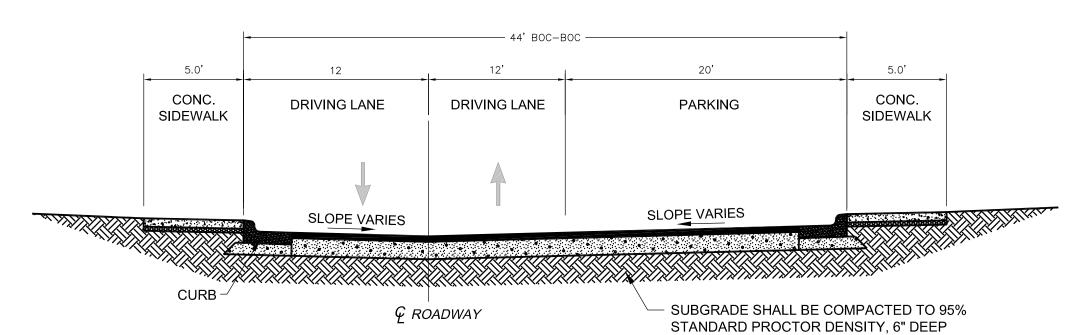
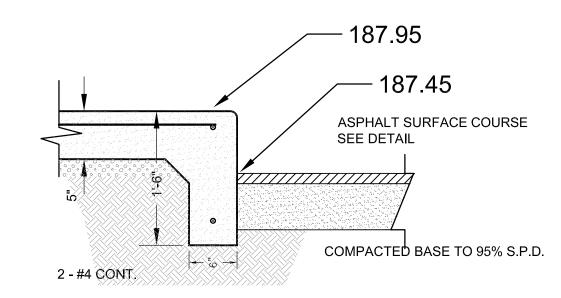


DOUBLE LOADED PARKING & AISLE CROSS SECTION



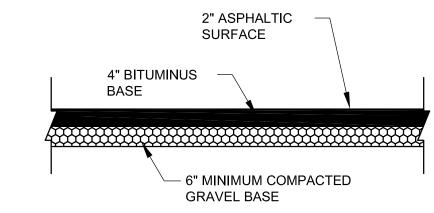
SINGLE LOADED AISLE CROSS SECTION N.T.S.

4" CONC. SIDEWALK OVER 4" COMPACTED BASE MATERIAL W/ 6X6-W1.4 X W1.4 WIRE MESH. MAX CROSS SLOPE 2%



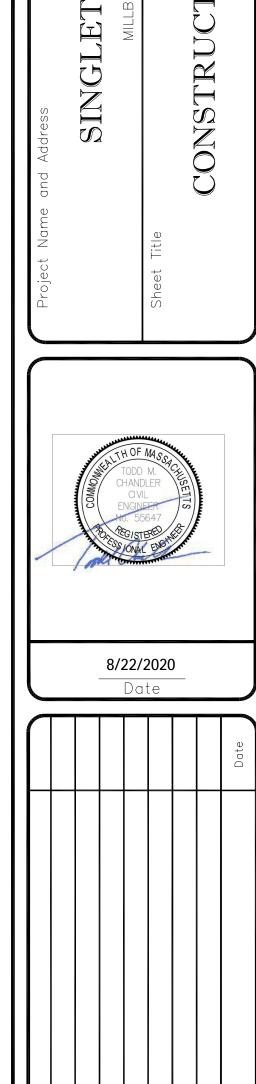
CONCRETE SIDEWALK TYPE II

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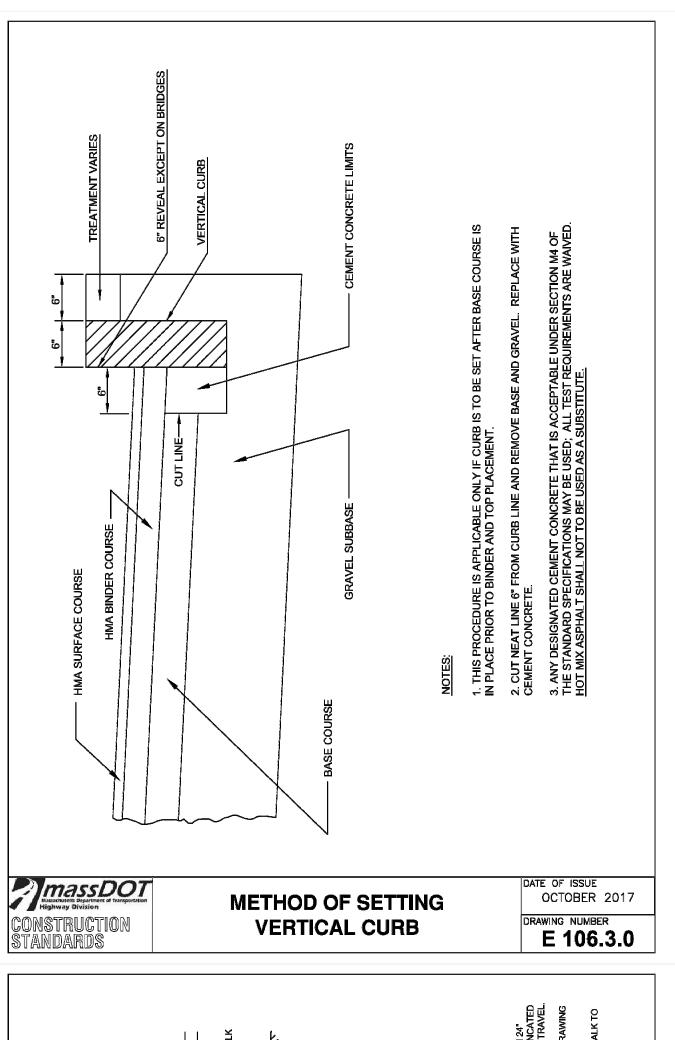


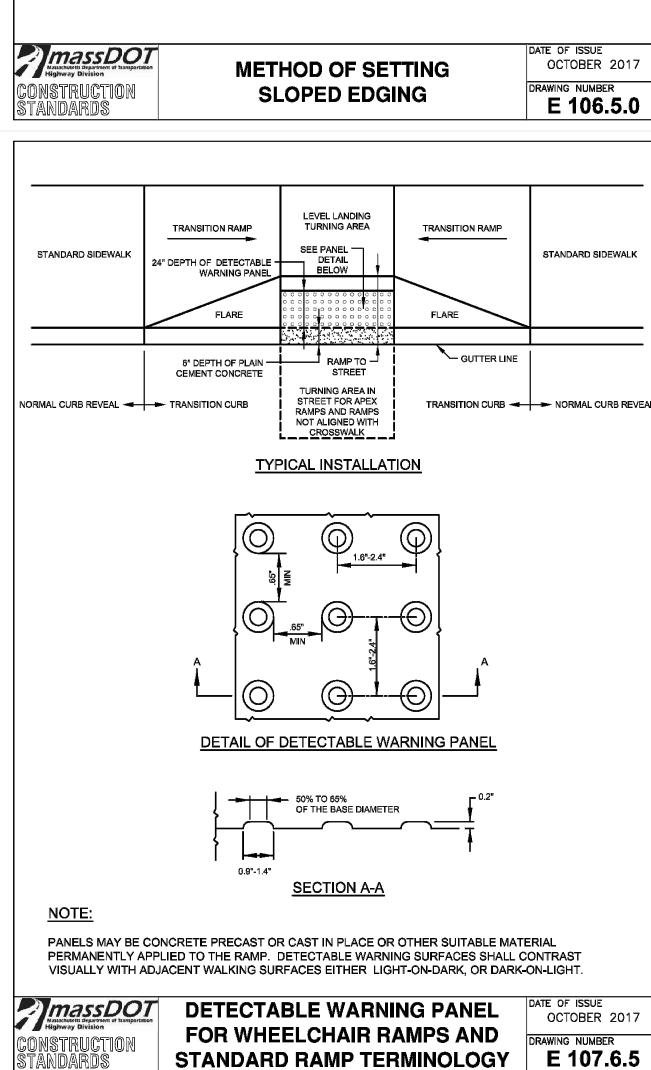
TYPICAL PAVEMENT DETAIL

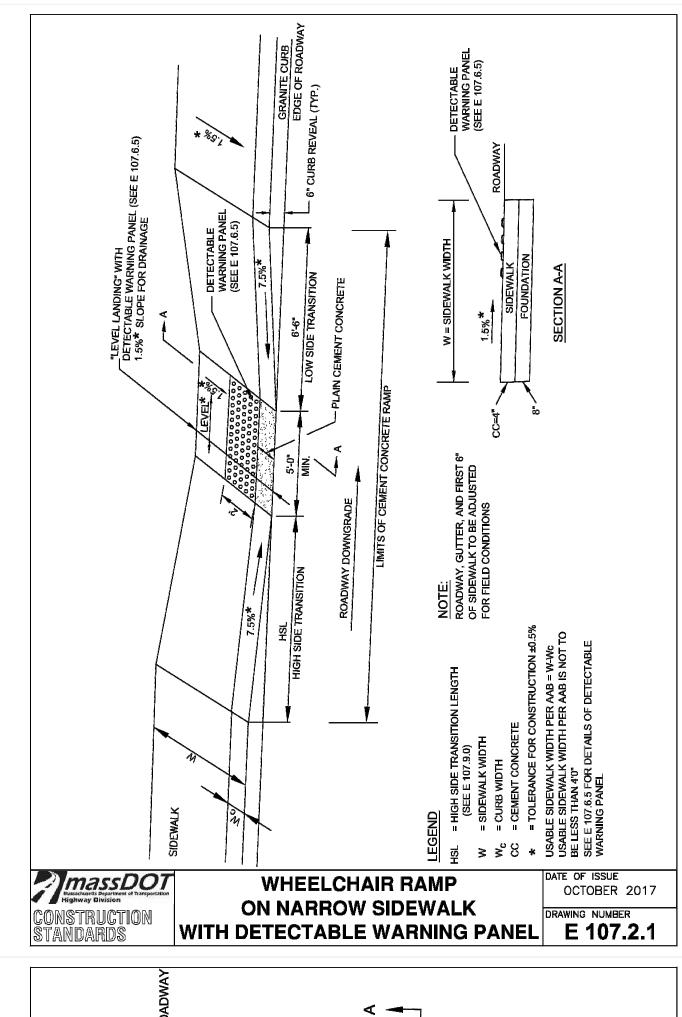
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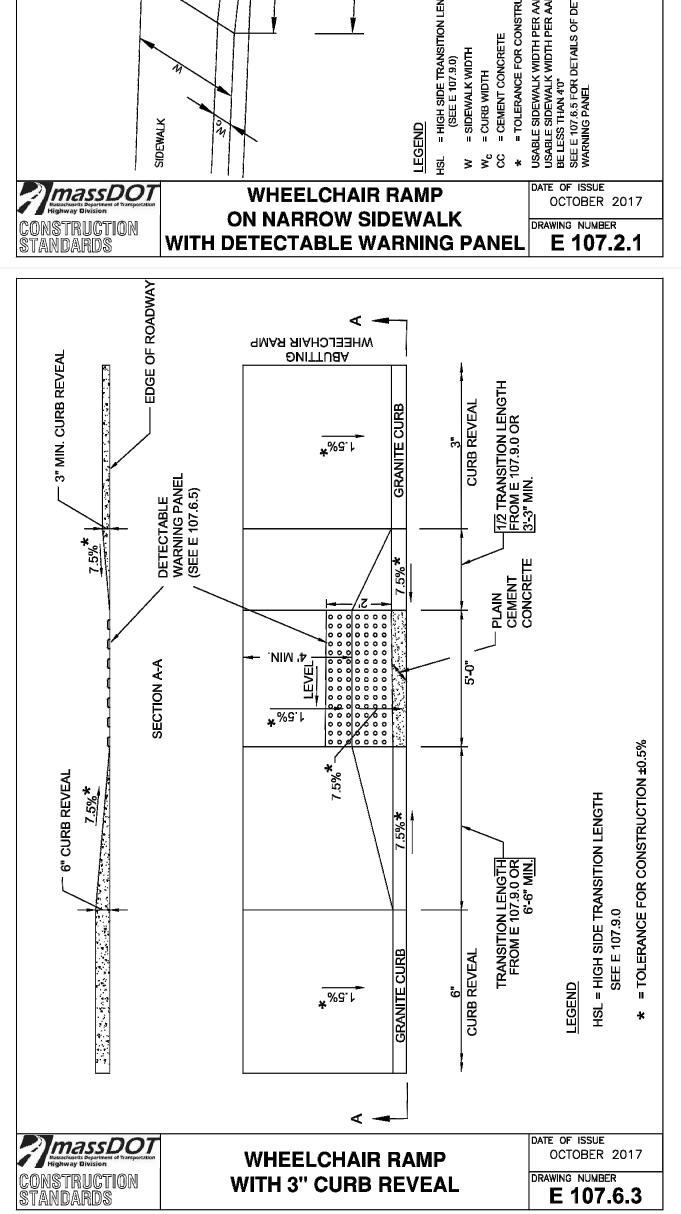


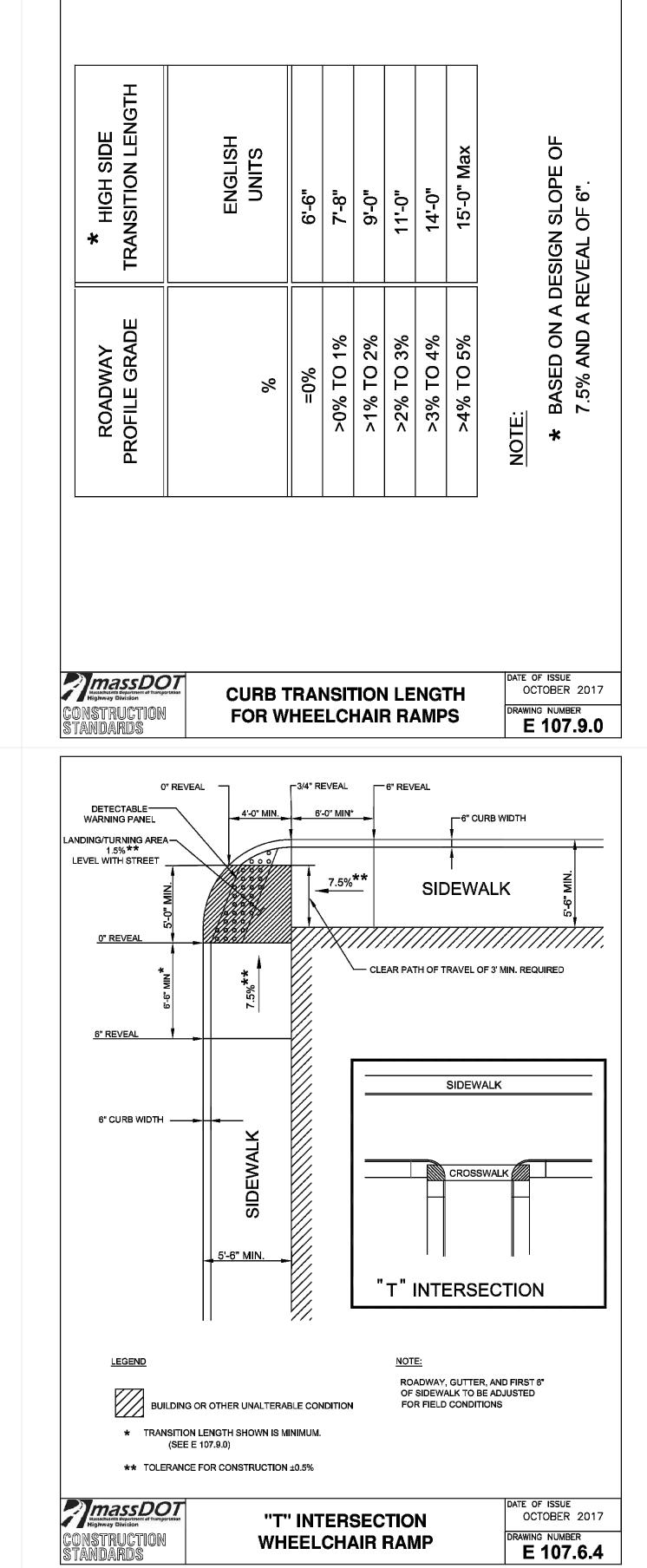
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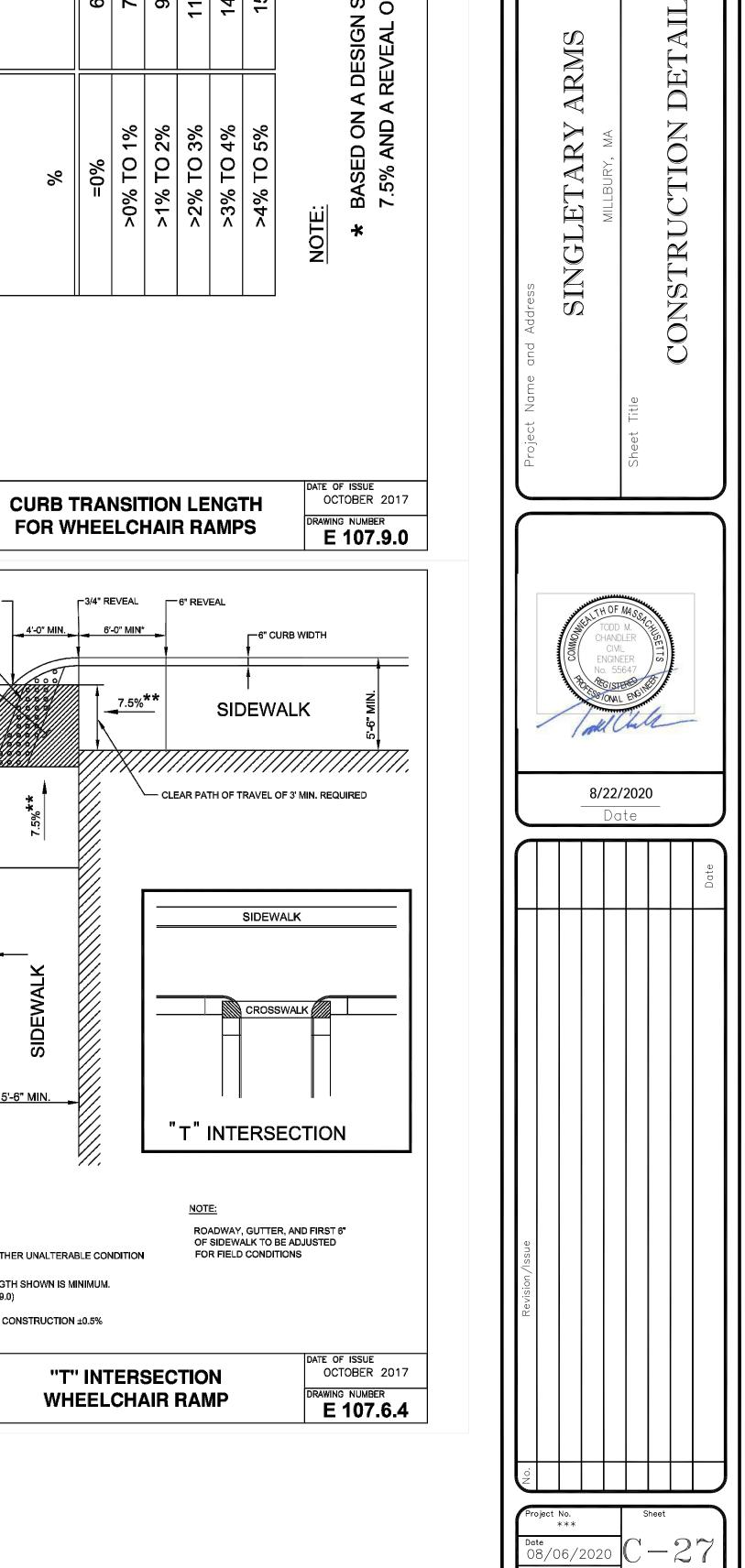


