

TRANSPORTATION IMPROVEMENT PROJECT

FOXBOROUGH
COMMERCIAL STREET (ROUTE 140) AT
WALNUT STREET
TITLE SHEET & INDEX
SHEET 1 OF 72

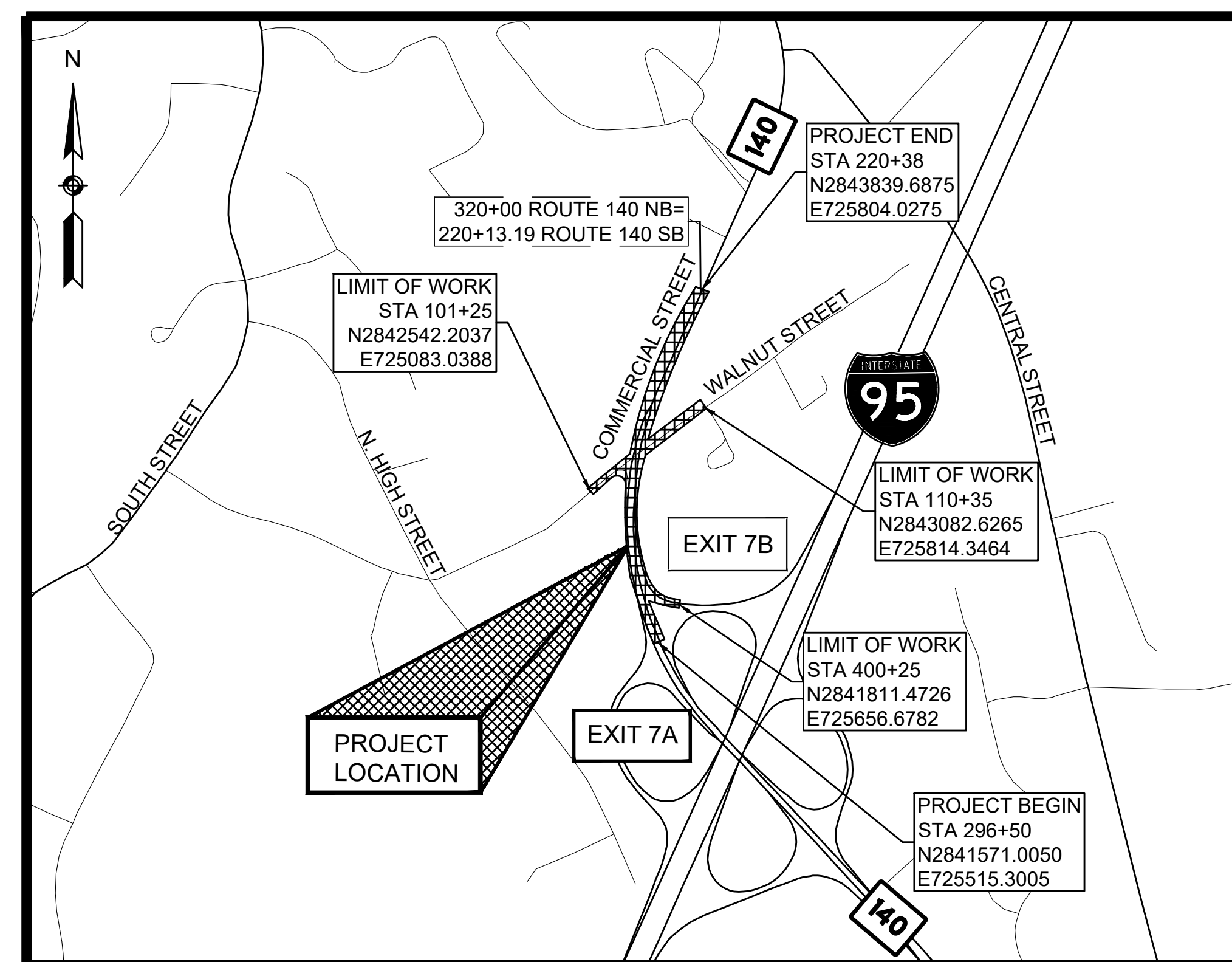
PLAN AND PROFILE OF
COMMERCIAL STREET (ROUTE 140) AT
WALNUT STREET

IN THE TOWN OF
FOXBOROUGH
NORFOLK COUNTY

THESE PLANS ARE SUPPLEMENTED BY THE MASSDOT OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE MASSDOT 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE MASSDOT 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

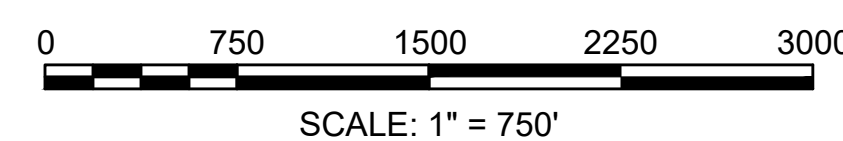
PS&E SUBMITTAL

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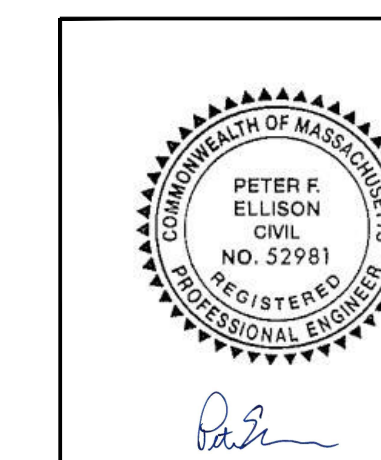


DESIGN DESIGNATION

	COMMERCIAL STREET	WALNUT STREET
DESIGN SPEED	55 MPH	40 MPH
ADT (2020)	19,874	2,513
ADT (2029)	23,755	3,004
K	9.30%	9.40%
D	54.9% NB	63.6% NB
T (PEAK HOUR)	3.70%	4.00%
T (AVERAGE DAY)	2.60%	2.70%
DHV	2209	282
DDHV	1213	180
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL	URBAN COLLECTOR



TOTAL LENGTH OF PROJECT = 3525 FEET = 0.668 MILES
COMMERCIAL STREET (ROUTE 140) = 2350 FEET = 0.445 MILES
WALNUT STREET = 910 FEET = 0.172 MILES
I-95 SB OFF RAMP = 265 FEET = 0.050 MILES



06/21/2023	PS&E2 SUBMITTAL	3
04/27/2023	PS&E SUBMITTAL	2
06/30/2021	75% / 100% SUBMITTAL	1
06/26/20	25% SUBMITTAL	-
DATE	DESCRIPTION	REV #



282 Merrimack St
2nd Floor
Lawrence, MA 01843
978-794-1792

311 Main Street
2nd Floor
Worcester, MA 01608
508-868-5104

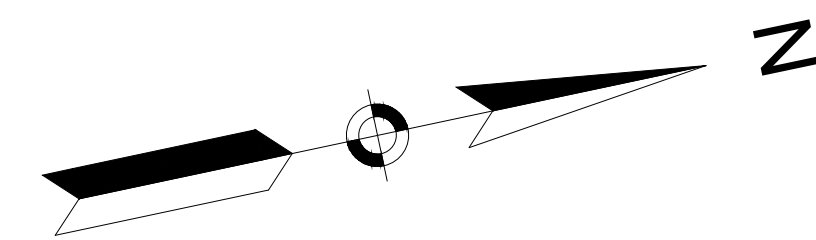
169 Ocean Blvd, Unit 3
PO Box 249
Hampton, NH 03842
603-601-8154

www.TheEngineeringCorp.com

APPROVED

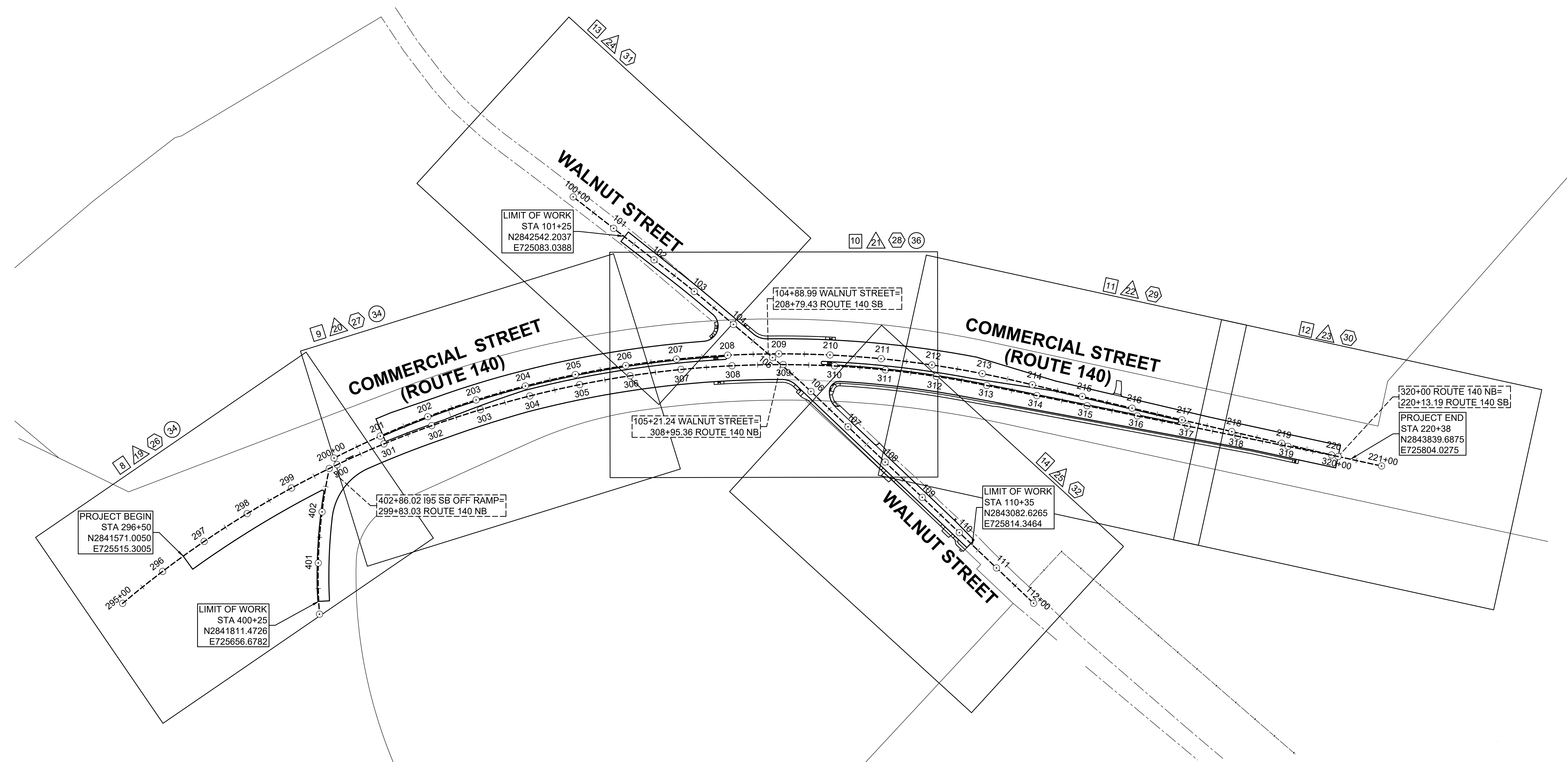
CHIEF ENGINEER

DATE



LEGEND

	CONSTRUCTION PLANS
	CURB TIE & GRADING PLANS
	TRAFFIC SIGN & PAVEMENT MARKING PLANS
	TRAFFIC SIGNAL PLANS

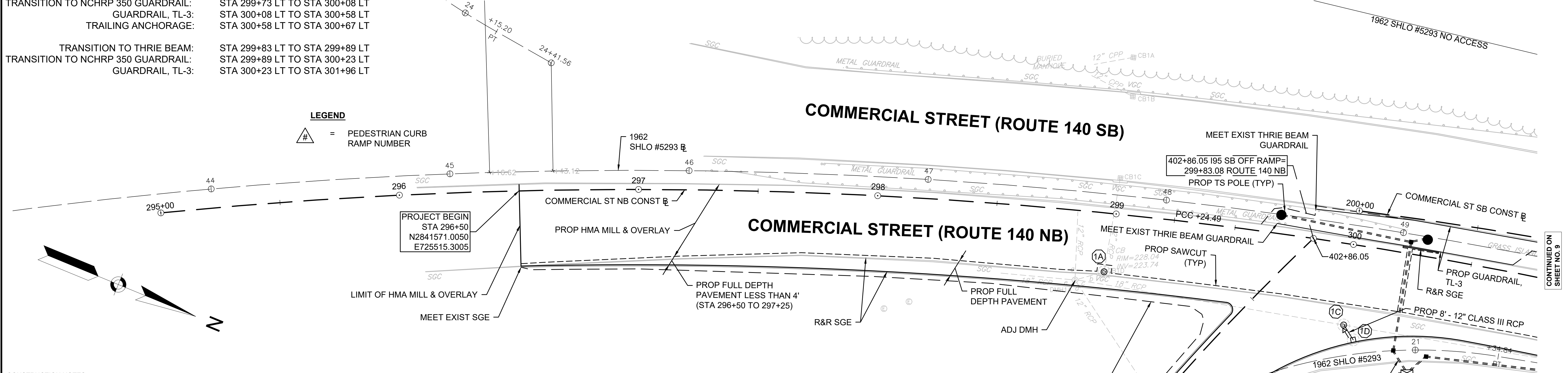


GUARDRAIL DETAILS
 TRANSITION TO THRIE BEAM: STA 299+67 LT TO STA 299+73 LT
 TRANSITION TO NCHRP 350 GUARDRAIL: STA 299+73 LT TO STA 300+08 LT
 GUARDRAIL, TL-3: STA 300+08 LT TO STA 300+58 LT
 TRAILING ANCHORAGE: STA 300+58 LT TO STA 300+67 LT

 TRANSITION TO THRIE BEAM: STA 299+83 LT TO STA 299+89 LT
 TRANSITION TO NCHRP 350 GUARDRAIL: STA 299+89 LT TO STA 300+23 LT
 GUARDRAIL, TL-3: STA 300+23 LT TO STA 301+96 LT

TRAFFIC SIGNAL CONDUIT SEE BELOW
WATER SUPPLY ALTERATIONS NONE
DRAINAGE DETAILS SEE BELOW

LEGEND
 = PEDESTRIAN CURB RAMP NUMBER



CONSTRUCTION NOTES:

- EXISTING CONDITIONS INFORMATION COMPILED FROM SURVEY BY BAY COLONY GROUP, FOXBOROUGH, MA PERFORMED IN FEBRUARY 2020.
 HORIZONTAL DATUM = NAD83 (MASSACHUSETTS STATE PLANE COORDINATES)
 VERTICAL DATUM = NAVD83
- ALL EXISTING STATE, COUNTY, AND CITY LOCATION LINES HAVE BEEN ESTABLISHED FROM AN ACTUAL ON-THE-GROUND SURVEY. ALL PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL CONTACT DIGSAFE (1-888-DIGSAFE) A MINIMUM OF 72 HOURS PRIOR TO ANY CONSTRUCTION TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- 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 THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- ALL MUNICIPALLY OWNED UTILITY STRUCTURES (CATCH BASINS, DRAIN MANHOLES, WATER GATES, ETC.) SHALL BE ADJUSTED BY THE CONTRACTOR TO FINISHED GRADE UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH THE FOXBOROUGH DEPARTMENT OF PUBLIC WORKS TO ALLOW FOR THE REPLACEMENT OF EXISTING UTILITY STRUCTURES IN POOR CONDITION. THESE REPLACEMENT UTILITY STRUCTURES TO BE PROVIDED AND INSTALLED BY THE DPW.
- ALL PRIVATELY OWNED UTILITY STRUCTURES (GAS GATES, ELECTRIC /TELEPHONE MANHOLES, ETC.) SHALL BE ADJUSTED TO FINISHED GRADE BY THE PRIVATE UTILITY COMPANY, UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ALTERATION AND ADJUSTMENT, AS NECESSARY.
- PROPOSED LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 1.0% (MINIMUM) UNLESS OTHERWISE NOTED.
- THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R), AS APPROVED BY THE ENGINEER.
- THE TERM "MEET EXIST" MEANS TO MEET BOTH THE EXISTING ALIGNMENT AND ELEVATION.
- DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED WHEELCHAIR RAMPS AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARDS.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- ALL EXISTING GRANITE CURB AND EDGING THAT MEETS SPECIFICATIONS SHALL BE REUSED IN THE PROPOSED WORK.
- ALL DISTURBED AREAS OUTSIDE THE CURBLINE SHALL BE STABILIZED WITH 4" LOAM AND SEED, UNLESS OTHERWISE NOTED.
- EXISTING DRAIN PIPE THAT IS NO LONGER NEEDED SHALL BE PLUGGED AT EACH END WITH BRICK MASONRY PER SECTION 270.62 OF THE STANDARD SPECIFICATIONS AND ABANDONED, UNLESS IT CONFLICTS WITH THE PROPOSED WORK. EXISTING DRAIN PIPE THAT CONFLICTS WITH THE PROPOSED WORK SHALL BE REMOVED.
- ALL EXISTING TREES WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE PLANS. ALL PROVIDED DIMENSIONS REFER TO THE DIAMETER AT BREST HEIGHT.
- CONTRACTOR TO TAKE CARE TO ENSURE PROPOSED GUARDRAIL POSTS DO NOT CONFLICT WITH UNDERGROUND UTILITIES (I.E. PROPOSED DRAINAGE STRUCTURES AND PIPES).
- AN UNOBSTRUCTED PEDESTRIAN PATH OF TRAVEL WITH A MINIMUM WIDTH OF 3'-0" (EXCLUDING THE WIDTH OF THE CURB) SHALL BE MAINTAINED PAST ALL VERTICAL OBSTRUCTIONS (UTILITY POLES, LIGHT POLES, SIGNS, MAILBOXES, ETC.)
- ALL CATCH BASIN GRATES WITHIN THE LIMIT OF PAVING WITHIN THE STATE HIGHWAY LAYOUT SHALL BE HOOK LOCK CASCADE GRATES, EXCEPT STRUCTURE #1B WHICH SHALL BE PARALLEL BAR. ALL MANHOLE COVERS WITHIN THE LIMIT OF PAVING WITHIN THE STATE HIGHWAY LAYOUT SHALL BE SECURED FRAME AND COVERS. ALL EXISTING CATCH BASINS AND MANHOLES LABELED AS "ADJ" SHALL ALSO INCLUDE REMOVAL OF EXISTING FRAME AND GRATE OR COVER, AND INSTALLATION OF A NEW HOOK LOCK CASCADE FRAME AND GRATE / NEW SECURED FRAME AND COVER.
- ALL PROPOSED MANHOLES ON COMMERCIAL STREET (ROUTE 140) LOCATED IN THE ROADWAY SHALL BE BOLT-DOWN MANHOLE COVER ASSEMBLIES IN PLACE OF STANDARD MANHOLES IN ACCORDANCE WITH ENGINEERING DIRECTIVE E-16-003. ALL PROPOSED CATCH BASINS ON COMMERCIAL STREET (ROUTE 140) SHALL BE HOOK LOCK CASCADE GRATE ASSEMBLIES IN PLACE OF STANDARD CATCH BASINS IN ACCORDANCE WITH ENGINEERING DIRECTIVE E-16-003.
- IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE, OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET WITHIN THE PROPOSED OR EXISTING ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SO THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE ACCESSIBLE SURFACE.
- ALL PROPOSED AND RESET CURB INLETS ADJACENT TO SLOPED GRANITE EDGING SHALL CONNECT TO THE SLOPED GRANITE EDGING WITH A SPLAYED END TRANSITION STONE.
- IN AREAS OF EXISTING ROADWAY / SIDEWALK WHERE LOAM AND SEED IS PROPOSED, THE CONTRACTOR SHALL REMOVE EXISTING ROADWAY / SIDEWALK AND SUBBASE, AND REPLACE WITH SUITABLE EXCAVATED MATERIAL AND PROPOSED 4" LOAM AND SEED TO MEET FINAL GRADE.
- WORK DONE IN AREAS LABELED "CLEARING & GRUBBING" IS TO BE PAID FOR UNDER ITEM 120. EARTH EXCAVATION.
- IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE, OR OTHER "SURFACE" TYPE STRUCTURE THAT IS NOT CALLED OUT TO BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOP MOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE ACCESSIBLE SURFACE.

