

STANDARD DRAWING S1 INDEX

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MANHOLE REQUIREMENTS (SIZE AND TYPE MUST BE SPECIFIED ON CONSTRUCTION DRAWINGS)

Size of Sewer Pipe	MH Dia (inches)/Cover Dia (inches)/Material for Depth of Manhole ⁽¹⁾			
	≤ 5-ft deep	> 5-ft and ≤ 12-ft	> 12-ft and ≤ 16-ft	> 16-ft deep ⁽²⁾
8-inch	60-in/30-in Flat Top Reinf Conc MH	48-in/24-in Reinf Conc MH	60-in/30-in Reinf Conc MH	72-in/36-in Reinf Conc MH
≥ 10-in and ≤ 18-in	60-in/30-in Flat Top Polymer MH	48-in/24-in Polymer MH	60-in/30-in Polymer MH	72-in/36-in Polymer MH
> 18-inch	60-in/30-in Flat Top Polymer MH	60-in/30-in Polymer MH	60-in/30-in Polymer MH	72-in/36-in Polymer MH
Monitoring Manhole	60-in/30-in Flat Top Reinf Conc MH	48-in/24-in Reinf Conc MH	60-in/30-in Reinf Conc MH	72-in/30-in Reinf Conc MH

NOTES AND ABBREVIATIONS:

REINF CONC MH = TRADITIONAL REINFORCED CONCRETE MANHOLE (S1 SHEET 2)

POLYMER MH = POLYMER CONCRETE MANHOLE (S1 SHEET 3)

- (1) POLYMER MANHOLES ARE REQUIRED IN ALL LOCATIONS DOWNSTREAM OF FORCE MAINS. OTHERWISE PROVIDE MATERIAL AS INDICATED ON TABLE.
- (2) MANHOLES AT DEPTHS >16-FT DEEP REQUIRES CHIEF ENGINEER APPROVAL.

