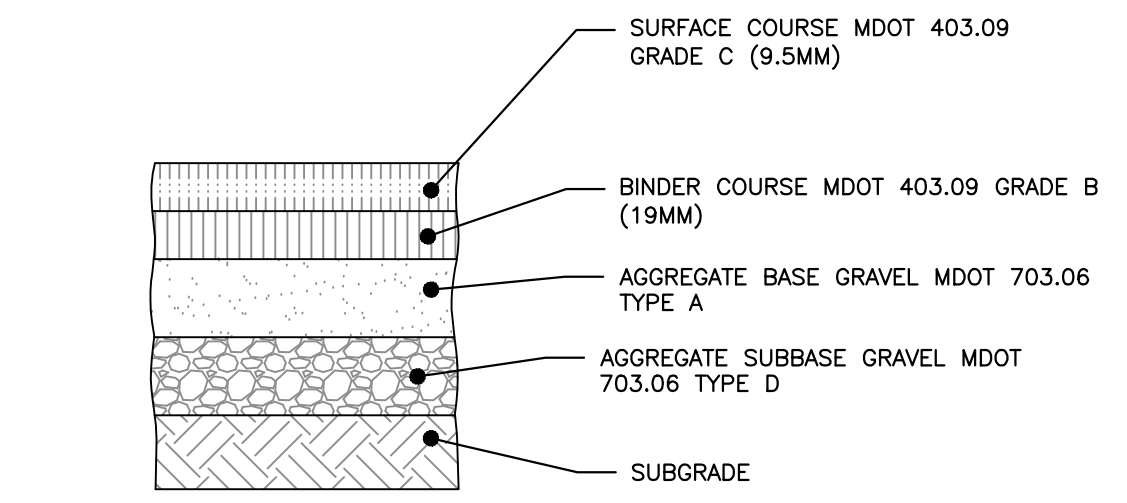
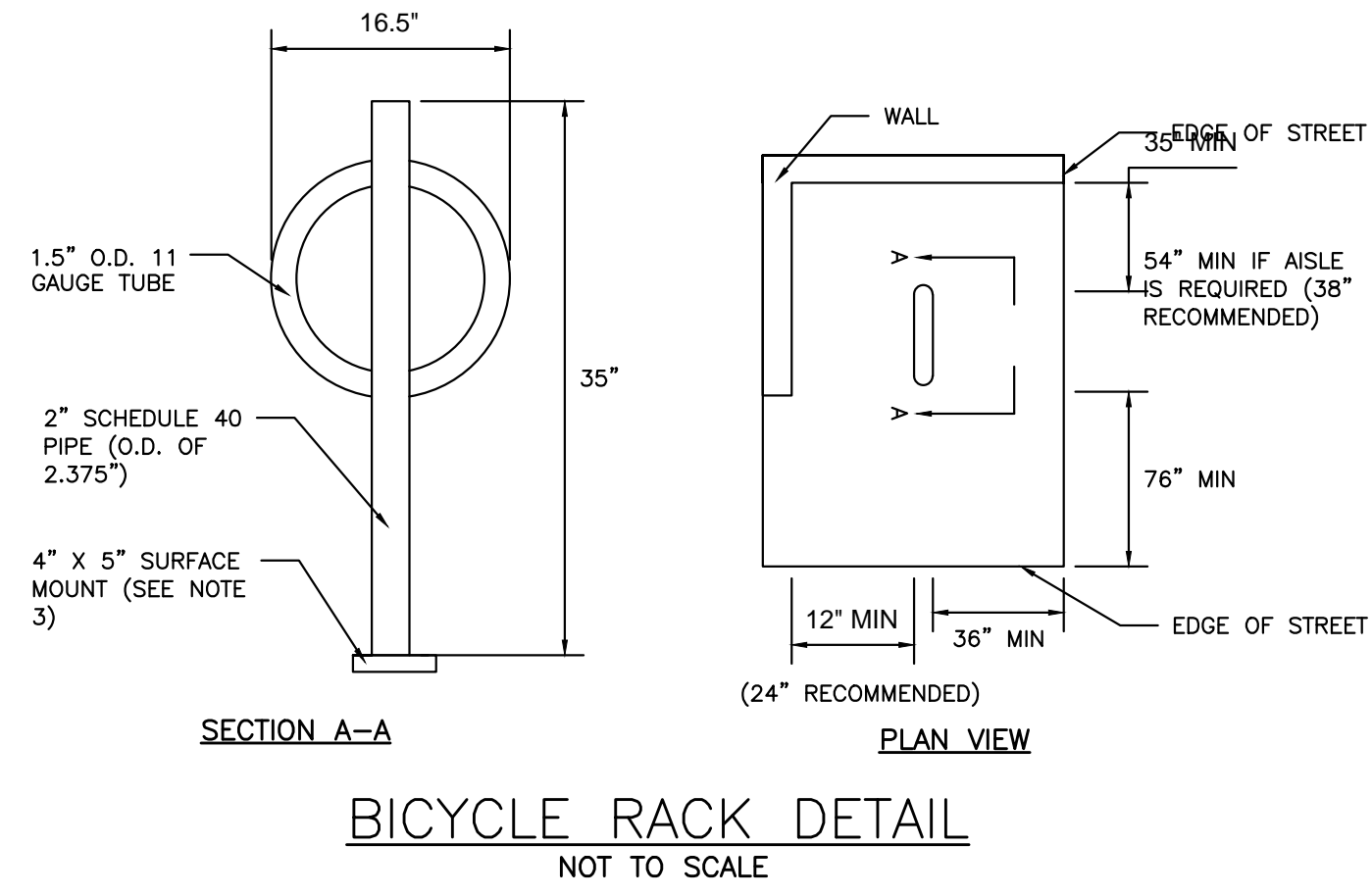


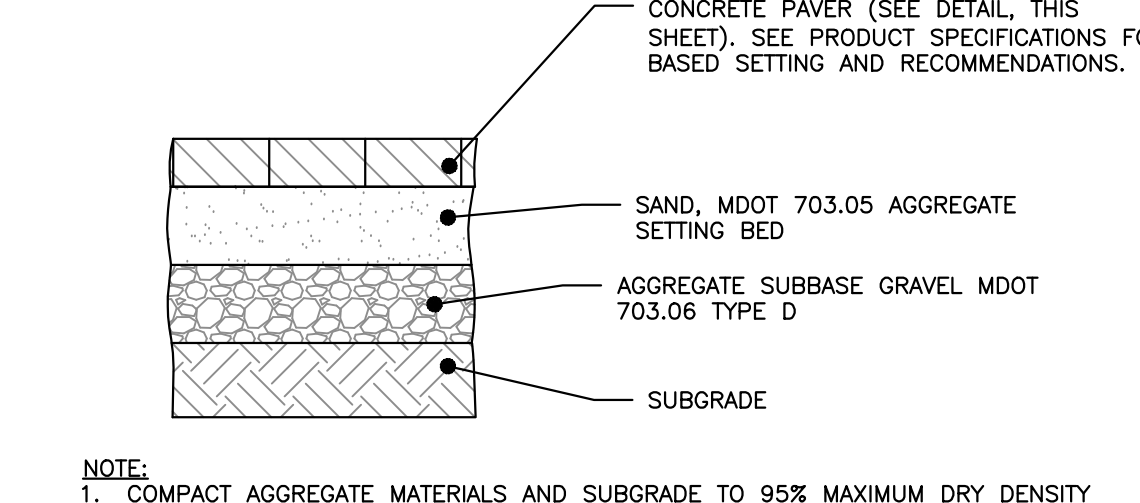
- NOTES:
- 1) BICYCLE RACK SHALL HAVE CAPACITY FOR TWO BICYCLES.
 - 2) BICYCLE RACK PARTS SHALL BE OF UNIFORM COLOR AND SHALL BE FINISHED IN ACCORDANCE WITH PRODUCT SPECIFICATION.
 - 3) BICYCLE RACK SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S MOST RECENT INSTALLATION RECOMMENDATIONS, AND SHALL BE INSTALLED WITH A SURFACE MOUNT UNLESS OTHERWISE APPROVED BY ENGINEER.
 - 4) BICYCLE RACK SHALL BE "DERO BIKE HITCH", AS MANUFACTURED BY DERO BIKE RACKS.
 - 5) MINIMUM OFFSETS SHOWN. MANUFACTURER'S RECOMMENDED OFFSETS SHALL BE ENFORCED WHERE POSSIBLE.
 - 6) MINIMUM DISTANCE BETWEEN BICYCLE RACKS SHALL BE 24". RECOMMENDED DISTANCE BETWEEN BICYCLE RACKS SHALL BE 38".
 - 7) ALL OFFSETS ARE FROM OUTSIDE EDGES OF ITEMS.



NOTE: COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

STANDARD	THICKNESS OF LAYERS
2"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
3"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
6"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B
18"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

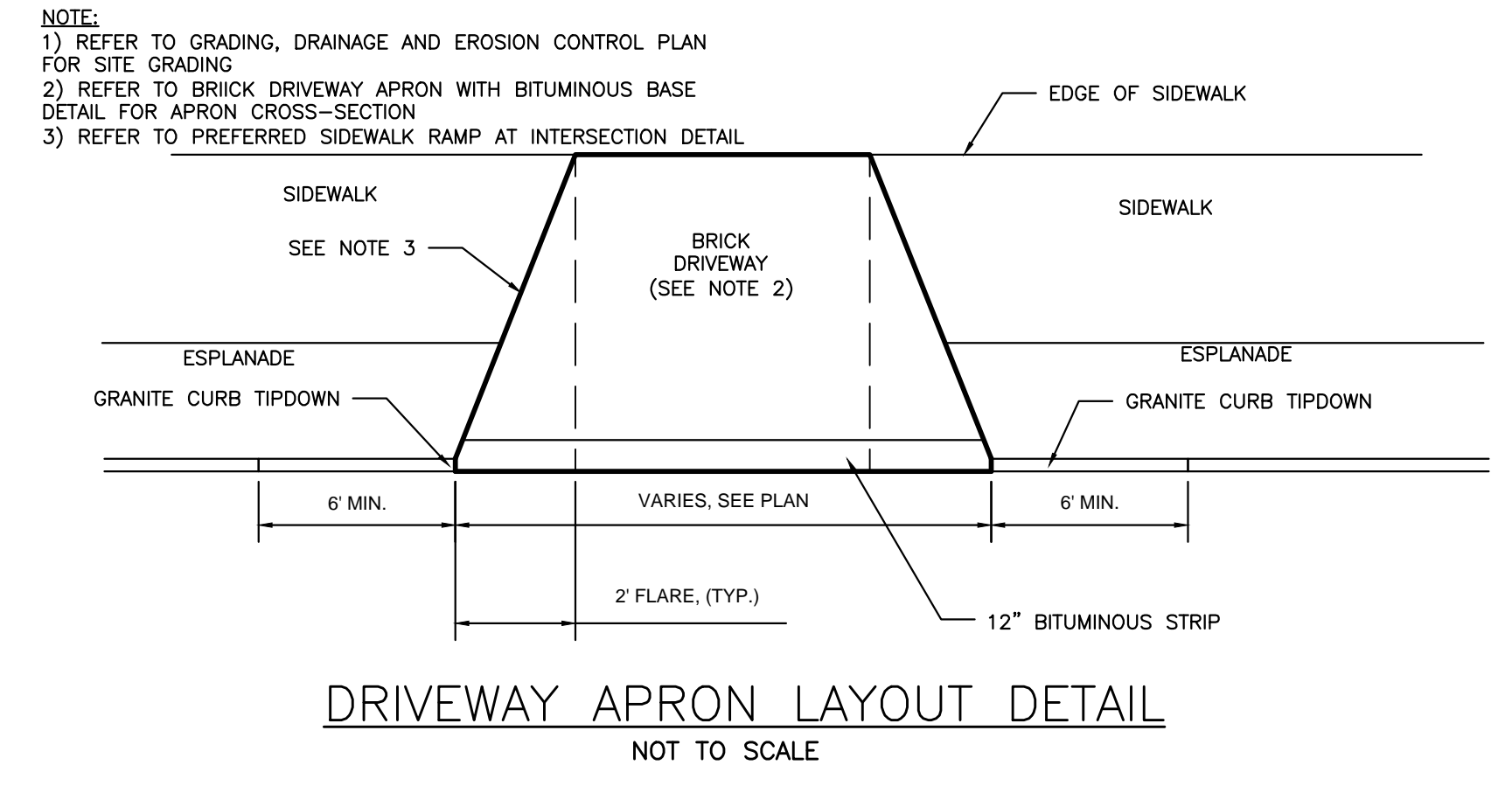
CITY OF PORTLAND ARTERIAL BITUMINOUS PAVEMENT PROFILE
NOT TO SCALE



NOTE: 1. COMPACT AGGREGATE MATERIALS AND SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

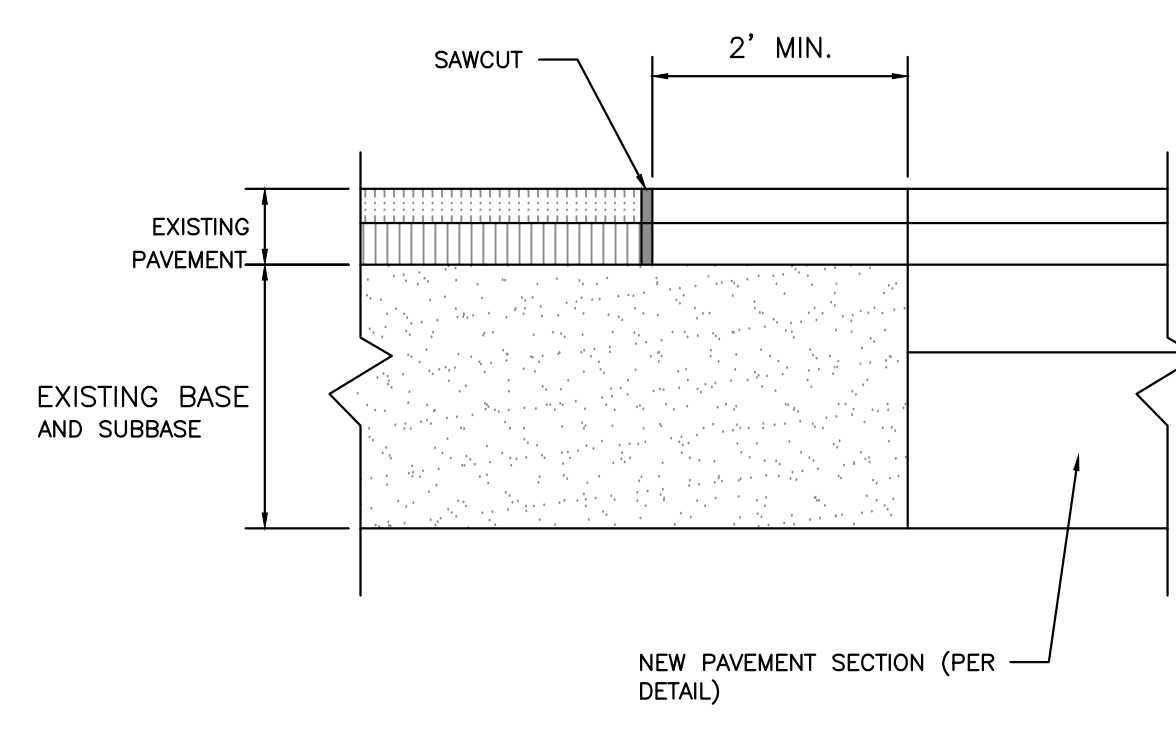
STANDARD	THICKNESS OF LAYERS
2-3/4"	CONCRETE PAVER (DEPTH TBD BASED UPON THE MANUFACTURER)
4"	AGGREGATE BASE SAND MDOT 703.05
15"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

CONCRETE BRICK PAVER PROFILE
NOT TO SCALE

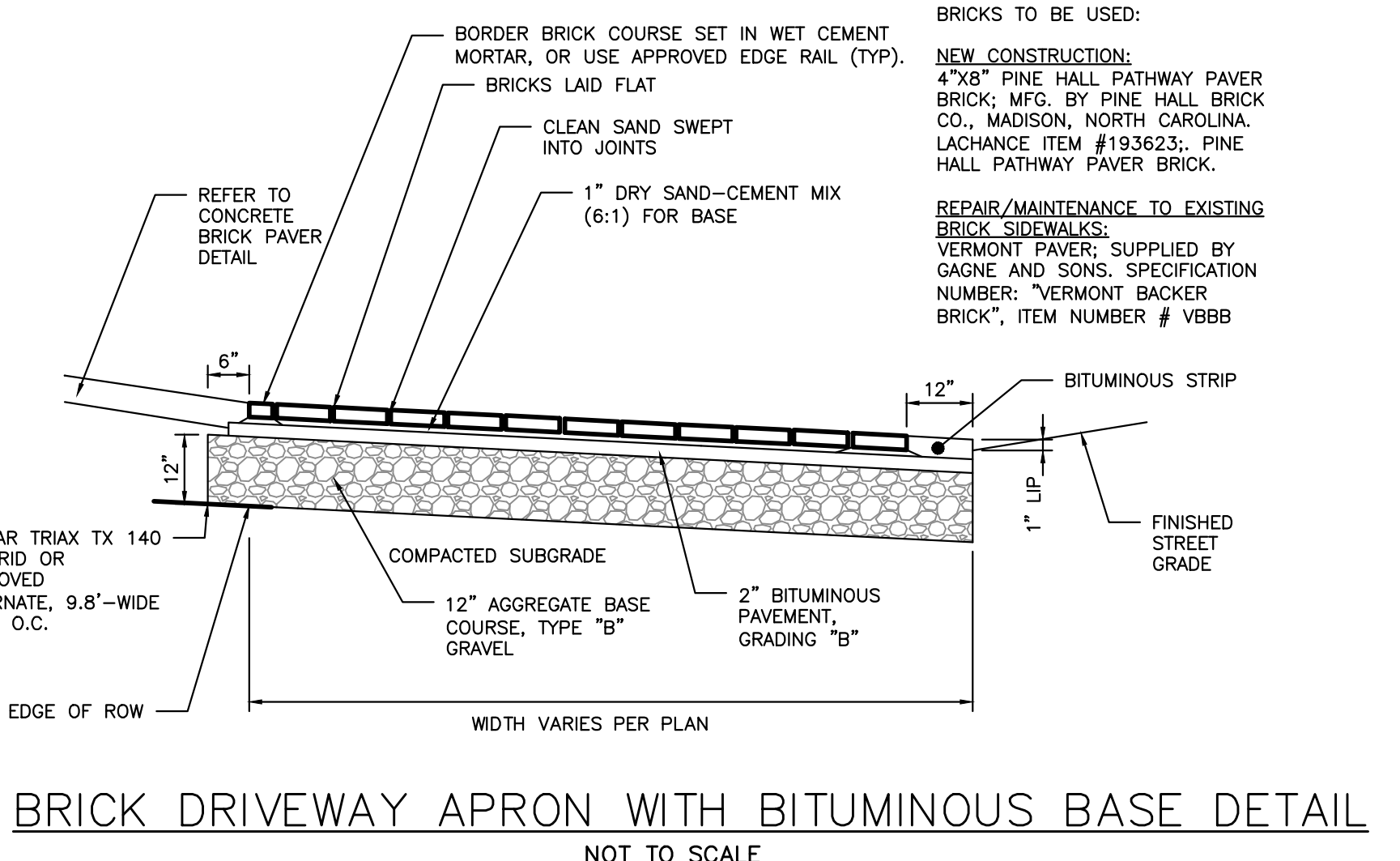


DRIVEWAY APRON LAYOUT DETAIL
NOT TO SCALE

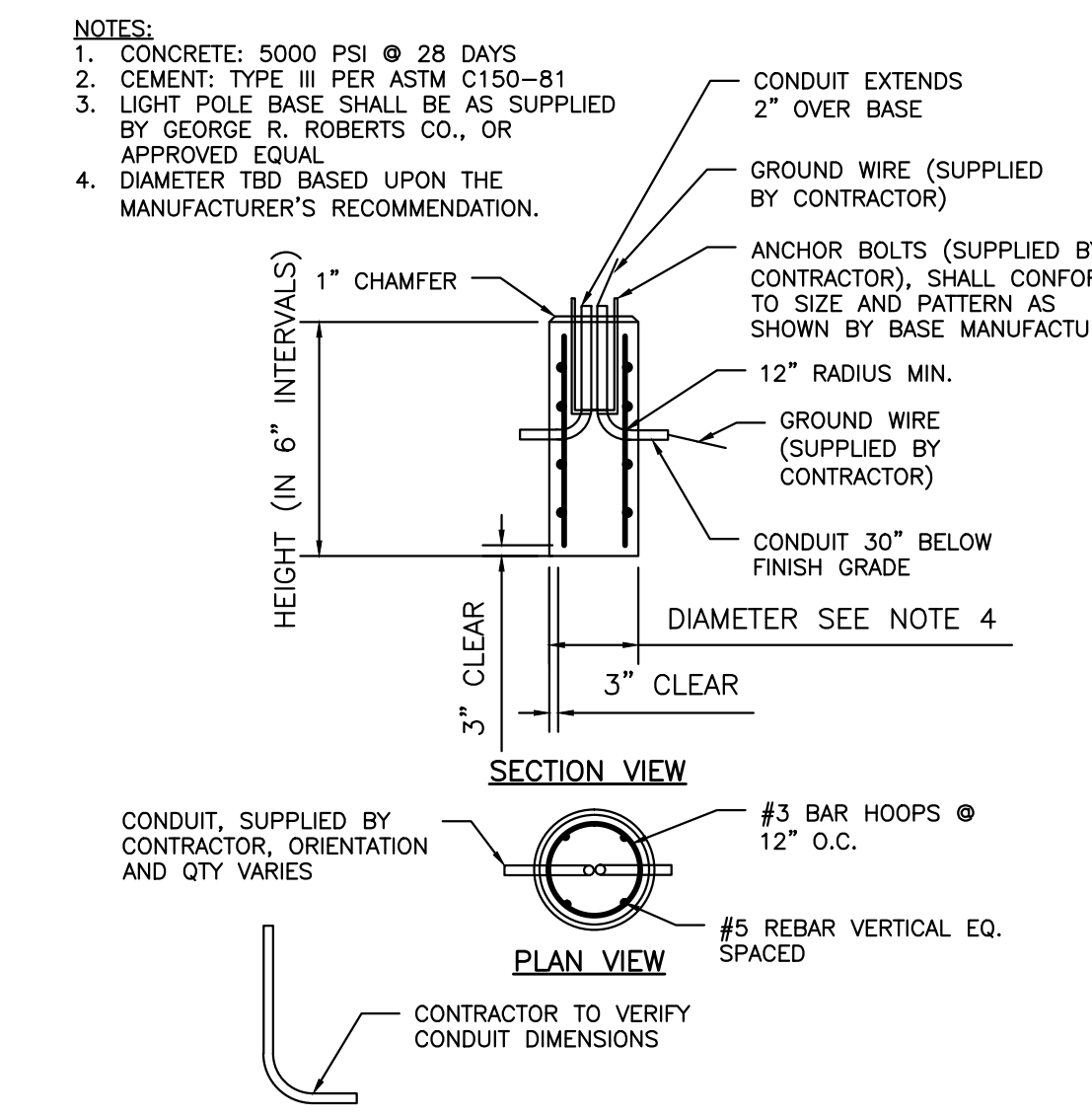
- NOTES:
1. SAWCUT EXISTING PAVEMENT AND REMOVE 2" STRIP OF EXISTING PAVEMENT. APPLY BITUMINOUS TACK COAT PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
 2. THE NEW PAVEMENT SECTION SHALL MEET THE CITY OF PORTLAND ARTERIAL BITUMINOUS PAVEMENT SECTION DETAIL AT A MINIMUM OR THE THE EXISTING PAVEMENT AND AGGREGATE BASE AND SUBBASE DEPTH WHICHEVER IS GREATER.



