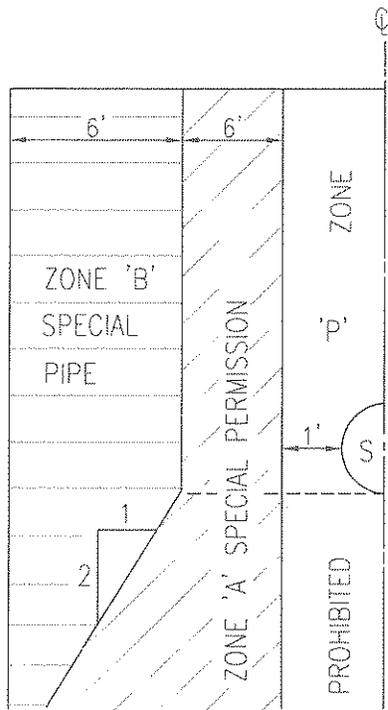
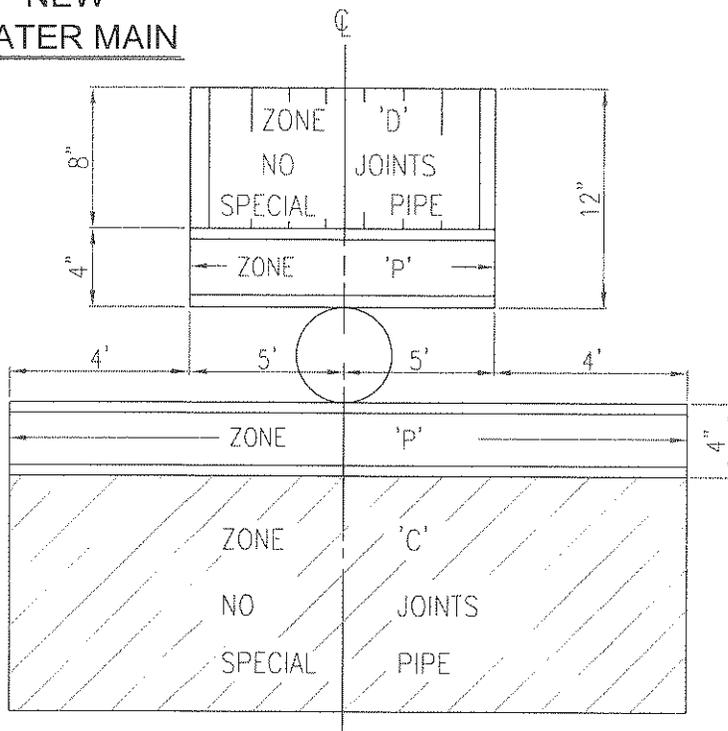


**NEW
WATER MAIN**



PARALLEL



CROSSING

NOTES:

1. ZONE 'P' IS A PROHIBITED ZONE PER SECTION 64630 (e) (2) CALIFORNIA ADMINISTRATIVE CODE, TITLE 22.
2. ZONE 'A' : NO CONSTRUCTION WITHOUT APPROVAL FROM RESPONSIBLE HEALTH AGENCY AND WATER SUPPLIER.
3. ZONE 'B': NEW WATER MAIN WILL BE CONSTRUCTED OF:
 - A. DUCTILE IRON PIPE, CLASS 52, CEMENT MORTAR LINED WITH COMPRESSION JOINTS.
4. ZONE 'C': NEW WATER MAIN WILL BE CONSTRUCTED OF DUCTILE IRON PIPE, CLASS 52, WITH HOT DIP BITUMINUS COATING AND CEMENT MORTAR LINING.
5. ZONE 'D': NEW WATER MAIN WILL BE CONSTRUCTED OF DUCTILE IRON PIPE, CLASS 52, WITH HOT DIP BITUMINUS COATING AND CEMENT MORTAR LINING.
6. CRITERIA ALSO APPLIES TO WATER MAINS THAT CROSS BELOW A SEWER LATERAL BUT NOT THOSE THAT CROSS ABOVE.
7. PIPE, COATING AND LINING SHALL BE PER A.W.W.A. STANDARD SPECIFICATIONS.

REVISIONS	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	WATER MAIN DESIGN CRITERIA	
2		
3	APPROVED BY: 	DATE: <u>6/2/04</u>
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		400 1 OF 11

MATERIALS:

I. MAINLINE PIPE:

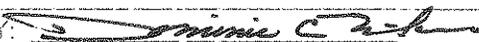
- A. DUCTILE IRON PIPE, CLASS 52
 - 1. A.W.W.A. STANDARDS Nos. C115-83, C150-81 AND C151-81
- B. CEMENT MORTAR LINING
 - 1. A.W.W.A. STANDARD No. C104-80
- C. ENCASEMENT
 - 1. POLYETHYLENE: 8 MILS MINIMUM THICKNESS
 - 2. A.W.W.A STANDARD No. C105-82

II. MAINLINE FITTINGS:

- A. DUCTILE IRON, CLASS 350
 - 1. A.W.W.A. STANDARD No. C110-82
- B. GREY IRON, CLASS 250
 - 1. A.W.W.A. C110-82
- C. CEMENT MORTAR LINING
 - 1. A.W.W.A. C104-80
- D. ENCASEMENT
 - 1. POLYETHYLENE: TWO LAYERS, 8 MILS MINIMUM THICKNESS EACH LAYER
 - 2. A.W.W.A. STANDARD No. C105-82
 - 3. TWO ENCASEMENTS REQUIRED
- E. COMPACT FITTINGS
 - 1. NOT ALLOWED

⚠ III. MAINLINE PIPE AND FITTING JOINTS:

- A. RUBBER GASKET PUSH ON JOINTS (B.J.)
 - 1. "TYTON" BY CLOW CORPORATION OR BY U.S. PIPE AND FOUNDRY CO. OR APPROVED EQUAL EXCEPT AS SHOWN ON STANDARD PLANS (COMPACT FITTING WILL NOT BE ALLOWED).
 - 2. A.W.W.A. STANDARD No. C111-80
- B. MECHANICAL JOINT (M.J.)
 - 1. MAY BE SUBSTITUTED WITH APPROVAL OF CITY ENGINEER EXCEPT AS SHOWN ON STANDARD PLANS
 - 2. STEEL NUTS AND BOLTS
 - a) HIGH STRENGTH
 - b) LOW ALLOY
 - 3. A.W.W.A. STANDARD No. C111-80

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⚠ 3/4/11	WATER MAIN DESIGN CRITERIA	400
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C. FLANGED JOINTS (F.J.)

1. WHERE SHOWN ON STANDARD PLANS
2. RAISED OR FLAT FACED
3. 125 POUND AMERICAN STANDARD DIMENSIONS
 - a) 175 P.S.I. OR LESS WATER WORKING PRESSURE
4. 250 POUND AMERICAN STANDARD DIMENSIONS
 - a) WATER WORKING PRESSURE GREATER THAN 175 P.S.I.
5. A.W.W.A. STANDARDS Nos. C111-80 AND C115-83.



B. RESTRAINED JOINTS (R.J.)

1. WHEN APPROVED BY CITY ENGINEER EXCEPT AS SHOWN ON STANDARD PLANS
2. "TR-FLEX" BY U.S. PIPE AND FOUNDRY OR "SUPER-LOCK" BY CLOW CORPORATION OR APPROVED EQUAL
3. A.W.W.A. STANDARDS No. C111-80

IV. SERVICE LATERALS: 4" MINIMUM AND LARGER

A. PIPE

1. DUCTILE IRON PIPE, CLASS 52
 - a) PER SECTION I OF THIS STANDARD

B. FITTINGS

1. DUCTILE IRON, CLASS 350 OR
2. GREY IRON, CLASS 250
 - a) PER SECTION II OF THIS STANDARD

C. JOINTS

1. FLANGED JOINTS (F.J.)
 - a) PER SECTION III OF THIS STANDARD

V. SERVICE LATERALS: 1" AND 2" SIZE:

A. COPPER

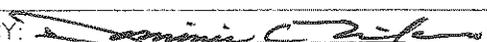
1. COPPER TUBE
2. MAXIMUM WORKING PRESSURE: 200 P.S.I.
3. A.W.W.A. STANDARD No. C901-78
4. A.S.T.M. STANDARD D-2737

VI. COUPLINGS: 4" AND LARGER:

A. DUCTILE IRON OR GREY IRON



1. BY ROCKWELL INTERNATIONAL OR BY DRESSER MANUFACTURING OR APPROVED EQUAL

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VII. COUPLINGS: 1" OR 2"

A. CAST BRONZE OR FORGED BRASS



1. CONTAINING 85 PERCENT COPPER
2. BY THE FORD METER BOX CO. OR BY JAMES JONES CO. OR APPROVED EQUAL
3. A.W.W.A. STANDARD No. C800-84
4. A.S.T.M. STANDARD No. B88

VIII. COPPER TUBING

A. SEAMLESS WATER TUBE, TYPE K

1. A.W.W.A. STANDARD No. C800-84
2. A.S.T.M. STANDARD No. B88

IX. NUTS AND BOLTS:

A. TYPE 316 STAINLESS STEEL, EXCEPT ON MECHANICAL JOINTS

B. PROTECTIVE COATING (BURIED NUTS & BOLTS)
NO-OXIDE GREASE OR WAX MESS WRAP

X. VALVES:

A. GATE VALVE

1. RESILIENT SEATED
2. 200 P.S.I. MINIMUM WORKING PRESSURE
3. TYPE 316 STAINLESS STEEL BODY BOLTS
4. TWO INCH (2") SQUARE OPERATING NUT
5. COUNTERCLOCKWISE OPENING
6. HANDWHEEL WHERE SHOWN ON STANDARD PLANS
7. FLANGED JOINTS
 - a) RAISED OR FLAT FACED
 - b) 125 POUND AMERICAN STANDARD DIMENSIONS FOR 175 P.S.I. OR LESS WATER WORKING PRESSURE
 - c) 250 POUND AMERICAN STANDARD DIMENSIONS FOR WATER WORKING PRESSURE GREATER THAN 175 P.S.I.



8. MANUFACTURED BY McWAYNE OR APPROVED EQUAL
9. A.W.W.A STANDARD No. C509-80
10. A.S.T.M. STANDARD No. 429

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- B. MINOR VALVES (2" AND SMALLER SIZE)
 - 1. CAST BRONZE OR FORGED BRASS
 - a) BY FORD METER BOX CO. OR BY JAMES JONES CO. OR APPROVED EQUAL
 - 2. A.W.W.A. STANDARD No. C800-84

XI. TAPPING SLEEVES:

- A. SPLIT SLEEVE
- B. MECHANICAL JOINT BY FLANGED SPUR
- C. STEEL NUTS AND BOLTS
 - 1. HIGH STRENGTH
 - 2. LOW ALLOY
- D. DUCKED TIPPED END GASKETS
- E. 200 P.S.I. MINIMUM WORKING PRESSURE
- F. MANUFACTURED BY SMITH BLAIR 663 OR EQUAL

XII. PROTECTIVE COATING FOR VALVES:

- A. ALL INTERIOR FERROUS SURFACES EXCEPT STAINLESS STEEL
 - 1. TWO COATS, TEN (10) MILS MINIMUM TO SIXTEEN (16) MILS MAXIMUM DRY FILM TOTAL THICKNESS
 - 2. INTERIOR OF MECHANICAL JOINT ENDS
 - A. ONE (1) COAT, FOUR (4) MILS MINIMUM TO SIX (6) MILS MAXIMUM DRY FILM THICKNESS
 - 3. BY SOC. CO. PLASTIC COATING CO. "KEYSITE 750", 100 PERCENT PURE EPOXY COATING, WHITE IN COLOR
 - 4. A.W.W.A. STANDARD NO. C550-81
- B. ALL EXTERIOR FERROUS SURFACES
 - 1. INCLUDING VALVE OPERATIONS
 - 2. ONE (1) COAT, FOUR (4) MILS MINIMUM TO SIX (6) MILS MAXIMUM DRY FILM THICKNESS
 - 3. BLAST CLEANED TO WHITE METAL
 - 4. MANUFACTURED BY SOC. CO. PLASTIC COATING CO. "KEYSITE NO. 750" OR EQUAL

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X. METERS:

A. DEVELOPER AND CITY PROJECTS

- 1. DEVELOPER AND/OR CONTRACTOR SHALL PURCHASE, FROM THE MANUFACTURER, ALL METERS AND INSTALL METER PER APPLICABLE CITY OF SIGNAL HILL STANDARD. (CONTACT THE CITY WATER DEPARTMENT FOR CURRENT WATER METER MANUFACTURER AND CAT. NO.)



INSTALLATION

I. PIPES, VALVES, FITTINGS AND APPURTENANCES:

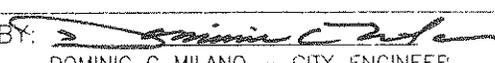
- A. CITY OF SIGNAL HILL STANDARD PLANS
- B. CITY OF SIGNAL HILL STANDARD SPECIFICATIONS
- C. A.W.W.A. STANDARD No. C600-82

II. HOT-TAP EXISTING MAIN

- A. SPUR ONE SIZE SMALLER THAN EXISTING MAIN
- B. TAPPING SLEEVE PER MATERIALS SECTION XI OF THIS STANDARD
- C. VALVE PER MATERIALS SECTION X, PART A OF THIS STANDARD

III. DRY-TAP OF EXISTING MAIN:

- A. ONLY WITH PRIOR APPROVAL OF CITY ENGINEER
- B. TIME SCHEDULED BY CITY OF SIGNAL HILL WATER DEPARTMENT
- C. TWO (2) OUNCES OF CALCIUM HYPOCHLORITE TABLETS IN EXISTING MAIN AT ALL CUT POINTS
- D. NEW FITTINGS SWABBED INTERNALLY WITH CHLORINE SOLUTION

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1 11/24/10	WATER MAIN DESIGN CRITERIA	400
2 3/4/11		
3		
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	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172

- E. CONNECT TO EXISTING MAIN
 - 1. AFTER NEW MAIN IS INSTALLED
 - 2. AFTER NEW MAIN IS PRESSURE TESTED
 - 3. AFTER NEW MAIN HAS BEEN DISINFECTED

II. PRESSURE TESTING:

- A. MAINLINE, HYDRANT LATERALS AND SERVICE LATERALS
 - 1. TESTED AT 225 P.S.I.
 - 2. HOLD TEST PRESSURE FOR FOUR (4) HOURS
 - 3. ALLOWABLE LEAKAGE PER A.W.W.A. STANDARD No. C600-82

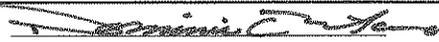
III. DISINFECTION OF PIPING:

A. SAMPLING TAPS

- 1. TWO INCH (2") SAMPLING TAPS SHALL BE BRONZE DOUBLE STRAP SERVICE SADDLE AND SCREW PLUG
- 2. LOCATED ONE FOOT (1') FROM EACH VALVE
 - a) FOR AIR-RELEASE
 - b) FOR MAINLINE FLUSHING
 - c) FOR WATER SAMPLING
- 3. LEFT IN PLACE UNTIL APPROVAL OF WORK
- 4. PIPELINE COMPLETELY FLUSHED PRIOR TO CHLORINATION

B. CHLORINATION

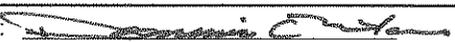
- 1. CHLORINE - WATER MIXTURE APPLIED WITH SOLUTION FEED CHLORINATING SERVICE
- 2. AT ONE END OF PIPELINE THROUGH SAMPLING TAP
- 3. DOSAGE MINIMUM OF FIFTY MILLIGRAMS PER LITER (50 M.G./L) IN ALL SECTIONS OF PIPELINE AND APPURTENANCES
- 4. NO FLOW-BACK OF CHLORINE INTO LINE SUPPLYING WATER
- 5. RETENTION PERIOD
 - a) DESTROY ALL NON-SPORE FORMING BACTERIA
 - b) MINIMUM TWENTY-FOUR (24) HOURS
 - c) CHLORINE RESIDUAL NOT LESS THAN TWENTY-FIVE MILLIGRAMS PER LITER (25 M.G./L) IN ALL SECTIONS OF PIPELINE AT END OF RETENTION TIME
- 6. CHLORINATING VALVES TO BE OPERATED DURING DISINFECTION
- 7. FINAL FLUSHING
 - a) LINE FLUSHED FROM EXTREMITIES THROUGH SAMPLING TAPS
 - b) FINAL CHLORINE RESIDUAL EQUAL TO SYSTEM RESIDUAL OR LESS
 - c) CONTRACTOR TO DISPOSE OF CHLORINATED WATER

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C. BACTERIOLOGICAL TESTING

1. AGENCY / CITY TO TAKE SAMPLES OF WATER TWENTY-FOUR (24) HOURS AFTER FINAL FLUSHING
2. BEFORE PIPELINE IS PUT IN SERVICE
3. AGENCY / CITY TO HAVE SAMPLES ANALYZED FOR CONFORMANCE TO U.S. PUBLIC HEALTH SERVICE DRINKING WATER STANDARDS
4. REPEAT ALL PROCESSES IF TESTING FAILS OR ANY REPAIR WORK ON PIPELINE BECOMES NECESSARY DURING DISINFECTION PROCESS.

D. A.W.W.A. STANDARD No. C601-81

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	WATER MAIN DESIGN CRITERIA	400
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3	APPROVED BY: 	SHEET
4	DOMINIC C MILANO - CITY ENGINEER	8 OF 11
	DATE: <u>6/2/04</u>	R.C.E. NO. 27172

GENERAL NOTES (WATER):

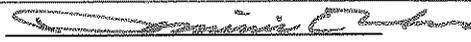
1. ALL WORK DETAILED ON THE CONSTRUCTION DRAWINGS, EXCEPT AS OTHERWISE STATED IN THE SPECIAL PROVISIONS OF THE CONTRACT, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF SIGNAL HILL STANDARD PLANS AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (2003 EDITION), WITH SUPPLEMENTS.
2. ALL STATIONS AND DIMENSIONS ARE ALONG THE CENTERLINE OF PIPELINE UNLESS OTHERWISE SPECIFIED.
3. EXISTING UNDERGROUND UTILITIES ARE SHOWN AS PER AVAILABLE RECORDS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION AND ELEVATION, IF REQUIRED, IN THE FIELD PRIOR TO BEGINNING CONSTRUCTION OF THE NEW FACILITIES.
4. ALL P.C.C. AND A.C. REMOVALS SHALL BE OUTLINED TO NECESSARY WORKING LIMITS AND SAW CUT TO MINIMUM DEPTH OF 2 INCHES PRIOR TO THE REMOVAL. UNLESS OTHERWISE STATED IN THE SPECIAL PROVISIONS, ALL DEBRIS CREATED BY THE REMOVAL OPERATIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AWAY FROM THE JOB SITE IN A MANNER AND AT A LOCATION ACCEPTABLE TO ALL AGENCIES AFFECTED BY THE WORK.
- △ 5. TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CALIFORNIA MANUAL OF TRAFFIC CONTROL DEVICES (CMUTCD), LATEST EDITION, AND ARE SUBJECT TO THE APPROVAL OF THE AGENCY / CITY.
6. IN ALL OPERATIONS, THE REQUIREMENTS OF THE STATE DIVISION OF INDUSTRIAL SAFETY FOR TRENCHES, EXCAVATIONS AND SHORING SHALL APPLY. SAFETY IS STRESSED. ANY OPERATION OR SITUATION THAT THREATENS THE SAFETY OF WORKERS OR THE PUBLIC, INCLUDING IMPROPER TRAFFIC CONTROL SHALL CAUSE SUSPENSION OF WORK UNTIL CORRECTIONS ARE MADE.
7. ALL TRENCH EXCAVATIONS SHALL BE PROPERLY BARRICADED AT ALL TIMES, AND EQUIPPED WITH FLASHER LIGHTS FROM 4:30 P.M. TO 7:00 A.M. DAILY, AND FROM 4:30 P.M. FRIDAY TO 7:00 A.M. MONDAY.
8. ALL OPEN TRENCH EXCAVATIONS WITHIN A STREET SHALL BE STEEL - PLATED AT ALL TIMES, EXCEPT WHEN THE CONTRACTOR IS PHYSICALLY WORKING WITHIN THE AREA AND HAS PLACED BARRICADES TO THE SATISFACTION OF THE ENGINEER.

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9. THE CONTRACTOR SHALL CONDUCT CONSTRUCTION OPERATIONS IN SUCH A MANNER THAT STORM OR OTHER WATERS MAY PROCEED UNINTERRUPTED AND WITHOUT EROSION ALONG THEIR EXISTING STREET OR DRAINAGE COURSES.
10. IN THE COURSE OF RUNOFF WATER CONTROL, THE CONTRACTOR SHALL PROTECT ALL WATER COURSES, THE GROUNDWATER AND BODIES OF WATER FROM POLLUTION BY FUELS, OILS, BITUMENS OR OTHER HARMFUL MATERIALS.
11. HARD HATS AND HIGH VISIBILITY ORANGE VESTS SHALL BE WORN AT ALL TIMES WHEN WORKING ON THIS PROJECT.
12. EXACT LOCATION, ELEVATIONS AND CONFIGURATION OF CONNECTIONS TO EXISTING WATER MAIN SHALL BE DETERMINED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION.
- △ 13. ALL NEW WATER PIPES SHALL BE INSTALLED WITH A 42 INCH MINIMUM COVER. UNLESS APPROVED BY THE CITY ENGINEER ALL NEW WATER LINES SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 1 FOOT FROM ALL EXISTING UTILITY LINES.
14. AN AGENCY / CITY INSPECTOR MUST BE PRESENT FOR ALL STAGES OF TESTING AND DISINFECTION.
15. THE CONTRACTOR SHALL NOT INSTALL THE WATER MAIN SUCH THAT AN INTERMEDIATE HIGH POINT RESULTS UNLESS APPROVED BY THE CITY ENGINEER.
16. AS-BUILT LOCATIONS OF THE WATER MAIN SHALL BE RECORDED BY THE CONTRACTOR AND FILED WITH THE AGENCY / CITY PRIOR TO ACCEPTANCE OF THE PROJECT.
17. WHEN ABANDONING AN EXISTING FIRE HYDRANT ASSEMBLY, CLOSE VALVE, REMOVE THE VALVE BOX, PLUG LATERAL END (THRUST BLOCK IF REQUIRED) FILL REMAINING VALVE RISER HOLE WITH ¾ SACK SLURRY MIX TO TOP OF SUBGRADE AND RETURN FIRE HYDRANT AND BURY TO THE CITY YARD. SEE CITY OF SIGNAL HILL STANDARD No. 409.
18. THE CONTRACTOR SHALL PROVIDE AND INSTALL NEW SERVICE LINES IN ACCORDANCE WITH THE WATER SERVICE SCHEDULES AND CONNECT CUSTOMER'S LINES AS REQUIRED (REFER TO APPROPRIATE CITY OF SIGNAL HILL STANDARD PLAN). NEW SERVICE LINES SHALL BE INSTALLED WITHIN 2 (TWO) FEET OF EXISTING SERVICE LINES UNLESS OTHERWISE SPECIFIED. ALL NEW SERVICE LINE LOCATIONS TO BE VERIFIED BY AGENCY / CITY FORCES. ABANDON EXISTING SERVICE LATERALS PER CITY OF SIGNAL HILL STANDARD PLAN No. 409.

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
△ ITEM 13 MODIFIED 6/8/05	WATER MAIN DESIGN CRITERIA	400
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△	DOMINIC C MILANO - CITY ENGINEER	10 OF 11
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△		

19. BEFORE STARTING WORK, THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE CITY OF SIGNAL HILL, DEPARTMENT OF PUBLIC WORKS.
20. ALL THRUST AND ANCHOR BLOCKS MUST BE INSPECTED AND APPROVED PRIOR TO PLACING CONCRETE AND BACKFILL.
21. ALL EXISTING VALVES AND FIRE HYDRANTS SHALL BE OPERATED BY CITY OF SIGNAL HILL WATER DEPARTMENT PERSONNEL UNLESS APPROVED OTHERWISE.
22. ALL NEW EXISTING FIRE HYDRANTS ON THE PROJECT THAT ARE NOT IN SERVICE, SHALL BE COVERED WITH A SACK INDICATING "NOT-IN-SERVICE" UNTIL ENTIRE PROJECT HAS BEEN ACCEPTED FOR SERVICE.
23. FAILURE TO COMPLY WITH ANY OF THE ABOVE ITEMS SHALL BE SUFFICIENT CAUSE FOR THE AGENCY / CITY TO ARRANGE FOR THE NECESSARY WORK TO BE PERFORMED BY OTHERS. ANY COSTS INCURRED TO COMPLETE THE NECESSARY WORK WILL BE CHARGED TO THE CONTRACTOR.
24. CONCRETE THRUST BLOCKS EXIST AT ALL TEES, BENDS, CROSSES AND OTHER WATER MAIN FITTINGS. THE CONTRACTOR SHALL WORK WITH CAUTION WHEN EXCAVATING IN THE VICINITY OF ANY THRUST BLOCK. THE CONTRACTOR SHALL NOT DISTURB THRUST BLOCKS.

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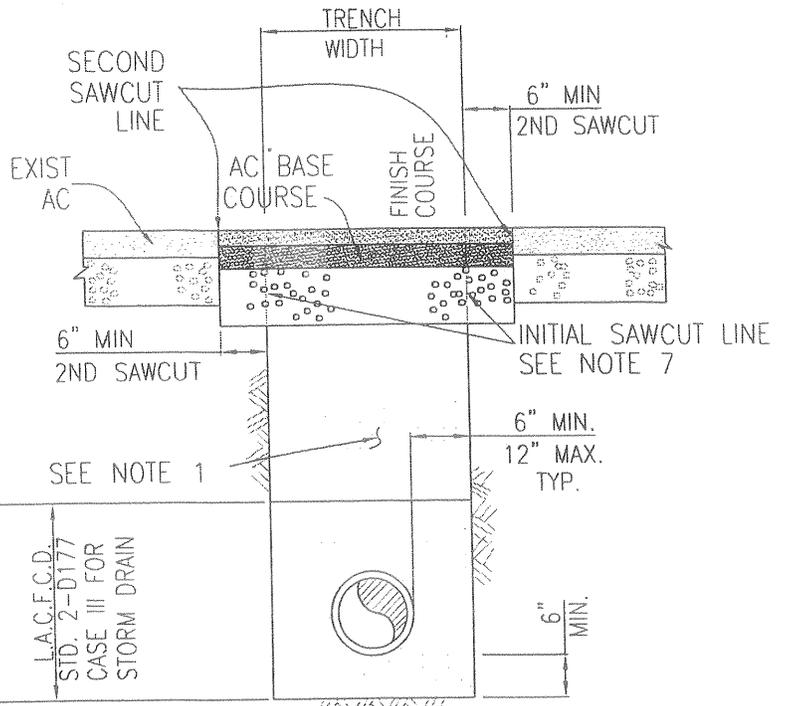
STRUCTURAL SECTION PER IMPROV. PLANS

SEE NOTE 1

6" MIN.
12" MAX.
TYP.

6" MIN.

CASE I
NEW PAVEMENT

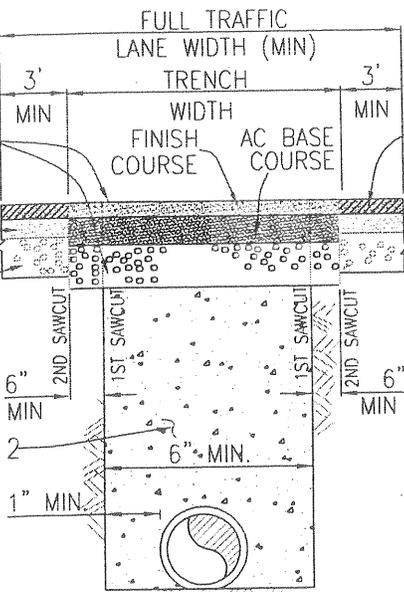


CASE II
EXISTING PAVEMENT

(ROADWAY SURFACE OVER 5 YEARS OLD)

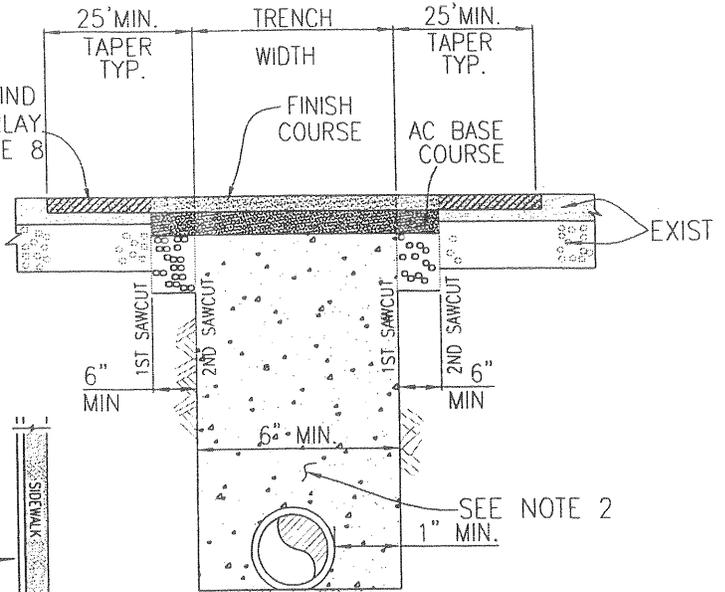
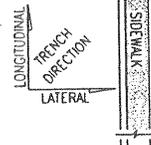
STRUCTURAL SECTION PER IMPROV. PLANS

SEE NOTE 2



CASE III
EXISTING PAVEMENT

OVERLAYED OR CONSTRUCTED WITHIN 10 YEARS
LONGITUDINAL CUT



CASE IV
EXISTING PAVEMENT

OVERLAYED OR CONSTRUCTED WITHIN 10 YEARS
LATERAL CUT

REVISIONS

CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.

