**CLEARANCE "A"**

1. PIPE SIZES THROUGH 12"; "A" = 6" - 9"

2. PIPE SIZES OVER 12"; "A" = 1" - 0" MIN.

**REVISIONS**

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**NOTES:**

- WHEN A FIRM FOUNDATION IS NOT ENCOUNTERED, DUE TO SOFT, SPONGY, OR OTHER UNSUITABLE MATERIAL, SUCH MATERIAL SHALL BE REMOVED TO THE LIMITS DIRECTED BY THE ENGINEER, AND THE RESULTING EXCAVATION BACKFILLED WITH PIPE BEDDING MATERIAL COMPACTED TO 90% RELATIVE COMPACTION.

**REFERENCES:**

- FILE I.D.: 85c468p.png
- DRAWN BY: JIN
- RECOMMENDED: Joseph D. Van Sickles
- APPROVED: G. Lamont Robbins
- DATE: 12/30/94

**CONSTRUCTION:**

- INSPECTION: JCW 12/24/94
- OPERATIONS: JUS 12/24/94
- SUBMITTED: JUS 12/24/94

**EASTERN MUNICIPAL WATER DISTRICT**

**TRENCH BACKFILL**

- EASTERN MUNICIPAL WATER DISTRICT
- STANDARD DRAWING
- B-286B
USE EMWD APPROVED BLOW-OFF HEAD
(4" x 1-1/2"

PLASTIC CAP WITH
CHAIN AND RING

6" x 4" CAST IRON REDUCING
COMPANION FLANGE

NOTE: ALL CAP AND OPERATOR NUTS
TO BE 1-1/8" FACE TO POINT

4" x 1-1/4" GALVANIZED
NIPPLE THREAD AT
BOTH ENDS

FINISH GRADE

CURB AND GUTTER

TRENCH WIDTH

6" FLANGED CAST IRON BREAK-OFF RISER
WITH 8-7/8" BOLT HOLES AT BOTH ENDS
X 6" LENGTH (CEMENT MORTAR LINED)

SEE NOTE 5

SEE NOTE 5

6" RINGTITE OR GRIP SCITE X FLANGE WITH
8-7/8" BOLT HOLES X LENGTH OF CAST
IRON BURY (CEMENT MORTAR LINED)

SEE NOTE 5

3" x 3" x 6" THK
CONCRETE SUPPORT RING
CLASS "C" CONCRETE

VARIIES 3'-0" MINI

CONCRETE THRUST BLOCK
SEE B-407

CAST IRON
TEE

CONCRETE GATE VALVE
SUPPORT SHALL BE POURED SEPARATELY
AND HAVE A PHYSICAL SEPARATION

THRUST BLOCK AND
VALVE SUPPORT SHALL
BE POURED SEPARATELY
AND HAVE A PHYSICAL
SEPARATION

CONCRETE THRUST BLOCK WITH
4 50 FT OF BEARING AREA FOR
BOTH ISO A AND B CLASS PIPE
AGAINST UNGUIDED EARTH WITH
SOIL BEARING PRESSURE EQUAL TO
3000 LB/SD FT. FOR DIFFERENT SOIL
BEARING PRESSURE SEE EMWD STD
DWG B-407.

GENERAL NOTES

1. PAINT:
BLOW-OFF TO BE PAINTED APPROVED YELLOW.

2. USE THRUST BLOCKS PER B-407 FOR ACIP, USE
RESTRAINED JOINTS PER B-463 FOR PVC AND DUCTILE
IRON, CONCRETE FOR THRUST BLOCKS AND SUPPORTS TO
BE CLASS "C" (2000 PSI) CONCRETE.

3. ALTERNATE MATERIALS MAY BE USED WHEN SPECIFIED.

4. BLOW-OFF LOCATIONS:
A. BLOW-OFF SHALL BE PLACED:
1. 1'-6" BEHIND CURB FACE WHEN THE WIDTH OF
SIDEWALK IS 8' OR WIDER.
2. 7'-6" BEHIND CURB FACE WHEN THE WIDTH OF
SIDEWALK IS 6' WIDE.
3. 7'-6" BEHIND CURB FACE WHEN THERE IS NO
SIDEWALK.
4. 1'-6" WITHIN ROAD RIGHT-OF-WAY WHEN NO
CURBS OR SIDEWALKS ARE PROPOSED.
B. BLOW-OFF TO BE 1" BACK FROM INTERSECTION
OF SIDEWALK WITH CORNER APRON
C. AT OTHER THAN STREET INTERSECTIONS
BLOW-OFF TO BE ON LOT LINES.

5. LENGTH OF BREAK-OFF RISER TO BE DETERMINED BY
THE DIFFERENCE IN ELEVATION BETWEEN THE CENTER
GRADE OF THE PIPELINE OUTLET AND THE TOP OF THE
CURB, LESS THE LENGTH FOR THE BURY.
FOR PLACEMENT UNDER NOTE 4B ABOVE, ADD 2" TO
ALLOW FOR SIDEWALK SLOPE.