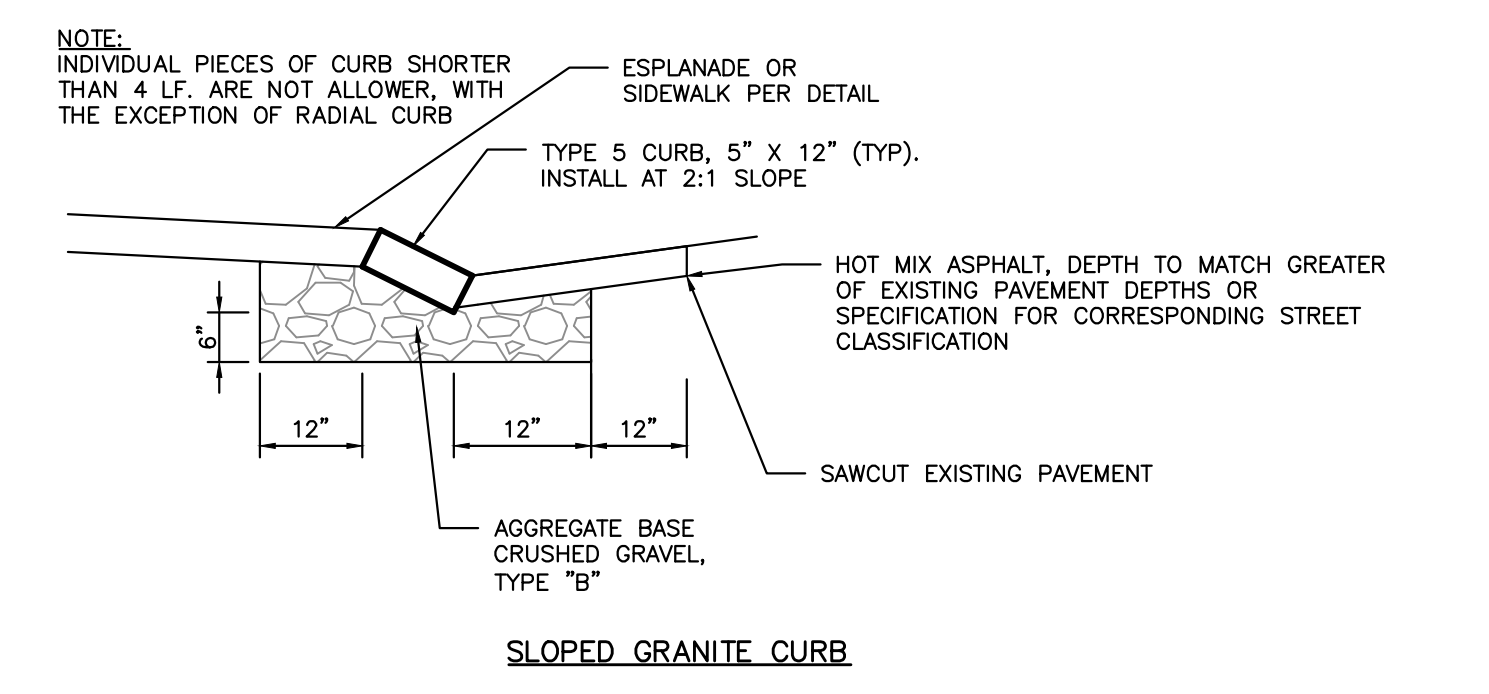
PAVEMENT SAWCUT DETAIL
NOT TO SCALE



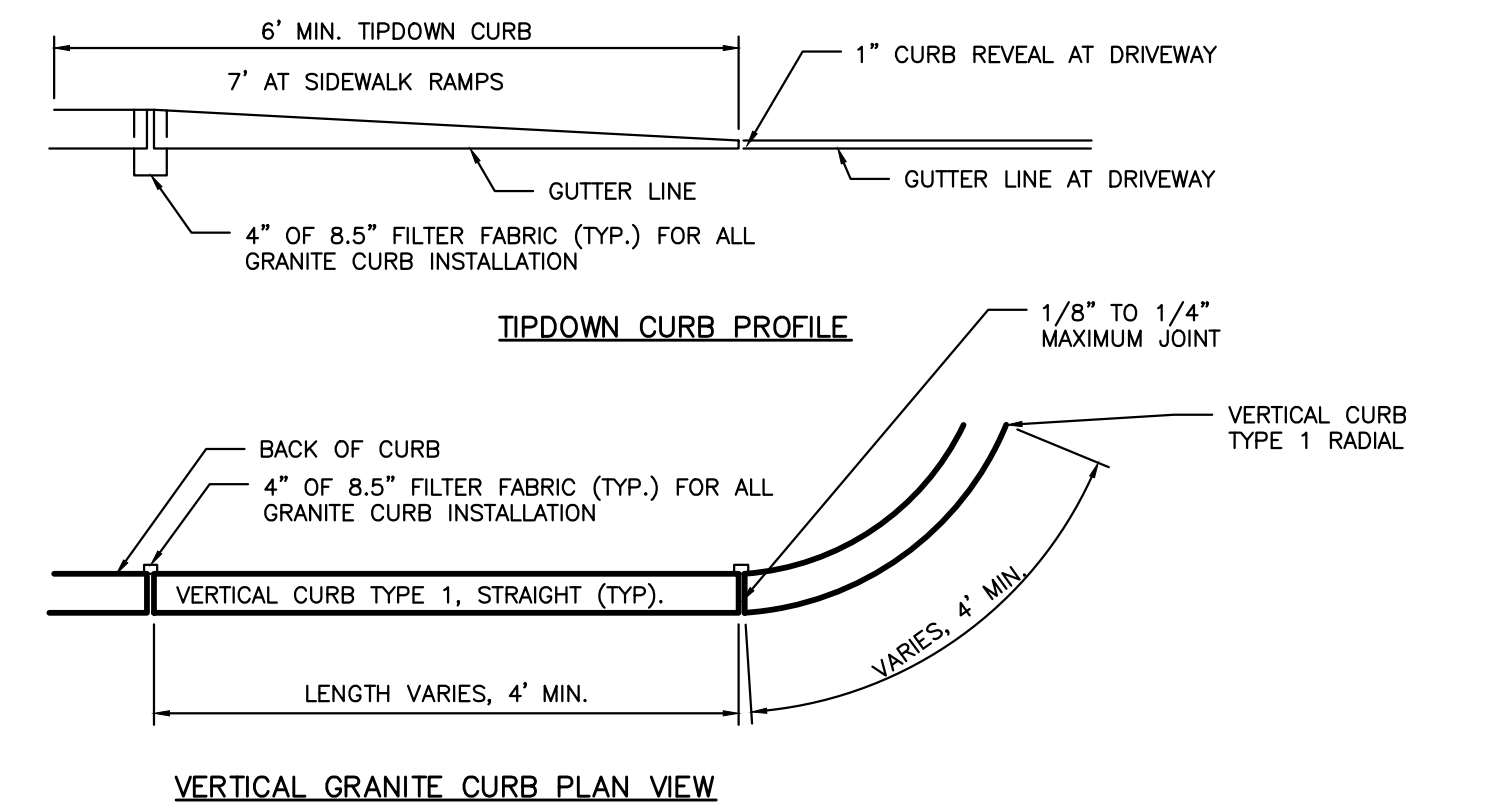
BRICK DRIVEWAY APRON WITH BITUMINOUS BASE DETAIL
NOT TO SCALE



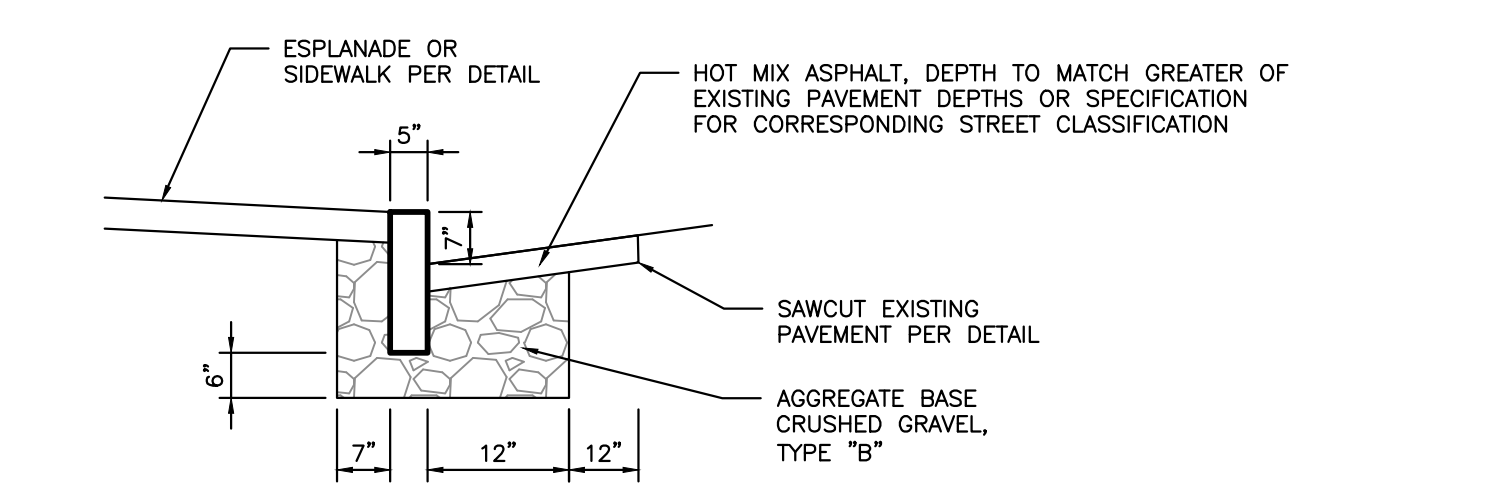
LIGHT POLE BASE
NOT TO SCALE



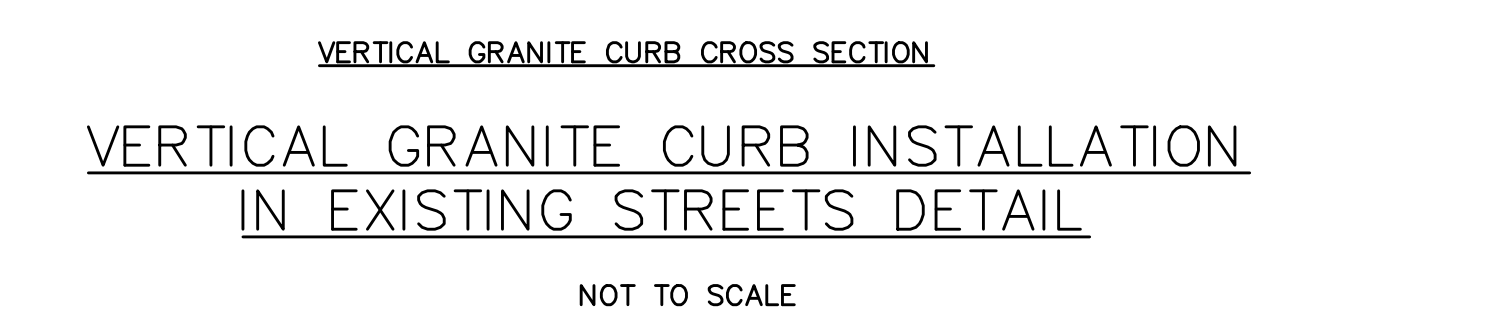
SLOPED GRANITE CURB



TIPDOWN CURB PROFILE

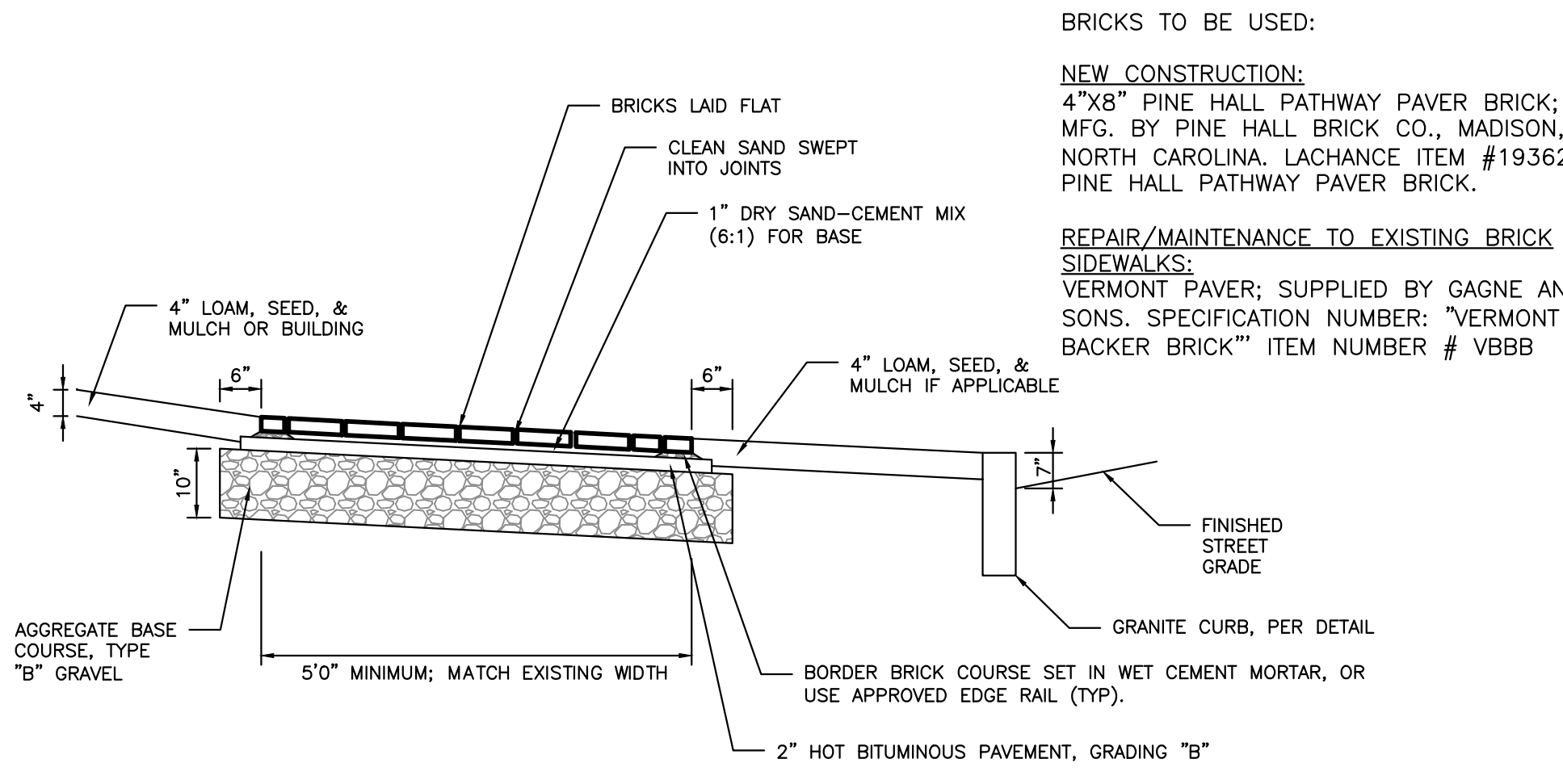


VERTICAL GRANITE CURB PLAN VIEW

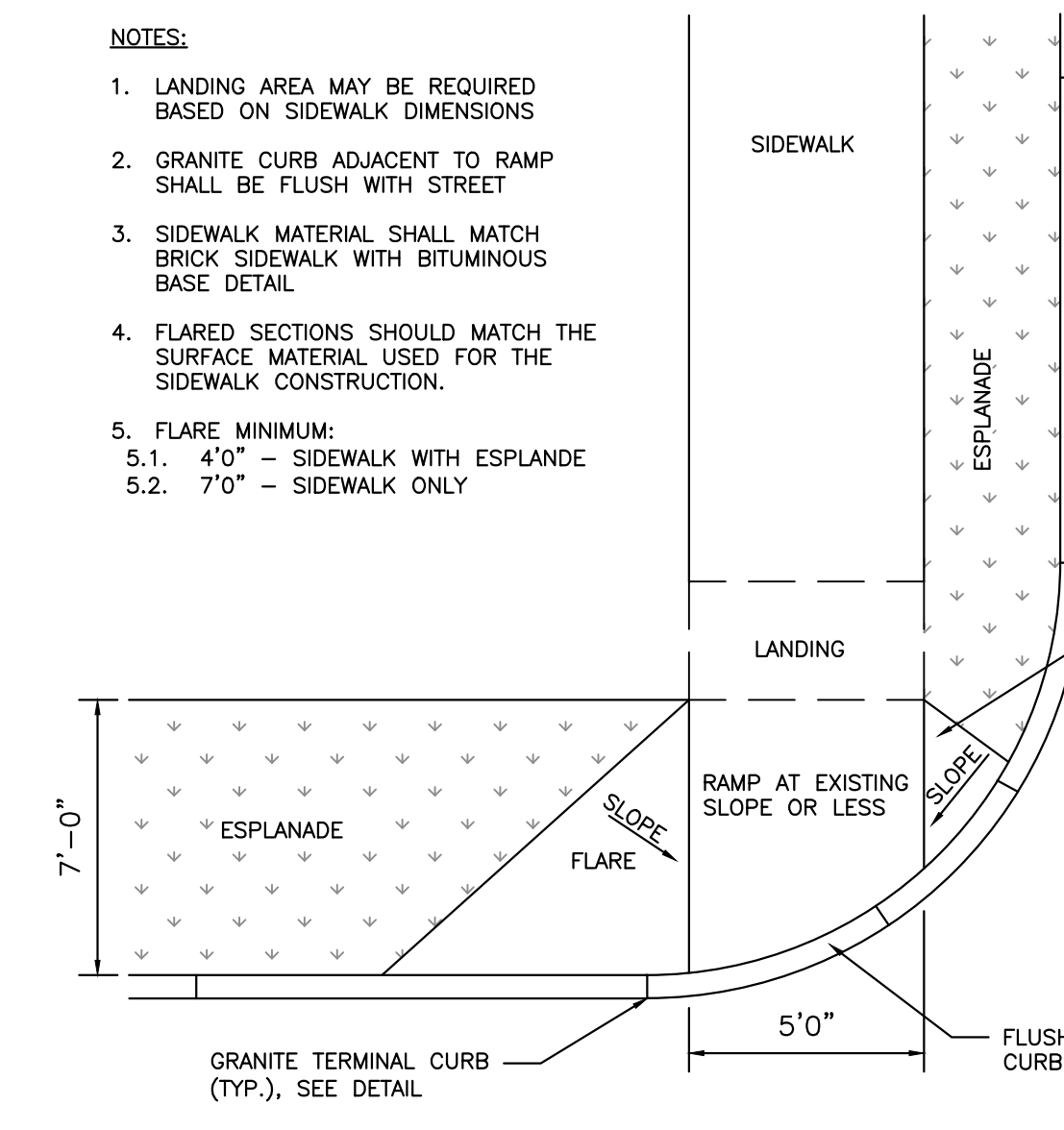


VERTICAL GRANITE CURB CROSS SECTION

VERTICAL GRANITE CURB INSTALLATION IN EXISTING STREETS DETAIL
NOT TO SCALE



BRICK SIDEWALK WITH BITUMINOUS BASE DETAIL
NOT TO SCALE



PREFERRED SIDEWALK RAMP AT INTERSECTION
NOT TO SCALE

ISSUED FOR	BY
WORKSHOP #2	WHS
FINAL SUBMISSION	WHS

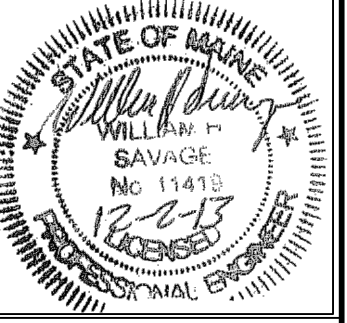
REVISION	REV	DATE
REV. STANDARD DETAIL	WHS	12/2/13

DRAWING NAME: SITE DETAILS
PROJECT NAME: MUNJOY HEIGHTS
CLIENT: REDFERN MUNJOY, LLC.
P.O. BOX 8816, PORTLAND, MAINE 04104

ACORNY ENGINEERING, INC.
3372 PORTLAND, MAINE 04104
(207) 775-2655

ENGINEERING, INC.

FILE: 1047_details
DATE: 7/11/13
JN: 302-001
SCALE: NTS
DESIGN BY: WHS
DRAWN BY: ZRJ
CHECKED BY: WHS

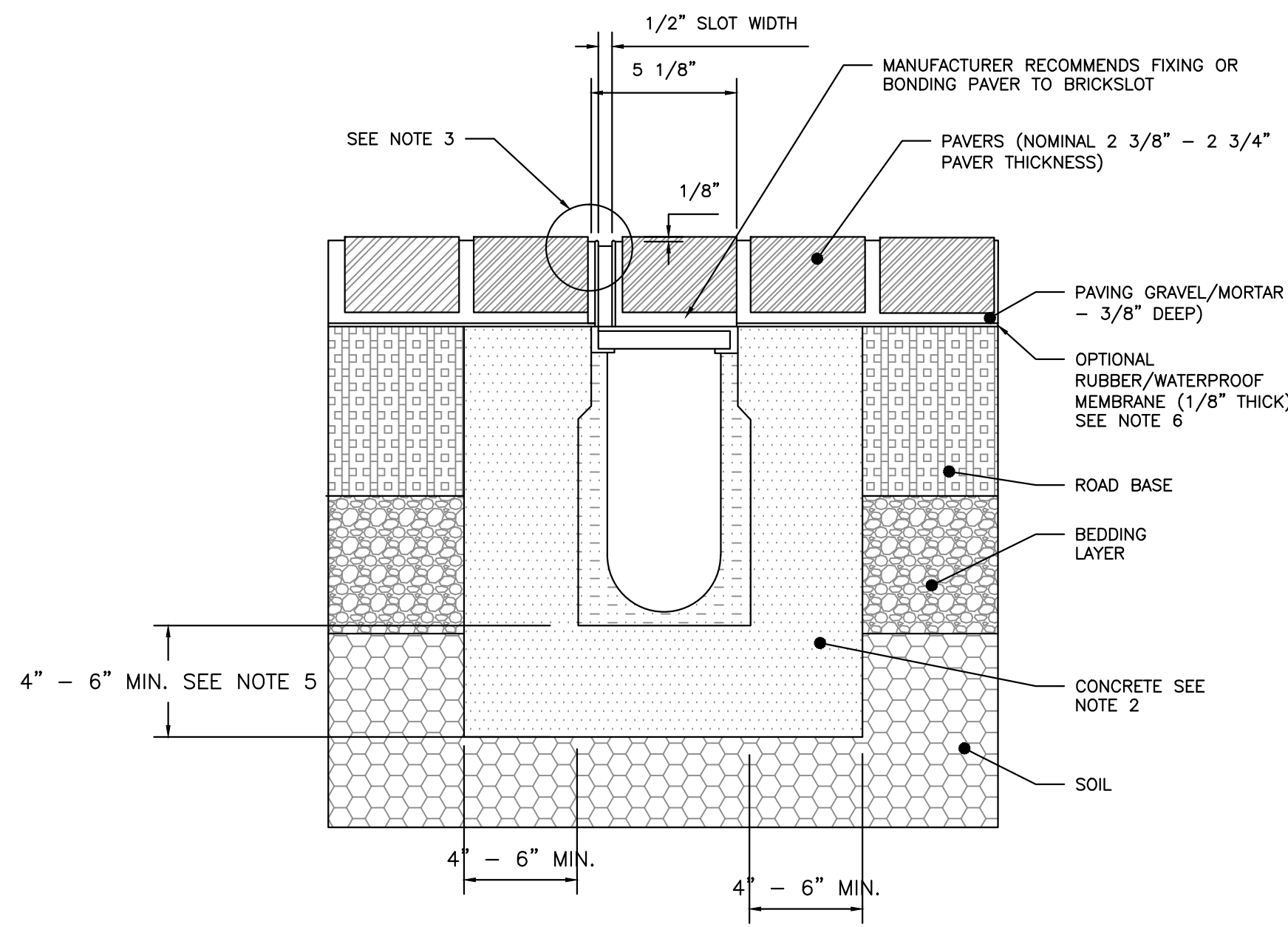


DRAWING NO. C-40

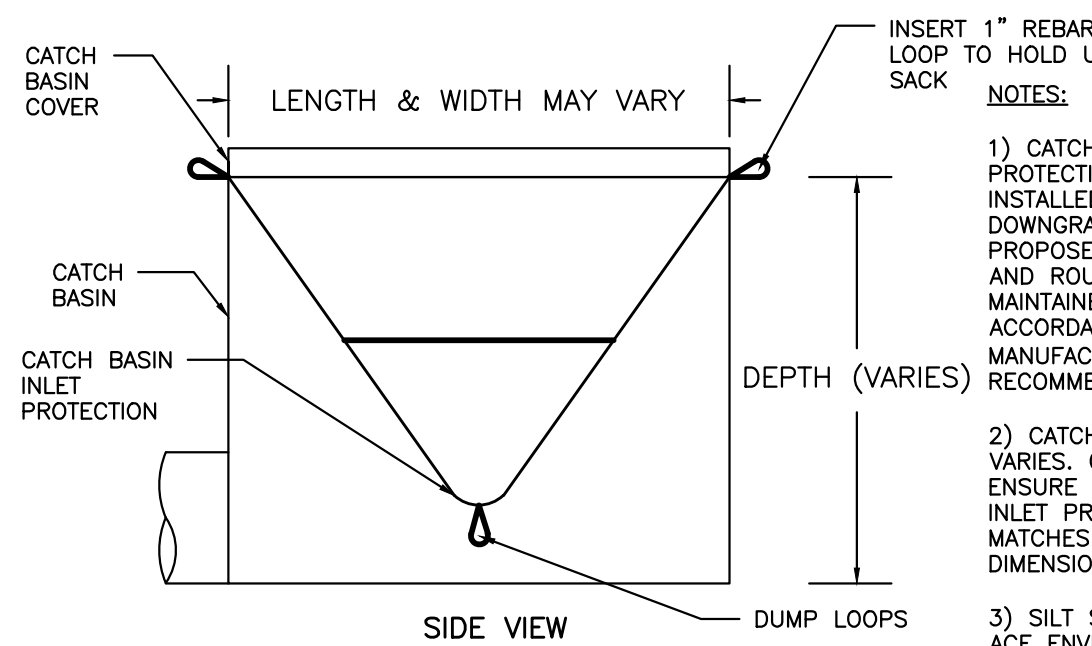
PERMIT DRAWINGS
NOT FOR CONSTRUCTION

NOTES:

