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1. THE CITY OF COTTONWOOD DOES NOT WARRANT ANY QUANTITIES SHOWN ON THESE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL QUANTITIES. THE CITY OF COTTONWOOD SHALL NOT BE HELD RESPONSIBLE FOR ERRORS IN ESTIMATES OF QUANTITIES, MATERIALS, SCHEDULE, INSTALLATION REQUIREMENTS, OR SIZE.
2. THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF, SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY CONSTRUCTION WORK BY TELEPHONE AT (928) 634-8033. ANY WORK CONCEALED WITHOUT INSPECTION SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
3. AN APPROVED SET OF PLANS MUST BE AVAILABLE ON THE JOB SITE AT ALL TIMES. THE CONTRACTOR'S REPRESENTATIVE (CAPABLE OF COMMUNICATING WITH THE CITY'S REPRESENTATIVES) SHALL BE ON THE JOB AT ALL TIMES THE WORK IS BEING PURSUED.
4. THE PROCEDURES AND METHODS USED TO SAMPLE, TEST MATERIALS, AND REPORT TEST RESULTS WILL BE DETERMINED BY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT. FOR ALL PHASES OF CONSTRUCTION, THE TYPE, SCHEDULING, FREQUENCY AND LOCATION OF ALL MATERIALS TESTING AND SAMPLING SHALL BE DETERMINED BY THE ENGINEERING DEPARTMENT. THE INSPECTOR SHALL SELECT TESTING LOCATIONS AND INCREASE OR DECREASE THE FREQUENCY OF THE TESTS. COSTS OF MATERIAL TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. A THIRD PARTY TESTING LABORATORY SHALL BE USED FOR ALL MATERIAL TESTING. AS A GENERAL GUIDELINE TESTING FREQUENCY SHALL BE:
  - CONCRETE – 1 SET OF 4 CYLINDERS PER 50 CUBIC YARDS OR DAILY
  - SUBGRADE – 1 DENSITY TEST PER 500 LINEAL FEET – COMPACTION PER MAG
  - BASE COURSE – 1 DENSITY TEST PER 500 LINEAL FEET – COMPACTION PER MAG
  - ASPHALT – 1 DENSITY TEST PER 500 LINEAL FEET IN EACH LANE. 1 OIL CONTENT PER DAY OF PAVING. 1 GRADATION CHECK PER PAVING DAY.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND LEGAL DISPOSAL OF ALL ITEMS SHOWN AS BEING REMOVED ON THESE PLANS.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO VERIFY THE PRESENCE AND LOCATION OF ALL EXISTING OVERHEAD AND/OR UNDERGROUND UTILITIES AND IRRIGATION LINES THAT MAY INTERFERE WITH THIS CONSTRUCTION, WHETHER OR NOT SAID UTILITIES ARE SHOWN ON THE CONSTRUCTION PLANS FOR THIS PROJECT AND TO ADEQUATELY PROTECT, REPAIR AS REQUIRED, AND MAINTAIN ANY SUCH UTILITIES AND IRRIGATION LINES.
7. THE CONTRACTOR SHALL ONLY USE RECLAIMED WATER FOR COMPACTION AND DUST CONTROL. RECLAIMED WATER PURCHASE IS AVAILABLE BY CONTACTING THE CITY OF COTTONWOOD UTILITIES DEPARTMENT (928) 634-0186.
8. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTION DITCHES, PIPES PROTECTIVE BERMS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT IMPROVEMENTS, WHETHER EXISTING OR PROPOSED, FROM RUNOFF OR DAMAGE FROM STORM WATER, MUST BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS.
9. TRAFFIC CONTROL SHALL CONFORM WITH THE CURRENT CITY OF COTTONWOOD R.O.W. PERMIT AND MUTCD GUIDELINES, AS APPLICABLE.
10. ALL CONTRACTORS ARE RESPONSIBLE TO OBTAIN AN AZPDES POLLUTION DISCHARGE ELIMINATION SYSTEM PERMIT IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS, INCLUDING NOTICE OF INTENT (NOI), NOTICE OF TERMINATION, AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP). A COPY OF THE NOI AND SWPPP SHALL BE AVAILABLE ON THE JOB SITE AT ALL TIMES. THIS APPLIES TO ALL SITES GREATER THAN 1 ACRE IN SIZE OR PART OF A LARGER DEVELOPMENT 1 ACRE OR GREATER IN SIZE.
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY AND ALL OTHER PERMITS AND MEET ANY REQUIREMENTS SET FORTH BY OTHER AGENCIES OR UTILITIES, WHICH HAVE JURISDICTION, AT THE CONTRACTOR'S EXPENSE, INCLUDING OSHA.
12. ALL CONTRACTORS ARE RESPONSIBLE TO CONSTRUCT STABILIZED CONSTRUCTION ENTRANCES, IF REQUIRED, IN ORDER TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAYS OR STREETS. GRAVEL TRACK-OUT PADS SHALL MEET CURRENT ADOT EROSION AND POLLUTION CONTROL MANUAL STANDARDS. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ANY SEDIMENT TRACKED ONTO PUBLIC RIGHTS-OF-WAYS OR STREETS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK AREAS INCLUDING STREETS & PAVED AREAS, DRAINAGEWAYS AND DRAINAGE APPURTENANCES, WORK AREA UTILITIES WHETHER BURIED AND EXPOSED, EMBANKMENTS & CUT SLOPES, AND ALL UNFINISHED WORK AREAS. THE CONTRACTOR SHALL DO WHAT IS REQUIRED SO THAT ACCESS IS NOT DENIED TO ANY PROPERTY ALONG THE PROPOSED CONSTRUCTION FOR ANY DURATION THAT WOULD INTERFERE WITH NORMAL DAILY INGRESS AND EGRESS. ALL DRIVING AREAS SHALL BE GRADED TO FINISH SURFACE FOLLOWING THE REQUIRED TRENCH FILL SPECIFICATIONS IMMEDIATELY AFTER THE INSTALLATION IS COMPLETE IN ORDER THAT ACCESS IS NOT INTERRUPTED AND THAT ACCESS IS UNINHIBITED. NO UNEVEN SURFACES SHALL BE ALLOWED THAT COULD CAUSE ACCIDENTS, VEHICLE DAMAGE, OR LIMITED ACCESS. THE CONTRACTOR SHALL DO WHAT IS REQUIRED TO ASSURE THAT NO UTILITIES ARE INTERRUPTED ALONG THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL LEAVE ALL DRAINAGEWAYS AND APPURTENANCES IN OPERATING ORDER THROUGHOUT THE CONSTRUCTION DURATION. THE CONTRACTOR SHALL ASSURE THAT ALL CUT AND FILL SLOPES ARE RESTORED TO THE PRIOR CONDITIONS OR AS SHOWN ON THE APPROVED PLANS. THE CONTRACTOR SHALL SEE THAT ALL UNFINISHED WORK AREAS SHALL BE MAINTAINED TO ASSURE THAT OPEN TRENCHES ARE SECURE AND NOT LEFT UNATTENDED, THAT DRAINAGE IS NOT ALLOWED TO ENTER OPEN TRENCHES AND DAMAGE EXISTING AND NEW UTILITIES, AND THAT PUBLIC SAFETY IS ASSURED ALONG THE ENTIRE CONSTRUCTION ROUTE AT ALL TIMES. CONTRACTOR SHALL MEET OSHA STANDARDS FOR TRENCH SAFETY.
14. PRIOR TO THE START OF ANY WORK, THE CONTRACTOR SHALL SCHEDULE AND ATTEND A PRE-CONSTRUCTION AND UTILITY COORDINATION MEETING. ALL WORK, PLANS, SPECIFICATIONS, INSPECTION REQUIREMENTS, AND SCHEDULING SHALL BE DISCUSSED AT THIS MEETING.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL ARIZONA 811 LAWS PRIOR TO AND DURING CONSTRUCTION BY CONTACTING THE 811 AUTHORITY AT (602) 659-7500. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF THE UTILITY LOCATION AS IS REQUIRED THROUGHOUT THE PROJECT CONSTRUCTION DURATION. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ARIZONA 811 AUTHORITY REGULATIONS. CONTRACTOR SHALL PROVIDE THE CITY OF COTTONWOOD ENGINEERING STAFF WITH EVIDENCE OF ANY AREA BEING DISTURBED HAVING BEEN LOCATED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

**GENERAL ENGINEERING NOTES**

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16. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE SUFFICIENT MANPOWER, MATERIALS, AND EQUIPMENT ON THE JOB AT ALL TIMES DURING THE DURATION OF THE CONSTRUCTION PROJECT TO BOTH COMPLY WITH THE PROJECT SPECIFICATIONS AND ALSO ACCOMPLISH THE WORK IN A TIMELY MANNER.
17. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE SPECIFICATIONS AS REQUIRED IN THE CURRENT UNIFORM STANDARD SPECIFICATIONS AND DETAILS OF PUBLIC WORKS CONSTRUCTION BY MARICOPA ASSOCIATION OF GOVERNMENT COMMONLY REFERRED TO AS MAG STANDARDS, CITY OF COTTONWOOD REGULATIONS OR SPECIFICATIONS, ANSI/AWWA SPECIFICATIONS, AND/OR OTHER STATE AND FEDERAL SPECIFICATIONS, AS APPLICABLE.
18. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE TRENCH BRACING, SHEATHING, SHORING OR SIDE SLOPES AS REQUIRED FOR THE SAFETY AND CONFORMANCE TO ALL APPLICABLE OSHA LAWS AND CONSTRUCTION STANDARDS FOR THE EXCAVATION AND TRENCHING OF THIS PROJECT. THE CONTRACTOR SHALL ASSURE THAT SUITABLE AND SAFE CONDITIONS, INCLUDING PROPER TRAFFIC AND SAFETY CONTROL, ARE MET THROUGHOUT THE PROJECT DURATION OR WORK WILL BE CEASED UNTIL SUCH TIME THAT THE UNSAFE CONDITION IS RECTIFIED. THE CITY OF COTTONWOOD SHALL NOT BE HELD IN ANY WAY RESPONSIBLE FOR ANY LOST TIME BY THE CONTRACTOR DUE TO UNSAFE CONDITIONS OR THE ENFORCEMENT OF THIS SPECIFICATION
19. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY OF COTTONWOOD PUBLIC WORKS PROJECT MANAGER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
20. THE CITY OF COTTONWOOD MAY SUSPEND THE WORK BY WRITTEN NOTICE WHEN, IN THEIR JUDGMENT, PROGRESS IS UNSATISFACTORY OR UNAUTHORIZED, THE PRODUCT IS UNSATISFACTORY, WEATHER CONDITIONS ARE UNSUITABLE OR THERE IS DANGER TO THE PUBLIC.
21. THE CITY OF COTTONWOOD MAY REQUIRE THE SUBMITTAL OF A "CERTIFICATE OF COMPLIANCE" AND/OR "MANUFACTURER'S GUIDELINES" FOR ANY MATERIALS USED IN THE WORK. MANUFACTURER'S GUIDELINES SHALL CONSIST OF WRITTEN INSTRUCTIONS FOR SHIPPING, HANDLING, UNLOADING, CUTTING, JOINING, INSTALLATION, STORAGE, AND/OR ANY OTHER FACETS OF WORKING.
22. SHOP DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR PER MAG SECTION 105.2.
23. THE CITY OF COTTONWOOD MAY ORDER ANY MATERIALS USED IN THE WORK TO BE TESTED ACCORDING TO AASHTO AND ASTM STANDARDS. THE CONTRACTOR SHALL, AT THEIR EXPENSE, SUPPLY CERTIFICATES OR RESULTS OF TESTING.
24. THE CONTRACTOR MAY SUBMIT CAREFULLY DOCUMENTED AND CONSIDERED WRITTEN PROPOSALS FOR ALTERNATE MATERIALS AND CONSTRUCTION METHODS. THOSE PROPOSALS THAT ARE FOUND TO BE IN CONFORMITY WITH GOOD ENGINEERING DESIGN AND CAN BE EASILY MAINTAINED BY CITY FORCES MAY BE GIVEN WRITTEN APPROVAL BY THE CITY ENGINEER FOR INCORPORATION IN THE CONSTRUCTION PLANS IF THEY ARE FOUND TO BE IN THE PUBLIC INTEREST.
25. ALL IMPROVEMENTS SHALL BE CONSTRUCTED BY CONTRACTORS LICENSED BY THE ARIZONA STATE REGISTRAR OF CONTRACTORS, WITH A CLASS OF LICENSE(S) FOR THE SPECIFIC WORK BEING PERFORMED.
26. THE CITY OF COTTONWOOD INSPECTION STAFF SHALL BE NOTIFIED 24 HOURS PRIOR TO BEGINNING DIFFERENT PHASES OF CONSTRUCTION SO THAT OBSERVATIONS MAY BE SCHEDULED.
27. APPROVAL OF A PORTION OF THE WORK IN PROGRESS DOES NOT GUARANTEE ITS FINAL ACCEPTANCE. TESTING AND EVALUATION MAY CONTINUE UNTIL WRITTEN FINAL ACCEPTANCE OF A COMPLETE WORKABLE UNIT. ACCEPTANCE OF COMPLETED IMPROVEMENTS WILL NOT BE GIVEN UNTIL DEFECTIVE OR UNAUTHORIZED WORK IS REMOVED, AND FINAL CLEAN-UP IS COMPLETE.
28. THE CITY OF COTTONWOOD RESERVES THE RIGHT TO REQUEST MODIFICATIONS TO THESE PLANS DURING CONSTRUCTION IF FIELD CONDITIONS WARRANT AND THE DESIGN ENGINEER CONCURS.
29. ANY DEFECTS WHICH APPEAR IN THE WORK WITHIN THE WARRANTY PERIOD GIVEN IN THE PROJECT CONTRACT FROM THE DATE OF ACCEPTANCE AND WHICH ARE DUE TO IMPROPER WORKMANSHIP OR INFERIOR MATERIALS SUPPLIED SHALL BE CORRECTED BY OR AT THE EXPENSE OF THE CONTRACTOR.
30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE STREETS AND OF PARTIALLY COMPLETED PORTIONS OF THE WORK UNTIL FINAL ACCEPTANCE OF THE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE QUALITY OF EXISTING STREETS LEADING TO THE PROJECT SITE. EXISTING STREETS FOUND TO BE DAMAGED BY CONSTRUCTION TRAFFIC SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY OF COTTONWOOD BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
31. ALL ITEMS REMOVED AND NOT SALVAGED OR NOTED OTHERWISE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE HAULED AWAY.
32. STREETS CLOSED BECAUSE OF CONSTRUCTION SHALL BE PROVIDED WITH BARRICADES AND/OR HAZARD SIGNS AS REQUIRED AND APPROVED BY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF. THE CITY OF COTTONWOOD DEPARTMENT OF PUBLIC SAFETY SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY STREET CLOSURE.
33. PRIOR TO APPROVAL OF AN IMPROVEMENT PROJECT, AN "AS-BUILT" PLAN MUST BE SUBMITTED TO THE CITY OF COTTONWOOD ENGINEER. THE AS-BUILT PLAN SHALL INDICATE THE ACTUAL LOCATION OF WATER MAINS, SEWER MAINS, UNDERGROUND DRAINAGE STRUCTURES, ALL SEWER AND WATER SERVICES, ALL FITTINGS, VALVES AND MANHOLES RELATIVE TO RIGHT-OF-WAY BOUNDARIES, LOT LINE, OR OTHER POINTS OF SURVEY.
34. THE ACCURACY OF ALL CONSTRUCTION WORK SHALL BE MAINTAINED AND VERIFIED BY THE CONTRACTOR'S SURVEYOR AT THE CONTRACTOR'S EXPENSE. STAKES WILL BE SET ESTABLISHING LINES AND GRADES (FINISH OR FLOWLINE) FOR ALL CONSTRUCTION INCLUDING ROADS, CURB AND GUTTER, SIDEWALKS, UTILITIES, STRUCTURES, AND OTHER WORK AS CONSIDERED NECESSARY. ALL SURVEY CONTROL SHALL BE SET BY THE CONTRACTOR'S SURVEYOR FROM MONUMENTS PER THESE APPROVED PLANS.
35. A COPY OF THE A.D.E.Q. PERMITS ISSUED PRIOR TO NEW CONSTRUCTION, EXTENSION TO, OR MODIFICATION OF A WATER DISTRIBUTION SYSTEM, SEWAGE COLLECTION OR INDIVIDUAL SEWAGE TREATMENT SYSTEM SHALL BE ONSITE AT ALL TIMES.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

**GENERAL ENGINEERING NOTES**

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36. RELOCATION OF SIGNS, TREES, SHRUBS, MAILBOXES AND OTHER INCIDENTALS REQUIRING RELOCATION SHALL BE MOVED ONLY FAR ENOUGH TO ALLOW CONSTRUCTION OF THE PROJECT AND CAUSE THE LEAST DISRUPTION TO PRIVATE PROPERTY, AND LANDSCAPE. FINAL POSITIONS SHALL BE APPROVED BY THE CITY OF COTTONWOOD PRIOR TO RELOCATION. ALL RELOCATED ITEMS SHALL CONTINUE TO WORK IN THEIR INTENDED CAPACITY AFTER THE RELOCATION HAS BEEN ACCOMPLISHED. NO SIGNS SHALL BE RELOCATED TO POSITIONS OUTSIDE DESIGNATED RIGHTS-OF-WAY. SAFETY SHALL BE A PRIMARY CONSIDERATION IN THE PLACEMENT OF SHRUBBERY AND SIGNS WHICH COULD POSSIBLY DISRUPT THE SIGHT DISTANCE OF MOTORISTS.

37. NO JOB WILL BE CONSIDERED COMPLETE UNTIL FINAL GRADING IS COMPLETE AND ALL CURBS, PAVEMENT, AND SIDEWALKS HAVE BEEN SWEEP CLEAN OF ALL DIRT AND DEBRIS, ALL SURVEY MONUMENTS ARE INSTALLED, AND ALL VALVES, MANHOLES AND BOXES HAVE BEEN ADJUSTED TO GRADE ACCORDING TO THESE APPROVED PLANS.

38. ALL SAFETY RAIL WORK ON THE PROJECT SHALL RECEIVE AT LEAST ONE PRIME COAT AND TWO FINISH COATS OF PAINT. PAINT SHALL BE APPLIED BY SPRAYER IN A UNIFORM COAT. PAINT PRODUCTS SHALL BE SELECTED FROM THE ADOT APPROVED PRODUCTS LIST. COLOR SHALL BE SHERWIN-WILLIAMS SW-6454, SHAMROCK.



1. EXCAVATING CONTRACTOR MUST GIVE LOCATION FOR WASTING EXCESS EXCAVATION IF LOCATED WITHIN THE CITY OF COTTONWOOD AND A LETTER FROM OWNER GIVING PERMISSION FOR DUMPING PRIOR TO STARTING ON-SITE CONSTRUCTION. IF EXCESS EXCAVATION EXCEEDS 50 CUBIC YARDS AND IS DISPOSED OF ON PRIVATE PROPERTY THE DISPOSAL SITE WILL ALSO REQUIRE A GRADING AND DRAINAGE PERMIT.
2. GRADING AND DRAINAGE PLAN APPROVAL INCLUDES THE CONSTRUCTION OF ALL SURFACE IMPROVEMENTS SHOWN ON THE APPROVED PLANS.
3. ALL RAMPS MUST MEET ADA ACCESSIBILITY GUIDELINES (ADAAG) STANDARDS AND M.A.G. UNIFORM STANDARD SPECIFICATIONS AND DETAILS; 2% MAX CROSS SLOPES AND 12:1 MAX LONGITUDINAL SLOPES UNLESS DEVIATION IS SHOWN IN THESE APPROVED PLANS.
4. COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601 OR AS SPECIFIED IN THESE PLANS.
5. TREES AND SHRUBBERY THAT CONFLICT WITH PROPOSED IMPROVEMENTS SHALL NOT BE REMOVED WITHOUT WRITTEN APPROVAL OF THE CITY ENGINEERING DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AUTHORIZATION TO REMOVE AND/OR RELOCATE SAID TREES OR SHRUBBERY BY CALLING THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF AT (928) 634-8033.
6. SUBGRADE PREPARATION SHALL CONFORM WITH THE GEOTECHNICAL REPORT, IF APPLICABLE, FOR THIS PROJECT UNLESS OTHERWISE DIRECTED IN THESE APPROVED PLANS.
7. THE CONTRACTOR SHALL PRESERVE AND MAINTAIN CONSTRUCTION STAKING AND REFERENCE AND CONTROL POINTS UNTIL SUCH A TIME THAT THEY ARE NO LONGER REQUIRED. IN THE EVENT THAT THESE ITEMS ARE MOVED OR DESTROYED IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE THOSE ITEMS RE-ESTABLISHED FOR LOCATION AND GRADE.
8. ALL HEADWALLS, RETAINING WALLS, OR ANY OTHER INSTANCES WHERE THERE IS A BREAK IN GRADE OF 30" OR MORE SHALL REQUIRE THE INSTALLATION OF A SAFETY RAIL PER MAG STANDARD DETAIL 145. RAILING SHALL BE PRIMED AND PAINTED AS NOTED IN THESE APPROVED PLANS.
9. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND CONFIRMING DEPTH OF ALL EXISTING UTILITY LINES WITHIN PROPOSED RETENTION AND DRAINAGE FACILITY AREAS. IF THE DRAINAGE FACILITIES CANNOT BE CONSTRUCTED PER PLAN AS A RESULT OF CONFLICT WITH UNDERGROUND UTILITIES, THE CONTRACTOR SHOULD CONTACT THE CITY OF COTTONWOOD CITY ENGINEER AND REQUEST MODIFICATION OF THE DRAINAGE FACILITY DESIGN BY THE DESIGN ENGINEER.
10. ALL LANDSCAPE AND IRRIGATION INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY OR OTHER CITY MAINTAINED AREAS SHALL BE INSTALLED PER THE APPROVED PLANS. ALL LANDSCAPING APPROVED AS A PART OF THE SITE PLAN PROCESS SHALL BE INSTALLED PER THE APPROVED PLANS. ANY DEVIATIONS TO THE APPROVED PLANS REQUIRE CITY OF COTTONWOOD ENGINEERING DEPARTMENT APPROVAL.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

**GRADING & DRAINAGE NOTES**

REVISED  
01/2023

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1. SUBGRADE AND BASE COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601.
2. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST APPLICABLE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS, CITY OF COTTONWOOD ENGINEERING DESIGN STANDARDS, OR SPECIFICALLY AS SHOWN IN THESE PLANS.
3. THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, (928) 634-8033, SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY CONSTRUCTION WORK COMMENCING.
4. EXISTING OR NEWLY DAMAGED AND/OR DISPLACED CONCRETE CURB, GUTTER, SIDEWALK, OR DRIVEWAY SLABS SHALL BE REPAIRED OR REPLACED, AS NOTED BY CITY INSPECTORS, BEFORE FINAL ACCEPTANCE OF THE WORK.
5. OBSTRUCTIONS TO PROPOSED IMPROVEMENTS SHALL BE REMOVED OR RELOCATED BEFORE BEGINNING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
6. PAVING SHALL NOT START UNTIL ALL APPROPRIATE TESTING HAS BEEN COMPLETED AND ACCEPTED BY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT.
7. THE BASE MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 702 OF M.A.G. STANDARD SPECIFICATIONS.
8. BASE MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED DEPTH SPECIFIED IN MAG SECTION 310. EACH LAYER SHALL BE BLADED TO A SMOOTH SURFACE CONFORMING TO THE CROSS SECTION SHOWN ON THE PLANS AND SHALL BE WATERED AND THOROUGHLY ROLLED IN A MANNER SATISFACTORY TO THE CITY OF COTTONWOOD.
9. ASPHALT CONCRETE REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION 409 OF ADOT STANDARD SPECIFICATIONS OR SECTION 321 OF M.A.G. STANDARD SPECIFICATIONS. MIX DESIGN SHALL BE SUBMITTED TO THE CITY OF COTTONWOOD ENGINEER FOR REVIEW AND APPROVAL.
10. ASPHALTIC CONCRETE SHALL BE COMPACTED TO NOT LESS THAN 95.0 PERCENT OF LABORATORY DENSITY. THE LABORATORY DENSITY WILL BE DETERMINED BY THE CONTRACTOR'S ENGINEER BASED UPON FIELD SAMPLES IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO T-245, 75 BLOW MARSHALL DENSITY.
11. CORE SAMPLES SHALL BE TAKEN BY THE CONTRACTOR AT RANDOM LOCATIONS IN ACCORDANCE WITH QUALITY CONTROL TESTING.
12. WHEN THE AVERAGE PERCENT OF COMPACTION IS LESS THAN 95.0%, THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND REPLACE ANY PORTIONS, AT THE SOLE DISCRETION OF THE CITY OF COTTONWOOD ENGINEER.
13. ALL NEW STREETS SHALL BE CHIP SEALED, UNLESS OTHERWISE DIRECTED, PER THE FOLLOWING SPECIFICATION:
  - A. THE CHIP SEAL COAT SHALL CONSIST OF EMULSIFIED ASPHALT, TYPE CRS-2, (OR EQUIVALENT) APPLIED AT A RATE OF 0.30 TO 0.40 GALLONS PER SQUARE YARD AND 3/8" INCH CHIP COVER AGGREGATE. EMULSIFIED ASPHALT SHALL BE APPLIED TO THE SURFACE OF THE ROAD IN ACCORDANCE WITH SECTION 404-3.05 OF THE ADOT STANDARD SPECIFICATIONS. EMULSIFIED ASPHALT, TYPE CRS-2 OR EQUIVALENT SHALL CONFORM TO SECTION 1005-3.03 AND TABLE 1005-3 OF ADOT STANDARD SPECIFICATIONS.
14. CHIP SEAL COAT SHALL NOT BE APPLIED FOR A MINIMUM OF 14 DAYS AFTER COMPLETION OF THE ASPHALTIC CONCRETE.
15. THE COVER MATERIAL SHALL CONFORM TO MAG SECTION 716 AND SHALL BE AN AGGREGATE MIX OF CLEAN SAND, GRAVEL OR CRUSHED ROCK AND SHALL BE FREE OF LUMPS OR BALLS OF CLAY, CONTAIN NO CALCAREOUS, CLAY OR DUST COATINGS, CALICHE, SYNTHETIC MATERIALS, DECOMPOSED GRANITE, VOLCANIC CINDERS, ORGANIC MATTER, OR FOREIGN SUBSTANCES. IF A CLEAN COVER MATERIAL CANNOT BE ACHIEVED USING CONVENTIONAL CRUSHING AND SCREENING METHODS, THEN THE COVER MATERIAL WILL HAVE TO BE WASHED IN WATER. THE COVER MATERIAL SHALL BE APPLIED AT A RATE OF 25 TO 30 POUNDS PER SQUARE YARD.
16. THE CONTRACTOR IS RESPONSIBLE FOR ALL LABORATORY TEST AND CERTIFICATIONS TO ENSURE THAT THE CHIP MATERIAL IS IN CONFORMANCE TO THE REQUIREMENTS SET FORTH IN THESE SPECIFICATIONS.
17. REPRESENTATIVE SAMPLES OF THE AGGREGATE COVER MATERIAL SHALL BE TAKEN DAILY, AND THE LABORATORY TEST RESULTS AND CERTIFICATES OF COMPLIANCE, CERTIFIED BY THE CONTRACTOR'S ENGINEER, SHALL BE SUBMITTED TO THE CITY OF COTTONWOOD ENGINEER. THE CITY OF COTTONWOOD ENGINEER MAY REJECT DELIVERED CHIP MATERIAL IF, IN HIS OPINION, THE DELIVERED MATERIAL DIFFERS SIGNIFICANTLY FROM THE REPRESENTATIVE SAMPLE.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUCCESSFUL PLACEMENT OF THE CHIP SEAL COAT REGARDLESS OF TEMPERATURES OF MATERIAL COMPLIANCE, AND SHALL GUARANTEE THE SUCCESS OF THE CHIP SEAL COAT PER MAG SPECIFICATION SECTION 330.
19. THE CONTRACTOR SHALL HAVE EACH INDIVIDUAL ROAD SWEPT WITHIN 24 HOURS OF THE COMPLETION OF THE CHIP SEAL. THE CONTRACTOR SHALL MAINTAIN TRAFFIC CONTROL AND LOOSE GRAVEL SIGNS UNTIL ALL SWEEPING HAS BEEN COMPLETED.
20. BLOTTING SHALL BE DONE WHEREVER AND WHENEVER NECESSARY, WITH A MATERIAL APPROVED BY THE CITY OF COTTONWOOD ENGINEER. ALL EXCESS BLOTTING MATERIAL SHALL BE SWEPT AWAY AND SURFACE OF THE BITUMINOUS ROADWAY SHALL BE REASONABLY CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE THE SEAL COAT MAY BE APPLIED.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

**PAVING NOTES**

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- ALL PROJECT MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION, THE COTTONWOOD ENGINEERING DESIGN STANDARDS MANUAL (EDSM), THE APPROVED PLANS, TOGETHER WITH GENERALLY ACCEPTED GOOD CONSTRUCTION PRACTICES.
- THE CONTRACTOR SHALL PROVIDE SUFFICIENT MEN AND EQUIPMENT ON THE JOB SITE AT ALL TIMES TO ASSURE PUBLIC SAFETY AND COMPLY WITH THE CONSTRUCTION SPECIFICATIONS.
- WATERMAIN PIPE INSTALLATION, EMBEDMENT, AND BACKFILL SHALL CONFORM TO MAG STD. DETS. 200-1 AND 200-2 AND ITS REFERENCED SPECIFICATIONS. THE PIPE INSTALLATION, TRENCH WIDTH AND EMBEDMENT SHALL ALSO CONFORM TO THE PIPE MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS.
- THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF, WILL CONDUCT INSPECTIONS OF ALL OF THE PROPOSED IMPROVEMENTS. THESE REQUIRED INSPECTIONS WILL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
  - PRE-EXCAVATION LOCATION OF THE PROPOSED TRENCH AND ANY PROPOSED SAW CUTTING OF ASPHALT OR CONCRETE. VERIFICATION OF BLUE STAKE COMPLETION WILL ALSO BE DONE AT THIS TIME.
  - EXCAVATED DEPTH AND TRENCH SUBGRADE PREPARATION. ANY CROSSED UTILITIES (PUBLIC OR PRIVATE) WILL BE INSPECTED AT THIS TIME TO ASSURE NO DAMAGE OCCURRED DURING EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO OVERSEE THE REPAIR OF ANY DAMAGE TO ANY UTILITY THAT OCCURRED FROM THE EXCAVATION, CONSTRUCTION, AND BACKFILL OF THE PROPOSED WATERLINE TO THE SATISFACTION OF THAT RELATIVE UTILITY.
  - THE PLACEMENT OF TRENCH BOTTOM BEDDING INCLUDING QUALITY OF MATERIALS, THICKNESS, MOISTURE, AND COMPACTION IN ACCORDANCE TO THE PIPE BEDDING AND TRENCH DETAIL IN THE APPROVED PLANS.
  - THE INSTALLATION AND ASSEMBLY OF THE PROPOSED PIPE AND FITTINGS IN THE TRENCH ATOP THE TRENCH BOTTOM BEDDING. THIS WILL INCLUDE BUT NOT BE LIMITED TO INSPECTING THAT BEDDING HAS BEEN HAND REMOVED BELOW BELLS FOR FLUSH FIT ATOP TRENCH BOTTOM BEDDING, THAT PIPE ENDS HAVE BEEN MARKED AND THEN INSERTED INTO BELL ENDS FOR THE APPROPRIATE DEPTHS, THAT FITTINGS AND PIPE ARE PROPERLY ALIGNED AND BOLTED TOGETHER AS REQUIRED, THAT TRACING WIRE IS INSTALLED AS REQUIRED, THAT ALL DUCTILE IRON FITTINGS AND PIPE ARE WRAPPED AS REQUIRED, AND THAT ALL ITEMS ARE REASONABLY CENTERED IN THE TRENCH SO THAT BEDDING MATERIAL CAN BE PLACED ALONG THE SIDES OF THE PIPE AS REQUIRED BY THE PIPE BEDDING AND TRENCH DETAIL IN THE APPROVED PLANS.
  - THAT THE WATERLINE AND FITTINGS ARE APPROPRIATELY BEDDED AROUND AND OVER AS REQUIRED BY THE PIPE BEDDING AND TRENCH DETAIL IN THE APPROVED PLANS INCLUDING QUALITY OF BEDDING MATERIAL, WIDTH/THICKNESS, MOISTURE, AND COMPACTION PER TABLE #1 BELOW.
  - THAT TRACER WIRE IS INSTALLED UNDER THE CENTER LINE OF THE PIPE AND IS NOT DAMAGED DURING CONSTRUCTION. BEFORE ACCEPTANCE FOR THE JOB TRACER WIRE WILL BE CHECKED FOR CONTINUITY. DAMAGED WIRE WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
  - THAT "BURIED WATERLINE" LABELED DETECTOR TAPE IS INSTALLED PROPERLY ATOP THE FIRST COMPAKTED LIFT OF NATIVE MATERIAL ABOVE THE TOP OF PIPE BEDDING AND DIRECTLY ABOVE THE CENTERLINE OF THE BURIED WATERLINE.
  - THAT NATIVE BACKFILL USED ABOVE THE BEDDING IS CAREFULLY PROCESSED TO REMOVE ALL ROCK LARGER THAN 3" DIAMETER AND OBTAIN THE APPROPRIATE MOISTURE AND THEN CAREFULLY PLACED IN EVEN AND UNIFORM LIFTS IN THE TRENCH AND COMPAKTED TO THE DENSITY REQUIRED TO SATISFY BOTH MAG SPECIFICATIONS IN SECTION 601 AND ADOT REQUIREMENTS FOR WORK IN THEIR RIGHT OF WAY. THE ALLOWABLE DEPTH OF LIFT WILL BE DETERMINED BY THE CAPABILITIES OF THE COMPAKTION EQUIPMENT PROVIDED BY THE CONTRACTOR. DENSITIES OF TRENCH BACKFILL WILL BE CHECKED BY CITY OF COTTONWOOD CITY ENGINEER OR DESIGNEE AT THE FOLLOWING VERTICAL AND HORIZONTAL INTERVALS:

TABLE #1

MATERIAL/LOCATION	TEST INTERVAL-VERT*	TEST INTERVAL-HORIZ*
PIPE BEDDING BASE	TOP OF LIFT	EVERY 350' OR DAILY (WHICHEVER IS LESS)
PIPE BEDDING	12" ABOVE TOP OF PIPE & AT TOP OF BEDDING	EVERY 350' OR DAILY (WHICHEVER IS LESS)
TRENCH BACKFILL ABOVE BEDDING	EVERY 18" OF VERTICAL FILL	EVERY 350' OR DAILY (WHICHEVER IS LESS)
TRENCH BACKFILL IN DRIVEWAYS	EVERY LIFT	AT EVERY DRIVEWAY LOCATION

- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE AN ACCURATE SET OF "AS-BUILT" PLANS TO THE CITY OF COTTONWOOD CITY ENGINEER PRIOR TO THE FINAL ACCEPTANCE OF THE PROJECT WORK. THESE AS-BUILT PLANS SHALL ACCURATELY SHOW THE LOCATIONS OF ALL CONSTRUCTED WATERLINES, FITTINGS, VALVES, BLOCKING, AND TIE-IN POINTS WITH THEIR RELATIONSHIP TO RIGHT OF WAY BOUNDARIES, LOT LINES, OR OTHER POINTS OF SURVEY.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE SURVEY ACCURACY OF ALL OF THE PROPOSED WORK AT THEIR EXPENSE. THE PROPOSED WORK SHALL BE STAKED BY USE OF MONUMENTATION THAT IS ACCEPTABLE TO THE CITY OF COTTONWOOD CITY ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO "POT-HOLE" OR UNCOVER ALL EXISTING WATER LINE TIE-IN POINTS TO VERIFY THEIR SIZE, MATERIAL, LOCATION AND DEPTH PRIOR TO TRENCHING FOR NEW WATER LINE CONSTRUCTION. THE CONTRACTOR SHALL ALSO LOCATE OR HAVE LOCATED ALL EXISTING UNDERGROUND PIPES, CONDUITS, AND UTILITIES PRIOR TO CONSTRUCTION.
- ALL WATER MAIN PIPING SHALL BE DUCTILE IRON PRESSURE CLASS 350 ENCASED IN POLYETHYLENE SLEEVING, OR PVC C-900 CLASS DR14 AS SHOWN IN THE APPROVED PLANS.
- ALL FITTINGS SHALL BE DOMESTIC ONLY AND COMPLY WITH AWWA STANDARDS. ALL VALVE BOXES SHALL BE "TYLER" ONLY.
- WATER MAINS SHALL BE BURIED FOR A MINIMUM DEPTH OF 36-INCHES FOR PIPE DIAMETERS 10-INCHES OR LESS AND A MINIMUM OF 48-INCHES FOR PIPES WITH A DIAMETER GREATER THAN 10-INCHES UNLESS SHOWN DIFFERENTLY IN THE APPROVED PLANS OR APPROVED IN WRITING FROM THE CITY ENGINEER. THE DEPTH SHOWN IN PLANS IS ASSUMED TO BE THE MINIMUM DEPTH.



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9. ALL WATER LINES AND FITTINGS SHALL BE BEDDED AND SHADED ABOVE, BELOW, AND AROUND WITH AN APPROVED ROCK FREE, SANDY BEDDING MATERIAL PER THE PIPE BEDDING AND TRENCH DETAIL IN THE APPROVED PLANS.
10. THE CONTRACTOR SHALL PROVIDE A BLUE COATED #10 COPPER TRACER WIRE SECURED TO THE BOTTOM CENTERLINE OF ALL WATER LINES AND SERVICES PER CITY OF COTTONWOOD STD. DET. 1391-1 AND 1391-2. THE CONTRACTOR SHALL PROVIDE A LOOPED PIGTAIL AT ALL IN-LINE VALVE LOCATIONS. TRACER WILL BE INSPECTED FOR CONTINUITY PRIOR TO ACCEPTANCE OF THE WORK. NON-CONTINUOUS OR FAULTY WIRE WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
11. ALL SERVICE LINES THAT ARE UNDER PAVEMENT OR CONCRETE SHALL BE SLEEVED IN 4-INCH CLASS 160 PVC CONDUITS OR APPROVED EQUAL. SERVICE LINES ARE TO BE CONSTRUCTED WITH CROSS-LINKED POLYETHYLENE PIPING.
12. ALL WATER LINE ENDS SHALL BE PROVIDED WITH AN APPROVED 2" FLUSH VALVE (BLOWOFF) PER MAG STANDARD DETAIL 390, TYPE B, OR AS SHOWN IN THE APPROVED PLANS.
13. ALL FIRE HYDRANT HOSE AND STEAMER CONNECTIONS SHALL MATCH STANDARD SIZE AND THREADS PER THE COTTONWOOD FIRE DEPARTMENT.
14. ALL FRAMES, COVERS, VALVE BOXES, VAULT LIDS, ETC., SHALL BE PROPERLY ADJUSTED TO FINISH GRADE WITH THE SURROUNDING GRADE OR PAVING AFTER THE COMPLETION OF PAVING AND GRADING.
15. THE CONTRACTOR SHALL DISINFECT EVERY PART OF THE NEWLY CONSTRUCTED WATER SYSTEM PER ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY BULLETIN #8.
16. THE CONTRACTOR SHALL PROVIDE BACTERIOLOGICAL TESTING OF THE NEWLY CONSTRUCTED WATER SYSTEM PER ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY BULLETIN #8 AND THE COTTONWOOD CITY ENGINEER OR DESIGNEE.
17. THE CONTRACTOR SHALL PERFORM PRESSURE TESTING OF THE NEWLY CONSTRUCTED WATER SYSTEM AT THE DIRECTION OF THE CITY OF COTTONWOOD CITY ENGINEER OR DESIGNEE IN ACCORDANCE WITH AWWA STANDARDS. ALL LEAKS THAT ARE FOUND WILL BE REPAIRED AND RETESTED FOR PRESSURE BY THE CONTRACTOR PRIOR TO THE SYSTEM BEING PLACED INTO SERVICE. IF NECESSARY, THE SYSTEM MAY NEED TO BE ONCE AGAIN DISINFECTED AND MAY NEED TO UNDERGO BACTERIOLOGICAL TESTING AT THE CONTRACTOR'S EXPENSE PRIOR TO IT BEING PLACED IN SERVICE.
18. THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF, SHALL BE NOTIFIED 48 HOURS PRIOR TO THE START OF CONSTRUCTION SO THAT INSPECTIONS MAY BE SCHEDULED.
19. ALL WORK AND MATERIALS THAT DO NOT CONFORM TO THESE SPECIFICATIONS OR THE APPROVED PLANS ARE SUBJECT TO REMOVAL AND REPLACEMENT TO MATCH THESE APPROVED PLANS UNDER THE DIRECTION OF THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF, AT THE CONTRACTOR'S EXPENSE.
20. ALL WORK DONE BY THE CONTRACTOR SHALL BE SUBJECT TO INSPECTION BY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF, PRIOR TO BURIAL. ANY WORK PERFORMED WITHOUT THE KNOWLEDGE OF THE CITY OF COTTONWOOD INSPECTION STAFF IS SUBJECT TO EXCAVATION AND INSPECTION, REMOVAL, REPLACEMENT, OR REPAIR AT THE DIRECTION OF THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF, SOLELY AT THE CONTRACTOR'S EXPENSE. REPAIR OF ANY DAMAGE DONE DURING THIS TYPE OF RE-EXPOSURE AND REQUIRED RE-TESTING, ETC., IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
21. ALL VAULTS OR OTHER UNDERGROUND STRUCTURES WILL BE PLACED ATOP SUBGRADE AND BASE COURSE PLACED AND COMPAKTED TO 95% MDD, TO THE SATISFACTION OF THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF.
22. ALL PLASTIC PIPES SHALL BEAR THE SEAL BY THE NATIONAL SANITATION FOUNDATION.
23. ALL MATERIALS AND PRODUCTS THAT COME INTO CONTACT WITH WATER OR WATER TREATMENT CHEMICALS SHALL CONFORM TO ANSI/NSF STANDARD 61.
24. ALL CONSTRUCTION MATERIALS USED IN A PUBLIC WATER SYSTEM INCLUDING ALL RESIDENTIAL AND NON-RESIDENTIAL FACILITIES WHICH WILL BE CONNECTED TO SAID PUBLIC WATER SYSTEM, SHALL BE LEAD-FREE AS DEFINED BY R18-4-101.
25. WHEN ANY SEWER CROSSES A WATER PIPE AT A POINT AT WHICH THE SEWER IS 2 FEET OR MORE BELOW THE WATER MAIN, NO EXTRA PROTECTION OUTSIDE OF THE VERTICAL SEPARATION IS REQUIRED PER (ACC R18-4-502C). AT ALL OTHER CROSSINGS THE SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH MECHANICAL JOINTS FOR A DISTANCE OF AT LEAST 10 FEET IN EACH DIRECTION, MEASURED PERPENDICULAR TO THE WATER LINE. SAID SEWER SHALL BE ENCASED IN CONCRETE FOR A MINIMUM OF 6-INCHES ALL THE WAY AROUND FOR THE SAME SPECIFIED DISTANCE OR AS SHOWN ON MAG SEPARATION DETAIL 404.
26. SUBMITTAL OF AN ENGINEER'S CERTIFICATE OF COMPLETION IS REQUIRED BY ADEQ FOR ALL WATER AND SEWER SYSTEM CONSTRUCTION.
27. THE MINIMUM COVER FROM FINISH GRADE TO TOP OF PIPE FOR ALL POTABLE WATERLINES WHICH ARE 12-INCHES IN DIAMETER OR LESS LOCATED IN MAJOR STREETS SHALL BE AS SPECIFIED BY THE DESIGN ENGINEER, BUT NO LESS THAN 36 INCHES UNLESS SHOWN DIFFERENTLY ON THESE APPROVED PLANS.
28. THE MINIMUM COVER FROM FINISH GRADE TO TOP OF PIPE FOR POTABLE WATERLINES WHICH ARE GREATER THAN 12-INCHES IN DIAMETER, LOCATED IN MAJOR STREETS SHALL BE AS SPECIFIED BY THE DESIGN ENGINEER, BUT NO LESS THAN 48-INCHES, UNLESS SHOWN DIFFERENTLY ON THESE APPROVED PLANS.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

**POTABLE WATER NOTES**

REVISED

DETAIL NO.

