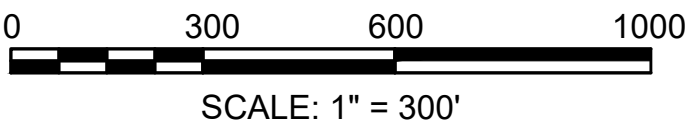
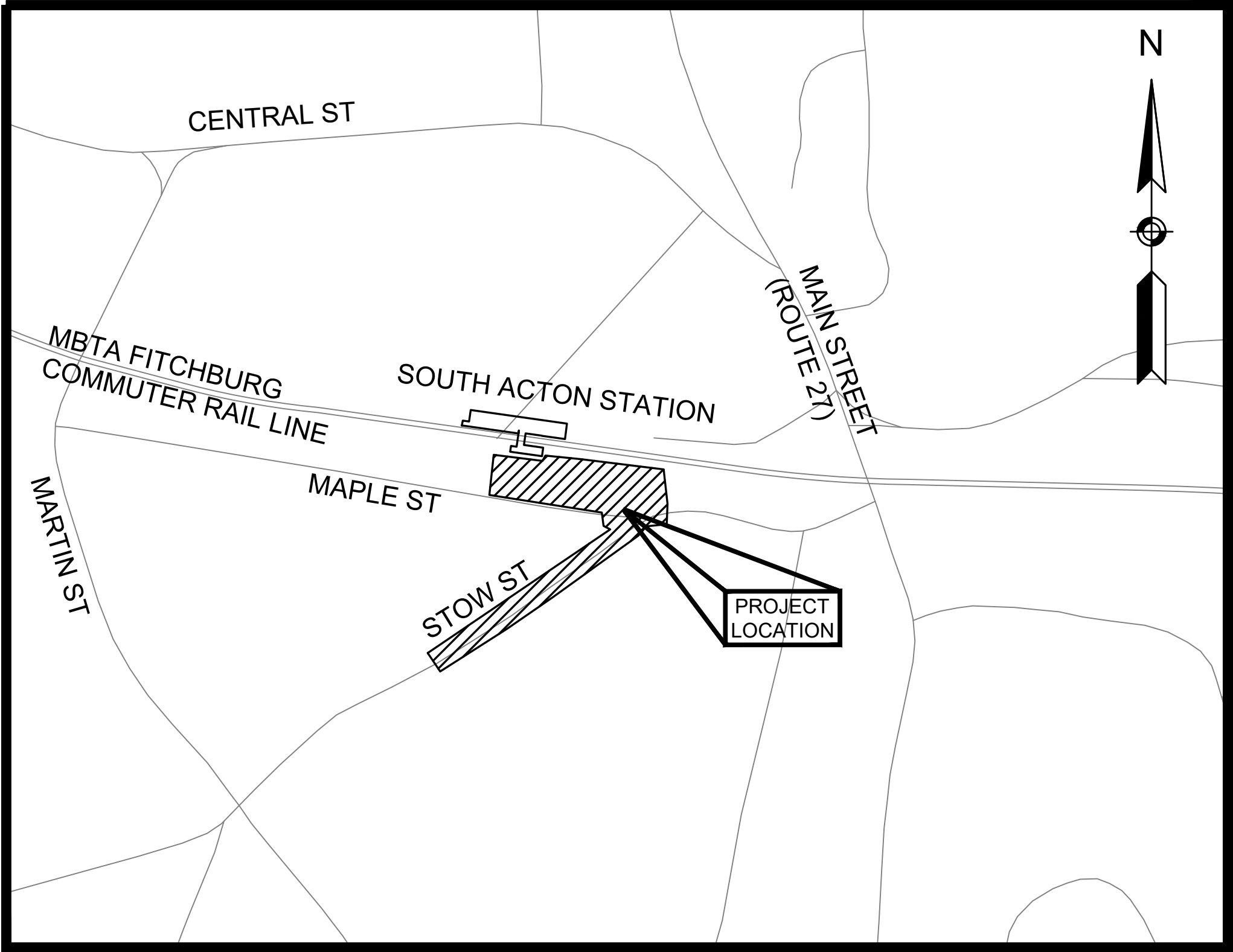


TOWN OF ACTON
PLAN AND PROFILE OF
MAPLE STREET COMMUTER LOT
PARKING LOT RECONSTRUCTION
IN THE TOWN OF
ACTON
MIDDLESEX COUNTY

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THESE PLANS ARE SUPPLEMENTED BY THE LATEST EDITIONS OF THE FOLLOWING PUBLICATIONS, AS IDENTIFIED IN THE CONTRACT SPECIAL PROVISIONS: THE MASSDOT CONSTRUCTION STANDARD DETAILS, THE MASSDOT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE MASSDOT OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, AND THE ANSI AMERICAN STANDARD FOR NURSERY STOCK.



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DATE	DESCRIPTION	REV #

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		GUARD RAIL - DOUBLE FACE - STEEL POSTS
		GUARD RAIL - DOUBLE FACE - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT BARRIER
		COIR LOG SEDIMENT BARRIER
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
		SANDBAGS

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
-----	-----	TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE - 12" WIDE
		CROSSWALK - 10' WIDE
		SOLID WHITE LINE - 6" WIDE
		SOLID YELLOW LINE - 6" WIDE
		BROKEN WHITE LINE - 6" WIDE - 10' LINE AND 30' GAP
		BROKEN YELLOW LINE - 6" WIDE - 10' LINE AND 30' GAP
		DOTTED WHITE LINE - 3' LINE AND 9' GAP
		DOTTED YELLOW LINE - 3' LINE AND 9' GAP
		DOTTED WHITE LINE EXTENSION - 6" WIDE - 2' LINE AND 6' GAP
		DOTTED YELLOW LINE EXTENSION - 6" WIDE - 2' LINE AND 6' GAP
		DOUBLE WHITE LINE - 6" WIDE
		DOUBLE YELLOW LINE - 6" WIDE

ABBREVIATIONS

GENERAL	
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LOG	LIMIT OF GRADING
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
M&O	MILL & OVERLAY
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY

TOWN OF ACTON
19 - 21 MAPLE STREET COMMUTER LOT
STOW STREET SHARED USE PATH
SHEET 2 OF 29
LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

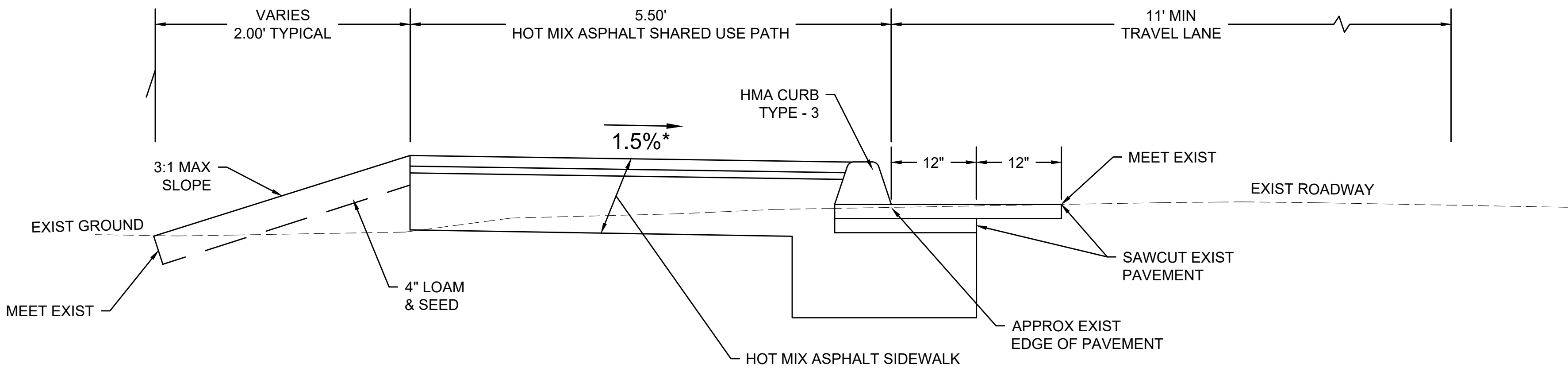
GENERAL	
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT

GENERAL NOTES

1. THE EXISTING CONDITIONS INFORMATION SHOWN HEREON IS THE RESULT OF AN ON-THE-GROUND SURVEY PERFORMED BY NITSCH ENGINEERING IN MARCH 2022.
2. THIS SURVEY IS REFERENCED HORIZONTALLY TO THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, MAINLAND ZONE, NAD83 (2011) EPOCH 2010.00, U.S. SURVEY FOOT, DERIVED FROM RTK OBSERVATIONS WITH CORRECTIONS PROVIDED BY MaCORS NETWORK.
3. ELEVATION REFERS TO NORTH AMERICAN VERTICAL DATUM (NAVD88) VERTICAL BASED ON RTK GPS OBSERVATIONS WITH CORRECTIONS PROVIDED BY MaCORS NETWORK.
4. THE EXISTING TOPOGRAPHIC CONDITIONS (ON THE GROUND SURVEY) FROM STA 200+00 TO STA 208+00 ON THESE PLANS WAS PROVIDED TO NITSCH ENGINEERING BY THE TOWN OF ACTON IN JULY 2025. THE TOWN OF ACTON SHALL BE RESPONSIBLE FOR ALL EXISTING CONDITIONS SHOWN HEREON, INCLUDING UTILITIES, RIGHT OF WAY, AND TOPOGRAPHIC INFORMATION.
5. THE LOCATION OF STATE, COUNTRY, MUNICIPAL, AND PRIVATE RIGHT OF WAY LINES SHOWN FROM STA 200+00 TO STA 208+00 HAVE NOT BEEN DEVELOPED OR VERIFIED BY NITSCH ENGINEERING. THE TOWN OF ACTON SHALL BE FULLY RESPONSIBLE FOR ESTABLISHMENT AND VERIFICATION OF THE EXISTING RIGHT OF WAY AND PROPERTY LINES. THE TOWN OF ACTON SHALL BE RESPONSIBLE FOR ACQUIRING EASEMENTS/RIGHT OF ENTRIES TO COMPLETE THE PROPOSED WORK ON PRIVATE PROPERTY SHOWN HEREON.
6. PHYSICAL FEATURES AND STRUCTURES SHOWN WITH ELEVATIONS HAVE BEEN ESTABLISHED FOR DESIGN PURPOSES ONLY. ONLY ELEVATIONS LABELED AND IDENTIFIED AS BENCHMARKS ON THIS PLAN CAN BE RELIED UPON FOR FUTURE CONSTRUCTION EFFORTS.
7. IN THE EVENT THAT BENCHMARKS ESTABLISHED FOR THIS PROJECT AND PUBLISHED ON THIS SURVEY ARE DESTROYED, NOT RECOVERABLE OR A DISCREPANCY IS FOUND, THE USER SHALL NOTIFY THIS FIRM IN WRITING PRIOR TO COMMENCING OR CONTINUING ANY WORK.
8. SIDELINES OF ROAD RIGHT OF WAYS AND PROPERTY LINES/OWNERSHIP WERE NOT COMPILED FOR THIS PROJECT GIVEN THE EMERGENCY NATURE OF THE REPAIRS. THE TOWN SHALL BE RESPONSIBLE FOR COORDINATION WITH ABUTTERS AND ACQUIRING ANY RIGHTS/EASEMENTS TO CONSTRUCT THE EMERGENCY REPAIRS SHOWN HEREON.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY EXISTING GRADES AND ELEVATIONS AT THE LOCATIONS WHERE PROPOSED WORK MEETS EXISTING CONDITIONS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE HIS OWN DETERMINATION OF SUBSURFACE CONDITIONS INCLUDING THE LOCATION OF ROCK AND THE ACTUAL LOCATION OF UTILITIES OR OTHER FEATURES WHICH MAY AFFECT HIS WORK.
11. EXISTING UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM DIGSAFE MARKINGS. LOCATIONS ARE NOT GUARANTEED TO BE ACCURATE NOR IS IT GUARANTEED THAT ALL UTILITIES ARE SHOWN. NO SEPARATE OR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR DUE TO ANY VARIANCE BETWEEN THE DATA SHOWN ON THE PLANS AND ACTUAL FIELD CONDITIONS ENCOUNTERED. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THIS INFORMATION FURNISHED TO THE ENGINEER.
12. THE RELOCATION, INSTALLATION OR REMOVAL OF PRIVATE UTILITIES SHALL BE ACCOMPLISHED BY THEIR OWNERS, EXCEPT AS OTHERWISE NOTED. THE CONTRACTOR WILL BE REQUIRED TO COOPERATE WITH THE PRIVATE UTILITY COMPANIES AND ALLOW THEM ADEQUATE TIME TO COMPLETE THEIR WORK IN ADVANCE OF PERFORMING ANY PAVING OPERATIONS OR OTHER FINISHED WORK.
13. AREAS OUTSIDE OF THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE TO THEIR ORIGINAL CONDITION AND TO THE SATISFACTION OF THE ENGINEER.
14. THE CONTRACTOR SHALL CONTACT "DIG SAFE" AT 1-888-DIG-SAFE AT LEAST 72 HOURS PRIOR TO COMMENCING WORK ON THE PROJECT.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND FOR MAINTAINING SEDIMENT CONTROL BARRIER, SILT FENCE(S), AND OTHER EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE CONTRACT, IF REQUIRED, AS SHOWN ON THE PLANS AND AS REQUIRED BY THE ENGINEER.
16. NO EXISTING DRAINAGE SYSTEMS SHALL BE ABANDONED, PLUGGED OR REMOVED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
17. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL SAFETY CODES AND LEGAL REQUIREMENTS, IN THE CONSTRUCTION OF IMPROVEMENTS.
18. ALL EXISTING PIPING AND STRUCTURES EXPOSED DURING EXCAVATION SHALL BE ADEQUATELY SUPPORTED, BRACED OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES. EXCAVATIONS SHALL BE BACK FILLED DAILY AT THE COMPLETION OF WORK.
19. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES IN SERVICE AT ALL TIMES. IF THE CONTRACTOR DAMAGES UTILITY SYSTEMS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL REPAIR/REPLACE THE AFFECTED SYSTEM AT HIS OWN EXPENSE.
20. ALL MATERIALS TO BE REMOVED AND DISCARDED SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.
21. CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
22. THE TEMPORARY TRAFFIC CONTROL PLANS INDICATE THE GENERAL REQUIREMENTS FOR THE VARIOUS PHASES OF WORK. THE CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC MANAGEMENT PLANS TO THE ENGINEER FOR APPROVAL.
23. ALL PROPOSED EXCAVATION SUPPORT SYSTEMS SHALL BE CONSIDERED INCIDENTAL TO THE APPLICABLE ITEMS.
24. THE FLOW OF TRAFFIC THROUGH THE SITE MUST BE MAINTAINED AS SHOWN ON THE TRAFFIC CONTROL PLANS AND SPECIFIED IN THE SPECIAL PROVISIONS. CONSTRUCTION EQUIPMENT AND MATERIALS SHALL NOT BE PARKED OR STOCKPILED SO AS TO OBSTRUCT THE FLOW OF VEHICLES.
25. ALL PROPOSED CATCH BASINS, UNLESS NOTED OTHERWISE, SHALL HAVE A 4' DEEP SUMP.
26. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. ANY FIELD ADJUSTMENTS REQUIRED SHALL BE MADE AS APPROVED OR REQUIRED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE SHALL BE INCLUDED IN THE COST OF THE PIPE.
27. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IN SUITABLE CONDITION IDENTIFIED AS "REMOVE AND RESET" (R&R).

28. ALL LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
29. IN AREAS OF FULL DEPTH PAVEMENT AND SIDEWALK RECONSTRUCTION WHERE PROPOSED MEETS EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE SAWCUT TO OBTAIN A CLEAN VERTICAL FACE.
30. ALL UTILITY AND DRAINAGE FRAMES, GRATES, AND COVERS SHALL BE INSTALLED FLUSH WITH SURROUNDING PAVEMENT.

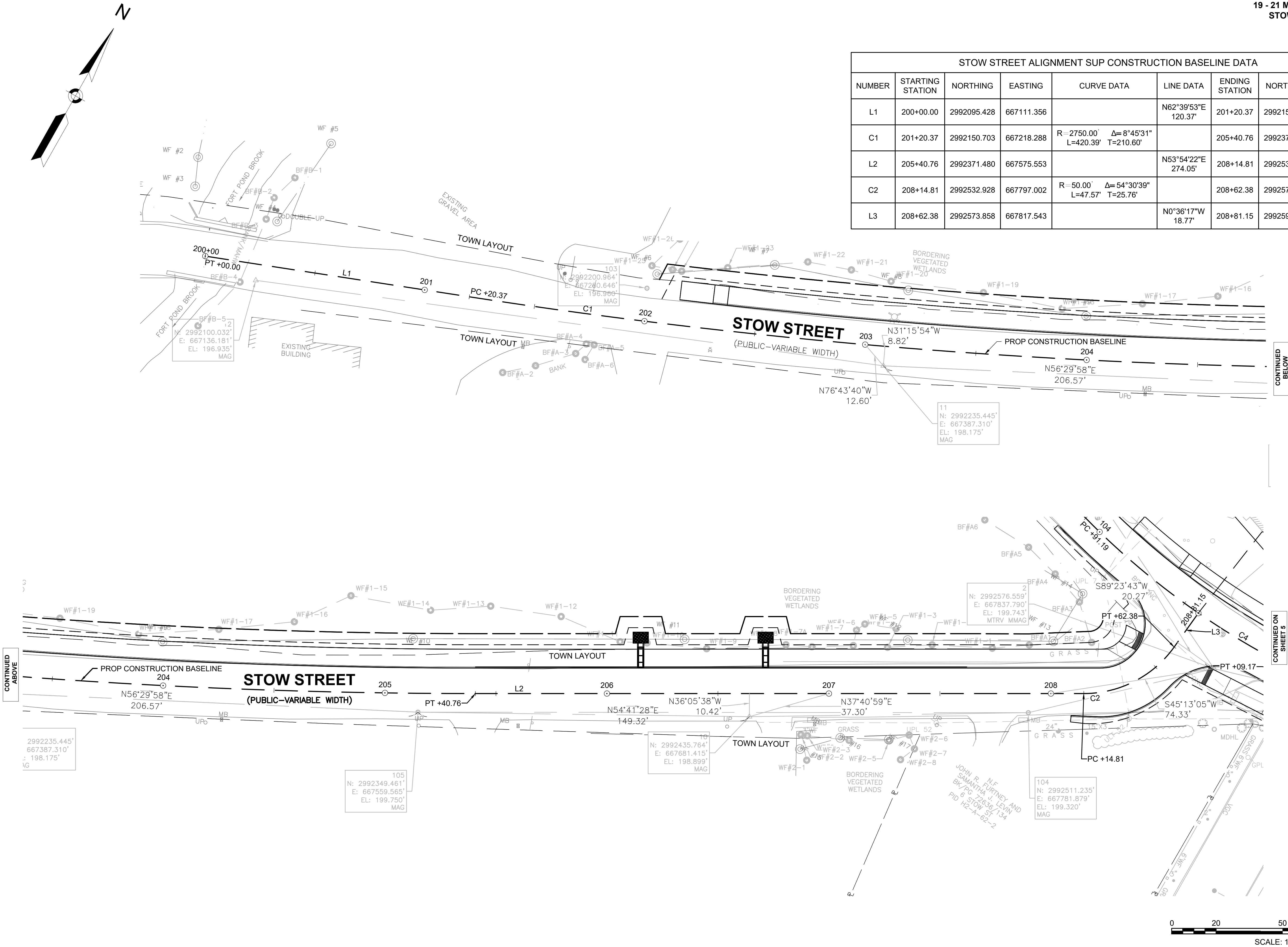
TOWN OF ACTON
19 - 21 MAPLE STREET COMMUTER LOT
STOW STREET SHARED USE PATH
SHEET 3 OF 29
GENERAL NOTES



*= TOLERANCE FOR CONSTRUCTION ±0.5%

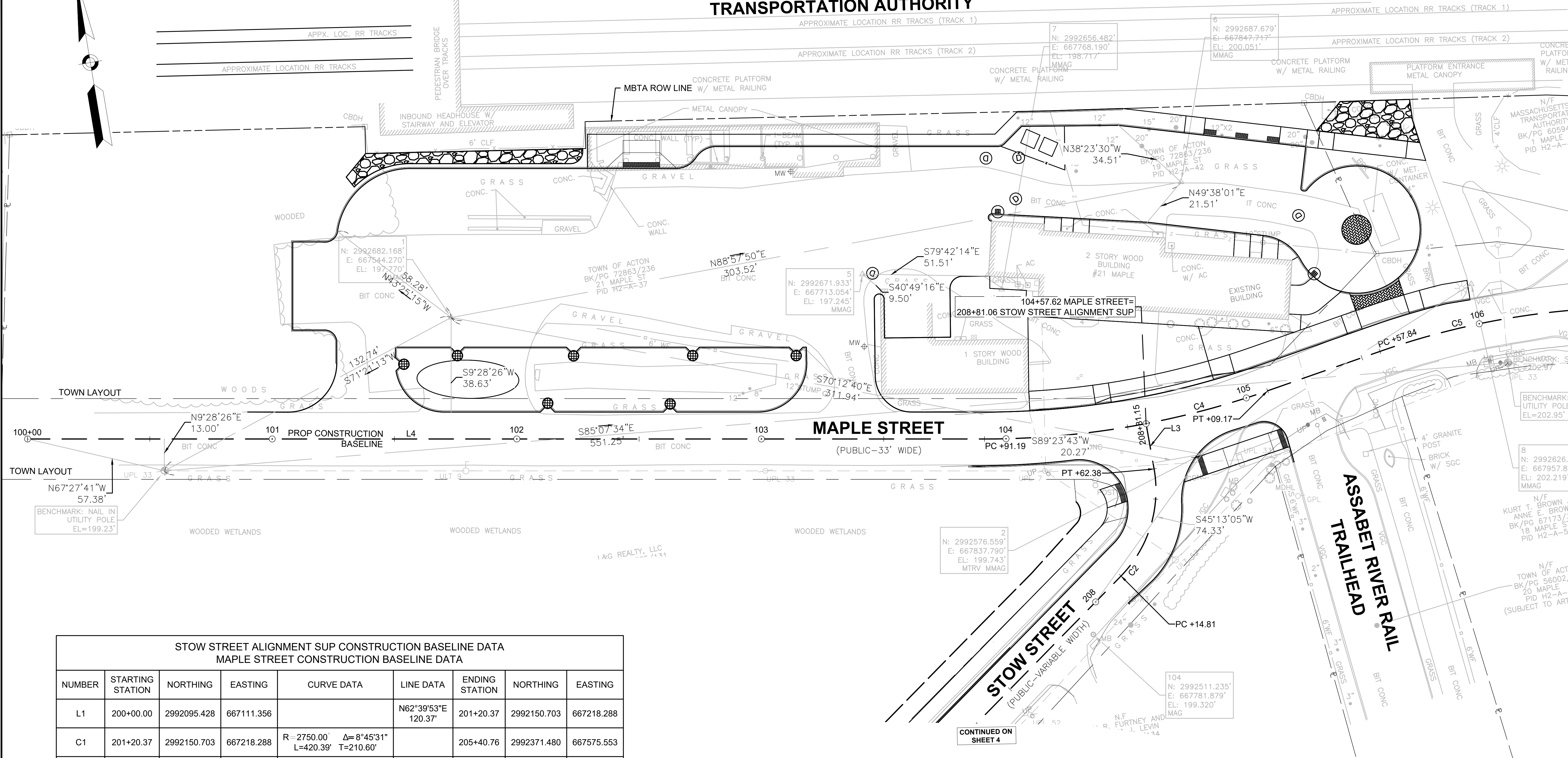
STOW STREET PROPOSED TYPICAL SECTION
STA 202+00± TO 208+00±
NTS

STOW STREET ALIGNMENT SUP CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	200+00.00	2992095.428	667111.356		N62°39'53"E 120.37'	201+20.37	2992150.703	667218.288
C1	201+20.37	2992150.703	667218.288	R=2750.00' Δ=8°45'31" L=420.39' T=210.60'		205+40.76	2992371.480	667575.553
L2	205+40.76	2992371.480	667575.553		N53°54'22"E 274.05'	208+14.81	2992532.928	667797.002
C2	208+14.81	2992532.928	667797.002	R=50.00' Δ=54°30'39" L=47.57' T=25.76'		208+62.38	2992573.858	667817.543
L3	208+62.38	2992573.858	667817.543		N0°36'17"W 18.77'	208+81.15	2992592.627	667817.345



MASSACHUSETTS BAY
TRANSPORTATION AUTHORITY

TOWN OF ACTON
19 - 21 MAPLE STREET COMMUTER LOT &
STOW STREET SHARED USE PATH
SHEET 5 OF 29
BASELINE TIE PLANS



STOW STREET ALIGNMENT SUP CONSTRUCTION BASELINE DATA MAPLE STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	200+00.00	2992095.428	667111.356		N62°39'53"E 120.37'	201+20.37	2992150.703	667218.288
C1	201+20.37	2992150.703	667218.288	R = 2750.00' Δ= 8°45'31" L=420.39' T=210.60'		205+40.76	2992371.480	667575.553
L2	205+40.76	2992371.480	667575.553		N53°54'22"E 274.05'	208+14.81	2992532.928	667797.002
C2	208+14.81	2992532.928	667797.002	R = 50.00' Δ= 54°30'39" L=47.57' T=25.76'		208+62.38	2992573.858	667817.543
L3	208+62.38	2992573.858	667817.543		N0°36'17"W 18.77'	208+81.15	2992592.627	667817.345

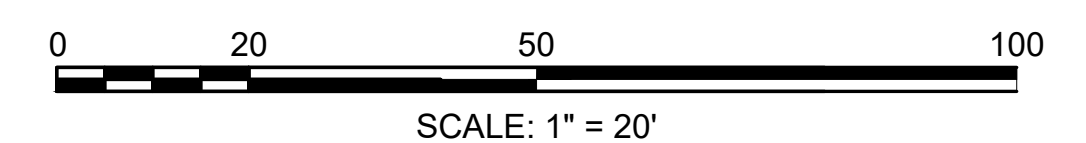
1. REMOVE AND DISCARD EXISTING DAMAGED CATCH BASIN CURB INLETS. INLETS THAT ARE NOT DAMAGED MAY BE REUSED AS APPROVED BY THE ENGINEER.
2. ADJUST ALL UTILITY COVERS WITHIN THE PAVING LIMITS. THE CONTRACTOR SHALL ADJUST ALL TOWN OWNED COVERS TO FINISH GRADE, AND COORDINATE WITH UTILITY COMPANIES TO HAVE THEIR COVERS ADJUSTED TO FINISH GRADE.
3. THE CONTRACTOR SHALL COORDINATE WITH UTILITY OWNERS 30 DAYS PRIOR TO ALL WORK ON THEIR RESPECTIVE UTILITY MANHOLES.
4. SAWCUTTING SHALL BE INCIDENTAL TO THE PROPOSED WORK AND INCLUDED IN THE RESPECTIVE PAY ITEMS EXCEPT FOR SAWCUTTING CEMENT CONCRETE WILL BE PAID UNDER ITEM 482.5.
5. ALL EXISTING GRANITE CURB IN SUITABLE CONDITION SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF DIFFERENT RADII THAN PROPOSED CURB, SUCH STONES SHALL BE TYPE VB VERTICAL GRANITE CURB. EXISTING CURB NOT SUITABLE FOR RE-USE AS DETERMINED BY THE ENGINEER SHALL BE REMOVED AND DISCARDED, AND REPLACED WITH VERTICAL GRANITE CURB TYPE VB. ALL EXISTING EXCESS GRANITE CURB THAT ARE IN SUITABLE CONDITION SHALL BE REMOVED AND STACKED AS DIRECTED BY THE ENGINEER.
6. CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND SHALL CONFIRM THE PROPOSED UNDERGROUND UTILITIES DO NOT CONFLICT.
7. CONTRACTOR SHALL RESTORE AND DISTURBED LAWN AREAS WITH PROPOSED 4" LOAM BORROW AND SEEDING.
8. SEE SHEETS 12 - 13 FOR DRAINAGE AND UTILITY PLANS.
9. SEE SHEET 24 FOR PLANTING SCHEDULE AND WETLAND REPLICATION PLANS.
10. REMOVAL AND DISPOSAL OF EXISTING PAVEMENT SHALL BE PAID UNDER ITEM 120.1 UNCLASSIFIED EXAVATION,
11. CONTRACTOR TO DETERMINE LAYOUT LINES AND COORDINATE WITH TOWN ON NECESSARY EASEMENTS.
12. ALL TREE LOCATIONS AND SIZES ARE APPROXIMATE AND SHALL BE VERIFIED IN FIELD.
13. STONE WALL REMOVAL SHALL BE PAID UNDER ITEM 120.1.