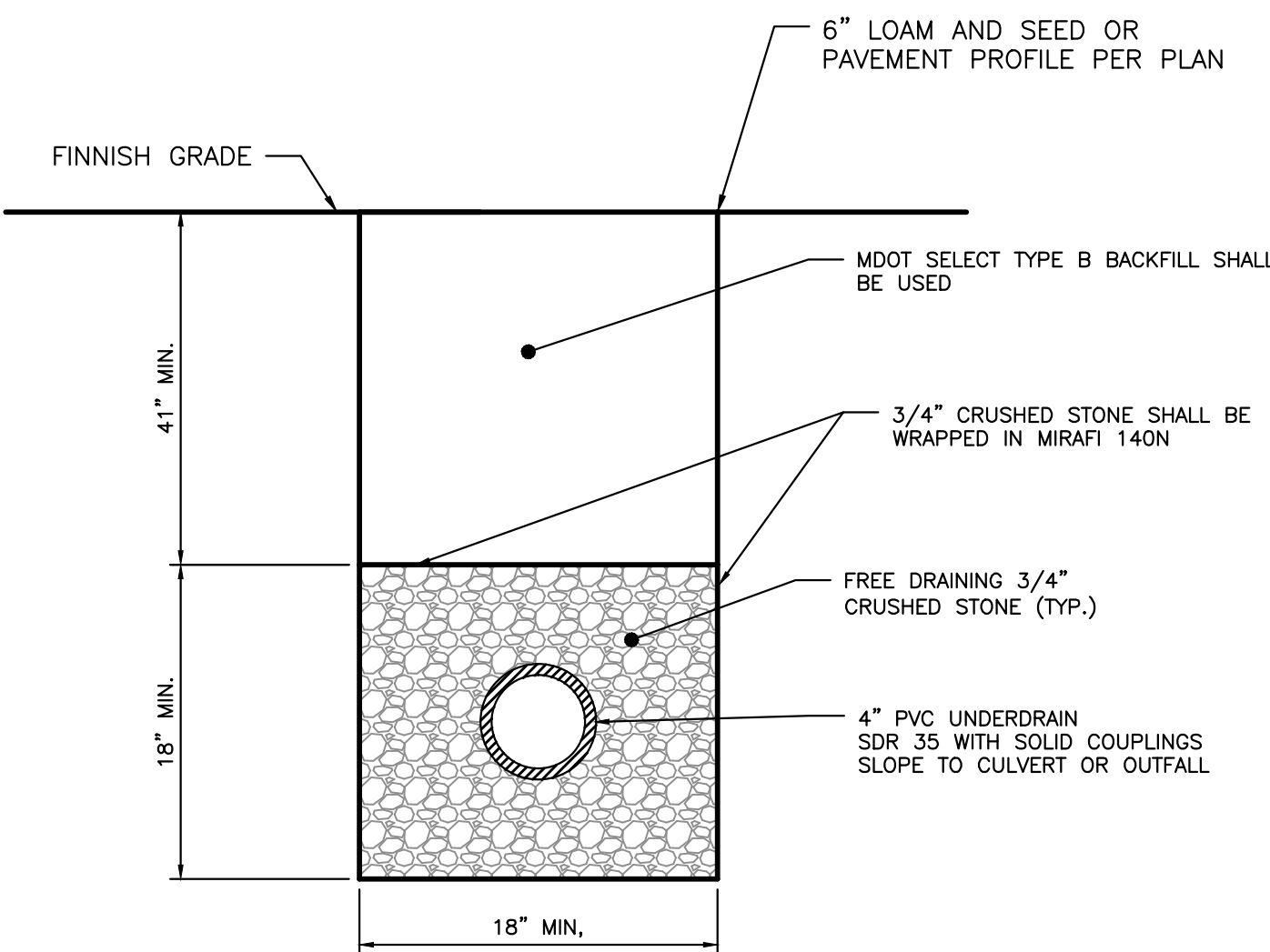
- REFER TO THE CRICK PAVING DETAIL FOR CONSTRUCTION OF THE BASE AND SUBBASE MATERIALS
- A MINIMUM CONCRETE STRENGTH OF 3000 PSI IS RECOMMENDED. THE CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
- PAVERS TO BE 1/8" ABOVE CHANNEL EDGE. A BEAD OF SEALANT CAN BE USED BETWEEN THE RAIL & CONCRETE.
- REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR COMPLETE DETAILS.
- CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS.
- CONTACT ACO FOR RECOMMENDATIONS ON DRAINING WHEN USING MEMBRANE MATERIAL WITH BRICKSLOT.
- PAVERS SHALL BE ACO DRAIN, K1000S BRICKSLOT, LOAD CLASS A-C; PAVERS.



ACO BRICK SLOT DETAIL
NOT TO SCALE

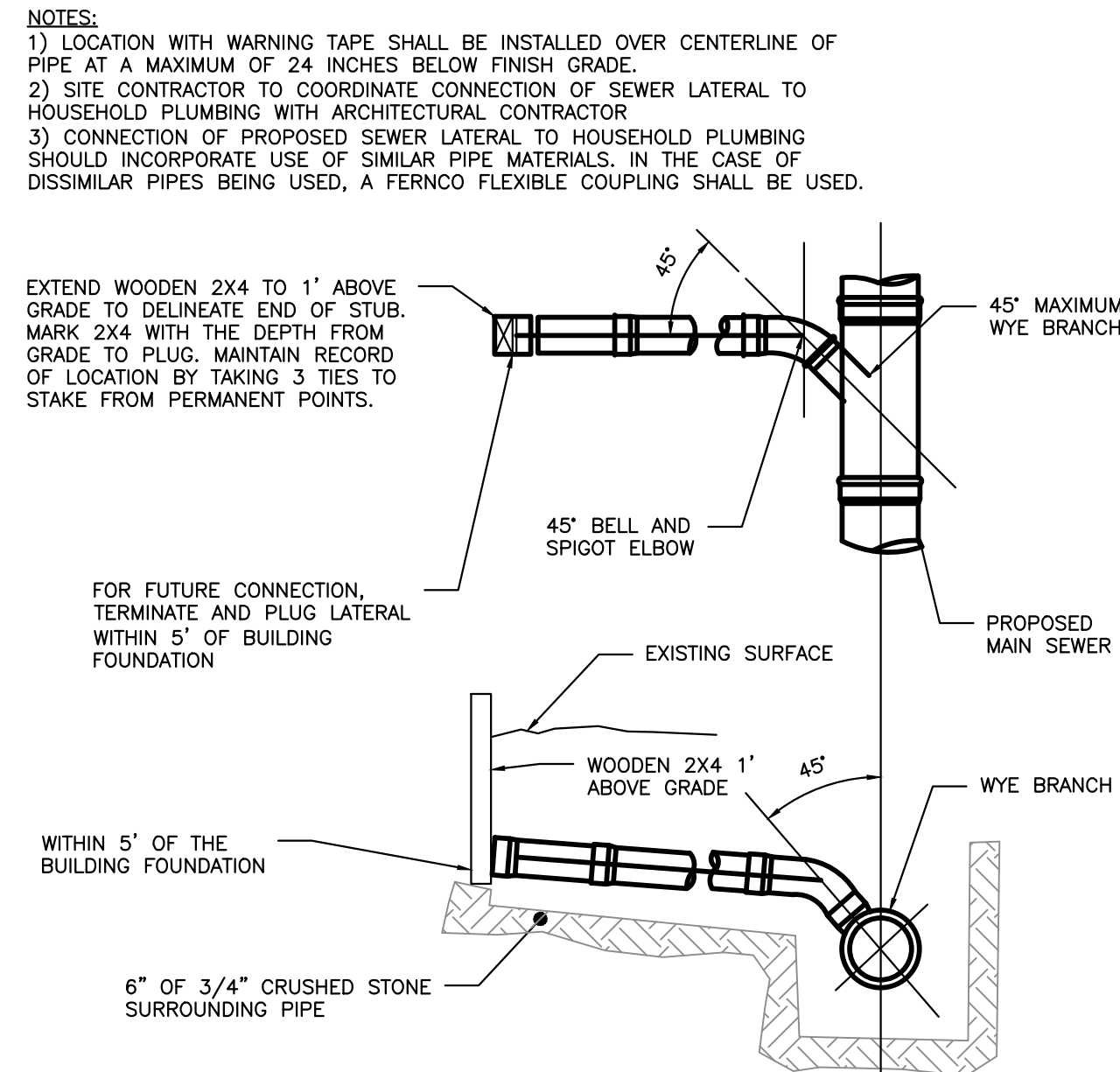


CATCH BASIN INLET PROTECTION
NOT TO SCALE

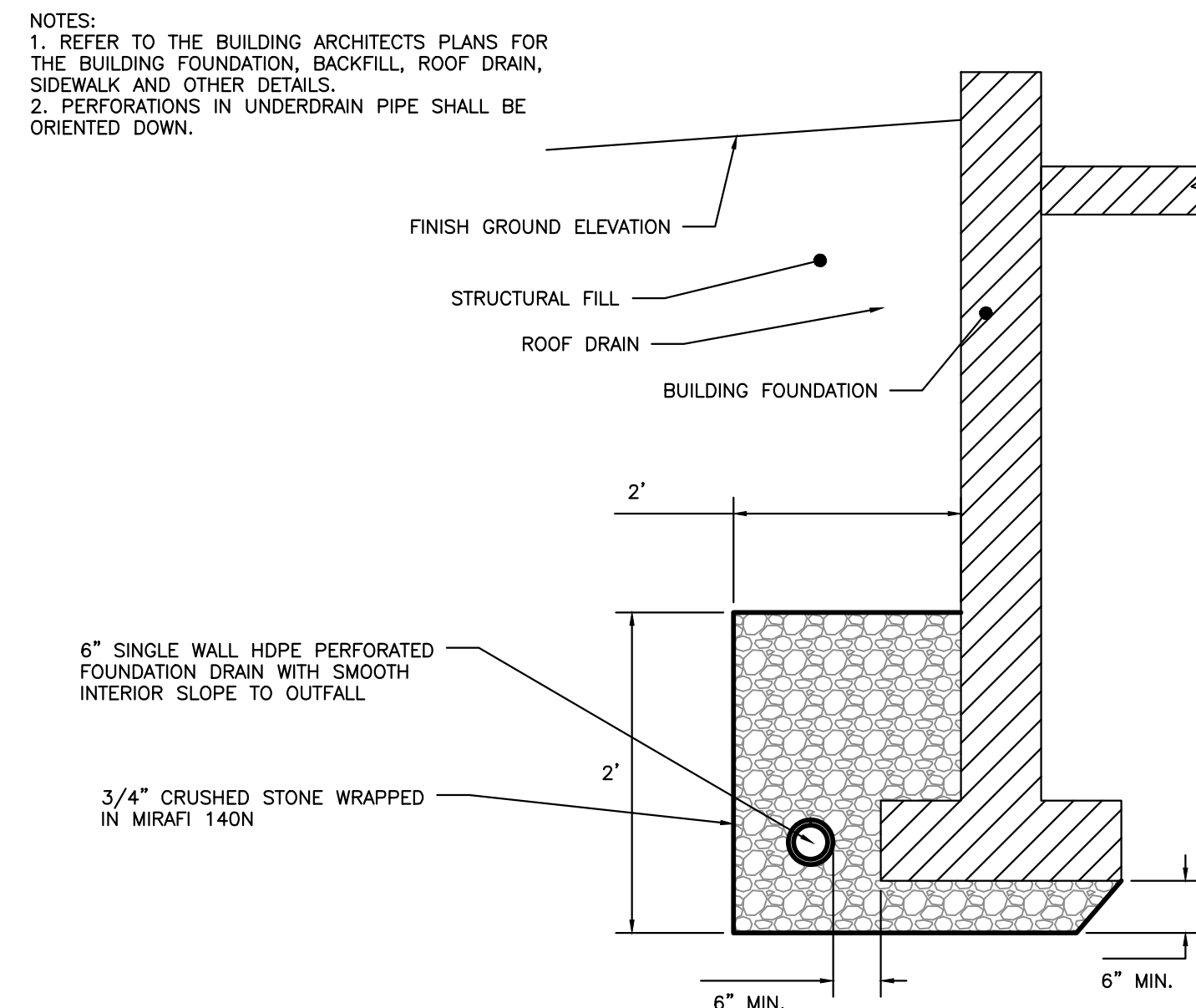


- NOTES:**
- MINIMUM UNDERDRAIN SLOPE 0.0025 (0.25%)
 - PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.

