GENERAL CONSTRUCTION STANDARDS

PART B

Standard Details

City of University Park
Public Works/Engineering Department

March 2010
STANDARD DETAIL INDEX

STORM SEWER
Recessed Curb Inlet - 4', 6', 8', and 10' Inlets –  
  Plan View and Section A-A  D1-1/4
Recessed Curb Inlet - 4', 6', 8', and 10' Inlets –  
  Section B-B and Section C-C  D1-2/4
Reinforcing Steel Schedule and Bar Diagrams  D1-3/4
Inlet Frame and Cover  D1-4/4
Concrete Collar for Pipe Connections  D2
Storm Sewer Embedment  D3
Storm Sewer Manhole  D4
"Y" Type Inlet  D5
Double Grate Inlet Plan View  D6-1/3
Double Grate Inlet Section D-D  D6-2/3
Double Grate Inlet Sections E-E & F-E  D6-3/3
Combination Triple Grate Inlet  D7-1/3
Combination Triple Grate Inlet  Section A-A  D7-2/3
Combination Triple Grate Inlet  Sections B-B and C-C  D7-3/3
Four Grate Inlet Plan View and Section A-A  D8-1/2
Four Grate Inlet Section B-B  D8-2/2
Six Grate Inlet Plan View and Section A-A  D9-1/2
Six Grate Inlet Section B-B  D9-2/2
Eight Grate Inlet Plan View and Section A-A  D10-1/2
Eight Grate Inlet Section B-B  D10-2/2
Storm Sewer Inlet Notes  D11

PAVING
Concrete Curbs  P1
Typ. Conc. Slab/Asphalt Replacement for Streets  P2
HMAC Temporary Pavement  P3
Misc. Paving Joints  P4
Misc. Sidewalk Joints  P5
Driveway Expansion Joints  P6
Typical Driveway Approach in Alley  P7
Driveway Header  P8
Street Header  P9
Typical Alley Paving  P10 - A
Typical Alley Detail  P10 - B
Typical Alley Approach with Sidewalk behind Curb  P11-1/2
Typical Alley Approach with Parkway  P11-2/2

STD DETAIL INDEX – 1
<table>
<thead>
<tr>
<th>STD DETAIL INDEX</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Driveway w/ Sod Parkway</td>
<td>P12-1/2</td>
</tr>
<tr>
<td>Driveway w/ Sidewalk behind Curb</td>
<td>P12-2/2</td>
</tr>
<tr>
<td>Standard Recessed Storm Drainage Inlets &amp; Curbs</td>
<td>P13-1/2</td>
</tr>
<tr>
<td>Standard Recessed Storm Drainage Inlets &amp; Curbs - Section A-A</td>
<td>P13-2/2</td>
</tr>
<tr>
<td>ADA Ramp W/ Sidewalk w/ Differing Parkway</td>
<td>P14-1/9</td>
</tr>
<tr>
<td>ADA Ramp W/ Sidewalk Section A-A Curb Ramp</td>
<td>P14-2/9</td>
</tr>
<tr>
<td>Ramp W/Parallel Sidewalk</td>
<td>P14-3/9</td>
</tr>
<tr>
<td>Ramp W/ Sidewalk Section E-E</td>
<td>P14-4/9</td>
</tr>
<tr>
<td>Curb Thru Ramp</td>
<td>P14-5/9</td>
</tr>
<tr>
<td>Sidewalk W/Parkway</td>
<td>P14-6/9</td>
</tr>
<tr>
<td>Sidewalk Abutting Curb</td>
<td>P14-7/9</td>
</tr>
<tr>
<td>Concrete Pavers with Truncated Dome Surface</td>
<td>P14-8/9</td>
</tr>
<tr>
<td>General Notes for Sidewalks</td>
<td>P14-9/9</td>
</tr>
</tbody>
</table>

**SANITARY SEWER**

- Standard Precast Manhole | S1-1/11 |
- Standard Cast-In-Place Manhole | S1-2/11 |
- Precast Concrete Flat Top Manhole | S1-3/11 |
- Ring and Cover | S1-4/11 |
- Manhole Invert Depth | S1-5/11 |
- Transition for 5 & 6 Foot Manholes | S1-6/11 |
- 4' Outside Drop Manhole | S1-7-1/11 |
- 5' & 6' Inside Drop Manhole | S1-7/11 A |
- Invert Detail for Lateral Connections at Manhole | S1-8/11 |
- Stub-out Detail | S1-9/11 |
- A-Lock Manhole Pipe Connector for All Manholes Connections | S1-10/11 |
- Abandonment of Existing Manhole in Pavement | S1-11/11 |
- Two-way Single Stack Cleanout | S2 |
- Sanitary Sewer Lateral | S3 |
- Typical Alley Embedment | S4 |
- Concrete Encasement | S5 |

