

THE CONTRACTOR SHALL KNOW AND FULLY COMPLY WITH APPLICABLE PROVISIONS OF THE FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS THAT GOVERN THE CONTRACTOR'S OPERATIONS AND STORM WATER AND NON-STORM WATER DISCHARGES FROM BOTH THE PROJECT SITE AND AREAS OF DISTURBANCE OUTSIDE THE PROJECT LIMITS DURING CONSTRUCTION. FOR MORE INFORMATION, SEE STANDARDS PAGES IN SECTION 800.

CUTS

1. SLOPE

EXCAVATIONS SHALL NOT BE MADE WITH A CUT FACE STEEPER IN SLOPE THAN TWO HORIZONTAL TO ONE VERTICAL (2:1). THE CITY ENGINEER, OR APPROVING BODY, MAY REQUIRE THE EXCAVATION TO BE MADE WITH A CUT FACE FLATTER IN SLOPE THAN TWO HORIZONTAL TO ONE VERTICAL IF THERE IS REASON TO BELIEVE THAT THE MATERIAL IN WHICH THE EXCAVATION IS TO BE MADE IS UNUSUALLY SUBJECT TO EROSION OR IF OTHER CONDITIONS MAKE SUCH FLATTER CUT NECESSARY FOR STABILITY AND SAFETY. AN APPLICANT OR PERMITTEE MAY SUBMIT THE REPORT AND RECOMMENDATIONS OF A RETAINED ENGINEERING GEOLOGIST OR GEOTECHNICAL ENGINEER FOR A STEEPER SLOPE AND THE CITY ENGINEER SHALL CONSIDER AND MAY APPROVE A STEEPER SLOPE, BUT SHALL NOT NECESSARILY BE BOUND BY SUCH REPORT IF A DETERMINATION THAT PUBLIC SAFETY WOULD BE ENDANGERED THEREBY.

2. UNSTABLE SLOPES

IF THE MATERIAL OF THE SLOPE IS OF SUCH COMPOSITION AND CHARACTER AS TO BE UNSTABLE, CONSIDERING ALL TYPES OF ANTICIPATED LOADING MOISTURE CONDITIONS AND ERODIBILITY, THE ENGINEERING GEOLOGIST AND/OR GEOTECHNICAL ENGINEER SHALL, BY TESTING AND ANALYSIS, PROVIDE SPECIFIC CRITERIA FOR ITS STABILIZATION BY REDUCTION OF SLOPE ANGLE, BUTTRESSING, OR BY A COMBINATION OF THESE OR OTHER MEANS.

3. ROUNDING SLOPES

ALL CUT SLOPES SHALL BE ROUNDED INTO THE EXISTING TERRAIN TO PRODUCE A CONTOURED TRANSITION FROM CUT FACE TO NATURAL GROUND WHERE CONDITIONS PERMIT.

4. LOCATION OF SLOPES

ALL CUT SLOPES SHALL BE WITHIN PROPERTIES OR PARCELS UNDER ONE OWNERSHIP WHEREVER POSSIBLE, AND IN NO EVENT SHALL CUTS BE DIVIDED VERTICALLY BY PROPERTY LINES UNLESS DESIGN CRITERIA IS SUBMITTED WHICH, IN THE ESTIMATION OF THE CITY ENGINEER, WOULD PROVIDE ADEQUATE PROTECTION. TOPS OF CUT SLOPES SHALL NOT BE NEARER THAN ONE FOOT PLUS ONE-FIFTH THE HEIGHT OF THE CUT TO A PROJECT BOUNDARY, BUT NEED NOT EXCEED A HORIZONTAL DISTANCE OF TEN (10) FEET FROM THE PROJECT BOUNDARY.

5. TERRACES

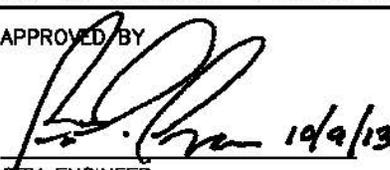
TERRACES SHALL BE A MINIMUM OF SIX AND ONE-HALF FEET IN WIDTH. CUT SLOPES SHALL NOT EXCEED A VERTICAL HEIGHT OF 60 FEET UNLESS TERRACES ARE INSTALLED AT EACH 30 FEET OF VERTICAL HEIGHT. AT THE DISCRETION OF THE CITY ENGINEER, CUT SLOPES EXCEEDING 30 FEET AND LESS THAN 100 FEET IN VERTICAL HEIGHT MAY HAVE ONE (1) TERRACE DRAIN PLACED AT MID-HEIGHT.

FILLS

1. SLOPE

NO FILL SHALL BE MADE WHICH CREATES ANY EXPOSED SURFACE STEEPER IN SLOPE THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).

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DWG DATE: 12/91		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
3	7/13	ADD TOPSOIL EDIT NOTES	APPROVED BY  10/9/13 CITY ENGINEER	
2	2/03			
MARK	DATE	REVISION	GRADING DESIGN STANDARDS	

2. TERRACES

TERRACES SHALL BE A MINIMUM OF SIX AND ONE-HALF FEET IN WIDTH. FILL SLOPES SHALL NOT EXCEED A VERTICAL HEIGHT OF 50 FEET UNLESS TERRACES ARE INSTALLED AT EACH 25 FEET OF VERTICAL HEIGHT. AT THE DISCRETION OF THE CITY ENGINEER, FILL SLOPES EXCEEDING 25 FEET AND LESS THAN 50 FEET IN VERTICAL HEIGHT MAY HAVE ONE (1) TERRACE DRAIN PLACED AT MID-HEIGHT.

3. PLACEMENT OF FILL

ALL FILLS SHALL BE PLACED, COMPACTED, INSPECTED AND TESTED IN ACCORDANCE WITH THE FOLLOWING PROVISIONS:

- A. THE NATURAL GROUND SURFACE SHALL BE PREPARED TO RECEIVE FILL BY REMOVING VEGETATION, NON-COMPLYING FILL, UNSUITABLE SOIL; AND, WHERE NATURAL SLOPES ARE FIVE HORIZONTAL TO ONE VERTICAL OR STEEPER, BY PLACING AT LEAST TEN (10) FOOT WIDE KEYS AND BENCHES INTO SOUND BEDROCK OR OTHER COMPETENT MATERIAL. FIVE (5) FEET OF THE LOWERMOST BENCH SHALL BE EXPOSED BEYOND THE TOE OF THE FILL.
- B. NO ORGANIC MATERIAL SHALL BE PERMITTED IN FILLS. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL WITH A MAXIMUM DIMENSION GREATER THAN EIGHT (8) INCHES SHALL BE BURIED OR PLACED IN FILLS UNLESS OTHERWISE RECOMMENDED BY THE CIVIL ENGINEER OR GEOTECHNICAL ENGINEER.
- C. THE FILL SHALL BE SPREAD IN A SERIES OF LAYERS. THE MAXIMUM THICKNESS OF LOOSE LIFTS SHALL BE EIGHT (8) INCHES AND SHALL BE COMPACTED BY SHEEPFOOT ROLLER OR OTHER APPROVED METHOD AFTER EACH LAYER IS SPREAD.
- D. THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE CONTROLLED AT THE TIME OF SPREADING AND COMPACTION TO OBTAIN REQUIRED RELATIVE COMPACTION.
- E. ALL FILLS SHALL BE COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T180, CORRECTION FOR OVERSIZE MATERIAL IN ACCORDANCE WITH AASHTO T224 OR OTHER APPROVED TESTING METHOD GIVING EQUIVALENT TEST RESULTS.
- F. A FIELD DENSITY TEST SHALL BE TAKEN FOR EACH TWO (2) FEET OF FILL OR PORTION THEREOF, MEASURED VERTICALLY FROM THE LOWEST POINT OF THE AREA TO BE FILLED AND FOR EACH 1,000 CUBIC YARDS OF FILL PLACED. IN ADDITION, IN THE CASE OF SUBDIVISIONS, AT LEAST ONE (1) FIELD DENSITY TEST SHALL BE TAKEN ON EACH PLATTED LOT WHICH RECEIVES FILL. SLOPE FACE TEST SHALL BE REQUIRED AT ONE (1) TEST PER 1,000 SQUARE FEET BUT AT NO GREATER VERTICAL INTERVAL THAN TEN (10) FEET.
- G. ALL FILLS SHALL BE TESTED FOR RELATIVE COMPACTION (DENSITY). A CERTIFICATE OF COMPLIANCE SHALL BE SUBMITTED TO ATTEST TO COMPLIANCE WITH THESE STANDARDS. IN ADDITION, ANY FILL PROPOSED TO SUPPORT ANY STRUCTURE, EITHER IMMEDIATELY OR IN THE FUTURE, SHALL BE CERTIFIED AS TO COMPLIANCE WITH THESE STANDARDS, THE SOILS REPORT, AND CHAPTERS 18 & 33 OF THE CALIFORNIA BUILDING CODE. ALL CERTIFICATES OF COMPLIANCE SHALL BE SIGNED BY A CIVIL ENGINEER OR A GEOTECHNICAL ENGINEER AND BE APPROVED BY THE CITY ENGINEER.
- H. FILLS TOEING OUT ON NATURAL SLOPES WHICH ARE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1) SHALL NOT BE PERMITTED UNLESS BUTTRESS EFFECT CAN BE SHOWN TO SAFELY PERMIT AN EXCEPTION.
- I. TOES OF FILL SLOPES SHALL NOT BE MADE NEARER TO A PROJECT BOUNDARY LINE THAN A MINIMUM OF FIVE (5) FEET OR ONE-FIFTH (1/5) THE HEIGHT OF THE FILL, BUT NEED NOT EXCEED A HORIZONTAL DISTANCE OF TEN (10) FEET. PROPERTY LINES SHOULD BE LOCATED 2' FROM TOP OF SLOPES. FILL SLOPES SHALL NOT BE DIVIDED VERTICALLY BY PROPERTY LINES UNLESS DESIGN CRITERIA IS SUBMITTED WHICH, IN THE ESTIMATION OF THE CITY ENGINEER, WOULD PROVIDE ADEQUATE PROTECTION.
- J. COMBINED CUT AND FILL SLOPES SHALL MEET THE REQUIREMENTS OF SUBSECTIONS 1 AND 2 OF THIS SECTION INSOFAR AS STEEPNESS, HEIGHT, AND TERRACING ARE CONCERNED EXCEPT THAT WHERE THE SLOPE EXCEEDS 25 FEET IN HEIGHT THE REQUIRED DRAINAGE TERRACE SHALL BE PLACED AT THE TOP OF THE CUT SLOPE.
- K. ALL FILL SLOPES SHALL BE ROUNDED INTO THE EXISTING TERRAIN TO PRODUCE A CONTOUR OR TRANSITION FROM THE FILL FACE TO NATURAL GROUND WHERE CONDITIONS PERMIT.

L. FILL SLOPES SHALL BE OVERBUILT A MINIMUM OF ONE FOOT AND CUT BACK TO DESIGN SLOPE AND TESTED PER SECTION F ABOVE. BRUSH MAY BE CLEARED TWELVE (12) FEET PAST THE TOE OF FILL SLOPES TO ACCOMODATE THIS OVERBUILDING AND REGRADING.

4. OLD FILLS

ALL OLD FILLS SHALL BE TESTED BY EITHER THE CIVIL ENGINEER OR THE GEOTECHNICAL ENGINEER AND A WRITTEN DECLARATION MADE AS TO THE ADEQUACY OF THE FILL TO SUPPORT THE PROPOSED STRUCTURES OR THE OLD FILL SHALL BE EITHER REMOVED AND RECOMPACTED OR REMOVED FROM THE SITE.

5. REPORTS AND INSPECTIONS

- A. PERIODIC REPORTS BY A CIVIL ENGINEER OR A GEOTECHNICAL ENGINEER SHALL BE REQUIRED. THESE REPORTS SHALL INCLUDE (BUT NEED NOT BE LIMITED TO): INSPECTION OF CLEARED AREAS AND BENCHES PREPARED TO RECEIVE FILL AND REMOVAL OF ALL UNSUITABLE SOIL AND MATERIAL, THE BEARING CAPACITY OF THE FILL TO SUPPORT STRUCTURES, THE PLACEMENT AND COMPACTION OF FILL MATERIALS, AND THE INSPECTION OF BUTTRESS FILLS, SUBDRAINS AND SIMILAR DEVICES.
- B. THE CITY ENGINEER MAY REQUIRE INSPECTION(S) BY AN ENGINEERING GEOLOGIST TO ASSURE THAT ALL GEOLOGIC CONDITIONS HAVE BEEN ADEQUATELY CONSIDERED. WHERE GEOLOGIC CONDITIONS JUSTIFY, THE CITY ENGINEER MAY REQUIRE PERIODIC GEOLOGIC REPORTS. THESE INSPECTIONS AND REPORTS MAY BE REQUIRED TO INCLUDE (BUT NEED NOT BE LIMITED TO): INSPECTION OF CUT SLOPES, INSPECTION OF CANYONS DURING CLEAN OUT, RECOMMENDATIONS WITH RESPECT TO GROUNDWATER AND EARTH MATERIAL CONDITIONS, INSPECTION OF BENCHES PRIOR TO PLACEMENT OF FILL, POSSIBLE SPRING LOCATIONS AND DETERMINATION OF SUBDRAIN PLACEMENT.