SURFACE:	2.0" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
INTERMEDIATE:	2.0" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)
SUBBASE:	12" GRAVEL BORROW, TYPE B*
<u>PROPOSED CEMENT CONCRETE SIDEWALK / PEDESTRIAN CURB RAMP</u>	
SURFACE:	4" CEMENT CONCRETE SIDEWALK (4000 PSI, $\frac{3}{4}$ ", 610)
SUBBASE:	8" GRAVEL BORROW, TYPE B*

*EXISTING GRAVEL BORROW SHALL BE RE-USED IF DETERMINED SUITABLE BY THE ENGINEER

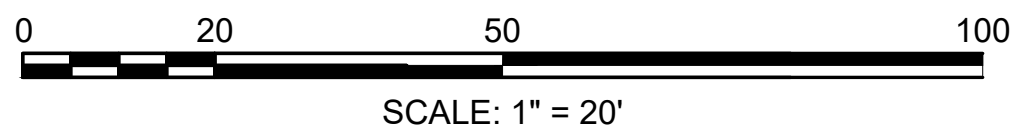
1. ALL PAVING SHALL BE IN ACCORDANCE WITH SECTION 450 HOT MIX ASPHALT PAVEMENT AND SECTION M3 ASPHALTIC MATERIALS.
2. INTERMEDIATE COURSE SHALL BE PLACED WITHIN 7 DAYS OF THE COMPLETION OF THE PAVEMENT MILLING TO PROTECT THE MILLED SURFACE.
3. DRIVEWAY AND SHARED USE PATH PAID FOR UNDER ITEM 702.



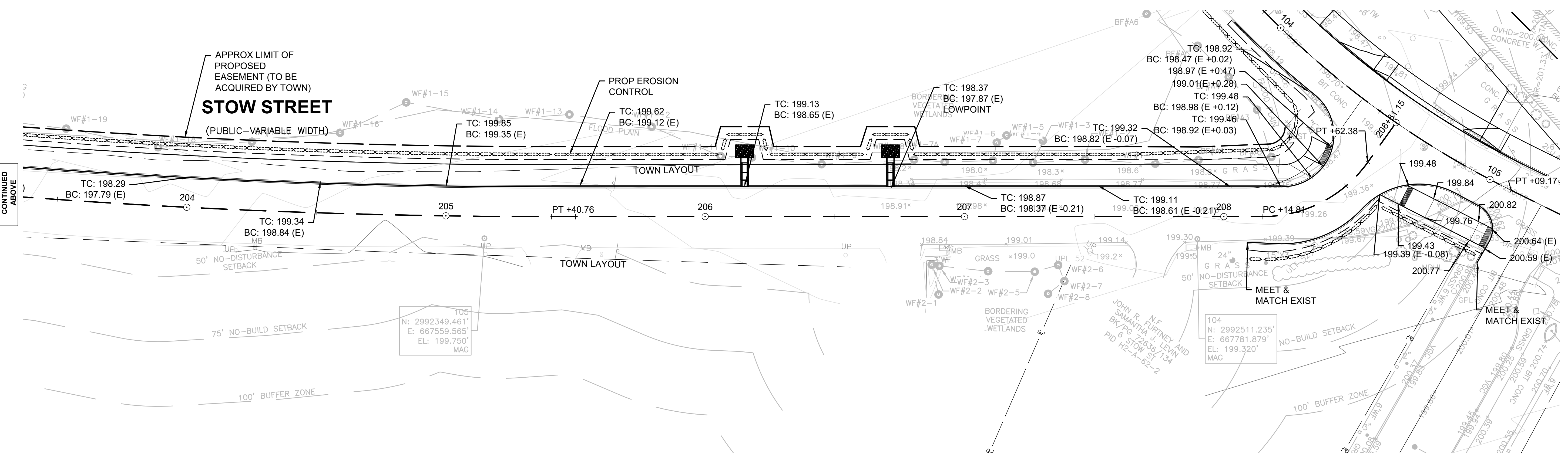
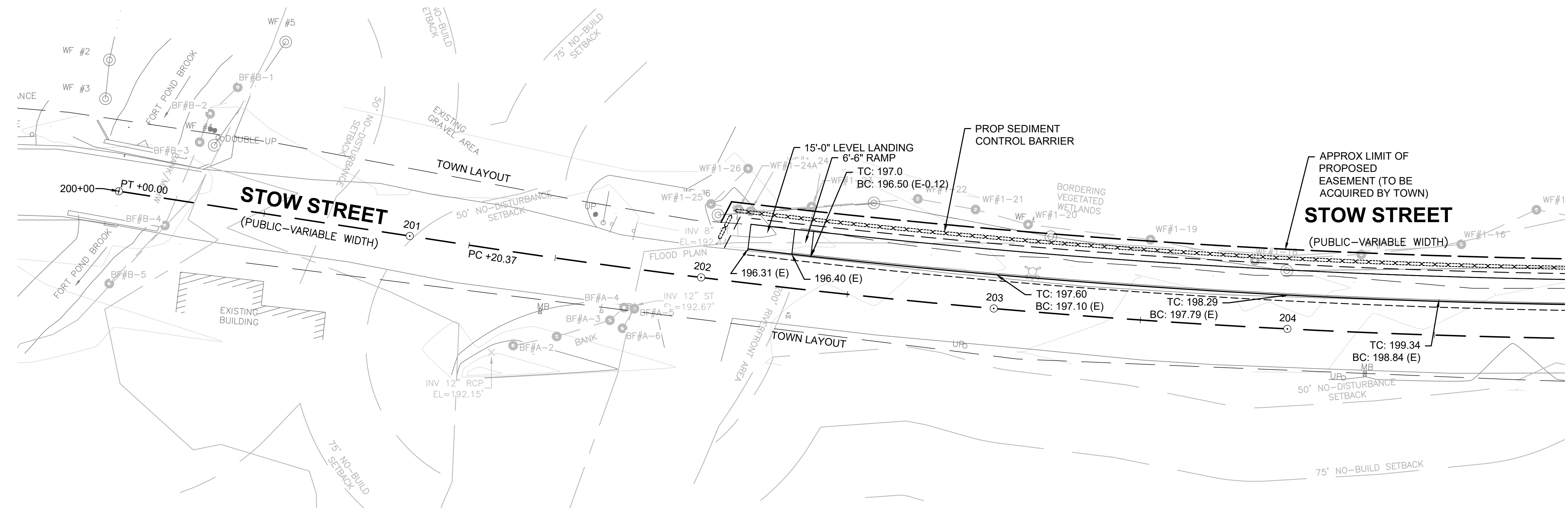
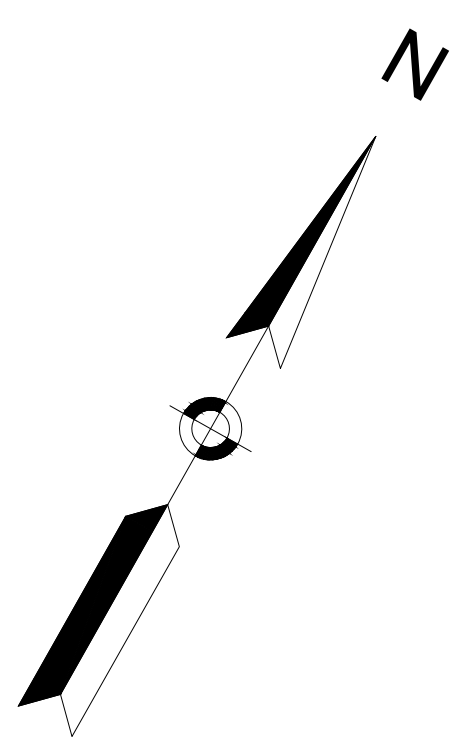


**CONTINUED
BELOW**

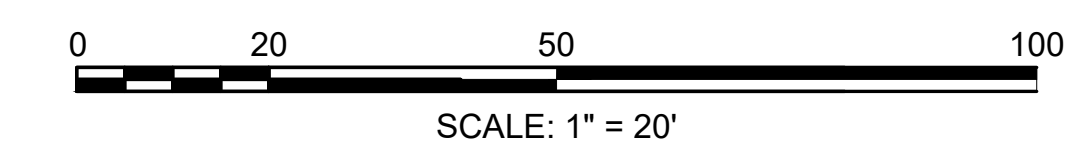




Parcel Table					
Line #/Curve #	Length	Direction/Delta	Radius	Tangent	
C22	41.59	6°37'10"	360.00	20.82	
C23	114.27	19°18'47"	339.00	57.68	
C24	16.57	2°52'03"	331.00	8.28	

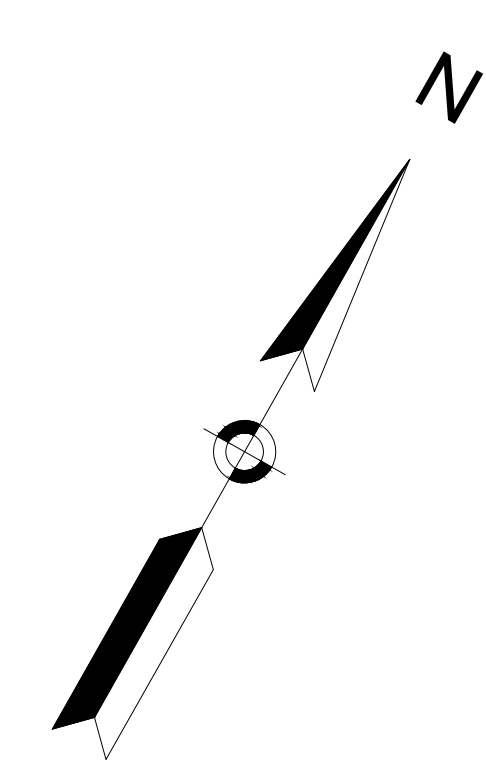


NOTES: EXISTING AND PROPOSED GRADES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING GRADES AND ELEVATIONS IN FIELD.



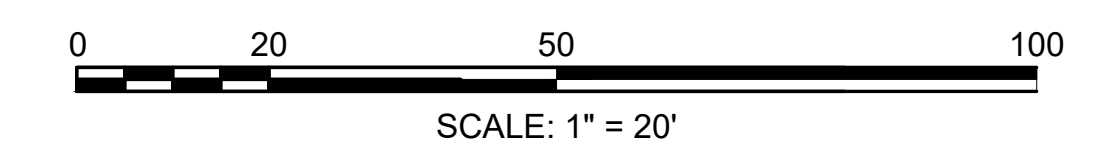
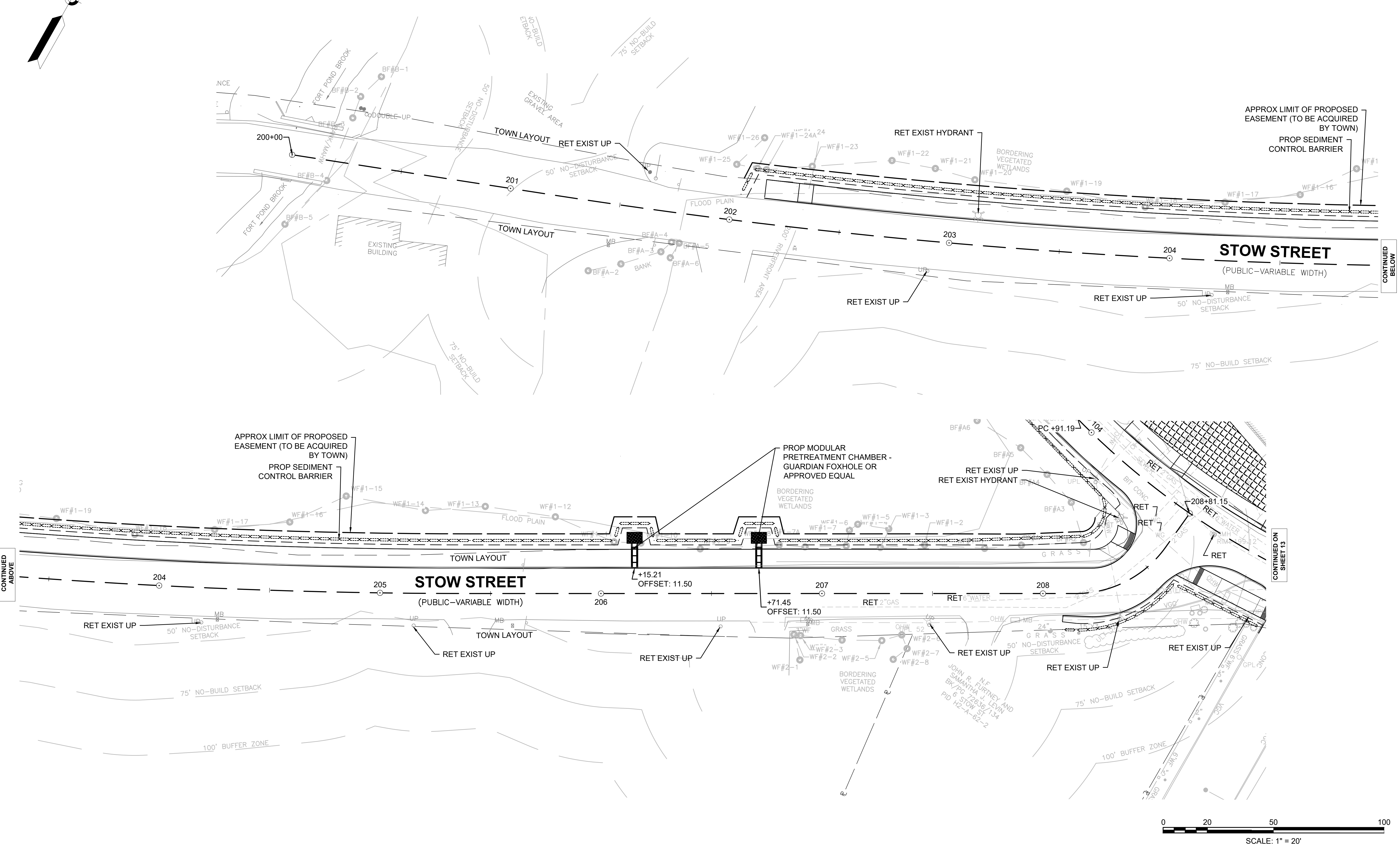


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- NOTES:
1. DRAINAGE ELEVATIONS ARE SHOWN FOR DESIGN PURPOSE ONLY. THE CONTRACTOR SHALL VERIFY, BY TEST PIT LOCATIONS, ALL EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE ONLY AFTER APPROVED BY THE ENGINEER. NO DRAINAGE STRUCTURE SHALL BE ORDERED UNTIL AFTER THE CONTRACTOR VERIFIES THE CONSTRUCTABILITY OF THE SYSTEM.
 2. ALL EXISTING DRAINAGE FRAME AND COVERS/GRATES SHALL BE REMOVED AND DISCARDED PER ITEM 223.2. NEW FRAMES AND GRATES/COVERS SHALL BE PROVIDED THAT COMPLY WITH SECTION 220.

TOWN OF ACTON
19 - 21 MAPLE STREET COMMUTER LOT &
STOW STREET SHARED USE PATH
SHEET 12 OF 29
DRAINAGE AND UTILITY PLANS



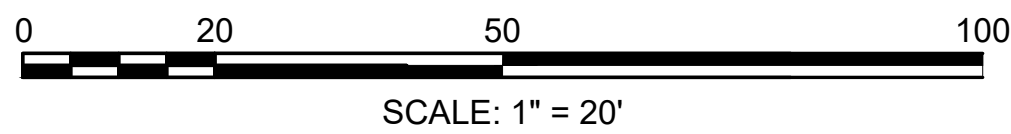
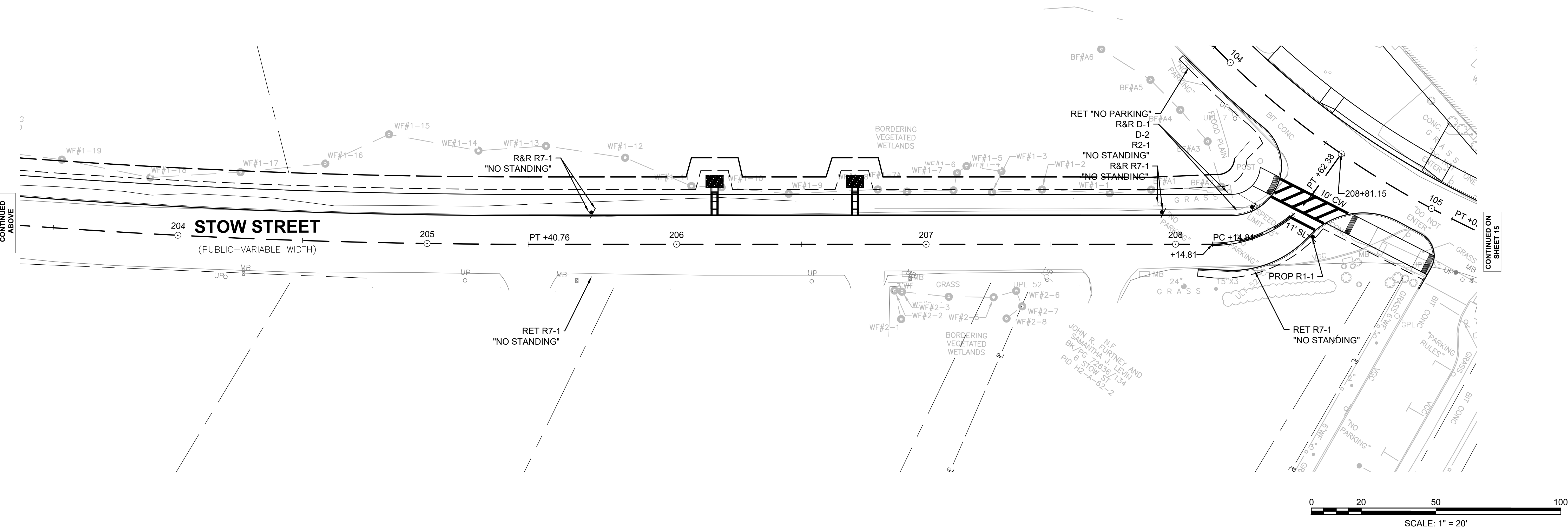
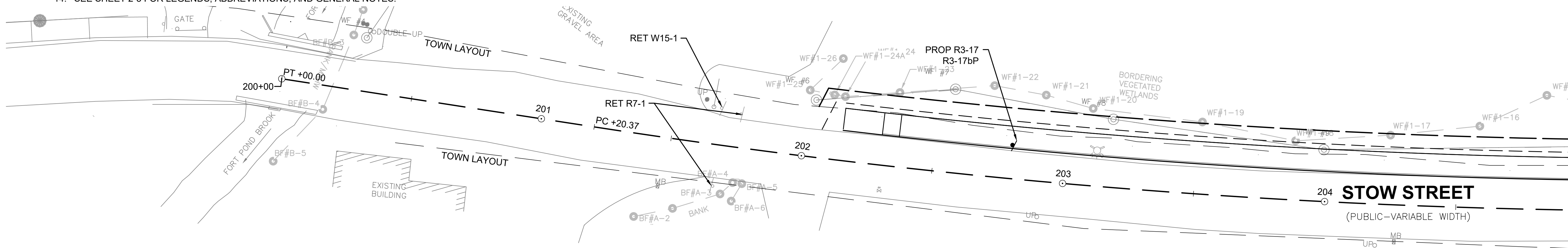
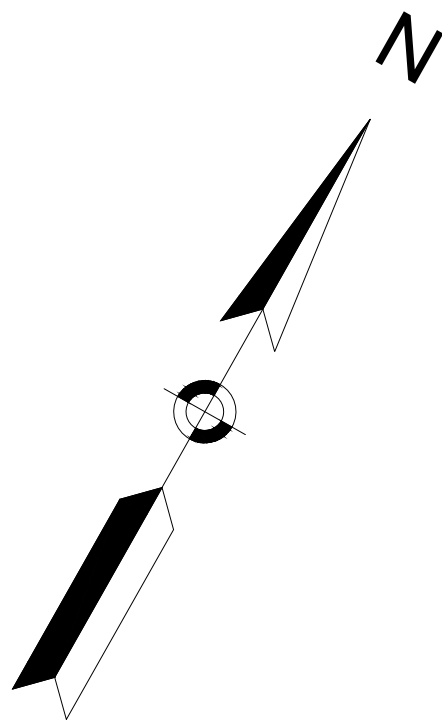


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TRAFFIC SIGN AND PAVEMENT MARKINGS NOTES

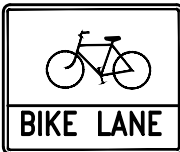
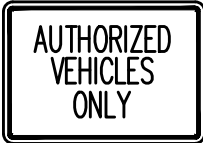
1. ALL EXISTING SIGNS AND SIGN POSTS WITHIN THE PROJECT LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED ON THE PLANS.
2. ALL PROPOSED PAVEMENT MARKINGS WITHIN THE LIMIT OF WORK SHALL BE THERMOPLASTIC. ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED.
3. ALL PROPOSED SIGN POSTS SHALL BE P-5 TYPE (TELESCOPIC POST) UNLESS NOTED OTHERWISE.
4. PROPOSED PAVEMENT MARKINGS (LEGENDS & ARROWS) SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF MUTCD & MASSDOT STANDARD DRAWINGS.
5. ALL PROPOSED SIGNS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MUTCD AND MASSDOT STANDARDS.
6. EXACT LOCATIONS OF PROPOSED SIGNS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
7. ALL SIGN PANELS SHALL BE 90° TO THE CURB AND FACING THE FLOW OF TRAFFIC EXCEPT PARKING REGULATION SIGNS.
8. ALL SIGNS TO BE R&R SHALL BE MOUNTED ON NEW POSTS, UNLESS OTHERWISE NOTED.
9. SIGNS TO BE MOUNTED NEAR THE CURB LINE SHALL BE SET BACK 12" FROM THE EDGE OF THE SIGN PANEL TO THE CURB LINE. NO SIGN SHALL OVERHANG THE CURB LINE.
10. ALL SIGNS SHALL BE MOUNTED TO PROVIDE A 7.0' MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE SIGN AND FINISH GRADE EXCEPT OBJECT MARKER SIGNS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TREE TRIMMING WHERE NECESSARY TO IMPROVE VISIBILITY OF PROPOSED SIGNAGES.
12. ALL SIGNS AND PAVEMENT MARKINGS BEYOND THE LIMITS OF WORK SHALL BE RETAINED.
13. SEE SHEET 16 FOR PROPOSED TRAFFIC SIGN LEGENDS.
14. SEE SHEET 2-3 FOR LEGENDS, ABBREVIATIONS, AND GENERAL NOTES.