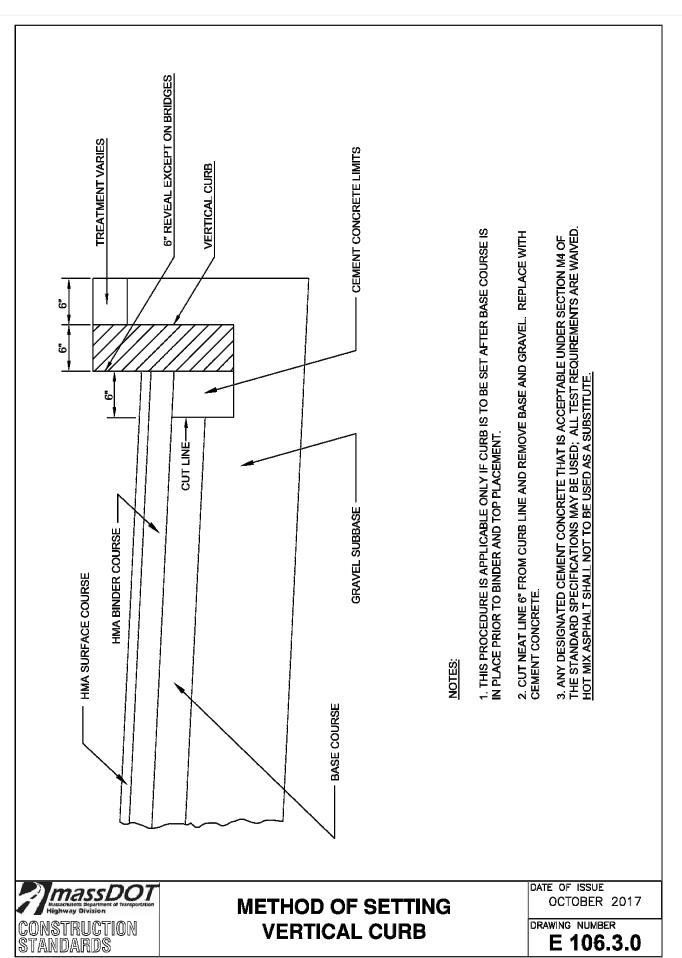


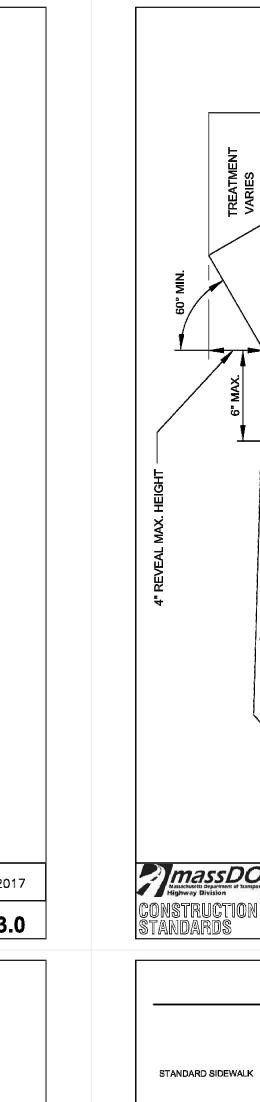












DATE OF ISSUE

DRAWING NUMBER

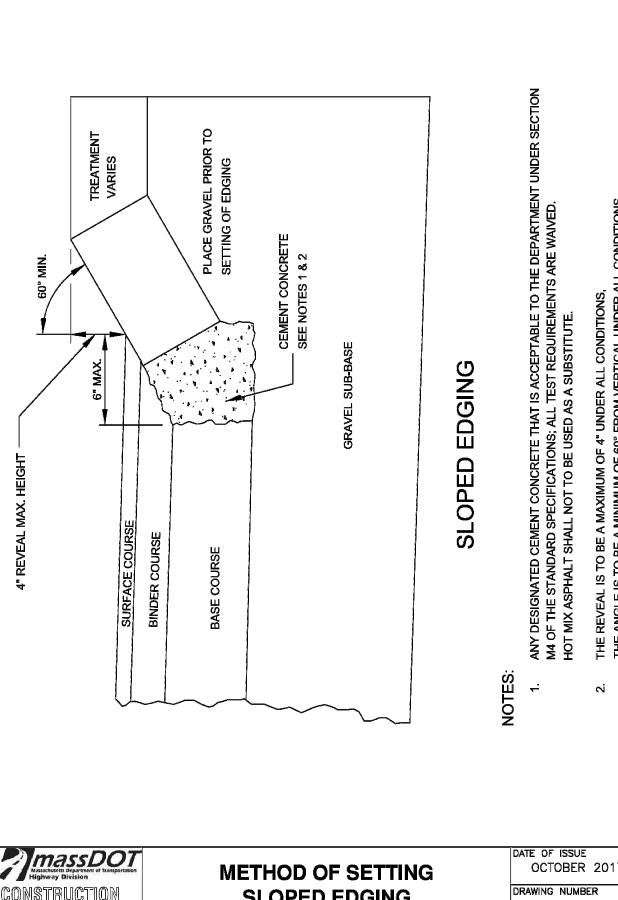
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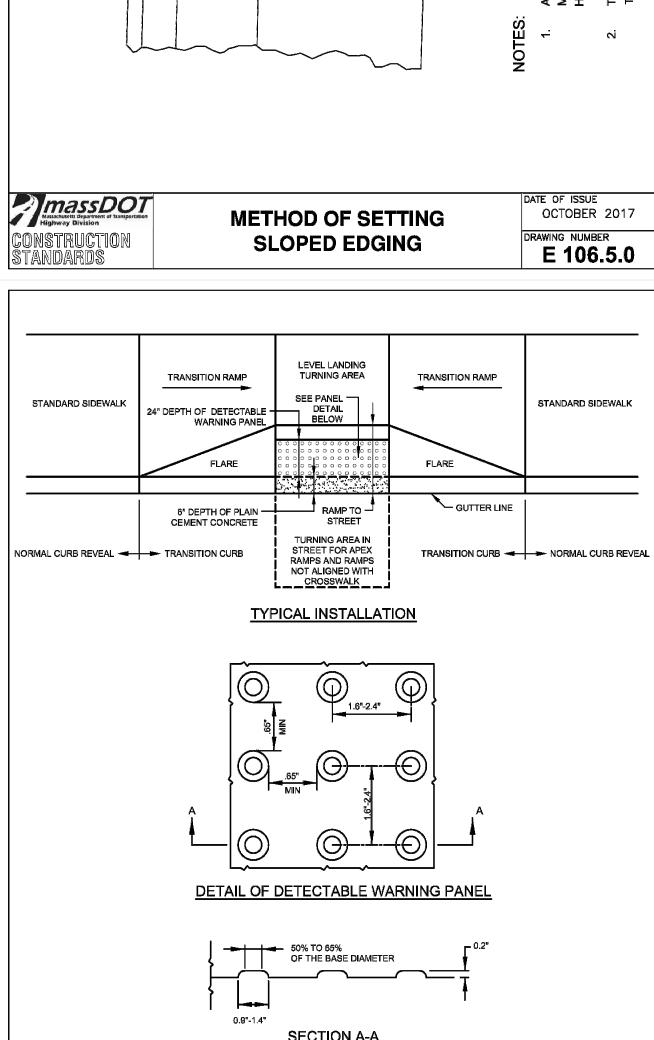
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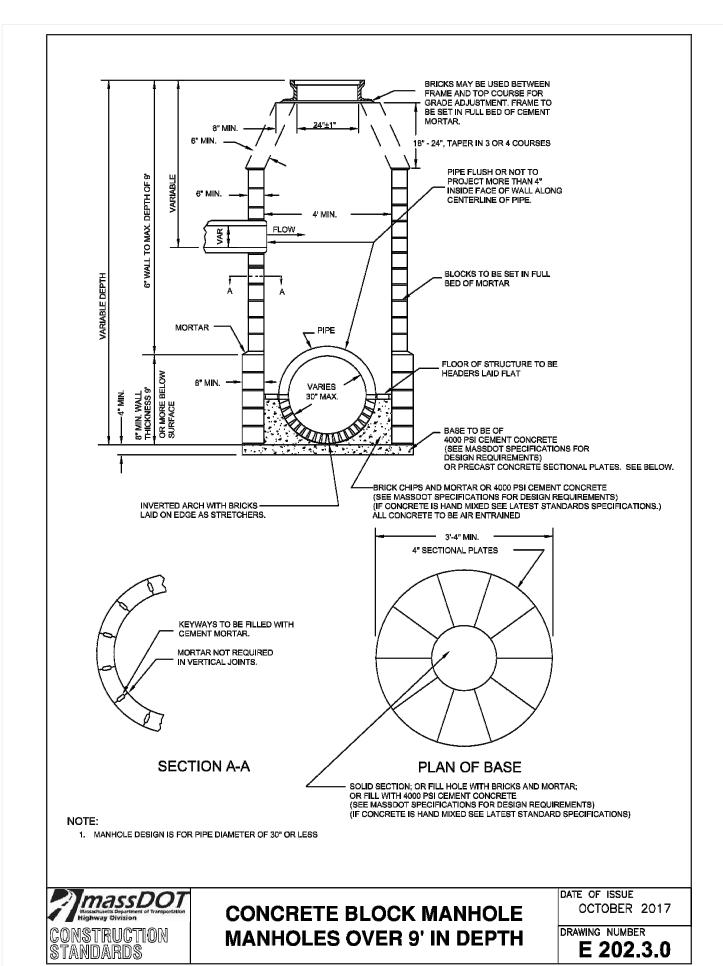
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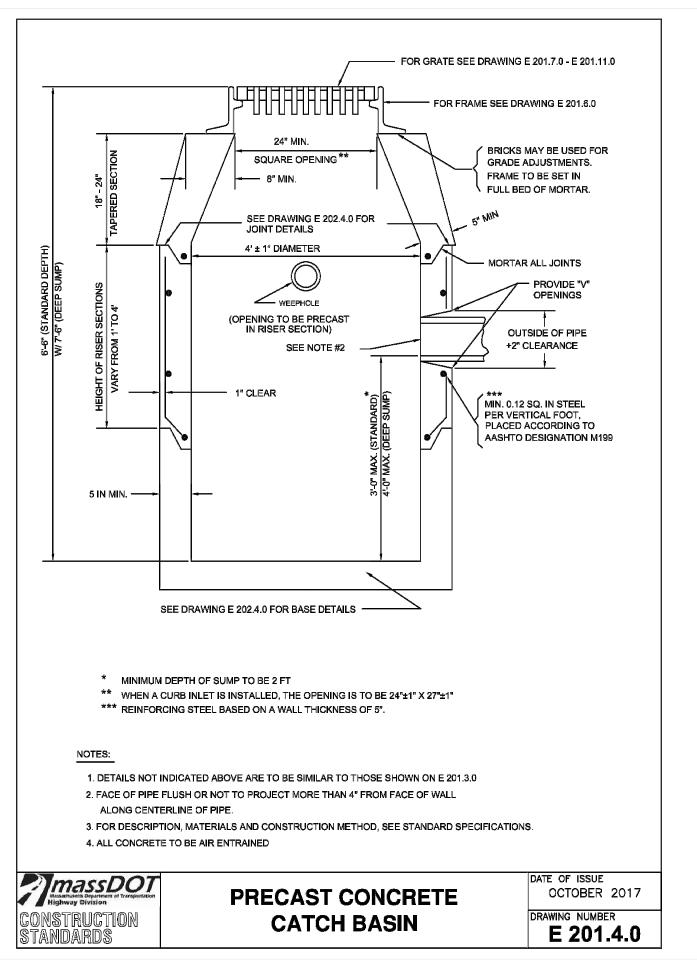
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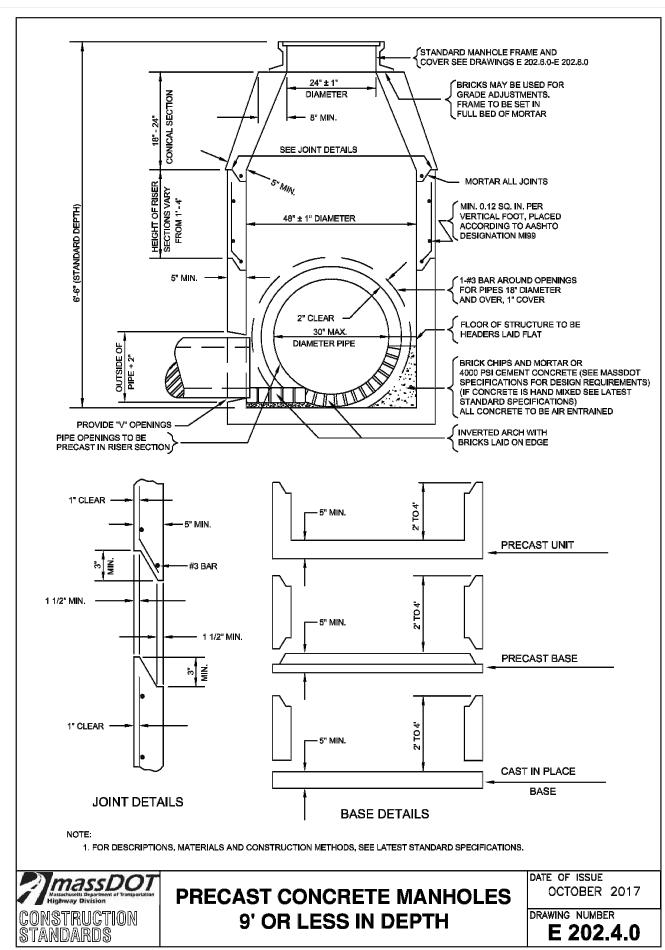
PEDESTRIAN TRAVEL