EXISTING INVERT TABLE

CB1A	RIM=230.62	INV=225.82
CB1B	RIM=230.25	INV=226.55
CB1C	RIM=	INV=
CB1D	RIM=228.04	INV=223.74
CB1E	RIM=228.64	INV=225.24

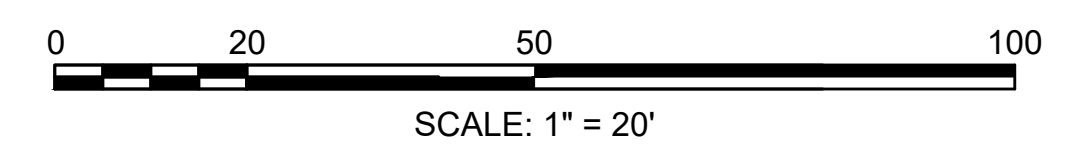
DMH1A

RIM=228.15	INV(a)=221.65
INV(b)=221.75	INV(c)=221.45
INV(d)=221.75	INV(e)=221.35

NOTE: EROSION CONTROL SHALL CONSIST OF FILTER TUBE AND SILT FENCE WHERE SLOPES ARE GREATER THAN 4:1

PROPOSED DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
(A)	PROP CIT	298+97.4	24.6' RT	228.60	223.74 (EX)	223.74 (EX)	EX CB 1D
(B)	PROP CBCI	401+85.0	20.0' RT	228.51	-	224.71 (EX)	4' SUMP; STRAIGHT CURB INLET, PARALLEL BAR GRATE
(C)	PROP DMH	300+01.2	33.9' RT	230.47	223.53 (EX/1)	223.43 (EX)	PROP F&C SECURED
(D)	PROP CBCI	300+06.2	39.4' RT	230.18	-	223.85	4' SUMP; CURVED CURB INLET



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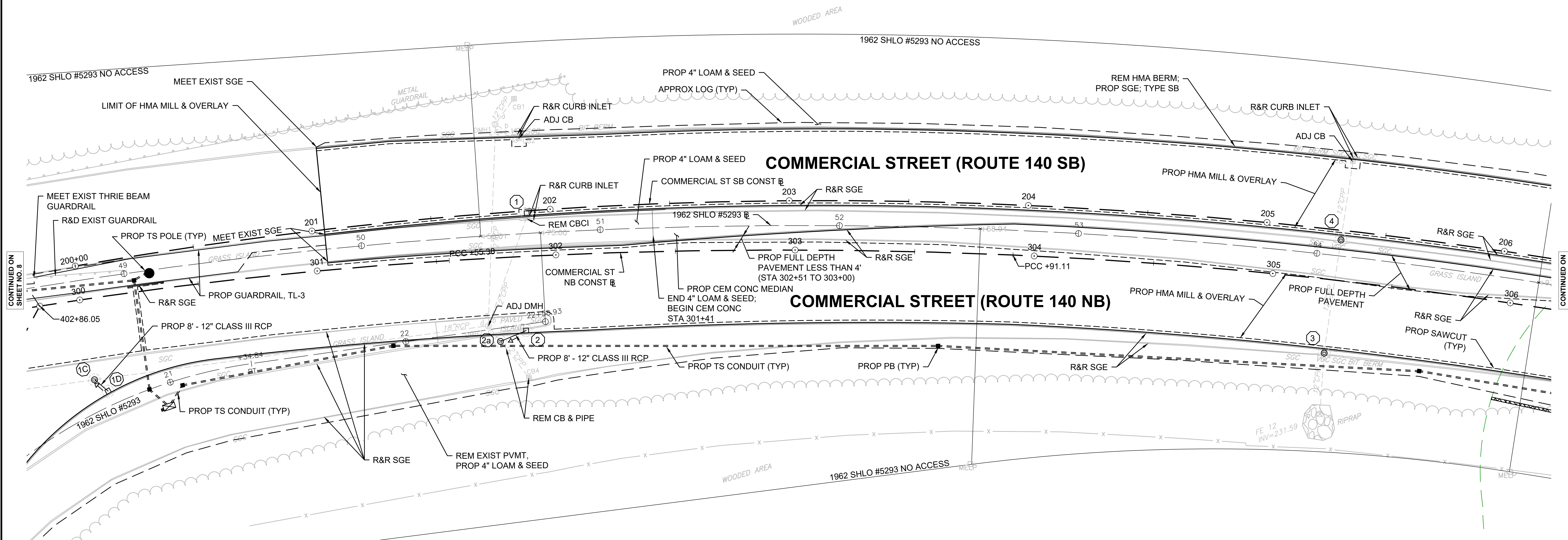
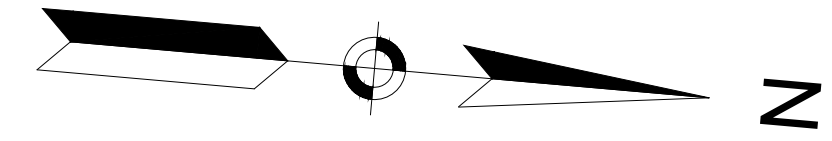
GUARDRAIL DETAILS
GUARDRAIL, TL-3: STA 300+23 LT TO STA 301+96 LT
TANGENT END TREATMENT: STA 301+96 LT TO STA 302+46 LT

TRAFFIC SIGNAL CONDUIT
SEE BELOW

WATER SUPPLY ALTERATIONS
NONE

DRAINAGE DETAILS
SEE BELOW

LEGEND
= PEDESTRIAN CURB
RAMP NUMBER



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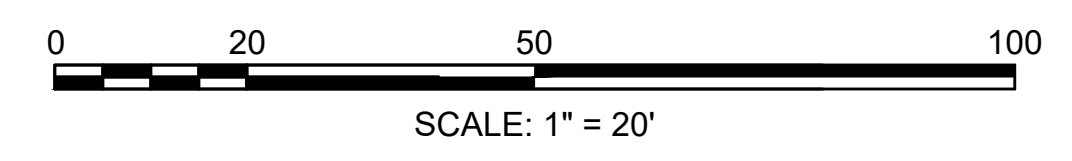
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PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
①	PROP CBCI	201+90.1	1.0' RT	234.62	-	230.24 (EX)	4' SUMP; R&R CURB INLET
②	PROP CBCI	301+86.0	31.0' RT	233.16	-	227.66	4' SUMP; STRAIGHT CURB INLET
②a	PROP DMH	301+74.9	35.0' RT	233.25	227.56 (2) 227.1 (EX)	226.9 (EX)	MATCH EXIST PIPE INVERTS
③	PROP CIT	305+25.0	30.9' RT	236.80	231.87 (4)	231.77 (EX)	EX CB 7
④	PROP CIT	205+31.6	4.1' RT	238.34	233.03 (EX)	232.93 (EX)	EX CB 6

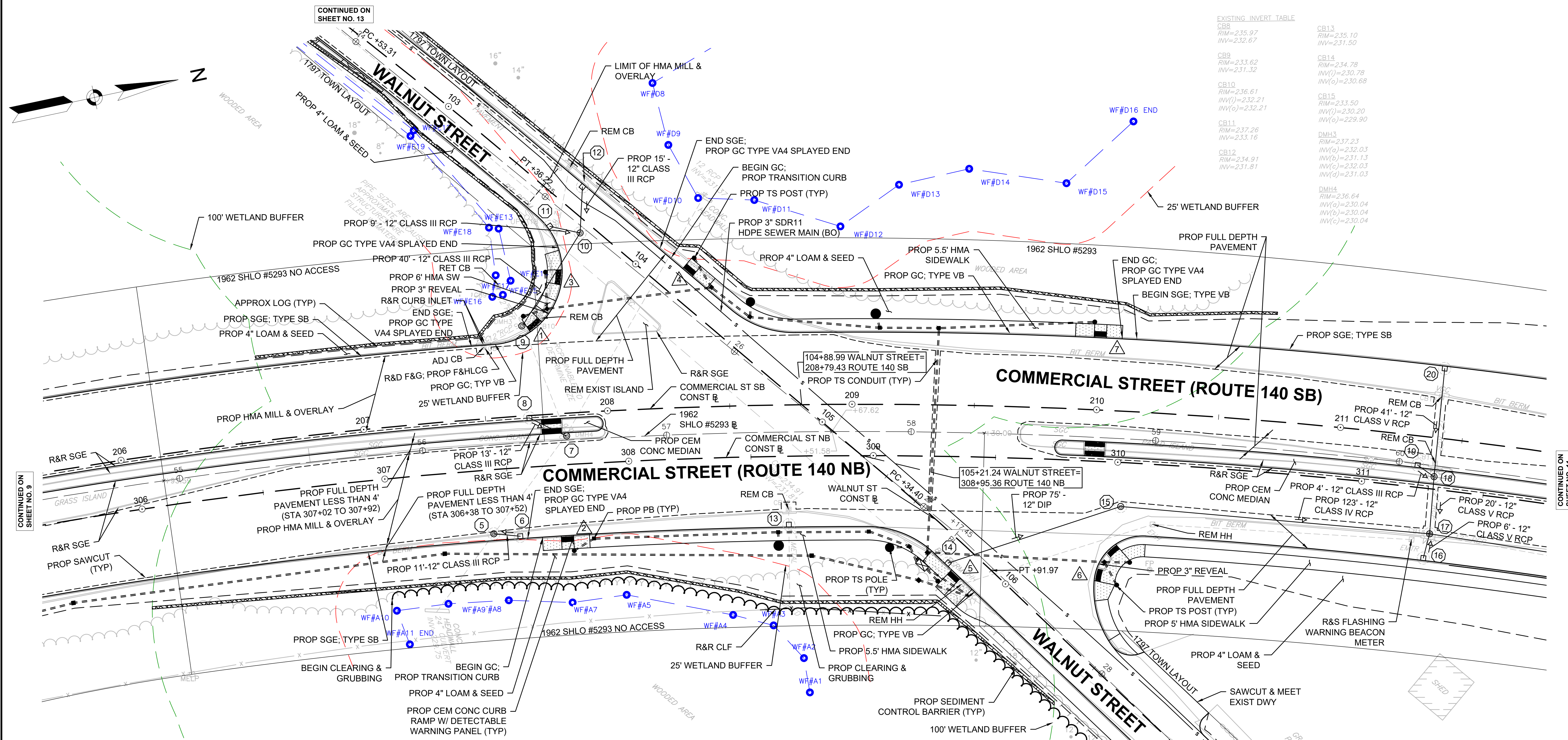
EXISTING INVERT TABLE

CB1	RIM=235.37 INV=230.97
CB2	RIM=235.10 INV=232.00
CB3	RIM=234.34 INV=230.24
CB4	RIM=231.94 INV=227.74
DMH1	RIM=235.49 INV(c)=229.89 INV(d)=230.29 INV(e)=229.09
CB5	RIM=238.23 INV=234.33
CB6	RIM=237.43 INV(f)=233.03 INV(g)=232.93
DMH2	RIM=233.16 INV(c)=226.86 INV(d)=226.76 INV(e)=226.76 INV(f)=231.87 INV(g)=231.77
CB7	RIM=235.87 INV(f)=231.87 INV(g)=231.77

NOTE: EROSION CONTROL SHALL CONSIST OF FILTER TUBE AND SILT FENCE WHERE SLOPES ARE GREATER THAN 4:1



GUARDRAIL DETAILS TANGENT END TREATMENT: STA 311+40 RT TO STA 311+90 RT
TRAFFIC SIGNAL CONDUIT SEE BELOW
WATER SUPPLY ALTERATIONS NONE
DRAINAGE DETAILS SEE BELOW
LEGEND # = PEDESTRIAN CURB RAMP NUMBER



EXISTING INVERT TABLE

CB8 RIM=235.97 INV=232.67	CB13 RIM=235.10 INV=231.90
CB9 RIM=233.62 INV=231.32	CB14 RIM=234.78 INV=230.78 INV(o)=230.68
CB10 RIM=236.61 INV=232.21 INV(o)=232.21	CB15 RIM=233.50 INV=230.20 INV(o)=229.90
CB11 RIM=237.26 INV=233.16	DMH3 RIM=237.23 INV(a)=232.03 INV(b)=231.13 INV(c)=232.03 INV(o)=231.03
CB12 RIM=234.91 INV=231.81	DMH4 RIM=236.64 INV(a)=230.04 INV(b)=230.04 INV(o)=230.04

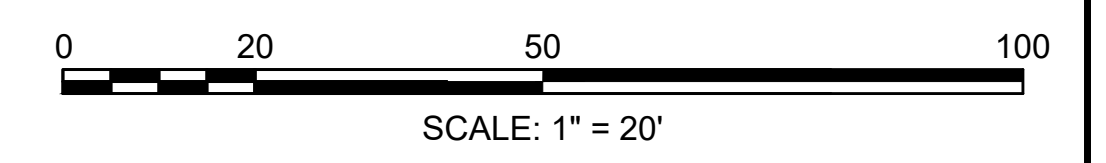
PROPOSED DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
5	PROP DMH	307+42.7	26.2' RT	235.85	229.89 (6) 229.89 (7)	229.87 (EX)	PROP F&C SECURED
6	PROP CBCI	307+53.6	28.0' RT	235.74	-	229.95	4' SUMP; STRAIGHT CURB INLET
7	REMOD DMH	307+75.3	11.7' LT	236.74	233.00 (8) 230.04 (9) 230.04 (EX)	230.04 (EX)	EX DMH 4 R&D EXIST F&C; PROP F&C SECURED
8	PROP CBCI	207+67.9	1.0' RT	236.95	-	233.26	4' SUMP; STRAIGHT CURB INLET
9	REMOD DMH	207+67.8	36.8' LT	237.59	232.03 (10) 232.03 (EX) 231.13 (EX)	231.03	EX DMH 3
10	PROP DMH	103+74.5	5.0' RT	236.54	232.64 (11) 232.58 (12)	232.48	PROP F&C SECURED
11	PROP CBCI	103+63.3	10.9' RT	236.33	-	232.74	4' SUMP; CURVED CURB INLET; MUNICIPAL STANDARD F&G
12	PROP CBCI	103+63.0	10.0' LT	236.35	-	232.78	4' SUMP; STRAIGHT CURB INLET; MUNICIPAL STANDARD F&G

PROPOSED DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
13	PROP SPECIAL CBCI	308+65.1	28.0' RT	235.04	-	-	MATCH EXIST SHALLOW; 4' SUMP; STRAIGHT CURB INLET
14	PROP SPECIAL CB	105+77.0	9.9' RT	234.21	-	231.19	SHALLOW; 4' SUMP
15	PROP DMH	310+02.2	18.0' RT	234.64	230.49 (14)	230.49	PROP F&C SECURED
16	PROP CBCI	311+28.7	28.5' RT	233.50	-	230.19	4' SUMP; STRAIGHT CURB INLET
17	PROP DMH	311+30.1	18.3' RT	233.90	229.90 (15) 230.09 (16) 230.00 (18)	229.90	REM EX CB15 PROP F&C SECURED
18	PROP DMH	211+40.3	16.0' RT	235.07	231.43 (19) 231.50 (20)	231.33	4' SUMP
19	PROP CBCI	211+33.1	12.0' RT	234.83	-	231.53	4' SUMP; STRAIGHT CURB INLET
20	PROP CBCI	211+39.5	28.5' LT	236.06	-	231.91	4' SUMP; STRAIGHT CURB INLET

NOTE: EROSION CONTROL SHALL CONSIST OF FILTER TUBE AND SILT FENCE WHERE SLOPES ARE GREATER THAN 4:1



GUARDRAIL DETAILS

TRAILING ANCHORAGE: STA 215+78 LT TO STA 215+87 LT
 GUARDRAIL, TL-3: STA 215+87 LT TO STA 219+78 LT

TANGENT END TREATMENT: STA 311+40 RT TO STA 311+90 RT
 GUARDRAIL, TL-3 W/ TIMBER BACKING: STA 311+90 RT TO STA 319+11 RT

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

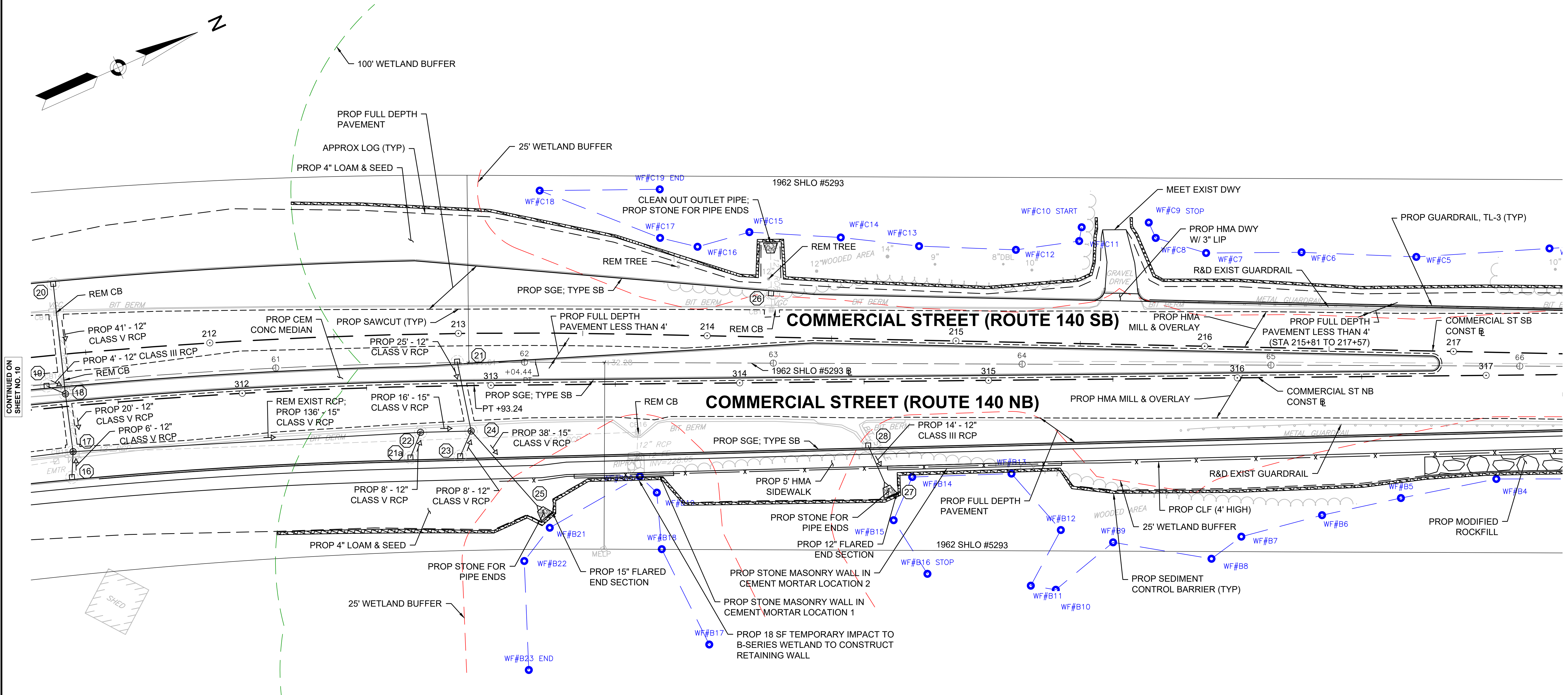
NONE

DRAINAGE DETAILS

SEE BELOW

LEGEND

= PEDESTRIAN CURB RAMP NUMBER



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PROPOSED DRAINAGE STRUCTURE DATA

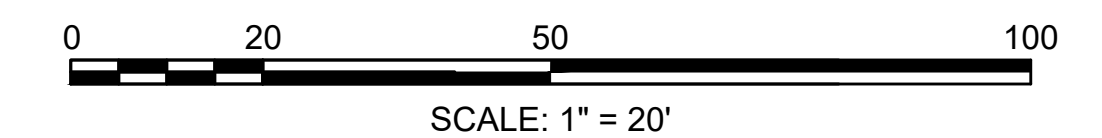
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
(21)	PROP CBCI	212+99.4	11.3' RT	234.06	-	230.06	4' SUMP; STRAIGHT CURB INLET
(21a)	PROP CBCI	312+67.0	28.5' RT	232.88	-	229.38	4' SUMP; STRAIGHT CURB INLET
(22)	PROP DMH	312+71.3	18.5' RT	233.28	229.22 (17) 229.28 (21a)	229.12	PROP F&C SECURED
(23)	PROP CBCI	312+87.3	28.3' RT	232.95	-	229.45	4' SUMP; STRAIGHT CURB INLET
(24)	PROP DMH	312+91.9	18.3' RT	233.30	229.35 (21) 229.04 (22) 229.35 (23)	228.94	PROP F&C SECURED
(25)	PROP FES	313+19.3	49.9' RT	-	-	228.50	15" RCP

PROPOSED DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
(26)	PROP CBCI	214+25.3	17.6' LT	233.67	-	MATCH EXIST	4' SUMP; STRAIGHT CURB INLET
(27)	PROP FES	314+58.6	42.3' RT			228.78	12" RCP
(28)	PROP CBCI	314+51.4	25.7' RT	232.68	-	228.85	4' SUMP; STRAIGHT CURB INLET

EXISTING INVERT TABLE
 CB16
 RIM=232.52
 INV(I)=229.22
 INV(O)=229.22
 CB17
 RIM=233.21
 INV=229.31
 CB18
 RIM=231.06
 INV=227.36

