

MUNJOY HEIGHTS

79 WALNUT STREET

PORTLAND, MAINE

GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 4 DAYS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE, ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
4. ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
5. THE SITE CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS STAMPED "AS-BUILT".
6. THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS AND 2) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
7. EXISTING CONDITIONS, BOUNDARY SURVEY AND PROPOSED BOUNDARY FROM THE PLAN TITLED "REDFERN PROPERTIES LLC, SHERIDAN STREET AND EAST COVE STREET, PORTLAND, MAINE" BY NADEAU LAND SURVEYS DATED AUGUST 9, 2013.
8. SUBSURFACE DATA HAVE BEEN OBTAINED BY SUMMIT GEOENGINEERING SERVICES, INC. AND SHALL BE INCLUDED IN THE CONTRACT DOCUMENTS.
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AND ALL ADJACENT PROPERTIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THROUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.

LAYOUT NOTES:

1. MONUMENTS DELINEATING PROPERTY LINES OR RIGHT OF WAYS SHALL NOT BE DISTURBED DURING CONSTRUCTION OPERATIONS. IN THE CASE A MONUMENT IS DISTURBED, AT THE CONTRACTOR'S EXPENSE, THE MONUMENT SHALL BE RESET TO THEIR ORIGINAL LOCATION BY A REGISTERED LAND SURVEYOR.
2. ALL DIMENSIONS ON THE FOLLOWING SHEETS TAKE PRECEDENT OVER SCALED DIMENSIONS. EACH DRAWING WITH A BAR SCALE MEANS THAT THE DRAWING/DETAIL HAS BEEN SCALED AS ACCURATELY AS POSSIBLE, AND THE BAR SCALE IS FOR GENERAL REFERENCE ONLY. IF NO BAR SCALE IS PRESENT, THEN THERE IS NO SCALE TO THAT DRAWING/DETAIL. AT NO TIME SHOULD DRAWINGS BE SCALED FROM.
3. SIGNAGE, STRIPING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL LAND SURVEYOR TO PROVIDE A MINIMUM OF TWO TEMPORARY BENCHMARKS WITHIN THE SITE.
5. CONTRACTOR TO ENSURE THAT DRIVEWAYS AND MAILBOXES REMAIN FUNCTIONAL AND IN USE AT ALL TIMES.
6. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & CONDITIONS OF THE CITY OF PORTLAND, MAINE DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

PERMITTING NOTES:

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF SITE PLAN - LEVEL III AND SUBDIVISION PERMIT FROM THE CITY OF PORTLAND.
2. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF A MAINE CONSTRUCTION GENERAL PERMIT FROM THE MAINE DEP.
3. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.

GRADING AND DRAINAGE NOTES:

1. TOPSOIL STRIPPED FROM THE SITE THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED WITHIN THE PROPOSED LIMIT OF WORK AREA. THE CONTRACTOR SHALL NOT ASSUME THAT ANY LOAM WILL BE ACCEPTABLE FOR REUSE WITH THEIR ESTIMATE.
2. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY; NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING.
3. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY EASEMENT OR TEMPORARY CONSTRUCTION RIGHTS AS NECESSARY BY ADJACENT LAND OWNERS. THE CONTRACTOR SHALL NOT DISTURB ANY SOIL BEYOND THE PROPERTY LINE WITHOUT NOTIFYING AND OBTAINING SUCH EASEMENT OR TEMPORARY CONSTRUCTION RIGHT FROM THE OWNER.
4. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. THE MINIMUM SLOPE SHALL MEET OR EXCEED 0.5% IN ALL CASES. ALL SLOPES SHALL BE AWAY FROM BUILDINGS AND TOP OF PAVEMENT SHALL BE AT OR BELOW EXISTING FINISH FLOOR ELEVATIONS.

5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FINAL GEOTECHNICAL REPORT PREPARED BY SUMMIT GEOENGINEERING SERVICES FOR REDFERN PROPERTIES, LLC.
6. EXCAVATED SOILS THAT ARE SUITABLE SHALL BE ACCEPTED FOR BACKFILL IF THEY ARE DEEMED SUITABLE IN ACCORDANCE WITH MAINE DOT GENERAL CONDITIONS, DATED FEBRUARY 2001 OR MOST RECENT EDITION, SECTION 104.3.13.
7. NO ADDITIONAL PAYMENT FOR UNSUITABLE MATERIALS.
8. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF N=0.012 OR LESS.
9. A POST CONSTRUCTION - STORMWATER INSPECTION & MAINTENANCE PLAN IS FILED WITH THE CITY OF PORTLAND.

EROSION CONTROL NOTES:

1. ALL ROUTINE MAINTENANCE ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.
2. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
3. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCH SHALL BE APPLIED AS SOON AS POSSIBLE WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY SOIL DISTURBANCE, AND PRIOR TO ANY STORM EVENT.
4. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE D.E.P.'S PERMIT CONDITIONS, FINDINGS OF FACT AND ORDER (IF ANY), AND THE CURRENT MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR TO BYPASS EXISTING SEWER FLOW CONTROL AT CONNECTION TO EXISTING SYSTEM AT NO ADDITIONAL COST.
3. CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES.
4. SEWER MANHOLES SHALL BE 4' ID UNLESS OTHERWISE STATED ON THE PLANS.
5. CONTRACTOR TO PROVIDE 5' OF COVER FROM TOP OF PIPE TO FINISH GRADE FOR WATER MAINS.
6. THRUST BLOCKS SHALL BE USED FOR THRUST RESTRAIN ON WATER MAINS. LIMITS FOR THRUST BLOCKS ARE SHOWN ON SHEET C45.
7. ALL REQUIRED FITTINGS FOR THE WATER MAIN ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY FITTINGS REQUIRED TO CONSTRUCT THE WATER MAIN IN ACCORDANCE WITH CITY OF PORTLAND, STATE OF MAINE, AND AMERICAN WATER WORKS ASSOCIATION STANDARDS AND REGULATIONS.
8. CONTRACTOR SHALL COORDINATE WORK REGARDING ANY WATER MAIN CONNECTION AND WATER MAIN SHUTDOWN WITH THE PORTLAND WATER DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
10. SEWER, GAS, TELEPHONE, CABLE, WATER AND ANY OTHER UTILITY CONNECTIONS SHALL BE COMPLETED IN ACCORDANCE WITH PLUMBING, ELECTRICAL, AND MECHANICAL CONTRACTS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR DISTURBING ANY SURVEY MONUMENTS DISTURBED DURING CONSTRUCTION VIA LICENSED SURVEYOR.
12. LIMITS OF CLEARING AND CONSTRUCTION SHALL BE LIMITED TO PROJECT SITE.
13. DO NOT SCALE THESE DRAWINGS. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, SPECIFICATIONS, AND THE FIELD CONDITION SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
14. COORDINATE EXIT POINT FOR SECONDARY SERVICE WITH THE ARCHITECT/ELECTRICAL ENGINEER. SECONDARY LINE LOCATIONS NOT PROVIDED BY ACORN ENGINEERING WITHIN THE UTILITY PLAN.
15. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL THE NECESSARY PERMITS FOR THE INSTALLATION OF THE UTILITIES AND STORMDRAINS WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE CITY IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL PRIOR TO ANY WORK.

DEMOLITION NOTES:

1. THE EXISTING ASPHALT SHOULD BE STRIPPED AND EITHER PROCESSED ONSITE, REMOVED FROM THE SITE OR DISPOSED OF ONSITE.
2. REFER TO THE FINAL GEOTECHNICAL REPORT PREPARED BY SUMMIT GEOENGINEERING SERVICES FOR REDFERN PROPERTIES, LLC. FOR BORING LOG INFORMATION.

3. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.
4. SITE DEMOLITION SHALL NOT OCCUR UNTIL PROPER ABATEMENT PROCEDURES HAVE OCCURRED. ABATEMENT, IF NECESSARY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ISSUED FOR	BY
WORKSHOP #2	WHS
DATE	11/12/13
FINAL SUBMISSION	WHS
	12/2/13
REVISION	REV
DATE	12/6/13
STAFF COMMENTS	

DRAWING NAME: **NOTES SHEET**

PROJECT NAME: **MUNJOY HEIGHTS**

CLIENT: **REDFERN PROPERTIES, LLC**

P.O. BOX 8616, PORTLAND, MAINE 04104

A C O R N

ENGINEERING, INC.

ACORN ENGINEERING, INC.
3372 PORTLAND, MAINE 04104
(207) 775-2855

P.O. BOX 3372 PORTLAND, MAINE 04104
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ACORN ENGINEERING, INC. IS AN EQUAL OPPORTUNITY EMPLOYER.
ACORN ENGINEERING, INC. DOES NOT DISCRIMINATE ON THE BASIS OF RACE, GENDER, RELIGION, NATIONAL ORIGIN, ANCESTRY, COLOR, SEX, OR HANDICAP.

FILE: 1047 COVER

DATE: 9/24/13

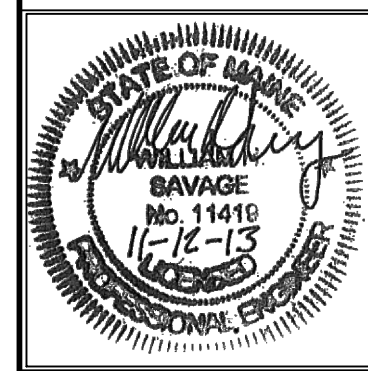
JN: 1047

SCALE: NTS

DESIGN BY: WHS

DRAWN BY: ZRJ

CHECKED BY: HPS



PERMIT DRAWINGS
NOT FOR CONSTRUCTION

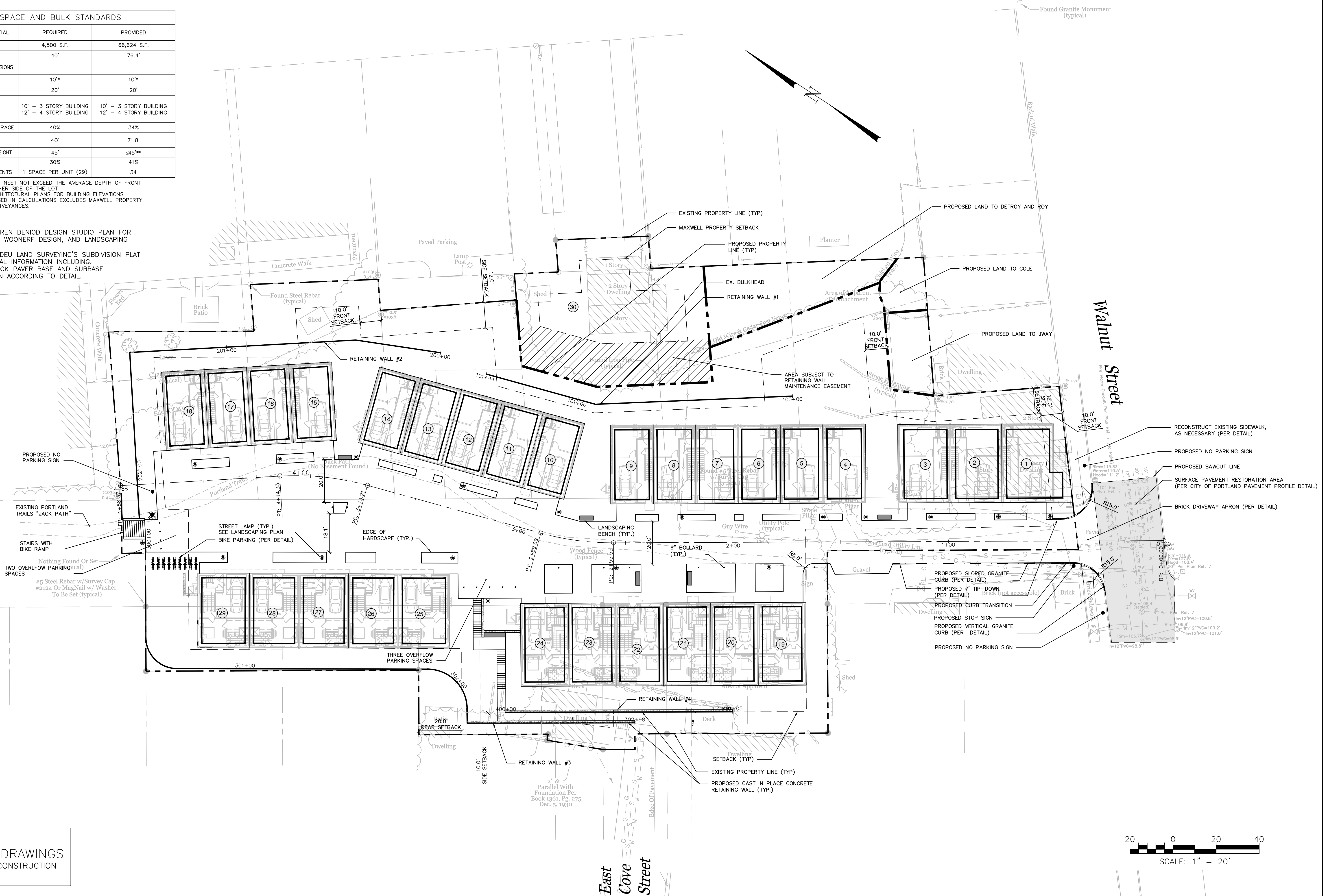
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C-02

SPACE AND BULK STANDARDS		
ZONE: R6 RESIDENTIAL	REQUIRED	PROVIDED
MINIMUM LOT SIZE	4,500 S.F.	66,624 S.F.
MINIMUM FRONTAGE	40'	76.4'
MINIMUM YARD DIMENSIONS		
FRONT YARD	10'	10'
REAR YARD	20'	20'
SIDE YARD		
10' - 3 STORY BUILDING	10'	10'
12' - 4 STORY BUILDING	12'	12'
MAXIMUM LOT COVERAGE	40%	34%
MINIMUM LOT WIDTH	40'	71.8'
MAXIMUM BUILDING HEIGHT	45'	<45'*
OPEN SPACE RATIO	30%	41%
PARKING REQUIREMENTS	1 SPACE PER UNIT (29)	34

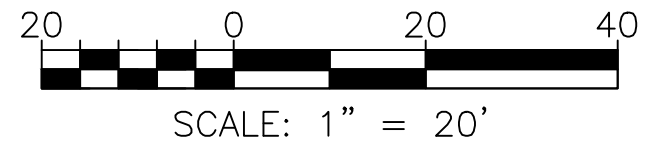
* A FRONT YARD NEET NOT EXCEED THE AVERAGE DEPTH OF FRONT YARDS ON EITHER SIDE OF THE LOT
 ** REFER TO ARCHITECTURAL PLANS FOR BUILDING ELEVATIONS
 *** LAND AREA USED IN CALCULATIONS EXCLUDES MAXWELL PROPERTY AND LAND CONVEYANCES.

NOTES:

1. REFER TO SOREN DENIOD DESIGN STUDIO PLAN FOR LANDSCAPING, WOONERF DESIGN, AND LANDSCAPING PLAN.
2. REFER TO NADEU LAND SURVEYING'S SUBDIVISION PLAT FOR ADDITIONAL INFORMATION INCLUDING.
3. CONCRETE BRICK PAVER BASE AND SUBBASE CONSTRUCTION ACCORDING TO DETAIL.



PERMIT DRAWINGS
NOT FOR CONSTRUCTION



ISSUED FOR	DATE	BY
CITY SUBMISSION	9/23/13	WHS
WORKSHOP #2	11/12/13	WHS
FINAL SUBMISSION	12/2/13	WHS

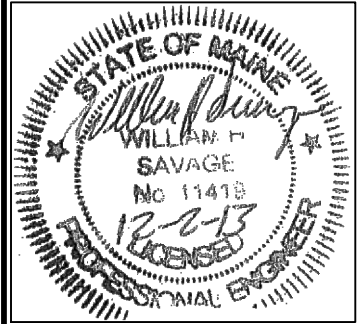
REVISION	REV. DATE	REV. BY
STAFF COMMENTS	12/6/13	WHS

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

A C O R N
ENGINEERING, INC.

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FILE: 1047_CIVIL
 DATE: 9/23/13
 JN: 1047
 SCALE: 1"=20'
 DESIGN BY: WHS
 DRAWN BY: ZRJ
 CHECKED BY: WHS



DRAWING NO.
C-10

- NOTES:
- UTILITY NOTES WITHIN WALNUT STREET FROM PLAN TITLED SHERIDAN STREET SANITARY SEWER AND STREET RECONSTRUCTION BY WOODARD & CURRAN CONSULTING ENGINEERS, SHEET 5, STAMPED AS-BUILTS 6-20-89.
 - COORDINATE ALL UTILITY ENTRY POINTS WITH ARCHITECTURAL PLANS PRIOR TO START OF CONSTRUCTION.
 - THE CONDOMINIUM ASSOCIATION DOCUMENTS SHALL PROVIDE A HYDRANT MAINTENANCE AGREEMENT IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL MANUAL SECTION 3.2.3 REVISED 6/17/11.
 - PLUGGING OF ABANDONED SEWER LATERALS SHALL BE IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL MANUAL SECTION 2.6.11 REVISED 6/7/11.
 - POTENTIAL TRANSFORMER PAD LOCATIONS ARE APPROXIMATE PENDING CONFIRMATION BY CENTRAL MAINE POWER COMPANY AND FUTURE REVIEW/APPROVAL BY THE CITY.
 - IF NECESSARY, ELECTRIC AND TELEPHONE PULL BOXES LOCATIONS TO BE DETERMINED BY THE CENTRAL MAINE POWER AND VERIZON PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE.
 - CONTRACTOR TO COORDINATE THE RELOCATION OF THE EXISTING GUY WIRE AND UTILITY POLE WITH CENTRAL MAINE POWER COMPANY.
 - MAINTAIN MINIMUM 10' HORIZONTAL SEPARATION BETWEEN SANITARY SEWER AND WATERMAIN. DEFLECT WATER MAIN JOINT UP TO 3' TO MAINTAIN ALIGNMENT. THE CONTRACTOR MAY REDUCE THE HORIZONTAL SEPARATION TO 5', PROVIDED THE INSTALLATION MEETS THE PORTLAND WATER DISTRICT SPECIFICATION AND PROCEDURES SECTION 1: GENERAL INFORMATION, D. 2. CONTRACTOR SHALL OBTAIN APPROVAL IN WRITING FROM THE PORTLAND WATER DISTRICT PRIOR TO ANY WATER AND SEWER LINE CONSTRUCTION.
 - THE EXACT LOCATION OF THE INDIVIDUAL GAS AND UGE/T/C LOCATIONS SHALL BE PROVIDED BY WRIGHT-RYAN TO THE RESPONSIBLE CONTRACTOR.

SEWER STRUCTURE SCHEDULE				
STRUCTURE	SIZE	RIM	INV. IN	INV. OUT
EXSMH-1	EXIST.	108.50'	8" INV. IN (SE) 101.37' 12" INV. IN (NE) 101.37' 10" INV. IN (E) 103.50' 8" INV. IN (MUNJOY HEIGHTS) 101.37'	12" INV. OUT (SW) 100.97'
SMH-1	4'	113.35'	102.52'	102.42'
SMH-2	4'	112.23'	105.00'	104.90'
SMH-3	4'	111.75'	105.71'	105.61'
SMH-4	4'	112.41'	-	106.08'
SMH-5	4'	93.00'	-	87.50'
SMH-6	4'	90.00'	84.50'	84.40'
SMH-7*	4'	91.50'	8"/83.04' 8"/83.04'	TBD
SMH-8	4'	91.50'	-	84.40'
SMH-9**	4'	TBD/85.75'	TBD	TBD

* IF THE DROP IS GREATER THAN 2 FEET BETWEEN THE INVERT IN & OUT, BASED UPON THE DATA RECEIVED FROM THE TEST PIT, THEN A DROP MANHOLE SHALL BE REQUIRED. PROVIDE TEST PIT INFORMATION TO THE ENGINEER FOR VERIFICATION.
 ** INVERTS IN & OUT TO BE DETERMINED BASED UPON TEST PIT DATA.



ISSUED FOR	DATE	BY
CITY SUBMISSION	9/23/13	WHS
WORKSHOP #2	11/12/13	WHS
FINAL SUBMISSION	12/2/13	WHS

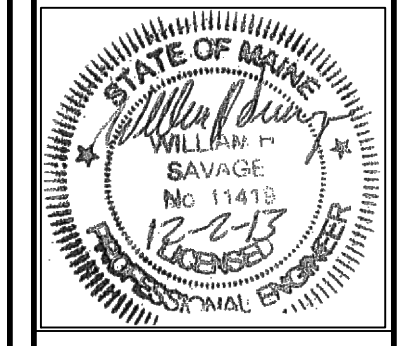
REVISION	REV. DATE	BY
STAFF COMMENTS	12/2/13	WHS

DRAWING NAME: **UTILITY PLAN**
 PROJECT NAME: **MUNJOY HEIGHTS**
 CLIENT: **REDFERN MUNJOY, LLC.**
 P.O. BOX 8816, PORTLAND, MAINE 04104

ACORN ENGINEERING, INC.
 2207 775-2665
 P.O. BOX 33201, PORTLAND, ME 04104

STATE OF MAINE
 WILLIAM F. SAUSAGE
 No. 11413
 12-2-13
 REGISTERED PROFESSIONAL ENGINEER

FILE: 1047_CIVIL
 DATE: 9/23/13
 JUN: 1047
 SCALE: 1"=20'
 DESIGN BY: WHS
 DRAWN BY: ZRJ
 CHECKED BY: WHS



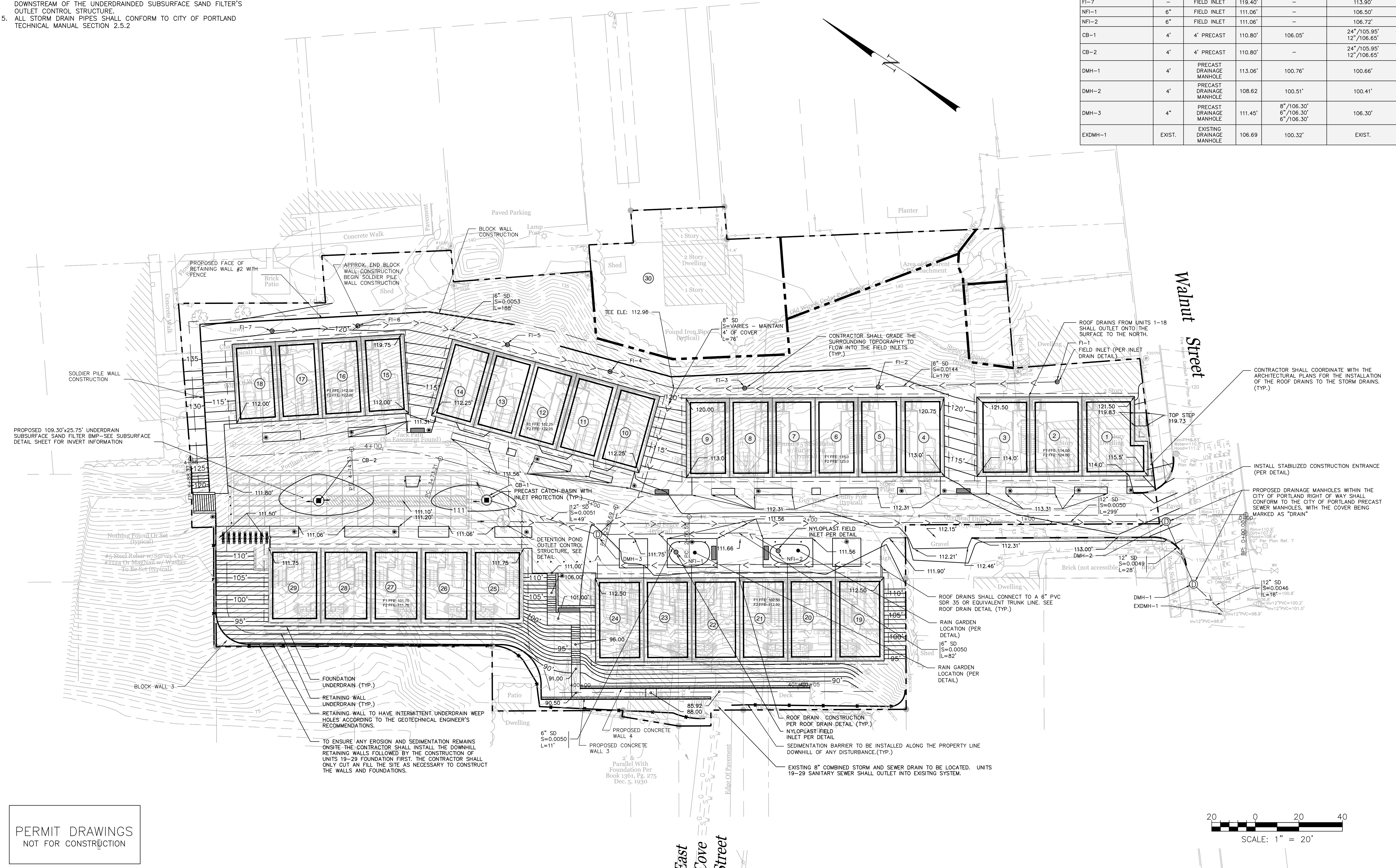
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PERMIT DRAWINGS
 NOT FOR CONSTRUCTION



- NOTE:
- ALL DISTURBED AND PROPOSED SLOPES NOT COVERED WITH MULCH AND GREATER THAN 3:1 SHALL BE STABILIZED WITH 4" OF LOAM SEED AND EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL.
 - ALL DISTURBED AND PROPOSED SLOPES TO BE COVERED WITH MULCH AND GREATER THAN 3:1 SHALL BE TEMPORARILY STABILIZED WITH EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL.
 - THE UNDERDRAIN ASSOCIATED WITH THE UPHILL RETAINING WALLS AND FOUNDATION UNDERDRAIN FOR UNITS 1-18 SHALL OUTLET DOWNSTREAM OF THE UNDERDRAINED SUBSURFACE SAND FILTER'S OUTLET CONTROL STRUCTURE.
 - ALL STORM DRAIN PIPES SHALL CONFORM TO CITY OF PORTLAND TECHNICAL MANUAL SECTION 2.5.2

DRAINAGE STRUCTURE SCHEDULE					
STRUCTURE	SIZE	TYPE	RIM	INV. IN	INV. OUT
FI-1	-	FIELD INLET	121.00'	-	115.50'
FI-2	-	FIELD INLET	120.40'	114.90'	114.90'
FI-3	-	FIELD INLET	120.40'	114.30'	114.30'
FI-4	-	FIELD INLET	121.90'	113.16'	113.16'
FI-5	-	FIELD INLET	121.90'	113.32'	113.32'
FI-6	-	FIELD INLET	119.40'	113.70'	113.70'
FI-7	-	FIELD INLET	119.40'	-	113.90'
NFI-1	6"	FIELD INLET	111.06'	-	106.50'
NFI-2	6"	FIELD INLET	111.06'	-	106.72'
CB-1	4'	4' PRECAST	110.80'	106.05'	24"/105.95' 12"/106.65'
CB-2	4'	4' PRECAST	110.80'	-	24"/105.95' 12"/106.65'
DMH-1	4'	PRECAST DRAINAGE MANHOLE	113.06'	100.76'	100.66'
DMH-2	4'	PRECAST DRAINAGE MANHOLE	108.62	100.51'	100.41'
DMH-3	4'	PRECAST DRAINAGE MANHOLE	111.45'	8"/106.30' 6"/106.30'	106.30'
EXDMH-1	EXIST.	EXISTING DRAINAGE MANHOLE	106.69	100.32'	EXIST.