DRAINAGE

1. TERRACE DRAINS

PAVED CONCRETE TERRACE DRAINS SHALL BE A MINIMUM OF THREE INCHES THICK, SHALL HAVE A MINIMUM WIDTH OF THREE FEET AND SHALL BE INSTALLED ALONG THE TERRACE FOR ALL GRADED SLOPES AT INTERVALS NOT TO EXCEED 25 FEET IN FILL AND 30 FEET IN CUT MEASURED ALONG A VERTICAL PLANE. THE LONGITUDINAL SLOPE OF TERRACE DRAINS SHALL NOT BE LESS THAN 4%, NOR MORE THAN 15%, AND ANY CHANGE IN RATE OF GRADE WITHIN THESE ALLOWABLE SLOPES SHALL INCREASE THE GRADE IN THE DIRECTION OF FLOW. NO SINGLE RUN OF A TERRACE DRAIN SHALL EXCEED 300 FEET TO A DOWNDRAIN.

2. BERMS

EARTH BERMS TO CONTROL DRAINAGE AND PREVENT EROSION SHALL BE CONSTRUCTED AROUND THE TOP PERIMETER OF CUT AND FILL SLOPES, EXCEPT WHEN DIVERTER GUTTERS ARE INSTALLED IN THE SAME LOCATION.

3. DIVERTER GUTTERS

CONCRETE GUTTER, VERTICAL CURB AND GUTTER, OR ANOTHER APPROVED SYSTEM SHALL BE CONSTRUCTED AS REQUIRED BY THE CITY ENGINEER TO PROVIDE DRAINAGE AND PROTECT AGAINST EROSION, AT THE TOP OF ALL CUT SLOPES WHERE THE TRIBUTARY DRAINAGE AREA ABOVE HAS A SLOPE EXCEEDING TEN HORIZONTAL TO ONE VERTICAL (10:1) AND A SLOPE DISTANCE OF GREATER THAN 50 FEET.

4. VEE CHANNELS

WHERE A SLOUGH WALL IS REQUIRED AT THE TOE OF A SLOPE, A VEE CHANNEL SHALL BE CONSTRUCTED BEHIND THE WALL TO CARRY OFF THE SLOPE WATERS.

5. DOWNDRAIN AND OUTLET STRUCTURES

- A. OPEN CHANNEL DOWNDRAINS SHALL BE OF A SIZE REQUIRED BY RUNOFF CALCULATIONS. THEY SHALL BE DESIGNED BY A CIVIL ENGINEER. THE ALIGNMENT OF DOWNDRAINS SHALL BE SUCH AS TO DISCHARGE WATER IN A SAFE AND EROSION-FREE MANNER.

B. OUTLET STRUCTURES SHALL BE OF CONCRETE. WHERE OUTLETING INTO STREETS, THE STRUCTURE SHALL BE OF A DESIGN APPROVED BY THE CITY ENGINEER. WHERE OUTLETING INTO NATURAL WATERCOURSES OR OTHER APPROVED LOCATIONS, THE STRUCTURE SHALL BE PROVIDED WITH ADEQUATE VELOCITY REDUCERS, DIVERSION WALLS, RIP-RAP, CONCRETE APRONS, OR OTHER SIMILAR ENERGY DISSIPATER. ALL SLOPE DRAINAGE SHALL BE COLLECTED AND DISPOSED OF IN AN APPROVED DRAINAGE DEVICE.

6. RUNOFF COMPUTATIONS

RUNOFF CALCULATION SHALL BE BASED UPON THE LATEST METHODS APPROVED BY THE CITY ENGINEER.

7. SUBDRAINS

ALL CANYON FILLS SHALL HAVE SUBDRAINS AS REQUIRED BY THE CITY ENGINEER OR SOILS REPORT, EXCEPT WHEN SOIL CONDITIONS ARE SUCH THAT A DRAIN IS NOT NEEDED.

8. SITE DRAINAGE

ALL FINISH GRADES SHALL SLOPE A MINIMUM OF 2% FROM THE BUILDING PAD TO A PUBLIC STREET, STORM DRAIN, OR AN IMPROVED EASEMENT. WHEN DESIGNED BY A CIVIL ENGINEER, A FLATTER GRADE MAY BE APPROVED BY THE CITY ENGINEER. THE DRAINAGE SYSTEM SHALL CONDUCT THE WATER TO A STREET, STORM DRAIN, OR NATURAL WATERCOURSE APPROVED BY THE CITY ENGINEER AS A SAFE PLACE TO DEPOSIT SUCH WATERS.

9. MAINTENANCE OF DRAINAGE

DRAINAGE IN CONFORMANCE WITH THE PROVISIONS OF THIS CHAPTER SHALL BE MAINTAINED DURING AND SUBSEQUENT TO CONSTRUCTION BY THE OWNER.

TOPSOIL

1. TOPSOIL SHALL BE PLACED ON ALL AREAS TO BE PLANTED OR STABILIZED WITH EROSION CONTROL INCLUDING FILL SLOPES, CUT SLOPES 2:1 OR FLATTER, AND ALL DISTURBED AREAS TO BE SEEDDED. VEE CHANNELS DO NOT REQUIRE PLACEMENT OF TOPSOIL.
2. TOPSOIL SHALL BE EXCAVATED TO THE LINES AND DEPTHS AS DIRECTED BY THE ENGINEER AND STOCKPILED.
3. TOPSOIL SHALL NOT BE PLACED UNTIL ALL EQUIPMENT, EXCEPT EQUIPMENT REQUIRED FOR SPREADING TOPSOIL, IS THROUGH WORKING IN AN AREA.
4. ALL LUMPS OR CLODS SHALL BE BROKEN UP, AND ROCKS AND DEBRIS LARGER THAN 2-1/2 INCHES IN MAXIMUM DIMENSIONS SHALL BE REMOVED, BEFORE THE TOPSOIL IS SPREAD.
5. TOPSOIL SHALL BE SPREAD UNIFORMLY AT THE RATE SPECIFIED BY THE ENGINEER. THE FINISHED SURFACE AFTER SPREADING TOPSOIL SHALL BE APPROXIMATELY ONE (1) INCH BELOW THE TOP OF ADJACENT GRADE. IMPORT TOPSOIL MAY BE REQUIRED TO MEET THIS SPECIFICATION.
6. TOPSOIL SHALL BE SPREAD TO A UNIFORM THICKNESS. TOPSOIL SHALL BE PLACED A MINIMUM OF 6 INCHES THICK ON ALL DISTURBANCE AREAS TO BE SEEDDED AND MULCHED PER PAGE 810.00, "EROSION CONTROL CRITERIA", EXCEPT THAT TOPSOIL SHALL BE PLACED 4 INCHES THICK ON CUT SLOPES THAT ARE 2:1. CUT SLOPES SHALL BE SCARIFIED TO A DEPTH OF 2 INCHES PRIOR TO PLACING TOPSOIL TO ENSURE SUFFICIENT CONTACT. OTHER COMPACTED AREAS (I.E. ROADBEDS, PARKING AREAS, STAGING OR EQUIPMENT STORAGE AREAS, ETC.) SHALL BE UNCOMPACTED BY RIPPING TO A DEPTH OF SIX (6) INCHES PRIOR TO PLACEMENT OF TOPSOIL.
7. TOPSOIL SHALL BE ROUGHENED BY TRACKWALKING OR ROLLING WITH A SHEEPSFOOT ROLLER PRIOR TO SEEDING AND MULCHING. TRACKWALK TOPSOIL WITH TRACKED EQUIPMENT RUN PERPENDICULAR TO SLOPE CONTOURS. WATER MAY BE USED TO ASSIST THIS PROCESS BUT MUST NOT CAUSE EROSION.
8. FINISHED SURFACES AFTER TOPSOIL PLACEMENT MUST ACHIEVE A MINIMUM OF 85 PERCENT COMPACTION.

CIVIL OR GEOTECHNICAL

ON ALL LAND DEVELOPMENT PROJECTS PROCESSED AFTER JUNE 1, 1983, THE DEVELOPER'S LICENSED CIVIL OR GEOTECHNICAL ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING A WRITTEN DECLARATION(1) THAT EMBANKMENTS OR UNCLASSIFIED FILLS, UP TO AND INCLUDING THE FINISH AGGREGATE BASE ROCK SURFACE, ON EITHER PUBLIC RIGHTS-OF-WAY OR PRIVATE PROPERTIES, HAVE BEEN PLACED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THIS WILL APPLY TO PROJECTS FOR SUBDIVISIONS, PARCEL MAPS, GRADING PERMITS, ENCROACHMENT PERMITS, OR ANY OTHER IMPROVEMENTS FOR WHICH PERMITS OR PERMISSION OF THE ENGINEERING DIVISION ARE NECESSARY.

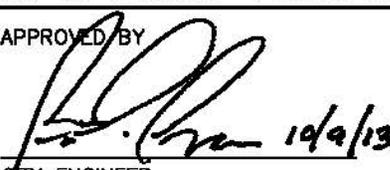
FOR PURPOSE OF CLARIFICATION, EMBANKMENT OR UNCLASSIFIED FILL SHALL BE CONSIDERED AS ANY AREA UPON WHICH THE DEPTH OF FILL EXCEEDS 12 INCHES TO THE FINISH GRADING PLANE. UNCLASSIFIED FILLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE GREENBOOK AND AS MODIFIED ON PAGE 705 OF THESE CONSTRUCTION STANDARDS.

THE CITY WILL COORDINATE WITH THE DEVELOPER OR ENGINEER FOR OBTAINING ALL COMPACTION TESTS ON THE SUBSEQUENT LAYERS OF MATERIAL PLACED ON THE FINISH SUBGRADE AND FOR THE DENSITIES OF TRENCHES WITHIN THE RIGHTS-OF-WAY.

THE DECLARATION SHALL BE BASED ON SUFFICIENT VISUAL AND TEST OBSERVATIONS TO ENABLE THE ENGINEER TO ISSUE A WRITTEN STATEMENT THAT IN HIS/HER PROFESSIONAL OPINION THE FILL(S) HAVE BEEN PLACED AND COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.

THE WRITTEN DECLARATION FOR THE COMPACTION OF ALL UNCLASSIFIED FILL WITHIN THE PUBLIC RIGHTS-OF-WAY SHALL BE RECEIVED BY THE ENGINEERING DIVISION PRIOR TO ALLOWING CONSTRUCTION TO PROCEED TO THE NEXT SUBSEQUENT OPERATION (PLACEMENT OF AC, ETC.). WITH RESPECT TO UNCLASSIFIED FILLS UPON PRIVATE PROPERTIES, THE WRITTEN DECLARATION WILL HAVE TO BE SUBMITTED TO THE ENGINEERING DIVISION PRIOR TO ISSUANCE OF ANY BUILDING PERMITS.

(1) FOR PURPOSES OF CLARIFICATION, THE WORDS CERTIFY, CERTIFICATION, OR DECLARATION CONSTITUTE AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THOSE FACTS OR FINDINGS WHICH ARE THE SUBJECT OF THE CERTIFICATION, AND DO NOT CONSTITUTE A WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED.

DWG DATE: 1/98		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
3	7/13	UPDATE	APPROVED BY  CITY ENGINEER	
2	1/98	NUM. CHG		
MARK	DATE	REVISION	DECLARATION REGARDING EMBANKMENTS OR UNCLASSIFIED FILLS	

A. GENERAL

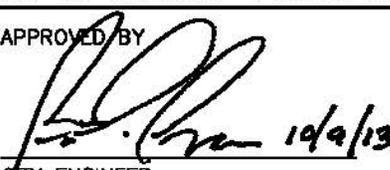
1. THE FOLLOWING CONSTRUCTION INFORMATION SHALL BE APPLICABLE TO ALL CITY PARKS, LANDSCAPE MAINTENANCE DISTRICTS, STREETSCAPES (RIGHT-OF-WAY) AND OTHER CITY FACILITIES THAT REQUIRE LANDSCAPE IMPROVEMENTS.
2. ALL LANDSCAPE WORK SHALL CONFORM TO THE FOLLOWING CODES, ADOPTED POLICIES, AND APPLICABLE STANDARDS. IF THERE IS A CONFLICT BETWEEN ANY OF THESE DOCUMENTS, REFER TO SECTION 2-5.2 OF THE "GREENBOOK" FOR ORDER OF PRECEDENCE.
 - a. UNIFORM BUILDING CODE
 - b. UNIFORM PLUMBING CODE
 - c. NATIONAL ELECTRIC CODE
 - d. STATE OF CALIFORNIA ADMINISTRATIVE CODE, TITLE 17
 - e. CITY OF REDDING COMPREHENSIVE TREE PLAN
 - f. REDDING ELECTRIC UTILITY CONSTRUCTION STANDARDS
 - g. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK)
 - h. CITY OF REDDING CONSTRUCTION STANDARDS (CORCS)
 - i. AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1....)
3. ALL WORK SHALL CONFORM TO THE APPROVED LANDSCAPE PLANS AND A.2. ABOVE.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE POINT OF CONNECTION FOR WATER AND ELECTRIC SERVICES PRIOR TO STARTING ANY LANDSCAPE WORK. PRIOR TO STARTING ANY EXCAVATION, THE CONTRACT SHALL CALL UNDERGROUND SERVICE ALERT AT 1-800-227-2600.
5. ALL LANDSCAPE IRRIGATION SYSTEMS SHALL INCLUDE A REDUCED PRESSURE PRINCIPLE DEVICE (RPP) PER PAGE 431.10.

