CITY OF PLANO

PARKS AND RECREATION DEPARTMENT

FOR

IRRIGATION DETAILS

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INSPECTIONS (REQUIRED OBSERVATIONS)

1. STAKED LOCATIONS OF MAINLINE, VALVES, AND IRRIGATION HEADS.
2. ALL PIPE RUNS AND JOINTS INCLUDING ANY COUPLING OR BELL END CONNECTIONS.
3. ALL WIRE INSTALLATION.
4. ALL THRUST BLOCKS MUST BE EXPOSED FOR VISUAL OBSERVATION.
5. PRESSURE TEST OF MAINLINE AND ELECTRIC CONTROL VALVE INSTALLATION.
6. IRRIGATION HEAD AND TREE SPRAY HEAD PLACEMENTS, COVERAGE AND OPERATING PRESSURE PRIOR TO PLANTING.
7. AUTOMATIC CONTROLLER INSTALLATION AND OPERATION.

MARCH 2016
PREFERRED MATERIAL:
DOUBLE CHECK VALVE ASSEMBLY — FEBCO 850
WYE STRAINER — FEBCO LF650A
BALL VALVE — NIBCO T-585-70

GENERAL NOTES:
1. INSTALL 4" X 8" X 16" SOLID CMU BLOCKS, LAID FLAT
STACKED 2 HIGH ALL AROUND THE VALVE BOX. LEAVE A
MINIMUM 3" CLEARANCE AROUND THE PIPE AT ALL INLET AND
OUTLET PORTS OF THE BOX. ADDITIONAL BRICK ROWS MAY
BE REQUIRED DEPENDING ON PIPE/COMPONENT DEPTH TO
ACHIEVE CLEARANCE TO GRAVEL.
2. WASH ROCK SHALL BE INSTALLED TO ALLOW
ACCESS AND OPERATION OF BALL VALVES.
3. SEE IRRIGATION PLANS FOR EQUIPMENT
SPECIFICATIONS NOT CALLED OUT ON THIS DETAIL.
4. MAINLINE SHALL BE INSTALLED A MINIMUM
OF 18" DEEP FROM TOP OF PIPE.
5. ALL TYPE K COPPER MUST BE STRAIGHT LENGTHS FREE
OF UNNECESSARY JOINTS FROM ONE COMPONENT TO THE
OTHER WITH SOLDERED END CONNECTIONS.
6. ALL BACKFLOW DEVICE TEST COCKS SHALL BE VERTICAL
AND CAPPED WITH NON-CORROSIVE MATERIAL.

CONSTRUCTION NOTES:
A. FINISHED GRADE
B. HIGHLINE VALVE BOX INSTALLED FLUSH TO FINISHED GRADE.
   (JUMBO BOX WITH LID #190106.
   ALLOW A MINIMUM OF 6" CLEARANCE ON ALL SIDES
   OF DOUBLE CHECK VALVE.
   C/D. MAINLINE— TYPE K COPPER TO MASTER VALVE
E. DOUBLE CHECK VALVE ASSEMBLY.
F. 6" DEPTH PEA GRAVEL.
G. 4" X 8" X 16" SOLID CMU BLOCKS,
   STACKED 2 HIGH ALL AROUND THE VALVE BOX.
H. "DEWITT" FILTER FABRIC, TAPE TO ALL INLET
   AND OUTLET PORTS OF VALVE BOX. INSTALL
   FABRIC SO THAT BOX IS ALLOWED TO DRAIN.
I. COMPACTED SUBGRADE
J. TYPE K COPPER SERVICE LINE TO METER.
K. Y—STRAINER & BALL VALVE.
GENERAL NOTES:
1. INSTALL 4" X 8" X 16" SOLID CMU BLOCKS, LAID FLAT, STACKED 2 HIGH ALL AROUND THE VALVE BOX. LEAVE A MINIMUM 3" CLEARANCE AROUND THE PIPE AT ALL INLET AND OUTLET PORTS OF THE BOX. ADDITIONAL BRICK ROWS MAY BE REQUIRED DEPENDING ON PIPE COMPONENT DEPTH TO ACHIEVE CLEARANCE TO GRAVEL.
2. PEA GRAVEL SHALL BE INSTALLED TO 2" BELOW BOTTOM OF PIPE AND VALVE.
3. MAIN LINE SHALL HAVE A MINIMUM OF 18" COVER. LATERAL LINE SHALL HAVE A MINIMUM 12" COVER.
4. PROVIDE A 24" WIRE EXPANSION COIL AT EACH SPLICE WIRE CONNECTION.
5. CENTER VALVE ASSEMBLY IN VALVE BOX.
6. SEE IRRIGATION PLANS FOR EQUIPMENT SPECIFICATIONS NOT CALLED OUT IN THIS DETAIL.
7. ALL TYPE K COPPER SHALL BE STRAIGHT LENGTHS, FREE OF UNNECESSARY JOINTS FROM ONE COMPONENT TO ANOTHER WITH SOLDIERED END CONNECTIONS.

