

**CITY OF EL MIRAGE  
SUPPLEMENT TO  
MARICOPA ASSOCIATION OF  
GOVERNMENTS  
UNIFORM STANDARD DETAILS  
(UNDER CONSTRUCTION)**



**CITY OF EL MIRAGE  
DEVELOPMENT AND COMMUNITY SERVICES  
ENGINEERING DIVISION**

**(Revised April 2014)**

# CITY OF EL MIRAGE

## STANDARD DETAIL INDEX (PAGE 1 OF 1)



<u>STANDARD DETAIL</u>	<u>DESCRIPTION</u>
111-1	TRASH ENCLOSURE
111-2	TRASH ENCLOSURE NOTES
131-1	POST MOUNTED STREET SIGNS 40MPH OR LESS
131-2	POST MOUNTED STREET SIGNS OVER 40MPH
132-1	SIGN POST INSTALLATION
132-2	SIGN POST SPECIFICATIONS
149	TRENCH PLATING
158	SIGHT DISTANCE REQUIREMENTS
159	UNOBSTRUCTED VIEW REQUIREMENTS
221A	ARTERIAL STREET SIDEWALK RAMPS
221R	RESIDENTIAL & COLLECTOR RAMPS
222A	ARTERIAL STREET SIDEWALK RAMPS
222R	RESIDENTIAL & COLLECTOR RAMPS
271	FIRE HYDRANT MAKER LOCATIONS
325	WATER METER/BOX/LOCATION/CONSTRUCTION
351-1	2" & SMALLER REDUCED PRESSURE BACKFLOW
351-2	2" & SMALLER REDUCED PRESSURE BACKFLOW
352	2" & LARGER REDUCED PRESSURE BACKFLOW
360	FIRE HYDRANT INSTALLATION
393	WATER VALVE ADJUSTMENT
395	UNIVERSAL AIR-VACUUM VALVE
406	BEDDING & BACKFILL FOR ALL PIPELINES
422	SEWER MANHOLE & CLEANOUT ADJUSTMENTS

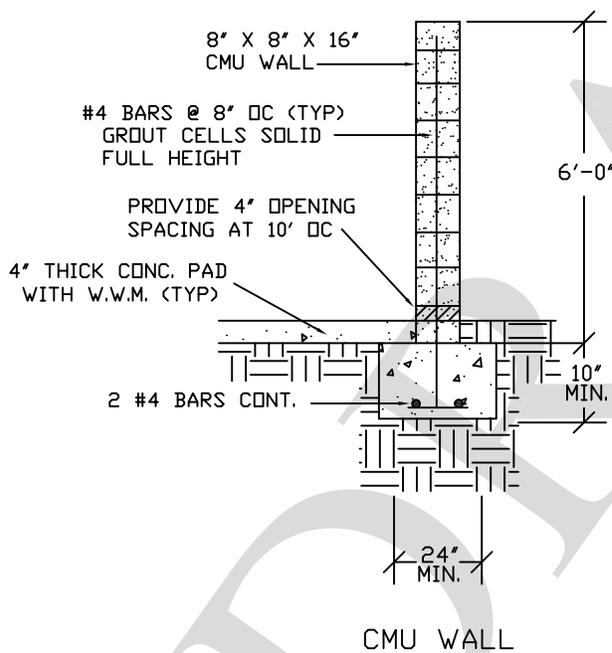
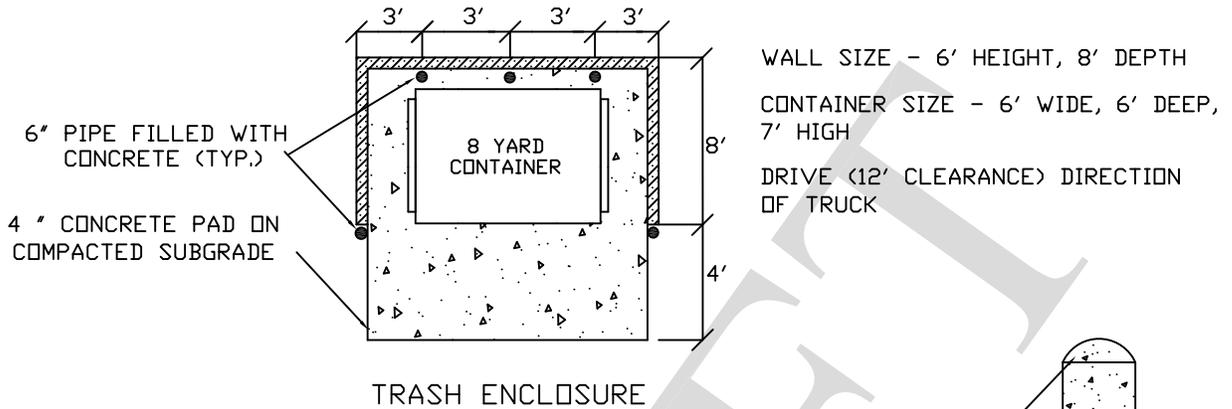
# CITY OF EL MIRAGE STANDARD DETAIL 111-1 TRASH ENCLOSURE



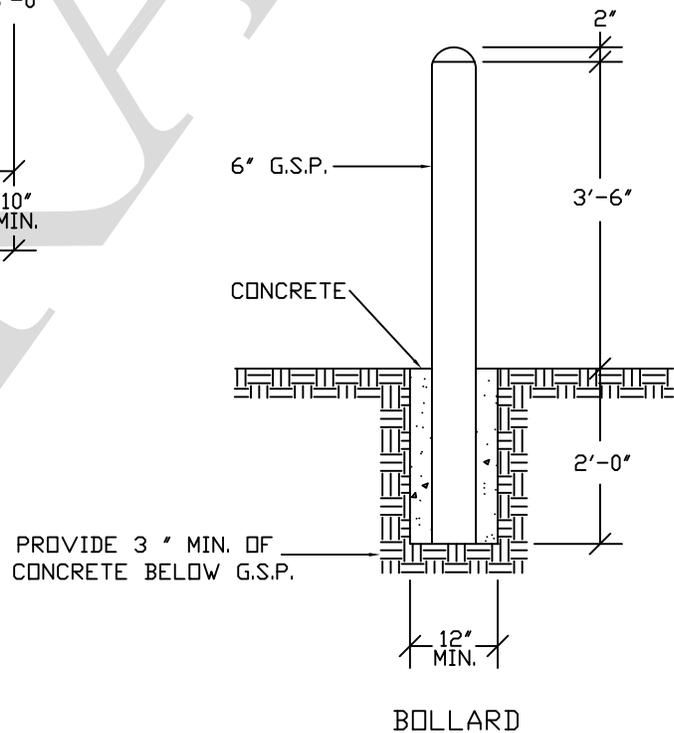
APPROVED: \_\_\_\_\_

CITY ENGINEER

DATE



(6" G.S.P.)  
GALVANIZED STEEL  
PIPE TO BE FILLED  
WITH CONCRETE AND  
ROUNDED ON TOP



ENCLOSURE TO BE CONSTRUCTED AS PER STANDARD DETAIL 111-1 & 111-2.

CITY OF EL MIRAGE  
STANDARD DETAIL 111-2  
TRASH ENCLOSURE NOTES



APPROVED:

