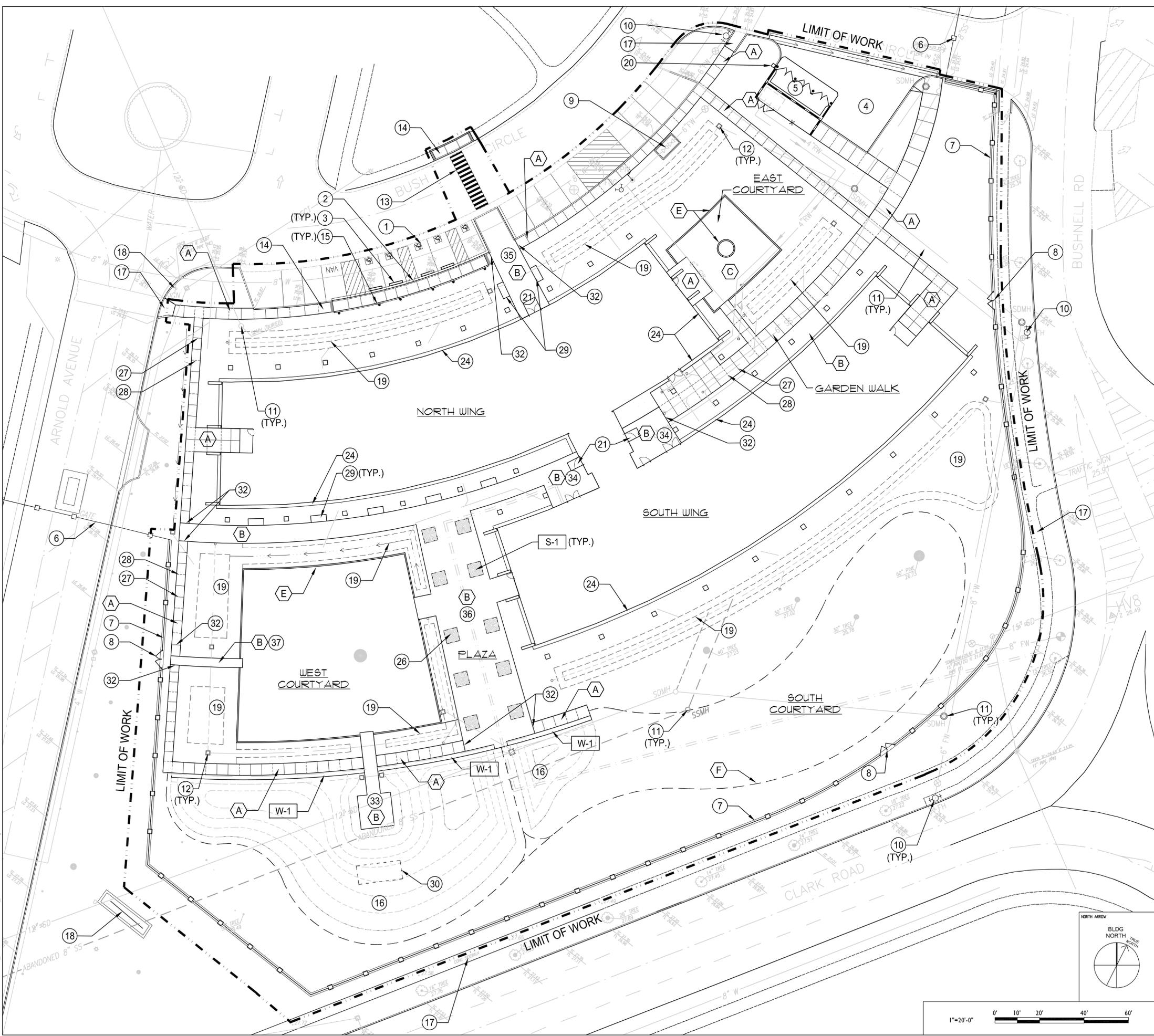


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 DATE: Apr 30, 2009 - 11:36:55 am Images: LANDSCAPE.dwg
 Xrefs: XBDP L-SP-NASA Ames C-SP-NASA Ames XCSiteD1 XChulid01



CONSTRUCTION LEGEND:

SYM.	DESCRIPTION	REMARKS
1	HANDICAP PARKING SPACE	REFER TO CIVIL ENGINEER PLANS
2	CONCRETE CURB	REFER TO CIVIL ENGINEER PLANS
3	CONCRETE WHEEL STOP	REFER TO CIVIL ENGINEER PLANS
4	SERVICE PARKING	REFER TO CIVIL ENGINEER PLANS
5	TRASH/RECYCLING BIN ENCLOSURE	REFER TO CIVIL ENGINEER PLANS
6	EXISTING WROUGHT IRON FENCE/GATE	REFER TO CIVIL ENGINEER PLANS
7	SALVAGED/NEW WROUGHT IRON FENCE WITH 18" MOW STRIP	REFER TO CIVIL ENGINEER PLANS
8	FIRE ACCESS GATE	REFER TO CIVIL ENGINEER PLANS
9	BACKFLOW PREVENTER ASSEMBLY	REFER TO CIVIL ENGINEER PLANS
10	FIRE HYDRANT	REFER TO CIVIL ENGINEER PLANS
11	MANHOLE	REFER TO CIVIL ENGINEER PLANS
12	CATCH BASIN/AREA DRAIN	REFER TO CIVIL ENGINEER PLANS
13	CROSSWALK	REFER TO CIVIL ENGINEER PLANS
14	CURB RAMP	REFER TO CIVIL ENGINEER PLANS
15	SIGNAGE	REFER TO CIVIL ENGINEER PLANS
16	LANDFORM	REFER TO CIVIL ENGINEER PLANS
17	EXISTING CONCRETE WALK TO REMAIN	PROTECT IN PLACE
18	EXISTING SIGN TO REMAIN	PROTECT IN PLACE
19	BIOSWALE	REFER TO CIVIL ENGINEER PLANS
20	IRRIGATION CONTROLLER	REFER TO IRRIGATION PLANS
21	GRILL AT ENTRY DOORS	SEE DETAIL 2, SHEET L401. REFER TO ARCHITECT'S PLANS FOR GRILL INFORMATION.
22	NOT USED	--
23	NOT USED	--
24	STONE DRAINAGE STRIP	SEE DETAIL 3, SHEET L402
25	NOT USED	--
26	TREE PIT WITH TREE GRATE	SEE DETAIL 1, SHEET L651 AND SITE FURNISHING SCHEDULE SHEET L100
27	SAWCUT JOINT	SEE DETAIL 4, SHEET L401
28	EXPANSION JOINT	SEE DETAIL 4, SHEET L401
29	CONCRETE BENCH PAD	SEE DETAIL 5, SHEET L401
30	IRRIGATION STORAGE TANK	SEE SHEET L594 FOR DETAIL REFER TO CIVIL ENGINEER PLANS FOR LOCATION
31	NOT USED	--
32	CONCRETE WALK/PAVER CONNECTION	SEE DETAIL 2, SHEET L401
33	PAVER ENLARGMENT - GARDEN ROOM	SEE DETAIL 1, SHEET L403
34	PAVER ENLARGMENT - INTERIOR ENTRIES	SEE DETAIL 2, SHEET L403
35	PAVER ENLARGMENT - MAIN ENTRY	SEE DETAIL 3, SHEET L403
36	PAVER ENLARGMENT - PLAZA	SEE DETAIL 4, SHEET L403
37	PAVER ENLARGMENT - GARDEN WALK	SEE DETAIL 5, SHEET L403

NOTE: HORIZONTAL CONTROL PER CIVIL DRAWINGS.

