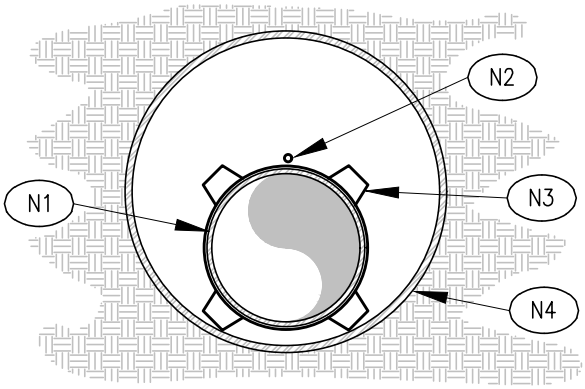


GENERAL NOTES:

1. SEAL EACH END OF CASING WITH 18" LEAN GROUT PLUG

2. FILL ANNULAR SPACE WITH NO.1 DRY SAND, CDF, OR LEAN GROUT. IF CDF OR LEAN GROUT IS USED, CONTRACTOR MUST PREVENT FLOATING OF CARRIER PIPE. SUBMIT PLAN TO ENGINEER. INSTALL GROUTING NIPPLES ON CASING AS NECESSARY.

3. ALTERNATIVE SUPPORT METHODS MAY BE ACCEPTABLE. METHODS SHALL BE SUBMITTED TO THE ENGINEER.

4. SEE SPECIFICATIONS.

NOTES:

N1 CARRIER PIPE

N2 CONTINUOUS LOCATING WIRE (NO SPLICES ALLOWED) THROUGH ENTIRE LENGTH OF CASING

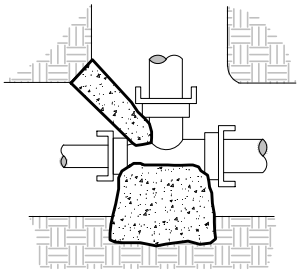
N3 CALPICO INC. CASING INSULATOR MODEL PX (MINIMUM 12" WIDE BAND) OR APPROVED EQUAL. ONE AT EACH BELL WITH MAXIMUM SPACING @ 60" O.C.

N4 CASING, SEE DRAWING SPECIFICATIONS OF THE CONTRACT DOCUMENTS FOR MINIMUM AND MAXIMUM STEEL CASING SIZE AND WALL THICKNESS

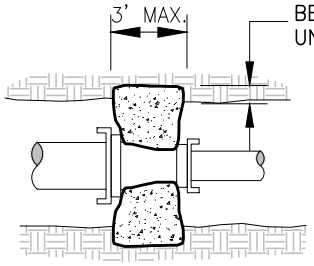
TOWN OF TWISP, WA
STANDARD DETAILS
CASING/CARRIER PIPE
WATER PIPE
301

REVISION #	DATE
1	5/14/2019

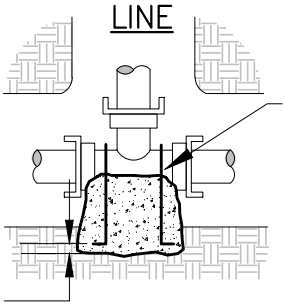
Town of Twisp



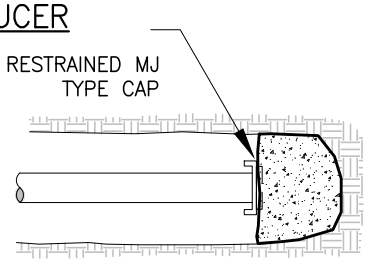
TEE REDUCING IN LINE



REDUCER

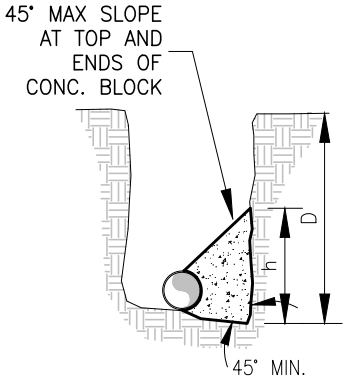


TEE



CAPPED END

THRUST BLOCK LAYOUT FOR HORIZONTAL PRESSURES

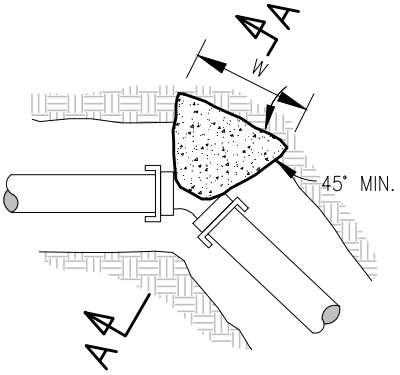


SECTION A–A
THRUST BLOCK

CRITERIA FOR HORIZONTAL BENDS

"h" IS LESS THAN OR EQUAL TO ONE HALF OF "D", "W" SHALL BE GREATER THAN "h" BUT LESS THAN 2 TIMES "h"

A=hW
A=BEARING AREA



HORIZONTAL ELBOW

HORIZONTAL BENDS

GENERAL NOTES:

1. THIS DETAIL DRAWING APPLICABLE FOR FITTINGS OF ALL END TYPES.
2. ALL CONCRETE THRUST BLOCKS SHALL BE ADEQUATELY CONSOLIDATED IN PLACE.
3. SEE TABLE FOR MINIMUM BEARING AREA REQUIREMENTS.

TOWN OF TWISP, WA STANDARD DETAILS THRUST BLOCKS TEES, REDUCERS, ENDS AND ELBOWS 302	1	5/14/2019	Town of Twisp
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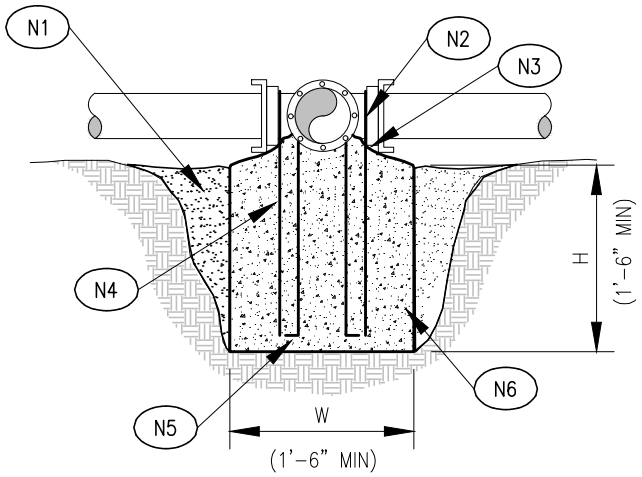
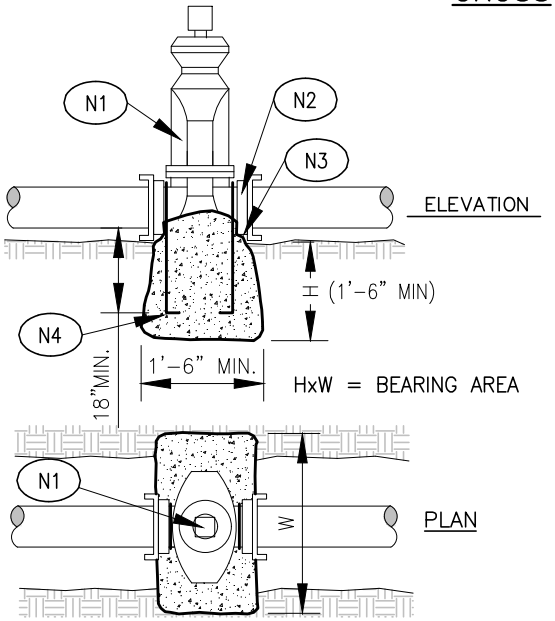


HxW = BEARING AREA
(CALCULATED FOR EACH BRANCH)

CROSS

NOTES:

- (N1) FILL ALL VOIDS BETWEEN FORMED CONCRETE BLOCK AND UNDISTURBED EARTH WITH COMPACTED GRAVEL.
- (N2) 4 EPOXY COATED #5 BARS (1 ON EACH BRANCH). FIT SNUG AROUND FITTINGS.
- (N3) FORM CONCRETE AROUND JOINTS TO ALLOW FOR FUTURE REMOVAL OF VALVE OR PIPE.
- (N4) SET INTO CONCRETE (18' MIN.)
- (N5) STANDARD HOOKS (MIN. 3" CONCRETE COVER ALL AROUND).
- (N6) FORMED CONCRETE BLOCK



NOTES:

- (N1) VALVE
- (N2) 2 EPOXY COATED #5 BARS FIT SNUG AROUND FITTINGS.
- (N3) FORM CONCRETE AROUND FLANGES SO BOLTS ON VALVES CAN BE REMOVED (TYP.)
- (N4) STANDARD HOOKS (MIN. 3" CONCRETE COVER ALL AROUND)

GENERAL NOTES:

1. THIS DETAIL DRAWING APPLICABLE FOR ALL FITTINGS OF ALL END TYPES.
2. ALL CONCRETE THRUST BLOCKS SHALL BE ADEQUATELY CONSOLIDATED IN PLACE.
3. SEE SPECIFICATIONS FOR MINIMUM BEARING AREA REQUIREMENTS.

VALVE ON RUN

TOWN OF TWISP, WA STANDARD DETAILS THRUST BLOCKS CROSSES AND VALVES ON RUN 303	1	5/14/2019	Town of Twisp
	REVISION #	DATE	

THRUST BLOCK MINIMUM BEARING AREA*

(SQ. FT. AT 100 PSI PRESSURE)

SIZE PIPE	TEE W/VALVE(S) ON RUN, 90° EL	45° EL	22-1/2° & 11-1/4° EL	VALVES, DEAD ENDS TEE W/O VALVE ON RUN
4	2	2	2	2
6	4	2	2	3
8	6	4	2	5
10	9	5	2	7
12	13	7	4	10
14	18	10	5	13

* SOIL BEARING CAPACITY 1500 PSF PRIOR TO BACKFILL

GENERAL NOTES:

1. FOR PRESSURES OTHER THAN SHOWN MULTIPLY THE TABLE VALUE BY A RATIO OF PRESSURE OVER 100psi (i.e.) $\frac{\text{PRESSURE}}{\text{100psi}}$

2. FOR SOIL BEARING CAPACITIES OTHER THAN 1500 PSF, MULTIPLY THE TABLE VALUE OF MIN. BEARING AREA REQUIRED BY A RATIO OF 1500 PSF OVER ACTUAL SOIL BEARING CAPACITY

(i.e. $\frac{\text{1500 psf}}{\text{ACTUAL SOIL BEARING CAPACITY}}$)

TOWN OF TWISP, WA

STANDARD DETAILS

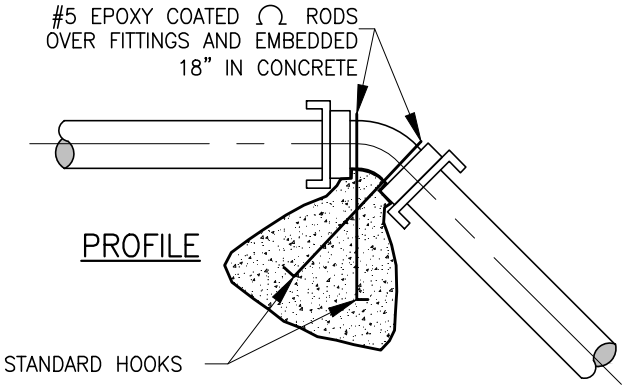
THRUST BLOCKS

MINIMUM BEARING AREA

304

REVISION #	DATE
1	5/14/2019

Town of Twisp



GENERAL NOTES:

1. PLACE CONCRETE SUCH THAT JOINTS AND JOINT ACCESSORIES ARE ACCESSIBLE FOR REPAIRS

2. THE REQUIRED THRUST BLOCK VOLUMES FOR SPECIAL CONNECTIONS ARE TO BE SHOWN ON THE PLAN; e.g. 6 INDICATES 6 CUBIC YARDS OF CONCRETE ARE REQUIRED.

