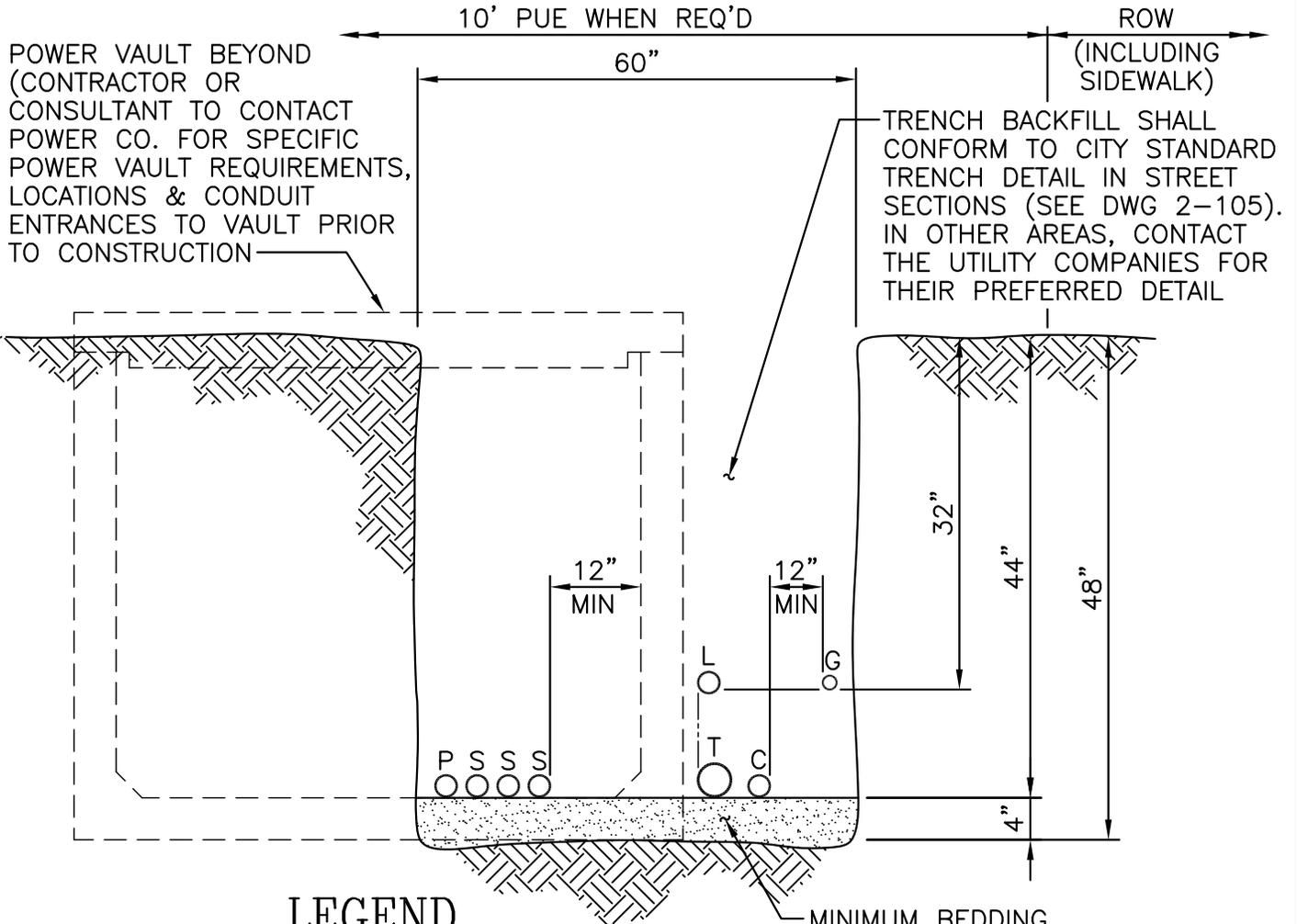


COMMON UTILITY TRENCH



LEGEND

G - NATURAL GAS	L - STREET LIGHTS
C - CABLE TELEVISION	P - PRIMARY POWER
T - TELEPHONE	S - SECONDARY POWER

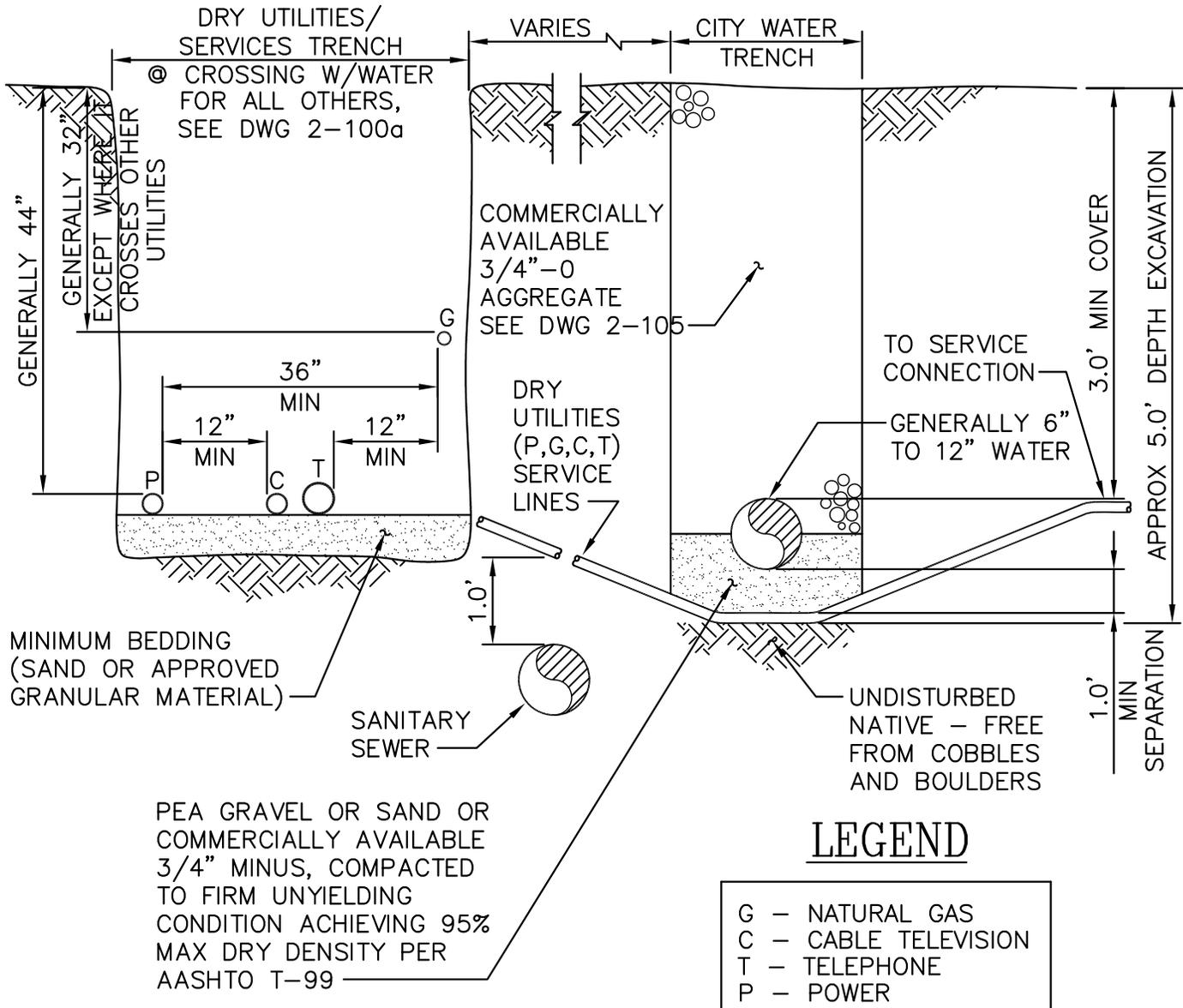
NOTES:

1. COMMON TRENCH IS TO BE LOCATED BEHIND THE BACK OF SIDEWALK. IN MOST CASES, A PUBLIC UTILITY EASEMENT WILL BE REQUIRED.
2. ALL SAND MUST PASS THROUGH A NO. 10 SIEVE.
3. THE DEVELOPER SHALL HAVE HIS/HER CONSULTANT CONDUCT A PREDESIGN MEETING WITH CITY ENGINEERING AND ALL UTILITY COMPANIES/AGENCIES INVOLVED PRIOR TO SUBMITTING CONSTRUCTION PLANS TO CITY ENGINEERING.

CITY OF KLAMATH FALLS

MK	Date	Revision:	<h2 style="margin: 0;">COMMON UTILITY TRENCH</h2> <p style="margin: 0;">FOR DEVELOPMENT WITHIN THE CITY OF KLAMATH FALLS</p>	Drwn. By: GDG
4	6/06	4th EDITION	Approved By: <u>Mark Willrett</u>	Date: 1/2002
3	8/05	3rd EDITION		Drwg. No.: 2-100a
2	6/05	3rd EDITION		
1	6/04	2nd EDITION		

SERVICE UTILITIES CROSSING CITY UTILITIES



NOTES:

1. COMMON TRENCH IS TO BE LOCATED BEHIND THE BACK OF SIDEWALK. IN MOST CASE, A PUBLIC UTILITY EASEMENT WILL BE REQUIRED.
2. ALL SAND MUST PASS THROUGH A NO. 10 SIEVE.
3. THE DEVELOPER SHALL HAVE HIS/HER CONSULTANT CONDUCT A PREDESIGN MEETING WITH CITY ENGINEERING AND ALL UTILITY COMPANIES/AGENCIES INVOLVED PRIOR TO SUBMITTING CONSTRUCTION PLANS TO CITY ENGINEERING.