**WATER**

- Typical Service Connection | W1 |
- 2" Water Service | W2 |
- Water Meter Relocation w/ Fence | W3 |
- Typical Fire Hydrant Assembly | W4 |
- Gate Valve and Box | W5 |
- Butterfly Valve | W6-1/3 |
- Butterfly Valve | W6-2/3 |
- Cross Section Bolt Assembly | W6-3/3 |

STD DETAIL INDEX – 2

March 26, 2010
<table>
<thead>
<tr>
<th>STD DETAIL INDEX – 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Release Valve Installation</td>
</tr>
<tr>
<td>Concrete Encasement</td>
</tr>
<tr>
<td>Concrete Straddle Block</td>
</tr>
<tr>
<td>Vertical Bend Thrust Block</td>
</tr>
<tr>
<td>Horizontal Thrust Block</td>
</tr>
<tr>
<td>Various Thrust Blocks</td>
</tr>
<tr>
<td>Thrust Block Notes</td>
</tr>
<tr>
<td>Offset and/or Lowering of Water Main Thrust Harness</td>
</tr>
<tr>
<td>Raci Pipe Insulator Spacing and Detail</td>
</tr>
<tr>
<td>Typical Water Embedment</td>
</tr>
</tbody>
</table>
PLAN - RECESSED INLET

N.T.S.

SECTION A-A

N.T.S.

NOTE: 
PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

NOTE: 
#3 BAR 18" D.C.E.W. IN BLOCK OUT DRILLED INTO EXISTING CONCRETE.
## REINFORCING STEEL SCHEDULE

Dimensions shown are for maximum size inlet.

<table>
<thead>
<tr>
<th>INLET LENGTH</th>
<th>BAR TYPE</th>
<th>BAR DIAG.</th>
<th>NO. REV'D.</th>
<th>BAR DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
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<td>A</td>
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### BAR DIAGRAMS

- BAR A
- BAR B
- BAR C & L
- BAR D
- BAR E
- BAR F
- BAR G
- BAR H
- BAR J
- BAR K
- BAR L
- BAR M
- BAR N

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**GENERAL CONSTRUCTION STANDARD**

**STORM SEWER DETAILS**

**REINFORCING STEEL SCHEDULE & BAR DIAGRAM**

---

**SCALE N.T.S.**

**DATE 04/16/98**

**DEPARTMENT OF PUBLIC WORKS / ENGINEERING**

---

**UNIVERSITY PARK**
ALL STORM SEWER PIPE PLUGS SHALL BE CONCRETE.

VARIES

VARIES

6" MIN.

6" MIN.

1-1/2" MIN.

1-1/2" MIN.

1/4" WIRE MESH TO BE WRAPPED AROUND JOINT.

2-1/2" MIN.
BACKFILL, PLACEMENT AND COMPACTION OF EMBEDMENT AND TRENCH WIDTS SHOWN ARE MINIMUM FOR PROPER

6" MIN, (6" MIN)

D-DEPTH OF BEDDING MATERIAL BELOW PIPE.

3" MIN.

OR CRUSHED STONE 1".

OR ROCK

NATURAL GROUND

95% DENSITY OF ASTM-D6998 BACKFILL RECYCLED CONCRETE MIX

TOP OF SUBGRADE
GENERAL NOTES:

AN ALTERNATE DESIGN (BEARING THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER) WILL BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF MANHOLES AND/OR EQUIVALENT STRUCTURAL DESIGN WITH THE APPROVAL OF THE CITY ENGINEER.

IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, BLOCKOUTS, PIPES, ANCHOR BOLTS OR OTHER REINFORCING STEEL, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE DESIGNING ENGINEER.

CONNECTING PIPES SHOULD ENTER WITHIN TEN (10) DEGREES OF NORMAL TO THE INLET WALL. IF NECESSARY, PIPE ELBOWS OR CURVED APPROACH ALIGNMENT SHOULD BE USED TO STAY WITHIN THIS LIMIT. PIPES MAY ENTER ANY OR ALL WALLS, EXCEPT AT CORNERS. THE MAXIMUM SIZE OF PIPE THAT CAN BE ACCOMMODATED IS 60 INCHES IN DIAMETER. MORE THAN ONE PIPE MAY ENTER A SIDE, SUBJECT TO THE MAXIMUM BOX DIMENSIONS SHOWN. THE CLEAR DISTANCE BETWEEN ADJACENT PIPES SHOULD BE A MINIMUM OF 9 INCHES.

MINIMUM REBAR LAP IS TO BE THIRTY (30) BAR DIAMETERS (MINIMUM LENGTH OF 18 INCHES).
BAR DIAGRAM

BAR NO. | REDO | BAR SIZE | BAR BENDING DIMENSIONS
---|---|---|---
A | 4 | 4 | Varies 3' - 0", Varies
B | 4 | +4 | 3' - 6", Varies
C | 4 | +4 | Varies
D | +4 | Varies | 3' - 6"
E | +4 | Varies | 3' - 8", 3' - 8" - 8'
F | 4 | +4 | 2' - 0",
G | 4 | +4 | 2' - 0"
H | 4 | +4 | 2' - 0"
J | 4 | +4 | 2' - 0"

NOTE: BARS "A" & "E" ARE USED IN THE WALLS PARALLEL TO THE R.C.P., BARS "B" ARE IN THE WALL OPPOSITE THE R.C.P.

