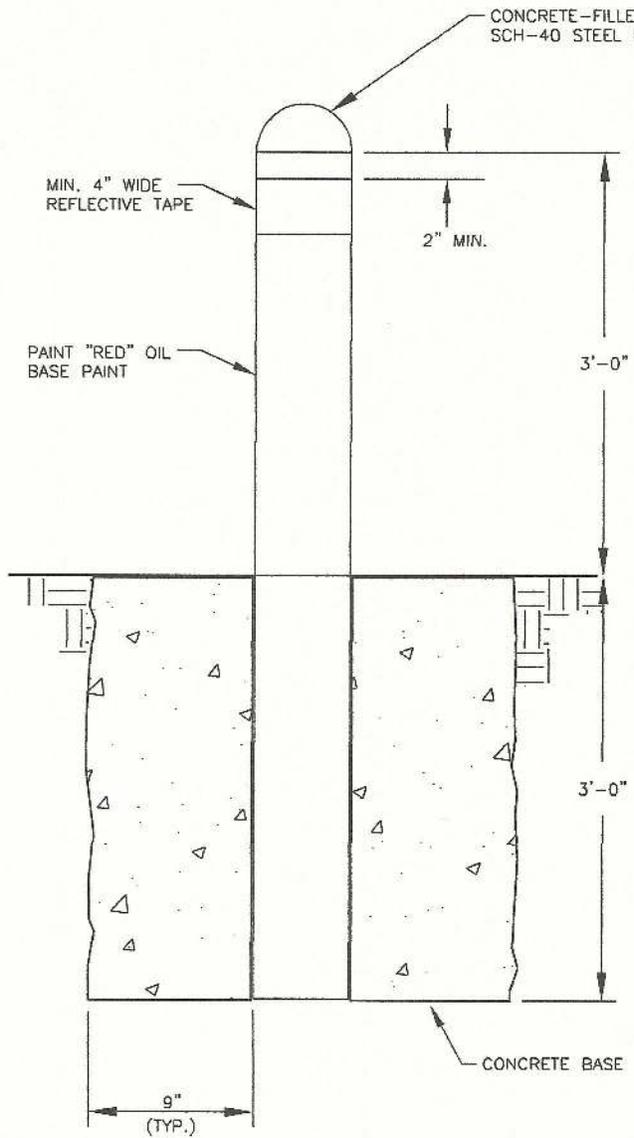


PLAN
N.T.S.

NOTES:

1. WHERE CONCRETE CURBING IS NOT INSTALLED, GUARD POSTS (2 EA. MIN.) SHALL BE INSTALLED ON SIDES FACING PAVED SURFACE.
2. GUARD POSTS TO BE PAINTED SAME AS HYDRANT. (SEE STANDARD SPECS.)



SECTION A-A
N.T.S.

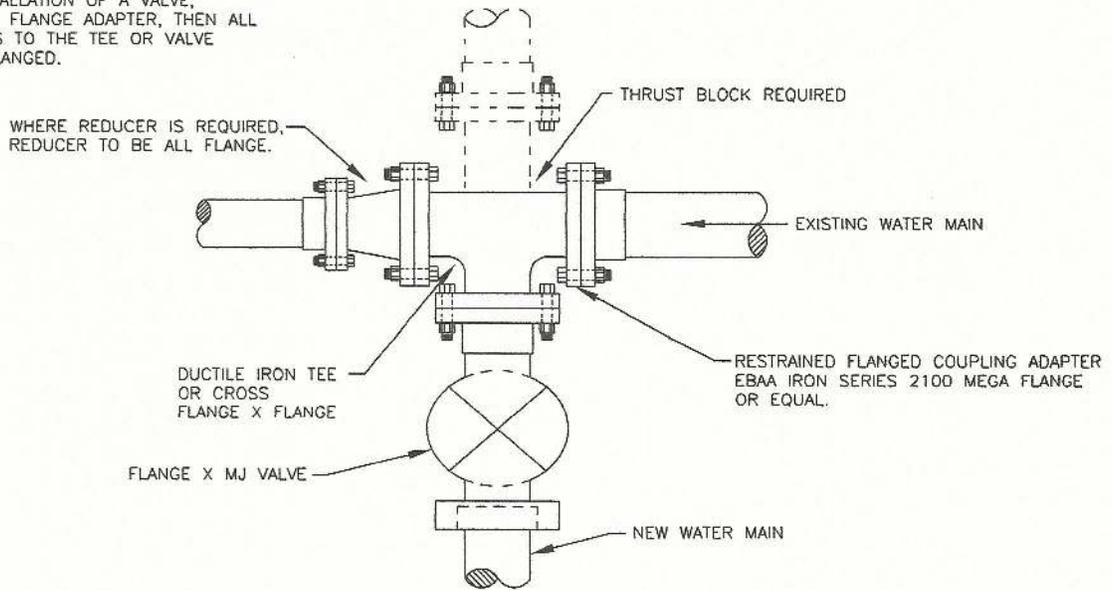


FIRE HYDRANT BOLLARDS
GUARD POSTS

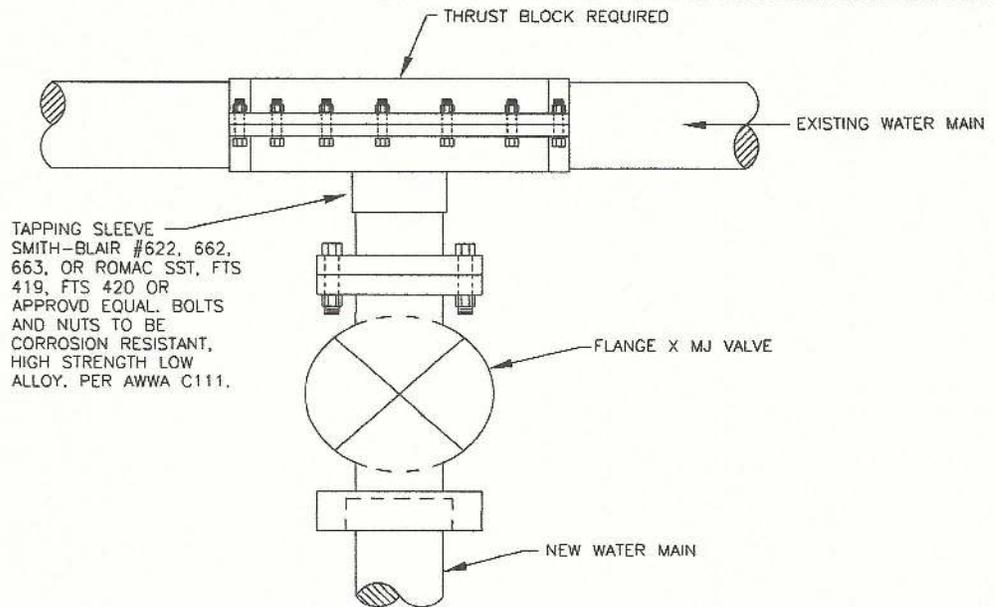
DATE:	
REV. #	
ACAD FILE:	W-411.DWG

W-411
STANDARD DRAWING NO.

WHEN EXISTING WATERLINE REQUIRES THE IN-LINE INSTALLATION OF A VALVE, REDUCER OR FLANGE ADAPTER, THEN ALL CONNECTIONS TO THE TEE OR VALVE SHALL BE FLANGED.