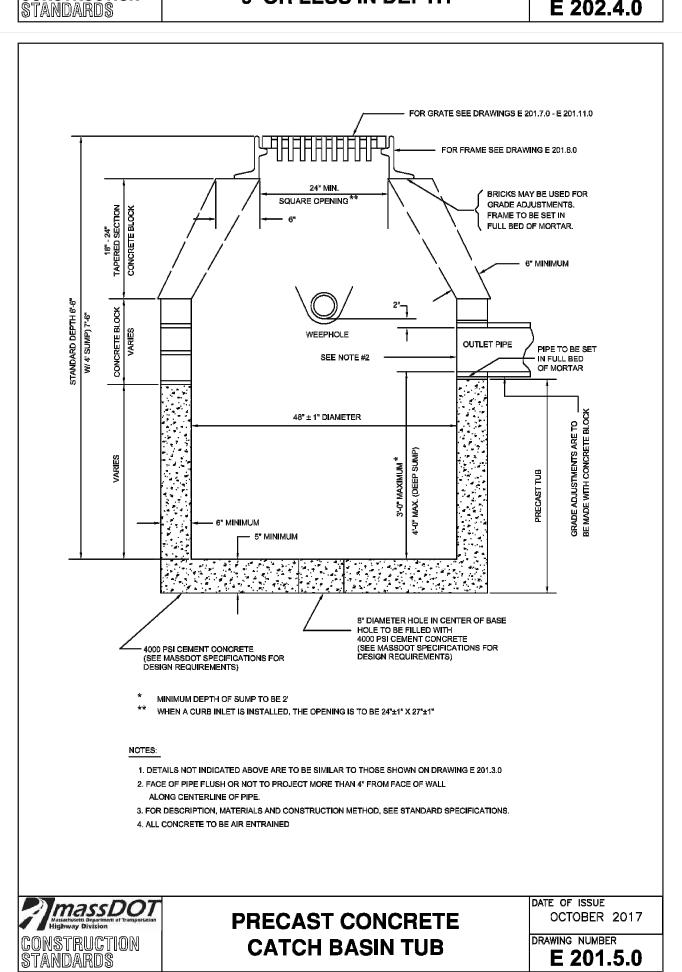


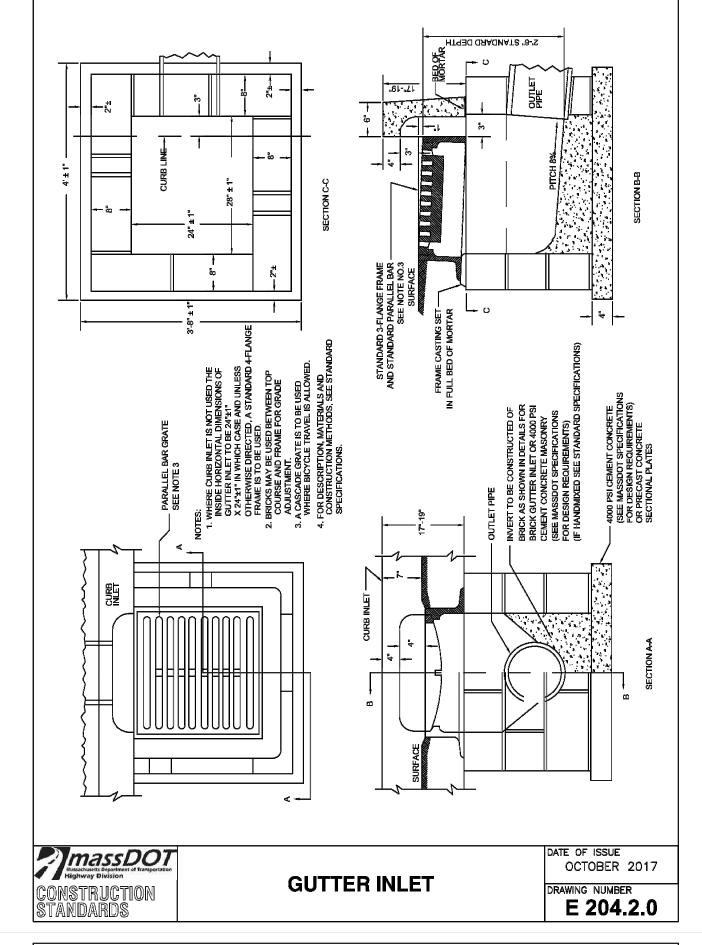


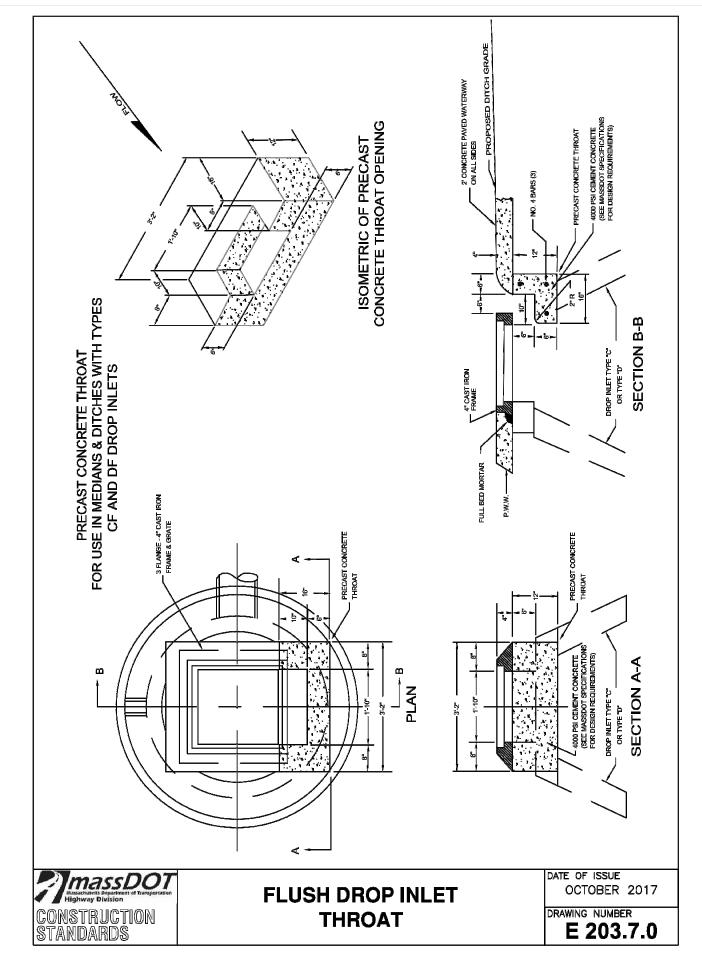


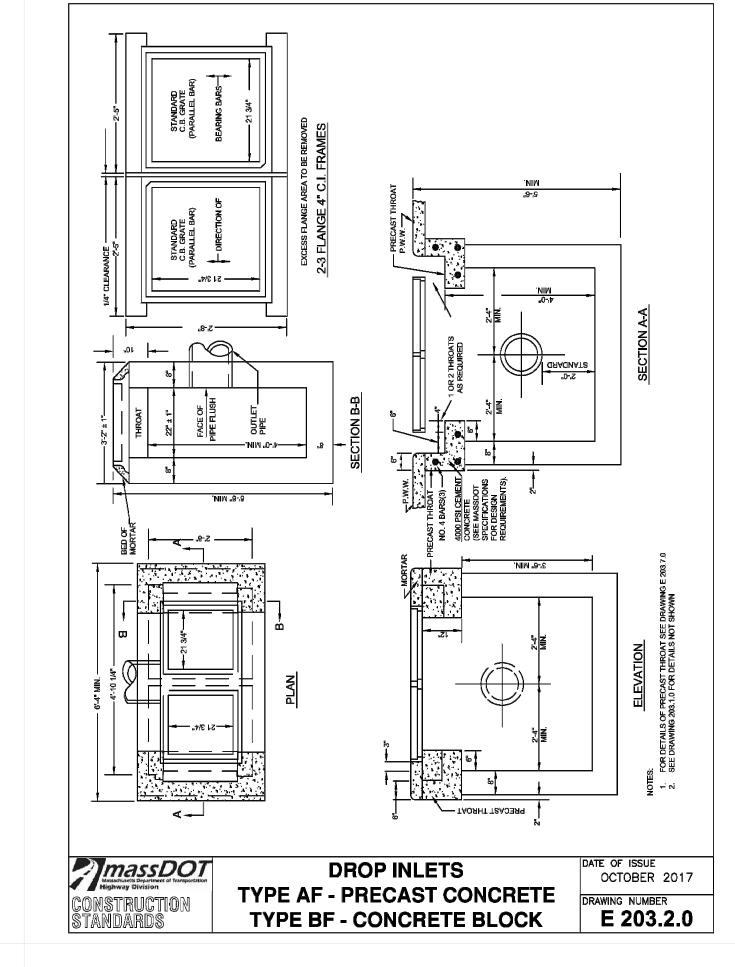


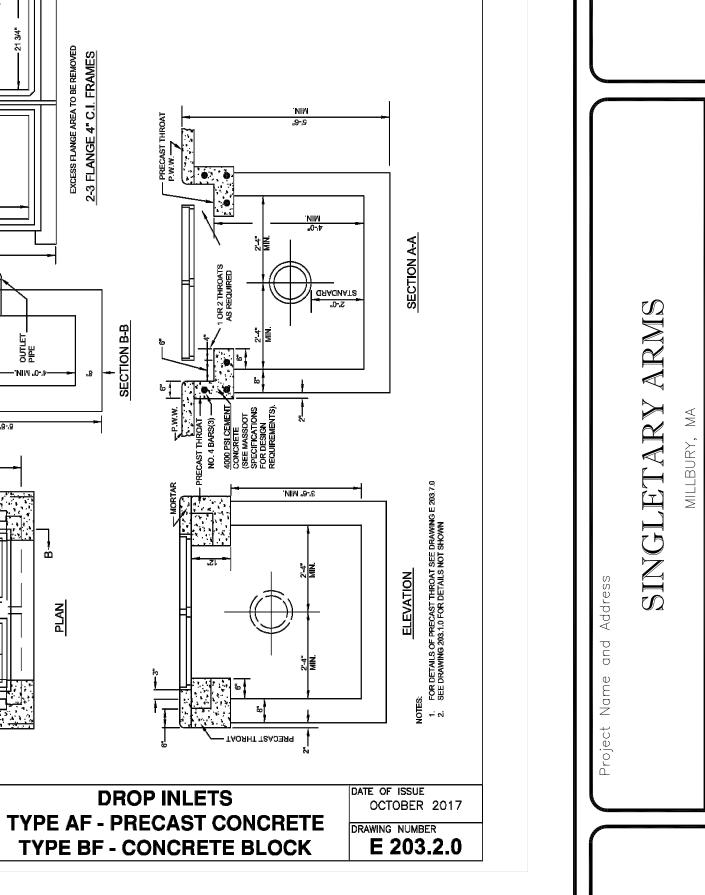


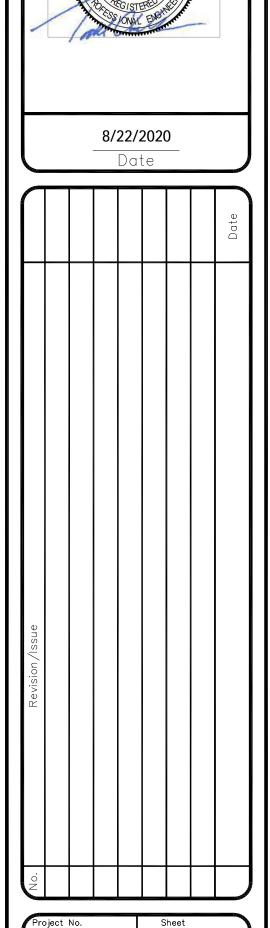












Project No. *** 08/06/2020



STORMTECH CHAMBER SPECIFICATIONS

- 1. CHAMBERS SHALL BE STORMTECH SC-160LP.
- 2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE.
- 3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- 4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- 5. CHAMBERS SHALL MEET THE MATERIAL REQUIREMENTS IN ASTM F2418-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"
- 7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE
- a. A STRUCTURAL EVALUATION THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
- b. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
- 8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-160LP SYSTEM

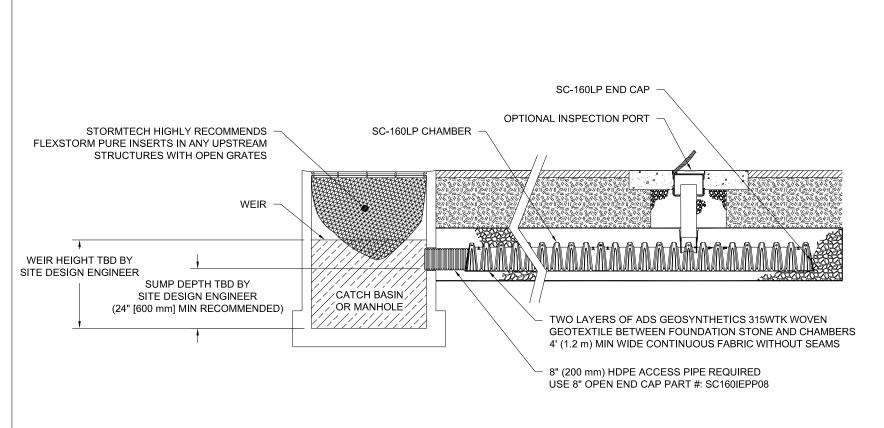
- 1. STORMTECH SC-160LP CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS
- 2. STORMTECH SC-160LP CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
- 3. FOUNDATION STONE AND EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE; AASHTO M43 #3,357, 4,
- 4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- 5. THE DEPTH OF FOUNDATION STONE SHALL BE DETERMINED BASED ON THE SUBGRADE BEARING CAPACITY PROVIDED BY THE SITE DESIGN
- 6. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES CONCERNING CHAMBER FOUNDATION DESIGN AND SUBGRADE BEARING CAPACITIES TO
- 7. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- 8. CHAMBERS SHALL BE INSTALLED "TOE TO TOE". NO ADDITIONAL SPACING BETWEEN ROWS IS REQUIRED
- 9. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.
- STONESHOOTER LOCATED OFF THE CHAMBER BED.
- BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE. BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- 10. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE

NOTES FOR CONSTRUCTION EQUIPMENT

- 1. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-160LP CHAMBERS IS LIMITED:
- NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS. NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE
- WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE" WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-106LP CONSTRUCTION GUIDE".
- 3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



INSPECTION & MAINTENANCE

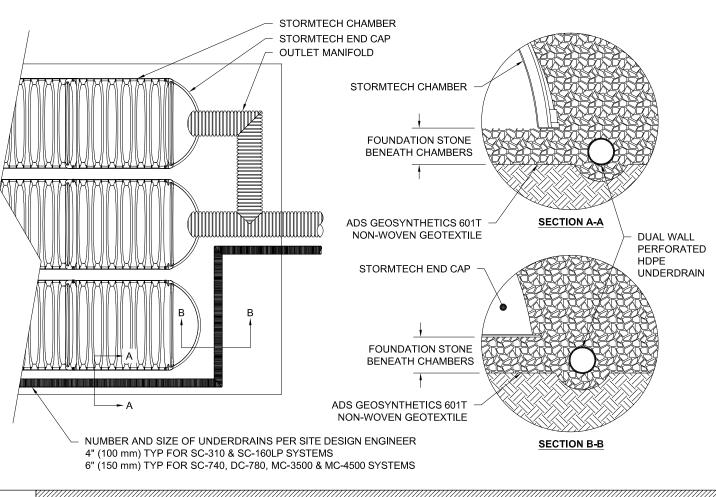
STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT

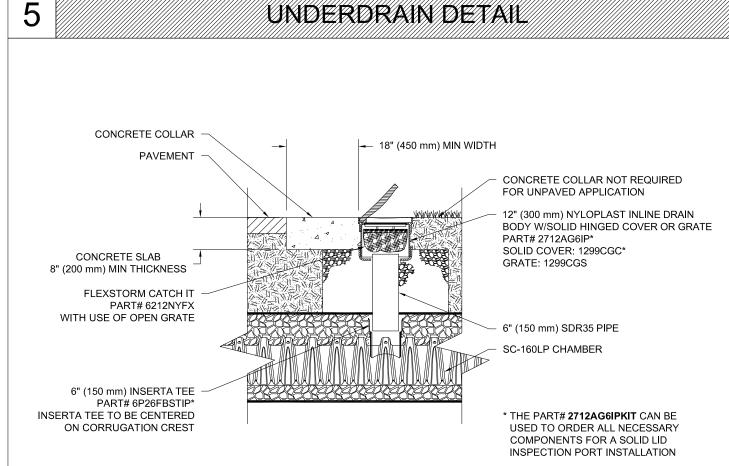
- A. INSPECTION PORTS (IF PRESENT) A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
- A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
- A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

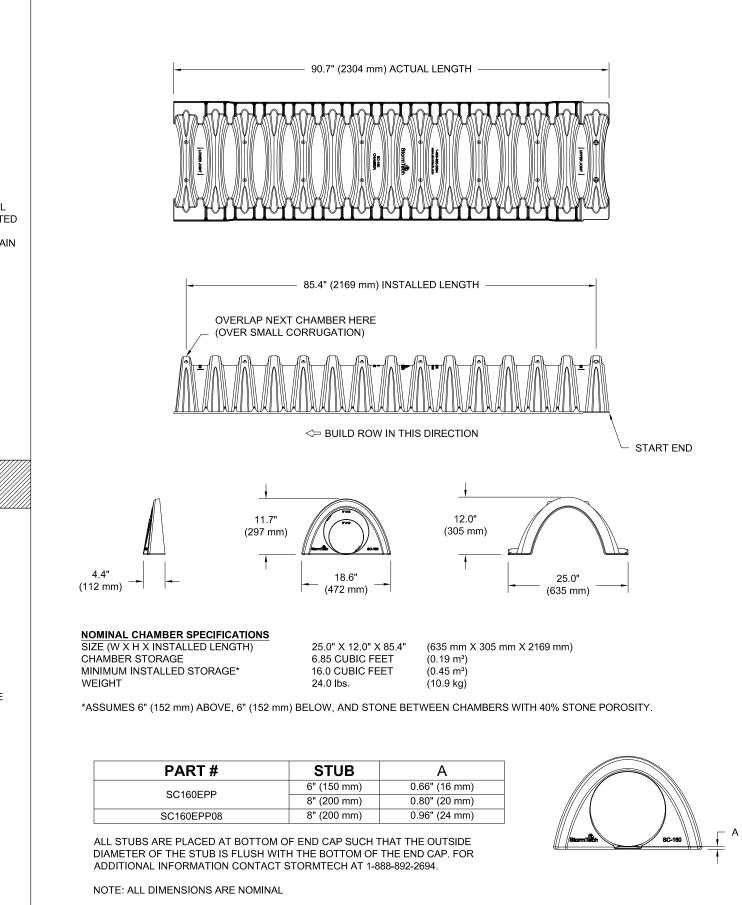
B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

- B. ALL ISOLATOR ROWS B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
- i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS. STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

- 1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- 2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS





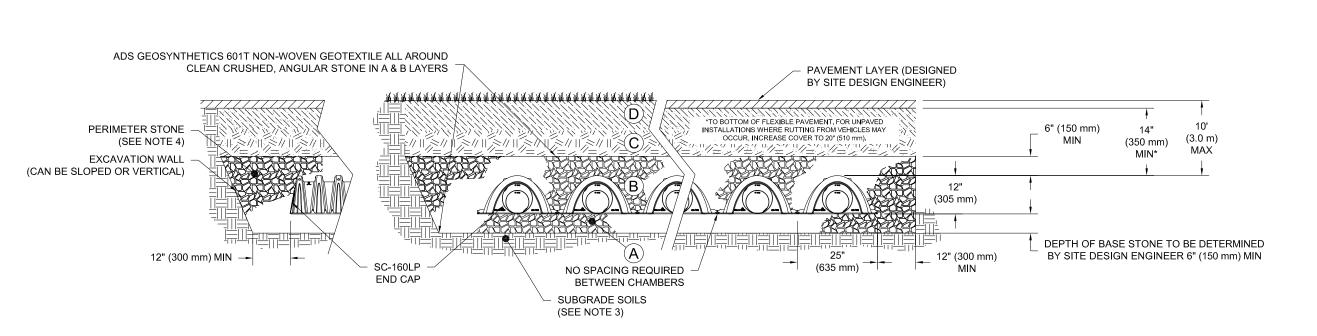


SC-160LP 6" (150 mm) INSPECTION PORT DETAIL SC-160LP TECHNICAL SPECIFICATIONS

ACCEPTABLE FILL MATERIALS: STORMTECH SC-160LP CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL	COMPACTION / DENSITY
			CLASSIFICATIONS	REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
С	STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 14" (355 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU	OR	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MA LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE
	SUBBASE MAY BE A PART OF THE 'C' LAYER.	OF THIS LAYER.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
В	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
Α	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

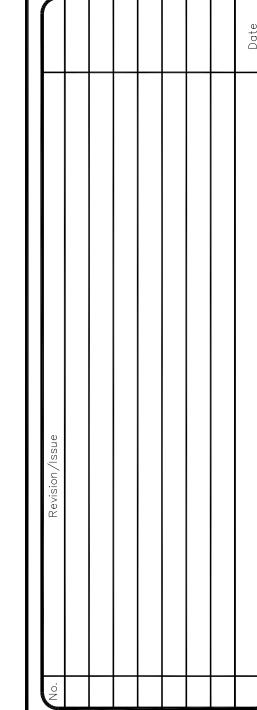
- 1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- 2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR. 3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



- 1. SC-160LP CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION
- 2. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- 3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- 4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- 5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

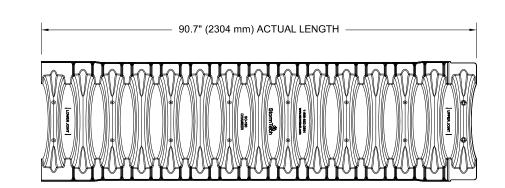


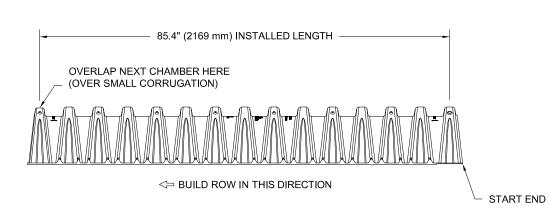
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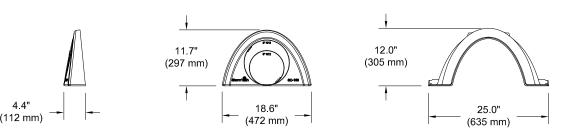


SC-160LP ISOLATOR ROW DETAIL









NOMINAL CHAMBER SPECIFICATIONS SIZE (W X H X INSTALLED LENGTH) CHAMBER STORAGE MINIMUM INSTALLED STORAGE*

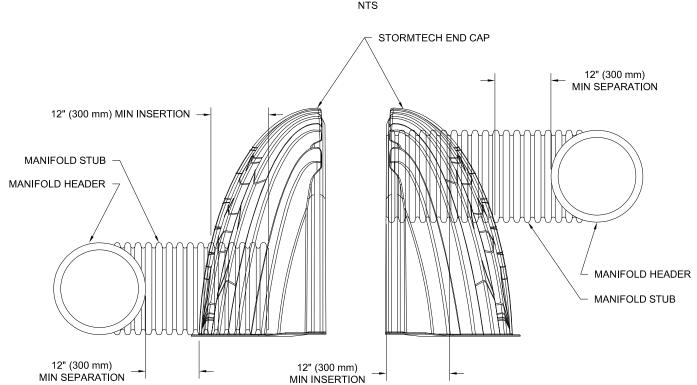
25.0" X 12.0" X 85.4" (635 mm X 305 mm X 2169 mm) 6.85 CUBIC FEET (0.19 m^3) 16.0 CUBIC FEET (0.45 m³)

*ASSUMES 6" (152 mm) ABOVE, 6" (152 mm) BELOW, AND STONE BETWEEN CHAMBERS WITH 40% STONE POROSITY.