01/2023

1104-2

1. ALL RECLAIMED WATER MAIN PIPING SHALL BE PURPLE PVC C-900 CLASS DR14 AS SHOWN IN THE APPROVED PLANS.
2. ALL PLASTIC PIPES SHALL BEAR THE SEAL BY THE NATIONAL SANITATION FOUNDATION.
3. ALL FITTINGS SHALL BE DOMESTIC ONLY AND COMPLY WITH AWWA STANDARDS. ALL VALVE BOXES SHALL BE "TYLER" ONLY.
4. RECLAIMED WATERLINE AND GRADE STAKES SHALL BE SET BY A QUALIFIED ARIZONA REGISTERED LAND SURVEYOR AND/OR THEIR REPRESENTATIVE PRIOR TO CONSTRUCTION. THE QUALIFIED ARIZONA REGISTERED LAND SURVEYOR AND/OR THEIR REPRESENTATIVE SHALL VERIFY THAT THE GRADES CONFORM TO THE APPROVED CONSTRUCTION PLANS, AND PROVIDE CUT SHEETS TO THE CONTRACTOR AND COTTONWOOD CITY ENGINEER. AFTER INSTALLATION AND PRIOR TO THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT ACCEPTANCE, THE ENGINEER OF RECORD SHALL CERTIFY THAT THE INSTALLATION CONFORMS TO THE APPROVED CONSTRUCTION PLANS.
5. TRENCH EXCAVATION, BACKFILLING AND COMPACTION SHALL CONFORM TO MAG STANDARD SPECIFICATION SECTION 601 OR AS SHOWN ON THESE APPROVED PLANS.
6. BEDDING AND BACKFILL MATERIAL FOR RECLAIMED AND NON-POTABLE WATER LINES SHALL CONFORM TO THE SAME REQUIREMENTS OF THE CITY OF COTTONWOOD FOR POTABLE WATERLINE INSTALLATION.
7. THE MINIMUM COVER FROM FINISH GRADE TO TOP OF PIPE FOR ALL RECLAIMED AND NON-POTABLE WATERLINES WHICH ARE 12-INCHES IN DIAMETER OR LESS LOCATED IN MAJOR STREETS SHALL BE AS SPECIFIED BY THE DESIGN ENGINEER, BUT NO LESS THAN 36-INCHES UNLESS SHOWN DIFFERENTLY ON THE APPROVED PLANS.
8. THE MINIMUM COVER FROM FINISH GRADE TO TOP OF PIPE FOR RECLAIMED AND NON-POTABLE WATERLINES WHICH ARE GREATER THAN 12-INCHES IN DIAMETER, LOCATED IN MAJOR STREETS SHALL BE AS SPECIFIED BY THE DESIGN ENGINEER, BUT NO LESS THAN 48-INCHES, UNLESS SHOWN DIFFERENTLY ON THE APPROVED PLANS.
9. THE MINIMUM COVER FROM FINISHED GRADE TO TOP OF PIPE FOR ALL RECLAIMED AND NON-POTABLE WATERLINES IN OTHER LOCATIONS SHALL BE AS SPECIFIED BY THE DESIGN ENGINEER, BUT NO LESS THAN 36-INCHES (FOR LINES LESS THAN 12-INCHES IN DIAMETER), AND NO LESS THAN 48-INCHES (FOR 12-INCH DIAMETER AND LARGER LINES), UNLESS SHOWN OTHERWISE ON THE APPROVED PLANS.
10. ALL STUB-OUTS SHALL HAVE A 2-INCH BRASS BALL CORP. STOP AS A BLOWOFF, LEFT IN PLACE WITH A 2-INCH RISER, PER MAG STANDARD DETAIL 390 "A", AND SHALL BE ACCESSIBLE TO USE.
11. ALL VALVES 16-INCHES AND SMALLER SHALL BE PER MAG 630 WITH RESILIENT SEAT AWWA APPROVED GATE VALVES AND SHALL OPEN BY TURNING COUNTER-CLOCKWISE.
12. VALVES SHALL NOT BE LOCATED IN SIDEWALKS, GUTTERS, CURB, OR VALLEY GUTTERS, UNLESS PREAPPROVED BY THE CITY ENGINEER.
13. ALL VALVE BOXES SHALL CONFORM TO MAG STANDARD DETAIL 391-1, TYPE A. ALL RECLAIMED WATER VALVE BOXES SHALL UTILIZE SQUARE COVERS WITH THE WORDS "RECLAIMED WATER" IMPRINTED ON THEM. COVERS SHALL BE PAINTED "RECLAIMED WATER" PURPLE UTILIZING AN ACCEPTABLE PAINT AS APPROVED BY THE COTTONWOOD CITY ENGINEER.
14. CONTRACTORS SHALL NOT OPERATE VALVES ON THE EXISTING CITY SYSTEM.
15. TO REQUEST A RECLAIMED WATER SYSTEM SHUT DOWN A "WATER SYSTEM SHUT DOWN REQUEST" FORM MUST BE SUBMITTED. THIS FORM SHALL BE SUBMITTED TEN DAYS IN ADVANCE OF ANY REQUESTS TO SHUT DOWN ANY LINES IN THE CITY OF COTTONWOOD'S DISTRIBUTION SYSTEM. THE FORM IS TO BE SUBMITTED THROUGH THE ENGINEERING INSPECTOR ASSIGNED TO THE PROJECT, WHO WILL IN TURN COORDINATE THE NECESSARY UTILITY STAFF. FAILURE TO COMPLETE THIS FORM MAY RESULT IN DELAYS TO CONSTRUCTION ACTIVITIES.
16. NEW RECLAIMED WATERLINES MUST MAINTAIN MINIMUM SEPARATION (BOTH VERTICAL AND HORIZONTAL) FROM POTABLE WATERLINES AND SEWER MAINS PER MAG SPECIFICATION SECTION 610.5 AND THE MAG STANDARD DETAIL 404 EXCEPT AS MODIFIED: WHEN IT COMES TO SEPARATION FROM SEWER MAINS, RECLAIMED AND NON-POTABLE WATERLINES SHALL USE THE SAME REQUIREMENTS AS POTABLE WATERLINES. WHEN IT COMES TO SEPARATION FROM POTABLE WATERLINES, RECLAIMED AND NON-POTABLE WATERLINES SHALL USE THE SAME REQUIREMENTS AS SEWER LINES.
17. ALL RECLAIMED WATERLINES REQUIRE THE INSTALLATION OF METALLIC LOCATING TAPE, WHICH SHALL BE INSTALLED IN ACCORDANCE WITH MAG SPECIFICATION SECTION 616.4. THE REQUIRED COLOR FOR RECLAIMED WATER PIPELINES IS RECLAIMED WATER PURPLE.
18. PRIOR TO BEING PUT INTO SERVICE, NEW RECLAIMED WATERLINES SHALL BE DISINFECTED AND TESTED PER ADEQ BULLETIN #8.
19. ALL FIRE HYDRANT HOSE AND STEAMER CONNECTIONS SHALL MATCH STANDARD SIZE AND THREADS PER THE LOCAL FIRE DEPARTMENT.
20. ALL ABOVE GROUND RECLAIMED WATER INFRASTRUCTURE (ABOVE AND BELOW GROUND) SHALL BE RECLAIMED WATER PURPLE IN COLOR.
21. ALL NEW LANDSCAPE AND TURF IRRIGATION INFRASTRUCTURE (ABOVE AND BELOW GROUND) SHALL BE RECLAIMED WATER PURPLE IN COLOR.
22. THE CONTRACTOR SHALL PROVIDE A PURPLE COATED #10 COPPER TRACER WIRE SECURED TO THE BOTTOM CENTERLINE OF ALL RECLAIMED WATERLINES AND SERVICE. THE CONTRACTOR SHALL PROVIDE A LOOPED PIGTAIL AT ALL IN-LINE VALVE LOCATIONS. TRACER WIRE WILL BE INSPECTED FOR CONTINUITY PRIOR TO ACCEPTANCE OF THE WORK. NON-CONTINUOUS OR FAULTY WIRE WILL BE REPAIRED AND THE CONTRACTOR'S EXPENSE.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

**RECLAIMED WATER NOTES**

REVISED  
01/2023

DETAIL NO.  
1105

1. ALL FRAMES, COVERS, VALVE BOXES, CLEAN-OUTS, AND MANHOLES SHALL BE ADJUSTED TO FINISH GRADE UPON COMPLETION OF PAVING OR RELATED CONSTRUCTION PER CITY OF COTTONWOOD STD. DETAIL 1422.
2. INSULATED TRACER WIRE (BRIGHT GREEN COATED, #10, SOLID COPPER) SHALL BE PLACED UNDER MANHOLE FRAMES AND CLEANOUTS AND EXTEND ALONG MAINS AND LATERALS. ALL SPLICES SHALL BE WATER TIGHT. TRACER WIRE IS INSTALLED ABOVE THE CENTER LINE OF THE PIPE AND SECURED TO THE PIPE. TRACER WIRE SHALL NOT BE DAMAGED DURING CONSTRUCTION. BEFORE ACCEPTANCE FOR THE JOB TRACER WIRE WILL BE CHECKED FOR CONTINUITY. DAMAGED WIRE WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. SEWER FORCE MAIN SHALL HAVE TRACER WIRE INSTALLED PER CITY OF COTTONWOOD STD. DET. 1319-1 FOR PRESSURE PIPING.
3. SEWER CASTINGS SHALL BE MANUFACTURED IN NORTH AMERICA OR APPROVED SPECIFICALLY BY THE CITY ENGINEER.
4. THE CONTRACTOR IS RESPONSIBLE TO SCHEDULE AND PAY FOR VIDEO INSPECTION OF ALL PUBLIC SANITARY SEWER MAINLINES PER ORDINANCE NO. 362.
5. SANITARY SEWER PIPE AND MANHOLES SHALL BE TESTED ACCORDING TO THE FOLLOWING STANDARDS:
  - A. MANHOLE TESTING: THE CONTRACTOR SHALL TEST 100% OF THE MANHOLES USING THE FOLLOWING TEST PROTOCOL:
    1. AIR PRESSURE TESTING USING THE "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST," PUBLISHED BY THE AMERICAN SOCIETY FOR TESTING AND MATERIALS, C 1244/C1244M-20.
    2. THE CONTRACTOR SHALL PERFORM MANHOLE TESTING AFTER INSTALLATION OF THE MANHOLE CONE TO VERIFY WATERTIGHTNESS OF THE MANHOLE FROM THE TOP OF THE CONE DOWN. UPON SATISFACTORY TEST RESULTS, THE CONTRACTOR SHALL INSTALL THE MANHOLE RING AND ANY SPACERS, COMPLETE THE JOINTS, AND SEAL THE MANHOLE TO A WATERTIGHT CONDITION. IF THE MANHOLE CONE, SPACERS, AND RING CAN BE INSTALLED TO FINAL GRADE WITHOUT DISTURBANCE OR ADJUSTMENT BY LATER CONSTRUCTION, THE CONTRACTOR MAY PERFORM THE TESTING FROM THE TOP OF THE MANHOLE RING DOWN.
  - B. LEAKAGE TESTING – THE CONTRACTOR SHALL TEST EACH SEGMENT OF THE SEWER LINE (100%) FOR LEAKAGE USING THE APPLICABLE METHOD BELOW AND RECORD THE RESULTS:
    1. "STANDARD TEST METHOD FOR INSTALLATION AND ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR" PUBLISHED BY THE AMERICAN SOCIETY FOR TESTING AND MATERIALS, F1417-11AR19E01.
    - C. THE CONTRACTOR SHALL PERFORM A DEFLECTION TEST OF THE TOTAL LENGTH (100%) OF ALL SEWER LINES MADE OF FLEXIBLE MATERIALS TO ENSURE THAT THE INSTALLATION MEETS OR EXCEEDS THE MANUFACTURER'S RECOMMENDATIONS AND RECORD THE RESULTS.
    - D. ANY PART OF THE INSTALLATION WHICH SHOWS DEFLECTION IN EXCESS OF 5% OF THE NOMINAL INSIDE DIAMETER PER MAG SECTION 738 OR IN EXCESS OF 5% OF THE AVERAGE INSIDE DIAMETER PER ASTM D-3034 FOR PVC PIPE SHALL BE CORRECTED.
    - E. UNIFORM SLOPE THE CONTRACTOR SHALL TEST THE TOTAL LENGTH (100%) OF THE SEWER LINE FOR UNIFORM SLOPE BY VISUALLY INSPECTING THE INTERIOR OF THE SEWER LINE USING A TELEVISION CAMERA AND RECORD THE RESULTS. THE CONTRACTOR SHALL COORDINATE THE TESTING WITH THE CITY OF COTTONWOOD.
6. SDR 21 AND 26 PVC PIPE AND DUCTILE IRON PIPE WITH SPECIAL SEWER COATINGS ARE ALLOWED MATERIALS PER ORDINANCE No. 371. THE USE OF SDR 35 PVC PIPE REQUIRES PRIOR APPROVAL FROM THE CITY ENGINEER.
7. A SEWER CLEANOUT SHALL BE PROVIDED AT THE EDGE OF THE RIGHT-OF-WAY PER CITY OF COTTONWOOD STD. DET. 1440-1 AND 1440-2.
8. TRENCH BOTTOM SHALL BE COMPACTED BY SUITABLE MEANS PER THE PIPE BEDDING AND TRENCH DETAIL IN THESE APPROVED PLANS. THE INSTALLATION AND ASSEMBLY OF THE PROPOSED PIPE AND FITTINGS IN THE TRENCH ATOP THE TRENCH BOTTOM BEDDING. THIS WILL INCLUDE BUT NOT BE LIMITED TO INSPECTING THAT BEDDING HAS BEEN HAND REMOVED BELOW BELLS FOR FLUSH FIT ATOP TRENCH BOTTOM BEDDING, THAT PIPE ENDS HAVE BEEN MARKED AND THEN INSERTED INTO BELL ENDS FOR THE APPROPRIATE DEPTHS, THAT FITTINGS AND PIPE ARE PROPERLY ALIGNED AND BOLTED TOGETHER AS REQUIRED, THAT TRACING WIRE IS INSTALLED AS REQUIRED, THAT ALL DUCTILE IRON FITTINGS AND PIPE ARE WRAPPED AS REQUIRED, AND THAT ALL ITEMS ARE REASONABLY CENTERED IN THE TRENCH SO THAT BEDDING MATERIAL CAN BE PLACED ALONG THE SIDES OF THE PIPE AS REQUIRED BY THE PIPE BEDDING AND TRENCH DETAIL IN THE APPROVED PLANS.
9. "BURIED SEWER LINE" LABELED METALLIC DETECTOR TAPE SHALL BE INSTALLED PROPERLY ATOP THE FIRST COMPACTED LIFT OF FINAL BACKFILL. TAPE SHALL BE PLACED 18" TO 24" DIRECTLY ABOVE THE TOP OF PIPE.
10. ALL PROJECT MATERIALS AND WORKMANSHIP SHALL COMPLY WITH MAG STANDARD SPECIFICATIONS AND DETAILS, THE CITY OF COTTONWOOD ENGINEERING DESIGN STANDARDS MANUAL (EDSM) AND ITS STANDARD DETAILS AND SPECIFICATIONS, THE APPROVED PLANS AND SPECIFICATIONS, TOGETHER WITH GENERALLY ACCEPTED GOOD CONSTRUCTION PRACTICES.
11. THE CONTRACTOR SHALL PROVIDE SUFFICIENT MEN AND EQUIPMENT ON THE JOB AT ALL TIMES TO ASSURE PUBLIC SAFETY AND COMPLY WITH THE CONSTRUCTION SPECIFICATIONS.
12. SEWER MAIN AND LATERAL TRENCHING, EMBEDMENT AND BACKFILL SHALL CONFORM TO MAG 200-1 AND 200-2 DETAILS AND ITS REFERENCED SPECIFICATIONS. THE PIPE INSTALLATION, TRENCH WIDTH AND EMBEDMENT SHALL ALSO CONFORM TO THE PIPE MANUFACTURERS REQUIREMENTS AND SPECIFICATIONS.
13. CONTRACTOR SHALL PROVIDE TRENCH OR EXCAVATION STABILIZATION/STEPPING AND SHORING FOR SAFETY FOR AND APPROVAL OF THE CITY OF COTTONWOOD PERSONNEL TO ENTER EXCAVATION FOR SEWER TAP/INSPECTION
14. NATIVE BACKFILL USED ABOVE THE BEDDING SHALL BE CAREFULLY PROCESSED TO REMOVE ALL ROCK LARGER THAN 3" DIAMETER AND OBTAIN THE APPROPRIATE MOISTURE AND THEN CAREFULLY PLACED IN EVEN AND UNIFORM LIFTS IN THE TRENCH AND COMPACTED TO THE DENSITY REQUIRED TO SATISFY BOTH MAG SPECIFICATIONS IN SECTION 601 AND ARIZONA DEPARTMENT OF TRANSPORTATION REQUIREMENTS FOR WORK IN THEIR RIGHT-OF-WAY. THE ALLOWABLE DEPTH OF LIFT WILL BE DETERMINED BY THE CAPABILITIES OF THE COMPACTION EQUIPMENT PROVIDED BY THE CONTRACTOR. DENSITIES OF TRENCH BACKFILL WILL BE CHECKED BY CITY OF COTTONWOOD UTILITY ENGINEER OR DESIGNEE AT THE FOLLOWING VERTICAL AND HORIZONTAL INTERVALS:



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TABLE #1

MATERIAL/LOCATION	TEST INTERVAL-VERT.*	TEST INTERVAL-HORIZ.*
PIPE BEDDING BASE	TOP OF LIFT	EVERY 350' OR DAILY (WHICHEVER IS LESS)
PIPE BEDDING	12" ABOVE TOP OF PIPE AND AT TOP OF BEDDING	EVERY 350' OR DAILY (WHICHEVER IS LESS)
TRENCH BACKFILL ABOVE BEDDING	EVERY 18" OF VERTICAL FILL	EVERY 350' OR DAILY (WHICHEVER IS LESS)
TRENCH BACKFILL IN DRIVEWAYS	EVERY LIFT	AT EVERY DRIVEWAY LOCATION

15. WHERE CULVERTS OR DRAINAGE PIPES CROSS GRAVITY SEWERS, PRESSURE SEWERS, OR WATER MAINS, A MINIMUM OF TWO FOOT OF VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE TWO PIPES PER MAG STANDARD DETAIL 404.
16. WATER AND SEWER MAINS SHALL BE SEPARATED IN ORDER TO PROTECT PUBLIC WATER SYSTEMS FROM POSSIBLE CONTAMINATION. ALL DISTANCES ARE MEASURED PERPENDICULARLY FROM THE OUTSIDE OF THE SEWER MAIN TO THE OUTSIDE OF THE WATER MAIN. SEPARATION REQUIREMENTS ARE AS FOLLOWS:
17. A SEWER MAIN SHALL NOT BE PLACED:
  - A. WITHIN SIX FEET, HORIZONTAL DISTANCE, AND BELOW TWO FEET, VERTICAL DISTANCE, ABOVE THE TOP OF A SEWER MAIN UNLESS EXTRA PROTECTION IS PROVIDED. EXTRA PROTECTION SHALL CONSIST OF CONSTRUCTING THE SEWER MAIN WITH MECHANICAL JOINT DUCTILE IRON PIPE OR WITH SLIP-JOINT DUCTILE IRON PIPE IF JOINT RESTRAINT IS PROVIDED. ALTERNATE EXTRA PROTECTION SHALL CONSIST OF ENCASING BOTH THE WATER AND SEWER MAINS IN AT LEAST SIX INCHES OF CONCRETE FOR AT LEAST TEN FEET BEYOND THE AREA OF CROSSING.
  - B. WITHIN TWO FEET HORIZONTALLY AND TWO FEET BELOW THE WATER MAIN.
18. NO WATER PIPE SHALL PASS THROUGH OR COME INTO CONTACT WITH ANY PART OF A SEWER MANHOLE. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATER MAINS AND MANHOLES SHALL BE SIX FEET, MEASURED FROM THE CENTER OF THE MANHOLE.
19. THE MINIMUM SEPARATION BETWEEN FORCE MAINS OR PRESSURE SEWERS AND WATER MAINS SHALL BE TWO FEET VERTICALLY AND SIX FEET HORIZONTALLY UNDER ALL CONDITIONS. WHERE A SEWER FORCE MAIN CROSSES ABOVE OR LESS THAN SIX FEET BELOW A WATER LINE, THE SEWER MAIN SHALL BE ENCASED IN AT LEAST SIX INCHES OF CONCRETE OR CONSTRUCTED USING MECHANICAL JOINT DUCTILE IRON PIPE FOR TEN FEET ON EITHER SIDE OF THE WATER MAIN.
20. THE SEPARATION REQUIREMENTS DO NOT APPLY TO BUILDING, PLUMBING, OR INDIVIDUAL HOUSE SERVICE CONNECTIONS.
21. THE CONTRACTOR SHALL UNCOVER ALL EXISTING SEWER LINES TO BE CONNECTED AND VERIFY INVERT ELEVATIONS BEFORE ANY OTHER CONSTRUCTION.
22. ALL SEWER SERVICE LATERALS REQUIRE THE INSTALLATION OF A BACKWATER VALVE PER CITY OF COTTONWOOD STD. DET. 1440-3 AND CURB STAMP PER CITY OF COTTONWOOD STD. DET. 1440-4.
23. ALL SEWER MANHOLE CONNECTIONS SHALL BE INSTALLED WITH A GASKET, JOINT SEALER, OR WATER STOP BETWEEN THE BASE AND RISER SECTION.
24. ALL MANHOLES AND COMPONENTS SHALL BE CONSTRUCTED OF CLASS A CONCRETE IN CONFORMANCE WITH MAG STANDARD SPECIFICATION SECTION 725.
25. CONTRACTOR SHALL MANDREL, AIR PRESSURE TEST, AND PROVIDE A CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION IN ACCORDANCE WITH NASSCO PIPELINE ASSESSMENT CERTIFICATION PROGRAM. THE CCTV INSPECTION SHOULD BE PROVIDED IN DIGITAL (DVD) FORMAT UTILIZING A MEASURING DEVICE AHEAD OF THE CAMERA TO IDENTIFY DEFLECTIONS IN THE LINE. THE MEASURING DEVICE SHALL BE ABLE TO MEASURE WATER DEPTH FROM 0 TO 2 INCHES IN  $\frac{1}{4}$  INCH INCREMENTS. CONTRACTOR SHALL PERFORM TESTS AFTER DRY UTILITIES ARE INSTALLED AND PRIOR TO ANY CONCRETE WORK, STREET WORK, OR FINAL ACCEPTANCE OF THE SEWER.
26. SEWER LINES SHALL REMAIN "PLUGGED" AT THE POINT(S) OF CONNECTION TO EXISTING LINES (OUTFALLS) UNTIL ALL PHASES OF THE PROJECT HAVE BEEN ACCEPTED BY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF. THE PLUG SHALL BE SECURED IN PLACE TO PREVENT THE PLUG FROM ENTERING THE SEWER SYSTEM.
27. NO FLOW SHALL BE RELEASED INTO THE CITY SANITARY SEWER UNTIL AFTER ALL TESTS HAVE BEEN PASSED AND APPROVED BY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF.
28. ALL PAVEMENT REPLACEMENT SHALL CONFORM TO MAG STANDARD DETAIL 200 WITH A "T-TOP" MODIFIED WITH A ONE SACK PORTLAND CEMENT ABC SLURRY, WHICH CONFORMS TO MAG STANDARD SPECIFICATION 728, FOR TRENCH BACKFILL FROM TOP OF BEDDING ABOVE THE TOP OF PIPE TO THE EXISTING PAVEMENT SUBGRADE. PAVEMENT REPLACEMENT THICKNESS SHALL BE AS SPECIFIED ON THESE APPROVED PLANS.
29. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE ENGINEER OF RECORD BEFORE THE SEWER LINE IS BACKFILLED SO "AS-BUILT" MEASUREMENTS MAY BE TAKEN. ANY CHANGES TO THE APPROVED PLANS MUST BE AUTHORIZED BY THE ENGINEER OF RECORD AND THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF, BEFORE THE CHANGE IS MADE IN THE FIELD.
30. THE CONTRACTOR SHALL PROVIDE SUFFICIENT PERSONNEL AND EQUIPMENT ON THE JOB AT ALL TIMES TO ASSURE PUBLIC SAFETY AND COMPLY WITH THE CONSTRUCTION SPECIFICATIONS.
31. CONTRACTOR TO PROVIDE TRENCH OR EXCAVATION STABILIZATION/STEPPING AND SHORING FOR THE SAFETY OF CITY OF COTTONWOOD PERSONNEL TO ENTER EXCAVATION FOR SEWER TAP INSTALLATION/INSPECTION.
32. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UNDERGROUND FACILITIES IN ADVANCE OF CONSTRUCTION AND TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO AVOID DAMAGE TO THESE FACILITIES.



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1. WEATHER INFORMATION AND STORM PREDICTIONS CAN BE OBTAINED BY CALLING THE NATIONAL WEATHER SERVICE – FLAGSTAFF WEATHER FORECAST OFFICE AT 928.556.9161 OR BY VISITING THE NATIONAL WEATHER SERVICE WEBSITE AT [HTTP://WWW.WRH.NOAA.GOV/FGZ](http://WWW.WRH.NOAA.GOV/FGZ)
2. PERMANENT EROSION CONTROL MEASURES SHALL BE INSTALLED AS AREAS ARE DETERMINED TO BE COMPLETE.
3. ALL DRAINAGE INLETS RECEIVING RUNOFF FROM DISTURBED SOIL AREAS SHALL BE PROTECTED WITH AN APPROVED SEDIMENT TRAP INLET PROTECTION MEASURE OR BMP.
4. A COPY OF THE APPROVED GRADING & DRAINAGE PLAN FOR THIS PROJECT, TOGETHER WITH A COPY OF THE NOTICE OF INTENT (NOI) AND THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP), SHALL BE MAINTAINED ON THE SITE AND AVAILABLE FOR REVIEW AT ALL TIMES. THOSE ELEMENTS OF THE GRADING & DRAINAGE PLAN PERTINENT TO OR REFERENCED ON THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE CONSIDERED A PART OF THE SWPPP.
5. THE NOTICE OF INTENT (NOI) SHALL BE COMPLETED AND SUBMITTED TO THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) AND THE CITY OF COTTONWOOD AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY.
6. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND RELATED RECORDS SHALL BE MADE AVAILABLE UPON REQUEST TO THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) AND THE CITY OF COTTONWOOD.
7. THE OWNER OR DESIGNATED CONTRACTOR SHALL AMEND THIS PLAN AS RAINFALL EVENTS, DESIGN CHANGES AND CONSTRUCTION METHODS DICTATE. ALL MODIFICATIONS TO THIS PLAN SHALL BE SUBMITTED TO THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT FOR REVIEW AND ACCEPTANCE PRIOR TO IMPLEMENTATION.
8. THE IMPLEMENTATION OF THESE PLANS, AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADES OF THESE FACILITIES IS THE RESPONSIBILITY OF THE OWNER OR DESIGNATED CONTRACTOR UNTIL ALL CONSTRUCTION HAS BEEN APPROVED AND A NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) AND THE CITY OF COTTONWOOD.
9. THE FACILITIES SHOWN ON THIS PLAN SHALL BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT LEAVE THE PROJECT SITE, ENTER INTO THE DRAINAGE SYSTEM, OR VIOLATE APPLICABLE WATER QUALITY STANDARDS. ADDITIONALLY, THE FACILITIES SHALL BE INSTALLED AND OPERATIONAL PRIOR TO ANY GRADING OR LAND CLEARING ACTIVITIES.
10. WHEN POSSIBLE, MAINTAIN ANY NATURALLY OCCURRING VEGETATION AS A SILT CONTROL BEST MANAGEMENT PRACTICE (BMP).
11. THE CONTRACTOR TO WHOM THE 'AT-RISK'/FINAL GRADING & DRAINAGE PERMIT WILL BE ISSUED SHALL HAVE THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ISSUED IN THEIR NAME.
12. THE NOTICE OF INTENT (NOI), THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PROVIDED TO THE CITY OF COTTONWOOD BEFORE THE GRADING & DRAINACE PERMIT WILL BE ISSUED.
13. THE OWNER OR DESIGNATED CONTRACTOR OF THE PROJECT SHALL ALSO MAINTAIN RECORDS WITH THE FOLLOWING INFORMATION:
  - A) THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR IN A PARTICULAR AREA.
  - B) THE DATES WHEN CONSTRUCTION ACTIVITIES CEASE IN A PARTICULAR AREA (TEMPORARILY OR PERMANENTLY).
  - C) THE DATES WHEN AN AREA IS STABILIZED (TEMPORARILY OR PERMANENTLY).
  - D) THE DATES OF ANY MAINTENANCE, REPLACEMENT, OR REMOVAL OF REQUIRED BMP'S HAS OCCURRED.
14. ONCE THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED AND THE SITE HAS MET THE FINAL STABILIZATION REQUIREMENTS OF THE PERMIT, THE AUTHORIZED SITE REPRESENTATIVE SHALL FILE A NOTICE OF TERMINATION (NOT) WITH THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) AND PROVIDE A COPY TO THE CITY OF COTTONWOOD.
15. THE PERMITTEE SHALL MAINTAIN ALL RECORDS ON FILE, INCLUDING THE NOTICE OF INTENT (NOI), THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP), THE NOTICE OF TERMINATION (NOT), AND ANY AND ALL INSPECTION REPORTS FOR A MINIMUM OF THREE (3) YEARS FROM THE FILING DATE OF THE NOTICE OF TERMINATION (NOT).
16. THE OUTLETS OF ALL SEDIMENT BASINS, TRAPS, AND LOCATIONS OF ARTIFICIALLY CONCENTRATED FLOW SHALL BE PROVIDED WITH OUTLET PROTECTION TO PREVENT EROSION AND SCOUR.
17. THOSE RESPONSIBLE FOR SWPPP PREPARATION, IMPLEMENTATION AND PERMIT COMPLIANCE SHALL BE PROPERLY TRAINED, AND SHALL ATTEND THE PRE-CONSTRUCTION MEETING.
18. A CONCRETE WASHOUT SHALL BE INSTALLED FOR ALL PROJECTS THAT PROPOSE CONCRETE TO BE MIXED ON SITE OR BE DELIVERED FROM A BATCH PLANT. THE CONCRETE WASHOUT SHALL BE LOCATED A MINIMUM OF FIFTY (50) FEET FROM ANY DRAINAGE INFRASTRUCTURE OR NATURAL DRAINAGE FEATURES OR WATER BODIES AND INCORPORATE AN IMPERMEABLE LINER (6.0 MIL MINIMUM THICKNESS) TO CONTAIN THE REQUIRED VOLUME. ALL DRIED CONCRETE WASTE SHALL BE BROKEN INTO MANAGEABLE PIECES AND DISPOSED OF OFF-SITE AT AN APPROVED DISPOSAL FACILITY.
19. THE CONTRACTOR SHALL HAVE EMERGENCY MATERIALS AND EQUIPMENT ON-SITE FOR UNFORESEEN SITUATIONS, SUCH AS DAMAGE TO UNDERGROUND WATER AND SEWER UTILITIES WHEREBY FLOWS MAY GENERATE EROSION AND SEDIMENT POLLUTION.
20. SEDIMENT AND EROSION CONTROLS MAY BE REMOVED ONLY WHEN CONTRIBUTORY UPSTREAM AREAS BECOME STABILIZED OR ARE MANAGED UPSTREAM AND AS LONG AS SEDIMENT LADEN RUNOFF WILL NOT DISCHARGE FROM THE SITE.
21. THIS PLAN SHALL BE IN EFFECT UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED, TRANSFERRED TO NEW OWNERSHIP, OR DEVELOPED UNDER FUTURE PLANS WITH A NEW NOTICE OF INTENT (NOI), SWPPP, AND PERMIT.



1. THE OWNER OR DESIGNATED CONTRACTOR SHALL PERFORM, AT A MINIMUM, A VISUAL INSPECTION OF THE PROJECT SITE ONCE EVERY SEVEN (7) DAYS AND 1 WITHIN TWENTY-FOUR(24) HOURS OF A RAINFALL EVENT GREATER THAN OR EQUAL TO ONE HALF (1/2) INCH OR MORE. THE OWNER OR DESIGNATED CONTRACTOR SHALL PREPARE A REPORT DOCUMENTING THE FINDINGS OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) CONTROLS AND NOTE ANY EROSION PROBLEM AREAS. THE REPORT IS TO BE SUBMITTED TO THE PUBLIC WORKS DEPARTMENT CONSTRUCTION INSPECTOR FOR REVIEW AND APPROVAL. FACILITIES SHALL BE MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING. IN ADDITION, ALL TEMPORARY SILTATION CONTROLS SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL SUCH TIME THAT CONSTRUCTION IS COMPLETED, PERMANENT DRAINAGE FACILITIES ARE OPERATIONAL, AND THE POTENTIAL FOR EROSION HAS BEEN ELIMINATED AS DETERMINED BY THE PUBLIC WORKS DIRECTOR OR DESIGNEE.
2. THE INSPECTION BY THE OWNER OR DESIGNATED CONTRACTOR SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
  - A) CHECK DISTURBED AREAS AND ANY MATERIAL STORAGE AREAS (IF APPLICABLE TO THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR EVIDENCE OF OR THE POTENTIAL FOR DISCHARGE OF POLLUTANTS.
  - B) ENSURE THAT SEDIMENT AND EROSION CONTROL MEASURES ARE FUNCTIONING AND OPERATING CORRECTLY.
  - C) AT ACCESSIBLE DISCHARGE POINTS, DETERMINE WHETHER BMP'S ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS. WHERE DISCHARGE POINTS ARE INACCESSIBLE OR UNSAFE TO INSPECT, INSPECT DOWNSTREAM AREAS FOR EVIDENCE OF DISCHARGE.
  - D) DOCUMENT SEDIMENT TRACK-OUT AT ALL INGRESS AND EGRESS LOCATIONS FROM THE PROJECT SITE.
  - E) DOCUMENT ANY REVISIONS TO BMP'S ON THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WITHIN SEVEN (7) DAYS OF INSPECTION AND CORRECTION.
  - F) DOCUMENT ANY INCIDENTS OF NON-COMPLIANCE OR CERTIFY THAT THE SITE IS IN COMPLIANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
  - G) DOCUMENT ANY ACTIVITY THAT CREATES A NON-STORM WATER DISCHARGE, INCLUDING DATE AND TIME, LOCATION, REASON FOR DISCHARGE, AMOUNT OF THE DISCHARGE, BMP MEASURES USED TO MEDIATE THE DISCHARGE, AND BMP'S USED TO PREVENT FURTHER NON-STORM WATER DISCHARGES FROM THE ACTIVITY.



1. A COPY OF THE APPROVED GRADING AND DRAINAGE PLANS FOR THIS PROJECT, TOGETHER WITH A COPY OF THE NOTICE OF INTENT (NOI) AND THE STORM WATER POLLUTION PREVENTION PLANS, SHALL BE MAINTAINED ON THE SITE AND AVAILABLE FOR REVIEW. THOSE ELEMENTS OF THE GRADING AND DRAINAGE PLAN PERTINENT TO OR REFERENCED ON THE SWPPP SHALL BE CONSIDERED A PART OF THE SWPPP.
2. THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF, SHALL BE NOTIFIED 48 HOURS BEFORE ANY ON-SITE AND/OR OFF-SITE CONSTRUCTION BEGINS, AT (928) 634-8033.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DUST CONTROL MEASURES. THE CONTRACTOR SHALL ONLY USE RECLAIMED WATER FOR COMPACTION AND DUST CONTROL. RECLAIMED WATER PURCHASE IS AVAILABLE BY CONTACTING THE CITY OF COTTONWOOD UTILITIES DEPARTMENT (928) 634-0186.
4. THE CONTRACTOR SHALL PERFORM, AT A MINIMUM, A VISUAL INSPECTION OF THE CONSTRUCTION SITE ONCE EVERY MONTH AND WITHIN 24 HOURS OF A RAINFALL GREATER THAN OR EQUAL TO A HALF OF AN INCH OR MORE. THE CONTRACTOR SHALL PREPARE A REPORT DOCUMENTING HIS/HER FINDINGS ON THE CONDITIONS OF THE SWMP CONTROLS AND NOTE ANY PROBLEM AREAS. THE CONTRACTOR'S REPORT IS TO BE SUBMITTED TO THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF, FOR REVIEW AND APPROVAL. FACILITIES SHALL BE MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING. IN ADDITION, ALL TEMPORARY SILTATION CONTROLS SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED, PERMANENT DRAINAGE FACILITIES ARE OPERATIONAL, AND THE POTENTIAL FOR EROSION HAS PASSED.
5. THE CONTRACTOR SHALL AMEND THE SWPPP AS NECESSARY DURING THE COURSE OF CONSTRUCTION TO RESOLVE ANY PROBLEM AREAS, WHICH BECOME EVIDENT DURING THE CONSTRUCTION AND/OR DURING RAINFALLS.
6. THE PERMITTEE SHALL FILE A NOTICE OF TERMINATION (N.O.T.) AFTER COMPLETION OF CONSTRUCTION AND PLACEMENT OF FINAL LANDSCAPE MATERIALS. THE N.O.T. IS TO BE SUBMITTED TO THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT. THE N.O.T. IS NOT TO BE FILED UNTIL FINAL ACCEPTANCE OF WORK HAS BEEN GRANTED BY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT.
7. THE PERMITTEE SHALL SAVE ALL RECORDS, INCLUDING THE N.O.I., SWMP, N.O.T., AND INSPECTION REPORTS ON FILE FOR A MINIMUM OF THREE YEARS FROM THE DATE OF FILING THE N.O.T.
8. THE IMPLEMENTATION OF THESE PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE FACILITIES IS THE RESPONSIBILITY OF THE PERMITTEE/CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED AND THE N.O.T. IS SUBMITTED TO THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF.
9. THE FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS, AND MUST BE INSTALLED AND OPERATIONAL PRIOR TO ANY GRADING OR LAND CLEARING. WHEREVER POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL.
10. PLAN APPROVAL IS FOR 180 DAYS. PRIOR TO PLAN APPROVAL EXPIRATION, ALL ASSOCIATED PERMITS SHALL BE PURCHASED OR THE PLANS SHALL BE RESUBMITTED FOR EXTENSION OF PLAN APPROVAL.
11. IN AREAS REQUIRING SEEDING AS NOTED ON THESE APPROVED PLANS THE CONTRACTOR SHALL FOLLOW THE SPECIFICATIONS GIVEN IN SECTION 805 OF THE ADOT STANDARD SPECIFICATIONS.
12. ALL LANDSCAPE PROJECTS REQUIRING CITY MAINTENANCE OR WITHIN THE CITY RIGHT-OF-WAY SHALL BE INSPECTED FOR THE FOLLOWING:
  - A. PLANT LOCATIONS: THESE LOCATIONS SHALL BE STAKED IN THE FIELD WITH IDENTIFICATION AS TO TREES OR SHRUBS; OR HOLES FOR THE PLANT MATERIALS MAY BE DUG WITH IDENTIFICATION OF PLANT TYPE. USE OF THIS METHOD DOES NOT RELIEVE THE CONTRACTOR OF ANY PLANT RELOCATIONS MADE BY THE CITY.
  - B. IRRIGATION INSTALLATION: INSPECTIONS SHALL BE MADE AT THE POINT THE IRRIGATION SYSTEM IS INSTALLED. INSPECTIONS OF THE PIPE DEPTH, AUTOMATIC VALVE INSTALLATION AND Emitter/SPRAY INSTALLATIONS WILL BE MADE.
  - C. SUBSTANTIAL COMPLETION: AN INSPECTION AT COMPLETION OF THE LANDSCAPE AND IRRIGATION INSTALLATION WILL BE MADE. ANY DEFICIENCIES IN THE INSTALLATION WILL BE NOTED AND CORRECTED BY THE CONTRACTOR DURING THE MAINTENANCE PERIOD.
  - D. FINAL ACCEPTANCE: A FINAL INSPECTION IS REQUIRED PRIOR TO CITY ACCEPTANCE OF THE LANDSCAPE AND IRRIGATION IMPROVEMENTS. THE ABOVE INSPECTIONS REQUIRE A MINIMUM OF 48-HOURS PRIOR NOTIFICATION TO THE CITY. CALL THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF AT (928) 634-8033 TO ARRANGE FOR THESE INSPECTIONS.
13. ALL PLANTINGS AT Maturity SHALL MAINTAIN A MINIMUM 6'-0" CLEARANCE AROUND ALL FIRE HYDRANTS AND FIRE SUPPRESSION DEVICES.
14. ALL PLANTING AREAS (EXCEPT TURF AREAS) TO BE MAINTAINED BY THE CITY SHALL BE TREATED WITH A PRE-EMERGENT HERBICIDE BY A LICENSED APPLICATOR PRIOR TO AND AFTER THE PLACEMENT OF THE DECOMPOSED GRANITE, RIVER ROCK ETC. APPLICATION DOCUMENTATION WILL BE REQUIRED PRIOR TO ACCEPTANCE OF THE LANDSCAPING BY THE CITY.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSPECTION, MODIFICATION, AND PROPER MAINTENANCE OF THE EROSION CONTROL DEVICES AS NECESSARY. IN THE EVENT OF FAILURE OR REFUSAL TO PROPERLY MAINTAIN SAID DEVICES, THE CITY ENGINEER MAY CAUSE EMERGENCY MAINTENANCE WORK TO BE DONE TO PROTECT ADJACENT PRIVATE AND PUBLIC PROPERTY, THE COST (INCLUDING AN INITIAL MOBILIZATION AMOUNT) SHALL BE CHARGED TO THE CONTRACTOR.
16. ALL EROSION CONTROL MEASURES REQUIRED TO RETAIN SEDIMENT ON-SITE AND TO SAFELY DISCHARGE ANY ACCELERATED RUNOFF GENERATED BY THE PROJECT SHALL BE INSTALLED DURING THE INITIAL CONSTRUCTION PHASE OF THE PROJECT.
17. THE CONSTRUCTION AND MAINTENANCE OF ALL EROSION CONTROL SYSTEMS SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED EROSION CONTROL PLAN.
18. TEMPORARY EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN WHICH INTERFERE WITH THE WORK SHALL BE RELOCATED OR MODIFIED AS THE WORK PROGRESSES AS RECOMMENDED BY THE ENGINEER OF RECORD AND AS APPROVED BY THE CITY ENGINEER.



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19. ALL REMOVABLE PROTECTION DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE 5-DAY RAIN PROBABILITY FORECAST EXCEEDS 25-PERCENT.

20. EROSION CONTROL SYSTEMS SHALL BE SERVICED AND MAINTAINED TO PROVIDE CONTINUOUS CAPACITY AND ADEQUACY TO FUNCTION AS DESIGNED. AFTER PRECIPITATION EXCEEDING ONE QUARTER (1/4) INCH IN ANY 12-HOUR PERIOD, OR UPON DIRECTION OF THE CITY ENGINEER, SILT AND DEBRIS SHALL BE REMOVED FROM CHECK DAMS AND DESILTING BASINS AND THE BASINS PUMPED DRY AND OTHERWISE RESTORED TO THE ORIGINAL DESIGN CONDITION.

21. DESILTING BASINS CONSTRUCTED OF COMPACTED EARTH SHALL BE COMPACTED TO A RELATIVE COMPACTION OF 90 PERCENT OF MAXIMUM DENSITY. A SOIL ENGINEERING REPORT INCLUDING THE TYPE OF FIELD TESTING PERFORMED, LOCATION AND RESULTS OF TESTING SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL UPON COMPLETING THE DESILTING BASIN.

22. EROSION CONTROL PROVISIONS SHALL INCLUDE AND COMPLEMENT DRAINAGE PATTERNS DURING THE CURRENT AND FUTURE PHASES OF GRADING THROUGHOUT THE RAINY SEASON.

23. PAVED STREETS, SIDEWALKS, AND OTHER IMPROVEMENTS SHALL BE MAINTAINED IN A NEAT AND CLEAN CONDITION, FREE OF LOOSE SOIL, CONSTRUCTION DEBRIS, AND TRASH. STREET SWEEPING OR OTHER EQUIVALENT MEANS SHALL BE USED ON A REGULAR BASIS TO CONTROL EROSION. WATERING SHALL NOT BE USED TO CLEAN STREETS EXCEPT FOR THE REMOVAL OF FINE MATERIAL NOT OTHERWISE REMOVED BY SWEEPING OR OTHER MECHANICAL MEANS.

24. STAND-BY CREWS SHALL BE ALERTED BY THE CONTRACTOR OR OWNER FOR EMERGENCY WORK DURING RAINSTORMS.

25. ALL UTILITY TRENCHES SHALL BE BACKFILLED WITHIN 24 HOURS AND MUST BE BACKFILLED BEFORE THE END OF THE WORK DAY IF A 25-PERCENT CHANCE OF RAIN IS PREDICTED.

26. A GRAVEL BAG SILT BASIN OR TRAP SHALL BE PROVIDED AT EVERY STORM DRAIN INLET TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN SYSTEM.

27. ALL EROSION CONTROL PLANS MUST PROVIDE A 24-HOUR TELEPHONE NUMBER AND THE NAME(S) OF THE PERSON(S) RESPONSIBLE FOR EMERGENCY WORK. A TELEPHONE ANSWERING MACHINE OR ANSWERING SERVICE IS UNACCEPTABLE.

28. OWNER/CONTRACTOR SHALL USE APPLICABLE BEST MANAGEMENT PRACTICES (BMP'S) AS CONTAINED IN THE ADOT EROSION AND POLLUTION CONTROL MANUAL. OTHER BMP'S MAY BE CITED AND USED PROVIDED SUFFICIENT DETAIL IS CONTAINED IN THE SWPPP OR APPROVED EROSION CONTROL PLAN.

29. CONTRACTOR MUST ENSURE THAT THE CONSTRUCTION SITE IS PREPARED PRIOR TO THE ONSET OF ANY STORM. CONTRACTOR SHALL HAVE ALL EROSION AND SEDIMENT CONTROL MEASURES IN PLACE PRIOR TO THE ARRIVAL OF THE RAINY SEASON.

30. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED. CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE CITY ENGINEER.

31. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED BEFORE AND AFTER ALL STORMS TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.

32. CONTRACTOR SHALL MAINTAIN A LOG AT THE SITE OF ALL INSPECTIONS OR MAINTENANCE OF BMP AS WELL AS ANY CORRECTIVE CHANGES TO THE BMPS OR EROSION AND SEDIMENT CONTROL PLAN.

33. THE CONTRACTOR SHALL INSTALL THE STABILIZED CONSTRUCTION ENTRANCE PRIOR TO COMMENCEMENT OF GRADING. LOCATION OF THE ENTRANCE MAY BE ADJUSTED BY THE CONTRACTOR TO FACILITATE GRADING OPERATIONS. ALL CONSTRUCTION TRAFFIC ENTERING THE PAVED ROAD MUST CROSS THE STABILIZED CONSTRUCTION ENTRANCE.

34. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE SWEPT AT THE END OF EACH WORKING DAY OR AS NECESSARY.

35. CONTRACTOR SHALL IMPLEMENT HOUSEKEEPING PRACTICES AS FOLLOWS:

- SOLID WASTE MANAGEMENT: PROVIDE DESIGNATED WASTE COLLECTION AREAS AND CONTAINERS. ARRANGE FOR REGULAR REMOVAL AND DISPOSAL. CLEAR SITE OF TRASH INCLUDING ORGANIC DEBRIS, PACKAGING MATERIALS, SCRAP, OR SURPLUS BUILDING MATERIALS AND DOMESTIC WASTE DAILY.
- MATERIAL DELIVERY AND STORAGE: PROVIDE A DESIGNATED MATERIAL STORAGE AREA WITH SECONDARY CONTAINMENT SUCH AS BERMING.
- CONCRETE WASTE: PROVIDE A DESIGNATED AREA FOR A TEMPORARY PIT TO BE USED FOR CONCRETE TRUCK WASH-OUT. DISPOSE OF HARDENED CONCRETE OFFSITE. AT NO TIME SHALL A CONCRETE TRUCK DUMP ITS WASTE AND CLEAN ITS TRUCK INTO THE CITY STORM DRAINS. CONTRACTOR SHALL INSPECT DAILY TO CONTROL RUNOFF AND WEEKLY FOR REMOVAL OF HARDENED CONCRETE.
- VEHICLE FUELING, MAINTENANCE, AND CLEANING: PROVIDE A DESIGNATED FUELING AREA WITH SECONDARY CONTAINMENT SUCH AS BERMING. DO NOT ALLOW MOBILE FUELING OF EQUIPMENT. PROVIDE EQUIPMENT WITH DRIP PANS. RESTRICT ONSITE MAINTENANCE AND CLEANING OF EQUIPMENT TO A MINIMUM. INSPECT AREA WEEKLY.
- HAZARDOUS MATERIALS MANAGEMENT: PREVENT THE DISCHARGE OF POLLUTANTS FROM HAZARDOUS MATERIALS TO THE DRAINAGE SYSTEM THROUGH PROPER MATERIAL USE, WASTE DISPOSAL AND TRAINING OF EMPLOYEES. HAZARDOUS WASTE PRODUCTS COMMONLY FOUND ON-SITE INCLUDE BUT ARE NOT LIMITED TO PAINTS & SOLVENTS, PETROLEUM PRODUCTS, FERTILIZERS, HERBICIDES & PESTICIDES, SOIL STABILIZATION PRODUCTS, ASPHALT PRODUCTS AND CONCRETE CURING PRODUCTS.