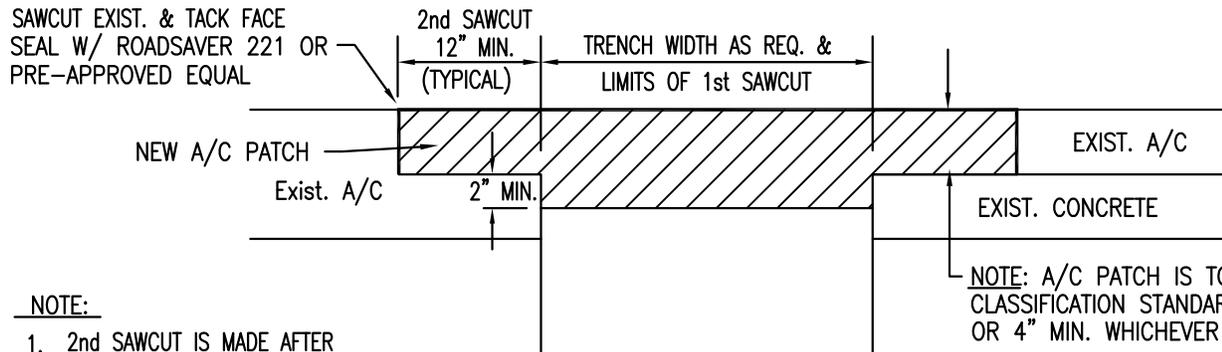
CITY OF KLAMATH FALLS

MK	Date	Revision:
1	6/05	3rd EDITION

SERVICE UTILITIES CROSSING CITY UTILITIES

Approved By: Mike Kuenzi

Drwn. By: WEM
Date: 6/2005
Drwg. No.: **2-100b**



NOTE:

1. 2nd SAWCUT IS MADE AFTER TRENCH HAS BEEN BACKFILLED PER TRENCH SECTION BELOW.
2. CUTS INTO EXISTING STREETS REQUIRES TRAVEL LANE TO BE REPAVED
3. IF CUT IS WITHIN 24" OF THE CURB, ASPHALT SHALL BE REMOVED AND REPLACED TO CURB

NOTE: A/C PATCH IS TO BE STREET CLASSIFICATION STANDARD THICKNESS OR 4" MIN. WHICHEVER IS GREATER

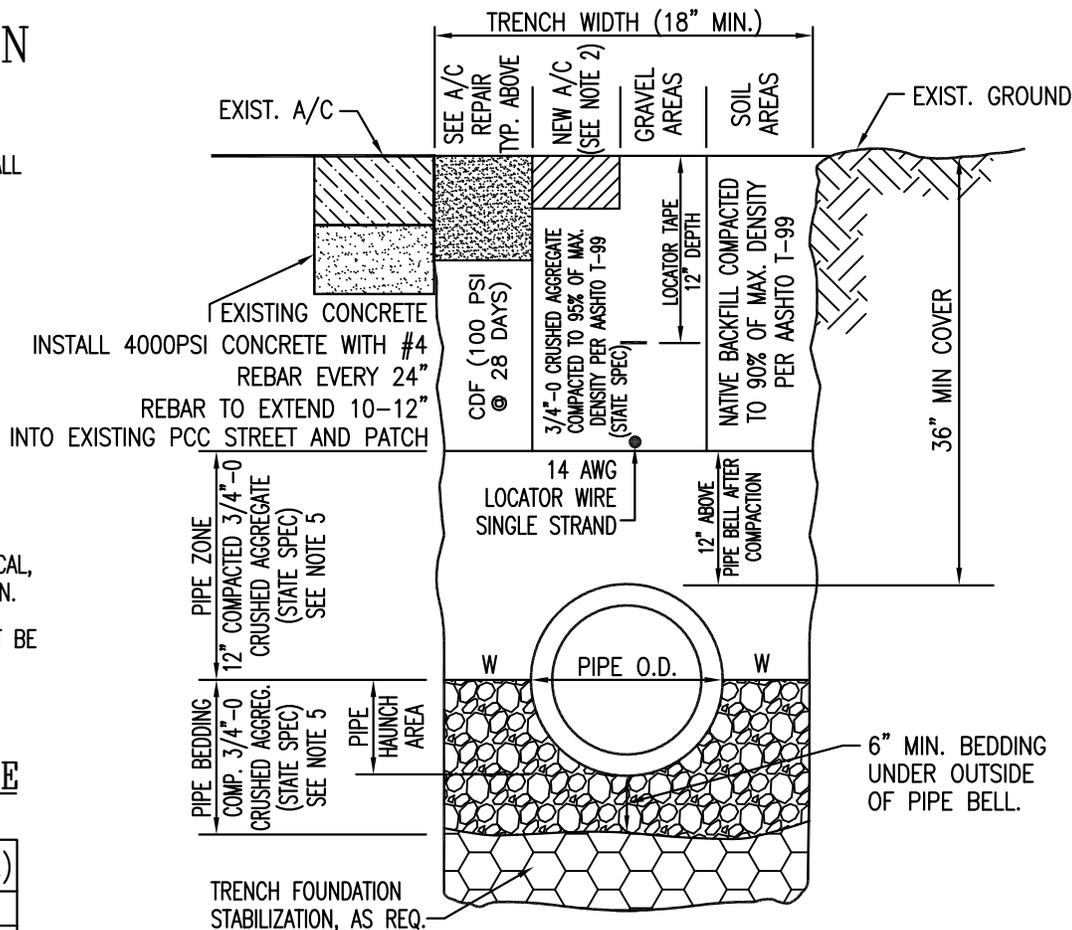
TYPICAL "T TRENCH"