\_\_\_\_\_  
CITY ENGINEER

\_\_\_\_\_  
DATE

1. ENCLOSURE TO BE CONSTRUCTED AS PER STANDARD DETAIL 111-1 & 111-2.
2. USE CLASS "A" CONCRETE, GRADE 60 STEEL REINFORCEMENT AND WELDED WIRE MESH.
3. WHEN STRAIGHT APPROACH IS NOT AVAILABLE, ENCLOSURE MUST BE PLACED AT 45 DEGREE ANGLE TO THE APPROACH. THE TURNING RADIUS SHALL BE 45' FEET AT EACH TRASH ENCLOSURE.
4. CONCRETE SLAB 4' X 12' IN FRONT OF THE ENCLOSURE TO SUPPORT VEHICLE.
5. ALL ENCLOSURES SHALL HAVE GATES THAT SCREEN THE BIN(S) FROM PUBLIC VIEW.
6. IF ATTACHED TO BUILDING, THE CONTAINER MUST BE 3' MINIMUM FROM WALL OF ENCLOSURE AND SHALL BE 5' MINIMUM FROM COMBUSTIBLES OR EXISTING STRUCTURE.
7. ALL COMMERCIAL PROPERTIES SHALL BE DESIGNED WITH ENCLOSURES TO ACCOMMODATE (1) TRASH ENCLOSURE FOR EVERY 20,000 SQUARE FEET OF BUILDING SPACE. RESTAURANTS WHICH ARE DESIGNED ON A SINGLE PAD SHALL HAVE A MINIMUM OF (1) TRASH ENCLOSURE. THE ENCLOSURE CAN BE SET UP AS DOUBLE OR SINGLE TO MAXIMIZE THE USE OF THE PROPERTY.
8. THE NUMBER OF BIN ENCLOSURES NEEDED DEPENDS ON THE SIZE OF DEVELOPMENT. TYPICALLY, TOTAL VOLUME NEEDS CAN BE CALCULATED BASED ON THE 1/2-CUBIC YARD PER LIVING UNIT PER WEEK. EXAMPLE, A DEVELOPMENT WITH 240 UNITS X .5 YARDS = 120 YARDS PER WEEK OR 10 TRASH BINS (6 YARD) SERVICED TWO TIMES PER WEEK (10 X 6 X 2 = 120 YARDS).
9. RESTAURANTS MUST PROVIDE A SEPARATE AREA TO ACCOMMODATE THEIR GREASE TRAP. THIS DESIGNATED AREA MUST NOT INTERFERE WITH THE TRASH COLLECTION.
10. ADDITIONAL ITEMS SUCH AS LANDSCAPE CONTROL BOXES AND LIGHTING MAY BE POSITIONED ON THE OUTSIDE OF THE ENCLOSURE WALLS.
11. GATES, HINGES & MOUNTING HARDWARE SHALL NOT INTRUDE INTO ENCLOSURE OPENING.
12. EACH ENCLOSURE GATE SHALL HAVE DROP PINS INSTALLED AND HOLES DRILLED IN THE CONCRETE AT BOTH THE OPEN AND CLOSED POSITIONS TO PREVENT THE GATES FROM CLOSING INTO THE COLLECTION VEHICLE.
13. EXTERIOR FINISH OF 6' CMU WALL SHALL BE COORDINATED ARCHITECTURALLY WITH PRIMARY BUILDING FINISHES.
14. SOIL BELOW THE CMU FOOTING AND CONCRETE PAD SHALL BE COMPACTED TO A DEPTH OF 6" AND TO A MINIMUM DRY DENSITY OF 95% IN ACCORDANCE WITH ASTM D-2922 & D-3017, AFTER ADJUSTMENT FOR ROCK CORRECTION.

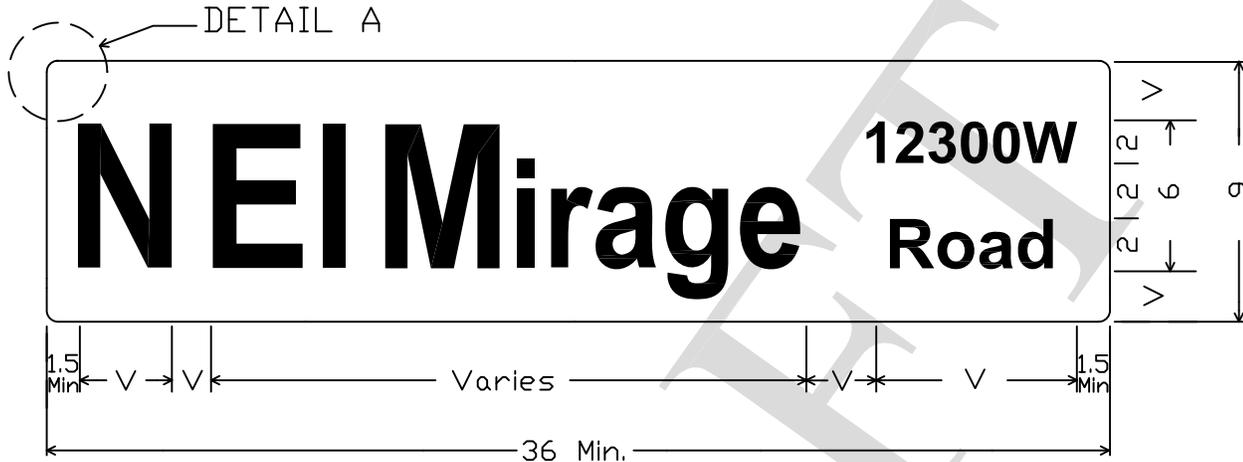
CITY OF EL MIRAGE  
 STANDARD DETAIL 131-1  
 POST MOUNTED STREET SIGNS  
 40MPH OR LESS



APPROVED:

\_\_\_\_\_  
 CITY ENGINEER

\_\_\_\_\_  
 DATE



V = Varies

Dimensions are in inches

EL MIRAGE STREET NAME;

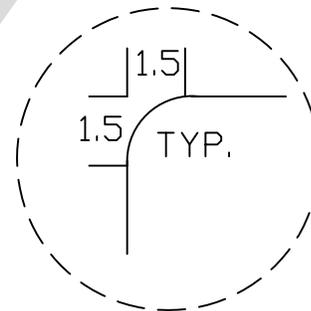
1.50" Radius, No border, Green;

[N] White ClearviewHwy-2-W;

[El Mirage] White ClearviewHwy-2-W;

[12300W] White ClearviewHwy-2-W;

[Road] White ClearviewHwy-2-W;



DETAIL A

ADDITIONAL REQUIREMENTS:

1. Aluminum Gage – 0.080, Reflective Sheeting Type – ASTM IV.
2. Mounting Bracket(s) shall be centered and provide a sign plane support of no less than 25% minimum of the overall sign width.
3. Lettering shall have 6-inch upper-case and 4.5-inch lower-case.

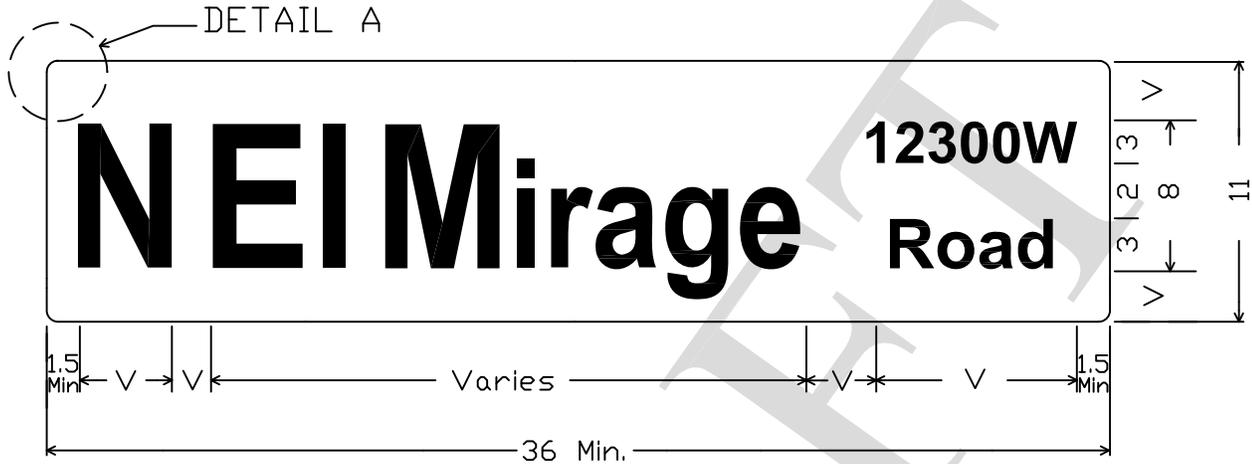
CITY OF EL MIRAGE  
 STANDARD DETAIL 131-2  
 POST MOUNTED STREET SIGNS  
 OVER 40MPH



APPROVED:

\_\_\_\_\_  
 CITY ENGINEER

\_\_\_\_\_  
 DATE



V = Varies

Dimensions are in inches

EL MIRAGE STREET NAME;

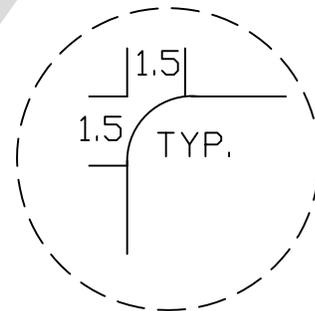
1.50" Radius, No border, Green;

[N] White ClearviewHwy-2-W;

[El Mirage] White ClearviewHwy-2-W;

[12300W] White ClearviewHwy-2-W;

[Road] White ClearviewHwy-2-W;



DETAIL A

ADDITIONAL REQUIREMENTS:

1. Aluminum Gage – 0.080, Reflective Sheeting Type – ASTM IV.
2. Mounting Bracket(s) shall be centered and provide a sign plane support of no less than 25% minimum of the overall sign width.
3. Lettering shall have 8-inch upper-case and 6-inch lower-case.