CUT-IN TEE
N.T.S.



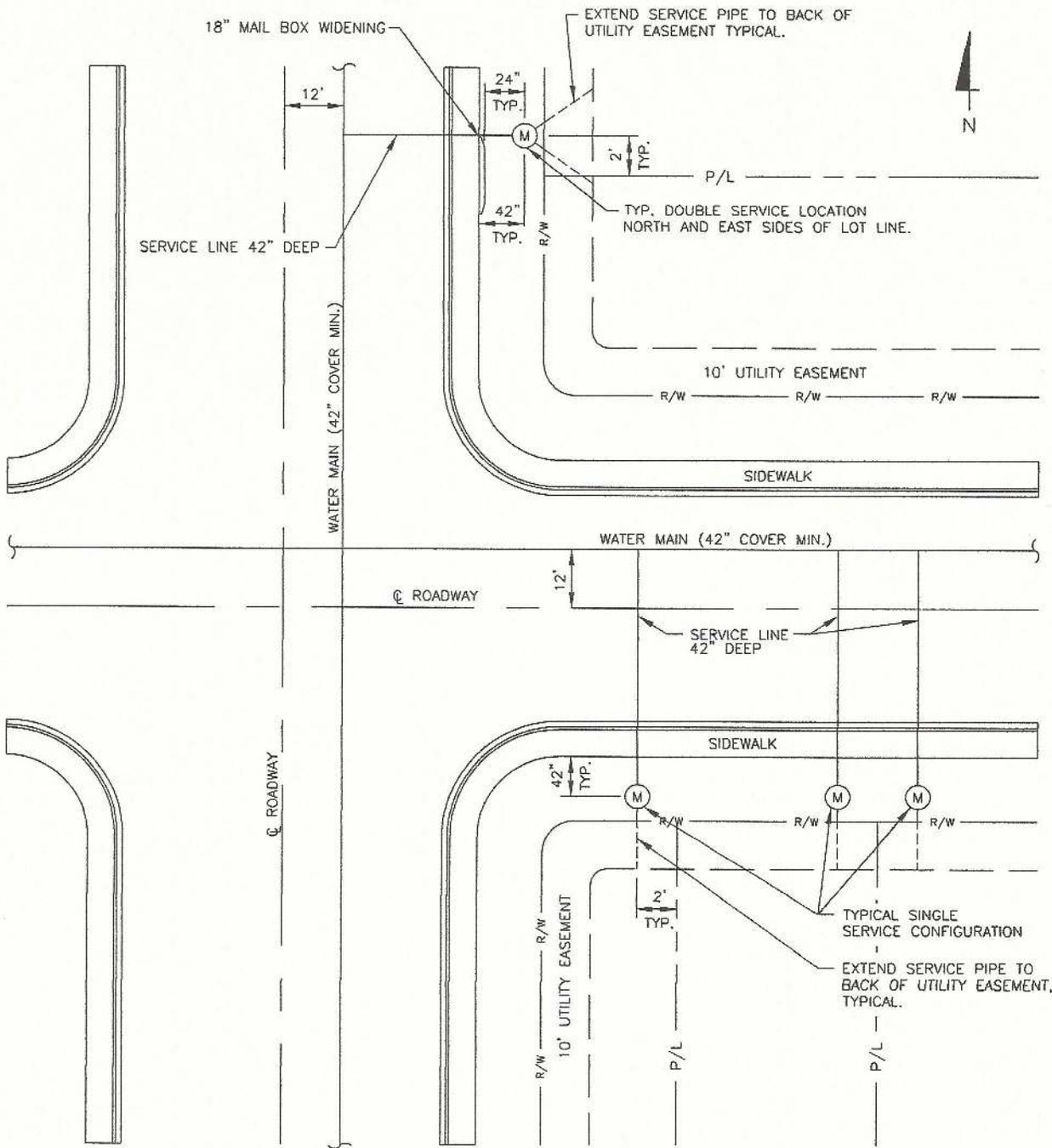
TAPPING SLEEVE AND VALVE
N.T.S.

- NOTES:**
1. CONTRACTOR TO DIG & VERIFY MAIN SIZE AND PIPE PRIOR TO ORDERING MATERIALS.
 2. INSTALL THRUST BLOCKS PER ISPCW STANDARD DRAWING SD-403.
 3. PROVIDE CITY WITH 48 HRS. NOTICE FOR INSPECTION AND VERIFICATION OF ALL MATERIALS PRIOR TO SCHEDULING OF WATER SHUTDOWN OR TAPPING.
 4. HOT TAP BY CITY OF GRANGEVILLE WATER DEPT. 48 HRS. NOTICE REQUIRED.
 5. METHOD OF TIE-IN SHALL BE APPROVED BY WATER SUPERINTENDENT.



TAPPING WATER MAIN
DETAILS

DATE:		W-412
REV. #	1	
ACAD FILE:	W-412.DWG	STANDARD DRAWING NO.



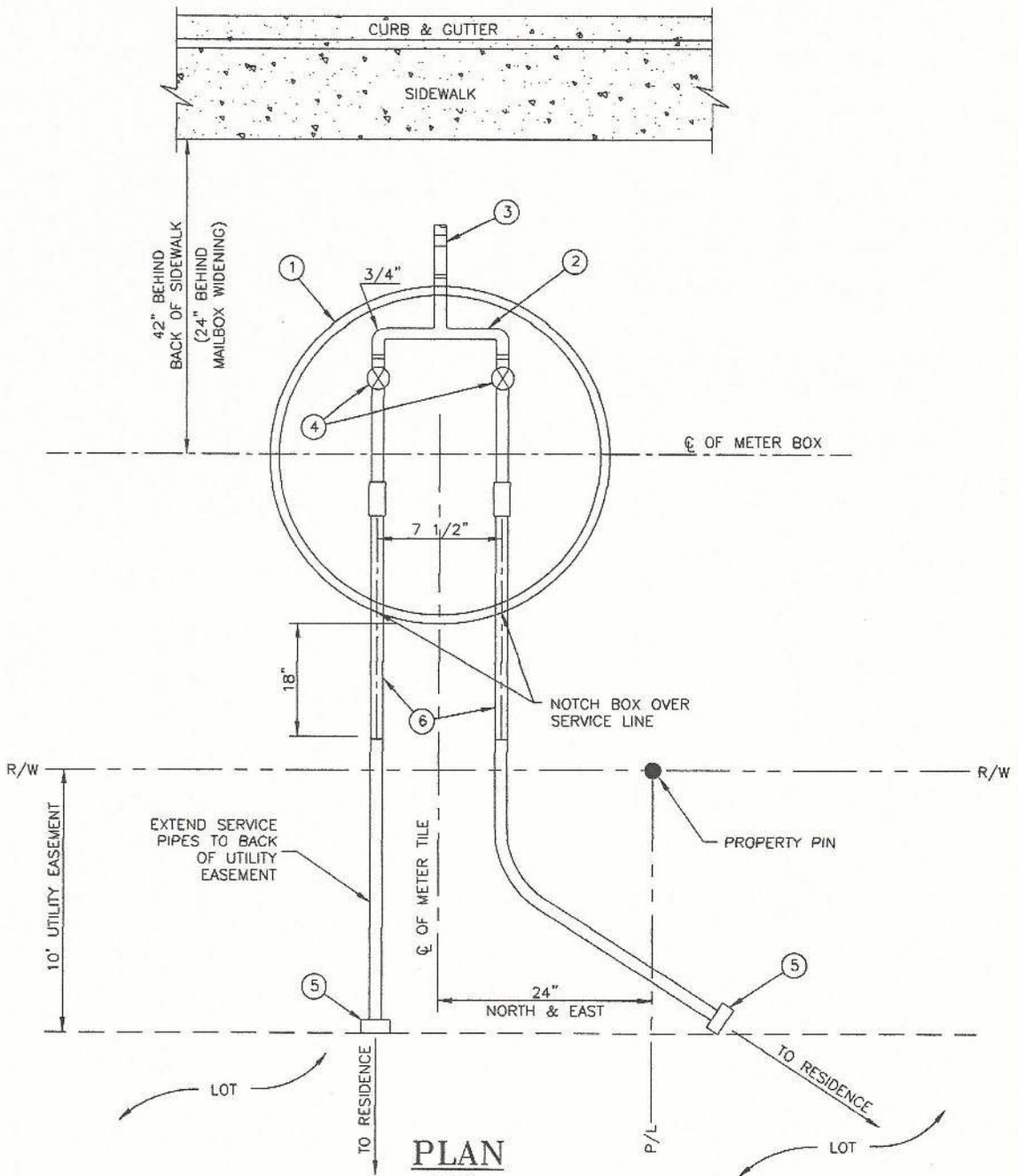
PLAN
N.T.S.