STANDARD PLAN NO.

- 1
- 2
- 3
- 4

PIPE BACKFILL IN TRENCHES

APPROVED BY:

Dominic C. Milano
DOMINIC C. MILANO - CITY ENGINEER

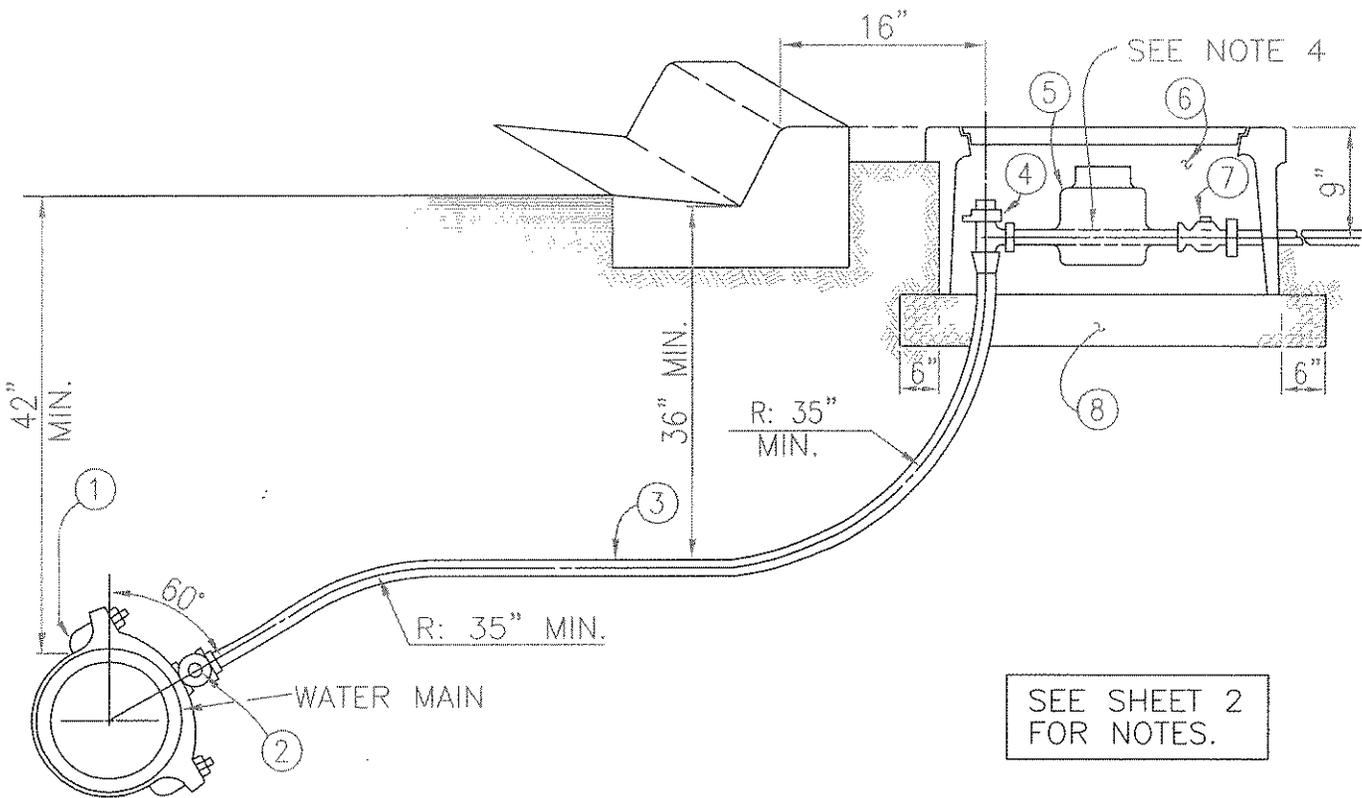
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NOTES:

1. BACKFILL SHALL BE IMPORTED SAND WITH S.E. 60 (90% RELATIVE COMPACTION) OR 1-SACK SAND CEMENT SLURRY.
2. IN EXISTING PAVEMENT, THE REPLACEMENT SECTION SHALL BE THE EXISTING PLUS 1" A.C. THE CONTRACTOR HAS THE OPTION OF REPLACING CRUSHED AGGREGATE BASE WITH A.C. AT THE RATIO OF 1" A.C. FOR 2" C.A.B. P.C.C. PAVEMENT SHALL BE REPLACED IN KIND PLUS 1" WITH APPROVAL OF CITY ENGINEER. BASE COURSE AC PAVING SHALL BE B2--4000 AND FINISH COURSE AC PAVING SHALL BE AR-4000 1 1/2" THICK
3. IF UNSUITABLE MATERIAL IS ENCOUNTERED ADDITIONAL BEDDING MAY BE REQUIRED BY THE CITY ENGINEER.
4. THE FINISH COURSE, AS SHOWN ON CASES II - IV SHALL BE PLACED A MINIMUM OF 30 DAYS TO A MAXIMUM OF 60 DAYS AFTER PLACEMENT OF BASE COURSE, AND SHALL BE MACHINE LAID, FOR ALL CASES WHERE THE PAVEMENT WIDTH EXCEEDS 6-FT WITH THE USE OF A SELF PROPELLED ASPHALT CONCRETE PAVING MACHINE, EXCEPT WHERE APPROVED BY CITY ENGINEER.
5. MINIMUM DESIGN COVER SHALL BE 3.5-FT FOR WATER MAINS, 6-FT FOR SANITARY SEWER AND 3-FT FOR OTHER PIPELINES. 
6. MINIMUM STRUCTURAL SECTION SHALL BE PER CITY STANDARDS 103 TO 109.
7. EXISTING A.C. PAVEMENT SHALL BE SAWCUT TWICE. INITIALLY TO EXCAVATE, LAY PIPE, AND BACKFILL. AFTER THE TRENCH HAS BEEN BACKFILLED, COMPACTED AND PRIOR TO THE PLACEMENT OF THE STRUCTURAL SECTION OF C.A.B AND A.C., A SECOND SAWCUT, A MINIMUM OF 6" BEYOND INITIAL SAWCUT, SHALL BE DONE.
8. IF THE LANE OR LIP OF GUTTER OR EDGE OF PAVEMENT IS WITHIN 4-FT OF THE LIMITS OF ASPHALT CONCRETE OVERLAY, THE LIMITS MAY BE EXTENDED AS DETERMINED IN THE FIELD BY THE CITY ENGINEER.

REVISIONS	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.		STANDARD PLAN NO.
	PIPE BACKFILL IN TRENCHES		401 2 OF 2
	APPROVED BY: 		
	DATE: 6/2/04		
	DOMINIC C. MILANO - CITY ENGINEER R.C.E. NO. 27172		



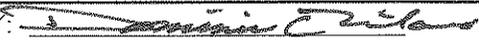
MATERIALS LIST

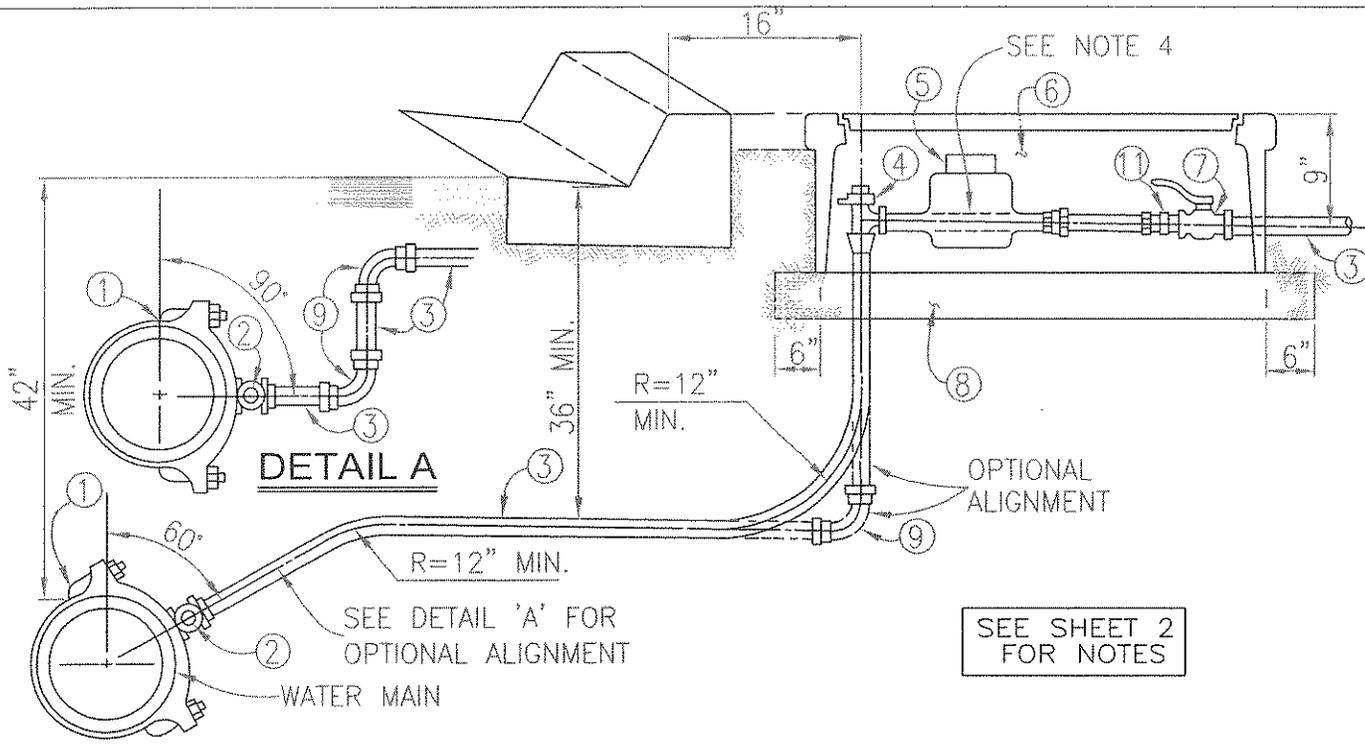
ITEM	DESCRIPTION	MANUFACTURER & CAT.NO.
1	1" DOUBLE STRAP BRONZE SERVICE SADDLE (CC)	JAMES JONES J-979
⚠ 2	1" CORPORATION STOP (CC X SG/COMPR)	FORD FB1000NL JAMES JONES JE3401SG
3	1" COPPER TUBING TYPE K PER STD. NO. 400	
⚠ 4	1" ANGLE METER STOP (SG/COMPR X METER)	FORD KV43-(342W),(444W)NL JAMES JONES JE4201SG
⚠ 5	WATER METER	CONTACT CITY WATER DEPT. FOR CURRENT SPEC.
⚠ 6	WATER METER BOX PER STD. NO. 403	ARMORCAST BOX P6000485 WITH 1 PC COVER A6000484-H2, OR ARMORCAST BOX A6000485 WITH 1 PC COVER A6000484T-H2 (FOR DRIVEWAY APPROACHES)
⚠ 7	BALL VALVE (MTR X SG/COMPR)	FORD B43 SERIES NL JAMES JONES JE1925WSG
8	3/4" CRUSHED AGGREGATE BASE - 6" THICK	

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.		
⚠ 1 11/24/10	1" SERVICE LINE	402 1 OF 2		
⚠ 2				
⚠ 3			APPROVED BY: <i>Dominic C. Milano</i> DOMINIC C MILANO - CITY ENGINEER	DATE: 11/24/10 R.C.E. NO. 27172
⚠ 4				

NOTES:

1. COPPER TUBING TO BE ONE PIECE. NO SPLICES OR HEATING OF PIPE WILL BE PERMITTED.
2. ADJACENT CORPORATION STOPS SHALL NOT BE LESS THAN 24" APART, NOR SHALL THEY BE WITHIN 24" OF A MAIN LINE COUPLING.
3. THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP EXCEPT IN CUL-DE-SAC ENDS, WHERE THE NON-PERPENDICULAR INSTALLATION IS ALLOWED.
4. THE PLUMBING OR PIPING CONTRACTOR SHALL FURNISH AND INSTALL JUMPERS AND WASHERS IF REQUIRED FOR TEMPORARY WATER SERVICE. THE CITY SHALL BE NOTIFIED PRIOR TO INSTALLATION. SEE STANDARD No. 410.
5. STANDARD ONE INCH SERVICE CONNECTION TO BE USED WITH THE FOLLOWING METER SIZES: 3/4 INCH, AND 1 INCH METER.
6. TRAFFIC LID SHALL BE USED UNDER TRAFFIC LOADING
7. METER REGISTER TO BE SET FOR CURB SIDE READING, WITH SERIAL NUMBER ON REGISTER COVER.
8. PRESSURE TEST SERVICES PER STANDARD No. 400.
9. METER SHALL BE PLACED PERPENDICULAR WITH STREET TO CUSTOMER SERVICE LOCATION.

REVISIONS #	DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1		1" SERVICE LINE	402
2			
3		APPROVED BY: 	DATE: <u>6/2/04</u>
4		DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
			SHEET 2 OF 2



MATERIALS LIST

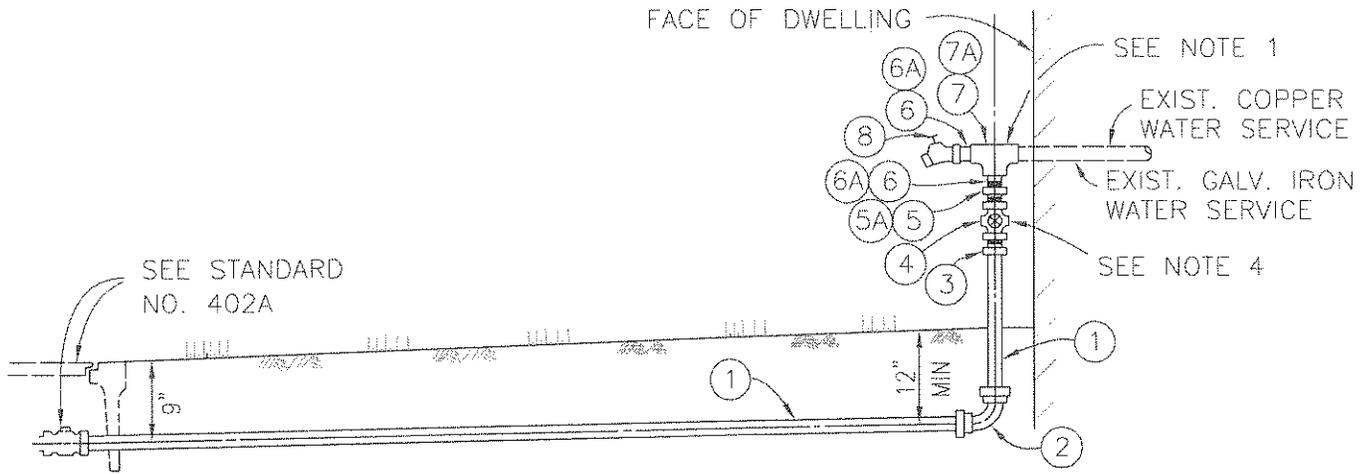
ITEM	DESCRIPTION	MANUFACTURER & CAT.NO.
1	1" DOUBLE STRAP BRONZE SERVICE SADDLE (CC)	JAMES JONES J-979
2	1" CORPORATION STOP (CC X SG/COMPR.)	FORD FB1000NL JAMES JONES JE3401SG
3	1" COPPER TUBING,TYPE 'K' SOFT PER STD.NO.400	MUELLER CAMBRIDGE OR CEREO COPPER
4	1" ANGLE METER STOP (SG/COMPR. X METER)	FORD KV43-(342W),(444W) JAMES JONES JE4201SG
5	WATER METER	CONTACT CITY WATER DEPT. FOR CURRENT SPEC.
6	WATER METER BOX PER STD. NO. 403	ARMORCAST BOX P6000485 WITH 1 PC COVER A6000484-H2, OR ARMORCAST BOX A6000485 WITH 1 PC COVER A6000484T-H2 (FOR DRIVEWAY APPROACHES)
7	BALL VALVE/HANDLE	FORD B43NL SERIES HH34 JAMES JONES JE1927
8	3/4" CRUSHED AGGREGATE BASE-6" THICK	
9	1" ELL COUPLING (P.J./COMPR.X P.J./COMPR.)	FORD L44-77NL JAMES JONES JE2611SG
10	1" PRESSURE REDUCING VALVE	WILKINS 600XL SERIES
11	1" BRONZE UNION	NO LEAD

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.		
1 11/24/10	1" SERVICE LINE	402A 1 OF 2		
2				
3			APPROVED BY: <i>Dominic C. Milano</i> DOMINIC C MILANO - CITY ENGINEER	DATE: 11/24/10 R.C.E. NO. 27172
4				

NOTES:

1. COPPER TUBING TO BE ONE PIECE EXCEPT AS SHOWN. NO SPLICES OR HEATING OF PIPE WILL BE PERMITTED.
2. ADJACENT CORPORATION STOPS SHALL NOT BE LESS THAN 24" APART, NOR SHALL THEY BE WITHIN 24" OF A MAIN LINE COUPLING.
3. THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP EXCEPT IN CUL-DE-SAC ENDS, WHERE NON-PERPENDICULAR INSTALLATION IS ALLOWED.
4. THE PLUMBING OR PIPING CONTRACTOR SHALL FURNISH AND INSTALL JUMPERS AND WASHERS, IF REQUIRED, FOR TEMPORARY WATER SERVICE. THE CITY SHALL BE NOTIFIED PRIOR TO INSTALLATION. SEE STANDARD No. 410.
5. STANDARD ONE INCH SERVICE CONNECTION TO BE USED WITH THE FOLLOWING METER SIZE: ¾" INCH AND 1 INCH METER.
6. TRAFFIC LID SHALL BE USED UNDER TRAFFIC LOADING
7. METER REGISTER TO BE SET FOR CURB SIDE READING, WITH SERIAL NUMBER ON REGISTER COVER.
8. PRESSURE TEST SERVICES PER STANDARD No. 400.
9. METER SHALL BE PLACED PERPENDICULAR WITH STREET TO CUSTOMER SERVICE LOCATION.
10. TUBING TO BE BENT WITH AN APPROVED BENDER. IN NO CASE SHALL THE O.D. OF THE TUBE BE DISTORTED TO EXCEED 1.125 TIMES ITS ORIGINAL CIRCULAR DIAMETER.

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	1" SERVICE LINE	402A
2		
3	APPROVED BY: 	DATE: <u>6/2/04</u>
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		SHEET 2 OF 2



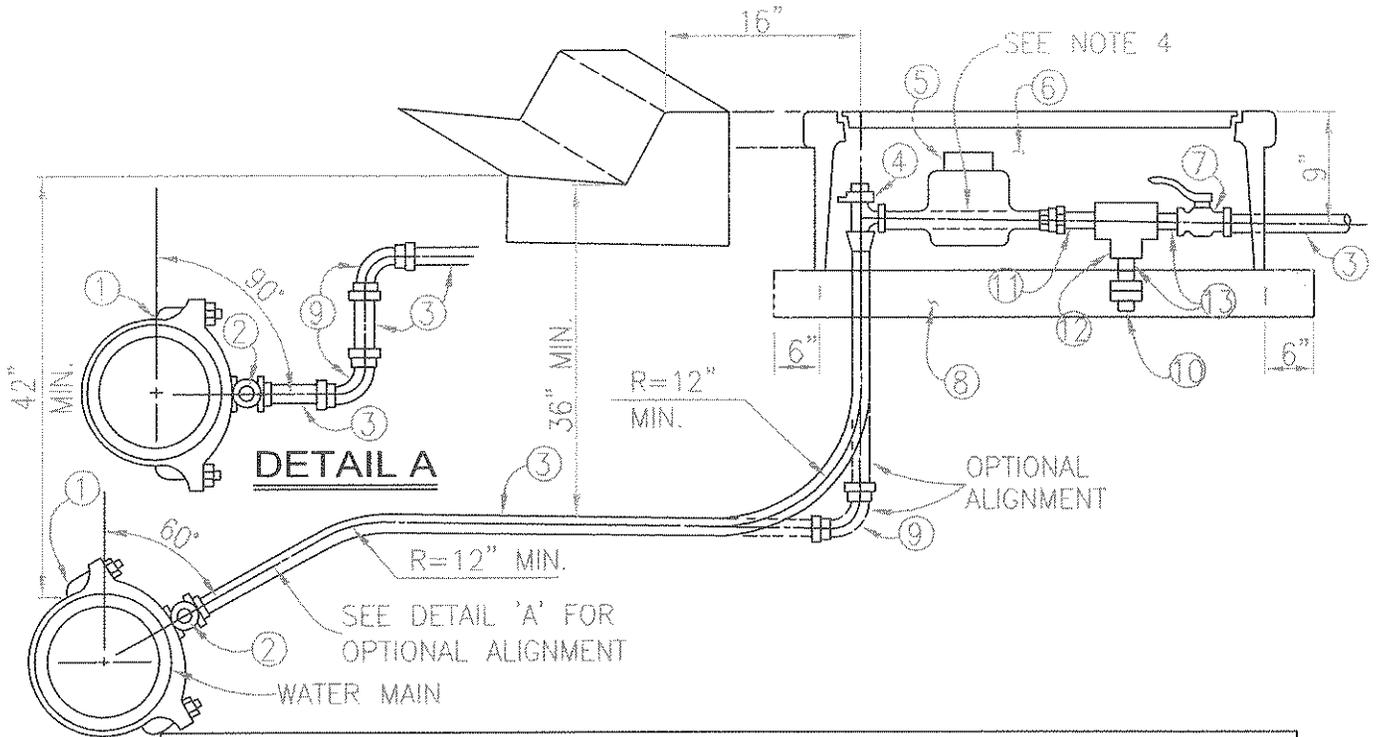
MATERIALS LIST

ITEM	DESCRIPTION	MANUFACTURER & CAT. NO.
1	1" COPPER TUBING, TYPE 'K' SOFT PER STD. NO. 400	HALSTEAD
2	1" ELL COUPLING (P.J./COMPR. X P.J./COMPR)	FORD L 44-44 JAMES JONES J-2611
3	1" STRAIGHT COUPLING (P.J./COMPR.X M.I.P.T.)	FORD C 84-44 JAMES JONES J-2605
4	1" SHUT-OFF GATE VALVE (F.I.P.T. X F.I.P.T.)	HAYS MODEL 1780
5	1" COPPER UNION (F.I.P.T. X M.I.P.T.)	
5A	1" INSULATING UNION (F.I.P.T. X M.I.P.T.)	
6	1" COPPER NIPPLE (P.E. X M.I.P.T.)	
6A	1" GALVANIZED IRON PIPE NIPPLE (M.I.P.T. X M.I.P.T.)	
7	1" COPPER TEE, SWEATED ENDS	
7A	1" GALVANIZED IRON TEE (F.I.P.T. X F.I.P.T. X F.I.P.T.)	
8	1" BRONZE HOSE BIBB	CHAMPION I-402

NOTES

1. REMOVE AND DISPOSE OF EXISTING TEE AND HOSE BIBB. NEW COPPER TEE TO BE SILVER SOLDERED ON ALL THREE LEGS/CITY CODE 15.16.040.
2. COPPER TUBING TO BE ONE PIECE, EXCEPT AS SHOWN. NO SPLICES OR HEATING OF PIPE WILL BE ALLOWED.
3. USE MATERIALS ITEM 5A, 6A AND 7A WHEN EXISTING WATER SERVICE IN DWELLING IS GALVANIZED IRON PIPE.
4. GATE VALVE TO BE ABOVE GROUND IN ALL CASES, PLUMB TEE TO GATE VALVE HORIZONTALLY IF REQUIRED.
5. PRESSURE TEST PER STANDARD NO. 400.

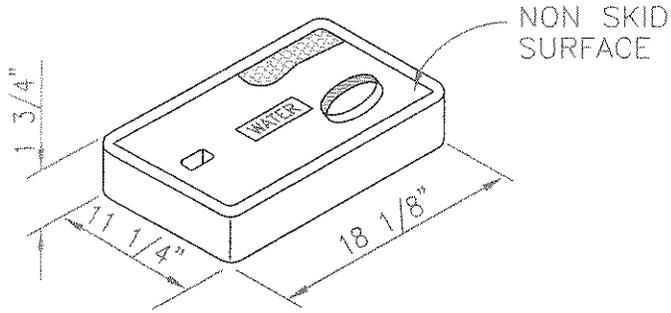
REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	1" HOUSE SERVICE	
2		
3	APPROVED BY: DATE: <u>6/2/09</u>	402B
4	DOMINIC C. MILANO - CITY ENGINEER R.C.E. NO. 27172	



MATERIALS LIST

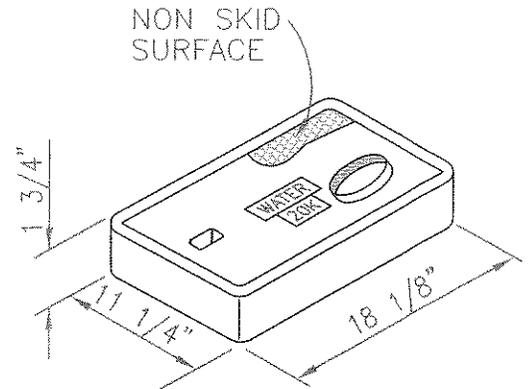
ITEM	DESCRIPTION	MANUFACTURER & CAT.NO.
1	1" DOUBLE STRAP BRONZE SERVICE SADDLE (CC)	JAMES JONES J-979
2	1" CORPORATION STOP (CC X SG/COMPR.)	FORD FB1000NL JAMES JONES JE3401SG
3	1" COPPER TUBING,TYPE 'K' SOFT PER STD.NO.400	MUELLER CAMBRIDGE OR CEREO COPPER
4	1" ANGLE METER STOP (SG/COMPR. X METER)	FORD KV43-(342W),(444W) JAMES JONES JE4201SG
5	WATER METER	CONTACT CITY WATER DEPT. FOR CURRENT SPEC.
6	WATER METER BOX PER STD. NO. 405	ARMORCAST BOX A6001640PCX12 WITH 1 PC COVER A6001643-H2 OR WITH 1 PC COVER A6001947T-H2 (FOR DRIVEWAY APPROACHES)
7	BALL VALVE, CURB STOP	FORD B81-444WNL
8	3/4" CRUSHED AGGREGATE BASE-6" THICK	
9	1" ELL COUPLING (P.J./COMPR.X P.J./COMPR.)	FORD L44-77 JAMES JONES JE2611SG
10	1" BRASS UNION	LEE BRASS 61-657
11	1" METER COUPLING	JAMES JONES JE130126
12	1" BRASS TEE NO LEAD (FIP)	LEE 60-460 DOMESTIC
13	1" BRASS NIPPLE	LEE DOMESTIC

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.		
1	1" SERVICE LINE WITH FIRE	402C		
2				
3			APPROVED BY: <i>Dominic C. Milano</i>	DATE: 9/12/12
4			DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172



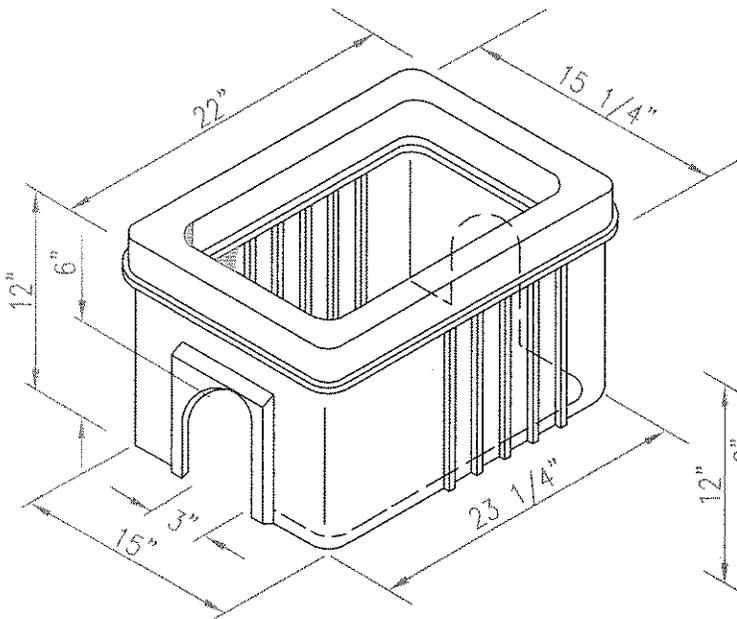
POLYMER CONCRETE COVER

ARMORCAST A6000484-H2
(WT. : 16 LBS.)