ISSUED FOR	DATE	BY
CITY SUBMISSION	9/23/13	WHS
WORKSHOP #2	11/12/13	WHS
FINAL SUBMISSION	12/2/13	WHS

REVISION

NO.	DATE	DESCRIPTION
1	12/2/13	REVISED

STAFF COMMENTS

DRAWING NAME: GRADING, DRAINAGE & EROSION CONTROL PLAN

PROJECT NAME: MUNJOY HEIGHTS

CLIENT: REDFERN MUNJOY, LLC.

P.O. BOX 8816, PORTLAND, MAINE 04104

ACORN ENGINEERING, INC.

1100 S. PORTLAND AVENUE, SUITE 04104

PORTLAND, MAINE 04104

(207) 775-2665

ENGINEERING, INC.

REGISTERED PROFESSIONAL ENGINEER

STATE OF MAINE

WILLIAM W. SAVAGE

NO. 11415

12-2-13

11/05/13

FILE: 1047_CIVIL

DATE: 11/05/13

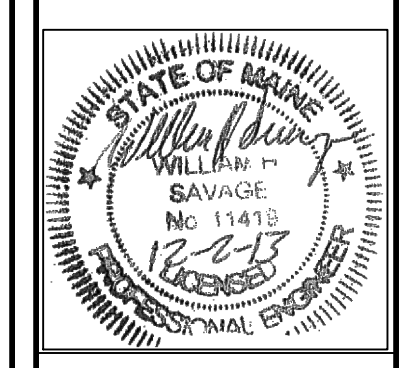
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DESIGN BY: WHS

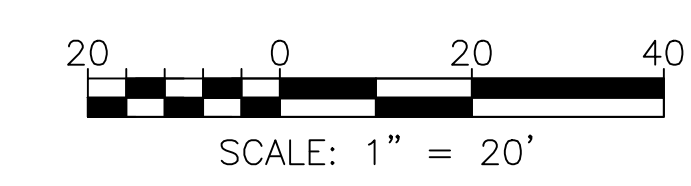
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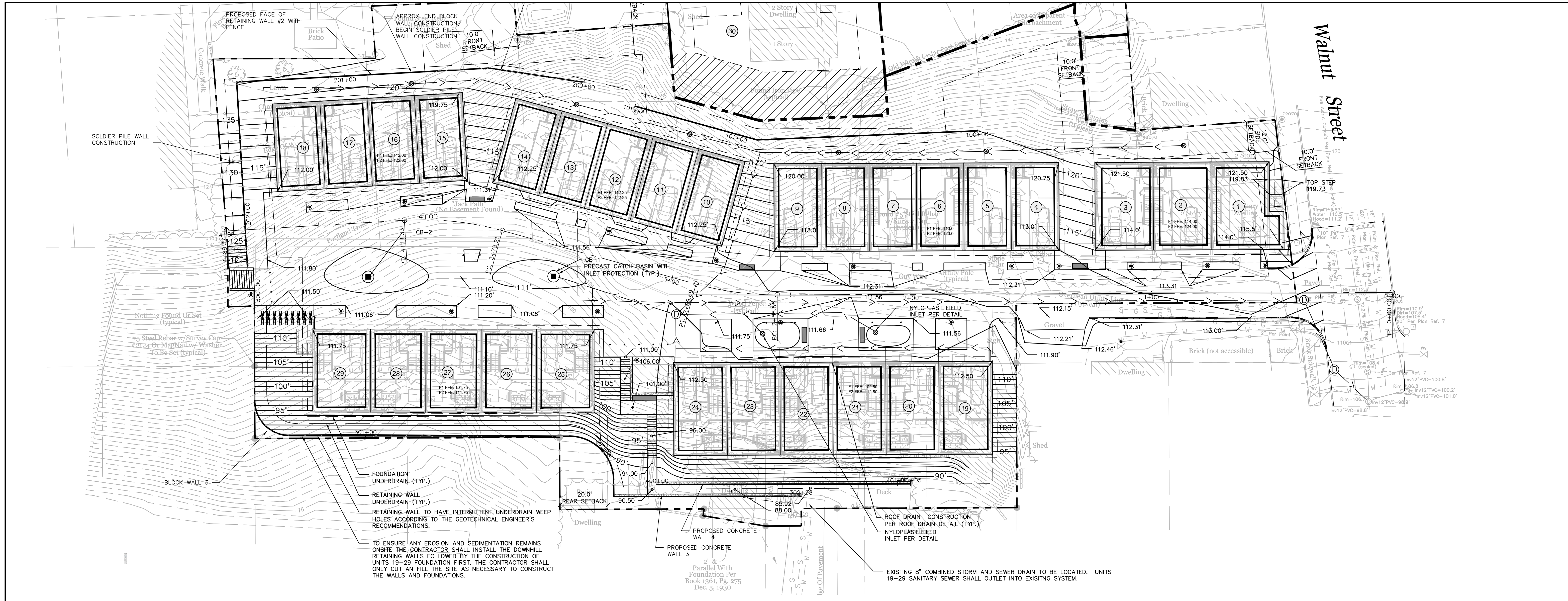
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DRAWING NO. C-30

PERMIT DRAWINGS
NOT FOR CONSTRUCTION





ISSUED FOR	BY
CITY SUBMISSION	WHS
WORKSHOP #2	WHS
FINAL SUBMISSION	WHS
	12/22/13

REVISION	REV. DATE
STAFF COMMENTS	WHS
	12/26/13

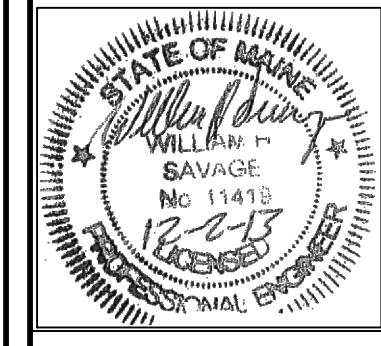
DRAWING NAME: **GRADING AND ROADWAY PROFILE PLAN**

PROJECT NAME: **MUNJOY HEIGHTS**

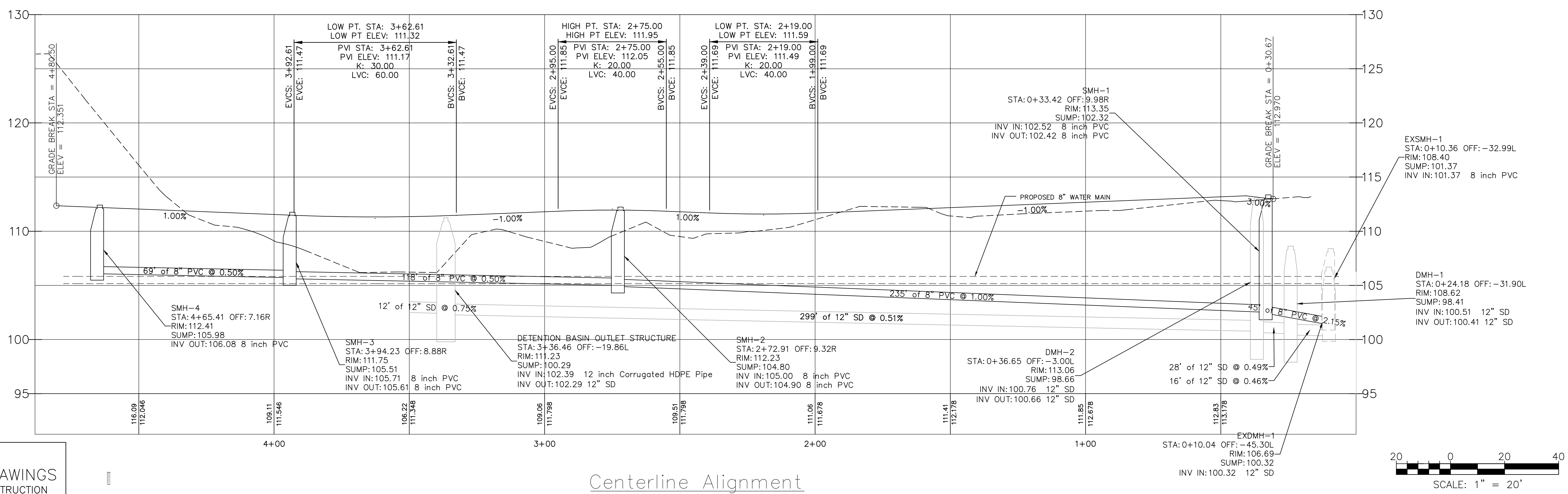
CLIENT: **REDFERN MUNJOY, LLC.**
P.O. BOX 8816, PORTLAND, MAINE 04104

ACORN ENGINEERING, INC.
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FILE:	1047_CIVIL
DATE:	9/23/13
JN:	1047
SCALE:	1" = 20'
DESIGN BY:	WHS
DRAWN BY:	ZRJ
CHECKED BY:	WHS

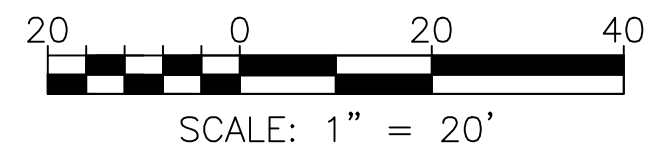


DRAWING NO. **C-31**

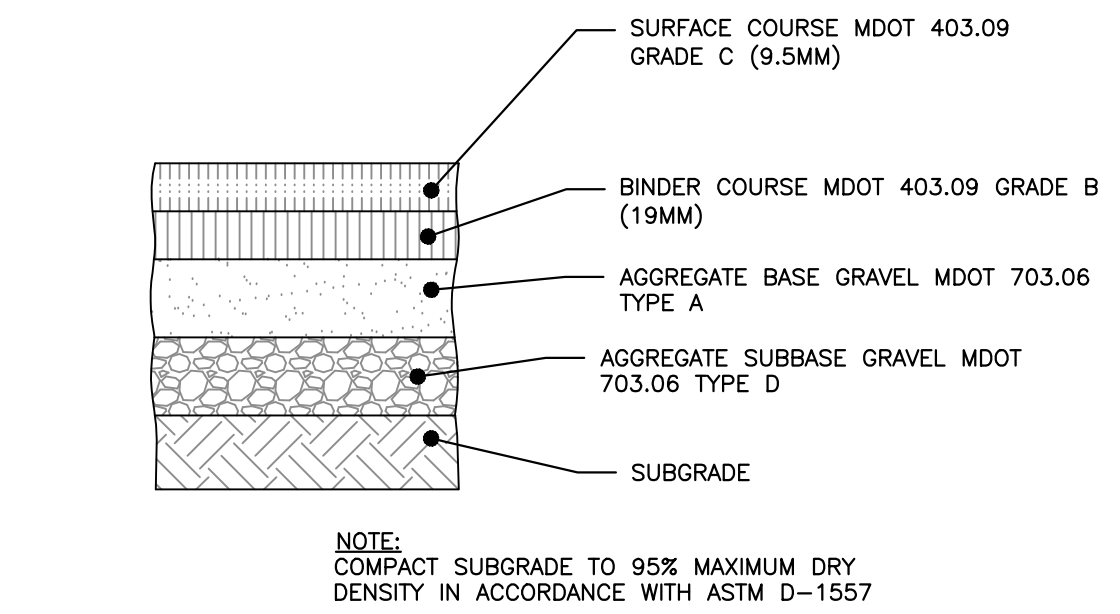
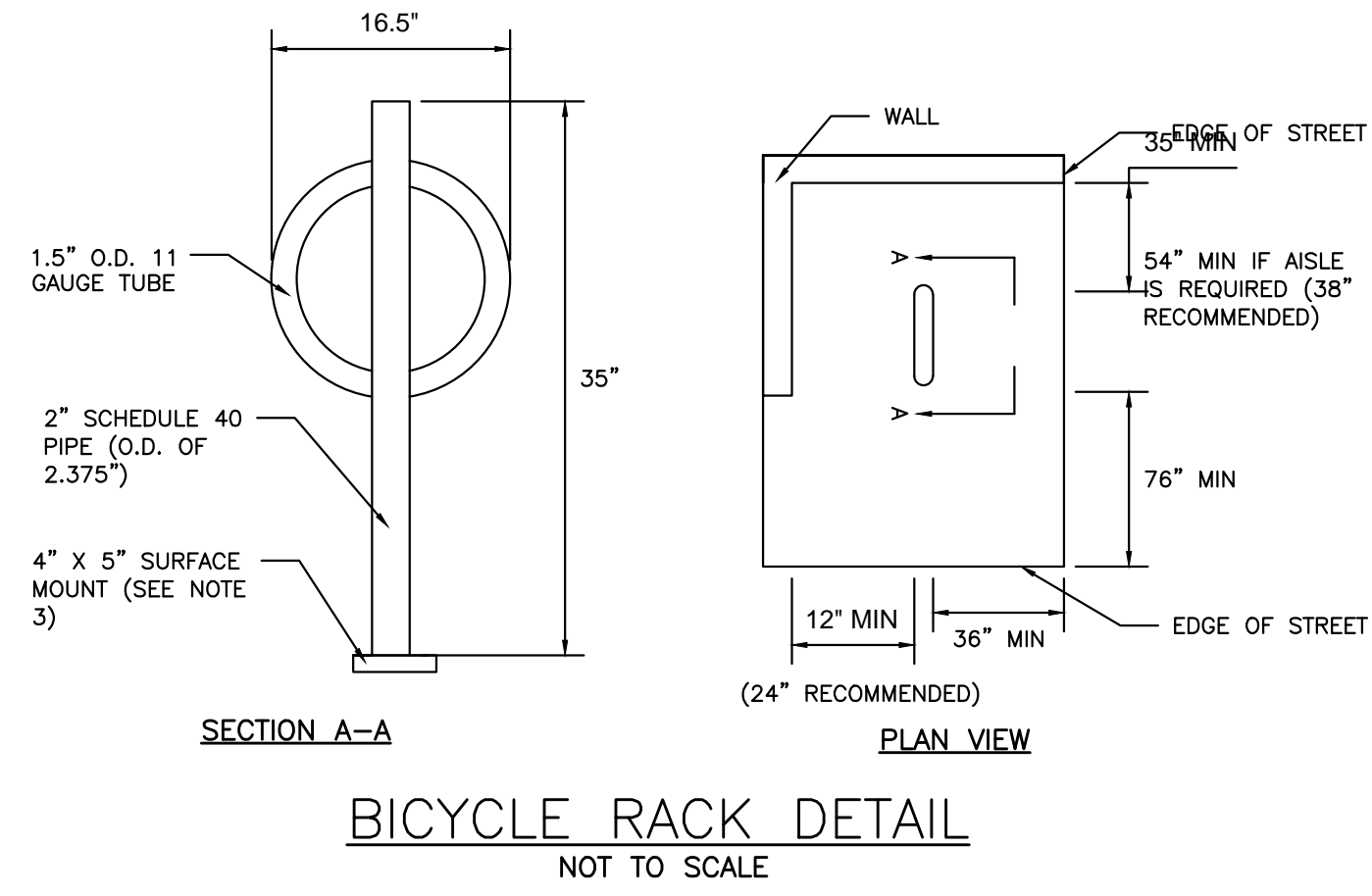


PERMIT DRAWINGS
NOT FOR CONSTRUCTION

Centerline Alignment



- 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.

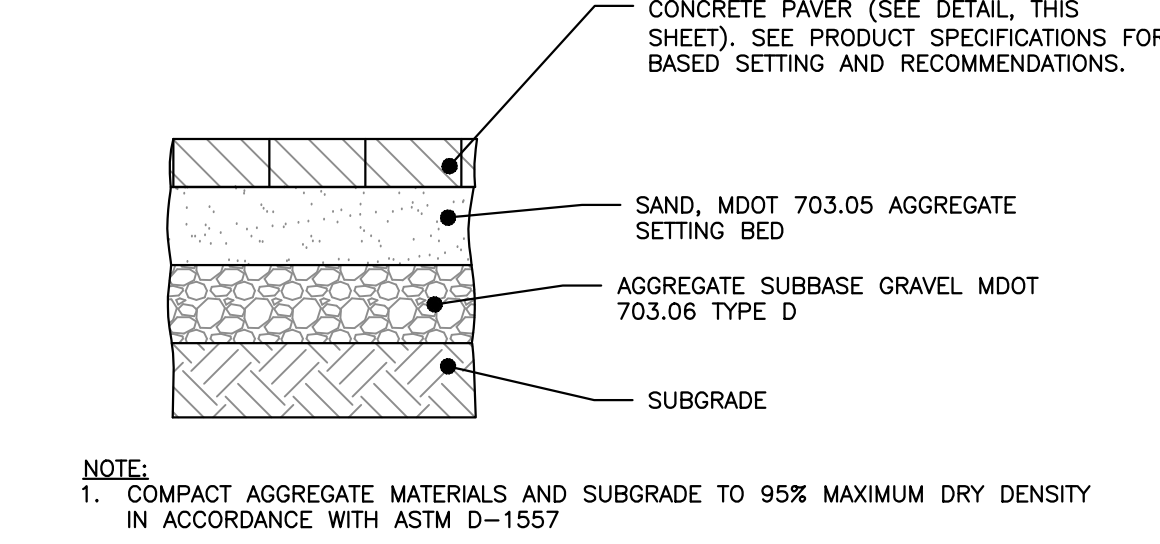


NOTE:
1. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

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

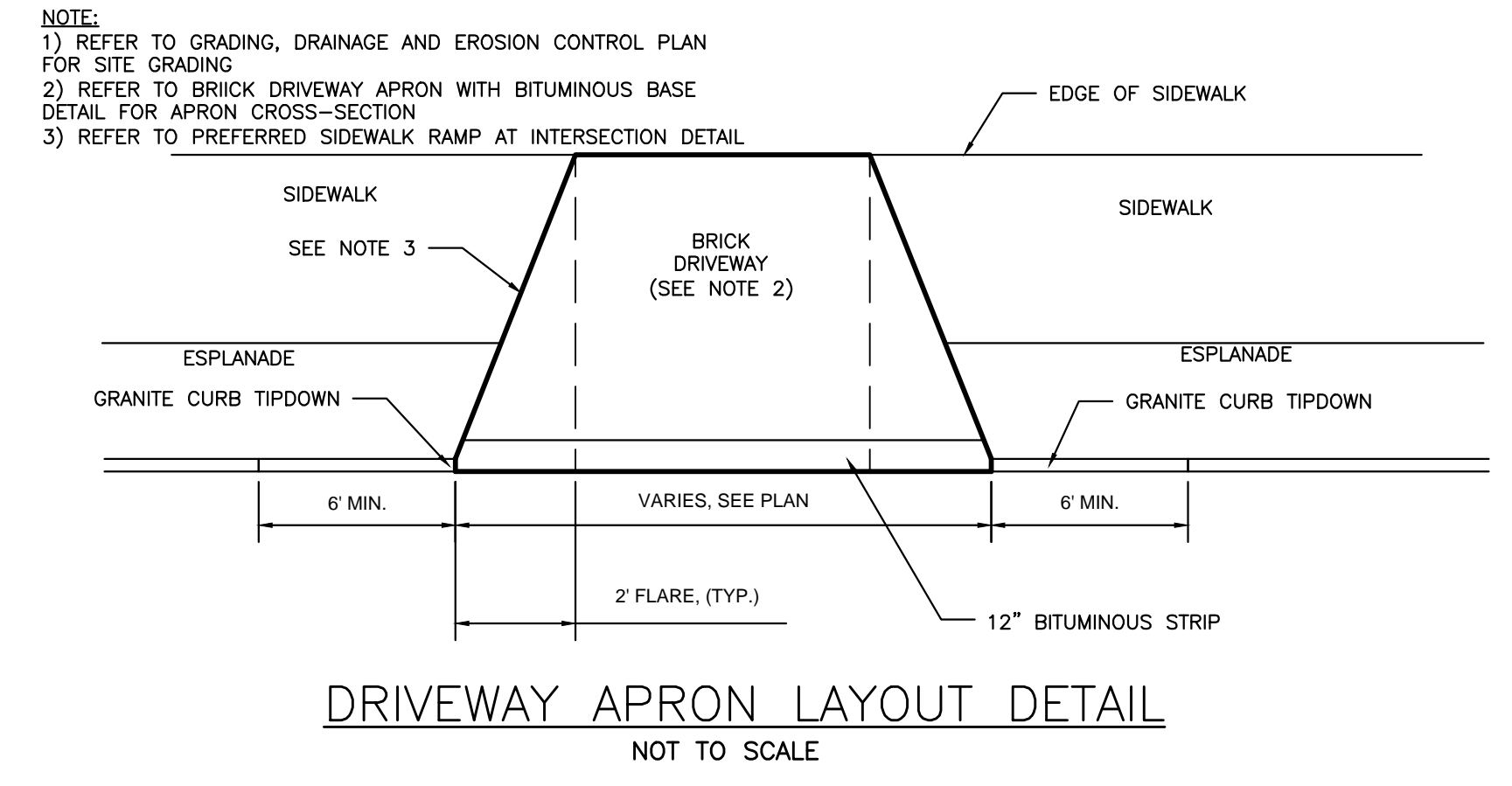


NOTE:
1. COMPACT AGGREGATE MATERIALS AND SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