WATER SERVICE
LOCATIONS

DATE:	
REV. #	
ACAD FILE:	W-413.DWG

W-413
STANDARD DRAWING NO.



PLAN
N.T.S.

LEGEND:

- ① 20"Ø x 36" METER BOX
- ② BRANCH FITTING (FORD U48-43)
- ③ 1" FORD PACK COUPLING
- ④ METER SETTER - FORD VBH92-18W-16-33B-G
- ⑤ MARKER PER W-409, PROVIDE TEMPORARY PLUG, (THREADED IN HIGH GROUNDWATER AREAS)
- ⑥ 3/4" COPPER SERVICE LINE

NOTES:

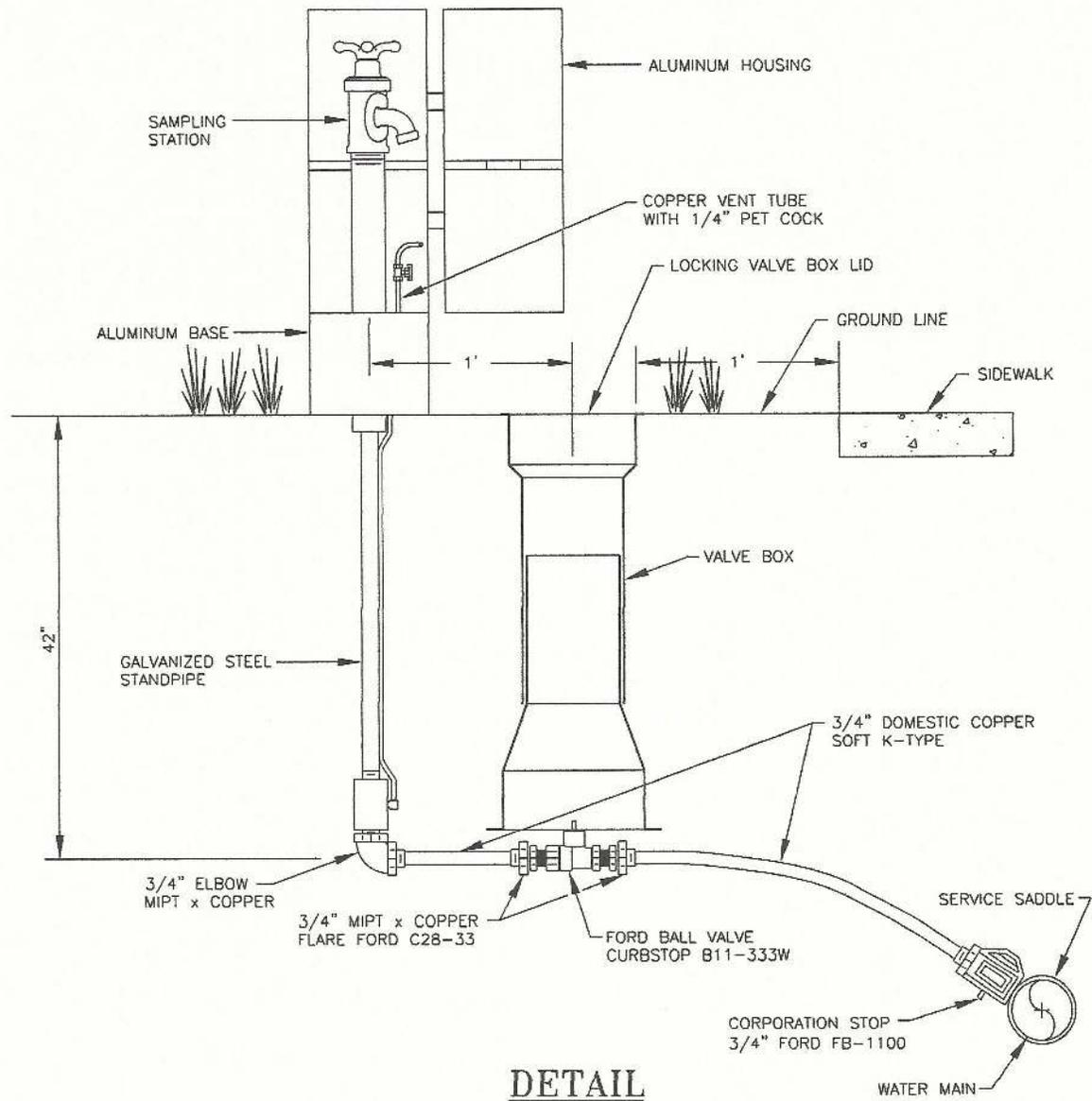
- 1. SEE STANDARD DWG. NO W-401 FOR METER SETTER ELEVATION.
- 2. METER BOX COVER SHALL HAVE TWO ELECTRONIC METER READING HOLES.
- 3. SEE SPECIFICATIONS FOR METER BOX REQUIREMENTS.
- 4. LOCATE METER BOX ON NORTH AND EAST SIDE OF PROPERTY PIN.
- 5. SEE SPECIFICATIONS FOR ADDITIONAL WORKMANSHIP REQUIREMENTS. DOUBLE METER MAY OR MAY NOT BE ALLOWED.



DOUBLE WATER METER
BRANCH FITTING AND LOCATION

DATE:	
REV. #	
ACAD FILE:	W-414.DWG

W-414
STANDARD DRAWING NO.



DETAIL
N.T.S.