B. PRE-CONSTRUCTION MEETING

1. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO COMMENCEMENT OF ANY LANDSCAPE WORK. THE MEETING WILL BE HELD AT A MUTUALLY AGREED TIME AND PLACE WHICH SHALL BE ATTENDED BY THE CITY CONSTRUCTION INSPECTOR, PARKS DIVISION REPRESENTATIVE, DEVELOPER, LANDSCAPE CONTRACTOR, SUB-CONTRACTOR(S), AND OTHER GOVERNMENTAL OR CITY AGENCY REPRESENTATIVES AS APPROPRIATE.
2. CONTRACTOR SHALL BRING TO THE PRE-CONSTRUCTION MEETING THE FOLLOWING ITEMS:
 - a. TENTATIVE CONSTRUCTION SCHEDULE
 - b. SHOP DRAWING, SAMPLE, SUBSTITUTE OR "OR EQUAL" SUBMITTAL SCHEDULE
 - c. A SET OF THE APPROVED LANDSCAPE PLANS AND SPECIFICATIONS.

C. INSPECTION AUTHORITY

1. ALL WORK SHALL BE INSPECTED BY THE CITY OF REDDING ENGINEERING DIVISION CONSTRUCTION INSPECTOR. GENERAL CONSTRUCTION OBSERVATION SHALL BE CONDUCTED BY THE PARKS DIVISION. FINAL AUTHORITY SHALL BE GOVERNED BY ENGINEERING'S CONSTRUCTION INSPECTOR.
2. THE PRESENCE OF THE INSPECTION AUTHORITY SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH ALL REQUIREMENTS OF THE APPROVED PLANS AND SPECIFICATIONS.
3. ALL MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE SUBJECT TO INSPECTION.
4. THE CONTRACTOR SHALL SCHEDULE ALL REVIEWS BY THE INSPECTOR AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE ANTICIPATED REVIEW BY CALLING (530) 225-4170.

DWG DATE: 2/03		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
2	7/13	RENUM. 670.00	APPROVED BY  10/9/13 CITY ENGINEER	
1	4/06	EDIT NOTES		
MARK	DATE	REVISION	LANDSCAPE CONSTRUCTION CRITERIA	

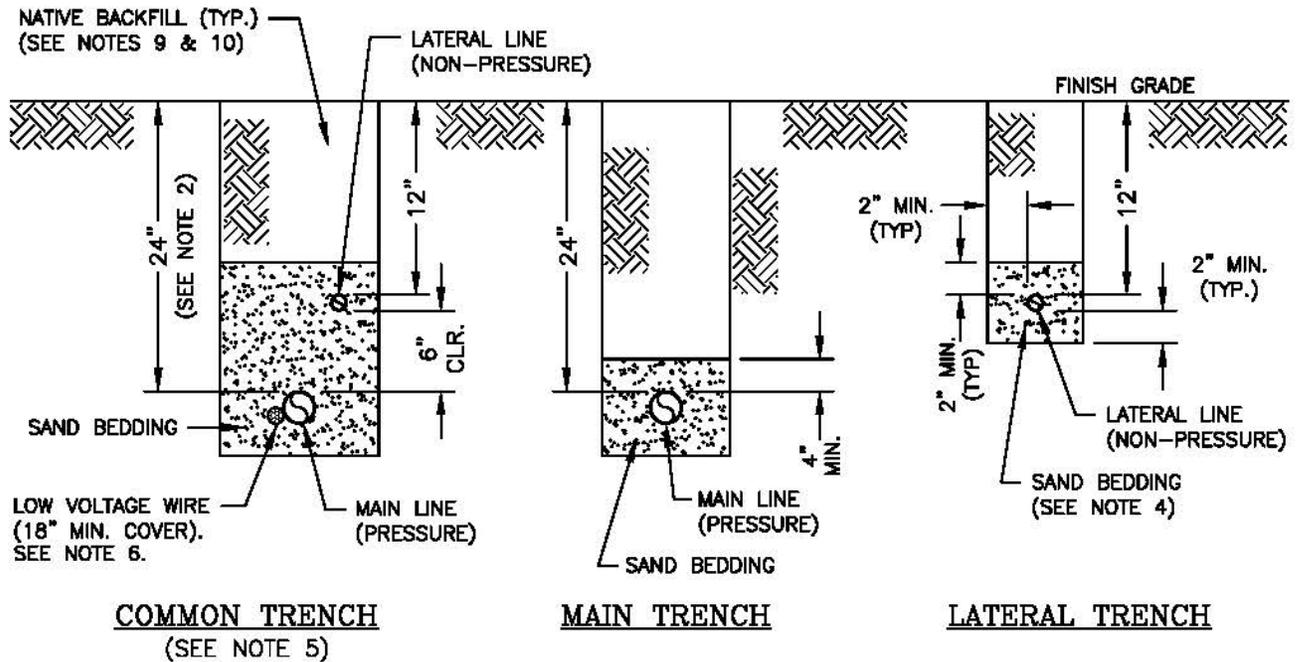
5. THE CONTRACTOR SHALL REQUEST A REVIEW BY THE INSPECTOR AT THE FOLLOWING PHASES IN THE PROGRESS OF THE LANDSCAPE WORK:
 - a. BEFORE BACKFILLING IRRIGATION PIPE AND ELECTRIC CONDUIT
 - b. HYDROSTATIC TESTING
 - c. IRRIGATION SYSTEM COVERAGE AND PERFORMANCE CHECK
 - d. FINISH GRADE PRIOR TO PLACING MULCH OR SOD
 - e. HARDSCAPE FORMS PRIOR TO POURING CONCRETE
6. THE CITY WILL NOT MAKE INSPECTIONS ON WEEKENDS, HOLIDAYS, OR OUTSIDE NORMAL WORK HOURS, EXCEPT WHEN AGREED TO BY THE CONSTRUCTION INSPECTOR.

D. FINAL INSPECTION

1. THE CONTRACTOR SHALL REQUEST AN INSPECTION WHEN ALL REQUIRED LANDSCAPE WORK HAS BEEN COMPLETED. THE MEETING WILL BE HELD AT THE PROJECT SITE AND SHALL BE ATTENDED BY THE CITY CONSTRUCTION INSPECTOR, PARKS DIVISION REPRESENTATIVE, DEVELOPER, LANDSCAPE CONTRACTOR, SUB-CONTRACTOR(S), AND OTHER GOVERNMENTAL OR CITY AGENCY REPRESENTATIVES, AS APPROPRIATE.
2. IF ALL WORK IS ACCEPTED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 90-DAY MAINTENANCE AND PLANT ESTABLISHMENT PERIOD FOR ALL REQUIRED LANDSCAPE WORK FOLLOWING THE INSPECTION.
3. AT THE CONCLUSION OF THE 90-DAY MAINTENANCE AND PLANT ESTABLISHMENT PERIOD, THE CONTRACTOR SHALL REQUEST A FINAL INSPECTION. ALL APPROPRIATE REPRESENTATIVES SHALL BE PRESENT.
4. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS, MANUFACTURER DOCUMENTATION, WARRANTY INFORMATION, AND SPECIFICATIONS ON INSTALLED EQUIPMENT TO THE CITY.

E. MISCELLANEOUS INFORMATION

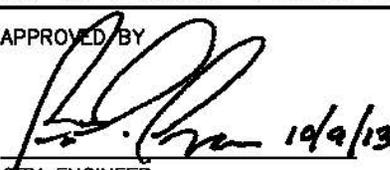
1. LANDSCAPE MAINTENANCE DISTRICT REQUIREMENTS:
 - a. AFTER COMPLETING THE 90-DAY PLANT ESTABLISHMENT AND MAINTENANCE PERIOD, THE CONTRACTOR SHALL CONTINUE MAINTAINING THE LANDSCAPE IMPROVEMENTS UNTIL ASSESSMENTS ARE LEVIED BY THE SHASTA COUNTY ASSESSOR.
 - b. ALL LANDSCAPE IMPROVEMENTS SHALL CONFORM TO THE CITY OF REDDING LANDSCAPE MAINTENANCE DISTRICT REQUIREMENTS AND STANDARDS, CURRENT EDITION. COPIES CAN BE OBTAINED AT THE CITY OF REDDING PERMIT CENTER.

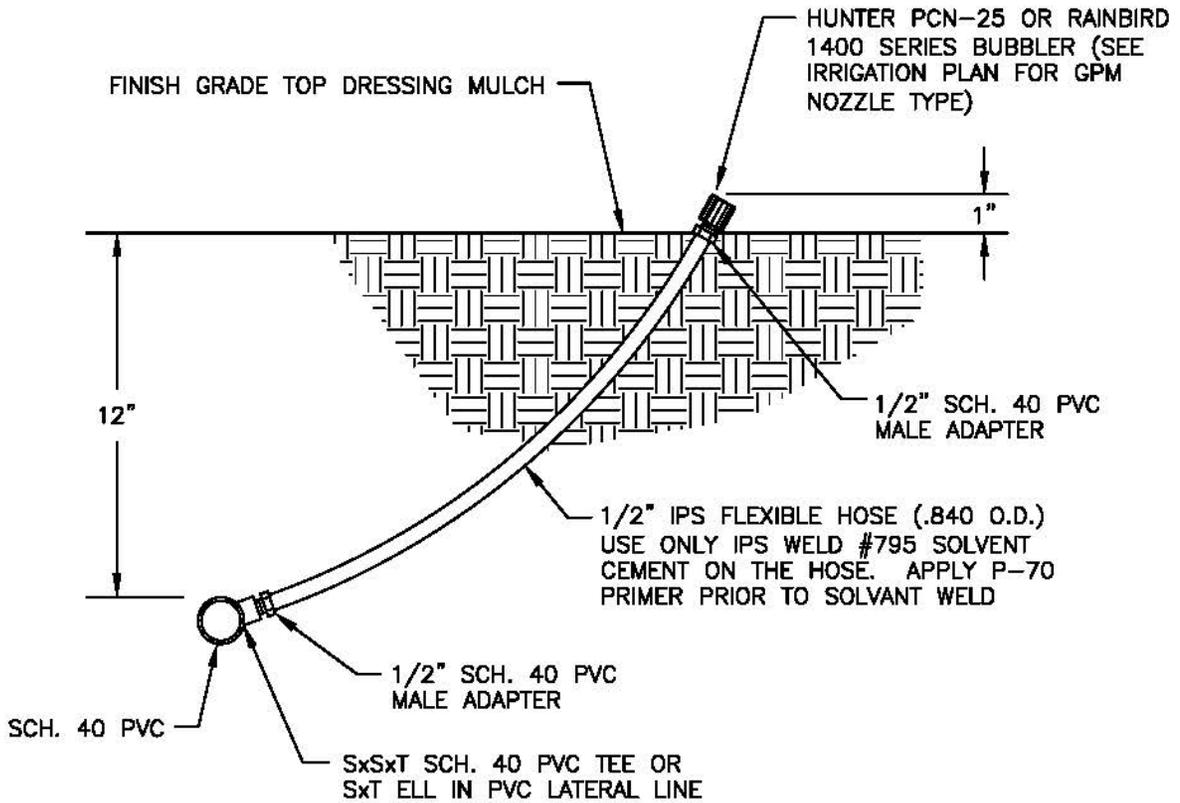


NOTES:

- IRRIGATION WATER LINES WILL NOT BE PERMITTED TO SHARE THE SAME TRENCH BELONGING TO OTHER PUBLIC UTILITIES AND AGENCIES.
- WHEN INSTALLING IRRIGATION MAIN LINE(S) OVER AN EXISTING JOINT UTILITY EASEMENT, COVER OVER PIPE SHALL BE EIGHTEEN (18) INCHES.
- THE BOTTOM OF TRENCHES SHALL BE TRUE TO GRADE AND FREE OF PROTRUDING STONES, ROOTS, OR OTHER MATTER WHICH WOULD PREVENT PROPER BEDDING OF PIPE.
- ALL PIPE SHALL BE BEDDED IN AT LEAST TWO INCHES OF SAND. AFTER LAYING, THE PIPE SHALL BE SURROUNDED WITH AN ADDITIONAL TWO INCHES OF SAND. STEP ALL WATER LINES.
- WHEN TWO OR MORE PIPELINES ARE INSTALLED IN THE SAME TRENCH, THEY SHALL BE SEPARATED BY A MINIMUM HORIZONTAL CLEAR DISTANCE OF SIX (6) INCHES & A VERTICAL CLEAR DISTANCE OF SIX (6) INCHES. WATER LINES SHALL BE INSTALLED TWELVE (12) INCHES BEHIND BACK OF SIDEWALK.
- INSTALL SPARE CONTROL WIRE OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX. MINIMUM OF ONE SPARE WIRE PER CONTROLLER.
- SPLICING OF WIRE WILL BE PERMITTED ONLY ON RUNS EXCEEDING 2,500 FEET. LOCATE ALL SPLICES AT VALVE LOCATIONS WITHIN VALVE BOXES.
- WHERE CONTROL WIRES PASS UNDER PAVING, THEY SHALL PASS THROUGH SCHEDULE 40 PVC CONDUIT.
- BACKFILL MATERIAL SHALL BE:
 - THE EARTH EXCAVATED FROM THE TRENCHES, AND
 - FREE FROM DEBRIS, VEGETATIVE MATERIAL, ROCKS OVER ONE (1) INCH IN DIAMETER, AND OTHER COARSE UNDESIRABLE MATERIAL.
- PLACE BACKFILL MATERIALS IN SIX (6) INCH LAYERS AND COMPACT BY JETTING OR TAMPING TO A MINIMUM COMPACTION OF 90 PERCENT OF ORIGINAL SOIL DENSITY.
- BACKFILL ONLY AFTER PIPING HAS BEEN TESTED, INSPECTED AND APPROVED.
- A WATER PRESSURE TEST SHALL BE PERFORMED ON ALL PRESSURE MAINS BEFORE ANY COUPLINGS, FITTINGS, AND/OR VALVES ARE CONCEALED. THE TEST SHALL BE PERFORMED AT A CONSTANT PRESSURE OF 125 PSI FOR A DURATION OF THREE (3) HOURS.
- ALL TRENCH SETTLEMENTS SHALL BE BROUGHT BACK TO ORIGINAL FINISH GRADE. THE CONTRACTOR SHALL REPAIR AND REPLACE ALL LAWN, PLANTED, HARDSCAPED, AND OTHER PAVEMENT AREAS DAMAGED DUE TO TRENCH SETTLEMENT.