TOWN OF ACTON
19 - 21 MAPLE STREET COMMUTER LOT &
STOW STREET SHARED USE PATH
SHEET 14 OF 29
SIGN AND PAVEMENT MARKING PLANS





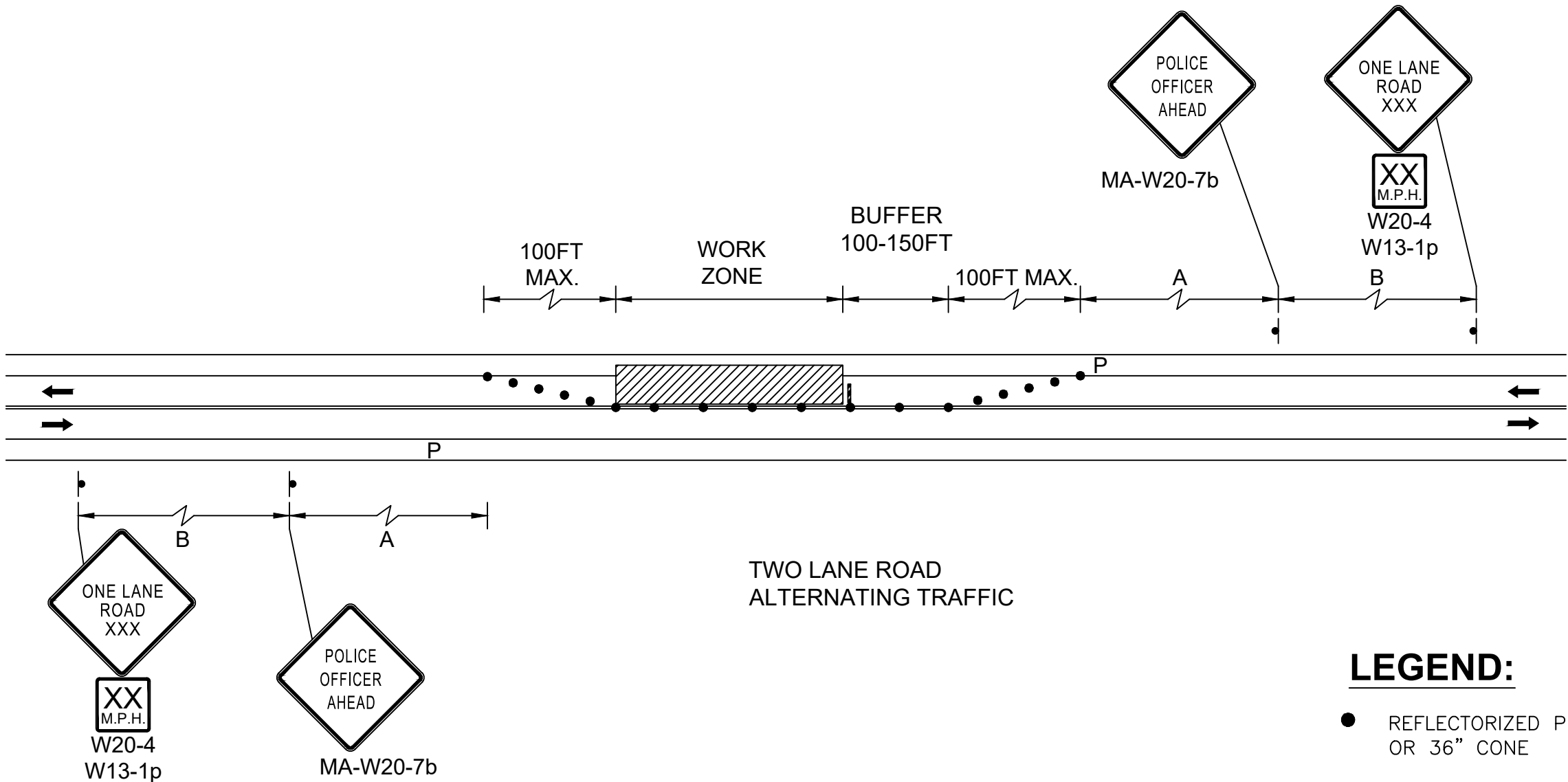
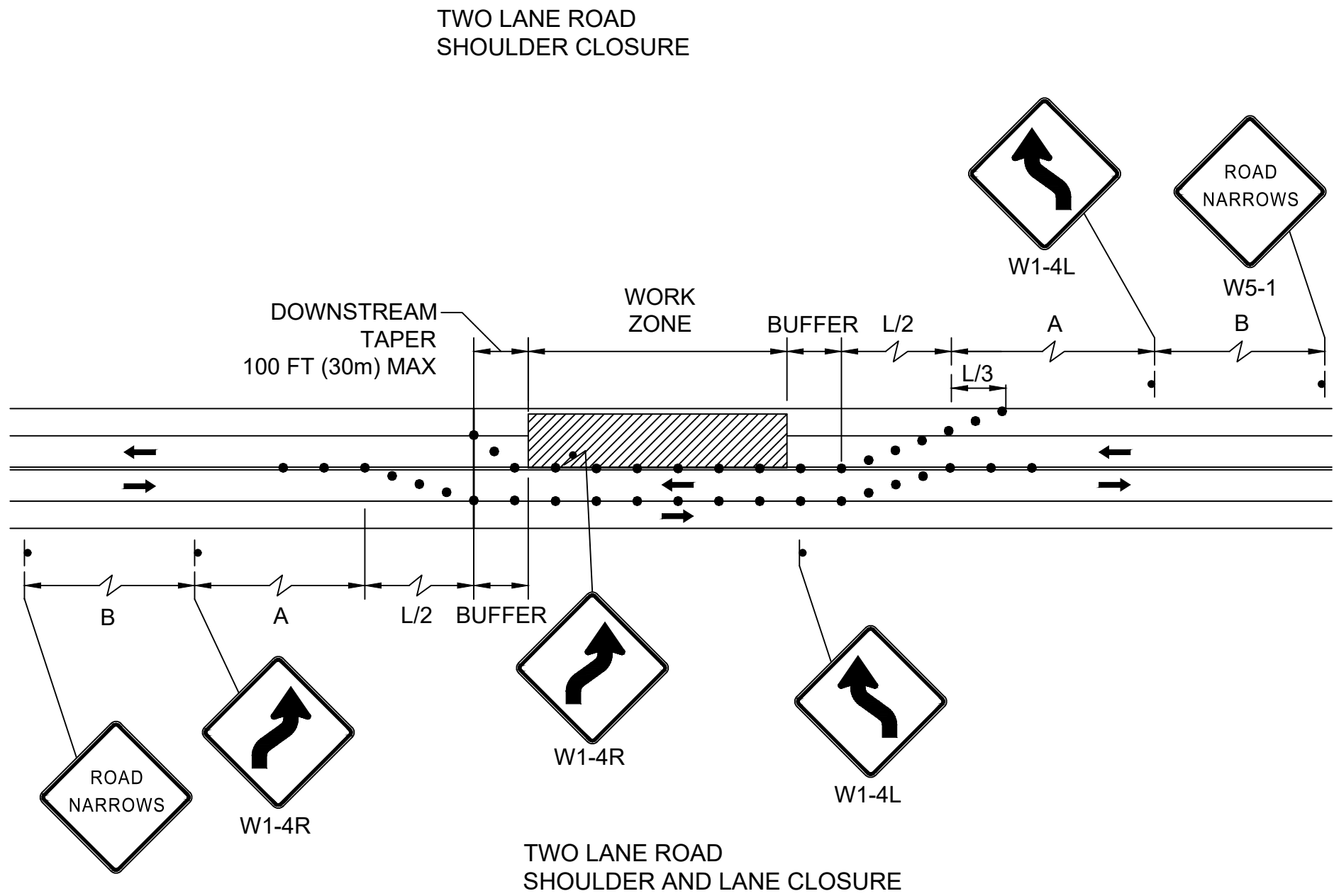
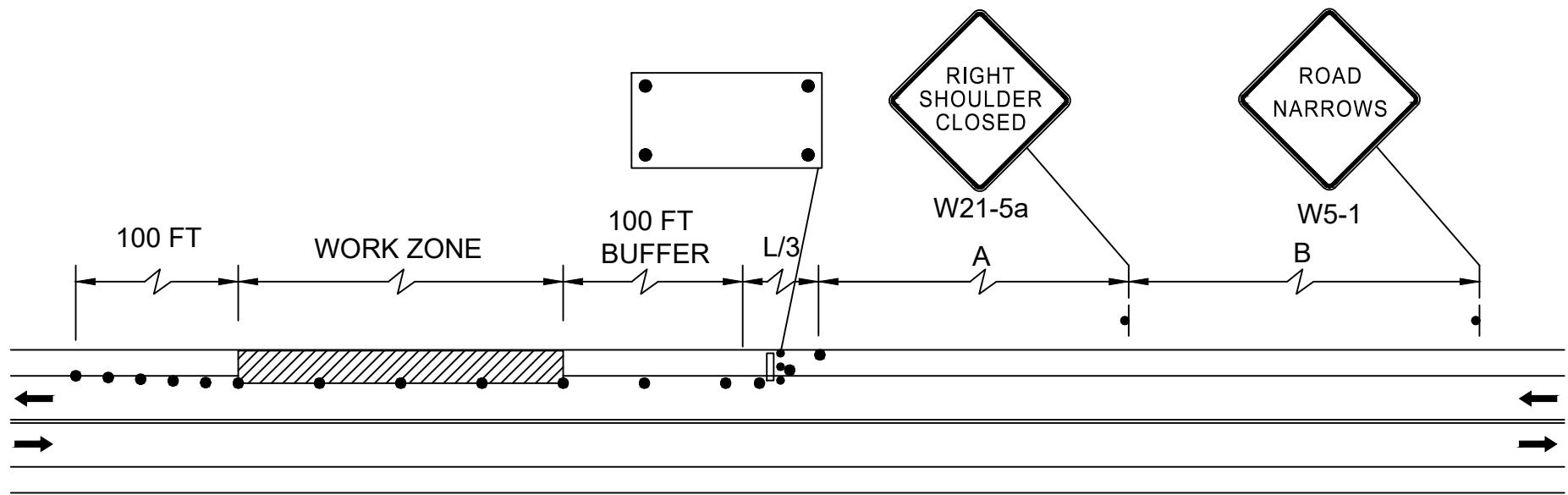
PROPOSED TRAFFIC SIGN SUMMARY

IDENTIFI- CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK- GROUND	LEGEND	BORDER			
R1-1	30"	30"		①	①	①	3	RED	WHITE	WHITE	P-5 3 REQ'D	6.25	18.75
R3-17	24"	18"					1	WHITE	BLACK	BLACK	P-5 1 REQ'D	3.00	3.00
R3-17bP	24"	8"					1	WHITE	BLACK	BLACK	MOUNTED W/ R3-17	1.33	1.33
R5-11	30"	24"					2	WHITE	BLACK	BLACK	P-5 2 REQ'D	5.00	10.00
R7-8	12"	18"					4	WHITE	GREEN	GREEN	P-5 4 REQ'D	1.50	6.00
R7-8p	18"	9"					1	WHITE	GREEN	GREEN	0 REQ'D MTD W/ R7-8	1.13	1.13
SP-1	12"	18"					1	WHITE	GREEN	GREEN	P-5 1 REQ'D	1.50	1.50

① SEE MUTCD 2009 EDITION, THE 2012 SUPPLEMENT TO THE 2004 EDITION OF THE STANDARD HIGHWAY SIGNS, SECTION M9.30.0 TYPE III OF THE MASSDOT STANDARD SPECIFICATION, AND THE MASSDOT STANDARD SIGN BOOK FOR TEXT DIMENSIONS AND COLOR.

1. ALL TRAFFIC MANAGEMENT AND WORK ZONE TRAFFIC CONTROL MEASURES SHALL CONFORM TO THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) CURRENT EDITION WITH MASSACHUSETTS AMMENDMENTS, THE STANDARD SPECIFICATIONS, THE PROJECT SPECIAL PROVISIONS, AND THE FOLLOWING NOTES.
2. THE TRAFFIC MANAGEMENT PLANS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. WORK ZONE TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS OR OTHER TRAFFIC SITUATIONS IF APPLICABLE SHALL BE IN ACCORDANCE WITH THE MUTCD AND AS APPROVED OR DIRECTED BY THE ENGINEER.
3. NO CONSTRUCTION VEHICLES SHALL BE PARKED WITHIN THE TRAVEL WAY WITHOUT PROPER PROTECTION AND APPROVAL OF THE ENGINEER.
4. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
5. ALL WARNING SIGNS SHALL BE BLACK LEGEND ON A REFLECTIVE ORANGE BACKGROUND AND IN ACCORDANCE WITH THE MUTCD. ALL REGULATORY SIGNS SHALL BE BLACK LEGEND ON A WHITE REFLECTIVE BACKGROUND. ALL CONSTRUCTION SIGNS SHALL BE ATTACHED TO THEIR OWN INDEPENDENT SUPPORTS UNLESS SHOWN OTHERWISE.
6. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO AVOID PLACING TEMPORARY TRAFFIC CONTROL DEVICES ON PRIVATE PROPERTY. IF SUCH PLACEMENT ON PRIVATE PROPERTY IS UNAVOIDABLE, IT SHALL BE DONE WITH THE EXPLICIT APPROVAL OF THE PROPERTY OWNER AND THE ENGINEER.
7. ABUTTER ACCESS SHALL NOT BE CLOSED EXCEPT FOR SHORT PERIODS AND ONLY WITH THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
8. THE CONTRACTOR SHALL PROVIDE IMMEDIATE ACCESS TO EMERGENCY VEHICLES AT ALL TIMES.
9. GRADE DIFFERENCES IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.
10. GRADE DIFFERENCES IN EXCESS OF 4" DURING NON-WORKING HOURS SHALL BE PROTECTED BY BACKFILLING WITH A TRANSITION OF GRAVEL OR OTHER MATERIAL TO BE COMPACTED AT A 4:1 SLOPE, AND DELINEATED BY DRUMS.
11. CONSTRUCTION SIGNS NOT APPLICABLE TO VARIOUS STAGES OF CONSTRUCTION SHALL BE REMOVED OR COVERED.
12. USE MA-W20-7b SIGNS ONLY WHEN POLICE OFFICER IS DIRECTING TRAFFIC. THEY SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH OPERATION.
13. MAINTAIN PEDESTRIAN ACCESS THROUGH THE WORK AREA AT ALL TIMES. THE POLICE DETAIL SHALL PROVIDE CONTROL TO CROSS PEDESTRIANS ON ROADWAY TO SIDEWALK. PROVIDE TEMPORARY CROSSWALKS AND RAMPS AS NEEDED AND AS DIRECTED BY THE ENGINEER.
14. ALL CONSTRUCTION SIGNING AND OTHER TRAFFIC MAINTENANCE DEVICES SHALL CONFORM WITH THE 2009 MUTCD AS AMENDED, MASH, AND MASSDOT STANDARDS.
15. ADVANCE WARNING SIGNS NO LONGER APPLICABLE, WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS, SHALL EITHER BE COVERED OR REMOVED AS SOON AS POSSIBLE. NO SIGN SHALL BE VISIBLE TO TRAFFIC THAT MAY CONFLICT WITH ACTUAL ROADWAY CONDITIONS.
16. ALL DISTANCES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. HOWEVER, MINIMUM DISTANCES, WHERE INDICATED, SHOULD BE MAINTAINED.
17. THE CONTRACTOR SHALL USE TEMPORARY PATCHING OR BEVELED STEEL PLATES TO COVER PIPE TRENCHES AND OTHER EXCAVATED HOLES NOT COMPLETED BY THE END OF EACH WORK DAY.
18. ALL DRUMS WITH FLASHERS, SIGNS AND SIGN SUPPORTS MUST PASS THE CRITERIA SET FORTH IN NCHRP 350 AND MASH RECOMMENDED PROCEDURES FOR THE SAFETY EVALUATION OF HIGHWAY FEATURES.
19. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH WILL BE MEASURED FROM THE EDGE OF DRUMS OR CONES.
20. ORANGE CONSTRUCTION FLAGS MAY BE USED ON ADVANCE WARNING SIGNS AS DIRECTED BY THE ENGINEER. FLAGS SHALL BE A MINIMUM OF 16" X 16".
21. MAINTAIN EXISTING PAVEMENT MARKINGS WHERE APPLICABLE. WHEN LANES SHIFT, IF NECESSARY, EXISTING MARKINGS SHALL BE REMOVED AND TEMPORARY PAVEMENT MARKING SHALL BE PROVIDED.
22. AT THE END OF EACH WORK DAY, NO TRAFFIC CONTROL DEVICES SHALL REMAIN IN THE ROADWAY AND ALL LANES SHALL BE OPEN FOR TRAFFIC FLOW.
23. THE CONTRACTOR MAY PROPOSE TO USE A DIFFERENT SEQUENCE OF WORK AREAS THAN WHAT IS BEING PROPOSED IN THESE DOCUMENTS. THE CONTRACTOR SHALL SUBMIT PHASING AND TRAFFIC MANAGEMENT PLANS FOR APPROVAL BY THE ENGINEER.
24. MAXIMUM SPACING OF CHANNELIZING DEVICES IN A TAPER IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH. (20' SPACING TYPICAL ON TAPER, 35' SPACING TYPICAL ON TANGENTS.)
25. CHANNELIZATION WILL BE ACCOMPLISHED THROUGH THE USE OF REFLECTORIZED PLASTIC DRUMS OR CONES.
26. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A SEQUENTIAL FLASHING LIGHTS.
27. POLICE DETAIL SHALL BE USED WHILE SETTING UP THE TEMPORARY TRAFFIC CONTROL DEVICES ON THE ROADWAY.
28. EACH WORK ZONE SHALL HAVE MA-R2-10a, MA-R2-10e, AND W-20 SERIES SIGNS WHERE APPLICABLE.
29. POLICE DETAILS SHALL BE EMPLOYED AND SHALL BE SUBSTITUTED WITH CERTIFIED ROADWAY FLAGGERS AS DIRECTED BY THE ENGINEER AND PER SECTION 850 "TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS" IN THE MASSDOT STANDARD SPECIFICATIONS.
30. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
31. ALL DRIVEWAYS AND STREETS SHALL REMAIN OPEN AT ALL TIMES EXCEPT FOR SHORT PERIODS AS APPROVED BY THE ENGINEER.

TOWN OF ACTON
19 - 21 MAPLE STREET COMMUTER LOT &
STOW STREET SHARED USE PATH
SHEET 17 OF 29
TEMPORARY TRAFFIC CONTROL PLANS

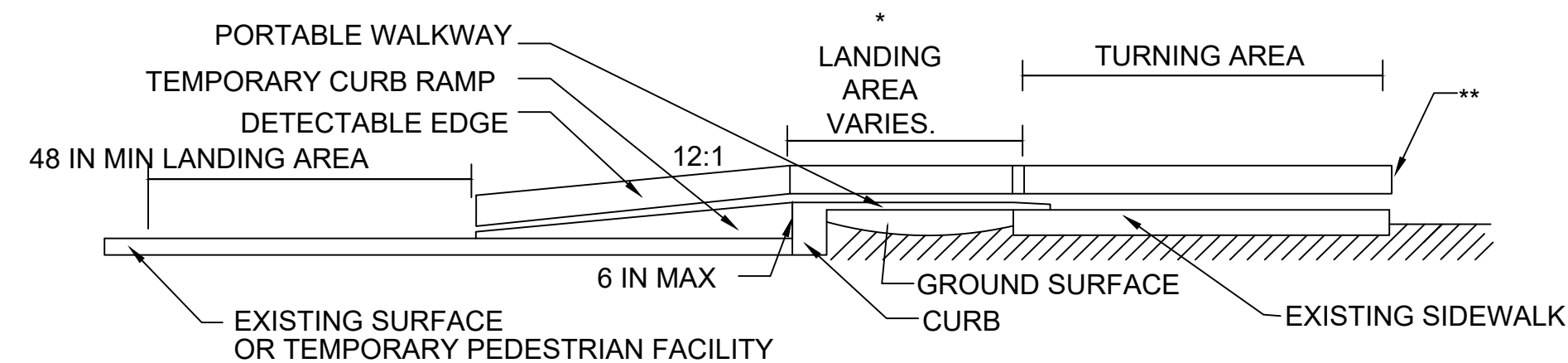
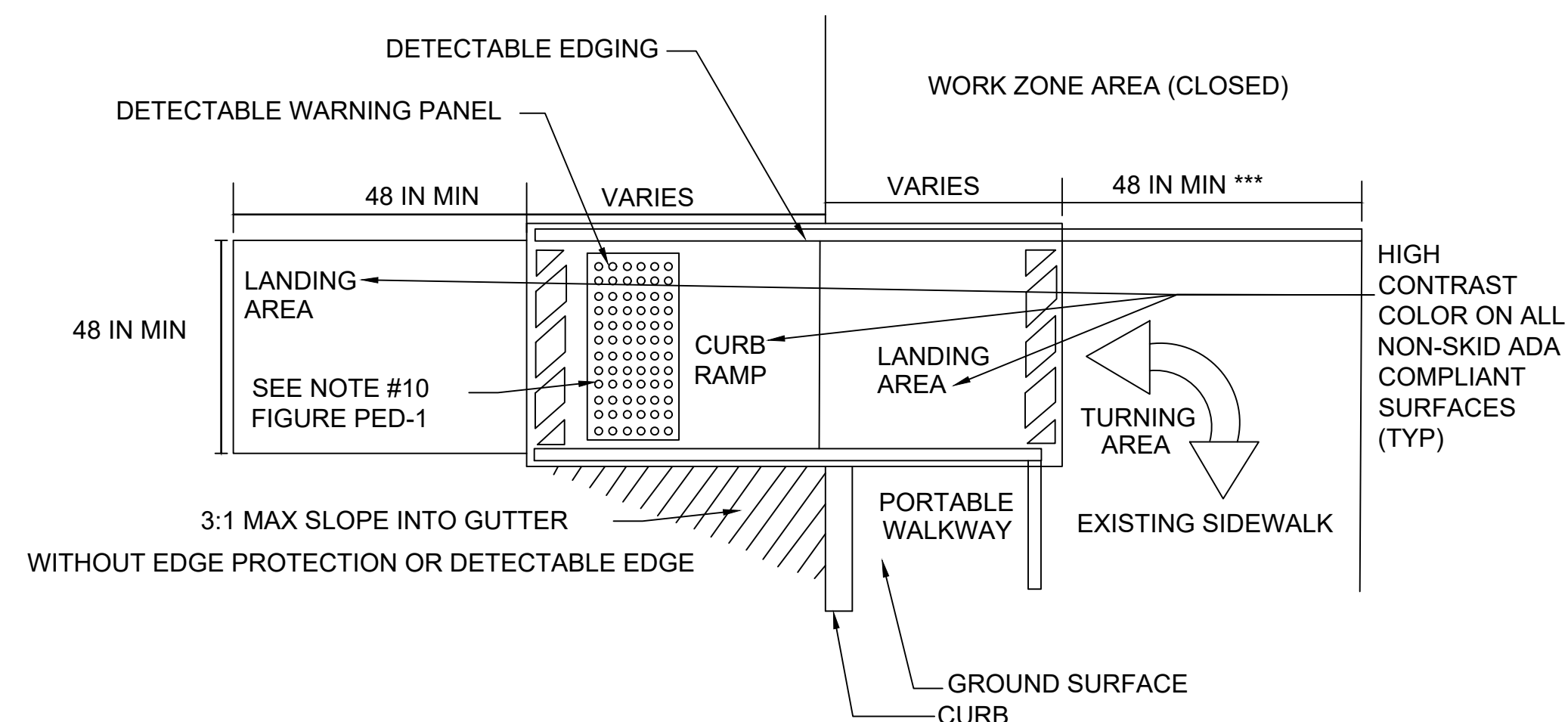


LEGEND:

- | | |
|--|--------------------------------------|
| ● REFLECTORIZED PLASTIC DRUM OR 36" CONE | ▨ WORK ZONE |
| P/F POLICE/FLAGGER DETAIL | ➡ DIRECTION OF TRAFFIC |
| ▨ TYPE III BARRICADE | ⊞ IMPACT ATTENUATOR |
| □ CHANGEABLE MESSAGE SIGN | ▭ MEDIAN BARRIER |
| ⋯ ARROW BOARD | ▨ MEDIAN BARRIER WITH WARNING LIGHTS |
| | 🚚 WORK VEHICLE |
| | ⊞ TRUCK MOUNTED ATTENUATOR |
| | ➡ TRAFFIC OR PEDESTRIAN SIGNAL |
| | ● SIGN |

