDROZONE LEGEND

IRRIGATION HYDROZONES	SQUARE FOOTAGE
ZONE 1 - PLANTERS- HIGH WATER	
ZONE 2 - NATIVE GRASS AND SHRUBS - LOW WATER	
ZONE 3 - NATIVE GRASS - LOW WATER	



THIS EXAMPLE PLAN DOES NOT NECESSAILY COMPLY WITH THE WATER EFFICIENCY LANDSCAPE STANDARDS (WELS); IT IS MEANT TO SHOW TYPICAL FORMATTING AND GENERAL CONTENT. REFER TO THE MOST RECENT WEL STANDARDS.



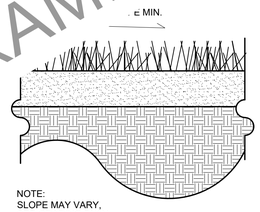
planting plan

date **I issue**

scale 0 5 10

north

L

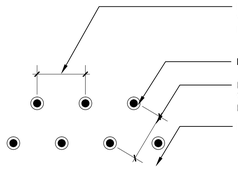


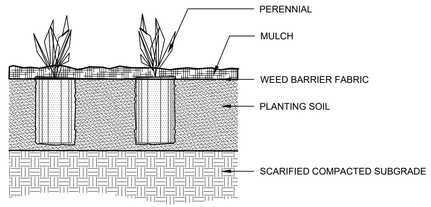
NOTE:
SLOPE MAY VARY,
SEE GRADING PLAN

1 Lawn

1" = 1'

9.1

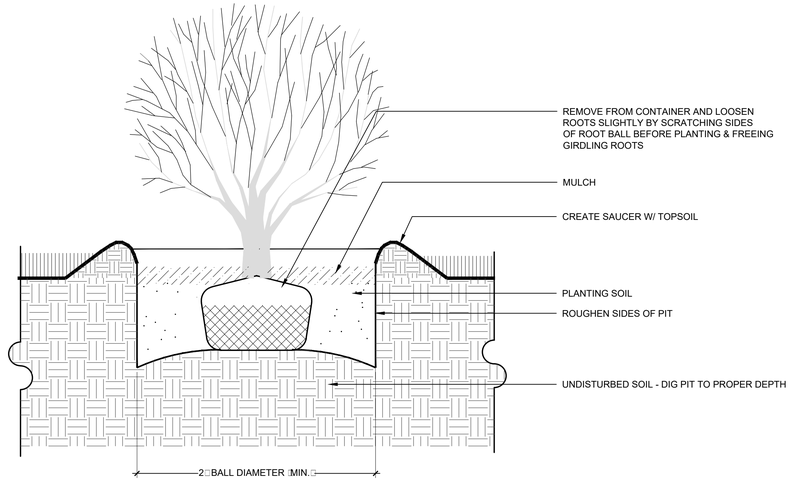




2 Perennial Planting

1" = 1'

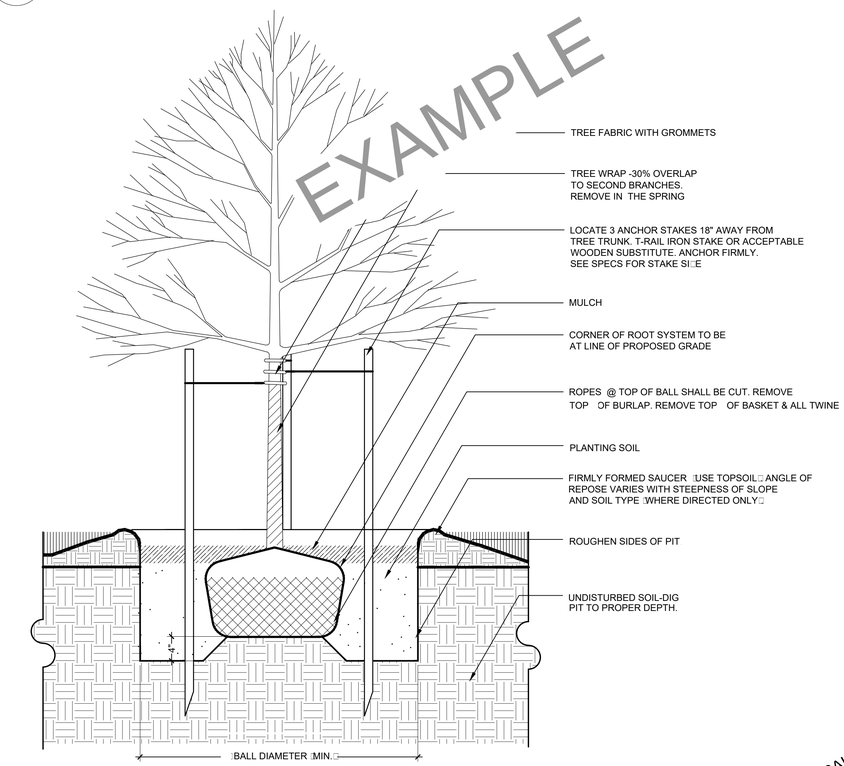
9.2



3 Shrub Planting

1" = 1'

9.3



4 Deciduous Tree

1" = 1'

9.4

SITE KEYNOTES:

		DETAIL / SHEET	SPEC. SECTION
9.0	**PLANTING AND LANDSCAPE**		
9.1	L□□□	1 / L11-01	000000
9.2	P□r□□□□□P□□t□□□	2 / L11-01	000000
9.3	S□r□□ P□□t□□□	3 / L11-01	000000
9.2	D□□d□□□s Tr□□ P□□t□□□	4 / L11-01	000000

THIS EXAMPLE PLAN DOES NOT NECESSAILY COMPLY WITH THE WATER EFFICIENCY LANDSCAPE STANDARDS (WELS); IT IS MEANT TO SHOW TYPICAL FORMATTING AND GENERAL CONTENT. REFER TO THE MOST RECENT WEL STANDARDS.

ISSUE DATE:

REVISIONS

#	DATE	DESCRIPTION

DRAWN: REVIEWED:

PRO□ECT NUMBER:

PLANTING DETAILS

SHEET NUMBER

L

EXAMPLE

RAIN GARDEN

RAIN GARDEN

RAIN GARDEN

RAIN GARDEN

25'-0" SETBACK

25'-0"

10' UTILITY EASEMENT

10'-0"