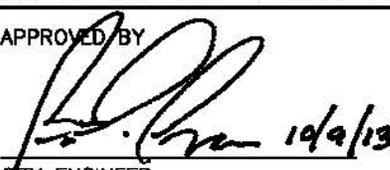
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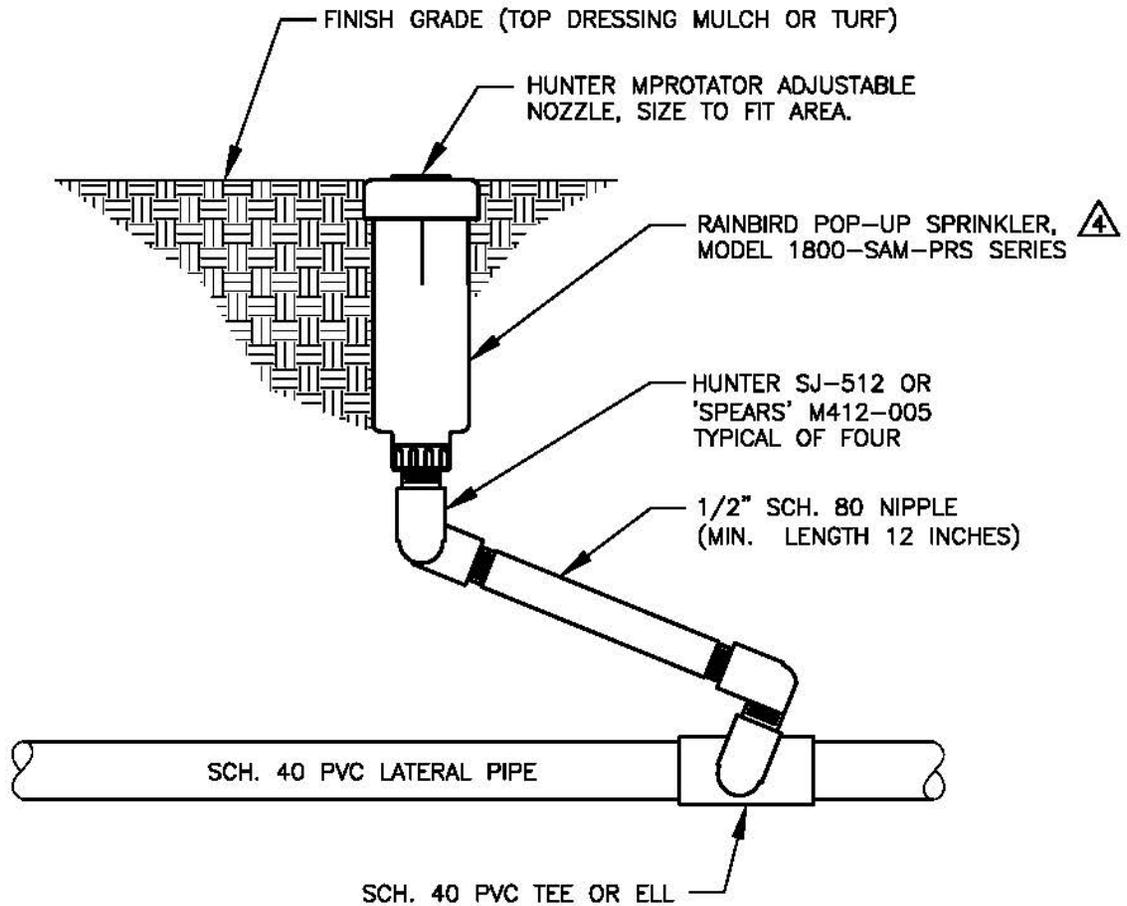
DWG DATE: 2/03		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
2	7/13	RENUM. 683.40	APPROVED BY  10/9/13 CITY ENGINEER	
1	4/06	EDIT NOTES		
MARK	DATE	REVISION	LANDSCAPE IRRIGATION TRENCHING DETAILS	



NOTES:

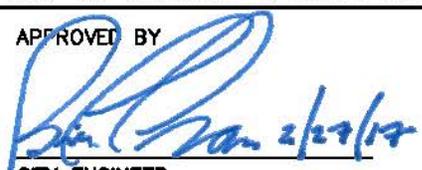
1. BUBBLER SHALL HAVE THE FOLLOWING FEATURES:
 - FULL CIRCLE (TRICKLE PATTERN)
 - PRESSURE COMPENSATING BETWEEN 20 & 90 PSI
 - LOW FLOW RATES
 - NO ADJUSTMENT REQUIRED
 - INLET FILTER SCREEN
 - DURABLE, NON-CORROSIVE PLASTIC
2. INSTALL BUBBLER ON THE UPHILL SIDE OF THE ROOT BALL.
3. INSTALL BUBBLER THREE INCHES FROM THE ROOT BALL.
4. USE TEFLON TAPE ON ALL MALE THREADS.

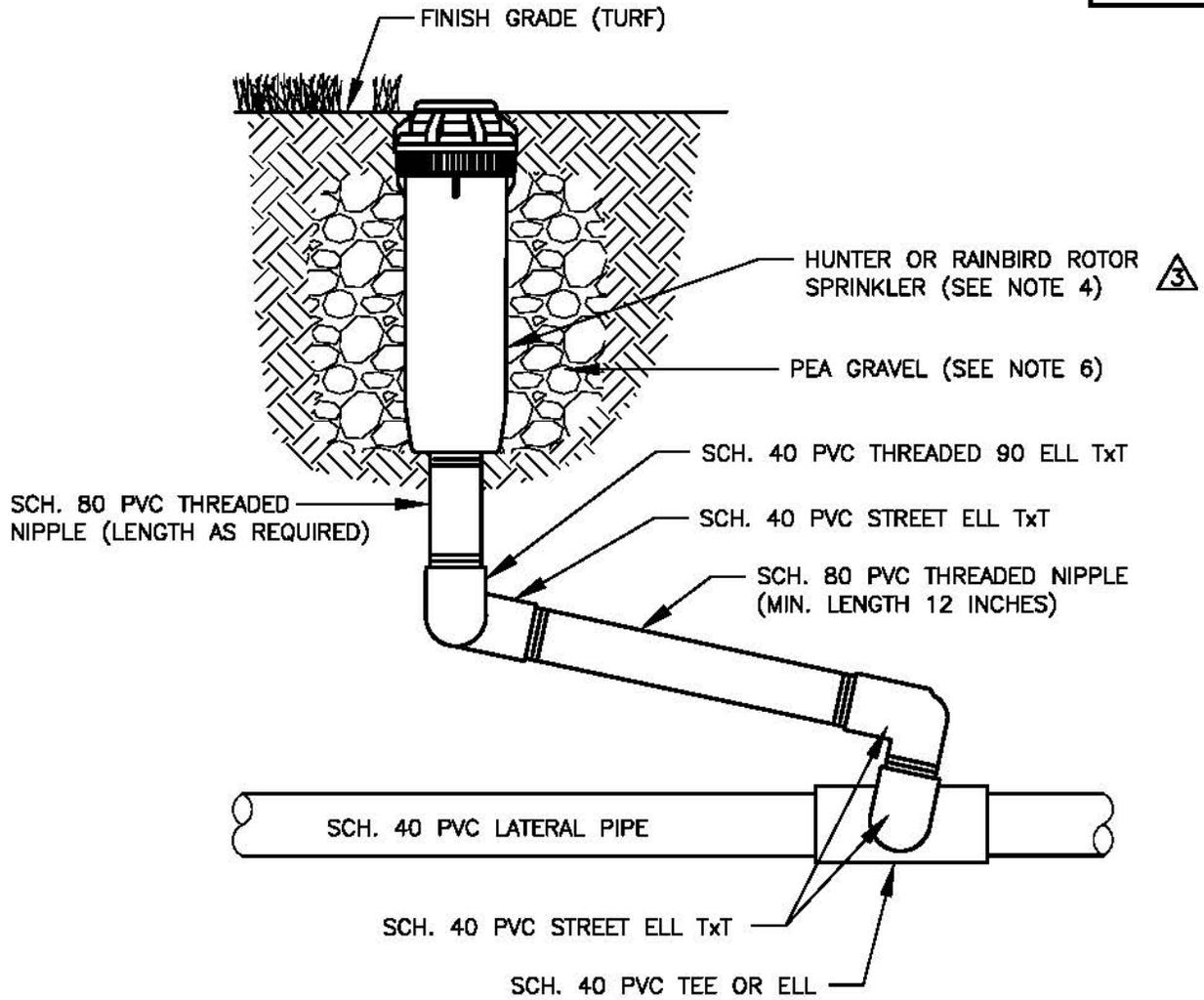
DWG DATE: 2/03		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
3	7/13	RENUM. 681.20	APPROVED BY  10/9/13 CITY ENGINEER	
2	4/06	EDIT NOTES		
1	2/03	REDRAWN		
MARK	DATE	REVISION	SPRINKLER DETAIL (TYPE 1)	



NOTES:

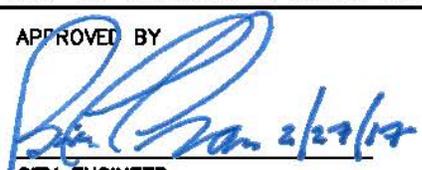
1. LOCATE POP-UP SPRINKLER HEAD 1 1/2" OFFSET FROM WALKS, CURBS, HARDSCAPING, MOWING STRIPS, AND HEADER BOARDS.
2. LOCATE POP-UP SPRINKLER HEAD 12" FROM STRUCTURES & BUILDINGS.
3. POP-UP SPRINKLER HEAD SHALL BE PERPENDICULAR TO GRADE.
4. ALL POP-UP SPRINKLER HEADS SHALL HAVE A BUILT-IN CHECK VALVE TO PREVENT LOW HEAD DRAINAGE.
5. TOP OF THE POP-UP SPRINKLER HEAD SHALL BE FLUSH WITH FINISH GRADE.
6. USE TEFLON TAPE ON ALL MALE THREADS.