NOTE: EROSION CONTROL SHALL CONSIST OF FILTER TUBE AND SILT FENCE WHERE SLOPES ARE GREATER THAN 4:1



GUARDRAIL DETAILS

GUARDRAIL, TL-3: STA 215+87 LT TO STA 219+78 LT
 TRANSITION TO NCHRP 350: STA 219+78 LT TO STA 220+13 LT

GUARDRAIL, TL-3 W/ TIMBER BACKING: STA 311+90 RT TO STA 319+11 RT
 TRAILING ANCHORAGE: STA 319+11 RT TO STA 319+20 RT

TANGENT END TREATMENT: STA 319+27 RT TO STA 319+77 RT
 GUARDRAIL, TL-3: STA 319+77 RT TO STA 319+90 RT

TRANSITION TO NCHRP 350: STA 319+90 RT (COMMERCIAL STREET NB) TO STA 220+37 RT (COMMERCIAL STREET SB) (34'-4 1/2")

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

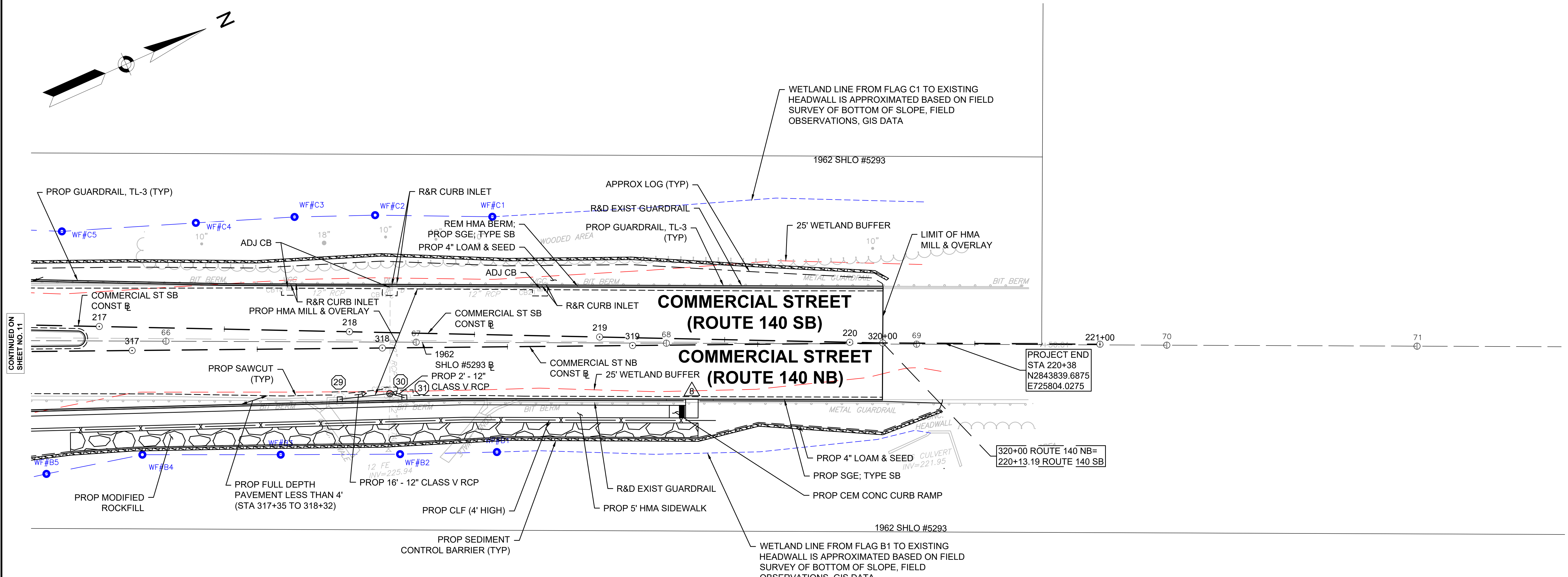
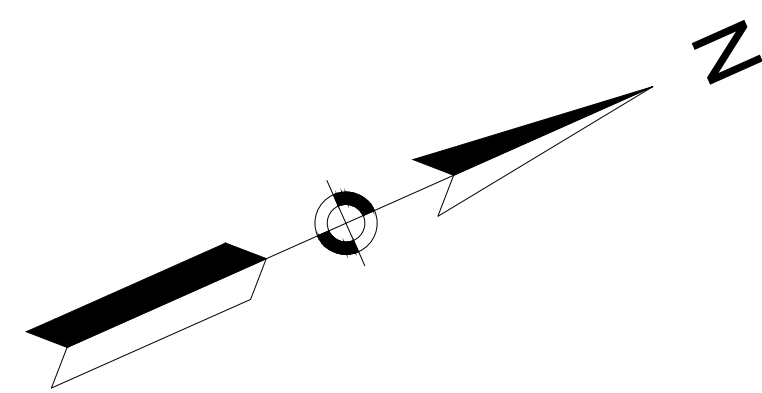
NONE

DRAINAGE DETAILS

SEE BELOW

LEGEND

△# = PEDESTRIAN CURB RAMP NUMBER

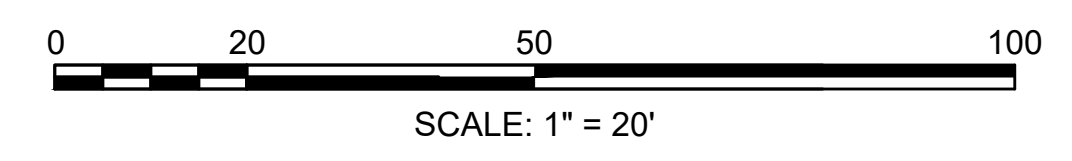


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PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
29	PROP CBCI	317+82.8	20.3' RT	231.39	-	227.85	4' SUMP; STRAIGHT CURB INLET
30	PROP DMH	318+02.8	18.2' RT	231.42	227.69 (29) 227.79 (30) 227.72 (EX)	226.70 (EX)	REM EX CB 16; PROP F&C SECURED
31	PROP CBCI	318+08.6	19.9' RT	231.37	-	227.82	4' SUMP; STRAIGHT CURB INLET

EXISTING INVERT TABLE
 CB19
 RIM=230.95
 INV(a)=227.05
 INV(b)=227.05
 INV(c)=227.05
 CB20
 RIM=231.30
 INV(f)=226.80
 INV(g)=226.70
 CB21
 RIM=231.11
 INV=227.61

NOTE: EROSION CONTROL SHALL CONSIST OF FILTER TUBE AND SILT FENCE WHERE SLOPES ARE GREATER THAN 4:1



GUARDRAIL DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

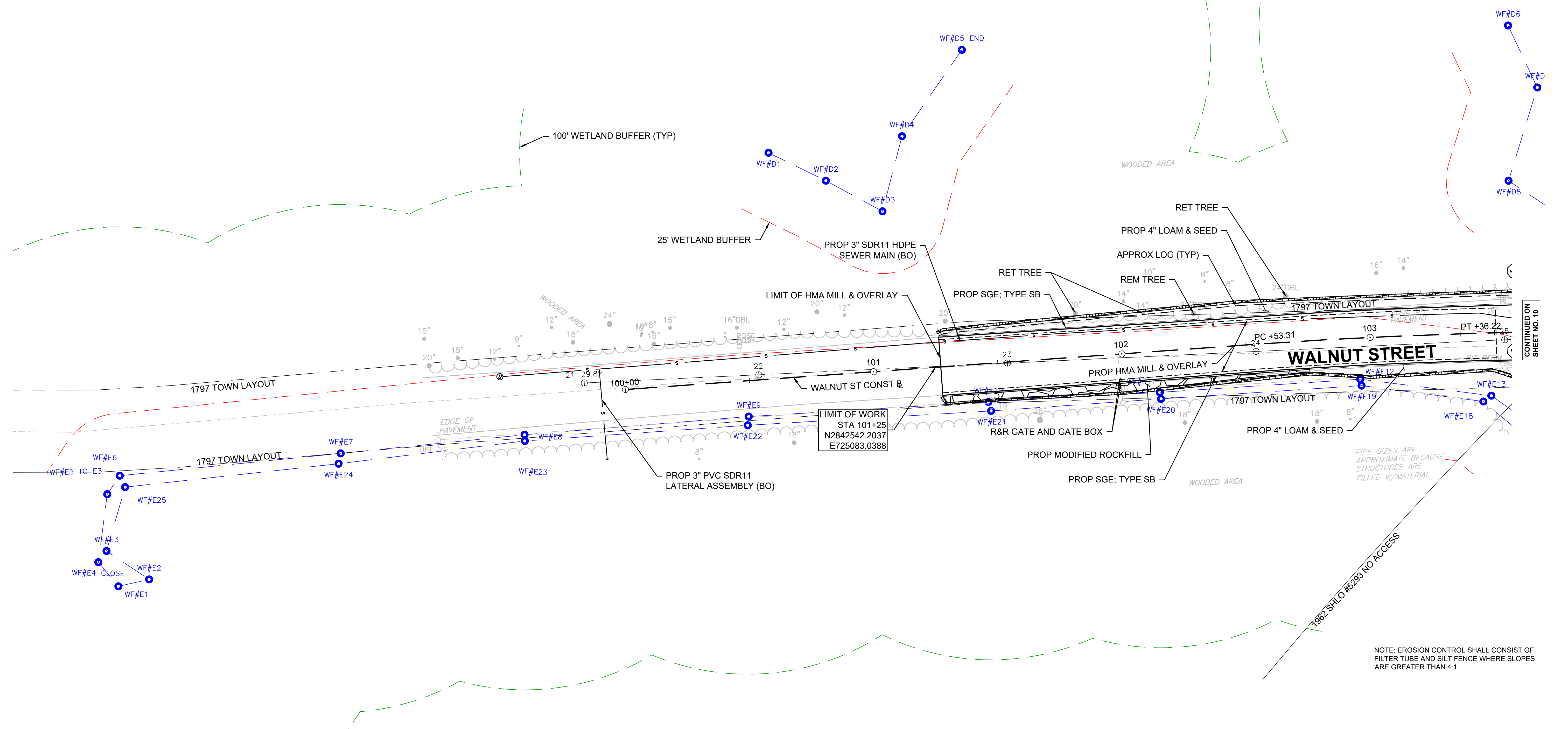
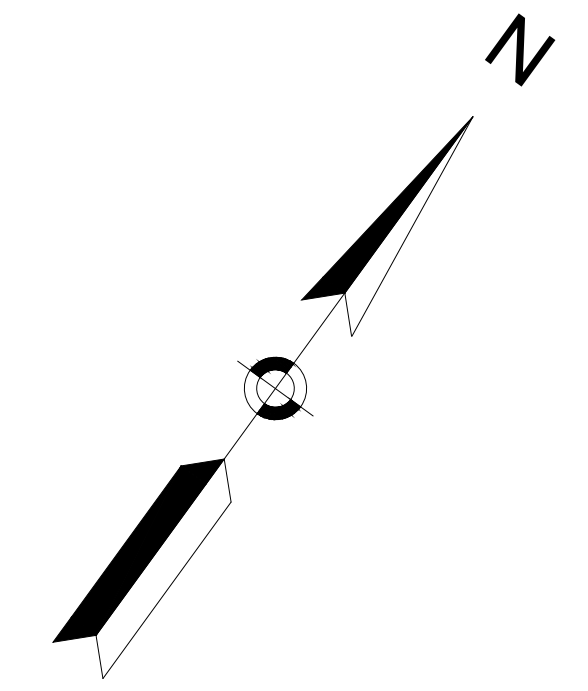
SEE BELOW