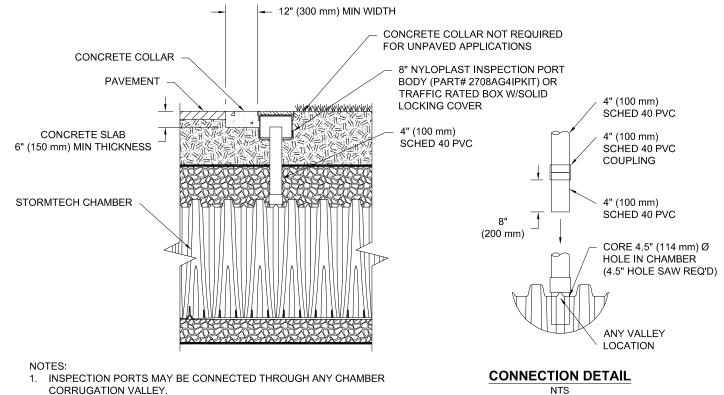
PART#	STUB	Α
004001555	6" (150 mm)	0.66" (16 mm)
SC160IEPP	8" (200 mm)	0.80" (20 mm)
SC160IEPP08	8" (200 mm)	0.96" (24 mm)

ALL STUBS ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

NOTE: ALL DIMENSIONS ARE NOMINAL



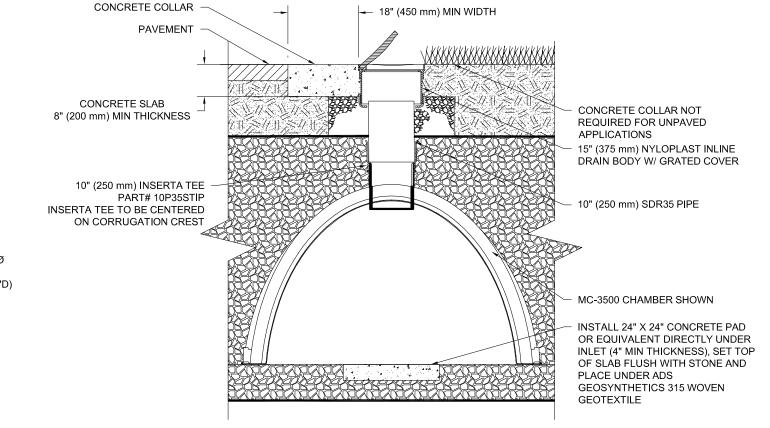
NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL



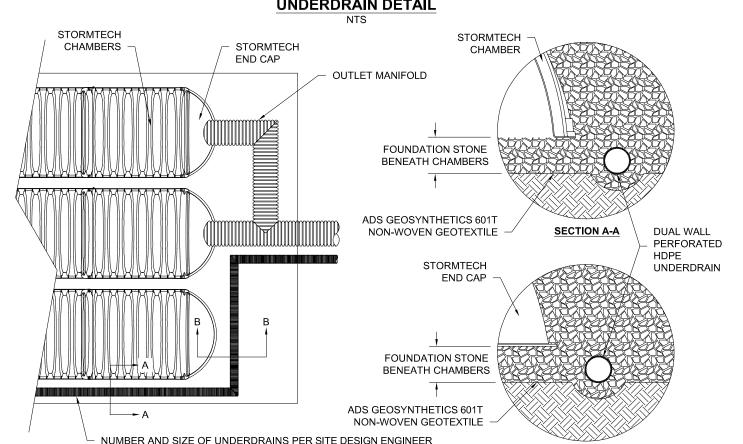
4" PVC INSPECTION PORT DETAIL

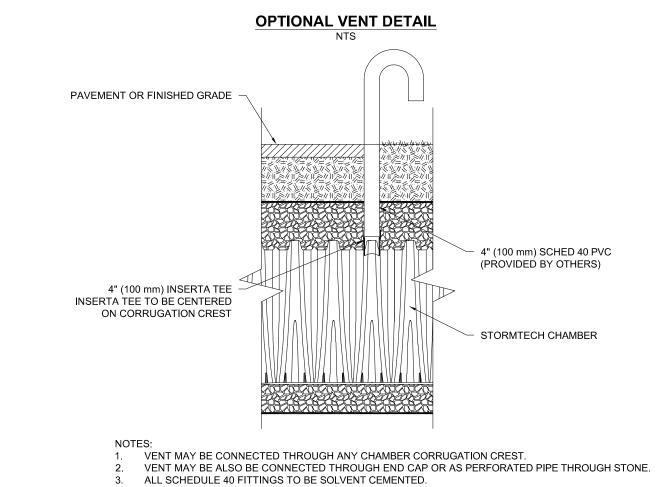
2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED (4" PVC NOT

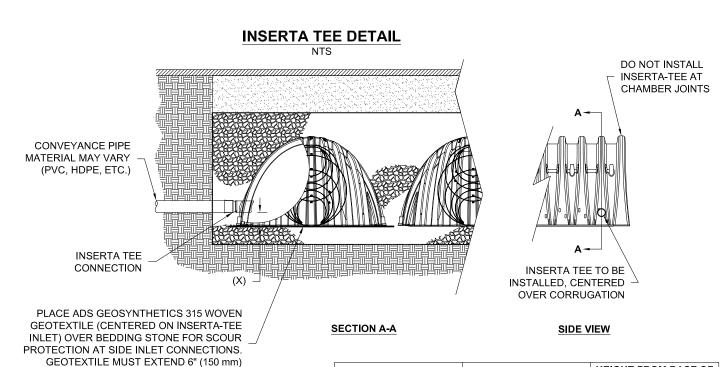
PROVIDED BY ADS).



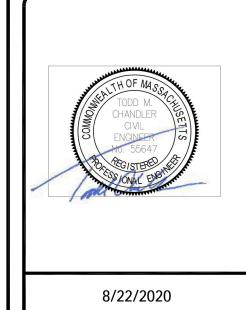


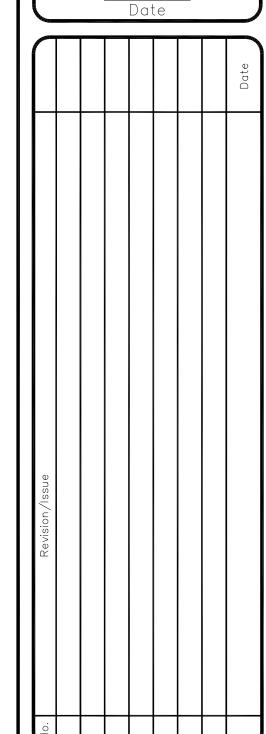




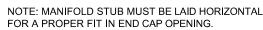


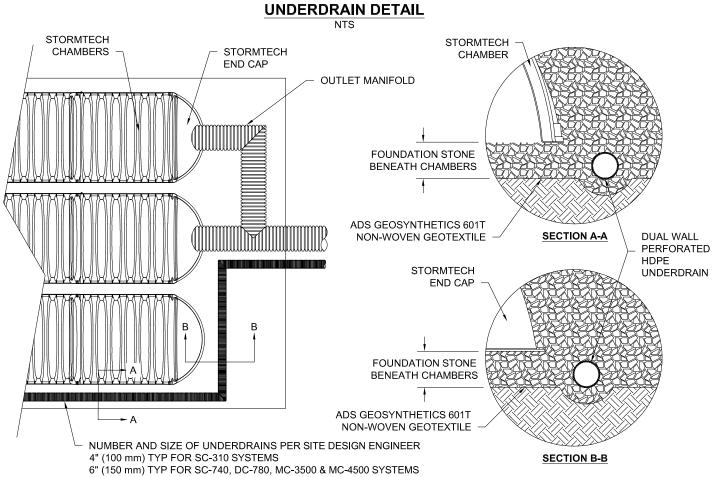
PAST CHAMBER FOOT	CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE (CHAMBER (X)		
	SC-310	6" (150 mm)	4" (100 mm)		
	SC-740	10" (250 mm)	4" (100 mm)		
	DC-780	10" (250 mm)	4" (100 mm)		
	MC-3500	12" (300 mm)	6" (150 mm)		
NOTE:	MC-4500	12" (300 mm)	8" (200 mm)		
 PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.	INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IROI				

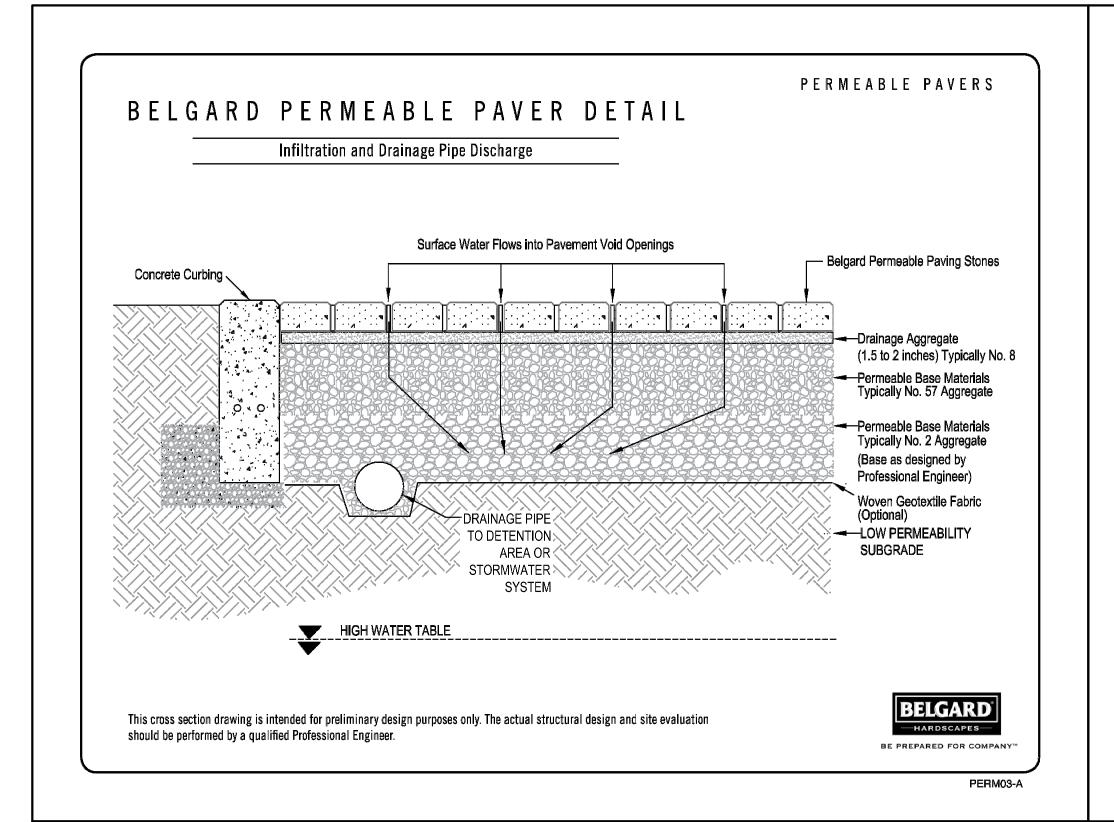


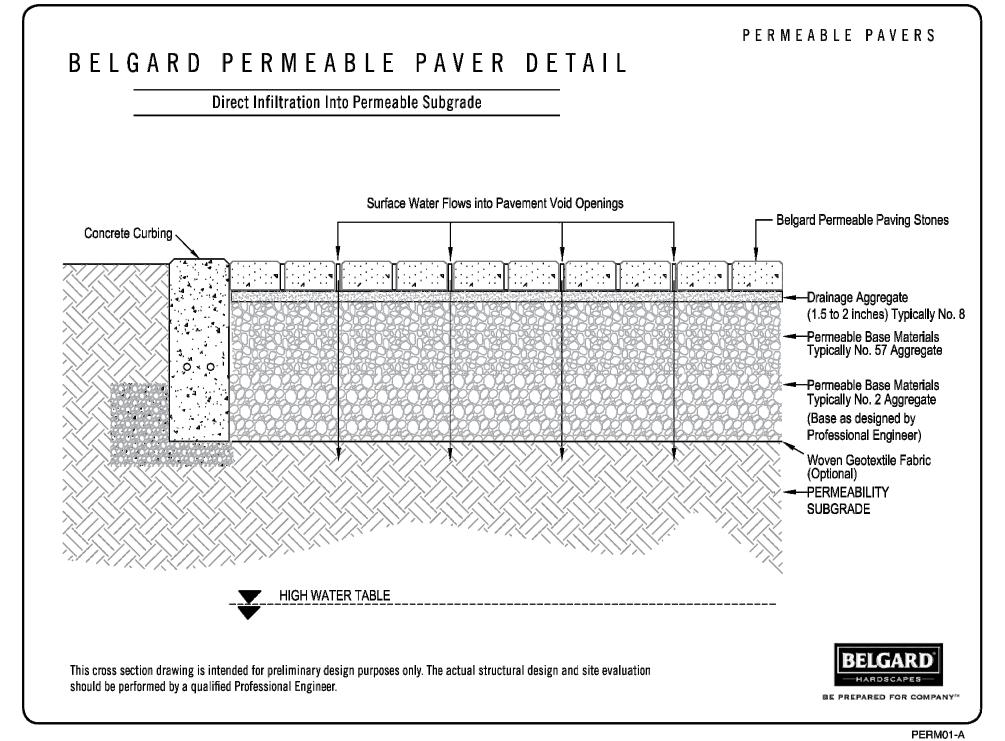


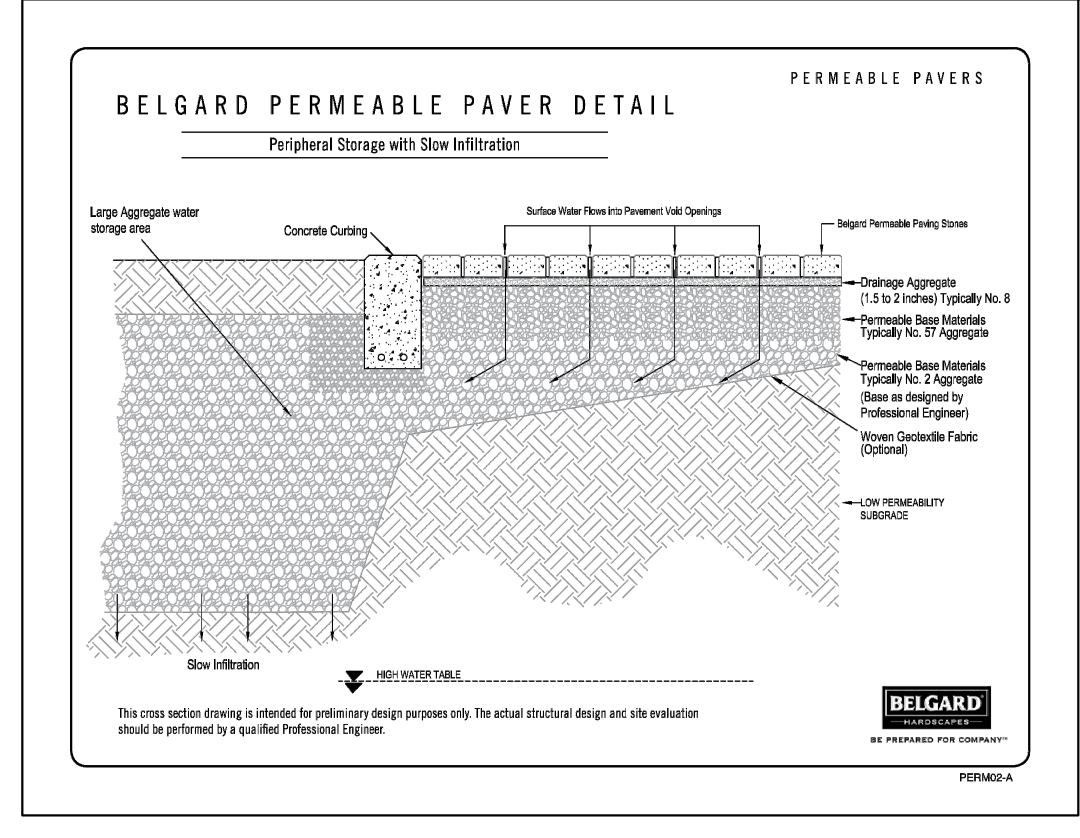
MC-SERIES END CAP INSERTION DETAIL



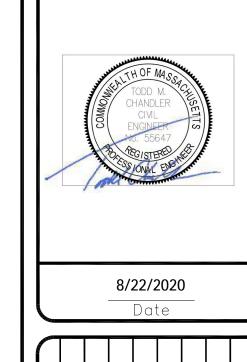


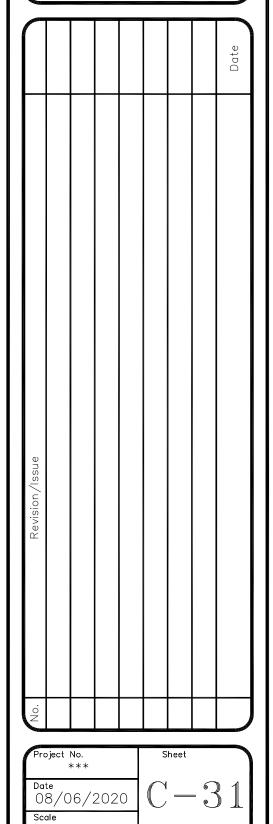






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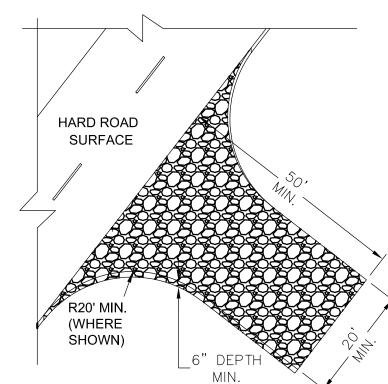


EROSION CONTROL NOTES:

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION & SEDIMENT CONTROL MEASURES AND PRACTICES THROUGHOUT THE PROJECT. ANY AND ALL FINES ASSOCIATED WITH EROSION CONTROL VIOLATIONS WILL BE THE CONTRACTOR'S RESPONSIBILITY.
- 2. EROSION CONTROL IS THE CONTRACTOR'S RESPONSIBILITY. THIS PLAN SHOULD BE USED AS A GUIDE AND REPRESENTS THE MINIMUM EROSION CONTROL DEVICES REQUIRED.
- 3. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. ADDITIONAL **EROSION & SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED** NECESSARY BY ON-SITE INSPECTION.
- 4. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL EROSION & SEDIMENT CONTROL DEVICES AFTER EACH RAINFALL EVENT.
- 5. THE CONTRACTOR SHALL PROVIDE ANY FURTHER EROSION CONTROL MEASURES IN ADDITION TO THOSE LISTED TO ENSURE THAT SILT WILL NOT LEAVE THE PROJECT CONFINES.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION & SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED WITH A HEALTHY STAND OF PERMANENT VEGETATION.
- 7. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AT COMPLETION OF CONSTRUCTION.
- 8. THE CONTRACTOR SHALL ENSURE THAT ALL DRAINAGE STRUCTURES. FLUMES. PIPES. ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
- 9. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY STABILIZATION AS REQUIRED.
- 10. THE CONTRACTOR SHALL PROVIDE A TEMPORARY CONSTRUCTION ENTRANCE FOR VEHICULAR TRAFFIC AT LOCATION SHOWN.
- 11. ALL EROSION CONTROL DEVICES SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS AND DESIGN CRITERIA OF THE DEPARTMENT OF PUBLIC WORKS, CITY OF BRANSON WEST, MISSOURI,
- 12. THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE STREETS OF DEPOSITED MUD AS FREQUENTLY AS NEEDED AS DETERMINED BY THE ENGINEER IN ORDER TO KEEP THEM USABLE AND TO CONTROL DUST.
- 13. SEE TEMPORARY VEGETATION REQUIREMENT NOTES ON THIS SHEET FOR EXPOSED SOIL WHERE NO ACTIVITY WILL OCCUR FOR MORE THAN 14 DAYS.
- 14. CONTRACTOR IS RESPONSIBLE FOR PHASED INSTALLATION OF EROSION CONTROL BMP'S IN ORDER TO PREVENT SEDIMENT FROM BREACHING THE LIMITS OF DISTURBANCE.