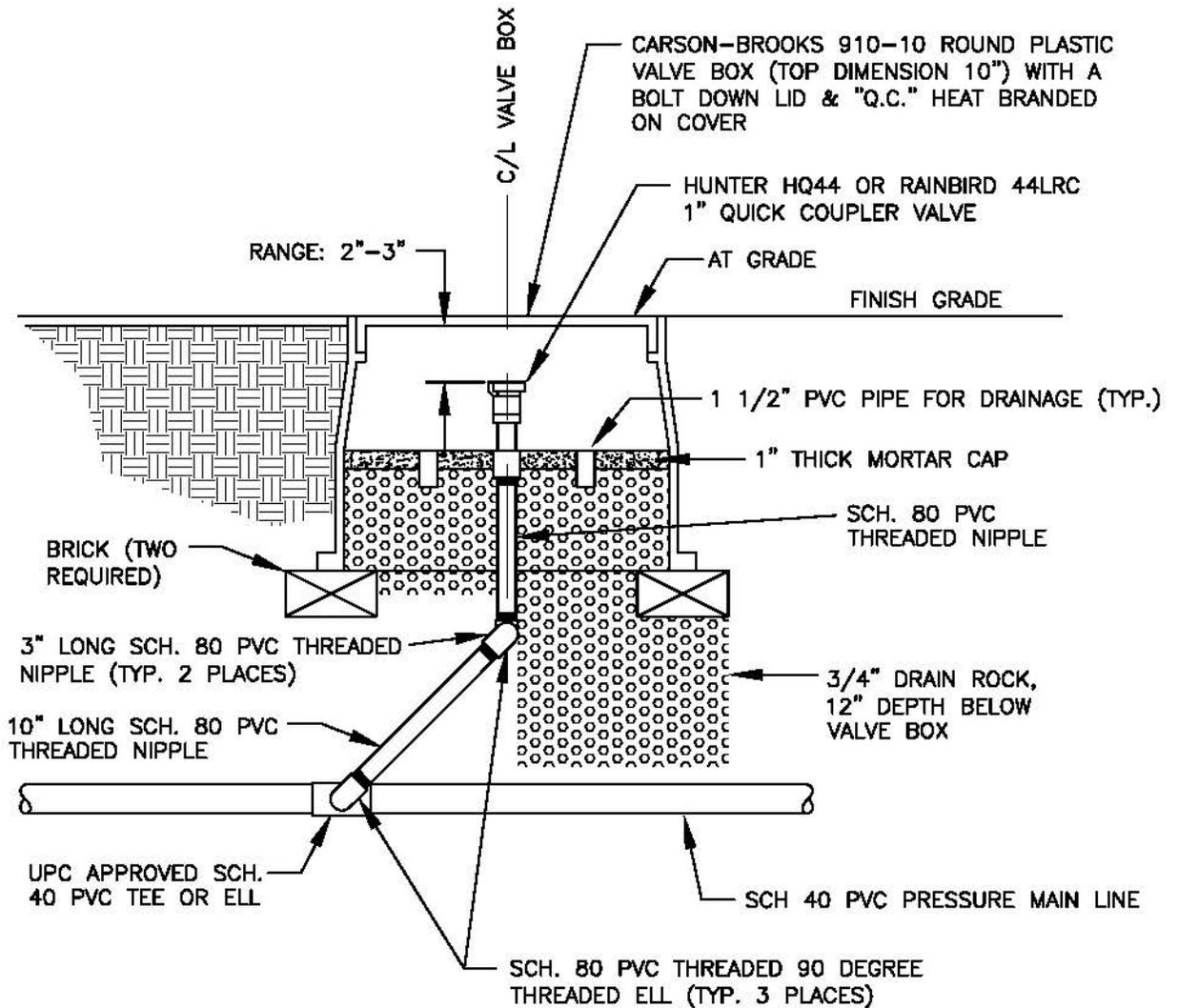
DWG DATE: 1/98		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
4	8/16	EDIT MODEL	APPROVED BY  2/27/12 CITY ENGINEER	SPRINKLER DETAIL (TYPE 2)
3	7/13	RENUM. 681.30		
2	4/06	ADD NOTE 6		
1	2/03	MATERIAL CHG		
MARK	DATE	REVISION		



NOTES:

1. LOCATE ROTOR POP-UP SPRINKLER HEAD 1 1/2" OFFSET FROM WALKS, CURBS, HARDSCAPING, MOWING STRIPS, AND HEADER BOARDS.
2. LOCATE ROTOR POP-UP SPRINKLER HEAD 12" FROM STRUCTURES & BUILDINGS.
3. ROTOR POP-UP SPRINKLER HEAD SHALL BE PERPENDICULAR TO GRADE.
4. ALL ROTOR POP-UP SPRINKLER HEADS SHALL HAVE A BUILT-IN CHECK VALVE TO PREVENT LOW HEAD DRAINAGE.
5. TOP OF THE POP-UP SPRINKLER HEAD SHALL BE FLUSH WITH FINISH GRADE.
6. INSTALL ONE CUBIC FOOT OF PEA GRAVEL AROUND BASE OF EACH ROTOR OR IMPACT ROTOR POP-UP SPRINKLER.
7. USE TEFLON TAPE ON ALL MALE THREADS.
8. SWING JOINT ASSEMBLY TO BE SAME SIZE AS ROTOR OPENING SWING ASSEMBLY.

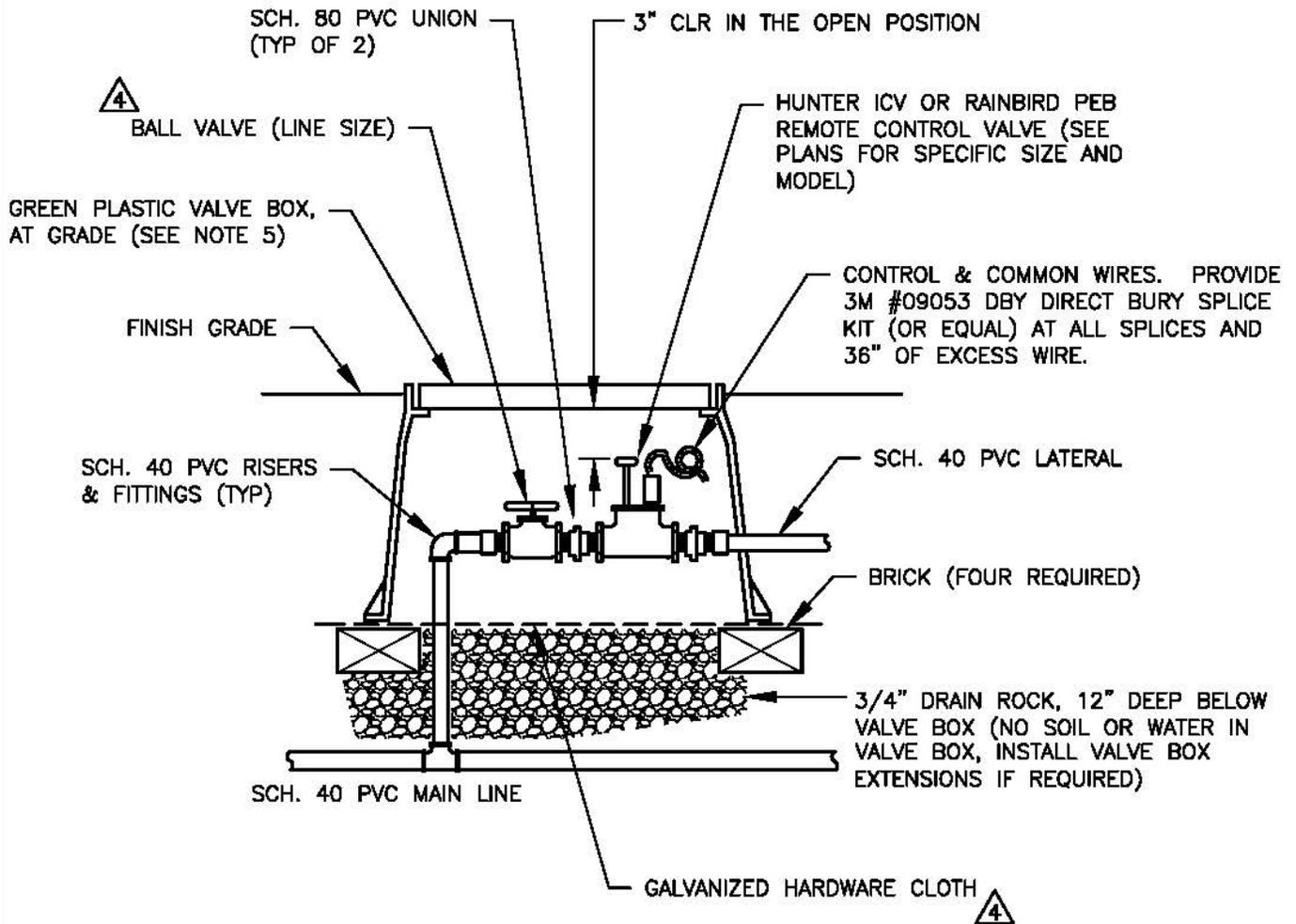
DWG DATE: 2/03		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
3	8/16	EDIT MODEL RENUM. 681.40 ADD NOTES	APPROVED BY  CITY ENGINEER	
2	7/13			
1	4/06			
MARK	DATE	REVISION	SPRINKLER DETAIL (TYPE 3)	



NOTES:

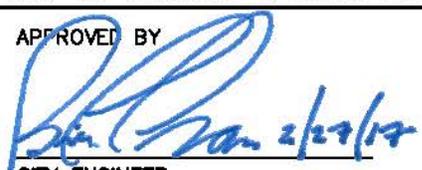
1. USE TEFLON TAPE ON ALL MALE THREADS.
2. NO SOIL OR WATER IN VALVE BOX. INSTALL VALVE BOX EXTENSION(S) IF REQUIRED.

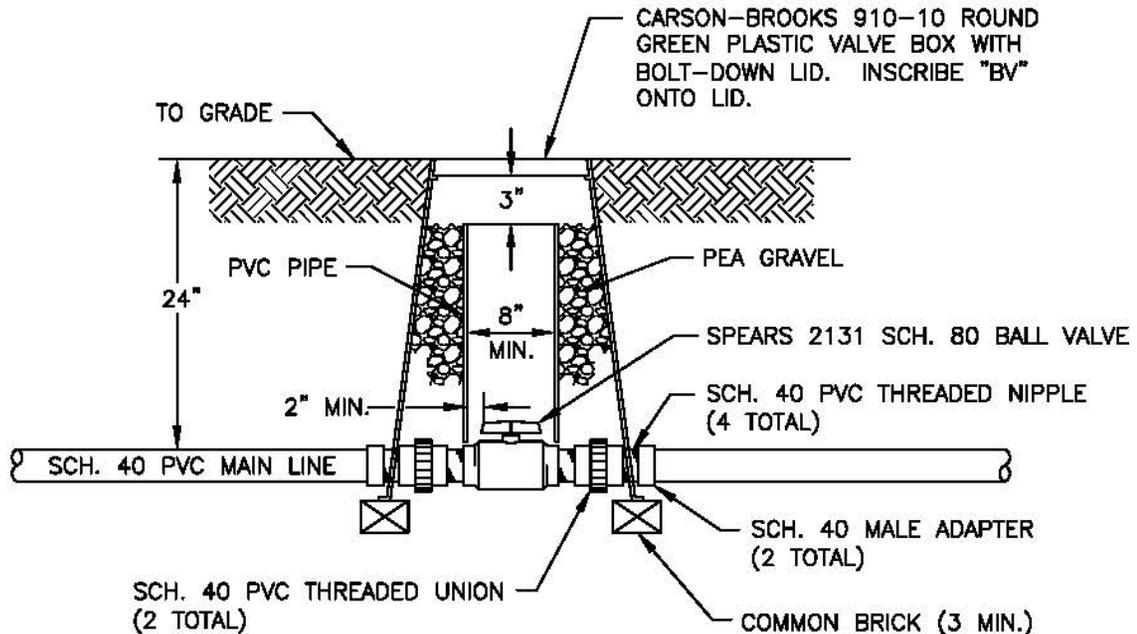
DWG DATE: 1/98		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
3	7/13	RENUM. 681.50	APPROVED BY  10/9/13 CITY ENGINEER	QUICK COUPLING VALVE DETAIL
2	4/06	EDIT DEPTH		
1	2/03	REVISE STD		
MARK	DATE	REVISION		



NOTES:

1. INSTALL REMOTE CONTROL VALVE (RCV) AS SHOWN ON PLAN AND GROUP TOGETHER. LIMIT ONE RCV PER BOX. LOCATE IN SHRUB OR GROUND COVER AREAS WHEREVER POSSIBLE.
2. WHERE VALVES ARE GROUPED TOGETHER, PROVIDE 6" SEPARATION BETWEEN VALVE BOXES.
3. VALVE & VALVE BOX SHALL NOT BE INSTALLED WITHIN 12" OF HARDSCAPE OR STRUCTURES.
4. RCV SHALL BE INSTALLED PLUMB & IN A NORMAL UPRIGHT POSITION WITHIN VALVE ACCESS BOX.
5. VALVE BOX SHALL BE CARSON-BROOKS #1419-12, WITH A BOLT DOWN LID #1419E, EXTENSION AS REQUIRED.
6. NO PART OF THE VALVE BOX SHALL BEAR ON THE MAIN OR LATERAL PIPING, VALVE BODY AND/OR APPURTENANCES.
7. PLACE VALVE BOX @ RIGHT ANGLES TO STRUCTURES OR HARDSCAPES.
8. THE VALVE DESIGNATION (CONTROLLER & STATION #) SHALL BE TAGGED ON EACH VALVE.
9. THOROUGHLY FLUSH MAIN LINE BEFORE INSTALLING VALVE.