36. MAINTENANCE IS TO BE PERFORMED AS FOLLOWS:

- A. REPAIR DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION AT THE END OF EACH WORKING DAY.
- B. SWALES SHALL BE INSPECTED PERIODICALLY AND MAINTAINED AS NEEDED.
- C. SEDIMENT TRAPS, BERMS, AND SWALES ARE TO BE INSPECTED AFTER EACH STORM AND REPAIRS MADE AS NEEDED.
- D. SEDIMENT SHALL BE REMOVED AND SEDIMENT TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A DEPTH OF 1 FOOT.
- E. SEDIMENT REMOVED FROM TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
- F. RILLS AND GULLIES MUST BE REPAIRED.

37. CONTROL MEASURES REQUIRING MAINTENANCE OR ADJUSTMENT SHALL BE REPAIRED IMMEDIATELY AFTER OBSERVATION OF THE FAILING CONTROL MEASURE.

38. SAND BAG INLET PROTECTION SHALL BE CLEANED OUT WHENEVER SEDIMENT DEPTH IS ONE HALF THE HEIGHT OF ONE SAND BAG.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

**EROSION & SEDIMENT CONTROL NOTES**

REVISED

DETAIL NO.

01/2023

1109-2

39. REASONABLE CARE SHALL BE TAKEN WHEN HAULING ANY EARTH, SAND, GRAVEL, STONE, DEBRIS, PAPER, OR ANY OTHER SUBSTANCE OVER ANY PUBLIC STREET, ALLEY, OR OTHER PUBLIC PLACE. SHOULD ANY BLOW, SPILL, OR TRACK OVER AND UPON SAID PUBLIC OR ADJACENT PROPERTY, IMMEDIATE REMEDY SHALL OCCUR.
40. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT LADEN RUNOFF TO AN STORM DRAINAGE SYSTEMS, INCLUDING EXISTING DRAINAGE SWALES AND WATERCOURSES.
41. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION WILL BE MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT SHALL BE COMPLIED WITH.
42. THE CONTRACTOR SHALL PROVIDE DUST CONTROL AS REQUIRED BY THE APPROPRIATE FEDERAL, STATE, AND LOCAL AGENCY REQUIREMENTS.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

EROSION & SEDIMENT CONTROL NOTES

REVISED  
01/2023

DETAIL NO.  
1109-3

1. CONSTRUCTION WASTE DISPOSED OF IN ONSITE WASTE CONTAINERS SHALL BE PERIODICALLY EMPTIED TO PREVENT WASTE FROM EXCEEDING THE DUMPSTER CAPACITY AND PREVENT THE ACCUMULATION OF TRASH ONSITE.
2. ALL WASTE CONTAINERS USED ONSITE SHALL BE WATERTIGHT. IF A WASTE CONTAINER IS EQUIPPED WITH A DRAIN, THE CONTRACTOR SHALL ENSURE THAT THE DRAIN IS PLUGGED AT ALL TIMES.
3. THE CONTRACTOR SHALL DESIGNATE A PROPER STORAGE AREA FOR ANY HAZARDOUS SUBSTANCES THAT MAY BE USED ONSITE DURING THE CONSTRUCTION PROCESS. STORAGE SITES FOR THESE MATERIALS SHALL BE LOCATED AWAY FROM STORM DRAINS OR OTHER WATERCOURSES AND AWAY FROM MOVING VEHICLES AND EQUIPMENT. HAZARDOUS SUBSTANCES INCLUDE PETROLEUM PRODUCTS, SEPTIC WASTES, PAINTS & STAINS, WOOD PRESERVATIVES, ASPHALT PRODUCTS, PESTICIDES, ACIDS, SOLVENTS, ROOFING AND ANY MATERIALS DEEMED HAZARDOUS WASTE IN THE STATE OF ARIZONA. SPILLS OF HAZARDOUS WASTE SHALL BE CONTAINED IMMEDIATELY AND BE REMOVED BY A LICENSED CONTRACTOR AUTHORIZED TO CONDUCT HAZARDOUS WASTE REMEDIATION.
4. LIQUID WASTE GENERATED FROM DRILLING SLURRIES & FLUIDS, GREASE- & OIL-FREE WASTEWATER AND RINSE WATER, CONCRETE OR STUCCO, PAINT OR RELEASE OILS OR AGENTS, CURING COMPOUNDS, AND OTHER NON-STORM WATER LIQUID DISCHARGES NOT PERMITTED BY SEPARATE PERMITS SHALL BE KEPT FROM ENTERING STORM DRAINS AND WATERCOURSES. THE CONTRACTOR SHALL EMPLOY THE NECESSARY MEASURES REQUIRED TO CAPTURE ALL LIQUID WASTES GENERATED FROM HIS CONSTRUCTION ACTIVITIES WHICH HAVE THE POTENTIAL TO AFFECT THE STORM DRAINAGE SYSTEM.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

WASTE CONTROL NOTES

REVISED

08/2018

DETAIL NO.

1110

1. THE CONTRACTOR SHALL NOTIFY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT, INSPECTION STAFF AT LEAST 48-HOURS IN ADVANCE OF ANY SIGNING OR STRIPING AT (928) 634-8033. SIGNING OR STRIPING COMPLETED PRIOR TO THE CITY'S INSPECTION SHALL BE REMOVED IF IT IS NOT CONSISTENT WITH CITY STANDARDS.
2. THE OBLITERATION OF CONFLICTING STRIPING SHALL BE ACCOMPLISHED BY WATER BLASTING OR OTHER METHODS APPROVED BY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT.
3. ON NEW ASPHALT SURFACES AND SEAL TREATMENTS, ALL STRIPING AND LEGENDS (EXCEPT BIKE LANE SYMBOLS) SHALL BE INSTALLED USING WATER-BASED PAINT AS A TEMPORARY MEASURE. PERMANENT MARKINGS SHALL BE INSTALLED NO SOONER THAN 30-DAYS FOLLOWING THE FINAL ASPHALT OR SEAL APPLICATION.
4. CROSSWALKS, STOP BARS, CHEVRON, CROSSLATCH, MARKING INSTALLATIONS SHALL BE DONE IN ACCORDANCE WITH THE MAG STANDARDS. ALKYD THERMOPLASTIC MATERIAL APPLIED AT 90 MIL THICKNESS OR 3M STAMARK PAVEMENT MARKING TAPE SERIES 270 ES OR APPROVED EQUAL. WORD SYMBOL AND LEGEND MARKING INSTALLATIONS SHALL BE DONE IN 3M STAMARK PAVEMENT MARKING TAPE.
5. SIGNING SHALL BE INSTALLED PER CITY OF COTTONWOOD STANDARDS AND THESE APPROVED PLANS.
6. ALL SIGN BLANKS SHALL BE .080 GAUGE ALUMINUM, UNLESS OTHERWISE NOTED.
7. ALL SIGNS SHALL BE ASTM TYPE IV HIGH INTENSITY SHEETING, UNLESS OTHERWISE NOTED.
8. ALL SIGNS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR PER THESE APPROVED PLANS.
9. THE CONTRACTOR SHALL RETURN ALL REMOVED TRAFFIC SIGNS TO THE CITY OF COTTONWOOD PUBLIC WORKS DEPARTMENT, 1490 WEST MINGUS AVENUE. CONTACT THE PUBLIC WORKS OFFICE AT (928) 634-8033.
10. SIGNING AND STRIPING INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
11. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TO THE BACK OF CURB AND THE CENTER OF THE STRIPE. IN THE CASE OF A DOUBLE STRIPE, DIMENSION IS TO THE CENTER OF THE DOUBLE STRIPE.
12. IF THE APPROVED PLANS DO NOT MATCH EXISTING FIELD CONDITIONS, THE CITY OF COTTONWOOD CITY ENGINEER MAY MAKE CHANGES HE DEEMS NECESSARY.
13. ALL MATERIAL, EQUIPMENT AND INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF A.D.O.T.'S TRAFFIC SIGNALS AND LIGHTING STANDARD DRAWINGS, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION ADOPTED BY ADOT, THE CITY OF COTTONWOOD STANDARDS, AND THESE APPROVED PLANS.
14. THE CONTRACTOR SHALL CONTACT ALL UTILITIES AND BLUE STAKE 48-HOURS BEFORE STARTING ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL INVOLVED AGENCIES AND FIELD VERIFY EXACT LOCATIONS OF ALL UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL POTHOLE AND VERIFY THE LOCATION OF EXISTING UTILITIES. IF DISCREPANCIES EXIST THE CONTRACTOR SHALL NOTIFY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT IMMEDIATELY.
15. ALL TEMPORARY TRAFFIC CONTROL EQUIPMENT SHALL BE IN PLACE AND OPERATIONAL PRIOR TO REMOVING EXISTING STOP SIGNS. STOP SIGNS SHALL BE REMOVED SHORTLY AFTER ACTIVATION AS APPROVED BY THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT INSPECTOR.
16. THE CONTRACTOR SHALL PROVIDE SUFFICIENT PERSONNEL TO CARRY OUT ALL REQUIRED TRAFFIC CONTROL OPERATIONS.
17. ALL TRAFFIC CONTROL WORK FOR CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD AND ALL OSHA REQUIREMENTS AS APPLICABLE.
18. THE CITY OF COTTONWOOD RESERVES THE RIGHT TO OBSERVE THESE TRAFFIC CONTROL PLANS IN USE AND TO DIRECT ANY NECESSARY CHANGES AS FIELD CONDITIONS WARRANT. ANY CHANGES SHALL SUPERCEDE THE APPROVED TRAFFIC CONTROL PLANS AND BE DONE PER MUTCD WITH THE APPROVAL OF THE CITY ENGINEER. REVISED TRAFFIC CONTROL PLANS MAY BE REQUIRED BY THE CITY. EXACT LOCATION OF ALL EQUIPMENT AND TRAFFIC CONTROL DEVICES SHALL BE DETERMINED BY THE CITY'S INSPECTOR.
19. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 5 WORKING DAYS IN ADVANCE OF IMPLEMENTING ANY CONSTRUCTION DETOURS. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED RESIDENTS AND BUSINESSES 5 WORKING DAYS PRIOR TO CONSTRUCTION. TEMPORARY "NO PARKING" SIGNS, WITH DATE AND TIME OF THE PROHIBITION INDICATED, SHALL BE POSTED 72 HOURS PRIOR TO COMMENCING WORK.
20. ALL PRIVATE DRIVEWAYS AND SIDE STREETS SHALL BE KEPT OPEN AT ALL TIMES EXCEPT WHEN CONSTRUCTION TAKES PLACE DIRECTLY IN FRONT OF THE DRIVEWAY / SIDE STREET. ALL OPEN EXCAVATIONS IN PUBLIC STREETS SHALL BE BACKFILLED OR STEEL-PLATED (ANTI-SKID PLATES) FOR TRAFFIC DURING THE NON-WORKING HOURS TO THE SATISFACTION OF THE CITY ENGINEER. TRAFFIC ROADWAYS SHALL BE RESTORED TO NORMAL CONDITION DURING NON-WORKING HOURS.
21. THE CONTRACTOR SHALL HAVE ALL NECESSARY TRAFFIC CONTROL DEVICES ON HAND PRIOR TO COMMENCING SETUP.
22. THE CONTRACTOR SHALL COVER EXISTING SIGNS THAT CONFLICT WITH TEMPORARY TRAFFIC CONTROL AND REMOVE COVERS WHEN TEMPORARY TRAFFIC CONTROL IS REMOVED.
23. IT IS THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE WORK ON A PUBLIC STREET TO INSTALL AND MAINTAIN CONTROL DEVICES AS SHOWN HEREON, AS WELL AS ANY SUCH ADDITIONAL DEVICES AS MAY BE REQUIRED TO ENSURE THE SAFE MOVEMENT OF TRAFFIC AND PEDESTRIANS THROUGH OR AROUND THE WORK AREA. THE CONTRACTOR SHALL REPLACE ANY TRAFFIC SIGNAL LOOPS DAMAGED WITHIN 72 HOURS.
24. ALL DAMAGED RAISED PAVEMENT MARKERS, TRAFFIC STRIPING, LEGENDS, OR TRAFFIC LOOPS SHALL BE REPLACED TO THE SATISFACTION OF THE CITY ENGINEER.
25. ALL TRAFFIC LANES SHALL HAVE A MINIMUM OF 5 FEET CLEARANCE FROM OPEN EXCAVATIONS AND A MINIMUM OF 2 FEET FROM VERTICAL OBSTRUCTIONS UNLESS OTHERWISE APPROVED. MAINTAIN MINIMUM ONE LANE OF TRAFFIC IN EACH DIRECTION DURING WORKING HOURS.
26. PLACE ADDITIONAL "LANE CLOSED" SIGNS ON TYPE II BARRICADES AT 200 FEET INTERVALS THROUGHOUT EXTENDED WORK AREAS IN EACH LANE THAT IS CLOSED. INSTALL "OPEN TRENCH" SIGNS WHENEVER AN OPEN EXCAVATION AREA EXISTS ADJACENT TO THE TRAVELED ROADWAY.



## CITY OF COTTONWOOD STANDARD DETAIL

### STRIPING, SIGNAGE, AND TRAFFIC CONTROL NOTES

REVISED  
01/2023

DETAIL NO.  
1111-1

27. NIGHT WORK WILL REQUIRE PRIOR WRITTEN APPROVAL FROM THE CITY OF COTTONWOOD ENGINEERING DEPARTMENT. LANE CLOSURES, ROAD DETOURS, AND TRAFFIC SIGNAL MODIFICATIONS ASSOCIATED WITH OVERNIGHT CONSTRUCTION ACTIVITIES WILL REQUIRE INFORMATION SIGNS BE PLACED AT LEAST 1 WEEK IN ADVANCE OF CONSTRUCTION.

28. ALL ADVANCED WARNING SIGNS SHALL BE EQUIPPED WITH FLAGS DURING DAY TIME WORKING HOURS AND WITH FLASHING BEACONS AT NIGHT. THE CONTRACTOR SHALL PROVIDE FLAGGERS AS DEEMED NECESSARY BY THE CITY ENGINEER.

29. ALL TUBULAR DELINEATORS SHALL BE 36" MINIMUM HEIGHT AND CONES SHALL BE 28" MINIMUM HEIGHT AND SHALL INCLUDE 6" AND 4" HIGH INTENSITY REFLECTORIZED BANDS OR SLEEVES. ALL SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE.

30. THE CONTRACTOR MAY USE PREFABRICATED REMOVABLE DETOUR STRIPING TAPE, TEMPORARY OBJECT MARKERS, PAVEMENT MARKINGS, AND RAISED MARKERS, WHERE SHORT TERM USE WILL OCCUR (24 HOURS OR LESS), OR AS DIRECTED BY THE CITY INSPECTOR.

31. ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE STREET WHEN NOT IN USE OR UPON COMPLETION OF DAILY CONSTRUCTION, AND THE PERMANENT TRAFFIC CONTROL DEVICES SHALL BE RESTORED BY THE CONTRACTOR AT THE END OF EACH WORK DAY.

32. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE PROJECT TO THE OTHER, ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF MUTCD, PART 6.

33. PEDESTRIAN ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES, BUILDINGS, RESIDENCES, AND COMMERCIAL PROPERTIES AT ALL TIMES. THIS MAY INCLUDE TEMPORARY WALKWAYS SPANNING THE CONSTRUCTION AREA.

34. ALL TRAFFIC CONTROL DEVICES SHALL BE IN LIKE NEW CONDITION AND PROPERLY FUNCTION.

35. THE CONTRACTOR SHALL PROVIDE FLAGMEN AS NECESSARY TO GIVE ADEQUATE WARNING TO TRAFFIC OR TO THE PUBLIC OF ANY DANGEROUS CONDITIONS TO BE ENCOUNTERED.

36. MAXIMUM SPACING FOR DELINEATORS IN A TAPER AREA SHALL BE 25 FEET. MAXIMUM SPACING FOR DELINEATORS IN A TANGENT AREA SHALL BE 35 FEET.

37. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN THEIR PROPER POSITION AT ALL TIMES AND SHALL BE REPAIRED, REPLACED, OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY.

38. ALL BUSINESSES AND PROPERTY OWNERS Affected BY THE WORK SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO START OF CONSTRUCTION. ACCESS TO BUSINESSES AND RESIDENCES SHALL BE MAINTAINED AT ALL TIMES.

39. FAILURE TO ADHERE TO WORKING HOURS OR TRAFFIC CONTROL REQUIREMENTS SHALL RESULT IN SUSPENSION OF WORK UNTIL ADEQUATE ARRANGEMENTS CAN BE MADE TO ENSURE PUBLIC SAFETY AND CONVENIENCE MEETING THE APPROVAL OF THE CITY ENGINEER.

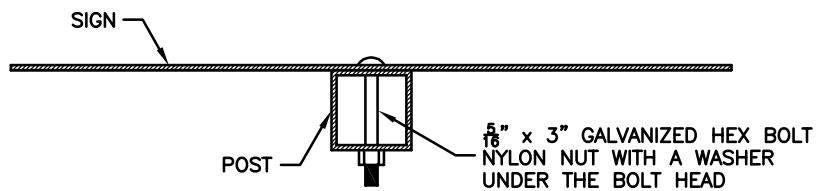
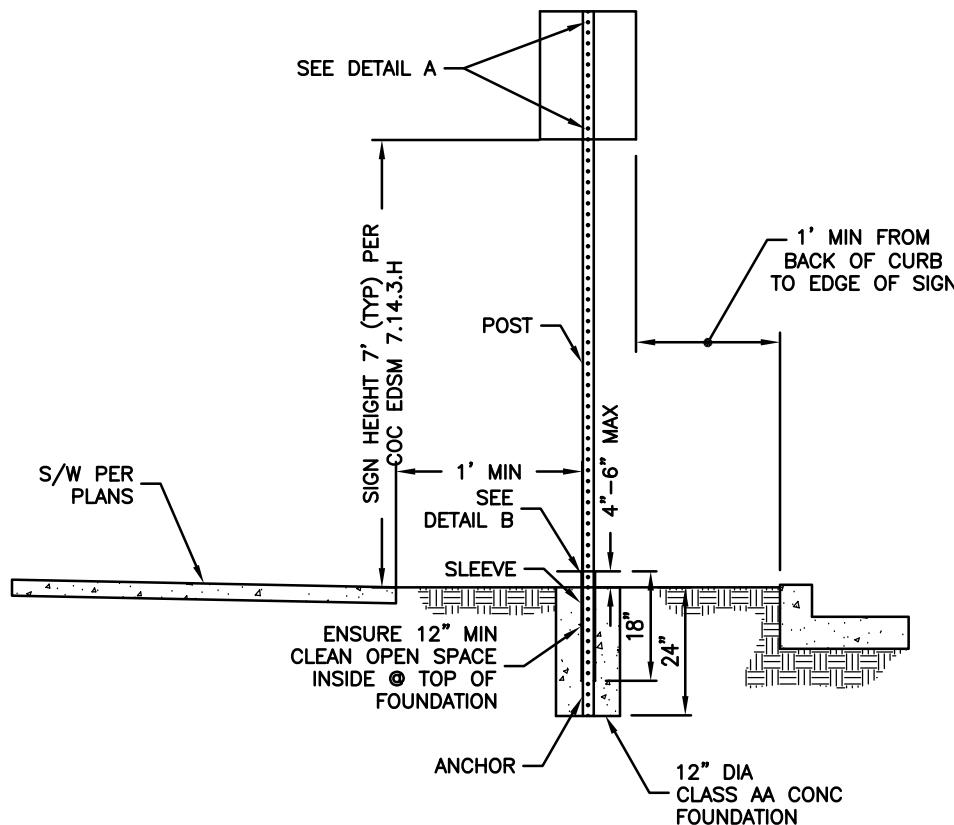


**CITY OF COTTONWOOD  
STANDARD DETAIL**

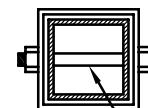
STRIPING, SIGNAGE, AND  
TRAFFIC CONTROL NOTES

REVISED  
01/2023

DETAIL NO.  
1111-2



DETAIL A  
SIGN MOUNTING

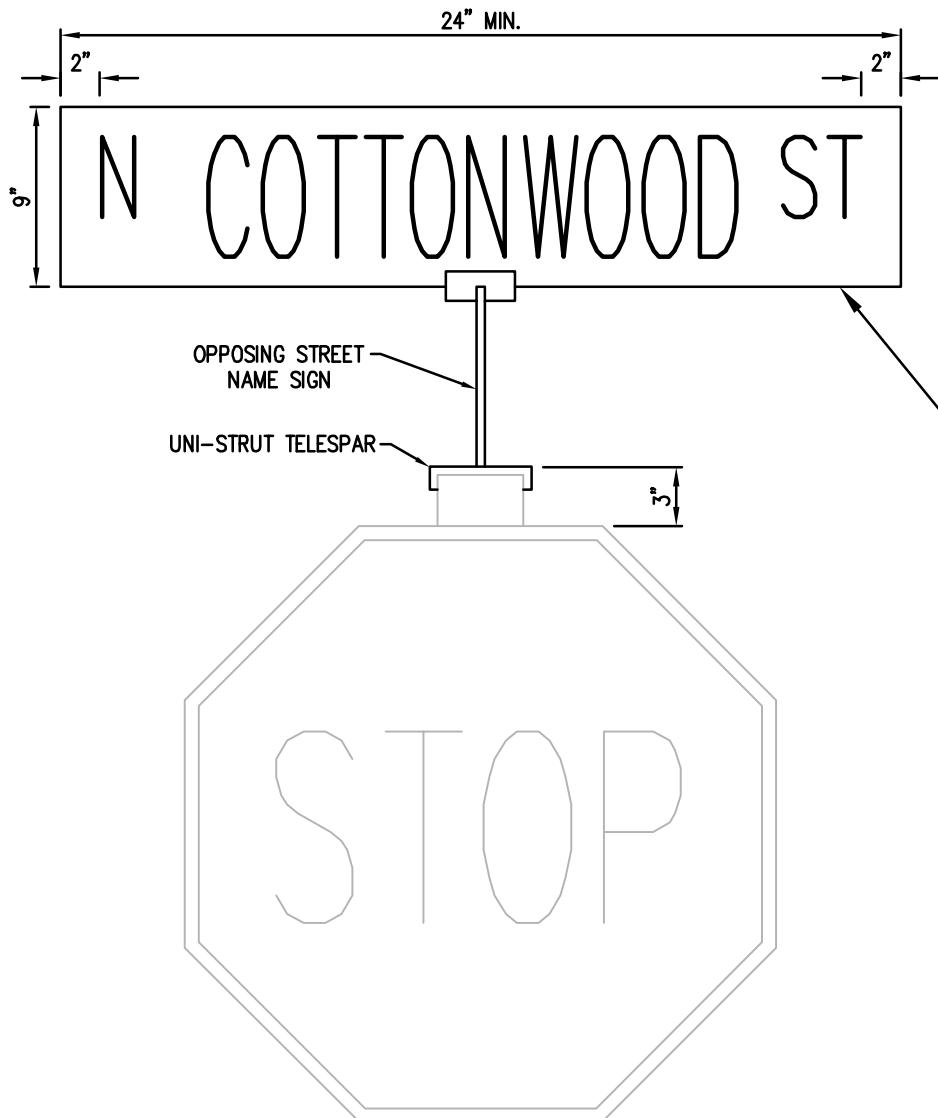


DETAIL B  
ANCHOR ASSEMBLY

LEGEND

1. POST - 2" x 2" SQUARE PERFORATED 12 GAUGE GALVANIZED STEEL TUBING
2. SLEEVE - 2 1/4" x 2 1/4" x 24", SQUARE PERFORATED 12 GAUGE GALVANIZED STEEL TUBING
3. ANCHOR - 2 1/4" x 2 1/4" x 24", SQUARE PERFORATED 12 GAUGE GALVANIZED STEEL TUBING





**SIGN MATERIAL:**

- 0.125" THICK EXTRUDED BLADE
- 24" MINIMUM LENGTH CENTERED

**WORDING:**

- WITH 2" AT EITHER SIDE

**DESIGN:**

- (PUBLIC ST.) WHITE LETTERS ON GREEN BACKGROUND (PER MUTCD)
- (PRIVATE ST.) BLACK LETTER ON WHITE BACKGROUND (PER MUTCD)
- NO BORDER
- MINIMUM SIZE 9" X 24"

**LEVEL OF REFLECTIVITY FOR LETTERS AND BACKGROUND:**

- HIGH INTENSITY (LEVEL III) GRADE

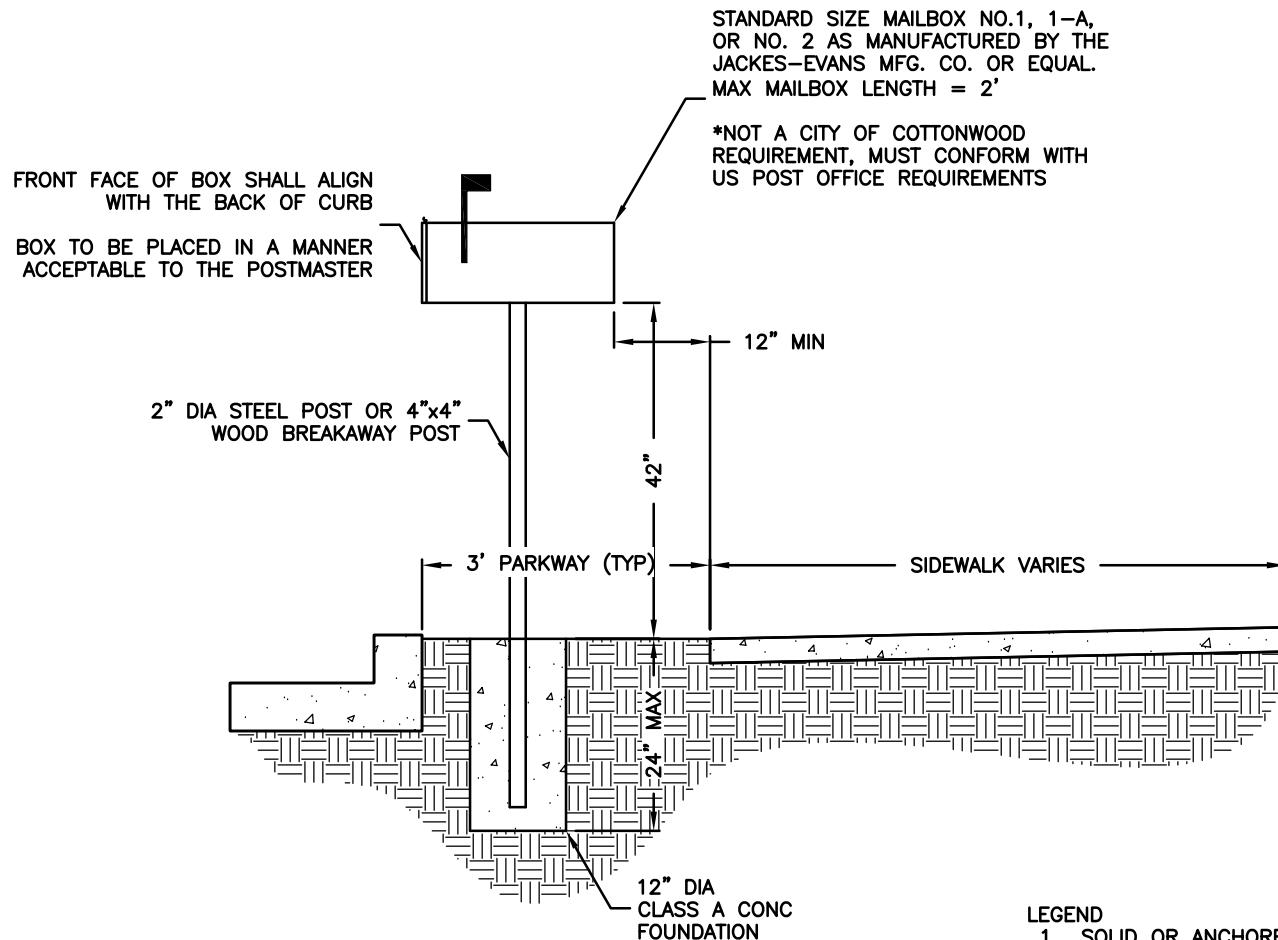
**LETTERING:**

- 6" LETTER SIZE FOR PRIMARY NAME
- 4" LETTER SIZE FOR PREFIX AND SUFFIX
- REQUIRES E, W, N, S, AVE, OR ST TO BE ALIGNED WITH TOP OF STREET NAME, NO PERIODS USED.
- FONT: HIGHWAY GOTHIC C

**POST:**

- 2"X2" UNISTRUT RISER FOR ALL SIGNING.
- BREAK-AWAY BASE PER COC STD. DET. 1131.

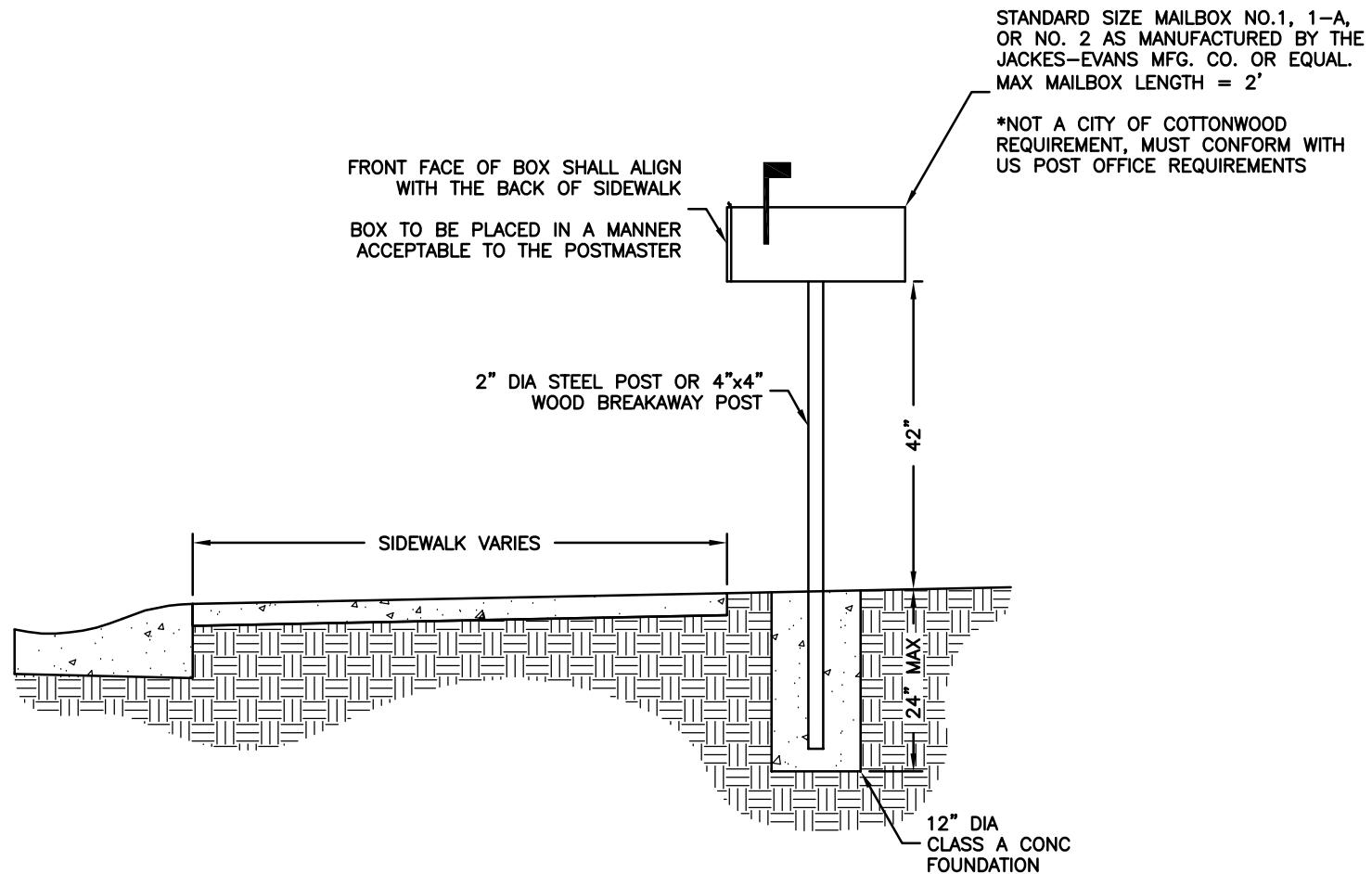




LEGEND

1. SOLID OR ANCHORED STRUCTURES IN THE RIGHT OF WAY SHALL BE OF BREAKAWAY CONSTRUCTION TO LIMIT DAMAGE & INJURIES.
2. ANY DEVIATION FROM THIS DETAIL OR STANDARD MAILBOX MUST BE APPROVED BY THE CITY ENGINEER.



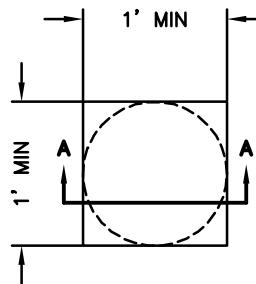


LEGEND

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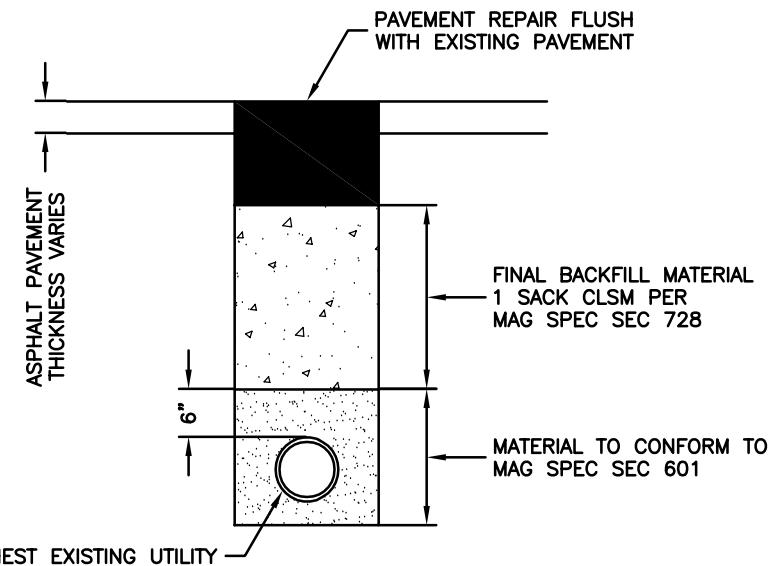


## PAVEMENT REPAIR

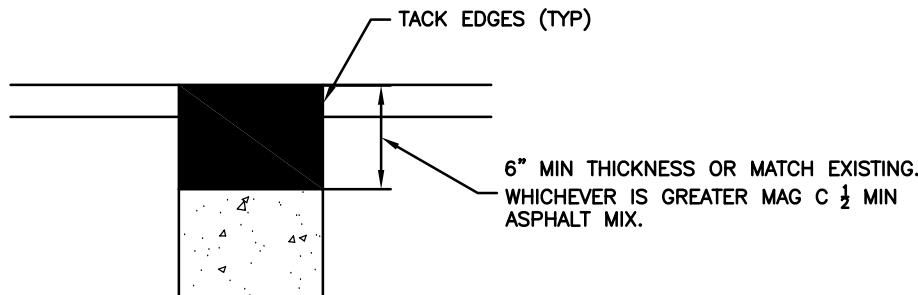


### NOTES:

1. DIMENSIONS ARE NOMINAL.
2. EDGES SHALL BE CUT TO A NEAT VERTICAL FACE.
3. PLACE CLSM BACKFILL IN ACCORDANCE WITH MAG SPEC SEC 604.
4. PLACE ASPHALT CONCRETE IN LIFTS (2" MAX THICKNESS PER LIFT).

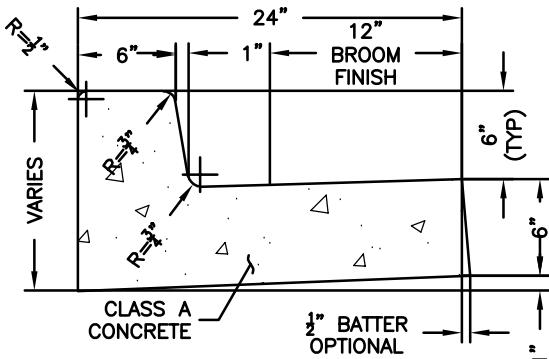


SECTION VIEW  
NO SCALE

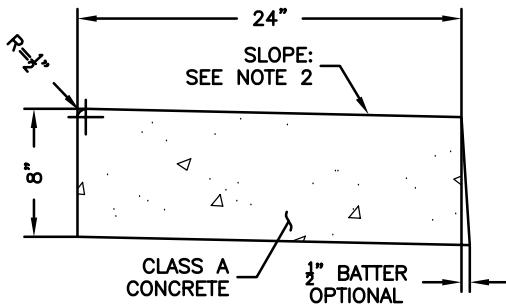


SECTION A-A  
NO SCALE

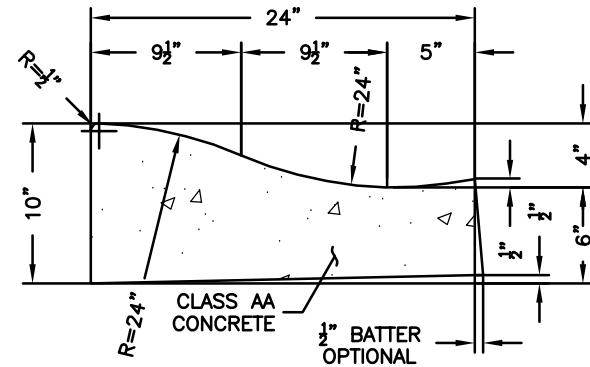




VERTICAL CURB & GUTTER (TYPE A)  
NO SCALE



RIBBON CURB (TYPE B)  
NO SCALE



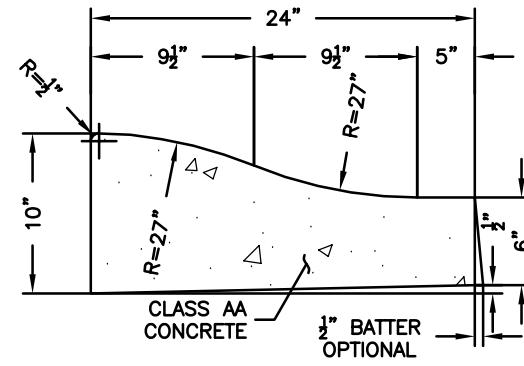
ROLL CURB & GUTTER (TYPE C)  
NO SCALE

NOTES:

1. CONSTRUCT CURB & INSTALL  $\frac{1}{2}$ " MASTIC EXPANSION JOINTS, ASTM D-1751 AND MAG SPEC SEC 340.
2. RIBBON CURB MAY SLOPE TOWARDS PAVEMENT OR PARKWAY AS INDICATED ON PLANS.

NOTES:

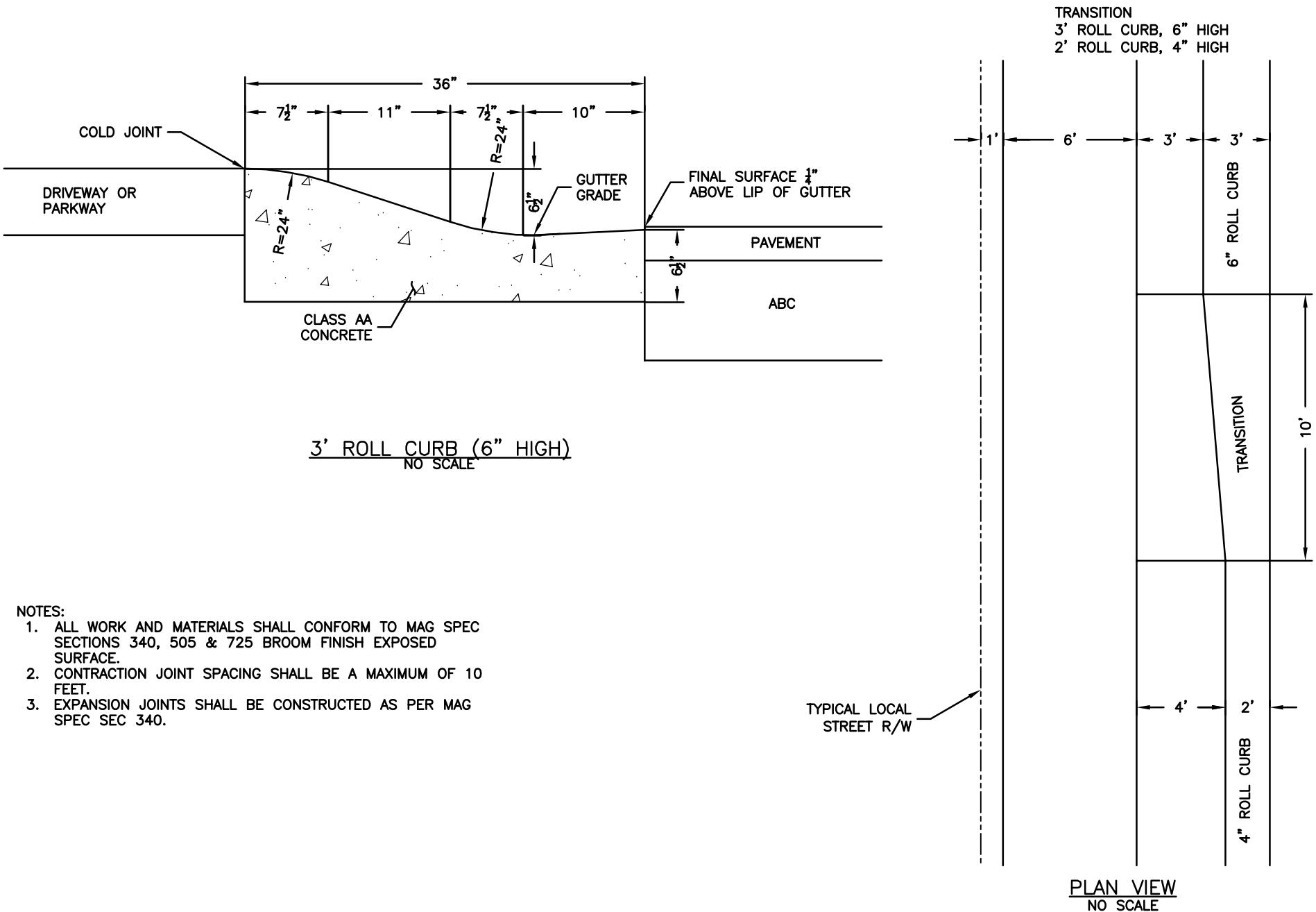
1. ALL EXPOSED SURFACES TO BE TROWEL FINISHED EXCEPT AS NOTED. SEE MAG SPEC SECTIONS 340, 505 & 725.
2. HEIGHT OF TYPE 'A' CURB SHALL BE 6" UNLESS NOTED OTHERWISE.
3. CONTRACTION JOINT SPACING SHALL BE A MAXIMUM OF 10 FEET.
4. EXPANSION JOINTS SHALL BE CONSTRUCTED PER MAG SPEC SEC 340, 50' MAX AT PC, DRIVEWAYS, ALLEYS & STRUCTURES.
5. 4" MIN ABC SHALL EXTEND TO BACK OF CURB BELOW ALL CURB & GUTTER.
6. WHEN THE ADJACENT PAVEMENT SECTION SLOPES AWAY FROM THE GUTTER, THE SLOPE OF THE GUTTER PAN SHALL MATCH THE PAVEMENT CROSS SLOPE.
7.  $\frac{1}{2}$ " ROUND FINISH SHALL BE REQUIRED AT THE LIP OF GUTTER, TYP ALL DETAILS.
8. FINAL PAVEMENT SURFACE SHALL BE  $\frac{1}{2}$ " ABOVE GUTTERS EXCEPT TYPE 'D' AND WHERE THE GUTTER SLOPES TOWARD THE PAVEMENT.
9. CLASS AA CONCRETE IS REQUIRED WHEN IT IS ADJACENT TO SIDEWALK OR DRIVEWAY FOR TYPES C AND D CURBS.



(TYPE D)  
NO SCALE

SPECIAL SECTION USE FOR HIGH SIDE CURB WITH SHEET DRAINAGE REVERSE FLOW ACROSS STREET





**CITY OF COTTONWOOD  
STANDARD DETAIL**

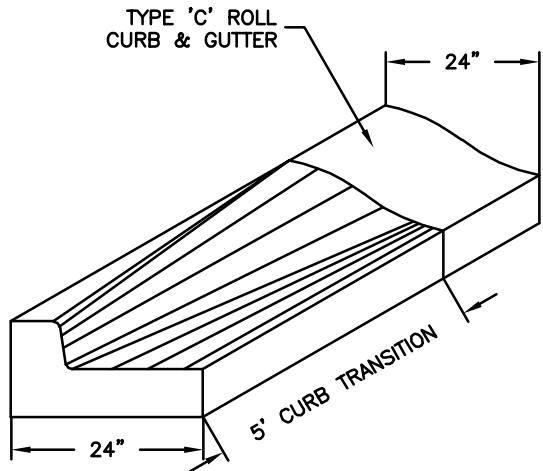
3' ROLL CURB & ROLL CURB TRANSITION

REVISED

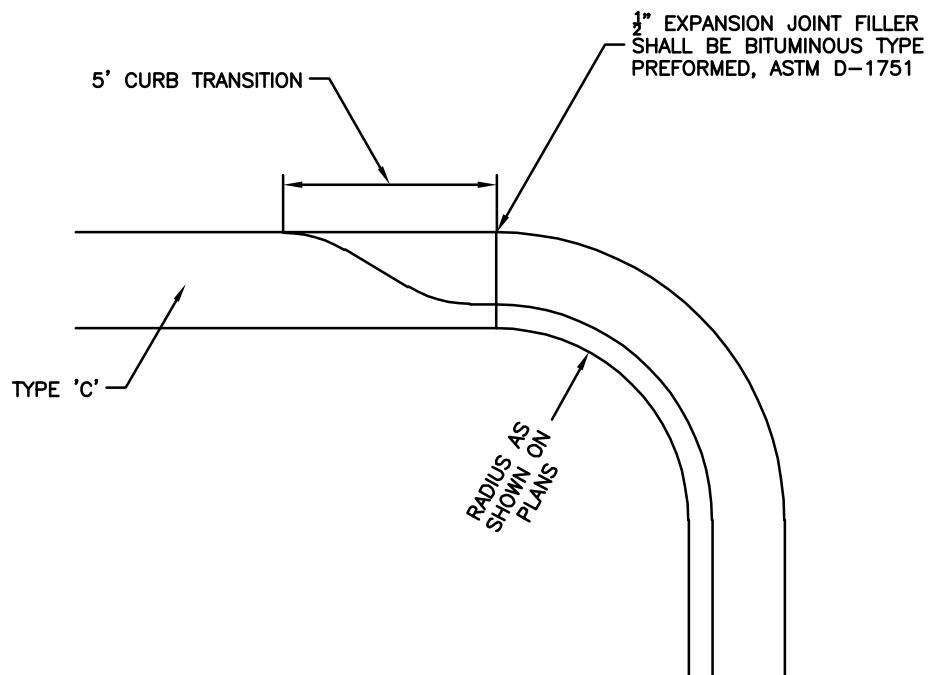
01/2023

DETAIL NO.