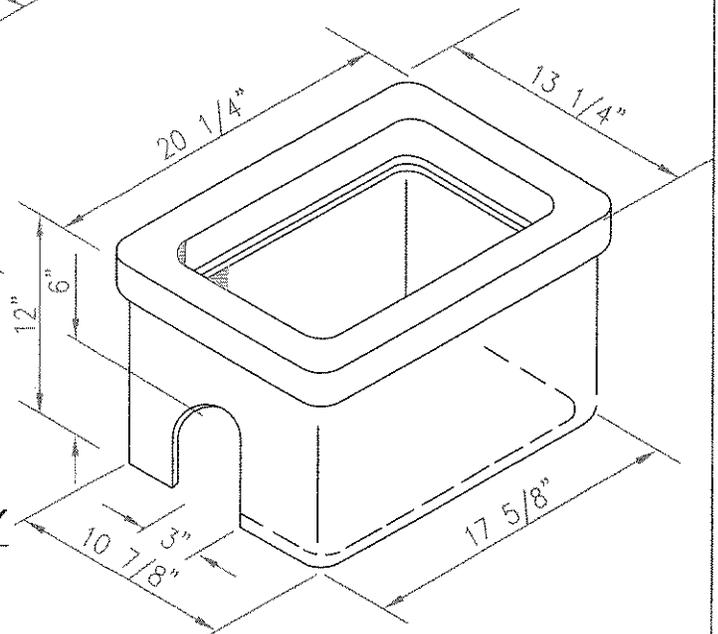
POLYMER CONCRETE TRAFFIC COVER

ARMORCAST A6000484T-H2
(WT. : 23 LBS.)



POLYMER CONCRETE (RPM) FRAME WITH ROTOCAST BODY

ARMORCAST P6000485



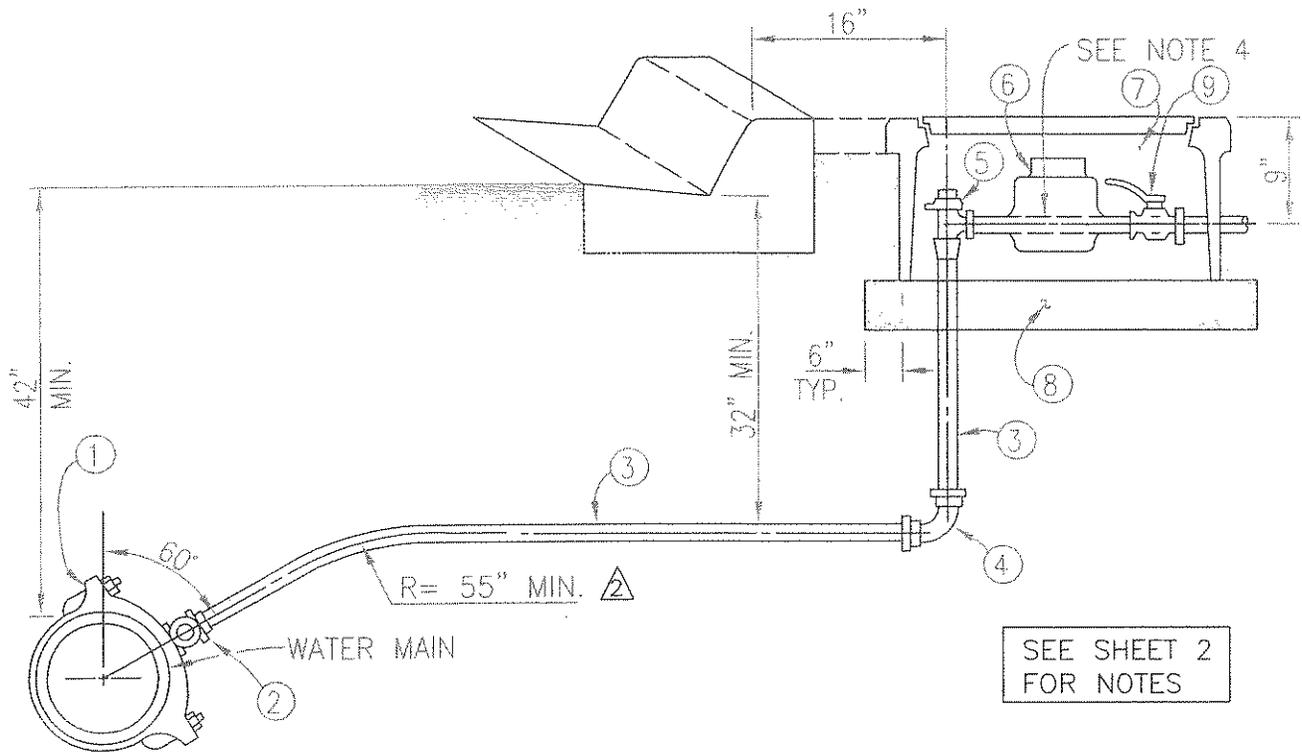
POLYMER CONCRETE TRAFFIC BOX

ARMORCAST A6000485
(WT. : 31 LBS.)

NOTES

1. METER BOX SHOWN SHALL BE USED WITH 5/8", 3/4" AND 1" WATER METERS.
2. NEEDS TO BE TOUCH READ LID WITH 2" HOLE.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.	
11/24/10	1" WATER SERVICE METER BOX	403	
	APPROVED BY: <i>Dominic C. Milano</i>		DATE: 11/24/10
	DOMINIC C MILANO - CITY ENGINEER		R.C.E. NO. 27172



MATERIALS LIST

ITEM	DESCRIPTION	MANUFACTURER & CAT. NO.
①	1 2" DBL. STRAP BRONZE SERVICE SADDLE (C.C.)	JAMES JONES J-979
① ②	2 2" CORPORATION STOP (C.C. X S.G./COMPR.)	FORD FB1100NL, JAMES JONES JE3401SG (FOR <100PSI) OR JAMES JONES JE1937SG (FOR 100PSI OR >100PSI)
① ②	3 2" COPPER TUBING TYPE K SOFT PER STD. NO. 400	
① ②	4 2" ELL COUPLING (S.G./COMPR. X S.G./COMPR.)	FORD L44-77NL JAMES JONES JE2611SG
① ②	5 2" ANGLE METER STOP (S.G./COMPR. X FLANGE)	FORD FV43-777WNL JAMES JONES JE1975WSG
①	6 WATER METER	CONTACT CITY WATER DEPT. FOR CURRENT SPEC.
	7 WATER METER BOX PER STD.NO. 405	ARMORCAST BOX P6001640PCX12 WITH 1 PC COVER A6001643-H2, OR ARMORCAST BOX A6001640PCX12 WITH 1 PC COVER A6001947T-H2 (FOR DRIVEWAY APPROACHES)
① ②	8 3/4" CRUSHED AGGREGATE BASE - 6" THICK	
① ②	9 2" BALL VALVE (FLANGE X S.G./COMPR.)/HANDLE	FORD BF43-777-HB67NL JAMES JONES J-1939WSG

REVISIONS	CITY OF SIGNAL HILL	PUBLIC WORKS DEPT.	STANDARD PLAN NO.
① 11/24/10	2" SERVICE LINE		404
② 07/17/13			
③	APPROVED BY: <i>Dominic C. Milano</i>	DATE: 7/17/13	1 OF 2
④	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172	

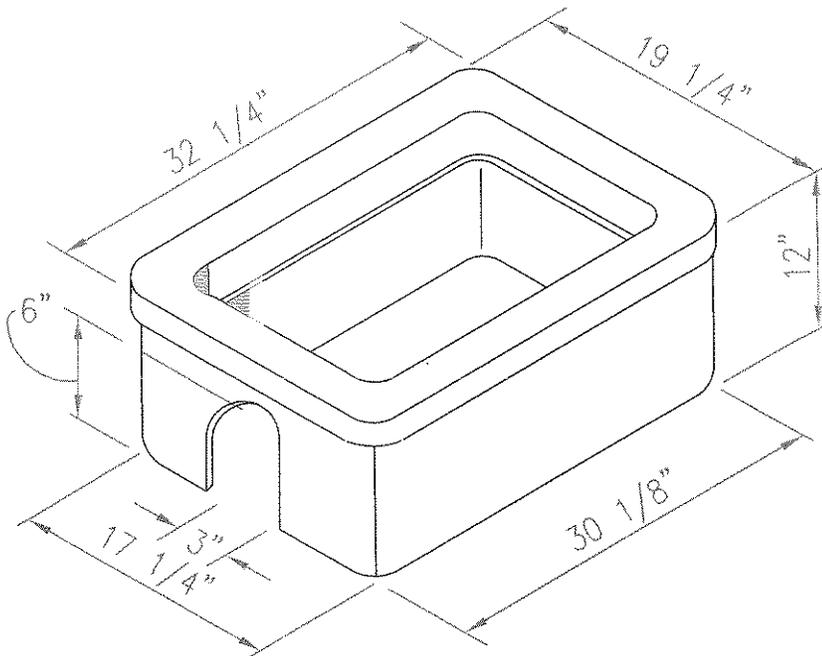
NOTES:

1. COPPER TUBING TO BE ONE PIECE EXCEPT AS SHOWN. NO SPLICES OR HEATING OF PIPE WILL BE PERMITTED.
2. ADJACENT CORPORATION STOPS SHALL NOT BE LESS THAN 24" APART, NOR SHALL THEY BE WITHIN 24" OF A MAIN LINE COUPLING.
3. THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP EXCEPT IN CUL-DE-SAC ENDS, WHERE NON-PERPENDICULAR INSTALLATION IS ALLOWED.
4. THE PLUMBING OR PIPING CONTRACTOR SHALL FURNISH AND INSTALL JUMPERS AND WASHERS IF REQUIRED FOR TEMPORARY WATER SERVICE. THE CITY SHALL BE NOTIFIED PRIOR TO INSTALLATION. SEE STANDARD No. 410.
- △ 5. STANDARD TWO INCH SERVICE CONNECTION TO BE USED WITH THE FOLLOWING METER SIZE: 1 ½ INCH METER, 2 INCH METER
6. TRAFFIC LID SHALL BE USED UNDER TRAFFIC LOADING.
7. METER REGISTER TO BE SET FOR CURBSIDE READING, WITH SERIAL NUMBER ON REGISTER COVER.
8. PRESSURE TEST SERVICES PER STANDARD No. 400.
9. METER SHALL BE PLACED PERPENDICULAR WITH STREET TO CUSTOMER SERVICE LOCATION.
10. TUBING TO BE BENT WITH AN APPROVED BENDER. IN NO CASE SHALL THE O.D. OF THE TUBE BE DISTORTED TO EXCEED 1.125 TIMES ITS ORIGINAL CIRCULAR DIAMETER.

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
△ 07/17/13	2" SERVICE LINE	404
△	APPROVED BY: 	SHEET
△	DOMINIC C MILANO - CITY ENGINEER	DATE: 7/17/13
△		R.C.E. NO. 27172
△		2 OF 2

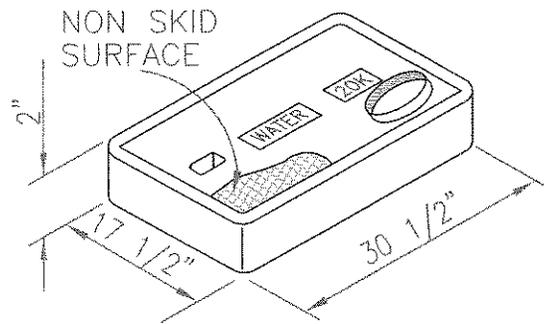
NOTES

1. METER BOX SHOWN SHALL BE USED FOR 2" WATER METER.
2. CONCRETE BOX, COVER AND READING LID SHALL HAVE 1/4" WELDED WIRE REINFORCEMENT.
3. USE 6" AND 12" EXTENSIONS AND BASE PLATES FOR CONCRETE BOX AS REQUIRED BY CITY ENGINEER.
4. NEEDS TO BE TOUCH READ LID WITH 2" HOLE.



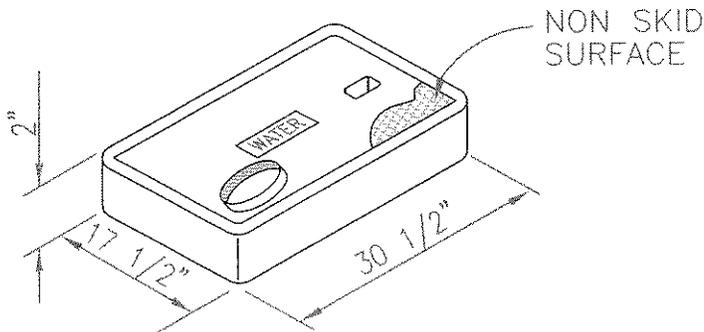
POLYMER CONCRETE BOX

ARMORCAST A6001640PCX12
(WT. : 71 LBS.)



POLYMER CONCRETE TRAFFIC COVER

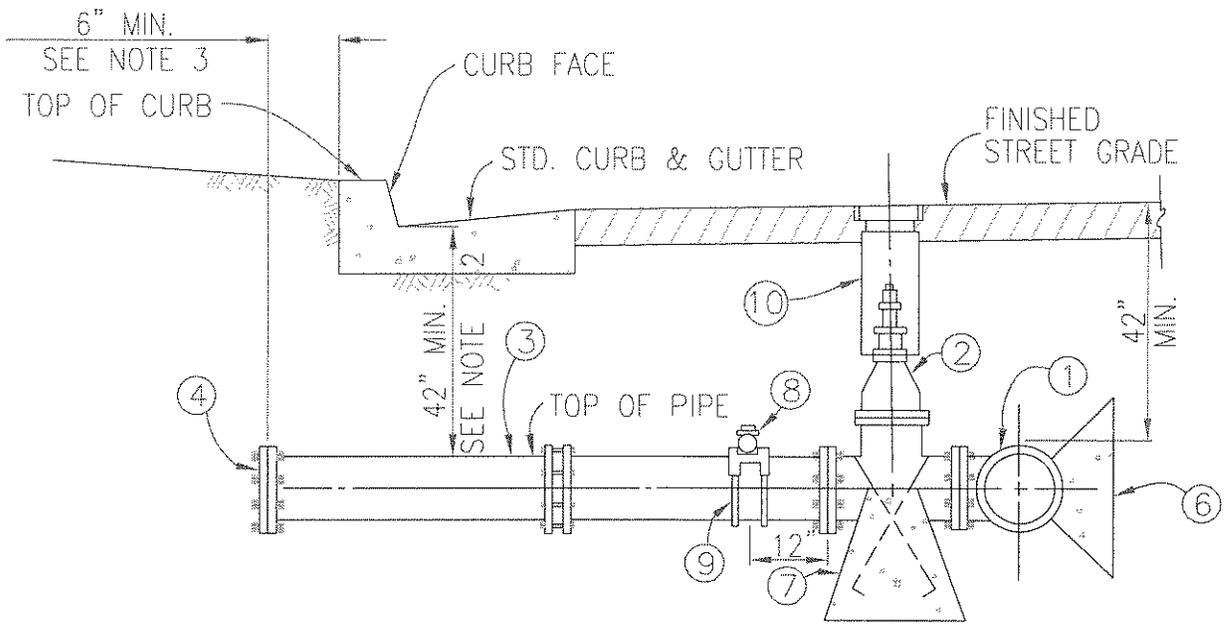
ARMORCAST A6001947T-H2
(WT. : 70 LBS.)



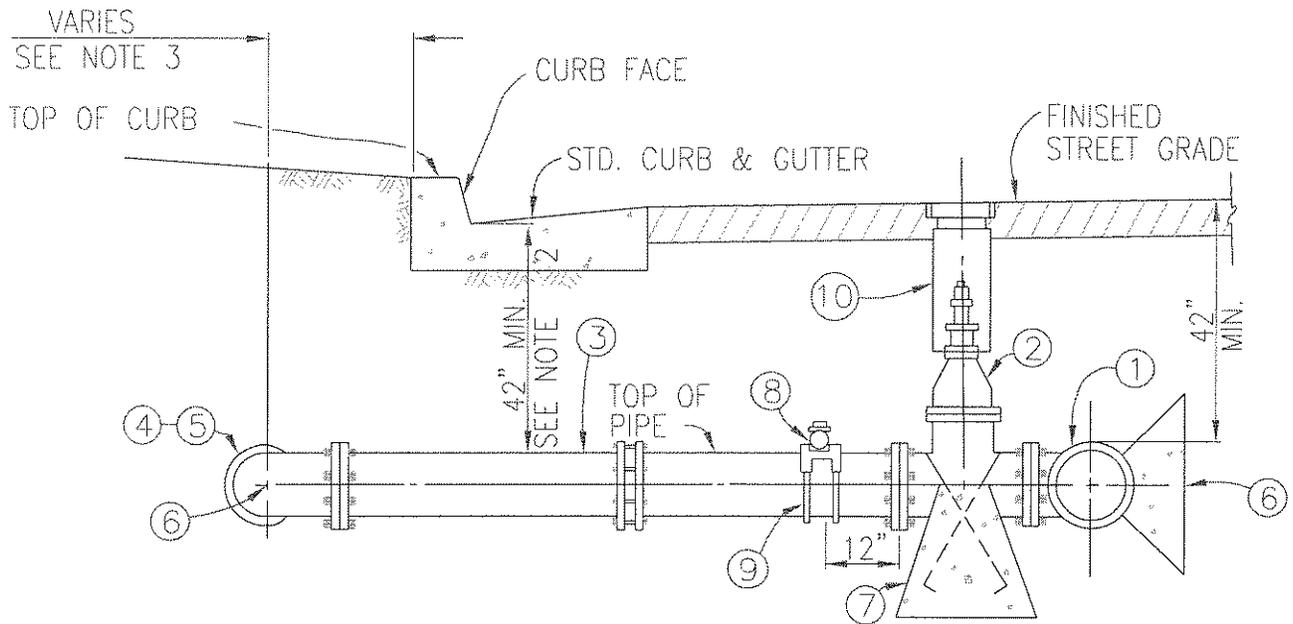
POLYMER CONCRETE COVER

ARMORCAST A6001643-H2
(WT. : 43 LBS.)

REVISIONS	CITY OF SIGNAL HILL	PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1 11/24/10	2" WATER SERVICE METER BOX		405
2	APPROVED BY: 	DATE: 11/24/10	
3	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172	
4			



PERPENDICULAR METER



SEE SHEET 2
FOR MATERIALS
LIST AND NOTES.

PARALLEL METER

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
①		
②		
③	APPROVED BY: <i>Dominic C. Milano</i>	DATE: 6/2/04
④	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		406 1 OF 2

MATERIALS:

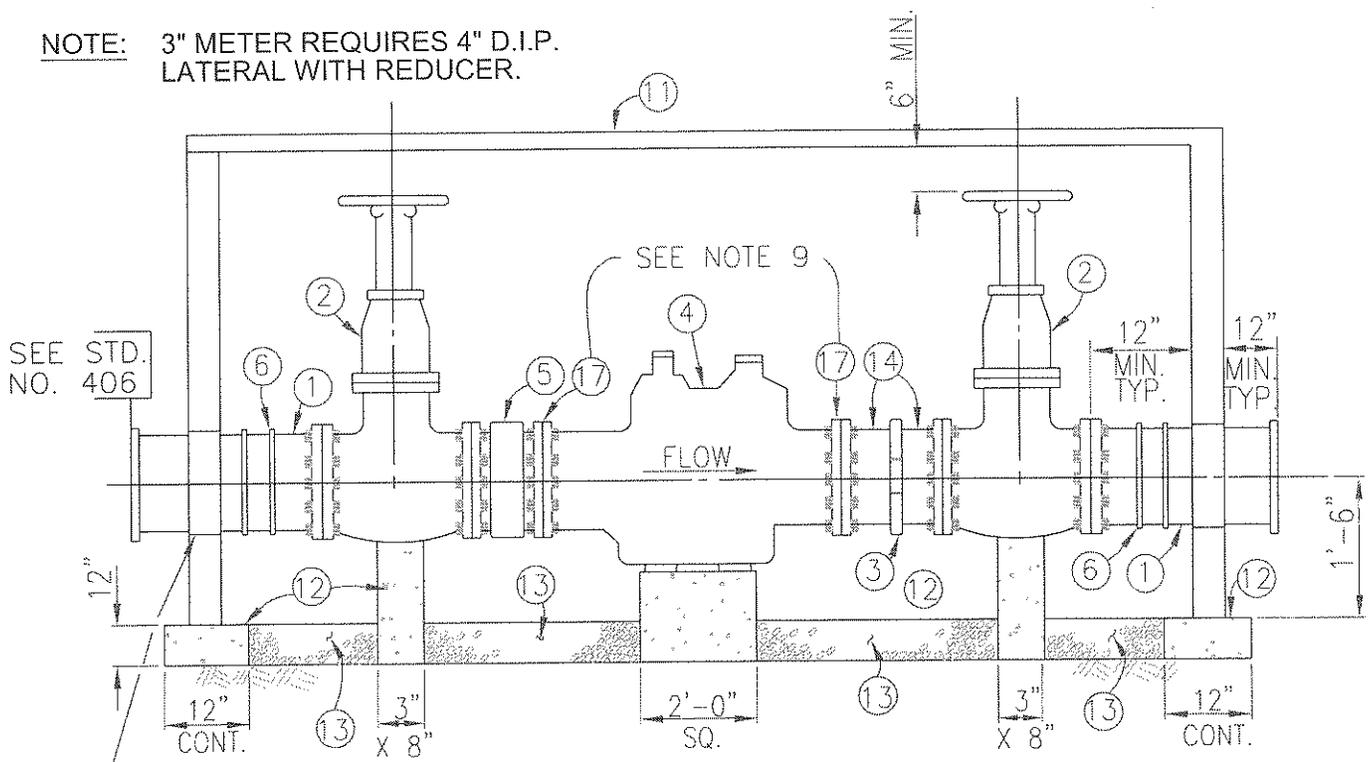
MATERIALS LIST		
ITEM	DESCRIPTION	MANUFACTURER & CAT
No.		
1	TEE (MJ X MJ X FLG) MAIN SIZE X LATERAL SIZE	
2	GATE VALVE (FLG X FLG/MJ) LATERAL SIZE PER STD. No. 400	
3	DUCTILE IRON SPOOL (FLG X FLG/MJ) LATERAL SIZE	
4	BLIND FLANGE LATERAL SIZE	
5	LONG RADIUS 90° BEND (FLG X FLG) LATERAL SIZE	
6	THRUST BLOCK PER STD. No. 416	
7	VALVE ANCHOR BLOCK PER STD. No. 418	
8	2" CORPORATION STOP (I.P. X I.P.) W/BRONZE CAP	FORD FB500 JAMES JONES J-1943
9	2" DBL. STRAP BRONZE SERVICE SADDLE (I.P.)	JAMES JONES J-979
10	VALVE PER STANDARD No. 422	

NOTES:

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
2. DEPTH VARIES, WITH 42" MINIMUM, DEPENDENT ON REQUIREMENTS FOR METER AND VALVE SIZES.
3. DISTANCE BEHIND CURB VARIES TO MEET REQUIREMENTS FOR PERPENDICULAR OR PARALLEL METER INSTALLATION.
4. ALL UNDERGROUND FERROUS MATERIAL SHALL BE COATED PER STANDARD No. 400.
5. SEE STANDARD No. 425 FOR TAPPING EXISTING

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
①	4" TO 8" SERVICE LATERAL	406
②		
③	APPROVED BY:  DATE: <u>6/2/04</u>	SHEET
④	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		2 OF 2

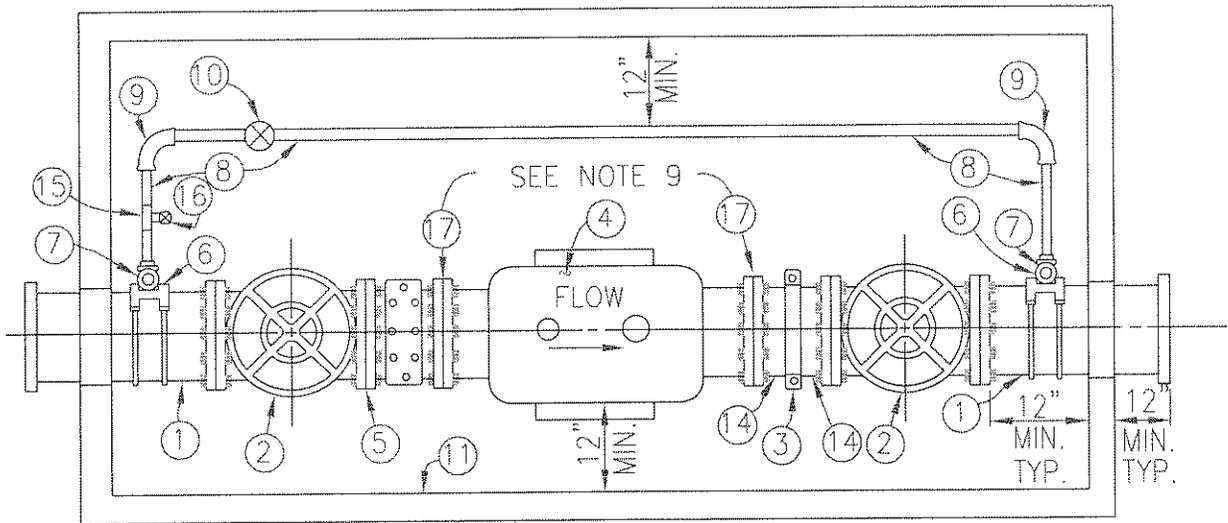
NOTE: 3" METER requires 4" D.I.P. LATERAL WITH REDUCER.



ELEVATION

SEE SHEET 2 OF 2 FOR MATERIALS LIST AND NOTES.

1/2" EXPANSION JOINT MATERIAL ALL AROUND (TYP.)