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

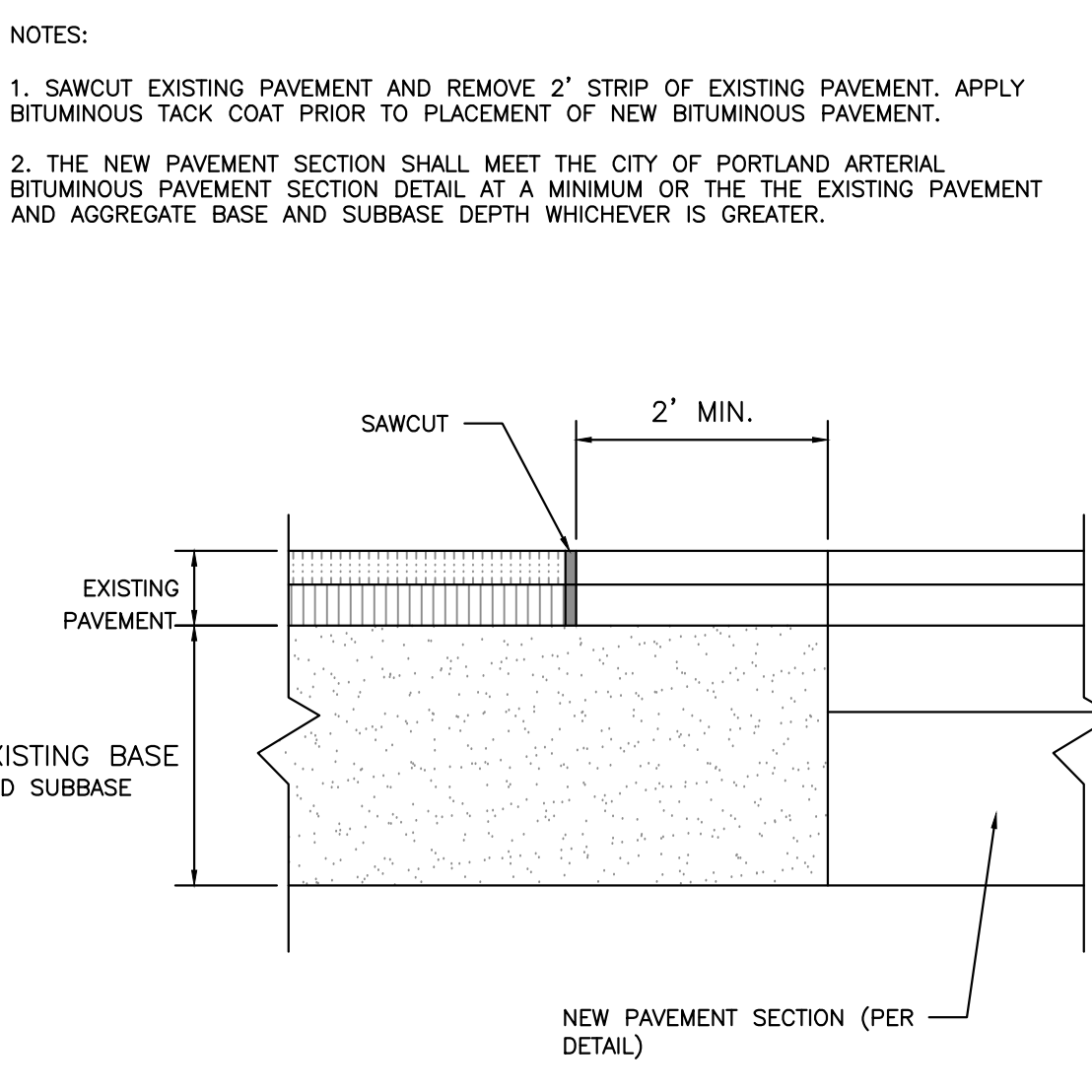
CONCRETE BRICK PAVER PROFILE

NOT TO SCALE



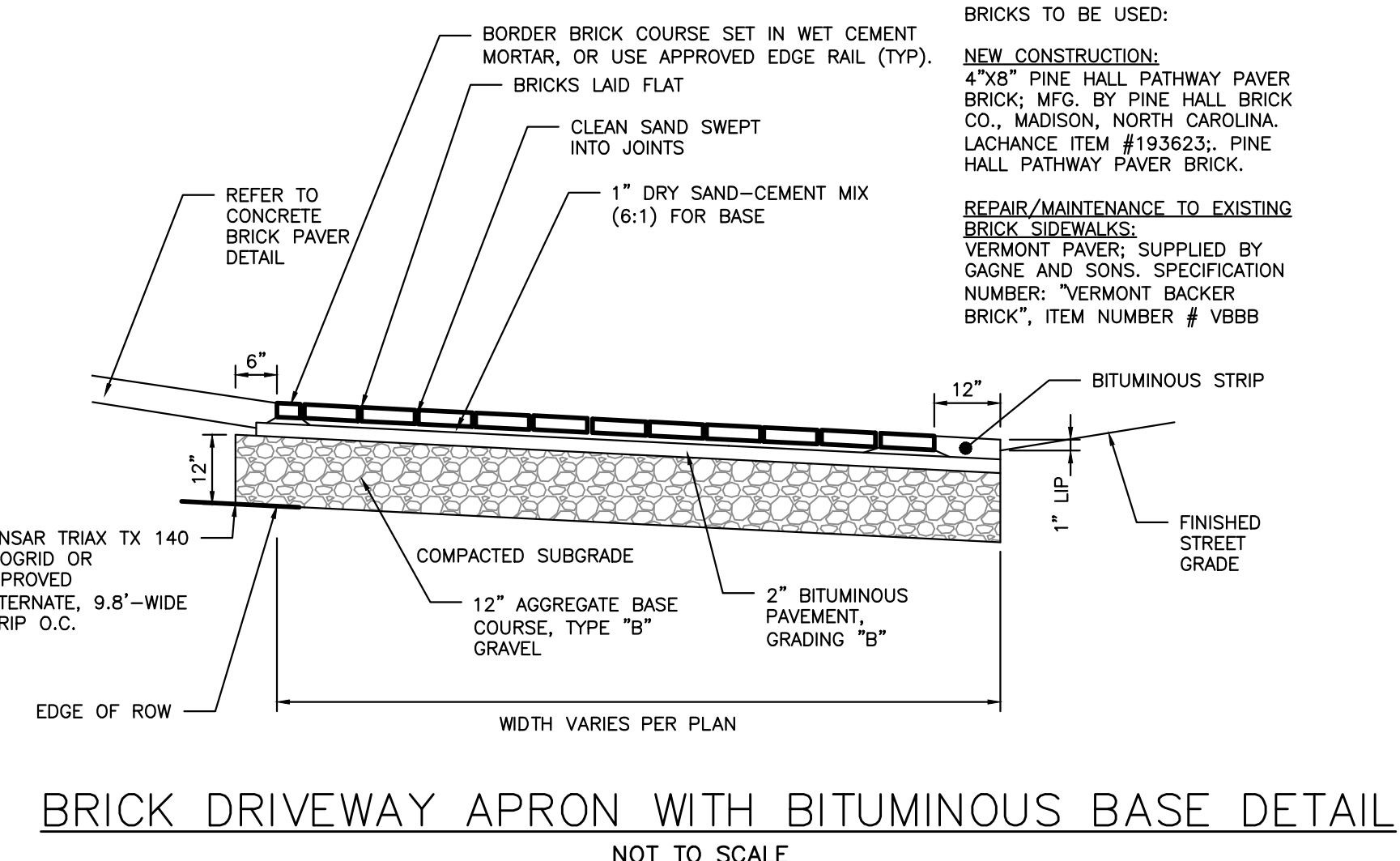
DRIVEWAY APRON LAYOUT DETAIL

NOT TO SCALE



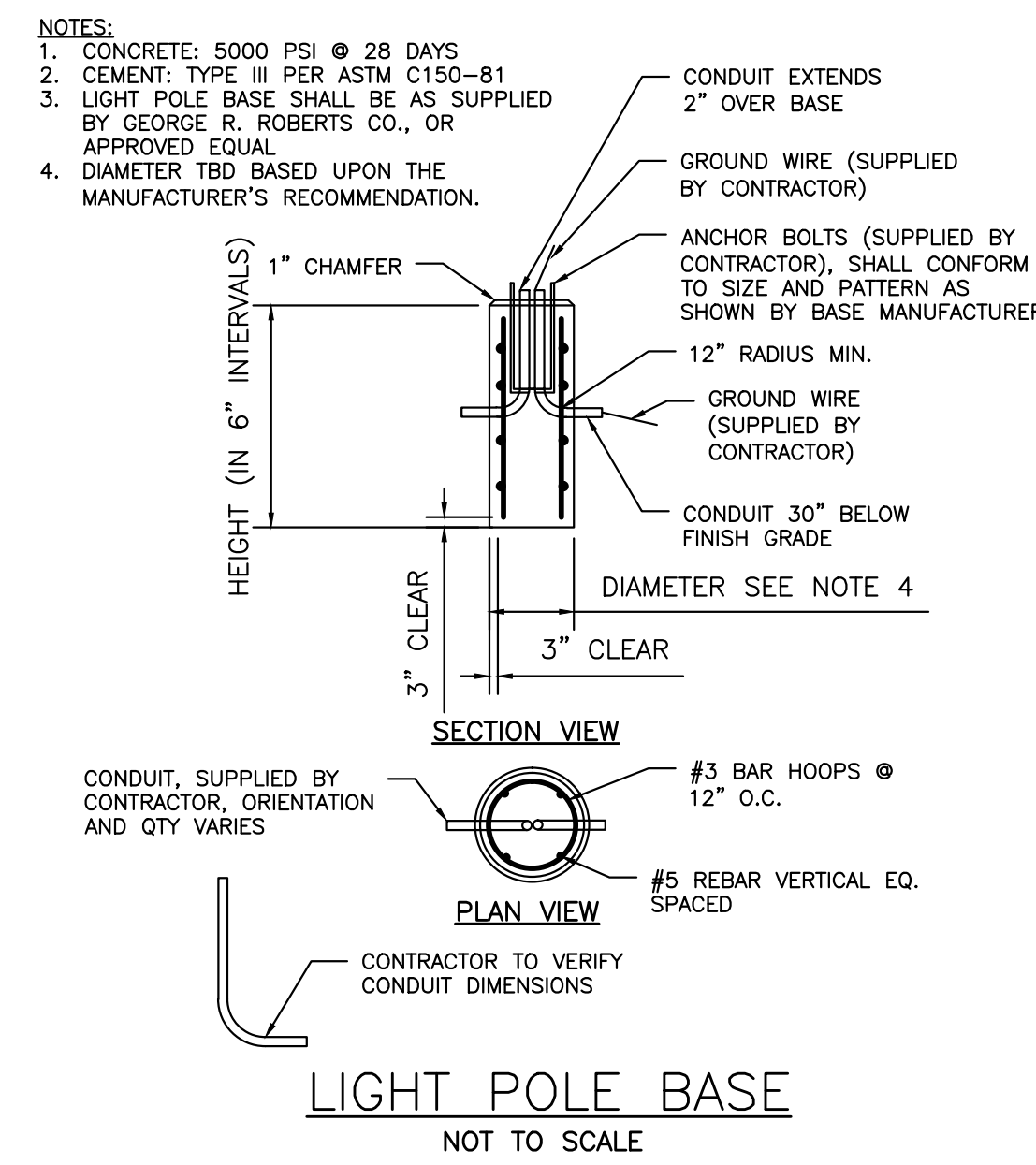
PAVEMENT SAWCUT DETAIL

NOT TO SCALE



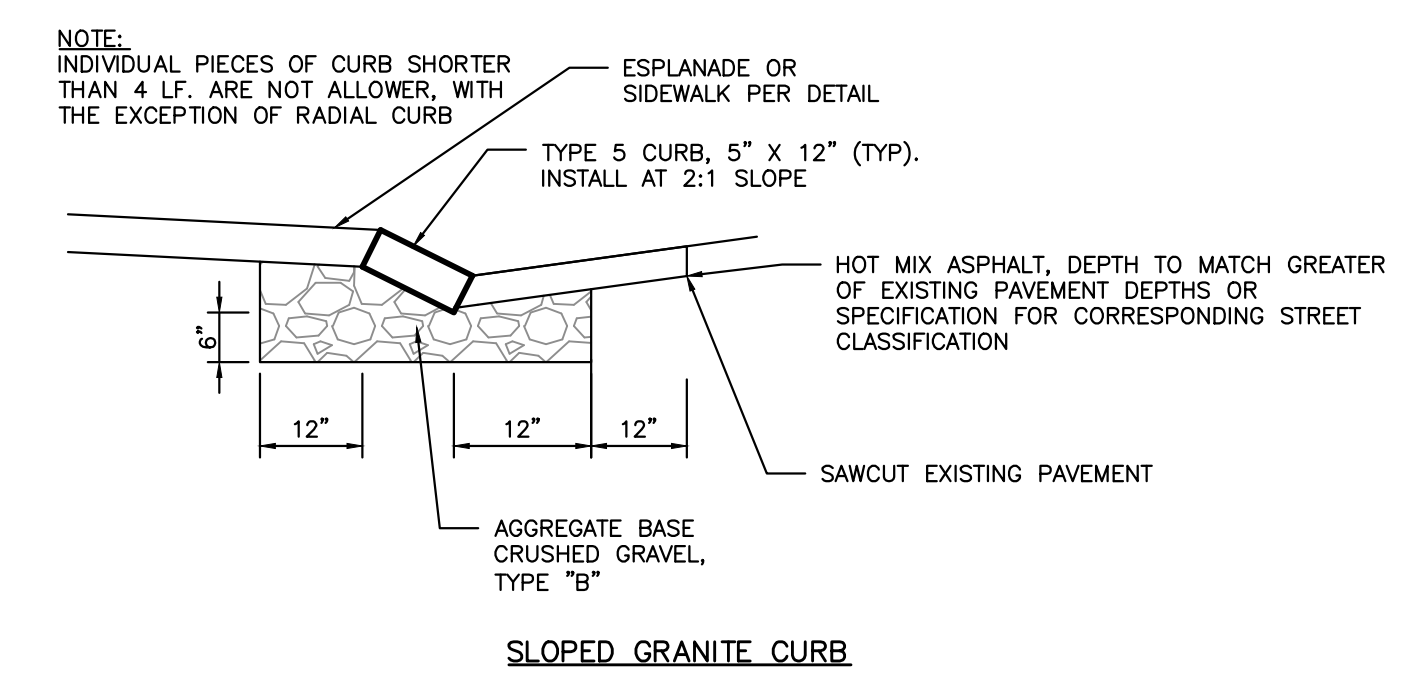
BRICK DRIVEWAY APRON WITH BITUMINOUS BASE DETAIL

NOT TO SCALE

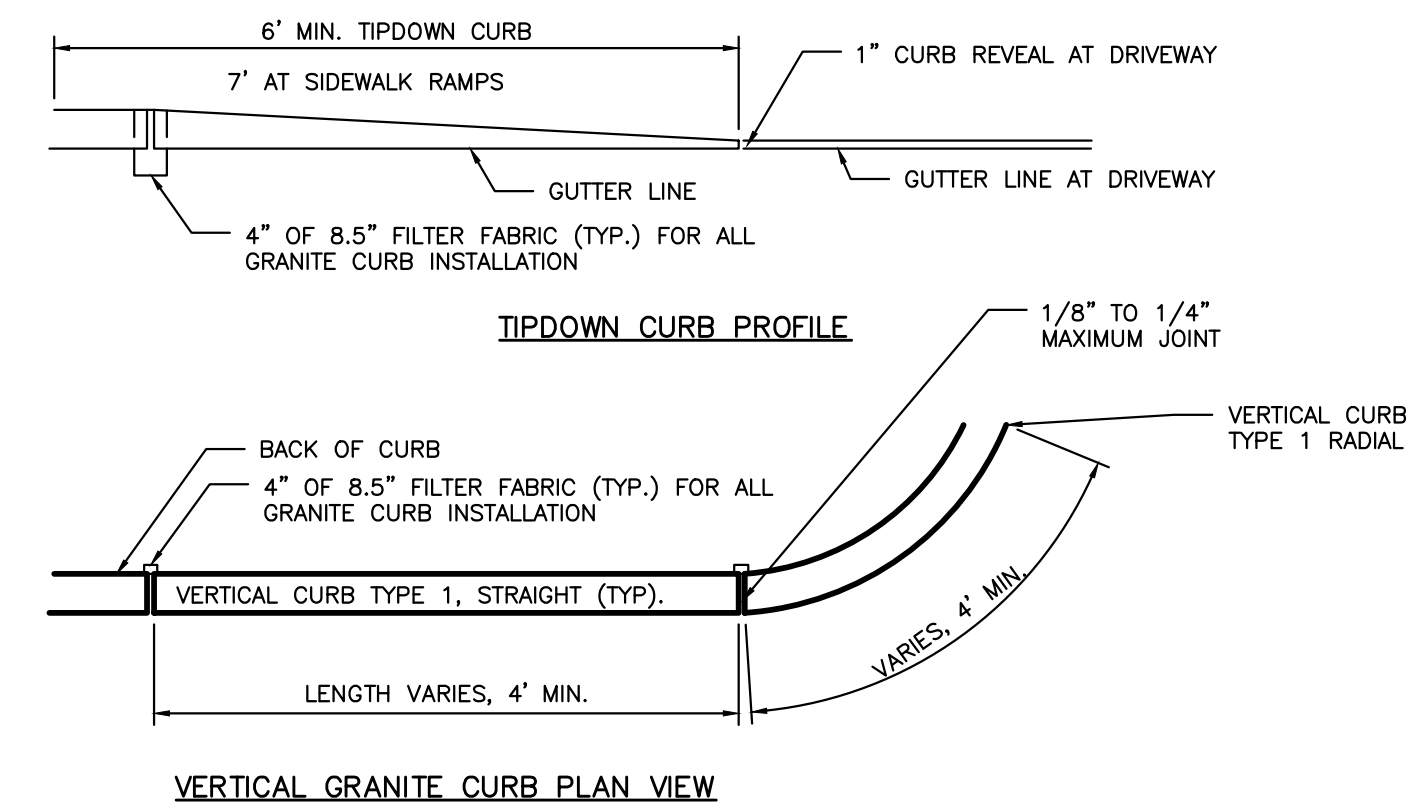


LIGHT POLE BASE

NOT TO SCALE

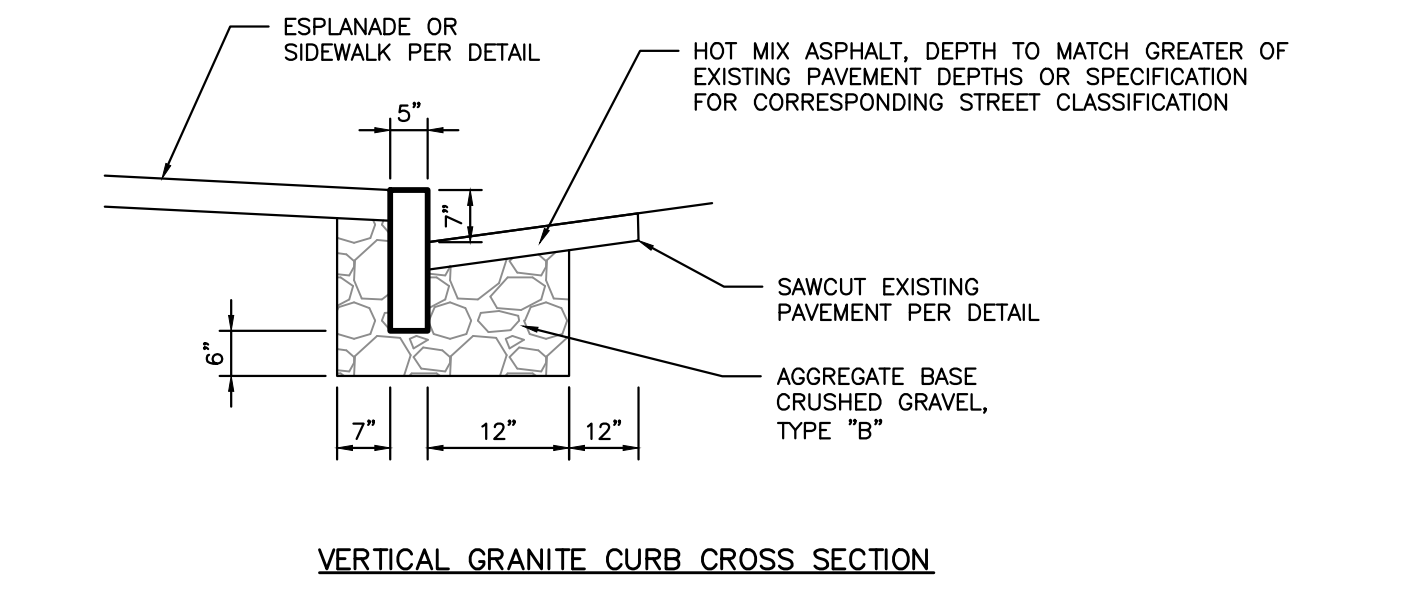


SLOPED GRANITE CURB



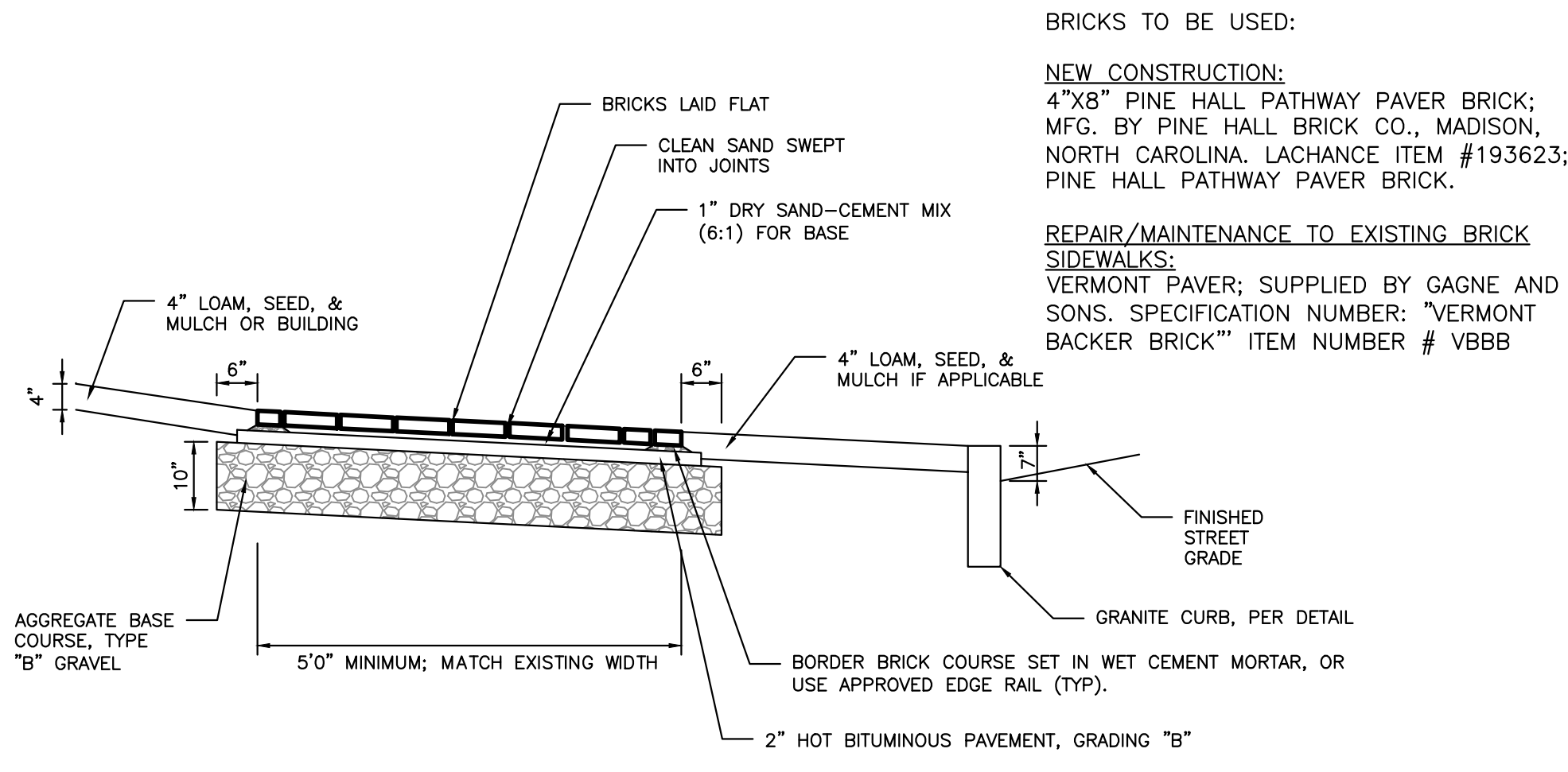
TIPDOWN CURB PROFILE

VERTICAL GRANITE CURB PLAN VIEW



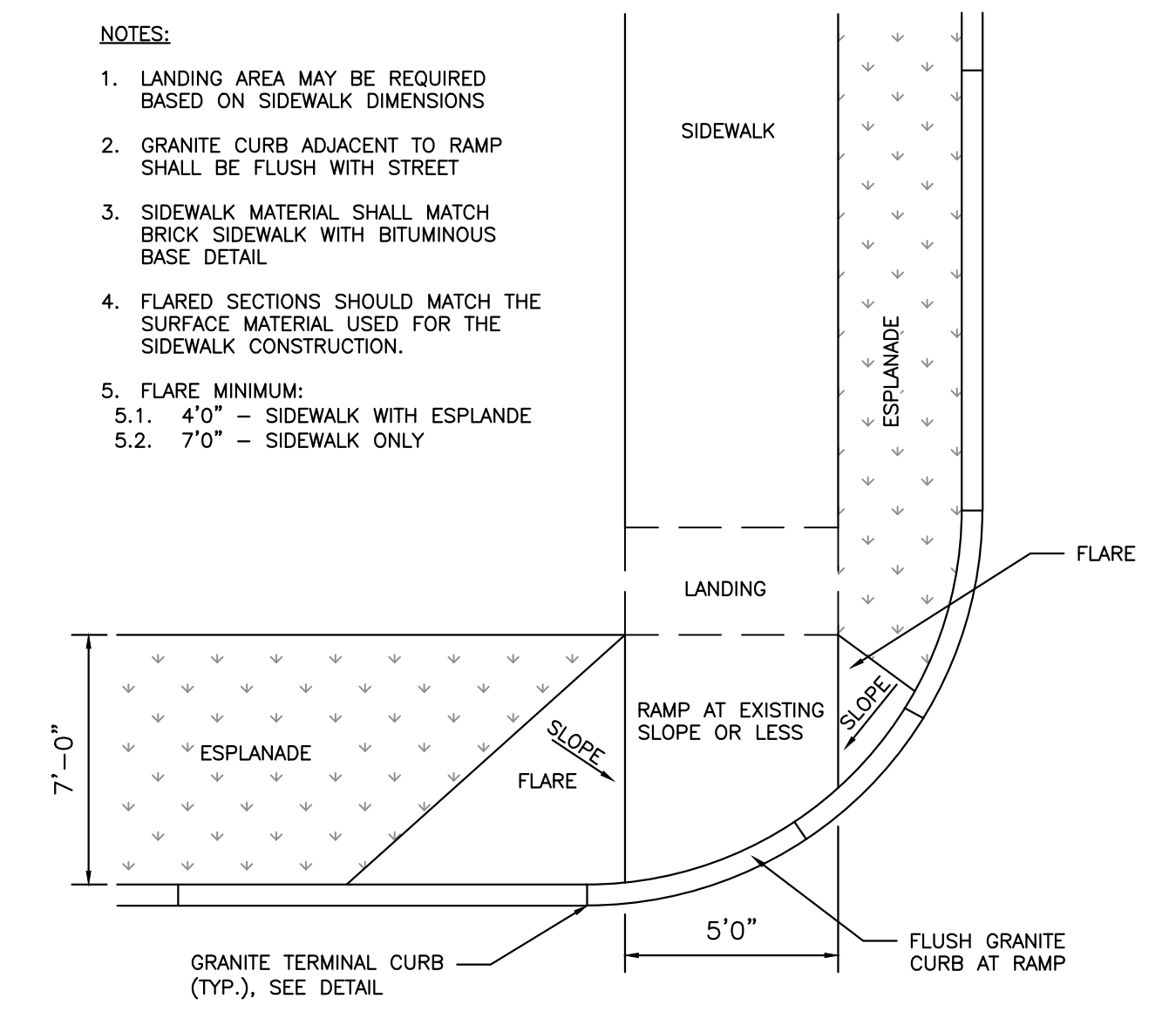
VERTICAL GRANITE CURB INSTALLATION IN EXISTING STREETS DETAIL

NOT TO SCALE



BRICK SIDEWALK WITH BITUMINOUS BASE DETAIL

NOT TO SCALE



PREFERRED SIDEWALK RAMP AT INTERSECTION

NOT TO SCALE

ISSUED FOR	BY	DATE
WORKSHOP #2	WHS	11/12/13
FINAL SUBMISSION	WHS	12/22/13

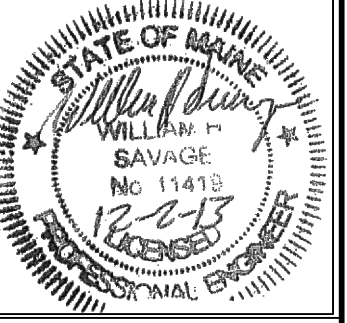
REVISION	REV	DATE
REV. STANDARD DETAIL	WHS	12/22/13
STAFF COMMENTS	WHS	12/6/13

DRAWING NAME: **SITE DETAILS**
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

ACORN ENGINEERING, INC.