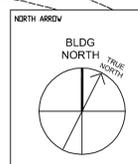
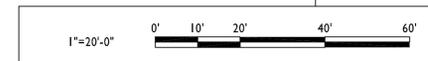
PROJECT STATUS		BID SET 04/30/09	
ISSUE			
MARK	DATE	DESCRIPTION	INITIAL
DESIGNED	D. COLBECK	DATE	
CHECKED	M. DURHAM / T. GOTO	DATE	
PROJ. MGR.	J. GRANT	DATE	
REQUESTOR	R. SCHULER	DATE	
PRQA		DATE	
SAFETY		DATE	
SUPERVISOR	S. FRANKEL	DATE	

Ames Research Center
Moffet Field, California

N232 COLLABORATIVE SUPPORT FACILITY

SITE CONSTRUCTION PLAN

SIZE	SCALE CODE	A232-0800-	L101	REV
D	25307			
SCALE	INDEX	SHEET	OF	



ROTARY SPRINKLER LEGEND:

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION	NOZZLE	RADIUS	G.P.M.	P.S.I.	PATTERN	PRECIP RATE		
F 18	HUNTER*	MP2000360	4" POP-UP ROTARY SPRINKLER **	MP2000	18'	1.6	35	360°	0.4		
		MP2000210		MP2000	18'	0.8	35	210-270°			
		MP2000090		MP2000	18'	0.4	35	90-210°			
		MPSS530		MP2000	12'	0.4	35	SIDE STRIP			
		MPLC515		MP2000	12'	0.2	35	LEFT STRIP			
		MPRC515		MP2000	12'	0.2	35	RIGHT STRIP			
		MP1000360		MP1000	12'	0.8	35	360°			
		MP1000090		MP1000	12'	0.4	35	90-210°			
		MP3000360		12" POP-UP ROTARY SPRINKLER**	MP3000	30'	3.6	35		360°	0.4
		MP3000210			MP3000	30'	1.8	35		210-270°	
MP3000090	MP3000	30'	0.9		35	90-210°					
MP3000360	MP3000	25'	3.6		35	360°					
MP3000210	MP3000	25'	1.8		35	210-270°					
MP3000090	MP3000	25'	0.9		35	90-210°					
MP2000360	MP2000	18'	1.6		35	360°					
MP2000210	MP2000	18'	0.8		35	210-270°					
MP2000090	MP2000	18'	0.4		35	90-210°					
MPCORNER	MP2000	18'	0.4		35	45-105°					
MPSS530	MP2000	12'	0.4	35	SIDE STRIP						
MPLC515	MP2000	12'	0.2	35	LEFT STRIP						
MPRC515	MP2000	12'	0.2	35	RIGHT STRIP						
MP1000360	MP1000	12'	0.8	35	360°						
MP1000090	MP1000	12'	0.4	35	90-210°						

NOTES:

- * ADJUST SPRINKLERS FOR HEAD TO HEAD COVERAGE AND FOR ADJUST RADIUS CONTROL ADJACENT TO NON-IRRIGATED AREAS.
- ** INSTALL ROTARY NOZZLE ON RAIN BIRD 4-INCH POP-UP BODY, MODEL NUMBER 1804-SAM FOR TURF AREAS AND INSTALL ROTARY NOZZLE ON RAIN BIRD 12-INCH POP-UP BODY, MODEL NUMBER 1812-SAM FOR GROUND COVER AREAS. INSTALL ROTARY SPRINKLERS PER POP-UP DETAIL 2, SHEET L553.

- PART CIRCLE NOZZLES ARE CIRCLE PATTERN ADJUSTABLE WITHIN THE RANGE OF DEGREES INDICATED. NOTE: SIDE STRIP AND END STRIP NOZZLES OFFER MINIMAL PATTERN ADJUSTMENTS.
- ROTARY NOZZLES ARE HIGH EFFICIENCY NON-GEAR DRIVE NOZZLES INSTALLED ON 1/2" INLET POP-UP SPRINKLER BODIES.

SPRAY SPRINKLER LEGEND:

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION	NOZZLE	RADIUS	G.P.M.	P.S.I.	PATTERN	PRECIP RATE
F	RAIN BIRD*	1812-SAM	12" POP-UP SPRAY HEAD	8F	8'	1.0	30	FULL CIRCLE	2.00
		1812-SAM		8H	8'	0.5	30	HALF	
		1812-SAM		8Q	8'	0.3	30	QUARTER	
		1804-SAM		4" POP-UP BUBBLER HEAD	PCN-025**	--	0.25	30	FLOOD BUBBLER
NONE		1804-SAM	TREE SPRINKLER	5QB***	--	0.3	30	STREAM BUBBLER	1.00

NOTES:

- * PROVIDE RAIN BIRD ADJUSTABLE NOZZLES IN LIEU OF STANDARD NOZZLES - NOTED ON PLAN WITH THE LETTER "V".
- ** PROVIDE HUNTER FLOOD PCN SERIES BUBBLER NOZZLE INSTALLED ON RAIN BIRD POP-UP SPRINKLER BODY. INSTALL NOZZLES ALIGNED 180 DEGREES APART AND LOCATED AT EDGE OF TREE ROOT BALL BELOW METAL TREE GRATE.
- *** REFER TO TREE SYSTEM LISTING IN EQUIPMENT LEGEND THIS SHEET. PROVIDE RAIN BIRD PRESSURE COMPENSATING SCREEN, MODEL PCS-030 (SILVER) IN LIEU OF CONVENTIONAL SCREEN. REFER TO POP-UP SPRINKLER DETAIL 2, SHEET L553.

- INSTALL SPRAY SPRINKLERS PER DETAIL 2, SHEET L553.

- SPRINKLER RADIUS ABBREVIATIONS:

F = FULL CIRCLE Q = QUARTER CIRCLE
T = THIRD CIRCLE V = ADJUSTABLE RADIUS

IRRIGATION SYSTEM GENERAL DESCRIPTION:

LANDSCAPE AREAS CONSISTING OF TURF, SHRUBS AND GROUND COVER PLANTING ARE TO BE IRRIGATED WITH PROPOSED POP-UP SPRINKLER IRRIGATION. SHRUBBERY AREAS ADJACENT TO BUILDINGS ARE IRRIGATED WITH LOW FLOW DRIPLINE TUBING. SPECIFIC TREES PLANTED WITHIN A PAVEMENT AREA SHALL BE IRRIGATED WITH LOW-FLOW SPRINKLERS.

THE IRRIGATION SYSTEM IS SUPPLIED WITH DOMESTIC WATER FROM A IRRIGATION-USE ONLY WATER METER AND ARRANGEMENTS ARE MADE TO CONNECT TO AN ALTERNATIVE WATER (MEW) WATER SUPPLY LINE WHEN AVAILABLE ON SITE. THE IRRIGATION SYSTEM OPERATES A PUMP LOCATED WITHIN A STORAGE TANK WITH THE CAPACITY TO MEET 1.5 DAYS OF PEAK SUMMER WATERING. BOTH THE DOMESTIC WATER AND MEW WATER SUPPLY SOURCES ARE DESIGNED TO FILL THE STORAGE TANK BASED ON SET LEVEL SETTINGS. THESE SET TANK FILL LEVEL SET POINTS ARE REMOTELY ADJUSTABLE VIA TELEPHONE COMMUNICATION TO A COMPUTER WITH CONTROL SOFTWARE FOR USE BY LANDSCAPE MAINTENANCE PERSONNEL. PUMP CONTROLS OPERATES DEDICATED FLOW SENSOR ASSEMBLY.

THE AUTOMATIC SPRINKLER CONTROLLER UTILIZES AN ON-SITE RAIN GAUGE AND OPERATES ON THE RAIN MASTER ICENTRAL INTERNET-BASED IRRIGATION CONTROL CENTER. AUTOMATIC IRRIGATION SCHEDULING ADJUSTMENTS ARE MADE DAILY THROUGH ICENTRAL VIA ZIP-ET. THE WEATHER DATA TRANSMITTED IS CALIBRATED TO MEET THE DEMANDS OF THE PROJECT'S SPECIFIC CLIMATE. REFER TO SHEET L555 FOR MORE SPECIFIC RAIN MASTER ICENTRAL INFORMATION.

FLOW SENSOR AND MASTER VALVE ARE INCORPORATED INTO THE IRRIGATION DESIGN. IN ADDITION TO PROVIDING HIGH FLOW SHUT-OFF CAPABILITY, THE CONTROL SYSTEM SHALL BE CAPABLE OF WATER FLOW CALIBRATION, INCLUDING THE RECORDING OF HISTORIC WATER USE.

SHUT-OFF VALVES HAVE BEEN PROVIDED TO ALLOW PARTIAL SHUT DOWN OF THE IRRIGATION SYSTEM DURING SERVICE AND REPAIRS.