PLAN VIEW

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	3" & 4" WATER SERVICE	407
2		1 OF 2
3	APPROVED BY: <i>Dominic C. Milano</i> DOMINIC C MILANO - CITY ENGINEER	DATE: 6/2/04 R.C.E. NO. 27172
4		

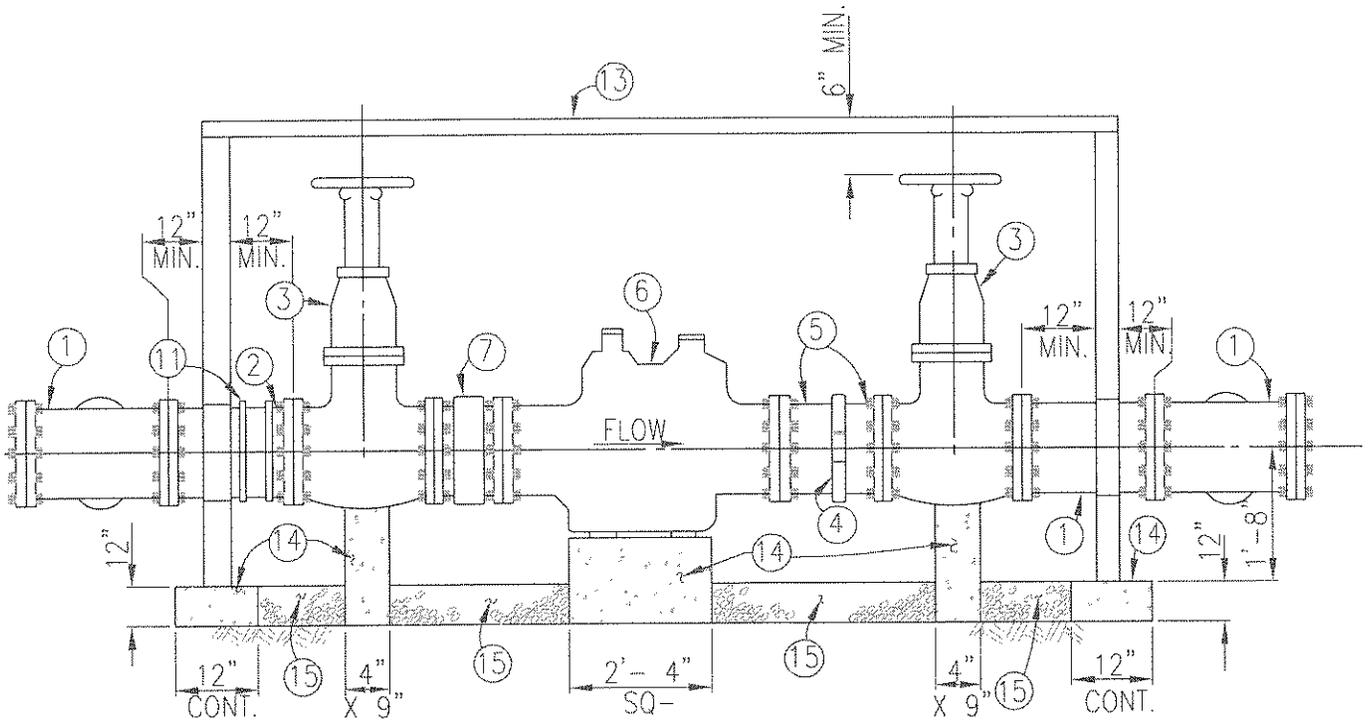
MATERIALS:

MATERIALS LIST		
ITEM	DESCRIPTION	MANUFACTURER & CAT No.
1	4" DUCTILE IRON SPOOL (FLG.X.FLG.)	
2	4" GATE VALVE N.R.S. (FLG. X FLG.) WITH HAND WHEEL PER STD. No. 400	
3	COUPLING	DRESSER STYLE 153 ROCKWELL #441
4	3" & 4" COMPOUND WATER METER (FLG. X FLG.)	KENT TOUCH READ
5	4" BRONZE STRAINER (FLG. X. FLG.)	
6	2" DOUBLE STRAP BRONZE SERVICE SADDLE (I.P.)	JAMES JONES J-979
7	2" CORPORATION STOP (I.P. X P.J./COMPR.)	FORD FB1100 JAMES JONES J-1935
8	2" COPPER TUBE TYPE K RIGID	
9	2" ELL (P.J./COMPR.)	FORD L44-77 JAMES JONES J-2611
10	2" BALL VALVE WITH LOCKING CAP	FORD B44-777/BVLC-2
11	METER VAULT (57 1/2" X 93 1/2" MIN.)	BROOKS PROD. 858-A BEST CONC. MC-5
12	CONCRETE SUPPORTS, CLASS 560-C-3250	
13	PEA GRAVEL, 12" THICK	
14	4" DUCTILE IRON SPOOL (FGL. X P.E.) 6" MIN. LENGTH	
15	2" BRASS TEE	FORD T441-773
16	BRASS HOSE BIB	
17	4" TO 3" DUCTILE IRON REDUCER (FLG. X FLG.) SEE NOTE No. 9	

NOTES:

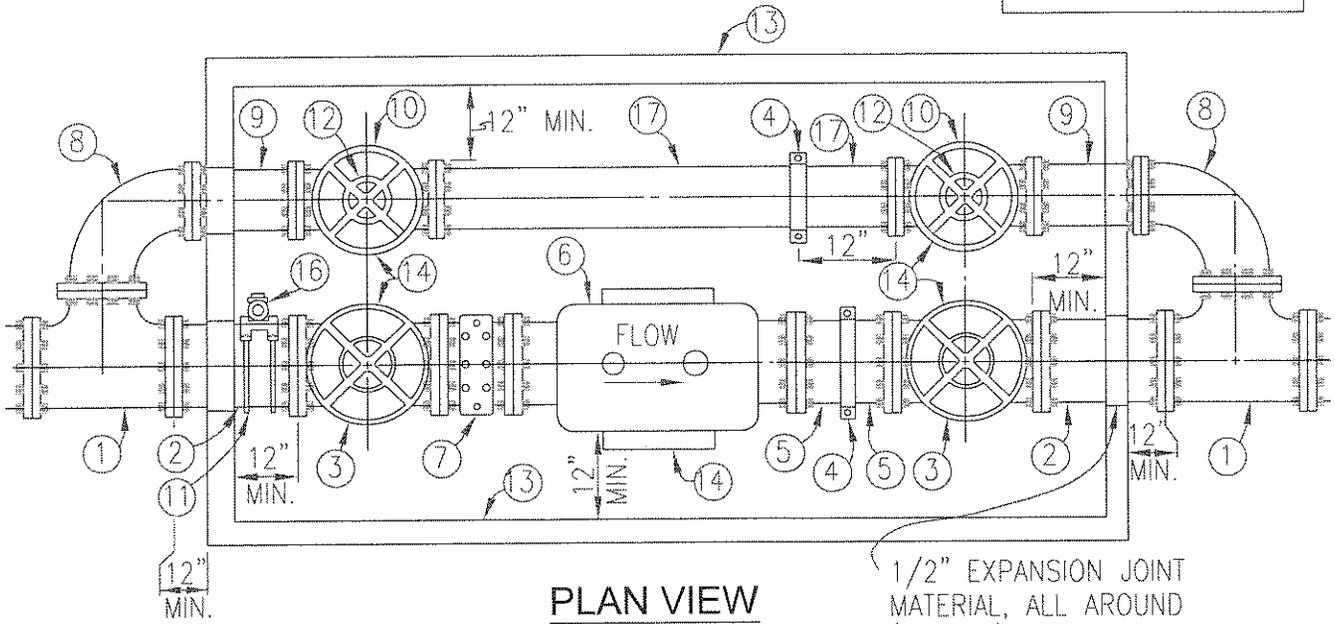
1. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
2. ALL FERROUS MATERIAL SHALL BE COATED PER STANDARD No. 400.
3. METER REGISTER TO BE SET FOR CURB SIDE READING WITHIN SERIAL NUMBER ON REGISTER.
4. PRECAST CONCRETE VAULTS SHALL HAVE GALVANIZED COVER WITH TWO 7" X 14" READING LIDS DRILLED WITH 2" HOLE FOR TOUCH READ METER.
5. CAST-IN-PLACE CONCRETE OR CONCRETE BLOCK VAULTS MAY BE USED IN PLACE OF PRECAST CONCRETE VAULT WITH PRIOR APPROVAL OF CITY ENGINEER. REQUIRES SPECIAL DESIGN.
6. METER TO BE INSTALLED IN PRIVATE PROPERTY REQUIRES AN EASEMENT TO THE CITY OF SIGNAL HILL.
7. SEE STD. No. 406 FOR SERVICE INSTALLATION FROM MAIN TO PARKWAY.
8. SEE STANDARD No. 411 FOR ABOVE GROUND INSTALLATION.
9. INSTALL ITEM No. 17 FOR 3" METER INSTALLATION ONLY.

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
①	3" TO 4" WATER SERVICE	407
②		
③		
④		
	APPROVED BY:  DATE: 6/2/04	SHEET 2 OF 2
	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172



ELEVATION

SEE SHEET 2 OF 2
FOR MATERIALS
LIST AND NOTES.



PLAN VIEW

1/2" EXPANSION JOINT
MATERIAL, ALL AROUND
(TYPICAL)

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.		
1	6" & 8" WATER SERVICE	408		
2				
3			APPROVED BY: <i>Dominic C. Milano</i>	DATE: 6/2/04
4			DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		1 OF 2		

MATERIALS:

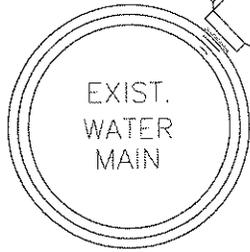
MATERIALS LIST		
ITEM	DESCRIPTION	MANUFACTURER & CAT No.
1	6" (8") X 4" TEE (FLG. X FLG.)	
2	6" (8") DUCTILE IRON SPOOL (FLG. X FLG.)	
3	6" (8") GATE VALVE N.R.S. (FLG. X FLG.) WITH HANDWHEEL PER STD. No. 400	
4	COUPLING (DUCTILE IRON)	DRESSER STYLE 153 ROCKWELL #441
5	6" (8") DUCTILE IRON SPOOL ((FLG. X P.E.) 6" MIN. LENGTH	
6	6" (8") COMPOUND WATER METER	KENT TOUCH READ
7	6" (8") BRONZE STRAINER (FLG. X. FLG.)	
8	4" LONG RADIUS 90° BEND (FLG. X. FLG.)	
9	4" DUCTILE IRON SPOOL (FLG. X.FLG.)	
10	4" GATE VALVE N.R.S. (FLG. X FLG.) WITH HANDWHEEL PER STD. No. 400	
11	2" DOUBLE STRAP BRONZE SERVICE SADDLE (I.P.)	JAMES JONES J-979
12	CHAIN AND LOCK	
13	6" METER VAULT (57 1/2" X 105 1/2" MIN.)	BROOKS PROD. 859A BEST CONC. PROD. MC-5
14	8" METER VAULT REQUIRES SPECIAL DESIGN	
15	CONCRETE SUPPORTS, CLASS 560-C-3250	
16	PEA GRAVEL 12" THICK	
17	2" CORPORATION STOP (I.P. X I.P.) WITH BRASS CAP	FORD FB500 JAMES JONES J-1943
18	4" DUCTILE IRON SPOOL (FLG. X. P.E.)	

NOTES:

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
2. ALL FERROUS MATERIAL SHALL BE COATED PER STANDARD No. 400.
3. METER REGISTER TO BE SET FOR CURB SIDE READING WITH SERIAL NUMBER ON REGISTER.
4. PRECAST CONCRETE VAULTS SHALL HAVE GALVANIZED COVER WITH TWO 7" X 14" READING LIDS WITH 2" HOLE FOR TOUCH READ METER.
5. CAST-IN-PLACE CONCRETE OR CONCRETE BLOCK VAULTS MAY BE USED IN PLACE OF PRECAST CONCRETE VAULTS WITH PRIOR APPROVAL OF CITY ENGINEER.
6. METER TO BE INSTALLED IN PRIVATE PROPERTY REQUIRES AN EASEMENT TO THE CITY OF SIGNAL HILL.
7. SEE STD. No. 406 FOR SERVICE INSTALLATION FROM MAIN TO PARKWAY.
8. SEE STANDARD No. 411 FOR ABOVE GROUND INSTALLATION.

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	6" TO 8" WATER SERVICE	408
2		
3	APPROVED BY: <i>Dominic C. Milano</i> DATE: <i>6/2/04</i>	SHEET
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		2 OF 2

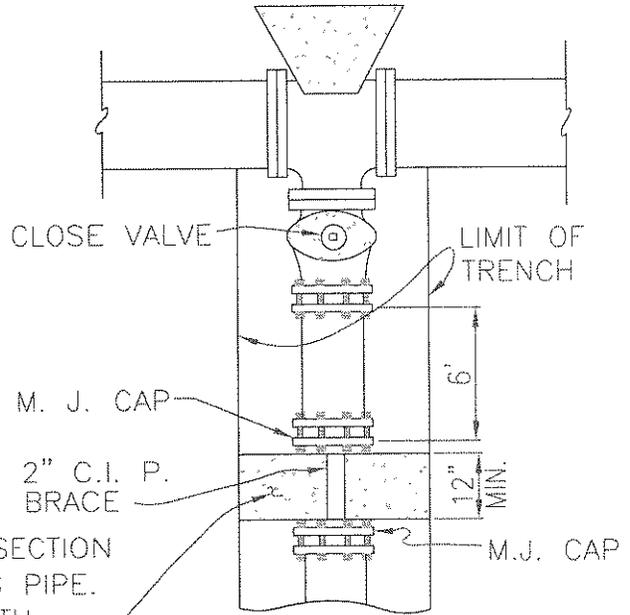
TURN OFF
CORP. STOP



CUT COPPER
± 6" FROM
CORP. STOP
AND CRIMP
COPPER

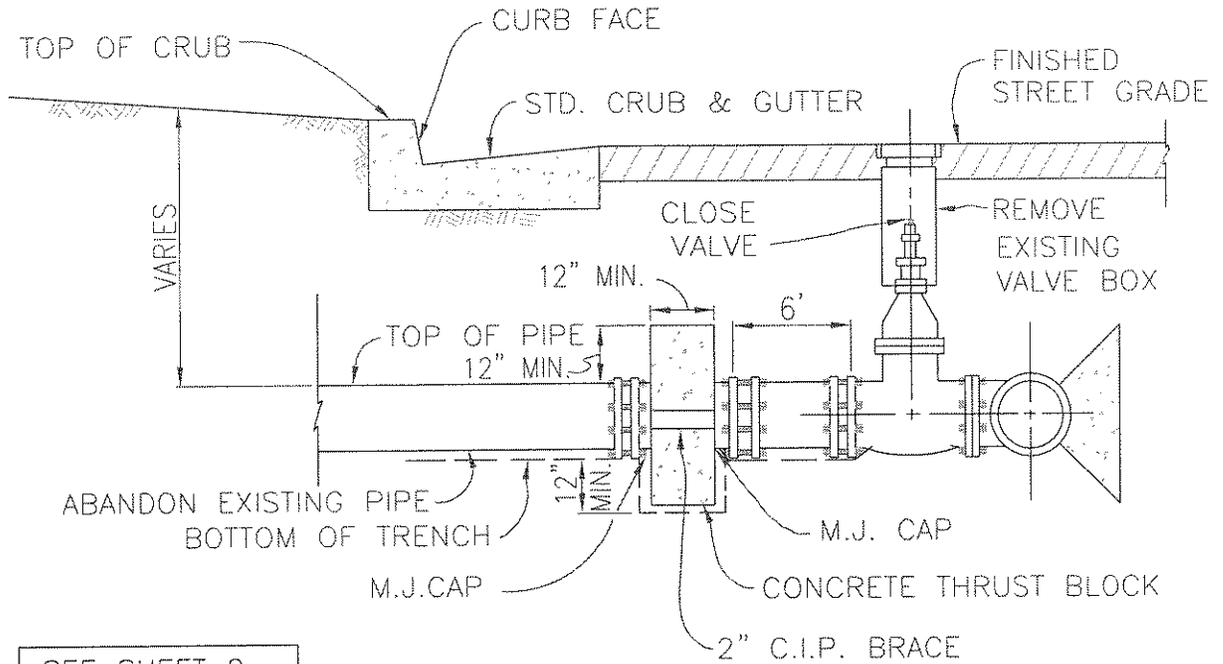
INSTALL BRASS
PLUG IN CORP.
STOP

2" AND SMALLER



REMOVE A SECTION
OF EXISTING PIPE.
REPLACE WITH
THRUST BLOCK.

3" THROUGH 12"



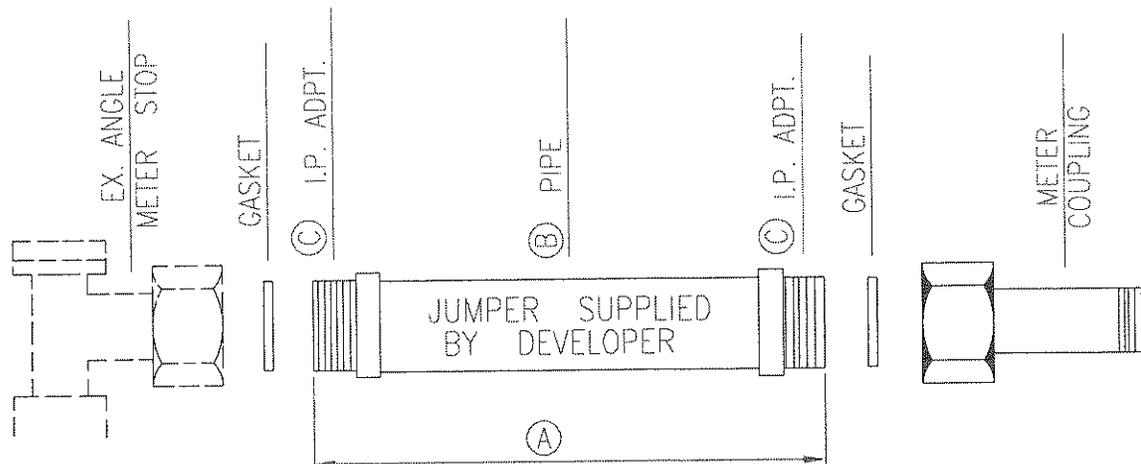
SEE SHEET 2
FOR NOTES.

REVISIONS	CITY OF SIGNAL HILL	PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	WATER SERVICE ABANDONMENT		409 1 OF 2
2	APPROVED BY: <i>Dominic C. Milano</i>		
3	DOMINIC C. MILANO - CITY ENGINEER		
4	DATE: 6/2/08 R.C.E. NO. 27172		

NOTES:

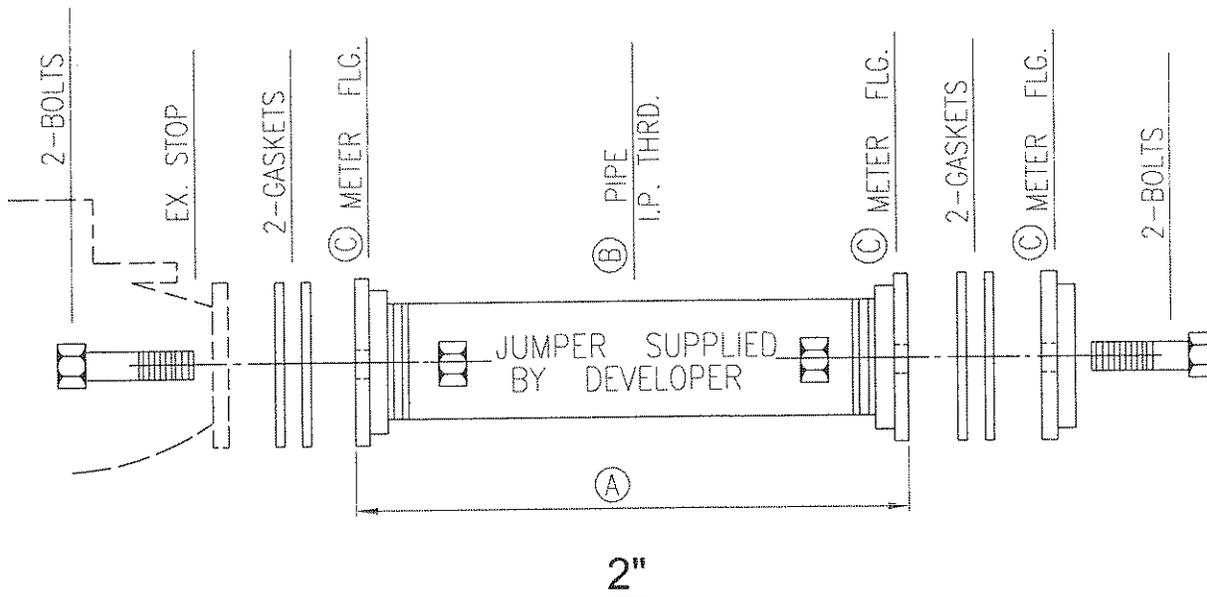
1. CUSTOMER MUST REQUEST TURN-OFF AND WATER METER TO BE REMOVED BY THE CITY 24 HOURS BEFORE WATER SERVICE IS TO BE ABANDONED.
2. PERMIT AND INSPECTION FEE TO BE DEPOSITED WITH THE WATER ENGINEERING DIVISION.
3. LOCATION OF CORPORATION STOP TO BE DETERMINED BY THE CONTRACTOR.
4. WATER METER BOX TO BE REMOVED:
 - A. PARKWAY - FILL HOLE WITH CLEAN DIRT AND GRADE LEVEL.
 - B. SIDEWALK - SAWCUT 12" ON EACH SIDE OF METER BOX AND POUR SIDEWALK TO MEET CITY STANDARD.
5. WATER METER BOX TO BE DELIVERED TO CITY YARD BY CONTRACTOR.
6. EXCAVATION AND BACKFILLING REQUIRED TO ABANDON SERVICE AND METER BOX AS PER STANDARDS No. 400 AND 401.
7. IF CORPORATION STOP LEAKS, IT MUST BE REMOVED AND THE HOLE COVERED BY A STAINLESS STEEL REPAIR CLAMP: MUELLER STYLE 520, ROCKWELL #261 OR EQUAL.
8. IF CORPORATION STOP IS TO BE REMOVED, THE WATER MAINTENANCE DIVISION PERSONNEL SHALL BE CONTACTED AT LEAST 48 HOURS PRIOR TO START OF JOB IN ORDER TO PREPARE FOR SHUTDOWN. THE CITY CANNOT GUARANTEE A COMPLETE WATER SHUTDOWN OF EXISTING MAIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING.
9. CONDITIONS OTHER THAN COPPER SHALL BE HANDLED AS FOLLOWS:
 - A. REMOVE SHORT SECTION OF PIPE AND PLUG CORPORATION STOP AS SHOWN ON SHEET 1. PLACE CAP ON OTHER END OF PLASTIC SERVICE LINE.
 - B. SHUTDOWN OF MAIN AND THE REMOVAL OF THE CORPORATION STOP FOR OTHER TYPE SERVICE MATERIALS OR AS DETERMINED BY INSPECTOR DEPENDING UPON FIELD CONDITIONS.
10. CITY OF SIGNAL HILL STREET EXCAVATION PERMIT IS REQUIRED.
11. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
12. WHEN TAPPING VALVE EXISTS AND MAIN LINE CAN BE TAKEN OUT OF SERVICE, VALVE SHALL BE REMOVED AND REPLACED WITH A BLIND FLANGE.

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	WATER SERVICE ABANDONMENT	409
2		
3	APPROVED BY:  DATE: <u>6/2/04</u>	SHEET
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172 2 OF 2



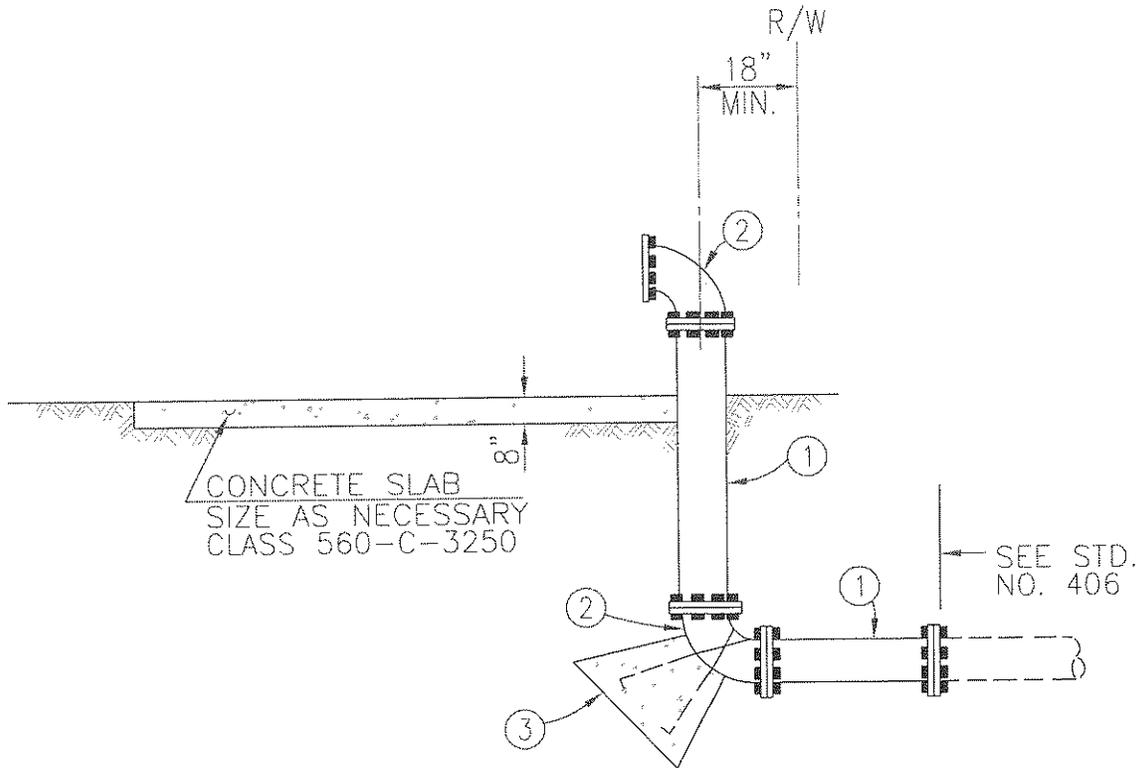
3/4" & 1"

METER SIZE	(A)	(B)	(C)
3/4"	9 1/2"	1" DIA.	1"
1"	11"	1 1/4" DIA.	1 1/4"
2"	17"	2" DIA.	2"



2"

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.	
1	JUMPER INSTALLATION	410	
2			
3	APPROVED BY: <i>Dominic C. Milano</i>		DATE: 6/2/04
4	DOMINIC C MILANO - CITY ENGINEER		R.C.E. NO. 27172



MATERIALS LIST

ITEM	DESCRIPTION
1	DUCTILE IRON SPOOL (FLG. x FLG.) LATERAL SIZE
2	LONG RADIUS 90° BEND (FLG. x FLG.) LATERAL SIZE
3	THRUST BLOCK PER STANDARD.NO. 416

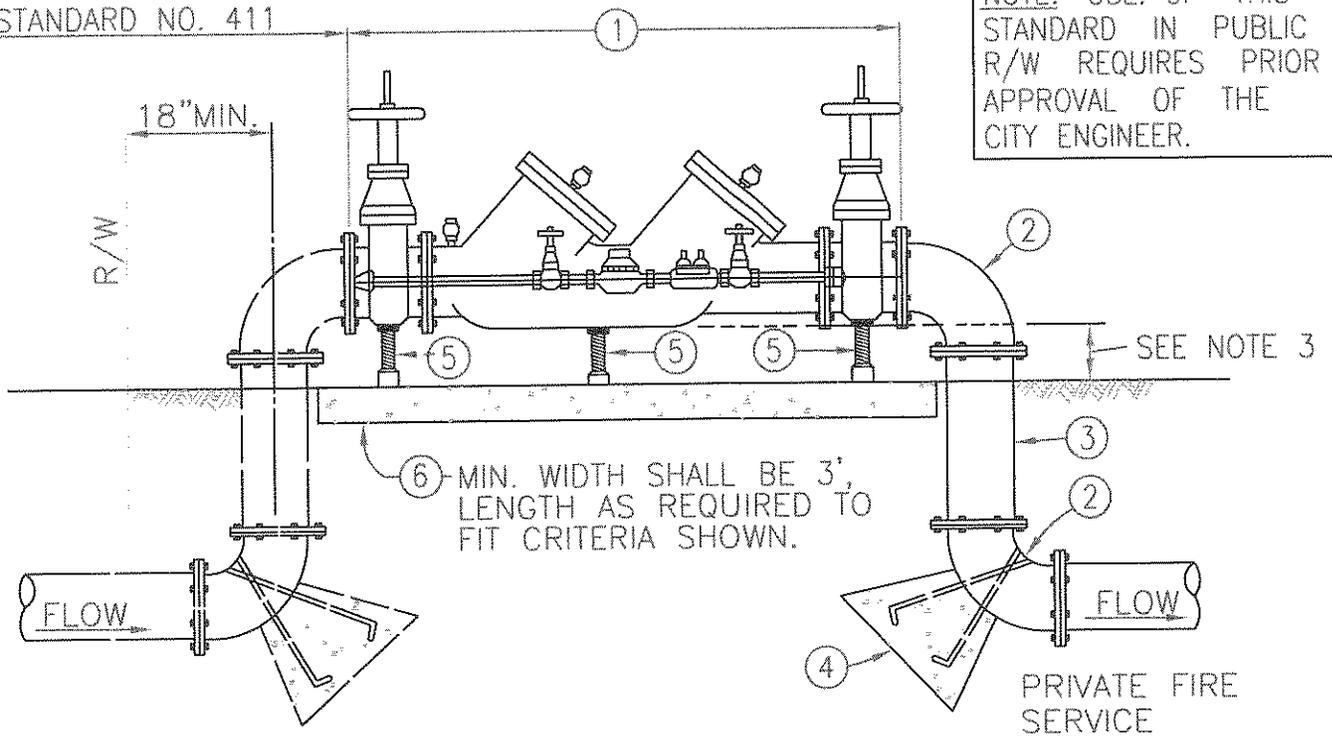
NOTES

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD NO. 400.
2. ALL BURIED PIPE AND FITTINGS SHALL BE ENCASED IN MINIMUM OF 8 MIL POLYETHYLENE WRAP.
3. ALL NUTS, BOLTS & WASHERS SHALL BE COATED PER STANDARD NO. 400.
4. SEE APPROPRIATE STANDARD FOR METER INSTALLATION.
5. ABOVE GROUND METER TO BE INSTALLED ON PRIVATE PROPERTY WITH EASEMENT TO CITY OF SIGNAL HILL.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	ABOVE GROUND INSTALLATION	411
2		
3	APPROVED BY:  DATE: 6/2/04	
4	DOMINIC C MILANO - CITY ENGINEER R.C.E. NO. 27172	

SEE STANDARD NO. 411

NOTE: USE OF THIS STANDARD IN PUBLIC R/W REQUIRES PRIOR APPROVAL OF THE CITY ENGINEER.



MATERIALS LIST

ITEM	DESCRIPTION	MANUFACTURER & CAT.NO
1	DOUBLE DETECTOR CHECK FIRE SERVICE INCL. DETECTOR BYPASS, O.S. & Y. GATE VALVES WITH HANDWHEELS AND TEST COCKS.	L.A. COUNTY DEPT. OF HEALTH SERVICES APPROVED
2	LONG RADIUS ELL (FLG. x FLG.)	
3	DUCTILE IRON SPOOL (FLG. x FLG.)	
4	CONCRETE THRUST BLOCK PER CITY STD.NO. 416	
5	TOLCO OR GRINNAL SCREW JACKS OR EQUAL	
6	8" THICK P.C.C. SLAB CLASS 560-C-3250	

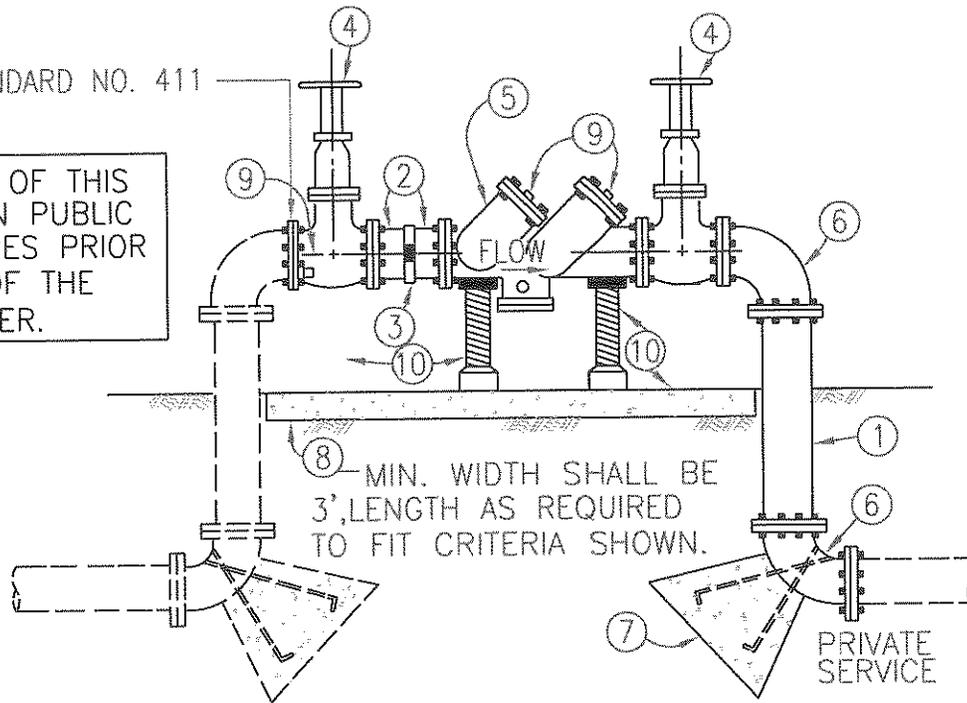
NOTES:

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD NO. 400.
2. ALL ABOVE GROUND MATERIAL TO BE PAINTED WITH ONE COAT DUNN EDWARDS VERSAPRIME 42-44 AND TWO COATS DUNN EDWARDS SYNTHETIC, DARK GREEN.
3. FIRE SERVICE SHALL BE INSTALLED WITH 12" MINIMUM TO 30" MAXIMUM CLEARANCE ABOVE FLOOD GRADE LEVEL.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1 6/1/2005	4" TO 10" FIRE SERVICE	412
2	APPROVED BY: <i>Dominic C. Milano</i>	
3	DATE: 6/23/05	
4	DOMINIC C MILANO - CITY ENGINEER R.C.E. NO. 27172	

SEE STANDARD NO. 411

NOTE: USE OF THIS STANDARD IN PUBLIC R/W REQUIRES PRIOR APPROVAL OF THE CITY ENGINEER.

