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ABBREVIATIONS		MAX	MAXIMUM	
FOR ENTIRE PLAN SET		ME	MATCH EXISTING	
ASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	MEP	MECHANICAL, ELECTRICAL, AND PLUMBING	LIMIT OF SAWCUT
C	ACRE / ACRES	MH	MANHOLE	
D	AREA DRAIN	MIN	MINIMUM	EXISTING NOTE
DA	ACCESSIBLE / AMERICANS WITH DISABILITIES ACT	MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	_____
G	ABOVE GROUND	NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	_____
PROX	APPROXIMATE	NCRS	NATIONAL RESOURCE CONSERVATION SERVICE	_____
ARCH	ARCHITECTURAL	O&M	OPERATIONS AND MAINTENANCE	_____
SPSH	ASPHALT	OC	ON CENTER	_____
SSF	AREA SUBJECT TO STORMWATER FLOWAGE	OCS	OUTLET CONTROL STRUCTURE	_____
SSOC	ASSOCIATION	OGS	OIL AND GRIT SEPARATOR	
C	BOTTOM OF CURB	ORD	ORDINANCE	
F	BASEMENT FLOOR	PA / POA	POINT OF ANALYSIS	
IO	BIOGARDEN	PC	POINT OF CURVATURE	
IT	BITUMINOUS	PCCR	POINT OF CURVATURE, CURB RETURN	
K	BLOCK	PERF	PERFORATED	
L	BASELINE	PG	PROPOSED GRADE	
LDG	BUILDING	PI	POINT OF INTERSECTION	
M	BENCH MARK	POG	POINT OF GRADE	
RL	BUILDING RESTRICTION LINE	PP	POLYPROPYLENE PIPE	
VW	BORDERING VEGETATIVE WETLAND	PROP	PROPOSED	
B	CATCH BASIN	PT	POINT OF TANGENCY	
F	CUBIC FEET	PTCR	POINT OF TANGENCY, CURB RETURN	
I	CURB INLET	PVI	POINT OF VERTICAL INTERSECTION	
IT	CHANGE IN TYPE	PVMT	PAVEMENT	
L	CENTER LINE	PVT	POINT OF VERTICAL TANGENCY	
MP	CORRUGATED METAL PIPE	R	RADIUS / RADII	
O	CLEAN OUT	R/W	RIGHT-OF-WAY / RIGHTS-OF-WAY	
ONC	CONCRETE	RCP	REINFORCED CONCRETE PIPE	
ONN	CONNECTION	RD	ROAD DRAIN	
OODR	COORDINATE	REGS	REGULATIONS	
PP	CORRUGATED PLASTIC PIPE	RELO	TO BE RELOCATED	
Y	CUBIC YARD	REQ	REQUIRED	
EC	DECORATIVE	RET	RETENTION	
ED	DEPARTMENT OF ENVIRONMENTAL PROTECTION	RET WALL	RETAINING WALL	
ET	DETENTION	RETO	TO BE RETURNED TO OWNER	
IA	DIAMETER	RG	RAIN GARDEN	
MH	DRAINAGE MANHOLE	S	SLOPE	
OM	DOMESTIC	SAN	SANITARY SEWER	
OT	DEPARTMENT OF TRANSPORTATION	SESC	SOIL EROSION AND SEDIMENT CONTROL	
P	DESIGN POINT	SF	SQUARE FEET	
WL	DASHED WHITE LINE	SHLO	STATE HIGHWAY LAYOUT	
YL	DOUBLE YELLOW LINE	SMH	SANITARY MANHOLE	
G	EXISTING GRADE	STA	STATION	
LEC	ELECTRIC	STM	STORM WATER / STORM SEWER	
LEV	ELEVATION	SWL	SINGLE/SOLID WHITE LINE	
OR	ENGINEER OF RECORD	SWPPP	STORMWATER POLLUTION PREVENTION PLAN	
P / EOP	EDGE OF PAVEMENT	TBA	TO BE ABANDONED	
S / EOS	EDGE OF SHOULDER	TBR	TO BE REMOVED	
W	END WALL	TBV	TO BE VACATED	
X	EXISTING	Tc	TOP OF CURB	
OC	FIRE DEPARTMENT CONNECTION	Tc	TIME OF CONCENTRATION	
EMA	FEDERAL EMERGENCY MANAGEMENT AGENCY	TD	TRENCH DRAIN	
ES	FLARED END SECTION	TELE	TELECOMMUNICATIONS / TELEDATA	
F	FINISH / FIRST FLOOR	TPF	TREE PROTECTION FENCE	
FE	FINISH / FIRST FLOOR ELEVATION	TR	TO REMAIN	
G	FINISH GRADE	TRANS	TRANSITION	
H	FIRE HYDRANT	TYP	TYPICAL	
M	FORCE MAIN	UG	UNDERGROUND	
O	FIBER OPTIC	UP	UTILITY POLE	
GRADE	GRADE	USGS	UNITED STATES GEOLOGICAL SURVEY	
C	GENERAL CONTRACTOR	VERT	VERTICAL	
EO	GEOTECH/GEOTECHNICAL	VIF	VERIFY IN FIELD	
F / FGE	GARAGE FLOOR ELEVATION (AT DOOR)	W	WIDE / WIDTH	
FA	GROSS FLOOR AREA	WL	WATER LINE	
H	GRADE HIGH (WALL)	WM	WATER METER	
L	GRADE LOW (WALL)	WQU	WATER QUALITY UNIT	
RT	GRATE	YD	YARD DRAIN	
T	GREASE TRAP	#	NUMBER	
V	GATE VALVE	##	SLOPE EXPRESSED IN HORIZONTAL VERTICAL IN FEET	
DPE	HIGH DENSITY POLYETHYLENE	±	PLUS OR MINUS	
OR	HORIZONTAL	°	DEGREE	
P	HIGH POINT	Ø	DIAMETER	
W	HEADWALL	'	FEET/FOOT	
IS	INLET CONTROL STRUCTURE	"	INCHES	
INF	INFILTRATION			
IT	INTERSECTION			
IV	INVERT			
C	LINEAR FOOT			
OC	LIMIT OF CLEARING			
OD	LIMIT OF DISTURBANCE			
OS	LINE OF SIGHT			
OW	LIMIT OF WORK			
o	LOW POINT			
S	LANDSCAPE			

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MASSACHUSETTS DEMOLITION NOTES

(Rev. 1/2023)

1. THE CONTRACTOR MUST LOCATE AND CLEARLY DEFINE VERTICALLY AND HORIZONTALLY ALL ACTIVE AND INACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE TO BE REMOVED. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/RELOCATED DURING SITE ACTIVITY.
2. CONTRACTOR SHALL FIELD LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION AND IF REQUIRED, DIG EXPLORATORY TEST PITS TO CONFIRM EXACT LOCATION AND DEPTH OF UTILITIES. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER WITH ANY CONFLICTS AS NEEDED TO COORDINATE FINAL LOCATION OF ALL PROPOSED IMPROVEMENTS.
3. CONTRACTOR SHALL INSPECT ALL EXISTING UTILITY STRUCTURES THAT ARE TO REMAIN FOR THE PROJECTS RE-USE TO VERIFY SUITABILITY FOR SAME. IF STRUCTURES CAN NOT BE REUSED THEN THE CONTRACTOR SHALL PROVIDE A NEW STRUCTURE. THE CONTRACTOR SHALL COORDINATE SUCH WORK WITH THE APPLICABLE UTILITY PROVIDER.
4. CONTRACTOR TO REMOVE ANY BUILDING FOUNDATION REMAINS OR ASSOCIATED IMPROVEMENTS, DELETERIOUS MATERIALS, AND/OR DEBRIS THAT IMPEDE THE WORK SHOWN ON THESE PLANS.
5. THE CONTRACTOR SHALL REVIEW THE PLANS VERSUS THE LOCATION OF EXISTING STRUCTURES, UTILITIES AND APPURTENANCES IN THE FIELD TO CONFIRM ACCURACY OF SAME AND VERIFY ITEMS TO BE REMOVED. THE CONTRACTOR SHALL CARRY COSTS FOR REMOVAL OF ANY EXISTING STRUCTURES, APPURTENANCES, AND UNDERGROUND UTILITIES, INCLUDING BUT NOT LIMITED TO, DRAIN, WATER, SEWER, STEAM, IRRIGATION, GAS, TELECOM AND ELECTRIC.
6. THE CONTRACTOR SHALL MAINTAIN, ADJUST OR ABANDON EXISTING MONITORING WELLS IN ACCORDANCE WITH THE DIRECTION OF THE ENVIRONMENTAL CONSULTANT (TYP.).
7. WHERE THE LIMIT OF WORK COINCIDES WITH PROPERTY LINE, TREE LINE, PROPOSED SAWCUT OR COMBINATION THEREOF IT IS SHOWN ADJACENT TO THESE FEATURES FOR GRAPHICAL CLARITY.
8. EXISTING TREES TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION UNLESS CLEARLY INDICATED OTHERWISE. REASONABLE CARE AND CAUTION SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT DAMAGE AND SELECTIVE PRUNING MAY BE REQUIRED TO ENSURE THAT TREES DO NOT CONFLICT WITH THE DEVELOPMENT.
9. CONTRACTOR SHALL REPAIR/REPLACE ANY TRAFFIC LOOP DETECTORS THAT ARE DAMAGED DURING CONSTRUCTION WITHIN EXISTING OR PROPOSED RIGHTS OF WAYS. ANY SUCH WORK SHALL BE PERFORMED BY A LICENSED / DOT APPROVED SIGNAL CONTRACTOR. ANY DAMAGED LOOPS OR OTHER SIGNAL EQUIPMENT SHALL BE REPAIRED IMMEDIATELY AFTER THE WORK IS COMPLETE. THE SIGNAL CONTRACTOR SHALL BE AVAILABLE TO MAKE ANY TEMPORARY SIGNAL CHANGES IF REQUESTED BY DOT AND/OR THE MUNICIPALITY.
10. THE CONTRACTOR MUST FIELD VERIFY THE LOCATIONS WHERE PROPOSED UTILITIES CROSS EXISTING UNDERGROUND UTILITIES BY USING A TEST PIT TO DETERMINE THE EXACT SIZE, DEPTH AND LOCATION, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
11. CONTRACTOR SHALL LOCATE ANY EXISTING UTILITY SERVICES THAT ARE TO BE TERMINATED AT THE EXISTING MAIN AND/OR PROPERTY LINE. THESE SERVICES ARE TO BE TERMINATED IN ACCORDANCE WITH MUNICIPAL / STATE TRANSPORTATION DEPARTMENT REQUIREMENTS.

**BOHLER** TM

SITE CIVIL AND CONSULTING ENGINEERING  
PROGRAM MANAGEMENT  
LANDSCAPE ARCHITECTURE  
SUSTAINABLE DESIGN  
PERMITTING SERVICES  
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	DRAWN BY	CHECKED BY



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PROJECT No.: MAA240489.00-0A  
DRAWN BY: SBB  
CHECKED BY: CPB  
DATE: 02/05/2025  
CAD ID: P-CIVL-PROP

PROJECT:

SITE  
DEVELOPMENT  
PLANS  
FOR

ROUTE 85  
REALTY CORP.

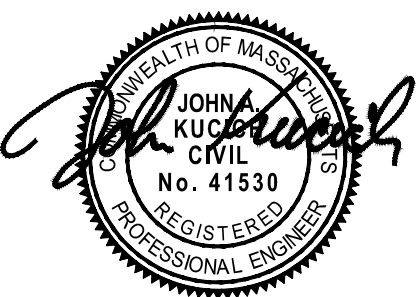
PROPOSED  
DEVELOPMENT

MAP: 24 | LOTS: 5 & 6  
182 & 186 HARTFORD AVENUE  
NORFOLK COUNTY  
BELLINGHAM, MA

**BOHLER** TM

352 TURNPIKE ROAD, 3rd FLOOR  
SOUTHBOROUGH, MA 01772  
Phone: (508) 480-9900

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SHEET TITLE:

EXISTING  
CONDITIONS/  
DEMOLITION  
PLAN

SHEET NUMBER:

C-201

ORG. DATE - 02/05/2025

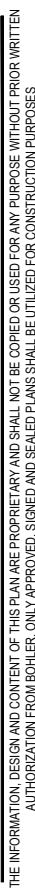
THIS PLAN TO BE UTILIZED  
FOR DEMOLITION PURPOSES  
ONLY











## (Rev. 5/2024)

- ## REVISIONS



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DOCUMENT UNLESS INDICATED OTHERWISE.