1220-2



CURB TRANSITION TYPE 'A' TO TYPE 'C'  
NO SCALE

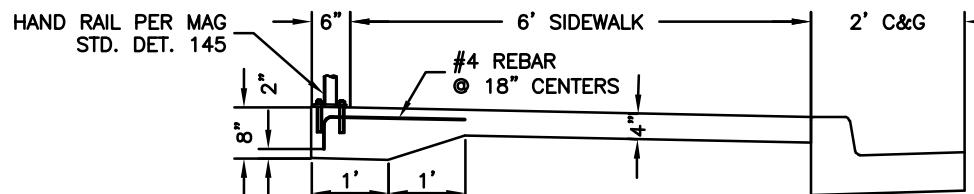
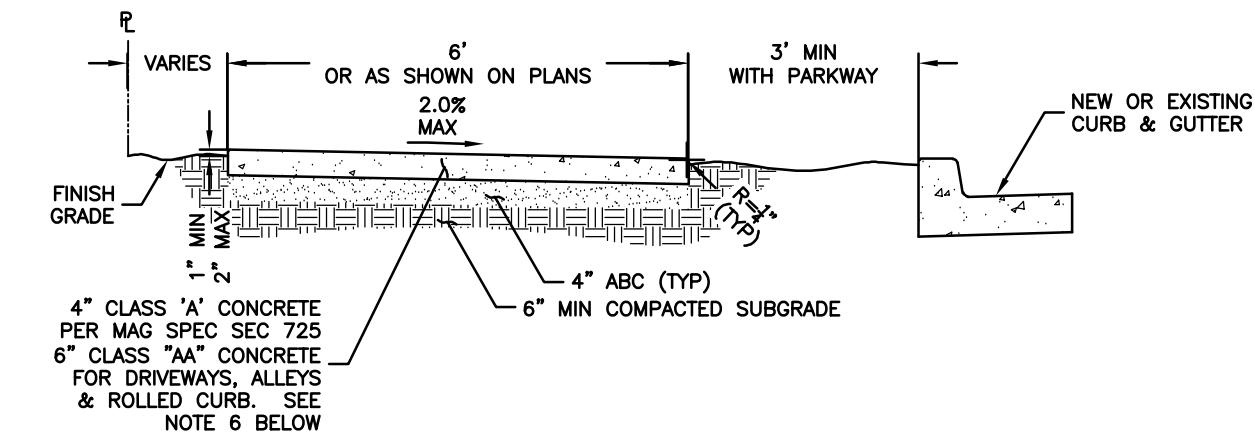
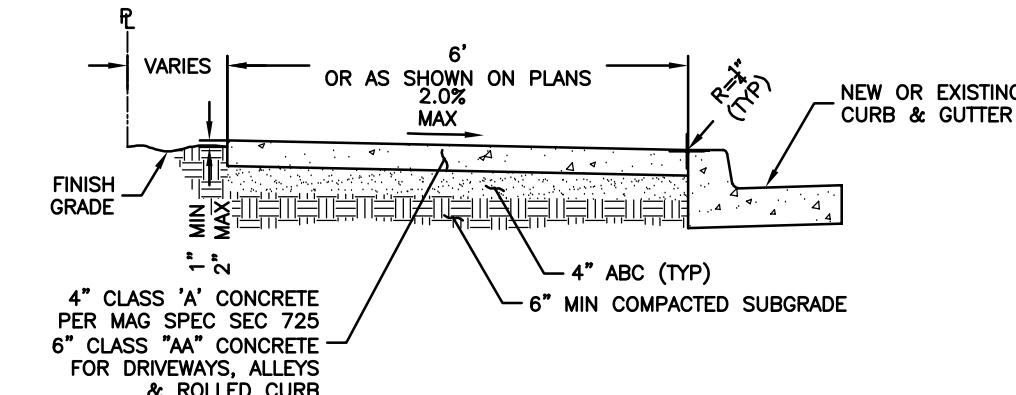


CURB & GUTTER TRANSITION  
NO SCALE

NOTES:

1. TRANSITIONS WILL BE PAID FOR AS THE PREDOMINANT TYPE OF CURB AND GUTTER BEING TRANSITIONED. WHEN TYPE "A" CURB AND GUTTER ARE USED AT RETURNS AND TYPE 'C' CURB AND GUTTER IS PREDOMINANTLY USED ELSEWHERE, THE TYPE 'A' TO TYPE 'C' TRANSITIONS SHALL BE MEASURED AND PAID FOR AS TYPE 'C' CURB & GUTTER.
2. WHERE PROPOSED CONSTRUCTION IS TO BE CONNECTED TO EXISTING CURB AND GUTTER, THE TRANSITION SHALL BE INDICATED ON THE PLANS.
3. CLASS 'AA' CONCRETE PER MAG SPEC SEC 725.
4. TRANSITION BETWEEN TYPICAL SECTIONS SHALL BE ACCOMPLISHED BY THE USE OF DIRECT STRAIGHT LINE TRANSITIONS OF THE FLOW LINE AND OTHER SURFACE FEATURES.

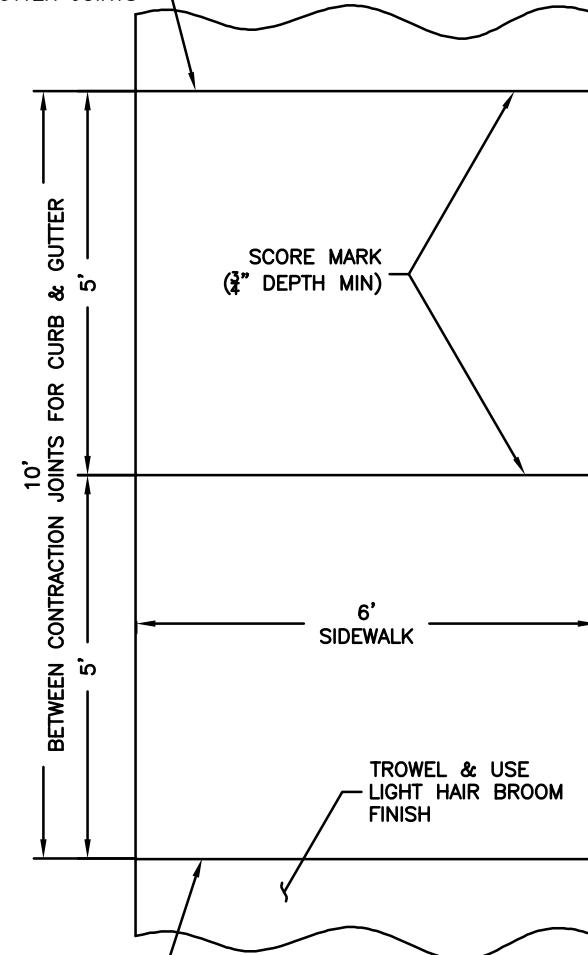




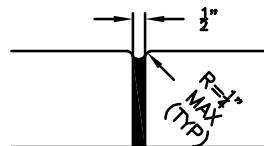
NOTES:

1. SIDEWALK CONSTRUCTION SHALL CONFORM TO MAG SPEC SECTIONS 725 & 340.
2. EXPANSION JOINT FILLER SHALL BE  $\frac{1}{2}$ " BITUMINOUS TYPE PREFORMED EXPANSION JOINT FILLER, ASTM D-1751.
3. LARGE AGGREGATE, IN CONTRACTION JOINT, SHALL BE SEPARATED TO A DEPTH OF 1". FINISH DEPTH SHALL BE A MINIMUM OF  $\frac{3}{4}$ ".
4. EXPANSION JOINTS SHALL HAVE A MAXIMUM SPACING OF 50' PER MAG SPEC SEC 340, AND BE LOCATED AT ALL PC's, DRIVEWAYS, ALLEYS AND STRUCTURES.
5. SUBGRADE TO BE COMPAKTED TO 95% OF MAXIMUM PER MAG SPEC SEC 301. MOISTURE TO BE 2% OVER OPTIMUM IN COHESIVE SOILS.
6. SIDEWALKS ADJACENT TO ROLLED CURB & GUTTER (TYPES C & D PER COC STD DTL 1230) SHALL BE A MINIMUM OF 6-INCHES THICK AND CLASS 'AA' CONCRETE PER MAG STD. SPEC. 725.

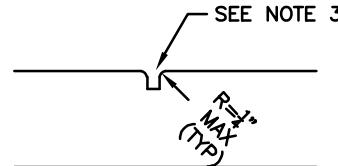
CONTRACTION/EXPANSION JOINTS SHALL MATCH ALL CURB & GUTTER JOINTS



CONTRACTION/EXPANSION JOINTS SHALL MATCH ALL CURB & GUTTER JOINTS



EXPANSION JOINT NO SCALE



CONTRACTION JOINT NO SCALE



**CITY OF COTTONWOOD  
STANDARD DETAIL**

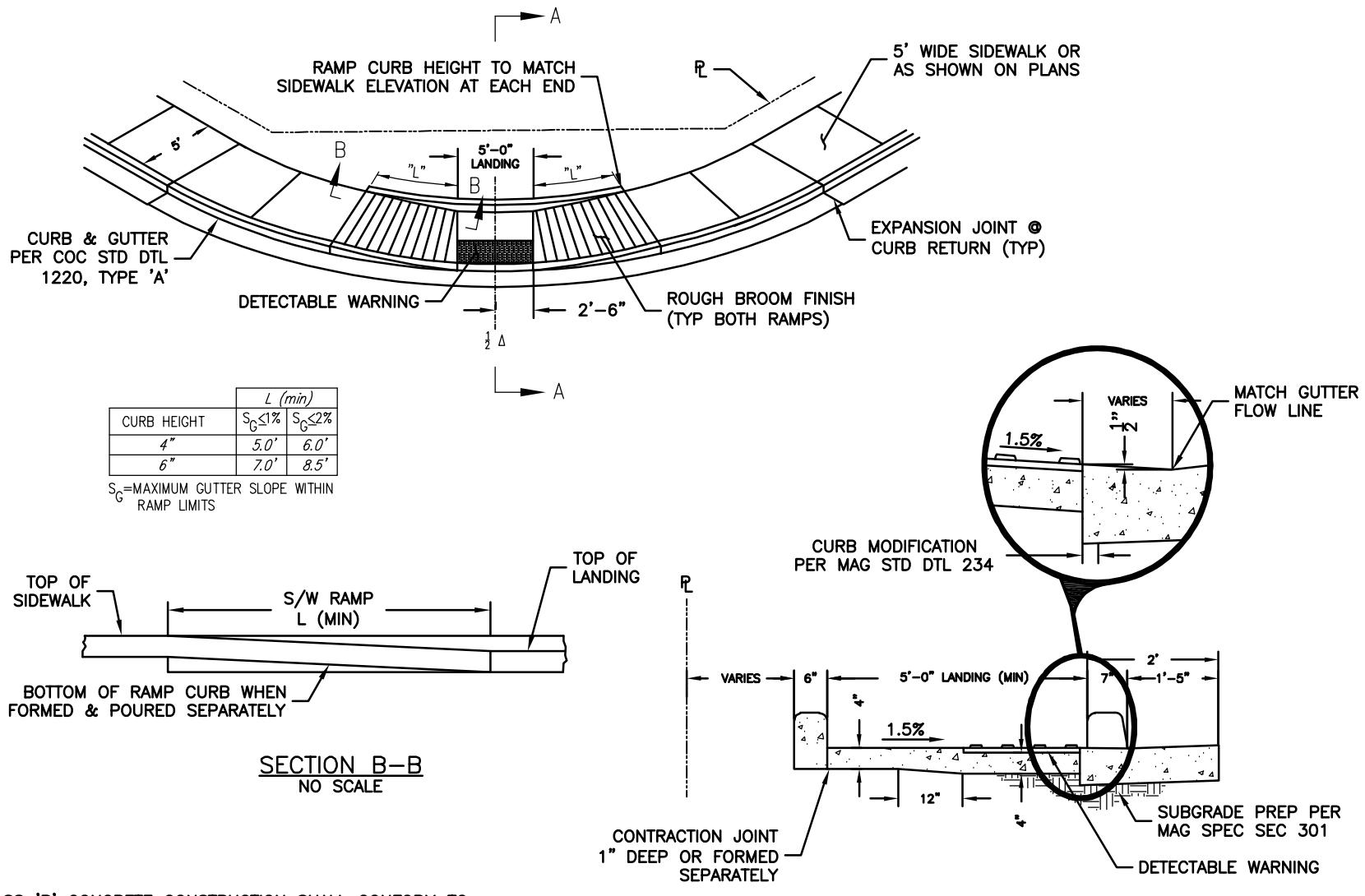
**SIDEWALKS**

REVISED

DETAIL NO.

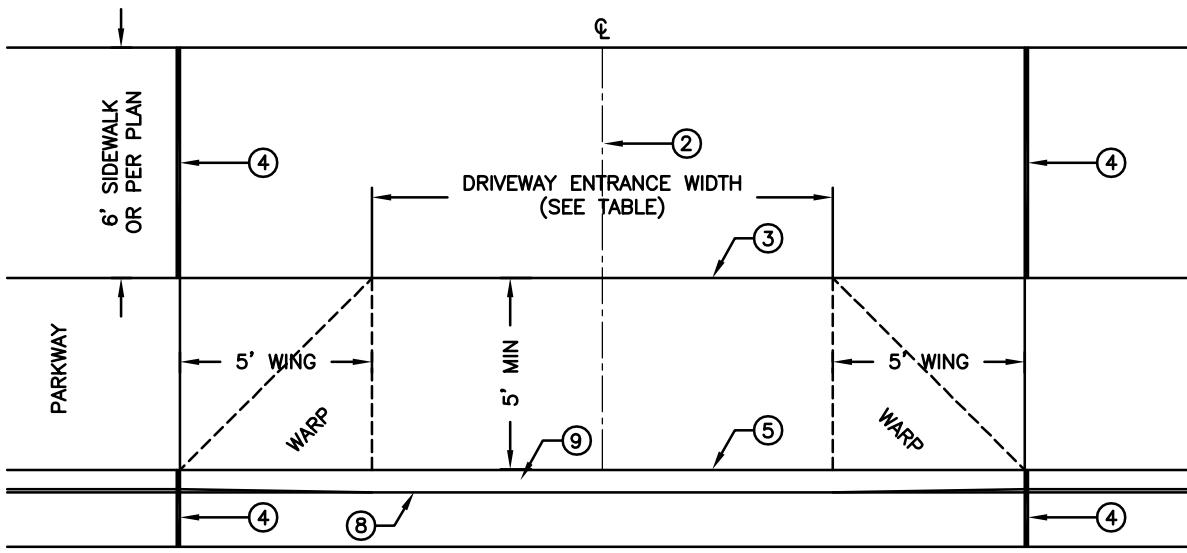
12/2020

1230

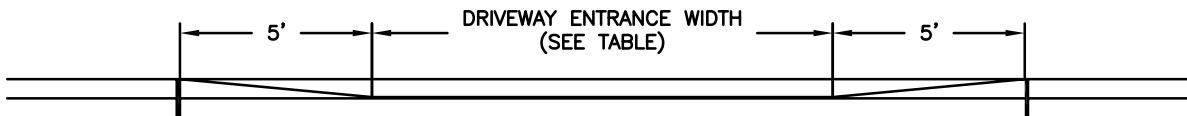


NOTES:

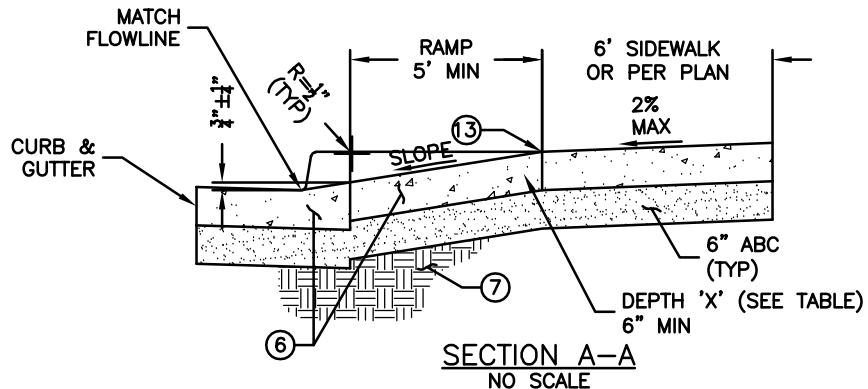
1. DEPRESSED CURB SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE TYPE OF CURB USED AT THAT LOCATION.
2. CONTRACTION JOINT ON D/W CENTERLINE
3. CONTRACTION JOINT
4.  $\frac{1}{2}$ " EXPANSION JOINTS SHALL COMPLY WITH MAG SPEC SEC 340.
5. BACK OF CURB - CONSTRUCTION JOINT
6. CLASS 'AA' CONCRETE PER MAG SPEC SEC 725.
7. SUBGRADE PREPARATION PER MAG SPEC SEC 301.
8. FLOW LINE OF GUTTER.
9. DEPRESSED CURB
10. SECTION A-A & ELEVATION: D/W SHOWN WITH VERTICAL CURB & GUTTER, ROLL TYPE CURB & GUTTER TREATED SIMILARLY.
11. ROUGH BROOM FINISH FULL WIDTH OF RAMP & WINGS.
12. TROWEL AND USE LIGHT HAIR BROOM FINISH FOR WALKWAY AREA.
13. ELEVATION AT TOP OF DRIVEWAY RAMP SHALL BE EQUAL TO OR HIGHER THAN NORMAL CURB ELEVATION.
14. DRIVEWAY WIDTH SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO ISSUANCE OF A RIGHT OF WAY PERMIT.



DRIVEWAY WITH DETACHED SIDEWALK  
NO SCALE

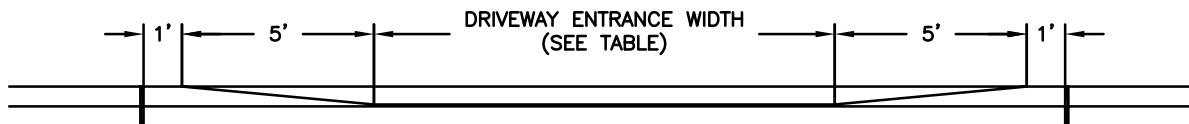
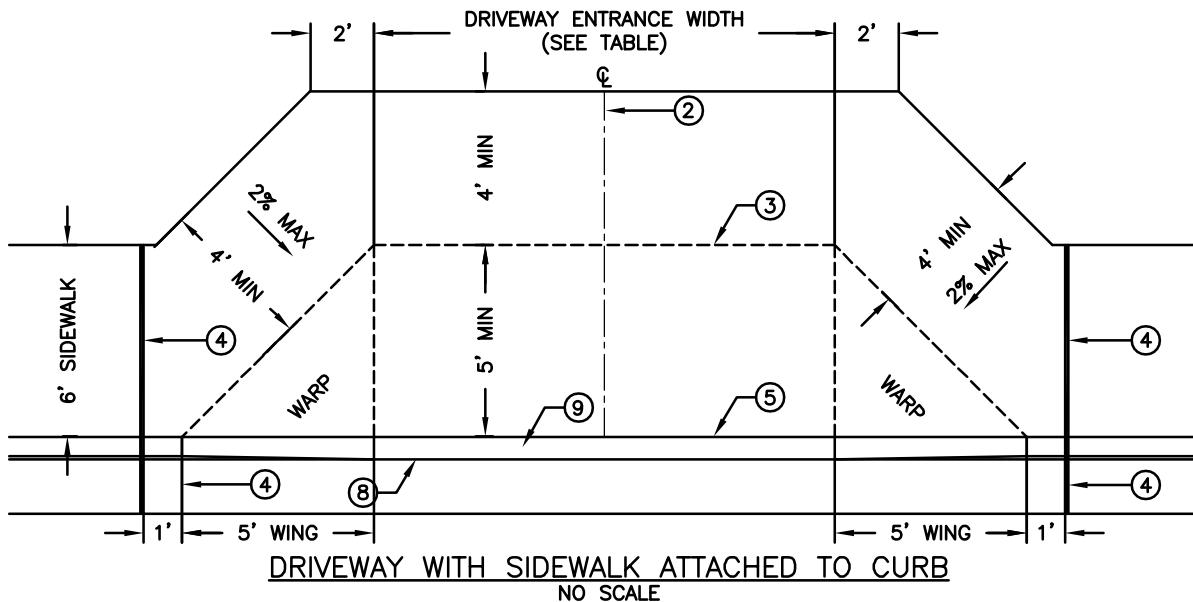


COMMERCIAL & INDUSTRIAL				
DRIVEWAY ENTRANCE WIDTH	MIN	MAX	CLASS	DEPTH 'X'
COMMERCIAL	*16'	40'	AA	9"
INDUSTRIAL	*16'	40'	AA	9"
*24' MIN FOR TWO WAY TRAFFIC				
RESIDENTIAL				
DRIVEWAY ENTRANCE WIDTH	MIN	MAX	CLASS	DEPTH 'X'
ARTERIAL STREET	16'	30'	AA	6"
COLLECTOR STREET	*12'	30'	AA	6"
LOCAL STREET	12'	30'	AA	6"
*16' DESIRABLE				

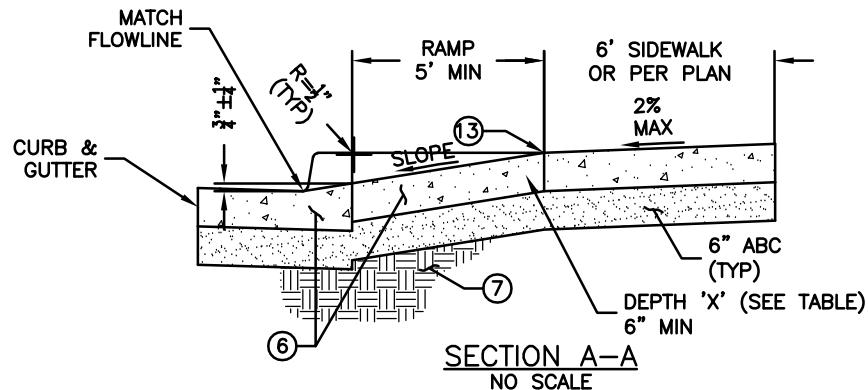


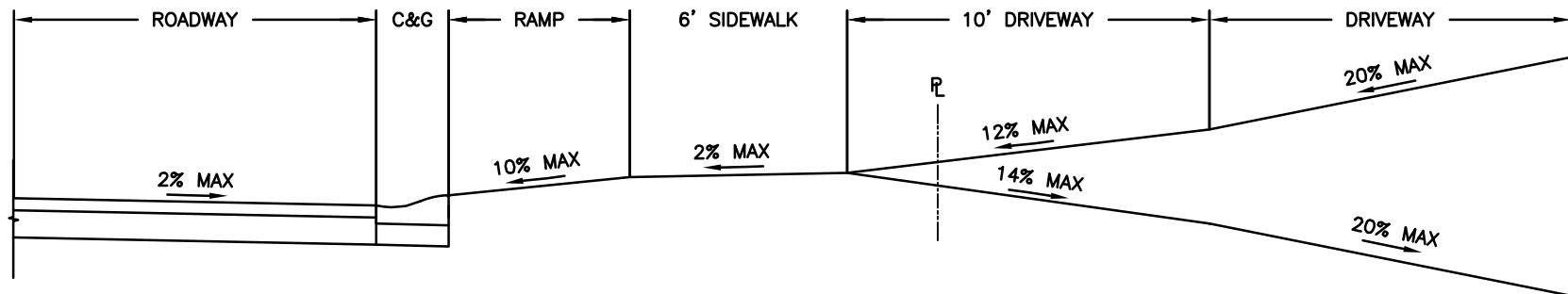
NOTES:

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13. ELEVATION AT TOP OF DRIVEWAY RAMP SHALL BE EQUAL TO OR HIGHER THAN NORMAL CURB ELEVATION.
14. DRIVEWAY WIDTH SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO THE ISSUANCE OF A RIGHT OF WAY PERMIT.

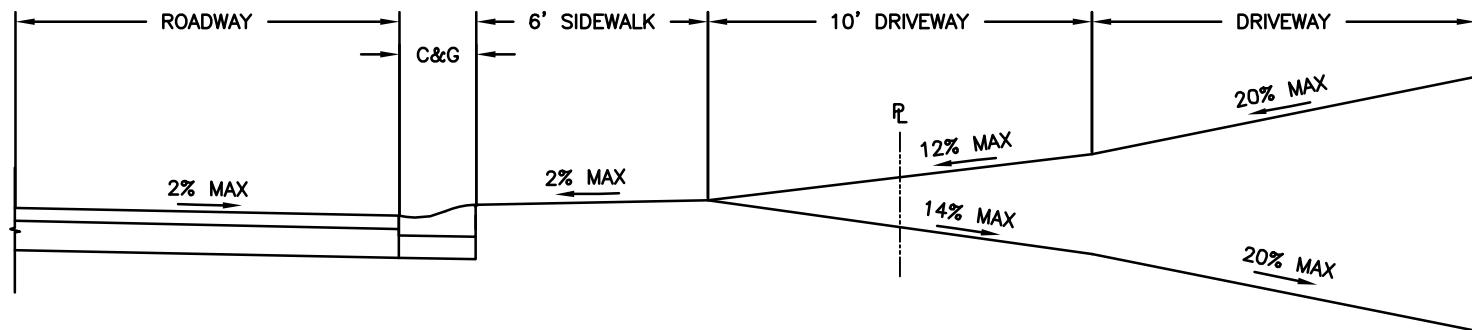


COMMERCIAL & INDUSTRIAL				
DRIVEWAY ENTRANCE WIDTH	MIN	MAX	CLASS	DEPTH 'X'
COMMERCIAL	*16'	40'	AA	9"
INDUSTRIAL	*16'	40'	AA	9"
*24' MIN FOR TWO WAY TRAFFIC				
RESIDENTIAL				
DRIVEWAY ENTRANCE WIDTH	MIN	MAX	CLASS	DEPTH 'X'
ARTERIAL STREET	16'	30'	AA	6"
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LOCAL STREET	12'	30'	AA	6"
*16' DESIRABLE				





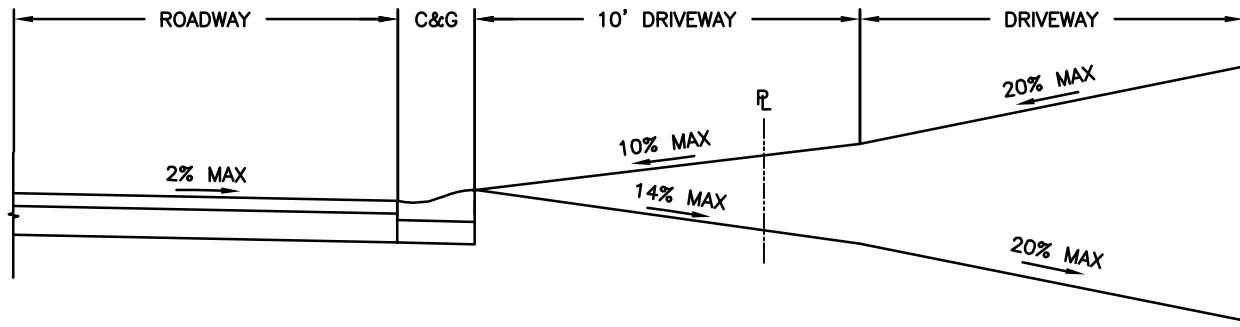
DRIVEWAY A  
NO SCALE



NOTES:

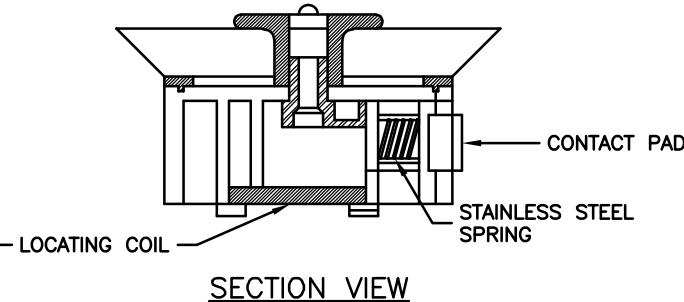
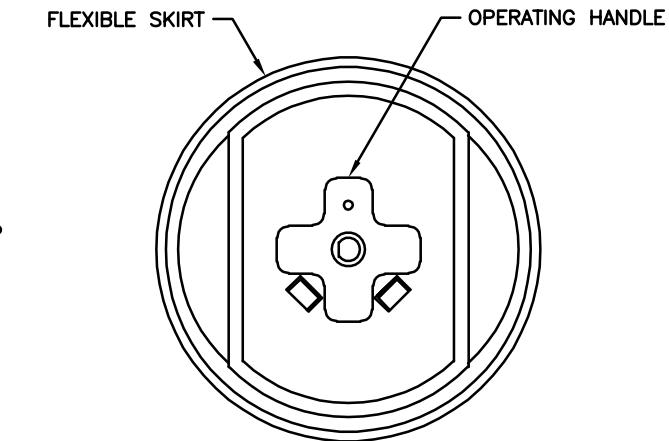
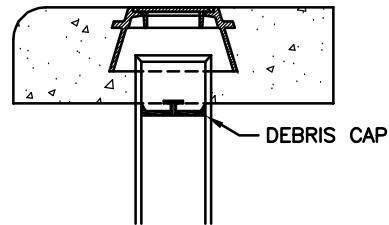
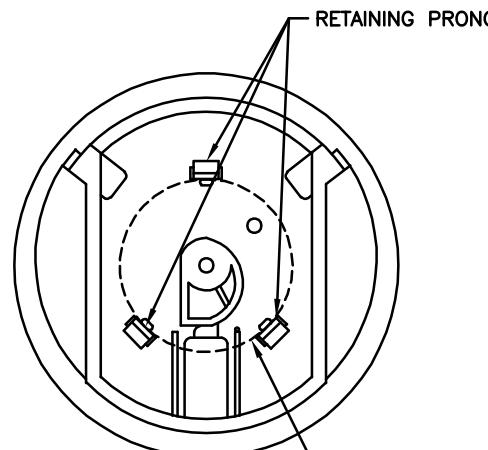
1. ALL SLOPE PERCENTAGES ARE THE MAXIMUM ALLOWED.

DRIVEWAY B  
NO SCALE



DRIVEWAY C  
NO SCALE

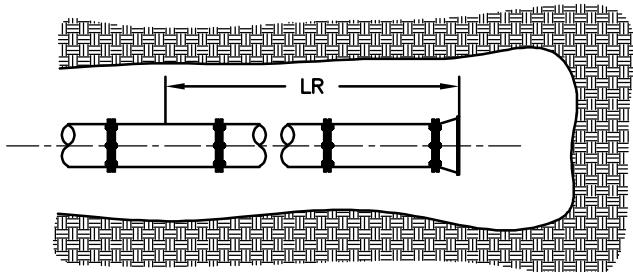




NOTES:

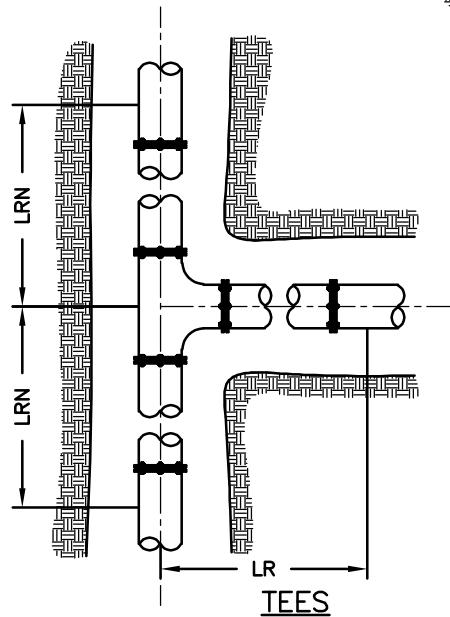
1. DEBRIS CAP SHALL BE INSTALLED AS CLOSE UNDER THE CAST IRON COVER WITHOUT INTERFERING WITH COVER OPERATION.
2. FLEXIBLE SKIRT SHALL BE TRIMMED TO PROVIDE SMOOTH CONTACT WITH THE INTERIOR DIAMETER OF THE PIPE.
3. DEBRIS CAP SHALL BE MANUFACTURED BY SW SERVICES, INC. PHOENIX, AZ OR APPROVED EQUAL.
4. DEBRIS CAP SHALL BE COMPRISED OF A HOLLOW MEMBER HAVING A CYLINDRICAL OUTER SURFACE, A CLOSURE FOR ONE END AND THREE POINT RESILIENT CONTACT PADS PROJECTION FROM THE OUTER SURFACE. THE CAP SHALL HAVE A FLEXIBLE SKIRT PROVIDING AN OUTWARD SEAL PREVENTING DEBRIS FROM GETTING PAST THE CAP. THE CAP MUST WITHSTAND, WITHOUT SLIPPAGE, A MINIMUM VERTICAL FORCE OF 50 POUNDS, AT A LOADING RATE OF 1.0 IN/MINUTE. THE CAP SHALL BE MOLDED USING GENERAL ELECTRIC ABS #HIM 4500. THE CAP SHALL HAVE RETAINING PRONGS TO RETAIN A STANDARD LOCATING COIL. SCOTCHMARK 4" DISC MARKER 141.7khz BY 3M OR APPROVED EQUAL.
5. DEBRIS CAPS WITH LOCATOR COILS SHALL BE INSTALLED ON ANY NEW UTILITY DEPARTMENT CIP PROJECTS, PUBLIC WORKS DEPARTMENT PAVING PROJECTS (NEW, REPLACEMENTS & OVERLAYS) AND ON PRIVATE DEVELOPMENT PROJECT IN THE FOLLOWING VALVE BOX LOCATIONS:
  - ALL MAJOR (ARTERIAL) STREETS
  - ANY UNPAVED AREAS
  - ALL EASEMENTS
  - GUTTER LOCATIONS
  - STREETS w/o CURB & GUTTER
  - COUNTY ROADS
  - GATE VALVE LOCATIONS ON WATERLINES >8" IN DIAMETER
  - ANY OTHER LOCATION INDICATED ON THE PLANS PER THE DESIGNER



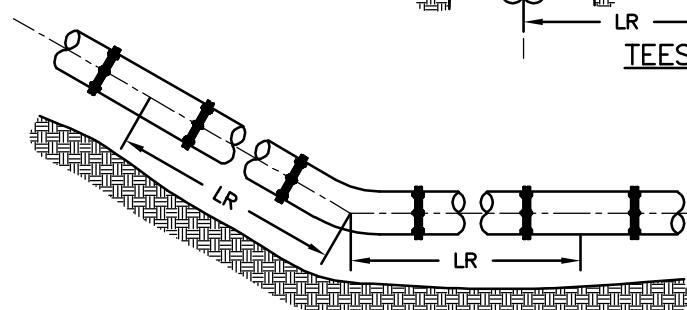


DEAD ENDS

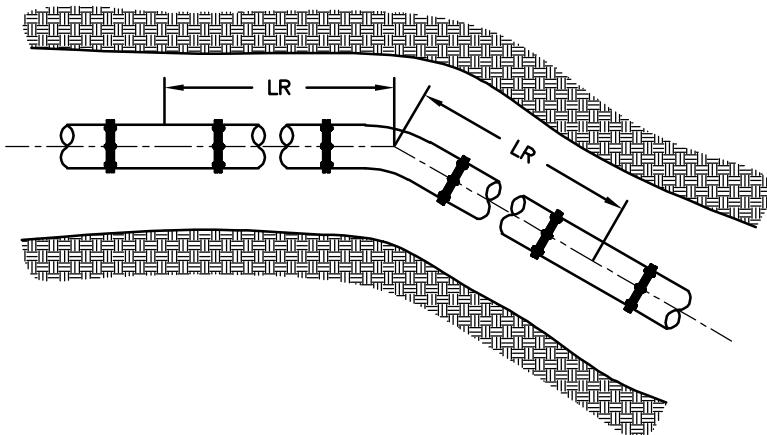
LRN = SHORTEST LENGTH  
OF PIPE RESTRAINED TO  
THE RUN OF THE TEE  
FITTING (BOTH SIDES OF  
TEE).



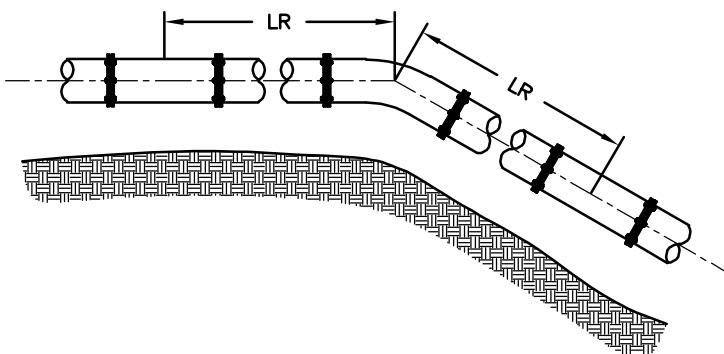
TEES



VERTICAL UP BENDS



HORIZONTAL BENDS



VERTICAL DOWN BENDS



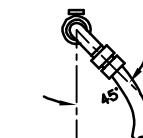
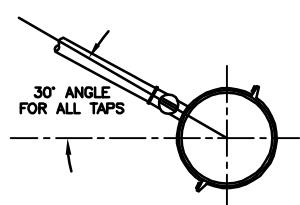
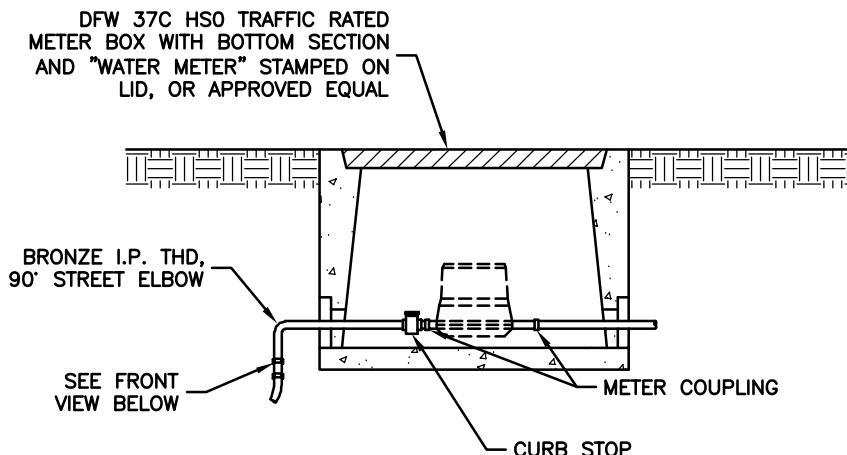
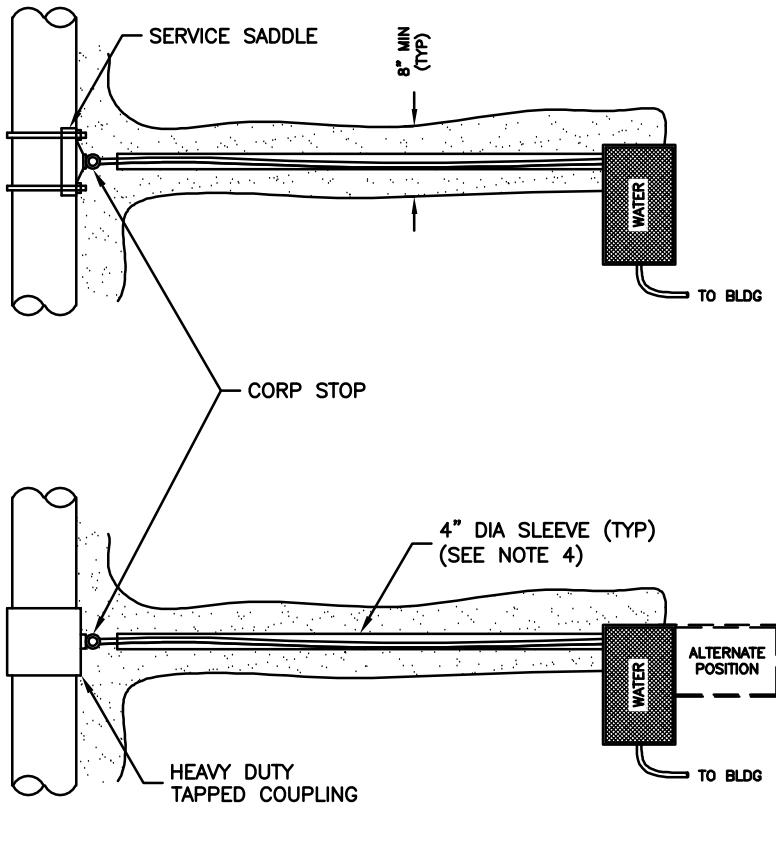
RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE												
NOMINAL PIPE SIZE (INCHES)	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						VALVES & DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22.5° BEND FITTINGS		
	90°	45°	22.5°	LRN = 0'	LRN = 10'	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	18	7	4	30	8	31	18	13	7	6	3	31
6	25	10	5	43	20	44	25	18	10	9	5	44
8	32	13	6	56	34	58	32	24	13	11	6	58
10	38	16	8	68	45	69	38	29	16	14	8	69
12	45	19	9	80	57	81	45	34	19	16	9	81
14	51	21	10	91	68	92	51	38	21	18	10	92
16	57	24	11	103	79	104	57	43	24	21	11	104
18	62	26	12	113	90	115	62	48	26	23	12	115
20	68	28	14	125	100	126	68	52	28	25	14	126
24	79	33	16	145	121	147	79	61	33	29	16	147

RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE WITH POLYETHYLENE WRAP												
NOMINAL PIPE SIZE (INCHES)	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						VALVES & DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22.5° BEND FITTINGS		
	90°	45°	22.5°	LRN = 0'	LRN = 10'	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	26	11	5	69	18	72	26	30	11	18	5	72
6	36	15	7	99	47	102	36	42	15	20	7	102
8	47	19	9	130	78	133	47	55	19	26	9	133
10	56	23	11	157	103	159	56	66	23	32	11	159
12	65	27	13	185	131	187	65	77	27	37	13	187
14	74	31	15	211	156	214	74	89	31	42	15	214
16	82	34	16	238	183	241	82	100	34	48	16	241
18	90	37	18	263	207	266	90	110	38	53	18	266
20	98	41	20	289	233	292	98	121	41	58	20	292
24	113	47	22	337	280	340	113	141	47	68	22	340

NOTES:

1. ALL JOINTS WITHIN THE SPECIFIED LENGTH 'LR' SHALL BE RESTRAINED. ALL LENGTHS ARE GIVEN IN FEET.
2. THE MAXIMUM TEST PRESSURE SHALL NOT EXCEED 200 PSI.
3. THE MINIMUM DEPTH OF BURY SHALL BE 4' TO TOP OF PIPE.





FRONT VIEW

NOTES:

1. ALL FITTINGS SHALL BE BRASS OR POLY TUBING (CTS), AND SHALL BE CONTINUOUS BETWEEN THE WATER MAIN AND WATER METER.
2. NEW WATER SERVICE TAPS SHALL BE INSTALLED USING AN ALL-BRONZE DOUBLE-STRAP TAPPING SADDLE OR A TAPPED COUPLING.
3. A MINIMUM OF 30" OF COVER SHALL BE PROVIDED FOR WATER SERVICES.
4. WATER SERVICES SHALL BE SLEEVED BEHIND ROADWAYS VIA A 4" PVC SLEEVE (SCH 80, WHITE).
5. WATER SERVICE INCLUDES THE CORP STOP, SERVICE PIPE, PVC SLEEVE, APPURTEMENT FITTINGS, CURB STOP, METER BOX AND COVER.
6. ALL WATER METERS WILL BE INSTALLED BY THE CITY OF COTTONWOOD UTILITIES DEPT.