3. IF NOT SHOWN ON PLANS, REQUIRED VOLUMES AT FITTINGS SHALL BE AS INDICATED BELOW, ADJUSTED IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) STATED IN THE SPECIFICATIONS.

4. VOLUMES AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER VOLUMES AND THE BLOCKING DETAIL SHOWN ON THIS STANDARD DETAIL.

5. THRUST BLOCKS FOR VERTICAL UP–BENDS SHALL BE THE SAME AS FOR HORIZONTAL BENDS.

FITTINGS SIZE	VOLUME OF THRUST BLOCK IN CU. YDS.			
	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
4	.8	.4		
6	1.8	.9	.4	
8	3.2	1.7	.8	.3
10	4.9	2.6	1.3	.5
12	7.0	3.7	1.8	.8
14	9.5	5.0	2.5	1.2
16	12.0	6.4	3.1	1.4

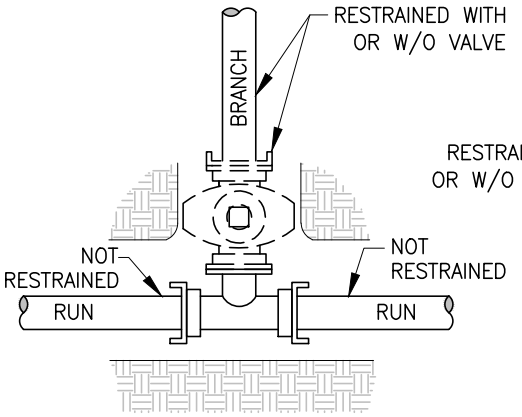
NOTES:

ABOVE VOLUMES BASED ON TEST PRESSURES OF 150 p.s.i. AND THE WEIGHT OF CONCRETE= 4050lb./cu.yd. TO COMPUTE VOLUMES FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION: VOLUME= (TEST PRESSURE/150) X (TABLE VALUE)

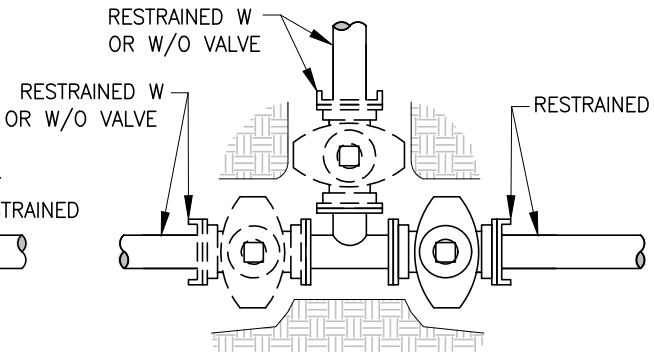
TOWN OF TWISP, WA
STANDARD DETAILS
THRUST BLOCKS
VERTICAL DOWN-BENDS
305

REVISION #	DATE
1	5/14/2019

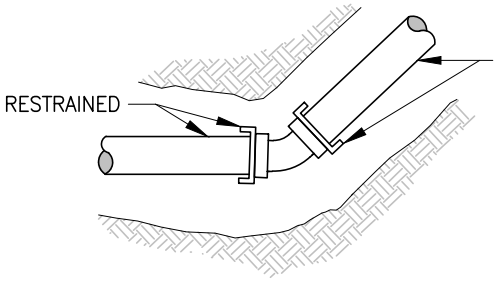
Town of Twisp



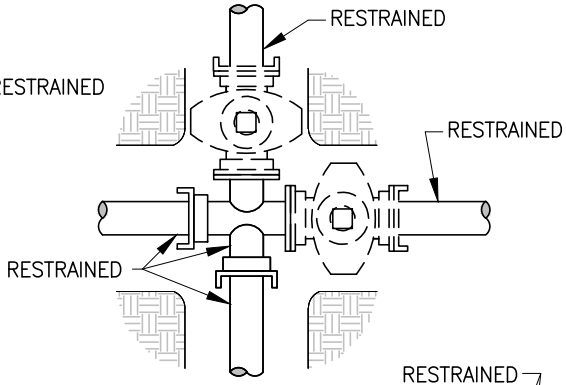
TEE–NO VALVE ON RUN
W OR W/O VALVE ON BRANCH



TEE–VALVE ON ONE OR BOTH RUNS
W OR W/O VALVE ON BRANCH



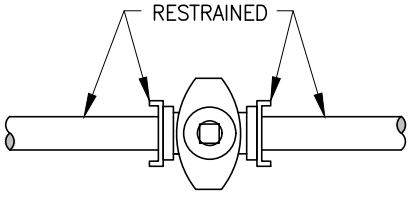
ELBOW
SINGLE OR COMBINED,
ANY ANGLE,
W OR W/O VALVE



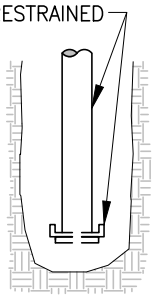
CROSS
WITH 1 OR MORE VALVES

GENERAL NOTES

1. SEE SPECIFICATIONS FOR MIN. LENGTHS OF RESTRAINED JOINT PIPE
2. FITTINGS, VALVES, AND PIPES REQUIRING RESTRAINED JOINTS ARE GENERALLY NOT CALLED OUT ON THE DRAWINGS



VALVE ON RUN



DEAD END
(CAP OR PLUG)

TOWN OF TWISP, WA STANDARD DETAILS RESTRAINED JOINT FITTINGS, VALVES AND PIPE 306	1	5/14/2019	Town of Twisp
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MINIMUN LENGTH RESTRAINED JOINT PIPE FITTINGS[1]
PRESURE 100 PSI,[2] MIN. COVER DEPTH 4.0',[3]

PIPE DIA.	DI PIPE[4]	PVC PIPE[4]
4", 6"	15'	20'
8", 10"	20'	25'
12"	25'	30'

GENERAL NOTE

1. SEE SPECIFICATIONS FOR FURTHER DETAIL(S).

(1) ONE-HALF OF THE LENGTHS SHOWN MAY BE USED FOR 22-1/2 DEGREE AND 11-1/4 DEGREE ELBOWS.

(2) FOR OTHER PRESSURES (I.E. TEST PRESSURE) MULTIPLY BY RATIO TO 100 PSI.

(3) ASSUMES PIPE BEDDING AND TRENCH BACKFILL COMPACTED TO MINIMUM 90%.

(4) FOR DEAD ENDS AND VALVES USE 150% OF THE TABLE VALVE FOR D.I PIPE AND USE 200% OF THE TABLE FOR PVC PIPE.

TOWN OF TWISP, WA
STANDARD DETAILS
MINIMUM LENGTH RESTRAINED JOINT PIPE
307

REVISION #	DATE
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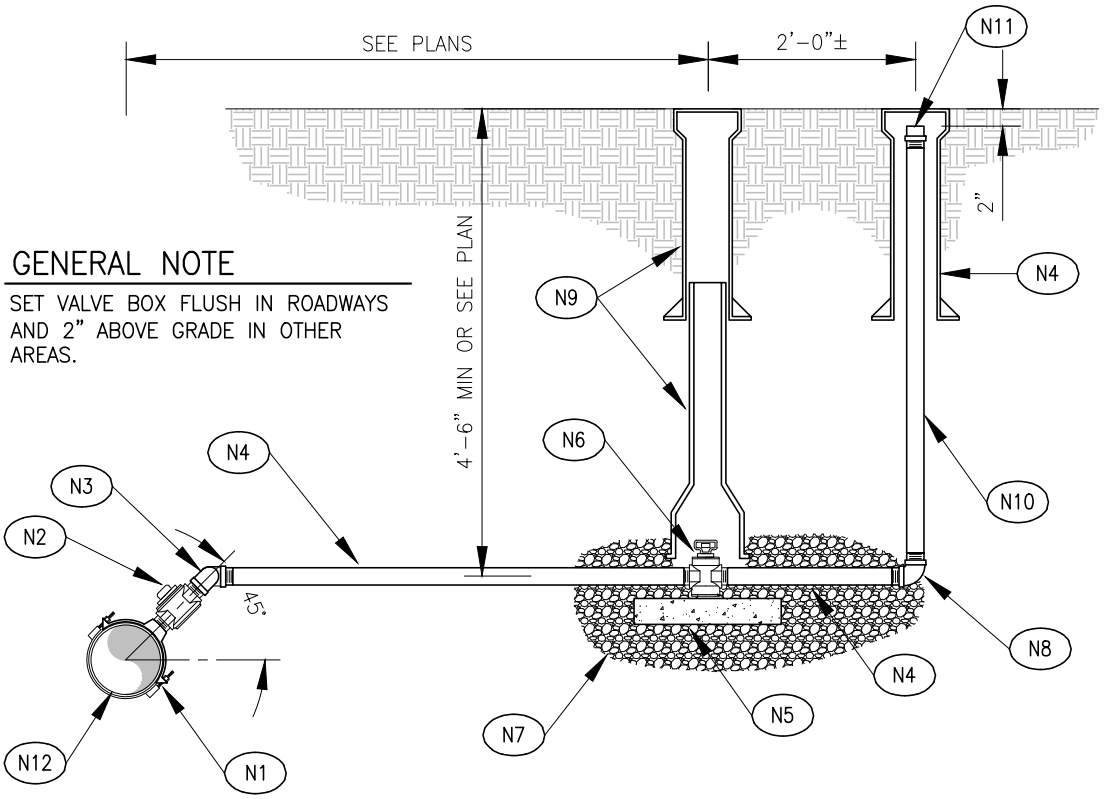
Town of Twisp



GENERAL NOTE

SET VALVE BOX FLUSH IN ROADWAYS AND 2" ABOVE GRADE IN OTHER AREAS.

NOTES:

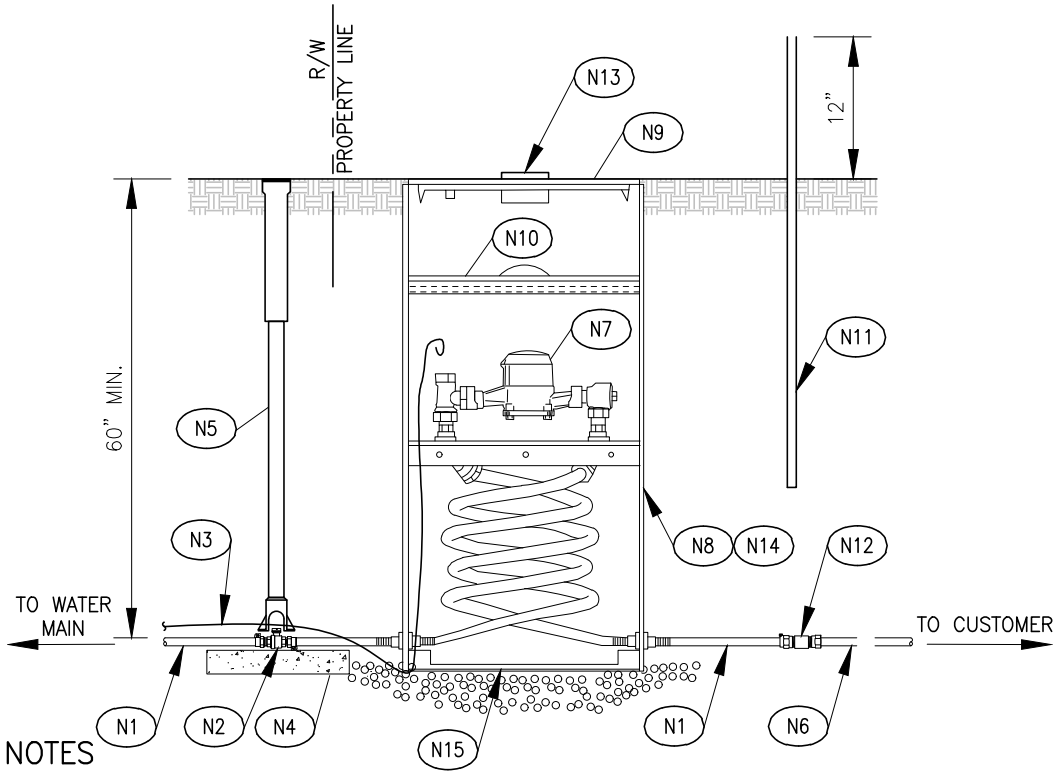
- (N1) 2" D.I. DOUBLE STRAP SERVICE SADDLE (OR 2" WIDE STRAP FOR PVC MAINS)
- (N2) CORPORATION STOP
- (N3) 2" SWIVEL JOINT (2–90° ELS W/PIPE NIPPLE)
- (N4) 2" SCHEDULE 40 GALVANIZED STEEL PIPE, LENGTH VARIES
- (N5) CONCRETE BLOCK (MIN. 3" THICK)
- (N6) 2" BRONZE STOP & DRAIN (MUELLER H10284 ORISEAL)
- (N7) 5 CU.FT. WASHED GRAVEL
- (N8) 2" x 90° GALVANIZED STEEL ELBOW
- (N9) CAST IRON VALVE BOX
- (N10) CAST IRON VALVE BOX TOP SECTION ONLY, MINIMUM INSIDE DIA. 5–¼"
- (N11) 2" SCHEDULE 40 GALVANIZED STEEL CAP
- (N12) WATER MAIN