CONSTRUCTION NOTES:
A. FINISH GRADE
B. HIGH-LINE VALVE BOX INSTALLED FLUSH TO FINISHED GRADE.
   (STANDARD BOX W/ LID #170106 – VALVES 1" AND SMALLER)
   (JUMBO BOX W/ LID #190106 – VALVES 1-1/2" – 3")
C. RAINBIRD DBRY20
D. IRRIGATION MAINLINE, TYPE K COPPER FROM MASTER VALVE BACK TO METER
E. IRRIGATION MAINLINE – PVC
F. COPPER MALE ADAPTER
G. MASTER VALVE
H. MINIMUM 4" DEPTH PEA GRAVEL.
   (INSTALLED TO 2' BELOW PIPE AND VALVE)
I. 4" X 8" X 16" SOLID CMU BLOCKS – LAID FLAT, STACKED 2 HIGH ALL AROUND VALVE BOX.
J. 24" WIRE EXPANSION COIL.
K. DEWITT FILTER FABRIC. TAPE TO ALL INLET AND OUTLET PORTS OF VALVE BOX. TO BLOCK SILTING PROBLEMS INSTALL FABRIC SO THAT BOX IS ALLOWED TO DRAIN.
L. 12" SCHEDULE 80 NIPPLE.
PREFERRED MATERIAL

VALVES - 3" HUNTER ICV SERIES WITH SPEARS BALL VALVE ALL THREADED
VALVES - 1", 1-1/2", & 2" IRRITROL 2008 SERIES WITH SPEARS BALL VALVE
ALL THREADED SIZE ACCORDING TO PLANS.

GENERAL NOTES:

1. INSTALL 4" X 8" X 16" SOLID CMU BLOCKS, LAYED FLAT
   STACKED 2 HIGH ALL AROUND THE VALVE BOX. LEAVE A
   MINIMUM 3" CLEARANCE AROUND THE PIPE AT ALL INLET AND
   OUTLET PORTS OF THE BOX. ADDITIONAL BRICK ROWS MAY
   BE REQUIRED DEPENDING ON PIPE/COMPONENT DEPTH TO
   ACHIEVE CLEARANCE TO GRAVEL.
2. PEA GRAVEL SHALL BE INSTALLED TO 2" BELOW
   BOTTOM OF PIPE AND VALVE.
3. MAIN LINE SHALL HAVE A MINIMUM OF 18" COVER
   LATERAL LINE SHALL HAVE A MINIMUM 12" COVER
4. PROVIDE A 24" WIRE EXPANSION COIL AT EACH
   WIRE CONNECTOR
5. CENTER VALVE ASSEMBLY IN VALVE BOX.