NOTES:

- INSTALL AS SOON AS POSSIBLE BEFORE
- START OF GRADING
- PLACE FILTER FABRIC UNDER STONE USE 3"-6" CLEAN CRUSHED LIMESTONE
- REPLACE AS NEEDED TO MAINTAIN 6" DEPTH



GRAVEL CONSTRUCTION ENTRANCE / EXIT NOT TO SCALE

POLLUTION PREVENTION PROCEDURE NOTES

1. HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS:

SHALL: PREVENT SPILLS

USE PRODUCTS UP FOLLOW LABEL DIRECTIONS FOR DISPOSAL

REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING TRASH

RECYCLE WASTES WHENEVER POSSIBLE

SHALL NOT: POUR WASTE INTO SEWERS OR WATERWAYS ON THE GROUND

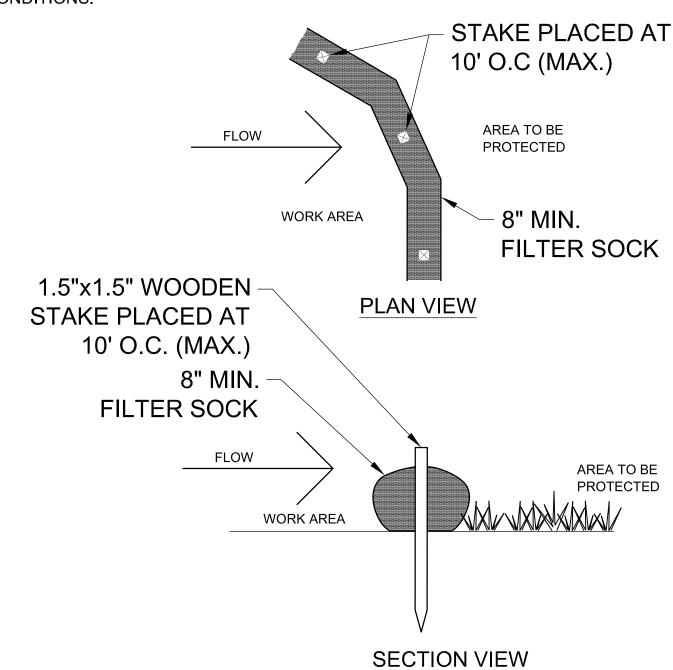
> POUR WASTE DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS BURY CHEMICALS OR CONTAINERS. OR DISPOSE OF THEM WITH

OTHER WASTE

BURN OR MIX CHEMICALS OR CONTAINERS WASH SEDIMENT DOWN STORM SEWER INLETS

2. CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ONSITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.

- 3. NO WASTE MATERIALS SHALL BE BURIED ON-SITE.
- 4. MIXING, PUMPING, TRANSFERRING OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE. DITCH OR STORM DRAIN.
- 5. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED ONLY IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS.
- 6. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO STORM SEWERS, STREAMS, DITCHES, LAKES, ETC WITHOUT BEING TREATED. A CONCRETE WASHOUT AREA SHALL BE PROVIDED. SEE DETAIL ON THIS SHEET.
- 7. ALL PAINT, SOLVENTS, PETROLEUM PRODUCTS AND PETROLEUM WASTE PRODUCTS, AND STORAGE CONTAINERS (SUCH AS DRUMS, CANS, OR CARTONS) SHALL BE STORED ACCORDING TO BMPS. THE MATERIALS EXPOSED TO PRECIPITATION SHALL BE STORED IN WATERTIGHT, STRUCTURALLY SOUND, CLOSED CONTAINERS. ALL CONTAINERS SHALL BE INSPECTED FOR LEAKS OR SPILLAGE DURING THE ONCE PER WEEK INSPECTION OF BMPS. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO SOIL, THE SOIL SHALL BE DUG UP AND PROPERLY DISPOSED OF. SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER OR PRODUCT DESIGNED FOR THAT PURPOSED AND DISPOSED OF AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. THESE MATERIALS WILL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH MODNR REQUIREMENTS.
- STATE LAW REQUIRES THE PARTY RESPONSIBLE FOR A PETROLEUM PRODUCT SPILL IN EXCESS OF 50 GALLONS TO REPORT THE SPILL TO MASSDEQ AS SOON AS PRACTICAL AFTER DISCOVERY. FEDERAL LAW REQUIRES THE RESPONSIBLE PARTY TO REPORT ANY RELEASE OF OIL IF IT REACHES OR THREATENS A SEWER, LAKE, CREEK, STREAM, RIVER, GROUNDWATER, WETLAND, OR AREA, LIKE A ROAD DITCH, THAT DRAINS INTO ONE OF THE ABOVE.
- $9.\quad$ SUFFICIENT TEMPORARY TOILET FACILITIES TO SERVE THE NUMBER OF WORKERS ON THE SITE SHALL BE PROVIDED. THE FACILITIES SHALL BE SERVICED FREQUENTLY TO MAINTAIN A SANITARY CONDITIONS.



NOTES:

- 1. COMPOST FILTER SOCK SHALL MEET THE REQUIREMENTS OF MoDOT SECTION 806.8.6.4.8. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL BEFORE INSTALLING
- 2. FILTER SOCK DEPICTED IS FOR MINIMUM SLOPES. GREATER SLOPES MAY REQUIRE LARGER SOCKS PER ENGINEER.
- 3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

COMPOST FILTER SOCK DETAILS NOT TO SCALE

TEMPORARY & PERMANENT VEGETATION REQUIREMENTS:

TOPSOIL REQUIREMENTS:

PERMANENT AND TEMPORARY SEEDING -

LOOSEN COMPACTED SOILS TO A DEPTH OF 4 INCHES. IF RAINFALL CAUSES THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING. SLOPES STEEPER THAN 33 PERCENT (3:1) GRADE SHOULD BE GROOVED OR FURROWED ON THE CONTOUR BEFORE SEEDING. A GOOD SEEDBED IS WELL PULVERIZED, LOOSE, AND UNIFORM.

PERMANENT SEEDING -

A MINIMUM OF 4 INCHES OF LOOSE TOPSOIL SHOULD BE SPREAD ON AREAS TO BE SEEDED

LIME REQUIREMENTS:

PERMANENT AND TEMPORARY SEEDING -

LIME SHOULD BE APPLIED ACCORDING TO SOIL TEST RECOMMENDATIONS. IF THE PH OF THE SOIL IS UNKNOWN, LIME SHALL BE INCORPORATED INTO THE TOP 4 INCHES OF SOIL AT THE RATE OF 1500 POUNDS EFFECTIVE NEUTRALIZING MATERIAL (ENM) PER ACRE. SOILS WITH A PH OF SIX OR HIGHER NEED NOT BE LIMED.

FERTILIZER REQUIREMENTS:

PERMANENT SEEDING -

FERTILIZER SHOULD BE APPLIED BASED ON SOIL TESTS. WHEN THESE ARE NOT POSSIBLE, A 13-13-13 GRADE FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4 INCHES OF SOIL AT THE RATE OF 500 POUNDS PER

TEMPORARY SEEDING -

FERTILIZER SHOULD BE APPLIED BASED ON SOIL TESTS. WHEN THESE ARE NOT POSSIBLE, A 10-10-10 GRADE FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4 INCHES OF SOIL AT THE RATE OF 200 POUNDS PER

SEED REQUIREMENTS:

PERMANENT SEEDING -

SEED MIX SHALL CONSIST OF NINETY PERCENT (90%) TALL FESCUE AND TEN PERCENT (10%) ANNUAL RYEGRASS. SEED MIXTURE SHALL BE APPLIED AT A RATE OF 400 POUNDS PER ACRE.

TEMPORARY SEEDING - SEED MIX SHALL CONSIST OF ANY COMBINATION OF TALL FESCUE, ANNUAL RYEGRASS, SUDAN, MILLET, WHEAT, OR OATS, SEED MIXTURE SHALL BE APPLIED AT A RATE OF 200 POUNDS PER ACRE.

DORMANT SEASON SEEDING - SEED MIX SHALL CONSIST OF 80 PERCENT (80%) TALL FESCUE, TEN PERCENT (10%) ANNUAL RYEGRASS, AND TEN PERCENT (10%) SPRING OATS. SEED MIXTURE SHALL BE APPLIED AT A RATE OF 600 POUNDS PER ACRE

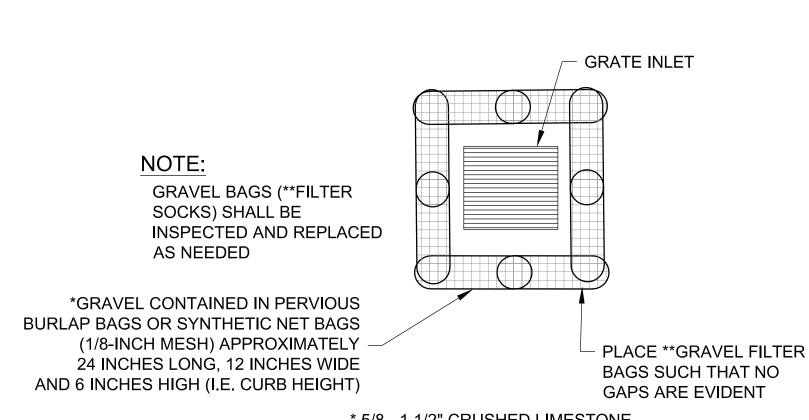
MULCH REQUIREMENTS:

PERMANENT AND TEMPORARY SEEDING -

WHERE SLOPES ARE LESS THAN 25 PERCENT (4:1) GRADE, CEREAL GRAIN MULCH IS REQUIRED AT THE RATE OF 100 POUNDS PER 1,000 SQUARE FEET (4,500 LBS/ACRE). CEREAL GRAIN MULCH SHALL MEET THE REQUIREMENTS OF SECTION 802 OF THE MISSOURI STATE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION FOR TYPE 1 MULCH. WHERE SLOPES ARE 25 PERCENT (4:1) OR GREATER GRADE. TYPE 3 MULCH ("HYDROMULCH") MEETING THE REQUIREMENTS OF SECTION 802 OF THE STATE SPECIFICATIONS SHALL BE USED. TYPE 3 MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 2,000 LBS/ACRE.

DATES FOR SEEDING:

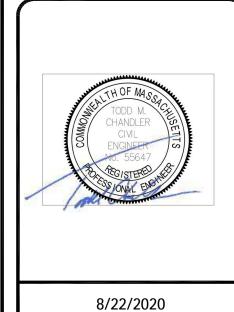
PERMANENT SEEDING - MARCH 1 TO JUNE 1 AND AUGUST 15 TO NOVEMBER 1 TEMPORARY SEEDING - CAN OCCUR DURING ANY SEASON, HOWEVER WINTER IS THE LEAST TOLERANT. DORMANT SEASON SEEDING - DECEMBER 15 TO FEBRUARY 29