TOWN OF TWISP, WA

STANDARD DETAILS
2" BLOW OFF ASSEMBLY
308

REVISION #	DATE
1	5/14/2019

Town of Twisp



NOTES

- (N1) 1" HDPE CTS SERVICE PIPE
- (N2) 1" CURB STOP, FORD B44-444QNL
- (N3) 10G COPPER TRACER WIRE CONNECTED TO LAST FITTING OUTSIDE BOX 1' ABOVE GROUND
- (N4) 12"x12"x2" CEMENT PAVER & 4" CSTC BASE
- (N5) ADJUSTABLE VALVE BOX WITH ROD, FORD EA2-55-40-48R
- (N6) EXISTING SERVICE PIPE TO CUSTOMER (DEPTH, SIZE AND MATERIAL VARIES)
- (N7) 3/4" METER NEPTUNE, T10 MTR CUFT ED2C11RWF3 R9001PIT C1BTTM
- (N8) 3/4" SINGLE METER COIL PIT SETTER, FORD PFCBB3881860AFPNL
- (N9) SINGLE METER LOCKING LID, FORD PPSC-18-L-T. WHERE DUAL METER COIL PIT SETTER UTILIZE FORD PPSC-18-L-TT.
- (N10) 2" INSULATION DISKS X2, FORD CCID-18-2
- (N11) 2x4 TREATED MARKER PAINTED BLUE. WHEN NOT CONNECTING TO LIVE SERVICE
- (N12) 1" COUPLING X2, FORD C14-44TW-QNL
- (N13) EXTERNAL RADIO READ ANTENA NEPTUNE 12527-200 6FT
- (N14) 3/4" DUAL METER COIL PIT SETTER, FORD PPSB-18H-P
- (N15) PLASTIC BOTTOM PLATE

TOWN OF TWISP, WA

STANDARD DETAILS

$\frac{3}{4}$" WATER METER DETAIL

309

REVISION #	DATE
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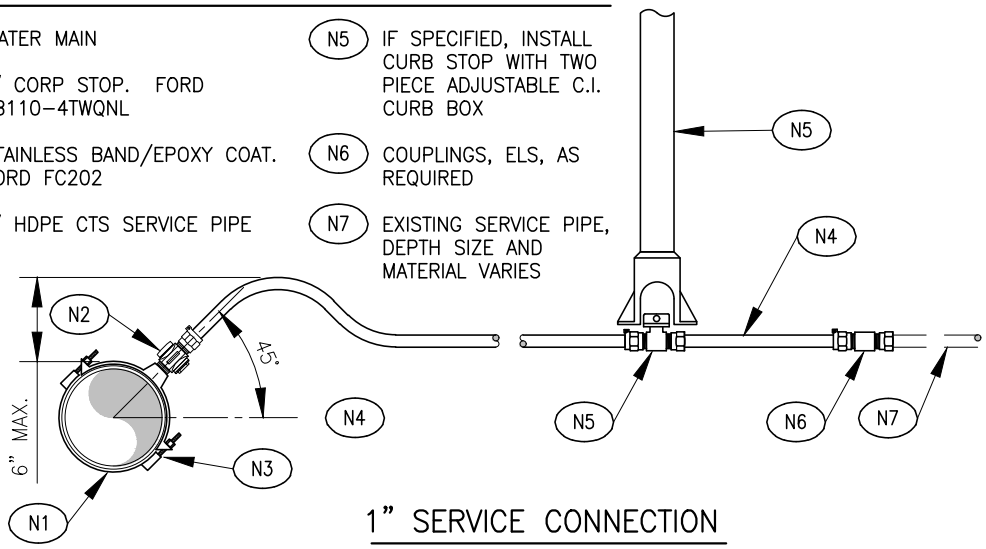
Town of Twisp

NOTES

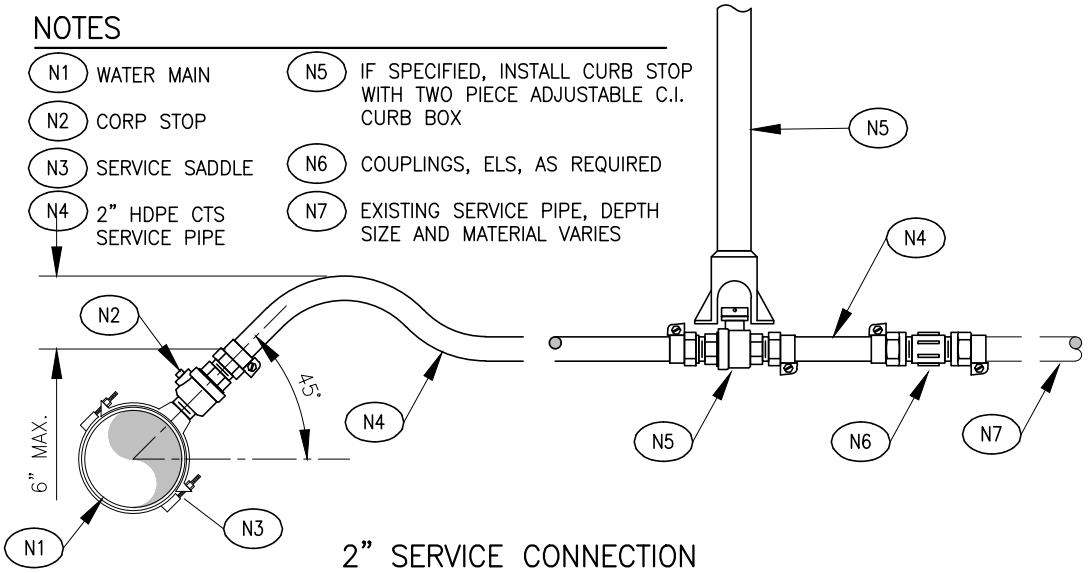
- N1 WATER MAIN
- N2 1" CORP STOP. FORD FB110–4TWQNL
- N3 STAINLESS BAND/EPOXY COAT. FORD FC202
- N4 1" HDPE CTS SERVICE PIPE
- N5 IF SPECIFIED, INSTALL CURB STOP WITH TWO PIECE ADJUSTABLE C.I. CURB BOX
- N6 COUPLINGS, ELS, AS REQUIRED
- N7 EXISTING SERVICE PIPE, DEPTH SIZE AND MATERIAL VARIES



1" SERVICE CONNECTION

NOTES

- N1 WATER MAIN
- N2 CORP STOP
- N3 SERVICE SADDLE
- N4 2" HDPE CTS SERVICE PIPE
- N5 IF SPECIFIED, INSTALL CURB STOP WITH TWO PIECE ADJUSTABLE C.I. CURB BOX
- N6 COUPLINGS, ELS, AS REQUIRED
- N7 EXISTING SERVICE PIPE, DEPTH SIZE AND MATERIAL VARIES

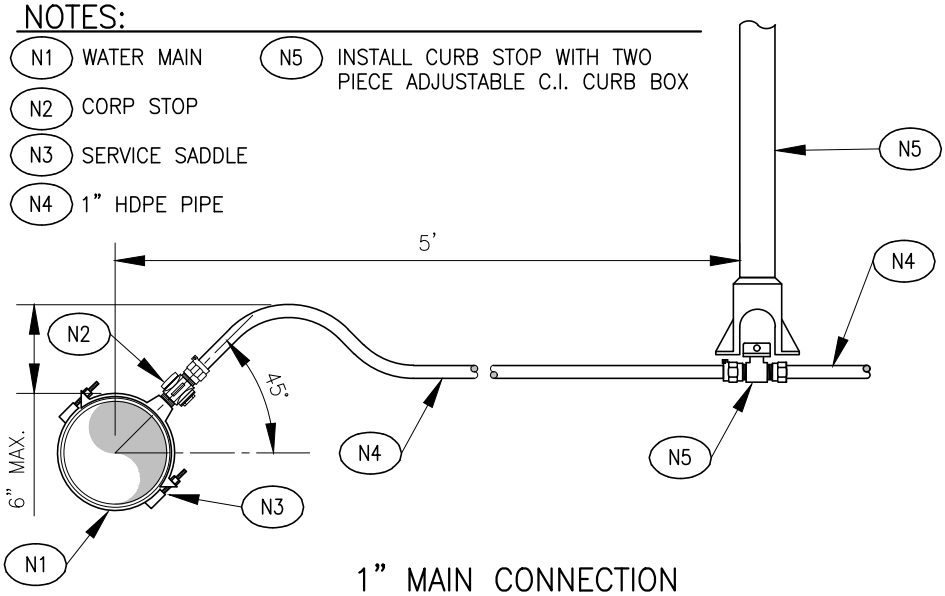


2" SERVICE CONNECTION

TOWN OF TWISP, WA STANDARD DETAILS SERVICE CONNECTIONS 310	1	5/14/2019	Town of Twisp
	REVISION #	DATE	

NOTES:

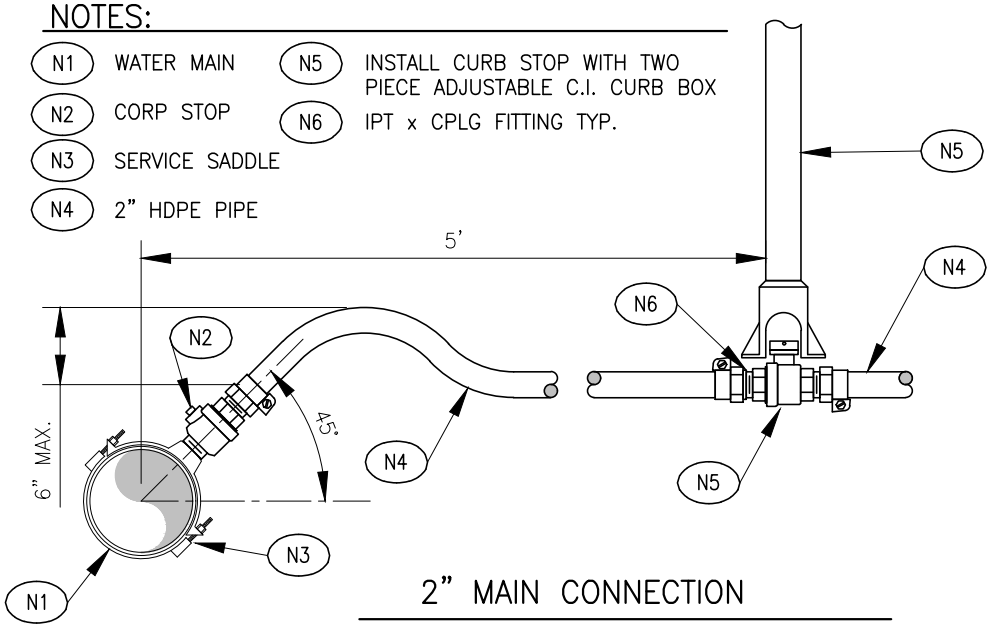
- N1 WATER MAIN
- N2 CORP STOP
- N3 SERVICE SADDLE
- N4 1" HDPE PIPE
- N5 INSTALL CURB STOP WITH TWO PIECE ADJUSTABLE C.I. CURB BOX



1" MAIN CONNECTION

NOTES:

- N1 WATER MAIN
- N2 CORP STOP
- N3 SERVICE SADDLE
- N4 2" HDPE PIPE
- N5 INSTALL CURB STOP WITH TWO PIECE ADJUSTABLE C.I. CURB BOX
- N6 IPT x CPLG FITTING TYP.