CONSTRUCTION NOTES:

A. FINISH GRADE
B. HIGHLINE VALVE BOX INSTALLED FLUSH TO FINISHED GRADE.
   (STANDARD BOX W/ LID #170106 - VALVES 1" AND SMALLER)
   (JUMBO BOX W/ LID #190106 - VALVES 1-1/2" - 3")
C. RAINBIRD DBRY20
D. IRRIGATION MAINLINE
E. IRRIGATION MAINLINE SERVICE Tee OR ELL
F. ELECTRIC VALVE - SEE PREFERRED MATERIAL
G. BALL VALVE - ALL THREADED
H. LATERAL LINE
I. MINIMUM 4" DEPTH PEA GRAVEL
J. INSTALLED TO 2" BELOW PIPE AND VALVE
K. 4" X 8" X 16" SOLID CMU BLOCKS, LAYED FLAT,
   STACKED 2 HIGH ALL AROUND VALVE BOX.
L. 24" WIRE EXPANSION COIL
M. "DEWITT" FILTER FABRIC. TAPE TO ALL INLET AND
   OUTLET PORTS OF VALVE BOX TO BLOCK
   SILLING PROBLEMS. INSTALL FABRIC SO
   THAT BOX IS ALLOWED TO DRAIN.
N. SCH. 80 NIPPLE 3" LENGTH
O. SCH. 80 NIPPLE, 12" LENGTH MIN. THREADED INTO G AND F
   AND CONNECTED TO SOLVENT WELDED COUPLING.

2 IRRIGATION ELECTRIC VALVE

NOT TO SCALE
GENERAL NOTES:
1. PVC FITTINGS SHALL BE PROTECTED FROM CONCRETE BY PLACING "DEWITT" FILTER FABRIC ON CONCRETE AND FITTING.
2. THRUST BLOCKS SHALL BE USED ON ALL SOLVENT WELD PIPE 3” OR LARGER AND ALL MECHANICAL JOINT DIRECTIONAL CHANGES.
3. NO FOUR WAY CONNECTS SHALL BE ALLOWED
4. MINIMUM 2000 PSI STRENGTH CONCRETE AFTER 28 DAYS.
5. MINIMUM 2.0 CUBIC FOOT OF CONCRETE PER THRUST BLOCK.

CONSTRUCTION NOTES:
A. CONCRETE THRUST BLOCK PLACED AGAINST SOLID UNDISTURBED SOIL.
B. PVC FITTING.
C. PIPE TRENCH.
D. "DEWITT" FILTER FABRIC. INSTALL FABRIC TO PREVENT CONCRETE FROM BONDING WITH PIPE OR FITTINGS.

IRRIGATION THRUST BLOCKS

NOT TO SCALE
GENERAL NOTES:
1. THIS DETAIL SHALL BE USED FOR ANY IRRIGATION HEAD THAT IS NOT CLASSIFIED AS A POP UP SPRAY HEAD.
2. TOP OF SPRINKLER HEAD SHALL BE SET FLUSH WITH FINISH GRADE.
3. FLUSH PIPING BEFORE INSTALLING HEADS.
4. SEE IRRIGATION PLANS FOR EQUIPMENT SPECIFICATIONS NOT CALLED OUT ON THIS DETAIL.

CONSTRUCTION NOTES:
A. FINISH GRADE
B. SPRINKLER HEAD (SEE PLAN)
C. LASCO SWING JOINT. 3/4" IS T732-412. 1" IS T932-212.
D. LATERAL PIPE.
E. 45 DEGREE ANGLE.
F. HARDSCAPE

GENERAL NOTES:
1. THIS DETAIL SHALL BE USED FOR POP-UP SHRUB SPRAYS, POP-UP TURF SPRAYS.
2. TOP OF SPRINKLER HEAD SHALL BE SET FLUSH WITH FINISH GRADE.
3. NO "FUNNY" PIPE OR "FLEX" PIPE IS TO BE USED IN THE INSTALLATION.
4. SEE IRRIGATION PLANS FOR EQUIPMENT SPECIFICATIONS NOT CALLED OUT ON THIS DETAIL.

