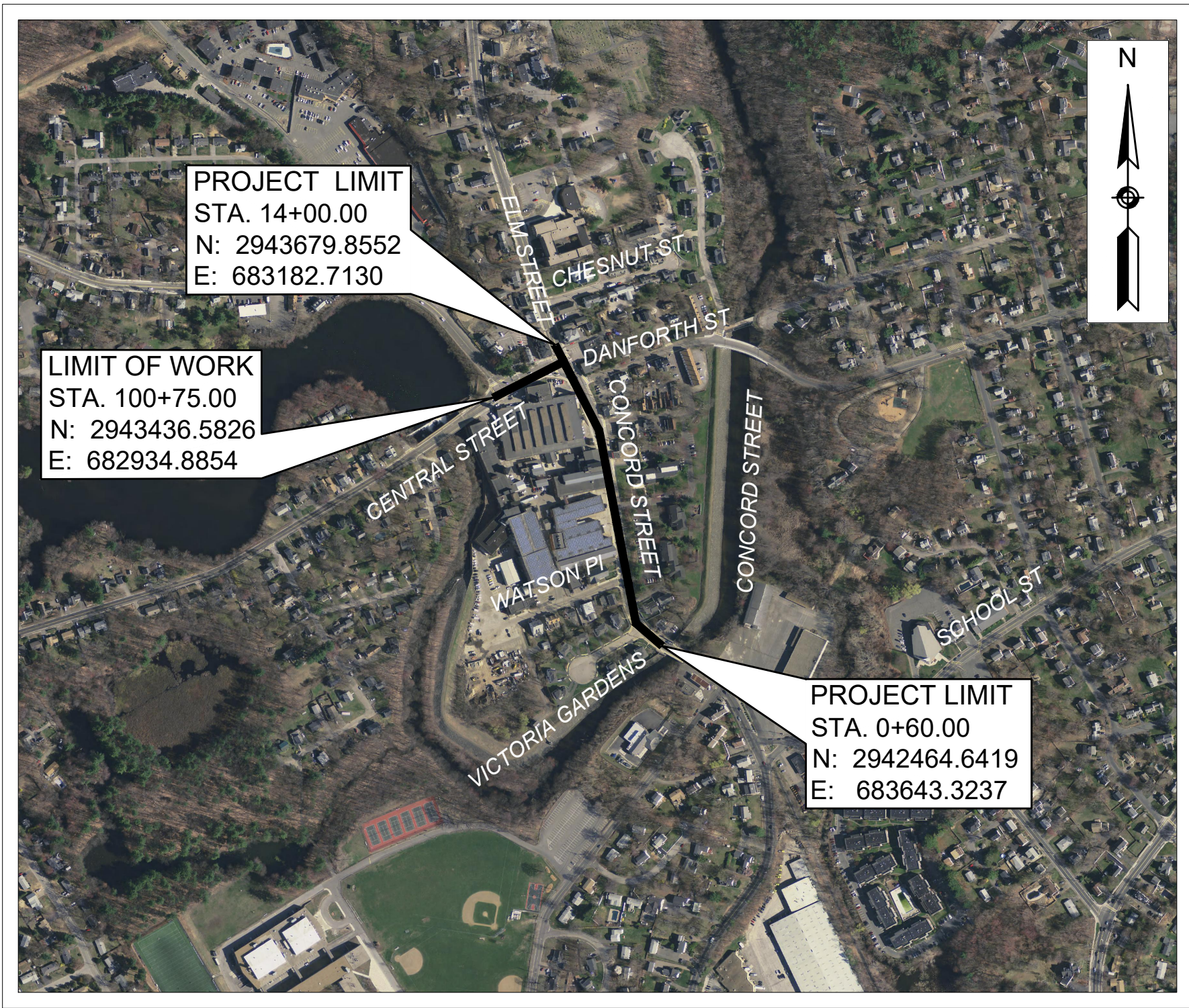


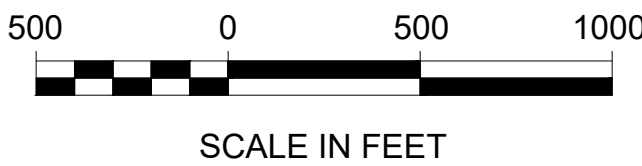
DEPARTMENT OF PUBLIC WORKS
CITY OF FRAMINGHAM, MASSACHUSETTS
PROPOSED ROADWAY IMPROVEMENTS
TO
CENTRAL STREET AND CONCORD STREET

CONTRACT PW #

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LOCATION PLAN



LENGTH OF PROJECT = 1340.00 FEET = 0.254 MILES

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2024 (AS AMENDED), THE MASSDOT SUPPLEMENTAL SPECIFICATIONS DATED MARCH 31, 2024, THE MASSDOT 2017 CONSTRUCTION STANDARD DETAILS, THE CITY OF FRAMINGHAM CONSTRUCTION STANDARDS WITH ALL REVISIONS, THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, MASSDOT NOTES ON WALKS AND WHEELCHAIR RAMPS FOR DESIGNERS AND CONSTRUCTION ENGINEERS DATED MARCH 2012, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE MASSDOT 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT 2015 OVERHEAD SIGNAL STRUCTURE & FOUNDATION STANDARD DRAWINGS, THE MASSDOT 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: TITLE SHEET AND INDEX		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 1 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

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ABBREVIATIONS

GENERAL	
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
AC	ASBESTOS CEMENT
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
LDCC	LOW-DENSITY CELLULAR CONCRETE
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
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
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY

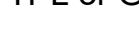
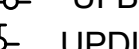
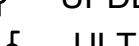
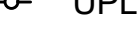
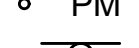
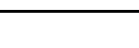
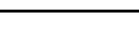
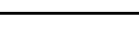
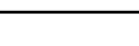
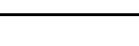
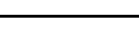
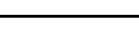
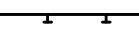
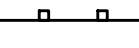
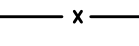
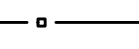
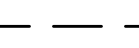
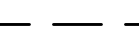
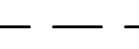
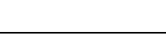
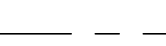
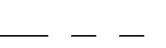
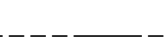
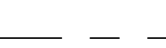
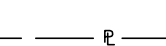
ABBREVIATIONS (cont.)

GENERAL	
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 DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

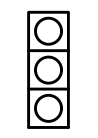
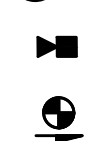
GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER ON BRIDGE OR 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
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS
		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)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		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
		BRICK PAVER STRIP

PAVEMENT MARKINGS SYMBOLS

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

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		360° 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
		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

GENERAL NOTES

1. THE WORK UNDER THIS PROJECT INCLUDES BUT IS NOT LIMITED TO PAVEMENT MICROMILLING AND RESURFACING, FULL DEPTH ROADWAY RECONSTRUCTION, SIDEWALK CONSTRUCTION, INSTALLATION OF DRAINAGE STRUCTURES AND PIPES, PLACEMENT OF PAVEMENT MARKINGS, PROTECTION OF EXISTING UTILITIES TO REMAIN, GRADING, REPLACEMENT OF TRAFFIC SIGNALS, INSTALLATION OF TRAFFIC SIGNS, AND TRAFFIC MAINTENANCE DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL CONFLICTS BETWEEN THE EXISTING UTILITIES AND PROPOSED WORK. THE ENGINEER RESERVES THE RIGHT TO MODIFY THE DESIGN TO REALIGN PIPING AND STRUCTURE LOCATIONS AND INVERTS TO SUIT ACTUAL FIELD CONDITIONS ENCOUNTERED AT NO ADDITIONAL COST TO THE CITY.
3. ALL EXISTING STREET NAME, REGULATORY, GUIDE, AND WARNING SIGNS, INCLUDING POSTS, WITHIN THE LIMITS OF WORK ARE TO BE RETAINED UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL RETAIN AND PROTECT ALL CURBS, FENCES, WALLS, TREES, SHRUBS, POSTS, LANDSCAPE FEATURES, AND OTHER MISCELLANEOUS ITEMS WITHIN ABUTTING PROPERTIES UNLESS OTHERWISE NOTED. WHEN RETAINING THOSE ITEMS IS NOT PRACTICAL IN THE OPINION OF THE ENGINEER, THE CONTRACTOR SHALL REMOVE, STOCKPILE, PROTECT AND RESET THE ITEMS. THE CONTRACTOR SHALL REPLACE ITEMS DAMAGED DURING REMOVAL, STOCKPILING, OR RESETTING DUE TO NEGLIGENCE, CARELESSNESS, OR MISHANDLING WITH EQUIVALENT NEW ITEMS AT NO COST TO THE CITY.
5. CONTRACTOR SHALL NOT PARK OR STORE CONSTRUCTION EQUIPMENT, MATERIALS OR VEHICLES UNDER THE DRIPLINE OF ANY TREE.
6. THE CONTRACTOR SHALL PROVIDE ALL SAFETY CONTROL (SIGNS, REFLECTORIZED DRUMS, ETC) FOR CONSTRUCTION OPERATIONS IN ACCORDANCE WITH THE TRAFFIC MANAGEMENT PLANS INCLUDED HEREIN AND THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
7. ALL LANDSCAPED AREAS BETWEEN THE PROPOSED EDGE OF PAVEMENT AND SLOPE LIMITS, INCLUDING BUT NOT LIMITED TO LAWNS, BARK MULCH, PLANTING BEDS, ETC., SHALL BE REPLACED IN KIND.
8. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES PRIOR TO THE START OF WORK.
9. ALL UTILITIES AND THEIR APPURTENANCES SHALL BE RETAINED AND PROTECTED UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR SHALL NOT WORK BEYOND THE LINES SHOWN ON THE PLANS AS PROPOSED SLOPE LIMITS, UNLESS APPROVED BY THE ENGINEER.
11. THE CONTRACTOR SHALL TRANSITION THE CURB TO MATCH THE EXISTING CONDITIONS AT THE LIMITS OF WORK WHERE NEW CURB IS PROPOSED OR EXISTING CURB IS RESET.
12. ALL CURB, CURB INLET AND CURB CORNER REMOVAL SHOULD BE INCLUDED UNDER ITEM 594.
13. SAWCUTTING OF ASPHALT PAVEMENT AND PORTLAND CEMENT CONCRETE SHALL BE INCIDENTAL TO OTHER CONTRACT ITEMS.

SURVEY PLAN NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS BASE MAP ARE THE RESULT OF AN ON THE GROUND INSTRUMENT SURVEY PERFORMED BETWEEN JANUARY 18, 2017 AND JUNE 22, 2017 BY GREEN INTERNATIONAL AFFILIATES, INC.
2. THIS DRAWING WAS PREPARED SOLELY FOR AND IS INTENDED FOR THE WORK ASSOCIATED WITH THIS PROJECT. THE USE OR REUSE OF THESE DRAWINGS FOR OTHER PURPOSES OR BY PARTIES NOT DIRECTLY CONTRACTED TO THIS PROJECT IS PROHIBITED WITHOUT PRIOR WRITTEN PERMISSION FROM THE CITY OF FRAMINGHAM.
3. HORIZONTAL DATUM IN MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD83. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1929 (NGVD29).

UTILITY NOTES

1. THE CONTRACTOR IS HEREBY MADE AWARE THAT EXISTING UTILITIES, INCLUDING BUT NOT LIMITED TO EXISTING WATER, SEWER AND DRAIN PIPES; DRAINAGE AND SEWER STRUCTURES; GAS LINES, COMMUNICATION LINES AND UTILITY POLES, MAY NEED TO BE PROTECTED AND/OR SHORED UP DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS UNDER THIS PROJECT. THE COST OF THE WORK REQUIRED FOR THE PROTECTION, MAINTENANCE AND SUPPORT OF THESE OR OTHER EXISTING ABOVE GROUND OR UNDERGROUND UTILITIES IN THE VICINITY OF THE PROPOSED WORK SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK UNDER THIS CONTRACT.
2. THIS PLAN WAS PREPARED IN CONFORMANCE WITH AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD C/ASCE 38-02 "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA", QL"C". REFER TO UTILITY QUALITY LEVEL INFORMATION INDEX. ACCURACY OF UTILITY LOCATIONS IS NOT GUARANTEED.
3. BELOW GROUND STRUCTURES, UNLESS DIMENSIONED, ARE SYMBOLIC ONLY.
4. PRIOR TO THE START OF ANY WORK ON THE SITE, THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN ON THIS PLAN. CONTACT DIG-SAFE AT 1-888-344-7233 (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE START OF EXCAVATION AND CONTACT THE FRAMINGHAM DEPARTMENT OF PUBLIC WORKS AT 508-532-6050 AT LEAST 48 HOURS PRIOR TO THE START OF WORK.
5. ALL SANITARY MANHOLE FRAMES AND COVERS CALLED FOR ADJUSTMENT, BUT IN THE OPINION OF THE ENGINEER ARE DAMAGED, SHALL BE REMOVED AND STACKED. THE CONTRACTOR SHALL INSTALL NEW SEWER MANHOLE FRAMES AND COVERS TO FINISHED GRADE.THE CONTRACTOR SHALL DELIVER THE STACKED FRAMES AND COVERS TO THE LOCATION DESIGNATED BY THE CITY. FRAMES AND COVERS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH NEW FRAMES AND COVERS AT NO ADDITIONAL COST TO THE CITY.

UTILITY QUALITY LEVEL INDEX

UTILITY QUALITY LEVEL INFORMATION INDEX (SEE ASCE/C1 38-02):

UTILITY QUALITY LEVEL A:
PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT IS TYPICALLY USED TO MINIMIZE THE POTENTIAL FOR UTILITY DAMAGE. A PRECISE HORIZONTAL AND VERTICAL LOCATION, AS WELL AS OTHER UTILITY ATTRIBUTES, IS SHOWN ON PLAN DOCUMENTS. ACCURACY IS TYPICALLY SET TO 15-MM VERTICAL AND TO APPLICABLE HORIZONTAL SURVEY AND MAPPING ACCURACY AS DEFINED OR EXPECTED BY THE PROJECT OWNER. INFORMATION IS ONLY VALID WITHIN THE VISIBLE LIMITS OF THE TEST HOLE.

UTILITY QUALITY LEVEL B:
INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QUALITY LEVEL B DATA SHOULD BE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT AND REDUCED ONTO PLAN DOCUMENTS.

UTILITY QUALITY LEVEL C:
INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.

UTILITY QUALITY LEVEL D:
INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.

DRAINAGE NOTES

1. ALL REINFORCED CONCRETE (RCP) PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL CONFLICTS BETWEEN THE EXISTING UTILITIES AND THE PROPOSED WORK. AT LEAST 48-HOURS NOTICE MUST BE PROVIDED. THE ENGINEER RESERVES THE RIGHT TO MODIFY THE DESIGN TO REALIGN THE PIPE AND STRUCTURE LOCATIONS AND INVERTS TO SUIT ACTUAL FIELD CONDITIONS ENCOUNTERED AT NO ADDITIONAL COST TO THE CITY.
3. ALL OFFSETS TO THE CATCH BASINS ARE TO THE CENTER BACK OF THE GRATE. THE LOCATION AND ORIENTATION OF THE BELOW GRADE STRUCTURE SHALL BE FIELD COORDINATED BY THE CONTRACTOR TO AVOID CONFLICTS WITH EXISTING UTILITIES.
4. ALL EXISTING AND PROPOSED CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT INUNDATION DURING ALL CONSTRUCTION ACTIVITIES.
5. ALL EXISTING DRAIN PIPES UNDER THE PROPOSED ROAD OR SIDEWALK SHALL BE RETAINED UNLESS OTHERWISE NOTED. IF THE EXISTING PIPE IS TO BE REMOVED OR ABANDONED AND IT EXTENDS OUTSIDE THE PROPOSED ROADWAY OR SIDEWALK LIMIT IT SHALL BE CUT AND CAPPED AT THE RESPECTIVE LIMIT AT NO ADDITIONAL COST. REMOVAL AND DISPOSAL OF THESE PIPES ARE INCIDENTAL TO THE DRAINAGE ITEMS.
6. ALL PROPOSED CATCH BASINS SHALL BE DEEP SUMP CATCH BASINS WITH HOOD.
7. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. FIELD ADJUSTMENTS WILL BE MADE AS APPROVED OR AS REQUIRED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO DRAIN LINE UP TO A DEPTH OF 5 FEET SHALL BE INCLUDED IN THE COST OF THE PIPE.
8. ALL SINGLE GRATE CATCH BASINS AND DRAIN MANHOLE STRUCTURES ARE ECCENTRIC, UNLESS OTHERWISE NOTED.
9. USE FLAT TOP SLAB MANHOLE AND CATCH BASIN WHERE NEEDED.
10. ALL EXISTING NON-BICYCLE GRATES SHALL BE REPLACED WITH BICYCLE SAFE GRATES.
11. ABANDONED PIPES GREATER THAN 6 INCHES IN DIAMETER SHALL BE FILLED WITH LDCC.
12. THE CONTRACTOR SHALL MAINTAIN DRAINAGE WITHIN CLOSED SYSTEM DURING NON-WORK HOURS SINCE SOME OF THE DRAINAGE IS BEING REPLACED IN THE SAME LOCATION AS THE EXISTING PIPE.

ASBESTOS AND WASTE MANAGEMENT PROTOCOLS

1. THE HANDLING OF ALL ASBESTOS AND WASTE MATERIALS SHALL BE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS AND INDUSTRY BEST PRACTICES. THE CITY HAS DEVELOPED AN ASBESTOS STANDARD OPERATING PROCEDURE FOR ASBESTOS CEMENT PIPE THAT HAS BEEN APPROVED BY THE COMMONWEALTH OF MASSACHUSETTS.
2. THE CONTRACTOR SHALL FOLLOW THE ASBESTOS AND WASTE MANAGEMENT GUIDANCE THAT IS INCLUDED IN THE CONTRACT DOCUMENTS.

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: GENERAL NOTES

PREPARED FOR:

CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DESIGNED BY: JL

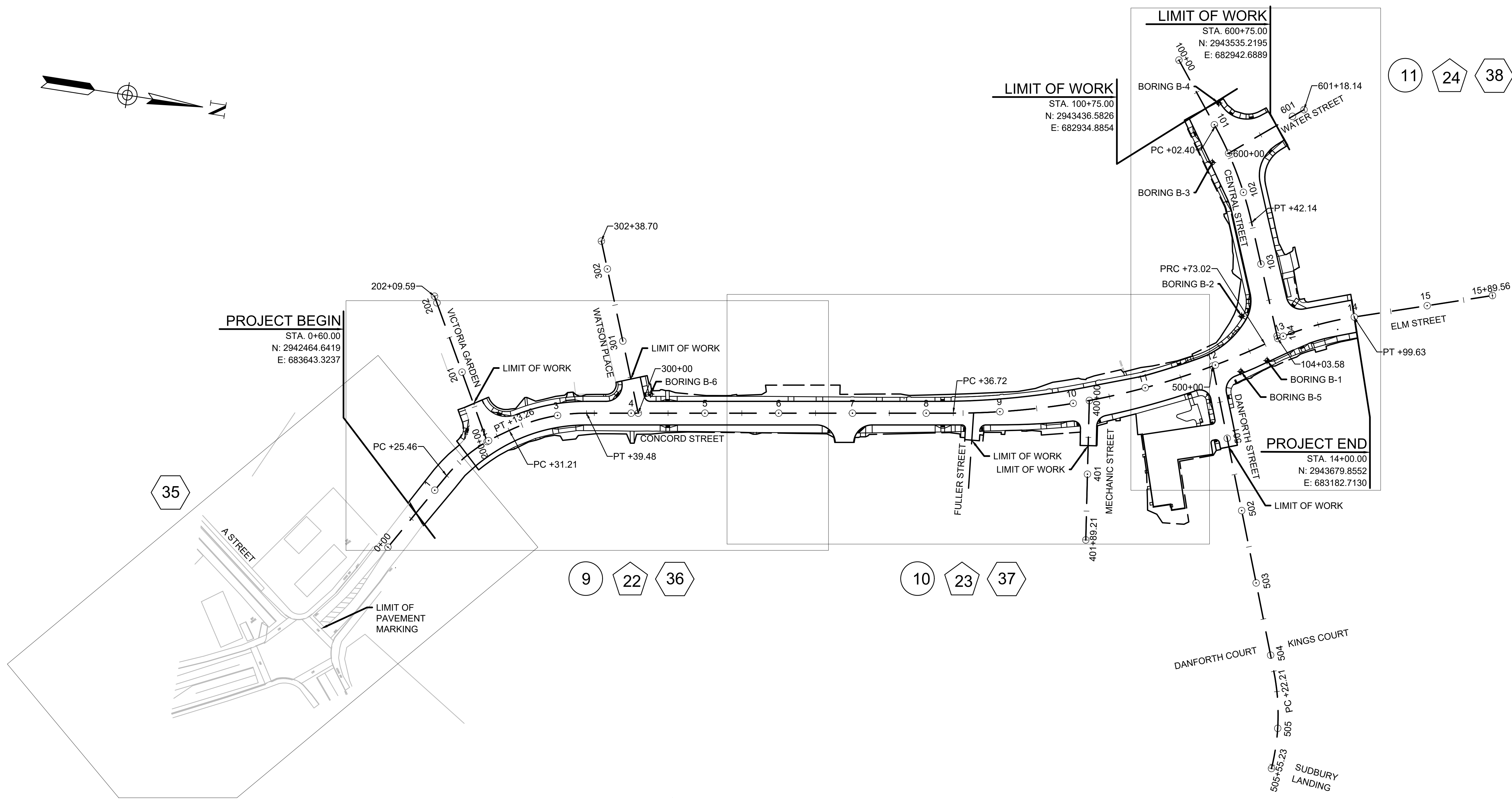
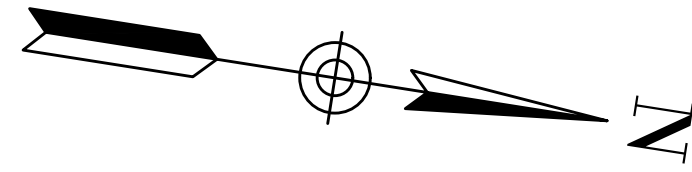
DATE: 6/4/2024

DRAWN BY: MPC

PROJECT NO. 20034

CHECKED BY: HP

SHEET NO.
3 OF 89



- LEGEND
- (X) CONSTRUCTION PLANS
 - (X) DRAINAGE & UTILITY PLANS
 - (X) SIGN & STRIPING PLANS

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: KEY PLAN		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 4 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

V:\Shared\Engineering\Projects\2020\20034\CONCORD Key Plan.dwg Printed: 6/17/2024 8:40 AM

Northern Drill Service, Inc.				Client: Green International Affiliates, Inc.		Boring #	
130 East Main Street, Northborough, MA 01532				Project: CENTRAL ST MAST ARMS		B-5	
TEL 508-393-6900 FAX 508-393-6901				Location: CENTRAL ST, FRAMINGHAM, MA		Page 1 OF 1	
File #:				CASING	SAMPLER	CORE BARREL	
Date Started: 5/18/2021				TYPE	HW	S/S	
Date Completed: 5/18/2021				SIZE	4"	2"	
Driller: JUSTIN STEVENS				HAMMER		140	
Site Rep.:				FALL		30"	
				Ground Water level:		10'	
SAMPLE					Strata		
No.	Depth	Pen. In.	Rec. In.	Blows/6"	Change	SAMPLE DESCRIPTION	
S-1	.5' - 2.5'	24"	12"	15-11-9-6		S-1: Medium dense, brown coarse sand some fine sand, some small to medium gravel.	
S-2	4' - 6'	24"	10"	4-5-7-11		S-2: Medium dense tan coarse sand, some medium to coarse gravel, trace fine sand.	
S-3	9' - 11'	24"	11"	32-36-31-18		S-3: Very dense gray coarse gravel and coarse sand, some fine sand, trace silt.	
S-4	14' - 16'	24"	16"	16-12-7-5		S-4: Medium dense gray fine silty sand, some small to medium gravel, little coarse sand.	
S-5	19' - 21'	24"	14"	23-28-31-25		S-5: Very dense, gray fine silty sand, some medium coarse gravel, trace coarse sand.	
S-6	23' - 25'	24"	12"	26-29-30-51		S-6: Very dense, gray fine silty sand, some small coarse gravel, little coarse sand. - glacial till -	
						Bottom of Exploration = 25'	
						ASPHALT= 6"	

Cohesionless Density Blows/ft: 0-10 Loose 10-30 Medium-Dense 30-50 Dense 50+ Very Dense

Northern Drill Service, Inc.				Client: Green International Affiliates, Inc.		Boring #	
33 Talbot Rd, Northborough, MA 01532				Project: Framingham Traffic Signal		B-6	
TEL 508-393-6900 FAX 508-393-6901				Location: Watson Place @ Concord St, Framingham, MA		Page 1 OF 1	
File #:				CASING	SAMPLER	CORE BARREL	
Date Started: 5/15/2024				TYPE	HW	S/S	NX
Date Completed: 5/15/2024				SIZE	4"	2"	
Driller: Zachary Nader				HAMMER		140	
Site Rep.: N/A				FALL		30"	
Northing: 2942753.6799				Elevation: 130.32			
Easting: 683434.5899				Ground Water level: 12'			
SAMPLE					Strata		
No.	Depth	Pen. In.	Rec. In.	Blows/6"	Change	SAMPLE DESCRIPTION	
S-1	0-2'			VACTOR		S-1: Brown, fine sand, trace fine gravel.	
S-2	2'-4'			VACTOR		S-2: Tan, fine sand and fine to medium gravel, some coarse sand.	
S-3	5'-7'	24"	18"	2-3-3-3		S-3: Loose, tan, fine, silty sand, trace coarse sand.	
S-4	9'-11'	24"	12"	3-4-2-3		S-4: Loose, wet, tan, fine silty sand, trace coarse sand.	
S-5	14'-16'	24"	12"	7-8-7-9		S-5: Medium dense, wet, gray, fine silty sand.	
S-6	19'-21'	24"	16"	4-3-2-4		S-6: Loose, wet, tan, fine silty sand.	
S-7	24'-26'	24"	18"	5-6-5-9		S-7: Medium dense, wet, tan, fine sand.	
						Bottom of Exploration= 26'	

Cohesionless Density Blows/ft: 0-10 Loose 10-30 Medium-Dense 30-50 Dense 50+ Very Dense

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: BORING LOG 3

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DESIGNED BY: JL

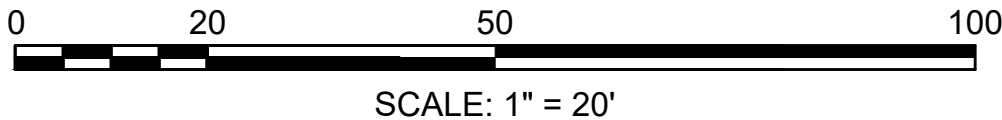
DATE: 6/4/2024

DRAWN BY: CW

PROJECT NO. 20034

CHECKED BY: JM

SHEET NO.
7 OF 89



C:\Bentley\Engineering\Projects\2025\20034\DWG\DWG-002 Boring Location Plot.dwg Plotmed 6/17/2024 4:44 AM

PROPOSED FULL DEPTH PAVEMENT

PROPOSED HMA DRIVEWAY AND PARKING LOT

SUBBASE: 8" GRAVEL BORROW, TYPE B

PROPOSED HMA WALKWAYS

SUBBASE: 8" GRAVEL BORROW, TYPE B

PROPOSED CEMENT CONCRETE SIDEWALK/WHEELCHAIR RAMP

SUBBASE: 8" GRAVEL BORROW, TYPE B

PROPOSED PAVEMENT MICROMILLING & RESURFACING

MILLING: 1.5" PAVEMENT MICROMILLING

NOTE

EXISTING GROUND



SCALE: 1"=4'
STA: 1+65 - 14+00

*TOLERANCE FOR CONSTRUCTION = +/-0.5%

****BRICK PAVER ACCENT STRIP STA. 1+88 - 2+89 RT,
STA. 2+41- 3+06 LT, STA. 3+35 - 4+39 RT, STA. 3+35 - 3+71 LT,
STA. 4+34 - 4+40 LT, STA. 4+62 - 6+13 LT, STA. 4+62 - 6+59 RT,
STA. 7+27 - 8+12 RT, STA. 8+86 - 9+53 RT, STA. 9+87 - 9+97 RT,
STA. 10+48 - 11+48 RT, STA. 13+41 - 13+95 LT**

***CURB REVEAL TO BE 7" EXCEPT AS NOTED ON PLANS.



SCALE: 1"=4'
STA: 103+70 - 104+00

*TOLERANCE FOR CONSTRUCTION = +/-0.5%



SCALE: 1"=4'
STA: 100+75 - 103+70

*TOLERANCE FOR CONSTRUCTION = +/-0.5%

1		
NO.	DATE	REVISIONS

DESIGN SUBMISSION: **85% DESIGN**

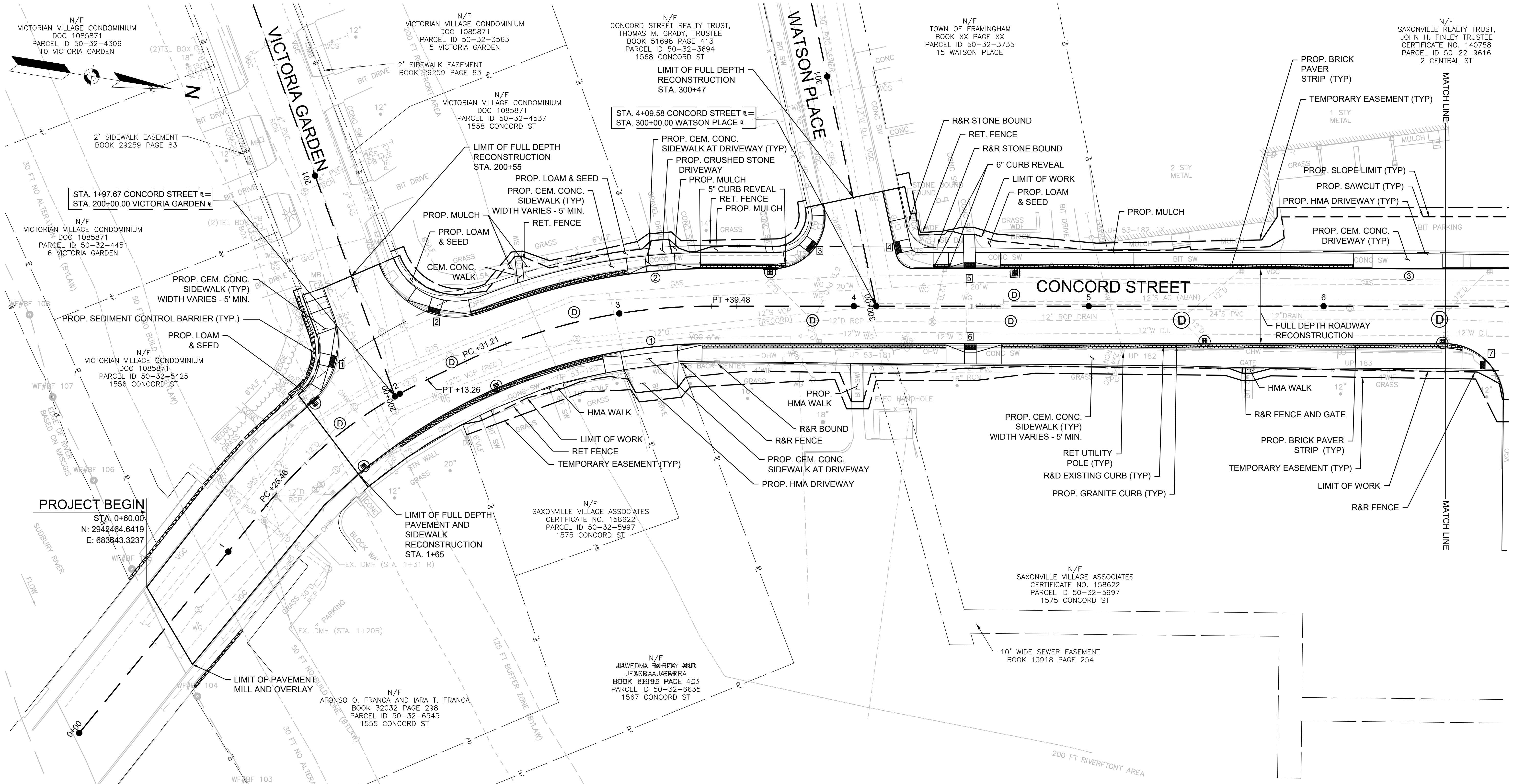
PREPARED FOR:

 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

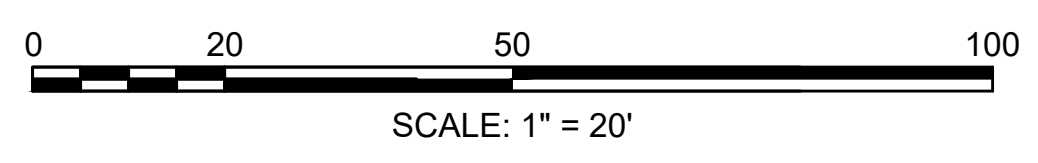
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 8 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



CONTINUED ON
SHEET NO. 10

PROJECT BEGIN
STA. 0+60.00
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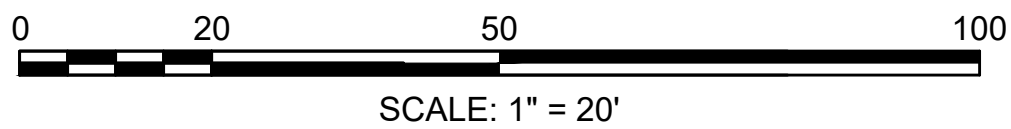
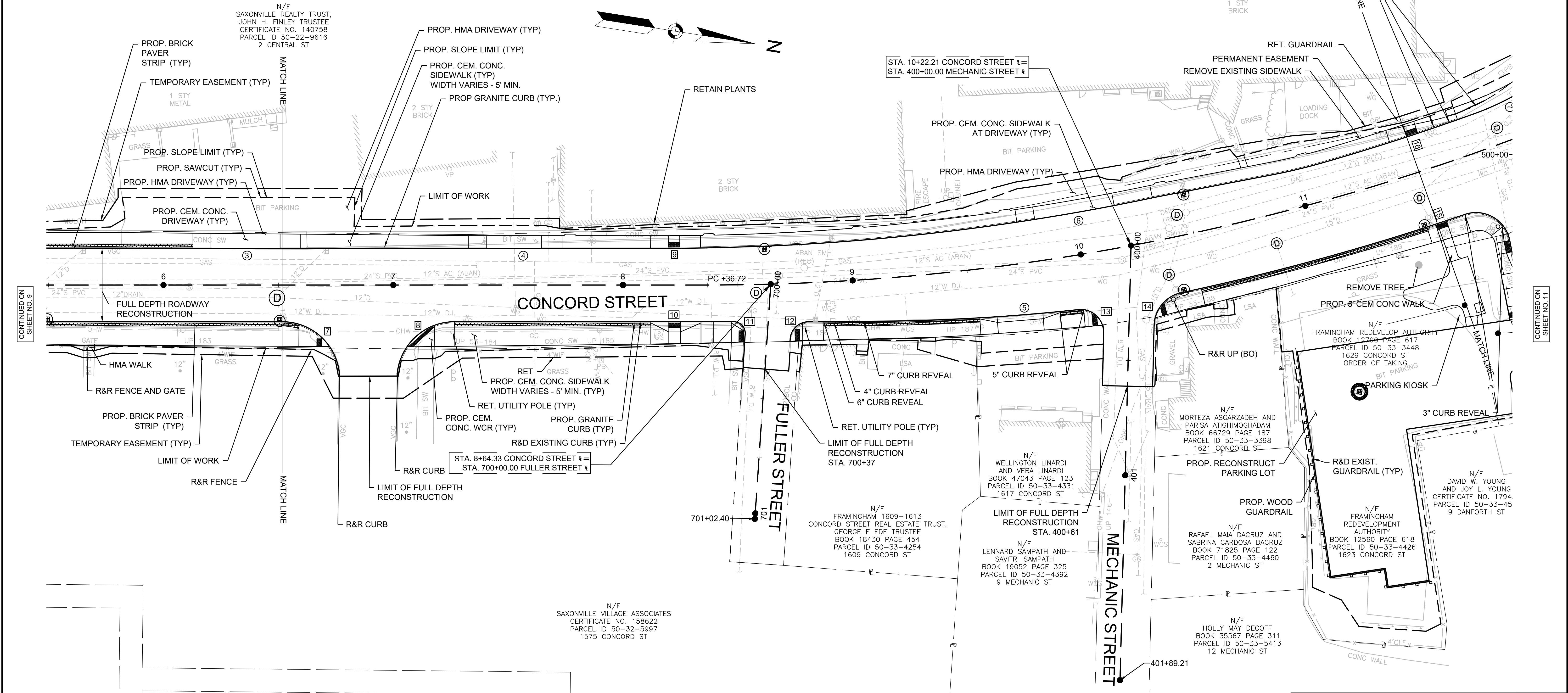


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION PLAN 1		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 9 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS
1		

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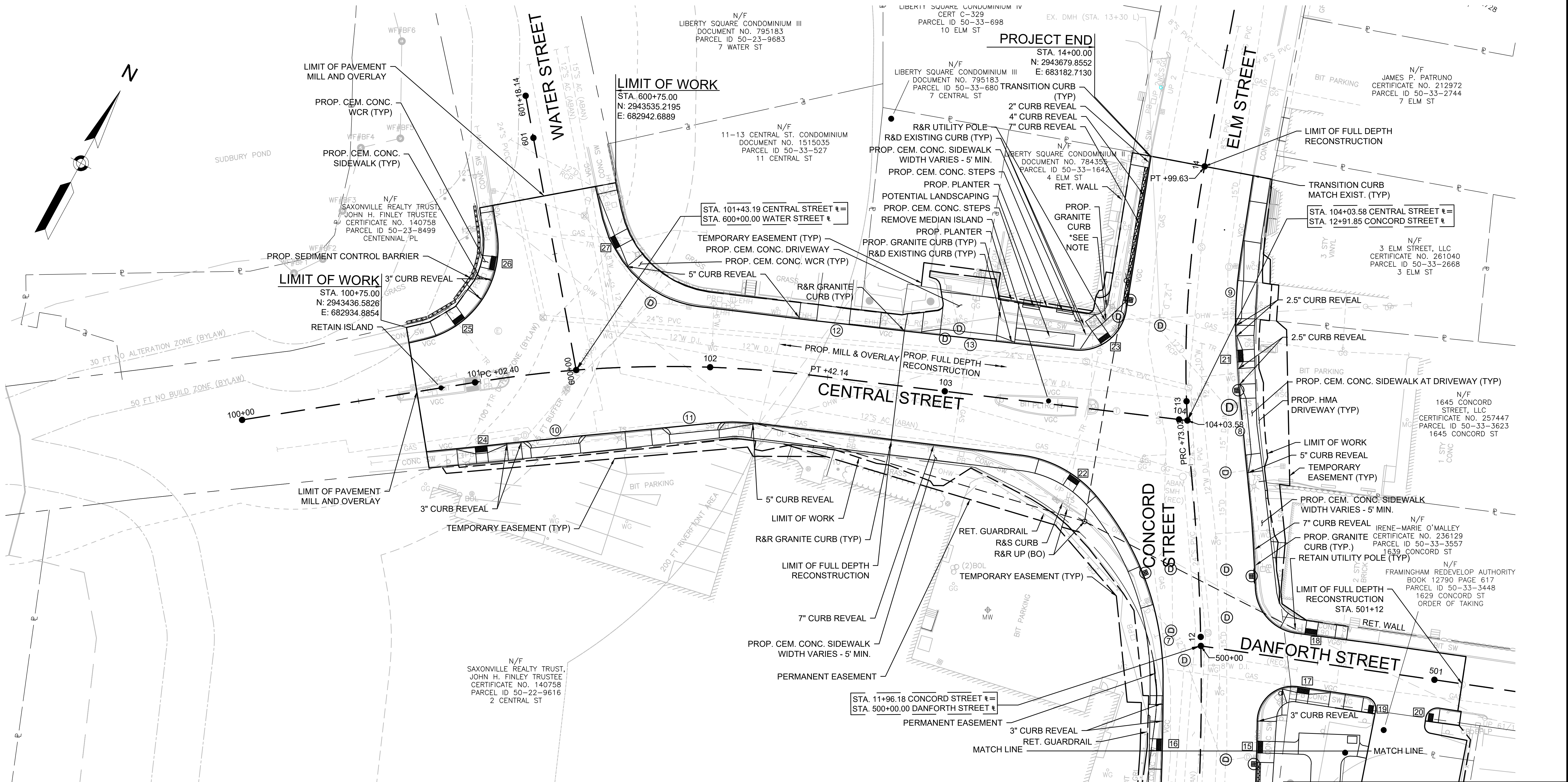
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NO.		DATE	REVISIONS
1			

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION PLAN 2		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 10 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

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*NOTE: UTILITY POLE AT STA. 13+31.50 LT ELEVATION TO BE 6" LOWER THAN EXISTING. COORDINATION WITH UTILITY COMPANIES REQUIRED.

CONTINUED ON SHEET NO. 10



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION PLAN 3		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 11 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

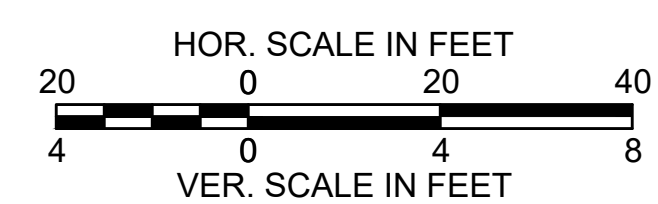
NO.	DATE	REVISIONS
1		

CONTINUED ON
SHEET NO. 12

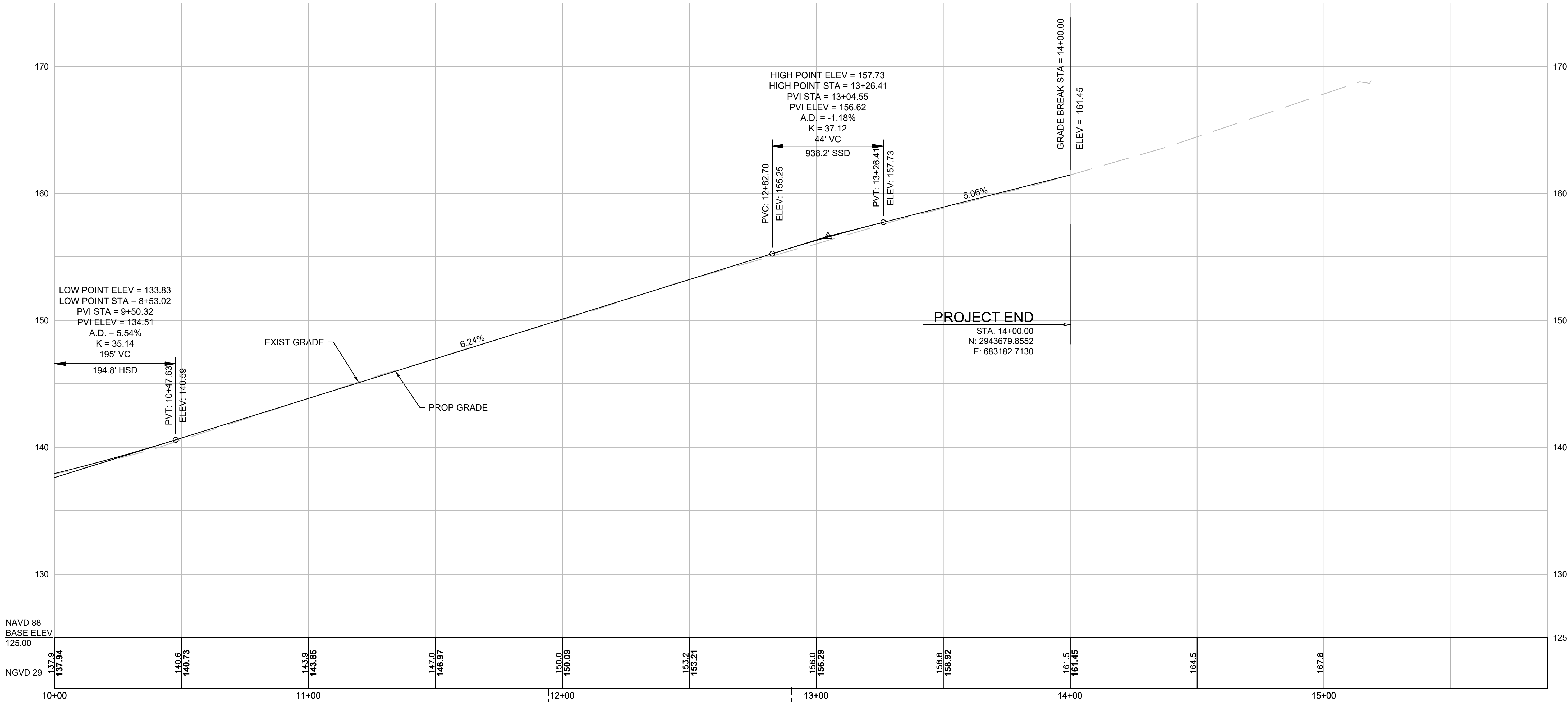


Benchmark #3
RR SPIKE FND, 1' ABOVE
GRADE, UPL
Elevation = 139.45
Sta. 10+33.78, 28.32' RT

SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 13 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

[illegible]

CONCORD STREET ALIGNMENT

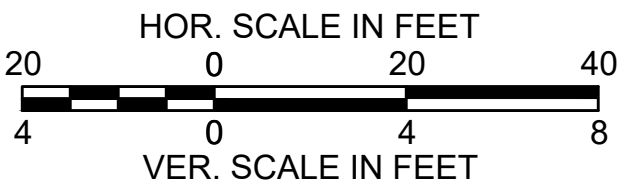


NAVD 88
BASE ELEV
125.00
NGVD 29

Benchmark #4
ROCLCS
Elevation = 160.92
Sta. 13+72.34, 29.31' RT

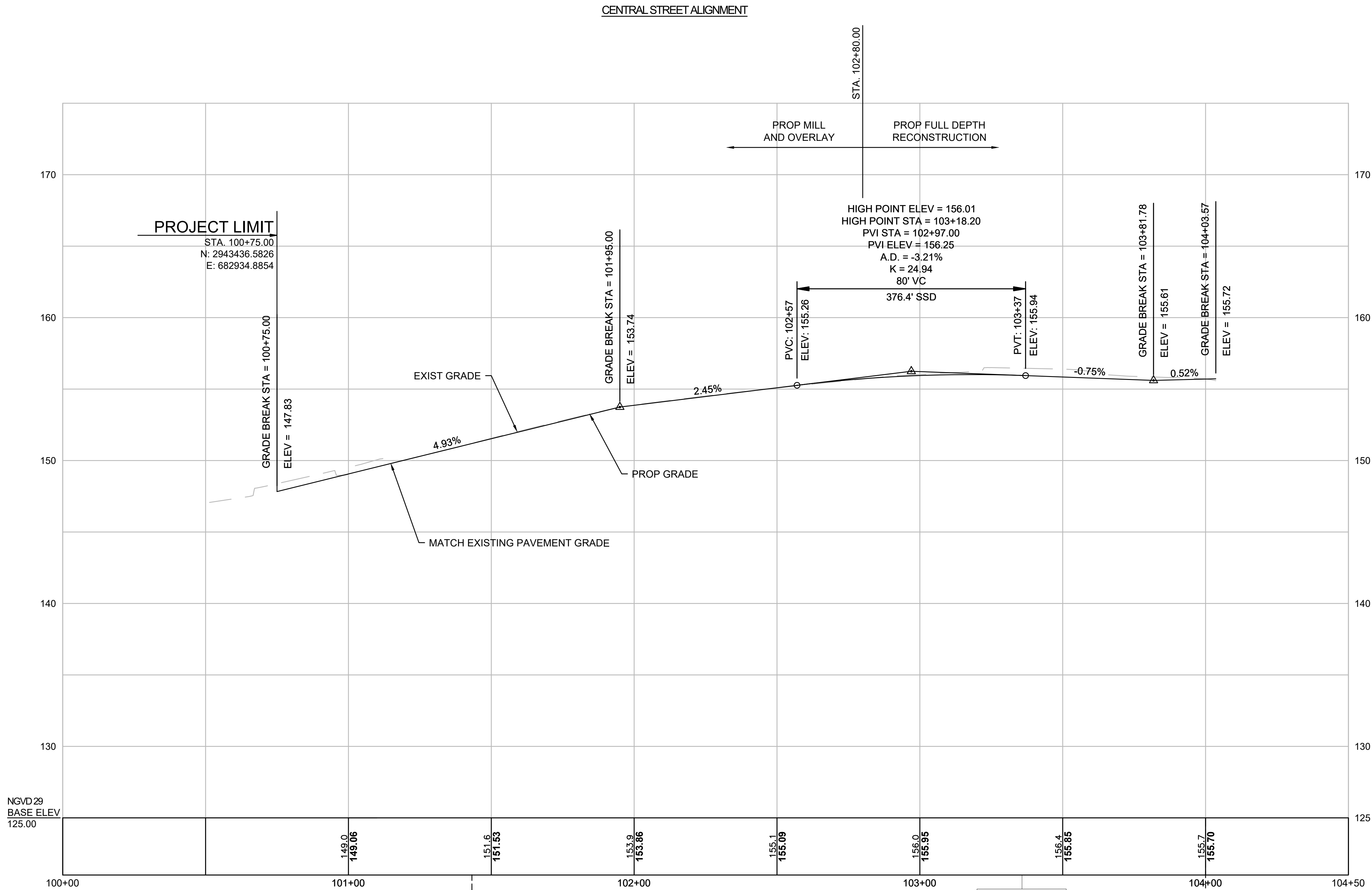
STA. 11+96.18 CONCORD STREET @
STA 500+00.00 DANFORTH STREET @

STA. 12+91.85 CONCORD STREET @
STA 104+03.58 CENTRAL STREET @



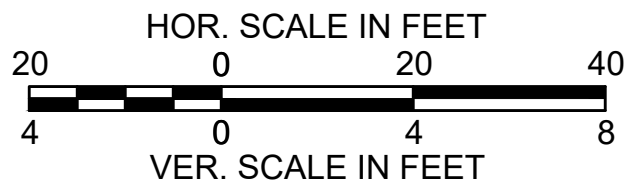
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION PROFILES - 3		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 14 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	
NO. DATE REVISIONS		

CONTINUED ON
SHEET NO. 14



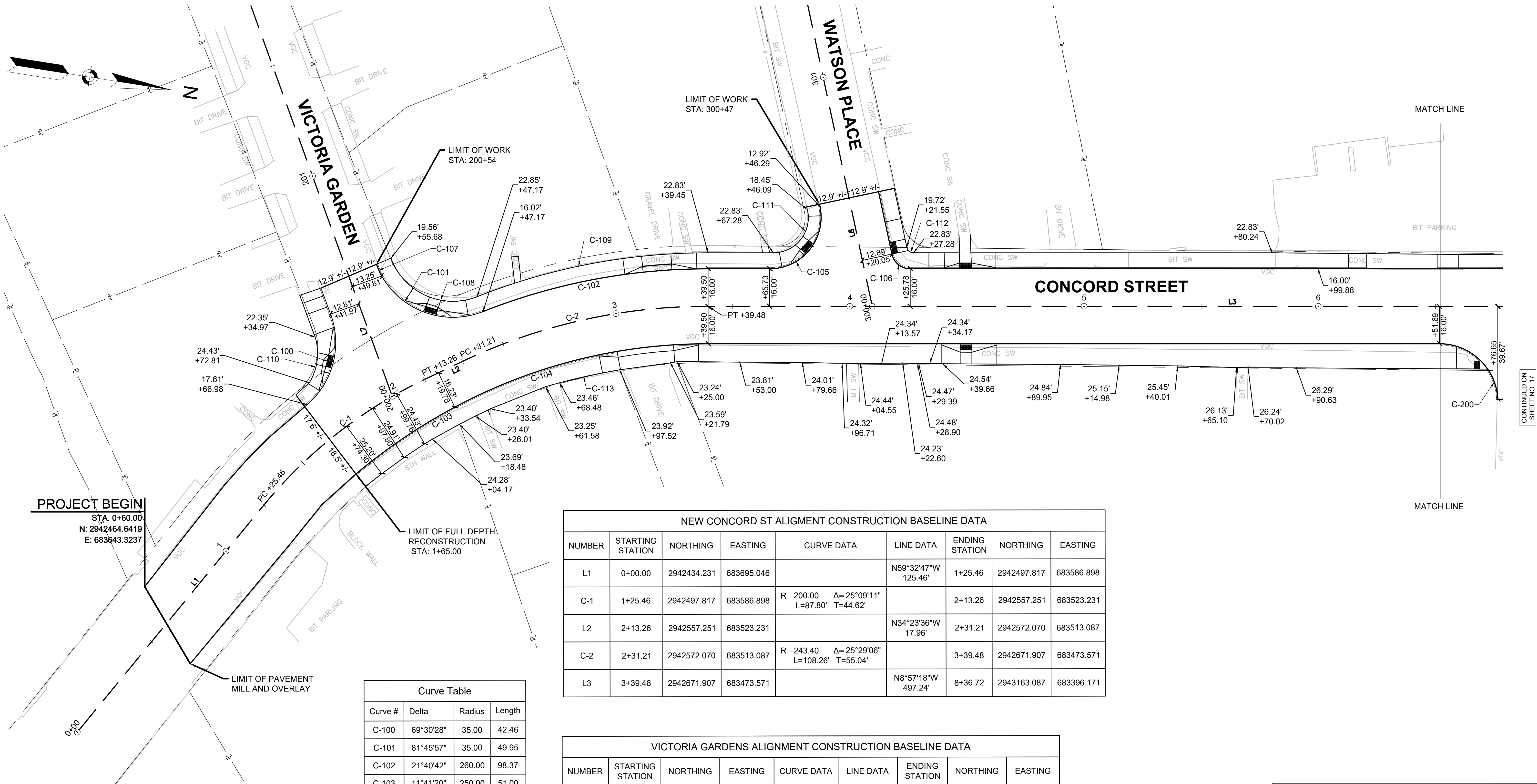
STA 101+43.19 CENTRAL STREET @
STA. 600+00.00 WATER STREET @

STA 104+03.58 CENTRAL STREET @
STA. 12+91.85 CONCORD STREET @



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION PROFILES - 4		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 15 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

V:\Standard Engineering\Projects\2020\2024\CONC ST Curbs Tie Plan.dwg Plot Date: 6/17/2024 8:55 AM



PROJECT BEGIN
STA: 0+60.00
N: 2942464.6419
E: 683643.3237

LIMIT OF PAVEMENT
MILL AND OVERLAY

Curve Table			
Curve #	Delta	Radius	Length
C-100	69°30'28"	35.00	42.46
C-101	81°45'57"	35.00	49.95
C-102	21°40'42"	260.00	98.37
C-103	11°41'20"	250.00	51.00
C-104	28°17'51"	228.00	112.61
C-105	101°58'10"	22.00	39.15
C-106	77°52'01"	8.00	10.87
C-107	10°32'02"	30.00	5.52
C-108	91°22'00"	28.17	44.92
C-109	21°39'54"	266.92	100.93
C-110	48°29'09"	23.89	20.22
C-111	103°00'43"	15.00	26.97
C-112	78°42'15"	2.97	4.09
C-113	5°28'48"	274.10	26.22

NEW CONCORD ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	0+00.00	2942434.231	683695.046		N59°32'47"W 125.46'	1+25.46	2942497.817	683586.898
C-1	1+25.46	2942497.817	683586.898	R=200.00' Δ=25°09'11" L=87.80' T=44.62'		2+13.26	2942557.251	683523.231
L2	2+13.26	2942557.251	683523.231		N34°23'36"W 17.96'	2+31.21	2942572.070	683513.087
C-2	2+31.21	2942572.070	683513.087	R=243.40' Δ=25°29'06" L=108.26' T=55.04'		3+39.48	2942671.907	683473.571
L3	3+39.48	2942671.907	683473.571		N8°57'18"W 497.24'	8+36.72	2943163.087	683396.171

VICTORIA GARDENS ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L7	200+00.00	2942544.743	683532.529		S61°08'29"W 209.59'	202+09.59	2942443.587	683348.971

WATSON PL ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	300+00.00	2942741.150	683462.660		S68°57'42"W 238.70'	302+38.70	2942655.459	683239.871

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CURB TIE PLAN 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

DESIGNED BY: JL

DRAWN BY: MPC

CHECKED BY: HP

SHEET NO.
16 OF 89

REVISIONS	
1	
NO.	DATE

CONTINUED ON
SHEET NO. 16

CONTINUED ON
SHEET NO. 18

Curve Table			
Curve #	Delta	Radius	Length
C-200	86°56'37"	25.00	37.94
C-201	86°50'16"	25.00	37.89
C-202	93°20'47"	5.00	8.15
C-203	84°26'36"	8.00	11.79
C-204	11°54'57"	1034.00	215.04
C-205	5°43'11"	880.00	87.85
C-206	98°32'16"	10.00	17.20
C-207	76°35'04"	15.00	20.05
C-208	6°48'44"	1077.00	128.05
C-209	5°08'58"	250.00	22.47
C-210	3°50'14"	1037.00	69.45
C-211	2°40'59"	244.50	11.45
C-212	2°55'31"	1031.50	52.67
C-213	2°04'18"	2013.13	72.79
C-214	3°19'25"	1028.97	59.69
C-215	3°17'05"	1028.97	58.99
C-216	3°31'19"	1028.97	63.25
C-217	1°13'04"	244.50	5.20
C-218	0°47'12"	1028.97	14.13

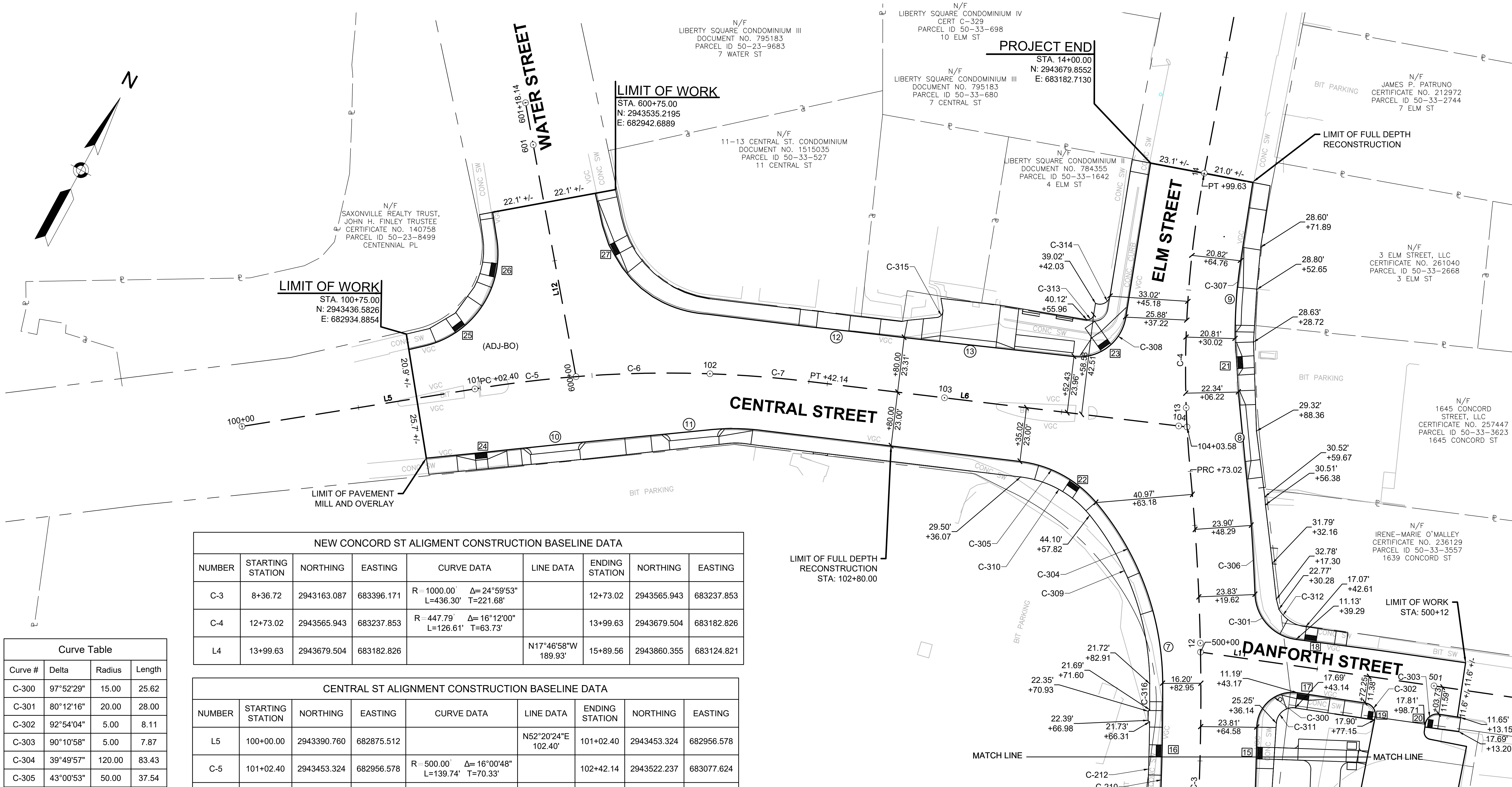
NEW CONCORD ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	3+39.48	2942671.907	683473.571		N8°57'18"W 497.24'	8+36.72	2943163.087	683396.171
C-3	8+36.72	2943163.087	683396.171	R = 1000.00' Δ= 24°59'53" L=436.30' T=221.68'		12+73.02	2943565.943	683237.853

FULLER STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L9	700+00.00	2943190.294	683391.497		N84°54'53"E 102.40'	701+02.40	2943199.371	683493.493

MECHANIC ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L10	400+00.00	2943342.598	683350.517		N82°29'54"E 189.21'	401+89.21	2943367.301	683538.109

NO.	DATE				
1					
REVISIONS					

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CURB TIE PLAN 2		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 17 OF 89
DATE:	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



Curve Table			
Curve #	Delta	Radius	Length
C-300	97°52'29"	15.00	25.62
C-301	80°12'16"	20.00	28.00
C-302	92°54'04"	5.00	8.11
C-303	90°10'58"	5.00	7.87
C-304	39°49'57"	120.00	83.43
C-305	43°00'53"	50.00	37.54
C-306	1°33'43"	1077.00	29.36
C-307	9°15'53"	205.00	33.15
C-308	87°12'51"	20.00	30.44
C-309	38°38'45"	114.50	77.23
C-310	44°12'05"	44.50	34.33
C-311	94°40'34"	7.00	11.57
C-312	55°17'19"	14.64	14.13
C-313	90°11'57"	2.50	3.94
C-314	99°48'08"	4.51	7.85
C-315	84°24'07"	2.91	4.29
C-316	0°37'00"	1031.50	11.10

NEW CONCORD ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C-3	8+36.72	2943163.087	683396.171	R=1000.00' Δ=24°59'53" L=436.30' T=221.68'		12+73.02	2943565.943	683237.853
C-4	12+73.02	2943565.943	683237.853	R=447.79' Δ=16°12'00" L=126.61' T=63.73'		13+99.63	2943679.504	683182.826
L4	13+99.63	2943679.504	683182.826		N17°46'58"W 189.93'	15+89.56	2943860.355	683124.821

CENTRAL ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	100+00.00	2943390.760	682875.512		N52°20'24"E 102.40'	101+02.40	2943453.324	682956.578
C-5	101+02.40	2943453.324	682956.578	R=500.00' Δ=16°00'48" L=139.74' T=70.33'		102+42.14	2943522.237	683077.624
C-6	101+02.40	2943453.324	682956.578	R=500.00' Δ=16°00'48" L=139.74' T=70.33'		102+42.14	2943522.237	683077.624
C-7	101+02.40	2943453.324	682956.578	R=500.00' Δ=16°00'48" L=139.74' T=70.33'		102+42.14	2943522.237	683077.624
L6	102+42.14	2943522.237	683077.624		N68°21'12"E 161.43'	104+03.58	2943581.786	683227.671

WATER ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L12	600+00.00	2943476.899	682989.845		N38°57'29"W 118.14'	601+18.14	2943568.765	682915.565

DANFORTH ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L11	500+00.00	2943500.618	683278.281		N69°43'54"E 422.21'	504+22.21	2943646.878	683674.346

PROJECT END
STA. 14+00.00
N: 2943679.8552
E: 683182.7130

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION:
85% DESIGN

DRAWING TITLE:
CURB TIE PLAN 3

PREPARED FOR:
 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

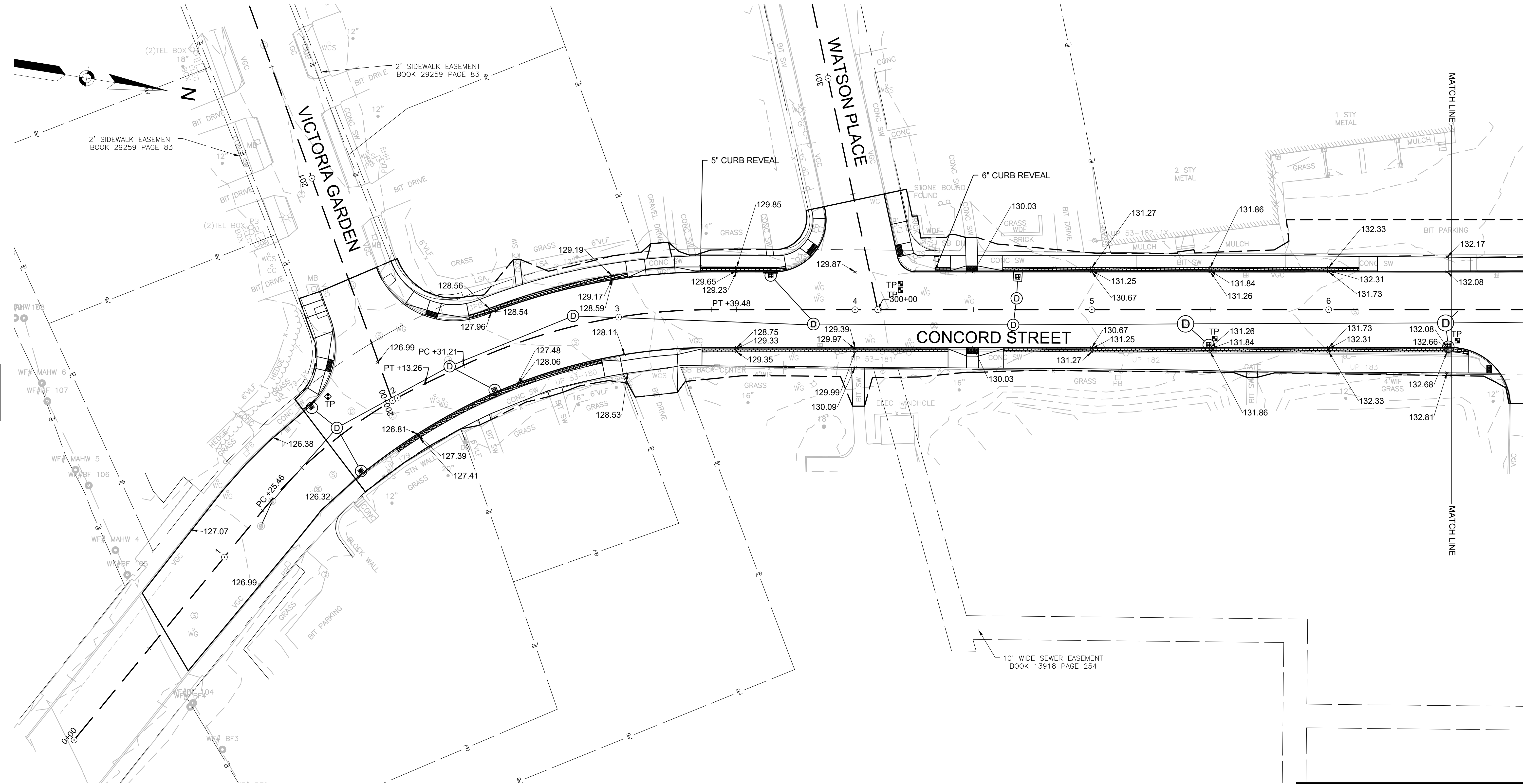
DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