NOTES:

1. SAMPLING STATIONS SHALL BE 42" BURY, WITH A 3/4" FIP INLET, AND A (3/4" HOSE OR UNTHREADED) NOZZLE.
2. ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NONREMOVABLE, ALUMINUM-CAST HOUSING.
3. WHEN OPENED, THE STATION SHALL REQUIRE NO KEY FOR OPERATION, AND THE WATER WILL FLOW IN AN ALL BRASS WATERWAY.
4. ALL WORKING PARTS WILL ALSO BE OF BRASS AND BE REMOVABLE FROM ABOVE GROUND WITH NO DIGGING. EXTERIOR PIPING SHALL BE GALVANIZED STEEL.
5. A COPPER VENT TUBE WILL ENABLE EACH STATION TO BE PUMPED FREE OF STANDING WATER TO PREVENT FREEZING AND TO MINIMIZE BACTERIA GROWTH.
6. SAMPLING STATION SHALL BE ECLIPSE NO. 88 AS MANUFACTURED BY KUPFERLE FOUNDRY, ST. LOUIS, MO.



SAMPLING STATION

DATE:	
REV. #	
ACAD FILE:	W-415.DWG

W-415
STANDARD DRAWING NO.

SS-500
SEWER DETAIL DWGS



CITY OF GRANGEVILLE
QUICK REFERENCE
For

DIVISION 500 – SEWER

This quick reference of specifications highlights some of the requirements for Public Works Construction within the jurisdiction of the City of Grangeville. This quick reference is intended for use only as a guide for the Designer and Contractor and not as a replacement to the Idaho Standards for Public Works Construction (ISPWC) or the City of Grangeville's Supplemental Specifications for the ISPWC. Please refer to those documents for more complete specifications.

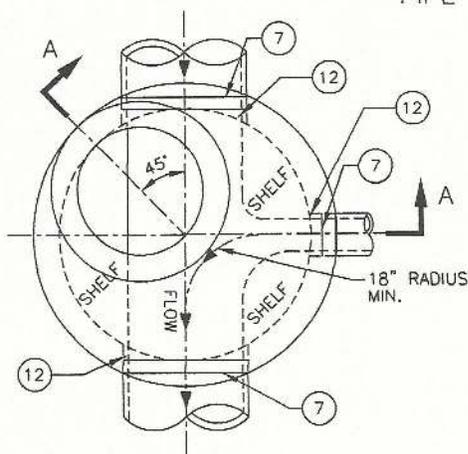
1. PVC sewer pipe shall conform to ASTM D 3034 for solid wall PVC SDR 35 (sizes 4 to 15-inch); ASTM F 679 (sizes 18 to 36-inch).
2. PVC pressure pipe for gravity sewers shall conform to AWWA C900 or C905, 100 psi rated or higher.
3. Reinforced concrete pipe, ductile iron pipe and high-density polyethylene pipe may be acceptable with prior approval of the Public Works Director.
4. Ribbed PVC pipe is not acceptable.
5. Dual wall closed profile PVC pipe is not acceptable.
6. Polyethylene profile wall pipe is not acceptable.
7. Vitrified clay pipe is not acceptable.
8. Non-reinforced concrete pipe is not acceptable.
9. Sewer services and mainline stub-outs shall be marked per Grangeville Standard Drawing SS-512.
10. Infiltration into new or rehabilitated sewer lines shall be cause for immediate rejection.
11. Air-pressure test pipes 24-inches in diameter and smaller per ISPWC Section 501 except as follows: If ground water is above pipe invert, increase air test pressure 0.5 psi for every foot ground water is above pipe invert to a maximum test pressure of 7 psi. If ground water conditions exist such that air test pressure will exceed 7 psi, hydrostatic exfiltration testing shall be required in conformance with the ISPWC. Hydrostatic test all pipes larger than 24-inches in diameter and also pipes with live sewer services.
12. Contractor to provide closed circuit TV (CCTV) inspection for all new or rehabilitated sewer pipe.
13. Deflection testing shall be required if CCTV inspection or visual inspection reveals deflection or damage.
14. More than ½-inch of standing water in pipeline caused by grade defects shall be cause for rejection.
15. Pipeline testing, including CCTV inspection, shall be considered incidental to the cost of the sewer pipe and installation. Inspection Contractor shall be approved by the City.

CITY OF GRANGEVILLE
QUICK REFERENCE
For

DIVISION 500 – SEWER

16. Manhole steps are allowed by Approval of the Public Works Director. Grout smooth any step holes.
17. Manhole testing is required on all new construction
18. Connection of sewer services to new manholes is not allowed. Connection of services to existing manholes may be considered if pipe depth exceeds 15-feet or for other constructability issues as determined by the City.
19. Submit sewer bypass plans to the City for approval, 7 days prior to beginning work.
20. Sewer services for new construction shall conform to Grangeville Standard Drawing SS-511A.
21. In-line tees shall be used for service connections for *new* mains 8-inch to 15-inch in diameter. Tapping saddles shall be used for service connections to *new* mains 18-inches in diameter or greater. Tapping saddles shall be Romac "CB", Fernco "EZ-Tap" or approved equal.
22. Tapping saddles shall be used for all service connections to *existing mains* less than 24-inches in diameter. Tapping saddles shall be Romac "CB", Fernco "EZ-Tap" or approved equal. "Insert-A-Tee" shall be used for service connections to *existing mains* 24-inches in diameter or greater.
23. Sewer manholes are to be located on the roadway centerline.
24. Construction debris shall not be allowed to enter existing sewer system. Failure to comply will obligate the Contractor to clean downstream mainlines as needed. See Section 501.3.2A of the ISPWC for additional requirements.
25. New sewer construction shall meet all testing and inspection requirements of this section prior to service or placement of any permanent asphalt, concrete, or surface repairs.

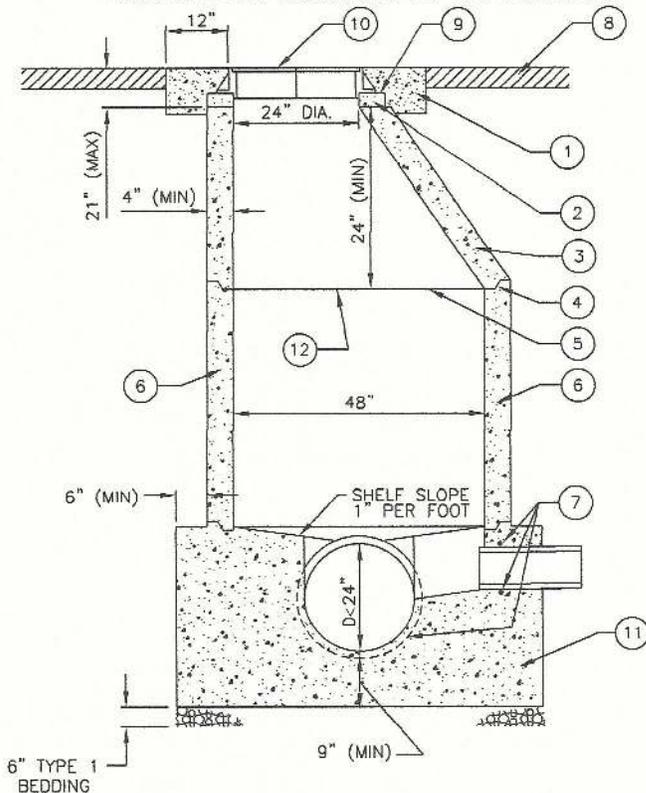
4 FT. OR GREATER DEPTH,
PIPE DIA. \leq 24"



PLAN

N.T.S.