**PROJECT:**

**MAP: 24 | LOTS: 5 & 6  
182 & 186 HARTFORD AVENUE  
NORFOLK COUNTY  
BELLINGHAM, MA**

Phone: (508) 480-9900

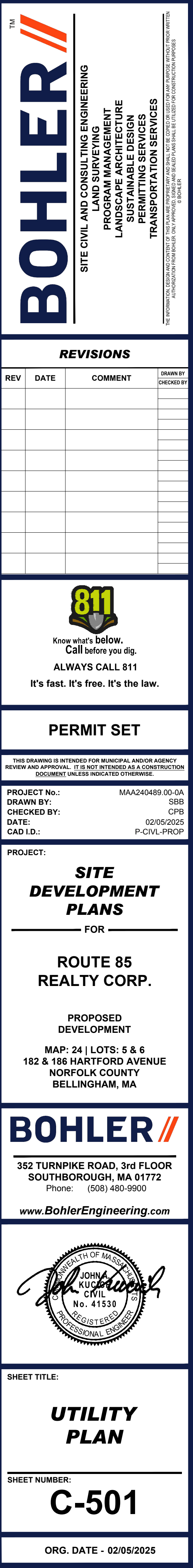
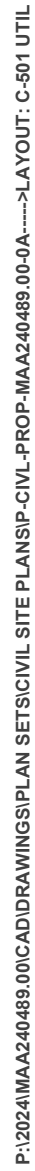
**SHEET TITLE**

## SHEET NUMBER

ORG. DATE - 02/05/2025











N/F  
EFB WHITEBURN CORPORATION  
BOOK:30847 PAGE:461  
178 HARTFORD AV  
HAAOD

N/F  
SHAHID GHUMAN  
BOOK:40856 PAGE:261  
5 ARROWHEAD RD

N/F  
LINDO F MONTEIRO &  
MICHELLE A MONTEIRO  
BOOK:37725 PAGE:550  
4 CEDAR HILL RD

N/F  
TIMOTHY M. &  
SHARON M. NORTON  
BOOK: 35441 PAGE: 441  
7 CEDAR HILL RD

N/F  
217 RIVER ROAD LLC  
BOOK:35064 PAGE:365  
190 HARTFORD AV  
A.M. 24 LOT 7  
AREA=17,042.5 SF  
(0.39±AC)

N/F  
217 RIVER ROAD LLC  
BOOK:35064 PAGE:365  
194 HARTFORD AV  
A.M. 24 LOT 8  
AREA=15,169±SF  
(0.35±AC)

#194  
1 STORY W/F  
HOUSE

#190  
1 STORY W/F  
HOUSE

#194  
1 STORY W/F  
HOUSE

#190  
1 STORY W/F  
HOUSE

N/F  
M A REALTY ACQUISITION LLC  
BOOK:26834 PAGE:118  
189 HARTFORD AV

N/F  
GLOBAL COMPANIES LLC  
BOOK:28008 PAGE:245  
270 NORTH MAIN ST

N/F  
HARTFORD REALTY TRUST  
C/O ALEXANDER HARCOWITZ  
BOOK:4488 PAGE:394  
HARTFORD AV

N/F  
HARTFORD REALTY TRUST  
C/O ALEXANDER HARCOWITZ  
BOOK:4488 PAGE:394  
HARTFORD AV

N/F  
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SITE CIVIL AND CONSULTING ENGINEERING  
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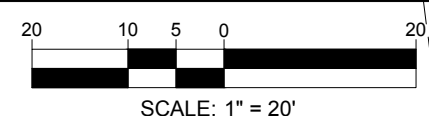
JOHN A. BOHLER  
CIVIL  
No. 41530  
REGISTERED  
PROFESSIONAL ENGINEER

SHEET TITLE:  
SOIL EROSION  
AND SEDIMENT  
CONTROL PLAN

SHEET NUMBER:  
C-801

ORG. DATE - 02/05/2025

THIS PLAN TO BE UTILIZED FOR  
SOIL EROSION AND SEDIMENT  
CONTROL PURPOSES ONLY





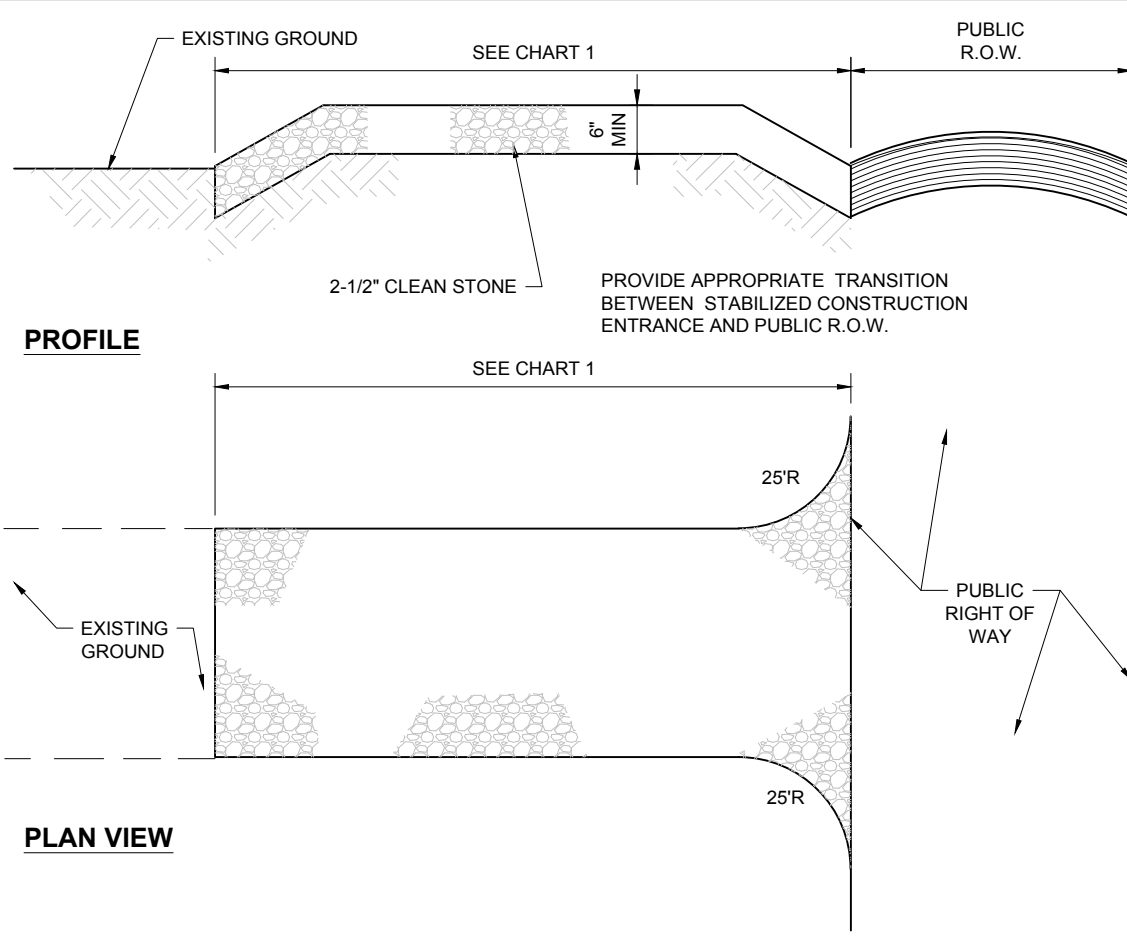
- ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE AS SET FORTH IN THE MOST CURRENT STATE SEDIMENT AND EROSION CONTROL MANUAL.
2. UNLESS OTHERWISE SPECIFIED, ALL ACTUAL CONSTRUCTION WILL BE LEFT IN AN UNTREATED OR UNVEGETATED CONDITION FOR A MINIMUM TIME. AREAS SHALL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. AT A MINIMUM, AREAS SHALL BE PERMANENTLY STABILIZED ACCORDING TO THE CURRENT EDITION OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP), OR IN THE ABSENCE OF A SWPPP, THEY SHALL BE PROMPTLY STABILIZED WITHIN 14 DAYS OF FINISH GRADING. TEMPORARILY STABILIZED WETLANDS ARE NOT TO BE SUBJECT TO INITIAL DISTURBANCE OF THE SOIL. IF ANY DISTURBANCE IS WITHIN 100 FEET OF A STREAM OR POND, THE AREA SHALL BE STABILIZED WITHIN 7 DAYS OR PRIOR TO ANY STORM EVENT (THIS WOULD INCLUDE WETLANDS).
3. SLOPE PROTECTION (E.g., SILT FENCE, STRAW BARRIERS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF A CONTRIBUTING DRAINAGE AREA ABOVE THEM. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 8%.
4. A STRAW BARRIER AT TOP OF SLOPE TO FILTER SILT FROM RUNOFF. SEE SILTATION TABLE FOR PROPER INSTALLATION. STRAW BARRIER SHALL REMAIN IN PLACE PER NOTE #5.
5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SEPARABLE DUE TO SEDIMENT ACCUMULATION OR DAMAGE TO STRUCTURE. SEDIMENT DEPOSIT SHOULD BE REMOVED AFTER EACH STORM EVENT; IT MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED. FOR SEDIMENT CONTROL DEVICES LOCATED AFTER THE COMPLETION OF FINAL GRADE, THE CONTRACTOR SHALL OBTAIN COMMISSION JURISDICTION, THE DEVICES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2:1) UNLESS OTHERWISE INDICATED ON THE PLANS. SLOPE PROTECTION FOR SLOPES GREATER THAN 2:1 SHALL BE DESIGNED BY A GEOTECHNICAL ENGINEER.
7. PRIOR TO ANY DISTURBANCE OF THE SITE, THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO KILL OFF ALL EXISTING TEMPORARY MULCH (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT REGIMENEST SEEDING PERIOD.
8. TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED 45 DAYS PRIOR TO THE NEXT KILLING FROST TO PROTECT FROM SPRING RUNOFF PROBLEMS.
9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL STANDARDS.
10. TEMPORARY SEEDING SHALL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE SPECIFIED WILL BE GRADED, SMOOTHED, AND PREPARED FOR FINAL SEEDING AS FOLLOWS:
  - A. SIX INCHES, OR DEPTH ESTABLISHED ON THE LANDSCAPE PLAN, OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND MEASURED.
  - B. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 80 LB PER ACRE OR 18.4 LB PER 1,000 SF USING 10-20-20 OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE OR 135 LB PER 1,000 SF.
  - C. FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDED TO A MIXTURE OF 4% CREEPING RED FESCUE, 3% REDTOP, AND 49% LAWN FESCUE. THE LAWN AREAS WILL BE SEEDED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% PERENNIAL Ryegrass, 2% Annual Ryegrass, 2% Tall Fescue, and 8% Bird's Foot Trefoil. 100 SF OF QUALITY SOY MAY BE SUBSTITUTED FOR SEED WHERE SLOPES DO NOT EXCEED 2:1. SOIL TOO MUCH STEEPER THAN 2:1 SHOULD BE PEGGED.
11. STRAW MULCH AT THE RATE 70-TONS PER 1,000 SF. AFTER APPLICATION OF WOOD OR PAPER FIBER MULCH SHALL BE APPLIED TO ALL SEED BEDS. SUITABLE NON-SODY SOILS MAY BE USED TO STRAW MULCH AREAS.
12. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS 70% STABILIZED. FOR EROSION CONTROL MEASURES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE MEASURES SHALL REMAIN IN PLACE UNTIL THEY ARE REMOVED BY THE DISTRICTING DIVISION.
13. WETLANDS WILL BE PROTECTED WITH BARRIERS CONSISTING OF STRAW BALES, COMPOST TUBES, SILT FENCE OR A COMBINATION THEREOF.
14. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL HAVE AN EXPOSURE WINDOW OF NOT MORE THAN 7 DAYS PRIOR TO EACH STORM IF NOT BEING ACTIVELY WORKED.