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

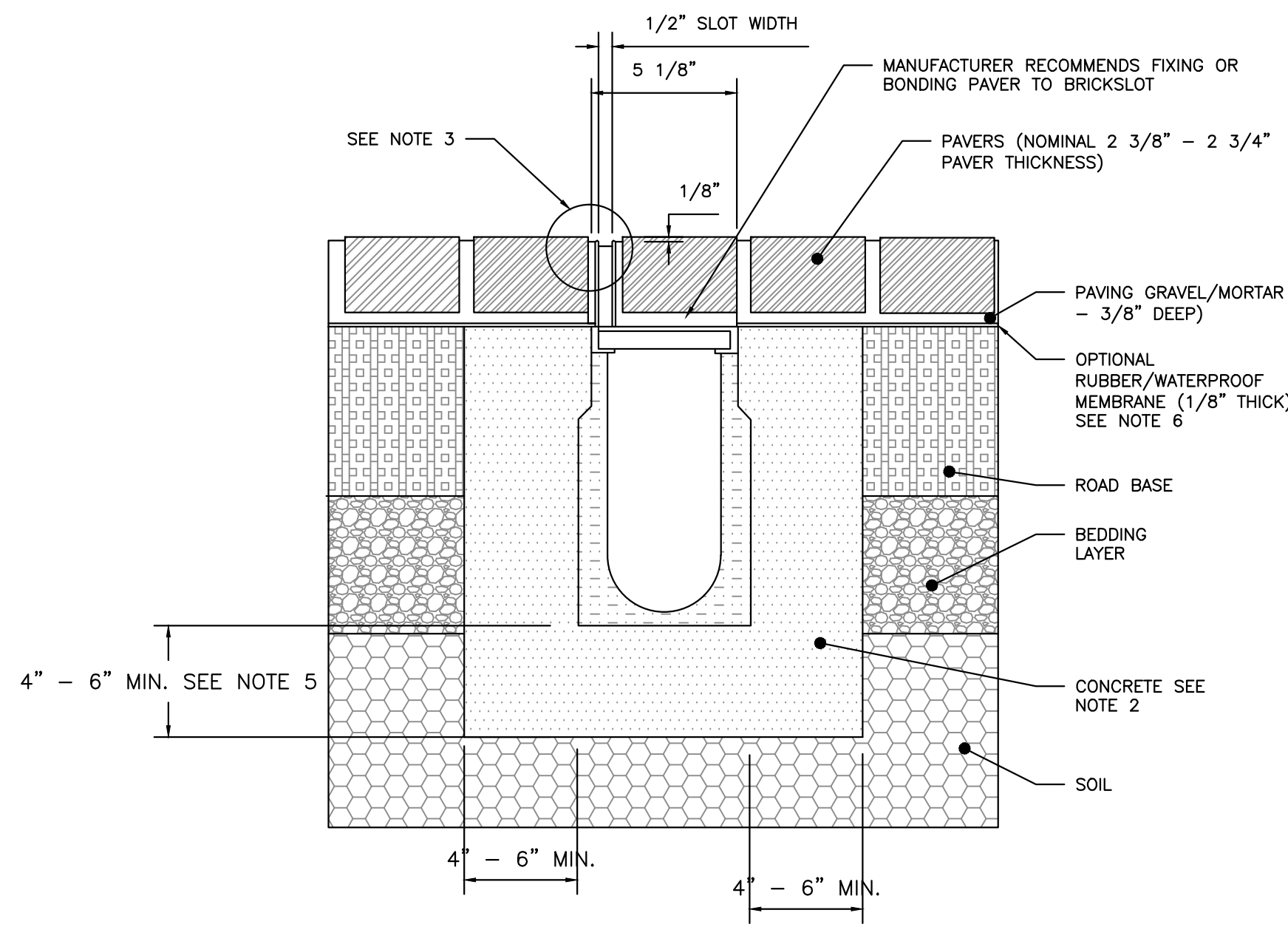


DRAWING NO. **C-40**

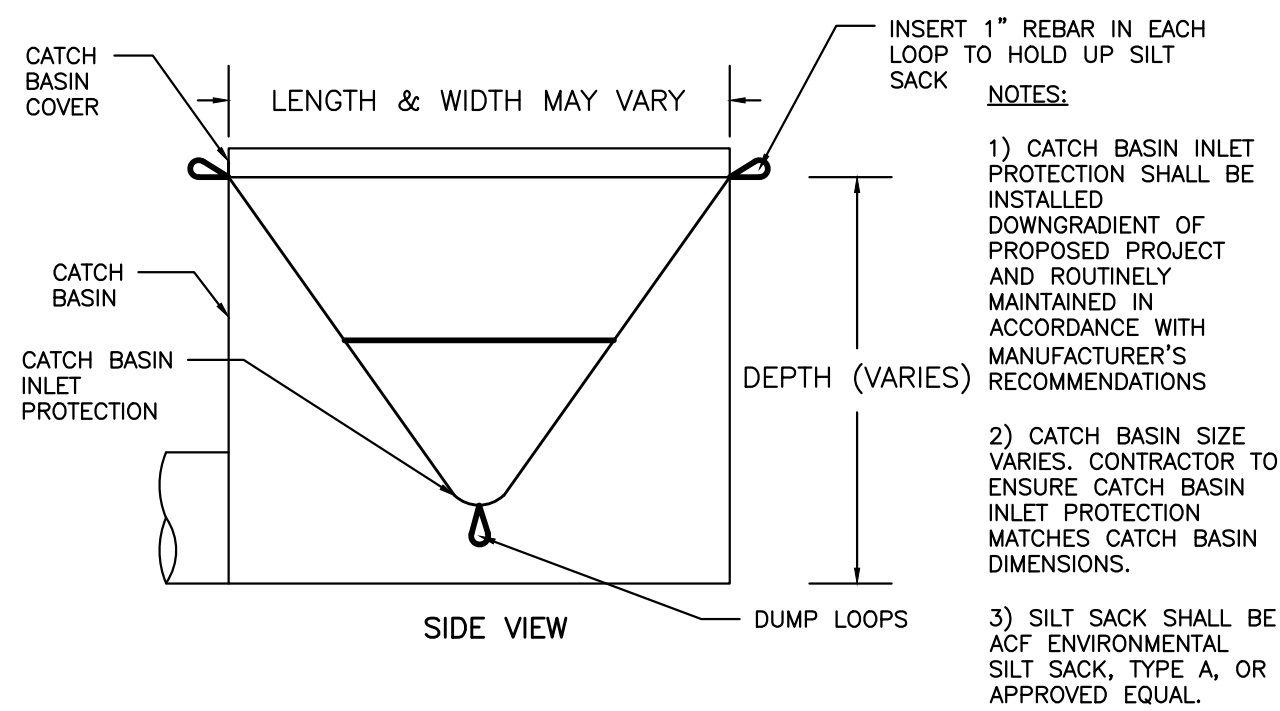
PERMIT DRAWINGS
NOT FOR CONSTRUCTION

NOTES:

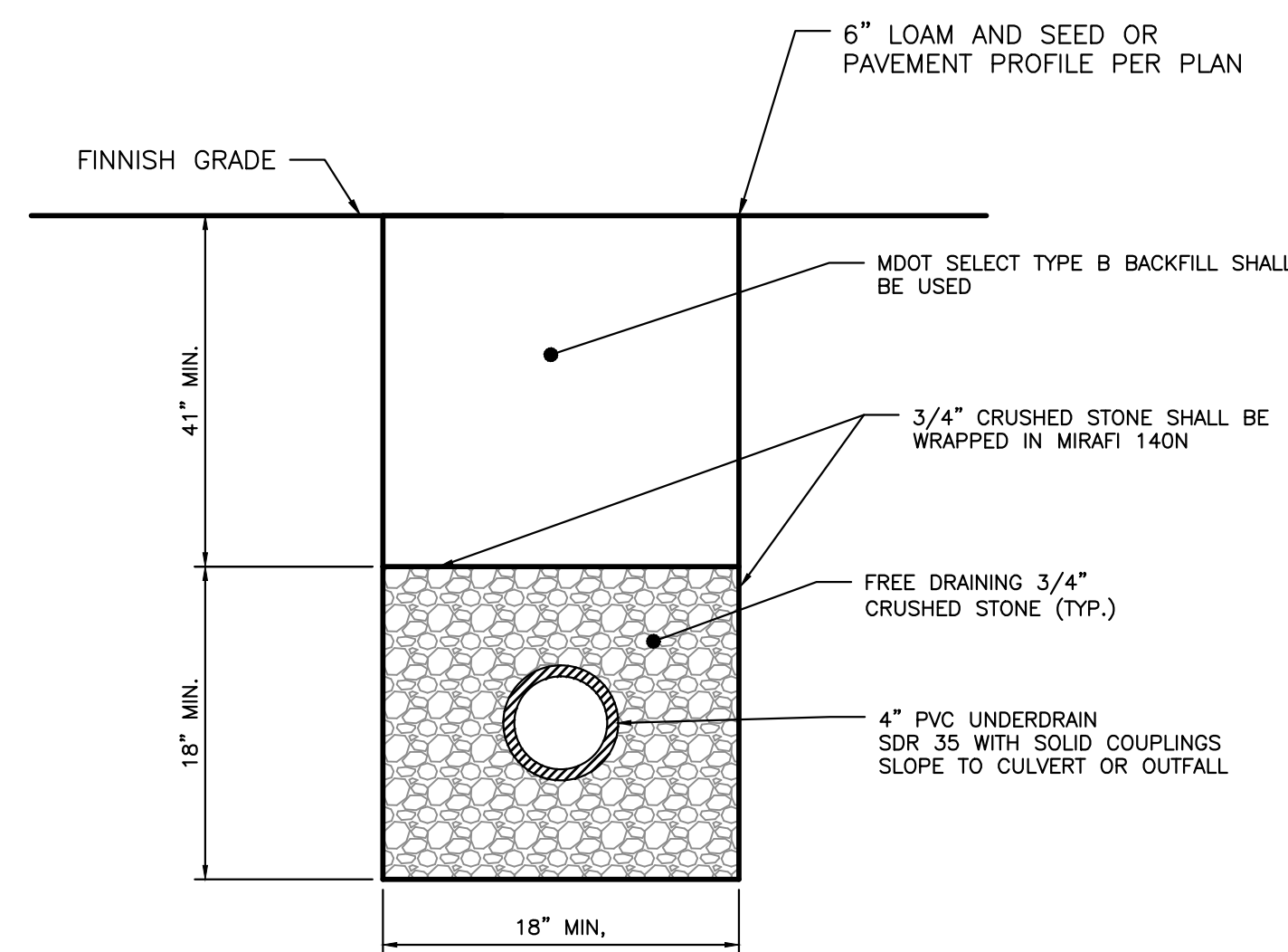
1. REFER TO THE CRICK PAVING DETAIL FOR CONSTRUCTION OF THE BASE AND SUBBASE MATERIALS
2. A MINIMUM CONCRETE STRENGTH OF 3000 PSI IS RECOMMENDED. THE CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. PAVERS TO BE 1/8" ABOVE CHANNEL EDGE. A BEAD OF SEALANT CAN BE USED BETWEEN THE RAIL & CONCRETE.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



ACO BRICK SLOT DETAIL
NOT TO SCALE

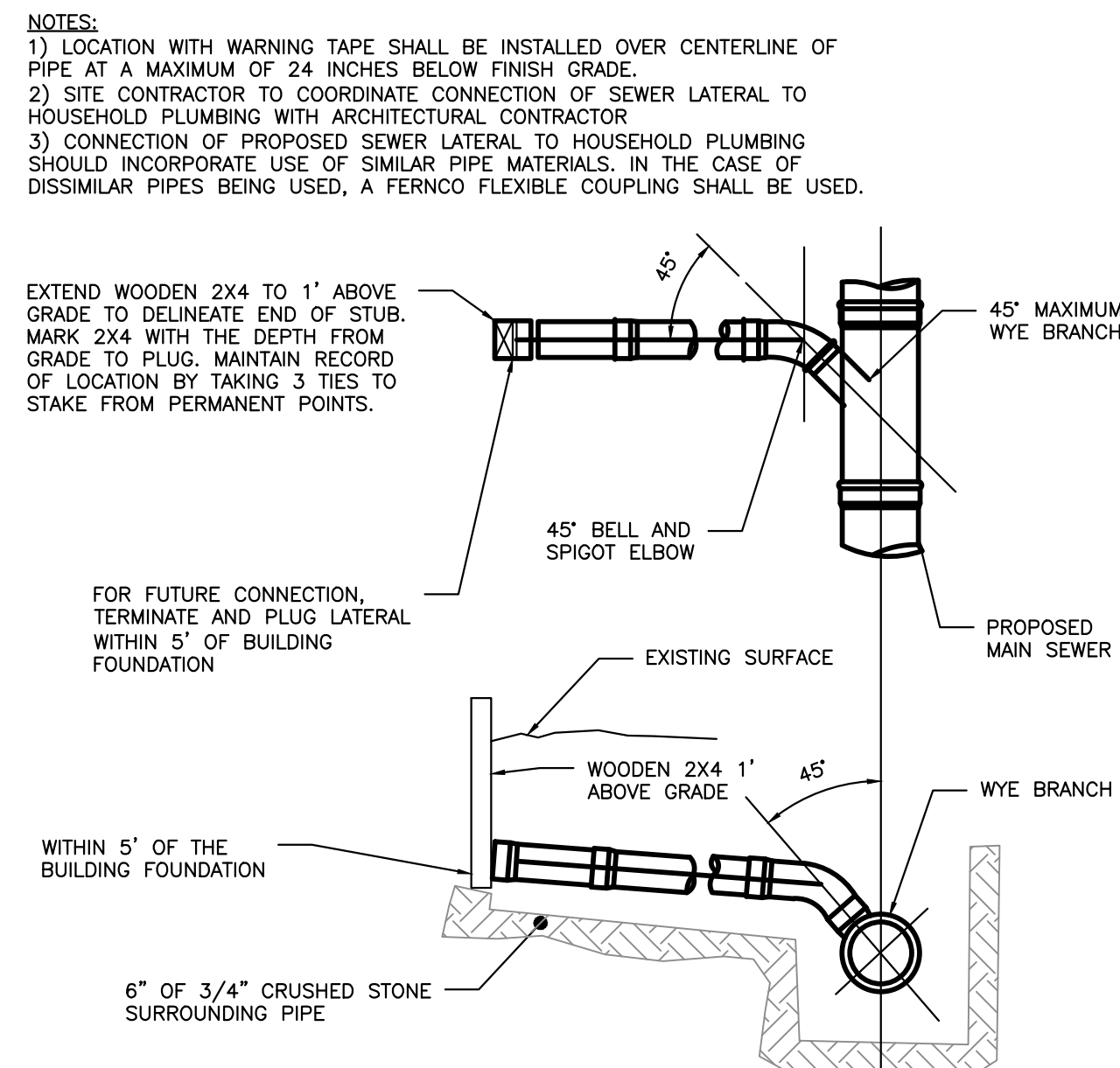


CATCH BASIN INLET PROTECTION
NOT TO SCALE

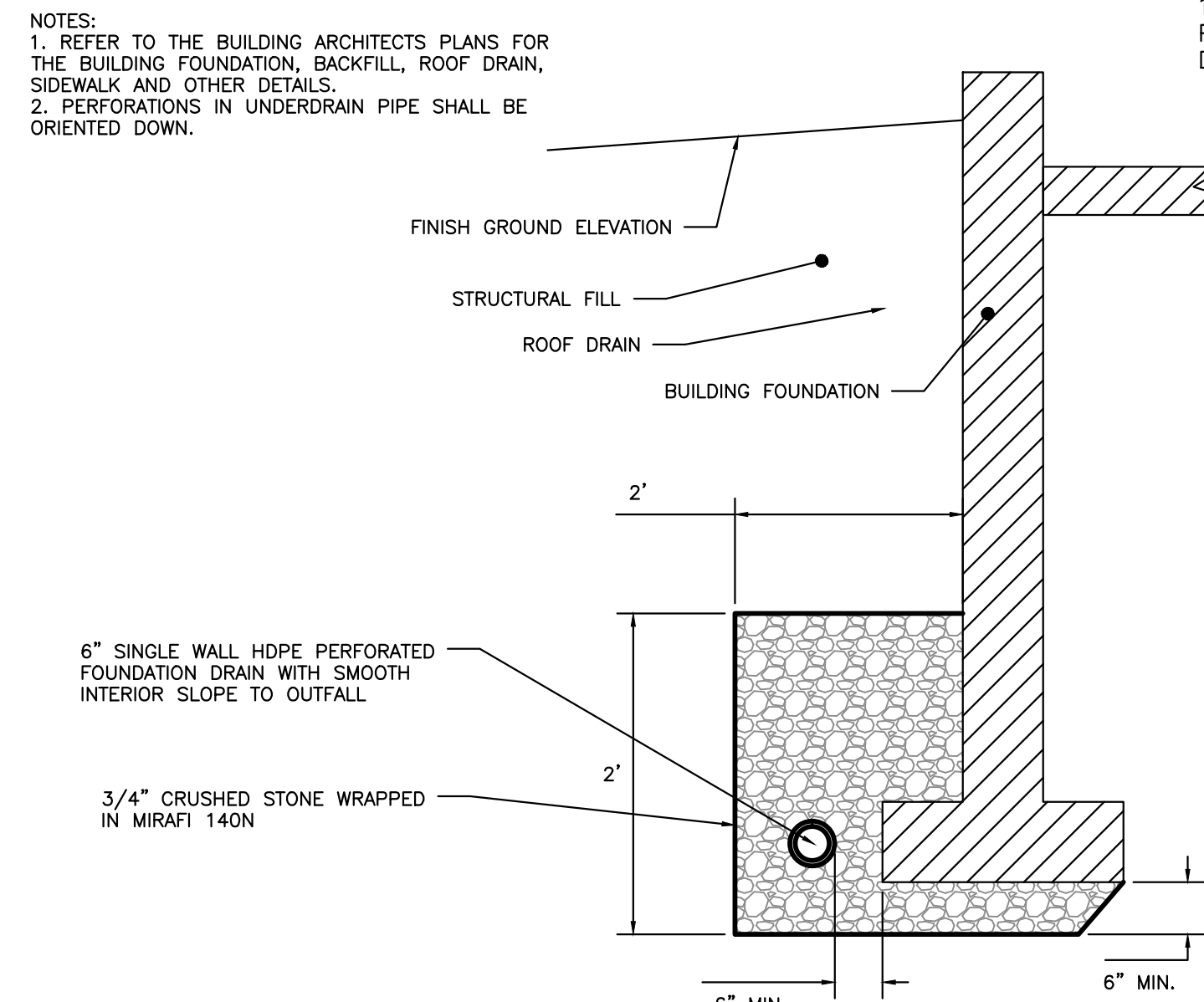


- NOTES:
1. MINIMUM UNDERDRAIN SLOPE 0.0025 (0.25%)
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.

UNDERDRAIN DETAIL
NOT TO SCALE



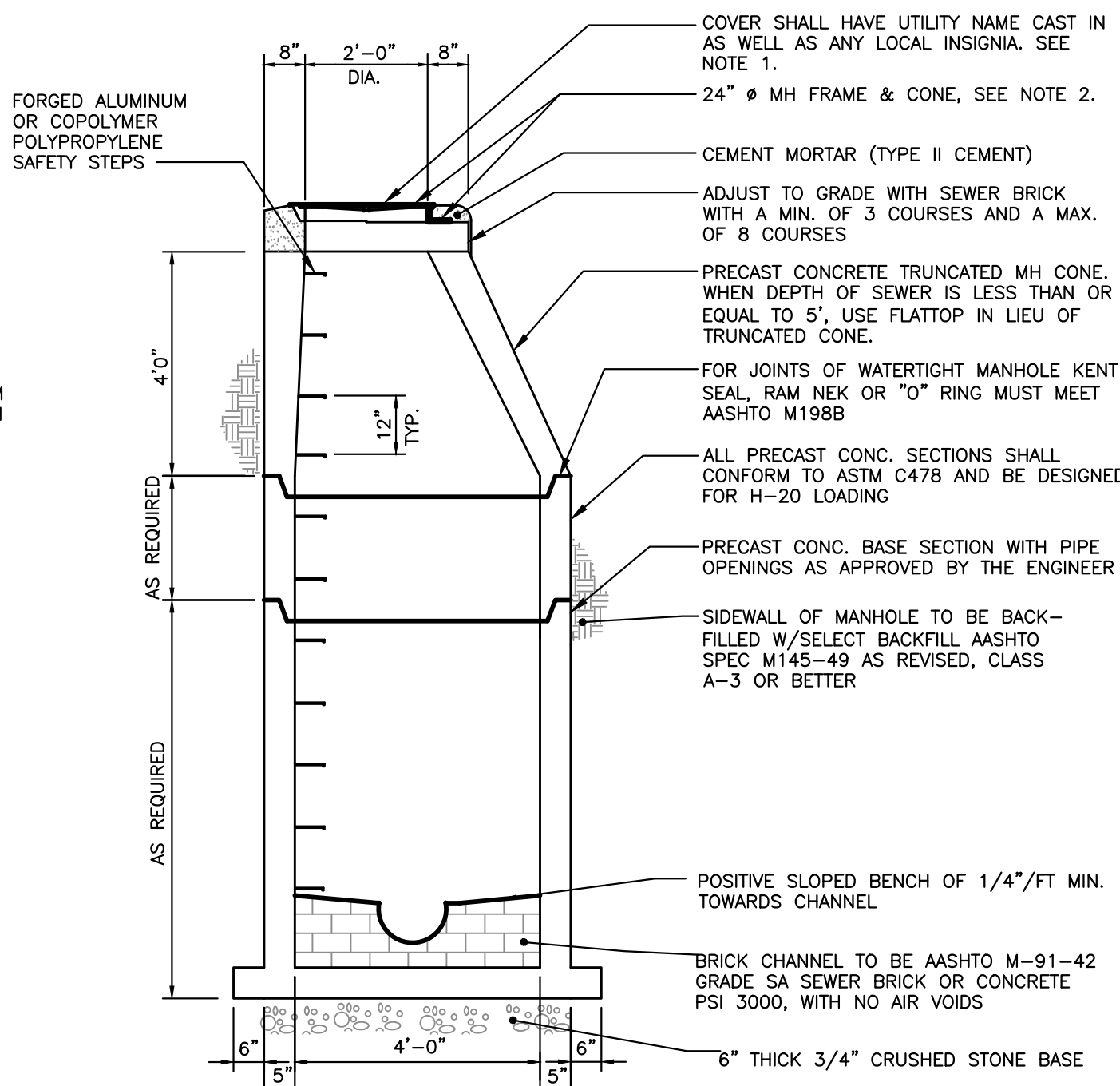
SEWER TEE/WYE CONNECTION DETAIL
NOT TO SCALE



FOUNDATION DRAIN DETAIL
NOT TO SCALE

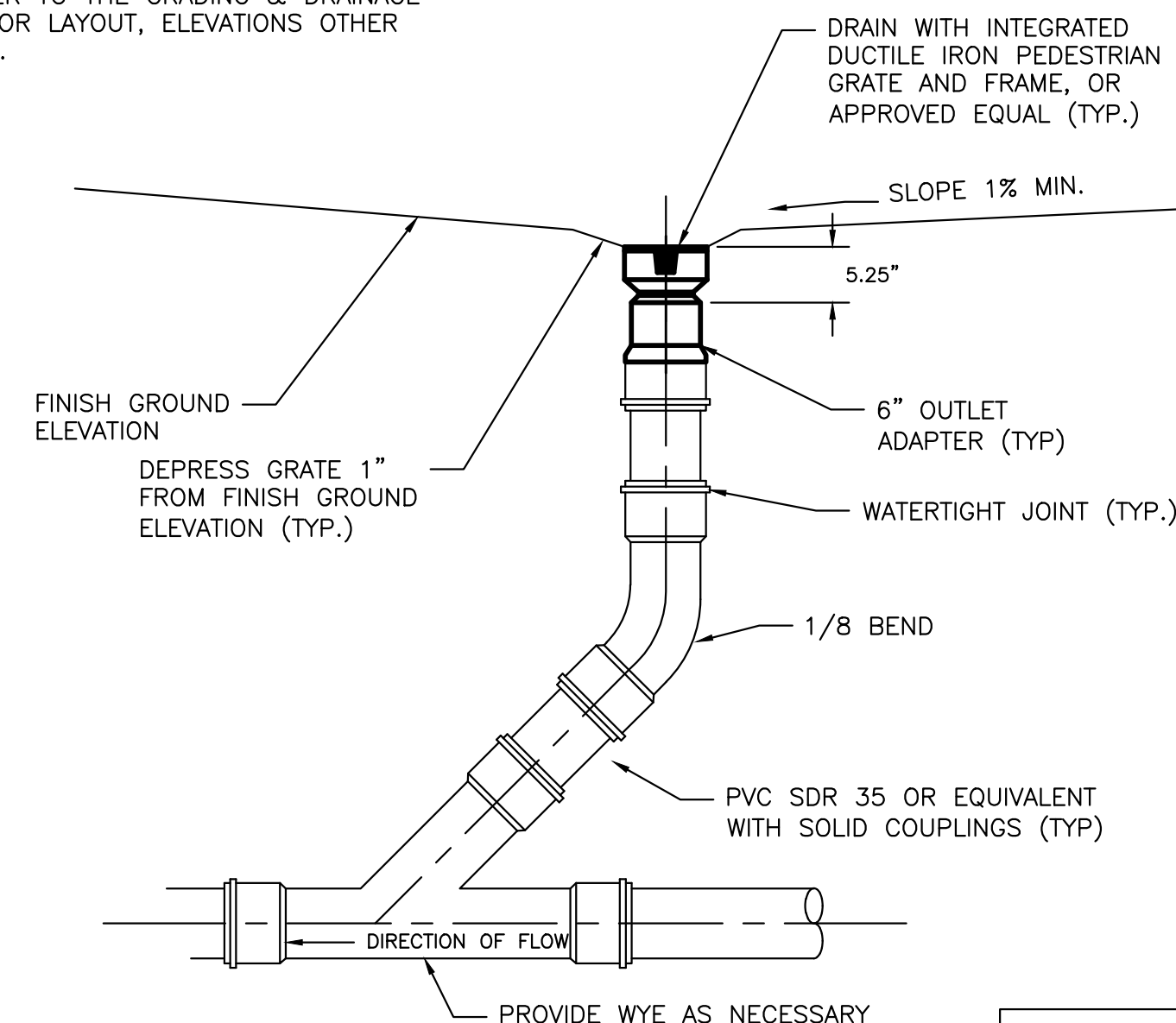
NOTES:

- 1) MANHOLE COVER FOR SEWER MANHOLE SHALL BE ENGRAVED "SEWER", AND SHALL BE EITHER ITEM # 2160A AS MANUFACTURED BY NEENAH FOUNDRY, OR ITEM # 14960002 AS MANUFACTURED BY NEENAH FOUNDRY. MANHOLE COVER FOR STORM SEWER SHALL BE ENGRAVED "DRAIN", AND SHALL BE EITHER ITEM # 2160A AS MANUFACTURED BY NEENAH FOUNDRY, OR ITEM # 14960003 AS MANUFACTURED BY NEENAH FOUNDRY.
- 2) MANHOLE FRAME SHALL BE EITHER ITEM # 14960001, AS MANUFACTURED BY NEENAH FOUNDRY, OR ITEM # 19602, AS MANUFACTURED BY EAST JORDAN CO.
- 3) WITHIN CITY OF PORTLAND ROW, STORM DRAIN MANHOLE SHALL CONFORM WITH "STANDARD PRECAST SEWER MANHOLE DETAIL", WITH THE EXCEPTION THAT THE COVER SHALL BE MARKED AS "DRAIN". REFER TO CITY OF PORTLAND TECHNICAL MANUAL, SECTION 2 - SANITARY SEWER AND STORM DRAIN, FIGURE II-1
- 4) SUBMITTAL REQUIRED FOR MANHOLES, MANHOLE FRAMES & MANHOLE COVERS



STANDARD PRECAST SEWER MANHOLE
NOT TO SCALE

- NOTES:
1. REFER TO THE GRADING & DRAINAGE PLAN FOR LAYOUT, ELEVATIONS OTHER DETAILS.