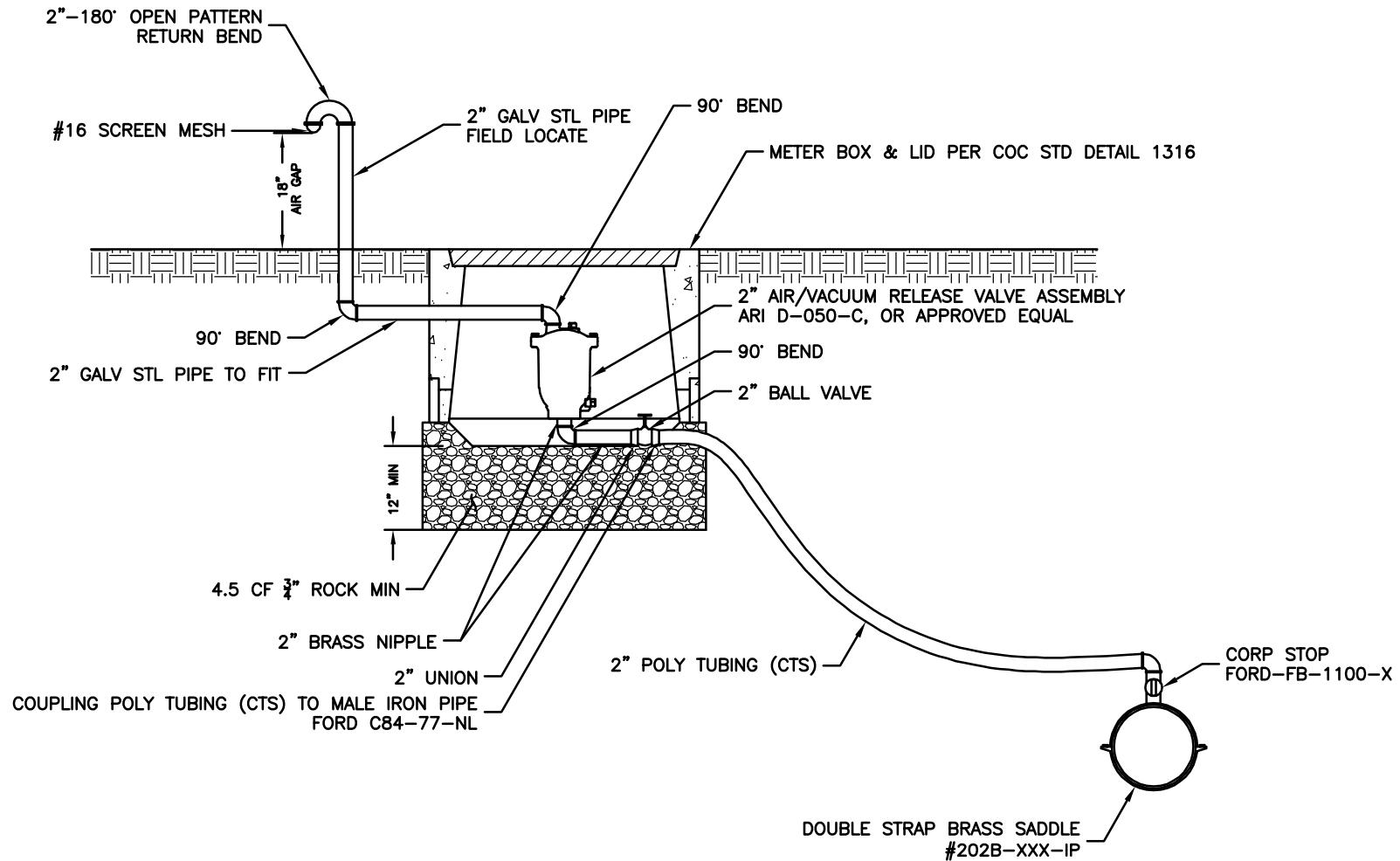


**CITY OF COTTONWOOD  
STANDARD DETAIL**

1" & 2" WATER SERVICE CONNECTIONS

REVISED  
01/2023

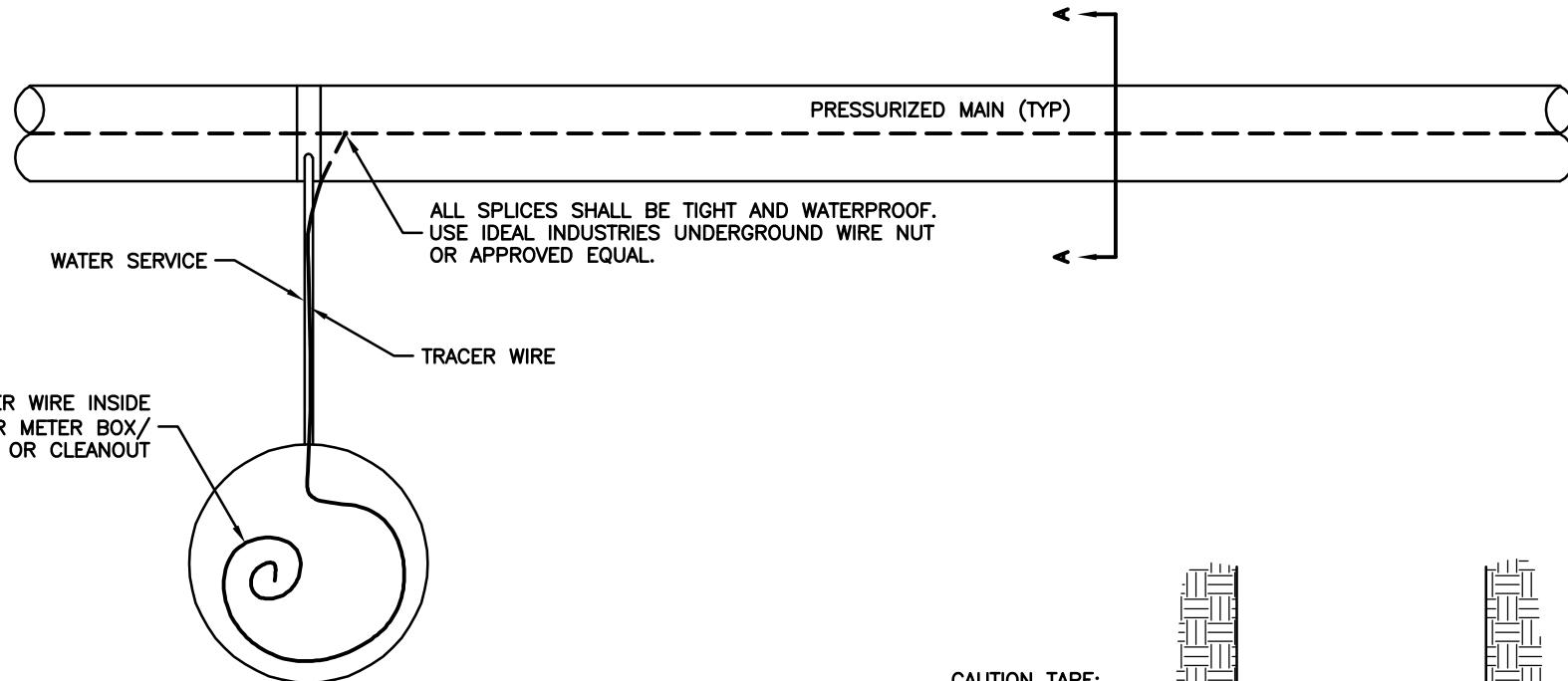
DETAIL NO.  
1316



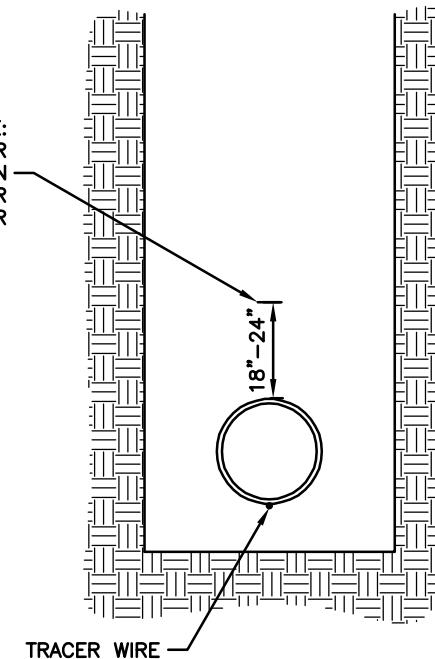
NOTES:

1. ALL FITTINGS SHALL BE BRASS OR POLY TUBING (CTS) FROM WATER MAIN TO AIR & VACUUM ASSEMBLY.
2. 2" GALVANIZED PIPE ABOVE GRADE SHALL BE PAINTED WITH 2 COATS OF RUSTOLEUM HIGH GLOSS WHITE PAINT.
3. AIR & VACUUM RELEASE VALVE ASSEMBLY MUST BE INSTALLED AT HIGHEST POINT OF LINE. IF HIGH POINT FALLS IN A LOCATION WHERE ASSEMBLY CANNOT BE INSTALLED, PROVIDE ADDITIONAL DEPTH OF LINE TO CREATE HIGHPOINT AT A LOCATION WHERE THE ASSEMBLY CAN BE INSTALLED.
4. LOCATE AIR & VACUUM METER BOX OUTSIDE OF TRAFFIC AREAS, BEHIND CURB. IN SIDEWALKS AND AREAS WITH VEHICULAR TRAFFIC, USE OLYMPIC FOUNDRY SM-30 CAST IRON BOX & COVER.





CAUTION TAPE:  
 BLUE TAPE = POTABLE WATER  
 GREEN TAPE = SEWER FORCE MAIN  
 & LOW PRESSURE SEWER  
 PURPLE TAPE = RECLAIMED WATER



NOTES:

1. TRACER WIRE SHALL BE REQUIRED FOR ALL PRESSURE PIPE INSTALLATION IN THE CITY OF COTTONWOOD AND AS INDICATED ON OTHER STANDARD DETAILS. TRACER WIRE SHALL BE #10 AWG HS-CCS, 30 MIL HDPE INSULATION.
2. FINAL CONTINUITY TESTING FOR ACCEPTANCE OF TRACER WIRE SHALL BE MADE AT PROJECT COMPLETION.
3. WIRE IS TO BE ATTACHED TO ALL APPURTENANCES.
4. TRACER WIRE IS TO BE PLACED AT BOTTOM CENTER OF PIPE AND SECURED BY TAPE AT A MINIMUM OF 6' INTERVALS.
5. THIS DETAIL DOES NOT PERTAIN TO STRAIGHT RUN GRAVITY SANITARY SEWERS.
6. TRACER WIRE INSTALLATION SHALL BE USED AT ALL FIRE HYDRANTS, SEWER WET WELLS, FORCE MAIN DISCHARGE MANHOLES, FORCE MAIN CLEANOUTS, FORCE MAIN VALVE LOCATIONS AND LOW PRESSURE SEWER MAIN APPURTENANCES IN ACCORDANCE WITH COTTONWOOD STD DETAIL 1319-2.

SECTION A-A

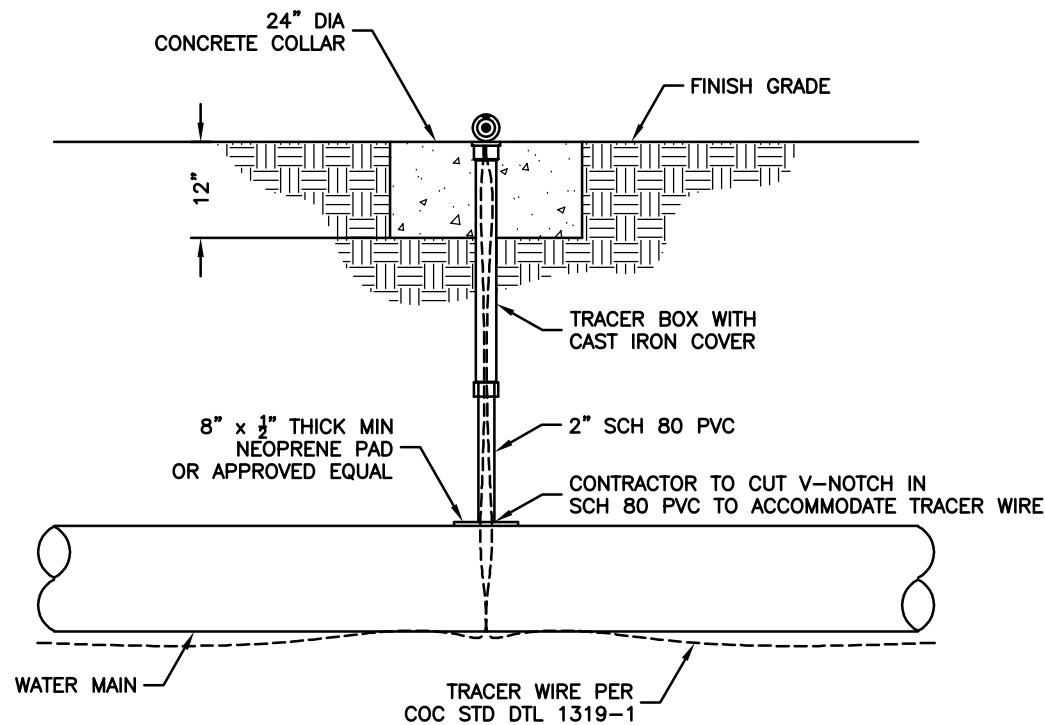


**CITY OF COTTONWOOD  
STANDARD DETAIL**

TRACER WIRE FOR ALL  
PRESSURE PIPE SYSTEMS

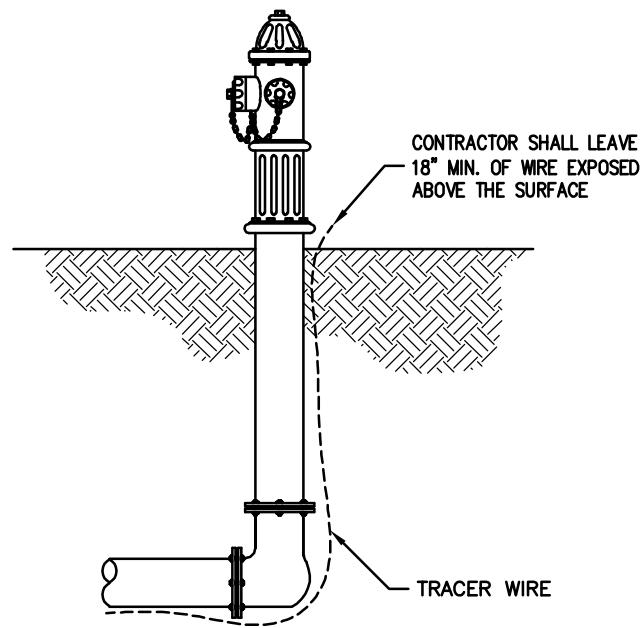
REVISED  
01/2023

DETAIL NO.  
1319-1



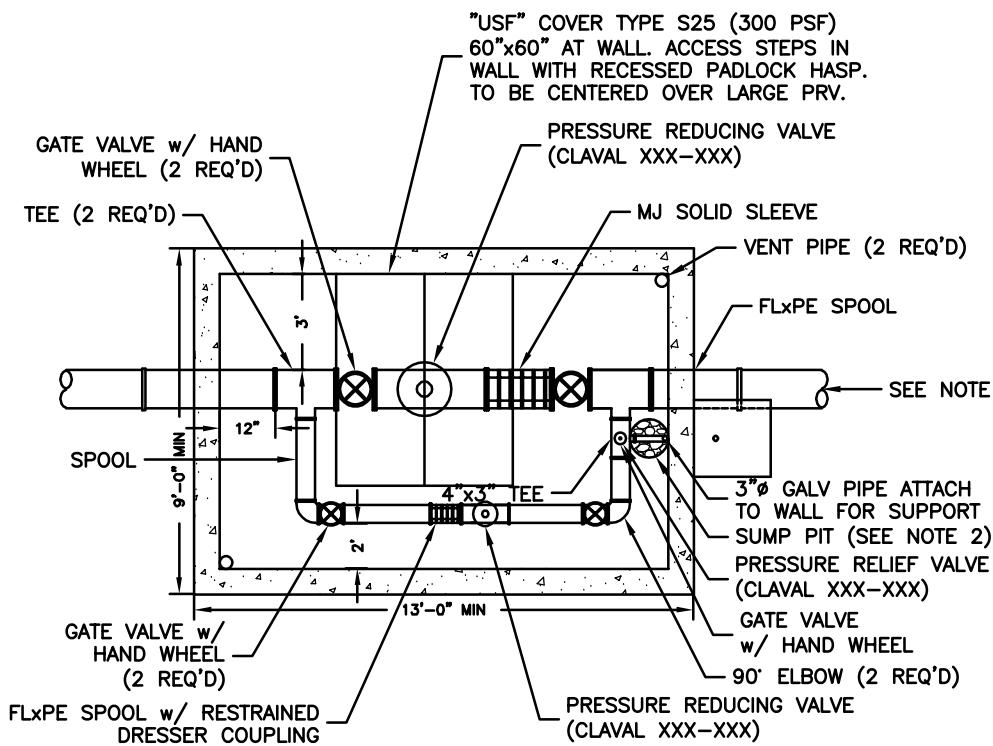
NOTES:

1. TRACER BOX AND CAST IRON COVER SHALL BE COPPERHEAD INDUSTRIES, LLC SNAKEPIT OR APPROVED EQUAL, MODEL RB14\*TP OR CD14\*TP AS APPROPRIATE, LID COLOR SHALL COINCIDE WITH TYPE OF UTILITY.
2. MAXIMUM DISTANCE BETWEEN TRACER WIRE POINT OF CONTACT SHALL BE 500'.
3. ATTACH TRACER WIRE TO PIPE AT 6' INTERVALS (MINIMUM).

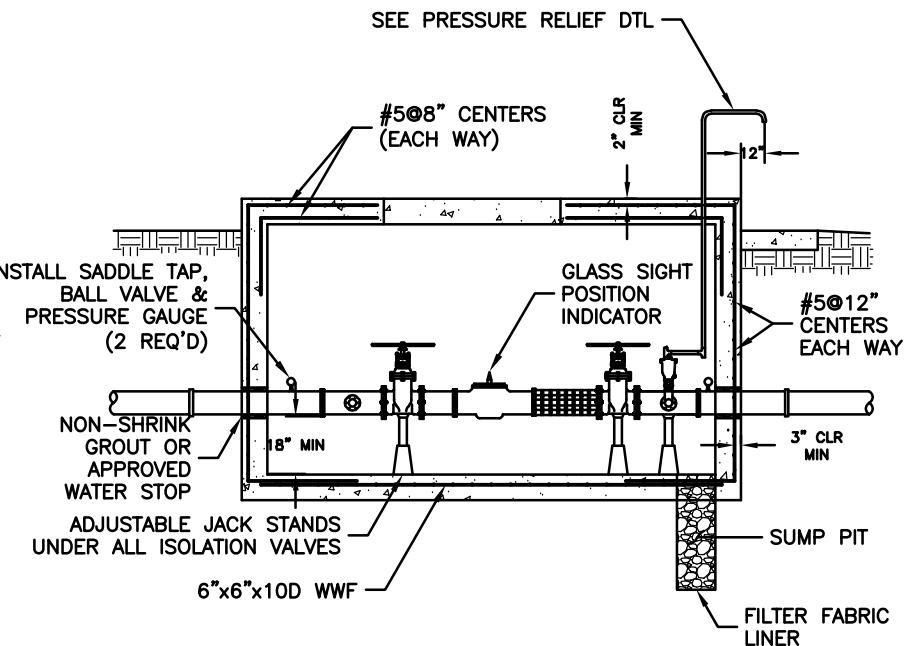


FIRE HYDRANT TRACER STATION





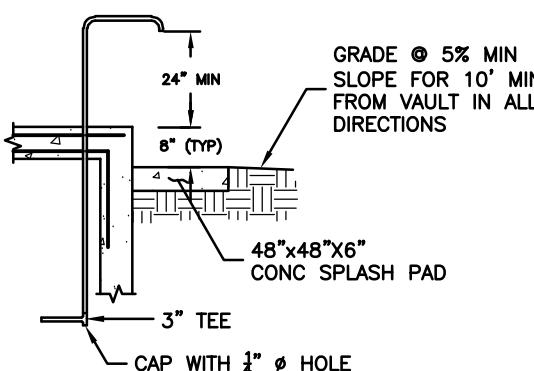
PLAN VIEW



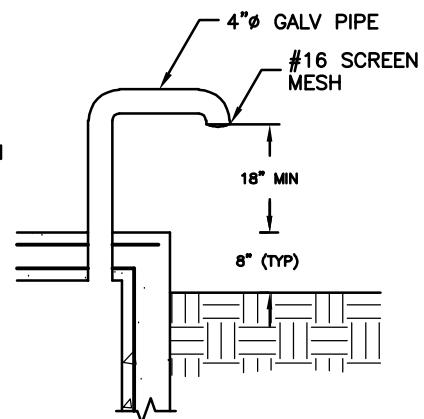
PROFILE VIEW

NOTES:

1. CONCRETE SHALL BE CLASS 'A' PER MAG SPEC SEC 725. ALTERNATE DESIGN TO BE 8" CMU WALLS, GROUT ALL CELLS SOLID, USE 2-#4 REBAR IN BOND BEAM AT TOP OF WALLS & AT 30" ABOVE FOOTING. #4 REBAR @ 16" CENTERS FOR VERTICALS.
2. SUMP PIT TO BE 8 CUBIC FEET CLEAN #57 ROCK LINED WITH FILTER FABRIC (MIRAFI TYPE 140NL OR APPROVED EQUAL).
3. FITTINGS AND VALVES SHALL BE COMPRISED OF DUCTILE IRON WITH FLANGED CONNECTIONS UNLESS NOTED OTHERWISE.
4. MAIN LINE PIPING SHALL BE RESTRAINED EITHER SIDE OF THE PRV VAULT PER COC STD DETAILS 1303-1 & 1303-2 PER VALVES & DEAD END CONDITION.
5. ALL VALVES SHALL BE RESILIENT SEAT GATE VALVE UNLESS NOTED OTHERWISE.
6. SLOPE FLOOR AT 5% TO SUMP.
7. PRESSURE REDUCING CLAVAL SHALL INCLUDE THE FOLLOWING FEATURES:
  - X46A FLOW STRAINER
  - CK2 BALL VALVE / SHUT-OFF COCK (ISOLATION VALVE)
  - CV SPEED CONTROL (OPENING & CLOSING)
  - ALL PRV PILOT SYSTEMS SHALL BE STAINLESS STEEL HIGH PRESSURE TUBING.
6. FINAL PRESSURE SETTINGS TO BE DETERMINED BY THE CITY OF COTTONWOOD.



PRESSURE RELIEF DETAIL

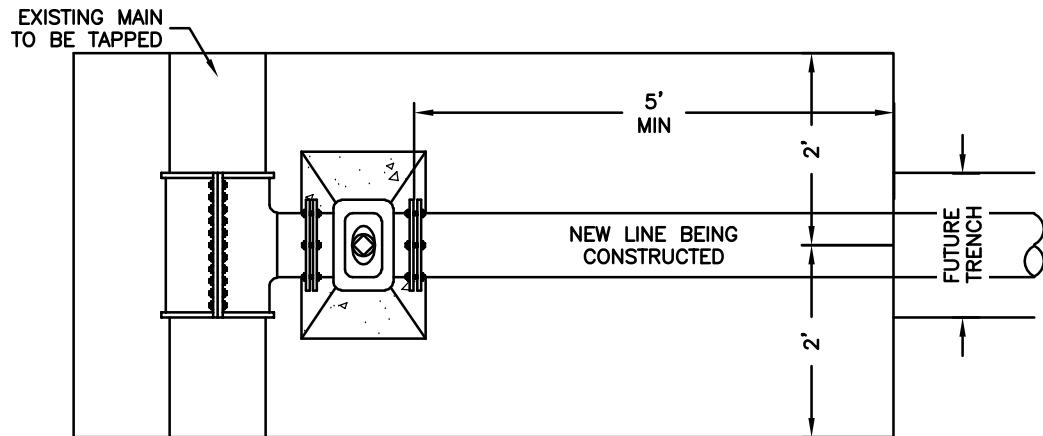


VENT PIPE DETAIL



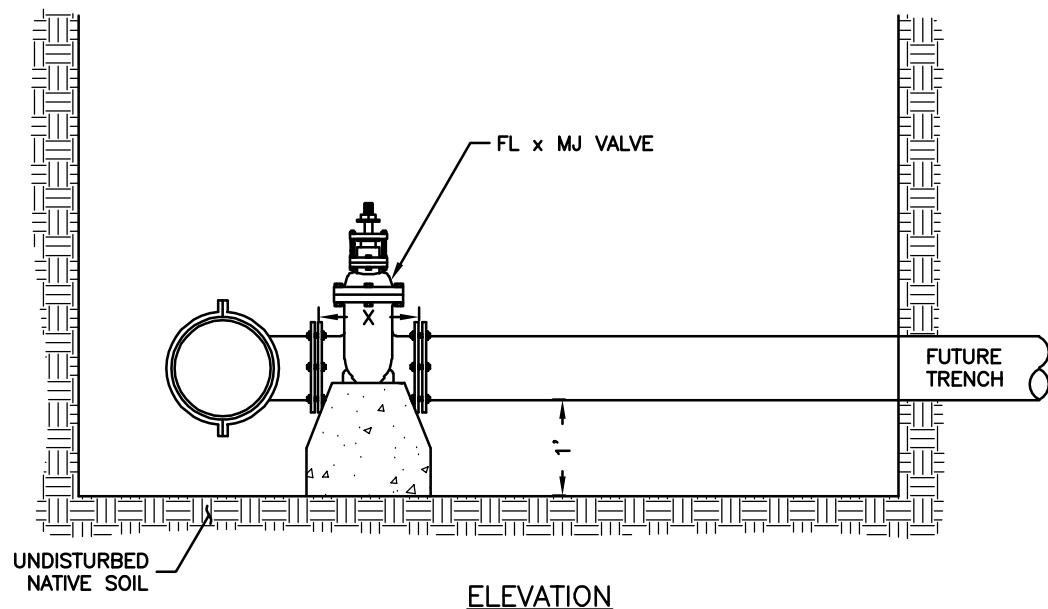
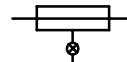
NOTES:

1. VALVE BLOCKING PER MAG STD DETAIL 301.
2. TAPS SHALL BE MADE BY CITY CREWS AT PREVAILING RATES OR BY APPROVED CONTRACTORS WHEN ALLOWED BY THE CITY.
3. INSTALL TEMPORARY BLOCKING UNDER VALVE BEFORE TAP IS MADE. ALL FLANGE BOLTS SHALL BE CLEAR OF FOOTING.
4. TAPPING SLEEVES SHALL BE FORD FTSS OR APPROVED EQUAL.
5. INSTALLATION SHALL BE LEAK TESTED TO A MINIMUM OF 200 PSI FOR 2 HOURS PRIOR TO TAP. THE TIME RANGE OF THE TEST COULD BE REDUCED TO 1 HOUR BASED UPON PIPE MATERIAL AND APPROVAL OF THE CITY OF COTTONWOOD.
6. TAPPING SLEEVE SHALL BE PLACED AT A MINIMUM OF 3' FROM ANY BELL, COUPLING, VALVE, FITTING, OR OTHER OBSTRUCTION.
7. PROTECT ALL CONCRETE CONTACT AREAS WITH 8 MIL PLASTIC SHEETING.
8. JOINT RESTRAINT PER COTTONWOOD STD DETAIL 1303 USING A DEAD END ON NEW CONSTRUCTION.
9. INSTALL BOX, COVER & VALVE BOX STABILIZER PER COTTONWOOD STD DETAIL 1391.
10. ALL EXCAVATIONS SHALL BE OSHA COMPLIANT.
11. ALL PIPE, VALVES, FITTINGS, AND APPURTENANCES SHALL BE MANUFACTURED IN THE USA.
12. MINIMUM EXCAVATION LENGTH FOR THE TAPPING OPERATION SHALL BE 5' FROM THE FACE OF VALVE.



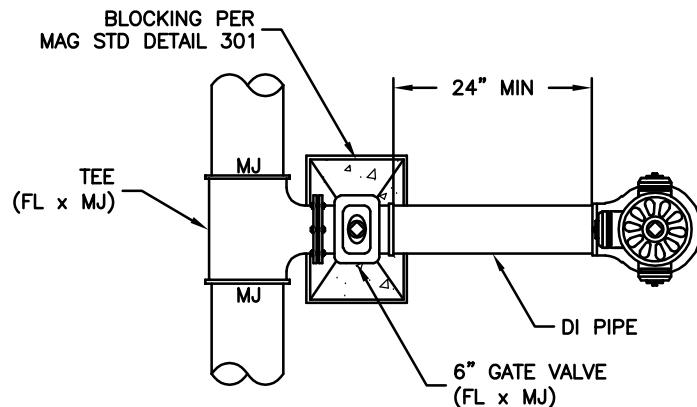
PLAN

PLAN SYMBOL



ELEVATION

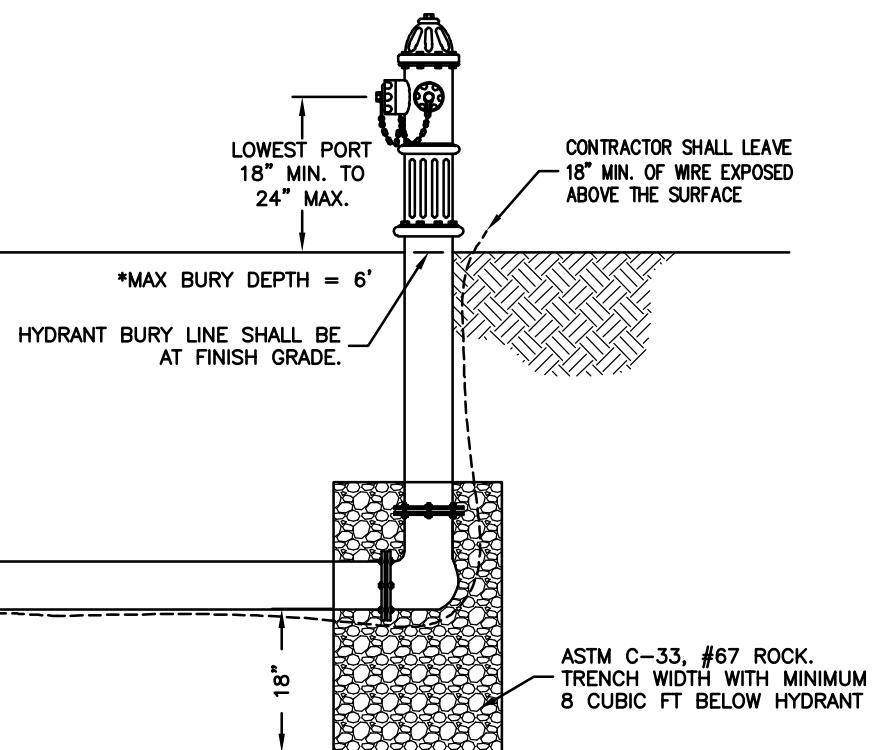
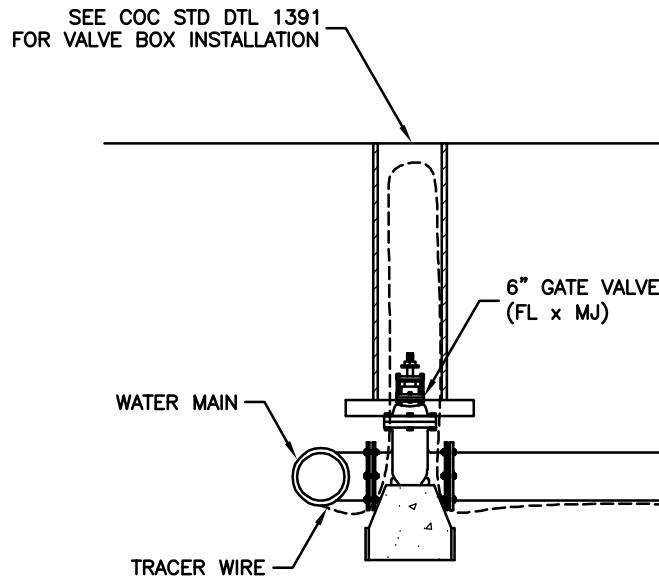




NOTES:

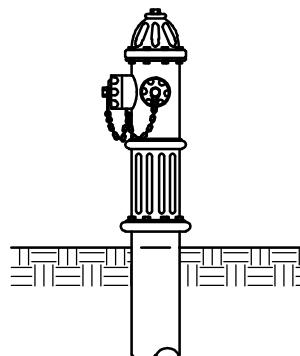
1. ALL HYDRANTS WHICH ARE PRIVATELY MAINTAINED AND OWNED ARE TO BE PAINTED RED.
2. ALL HYDRANTS TO BE WATEROUS, MUELLER OR CLOW.
3. HYDRANT LEADS SHALL HAVE NO HORIZONTAL BENDS.
4. TRACER WIRE SHALL CONFORM TO COTTONWOOD STD DETAIL 1319-1.
5. MECHANICALLY RESTRAIN ALL JOINTS FROM HYDRANT TO HYDRANT TEE. THRUST BLOCKS ARE NOT ALLOWED.
6. SEE COTTONWOOD STD DETAIL 1363 FOR VERTICAL ADJUSTMENT.
7. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE MANUFACTURED IN THE USA.
8. 4  $\frac{1}{2}$ " PUMPER CONNECTION TO FACE CURB.

PLAN

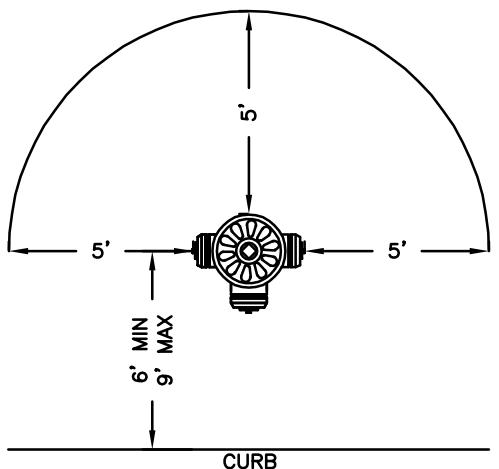


PROFILE





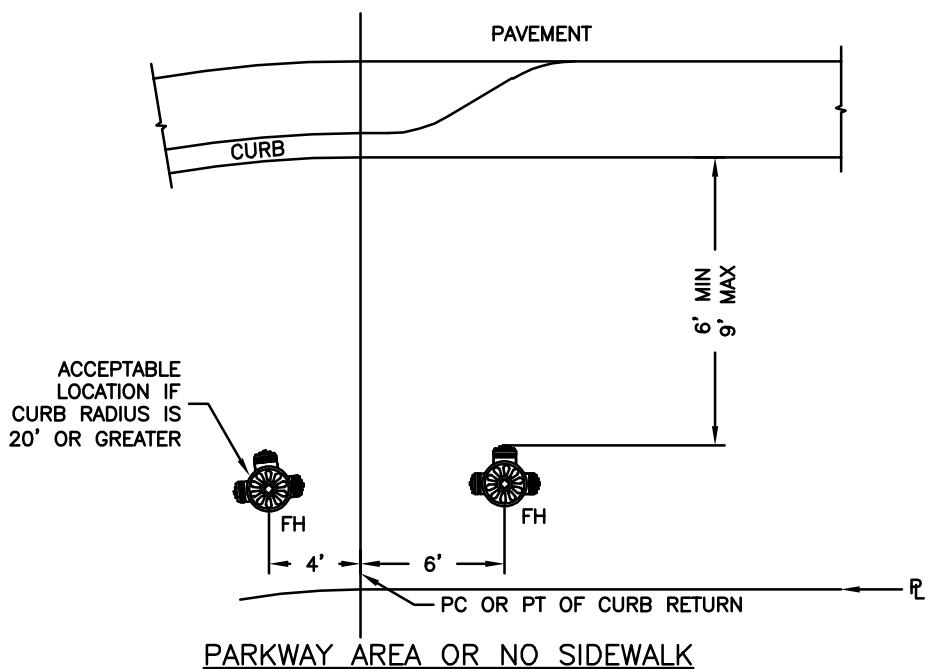
HEIGHT REQUIREMENTS



NOTES:

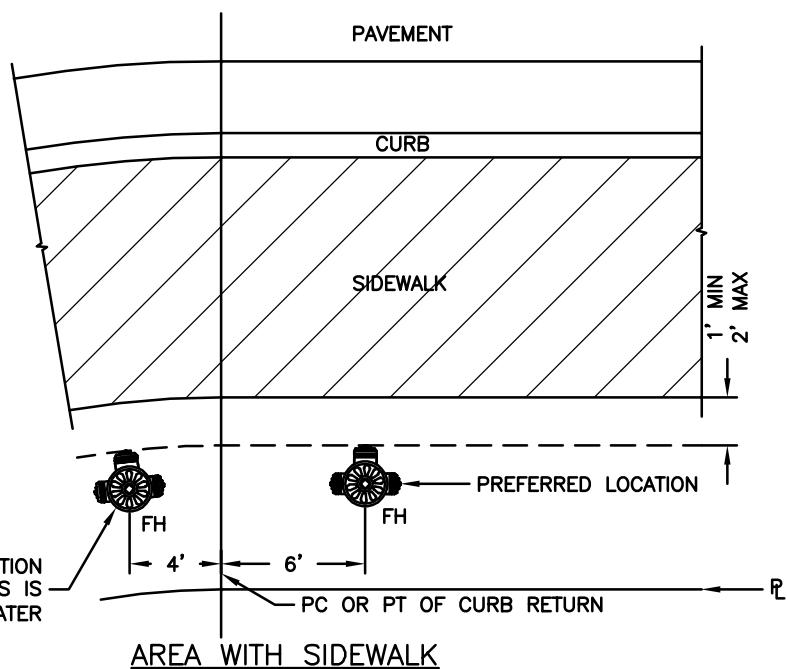
1. OBSTRUCTIONS SUCH AS UTILITY POLES, STREET SIGNS, IRRIGATION BOXES, FENCES, LANDSCAPE VEGETATION, ETC. MUST NOT BE PLACED BETWEEN THE CURB AND HYDRANT.
2. SOME LOCATIONS APPLY AT EITHER END OF CURB RETURNS.
3. ALL HYDRANTS WHICH ARE PRIVATELY MAINTAINED OR OWNED ARE TO BE PAINTED RED.
4. IN PARKING LOT ISLANDS, HYDRANT SHALL BE A MINIMUM OF 3' IN ALL DIRECTIONS FROM BACK OF CURB.
5. HYDRANTS TO BE CLEAR OF LANDSCAPE & VEGETATION WITHIN A 5' RADIUS.

HYDRANT OBSTRUCTION CLEARANCE



ACCEPTABLE  
LOCATION  
IF  
CURB  
RADIUS  
IS  
20'  
OR  
GREATER

R



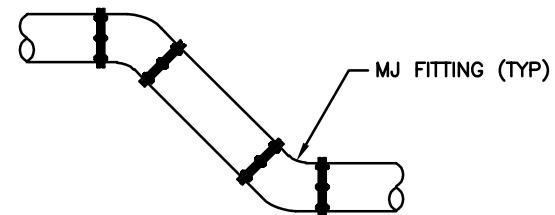
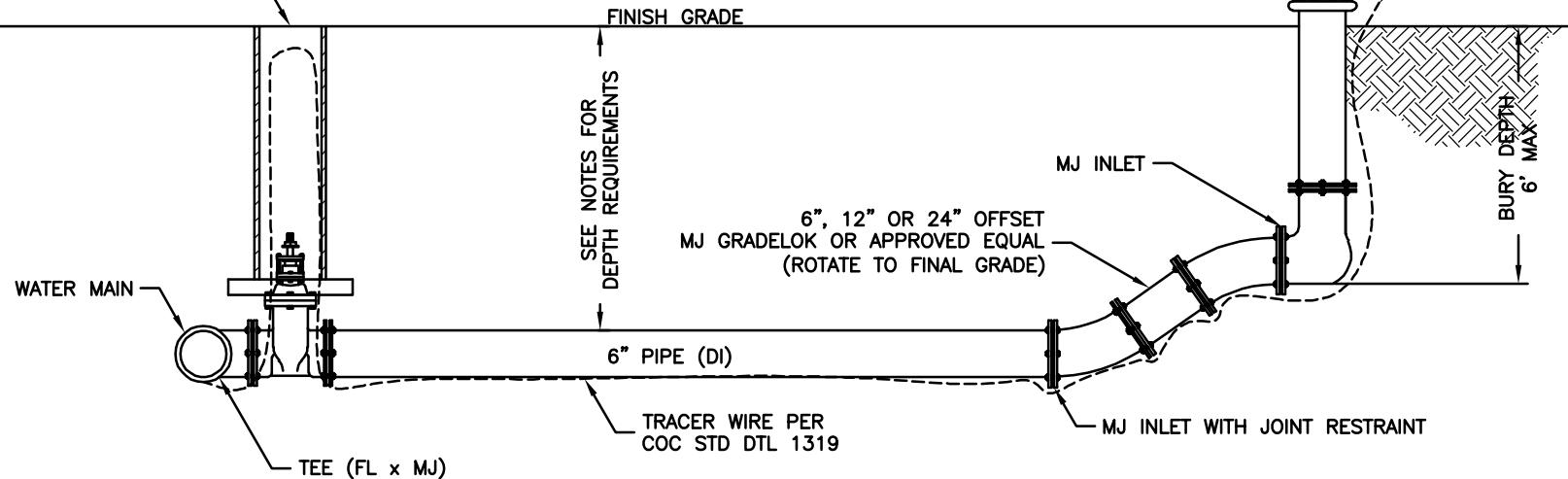
AREA WITH SIDEWALK

ACCEPTABLE  
LOCATION  
IF  
CURB  
RADIUS  
IS  
20'  
OR  
GREATER

R



SEE COC STD DTL 1391  
FOR VALVE BOX INSTALLATION



NOTES:

1. THIS DETAIL IS FOR VERTICAL DEFLECTION ONLY. REFER TO COTTONWOOD STD DETAIL 1360 FOR HYDRANT DETAILS.
2. MECHANICALLY RESTRAIN ALL JOINTS FROM HYDRANT TO HYDRANT TEE. THRUST BLOCKS ARE NOT ALLOWED.
3. ALL PIPE, VALVES, FITTINGS, AND APPURTENANCES SHALL BE MANUFACTURED IN THE USA.
4. IF THE DEPTH OF THE MAIN EXCEEDS 8' CONTRACTOR SHALL INSTALL 2-45° BENDS IN LIEU OF GRADELOK.

45° BEND ALTERNATE



**CITY OF COTTONWOOD  
STANDARD DETAIL**

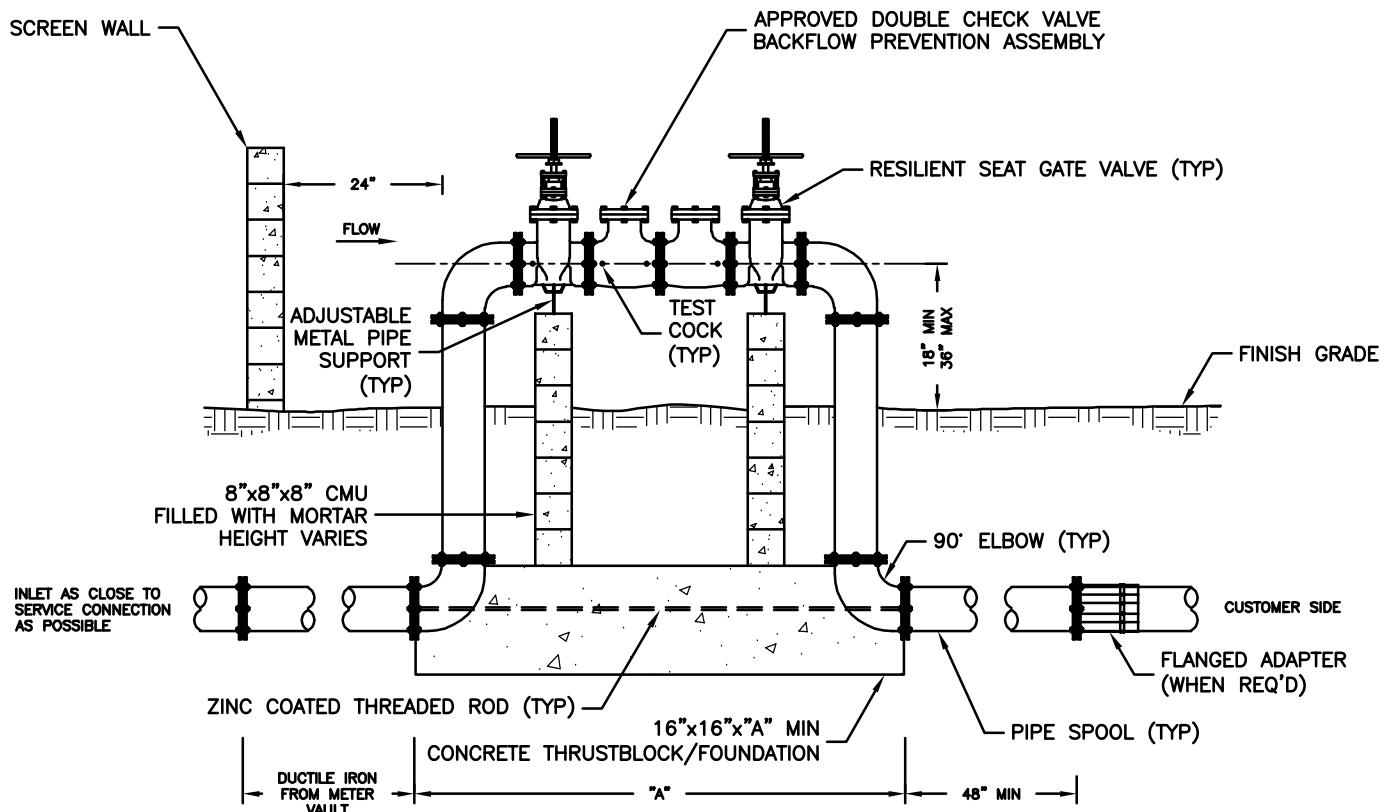
FIRE HYDRANT VERTICAL DEFLECTION

REVISED

08/2018

DETAIL NO.