SECTION A - A

PLAN VIEW

GENERAL CONSTRUCTION STANDARD
STORM SEWER DETAILS
"Y" TYPE INLET

UNIVERSITY PARK
DEPARTMENT OF PUBLIC WORKS / ENGINEERING
STEEL DETAIL

5'-11" - DOUBLE GRATE INLET

BARS A - 5 BAR, 6'-11" LONG, 3 REQUIRED.

2'-0"

2'-0"

2'-0"

BARS B - 5 BAR, 3'-9" LONG, 6 REQUIRED.

5"

2'-0"

BARS C - 3 BAR, 1'-3" LONG, 3 REQUIRED.
NOTES:

1. REINFORCEMENT, STRUCTURAL STEEL AND CASTINGS SHALL CONFORM TO THE SPECIFICATIONS.
2. TOP OF INLET SLOPE SHALL CONFORM TO ADJACENT PARKWAY NORMAL $\frac{1}{4}''$/ FT. SLOPE.
3. CONCRETE FOR INLET CONSTRUCTION SHALL BE CLASS F, $\frac{6}{2}''$ SACK, 4200 PSI HAND FINISH CONCRETE WHEN USED IN STREETS AND ALLEYS.
4. ALTERNATE CONSTRUCTION.
   ALTERNATE PRECAST INLETS MAY BE APPROVED ON AN INDIVIDUAL BASIS PRECAST INLETS SHALL BE OF EQUAL OR BETTER STRENGTH MATERIAL AND WORKMANSHIP AND SHALL MEET THE STANDARD DESIGN CRITERIA OF THE CAST-IN-PLACE INLETS SHOWN IN THESE DETAILS.
5. THE INLET FRAME & COVER SHALL BE AT THE SAME END OF INLET AS PIPE LATERAL.
6. DIMENSIONS RELATING TO PLACEMENT OF REINFORCING BARS ARE FROM CENTER TO CENTER OF BARS UNLESS OTHERWISE NOTED. BAR SPLICES ARE PERMISSIBLE IF BARS ARE TIED AND OVERLAPPED 30" DIAMETER WITH 18" MIN.
7. PIPE LATERALS MAY ENTER INLET AT SIDES OR ENDS AT ANY GRADE, ANGLE OR LOCATION.
8. STRUCTURAL EXCAVATION WILL NOT BE A SEPARATE PAY ITEM.
9. CHAMFER ALL EXPOSED EDGES AROUND INLET OPENINGS $\frac{1}{4}''$.
10. PROVIDE STREET JOINTS AS SHOWN FOR INTEGRAL CONCRETE PAVEMENT.
11. INCLUDE IN UNIT BID PRICE FOR ALL INLETS COMPLETE IN PLACE, ALL ITEMS, INCLUDING EXCAVATION AND VARIABLE HEIGHT CURB.
NOTE: CURB & GUTTER SHALL BE GRADED TO DRAIN LONGITUDINALLY. MATCH CURB & GUTTER AT BOTH ENDS WITH EXISTING CURB & GUTTER. NEW CURB & GUTTER SHALL HAVE STRAIGHT LINES & TRUE GRADES.

30" CONC. CURB & GUTTER DETAIL

3600 P.S.I. CLASS "C" CONCRETE PAVEMENT (6 SACK/C.Y.)

SLOW TO MATCH STREET PROFILE

2" X 6" BLOCKOUT FOR ASPHALT

SAW TO DEPTH OF EXIST. ASPHALT.

24" LONG 1/2" DIA. REBAR W/8" INTO EXISTING PAVEMENT ON 18" CENTERS #2 PART EPOXY AND LAP TO "L" BAR #4 "L" BARS @ 18" CTS.

SLOW CUT BREAKOUT LINE

6" COMPACTED RCY FOR SUBGRADE

DOWELED CURB

THICKNESS W/2 PART EPOXY

3/8" R

3" R

1 1/2 BATTER 1-1/2" R

6"
SAWED BREAKOUT LINE TO BE WIDTH OF TRENCH ONLY AND SLAB SHALL BE SAWED FULL DEPTH TO PREVENT SPALLING ON VERTICAL SIDES (TYP. BOTH SIDES)

SAWED BREAKOUT LINE TO BE MADE FULL DEPTH OF SLAB AFTER COMPACTED BACKFILL IS IN PLACE (TYP. BOTH SIDES)

INSTALL #4 BARS LONGITUDINAL STEEL ON 24" CENTERS TRANSVERSE BARS ON 24" CTRS. EPOXY #4 BARS MIN. 8" INTO EXIST. PVMT. ON 24" CTRS

R.C. SLAB REPLACEMENT

LIMITS OF TRENCH
O.D. + 16" (24" MIN)

TOP OF CONCRETE TO MATCH EXISTING TOP OF CONCRETE SO ASPHALT DEPTH MATCHES EXISTING CONDITIONS

REPLACEMENT SLAB THICKNESS TO MATCH EXISTING PAVEMENT THICKNESS (MIN 6" DEPTH)

CONCRETE PER SPEC.