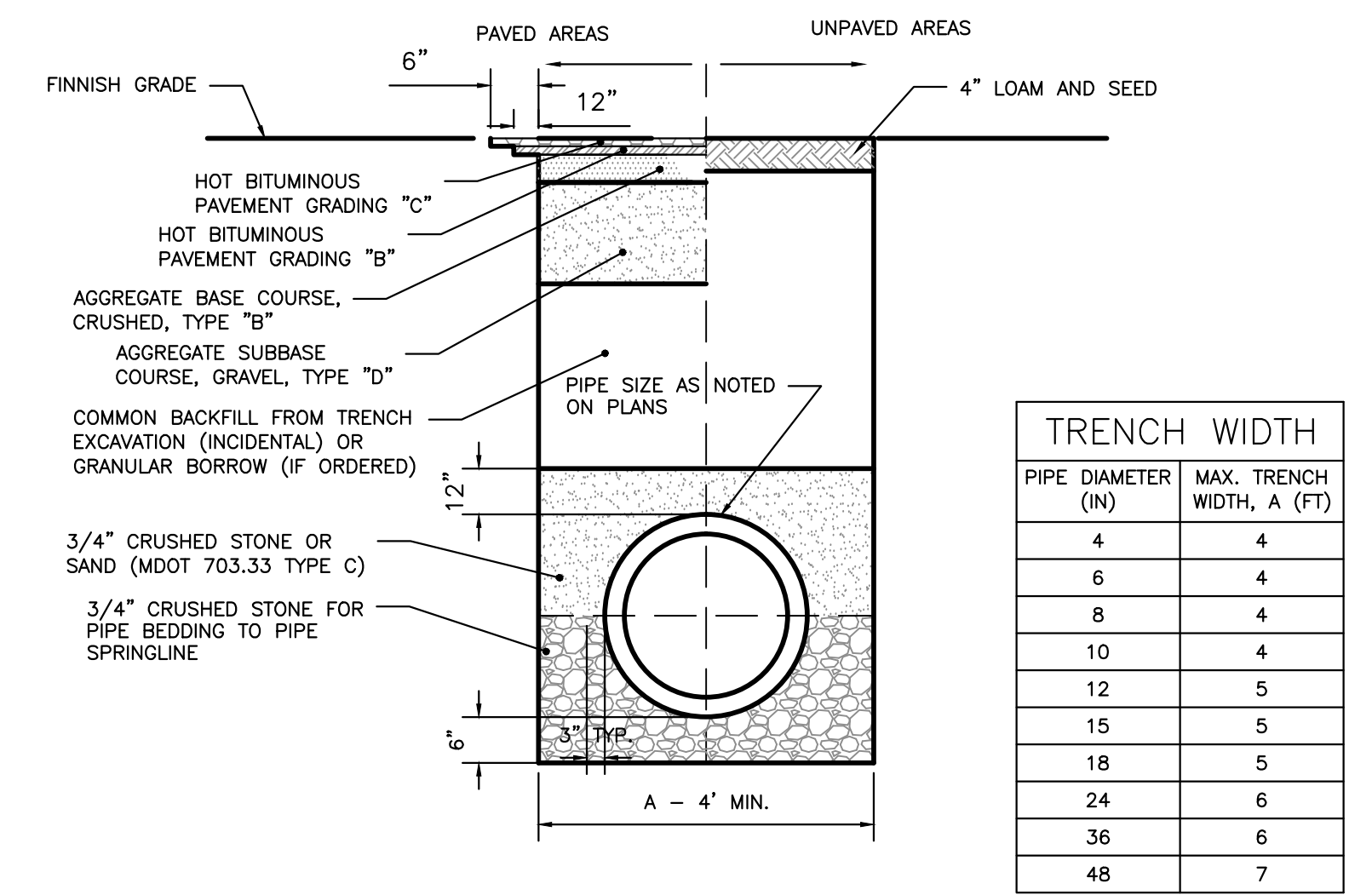


INLINE DRAIN DETAIL
NOT TO SCALE

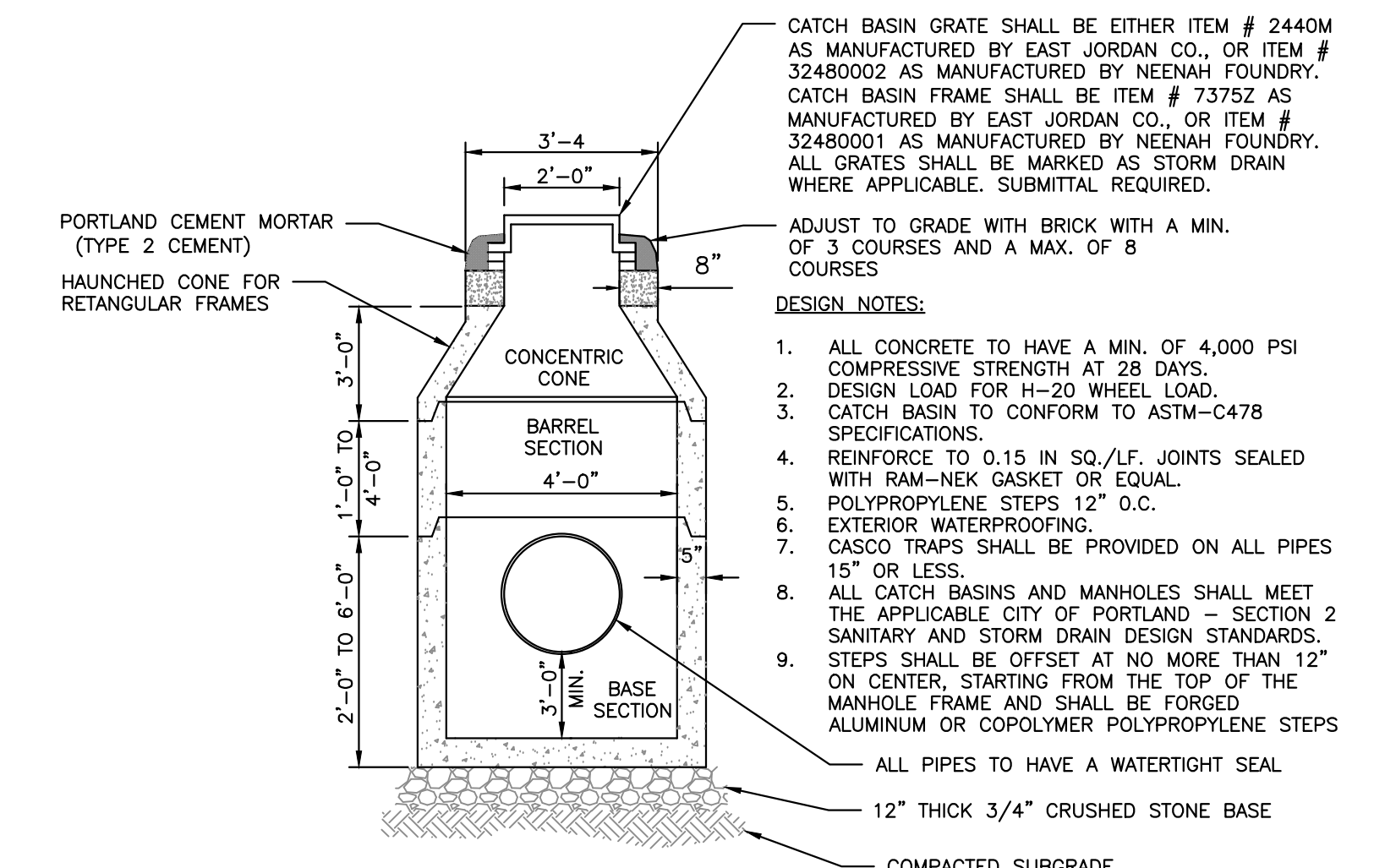
PERMIT DRAWINGS
NOT FOR CONSTRUCTION

DESIGN NOTES:

- 1) ANY ALTERNATE TRENCHING METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
- 2) ALL CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL STANDARDS FIGURE II-2.
- 3) 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.
- 4) WHERE APPLICABLE, PERFORATIONS IN STORM DRAIN (PERF.SD) SHALL BE ORIENTED UP.
- 5) 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
- 6) 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.

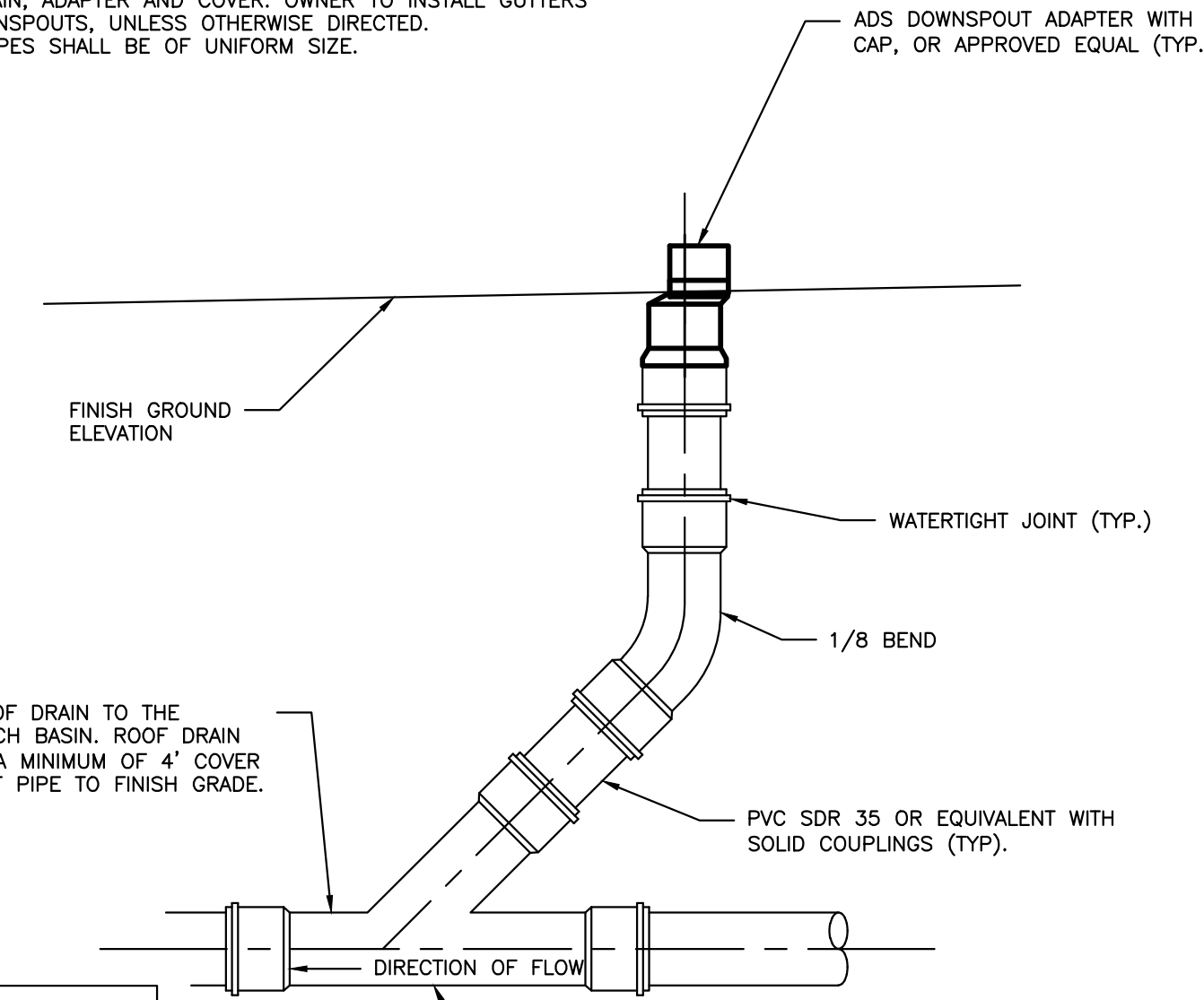


CITY OF PORTLAND TYPICAL PIPE TRENCH DETAIL
NOT TO SCALE



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

- NOTES:
1. CONTRACTOR RESPONSIBLE FOR THE INSTALLATION OF THE ROOF DRAIN, ADAPTER AND COVER. OWNER TO INSTALL GUTTERS AND DOWNSPOUTS, UNLESS OTHERWISE DIRECTED.
2. ALL PIPES SHALL BE OF UNIFORM SIZE.



ROOF DRAIN DETAIL
NOT TO SCALE

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

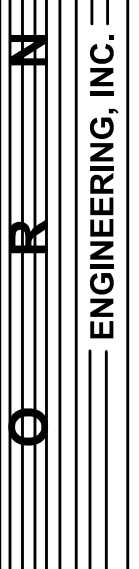
REVISION	REV. DATE
REV. STANDARD DETAIL	12/4/13
STAFF COMMENTS	12/8/13

DRAWING NAME: **DRAINAGE DETAILS - 1**

PROJECT NAME: **MUNUJOY HEIGHTS**

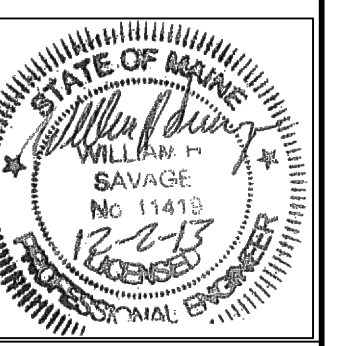
CLIENT: **REDFERN MUNJOY, LLC.**
P.O. BOX 8816, PORTLAND, MAINE 04104

ENGINEERING, INC.



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

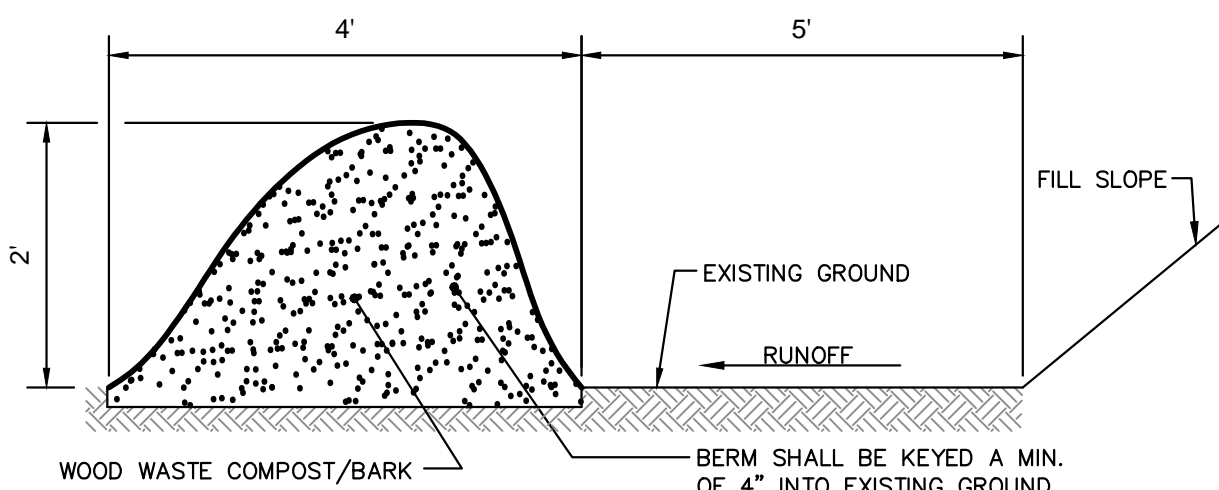
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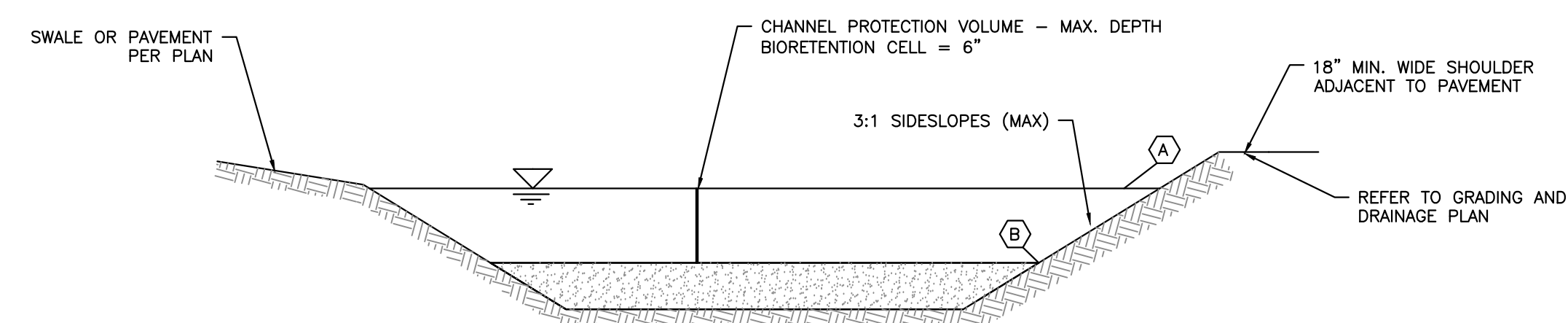
DRAWING NO.
C-41

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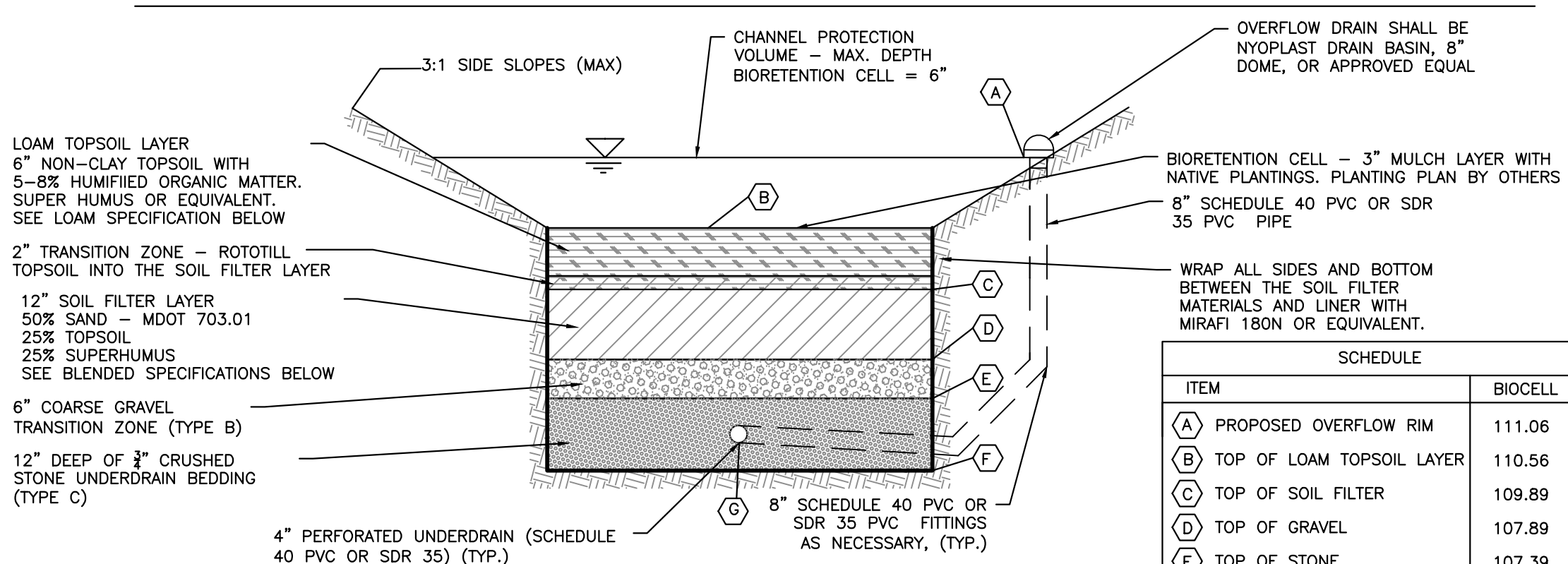
- THE EROSION CONTROL MIX SHALL CONFORM TO THE FOLLOWING STANDARDS AND IN ACCORDANCE WITH THE MAINE DEP'S EROSION AND SEDIMENT CONTROL BMPs SECTION B-1:
 - THE ORGANIC PORTIONS SHALL BE FIBROUS AND ELONGATED TO ALLOW FOR THE INTERLOCKING OF MATERIAL.
 - pH - 5.0 - 8.0.
 - PARTICLE SIZE BY WEIGHT SHALL 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



SOIL FILTER CROSS SECTION



SOIL FILTER SIDE VIEW

ITEM	BIOCELL
(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

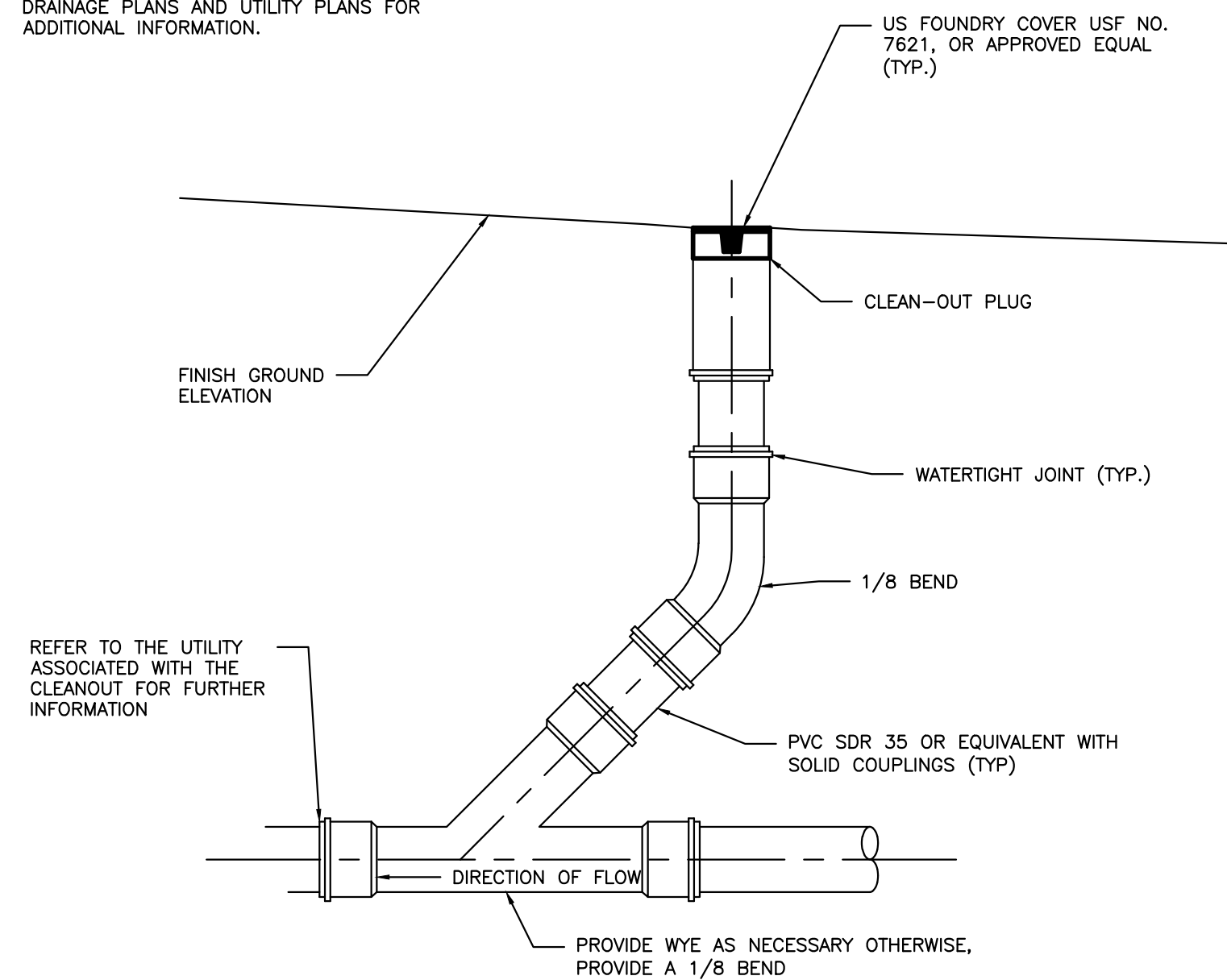
SIEVE SIZE	% PASSING BY WEIGHT
1"	90-100
1/2"	75-100
#4	50-100
#20	15-80
#50	0-15
#200	0-5

