THRUST/RETAINER GLAND SCHEDULE		
1/4 BEND	(90°)	USE POURED-IN-PLACE THRUST BLOCK WITH GRIPRING™ MECHANICAL JOINT RESTRAINT
1/8 BEND	(45°)	THRUST BLOCK w/ GRIPRING™
1/16 BEND	(22 1/2°)	THRUST BLOCK w/ GRIPRING™
1/32 BEND	(11 1/4°)	THRUST BLOCK w/ GRIPRING™

THE ABOVE SCHEDULE IS SUBJECT TO THE APPROVAL OF THE ON-SITE INSPECTOR DUE TO SOILS AND WORKING PRESSURES IN THE AREA.

NOTES:

1.) THE PORTLAND WATER DISTRICT MAY HAVE INSPECTION FEES AND REQUIRE OBSERVATION OF ALL PIPING INSTALLATION BEFORE BURIAL. REFER TO SPECIFICATIONS.

2.) REFER TO PORTLAND WATER DISTRICT SPECIFICATIONS FOR TESTING AND CHLORINATION REQUIREMENTS.

3.) ALL HYDRANTS AND VALVES TO BE EPOXY COATED, NUTS & BOLTS TO BE STAINLESS STEEL.

4.) SERVICE RODS FOR DOMESTIC SERVICE OR AIR VALVES TO BE STAINLESS STEEL.

(A) TYPICAL THRUST BLOCK PLACEMENT BENDS

N.T.S.

(C) TYPICAL THRUST BLOCK PLACEMENT ON TEES

N.T.S.

NOTES:

WHEN THIS MANHOLE DETAIL IS USED FOR SANITARY SEWER INSTALLATIONS MAKE THE FOLLOWING CHANGES:

1.)THE HEIGHT OF THE TRUNCATED CONE SHALL BE 2'-0"

2.)A POLYFROST BARRIER CONSISTING OF A MINIMUM OF 4 LAYERS, (EACH 6 MIL) SHALL BE PLACED AROUND THE STRUCTURE FROM THE SURFACE TO 5'-) MIN. BELOW GRADE.

3.)THE BACKFILL AROUND THE MANHOLE SHALL BE COMPACTED GRAVEL, A MINIMUM OF 24" OUTSIDE THE STRUCTURE.

4.)THE CASTING SHALL BE GASKETED.

(E) 4'-0" PRECAST SANITARY SEWER & STORM DRAIN MANHOLE

N.T.S.

I.D.	W	C
4'-0"	5"	8"
5'-0"	6"	8"
6'-0"	6"	8"
6'-8"	4"	8"
8'-0"	6"	8"

DESIGN NOTES:

1. ALL CONCRETE TO HAVE A MIN. 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS
2. DESIGN FOR H-20 WHEEL LOADING
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS
4. REINFORCE TO .12 IN. SQ./L.F.

NOTE:
FOR BASE CONSTRUCTION SEE BASE DETAIL

OPTION 1	
I.D.	T
4'-0"	6"
5'-0"	6"
6'-0"	6"
6'-8"	4"
8'-0"	6"

OPTION 2	
I.D.	B
4'-0"	6'-0"
5'-0"	7'-0"
6'-0"	9'-0"
6'-8"	11'-0"
8'-0"	12'-0"

(G) LARGE DIAMETER STORM DRAIN MANHOLE AND CATCH BASIN W/ FLAT TOP

N.T.S.

NOTE: THE CONTRACTOR SHALL USE BASE OPTION 2 UNLESS ANTIFLOATATION COMPUTATIONS ARE PROVIDED BY THE CONTRACTOR DEMONSTRATING OPTION 1 CAN BE USED AT THIS SITE. APPROVAL IS SUBJECT TO APPROVAL OF THE ENGINEER.

SIZE	A	B	C	D	E	F	G	H
6 in.	5 1/2"	13 3/8"	13 3/4"	5 3/8"	5 7/8"	11 5/8"	6 1/2"	7 1/4"
8 in.	7 1/2"	15"	15 3/8"	5 1/2"	5 3/8"	13 3/4"	8 3/4"	9 3/8"
10 in.	9 1/2"	16"	16 1/4"	6"	4 1/2"	14 1/8"	11 1/2"	12 3/8"
12 in.	11 1/2"	17"	22"	8"	3 1/2"	17"	12 1/2"	13 3/8"

(H) CASCO TRAP DETAIL

N.T.S.

1. INSTALL POLY BARRIER BETWEEN PIPE AND ALL THRUST BLOCKS.
2. ANY MODIFICATION TO THRUST BLOCK SIZING OR PIPE RESTRAINT REVISIONS SHALL BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO IMPLEMENTATION IN THE FIELD
3. ANY WORK RELATING TO WATER PIPING OR DETAILS SHALL BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS
4. ALL RESTRAINED JOINTS MUST HAVE GRIPRING TM

BEARING SURFACE REQUIRED IN SQUARE FEET

PIPE SIZE	1/32 BEND	1/16 BEND	1/8 BEND	1/4 BEND	TEES/CAPS
6"/8"	5.0	5.0	5.0	6.5	5.0
12"	11.5	11.5	11.5	20.0	22.0

(B) THRUST BLOCK NOTES

N.T.S.

(D) STANDARD TEE BLOCKING

N.T.S.

SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL (B)

SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL (B)

(F) FIRE HYDRANT INSTALLATION DETAIL

N.T.S.

(I) PIPE CONNECTION TO PRECAST CONCRETE SANITARY SEWER AND STORM DRAINAGE STRUCTURE

N.T.S.

REV	DATE	DESCRIPTION
3	12.09.15	RELEASED FOR CONSTRUCTION - FINAL PLANS TO CITY
2	07.17.15	REVISED SUBMISSION TO CITY
1	06.12.15	AMENDED SITE PLAN SUBMISSION

REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER

P.E. STEPHEN BUSHEY
LIC. #7429

PROJECT
SECOND TEE CONDOMINIUM ASSOCIATION
BUSINESS PARK EXPANSION

SHEET TITLE
UTILITY DETAILS

CLIENT
1039 RIVERSIDE LLC

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	DED	DATE:	MAY 2015
DESIGNED:	SRB	SCALE:	AS NOTED
CHECKED:	SRB	JOB NO.	SP-M164
FILE NAME:	SP-M168 DETAILS		
SHEET	C-8		

Reviewed for Code Compliance Department Division Approved as Noted Date: 02/29/16

R:\SP-M164 Second Tee Business Park Unit #9- Portland, ME\Cadd\Construction Set\dwg\SP-M164 DETAILS.dwg davis_d 12/9/2015 11:36 AM