EXISTING PAVEMENT & REINFORCING STEEL

ASPHALTIC SURFACE TO MATCH WHERE PRESENT

RECycled CONCRETE MIX OR SELECTED ALTERNATE
CONSTRUCTION JOINT

SAWED DUMMY JOINT
IDENTICAL FOR STREETS AND ALLEYS EXCEPT ALLEY LONGITUDINAL REINFORCEMENT BARS

NOTE:
SEAL JOINTS WITH HOT POUR POLYMER AS PER C.O.G. SPEC. 303.2.14.1.1
COLD APPLIED SEALANT MUST BE APPROVED BY CITY ENGINEER.

EXPANSION JOINT DETAIL

12" OF DOWEL COATED W/GREASE
SEAL AS PER NOTE

1.25" MIN. CLEARANCE
BAR STOP
CLEAR DOWEL SLEEVE (CLOSED END) TO FIT DOWEL AND BE SECURED TO BE INSTALLED 2" C.C.

DOWEL SUPPORT SHALL BE BY DOWEL CHAIRS OR BASKETS OR OTHER APPROVED METHOD.

24" NO. 6 SMOOTH DOWEL
EXPANSION JOINT DETAIL

- 3 BARS 18" D.C. MAXIMUM BOTH WAYS
- ¾" X 24" SMOOTH ROUND DOWEL 18" D.C. MAX
- DOWEL SUPPORT SHALL BE A METHOD APPROVED BY ENGINEER.

TOOLED JOINT DETAIL

- 1/4"
- 1/8" R.
- #3 BAR

FINISH TO BE LIGHT BRUSH

SEAL JOINT PER P14-9/9.

THIS HALF OF DOWEL TO BE COATED WITH GREASE...

BAR STOP MIN. CLEARANCE

4 1/2" CLEAR PLASTIC DOWEL SLEEVE (CLOSED END) TO FIT DOWEL AND BE SECURED

¾" REDWOOD EXPANSION JOINT FILLER

1/4" R 3/8" R
Dowel 8" INTO EX. PAVEMENT

Bars on 24" CTRS. AND/OR OR
INSTALL HEADER AS PER DETAILS.

1' FOR 10' ROW
2' - 6" FOR 15' ROW
(VARIES)

Prop. Alley PVMT.

#4 Rebar 24" C.C.

Seal joints per
specifications

3/4" Redwood
Expansion Joint

#4 Dowel bars 24"
Long on 24" CTRS.

Where Doweling is unacceptable see P-8
SECTION A-A
SECTION A-A
DIAGONAL CURB RAMP

SIDE FLARE TYPICAL
EXPANSION JOINT AS REQUIRED
CLASS "C" CONCRETE 6 SACK (3600 PSI@28 DAYS)
CONCRETE PAVER WITH TRUNCATED DOME SURFACE
1" SAND BED
SCORED CONTROL JOINT
6" TYPICAL VARIABLE HEIGHT CURB
1" RCM MIN. FOR LEVELING
"B-1" BARS 18" O.C.E.W
MIN. 6"
COMPACTED SUBGRADE

"B-1" BAR
1/2" WIDE JOINT W/1" MIN DEPTH
FILLED WITH 2-PART SEALANT
WITH ACCELERATOR.
TAPE, ROPE OR ROD PRIOR TO SEALING

NOTE:
1/4" REDWOOD EXPANSION JOINT EVERY 40' ON 4' WALK,
50' ON 5' WALK AND AT DIRECTIONAL CHANGE.
CLASS "A" CONCRETE 5 SACK (3000 PSI@28 DAYS)

PLAN VIEW

INSTALL KEYWAY (FOR PROPOSED PAVEMENT)
STANDARD KEYWAY TO BE
MANUFACTURED METAL FLASHING
FOR TIE TO EXIST.CURBS, DRILL
& EPOXY #3 BARS ON 18" CENTERS

1/2" WIDE JOINT W/1" MIN.DEPTH
FILLED WITH 2-PART SEALANT
WITH ACCELERATOR SL-2 OR
APPROVED EQUAL (GRAY)
TAPE, ROPE OR ROD

EXIST.CONC.CURB

4" BARS TRANSVERSE 24"CC
4" THICK REINFORCED
CONC. WALK

1" R.C.M. FOR LEVELING
AND FINE GRADING

COMPACTED SUBGRADE

DIM. TO CENTER OF PAVEMENT THICKNESS

SECTION A-A

P14-7 /9
UNIVERSITY PARK
GENERAL CONSTRUCTION STANDARD
SIDEWALK DETAILS
SIDEWALK ABUTTING CURB
SCALE: 1"=8'
DATE: 09/90
DEPARTMENT OF
PUBLIC WORKS/ENGINEERING
PAVER NOTES

Concrete paver units shall meet all requirements of ASTM C-936, C-33, and shall be laid in a two by two unit basket weave pattern, unless shown otherwise in the plans.