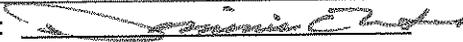


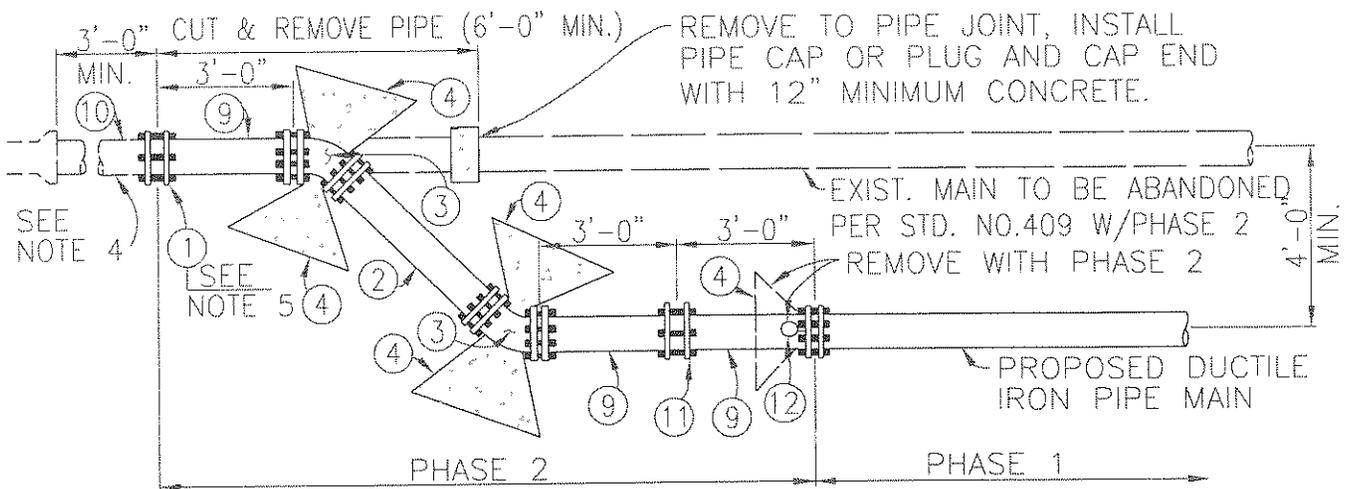
MATERIALS LIST

ITEM	DESCRIPTION	MANUFACTURER & CAT.NO.
1	DUCTILE IRON SPOOL (FLG. X FLG.)	
2	DUCTILE IRON SPOOL (FLG. X P.E.) 6" MIN. IN LENGTH	
3	COUPLING	DRESSER STYLE 153 ROCKWELL # 441
4	GATE VALVE N.R.S. WITH HANDWHEEL (FLG. X FLG.)	
5	BACK FLOW PREVENTER WITH TEST COCKS	L.A. COUNTY DEPT. OF HEALTH SERVICES APPROVED
6	LONG RADIUS ELL (FLG. X FLG.)	
7	CONCRETE THRUST BLOCK PER CITY STD. NO. 416	
8	8" THICK P.C.C. SLAB CLASS 560-C-3250	
9	TEST COCK	
10	TOLCO OR GRINNEL SCREW JACKS OR EQUAL	

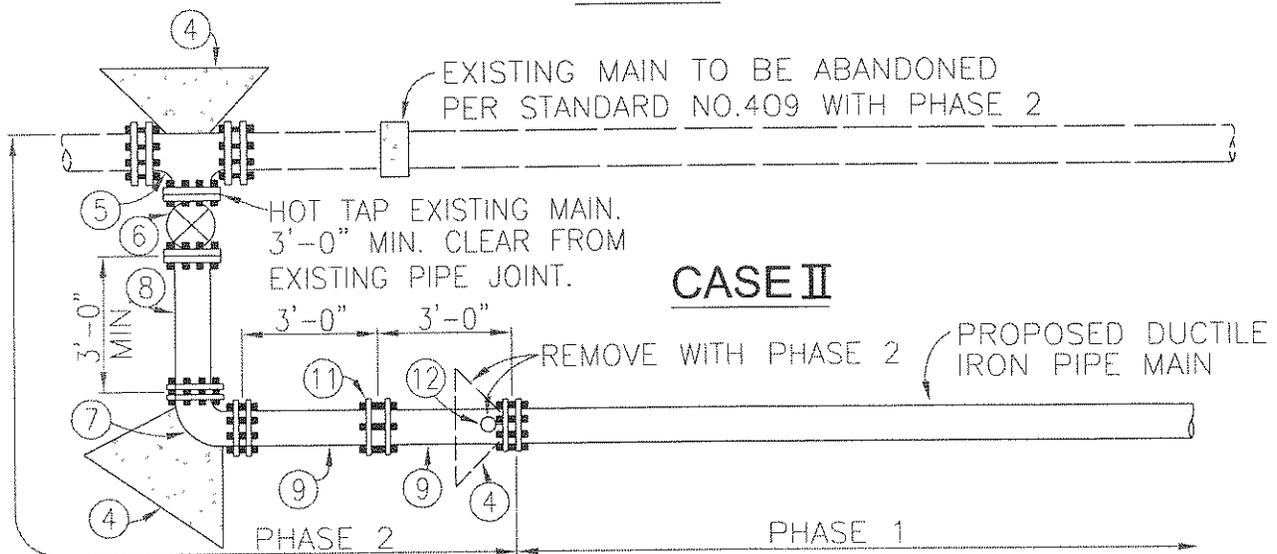
NOTES

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD NO. 400.
2. ALL ABOVE GROUND MATERIAL TO BE PAINTED WITH ONE COAT DUNN EDWARDS VERSAPRIME 42-44 AND TWO COATS DUNN EDWARDS SYNTHETIC, DARK GREEN.

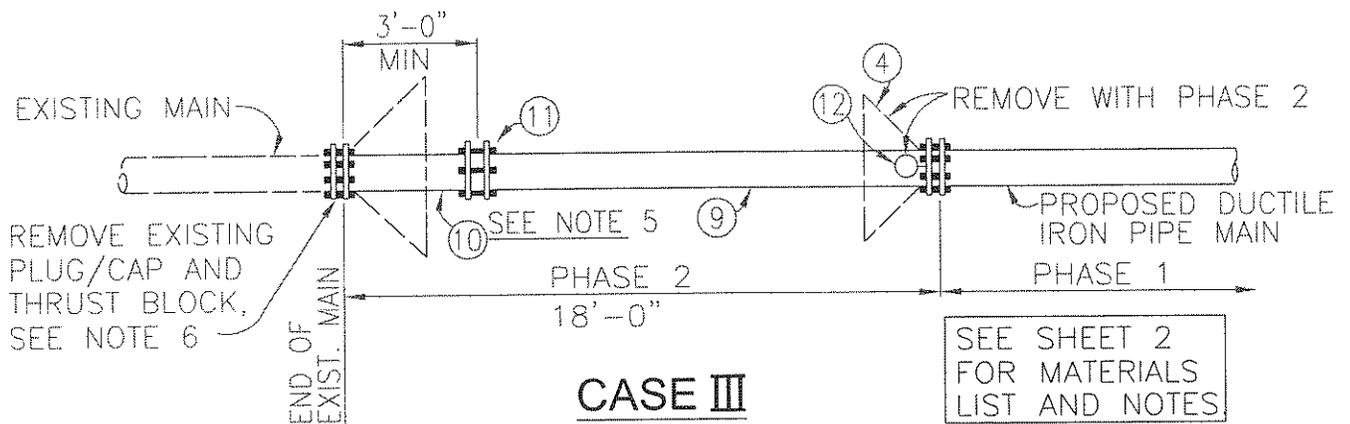
REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.	
1 6/1/2005	4" TO 10" BACKFLOW PREVENTER	413	
2			
3	APPROVED BY: 		DATE: 6/20/05
4	DOMINIC C MILANO - CITY ENGINEER		R.C.E. NO. 27172



CASE I



CASE II



CASE III

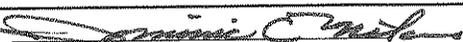
REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.		
1	CONNECTION TO EXISTING MAINS	414		
2				
3			APPROVED BY: <i>Dominic C. Milano</i>	DATE: 6/2/04
4			DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		1 OF 2		

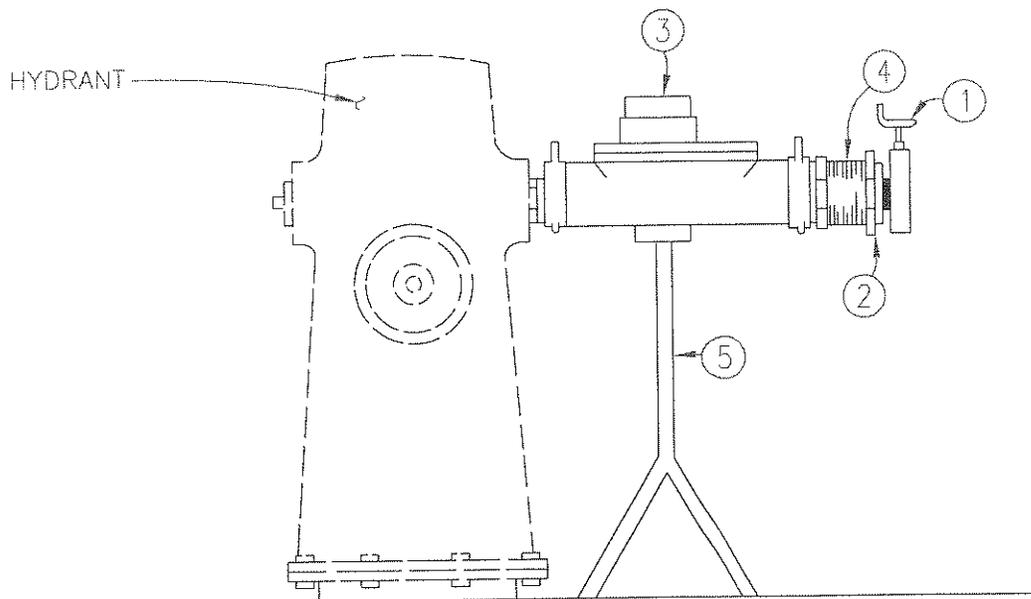
MATERIALS:

MATERIALS LIST		
ITEM	DESCRIPTION	MANUFACTURER & CAT. No.
1	TRANSITION COUPLING (SEE NOTE 5)	DRESSER STYLE 162 ROCKWELL #433
2	DUCTILE IRON SPOOL (M.J. X M.J.)	
3	45° BEND (M.J. X M.J.)	
4	THRUST BLOCK PER STANDARD No. 416	
5	TAPPING SLEEVE (M.J. X J.J. X FLG.)	
6	GATE VALVE (FLG. X FLG.) PER STD. No. 400	
7	90° BEND (M.J. X M. J.)	
8	DUCTILE IRON SPOOL (FLG. X M.J.)	
9	DUCTILE IRON SPOOL (M.J. X P.E.)	
10	DUCTILE IRON SPOOL (SEE NOTE 4)	
11	SLEEVE COUPLING	DRESSER STYLE 153 ROCKWELL #441
12	2" TEMPORARY BLOW-OFF PER STANDARD No. 430	

NOTES:

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
2. SEE CONSTRUCTION PLANS FOR LIMITS OF PHASE I CONSTRUCTION. PHASE I SHALL END WITH MECHANICAL JOINT CAP, THRUST BLOCK AND 2" TEMPORARY BLOW-OFF PER STD. No. 430. PHASE 2 WORK SHALL NOT COMMENCE UNTIL PHASE I HAS BEEN PRESSURE TESTED AND DISINFECTED IN ACCORDANCE WITH STANDARD No. 400.
3. ALL PRESSURE TESTING, FLUSHING AND DISINFECTING SHALL BE DONE IN PRESENCE OF THE ENGINEER. SALVAGE PIPE AND FITTINGS AS REQUIRED FOR PHASE 2 CONSTRUCTION.
4. REMOVE PIPE TO JOINT IF WITHIN 3' OF CUT LINE. REPLACE PIPE AS OUTLINED IN NOTE 6.
5. IF EXISTING MAIN IS SAME SIZE DUCTILE IRON PIPE AS PROPOSED MAIN, MATERIALS LIST ITEM II WILL REPLACE ITEM I.
6. THE CONTRACTOR SHALL JOIN THE END OF THE EXISTING MAIN FOLLOWING THE CRITERIA SHOWN HEREON:
 - A. EXISTING MAIN IS DUCTILE IRON PIPE - INSTALL APPROPRIATE DUCTILE IRON SPOOL (P.E. X P.E.), (M.J. X P.E.) OR (FLG. X P.E.)
 - B. EXISTING MAIN IS A.C. PIPE - FIELD CUT OFF BELL END, INSTALL TRANSITION COUPLING PER MATERIALS LIST ITEM I, INSTALL DUCTILE IRON

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	CONNECTION TO EXISTING MAINS	414
2		
3	APPROVED BY:  DATE: 6/2/04	SHEET
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		2 OF 2



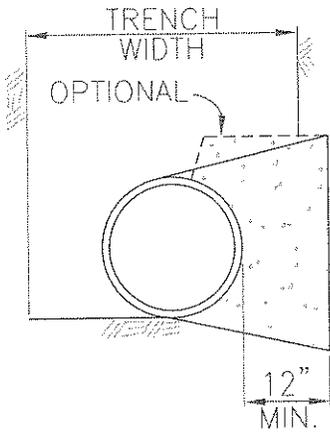
MATERIALS LIST

ITEM	DESCRIPTION
1	SCREW TYPE, SINGLE HYDRANT GATE VALVE, CRANK HANDLE NON-RISING STEM. SIERRA S30S OR EQUAL 2 1/2" NST X 2 1/2" NST.
2	HEXAGON BRASS BUSHING 2 1/2" N.S.T. X 3" I.P.T WITH THREE STRAIGHTENING VANES.
3	3" FIRE HYDRANT METER, ROCKWELL, HERSEY OR EQUAL
4	HOSE NIPPLE 3" I.P.T. X 2 1/2" N.S.T.
5	METER STAND.

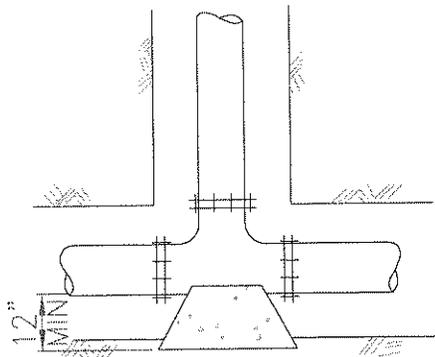
NOTES

1. OPENING AND CLOSING OF HYDRANT IS PERMITTED ONLY WITH A HYDRANT WRENCH. HYDRANT GATE VALVE WILL BE USED TO CONTROL WATER FLOW.
2. SERVICE MAY BE MOVED FROM ONE LOCATION TO ANOTHER WITH THE APPROVAL OF THE WATER DIVISION.
3. BACKFLOW DEVICES MAY BE REQUIRED FOR CERTAIN USES.
4. SERVICE CONNECTIONS MAY BE TERMINATED AT ANY TIME AT THE DISCRETION OF THE WATER DIVISION.
5. CHARGES FOR LOSS OR DAMAGE TO ANY SERVICE MATERIAL WILL BE BASED UPON CURRENT PRICES.
6. WATER TRUCKS MUST HAVE AN AIR GAP SEPARATION OF TWICE THE DIAMETER OF THE WATER FILL LINE ABOVE THE OVERFLOW OF THE WATER TANK.

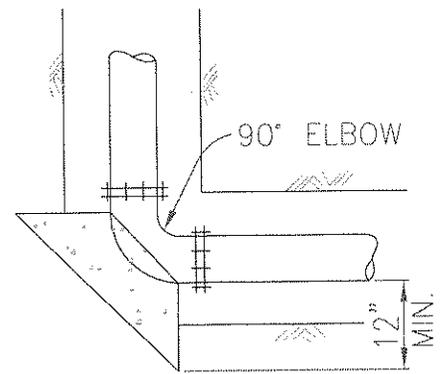
REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
①	TEMPORARY WATER SERVICE	415
②	APPROVED BY	
③	DOMINIC C MILANO - CITY ENGINEER	
④	DATE: <u>6/2/04</u> R.C.E. NO. 27172	



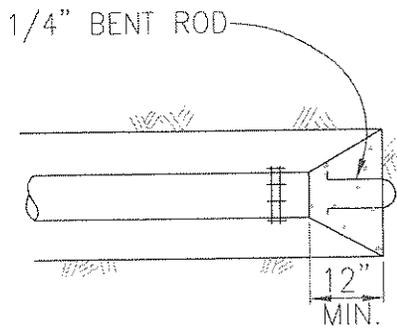
TYPICAL SECTION



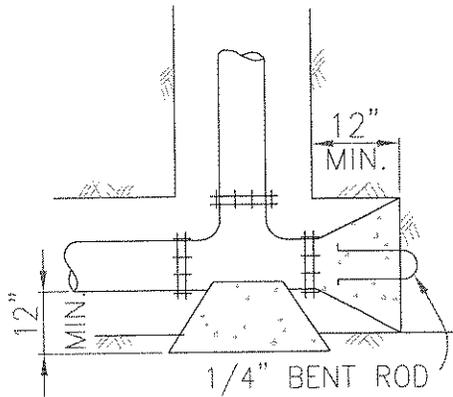
CONDITION I



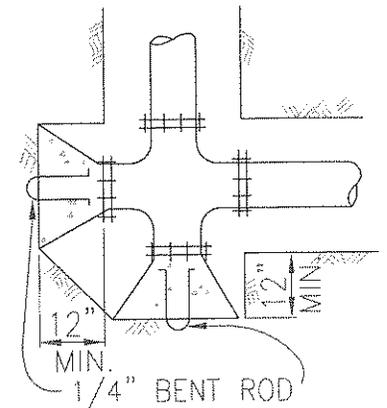
CONDITION II



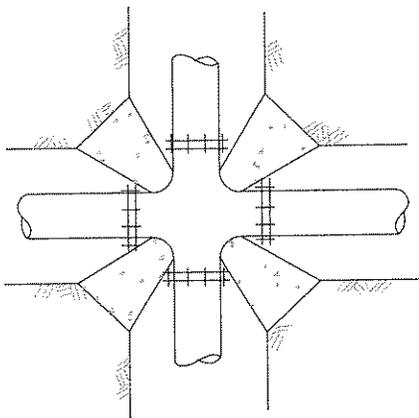
CONDITION III



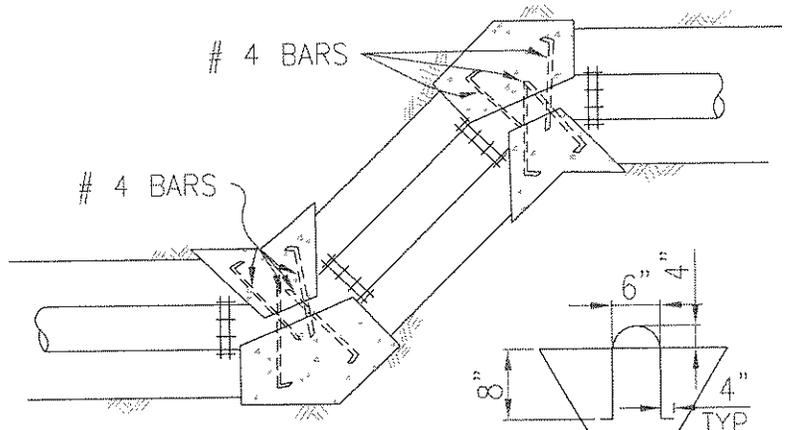
CONDITION IV



CONDITION V



CONDITION VI



CONDITION VII

**DETAIL:
1/4" BENT ROD**

SEE SHEET 2 FOR MATERIALS LIST AND NOTES.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	THRUST BLOCKS	416 1 OF 2
2		
3		
4		
	APPROVED BY: <i>Dominic C. Milano</i> DOMINIC C MILANO - CITY ENGINEER	DATE: 6/2/04 R.C.E. NO. 27172

BEARING AREA:

THRUST BLOCK BEARING AREA IN SQUARE FEET
PIPE SIZE CONDITION

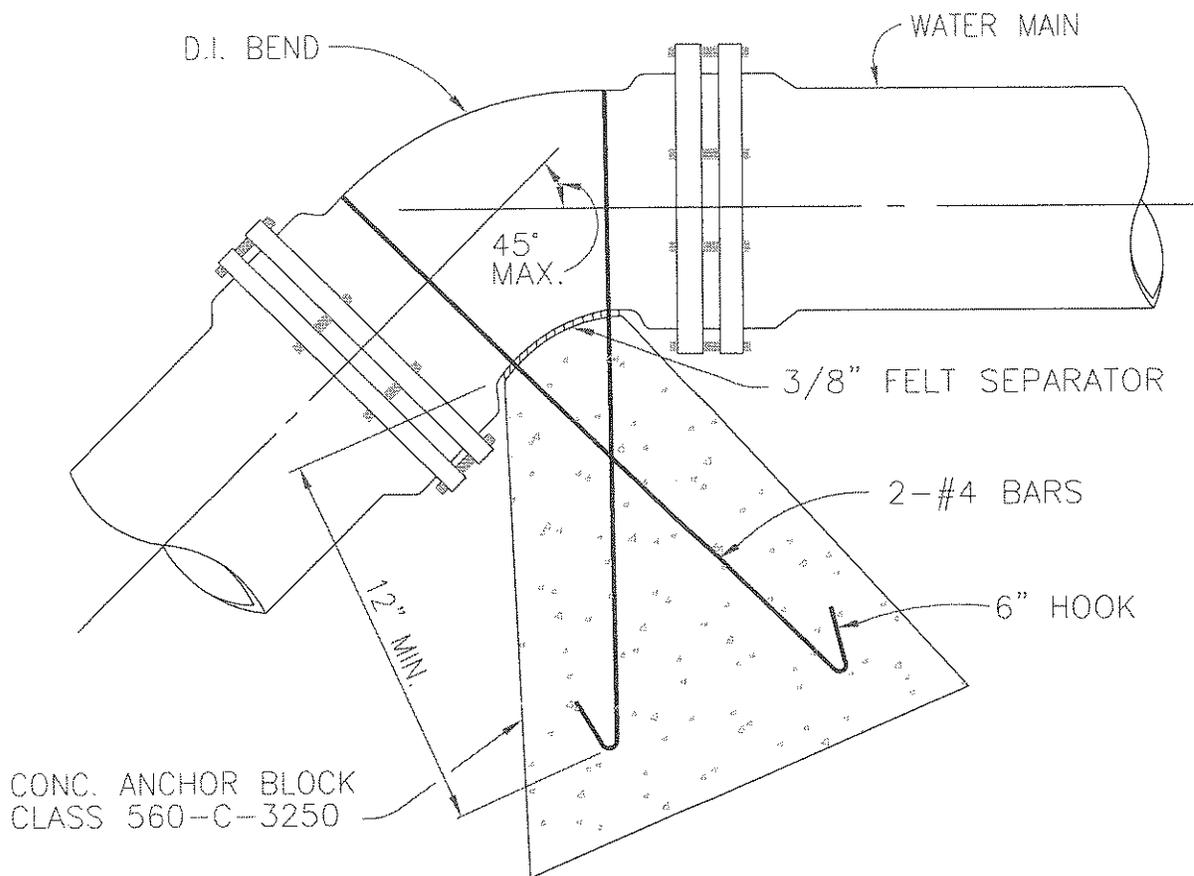
	I	II	III	IV	V	VI	VII*	VIII**
4"	4	5	4	4 EA.	4 EA.	1 EA.	2 EA.	3 EA.
6"	8	10	8	8 EA.	8 EA.	2 EA.	3 EA.	6 EA.
8"	12	16	12	12 EA.	12 EA.	3 EA.	5 EA.	10 EA.
10"	18	25	18	18 EA.	18 EA.	5 EA.	7 EA.	16 EA.
12"	26	36	26	26 EA.	26 EA.	7 EA.	10 EA.	23 EA.
14"	35	49	35	35 EA.	35 EA.	9 EA.	14 EA.	27 EA.
16"	45	64	45	45 EA.	45 EA.	11 EA.	18 EA.	35 EA.
18"	57	81	57	57 EA.	57 EA.	14 EA.	23 EA.	44 EA.

* = 22 1/2 ° BEND ** = 45° BEND

NOTES:

1. THRUST BLOCK AREAS BASED ON 225 P.S.I. PRESSURE AND 1500 P.S.F. ALLOWABLE SOIL PRESSURE WITH 42" OF COVER MINIMUM. FOR A BEARING VALUE OF 1000 P.S.F. USE 1.5 TIMES THE AREA SHOWN, FOR A SOIL BEARING VALUE OF 500 P.S.F., USE 3.0 TIMES THE AREA SHOWN. ADDITIONAL BEARING AREA REQUIRED FOR SPECIAL CONDITIONS SHALL HAVE PRIOR APPROVAL OF THE CITY ENGINEER.
2. THRUST BLOCK BEARING FACES SHALL BE PLACED AGAINST UNDISTURBED SOIL, APPROVED COMPACTED BACKFILL OR CLASS 100-E-100 SLURRY.
3. THRUST BLOCKS SHALL BE CLASS 560-C-3250 CONCRETE UNLESS SPECIFIED OTHERWISE.
4. TO FACILITATE FUTURE REMOVAL OF THRUST BLOCKS AND LINE EXTENSIONS:
 - A. INSTALL 1/4" BENT ROD HANDLES.
 - B. USE CARDBOARD SEPARATORS BETWEEN BLOCKS, IF NEEDED.
5. CONCRETE TO BE KEPT CLEAR OF ALL PIPE, NUTS, BOLTS, AND ENDS OF FITTINGS.
6. ALL UNDERGROUND FERROUS MATERIAL SHALL BE COATED PER STANDARD No. 400.