PROPERTY LINE

. ROAD

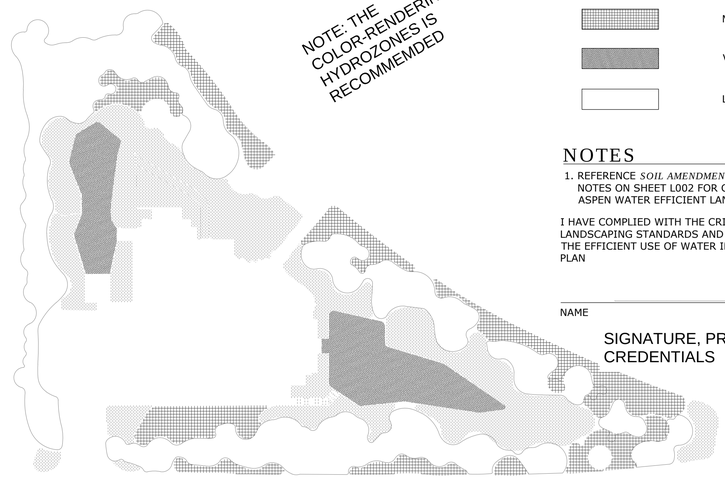
STREET

7875 7876 7877 7878 7879 7880

EXAMPLE

EXAMPLE

NOTE: THE COLOR-RENDERING OF HYDROZONES IS RECOMMEMDED



HYDROZONE LEGEND

- LOW WATER USE, 7015 SF
- MEDIUM WATER USE, 5400 SF
- VERY HIGH WATER USE, 2600 SF
- LOW WATER USE, 9635 SF

NOTES

1. REFERENCE *SOIL AMENDMENT CRITERIA AND PREPARATION* NOTES ON SHEET L002 FOR COMPLIANCE WITH THE CITY OF ASPEN WATER EFFICIENT LANDSCAPING STANDARDS.

I HAVE COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPING STANDARDS AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE IN THE PLANTING PLAN

NAME _____ DATE . . _____

SIGNATURE, PRINTED NAME AND CREDENTIALS

THIS EXAMPLE PLAN DOES NOT NECESSAILY COMPLY WITH THE WATER EFFICIENCY LANDSCAPE STANDARDS (WELS); IT IS MEANT TO SHOW TYPICAL FORMATTING AND GENERAL CONTENT. REFER TO THE MOST RECENT WEL STANDARDS.

planting plan

date l issue

north

scale 0 5 10

L

THE CITY OF ASPEN

WATER EFFICIENT LANDSCAPING STANDARDS AND ORDINANCE

WATER EFFICIENT LANDSCAPE WORKSHEET -- WATER BUDGET ANALYSIS

Note: Project Applicant must complete this worksheet as it is a required element of the Landscape & Irrigation Documentation Package.

SECTION A. GALLONS OF WATER NEEDED BY PLANT CATEGORY AND IRRIGATION TYPE:
The specific irrigation water needs of each hydrozone in the design should be determined using the following formula and factors:

Irrigation Water Budget = [(ETo x Plant Factor) - Re] x Irrigated Area / Irrigation Efficiency x 0.623

Where:

ETo = Reference Evapotranspiration = 27.4 inches/season (May through September)
Re = Effective Precipitation = 6.8 inches/season (May through September)
Irrigated Area = Hydrozone Area in Square Feet

Water Use Category	Plant Factor	Irrigation Method	Default Efficiency
Cool Season Turf	0.90	Overhead	75%
High	0.80	Drip	90%
Medium	0.65		
Low	0.40		
Very Low	0.25		

SECTION B. HYDROZONE INFORMATION TABLE AND WATER BUDGET CALCULATION:
Complete the hydrozone table for each hydrozone. Use as many rows as necessary to provide the square footage of landscape area per hydrozone.

Reference ET

27.4	inches/year
17.1	gallons/square foot

Effective Precipitation

6.8	inches/year
4.2	gallons/square foot

Hydrozone	Plant Water Use Type(s)	Plant Factor	Irrigation Method	Irrigation Efficiency	Hydrozone Area (Sq. Ft.)	Plant Water Need (gal/season)
Zone 1	H	0.80	Drip in Planters	0.90		
Zone 2	L	0.40	Overhead/ Drip to Shrubs	0.75		
Zone 3	L	0.40	Ovehead/ Drip to Shrubs	0.75		
TOTAL						

AVERAGE IRRIGATION WATER NEED - ALL ZONES* - In gallons/sq. ft./season

*** The average must be less than the Maximum Applied Water Budget of 7.5 gallons/sq.ft./season.**

Total area of irrigated public right-of-way: 0 Sq. Ft.
Total area of non-irrigated landscape: 0 Sq. Ft.

IRRIGATION LEGEND

- SLEEVES: CLASS 200 PVC
- MAINLINE PIPE: CLASS 200 PVC 1 1/4–INCH SIZE UNLESS OTHERWISE INDICATED
- LATERAL PIPE TO SPRINKLERS: CLASS 200 PVC 1–INCH UNLESS OTHERWISE INDICATED
- LATERAL PIPE TO EMITTERS: UV RADIATION RESISTANT POLYETHYLENE (3/4–INCH SIZE, ROUTING IS DIAGRAMMATIC)
- LATERAL PIPE TO TREE/SHRUB EMITTERS IN GRASS: 80 PSI RATED POLYETHYLENE (3/4–INCH SIZE, ROUTING IS DIAGRAMMATIC)
- UNCONNECTED PIPE CROSSING
- POINT–OF–CONNECTION ASSEMBLY
- M WATER METER AND CURB STOP ASSEMBLY (BY OTHERS)
- BACKFLOW PREVENTION ASSEMBLY: FEBCO 825–YA
- MASTER VALVE ASSEMBLY: TORO 220–27–04
- F FLOW SENSOR ASSEMBLY: RAINBIRD FS100B
- ISOLATION GATE VALVE ASSEMBLY: MATCO 514
- QUICK COUPLING VALVE ASSEMBLY: RAINBIRD 5RC
- DRAIN VALVE ASSEMBLY
- REMOTE CONTROL VALVE ASSEMBLY FOR SPRINKLER LATERALS RAINBIRD PEB (SIZED PER PLAN)
- REMOTE CONTROL DRIP VALVE ASSEMBLY: RAINBIRD XCZ–PRB–100–COM
- FLUSH CAP ASSEMBLY

A1 / 14 / 1" / Turf
- INDICATES CONTROLLER AND STATION NUMBER
- INDICATES LATERAL DISCHARGE (GPM)
- INDICATES VALVE SIZE (INCHES)
- INDICATES LANDSCAPE APPLICATION

- (A) IRRIGATION CONTROLLER UNIT WITH WIRELESS RAIN+FREEZE SENSOR CONTROLLER A: RAIN BIRD ESP–LXMEF with 22 Stations
- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/U SERIES 8 NOZZLE PRESSURE: 30 PSI RADIUS: 8 FEET FLOW (GPM): Q–0.26 H–0.52 F–1.05
- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/U SERIES 10 NOZZLE PRESSURE: 30 PSI RADIUS: 10 FEET FLOW (GPM): Q–0.41 H–0.82 F–1.64
- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/U SERIES 12 NOZZLE PRESSURE: 30 PSI RADIUS: 12 FEET FLOW (GPM): Q–0.65 H–1.30 F–2.60
- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/U SERIES 15 NOZZLE PRESSURE: 30 PSI RADIUS: 15 FEET FLOW (GPM): Q–0.92 H–1.85 F–3.70
- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/MPR SERIES 15SST OR 15EST NOZZLE, PRESSURE: 30 PSI PATTERN: 4 X 15 FEET FLOW (GPM): EST–0.61 SST–1.21

NOTE: SPRAY SPRINKLERS SHALL BE 12–INCH POP–UPS IN PERENNIAL BEDS AND 6–INCH IN GRASS AREAS.