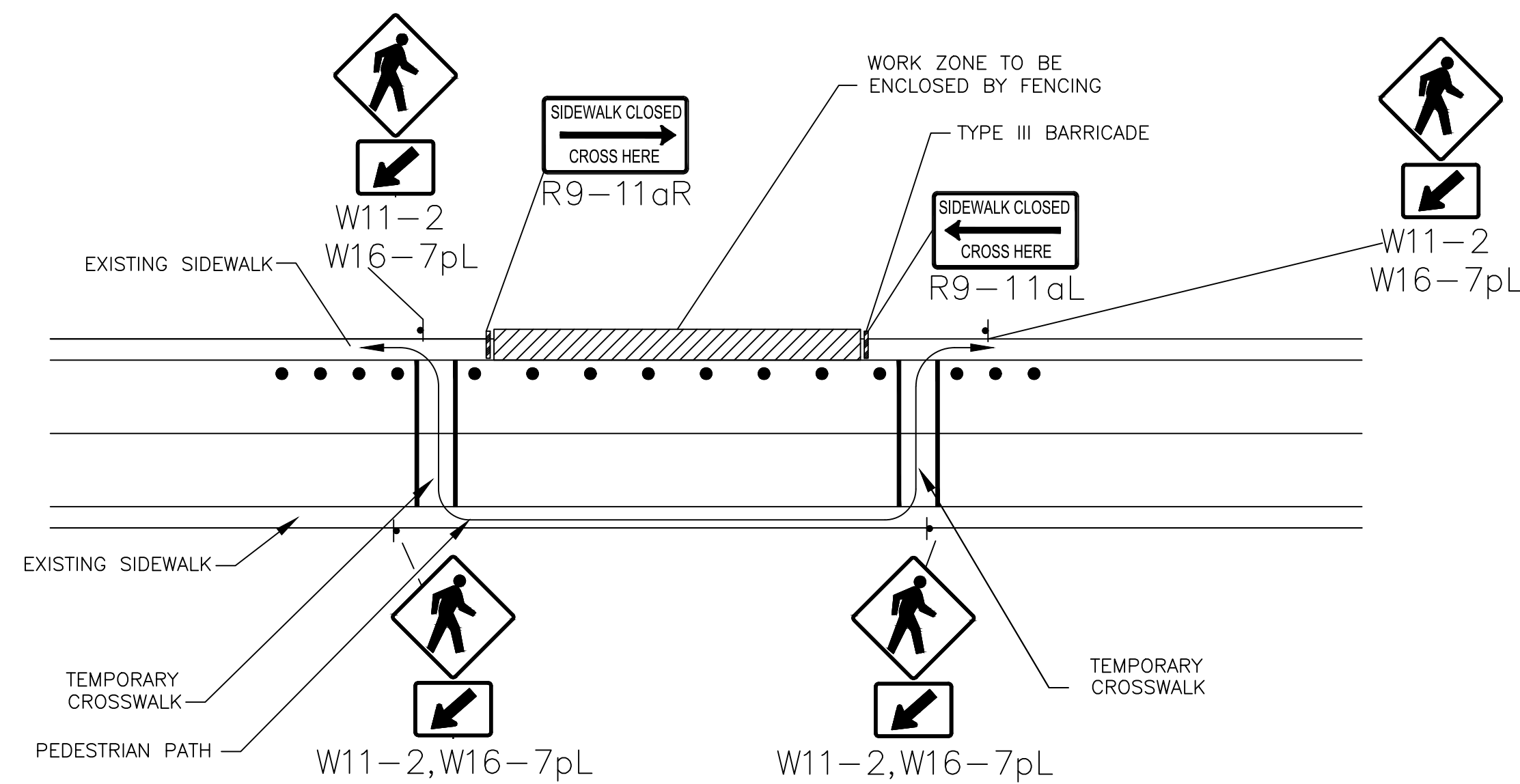
TEMPORARY CURB RAMP-PARALLEL TO CURB

TEMPORARY CURB RAMP-PERPENDICULAR TO CURB



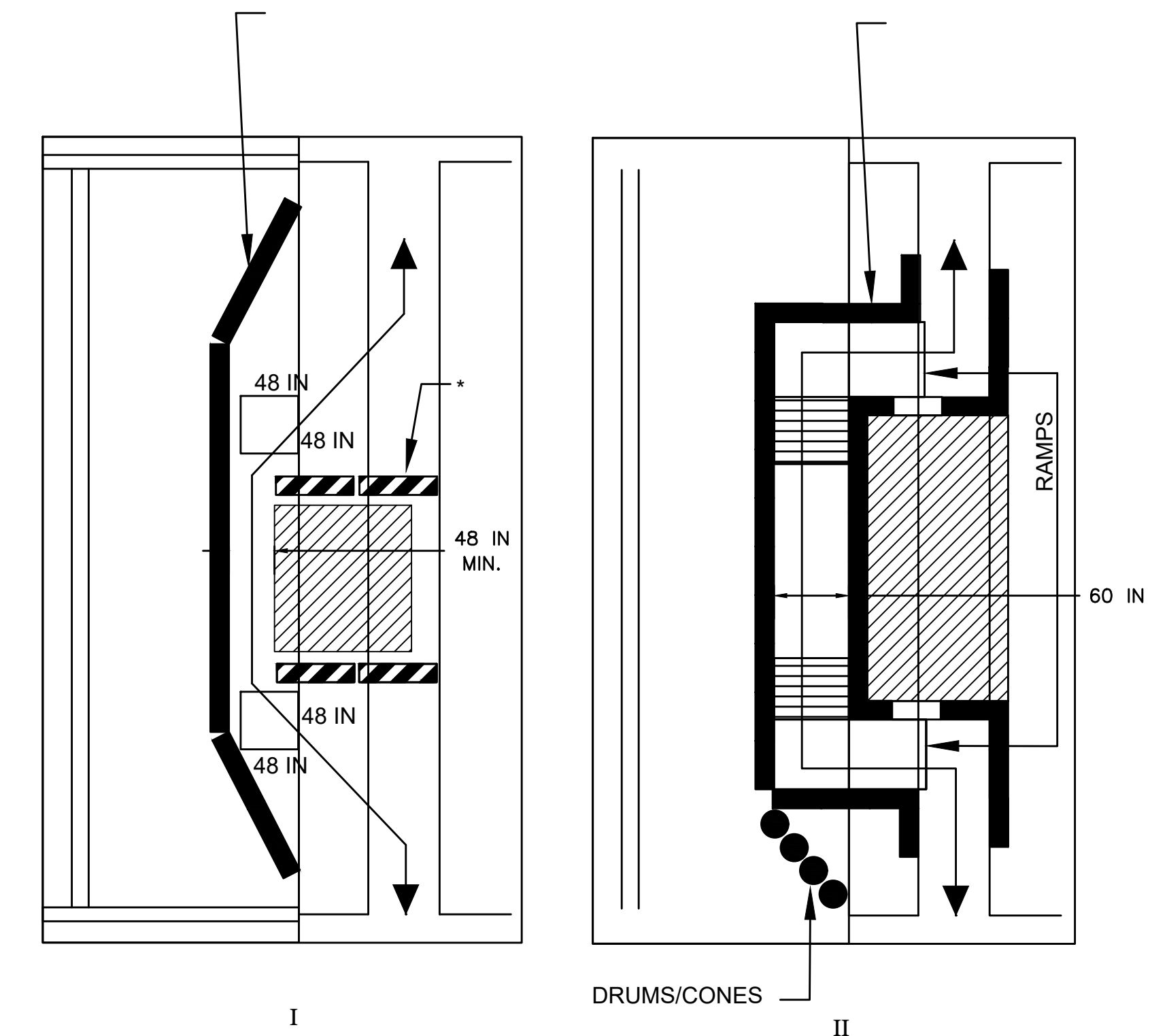
TEMPORARY CURB RAMP

- * -LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.
- ** -DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.
- *** -60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK

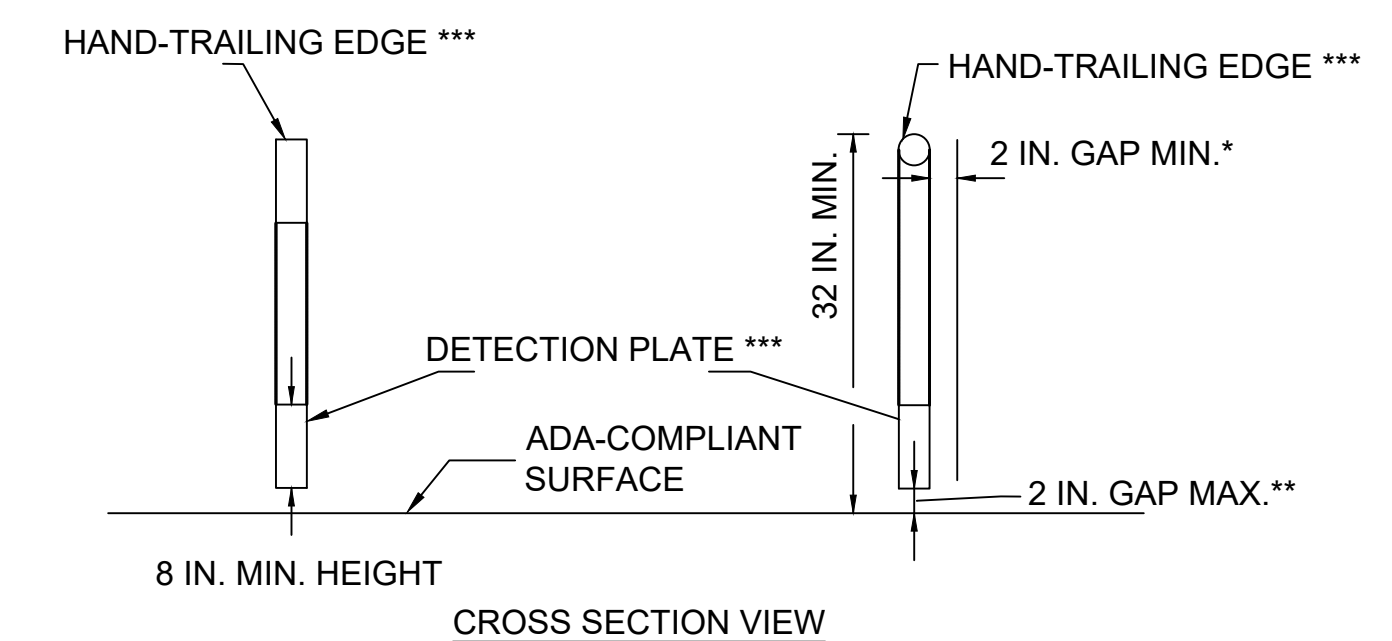


NOTES

1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER. TEMPORARY CURB RAMPS WILL BE REQUIRED AT ALL TEMPORARY CROSSWALK LOCATIONS.
5. BYPASS IS TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
6. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THIS WALKWAY EXCEEDS 200 FEET THEN A 5 FOOT X 5 FOOT PASSING ZONE. (FOR SHORT TERM SETUPS < 10 HOURS, THIS CONDITION MAY BE WAIVED. A NOTE WOULD NEED TO BE INCLUDED IN THE TTOP THAT STATES HOW THE CONTRACTOR SHOULD ADDRESS THIS ISSUE.)



TEMPORARY PEDESTRIAN DELINEATION DETAILS

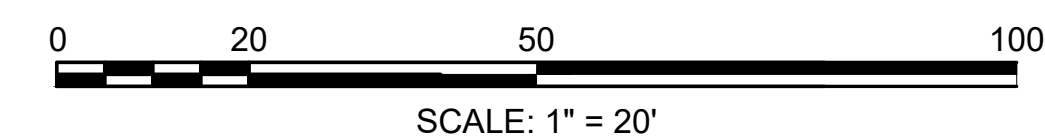
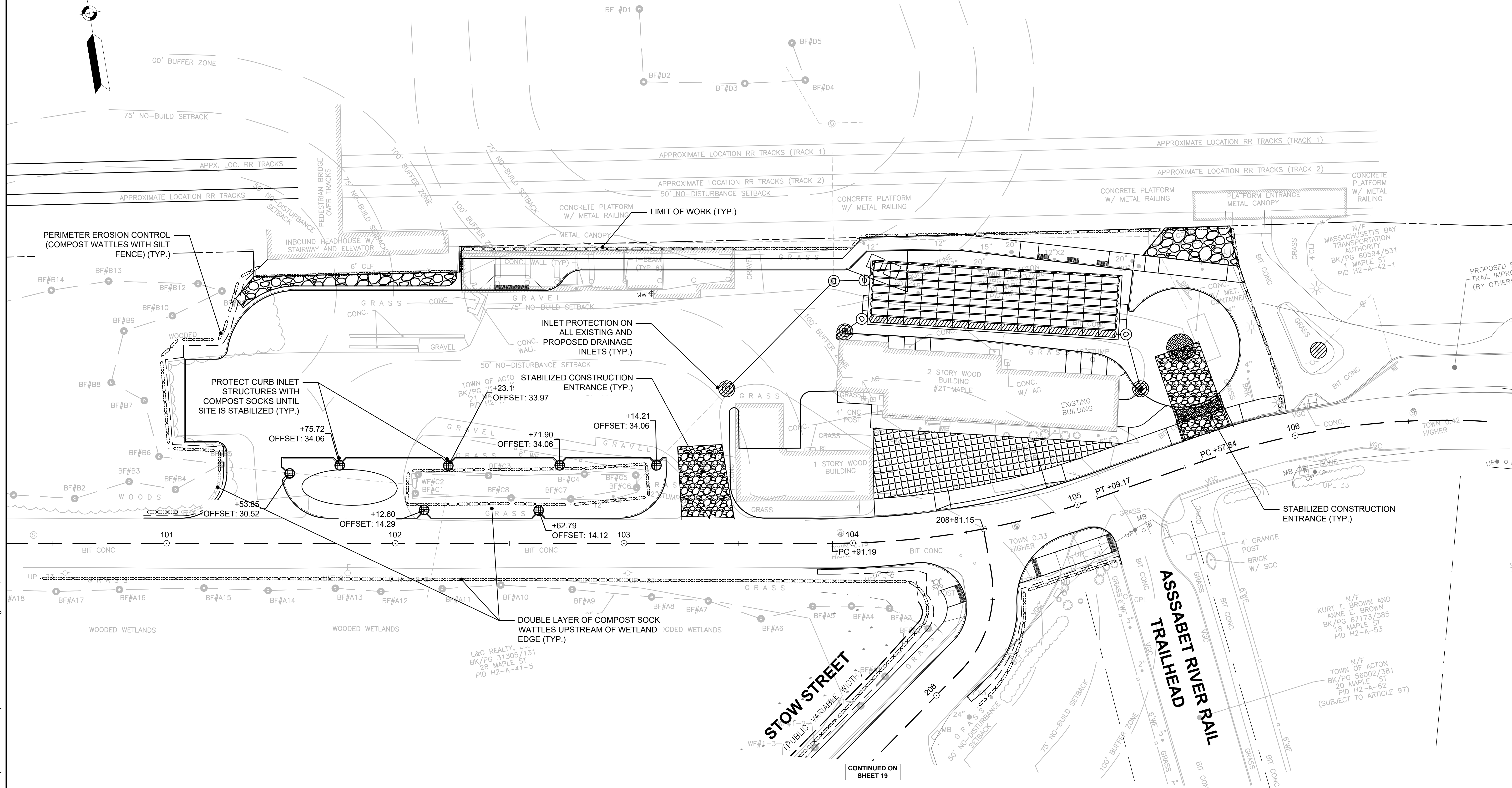
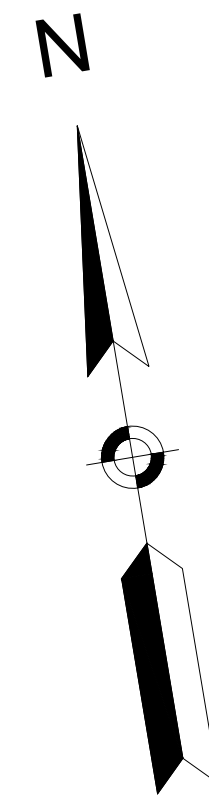


PEDESTRIAN CHANNELIZING DEVICE

NOTES:

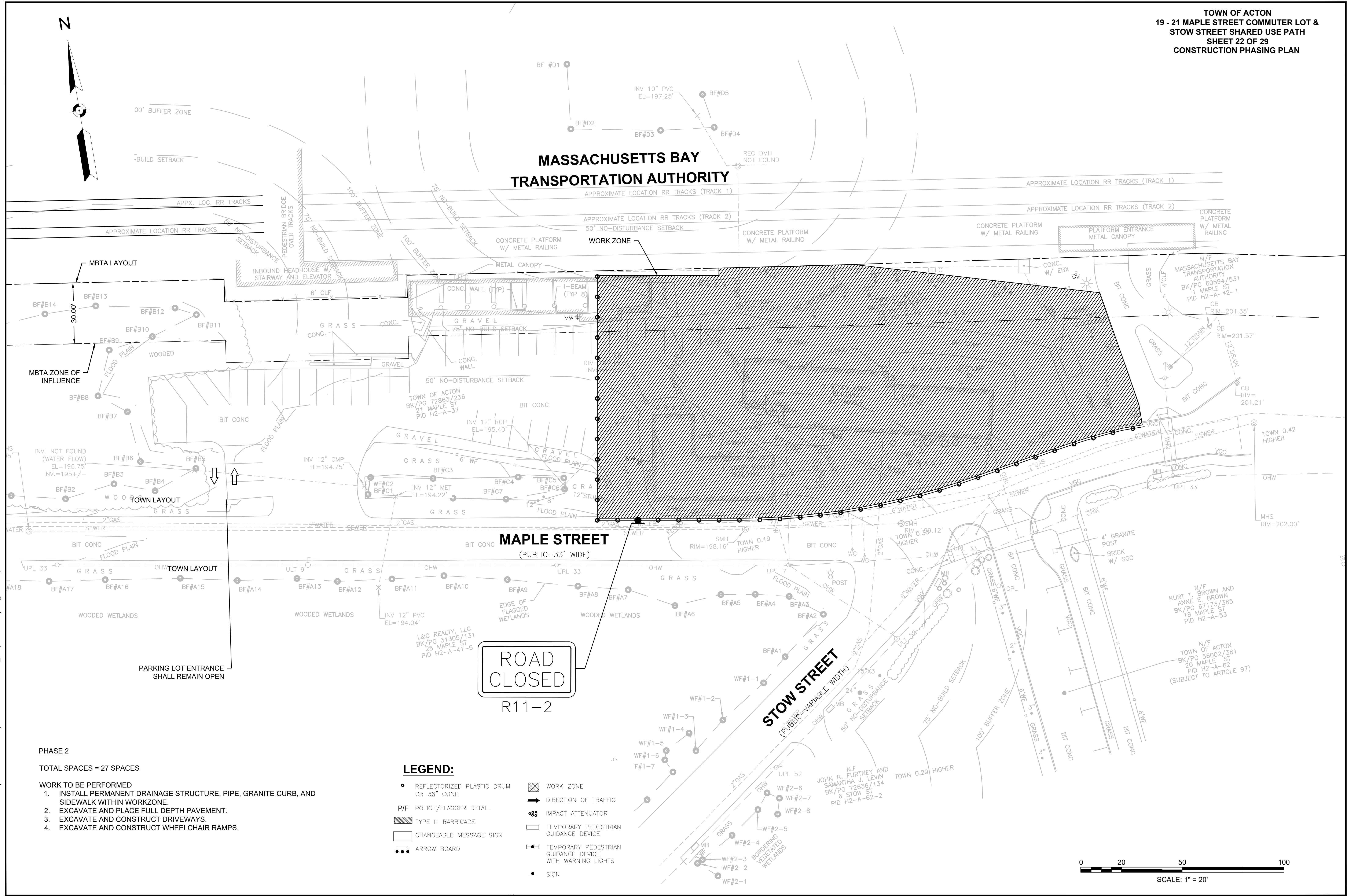
- * THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
- ** A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.
- *** THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.

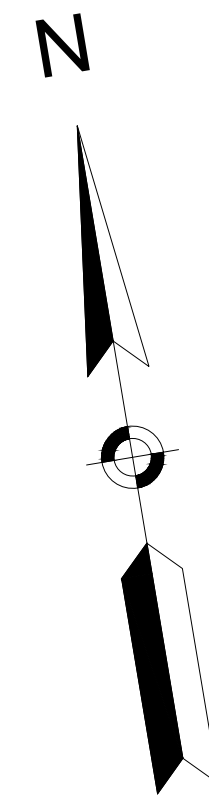






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MASSACHUSETTS BAY
TRANSPORTATION AUTHORITY

MAPLE STREET
(PUBLIC-33' WIDE)

STOW STREET
(PUBLIC-VARIABLE WIDTH)

ROAD
CLOSED

R11-2

PHASE 3

TOTAL SPACES = 10 SPACES

WORK TO BE PERFORMED

1. INSTALL PERMANENT DRAINAGE STRUCTURE, PIPE, GRANITE CURB, AND SIDEWALK WITHIN WORKZONE.
2. EXCAVATE AND PLACE FULL DEPTH PAVEMENT.
3. EXCAVATE AND CONSTRUCT DRIVEWAYS.
4. EXCAVATE AND CONSTRUCT WHEELCHAIR RAMPS.

LEGEND:

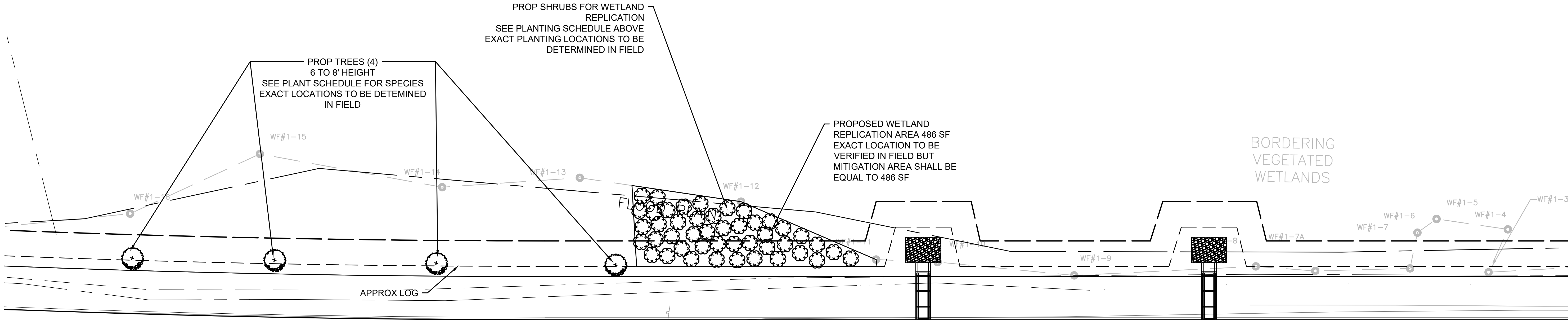
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- P/F POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- TEMPORARY PEDESTRIAN GUIDANCE DEVICE
- TEMPORARY PEDESTRIAN GUIDANCE DEVICE WITH WARNING LIGHTS
- SIGN

0 20 50 100
SCALE: 1" = 20'

PLANT SCHEDULE		
QUANTITY	BOTANICAL NAME	COMMON NAME
22	Vaccinium corymbosum	HIGHBUSH BLUEBERRY
23	Hamamelis virginiana	WITCH-HAZEL
1	Acer rubrum	RED MAPLE
1	Acer saccharum	SUGAR MAPLE
1	Quescus rubra	RED OAK
1	Pinus strobus	WHITE PINE

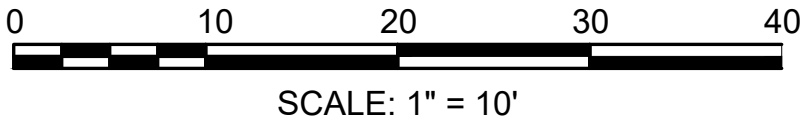
Wetland Replication Area Construction Sequence

1. A qualified Wetland Scientist shall supervise all aspects of the proposed Wetland Replication Area during construction; eg., erosion controls, site preparatory, grading, backfilling, planting and seeding.
2. Flag or stake limits of Wetland Replication Area. Flag trees and/or shrubs adjacent to the existing wetland boundary to remain. Install erosion control barrier along intersection of the Wetland Replication Area and adjacent wetland, taking into considering that grading within the wetland will be required to achieve a suitable hydrologic connection to the WRA. Once the Wetland Replication Area and adjacent side slope have been graded, install an erosion control barrier at the toe of slope to protect the Wetland Replication Area.
3. During construction of the Wetland Replication Area, the supervisory Wetland Scientist shall oversee the proposed grading and planting scheme. The final elevation shall be determined in the field and will correspond to the elevation of the adjacent wetland. During construction, the Wetland Replication Area shall be excavated to final grade unless a suitable topsoil is not encountered, at which time the area will be excavated to one foot below the final design grade to facilitate the placement of approved clean wetland soil (12% organic carbon content (or 20% organic matter content) and pH of 6.2-6.8) as a suitable substrate for the establishment of wetland vegetation. Wetland soils will consist of the topsoil (A Horizon) from the Wetland Impact Area and/or a wetland soil mixture manufactured by combining topsoil with a soil textural class of sandy loam, fine sandy loam, or silt loam with decomposed leaf litter at a 1:1 ratio. The wetland soil shall be free of stumps, roots, heavy or stiff clay, stones, coarse sand, noxious weeds, weed seeds or other litter. Settling of soils shall be taken into consideration for final elevations.
4. Apply wetland seed mix at the specified application rate or higher if applied at the end of the growing season and lightly rake to insure seed-to-soil contact. There shall be no seeding in areas of standing water.
5. Apply conservation seed mix to side slopes at the specified application rate and lightly rake to insure seed-to-soil contact.
6. Apply a light mulch of clean weed free straw.
7. The supervisory Wetland Scientist shall reserve the right to reject acceptance of wetland plant species upon delivery based on plant vigor/conditions, unauthorized substitutions, and/or non- conformance with the planting plan and specifications. All plantings shall be native varieties with no landscape cultivars accepted. During transport, the plants shall be protected to minimize stress.
8. The supervisory wetland scientist shall reserve the right to require a supplemental watering program of plantings.
9. Remove erosion control barriers upon stabilization of the side slope and Wetland Replication Area and Wetland Restoration Area.
10. Wetland plantings shall be paid for under items 765.552 and 765.555.