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
①	THRUST BLOCKS	416
②		
③	APPROVED BY:  DATE: <u>6/2/04</u>	SHEET
④	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		2 OF 2

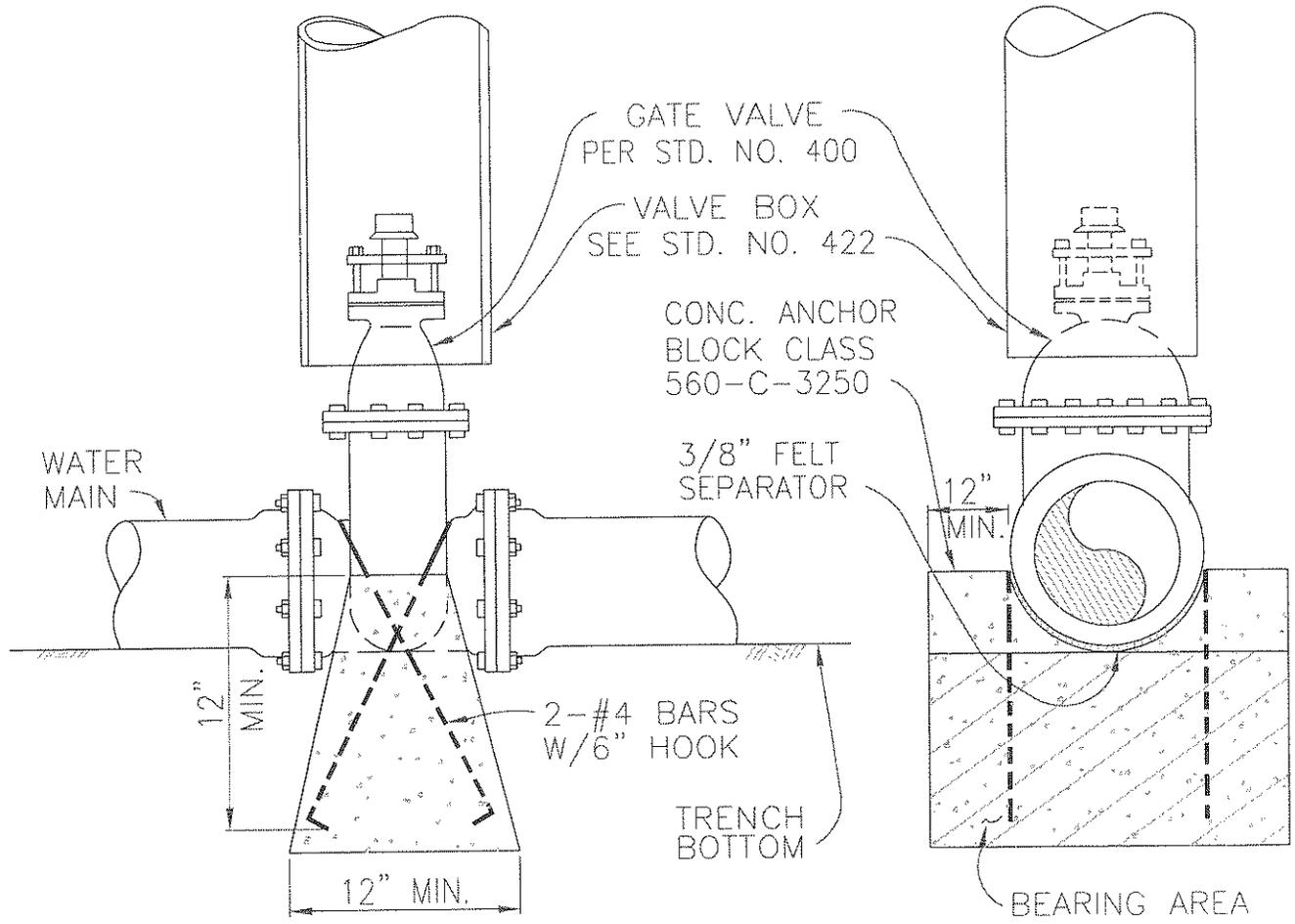


D.I. BEND	6"	8"	10"	12"	14"	16"	18"
CONC. ANCHOR BLOCK VOLUME IN CUBIC YARDS	2.0	3.0	5.0	7.0	9.5	12.5	15.5

NOTES

1. CONCRETE SHALL BE KEPT CLEAR OF ALL NUTS, BOLTS AND ENDS OF FITTINGS.
2. ALL EXPOSED FERROUS MATERIAL SHALL BE COATED PER STANDARD NO. 400.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.		
1	VERTICAL BEND ANCHOR	417		
2				
3			APPROVED BY: <i>Dominic C. Milano</i>	DATE: <i>6/2/07</i>
4			DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172

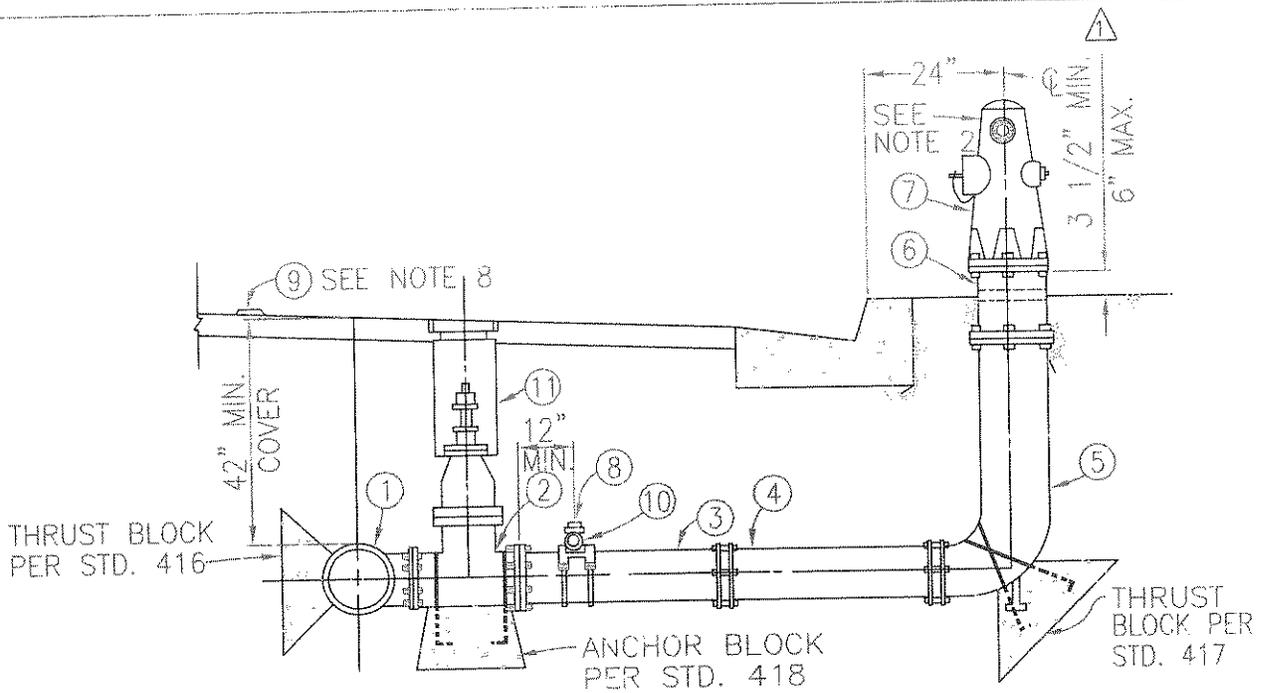


VALVE SIZE	6"	8"	10"	12"	14"	16"	18"
BEARING AREA SQUARE FEET	8	12	18	26	35	45	57

NOTES

1. CONCRETE SHALL BE KEPT CLEAR OF ALL NUTS, BOLTS AND ENDS OF FITTINGS.
2. ALL EXPOSED FERROUS MATERIAL SHALL BE COATED PER STANDARD NO. 400.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.		STANDARD PLAN NO.
1 2 3 4	VALVE ANCHOR BLOCK		
	APPROVED BY: <i>Dominic C. Milano</i>	DATE: <i>6/2/07</i>	418
	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172	



SEE SHEET 2 FOR NOTES

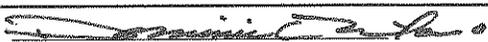
MATERIALS LIST

ITEM	DESCRIPTION	MANUFACTURER & CAT.NO.
1	TEE (MAIN SIZE X 6") (M.J. X M.J. X FLANGE) FOR EXISTING MAINS USE M.J. TAPPING SLEEVE	
2	6" GATE VALVE (FLANGE X FLANGE) PER STD. NO.400	
3	6" DUCTILE IRON SPOOL (FLG.X M.J.) LENGTH VARIES	
4	6" DUCTILE IRON SPOOL (M.J. .X M.J.) LENGTH VARIES	
5	6" DUCTILE IRON HYDRANT BURY W/FOOT	
6	6" DUCTILE IRON BREAK OFF SPOOL WITH HOLLOW BREAK-OFF BOLTS 5/8" X 2 3/4" (INSTALL W/NUTS UP)	
7	FIRE HYDRANT (2-2 1/2" OUTLETS; 1-4" OUTLETS) 6 BOLT FLANGE	JAMES JONES J-3765
8	2" CORPORATION STOP (I.P. X I.P.) W/BRASS CAP	FORD FB500 JAMES JONES J-1943
9	TWO WAY REFLECTIVE BLUE PVMT. MARKER	
10	2" DOUBLE STRAP BRONZE SERVICE SADDLE(I.P.)	JAMES JONES J-979
11	VALVE BOX PER STD. NO. 422	

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.								
<table border="1"> <tr> <td>1</td> <td>3/4/11</td> </tr> <tr> <td>2</td> <td></td> </tr> <tr> <td>3</td> <td></td> </tr> <tr> <td>4</td> <td></td> </tr> </table>	1	3/4/11	2		3		4		<p align="center">FIRE HYDRANT ASSEMBLY</p> <p>APPROVED BY:  DOMINIC C MILANO - CITY ENGINEER</p> <p>DATE: 3/9/11 R.C.E. NO. 27172</p>	<p align="center">419</p> <p align="center">1 OF 2</p>
1	3/4/11									
2										
3										
4										

NOTES:

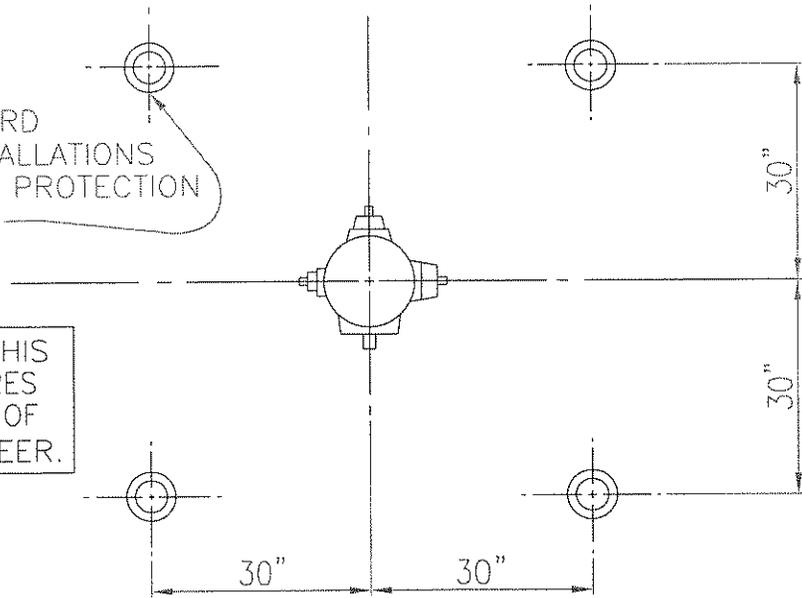
1. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
2. HYDRANT 24" BEHIND FACE OF CURB (AS SHOWN) WHEN:
 - a. NO SIDEWALK EXISTS
 - b. CURB AND SIDEWALKS ARE NOT CONTIGUOUS
 - c. CURB AND SIDEWALKS ARE CONTIGUOUS - SIDEWALK EXCEEDS 5 (FIVE) FEET.
3. HYDRANT 18" BEHIND SIDEWALKS WHEN CURB AND SIDEWALK ARE CONTIGUOUS AND SIDEWALK DOES NOT EXCEED 5 FEET.
4. PROVIDE 3 FEET UNOBSTRUCTED CLEARANCE ON ALL SIDES OF FIRE HYDRANT.
5. FIRE HYDRANTS TO BE PAINTED WITH 1 (ONE) COAT DUNN EDWARDS VERSAPRIME 42-44 & 2 (TWO) COATS DUNN EDWARDS SYNTHETIC HIGH VISIBILITY YELLOW 10-14.
6. ALL UNDERGROUND FERROUS MATERIAL SHALL BE COATED PER STANDARD No. 400.
7. IN AREAS WHERE NO CURB OR BERM EXIST, SEE STD. No. 420
8. PLACE BLUE PAVEMENT MARKER ON SIDE OF STREET NEAREST FIRE HYDRANT AS LISTED BELOW:
 - a. TWO-WAY STREETS OR ROADS:
PLACE MARKERS TWELVE INCHES FROM EDGE OF PAINTED CENTERLINE ON THE SIDE NEAREST THE FIRE HYDRANT. IF THE STREET HAS NO CENTERLINE, PLACE THE MARKER TWELVE INCHES FROM THE APPROXIMATE CENTER OF THE ROADWAY ON THE SIDE NEAREST THE HYDRANT.
 - b. STREETS WITH LEFT TURN LANE AT INTERSECTION:
PLACE MARKERS TWELVE INCHES FROM THE EDGE OF PAINTED WHITE CANALIZING LINE ON THE SIDE NEAREST THE HYDRANT
 - c. STREETS WITH CONTINUOUS TWO-WAY LEFT TURN LANE:
PLACE MARKERS TWELVE INCHES FROM THE EDGE OF THE PAINTED YELLOW BARRIER LINE ON THE SIDE NEAREST THE FIRE HYDRANT.
 - d. STREETS WITH RAISED MEDIANS:
PLACE MARKER 12" FROM EDGE OF GUTTER.
9. PROVIDE 24" X 30" EXPANSION JOINT AROUND HYDRANT FOR NEW SIDEWALK CONSTRUCTION.
10. PUSH-ON JOINTS MAY BE USED IN LIEU OF MECHANICAL JOINTS.
11. HYDRANTS SHALL BE LOCATED A MINIMUM OF 5 (FIVE) FEET FROM A DRIVEWAY TOP OF 'X', CURB RETURN B.C.R./E.C.R. AND AS APP
12. HYDRANT INSTALLATION LOCATION WITHOUT SIDEWALK SHALL INCLUDE 30" x 30" x 4" MINIMUM PCC PAD WITH LIGHT BROOM FINISH.

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	FIRE HYDRANT ASSEMBLY	419
2		
3	APPROVED BY:  DATE: <u>6/2/04</u>	SHEET
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172 2 OF 2

PLAN

OMIT REAR GUARD POSTS ON INSTALLATIONS NOT REQUIRING PROTECTION FROM REAR.

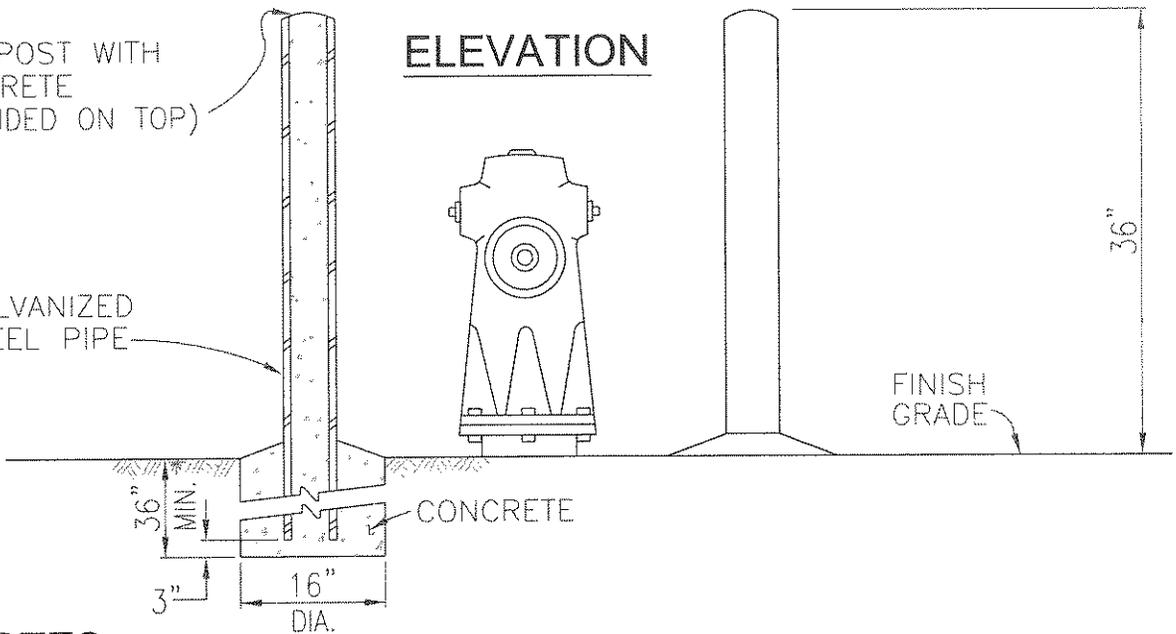
NOTE: USE OF THIS STANDARD REQUIRES PRIOR APPROVAL OF THE CITY ENGINEER.



ELEVATION

FILL POST WITH CONCRETE (ROUNDED ON TOP)

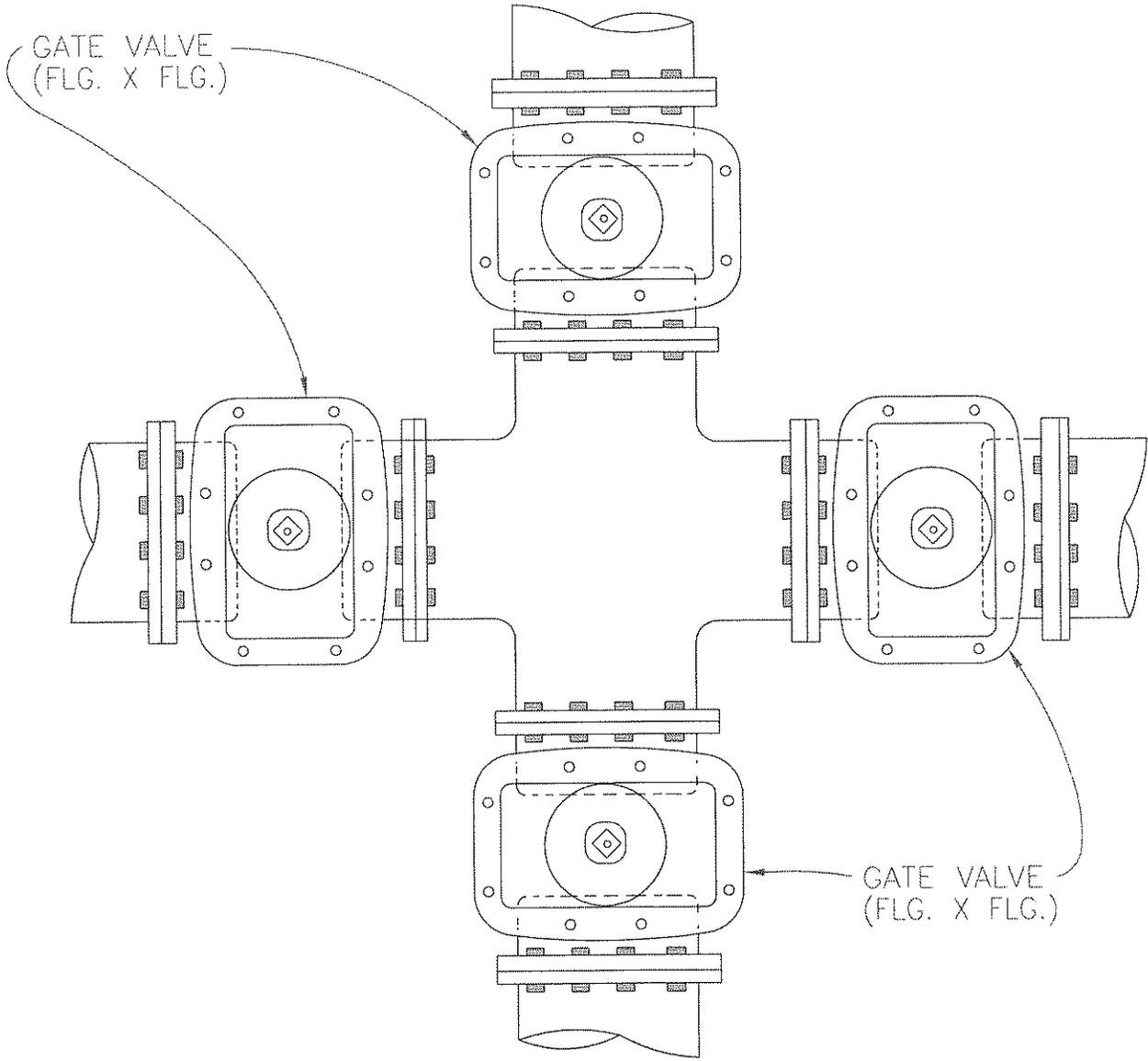
4" GALVANIZED STEEL PIPE



NOTES

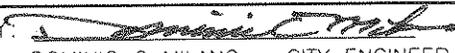
1. GUARD POSTS SHALL RECEIVE ONE COAT DUNN EDWARDS VERSAPRIME 42-44 & TWO COATS DUNN EDWARDS SYNTHETIC HIGH VISIBILITY YELLOW 10-14.
2. NUMBER OF POSTS MAY VARY AS DETERMINED BY THE CITY ENGINEER.

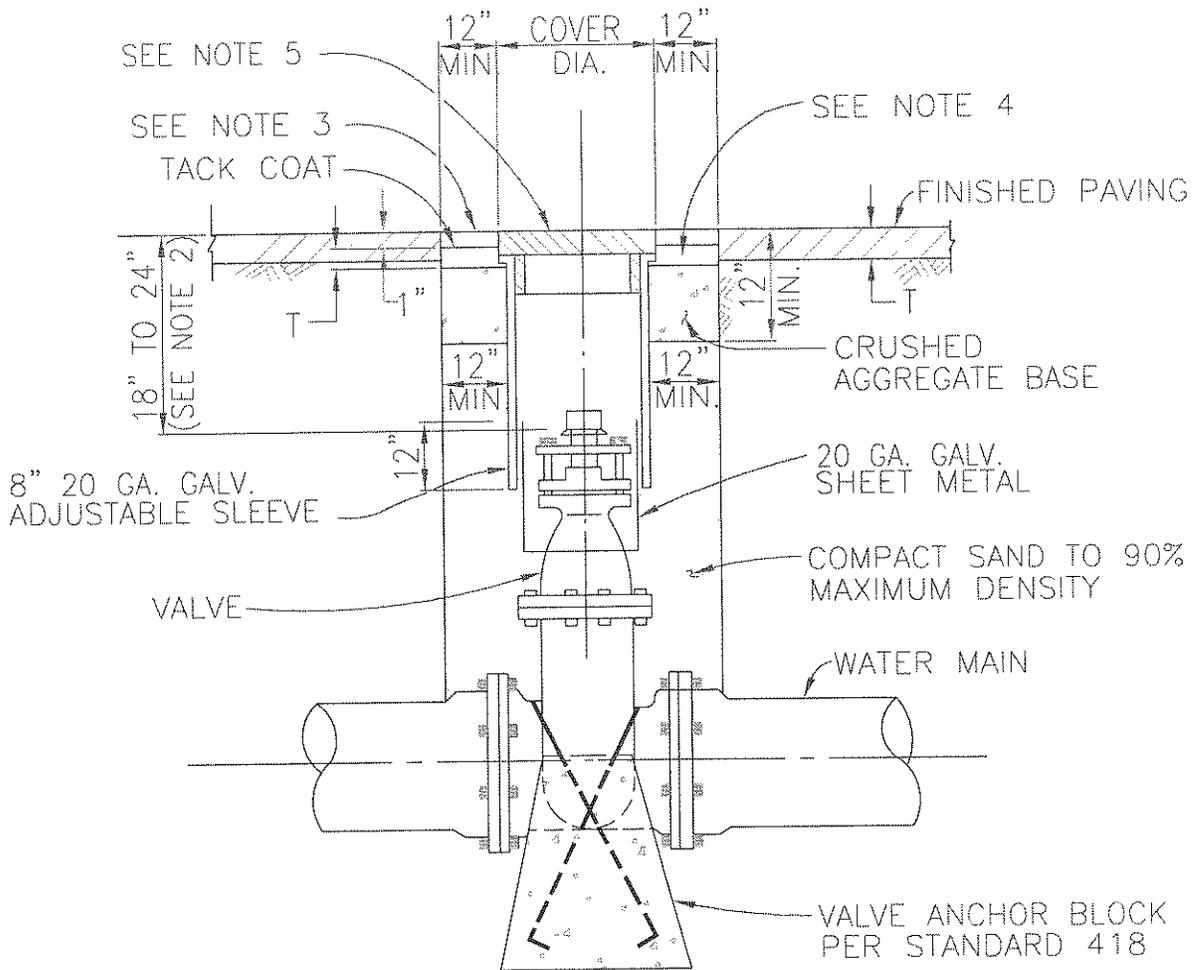
REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
△	FIRE HYDRANT GUARD POSTS	420
△		
△	APPROVED BY:  DATE: 6/2/04	
△	DOMINIC C MILANO - CITY ENGINEER R.C.E. NO. 27172	



NOTES

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD NO. 400.
2. SEE STANDARD 416 FOR THRUST BLOCKS, STANDARD 422 FOR VALVE BOXES AND STANDARD 418 FOR VALVE ANCHOR BLOCKS.
3. UNDERGROUND CLAMPS SHALL BE INSTALLED ON ALL "TAKE OFFS" AND/OR SIDE CONNECTIONS FOR FUTURE USE.
4. VALVES SHALL BE INSTALLED ON ALL LEGS OF CROSSES & TEES.

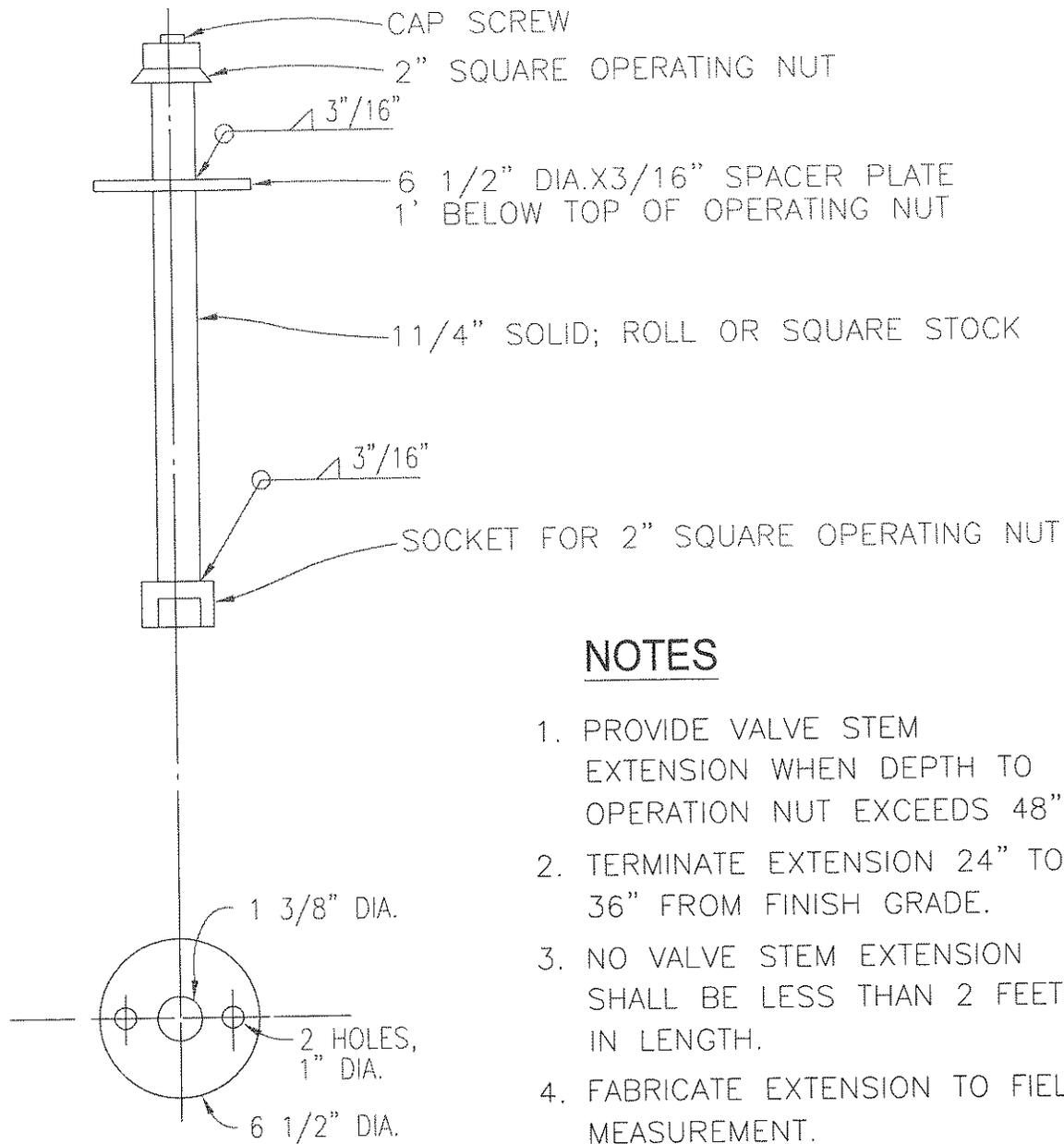
REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	STANDARD VALVE INSTALLATION	
2		
3	APPROVED BY: 	DATE: <u>6/2/04</u>
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		421



NOTES

1. FACE OF CURB SHALL BE MARKED WITH "V" TO DENOTE VALVE LOCATION.
2. PROVIDE VALVE STEM EXTENSION AS REQUIRED PER NO. 423.
3. TYPE D1(AR4000) ASPHALT CONCRETE PLACED NO LATER THAN 72 HOURS AFTER COVER HAS BEEN INSTALLED.
4. TYPE B (AR4000) ASPHALT CONCRETE PLACED NO LATER THAN 24 HOURS AFTER COVER HAS BEEN INSTALLED UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.
5. CAST IRON COVER PER LONG BEACH IRON WORKS NO. X512G OR ALHAMBRA FOUNDRY CO. NO. A-29608 OR EQUAL, STAMPED "WATER".