- PENETRATION THROUGH STRUCTURE INTO PLANTER BOXES: LINK SEAL WATERPROOF FITTING
- 1–INCH COPPER PIPE ROUTED BENEATH STRUCTURE: BY MECHAN''

INSTALLATION GENERAL NOTES

1. THE SYSTEM DESIGN ASSUMES A MINIMUM DYNAMIC PRESSURE FOR THE IRRIGATION SYSTEM OF 70 PSI (PER CITY ENGINEER), AT A MAXIMUM DISCHARGE OF 12 GPM AT THE 3/4–INCH IRRIGATION POINT–OF–CONNECTION (POC). VERIFY PRESSURE AND FLOW ON SITE PRIOR TO CONSTRUCTION.
2. READ THOROUGHLY AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND INSTALLATION DETAILS FOR THIS AND RELATED WORK PRIOR TO CONSTRUCTION.
3. COORDINATE UTILITY LOCATES ("CALL BEFORE YOU DIG") OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
4. DO NOT PROCEED WITH THE INSTALLATION OF THE IRRIGATION SYSTEM WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. IF DISCREPANCIES IN CONSTRUCTION DETAILS, LEGEND, NOTES, OR SPECIFICATIONS ARE DISCOVERED, BRING ALL SUCH OBSTRUCTIONS OR DISCREPANCIES TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
5. THE DRAWINGS ARE DIAGRAMMATIC. THEREFORE, THE FOLLOWING SHOULD BE NOTED:
   A. ALTHOUGH IRRIGATION COMPONENTS MAY BE SHOWN OUTSIDE PLANTING AREAS FOR CLARITY, INSTALL IRRIGATION PIPE AND WIRING IN LANDSCAPED AREAS WHENEVER POSSIBLE.
   B. TREE AND SHRUB LOCATIONS AS SHOWN ON LANDSCAPE PLANS TAKE PRECEDENCE OVER IRRIGATION EQUIPMENT LOCATIONS. AVOID CONFLICTS BETWEEN THE IRRIGATION SYSTEM, PLANTING MATERIALS, AND ARCHITECTURAL FEATURES.
   C. USE ONLY STANDARD TEES AND ELBOW FITTINGS. USE OF TEES IN THE BULLNOSE CONFIGURATION, OR USE OF CROSS TYPE FITTINGS IS NOT ALLOWED.

...LLOWING COMPONENTS TO THE OWNER PRIOR TO THE ... OF THE PROJECT:

TWO (2) OPERATING KEYS FOR EACH TYPE OF MANUALLY OPERATED VALVES.

B. TWO (2) OF EACH SERVICING WRENCH OR TOOL NEEDED FOR COMPLETE ACCESS, ADJUSTMENT, AND REPAIR OF ALL ROTARY SPRINKLERS.

7. SELECT NOZZLES FOR SPRAY AND ROTARY SPRINKLERS WITH ARCS WHICH PROVIDE COMPLETE AND ADEQUATE COVERAGE WITH MINIMUM OVERSPRAY FOR THE SITE CONDITIONS. CAREFULLY ADJUST THE RADIUS OF THROW AND ARC OF COVERAGE OF EACH ROTARY SPRINKLER TO PROVIDE THE BEST PERFORMANCE.
8. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF IRRIGATION SLEEVING. SLEEVES ARE REQUIRED FOR BOTH PIPING AND ELECTRICAL WIRING AT EACH HARDSCAPE CROSSING. COORDINATE INSTALLATION OF SLEEVING WITH OTHER TRADES. ANY PIPE OR WIRE WHICH PASSES BENEATH EXISTING HARDSCAPE WHERE SLEEVING WAS NOT INSTALLED WILL REQUIRE HORIZONTAL BORING BY THE IRRIGATION CONTRACTOR. PIPE SLEEVES SHALL BE SIZED TWICE THE NOMINAL SIZE OF THE PIPE PASSING THROUGH.
9. INSTALL ALL ELECTRICAL POWER TO THE IRRIGATION CONTROL SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL ELECTRIC UTILITY CODES.
10. THE FOLLOWING SHOULD BE NOTED REGARDING PIPE SIZING: IF A SECTION OF UNSIZED PIPE IS LOCATED BETWEEN THE IDENTICALLY SIZED SECTIONS, THE UNSIZED PIPE IS THE SAME NOMINAL SIZE AS THE TWO SIZED SECTIONS. THE UNSIZED PIPE SHOULD NOT BE CONFUSED WITH THE DEFAULT PIPE SIZE NOTED IN THE LEGEND.
11. INSTALL TWO (2) #14 AWG CONTROL WIRES FOR USE AS SPARES. INSTALL SPARE WIRES FROM CONTROLLER LOCATION TO EACH DEAD–END OF MAINLINE. COIL 3 FEET OF WIRE IN VALVE BOX.

CONSTRUCTION NOTES

1. THE IRRIGATION SYSTEM POINT–OF–CONNECTION (POC) SHALL BE DOWNSTREAM OF THE IRRIGATION WATER TAP AND METER INSTALLED BY OTHERS AT THE APPROXIMATE LOCATION SHOWN. INSTALL BACKFLOW PREVENTION UNIT AND MASTER VALVE ASSEMBLY AS INDICATED. VERIFY EXACT LOCATION OF POC WITH OWNER'S REPRESENTATIVE.
2. WALL MOUNT THE IRRIGATION CONTROLLER AT THE APPROXIMATE LOCATION SHOWN INSIDE OF THE SITE MECHANICAL ROOM LOCATED IN THE LOWER LEVEL. FIELD LOCATE 2–INCH PVC CONDUIT INSTALLED BY OTHERS FOR CONTROL WIRE AND ROUTE CONTROL WIRES TO LANDSCAPED AREA. COORDINATE ELECTRICAL POWER TO THE CONTROLLER WITH THE OWNER'S REPRESENTATIVE. FINAL LOCATION TO APPROVED BY THE OWNER'S REPRESENTATIVE.
3. IRRIGATION SHOWN OUT OF LANDSCAPED AREA FOR CLARITY ONLY. INSTALL IRRIGATION COMPONENTS WITHIN LANDSCAPED AREA.
4. COPPER PIPE ROUTED THROUGH PARKING GARAGE CEILING, BETWEEN PLANTER BOXES, SHALL BE INSTALLED BY MECHANICAL CONTRACTOR. COORDINATE WITH CIVIL, MECHANICAL AND ARCHITECT ON ROUTING COPPER PIPE THROUGH STRUCTURE.

IRRIGATION PIPE SCHEDULE

CLASS 200 PVC PIPE

SIZE	FLOW (GPM)
1/2"	NA
3/4"	NA
1"	0–15
1–1/4"	16–25
1–1/2"	26–35
2"	36–55
2–1/2"	56–80
3"	81–110
4"	111–200

IF THERE IS A DISCREPANCY BETWEEN PIPE SIZES SHOWN ON THE DRAWINGS AND THIS PIPE SCHEDULE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE IRRIGATION DESIGNER FOR CLARIFICATION.