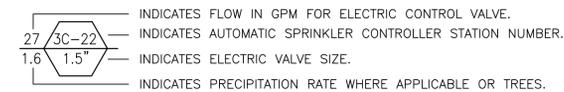
EQUIPMENT LEGEND:

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION
	RAIN MASTER	RME-i	AUTOMATIC IRRIGATION (EAGLE ICENTRAL) CONTROLLER MOUNTED WITHIN STAINLESS STEEL ENCLOSURE (FACTORY PRE-WIRED ASSEMBLY) - (SIZE NOTED) - CONTROLLER INCLUDES A ONE-YEAR INTERNET DATA SERVICE PLAN - REFER TO CONTROLLER NOTES SHEET L555 AND DETAIL 3, SHEET L551.
	RAIN BIRD*	PESB-R	ELECTRIC CONTROL VALVE - EQUIPPED FOR NON-POTABLE WATER USE - SIZE NOTED, REFER TO DETAIL 4, SHEET L551.
	RAIN BIRD*	44-NP 44-K	QUICK COUPLING VALVE IDENTIFIED WITH PURPLE (COLOR) FOR NON-POTABLE WATER USE - WITH CORRESPONDING KEY AND LOCKING RUBBER COVER MOUNTED IN BOX - 1" SIZE - REFER TO DETAIL 3, SHEET L553.
	WILKINS WILKINS V.I.T. SBBG-30SS V.I.T. QP-30BF WEATHER GUARD WG2	975XLSEU S-1"	REDUCED PRESSURE TYPE (RP) BACKFLOW PREVENTER ASSEMBLY - 1-INCH SIZE - PROVIDE FACTORY LINE-SIZE "Y" STRAINER - STAINLESS STEEL ENCLOSURE AND PRE-FABRICATED MOUNTING PAD - LOCATE ASSEMBLY WITHIN 10- FEET BACK OF SIDEWALK - PROVIDE SHOP DRAWING FOR REVIEW AND APPROVAL OF LOCATION PRIOR TO INSTALLATION - INCLUDES BACKFLOW WEATHER PROTECTION INSULATION BLANKET (FOREST GREEN IN COLOR) - REFER TO DETAIL 1, SHEET L551
	BERMAD*	120-55-020 -NC	MASTER CONTROL VALVE W/ PRESSURE REGULATION FEATURE - 2-INCH SIZE - NORMALLY CLOSED - REFER TO DETAIL 5, SHEET L551.
	RAIN MASTER*	FS-125B	SERIES FLOW SENSOR - BRASS HOUSING - 1.25-INCH SIZE - SPECIFIED WITH CONTROLLER ENCLOSURE ASSEMBLY - REFER TO DETAIL 6, SHEET L551.
	SKY HARVESTER*	-	PUMPING SYSTEM FLOW SENSOR - SPECIFIED WITH STORAGE TANK/PUMPING ASSEMBLY - REFER TO DETAIL SHEET L554.
	DIG	P75-155	DRIPLINE SYSTEM (PLASTIC) WYE FILTER - 155 MESH STAINLESS STEEL FILTER ELEMENT (COLOR CODED GREEN) AND FLUSH CAP - 1.5-INCH MIPT INLET AND OUTLET - REFER TO DETAIL 4, SHEET L553.
	LASCO	V___101N-SC	BALL VALVE - SCHEDULE 80 PVC PLASTIC - TRUE UNION THREADED - SLOW CLOSING SERIES - CROSS HANDLE - LINE SIZE - INSTALL VALVE WITHIN ROUND VALVE BOX - REFER TO BALL VALVE DETAIL 2, SHEET L551
	FLUSH OUT ASSEMBLY (DRIP EMITTER SYSTEM)	1/2" PVC SCHEDULE 40 BALL VALVE AND 1/2" PVC FLEX HOSE WITHIN ROUND BOX - OTHER DRIP PIPE ENDS REQUIRE HOSE CAP END FITTING - REFER TO DETAIL 3, SHEET L552	
	SENNINGER	PMR-35MF	DRIPLINE SYSTEM INLINE PRESSURE REGULATOR - FACTORY SET AT 35 PSI - MEDIUM FLOW (2-20 GPM) RANGE - 1" FIPT INLET & OUTLET - INSTALL AS SHOWN ON DRAWINGS - SEE DETAIL 1, SHEET L552
	DOMESTIC WATER SERVICE AND METER CONNECTION		ADDITIONAL POINT-OF-CONNECTION INFORMATION NOTED WITH CALLOUT ON SHEET L502
	PRESSURE MAIN LINE PIPING		NON-POTABLE WATER USE - USE PURPLE COLOR CODED CLASS 315 PVC FOR SIZES 2" AND LARGER AND SCHEDULE 40 PVC FOR SIZES 1-1/2" AND SMALLER - SIZE PIPING (NOTED IN INCHES) AS SHOWN ON DRAWINGS. REFER TO DETAIL 2, SHEET L552.
	NON-PRESSURE LATERAL LINE PIPING		PURPLE COLOR CODED SCHEDULE 40 PVC - PIPE SHALL BE IDENTIFIED FOR NON-POTABLE WATER-USE - SIZE PIPING (NOTED IN INCHES) AS SHOWN ON DRAWINGS. REFER TO DETAIL 2, SHEET L552.
	DIG RAIN BIRD ECO-SPEC	A5-518P-CV (TUBING) MDCF SERIES FITTINGS GDT5-140900	DRIPLINE SYSTEM - PRESSURE COMPENSATING W/ BUILT-IN CHECK VALVE - 0.5 GPH @ 18-INCHES O.C. EMITTER SPACING - 17 MM DIA. - (BROWN COLOR) 0.670" O.D. POLYETHYLENE TUBING WITH COMPRESSION-TYPE FITTINGS FOR ELLS, TEES, COUPLERS & PVC ADAPTERS - PROVIDE METAL HOLD DOWN STAKES EVERY 10-O.C. - INSTALL DRIPLINE TUBING WITH 1-INCH OF SOIL COVER - REFER TO DRIPLINE SHEET L555. RAIN BIRD FITTING MODEL NUMBERS: MDCFTEE = TEE, MDCFEL = ELBOW, MDCFcoup = COUPLER, MDCF75MPT = 3/4" MIPT ADAPTER, MDCF75FHT = 3/4" FIPT ADAPTER. REFER TO DRIPLINE NOTES ON SHEET L555 AND PER DETAILS 4 AND 5, SHEET L552.
	ECO-SPEC (GPH)	GDPJ04	DRIPLINE IRRIGATION EMISSION OUTLET EMITTER - PRESSURE COMPENSATING - BARB INLET - 1 GPH (BLACK) - ZERO FLUSH OPERATION - PROVIDED FOR TREES AND VINES LOCATED WITHIN DRIPLINE AREAS PER DRIPLINE NOTE NO. 8, SHEET L555. REFER TO DETAIL 5, SHEET L552.
	TREE SPRINKLER SYSTEM		SHOWN DIAGRAMMATICALLY - USE PURPLE COLORED PVC SCHEDULE 40 PIPING FOR BURIED INSTALLATIONS - 3/4" MINIMUM SIZE & OTHER SIZES AS NOTED - PROVIDE TWO (2) RAIN BIRD MODEL 4-INCH POP-UP SPRINKLER HEADS TO EVERY TREE - INSTALL AS INDICATED WITH SPRINKLER LEGEND - REFER TO DETAIL 2, SHEET L553.
	FLOW SENSOR SIGNAL CABLE AND RAIN MASTER	EC-CAB-SEN	CONDUIT - MULTIPLE WIRE PAIR SHIELDED CABLE INSTALLED WITH 1-INCH MINIMUM SIZE SCHEDULE 40 PVC CONDUIT - NO SPLICES PERMITTED - SPECIFIED WITH AUTOMATIC CONTROLLER NOTE ON SHEET L-5.53.- INSTALL PULL BOXES AT CHANGES OF CONDUIT DIRECTION - REFER TO PULL BOX DETAIL 1, SHEET L553.
	CONTROL WIRE SLEEVE UNDER PAVED AREA		PVC (WHITE) SCHEDULE 40 - 2" MINIMUM SIZE (2" ABBREVIATED ON DRAWING AS "2SL") - REFER TO DETAIL 2, SHEET L552.
	PIPING SLEEVE UNDER PAVED AREA		PVC SCHEDULE 40 - TYPICAL ABBREVIATION SHOWN ON DRAWING: "4SL" = 4-INCH SIZE - REFER TO DETAIL 2, SHEET L552.