2" MAIN CONNECTION

TOWN OF TWISP, WA STANDARD DETAILS MAIN CONNECTIONS 311	1	5/14/2019	Town of Twisp
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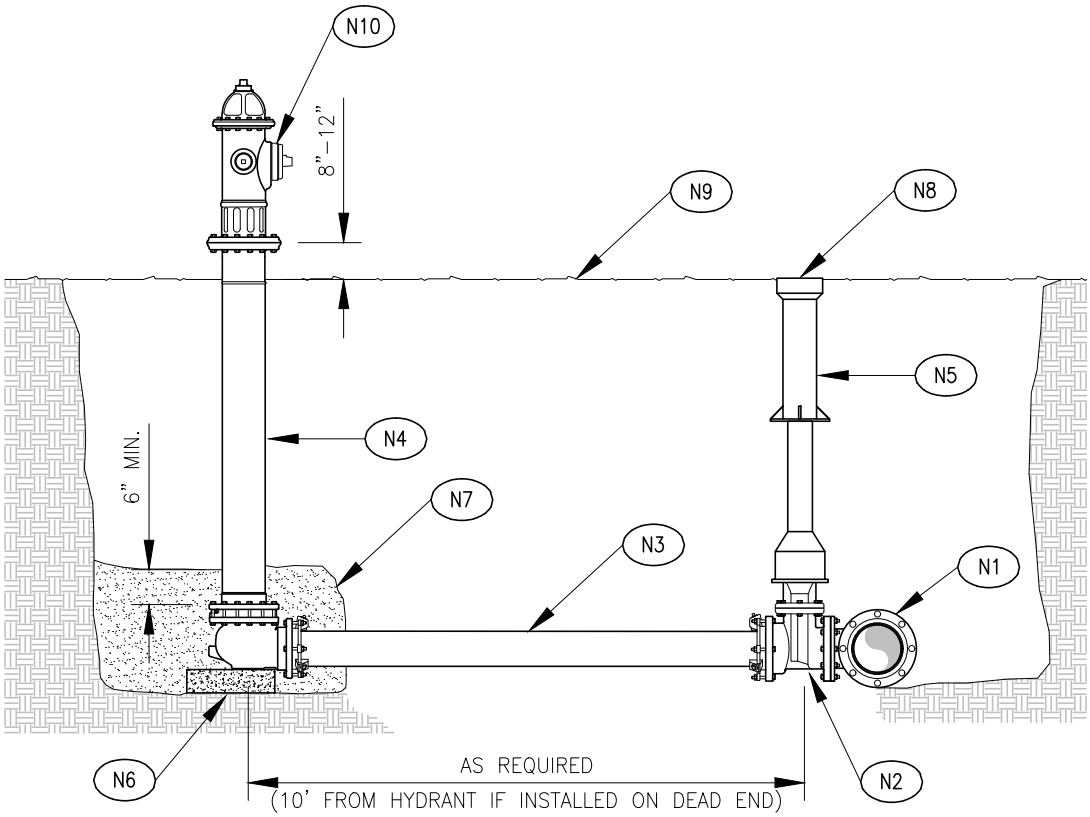

NOTES:

- (N1) C.I. OR D.I. TEE, MAIN SIZE x MAIN SIZE x 6" (FL OUTLET, ON RUN JOINT TYPE MAY VARY) NOT APPLICABLE IF INSTALLED ON DEAD END.
- (N2) 6" RSGV, FL x MJ (RESTRAINED JOINT)
- (N3) 6" DI PIPE, PE x PE, LENGTH AS REQUIRED (USED RESTRAINED JOINT IF MORE THAN 1 PIECE REQUIRED)
- (N4) FIRE HYDRANT, MJ OUTLET (RESTRAINED JOINT)
- (N5) C.I. VALVE BOX
- (N6) 15" X 4" CONCRETE BLOCK SET ON COMPACTED FOUNDATION
- (N7) ½ C.Y. 3" TO ⅜" CLEAN GRAVEL AROUND BASE
- (N8) SET TOP FLUSH IN ROADWAYS, 2" ABOVE GRADE IN OTHER AREAS
- (N9) FINISH GRADE
- (N10) 5" STORZ FITTING

NOTE: ALL JOINTS SHALL BE RESTRAINED

TOWN OF TWISP, WA STANDARD DETAILS FIRE HYDRANT ASSEMBLY 312	1	5/14/2019	Town of Twisp
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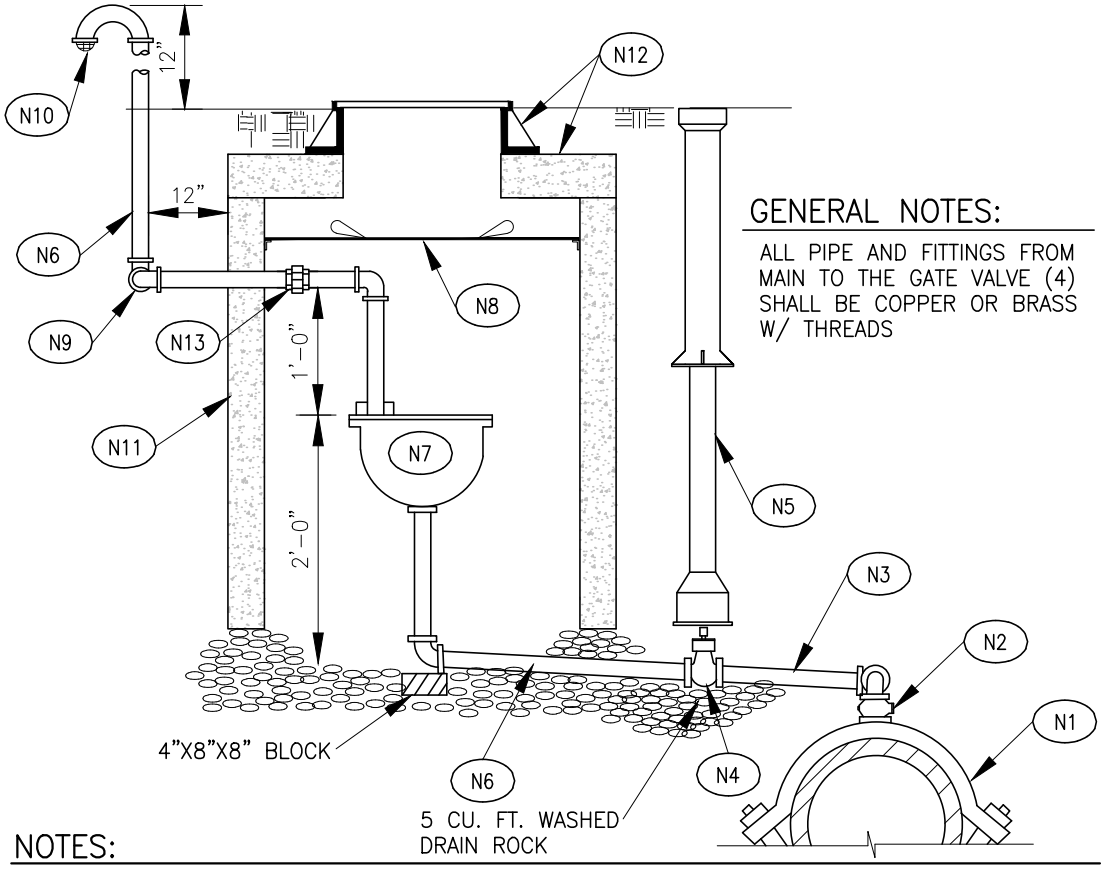

GENERAL NOTES:

ALL PIPE AND FITTINGS FROM MAIN TO THE GATE VALVE (4) SHALL BE COPPER OR BRASS W/ THREADS

NOTES:

- N1 DI SADDLE FOR WATER MAIN. (SEE DRAWING FOR MAIN SIZE)
- N2 2" BRONZE CORP STOP
- N3 2" G.I.P.
- N4 2" R/S GATE VALVE, CAST IRON BODY, SCREWED, NON-RISING STEM, 2" SQUARE OPERATING NUT STOP AND WASTE
- N5 CAST IRON 2 PIECE VALVE BOX W/ LID & LIFTING HANDLE
- N6 2" GALV STEEL PIPE, ELS, NIPPLES, UNIONS AS REQUIRED
- N7 2" COMBINATION AIR/VACUUM VALVE, APCO 145C OR EQUAL
- N8 INSULATE INTERIOR W/ (2) 2" THICK HIGH DENSITY INSULATION PAD CUT TO FIT SNUG
- N9 2" 90° BEND, 2" CLOSE NIPPLE & 2" 90° BEND
- N10 2" BRONZE BEHIVE STRAINER, 2" RETURN BEND, PAINTED SAFETY YELLOW
- N11 48" PRECAST CONC MANHOLE – 4' SECTION
- N12 48" PRECAST CONC MANHOLE TOP REINFORCED FOR STANDARD HIGHWAY LOADING, 4"X24" CI RING AND COVER
- N12 2" PIPE UNION

TOWN OF TWISP, WA STANDARD DETAILS COMBINATION AIR VACUUM RELEIF STATION 1"-3" (NON TRAFFIC) 313	1	5/14/2019	Town of Twisp
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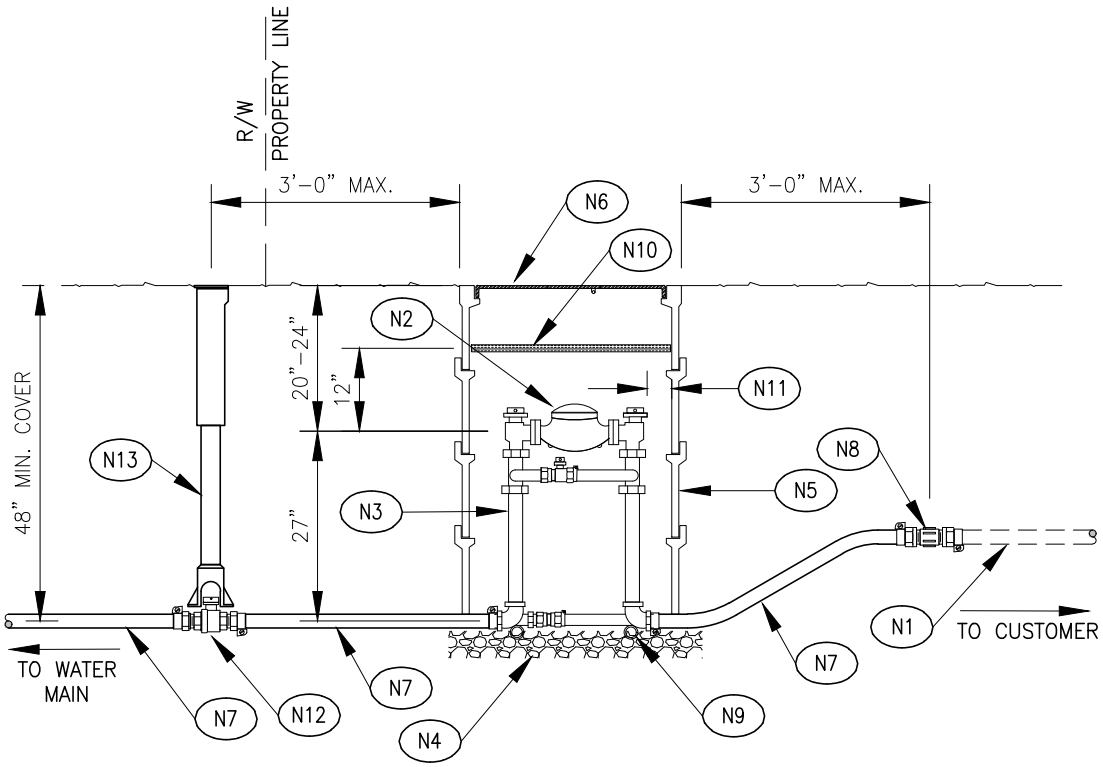