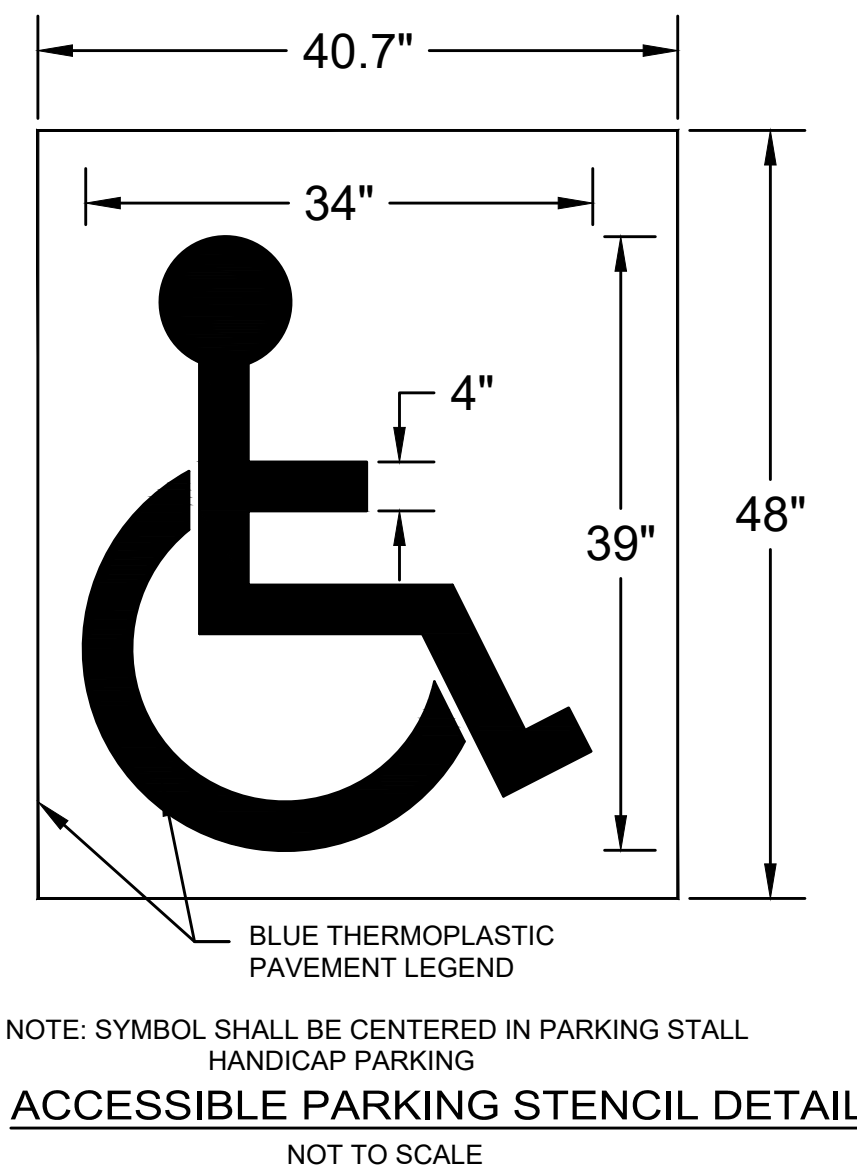
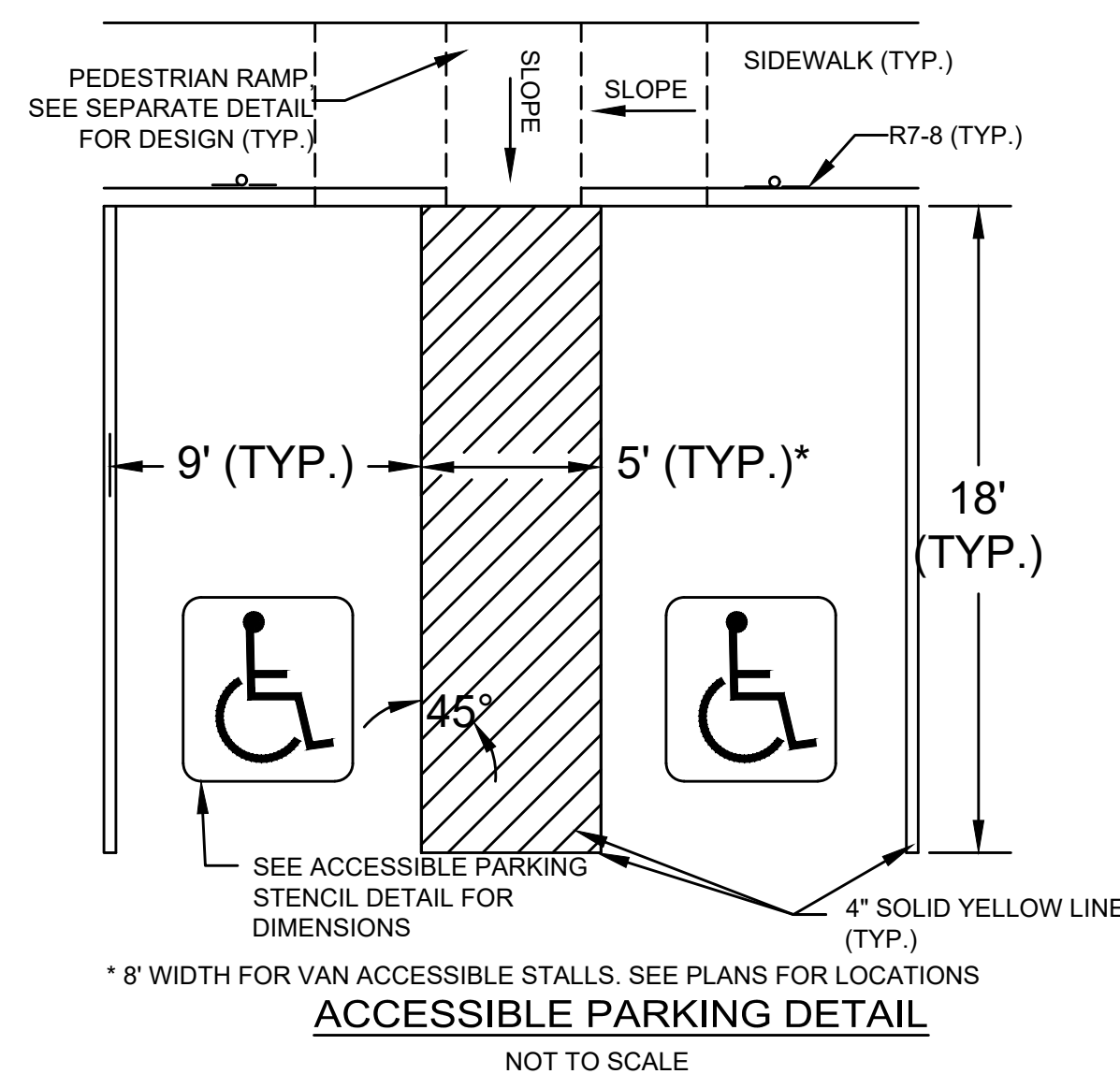
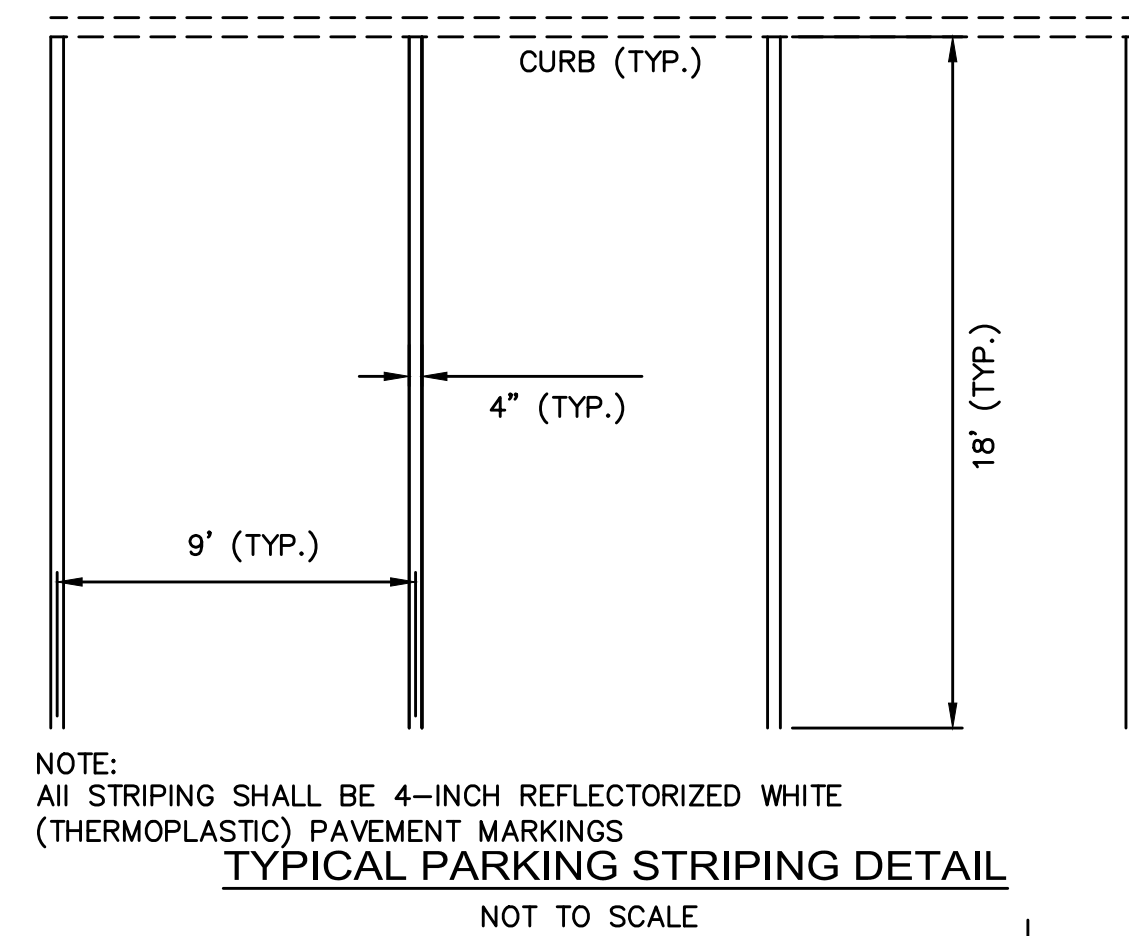
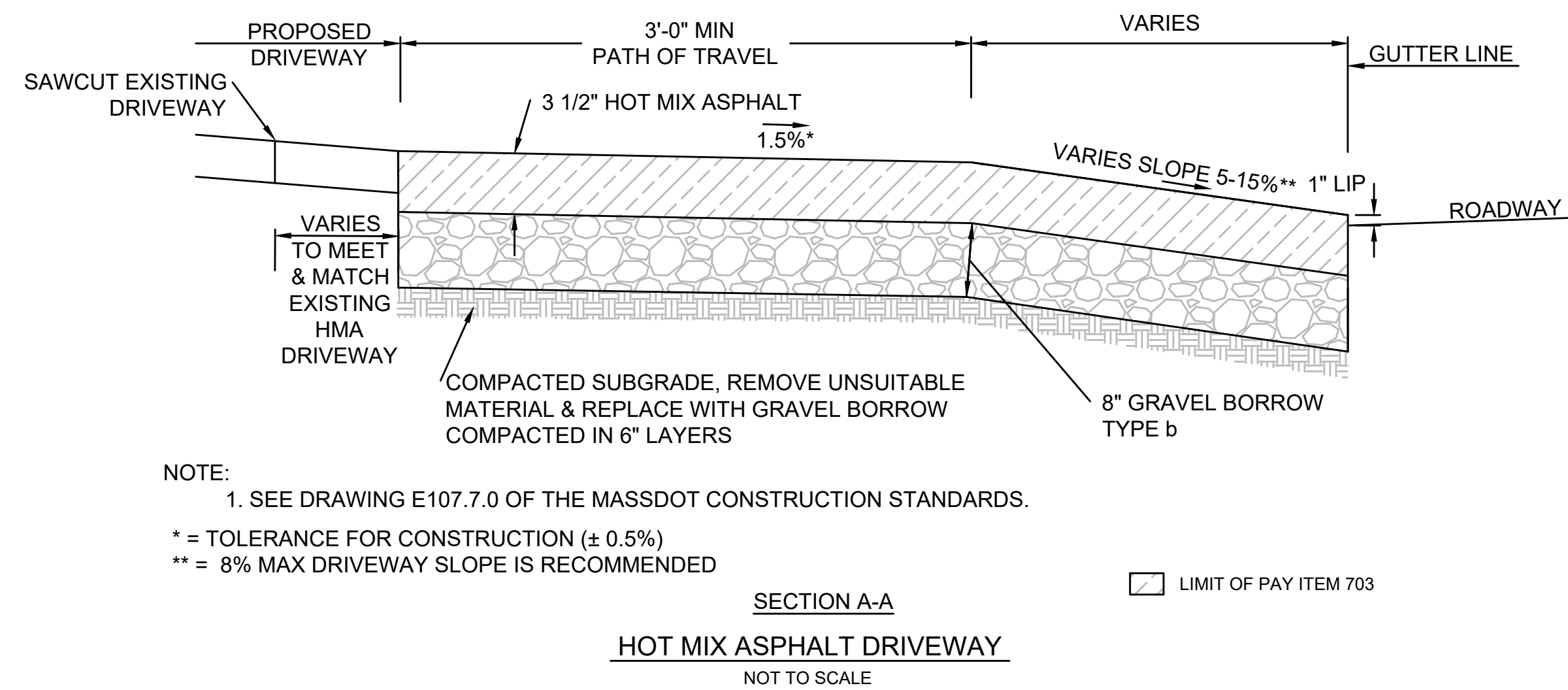
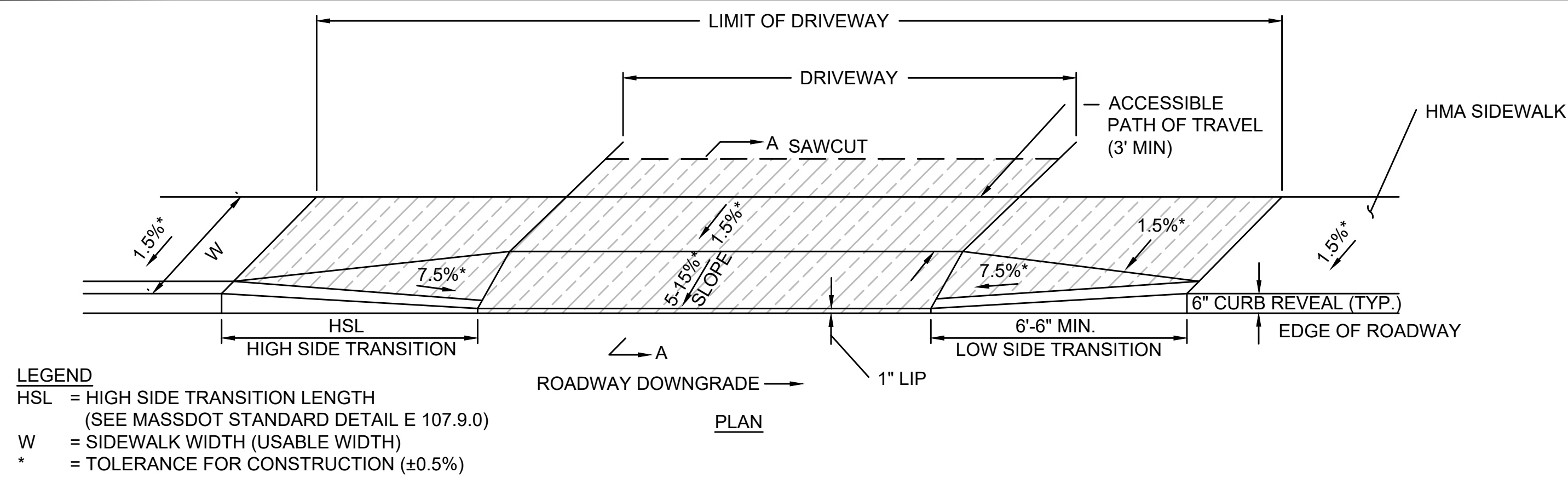


NOTE:

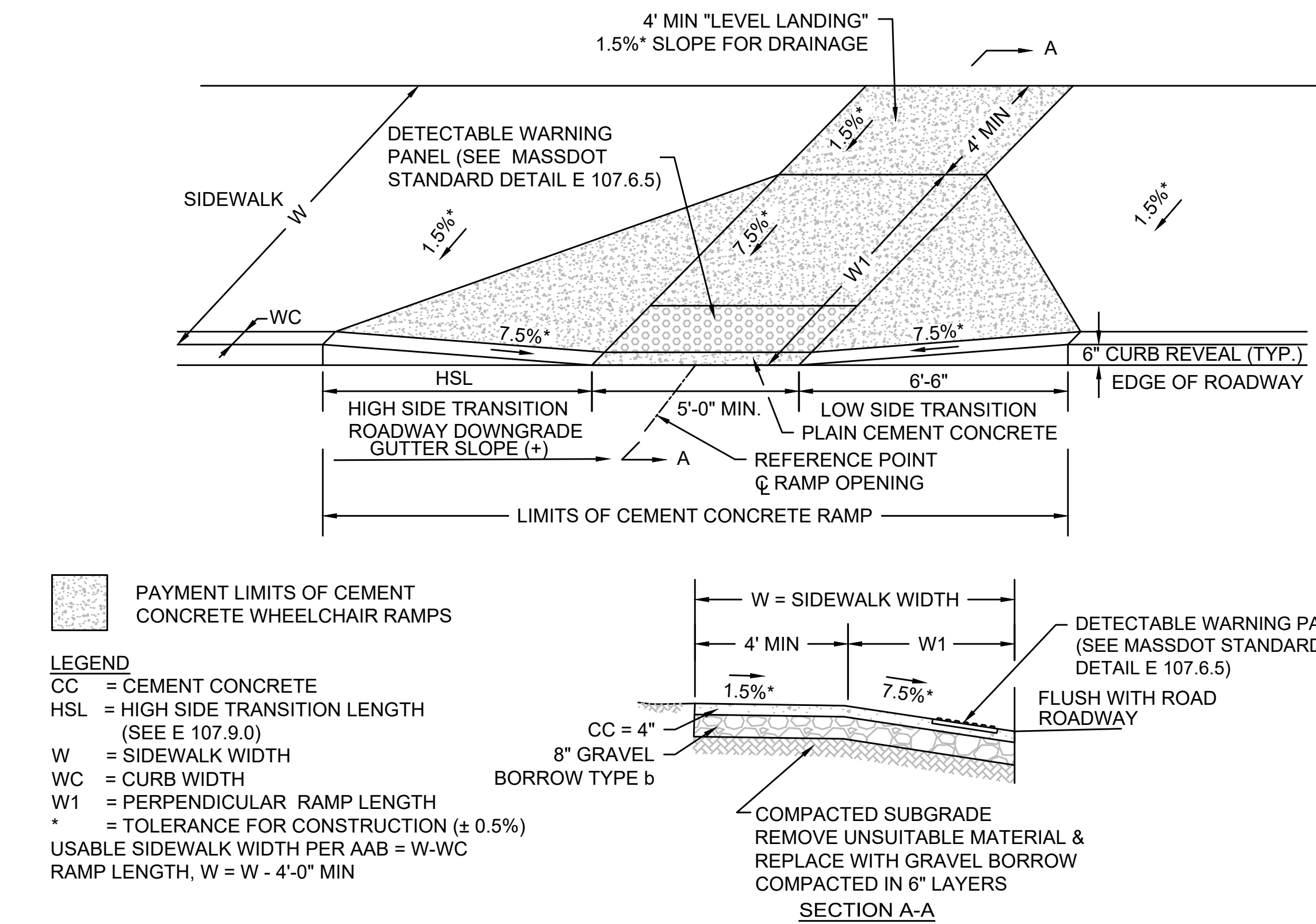
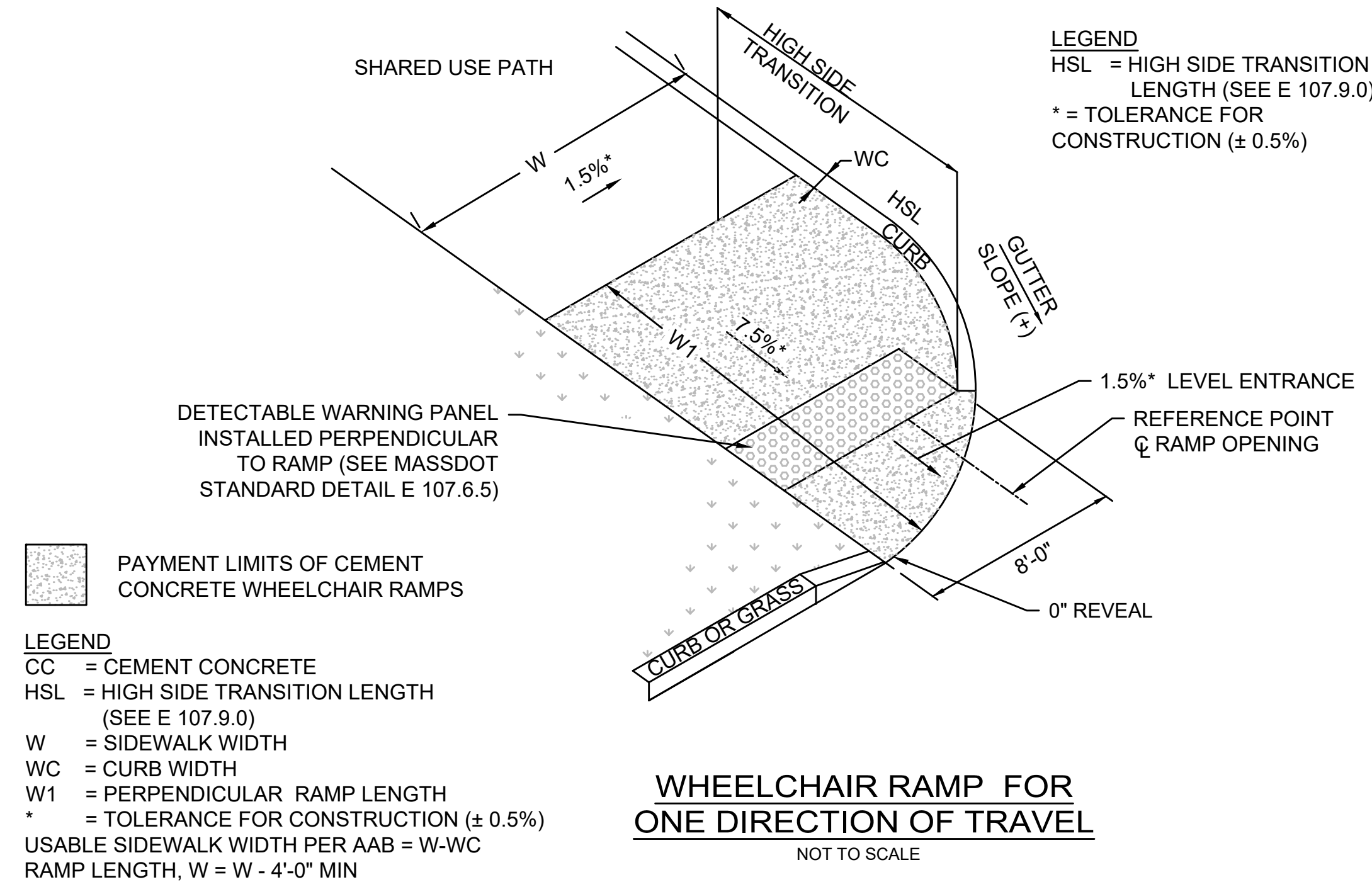
1. EXACT PLANT LOCATION TO BE WITHIN PROPOSED WETLAND REPLICATION OR BUFFER ZONE REPLICATION AREA. EXACT LOCATION TO BE FIELD MARKED AND APPROVED BY WETLAND SPECIALIST
2. SEED MIX, PLANTINGS, EXCAVATION, GRADING, AND COMPLETION OF THE WETLAND RESTORATION SHALL BE INCLUDED UNDER ITEM 755.35 - WETLAND REPLICATION AREA.