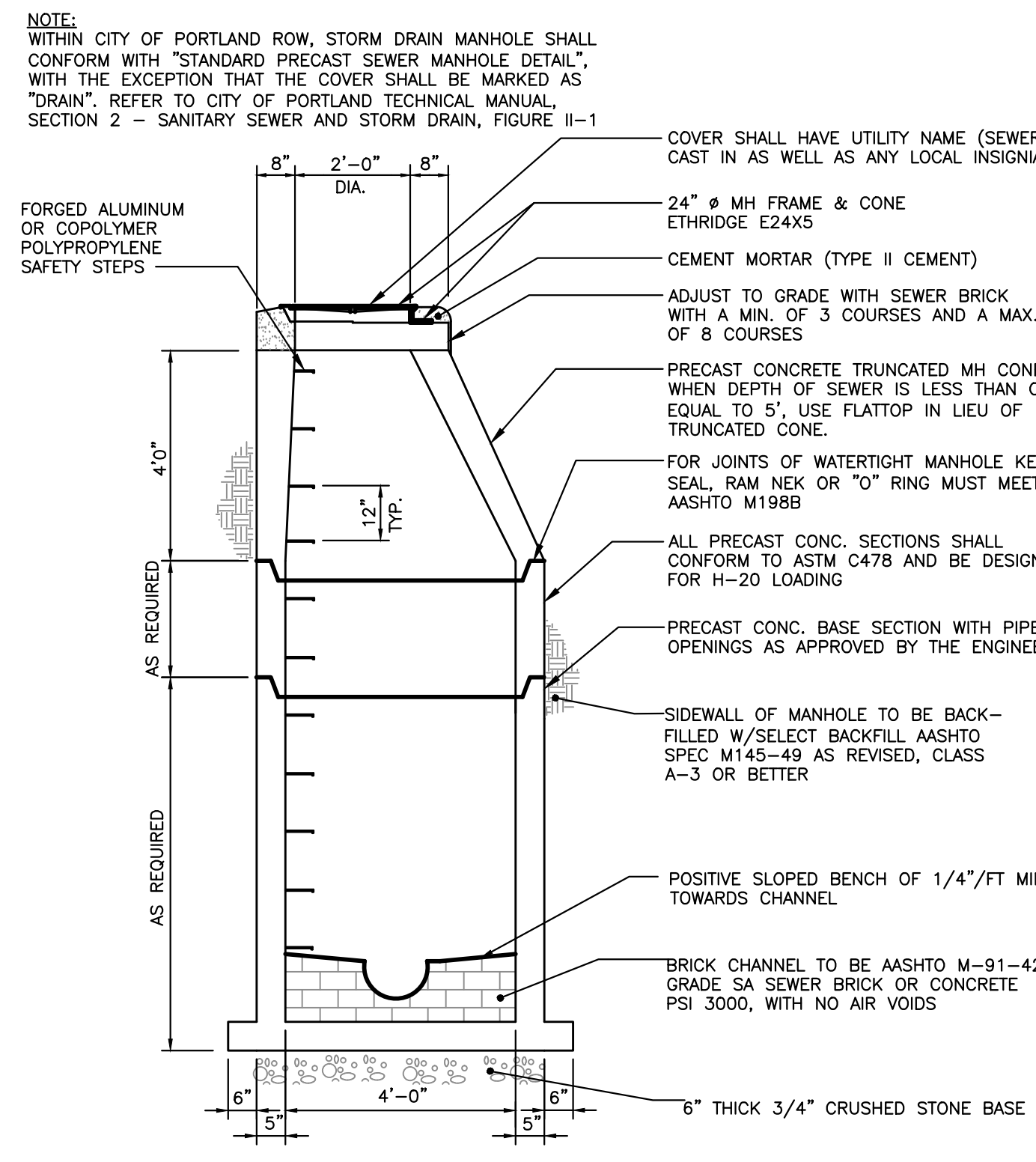
UNDERDRAIN DETAIL
NOT TO SCALE



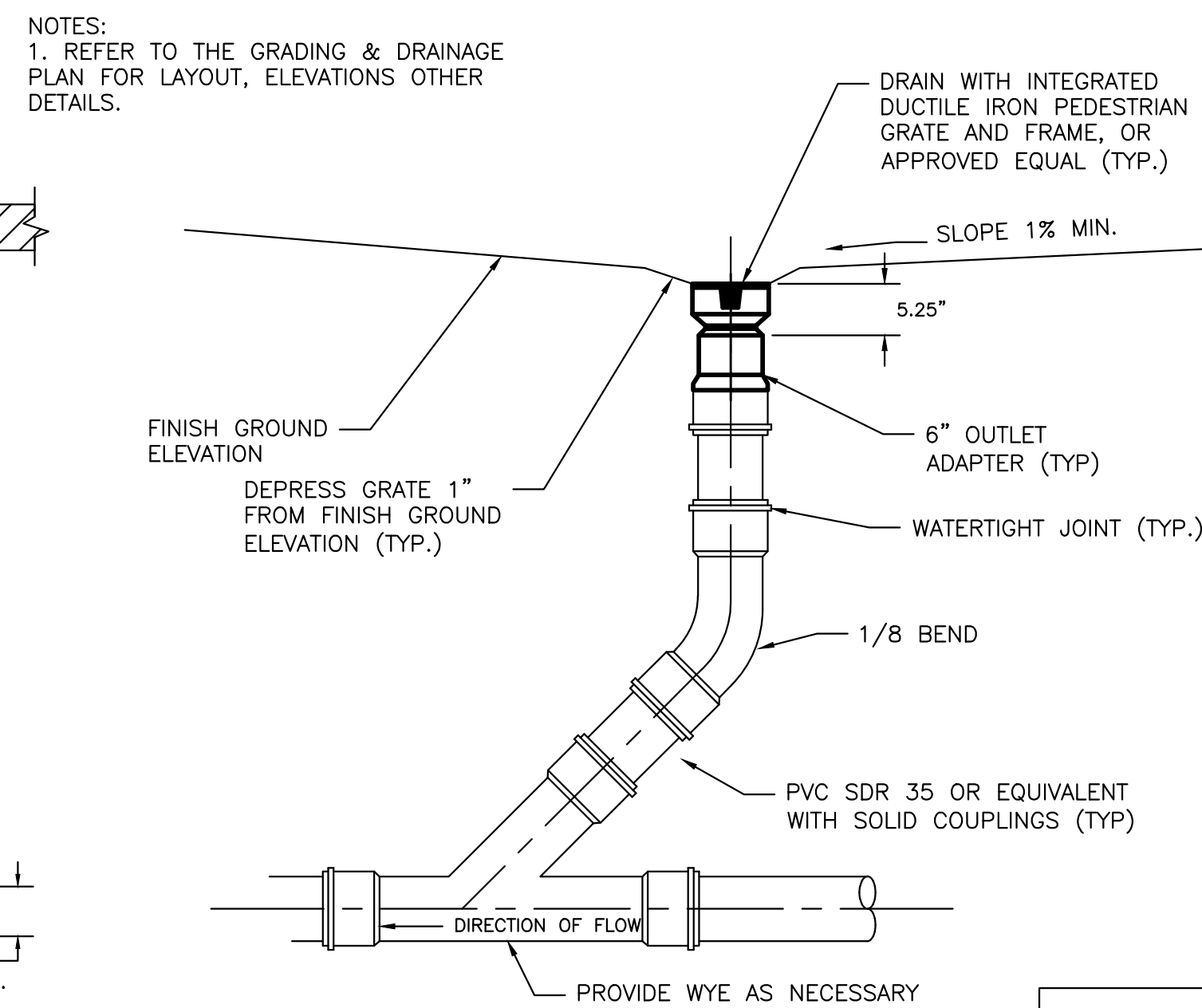
SEWER TEE/WYE CONNECTION DETAIL
NOT TO SCALE



FOUNDATION DRAIN DETAIL
NOT TO SCALE

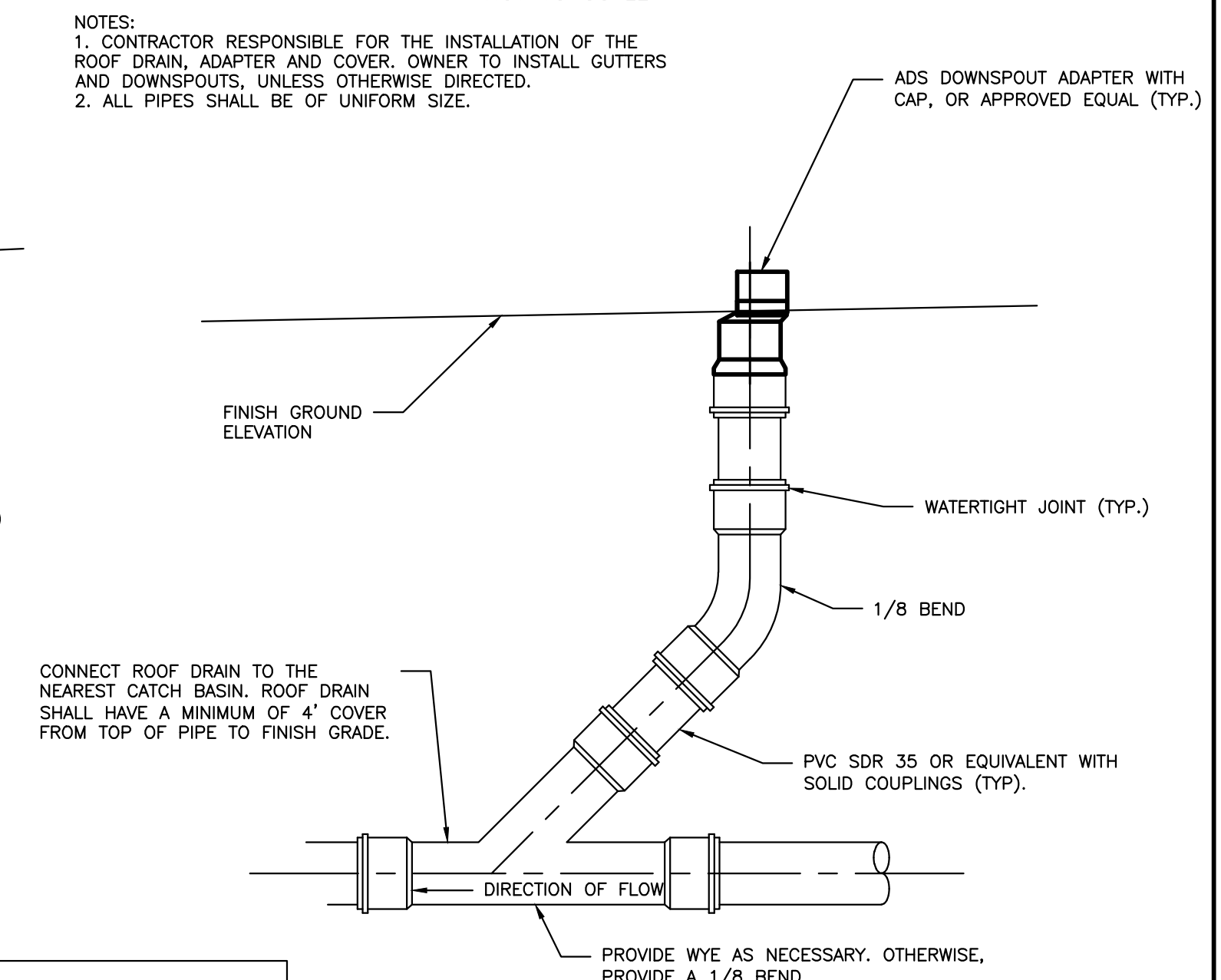


STANDARD PRECAST SEWER MANHOLE
NOT TO SCALE



INLINE DRAIN DETAIL
NOT TO SCALE

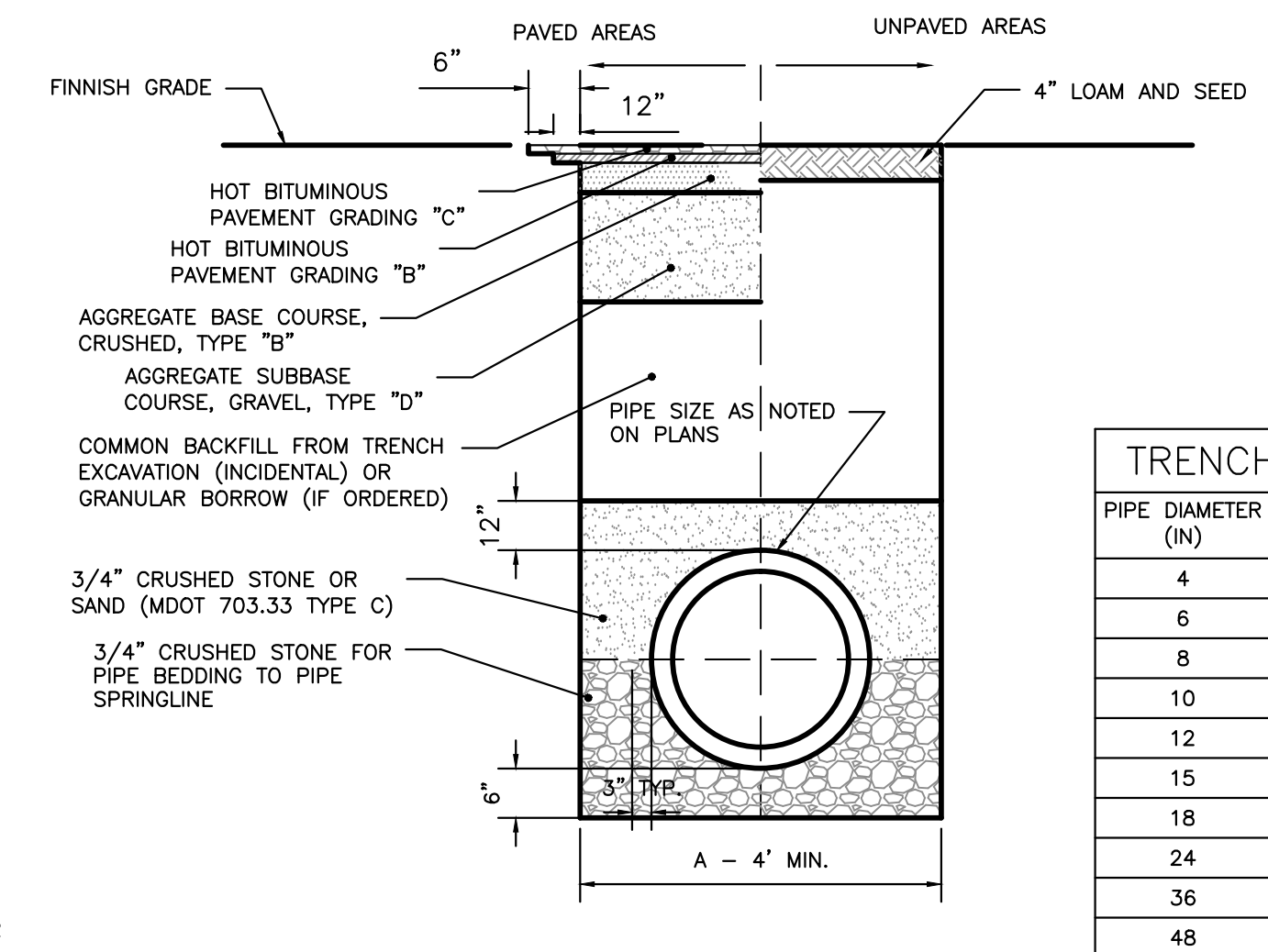
PERMIT DRAWINGS
NOT FOR CONSTRUCTION



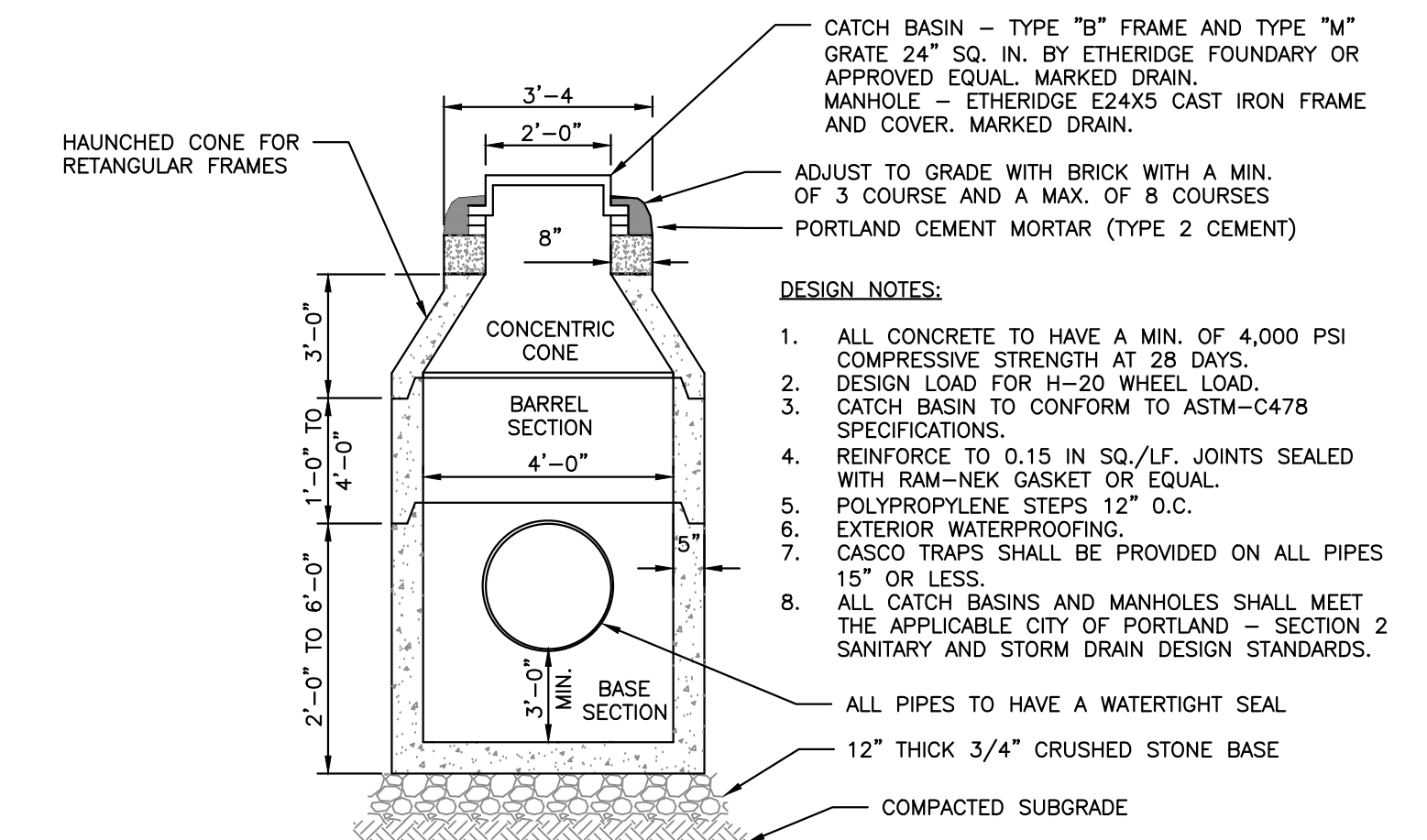
ROOF DRAIN DETAIL
NOT TO SCALE

DESIGN NOTES:

- ANY ALTERNATE TRENCHING METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
- ALL CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL STANDARDS FIGURE II-2.
- BRACING & SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- WHERE APPLICABLE, PERFORATIONS IN STORM DRAIN (PERF.SD) SHALL BE ORIENTED UP.
- ALL STORM DRAINS SHALL BE PVC SDR 35 MIN PS-46 RATING OR OR IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL MANUAL - SECTION 2 - SANITARY SEWER AND STORM DRAIN - PART 2.5.2
- IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.



CITY OF PORTLAND TYPICAL PIPE TRENCH DETAIL
NOT TO SCALE



4'-0" PRECAST CATCH BASIN/MANHOLE
NOT TO SCALE

ISSUED FOR	DATE
WORKSHOP #2	11/12/13
FINAL SUBMISSION	12/2/13

REVISION	REV. DATE
REV. STANDARD DETAIL	12/4/13

DRAWING NAME: DRAINAGE DETAILS - 1

PROJECT NAME: MUNJOY HEIGHTS

CLIENT: REDEFERN MUNJOY, LLC.
P.O. BOX 8816, PORTLAND, MAINE 04104

DRAWING NAME:

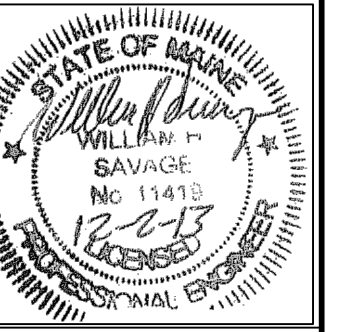
PROJECT NAME:

CLIENT:

ACORN ENGINEERING, INC.
1000 S. BOSTON ST. SUITE 200
PORTLAND, MAINE 04104
(207) 775-2655

ACORN ENGINEERING, INC.
1000 S. BOSTON ST. SUITE 200
PORTLAND, MAINE 04104
(207) 775-2655

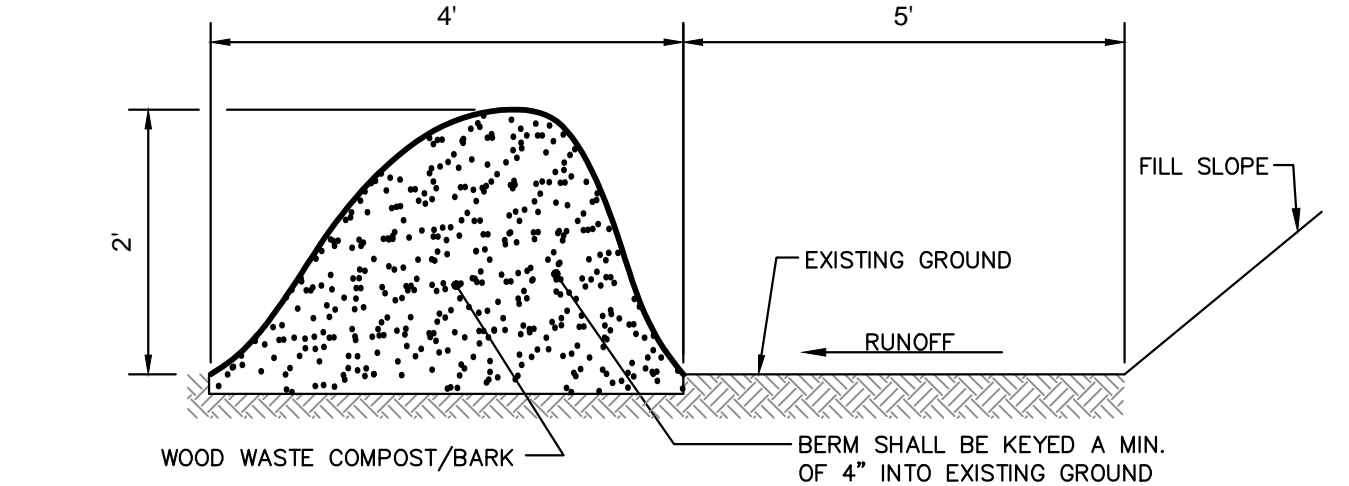
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DRAWING NO.
C-41

NOTES:

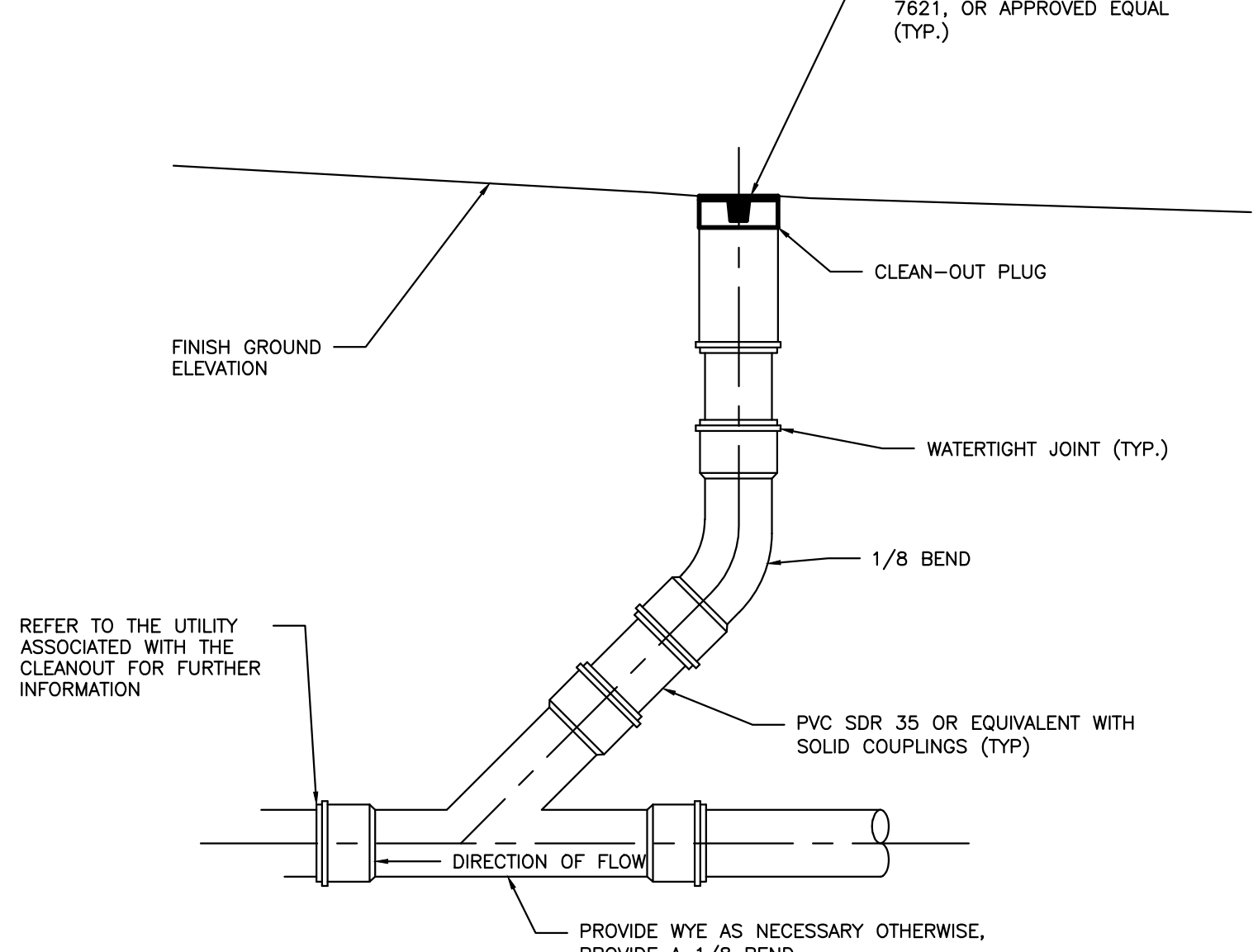
- THE EROSION CONTROL MIX SHALL CONFORM TO THE FOLLOWING STANDARDS AND IN ACCORDANCE WITH THE MAINE DEP'S EROSION AND SEDIMENT CONTROL BMPs SECTION B-1:
 - THE ORGANIC PORTIONS SHALL BE FIBROUS AND ELONGATED TO ALLOW FOR THE INTERLOCKING OF MATERIAL.
 - pH - 5.0 - 8.0.
 - PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70% TO A MAXIMUM 85% PASSING A 0.75" (3/4") SCREEN.
 - THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100% DRY WEIGHT BASIS.
 - NO STONES LARGER THAN 4" IN DIAMETER.
 - LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
- THE BERM SHOULD BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR, WHEN NECESSARY THE BERM MAY BE PLACED PERPENDICULAR TO THE SLOPE ALONG THE PROPERTY LINE TO CONTAIN THE SEDIMENT PROVIDED A BERM IS LOCATED AT THE BASE OF THE SLOPE.
- THE BERM MAY BE USED IN LIEU OF SILTATION FENCE, AT THE TOE OF SHALLOW SLOPES, ON FROZEN GROUND, LEDGE OUT CROPS, VERY ROOTED FORESTED AREA OR AT THE EDGE OF GRAVEL PARKING AREAS.
- BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS STABILIZED OR 90% CATCH OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED OFFSITE OR BY SPREADING SUCH THAT NATIVE EARTH CAN BE SEEN BELOW.



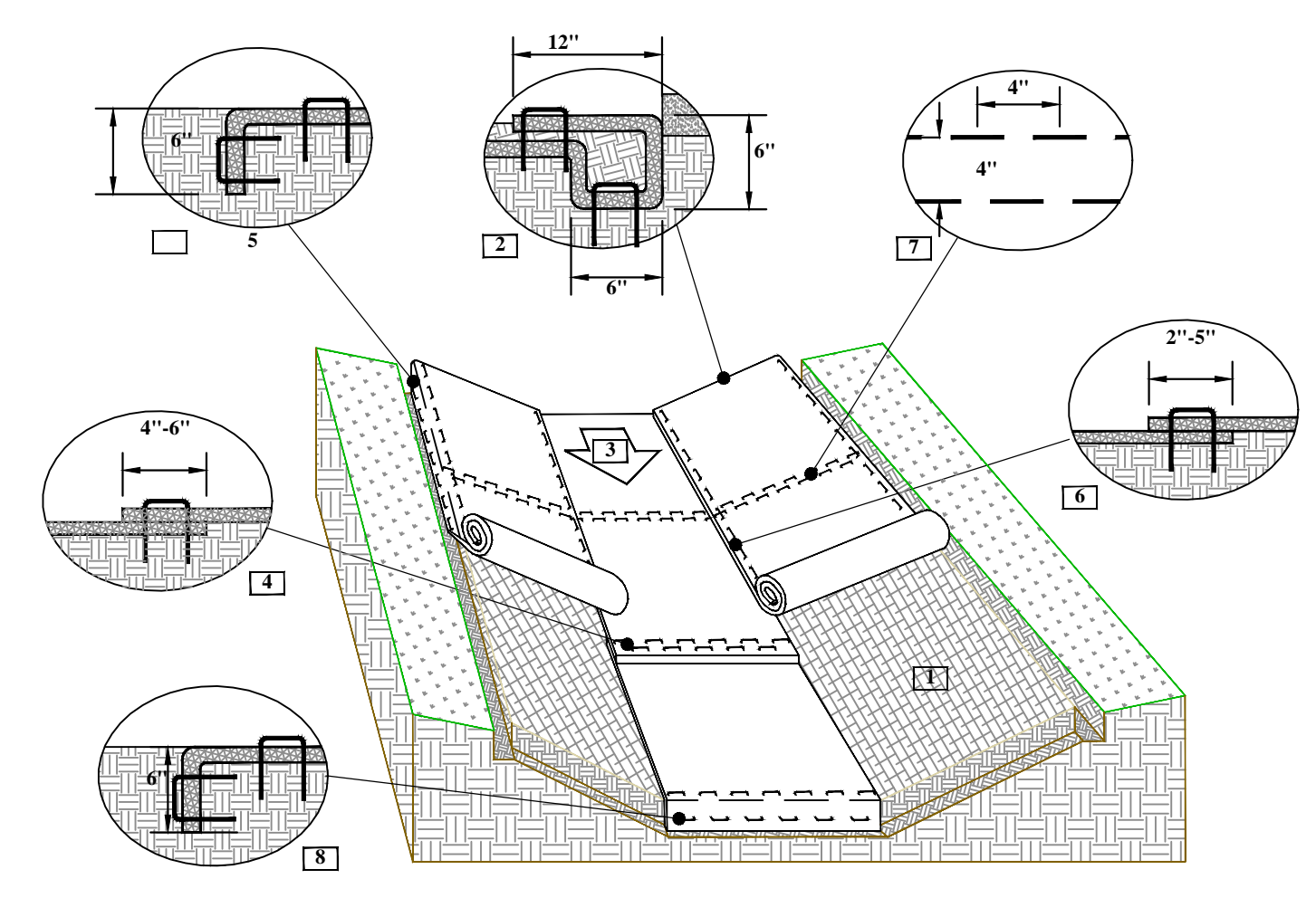
EROSION CONTROL MIX BERM DETAIL
NOT TO SCALE

NOTES:

- REFER TO THE REFER TO THE GRADING & DRAINAGE PLANS AND UTILITY PLANS FOR ADDITIONAL INFORMATION.