6. FIELD COATING FOR EXPOSED PIPE SHALL BE PER EMWD
SPECIFICATIONS AND APPROVED MATERIALS.

7. A MINIMUM 3 FT CLEAR SPACE SHALL BE MAINTAINED
AROUND THE CIRCUMFERENCE OF THE BLOW-OFF.

REVISIONS

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REFERENCES: SUPERCEDES B-350 ORG DRAWN 5/63
SCALE: NONE
FILE: 102c aplsbof07.dwg B-357
DRAWN BY
RECOMMENDED: Joesph D. Van Staal
APPROVED: C. Halpin 7/2/93
DATE: 7/2/93

RIVERSIDE COUNTY WATER DISTRICT
EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING
6" x 1-2 1/2" BLOW-OFF
INSTALLATION - AC, PVC, DI PIPE

D:\REVb357.dgn 09/30/03 01:58:09 PM
THRU BLOCK TABLES

NOTES
1. CONCRETE THRUST BLOCKS ARE TO BE POUR ED AGAINST UNDISTURBED EARTH
2. CONCRETE THRUST BLOCKS SHALL BE OR CLASS "C" (1/3 S.O.C.) CONCRETE
3. ALL STEEL VALVES SHALL BE SUPPORTED BY STAINLESS STEEL TRAVEL Aplet... 68567
4. PLUG VALVES ARE TO BE... 74360
5. ALL CONCRETE SHALL BE POUR ED TO XING TO A EACTOR... 71238
6. WHOLE PIPE CONNECTS TO A... 74360
7. THE STEEL PIPELINE SHALL BE BLOCKED AS SHOWN HEREIN.

PLAN VIEW
TYPICAL THRUST BLOCK INSTALLATION

PE RSPECTIVE VIEW
DETAIL A'

REVISIONS

REFERENCES

SCALE

DATE

NO. DATE INITIAL DESCRIPTION APPROVED TRANSITE PIPE MANUAL

EASTERN MUNICIPAL WATER DISTRICT
RIVERSIDE COUNTY, CALIFORNIA

STANDARD DRAWING
THRUST BLOCK INSTALLATION
FOR HUB-END PIPE - CLASS 150 & 200

APPROVED
GENERAL MANAGER & CHIEF ENGINEER
B-407
REVISIONS

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REFERENCES: SUPERCEDES A-537

FILE 1.D.: \www\engold\dwgs\B-408.dgn

SPECIFIED PIPE BEDDING

PIPE OD (C'MIN)
LOCATOR WIRE PER B-606

PLAN VIEW
TYPICAL PIPE INSTALLATION

FINISHED GRADE @ \( \xi \) OF WATERLINE

CONCRETE CAP DETAIL

SELECT BACKFILL MATERIAL COMPACTED OR CONSOLIDATED IN ACCORDANCE WITH STD DWG B-286B AND SPECS

CLEAN FINE SAND TAMPERED UNDER PIPE TO SPRING LINE OF PIPE EXPOSED (OR SAND SLURRY POLISHED TO SPRING LINE, TAKING CARE NOT TO FLOAT PIPE), THEN ADDITIONAL SAND TO COVER PIPE

NOTES:

1. THE BACKFILL MATERIAL IN THE PIPE ZONE MAY CONSIST OF MATERIAL FROM THE EXCAVATION WHERE THAT MATERIAL IS A UNIFORM GRADE OF SUITABLE SOIL, FREE FROM STONES OR LUMPS EXCEEDING 3/4" IN THE GREATEST DIMENSION, VEGETABLE MATTER OR OTHER UNSATISFACTORY MATERIAL, AS APPROVED BY THE ENGINEER, AND COMPACTED TO A RELATIVE COMPACTION AS RECOMMENDED BY THE MANUFACTURER OF THE PIPE.

2. CAP SHALL BE OF CLASS "A" CONCRETE.

3. REBAR SHALL HAVE A YIELD STRENGTH OF 60 KSI.

4. CLOSED CELL NEOPRENE PER ASTM D-1056, D-1667a & D-412;
   - COMPRESSION RESISTANCE = 5-13 PSI
   - 50% COMPRESSION SET = 25%
   - DENSITY = 15-30 LBS/FT³
   - WATER ABSORPTION = 0.1 MAX LBS/FT²
   - TENSIILE = 150 MIN. PSI
   - ELONGATION = 350 MIN.