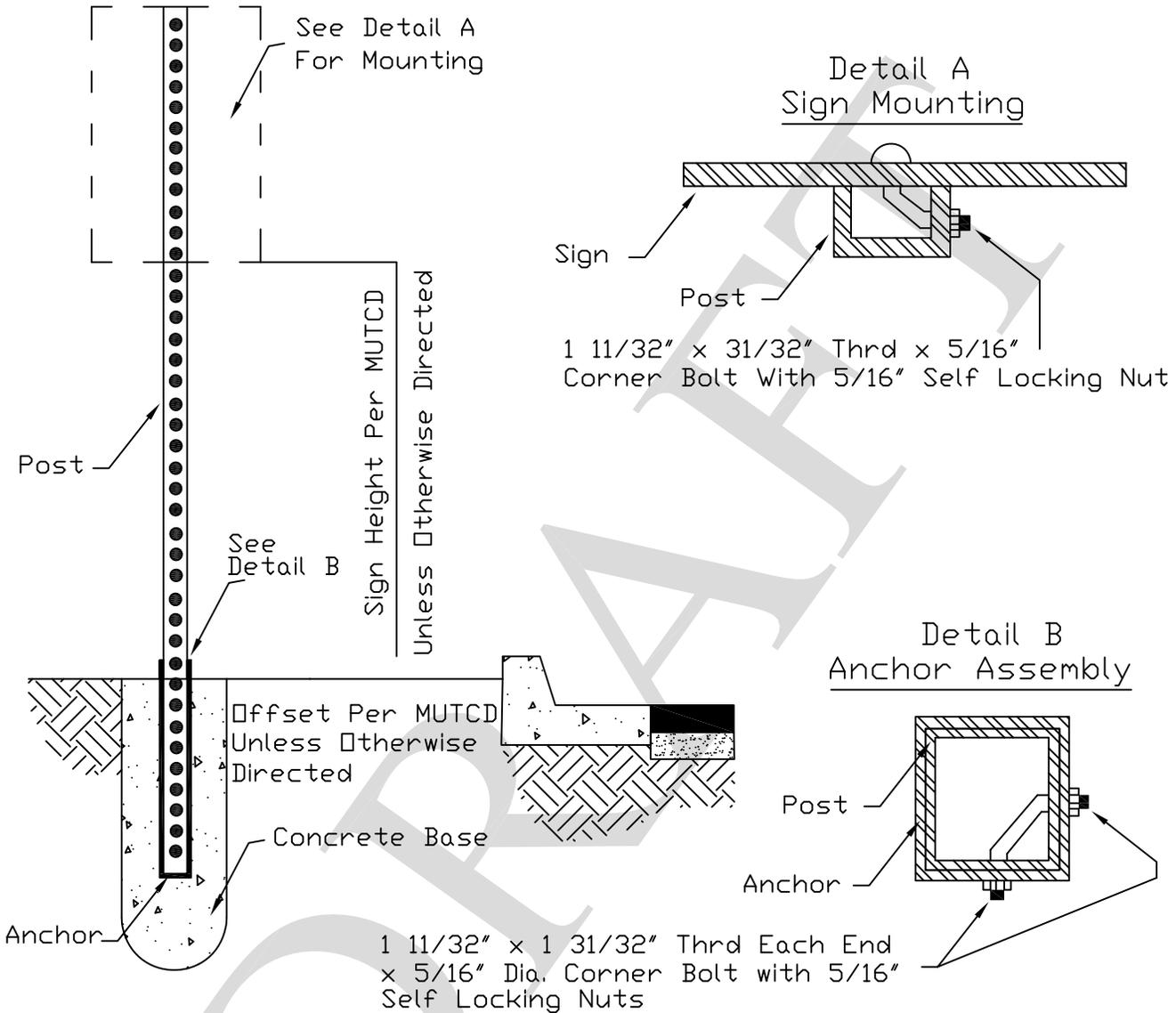
# CITY OF EL MIRAGE STANDARD DETAIL 132-1 SIGN POST INSTALLATION



APPROVED:

\_\_\_\_\_  
CITY ENGINEER

\_\_\_\_\_  
DATE



Legend

Post - 1 3/4" x 1 3/4" Square Perforated 0.105" Galvanized Steel Tubing (Galvanized Finish)

Anchor - 2" x 2" x 30" Square Perforated 0.105" Galvanized Steel Tubing (Galvanized Finish)

Note:

1. Sign Post and Anchor Per City of El Mirage Detail 132-2 Specifications.
2. Concrete for Anchor Shall be 8-inches in Dia. by 24-inches in Depth.
3. Top of Anchor Shall be 6-inches Maximum Above Ground Surface.

# CITY OF EL MIRAGE STANDARD DETAIL 132-2 SIGN POST SPECIFICATIONS



APPROVED: \_\_\_\_\_

CITY ENGINEER

DATE

The City of El Mirage requires square tubing for post mounted sign installations.

Tubing shall have a galvanized finish and be roll formed from twelve (12) gage (.105 USS GAGE) cold rolled steel, be perforated, and have a hole size of 7/16" in diameter and 1" on center on all sides.

All posts require a 2" X 2" X 30" anchor to be concreted into any ground surface at a depth of 24".

For singular signs a 1 3/4" X 1 3/4" X 10' post is required. For dual signs a 1 3/4" X 1 3/4" X 12' post is required.

Also for signs that exceed 42" in width, dual posts and anchors are required.

Attachment of the post to the anchor requires a 1 11/32" X 31/32" X 5/16" corner bolt (threaded at each end) with 5/16" self locking nuts.

Attachment of the sign to the post requires a 1 11/32" X 31/32" X 5/16" corner bolt with self locking nuts.

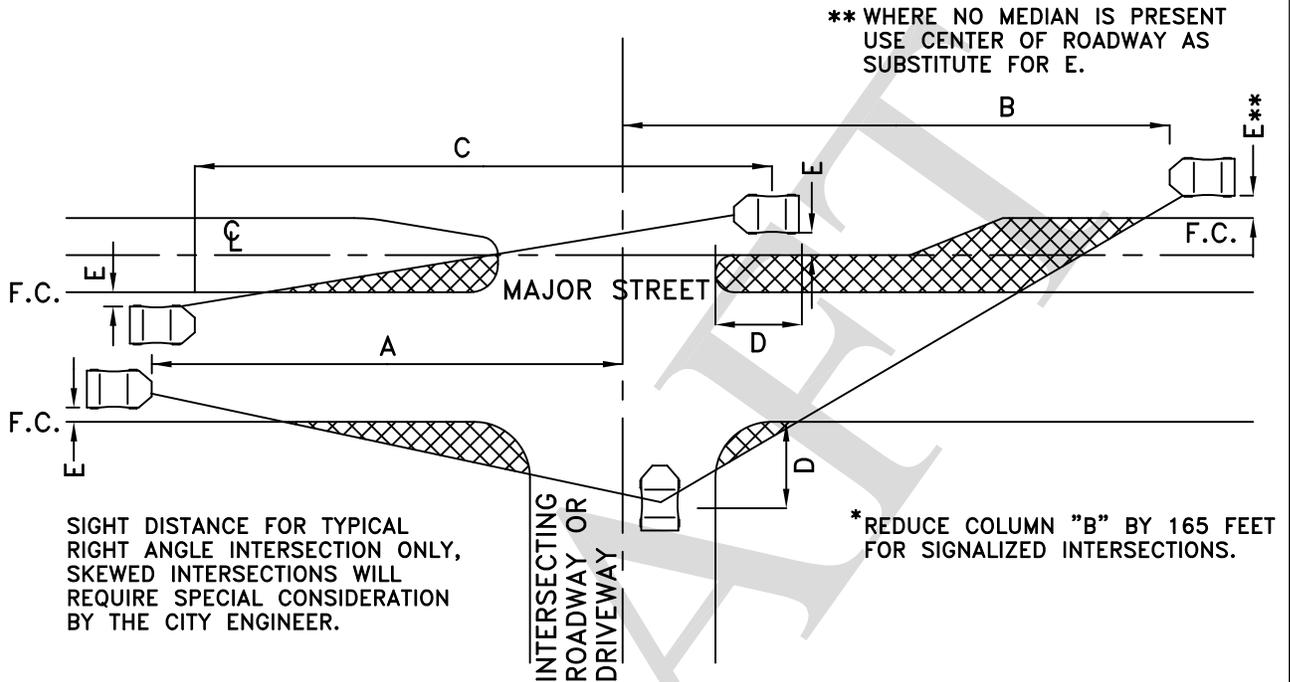
The Anchor shall be protected (taped) prior to the concrete placement. The concrete base shall be 8" in diameter X 24" in depth, with 4" minimum to 6" maximum above finish ground level.



# CITY OF EL MIRAGE STANDARD DETAIL 158 SIGHT DISTANCE REQUIREMENTS FOR ARTERIAL AND COLLECTOR STREETS



APPROVED: \_\_\_\_\_  
CITY ENGINEER DATE



TABLE

STREET	A	*B	C	D	E
COLLECTOR	455'	455'	490'	16'	3'
ARTERIAL	585'	585'	630'	16'	3'

NOTES

1. NO SIGNS, FENCES, WALLS, UTILITY BOXES, STRUCTURES, SHRUBS, HEDGES, OR OTHER PLANTS, (EXCLUDING TREES) OVER 30 INCHES IN HEIGHT SHALL BE PERMITTED WITHIN THE RESTRICTED AREAS, EXCEPT AS APPROVED BY THE CITY ENGINEER.
2. TREES ARE PERMITTED WITHIN THE RESTRICTED AREAS PROVIDED:
  - A. NO LIMBS, LEAVES, NEEDLES OR OTHER FOLIAGE ABOVE 30 INCHES OR BELOW 84 INCHES ARE PERMITTED.
  - B. TREES ARE PLANTED SO AS NOT TO OBSTRUCT 20% OF THE VISIBILITY WHEN COMBINED WITH OTHER OBSTRUCTIONS PRESENT.