SHEET NO.
18 OF 89

NO.	DATE	REVISIONS
1		

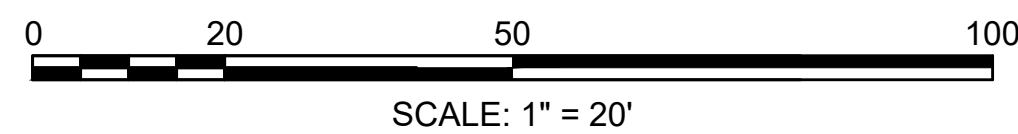
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CONTINUED ON
SHEET NO. 18



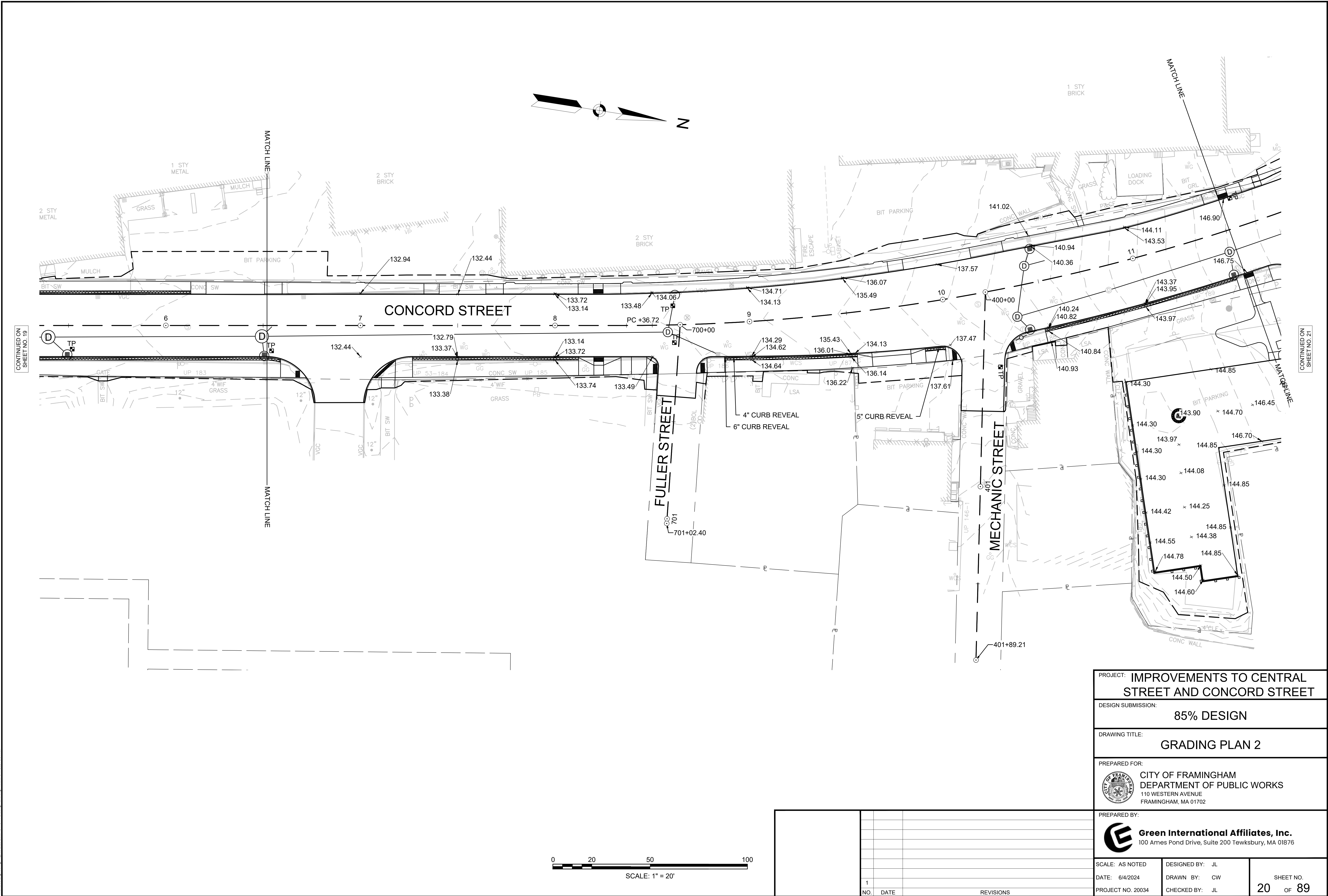
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SHEET NO. 20

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: GRADING PLAN 1		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 19 OF 89
DATE: 6/4/2024	DRAWN BY: CW	
PROJECT NO. 20034	CHECKED BY: JL	



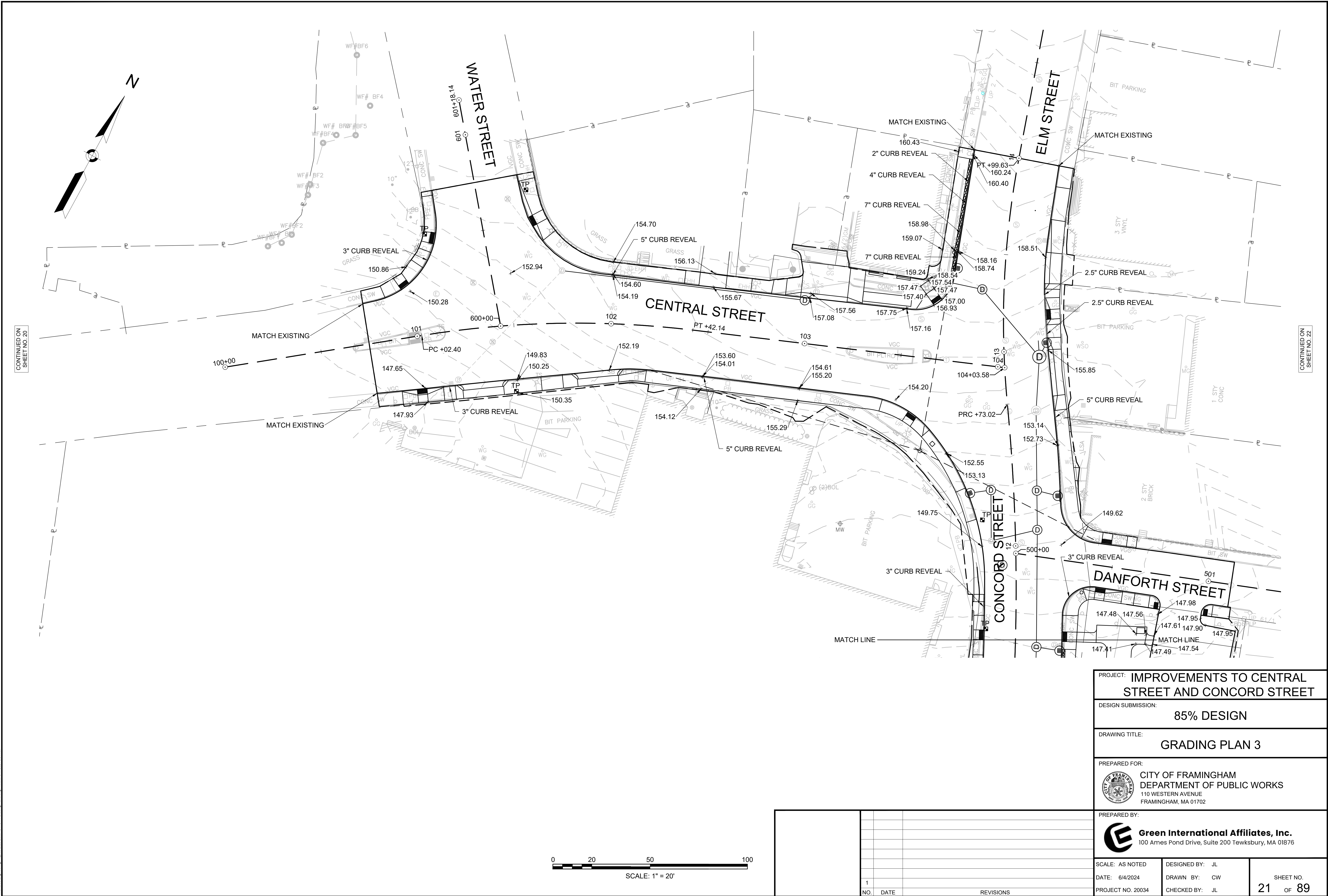
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NO.	DATE	REVISIONS	

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CONTINUED ON
SHEET NO. 20

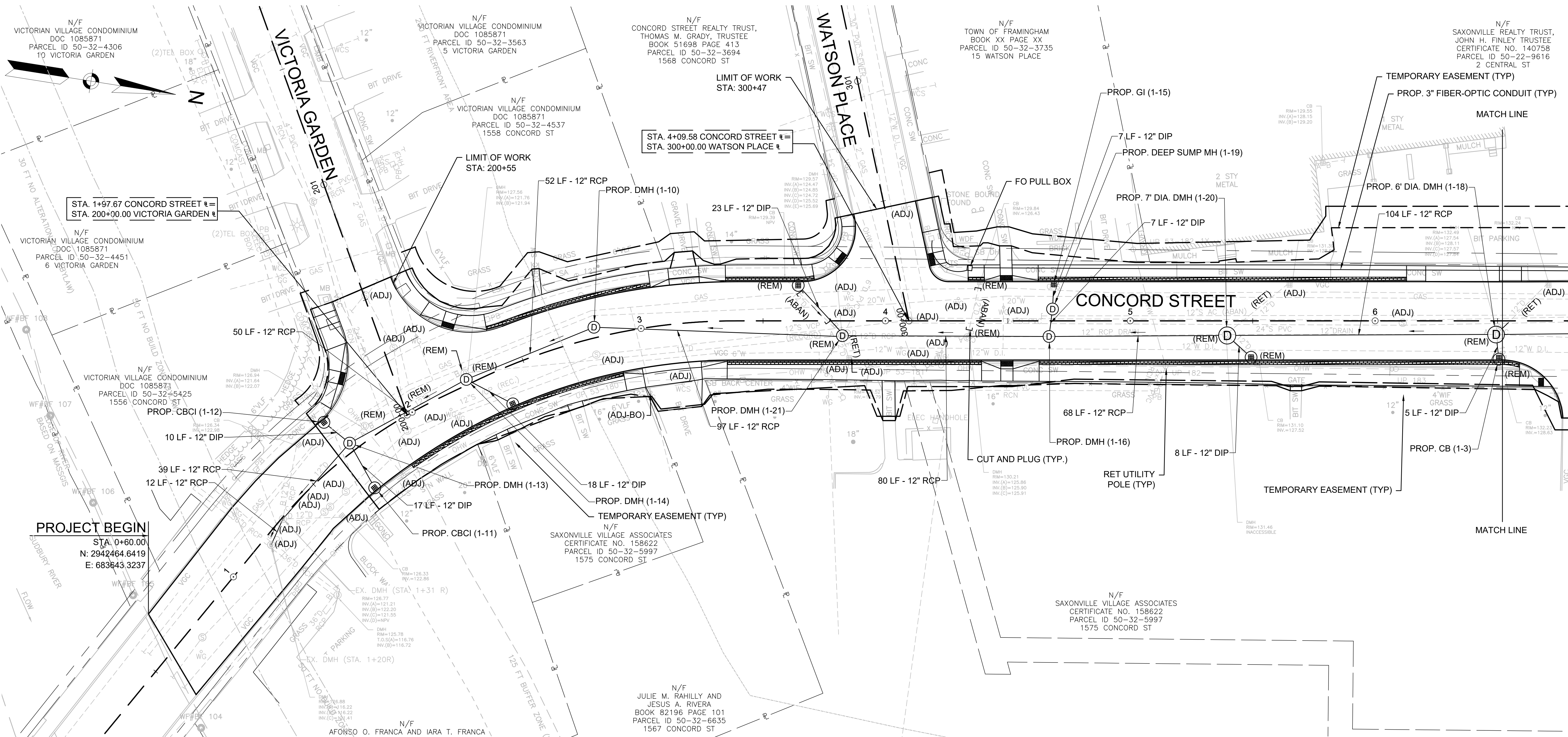


CONTINUED ON
SHEET NO. 22

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: GRADING PLAN 3		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 21 OF 89
DATE: 6/4/2024	DRAWN BY: CW	
PROJECT NO. 20034	CHECKED BY: JL	

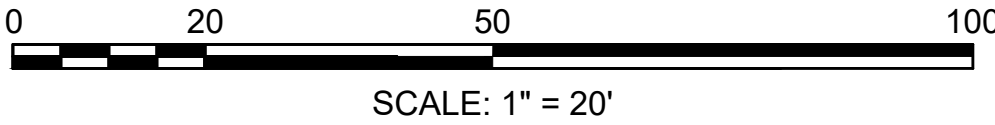
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NO.	DATE	REVISIONS
1		



DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP. CBCI (1-11)	1+68.75	17.2 RT	126.59		I=123.60' (PROP. DMH (1-13))	
PROP. CBCI (1-12)	1+68.96	16.6 LT	126.60		I=123.70' (PROP. DMH (1-13))	
PROP. DMH (1-13)	1+71.95	3.5 LT	126.88	I=123.60' (PROP. CBCI (1-12)) I=123.40' (PROP. CBCI (1-11)) I=121.70' (PROP. DMH (1-14))	I=121.60' (EX. DMH (STA. 1+31 R))	
PROP. DMH (1-14)	2+25.72	2.2 LT	128.33	I=123.00' (PROP. DMH (1-10)) I=124.00' (PROP. CBCI (1-8))	I=122.90' (PROP. DMH (1-13))	
PROP. CBCI (1-8)	2+39.08	14.9 RT	127.36		I=124.30' (PROP. DMH (1-14))	
PROP. DMH (1-10)	2+81.42	4.3 LT	127.93	I=123.60' (PROP. DMH (1-21))	I=123.50' (PROP. DMH (1-14))	
PROP. CBCI (1-7)	3+64.38	14.4 LT	129.38		I=126.00' (PROP. DMH (1-21))	
PROP. DMH (1-21)	3+82.42	6.1 RT	130.13	I=125.80' (PROP. CBCI (1-7)) I=125.00' (PROP. DMH (1-16))	I=124.47' (PROP. DMH (1-10))	
PROP. DMH (1-16)	4+66.82	6.4 RT	130.44	I=127.10' (PROP. DEEP SUMP MH (1-19)) I=126.10' (PROP. 7' DIA. DMH (1-20))	I=126.00' (PROP. DMH (1-21))	
PROP. DEEP SUMP MH (1-19)	4+68.24	4.8 LT	130.49	I=127.30' (PROP. GI (1-15))	I=127.20' (PROP. DMH (1-16))	DEEP SUMP
PROP. 7' DIA. DMH (1-20)	5+39.57	6.0 RT	131.35	I=126.75' (PROP. 6' DIA. DMH (1-18)) I=128.00' (PROP. CB (1-4))	I=126.65' (PROP. DMH (1-16))	7' DIA.
PROP. CB (1-4)	5+49.33	14.9 RT	131.28		I=128.20' (PROP. 7' DIA. DMH (1-20))	
PROP. CB (1-3)	6+50.54	15.6 RT	132.10		I=129.64' (PROP. 6' DIA. DMH (1-18))	

NOTE: REFER TO GENERAL NOTES SHEET 3 FOR DRAINAGE NOTES.



PROJECT: **IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET**

DESIGN SUBMISSION: **85% DESIGN**

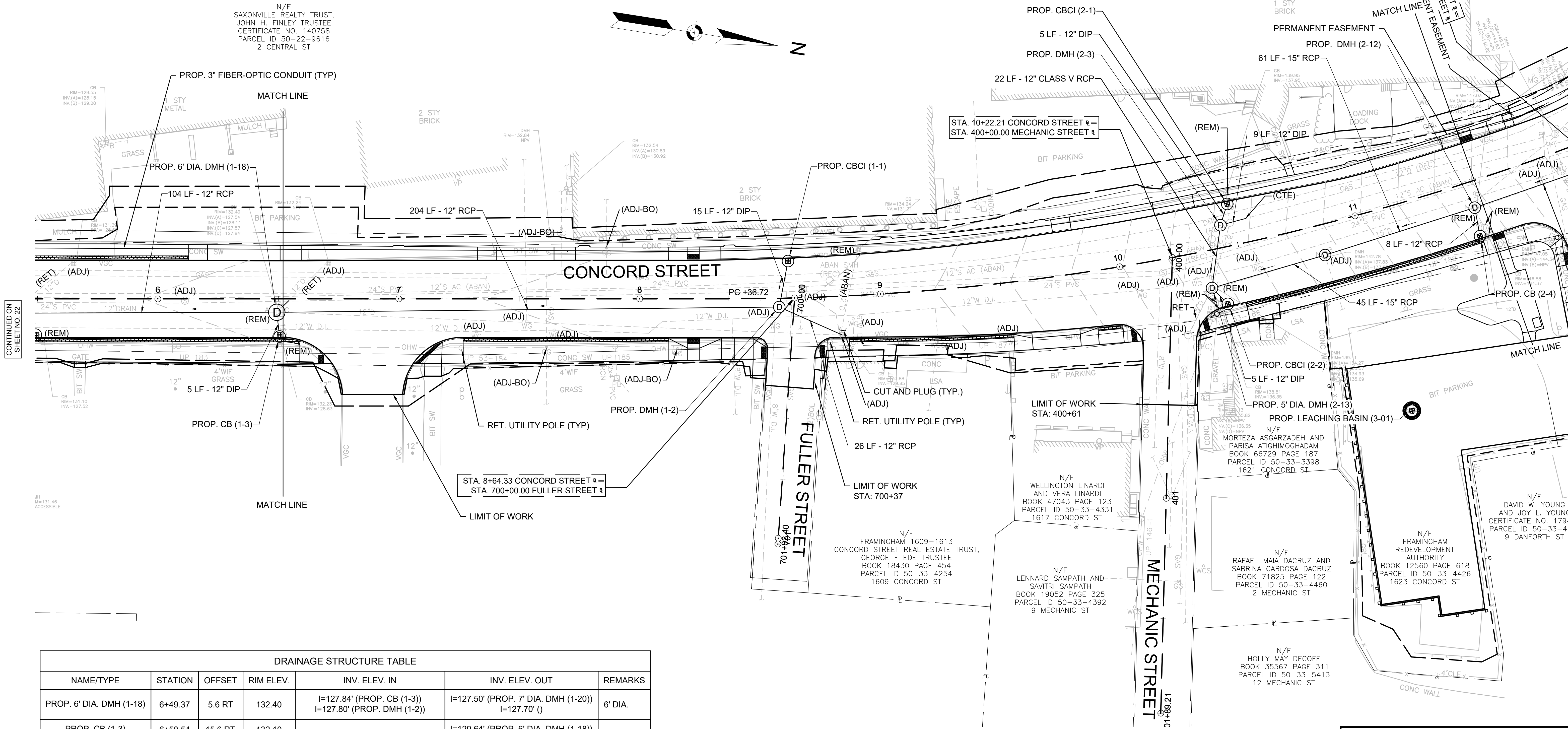
DRAWING TITLE: **DRAINAGE AND UTILITY PLAN 1**

PREPARED FOR: **CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702**

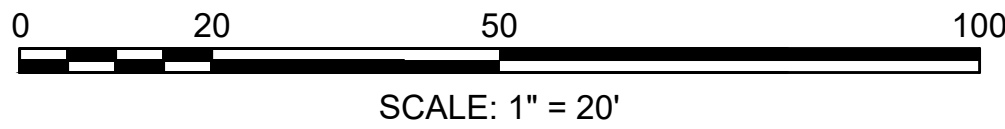
PREPARED BY: **Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876**

SCALE: AS NOTED	DESIGNED BY: SS/HG	SHEET NO. 22 OF 89
DATE: 6/4/2024	DRAWN BY: HG	
PROJECT NO. 20034	CHECKED BY: SS	

NO.	DATE	REVISIONS
1		



DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP. 6' DIA. DMH (1-18)	6+49.37	5.6 RT	132.40	I=127.84' (PROP. CB (1-3)) I=127.80' (PROP. DMH (1-2))	I=127.50' (PROP. 7' DIA. DMH (1-20)) I=127.70' ()	6' DIA.
PROP. CB (1-3)	6+50.54	15.6 RT	132.10		I=129.64' (PROP. 6' DIA. DMH (1-18))	
PROP. DMH (1-2)	8+57.89	3.6 RT	134.58	I=130.25' (PROP. CBCI (1-1)) I=129.55' (EX. CB (STA. 8+81 R))	I=129.40' (PROP. 6' DIA. DMH (1-18))	
PROP. CBCI (1-1)	8+61.97	15.4 LT	134.83		I=130.50' (PROP. DMH (1-2))	
PROP. 5' DIA. DMH (2-13)	10+35.85	15.6 RT	140.33	I=135.57' (PROP. DMH (2-3)) I=136.00' (PROP. CBCI (2-2)) I=134.93' (EX. DMH (STA. 10+82 R))	I=134.27' (EXIST 15' DRAIN)	5' DIA.
PROP. CBCI (2-2)	10+40.87	23.3 RT	140.53		I=136.20' (PROP. 5' DIA. DMH (2-13))	
PROP. DMH (2-3)	10+44.52	9.3 LT	141.33	I=137.60' (PROP. CBCI (2-1)) I=136.03' ()	I=136.00' (PROP. 5' DIA. DMH (2-13))	
PROP. CBCI (2-1)	10+49.17	17.3 LT	141.43		I=137.70' (PROP. DMH (2-3))	
PROP. CB (2-4)	11+46.87	22.8 RT	146.32		I=142.90' (PROP. DMH (2-12))	
PROP. DMH (2-12)	11+48.36	10.8 RT	147.03	I=142.80' (PROP. CB (2-4)) I=142.00' (PROP. DMH (2-14))	I=141.43' (EX. DMH (STA. 10+82 R))	



1					
NO.	DATE				REVISIONS

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: DRAINAGE AND UTILITY PLAN 2

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DESIGNED BY: SS/HG

DATE: 6/4/2024

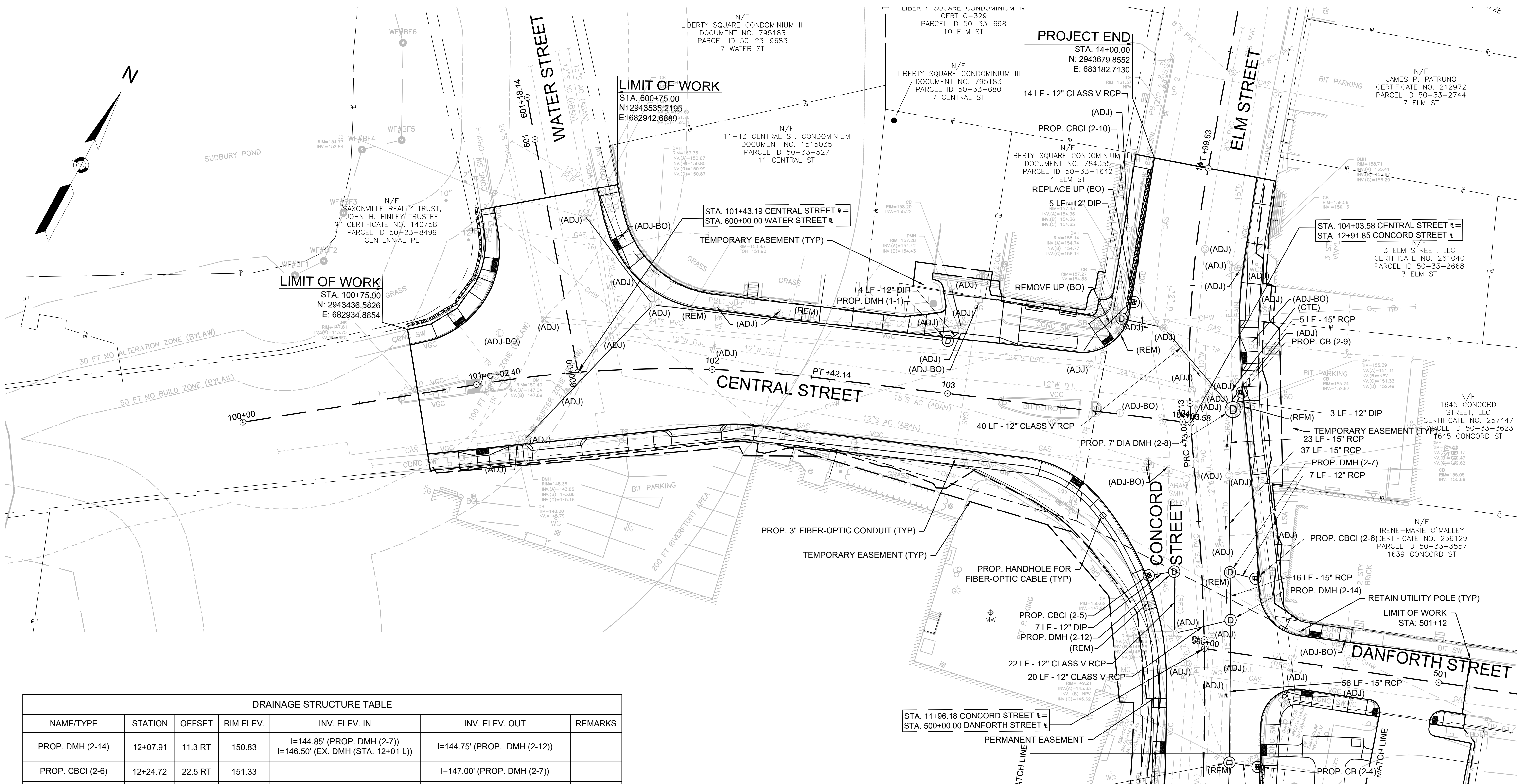
DRAWN BY: HG

PROJECT NO. 20034

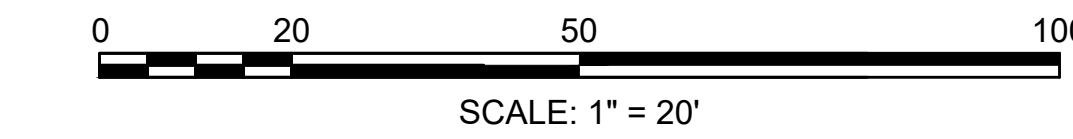
CHECKED BY: SS

SHEET NO. 23 OF 89

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DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP. DMH (2-14)	12+07.91	11.3 RT	150.83	I=144.85' (PROP. DMH (2-7)) I=146.50' (EX. DMH (STA. 12+01 L))	I=144.75' (PROP. DMH (2-12))	
PROP. CBI (2-6)	12+24.72	22.5 RT	151.33		I=147.00' (PROP. DMH (2-7))	
PROP. DMH (2-7)	12+27.87	11.9 RT	151.60	I=146.90' (PROP. CBI (2-6)) I=148.40' (EX. DMH (STA. 12+67 R))	I=146.00' (PROP. DMH (2-14))	
PROP. CBI (2-5)	12+28.29	22.5 LT	152.83		I=148.50' (PROP. DMH (2-12))	
PROP. DMH (2-12)	12+29.37	11.7 LT	151.67	I=148.30' (PROP. CBI (2-5))	I=147.00' (EX. DMH (STA. 12+01 L))	
PROP. 7' DIA DMH (2-8)	12+96.67	18.0 RT	156.60	I=152.50' (PROP. CB (2-9)) I=152.60' (EX. DMH (STA. 13+30 L)) I=151.33' ()	I=151.00' (EX. DMH (STA. 12+67 R))	7' DIA.
PROP. CB (2-9)	13+04.12	22.1 RT	156.93		I=152.60' (PROP. 7' DIA DMH (2-8))	
PROP. CBI (2-10)	13+41.54	24.3 LT	158.32		I=155.20' (EX. DMH (STA. 13+33 L))	
PROP. DMH (1-1)	102+97.45	22.1 LT	158.23	I=153.90' (EX. DMH (STA. 103+03 L))	I=153.60' (EX. DMH (STA. 101+75 L))	



*NOTE: UTILITY POLE AT STA. 13+31.50 LT ELEVATION TO BE 6" LOWER THAN EXISTING. COORDINATION WITH UTILITY COMPANIES REQUIRED.

CONTINUED ON SHEET NO. 23

PROJECT: **IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET**

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: **DRAINAGE AND UTILITY PLAN 3**

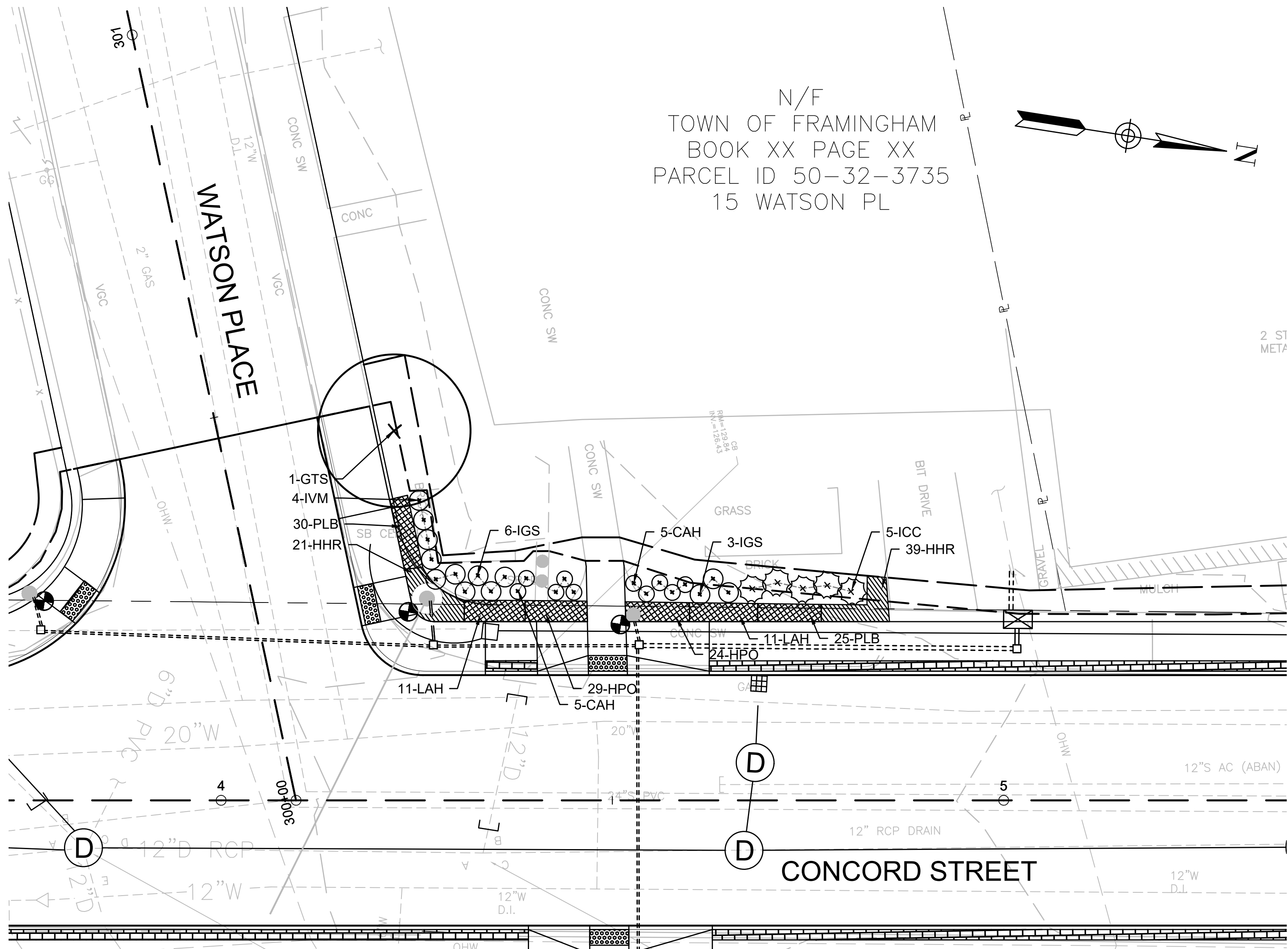
PREPARED FOR: **CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702**

PREPARED BY: **Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876**

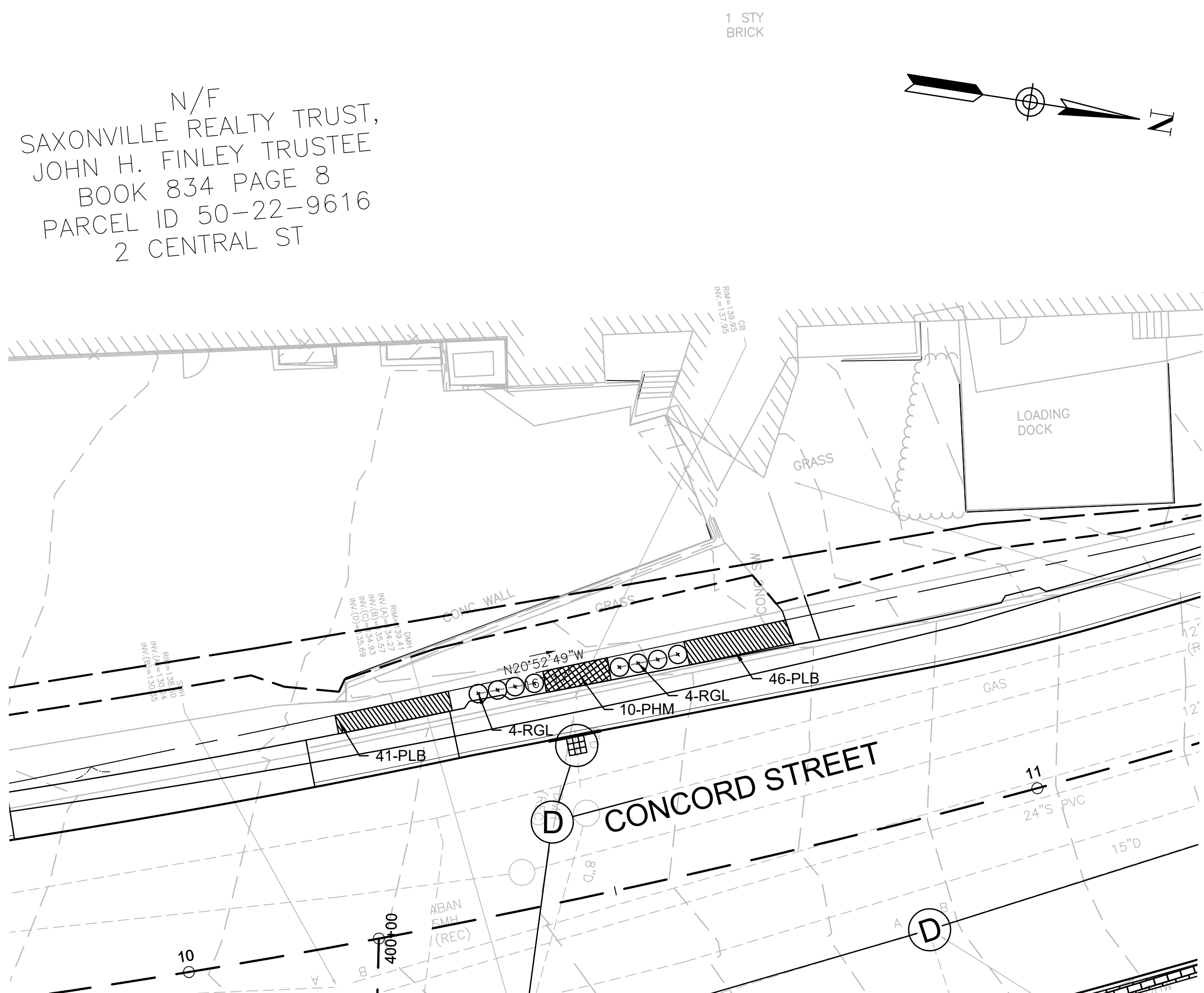
SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: HG/SS
DRAWN BY: HG
CHECKED BY: SS

SHEET NO. **24** OF **89**



1 LANDSCAPE PLAN 1- CORNER CONCORD STREET AND WATSON PLACE STREET
SCALE: 1"=10'



2 LANDSCAPE PLAN 2 - CONCORD STREET
SCALE: 1"=10'

PLANT LIST - SHEET 1						
KEY	DECIDUOUS TREES	COMMON NAME	QTY	SIZE	ROOT	REMARKS/SPACING
GTS	GLEDITSIA TRICANTHOS SHADEMASTER	SHADEMASTER HONEYLOCUST	1	2-2.5" CAL	B&B	AS SHOWN
DECIDUOUS SHRUBS						
CAH	CLETHRA ALNIFOLIA 'CRYSTALINA'	SUGARTINA SUMMERSWEET	10	18-24" SPREAD	#3 CONTAINER	18" O.C.
IGS	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	9	18-24" SPREAD	#3 CONTAINER	2' O.C.
IVM	ITEA VIRGINIANA 'MERLOT'	MERLOT VIRGINIA SWEETSPIRE	4	2-3' HT	#3 CONTAINER	30" O.C.
RGL	RHUS AROMATICA 'GRO LOW'	GROW LOW FRAGRANT SUMAC	8	18-24" SPREAD	#3 CONTAINER	2.5' OC
EVERGREEN SHRUBS						
ICC	ILEX CRENATA 'SOFT TOUCH'	SOFT TOUCH JAPANESE HOLLY	5	18-24" SPREAD	#5 CONTAINER	24" O.C.
PERENNIALS AND ORNAMENTAL GRASSES						
HHR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	60	#1 CONTAINER	#1 CONTAINER	10" O.C.
HPO	HEMEROCALLIS 'PURPLE DE ORO'	PURPLE DE ORO DAYLILY	53	#1 CONTAINER	#1 CONTAINER	10" O.C.
LAH	LAVANDULA ANGUSTIFOLIA 'HICOTE'	HIDCOTE LAVENDER	22	#1 CONTAINER	#1 CONTAINER	18" O.C.
PLB	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	142	#1 CONTAINER	#1 CONTAINER	10" O.C.
PHM	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCH GRASS	10	#1 CONTAINER	#1 CONTAINER	18" O.C.

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

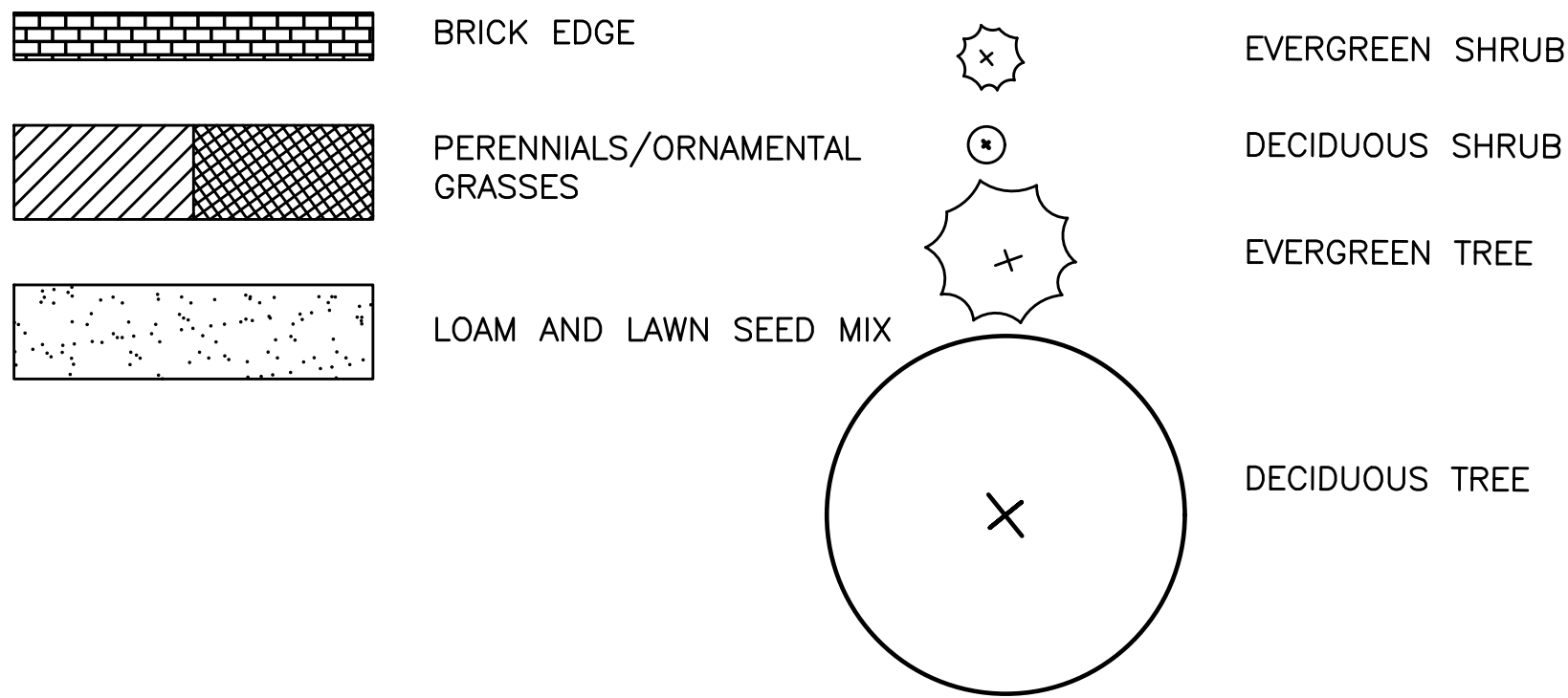
DRAWING TITLE: LANDSCAPE PLAN 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

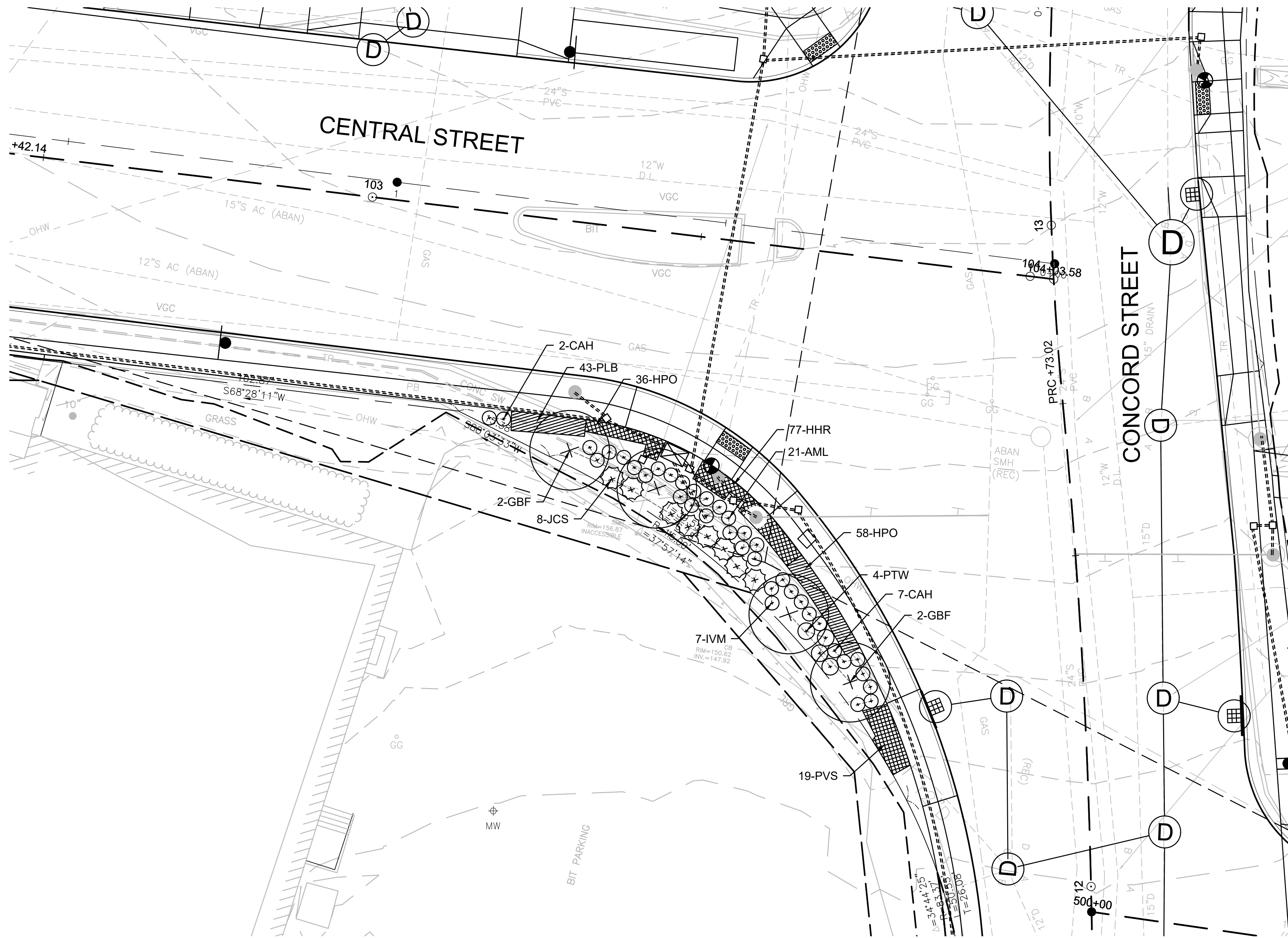
PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034
DESIGNED BY: JL
DRAWN BY: YLZ/MPC
CHECKED BY: TB
SHEET NO. 25 OF 89

KEY



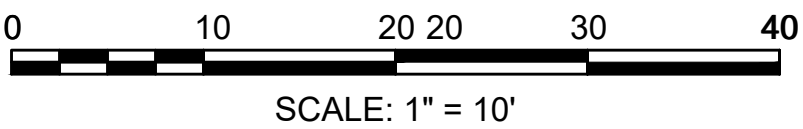
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3 LANDSCAPE PLAN 3 - CORNER CONCORD STREET AND CENTRAL STREET
SCALE: 1"=10'

PLANT LIST - SHEET 2

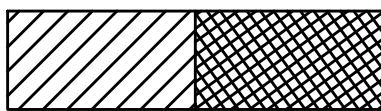
KEY	DECIDUOUS TREES	COMMON NAME	QTY	SIZE	ROOT	REMARKS/SPACING
GBF	GINKGO BILOBA 'FASTIGIATA' GOLD SPIRE	GOLD SPIRE GINKGO	4	2-2.5" CAL	B&B	AS SHOWN
DECIDUOUS SHRUBS						
AML	ARONIA MELANOCARPA 'LOWSCAPE MOUND'	LOWSCAPE MOUND CHOKEBERRY	21	18-24" SPREAD	#3 CONTAINER	18" O.C.
CAH	CLETHRA ALNIFOLIA 'CRYSTALINA'	SUGARTINA SUMMERSWEET	9	18-24" SPREAD	#3 CONTAINER	2' O.C.
IVM	ITEA VIRGINIANA 'MERLOT'	MERLOT VIRGINIA SWEETSPIRE	7	2-3' HT	#3 CONTAINER	30" O.C.
PTW	PHYSOCARPUS OPULIFOLIUS 'TINY WINE'	TINY WINE DWARF NINEBARK	4	2-3' HT	#3 CONTAINER	2.5' O.C.
EVERGREEN SHRUBS						
JCS	JUNIPERUS CHINENSIS 'SEA GREEN'	SEA GREEN JUNIPER	8	2.5-3' SPREAD	#5 CONTAINER	3' O.C.
PERENNIALS AND ORNAMENTAL GRASSES						
HHR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	77	#1 CONTAINER	#1 CONTAINER	10" O.C.
HPO	HEMEROCALLIS 'PURPLE DE ORO'	PURPLE DE ORO DAYLILY	94	#1 CONTAINER	#1 CONTAINER	10" O.C.
PLB	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	43	#1 CONTAINER	#1 CONTAINER	10" O.C.
PVS	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	19	#1 CONTAINER	#1 CONTAINER	18" O.C.



KEY



BRICK EDGE



PERENNIALS/ORNAMENTAL GRASSES



LOAM AND LAWN SEED MIX



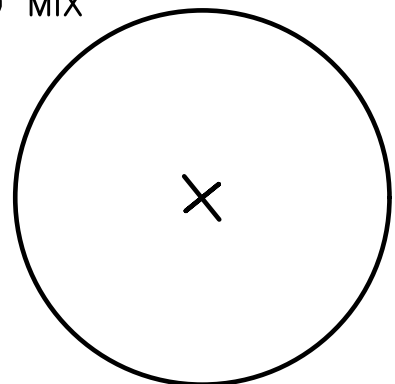
EVERGREEN SHRUB



DECIDUOUS SHRUB



EVERGREEN TREE



DECIDUOUS TREE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

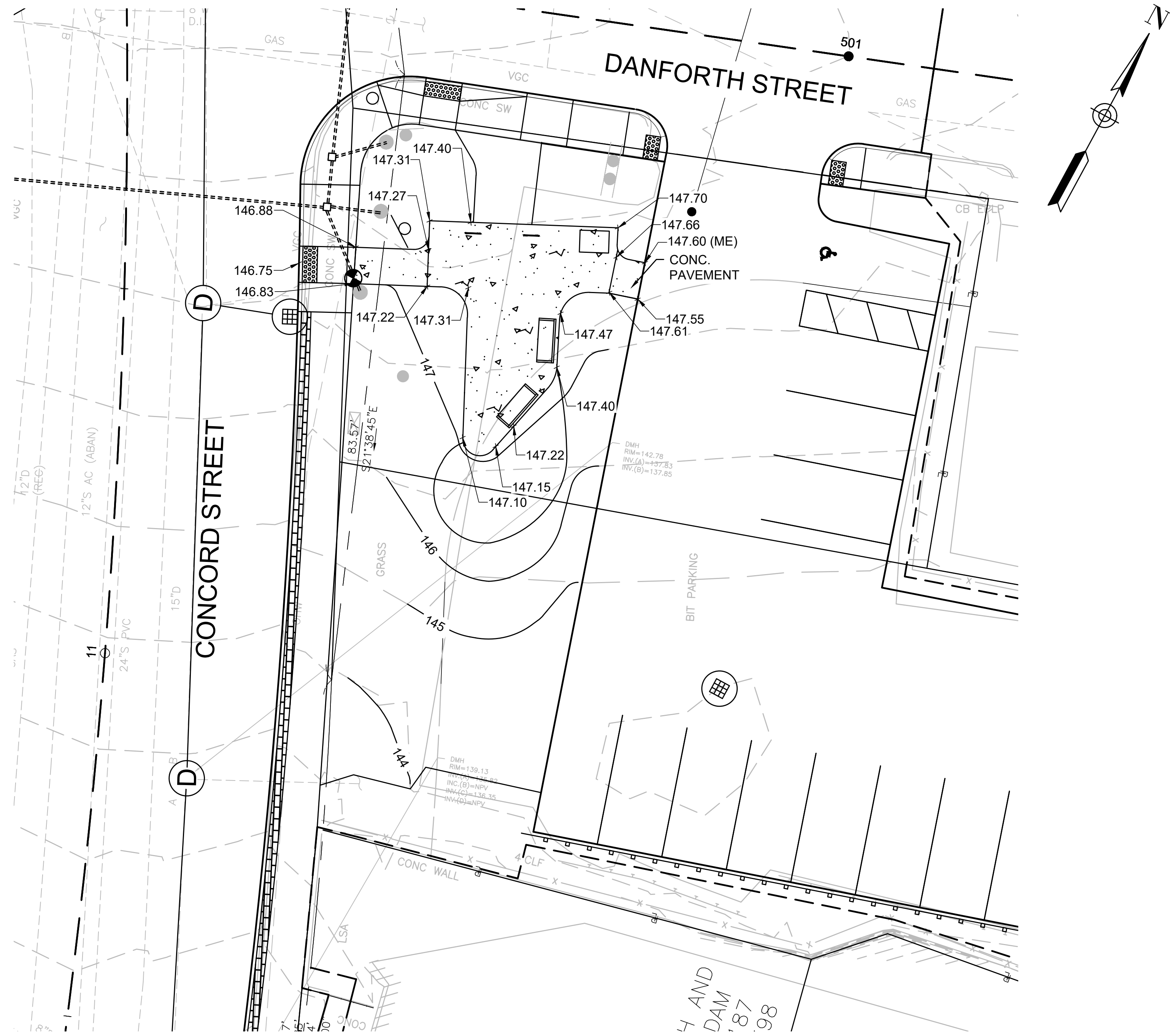
DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LANDSCAPE PLAN 2

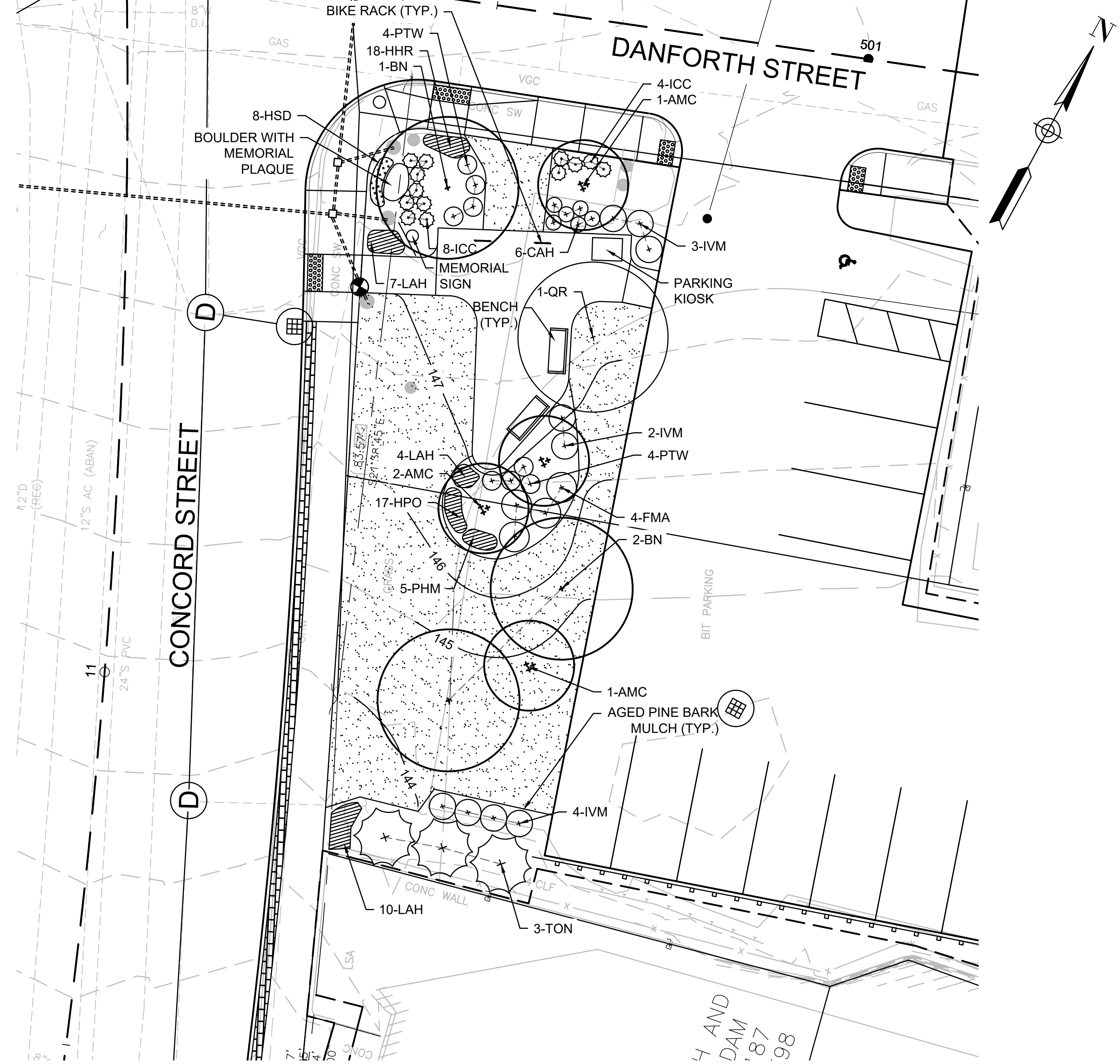
PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034
DESIGNED BY: JL
DRAWN BY: YLZ/MPC
CHECKED BY: TB
SHEET NO. 26 OF 89



4 LAYOUT AND GRADING PLAN - CORNER CONCORD STREET AND DANFORTH STREET
SCALE: 1"=10'

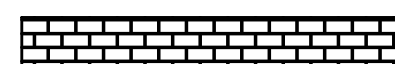


5 MATERIALS AND LANDSCAPE PLAN 4 - CORNER CONCORD STREET AND DANFORTH STREET
SCALE: 1"=10'

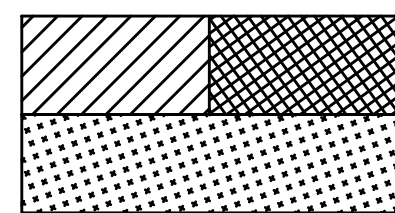
PLANT LIST - SHEET 3						
KEY	DECIDUOUS TREES	COMMON NAME	QTY	SIZE	ROOT	REMARKS/SPACING
AMC	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	4	5-6' HT MULTI-STEMMED	B&B	AS SHOWN
BN	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH	3	2-2.5" CAL	B&B	AS SHOWN
QR	QUERCUS RUBRA	NORTHERN RED OAK	1	2-2.5" CAL	B&B	AS SHOWN
EVERGREEN TREES						
TON	THUJA OCCIDENTALIS 'NIGRA'	DARK AMERICAN ARBORVITAE	3	6-7'	B&B	AS SHOWN
DECIDUOUS SHRUBS						
CAH	CLETHRA ALNIFOLIA 'CRYSTALINA'	SUGARTINA SUMMERSWEET	6	18-24" SPREAD	#3 CONTAINER	2' O.C.
FMA	FOTHERGILLA 'MOUNT AIRY'	MOUNT AIRY FOTHERGILLA	4	3-4' HT	#7 CONTAINER	4' O.C.
IVM	ITEA VIRGINIANA 'MERLOT'	MERLOT VIRGINIA SWEETSPIRE	9	2-3' HT	#3 CONTAINER	30" O.C.
PTW	PHYSOCARPUS OPULIFOLIUS 'TINY WINE'	TINY WINE DWARF NINEBARK	8	2-3' HT	#3 CONTAINER	2.5' O.C.
EVERGREEN SHRUBS						
ICC	ILEX CRENATA 'SOFT TOUCH'	SOFT TOUCH COMPACT JAPANESE HOLLY	12	18-24" SPREAD	#5 CONTAINER	24" O.C.
PERENNIALS AND ORNAMENTAL GRASSES						
HHR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	18	#1 CONTAINER	#1 CONTAINER	10" O.C.
HPO	HEMEROCALLIS 'PURPLE DE ORO'	PURPLE DE ORO DAYLILY	17	#1 CONTAINER	#1 CONTAINER	10" O.C.
HSD	HEMEROCALLIS 'STELLA D'ORO'	STELLA D'ORO DAYLILY	8	#1 CONTAINER	#1 CONTAINER	15" O.C.
LAH	LAVANDULA ANGUSTIFOLIA 'HICOTE'	HIDCOTE LAVENDER	21	#1 CONTAINER	#1 CONTAINER	18" O.C.
PHM	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCH GRASS	5	#1 CONTAINER	#1 CONTAINER	18" O.C.

0 10 20 30 40
SCALE: 1" = 10'

KEY



BRICK EDGE



PERENNIALS/ORNAMENTAL GRASSES



LOAM AND LAWN SEED MIX



EVERGREEN SHRUB



DECIDUOUS SHRUB



EVERGREEN TREE



DECIDUOUS TREE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LANDSCAPE PLAN 3

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

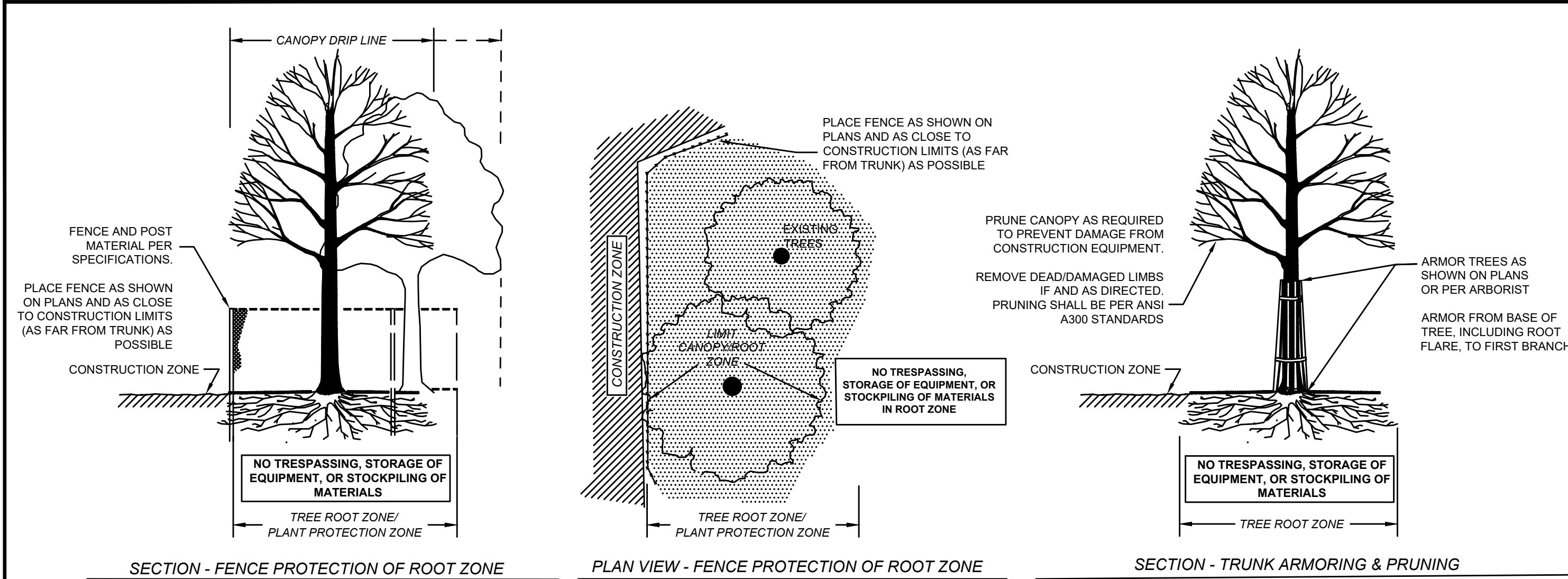
DESIGNED BY: JL

DRAWN BY: YLZ/MPC

CHECKED BY: TB

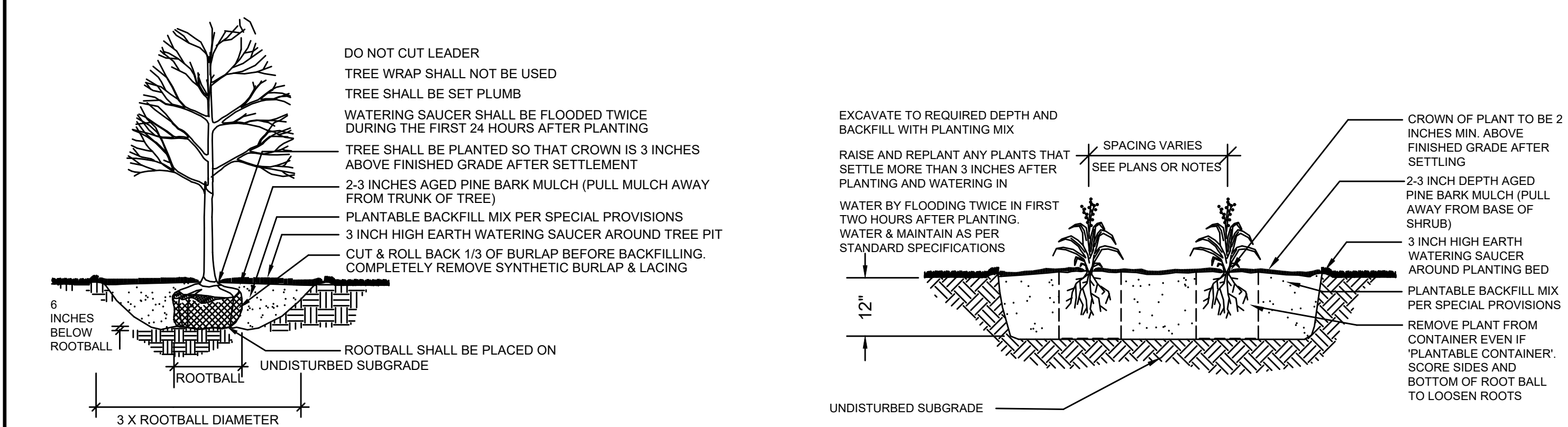
SHEET NO.