*MASTIC (12") REQUIRED ON ALL EXTERIOR JOINTS
*GROUT ALL INTERIOR AND EXTERIOR JOINTS
*CORN-SEAL BOOT REQUIRED ON ALL PIPE CONNECTIONS



SECTION A-A

N.T.S.

LEGEND:

- ① CONCRETE COLLAR IN PAVED STREET SECTIONS PER SS-508 (MAY OR MAY NOT BE REQUIRED DEPENDING ON APPLICATION).
- ② GRADE RINGS GROUTED WATERTIGHT IN PLACE, NOT TO EXCEED 21" TO TOP OF CONE
- ③ PRECAST MONOLITHIC ECCENTRIC CONE SECTION, (REBAR NOT SHOWN)
- ④ RAMNEK OR APPROVED GASKETS ALL JOINTS
- ⑤ PROPERLY ALIGN ALL INTERIOR JOINTS
- ⑥ PRECAST CONCRETE MANHOLE-BARREL SECTION, (REBAR NOT SHOWN)
- ⑦ PRECAST GASKETED HUB RING OR RUBBER GASKETED COLLAR-FLEXIBLE AND WATER TIGHT
- ⑧ REPLACEMENT SURFACING TO MATCH FLUSH WITH EXISTING SURFACING, (AC SHOWN)
- ⑨ FRAME TO BE GROUTED TO GRADE RINGS
- ⑩ FRAME AND COVER PER SD-507
- ⑪ CAST IN PLACE MANHOLE BASE, SEE SS-501A FOR PREFABRICATED BASE
- ⑫ GROUT SMOOTH ALL INTERIOR JOINTS, INCLUDING PIPES

MASTIC
CORN-

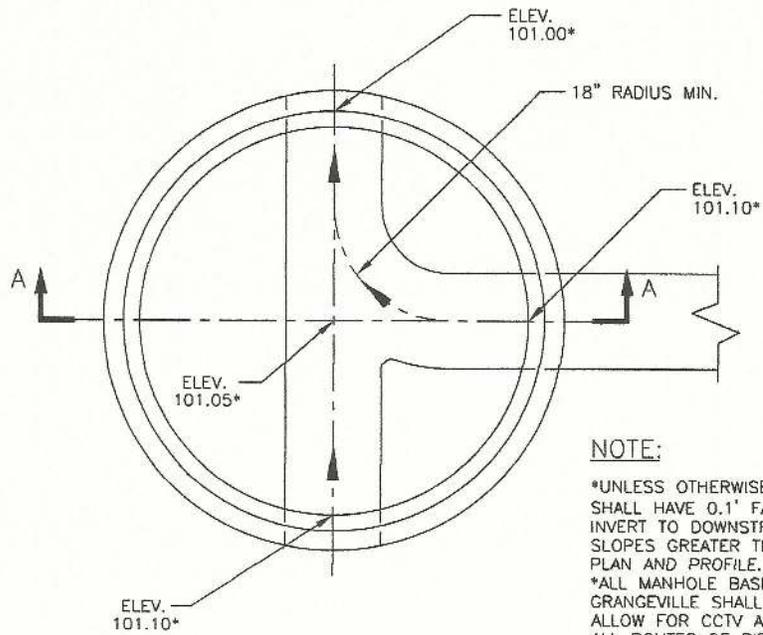
NOTES:

1. OPTIONAL PREFABRICATED MANHOLE BASE WITH APPROVED PIPE CONNECTIONS MAY BE USED WITH CITY APPROVAL, SEE SS-501A.
2. PLACE VERTICAL WALL ON UPSTREAM SIDE OF MANHOLE, ROTATED 45 DEGREES.
3. FOR DIAMETER, D, GREATER THAN 24", SEE SS-502 OR SS-503.
4. MANHOLE FRAME AND COVER:
A. REFER TO DRAWING NO. SD-507.
B. FRAME AND COVER SHALL BE FLUSH WITH SLOPE OF PAVEMENT.
5. WHERE PVC PIPE IS UTILIZED, INSTALL A RUBBER RING OR GASKET COLLAR WHERE THE PIPE IS IN CONTACT WITH MANHOLE BASE AND/OR MANHOLE CHANNEL, IN ORDER TO INSURE A WATERTIGHT SEAL.
6. EITHER BASE ON SS-501 OR SS-501A MAY BE USED WITH ANY MANHOLE DESIGN.
7. PROVIDE MANHOLE CONCRETE REINFORCING TO ACCOMMODATE TRAFFIC LOADINGS.
8. MANHOLE STEPS MAY OR MAY NOT BE REQUIRED.
9. INSTALL MANHOLE JOINT EXTERIOR WRAP IN CONFORMANCE WITH ISPPWC SECTION 502.2.9 ON JOINTS BELOW GROUNDWATER OR AS DIRECTED BY THE CITY.



STANDARD MANHOLE
TYPE A

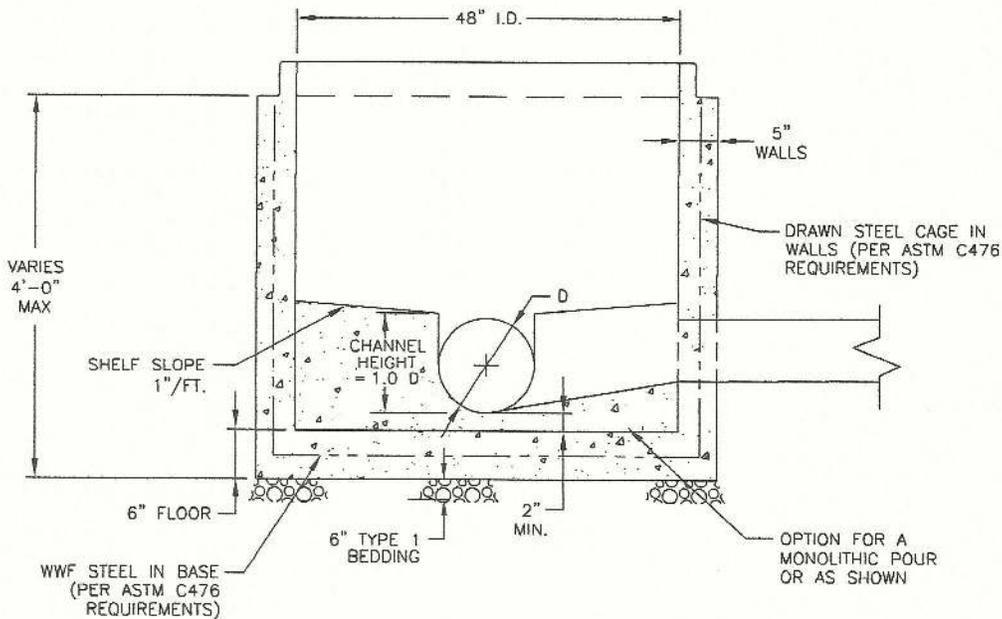
DATE:		SS-501
REV. #		
ACAD FILE:	SS-501.DWG	STANDARD DRAWING NO.