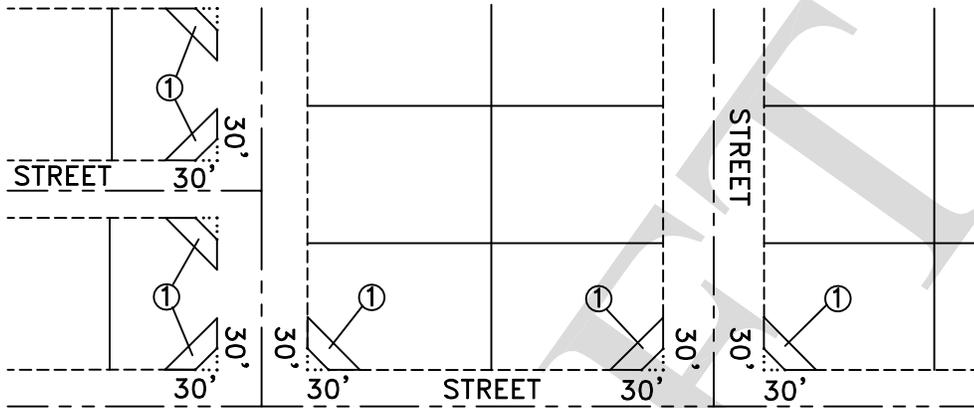
# CITY OF EL MIRAGE STANDARD DETAIL 159 UNOBSTRUCTED VIEW EASEMENT REQUIREMENTS FOR STREETS



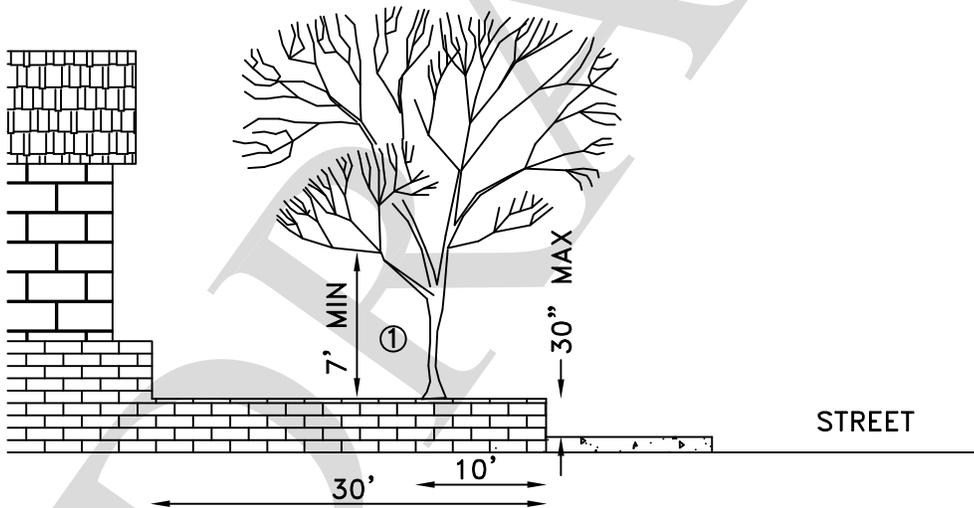
APPROVED: \_\_\_\_\_

CITY ENGINEER

DATE



PLAN VIEW



**NOTES:**

1. Signs, fences, walls, utility boxes, structures, shrubs, hedges other plants, but excluding trees over 30 inches in height shall not be permitted within the restricted areas, except as approved by the City Engineer.
2. Trees are permitted within the restricted areas provided:
  - a) No limbs, leaves, needles or other foliage above 30 inches or below 84 inches are permitted.
  - b) Trees are planted so as not to obstruct 20 percent of the visibility when combined with other obstructions present.