DWG DATE: 1/98		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
4	8/16	ADD VALVE	APPROVED BY  CITY ENGINEER	
3	7/13	RENUM. 681.60		
2	4/06	EDIT STD		
1	2/03	REVISE STD		
MARK	DATE	REVISION	REMOTE CONTROL VALVE (RCV)	

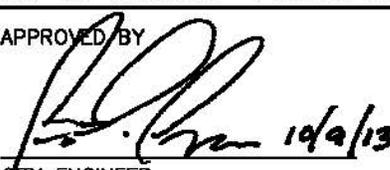


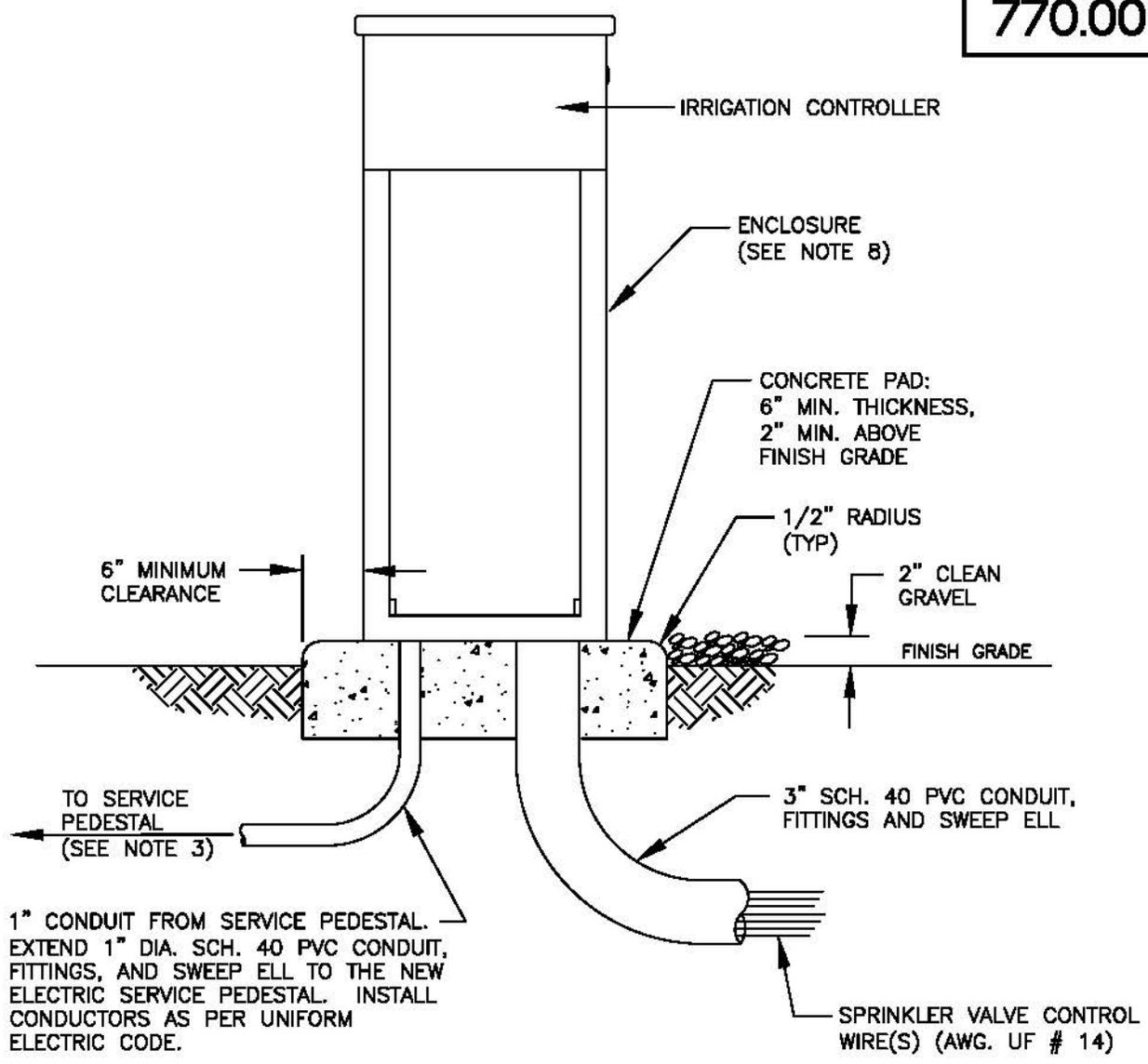
NOTES:

1. BALL VALVE SHALL HAVE THE FOLLOWING FEATURES:

- LOW TORQUE SCH. 80 HI-IMPACT PVC TYPE II MATERIAL w/ STRONG IMPACT RESISTANT RED HANDLE.
- SELF ADJUSTING BALL SEATS.
- PRECISION MOLDED MICRO-FINISH BALL.
- 150 PSI WORKING PRESSURE.
- FULL PORT DESIGN.
- COMPLIES WITH ALL APPLICABLE ASTM & ANSI STANDARDS.
- USE TEFLON TAPE ON ALL MALE THREADS.

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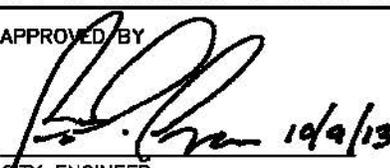
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2	7/13	RENUM. 683.20	APPROVED BY  10/9/13 CITY ENGINEER	
1	4/06	EDIT STD		
MARK	DATE	REVISION	<h2 style="text-align: center;">BALL VALVE DETAIL</h2>	



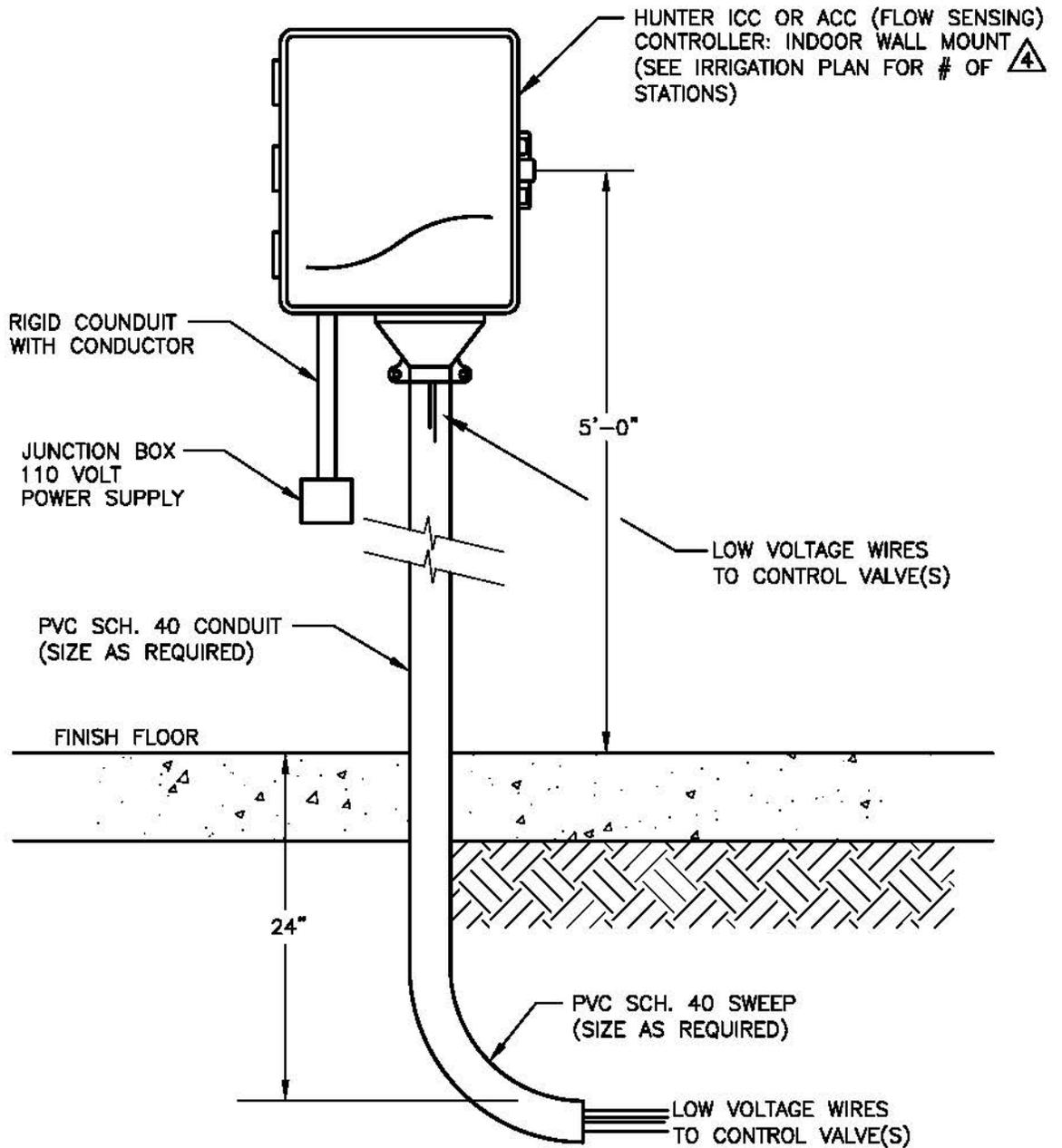
1" CONDUIT FROM SERVICE PEDESTAL. EXTEND 1" DIA. SCH. 40 PVC CONDUIT, FITTINGS, AND SWEEP ELL TO THE NEW ELECTRIC SERVICE PEDESTAL. INSTALL CONDUCTORS AS PER UNIFORM ELECTRIC CODE.

NOTES:

1. A PERMIT FROM THE CITY OF REDDING BUILDING DEPT. FOR ELECTRIC SERVICE INSPECTION SHALL BE OBTAINED PRIOR TO ANY ELECTRIC WORK.
2. THE CONNECTION TO THE SERVICE PEDESTAL SHALL BE MADE BY AN APPROPRIATELY LICENSED CONTRACTOR.
3. SERVICE PEDESTAL SHALL BE PER CITY OF REDDING CONSTRUCTION STANDARD 507.20, FIGURE 1.
4. PROVIDE A 110V GFCI RECEPTACLE INSIDE CONTROLLER PEDESTAL.
5. ALL SPRINKLER VALVE CONTROL WIRE(S) SHALL BE HOUSED IN A SCH 40 SLEEVE UNDER HARD SURFACED AREAS (SIZE AS REQUIRED).
6. EXTRA SPRINKLER VALVE CONTROL WIRE(S) SHALL BE BUNDLED & TAPED AND LAID AT BOTTOM OF ENCLOSURE. ADDITIONAL WIRE LENGTH AT 2 TIMES THE HEIGHT OF ENCLOSURE SHALL BE PROVIDED ON EACH EXTRA WIRE.
7. ALL SPLICES SHALL BE MADE IN SPLICE BOXES.
8. ENCLOSURE SHALL BE HUNTER (ICC OR ACC-SS) OR RAINBIRD (ESP-MC-SS). INSTALL PER MANUFACTURER'S SPECIFICATIONS.

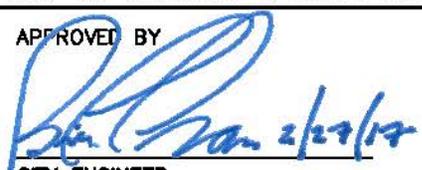
DWG DATE: 4/06		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
			APPROVED BY  10/9/13 CITY ENGINEER	<h2 style="margin: 0;">IRRIGATION CONTROL ENCLOSURE</h2>
1	7/13	RENUM. 681.70		
MARK	DATE	REVISION		

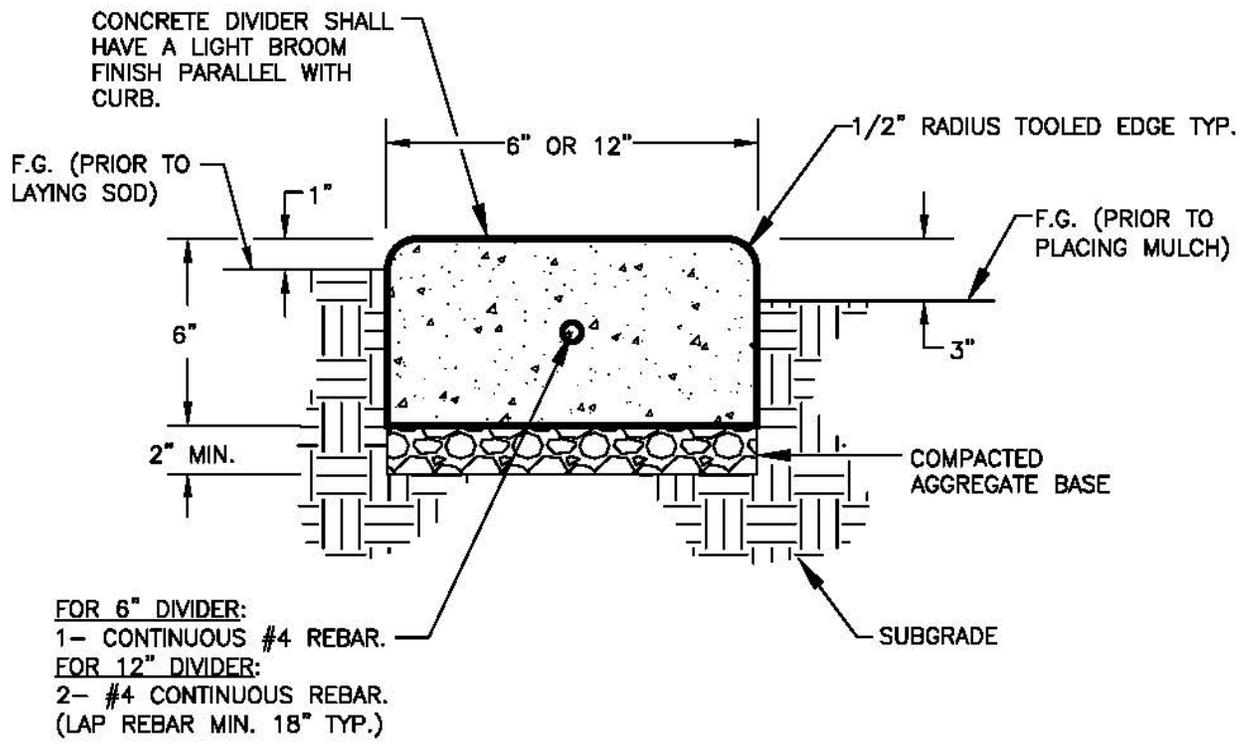
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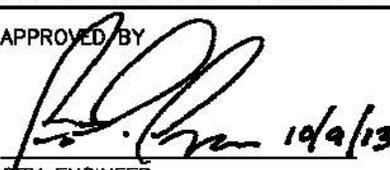
1. ALL WORK SHALL CONFORM TO THE UNIFORM ELECTRIC CODE.
2. CONTROLLER SHALL BE MOUNTED ON A VERTICAL WALL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S MOUNTING INSTRUCTIONS.
3. CONTROLLER SHALL BE ON A SEPARATE CIRCUIT BREAKER.