* 5/8 - 1 1/2" CRUSHED LIMESTONE

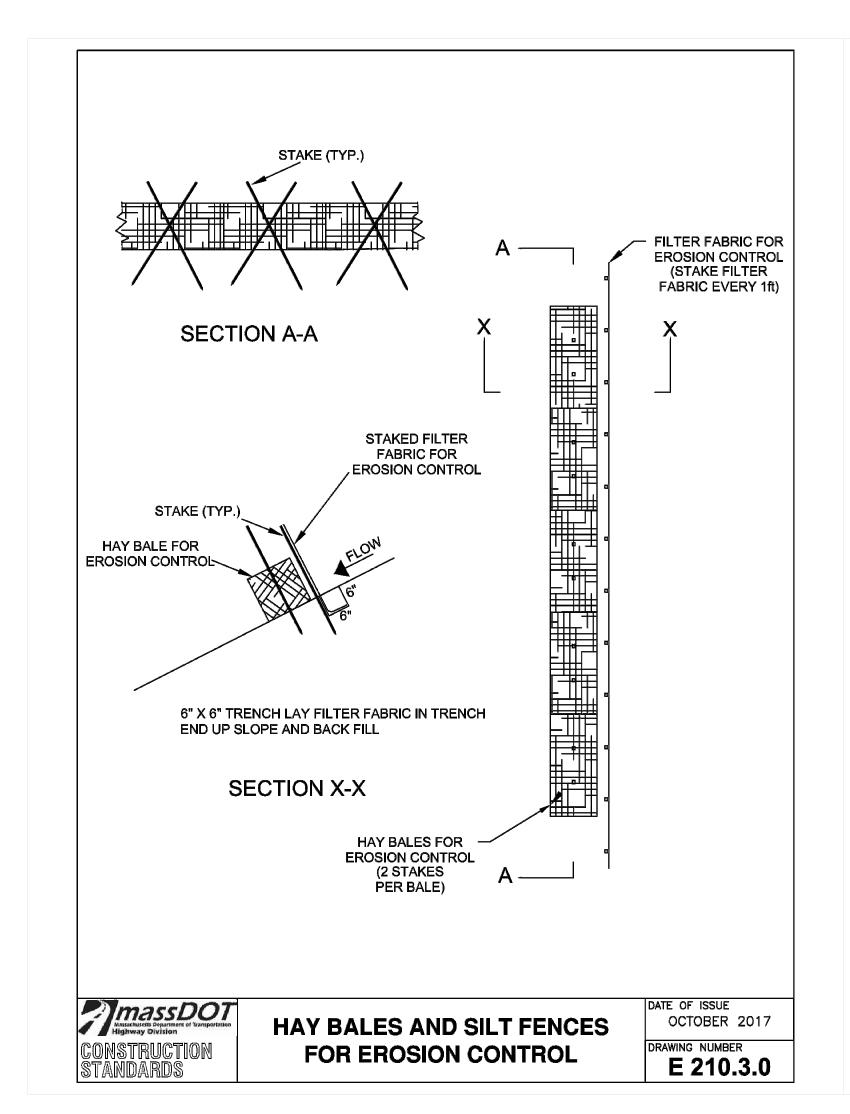
** COMPOST FILTER SOCKS MAY BE USED IN LIEU OF GRAVEL BAGS

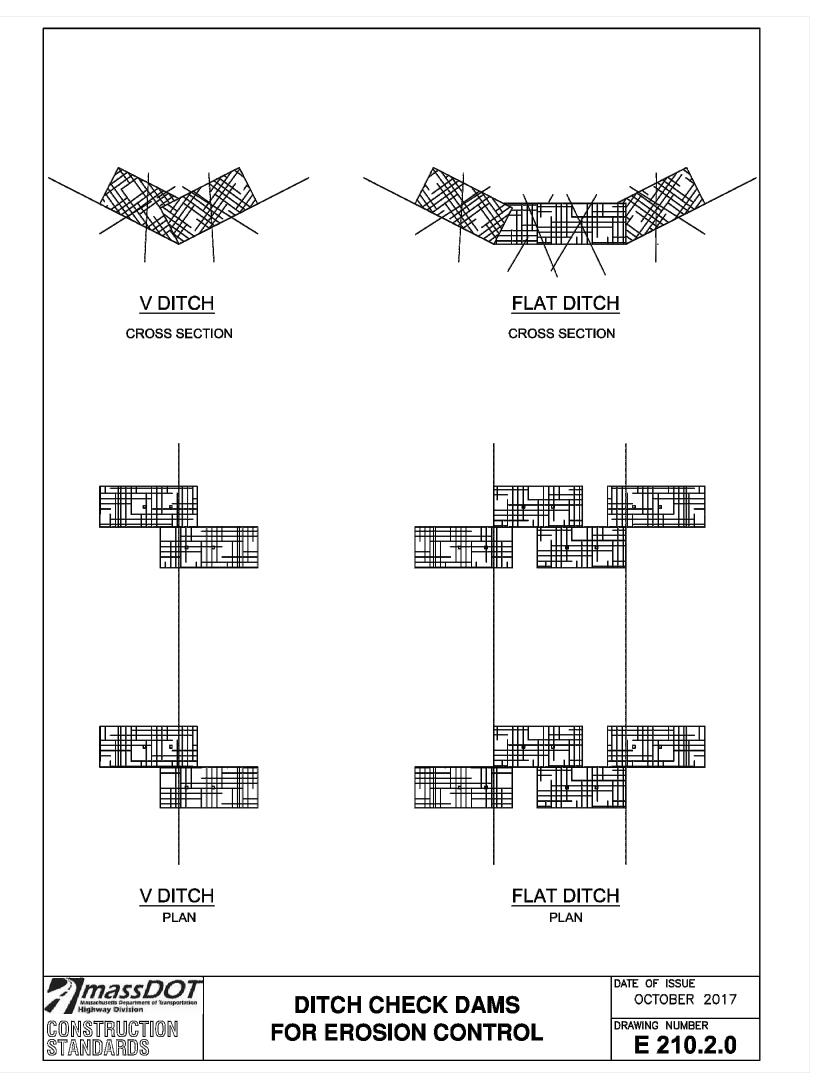
GRATE INLET PROTECTION DETAIL NOT TO SCALE



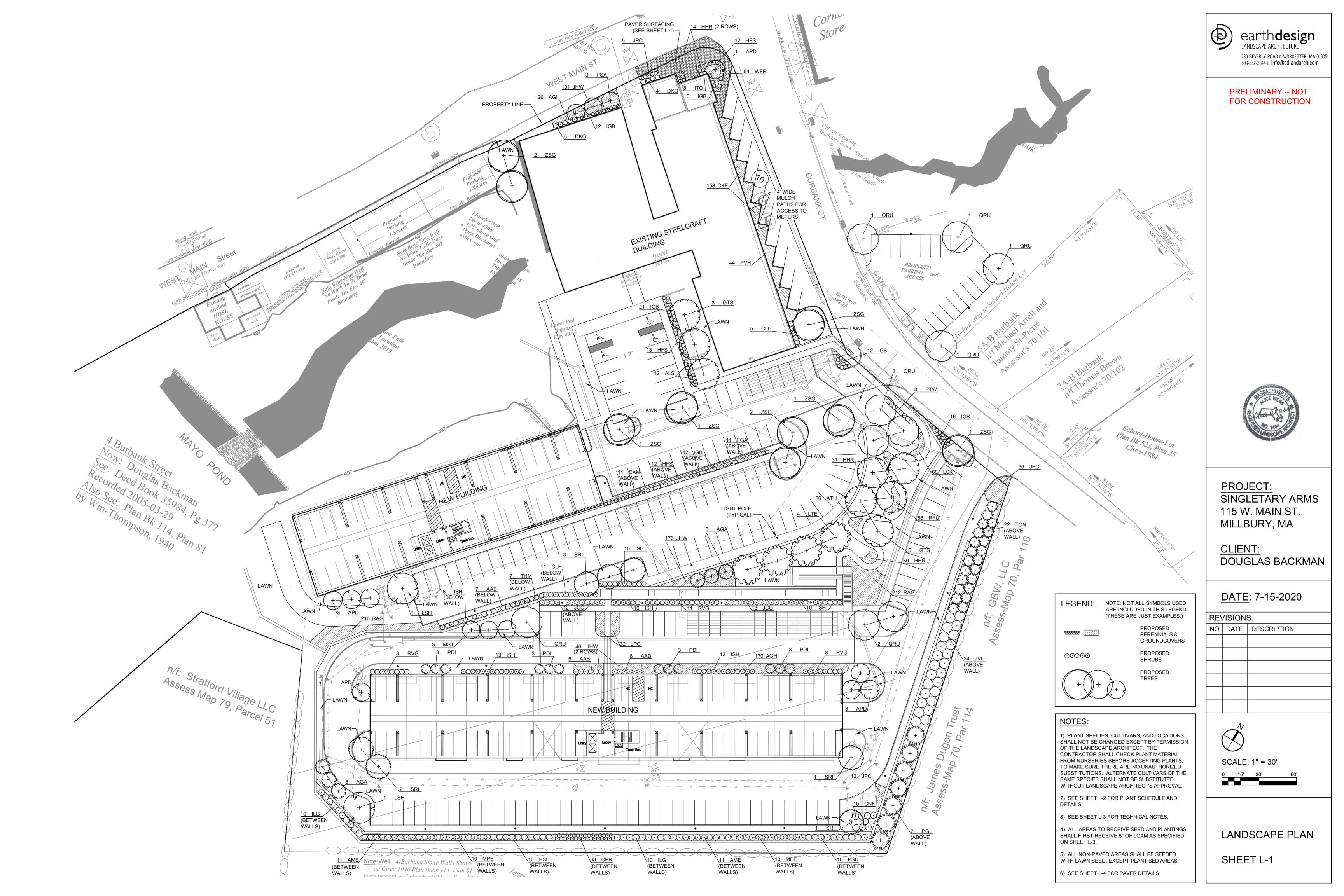
Date

08/06/2020 AS NOTED



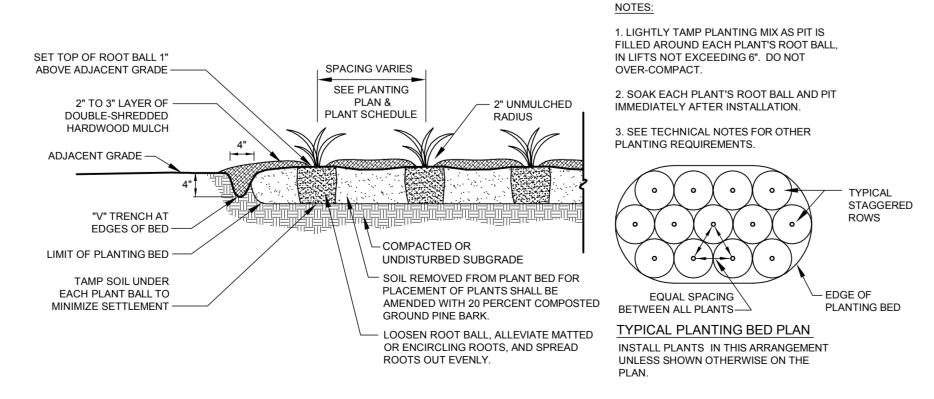


DETAIL CONTROL SEDIMENT 8/22/2020 Date



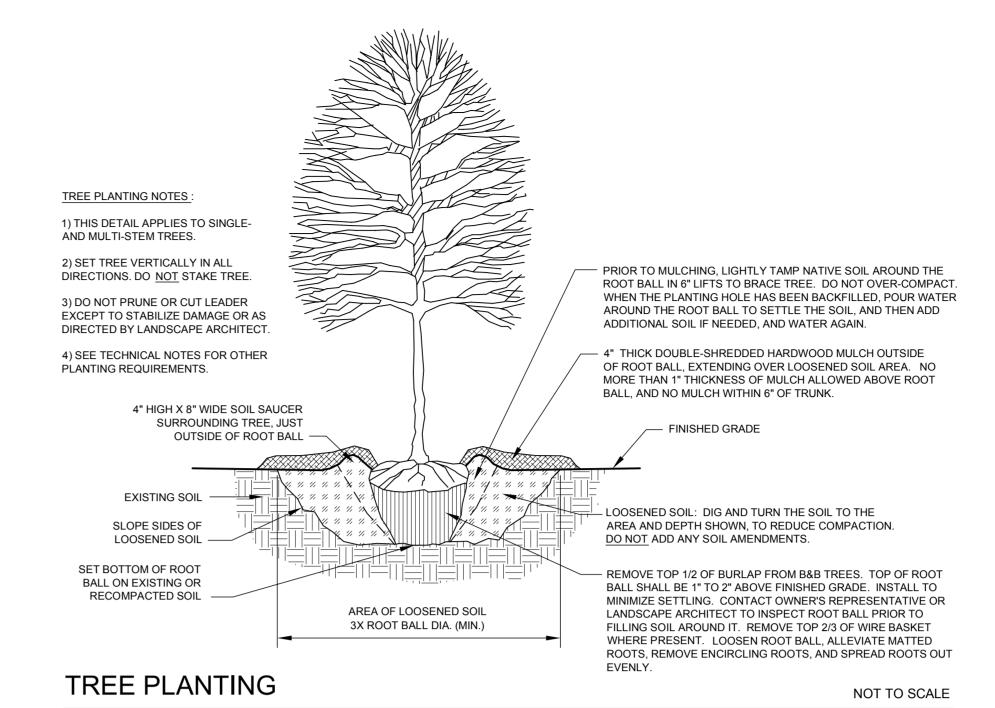
			PLANT SCHEDULE		
SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	MINIMUM SIZE AT PLANTING	PLANT SPACING & NOTES
SHADE TREES:			'	-	
GTS	8	GLEDITZIA TRIACANTHOS VAR. INERMIS 'SKYLINE'	SKYLINE HONEYSUCKLE	2.5" CALIPER	B&B, PLANT 25' ON CENTER
LSH	2	LIQUIDAMBAR STYRACIFLUA 'HAPPIDAZE'	HAPPIDAZE SWEETGUM	2.5" CALIPER	B&B, PLANT 25' ON CENTER
LTE	4	LIRIODENDRON TULIPIFERA 'EMERALD CITY'	EMERALD CITY TULIP POPLAR	2.5" CALIPER	B&B, PLANT 25' ON CENTER
QRU	10	QUERCUS RUBRA	RED OAK	2.5" CALIPER	B&B, PLANT 25' ON CENTER
SRI	7	SYRINGA RETICULATA 'IVORY SILK'	IVORY SILK JAPANESE TREE LILAC	2.5" CALIPER	B&B, PLANT 20' ON CENTER
ZSG	9	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA	2.5" CALIPER	B&B, PLANT 25' ON CENTER
ORNAMENTAL AND	D EVERGREEN TREES:			1	
AGA	6	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	8' HEIGHT	B&B, MULTI-STEM, PLANT 12' ON CENTER
APD	8	AMELANCHIER X GRANDIFLORA 'PRINCESS DIANA'	PRINCESS DIANA SERVICEBERRY	8' HEIGHT	B&B, MULTI-STEM, PLANT 15' ON CENTER
MST		MAGNOLIA STELLATA	STAR MAGNOLIA	8' HEIGHT	B&B, PLANT 15' ON CENTER
PGL		PICEA GLAUCA	WHITE SPRUCE	8' HEIGHT	B&B, PLANT 15' ON CENTER
PSA	3	PRUNUS SARGENTII 'COLUMNARIS'	COLUMNAR SARGENT CHERRY	8' HEIGHT	B&B, PLANT 15' ON CENTER
SHRUBS:		T			T
AAB		ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	BRILLIANT ARONIA	# 3 POT	PLANT 4' ON CENTER
ALS		ARONIA MELANOCARPA 'LOW SCAPE MOUND'	LOW SCAPE MOUND ARONIA	# 3 POT	PLANT 3' ON CENTER
AME		ARONIA MELANOCARPA (STRAIGHT SPECIES)	BLACK ARONIA	# 3 POT	PLANT 5' ON CENTER
CAM		CEANOTHUS AMERICANUS	NEW JERSEY TEA	# 3 POT	PLANT 3' ON CENTER
CLH		CLETHRA ALNIFOLIA (STRAIGHT SPECIES)	HUMMINGBIRD SUMMERSWEET	# 3 POT	PLANT 4' ON CENTER
CNF		CLETHRA ALNIFOLIA (STRAIGHT SPECIES)	SUMMERSWEET	# 3 POT	PLANT 5' ON CENTER
CPR		COMPTONIA PEREGRINA	SWEETFERN KODIAK ODANGE BUSH HONEVOLGKI E	# 3 POT	PLANT 3' ON CENTER
DKO		DIERVILLA X 'KODIAK ORANGE'	KODIAK ORANGE BUSH HONEYSUCKLE	# 3 POT	PLANT 4' ON CENTER
FGA HFS		FOTHERGILLA GARDENII HYPERICUM FRONDOSUM 'SUNBURST'	DWARF FOTHERGILLA SUNBURST ST. JOHN'S WORT	# 3 POT # 3 POT	PLANT 3' ON CENTER PLANT 3' ON CENTER
IGB		ILEX GLABRA 'GEM BOX'	GEM BOX INKBERRY	#3 POT	PLANT 3' ON CENTER. DO NOT SUBSTITUTE LARGER CULTIVAR FOR THIS PLANT.
ILG	20	ILEX GLABRA (STRAIGHT SPECIES)	INKBERRY	# 3 POT	PLANT 5' ON CENTER
ISH	64	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	# 3 POT	PLANT 4' ON CENTER
ITO	8	ILEX CRENATA 'SOFT TOUCH'	SOFT TOUCH HOLLY	# 3 POT	PLANT 3' ON CENTER. DO <u>NOT</u> SUBSTITUTE LARGER CULTIVAR FOR THIS PLANT.
JCO	25	JUNIPERUS CHINENSIS 'OLD GOLD'	OLD GOLD JUNIPER	# 3 POT	PLANT 4' ON CENTER
JVI	24	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	8' HEIGHT	PLANT 8' ON CENTER
MPE	20	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	# 3 POT	PLANT 5' ON CENTER
PDI	12	PHYSOCARPUS OPULIFOLIUS 'DIABOLO'	DIABOLO NINEBARK	5' HEIGHT	PLANT 8' ON CENTER
PSU	20	PHYSOCARPUS OPULIFOLIUS 'SUMMER WINE'	SUMMER WINE NINEBARK	# 3 POT	PLANT 5' ON CENTER
PTW	8	PHYSOCARPUS OPULIFOLIUS 'TINY WINE'	TINY WINE NINEBARK	# 3 POT	PLANT 3.5' ON CENTER. DO \underline{NOT} SUBSTITUTE LARGER CULTIVAR FOR THIS PLANT.
RVG	27	ROSA VIRGINIANA	VIRGINIA ROSE	# 3 POT	PLANT 4' ON CENTER
THM	7	THUJA OCCIDENTALIS 'HETZ MIDGET'	HETZ MIDGET ARBORVITAE	# 3 POT	PLANT 4' ON CENTER. DO <u>NOT</u> SUBSTITUTE LARGER CULTIVAR FOR THIS PLANT.
TON		THUJA OCCIDENTALIS 'NIGRA'	DARK AMERICAN ARBOVITAE	8' HEIGHT	PLANT 8' ON CENTER
GROUNDCOVERS	& PERENNIALS				
AGH		ARONIA MELANOCARPA 'GROUNDHOG'	GROUNDHOG ARONIA	#2 POT	PLANT 30" ON CENTER
ATU		ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	# 1 POT	PLANT 12" ON CENTER
CKF		CALAMAGROSTIS X ACUTIFOLIA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	# 2 POT	PLANT 2' ON CENTER
HHR		HEMEROCALLIS X 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	# 1 POT	PLANT 18" ON CENTER
JHW		JUNIPERUS HORIZONTALIS 'WILTONI'	BLUE RUG JUNIPER	# 2 POT	PLANT 2' ON CENTER
JPC		JUNIPERUS HORIZONTALIS 'PLUMOSA COMPACTA'	COMPACT ANDORRA JUNIPER	# 3 POT	PLANT 3' ON CENTER
LSK		LIATRIS SPICATA 'KOBOLD'	KOBOLD BLAZINGSTAR	#1 POT	PLANT 15" ON CENTER
PVH		PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCHGRASS	# 2 POT	PLANT 3' ON CENTER
RAG		RHUS AROMATICA 'GRO-LOW'	GRO-LOW SUMAC	# 2 POT	PLANT 2' ON CENTER
RFU		RUDBECKIA FULGIDA 'GOLDSTURM'	GOLDSTURM BLACK-EYED SUSAN	# 1 POT	PLANT 18" ON CENTER
WFR	54	WALDSTEINIA FRAGARIOIDES	BARREN STRAWBERRY	#1 POT	PLANT 18" ON CENTER

NOTE: PLANT SPECIES, CULTIVARS, SIZES, AND LOCATIONS SHALL NOT BE CHANGED EXCEPT BY PERMISSION OF THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL CHECK PLANT MATERIAL FROM NURSERIES BEFORE ACCEPTING PLANTS, TO MAKE SURE THERE ARE NO UNAUTHORIZED SUBSTITUTIONS. ALTERNATE CULTIVARS OF THE SAME SPECIES SHALL NOT BE SUBSTITUTED WITHOUT LANDSCAPE ARCHITECT'S APPROVAL.



GROUNDCOVER & PERENNIAL PLANTING

NOT TO SCALE



- SET ROOT BALL SO BASE OF TRUNK (ROOT COLLAR) TREE PLANTING NOTES: IS AT ELEVATION OF ORIGINAL SLOPE 1) THIS DETAIL APPLIES TO SINGLE-PRIOR TO MULCHING, LIGHTLY TAMP NATIVE SOIL AROUND THE AND MULTI-STEM TREES. ROOT BALL IN 6" LIFTS TO BRACE TREE. DO NOT OVER-COMPACT. WHEN THE PLANTING HOLE HAS BEEN BACKFILLED, POUR WATER 2) SET TREE VERTICALLY IN ALL AROUND THE ROOT BALL TO SETTLE THE SOIL, AND THEN ADD DIRECTIONS. DO NOT STAKE TREE. ADDITIONAL SOIL IF NEEDED, AND WATER AGAIN. 3) DO NOT PRUNE OR CUT LEADER EXCEPT TO STABILIZE DAMAGE OR AS 4" THICK DOUBLE-SHREDDED HARDWOOD MULCH OUTSIDE OF ROOT BALL, EXTENDING OVER LOOSENED SOIL AREA. NO DIRECTED BY LANDSCAPE ARCHITECT. MORE THAN 1" THICKNESS OF MULCH ALLOWED ABOVE ROOT BALL, AND NO MULCH WITHIN 6" OF TRUNK. 4) SEE TECHNICAL NOTES FOR OTHER PLANTING REQUIREMENTS. — FINISHED GRADE 4" HIGH X 8" WIDE SOIL BERM ON DOWNHILL SIDE OF TREE, AND EXTENDING AROUND SIDES FOR A TOTAL OF 240 DEGREES -- BERM SHALL BE LOCATED JUST OUTSIDE OF ROOT BALL, AND TOP OF BERM SLOPE SIDES OF

AREA OF LOOSENED SOIL

3X ROOT BALL DIA. (MIN.)

LOOSENED SOIL

LOOSENED SOIL: DIG AND TURN THE SOIL TO THE

DO NOT ADD ANY SOIL AMENDMENTS.

AREA AND DEPTH SHOWN, TO REDUCE COMPACTION.

REMOVE TOP 1/2 OF BURLAP FROM B&B TREES. TOP OF ROOT

BALL SHALL BE 1" TO 2" ABOVE FINISHED GRADE. INSTALL TO

FILLING SOIL AROUND IT. REMOVE TOP 2/3 OF WIRE BASKET

WHERE PRESENT. LOOSEN ROOT BALL, ALLEVIATE MATTED

ROOTS, REMOVE ENCIRCLING ROOTS, AND SPREAD ROOTS OUT

MINIMIZE SETTLING. CONTACT OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT TO INSPECT ROOT BALL PRIOR TO

TREE PLANTING ON SLOPE

SHALL BE LEVEL

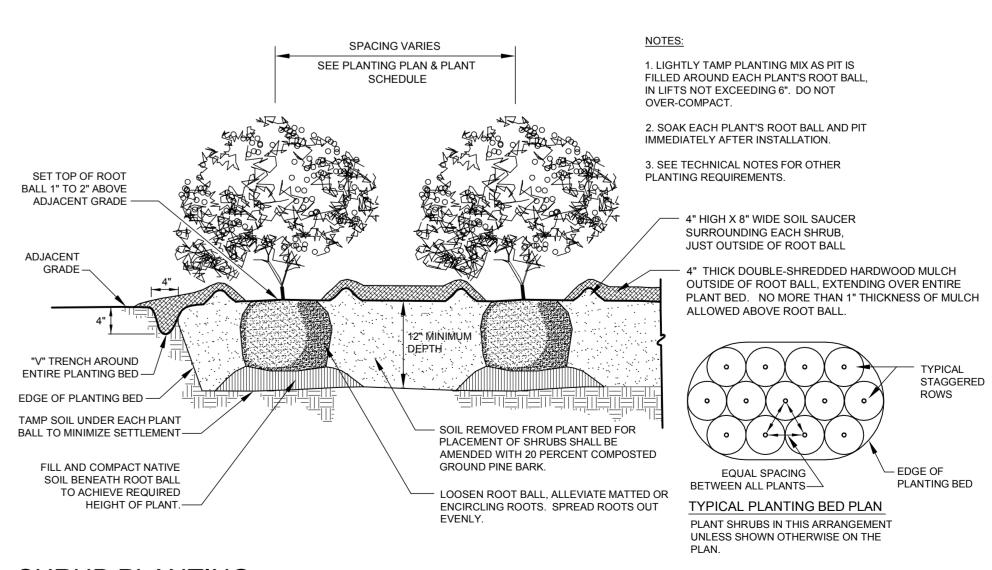
EXISTING SOIL -

SET BOTTOM OF ROOT

BALL ON EXISTING OR

RECOMPACTED SOIL

NOT TO SCALE



SHRUB PLANTING NOT TO SCALE



PRELIMINARY -- NOT FOR CONSTRUCTION



PROJECT: SINGLETARY ARMS 115 W. MAIN ST. MILLBURY, MA

CLIENT:
DOUGLAS BACKMAN

DATE: 7-15-2020

REVISIONS:							
NO. DATE		DESCRIPTION					

NOT TO SCALE

LANDSCAPE SCHEDULE & DETAILS

SHEET L-2

TECHNICAL NOTES FOR LOAM BORROW:

1) <u>SCOPE OF WORK</u>: FOR THIS PROJECT, THE WORK SHALL INCLUDE PLACING LOAM ALL AREAS TO RECEIVE PLANTS AND TURFGRASS SEEDING.

2) THE CONTRACTOR SHALL FURNISH A CERTIFIED LABORATORY REPORT SHOWING THE SOILS CLASSIFICATION AND NUTRIENT ANALYSIS OF REPRESENTATIVE SAMPLES OF THE LOAM THIS IS PROPOSED TO BE USED, INCLUDING THE EXTENT OF LIME AND FERTILIZER REQUIRED. ALL COSTS FOR SUCH WORK SHALL BE BORNE BY THE CONTRACTOR.

3) IN ACCORDANCE WITH THE SPECIFIC REQUIREMENTS OF THIS PROJECT, EXISTING ON-SITE SOIL MAY BE RE-USED AS LOAM BORROW ONLY IF IT MEETS THIS SPECIFICATION. EXISTING TOPSOIL THAT DOES NOT MEET THIS SPECIFICATION MAY BE RE-USED ONLY UP TO THE SUBGRADE ELEVATION WITHIN THE LIMITS OF AREAS TO RECEIVE NEW LOAM BORROW. THE CONTRACTOR SHALL FURNISH ALL REQUIRED LOAM BORROW, FROM OFF-SITE SOURCES, AS NECESSARY, TO COMPLETE THE PROJECT.

4) SCREENED LOAM SHALL BE "FINE SANDY LOAM" OR "SANDY LOAM" DETERMINED BY MECHANICAL ANALYSIS (ASTM D-422) AND BASED ON THE "USDA CLASSIFICATION SYSTEM". SCREENED LOAM SHALL HAVE THE FOLLOWING MECHANICAL ANALYSIS:

TEXTURAL CLASS PERCENTAGE	PERCENTAGE OF TOTAL WEIGHT	AVERAGE PERCENTAGE
SAND (0.05 - 2.0 MM)	45 - 75	60
SILT (0.002 - 0.05 MM)	5 - 35	25
CLAY (LESS THAN 0.002 MM)	5 - 20	15

5) SCREENED LOAM SHALL BE A NATURAL PRODUCT CONSISTING PRIMARILY OF NATURAL TOPSOIL, FREE FROM SUBSOIL, AND OBTAINED FROM AN AREA THAT HAS NEVER BEEN STRIPPED BEFORE. SCREENED LOAM SHALL NOT CONTAIN LESS THAN FIVE PERCENT (5%) NOR MORE THAN TEN PERCENT (10%) ORGANIC MATTER. TO ADJUST ORGANIC MATTER CONTENT, THE SOIL MAY BE AMENDED, PRIOR TO SITE DELIVERY, BY THE ADDITION OF COMPOSTED LEAF MOLD OR PEAT MOSS. NO MIXING OR AMENDING OF LOAM IS PERMITTED ON SITE.

6) THE LOAM SHALL NOT BE DELIVERED IN A WET OR FROZEN CONDITION.

7) SCREENED LOAM SHALL CONSIST OF FERTILE, FRIABLE, LOAM CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH. LOAM SHALL BE WITHOUT ADMIXTURE OF SUBSOIL AND REFUSE. IT SHALL BE A HOMOGENEOUS MATERIAL FREE OF STONES GREATER THAN ONE-HALF (1/2) INCH IN THE LONGEST DIMENSION; FREE OF LUMPS, PLANTS, GRASS, ROOTS, STICKS, EXCESSIVE STONE CONTENT, DEBRIS, AND EXTRANEOUS MATTER AS DETERMINED BY THE OWNER.