18

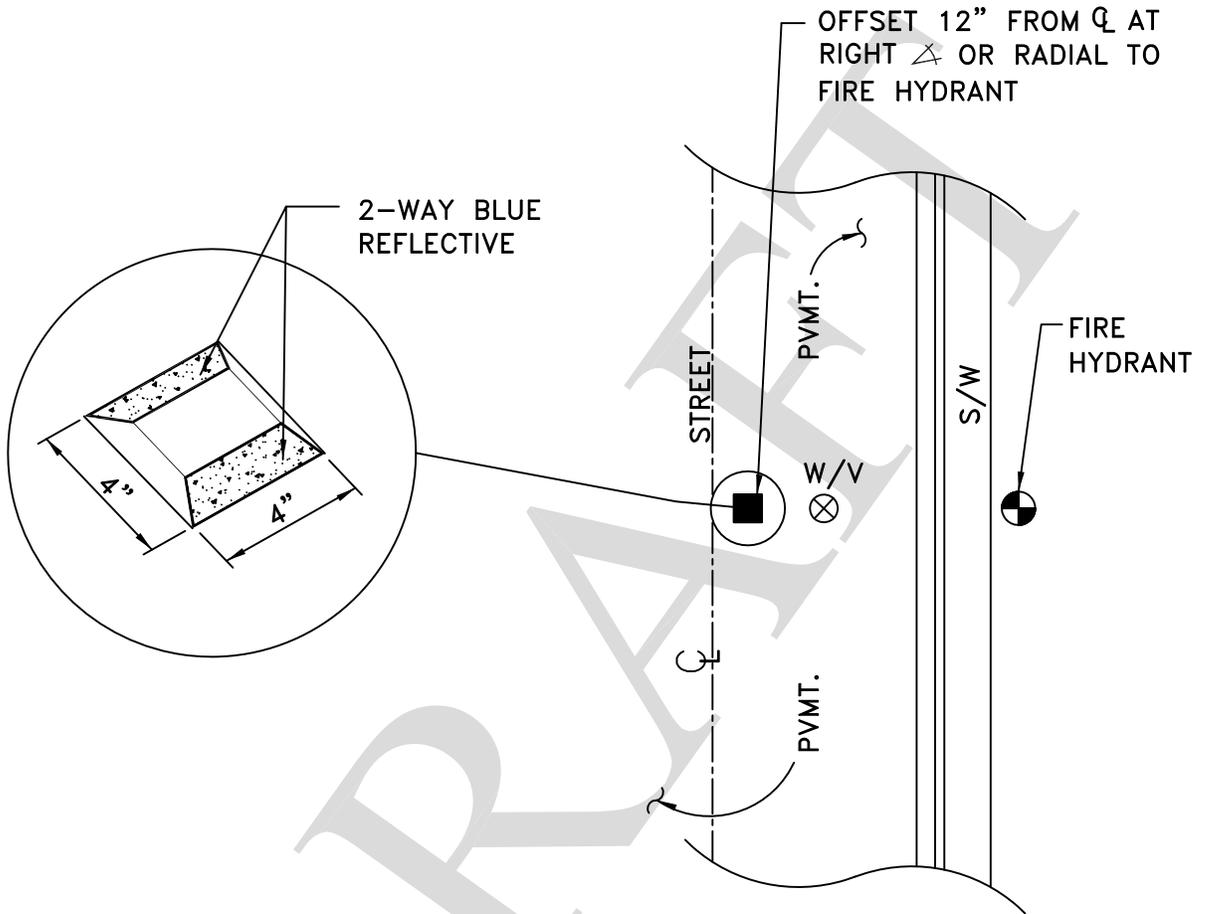
CITY OF EL MIRAGE  
STANDARD DETAIL 271  
FIRE HYDRANT MARKER LOCATION



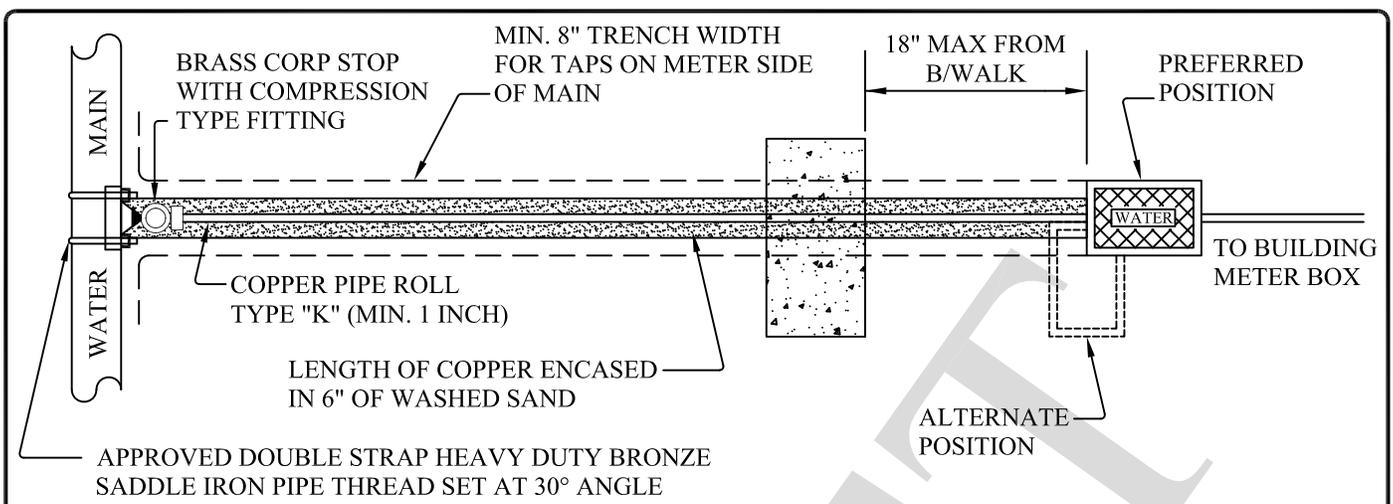
APPROVED: \_\_\_\_\_

CITY ENGINEER

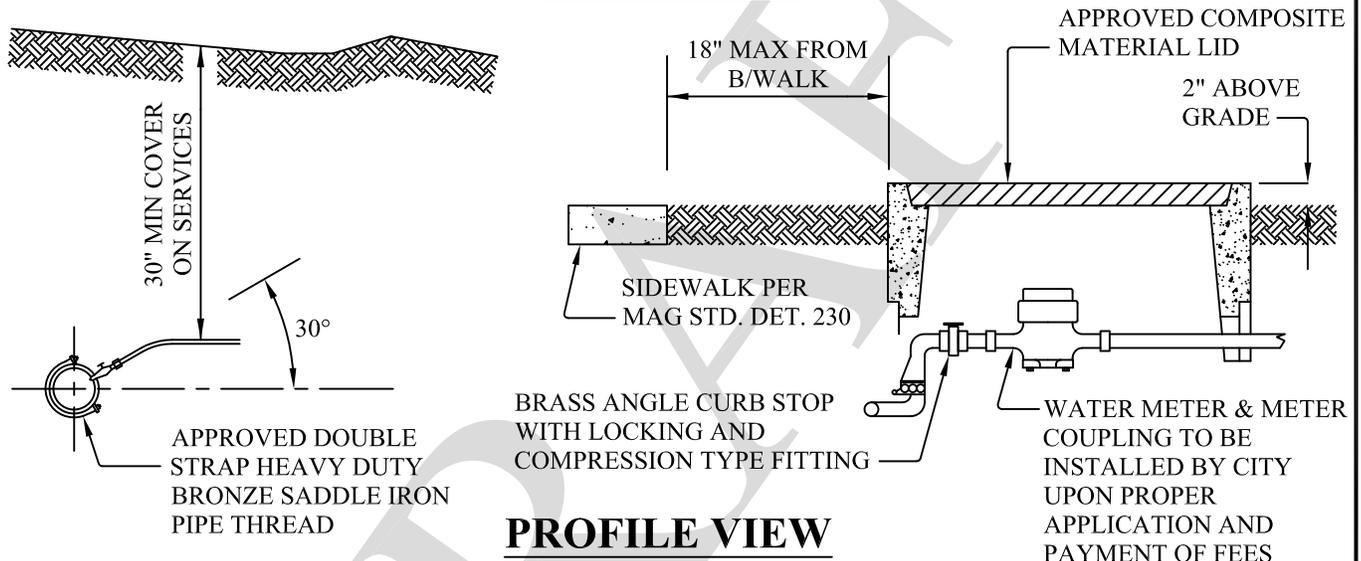
DATE



BLUE (RPM) FIRE HYDRANT MARKER LOCATION



**PLAN VIEW**

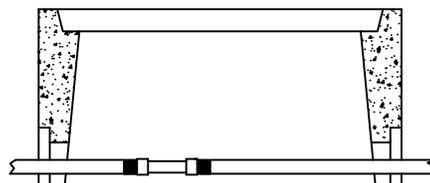
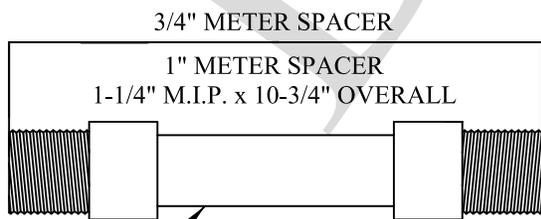


**PROFILE VIEW**

**NOTES:**

1. ALL TAPS MUST BE MADE BY USING A SERVICE SADDLE AS SHOWN.
2. IF CONTRACTOR IS TO TAP THE MAIN AND INSTALL WATER SERVICES, THEY SHALL INCLUDE THE CORP STOP, SERVICE PIPE, APPURTENANT FITTINGS, CURB STOP, METER BOX AND COVER.
3. TAP SIZE SHALL BE A MINIMUM OF ONE INCH. METERS LARGER THAN ONE INCH MUST MATCH METER SIZE.
4. NO COUPLINGS ALLOWED FOR SERVICE LINE.
5. ALL MATERIALS SHALL CONFORM TO THE LATEST MAG SPECIFICATIONS.

**CONSTRUCTION SERVICE WATER METER BY-PASS**



PVC - SCH. 40 (AS SHOWN WITH MALE ADAPTERS) OR PVC - SCH. 80 THREADED NIPPLE



**WATER SERVICE CONNECTIONS - 2" AND SMALLER**

APPROVED BY:

CITY ENGINEER

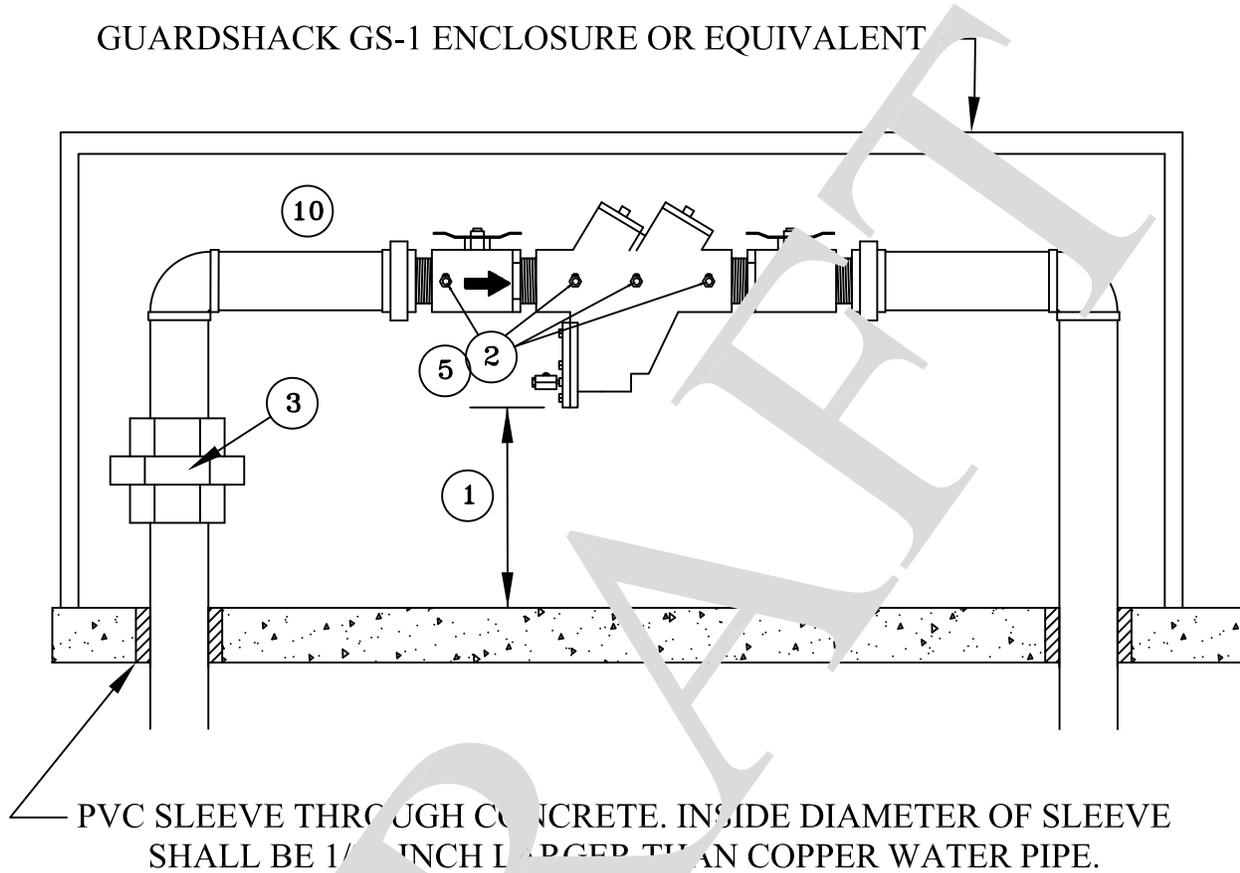
REVISION DATE: 11/2013

STANDARD DETAIL NO.