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

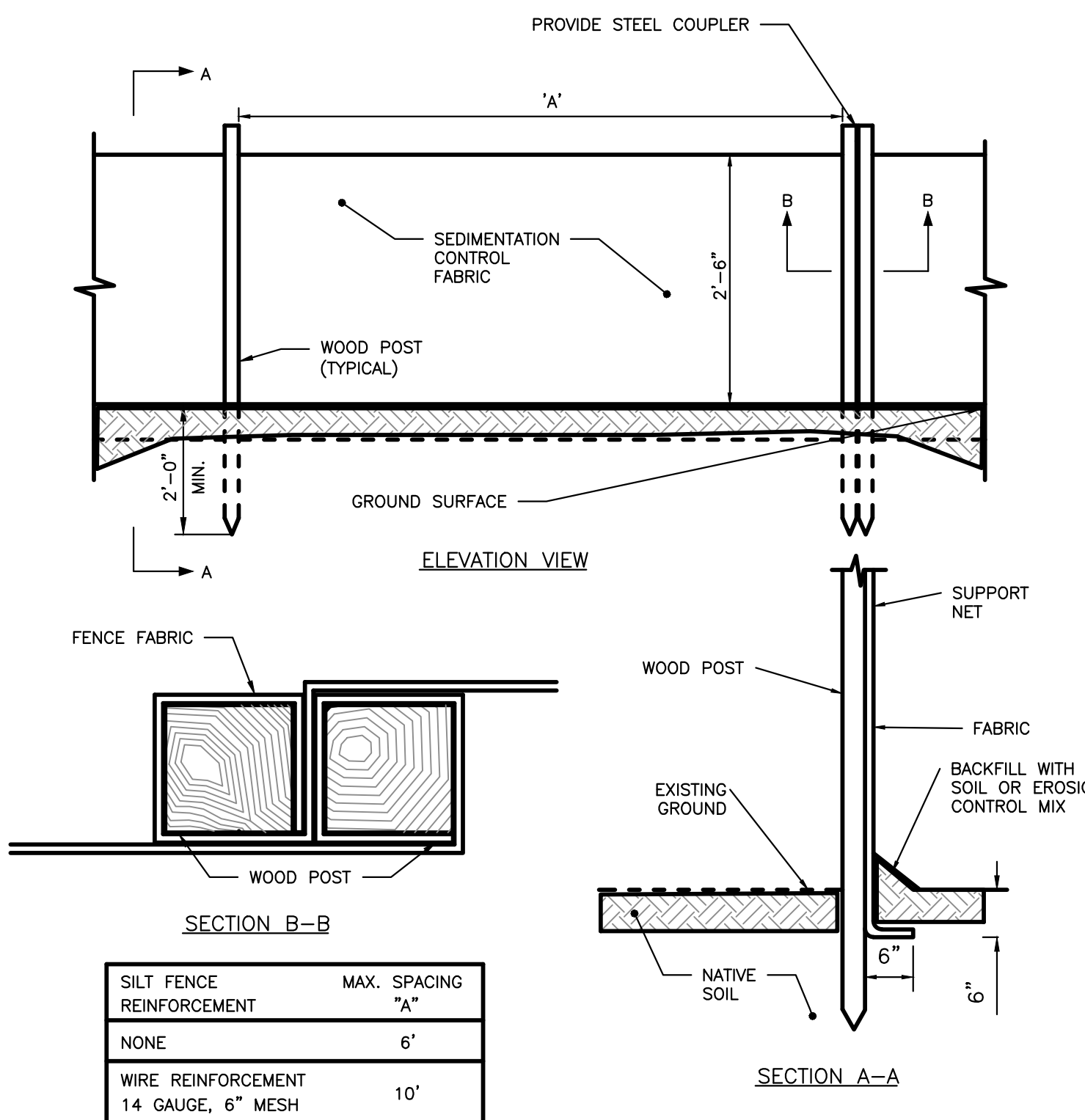
- CLAY FRACTION <10% PASSING THE #200 SIEVE.*
 - LOAM SHALL BE LOOSE AND FRIABLE AND SHALL BE FREE FROM ADMIXTURE OF SUBSOIL, REFUSE, LARGE STONES, CLOUDS OR ROOTS OR RHIZOMES OR WITCH GRASS* OR OTHER UNDESIRABLE GRASSES.
- *10% CLAY PASSING THE #200 SIEVE ALLOWED PER EMAIL FROM MARIANNE HUBERT - MDEP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

RAIN GARDEN OR BIORETENTION CELL DETAIL
NOT TO SCALE

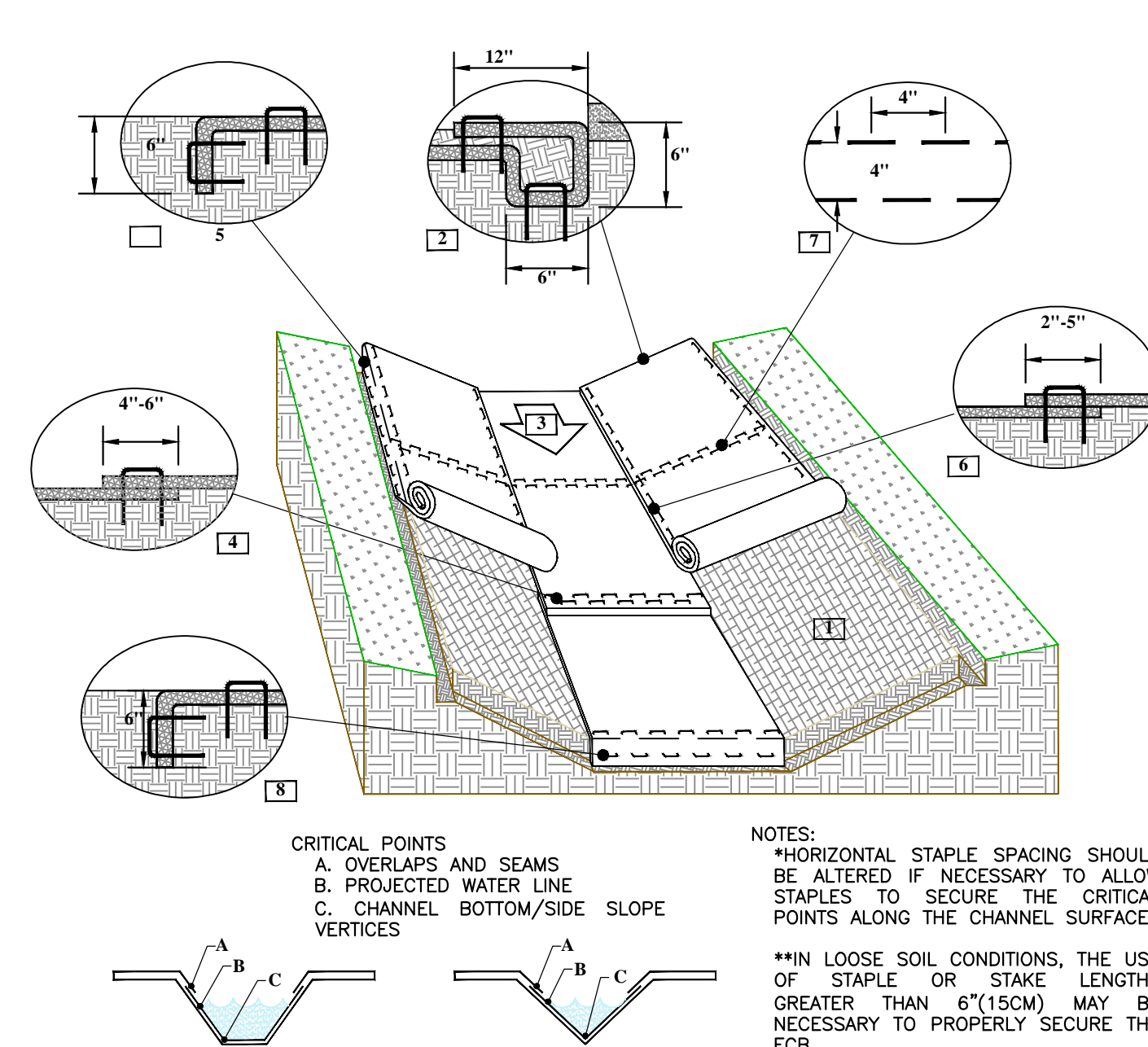
- REFER TO THE REFER TO THE GRADING & DRAINAGE PLANS AND UTILITY PLANS FOR ADDITIONAL INFORMATION.



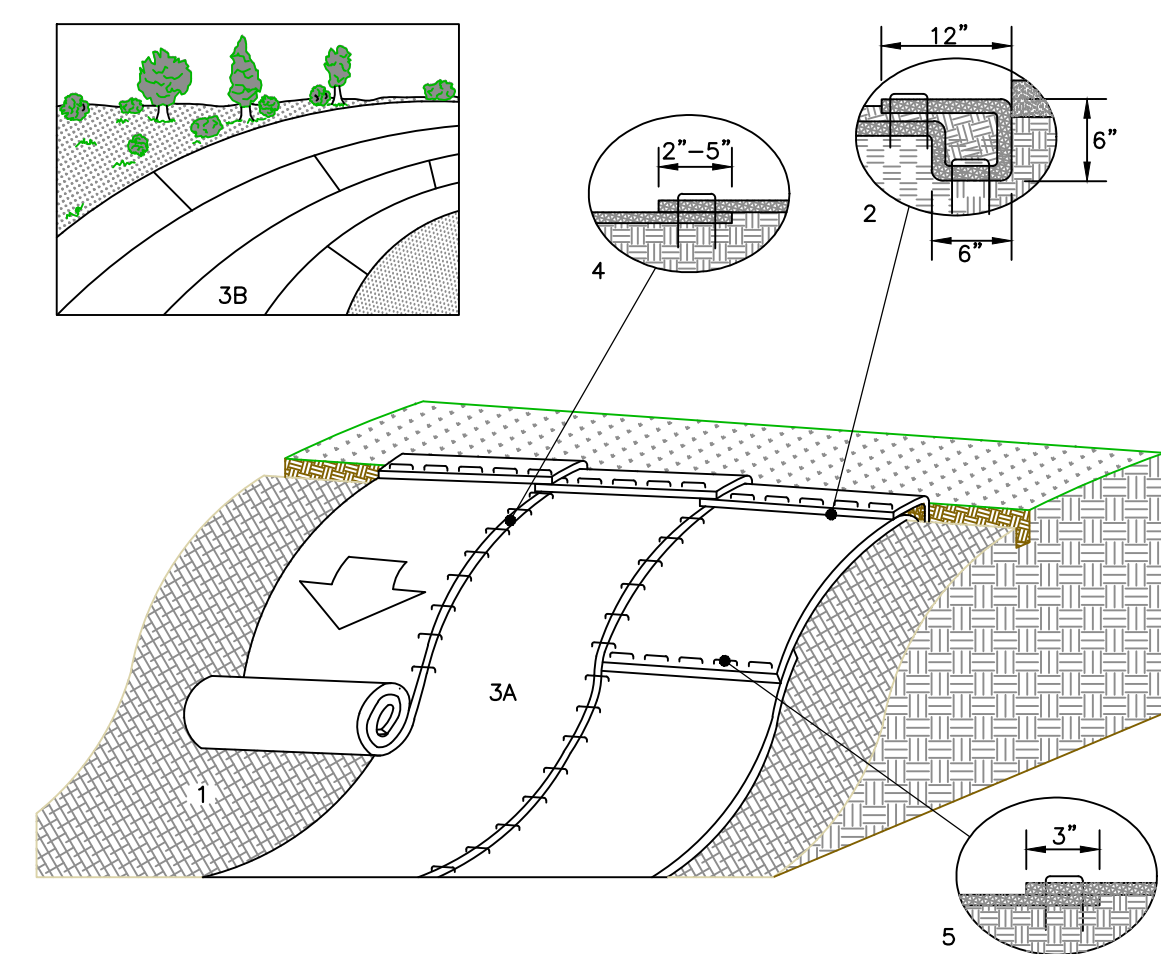
CLEANOUT DETAIL
NOT TO SCALE



SILTATION FENCE DETAIL
NOT TO SCALE



EROSION CONTROL BLANKET CHANNEL INSTALLATION
NOT TO SCALE



EROSION CONTROL BLANKET SLOPE 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.

INSTALLATION DETAIL

- 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" (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" 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.

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

ISSUED FOR	BY
WORKSHOP #2	WHS
FINAL SUBMISSION	WHS

REVISION	REV	DATE
REV. STANDARD DETAIL	WHS	12/2/13
STAFF COMMENTS	WHS	12/28/13

DRAINAGE DETAILS - 2

MUNJOY HEIGHTS

REDFERN MUNJOY, LLC.

P.O. BOX 8816, PORTLAND, MAINE 04104

DRAWING NAME

PROJECT NAME

CLIENT

ACORN ENGINEERING, INC.
3777 PORTLAND, MAINE 04104
P.O. BOX 3372 PORTLAND, MAINE 04104
(207) 775-2655

ENGINEERING, INC.

FILE: C-42.DWG

DATE: 7/11/13

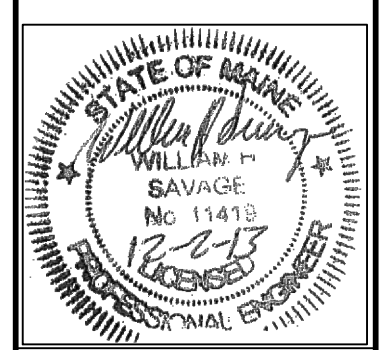
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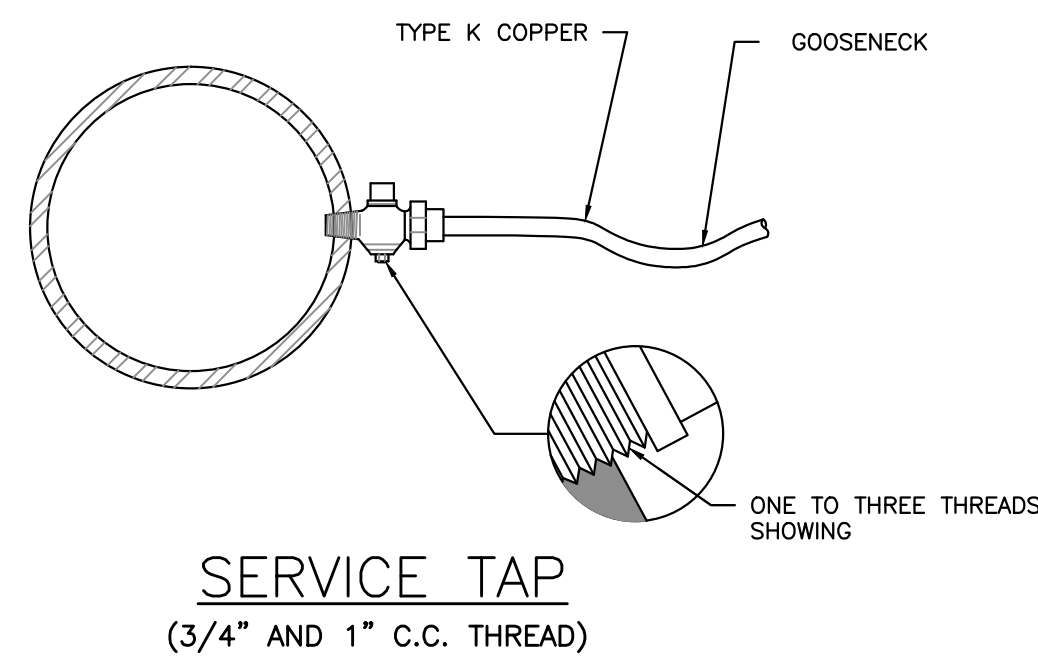
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CHECKED BY: WHS

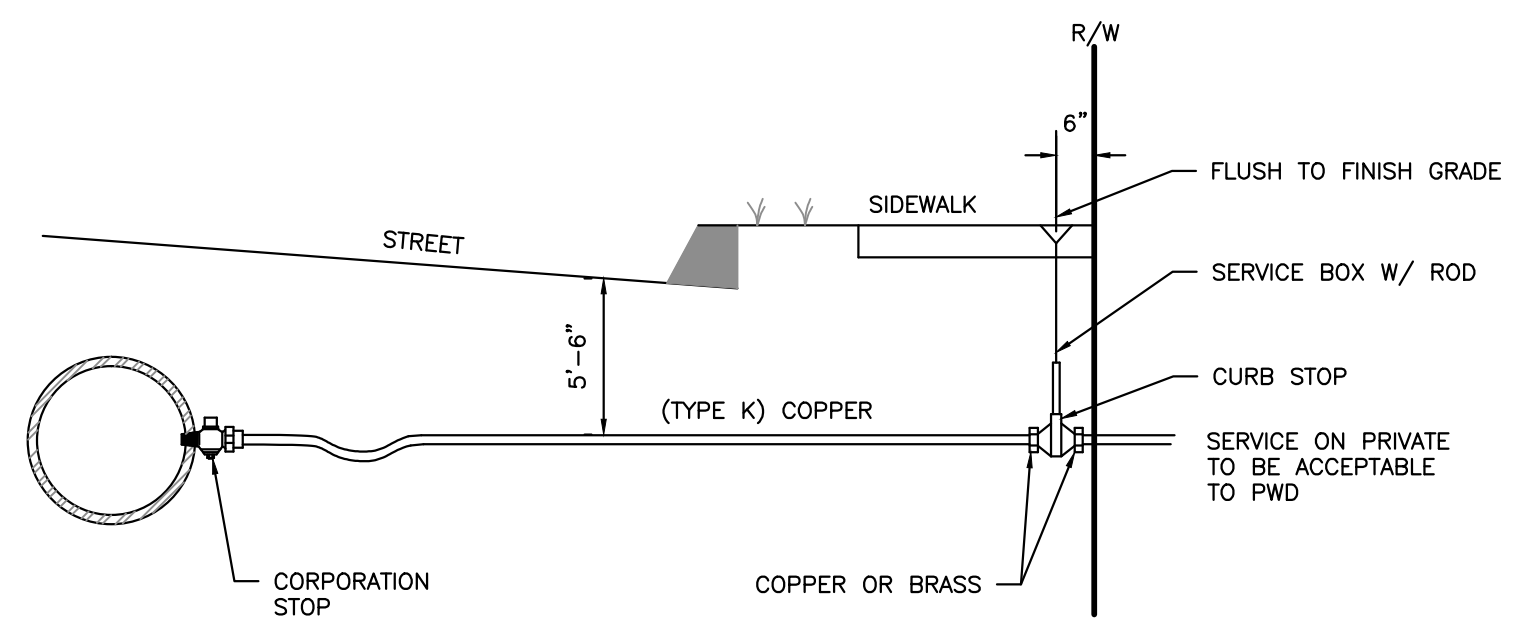


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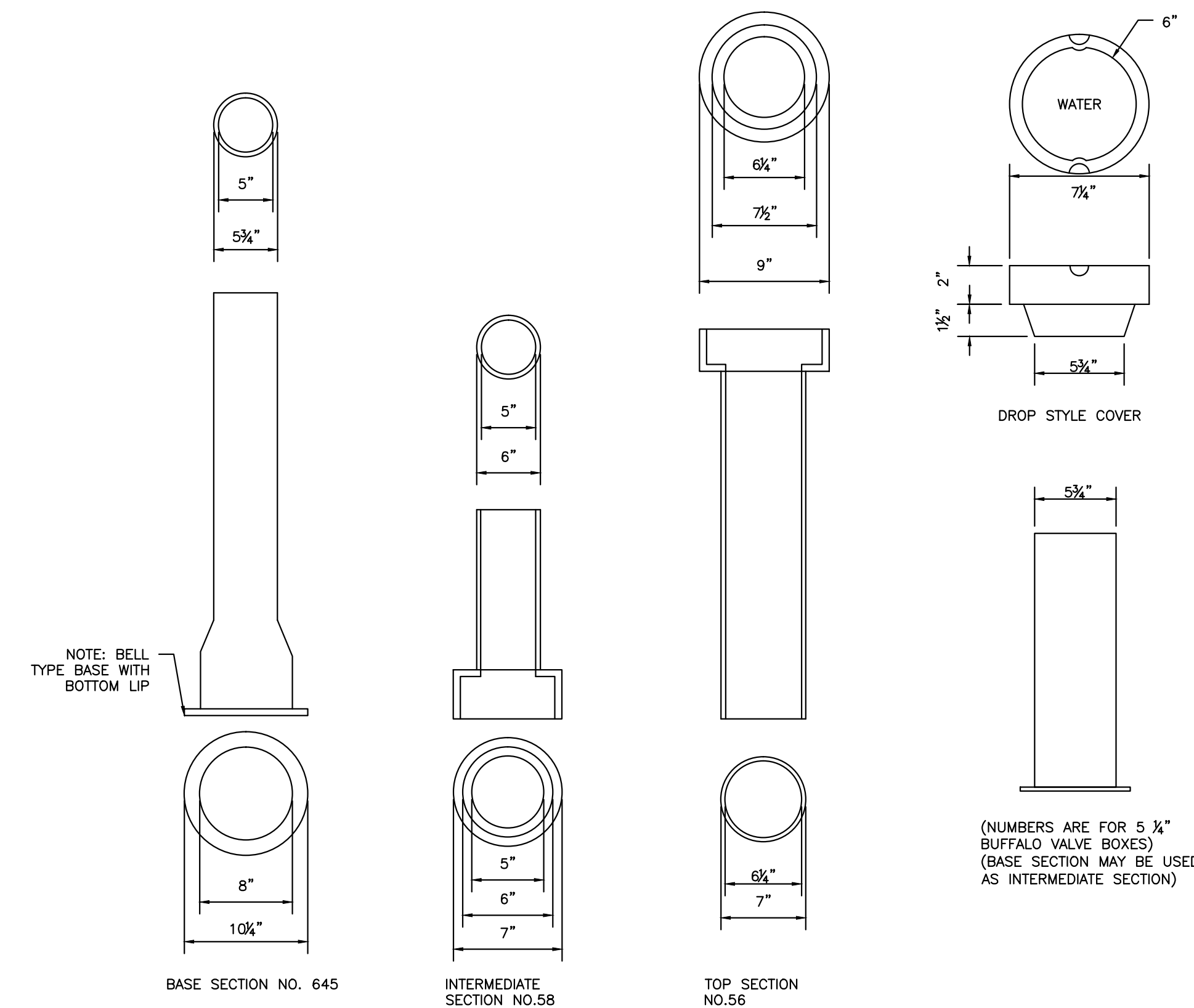
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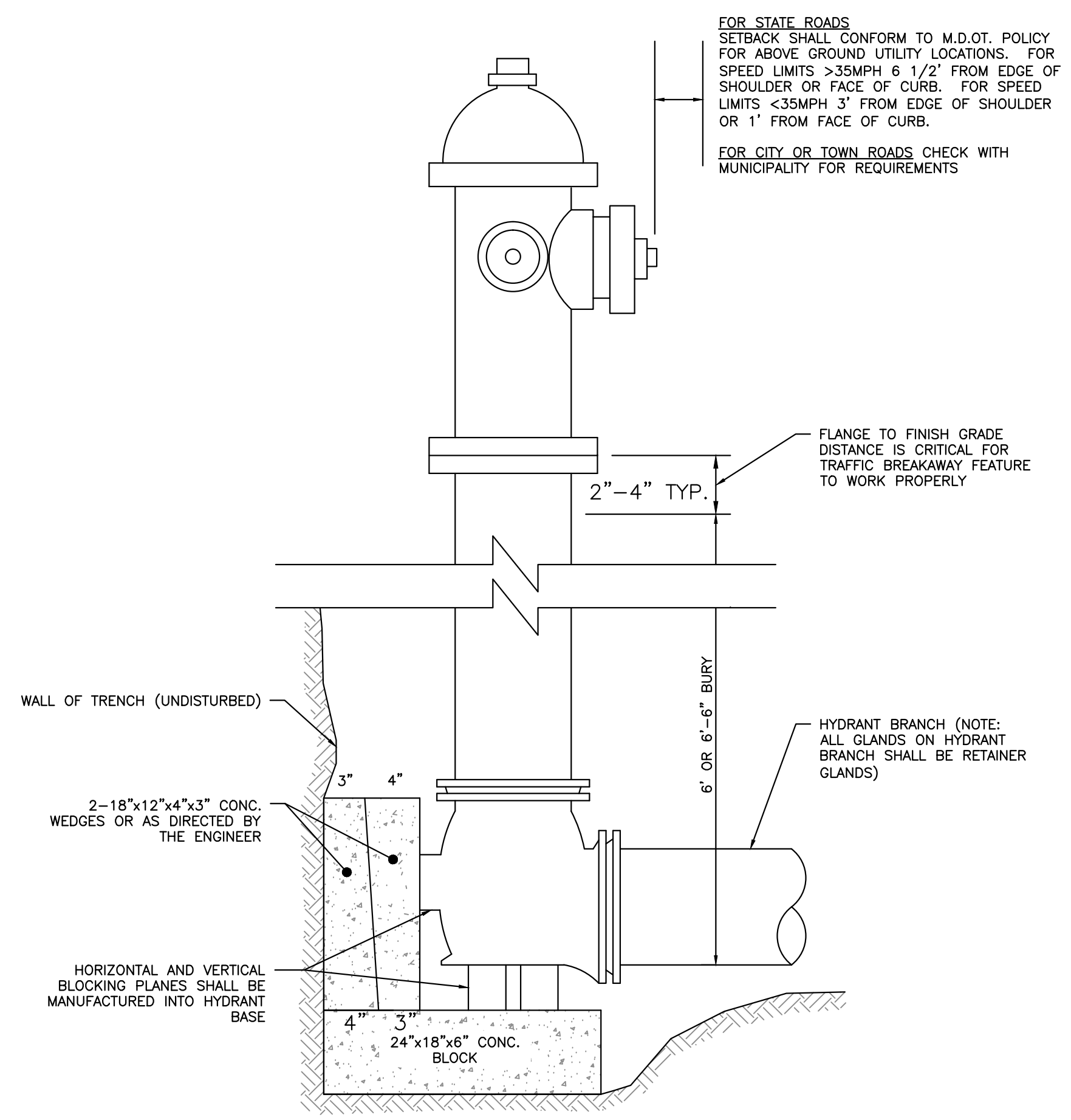
SERVICE TAP
(3/4" AND 1" C.C. THREAD)



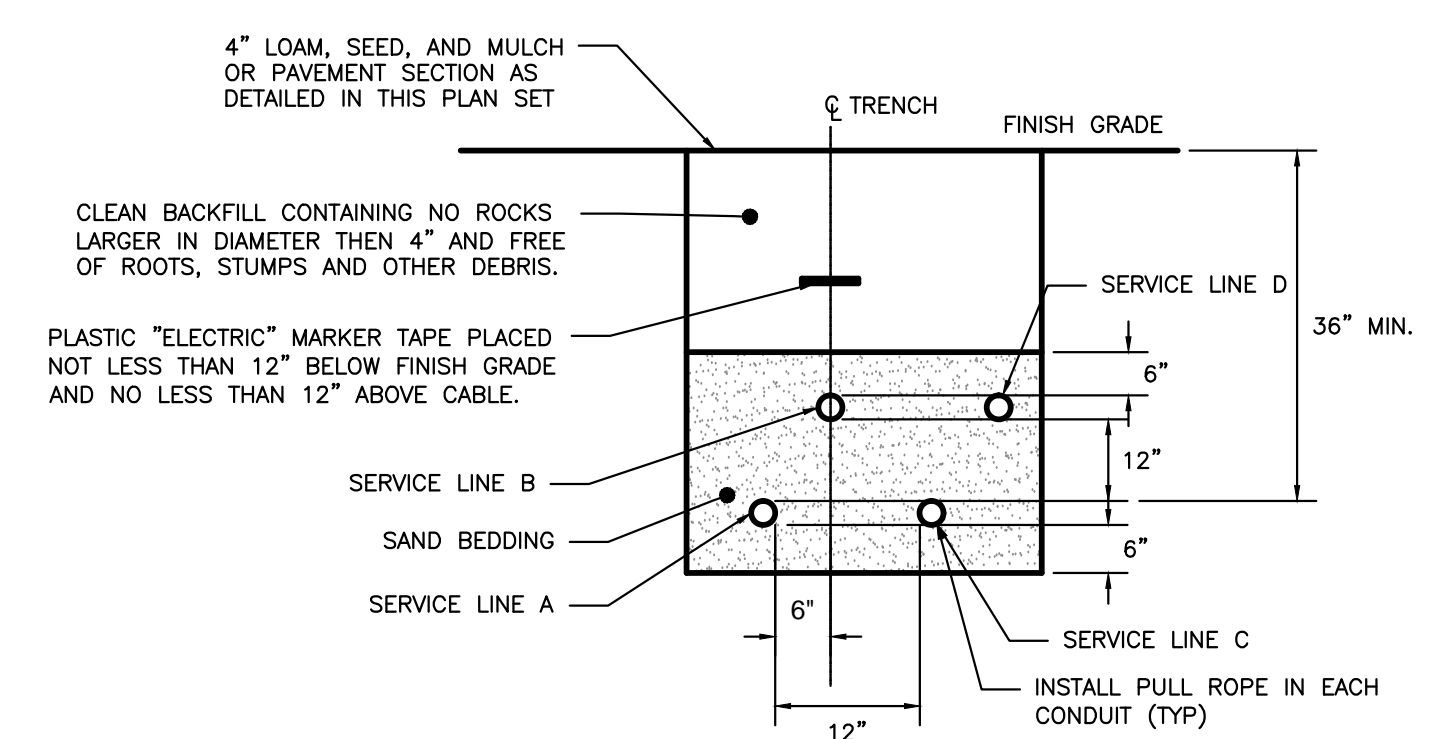
TYPICAL SERVICE CONNECTION
N.T.S.