27 OF 89



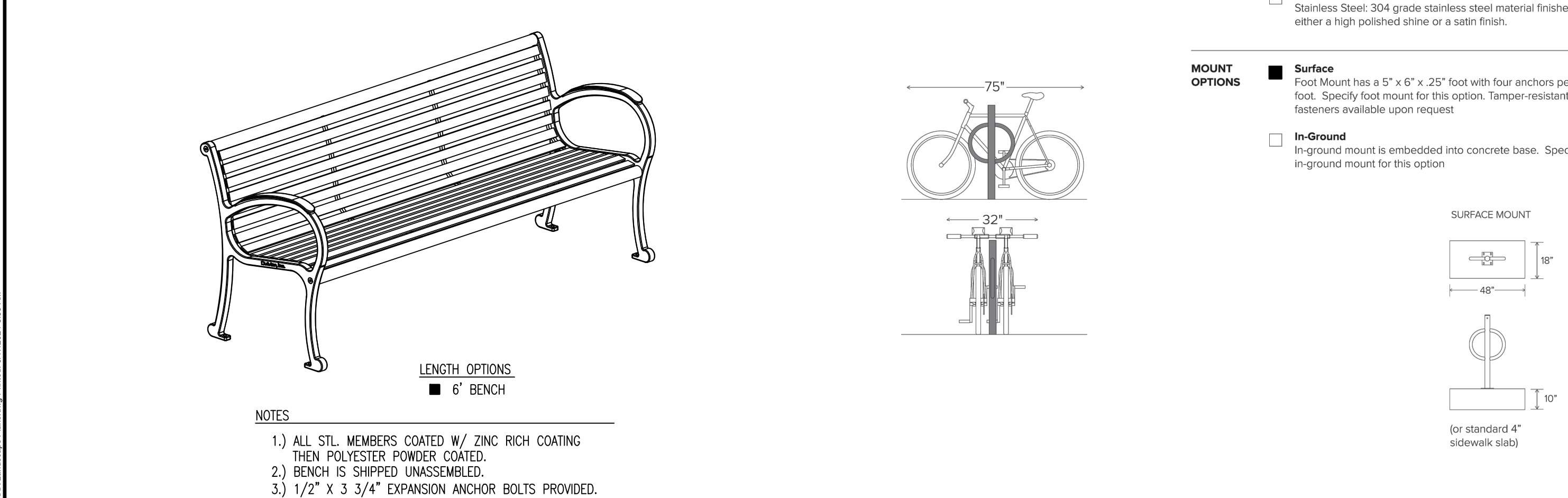
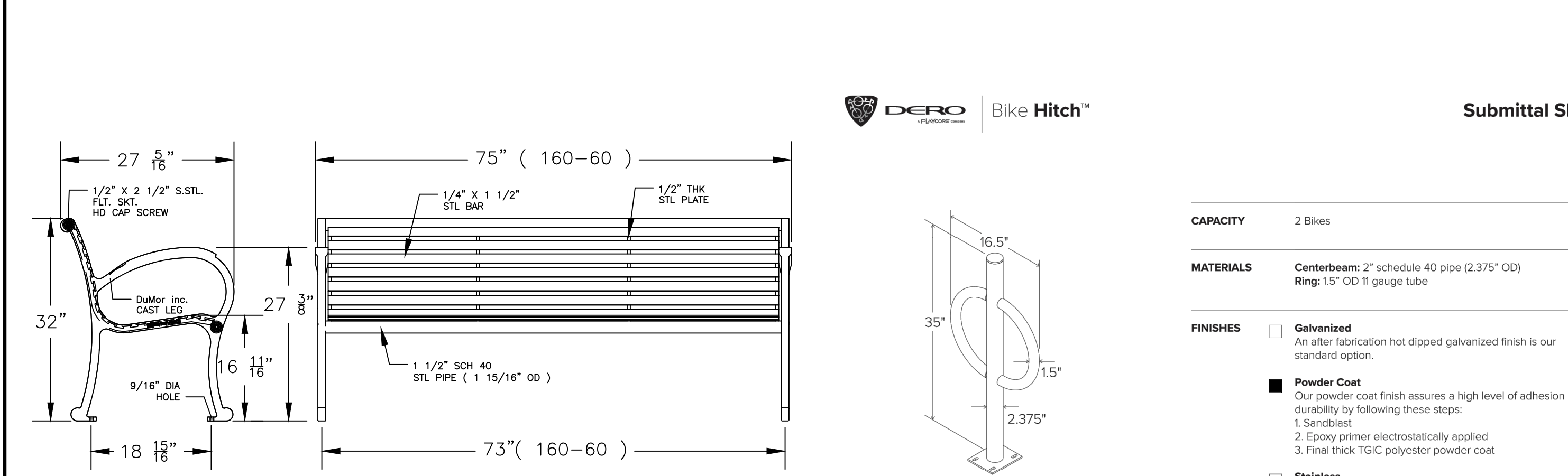
1 TREE PROTECTION DETAILS

NOT TO SCALE



5 PERENNIAL AND ORNAMENTAL GRASS PLANTING

NOT TO SCALE



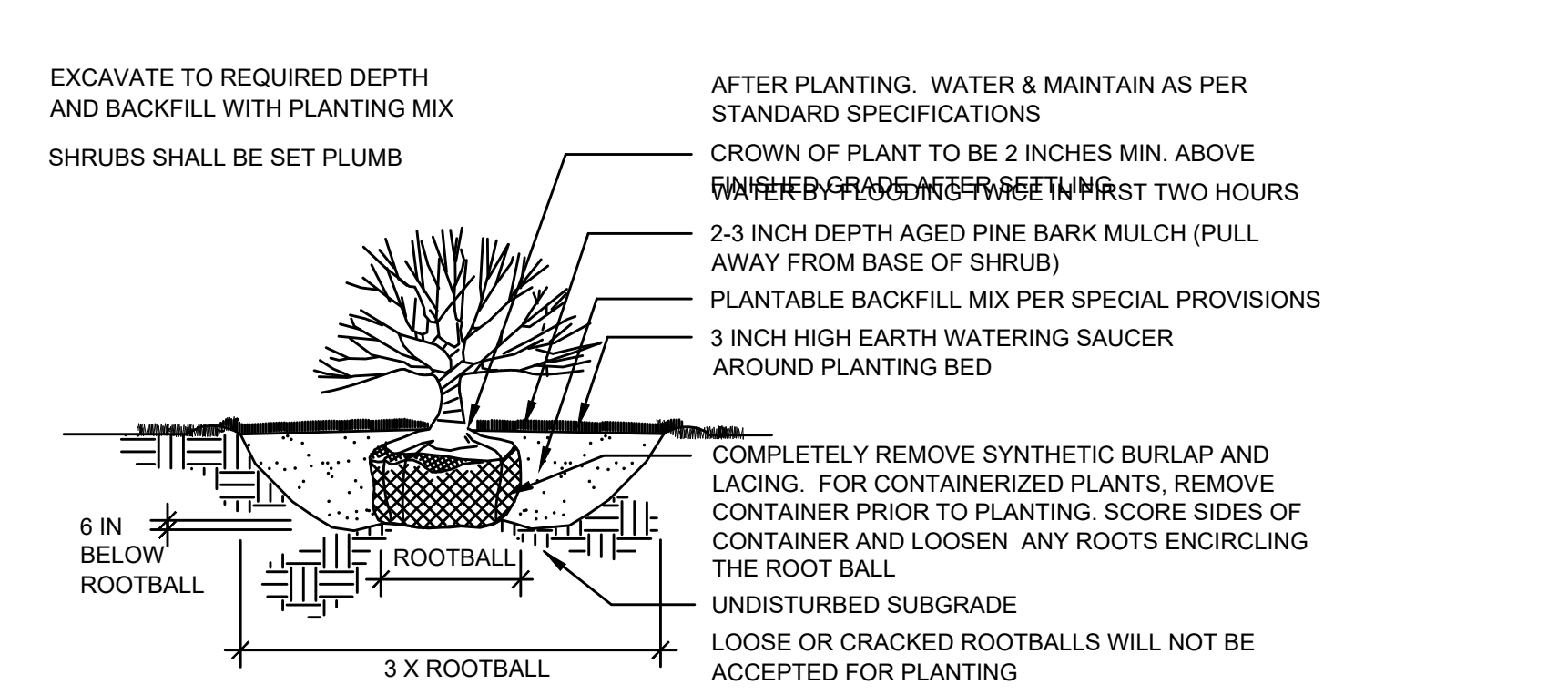
9 BIKE RACK

NOT TO SCALE



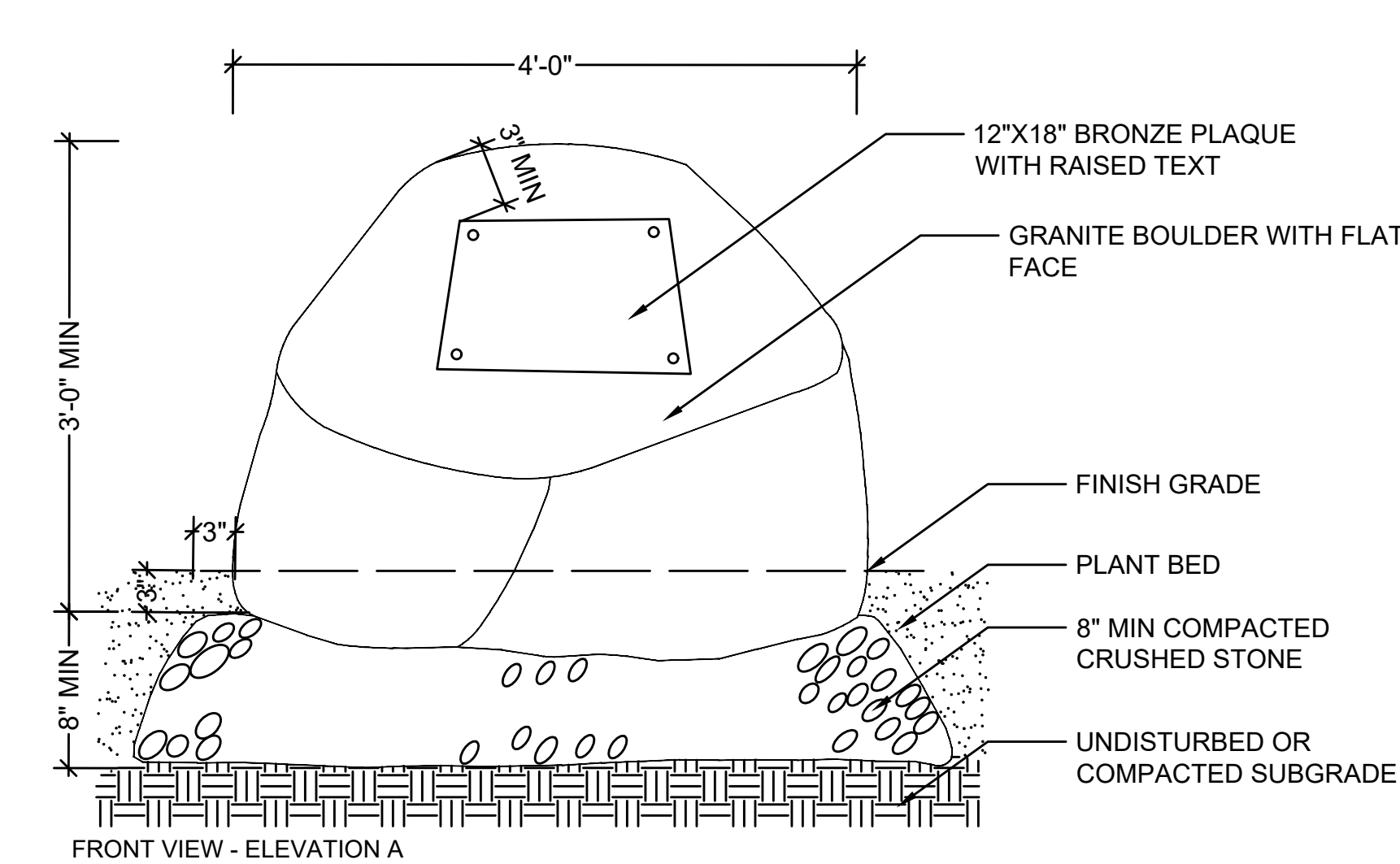
2 SHRUB, PERENNIAL AND ORNAMENTAL GRASS SPACING DETAIL

NOT TO SCALE



6 SHRUB PLANTING

NOT TO SCALE



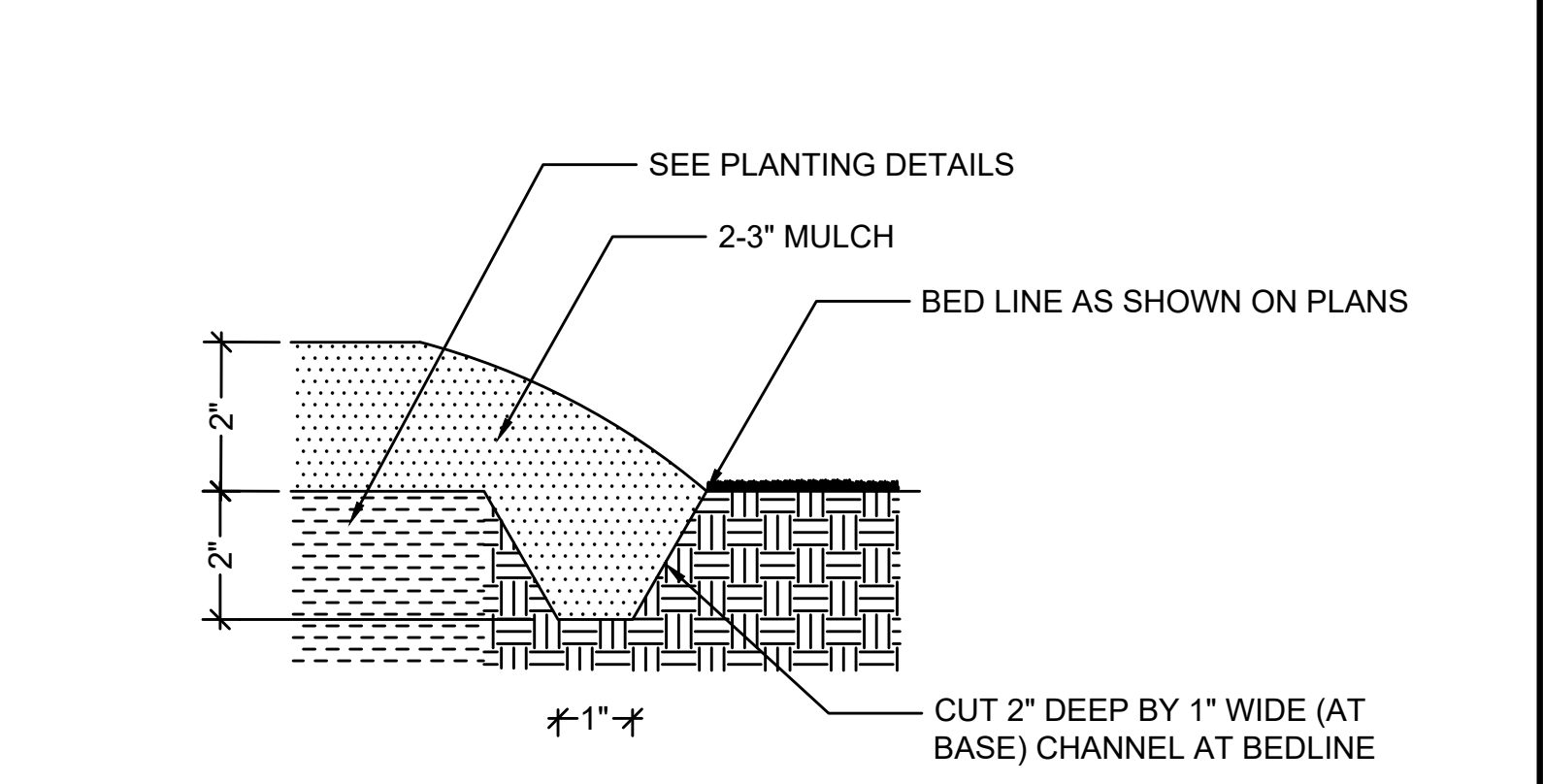
10 BOULDER WITH MEMORIAL PLAQUE

1"=1'-0"

NO.	DATE	REVISIONS
1		

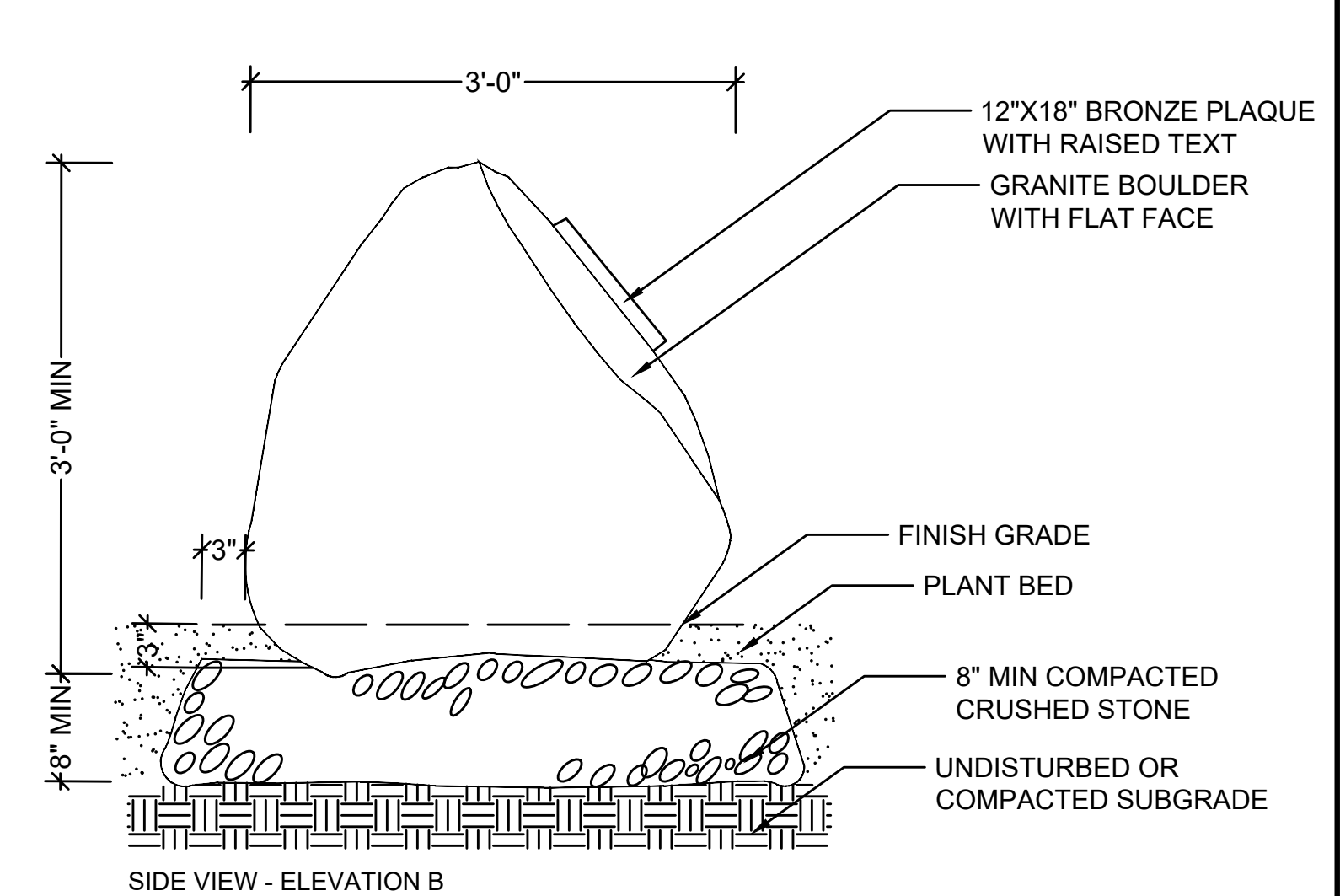
3 EVERGREEN TREE PLANTING

NOT TO SCALE



7 PLANT BED EDGE DETAIL

NOT TO SCALE



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LANDSCAPE DETAILS

PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

DESIGNED BY: JL

DRAWN BY: MPC

CHECKED BY: HP

SHEET NO. 28 OF 89

PROJECT TOTAL PLANT LIST						
KEY	DECIDUOUS TREES	COMMON NAME	QTY	SIZE	ROOT	REMARKS/SPACING
AMC	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	4	5-6' HT MULTI-STEMMED	B&B	AS SHOWN
BN	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH	3	2-2.5" CAL	B&B	AS SHOWN
GBF	GINKGO BILOBA 'FASTIGIATA' GOLD SPIRE	GOLD SPIRE GINKGO	3	2-2.5" CAL	B&B	AS SHOWN
GTS	GLEDITSIA TRICANTHOS SHADEMASTER	SHADEMASTER HONEYLOCUST	1	2-2.5" CAL	B&B	AS SHOWN
QR	QUERCUS RUBRA	NORTHERN RED OAK	1	2-2.5" CAL	B&B	AS SHOWN
	EVERGREEN TREES					
TON	THUJA OCCIDENTALIS 'NIGRA'	DARK AMERICAN ARBORVITAE	3	6-7'	B&B	AS SHOWN
	DECIDUOUS SHRUBS					
AML	ARONIA MELANOCARPA 'LOWSCAPE MOUND'	LOWSCAPE MOUND CHOKEBERRY	21	18-24" SPREAD	#3 CONTAINER	18" O.C.
CAH	CLETHRA ALNIFOLIA 'CRYSTALINA'	SUGARTINA SUMMERSWEET	25	18-24" SPREAD	#3 CONTAINER	2' O.C.
FMA	FOTHERGILLA 'MOUNT AIRY'	MOUNT AIRY FOTHERGILLA	4	3-4' HT	#7 CONTAINER	4' O.C.
IGS	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	9	18-24" SPREAD	#3 CONTAINER	2' O.C.
IVM	ITEA VIRGINIANA 'MERLOT'	MERLOT VIRGINIA SWEETSPIRE	20	2-3' HT	#3 CONTAINER	30" O.C.
PTW	PHYSOCARPUS OPULIFOLIUS 'TINY WINE'	TINY WINE DWARF NINEBARK	12	2-3' HT	#3 CONTAINER	2.5' O.C.
RGL	RHUS AROMATICA 'GRO LOW'	GROW LOW FRAGRANT SUMAC	8	18-24" SPREAD	#3 CONTAINER	2.5' OC
	EVERGREEN SHRUBS					
ICC	ILEX CRENATA 'SOFT TOUCH'	SOFT TOUCH JAPANESE HOLLY	17	18-24" SPREAD	#5 CONTAINER	24" O.C.
JCS	JUNIPERUS CHINENSIS 'SEA GREEN'	SEA GREEN JUNIPER	8	2.5-3' SPREAD	#5 CONTAINER	3' O.C.
	PERENNIALS AND ORNAMENTAL GRASSES					
HHR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	155	#1 CONTAINER	#1 CONTAINER	10" O.C.
HPO	HEMEROCALLIS 'PURPLE DE ORO'	PURPLE DE ORO DAYLILY	164	#1 CONTAINER	#1 CONTAINER	10" O.C.
HSD	HEMEROCALLIS 'STELLA D'ORO'	STELLA D'ORO DAYLILY	8	#1 CONTAINER	#1 CONTAINER	15" O.C.
LAH	LAVANDULA ANGUSTIFOLIA 'HICOTE'	HIDCOTE LAVENDER	43	#1 CONTAINER	#1 CONTAINER	18" O.C.
PLB	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	185	#1 CONTAINER	#1 CONTAINER	10" O.C.
PVS	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	19	#1 CONTAINER	#1 CONTAINER	18" O.C.
PHM	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCH GRASS	15	#1 CONTAINER	#1 CONTAINER	18" O.C.

1

TOTAL PLANT LIST

NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LANDSCAPE DETAILS

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DESIGNED BY: JL

DATE: 6/4/2024

DRAWN BY: YLZ

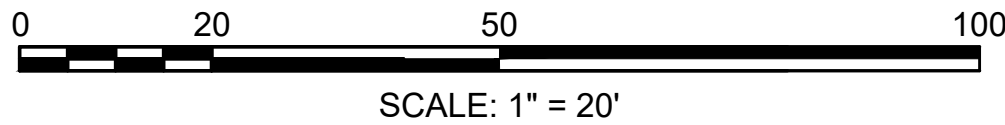
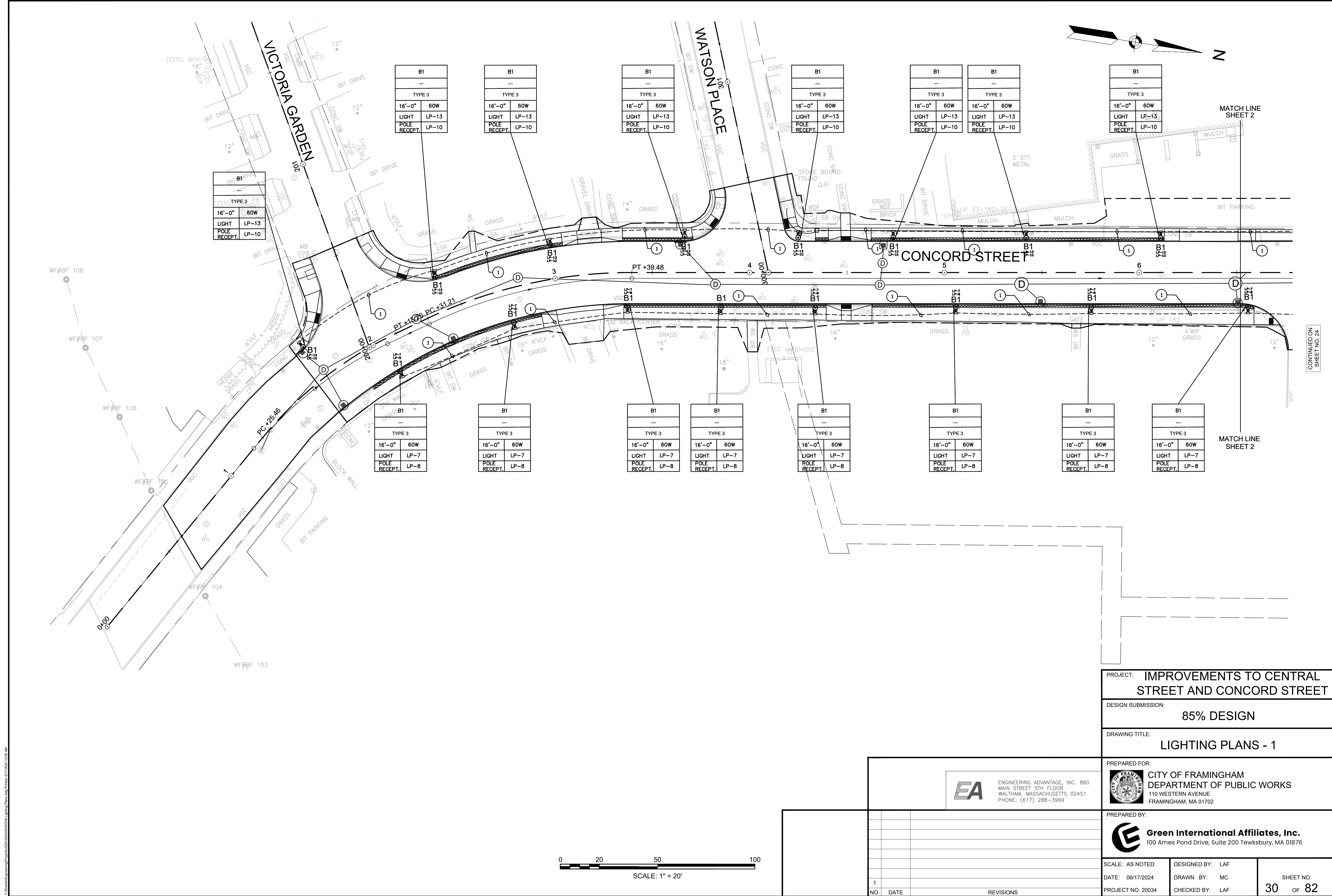
PROJECT NO. 20034

CHECKED BY: TB

SHEET NO.

29 OF 89

1		
NO.	DATE	REVISIONS



PROJECT: **IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET**

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: **LIGHTING PLANS - 1**

PREPARED FOR:
 **CITY OF FRAMINGHAM**
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

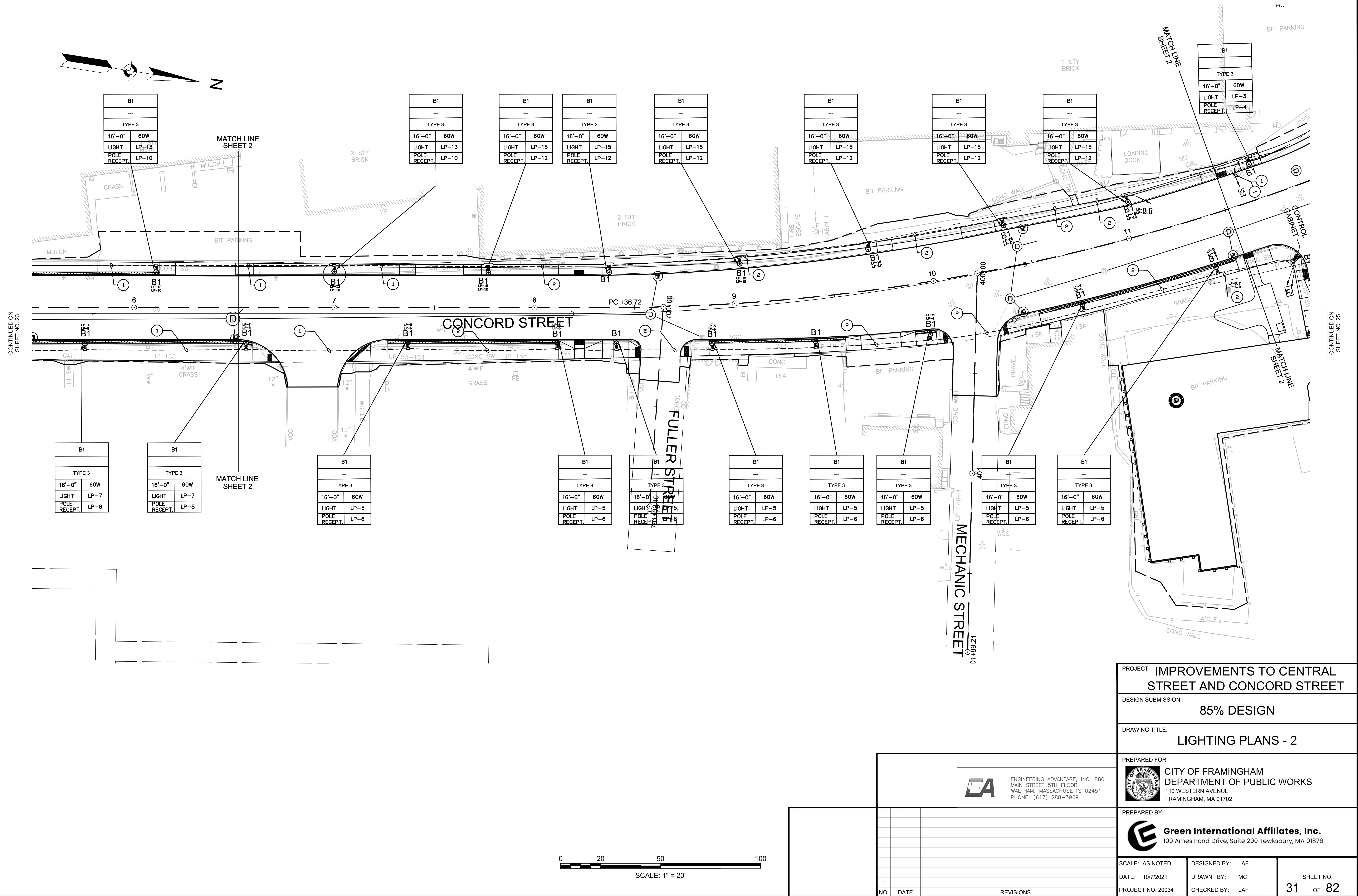
SCALE: AS NOTED	DESIGNED BY: LAF	SHEET NO. 30 OF 82
DATE: 06/17/2024	DRAWN BY: MC	
PROJECT NO. 20034	CHECKED BY: LAF	

 ENGINEERING ADVANTAGE, INC. 880 MAIN STREET 5TH FLOOR WALTHAM, MASSACHUSETTS 02451 PHONE: (617) 288-3969	
1	NO. DATE
REVISIONS	

V:\Standard\Engineering\Projects\2020\2020-034\CONC01 Lighting Plans.dwg Printed: 6/17/2024 10:56 AM

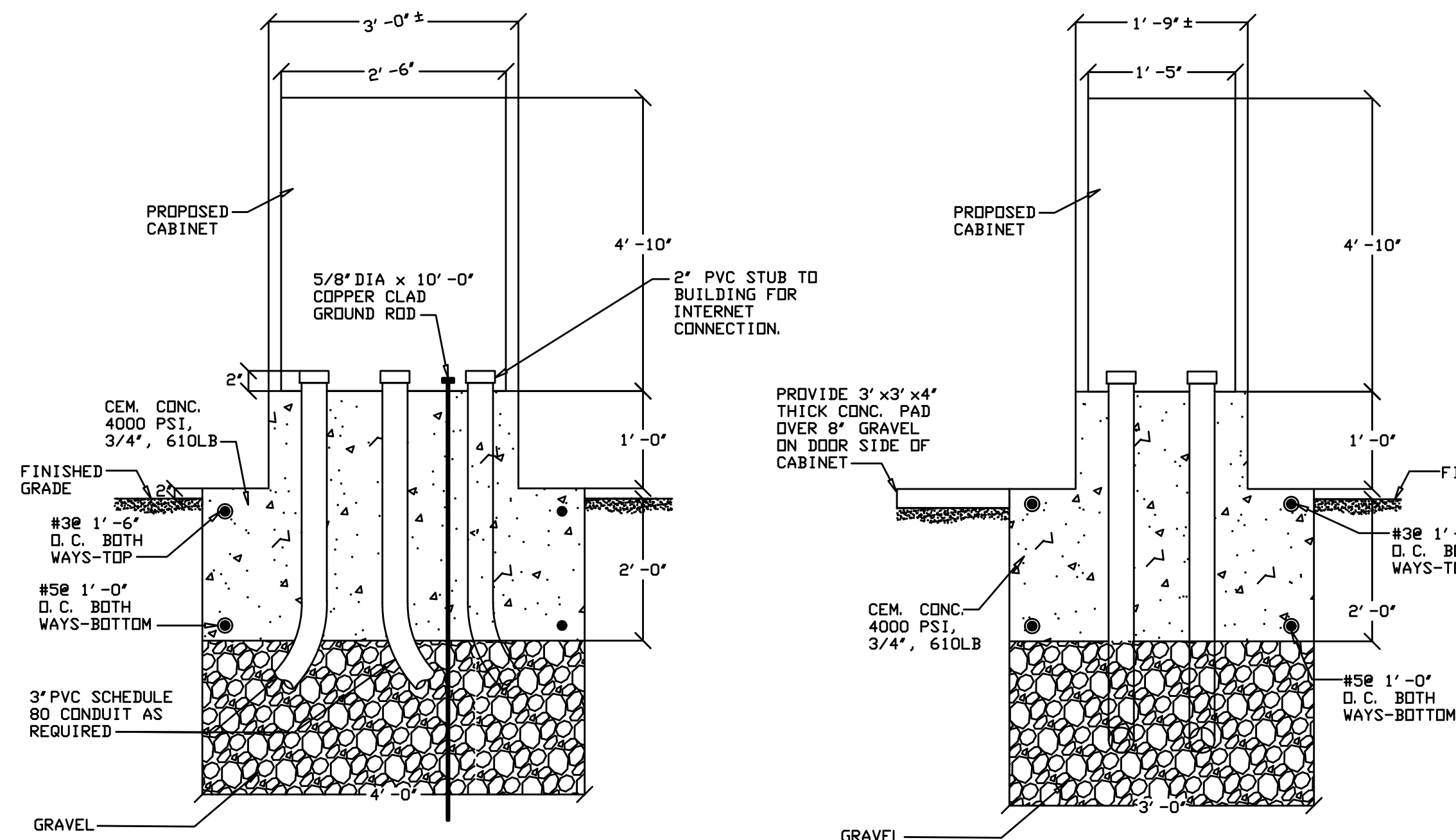
CONTINUED ON
SHEET NO. 23

CONTINUED ON
SHEET NO. 25



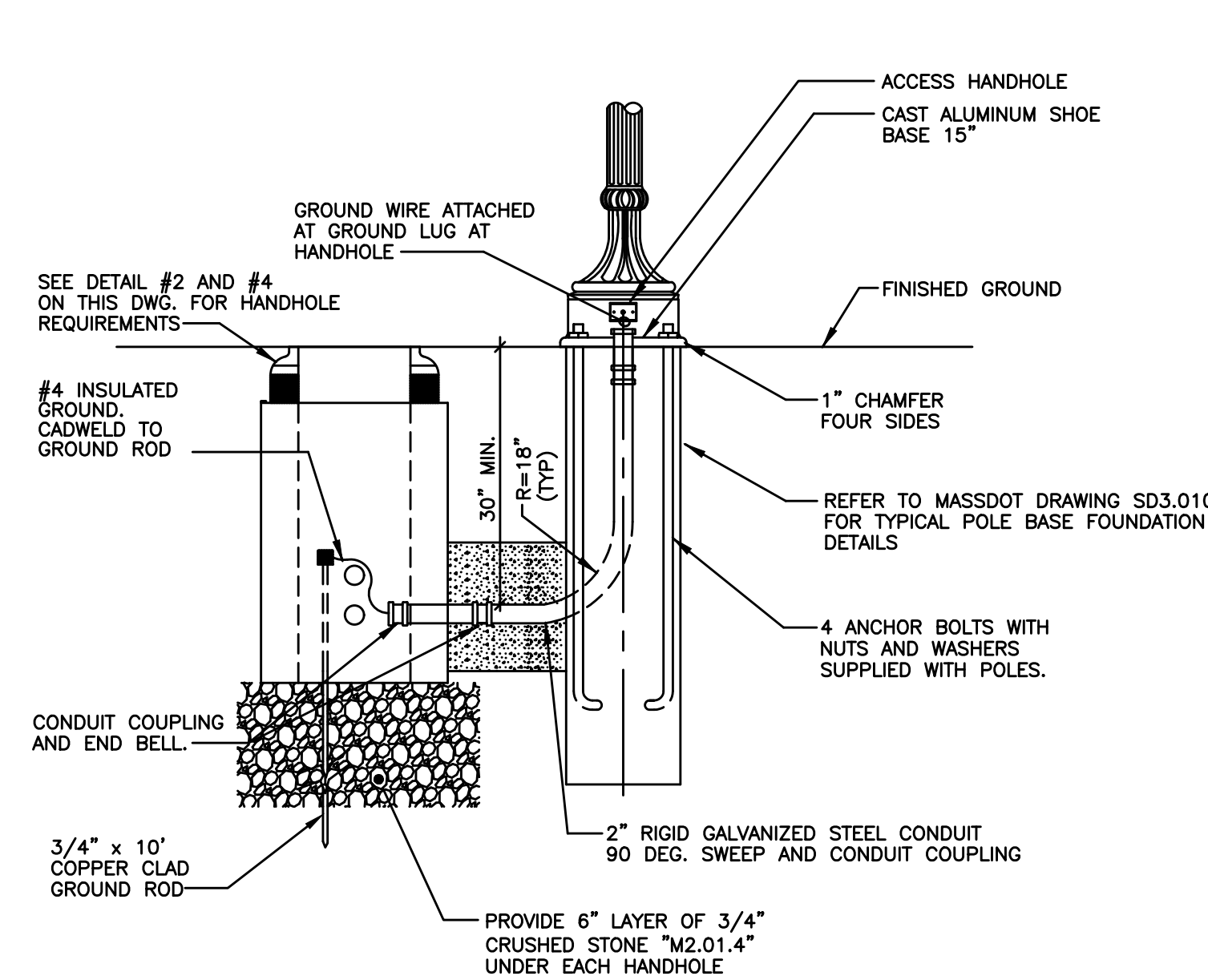
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: LIGHTING PLANS - 2		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: LAF	SHEET NO. 31 OF 82
DATE: 10/7/2021	DRAWN BY: MC	
PROJECT NO. 20034	CHECKED BY: LAF	

EA ENGINEERING ADVANTAGE, INC. 880 MAIN STREET 5TH FLOOR WALTHAM, MASSACHUSETTS 02451 PHONE: (617) 288-3969



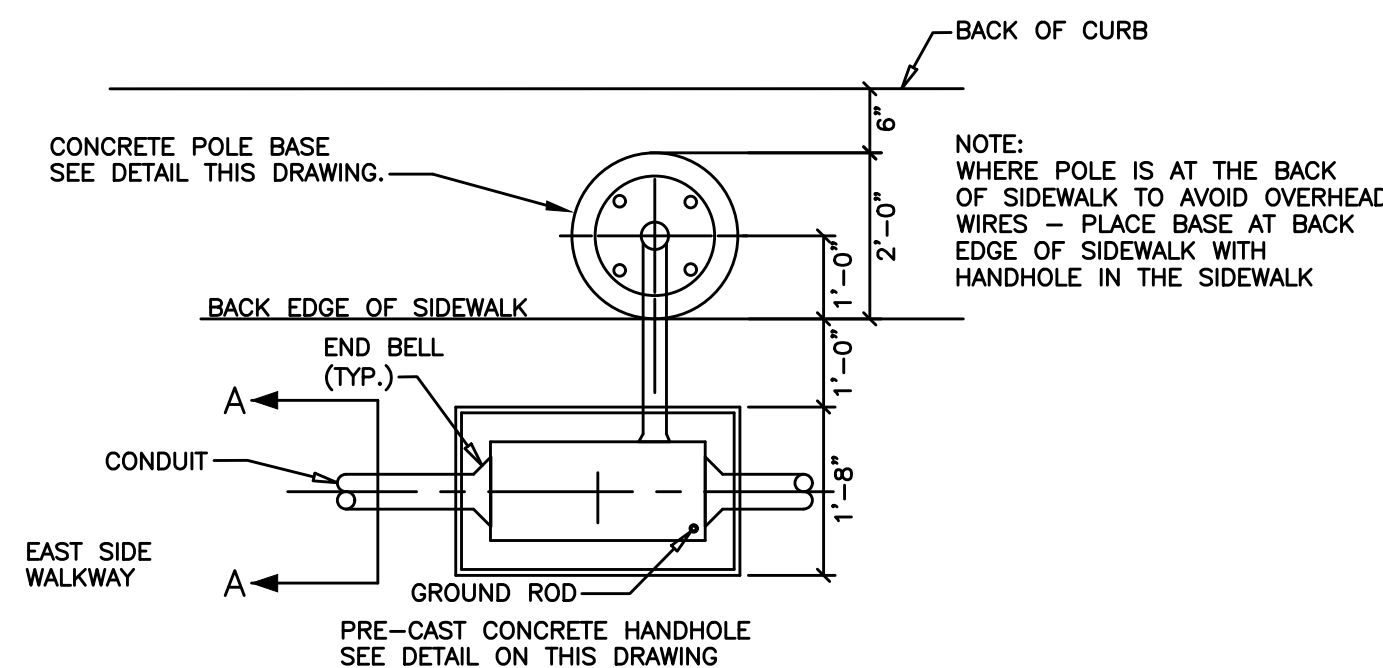
LIGHTING LOAD CENTER
FOUNDATION
FRONT VIEW
NOT TO SCALE

LIGHTING LOAD CENTER
FOUNDATION
SIDE VIEW
NOT TO SCALE

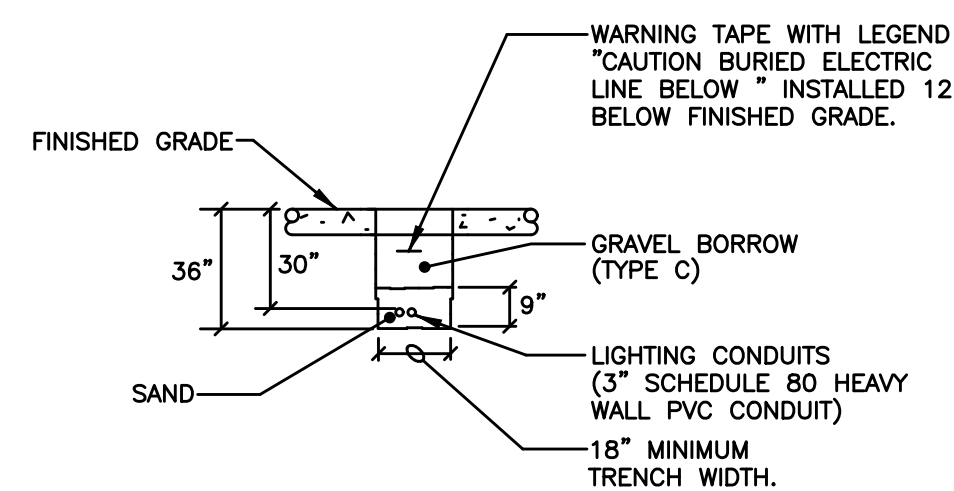


TYPICAL POLE BASE, HANDHOLE AND POLE FOUNDATION
NOT TO SCALE

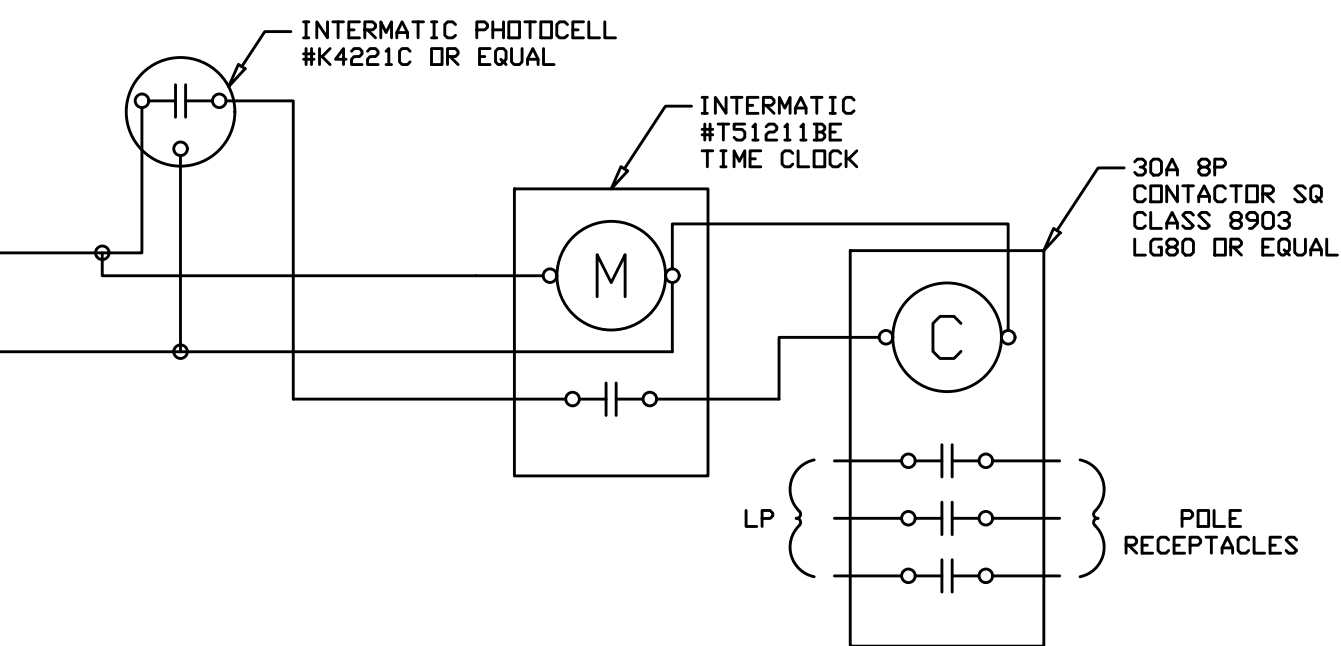
COORDINATE LOCATIONS OF HANDHOLES WITH
EXISTING UNDERGROUND PIPING AND UTILITIES



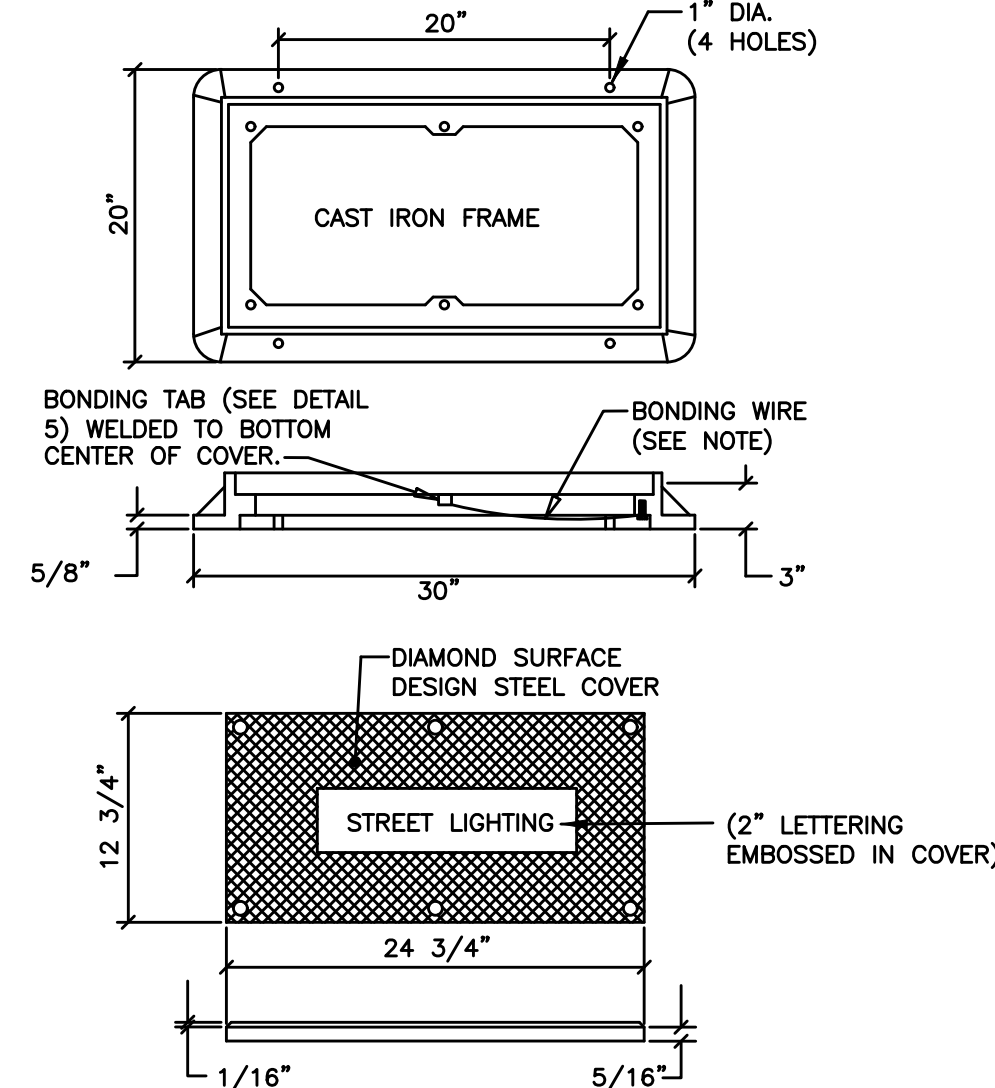
TYPICAL POLE BASE AND HANDHOLE ARRANGEMENT
NOT TO SCALE



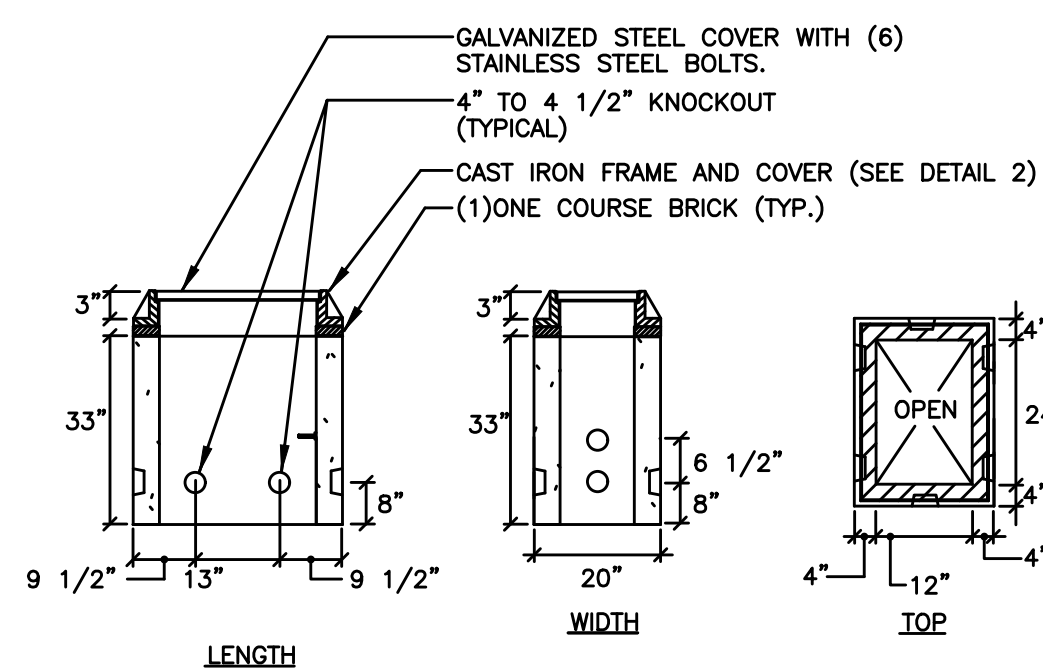
SECTION A
TYPICAL CONDUIT TRENCH
NOT TO SCALE



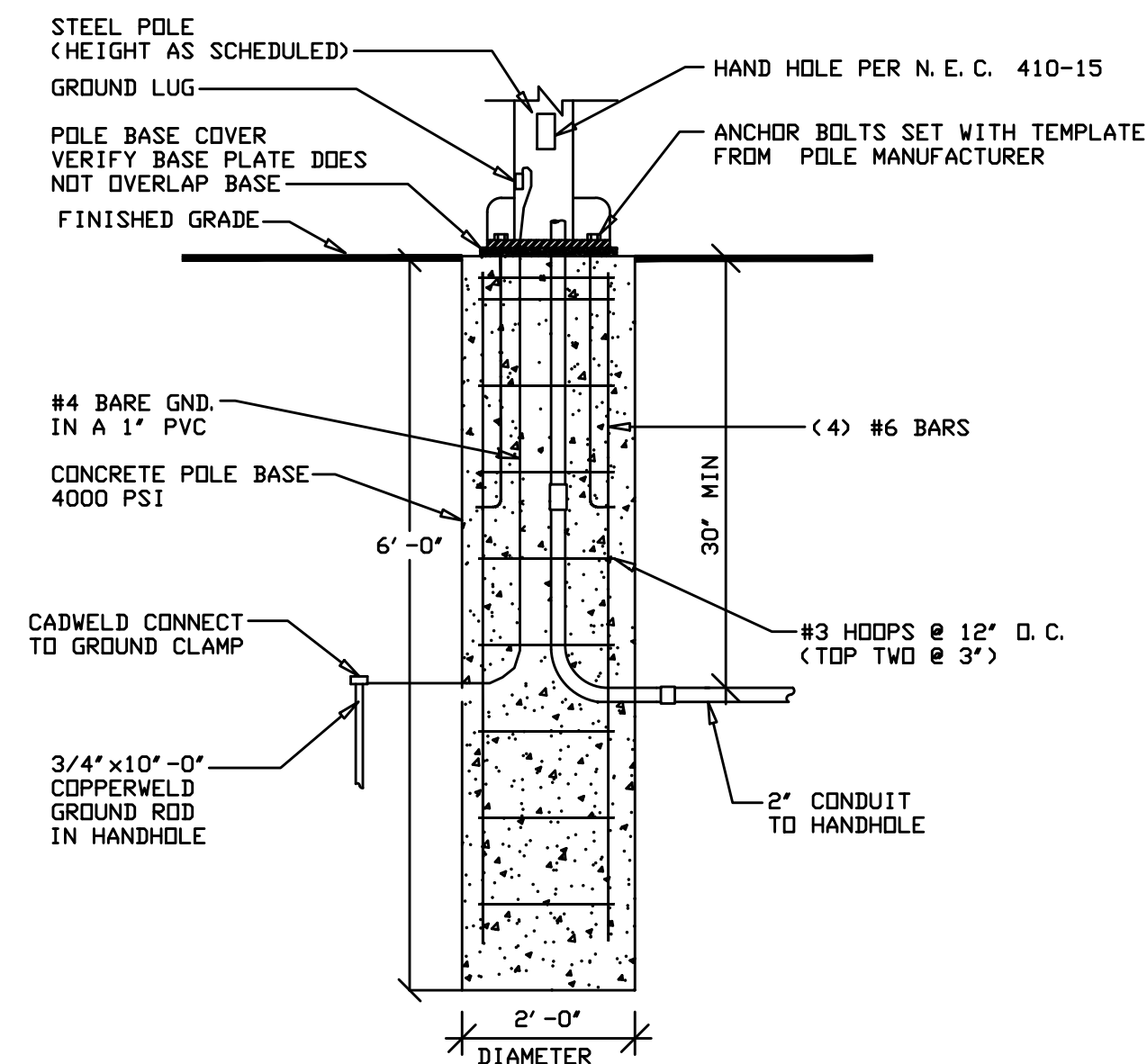
CONTACTOR WIRING DIAGRAM
NOT TO SCALE



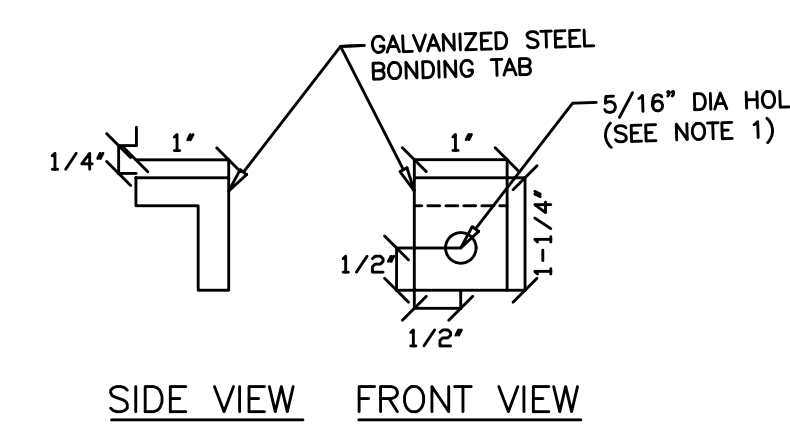
2 TYPICAL HANDHOLE COVER
NOT TO SCALE



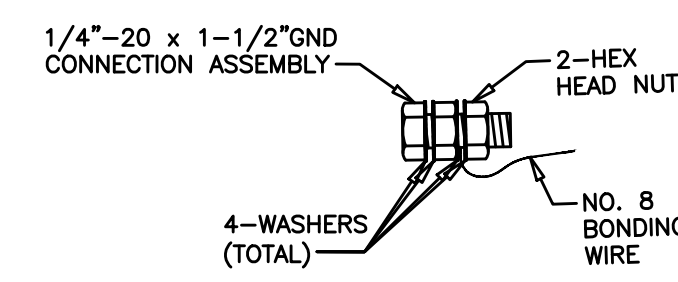
4 TYPICAL PRE-CAST CONCRETE HANDHOLE
NOT TO SCALE



POLE BASE DETAIL
NOT TO SCALE



SIDE VIEW FRONT VIEW



5 GALVANIZED STEEL BONDING TAB
NOT TO SCALE

- NOTES:
1. ATTACH 3 FOOT LENGTH OF NO. 8 BONDING WIRE TO GALVANIZED STEEL BONDING TAB WITH 1/4"-20 x 1-1/2" LONG STAINLESS STEEL HEX HEAD BOLT, STAINLESS STEEL FLAT WASHERS AND 2 HEX NUTS. ATTACH FREE END OF BONDING WIRE TO BONDING WIRE ROUTED THROUGH PULL BOX.
 2. BONDING TAB WELDED TO BOTTOM CENTER OF COVER.

PROJECT: IMPROVEMENTS TO CENTRAL
STREET AND CONCORD STREET

DESIGN SUBMISSION:
85% DESIGN

DRAWING TITLE:
LIGHTING DETAILS - 1

PREPARED FOR:
CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: LAF
DRAWN BY: MC
CHECKED BY: LAF

SHEET NO.
33 OF 89

0 20 50 100
SCALE: 1" = 20'

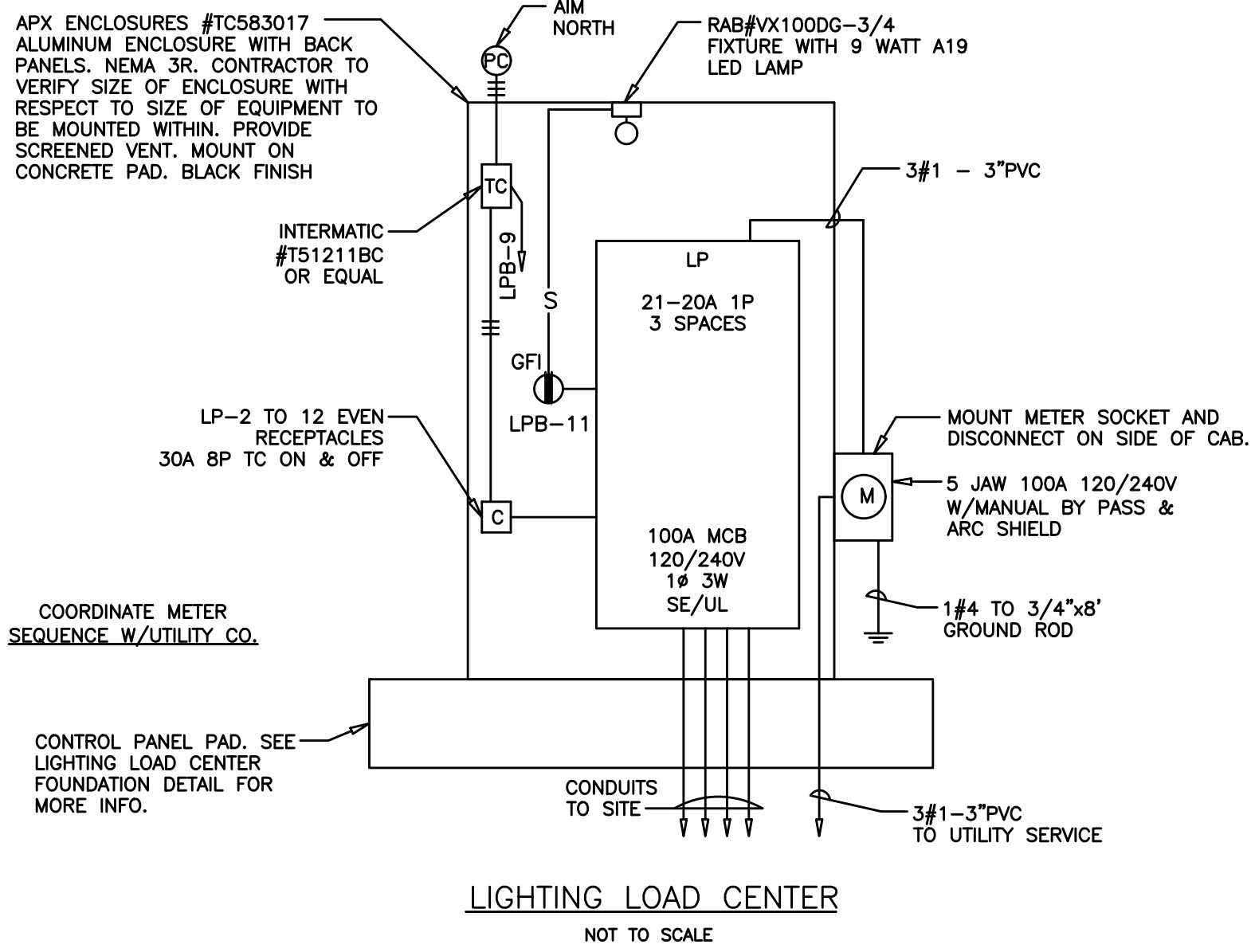
PANEL LP SCHEDULE		CONNECTED LOAD: 10,580 WATTS		HANDLE LOCKS	
		44 AMPS		MAINS: 100A MCB	
		120/240 VOLTS 1Ø 3W			
CKT NO	DESCRIPTION	CKT BKR	CONNECTED LOAD WATTS	CKT BKR	DESCRIPTION
1	6 LIGHT POLES	20 1	870	20 1	6 POLE RECEIPTS
3	6 LIGHT POLES	20 1	1080	20 1	6 POLE RECEIPTS
5	6 LIGHT POLES	20 1	480	20 1	6 POLE RECEIPTS
7	6 LIGHT POLES	20 1	1080	20 1	6 POLE RECEIPTS
9	CONTROL CIRCUIT	20 1	300	20 1	6 POLE RECEIPTS
11	CAB. LTG & RECEIPT	20 1	500	20 1	6 POLE RECEIPTS
13	7 LIGHT POLES	20 1	480	20 1	SPARE
15	7 LIGHT POLES	20 1	480	20 1	SPARE
17	SPARE	20 1		20 1	SPARE
19	SPARE	20 1		20 1	SPARE
21	SPARE	20 1		20 1	SPARE
23	SPARE	20 1		20 1	SPARE
TOTAL			5290	5330	

VOLTAGE DROP CALCULATIONS
% VD = AMPS X DISTANCE (100') X FACTOR /120

CIR#	AMPS	DIST.	WIRE SIZE	% VD
LP-1	6.7	400'	#6	2.2%
LP-3	6.2	500'	#6	2.5%
LP-5	3.5	500'	#6	1.4%
LP-7	3.5	1000'	#6	2.8%
LP-13	3.5	620'	#6	1.8%
LP-15	3.5	1000'	#6	2.8%

WIRE SCHEDULE

- 4#6 & 1#6GND. - 3" PVC
- 6#6 & 1#6GND. - 3" PVC
-
-
- EMPTY - 2" PVC



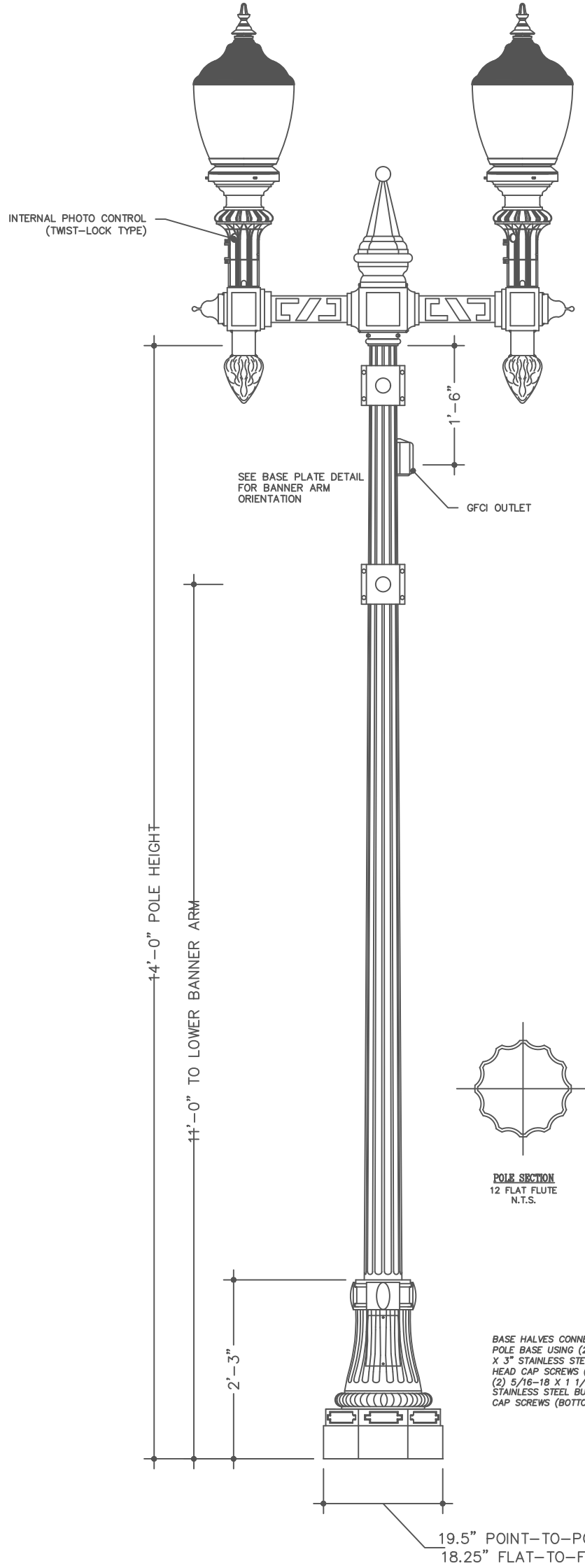
LUMINAIRE SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
CATALOG NO.: K199R-B2AR-III-60(SSL)-1042-120:277-K18-SST-PE
OPTICAL SYSTEM: BAFFLED ARRAY ACRYLIC RIPPLED
IES CLASS: TYPE III
WATTAGE: 60W SOLID STATE LIGHTING
LINE VOLTAGE: 120:277V
I.P. RATING: IP 65
CCT: 4000K
POLE ADAPTER: K18 WITH INTERNAL 3-PIN RECEPTACLE & LONG LIFE PHOTOCONTROL
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK
OPTIONS:

- SOLID SPUN TOP
- #1 VENTED FINIAL
- QUICK DISCONNECT WIRING
- 540 JOULE @ 2mS 20kA-8/20uS SURGE PROTECTION

DRIVER SPECIFICATIONS
MANUFACTURER: MEANWELL
TYPE: ELECTRONIC
CATALOG NO.: HLG-100H (DATA SHEET ATTACHED)

POLE & BASE SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
CATALOG NO.: K199R-B2AR-III-60(SSL)-1042-120:277-K18-SST-PE
BASE: CAST ALUMINUM ALLOY 356 PER ASTM B26
SHAFT: "CLAMSHELL" ALUMINUM ALLOY 6063 PER ASTM B221 AND HEAT TREATED TO T6 TEMPER AFTER WELDING. ROUND TAPERED (0.14" PER FT.) - 12 FLAT FLUTE PROFILE - 0.188 WALL THICKNESS
TENON: 3 1/2" DIA. x 3" LONG
HAND HOLE: 3" x 2" (NOMINAL) COVER SECURED BY (2) 1/4" -20 SS SCREWS
ACCESS DOOR: LOCATED OPPOSITE HANDHOLE
ANCHOR BOLTS: (4) 3/4" DIA. x 24"L +3" HOOK. PER ASTM F1554 -07 -Gr55, FULLY HOT DIPPED GALVANIZED PER ASTM A153.
BOLT PROJECTION: (1) HEX NUT AND (1) FLAT WASHER
GROUND PROVISION: LOCATED INSIDE POLE HANDHOLE
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK
OPTIONS: 20 AMP GFCI OUTLET WITH WEATHERPROOF WHILE IN USE COVER