DRAINAGE DETAILS

NONE

LEGEND

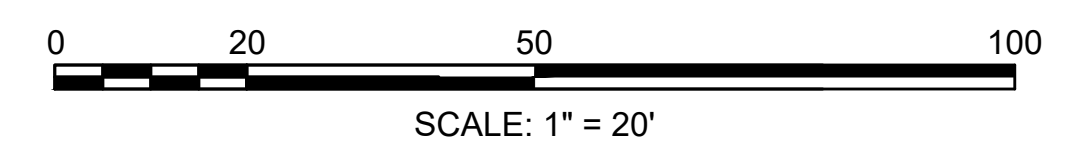
 = PEDESTRIAN CURB RAMP NUMBER



CONTINUED ON
 SHEET NO. 10

PIPE SIZES ARE APPROXIMATE BECAUSE STRUCTURES ARE FILLED W/MATERIAL

NOTE: EROSION CONTROL SHALL CONSIST OF FILTER TUBE AND SILT FENCE WHERE SLOPES ARE GREATER THAN 4:1



GUARDRAIL DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

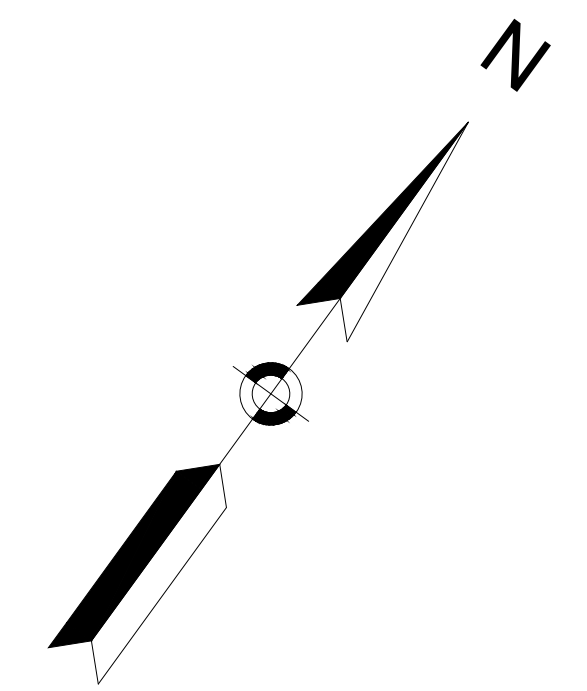
SEE BELOW

DRAINAGE DETAILS

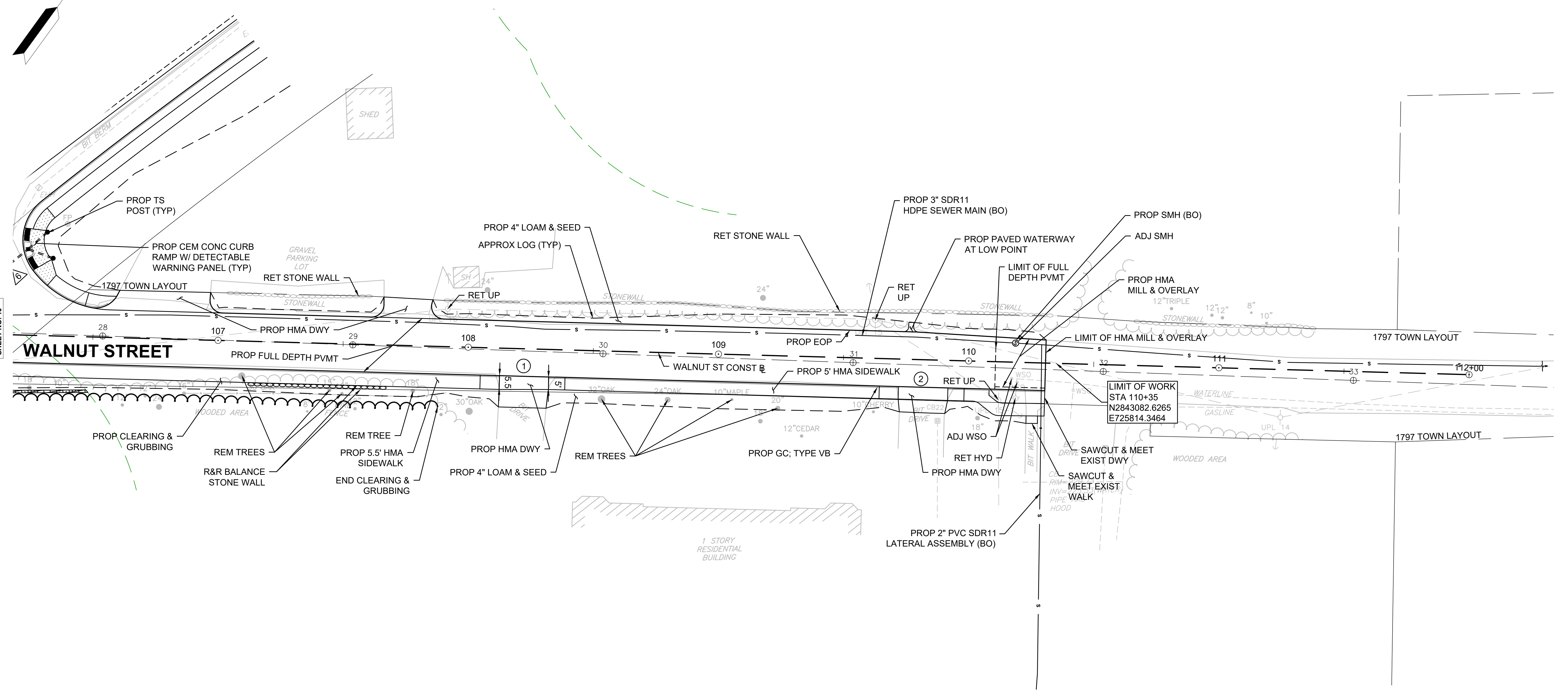
SEE BELOW

LEGEND

- △# = PEDESTRIAN CURB RAMP NUMBER
- ⊕# = DRIVEWAY NUMBER



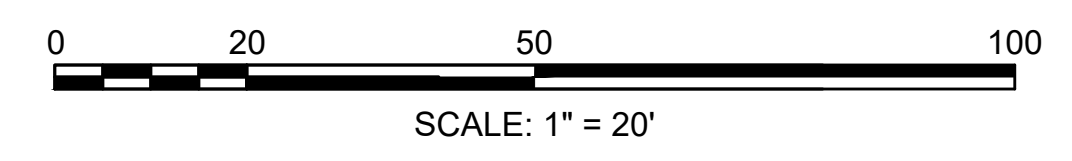
CONTINUED ON SHEET NO. 10

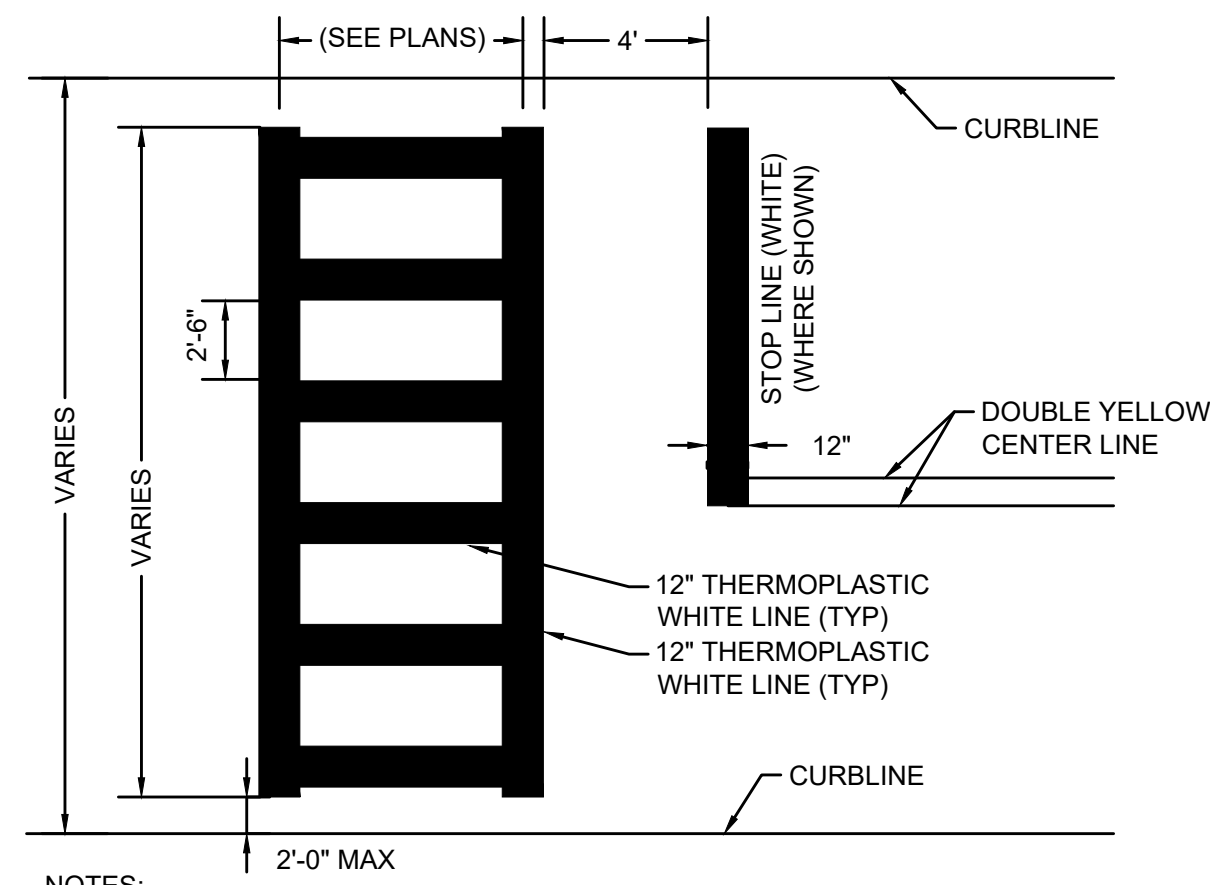


LIMIT OF WORK
 STA 110+35
 N2843082.6265
 E725814.3464

NOTE: EROSION CONTROL SHALL CONSIST OF FILTER TUBE AND SILT FENCE WHERE SLOPES ARE GREATER THAN 4:1

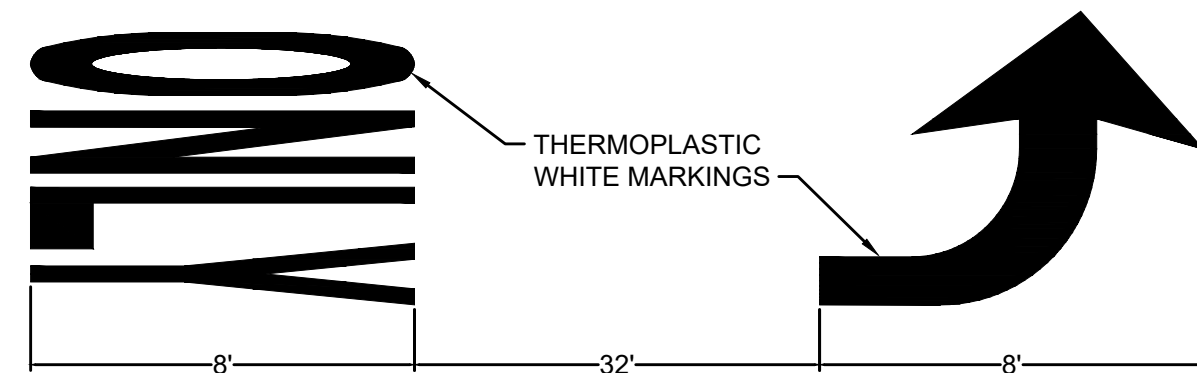
EXISTING INVERT TABLE
 CB22
 RIM=230.27
 INV=226.07(WATER)
 PIPE HAS HOOD





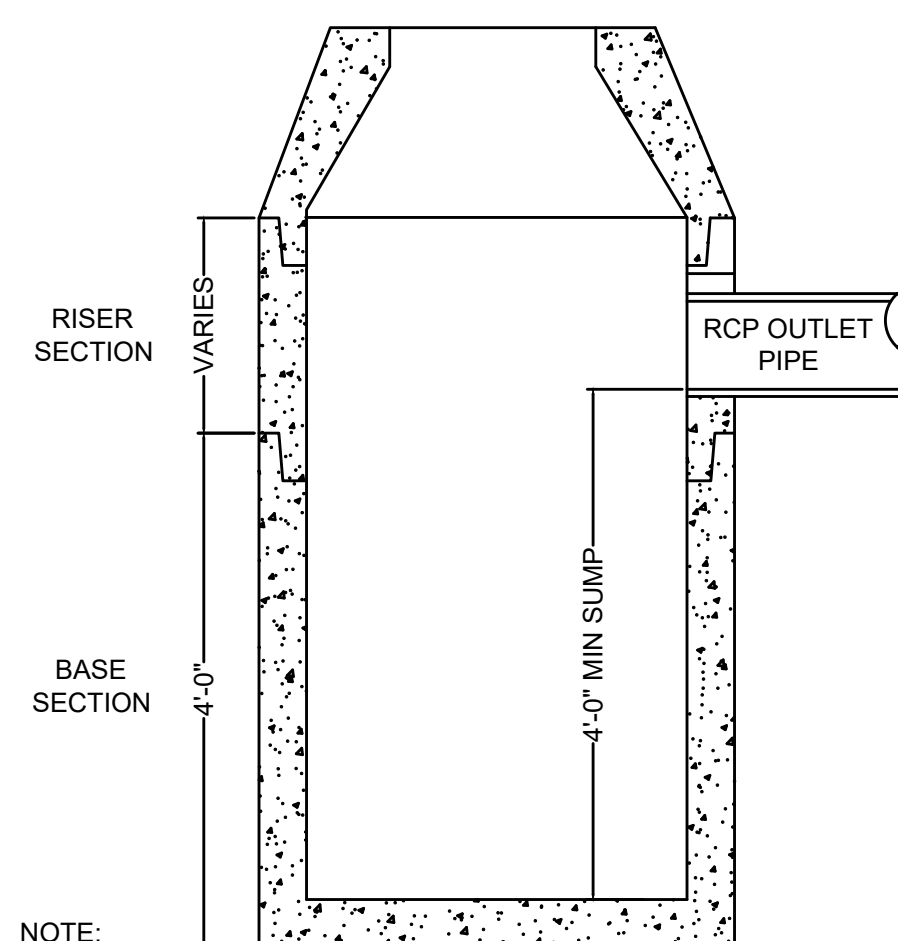
- NOTES:
- ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION. NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED. ALL 24" LINES MAY BE EITHER ONE 24" LINE OR A COMBINATION OF TWO - 12" LINES.
 - LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.
 - CROSSWALK BARS SHALL BE PLACED OUTSIDE THE VEHICULAR WHEEL PATH WHEREVER POSSIBLE.
 - OMIT STOP BAR WHERE NOT SHOWN ON TRAFFIC SIGN & PAVEMENT MARKING PLANS.

CROSSWALK PAVEMENT MARKING (LADDER)
N.T.S.



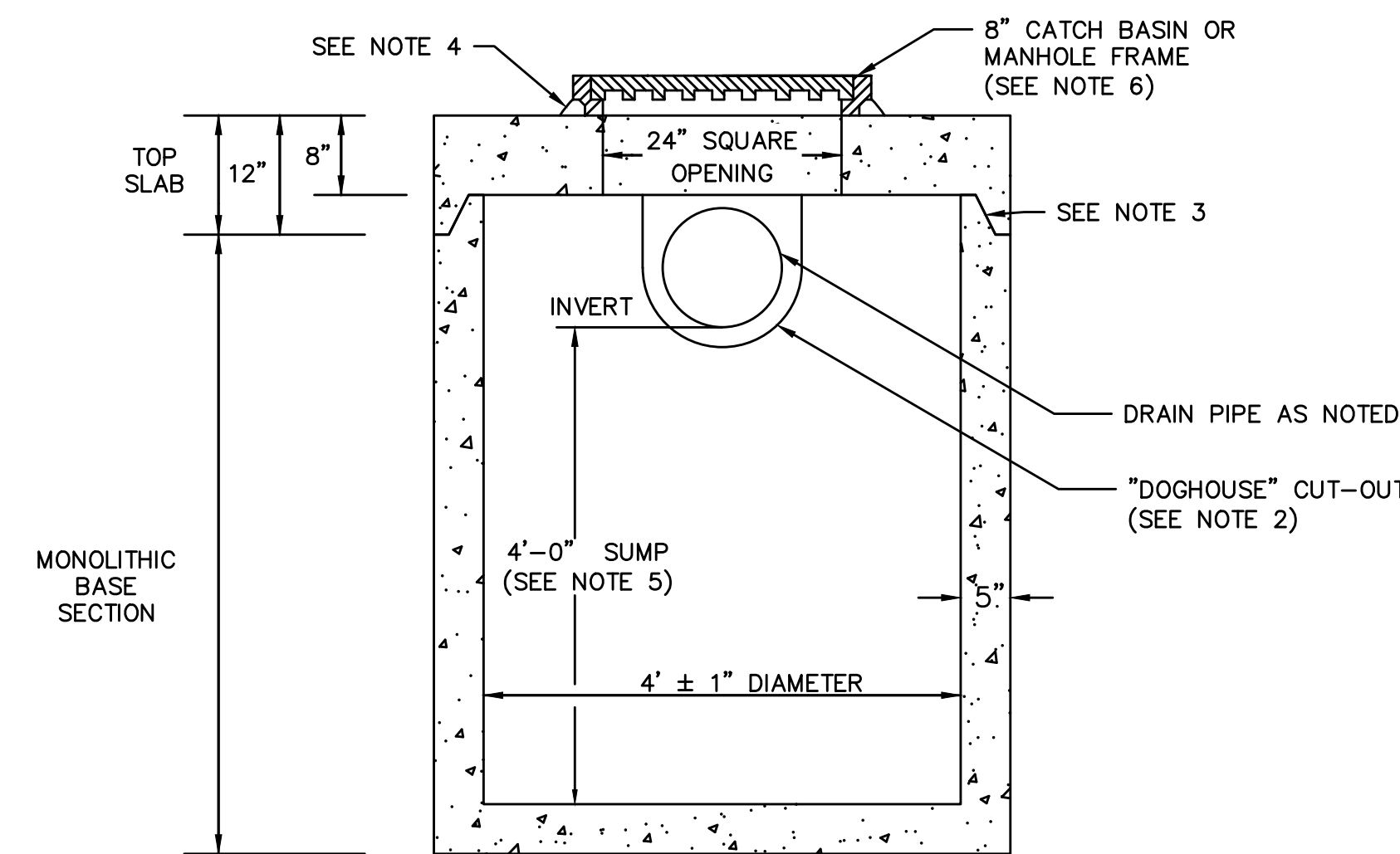
NOTE: SPACING SHALL BE SAME FOR RIGHT TURN LANE AND THRU ONLY PAVEMENT MARKING (REFER TO MASSDOT STANDARD DRAWING TR.6.1)

LEFT TURN LANE PAVEMENT MARKING
N.T.S.



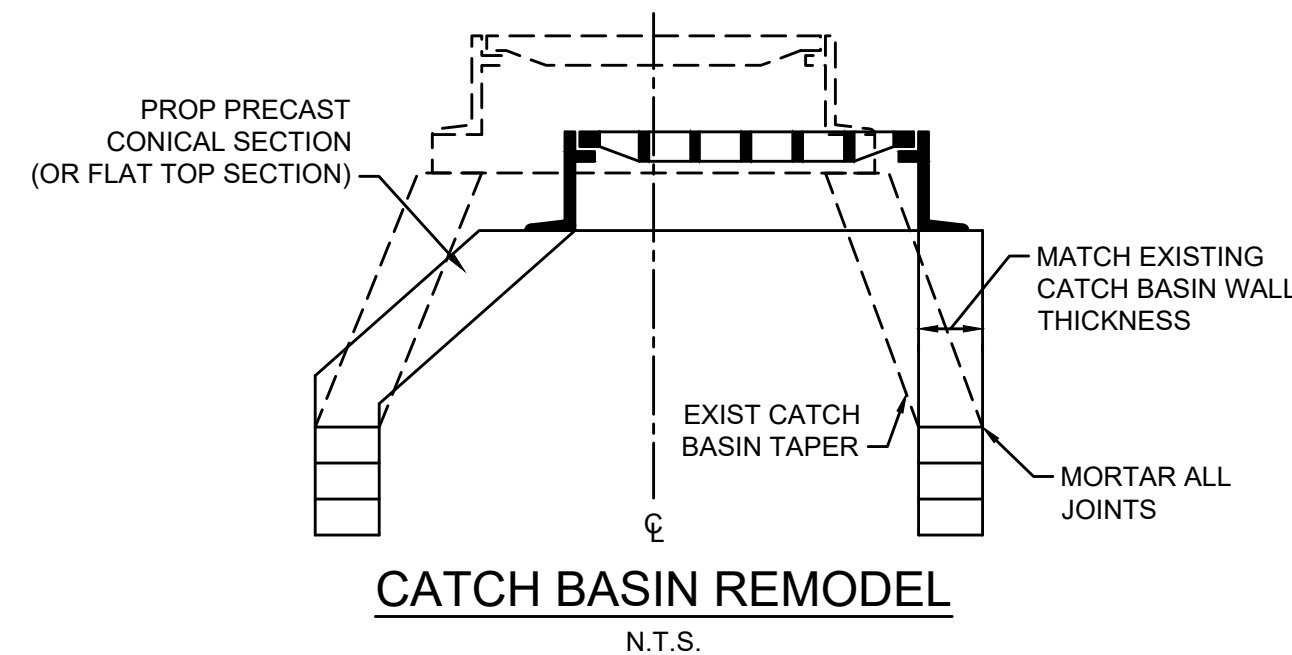
NOTE:
ALL CATCH BASINS SHALL CONFORM TO MASSDOT CONSTRUCTION STANDARD E 201.4.0 EXCEPT FOR 4' SUMP DEPTH AS SHOWN

DEEP SUMP CATCH BASIN
N.T.S.

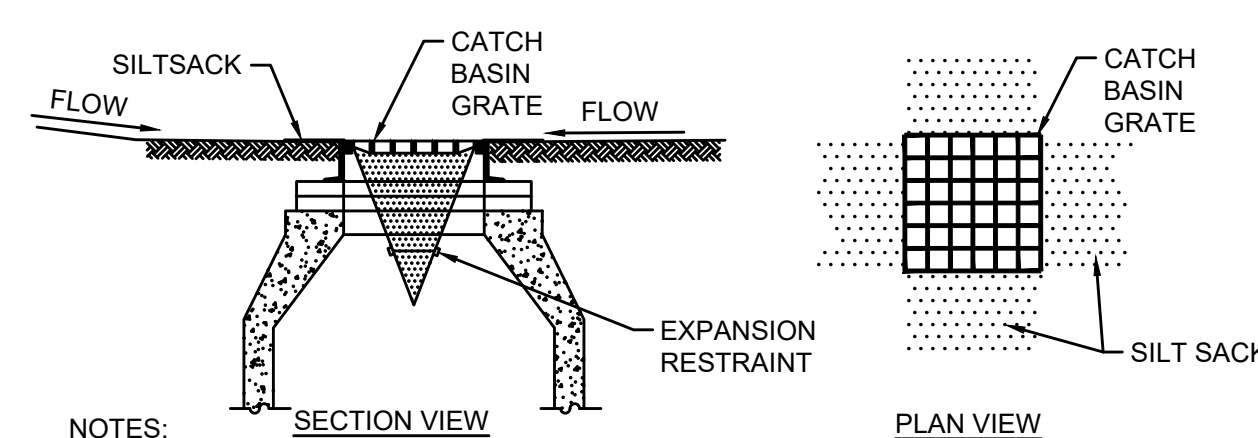


- NOTES:
- ALL SECTIONS SHALL BE DESIGNED FOR HI-93 LOADING.
 - PROVIDE DOGHOUSE OPENING FOR PIPE WITH 2" MAX CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS WITH NON-SHRINK GROUT.
 - JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
 - CATCH BASIN AND MANHOLE FRAMES SHALL BE SET IN FULL MORTAR BED AND IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARD DETAIL E 202.9.0.
 - OMIT 4' SUMP FOR MANHOLE STRUCTURES.
 - FRAME ELEVATION SHALL BE INSTALLED AT FINISH GRADE USING VARIABLE HEIGHT BRICK COURSES.

SPECIAL CATCH BASIN/MANHOLE (SHALLOW)
NOT TO SCALE



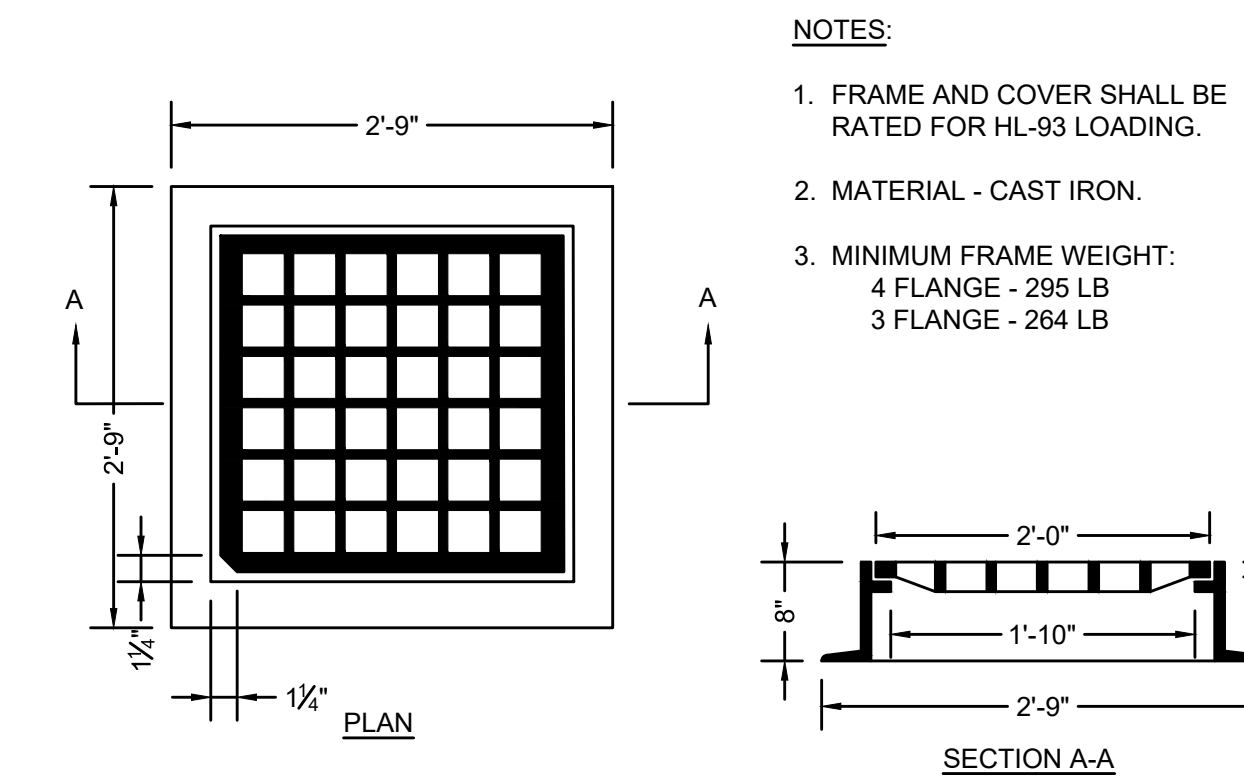
CATCH BASIN REMODEL
N.T.S.



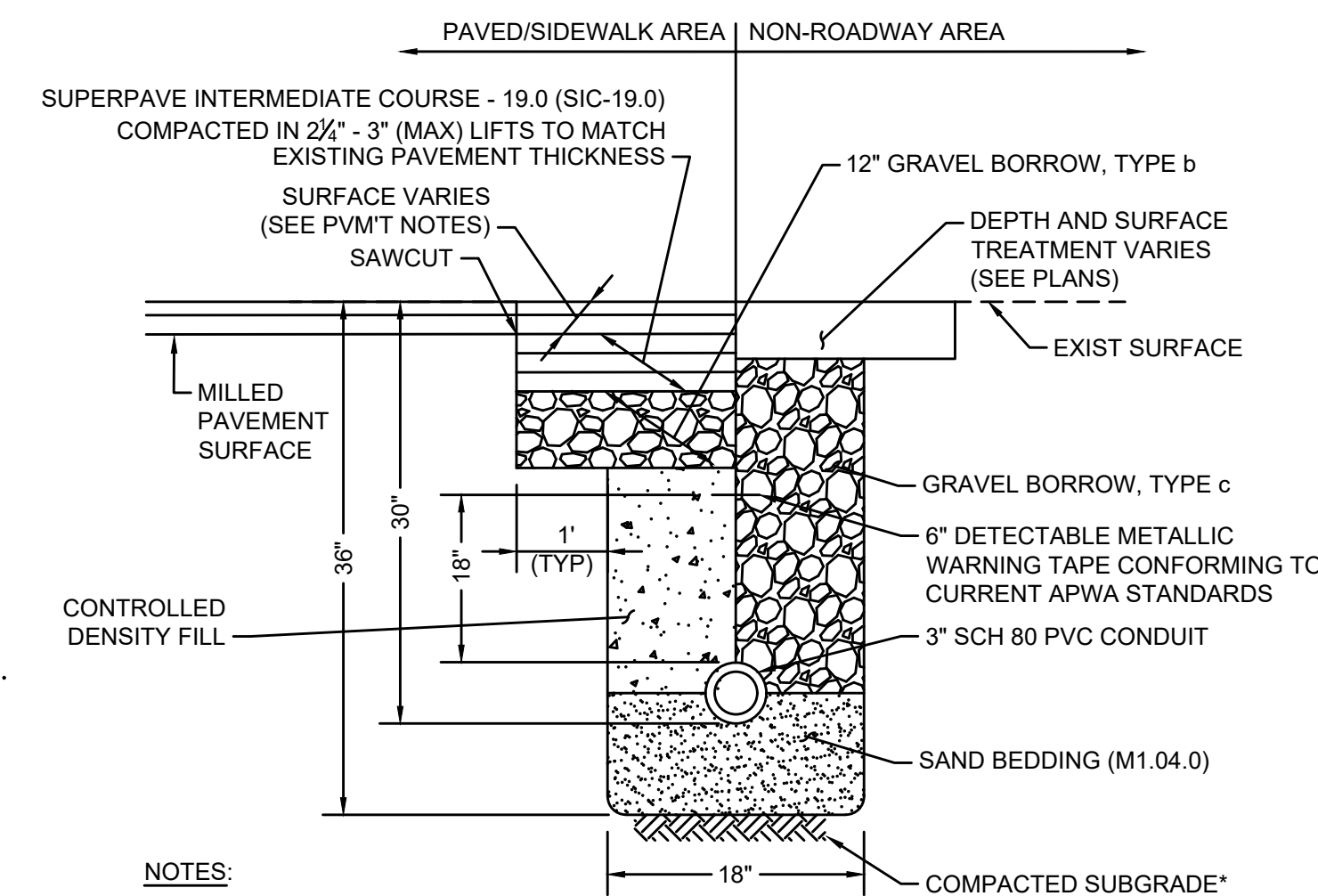
- NOTES:
- INSTALL SILT SACK IN EXISTING CATCH BASINS BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
 - GRATE TO BE PLACED OVER SILT SACK.
 - SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

INLET PROTECTION SILT SACK IN CATCH BASIN
N.T.S.