PIPE ZONE BACKFILL

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TYPICAL TRENCH SECTION

NOTES:

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CONCRETE CAP (FOR SHALLOW WATERLINE WHEN APPROVED BY ENGINEER)

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   - TENSIILE = 150 MIN. PSI
   - ELONGATION = 350 MIN.
C.I. FITTING INSTALLATION
SHOWING OPEN FIELD

SADDLE OUTLET INSTALLATION
SHOWING UNIMPROVED ROADWAY

IN LINE VALVE INSTALLATION
SHOWING PAVED STREET

NOTES

1. ALL FLEXIBLE JOINTS IN PIPELINES FROM VALVES OR IN BRANCH LINES SHALL BE WELDED OR RESTRAINED TO PROVIDE ANCHORAGE FOR UNBALANCED FORCES.

2. CONCRETE SUPPORTS TO AVOID INTERFERENCE WITH BOLTED OR MB END CONNECTIONS AND SHALL BE Poured AGAINST UNDISTURBED EARTH.

3. ALL STEEL FLANGES SHALL BE PRIMED AND COATED PER EMWD SPECIFICATIONS.

4. ALL STEEL PIPE AND FITTINGS SHALL BE COATED WITH THE SAME MATERIAL AS SUPPLIED ON THE PIPE.

5. USE VITREOUS COUPLINGS ONLY IF REQUESTED BY THE ENGINEER OR IF SPECIFICALLY NOTED ON THE PLANS.

PLAN VIEW

A.C. - D.I. - PVC PIPELINE INSTALLATION

REVISIONS

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REFERENCES: ORIGINAL B-577 DRAWN 1/15/80
FILE ID: D.STANDARDS.B577.004
DRAWN BY T.
RESTRAINT JOINT LENGTHS USAGE GENERAL NOTES

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED.
2. FOR TEE RESTRAIN BOTH RUN-SIDE JOINTS AND INSTALL A FULL LENGTH OF PIPE ON EACH SIDE OF BRANCH.
3. FORTY-EIGHT (48) INCHES MINIMUM DEPTH OF COVER.
4. A SAFETY FACTOR OF 1.5.
5. SOIL TYPE: ML OR INORGANIC SILTS, VERY FINE SANDS, ROCK FLOOR, SILT OR CLAYEY FINE SANDS PER UNITED SOIL CLASSIFICATION ASTM D 4497.
   A. NO BEDDING IN GRANULAR MATERIAL.
   B. NO USE OF PHI = 0 PRINCIPAL.
6. PIPE BEDDING PER EMMO STANDARD DRAWINGS B-266B AND B-408.
7. TEST PRESSURE 225 PSI.
8. IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRANDED LENGTHS CANNOT BE MET, THE RESTRANDED LENGTH SHALL BE DETERMINED BY THE DESIGN ENGINEER AND APPROVED BY THE DISTRICT ENGINEER.

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REFERENCES:

FILE D: Verangasymphatho dwg8663863
SCALE: NONE
DRAWN BY: 8/15/76

STANDARD DRAWING

EASTERN MUNICIPAL WATER DISTRICT
STANDARD RERAINT TEE, DEAD END, BEND FOR PVC C-900 & C-905

APPROVED: Charles J. Beighmean 7/5/98
ASSISTANT GENERAL MANAGER ENGINEERING

B-663
SLIP CAN DETAIL

- TOP VIEW
- LENGTH: 12" OR 24" AS REQUIRED
- 6" O.D. X 22 GA. SPLIT VALVE CAN TCP SECTION, GALVANIZED, FOR SLIP CAN. 5/8" HOLE FOR 3/4" VALVE.
- 2" X 4" REDWOOD PLUG IF BUTTERFLY VALVE HAS BEND FLANGE
- PROVIDE VALVE STEM EXTENSION WHERE DEPTH OF OPERATOR MANSION EXCEEDS 5
- 3/4" DIA. X LENGTH TO FIT BLACK PIPE PER ASTM-A120
- 6 5/8" C.D. DOUBLE-DIPPED PIPE (1 GA.) VALVE CAN
- FIELD FIT TO VALVE BODY SEE DETAIL "A"
- BUTTERFLY VALVE RISER INSTALATION

NOTES
1. CONTRACTOR SHALL RAISE SLIP CAN TO GRADE AFTER STREET IS PAVED, WHERE PAVING IS PROPOSED.
2. IN UNPAVED AREAS, CONTRACTOR SHALL LEAVE CAP AND SLIP CAN 18" BELOW FINISH GRADE. (I.E. GRADED SHOULDERS).
3. IN NEW SUBDIVISIONS WHERE IT IS SPECIFICALLY GIVEN TO OTHERS (AS SPECIFIED) TO RAISE CAP AND CAY TO FINISH GRADE UPON COMPLETION OF PAVING. WATER CONTRACTOR SHALL FINISH STEM EXTENSION, SLIP CAN AND CAP TO DISTRICT STORAGE YARD, AND LEAVE VALVE CAN PROPERLY COVERED WITH 2" X 4" REDWOOD PLATE.
4. SET TOP OF TRAFFIC COVER SUFICIENTLY BELOW ROUGH GRADED SUB-GRADE TO AVOID DAMAGE DURING FINE GRADING AND SCRACHING OPERATIONS.
5. DOMESTIC WATER INSTALLATION: VALVE CAP TO BE PAINTED SAFETY PRECAUTION BLUE ENAMEL AND PRIMER. AS APPROVED, AND MARKED "WATER" RECYCLED WATER INSTALLATIONS: VALVE CAP LID TO BE PAINTED PURPLE AND MARKED "RECLAIMED".