BANNER ARM SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
STYLE: CLAMP-ON
MATERIAL: ALUMINUM WITH STAINLESS STEEL HARDWARE
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK



LUMINAIRE SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
CATALOG NO.: K199R-B2AR-III-60(SSL)-1042-120:277-K18-SST-PE
OPTICAL SYSTEM: BAFFLED ARRAY ACRYLIC RIPPLED
IES CLASS: TYPE III
WATTAGE: 60W SOLID STATE LIGHTING
LINE VOLTAGE: 120:277V
I.P. RATING: IP 65
CCT: 4000K
POLE ADAPTER: K18 WITH INTERNAL 3-PIN RECEPTACLE & LONG LIFE PHOTOCONTROL
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK
OPTIONS:

- SOLID SPUN TOP
- #1 VENTED FINIAL
- QUICK DISCONNECT WIRING
- 540 JOULE @ 2mS 20kA-8/20uS SURGE PROTECTION

DRIVER SPECIFICATIONS
MANUFACTURER: MEANWELL
TYPE: ELECTRONIC
CATALOG NO.: HLG-100H (DATA SHEET ATTACHED)

POLE & BASE SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
CATALOG NO.: K199R-B2AR-III-60(SSL)-1042-120:277-K18-SST-PE
BASE: CAST ALUMINUM ALLOY 356 PER ASTM B26
SHAFT: "CLAMSHELL" ALUMINUM ALLOY 6063 PER ASTM B221 AND HEAT TREATED TO T6 TEMPER AFTER WELDING. ROUND TAPERED (0.14" PER FT.) - 12 FLAT FLUTE PROFILE - 0.188 WALL THICKNESS
TENON: 3 1/2" DIA. x 3" LONG
HAND HOLE: 3" x 2" (NOMINAL) COVER SECURED BY (2) 1/4" -20 SS SCREWS
ACCESS DOOR: LOCATED OPPOSITE HANDHOLE
ANCHOR BOLTS: (4) 3/4" DIA. x 24"L +3" HOOK. PER ASTM F1554 -07 -Gr55, FULLY HOT DIPPED GALVANIZED PER ASTM A153.
BOLT PROJECTION: (1) HEX NUT AND (1) FLAT WASHER
GROUND PROVISION: LOCATED INSIDE POLE HANDHOLE
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK
OPTIONS: 20 AMP GFCI OUTLET WITH WEATHERPROOF WHILE IN USE COVER

BANNER ARM SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
STYLE: CLAMP-ON
MATERIAL: ALUMINUM WITH STAINLESS STEEL HARDWARE
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LIGHTING DETAILS - 2

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

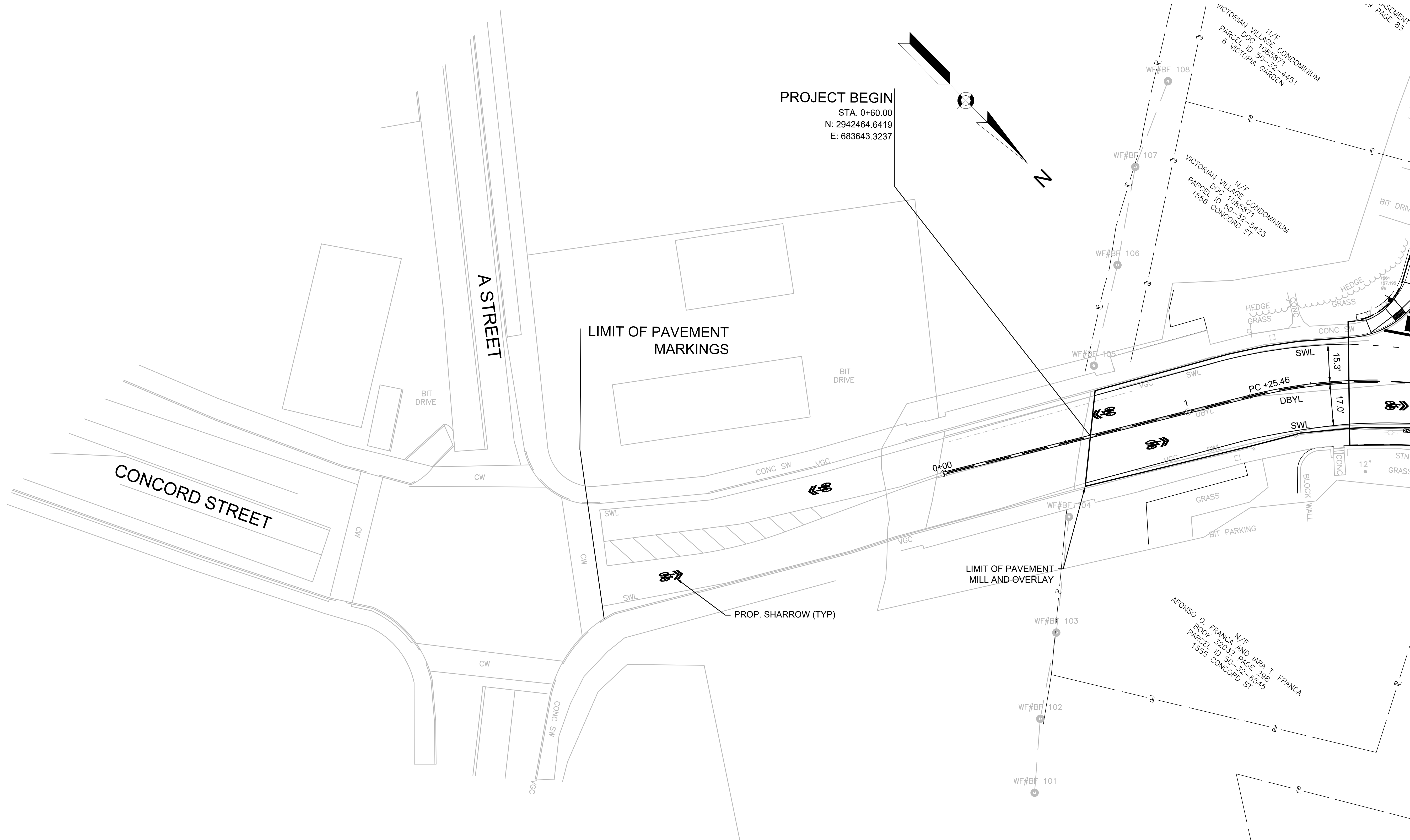
SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: LAF
DRAWN BY: MC
CHECKED BY: LAF

SHEET NO. 34 OF 89

0 20 50 100
SCALE: 1" = 20'

C:\Shared\Engineering\Projects\200304\MA0304\DWG\35.dwg AND 35.dwg PLOT Date Printed: 6/17/2024 9:54 AM

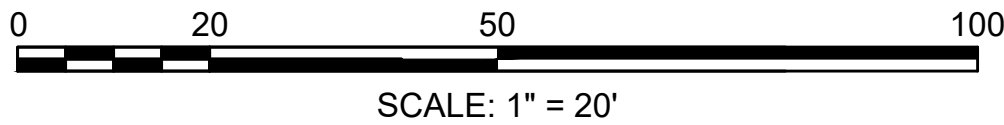


PROJECT BEGIN
STA. 0+60.00
N: 2942464.6419
E: 683643.3237

LIMIT OF PAVEMENT
MARKINGS

LIMIT OF PAVEMENT
MILL AND OVERLAY

PROP. SHARROW (TYP)

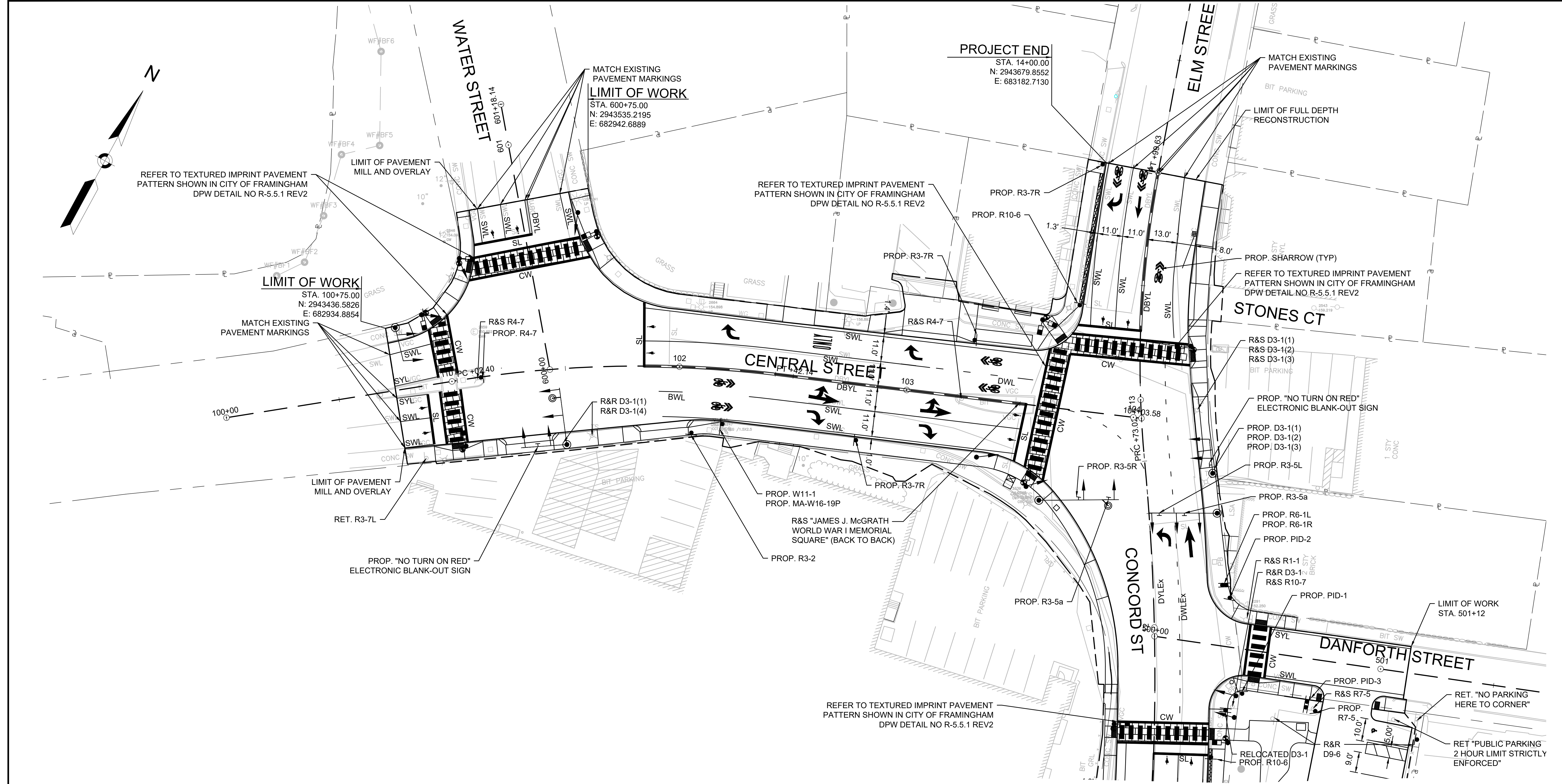


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: PAVEMENT MARKING & SIGNING PLAN 1		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 35 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	

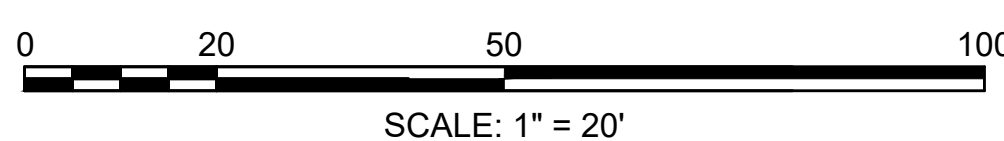
NO.	DATE	REVISIONS

CONTINUED ON
SHEET NO. 36





CONTINUED ON
SHEET NO. 37



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: PAVEMENT MARKING & SIGNING PLAN 4		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 38 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	

NO.	DATE	REVISIONS

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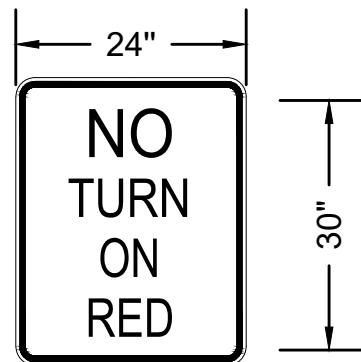
C:\Users\jengland\Documents\20250324\CHS\CHS_Summary.dwg Printed: 6/17/2024 8:54 AM

IDENTIFICA TION	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (IN)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA (S.F)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MRK.		BACKGRO UND	LEGEND	BORDER			
MA-W16-19P	24	18		SEE MASSDOT STANDARD SIGN BOOK			2	RETRORE FLECTIVE YELLOW	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	2 MOUNTED WITH W11-1	3.00	6.00
W3-3	30	30		SEE MUTCD DETAIL			1	RETRORE FLECTIVE YELLOW	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	P-5 1	6.25	6.25
W11-1	30	30					3	FLOURE- SCENT YELLOW GREEN	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	P-5 3	6.25	18.75
W11-2	30	30					4	FLOURE- SCENT YELLOW GREEN	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	4 MOUNTED ON RRFB	6.25	25.00
W16-7PL	24	12					2	FLOURE- SCENT YELLOW GREEN	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	2 MOUNTED ON RRFB	2.00	4.00
W16-7PR	24	12					2	FLOURE- SCENT YELLOW GREEN	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	2 MOUNTED ON RRFB	2.00	4.00
R1-1	30	30					2	RETRORE FLECTIVE RED	RETRORE FECTIVE WHITE	RETROREF LECTIVE WHITE	P-5 2	6.25	12.50
R3-2	24	24					1	RETRORE FLECTIVE WHITE	BLACK/RE TROREFLE CTIVE RED	RETROREF LECTIVE BLACK	P-5 1	4.00	4.00
R3-2_SP	24	24					1	RETRORE FLECTIVE WHITE	BLACK/RE TROREFLE CTIVE RED	RETROREF LECTIVE BLACK	P-5 1	4.00	4.00
R3-5a	30	36					2	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	2 MOUNTED ON MAST ARM	7.50	15.00
R3-5L	30	36					1	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	1 MOUNTED ON MAST ARM	7.50	7.50
R3-5R	30	36					1	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	1 MOUNTED ON MAST ARM	7.50	7.50
R3-7L	30	30					1	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	P-5 1	6.25	6.25
R3-7R	30	30					3	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	P-5 3	6.25	18.75
R3-17	24	18					4	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	P-5 4	3.00	12.00
R3-17aP	24	9					2	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	2 MOUNTED WITH R3-17	1.50	3.00
R3-17bP	24	9					2	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	2 MOUNTED WITH R3-17	1.50	3.00
R4-7	24	30					1	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	P-5 1	5.00	5.00
R6-1L	36	12					1	RETRORE FLECTIVE WHITE/ RETRORE FLECTIVE BLACK	RETRORE FLECTIVE BLACK	RETROREF LECTIVE WHITE	1 MOUNTED WITH R6-1R	3.00	3.00

IDENTIFICA TION	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (IN)			NUMBER OF SIGNS REQUIRED	COLOR				UNIT AREA (S.F.)	AREA (S.F)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MRK.		BACKGRO UND	LEGEND	BORDER			
R6-1R	36	12		SEE MUTCD DETAIL			1	RETRORE FLECTIVE WHITE/ RETRORE FLECTIVE BLACK	RETRORE FLECTIVE BLACK	RETROREF LECTIVE WHITE	P-5 2	3.00	3.00
R7-1	12	18					1	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE RED	RETROREF LECTIVE RED	P-5 1	1.50	1.50
R7-5	12	18					1	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE RED	RETROREF LECTIVE RED	P-5 1	1.50	1.50
R10-6	24	36					2	RETRORE FLECTIVE WHITE	RETRORE FLECTIVE BLACK	RETROREF LECTIVE BLACK	P-5 2	6.00	12.00
D3-1(1)	36	9		SEE DETAIL ON SHEET 40			1	RETRORE FLECTIVE BLUE	BLACK/RE TROREFLE CTIVE WHITE	RETROREF LECTIVE WHITE	MOUNTED ON MAST ARM	2.25	2.25
D3-1(2)	24	9					1	RETRORE FLECTIVE BLUE	BLACK/RE TROREFLE CTIVE WHITE	RETROREF LECTIVE WHITE	MOUNTED ON MAST ARM	1.50	1.50
D3-1(3)	36	9					1	RETRORE FLECTIVE BLUE	BLACK/RE TROREFLE CTIVE WHITE	RETROREF LECTIVE WHITE	MOUNTED ON MAST ARM	2.25	2.25
PID-1	24	36					1	RETRORE FLECTIVE BLACK AND TAN	BLUE AND WHITE	NONE	P-5 1	6.00	6.00
PID-2	24	36					1	RETRORE FLECTIVE BLACK AND TAN	BLUE AND WHITE	NONE	P-5 1	6.00	6.00
PID-3	72	30					1	RETRORE FLECTIVE BLACK AND TAN	BLUE AND WHITE	NONE	P-5 2	15.00	15.00
IDSD-1	48	24					2	RETRORE FLECTIVE BLACK AND TAN	WHITE	NONE	P-5 2	8.00	16.00
												TOTAL (S.F.)	150.50

NOTES:

"NO TURN ON RED" ELECTRONIC BLANK-OUT SIGN



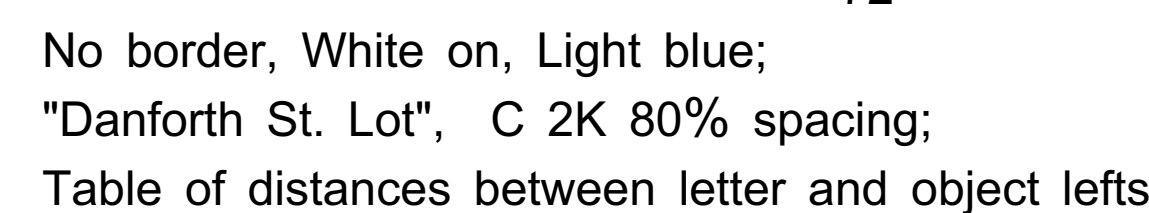
R10-11b

- "NO TURN ON RED" ELECTRONIC BLANK-OUT SIGNS TO BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 815.11.
- PROPOSED R10-11b ELECTRONIC BLANK-OUT SIGNS SHALL BE BLANK AT ALL TIMES EXCEPT WHEN THE PEDESTRIAN PHASE IS ACTIVATED AT THE RESPECTIVE INTERSECTION. DURING THE PEDESTRIAN SIGNAL PHASE, THE R10-11b ELECTRONIC BLANK-OUT SIGN AT THE RESPECTIVE INTERSECTION SHALL READ "NO TURN ON RED" AS SHOWN IN THE ABOVE DETAIL.
- SEE SPECIAL PROVISIONS FOR ELECTRONIC BLANK-OUT SIGN SPECIFICATIONS.

NOTES:

- W11-2, W16-7PL AND W16-7PR SIGNS INSTALLED WITH PROPOSED RECTANGULAR RAPID FLASHING BEACONS (RRFB) TO BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEMS 824.221 AND 824.222, RESPECTIVELY.
- D3-1(1), D3-2(2) AND D3-3(3) SIGNS TO BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEM 874.01.
- PID-1 AND PID-2 SIGNS TO BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEM 827.991.
- PID-3 AND IDSD-1 SIGNS TO BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEM 827.992.

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: TRAFFIC SIGN SUMMARY 1		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 39 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	



2.1	D	a	n	f	o	r	t	h	S	t	.	L	o	t		
5.3	4.9	4.9	3.0	5.0	2.8	3.6	10.4	5.0	3.2	7.6	4.7	4.5	2.9	2.1		

[illegible]

Table of distances between letter and object lefts

Technical drawing of a rectangular street sign for "Concord St". The sign features the City of Pasadena seal on the left and the text "Concord St" in a bold, sans-serif font. Dimensions are provided in feet and inches.

Sign Dimensions:

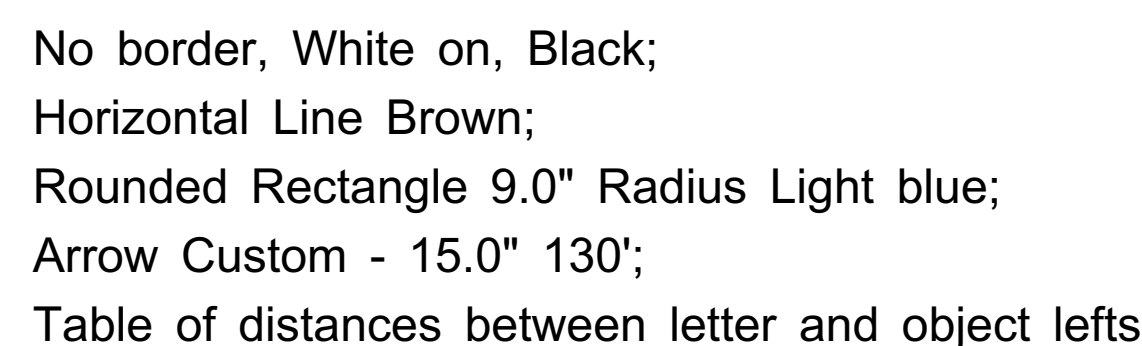
- Overall Width: 36"
- Overall Height: 15"
- Text "Concord" Width: 19.1"
- Text "St" Width: 3"
- Seal Width: 5.5"
- Text "Concord" Height: 1.5"
- Text "St" Height: 1.5"
- Seal Height: 1.5"
- Sign Thickness: 1.5"

Mounting Dimensions:

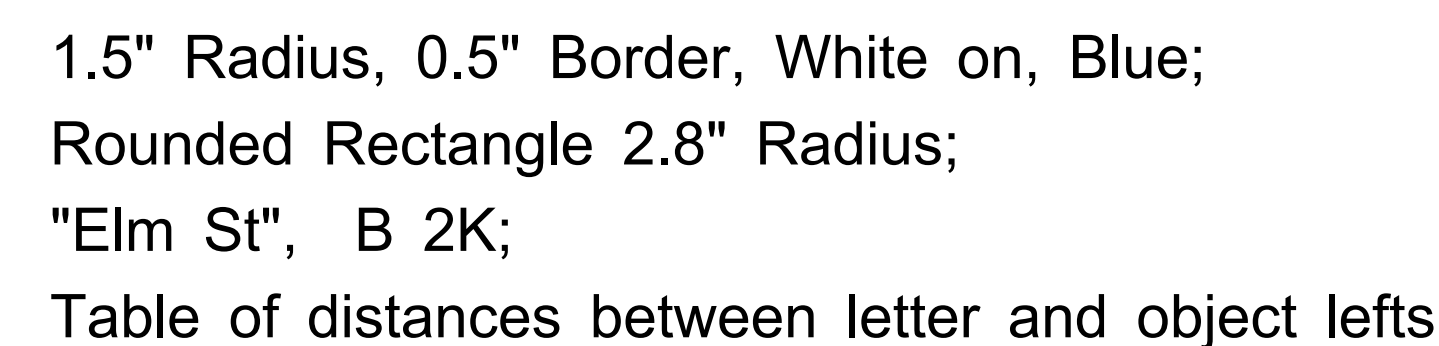
- Mounting Bracket Width: 1.7"
- Mounting Bracket Height: 1.5"
- Mounting Bracket Offset: 1.5"
- Mounting Bracket Thickness: 1.5"

Table of distances between letter and object lefts

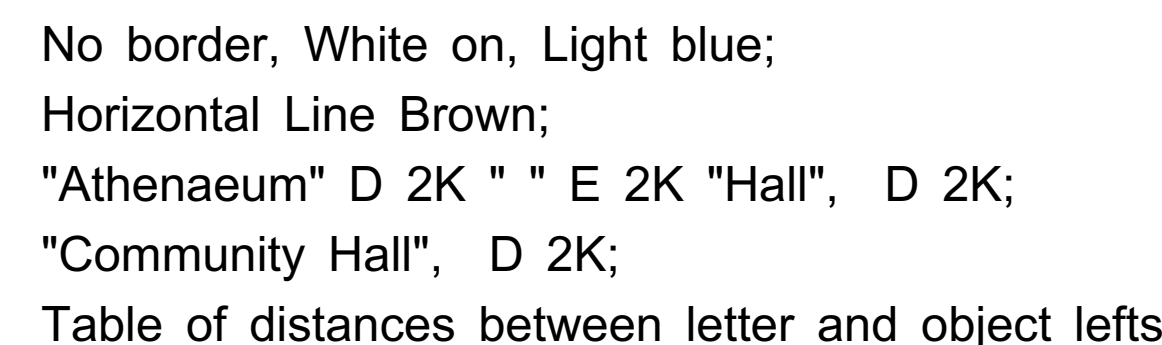
D3-1(1) DETAIL
NOT TO SCALE



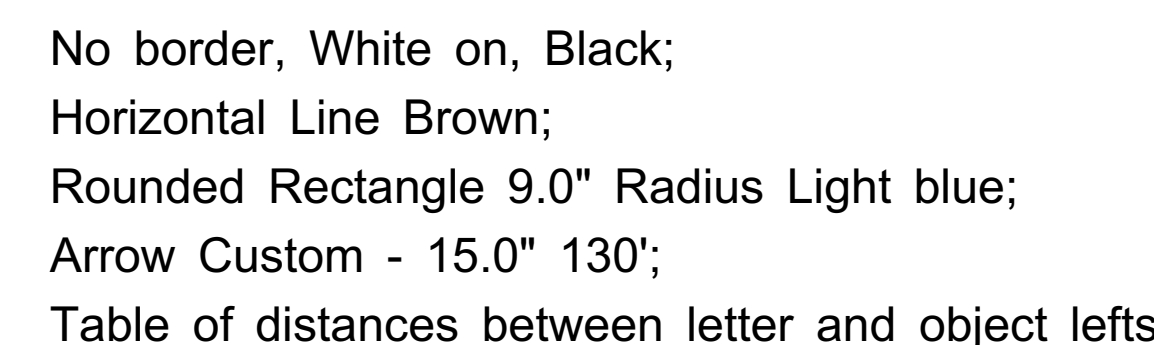
PID-1 DETAIL
NOT TO SCALE



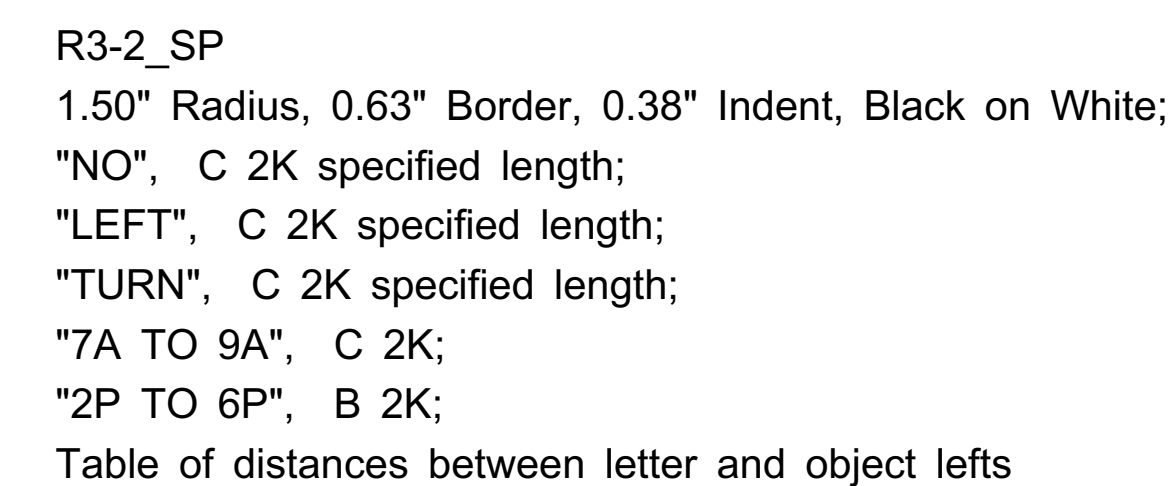
D3-1(2) DETAIL
NOT TO SCALE



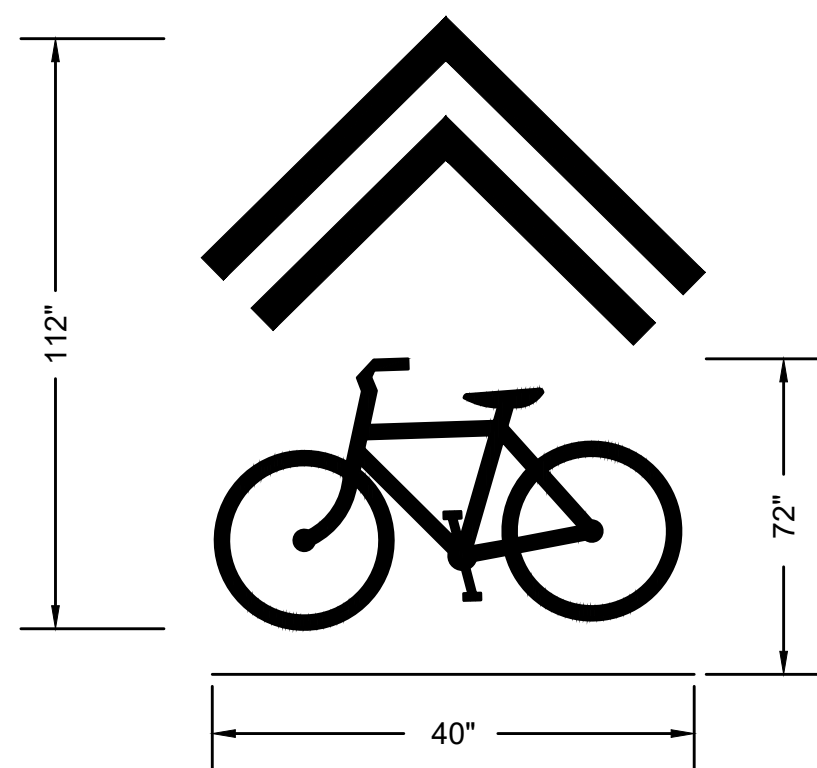
IDSD-1 DETAIL
NOT TO SCALE



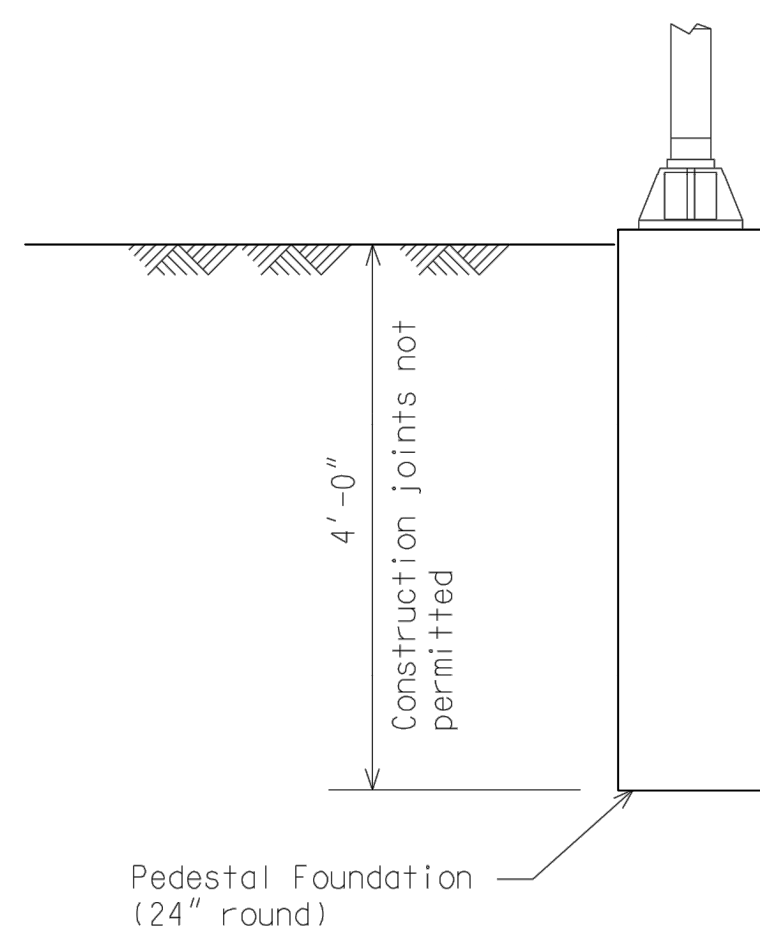
PID-2 DETAIL
NOT TO SCALE

[illegible]

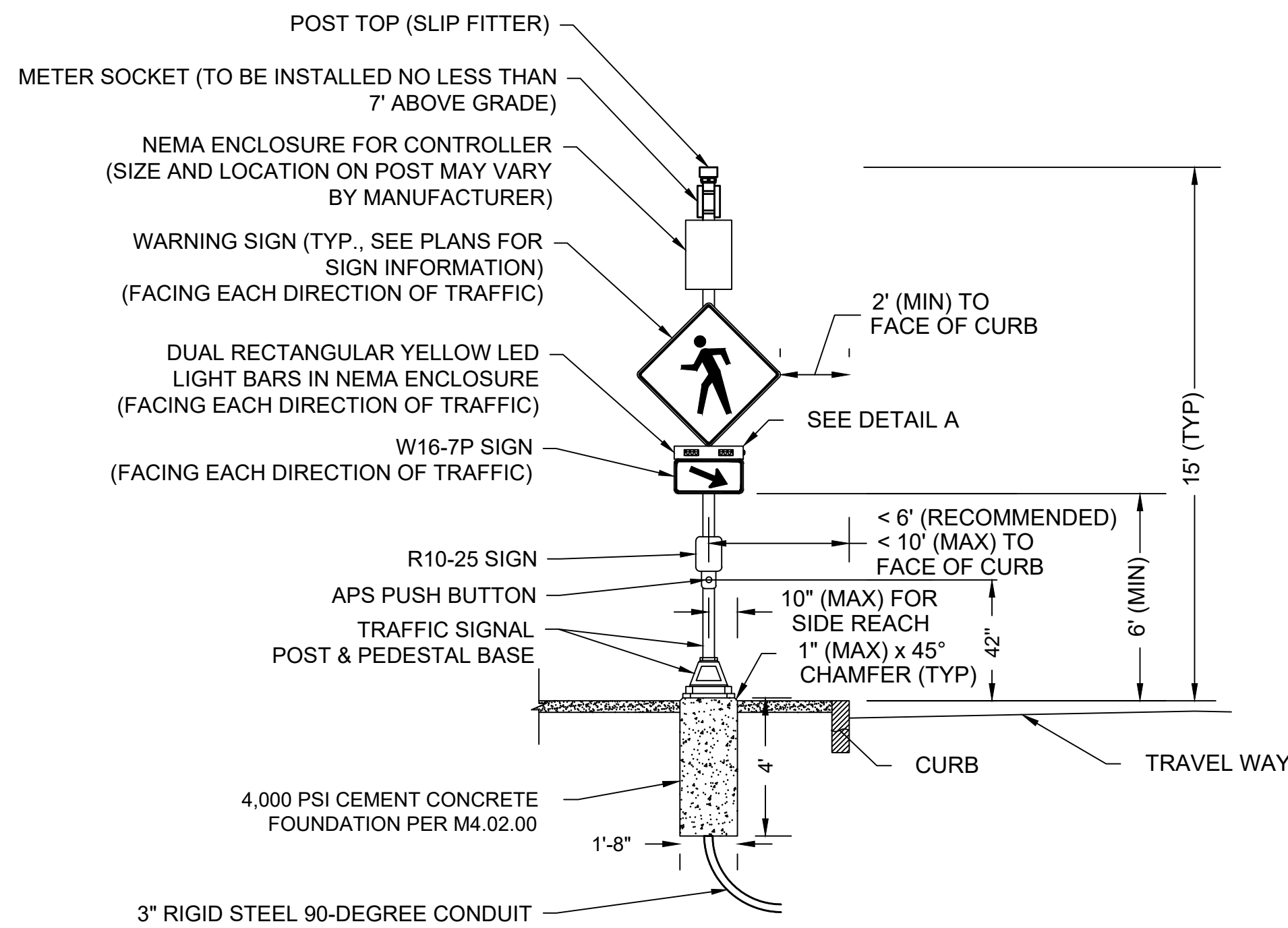
R3-2_SP "7A TO 9A 2P TO 6P"
NOT TO SCALE



SHARED LANE MARKING DETAIL
NOT TO SCALE

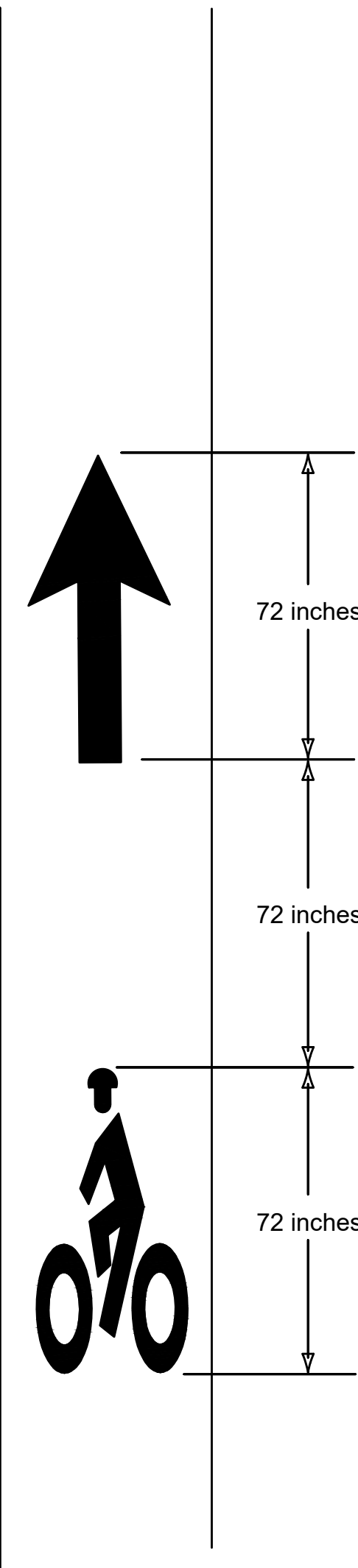
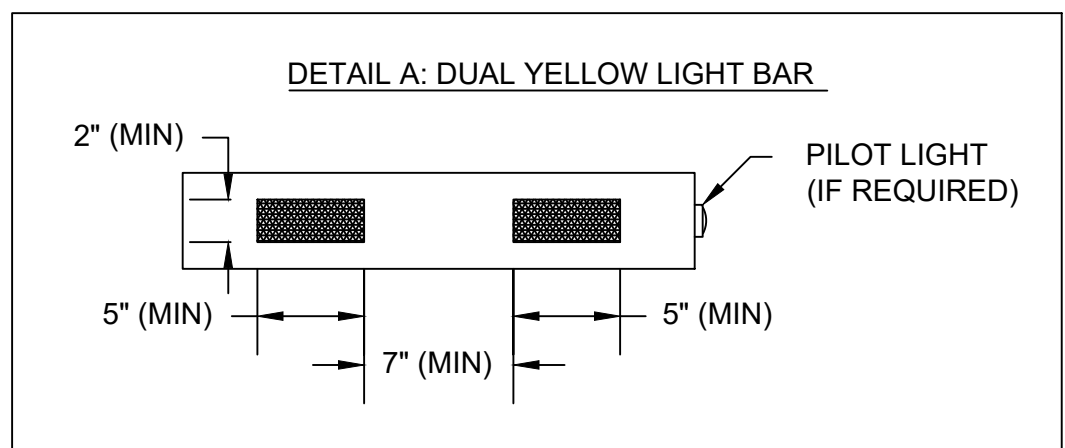


PEDESTAL FOUNDATION DETAILS
NOT TO SCALE

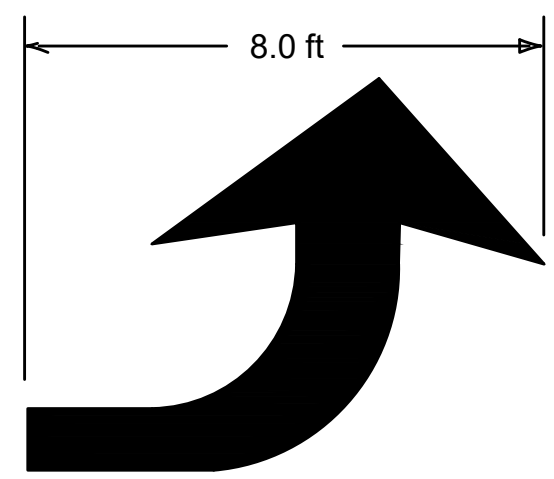


RECTANGULAR RAPID FLASHING BEACON (RRFB)
NOT TO SCALE

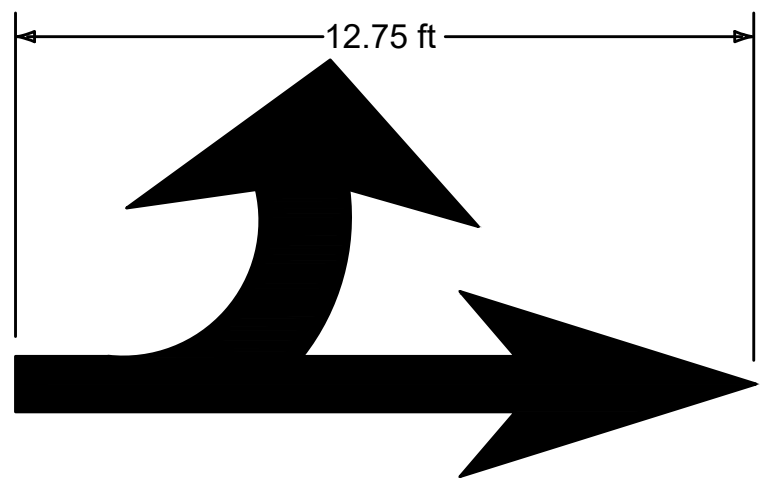
- NOTES:
- CROSSWALK AND ADA/AAB-COMPLIANT RAMPS NOT SHOWN. SEE PLANS FOR LOCATIONS.
 - APS PUSHBUTTONS SHALL BE POSITIONED TO MEET ALL ADA/AAB REQUIREMENTS.



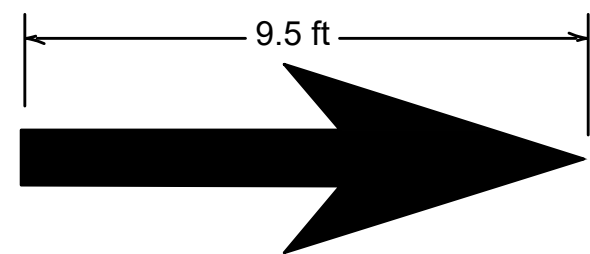
BIKE LANE SYMBOL
(NOT TO SCALE)



TURN LANE USE ARROW
NOT TO SCALE



TURN AND THROUGH LANE USE ARROW
NOT TO SCALE



THROUGH LANE USE ARROW
NOT TO SCALE



- *Stroke width:
- Minimum = 3 inches
 - Special = 4 inches

Note: Blue background and white border are optional

ACCESSIBILITY PARKING SPACE MARKING
NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

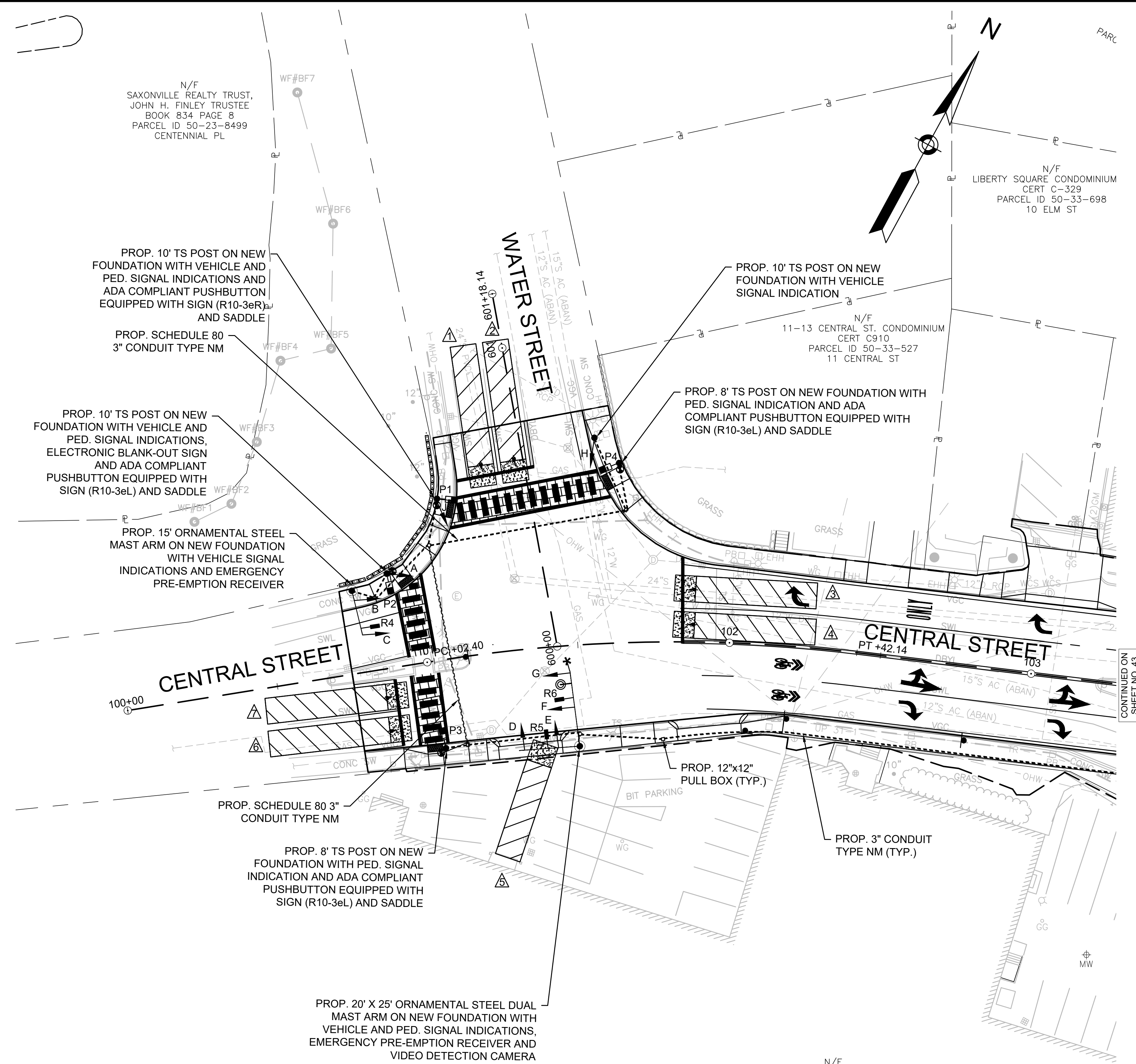
DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: TRAFFIC DETAILS 2

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

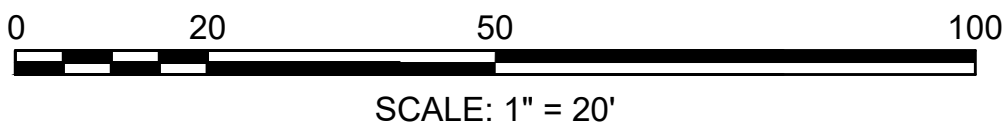
PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034
DESIGNED BY: MP
DRAWN BY: MP
CHECKED BY: AV
SHEET NO. 41 OF 89



NOTES:

1. CONTRACTOR SHALL REMOVE AND DISPOSE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT. SEE SPECIAL PROVISIONS.
2. EXISTING SIGNAL SHALL BE KEPT OPERATIONAL UNTIL THE NEW SIGNAL IS OPERATIONAL AND TESTED.
3. NEW SIGNAL HEADS SHALL NOT BE INSTALLED UNTIL EXISTING SIGNAL IS NO LONGER OPERATIONAL.
4. SEE SHEETS 35-38 FOR ALL PAVEMENT MARKINGS AND SIGNS



PROJECT: **IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET**

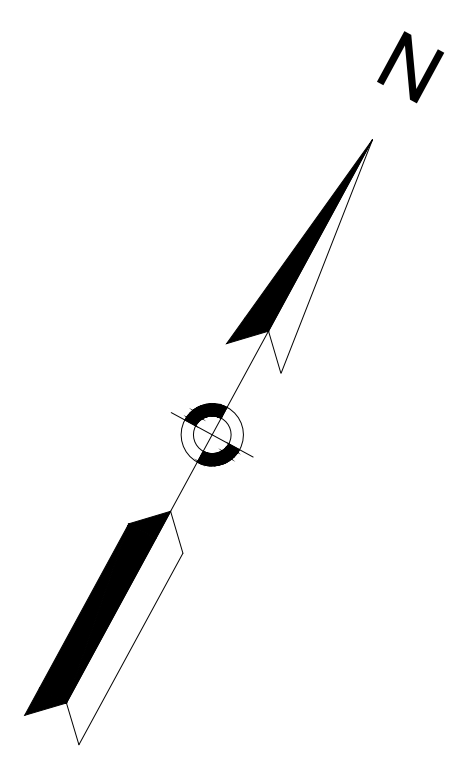
DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: **TRAFFIC SIGNAL PLAN 1**

PREPARED FOR:
CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 42 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	



0 20 50 100

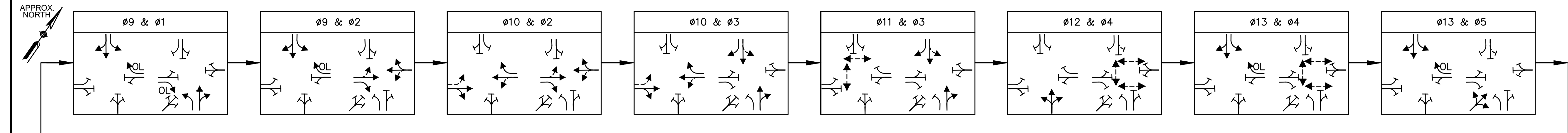
SCALE: 1" = 20'

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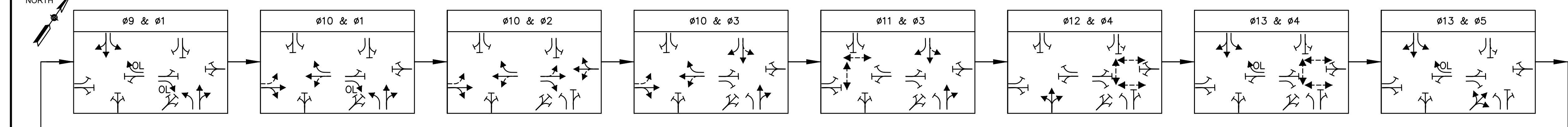
SEQUENCE & TIMING FOR FULL ACTUATED CONTROL (COORDINATED) CENTRAL STREET AT CONCORD STREET / ELM STREET WATER STREET			APPROX NORTH		Ø 1		Ø 2		Ø 3		Ø 4		Ø 5		Ø 9		Ø 10		Ø 11			Ø 12			Ø 13			FLASHING OPERATION						
											(PED.)								(PED.)															
INTERVALS																																		
APPROACH	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	13	14	15	16	17	18											
CENTRAL ST @ WATER ST	WB	A	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	←G	←Y	←R	G	Y	R	R	R	R	R	R	R	←G	←Y	R	FY	
CENTRAL ST @ WATER ST	WB	B,C	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FY	
WATER ST	SB	D,E	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	FR	
CENTRAL ST @ WATER ST	EB	F,G	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FY	
FRAMED IN TIME DRIVEWAY	NB	H,J	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	FR
ELM STREET	SB	K,L	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
CONCORD STREET	NB	M	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	FY
CONCORD STREET	NB	N,O	G	Y	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
CENTRAL ST @ CONCORD ST	EB	P	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
CENTRAL STREET @ CONCORD ST	EB	Q	←G	←Y	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
NIKO'S PIZZERIA	WB	R,S	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
SAXONVILLE CAFE DRIVEWAY	NWB	T,U	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
"NO TURN ON RED" ELECTRONIC BLANK-OUT SIGN	WB		ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	EB		OFF	OFF	OFF	OFF	OFF	OFF	OFF	ACTIVE	ACTIVE	ACTIVE	OFF	OFF	OFF	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	OFF
PEDESTRIAN	ALL	P1-P4	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OUT
PEDESTRIAN	ALL	P5-P10	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OUT
TIMING IN SECONDS																																		
MINIMUM GREEN (INITIAL)			6			8				8					6			8			8								8					
SEQUENCE 1 (AM)			31			26				52					16			48			38							22			19			
SEQUENCE 2 (PM)			54			19				36					16			24			63							12			29			
VEHICLE EXTENSION			3			4				4					3			5			6							6			3			
YELLOW CLEARANCE				3			4			3						3		3.5				4						3			3.5			
RED CLEARANCE					7			6.5				7				7				2.5				2.5									2.5	
PED WALK INTERVAL																																		
RECALL				SOFT			NONE			SOFT			NONE			NONE			NONE			NONE			NONE			NONE			NONE		NONE	
DETECTION (MEMORY)				NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK		NON-LOCK	

- NOTES:
- STANDARD NEMA CLEARANCES SHALL APPLY.
 - SEQUENCE 1 SHALL BE IN EFFECT ON WEEKDAYS FROM 6:00AM TO 10:00AM AND ON SATURDAYS FROM 11:00AM TO 2:00PM.
 - SEQUENCE 2 SHALL BE IN EFFECT ON WEEKDAYS FROM 3:00PM TO 7:00PM.

PREFERENTIAL PHASING DIAGRAM - SEQUENCE 1



PREFERENTIAL PHASING DIAGRAM - SEQUENCE 2



- NOTES:
- EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL RECEIVERS LOCATED AT THE INTERSECTION.
 - PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES AS FOLLOWS: (D1, D2, D3, D4, D5 AND D6)
 - IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL RECEIVER D1 (OR OTHERS AS PROVIDED) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY PRE-EMPTION THE ASSOCIATED GREEN PHASE FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL, PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN PROVIDE PRE-EMPTION PHASE CLEARANCE SERVICE THEN RESUME NORMAL OPERATION.
 - MINIMUM GREEN, NORMAL VEHICLE AND PEDESTRIAN CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
 - ONCE PRE-EMPTION TERMINATES THE SIGNAL WILL RETURN TO PHASES 1+9 TO RESUME NORMAL OPERATION.

SIGNAL IDENTIFICATION - CENTRAL ST / WATER ST SIGNAL IDENTIFICATION - CENTRAL ST/CONCORD ST/ELM ST

SIGNAL HOUSING		
B,C,D,E,F,G,H,J	A	P1-P4

(PROPOSED)

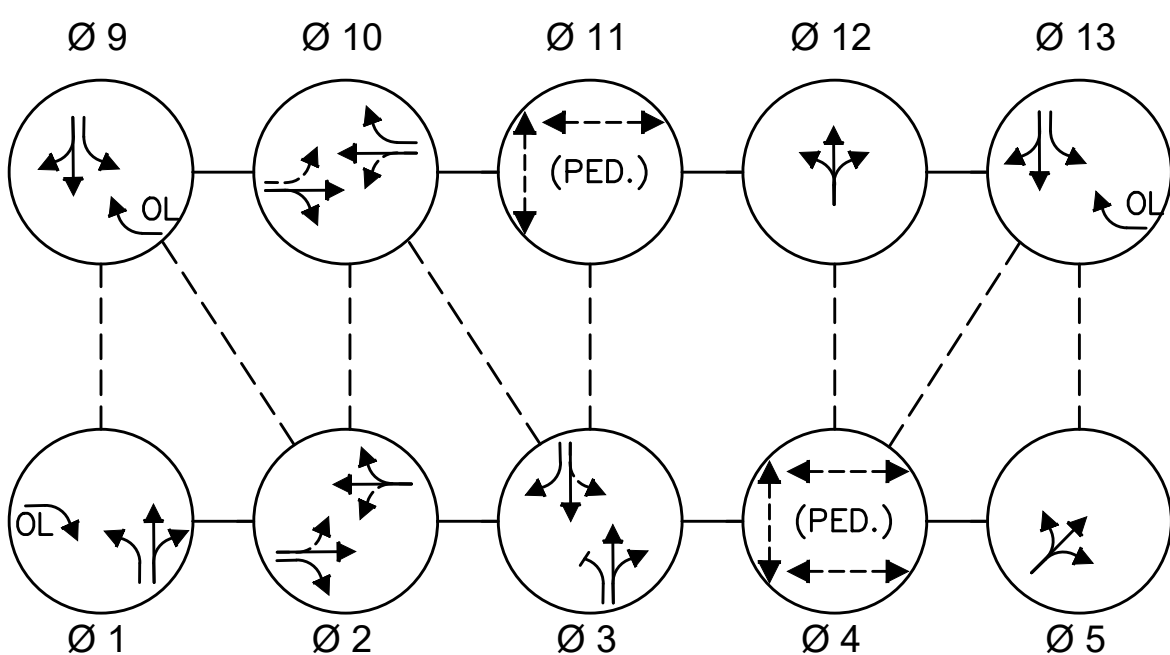
- NOTES:
- ALL VEHICLE AND PEDESTRIAN LENSES SHALL BE LED TYPE.
 - ALL VEHICLE SIGNAL HEADS SHALL BE 12 INCHES.
 - ALL HOUSINGS TO BE PROVIDED WITH TUNNEL VISORS AND 5-INCH NON-LOUVERED BACKPLATES WITH 3-INCH RETROREFLECTIVE BORDER.
 - ALL HOUSINGS TO BE FIXED MOUNTED.
 - ALL SIGNAL HEAD BACKPLATES SHALL BE NON-LOUVERED.

SIGNAL HOUSING			
K,L,N,O,P,R,S,T,U	M	Q	P5-P10

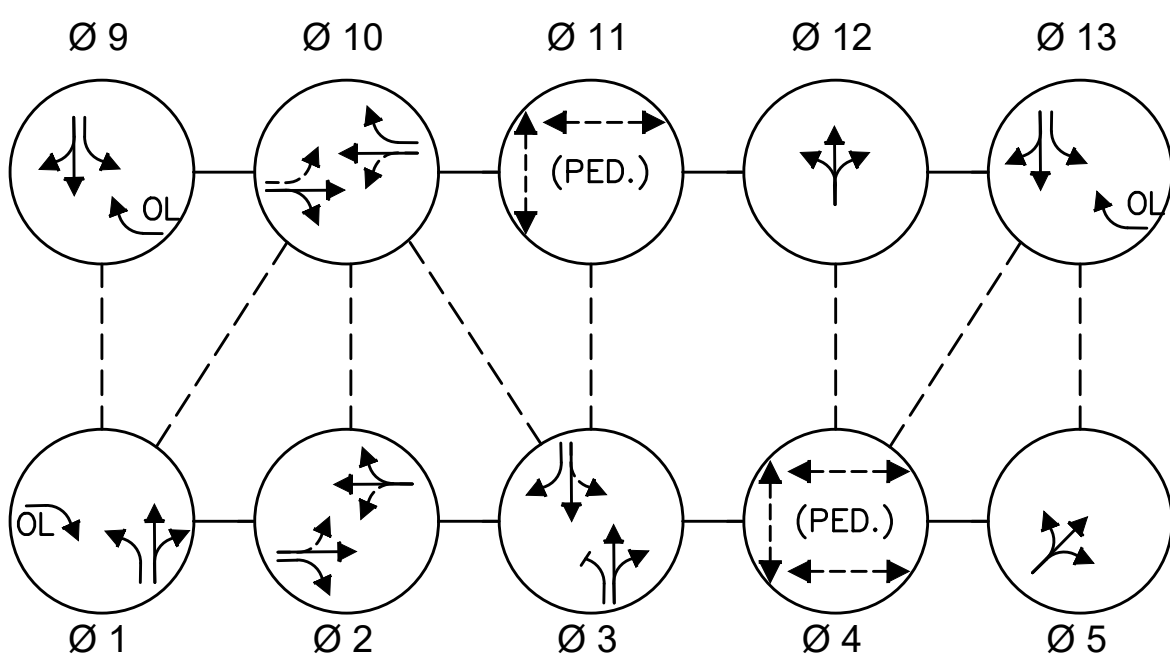
(PROPOSED)

- NOTES:
- ALL VEHICLE AND PEDESTRIAN LENSES SHALL BE LED TYPE.
 - ALL VEHICLE SIGNAL HEADS SHALL BE 12 INCHES.
 - ALL HOUSINGS TO BE PROVIDED WITH TUNNEL VISORS AND 5-INCH NON-LOUVERED BACKPLATES WITH 3-INCH RETROREFLECTIVE BORDER.
 - ALL HOUSINGS TO BE FIXED MOUNTED.
 - ALL SIGNAL HEAD BACKPLATES SHALL BE NON-LOUVERED.

NEMA DUAL RING PHASING NOTES SEQUENCE 1:



NEMA DUAL RING PHASING NOTES SEQUENCE 2:



- NOTES:
- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
 - PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
 - THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
 - IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

CENTRAL STREET AT CONCORD STREET / ELM STREET MAJOR ITEMS LIST

QUANTITY	ITEM
1	MASTER SIGNAL CONTROLLER NEMA 8 PHASE TS-2 (TYPE-1), CAB. & FDN.
1	15 FT ORNAMENTAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
1	30 FT ORNAMENTAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
1	35 FT ORNAMENTAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
4	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 8 FT. W / FOUNDATION
4	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 10 FT. W / FOUNDATION
9	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION
1	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION (ALL ARROWS)
1	12 INCH 1 WAY 5-SECTION LED VEHICLE SIGNAL INDICATION
6	16 INCH LED PEDESTRIAN INDICATION WITH COUNTDOWN
6	PUSHBUTTON-INTEGRATED ACCESSIBLE PEDESTRIAN SIGNAL W/SIGN AND SADDLE
1	VIDEO DETECTION SYSTEM
3	EMERGENCY PRE-EMPTION OPTICAL DETECTORS
1	EMERGENCY PRE-EMPTION STROBE (WHITE LENS)
1	4-CHANNEL EMERGENCY PREEMPT. PHASE SELECTOR/RACK
1	GPS SYNCHRONIZATION SYSTEM
PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION OF A FULLY OPERATIONAL SIGNAL SYSTEM AS INTENDED ON THESE PLANS	

CENTRAL STREET AT WATER STREET MAJOR ITEMS LIST

QUANTITY	ITEM
1	15 FT ORNAMENTAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
1	20 FT X 25 FT ORNAMENTAL DUAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
2	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 8 FT. W / FOUNDATION
3	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 10 FT. W / FOUNDATION
8	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION
1	12 INCH 1 WAY 5-SECTION LED VEHICLE SIGNAL INDICATION
4	16 INCH LED PEDESTRIAN INDICATION WITH COUNTDOWN
4	PUSHBUTTON-INTEGRATED ACCESSIBLE PEDESTRIAN SIGNAL W/SIGN AND SADDLE
1	VIDEO DETECTION SYSTEM
3	EMERGENCY PRE-EMPTION OPTICAL DETECTORS
1	EMERGENCY PRE-EMPTION STROBE (WHITE LENS)
1	4-CHANNEL EMERGENCY PREEMPT. PHASE SELECTOR/RACK
PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION OF A FULLY OPERATIONAL SIGNAL SYSTEM AS INTENDED ON THESE PLANS	

VIDEO DETECTION DATA

DETECTOR NO.	PHASE CALLED	PHASE EXT.	OPERATIONS	DELAY TIME	EXT. TIME
1	Ø 9 Ø 13	Ø 9 Ø 13	PRESENCE	-	-
2	Ø 9 Ø 13	Ø 9 Ø 13	PRESENCE	-	-
3	Ø 9 Ø 13	Ø 9 Ø 13	PRESENCE	-	-
4	Ø 10	Ø 10	PRESENCE	-	-
5	Ø 12	Ø 12	PRESENCE	-	-
6	Ø 10	Ø 10	PRESENCE	-	-
7	Ø 10	Ø 10	PRESENCE	-	-
8	Ø 1	Ø 1	PRESENCE	-	-
9	Ø 2	Ø 2	PRESENCE	-	-
10	Ø 3	Ø 3	PRESENCE	-	-
11	Ø 3	Ø 3	PRESENCE	-	-
12	Ø 2	Ø 2	PRESENCE	-	-
13	Ø 3	Ø 3	PRESENCE	-	-
14	Ø 1	Ø 1	PRESENCE	-	-
15	Ø 5	Ø 5	PRESENCE	-	-

PRE-EMPTION SCHEDULE

RECEIVER	PRE-EMPT PHASE ASSIGNMENT	APPROACH AND MOVEMENT	VEHICLE PHASE ASSIGNMENT	NEXT PHASE CALLED
R1	1	NB	Ø 1	Ø 9 + Ø 1
R2	2	SB	Ø 3	Ø 10 + Ø 3
R3	3	EB	Ø 2	Ø 10 + Ø 2
R4	4	WB	Ø 10	Ø 10 + Ø 2
R5	5	SB	Ø 9	Ø 9 + Ø 1
R6	6	EB	Ø 10	Ø 10 + Ø 2

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION:

85% DESIGN

DRAWING TITLE:

SEQUENCE & TIMING PLAN 1

PREPARED FOR:

CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DESIGNED BY: MP

DATE: 6/4/2024

DRAWN BY: MP

PROJECT NO. 20034

CHECKED BY: AV

SHEET NO.