LOCATION	MULCH	MULCH RATE (1000 SF)
PROTECTED AREA	STRAW	100 POUNDS
WINDY AREA	SHREDDED OR CHOPPED CORNSTALKS STRAW (ANCHORED)*	185-275 POUNDS 100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES GREATER THAN 3:1	JUTE MESH OR EXCELSIOR MAT	AS REQUIRED
GREATER THAN 3:1	(REFER TO GEOTECHNICAL REPORT FOR FINAL DESIGN REQUIREMENT)	

- \* A HYDRO-APPLICATION OF WOOD OR PAPER FIBER MAY BE APPLIED FOLLOWING SEEDING, A SUITABLE NON-TOXIC BINDER SHALL BE USED TO ADDITIONAL WIND CONTROL.
1. ANCHORING: ANCHORS ARE TO BE USED WITH PEG AND TWINE (1" x 3" VDL/COL), MULCH NETTING (AS PER MANUFACTURER'S); WOOD CELLULOSE FIBER (90 LBS/ACRE); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); USE OF A SERATED STRAIGHT DITCH. WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.
15. PROPOSED LOCATIONS OF STORMWATER MANAGEMENT BASINS CAN BE UTILIZED AS A TEMPORARY SEDIMENT TRAP DURING CONSTRUCTION. SEDIMENT TRAPS SHALL BE SIZED AND CONSTRUCTED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
16. TEMPORARY SEDIMENT TRAPS SHALL BE SIZED PER THE CURRENT EDITION OF THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS" AND PROVIDE A MINIMUM OF 1,800 CF PER ACRE OF TRIBUTARY AREA. TRAPS SHALL BE DESIGNED TO ACCUMULATE SEDIMENT TO A MINIMUM LENGTH TO WIDTH RATIO AND NO DEPTH LESS THAN 5 FT IN HEIGHT. UPON SITE STABILIZATION, ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE TEMPORARY SEDIMENT TRAP EXCAVATED TO 1 FOOT BELOW THE TRAP. THE AREA SHALL THEN BE RECLAIMED TO PREVENT COMPACTION AND PROMOTE INFILTRATION, AND GRADED TO MATCH THE ADJACENT TERRAIN.
16. STOCKPILING OF MATERIALS (DIRT, WOOD, CONSTRUCTION MATERIALS, ETC.) MUST REMAIN COVERED AT ALL TIMES TO MINIMIZE ANY DUST PROBLEMS THAT MAY OCCUR WITH ADJACENT PROPERTIES AND TO PROVIDE MAXIMUM PROTECTION AGAINST EROSION.
17. ALL CATCH BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.
18. THE CONTRACTOR MUST PERFORM Dewatering (IF REQUIRED), IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY FOR THE COSTS ASSOCIATED WITH ANY AND ALL NECESSARY DISCHARGE PERMITS REQUIRED WITH LOCAL AGENCIES.
19. THE CONTRACTOR MUST PLACE CONSTRUCTION WASTE MATERIAL STORAGE AREAS TO MINIMIZE EXPOSURE TO STORMWATER. THE CONTRACTOR MUST IMMEDIATELY PLACE CONSTRUCTION WASTE IN ON-SITE STORAGE CONTAINERS UNTIL THAT CONSTRUCTION WASTE IS READY FOR OFF-SITE DISPOSAL. THE CONTRACTOR MUST MAINTAIN SPILL PREVENTION AND RESPONSE EQUIPMENT ON AND AROUND ALL WASTE STORAGE AREAS. THE CONTRACTOR MUST TRAIN ALL OF THE CONTRACTOR'S EMPLOYEES WHO MUST BE PROPERLY TRAINED IN THE APPLICATION OF SPILL PREVENTION AND RESPONSE PROCEDURES.
20. EROSION CONTROL NOTES DURING WINTER CONSTRUCTION
21. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
22. WINTER EXCAVATION AND GRADING SHALL BE SUCH THAT THE AMOUNT OF AREA OPEN AT ONE TIME IS MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE AND IN CONFORMANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN SUCH THAT ADEQUATE PROVISIONS ARE EMPLOYED TO CONTROL STORMWATER RUNOFF.
23. DURING THE WINTER CONSTRUCTION PERIOD, THE CONTRACTOR SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
24. AN AREA SHALL BE CONSIDERED TO HAVE BEEN TEMPORARILY STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR STRAW AT A RATE OF 100 LBS PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDS, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE.
25. FOR AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR A PERIOD EXCEEDING 14 DAYS BETWEEN THE DATES OF NOVEMBER 15TH AND APRIL 15TH, SEED WILL NOT BE REQUIRED. THE MULCH SHALL BE FINE GRADED AND EITHER MULCHED WITH MULCH OR MULCH WILL BE REMOVED. IF MULCH IS REMOVED, THE AREA HAS BEEN FINE GRADED AND EITHER MULCHED, THEN THE AREA MAY BE DORMANT SEEDS AT A RATE OF 200-300 LBS PER ACRE FOR PERMANENT SEED AND THEN MULCHED AS APPLICABLE. SLOPES SHALL NOT BE LEFT UNSTABILIZED OVER THE WINTER OR IN AREAS WHERE WORK HAS CEASED FOR MORE THAN 14 DAYS. MULCHING SHALL BE REQUIRED FOR ALL AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED. IT SHALL BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF SEDIMENT BARRIERS OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
26. MULCHING REQUIREMENTS
27. A. BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING OR WOOD CELLULOSE FIBER.
28. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES GREATER THAN 14% AND FOR ALL OTHER SLOPES GREATER THAN 8%.
29. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%, AFTER OCTOBER 1ST THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
30. ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE STORMWATER PREVENTION PLAN.
31. DURING THE WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH ALL REQUIREMENTS. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. EROSION CONTROL MEASURES MUST CONFORM TO THE STATE, LOCAL, AND FEDERAL GUIDELINES FOR URBAN EROSION CONTROL. EROSION CONTROL MEASURES MUST BE INSTALLED AND MAINTAINED BY THE PROFESSIONAL OF RECORD CHIEF AND SPECIFICALLY AS DIRECTED THEREIN. INSTALLATION OF EROSION CONTROL, CLEARING, AND SITE WORK MUST BE PERFORMED EXACTLY AS INDICATED IN THE EROSION CONTROL CONSTRUCTION NOTES.
3. THE DISTURBED LAND AREA OF THIS SITE IS APPROXIMATELY XXX,XXX ACRES.
4. THE FOLLOWING EROSION CONTROL MEASURES ARE PROPOSED FOR THIS SITE:
  - a. STABILIZED CONSTRUCTION ENTRANCE/ EXIT - A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT IS TO BE INSTALLED AT THE DESIGNATED LOCATION SHOWN ON THE PLAN. THIS AREA MUST BE GRADED SO THAT RUNOFF WATER WILL BE RETAINED.
  - b. SEDIMENT FENCE - INSTALL SILT FENCE(S) AND/OR SILT SOCK AROUND ALL OF THE DOWNSLOPE PERIMETERS OF THE SITE, TEMPORARY FILL AND SOIL STOCKPILES.
  - c. FILTER FABRIC DRAINAGE PROTECTION AROUND EACH DRAINAGE INLET AS DRAINAGE STRUCTURES ARE INSTALLED TO REDUCE THE QUANTITY OF SEDIMENT. INSTALL TEMPORARY INLET PROTECTION ON INLETS DOWNSLOPE FROM DISTURBANCE, WHICH MAY BE BEYOND THE LIMITS OF DISTURBED AREA.
  - d. INSTALLATION OF EROSION CONTROL DEVICES MUST BE IN ACCORDANCE WITH ALL OF THE MANUFACTURER'S RECOMMENDATIONS.
5. THE CONTRACTOR MUST INSPECT EROSION CONTROL MEASURES WEEKLY. THE CONTRACTOR MUST REMOVE ANY SILT DEPOSITS GREATER THAN 6 INCHES OR HALF THE EROSION CONTROL BARRIERS HEIGHT COLLECTED ON THE FILTER FABRIC AND/OR SILT SOCKS. THE CONTRACTOR MUST REMOVE ANY SILT DEPOSITS GREATER THAN 6 INCHES OR HALF THE EROSION CONTROL BARRIERS HEIGHT COLLECTED ON THE FILTER FABRIC AND/OR SILT SOCKS.
6. THE CONTRACTOR MUST APPLY TEMPORARY SEED AND MULCH TO ALL DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINISHED GRADE AND VEGETATED WITHIN 7 DAYS. WHEN AREAS ARE DISTURBED AFTER THE GROWING SEASON, THE CONTRACTOR MUST STABILIZE SAME WITH GEOTEXTILE FABRIC AND MAINTAIN SAME IN STRICT ACCORDANCE WITH BEST MANAGEMENT PRACTICES.
7. THE CONTRACTOR MUST INSTALL ADDITIONAL EROSION CONTROL MEASURES IF THE PROFESSIONAL OF RECORD SO REQUIRES, TO PREVENT AND INCLUDING THE INCIDENTAL DISCHARGE OF SILT-LAND RUNOFF FROM EXISTING THE SITE.
8. THE CONTRACTOR MUST MAINTAIN ALL EROSION CONTROL MEASURES UNTIL THE PROFESSIONAL OF RECORD RECOMMENDS UNTIL PERMANENT PAVING AND TURF/LANDSCAPING IS ESTABLISHED. THE COSTS OF INSTALLING AND MAINTAINING THE EROSION CONTROL MEASURES MUST BE INCLUDED IN THE BID PRICE FOR THE SITE WORK AND THE CONTRACTOR IS RESPONSIBLE FOR ALL SUCH COSTS.
9. THE CONTRACTOR MUST CONTINUE TO MAINTAIN ALL EROSION CONTROL MEASURES UNTIL THE COMPLETION OF CONSTRUCTION AND THE ESTABLISHMENT OF VEGETATION.
10. EROSION CONTROL MEASURES FOR EROSION CONTROL MEASURES, SILT AND DEBRIS AFTER ESTABLISHING PERMANENT VEGETATION COVER OR OTHER INSTALLING A DIFFERENT, SPECIFIED METHOD OF STABILIZATION.
11. THIS PLAN REPRESENTS THE MINIMUM LEVEL OF IMPLEMENTATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROL FACILITIES, MEASURES AND STRUCTURES. ADDITIONAL FACILITIES, MEASURES AND STRUCTURES MUST BE INSTALLED WHERE REQUIRED TO COMPLY WITH THE LOCAL, STATE AND FEDERAL STANDARDS AND TO PREVENT ANY, INCLUDING THE INCIDENTAL DISCHARGE OF SILT-LAND RUNOFF FROM EXISTING THE SITE.
12. THE CONTRACTOR MUST PROTECT ALL EXISTING TREES AND SHRUBS. THE CONTRACTOR MUST REFER TO THE LANDSCAPE ARCHITECTURE DEMOLITION PLANS FOR TREE PROTECTION.
13. THE CONTRACTOR MUST REFER TO GRADING PLANS FOR ADDITIONAL INFORMATION.
14. THE CONTRACTOR MUST CLEAN EXISTING AND PROPOSED DRAINAGE STRUCTURES AND INTERCONNECTING PIPES ON OR OFF-SITE OF THE PROJECT DURING THE CONSTRUCTION PERIOD AND AT THE END OF THE TIME OF SITE STABILIZATION AND END OF PROJECT.
15. SOIL EROSION CONTROL MEASURES MUST BE ADJUSTED OR RELOCATED BY THE CONTRACTOR AS IDENTIFIED DURING SITE OBSERVATION IN ORDER TO MAINTAIN THE COMPLETE EFFECTIVENESS OF ALL CONTROL MEASURES.
16. THE CONTRACTOR MUST IDENTIFY, ON THE PLAN, THE LOCATION OF WASTE CONTAINERS, FUEL STORAGE TANKS, CONCRETE WASHOUT AREA AND ANY OTHER MATERIALS STORAGE AREAS.
17. THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:

- INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE/EXIT (AS SHOWN)
- INSTALLATION OF EROSION CONTROL BARRIER (STRAW BALES AND SILT FENCE) (AS SHOWN)
- INSTALLATION OF INLET PROTECTION IN STREET (AS SHOWN)
- DEMOLITION OF EXISTING SITE STRUCTURES (SEE DEMOLITION PLAN)
- DEMOLITION OF EXISTING SITE PAVEMENT AND AMENITIES (SEE DEMOLITION PLAN)
- CLEARING AND GRUBBING
- INSTALLATION OF TEMPORARY SWALES AND SEDIMENT BASINS
- EARTHWORK AND EXCAVATION/FILLING AS NECESSARY
- CONSTRUCTION OF UTILITIES
- STABILIZE PERMANENT LAWN AREAS AND SLOPES WITH TEMPORARY SEEDING
- INSTALLATION OF INLET PROTECTION OF ON-SITE UTILITIES (AS SHOWN)
- CONSTRUCTION OF BUILDINGS
- CONSTRUCTION OF ALL CURBING AND LANDSCAPE ISLANDS AS INDICATED ON THE PLANS
- SPREAD TOPSOIL ON SLOPED AREAS AND SEED AND MULCH
- FINAL GRADING OF ALL SLOPED AREAS
- PLACE 6" TOPSOIL ON SLOPES AFTER FINAL GRADING COMPLETED. FERTILIZE, SEED, AND MULCH SEED MIXTURE TO BE INSTALLED AS REQUIRED.
- REMOVAL OF THE TEMPORARY SEDIMENT BASINS
- PAVE PARKING LOT
- LANDSCAPING PER LANDSCAPING PLAN
- REMOVE EROSION CONTROLS AS DISTURBED AREAS BECOME STABILIZED TO 70% STABILIZATION OR GREATER

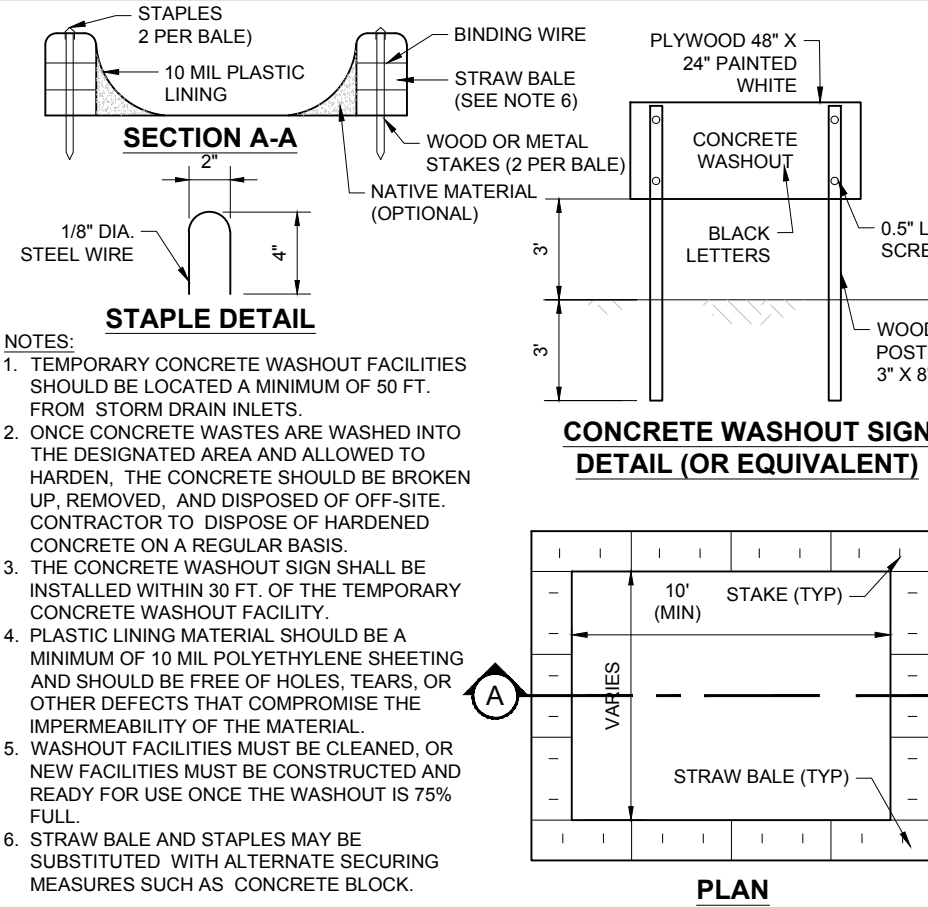


PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2 TO 5%	100 FT	200 FT
>5%	ENTIRE ENTRANCE STABILIZED WITH FABC BASE COURSE (1)	

(1) AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

**CHART 1**

### CHART 1



LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTY	TEST METHOD	UNITS
GRAIN TENSILE STRENGTH	ASTM D-4832	200 LBS
GRAIN TENSILE ELONGATION	ASTM D-4832	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3788	800 PSI
TRAFFIC/200 TEAR	ASTM D-4833	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPROXIMATE OPENING SIZE	ASTM D-4491	40S GULMINE FT
FLOW RATE	ASTM D-4491	3.5 SEC <sup>1</sup>
PERMITTIVITY	ASTM D-4491	3.5 SEC <sup>1</sup>
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTY	TEST METHOD	UNITS
GRAIN TENSILE STRENGTH	ASTM D-4832	265 LBS
GRAIN TENSILE ELONGATION	ASTM D-4832	20%
PUNCTURE	ASTM D-4833	130 LBS
MULLEN BURST	ASTM D-3788	420 PSI
TRAFFIC/200 TEAR	ASTM D-4833	130 LBS
UV RESISTANCE	ASTM D-4355	80%
APPROXIMATE OPENING SIZE	ASTM D-4491	20S GULMINE FT
FLOW RATE	ASTM D-4491	1.5 SEC <sup>1</sup>
PERMITTIVITY	ASTM D-4491	1.5 SEC <sup>1</sup>

NOTES:

1. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. THE GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS OF THE SPECIFICATIONS TABLE.
3. PLACE AN INLET AGGREGATE PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE LENGTH "W" OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH "D" OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH "L" OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

NOT TO SCALE

**SECTION VIEW**  
**PROFILE VIEW OF INSTALLED FILTER SACK**

Labels for Section View:  
 SECURE LIFTING LOOPS TO OR UNDER SURFACE  
 FINISHED GRADE  
 2" X 2" X 3/4" RUBBER BLOCK (TYP)  
 1/4" BRIGHTLY COLORED NYLON ROPE EXPANSION RESTRAINT  
 INLET GRATE  
 REBAR LIFT FILET BAG FROM INLET USING REBAR FOR HANDLES OVERFLOW HOLES GEOTEXTILE BAG  
 1/4" BRIGHTLY COLORED NYLON ROPE EXPANSION RESTRAINT  
 LOOPS SIZED FOR 1" REBAR. USE REBAR FOR HANDLE TO EMPTY FILTER SACK AT A SEGMENT COLLECTION LOCATION.  
 BE SEEN: ENTS IN

Labels for Profile View:  
 3 (MAX)  
 36" MAX  
 CONSTRUCT SILT FENCE AND MIN 6" COMPOST FILTER SOCK AROUND PERIMETER OF STOCKPILE

**ISOMETRIC VIEW**  
**OR APPROVED EQUIVALENT**

SCALE (NE-0050101 - 09/2023) NOT TO SCALE (NE-0060102 - 09/2023)

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Know what's **below**.  
Call before you dig.

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PERMIT SET	
THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.	
PROJECT No.:	MAA240489.00-0A
DRAWN BY:	SBB
CHECKED BY:	CPB
DATE:	02/05/2025
CAD ID.:	P-CIVL-CNDS
PROJECT:	

***SITE  
DEVELOPMENT  
PLANS***

---

**FOR**

---

**ROUTE 85  
REALTY CORP.**

**PROPOSED  
DEVELOPMENT**

**MAP: 24 | LOTS: 5 & 6  
182 & 186 HARTFORD AVENUE  
NORFOLK COUNTY  
BELLINGHAM, MA**

**BOHLER //**

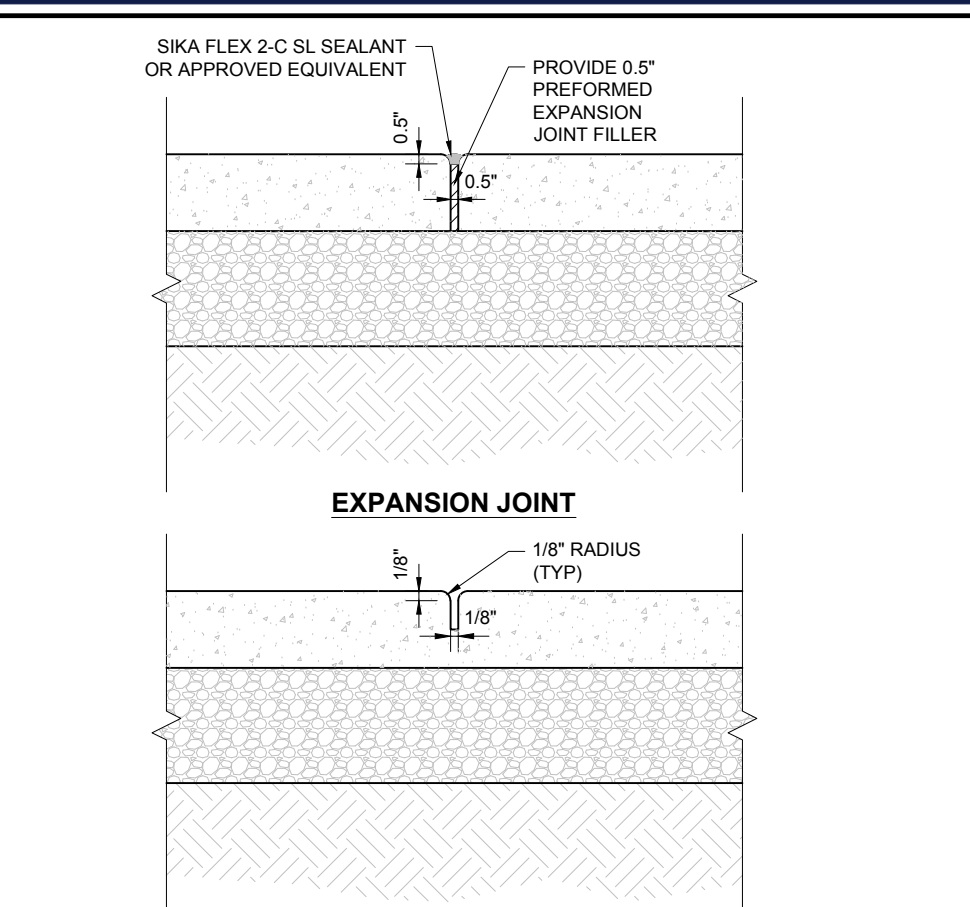
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352 TURNPIKE ROAD, 3rd FLOOR  
SOUTHBOROUGH, MA 01772  
Phone: (508) 480-9900