NOTE:

*UNLESS OTHERWISE SHOWN, MANHOLES SHALL HAVE 0.1' FALL FROM UPSTREAM INVERT TO DOWNSTREAM INVERT. FOR PIPE SLOPES GREATER THAN 2.5% SLOPE, SEE PLAN AND PROFILE.
 *ALL MANHOLE BASES WITHIN THE CITY OF GRANGEVILLE SHALL BE CONSTRUCTED TO ALLOW FOR CCTV ACCESS ON ALL ROUTES OF PIPING.

**PLAN VIEW
 48" ID CHANNELED BASE**
 N.T.S.



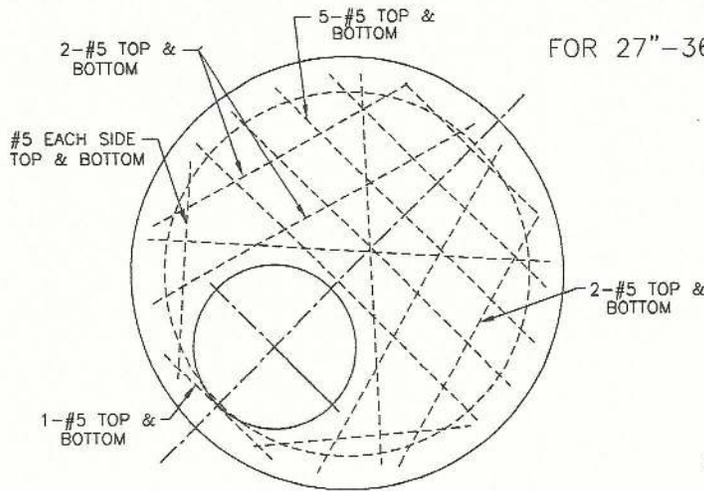
SECTION A-A
 N.T.S.



STANDARD MANHOLE
 PRECAST BASE TYPE A

DATE:	
REV. #	
ACAD FILE:	SS-501A.DWG

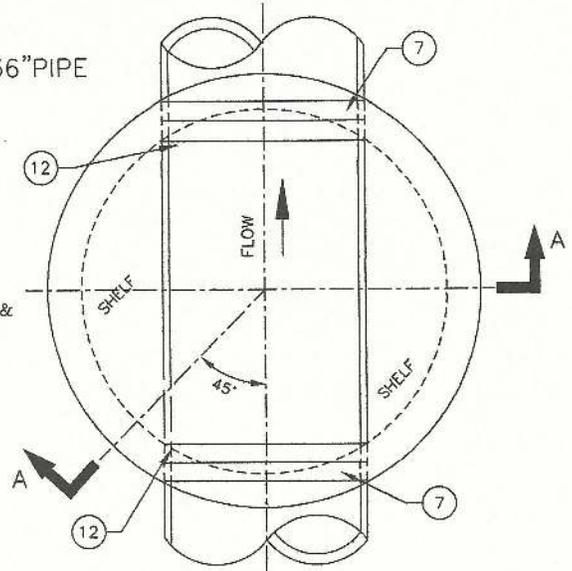
SS-501A
 STANDARD DRAWING NO.



FOR 27"-36" PIPE

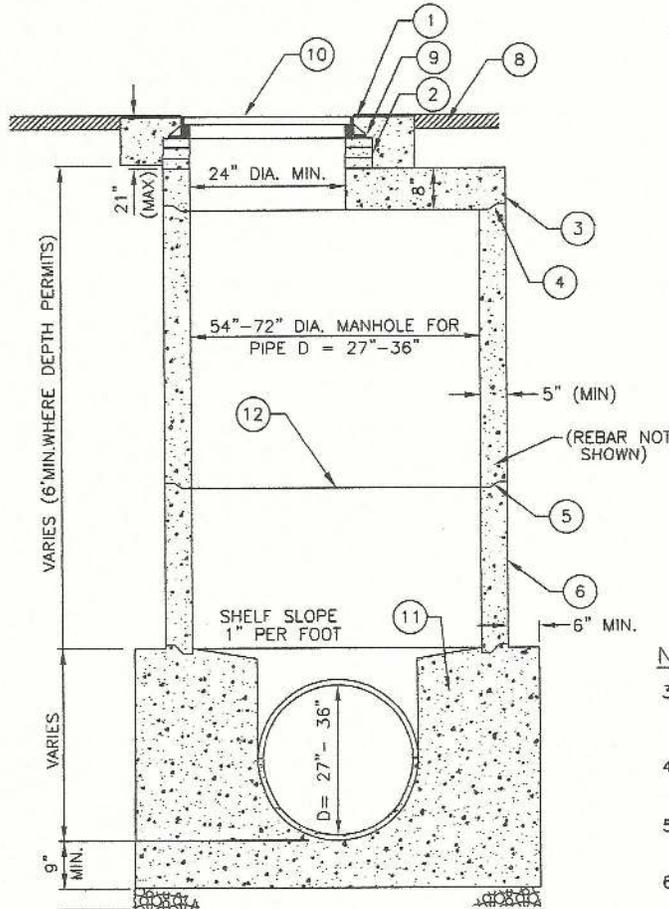
STANDARD SLAB TOP DETAILS

N.T.S.



PLAN

N.T.S.



SECTION A-A

N.T.S.

6" TYPE 1 BEDDING

LEGEND:

- ① CONCRETE COLLAR IN PAVED AND GRAVEL AREAS PER SS-508 (MAY OR MAY NOT BE REQUIRED)
- ② GRADE RINGS GROUT WATERTIGHT IN PLACE, NOT TO EXCEED 21" FROM FINISHED SURFACE TO TOP OF CONE
- ③ REINFORCED CONCRETE REDUCER SLAB
- ④ RAMNEK OR APPROVED GASKET AT ALL JOINTS
- ⑤ PROPERLY ALIGN ALL INTERIOR JOINTS
- ⑥ PRECAST CONCRETE MANHOLE BARREL SECTION (REBAR NOT SHOWN), 54"-72" PIPE
- ⑦ PRECAST GASKETED HUB RING OR RUBBER GASKETED COLLAR-FLEXIBLE AND WATER TIGHT
- ⑧ REPLACEMENT SURFACING TO MATCH FLUSH WITH EXISTING SURFACING, (AC SHOWN)
- ⑨ FRAME TO BE GROUTED TO GRADE RINGS
- ⑩ FRAME AND COVER PER SD-507 OR SD-507A
- ⑪ CAST-IN-PLACE MANHOLE BASE, SEE SS-502A FOR PREFABRICATED BASE
- ⑫ GROUT SMOOTH ALL INTERIOR JOINTS INCLUDING PIPES

NOTES:

- 3. OPTIONAL PREFABRICATED MANHOLE BASE WITH APPROVED PIPE CONNECTIONS MAY BE USED WITH ENGINEERS APPROVAL, SEE SS-502A.
- 4. PLACE VERTICAL WALL ON UPSTREAM SIDE OF MANHOLE, ROTATED 45 DEGREES.
- 5. FOR EXTRA DEPTH MANHOLE, SEE SS-503 "STANDARD MANHOLE TYPE B, DEEP".
- 6. MANHOLE FRAME AND COVER:
 - A. REFER TO DRAWING NO. SD-507 (24" OPENING) OR SS-508 (30" OPENING).
 - B. FRAME AND COVER SHALL BE FLUSH WITH SLOPE OF PAVEMENT.
- 7. WHERE PVC PIPE IS UTILIZED, INSTALL A RUBBER RING OR GASKET COLLAR WHERE THE PIPE IS IN CONTACT WITH MANHOLE BASE AND/OR MANHOLE CHANNEL, IN ORDER TO INSURE A WATERTIGHT SEAL.
- 8. PROVIDE MANHOLE CONCRETE REINFORCING TO ACCOMMODATE TRAFFIC LOADINGS.