REVISIONS	CITY OF SIGNAL HILL	PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	VALVE BOX		422
2			
3	APPROVED BY: <i>Dominic C. Milano</i>	DATE: 6/2/04	
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172	

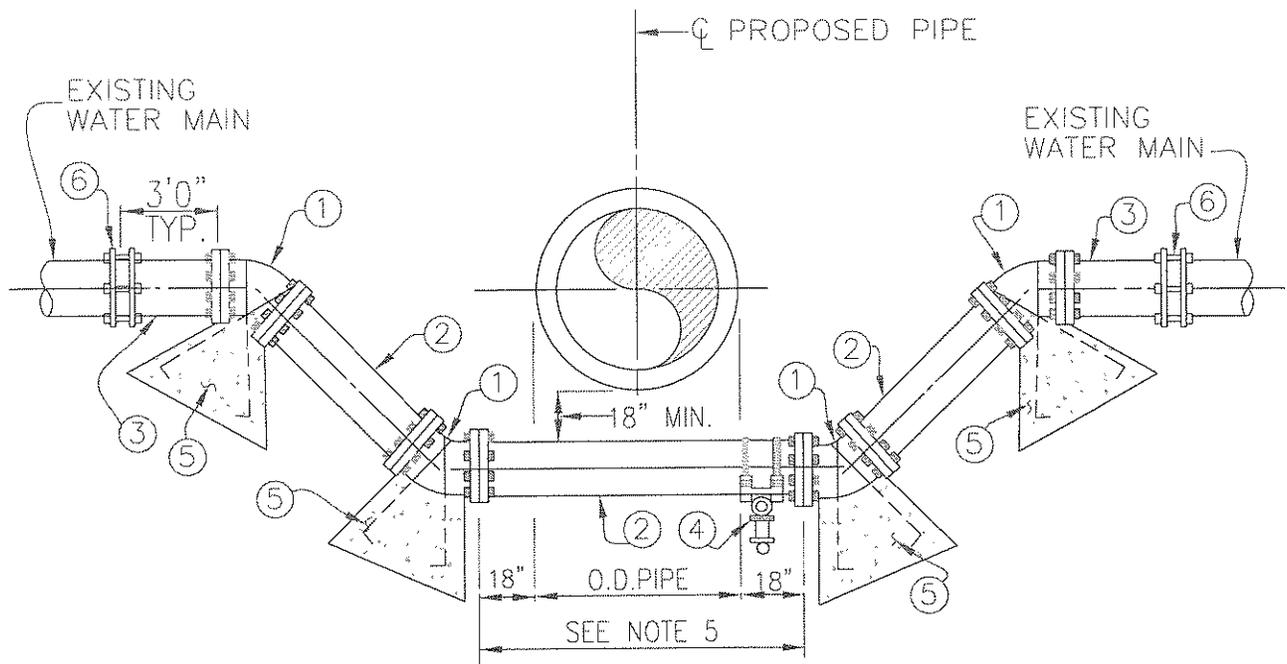


**SPACER PLATE
PLAN**

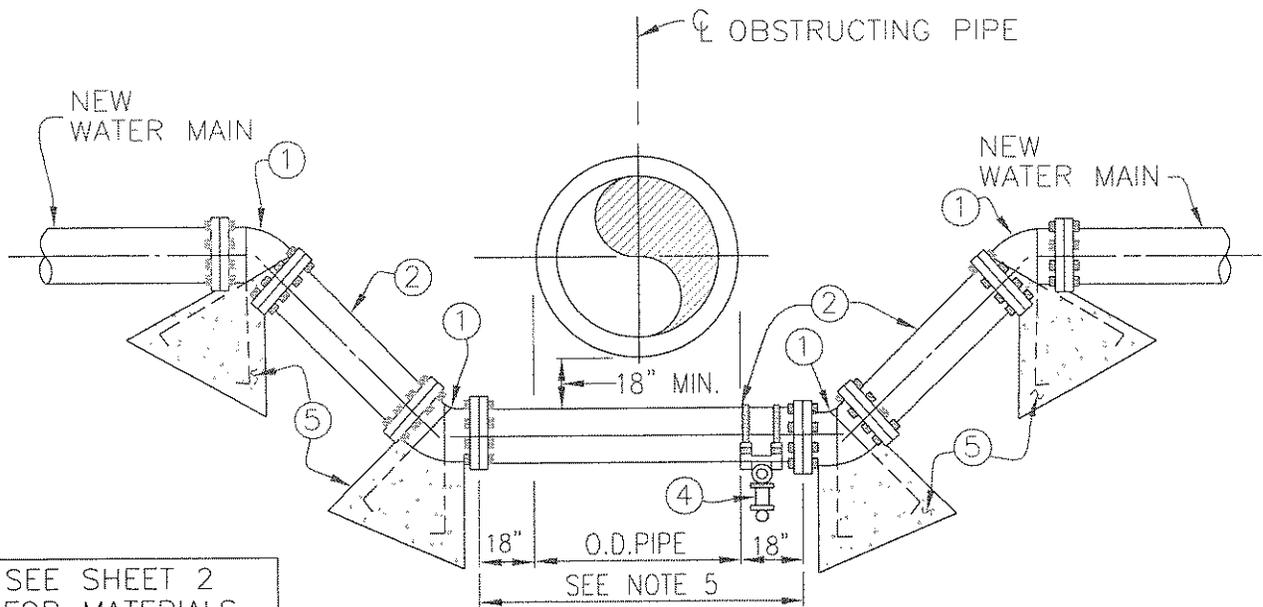
NOTES

1. PROVIDE VALVE STEM EXTENSION WHEN DEPTH TO OPERATION NUT EXCEEDS 48".
2. TERMINATE EXTENSION 24" TO 36" FROM FINISH GRADE.
3. NO VALVE STEM EXTENSION SHALL BE LESS THAN 2 FEET IN LENGTH.
4. FABRICATE EXTENSION TO FIELD MEASUREMENT.
5. PROVIDE ADDITIONAL SPACER PLATE WHEN DISTANCE TO BOTTOM SOCKET EXCEEDS 5 FEET.
6. THE VALE STEM EXTENSION SHALL BE OF SOLID DESIGN, PINNED COUPLES ARE UNACCEPTABLE.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	VALVE STEM EXTENSION	423
2		
3	APPROVED BY: <i>Dominic C. Milano</i>	
4	DOMINIC C MILANO - CITY ENGINEER	
	DATE: 6/2/09	R.C.E. NO. 27172



TYPE A
FOR EXISTING WATER MAIN



SEE SHEET 2
FOR MATERIALS
LIST AND NOTES.

TYPE B
FOR NEW WATER MAIN

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.		
1	INVERTED SYPHON	424 1 OF 2		
2				
3			APPROVED BY: <i>Dominic C. Milano</i>	DATE: 6/2/04
4			DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172

MATERIALS LIST

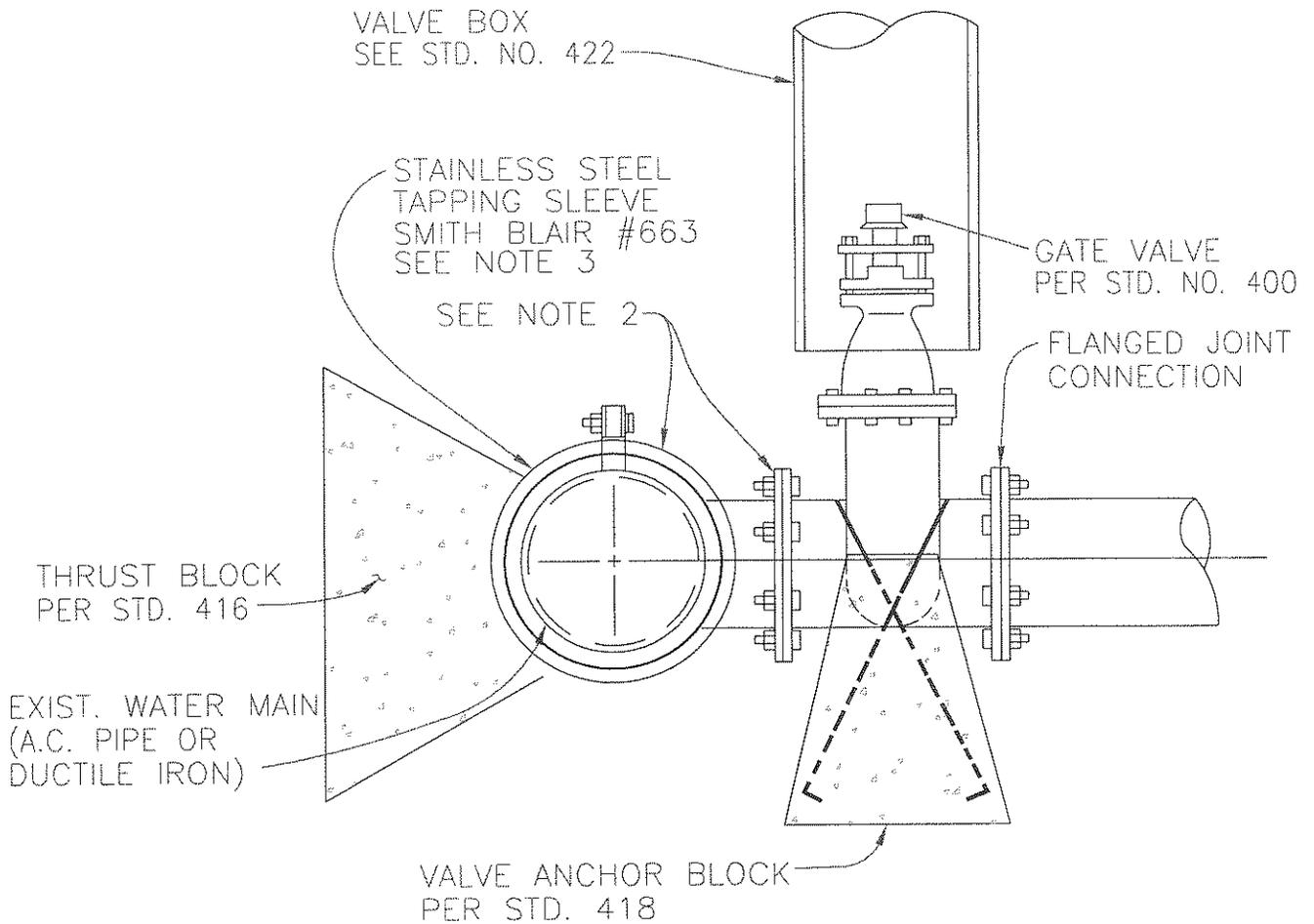
ITEM	DESCRIPTION	MANUFACTURER & CAT. No.
1	MAIN SIZE 45° BEND (FLG. X FLG.)	
2	MAIN SIZE DUCTILE IRON SPOOL (FLG. X FLG.)	
3	MAIN SIZE DUCTILE IRON SPOOL (FLG. X P.E.)	
4	PERMANENT BLOW-OFF PER STANDARD No. 428	
5	VERTICAL BEND ANCHOR PER STANDARD No. 417	
6	MAIN SIZE TRANSITION COUPLING	DRESSER STYLE 162 * ROCKWELL #433

* IF EXISTING MAIN IS SAME SIZE DUCTILE IRON PIPE, COUPLING SHALL BE DRESSER STYLE 153 OR ROCKWELL #441.

NOTES:

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
2. ALL NUTS, BOLTS AND WASHERS SHALL BE COATED PER STANDARD No. 400.
3. PERMANENT BLOW-OFF SHALL BE PLACED AT THE LOWEST POINT OF INVERTED SYPHON. A FIRE HYDRANT ASSEMBLY, PER STANDARD No. 419, MAY REPLACE BLOW-OFF AT THE DIRECTION OF THE CITY ENGINEER.
4. AIR RELEASE OR COMBINATION AIR AND VACUUM VALVE, PER STANDARD No. 427, SHALL BE INSTALLED AT THE DIRECTION OF THE CITY ENGINEER IF A HIGH POINT IS CREATED.
5. IF CLEARANCE BETWEEN OBSTRUCTING PIPE AND WATER MAIN IS LESS THAN 18 INCHES, WATER MAIN SHALL BE ENCASED PER STANDARD No. 432.

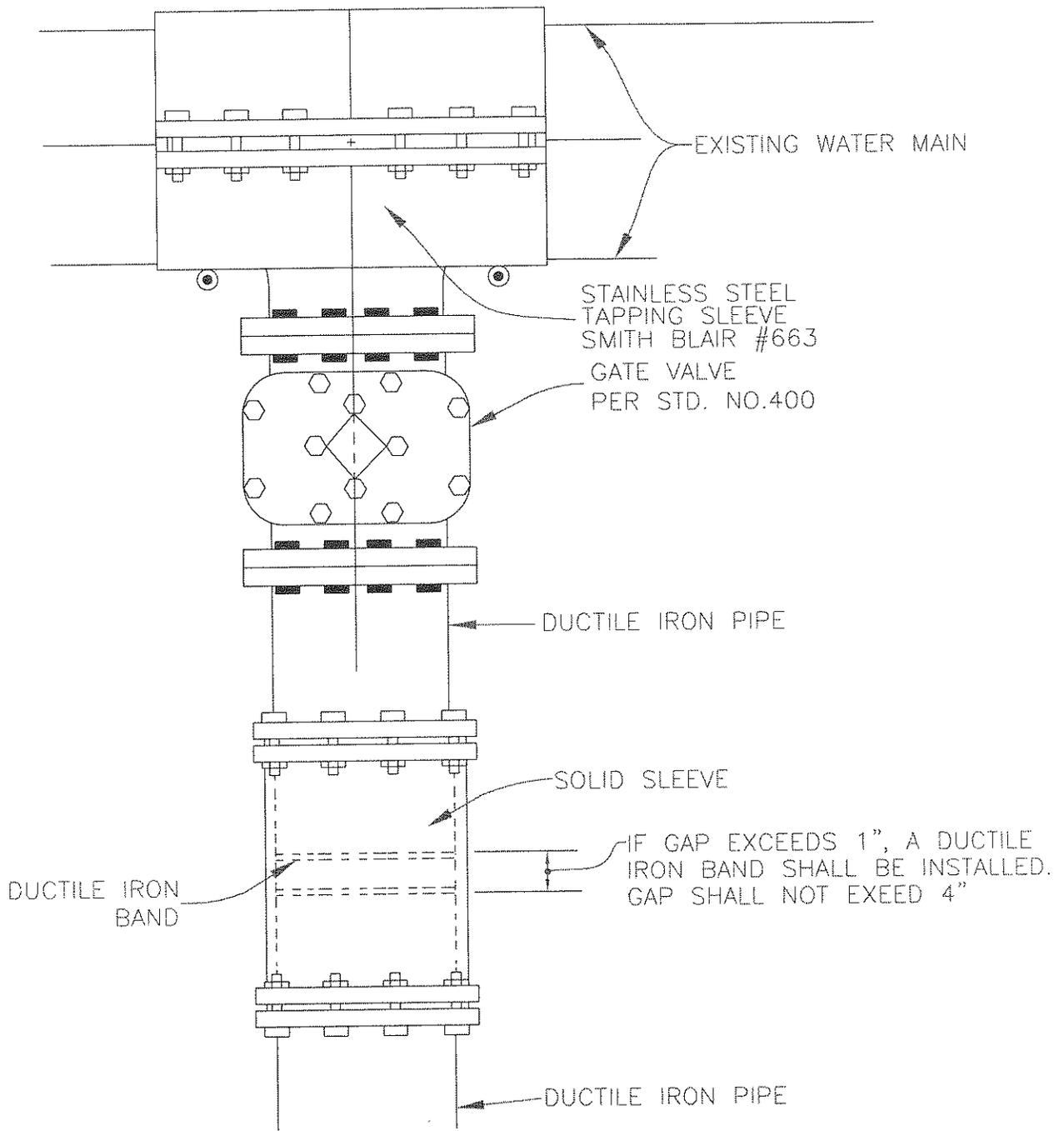
REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
①	INVERTED SYPHON	424
②		
③	APPROVED BY: 	DATE: <u>6/2/04</u>
④	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		SHEET 2 OF 2



NOTES

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD NO. 400.
2. ALL FERROUS MATERIAL SHALL BE COATED PER STANDARD NO. 400.
3. TAP ON EXISTING MAIN SHALL BE ONE SIZE LESS THAN EXISTING MAIN SIZE, EXCEPT AS DIRECTED BY THE CITY ENGINEER.

REVISIONS	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
①	HOT TAP OF EXISTING MAIN	425
②		
③	APPROVED BY: <i>Dominic C. Milano</i>	
④	DATE: <i>6/2/04</i> DOMINIC C MILANO - CITY ENGINEER R.C.E. NO. 27172	



NOTES

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD NO. 400.
2. ALL NUTS, BOLTS & WASHERS SHALL BE COATED PER STANDARD NO. 400.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
①	SOLID SLEEVE INSTALLATION	426
②	APPROVED BY: <i>Dominic C. Milano</i>	
③	DOMINIC C MILANO - CITY ENGINEER	
④	DATE: <i>6/2/04</i> R.C.E. NO. 27172	

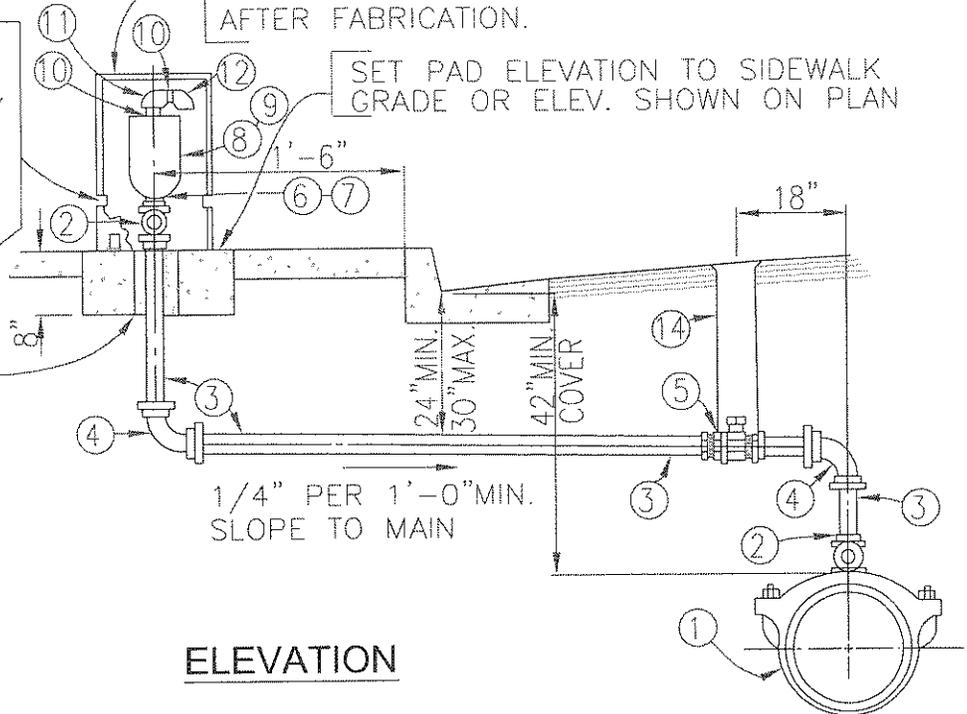
AT 6" FROM BASE, PROVIDE 4 SLOTS, 1" X 4", SYMMETRICALLY PLACED HALFWAY BETWEEN MOUNTING ANGLES OR 20 HOLES 1" DIA., EQUALLY SPACED.

5" DIA. PEA GRAVEL PACK

SEE SHEET 2 FOR MATERIALS LIST AND NOTES.

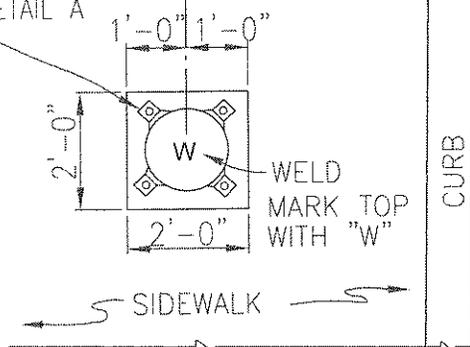
16" DIA. X 24" HIGH X 12 GAUGE STEEL PIPE COVERED AT TOP WITH 16" X 12" DOOR AND LOCKING CLASP. DOUBLE DIP GALVANIZE AFTER FABRICATION.

SET PAD ELEVATION TO SIDEWALK GRADE OR ELEV. SHOWN ON PLAN

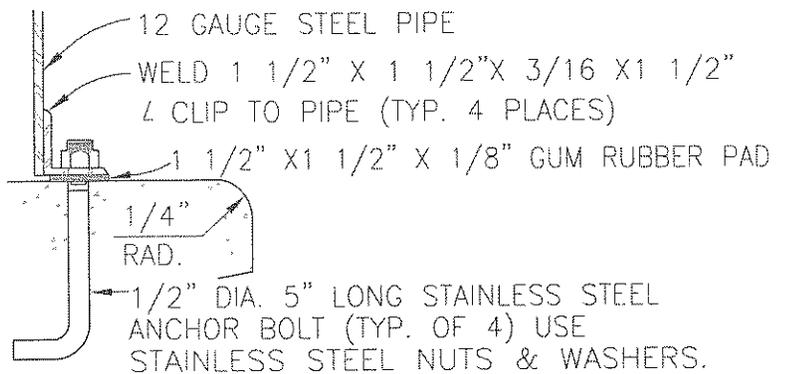


ELEVATION

SEE DETAIL A



PLAN VIEW



DETAIL A

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	AIR RELEASE/AIR & VACUUM VALVE	427
2		1 OF 2
3	APPROVED BY:  DATE: 6/2/04	
4	DOMINIC C MILANO - CITY ENGINEER R.C.E. NO. 27172	

MATERIALS:

MATERIALS LIST		
ITEM DESCRIPTION	MANUFACTURER & CAT. No.	
1	2" DOUBLE STRAP BRONZE SERVICE SADDLE (I.P.)	JAMES JONES J-979
2	2" CORPORATION STOP (I.P. X P.J./COMPR)	FORD FB1100 JAMES JONES J-1935
3	2" POLYETHYLENE PIPE C.T.S. P.E. 3408 CL-200 PER STD. No. 400	
4	2" ELL (P.J./COMPR. X P.J./COMPR.)	FORD L 44-77 JAMES JONES J-2611
5	2" BRONZE BALL VALVE (P.J./COMPR. X P.J./COMPR)	FORD L44-777 JAMES JONES J-1949
6*	REDUCING COUPLING (2" F.I.P.T. X 1" F.I.P.T.)	FORD C11-74
7*	1" CLOSE BRASS NIPPLE (I.P.T. X I.P.T.)	
8	1" (2") COMB. AIR RELEASE & VACUUM VALVE APCO 143C (145C)	
9	1" (2") AIR RELEASE VALVE APCO 200 A (200)	
10	1" (2") CLOSE BRASS NIPPLE (I.P.T. X F.I.P.T.)	
11	1" (2") BRASS ELBOW (F.I.P.T. X F.I.P.T.)	
12	1" (2") BRASS ELBOW WITH INSECT SCREEN (F.I.P.T.)	
13	VALVE HOUSING CONSTRUCTED AS SHOWN	
14	VALVE BOX AND COVER PER STD. No. 422	

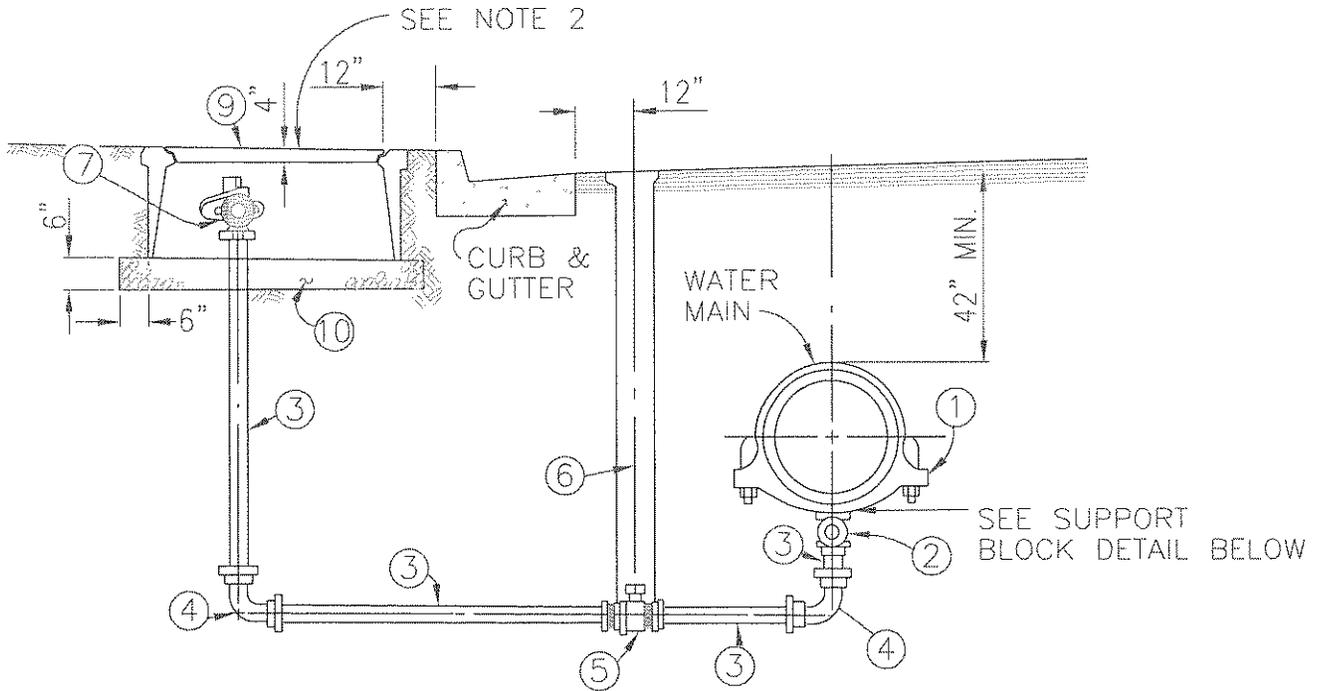
* DELETE ITEMS 6 & 7 FOR 2" ASSEMBLY

NOTES:

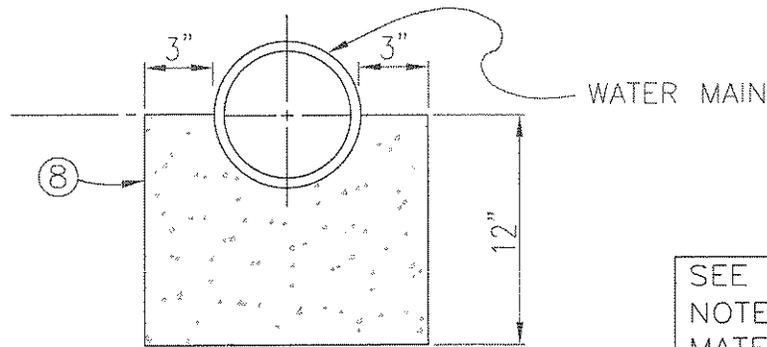
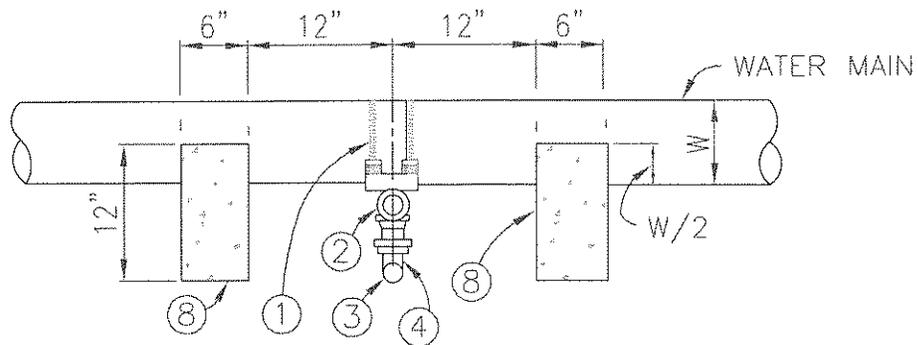
1. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
2. ALL BURIED BOLTS, NUTS & WASHERS SHALL BE COATED PER STANDARD No. 400
3. VALVE ASSEMBLY TO BE PLACED AS SHOWN WHEN:
 - A. NO SIDEWALK EXISTS.
 - B. CURB AND SIDEWALK ARE NOT CONTIGUOUS
 - C. CURB AND SIDEWALK ARE CONTIGUOUS AND SIDEWALK EXCEEDS 5 FEET WIDE.
4. VALVE ASSEMBLY TO BE OTHERWISE PLACED WHEN:
 - A. CURB AND SIDEWALK ARE CONTIGUOUS AND SIDEWALK IS 5' WIDE:
 1. BEHIND SIDEWALK IF SUFFICIENT R / W EXISTS.
 2. 18" BEHIND CURB FACE WHERE R / W IS INSUFFICIENT.
5. IF NO CURB AND GUTTER EXISTS SEE STD. No. 420 FOR GUARD POSTS.

COVERS TO BE PAINTED WITH ONE COAT DUNN EDWARDS VERSAPRIME 42-44 & TWO COATS DUNN EDWARDS SYNTHETIC HIGH VISIBILITY YELLOW 10-14

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	AIR RELEASE/AIR & VACUUM VALVE	427
2		
3	APPROVED BY:  DATE: <u>6/2/09</u>	SHEET
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		2 OF 2



ELEVATION



SEE NOTE 2 FOR
NOTES AND
MATERIALS LIST.