44 OF 89

NOTES:

1. CONTRACTOR SHALL REMOVE AND DISPOSE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT SEE SPECIAL PROVISIONS.
2. EXISTING SIGNAL SHALL BE KEPT OPERATIONAL UNTIL THE NEW SIGNAL IS OPERATIONAL AND TESTED.
3. SEE SHEETS 35-38 FOR ALL PAVEMENT MARKINGS AND SIGNS

0 20 50 100
SCALE: 1" = 20'

PROJECT: **IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET**

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: **TRAFFIC SIGNAL PLAN 3**

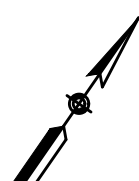
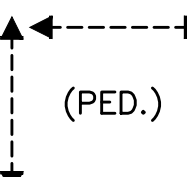
PREPARED FOR:
 **CITY OF FRAMINGHAM**
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: MP
DRAWN BY: MP
CHECKED BY: AV

SHEET NO.
45 OF 89

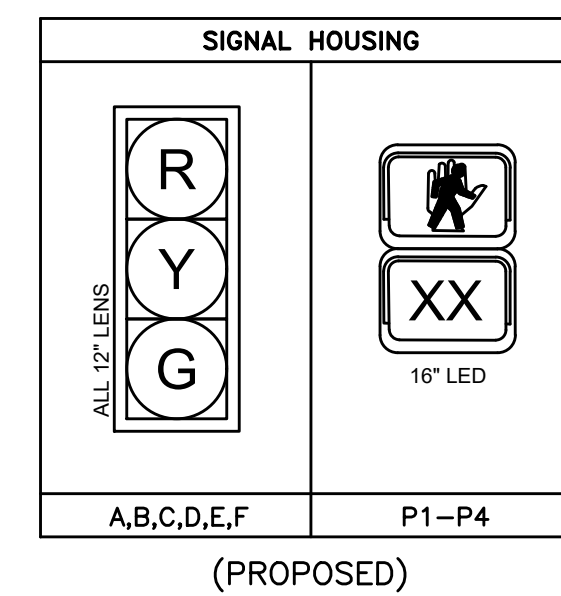
SEQUENCE & TIMING FOR FULL ACTUATED CONTROL (COORDINATED) CONCORD STREET AT WATSON PLACE			APPROX. NORTH 												 (PED.)			FLASHING OPERATION
						INTERVALS												
APPROACH	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12				
CONCORD STREET	SB	C,D	R	R	R	R	R	R	G	Y	R	R	R	R				
CONCORD STREET	NB	E,F	G	Y	R	R	R	R	R	R	R	R	R	R				
WATSON PLACE	EB	A,B	R	R	R	G	Y	R	R	R	R	R	R	R				
PEDESTRIAN	ALL	P1-P4	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT		
			TIMING IN SECONDS												EMERGENCY ONLY			
MINIMUM GREEN (INITIAL)			4			4			4									
MAX GREEN 1			112			19			112									
MAX GREEN 2			107			24			107									
VEHICLE EXTENSION			3			3			3									
YELLOW CLEARANCE				3			3			3								
RED CLEARANCE					3			3			3							
PED WALK INTERVAL												7	12	3				
RECALL				SOFT			NONE			SOFT			NONE					
DETECTION (MEMORY)				NON-LOCK			NON-LOCK			NON-LOCK			LOCK					

CENTRAL STREET AT WATER STREET MAJOR ITEMS LIST	
QUANTITY	ITEM
1	SERVICE CONNECTION (OVERHEAD)
1	MASTER SIGNAL CONTROLLER NEMA 8 PHASE TS-2 (TYPE-1), CAB. & FDN.
1	45 FT ORNAMENTAL, GALV. STEEL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
1	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 8 FT. W / FOUNDATION
6	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION
4	16 INCH LED PEDESTRIAN INDICATION WITH COUNTDOWN
4	PUSHBUTTON-INTEGRATED ACCESSIBLE PEDESTRIAN SIGNAL W/SIGN AND SADDLE
1	VIDEO DETECTION SYSTEM
1	GPS TIME SYNCHRONIZATION SYSTEM
PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION OF A FULLY OPERATIONAL SIGNAL SYSTEM AS INTENDED ON THESE PLANS	

VIDEO DETECTION DATA					
DETECTOR NO.	PHASE CALLED	PHASE EXT.	OPERATIONS	DELAY TIME	EXT. TIME
1	ø4	ø4	PRESENCE	—	—
2	ø6	ø6	PRESENCE	—	—
3	ø2	ø2	PRESENCE	—	—
4	ø6	ø6	PRESENCE	—	—
5	ø2	ø2	PRESENCE	—	—

PRE-EMPTION SCHEDULE				
RECEIVER	PRE-EMPT PHASE ASSIGNMENT	APPROACH AND MOVEMENT	VEHICLE PHASE ASSIGNMENT	NEXT PHASE CALLED
R1	1	EB 	Ø 4	Ø 2 + Ø 6
R2	2	SB 	Ø 6	Ø 4
R3	3	NB 	Ø 2	Ø 4

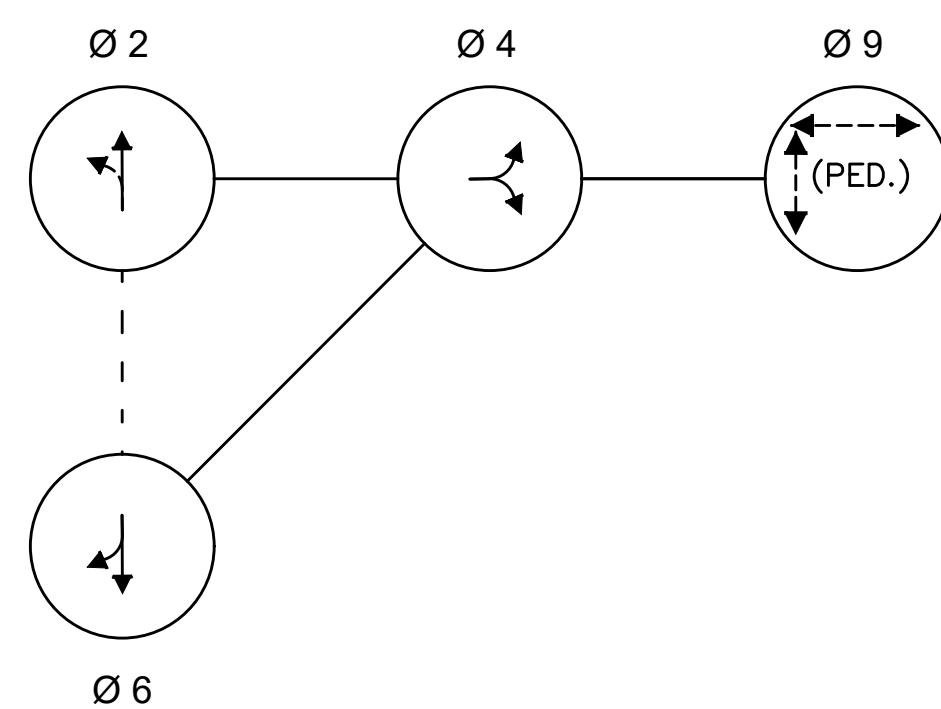
SIGNAL IDENTIFICATION



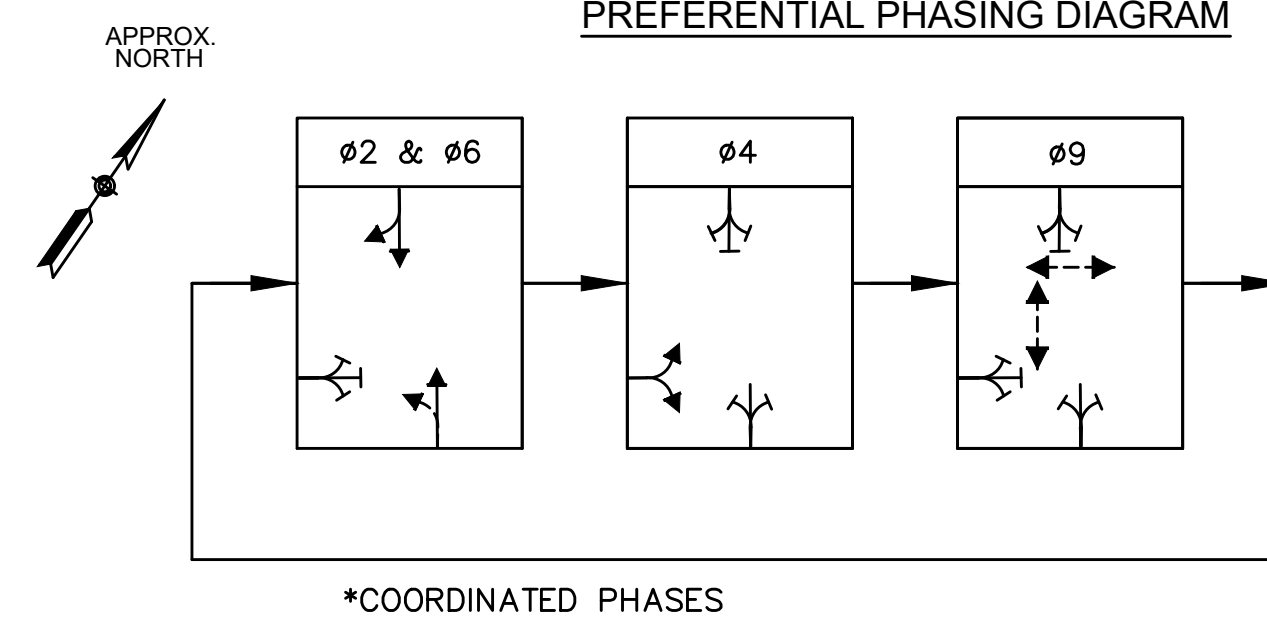
NOTES:

1. ALL VEHICLE AND PEDESTRIAN LENSES SHALL BE LED TYPE.
2. ALL VEHICLE SIGNAL HEADS SHALL BE 12 INCHES.
3. ALL HOUSINGS TO BE PROVIDED WITH TUNNEL VISORS AND 5-INCH NON-LOUVERED BACKPLATES WITH 3-INCH RETROREFLECTIVE BORDER.
4. ALL HOUSINGS TO BE FIXED MOUNTED.
5. ALL SIGNAL HEAD BACKPLATES SHALL BE NON-LOUVERED.

NEMA DUAL RING PHASING NOTES:



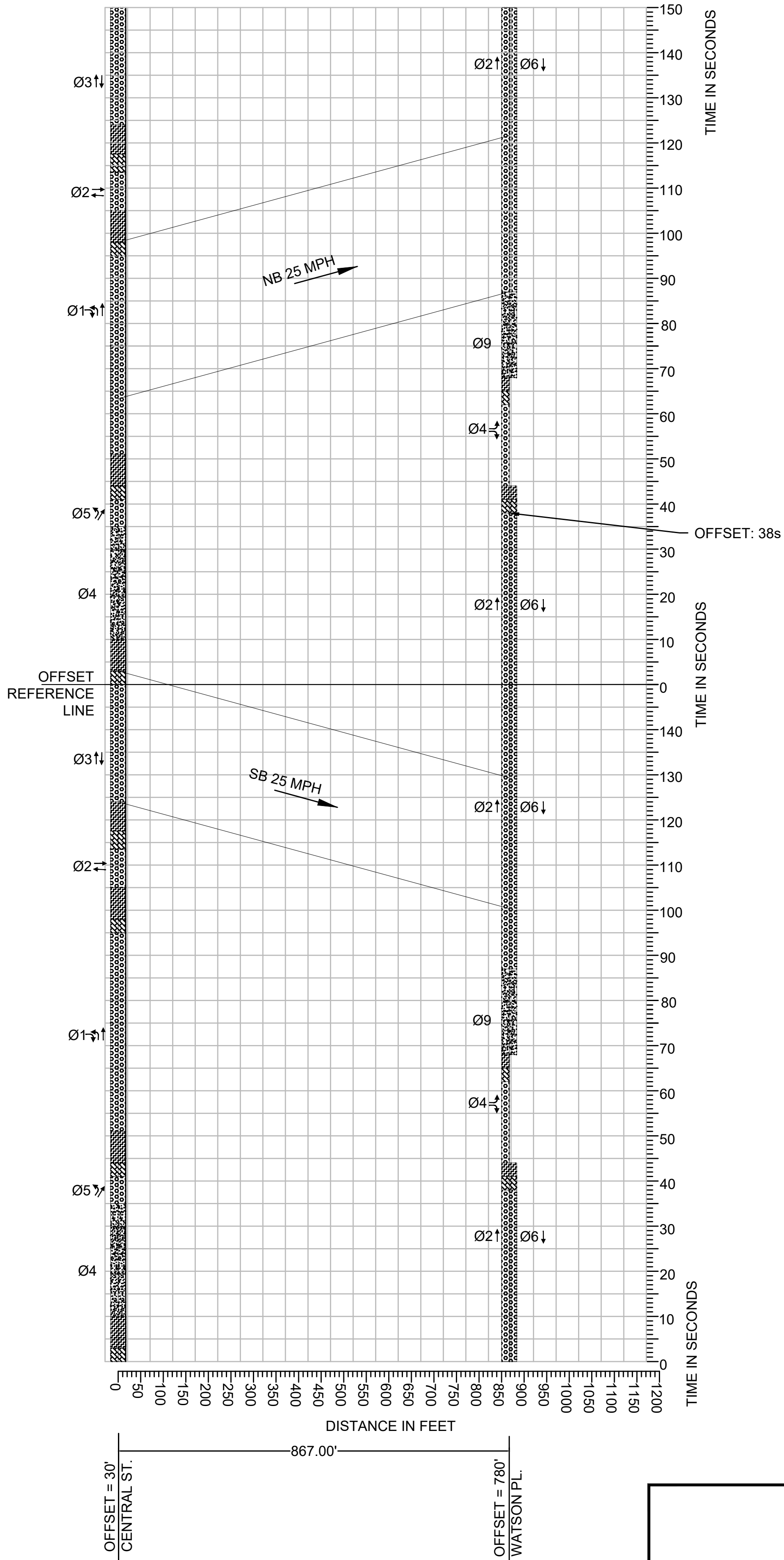
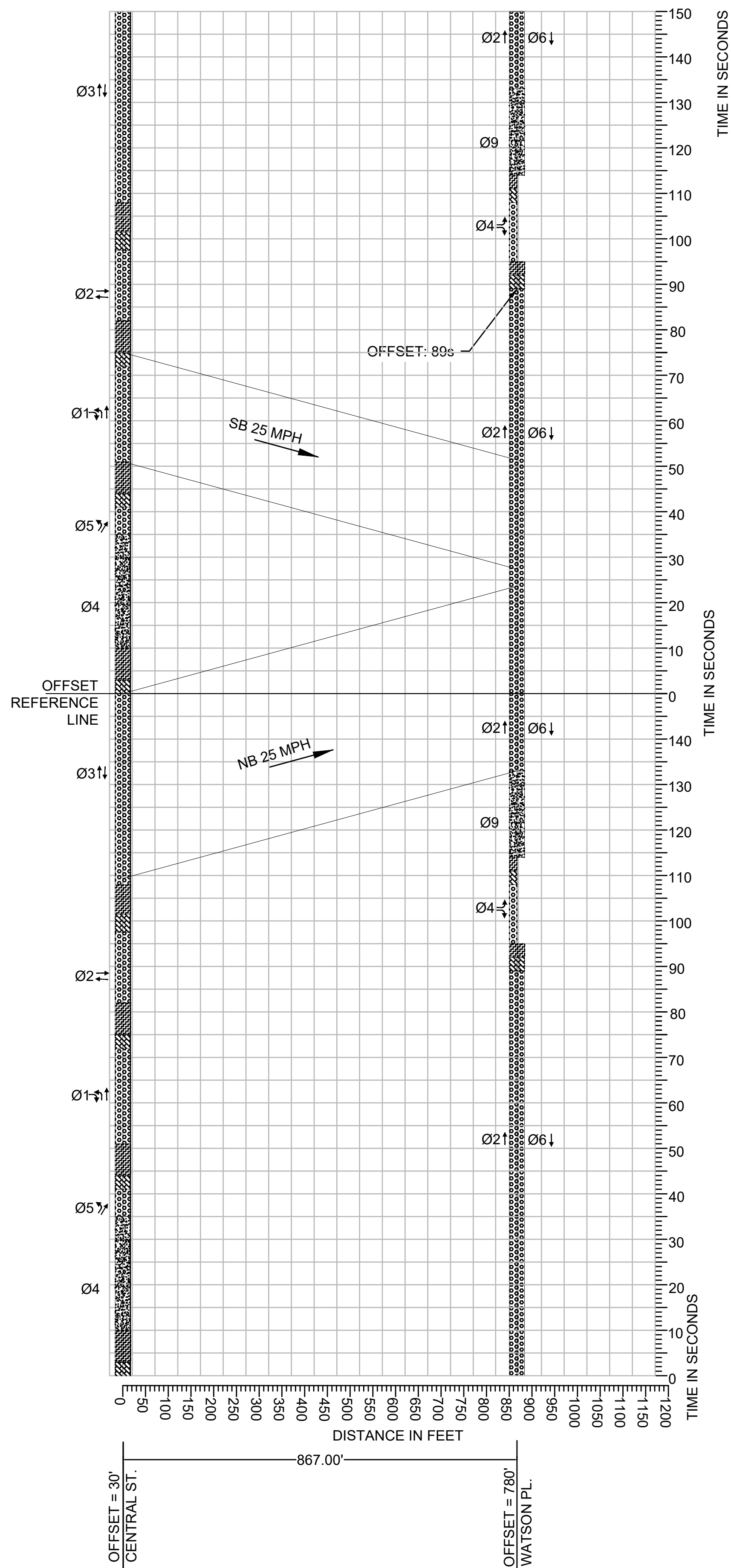
PREFERENTIAL PHASING DIAGRAM



NOTES:

1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: SEQUENCE & TIMING PLAN 2		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 206 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 46 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	



COORDINATION DATA		
TIMING PLAN	CYCLE LENGTH (SEC.)	REF/OFFSET (SEC.)
COORDINATION PLAN 1 M-F (6AM - 10AM) SAT (11AM - 2PM)	150	89
COORDINATION PLAN 2 M-F (3PM - 7PM)	150	38

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: TIME SPACE DIAGRAM		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 47 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	

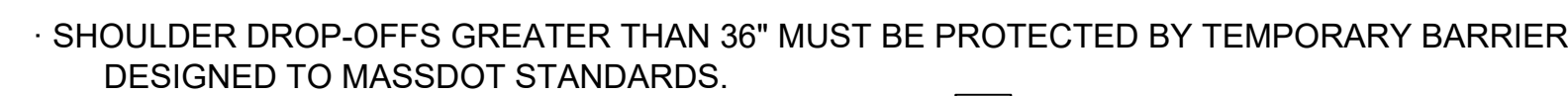
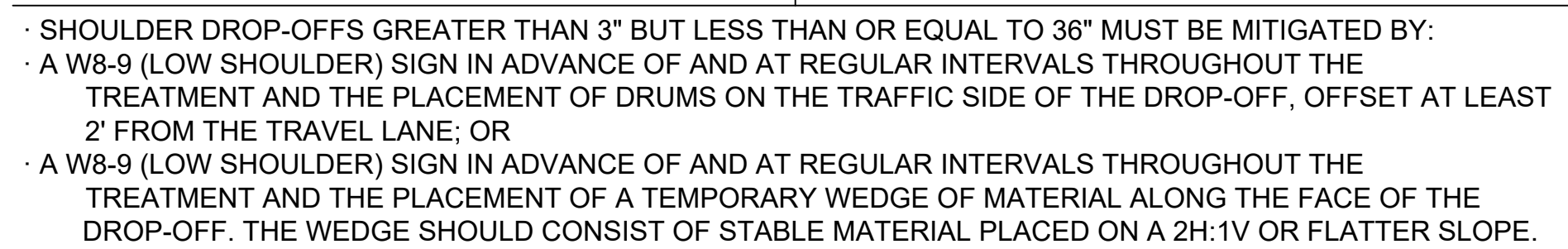
1. MINIMUM LANE WIDTH OF 11 FEET SHALL BE MAINTAINED UNLESS OTHERWISE NOTED. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF THE DRUMS OR CONES (IF USED).
2. THE CONTRACTOR SHALL COORDINATE APPROVAL OF ANY CHANGES TO THE TEMPORARY TRAFFIC CONTROL PLAN WITH THE CITY OF FRAMINGHAM PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL ALSO NOTIFY THE CITY OF FRAMINGHAM THREE (3) WEEKS IN ADVANCE OF PLACING TEMPORARY TRAFFIC CONTROL SIGNS.
3. THESE PLANS ARE NOT INTENDED TO LIMIT THE CONTRACTOR'S APPROACH TO SCHEDULE THE WORK BUT TO OUTLINE ONE WAY OF PROGRESSING. THE CONTRACTOR IS EXPECTED TO USE KNOWLEDGE AND EXPERIENCE TO PERFORM THE WORK IN THE MOST EFFICIENT AND SAFE MANNER IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.
4. PLACE ALL SAFETY DEVICES AND CONSTRUCTION SIGNING BEFORE ACTUAL CONSTRUCTION WORK BEGINS.
5. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED BASED ON FIELD CONDITIONS WITH THE APPROVAL OF THE ENGINEER.
6. WHEN EXISTING SIGNS ARE NO LONGER APPLICABLE THEY SHALL BE TEMPORARILY COVERED DURING CONSTRUCTION OR REMOVED AND RESET UPON COMPLETION OF CONSTRUCTION. THE COST SHALL BE INCIDENTAL TO THE CONTRACT.
7. ALL SIGNS SHALL BE REFLECTORIZED, WITH REFLECTIVE SHEETING CONFORMING TO M9.30.0. ALL SIGN COLORS SHALL BE PER THE CONSTRUCTION SIGN SUMMARY TABLE AND CURRENT MUTCD.
8. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
9. CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES IMMEDIATELY WHEN NO LONGER NEEDED.
10. UNLESS OTHERWISE NOTED, ALL PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC EQUIPMENT REMOVED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
11. CONTRACTOR SHALL INSTALL, RENEW, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
12. ACCESS/EGRESS TO ALL ABUTTERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
13. CONTRACTOR SHALL MAINTAIN EMERGENCY PASSAGE AT ALL TIMES TO BUILDINGS WITHIN AND ADJACENT TO THE PROJECT LIMITS AS WELL AS A LARGER AREA IF AFFECTED BY CONSTRUCTION CONDITIONS. CONTRACTOR SHALL MAINTAIN 24 HOUR EMERGENCY VEHICLE ACCESS TO CONSTRUCTION AREAS.
14. CONTRACTOR SHALL COORDINATE WITH ABUTTERS FOR THE PROPOSED WORK AND SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF THE WORK THAT WILL REQUIRE TEMPORARY CLOSURE OF ACCESS TO THEIR PROPERTY.
15. THE CONTRACTOR SHALL COORDINATE THE WORK WITH ALL ABUTTING PROJECTS.
16. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
17. THE FIRST TEN (10) PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
18. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
19. CONTRACTOR SHALL MAINTAIN ADA COMPLIANT ACCESS AT ALL TIMES INCLUDING PEDESTRIAN GUIDANCE SYSTEMS. ALL PEDESTRIAN DETOURS OR BYPASSES SHALL BE ADA COMPLIANT WITH PROPER BARRICADES, RAILINGS, RAMPS, SIGNS, ETC.
20. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERSEDED BY THESE PLANS.



THIS GUIDANCE IS ADOPTED FROM THE ROADSIDE DESIGN GUIDE, 4TH EDITION.

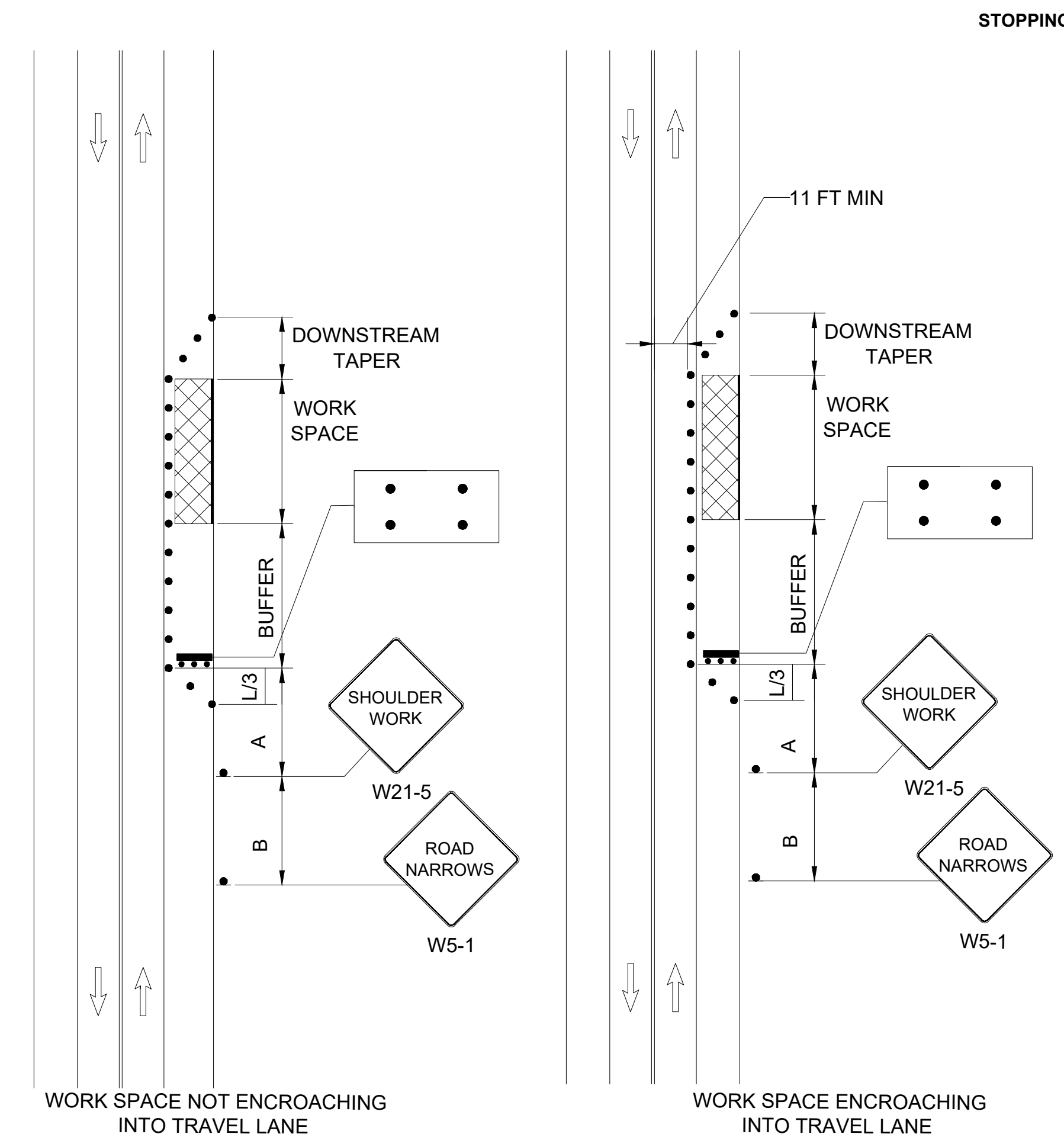
PAVEMENT DROP-OFFS MAY OCCUR DURING PAVING, EXCAVATION, AND OTHER CONSTRUCTION ACTIVITIES. DROP-OFFS CREATE HAZARDS FOR VEHICLES IF NOT PROPERLY MITIGATED. THE FOLLOWING APPLIES FOR ALL ROADS WITH SPEED LIMITS GREATER THAN 30 MPH; FOR ROADS WITH SPEEDS OF 30 MPH OR LESS, TREATMENTS FOR PAVEMENT EDGE DROP-OFFS SHALL BE AT THE DISCRETION OF THE ENGINEER. DROP-OFFS BETWEEN ADJACENT, OPEN TRAVEL LANES SHALL NOT EXCEED 2", AND ANY DROP-OFF IN EXCESS OF 3" SHALL NOT BE LEFT UNATTENDED WITHOUT ONE OF THESE MITIGATION MEASURES APPLIED.

- SHOULDER DROP-OFFS 3" OR LESS ADJACENT TO A SHOULDER OR ACTIVE LANE SHOULD BE MITIGATED BY:
- A W8-9 (LOW SHOULDER) SIGN IN ADVANCE OF AND AT REGULAR INTERVALS THROUGHOUT THE TREATMENT; OR
- THE PLACEMENT OF DRUMS ON THE TRAFFIC SIDE OF THE DROP OFF.

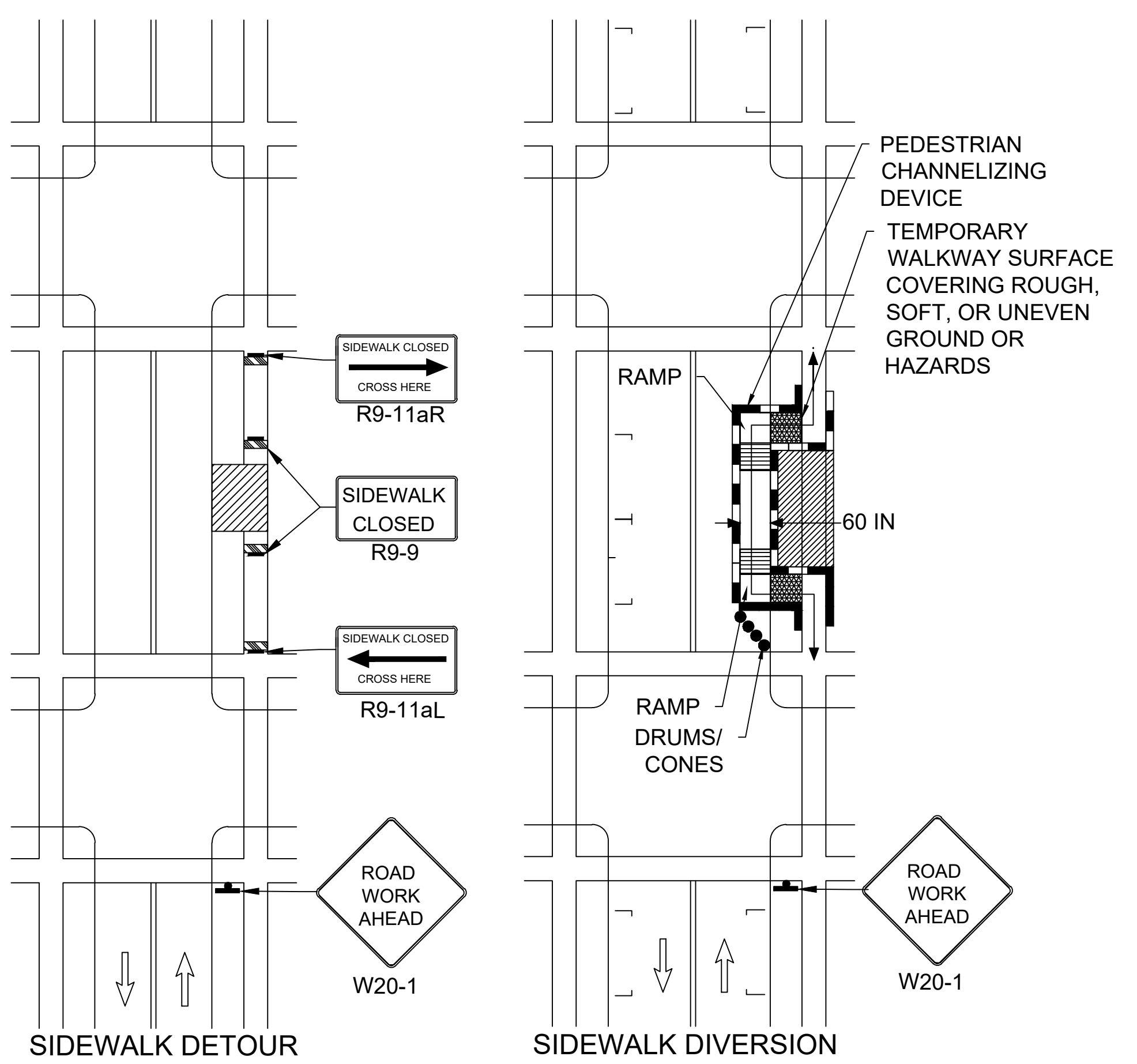


	WORK ZONE
	DIRECTION OF VEHICULAR TRAFFIC
	DIRECTION OF PROPOSED VEHICULAR TRAFFIC SIGN
	TYPE III BARRICADE
	REFLECTORIZED PLASTIC DRUM OR 36" CONE
	POLICE OFFICER

				PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876
1	XX/XX/XX	ENTER DESCRIPTION OF REVISION HERE		SCALE: AS NOTED DATE: 6/4/2024 PROJECT NO. 20034
NO.	DATE	REVISIONS		DESIGNED BY: MP DRAWN BY: MP CHECKED BY: AV
				SHEET NO. 48 OF 89



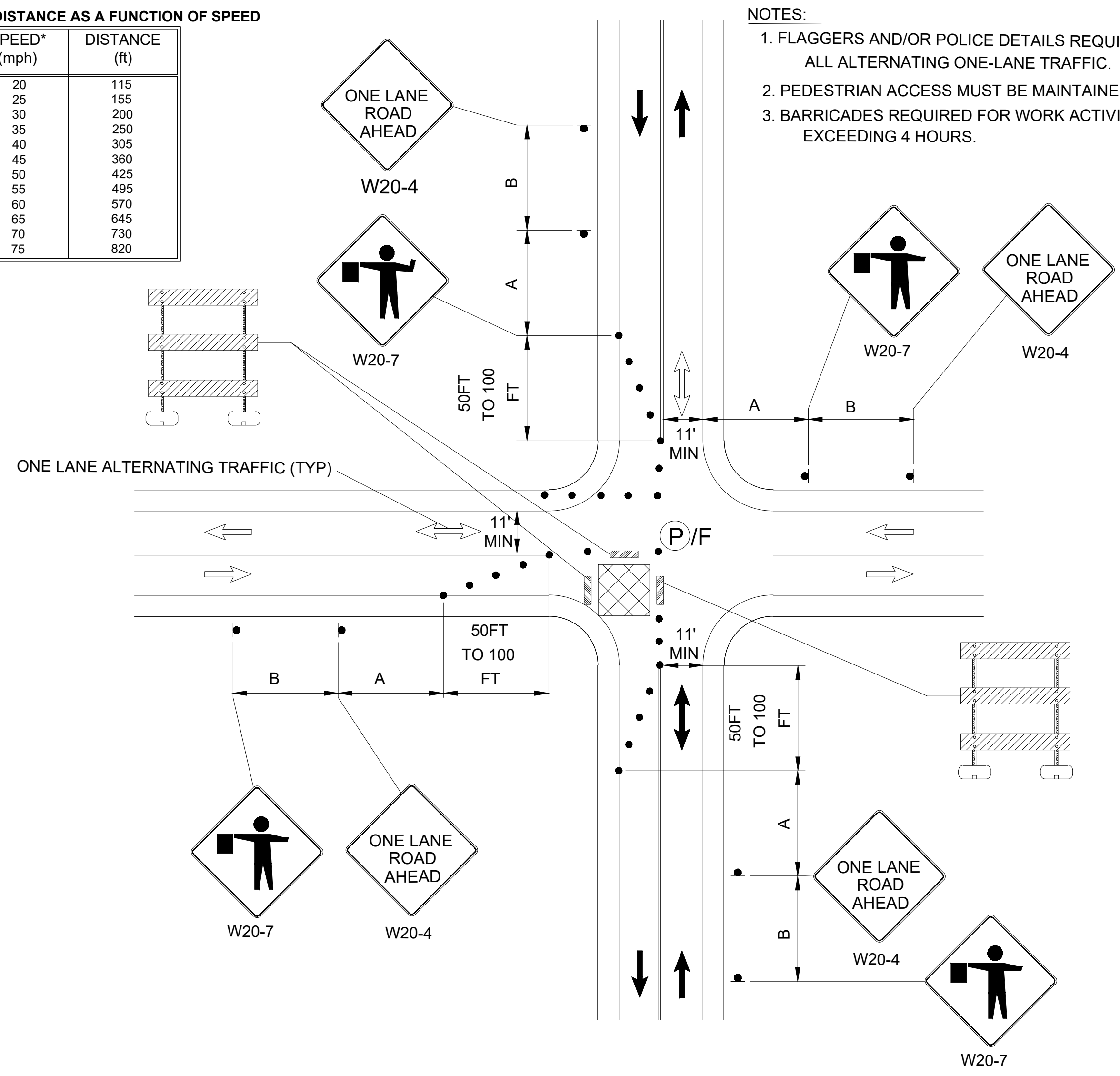
SHOULDER CLOSURE
NOT TO SCALE



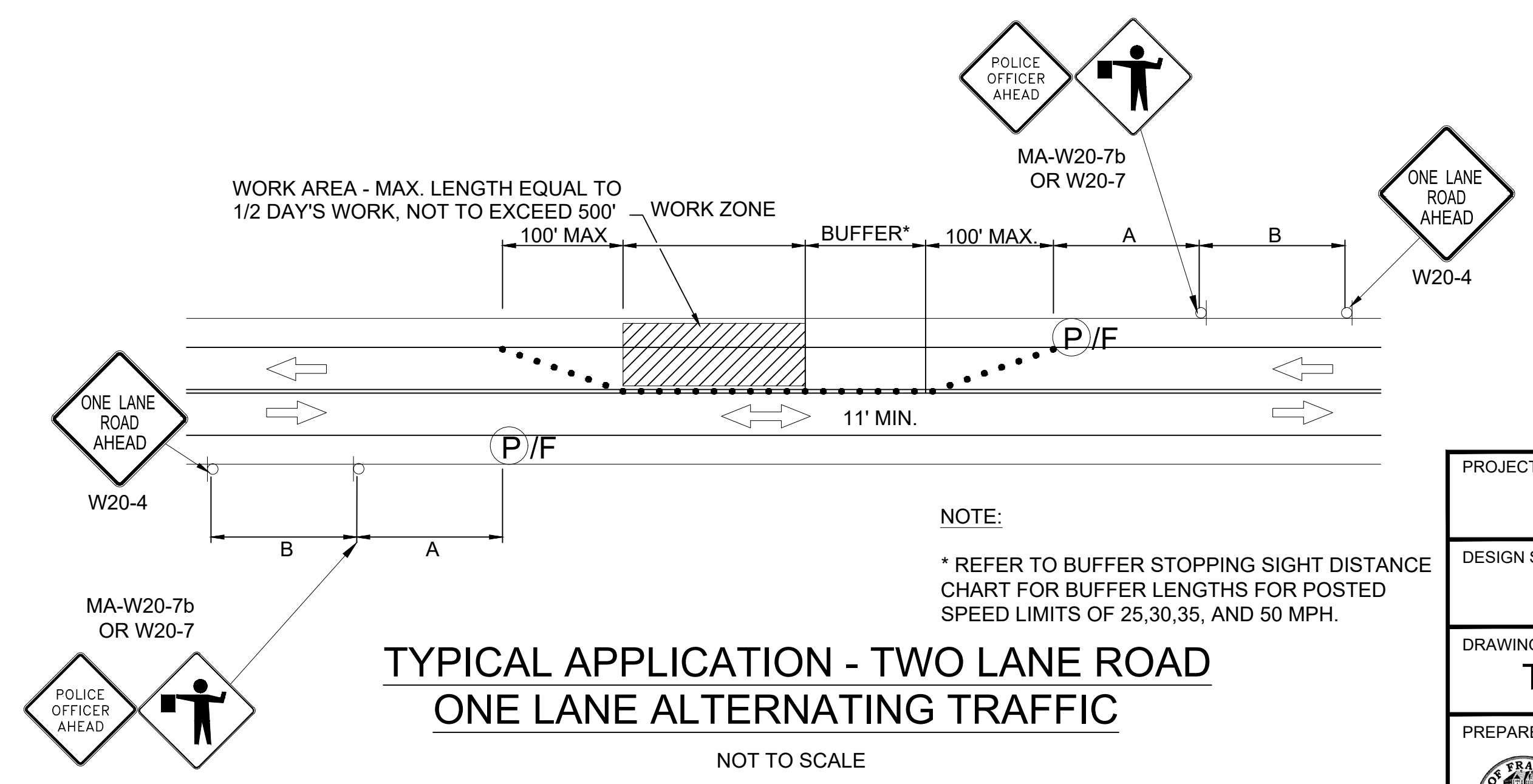
PEDESTRIAN DETOUR
NOT TO SCALE

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED* (mph)	DISTANCE (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820



TYPICAL APPLICATION - SINGLE LANE
APPROACH ONE QUADRANT CLOSURE AT T-INTERSECTION
NOT TO SCALE

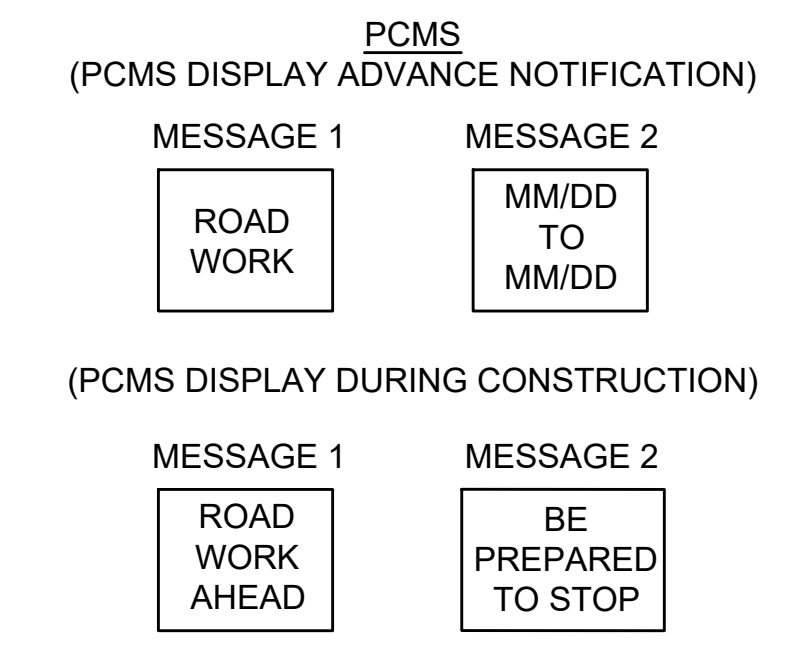
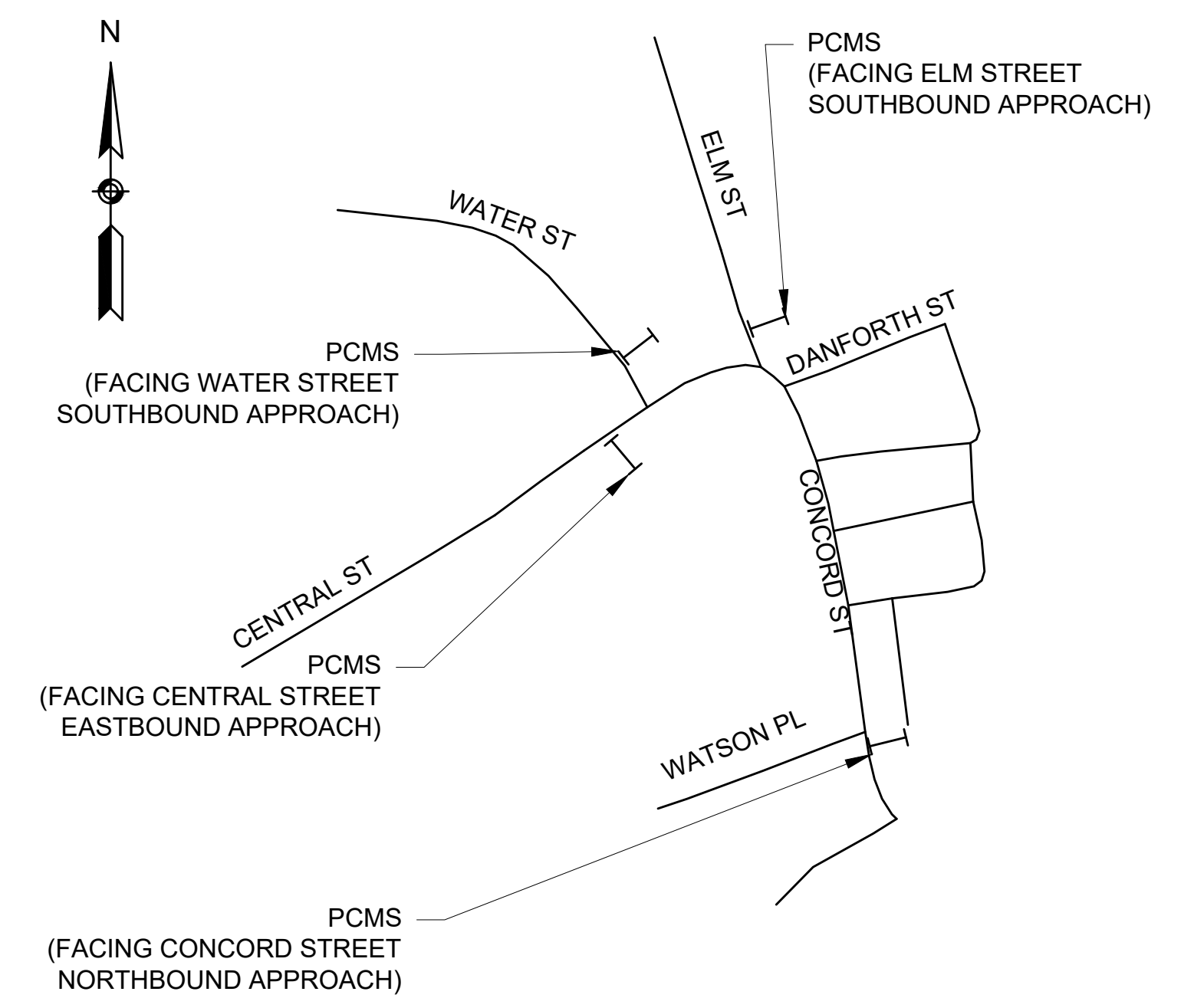


TYPICAL APPLICATION - TWO LANE ROAD
ONE LANE ALTERNATING TRAFFIC
NOT TO SCALE

TRAFFIC DEVICE LEGEND

- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- DIRECTION OF PROPOSED VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- POLICE OFFICER
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

- NOTES:
1. FLAGGERS AND/OR POLICE DETAILS REQUIRED FOR ALL ALTERNATING ONE-LANE TRAFFIC.
 2. PEDESTRIAN ACCESS MUST BE MAINTAINED
 3. BARRICADES REQUIRED FOR WORK ACTIVITY EXCEEDING 4 HOURS.



NOTE:
THE CONTRACTOR SHALL INSTALL PCMS BOARDS ALONG CENTRAL STREET, WATER STREET, ELM STREET, AND CONCORD STREET 1/4 MILES FROM THE PROJECT LIMITS.

PCMS BOARD SETUP FOR ROADWORK
NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: TRAFFIC MANAGEMENT PLAN 2

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DESIGNED BY: MP

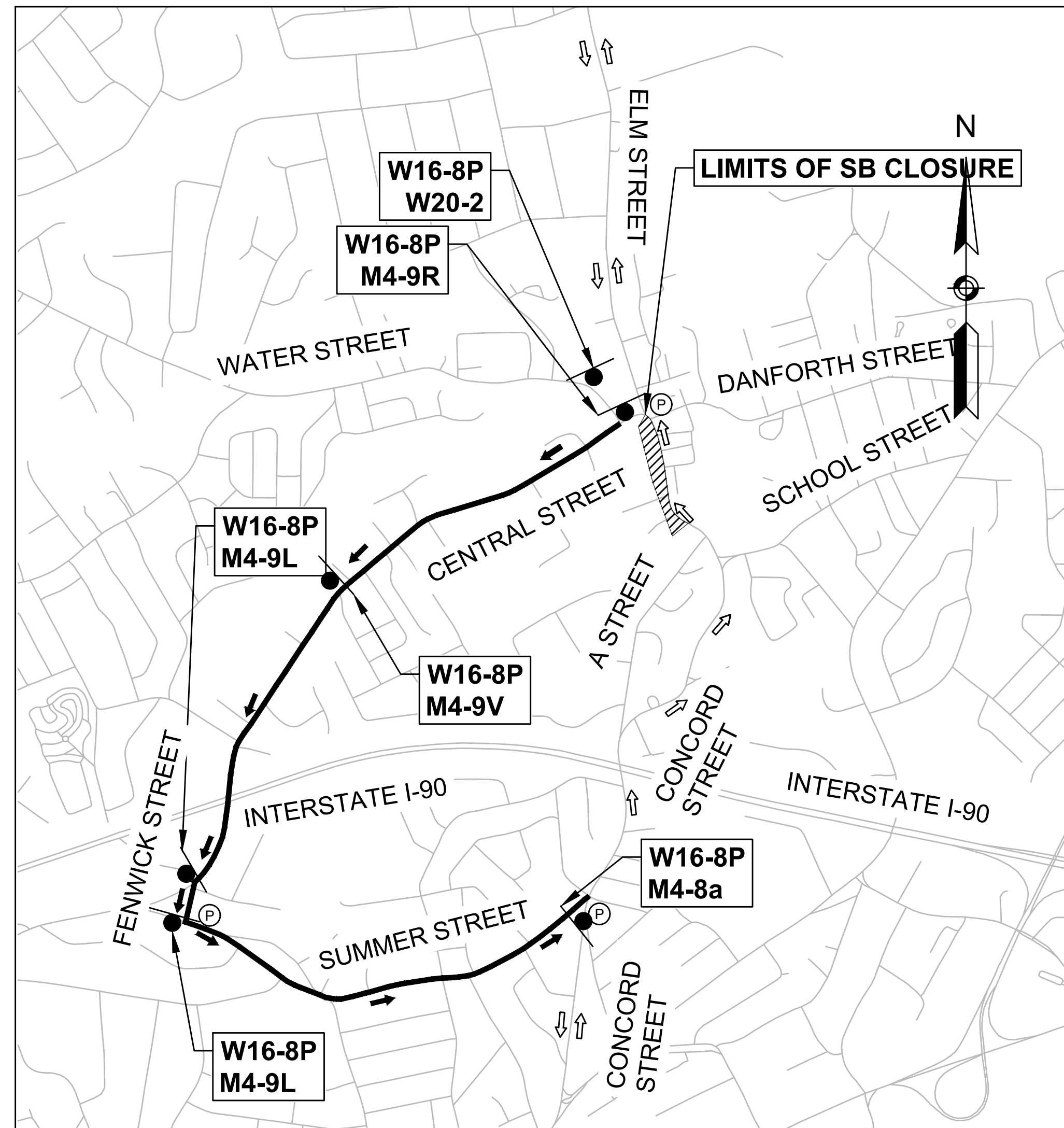
DATE: 6/4/2024

DRAWN BY: MP

PROJECT NO. 20034

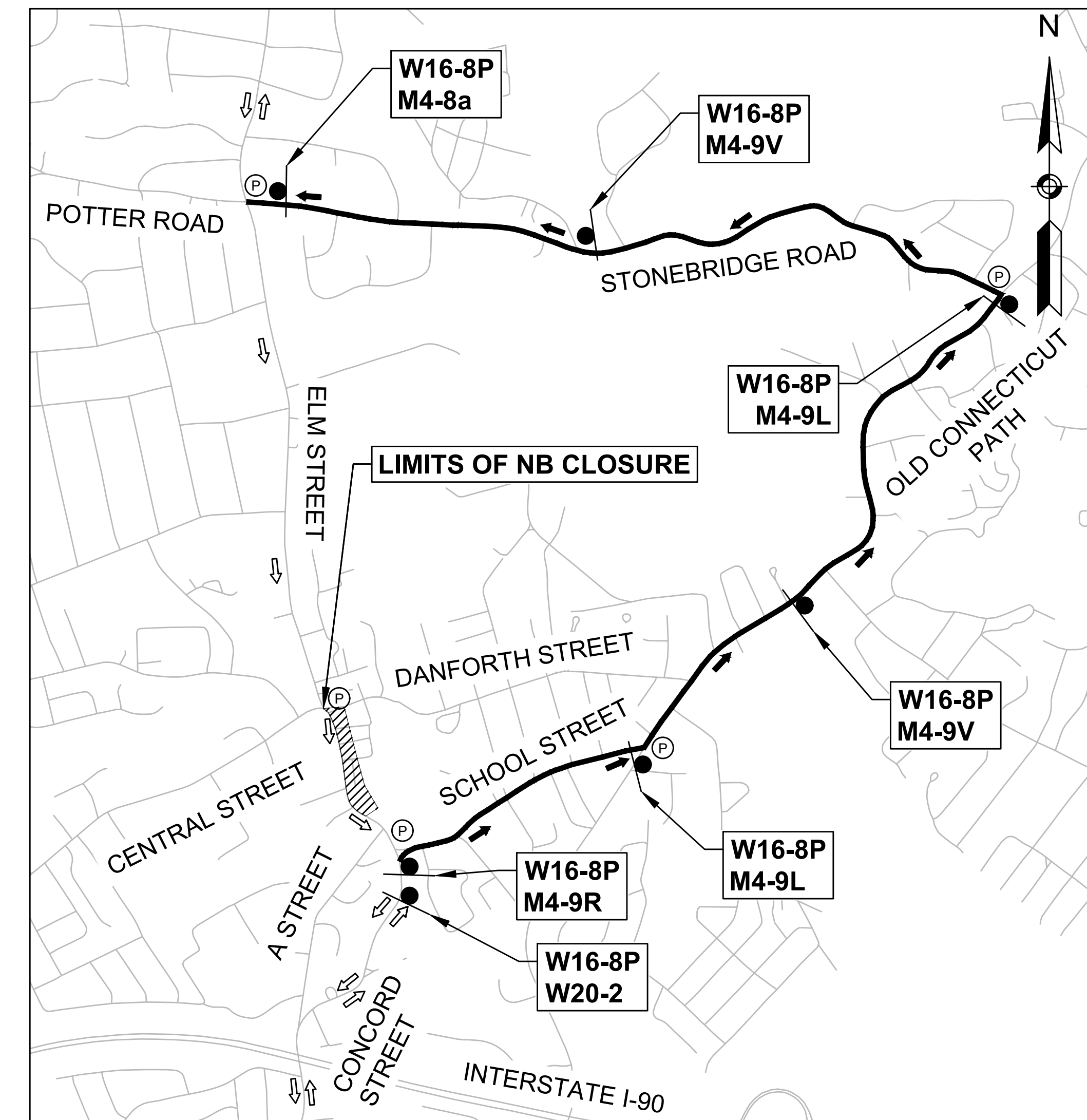
CHECKED BY: AV

SHEET NO. 49 OF 89



MAP SOURCE: MASSGIS

DETOUR ROUTE 1: CONCORD STREET - SOUTHBOUND



MAP SOURCE: MASSGIS

DETOUR ROUTE 2: CONCORD STREET - NORTHBOUND

NOTES:

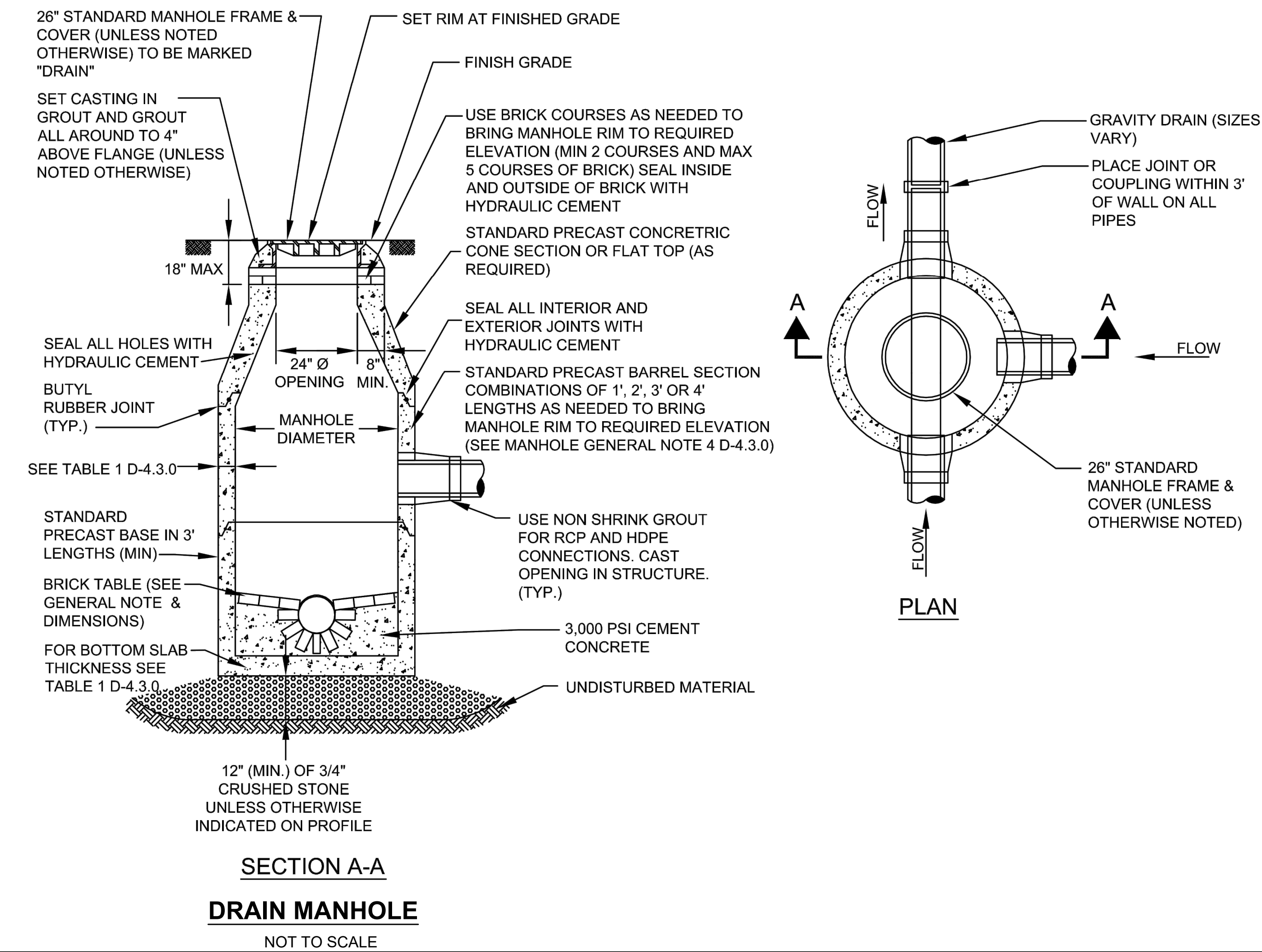
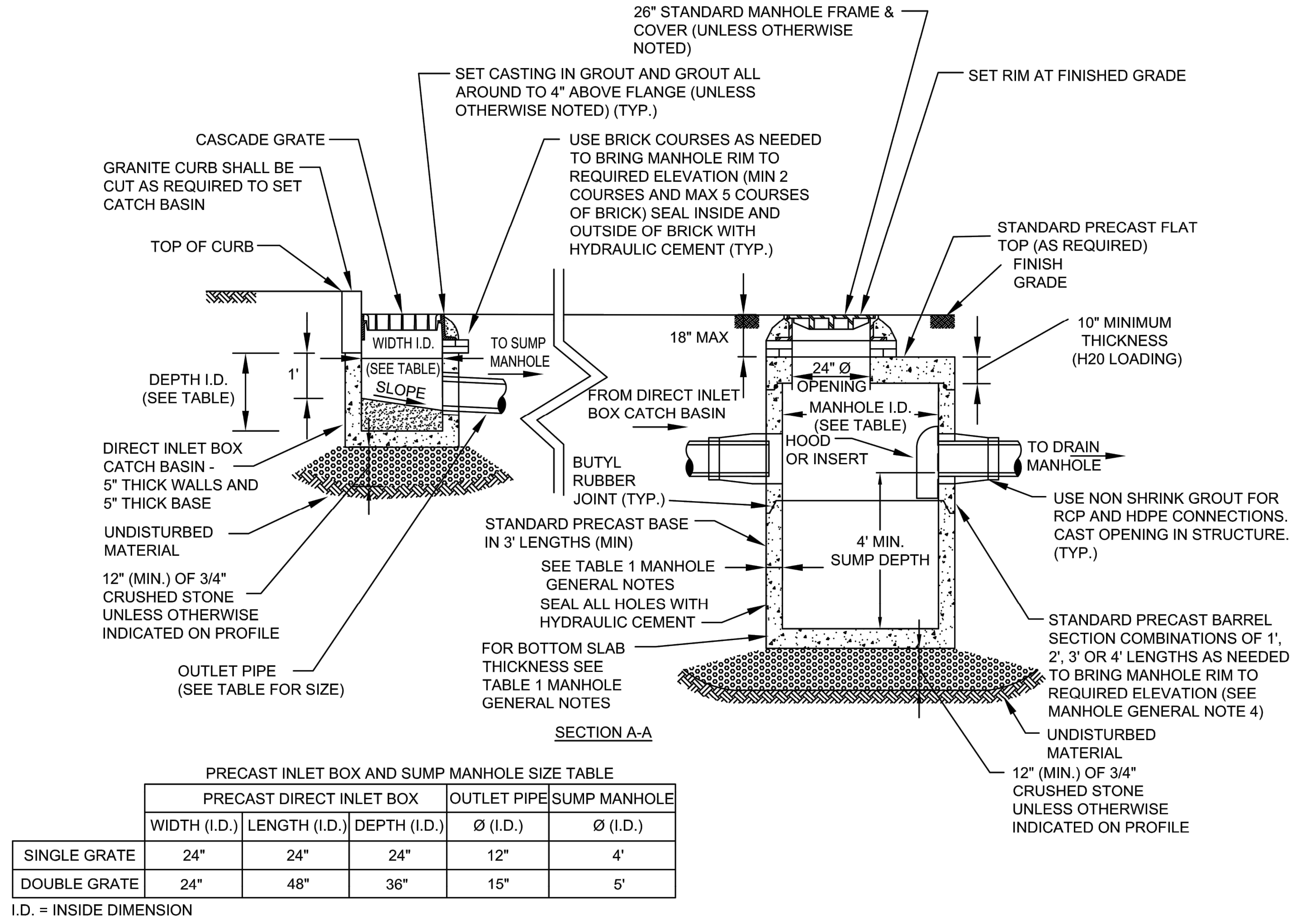
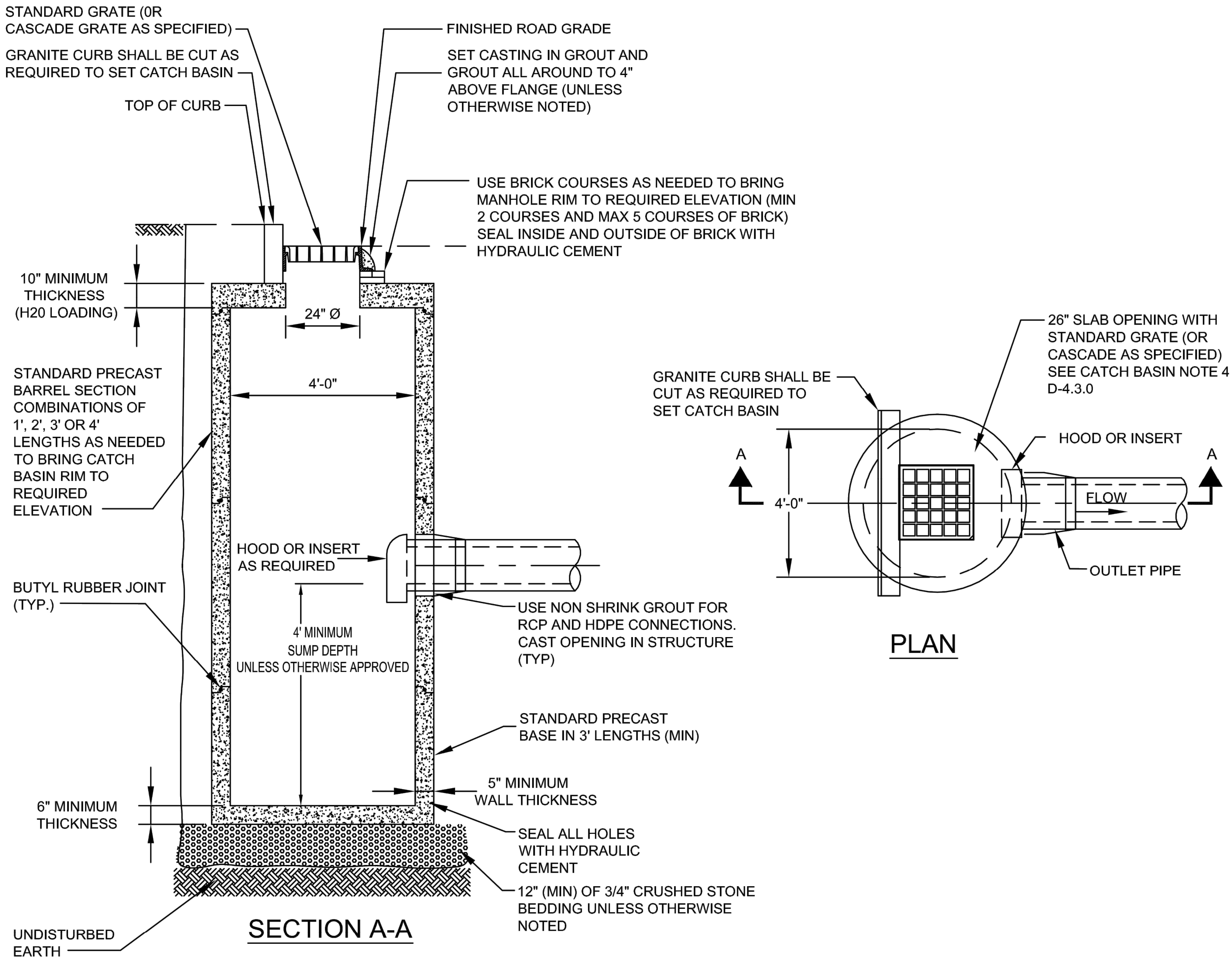
1. DETOUR ROUTE 1 SHALL BE USED WHILE THE SOUTHBOUND HALF OF CONCORD STREET IS CLOSED FOR FULL DEPTH RECONSTRUCTION.
2. DETOUR ROUTE 2 SHALL BE USED WHILE THE NORTHBOUND HALF OF CONCORD STREET IS CLOSED FOR FULL DEPTH RECONSTRUCTION.
3. DETOURS SHALL ONLY BE USED FOR WORK DURING THE DAY. NORMAL TRAFFIC OPERATIONS WILL BE RESTORED DURING NON-WORK HOURS.
4. DETOUR ROUTE 2 WILL REQUIRE THE DETOUR OF EMERGENCY VEHICLES EXITING FOR A CALL FROM FRAMINGHAM FIRE STATION 2 GOING NORTHBOUND.
5. ROAD CLOSURES ON CONCORD STREET SHALL FOLLOW THE TYPICAL TEMPORARY TRAFFIC MANAGEMENT DETAILS ON SHEETS 48, AND 49



TRAFFIC DEVICE LEGEND

- | | |
|---|---|
|  | WORK ZONE |
|  | DIRECTION OF VEHICULAR TRAFFIC |
|  | DIRECTION OF DETOURED VEHICULAR TRAFFIC |
|  | POLICE OFFICER |
|  | PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) |

				PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
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NO.	DATE	REVISIONS				



GENERAL CATCH BASIN NOTES:

- FACE OF PIPE SHALL NOT PROJECT MORE THAN 3-INCHES FROM FACE OF WALL ALONG CENTERLINE OF PIPE.
- DESIGN PRECAST SECTIONS WITH FRAME AND GRATE FOR AASHTO H20 LOADING UNLESS OTHERWISE NOTED.
- PRECAST TOP SLAB OPENING CAN BE CENTERED OR OFFSET AS NECESSARY.
- GRATE VANES SHALL BE INSTALLED IN DIRECTION TO RECEIVE FLOWS.
- CATCH BASIN BASE SHALL BE SOLID.

MANHOLE GENERAL NOTES:

- DRAIN MANHOLE DIAMETER SHALL BE 4', 5', 6', 8' OR 10' AS SHOWN ON PLAN/PROFILE VIEWS.
- DESIGN PRECAST SECTIONS WITH FRAME AND COVER FOR AASHTO H20 LOADINGS UNLESS OTHERWISE NOTED.
- MANHOLES LARGER THAN 4' IN DIAMETER AT THE BASE SHALL BE REDUCED IN DIAMETER TO 4' AT THE NEXT RISER SECTION UNLESS NOTED OTHERWISE ON PLANS.