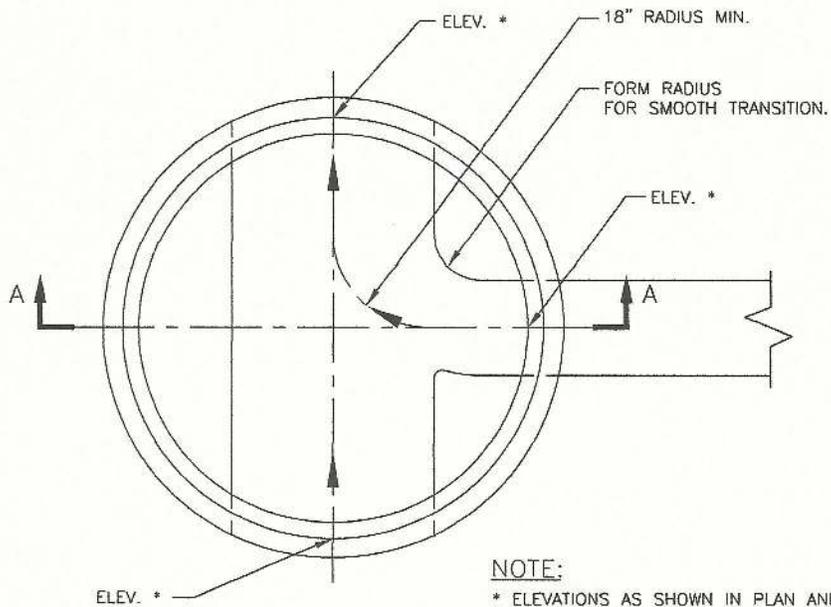
- 1. MANHOLE STEPS MAY OR MAY NOT BE PERMITTED.
- 2. INSTALL MANHOLE JOINT EXTERIOR WRAP IN CONFORMANCE WITH ISPWC SECTION 502.2.9 ON JOINTS BELOW GROUNDWATER OR AS DIRECTED BY THE CITY.



STANDARD MANHOLE
TYPE B

DATE:	
REV. #	
ACAD FILE:	SS-502.DWG

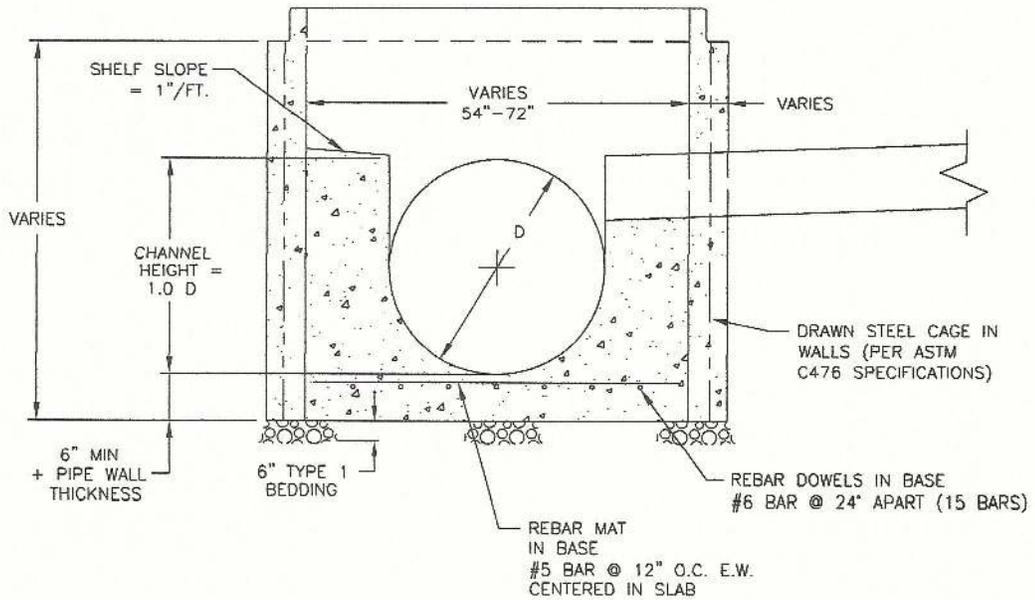
SS-502
STANDARD DRAWING NO.



PLAN VIEW

N.T.S.

NOTE:
* ELEVATIONS AS SHOWN IN PLAN AND PROFILE.



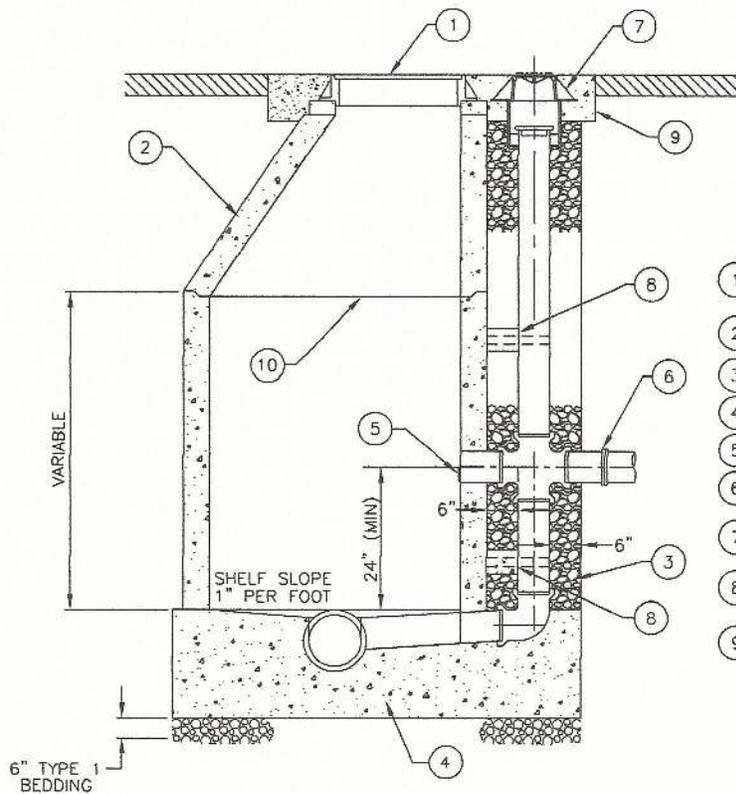
SECTION A-A

N.T.S.



STANDARD MANHOLE
PRECAST BASE TYPE B

DATE:		SS-502A
REV. #		
ACAD FILE:	SS-502A.DWG	STANDARD DRAWING NO.