*[www.BohlerEngineering.com](http://www.BohlerEngineering.com)*

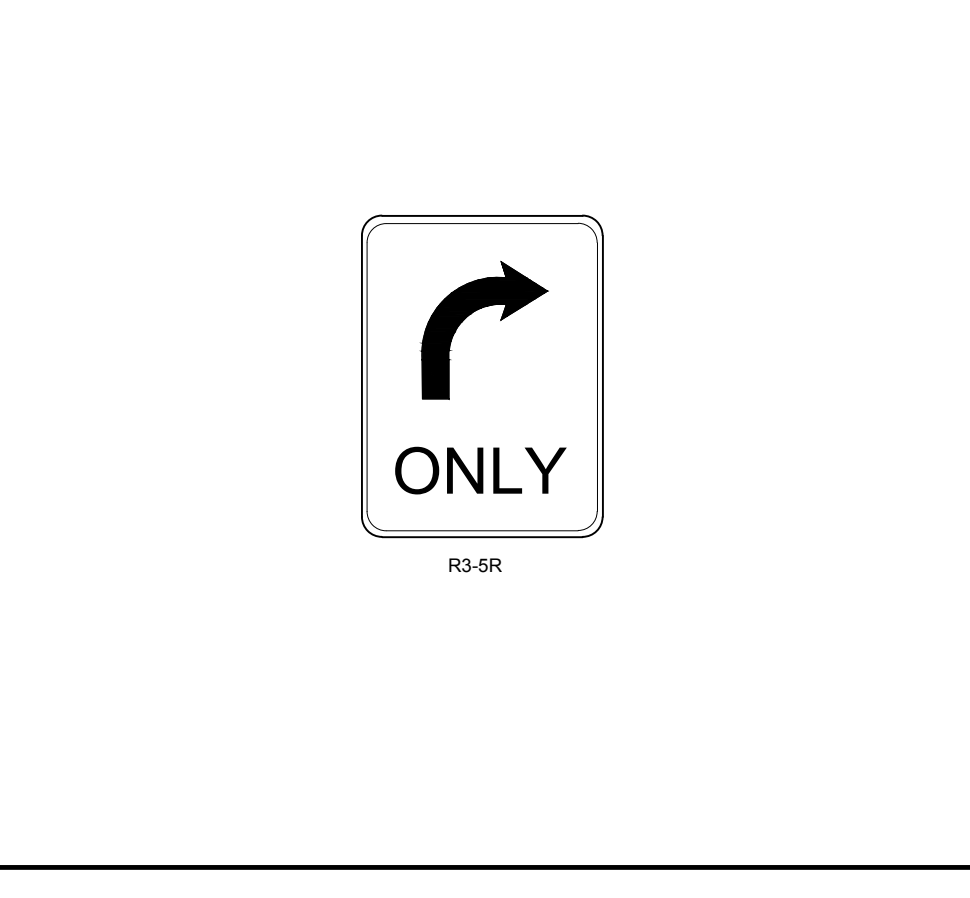
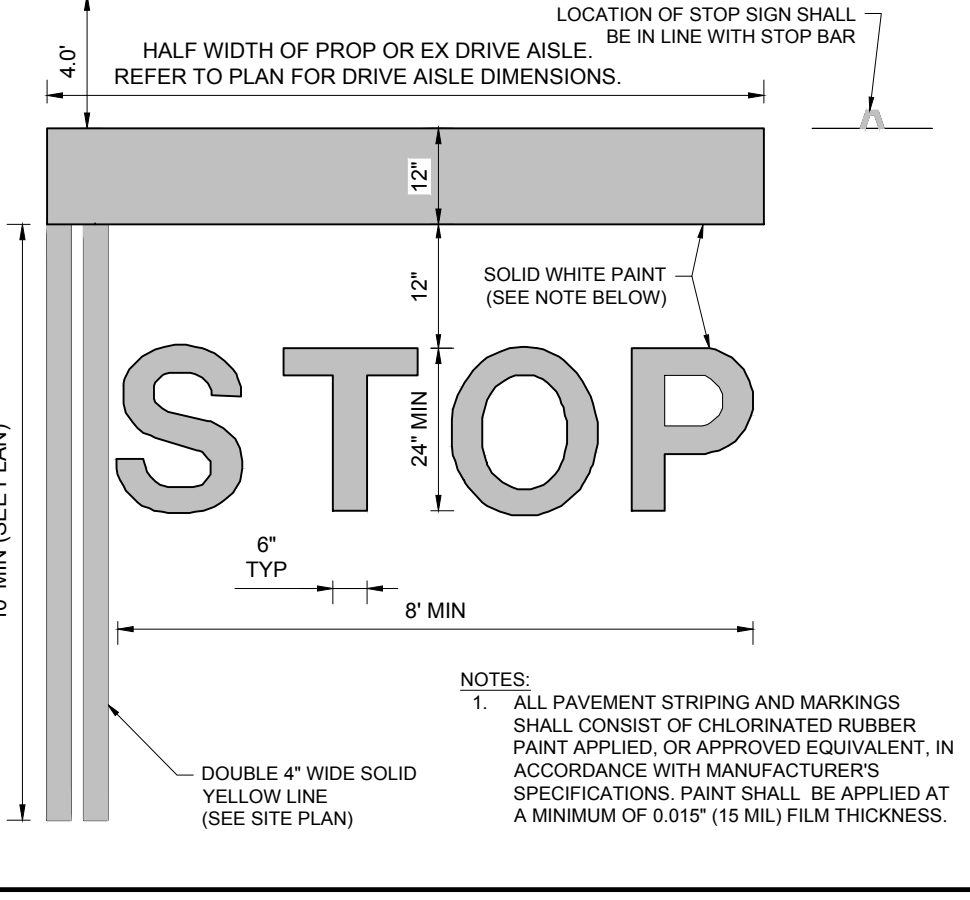
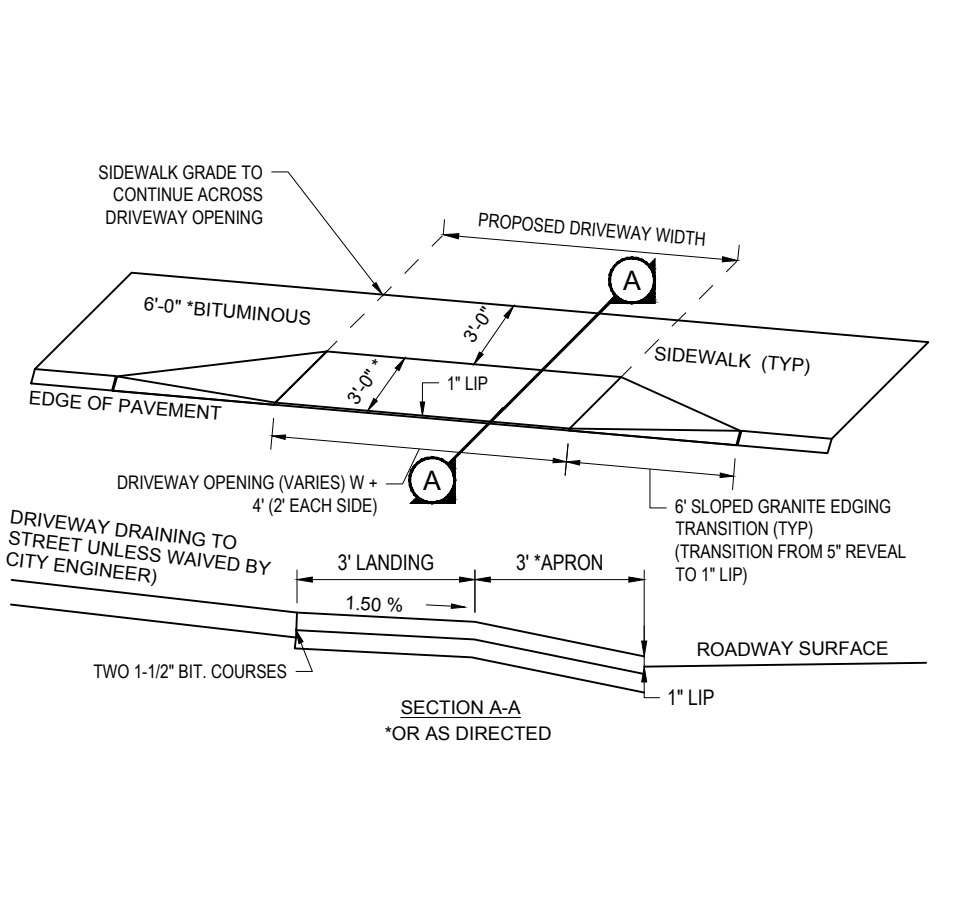
A circular professional engineer seal for the State of Massachusetts. The outer ring contains the text "COMMONWEALTH OF MASSACHUSETTS" at the top and "PROFESSIONAL ENGINEER" at the bottom. The inner circle features a signature, "JOHN A. KUCENAS", the number "No. 41530", and the word "REGISTERED".





**SIDEWALK CONSTRUCTION JOINTS**

NOT TO SCALE (BE-S030401 - 08/2023)

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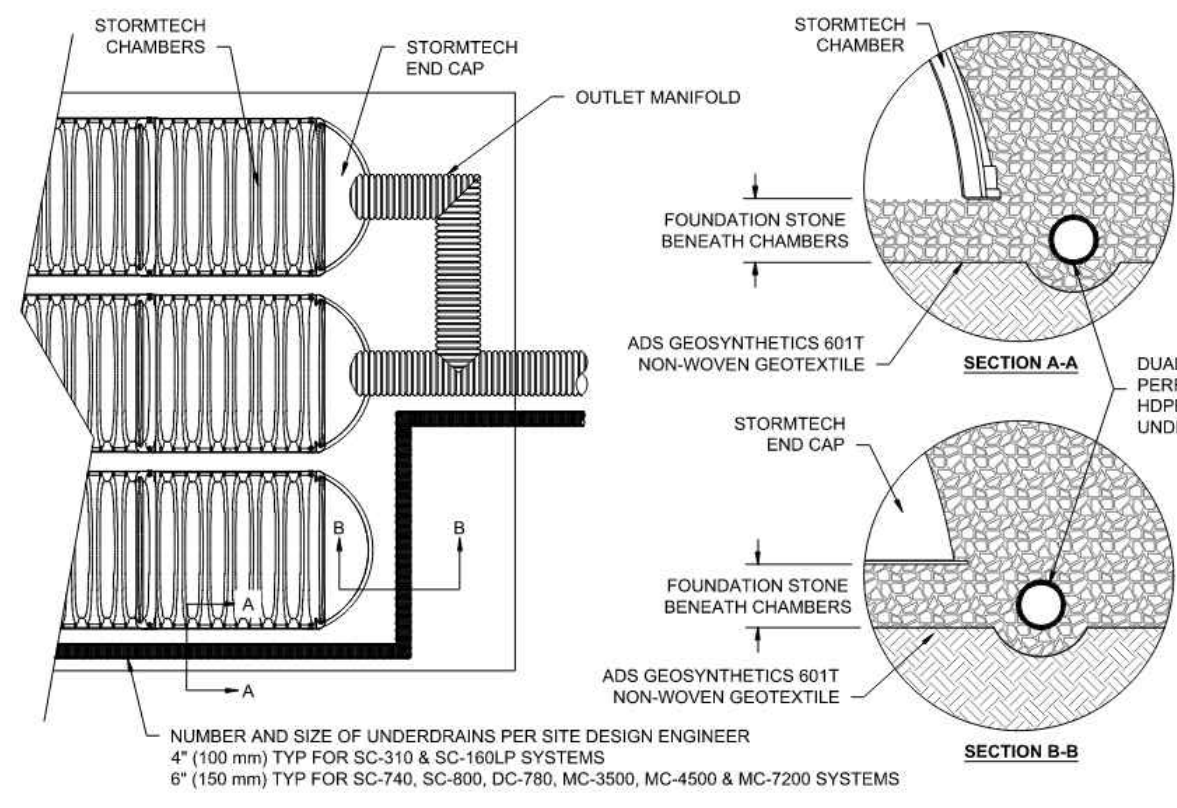
### MC-4500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-4500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPIDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- 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.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LB/FT<sup>2</sup>. THE ABC IS DEFINED IN SECTION 6.2.6 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE 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 SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