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS - 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

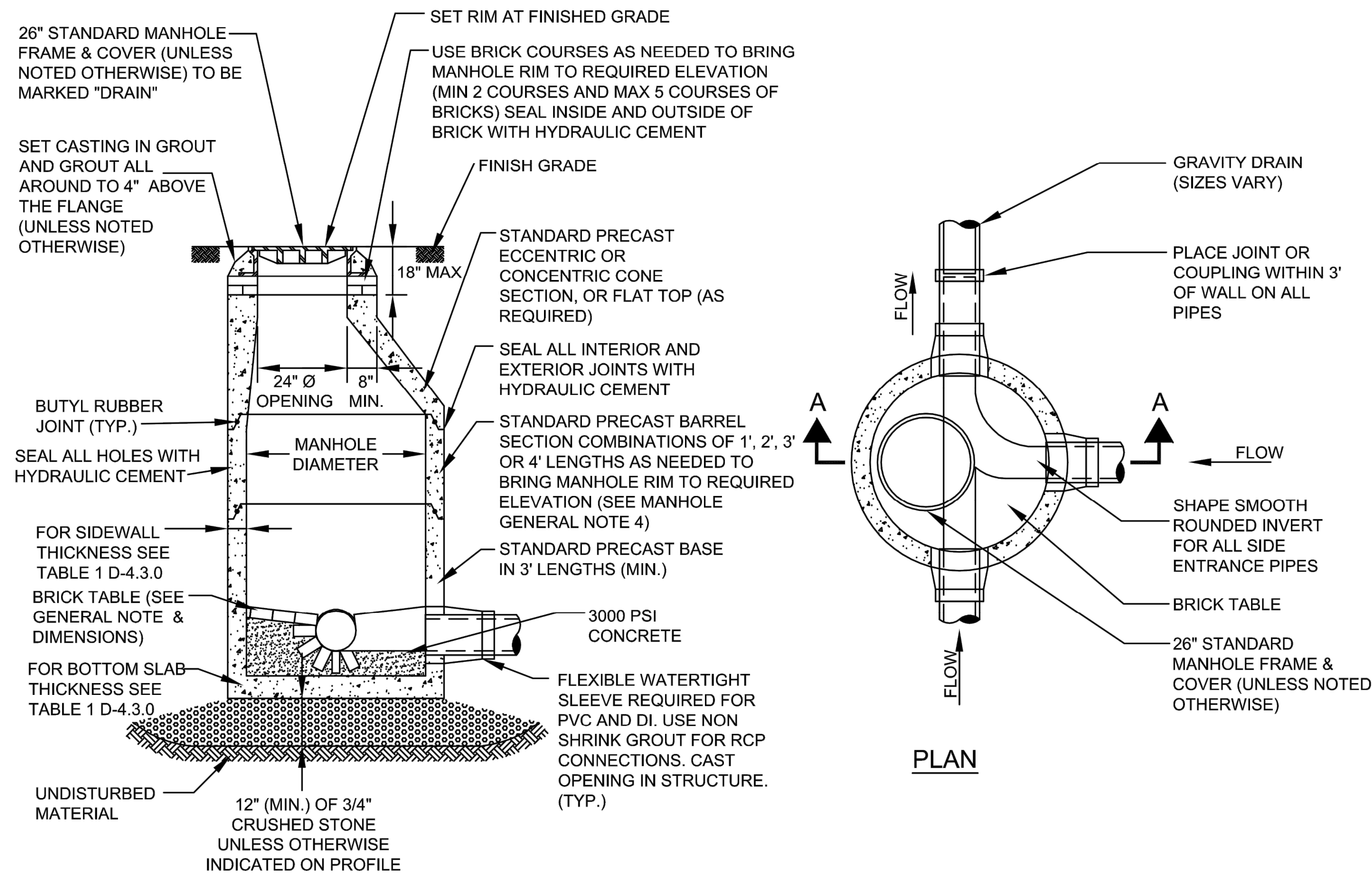
DESIGNED BY: JL

DRAWN BY: MPC

CHECKED BY: HP

SHEET NO. 52 OF 89

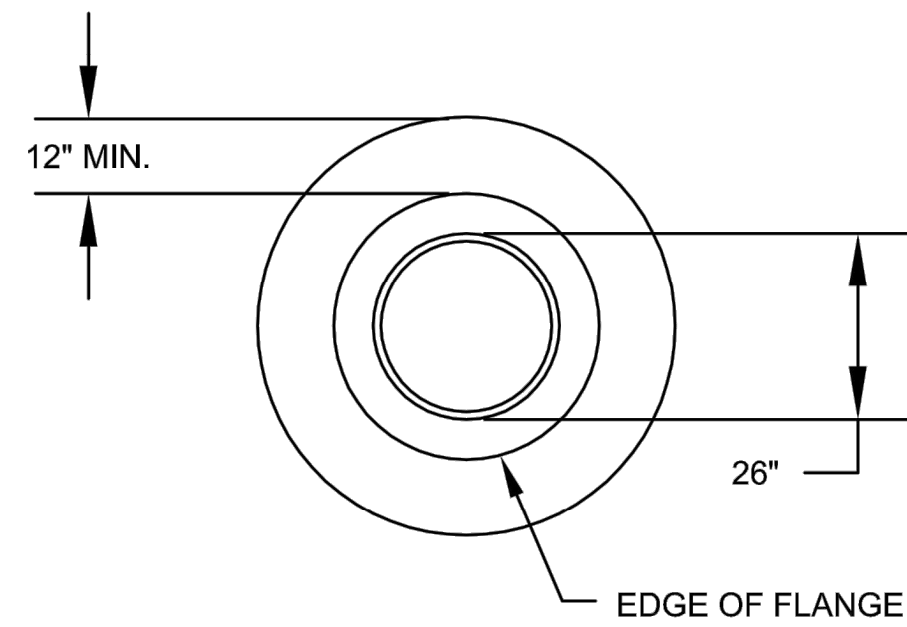
NO.	DATE	REVISIONS
1		



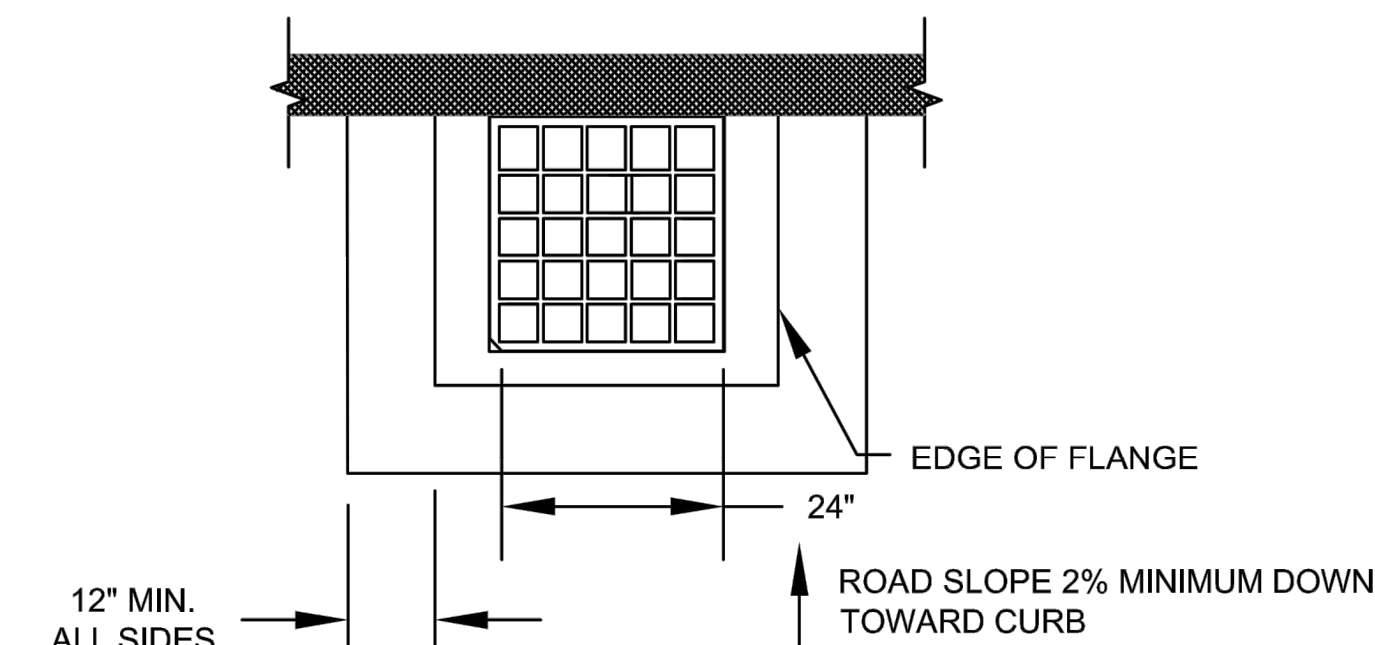
SECTION A-A

ECCENTRIC MANHOLE

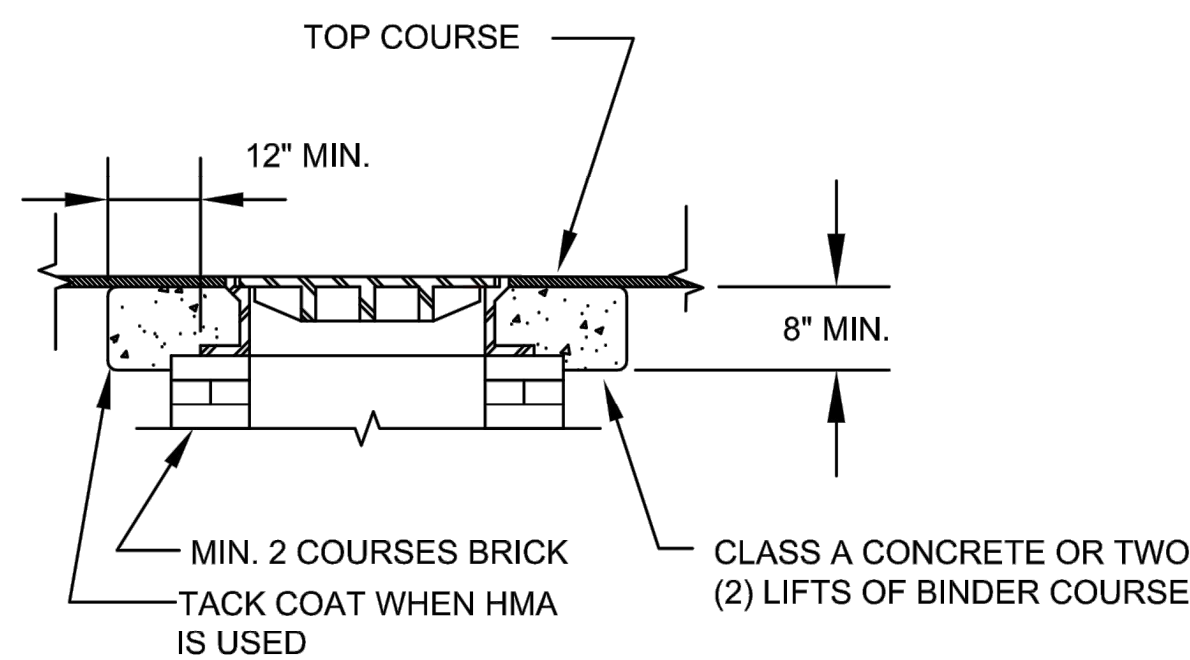
NOT TO SCALE



PLAN



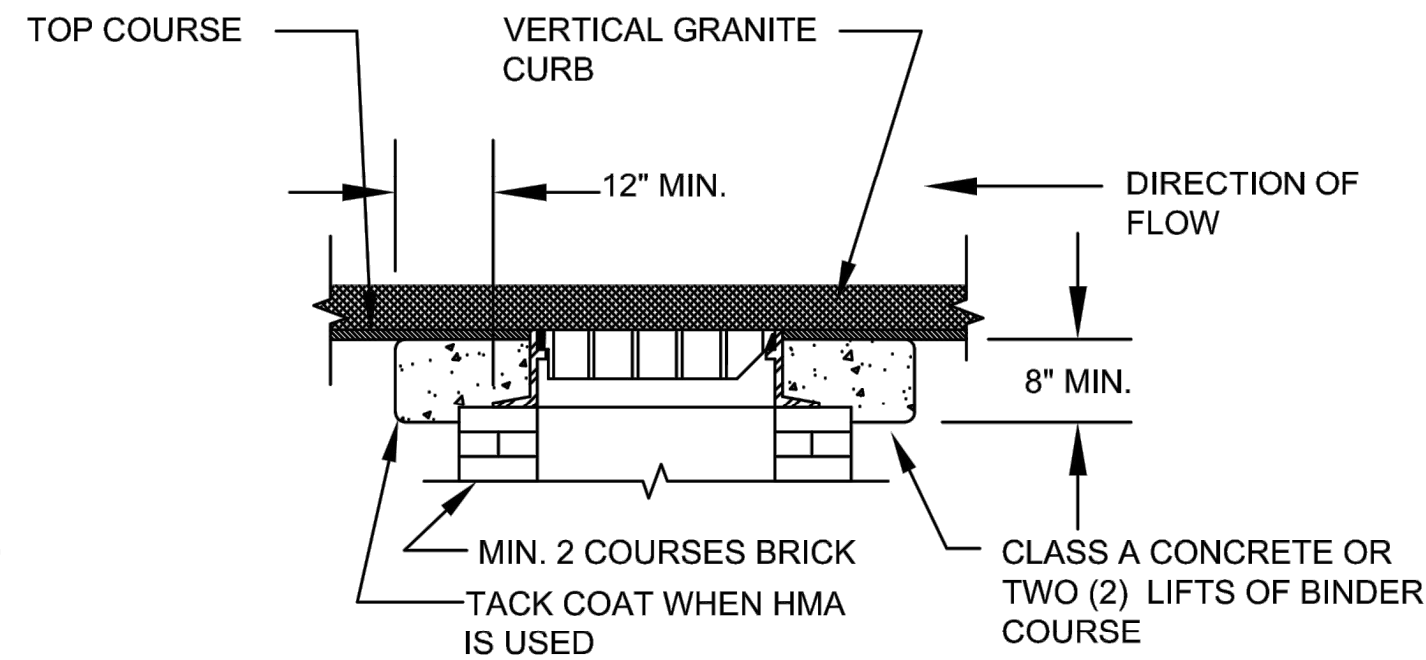
PLAN



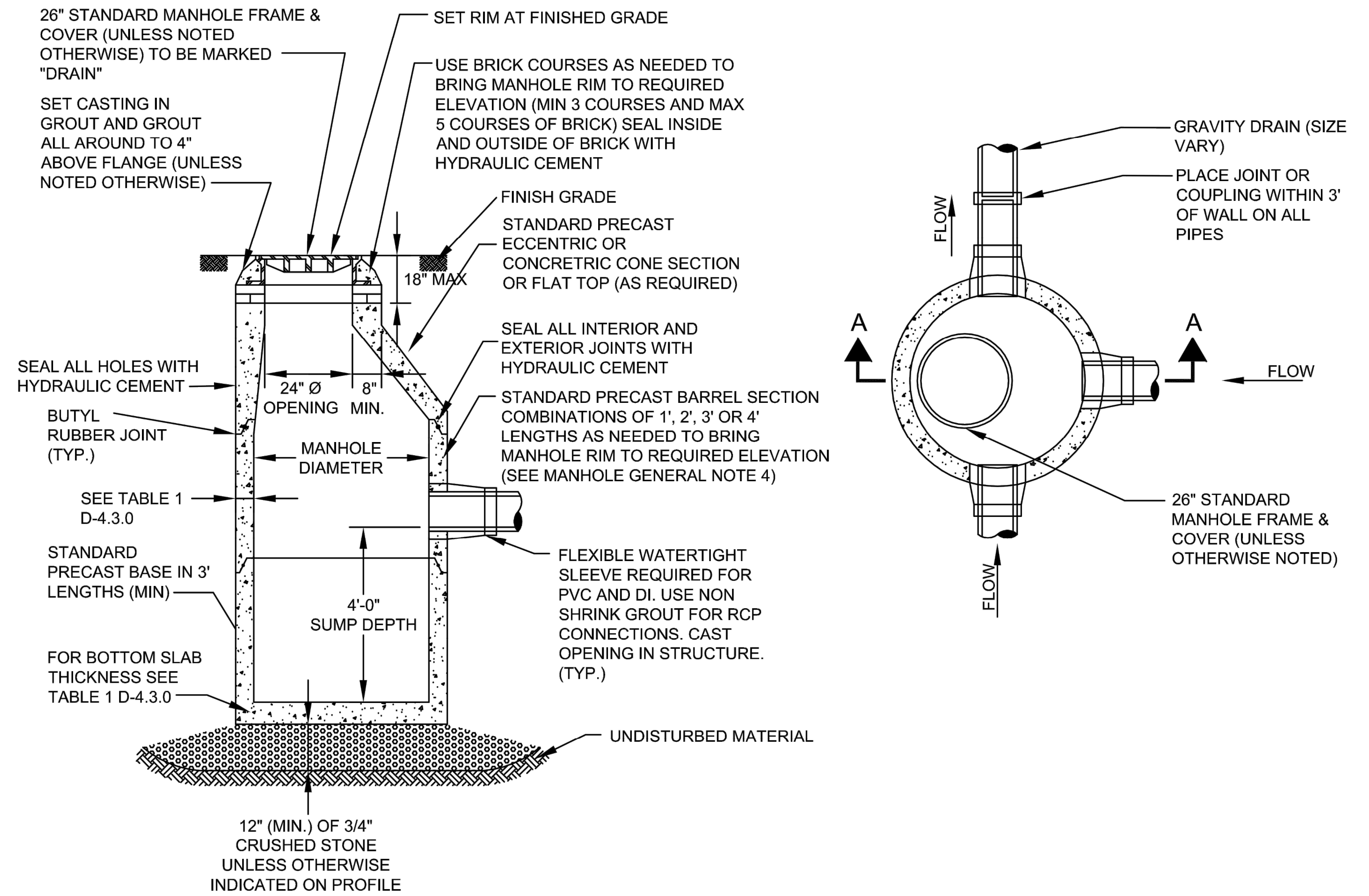
SECTION
MANHOLES

RAISING CASTINGS

NOT TO SCALE



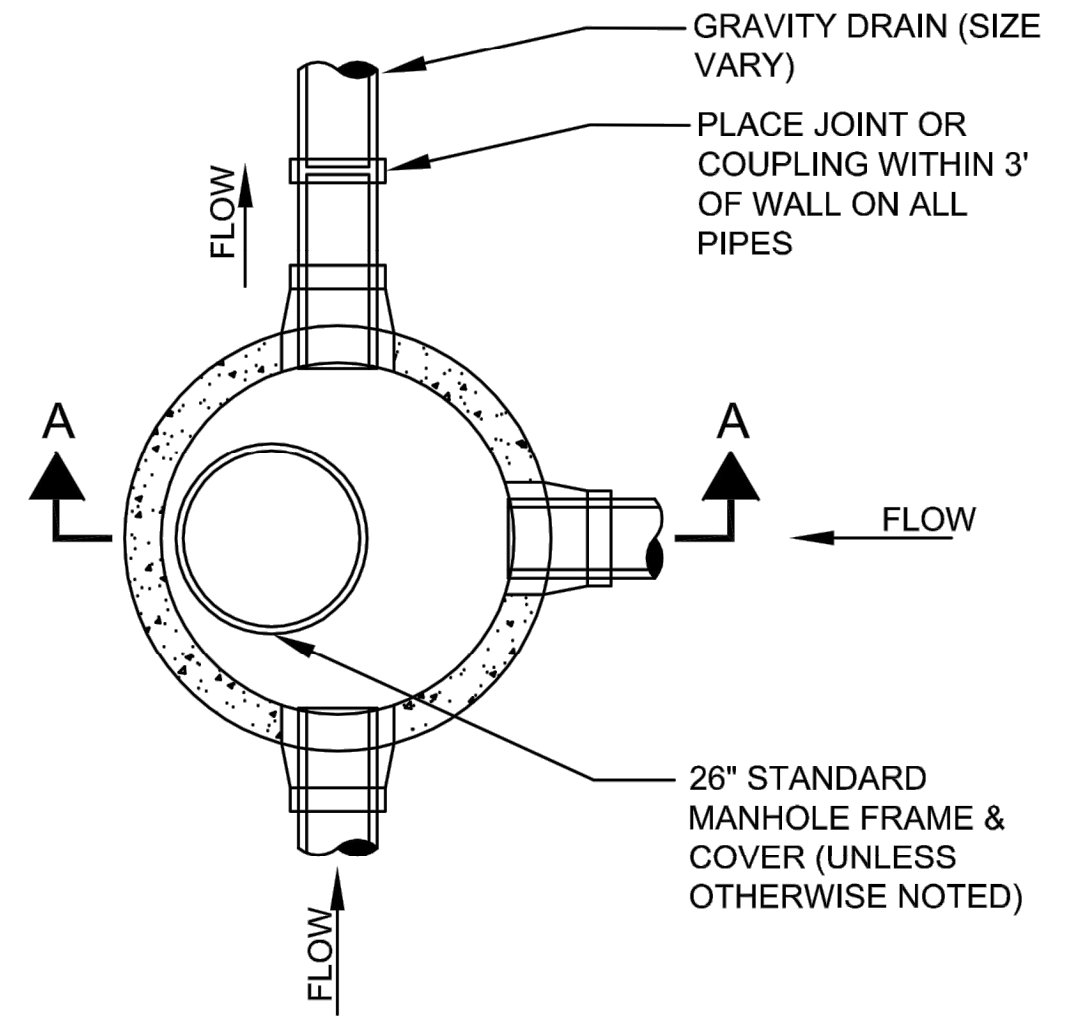
SECTION
CATCH BASINS



SECTION A-A

SUMP MANHOLE

NOT TO SCALE



PLAN

TABLE 1				
MANHOLE DIAMETER	SIDE WALL MIN. THICKNESS	BOTTOM SLAB MIN. THICKNESS	MAX PIPE DIAMETER * RCP DI/PVC	
4'	5"	6"	24"	30"
5'	6"	8"	36"	42"
6'	6"	8"	48"	54"
8'	8"	8"	66"	72"
10'	10"	10"	72"	84"

* MAY VARY DEPENDING ON SIZE AND LOCATION OF ADDITIONAL PENETRATIONS OR RELATIONSHIP OF PENETRATIONS IN MANHOLE

MANHOLE AND CATCH BASINS DIMENSIONS

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

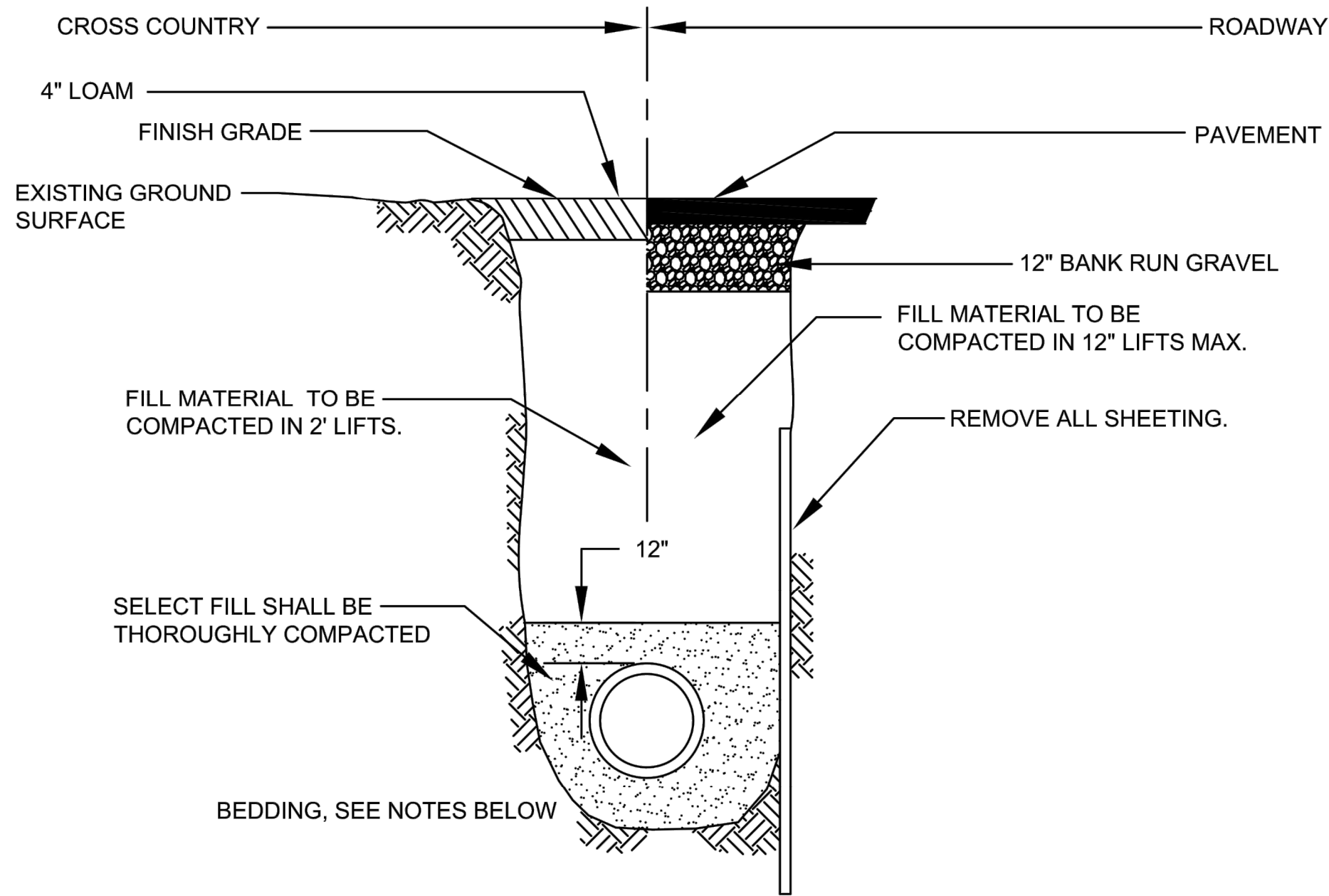
DRAWING TITLE: CONSTRUCTION DETAILS - 2

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034
DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP
SHEET NO. 53 OF 89

NO.	DATE	REVISIONS
1		



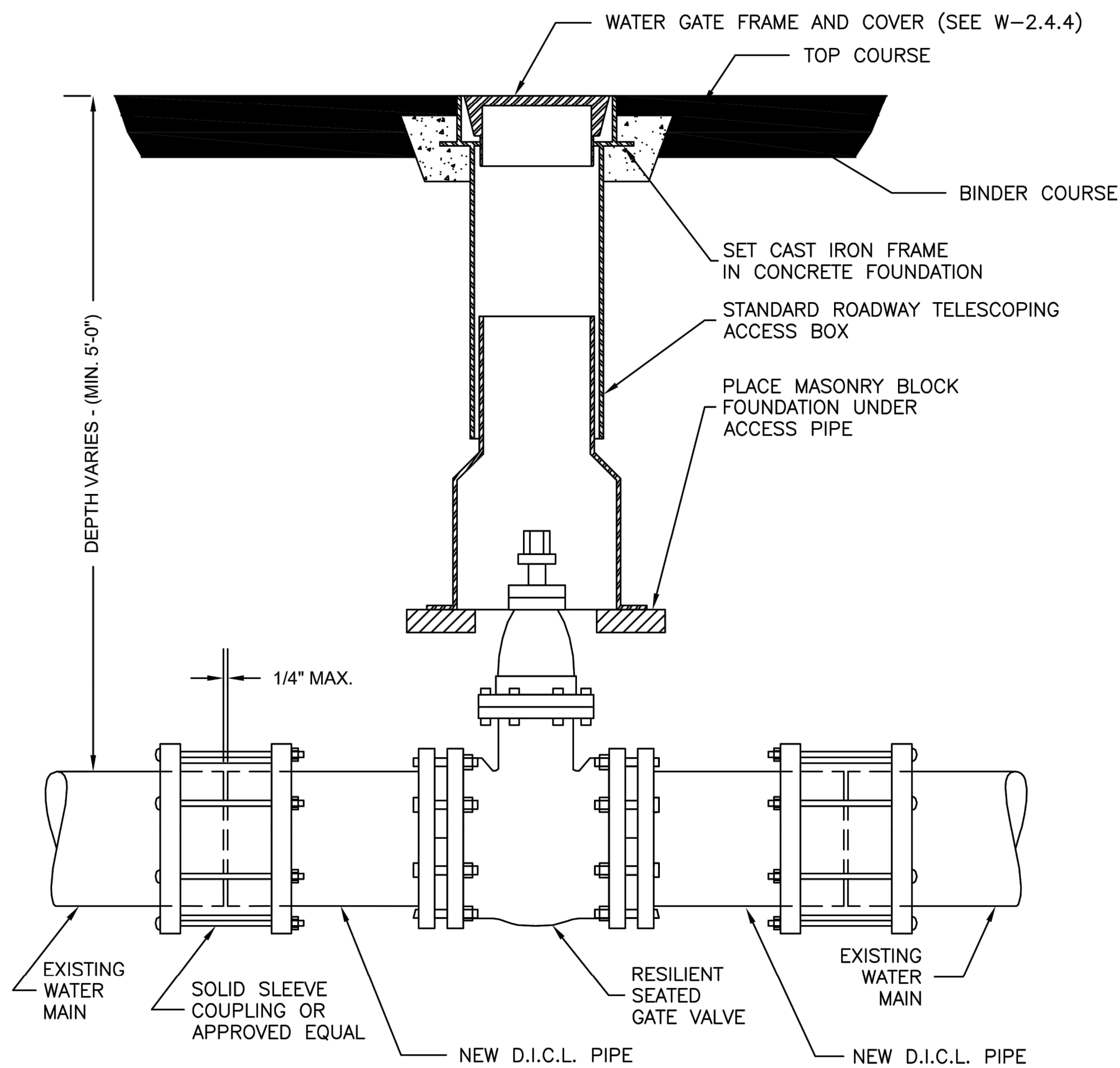
NOTE: 5'-0" MIN. COVER

NOTES:

1. CITY OF FRAMINGHAM MAY REQUIRE FLOWABLE FILL AT ITS DISCRETION.
2. FOR LOCATIONS WHERE LEDGE IS NOT ENCOUNTERED IN TRENCH, PIPE CAN LAY ON UNDISTURBED EARTH, OR ON SAND BEDDING CONSISTENT WITH AWWA GUIDELINES.
3. FOR LOCATIONS WHERE LEDGE IS ENCOUNTERED, SAND BEDDING SHALL BE MINIMUM OF 12" THICK UNDER PIPE.
4. FILL MATERIAL SHALL BE COMPACTED TO 95% PROCTOR DENSITY.

WATER MAIN TRENCH DETAIL

NOT TO SCALE

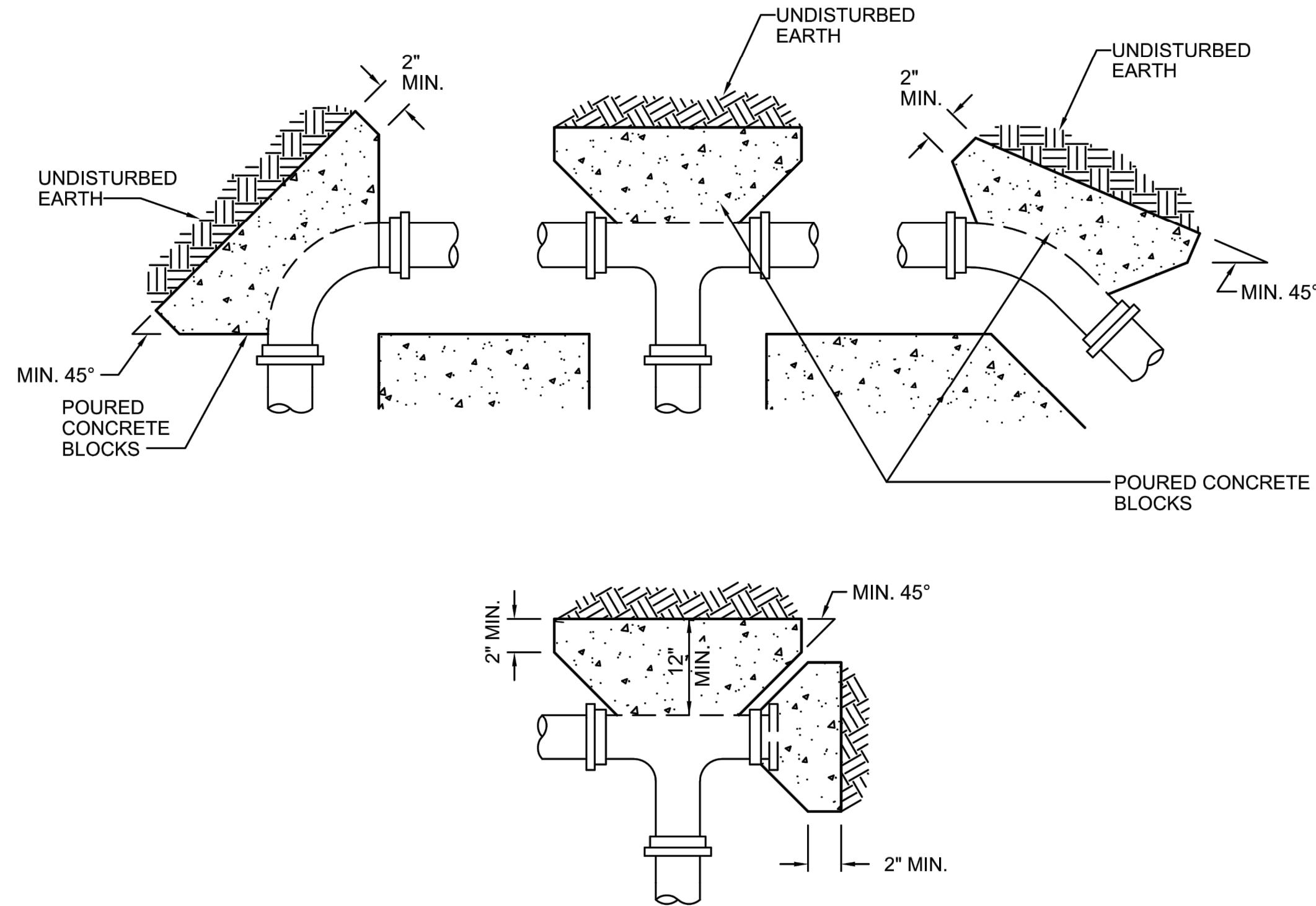


NOTE:

1. ALL EXCAVATION, BACKFILLING AND PAVING SHALL BE IN ACCORDANCE WITH THE TOWN OF FRAMINGHAM REQUIREMENTS.
2. WATER GATE COVER SHALL HAVE A MINIMUM HEIGHT OF 3.5 INCHES AND A MINIMUM WEIGHT OF 13 POUNDS, BRAND NAME BIBBY-STE-CROIX OR EQUAL.

GATE VALVE

NOT TO SCALE



PLAN VIEWS

NOTES:

1. SPECIFIC THRUST BLOCK DESIGN SHALL CONFORM TO AWWA GUIDELINES.
2. PLACE 4 mil. POLYETHYLENE BETWEEN CONCRETE AND FITTING (CONCRETE SHALL NOT INTERFERE WITH JOINT).
3. MINIMUM CONCRETE THICKNESS SHALL BE 12 INCHES.
4. THRUST BLOCK ORIENTATION SHALL BE SUCH THAT THE CENTER OF THE FITTING CORRESPONDS WITH THE CENTER OF THE THRUST BLOCK.
5. THE MINIMUM ALLOWABLE ANGLE (EITHER VERTICAL OR HORIZONTAL) SHALL BE 45 DEGREES.

TYPICAL THRUST BLOCK DETAILS

NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS - 3

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

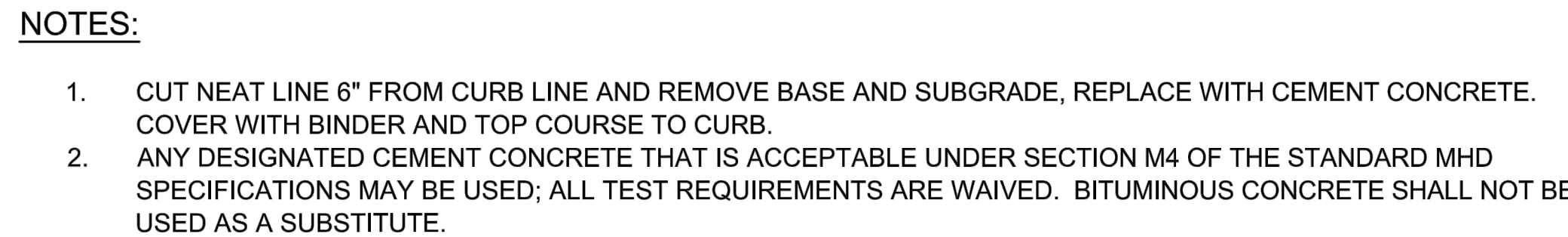
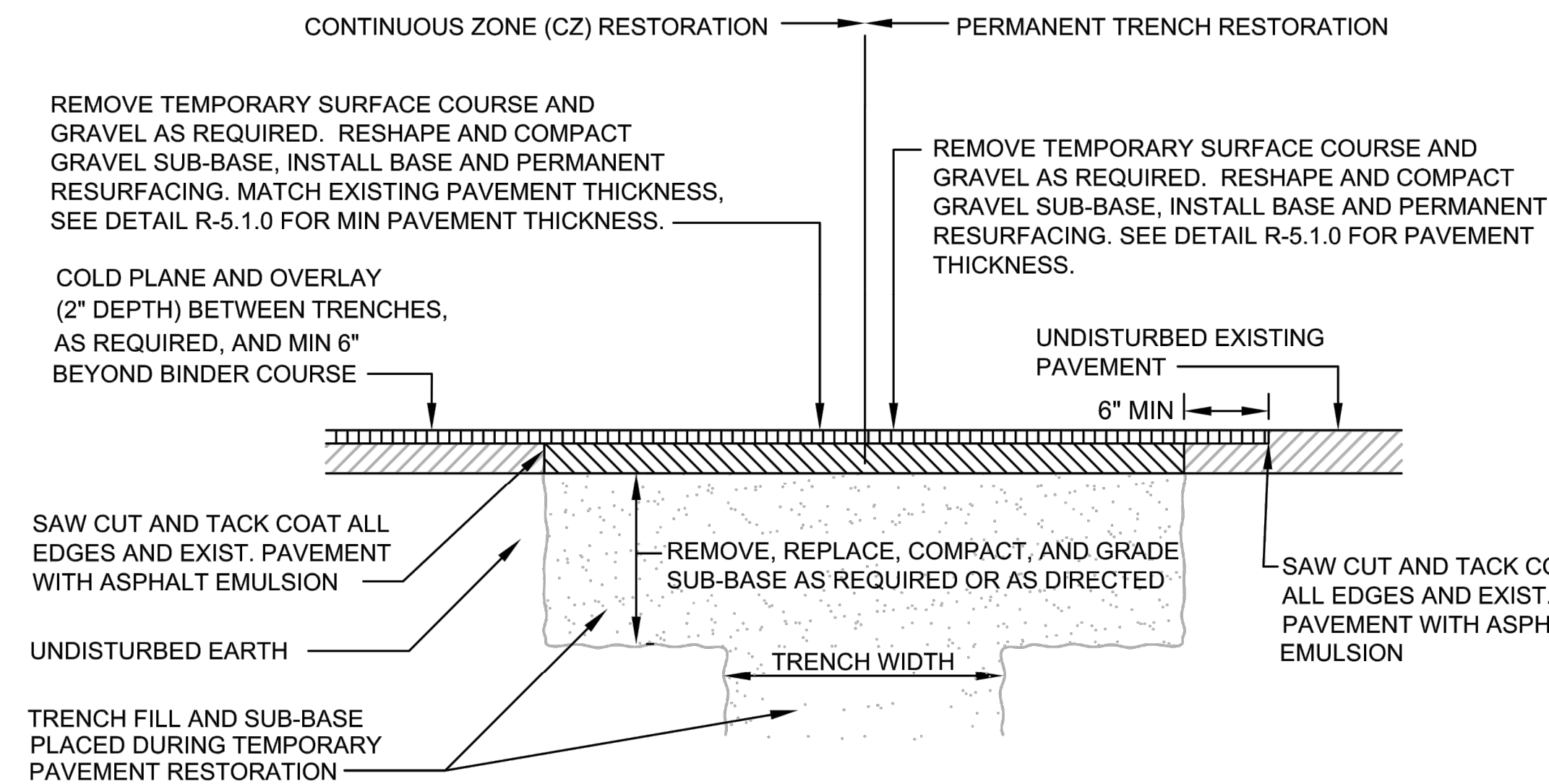
PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

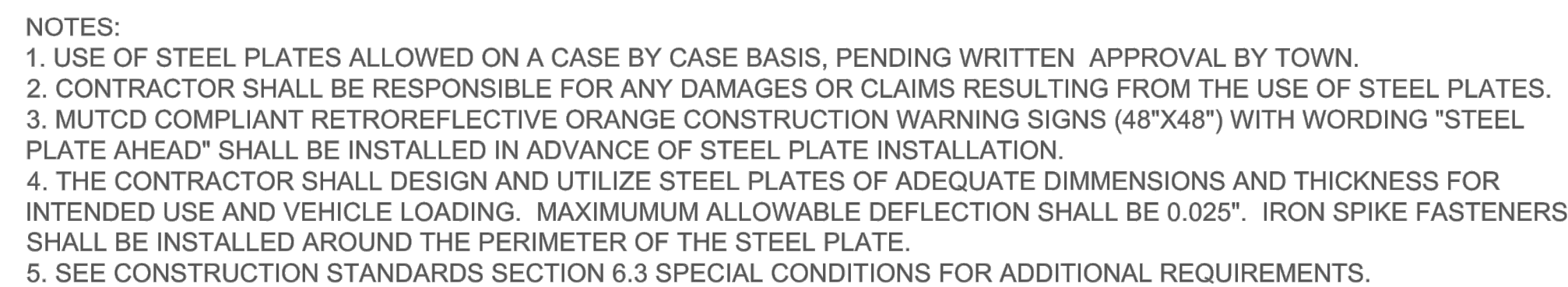
DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

SHEET NO. 54 OF 89

NO.		DATE	REVISIONS
1			



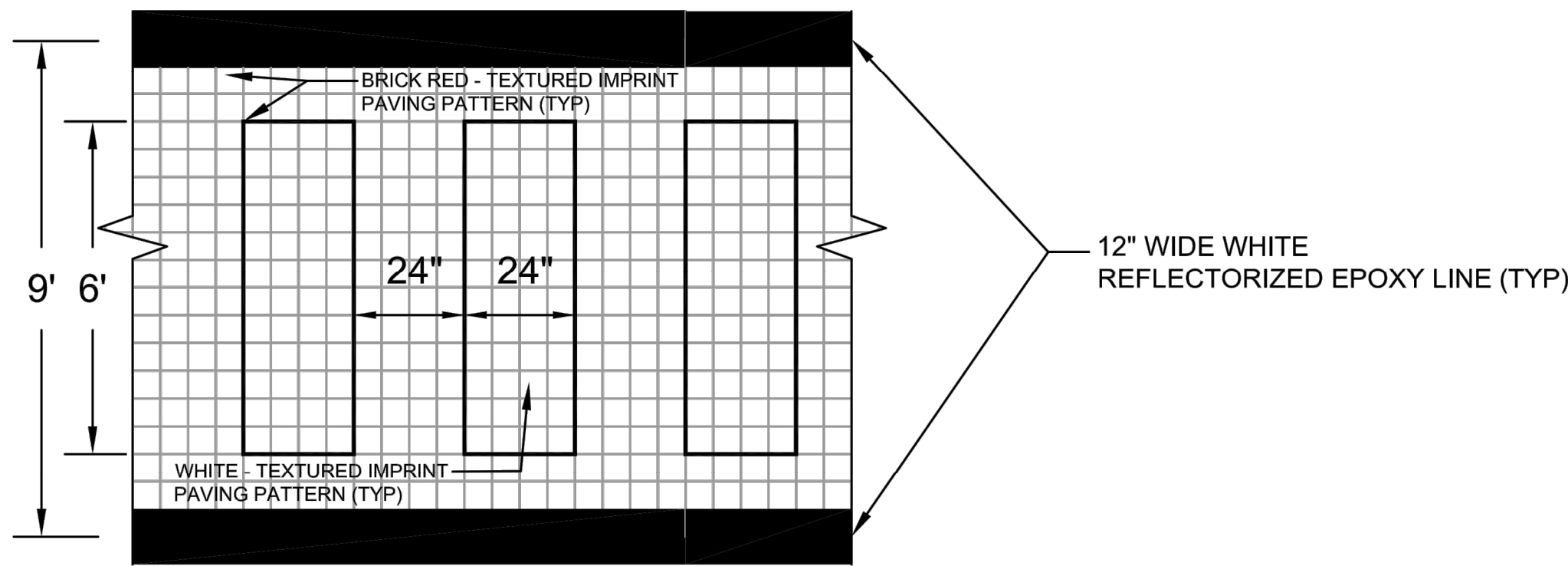
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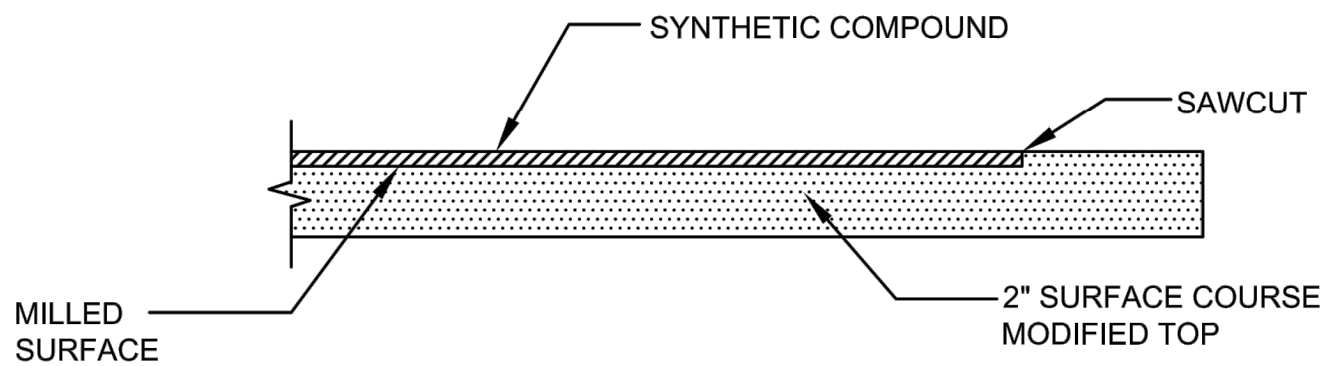
NOT TO SCALE

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NO.	DATE	REVISIONS

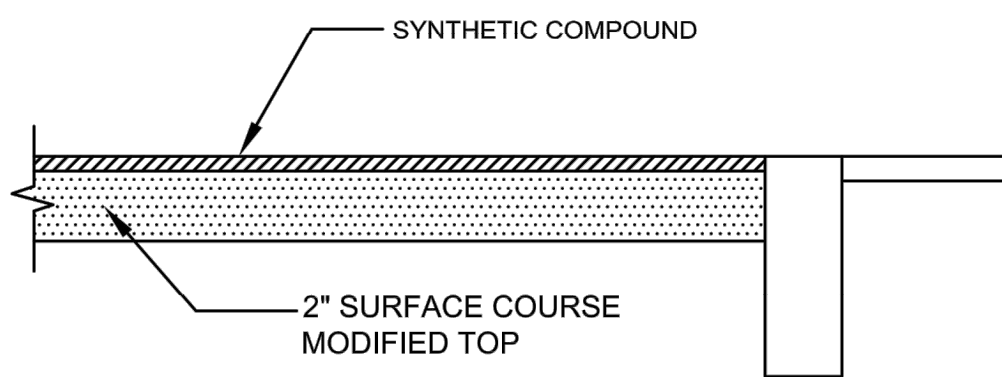
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION DETAILS - 4		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 55 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



PLAN



TRANSVERSE SECTION



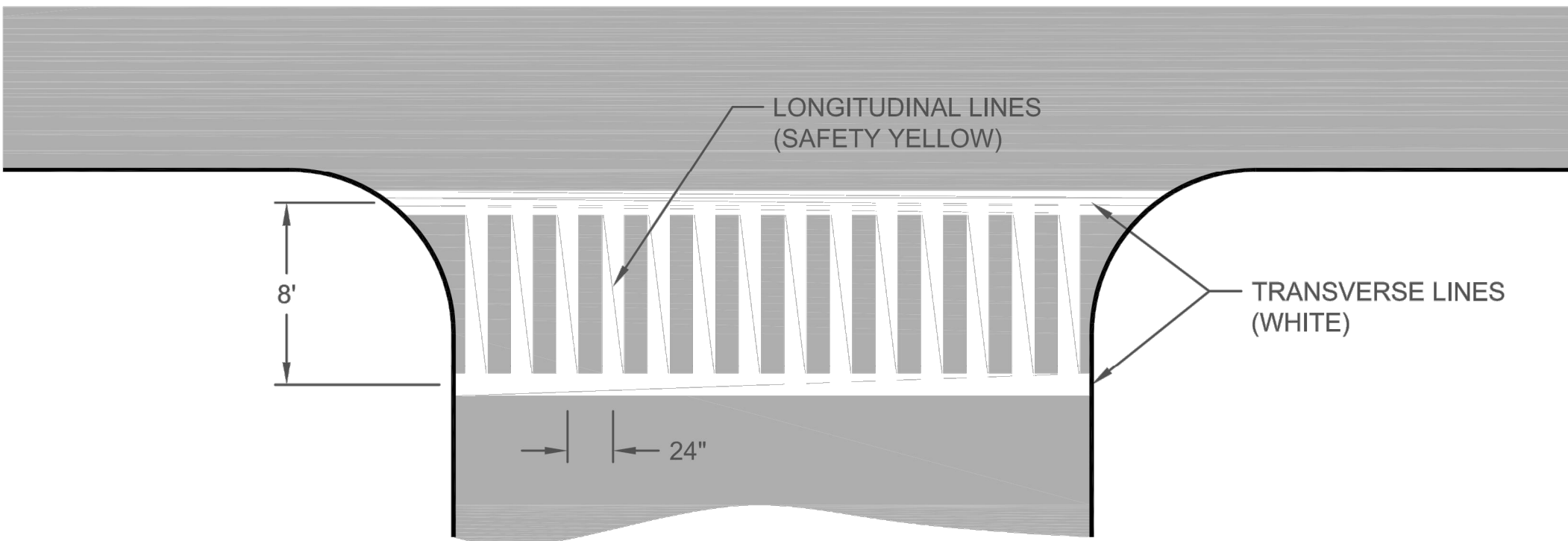
LONGITUDINAL SECTION

NOTES:

1. BRICK PATTERN TO BE STAMPED INTO MECHANICALLY HEATED SYNTHETIC COMPOUND.
2. REFER TO ITEM 706.9 FOR SPECIFICATIONS FOR TEXTURED DECORATIVE PAVEMENT CROSSWALK WHICH IS ON FILE WITH THE CITY OF FRAMINGHAM'S MUNICIPAL ENGINEERING DEPARTMENT.

DECORATIVE CROSS WALK

NOT TO SCALE



PAVEMENT MARKING - FAST DRYING WATER-BORNE OR OTHER TRAFFIC PAINT

NOT TO SCALE

NOTES:

1. CROSSWALK MARKINGS SHALL CONSIST OF SOLID WHITE OR YELLOW (AS INDICATED) LINES (BOTH TRANSVERSE AND LONGITUDINAL) 12 INCHES IN WIDTH.
2. CROSSWALKS SHALL BE 8 FEET WIDE.
3. LONGITUDINAL LINES SHALL BE SPACED 24" APART ON CENTER FOR ALL NEW CROSSWALKS. EXISTING CROSSWALK REPAIRS SHALL MATCH EXISTING SPACING.
4. CROSSWALK LINES SHALL EXTEND ACROSS THE FULL WIDTH OF PAVEMENT OR TO THE EDGE OF THE INTERSECTING CROSSWALK.
5. CROSSWALKS SHALL BE MARKED AT ALL INTERSECTIONS WHERE THERE IS SUBSTANTIAL CONFLICT BETWEEN VEHICULAR AND PEDESTRIAN MOVEMENT.
6. CROSSWALK MARKINGS FOR NEW ROADWAYS SHALL BE INSTALLED USING EPOXY PAVING MARKING MATERIAL CONFORMING TO MASSDOT ENGINEERING DIRECTIVE E-05-003, DATED JUNE 16, 2005 AND TO MASSDOT STANDARD SECTION 860.
7. CROSSWALK MARKINGS FOR EXISTING ROADWAYS SHALL BE INSTALLED USING FAST DRYING WATER-BORNE TRAFFIC PAINT PAVING MARKING MATERIAL TO MEET MASSDOT SPECIFICATIONS M07.01.23 (WHITE) AND M07.01.24 (YELLOW).
8. THERMOPLASTIC SHALL NOT BE USED FOR ANY PAVEMENT MARKINGS.

CROSS WALK

NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS - 5

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

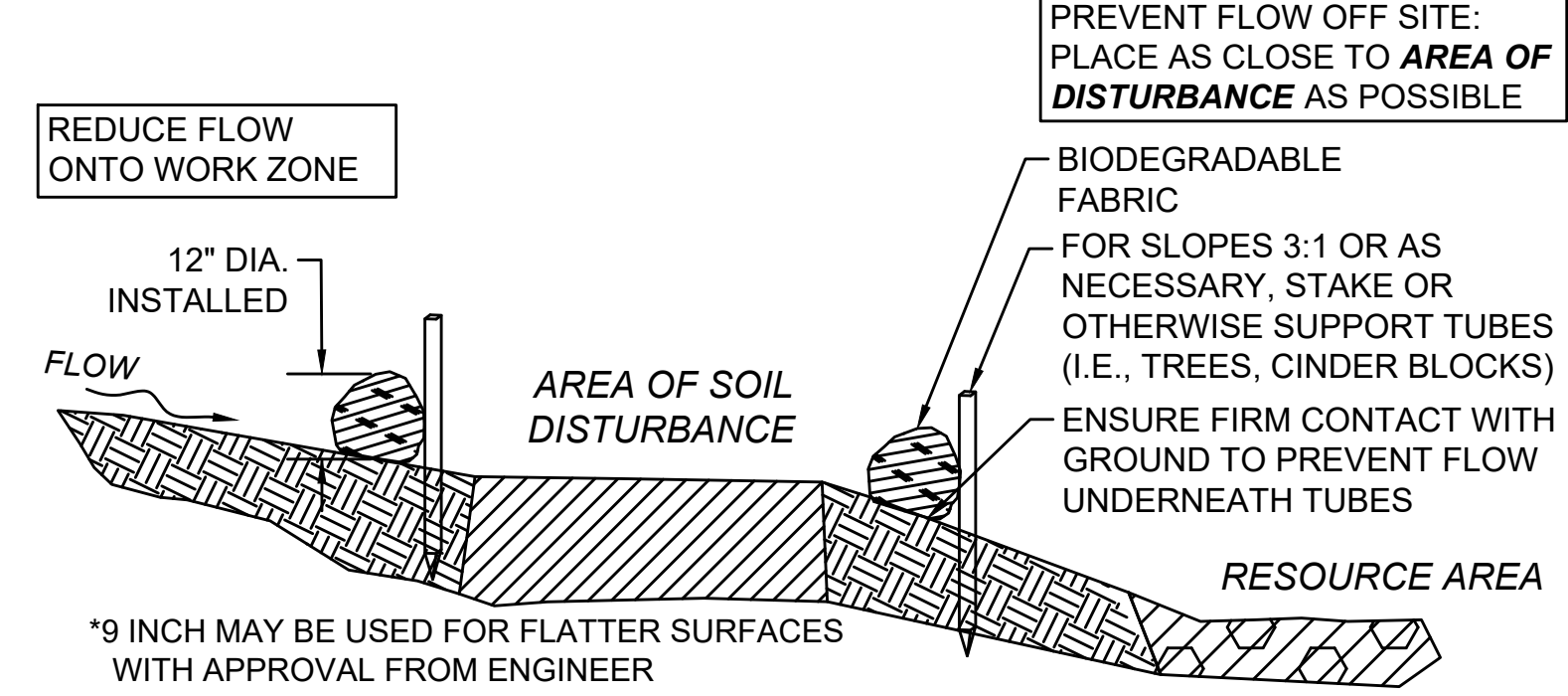
SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

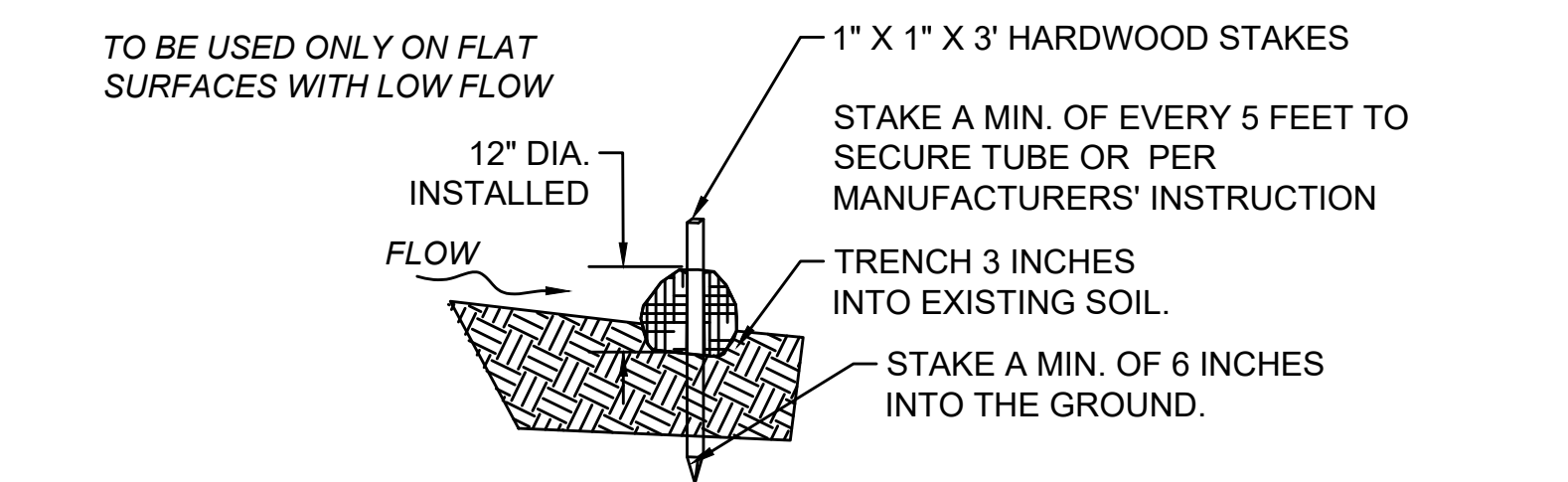
SHEET NO. 56 OF 89

NO.	DATE	REVISIONS
1		

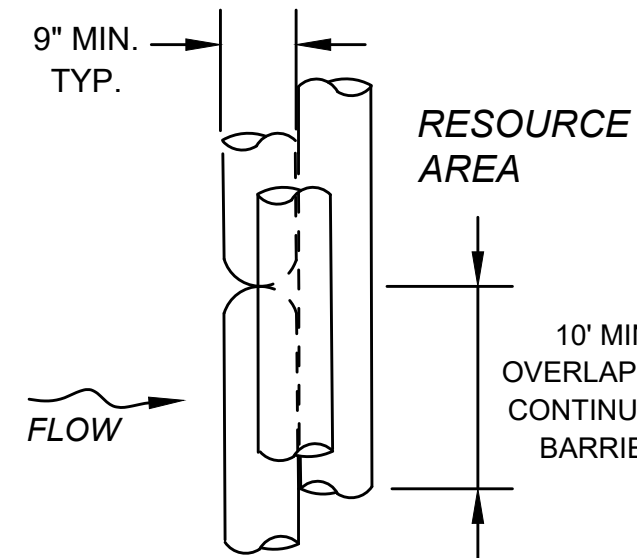
COMPOST FILTER TUBE



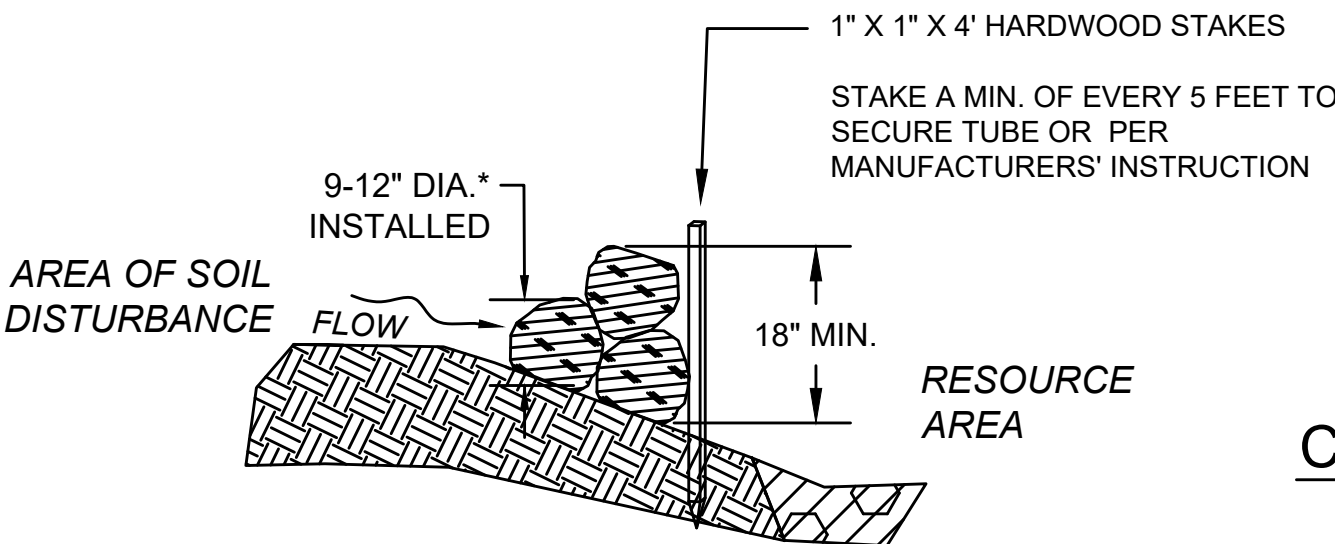
12 INCH STRAW WATTLE



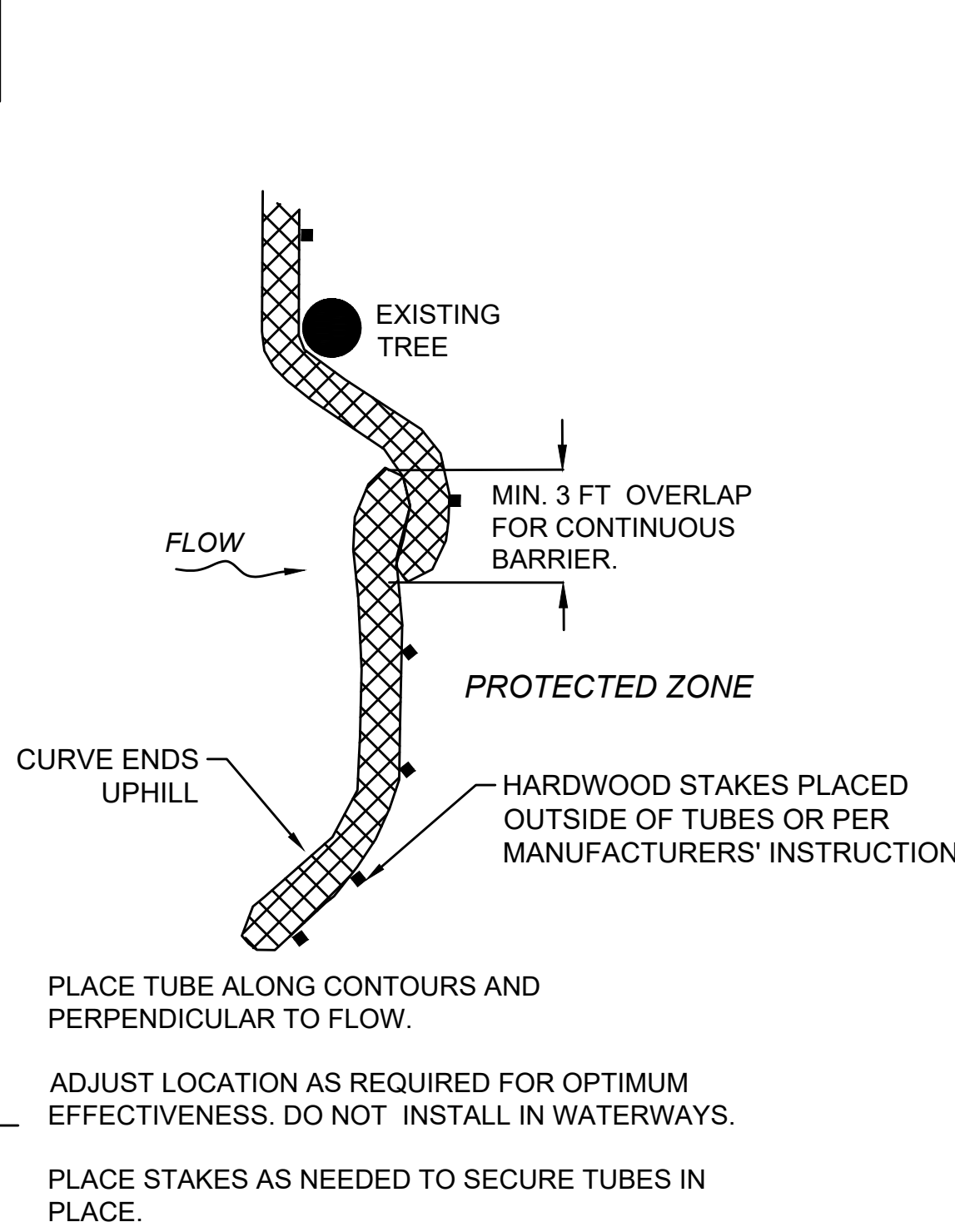
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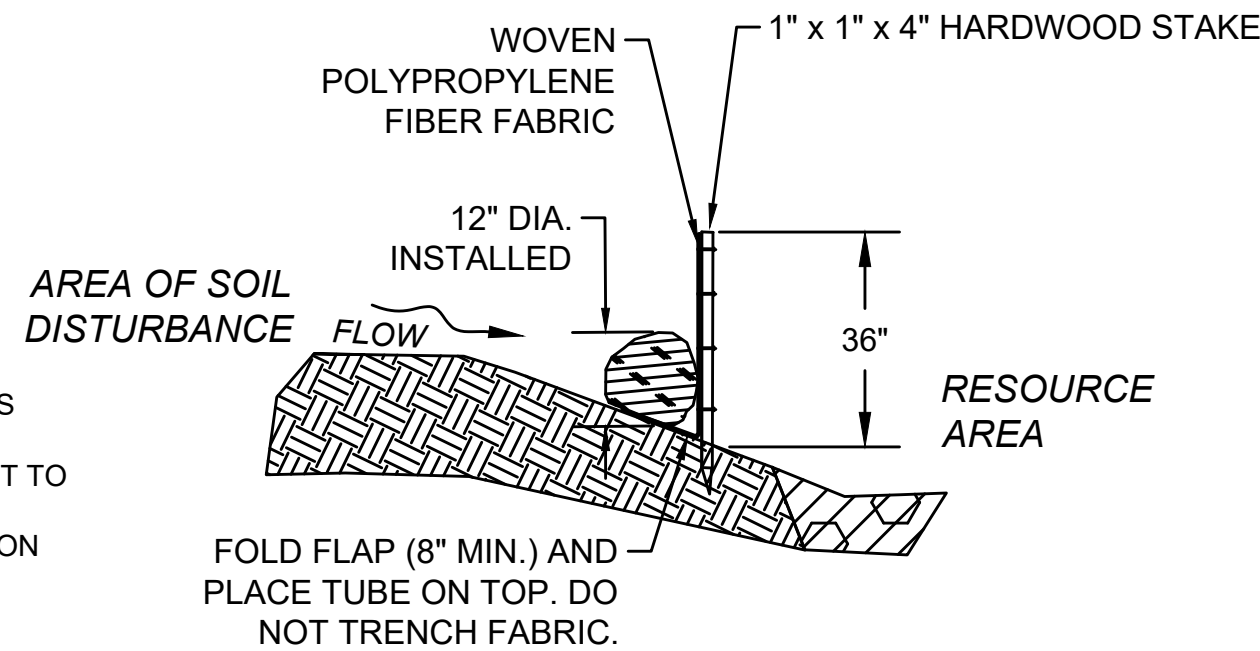
PLAN VIEW



SECTION



PLAN VIEW



SECTION

COMPOST FILTER TUBE & SILT FENCE

NOT TO SCALE

COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)