CONSTRUCTION NOTES:

1. ALL WORK & MATERIALS SHALL CONFORM TO THE MOST CURRENT EDITION OF THE CITY OF KLAMATH FALLS STANDARD DRAWINGS.
2. ASPHALT DEPTH PER THE DESIGN PLANS.
3. BEDDING & PIPE ZONE MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY PER AASHTO, T-99.
4. TESTING-INTERNAL, 3' VERTICAL, 50' LENGTH WITH 2 TEST MIN.
5. CRUSHER REJECT SHALL NOT BE ACCEPTED AS A SUBSTITUTE FOR 3/4"-0" STATE SPEC CRUSHED AGGREGATE.

SIDEWALL CLEARANCE EXCLUDING SHORING

PIPE SIZE	W(Min.-Max.)
0 - 6"	6" - 12"
8" - 24"	8" - 12"
27" - 60"	12" - 18"
Over 60"	18" - 21"



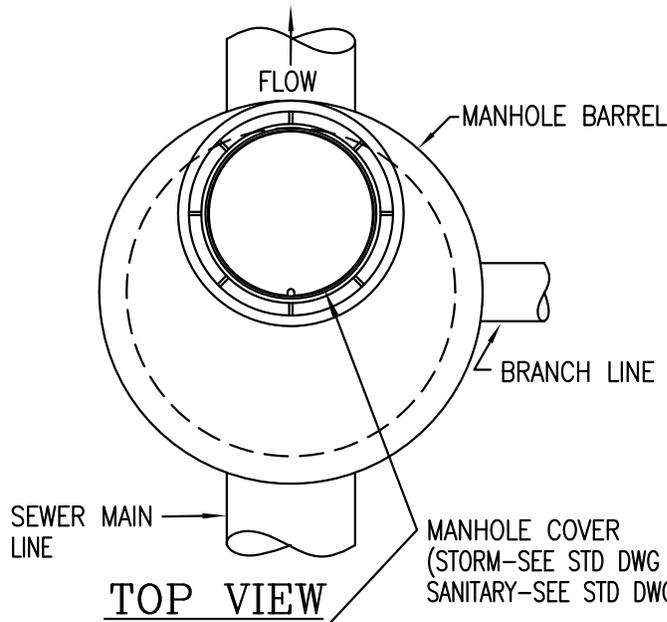
CITY OF KLAMATH FALLS

TRENCH SECTION

Date	Revision:
3/10	5th EDITION
6/06	4th EDITION
6/04	2nd EDITION

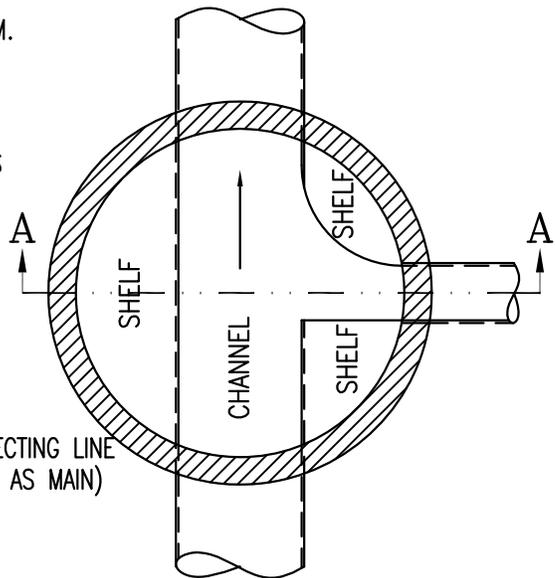
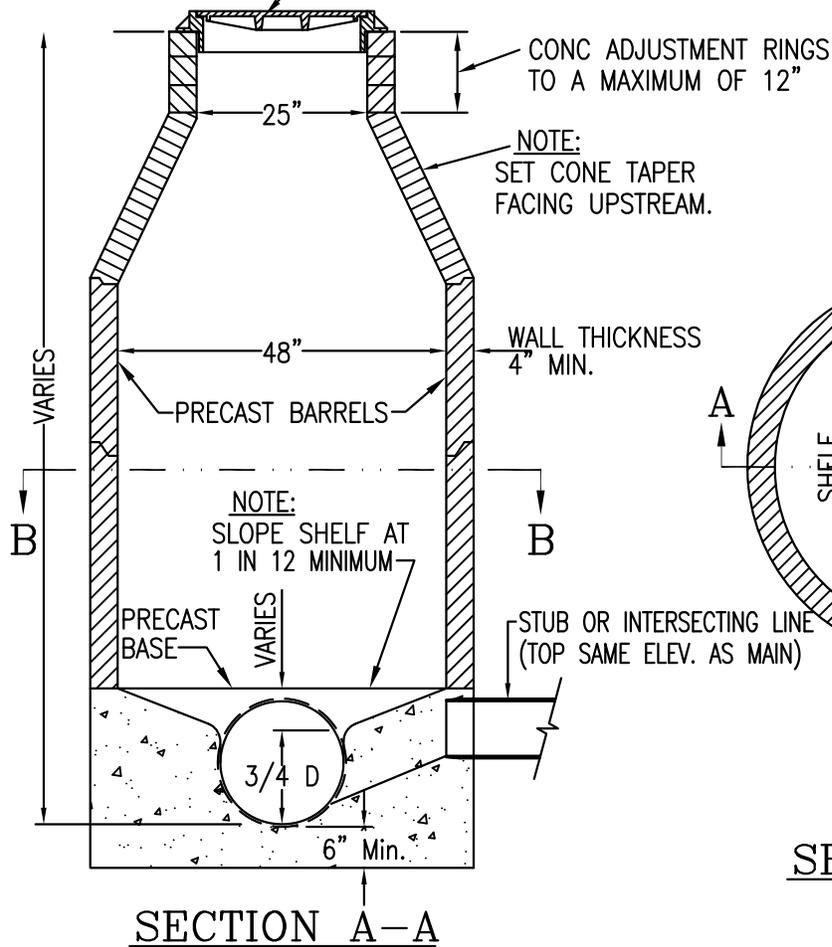
Approved By: Don Wilcox