NOTES

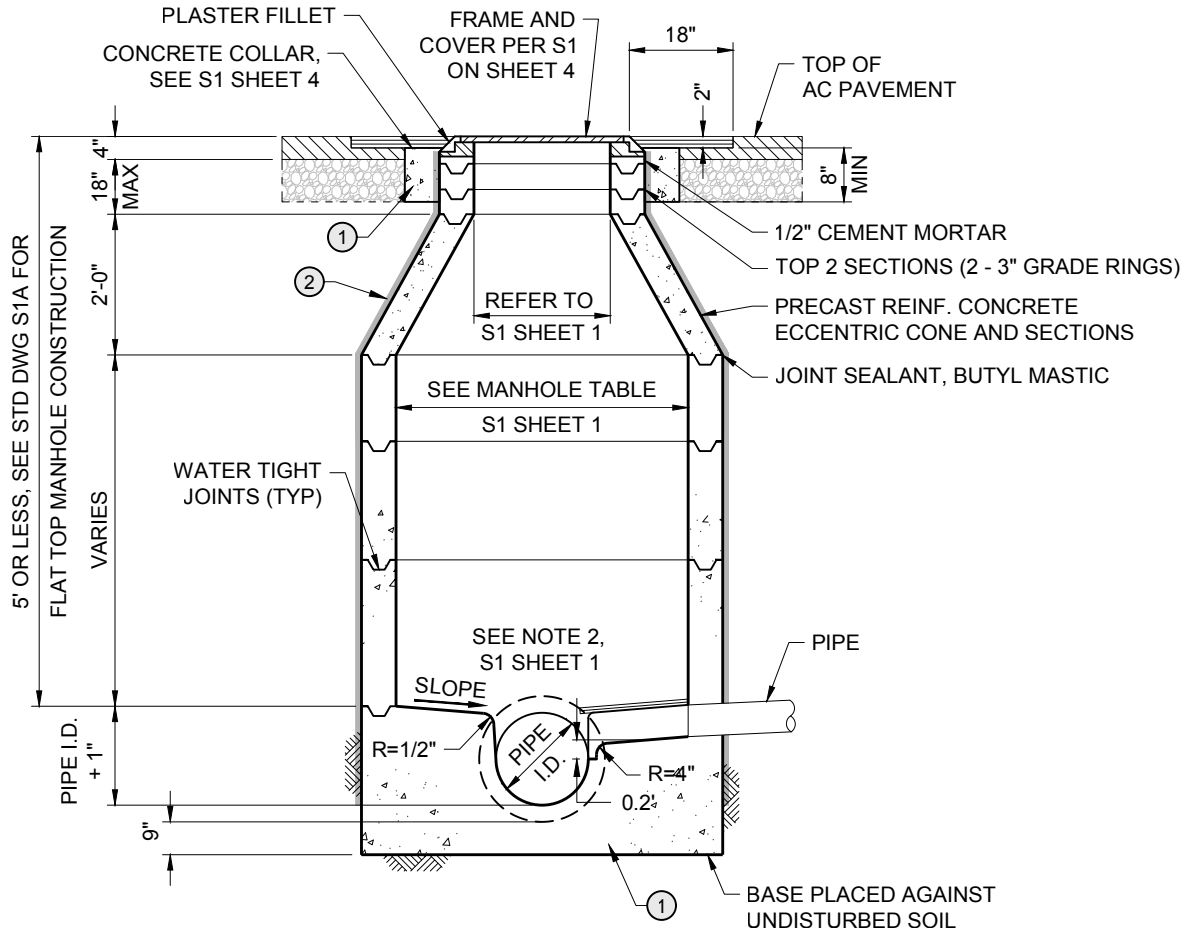
1. PROTECT AGAINST DEBRIS FALLING IN THE SEWER PER THE REQUIREMENTS OF S1 SHEET 5 AND 6.
2. THE CROWN ELEVATIONS OF ALL PIPES SHALL BE THE SAME AS THE CROWN ELEVATION OF THE LARGEST PIPE UNLESS OTHERWISE NOTED ON THE DRAWING.
3. FOR NEW MANHOLES, INSTALL BRICK PLUG IN CHANNEL OUTLET AND REMOVE WHEN CONSTRUCTION IS COMPLETE AT DIRECTION OF THE DISTRICT.
4. FOR REINFORCED CONCRETE MANHOLES, THE EXTERIORS SHALL HAVE APPLIED BACKROLL CARBOGUARD 1340 (100 PERCENT SOLIDS EPOXY PENETRATING PRIMER) OR EQUAL, 3 TO 5 MILS AND CARBOLINE CARBOGUARD 890 VOC OR EQUAL, 8 TO 10 MILS. IF DIRECTED BY ENGINEER, CONCRETE MANHOLES REQUIRING LINING SHALL BE LINED WITH SAUEREISEN SEWERGARD NO. 210 XB OR APPROVED EQUAL.
5. PRIOR TO ANY SEWER BEING PLACED INTO SERVICE, A HIGH DENSITY POLYETHYLENE MANHOLE COVER INSERT, MANUFACTURED BY FLOW IN FLOW, OR APPROVED EQUAL, SHALL BE INSTALLED ON THE MANHOLE RIM UNDER THE MANHOLE COVER IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. THE INSERT SHALL REMAIN IN PLACE UNTIL THE STREET IS CAP PAVED, AT WHICH TIME THE INSERT IS TO BE REMOVED FROM THE SYSTEM.

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SEWER MANHOLE STANDARD DRAWING S1 INDEX AND NOTES

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**TYPICAL SECTION
STANDARD 48", 60" & 72" MANHOLE**