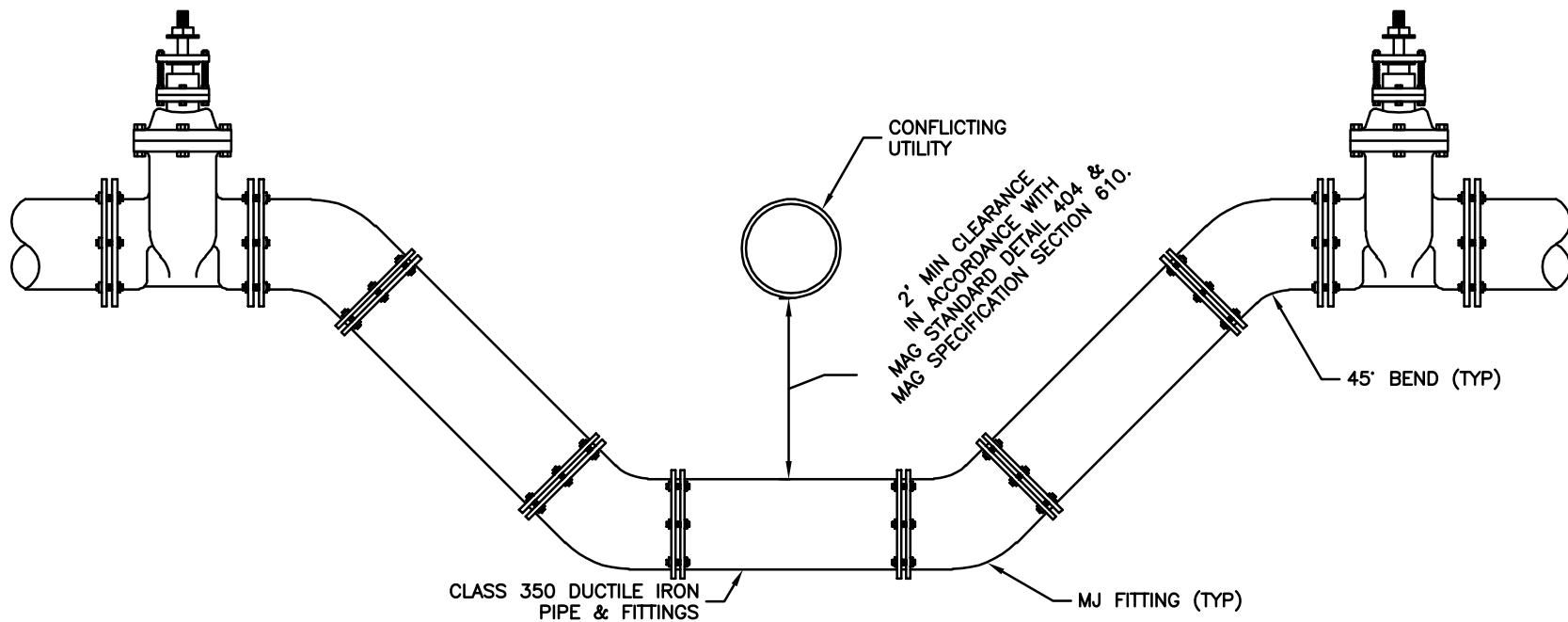
1363



NOTES:

1. BACKFLOW ASSEMBLIES MUST BE TESTED BY A CERTIFIED TESTER THAT IS RECOGNIZED BY THE CITY OF COTTONWOOD.
2. BACKFLOW PREVENTERS SHALL BE PAINTED LIGHT TAN OR A COLOR TO MATCH THE BUILDING. DO NOT PAINT THE NAME PLATE OR ANY BRASS PARTS ON THE ASSEMBLY.
3. FOR BACKFLOW PREVENTERS REQUIRING GUARD POSTS SEE MAG STD. DET. 140. BACKFLOW PREVENTERS ENCLOSED BY SCREENING SHALL MAINTAIN A 24 INCH CLEARANCE AROUND THE ASSEMBLY.
4. FINISHED GRADE UNDERNEATH THE BACKFLOW PREVENTER SHALL BE @ 95% COMPACTION.
5. BACKFLOW PREVENTERS ON FIRE LINES MAY REQUIRE TAMPER SWITCHES ON THE SHUT OFF VALVES. CONTACT CITY OF COTTONWOOD FIRE DEPT.
6. CALL FOR UNDERGROUND INSPECTION BEFORE BACKFILLING TRENCH.
7. VERTICAL INSTALLATIONS OF ASSEMBLIES ON FIRE SPRINKLER SYSTEMS ARE ALLOWED USING ASSEMBLIES APPROVED FOR USE IN THE VERTICAL POSITION ON FIRE SYSTEMS.
8. APPROVALS FOR BACKFLOW ASSEMBLIES MUST HAVE SEAL APPROVAL FROM THE AMERICAN SOCIETY OF SANITATION ENGINEERS. BACKFLOW ASSEMBLIES INSTALLED ON FIRE SUPPRESSION SYSTEMS MUST ALSO HAVE APPROVAL FROM UNDERWRITERS LABORATORIES AND/OR FACTORY MUTUAL RESEARCH CORPORATION.
9. RESILIENT SEAT GATE VALES: OS&Y (FIRE LINE CONNECTION)  
NRS (NON FIRE LINE CONNECTION)
10. PIPE SPOOLS: FLANGED, DUCTILE IRON PIPE, 3" THRU 10", MEGA LUG OR APPROVED EQUAL MAY BE USED ON UNDERGROUND JOINTS.
11. 90' ELBOWS: FLANGED, DUCTILE IRON PIPE, 3" THRU 10", MEGA LUG OR APPROVED EQUAL MAY BE USED ON UNDERGROUND JOINTS.
12. ZINC COATED THREADED ROD: BOLT TO FLANGES AS SHOWN ON BOTH SIDES  
 $\frac{5}{8}$ " DIA FOR 3" AND 4" PIPING  
 $\frac{3}{4}$ " DIA FOR PIPING OVER 4"
13. TEST COCKS WITH BRASS PLUGS OR ADAPTORS w/ CAPS INSTALLED (4 REQ'D)

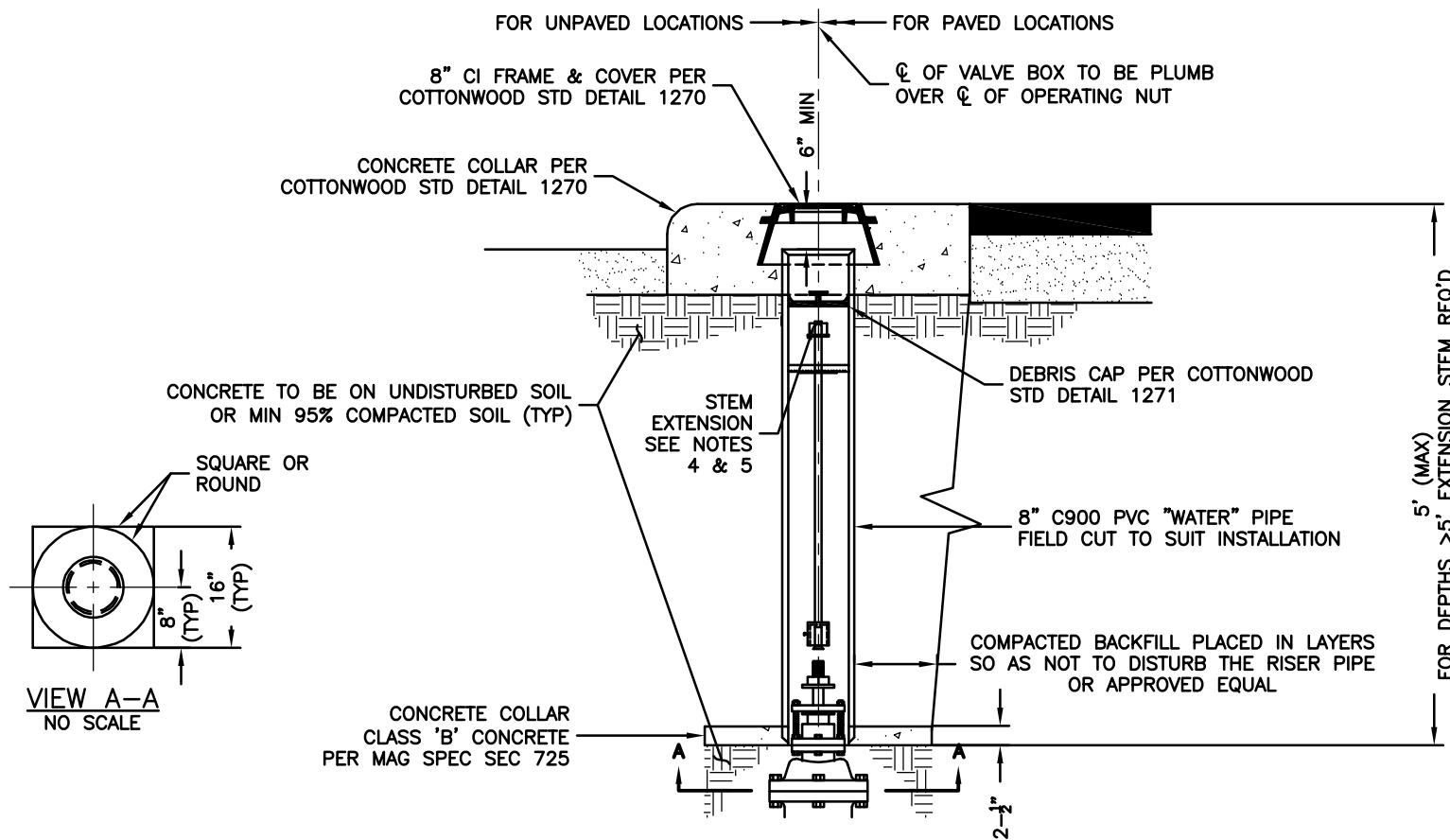




NOTES:

1. ALL PIPE, VALVES, FITTINGS, AND APPURTENANCES SHALL BE MANUFACTURED IN THE USA.
2. ENTIRE VERTICAL REALIGNMENT SHALL BE MECHANICALLY RESTRAINED CLASS 350 DIP PER COTTONWOOD STD DETAILS 1303-1 & 1303-2. RESTRAINED LENGTHS FROM VALVES SHALL BE THE SAME AS DEAD ENDS ON NEW CONSTRUCTION.
3. BOTTOM OF VERTICAL ALIGNMENT SHALL BE ONE PIECE. IF JOINTS ARE REQUIRED, WATER MAIN SEGMENT SHALL BE CENTERED BELOW PIPE OR IN A CASING PIPE.
4. NO SERVICE CONNECTIONS SHALL BE LOCATED WITHIN VERTICAL REALIGNMENTS.
5. AIR RELEASE VALVE TO BE INSTALLED ON THE VERTICAL REALIGNMENT AT THE HIGH POINT OF THE LOW SIDE.
6. TRACER WIRE SHALL BE INSTALLED PER COTTONWOOD STD DETAIL 1319.
7. TRENCH TO BE BACKFILLED PER MAG STD. DET. 200-1 AND 200-2 AND THE CITY OF COTTONWOOD POTABLE WATER NOTES.
8. VALVE(S) AND BLOCKING PER MAG STD DTL 301 (MJ VALVE, TYP)



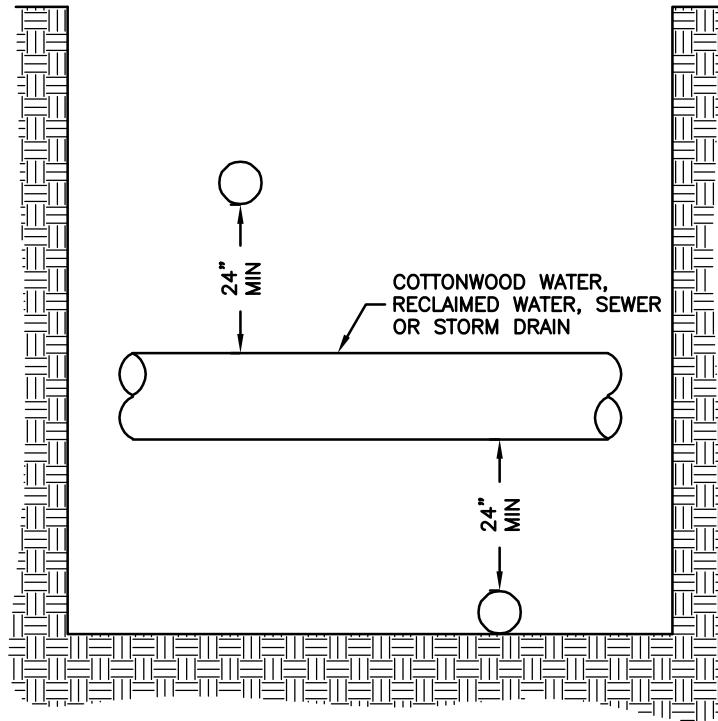


NOTES:

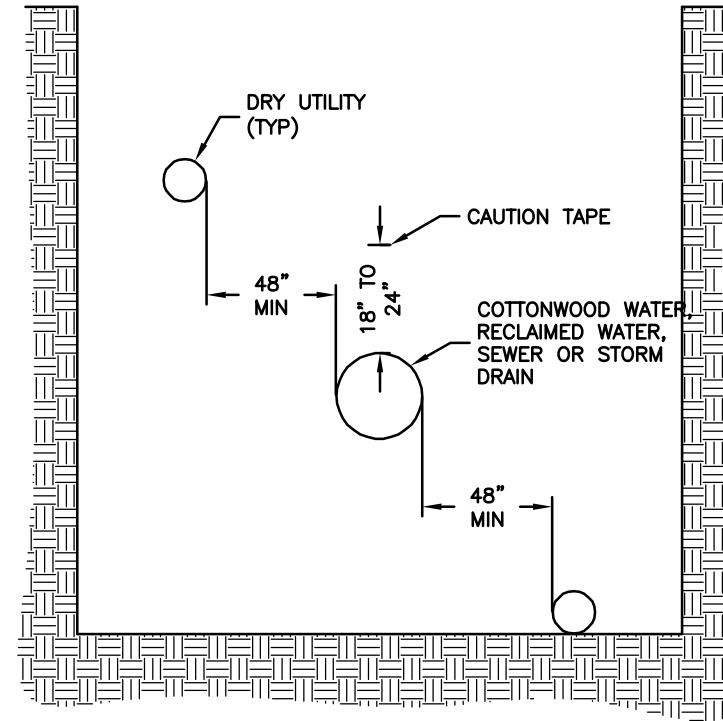
1. VALVE BOX SHALL BE ADJUSTED TO THE FINISHED GRADE AFTER PLACEMENT OF THE ASPHALT CONCRETE SURFACE.
2. USE TYLER #6855 VALVE BOX OR APPROVED EQUAL.
3. ALL VALVES CONNECTED TO EXISTING MAINS ARE TO BE OPERATED BY CITY OF COTTONWOOD PERSONNEL ONLY.
4. ALL STEEL FOR EXTENSION TO HAVE SHOP PRIME COAT ZINC CHROMATE, AND ONE HEAVY APPLICATION NO-OX-10 "A" IN ACCORDANCE WITH MANUFACTURER'S DIRECTION.
5. STEM EXTENSION SHALL BE TIGHTLY SECURED TO VALVE NUT.
6. VALVE BLOCKING REQUIRED PER MAG STD DETAIL 301.
7. IF TWO OR MORE JOINTS OF C900 PVC 'WATER' PIPE RISER ARE NEEDED, THEY SHALL BE COUPLED AND GLUED WITH APPROPRIATE PVC GLUE TO PERFORM A DEBRIS TIGHT JOINT.
8. U.S. MANUFACTURED IRON ONLY.

DEBRIS CAP COLOR TABLE	
VALVE TYPE	COLOR
IN-LINE-RW	BLACK
HYDRANT	BLUE
BUTTERFLY	YELLOW
ZONE	RED
FIRE LINE	WHITE
EFFLUENT	PURPLE
SEWER FORCE MAIN	GREEN



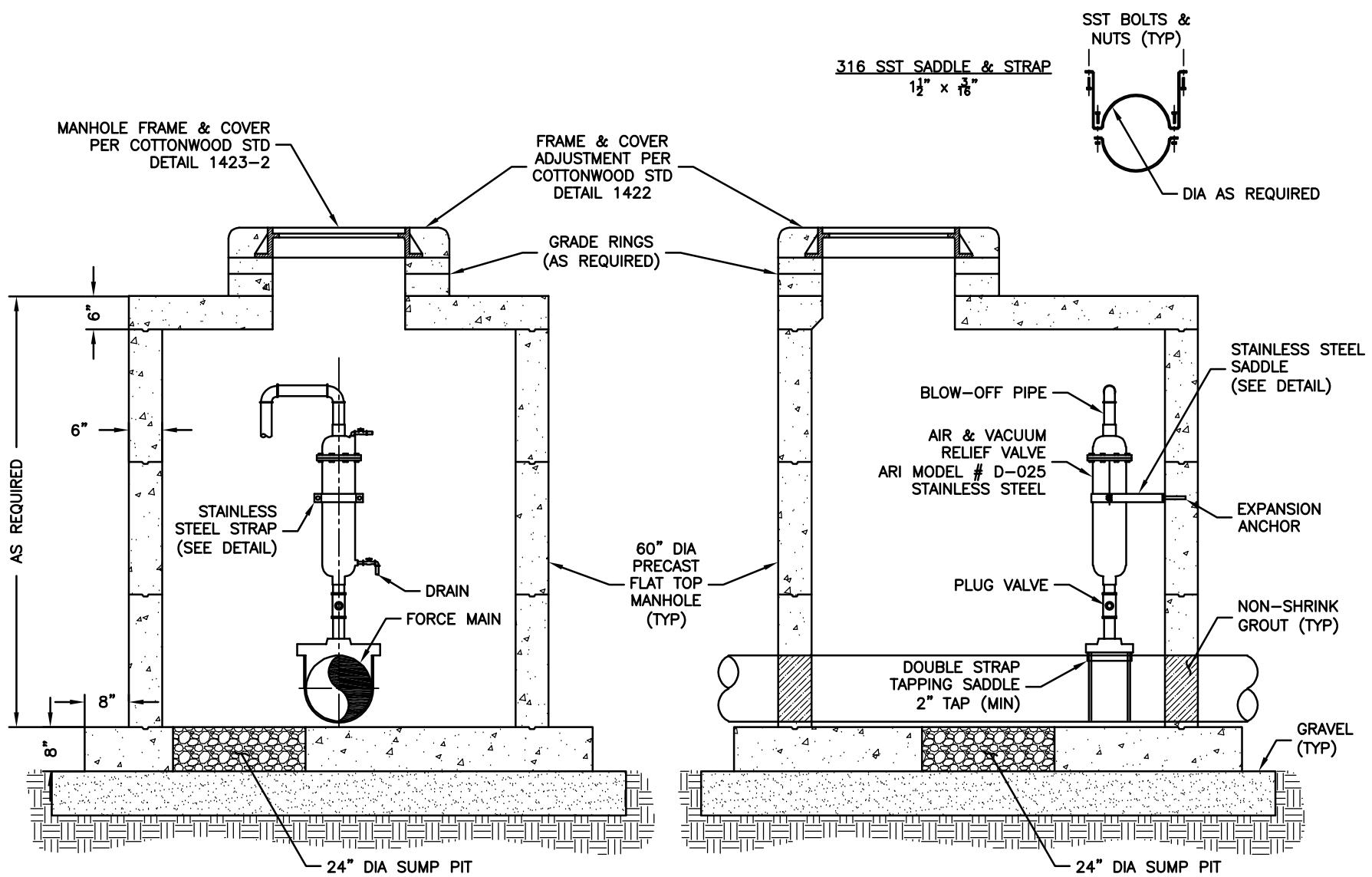


VERTICAL CLEARANCE

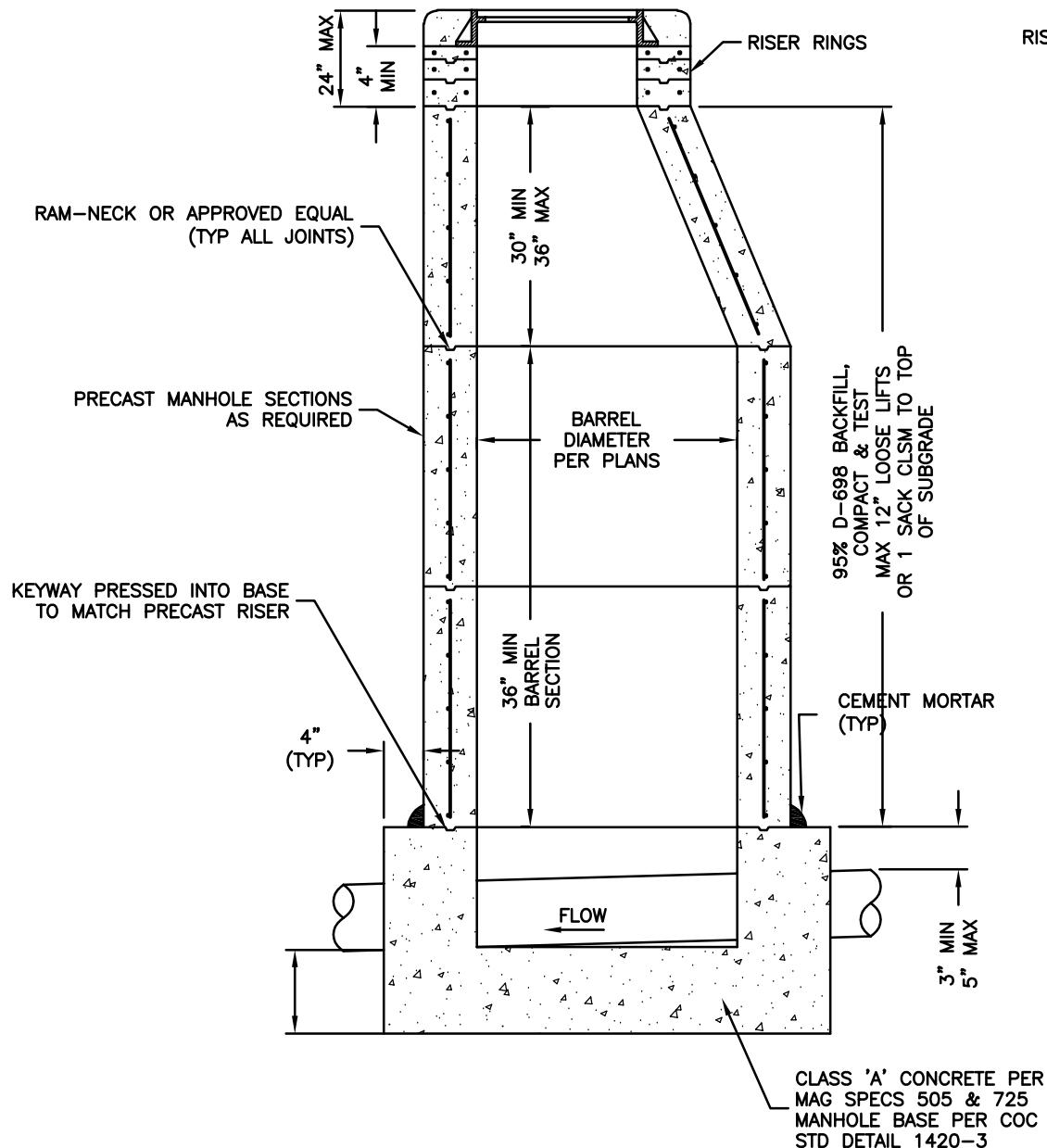


HORIZONTAL CLEARANCE

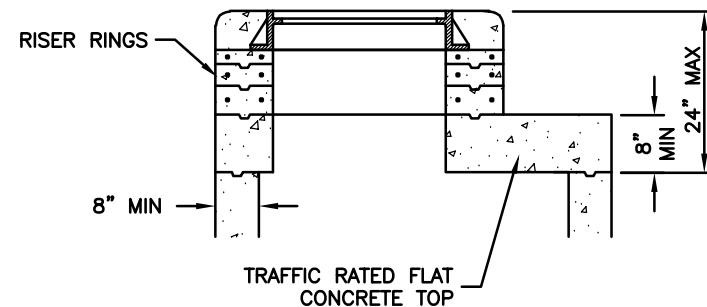




### PRECAST ECCENTRIC CONE TOP MANHOLE



### PRECAST FLAT TOP MANHOLE

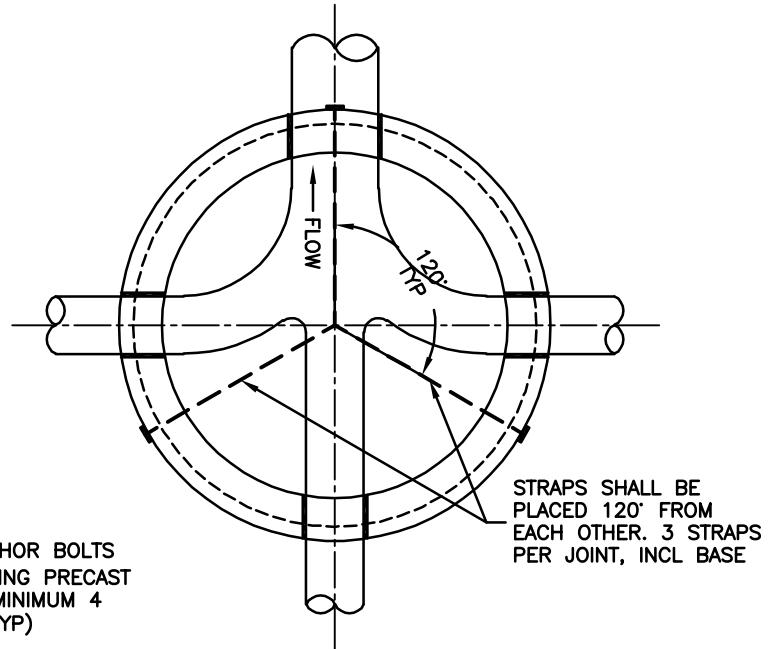
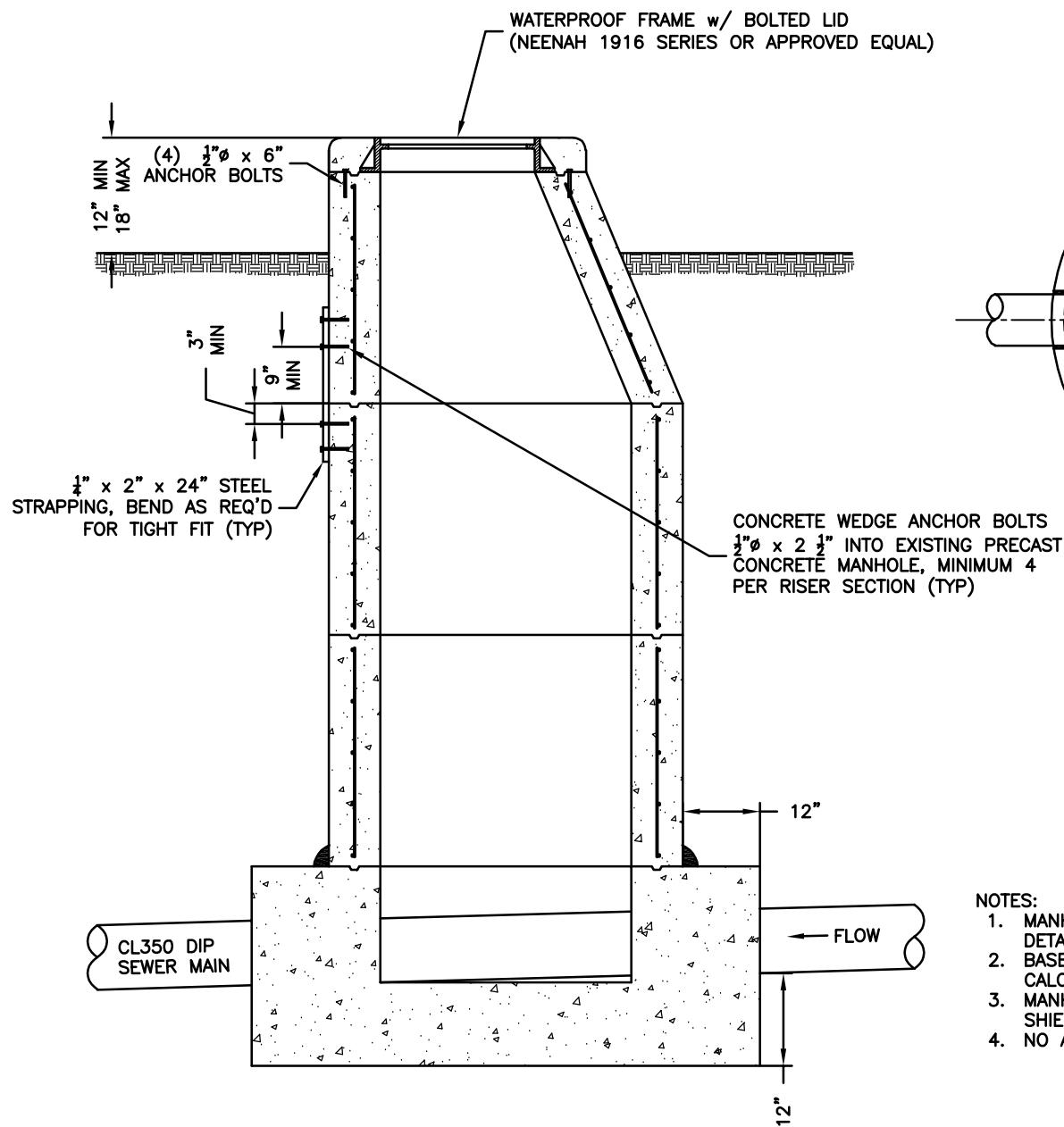


#### NOTES:

1. PRECAST, REINFORCED MANHOLE SECTIONS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
2. MANHOLE FRAME & COVER PER COTTONWOOD STD DETAILS 1422 & 1423.
3. ALL CONCRETE TO BE CURED AND PROTECTED.
4. GROUT ALL JOINTS TO SMOOTH SURFACE.
5. MANHOLES REQUIRING LINING SHALL BE LINED WITH SEWER SHIELD 150, SEWERCARD 210S OR RAVEN 405.
6. A MINIMUM OF ONE RISER RING SHALL BE USED.
7. CONTRACTOR SHALL VERIFY INVERT AND RIM ELEVATIONS TO ENSURE 24" MAXIMUM DISTANCE FROM CONE TO RIM WILL BE ATTAINED PRIOR TO SETTING CONE.
8. IF 3' MINIMUM DEPTH OF BARREL SECTION CANNOT BE ACHIEVED WITH AN ECCENTRIC CONE A FLAT TOP MANHOLE SHALL BE USED.
9. THERE SHALL BE NO MANHOLE STEPS ON THE INSIDE OF THE MANHOLE.
10. FLEXIBLE PIPE TO MANHOLE BASE CONNECTIONS ARE NOT ALLOWED.
11. CONCRETE FOR MANHOLE BASE SHALL CURE FOR 7 DAYS OR REACH 70% OF SPECIFIED STRENGTH PRIOR TO SETTING MANHOLE RISERS.
12. DESIGNER OR CONTRACTOR SHALL GET ENGINEER'S APPROVAL TO USE SMALLER DEPTH OF BARREL SECTIONS IF REQUIRED DUE TO GRADE. CONE SECTION SHALL NOT BE PLACED DIRECTLY ON BASE.
13. CONTRACTOR SHALL COORDINATE SUBGRADE/PAVEMENT DIMENSION WITH AMOUNT OF RISER RINGS.

MANHOLE INSIDE DIAMETER REQUIREMENTS			
PIPE DIAMETER	DEPTH OF MAIN	MH BARREL DIA.	RING & COVER
8" - 12"	UP TO 12'	4'	24" DIA
8" - 12"	12' - 20'	5'	30" DIA
15" - 18"	UP TO 20'	5'	30" DIA
*21" AND LARGER	UP TO 20'	6'	30" DIA

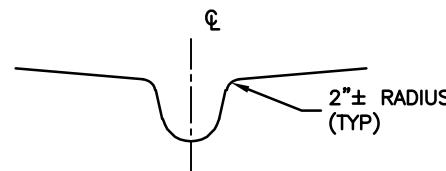
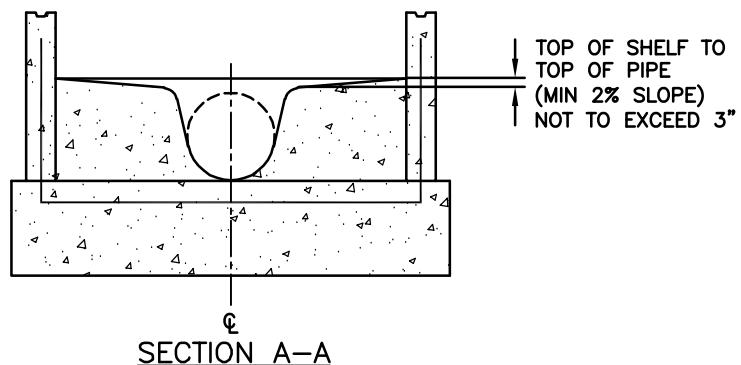
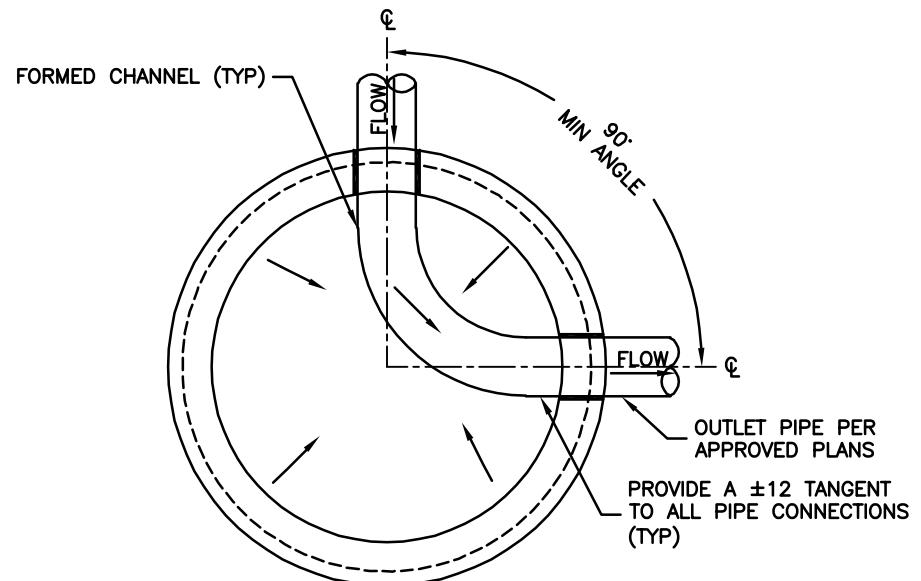
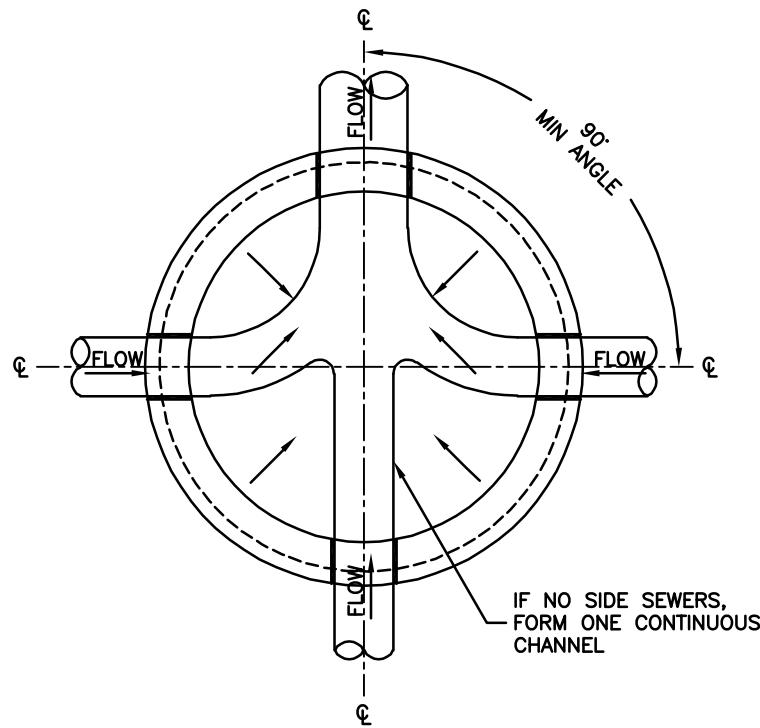




NOTES:

1. MANHOLE SHALL BE IN ACCORDANCE WITH COTTONWOOD STD DETAIL 1420-1.
2. BASE SHALL BE SIZED FOR EXTERNAL FORCE AND BUOYANCY CALCULATIONS.
3. MANHOLES REQUIRING LINING SHALL BE LINED WITH SEWER SHIELD 150, SEWERCARD 210S, OR RAVEN 405.
4. NO ADJUSTING RINGS SHALL BE USED.

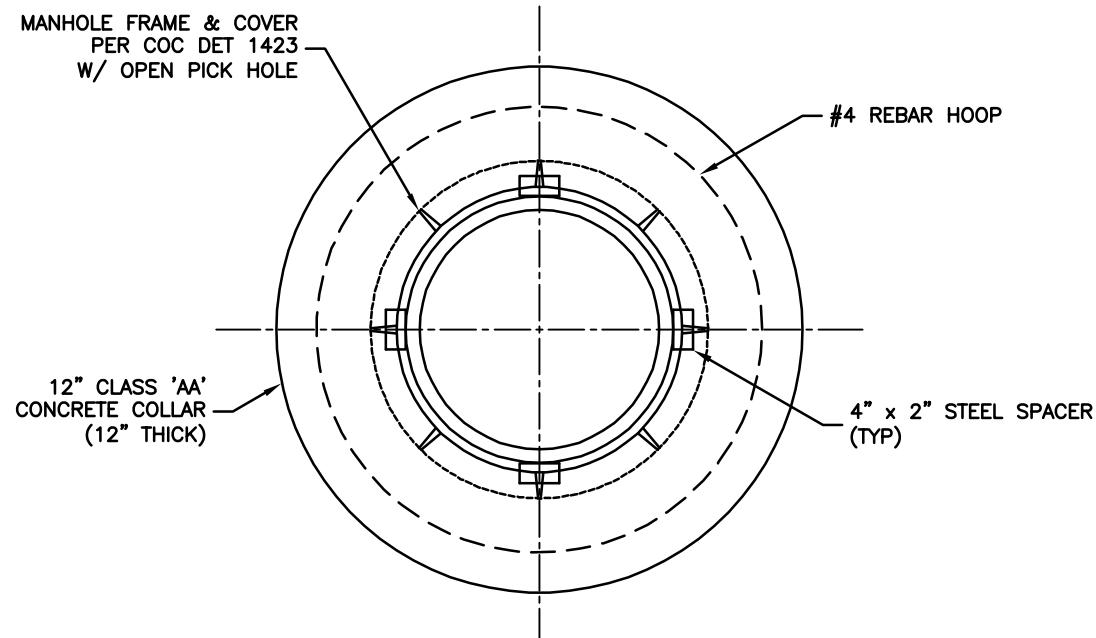




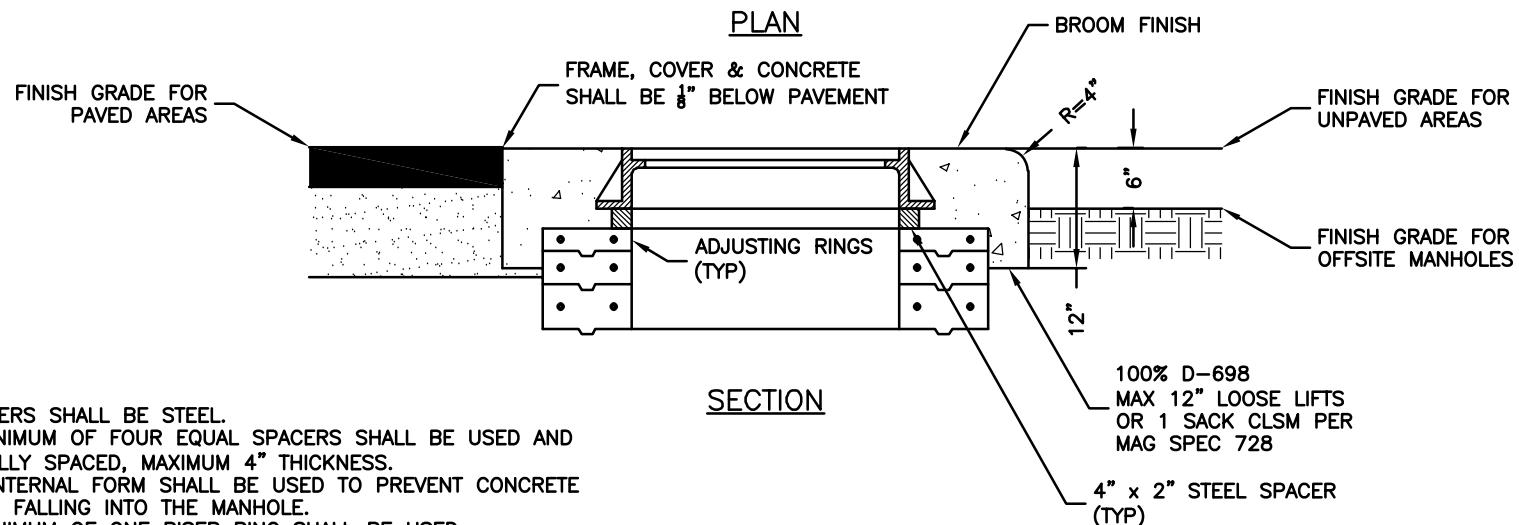
CHANNEL TRANSITION SHALL BE CONSISTENT FROM INLET TO OUTLET OF MANHOLE TO FACILITATE SMOOTH TRANSITIONS AND ACCOMMODATE CORRESPONDING MANDREL.

TYPICAL CHANNEL





PLAN

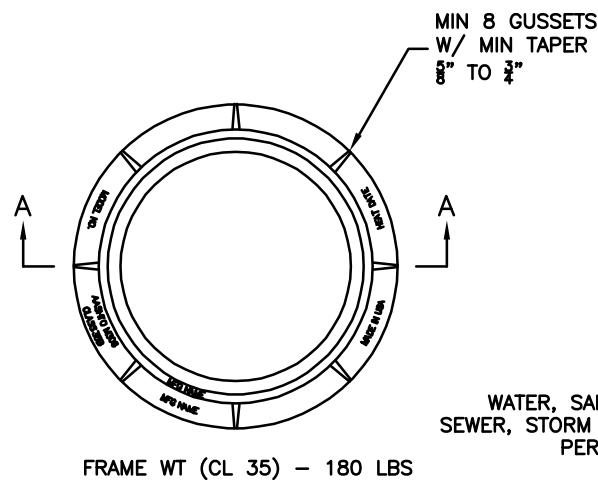


NOTES:

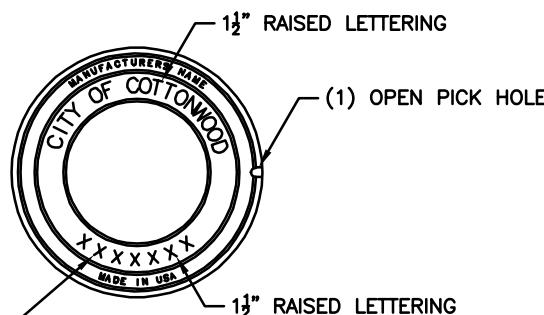
1. SPACERS SHALL BE STEEL.
2. A MINIMUM OF FOUR EQUAL SPACERS SHALL BE USED AND EQUALLY SPACED, MAXIMUM 4" THICKNESS.
3. AN INTERNAL FORM SHALL BE USED TO PREVENT CONCRETE FROM FALLING INTO THE MANHOLE.
4. A MINIMUM OF ONE RISER RING SHALL BE USED.

SECTION



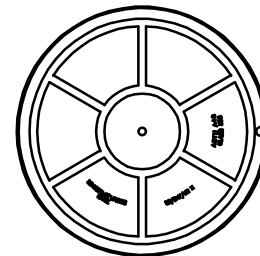


WATER, SANITARY  
SEWER, STORM DRAIN  
PER PLAN

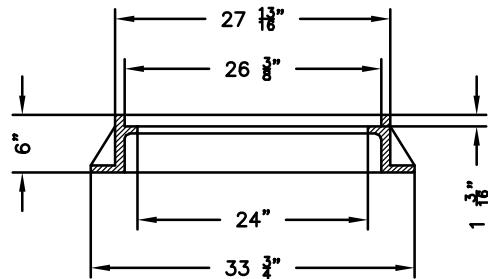


FRAME TOP VIEW

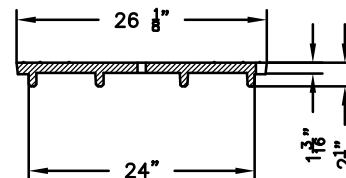
PLAN VIEW



BOTTOM VIEW



SECTION A-A



SECTION VIEW

NOTES:

1. LETTERING ON MANHOLE COVER TO CONTAIN CITY OF COTTONWOOD AND UTILITY FOR WHICH MANHOLE IS NEEDED, (I.E. "COTTONWOOD SANITARY SEWER"), OR AS DIRECTED. THE TOTAL WIDTH OF INDIVIDUAL LETTERS TO BE SUCH THAT LETTERS AND WORDS ARE EQUALLY SPACED AND BALANCED TO FORM A COMPLETE CIRCLE WITH SPACERS BEFORE AND AFTER THE WORD IDENTIFYING THE AGENCY INVOLVED. LETTERS TO BE 2" IN HEIGHT AND RAISED FLUSH W/ TOP OF COVER. TYPE OF LETTERS TO BE SUBMITTED FOR APPROVAL. WEIGHT OF CASTINGS SHALL BE NO MORE THAN 2% MORE OR LESS THAN THE APPROXIMATE WEIGHT SPECIFIED. CASTINGS SHALL CONFORM TO ASTM A-48, CLASS 35 AND AASHTO M306. THE BEARING SURFACES OF THE FRAMES AND COVERS SHALL BE MACHINED AND THE COVERS SHALL SEAT FIRMLY WITHOUT ROCKING. ALL DIMENSIONS SHALL HAVE A  $\frac{1}{16}$ " TOLERANCE. U.S. MANUFACTURED IRON ONLY.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

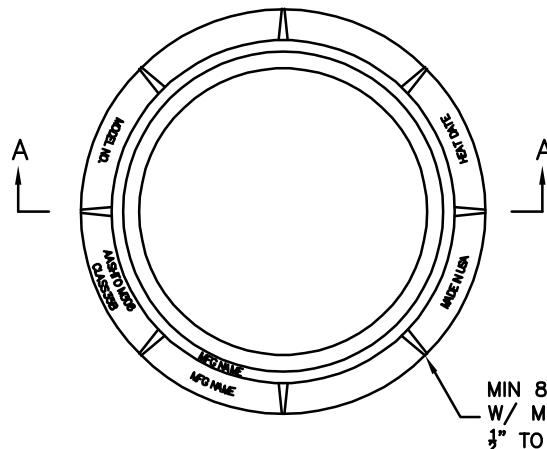
24" CAST IRON MANHOLE FRAME & COVER

REVISED

DETAIL NO.