Drwn. By: GDG
 Date: 1/2002
 Drwg. No.: **2-105**



CONSTRUCTION NOTES:

1. PAY ITEM FOR STANDARD MANHOLE INCLUDES ADJUSTMENT TO GRADE PER STANDARD DRAWING NO. 8-235 AFTER PAVEMENT IS PLACED.
2. MANHOLE RINGS AND BASE SHALL BE PRECAST PER THE APPLICABLE SECTION OF APWA, DIVISION 306.
3. MANHOLE COUPLINGS ARE TO BE THE SAME SIZE AND MATERIAL AS THE PIPE IN THE ADJACENT TRENCH AND INSTALLED WITH WATER STOP AND STAINLESS STEEL BANDS AT THE TIME OF FABRICATION.
4. PIPE STUBOUTS FOR FUTURE SEWER CONNECTION SHALL BE SEALED WITH THE APPROPRIATE WATER TIGHT PLUG.



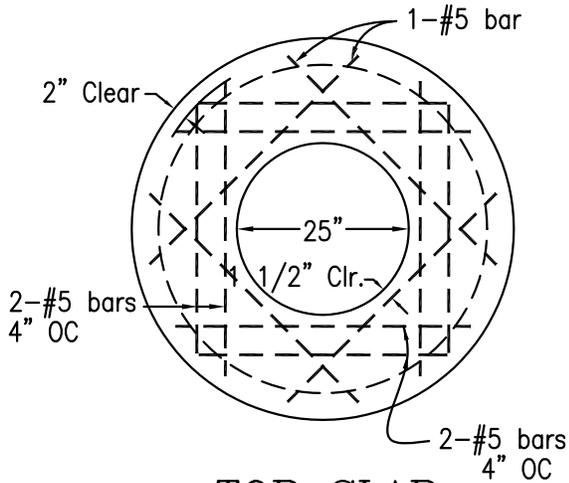
CITY OF KLAMATH FALLS

STANDARD MANHOLE

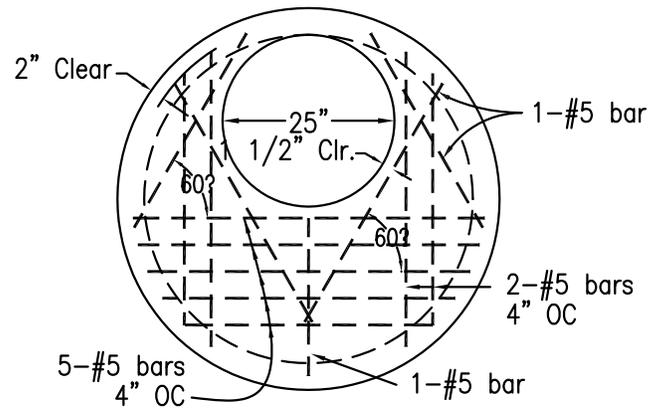
Date	Revision:
2 3/10	5th EDITION
1 6/06	4th EDITION