CONSTRUCTION NOTES:
A. FINISH GRADE
B. SPRINKLER HEAD. SEE PLAN.
C. HUNTER SJ-912 SWING JOINT
D. LATERAL PIPE
E. APPROPRIATE SCHEDULE 40 FITTING.
IRRIGATION DETAIL FOR NEWLY PLANTED TREES

NOT TO SCALE

GENERAL NOTES:

1. ALL TREE IRRIGATION HEADS ARE TO BE RAINBIRD 1806 SERIES 6" POP-UP W/ 8" Q NOZZLES.

CONSTRUCTION NOTES:

A. IRRIGATION HEAD (2 PER TREE) – SHALL BE INSTALLED OUTSIDE OF AND ON OPPOSITE SIDES OFF THE TREE WELL. HEADS SHALL BE 72" FROM THE BASE OF THE TREE. DO NOT COVER WITH MULCH.

B. SWING JOINT TO BE A HUNTER SJ–512

C. FINISHED GRADE

D. MULCH TREE WELL (SEE PLANTING DETAIL)

E. TREE ROOT BALL

F. LATERAL IRRIGATION LINE TO REMAIN A MINIMUM OF 72" FROM THE TRUNK OF THE TREE.

G. PVC THREADED HUNTER SJ–512. CONNECT TO BOTTOM ON INLET.

H. TORO SUPER FUNNY PIPE CONNECTED TO SIDE INLET

I. SET BUBBLER HEAD INSIDE TREE RING.
GENERAL NOTES:

1. CONTROLLER TO BE SPECIFIC TO EACH PROJECT. ALL ELECTRICAL WIRING TO BE INSTALLED PER LOCAL CODES. WIRED SERVICE TO BE INSTALLED IN A SEPARATE TRENCH FROM OTHER ELECTRICAL WIRING.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK ASSOCIATED WITH CONTROLLER INSTALLATION. INSTALLATION SHALL INCLUDE A METER BASE FOR AC CONTROLLER.

3. PROVIDE DRAINAGE AWAY FROM THE BASE OF THE CONTROLLER IN ALL DIRECTIONS.

4. ALL IRRIGATION CONTROLLERS TO BE GROUNDED WITH GROUNDING ROD AND WIRE PER THE N.E.C.

5. INSTALL CONTROLLER IN ACCORDANCE WITH MANUFACTURE'S INSTRUCTIONS.

6. NO MORE THAN 100' BETWEEN CONTROLLER AND FURTHEST VALVE ON DC SYSTEMS. NO MORE THAN 1,200' ON AC SYSTEMS.

CONSTRUCTION NOTES:

A. WEATHER PROOF AUTOMATIC CONTROLLER AS SPECIFIED - PROVIDED BY OWNER. INSTALLED BY CONTRACTOR.

B. CONTROLLER PEDESTAL (SECURELY ANCHOR TO CONCRETE BASE)

C. 4' X 4' CONCRETE BASE WITH #4 REBAR AT 12" ON CENTER EACH WAY. 1/2" CHAMFER AT EDGES. 2" MINIMUM SWEEP FOR FIELD WIRES. 1" MINIMUM SWEEP FOR POWER SUPPLY.

D. SOLAR PANEL. SOLAR ARRAY MUST FACE SOUTH IF DC CONTROLLER IS SPECIFIED.

E. 5/8 COPPER ROD 8 FEET IN LENGTH. LOCATE WITHIN 6" OF CONTROLLER IN A 10" ROUND ROUND BOX WITH 6" OF GRAVEL BELOW GROUNDING CLAMP. DO NOT PLACE GROUNDING ROD IN CONCRETE PAD. EARTH GROUND RESISTANCE SHALL BE UNDER 10 OHMS. MULTIPLE GROUNDING RODS MAY BE REQUIRED.

F. #10 BARE COPPER GROUNDING WIRE. COORDINATE WITH OWNER FOR EXACT CONNECTION LOCATION INSIDE CONTROLLER.

G. HIGHLINE VALVE BOX INSTALLED FLUSH TO FINISH GRADE - 10" ROUND #181104.

H. BRICK

I. PEA GRAVEL
GENERAL NOTES:

1. NOTES: NO DIRECT CONNECTION TO SLEEVE SHALL BE ALLOWED. SLEEVE SIZE SHALL BE TWO SIZES LARGER THAN THE PIPE TO BE SLEEVED.
2. MARK HARDSCAPE WITH SYMBOL "S" TO INDICATE THAT A SLEEVE IS BELOW.
3. SLEEVE DEPTH TO MATCH DEPTH OF PIPE BEING SLEEVED – SEE DETAIL SD-09.