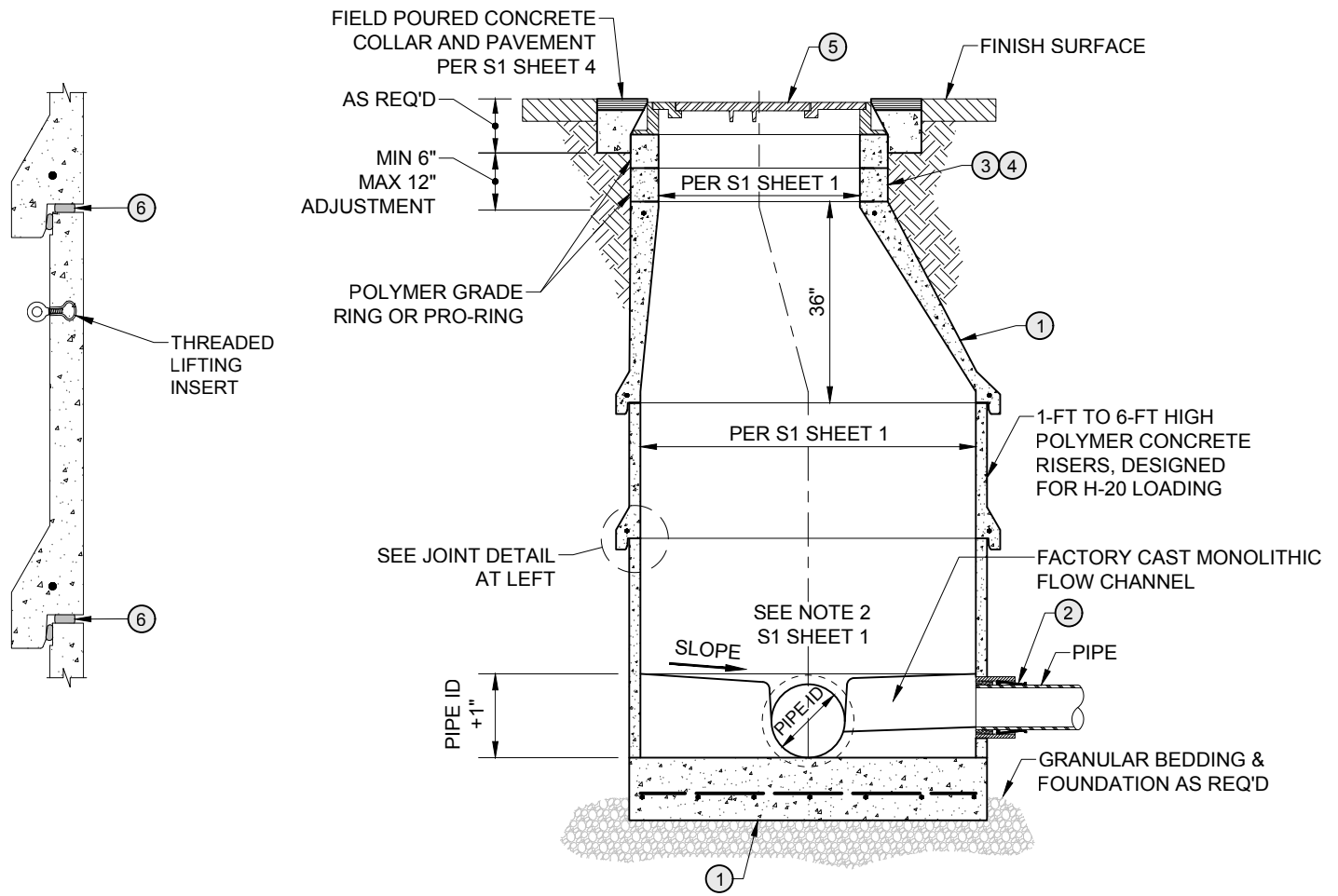
CONSTRUCTION ITEMS / MATERIALS LIST			
ITEM	SIZE AND DESCRIPTION	MANUFACTURER	MFR. CAT. NO. OR SPEC.
①	560-C-3250 CONCRETE	X	X
②	BACKROLL CARBOGUARD 1340 (100 PERCENT SOLIDS EPOXY PENETRATING PRIMER) OR EQUAL, 3 TO 5 MILS AND CARBOLINE CARBOGUARD 890 VOC OR EQUAL, 8 TO 10 MILS. INTERIORS REQUIRING LINING SHALL BE LINED WITH SAUERISEN SEWERGARD NO. 210 XB OR APPROVED EQUAL	X	X