FIELD FIT TO VALVE BODY SEE DETAIL "A"
- LINE VALVE
- GATE VALVE RISER INSTALLATION
- POTABLE WATER
- RECYCLED WATER
- BROOKS 4- TT OR APPROVED EQUAL

REFERENCES:
SUPERCEDED: A-482 & PA-2

FILE I.D.: Iaua/eng/dwg/dwg/n-668.dgn
DRAWN BY: GS
RECOMMENDED: Joes Munera/1-10/2014
DIRECTOR OF ENGINEERING
DATE

APPROVED: Charlie Bachmann/11-12/2014
ASSISTANT GENERAL MANAGER
DATE

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

EASTERN MUNICIPAL WATER DISTRICT
VALVE CAP & RISER DETAIL

REVISIONS
NO DATE INITIAL DESCRIPTION APPD DATE

APPROVALS
DESIGN
MAINTENANCE
INSPECTION
OPERATIONS
SUBMITTED

INITIAL DATE

DATE

DATE

none none
NOTES:

1. THE CONTRACTOR SHALL PROVIDE A MINIMUM 12" LAP OF STEEL PLATE ON EACH SIDE OF TRENCH TO ASSURE NO SLIPPING OF PLATE OR COLLAPSING OF TRENCH WALL. WHERE 12" LAP CANNOT BE MET, ENGINEER DESIGN REQUIRED.

2. MULTIPLE PLATES MUST BE TACK WELDED AS NEEDED TO SECURE PLATES, 6" MIN.

3. ALL PLATES MUST MEET REQUIRED TRAFFIC LOADS.

REPAIR PAVING SECTION IN ACCORDANCE WITH PERMIT REQUIREMENTS

MILLING DEPTH TO MATCH PLATE THICKNESS OR 1" MINIMUM WHICHEVER IS GREATER. PACK JOINT WITH TEMP A.C.

TYPICAL TRENCH PLATE DETAIL

N.T.S.

TO BE IMPLEMENTED ON ALL EMWD PROJECTS
MIN. 0.15' GRIND & OVERLAY TO LANE LINE OR CENTERLINE.

MIN. 0.15' GRIND & OVERLAY TO LIP OF GUTTER OR LANE LINE (OR 10' ON EACH SIDE OF TRENCH IF PERPENDICULAR TO CENTERLINE).

VARIED TRENCH WIDTH 1'

3/8' LIP MINIMUM

SAWCUT

EXISTING PAVEMENT

BASE MATERIAL AND 6" OF SUBGRADE COMPACTED TO 90% RELATIVE DENSITY.

BACKFILLED COMPACTED TO 90% RELATIVE DENSITY.

MAXIMUM LIFT THICKNESS IS 8 INCHES

MAXIMUM LIFT THICKNESS WHEN PONDING OR JETTING IS 4 FEET.

BACKFILLED COMPACTED TO 90% RELATIVE DENSITY.

BEDDING & UTILITY BACKFILL PER UTILITY COMPANY OR MANUFACTURERS SPECIFICATION.

I. STRUCTURAL ZONE
II. INTERMEDIATE ZONE
III. PIPE & UTILITY ZONE

NOTES:

1. STREET STRUCTURAL SECTION TO BE AS FOLLOWS:
   A.C. SURFACING = MATCH EXISTING THICKNESS + ONE INCH.
   BASE = MATCH EXISTING THICKNESS (MUST USE CLASS II BASE)
   IN NO CASE SHALL THE STRUCTURAL SECTION SHALL BE LESS THAN
   3" OVER 6" CLASS II BASE. CITY MAY ALSO SPECIFY STRUCTURAL
   SECTION FOR ROADWAY IN CERTAIN SITUATIONS.

2. WHEN A FIRM FOUNDATION IS NOT ENCOUNTERED DUE TO SOFT,
   SPONGY OR OTHER UNSUITABLE MATERIAL, SUCH MATERIAL SHALL
   BE REMOVED TO THE LIMITS DIRECTED BY THE INSPECTOR, AND THE
   RESULTING EXCAVATION BACKFILLED WITH CLASS II BASE.

3. CONTRACTOR TO PROVIDE INSPECTOR COPY OF COMPACTION REPORTS
   PRIOR TO PAVING.