I HAVE COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPING STANDARDS AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN

NAME

DATE

SIGNATURE, PRINTED NAME AND CREDENTIALS

Project:

Designed:
Drafted:
Reviewed:
Date Issued:

Revision	Title	Date
1		
2		
3		
4		
5		
6		
7		

Sheet Title:
IRRIGATION LEGEND & NOTES

Sheet Number:
IR

IRRIGATION LEGEND

- SLEEVES: CLASS 200 PVC
- MAINLINE PIPE: CLASS 200 PVC
  1 1/4–INCH SIZE UNLESS OTHERWISE INDICATED
- LATERAL PIPE TO SPRINKLERS: CLASS 200 PVC
  1–INCH UNLESS OTHERWISE INDICATED
- LATERAL PIPE TO EMITTERS: UV RADIATION RESISTANT
  POLYETHYLENE (3/4–INCH SIZE, ROUTING IS DIAGRAMMATIC)
- LATERAL PIPE TO TREE/SHRUB EMITTERS IN GRASS: 80 PSI RATED
  POLYETHYLENE (3/4–INCH SIZE, ROUTING IS DIAGRAMMATIC)
- UNCONNECTED PIPE CROSSING
- POINT–OF–CONNECTION ASSEMBLY
- [M] WATER METER AND CURB STOP ASSEMBLY (BY OTHERS)
- BACKFLOW PREVENTION ASSEMBLY: FEBCO 825–YA
- MASTER VALVE ASSEMBLY: TORO 220–27–04
- [F] FLOW SENSOR ASSEMBLY: RAINBIRD FS100B
- ISOLATION GATE VALVE ASSEMBLY: MATCO 514
- QUICK COUPLING VALVE ASSEMBLY: RAINBIRD 5RC
- DRAIN VALVE ASSEMBLY
- REMOTE CONTROL VALVE ASSEMBLY FOR SPRINKLER LATERALS
  RAINBIRD PEB (SIZED PER PLAN)
- REMOTE CONTROL DRIP VALVE ASSEMBLY: RAINBIRD XCZ–PRB–100–COM
- FLUSH CAP ASSEMBLY

A1 / 14 / 1" / Turf
- INDICATES CONTROLLER AND STATION NUMBER
- INDICATES LATERAL DISCHARGE (GPM)
- INDICATES VALVE SIZE (INCHES)
- INDICATES LANDSCAPE APPLICATION

- (A) IRRIGATION CONTROLLER UNIT WITH WIRELESS RAIN+FREEZE SENSOR
  CONTROLLER A: RAIN BIRD ESP–LXMEF with 22 Stations

- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/U SERIES 8 NOZZLE
  PRESSURE: 30 PSI RADIUS: 8 FEET
  FLOW (GPM): Q–0.26 H–0.52 F–1.05

- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/U SERIES 10 NOZZLE
  PRESSURE: 30 PSI RADIUS: 10 FEET
  FLOW (GPM): Q–0.41 H–0.82 F–1.64

- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/U SERIES 12 NOZZLE
  PRESSURE: 30 PSI RADIUS: 12 FEET
  FLOW (GPM): Q–0.65 H–1.30 F–2.60

- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/U SERIES 15 NOZZLE
  PRESSURE: 30 PSI RADIUS: 15 FEET
  FLOW (GPM): Q–0.92 H–1.85 F–3.70

- POP–UP SPRAY SPRINKLER: RAIN BIRD RD1806–S–P30 W/MPR SERIES
  15SST OR 15EST NOZZLE, PRESSURE: 30 PSI PATTERN: 4 X 15 FEET
  FLOW (GPM): EST–0.61 SST–1.21

NOTE: SPRAY SPRINKLERS SHALL BE 12–INCH POP–UPS IN PERENNIAL BEDS AND 6–INCH IN GRASS AREAS.

- PENETRATION THROUGH STRUCTURE INTO PLANTER BOXES: LINK SEAL WATERPROOF FITTING
- 1–INCH COPPER PIPE ROUTED BENEATH STRUCTURE: BY MECHANICAL CO

CONSTRUCTION NOTES

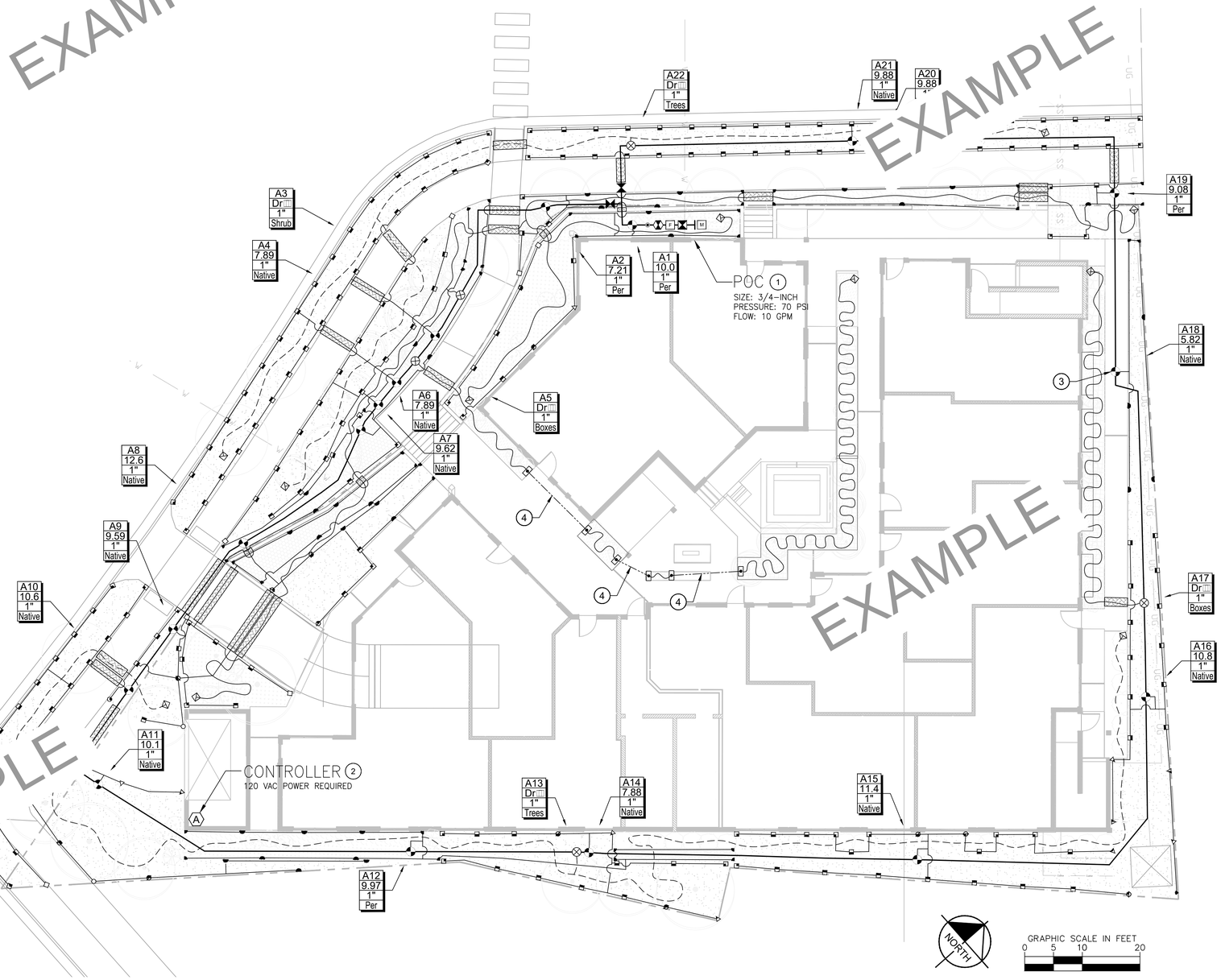
1. THE IRRIGATION SYSTEM POINT–OF–CONNECTION (POC) SHALL BE DOWNSTREAM OF THE IRRIGATION WATER TAP AND METER INSTALLED BY OTHERS AT THE APPROXIMATE LOCATION SHOWN. INSTALL BACKFLOW PREVENTION UNIT AND MASTER VALVE ASSEMBLY AS INDICATED. VERIFY EXACT LOCATION OF POC WITH OWNER'S REPRESENTATIVE.
2. WALL MOUNT THE IRRIGATION CONTROLLER AT THE APPROXIMATE LOCATION SHOWN INSIDE OF THE SITE MECHANICAL ROOM LOCATED IN THE LOWER LEVEL. FIELD LOCATE 2–INCH PVC CONDUIT INSTALLED BY OTHERS FOR CONTROL WIRE AND ROUTE CONTROL WIRES TO LANDSCAPED AREA. COORDINATE ELECTRICAL POWER TO THE CONTROLLER WITH THE OWNER'S REPRESENTATIVE. FINAL LOCATION TO APPROVED BY THE OWNER'S REPRESENTAT
3. IRRIGATION SHOWN OUT OF LANDS… …OR CLARITY ONLY. INSTALL IRRIGATION COMPONEN… …PED AREA.
4. COPPER PIPE ROUTED … …EILING, BETWEEN PLANTER BOXES, S… …AL CONTRACTOR. COORDINATE W… …FFECT ON ROUTING COPPER P…