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REINFORCED CONCRETE MANHOLE STANDARD DRAWING

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**TYPICAL SECTION
STANDARD POLYMER CONCRETE MANHOLE**

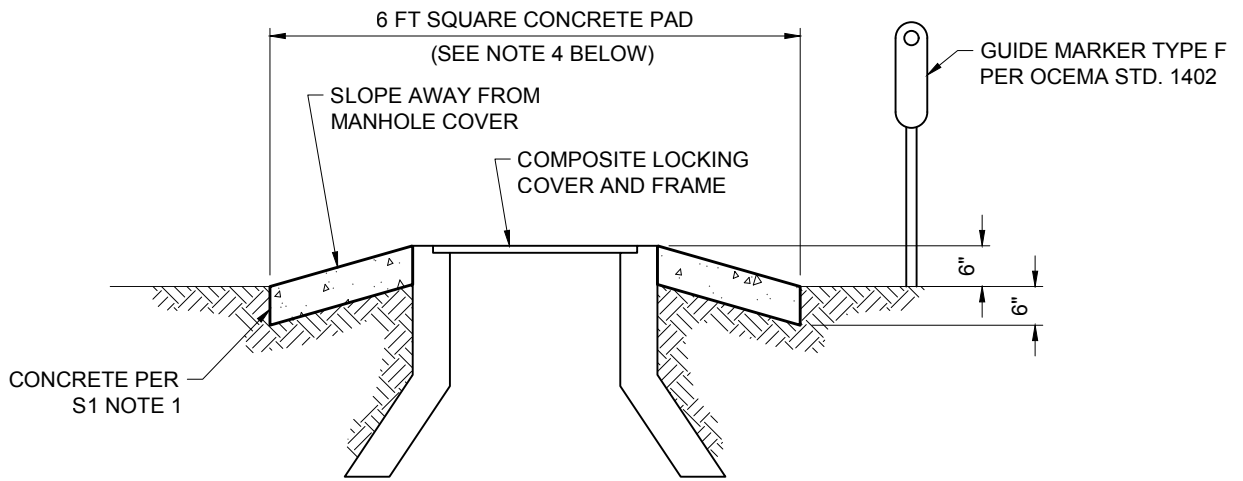
CONSTRUCTION ITEMS / MATERIALS LIST			
ITEM	SIZE AND DESCRIPTION	MANUFACTURER	MFR. CAT. NO. OR SPEC.
①	PRECAST POLYMER CONCRETE BASE, WALLS, & CONE WITH #5 FIBERGLASS REBAR MAT, WITH RISER SECTION	ARMOROCK OR APPROVED EQUAL	----
②	FLEXIBLE BOOT CONNECTOR PER ASTM C923	PRESS-SEAL, TRELLEBORG	----
③	PRECAST POLYMER GRADE RINGS, TAPERED AS NEEDED	CRETEX, ARMOROCK OR APPROVED EQUAL	PRO-RING OR EQUAL
④	ADHESIVE SEALANT (FOR GRADE RINGS)	M-1 ADHESIVE	----
⑤	COMPOSITE (LOCKING) 5-INCH FRAME HEIGHT, PER PROJECT DESIGN SEE S1 SHEET 4	EJ GROUP	24-INCH, 30-INCH, 36-INCH
⑥	JOINT SEALANT, BUTYL MASTIC	CONSEAL	----

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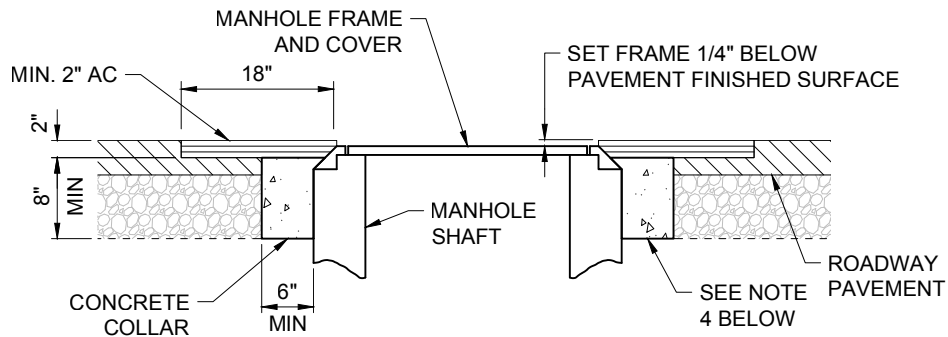
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POLYMER MANHOLE STANDARD DRAWING