Approved By: Don Wilcox

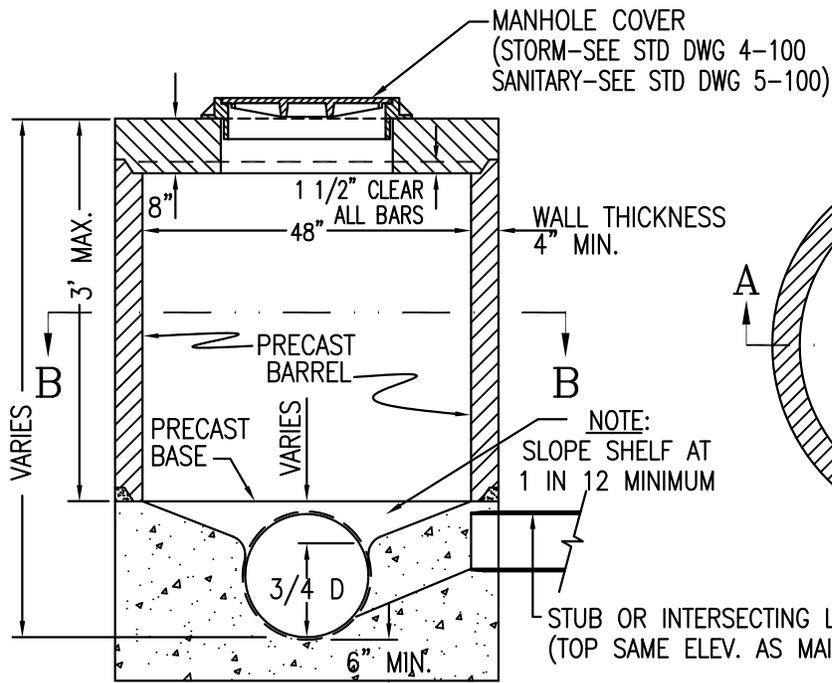
Drwn. By: GDG
 Date: 1/2002
 Drwg. No.: **2-110**



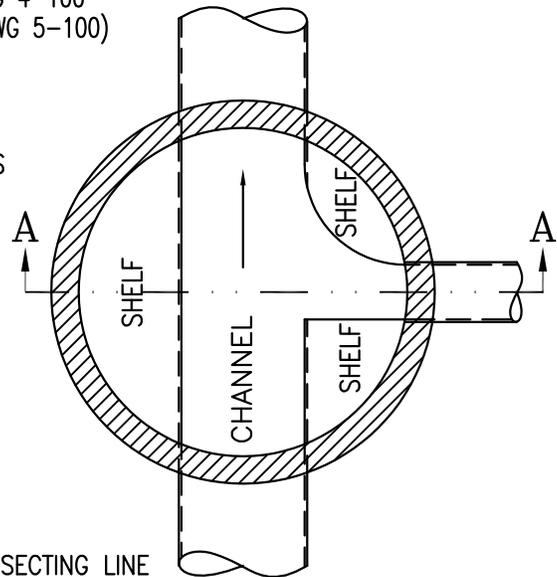
TOP SLAB



OPTIONAL TOP SLAB
(OFFSET RING & COVER)



SECTION A-A



SECTION B-B

CONSTRUCTION NOTES:

1. PAY ITEM FOR STANDARD MANHOLE INCLUDES ADJUSTMENT TO GRADE PER STANDARD DRWG. NO. 8-235 AFTER PAVEMENT IS PLACED.
2. MANHOLE BARRELS AND BASE SHALL BE PRECAST PER THE APPLICABLE SECTION OF A.P.W.A., DIVISION 306.
3. MANHOLE COUPLINGS ARE TO BE THE SAME SIZE AND MATERIAL AS THE PIPE IN THE ADJACENT TRENCH AND INSTALLED WITH WATER STOP AND STAINLESS STEEL BANDS AT THE TIME OF FABRICATION.
4. PIPE STUBOUTS FOR FUTURE SEWER CONSTRUCTION SHALL BE SEALED WITH THE APPROPRIATE WATERTIGHT PLUG.

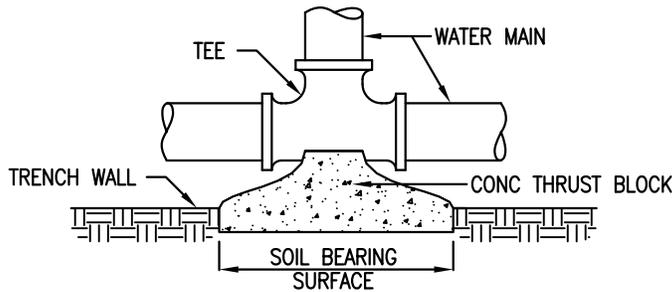
CITY OF KLAMATH FALLS

MK	Date	Revision:

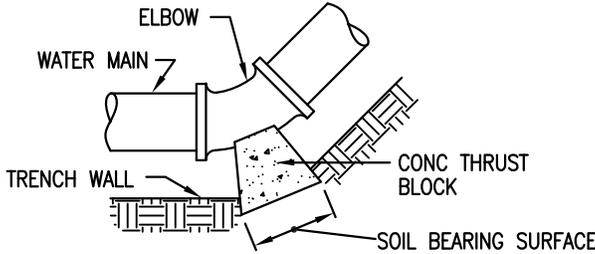
STANDARD FLAT
TOP MANHOLE

Approved By: Mike Kuenzi

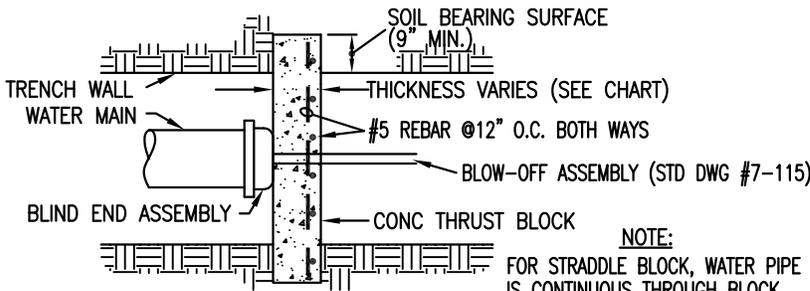
Drwn. By: GDG
Date: 1/2002
Drwg. No.: **2-115**