PAVED AREA NON-ROADWAY AREA

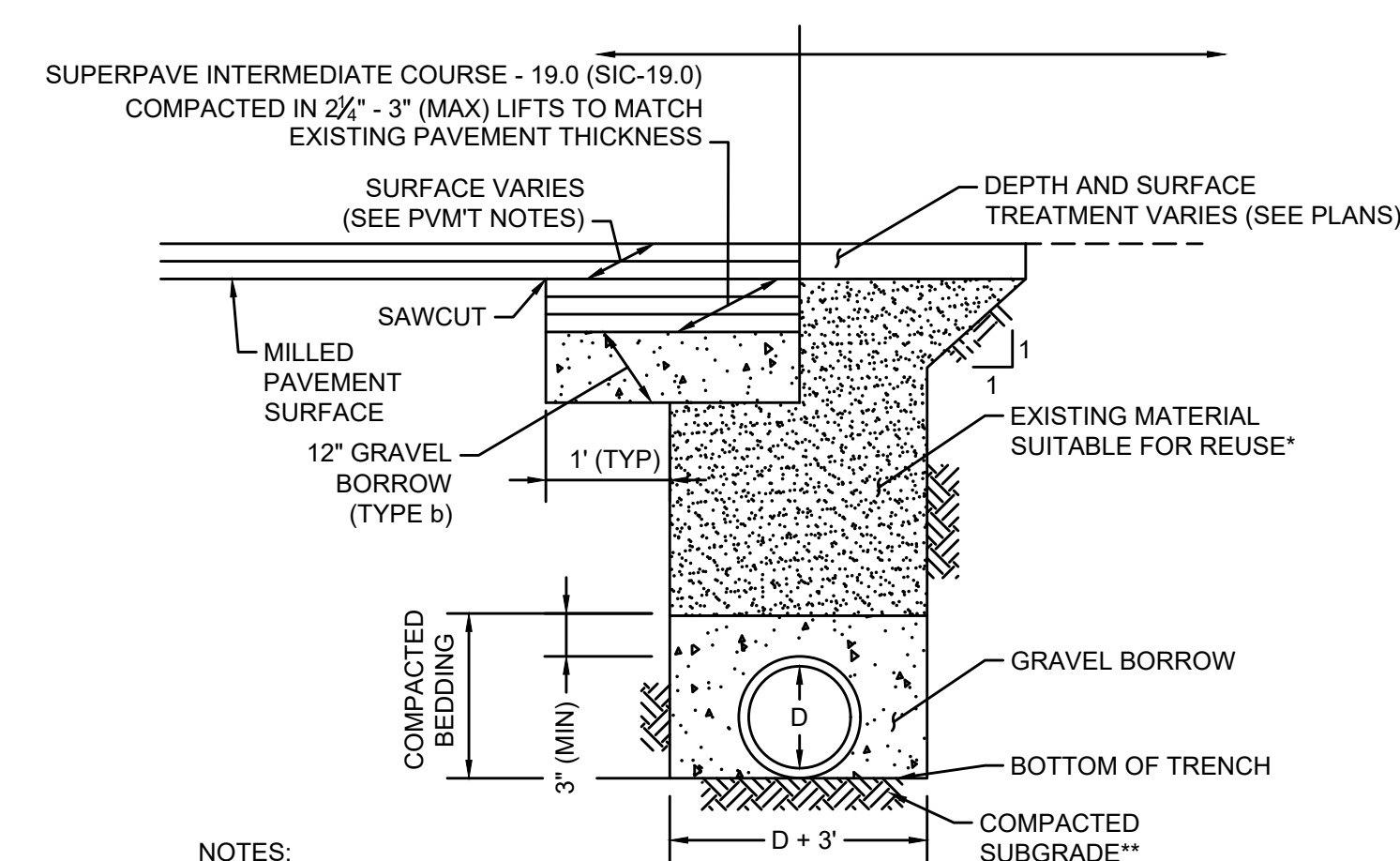


CATCH BASIN FRAME & GRATE (MUNICIPAL STANDARD)
N.T.S.



NOTES:
* SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.

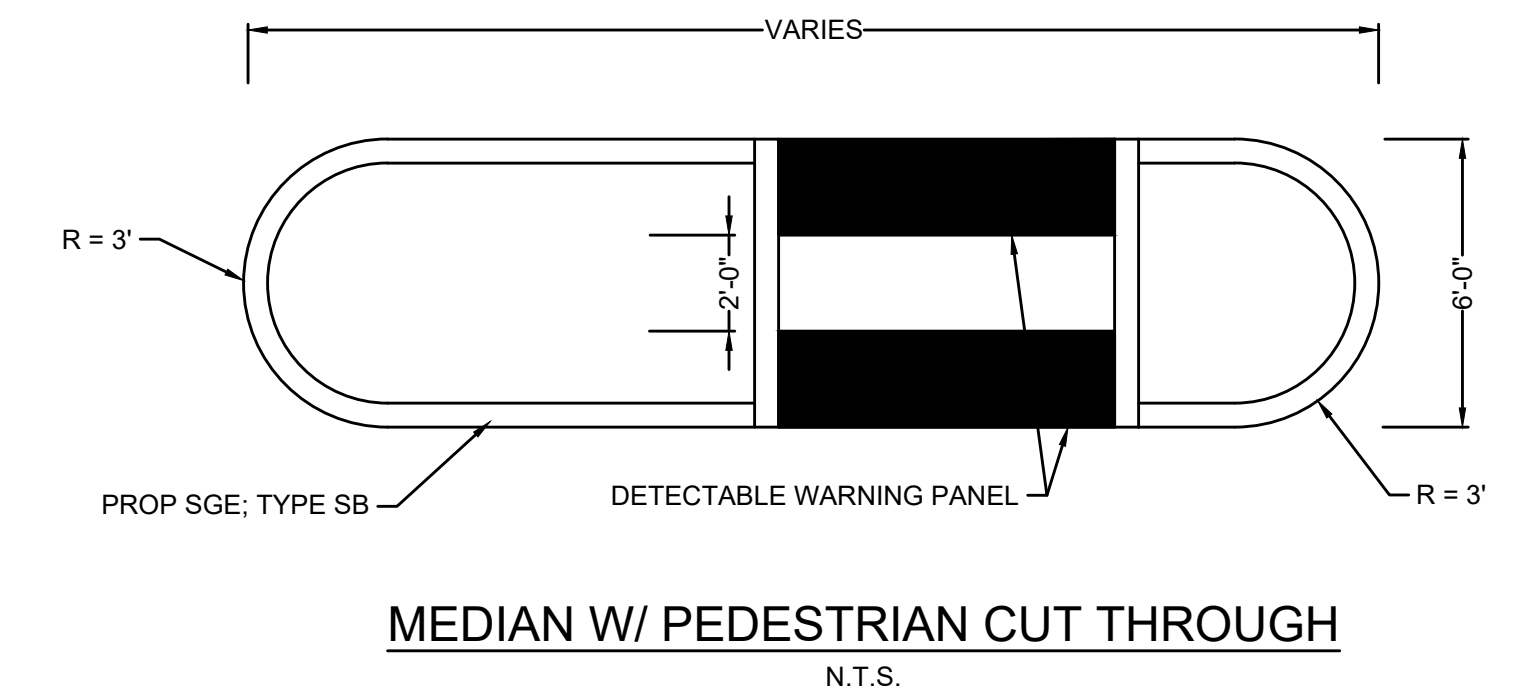
CONDUIT TRENCH
N.T.S.



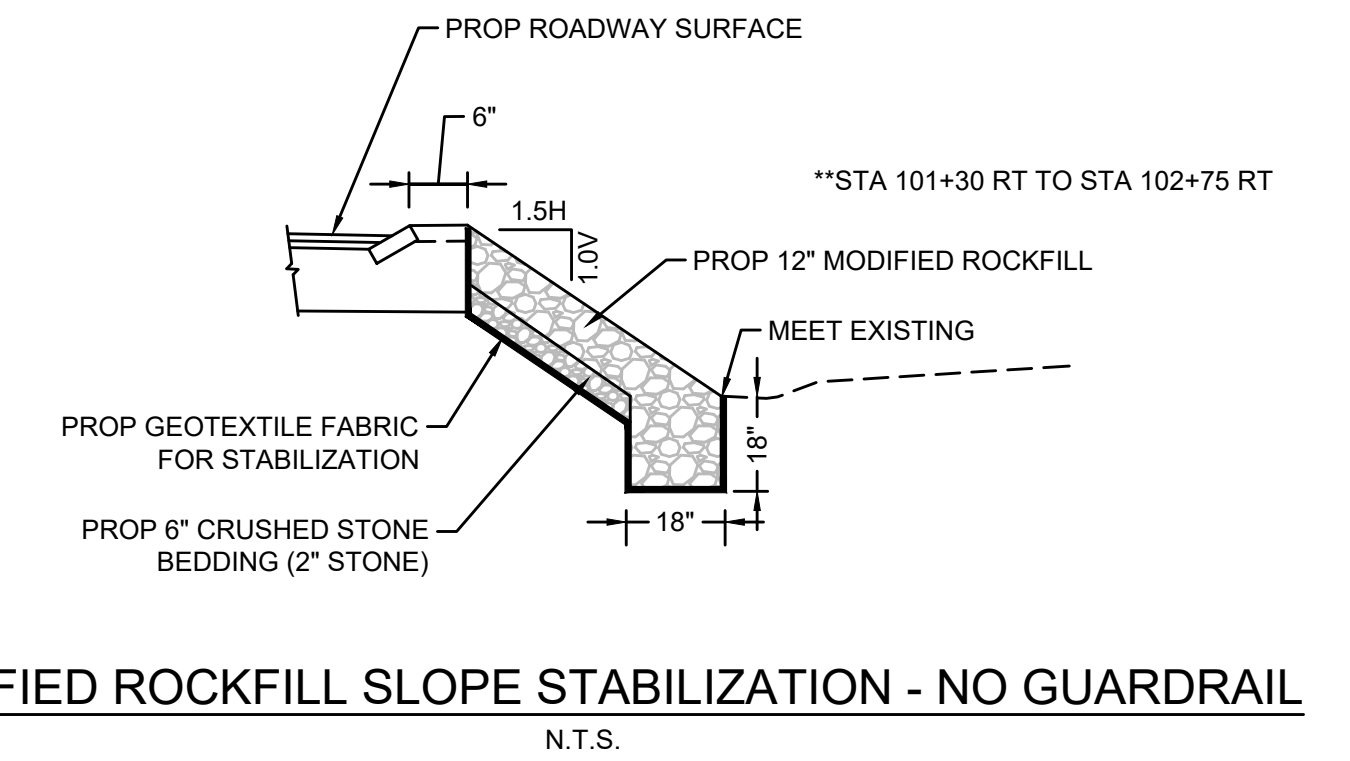
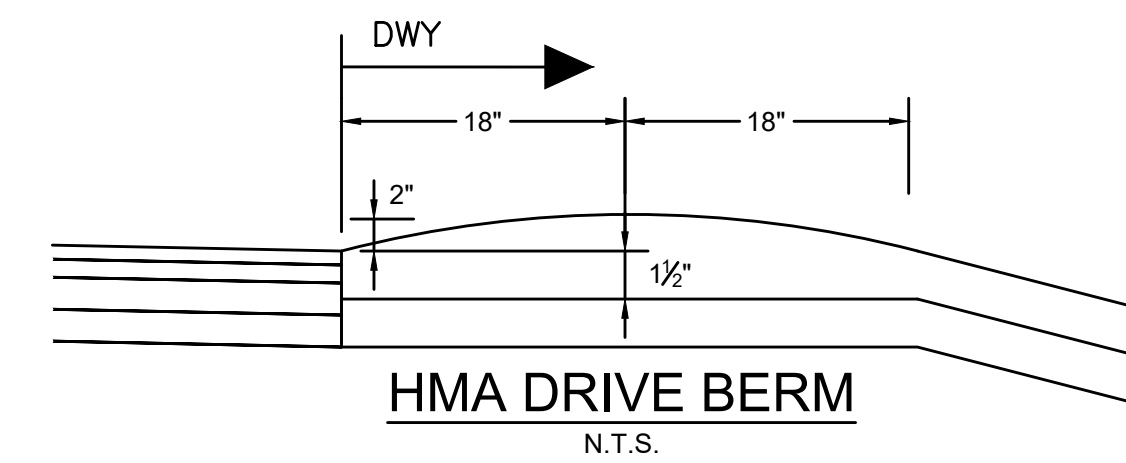
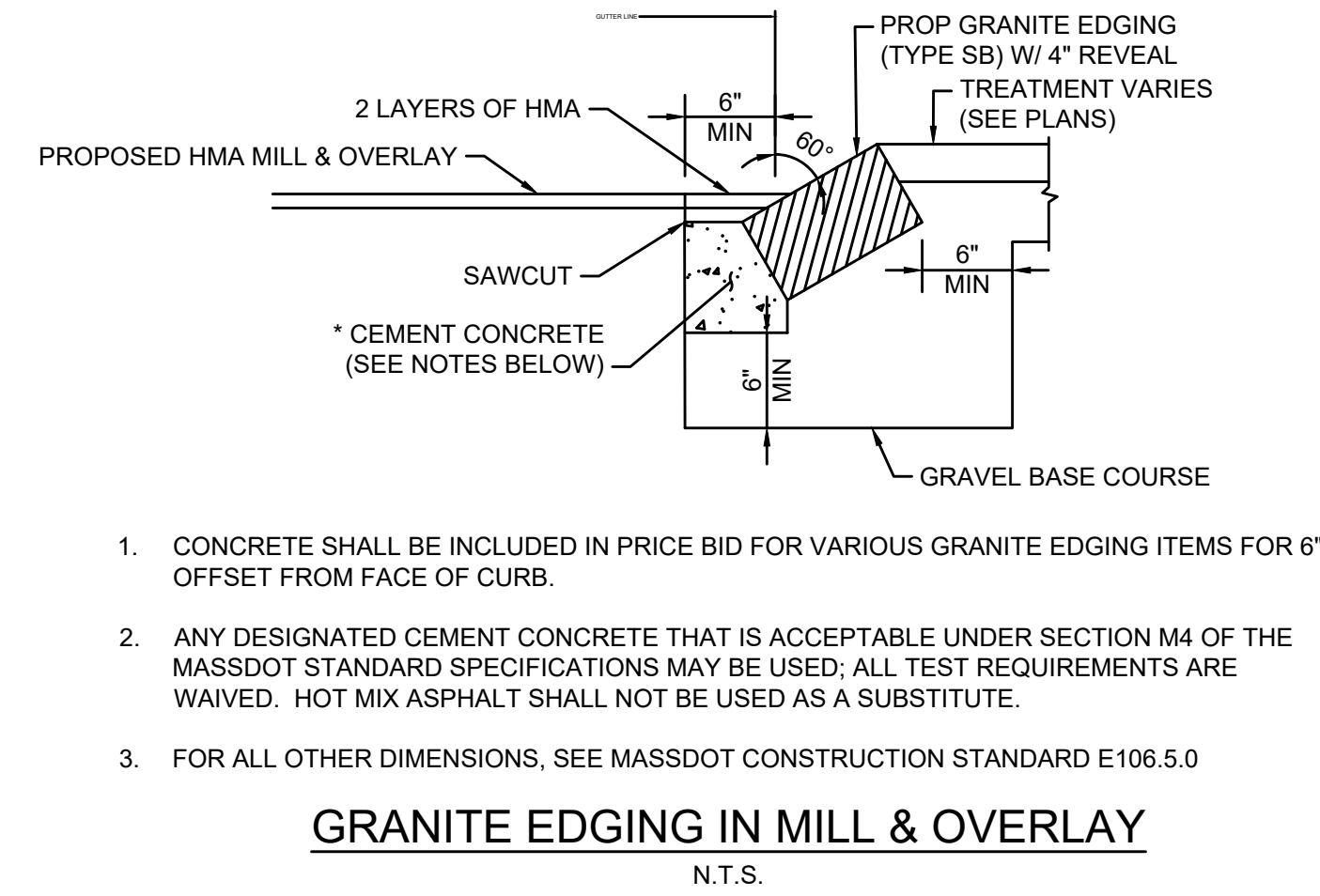
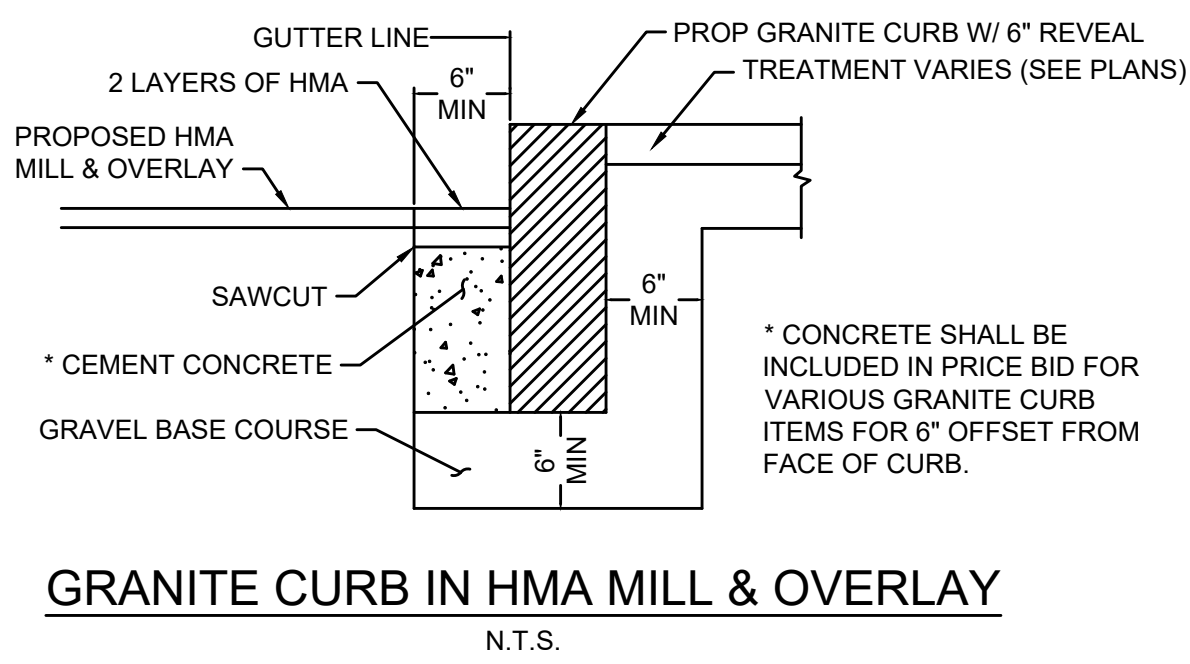
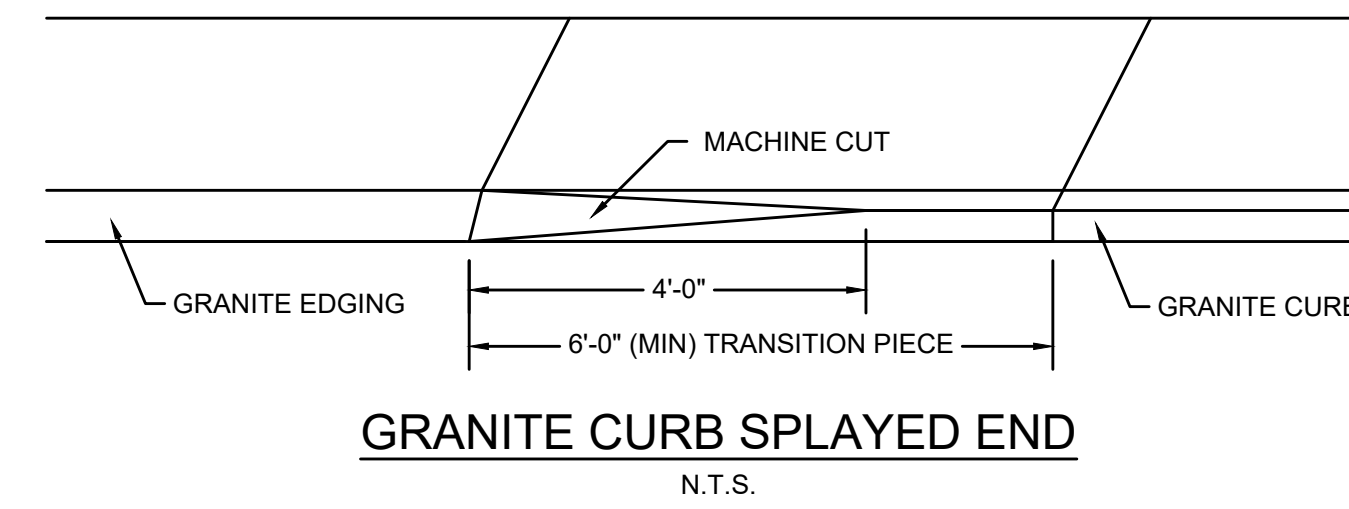
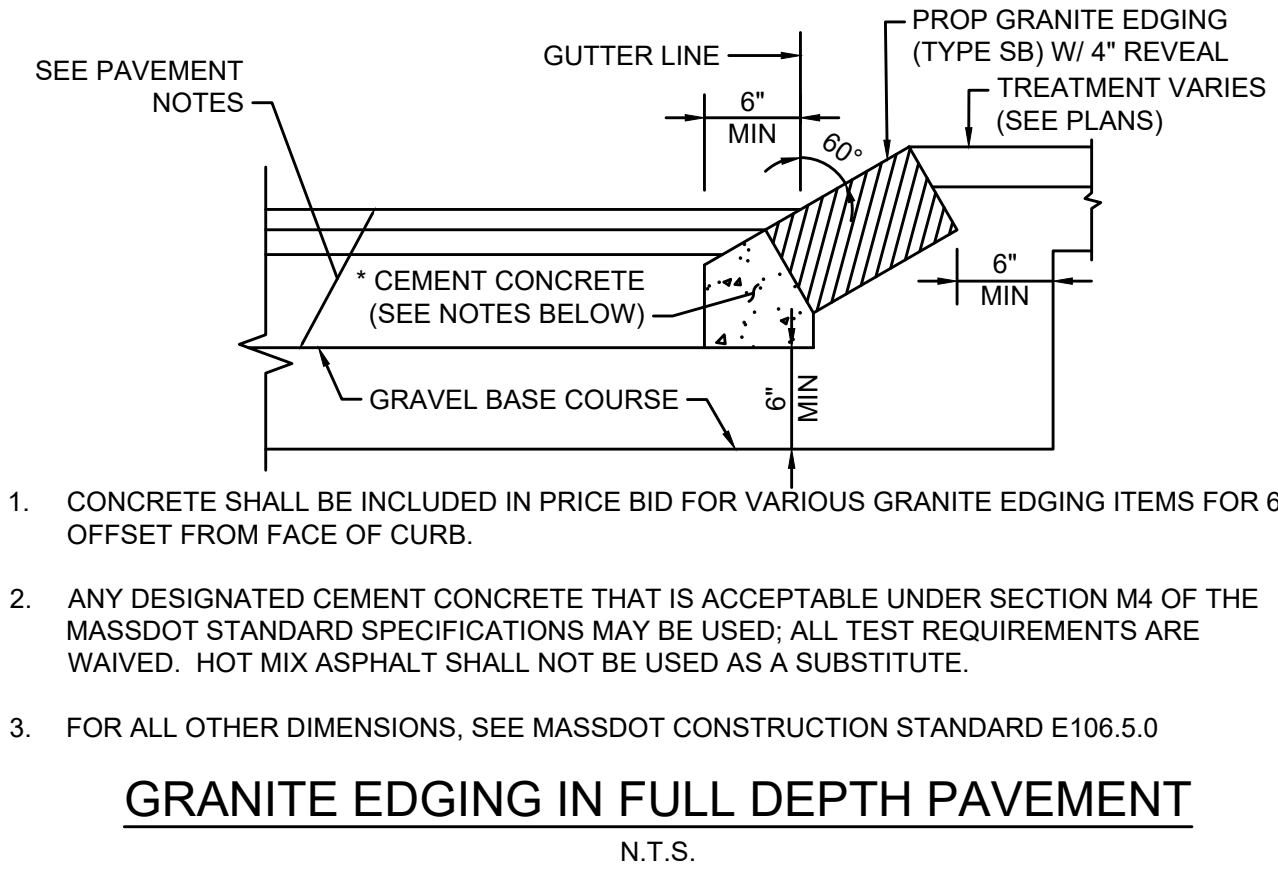
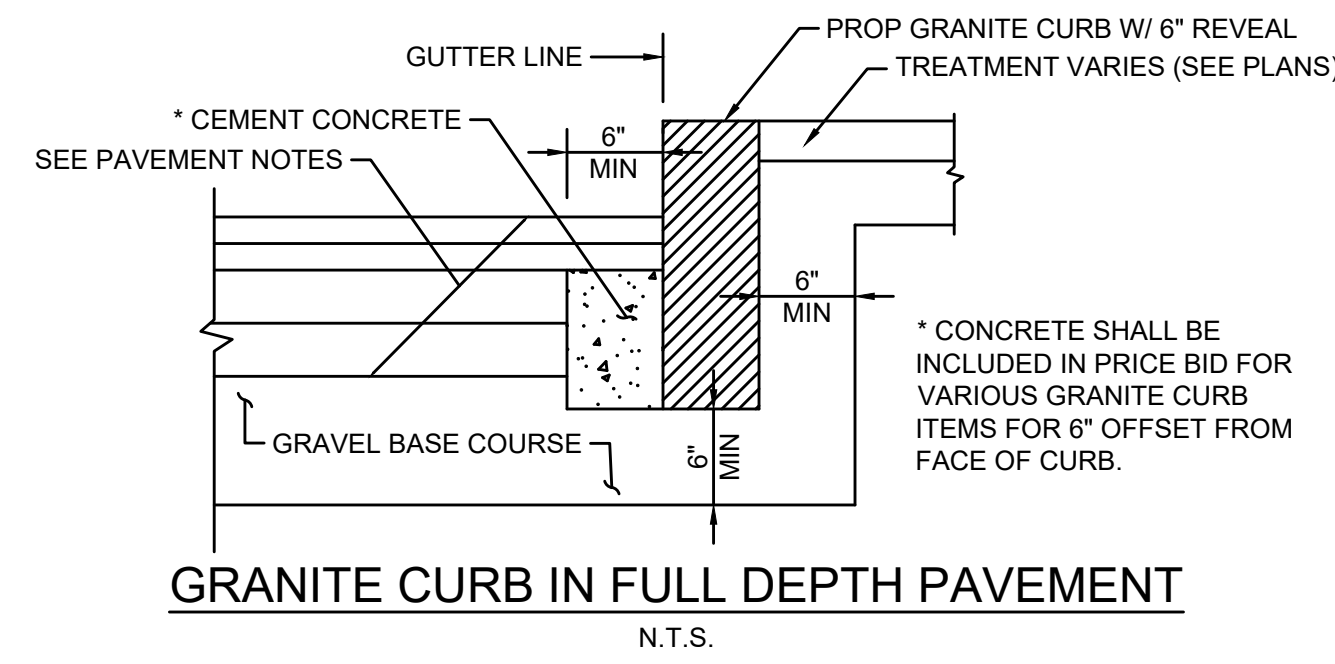
NOTES:
* EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6" IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2' OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3".

**SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.

UTILITY TRENCH
N.T.S.

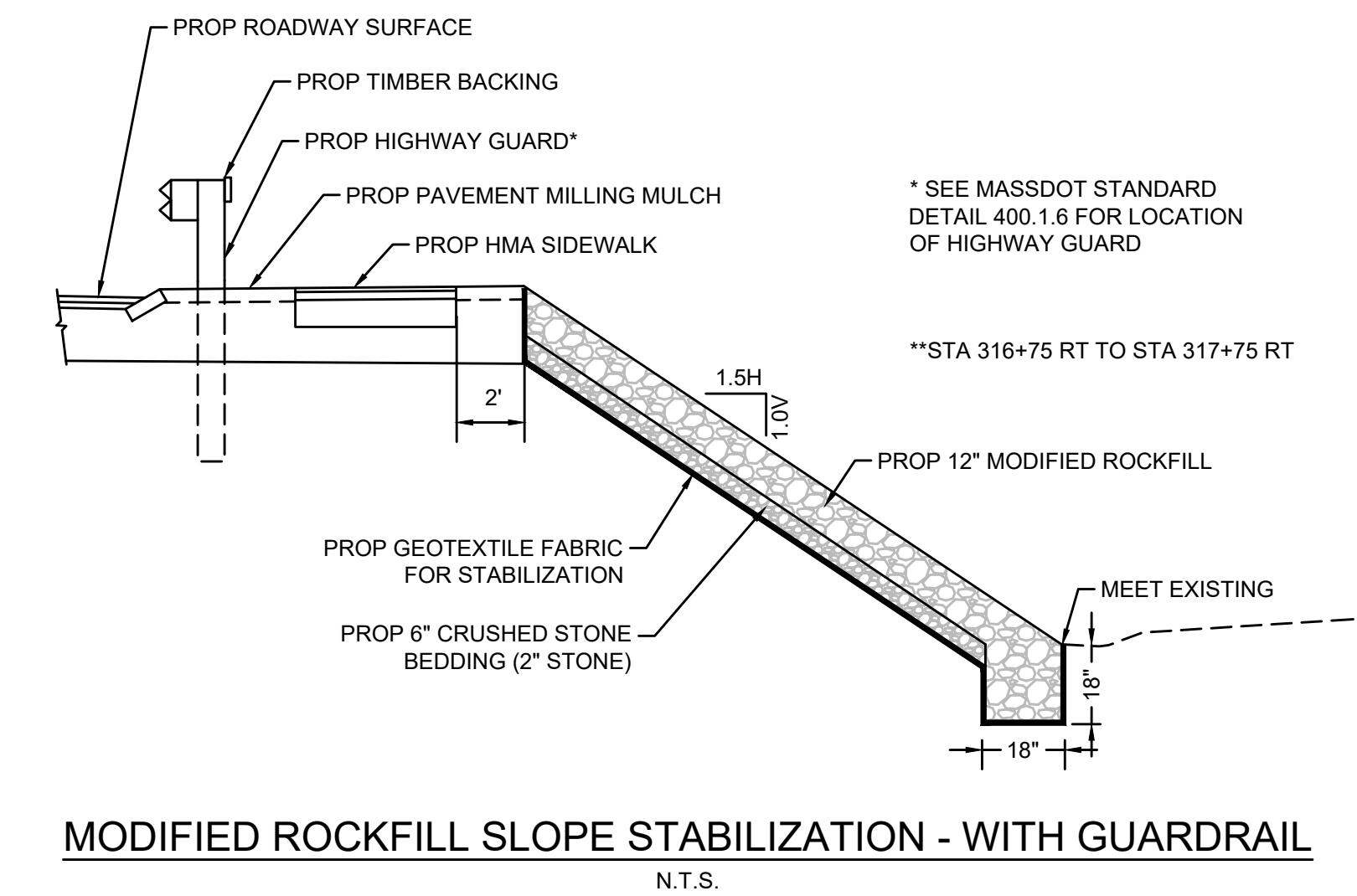
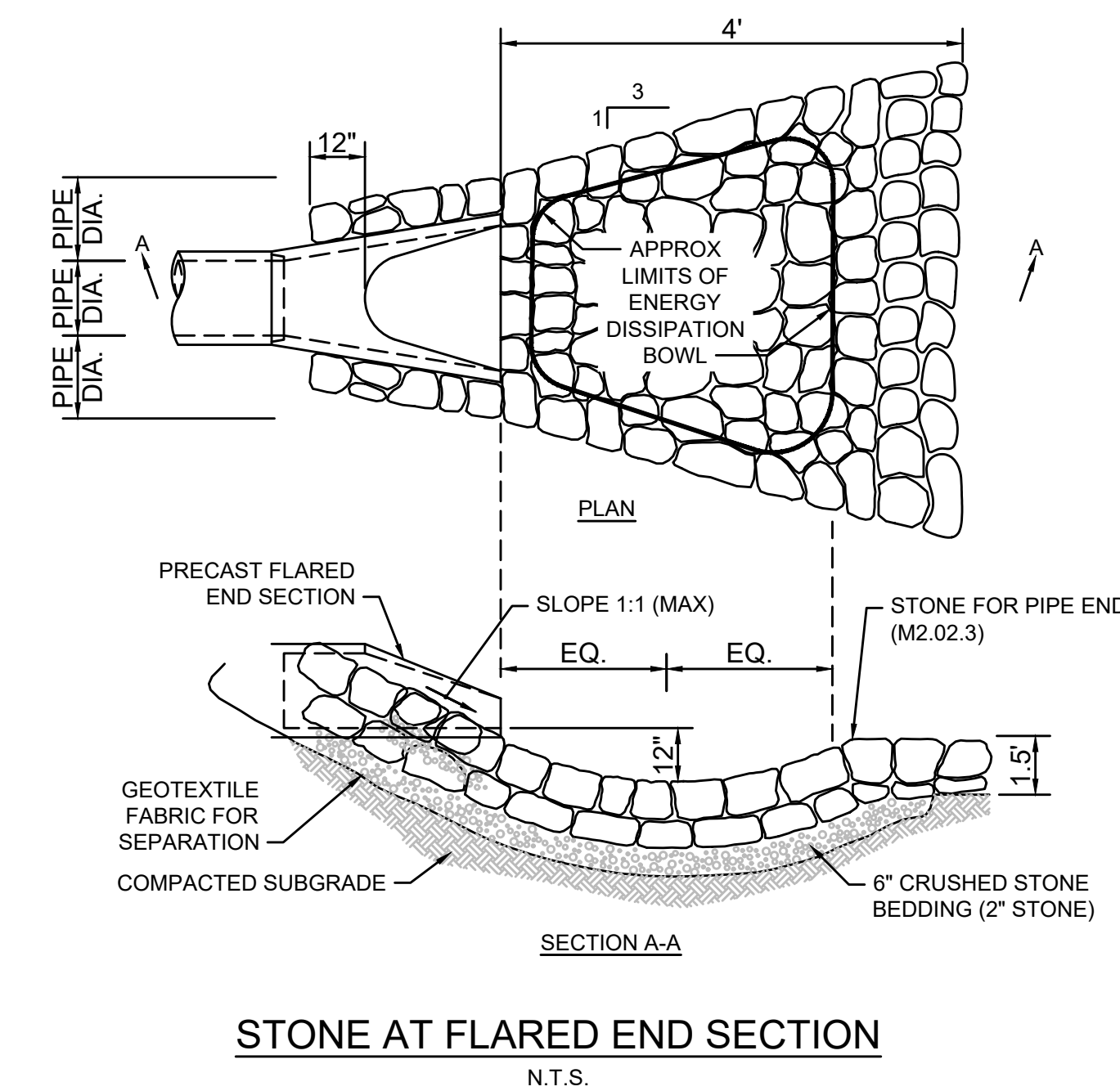
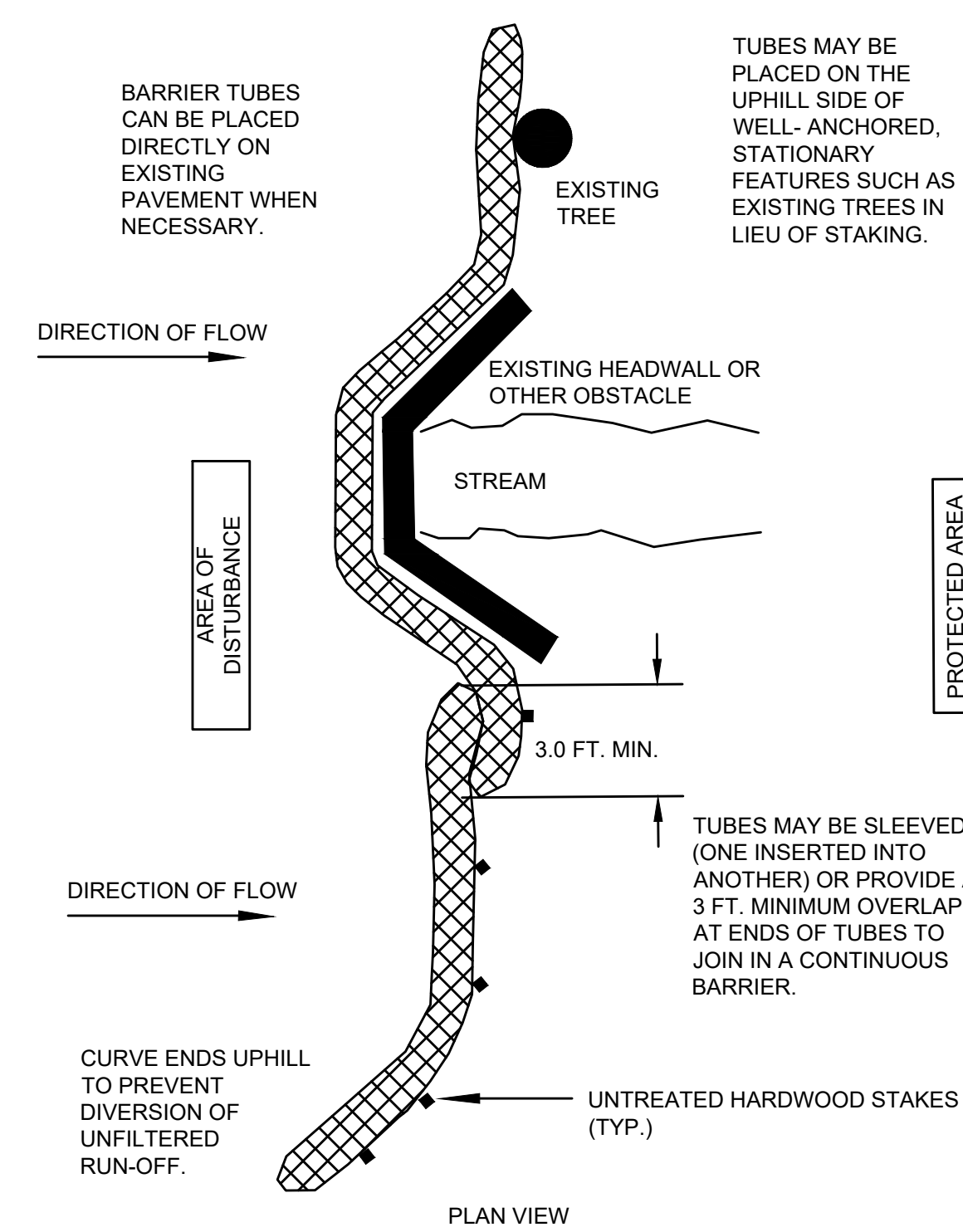
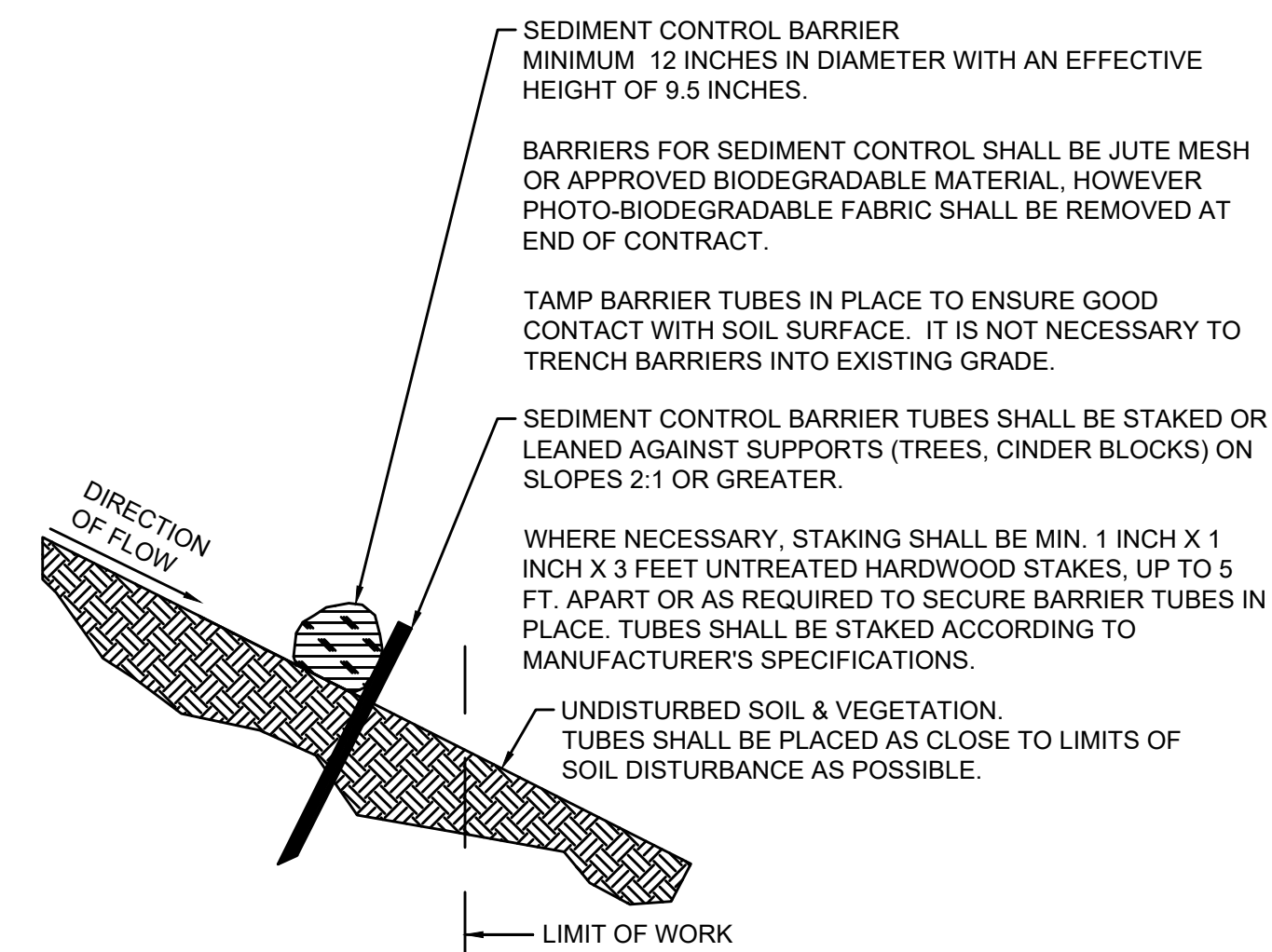