CLEANOUT DETAIL
NOT TO SCALE

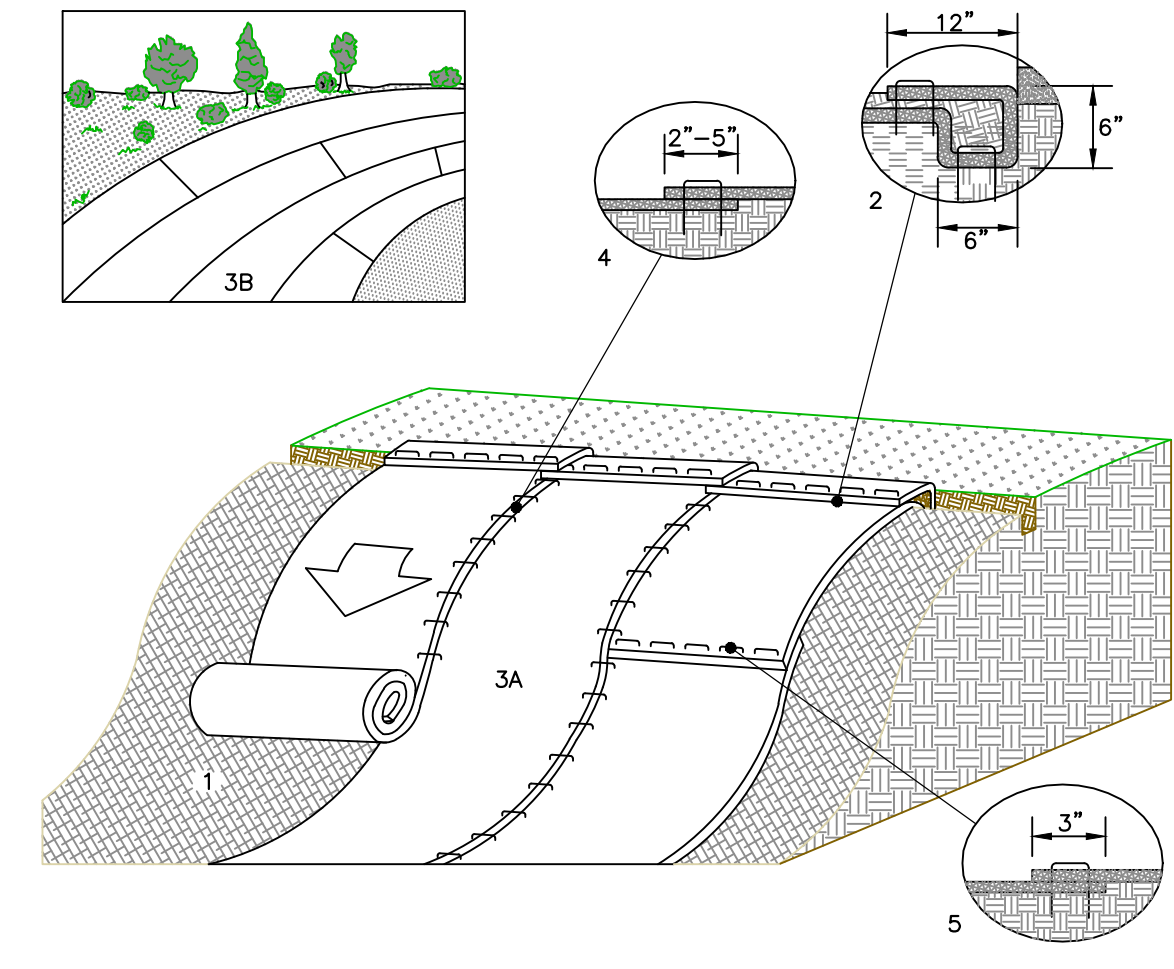


EROSION CONTROL BLANKET CHANNEL INSTALLATION
NOT TO SCALE

CHANNEL INSTALLATION DETAIL

- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL BLANKET (ECB), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE ECB IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" (30CM) OF ECB EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. USE SHOREMAX MAT AT THE CHANNEL/CULVERT OUTLET AS SUPPLEMENTAL SCOUR PROTECTION AS NEEDED. ANCHOR THE ECB WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" (30CM) PORTION OF ECB BACK OVER THE SEED AND COMPACTED SOIL. SECURE ECB OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE ECB.
- ROLL CENTER ECB IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. ECB WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL ECB MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
- PLACE CONSECUTIVE ECB END-OVER-END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE ECB. THE TOP LAYER SHALL GO OVER THE DOWNSTREAM LAYER.
- FULL LENGTH EDGE OF ECB AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30CM) APART IN A 6" (15CM) DEEP X 6" (15CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
- ADJACENT ECB MUST BE OVERLAPPED APPROXIMATELY 2"-5" (5-12.5CM) (DEPENDING ON ECB TYPE) AND STAPLED.
- IN HIGH FLOW CHANNEL APPLICATIONS A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 - 12M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10CM) APART AND 4" (10CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
- THE TERMINAL END OF THE ECB MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30CM) APART IN A 6" (15CM) DEEP X 6" (15CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

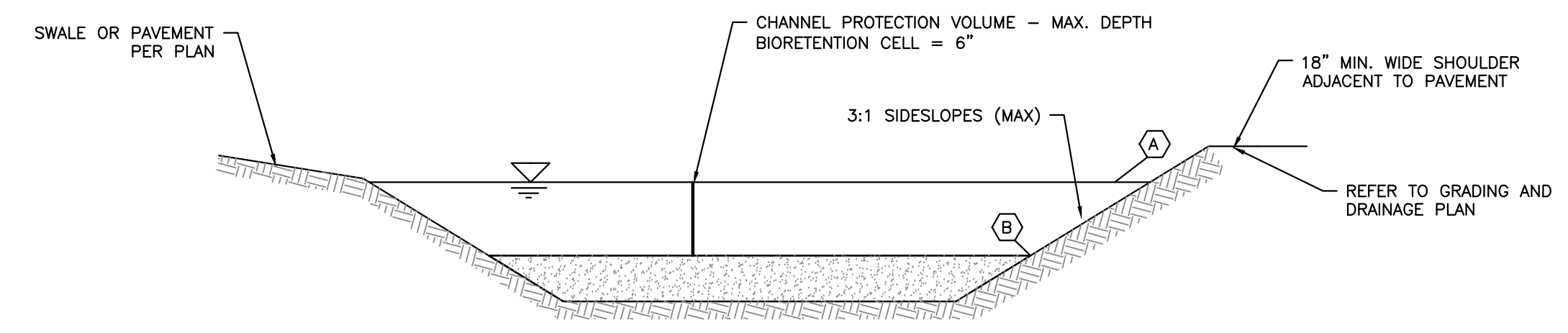
SLOPE DETAIL INSTALLATION



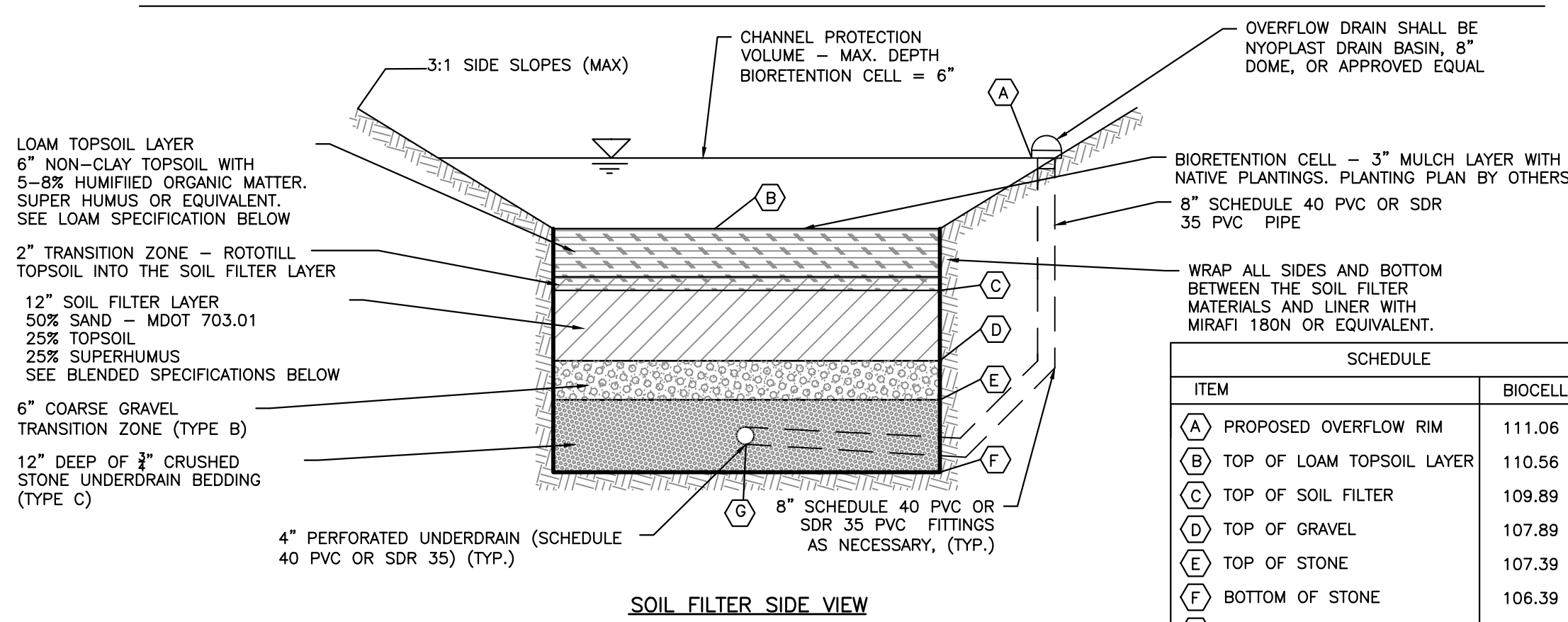
EROSION CONTROL BLANKET SLOPE INSTALLATION
NOT TO SCALE

- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (ECB), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE ECB IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF ECB EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE ECB WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" PORTION OF ECB BACK OVER THE SEED AND COMPACTED SOIL. SECURE ECB OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE ECB.
- ROLL THE ECB (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. ECB WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL ECB MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
- THE EDGES OF PARALLEL ECB MUST BE STAPLED WITH APPROXIMATELY 2" - 5" OVERLAP DEPENDING ON THE ECB TYPE.
- CONSECUTIVE ECB SPLICED DOWN THE SLOPE MUST BE END-OVER-END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE ECB WIDTH.

*NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE ECB.



SOIL FILTER CROSS SECTION



SOIL FILTER SIDE VIEW

ITEM	BIOCCELL
(A) PROPOSED OVERFLOW RIM	111.06
(B) TOP OF LOAM TOPSOIL LAYER	110.56
(C) TOP OF SOIL FILTER	109.89
(D) TOP OF GRAVEL	107.89
(E) TOP OF STONE	107.39
(F) BOTTOM OF STONE	106.39
(G) UNDERDRAIN INVERT	106.72

- THE SIDESLOPES SHALL BE STABILIZED WITH A MIN. OF 4" LOAM, EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL AND A CONSERVATION SEED MIX. THE BOTTOM OF THE VEGETATED UNDERDRAIN SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL AND A CONSERVATION SEED MIX.
- LIGHT COMPACTION SOIL FILTER AND PIPE BEDDING MATERIAL. (90 TO 92% STANDARD PROCTOR). TESTING SHALL BE PERFORMED BY A QUALIFIED MATERIAL TESTING FIRM.
- THE SOIL FILTER MEDIA SHALL NOT BE CONSTRUCTED UNTIL THE AREA DRAINING TO THE BASIN HAS BEEN PERMANENTLY STABILIZED.
- A LANDSCAPE DESIGNER OR ARCHITECT SHALL SELECT THE APPROPRIATE PLANTS FOR THE BIORETENTION CELL FOR THE SITE CONDITIONS. PLANTING PLAN BY OTHERS.
- MINIMUM UNDERDRAIN SLOPE 0.0025.
- TESTING: SIEVE ANALYSIS INCLUDING HYDROMETER TESTING FOR CLAY CONTENT FOR EACH LAYER SHALL BE PERFORMED BY A QUALIFIED SOIL TESTING LABORATORY AND SUBMITTED TO THE PROJECT ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO CONSTRUCTION. ALL TESTING AND SUBMITTALS SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE MAINE DEP - TECHNICAL DESIGN MANUAL SECTION 7.2.5 TESTING AND SUBMITTALS.
- ACORN ENGINEERING, INC., RECOMMENDS THE SOIL FILTER LAYER BE SUPPLIED BY JONES ASSOCIATES, INC., AUBURN, ME.

SIEVE SIZE	% PASSING BY WEIGHT
#4	75-95
#10	60-90
#40	35-85
#200	20-70

SIEVE SIZE	% PASSING BY WEIGHT
1"	100
#200	0-5

SIEVE SIZE	% PASSING BY WEIGHT
#10	85-100
#20	70-100
#60	15-40
#200	8-15

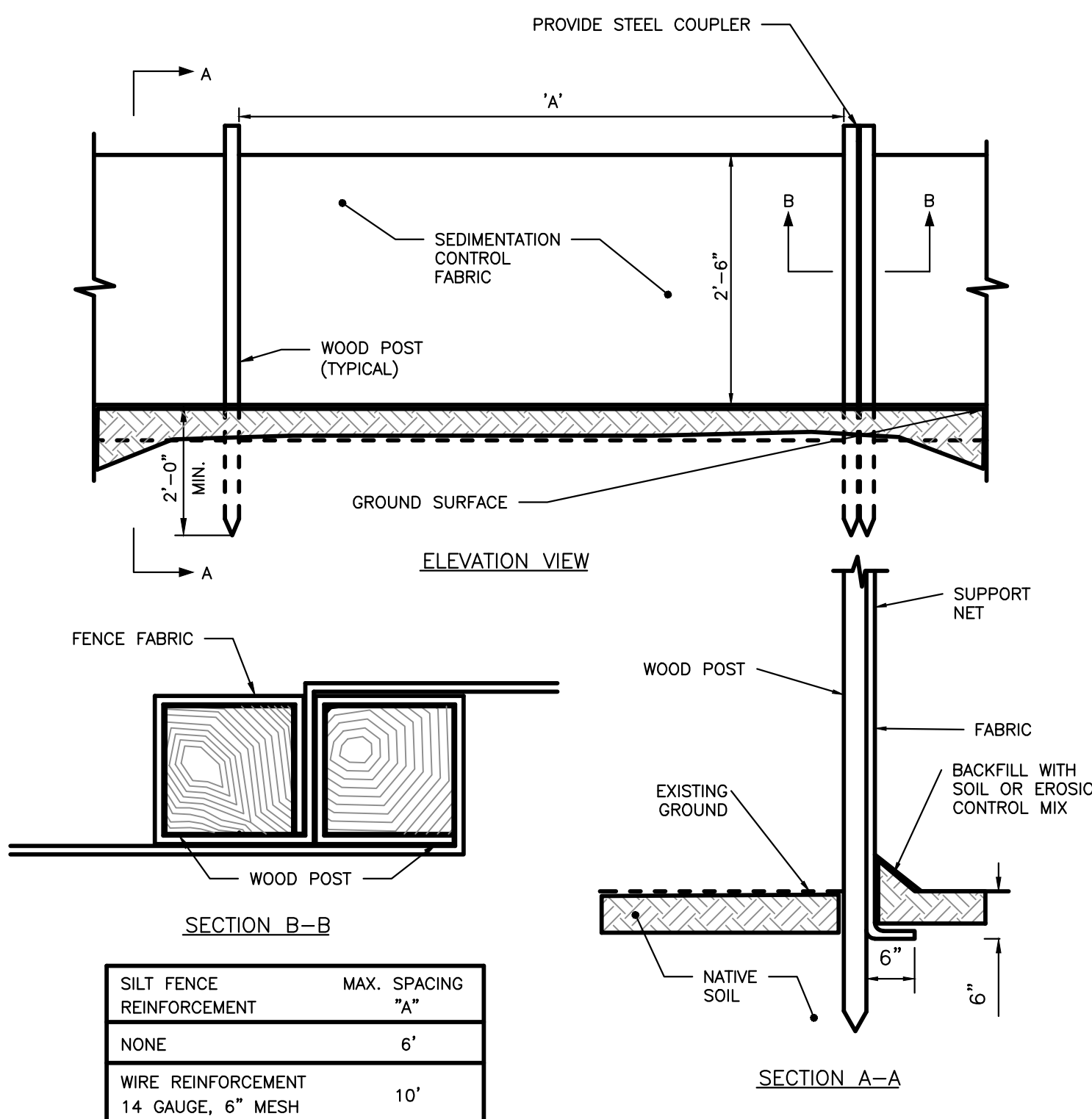
SIEVE SIZE	% PASSING BY WEIGHT
1"	90-100
1/2"	75-100
#4	50-100
#20	15-80
#50	0-15
#200	0-5

SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90-100
3/8"	0-75
#4	0-25
#10	0-5

1. CLAY FRACTION <10% PASSING THE #200 SIEVE.*
2. LOAM SHALL BE LOOSE AND FRIABLE AND SHALL BE FREE FROM ADMIXTURE OF SUBSOIL, REFUSE, LARGE STONES, CLOUDS OR ROOTS OR RHIZOMES OR WITCH GRASS* OR OTHER UNDESIRABLE GRASSES.
*10% CLAY PASSING THE #200 SIEVE ALLOWED PER EMAIL FROM MARIANNE HUBERT - MDEP TO WILL SAVAGE DATED 9/20/13

RAIN GARDEN OR BIORETENTION CELL DETAIL

NOT TO SCALE



SILTATION FENCE DETAIL
NOT TO SCALE

SILT FENCE REINFORCEMENT	MAX. SPACING
NONE	6'
WIRE REINFORCEMENT	10'

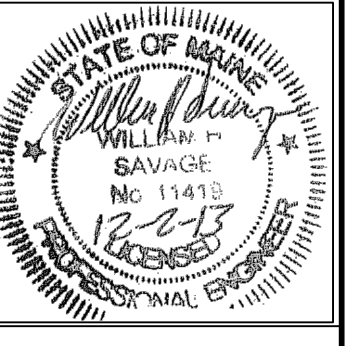
ISSUED FOR	BY
WORKSHOP #2	WHS
FINAL SUBMISSION	WHS

REVISION	REV	DATE
REV. STANDARD DETAIL	WHS	12/2/13

DRAWING NAME: **DRAINAGE DETAILS - 2**
PROJECT NAME: **MUNJOY HEIGHTS**
CLIENT: **REDFERN MUNJOY, LLC.**
P.O. BOX 8816, PORTLAND, MAINE 04104

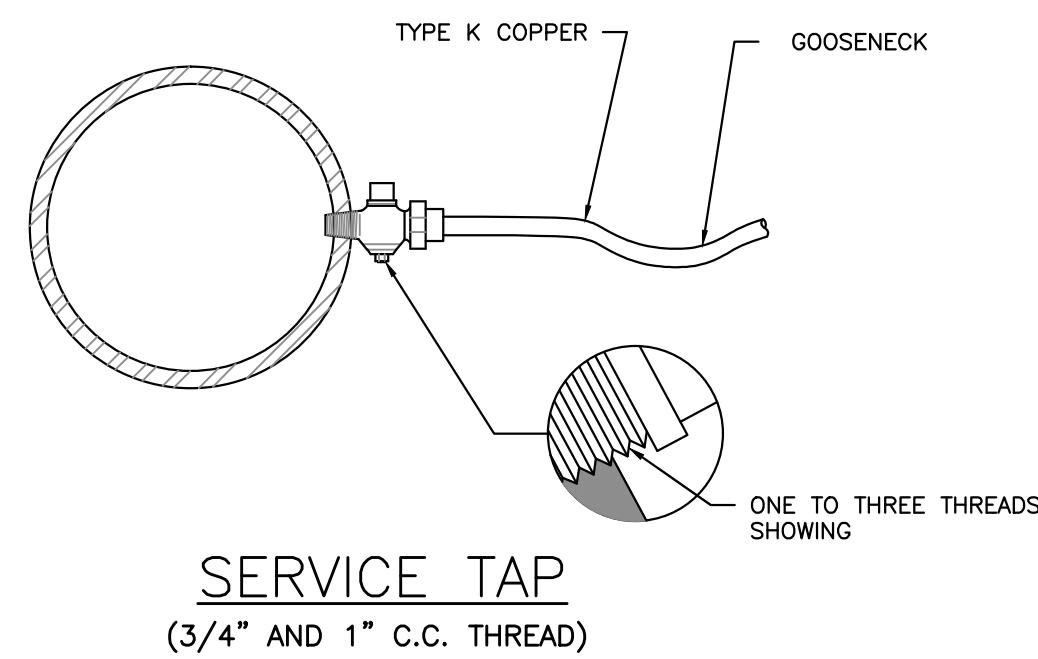
ACORN ENGINEERING, INC.
277-2000
P.O. BOX 3372 PORTLAND, MAINE 04104
(207) 775-2655