NOTES:

- (N1) SERVICE PIPE TO CUSTOMER (DEPTH, SIZE AND MATERIAL VARIES)
- (N2) WATER METER
- (N3) COPPERSETTER WITH HIGH BYPASS, FORD (SHOWN) OR APPROVED EQUAL
- (N4) 4" THICK COMPACTED GRAVEL BASE FOR METER BOX (3/4" MINUS CRUSHED ROCK)
- (N5) METER BOX
- (N6) COVER WITH READING LID METAL TRAFFIC RATED
- (N7) SERVICE PIPE
- (N8) COUPLING
- (N9) PVC OR METAL BRACE PIPE (2) IN PIPE EYE, LENGTH AS REQUIRED (MIN. 18")
- (N10) INSULATING PAD x2 4" TOTAL
- (N11) MIN 2" CLEARANCE ALL AROUND
- (N12) CURB STOP
- (N13) TWO PIECE ADJUSTABLE C.I. CURB BOX

TOWN OF TWISP, WA STANDARD DETAILS 1-1/2" AND 2" METER DETAIL 314	1	5/14/2019	Town of Twisp
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NOTES:

(N1) REMOVE EXISTING ANGLE VALVES/ ELBOWS, INSTALL 1" PIPE NIPPLE & 3/4" TO 1" TRANSITION FITTING IF NEEDED.

(N2) 4" THICK COMPACTED 3/4" MINUS CRUSHED ROCK BASE

(N3) NEW 1" SERVICE PIPE

(N4) EXISTING PIPE, SIZE AND MATERIAL VARIES

(N5) PACK JOINT, CONNECT TO EXISTING SERVICE PIPE, USE FITTINGS AS REQUIRED

(N6) 18" FORD COIL PIT SETTER, 72-INCH DEPTH, MODIFY AS SHOWN TO ACCEPT 1-INCH DOUBLE CHECK VALVE

(N7) 1" PIPE NIPPLE, LENGTH AS NECESSARY

(N8) 1" UNION

(N9) 1" BALL VALVE (OWNER PROVIDED)

(N10) 1" STREET 90° ELBOW

(N11) 1" 90° ELBOW

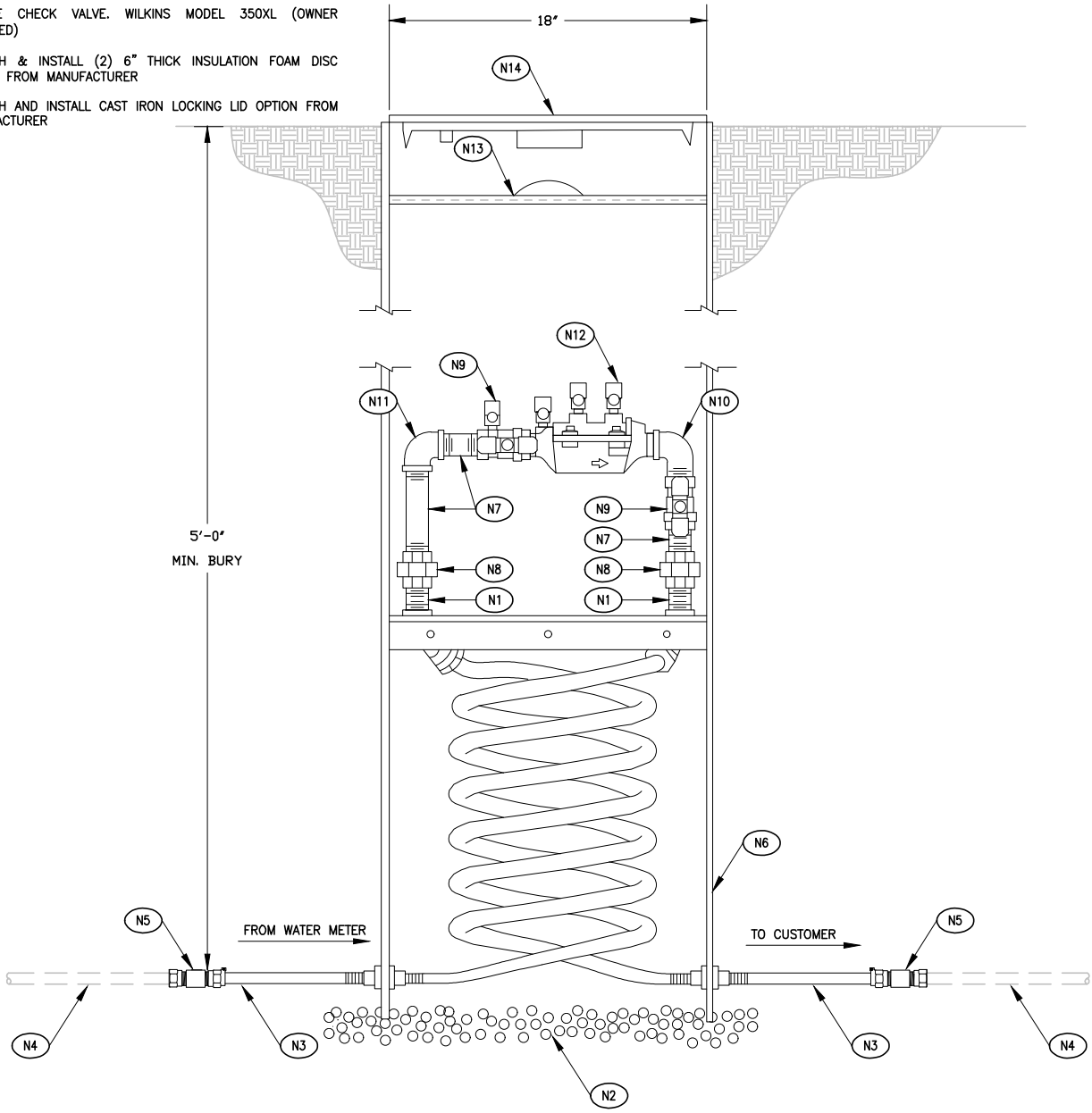
(N12) DOUBLE CHECK VALVE. WILKINS MODEL 350XL (OWNER PROVIDED)

(N13) FURNISH & INSTALL (2) 6" THICK INSULATION FOAM DISC OPTION FROM MANUFACTURER

(N14) FURNISH AND INSTALL CAST IRON LOCKING LID OPTION FROM MANUFACTURER

SPECIAL NOTE:

1. CONTRACTOR SHALL FURNISH 1 MANUFACTURER PROVIDED OPTIONAL ACCESS ROD TO OWNER.



TOWN OF TWISP

STANDARD DETAILS

THERMAL COIL PITSETTER, DOUBLE CHECK VALVE

315

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#1	5/14/2019

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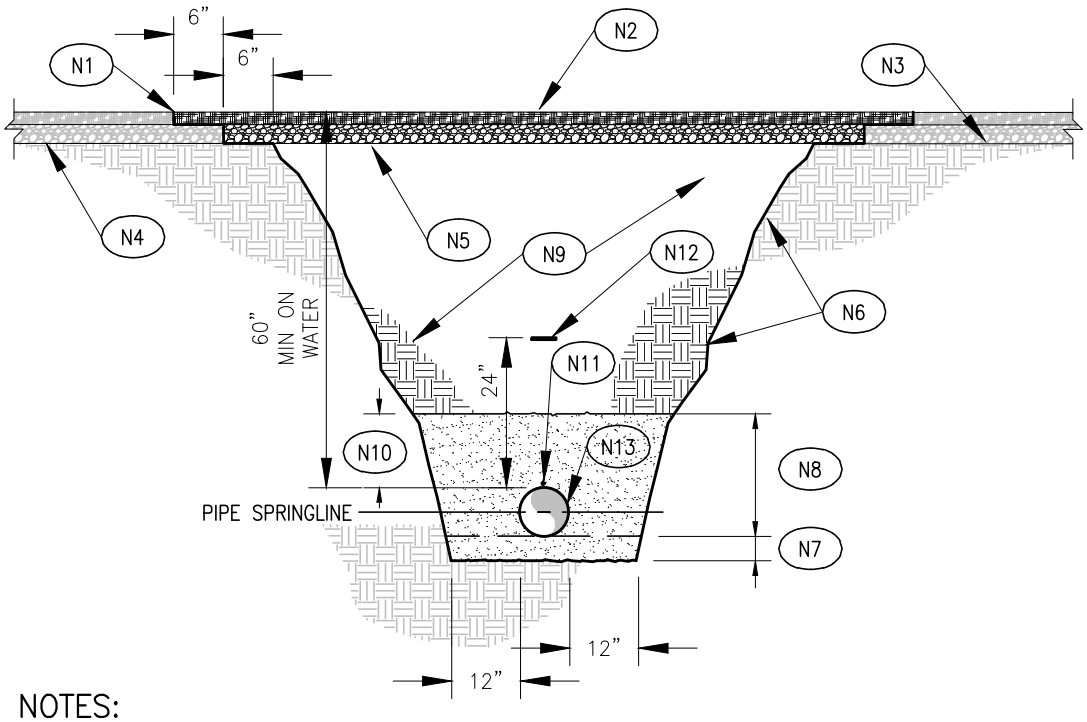

NOTES:

(N1) SAWCUT EXISTING PAVEMENT (TYP.)

(N2) NEW AC (DEPTH AS SPECIFIED)

(N3) EXISTING GROUND LINE OR STREET SUBGRADE

(N4) EXISTING AC PAVEMENT AND BASE COURSE (IF ANY)

(N5) NEW BASE COURSE (DEPTH AS SPECIFIED)

(N6) SLOPE AND/OR SHORE PER TRENCH SAFETY REQUIREMENTS

(N7) BEDDING MATERIAL, 4" OVER SOIL, 6" OVER ROCK

(N8) BEDDING MATERIAL, HAND PLACED, COMPACTED

(N9) TRENCH BACKFILL, COMPACTED IN 12" LIFTS

(N10) 12" UNLESS OTHERWISE SPECIFIED

(N11) PIPE LOCATING WIRE AS SPECIFIED

(N12) UTILITY MARKING TAPE AS SPECIFIED

(N13) PIPELINE

TOWN OF TWISP, WA
STANDARD DETAILS
WATER, SEWER AND STORM TRENCH EXCAVATION
316

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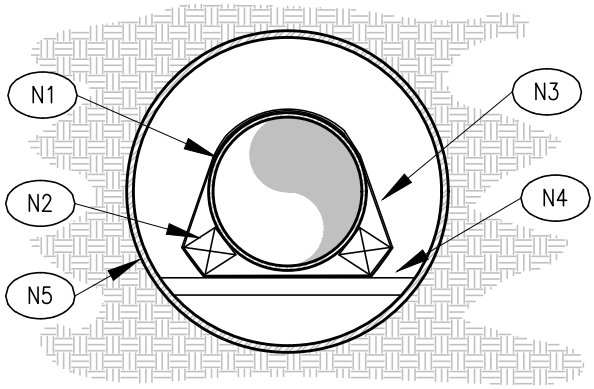

GENERAL NOTES:

1. SEAL EACH END OF CASING WITH 18" LEAN GROUT PLUG

2. FILL ANNULAR SPACE WITH NO.1 DRY SAND, CDF, OR LEAN GROUT. IF CDF OR LEAN GROUT IS USED, CONTRACTOR MUST PREVENT FLOATING OF CARRIER PIPE. SUBMIT PLAN TO ENGINEER. INSTALL GROUTING NIPPLES ON CASING AS NECESSARY.