SUPPORT BLOCK DETAIL

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.		STANDARD PLAN NO.
1	PERMANENT 2" BLOW-OFF		428 1 OF 2
2	APPROVED BY: <i>Dominic C. Milano</i>		
3	DOMINIC C MILANO - CITY ENGINEER		
4	DATE: 6/2/04 R.C.E. NO. 27172		

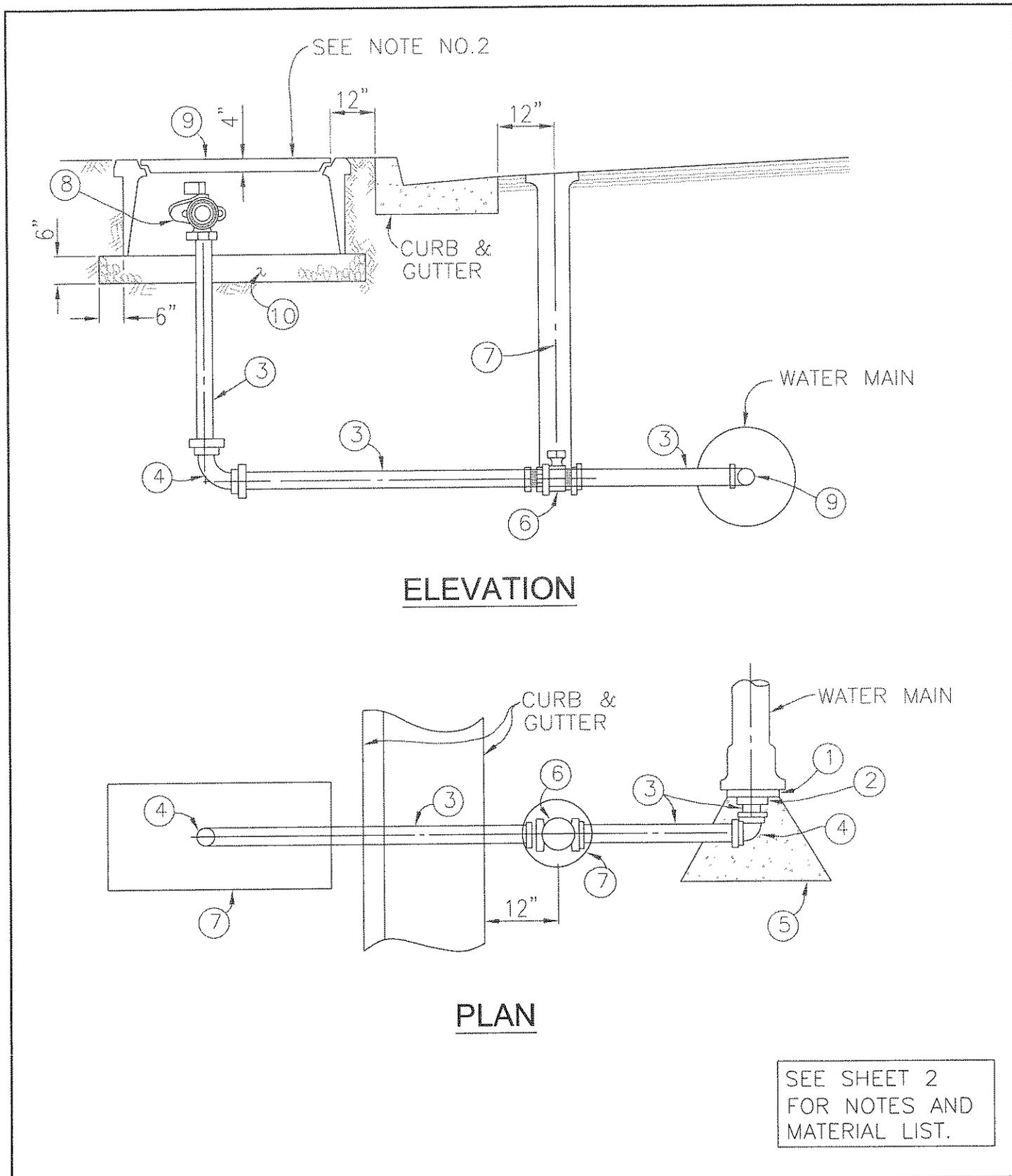
MATERIALS:

MATERIALS LIST		
ITEM	DESCRIPTION	MANUFACTURER & CAT. No.
1	2" DOUBLE STRAP BRONZE SERVICE SADDLE (I.P.)	JAMES JONES J-979
2	2" CORPORATION STOP (I.P. X P.J./COMPR.)	FORD FB1100 JAMES JONES J-1935
3	2" POLYETHYLENE C.T.S. P.E. 3408 CL-200 PER STD. No. 400	
4	2" ELL COUPLING (P.J./COMPR. X P.J./COMPR.)	FORD L44-77 JAMES JONES J-2611
5	2" BRONZE BALL VALVE (P.J./COMPR. X P.J./COMPR.)	FORD L44-777 JAMES JONES J-1949
6	VALVE BOX AND COVER PER STD. No. 422	
7	2" ANGLE METER VALVE (P.J./COMPR.XFLG.)	FORD FV43-777W JAMES JONES J-4205
8	SUPPORT BLOCK-CLASS 560-C-3250 CONCRETE	
9	METER BOX PER CITY STD. No. 405	
10	¾" CRUSHED AGGREGATE BASE	

NOTES:

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
 2. WHEN THERE IS NO EXISTING CURB, THE METER BOX SHALL BE SET 4' CLEAR OF PROPERTY LINE, FLUSH WITH EXISTING GROUND.
- ALL BURIED NUTS, BOLTS AND WASHERS SHALL BE COATED PER STANDARD No. 400

REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	PERMANENT 2" BLOW OFF	428
2		
3	APPROVED BY:  DOMINIC C MILANO - CITY ENGINEER	DATE: <u>6/2/04</u> R.C.E. NO. 27172
4		SHEET 2 OF 2



REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	2" BLOW-OFF FOR DEAD END	429
2		1 OF 2
3	APPROVED BY: <i>Dominic C. Milano</i>	DATE: 6/2/04
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172

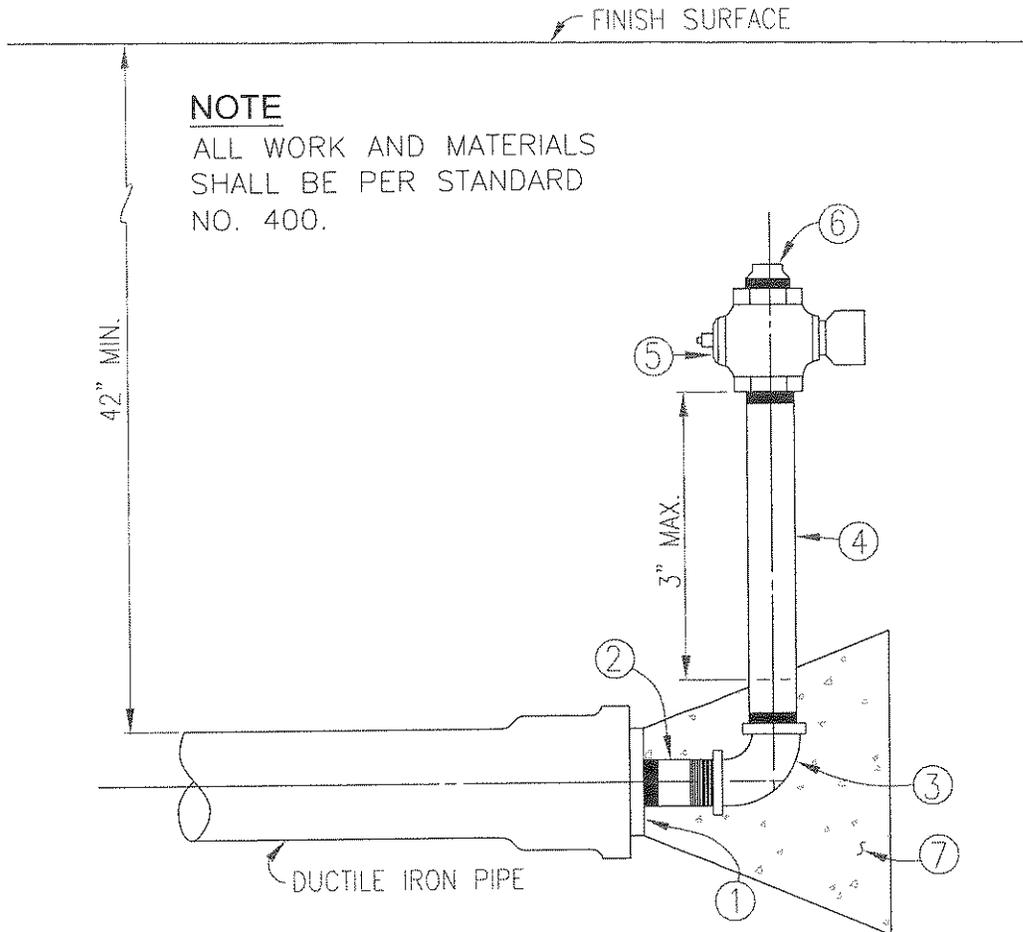
MATERIALS:

MATERIALS LIST		
ITEM	DESCRIPTION	MANUFACTURER & CAT. No.
1	MAIN SIZE X 2" DUCTILE IRON PLUG WITH 2" DRILLED TAP HOLE	
2	2" STRAIGHT COUPLING (I.P.XP.J./COMPR.)	FORD C84-77 JAMES JONES J-2605
3	2" POLYETHYLENE C.T.S. P.E.3408 CL200 PER STANDARD No. 400	
4	2" ELL COUPLING (P.J./COMPR. X P.J./COMPR.)	FORD L44-77 JAMES JONES J-2611
5	THRUST BLOCK PER STANDARD No. 416	
6	2" BRONZE BALL VALVE (P.J./COMPR. X P.J. COMPR.)	FORD B44-777 JAMES JONES J-1949
7	VALVE BOX AND COVER PER STANDARD No. 422	
8	2" ANGLE METER VALVE (P.J./COMPR. X FLG.)	FORD FV43-777W JAMES JONES J-4205
9	METER BOX PER STANDARD No. 405	
10	¾" CRUSHED AGGREGATE BASE	

NOTES:

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD No. 400.
2. WHEN THERE IS NO EXISTING CURB, THE METER BOX SHALL BE SET 4 (FOUR) FEET CLEAR OF PROPERTY LINE, FLUSH WITH EXISTING GROUND.
3. ALL BURIED NUTS, BOLTS AND WASHERS SHALL BE COATED PER STANDARD No. 400.

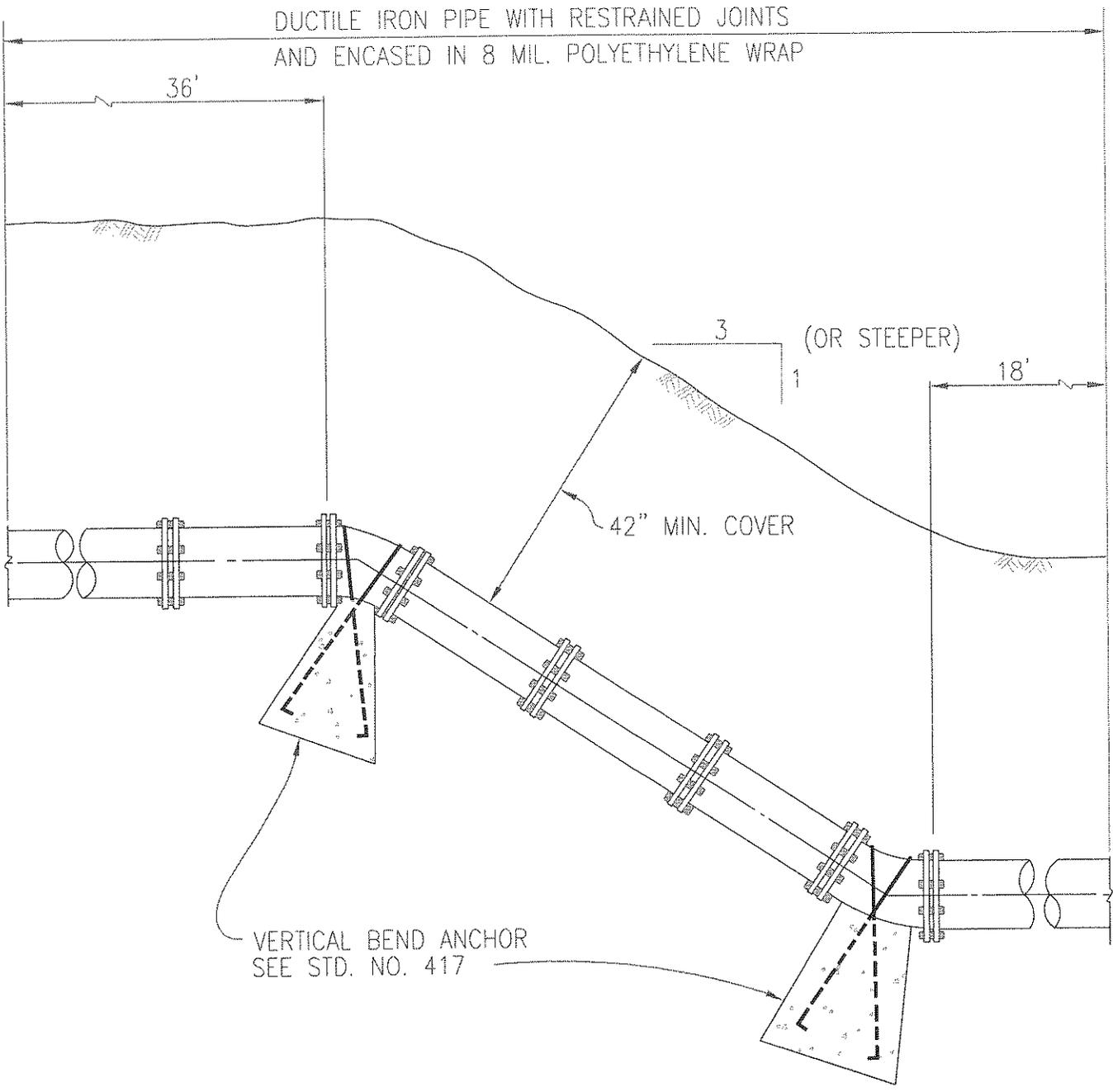
REVISIONS # DATE	CITY OF SIGNAL HILL - PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	2" BLOW OFF FOR DEAD END	429
2		
3	APPROVED BY:  DATE: 6/2/04	SHEET
4	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		2 OF 2



MATERIALS LIST

ITEM	DESCRIPTION	MANUFACTURER/CAT.NO.
1	MAIN SIZE X 2" DUCTILE IRON PLUG/CAP WITH DRILLED TAP HOLE	
2	2" CLOSE BRASS NIPPLE (I.P.T. X I.P.T.)	
3	2" BRASS STREET ELL (F.I.P.T. X F.I.P.T.)	
4	2" BRASS NIPPLE (I.P.T. X I.P.T.)	
5	2" CURB STOP (F.I.P.T. X F.I.P.T.)	FORD/B11-777 JAMES JONES/J-1900
6	2" BRASS PLUG (I.P.T.)	
7	THRUST BLOCK PER CITY STANDARD NO. 416	

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.	
①	TEMPORARY 2" BLOW -OFF	430	
②			
③	APPROVED BY: 		DATE: <u>6/2/04</u>
④	DOMINIC C MILANO - CITY ENGINEER		R.C.E. NO. 27172



DUCTILE IRON PIPE WITH RESTRAINED JOINTS
AND ENCASED IN 8 MIL. POLYETHYLENE WRAP

36'

3 (OR STEEPER)
1

18'

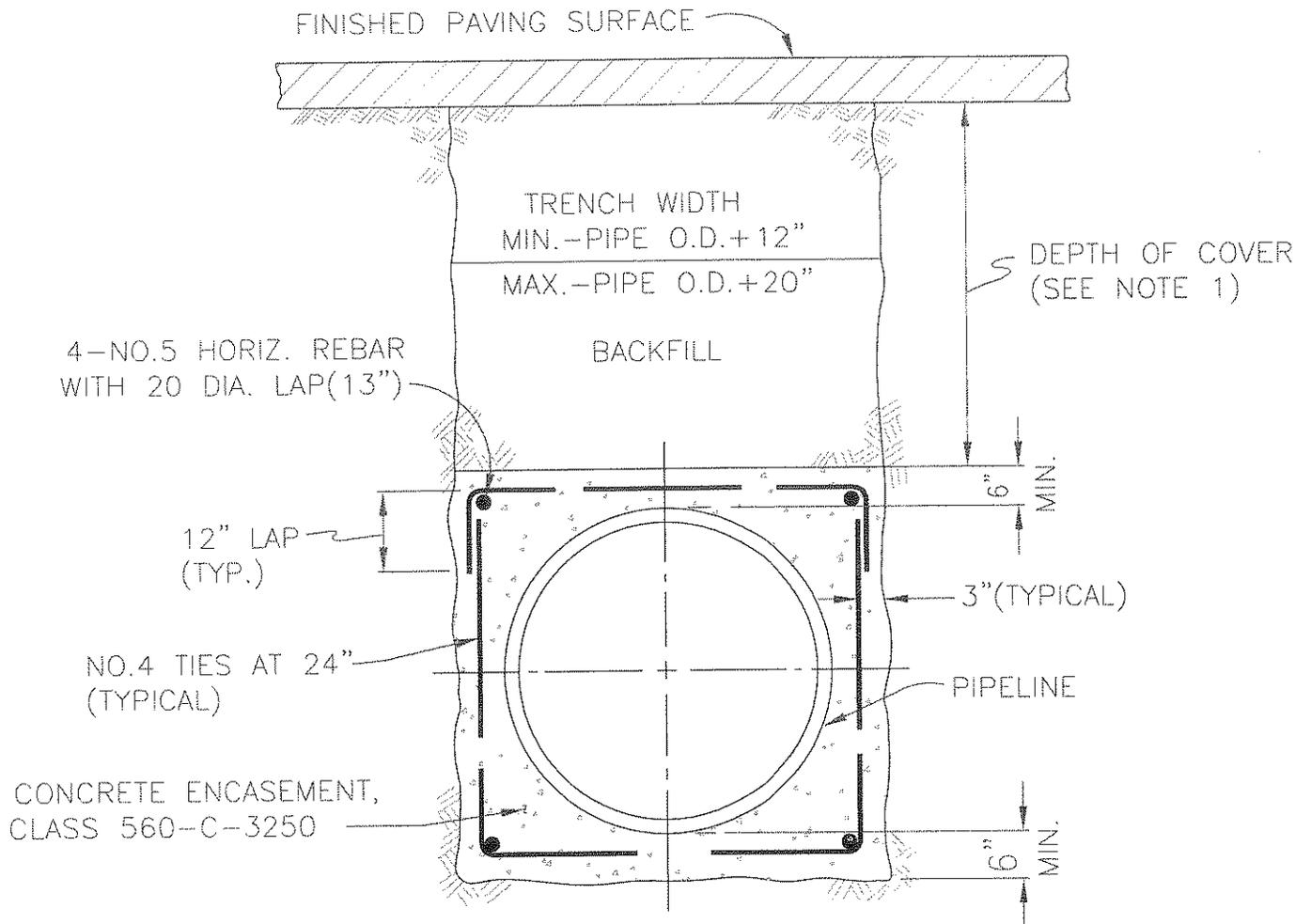
42" MIN. COVER

VERTICAL BEND ANCHOR
SEE STD. NO. 417

NOTE

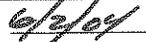
1. ALL WORK AND MATERIAL SHALL BE PER STANDARD NO. 400.

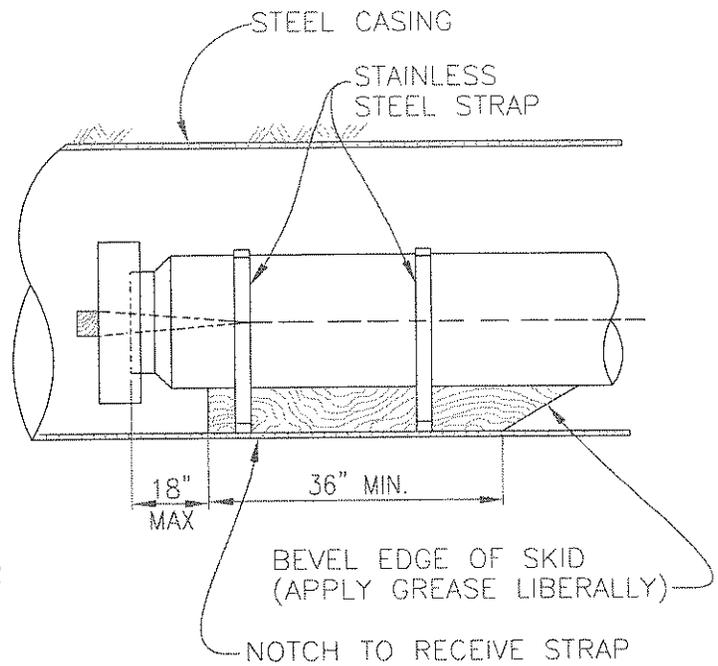
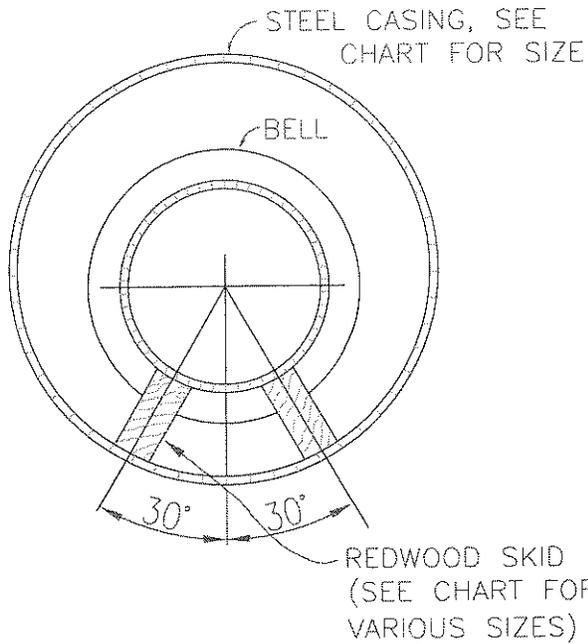
REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
	WATER MAINS ON SLOPES	
1	APPROVED BY: <i>Dominic C. Milano</i>	DATE: 6/2/04
2	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
3		431
4		



NOTES

1. WHEN DEPTH OF COVER IS LESS THAN 24", THIS STANDARD WILL NOT APPLY. SPECIAL DESIGN IS REQUIRED.
2. SEE PROJECT DRAWING(S) FOR LENGTH AND LOCATION(S) OF CONCRETE ENCASEMENTS.
3. HORIZONTAL REBAR TO END 3" WITHIN THE CONCRETE ENCASEMENT.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.	
1	P.C.C. ENCASEMENT	432	
2			
3	APPROVED BY: 		DATE: 
4	DOMINIC C MILANO - CITY ENGINEER		R.C.E. NO. 27172



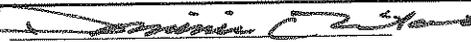
SKID SIZE	PIPE SIZE (I.D.)	STEEL CASING PIPE	
		MIN. SIZE	MIN. WALL THICKNESS
2" X 4"	6"	16"	3/8"
2" X 4"	8"	18"	3/8"
4" X 6"	10"	21"	5/16"
4" X 6"	12"	24"	7/16"

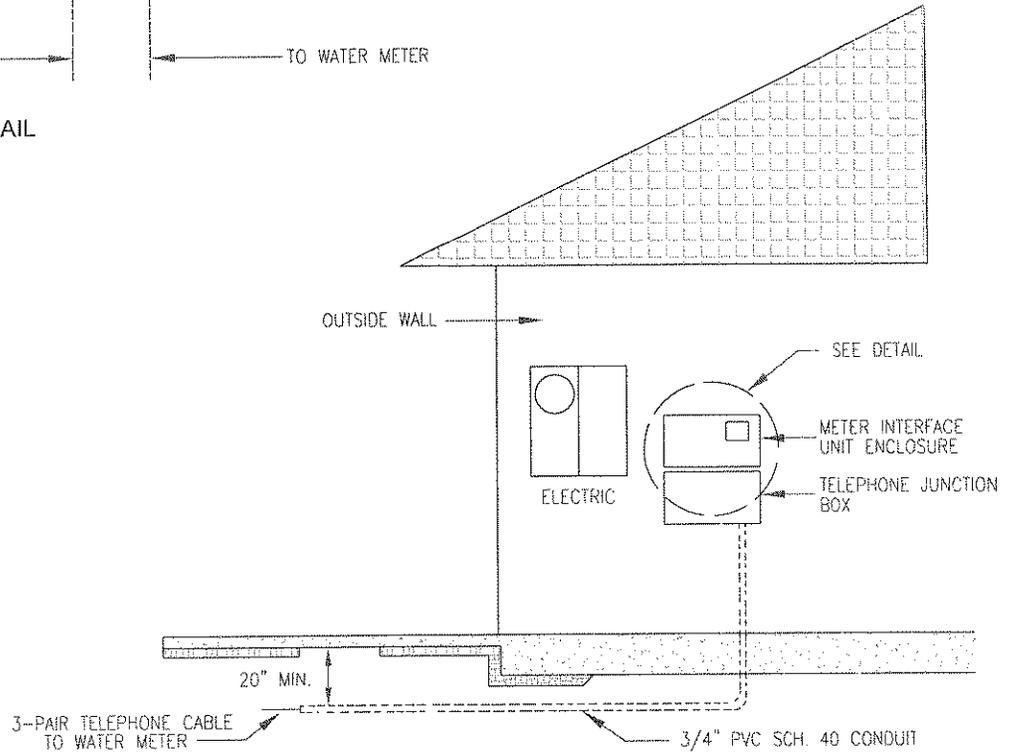
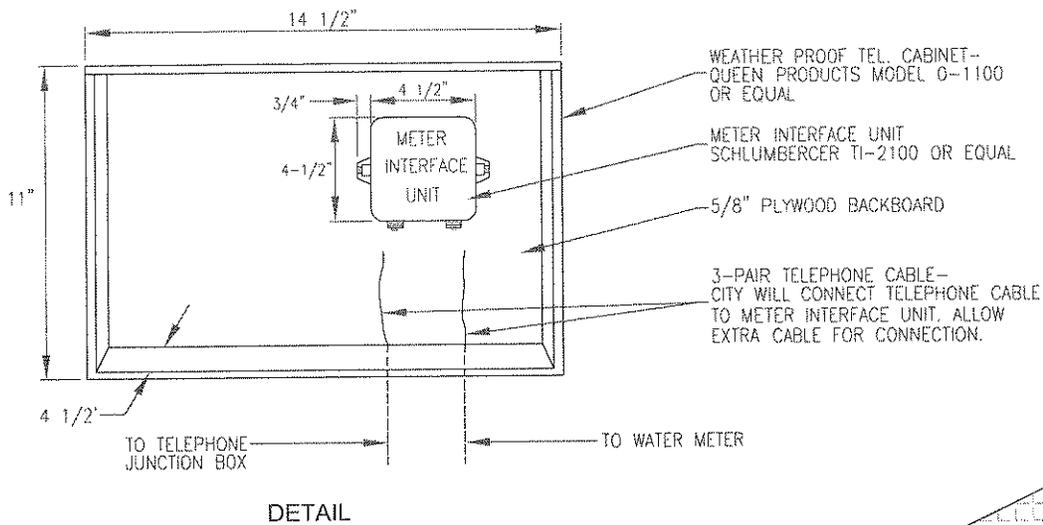
NOTES

1. PIPE HANDLING, PULLING & INSTALLATION SHALL BE PER PIPE MANUFACTURERS RECOMMENDATIONS.
2. ALL STEEL CASING PIPE JOINTS SHALL BE WELDED FULL CIRCUMFERENCE.
3. WATER MAIN TO BE TESTED PER STANDARD SPECIFICATIONS PRIOR TO FILLING CASING PIPE.
4. CITY ENGINEER WILL DESIGNATE ON PLANS WHETHER CASING TO BE PRESSURE GROUTED (4:1 MIX) OR FILLED WITH AIR BLOWN SAND.
5. THE ENDS OF THE CASING SHALL BE CLOSED WITH 3" CEMENT GROUT (4:1 MIX).

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	STEEL CASING PIPE	433
2		
3		
4		
	APPROVED BY: <i>Dominic C. Milano</i> DOMINIC C MILANO - CITY ENGINEER	DATE: 6/2/04 R.C.E. NO. 27172

FOR ALL
TRENCH SHORING & BRACING STANDARDS
 REFER TO
OCCUPATIONAL SAFETY & HEALTH AGENCY
(OSHA)

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
1	TRENCH SHORING & BRACING	434
2		
3	APPROVED BY: 	
4	DATE: <u>6/2/04</u> R.C.E. NO. 27172	
	DOMINIC C MILANO - CITY ENGINEER	



NOTES:

1. CITY WILL PROVIDE AND INSTALL WATER METER.
2. CONTRACTOR WILL PROVIDE AND INSTALL METER BOX, CONDUIT, 3-PAIR TELEPHONE CABLE, AND 2 WEATHERPROOF CABINETS FOR METER INTERFACE UNIT AND TELEPHONE JUNCTION BOX.
3. CONTRACTOR WILL PURCHASE PRE-PROGRAMMED METER INTERFACE UNIT FROM THE CITY.
4. CITY WILL INSTALL AND CONNECT METER INTERFACE UNIT.
5. METER INTERFACE UNIT WILL BE WALL MOUNTED OUTDOORS IN CLOSE PROXIMITY TO TELEPHONE JUNCTION BOX.

REVISIONS	CITY OF SIGNAL HILL PUBLIC WORKS DEPT.	STANDARD PLAN NO.
①	TELEMETRY BOX AND CONDUIT INSTALLATION	
②		
③	APPROVED BY: 	DATE: 6/2/04
④	DOMINIC C MILANO - CITY ENGINEER	R.C.E. NO. 27172
		435