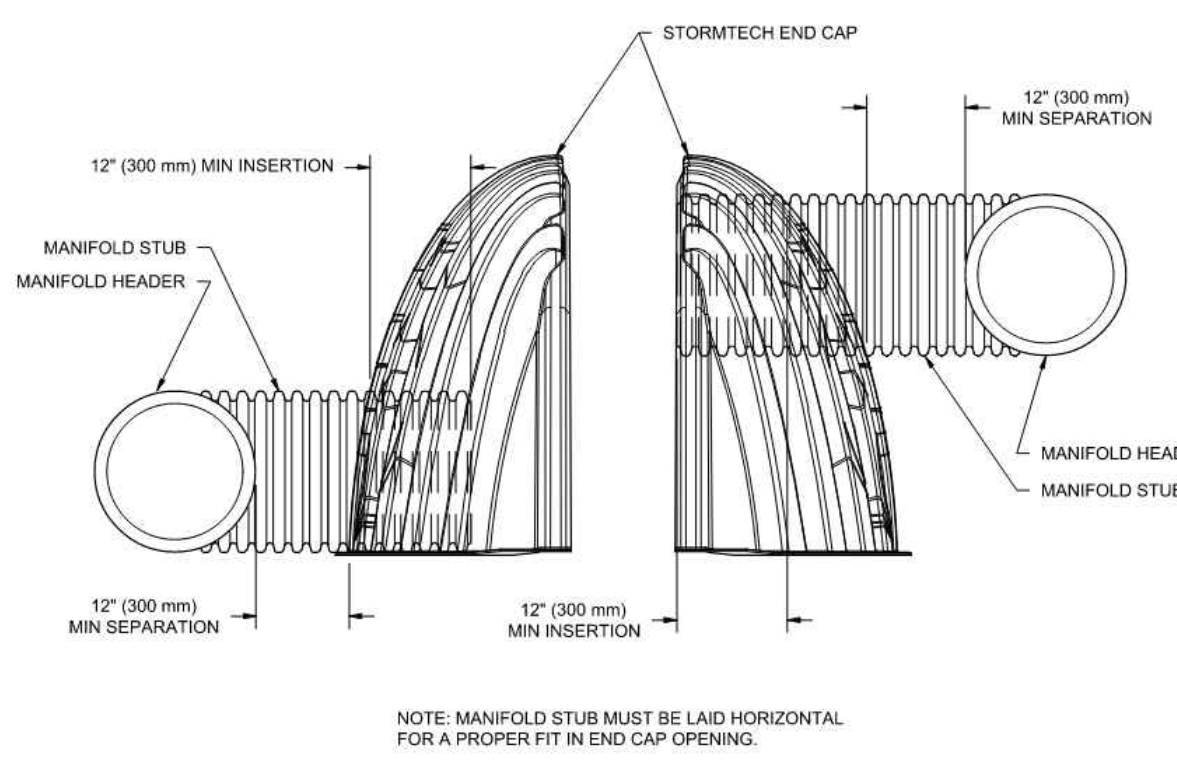
### IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

- STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONE SHOOTER 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 HIRE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF FLEXTORM CATCH IT™ INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.
- ADS RECOMMENDS THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
  - NO RUBBER Tired LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
  - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- 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 CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

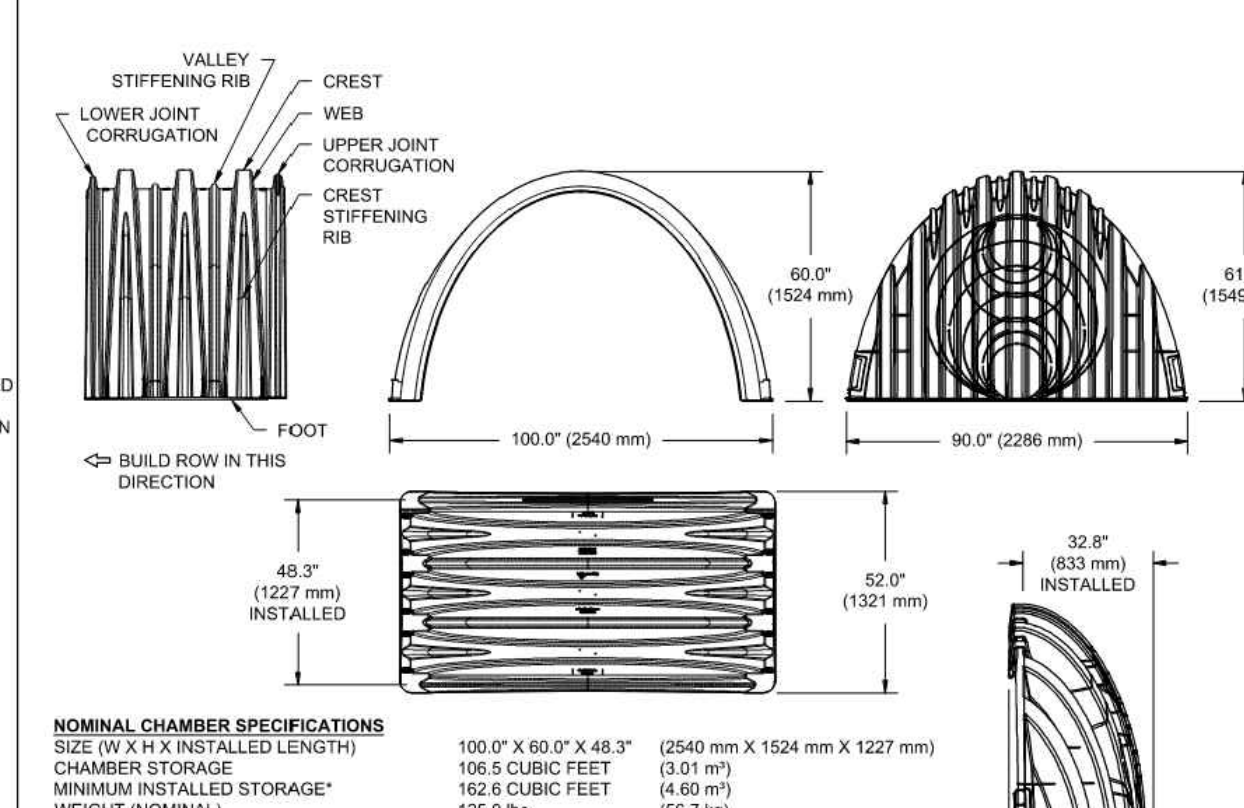
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



### 5 UNDERDRAIN DETAIL



### 6 MC-SERIES END CAP INSERTION DETAIL



### 2 MC-4500 TECHNICAL SPECIFICATIONS

NOMINAL CHAMBER SPECIFICATIONS			
SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 48.3"	(2540 mm X 1524 mm X 1227 mm)	
CHAMBER STORAGE	108.5 CUBIC FEET	(3.01 m <sup>3</sup> )	
MINIMUM INSTALLED STORAGE*	162.6 CUBIC FEET	(4.60 m <sup>3</sup> )	
WEIGHT (NOMINAL)	125.0 lbs.	(56.7 kg)	

NOMINAL END CAP SPECIFICATIONS			
SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)	
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m <sup>3</sup> )	
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m <sup>3</sup> )	
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)	

\*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B" PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T" END CAPS WITH A PREFABRICATED WELDED STUB END WITH "C"

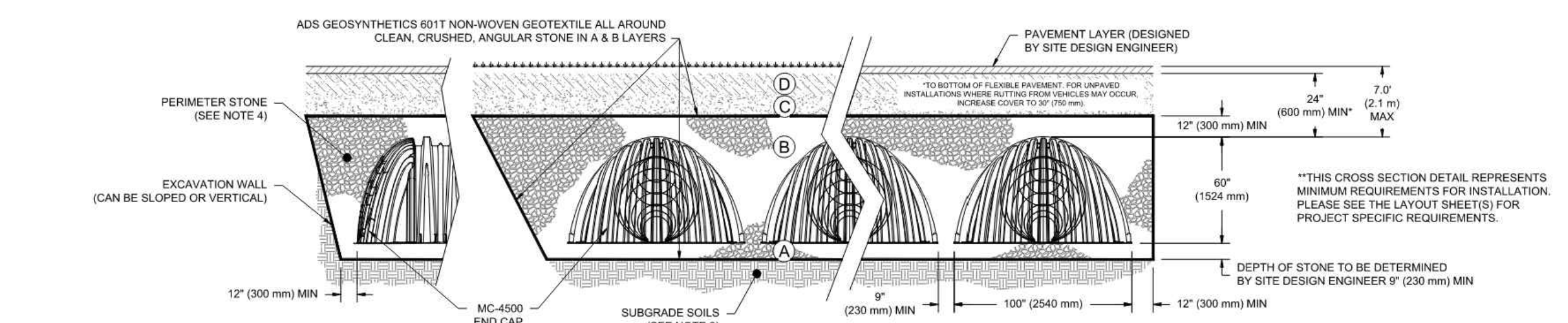
PART #	STUB	B	C
MC4500EPP08T	6" (150 mm)	42.54" (1081 mm)	---
MC4500EPP08B	---	40.50" (1029 mm)	0.86" (22 mm)
MC4500EPP08T	8" (200 mm)	---	1.01" (26 mm)
MC4500EPP08B	---	38.37" (975 mm)	1.33" (34 mm)
MC4500EPP10T	10" (250 mm)	---	1.55" (39 mm)
MC4500EPP10B	---	35.69" (907 mm)	---
MC4500EPP12T	12" (300 mm)	---	1.55" (39 mm)
MC4500EPP12B	---	32.72" (831 mm)	---
MC4500EPP15T	15" (375 mm)	---	1.70" (43 mm)
MC4500EPP15B	---	29.38" (746 mm)	---
MC4500EPP18T	18" (450 mm)	---	1.97" (50 mm)
MC4500EPP18B	---	23.05" (585 mm)	---
MC4500EPP24T	24" (600 mm)	---	2.26" (57 mm)
MC4500EPP24B	---	20.05" (509 mm)	---
MC4500EPP24TW	---	---	2.26" (57 mm)
MC4500EPP24BW	---	---	3.25" (83 mm)
MC4500EPP28TW	---	---	3.55" (90 mm)
MC4500EPP28BW	---	---	---
MC4500EPP42BW	---	---	---

NOTE: ALL DIMENSIONS ARE NOMINAL

### ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY 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.	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. OR AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 76, 8, 88, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 98% PROCTOR DENSITY FOR WELL-GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE <sup>2</sup> AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE <sup>2</sup> AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>1,3</sup>