3. ALTERNATIVE SUPPORT METHODS MAY BE ACCEPTABLE. METHODS SHALL BE SUBMITTED TO THE ENGINEER.

4. SEE SPECIFICATIONS SECTION 01010 AND 02224.

NOTES:

N1 CARRIER PIPE

N2 PRESSURE TREATED TIMBER SKIDS AS REQ'D (4x4 MIN.) FULL LENGTH EXCEPT AT BELLS

N3 STAINLESS STEEL STRAPS AT 24" O.C. STAPLE TO TIMBERS

N4 STEEL CROSS SUPPORTS, LENGTH AS REQ'D WELDED @ 10' O.C. MIN.

N5 CASING, SEE DRAWING SPECIFICATIONS OF THE CONTRACT DOCUMENTS FOR MINIMUM AND MAXIMUM STEEL CASING SIZE AND WALL THICKNESS

TOWN OF TWISP, WA
STANDARD DETAILS
CASING/CARRIER PIPE
SANITARY SEWER PIPE
401

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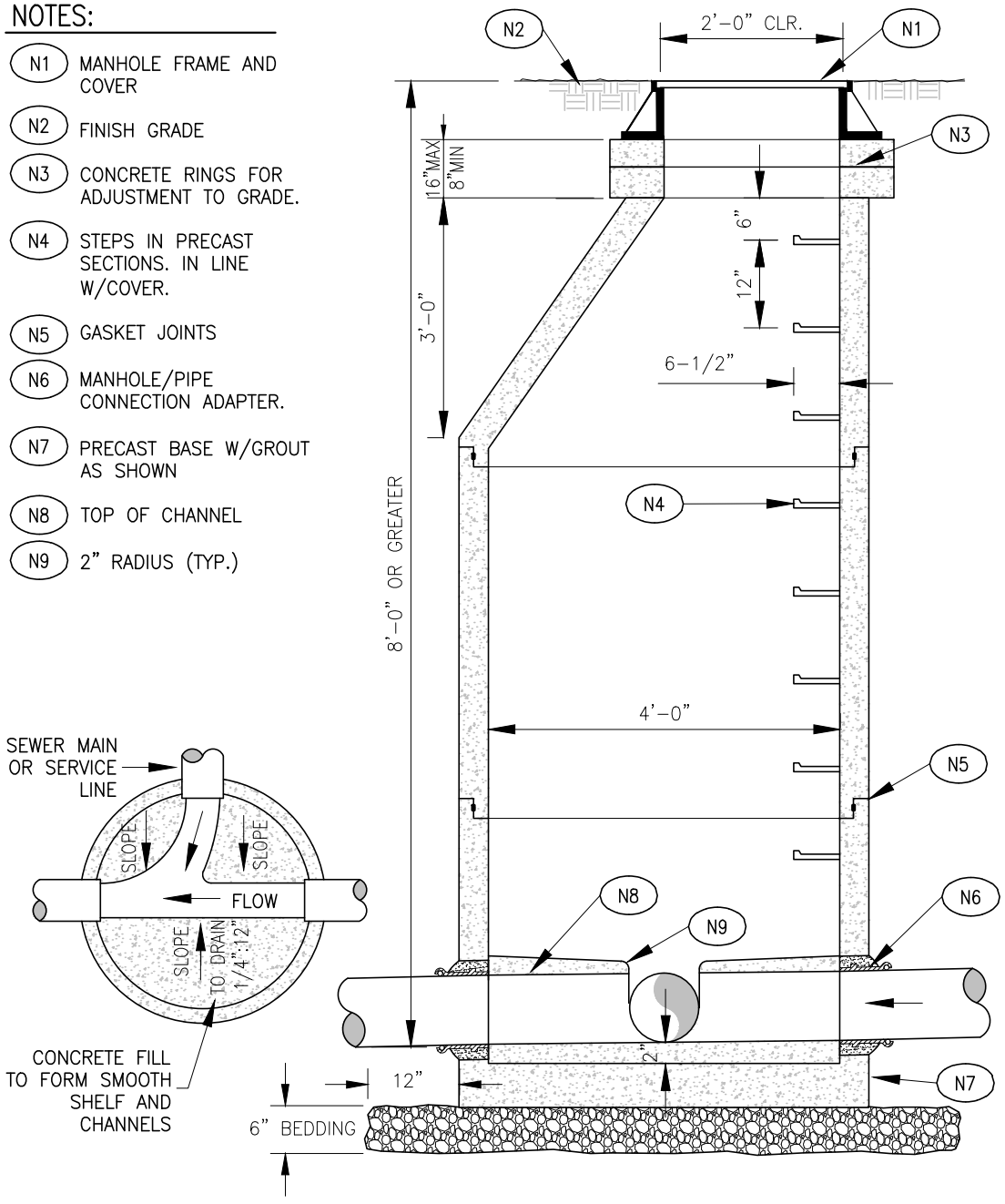
Town of Twisp

NOTES:

- (N1) MANHOLE FRAME AND COVER
- (N2) FINISH GRADE
- (N3) CONCRETE RINGS FOR ADJUSTMENT TO GRADE.
- (N4) STEPS IN PRECAST SECTIONS. IN LINE W/COVER.
- (N5) GASKET JOINTS
- (N6) MANHOLE/PIPE CONNECTION ADAPTER.
- (N7) PRECAST BASE W/GROUT AS SHOWN
- (N8) TOP OF CHANNEL
- (N9) 2" RADIUS (TYP.)



TOWN OF TWISP, WA STANDARD DETAILS MANHOLE TYPE I-48 402	1	5/14/2019	Town of Twisp
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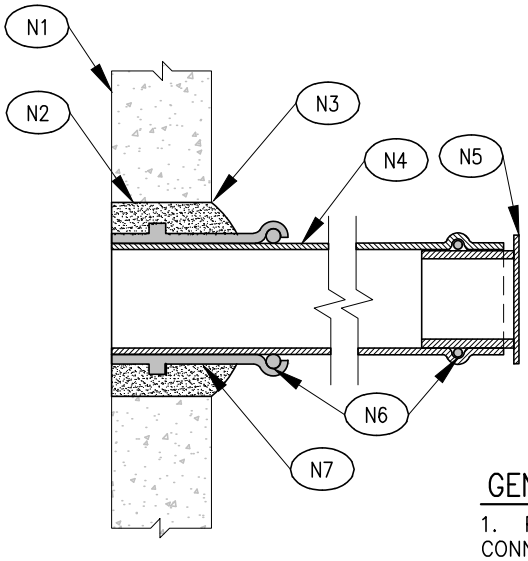

NOTES:

- (N1) MANHOLE WALL
- (N2) WATERPROOF NON–SHRINK GROUT
- (N3) OPENING SHALL BE CAST AT FACTORY OR CORE DRILLED IN FIELD
- (N4) PVC PIPE (TYP.)
- (N5) PIPE PLUG OR CAP (IF APPLICABLE)
- (N6) GASKET (TYP.)
- (N7) SANDED COLLAR MANHOLE ADAPTER (TYP.)

GENERAL NOTES:

1. PVC ADAPTER SHOWN. OTHER MANHOLE PIPE CONNECTION ADAPTERS MAY VARY IN SHAPE AND SIZE IN ACCORDANCE WITH ASTM C482. SEE SPECIFICATIONS.

TOWN OF TWISP, WA
STANDARD DETAILS
MANHOLE/PVC PIPE CONNECTION
403

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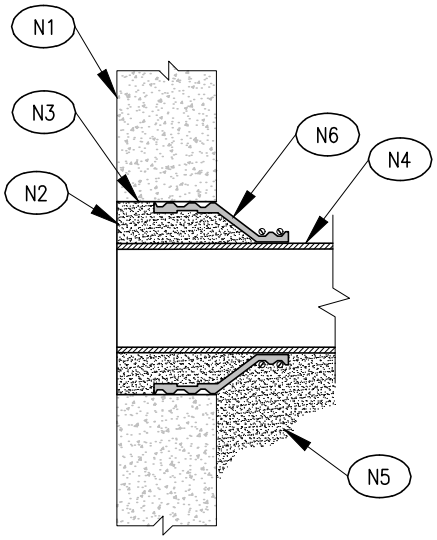

NOTES:

- (N1) MANHOLE WALL
- (N2) WATERPROOF NON–SHRINK GROUT
- (N3) OPENING SHALL BE CAST AT FACTORY OR CORE DRILLED IN FIELD
- (N4) SMOOTHWALL HDPE/D.I., PVC PIPE (TYP.)
- (N5) COMPACTED BEDDING FOUNDATION
- (N6) KOR–N–SEAL BOOT OR EQUAL

TOWN OF TWISP, WA
STANDARD DETAILS
MANHOLE/HDPE, D.I. PIPE CONNECTION
404

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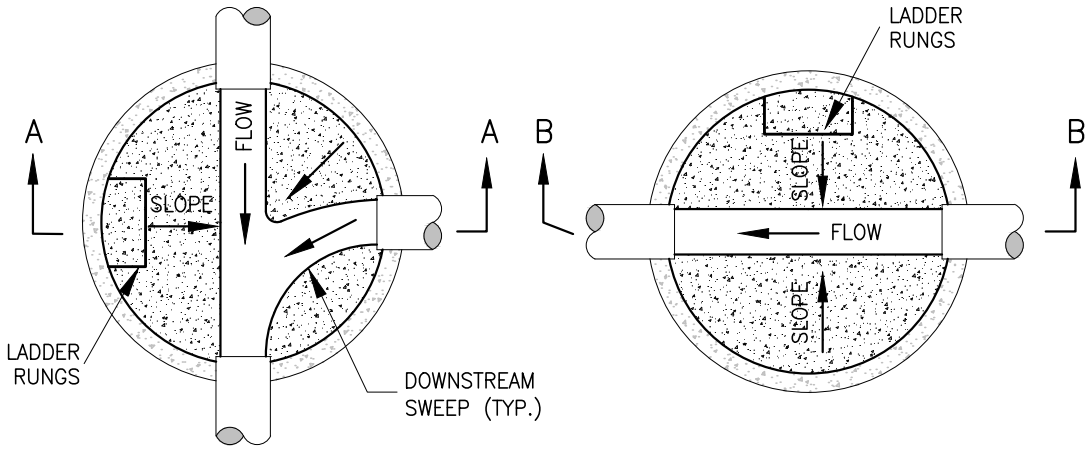