NOT TO SCALE

SEDIMENT CONTROL BARRIERS - COMPOST FILTER TUBE & STRAW WATTLES

NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS - 6

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

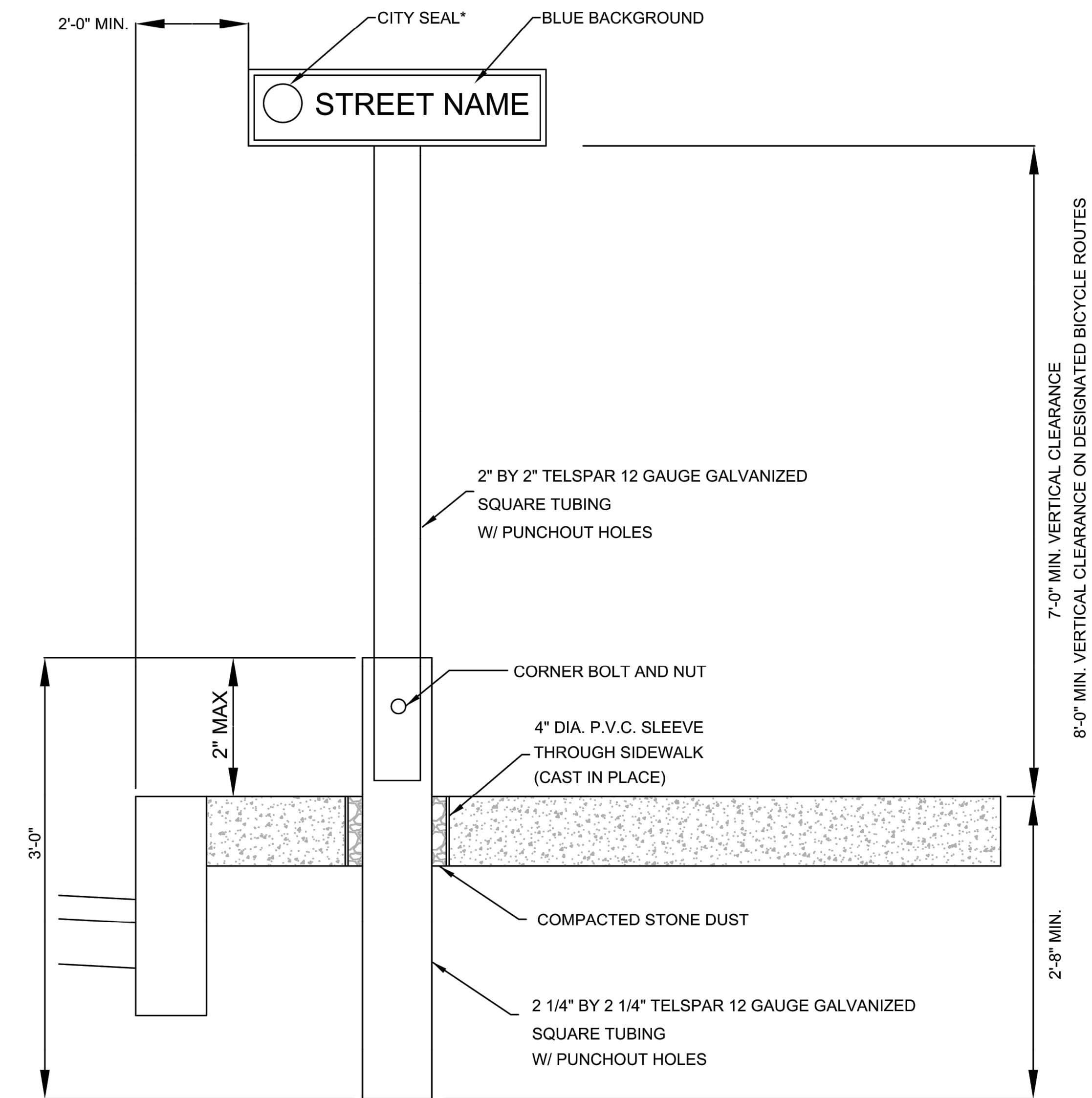
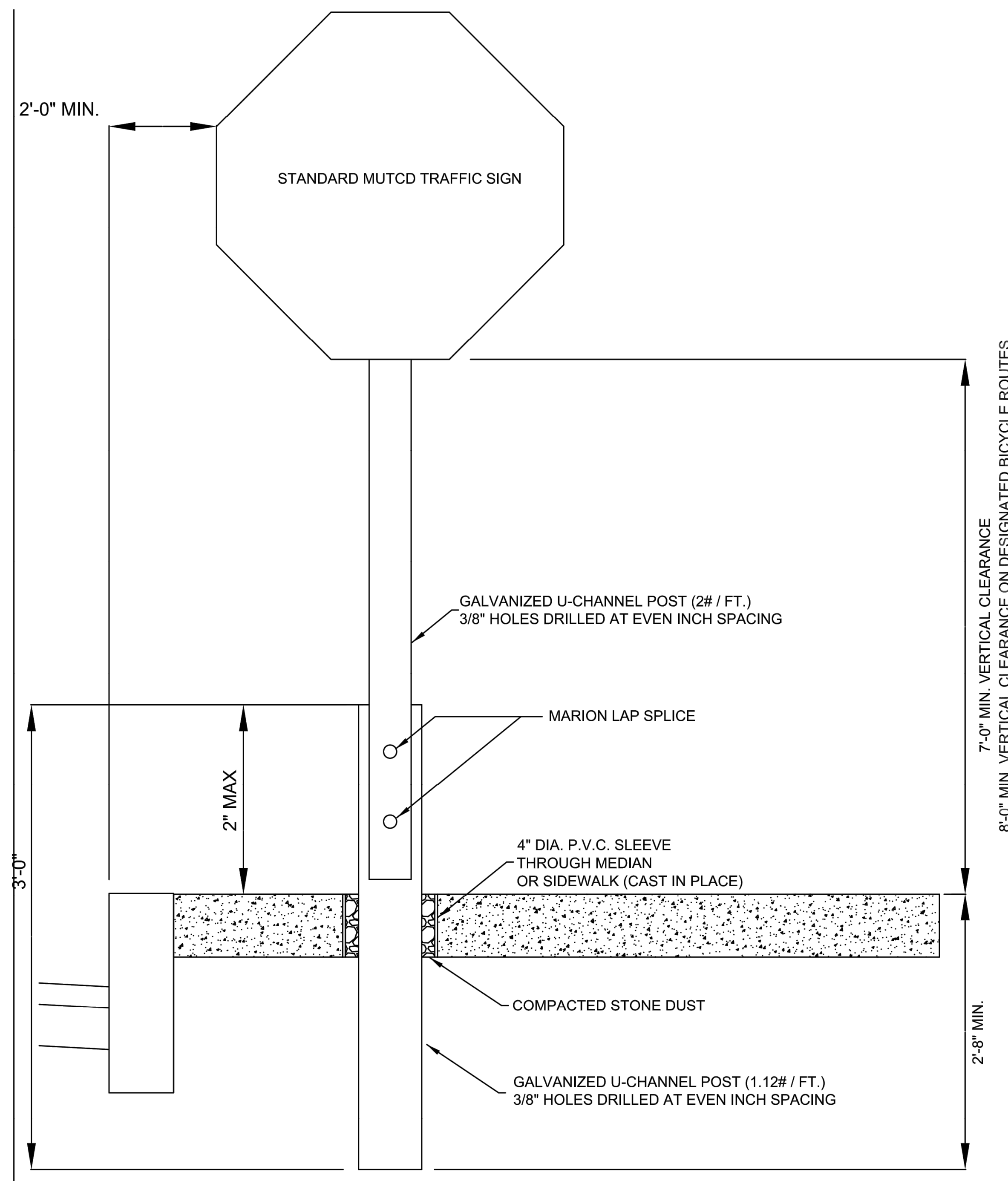
PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

SHEET NO.
57 OF 89

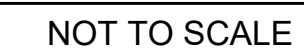
NO.	DATE	REVISIONS
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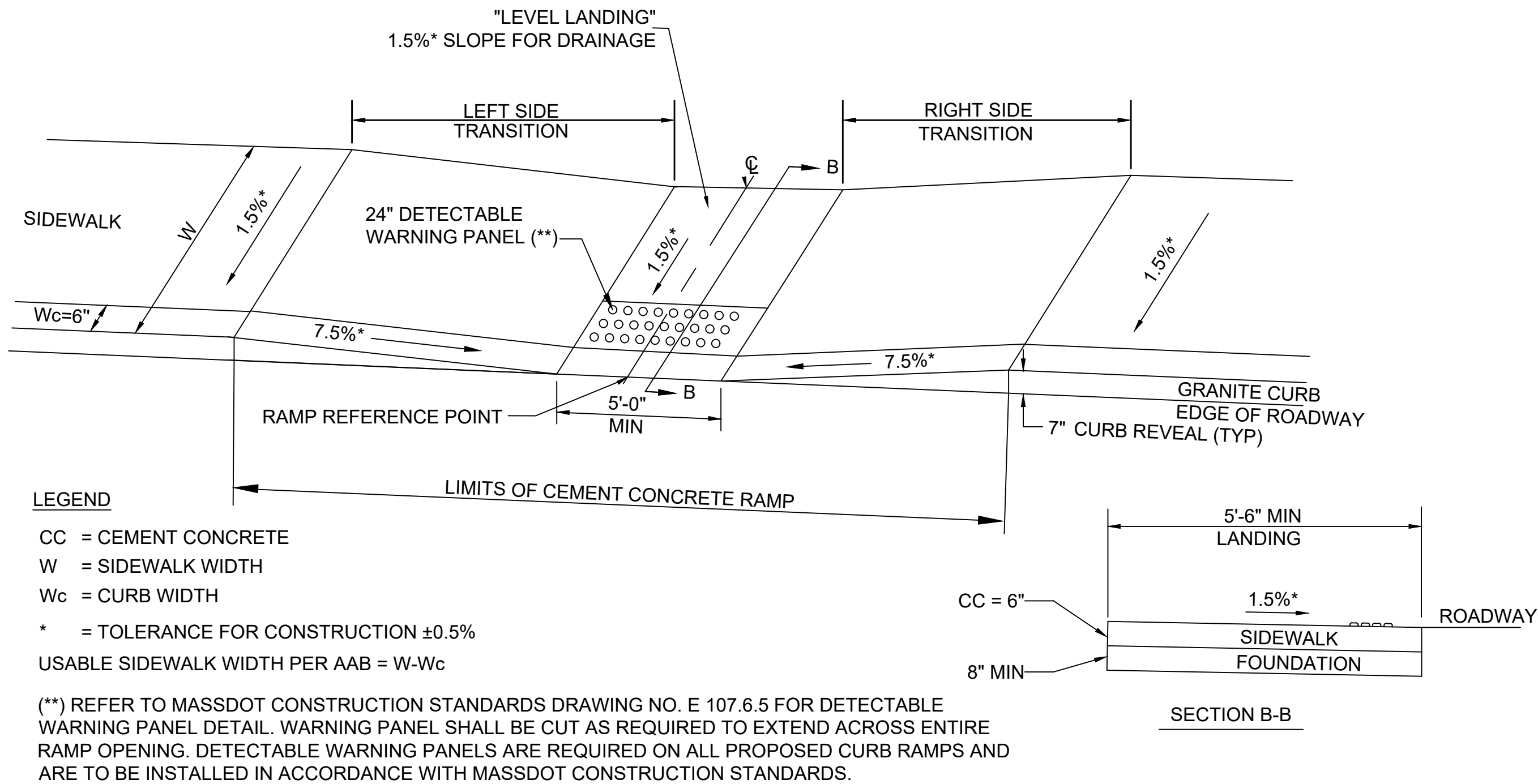
1. EACH SIGN SHALL CONSIST OF (2) SINGLE SIDED PLATES USING DRIVE PINS TO SECURE PLATES TO POST.
2. OUTER EDGE OF SIGN SHALL BE SECURED WITH POP RIVETS AND 2" SPACER BETWEEN THE 2 PLATES.
3. FONT SHALL BE HIGHWAY GOTHIC B IN UPPER CASE ONLY.
4. PLATES SHALL HAVE ROUNDED CORNERS.
5. WHITE AVERY-DENNISON PRISMATIC PLATE SHALL BE UTILIZED.
6. THE SIGNS SHALL INCLUDE 5.5" TOWN SEALS (2 REQUIRED).
7. THE SIGNS SHALL INCLUDE A 0.5" WHITE BORDER.

1		
NO.	DATE	REVISIONS

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION DETAILS - 7		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 804 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 58 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION DETAILS - 8		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 59 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

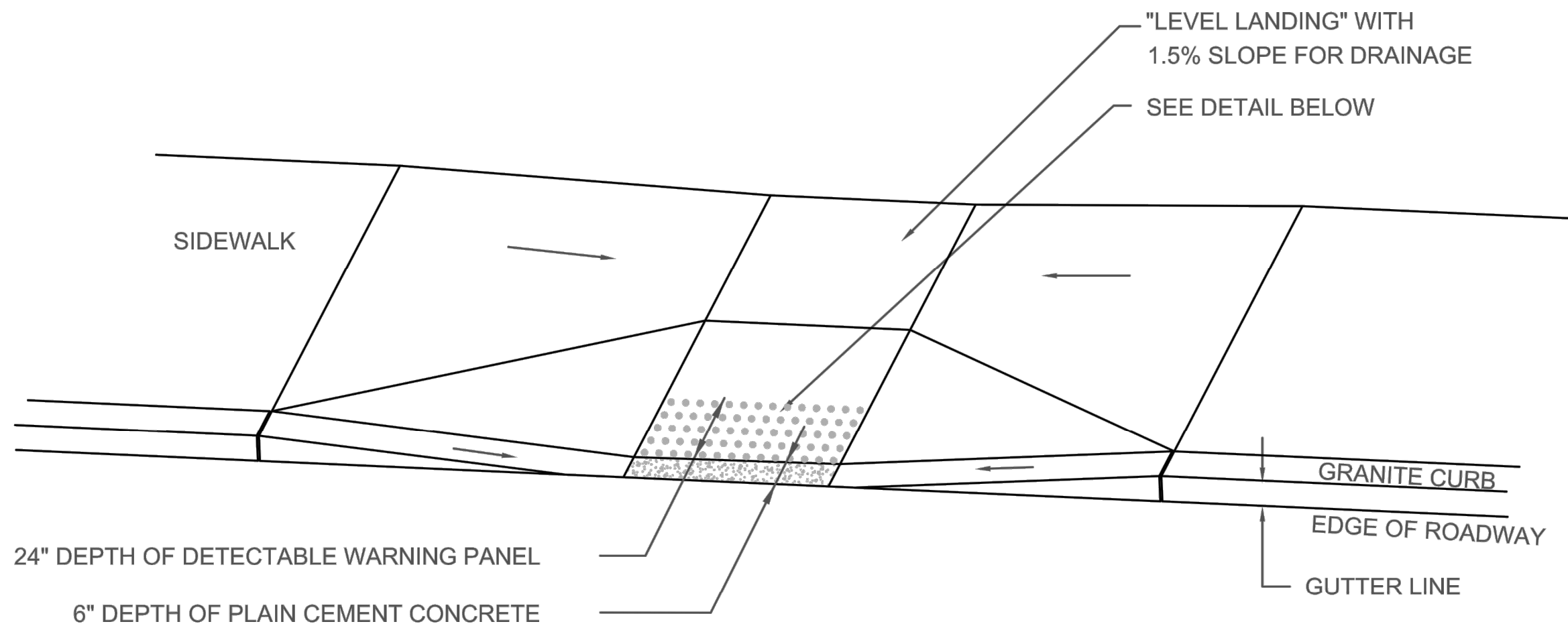


WHEELCHAIR RAMP ON NARROW SIDEWALK
NOT TO SCALE

WHEELCHAIR #.	STATION	OFFSET	WIDTH OF SIDEWALK	WIDTH OF RAMP MIN. (5'-0")	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH
3	3+81.08	27.46 LT	5.50	5.00	2.00%	7'-6"***	9'-0"
4	4+15.47	27.75 LT	7.00	5.00	2.00%	9'-0"	9'-0"****
9	8+20.42	16.52 LT	5.50	5.00	0.70%	7'-10"	9'-0"
15	11+52.21	24.00 RT	7.50	5.00	6.24%	8'-6"**	4'-0"
16	11+52.21	16.00 LT	5.50	5.00	6.24%	7'-10"	7'-6"**
18	500+45.58	11.21 LT	6.00	5.00	-1.80%	10'-10"	7'-10"
22	103+59.36	29.32 RT	6.00	5.00	-0.75%	7'-10"	13'-0"***
25	100+97.97	26.02 LT	7.00	5.00	4.93%	7'-10"	8'-6"**
26	101+13.13	25.68 LT	6.50	5.80	4.93%	3'-9"**	17'-0"

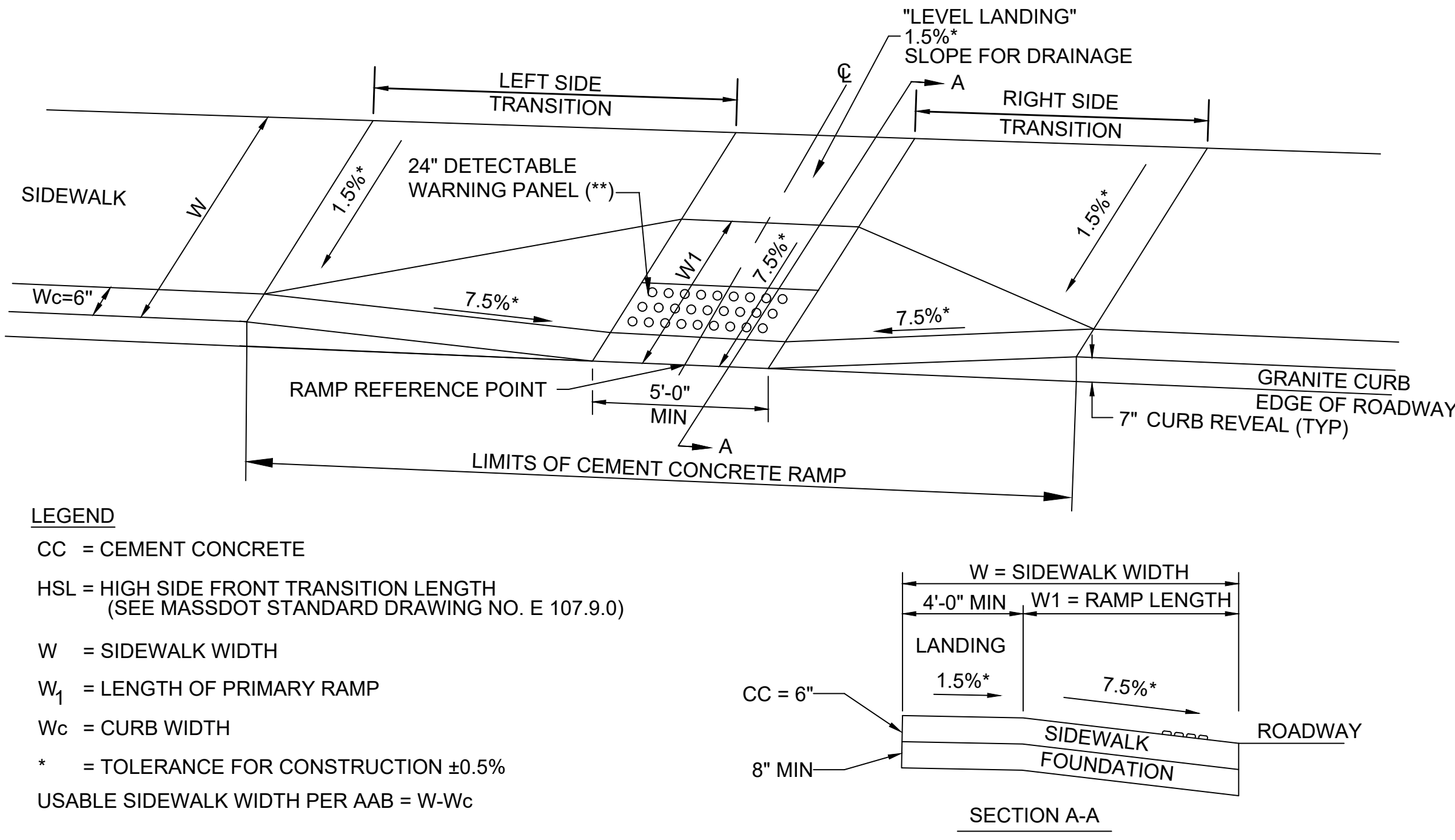
NOTE:
* = 3" CURB REVEAL
** = 4" CURB REVEAL
*** = 5" CURB REVEAL
**** = 6" CURB REVEAL
***** = 2.5" CURB REVEAL

WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CURRENT REGULATIONS OF THE ARCHITECTURAL ACCESS BOARD, THE AMERICANS WITH DISABILITIES ACT AND THE CURRENT MASSDOT CONSTRUCTION STANDARDS.



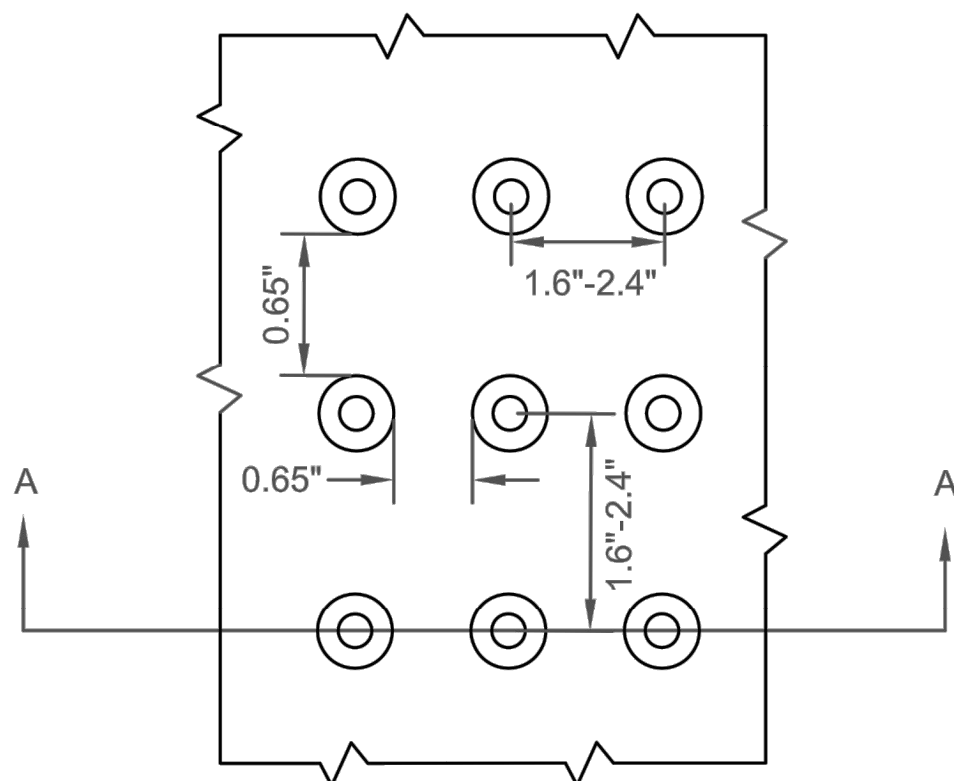
TYPICAL INSTALLATION

DETECTABLE WARNING PANEL DETAIL
NOT TO SCALE



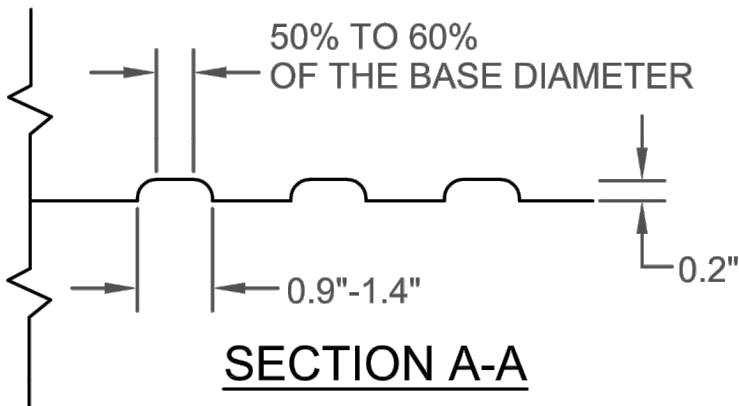
WHEELCHAIR RAMP WITH LESS THAN 12'-4" SIDEWALK
NOT TO SCALE

WHEELCHAIR #.	STATION	OFFSET	LENGTH OF PRIMARY RAMP	WIDTH OF SIDEWALK	WIDTH OF RAMP MIN. (5'-0")	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH
1	1+83.34	27.81 LT	2.50	6.50	5.00	1.00%	9'-0"	7'-10"
2	2+26.71	27.13 LT	2.50	7.00	5.00	1.28%	7'-10"	10'-8"
5	4+47.62	18.50 LT	2.00	7.00	5.00	1.28%	6'-6"****	10'-8"
6	4+47.62	13.00 RT	3.50	8.50	5.00	1.28%	7'-10"	10'-8"
10	8+21.42	16.00 RT	3.00	9.50	5.00	0.70%	7'-10"	9'-0"
17	500+45.87	11.21 RT	2.50	6.50	5.00	-1.80%	9'-0"	3'-9"**
21	13+15.21	22.15 RT	2.50	5.50	5.00	5.26%	6'-1"*****	2'10"*****
23	103+65.65	34.14 LT	2.50	7.00	5.00	-0.75%	9'-0"	17'-0"***
24	100+98.19	27.10 RT	3.00	7.00	5.00	4.93%	8'-6"**	7'-10"
27	101+60.72	25.78 LT	2.50	9.00	5.00	4.93%	17'-0"	7'-6"***



DETAIL OF DETECTABLE WARNING PANEL

NOTE:
PANELS SHALL BE "BRICK RED" IN COLOR AND SHALL BE CAST-IN-PLACE WITH WHEELCHAIR RAMP CEMENT CONCRETE.
SURFACE APPLIED TACTILE PANELS SHALL NOT BE UTILIZED.



SECTION A-A

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: WHEELCHAIR RAMP DETAILS 1

PREPARED FOR:
CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

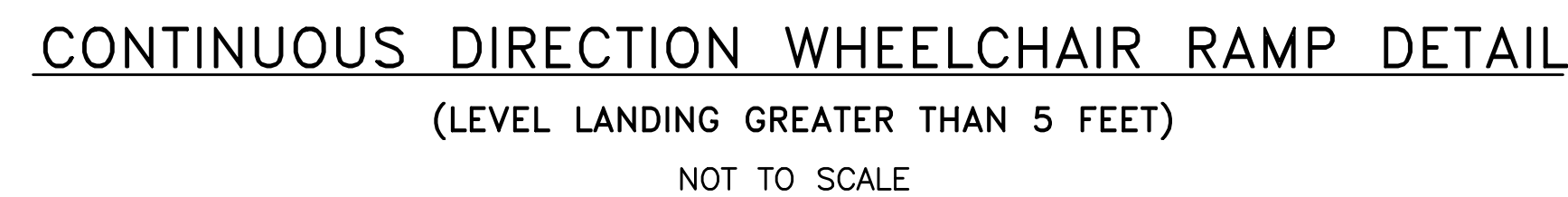
DESIGNED BY: JL

DRAWN BY: MPC

CHECKED BY: HP

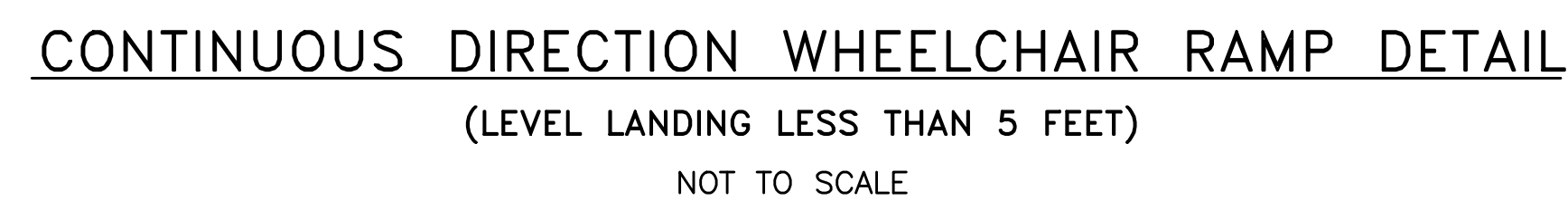
SHEET NO.

60 OF 89



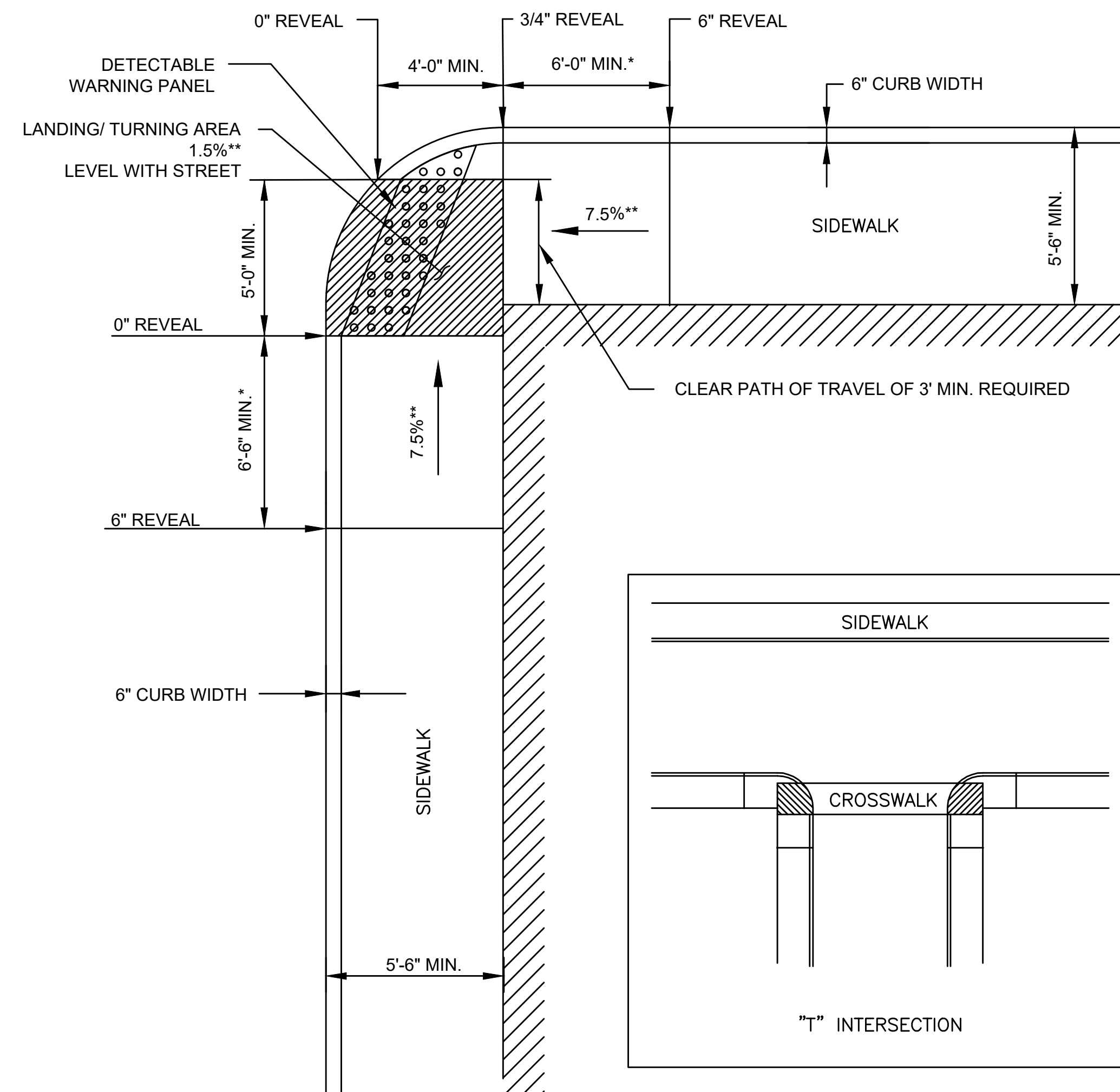
WHEELCHAIR #	STATION	OFFSET	WIDTH OF SIDEWALK (W)	DEPTH OF LEVEL LANDING MIN. 4.0'	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH	LEVEL LANDING LENGTH
7	6+67.14	20.01 RT	8.93	-	0.70%	-	7'-10"	< 5'
12	8+75.20	15.14 RT	8.00	-	1.66%	9'-0"	-	< 5'
13	400+32.00	14.23 RT	7.43	-	3.90%	-	5'-4"	< 5'
14	400+28.00	11.39 RT	7.37	-	4.50%	17'-0"	-	< 5'
19	500+76.89	14.73 RT	6.50	-	-2.40%	-	7'-10"	< 5'
20	500+91.38	14.45 RT	6.00	-	-3.12%	9'-0"	-	< 5'

NOTE:
 * = 3" CURB REVEAL
 ** = 4" CURB REVEAL
 *** = 5" CURB REVEAL
 **** = 6" CURB REVEAL
 ***** = 2.5" CURB REVEAL



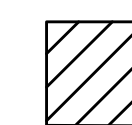
NOTES:

- * CONSTRUCTION TOLERANCE $\pm 0.5\%$
- SEE CONSTRUCTION STANDARD R-5.3.4
- ** SEE MASSDOT CONSTRUCTION STANDARD E 107.9.0 - DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5
- CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR CONSTRUCTING RAMPS COMPLIANT WITH ADA/AAB RULES, REGULATIONS AND STANDARDS. CONTRACTOR SHALL VERIFY RAMPS ARE ADA/AAB COMPLIANT BEFORE POURING CEMENT CONCRETE.



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

LEGEND



BUILDING OR OTHER UNALTERABLE CONDITION

* TRANSITION LENGTH SHOWN IS MINIMUM.
(SEE E 107.9.0)

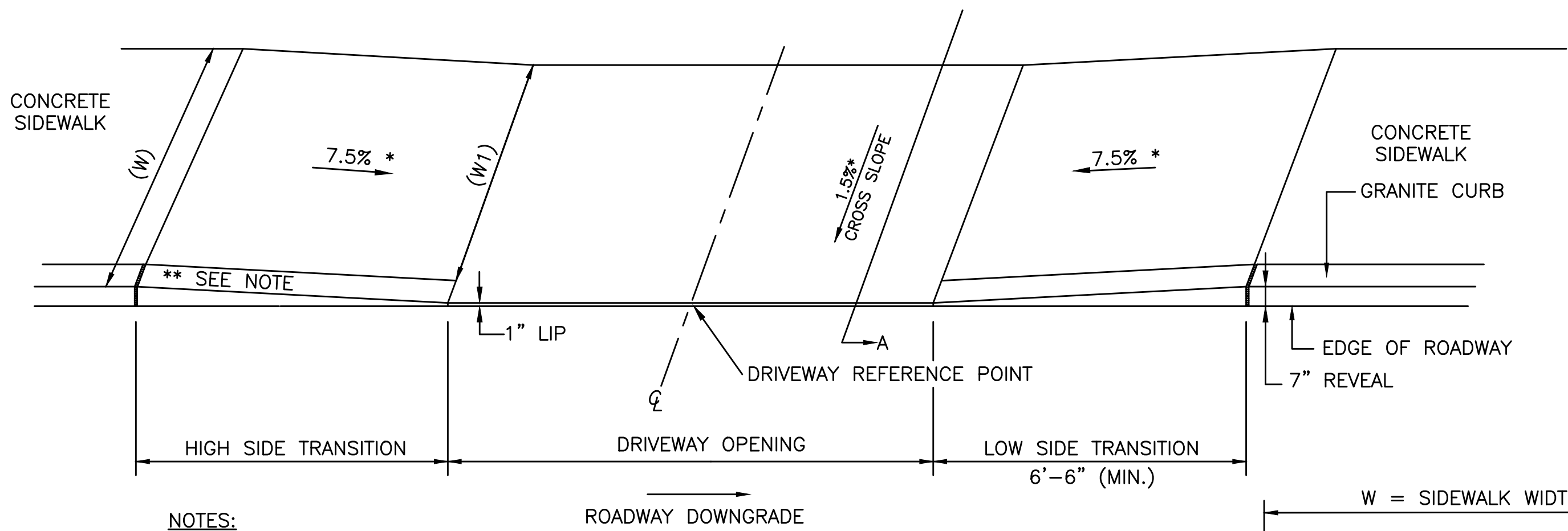
** TOLERANCE FOR CONSTRUCTION $\pm 0.5\%$

"T" INTERSECTION WHEELCHAIR RAMP DETAIL

NOT TO SCALE

WHEELCHAIR #	STATION	OFFSET	WIDTH OF SIDEWALK (W)	DEPTH OF LEVEL LANDING MIN. 4.0'	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH	LEVEL LANDING LENGTH
8	7+15.90	20.81 RT	10.66	-	0.70%	9'-0"	-	> 5'
11	8+29.92	13.36 RT	9.00	-	0.70%	-	7'-10"	< 5'

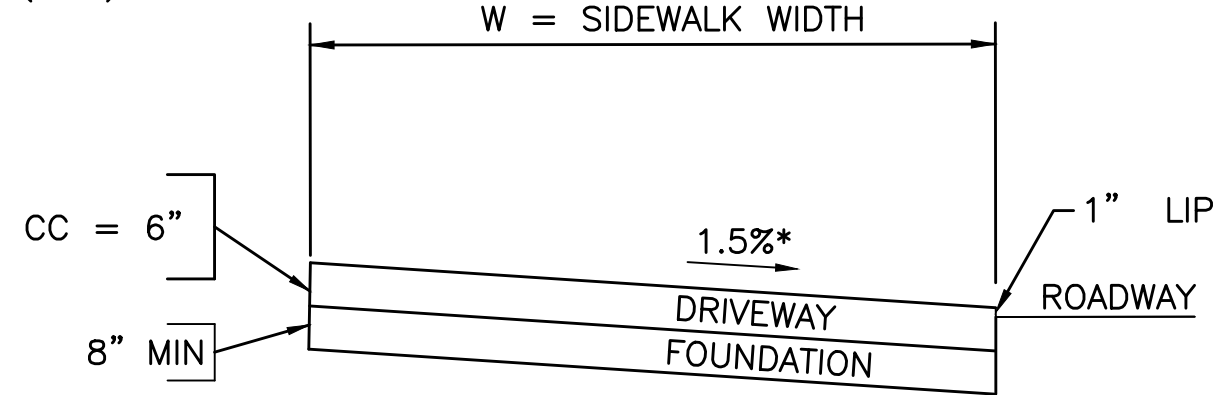
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: WHEELCHAIR RAMP DETAILS 2		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 206 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 61 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



NOTES:
* CONSTRUCTION TOLERANCE
± 0.5%
** SEE CONSTRUCTION
STANDARD E 107.9.0

DEPRESSED DRIVEWAY DETAILS

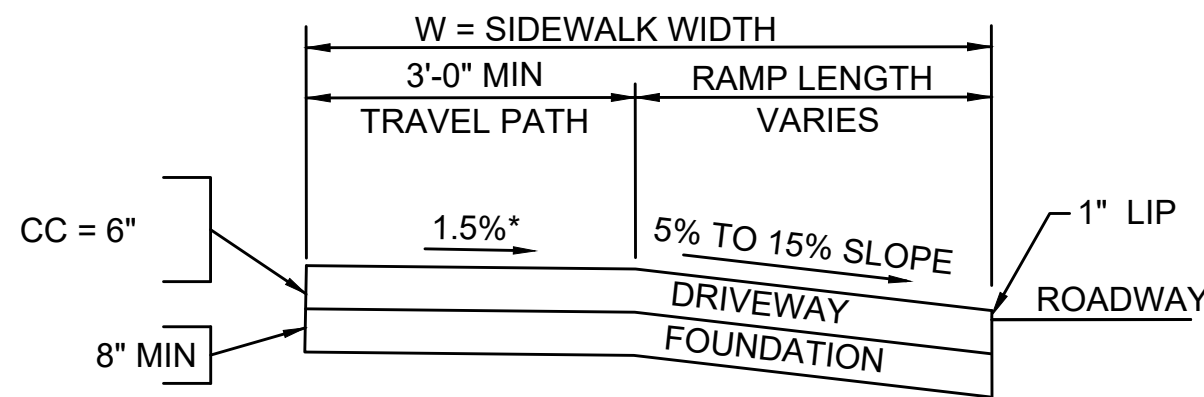
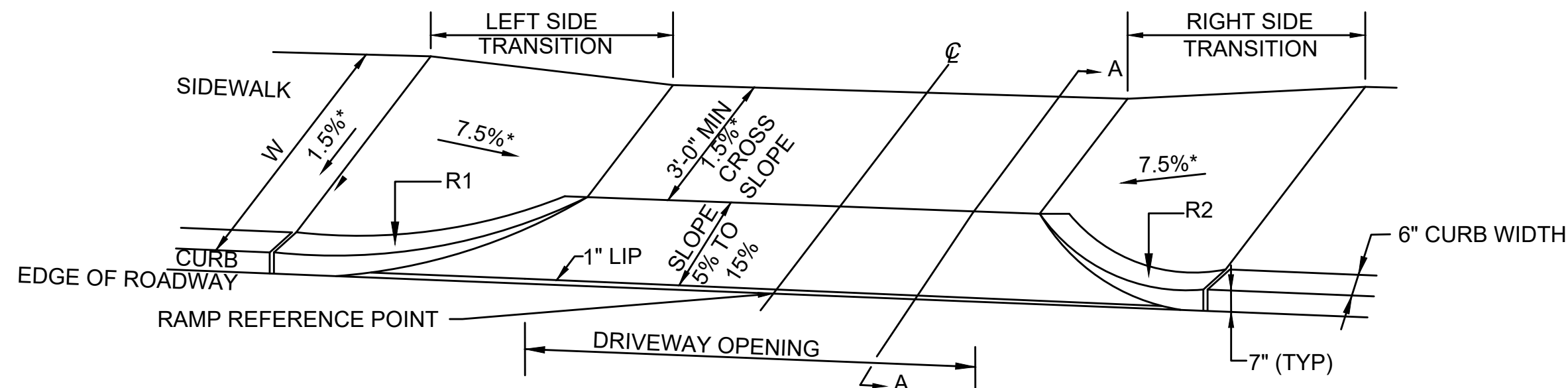
NOT TO SCALE



SECTION A-A

DWY NO.	STATION	OFFSET	WIDTH OF SIDEWALK (W)	WIDTH OF DRIVEWAY OPENING	WIDTH OF TRAVEL PATH (W1)	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH
3	6+33.07	19.00 LT	6.50	30.00	3.50	0.70%	7'-10"	9'-0"
4	7+50.48	19.00 LT	5.50	24.00	3.00	0.70%	7'-10"	9'-0"
6	10+00.00	19.00 LT	5.50	35.00	5.00	4.97%	7'-10"	17'-0"
7	12+00.00	16.50 LT	5.50	39.00	3.00	6.24%	3'-9"	17'-0"
12	102+42.14	23.16 LT	7.00	14.00	6.50	2.45%	7'-6"	13'-0"

NOTE:
* = 3" CURB REVEAL
** = 4" CURB REVEAL
*** = 5" CURB REVEAL
***** = 2.5" CURB REVEAL



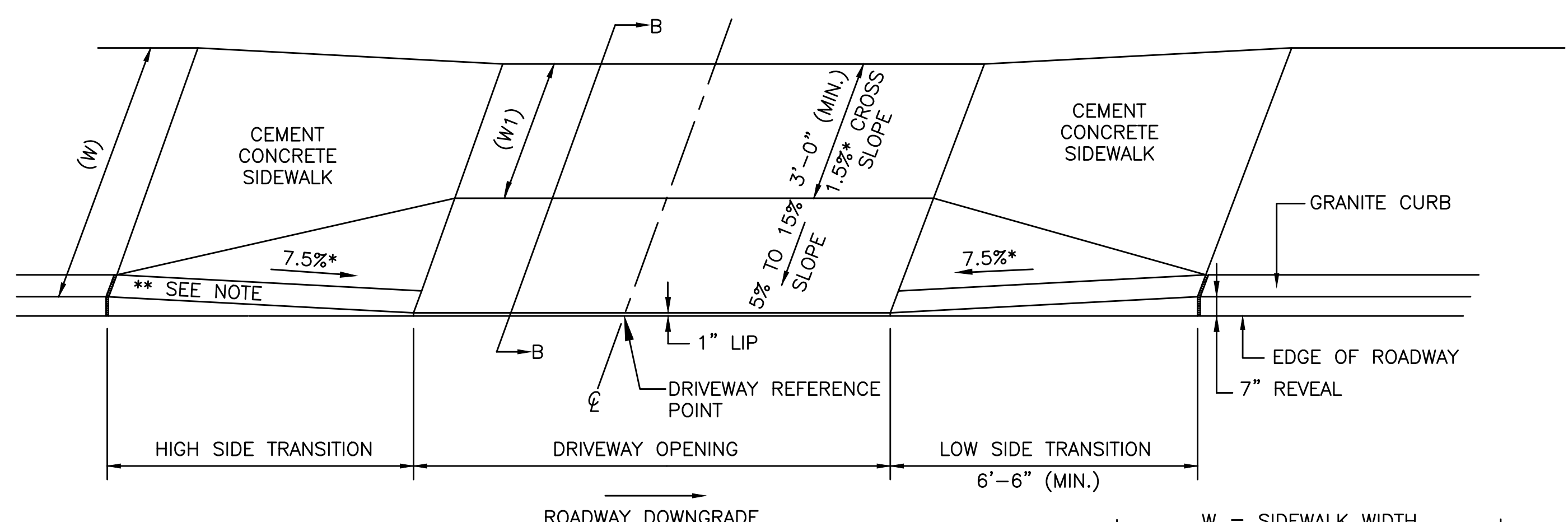
SECTION A-A

CEMENT CONCRETE DRIVEWAY WITH SIDEWALK CURB RADI

NOT TO SCALE

DRIVEWAY #.	STATION	OFFSET	WIDTH OF SIDEWALK	WIDTH OF TRAVEL PATH ACROSS OPENING	LEFT SIDE TRANSITION LENGHT	RIGHT SIDE TRANSITION LENGHT	ROADWAY GUTTER SLOPE (%)	RADIUS 1	RADIUS 2
10	101+31.95	28.04 RT	7.21	20.00	17'-0"	3'-9"	4.93%	3.00	3.00
11	101+93.44	24.82 RT	6.96	20.00	13'-0"	7'-6"	4.93%	3.00	3.00

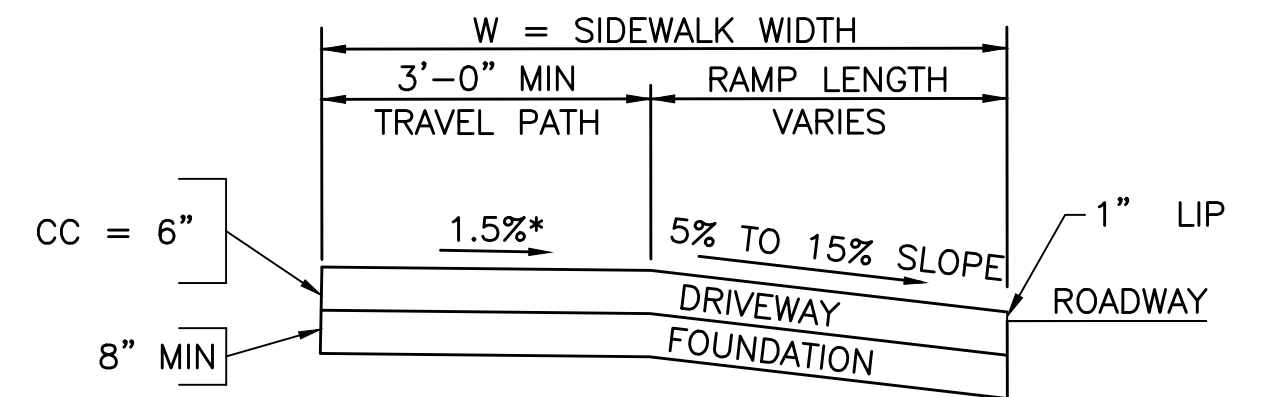
NOTE:
* = 3" CURB REVEAL
** = 4" CURB REVEAL
*** = 5" CURB REVEAL
***** = 2.5" CURB REVEAL



DRIVEWAY DETAILS

(STANDARD CURB CUT)
NOT TO SCALE

NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
** SEE CONSTRUCTION STANDARD E 107.9.0
*** 3 INCH CURB REVEAL



SECTION B-B

DWY NO.	STATION	OFFSET	WIDTH OF SIDEWALK (W)	WIDTH OF DRIVEWAY OPENING	WIDTH OF TRAVEL PATH (W1)	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH
1	3+09.09	13.00 RT	7.50	24.31	5.50	1.28%	10'-8"	7'-10"
2	3+15.97	19.00 LT	6.80	14.30	4.32	1.28%	7'-10"	10'-8"
5	9+68.27	20.00 RT	7.50	20.00	4.80	0.40%	7'-6"	7'-6"
8	12+86.05	23.30 RT	6.50	24.00	3.50	6.10%	6'-1"	7'-6"
9	13+42.73	20.50 RT	8.10	16.14	5.68	5.17%	17'-0"	2'-10"
13	103+7.09	19.00 LT	17.70	24.00	15.64	0.39%	7'-10"	7'-10"

(LEFT SIDE/RIGHT SIDE DETERMINED WHEN STANDING IN ROADWAY LOOKING AT RAMP OR DRIVEWAY)

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: DRIVEWAY DETAILS 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

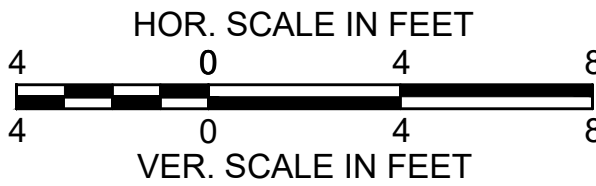
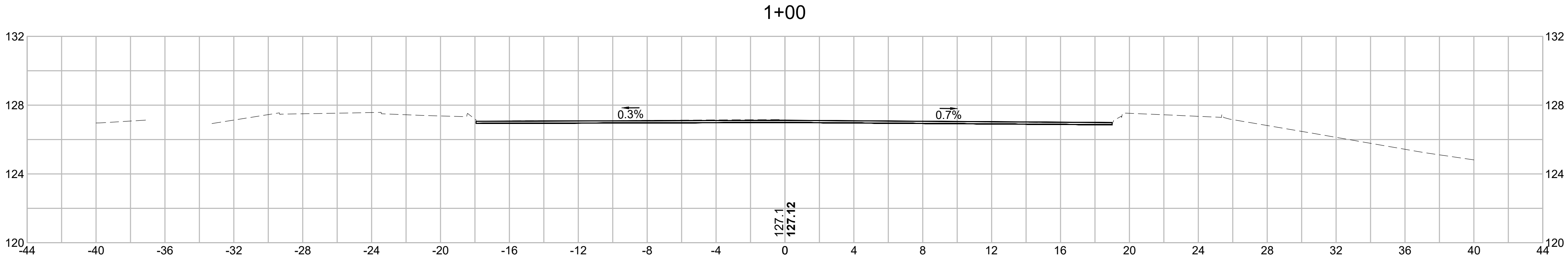
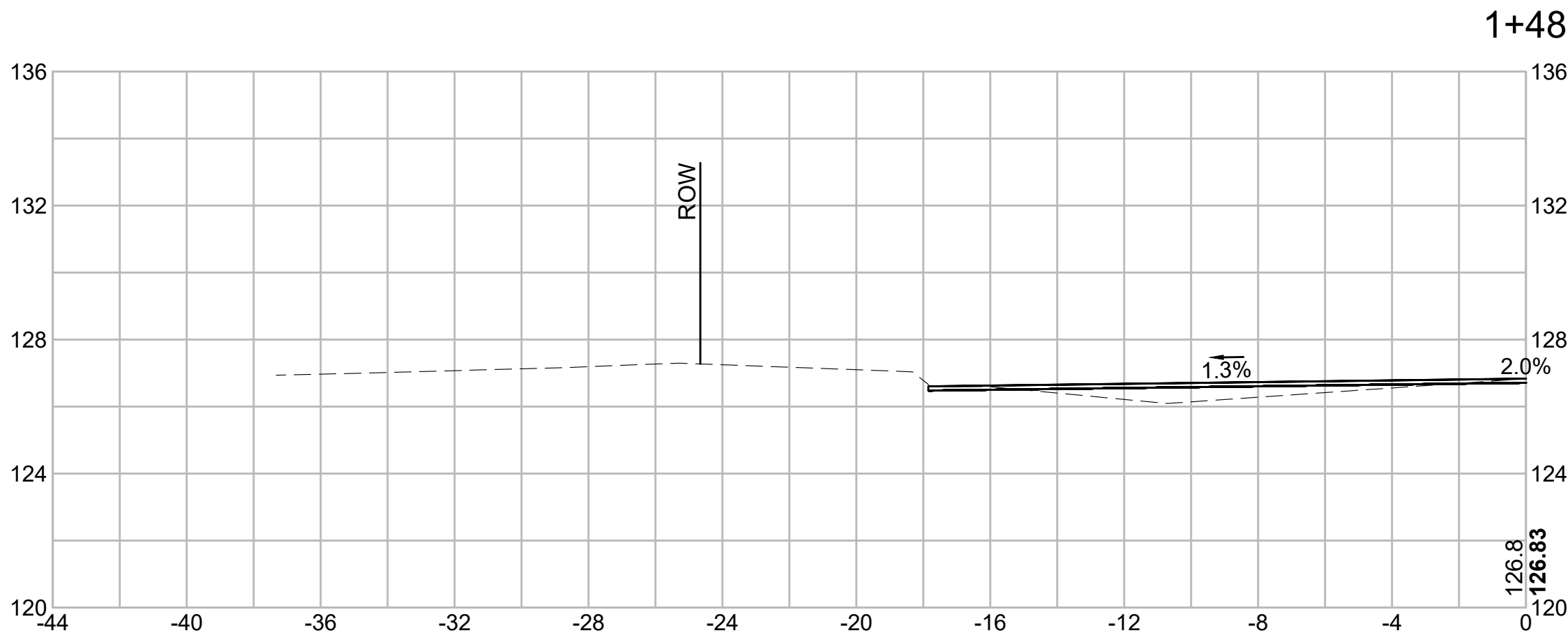
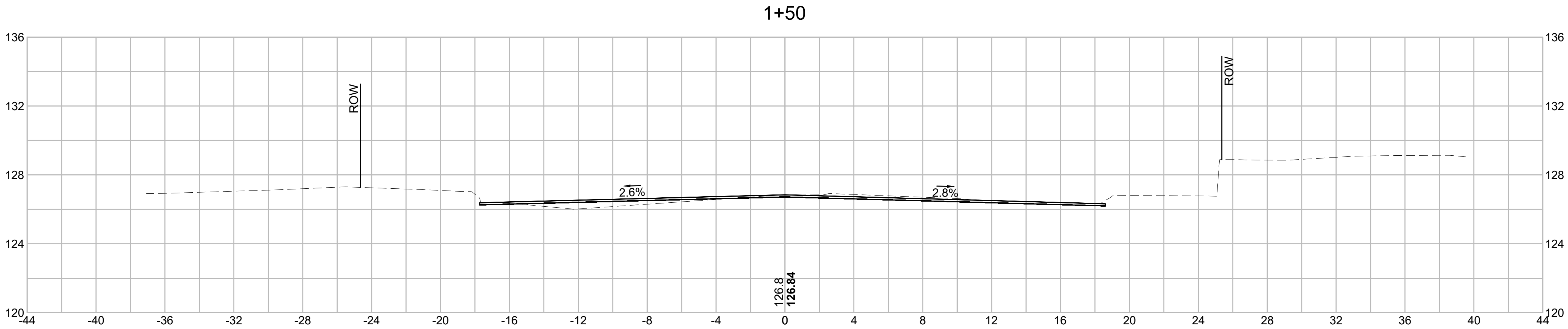
DESIGNED BY: J L

DRAWN BY: MPC

CHECKED BY: HP

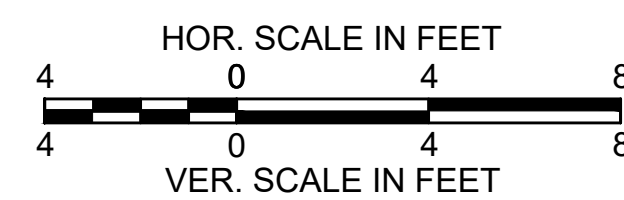
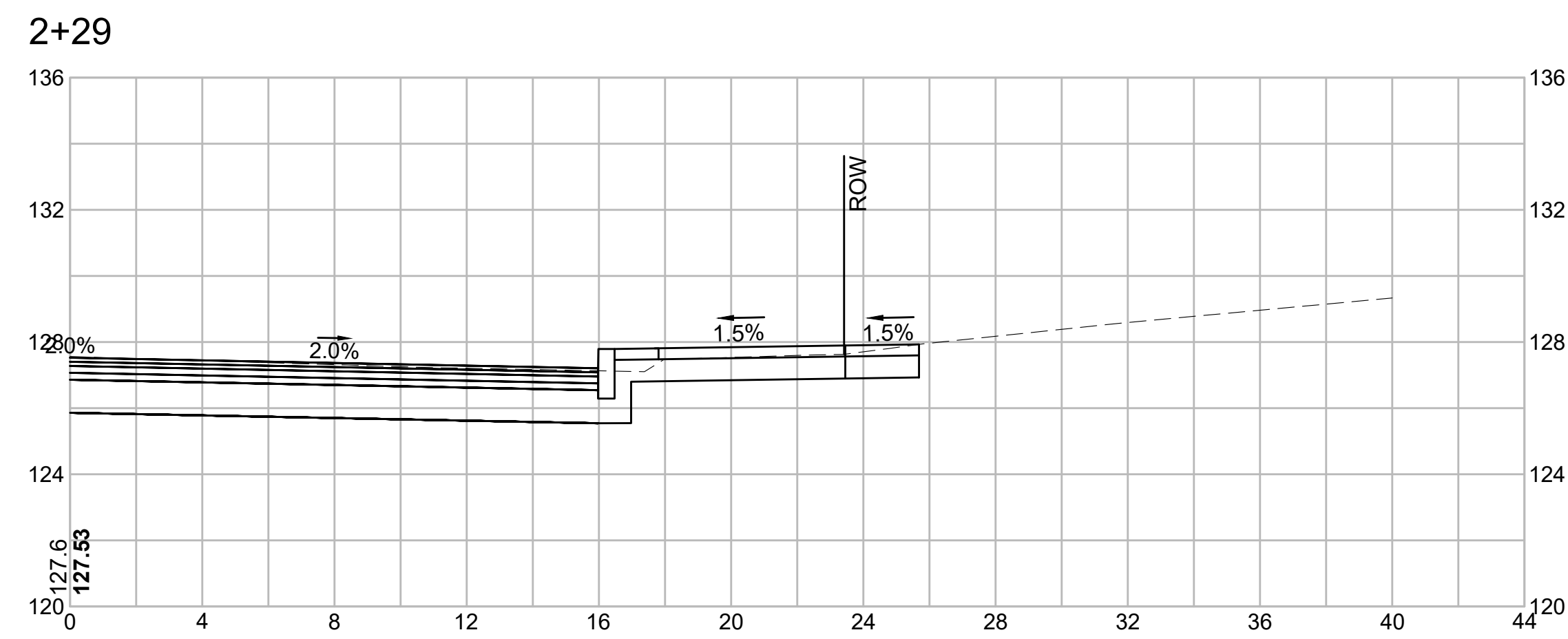
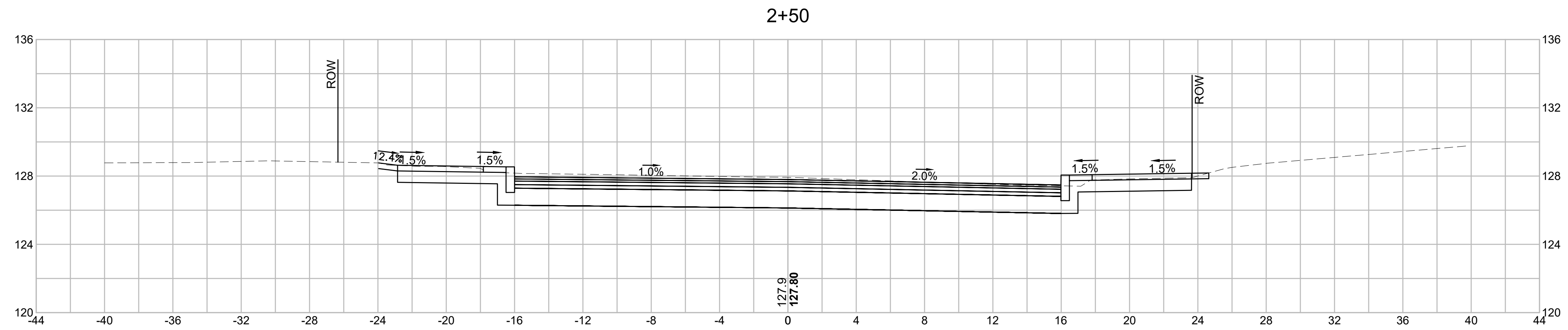
SHEET NO.