IRRIGATION PIPE SCHEDULE

CLASS 200 PVC PIPE

SIZE	FLOW (GPM)
1/2"	NA
3/4"	NA
1"	0–15
1–1/4"	16–25
1–1/2"	26–35
2"	36–55
2–1/2"	56–80
3"	81–110
4"	111–200

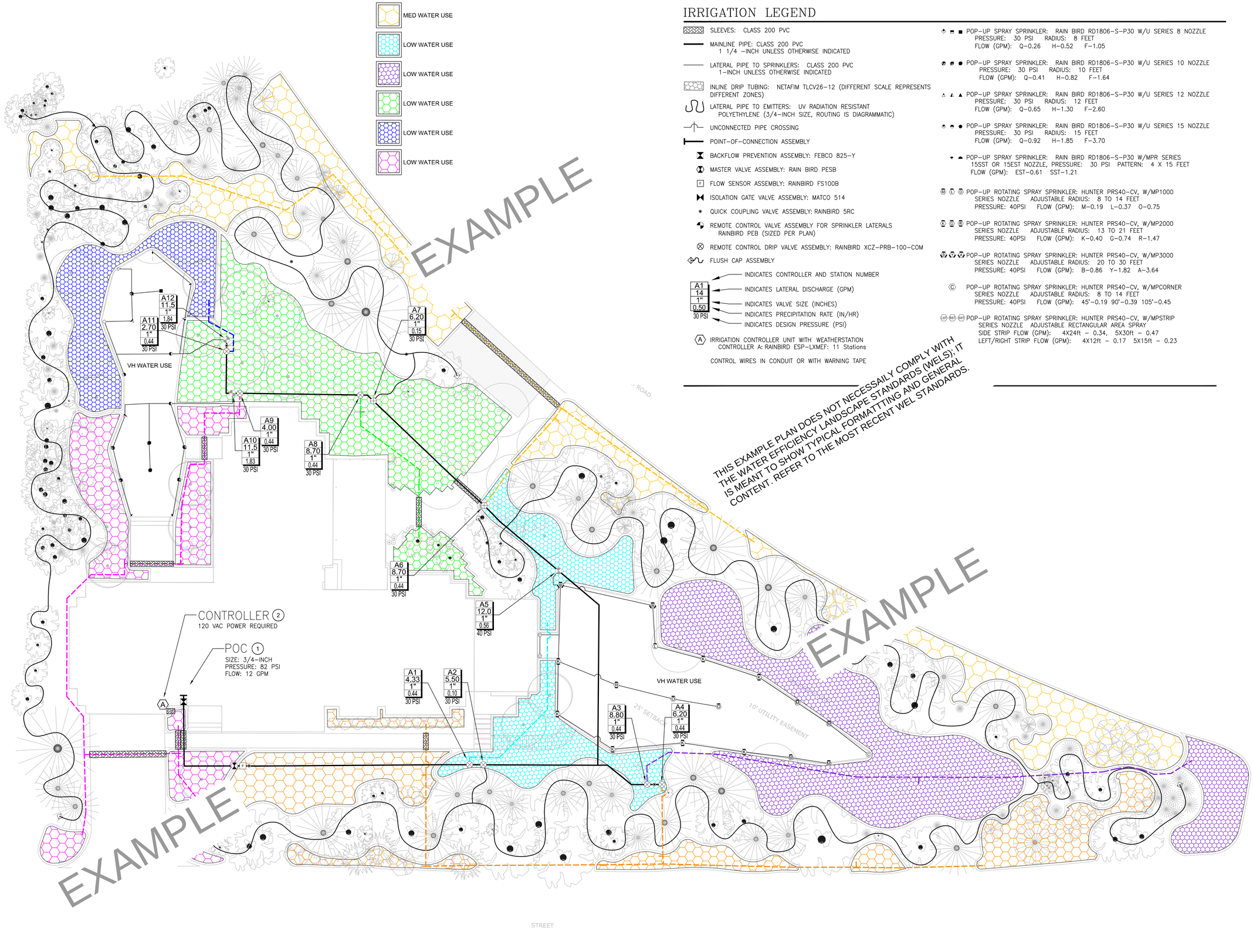
IF THERE IS A DISCREPANCY BETWEEN PIPE SIZES SHOWN ON THE DRAWINGS AND THIS PIPE SCHEDULE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE IRRIGATION DESIGNER FOR CLARIFICATION.