**325**

## OUTSIDE INSTALLATION

GUARDSHACK GS-1 ENCLOSURE OR EQUIVALENT



### NOTES

1. BOTTOM OF ASSEMBLY MUST BE AT LEAST 12" ABOVE GRADE BUT NO MORE THAN 30" ABOVE GRADE.
2. MINIMUM CLEARANCE IN FRONT OF TEST COCKS-12".
3. MINIMUM CLEARANCE UNION REQUIRED, TYPE "L" HARD COPPER REQUIRED.
4. ASSEMBLIES MUST BE INSPECTED BY THE CITY OF EL MIRAGE AND TESTED BY A CITY APPROVED TESTER.
5. ALL TEST COCKS SHALL HAVE BRASS PLUGS.
6. A PERMIT IS REQUIRED FOR INSTALLATION.
7. CONTACT CITY FOR VERIFICATION OF APPROVED ASSEMBLIES.
8. ASSEMBLIES MUST BE INSTALLED AS SHIPPED.
9. ALL INSTALLATIONS SHALL BE PROTECTED.
10. INSTALL A "Y" STRAINER ON THE INLET SIDE.



## REDUCED PRESSURE BACKFLOW PREVENTOR - 2" & SMALLER

APPROVED BY:

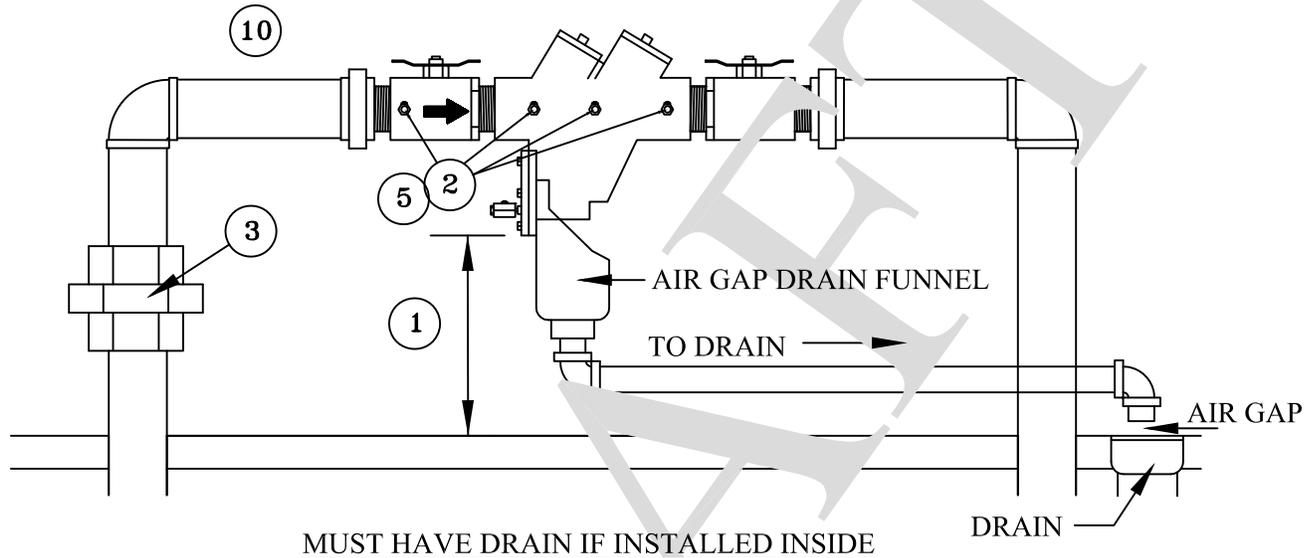
CITY ENGINEER

REVISION DATE: 03/2015

STANDARD DETAIL NO.

**351-1**

## INSIDE INSTALLATION



### NOTES

1. BOTTOM OF ASSEMBLY MUST BE AT LEAST 12" ABOVE GRADE BUT NO MORE THAN 30" ABOVE GRADE.
2. MINIMUM CLEARANCE IN FRONT OF TEST COCKS-12".
3. MINIMUM OF ONE UNION REQUIRED, TYPE "L" HARD COPPER REQUIRED.
4. ASSEMBLIES MUST BE INSPECTED BY THE CITY OF EL MIRAGE AND TESTED BY A CITY APPROVED TESTER.
5. ALL TEST COCKS SHALL HAVE BRASS PLUGS.
6. A PERMIT IS REQUIRED FOR INSTALLATION.
7. CONTACT CITY FOR VERIFICATION OF APPROVED ASSEMBLIES.
8. ASSEMBLIES MUST BE INSTALLED AS SHIPPED.
9. ALL INSTALLATIONS SHALL BE PROTECTED.
10. INSTALL A "Y" STRAINER ON THE INLET SIDE.



## REDUCED PRESSURE BACKFLOW PREVENTOR - 2" & SMALLER

APPROVED BY:

CITY ENGINEER

REVISION DATE: 03/2015

STANDARD DETAIL NO.

**351-2**

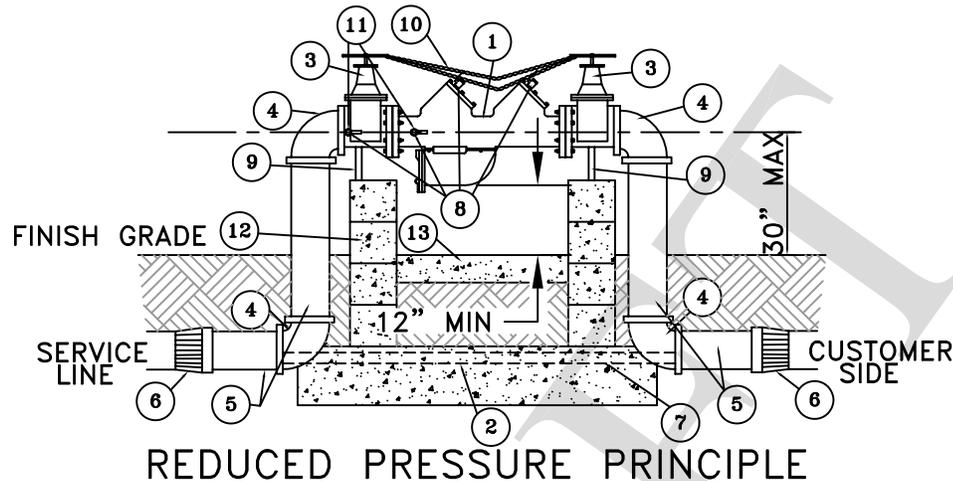
CITY OF EL MIRAGE  
STANDARD DETAIL 352  
CROSS CONNECTION CONTROL LARGER THAN 2"  
REDUCED PRESSURE BACKFLOW PREVENTOR



APPROVED: \_\_\_\_\_

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CITY ENGINEER

\_\_\_\_\_  
DATE



LIST OF MATERIALS

1. APPROVED BACKFLOW ASSEMBLY
2. COAT WITH COAL TAR EPOXY (16 MILS.)
3. GATE VALVE
4. 90° ELBOW (FLANGED D.I.P. 3" THRU 10")
5. PIPE SPOOL (FLANGED D.I.P. 3" THRU 10")
6. FLANGED ADAPTER (WHEN REQUIRED)
7. 3" X 3" X 1/4" STEEL ANGLE BOLT TO FLANGE AT EACH END
8. TEST COCK (4 REQUIRED)
9. ADJUSTABLE PIPE SUPPORT
10. CHAIN & LOCK (FIRE LINE ONLY)
11. INSTALL TATTLE TAIL APPARATUSSES & FITTINGS (METER TO BE INSTALLED BY CITY)
12. 8" X 8" X 16" CONCRETE BLOCK FILLED WITH MORTAR
13. CONCRETE PAD FROM SUPPORT TO SUPPORT (4" DEEP X 12" WIDE)

GENERAL NOTES

- A. CONTACT CITY OF EL MIRAGE WATER SUPERINTENDENT FOR LIST OF APPROVED ASSEMBLIES
- B. ASSEMBLY SHALL BE APPROVED BY CITY OF EL MIRAGE INSPECTOR
- C. THE FOUR TEST COCKS SHALL BE FITTED WITH PLUGS AND USED FOR NO REASON OTHER THAN TESTING
- D. INSTALLATION SHALL BE PROTECTED BY GUARD POST (SEE STANDARD) IF NEAR TRAFFIC
- E. FINISHED GRADE UNDERNEATH ASSEMBLY SHALL BE 95% COMPACTION
- F. ASSEMBLY SHALL BE PAINTED TAN OR COLOR TO MATCH BACKGROUND
- G. INSPECTIONS MUST BE CALLED FOR PIERS, KICKBLOCK, AND ANGLE STEEL PLACEMENT
- H. BOTTOM TO BE 12" MIN TO 30" MAX. ABOVE GRADE
- I. 12" CLEARANCE TO TEST COCKS
- J. ASSEMBLY MUST BE TESTED AT TIME OF INSTALLATION BY CITY APPROVED TESTER
- K. PERMIT REQUIRED FOR INSTALLATION
- L. THRUST BLOCK PER MAG STD DET 380