Concrete paver units shall have a truncated dome top surface for detectable warning to pedestrians.

Concrete paver units shall be saw cut only and any cut unit shall be not less than 25 percent of a full unit.

Pavers will have detectable warning that consists of raised truncated domes with a diameter of .09 in. a height of nominal 0.2 in., and a center to center spacing of nominal 2.35 in., and shall be red in color.
GENERAL NOTES FOR SIDEWALKS:

1. ALL HONEYCOMB IN BACK OF CURB TO BE TROWELED AND WIPED W/NON SHRINK GROUT BEFORE POURING SIDEWALK.
2. LUG MAY BE FORMED BY SHAPING SUBGRADE TO APPROXIMATE DIMENSIONS SHOWN.
3. PAYMENT FOR KEYWAY IS SUBSIDIARY TO CONCRETE SIDEWALK PAT ITEM.
4. PAYMENT FOR EXCAVATION, BORROW, AND COMPACTION IS SUBSIDIARY TO CONCRETE SIDEWALK PAY ITEM.
5. CONTRACTOR SHALL DO ALL NECESSARY FILLING, LEVELING AND FINE GRADING REQUIRED TO BRING THE SUBGRADE TO THE EXACT GRADES.
6. BACKFILL FOR SIDEWALK SUBGRADE SHALL BE RECYCLED CONCRETE MIX.
7. SIDEWALK BACKFILL AND SUBGRADE SHALL BE COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES TO 90% OF ASTM D698 DENSITY WITH A MOISTURE WITHIN -2% TO -4% OF OPTIMUM MOISTURE.
8. 3/4" EXPANSION JOINTS ARE REQUIRED EVERY 40", ALSO WHERE SIDEWALK ABUTS THE CURB. 3/4" EXPANSION JOINTS SHALL BE INSTALLED WHERE THERE IS AN EXPANSION JOINT @ THE STREET.
9. CONCRETE SHALL BE CLASS A 5 SACK (3000 PSI@ 28 DAYS) EXCEPT FOR HANDICAP RAMPS WHICH SHALL BE CLASS C 3600 PSI@28 DAYS.
10. REINFORCEMENT SHALL BE NO. 3 BARS ON 18" CENTERS OR NO. 4 BARS ON 24" CENTERS ON CHAIRS (NO WELDED WIRE FABRIC WILL BE ACCEPTABLE AS A SUBSTITUTE FOR STEEL BARS).
11. FINISH OF THE TOP SURFACE SHALL BE "LIGHT BROOM FINISH" WITH TOOLED JOINTS.
12. SLOPE WALK 1/4" MIN-1/2" MAX PER FT. OR APPROVED BY THE CITY.
13. MIN. CONCRETE THICKNESS ON SIDEWALK SHALL BE 4" AND DRIVEWAYS SHALL BE 6".
14. ALL JOINTS TO BE SEALED WITH SONOLASTIC SL2 (GRAY) AS PER DETAIL.
15. ALL MISCELLANEOUS SIDEWALK DETAILS FOR SIDEWALKS AND HANDICAP RAMPS AGAINST PROPOSED OR EXISTING CURB SHALL APPLY.
16. WHERE BARRIER FREE RAMPS ARE TO BE CONSTRUCTED @ EXISTING STREET LOCATIONS DELETE KEYWAY DETAILS AND DRILL/EPOXY GROUT "3 BARS 8" INTO EXISTING ON 18" CENTERS.
CLASS "F" CONCRETE 4500 P.S.I. CONC. @ 28 DAYS 6½ SACK MIX.

USE RUBBER GASKET AS REQUIRED BY PRECAST SUPPLIER

BENCH TO BE BUILT PER SPEC. PG. S1-5/11

STUB-OUTS TO BE A MIN. OF 5' LONG W/BELL @ END W/CONCRETE CRADLE

STUB-OUTS TO BE FITTED W/ WATER TIGHT STOPPER OR CAP

KOR-N-SEAL CONNECTOR 6" TO 18"

*ALT. COUPLINGS MUST BE APPROVED BY THE CITY ENGINEER. Voids TO BE GROUTED W/ NON SHRINK GROUT.

ENBEDMENT AS SPECIFIED BY PLANS

6" STONE CUSHION FOUNDATION
Cast iron frame and cover for manhole shall be suitable for heavy traffic.