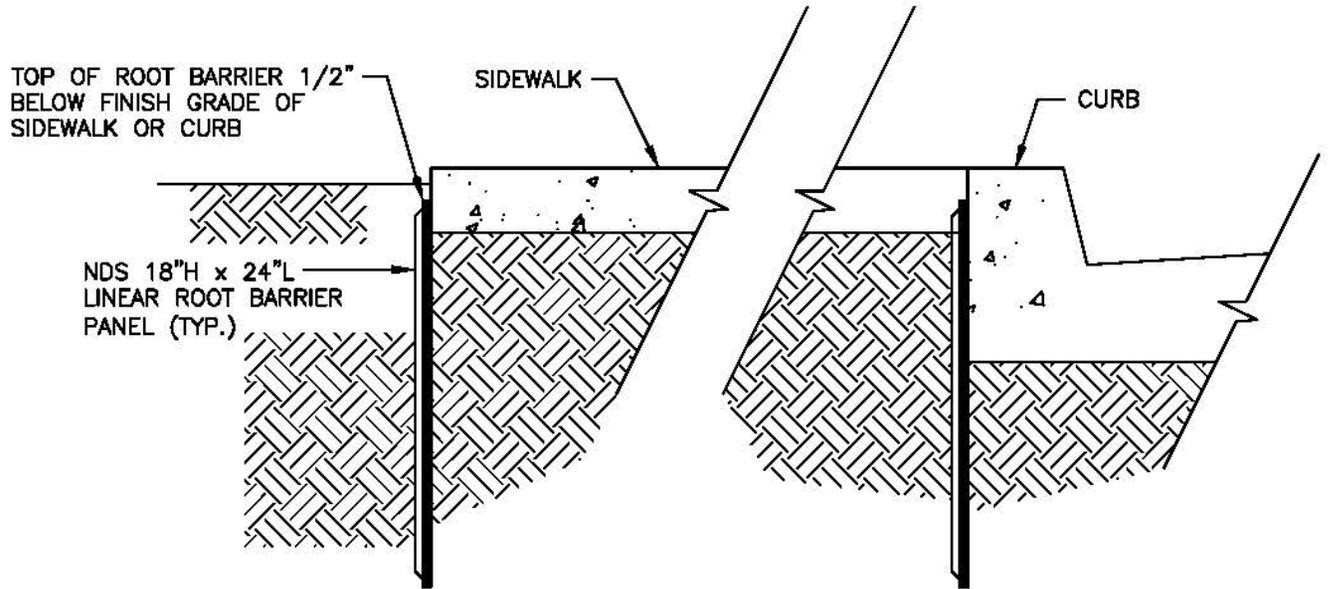
DWG DATE: 2/03		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
4	8/16	EDIT MODEL	APPROVED BY  2/27/12 CITY ENGINEER	
3	7/13	RENUM. 683.80		
2	4/06	ADD NOTES		
1	2/03	REDRAWN		
MARK	DATE	REVISION	IRRIGATION CONTROLLER DETAIL (TYPE 1)	



NOTES:

1. SUBGRADE SHALL BE FREE OF ORGANIC MATTER, LARGE CLAY LUMPS, OR STONES LARGER THAN ONE INCH, AND SHALL BE COMPACTED TO 95% RELATIVE DENSITY.
2. FORMS SHALL BE TRUE TO LINE & GRADE, AND ADEQUATELY STAKED AND BRACED TO MAINTAIN A UNIFORM LINE.
3. INSTALL FIBER EXPANSION JOINTS IN CURB @ 20'-0" O.C. MAXIMUM.
4. INSTALL TOOLED SCORED JOINTS AT 10'-0" O.C. OR AT CHANGES OF DIRECTION.

DWG DATE: 10-11		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
2	7/13	RENUM. 680.10	APPROVED BY  10/9/13 CITY ENGINEER	
1	4/06	ADD A.B.		
MARK	DATE	REVISION	<h1>CONCRETE DIVIDER</h1>	

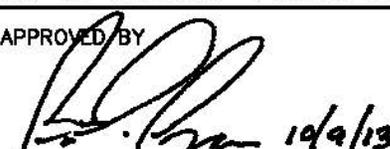


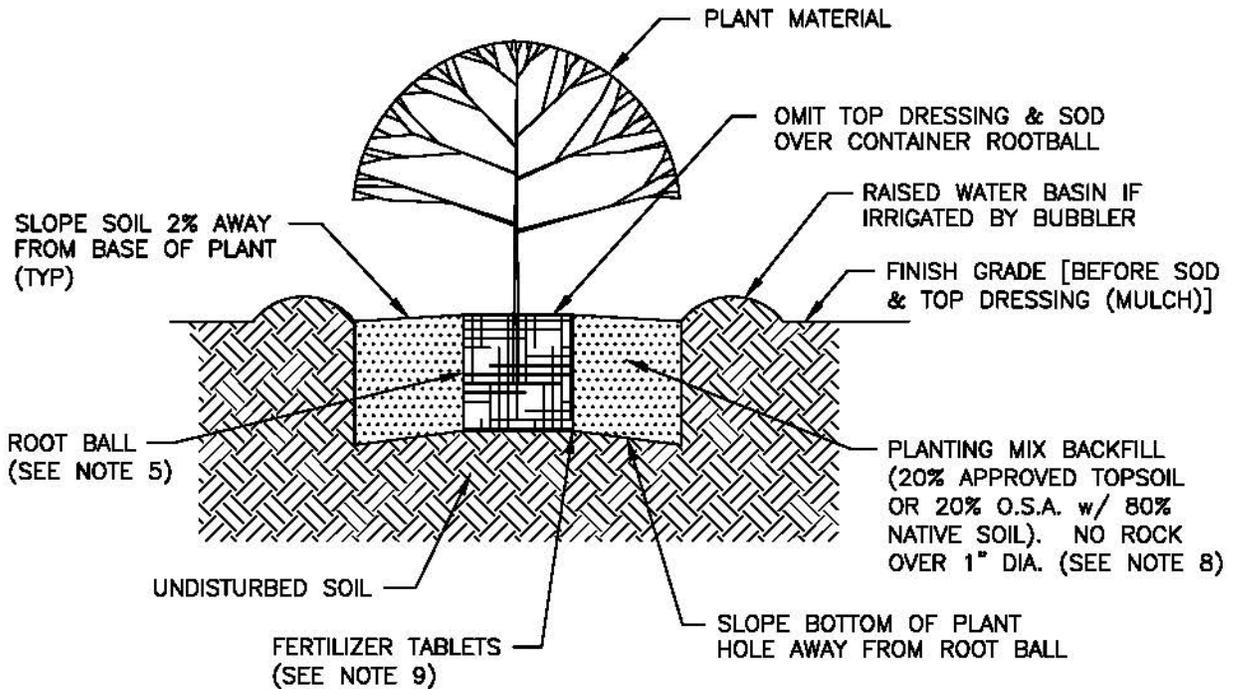
NOTES:

1. ROOT BARRIERS SHALL BE INSTALLED IF A TREE IS WITHIN FOUR FEET OF ANY HARD-SURFACE AREA, BUILDING STRUCTURE, UTILITY EQUIPMENT OR OTHER STRUCTURES.
2. INSTALL ROOT DEFLECTING RIBS FACING THE TREE ROOTS
3. ROOT BARRIER SHALL HAVE THE FOLLOWING FEATURES:
 - A. COLOR: BLACK
 - B. PANEL: 0.085" THICK POLYPROPYLENE
 - C. ZIPPER JOINING SYSTEM
 - D. ROUNDED EDGES
 - E. 90 DEGREE ROOT DEFLECTING RIBS
 - F. ANTI-LIFT PADS
 - G. DOUBLE TOP EDGE
4. QUANTITY OF PANELS REQUIRED FOR LINEAR APPLICATION USE:

15 GAL. & 24" BOX TREE	- 5 PANELS
36"-42" BOX TREE	- 7 PANELS
48"-72" BOX TREE	- 10 PANELS

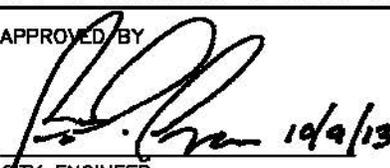
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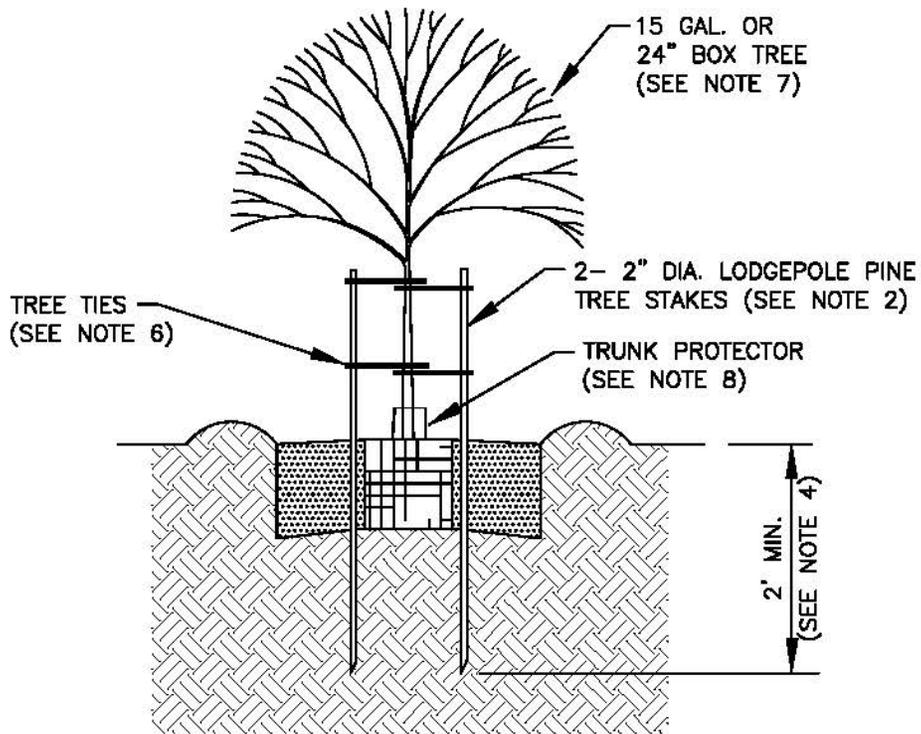
DWG DATE: 2/03		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
1	7/13	RENUM. 683.50	APPROVED BY  10/9/13 CITY ENGINEER	<h2 style="margin: 0;">TREE ROOT BARRIER DETAIL</h2>
MARK	DATE	REVISION		



NOTES:

1. PLANTING SHALL BE PERFORMED ONLY WHEN WEATHER & SOIL CONDITIONS ARE DETERMINED TO BE SUITABLE BY THE ENGINEER.
2. PRIOR TO PLANTING, ALL PLANTED AREAS SHALL PROVIDE POSITIVE DRAINAGE (NO STANDING WATER).
3. IF GLAZING OCCURS DURING EXCAVATION, SCARIFY VERTICAL SIDES OF PLANTING HOLE.
4. ALL PLANTS THAT SETTLE SHALL BE RAISED TO THE CORRECT FINISH GRADE LEVEL.
5. THE TOP OF THE ROOT BALL SHALL BE ONE INCH ABOVE THE SURROUNDING SOIL TO AVOID WATER ACCUMULATION AT THE CROWN. BACKFILL SHALL BE PLACED AROUND THE CROWN OF THE ROOT BALL TO COVER EXPOSED SURFACES.
6. LOOSEN THE BOTTOM & SIDES OF THE EXPOSED ROOT BALL & UNWIND ANY CIRCLING ROOTS.
7. PLANT MATERIAL SHALL BE LOCATED & INSTALLED ON THE SITE AS PER THE PLANTING PLAN. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE AESTHETIC PLACEMENT OF PLANT MATERIALS. THERE SHALL BE NO PLANT PLACEMENT TOLERANCES.
8. ORGANIC SOIL AMENDMENT (O.S.A.) SHALL BE SLOWLY DECOMPOSING BY NATURE.
9. PLANTING PACKET SHALL BE REFORESTATION TECHNOLOGIES INTERNATIONAL (RTI) "BOOSTER-PAKS" OR EQUAL. PLANTING PACKET SHALL HAVE A GUARANTEED ANALYSIS OF 20-10-5 (N-P-K). INSTALL AS PER MANUFACTURERS APPLICATION RATES & SPECIFICATIONS.
10. PLANT MATERIAL SHALL BE APPROVED BY THE CITY PRIOR TO IT BEING PLANTED ON THE SITE.
11. PLANTING HOLES SHALL BE CIRCULAR AND EQUAL TO THE DEPTH AND THREE (3) TIMES THE WIDTH OF THE PLANT CONTAINER.
12. ALL PLANT MATERIALS SHALL COMPLY WITH FEDERAL, STATE & COUNTY LAWS REQUIRING INSPECTION FOR PLANT DISEASES & PEST INFESTATIONS. INSPECTION CERTIFICATES REQUIRED BY LAW SHALL ACCOMPANY EACH SHIPMENT OF MATERIAL.