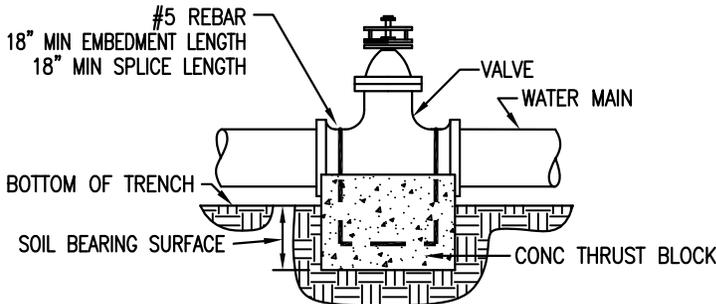
TEE - PLAN VIEW



ELBOW - PLAN VIEW



BLIND END ASSEMBLY - PLAN VIEW



VALVE - ELEVATION VIEW

THRUST BLOCK SCHEDULE

PIPE SIZE	MAXIMUM SOIL BEARING CAP. (1000 lb/SF)	BLIND END OR TEE OR VALVE	REQUIRED SOIL BEARING AREA (SF)				
			ELBOWS				
			90°	to 45°	45° to 22 1/2°	22° to 11 1/4°	
4"	10 4 2 1	1 1 2 4	1 2 3 6	1 1 2 4	1 1 1 2	1 1 1 2	
6"	10 4 2 1	1 2 4 9	1 3 7 13	1 2 4 8	1 1 2 4	1 1 2 4	
8"	10 4 2 1	2 4 8 15	2 6 11 22	1 3 6 13	1 2 3 7	1 2 3 7	
10"	10 4 2 1	3 6 12 24	4 9 18 36	2 5 10 20	1 3 5 11	1 3 5 11	
12"	10 4 2 1	3 9 17 35	5 12 25 50	3 7 13 27	1 3 7 14	1 3 7 14	
14"	10 4 2 1	5 12 24 47	7 17 34 68	4 9 19 38	2 5 10 20	2 5 10 20	
16"	10 4 2 1	6 15 30 61	9 23 45 90	5 13 25 51	3 7 14 27	3 7 14 27	
18"	10 4 2 1	9 21 43 86	11 28 56 113	6 16 32 63	3 8 16 33	3 8 16 33	
20"	10 4 2 1	11 27 54 108	15 38 75 151	8 21 42 83	4 11 21 43	4 11 21 43	
SOIL DESCRIPTION	10	HARD, SOUND SHALE				NOTE: CHART BASED ON 225 PSI PRES	
	4	SAND AND GRAVEL, CEMENTED WITH CLAY - HARD TO PICK					
	2	SAND AND MEDIUM CLAY, CAN BE SPADED					
	1	SOFT CLAY					

BLOCK THICKNESS

SIZE OF MAIN	THICKNESS OF BLOCK	SIZE OF MAIN	THICKNESS OF BLOCK
4"	12"	12"-14"	30"
6"	18"	16"-20"	36"
8"-10"	24"		

CONSTRUCTION NOTES

1. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. (SEE STD. DWG. 8-100 FOR CONC. SPECS)
2. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL.
3. CONCRETE SHALL NOT BE PLACED AROUND BOLTS OR BELLS.
4. INSTALL APPROVED ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE.
5. SOME FORM WORK MAY BE REQUIRED, AS DETERMINED BY THE ENGINEER, FOR PROPER BEARING, SHAPE AND/OR CONTAINMENT.
6. CONCRETE MIX SHALL BE STIFF, 3" TO 4" SLUMP.
7. FORMWORK SHALL NOT BE LEFT IN TRENCH AFTER CONCRETE HAS SET OR AFTER BACKFILL.
8. UTILITIES CROSSING A THRUST BLOCK REQUIRE A MINIMUM OF ONE-FOOT CLEARANCE.