FILE: C-42.DWG
DATE: 7/11/13
JN: 302-001
SCALE: NTS
DESIGN BY: WHS
DRAWN BY: ZRJ
CHECKED BY: WHS

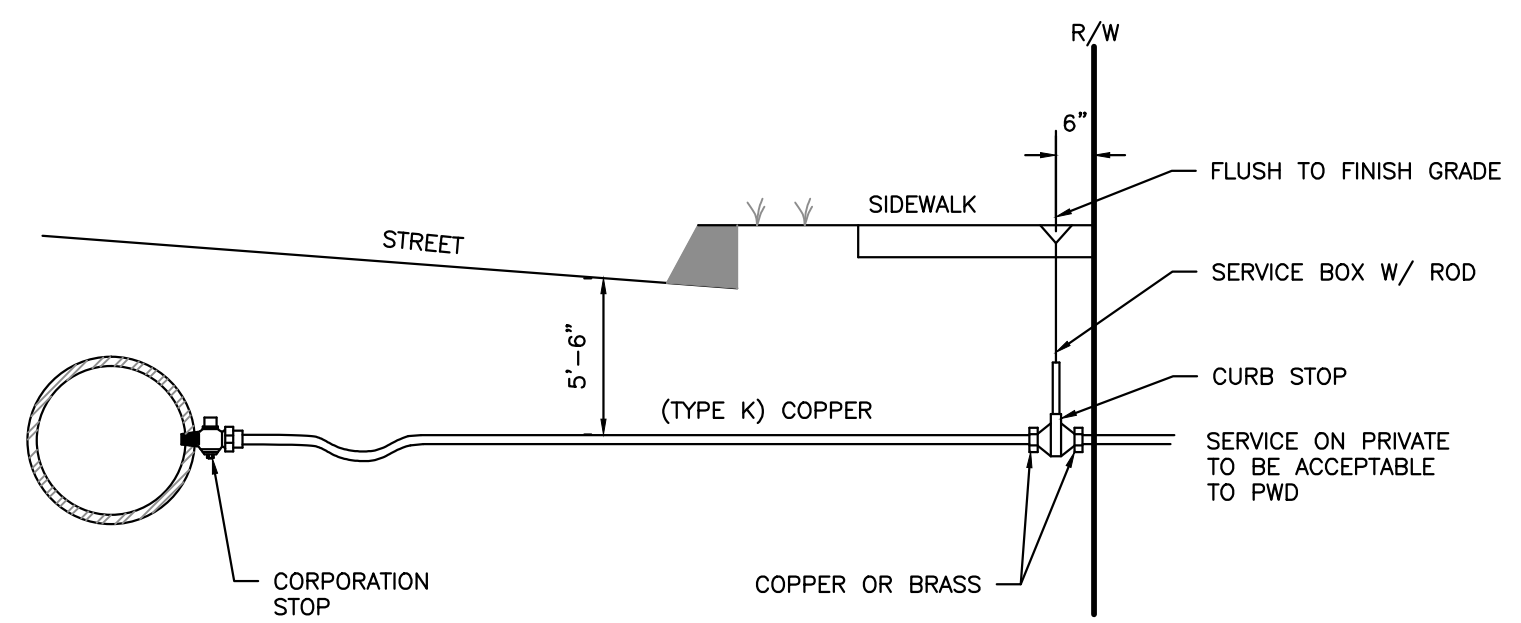


DRAWING NO. **C-42**

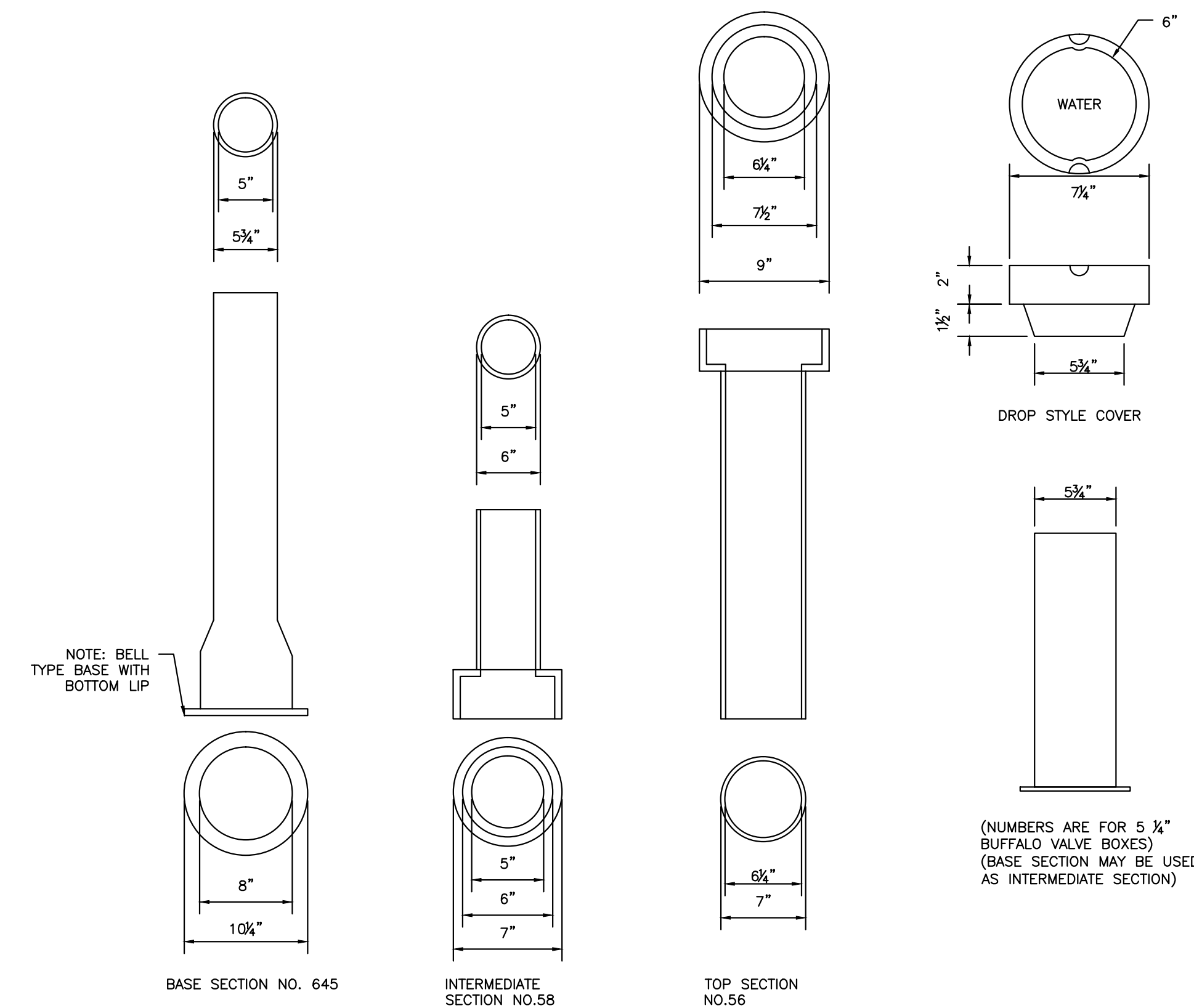
PERMIT DRAWINGS
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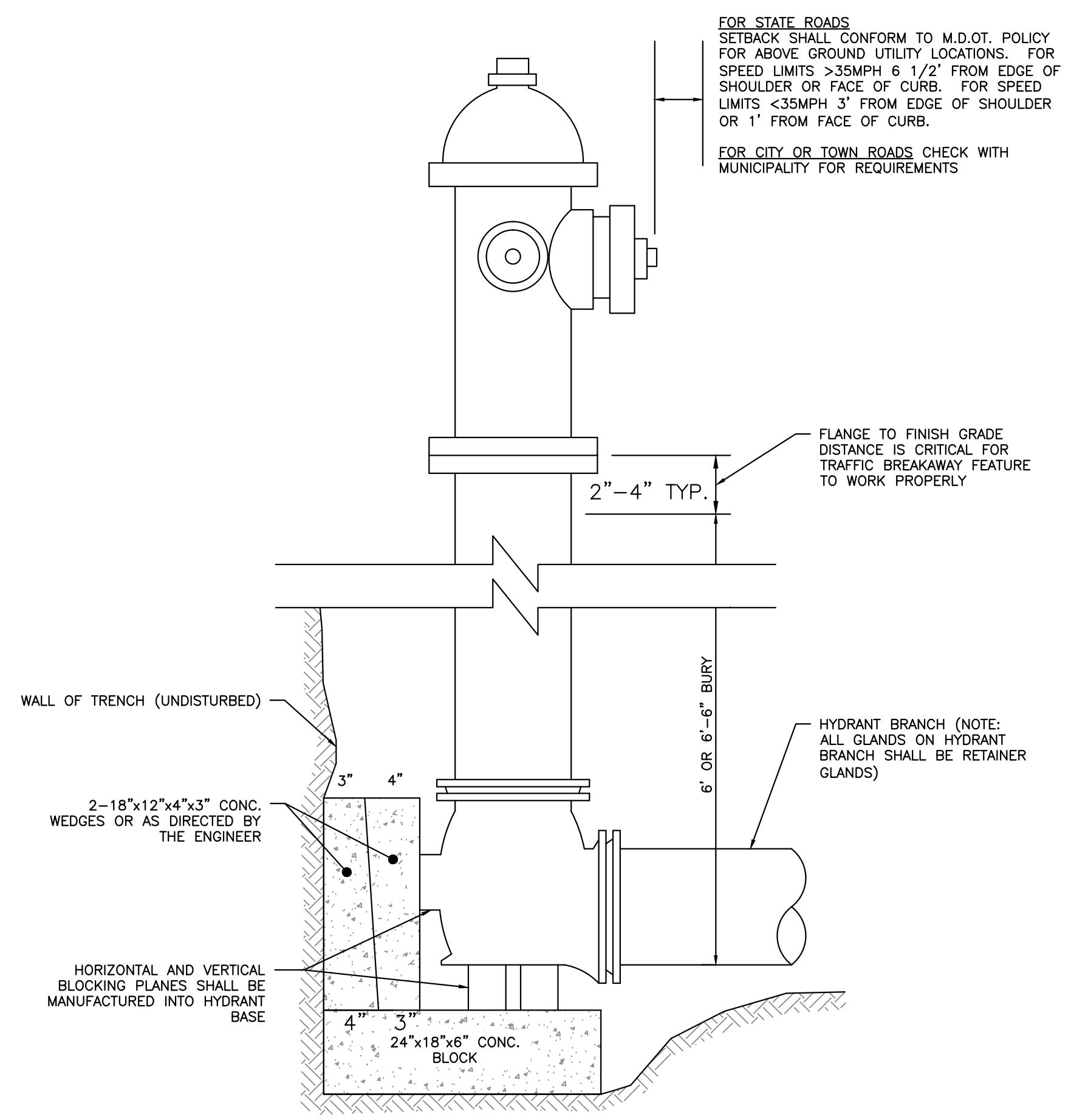
SERVICE TAP
(3/4" AND 1" C.C. THREAD)



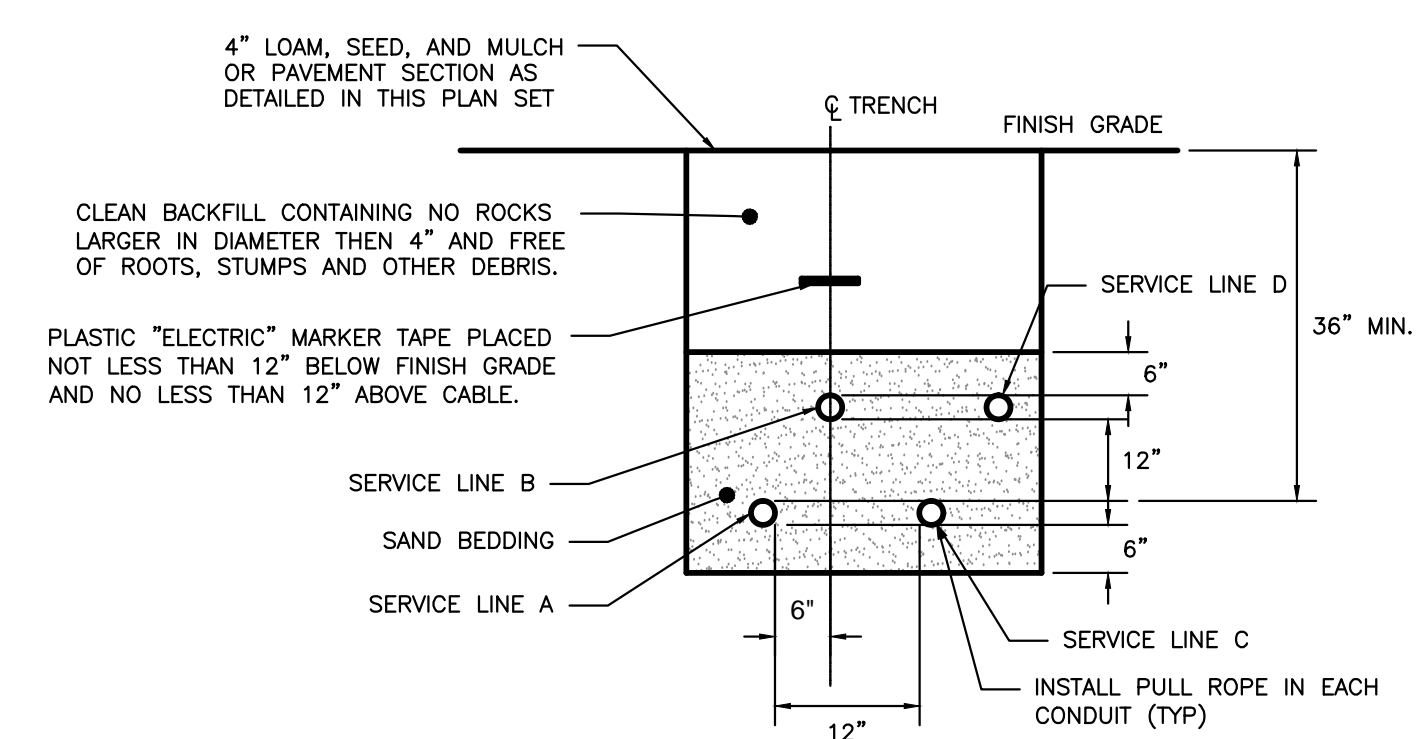
TYPICAL SERVICE CONNECTION
N.T.S.



VALVE BOX & COVER
N.T.S.



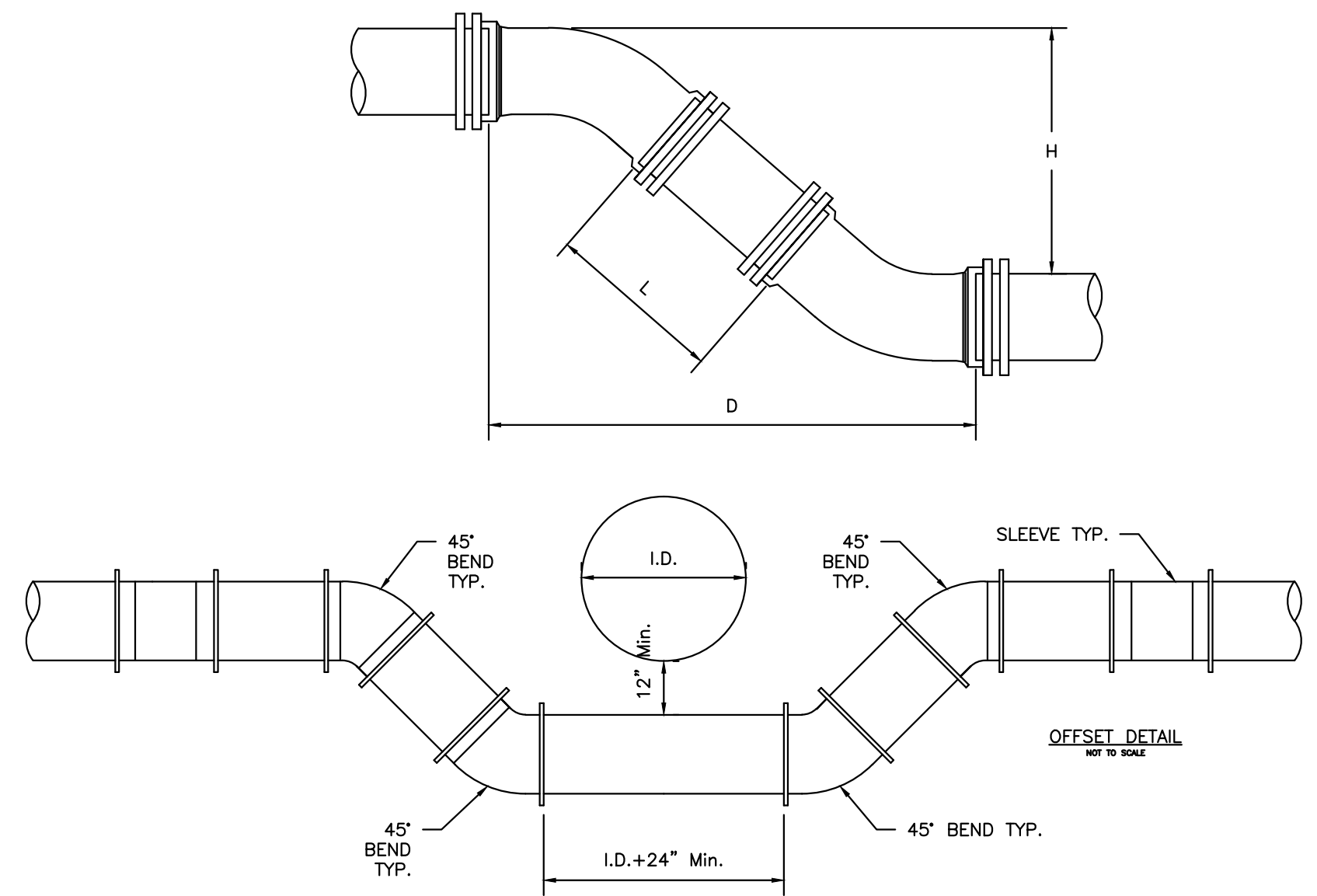
TYPICAL HYDRANT INSTALLATION DETAIL



CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	2-5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	2-4"	SCHEDULE 40 PVC ELECTRICAL GRADE	COMMUNICATION	-
C	2-4"	SCHEDULE 40 PVC ELECTRICAL GRADE	SPARE	IF REQUIRED
D	2-4"	SCHEDULE 40 PVC ELECTRICAL GRADE	CABLE	-

NOTE:
1. ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10" ABOVE GRADE AT POLE WITH STAND-OFF BRACKETS.
2. MINIMUM SEPARATION OF 24 INCHES BETWEEN PRIMARY CABLE/CONDUIT AND GAS LINES SHALL BE MAINTAINED.

UTILITY TRENCH - PRIMARY AND SECONDARY POWER, TELEPHONE, AND CABLE
NOT TO SCALE



TYPICAL MAIN OFFSET
NOT TO SCALE

H	6" PIPE		8" PIPE		12" PIPE	
	D	L	D	L	D	L
12"	1' 6-1/2"	0' 10-1/2"	1' 7-1/2"	0' 9-1/2"	1' 11-1/2"	0' 5-1/2"
13"	1' 7-1/2"	0' 11-7/8"	1' 8-1/2"	0' 10-7/8"	2' 0-1/2"	0' 6-7/8"
14"	1' 8-1/2"	1' 1-5/16"	1' 9-1/2"	1' 0-5/16"	2' 1-1/2"	0' 8-5/16"
15"	1' 9-1/2"	1' 2-1/16"	1' 10-1/2"	1' 1-1/16"	2' 2-1/2"	0' 9-1/16"
16"	1' 10-1/2"	1' 4-1/8"	1' 11-1/2"	1' 3-1/8"	2' 3-1/2"	0' 11-1/8"
17"	1' 11-1/2"	1' 5-9/16"	2' 0-1/2"	1' 4-9/16"	2' 4-1/2"	1' 0-9/16"
18"	2' 0-1/2"	1' 6-15/16"	2' 1-1/2"	1' 5-15/16"	2' 5-1/2"	1' 1-15/16"
19"	2' 1-1/2"	1' 8-3/8"	2' 2-1/2"	1' 7-3/8"	2' 6-1/2"	1' 3-3/8"
20"	2' 2-1/2"	1' 9-13/16"	2' 3-1/2"	1' 8-13/16"	2' 7-1/2"	1' 4-13/16"
21"	2' 3-1/2"	1' 11-3/16"	2' 4-1/2"	1' 10-3/16"	2' 8-1/2"	1' 6-3/16"
22"	2' 4-1/2"	2' 0-5/8"	2' 5-1/2"	1' 11-5/8"	2' 9-1/2"	1' 7-5/8"
23"	2' 5-1/2"	2' 2"	2' 6-1/2"	2' 1"	2' 10-1/2"	1' 9"
24"	2' 6-1/2"	2' 3-7/16"	2' 7-1/2"	2' 2-7/16"	2' 11-1/2"	1' 10-7/16"
25"	2' 7-1/2"	2' 4-7/8"	2' 8-1/2"	2' 3-7/8"	3' 0-1/2"	1' 11-7/8"
26"	2' 8-1/2"	2' 6-1/4"	2' 9-1/2"	2' 5-1/4"	3' 1-1/2"	2' 1-1/4"
27"	2' 9-1/2"	2' 7-11/16"	2' 10-1/2"	2' 6-11/16"	3' 2-1/2"	2' 2-11/16"
28"	2' 10-1/2"	2' 9-1/8"	2' 11-1/2"	2' 8-1/8"	3' 3-1/2"	2' 4-1/8"
29"	2' 11-1/2"	2' 10-1/2"	3' 0-1/2"	2' 9-1/2"	3' 4-1/2"	2' 5-1/2"
30"	3' 0-1/2"	2' 11-15/16"	3' 1-1/2"	2' 10-15/16"	3' 5-1/2"	2' 6-15/16"
31"	3' 1-1/2"	3' 1-5/16"	3' 2-1/2"	3' 0-5/16"	3' 6-1/2"	2' 8-5/16"
32"	3' 2-1/2"	3' 2-3/4"	3' 3-1/2"	3' 1-3/4"	3' 7-1/2"	2' 9-3/4"
33"	3' 3-1/2"	3' 4-3/16"	3' 4-1/2"	3' 3-3/16"	3' 8-1/2"	2' 11-3/16"
34"	3' 4-1/2"	3' 5-9/16"	3' 5-1/2"	3' 4-9/16"	3' 9-1/2"	3' 0-9/16"
35"	3' 5-1/2"	3' 6-5/8"	3' 6-1/2"	3' 5-5/8"	3' 10-1/2"	3' 1-5/8"
36"	3' 6-1/2"	3' 8-7/16"	3' 7-1/2"	3' 7-7/16"	3' 11-1/2"	3' 3-7/16"
37"	3' 7-1/2"	3' 9-13/16"	3' 8-1/2"	3' 8-13/16"	4' 0-1/2"	3' 4-13/16"
38"	3' 8-1/2"	3' 11-1/4"	3' 9-1/2"	3' 10-1/4"	4' 1-1/2"	3' 6-1/4"
39"	3' 9-1/2"	4' 0-11/16"	3' 10-1/2"	4' 0-11/16"	4' 2-1/2"	3' 7-11/16"
40"	3' 10-1/2"	4' 2-1/16"	4' 1-1/2"	4' 1-1/16"	4' 3-1/2"	3' 9-1/16"
41"	3' 11-1/2"	4' 3-1/2"	4' 0-1/2"	4' 2-1/2"	4' 4-1/2"	3' 10-1/2"
42"	4' 0-1/2"	4' 4-7/8"	4' 1-1/2"	4' 3-7/8"	4' 5-1/2"	3' 11-7/8"
43"	4' 1-1/2"	4' 5-5/8"	4' 2-1/2"	4' 5-5/8"	4' 6-1/2"	4' 1-5/8"
44"	4' 2-1/2"	4' 7-3/4"	4' 3-1/2"	4' 6-3/4"	4' 7-1/2"	4' 2-3/4"
45"	4' 3-1/2"	4' 9-1/8"	4' 4-1/2"	4' 8-1/8"	4' 8-1/2"	4' 4-1/8"
46"	4' 4-1/2"	4' 10-9/16"	4' 5-1/2"	4' 9-9/16"	4' 9-1/2"	4' 5-9/16"
47"	4' 5-1/2"	4' 11-15/16"	4' 6-1/2"	4' 10-15/16"	4' 10-1/2"	4' 6-15/16"
48"	4' 6-1/2"	5' 1-3/8"	4' 7-1/2"	5' 0-3/8"	4' 11-1/2"	4' 8-3/8"
49"	4' 7-1/2"	5' 2-13/16"	4' 8-1/2"	5' 1-13/16"	5' 0-1/2"	4' 9-13/16"
50"	4' 8-1/2"	5' 4-3/16"	4' 9-1/2"	5' 3-3/16"	5' 1-1/2"	4' 11-3/16"
51"	4' 9-1/2"	5' 5-5/8"	4' 10-1/2"	5' 4-5/8"	5' 2-1/2"	5' 0-5/8"
52"	4' 10-1/2"	5' 7-1/8"	4' 11-1/2"	5' 6-1/8"	5' 3-1/2"	5' 2-1/8"
53"	4' 11-1/2"	5' 8-7/16"	5' 0-1/2"	5' 7-7/16"	5' 4-1/2"	5' 3-7/16"
54"	5' 0-1/2"	5' 9-7/8"	5' 1-1/2"	5' 8-7/8"	5' 5-1/2"	5' 4-7/8"
55"	5' 1-1/2"	5' 11-5/16"	5' 2-1/2"	5' 10-5/16"	5' 6-1/2"	5' 6-5/16"

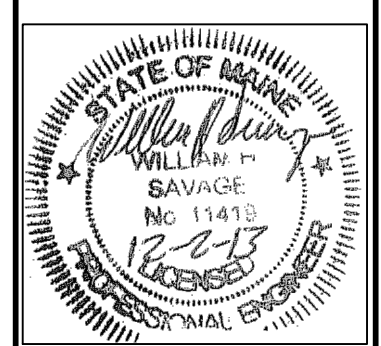
NOTE: DIMENSIONS APPLICABLE FOR SIGMA COMPACT BENDS. FOR TYLER COMPACT BENDS, ADD 1/2" TO "D" DIMENSION AND SUBTRACT 1/2" FROM "L" DIMENSION. FOR OTHER FITTINGS REFER TO MANUFACTURER'S RECOMMENDATIONS.