NOTE:

- * PROVIDE LANDSCAPE FABRIC MODEL NUMBER 140N, AS MANUFACTURED BY MIRAFI, OR APPROVED EQUAL. TYPICAL FOR ALL ROUND AND RECTANGULAR VALVE BOX INSTALLATIONS.

VALVE CALLOUT LEGEND:



PROJECT STATUS			
BID SET 04/30/09			
ISSUE			
MARK	DATE	DESCRIPTION	INITIAL
DRAWN		D. COLBECK	
DESIGNED		M. DURHAM	
CHECKED		M. DURHAM / T. GOTO	
PROJECTOR		J. GRANT	
REQUESTOR		R. SCHULER	
REDA			
SAFETY			
SUPERVISOR		S. FRANKEL	
SIZE	D	CASE CODE	25307
SCALE	NONE	INDEX	A232-0800- L500
		SHEET	OF

Ames Research Center
Moffet Field, California

N232 COLLABORATIVE SUPPORT FACILITY

IRRIGATION NOTES AND LEGENDS

SPARE WIRE NOTE:

PROVIDE TWO SPARE WIRES AND ONE SPARE COMMON WIRE CONTINUOUSLY FROM AUTOMATIC CONTROLLER TO LAST ELECTRIC CONTROL VALVE BOX, FOLLOWING MAIN LINE ROUTE. ALLOW 30-INCH EXPANSION LOOP AT EACH CONTROL VALVE ALONG MAIN LINE ROUTING. THE LOCATIONS FOR SPARE WIRES ARE IDENTIFIED ON DRAWING WITH THE WORDS "PROVIDE SPARE WIRES AT EC.V".

PROTECTION OF EXISTING TREE ROOTS:
 INSTALL PVC PIPING ROUTED AROUND EXISTING TREES WITH SUFFICIENT CLEARANCE WITH SUCH ROOT SYSTEMS. EXCAVATE WITH HAND DIGGING AS REQUIRED TO EXPLORE ROOT LOCATIONS. SECURE PERMISSION EXCAVATE BELOW ROOTS PRIOR TO DIGGING. ROTARY STATIONS WITH PIPING INSTALLED NEAR EXISTING TREES ARE NOTED AS A13, A18, A19, A22, A24, AND A27.

DRIPLINE STATIONS A13 AND A30:
 DRIPLINE STATION(S) TO PROVIDE TWO (2) DRIP EMITTER EMISSION OUTLETS TO EACH VINE, PER DRIP EMITTER CONNECTION DETAIL 5, SHEET L552. REFER TO DRIPLINE NOTES ON SHEET L555.

MATCHLINE - SEE SHEET L501

PROVIDE SPARE WIRES AT EC.V.

LIMIT OF WORK

LIMIT OF WORK

LIMIT OF WORK

CONTRACTOR POINT-OF-CONNECTION NOTE - MEW IRRIGATION SUPPLY - SYSTEM "A":

CONTRACTOR POINT-OF-CONNECTION - PROVIDE NEW MAIN LINE PIPING AND CAPPED GATE VALVE TO THIS LOCATION FOR CONNECTION TO MEW WATER SUPPLY LINE AS PRIMARY IRRIGATION WATER SUPPLY. REFER TO CIVIL ENGINEERING PLANS FOR ADDITIONAL INFORMATION. NOTE LOCATION ON AS-BUILT RECORD DRAWING.

ESTIMATED PEAK FLOW SUPPLY: 10 G.P.M.
 ESTIMATED WATER PRESSURE: 40 P.S.I.

IRRIGATION SYSTEM "A" - IRRIGATION PUMP AND STORAGE TANK:

LOCATION OF IRRIGATION WATER STORAGE TANK WITH INTERNAL BOOSTER PUMP, PUMP CONTROLS AND DISCONNECT PANEL MOUNTED TO POLE ADJACENTLY LOCATED TO OUTSIDE OF FENCE FACING CLARK ROAD. REFER TO ELECTRICAL PLAN FOR COORDINATION OF ELECTRICAL POWER AND TELEPHONE SERVICE CONNECTION TO PANEL. REFER TO DETAIL SHEET L554 FOR DESIGN CLARIFICATION SPECIFICATION DRAWING AND ADDITIONAL INFORMATION. COORDINATE TANK LOCATION WITH EXISTING UTILITIES. SUBMIT SHOP DRAWING OF FINAL LOCATION FOR REVIEW AND APPROVAL BY CONTRACTING OFFICER PRIOR TO INSTALLATION.

PEAK FLOW DEMAND: 30 G.P.M.
 SYSTEM DESIGN PRESSURE: 60 P.S.I.

PROJECT CONTINGENCY USE WATER SUPPLY:

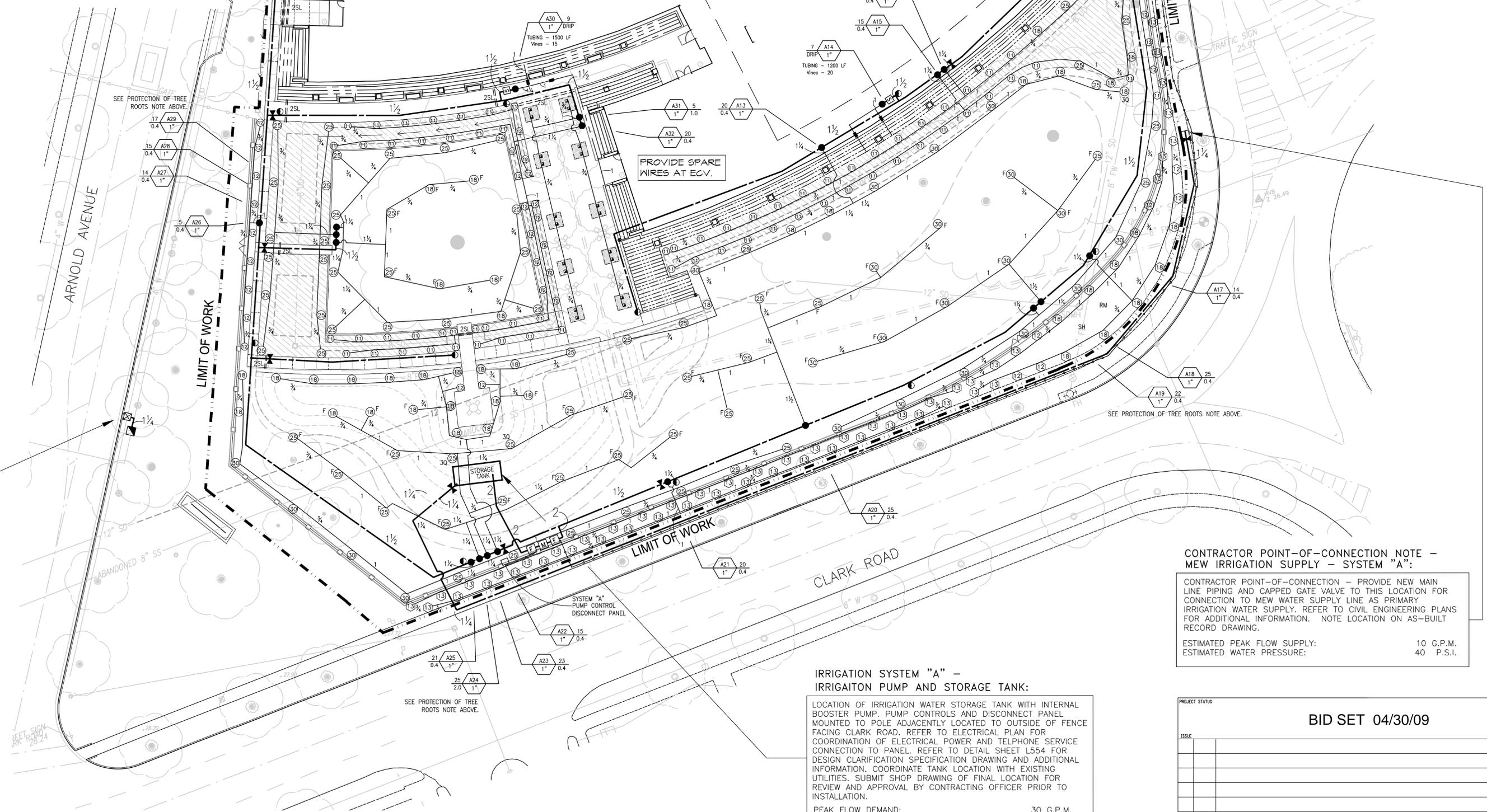
CONTRACTOR TO INSTALL NEW 3/4" DOMESTIC WATER METER FOR PROJECT FUTURE CONTINGENCY USE WATER SOURCE. WATER SERVICE CONNECTED TO EXISTING 4-INCH DW LINE. REFER TO CIVIL ENGINEERING PLANS FOR ADDITIONAL INFORMATION.