Bottom section of riser pipe butt and bell.

Grout space to be filled with cement mortar or mastic material.

Reinforced concrete pipe, C-76, Class III with rubber gasket joint.

60" dia. and 72" dia.

Class "F" concrete base for precast manhole.

6" min.

6" stone cushion foundation

Note:
If false manhole bottoms required, they shall be constructed, installed and removed.

Precast concrete
Flat top manhole
APPROXIMATE WEIGHT
RING AND COVER: 385 LBS.

PROVIDE WITH PICK SLOTS ONLY.

24”
12 1/2”
1”
1/8”

25 3/4”
24 1/4”
1/8”

2 1/2”
22 3/8”
31”
PIPES W/DIAMETER OF LESS THAN 15”
D = DISTANCE OF 1/2 DIAMETER OF LARGEST PIPE.

PIPES W/DIAMETER OF 15”-24”
D = DISTANCE OF 3/4 DIAMETER OF LARGEST PIPE.

PIPES W/DIAMETER GREATER THAN 24”
D = DISTANCE OF FULL DIAMETER OF LARGEST PIPE.

NOTE: BENCH SHALL HAVE 1/2” PER FT. MIN. SLOPE.
ALL MANHOLES SHALL BE MONOLITHIC CLASS "F" CONCRETE 4200 P.S.I.

CAST-IN-PLACE NOTES:
1. CONCRETE SHALL BE A MONOLITHIC POUR.
2. DROP MANHOLES SHALL BE INSTALLED WHEN THE INFLOW AND OUTFALL ELEVATIONS DIFFER BY 10" OR MORE.
CAST-IN-PLACE NOTES:

1. CONCRETE SHALL BE A MONOLITHIC POUR.

2. DROP MANHOLES SHALL BE INSTALLED WHEN THE INFLOW AND OUTFALL ELEVATIONS DIFFER BY 18" OR MORE.

3. SEE SHEET S1-7/11_B DURAN INC. "RELINER" DETAIL FOR PIPING AND FITTINGS INFORMATION.
EXTERIOR PIPING SHALL BE DUCTILE IRON AND SHALL EXTEND A MINIMUM OF 5'-0" ONTO UNDISTURBED SOIL, AT WHICH IT MAY TRANSITION TO PVC.

ALL VETICLE PIPING SHALL BE SDR 35 PVC

DURAN, INC. “RELINER” FIBERGLASS DROP BOWL FITTING OR APPROVED EQUAL SECURED WITH 304 STAINLESS STEEL FASTENERS.

DURAN, INC. “RELINER” 304 STAINLESS STEEL BRACKET & FASTNERS OR APPROVED EQUAL. INSTALL AT NO MORE THAN 4'-0" APART 2 MINIMUM PER DROP.

CUT A 1-1/4" LONG 60° - 90° V-NOTCH IN THE INVEROS OF SEWER MAIN INLETS

45° BEND

GENERAL CONSTRUCTION STANDARD
STORM SEWER DETAILS
DROP BOWL CONNECTION FOR STANDARD MANHOLE
NOTE: CONCRETE INVERT FOR LATERAL CONNECTION SHALL BE FORMED TO INTERSECT THE MAIN LINE INVERT TO PROVIDE POSITIVE FLOW DOWN STREAM.
NOTE:
SEE SHEET S1-5/1 FOR MH INVERT DETAIL

A-LOCK REQUIRED ON ALL MH CONNECTIONS UNLESS APPROVED BY CITY ENGINEER.

MANHOLE PIPE CONNECTOR WITH O-RING RUBBER GASKET FOR PIPE OTHER THAN CLAY OR CONC. OR AS APPROVED BY THE CITY ENGINEER.

STUBOUT TO BE FITTED WITH WATERTIGHT STOPPER OR CAP. (5' MIN. LENGTH)
MANHOLE WALL THICKNESS AS REQUIRED

AVERAGE PIPE O.D.

RADIUS AS REQUIRED

A-LOK RUBBER GASKET

FIBERGLASS REINFORCED POLYESTER

DIMENSION FOR MANHOLE PIPE CONNECTOR A.S.T.M. C-923

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<th>PIPE SIZE</th>
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GENERAL CONSTRUCTION STANDARD
SANITARY SEWER DETAILS
A-LOCK MANHOLE PIPE CONNECTOR FOR ALL MANHOLE CONNECTIONS
12"x12" CONC. PAD