VALVE BOX & COVER
N.T.S.

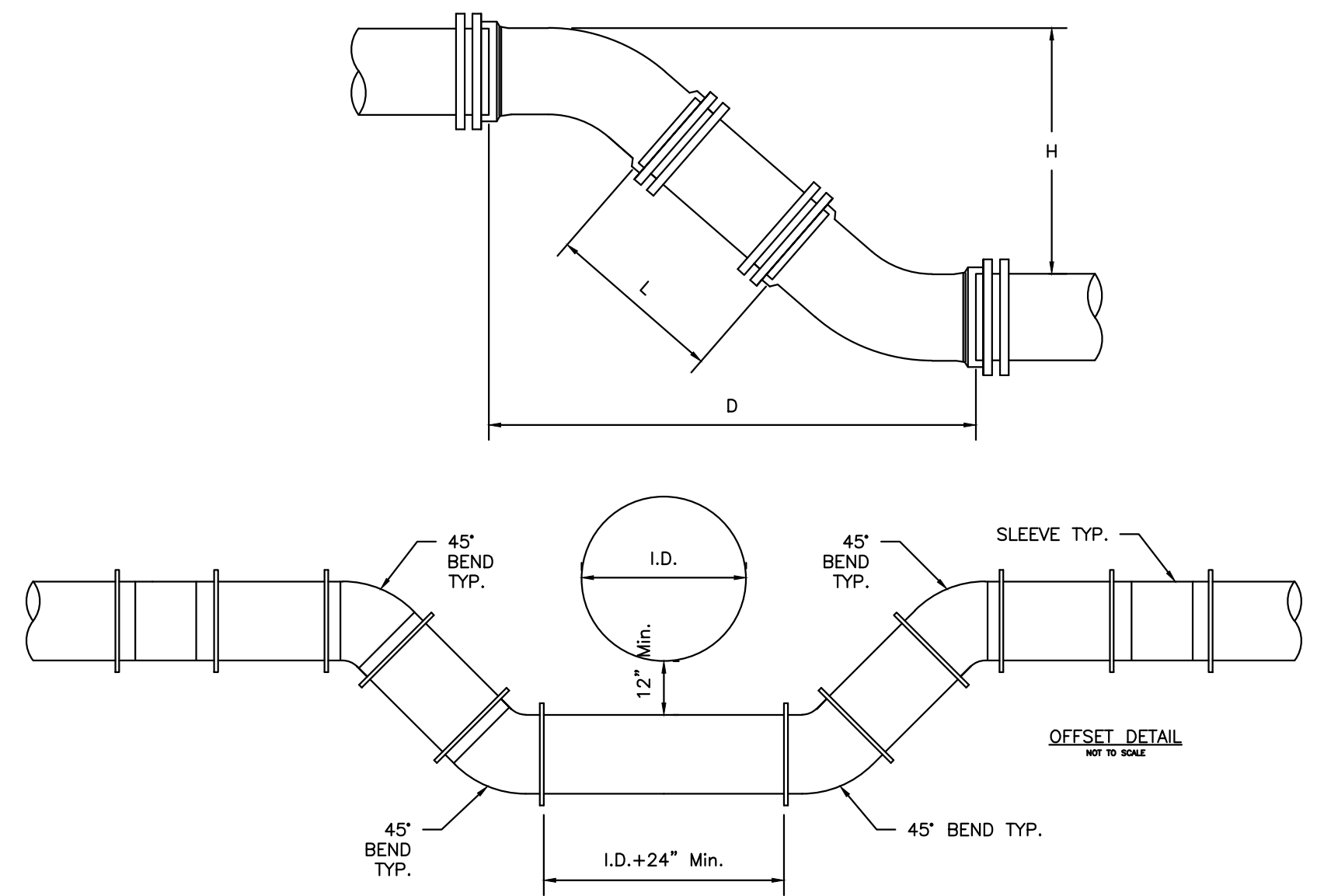


TYPICAL HYDRANT INSTALLATION DETAIL



SERVICE	CONDUIT SIZE	CONDUIT TYPE	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	-

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' 3-1/16"	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' 0-1/16"	3' 10-1/2"	3' 11-1/16"	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' 2-1/2"	4' 2-1/2"	4' 4-1/2"	3' 10-1/2"
42"	4' 0-1/2"	4' 4-7/8"	4' 3-1/2"	4' 3-7/8"	4' 5-1/2"	3' 11-7/8"
43"	4' 1-1/2"	4' 5-5/8"	4' 4-1/2"	4' 4-5/8"	4' 6-1/2"	4' 1-5/8"
44"	4' 2-1/2"	4' 7-3/4"	4' 5-1/2"	4' 5-3/4"	4' 7-1/2"	4' 2-3/4"
45"	4' 3-1/2"	4' 9-1/8"	4' 6-1/2"	4' 8-1/8"	4' 8-1/2"	4' 4-1/8"
46"	4' 4-1/2"	4' 10-9/16"	4' 7-1/2"	4' 9-9/16"	4' 9-1/2"	4' 5-9/16"
47"	4' 5-1/2"	4' 11-15/16"	4' 8-1/2"	4' 10-15/16"	4' 10-1/2"	4' 6-15/16"
48"	4' 6-1/2"	5' 1-3/8"	4' 9-1/2"	5' 0-3/8"	4' 11-1/2"	4' 8-3/8"
49"	4' 7-1/2"	5' 2-13/16"	4' 10-1/2"	5' 1-13/16"	5' 0-1/2"	4' 9-13/16"
50"	4' 8-1/2"	5' 4-3/16"	4' 11-1/2"	5' 3-3/16"	5' 1-1/2"	4' 11-3/16"
51"	4' 9-1/2"	5' 5-5/8"	4' 12-1/2"	5' 4-5/8"	5' 2-1/2"	5' 0-5/8"
52"	4' 10-1/2"	5' 7-1/8"	4' 13-1/2"	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"

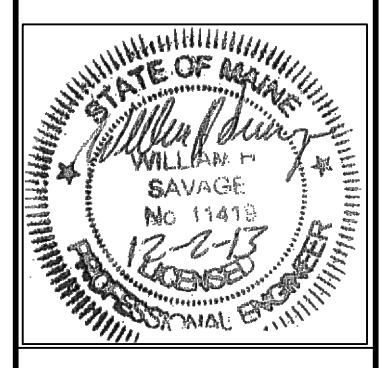
NOTE: DIMENSIONS APPLICABLE FOR SIGMA COMPACT BENDS. FOR TYLER COMPACT BENDS, ADD 1/2" TO "D" DIMENSION AND SUBTRACT 1/2" FROM "L" DIMENSION. FOR OTHER FITTINGS REFER TO MANUFACTURER'S RECOMMENDATIONS.

ISSUED FOR	BY
CITY SUBMISSION	WHS
FINAL SUBMISSION	12/27/13

REVISION	REV. DATE
REV. STANDARD DETAIL	12/24/13
STAFF COMMENTS	WHS 12/28/13

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

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

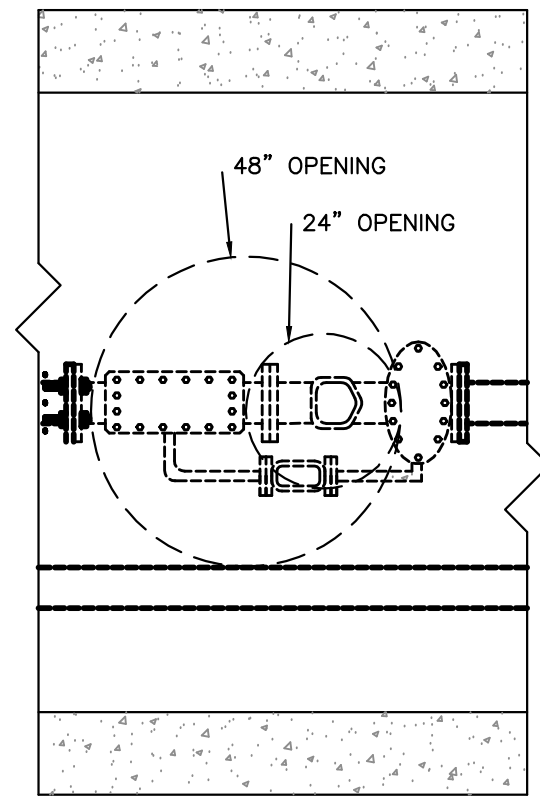


DRAWING NO. **C-44**

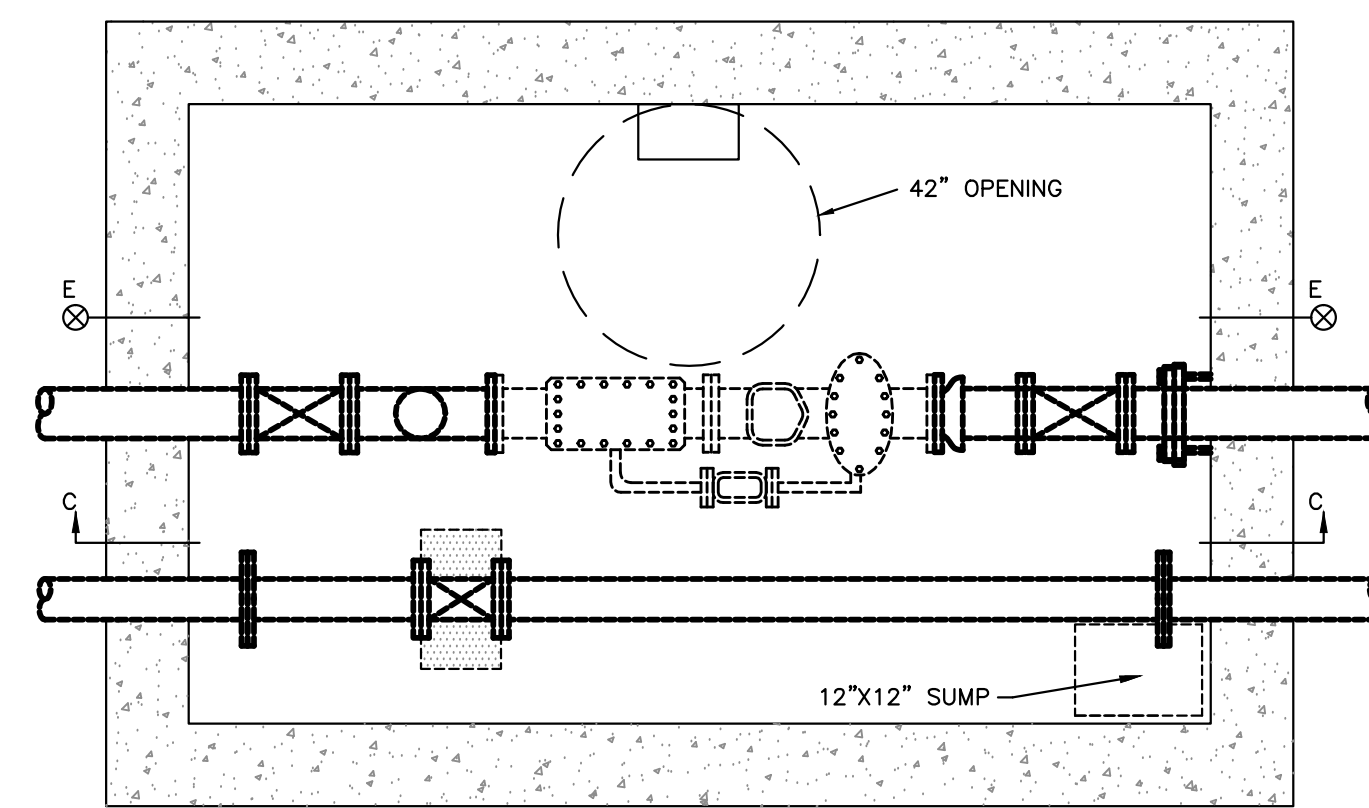
PERMIT DRAWINGS
NOT FOR CONSTRUCTION

NOTES:

- 1.) SHOP DRAWING SUBMITTAL REQUIRED
- 2.) ALL JOINTS TO BE WATERTIGHT WITH USE OF TWO (2) STRIPS OF CONSEAL
- 3.) COVER AND STRUCTURE LOADING SHALL BE FOR H2O
- 4.) STRUCTURAL DESIGN OF THE VAULT TO BE APPLICABLE FOR THE ANTICIPATED LOADING AND A MIN. OF H2O LOADING
- 5.) WATER METER SHALL BE 6-INCH "OMNI F² METER" AS MANUFACTURED BY SENSUS. WATER METER SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
- 6.) PRE-CAST CONCRETE METER PIT AND APPURTENANCES SHALL BE AS MANUFACTURED BY GEORGE R. ROBERTS CO., OR APPROVED EQUAL.
- 7.) 5,000 PSI @ 28 DAYS
- 8.) CEMENT SHALL BE TYPE III PER ASTM C150-81
- 9.) SHALL BE CONSTRUCTED IN ACCORDANCE WITH PORTLAND WATER DISTRICT STANDARDS
- 10.) 12" HOLES SHALL BE CONSTRUCTED FOR 8" PIPE
- 11.) STEPS SHALL BE OFFSET AT NO MORE THAN 12" ON CENTER, STARTING FROM THE TOP OF THE MANHOLE. FRAME AND SHALL BE FORGED ALUMINUM OR COPOLYMER POLYPROPYLENE STEPS



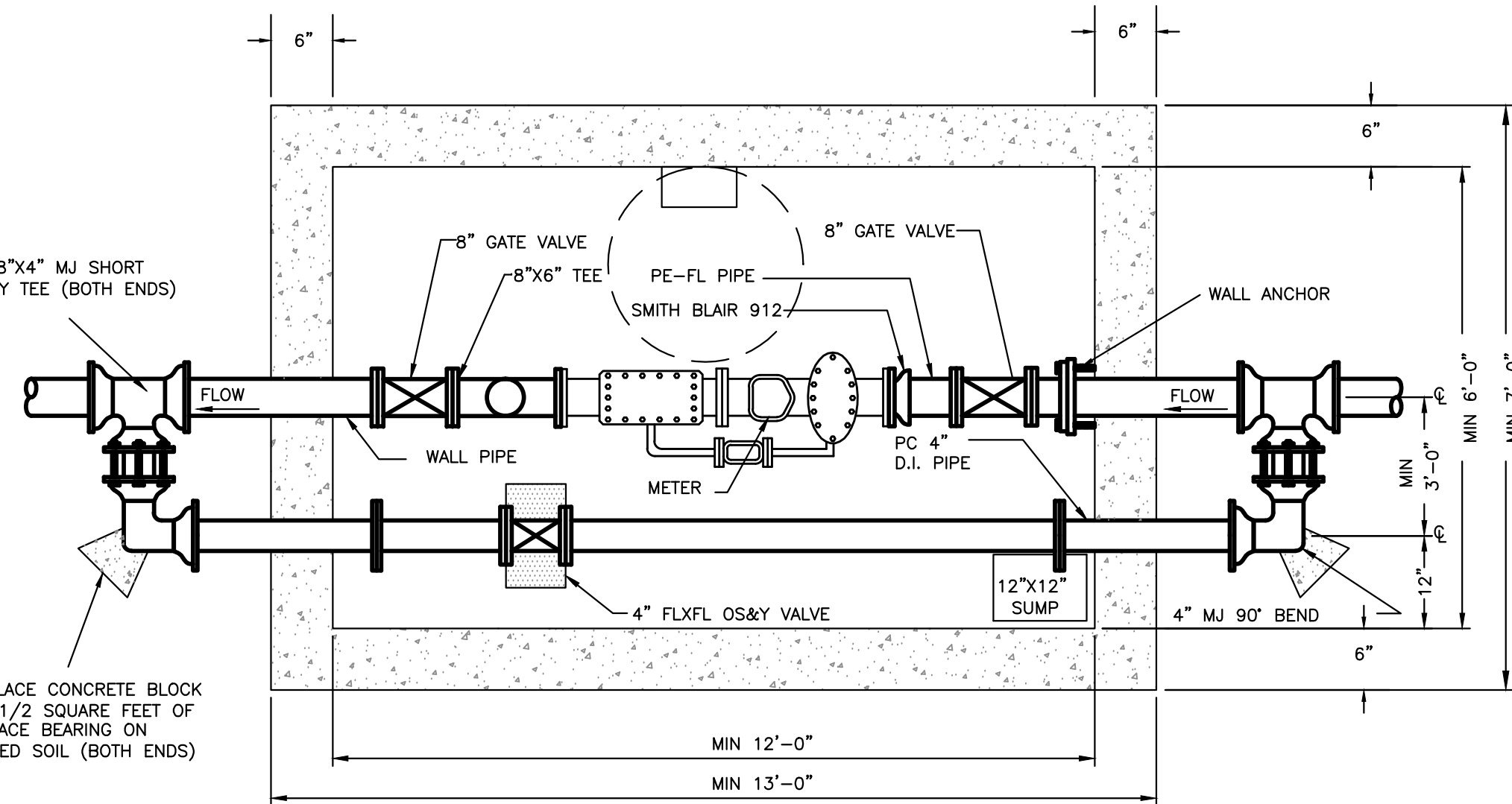
PLAN - TRAFFIC-RATED COVER



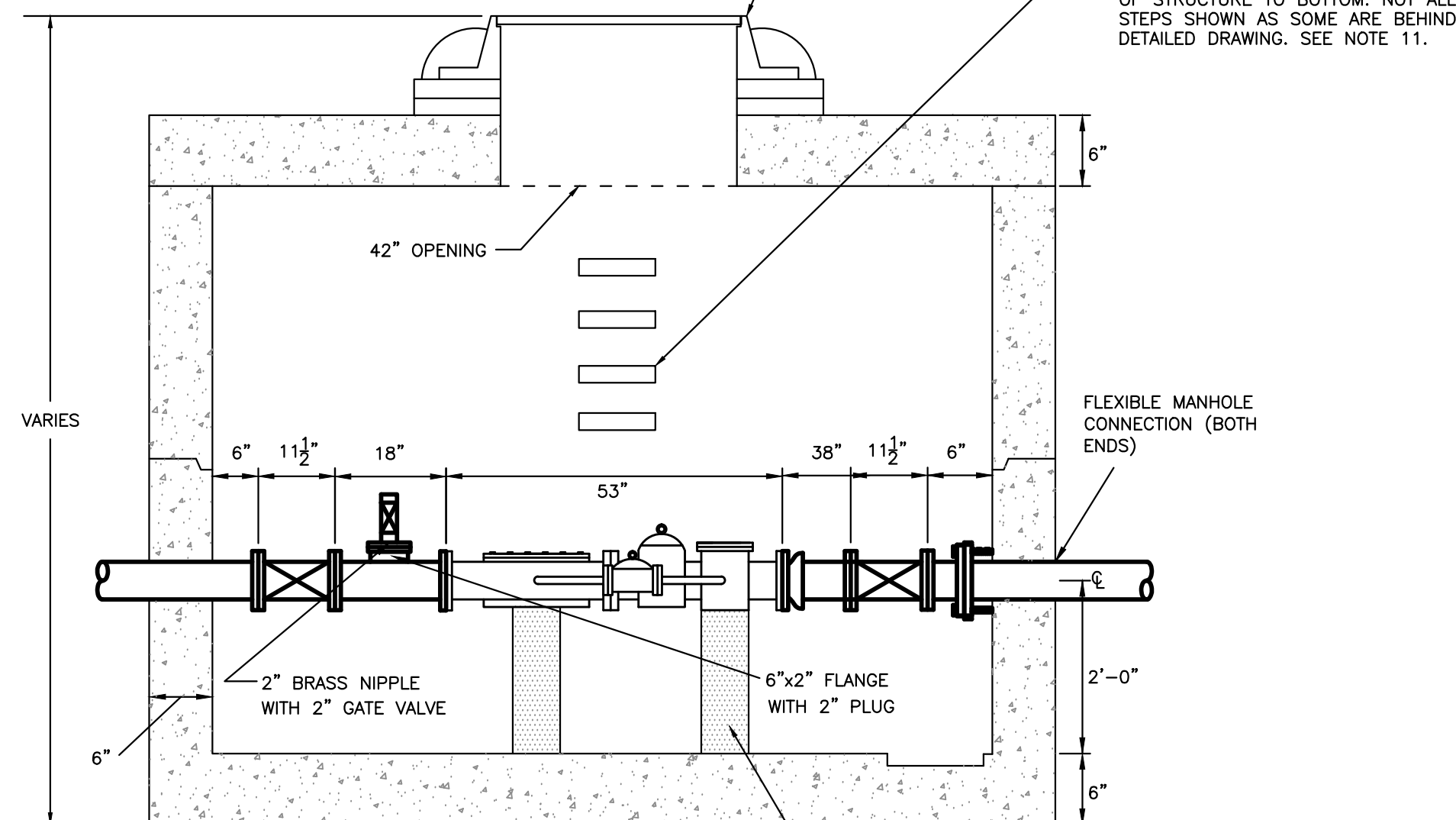
PLAN

8-IN FIRE LINE METER DETAIL

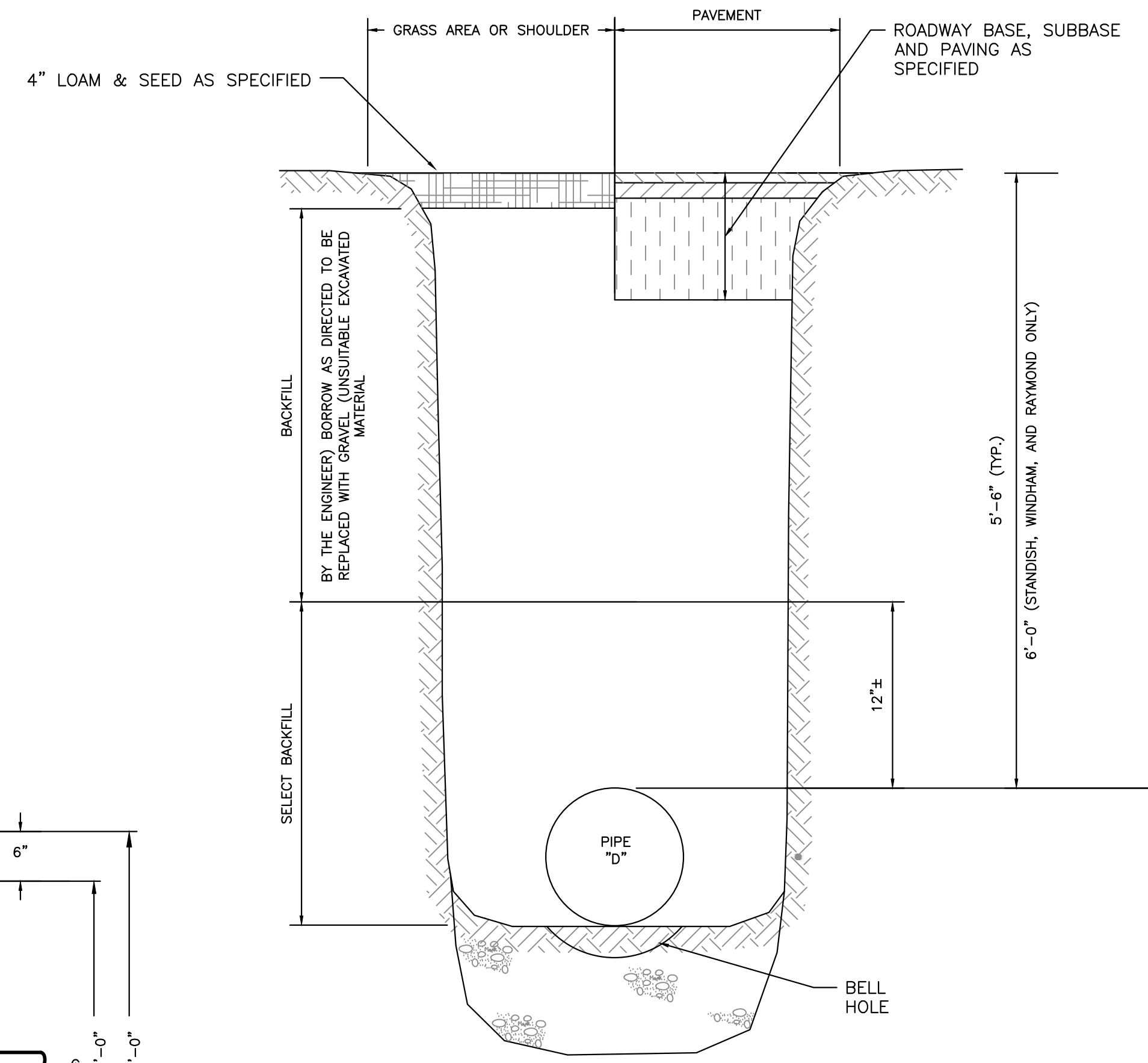
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SECTION E-E