ESTIMATED FUTURE PEAK FLOW DEMAND: 10 G.P.M.
 EXISTING WATER PRESSURE: 60 P.S.I.

CONTRACTOR TO REPAIR DAMAGE TO EXISTING LANDSCAPE DUE TO HIS OWN TRENCHING AND CONSTRUCTION OPERATIONS. PROVIDE PLANT MATERIAL IN LIKE-KIND SIZE AND CONDITION TO THE SATISFACTION OF CONTRACTING OFFICER. CONTRACTOR TO INSTALL BACKFLOW PREVENTER ADJACENT TO PAVEMENT PER LOCATION REVIEWED AND APPROVED BY CONTRACTING OFFICER.

GRAPHIC INTENT OF DRIPLINE IRRIGATION:

DRIPLINE EMITTER TUBING AS SHOWN ON PLAN GRAPHICALLY SHOWS THE FULL EXTENT OF DRIPLINE IRRIGATION FOR THE PLANTING AREA ASSIGNED TO EACH DRIP VALVE STATION. CONTRACTOR IS TO PROVIDE DRIPLINE TUBING TO PROVIDE IRRIGATION FOR ALL PLANT MATERIAL WITHIN THE DEFINED DRIPLINE AREA. REFER TO DRIP IRRIGATION NOTES ON SHEET L555 AND DETAILS ON SHEET L552 FOR SPECIFIC DRIP SYSTEM COMPONENTS AND COMPONENT CONNECTIONS.



REF. SIGN 158.24

ABANDONED 8\"/>

TRAFFIC SIGN 25.97

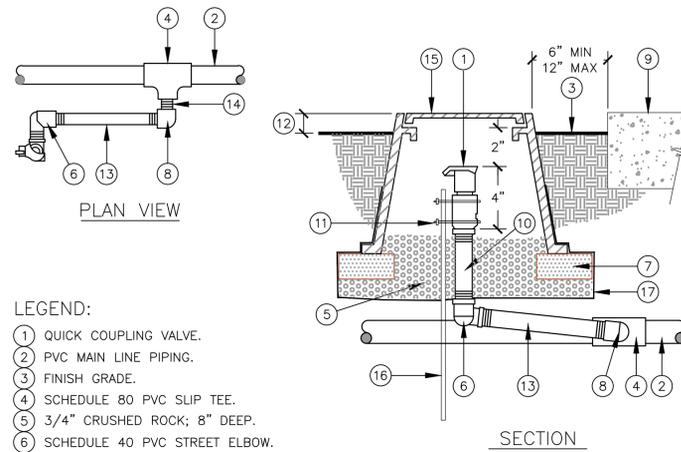
SEE PROTECTION OF TREE ROOTS NOTE ABOVE.

SEE PROTECTION OF TREE ROOTS NOTE ABOVE.

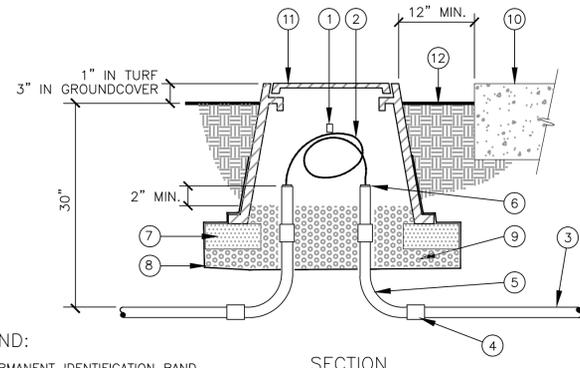


SCALE: 1" = 20'

PROJECT STATUS		BID SET 04/30/09	
ISSUE			
MARK	DATE	DESCRIPTION	INITIAL
DRAWN		D. COLBECK	
DESIGNED		M. DURHAM	
CHECKED		M. DURHAM / T. GOTO	
PROJECTOR		J. GRANT	
REQUESTOR		R. SCHULER	
PRQA			
SAFETY			
SUPERVISOR		S. FRANKEL	
Ames Research Center Moffet Field, California		N232 COLLABORATIVE SUPPORT FACILITY IRRIGATION PLAN	
SIZE	CASE CODE		REV
D	25307	A232-0800- L502	
SCALE: 1" = 20'	INDEX	SHEET	OF



- LEGEND:
- 1 QUICK COUPLING VALVE.
 - 2 PVC MAIN LINE PIPING.
 - 3 FINISH GRADE.
 - 4 SCHEDULE 80 PVC SLIP TEE.
 - 5 3/4" CRUSHED ROCK; 8" DEEP.
 - 6 SCHEDULE 40 PVC STREET ELBOW.
 - 7 COMMON RED BRICK - 4 REQUIRED.
 - 8 SCHEDULE 40 PVC ELBOW - 3/4".
 - 9 CURB, WALK, OR OTHER HARDSCAPE FEATURE.
 - 10 SCHEDULE 80 PVC 3/4" - 2" MINIMUM, LENGTH AS REQUIRED.
 - 11 STAINLESS STEEL COMPRESSION CLAMP; TWO (2) REQUIRED.
 - 12 SET BOX FLUSH WITH FINISH GRADE OF TURF, AND SET 3" ABOVE FINISH GRADE IN GROUND COVER AREAS.
 - 13 SCHEDULE 80 PVC NIPPLE - 6" MINIMUM, 12" MAXIMUM LENGTH.
 - 14 SCHEDULE 80 PVC NIPPLE - 3/4" x 1" LENGTH.
 - 15 BOLT-DOWN ROUND VALVE BOX, GREEN IN COLOR - IDENTIFY THE LETTERS "QCV" ON COVER PER SPECIFICATIONS.
 - 16 REBAR STAKE - #4 X 36" MINIMUM LENGTH. SECURE AT QUICK COUPLER BODY ONLY.
 - 17 LANDSCAPE FABRIC - WRAP SIDES & BOTTOM OF BOX TO COVER ALL OPENINGS.



- LEGEND:
- 1 PERMANENT IDENTIFICATION BAND.
 - 2 SIGNAL CABLE - WITH 24-INCH LOOP.
 - 3 CABLE CONDUIT - UL LISTED SCHEDULE 40 PVC.
 - 4 SxS COUPLING - UL LISTED SCHEDULE 40 PVC - FOUR (4) REQUIRED.
 - 5 SWEEP EL 90 - UL LISTED SCHEDULE 40 PVC.
 - 6 CONDUIT BUSHING - SEAL ENDS WITH SPRAY FOAM.
 - 7 COMMON RED BRICK - 4 REQUIRED.
 - 8 LANDSCAPE FABRIC - WRAP SIDES AND BOX BOTTOM, COVER ALL OPENINGS.
 - 9 3/4" CRUSHED ROCK - 8" DEEP.
 - 10 CURB, WALK, OR OTHER HARDSCAPE FEATURE.
 - 11 RECTANGULAR VALVE BOX, WITH BOLT-DOWN COVER; GREEN IN COLOR - HEAT BRAND THE LETTERS "PB" ON COVER IN 2" HIGH CHARACTERS.
 - 12 FINISH GRADE.
- NOTES:
1. ARRANGE PULL BOXES AT RIGHT ANGLE TO HARDSCAPE EDGES.
 2. THE ENDS OF THE CONDUIT SHALL REMAIN CAPPED UNTIL THE INSTALLATION OF CABLE.