PROPERTY LINE

INSTALL IRON-BODY CLEANOUT
TYLER PIPE & FOUNDRY
2-114 W/3 1/2" PES
BRASS PLUG

6" PAVEMENT OR TOP SOIL

12"x12" CONC. PAD

4" PVC PIPE STRAIGHT SECTIONS

EXIST. HOUSE LATERAL

PEA GRAVEL EMBEDMENT

2000 P.S.I. CONCRETE BLOCKING

INSTALL SDR-26XSDR-35 PVC ADAPTER

SDR-35 TWO-WAY SINGLE-STACK CLEANOUT FITTING
CORPORATION COCK AND SERVICE CLAMP

EXISTING METER AND CURB STOP

STD. UNIVERSITY PARK METER BOX

FRAME AND COVER

WATER METER WILL BE RELOCATED AS CLOSE TO TO HOUSE THE ALLEY PAVEMENT POSSIBLE. WITH THE CL
OF THE METER WATER LINE CONNECTIONS PARALLEL WITH THE ALLEY CENTER LINE,
CONTRACTOR WILL FURNISH SUCH ADDED ANGLE CONNECTIONS AS REQUIRED FOR THIS CONNECTION.

DISCONNECT EXISTING SERVICE CONNECTION TO ALLOW TEMPORARY CONNECTION, DISPOSE OF COPPER, BRASS AND IRON MATERIAL AS PER SPEC. REPLACE WITH 1” COPPER SERVICE LINE

NEW CORPORATION COCK (MUELLER #H15000 OR APPROVED EQUAL) POLYWRAP COPPER

NEW WATER MAIN
MAKE SERVICE TAPS PER SPECIFICATIONS AND WHERE LOCATED ON PLANS.

12” GRAVEL OR CRUSHED STONE CUSHION FILL.

DISCONNECT EXISTING SERVICE CONNECTION TO ALLOW TEMPORARY CONNECTION, DISPOSE OF COPPER, BRASS AND IRON MATERIAL AS PER SPEC. REPLACE WITH 1” COPPER SERVICE LINE

WATER METER WILL BE RELOCATED AS CLOSE TO THE ALLEY PAVEMENT POSSIBLE. WITH THE CL OF THE METER WATER LINE CONNECTIONS PARALLEL WITH THE ALLEY CENTER LINE. CONTRACTOR WILL FURNISH SUCH ADDED ANGLE CONNECTIONS AS REQUIRED FOR THIS CONNECTION.

NOTE: DURING INCLEMENT WEATHER CONTRACTOR TO PROTECT SERVICE, CORP METERS AND TEMPORARY WATER MAIN WITH PIPE WRAP, HAY AND ACTIVE RUNNING SERVICE FOR THE MAIN.

DIELECTRIC COUPLING: EACH WATER METER, WHEN INSTALLED IN ITS PERMANENT LOCATION, SHALL BE ELECTRICALLY ISOLATED FROM THE CUSTOMERS SERVICE LINE BY INSERTION OF AN APPROVED DIELECTRIC NYLON BUSHING ON THE CUSTOMERS SIDE OF THE METER.

TEMPORARY SERVICE MAIN TO BE LAID ALONG P

TEMPORARY SERVICE LINE: 3/4” COPPER OR POLYETHYLENE TUBING WRAPPED TO PREVENT FREEZING.

TYPICAL SERVICE CONNECTION

NOTE: DURING INCLEMENT WEATHER CONTRACTOR TO PROTECT SERVICE, CORP METERS AND TEMPORARY WATER MAIN WITH PIPE WRAP, HAY AND ACTIVE RUNNING SERVICE FOR THE MAIN.

DIELECTRIC COUPLING: EACH WATER METER, WHEN INSTALLED IN ITS PERMANENT LOCATION, SHALL BE ELECTRICALLY ISOLATED FROM THE CUSTOMERS SERVICE LINE BY INSERTION OF AN APPROVED DIELECTRIC NYLON BUSHING ON THE CUSTOMERS SIDE OF THE METER.
WATER MAIN

THREADED MALE COMPRESSION FITTING

2" COPPER

THREADED BRASS NIPPLE

THREADED TEE

TOP VIEW

THREADED 2" GATE VALVE

THREADED MALE COMPRESSION FITTING

1"x1" CONCRETE PAD 6" THICK MIN.

THREADED BRASS NIPPLE

THREADED TEE

SIDE VIEW
NOTE:

ALL SERVICE TAPS TO BE PERPENDICULAR TO MAIN PIPELINE WITHIN RIGHT-OF-WAY

10' ROW METER CAN BE INSTALLED AS SHOWN WITH CONCRETE AROUND METER CAN (6" x 8")

15' ROW INSTALL ADJACENT TO ALLEY PAVING SIMILAR TO DETAIL W-5
FIRE HYDRANT NOTES:

1. C.L. OF F.H. BARREL SHALL BE NOT LESS THAN 2 OR MORE THAN 7' FROM BACK OF CURB OR EDGE OF PAVEMENT.
2. DO NOT SET F.H. IN AN EXISTING OR PROPOSED SIDEWALK, UNLESS OTHERWISE NOTED.
3. ALL TEES SHALL BE ANCHOR TEES FROM THE MAIN TO F.H. VALVES.
4. SET F.H. ON THE LOT LINE EXTENDED WHEN POSSIBLE
5. NEVER PLACE F.H. WHERE FIRE TRUCK COULD NOT PARK BESIDE IT
6. NO MORE THAN ONE EXTENSION ALLOWED ON BARREL OF F.H. W/ MAX 18" EXTENSION USE OFFSET OR 2 BENDS AS REQUIRED.
7. USE OFFSET OR 2 BENDS AS REQUIRED FOR EXTRA DEPTH WATER MAINS.
TYLER 6850 SERIES SCREW TYPE VALVE BOX FOR ALL VALVES. NO SLIDE DESIGNS ALLOWED.