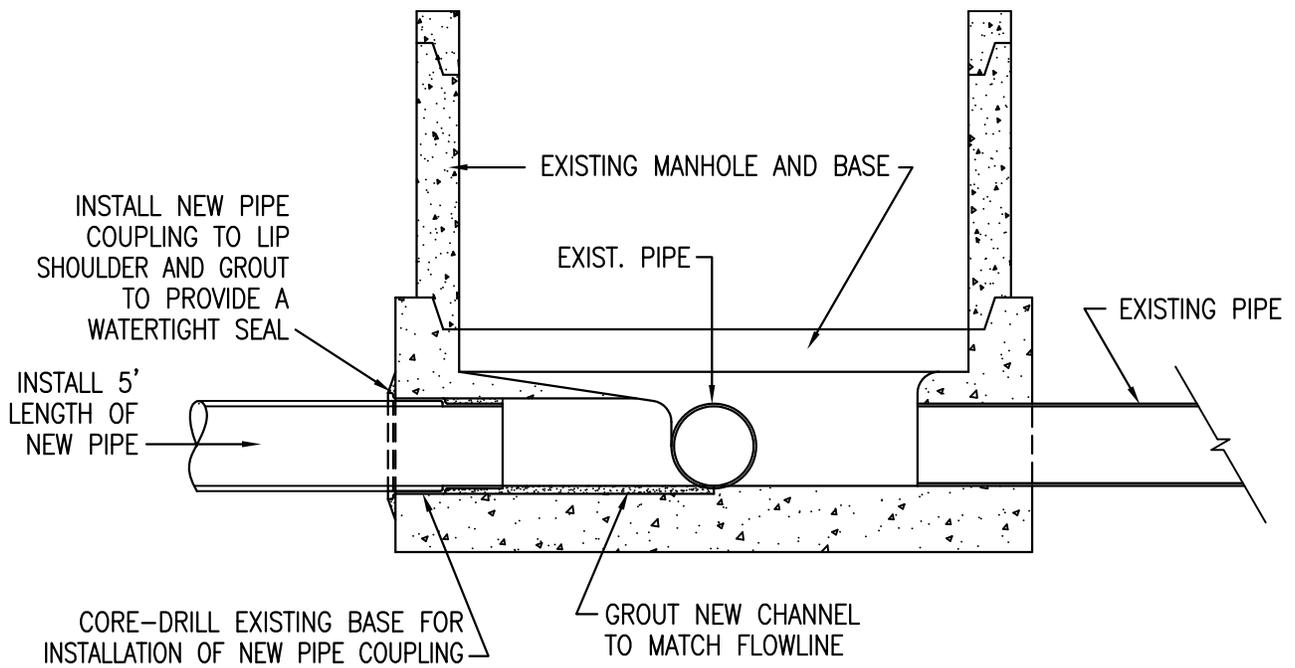
CITY OF KLAMATH FALLS

MK	Date	Revision:
2	6/05	3rd EDITION
1	6/04	2nd EDITION

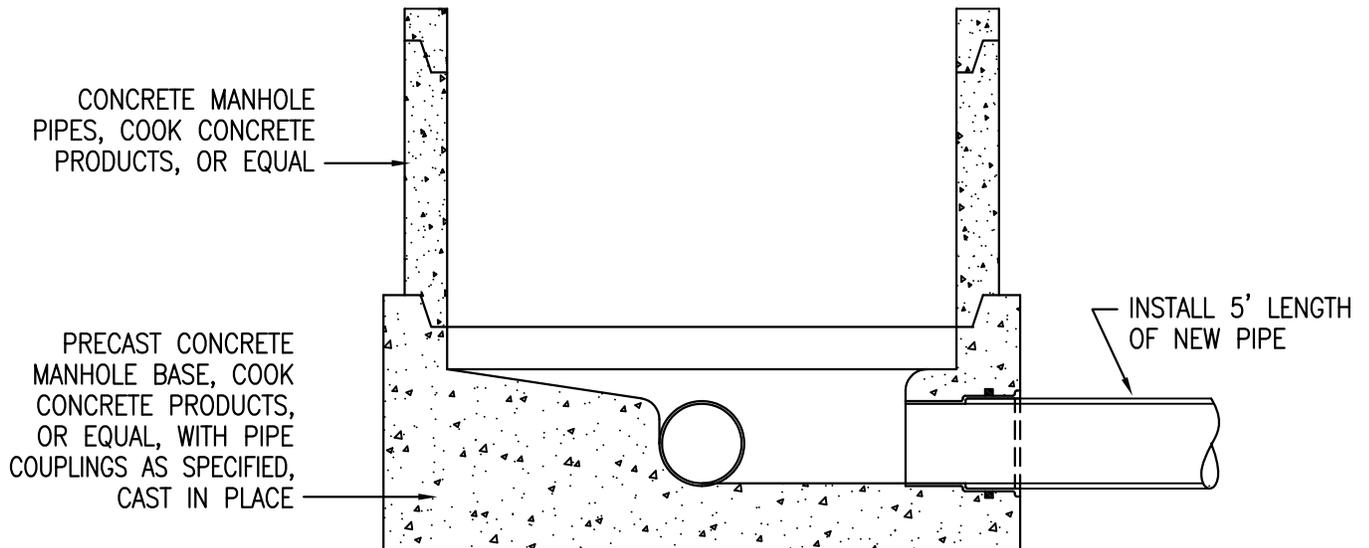
STANDARD THRUST BLOCKS

Approved By: Mike Kuenzi

Drwn. By: GDG
 Date: 1/2002
 Drwg. No.: **2-120**



CONNECTION TO EXISTING MANHOLE BASE



NEW MANHOLE INSTALLATION

CITY OF KLAMATH FALLS

MK	Date	Revision:

STANDARD MANHOLE BASES
EXISTING & NEW CONSTRUCTION

Approved By: Mike Kuenzi

Drwn. By: GDG
Date: 1/2002
Drwg. No.: **2-125**