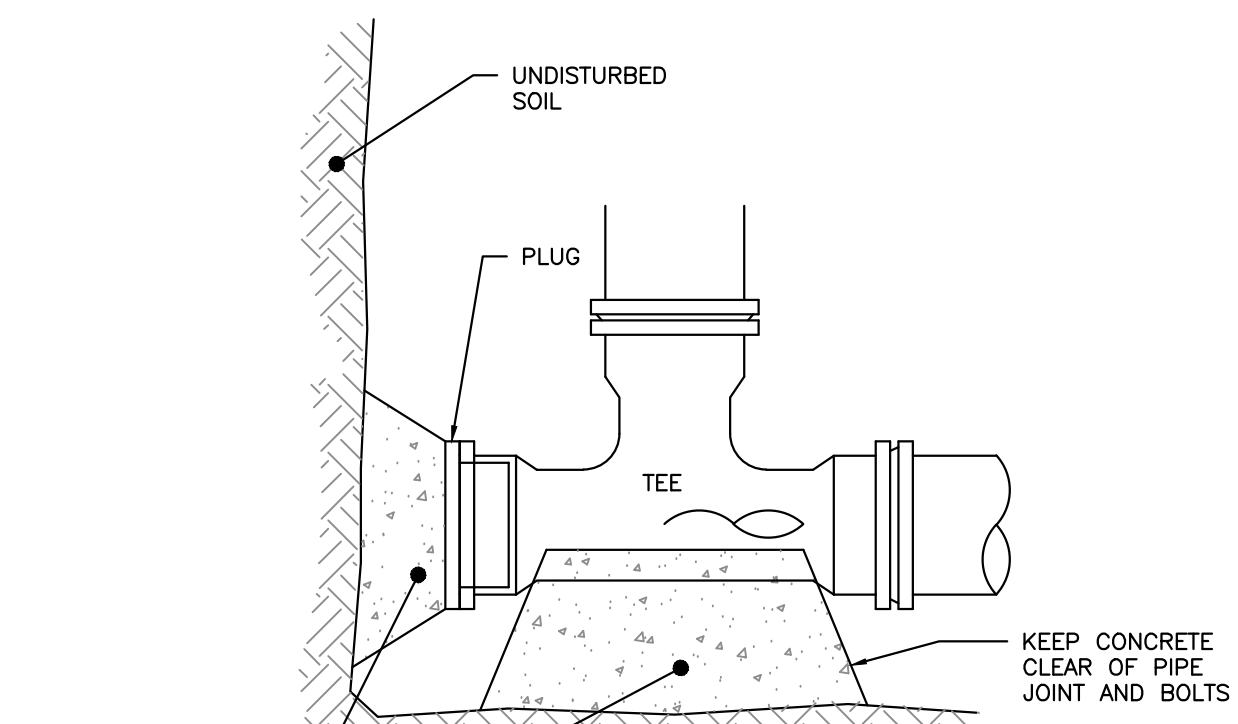


SECTION C-C



WATER PIPE THRU EARTH TRENCH

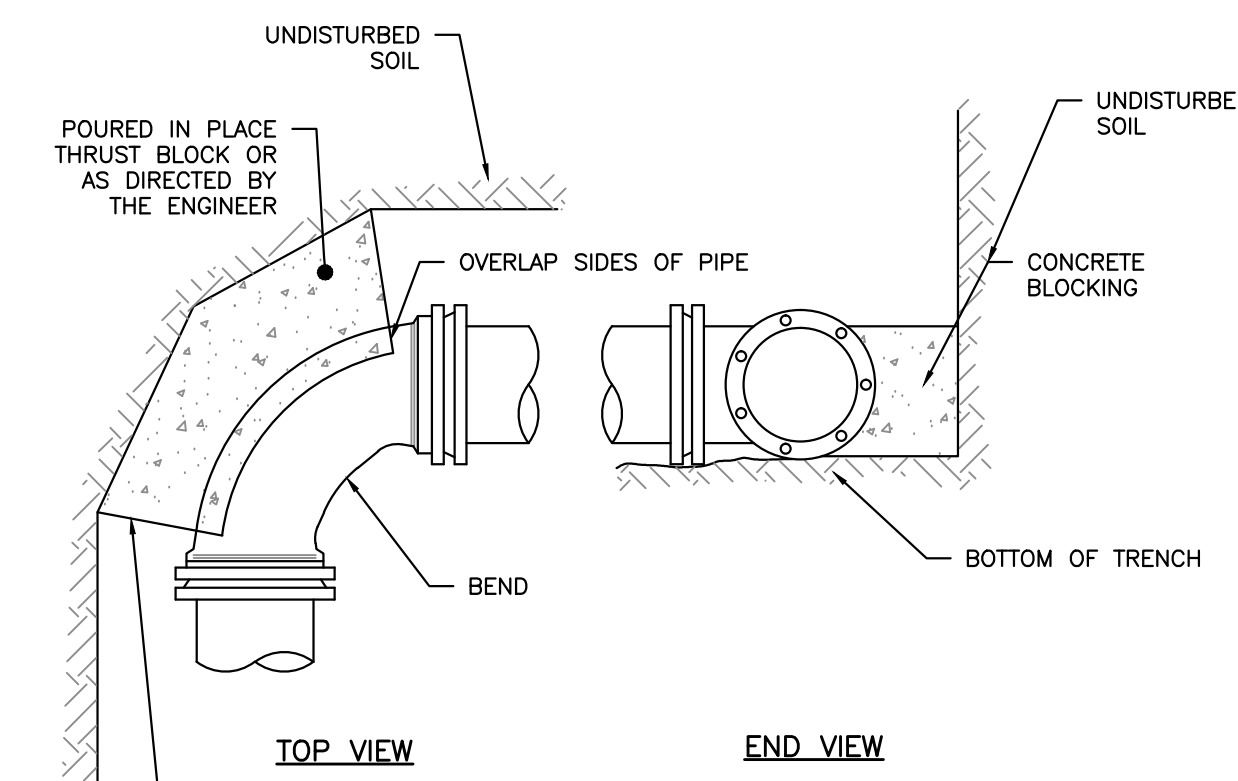
NOT TO SCALE



NOTE: IF DEAD END WITH TEE, THRUST BLOCK WOULD BE REQUIRED OR AS DIRECTED BY THE ENGINEER

END SECTION

BEARING SURFACE REQUIRED FOR WATER PIPES (VALUES IN SF)				
PIPE SIZE	1/32 BEND	1/16 BEND	1/8 BEND	TEES/CAPS
8"	2.0	3.0	6.0	10.0 16.0



TOP VIEW

END VIEW

REGULAR BEND

THRUST BLOCKING

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
STAFF COMMENTS	WHS	12/6/13

DRAWING NAME: **PORTLAND WATER DISTRICT DETAILS - 2**

PROJECT NAME: **MUNJOY HEIGHTS**

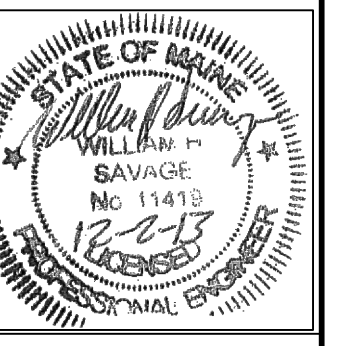
CLIENT: **REDFERN MUNJOY, LLC.**
P.O. BOX 8816, PORTLAND, MAINE 04104

ACCORN ENGINEERING, INC.
ENGINEERING, INC.

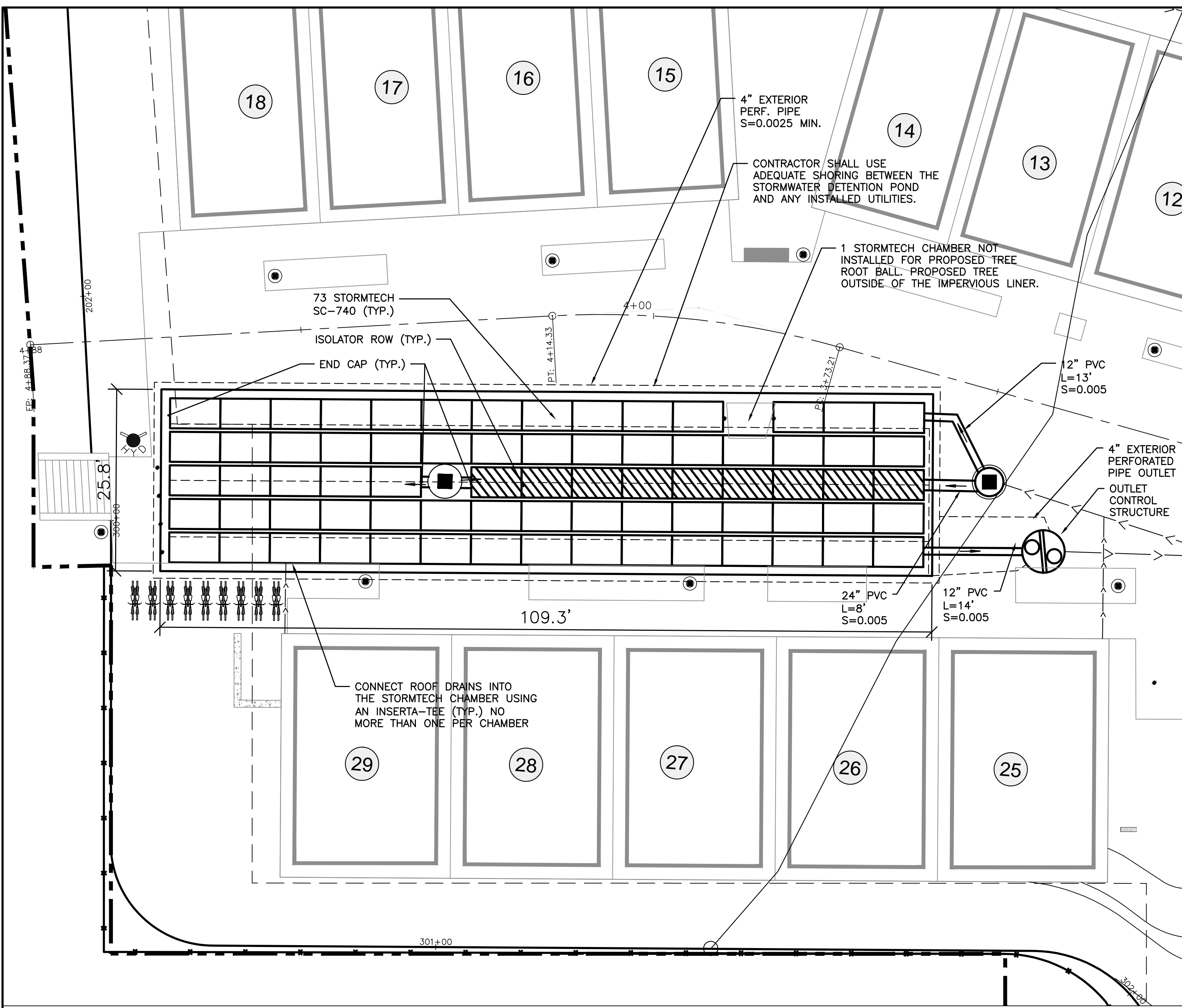
1500 W. MAINE STREET, SUITE 200, PORTLAND, MAINE 04104
ACCORN ENGINEERING, INC. AND ALL SERVICES ARE PROVIDED ON A "AS IS" BASIS. ACCORN ENGINEERING, INC. DOES NOT WARRANT THE ACCURACY OF THE INFORMATION PROVIDED HEREON.

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

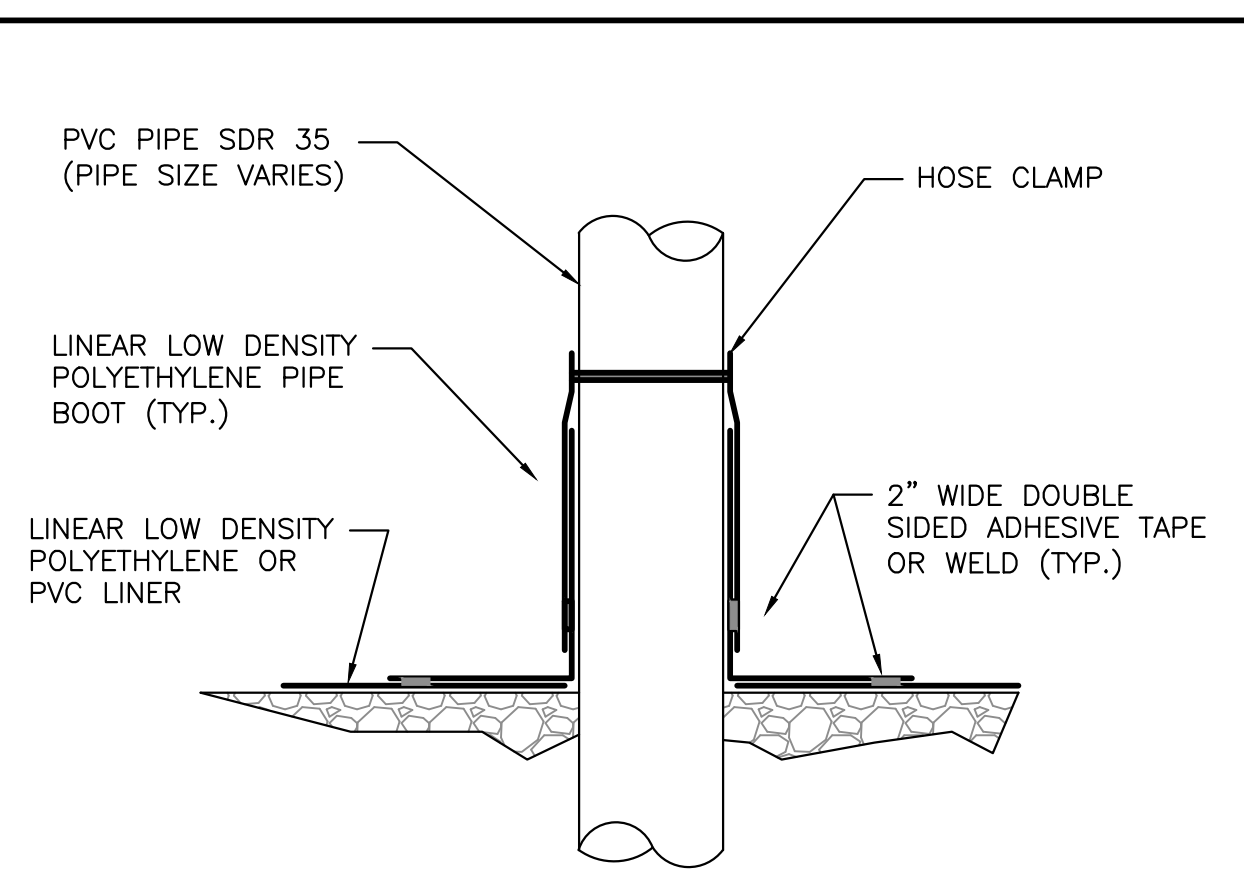
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DESIGN BY: WHS
DRAWN BY: ZRJ
CHECKED BY: WHS



DRAWING NO.
C-45



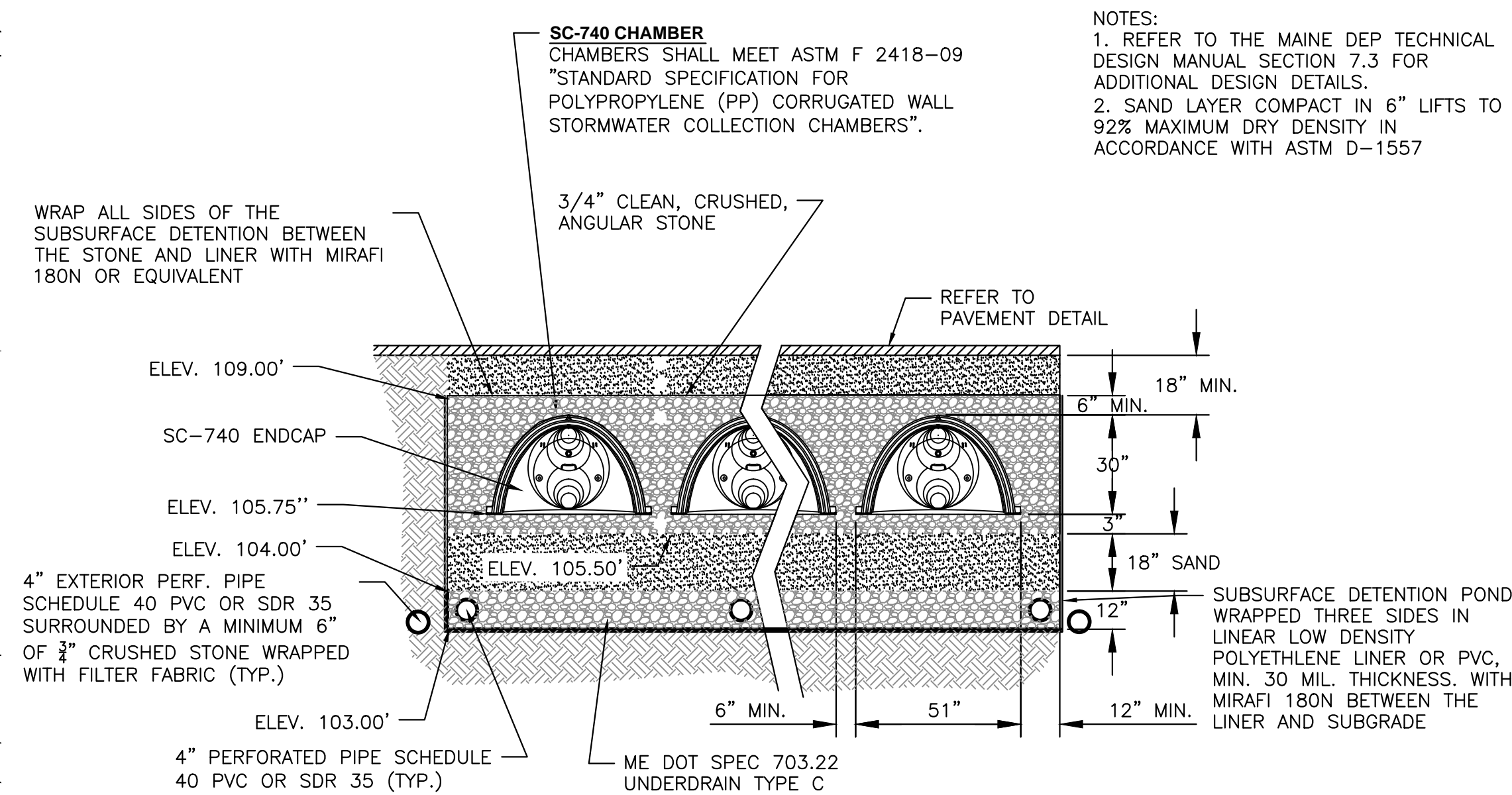
PLAN VIEW LAYOUT
1"=10'



TYPICAL PIPE PENETRATION DETAIL
NOT TO SCALE

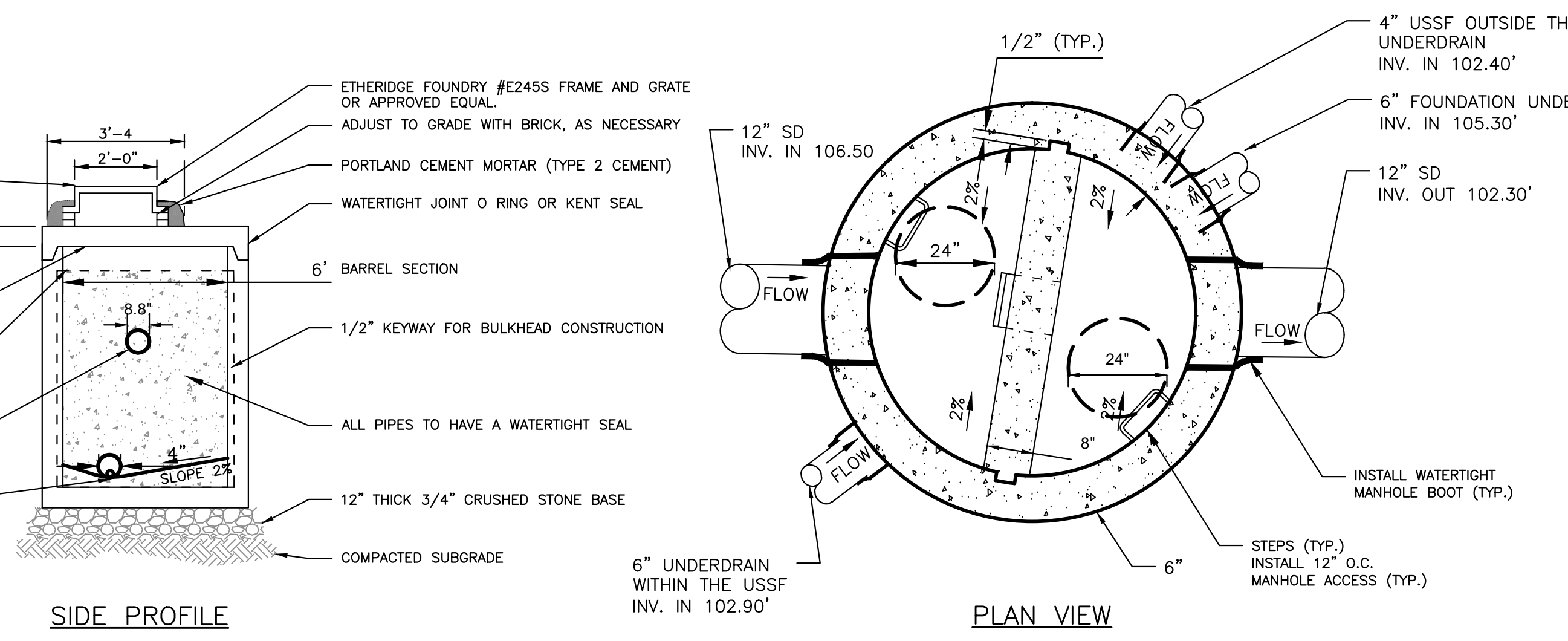
- MANUFACTURERS NOTES:
- ALL DESIGN SPECIFICATIONS FOR STORMTECH SC-740 CHAMBERS SHALL BE IN ACCORDANCE WITH THE STORMTECH DESIGN MANUAL
 - THE INSTALLATION OF STORMTECH SC-740 CHAMBERS SHALL BE IN ACCORDANCE WITH THE LATEST STORMTECH INSTALLATION INSTRUCTIONS
 - THE CONTRACTOR IS ADVISED TO REVIEW AND 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
 - 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:
- 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.
 - 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.

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

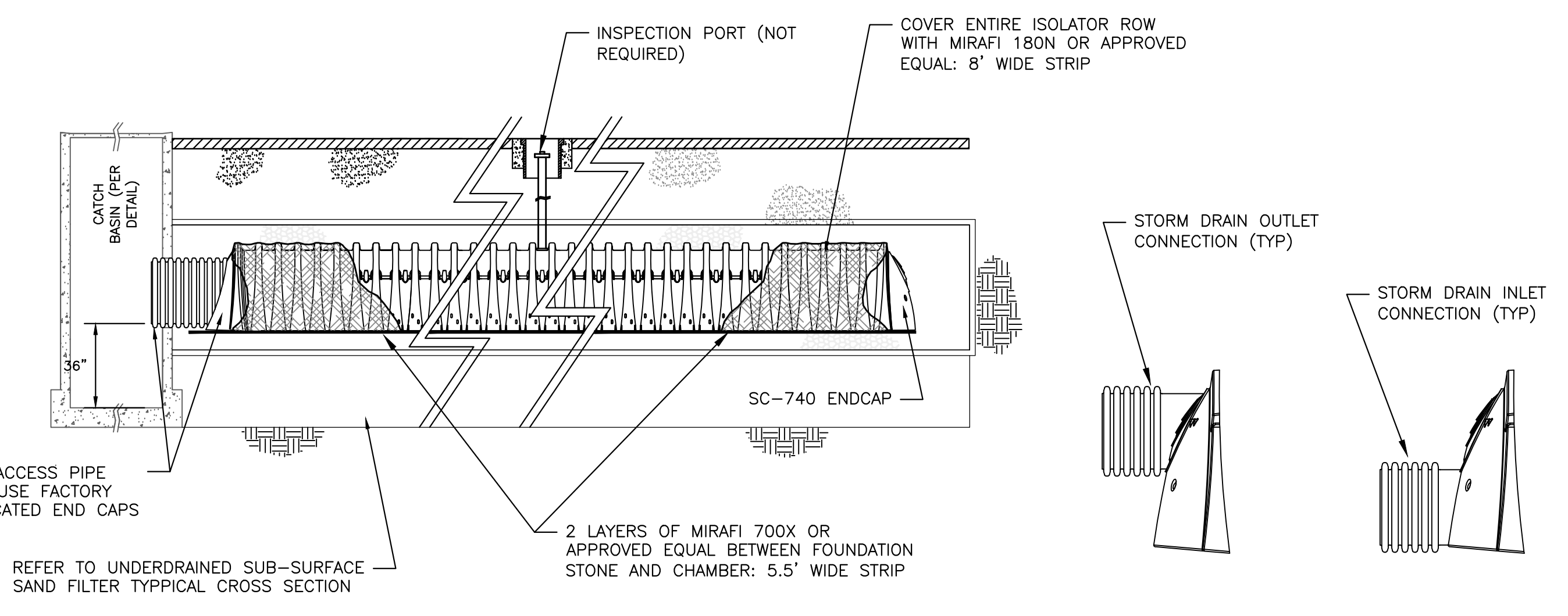


UNDERDRAINED SUB-SURFACE SAND FILTER
TYPICAL CROSS SECTION
NOT TO SCALE

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



OUTLET CONTROL STRUCTURE
NOT TO SCALE



ISOLATOR ROW - PROFILE VIEW
NOT TO SCALE

STORMTECH-CONNECTION
NOT TO SCALE

ISSUED FOR	BY
WORKSHOP #2	WHS
FINAL SUBMISSION	11/12/13
	WHS
	12/2/13
REVISION	REV. DATE
REV. STANDARD DETAIL	12/2/13
STAFF COMMENTS	WHS
	12/6/13

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
11-227-2043.dwg
DATE: 7/11/13
JN: 302-001
SCALE: NTS
DESIGN BY: WHS
DRAWN BY: ZRJ
CHECKED BY: WHS

DRAWING NO. C-46