Designed:
Drafted:
Reviewed:
Date Issued:

Revision	Title	Date
1		
2		
3		
4		
5		
6		
7		

Sheet Title:
IRRIGATION PLAN
Sheet Number:
IR



IRRIGATION LEGEND

- SLEEVES: CLASS 200 PVC
- MAINLINE PIPE: CLASS 200 PVC
  1 1/4 -INCH UNLESS OTHERWISE INDICATED
- LATERAL PIPE TO SPRINKLERS: CLASS 200 PVC
  1-INCH UNLESS OTHERWISE INDICATED
- INLINE DRIP TUBING: NETAFIM TLCV26-12 (DIFFERENT SCALE REPRESENTS DIFFERENT ZONES)
- LATERAL PIPE TO EMITTERS: UV RADIATION RESISTANT POLYETHYLENE (3/4-INCH SIZE, ROUTING IS DIAGRAMMATIC)
- UNCONNECTED PIPE CROSSING
- POINT-OF-CONNECTION ASSEMBLY
- BACKFLOW PREVENTION ASSEMBLY: FEBCO 825-Y
- MASTER VALVE ASSEMBLY: RAIN BIRD PESB
- FLOW SENSOR ASSEMBLY: RAINBIRD FS100B
- ISOLATION GATE VALVE ASSEMBLY: MATCO 514
- QUICK COUPLING VALVE ASSEMBLY: RAINBIRD 5RC
- REMOTE CONTROL VALVE ASSEMBLY FOR SPRINKLER LATERALS
  RAINBIRD PEB (SIZED PER PLAN)
- REMOTE CONTROL DRIP VALVE ASSEMBLY: RAINBIRD XCZ-PRB-100-COM
- FLUSH CAP ASSEMBLY

A1 / 14 / 1" / 0.50 / 30 PSI
- INDICATES CONTROLLER AND STATION NUMBER
- INDICATES LATERAL DISCHARGE (GPM)
- INDICATES VALVE SIZE (INCHES)
- INDICATES PRECIPITATION RATE (IN/HR)
- INDICATES DESIGN PRESSURE (PSI)

- (A) IRRIGATION CONTROLLER UNIT WITH WEATHERSTATION
  CONTROLLER A: RAINBIRD ESP-LXMEF: 11 Stations

CONTROL WIRES IN CONDUIT OR WITH WARNING TAPE

- POP-UP SPRAY SPRINKLER: RAIN BIRD RD1806-S-P30 W/U SERIES 8 NOZZLE
  PRESSURE: 30 PSI RADIUS: 8 FEET
  FLOW (GPM): Q-0.26 H-0.52 F-1.05
- POP-UP SPRAY SPRINKLER: RAIN BIRD RD1806-S-P30 W/U SERIES 10 NOZZLE
  PRESSURE: 30 PSI RADIUS: 10 FEET
  FLOW (GPM): Q-0.41 H-0.82 F-1.64
- POP-UP SPRAY SPRINKLER: RAIN BIRD RD1806-S-P30 W/U SERIES 12 NOZZLE
  PRESSURE: 30 PSI RADIUS: 12 FEET
  FLOW (GPM): Q-0.65 H-1.30 F-2.60
- POP-UP SPRAY SPRINKLER: RAIN BIRD RD1806-S-P30 W/U SERIES 15 NOZZLE
  PRESSURE: 30 PSI RADIUS: 15 FEET
  FLOW (GPM): Q-0.92 H-1.85 F-3.70
- POP-UP SPRAY SPRINKLER: RAIN BIRD RD1806-S-P30 W/MPR SERIES
  15SST OR 15EST NOZZLE, PRESSURE: 30 PSI PATTERN: 4 X 15 FEET
  FLOW (GPM): EST-0.61 SST-1.21
- POP-UP ROTATING SPRAY SPRINKLER: HUNTER PRS40-CV, W/MP1000
  SERIES NOZZLE ADJUSTABLE RADIUS: 8 TO 14 FEET
  PRESSURE: 40PSI FLOW (GPM): M-0.19 L-0.37 O-0.75
- POP-UP ROTATING SPRAY SPRINKLER: HUNTER PRS40-CV, W/MP2000
  SERIES NOZZLE ADJUSTABLE RADIUS: 13 TO 21 FEET
  PRESSURE: 40PSI FLOW (GPM): K-0.40 G-0.74 R-1.47
- POP-UP ROTATING SPRAY SPRINKLER: HUNTER PRS40-CV, W/MP3000
  SERIES NOZZLE ADJUSTABLE RADIUS: 20 TO 30 FEET
  PRESSURE: 40PSI FLOW (GPM): B-0.86 Y-1.82 A-3.64
- (C) POP-UP ROTATING SPRAY SPRINKLER: HUNTER PRS40-CV, W/MPCORNER
  SERIES NOZZLE ADJUSTABLE RADIUS: 8 TO 14 FEET
  PRESSURE: 40PSI FLOW (GPM): 45°-0.19 90°-0.39 105°-0.45
- (LS) (RS) (SS) POP-UP ROTATING SPRAY SPRINKLER: HUNTER PRS40-CV, W/MPSTRIP
  SERIES NOZZLE ADJUSTABLE RECTANGULAR AREA SPRAY
  SIDE STRIP FLOW (GPM): 4X24ft - 0.34, 5X30ft - 0.47
  LEFT/RIGHT STRIP FLOW (GPM): 4X12ft - 0.17 5X15ft - 0.23

THIS EXAMPLE PLAN DOES NOT NECESSAILY COMPLY WITH THE WATER EFFICIENCY LANDSCAPE STANDARDS (WELS); IT IS MEANT TO SHOW TYPICAL FORMATTING AND GENERAL CONTENT. REFER TO THE MOST RECENT WEL STANDARDS.

Project:

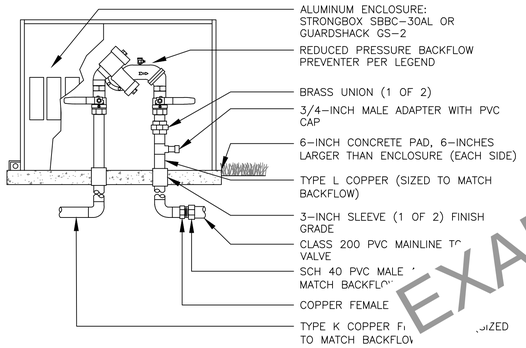
Designed:
Drafted:
Reviewed:
Date Issued:

Revision	Title	Date
1		
2		
3		
4		
5		
6		
7		

0' 5' 10' 20'
SCALE: 1"=10' NORTH

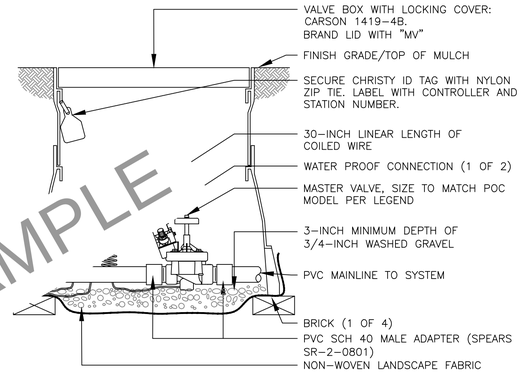
Sheet Title:
IRRIGATION PLAN

Sheet Number:
IR

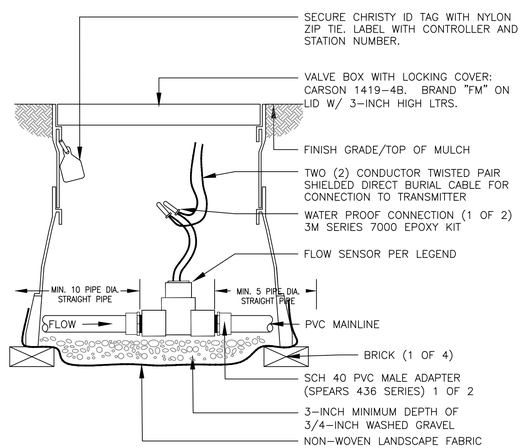


NOTES:
1. INSTALL BACKFLOW DEVICE IN ACCORDANCE WITH ALL STATE AND LOCAL CODE REQUIREMENTS.
2. SLOPE TOP SURFACE OF PAD AT 0.5 % WITH BROOM FINISH. MAKE PIPE SLEEVES WITH 1–1/2 INCH LARGER DIAMETER PIPE THAN PENETRATING PIPE SIZE.
3. ALL HINGED CONNECTION LOCATIONS AND HARDWARE TO BE TAMPER PROOF.
4. ALL WELD JOINTS SHALL BE CONTINUOUS AND GROUND SMOOTH.

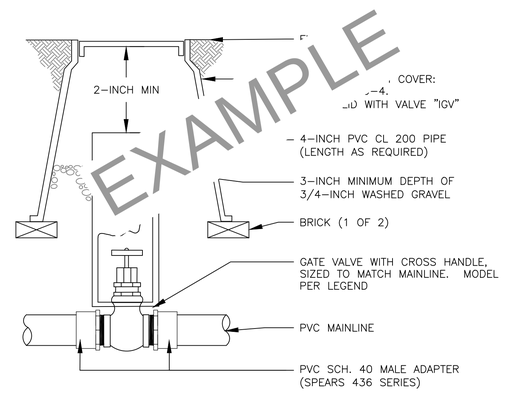
1 BACKFLOW PREVENTION UNIT ASSEMBLY



2 MASTER VALVE ASSEMBLY

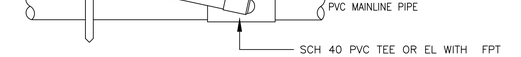


3 FLOW SENSOR ASSEMBLY

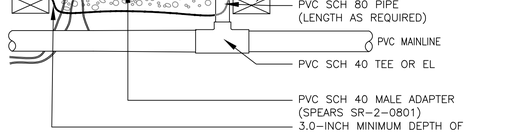


NOTES:
1. NOMINAL SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE.

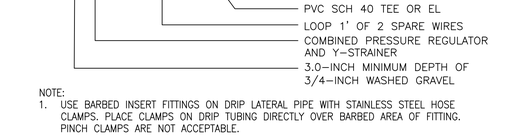
4 ISOLATION GATE VALVE ASSEMBLY



5 QUICK COUPLING VALVE ASSEMBLY

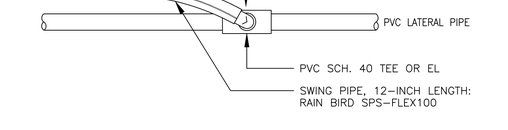


6 REMOTE CONTROL TURF VALVE ASSEMBLY



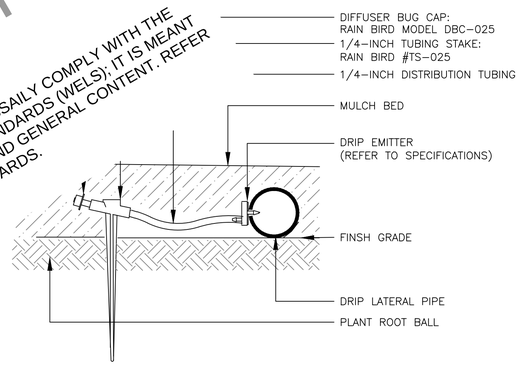
NOTE:
1. USE BARBED INSERT FITTINGS ON DRIP LATERAL PIPE WITH STAINLESS STEEL HOSE CLAMPS. PLACE CLAMPS ON DRIP TUBING DIRECTLY OVER BARBED AREA OF FITTING. PINCH CLAMPS ARE NOT ACCEPTABLE.

7 REMOTE CONTROL DRIP VALVE ASSEMBLY

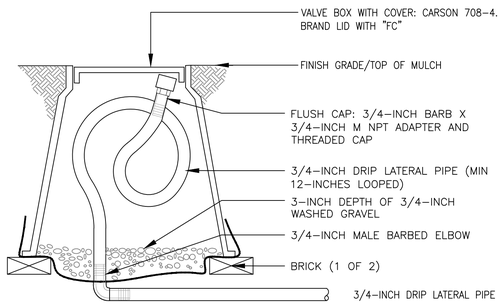


8 6-INCH POP UP SPRAY SPRINKLER ASSEMBLY

THIS EXAMPLE PLAN DOES NOT NECESSAILY COMPLY WITH THE WATER EFFICIENCY LANDSCAPE STANDARDS (WELS). IT IS MEANT TO SHOW TYPICAL FORMATTTING AND GENERAL CONTENT. REFER TO THE MOST RECENT WEL STANDARDS.

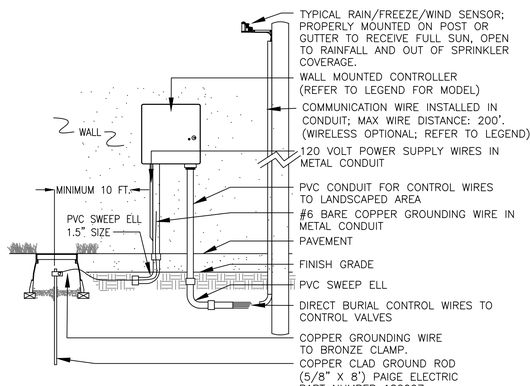


9 SINGLE OUTLET DRIP EMITTER ASSEMBLY



NOTE:
1. LOOP IRRIGATION DRIP TUBING INSIDE VALVE BOX FOR EXTENSION OUTSIDE OF BOX DURING BLOWOUT.

10 DRIP FLUSH CAP ASSEMBLY



NOTES:
1. INSTALL ALL WIRING PER LOCAL ELECTRICAL CODES.
2. INSTALL GROUND ROD WITHIN IRRIGATED TURF AREA. IF IRRIGATED TURF AREA IS NOT IN CLOSE PROXIMITY TO CONTROLLER, INSTALL ONE (1) DRIP EMITTER FROM NEAREST DRIP VALVE IN VALVE BOX HOUSING GROUNDING ROD.