CONSTRUCTION NOTES:

A. STUB UP SLEEVE AND CAP IF SLEEVE IS NOT BEING USED AFTER INSTALLATION.
B. HARDSCAPE
C. SCH 40 PVC – IRRIGATION SLEEVE (IF NOT BEING USED AFTER INSTALLATION).
D. SCH 40 PVC IRRIGATION SLEEVE – SEE PLAN
E. EXTEND SLEEVE 1'-0" BEYOND EDGE OF HARDSCAPE.
F. PVC MAINLINE OR LATERAL AS SPEC'D.
G. ONLY SOLVENT WELDED FITTINGS ALLOWED IN SLEEVE.
GENERAL NOTES:

1. PIPE SHALL REST FIRMLY ON TRENCH BOTTOM.
   BUNDLE WIRE WITH ELECTRICAL TAPE AT 20’ INTERVALS.
   SNAKE PIPE FROM SIDE TO SIDE.

2. MAINLINE AND LATERAL DO NOT SHARE A SINGLE
   TRENCH UNLESS APPROVED BY OWNER.

3. ALL PIPE USED SHALL BE IN 20’ SECTIONS AND CUT
   TO FIT WHERE NECESSARY

4. WIRE IS TO BE 12 GUAGE.
   USE WHITE FOR COMMON, RED FOR STATION VALVES,
   2 YELLOW AND 2 BLACK FOR MASTER VALVE,
   2 BLUE AND 2 GREEN FOR FLOW.
   *SEE TECHNICAL SPECS 4.12 and 4.13

5. PIPE SIZES 2 1/2” & BELOW REQUIRE
   CLEAR PLASTIC MEDIUM BODY PIPE CEMENT,
   PIPE SIZES 3” & ABOVE REQUIRE GRAY
   HEAVY BODIED PIPE CEMENT.

6. USE DUCTILE IRON MECHANICAL JOINT FITTINGS
   WITH STANDARD RING & TRANSITION GASKET
   FOR 4” & ABOVE DIRECTIONAL CHANGES.

7. BACKFILL MUST BE FREE OF ROCK DEBRIS AND
   TRENCHES MUST BE WATER PACKED TO
   PREVENT FUTURE SETTLING.

CONSTRUCTION NOTES:

A. MAIN LINE, 18” COVER
B. WIRE BUNDLE, TAPE PER SPECS.
   (DO NOT TAPE WIRE IN SLEEVE.)
C. LATERAL LINE, 12” COVER
D. FINISHED GRADE

IRRIGATION TRENCH DETAIL
GENERAL IRRIGATION NOTES

ALWAYS CONTACT CITY OF PLANO REPRESENTATIVE BEFORE COMMENCING WORK.
DO NOT BACKFILL ANY PORTION OF THE IRRIGATION WITHOUT CONSENT FROM RELEVANT C.O.P.
REPRESENTATIVE (YOU MAY BE ASKED TO DIG IT BACK UP IF YOU DO).
NOTE: ALL REQUIRED OBSERVATIONS CAN BE FOUND IN SECTION 1.07 OF THE IRRIGATION TECHNICAL SPECS.

1. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES, PIPES AND
   STRUCTURES EITHER SHOWN OR NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE
   FOR ANY DAMAGE TO UTILITIES AND STRUCTURES DURING CONSTRUCTION. THE CONTRACTOR SHALL
   COORDINATE LINE LOCATIONS WITH FRANCHISE AND CITY UTILITIES. THE CONTRACTOR SHALL FIELD
   VERIFY DIMENSIONS AND EXISTING SITE CONDITIONS.
2. VERIFY MINIMUM STATIC PRESSURE AS NOTED ON THE PLAN BEFORE BEGINNING INSTALLATION. IF
   LOWER THAN NOTED, NOTIFY OWNER'S REPRESENTATIVE BEFORE PROCEEDING.
3. ALL PIPING IS DIAGRAMMATIC. LOCATE ALL IRRIGATION LINES IN THE TURF AND PLANTING AREAS.
   ADJUST ALL HEAD AND LINE LOCATIONS AS NECESSARY ON SITE TO ACCOMMODATE EXISTING JOB
   CONDITIONS AND TO ACHIEVE 100% COVERAGE.
4. THE IRRIGATION SYSTEM IS TO BE INSTALLED PER ALL LOCAL AND STATE CODES AND REQUIREMENTS.
   THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED PERMITS AND INSPECTION FEES.
5. LOCATE ALL HEADS A MINIMUM OF 4 INCHES AND MAXIMUM OF 6 INCHES FROM ADJACENT PAVING.
   ADJUST RADIUS AND ARC AS NEEDED.
6. THE REMOTE CONTROL VALVES ARE TO BE INSTALLED IMMEDIATELY ADJACENT TO THE MAIN LINE.
7. THE IRRIGATION CONTRACTOR SHALL ENSURE ALL AREAS SHOWN TO BE IRRIGATED RECEIVE 100%
   COVERAGE WITH NO OVERTHROW ONTO THE STREETS. ADJUST RADIUS AND ARC AS NEEDED.
8. ALL NECESSARY COMPONENTS ARE TO BE LOCATED IN THE HIGHLINE BOXES. (SIZE PER DETAIL SPECS),
   BOXES TO BE SET FLUSH WITH FINISH GRADE.
9. ALL WIRES FOR REMOTE CONTROL VALVES ARE TO BE 12 GAUGE SINGLE STRAND, UL APPROVED DIRECT
   BURIAL WIRE. ALL WIRE CONNECTORS ARE TO BE RAINBIRD DBRY20. ALL WIRE RUNS ARE TO BE
   HOMERUN FROM CONTROLLER TO ELECTRIC VALVE. PROVIDE A WIRE COIL EVERY 100’ FOR EXPANSION
   AND CONTRACTION. SPLICING AND SPLICE BOXES ARE PROHIBITED UNLESS APPROVED BY RELEVANT
   COP REPRESENTATIVE.
10. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH OTHER TRADES.
11. REFER TO THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
12. THE L.I.C. SHALL MAINTAIN A COMPLETE SET OF RED LINED AS-BUILT DRAWINGS DURING CONSTRUCTION
    THAT IS TO REMAIN ON SITE AT ALL TIMES. THE L.I.C. WILL THEN CONTRACT WITH THE ORIGINAL
    DESIGNER, UNLESS PRIOR ARRANGEMENTS HAVE ALREADY BEEN MADE, TO PROVIDE THE RED LINED
    AS-BUILT NOTES TO PRODUCE A RECORD DRAWING AND COLOR FIELD COPY. THIS MUST ALL BE DONE
    VIA AUTOCAD TO THE ORIGINAL CONSTRUCTION DOCUMENT. THE RECORD DRAWING MUST THEN BE
    SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO CREATING THE COLOR FIELD COPY.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ELECTRICAL SERVICE (INCLUDING METER
    BASES) TO THE IRRIGATION CONTROLLERS AS SHOWN ON THE PLANS. HARDWARE CONTROLLERS TO THE
    ELECTRICAL SERVICES. ELECTRICAL CONNECTIONS SHALL BE IN ACCORDANCE WITH ALL STATE AND
    LOCAL CODES AND REQUIREMENTS. CONTACT T.U. ELECTRIC FOR ADDITIONAL SERVICE REQUIREMENTS.
14. THE ELECTRICAL SERVICE SHALL BE LOCATED IN A SEPARATE TRENCH THAN THE IRRIGATION PIPING
    AND THE LOCATION OF THE SERVICES SHALL BE SHOWN AND DIMENSIONED ON THE AS-BUILT PLANS.