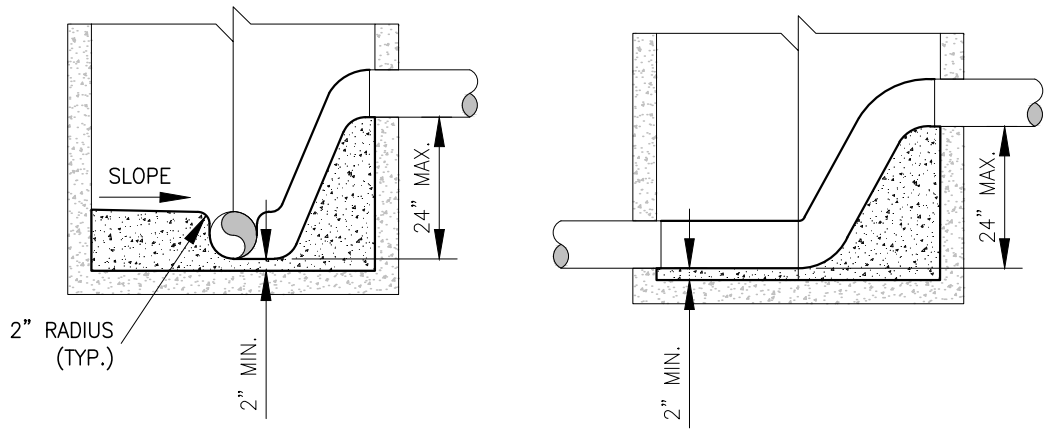
PLAN

PLAN

NOTES:

1. THE CHANNEL SHALL HAVE A SMOOTH FINISH. THE SHELF SHALL HAVE A LIGHT BROOM FINISH.

2. SLOPE SHELF AT 1/4" PER FOOT.



SECTION A–A

SECTION B–B

TOWN OF TWISP, WA STANDARD DETAILS MANHOLE CHANNELNG 405	1	5/14/2019	Town of Twisp
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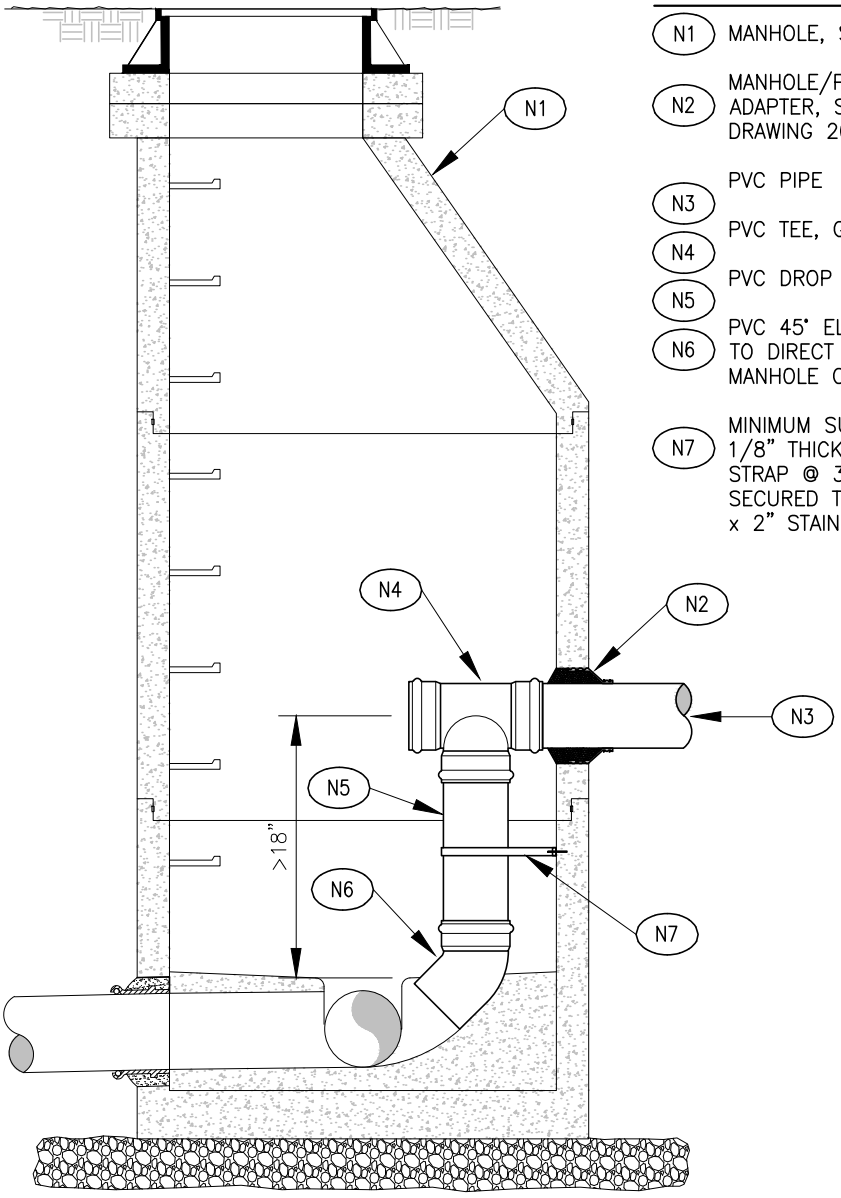

NOTES:

- (N1) MANHOLE, SEE SPECIFICATIONS
- (N2) MANHOLE/PIPE CONNECTION ADAPTER, SEE STANDARD DETAIL DRAWING 203
- (N3) PVC PIPE
- (N4) PVC TEE, GxG
- (N5) PVC DROP PIPE
- (N6) PVC 45° EL, SxG, FORM CHANNEL TO DIRECT FLOW DOWNSTREAM IN MANHOLE CHANNEL
- (N7) MINIMUM SUPPORT: 1" WIDE x 1/8" THICK STAINLESS STEEL STRAP @ 36" O.C. (MAX.) SECURED TO MANHOLE WITH 1/2" x 2" STAINLESS STEEL FASTENERS

TOWN OF TWISP, WA
STANDARD DETAILS
INTERIOR DROP MANHOLE
406

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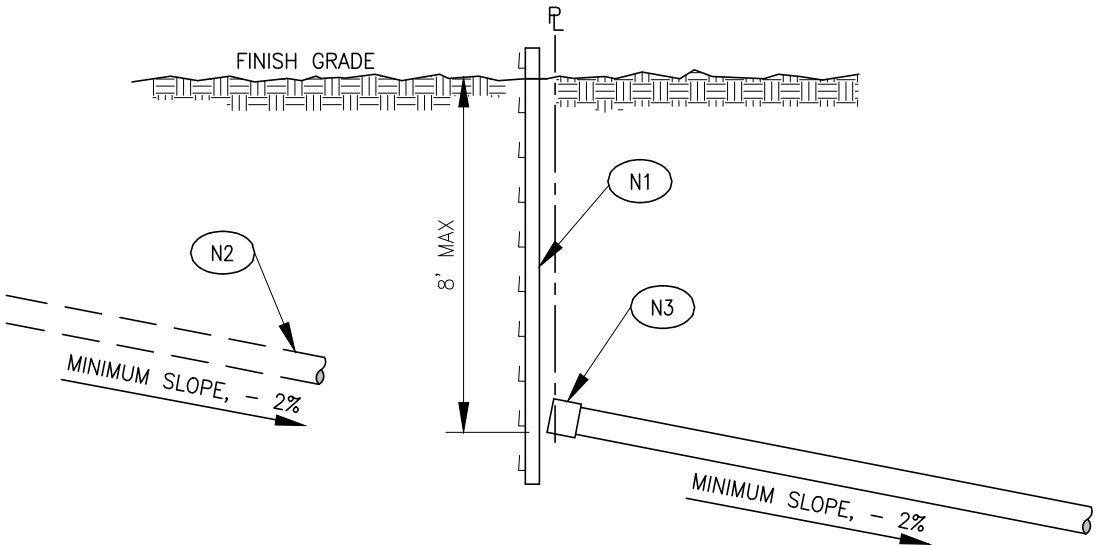

NOTES:

(N1) METAL "T" POST. LENGTH AS REQUIRED. T POST SHALL BE SET AT INVERT OF STUB WITH NUBS AWAY FROM STUB. TOP OF POST SHALL BE 2" ABOVE FINISH GRADE

(N2) FUTURE OWNER INSTALLED SIDE SEWER

(N3) PLUG PER SPECIFICATIONS.
STUB I.E. SHOWN ON PLANS

GENERAL NOTES:

FIELD CONDITIONS MAY NECESSITATE AN INVERT DEPTH AT THE PROPERTY LINE OF LESS THAN 8'. CONFIRM WITH THE ENGINEER IN THE FIELD.

TOWN OF TWISP, WA STANDARD DETAILS SIDE SEWER STUB TO PROPERTY STUB I.E. DEPTHS LESS THAN 8' 407	1	5/14/2019	Town of Twisp
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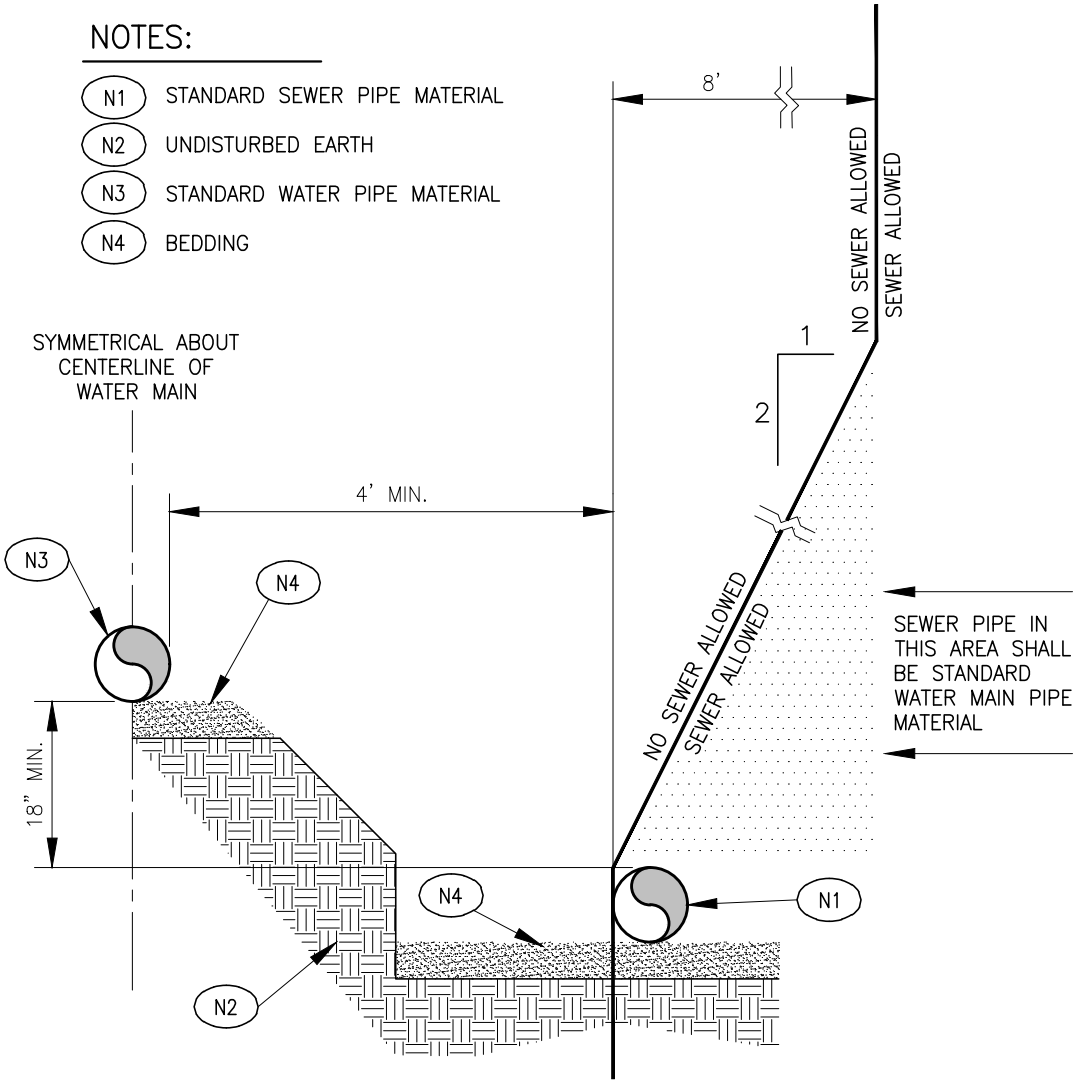
NOTES:

- N1 STANDARD SEWER PIPE MATERIAL
- N2 UNDISTURBED EARTH
- N3 STANDARD WATER PIPE MATERIAL
- N4 BEDDING



TOWN OF TWISP, WA STANDARD DETAILS PARALLEL CONSTRUCTION WITH LESS THAN 10" SEPERATION 408	1	5/14/2019	Town of Twisp
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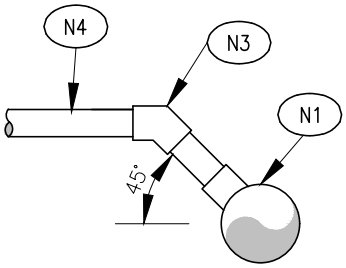
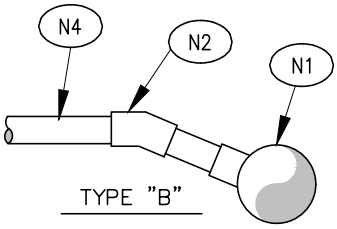
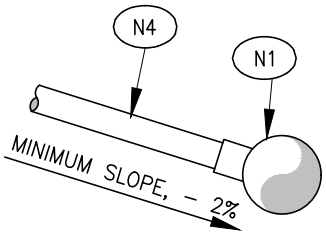


TYPE "A"



TYPE "B"



TYPE "C"

NOTES:

1. EXTEND SIDE SEWER 10' BEYOND SIDE WALKS OR CURBS WHERE EASEMENTS ARE AVAILABLE OR TO THE PROPERTY LINE.
2. INSTALL BEDDING MATERIAL PER SPECIFICATIONS.