5

3

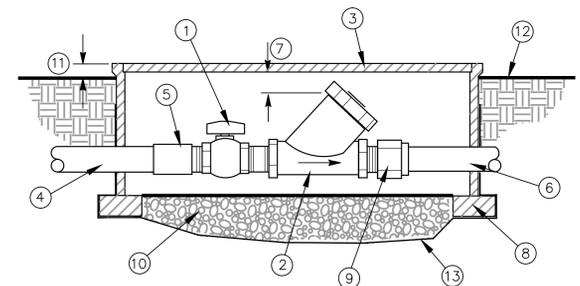
QUICK COUPLING VALVE

N.T.S.
iQCVIR01

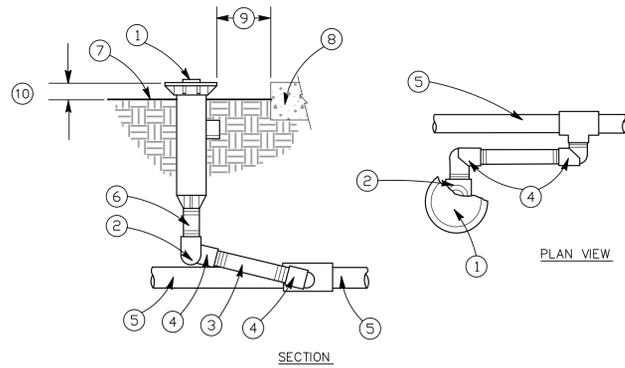
1

SIGNAL CABLE PULL BOX

N.T.S.
iCAPBI01



- LEGEND:
- 1 BALL VALVE - SCHEDULE 80 PVC - SAME SIZE AS DRIP FILTER.
 - 2 DRIP FILTER WITH SERVICABLE ELEMENT. INSTALL WITH FILTER ELEMENT FACING TO ONE SIDE.
 - 3 RECTANGULAR VALVE BOX - HEAT BRAND THE WORDS "DRIP FILTER" WITH 2" HIGH CHARACTERS ON COVER. GREEN IN COLOR WITH PURPLE TAG.
 - 4 PVC MAIN LINE PIPING.
 - 5 LINE-SIZE SCHEDULE 40 PVC SLIP COUPLER AND SCHEDULE 80 T.O.E. NIPPLE (THREADED ONE END). TYPICAL.
 - 6 PVC MAIN LINE PIPE TO ELECTRIC CONTROL VALVES.
 - 7 PROVIDE 2" MAXIMUM CLEARANCE BELOW COVER.
 - 8 COMMON RED BRICK (4 REQUIRED).
 - 9 SCHEDULE 80 PVC FEMALE ADAPTER (T x S).
 - 10 3/4" CRUSHED GRAVEL - 12" DEEP AND 2" CLEAR SPACE BELOW ASSEMBLY.
 - 11 SET BOX 3" ABOVE FINISH GRADE OF GROUND COVER AND SHRUB AREAS.
 - 12 FINISH GRADE.
 - 13 LANDSCAPE FABRIC - WRAP SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.
- NOTES:
1. PROVIDE 2" MINIMUM AND 4" MAXIMUM CLEARANCE BELOW PIPING AND FILTER ASSEMBLY.
 2. ROTATE FILTER TOWARD INSIDE CORNER OF BOX TO ALLOW FOR REMOVAL OF FILTER ELEMENT WITHOUT CONTAMINATION.



- LEGEND:
- 1 POP-UP SPRAY HEAD.
 - 2 SCHEDULE 40 PVC T x T ELL.
 - 3 SCHEDULE 80 PVC NIPPLE - 6-INCH MINIMUM, AND 12-INCHES MAXIMUM LENGTH.
 - 4 SCHEDULE 40 PVC STREET ELL.
 - 5 LATERAL LINE PIPE AND FITTING.
 - 6 PVC SCHEDULE 80 SHORT NIPPLE.
 - 7 FINISH GRADE.
 - 8 ADJACENT PAVING EDGE OR CURB.
 - 9 INSTALL TOP OF SPRAY HEAD 4" AWAY FROM PAVING EDGE IN TURF AREAS AND SET 6" AWAY FROM PAVING EDGE IN PLANTING BEDS.
 - 10 SET SPRAY HEAD 1/2-INCH ABOVE FINISH GRADE IN TURF AND 2-INCHES ABOVE GROUND IN SHRUB AND GROUND COVER PLANTING AREAS.
- NOTE:
1. USE TEFLON TAPE ON THREADED FITTINGS.

6

4

DRIP FILTER

N.T.S.
iFTRDI01

2

POP-UP SPRAY HEAD

N.T.S.
iSPYPI01

PROJECT STATUS

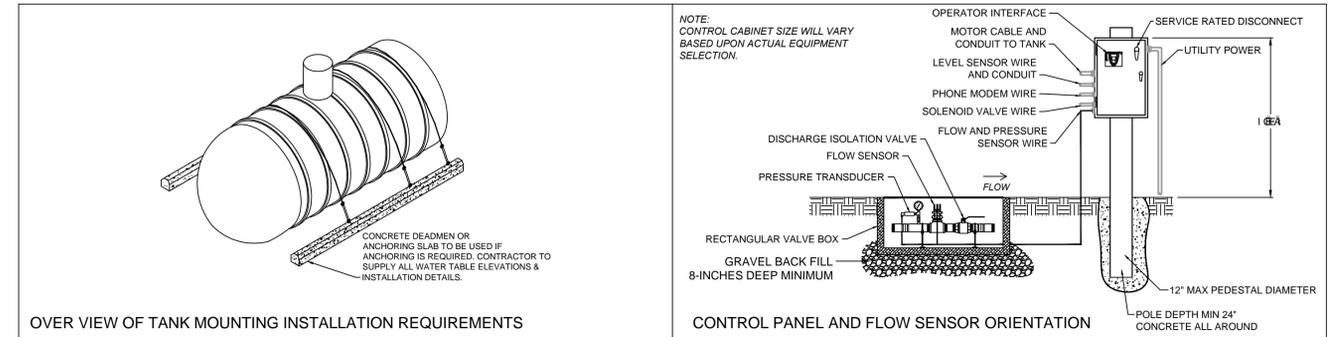
BID SET 04/30/09

ISSUE

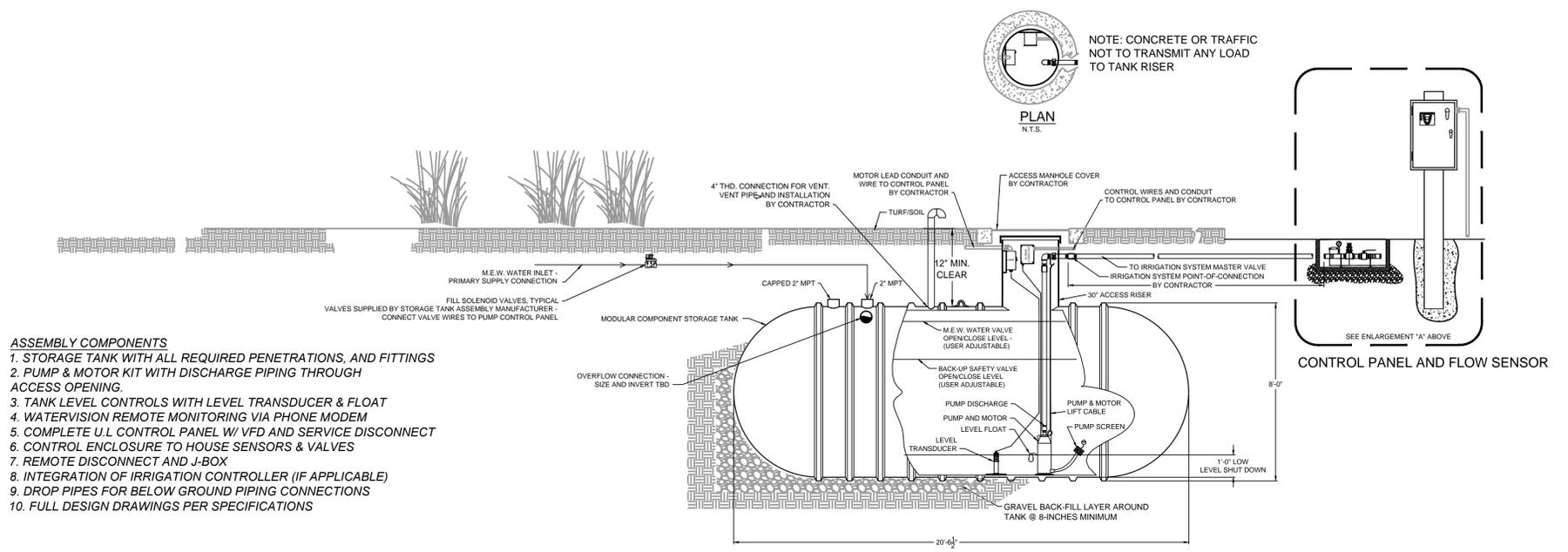
MARK	DATE	DESCRIPTION	INITIAL

DRAWN	D. COLBECK	DATE		<p>Ames Research Center Moffet Field, California</p> <p>N232 COLLABORATIVE SUPPORT FACILITY</p> <p style="font-size: 1.2em;">IRRIGATION DETAILS</p>
DESIGNED	M. DURHAM	DATE		
CHECKED	M. DURHAM / T. GOTO	DATE		
PROJECTOR	J. GRANT	DATE		
REQUESTOR	R. SCHULER	DATE		
REDA		DATE		
SAFETY		DATE		
SUPERVISOR	S. FRANKEL	DATE		

SIZE	CASE CODE	A232-0800-	L553	REV	
D	25307	A232-0800-	L553		
SCALE	AS SHOWN	INDEX	SHEET	OF	



ENLARGEMENT "A"
N.T.S.