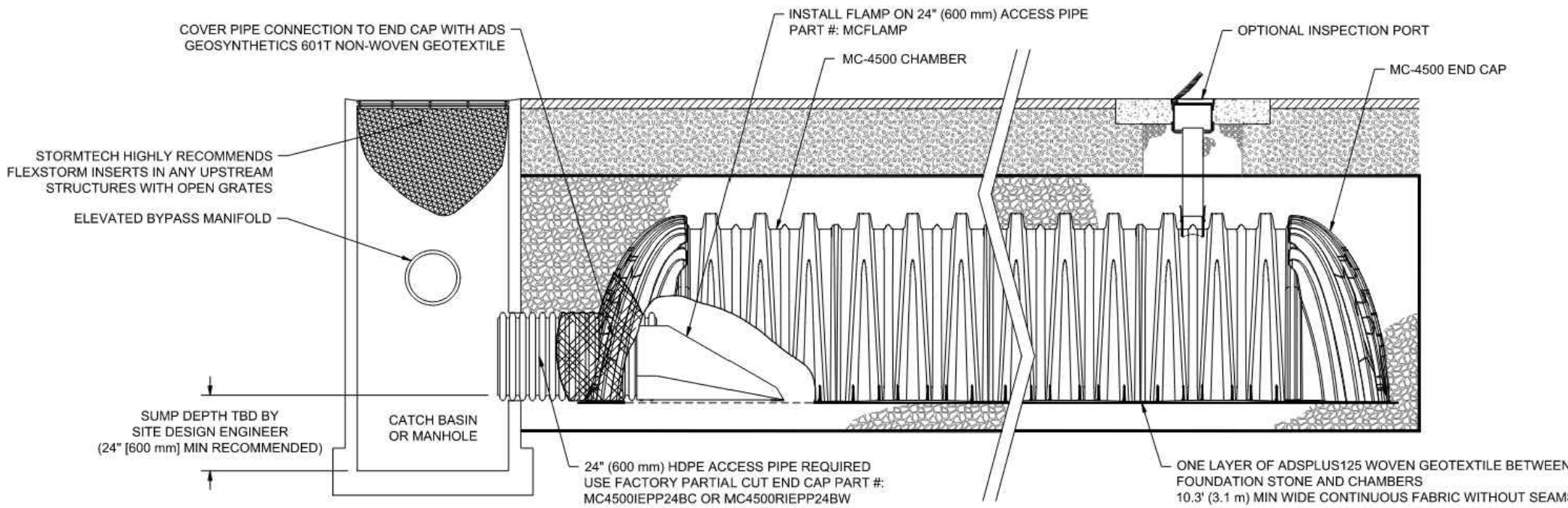
- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERS WITH A VIBRATORY COMPACTOR.
  - 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.
  - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOLIDS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
  - WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



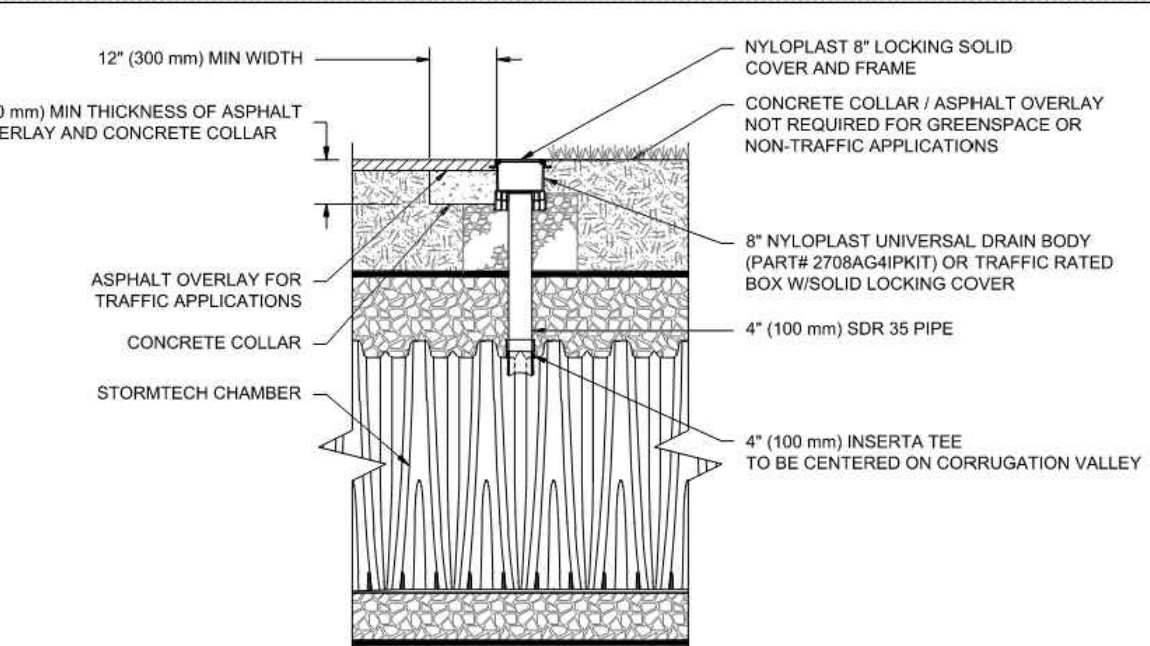
### NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.6 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LB/FT<sup>2</sup>. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

### 1 MC-4500 CROSS SECTION DETAIL



### 3 MC-4500 ISOLATOR ROW PLUS DETAIL



NOTE:  
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

### INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
  - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - REMOVE AND CLEAN FLEXTORM FILTER IF INSTALLED
  - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROW PLUS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
  - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
  - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
  - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
  - VACUUM STRUCTURE PUMP 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.

### NOTES

- 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.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

### 4 4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)

DRAWN: JLM  
REVIEWED: JLM  
REV:

MC-4500  
STANDARD DETAILS

StormTech®  
Chamber System  
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD  
HILLIARD, OH 43026

ADS  
Advanced Drainage Systems, Inc.

SHEET  
1

BOHLER  
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### REVISIONS

REV	DATE	COMMENT	DRAWN BY



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PROJECT No.: MAA240489-00-0A  
DRAWN BY: SBB  
CHECKED BY: CPB  
DATE: 02/05/2025  
CAD ID: P-CIVL-CND5

PROJECT:

### SITE DEVELOPMENT PLANS FOR

ROUTE 85  
REALTY CORP.

### PROPOSED DEVELOPMENT

MAP: 24 | LOTS: 5 & 6  
182 & 186 HARTFORD AVENUE  
NORFOLK COUNTY  
BELLINGHAM, MA

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR  
SOUTHBOROUGH, MA 01772  
Phone: (508) 480-9900

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SHEET TITLE:

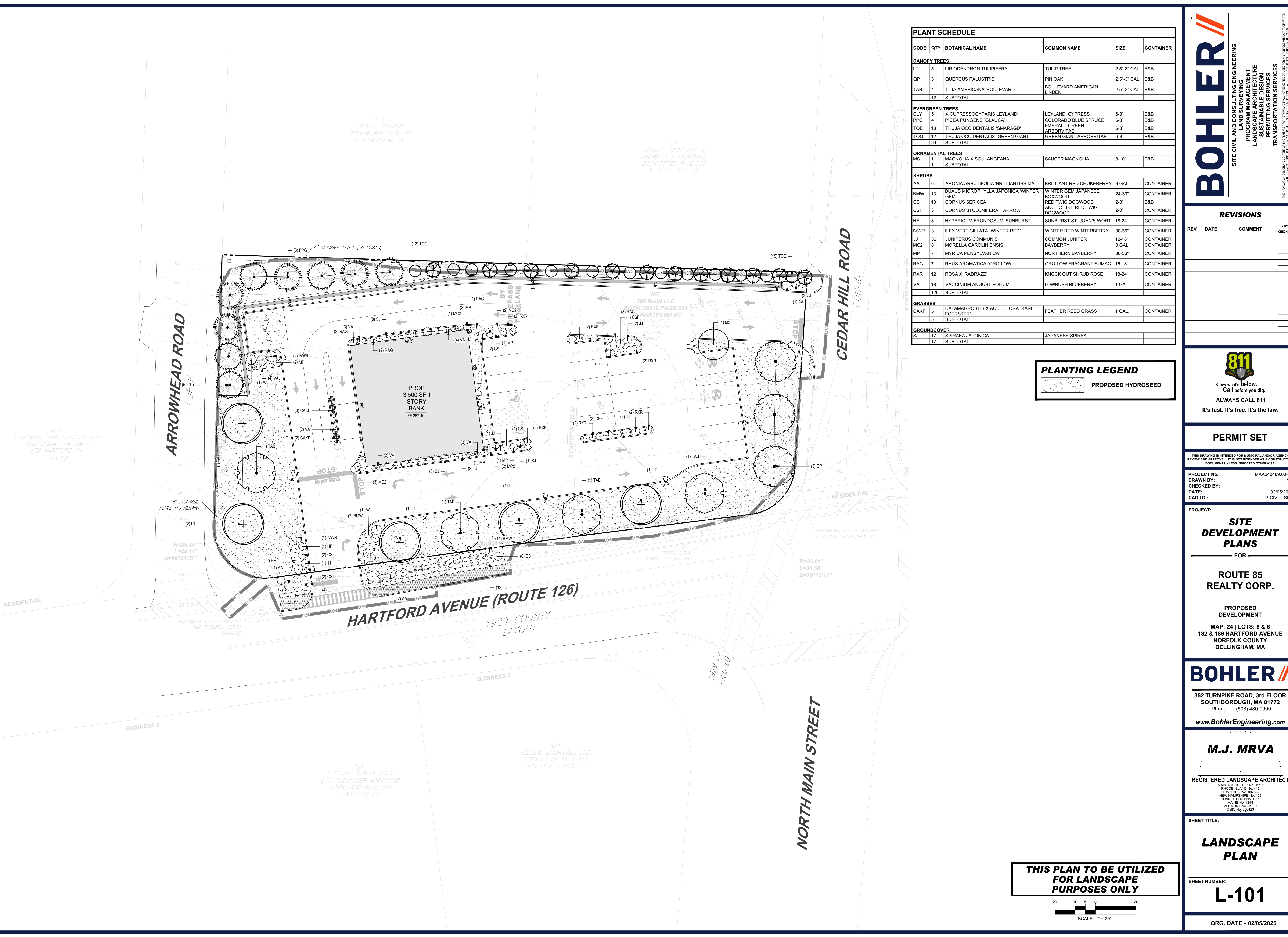
### CONSTRUCTION DETAILS

SHEET NUMBER:

C-903

ORG. DATE - 02/05/2025





PLANT SCHEDULE					
CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
<b>CANOPY TREES</b>					
LT	5	LIRODENDRON TULIPIFERA	TULIP TREE	2.5'-3" CAL.	B&B
QP	3	QUERCUS PALUSTRIS	PIN OAK	2.5'-3" CAL.	B&B
TAB	4	TILIA AMERICANA 'BOULEVARD'	BOULEVARD AMERICAN LINDEN	2.5'-3" CAL.	B&B
	12	SUBTOTAL:			
<b>EVERGREEN TREES</b>					
CLY	5	X CUPRESSOCYPARIS LEYLANDII	LEYLANDII CYPRESS	6'-8'	B&B
PPG	4	PICEA PUNGENS 'GLAUCA'	COLORADO BLUE SPRUCE	6'-8'	B&B
TOE	13	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	6'-8'	B&B
TOG	12	THUJA OCCIDENTALIS 'GREEN GIANT'	GREEN GIANT ARBORVITAE	6'-8'	B&B
	34	SUBTOTAL:			
<b>ORNAMENTAL TREES</b>					
MMS	1	MAGNOLIA X SOULANGEANA	SAUCER MAGNOLIA	8'-10'	B&B
	1	SUBTOTAL:			
<b>SHRUBS</b>					
AA	6	ARONIA ARBUTIFOLIA 'BRILLANTISSIMA'	BRIGHT 'ART' RED CHOKEBERRY	3 GAL.	CONTAINER
BMW	13	BUXUS MICROPHYLLA JAPONICA 'WINTER GEM'	WINTER GEM JAPANESE BOXWOOD	24-30"	CONTAINER
CS	13	CORNUS SERICEA	RED TWIG DOGWOOD	2-3"	B&B
CSF	3	CORNUS STOLONIFERA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	2-3"	CONTAINER
HF	8	HYPERICUM FRONDOSUM 'SUNBURST'	SUNBURST ST. JOHN'S WORT	18-24"	CONTAINER
IVWR	3	ILEX VERTICILLATA 'WINTER RED'	WINTER RED WINTERBERRY	30-36"	CONTAINER
JJ	32	JUNIPERUS COMMUNIS	COMMON JUNIPER	12-18"	CONTAINER
CMC2	8	MORELLA CAROLINIENSIS	BAYBERRY	3 GAL.	CONTAINER
MP	7	MYRTICA PENSYLVANICA	NORTHERN BAYBERRY	30-36"	CONTAINER
RAG	7	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	15-18"	CONTAINER
RXR	12	ROSA 'X RADRAZZ'	KNOCK OUT SHRUB ROSE	18-24"	CONTAINER
VA	18	VACCINIUM ANGUSTIFOLIUM	LOWBUSH BLUEBERRY	1 GAL.	CONTAINER
	125	SUBTOTAL:			
<b>GRASSES</b>					
CAK	5	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	1 GAL.	CONTAINER
	5	SUBTOTAL:			
<b>COVER</b>					
SJ	17	SPIRAEA JAPONICA	JAPANESE SPIREA	---	
	17	SUBTOTAL:			