SECTION A-A

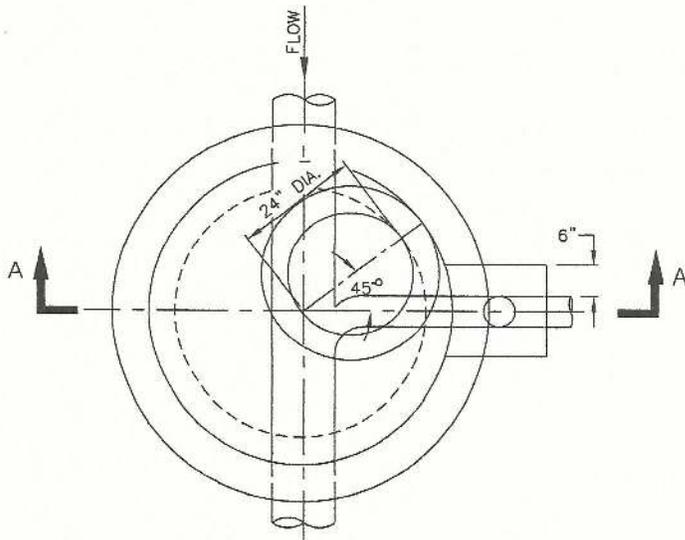
N.T.S.

LEGEND:

- ① MANHOLE PER STANDARD DRAWING SS-501, SS-502 OR SS-503
- ② TYPE 1 BEDDING MATERIAL
- ③ CONCRETE BASE CAST IN PLACE PER SECTION 703
- ④ BLIND FLANGE OR CAP, TOP 1/2 REMOVED
- ⑤ FLEXIBLE JOINT
- ⑥ CLEAN-OUT PER SD-506
- ⑦ STAINLESS STEEL BANDS WITH CONCRETE SPACER TO MANHOLE (5' MAX. SPACING, 1 MIN.)
- ⑧ EXTEND CONCRETE COLLAR AROUND CLEAN-OUT (MAY OR MAY NOT BE REQUIRED)
- ⑨ GROUT SMOOTH ALL INTERIOR JOINTS, INCLUDING PIPES

NOTES:

1. PLACE VERTICAL WALL ON UPSTREAM SIDE OF MANHOLE, ROTATED 45 DEGREES.
2. MANHOLE FRAME AND COVER
 - A. REFER TO STANDARD DRAWING SD-507.
 - B. FRAME AND COVER SHALL BE FLUSH WITH SLOPE OF PAVEMENT.
3. CONSTRUCT BASIC MANHOLE PER TYPE SPECIFIED.
4. WHERE PVC PIPE IS UTILIZED, A RUBBER RING OR GASKETED COLLAR IS TO BE INSTALLED WHERE THE PIPE IS IN CONTACT WITH MANHOLE BASE AND/OR MANHOLE CHANNEL, IN ORDER TO INSURE A WATERTIGHT SEAL.
5. IF THE DROP MANHOLE IS ON THE UPSTREAM SIDE, ROTATE MANHOLE 180 DEGREES SO THE VERTICAL WALL WILL BE DOWNSTREAM.
6. OPTIONAL PREFABRICATED MANHOLE BASE WITH APPROVED PIPE CONNECTIONS MAY BE USED WITH PUBLIC WORKS DIRECTOR'S APPROVAL. SEE SS-501A.
7. PROVIDE MANHOLE CONCRETE REINFORCING TO ACCOMMODATE TRAFFIC LOADINGS.
8. FITTING MATERIALS APPROVED BY THE CITY.
9. DROP MANHOLES ALLOWED ONLY WITH APPROVAL OF PUBLIC WORKS DIRECTOR. CONFIGURATION MAY DIFFER FROM WHAT'S SHOWN DEPENDING ON LOCATION OF MANHOLE.



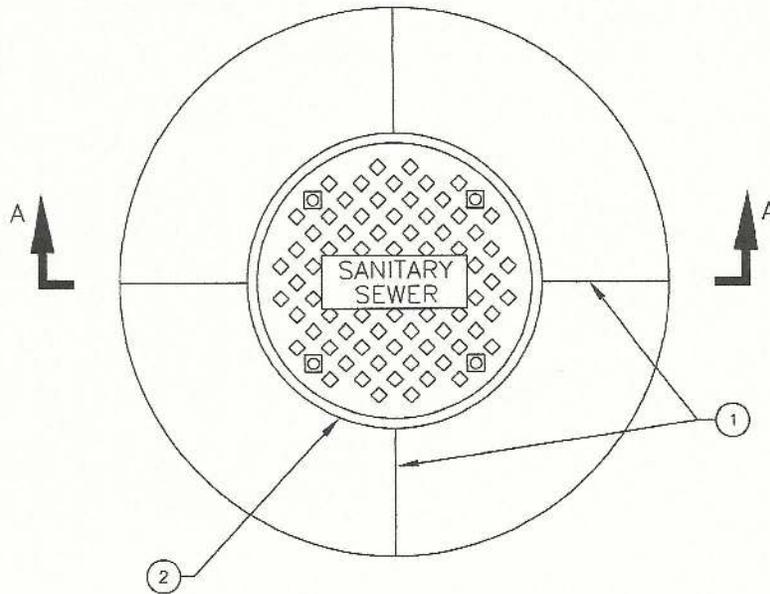
PLAN

N.T.S.

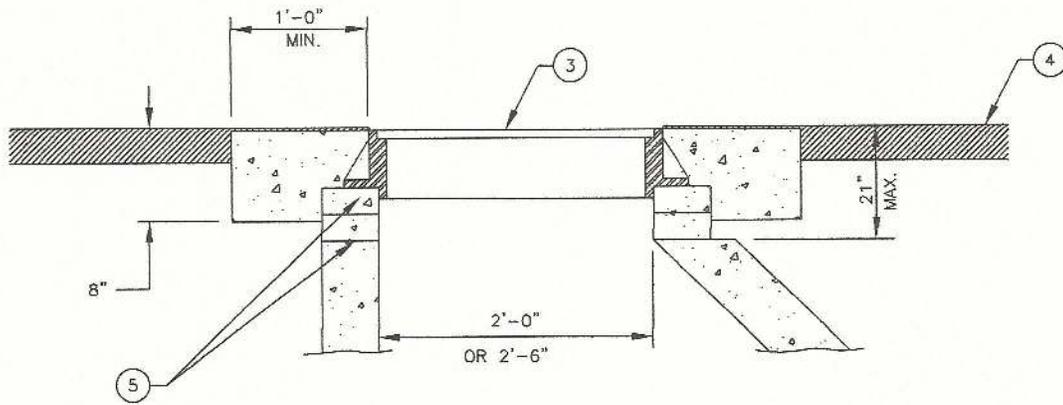


DROP MANHOLE

DATE:		SS-504
REV. #		
ACAD FILE:	SS-504.DWG	STANDARD DRAWING NO.



PLAN
N.T.S.



SECTION A-A
N.T.S.

LEGEND:

- ① SCORES
- ② RIM
- ③ FRAME AND COVER PER SD-507 AND SD-507A
- ④ FINISHED GRADE
- ⑤ GROUT BETWEEN RING AND COVER AND GRADE RINGS

NOTE:

- 1. TOP OF COLLAR TO BE FLUSH WITH MANHOLE COVER.
- 2. TOP OF COLLAR SHALL BE RECESSED 1/8" TO 1/4" BELOW ASPHALT SURFACE.
- 3. CONCRETE COLLARS MAY OR MAY NOT BE REQUIRED AS DETERMINED BY THE CITY.



MANHOLE
COLLAR

DATE: _____
REV. # _____
ACAD FILE: SS-508.DWG

SS-508

STANDARD DRAWING NO.