- ASSEMBLY COMPONENTS**
1. STORAGE TANK WITH ALL REQUIRED PENETRATIONS, AND FITTINGS
 2. PUMP & MOTOR KIT WITH DISCHARGE PIPING THROUGH ACCESS OPENING.
 3. TANK LEVEL CONTROLS WITH LEVEL TRANSDUCER & FLOAT
 4. WATERVISION REMOTE MONITORING VIA PHONE MODEM
 5. COMPLETE U.L CONTROL PANEL W/ VFD AND SERVICE DISCONNECT
 6. CONTROL ENCLOSURE TO HOUSE SENSORS & VALVES
 7. REMOTE DISCONNECT AND J-BOX
 8. INTEGRATION OF IRRIGATION CONTROLLER (IF APPLICABLE)
 9. DROP PIPES FOR BELOW GROUND PIPING CONNECTIONS
 10. FULL DESIGN DRAWINGS PER SPECIFICATIONS

- NOTES:**
1. DRAWING EXHIBIT NOT TO SCALE, PROVIDED FOR BASIS OF DESIGN ILLUSTRATION PURPOSES ONLY.
 2. INSTALL LENGTH OF STORAGE TANK PARALLEL TO LANDSCAPE GRADE CONTOURS.
 3. SECTION/ELEVATION EXHIBIT IS SHOWN FOR STORAGE TANK COMPONENT CLARIFICATION ONLY. LANDSCAPE FINISH GRADES ARE DIAGRAMMATIC AND DO NOT REFLECT SPECIFIC SITE INSTALLATION FINAL GRADING CONTOURS. REFER TO SITE CONSTRUCTION PLAN SHEET L101.
 4. ALIGN TANK IN PLUMB AND LEVEL POSITION AND PER MANUFACTURER'S RECOMMENDATIONS.
 5. IRRIGATION PUMP AND TANK ASSEMBLY COMPONENTS AND RELATED COMPONENT ALIGNMENT/COORDINATION SHALL BE ASSEMBLED BY THE SAME MANUFACTURER PROVIDING A WARRANTY FOR THE ENTIRE ASSEMBLY.
 6. FLEXIBLE COUPLINGS REQUIRED ON ALL TANK CONNECTIONS.
 7. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF THE FINAL ASSEMBLY AND FOR SUPPLY/ SERVICE CONNECTIONS. IN NO CIRCUMSTANCES SHALL THE CONTRACTOR REPLACE THE MANUFACTURER'S RESPONSIBILITY FOR THE SELECTION AND SUB-INSTALLATION OF IRRIGATION PUMP AND STORAGE TANK COMPONENTS.
 8. REFER TO IRRIGATION PLAN SHEET L202 FOR IRRIGATION SYSTEM CONNECTION AND ADDITIONAL INFORMATION.

IRRIGATION PUMP AND STORAGE TANK DESIGN INTENT AND PERFORMANCE CRITERIA:

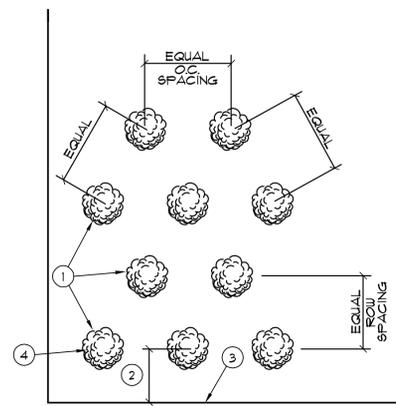
CONTRACTOR TO PROVIDE ONE IRRIGATION PUMP AND STORAGE TANK ASSEMBLY, DESCRIBED WITH THE DRAWING AND AND SPECIFICATION AS THE BASIS OF DESIGN. DESIGN CLARIFICATION DRAWING REPRESENTS AN OVERVIEW OF THE INSTALLATION AND COORDINATION REQUIRED FOR A COMPLETE AND OPERATIONAL ASSEMBLY SPECIFICALLY DESIGNED TO MEET THE IRRIGATION SYSTEM CRITERIA SHOWN ON PLAN SHEETS L201 AND L202. REFER TO IRRIGATION SPECIFICATION SECTION 328400 INDICATING THE SPECIFIC ASSEMBLY COMPONENTS AND PERFORMANCE ENGINEERING.

OVERVIEW OF IRRIGATION PUMP AND STORAGE TANK ASSEMBLY:

MODULAR TANK SIZE RATED AT 6,000 GALLONS
 SUBMERSIBLE PUMP ACCESSIBLE THROUGH TANK TOP HATCH.
 ADJUSTABLE WATER LEVEL SENSOR SWITCH FOR DOMESTIC WATER SUPPLY AND MEW SUPPLY.
 REMOTE MONITORING AND OPERATING INTERFACE VIA TELEPHONE MODEM TO PC COMPUTER SOFTWARE AS PART OF ASSEMBLY SPECIFICATION.

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REQUESTOR		R. SCHULER	
REDA			
SAFETY			
SUPERVISOR		S. FRANKEL	
SIZE	CASE CODE	REV	
D	25307	A232-0800-	L554
SCALE	AS SHOWN	INDEX	SHEET OF

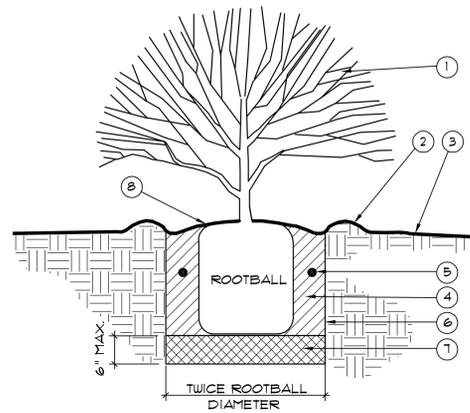

Ames Research Center
 Moffet Field, California
 N232 COLLABORATIVE SUPPORT FACILITY
IRRIGATION PUMP AND STORAGE TANK DETAILS



- LEGEND:**
- 1 LOCATE PLANT MATERIAL SPACED EQUAL DISTANT FROM EACH OTHER AS SHOWN ON PLANTING PLAN / PLANTING LEGEND.
 - 2 OFFSET DISTANCE OF 1/2 THE PLANT ON-CENTER SPACING.
 - 3 EDGE OF PAVING, CURB, BUILDING, HEADER, ETC.
 - 4 WHERE TRIANGULAR SPACING MEETS WALKWAY AT END ADD A PLANT TO SQUARE OFF THE END.

- NOTE:**
1. SET FINISH GRADE OF PLANTING AREA 2-INCHES BELOW FINISH SURFACE OF PAVING, WALK OR MOWSTRIP.

