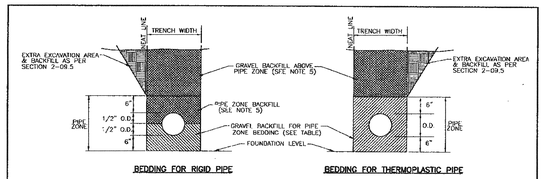


BEDDING FOR RIGID PIPE

BEDDING FOR THERMOPLASTIC PIPE

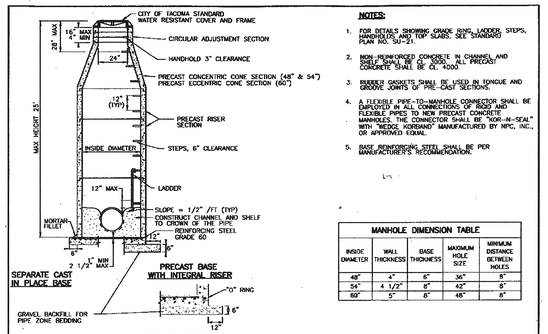
GRAVEL BACKFILL FOR PIPE ZONE BEDDING	
SIEVE SIZE	PERCENT PASSING
3/4" SQUARE	100
3/8" SQUARE	95-100
U.S. NUMBER 8	0-10
U.S. NUMBER 200	0-3
SAND EQUIVALENT	35 MINIMUM

NOTES:

1. PROVIDE UNIFORM SUPPORT UNDER BARREL.
2. HAND TAMP UNDER HAUNCHES.
3. COMPACT BEDDING AND BACKFILL MATERIAL TO 95% MAX. DENSITY EXCEPT DIRECTLY OVER PIPE. HAND TAMP ONLY.
4. TRENCH WIDTH SHALL BE AS SPECIFIED IN SECTION 2-09.4 OF THE STANDARD SPECIFICATIONS.
5. SEE STANDARD SPECIFICATION SECTION 9-03.12(2) FOR MATERIAL REQUIREMENTS ON "PIPE ZONE BACKFILL" AND FOR "BACKFILL ABOVE PIPE ZONE".

CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION	PIPE BEDDING AND BACKFILL FOR SANITARY AND STORM SEWERS
	CITY ENGINEER 3/4/03 DATE	STANDARD PLAN NO. SU-16

CITY OF TACOMA STD PLAN NO. SU-16
PIPE BEDDING & BACKFILL
NTS
1/5



SEPARATE PRECAST BASE

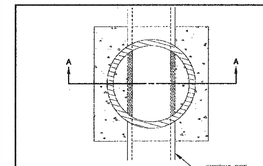
NOTES:

1. FOR DETAILS SHOWING GRADE RING, LADDER, STEPS, HANDHOLDS AND TOP SLABS: SEE STANDARD PLAN NO. SU-21.
2. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE OF 3000 PSI. ALL PRECAST CONCRETE SHALL BE CL. 4000
3. RUBBER GASKETS SHALL BE USED IN TONGUE AND GROOVE JOINTS OF PRE-CAST SECTIONS.
4. A FLEXIBLE PIPE-TO-MANHOLE CONNECTOR SHALL BE EMPLOYED IN ALL CONNECTIONS OF RIGID AND FLEXIBLE PIPES TO NEW PRECAST CONCRETE MANHOLES. THE CONNECTOR SHALL BE "KOR-N-SEAL" WITH "MEDIUM KORBAND" MANUFACTURED BY NPC, INC., OR APPROVED EQUAL.
5. BASE REINFORCING STEEL SHALL BE PER MANUFACTURER'S RECOMMENDATION.

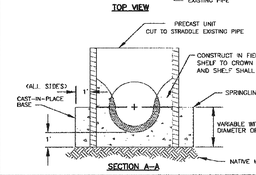
MANHOLE DIMENSION TABLE				
INSIDE DIAMETER	WALL THICKNESS	BASE THICKNESS	MAXIMUM HOLE SIZE	MINIMUM DISTANCE BETWEEN HOLES
48"	4"	6"	36"	8"
54"	4 1/2"	8"	42"	8"
60"	5"	8"	48"	8"

CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION	MANHOLE-TYPE 1 48", 54" AND 60"
	CITY ENGINEER 12/4/03 DATE	STANDARD PLAN NO. SU-17