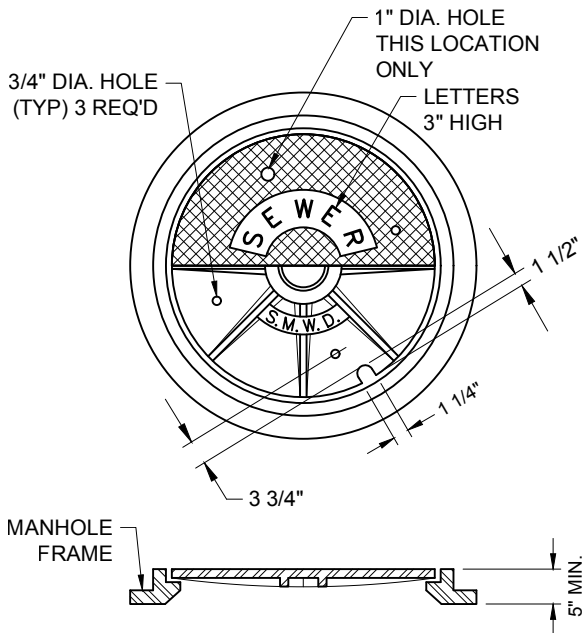
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TOP OF MANHOLE IN UNIMPROVED AREA



CONCRETE COLLAR DETAIL



MANHOLE FRAME AND COVER

FRAME AND COVER DETAIL TYPICAL FOR 48", 60", 72" AND MONITORING MANHOLES

NOTES:

1. UNLESS OTHERWISE SPECIFIED, REINFORCED CONCRETE MANHOLES SHALL HAVE CAST IRON FRAME AND COVER.
2. POLYMER MANHOLES SHALL HAVE COMPOSITE FRAME AND COVER, UNLESS OTHERWISE SPECIFIED.
3. AT LIFT STATIONS, FRAME AND COVER SHALL BE COMPOSITE RATED FOR [H2O LOADING].
4. ALL CAST IN PLACE CONCRETE SHALL BE CLASS 560-C-3250 W/ WIRE MESH.

PIPE SIZE	CAST IRON (1)		COMPOSITE (2)
	SOUTHBAY FOUNDRY	ALHAMBRA FOUNDRY	EJ GROUP
24-INCH	SBF 1254	A-1254	2600
30-INCH	SBF 1252	A-1252	3200
36-INCH	SBF 1325 (3PC)	A-1325 (3PC)	3800

- (1) ALTERNATE EQUAL CAST IRON LID ALLOWED ONLY AFTER DISTRICT APPROVAL.
- (2) PROVIDE TITUS TWISTLIFT SECURITY LOCKS.

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STANDARD DETAILS

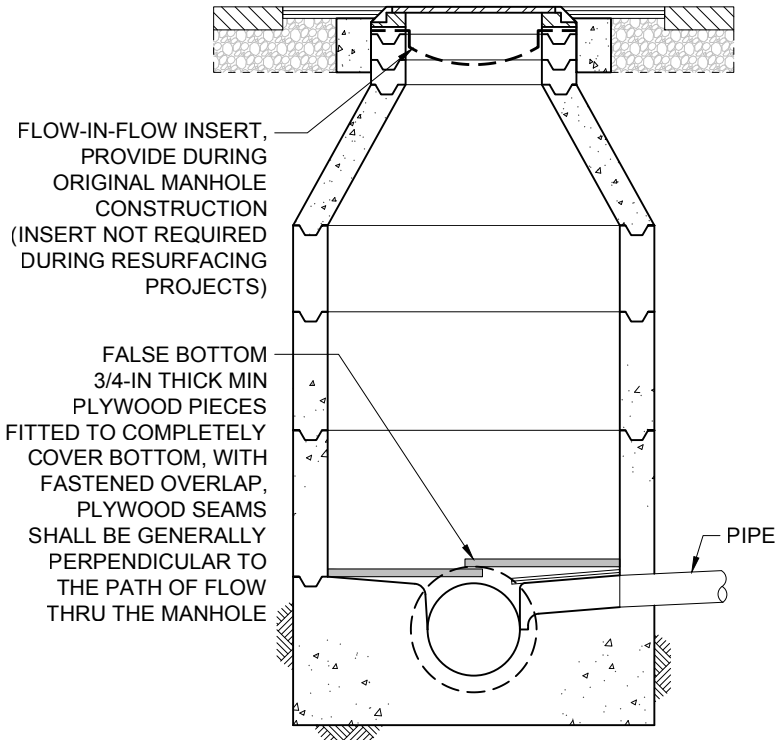
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NOTES: (Applies to manholes and valve cans during resurfacing projects)