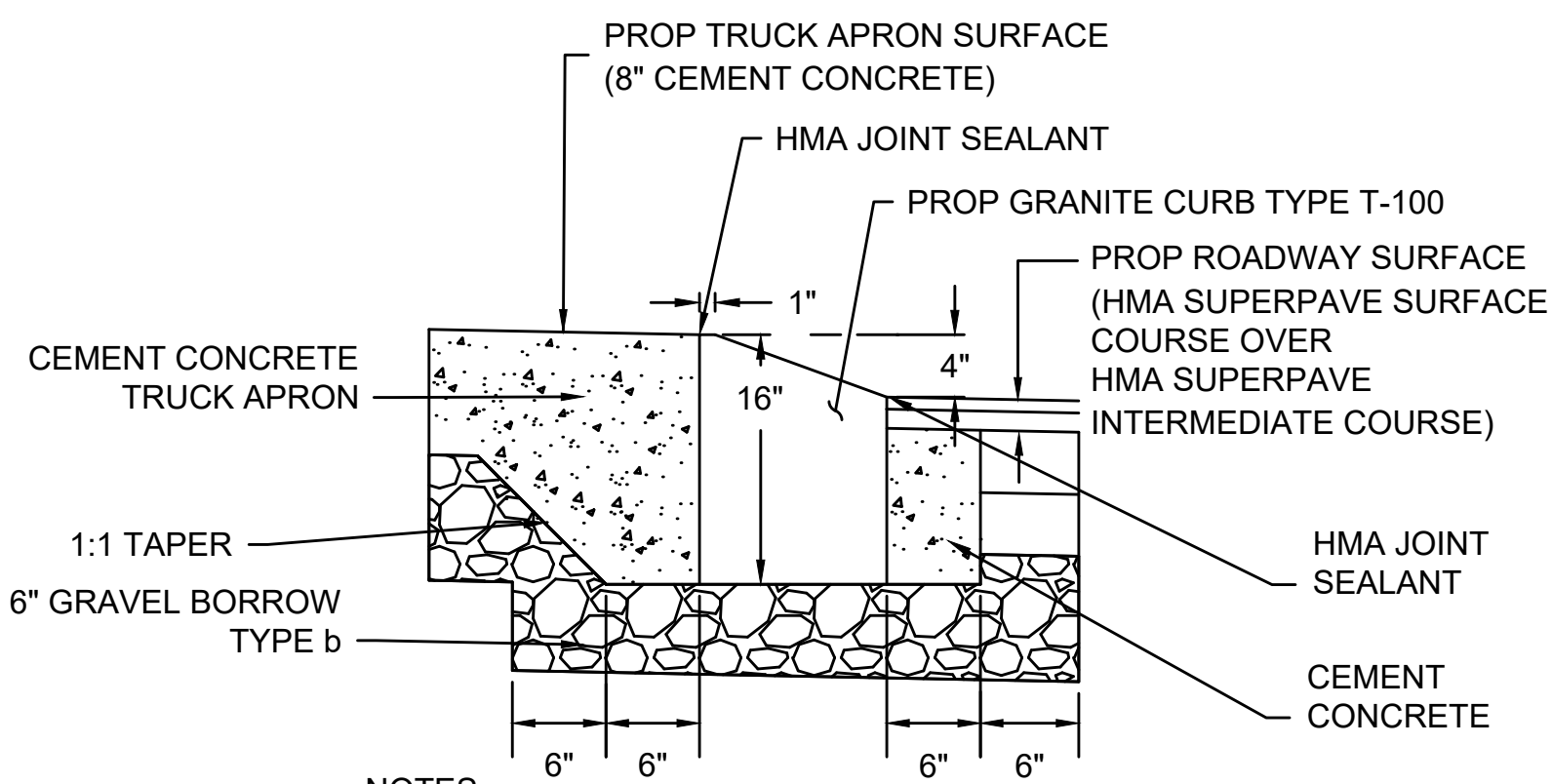


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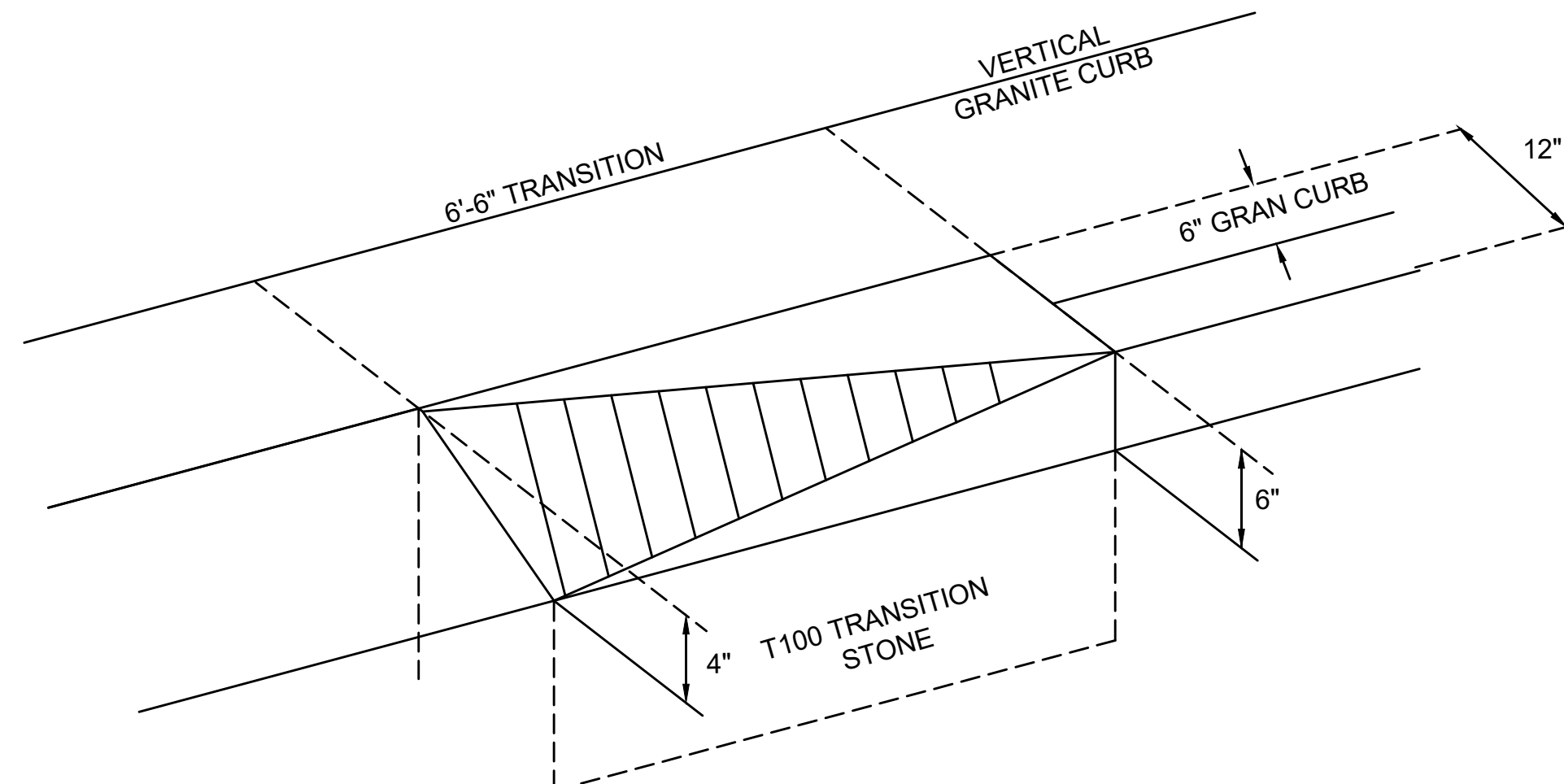
TOWN OF ACTON
19 - 21 MAPLE STREET COMMUTER LOT &
STOW STREET SHARED USE PATH
SHEET 25 OF 29
CONSTRUCTION DETAILS



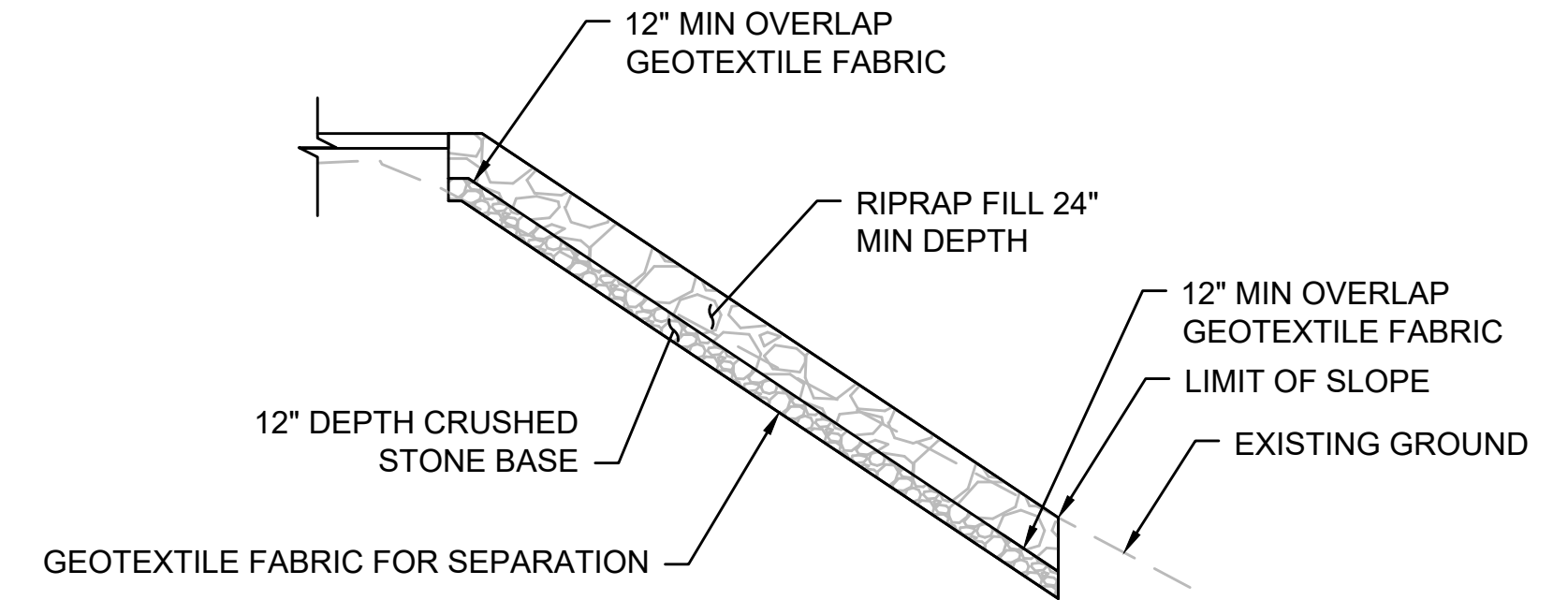


- NOTES:
1. GRANITE CURB SHALL BE CUT TO PROPOSED RADIUS AS SHOWN ON PLANS.
 2. MAXIMUM LENGTH OF CURB SHALL BE 6 FEET.
 3. CEMENT CONCRETE IS INCLUDED IN THE COST OF CURB SETTING.

GRANITE CURB TYPE T-100
NOT TO SCALE

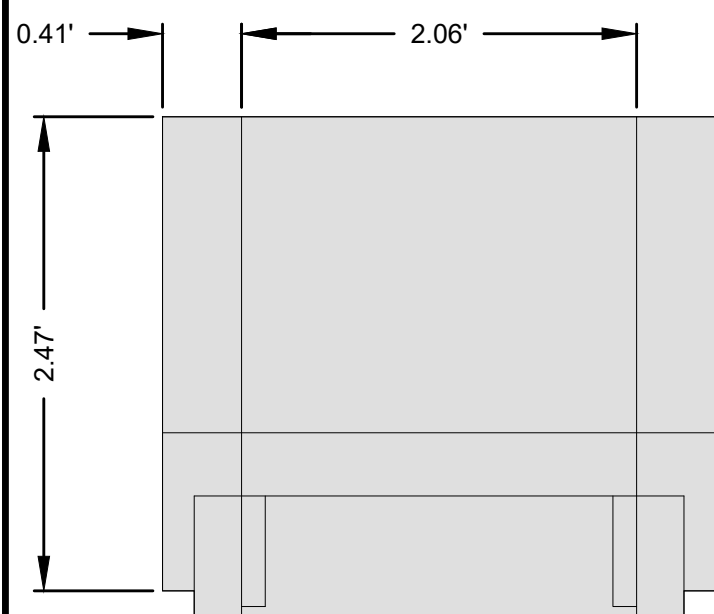


PROP. VERTICAL GRANITE CURB TO T100 SPLAYED END
NOT TO SCALE

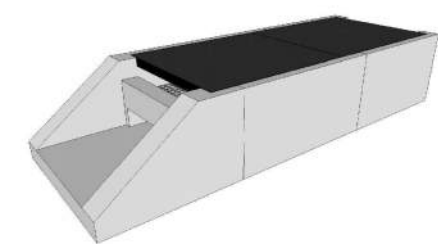


- NOTES:
1. CRUSHED STONE SHALL BE 1-1/2" - M2.01.2

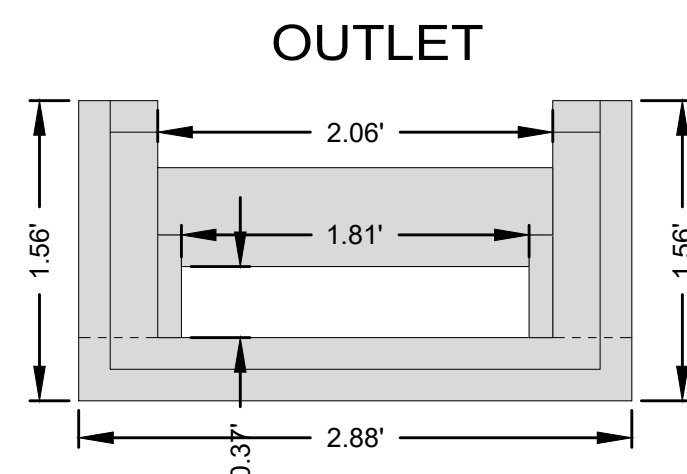
RIPRAP SLOPE PROTECTION
NOT TO SCALE



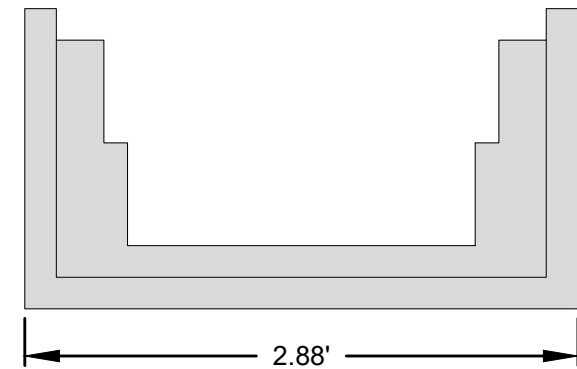
OUTLET



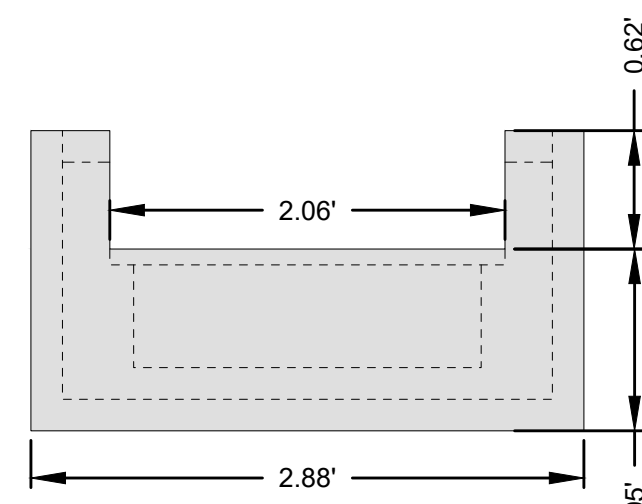
3D VIEW



MIDDLE

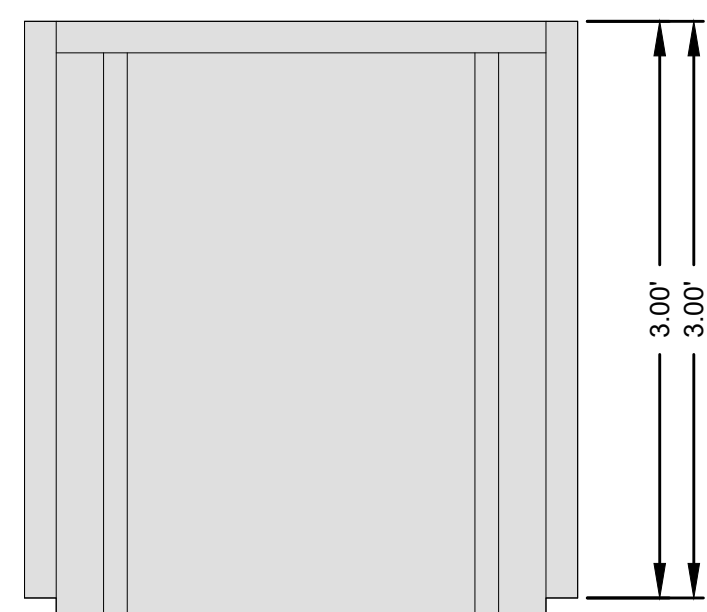


END A-A' VIEW



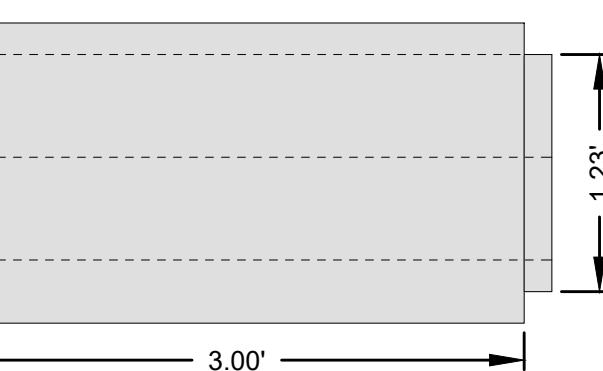
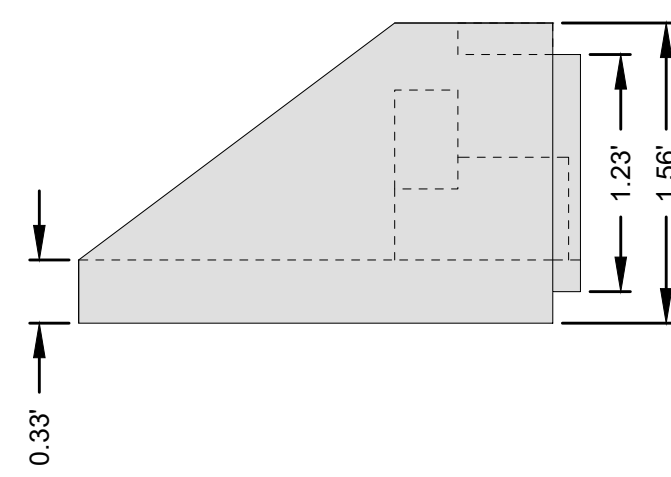
FRP COMPOSITE LID

FIBERGLASS GRATE



MIDDLE

REMOVABLE FILTER WALL



ELEVATION VIEW

WALKWAY MODULAR PRETREATMENT SYSTEM REQUIREMENTS

1. STEEL REINFORCED, COLD JOINT SECURED MONOLITHIC CONCRETE STRUCTURES (INLET 875 LBS, MIDDLE 965 LBS, AND OUTLET 730 LBS). CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. CONCRETE AIR ENTRAINMENT (4% TO 8% BY VOLUME), MANUFACTURED AND DESIGNED TO ASTM C858.
2. 2-POINT PICK USING RECESSED LIFTING POCKETS WITH A STANDARD HOOK.
3. FIBERGLASS GRATE (11 LBS/PIECE).
4. FRP COMPOSITE LID (38 LBS/PIECE) WITH CONCENTRIC LOAD CAPACITY OF 11,200 LBS.

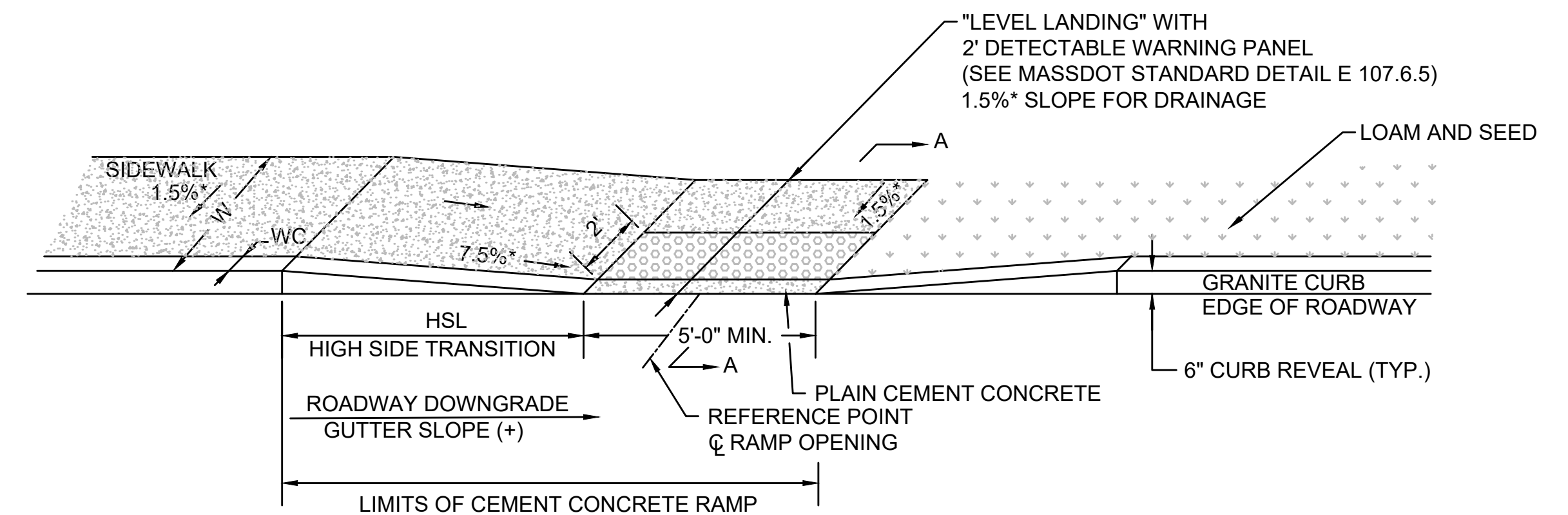
INSTALLATION NOTES

1. INSTALL PER MANUFACTURERS REQUIREMENTS

PROP 5.0' x 7.0' STONE AT OUTLET SHALL BE PAID UNDER ITEM 258.