CITY OF TACOMA STD PLAN NO. SU-17
MANHOLE TYPE 1
NTS
2/5



TOP VIEW



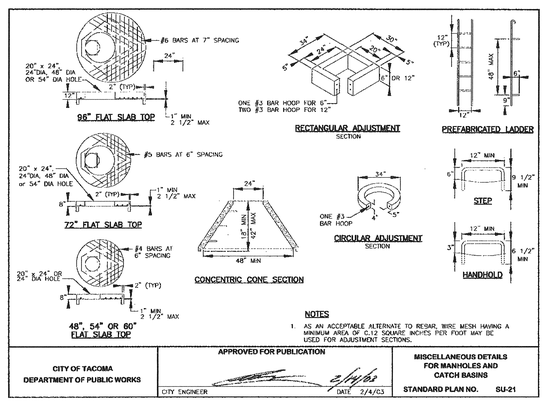
SECTION A-A

NOTES:

1. EXISTING PIPE SHALL BE SUPPORTED AT ALL TIMES.
2. NO WEIGHT OF THE PRECAST UNIT SHALL BEAR ON THE EXISTING PIPE.
3. CONCRETE FOR CAST-IN-PLACE BASE SHALL BE CLASS 4000.
4. CAST-IN-PLACE BASE SHALL BE POURED TO ENCASE THE PRECAST UNIT.
5. PRECAST MANHOLE SECTION SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARD PLAN FOR THE SPECIFIED MANHOLE SIZE AND TYPE.
6. ADDITIONAL MANHOLE SECTIONS SHALL NOT BE INSTALLED UNTIL CONCRETE BASE HAS SET FOR 12 HOURS.
7. THE EXISTING MAIN SHALL BE LEFT IN PLACE AND THE TOP PORTION OF THE MAIN SHALL BE REMOVED. THE BOTTOM PORTION SHALL BE TIED IN AS THE CHANNEL OF THE NEW MANHOLE.
8. GROUT ALL OPENINGS TO ENSURE WATER TIGHT STRUCTURE.

CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION	CAST-IN-PLACE MANHOLE BASE
	CITY ENGINEER 2/4/03 DATE	STANDARD PLAN NO. SU-20

CITY OF TACOMA STD PLAN NO. SU-20
CIP MANHOLE BASE
NTS
3/5

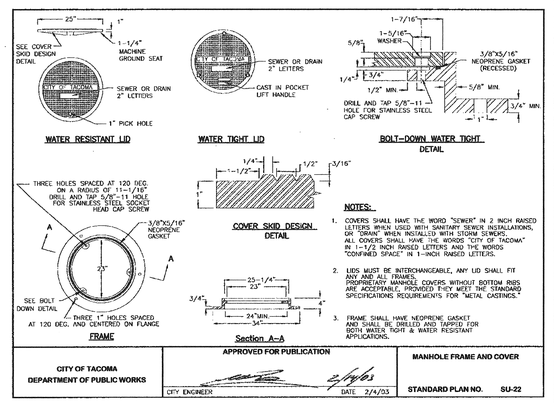


NOTES

1. AS AN ACCEPTABLE ALTERNATE TO REBAR, WIRE MESH HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED FOR ADJUSTMENT SECTIONS.

CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION	MISCELLANEOUS DETAILS FOR MANHOLES AND CATCH BASINS
	CITY ENGINEER 2/4/03 DATE	STANDARD PLAN NO. SU-21

CITY OF TACOMA STD PLAN NO. SU-21
MISC DETAILS FOR MANHOLES
NTS
4/5

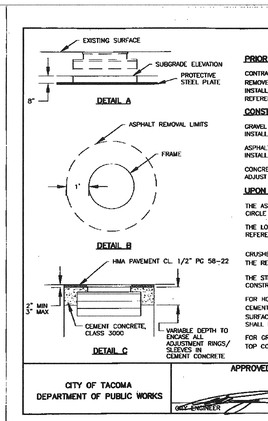


NOTES:

1. COVERS SHALL HAVE THE WORD "SEWER" IN 2 INCH RAISED LETTERS WHEN USED WITH SANITARY SEWER INSTALLATIONS, OR "DRAIN" WHEN INSTALLED WITH STORM SEWERS. ALL COVERS SHALL HAVE THE WORDS "CITY OF TACOMA" IN 1-1/2 INCH RAISED LETTERS AND THE WORDS "CONFINED SPACE" IN 1-INCH RAISED LETTERS.
2. LIDS MUST BE INTERCHANGEABLE, ANY LID SHALL FIT ANY AND ALL FRAMES. PROPRIETARY MANHOLE COVERS WITHOUT BOTTOM RIBS ARE ACCEPTABLE, PROVIDED THEY MEET THE STANDARD SPECIFICATIONS REQUIREMENTS FOR "METAL CASTINGS."
3. FRAME SHALL HAVE NEOPRENE GASKET AND SHALL BE DRILLED AND TAPPED FOR BOTH WATER TIGHT & WATER RESISTANT APPLICATIONS.

CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION	MANHOLE FRAME AND COVER
	CITY ENGINEER 2/4/03 DATE	STANDARD PLAN NO. SU-22

CITY OF TACOMA STD PLAN NO. SU-22
MANHOLE FRAME AND COVER
NTS
5/5



PROGRESSION OF WORK

PRIOR TO EXCAVATING OR RESURFACING:

CONTRACTOR SHALL:
REMOVE FRAME AND RISERS TO A DEPTH 8-INCHES BELOW SUBGRADE.
INSTALL STEEL PROTECTIVE PLATE IN ACCORDANCE WITH DETAIL A.
REFERENCE THE LOCATION OF THE UTILITY STRUCTURE.

CONSTRUCTION OF SURFACING:

GRAVEL SURFACING:
INSTALL BASE MATERIALS AND GRAVEL OVER PROTECTIVE STEEL PLATE.

ASPHALT SURFACING:
INSTALL BASE MATERIALS AND ASPHALT OVER PROTECTIVE STEEL PLATE.

CONCRETE SURFACING:
ADJUST FRAME AND GRATE TO FINAL GRADE PRIOR TO PLACING CONCRETE SURFACING.

UPON COMPLETION OF SURFACING:

THE ASPHALT CONCRETE PAVEMENT OR GRAVEL SURFACING SHALL BE REMOVED IN A NEAT CIRCLE IN ACCORDANCE WITH DETAIL B.

THE LOCATION OF THE ASPHALT OR GRAVEL REMOVAL SHALL BE BASED UPON THE REFERENCE LOCATION ESTABLISHED BY THE CONTRACTOR.

CRUSHED SURFACING AND BASE MATERIALS SHALL BE REMOVED AND DISPOSED OF TO ALLOW THE REMOVAL OF THE STEEL PROTECTIVE PLATE.

THE STRUCTURE SHALL BE ADJUSTED TO FINISH GRADE UTILIZING THE SAME METHODS OF CONSTRUCTION AS SPECIFIED FOR NEW CONSTRUCTION IN SECTION 7-05.

FOR HOT MIX ASPHALT, THE AREA SHALL THEN BE BACKFILLED WITH CLASS 3000 CEMENT CONCRETE TO AN ELEVATION OF 2 TO 3 INCHES BELOW THE FINISHED PAVEMENT SURFACE. 24-HOURS AFTER PLACING THE CONCRETE, HMA PAVEMENT CL. 1/2" PG 58-22 SHALL BE PLACED IN ACCORDANCE WITH STANDARD PLAN NO. SU-15.

FOR GRAVEL SURFACES, THE AREA SHALL THEN BE BACKFILLED WITH CRUSHED SURFACING TOP COURSE AND COMPACTED.

CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION	UTILITY ADJUSTMENT
	DEPUTY CITY ENGINEER 2/4/03 DATE	STANDARD PLAN NO. SU-25

CITY OF TACOMA STD PLAN NO. SU-25
UTILITY ADJUSTMENT
NTS
6/5

PLOTTED BY: cuivard DATE & TIME: Sep 24, 2008 - 1:12pm FILE: I:\108-1\108097 Multicare ED\Design\CAD\Dwgs\C07 WD STD DETAILS.dwg

kpff Consulting Engineers
1201 Pacific Avenue, Suite 800
Tacoma, Washington 98402
(253) 396-0150 Fax (253) 396-0162

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

NO	REVISION	DATE	APPD

FINAL CONSTRUCTION REVISED CHECKED BY DATE FIELD BOOKS

DATE 9/26/08 | SCALE AS SHOWN
DESIGNED ABO | CHECKED SWK
DRAWN REB | FILE NAME

STEPHEN WADE KINGSLEY — STATE OF WASHINGTON — 19161 — REGISTERED PROFESSIONAL ENGINEER — 10/31/08

CITY OF TACOMA
DEPARTMENT OF PUBLIC WORKS
CONSTRUCTION DIVISION

MULTICARE MEDICAL CENTER
EMERGENCY DEPARTMENT & CANCER CARE CENTER EXPANSION
CITY OF TACOMA STANDARD PLANS

SHEET NO. SHEET 8 OF 9