8) SCREENED LOAM SHALL BE WITHIN THE PH RANGE OF 6.0 TO 6.5. IT SHALL BE UNCONTAMINATED BY SALT WATER, FOREIGN MATTER, AND SUBSTANCES HARMFUL TO PLANT GROWTH. THE MAXIMUM SOLUBLE SALT INDEX SHALL BE 100. SCREENED LOAM SHALL NOT HAVE LEVELS OF ALUMINUM GREATER THAN 200 PARTS PER MILLION.

9) SEE TURFGRASS NOTES FOR LIME AND FERTILIZER REQUIREMENTS FOR LAWN AREAS.

10) TOPSOIL STRUCTURE SHALL NOT BE DESTROYED THROUGH EXCESSIVE AND UNNECESSARY HANDLING OR COMPACTION. INAPPROPRIATE HANDLING LEADING TO THE COMPACTION OF DETERIORATION OF SOIL STRUCTURE WILL RESULT IN REJECTION OF TOPSOIL FOR USE.

11) AT NO TIME SHALL EQUIPMENT OR MATERIAL REST ON THE SOIL.

12) THE CONTRACTOR SHALL FURNISH AND SPREAD LOAM TO A MINIMUM 6 INCH DEPTH (AFTER SOIL SETTLEMENT) IN ALL LAWN AND PLANT BED AREAS. SUBSOIL SHALL BE SCARIFIED PRIOR TO PLACEMENT OF LOAM. THE TOP OF THE SETTLED LOAM BORROW LAYER SHALL BE TO GRADES SPECIFIED ON THE DRAWINGS. NO COMPACTION SHALL BE REQUIRED BEYOND THAT EXTENT NECESSARY TO PLACE SOD OR OR TO PLANT TREES AND SHRUBS TO ENSURE AGAINST UNEVENNESS OR SETTLING BELOW ACCEPTED GROWTH LINES.

TECHNICAL NOTES FOR TURFGRASS SEEDING:

1) SCOPE OF WORK: FOR THIS PROJECT, THE WORK SHALL INCLUDE SEEDING AREAS DENUDED BY CONSTRUCTION.

2) ALL AREAS SHALL BE SEEDED WITHIN 30 DAYS AFTER FINISHED GRADES ARE ESTABLISHED AND OTHER ELEMENTS INCLUDED IN THIS CONTRACT ARE CONSTRUCTED.

3) TURFGRASS SEED SPECIFICATIONS:

B) AREAS RECEIVING FULL SUN OR PART SHADE

FESCUE/BLUEGRASS/PERENNIAL RYEGRASS MIXTURE:
MIXTURE REQUIREMENTS ARE AS FOLLOWS (WITH APPROXIMATE PERCENTAGES):

35% FINE FESCUE (ENDOPHYTIC) 35% KENTUCKY BLUEGRASS

C) AREAS RECEIVING MOSTLY SHADE:

FESCUE/PERENNIAL RYEGRASS MIXTURE:
MIXTURE REQUIREMENTS ARE AS FOLLOWS (WITH APPROXIMATE PERCENTAGES):

90% FINE FESCUE (ENDOPHYTIC)

30% PERENNIAL RYEGRASS (ENDOPHYTIC)

10% PERENNIAL RYEGRASS (ENDOPHYTIC)

D) ANY PROPOSED SUBSTITUTIONS SHALL BE PRESENTED TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO SEEDING.

E) ALL TURFGRASS SEED SHALL HAVE A MINIMUM PURITY OF 98 PERCENT AND A GERMINATION RATE OF 85 PERCENT.

F) ALL TURFGRASS SEED SHALL BE LABELED TO SHOW THAT IT IS WITHIN THE REQUIREMENTS OF THE USDA AS TO PURITY, GERMINATION, AND PRESENCE OF RESTRICTED OR PROHIBITED WEEDS.

4) BED PREPARATION FOR AREAS TO BE SEEDED WITH TURFGRASS: A ROTOVATOR, CHISEL PLOW, OR CULTIVATOR SHALL BE USED TO WORK THE SOIL TO A DEPTH OF SIX INCHES. AFTER THIS OPERATION, REMOVE AND DISPOSE OF STICKS, STONES OVER 1 INCH DIAMETER, AND RUBBISH TO A MINIMUM DEPTH OF TWO INCHES.

5) LIME AND NUTRIENTS FOR TURFGRASS AREAS: LIME SHALL BE GROUND DOLOMITIC LIMESTONE, APPLIED AT THE RATE OF 50 POUNDS PER 1000 SQUARE FEET. LIME SHALL BE WELL-MIXED INTO THE TOP THREE INCHES OF LOAM.

6) <u>FERTILIZER FOR TURFGRASS AREAS:</u> FERTILIZER SHALL BE A COMMERCIAL GRADE WITH A MINIMUM OF 50 PERCENT OF THE NITROGEN COMPONENT IN A CONTROLLED RELEASE FORM LABELED TO RELEASE NITROGEN FOR A MINIMUM OF SIX WEEKS. FERTILIZER SHALL HAVE AN N/P/K RATIO IN THE RANGE OF 1:1:1 TO 1:2:2. IT SHALL BE APPLIED AT A RATE WHICH ACHIEVES ONE POUND OF NITROGEN PER 1000 SQUARE

7) <u>SEEDING PROCEDURE FOR TURFGRASS:</u> SOWING OF SEED SHALL BE DONE ONLY AFTER THE PREPARED SOIL, TO WHICH LIME AND FERTILIZER HAVE BEEN ADDED AS SPECIFIED, HAS BEEN THOROUGHLY SETTLED BY RAINFALL OR ARTIFICIAL WATERING. IMMEDIATELY BEFORE ANY SEED IS SOWN, THE GROUND SHALL BE SCARIFIED AS SPECIFIED. LAWN AREAS SHALL BE SEEDED EVENLY WITH A MECHANICAL SPREADER. SEED MIXTURES SHALL BE SOWN AT A RATE OF 5 POUNDS PER 1000 SQUARE FEET. AFTER SEEDING, THE LAWN SHALL BE LIGHTLY RAKED, ROLLED WITH A 200-POUND ROLLER, AND WATERED WITH A FINE SPRAY. THIS METHOD OF SEEDING MAY BE VARIED AT THE DISCRETION OF THE CONTRACTOR ON HIS OWN RESPONSIBILITY TO ESTABLISH A SMOOTH, UNIFORMLY GRASSED LAWN.

8) SEED FOR PERMANENT TURFGRASS SHALL ONLY BE SOWN FROM THE THIRD WEEK IN APRIL THROUGH JUNE AND DURING THE MONTH OF SEPTEMBER.

9) TEMPORARY SEEDING FOR EROSION CONTROL: IN THE EVENT THAT THE CONTRACT IS SUSPENDED, TEMPORARY SEEDING SHALL BE USED ON ANY BARE AREAS THAT MAY BE SUBJECT TO EROSION AND WHERE TEMPORARY VEGETATION CAN BE USED TO RETARD EROSION FROM 2 TO 12 MONTHS. THE SEED TYPE USED FOR TEMPORARY COVER SHALL BE 100 PERCENT TALL FESCUE APPLIED AT A RATE OF 300 POUNDS PER

10) MAINTENANCE: MAINTAIN THE TURFGRASS FROM TIME OF INSTALLATION UNTIL THE FINAL INSPECTION IMMEDIATELY PRIOR TO THE BEGINNING OF THE GUARANTEE PERIOD. MAINTENANCE SHALL INCLUDE WATERING OF TURF AREAS, REPAIRS TO TURF AREAS, AND OTHER NECESSARY OPERATIONS. THE MAINTAINED TURF AREAS SHALL BE MOWED TO A UNIFORM HEIGHT OF APPROXIMATELY TWO AND ONE-HALF INCHES. MOWING SHALL BE PROVIDED AS REQUIRED SO THAT THE TURF NEVER EXCEEDS FOUR INCHES IN HEIGHT. TURF SHALL BE PROTECTED AND REPLANTED AS NECESSARY TO ESTABLISH A UNIFORM STAND OF THE SPECIFIED TURF AND UNTIL ACCEPTANCE. SCATTERED BARE SPOTS, NONE OF WHICH IS LARGER THAN ONE SQUARE FOOT, WILL BE ALLOWED UP TO A MAXIMUM OF THREE PERCENT OF ANY TURF AREA. WHEN TURF AREAS ARE READY FOR FINAL INSPECTION, THE MAINTAINED TURF AREAS SHALL BE NEATLY MOWED TO THE UNIFORM HEIGHTS AS NOTED ABOVE. THE LAWNS SHALL BE CONSIDERED ESTABLISHED ONLY WHEN THE SPECIFIED GRASS IS VIGOROUS AND GROWING WELL IN ADDITION TO MEETING THE OTHER REQUIREMENTS SPECIFIED. AT THE TIME OF ACCEPTANCE FOLLOWING FINAL INSPECTION, THE CONTRACTOR IS RELIEVED OF ROUTINE MAINTENANCE RESPONSIBILITIES FOR THE TURF UNDER THIS CONTRACT.

11) FINAL INSPECTION, CLEANUP AND COMPLETION: FINAL INSPECTION SHALL BE FOR THE COMPLETED LANDSCAPE AND SHALL BE MADE AT THE CONCLUSION OF THE LANDSCAPE WORK. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL EQUIPMENT AND OTHER ARTICLES USED. ALL EXCESS SOIL, STONES, AND DEBRIS SHALL BE REMOVED FROM THE SITE. ALL WORK AREAS SHALL BE LEFT IN A CLEAN AND NEAT CONDITION. ALL DAMAGE TO EXISTING CONSTRUCTION CAUSED BY THE LANDSCAPING OPERATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER AT THE CONTRACTOR'S EXPENSE.

12) GUARANTY AND REPLACEMENT: IF A SATISFACTORY STAND OF MAINTAINED TURF HAS BEEN PRODUCED AT THE TIME OF FINAL INSPECTION, IT SHALL BE GUARANTEED THROUGH ONE COMPLETE GROWING SEASON. IF RENOVATION AND/OR RESEEDING ARE REQUIRED AT THE END OF THE GUARANTEE PERIOD, THIS WORK SHALL BE DONE IN CONFORMANCE WITH THE REQUIREMENTS NOTED ABOVE. IF A SATISFACTORY STAND OF MAINTAINED TURF HAS NOT BEEN PRODUCED AT THE TIME OF FINAL INSPECTION, NECESSARY REPAIRS SHALL BE PERFORMED IN CONFORMANCE WITH THE REQUIREMENTS NOTED ABOVE. UPON COMPLETION OF THESE REPAIRS, THE TURF GRASS SHALL BE GUARANTEED AS NOTED ABOVE.

TECHNICAL NOTES FOR TREE, SHRUB, GROUNDCOVER, AND PERENNIAL PLANTINGS:

1) <u>NOMENCLATURE:</u> THE NAMES OF PLANTS REQUIRED UNDER THIS CONTRACT SHALL CONFORM TO THOSE GIVEN IN <u>STANDARDIZED PLANT NAMES</u>, LATEST EDITION, PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. NAMES OF VARIETIES NOT INCLUDED THEREIN SHALL CONFORM GENERALLY WITH NAMES ACCEPTED IN THE NURSERY TRADE.

2) QUALITY AND SIZE: PLANTS SHALL HAVE A HABIT OF GROWTH THAT IS NORMAL FOR THE SPECIES AND SHALL BE SOUND, HEALTHY, VIGOROUS, AND FREE FROM INSECT PESTS, PLANT DISEASES, AND INJURIES. ALL PLANTS SHALL EQUAL OR EXCEED THE MEASUREMENTS SPECIFIED IN THE PLANT LIST, WHICH ARE MINIMUM ACCEPTABLE SIZES. THEY SHALL BE MEASURED BEFORE PRUNING IS DONE AT TIME OF PLANTING. REQUIREMENTS FOR THE MEASUREMENTS, BRANCHING, GRADING, QUALITY, BALLING, AND BURLAPPING OF PLANTS IN THE PLANT LIST SHALL FOLLOW THE CODE OF STANDARDS CURRENTLY RECOMMENDED BY THE AMERICAN ASSOCIATIONS OF NURSERYMEN, INC., IN THE AMERICAN STANDARD FOR NURSERY STOCK.

3) <u>SUBSTITUTIONS:</u> SUBSTITUTIONS WILL BE PERMITTED ONLY UPON SUBMISSION OF PROOF THAT ANY PLANT AS SPECIFIED IS NOT OBTAINABLE DURING THE SCHEDULED PLANTING SEASON. WRITTEN AUTHORIZATION BY THE LANDSCAPE ARCHITECT SHALL BE REQUIRED FOR ANY SUBSTITUTION. THE NEAREST EQUIVALENT SIZE OR VARIETY OF PLANT HAVING THE SAME ESSENTIAL CHARACTERISTICS SHALL BE PROPOSED FOR SUBSTITUTION.

4) <u>BALLED AND BURLAPPED MATERIALS:</u> PLANTS DESIGNATED "B&B" IN THE PLANT LIST SHALL BE BALLED AND BURLAPPED. THEY SHALL BE DUG WITH FIRM, NATURAL BALLS OF EARTH OF SUFFICIENT DIAMETER AND DEPTH TO ENCOMPASS THE FIBROUS AND FEEDING ROOT SYSTEM NECESSARY FOR FULL RECOVERY OF THE PLANT. MATERIAL SHALL BE IN A CONDITION WHERE THE NATURAL ROOT COLLAR OF THE PLANT IS WITHIN APPROXIMATELY TWO (2) INCHES OF THE SOIL LEVEL OF THE BALL. BALLS SHALL BE FIRMLY WRAPPED WITH BURLAP OR SIMILAR MATERIAL AND BOUND WITH TWINE, CORD, OR WIRE MESH. NO SYNTHETIC FABRIC IS ALLOWED. WHERE NECESSARY TO PREVENT BREAKING OR CRACKING OF THE BALL DURING THE PROCESS OF PLANTING, THE BALL MAY BE SECURED TO A PLATFORM. BALLS SHALL BE KEPT MOIST AND SHADED UNTIL THEY ARE PLANTED. REMOVE ALL BALL TIES OR STRAPPING FROM ROOT BALL PRIOR TO PLANTING. PLANT IN ACCORDANCE WITH TREE AND SHRUB PLANTING DETAILS.

5) CONTAINER-GROWN MATERIALS: PLANTS NOT DESIGNATED OTHERWISE IN THE PLANT LIST MAY BE PURCHASED AS CONTAINER-GROWN OR BALLED/BURLAPPED. CONTAINER-GROWN PLANTS, IF STORED ON THE SITE, SHALL BE WATERED THOROUGHLY AT LEAST ONCE EVERY 48 HOURS. ROOT SYSTEMS OF CONTAINER-GROWN PLANTS SHALL BE WELL-DEVELOPED BUT NOT IN "POT-BOUND" CONDITION OF DENSE, ENCIRCLING ROOTS. THE ROOT BALL OF THE PLANT SHALL BE LOOSENED TO ALLEVIATE ENCIRCLING ROOTS AND TO PROVIDE AN INCREASED ROOT INTERFACE WITH THE FILL SOIL. PLANT IN ACCORDANCE WITH TREE, SHRUB, AND GROUNDCOVER PLANTING DETAILS.

6) PROTECTION OF PLANTS PRIOR TO INSTALLATION: THE ROOT ZONE OF ALL PLANTS NOT YET INSTALLED SHALL BE PROTECTED FROM FREEZING, DRYING, AND DIRECT SUNLIGHT.

7) <u>MULCHING:</u> DOUBLE-SHREDDED HARDWOOD MULCH SHALL BE USED AS THE MULCH FOR ALL PLANT BEDS INDICATED ON THE LANDSCAPE PLAN, INCLUDING AREAS SURROUNDING THE PLANTS AS SHOWN ON THE TREE, SHRUB, AND GROUNDCOVER PLANTING DETAILS.

8) <u>PLANTING SEASON:</u> THE NORMAL PLANTING SEASON IS APRIL THROUGH NOVEMBER. SOME PLANTS SPECIFIED AS BALLED AND BURLAPPED CANNOT BE DUG DURING PORTIONS OF THIS PLANTING SEASON -- CHECK WITH NURSERIES FOR SPECIFICS. PLANTING OPERATIONS SHALL BE CONDUCTED UNDER FAVORABLE WEATHER CONDITIONS DURING THE NORMAL PLANTING SEASON.

9) WEATHER CONDITIONS: PLANTING SHALL NOT TAKE PLACE WHEN SOILS ON SITE ARE FROZEN OR WET AND IN

10) <u>LAYOUT:</u> NEW PLANTINGS SHALL BE LOCATED ACCORDING TO THE LANDSCAPE PLAN. THE CONTRACTOR SHALL STAKE THE PLANT LOCATIONS, AND SHALL THEN CONTACT THE LANDSCAPE ARCHITECT FOR APPROVAL.

11) <u>SETTING PLANTS:</u> ALL PLANTS SHALL BE PLANTED IN PREPARED SOILS BEDS, AND SET ON FIRM SOIL TO SUCH DEPTH AS INDICATED IN THE PLANTING DETAILS. TREES, SHRUBS, GROUNDCOVERS, AND PERENNIALS SHALL BE SET SO THAT THE PLANT'S NATURAL ROOT COLLAR OR CROWN IS ABOVE FINISHED GRADE AT THE HEIGHTS INDICATED IN THE PLANTING DETAILS. NO BURLAP SHALL BE PULLED FROM UNDER THE BALLS. ROOTS ON BARE-ROOT PLANTS SHALL BE SPREAD IN THEIR NORMAL POSITION. ALL BROKEN OR FRAYED ROOTS SHALL BE CUT OFF CLEANLY. PREPARED SOIL SHALL BE PLACED AND COMPACTED CAREFULLY TO AVOID INJURY TO ROOTS, TO FILL ALL VOIDS, AND TO MINIMIZE ROCKING OF ROOT BALL. ADD WATER AND TAMP THE BACKFILL UNTIL THE BACKFILL IS COMPLETELY SATURATED, THEN ALLOW IT TO SOAK AWAY. FILL THE HOLE TO FINISHED GRADE, AND FORM A SAUCER AROUND EACH TREE AND SHRUB BY PLACING A RIDGE OF TOPSOIL AROUND THE EDGE OF EACH ROOT BALL, IN ACCORDANCE WITH THE PLANTING DETAILS. AFTER THE GROUND SETTLES, ADDITIONAL SOIL SHALL BE FILLED IN TO THE LEVEL OF THE FINISHED GRADE, AND WATERED.

12) <u>STAKING TREES:</u> DO NOT STAKE TREES, UNLESS TREES ARE PLANTED ON STEEP SLOPES, IN WHICH CASE THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT FOR PERMISSION TO STAKE THOSE TREES.

13) <u>MAINTENANCE:</u> MAINTAIN PLANTS AND PLANT BEDS FROM THE TIME OF INSTALLATION UNTIL THE FINAL INSPECTION IMMEDIATELY PRIOR TO COMMENCEMENT OF THE GUARANTEE PERIOD. MAINTENANCE SHALL INCLUDE WATERING AND PROTECTION OF PLANTINGS AND OTHER NECESSARY OPERATIONS.

14) <u>FINAL INSPECTION:</u> WHEN THE TREE AND SHRUB PLANTINGS ARE READY FOR FINAL INSPECTION, ALL MULCHED AREAS SHALL BE FREE FROM WEEDS AND MULCHED TO THE EXTENT INDICATED ON THESE DRAWINGS. PLANT TAGS SHALL BE REMOVED BY THE CONTRACTOR PRIOR TO THE INSPECTION FOR ACCEPTANCE.

15) <u>GUARANTEE:</u> AFTER ACCEPTANCE AT TIME OF FINAL INSPECTION, ALL PLANTS SHALL BE GUARANTEED FOR ONE (1) YEAR. PLANTINGS SHALL BE ALIVE AND IN SATISFACTORY VIGOR AT THE END OF THE GUARANTEE PERIOD.