INSTALLED ELEVATION VIEW - INLET/OUTLET ONLY

MODULAR PRETREATMENT CHAMBER - GUARDIAN FOXHOLE OR APPROVED EQUAL
NOT TO SCALE

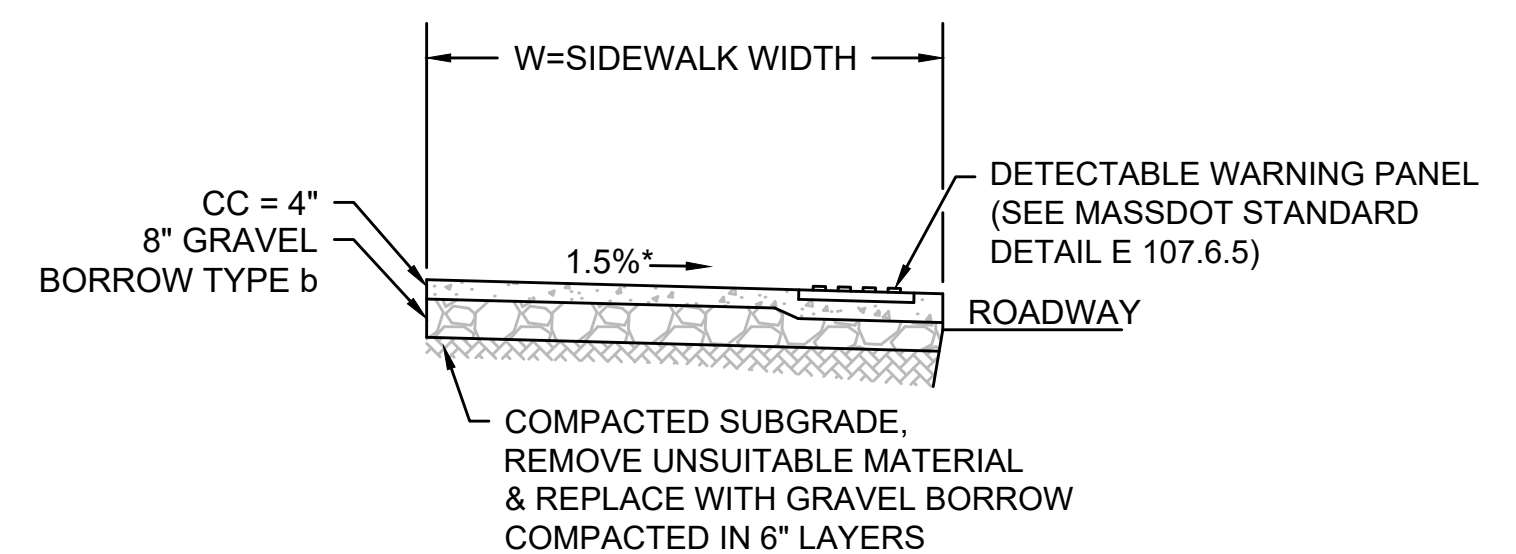


NOTE:
ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS

PAYMENT LIMITS OF CEMENT CONCRETE WHEELCHAIR RAMPS

LEGEND

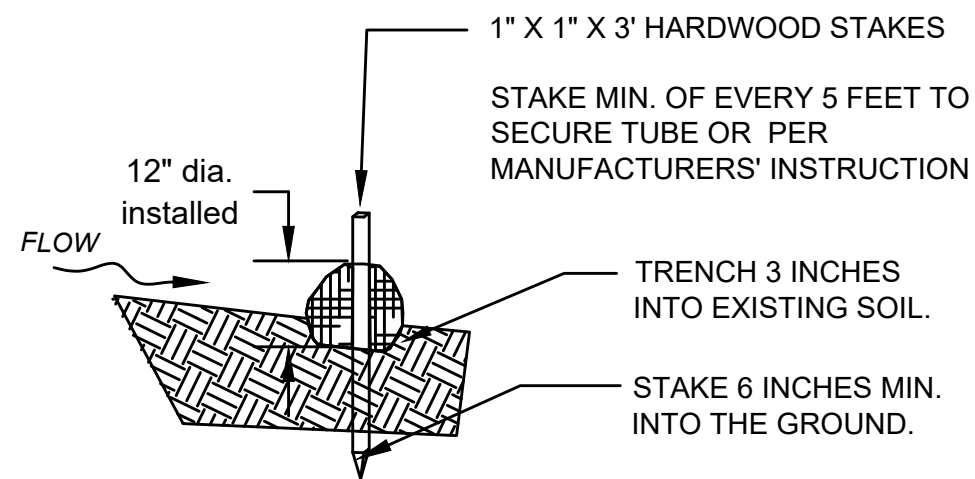
CC = CEMENT CONCRETE
HSL = HIGH SIDE TRANSITION LENGTH (SEE MASSDOT DETAIL E 107.9.0)
W = SIDEWALK WIDTH
W1 = PERPENDICULAR RAMP LENGTH (W-4')
Wc = CURB WIDTH
* = TOLERANCE FOR CONSTRUCTION (±0.5%)
USABLE SIDEWALK WIDTH PER AAB = W-Wc
USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"



WHEELCHAIR RAMP ON NARROW SIDEWALK WITH DETECTABLE WARNING PANEL
NOT TO SCALE

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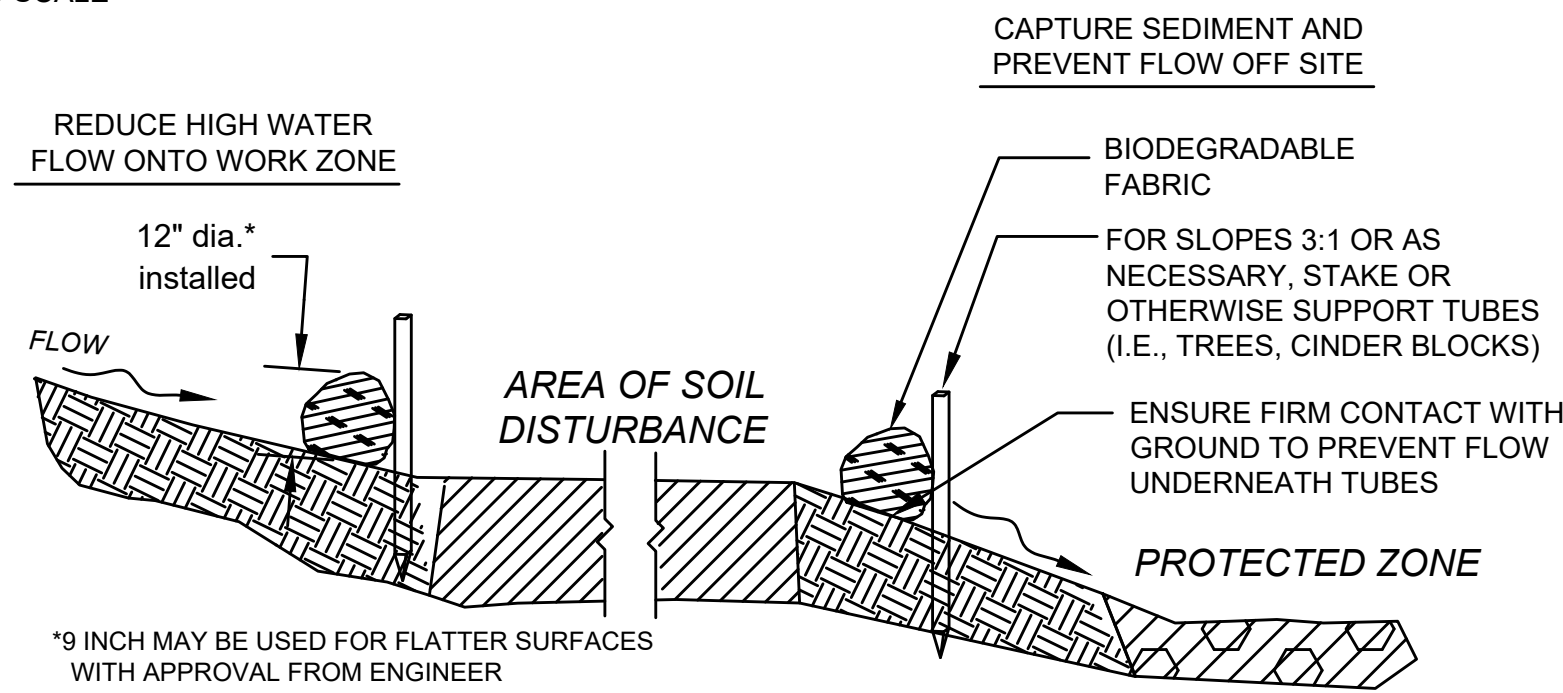
FOR USE ONLY ON SLOPES UP TO 5% AND
WITH APPROVAL OF THE ENGINEER.
NOT TO BE USED FOR WETLAND MITIGATION.



SECTION

12 INCH STRAW WATTLE

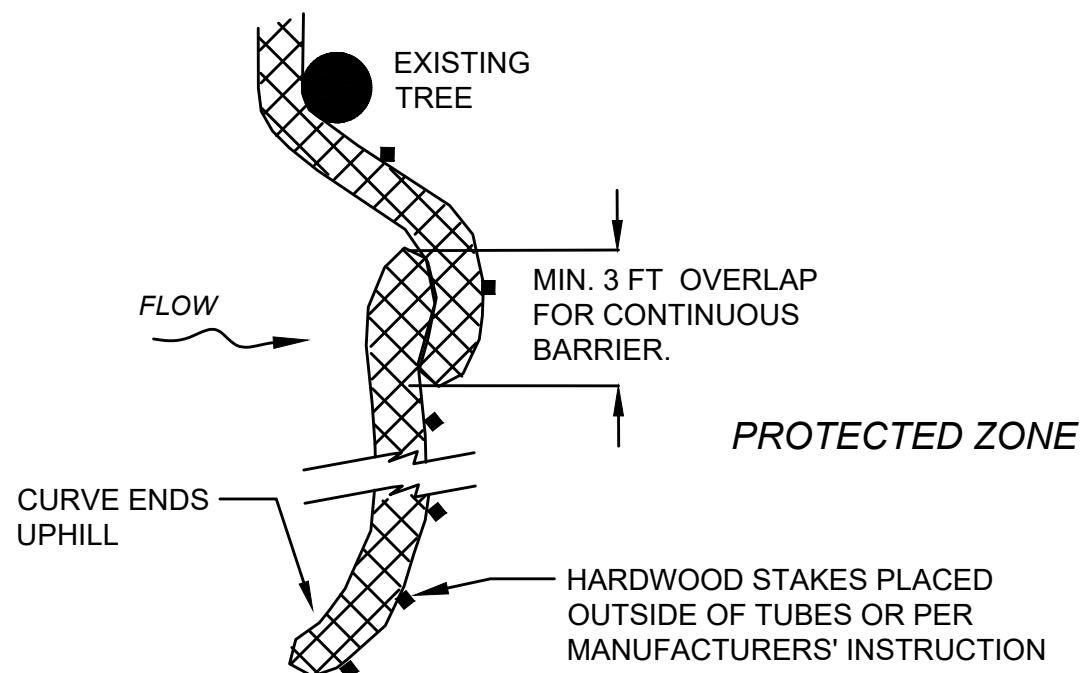
NOT TO SCALE



SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

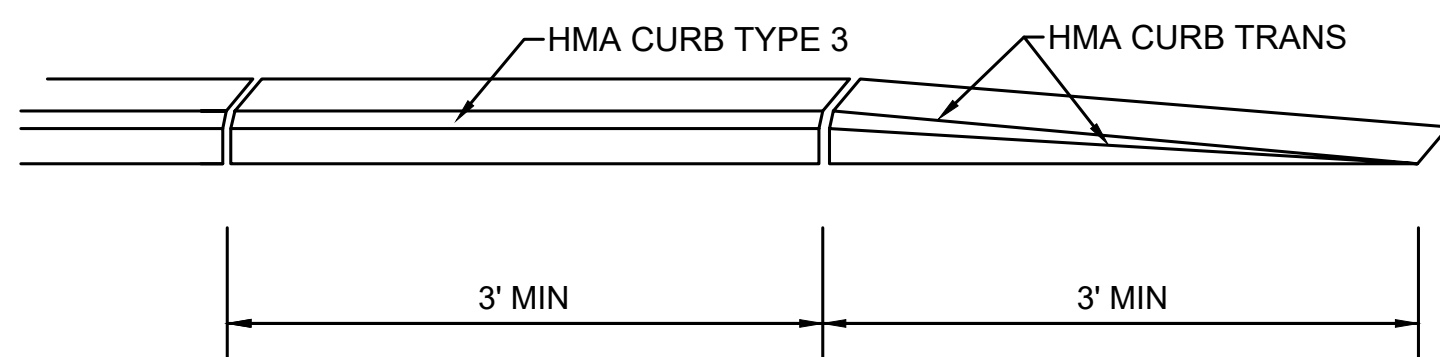
NOT TO SCALE



PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE
AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR
TO FLOW.

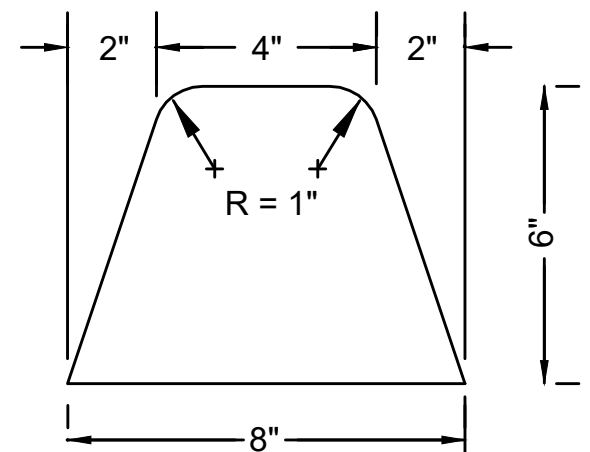
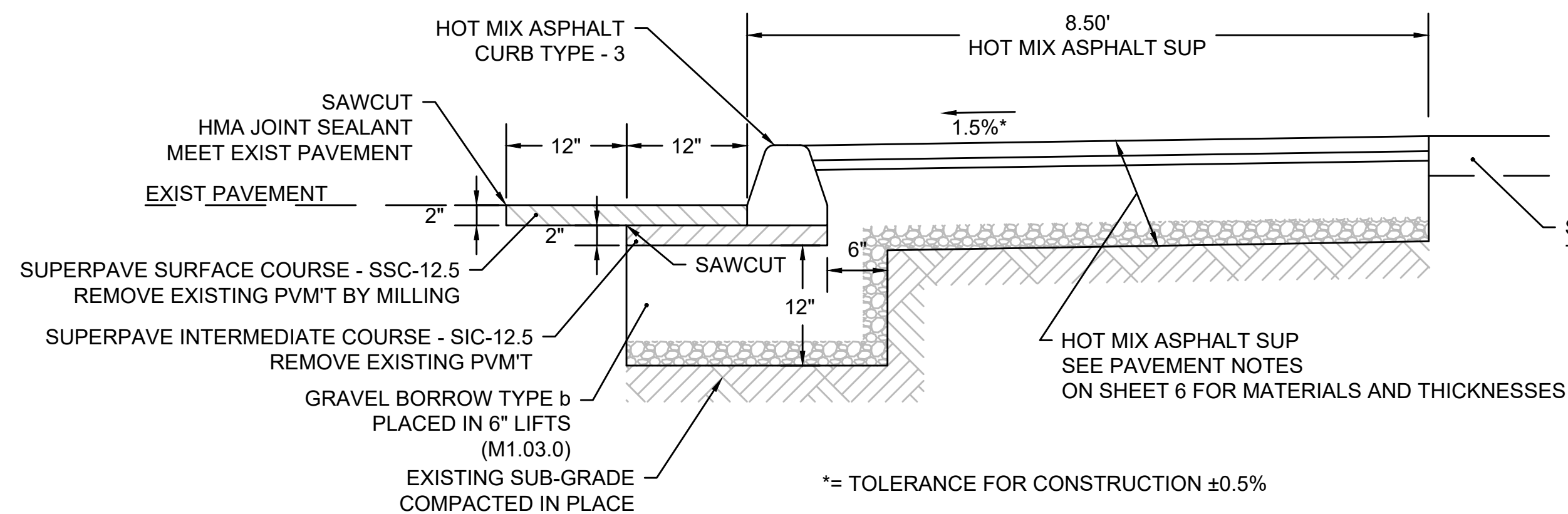
ADJUST LOCATION AS REQUIRED FOR OPTIMUM
EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLAN VIEW



HOT MIX ASPHALT CURB TRANSITION

NTS



TYPE- 3

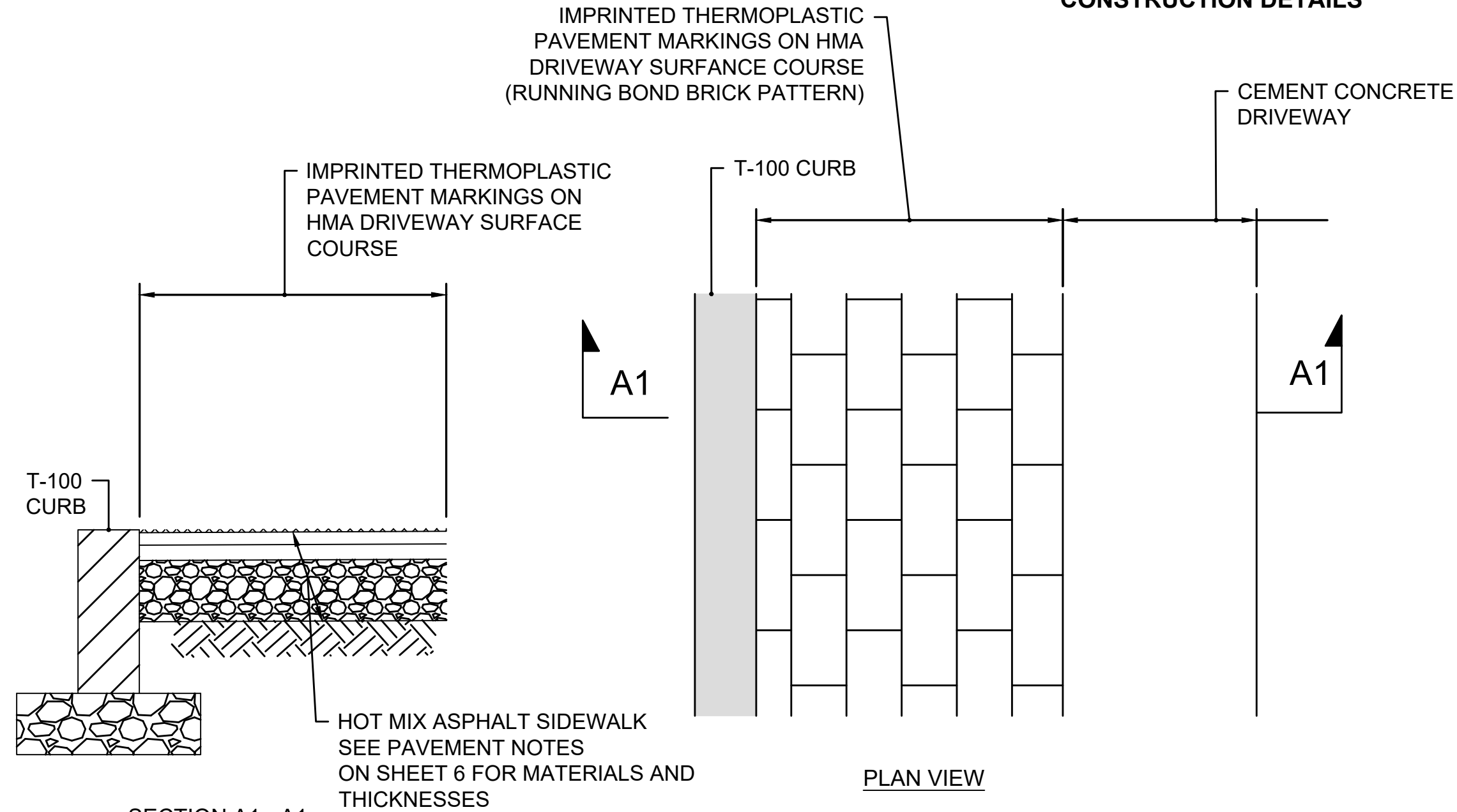
NOTES:

1. EXCAVATION, MILLING, AND GRAVEL BORROW, TYPE b FOR HMA CURB INSTALLATION SHALL BE INCLUDED UNDER THE CONTRACT UNIT PRICE FOR ITEM 570.3, HOT MIX ASPHALT CURB - TYPE 3.
2. HMA JOINT SEALANT SHALL BE PLACED AT ALL SAWCUT JOINTS WITH THE EXISTING PAVEMENT.
3. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT A RATE OF 0.05 GAL/SY ON THE HMA INTERMEDIATE COURSES IMMEDIATELY BEFORE PLACEMENT OF THE HMA SURFACE COURSE. ASPHALT EMULSION FOR TACK COAT SHALL BE INCLUDED UNDER THE CONTRACT UNIT PRICE FOR ITEM 570.3, HOT MIX ASPHALT CURB - TYPE 3.
4. GRAVEL BORROW AND EXCAVATION FOR THE HMA SIDEWALK SHALL BE MEASURED AND PAID FOR UNDER ITEMS 120.1 & 151, RESPECTIVELY.
5. HMA SIDEWALK SHALL BE MEASURED AND PAID FOR UNDER ITEM 702.
6. LOAM BORROW AND SEEDING SHALL BE MEASURED AND PAID FOR UNDER ITEMS 751 & 765, RESPECTIVELY.

HMA CURB AND SHARED USE PATH IN EXISTING PAVEMENT

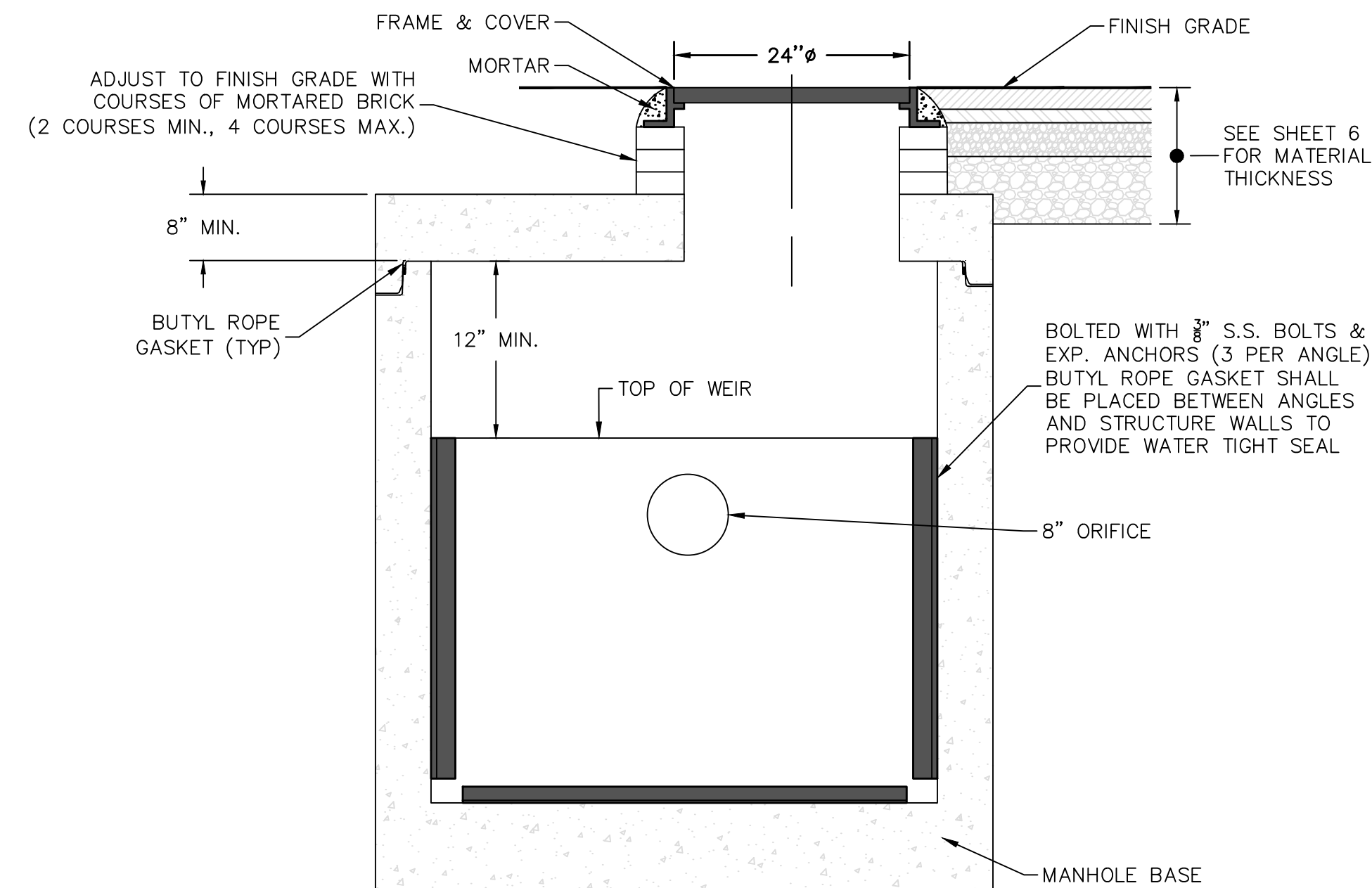
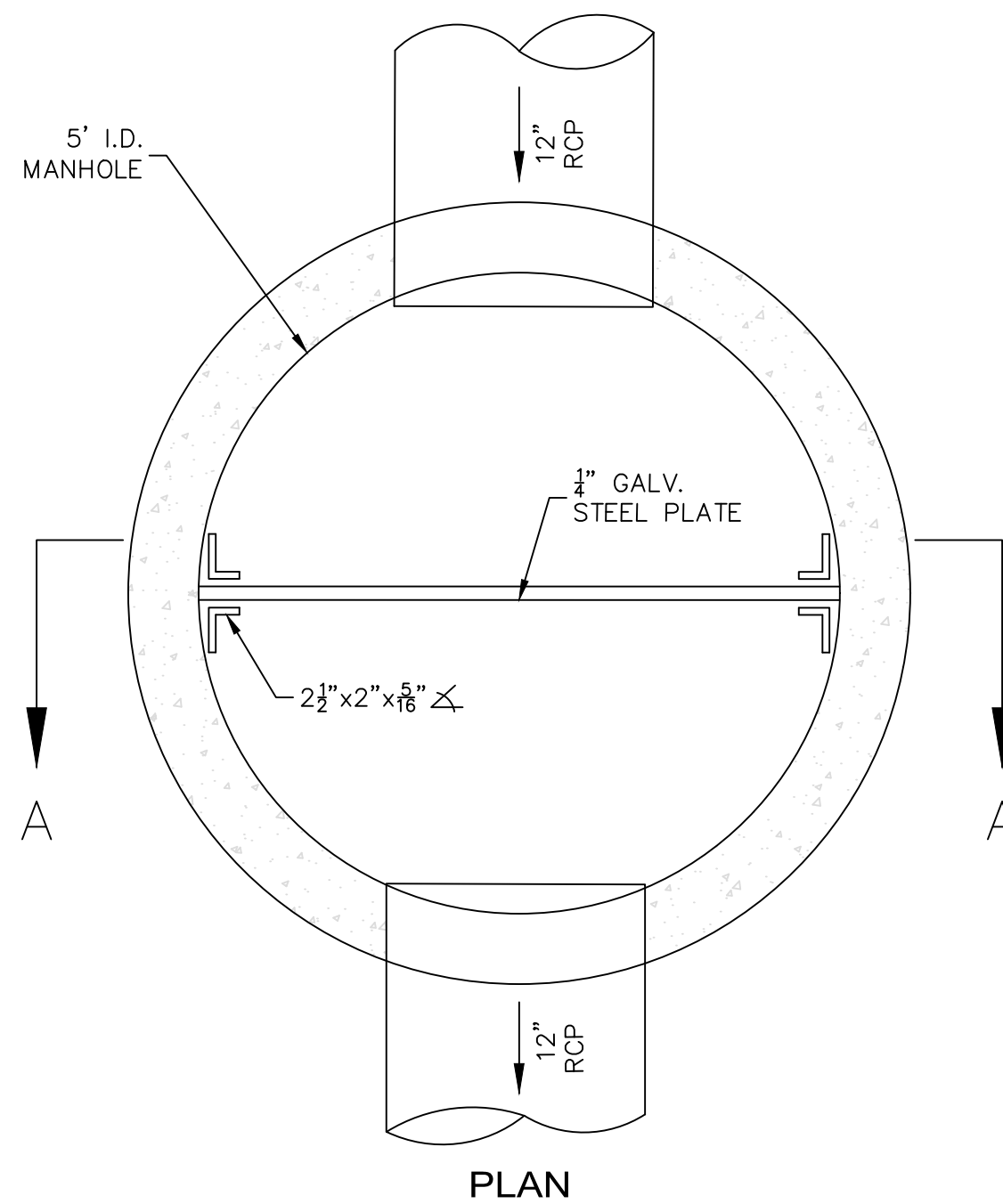
NTS