NOTES:

N1	SERVICE TEE
N2	22 ½° ELBOW
N3	45° ELBOW
N4	PVC SIDE SEWER PIPE AND FITTING (TYP.)

TOWN OF TWISP, WA
STANDARD DETAILS
SIDE SEWER CONNECTION TO MAIN
409

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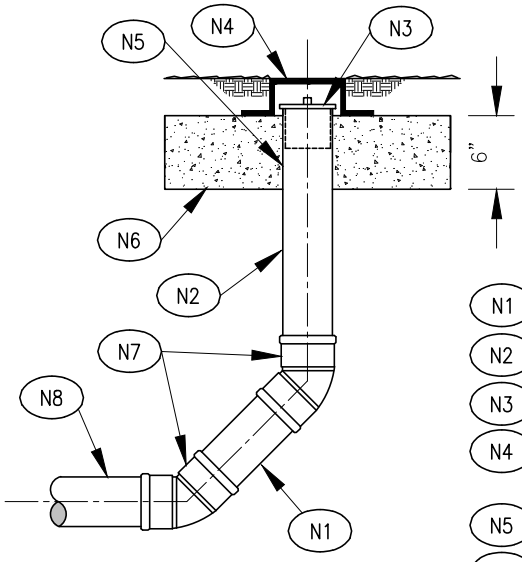

N1	1'–6" PVC SPOOL
N2	PVC SPOOL TO SUIT DEPTH OF LINE
N3	REMOVABLE THREAD PVC PLUG
N4	CAST IRON CLEAN OUT FRAME AND COVER REQUIRED WHEN PLACED UNDER DRIVING SURFACE
N5	BOND BREAKER AROUND PIPE
N6	2'–6" SQUARE CONCRETE BASE REQUIRED WHEN PLACED UNDER DRIVING SURFACE
N7	45° PVC ELL HxH
N8	PVC GRAVITY SEWER

NOTES:

1. I.D. OF FRAME AND COVER SHALL BE AT LEAST 2" LARGER THAN O.D. PLASTIC PLUG.
2. PIPE AND FITTINGS SHALL BE SAME SIZE AS GRAVITY LINE.
3. WHERE CAST IRON FRAME IS REQUIRED, PLUG SHALL BE A MAX. 6" BELOW GRADE, OTHERWISE, PLUG SHALL BE FLUSH WITH FINISHED GRADE.

TOWN OF TWISP, WA
STANDARD DETAILS
GRAVITY CLEANOUT FOR SEWER SERVICE
410

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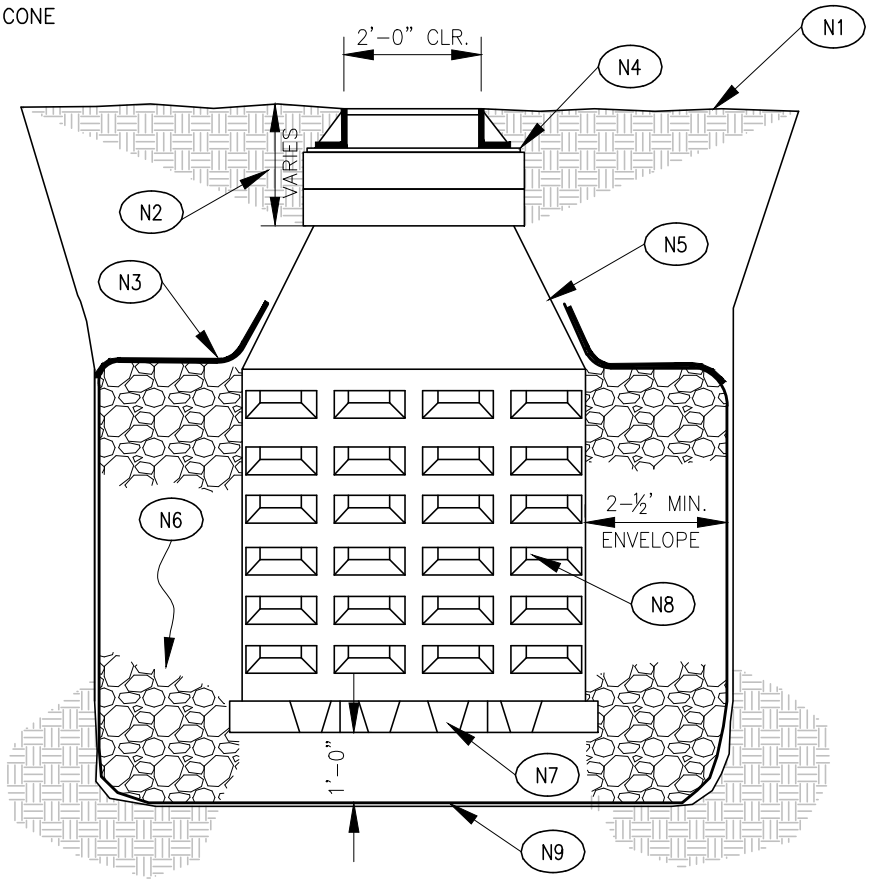
NOTES:

- (N1) FINISH GRADE
- (N2) MAX 2 COURSES OF CONC. RINGS FOR ADJUSTMENT TO GRADE
- (N3) 10 MIL POLY SHEETING COVER
- (N4) 4" x 24" CI RING AND SLOTTED COVER
- (N5) 24" TALL CONCENTRIC DRYWELL CONE
- (N6) MIN. 15 C.Y. 1–½" TO 3" WASHED DRAIN ROCK ALL AROUND
- (N7) 5" x 60" CONC. BASE WITH 24" OPENING
- (N8) 52" x 48" DIA. PERF. BARRELS
- (N9) PROVIDE GEO–FABRIC CONTAINMENT

GENERAL NOTES:

1. ECCENTRIC CONE MAY BE USED IF APPROVED OR DIRECTED BY ENGINEER.



TOWN OF TWISP, WA STANDARD DETAILS STANDARD DRYWELL 501	1	5/14/2019	Town of Twisp
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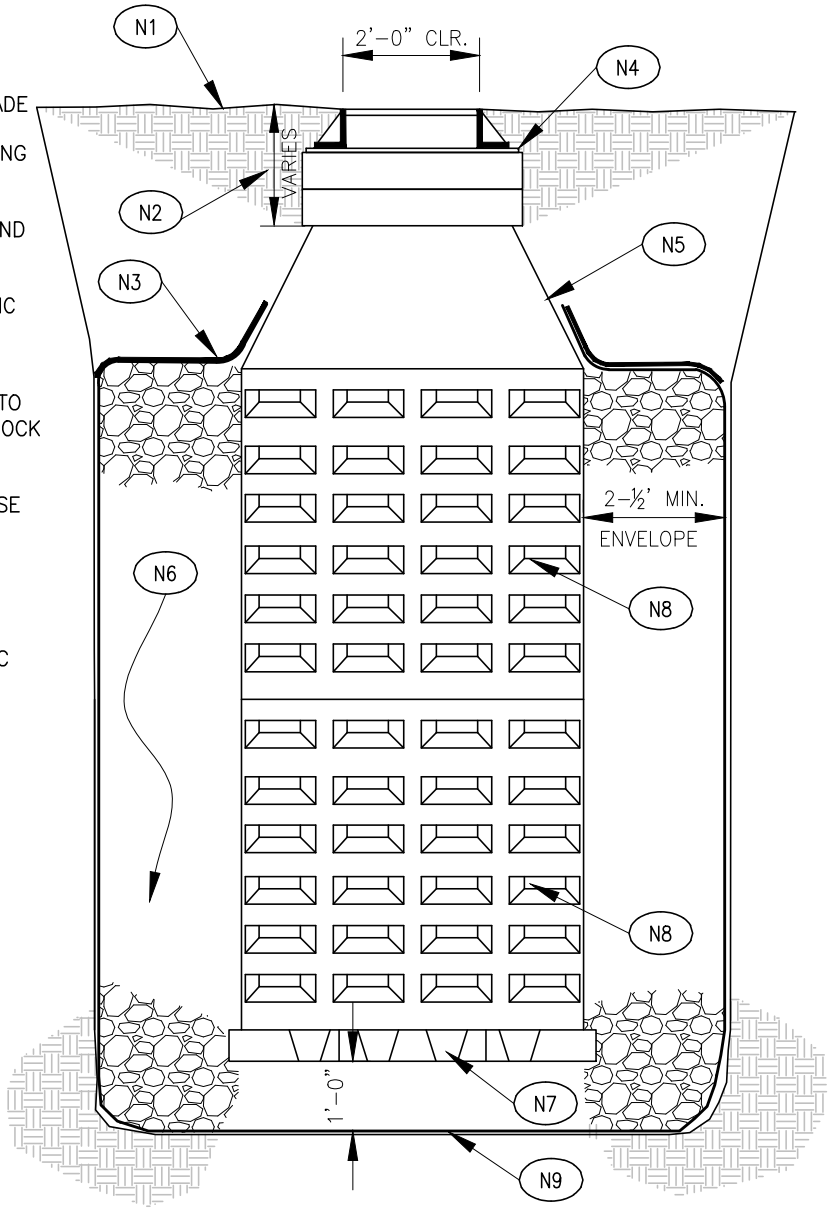
NOTES:

- (N1) FINISH GRADE
- (N2) MAX 2 COURSES OF CONC. RINGS FOR ADJUSTMENT TO GRADE
- (N3) 10 MIL POLY SHEETING COVER
- (N4) 4" x 24" CI RING AND SLOTTED COVER
- (N5) 24" TALL CONCENTRIC DRYWELL CONE
- (N6) MIN. 30 C.Y. 1–½" TO 3" WASHED DRAIN ROCK ALL AROUND
- (N7) 5" x 60" CONC. BASE WITH 24" OPENING
- (N8) 2 – 52" x 48" DIA. PERF. BARRELS
- (N9) PROVIDE GEO–FABRIC CONTAINMENT

GENERAL NOTES:

1. ECCENTRIC CONE MAY BE USED IF APPROVED OR DIRECTED BY ENGINEER.



TOWN OF TWISP, WA STANDARD DETAILS EXTRA DEPTH DRYWELL 502	1	5/14/2019	Town of Twisp
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