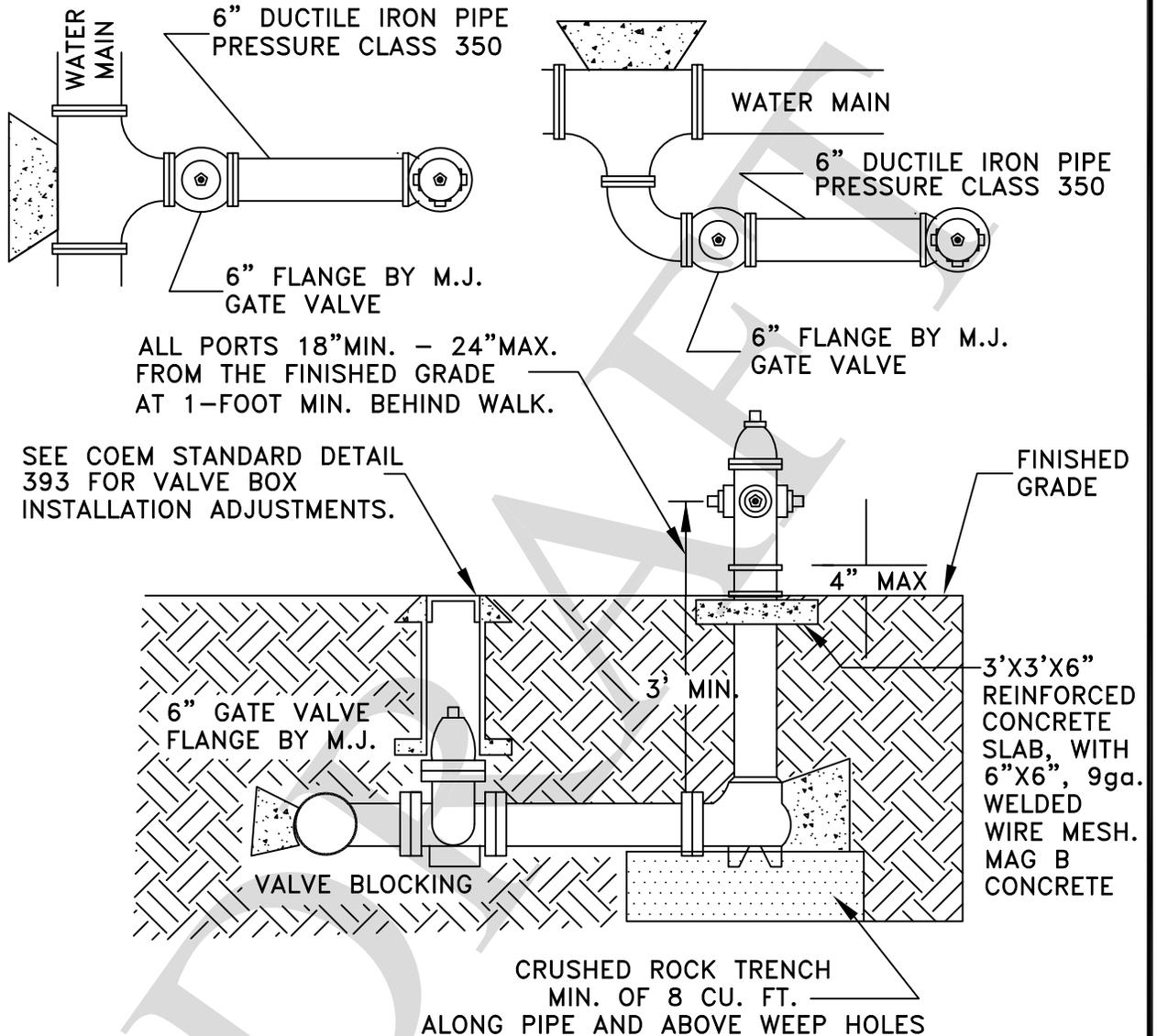
# CITY OF EL MIRAGE STANDARD DETAIL 360 FIRE HYDRANT INSTALLATION



APPROVALS:

\_\_\_\_\_  
CITY ENGINEER

\_\_\_\_\_  
DATE



**NOTES:**

1. ALL JOINTS IN THE HYDRANT RUN OUT ARE TO BE MEG-A-LUG, OR EQUAL.
2. APPROVED HYDRANTS INCLUDE: A.V.K., CLOW, KENNEDY MODEL K81, MULLER, AND WATEROUS.
3. THE 6" GATE VALVE SHALL BE FLANGED BY MECHANICAL JOINT.
4. NO VALVES ARE TO BE IN THE CONCRETE.
5. THE 4 1/2" PORT OF THE FIRE HYDRANT IS TO BE INSTALLED FACING THE STREET.
6. ALL BARRELS ABOVE GROUND SHALL HAVE A PRIME COAT AND PAINTED WITH TWO COATS OF FIRE HYDRANT YELLOW PAINT OR AS SPECIFIED BY THE CITY .
7. FOR CONCRETE THRUST BLOCKS, SEE MAG STD. DTL. 380.



# CITY OF EL MIRAGE STANDARD DETAIL 395 UNIVERSAL AIR-VACUUM VALVE

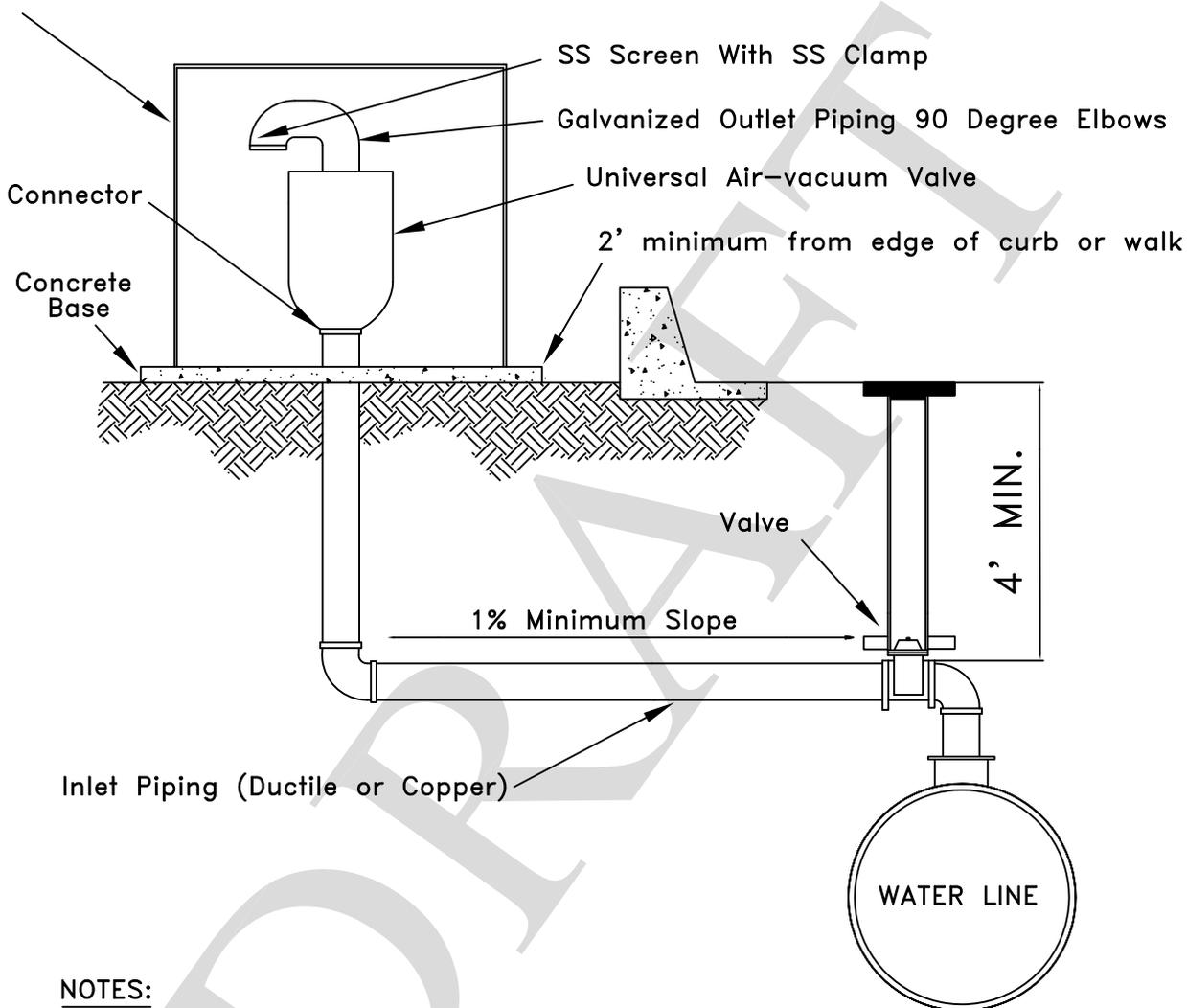


APPROVED: \_\_\_\_\_

CITY ENGINEER

DATE

Gaurdshack GS-1 Enclosure or Equivalent



**NOTES:**

1. VANDAL ENCLOSURE TO BE "GAURDSHACK GS-1 OR APPROVED EQUAL.
2. LINE FROM MAIN TO AIR RELEASE VALVE TO BE INSTALLED WITH POSITIVE SLOPE TO PREVENT BLOCKAGE.
3. CONCRETE BASE TO BE 4-INCHES THICK WITH NUMBER 4-60 GRADE STEEL REINFORCEMENT AT 12-INCHES O.C. E.W., THE BASE SHALL EXTEND A MINIMUM OF 12-INCHES OUTSIDE THE ENCLOSURE.
4. FIELD PAINT ALL FITTINGS AND VANDAL ENCLOSURE "SAN DIEGO BUFF".
5. SIZE OF UNIVERSAL AIR-VACUUM VALVE AND APPURTENANCES SHALL BE SPECIFIED BY THE DESIGN ENGINEER.