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DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: MAA240489.00-0A  
DRAWN BY: MB  
CHECKED BY: JE  
DATE: 02/05/2025  
CAD I.D.: P-CIVL-LSCP

**PROJECT:**

# **SITE DEVELOPMENT PLANS**

**ROUTE 85  
REALTY CORP.**

## PROPOSED DEVELOPMENT

**MAP: 24 | LOTS: 5 & 6**  
**182 & 186 HARTFORD AVENUE**  
**NORFOLK COUNTY**  
**BELLINGHAM, MA**

**BOHLER //**

**352 TURNPIKE ROAD, 3rd FLOOR**  
**SOUTHBOROUGH, MA 01772**  
Phone: (508) 480-9900

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**M.J. MRVA**

**REGISTERED LANDSCAPE ARCHITECT**

MASSACHUSETTS No. 1217  
RHODE ISLAND No. 419  
NEW YORK No. 002359  
NEW HAMPSHIRE No. 109  
CONNECTICUT No. 1359  
MAINE No. 4248  
VERMONT No. 01337  
OHIO No. 250433

**SHEET TITLE:**

# LANDSCAPE PLAN

**SHEET NUMBER:**

# L-101

**ORG. DATE - 02/05/2025**



## LANDSCAPE SPECIFICATIONS

1.	<b>SCOPE OF WORK:</b>		9.3.	ANY INJURED ROOTS OR BRANCHES SHALL BE PRUNED TO MAKE CLEAN-CUT ENDS PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY INJURED OR DISEASED BRANCHING SHALL BE REMOVED.
	1.1. THE LANDSCAPE CONTRACTOR SHALL BE REQUIRED TO PERFORM ALL CLEARING, FINISHED GRADING, SOIL PREPARATION, PERMANENT SEEDING OR SODDING, PLANTING AND MULCHING INCLUDING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY FOR THE COMPLETION OF THIS PROJECT, UNLESS OTHERWISE CONTRACTED BY THE GENERAL CONTRACTOR.		9.4.	ALL PLANTING CONTAINERS, BASKETS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.
2.	<b>MATERIALS</b>		9.5.	POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.
	2.1. GENERAL - ALL HARDSCAPE MATERIALS SHALL MEET OR EXCEED SPECIFICATIONS AS OUTLINED IN THE STATE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.		9.6.	PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, THE PROPOSED LANDSCAPE, AS SHOWN ON THE APPROVED LANDSCAPE PLAN, MUST BE INSTALLED, INSPECTED AND APPROVED BY THE APPROVING AGENCY. THE APPROVING AGENCY SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD AS FOLLOWS. THE PLANTING OF TREES, SHRUBS, VINES OR GROUND COVER SHALL OCCUR ONLY DURING THE FOLLOWING PLANTING SEASONS:
2.2.	TOPSOIL - NATURAL, FRIABLE, LOAMY SILT SOIL HAVING AN ORGANIC CONTENT NOT LESS THAN 5%, A PH RANGE BETWEEN 4.5-7.0, IT SHALL BE FREE OF DEBRIS, ROCKS LARGER THAN ONE INCH (1"), WOOD, ROOTS, VEGETABLE MATTER AND CLAY CLODS.		9.6.1.	PLANTS: MARCH 15 TO DECEMBER 15
2.3.	LAWN - ALL DISTURBED AREAS ARE TO BE TREATED WITH A MINIMUM 6" THICK LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, AND SEEDED OR SODDED IN ACCORDANCE WITH THE PERMANENT STABILIZATION METHODS INDICATED ON THE LANDSCAPE PLAN		9.6.2.	LAWN: MARCH 15 TO JUNE 15 OR SEPT. 1 TO DECEMBER 1
2.3.1.	LAWN SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED.		9.6.3.	PLANTINGS REQUIRED FOR A CERTIFICATE OF OCCUPANCY SHALL BE PROVIDED DURING THE NEXT APPROPRIATE SEASON AT THE MUNICIPALITY'S DISCRETION. CONTRACTOR SHOULD CONTACT APPROVING AGENCY FOR POTENTIAL SUBSTITUTIONS.
2.3.2.	SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE/PEST FREE WITH A UNIFORM THICKNESS. SOD INSTALLED ON SLOPES GREATER THAN 4:1 SHALL BE PEGGED TO HOLD SOD IN PLACE.		9.7.	FURTHERMORE, THE FOLLOWING TREE VARIETIES ARE UNUSUALLY SUSCEPTIBLE TO WINTER DAMAGE. WITH TRANSPARENT SHOCK AND THE SEASONAL LACK OF NITROGEN AVAILABILITY, THE RISK OF PLANT DIE IS GREATLY INCREASED. IT IS NOT RECOMMENDED THAT THESE SPECIES BE PLANTED DURING THE FALL PLANTING SEASON:
2.4.	MULCH - ALL PLANTING BEDS SHALL BE MULCHED WITH A 3" THICK LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE STATED ON THE LANDSCAPE PLAN AND/OR LANDSCAPE PLAN NOTES/DETAILS.			ACER RUBRUM                      PLATANUS X ACERIFOLIA BETULA VARIETIES              POPULUS VARIETIES CARPINUS VARIETIES              PRUNUS VARIETIES CRATAEGUS VARIETIES              PYRUS VARIETIES KOELREUTERIA                      QUERCUS VARIETIES LIQUIDAMBAR STYRACIFLUA              TILIA TOMENTOSA LIRIODENDRON TULIPIFERA              ZELKOVA VARIETIES
2.5.	FERTILIZER SHALL BE DELIVERED TO THE SITE MIXED AS SPECIFIED IN THE ORIGINAL UNOPENED STANDARD BAGS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. FERTILIZER SHALL BE STORED IN A WEATHERPROOF PLACE SO THAT IT CAN BE KEPT DRY PRIOR TO USE.		9.8.	PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS, WITH THE WIDTH TWICE THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS WITH THE FOLLOWING PREPARED SOIL MIXED THOROUGHLY:
2.5.2.	FOR THE PURPOSE OF BIDDING, ASSUME THAT FERTILIZER SHALL BE 10% NITROGEN, 6% PHOSPHORUS AND 4% POTASSIUM BY WEIGHT. A FERTILIZER SHOULD NOT BE SELECTED WITHOUT A SOIL TEST PERFORMED BY A CERTIFIED SOIL LABORATORY.		9.8.1.	1 PART PAST MOSS
2.6.	<b>PLANT MATERIAL</b>		9.8.2.	1 PART COMPOSTED COW MANURE BY VOLUME
2.6.1.	ALL PLANTS SHALL IN ALL CASES CONFORM TO THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION (FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN).		9.8.3.	3 PARTS TOPSOIL BY VOLUME
2.6.2.	IN ALL CASES, BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.		9.8.4.	21 GRAMS AGRIFORM PLANTING TABLETS (OR APPROVED EQUAL) AS FOLLOWS:
2.6.3.	PLANTS SHALL BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE. TAGS ARE TO REMAIN ON AT LEAST ONE PLANT OF EACH SPECIES FOR VERIFICATION PURPOSES DURING THE FINAL INSPECTION.		9.8.4.1.	2 TABLETS PER 1 GALLON PLANT
2.6.4.	TREES WITH ABRASION OF THE BARK, SUN SCALDS, DISFIGURATION OR FRESH CUTS OF LIMBS OVER 1/2", WHICH HAVE NOT BEEN COMPLETELY CALLEDUS, SHALL BE REJECTED. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES.		9.8.4.2.	3 TABLETS PER 5 GALLON PLANT
2.6.5.	ALL PLANTS SHALL BE TYPICAL, OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH: WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE OF DISEASE, INSECTS, PESTS, EGGS OR LARVAE.		9.8.4.3.	4 TABLETS PER 15 GALLON PLANT
2.6.6.	CALIPER MEASUREMENTS OF NURSERY GROWN TREES SHALL BE TAKEN AT A POINT ON THE TRUNK SIX INCHES (6") ABOVE THE NATURAL GRADE FOR TREES UP TO AND INCLUDING A FOUR INCH (4") CALIPER SIZE. IF THE CALIPER AT SIX INCHES (6") ABOVE THE GROUND EXCEEDS FOUR INCHES (4") IN CALIPER, THE CALIPER SHOULD BE MEASURED AT A POINT 12" ABOVE THE NATURAL GRADE.		9.8.4.4.	LARGER PLANTS: 2 TABLETS PER 1/2" CALIPER OF TRUNK
2.6.7.	SHRUBS SHALL BE MEASURED TO THE AVERAGE HEIGHT OR SPREAD OF THE SHRUB, AND NOT TO THE LONGEST BRANCH.		9.9.	FILL PREPARED SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.
2.6.8.	TREES AND SHRUBS SHALL BE HANDLED WITH CARE BY THE ROOT BALL.		9.10.	ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL.
3.	<b>GENERAL WORK PROCEDURES</b>		9.11.	ALL PROPOSED TREES DIRECTLY ADJACENT TO WALKWAYS OR DRIVEWAYS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM BRANCHING HEIGHT OF 7' FROM GRADE.
	3.1. CONTRACTOR TO UTILIZE WORKMANLIKE INDUSTRY STANDARDS IN PERFORMING ALL LANDSCAPE CONSTRUCTION. THE SITE IS TO BE LEFT IN A CLEAN STATE AT THE END OF EACH WORKDAY. ALL DEBRIS, MATERIALS AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF.		9.12.	GROUND COVER AREAS SHALL RECEIVE A 1/2" LAYER OF HUMUS RAKED INTO THE TOP 1" OF PREPARED SOIL PRIOR TO PLANTING. ALL GROUND COVER AREAS SHALL BE WEEDED AND TREATED WITH A PRE-EMERGENT CHEMICAL AS PER MANUFACTURER'S RECOMMENDATION.
3.2.	WASTE MATERIALS AND DEBRIS SHALL BE COMPLETELY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. DEBRIS SHALL NOT BE BURIED, INCLUDING ORGANIC MATERIALS, BUT SHALL BE REMOVED COMPLETELY FROM THE SITE.		9.13.	NO PLANT, EXCEPT GROUND COVERS, GRASSES OR VINES, SHALL BE PLANTED LESS THAN TWO FEET (2') FROM EXISTING STRUCTURES AND SIDEWALKS.
4.	<b>SITE PREPARATIONS</b>		9.14.	ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED HEREIN TO FILL THE ENTIRE BED AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB.
	4.1. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN.		9.15.	ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE WATERING SPECIFICATIONS AS LISTED HEREIN.
4.2.	ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE BRANCH COLLAR. CONTRACTOR SHALL ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT, ANY EXPOSED ROOTS SHALL BE CUT BACK WITH CLEAN, SHARP TOOLS AND TOPSOIL SHALL BE PLACED AROUND THE REMAINDER OF THE ROOTS. EXISTING TREES SHALL BE MONITORED ON A REGULAR BASIS FOR ADDITIONAL ROOT OR BRANCH DAMAGE AS A RESULT OF CONSTRUCTION. ROOTS SHALL NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR SHALL WATER EXISTING TREES AS NEEDED TO PREVENT SHOCK OR DECLINE.		<b>10. TRANSPLANTING (WHEN REQUIRED)</b>	
4.3.	CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.		10.1.	ALL TRANSPLANTS SHALL BE DUG WITH INTACT ROOT BALLS CAPABLE OF SUSTAIN

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<b>DETAIL</b>		N
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