1. DURING INITIAL CONSTRUCTION AND MODIFICATION OF EXISTING MANHOLES SUCH AS DURING PAVEMENT RESURFACING PROJECTS, THE CONTRACTOR IS REQUIRED TO IMPLEMENT MEASURES SPECIFIED HEREIN TO PREVENT DEBRIS AND CONSTRUCTION MATERIALS FROM ENTERING THE SEWER WHICH CAN CAUSE SEWER AND PUMP BLOCKAGES/SPILLS.
2. PROJECTS MODIFYING OR OCCURING WITHIN A DISTRICT EASEMENT REQUIRE AN ENCROACHMENT PERMIT FROM THE DISTRICT PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL PROTECT SEWER MAINLINES AND FACILITIES AND OTHER STRUCTURES BY CONSTRUCTING "FALSE BOTTOMS" AND IMPLEMENTING OTHER MEASURES SPECIFIED HEREIN, REMOVING TRAPPED DEBRIS DURING CONSTRUCTION, AND EVENTUALLY REMOVING FALSE BOTTOMS ONCE ALL CONSTRUCTION IS COMPLETED AND ACCEPTED BY THE DISTRICT
4. FALSE BOTTOMS SHALL BE CONSTRUCTED OF PLYWOOD:
 - MINIMUM 3/4-INCH THICK PLYWOOD
 - FREE OF DEFECTS SUCH AS PERFORATIONS, DELAMINATION, AND EXCESSIVE WARPING
 - COVER THE ENTIRE SHELF OF THE MANHOLE AS SHOWN ON S1 SHEET 6, CUT SUCH THAT THE PERIMETER FITS TO THE INTERIOR WALLS OF THE MANHOLE.
5. THE FALSE BOTTOM CAN CONSIST OF TWO PIECES OF PLYWOOD FASTENED TOGETHER TO PROVIDE COMPLETE COVERAGE OF THE AREA AND RIGID ENOUGH NOT TO DEFLECT AND NOT TO ALLOW DEBRIS TO PASS BELOW TO THE SEWER. ANY INTERNAL SEAMS SHALL BE GENERALLY PERPENDICULAR TO THE FLOW THROUGH THE MANHOLE. INDIVIDUAL PIECES OF THE FALSE BOTTOM SHALL HAVE A WIDTH AND LENGTH LARGER THAN THE MANHOLE INLET AND OUTLET PIPING.
6. THE CONTRACTOR SHALL PROVIDE A SUBMITTAL DETAILING THE PROPOSED MATERIALS AND PLACEMENT PROCEDURE FOR DISTRICT REVIEW AND APPROVAL BEFORE CONSTRUCTION.
7. FALSE BOTTOMS MUST BE PLACED IMMEDIATELY FOLLOWING THE INITIAL CONSTRUCTION OF THE MANHOLE OR BEFORE ANY MODIFICATION WORK BEGINS, AND SHALL BE INSPECTED BY THE DISTRICT. HOWEVER, IF THE MANHOLE HAS AN HDPE COVER INSERT OR IF IT HAS A BRICK AND MORTAR PLUG ON THE DOWNSTREAM END TO ENABLE PUMPING OF SEWAGE DURING CONSTRUCTION, THIS FALSE BOTTOM SYSTEM IS NOT NECESSARY.
8. THE CONTRACTOR SHALL REMOVE DEBRIS CAPTURED BY THE FALSE BOTTOM THROUGHOUT CONSTRUCTION AND SHALL REMOVE THE FALSE BOTTOM UPON COMPLETION OF ALL PROJECT WORK OR AS DIRECTED BY THE DISTRICT INSPECTOR.