01/2023

1423-1

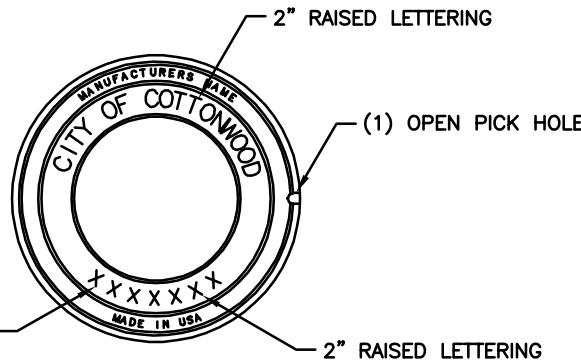


FRAME WT (CL 35) - 227 LBS

FRAME TOP VIEW

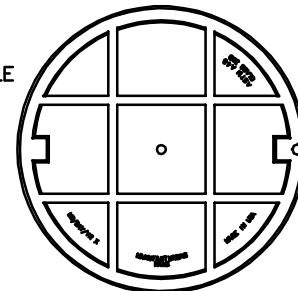
WATER, SANITARY  
SEWER, STORM DRAIN  
PER PLAN

MIN 8 GUSSETS  
W/ MIN TAPER  
1" TO 1 1/2"

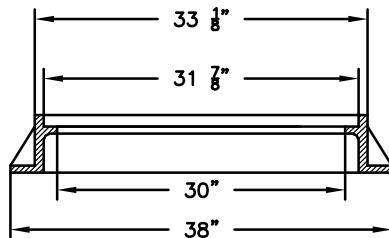


PLAN VIEW

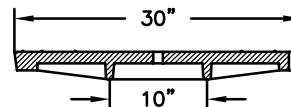
2" RAISED LETTERING  
(1) OPEN PICK HOLE  
2" RAISED LETTERING



BOTTOM VIEW



SECTION A-A



SECTION VIEW

NOTES:

1. LETTERING ON MANHOLE COVER TO CONTAIN CITY OF COTTONWOOD AND UTILITY FOR WHICH MANHOLE IS NEEDED, (I.E. "COTTONWOOD SANITARY SEWER"), OR AS DIRECTED. THE TOTAL WIDTH OF INDIVIDUAL LETTERS TO BE SUCH THAT LETTERS AND WORDS ARE EQUALLY SPACED AND BALANCED TO FORM A COMPLETE CIRCLE WITH SPACERS BEFORE AND AFTER THE WORD IDENTIFYING THE AGENCY INVOLVED. LETTERS TO BE 2" IN HEIGHT AND RAISED FLUSH W/ TOP OF COVER. TYPE OF LETTERS TO BE SUBMITTED FOR APPROVAL. WEIGHT OF CASTINGS SHALL BE NO MORE THAN 2% MORE OR LESS THAN THE APPROXIMATE WEIGHT SPECIFIED. CASTINGS SHALL CONFORM TO ASTM A-48, CLASS 35 AND AASHTO M306. THE BEARING SURFACES OF THE FRAMES AND COVERS SHALL BE MACHINED AND THE COVERS SHALL SEAT FIRMLY WITHOUT ROCKING. ALL DIMENSIONS SHALL HAVE A  $\frac{1}{16}$ " TOLERANCE. U.S. MANUFACTURED IRON ONLY.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

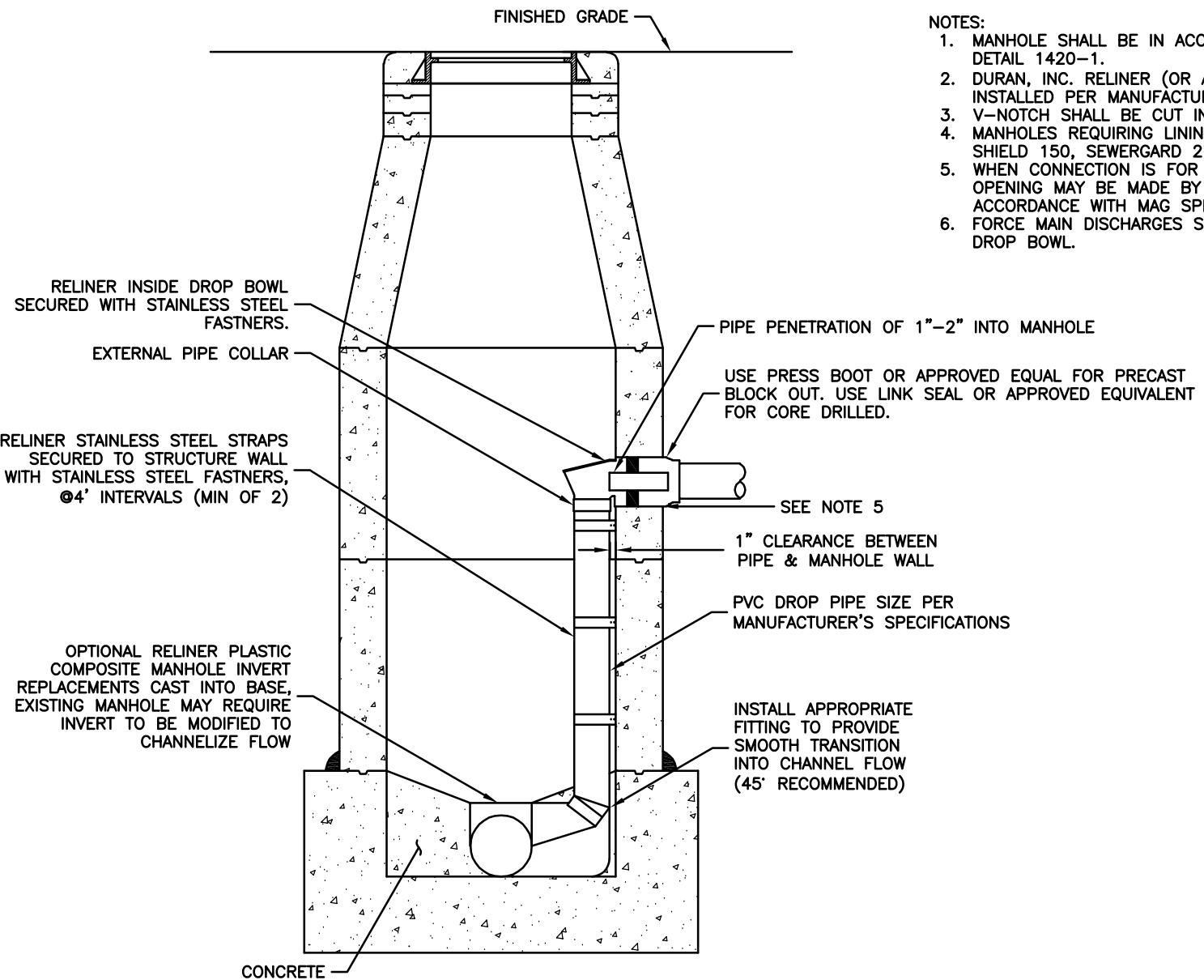
30" CAST IRON MANHOLE FRAME & COVER

REVISED

DETAIL NO.

01/2023

1423-2

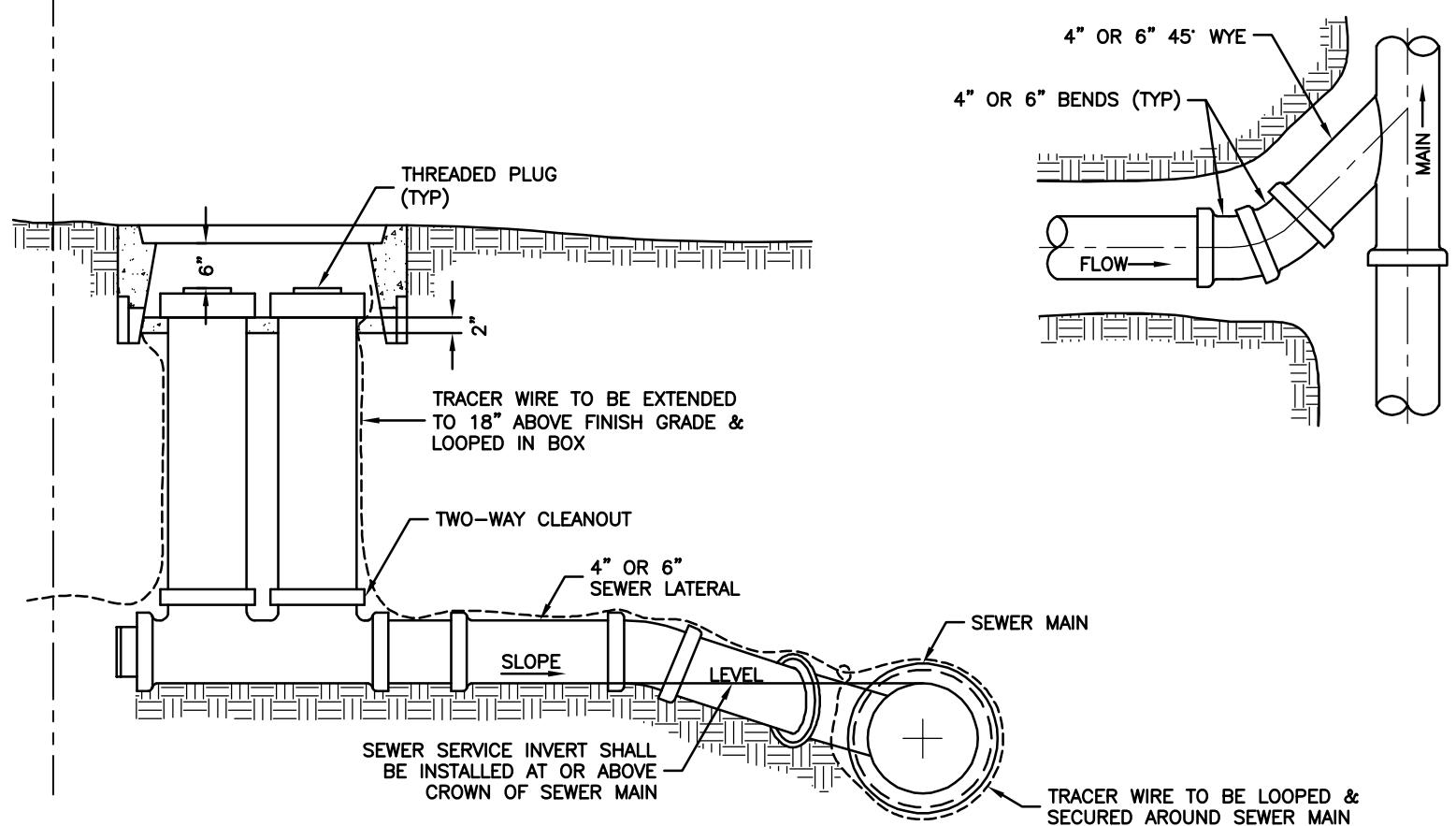


NOTES:

1. MANHOLE SHALL BE IN ACCORDANCE WITH COTTONWOOD STD DETAIL 1420-1.
2. DURAN, INC. RELINER (OR APPROVED EQUAL) SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
3. V-NOTCH SHALL BE CUT IN INFLUENT PIPE INVERT.
4. MANHOLES REQUIRING LINING SHALL BE LINED WITH SEWER SHIELD 150, SEWERCARD 210S, OR RAVEN 405.
5. WHEN CONNECTION IS FOR AN EXISTING MAIN THE PIPE OPENING MAY BE MADE BY CORE DRILLING MANHOLE IN ACCORDANCE WITH MAG SPECIFICATION SECTION 625.3.
6. FORCE MAIN DISCHARGES SHALL REQUIRE A HOOD ON THE DROP BOWL.



R/W OR RL



NOTES:

1. SERVICE LATERAL EXTENDS TO PROPERTY LINE OR TO EASEMENT LINE.
2. SIZE OF TAP AND SERVICE LATERAL SHALL BE DESIGNATED ON PLANS.
3. CONSTRUCT SERVICE LATERAL AT MINIMUM SLOPE OF  $\frac{1}{4}$ " PER FOOT.
4. IF DEPTH REQUIRES, MINIMUM SLOPE CAN BE REDUCED TO  $\frac{1}{8}$ " PER FOOT PROVIDED SERVICE LATERAL IS SURVEYED AND STAKED.
5. CONTRACTOR SHALL USE THE APPROPRIATE FITTINGS TO ENSURE NO MISALIGNMENT OF PIPE AND NO JOINT DEFLECTION.
6. END OF SERVICE LATERAL SHALL BE SEALED.
7. FOR CLEANOUTS LESS THAN 24" DEEP, REFER TO COC STD DETAIL 1440-2.
8. FOR INSTALLATION OF A TAP TO AN EXISTING MAIN, A SADDLE TEE SHALL BE USED IN LIEU OF A WYE FITTING. TAPS SHALL BE PERFORMED BY CITY OF COTTONWOOD PERSONNEL ONLY.
9. PLACE CONCRETE AROUND PIPE INSIDE FRAME OR METER BOX.
10. ON DOUBLE BARREL TWO-WAY CLEANOUT, IF HORIZONTAL SPACING ALLOWS, CONTRACTOR SHALL INSTALL FRAMES & COVERS, IF FRAMES & COVERS ARE NOT USED, A MAG #2 METER BOX (MINIMUM) COMPLIANT WITH MAG STD. DET. 320 AND LID COMPLIANT WITH MAG STD. DET. 315. IF CLEANOUTS ARE PLACED IN AREAS SUBJECT TO VEHICULAR TRAFFIC A MAG #2 METER BOX (MINIMUM) AND LID COMPLIANT WITH MAG STD. DET. 319 SHALL BE USED.



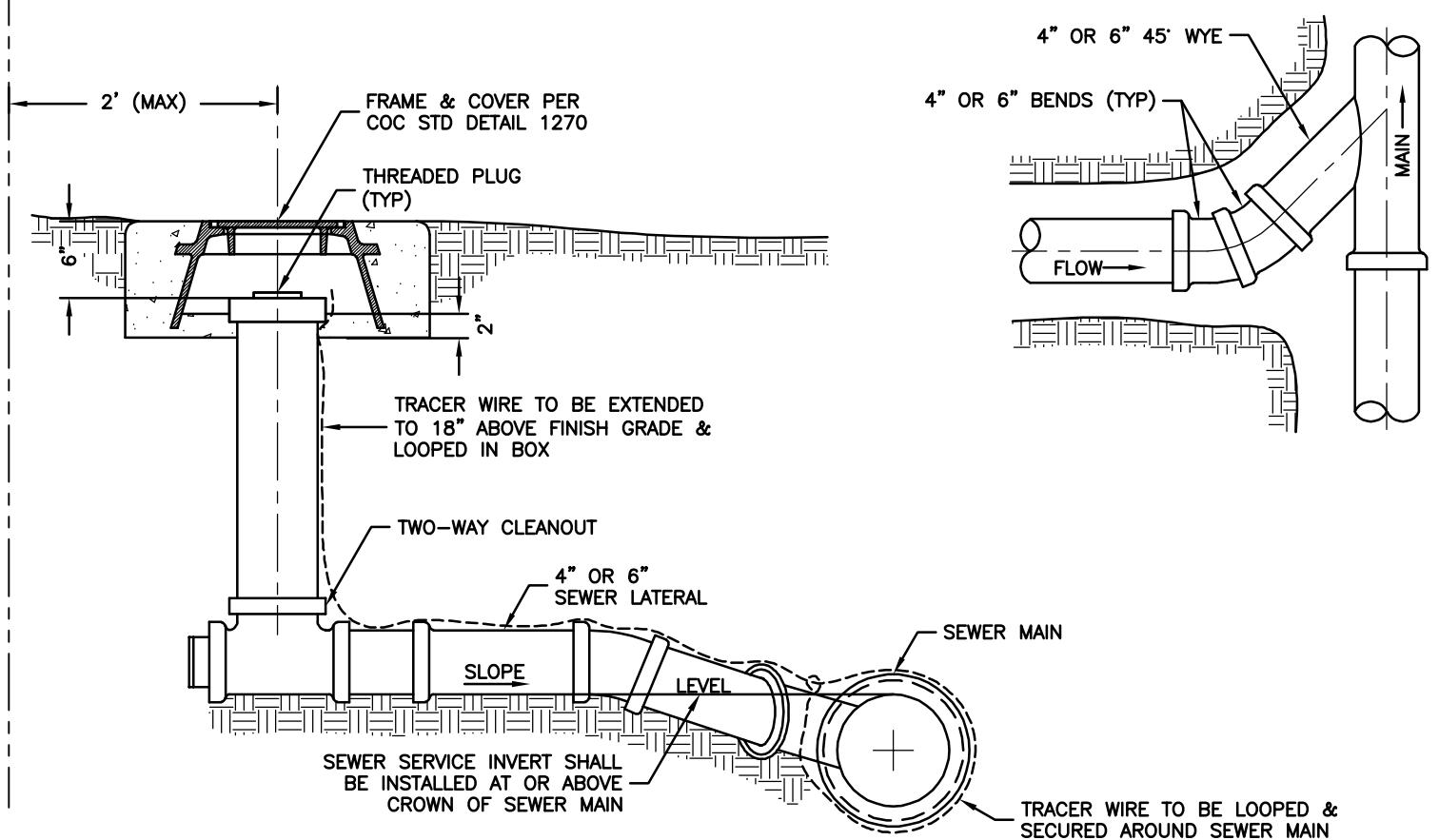
**CITY OF COTTONWOOD  
STANDARD DETAIL**

SEWER SERVICE LATERAL  
GREATER THAN 2 FEET DEEP

REVISED  
01/2023

DETAIL NO.  
1440-1

R/W OR RL



NOTES:

1. SERVICE LATERAL EXTENDS TO PROPERTY LINE OR TO EASEMENT LINE.
2. SIZE OF TAP AND SERVICE LATERAL SHALL BE DESIGNATED ON PLANS.
3. CONSTRUCT SERVICE LATERAL AT MINIMUM SLOPE OF  $\frac{1}{4}$ " PER FOOT.
4. IF DEPTH REQUIRES, MINIMUM SLOPE CAN BE REDUCED TO  $\frac{1}{8}$ " PER FOOT PROVIDED SERVICE LATERAL IS SURVEYED AND STAKED TO GRADE.
5. CONTRACTOR SHALL USE THE APPROPRIATE FITTINGS TO ENSURE NO MISALIGNMENT OF PIPE AND NO JOINT DEFLECTION.
6. END OF SERVICE LATERAL TO BE SEALED.
7. FOR CLEANOUTS DEEPER THAN 24", REFER TO COC STD DETAIL 1440-1.
8. FOR INSTALLATION OF A TAP TO AN EXISTING MAIN, A SADDLE TEE SHALL BE USED IN LIEU OF A WYE FITTING. TAP SHALL BE PERFORMED BY CITY OF COTTONWOOD PERSONNEL ONLY.
9. PLACE CONCRETE AROUND PIPE INSIDE FRAME & COVER.

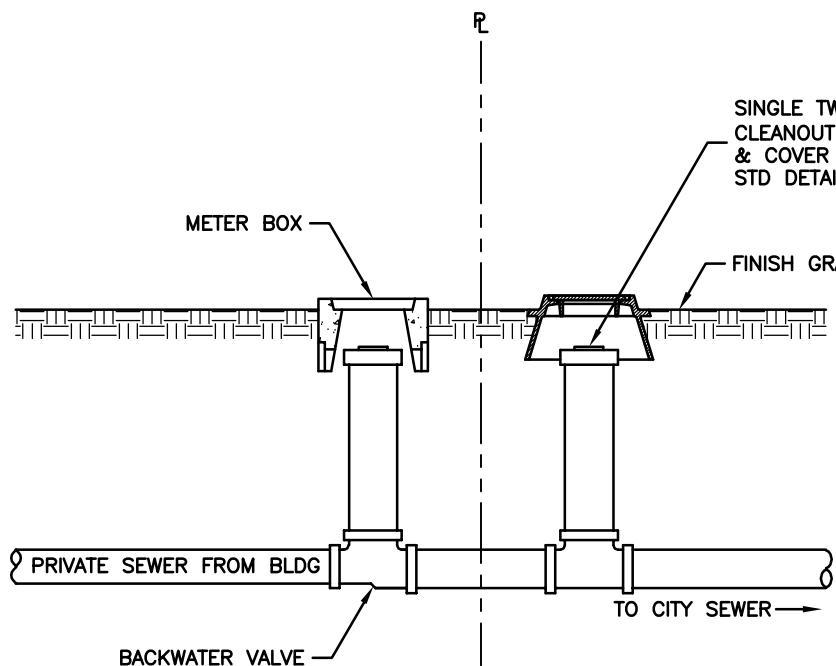


**CITY OF COTTONWOOD  
STANDARD DETAIL**

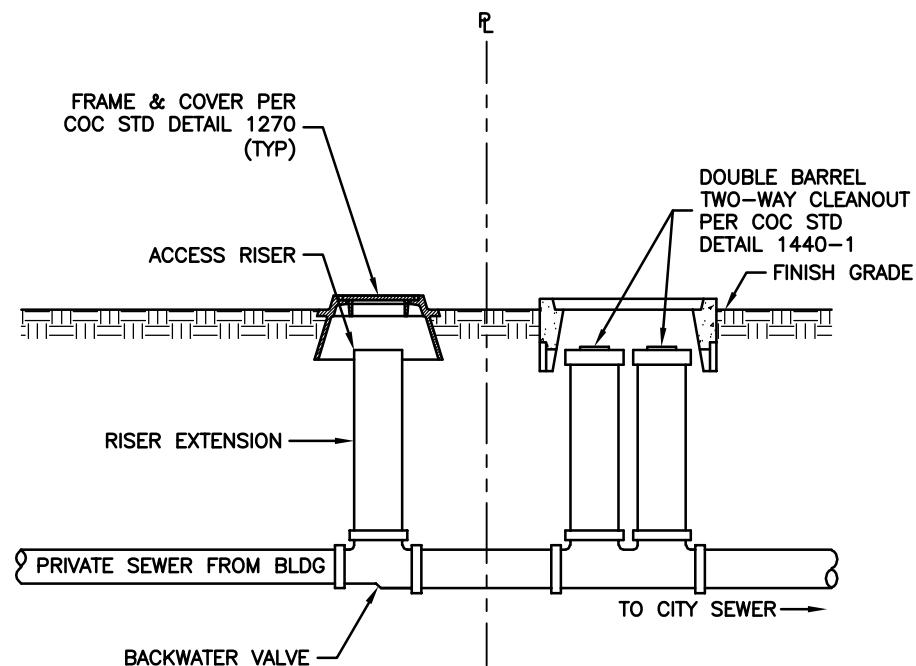
SEWER SERVICE LATERAL  
2 FEET DEEP OR LESS

REVISED  
08/2018

DETAIL NO.  
1440-2



DEPTH OF BURY: 24" AND LESS



DEPTH OF BURY: GREATER THAN 24"

NOTES:

1. BACKWATER VALVE SHALL BE LOCATED BETWEEN THE BUILDING CLEANOUT AND PROPERTY LINE.
2. AN EXTENDABLE TYPE BACKWATER VALVE SHALL BE INSTALLED WHEN VALVES ARE DEEPER THAN 24".
3. ON DOUBLE BARREL TWO-WAY CLEANOUT, IF HORIZONTAL SPACING ALLOWS, CONTRACTOR SHALL INSTALL FRAMES AND COVERS, IF FRAMES AND COVERS ARE NOT USED, A MINIMUM OF A MAG #2 METER BOX SHALL BE USED. STAMP OR WELD A 2" TALL LETTER "S" ON THE LID OF THE METER BOX.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

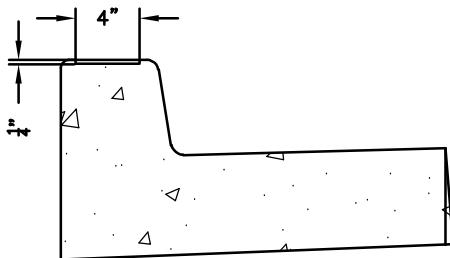
BACKWATER VALVE

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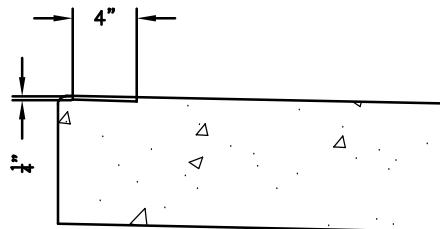
08/2018

DETAIL NO.

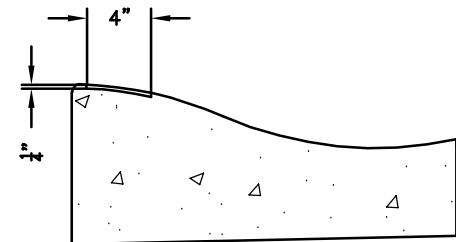
1440-3



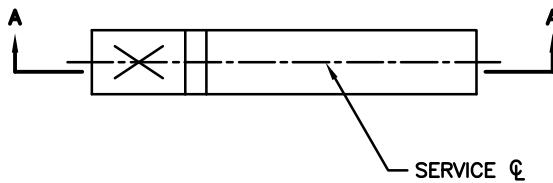
SECTION A-A



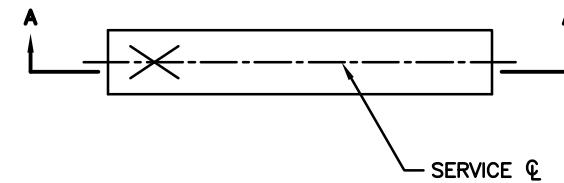
SECTION A-A



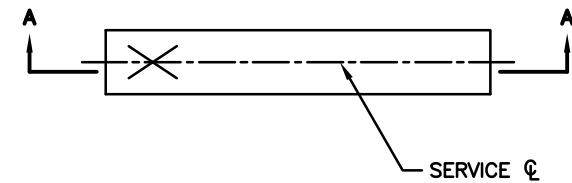
SECTION A-A



CURB STAMP TYPE 'A'  
VERTICAL CURB & GUTTER



CURB STAMP TYPE 'B'  
RIBBON CURB

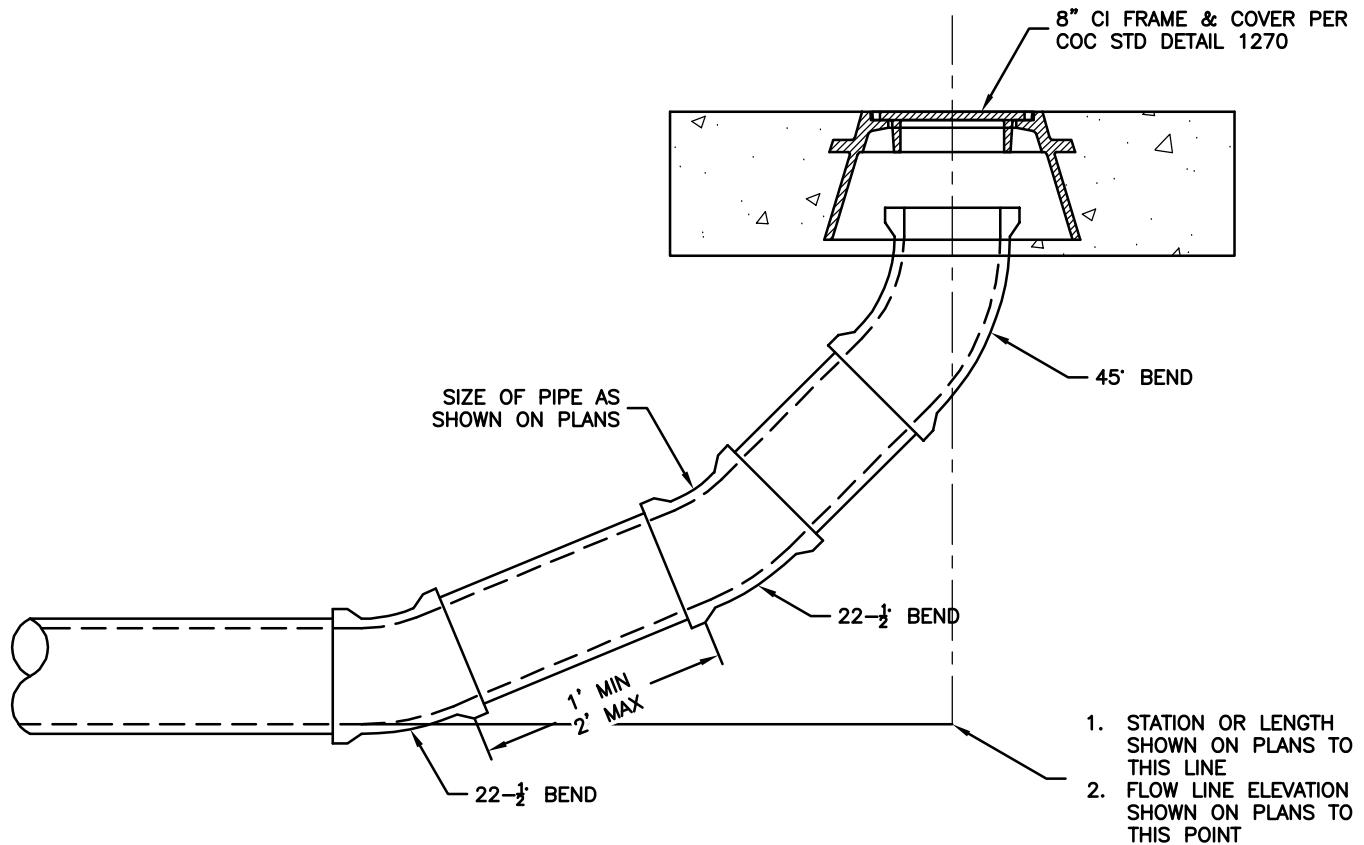


CURB STAMP TYPE 'C' OR 'D'  
ROLL CURB & GUTTER

NOTES:

1. STAMP TOP OF CURB WITH 4" TALL BY  $\frac{1}{4}$ " DEEP "W" OR "S" TO DESIGNATE SERVICE LINE CROSSING.

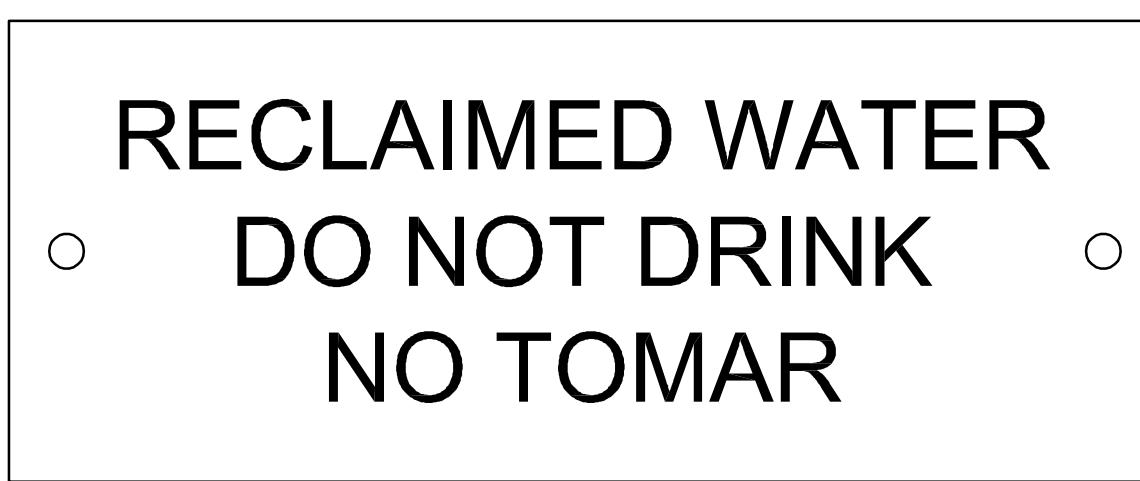




NOTES:

1. NO SERVICE TAPS SHALL BE LOCATED CLOSER THAN 4 FEET DOWNSTREAM OF FIRST BEND.
2. ALL JOINTS ARE TO BE WATER TIGHT.
3. CLEANOUTS SHALL NOT BE PLACED IN VALLEY GUTTERS, SPANDRELS, CURB & GUTTERS, CATCH BASINS, OR OTHER DRAINAGE STRUCTURES.
4. CLEANOUTS INSTALLED OFFSITE REQUIRE CARSONITE MARKERS RUNNING PARALLEL TO THE LINE, AS DIRECTED BY THE ENGINEER.
5. PIPE EMBEDMENT PER MAG STD. DET. 200-1 AND 200-2 AND CITY OF COTTONWOOD SANITARY SEWER NOTES.
6. PLACE CONCRETE AROUND 45° BEND INSIDE FRAME & COVER.





IDENTIFICATION TAG:

3" x 8" x  $\frac{1}{16}$ " PURPLE POLYETHYLENE PLASTIC WITH  
MINIMUM  $\frac{1}{2}$ " HIGH BLACK LETTERING IN ACCORDANCE  
WITH MAG SPEC SEC 616. TAG TO BE ATTACHED TO  
METER AND VALVE WITH STAINLESS STEEL WIRE.

IDENTIFICATION DECAL:

5" x 16" x  $\frac{1}{16}$ " PURPLE POLYETHYLENE PLASTIC WITH  
MINIMUM 1" HIGH BLACK LETTERING IN ACCORDANCE  
WITH MAG SPEC SEC 616. DECAL TO BE ATTACHED  
WITH AN EPOXY ADHESIVE.

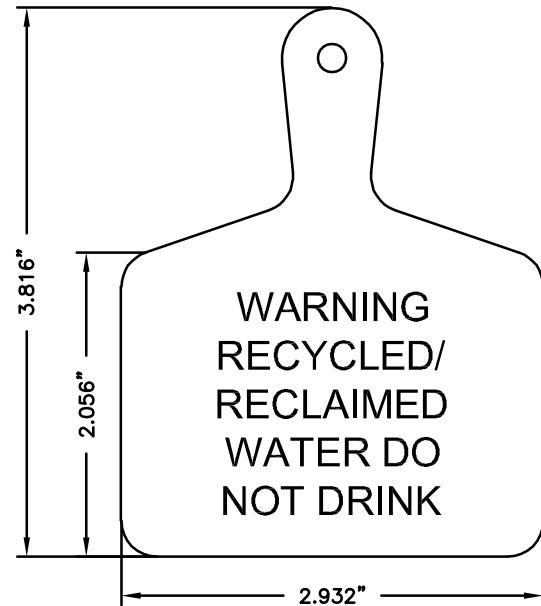


**CITY OF COTTONWOOD  
STANDARD DETAIL**

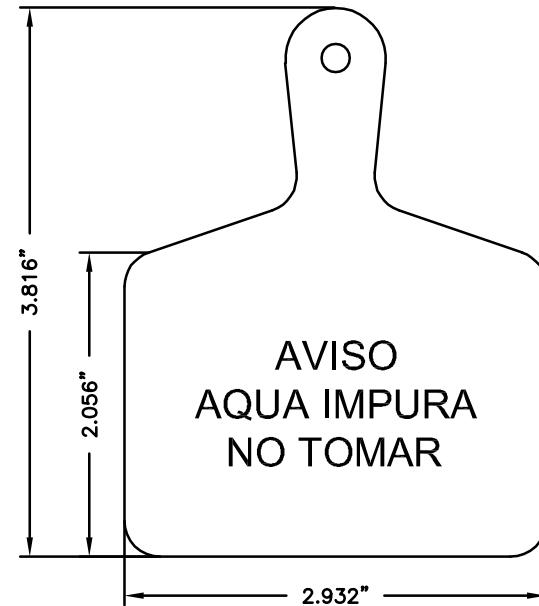
LARGE RECLAIMED WATER  
IDENTIFICATION TAG & DECAL

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08/2018

DETAIL NO.  
1501-1



FRONT



BACK

IDENTIFICATION TAG:

IN ACCORDANCE WITH CHRISTY'S SPECIFICATIONS, "PURPLE RECYCLED/RECLAIMED WATER - ENGLISH/SPANISH - 2 SIDED MAXI TAG (PART No. ID.MAX.P2.RC006)" OR APPROVED EQUAL. TAG TO BE ATTACHED TO METER & VALVE WITH STAINLESS STEEL WIRE.

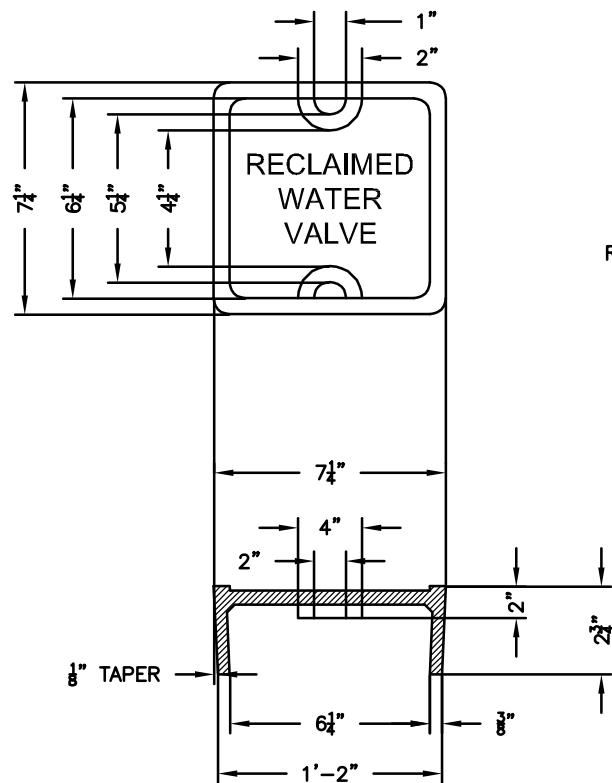


**CITY OF COTTONWOOD  
STANDARD DETAIL**

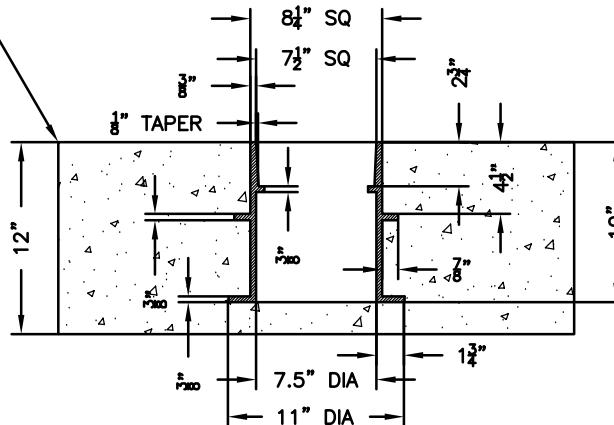
SMALL RECLAIMED WATER IDENTIFICATION TAG

REVISED  
08/2018

DETAIL NO.  
1501-2



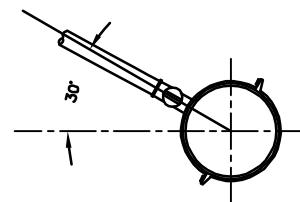
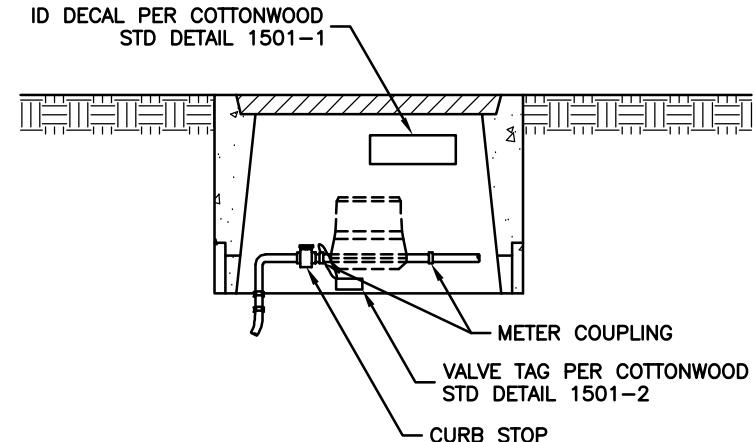
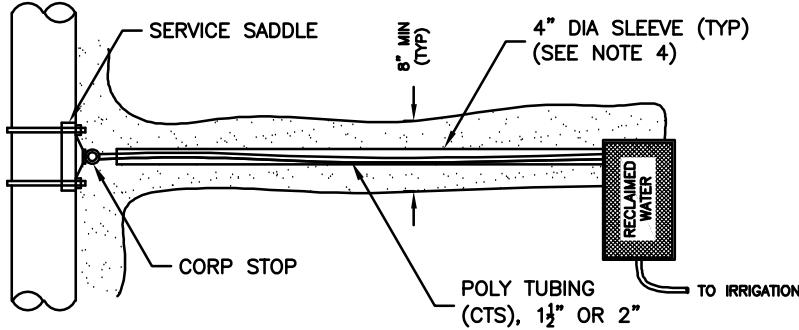
CLASS 'A' CONCRETE  
RING PER COTTONWOOD  
STD DETAIL 1270



NOTES:

1. ROUND BOTTOM FOR RISER PIPE, SQUARE TOP COVER.
2. ALL MATERIAL SHALL BE CAST IRON PER ASTM A48, CLASS 30B.
3. U.S. MANUFACTURED IRON ONLY.
4. RECLAIMED WATER VALVE BOX TO BE INSTALLED PER COTTONWOOD STD DETAIL 1270.
5. THE CAST IRON LID SHALL BE MARKED "RECLAIMED WATER VALVE" ON THE TOP SIDE. LETTERS SHALL BE 1" EACH AND RAISED 1/8".
6. THE LID, INSIDE AND OUTSIDE OF THE RISER PIPE SHALL BE PAINTED RECLAIMED PURPLE (PANTONE No. 512). A PURPLE LOCKING DEBRIS CAP SHALL BE INSTALLED PER COTTONWOOD STD DETAIL 1271. THE DEBRIS CAP SHALL HAVE A VALVE TAG PER COTTONWOOD STD DETAIL 1501.





NOTES:

1. ALL FITTINGS SHALL BE BRASS OR POLY TUBING (CTS), AND SHALL BE CONTINUOUS BETWEEN THE RECLAIMED WATER MAIN AND RECLAIMED WATER METER. POLY TUBING SHALL BE PURPLE IN COLOR.
2. NEW RECLAIMED WATER SERVICE TAPS SHALL BE INSTALLED USING AN ALL-BRONZE DOUBLE-STRAP TAPPING SADDLE.
3. A MINIMUM OF 30" OF COVER SHALL BE PROVIDED FOR RECLAIMED WATER SERVICES.
4. RECLAIMED WATER SERVICES SHALL BE SLEEVED BENEATH ROADWAYS VIA A 4" PVC SLEEVE (SCH 80). SLEEVE SHALL BE WRAPPED w/ PURPLE POLYETHYLENE TAPE.
5. RECLAIMED WATER SERVICE INCLUDES THE CORP STOP, SERVICE PIPE, PVC SLEEVE, APPURtenant FITTINGS, CURB STOP, METER BOX AND COVER.
6. ALL RECLAIMED WATER METERS WILL BE INSTALLED BY THE CITY OF COTTONWOOD UTILITIES DEPT.