16) <u>REPLACEMENT:</u> AT THE END OF THE GUARANTEE PERIOD, ANY PLANT REQUIRED UNDER THIS CONTRACT THAT IS DEAD OR IN POOR VIGOR SHALL BE REMOVED FROM THE SITE. THESE AND ANY MISSING PLANTS SHALL BE REPLACED AS SOON AS CONDITIONS PERMIT, BUT DURING THE NORMAL PLANTING SEASON. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AS ORIGINALLY PLANTED AND SHALL BE OF SIZE EQUAL TO THAT ATTAINED BY ADJACENT PLANTS OF THE SAME KIND AT THE TIME REPLACEMENT IS MADE. ONLY ONE REPLACEMENT WILL BE REQUIRED FOR EACH PLANT DECLARED DEAD, IN AN UNHEALTHY OR BADLY IMPAIRED CONDITION, OR MISSING AT THE TIME OF FINAL INSPECTION.



PRELIMINARY -- NOT FOR CONSTRUCTION



PROJECT:
SINGLETARY ARMS
115 W. MAIN ST.
MILLBURY, MA

<u>CLIENT:</u> DOUGLAS BACKMAN

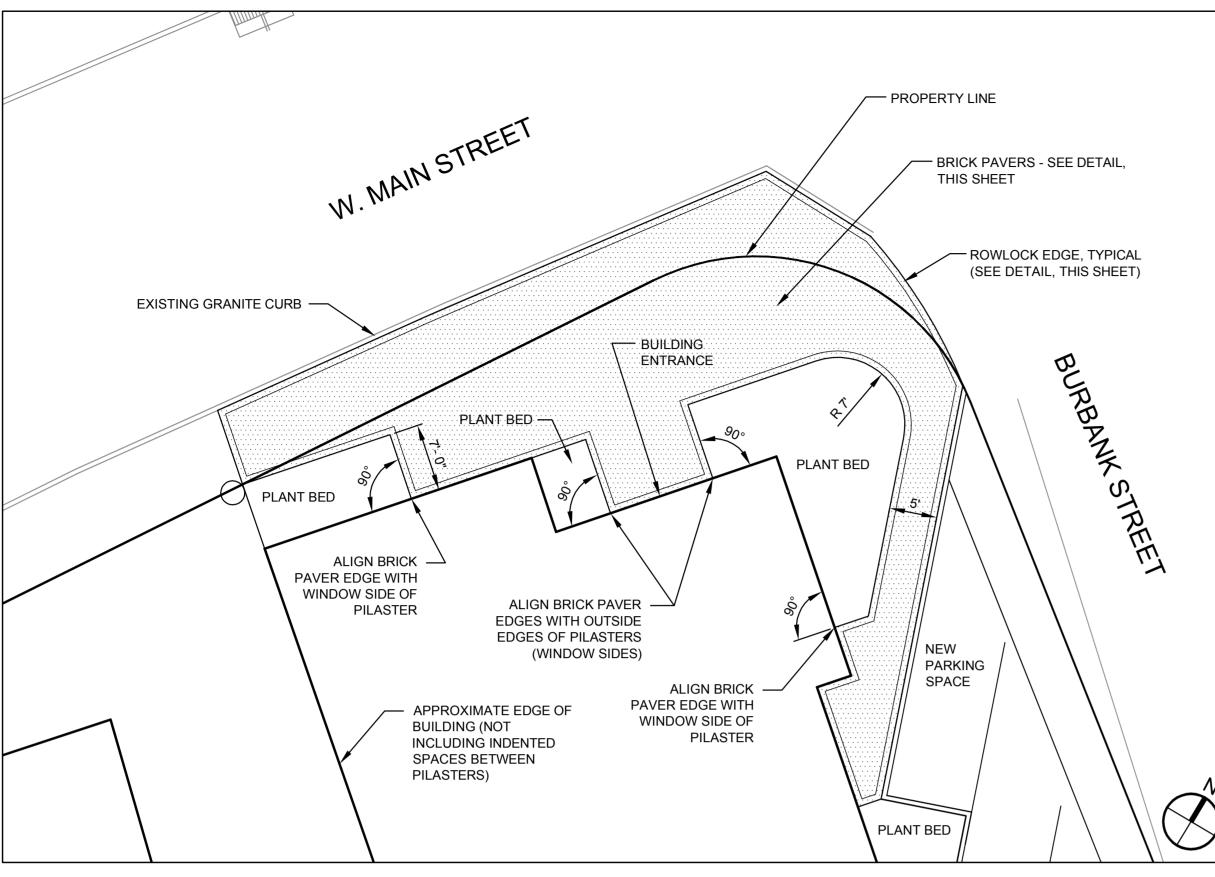
DATE: 7-15-2020

RE\	REVISIONS:							
NO.	DATE	DESCRIPTION						
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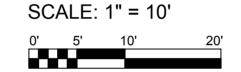
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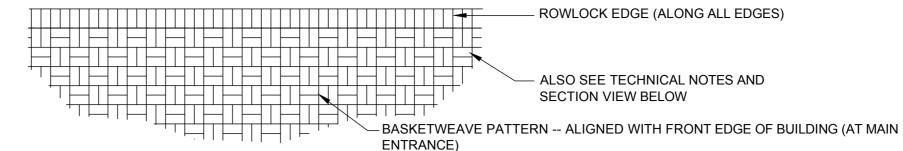
LANDSCAPE NOTES

SHEET L-3

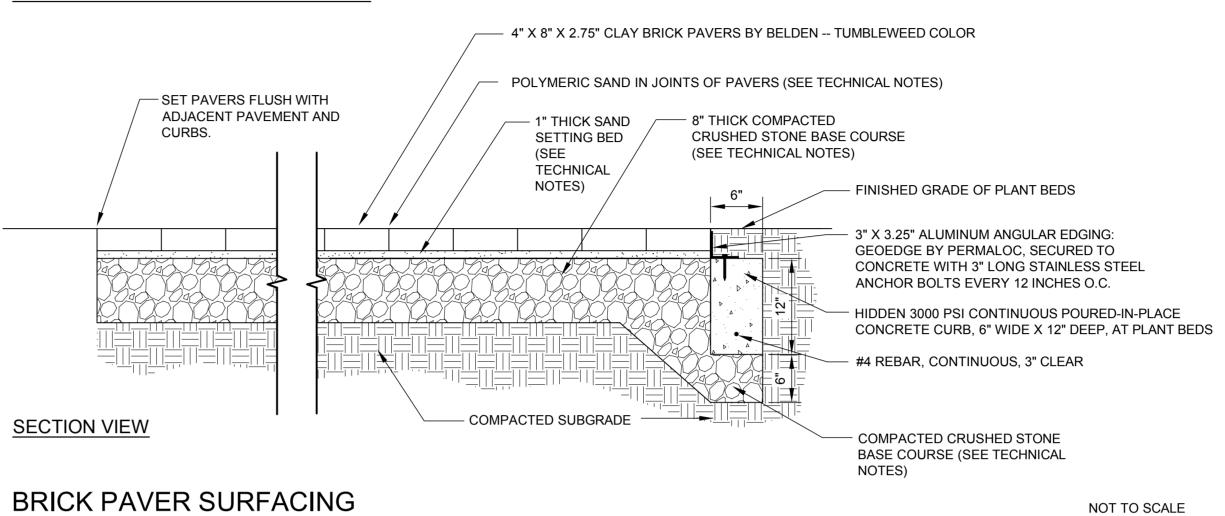


BRICK PAVER SURFACING AT MAIN BUILDING ENTRANCE





PLAN VIEW: TYPICAL PAVER PATTERN



TECHNICAL NOTES FOR BRICK UNIT PAVING

1) SOME OF THE PRODUCTS AND EXECUTION METHODS ARE SPECIFIED IN THIS SECTION BY REFERENCE TO PUBLISHED SPECIFICATIONS OR STANDARDS OF THE FOLLOWING, WITH RESPECTIVE ABBREVIATIONS USED:

A) AASHTO: AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATOIN OFFICIALS

B) ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS
C) MA DOT: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

2) REQUIRED INSTALLER QUALIFICATIONS: AN EXPERIENCED INSTALLER WHO HAS COMPLETED UNIT PAVER INSTALLATIONS SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT, AND WHOSE WORK HAS RESULTED IN CONSTRUCTION WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.

3) THE CONTRACTOR SHALL PROTECT BRICKS, SAND, AND AGGREGATE DURING STORAGE AND CONSTRUCTION AGAINST SOILING OR CONTAMINATION FROM EARTH AND OTHER MATERIALS. BRICKS SHALL BE COVERED WITH PLASTIC OR OTHER PACKAGING MATERIALS THAT WILL PREVENT RUST MARKS FROM STEEL STRAPPING, WHEN PRESENT. THE CONTRACTOR SHALL STORE CEMENTITIOUS MATERIALS ON ELEVATED PLATFORMS, UNDER COVER, AND IN A DRY LOCATION.

4) THE CONTRACTOR SHALL NOT USE FROZEN MATERIALS OR MATERIALS MIXED OR COATED WITH ICE OR FROST. HE/SHE SHALL NOT BUILD ON FROZEN SUBGRADE OR SETTING BEDS. HE/SHE SHALL REMOVE AND REPLACE UNIT PAVER WORK DAMAGED BY FROST OR FREEZING.

5) CLAY BRICKS SHALL BE 4" X 8" X 2.75" THICK, TUMBLEWEED COLOR, BY THE BELDEN BRICK CO., PHONE # 330-451-2031, WWW.BELDENBRICK.COM

6) ALUMINUM EDGE RESTRAINTS SHALL BE GEOEDGE BY PERMALOC, PHONE # 616-39-9600, WWW.PERMALOC.COM. ANCHOR BOLTS SHALL BE 3" LONG STAINLESS STEEL.

7) SAND FOR LEVELING COURSE SHALL BE WASHED CONCRETE SAND, FREE OF SOIL AND OTHER FOREIGN DEBRIS.

8) POLYMERIC SAND FOR JOINTS SHALL CONSIST OF CLEAR POLYMERS, AND SHALL NOT CONTAIN ANY PORTLAND CEMENT.

9) AGGREGATE BASE COURSE SHALL BE 3/4" CRUSHED STONE AND SHALL MEET THE REQUIREMENTS OF MA DOT SPECIFICATION SECTION M2.01.4 OF DIVISION 3 -- MATERIALS.

10) THE CONTRACTOR SHALL NOT USE ANY BRICKS THAT HAVE CHIPS, CRACKS, VOIDS, DISCOLORATIONS, AND OTHER DEFECTS THAT MIGHT BE VISIBLE OR CAUSE STAINING IN FINISHED WORK.

11) WHEN CUTTING IS NECESSARY, THE CONTRACTOR SHALL CUT BRICKS WITH MOTOR-DRIVEN MASONRY SAW EQUIPMENT TO PROVIDE CLEAN, SHARP, UN-CHIPPED EDGES. HE/SHE SHALL CUT UNITS TO PROVIDE PATTERN INDICTED AND TO FIT ADJOINING WORK NEATLY. HE/SHE SHALL USE FULL UNITS WITHOUT CUTTING WHERE POSSIBLE. HAMMER CUTTING IS NOT ACCEPTABLE.

12) JOINT AND COLOR PATTERNS SHALL BE AS INDICATED ON THE PLANS AND IN THE CONSTRUCTION DETAILS.

13) TOLERANCES: THE CONTRACTOR SHALL NOT EXCEED 1/32-INCH UNIT-TO-UNIT OFFSET FROM FLUSH (LIPPAGE) NOR 1/8-INCH IN 10 FEET FROM INDICATED SLOPE, FOR FINISHED SURFACE OF PAVEMENT.

14) INSTALLATION PROCESS:

A) COMPACT SOIL SUBGRADE UNIFORMLY TO 95 PERCENT OF ASTM D 1557 LABORATORY DENSITY.

B) PLACE CRUSHED STONE BASE COURSE OVER COMPACTED SUBGRADE. PROVIDE COMPACTED THICKNESS INDICATED. COMPACT BASE COURSE TO 100 PERCENT OF ASTM D 1557 MAXIMUM LABORATORY DENSITY AND SCREED TO DEPTH REQUIRED TO ALLOW SETTING OF PAVERS.

C) INSTALL HIDDEN CURBING (SEE CEMENT CONCRETE NOTES).

D) PLACE LEVELING COURSE OF SAND OVER AGGREGATE BASE COURSE AND SCREED TO THICKNESS INDICATED ON THE DRAWINGS, TAKING CARE THAT MOISTURE CONTENT REMAINS CONSTANT AND DENSITY IS LOOSE AND CONSTANT UNTIL BRICKS ARE SET AND COMPACTED.

E) SET BRICKS WITH A MINIMUM JOINT WIDTH OF 1/16 INCH AND A MAXIMUM WIDTH OF 1/8 INCH, BEING CAREFUL NOT TO DISTURB LEVELING COURSE. IF BRICKS HAVE SPACER LUGS, PLACE BRICKS HAND-TIGHT AGAINST LUGS. USE STRING LINES TO KEEP STRAIGHT LINES. FILL GAPS BETWEEN UNITS THAT EXCEED 3/8 INCH WITH PIECES CUT TO FIT FROM FULL-SIZE BRICKS.

F) VIBRATE BRICKS INTO LEVELING COURSE WITH A LOW-AMPLITUDE PLATE VIBRATOR CAPABLE OF A 3500- TO 5000-LBF (16- TO 22-kN) COMPACTION FORCE AT 80 TO 90 Hz. PERFORM AT LEAST THREE PASSES ACROSS PAVING SURFACE WITH VIBRATOR. VIBRATE UNDER THE FOLLOWING CONDITIONS:

1. AFTER EDGE BRICKS ARE INSTALLED AND THERE IS A COMPLETED SURFACE OR BEFORE SURFACE IS EXPOSED TO RAIN

2. BEFORE ENDING EACH DAY'S WORK, FULLY-COMPACT INSTALLED BRICKS TO WITHIN 36 INCHES OF THE LAYING FACE. COVER OPEN LAYERS WITH NON-STAINING PLASTIC SHEETS OVERLAPPED 48 INCHES ON EACH SIDE OF THE LAYING FACE TO PROTECT IT FROM RAIN.

G) SPREAD DRY POLYMERIC SAND AND FILL JOINTS IMMEDIATELY AFTER VIBRATING BRICKS INTO LEVELING COURSE. POLYMERIC SAND SHALL ONLY BE INSTALLED WHEN BRICKS ARE COMPLETELY DRY, AND NO PRECIPITATION IS IN THE FORECAST FOR AT LEAST 48 HOURS. VIBRATE PAVERS AND THEN ADD THE POLYMERIC SAND UNTIL JOINTS ARE COMPLETELY FILLED TO THE BASE OF THE BEVELED EDGES, OR TOPS OF NON-BEVELED BRICK EDGES. REMOVE ALL EXCESS POLYMERIC SAND FROM SURFACE OF BRICKS PRIOR TO WETTING THE JOINTS. THEN LIGHTLY MOISTEN JOINTS UNTIL THEY WILL NOT ACCEPT ANY MORE WATER, TO ENSURE THAT THE ENTIRE DEPTH OF THE JOINT IS MOISTENED, WHILE TAKING CARE NOT TO LET SAND WASH OUT OF THE JOINTS DURING THIS PROCESS. DO NOT ALLOW ANY TRAFFIC (PEDESTRIAN OR VEHICULAR) ONTO THE BRICK PAVEMENT FOR AT LEAST 24 HOURS AFTER JOINTS HAVE BEEN WATERED. IF UNEXPECTED PRECIPITATION HAPPENS DURING THIS PERIOD, COVER BRICK PAVEMENT WITH NON-STAINING PLASTIC SHEETS AS NOTED IN F2 ABOVE.

15) REPAIR AND PROTECTION: THE CONTRACTOR SHALL REMOVE AND REPLACE BRICKS THAT ARE LOOSE, CHIPPED, BROKEN, STAINED, OR OTHERWISE DAMAGED, OR THAT DO NOT MATCH ADJOINING UNITS AS INTENDED, AND THOSE WHOSE SURFACES HAVE BEEN STAINED WITH POLYMERIC SAND. THE CONTRACTOR SHALL REPLACE THESE BRICKS TO MATCH ADJOINING BRICKS, AND INSTALL IN SAME MANNER AS ORIGINAL BRICKS, WITH SAME JOINT TREATMENT AND WITH NO EVIDENCE OF REPLACEMENT.



PRELIMINARY -- NOT FOR CONSTRUCTION



PROJECT: SINGLETARY ARMS 115 W. MAIN ST. MILLBURY, MA

<u>CLIENT:</u> DOUGLAS BACKMAN

DATE: 7-15-2020

REVISIONS:

NO.	DATE	DESCRIPTION

SCALE: VARIES

HARDSCAPE
DETAILS & NOTES

SHEET L-4



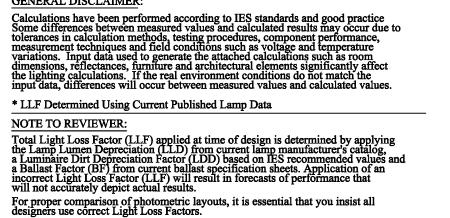
93.7' C/6.to C/p.1 0.1 63.1 1.4 8.2 37.8 12.3 3.05 0.4 0.4 0.4 0.6WALKWAY SCALE: 1"=10'-0" 2 $\stackrel{\downarrow}{2}.1$ $\stackrel{\uparrow}{2}.1$ $\stackrel{\uparrow}{1}.0$ $\stackrel{\downarrow}{|0}.7$ $\stackrel{\downarrow}{0}.7$ $\stackrel{\downarrow}{0}.5$ $\stackrel{\downarrow}{0}.8$ $\stackrel{\downarrow}{1}.7$ $\stackrel{\downarrow}{4}.0$ $\stackrel{\downarrow}{0}$ $\stackrel{\downarrow}{0}.8$ 1.9 2.2 1.2 / 1.2 / 5.3 0.5 0.4 0.910.4 2.1 0.8 9.8 20.9 8.4 22.5 4.1 0.6 4.3 14.3 13.2 0.6 0.5 0.8 0.5 0.5

JOB NAME: 151 W MAIN ST - MILLBURY, MA APEX LIGHTING SOLUTIONS WORKPLANE/CALC PLANE: @ FINISH GRADE MOUNTING HEIGHT: SEE LUMINAIRE SCHEDULE

SALES: DT

Luminaire Schedule								
Qty Label Arrangement Lumens			Input Watts	LLF	BUG Rating	Description		
33	SL1	SINGLE	8695	105.1	0.850	B2-U4-G5	HADCO CL32PHKN1AWHWA5NSP2 / MOUNTED TO 16FT POLE	
12	SL3	SINGLE	2551	30.3	0.765	B1-U0-G1	GARDCO PBL-36-14L-600-WW-G2-3-UNV-PCB-F1-BK	

Calculation Summary								
Label	Grid Height	Avg	Max	Min	Avg/Min	Max/Min		
CalcPts_1	0	0.31	7.8	0.0	N.A.	N.A.		
WALKWAY	0	8.59	40.1	0.2	42.95	200.50		
PARKING LOT 1		1.48	2.9	0.3	4.93	9.67		
PARKING LOT 2		1.23	2.4	0.4	3.08	6.00		
PARKING LOT 3		1.01	2.1	0.4	2.53	5.25		
PARKING LOT 4		1.22	2.3	0.4	3.05	5.75		





PROJECT TITLE:

DRAWING TITLE:

FILE NAME: SL1 115 W MAIN ST - MILLBURY, MA 07-22-2020 BD.dwg

115 W MAIN ST MILLBURY, MA

SCALE: 1"=30'-0" DATE: 7/22/20

EXTERIOR LIGHTING PHOTOMETRIC CALCULATION SHEET:

DRAWN BY: BD