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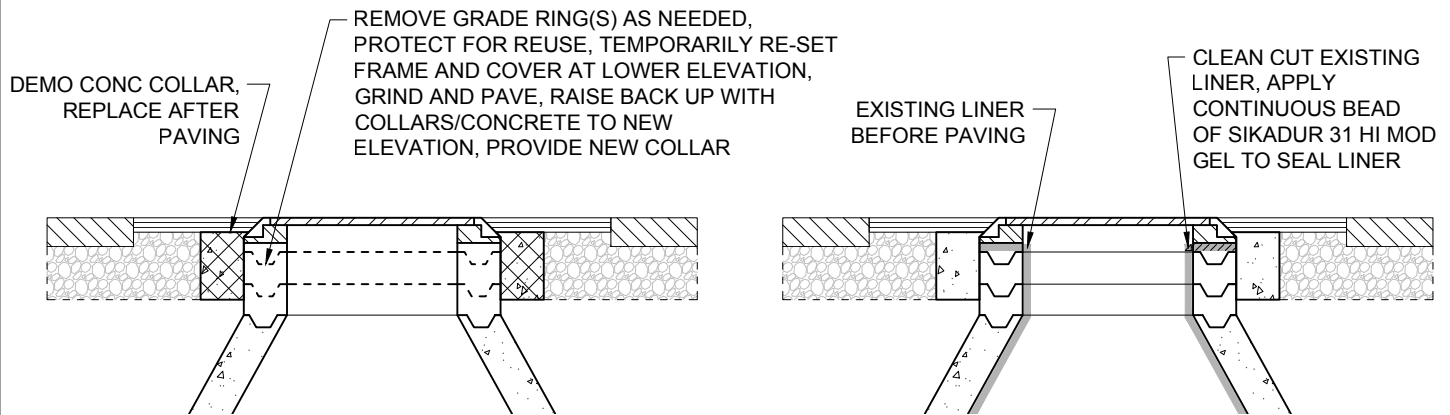
REVISION		DECEMBER 2021	<h3 style="margin: 0;">CONSTRUCTION AND PAVEMENT RESURFACING PROJECT NOTES</h3>	SMWD STD DWG NO.
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NOTES FOR PAVING PROJECTS:

1. TYING OFF OF ALL FACILITIES MUST BE DONE BEFORE WORK BEGINS.
2. SLURRY - COVER LID WITH CARDBOARD CUTOUT OR OTHER MATERIAL BEFORE SLURRY, REMOVE AFTER SLURRY.
3. RESURFACING WITH LOWERING FOR GRINDING. CITY, COUNTY OR HOMEOWNER'S ASSOCIATION HAS THE OPTION OF LOWERING THE MANHOLE TO ALLOW GRINDING, AND THEN RAISING TO FINAL GRADE AFTER RESURFACING. THE COST OF LOWERING IS THE RESPONSIBILITY OF THE CITY, COUNTY OR HOMEOWNER'S ASSOCIATION PER S1 SHEET 6 , DETAIL 1.