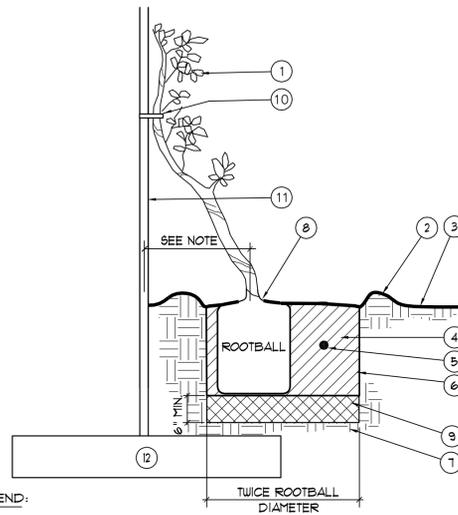
3 SHRUB AND GROUND COVER PLANTING
SCALE: N.T.S. D-Tri-Spacing



- LEGEND:**
- 1 SHRUB - CENTER IN PIT.
 - 2 2" DEEP WATERING BASIN.
 - 3 FINISH GRADE.
 - 4 AMENDED BACKFILL PER HORTICULTURAL SOILS REPORT.
 - 5 PLANTING TABLETS PER SPECIFICATIONS.
 - 6 SCARIFY SIDES AND BOTTOM OF PLANTING PIT.
 - 7 UNDISTURBED NATIVE SOIL.
 - 8 SET TOP OF ROOTBALL 1/2" ABOVE SURROUNDING GRADE AND SLOPE FOR DRAINAGE.

- NOTES:**
1. PROVIDE 2-INCH LAYER OF APPROVED MULCH AT PLANT BASIN. MULCH TO BE 6-INCHES AWAY FROM THE SHRUB STEM.

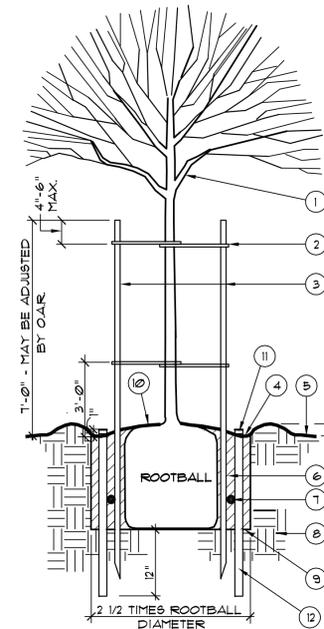
4 SHRUB AND GROUND COVER PLANTING
SCALE: N.T.S. D-SHRUB



- LEGEND:**
- 1 VINE.
 - 2 2" DEEP WATERING BASIN. SEE SPECIFICATIONS.
 - 3 FINISH GRADE.
 - 4 AMENDED BACKFILL - PER SPECIFICATIONS
 - 5 PLANTING TABLETS. PLACE IN PIT 2/3 UP FROM PIT BOTTOM. SEE SPECS.
 - 6 SCARIFY SIDES AND BOTTOM OF PLANTING PIT.
 - 7 UNDISTURBED NATIVE SOIL.
 - 8 SET TOP OF ROOTBALL 1/2" ABOVE SURROUNDING GRADE AND SLOPE FOR DRAINAGE. CENTER BETWEEN DRAINAGE STRIP AND COLUMN - SEE PLANS.
 - 9 TRANSITION ZONE OF COMPACTED AND UNAMENDED NATIVE SOIL.
 - 10 FLEXIBLE VINE TIES
 - 11 VINE TRELLIS - SEE ARCHITECT'S DRAWINGS
 - 12 BUILDING FOOTING - SEE ARCHITECT'S DRAWINGS

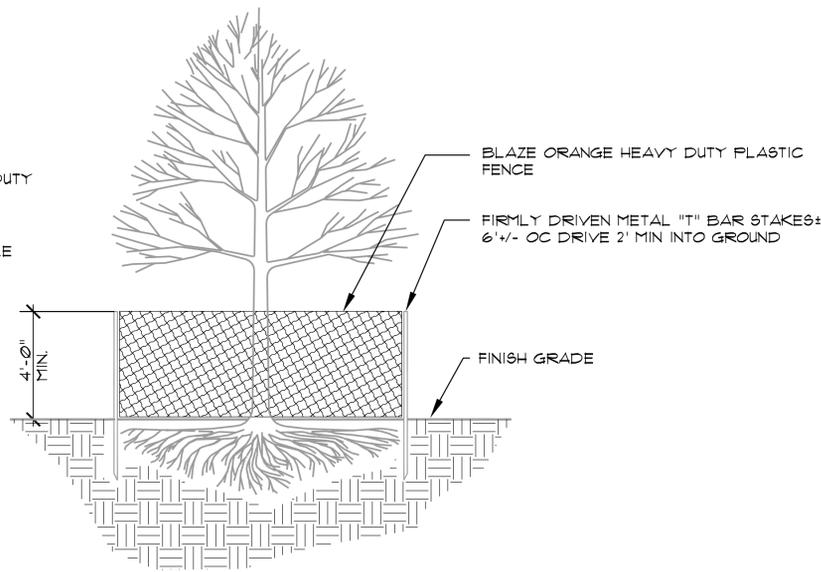
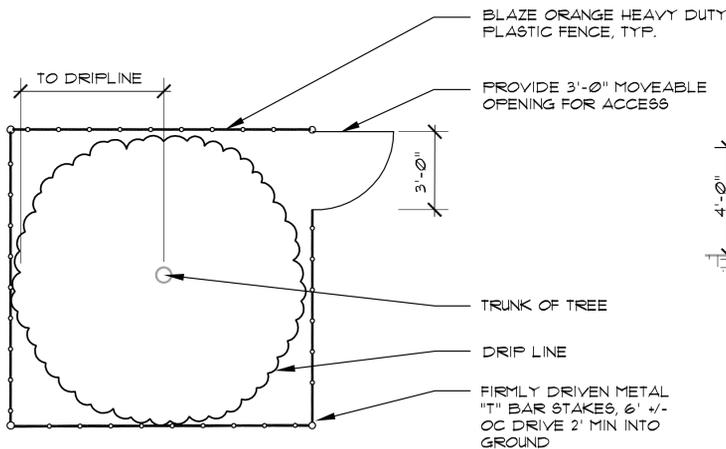
- NOTES:**
1. SET VINE AS CLOSE TO BACK SURFACE OF PIT OR TIGHT TO FOOTING AS POSSIBLE.
 2. PROVIDE 2-INCH LAYER OF APPROVED MULCH AT PLANT BASIN. MULCH TO BE 6-INCHES AWAY FROM PLANT STEM.

2 VINE PLANTING
SCALE: N.T.S. D-VINE



- LEGEND:**
- 1 TREE - CENTER IN PIT.
 - 2 THE WONDER TREE TIE - MODEL U2484. INSTALL PER MANUFACTURER'S SPECIFICATIONS. PH: (800) 310-2810
 - 3 3" DIAMETER LODGE POLE PINE TREE STAKE. DRIVE STAKES A MINIMUM OF 2 FEET INTO NATIVE SOIL BENEATH PLANTING PIT. THE STAKES SHALL BE INSTALLED OUTSIDE THE ROOTBALL OF THE TREE.
 - 4 WATER BASIN.
 - 5 FINISH GRADE.
 - 6 AMENDED BACKFILL PER HORTICULTURAL SOILS REPORT.
 - 7 PLANT TABLET PER SPECIFICATIONS
 - 8 UNDISTURBED NATIVE SOIL.
 - 9 SCARIFY SIDES AND BOTTOM OF PLANTING PIT.
 - 10 SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE AND SLOPE FOR DRAINAGE.
 - 11 3" BLACK DRAIN SLIP CAP
 - 12 3" PERFORATED PVC PIPE WITH "SOCK" FILTER FABRIC.

1 TREE PLANTING - DOUBLE STAKE
SCALE: N.T.S. D-TREE-DBL_STAKE



- NOTES:**
1. PROVIDE SIMILAR INSTALLATION CONTINUOUSLY AS NOTED.
 2. SEE TREE PRESERVATION NOTES ON SHEET L600 AND CIVIL ENGINEER'S DRAWINGS FOR ADDITIONAL INFORMATION.

5 TREE PRESERVATION FENCING
SCALE: N.T.S. DTL-Proto-Fence.dwg

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REQUESTOR	R. SCHULER	DATE	
PRQA		DATE	
SAFETY		DATE	
SUPERVISOR	S. FRANKEL	DATE	
		SIZE	REV
		D	
SCALE	CASE CODE	INDEX	SHEET
	25307	A232-0800-	L651

Ames Research Center
Moffet Field, California
N232 COLLABORATIVE SUPPORT FACILITY
PLANTING DETAILS