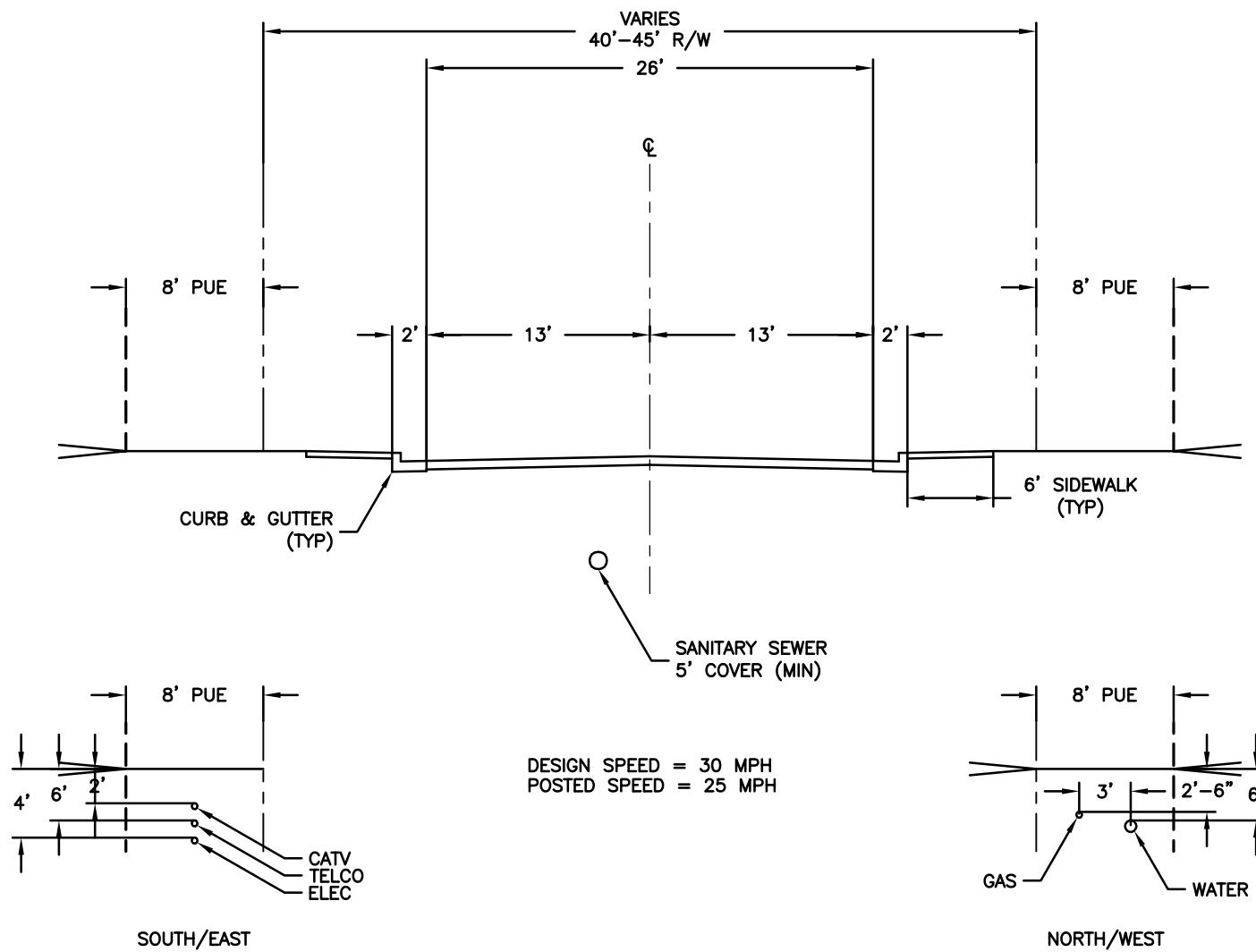


**CITY OF COTTONWOOD  
STANDARD DETAIL**

RECLAIMED WATER SERVICE CONNECTION

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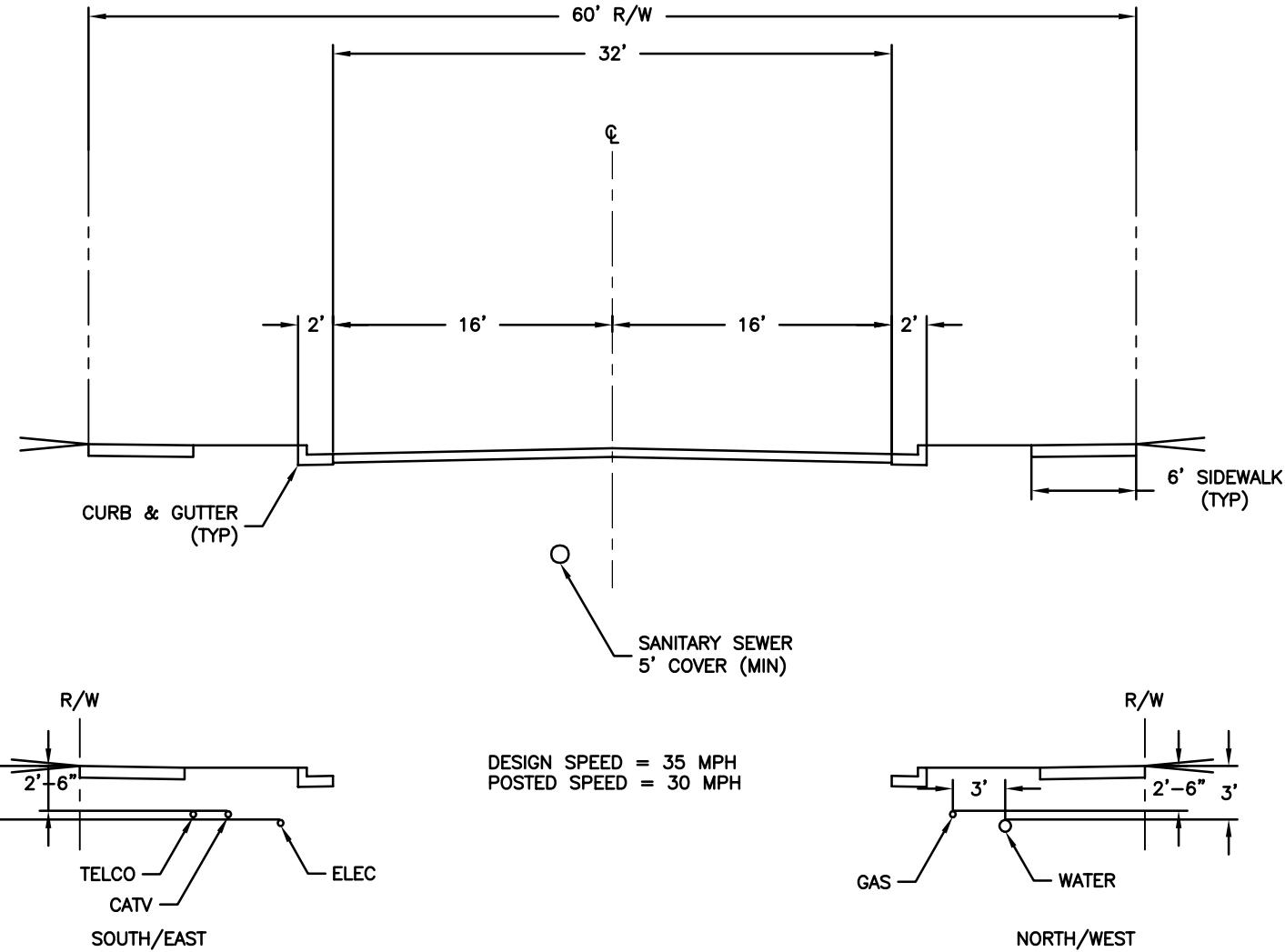
DETAIL NO.  
1503



NOTES:

1. MINIMUM 3" AC OVER 6" ABC PAVEMENT STRUCTURE OR PER APPROVED PAVEMENT DESIGN REPORT, WHICHEVER IS GREATER.





NOTES:

1. 'NO PARKING' SIGNS SHALL BE PLACED ALONG BOTH SIDES OF THE STREET.
2. VERTICAL CURB SHALL BE USED AT CURB RETURNS, ADJACENT TO COMMON AREAS, AND OTHER AREAS TO RESTRICT VEHICLE ACCESS.
3. ROLLED CURB MAY BE USED ADJACENT TO RESIDENTIAL LOTS.
4. SIX INCH HIGH ROLLED CURB, COTTONWOOD STANDARD DETAIL 1220, MAY BE USED TO INCREASE STREET DRAINAGE CAPACITY.
5. MINIMUM 4" AC OVER 6" ABC PAVEMENT STRUCTURE OR PER APPROVED PAVEMENT DESIGN REPORT, WHICHEVER IS GREATER.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

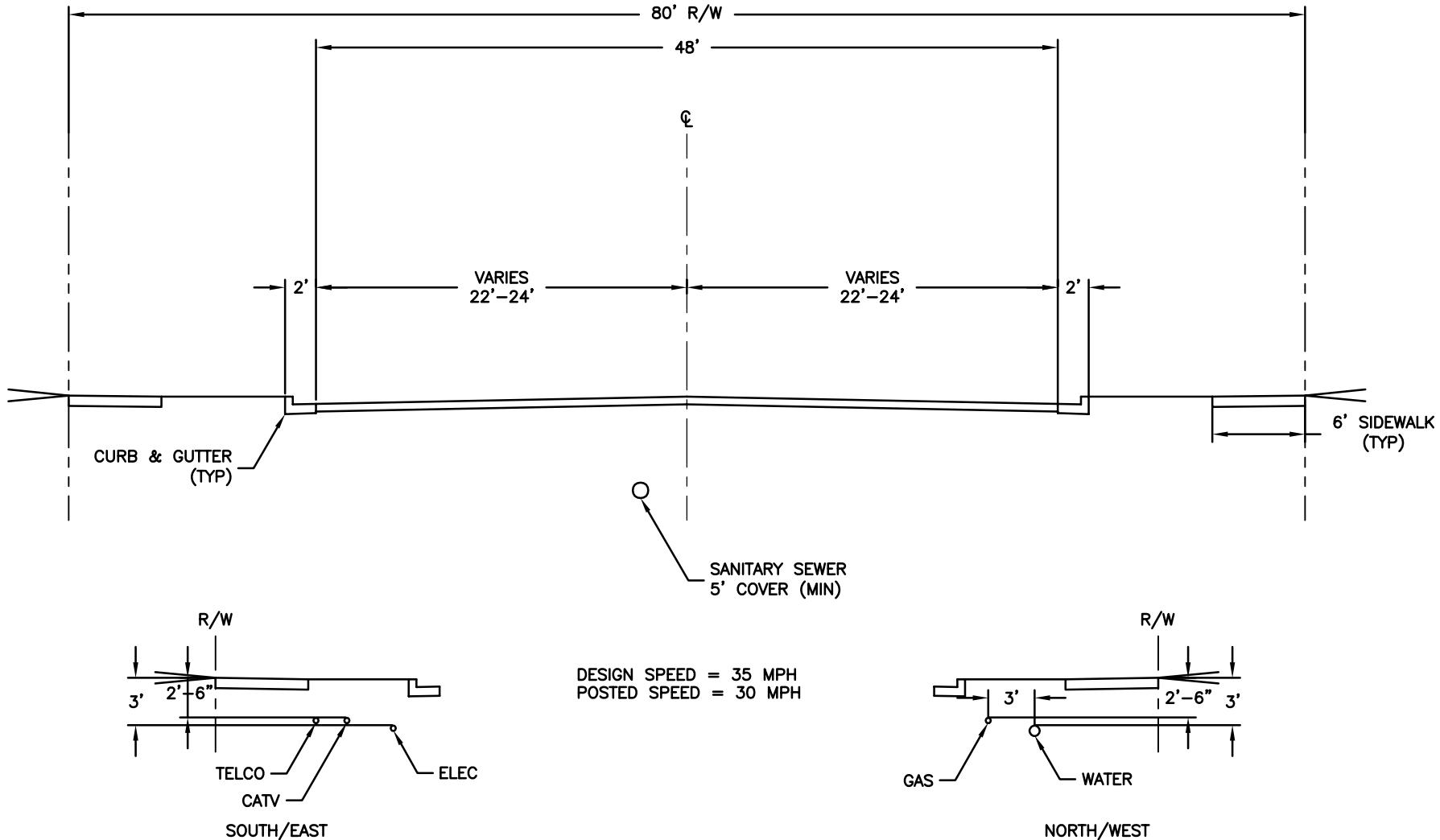
2 LANE COLLECTOR

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08/2018

DETAIL NO.

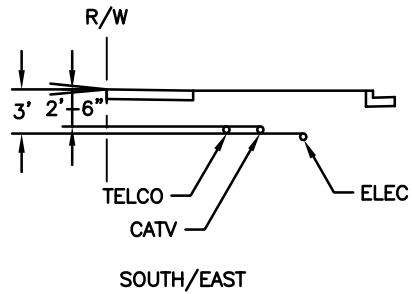
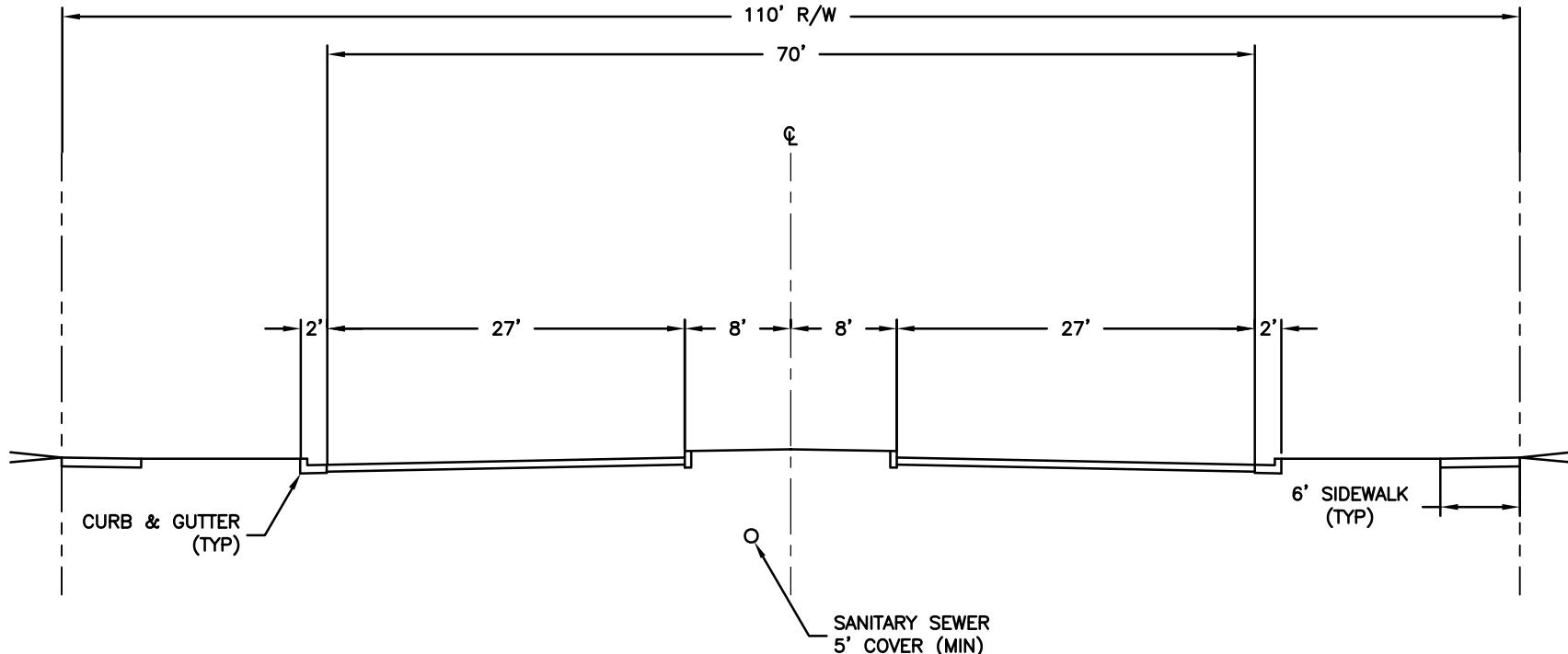
1602



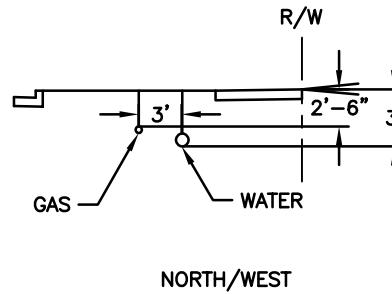
NOTES:

1. 'NO PARKING' SIGNS SHALL BE PLACED ALONG BOTH SIDES OF THE STREET.
2. MINIMUM 5" AC OVER 8" ABC PAVEMENT STRUCTURE OR PER APPROVED PAVEMENT DESIGN REPORT, WHICHEVER IS GREATER.





DESIGN SPEED = 50 MPH  
POSTED SPEED = 40 MPH



NOTES:

1. 'NO PARKING' SIGNS SHALL BE PLACED ALONG BOTH SIDES OF THE STREET.
2. MINIMUM 6" AC OVER 10" ABC PAVEMENT STRUCTURE OR PER APPROVED PAVEMENT DESIGN REPORT, WHICHEVER IS GREATER.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

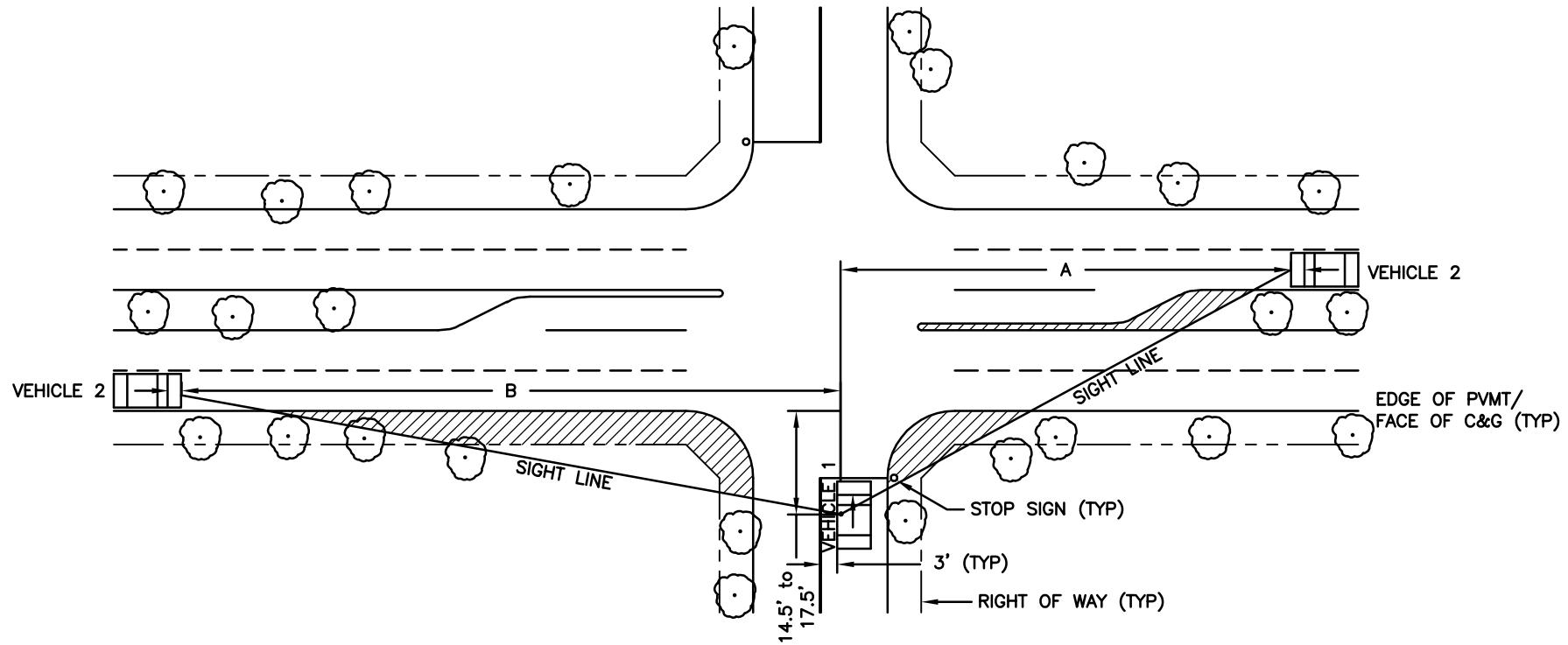
4-5 LANE COLLECTOR

REVISED

08/2018

DETAIL NO.

1604



NOTES:

1. THE SHADED AREAS (SIGHT VISIBILITY TRIANGLES) SHALL BE KEPT CLEAR OF VEGETATION THAT AT MATURITY WILL HAVE HEIGHTS GREATER THAN 3' AND TREES THAT HAVE BRANCHES LOWER THAN 7'; AS MEASURED FROM THE PAVEMENT SURFACE.
2. ABOVE GROUND UTILITY FACILITIES AND APPURTENANCES ABOVE 3 FEET IN HEIGHT SHALL NOT BE LOCATED WITHIN THE SIGHT VISIBILITY TRIANGLE.
3. SIGNAGE APPROVED BY THE CITY FOR USE IN THE RIGHT OF WAY MAY BE LOCATED WITHIN THE SIGHT VISIBILITY TRIANGLES.
4. THE LINE OF SIGHT SHALL BE SHOWN AT INTERSECTIONS ON ALL LANDSCAPING PLANS, GRADING PLANS, AND TENTATIVE TRACT PLANS WHERE SAFE SIGHT DISTANCE IS QUESTIONABLE. IN CASES WHERE AN INTERSECTION IS LOCATED ON A VERTICAL CURVE, A PROFILE OF THE SIGHT LINE MAY BE REQUIRED.
5. TO ESTABLISH THE LINE OF SIGHT, VEHICLE 1 SHOULD BE POSITIONED SO THAT THE DRIVERS EYE IS 14.5' TO 17.5' BACK FROM THE EDGE OF PAVEMENT / FACE OF CURB AND 3.5' ABOVE THE PAVEMENT. DRIVER IS ASSUMED TO BE 3.0' RIGHT OF CENTER LINE IN LANE.
6. APPROACH VEHICLE (VEHICLE 2) IS POSITIONED IN THE CENTER OF

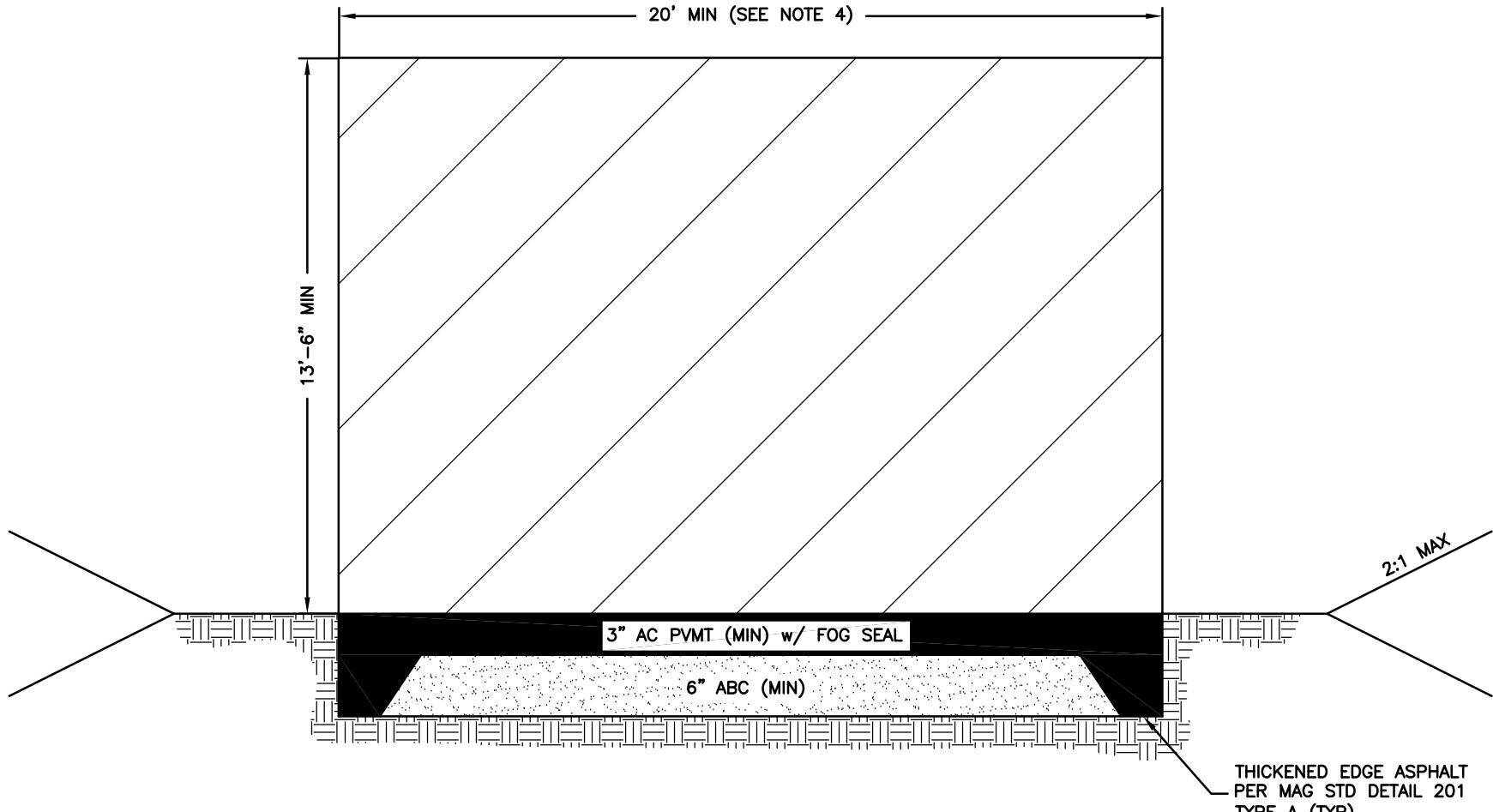
7. ITS LANE AND ASSUMED TO BE 4.25' ABOVE THE PAVEMENT.
8. DRAWING DEPICTS TYPICAL PASSENGER CAR SITUATION WITHOUT GRADES. ADJUSTMENTS FOR GRADES SHALL BE MADE PER AASHTO.
9. EASEMENTS TO BE SHOWN AND DIMENSIONED ON FINAL PLAT.

A = SIGHT DISTANCE TO RIGHT FOR VEHICLE 1

B = SIGHT DISTANCE TO LEFT FOR VEHICLE 1

DESIGN SPEED (85th PERCENTILE) OF INTERSECTING ROADWAY	SIGHT DISTANCE FOR PASSENGER VEHICLE 1 TO TURN LEFT OR RIGHT				B
	A		B		
1-LANE [FT]	2-LANE [FT]	3-LANE / 2-LANE w/ MEDIAN [FT]	3-LANE w/ MEDIAN [FT]		
25 MPH	280	295	—	—	240
30 MPH	335	355	—	—	290
35 MPH	390	415	440	465	335
40 MPH	445	475	500	530	385
45 MPH	500	530	565	600	430
50 MPH	555	590	625	665	480
55 MPH	610	650	690	730	530





TYPICAL CROSS SECTION

NO SCALE

NOTES:

1. THE PAVEMENT STRUCTURE SHALL BE SUFFICIENT TO SUPPORT A MINIMUM AXLE LOAD OF 80,000 lbs. AND SHALL BE AN ALL-WEATHER SURFACE.
2. ACTUAL STRUCTURAL SECTION SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND BE DESIGNED FOR HEAVY EQUIPMENT.
3. HATCHED AREA IN THE ABOVE DIAGRAM DEPICTS THE MINIMUM OBSTRUCTION FREE AREA REQUIRED FOR FIRE ACCESS PER THE CITY OF COTTONWOOD FIRE DEPARTMENT.
4. IN SOME INSTANCES THE MINIMUM WIDTH MAY BE INCREASED TO 26-FEET PER COTTONWOOD FIRE DEPARTMENT'S REQUEST.



**CITY OF COTTONWOOD  
STANDARD DETAIL**

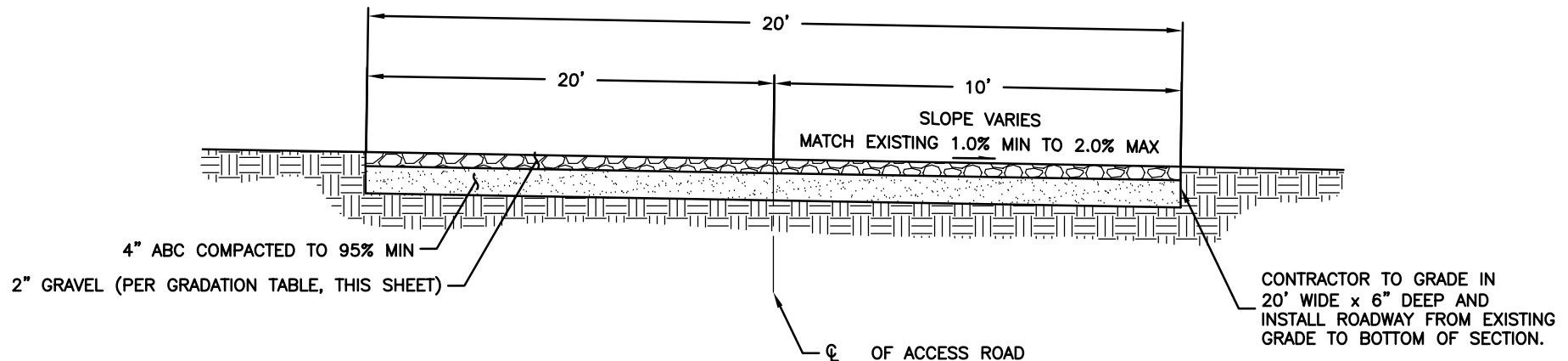
FIRE LANE ACCESS

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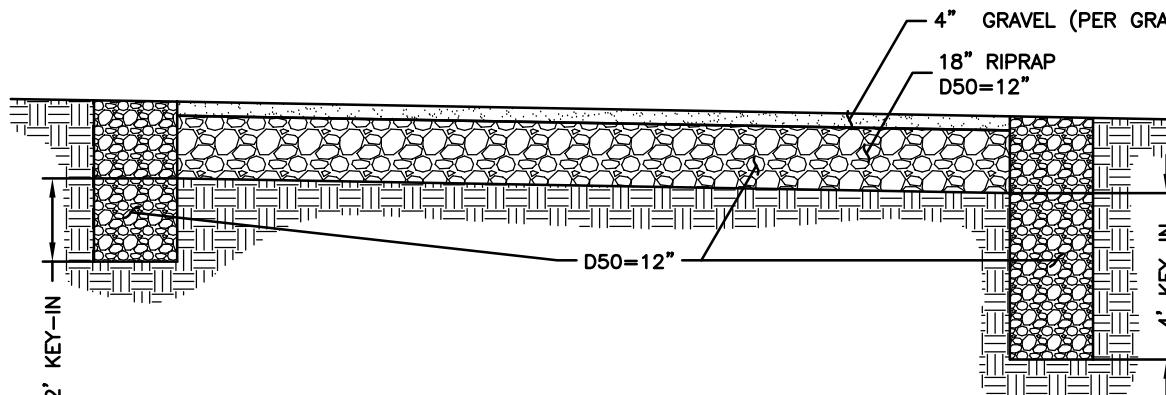
08/2019

DETAIL NO.

1610



DETAIL 'A'  
NO SCALE



DETAIL 'B' - AT LOW WATER CROSSING  
NO SCALE

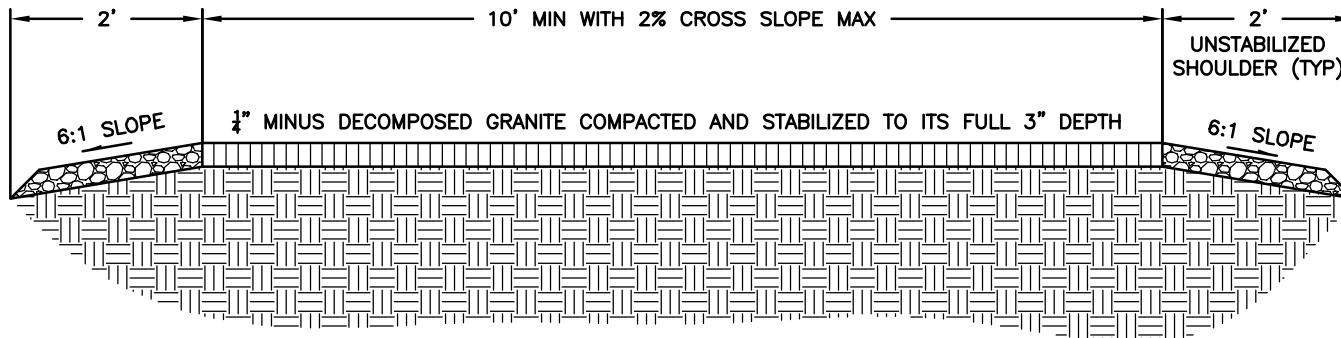
GRADATION TABLE FOR CRUSHED AGGREGATE	
SIEVE SIZE (SQUARE OPENING) [INCHES]	PERCENTAGE BY WEIGHT PASSING SIEVE
2	100
1.5	50-90
1.25	30-50
1	20-30
0.75	0-20

\*CRUSHED AGGREGATE SHALL CONSIST OF CRUSHED ROCK WITH 75% OF THE SPECIFIED SIZE HAVING AT LEAST ONE FRACTURED FACE TESTED IN ACCORDANCE WITH AZ-212.

NOTES:

1. MATCH EXISTING GRADES AND TOPOGRAPHY.
2. ROAD AT WASH CROSSINGS TO BE D50=12" RIPRAP, 2' WIDE KEY-IN TO DEPTH, 2' UPSTREAM & 4' DOWNSTREAM.
3. FILL Voids WITH NATIVE MATERIAL AFTER PLACEMENT.



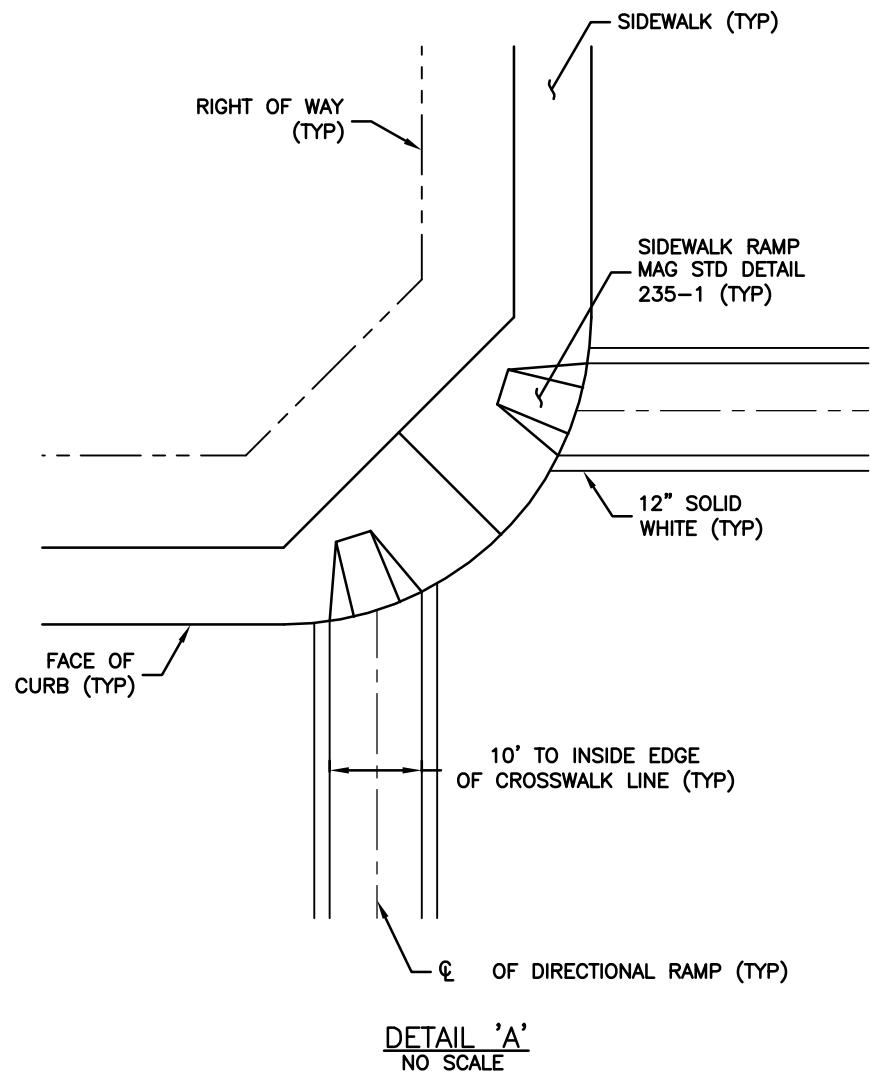
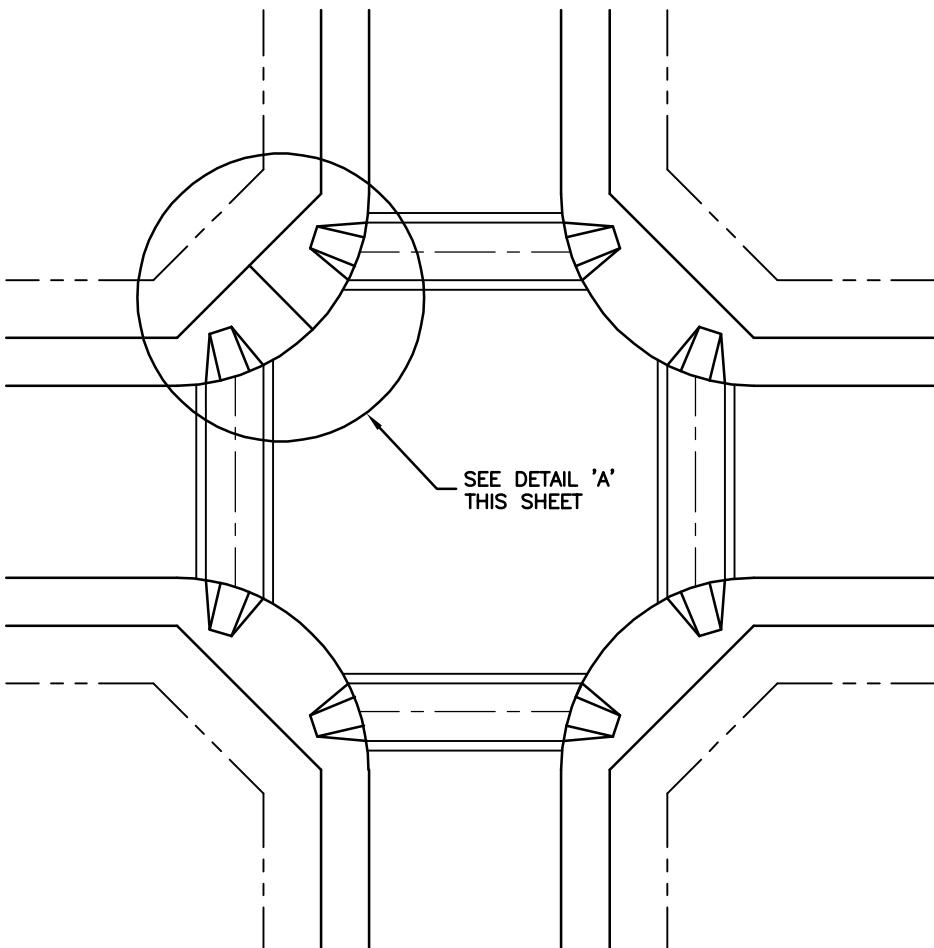


MULTI-USE TRAIL IN DECOMPOSED GRANITE  
NO SCALE

NOTES:

1. ALL UNDERLYING NATURAL SOILS SHALL BE COMPACTED TO 90% MIN.
2. NO RUNNING SLOPE SHALL EXCEED 5%. IF RUNNING SLOPE EXCEEDS 5%, TRAIL MUST CONFORM TO AMERICANS WITH DISABILITIES ACT GUIDELINES.
3. TRAILS WILL NOT EXCEED 8% SLOPES, SLOPES 5-8% NOT TO EXCEED 30' DISTANCE WITHOUT 5' LANDING. REFER TO U.S. DEPARTMENT OF JUSTICE WEBSITE FOR MORE INFORMATION.
4. MULTI-USE TRAILS LOCATED WITHIN OR ADJACENT TO OPEN SPACE OR WASH CORRIDORS WILL BE LOCATED WITHIN A MINIMUM 20' PUBLIC TRAIL EASEMENT THAT MAY INCLUDE A PUBLIC UTILITY EASEMENT.
5. THE CITY ENGINEER MAY MAKE EXCEPTIONS TO THE TRAIL WIDTH.



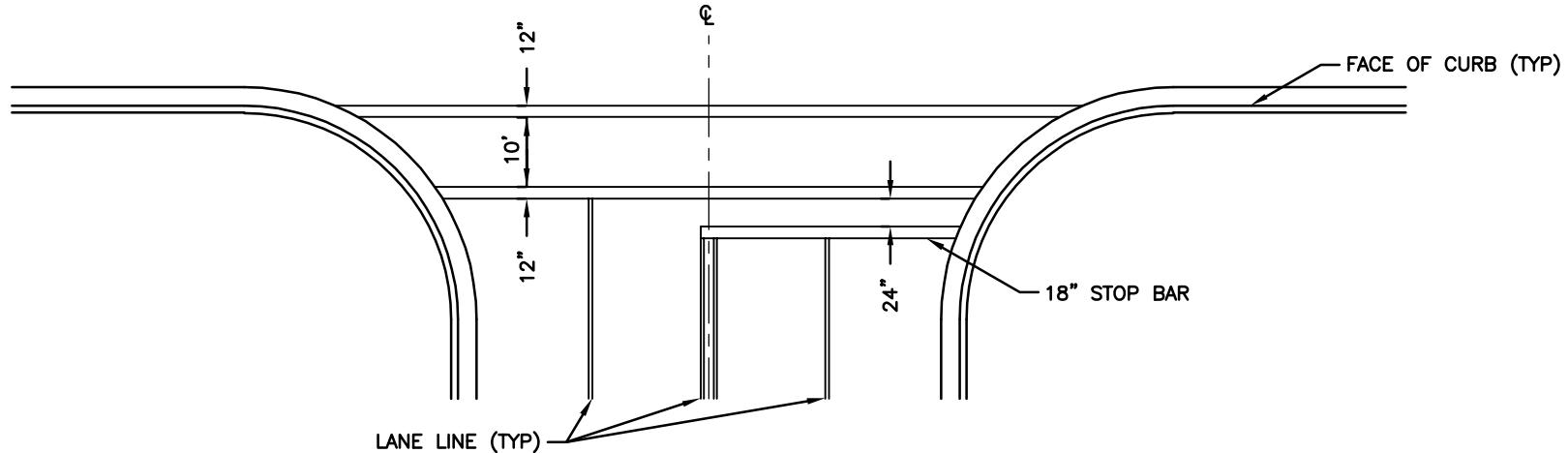


**CITY OF COTTONWOOD  
STANDARD DETAIL**

CROSSWALK STRIPING AT INTERSECTIONS

REVISED  
08/2018

DETAIL NO.  
1620

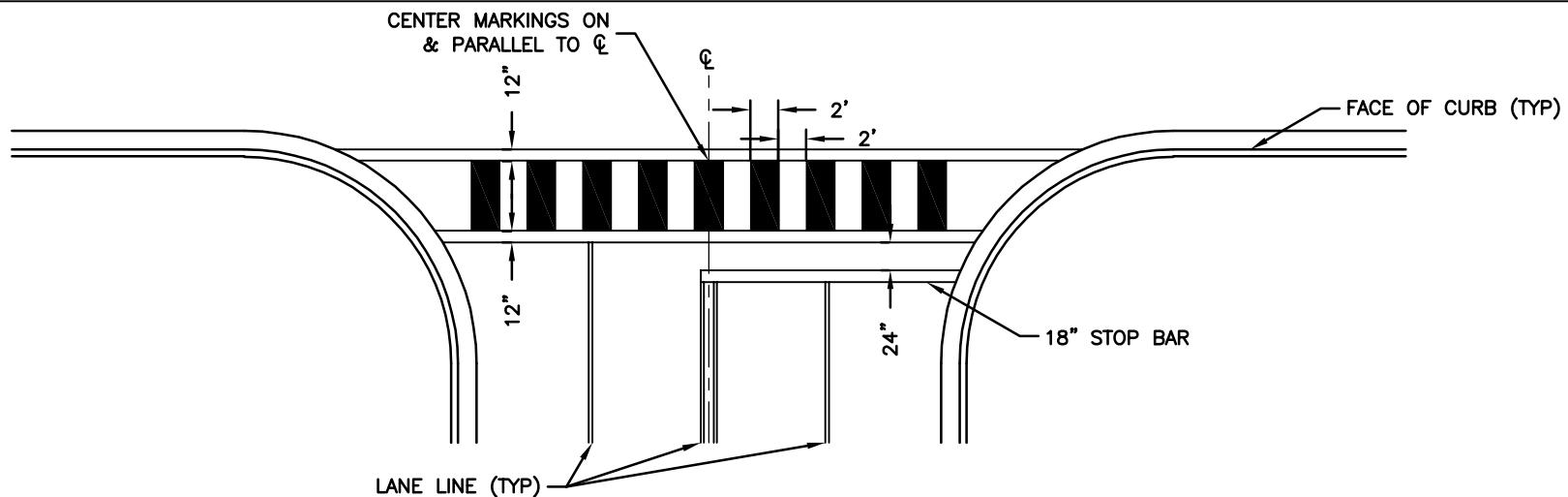


#### STANDARD CROSSWALK MARKING

WIDTH OF LINES 12" STANDARD  
WIDTH OF CROSSWALK 10' STANDARD

NOTES:

1. ALL LANE LINES TERMINATE AT STOP BAR.
2. CROSSWALK AND STOP BAR MARKINGS SHALL BE 90 MIL (0.090 INCH) THICK ALKYD EXTRUDED THERMOPLASTIC.



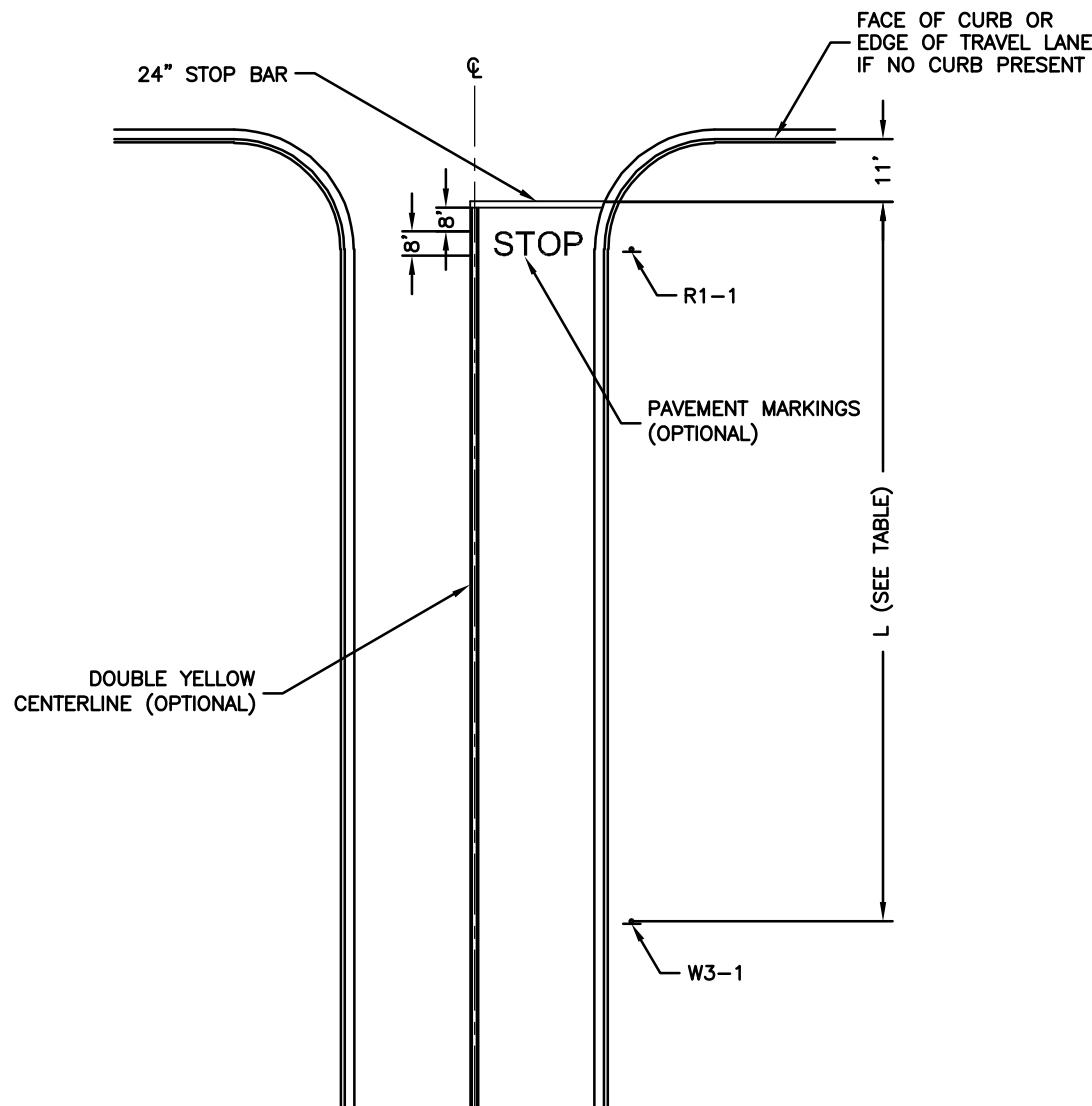
#### HIGH VISIBILITY MARKING

USE WHERE SPECIFIED

NOTES:

1. ALL LANE LINES TERMINATE AT STOP BAR.
2. CROSSWALK AND STOP BAR MARKINGS SHALL BE 90 MIL (0.090 INCH) THICK ALKYD EXTRUDED THERMOPLASTIC.





NOTES:

1. USE OF THE W3-1 'STOP AHEAD' SIGN SHALL BE INSTALLED AT SPECIFIC LOCATIONS DEMONSTRATING LIMITED SIGHT DISTANCE OR AS DIRECTED BY THE CITY ENGINEER.
2. 'STOP SIGN' NORMALLY LOCATED AT CURB RETURN OR POINT OF OPTIMUM VISIBILITY.
3. STOP BARS SHALL BE REFLECTORIZED 90 MIL THERMOPLASTIC. DOUBLE YELLOW CENTERLINE SHALL BE REFLECTORIZED PAINT, 24-28 MIL IN THICKNESS.
4. ALL PAVEMENT MARKINGS SHALL BE CENTERED IN THE TRAVEL LANE.
5. R1-1 'STOP SIGN' SHALL BE A MINIMUM OF THIRTY (30") INCHES IN WIDTH. ALL SIGN SHEETING MATERIAL TO BE DIAMOND GRADE VIP.
6. OPTIONAL 'STOP' PAVEMENT MARKING MAY BE REQUIRED AS DIRECTED BY THE CITY ENGINEER.

POSTED SPEED LIMIT [MPH]	L VALUES			
	0% [FT]	3% [FT]	6% [FT]	9% [FT]
25 OR NOT POSTED	250	260	270	290
30	305	315	335	355
35	360	380	400	430