ISSUED FOR	BY
CITY SUBMISSION	WHS
FINAL SUBMISSION	WHS

REVISION	REV. DATE
REV. STANDARD DETAIL	WHS 12/2/13

DRAWING NAME: **PORTLAND WATER DISTRICT DETAILS - 1**
PROJECT NAME: **MUNJOY HEIGHTS**
CLIENT: **REDFERN MUNJOY, LLC.**
P.O. BOX 8816, PORTLAND, MAINE 04104

ACORN ENGINEERING, INC.
P.O. BOX 3372 PORTLAND, MAINE 04104
(207) 775-2655



DRAWING NO. **C-44**

PERMIT DRAWINGS
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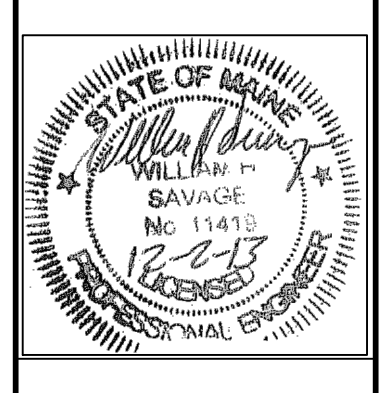
ISSUED FOR	BY DATE
WORKSHOP #2	WHS 11/12/13
FINAL SUBMISSION	WHS 12/2/13
REVISION	REV. DATE
REV. STANDARD DETAIL	WHS 12/4/13

DRAWING NAME: PORTLAND WATER DISTRICT DETAILS - 2
PROJECT NAME: MUNJOY HEIGHTS
CLIENT: REDFERN MUNJOY, LLC.
P.O. BOX 8816, PORTLAND, MAINE 04104

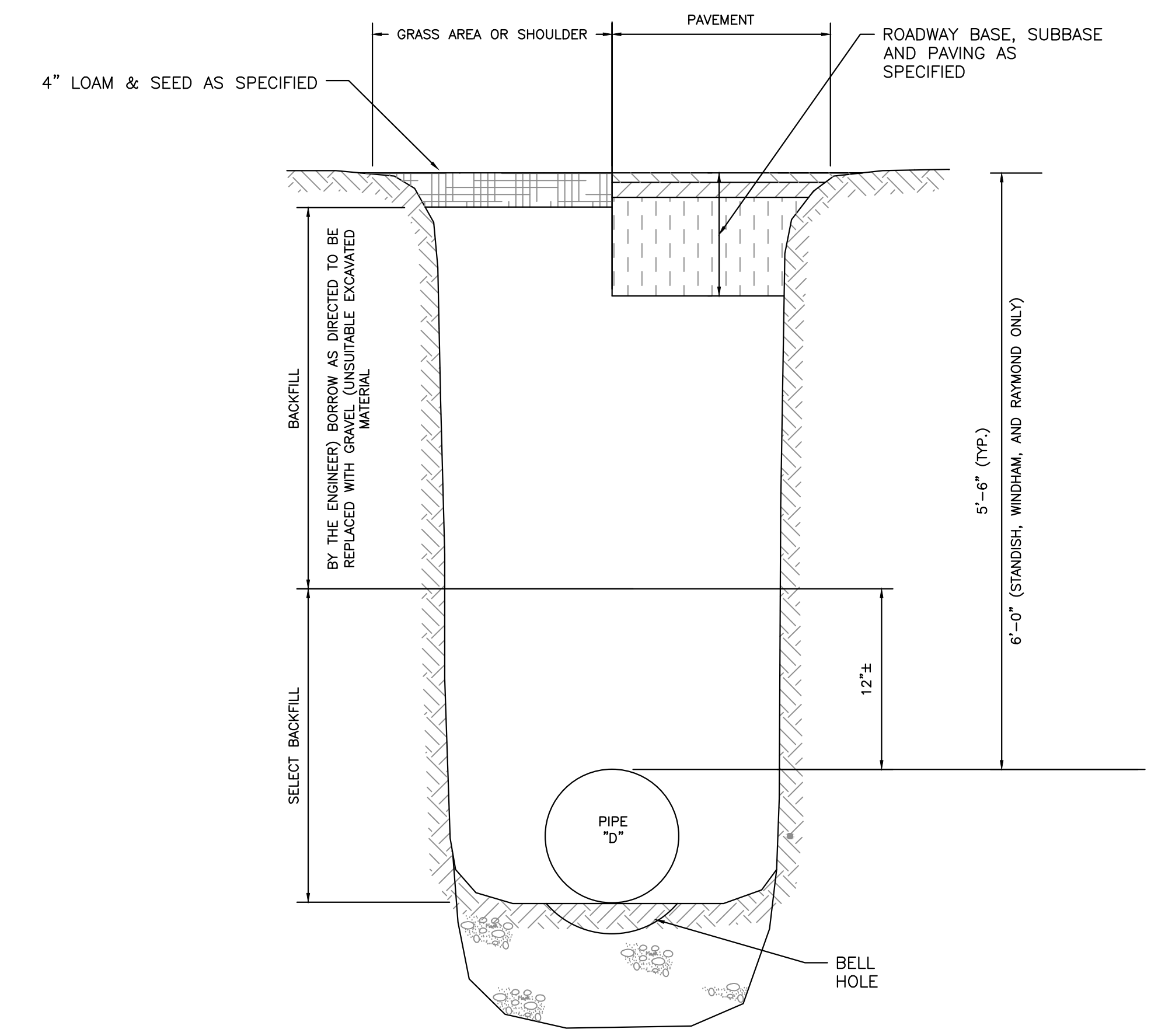
A A C O R N
ENGINEERING, INC.

ACORN ENGINEERING, INC. 04104
P.O. BOX 3372 PORTLAND, MAINE 04104
(207) 775-2655

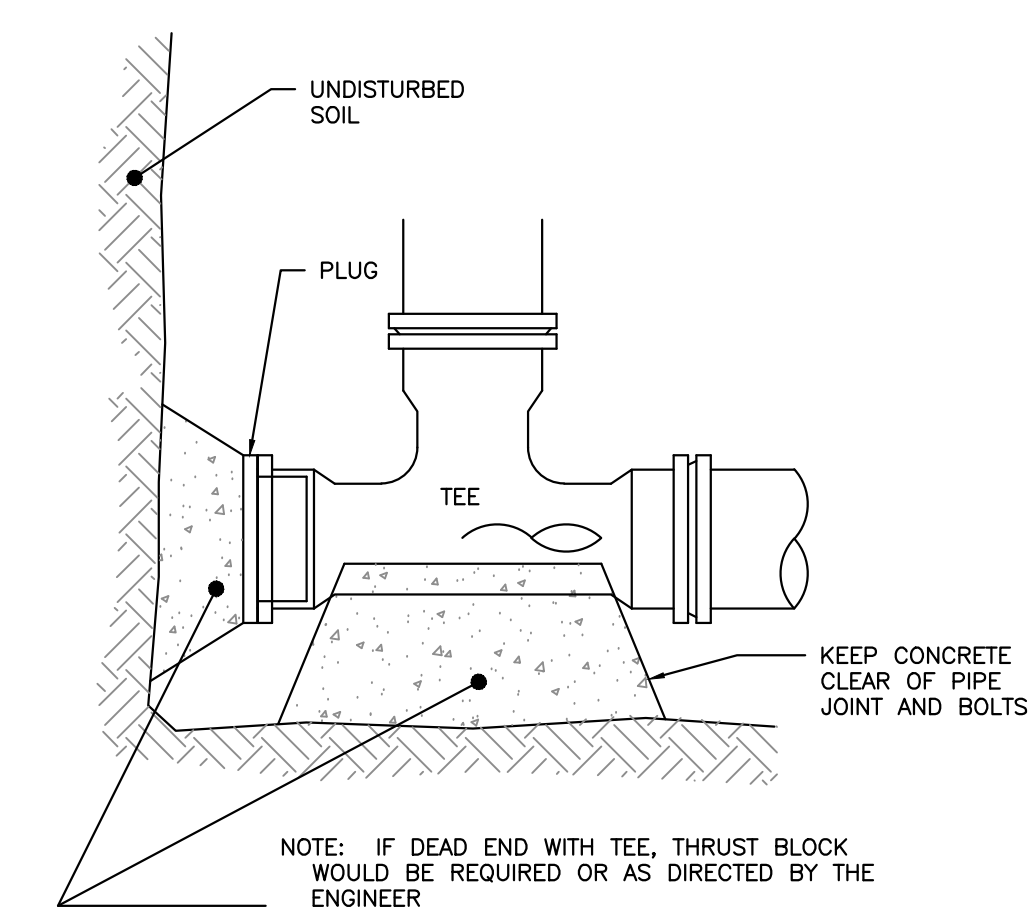
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JN: 302-001
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CHECKED BY: WHS



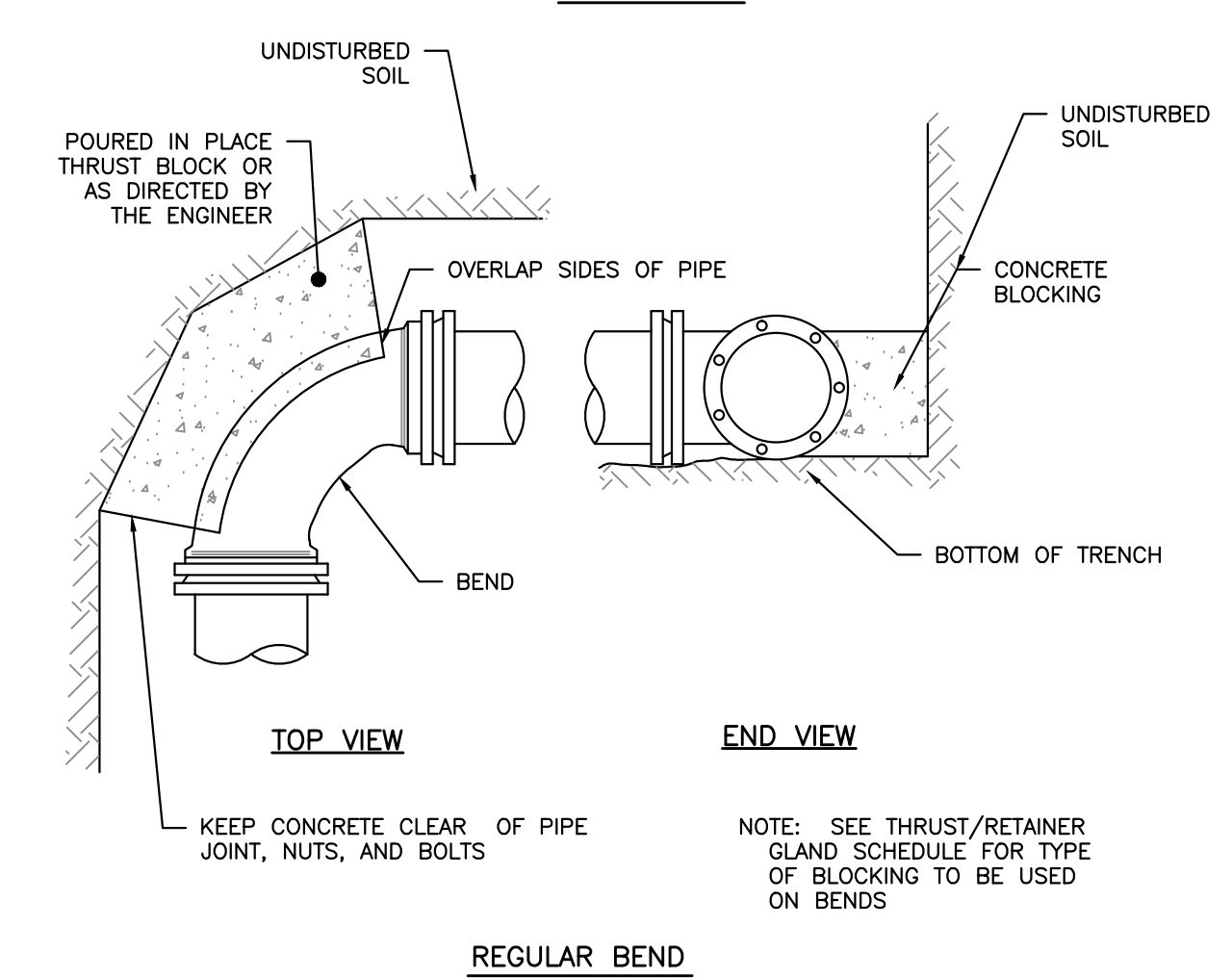
DRAWING NO.
C-45



WATER PIPE THRU EARTH TRENCH
NOT TO SCALE

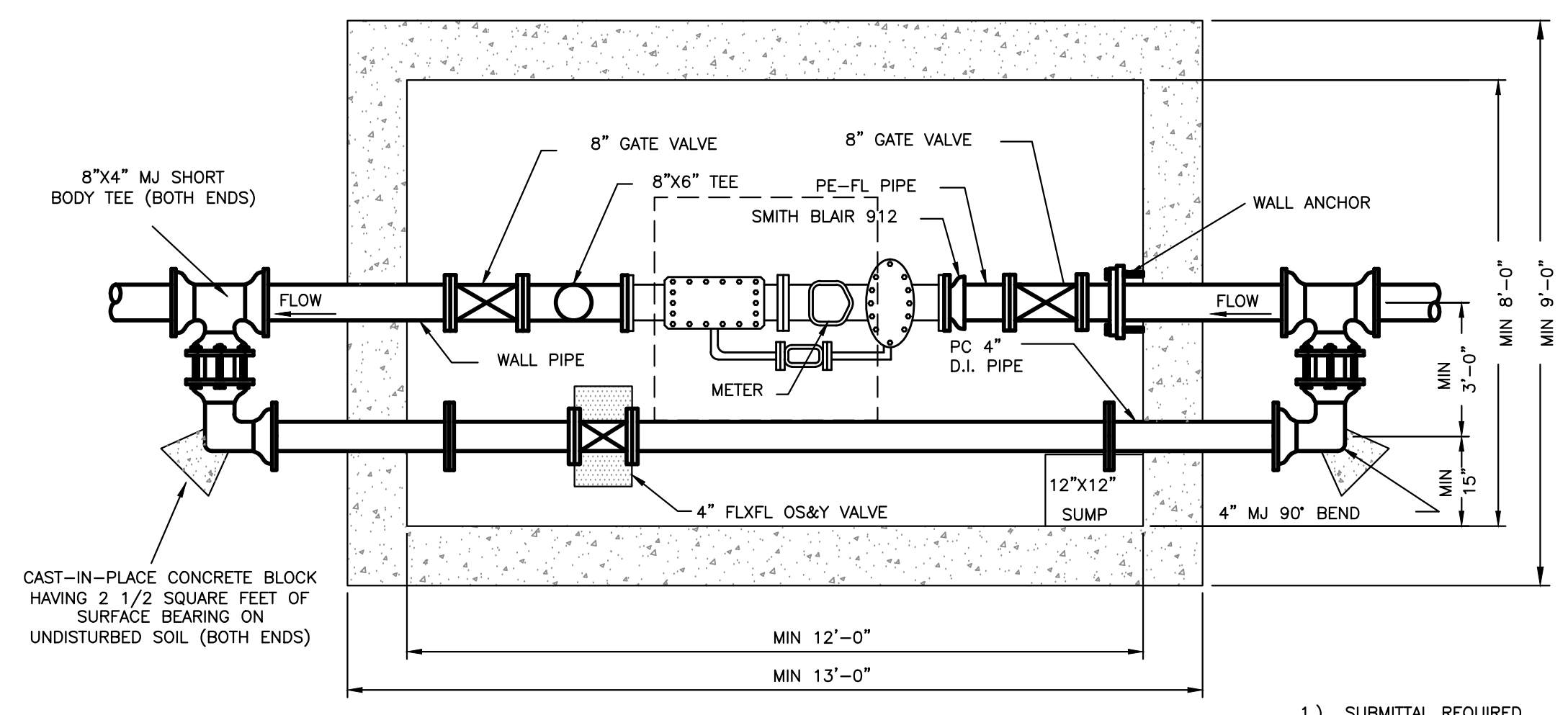


PIPE SIZE	1/32 BEND	1/16 BEND	1/8 BEND	1/4 BEND	TEES/CAPS
8"	2.0	3.0	6.0	10.0	16.0



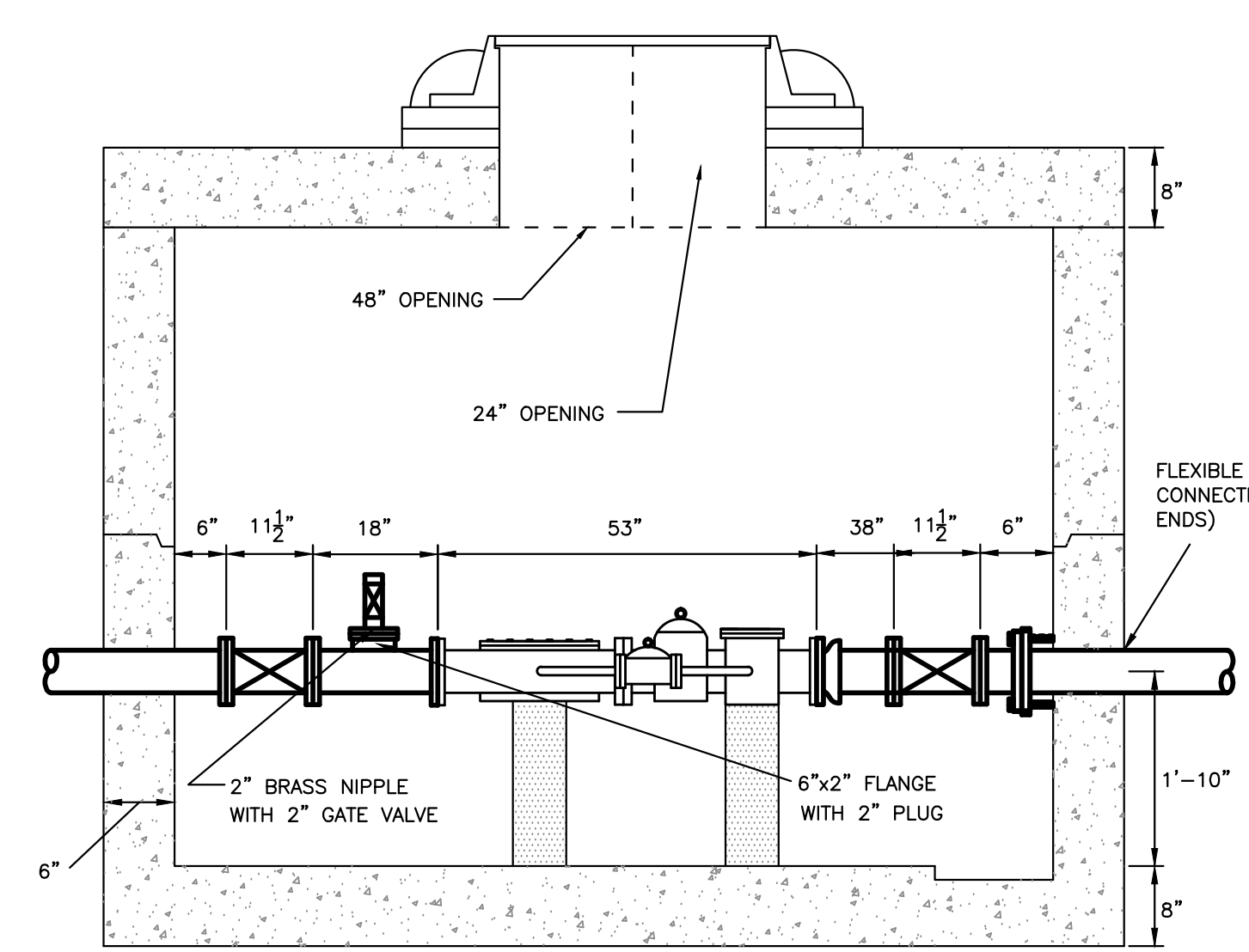
THRUST BLOCKING
NOT TO SCALE

PERMIT DRAWINGS
NOT FOR CONSTRUCTION



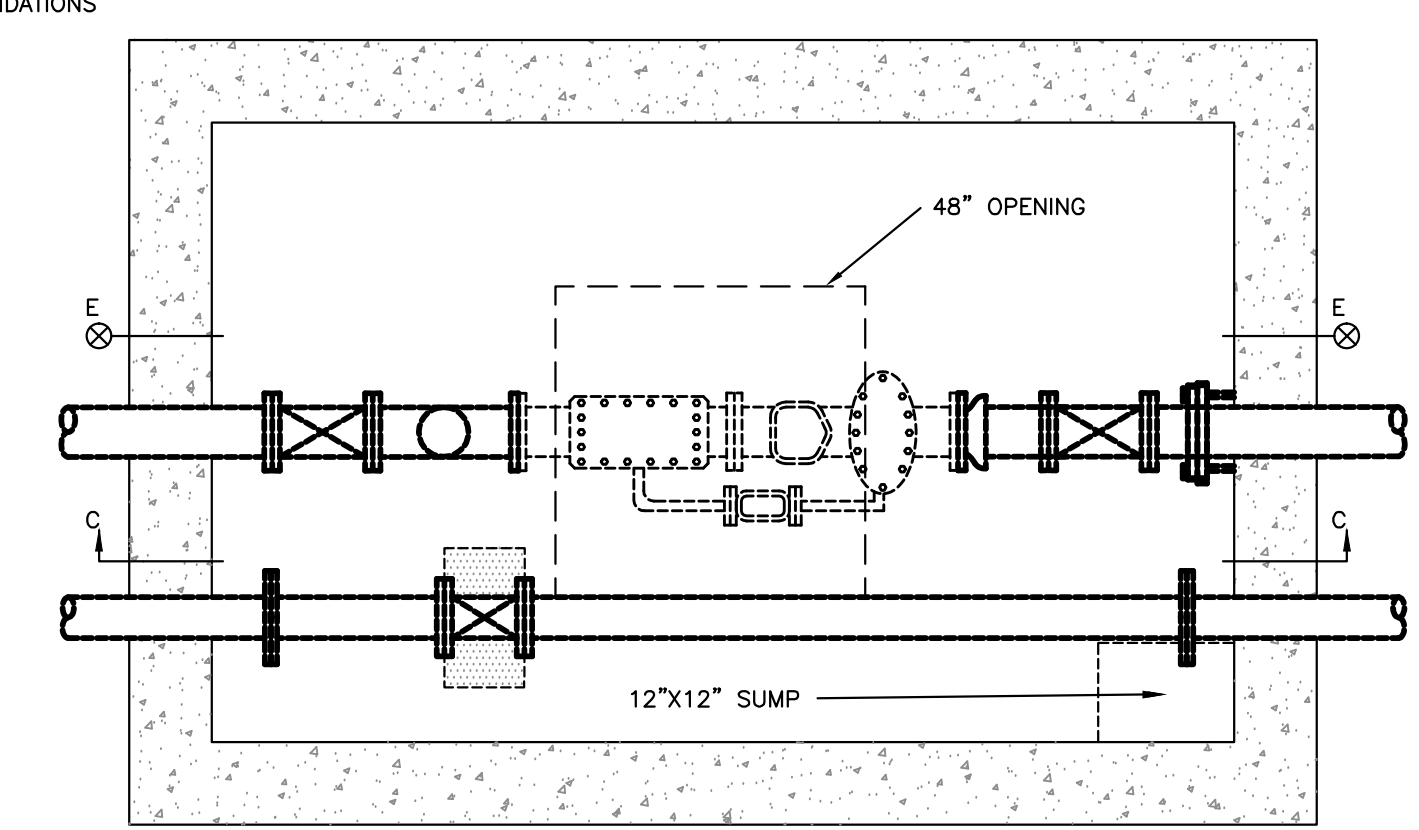
SECTION E-E

- 1.) SUBMITTAL REQUIRED
- 2.) ALL JOINTS TO BE RESTRAINED
- 3.) COVER LOADING
 - A.) TRAFFIC-H2O
- 4.) STRUCTURAL DESIGN OF THE VAULT TO BE APPLICABLE FOR THE ANTICIPATED LOADING AND A MIN. OF H2O LOADING
- 4.) WATER METER SHALL BE 8-INCH "OMNI F" METER" AS MANUFACTURED BY SENSUS. WATER METER SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS



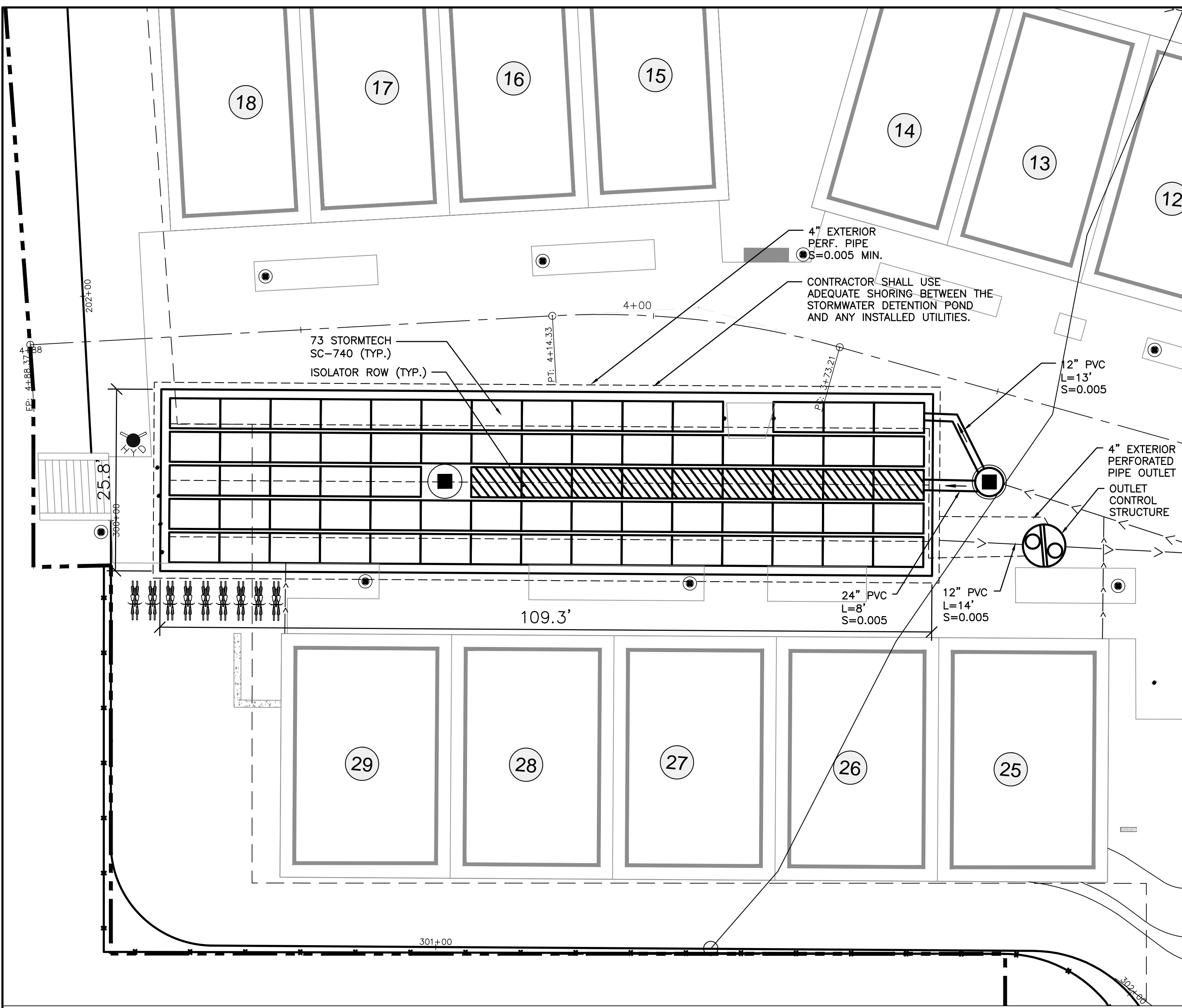
SECTION C-C

8-IN FIRE LINE METER DETAIL
NOT TO SCALE

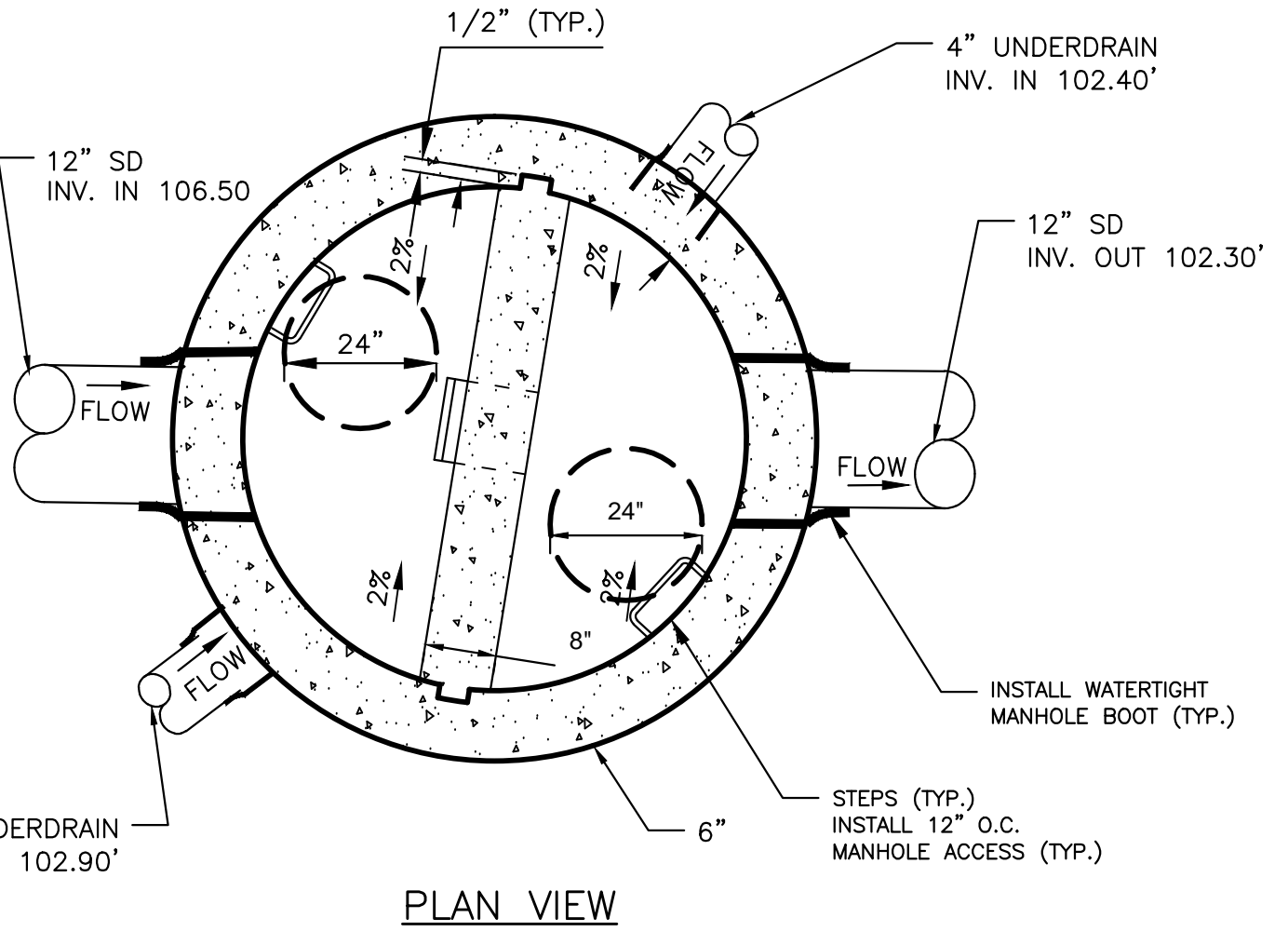
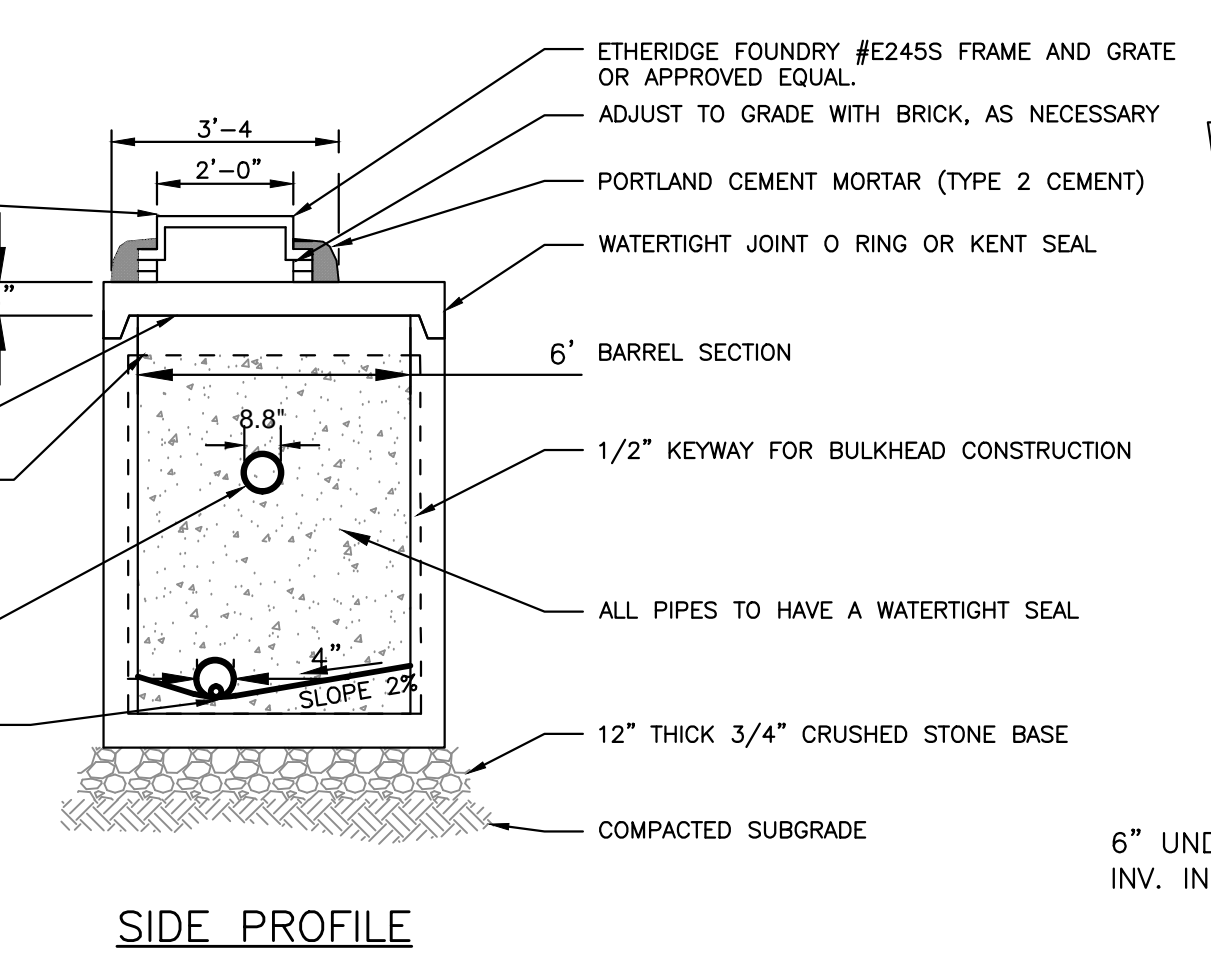


PLAN

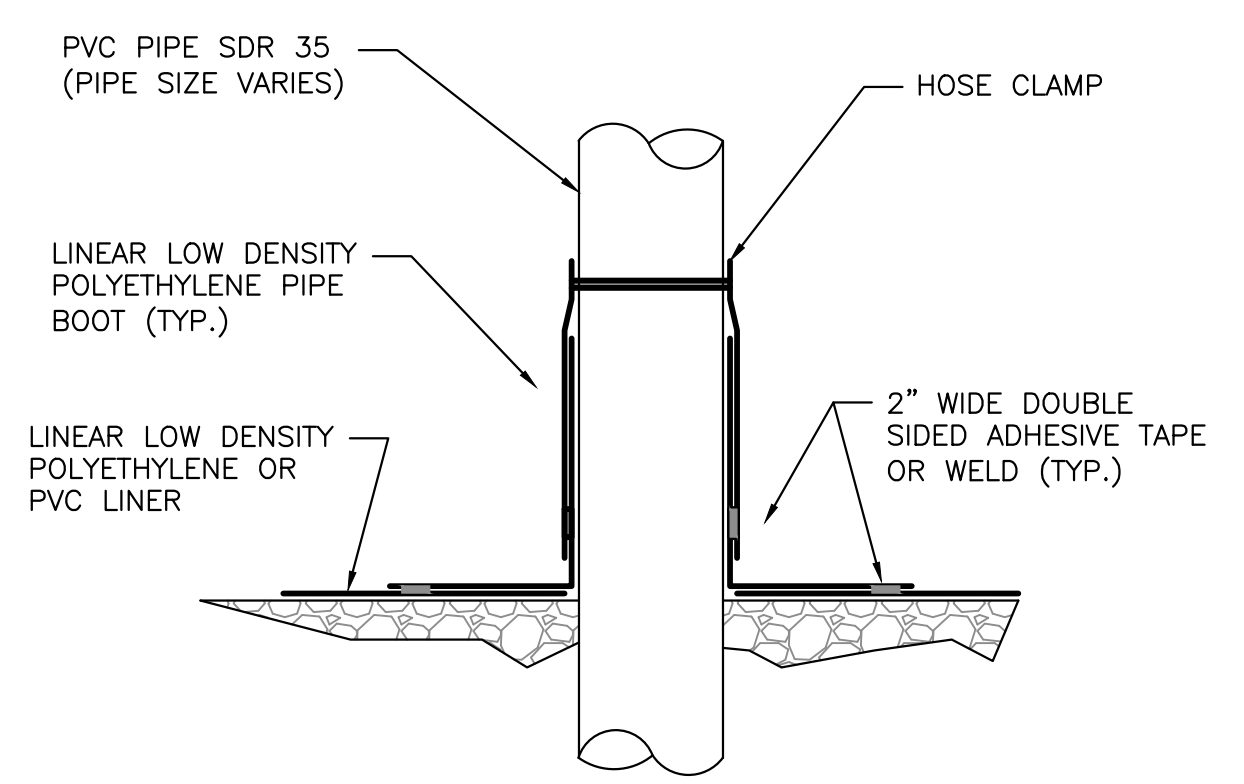
NOTES:



- DESIGN NOTES:**
1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
 2. DESIGN LOAD FOR H-20 WHEEL LOAD.
 3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
 4. REINFORCE TO 0.12 IN. SQ./LF.
 5. JOINTS SEALED WITH BUTYL RUBBER.
 6. POLYPROPYLENE STEPS 12" O.C.

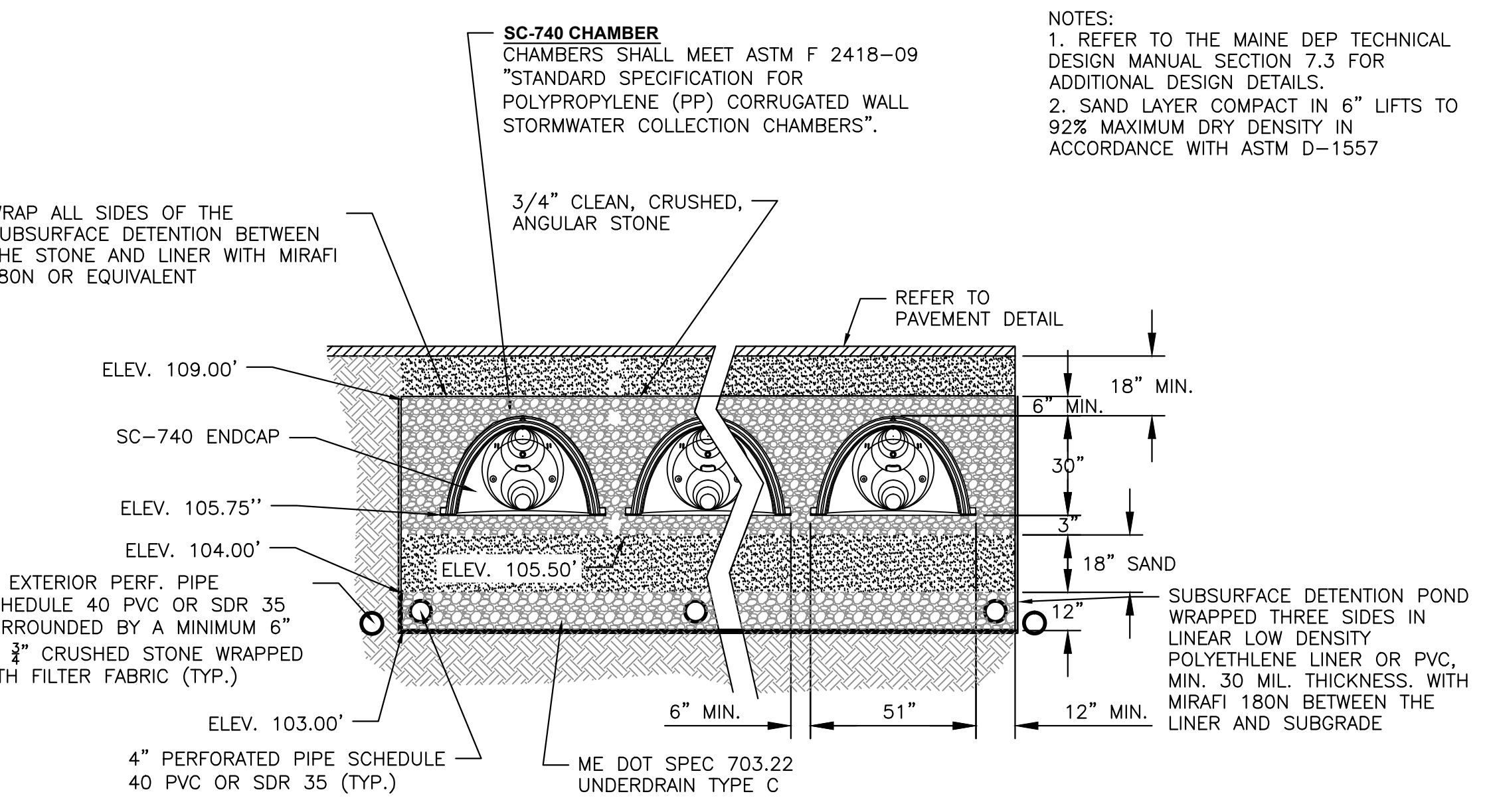


OUTLET CONTROL STRUCTURE
NOT TO SCALE

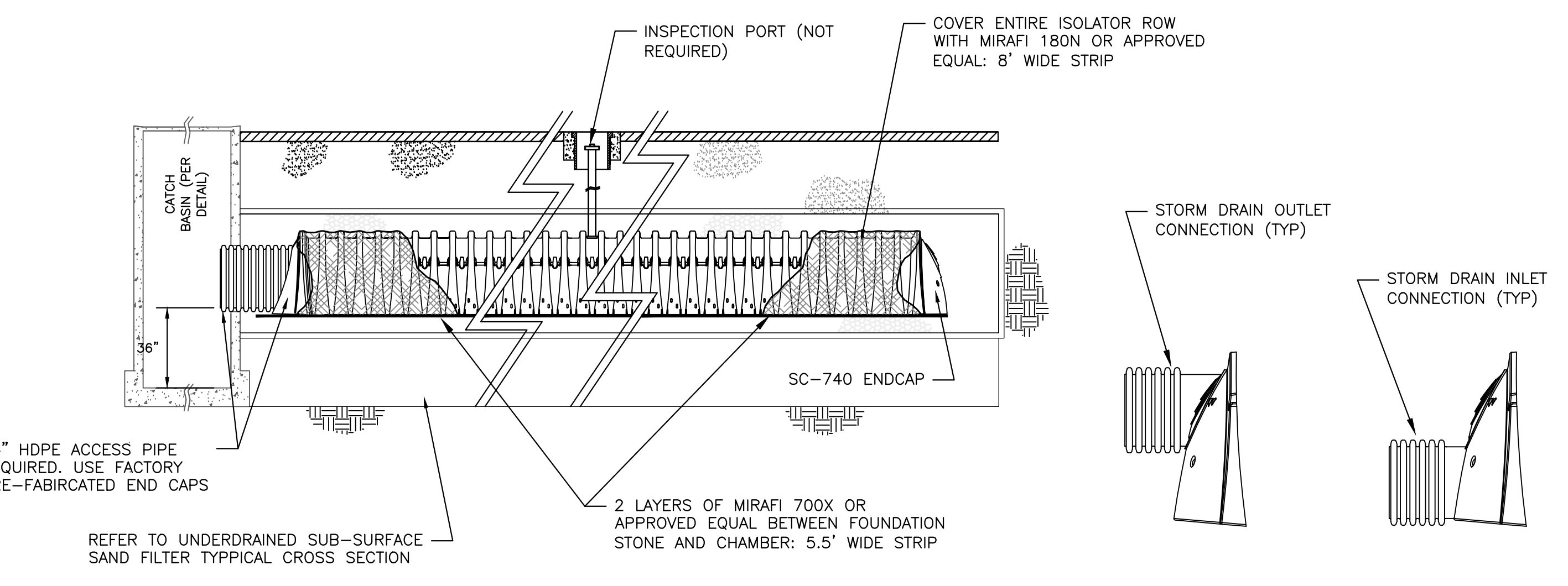


- MANUFACTURERS NOTES:**
1. ALL DESIGN SPECIFICATIONS FOR STORMTECH SC-740 CHAMBERS SHALL BE IN ACCORDANCE WITH THE STORMTECH DESIGN MANUAL.
 2. THE INSTALLATION OF STORMTECH SC-740 CHAMBERS SHALL BE IN ACCORDANCE WITH THE LATEST STORMTECH INSTALLATION INSTRUCTIONS.
 3. THE CONTRACTOR IS ADVISED TO REVIEW AND UNDERSTAND THE INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION. CALL 1-888-892-2694 OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF THE LATEST STORMTECH INSTALLATION INSTRUCTIONS.
 4. CHAMBERS SHALL MEET THE DESIGN REQUIREMENTS AND LOAD FACTORS SPECIFIED IN SECTION 12.12 OF THE LATEST EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

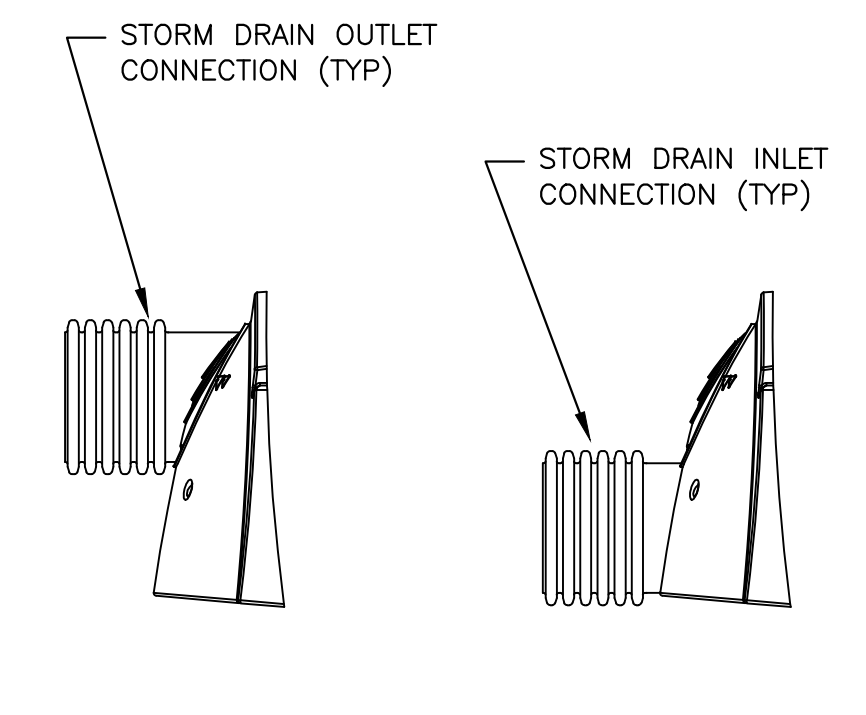
- ENGINEERS NOTES:**
1. THE LAYOUT AND DIMENSION OF THE SUBSURFACE DETENTION MAY BE MODIFIED WITH AN ENGINEER APPROVED EQUAL WHICH PROVIDES EQUAL DETENTION STORAGE AND WATER QUALITY TREATMENT.
 2. THE SUBSURFACE DETENTION SHALL BE INSPECTED BY THE DESIGN ENGINEER AT THE FOLLOWING INTERVALS:
 - AFTER PRELIMINARY CONSTRUCTION OF THE SUBSURFACE DETENTION GRADES
 - DURING THE CONSTRUCTION OF THE SAND FILTER LAYER
 - DURING THE INSTALLATION OF THE STORMTECH ISOLATOR ROW.
 - BEFORE BACKFILLING THE STORMTECH UNITS.



UNDERDRAINED SUB-SURFACE SAND FILTER
TYPICAL CROSS SECTION
NOT TO SCALE



ISOLATOR ROW - PROFILE VIEW
NOT TO SCALE



STORMTECH-CONNECTION
NOT TO SCALE

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

ISSUED FOR	BY DATE
WORKSHOP #2	WHS 11/12/13
FINAL SUBMISSION	WHS 12/2/13
REVISION	REV. DATE
REV. STANDARD DETAIL	WHS 12/4/13

DRAWING NAME: UNDERDRAIN SUB-SURFACE SAND FILTER
PROJECT NAME: MUNJOY HEIGHTS
CLIENT: REDFERN MUNJOY, LLC.
P.O. BOX 8816, PORTLAND, MAINE 04104

ACORN ENGINEERING, INC.
3372 PORTLAND, MAINE 04104
(207) 775-2655

FILE: 1047_details
11-27-2013.dwg
DATE: 7/11/13
JN: 302-001
SCALE: NTS
DESIGN BY: WHS
DRAWN BY: ZRJ
CHECKED BY: WHS

DRAWING NO. **C-46**