**DEBRIS PROTECTION
TYPICAL SECTION**



LOWER/RAISE METHOD

WITH LINER

DETAIL 1: PAVING PROJECT DETAILS

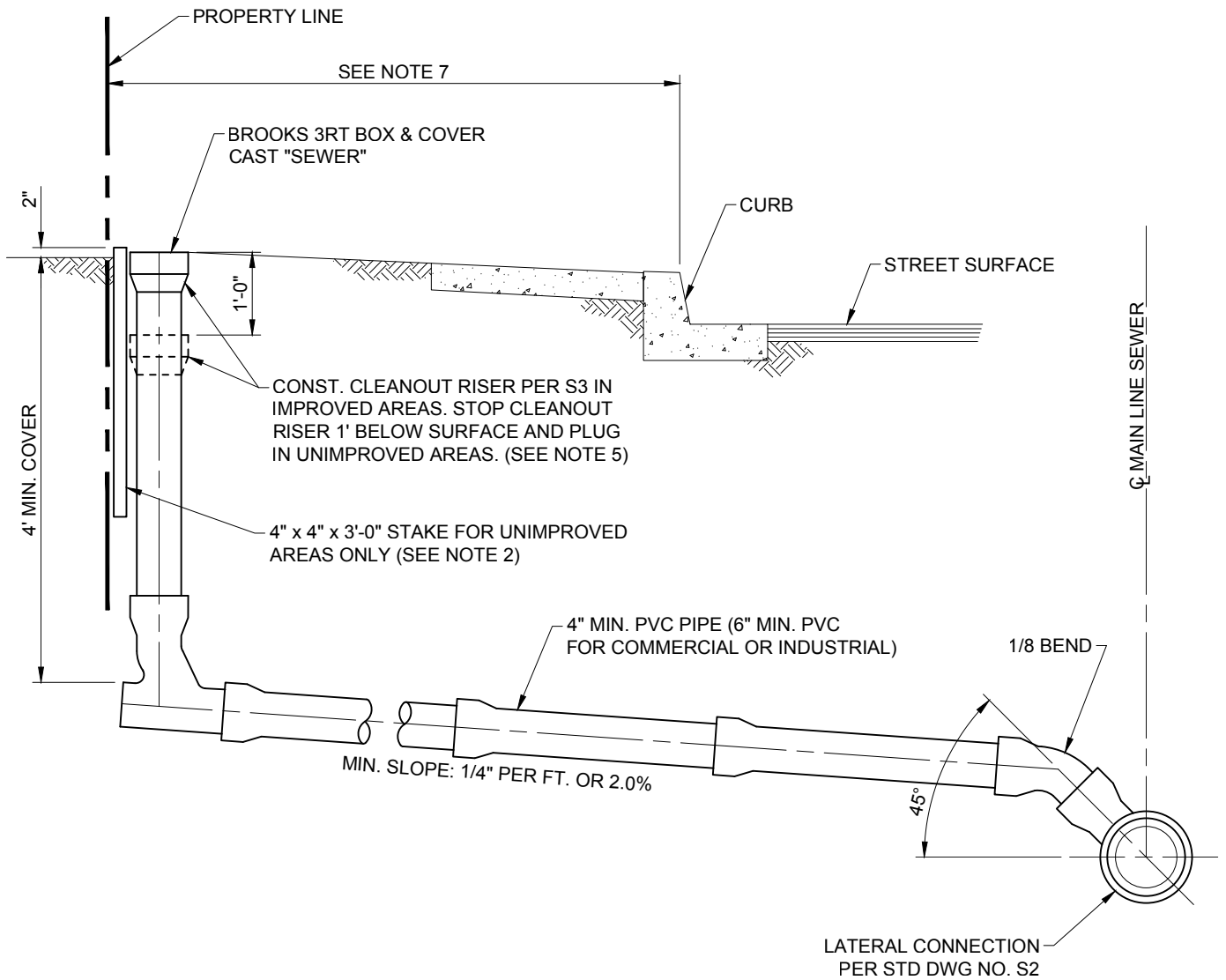
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**CONSTRUCTION AND PAVEMENT
RESURFACING DETAILS**

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NOTES

1. WHERE WYE IS INSTALLED WITHOUT HOUSE LATERAL, THE WYE SHALL BE PLUGGED WITH A PLUG OR NEOPRENE STOPPER.
2. LOCATE LATERAL WITH A 1 1/2" HIGH "S" CHISELED IN FACE OF CURB WHERE THE LATERAL CROSSES UNDER THE CURB. WHERE NO CURB EXISTS OR WHERE THE LATERAL ENDS 8' OR MORE BACK OF CURB, PLACE A 4" x 4" x 3'-0" STAKE EXTENDING 2" ABOVE FINISH GRADE OVER END OF HOUSE LATERAL.
3. ALL HOUSE LATERALS SHALL HAVE COMPRESSION TYPE JOINTS.
4. HOUSE CONNECTION SHALL BE VIDEO TAPED BY CONTRACTOR AND INSPECTED BY THE DISTRICT INSPECTOR.
5. CLEANOUT REQUIRED ON SINGLE FAMILY RESIDENTIAL UNITS AS SHOWN ON CONSTRUCTION DRAWINGS.
6. CUSTOMER IS REQUIRED TO MAINTAIN LATERAL TO THE SEWER MAINLINE. REPAIR OF BROKEN LATERALS BETWEEN THE MAINLINE AND THE PROPERTY LINE ARE DISTRICT RESPONSIBILITY.
7. CLEANOUT IS TO BE LOCATED AT THE PROPERTY LINE UNLESS SPECIFIED OTHERWISE ON THE CONSTRUCTION PLANS.

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HOUSE LATERAL

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