TOWN OF ACTON
19 - 21 MAPLE STREET COMMUTER LOT &
STOW STREET SHARED USE PATH
SHEET 27 OF 29
CONSTRUCTION DETAILS



STAMPED HOT MIX ASPHALT DRIVEWAY

NTS



OUTLET CONTROL STRUCTURE

NOT TO SCALE

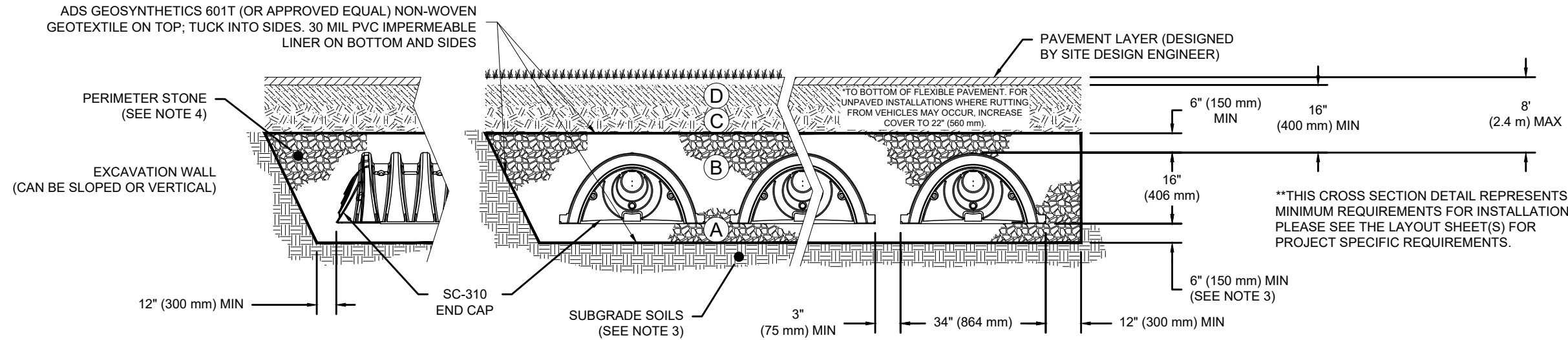
14665_HD(DET) - SHEET 5.DWG Plotted on 20-Jan-2026 8:18 AM

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ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER (OR APPROVED EQUAL) SYSTEMS

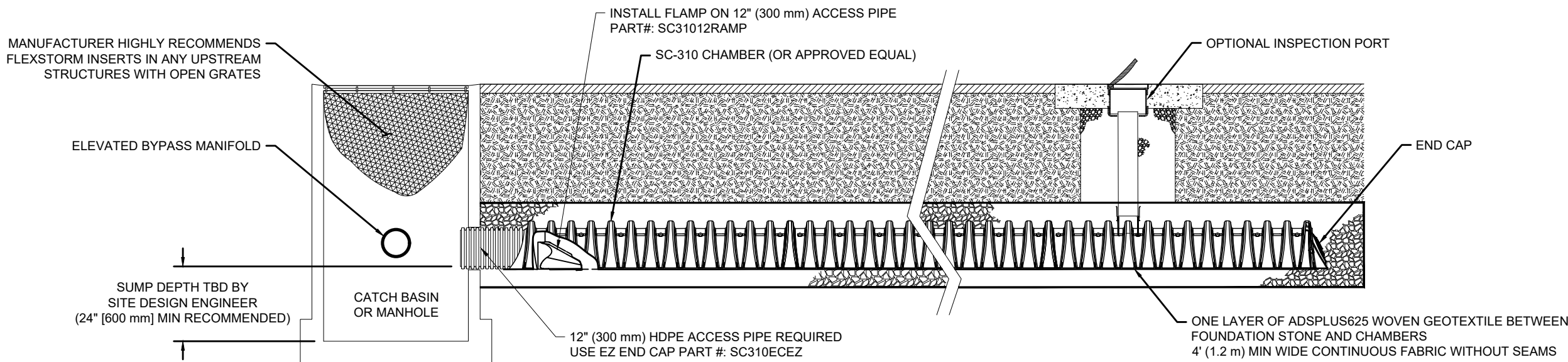
MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	3.25	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 16" (406 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ² 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.	AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

- 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 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES 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 SOILS 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".

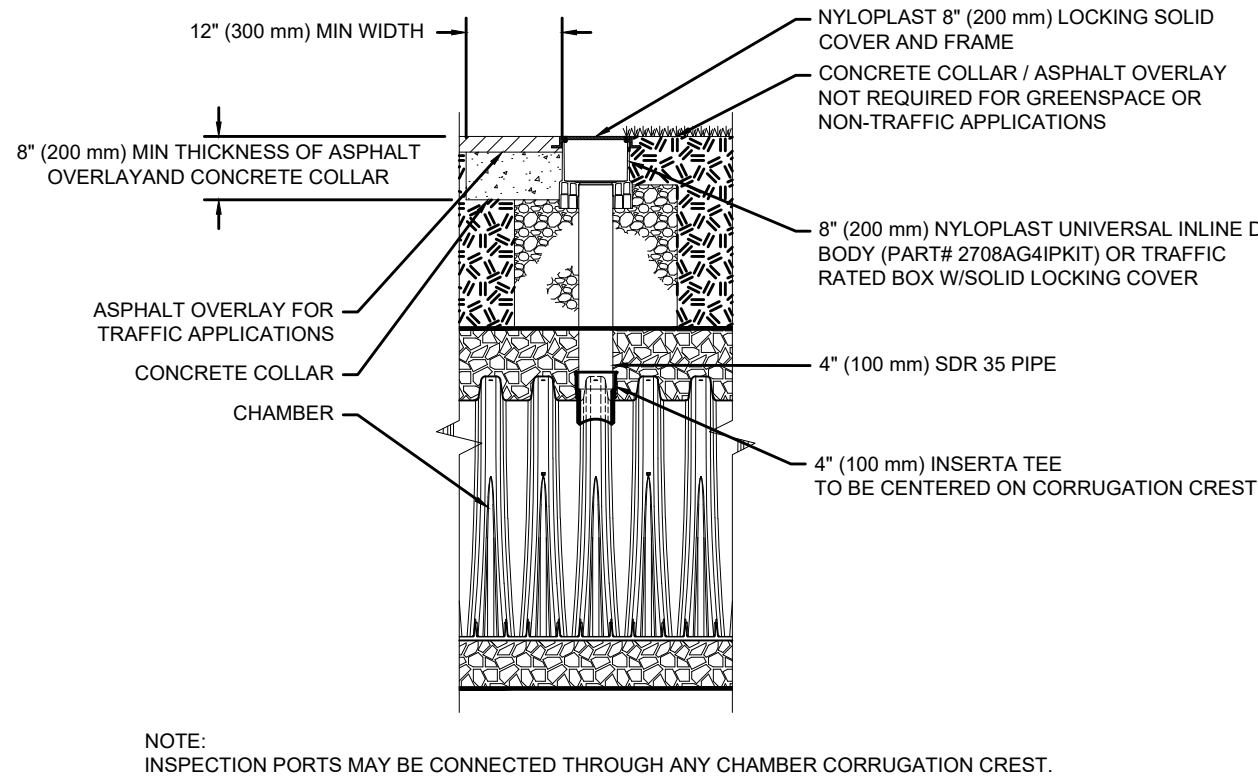


NOTES:

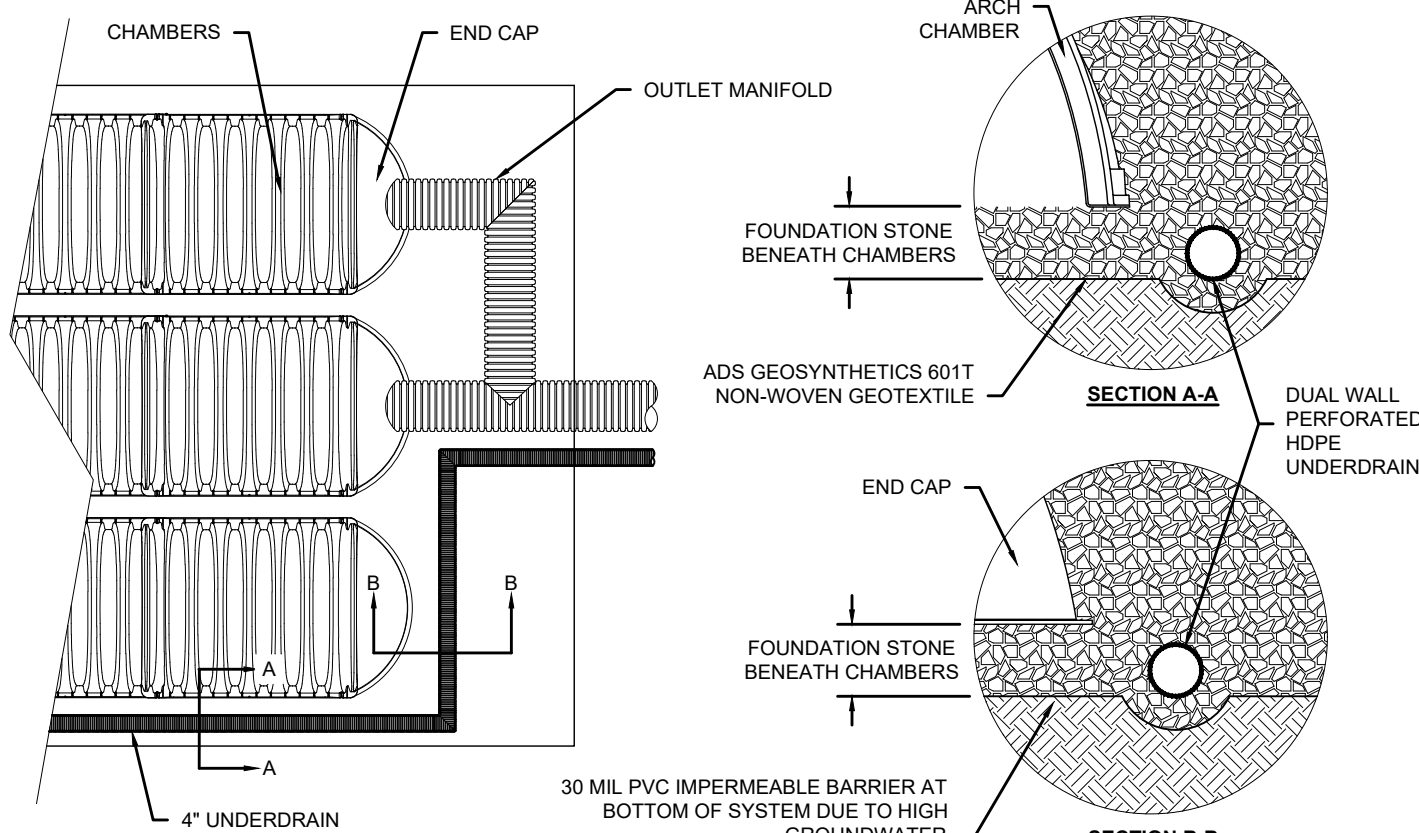
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED 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. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
- 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 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 325 LBS/FT³ 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.



ISOLATOR ROW DETAIL
NTS

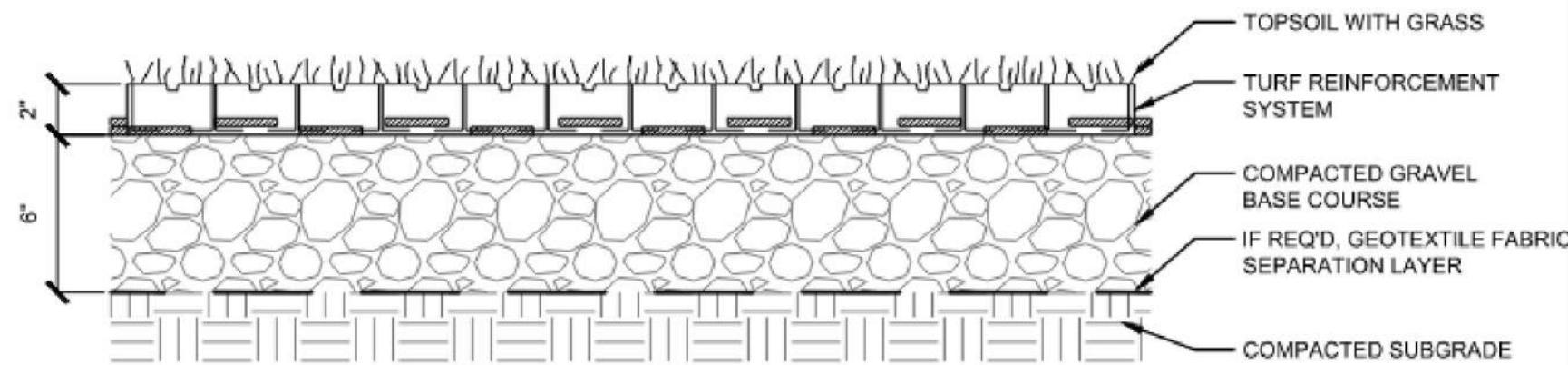


4" PVC INSPECTION PORT DETAIL
(SC SERIES CHAMBER)
NTS

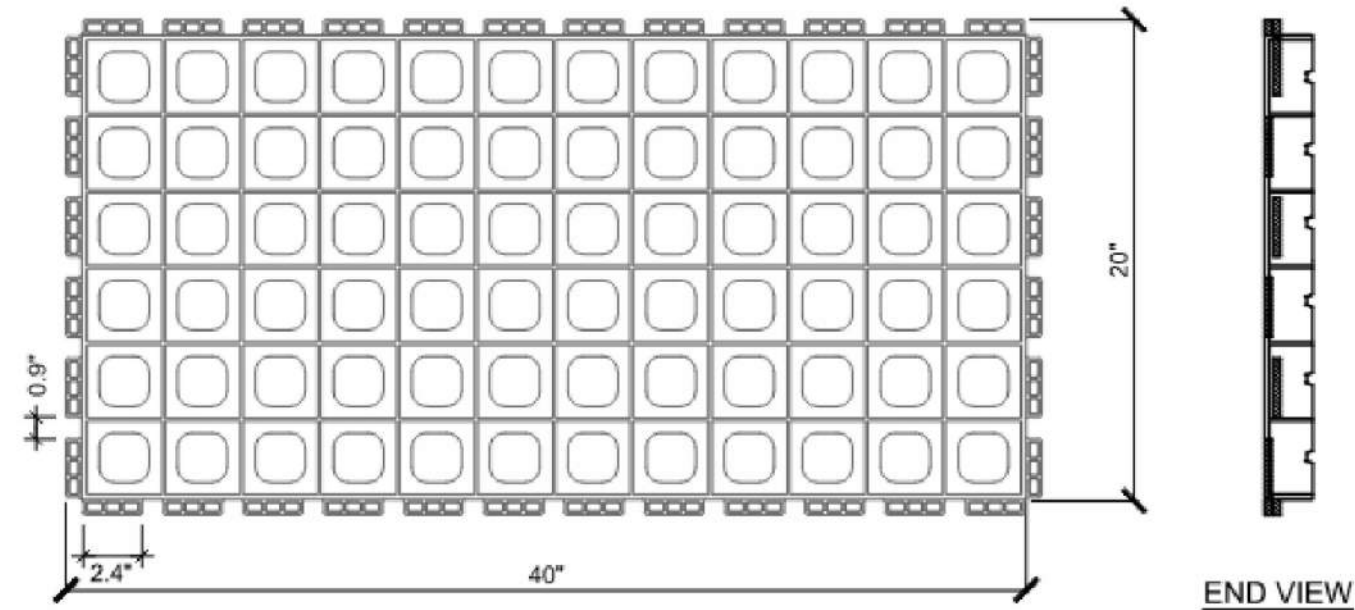


UNDERDRAIN DETAIL
NTS

SUBSURFACE DETENTION SYSTEM DETAILS
NOT TO SCALE



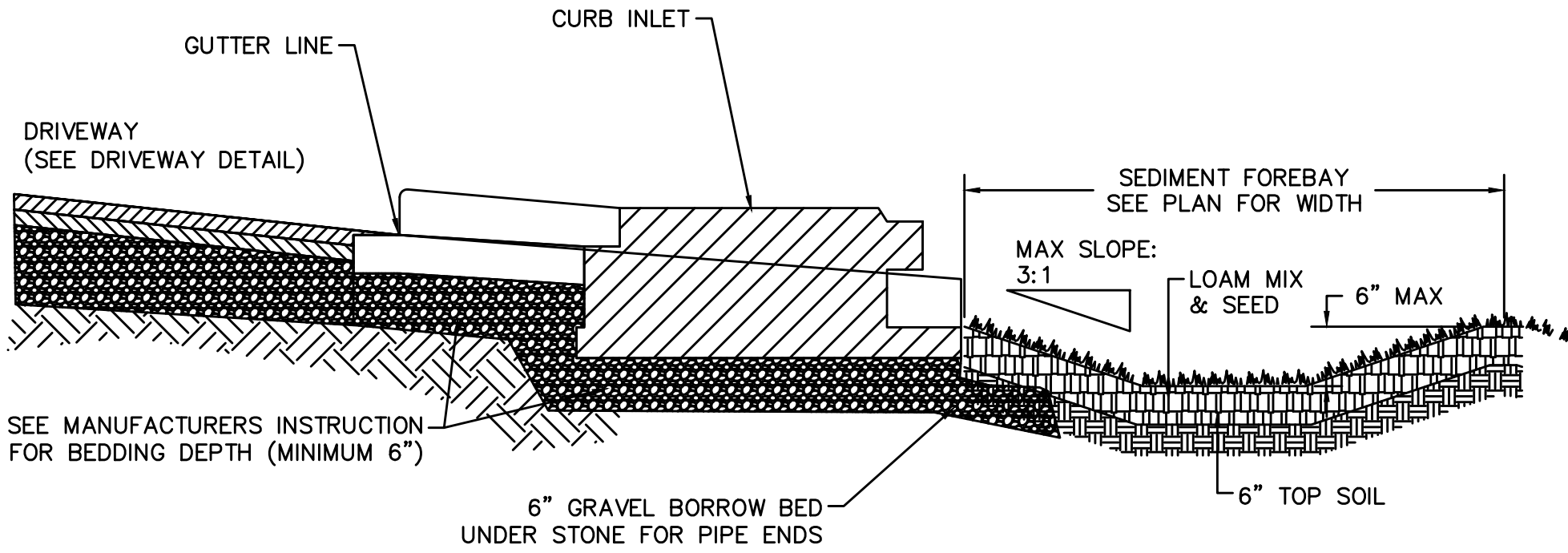
SECTION



FRONT VIEW

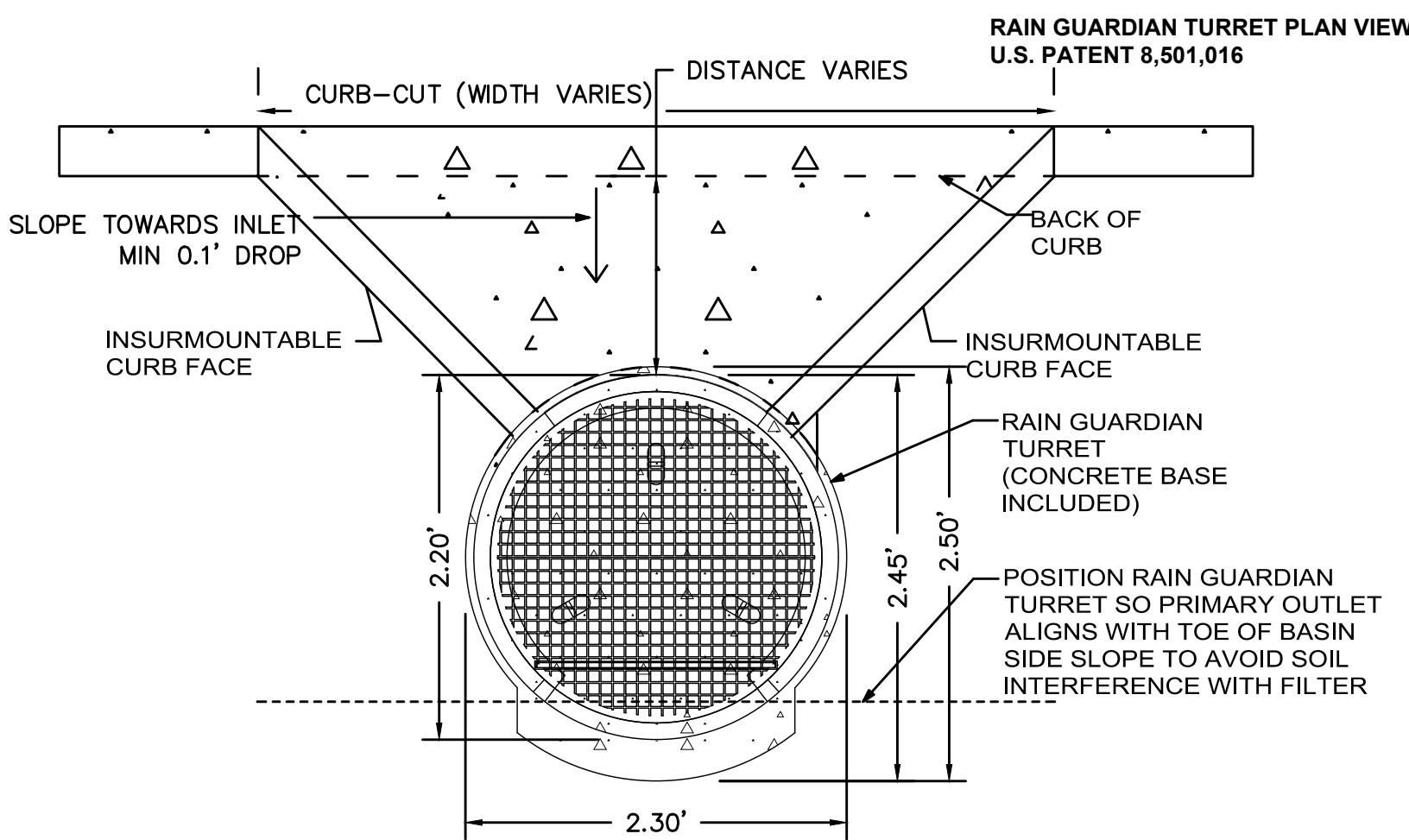
SIDE VIEW

GRASSPAVE SYSTEM
NOT TO SCALE



TYPICAL INLET (RAIN TURRET, OR APPROVED EQUAL) AND FOREBAY

NOT TO SCALE

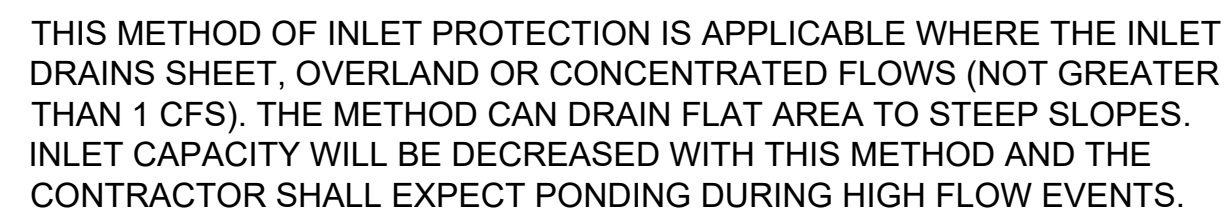


INLET TO BIORETENTION
NOT TO SCALE



NOTE: INLET DEVICE PROVIDES 50% TSS REMOVAL.

RAIN GUARDIAN RAIN TURRET (OR APPROVED EQUAL)
NOT TO SCALE



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