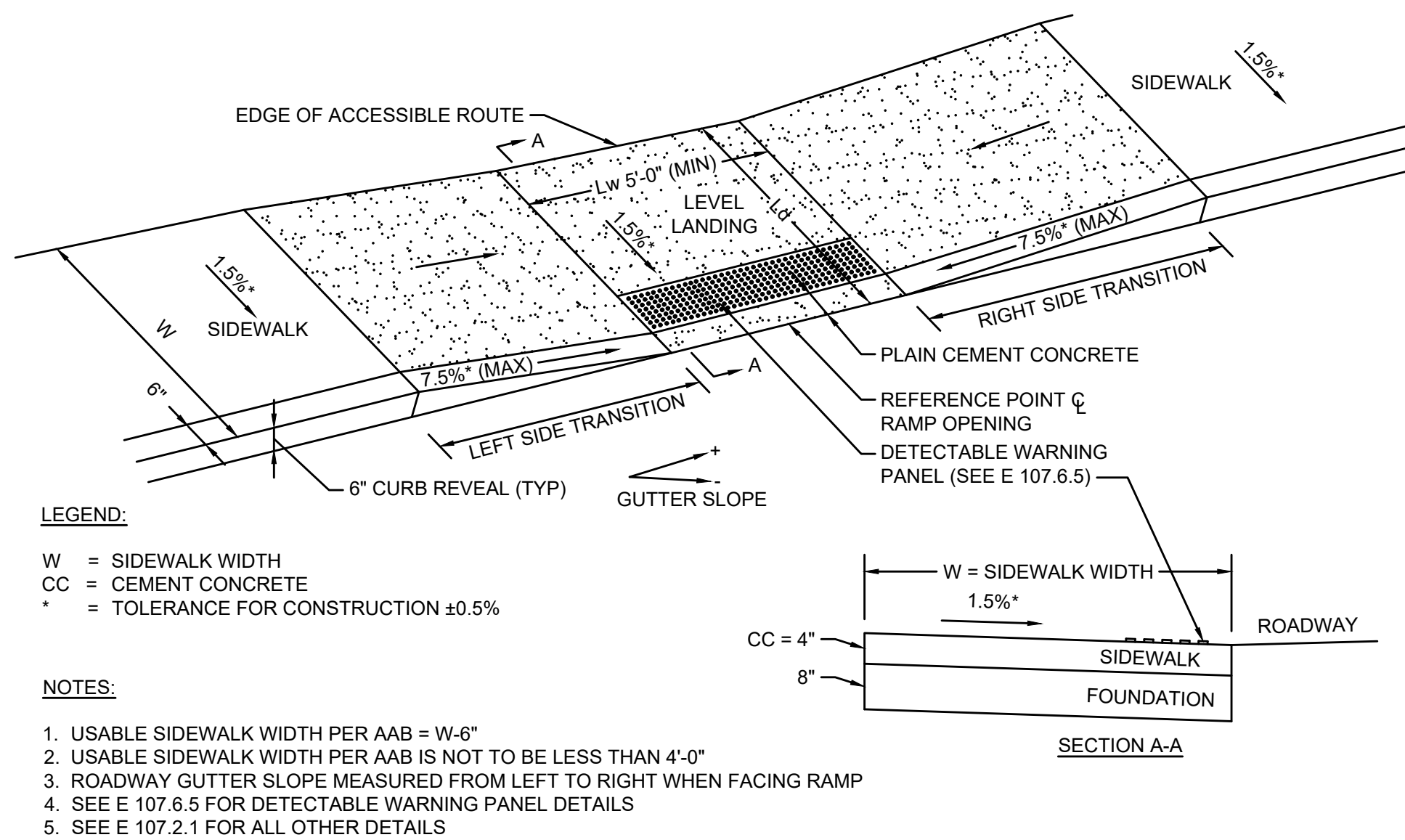
MEDIAN W/ PEDESTRIAN CUT THROUGH
N.T.S.



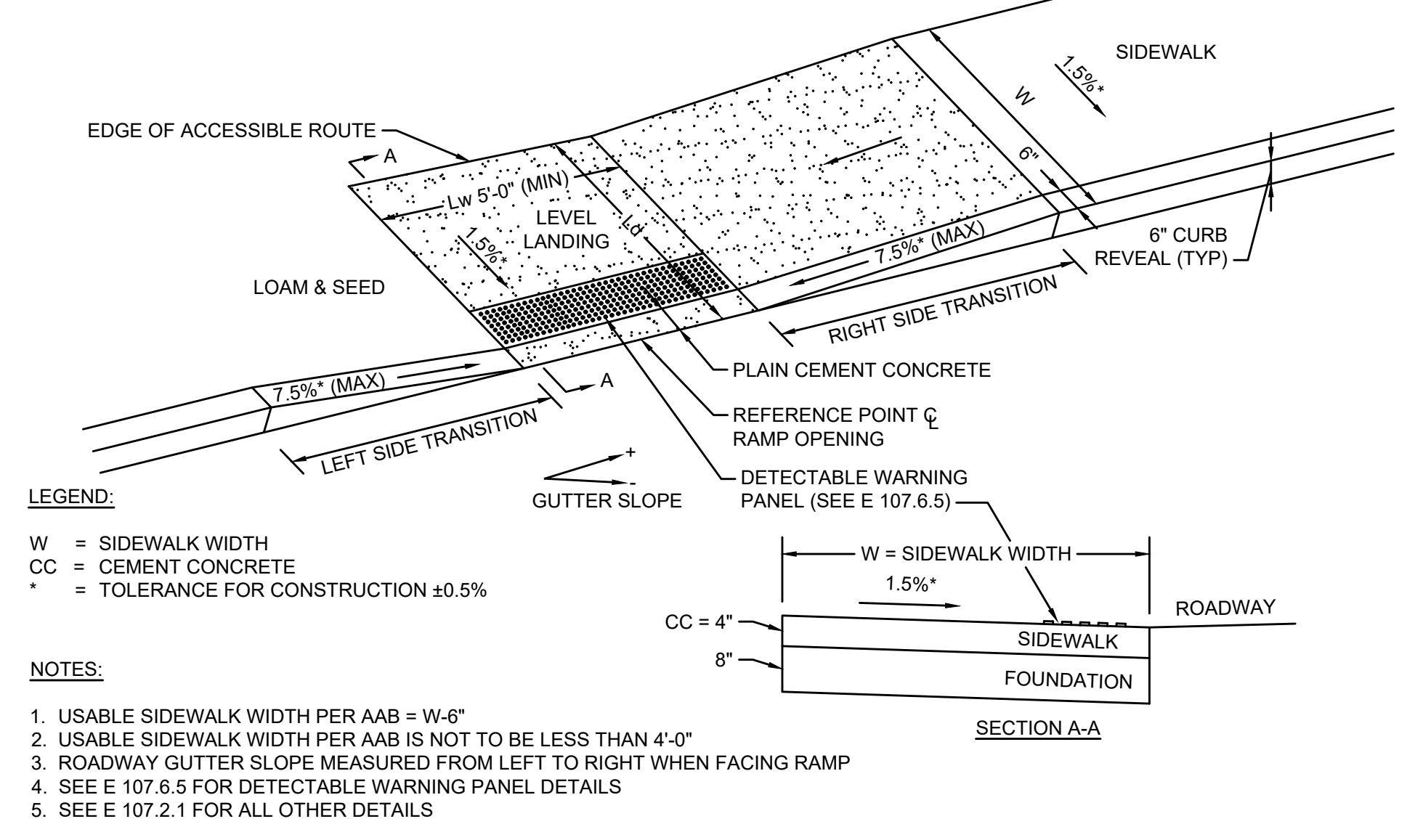
NOTES:

1. PROVIDE A MINIMUM BARRIER TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL BARRIER TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL BARRIER TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

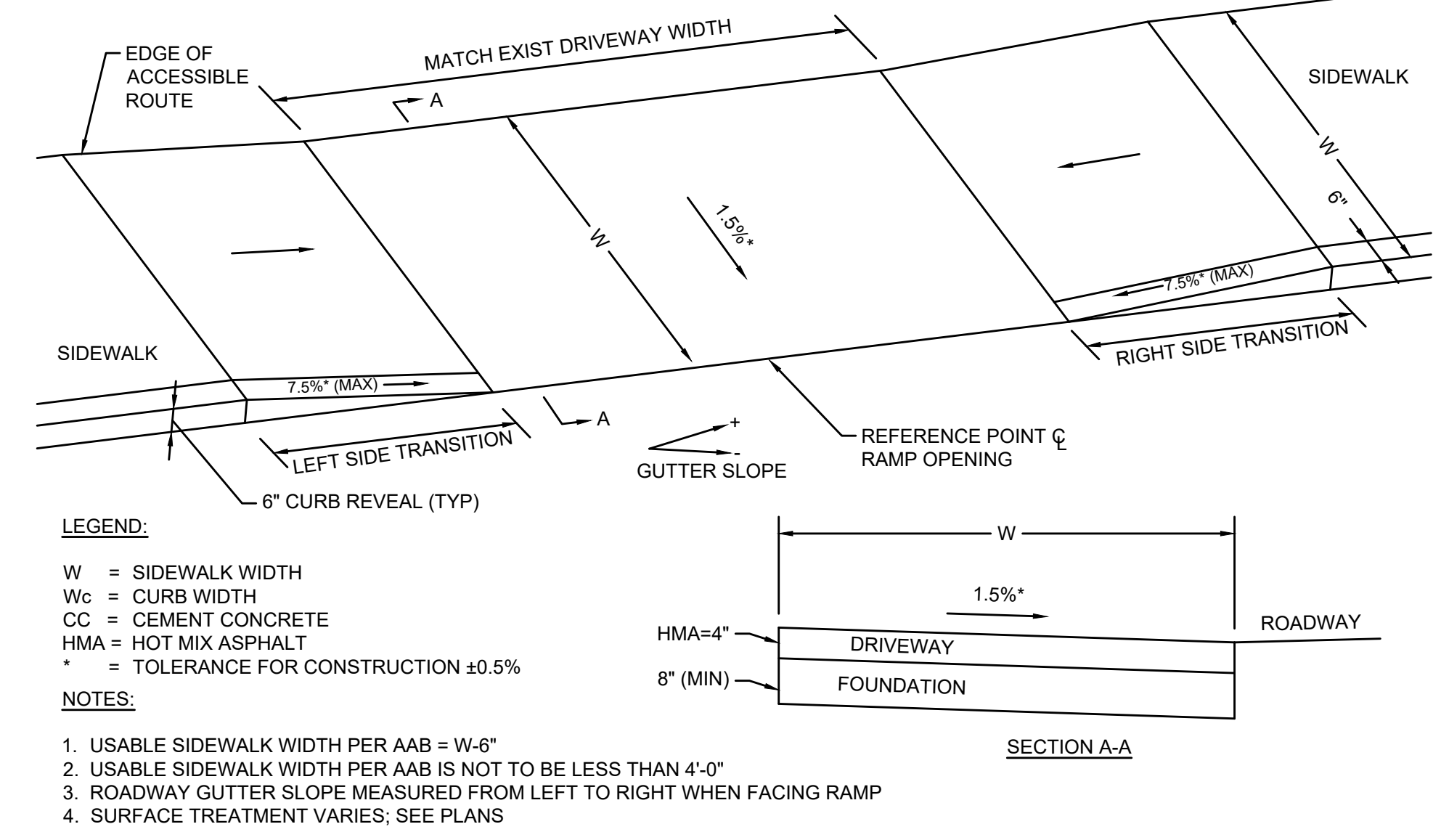




PEDSTRIAN CURB RAMP TYPE A
N.T.S.



PEDESTRIAN CURB RAMP TYPE C
N.T.S.

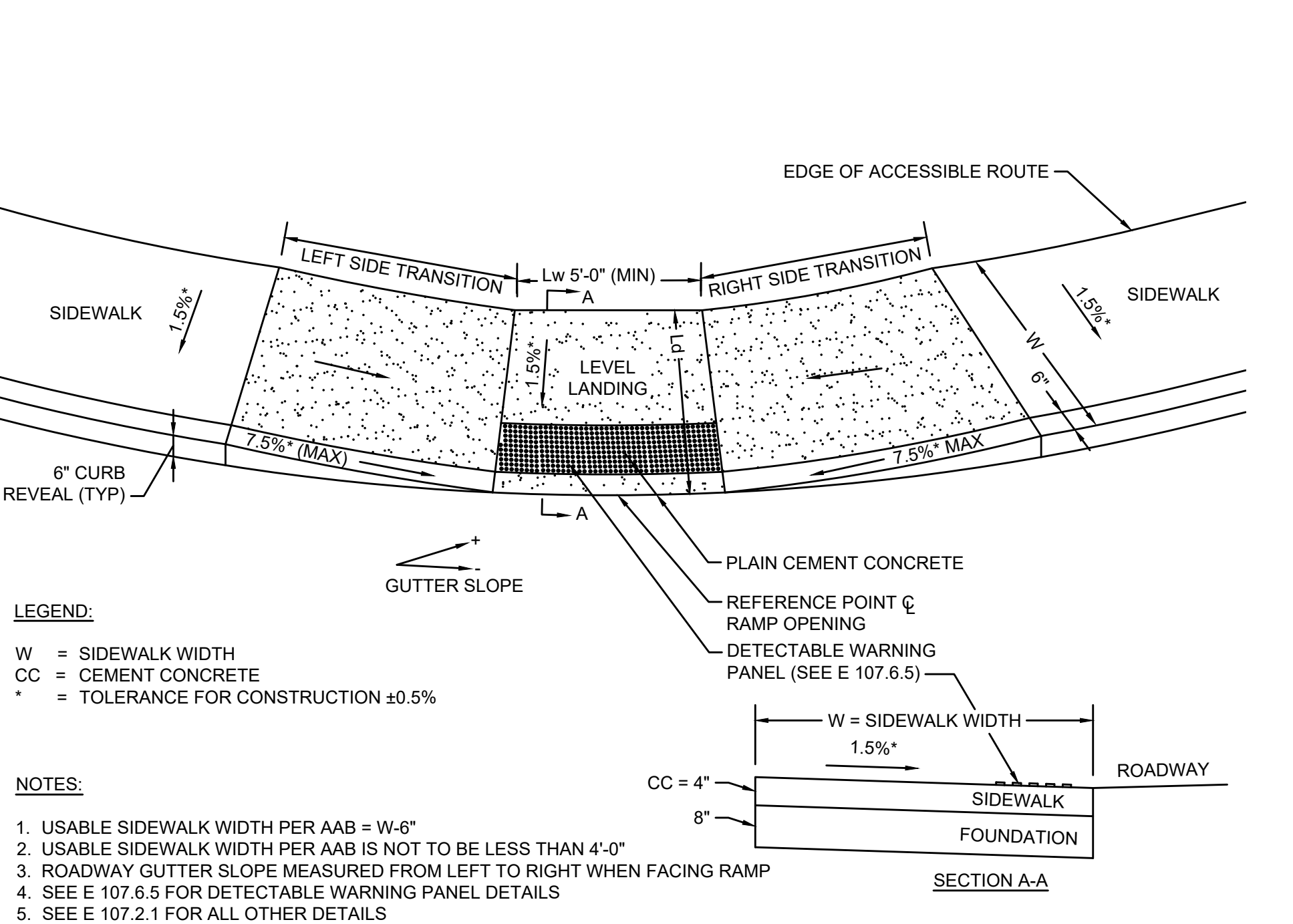


SIDEWALK THROUGH DRIVEWAY TYPE A
N.T.S.

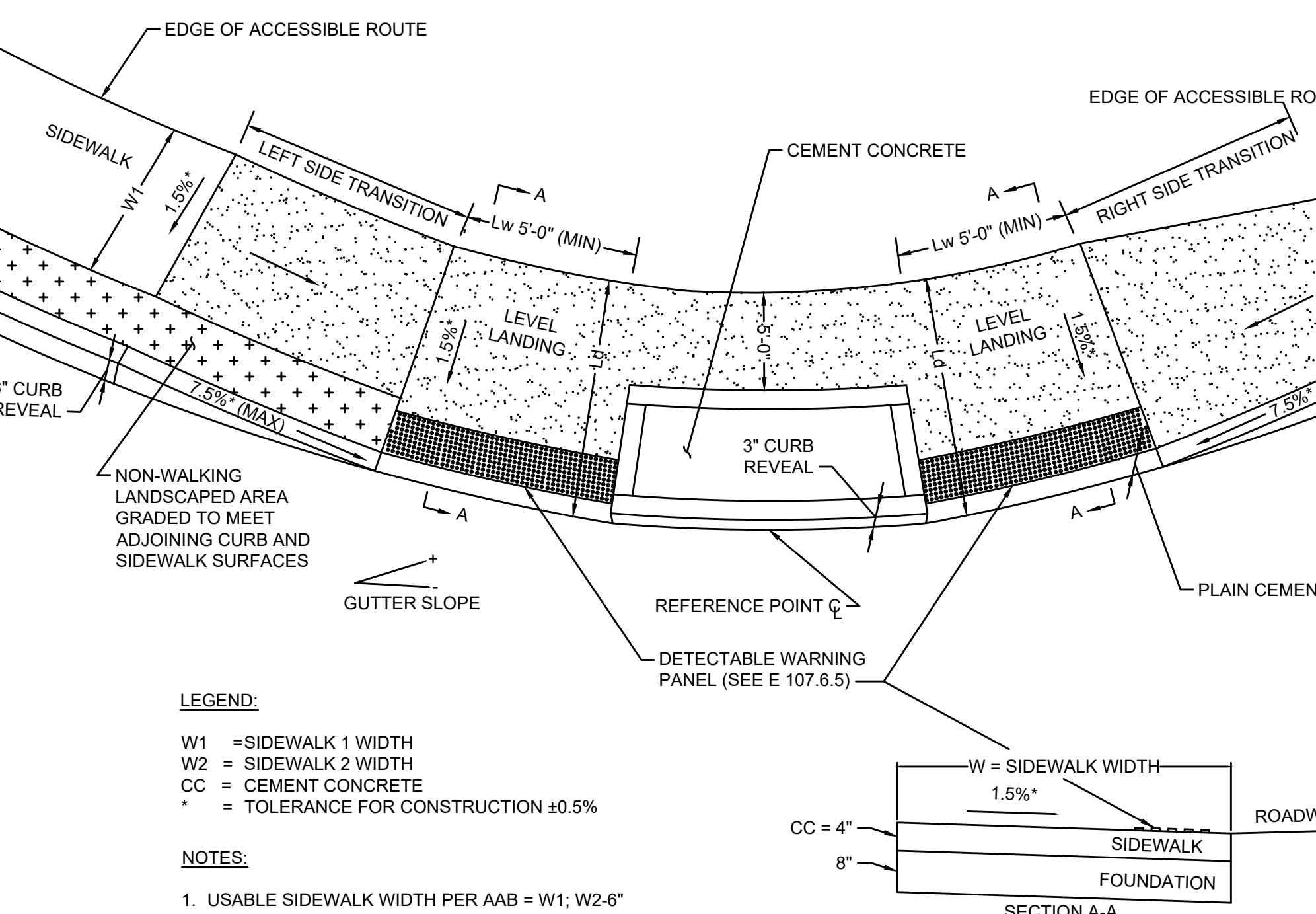
PEDESTRIAN CURB RAMP DATA												
RAMP #	BASELINE REFERENCE	STATION	OFFSET	LEVEL LANDING		ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION			RIGHT SIDE TRANSITION		
				WIDTH (Lw)	DEPTH (Ld)		TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH	TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH
△	ROUTE 140 NB	307+73	29' RT	5'-0"	5'-6"	+0.4%	6'-6"	6"	5'-6"	7'-8"	6"	-
△	WALNUT STREET	105+83	11' RT	5'-0"	9'-6"	+2.5%	6'-6"	6"	5'-6" (MIN)	11'-0"	6"	5'-6" (MIN)
△	ROUTE 140 SB	210+00	30' LT	5'-0"	5'-6"	-0.2%	7'-8"	6"	5'-6"	6'-6"	6"	-