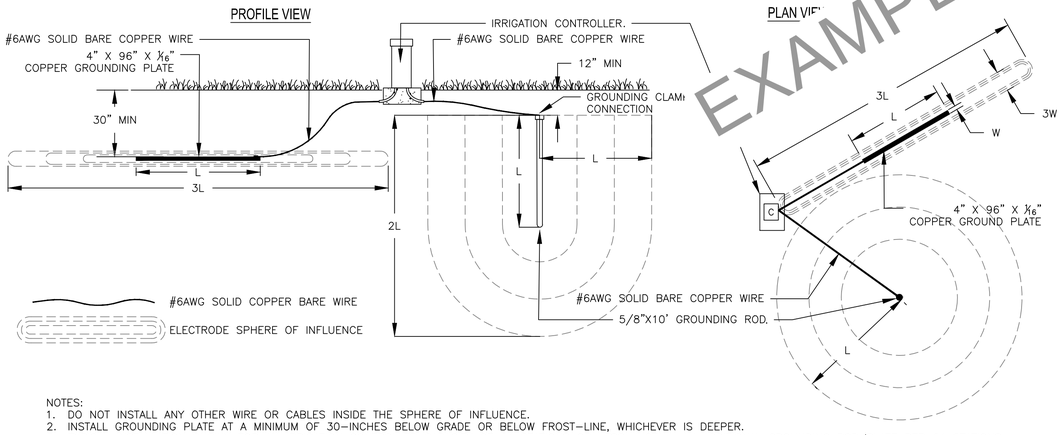
11 WALL MOUNT CONTROLLER ASSEMBLY

Project:

Designed:
Drafted:
Reviewed:
Date Issued:

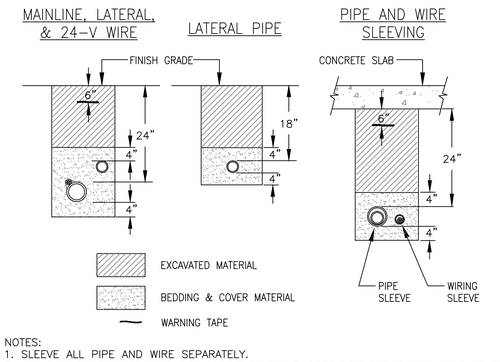
Revision	Title	Date
1		
2		
3		
4		
5		
6		
7		

Sheet Title:
IRRIGATION DETAILS
Sheet Number:
IR



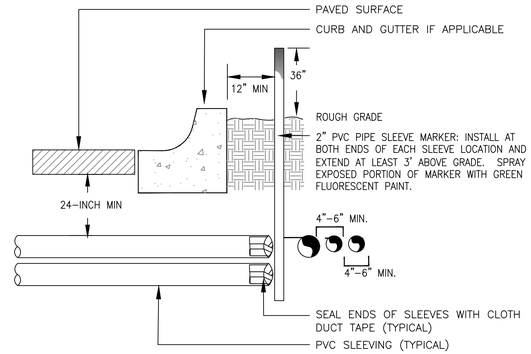
NOTES:
1. DO NOT INSTALL ANY OTHER WIRE OR CABLES INSIDE THE SPHERE OF INFLUENCE.
2. INSTALL GROUNDING PLATE AT A MINIMUM OF 30–INCHES BELOW GRADE OR BELOW FROST–LINE, WHICHEVER IS DEEPER.
3. TYPICAL INSTALLATION SHOWN FOR AN IRRIGATION CONTROLLER CAPACITY OF 64 STATIONS OR LESS, INSTALL AN ADDITIONAL GROUNDING ROD/PLATE PER 64 STATIONS.

12 TYPICAL IRRIGATION CONTROLLER GROUNDING ROD & PLATE INSTALLATION



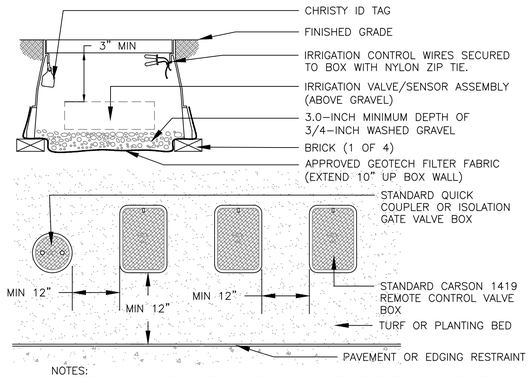
NOTES:
1. SLEEVE ALL PIPE AND WIRE SEPARATELY.
2. ALL PIPE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS."SNAKE" UNSLEEVED PLASTIC PIPE IN TRENCH. PROVIDE A MINIMUM OF 2" CLEARANCE TO SIDE OF TRENCH AND BETWEEN PIPES.
3. ALL 120–V WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS. TAPE AND BUNDLE 24–V WIRE EVERY 10' AND PROVIDE LOOSE 20" LOOP AT ALL CHANGES OF DIRECTION OVER 30 DEGREES.

13 TYPICAL TRENCHING DETAIL



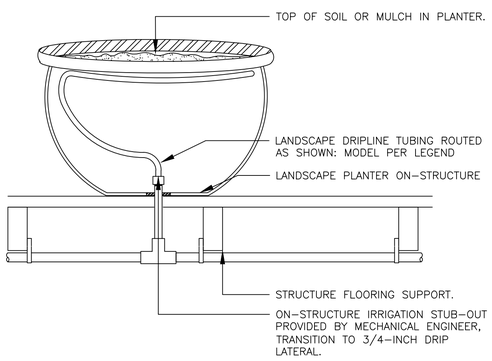
NOTE:
1) ALL SLEEVING TO BE CLASS 200 BE PVC, SIZED AS NOTED.
2) INSTALL SLEEVES IN SIDE–BY–SIDE CONFIGURATION WHERE MULTIPLE SLEEVES ARE TO BE INSTALLED. SPACE SLEEVES 4" TO 6" APART. DO NOT STACK SLEEVES VERTICALLY.

14 TYPICAL SLEEVING DETAIL



NOTES:
1. INSTALL ONLY ONE RCV TO VALVE BOX. LOCATE AT LEAST 12–INCHES FROM AND ALIGN WITH NEARBY WALLS OR EDGES OF PAVED AREAS. GROUP RCV ASSEMBLIES TOGETHER WHERE PRACTICAL.
4. GROUP RCV ASSEMBLIES TOGETHER WHERE PRACTICAL, BUT AVOID GROUPING MORE THAN THREE (3) STANDARD VALVE BOXES TOGETHER IN A SERIES.
5. ARRANGE GROUPED VALVE BOXES IN RECTANGULAR PATTERNS.

15 TYPICAL VALVE BO□ INSTALLATION



16 DRIP LATERAL ASSEMBLY FOR PLANTERS ON STRUCTURE

Project:

Designed:
Drafted:
Reviewed:
Date Issued:

Revision	Title	Date
1		
2		
3		
4		
5		
6		
7		

Sheet Title:
IRRIGATION DETAILS
Sheet Number:
IR