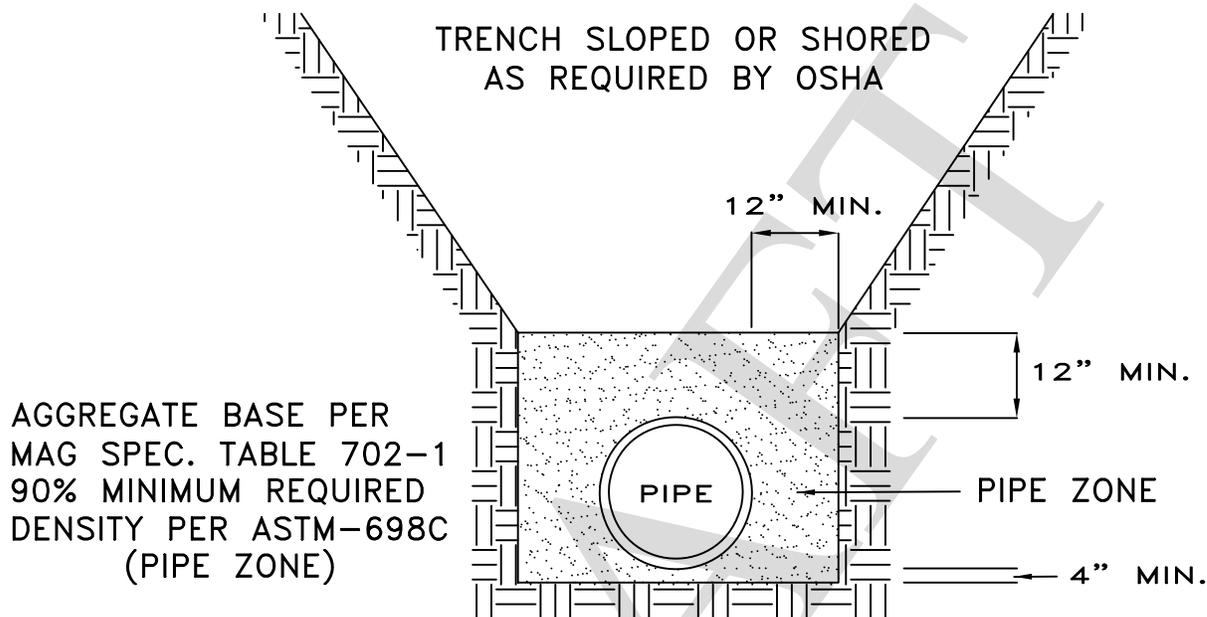
CITY OF EL MIRAGE  
STANDARD DETAIL 406  
BEDDING AND BACKFILL  
FOR ALL PIPELINES



APPROVED:

\_\_\_\_\_  
CITY ENGINEER

\_\_\_\_\_  
DATE



NOTES:

1. Aggregate base per MAG Standard Specifications Table 702-1, shall be used in the pipe zone. The pipe zone extends from the bottom of trench to one-foot above the top of pipe.
2. Bottom of trench to be inspected for uniformity and subject to compaction testing at the discretion of the City of El Mirage prior to bedding placement.
3. Pipe zone placements shall be no less than four lifts, bedding, springline, top of pipe and 1-foot above pipe. Each lift shall be placed at 90% compaction.
4. Backfill above the pipe zone shall conform to MAG Section 601, Table 601-2 type 1 and note 5 below.
5. All backfill below existing asphalt paving shall be placed with 1/2 sack CLSM (slurry). Asphalt replacements shall conform to MAG Standard Detail 200 "type A" from 1-foot above top of pipe to 5-inches below finish grade.

# CITY OF EL MIRAGE STANDARD DETAIL 422 SEWER MANHOLE AND CLEANOUT ADJUSTMENTS

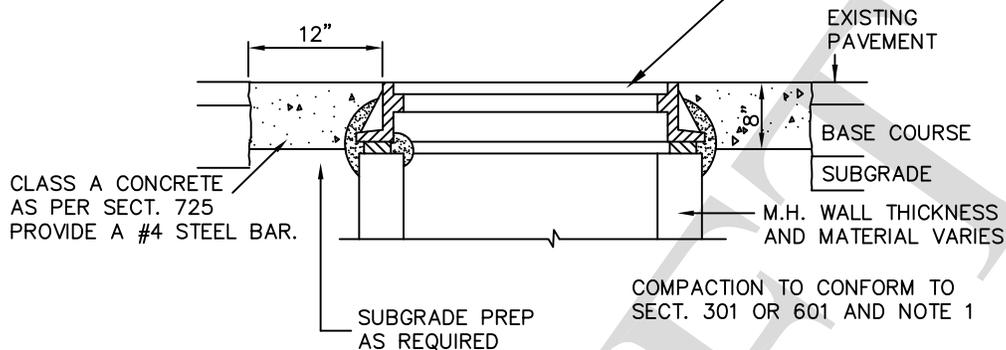


APPROVED: \_\_\_\_\_

CITY ENGINEER

DATE

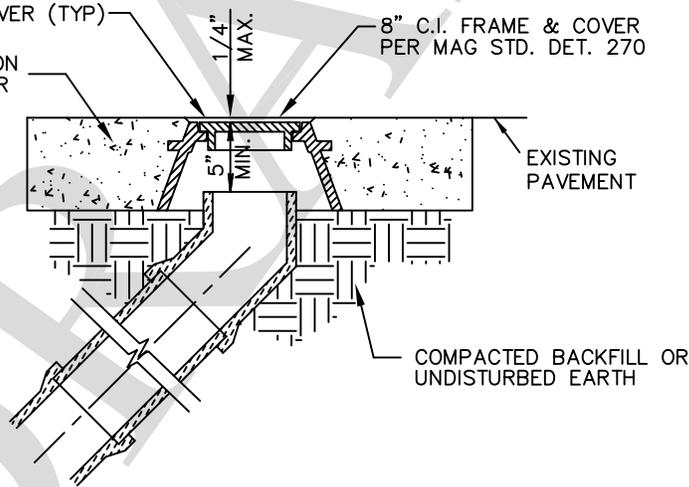
THE WORD "CITY OF EL MIRAGE SANITARY SEWER" ON COVER (TYP) →



MANHOLE

THE WORD "SEWER" ON COVER (TYP) →

CLASS 'A' CONC. PER SECTION 725, 8" THICK, 40" DIAMETER PROVIDE A #4 STEEL BAR.



CLEANOUT

NOTES:

1. COMPACTION BELOW CONCRETE ADJUSTMENT TO BE AT 95% MIN.
2. CONCRETE ADJUSTMENTS ARE REQUIRED ON (BOTH) PAVED AND UNPAVED SURFACES.
3. MANHOLES SHALL HAVE AT LEAST ONE ADJUSTMENT RING ON CONE.
4. CONCRETE SHALL HAVE A MEDIUM BROOM FINISH WITH FOUR SCORE MARKS MINIMUM.
5. ASPHALT SURFACE (CRACKSEAL) IS REQUIRED AT CONCRETE JOINTS.

MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35, AASHTO M306  
DRAWING NOT TO SCALE



2" RAISED LETTERS  
FLUSH WITH TOP OF  
COVER



OPEN PICKSLOT

**NOTES:**

1. MANHOLE COVER DIMENSIONS MUST ADHERE TO MAG STANDARD DETAILS 423 OR 424.
2. ALL MATERIALS SHALL CONFORM TO THE LATEST MAG SPECIFICATIONS.
3. MANHOLE COVER IS NEENAH FOUNDRY PRODUCT NO. DF-1296-T OR EAST JORDAN IRON WORKS PRODUCT NO. 2230.



**MANHOLE COVER WITH CITY LOGO**

APPROVED BY:

CITY ENGINEER

REVISION DATE: 10/2015

STANDARD DETAIL NO.

**423**