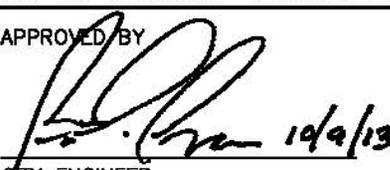
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3	7/13	RENUM. 683.00	APPROVED BY  10/9/13 CITY ENGINEER	
2	4/06	EDIT NOTES		
1	2/03	REVISE STD		
MARK	DATE	REVISION	<h1>PLANTING DETAIL</h1>	

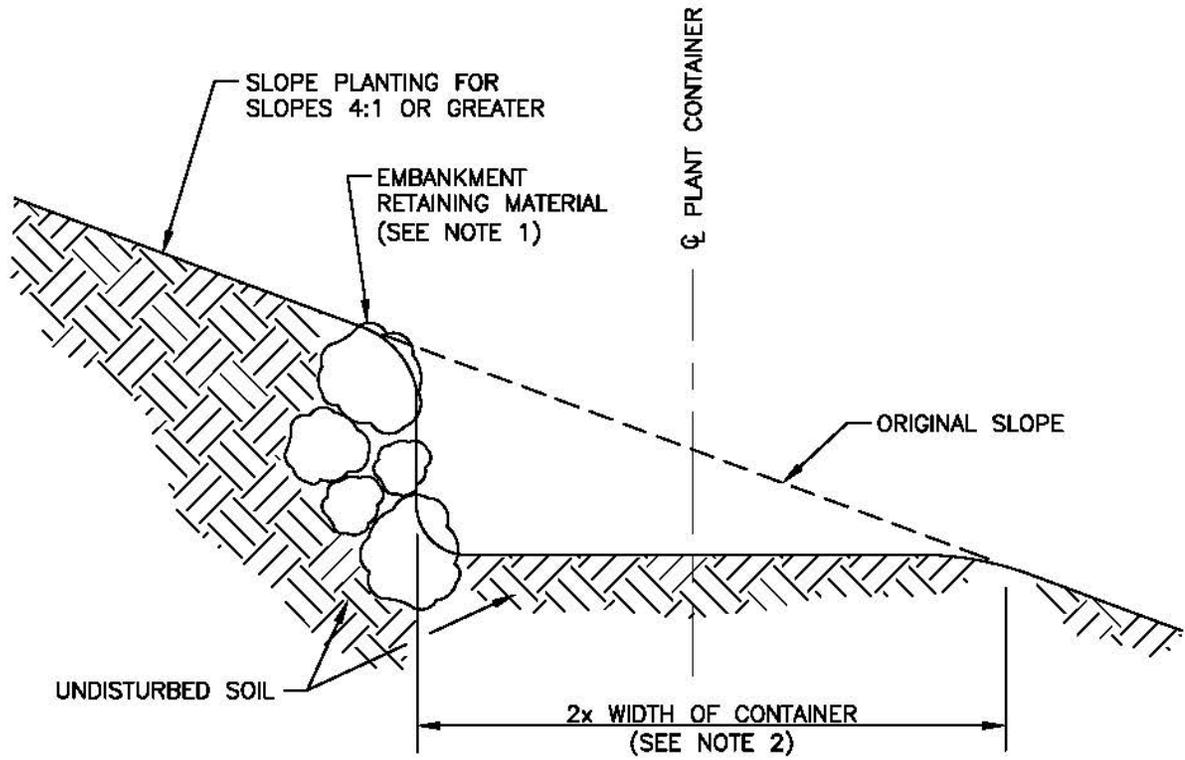


NOTES:

1. STAKING SHALL BE COMPLETED THE SAME DAY AS THE TREE PLANTING.
2. STAKES SHALL BE:
 - 8' IN HEIGHT FOR A 15 GAL. TREES, OR
 - 10' IN HEIGHT FOR A 24" BOX.
3. STAKES & TREES SHALL BE ALIGNED IN AN EAST/WEST DIRECTION.
4. SPACE STAKES EVENLY & VERTICALLY ON THE OUTSIDE OF THE TREE ROOT BALL & DRIVE FIRMLY INTO UNDISTURBED SOIL. STAKE SHALL BE DRIVEN AT AN ANGLE AND DRAWN TO VERTICAL. DO NOT DRIVE STAKE THROUGH ROOT BALL.
5. REMOVE NURSERY STAKE AT TIME OF INSTALLATION.
6. TREES SHALL BE DOUBLE STAKED AND SUPPORTED WITH FOUR 'CINCH-TIES' OR EQUAL. WRAP 'CINCH-TIE' AROUND THE TREE TRUNK AND THE STAKE TWISTING TO FORM A FIGURE EIGHT. SECURE WITH A GALVANIZED SCREW DRIVEN THROUGH THE 'CINCH-TIE' AND INTO THE STAKE TO PREVENT SLIPPAGE.
7. TREES BRANCHING THREE (3) FEET OR MORE ABOVE GROUND LEVEL SHALL HAVE THEIR TRUNKS PAINTED WITH LIGHT GRAY INTERIOR LATEX PAINT.
8. TREES IN LAWN AREAS SHALL HAVE A PLASTIC TRUNK GUARD INSTALLED AT GROUND LEVEL.
9. TREES SHALL BE STAKED TO KEEP THEM IN AN UPRIGHT POSITION AND HOLD THEM ERECT, WHILE ALLOWING THE TOPS AND TRUNKS TO FLEX WITH THE WIND. TREE TRUNKS AND LATERAL BRANCHES SHALL BE PROTECTED FROM ABRASION FROM STAKES AND TIES.
10. SLOPE FINISH GRADE AWAY FROM TREE TRUNK A MIN. 2' DIA. AT 3%.

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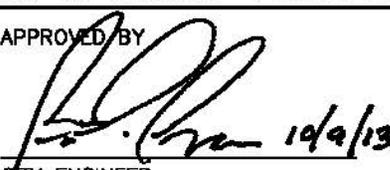
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3	7/13	RENUM. 683.10	APPROVED BY  10/9/13 CITY ENGINEER	
2	4/06	EDIT SIZE		
1	2/03	REVISE STD		
MARK	DATE	REVISION	<h2>TREE STAKING DETAIL</h2>	

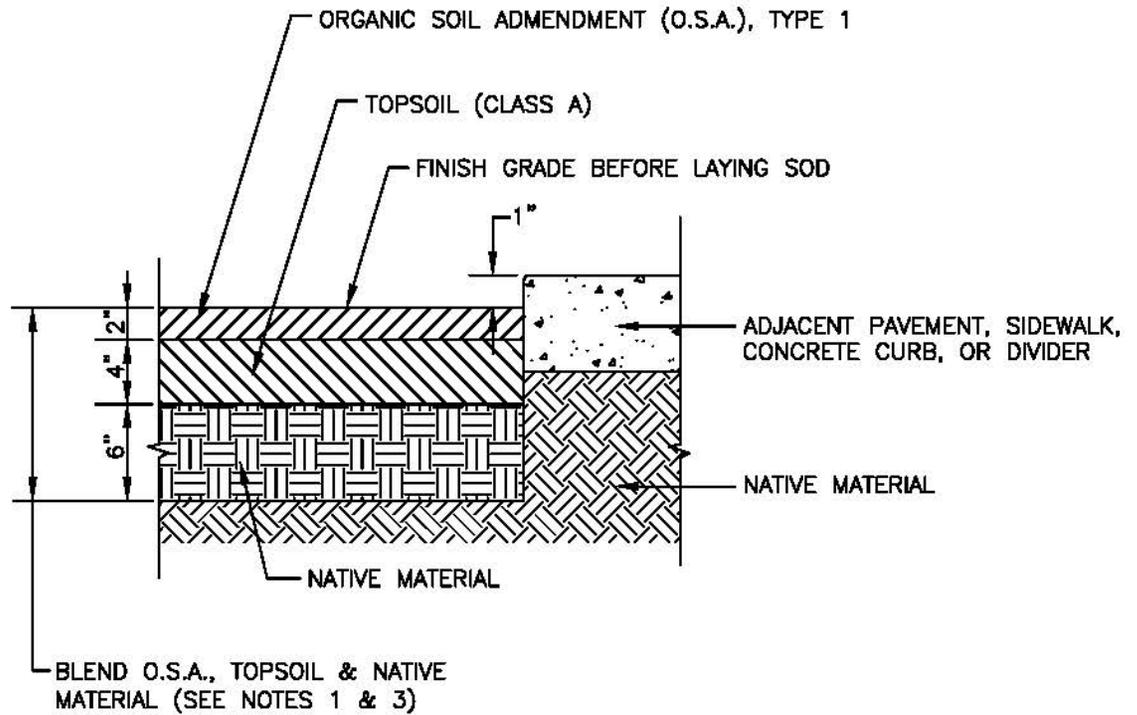


NOTES:

1. ACCEPTABLE RETAINING MATERIAL:
 - BOULDERS/ROCKS
 - PLASTIC RECYCLED HEADER
 - CONCRETE BLOCK

2. PLANTING SHALL BE IN ACCORDANCE WITH CORCS, PAGES 780.00 & 780.10, EXCEPTING: NOTE 11 OF PAGE 780.00 SHALL READ, "PLANTING HOLES SHALL BE... TWO (2) TIMES THE WIDTH OF THE PLANT CONTAINER".

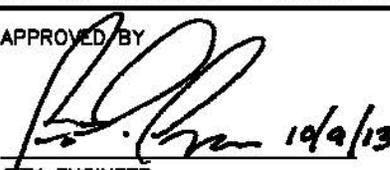
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1	7/13	RENUM. 683.60	APPROVED BY  10/9/13 CITY ENGINEER	
MARK	DATE	REVISION		
			<h2 style="margin: 0;">SLOPE PLANTING DETAIL</h2>	



NOTES:

1. ALL ROCKS LARGER THAN ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE TOP SIX INCHES.
2. CONTRACTOR SHALL DISPOSE OF ALL ROCKS LARGER THAN ONE INCH & OTHER EXTRANEIOUS MATERIALS GENERATED FROM SOIL PREPARATION OPERATIONS.
3. AFTER BLENDING SOILS, ALL SOD AREAS SHALL RECEIVE TWENTY (20) POUNDS OF 6-20-20 (10 PERCENT SULPHUR) FERTILIZER AND TEN (10) POUNDS OF 5-2-4 WITH 10% HUMIC ACID FERTILIZER PER 1,000 SQUARE FOOT, ROTOTILLED INTO THE TOP SIX (6) INCHES OF THE MIXED SOIL.
4. THE FINISH GRADE FOR SOD AREAS SHALL BE APPROVED BY THE ENGINEER PRIOR TO LAYING SOD.
5. ALL SOD AREAS SHALL HAVE A MINIMUM SLOPE OF TWO PERCENT.
6. SOD SHALL BE FIELD-GROWN IN THE SACRAMENTO/SAN JOAQUIN VALLEY.
7. SOD TYPE SHALL BE AS SPECIFIED ON THE DRAWINGS.
8. SOD SHALL BE STRONGLY ROOTED, AND FREE OF WEEDS, NATIVE GRASSES, & INSECT PESTS.
9. SOD BLEND SHALL HAVE A 5/8" MINIMUM THICKNESS WITH A 2" MINIMUM TOP GROWTH.

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DWG DATE: 4/06		SCALE: NTS	CITY OF REDDING • PUBLIC WORKS DEPARTMENT • ENGINEERING DIVISION	
1	7/13	RENUM. 683.90	APPROVED BY  10/9/13 CITY ENGINEER	
MARK	DATE	REVISION	SOD PLANTING DETAIL	