NOTE: VALVE BOX SHALL BE CAST-IRON, TWO PIECE. TYLER "SERIES 6850" W/LID
AIR RELEASE VALVE INSTALLATION

GENERAL CONSTRUCTION STANDARD

WATER DETAILS

UNIVERSITY PARK

W7

12" X 12" X 2"
THREADED TEE

12" WATER LINE

2" COPPER PIPE

2" COPPER PIPE

2" COPPER PIPE

2" GATE VALVE

THREADED NUT VALVE

COPPER TO IRON MALE
W/2" COMPRESSION COUPLING (MUeller)

2" THREADED NIPPLE

VALVE BOX

EXISTING GROUND

EXTEND 3" ABOVE GROUND

STD. CAST IRON METER LID WITH LOCK TYPE COVER AND FRAME. DALLAS FOUNDRY OR APPROVED EQUAL. PROVIDE 4-1" DIA. HOLES IN COVER.

24" DIA. PRECAST CONC. METER VAULT

WASHED GRAVEL

12" SLOPE 1/8" PER FT.

NOTE:
AIR RELEASE TO BE BY VALVE & PRIMER "APCO STANDARD AIR RELEASE"
### Elevation B-B

- **Trench Width**
  - $B_c$

- **Ground**

- **1'-0" (Min.)**

- **Vertical Component of Thrust = Tabulated Value**
  - **Reinforcing Bars**

- **Pour Against Undisturbed Earth**

- **Variable (Approx Same Length as Bend)**

---

### Section A-A

- **2'-0" (Min.) Preferred**

- **Assumed Horizontal**

- **Note:** Use Polyethylene Wrap or Equal Between Concrete and Bend to Prevent Concrete from Sticking to Bend.

---

### Reinforcing Bars

- #4 @ 12" C.C. on 12" Pipe and Larger

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NOTE:
USE POLYETHYLENE WRAP OR
EQUAL BETWEEN CONCRETE AND
BEND TO PREVENT CONCRETE
FROM STICKING TO BEND.

NOTE: CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

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NOTE:
USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND PLUG TO PREVENT CONCRETE FROM STICKING TO PLUG.

PLAN OF PLUG THRUST BLOCK

PLAN OF TEE THRUST BLOCK

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<th>I.D. (IN)</th>
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<th>C (FT)</th>
<th>A VOL. (FT X CY)</th>
<th>A VOL. (CY)</th>
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PLUG & TEE THRUST BLOCK

GENERAL CONSTRUCTION STANDARD
THRUST BLOCK DETAILS
VARIOUS THRUST BLOCKS
GENERAL NOTES FOR ALL THRUST BLOCKS:

1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 P.S.I.

2. VOLUMES OF VERTICAL BEND THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THRUST ON THE VERTICAL BEND.

3. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.

4. CONCRETE FOR BLOCKING SHALL BE CLASS B CONCRETE.

5. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
RESTRAINED RETAINER GLAND AS MANUFACTURED BY THE EBAA IRON SALES, INC. CO. EASTLAND, TEXAS MODEL 1100 PV OR AS APPROVED BY THE CITY ENGINEER.

D.I. PIPE

D.I. M.J. FITTING

D.I. PIPE

D.I. M.J. FITTING

"EYE BOLTS" (90°) TYPICAL AT EACH ALL-THREAD ROD LOCATION

"TEE HEAD" BOLTS AS SPECIFIED (TYPICAL)

GENERAL NOTES:
SEE THE GENERAL DESIGN STANDARDS FOR THE REQUIRED METALLURGICAL SPECIFICATIONS FOR ALL BOLTS, NUTS, WASHERS AND ALL-THREAD RODS. SEE GENERAL DESIGN STANDARDS FOR THE REQUIRED COATINGS AND COVERING FOR THE FITTINGS, ETC.
NOTES:

#1. SPACERS SHALL BE RACI HIGH DENSITY POLYETHYLENE OR ENGINEER PRE-APPROVED EQUAL.

#2. SEE SPECIFICATIONS FOR SPACING AND LOAD LIMITS.

#3. GROUTING BETWEEN CASING & CARRIER PIPES REQUIRED.

SEE APPROPRIATE TABLE FROM RACI CASING SPACER SPECIFICATIONS, FOR SPACER TYPE AND SPACING.