PEDESTRIAN CURB RAMP DATA												
RAMP #	BASELINE REFERENCE	STATION	OFFSET	LEVEL LANDING		ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION			RIGHT SIDE TRANSITION		
				WIDTH (Lw)	DEPTH (Ld)		TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH	TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH
△	WALNUT STREET	104+18	11' LT	5'-0"	5'-6"	+0.4%	6'-6"	6"	-	7'-8"	6"	5'-6"

DRIVEWAY DATA													
DWY #	BASELINE REFERENCE	STATION	OFFSET	DRIVEWAY SURFACE	DWY WIDTH @ GUTTER	ROADWAY GUTTER SLOPE	WIDTH OF ACCESSIBLE ROUTE	LEFT SIDE			RIGHT SIDE		
								TRANSITION LENGTH	CURB REVEAL	SW WIDTH (W)	TRANSITION LENGTH	CURB REVEAL	SW WIDTH (W)
①	WALNUT STREET	108+23	11' RT	HMA	19.7'	+0.9%	5'-0"	6'-6"	6"	5'-0"	7'-8"	6"	5'-6"
②	WALNUT STREET	109+82	11' RT	HMA	19.8'	+0.2%	5'-0"	6'-6"	6"	5'-0"	7'-8"	6"	5'-0"



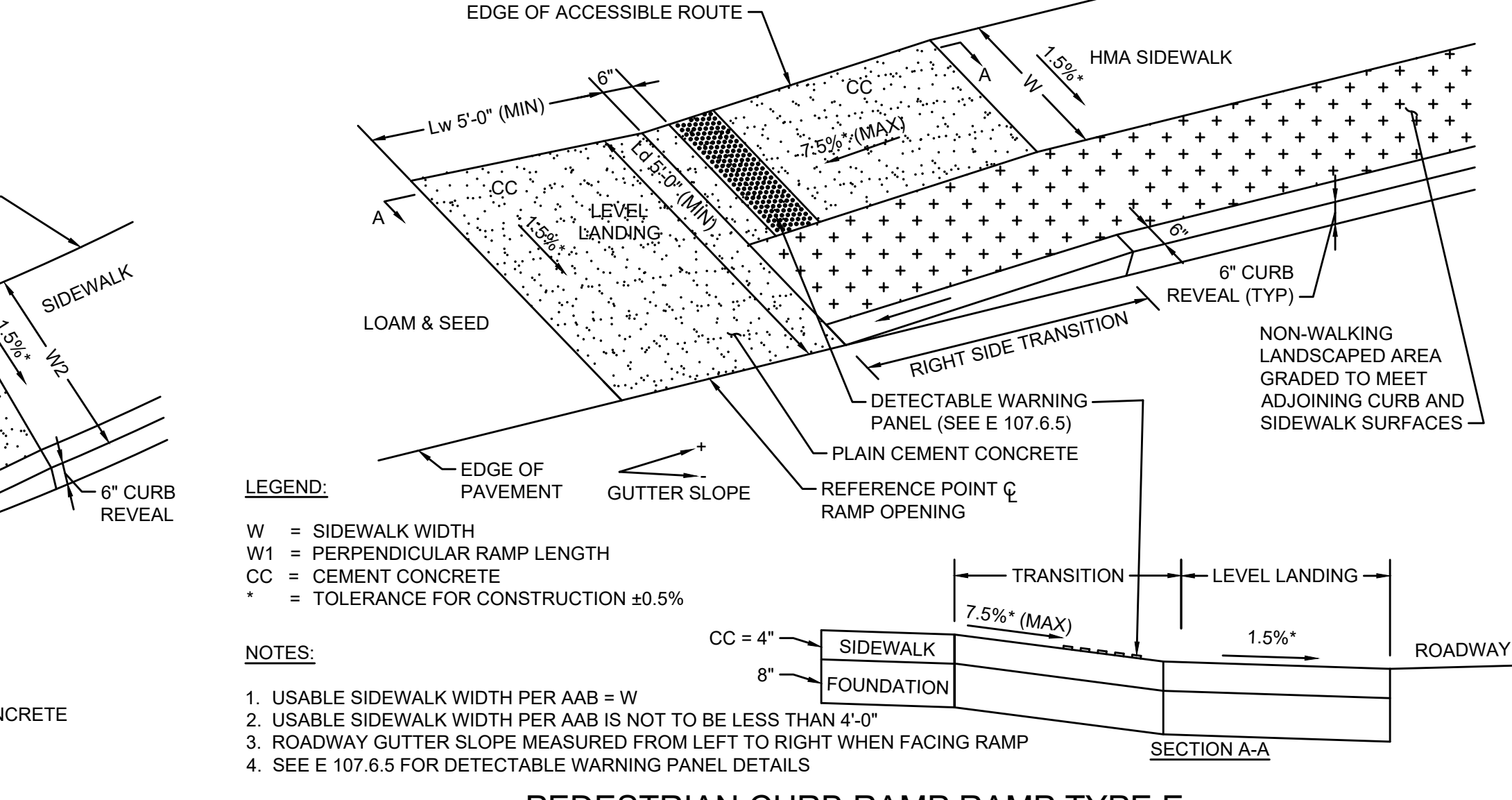
PEDESTRIAN CURB RAMP TYPE B
N.T.S.



PEDESTRIAN CURB RAMP TYPE D
N.T.S.

PEDESTRIAN CURB RAMP DATA												
RAMP #	BASELINE REFERENCE	STATION	OFFSET	LEVEL LANDING		ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION			RIGHT SIDE TRANSITION		
				WIDTH (Lw)	DEPTH (Ld)		TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH	TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH
△	ROUTE 140 SB	207+73	36' LT	5'-0"	6'-0"	-2.5%	-	6"	-	3'-3"	3"	6'-0"
△	WALNUT STREET	103+81	24' RT	5'-0"	6'-0"	-2.7%	5'-6"	3"	6'-0"	6'-6"	6"	-

PEDESTRIAN CURB RAMP DATA												
RAMP #	BASELINE REFERENCE	STATION	OFFSET	LEVEL LANDING		ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION			RIGHT SIDE TRANSITION		
				WIDTH (Lw)	DEPTH (Ld)		TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH	TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH
△	WALNUT STREET	106+22	34' LT	5'-0"	8'-6"	+0.6% LT -3.8% RT	6'-6"	6"	5'-0"	6'-6"	6"	5'-6"

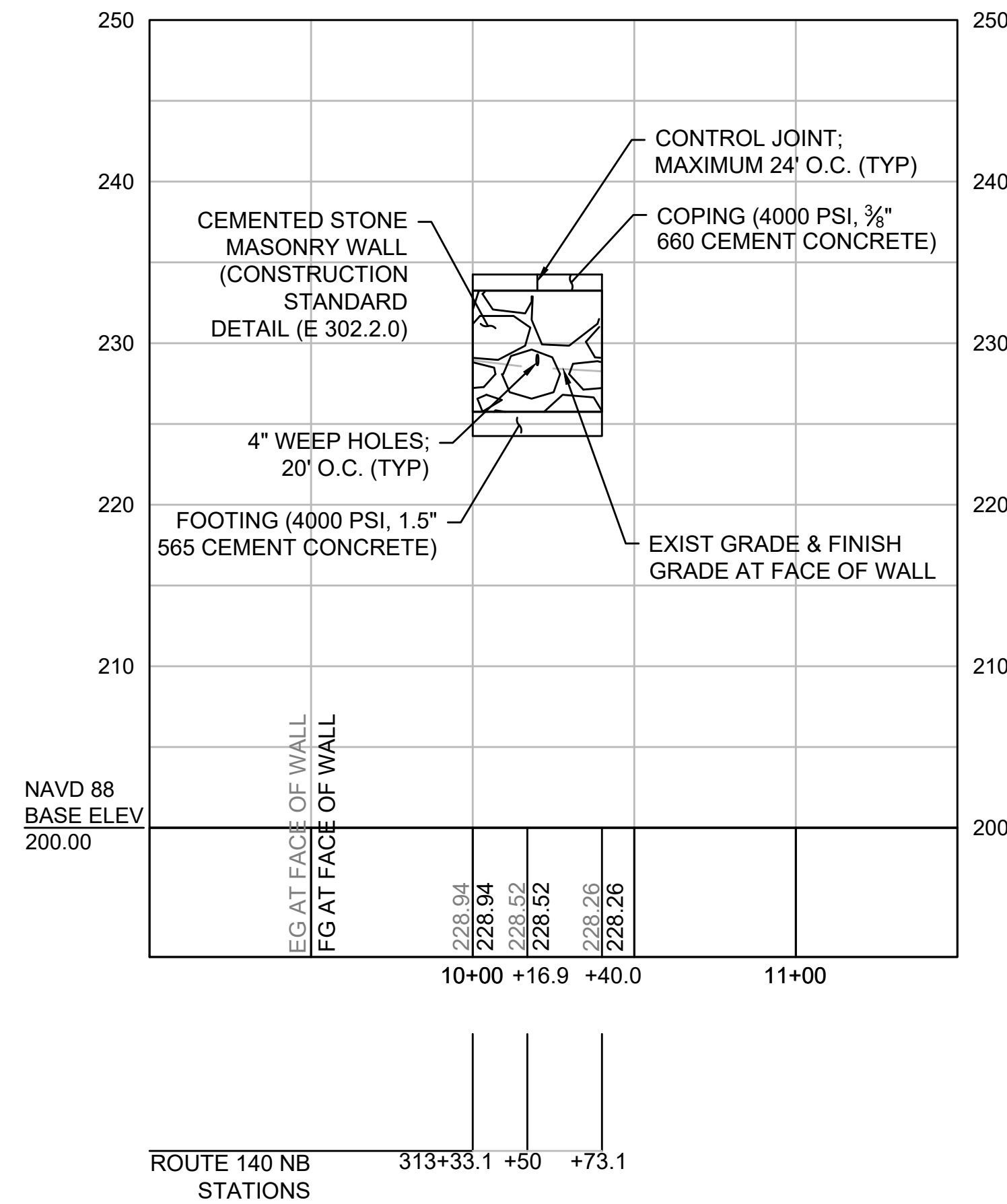


PEDESTRIAN CURB RAMP TYPE E
N.T.S.

PEDESTRIAN CURB RAMP DATA												
RAMP #	BASELINE REFERENCE	STATION	OFFSET	LEVEL LANDING		ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION			RIGHT SIDE TRANSITION		
				WIDTH (Lw)	DEPTH (Ld)		TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH	TRANSITION LENGTH	CURB REVEAL	SIDEWALK WIDTH
△	ROUTE 140 NB	319+24	22' RT	5'-0"	7'-6"	-0.5%	-	-	-	6'-6"	6"	5'-0"

- PEDESTRIAN CURB RAMP NOTES:**
- MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE DESIGNED TO 4.5% ±0.5% (7.5% ±0.5% FOR CURB RAMPS)
 - A MINIMUM OF 3'-0" CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
 - CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
 - RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
 - WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5x5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FT.
 - ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY.
 - DETECTABLE WARNING PANELS ARE REQUIRED ON ALL OF THE PROPOSED PEDESTRIAN CURB RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STANDARD E 107.6.5 (JUNE 2014). CONTRACTOR SHALL PROVIDE 6" BETWEEN DETECTABLE WARNING PANEL AND EDGE OF CONCRETE WHERE IT ABUTS LOAM & SEED.
 - PEDESTRIAN CURB RAMP SLOPES AND CROSS SLOPES SHALL HAVE A CONSTRUCTION TOLERANCE OF ±0.5%.
 - DETECTABLE WARNING PANELS SHALL BE BRICK RED IN COLOR AS APPROVED BY THE FOXBOROUGH DPW.

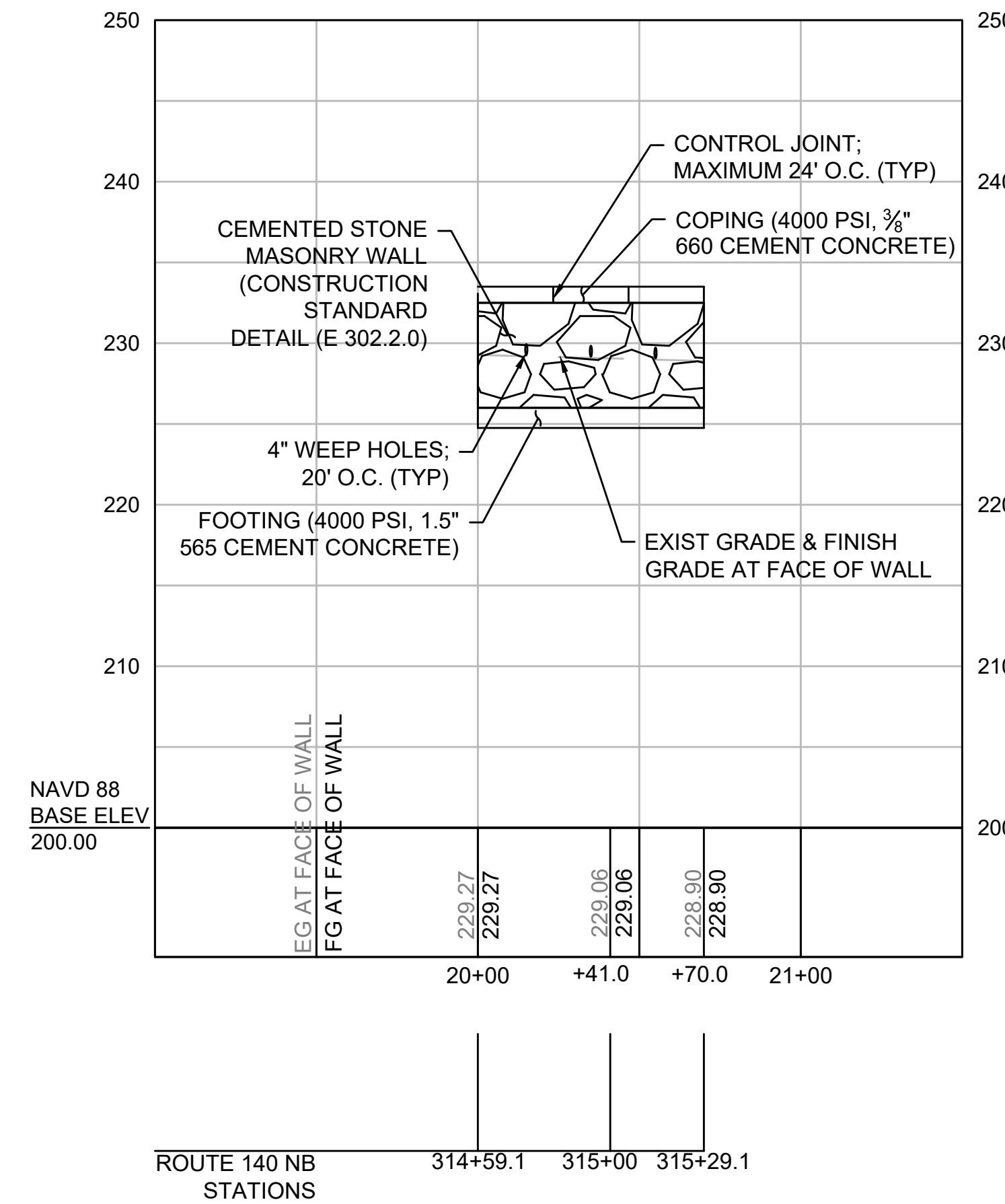
STONE MASONRY WALL LOCATION 1



WALL ALIGNMENT STATION	ROUTE 140 NB	OFFSET FROM ROUTE 140 NB BASELINE	ELEV. TOP OF WALL	H	ELEV. TOP OF FOOTING	ELEV. BOTTOM OF FOOTING	WIDTH OF FOOTING
10+00.0	313+33.1	36.1' RT	234.25	8.5	225.75	224.25	5.25
10+16.9	313+50.0	35.8' RT	234.25	8.5	225.75	224.25	5.25
10+40.0	313+73.1	35.5' RT	234.25	8.5	225.75	224.25	5.25

NOTE: WALL IS TO BE BUILT IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARD DETAIL E 302.2.0

STONE MASONRY WALL LOCATION 2



WALL ALIGNMENT STATION	ROUTE 140 NB	OFFSET FROM ROUTE 140 NB BASELINE	ELEV. TOP OF WALL	H	ELEV. TOP OF FOOTING	ELEV. BOTTOM OF FOOTING	WIDTH OF FOOTING
20+00.0	314+59.1	34.1' RT	233.50	7.50	226.00	224.75	4.50
20+41.0	315+00.0	33.4' RT	233.50	7.50	226.00	224.75	4.50
20+70.0	315+29.1	32.9' RT	233.50	7.50	226.00	224.75	4.50

NOTE: WALL IS TO BE BUILT IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARD DETAIL E 302.2.0

H (FT)	W (FT)	D (FT)	CONCRETE MASONRY FOOTING		STONE MASONRY EXCLUDING COPING	
			SECTION AREA (SQ. FT.)	VOLUME PER UNIT LENGTH (CU. YD./LIN. FT.)	SECTION AREA (SQ. FT.)	VOLUME PER UNIT LENGTH (CU. YD./LIN. FT.)
5.0	0.75	1.25	4.06	0.150	9.00	0.333
5.5			4.38	0.162	10.63	0.394
6.0			4.69	0.174	12.38	0.458
6.5			5.00	0.185	14.16	0.524
7.0			5.31	0.197	16.05	0.594
7.5			5.63	0.208	18.06	0.669
8.0	1.0	1.5	7.50	0.278	20.16	0.747
8.5			7.88	0.292	22.40	0.829
9.0			8.25	0.306	24.75	0.917
9.5			8.63	0.319	27.22	1.008
10.0	1.2	2.0	12.40	0.459	29.80	1.104
10.5			12.90	0.478	32.50	1.204
11.0			13.40	0.496	35.28	1.307
11.5			13.90	0.515	38.21	1.415
12.0			14.40	0.533	41.25	1.528
12.5			14.90	0.552	44.41	1.645
13.0	1.5	2.5	20.00	0.741	47.68	1.766
13.5			20.63	0.764	51.07	1.891
14.0			21.25	0.787	54.53	2.020
14.5			21.88	0.810	58.14	2.153
15.0			22.50	0.833	61.88	2.292
15.5			23.13	0.856	65.72	2.434
16.0			23.75	0.880	69.68	2.581
16.5	1.8	3.0	30.15	1.117	73.76	2.732
17.0			30.90	1.144	77.90	2.885
17.5			31.65	1.172	82.21	3.045
18.0			32.40	1.200	86.63	3.208
18.5			33.15	1.228	91.38	3.384
19.0			33.90	1.256	96.25	3.565
19.5			34.65	1.283	101.25	3.750
20.0			35.40	1.311	106.38	3.940
20.5			36.15	1.339	111.63	4.134
21.0			36.90	1.367	117.00	4.333
21.5			37.65	1.394	122.50	4.537
22.0			38.40	1.422	128.13	4.745
22.5			39.15	1.450	133.88	4.958
23.0			39.90	1.478	139.75	5.176
23.5			40.65	1.506	145.75	5.398
24.0			41.40	1.533	151.88	5.625
24.5			42.15	1.561	158.13	5.856
25.0			42.90	1.589	164.50	6.093
25.5			43.65	1.617	171.00	6.333
26.0			44.40	1.644	177.63	6.579
26.5			45.15	1.672	184.38	6.829

COPING TO BE PRECAST CONCRETE OR GRANITE OF UNIFORM DEPTH FOR THE ENTIRE LENGTH. DEPTH OF CONCRETE TO BE 1/12 THE AVERAGE "H" WITHIN THE LIMITS SHOWN. DEPTH OF GRANITE TO BE AS SHOWN ON THE PLANS, 6" OR 9".

FOR CHAIN LINK FENCE ON TOP OF WALL, THE COPING SHALL BE CONCRETE CAST-IN-PLACE WITH A MINIMUM DEPTH OF 12". THE LENGTH OF GALVANIZED PIPE SLEEVES FOR FENCE POSTS SHALL BE EQUAL TO THE DEPTH OF COPING.

NOTES:

- COPING OVERHANG TO BE APPROXIMATELY 3" FOR WALLS 10' OR MORE IN HEIGHT AND APPROXIMATELY 2" FOR WALLS LESS THAN 10' IN HEIGHT; IN A CONTINUOUS WALL OF VARYING HEIGHT THE OVERHANG WILL BE APPROXIMATELY 2" TO 3" FOR THE ENTIRE LENGTH.
- ALL DIMENSIONS SHOWN ARE MINIMUM.
- PAYMENT WILL BE BASED ON THE ACCOMPANYING TABLE.
- TO BE FOUNDED ON SUITABLE SOIL.