62 OF 89



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 63 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

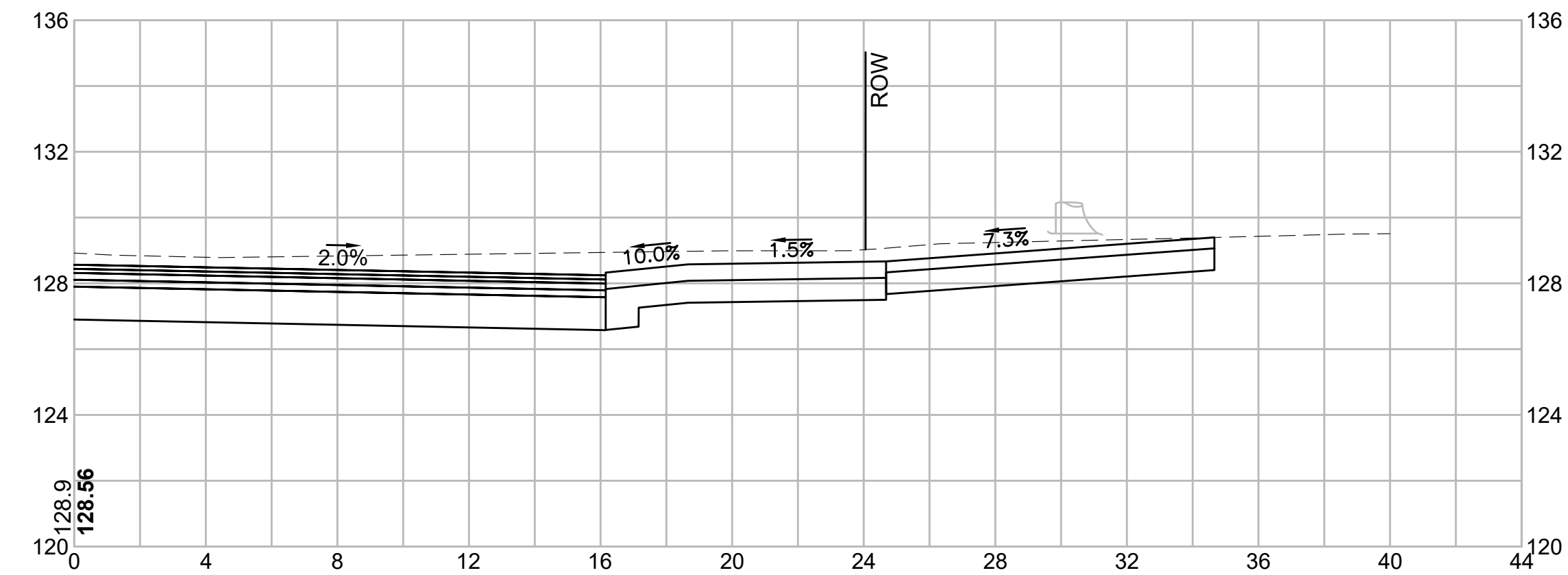


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 65 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

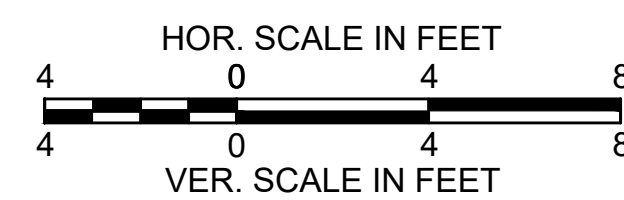
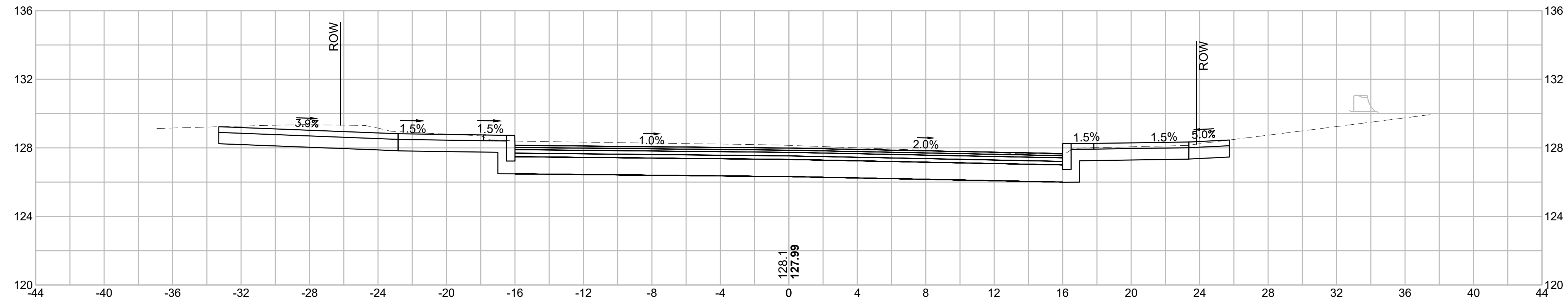
NO.	DATE	REVISIONS

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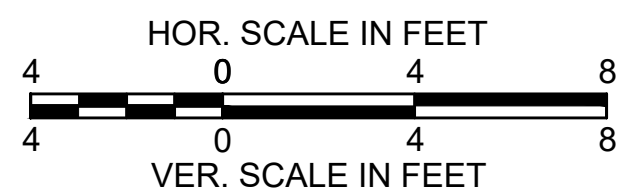
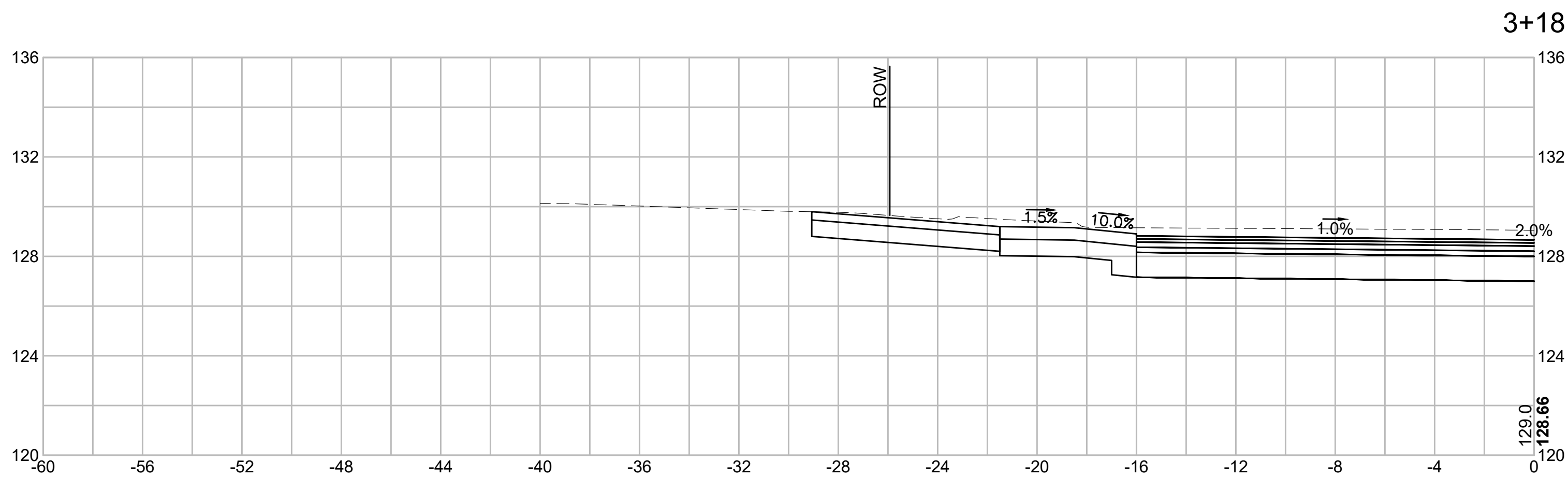
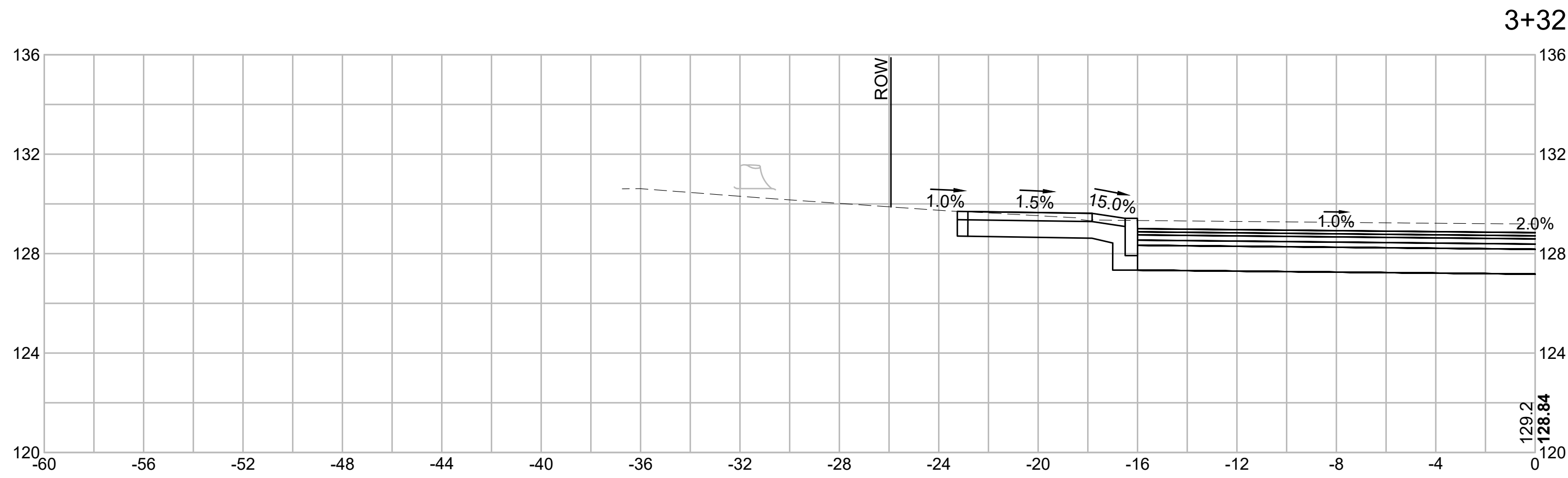
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2+65



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 66 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	
NO.	DATE	REVISIONS



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

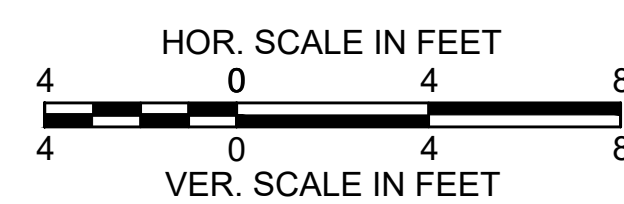
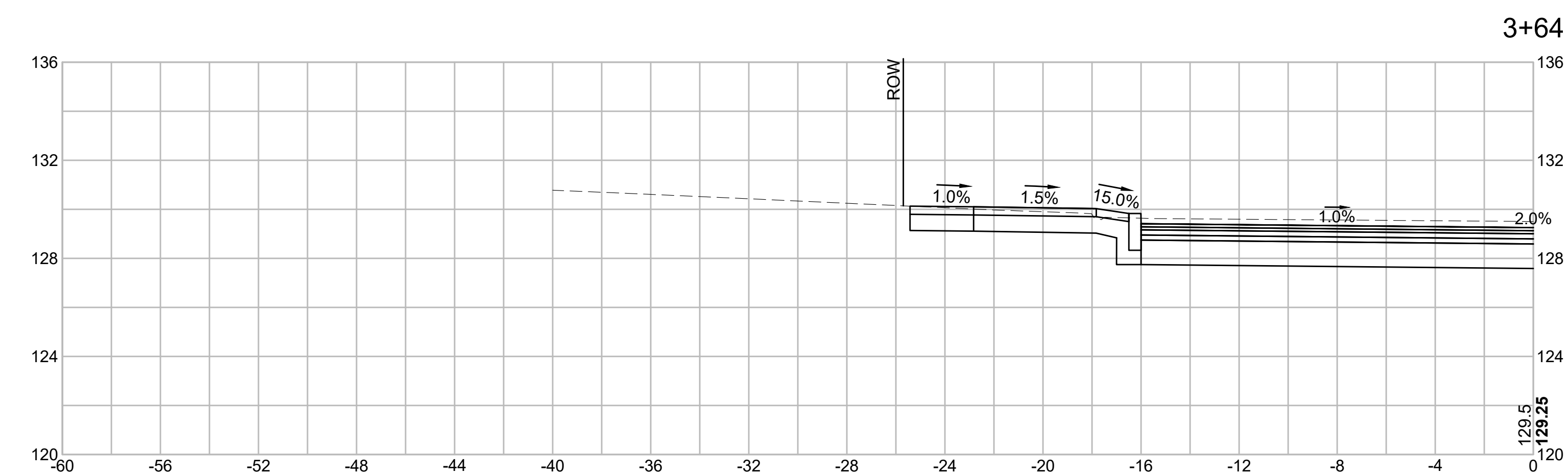
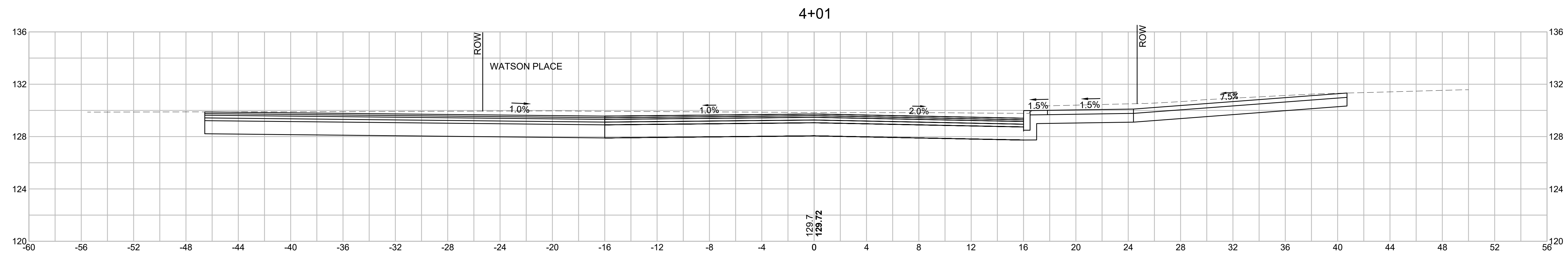
DRAWING TITLE: CROSS SECTIONS

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

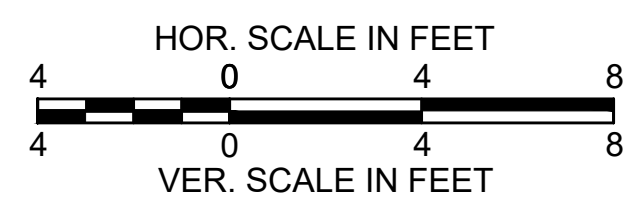
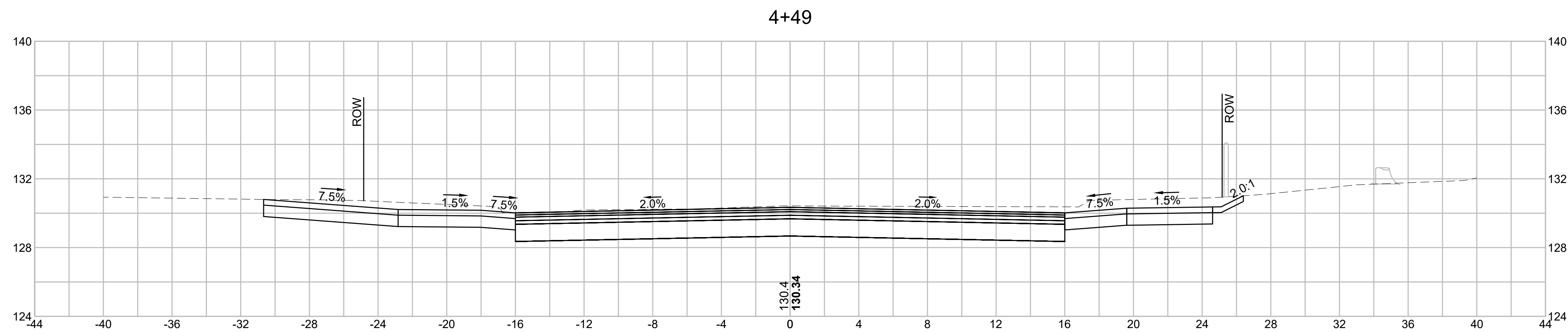
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 67 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS



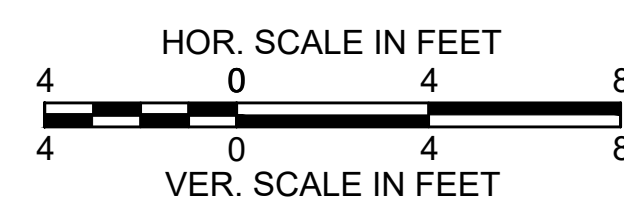
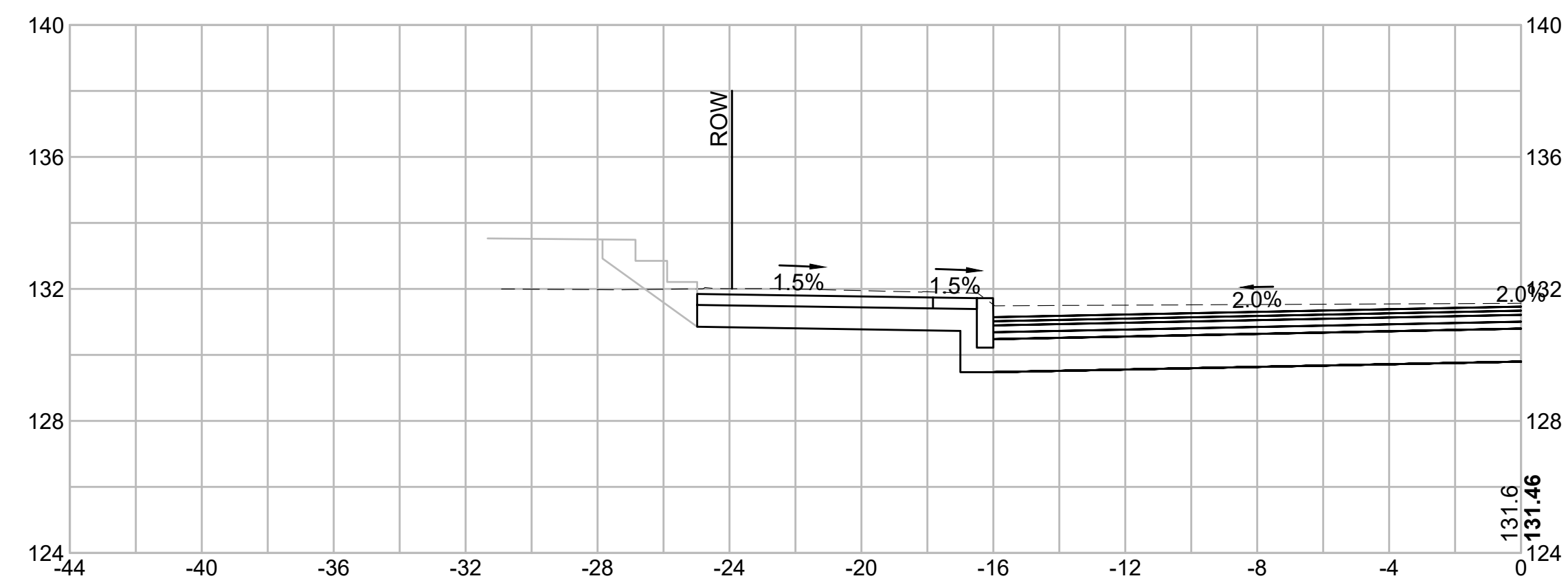
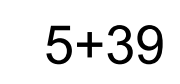
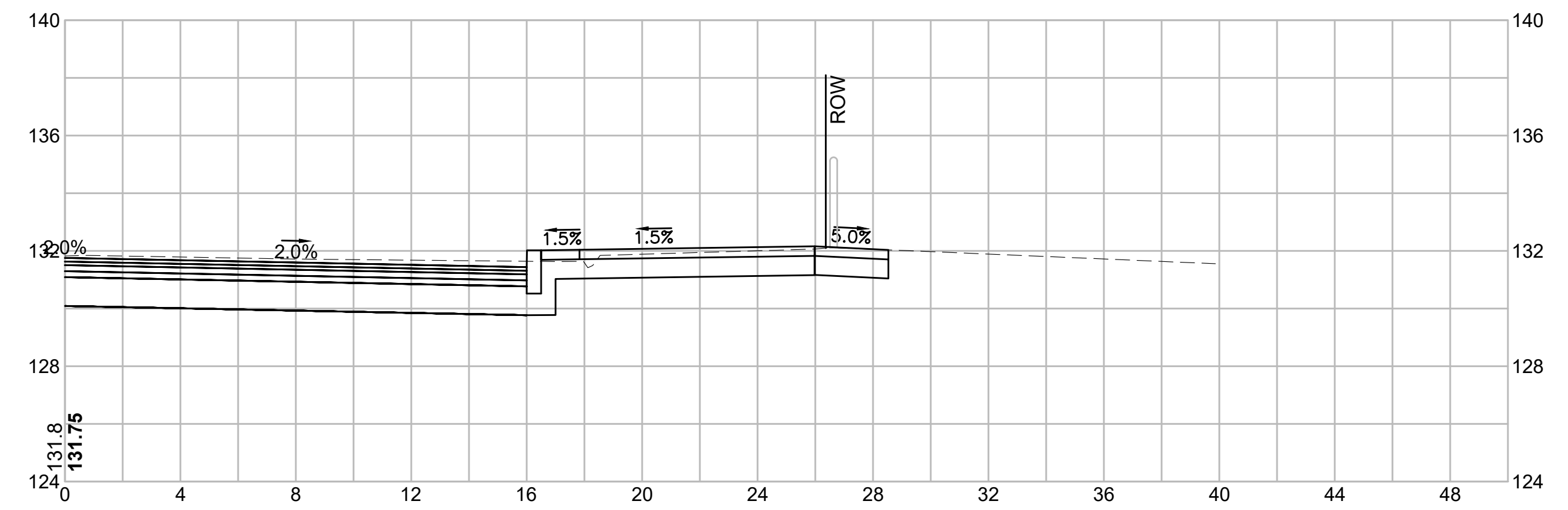
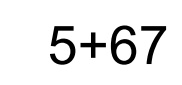
No.	Date	Revisions

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 206 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 68 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 69 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

[illegible]

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: CROSS SECTIONS

PREPARED FOR:

 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

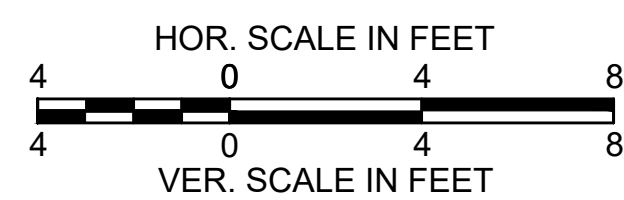
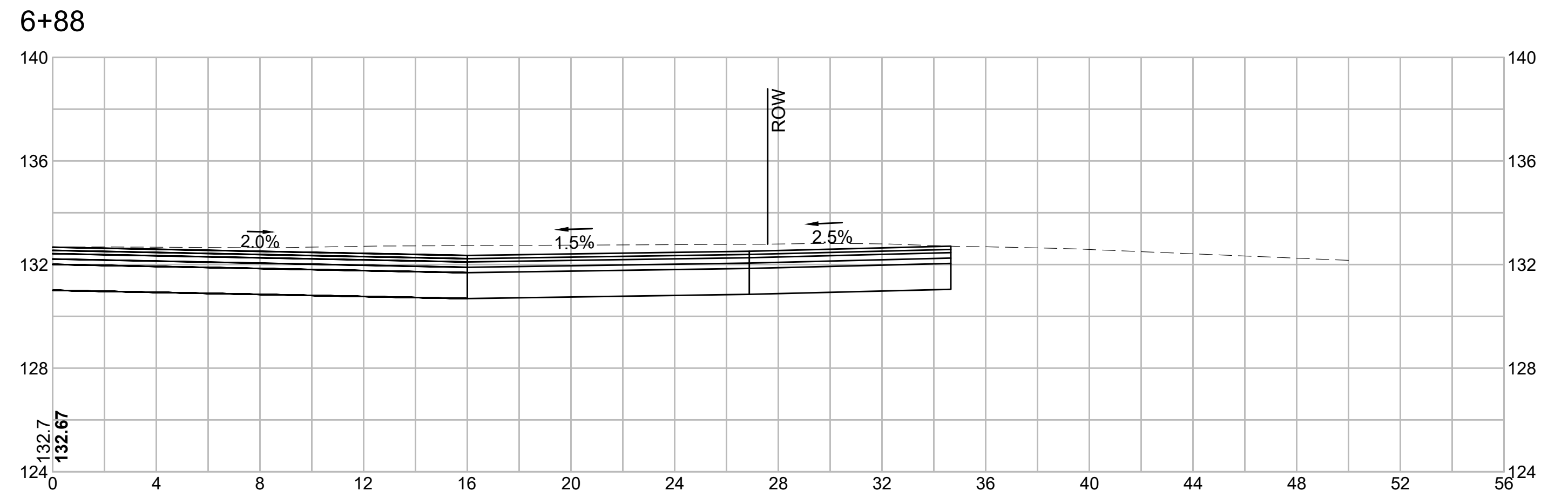
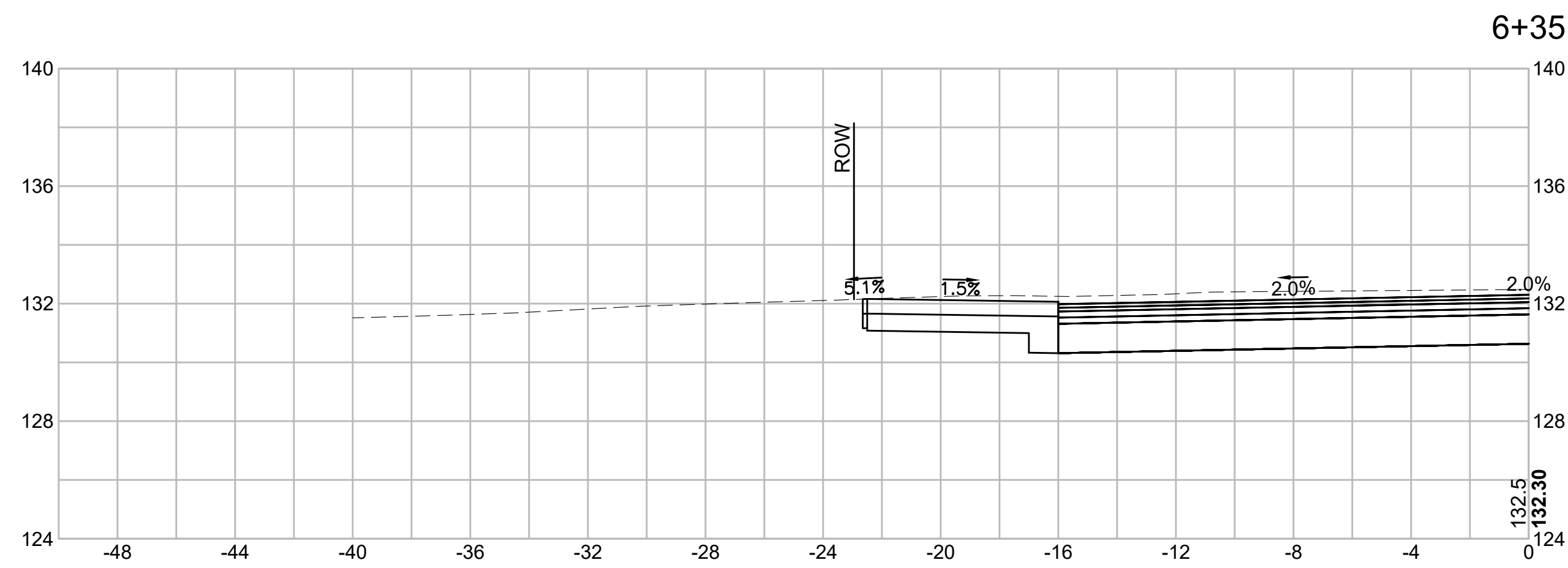
PROJECT NO. 20034

DESIGNED BY: JL

DRAWN BY: MPC

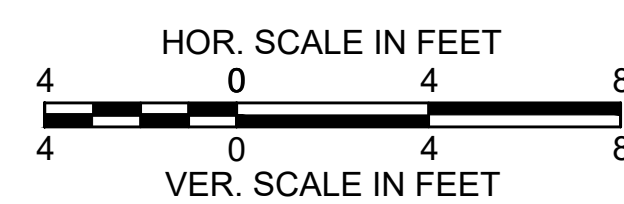
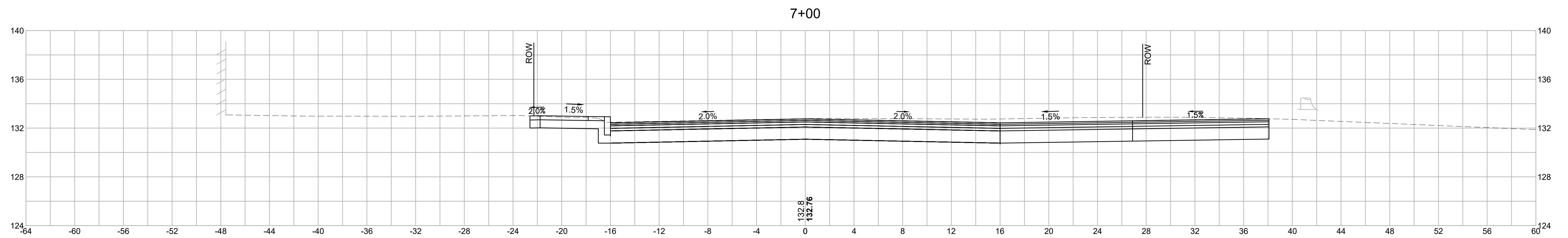
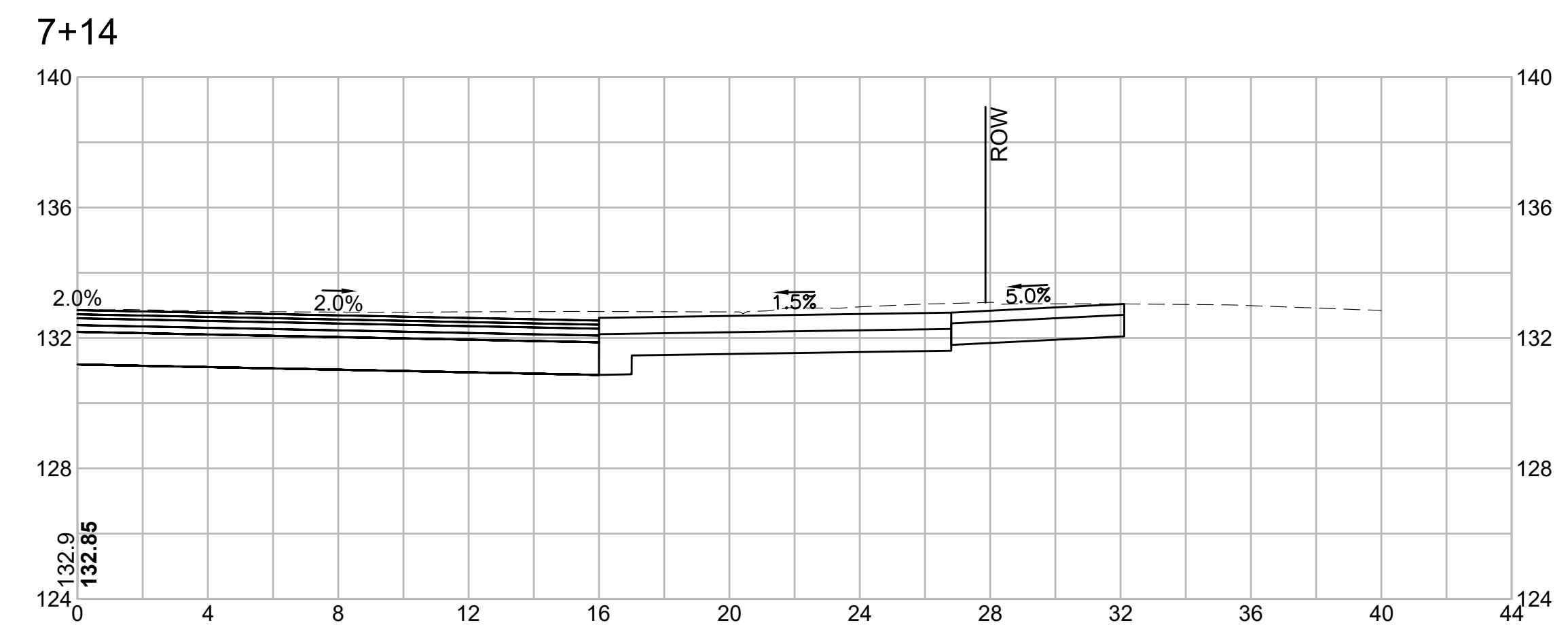
CHECKED BY: HP

SHEET NO. 70 OF 89



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 71 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS



No.	Date	Revisions

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: CROSS SECTIONS

PREPARED FOR:

 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

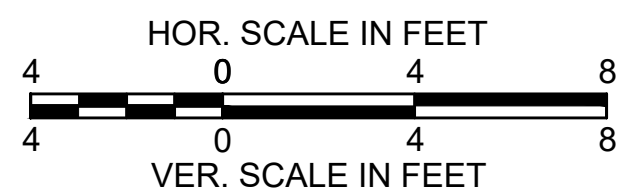
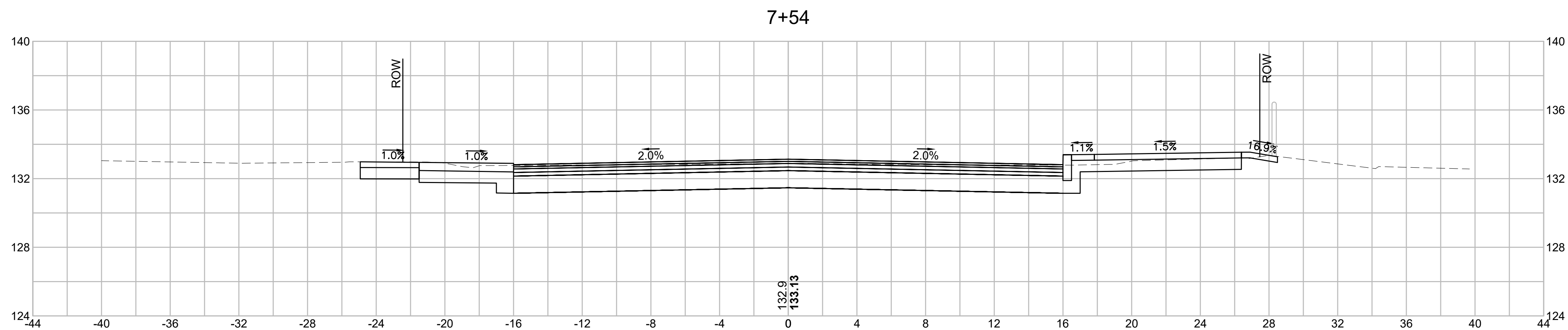
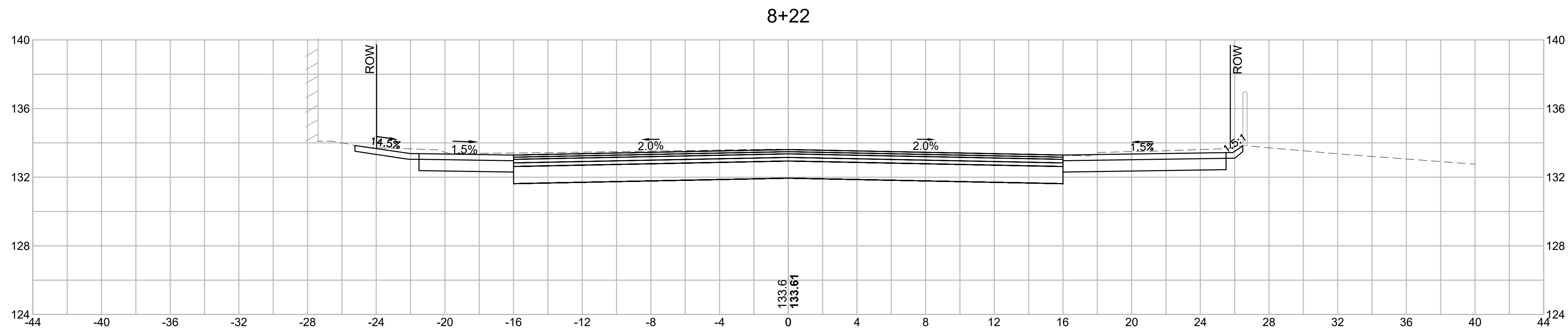
PREPARED BY:

 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

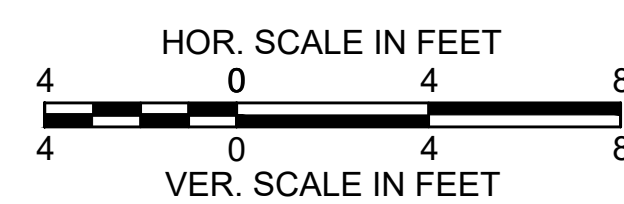
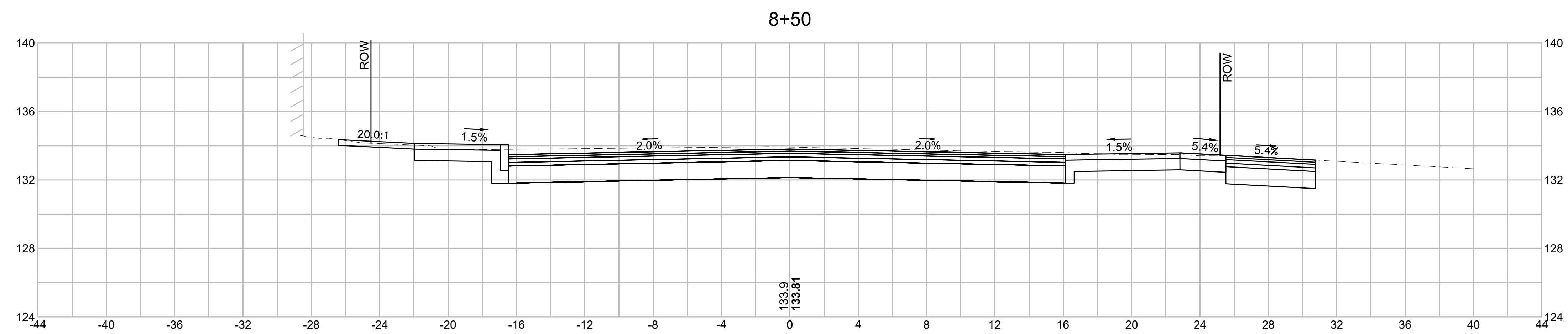
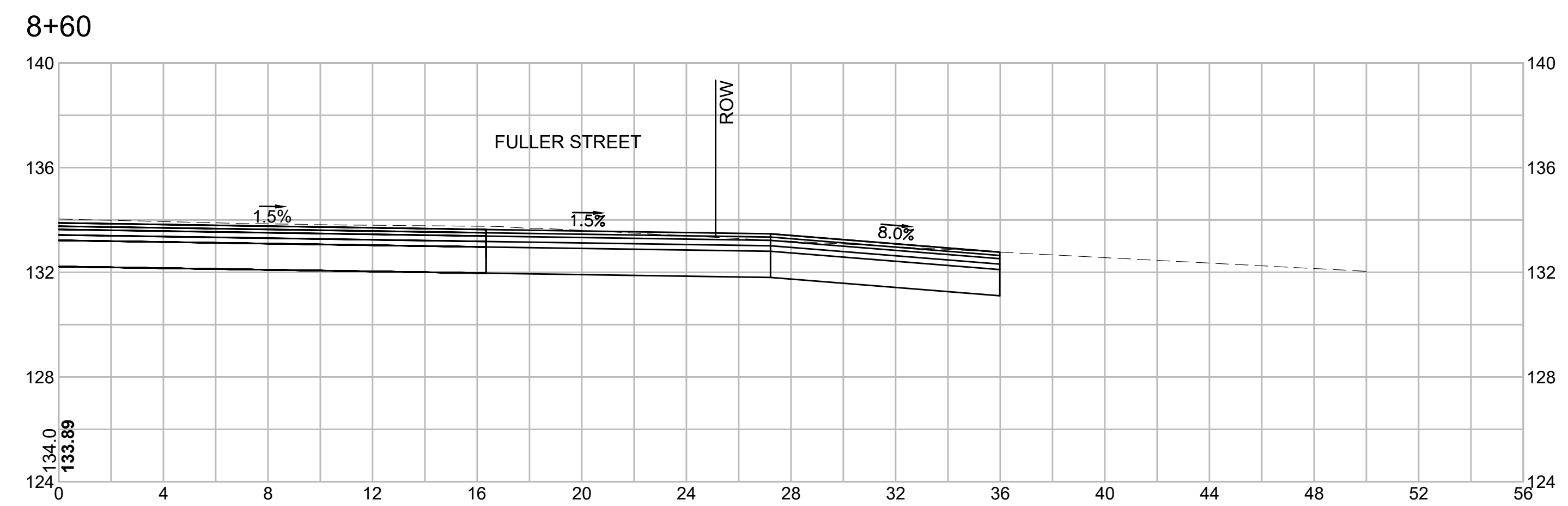
DESIGNED BY:	JL
DRAWN BY:	MPC
CHECKED BY:	HP

SHEET NO.
72 OF 89

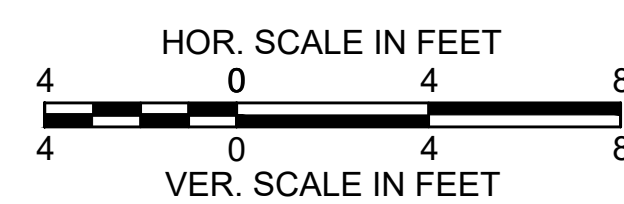
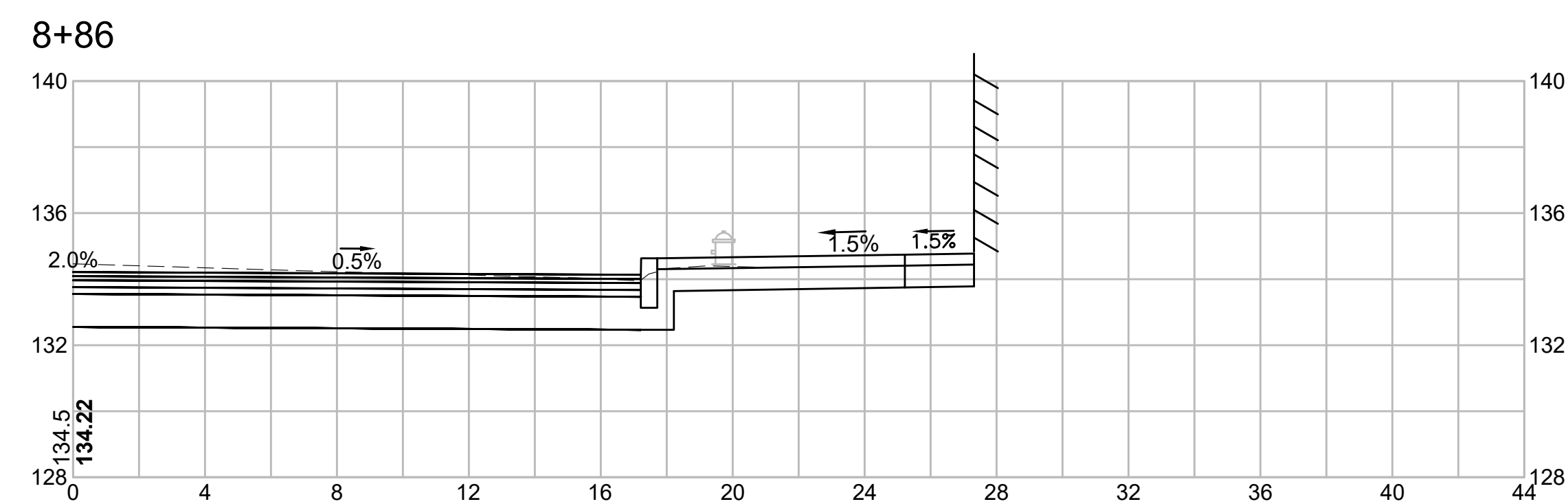
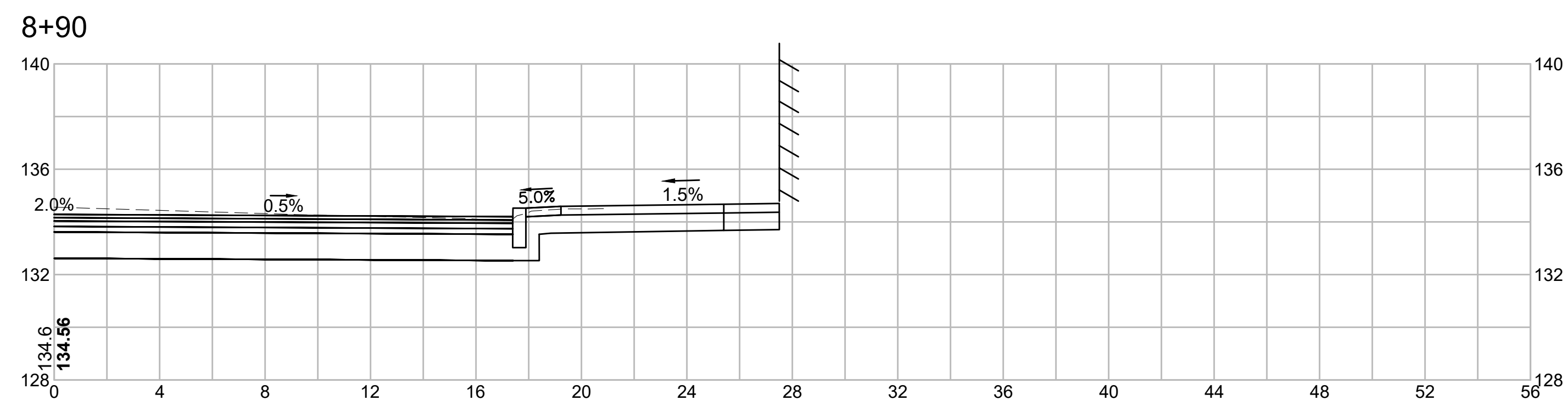


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 73 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

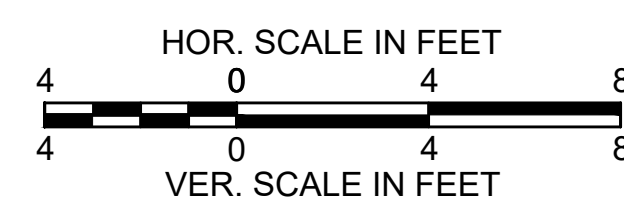
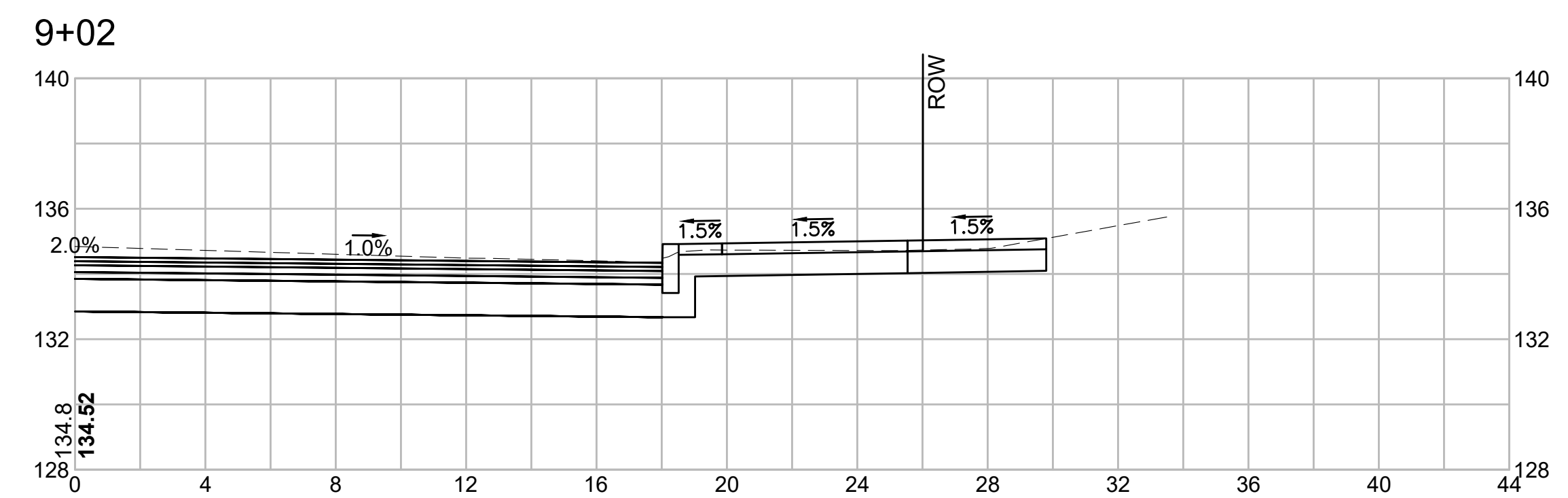
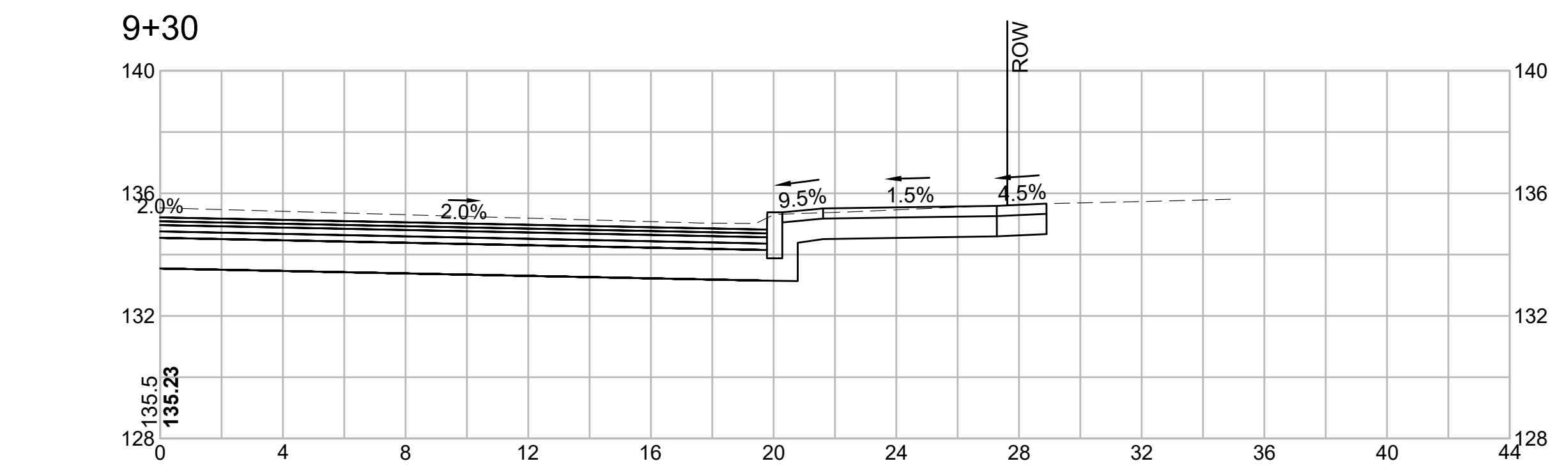
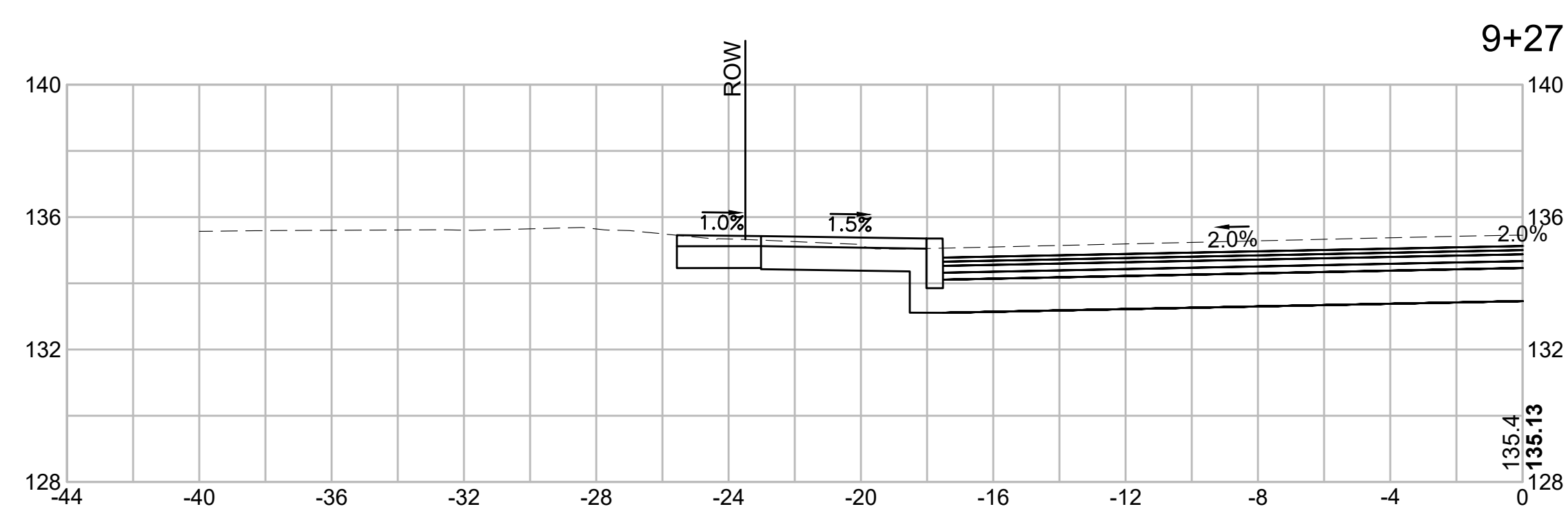
NO.	DATE	REVISIONS



			PREPARED BY:		
			Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
			SCALE: AS NOTED		DESIGNED BY: JL
			DATE: 6/4/2024		DRAWN BY: MPC
			PROJECT NO. 20034		SHEET NO. 74 OF 89
			CHECKED BY: HP		
NO.	DATE	REVISIONS			

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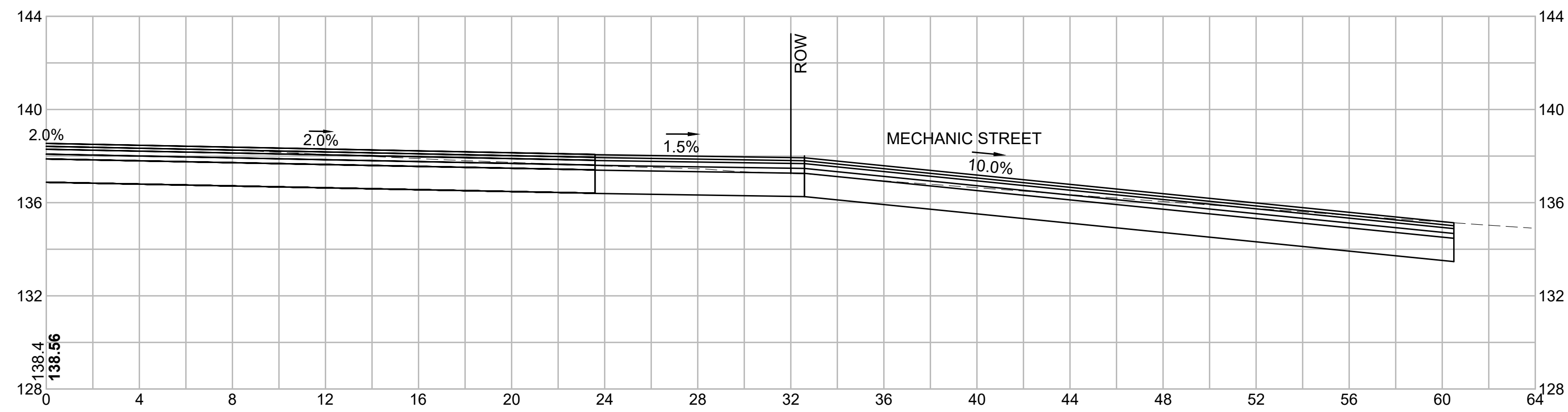
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 75 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



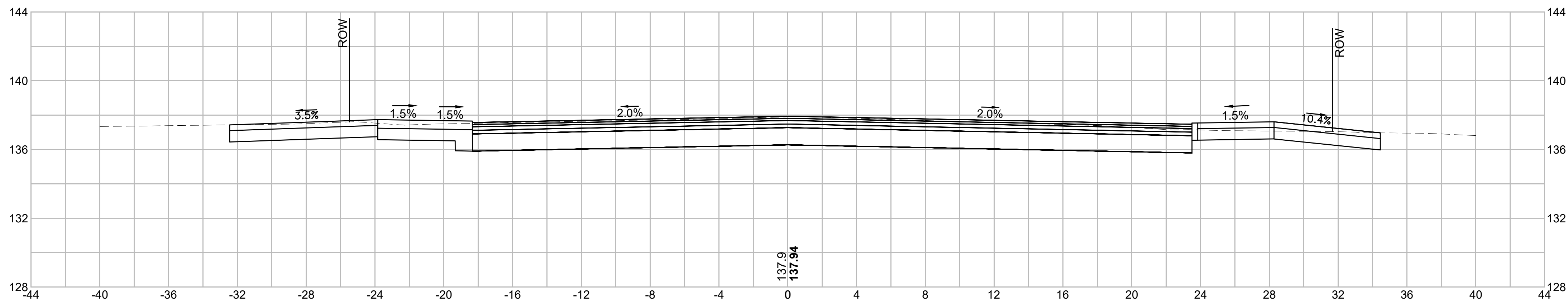
				PREPARED BY:	 Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876
NO.	DATE	REVISIONS	SCALE: AS NOTED DATE: 6/4/2024 PROJECT NO. 20034	DESIGNED BY: JL DRAWN BY: MPC CHECKED BY: HP	SHEET NO. 76 OF 89

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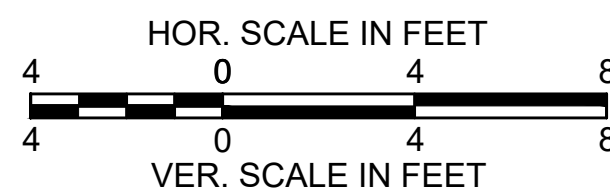
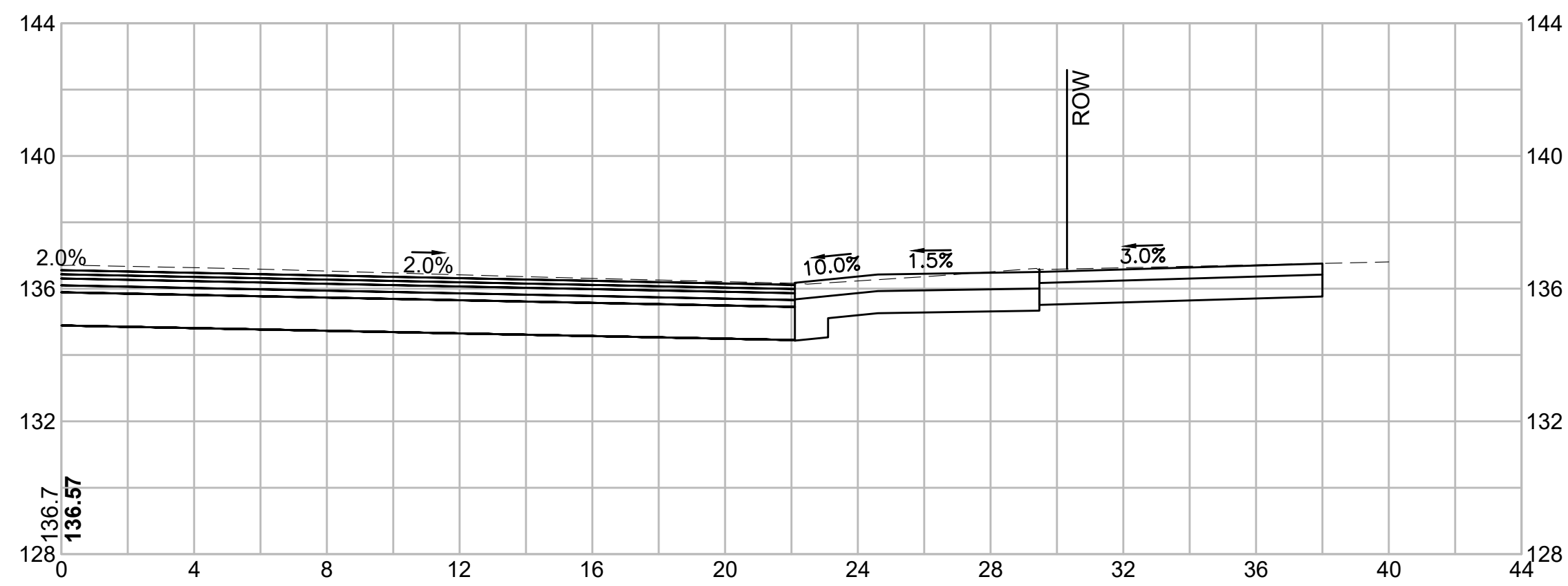
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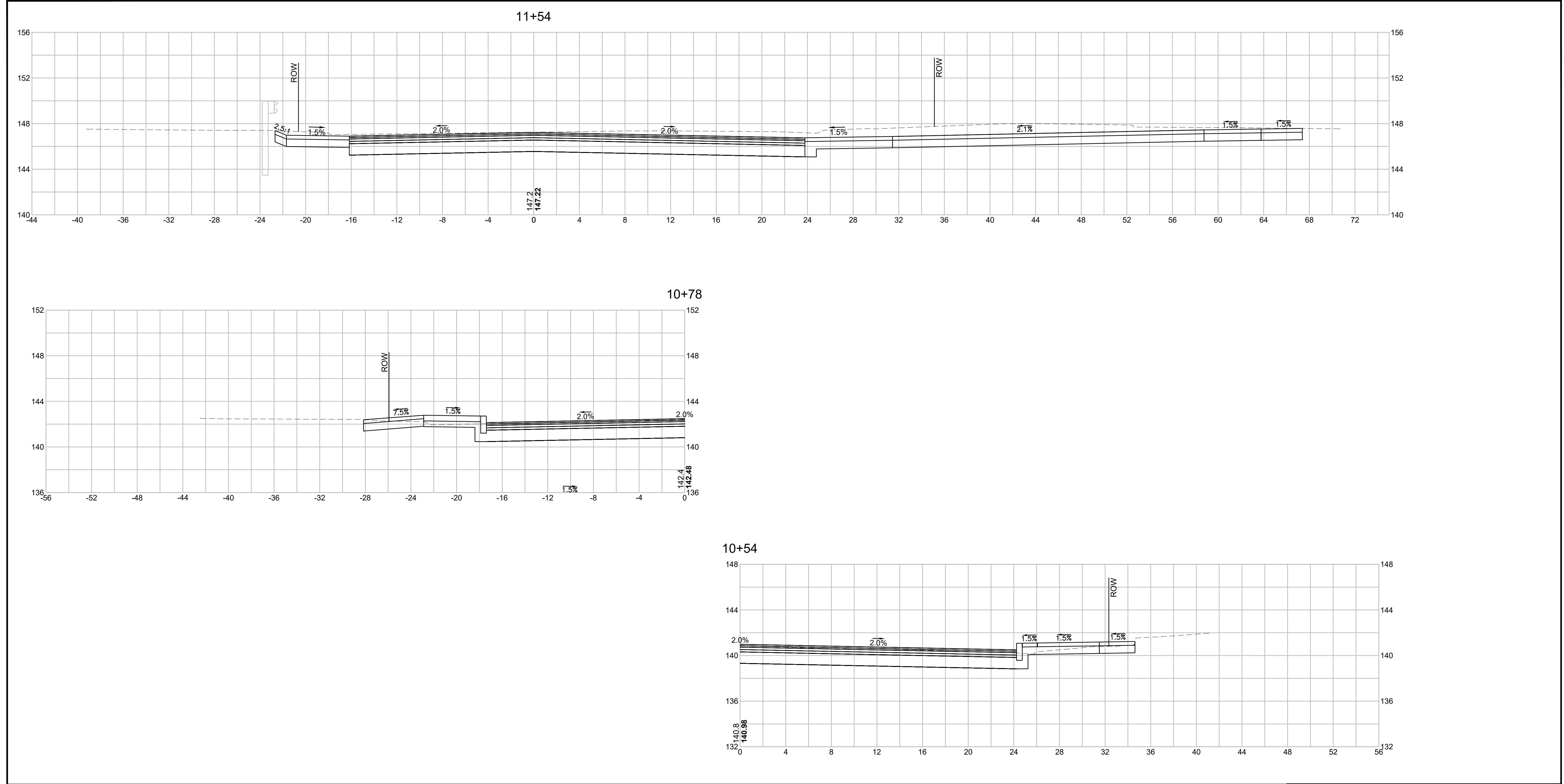
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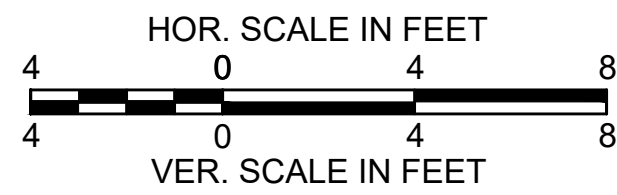
9+69



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET	
DESIGN SUBMISSION: 85% DESIGN	
DRAWING TITLE: CROSS SECTIONS	
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702	
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876	
SCALE: AS NOTED	DESIGNED BY: JL
DATE: 6/4/2024	DRAWN BY: MPC
PROJECT NO. 20034	CHECKED BY: HP
SHEET NO. 77 OF 89	

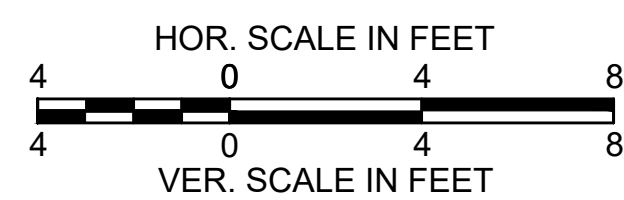
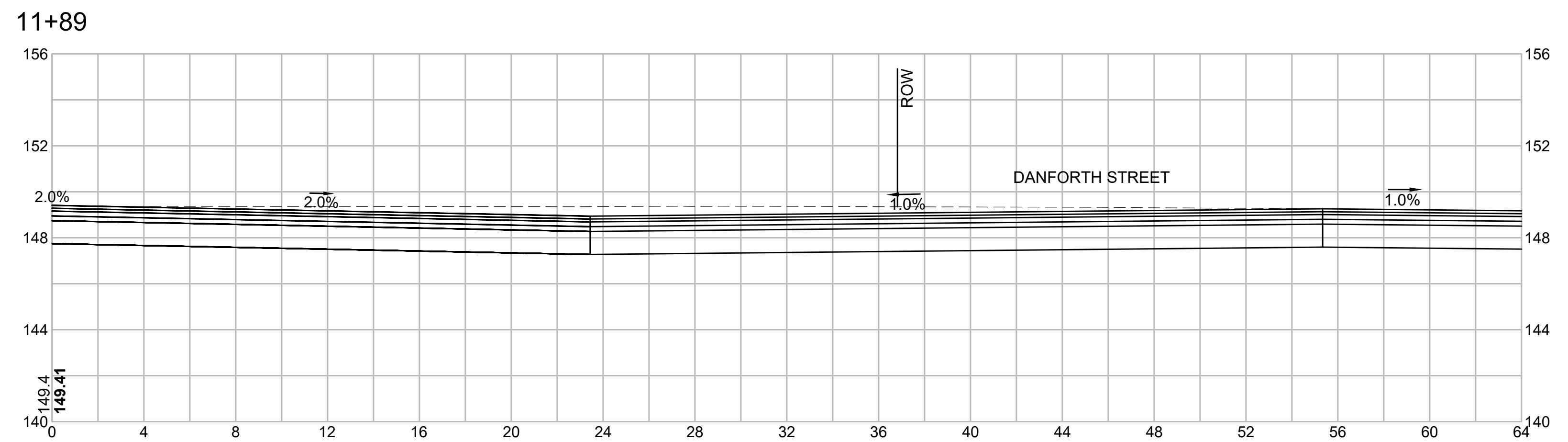
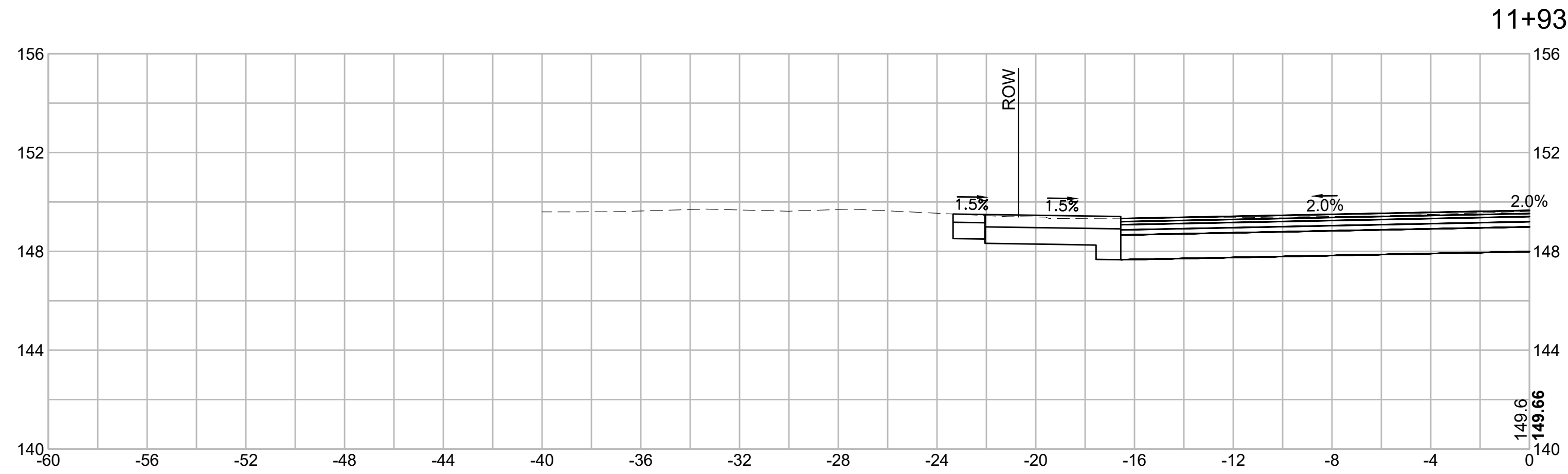


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	NO.	DATE	REVISIONS		

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET	
DESIGN SUBMISSION: 85% DESIGN	
DRAWING TITLE: CROSS SECTIONS	
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702	
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876	
SCALE: AS NOTED	DESIGNED BY: JL
DATE: 6/4/2024	DRAWN BY: MPC
PROJECT NO. 20034	CHECKED BY: HP
SHEET NO. 78 OF 89	

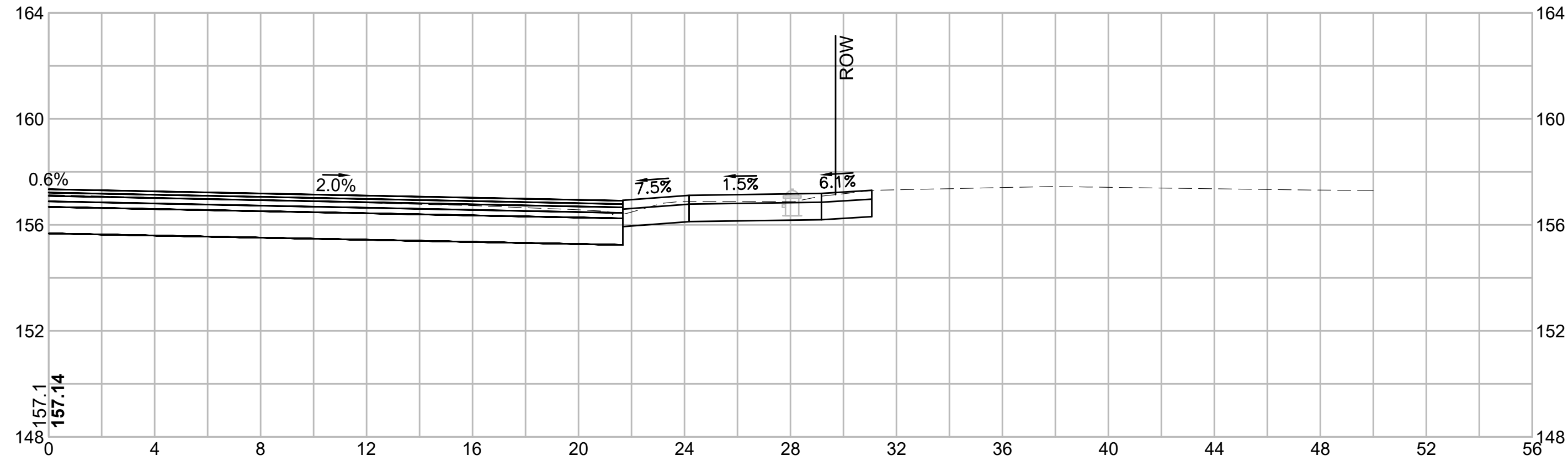


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 79 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

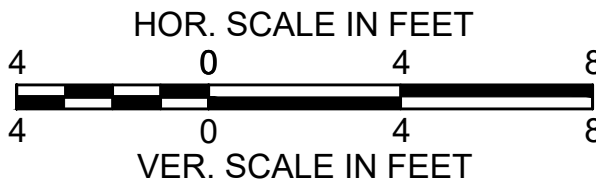
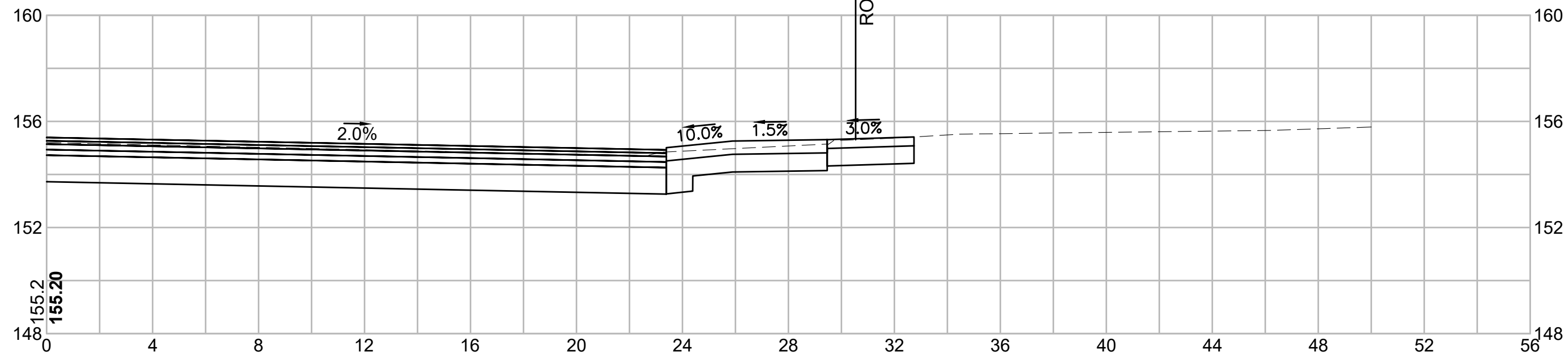
NO.	DATE	REVISIONS

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13+19



12+85



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CROSS SECTIONS

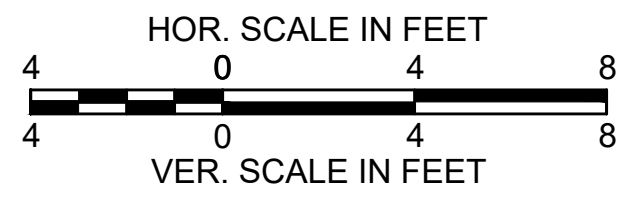
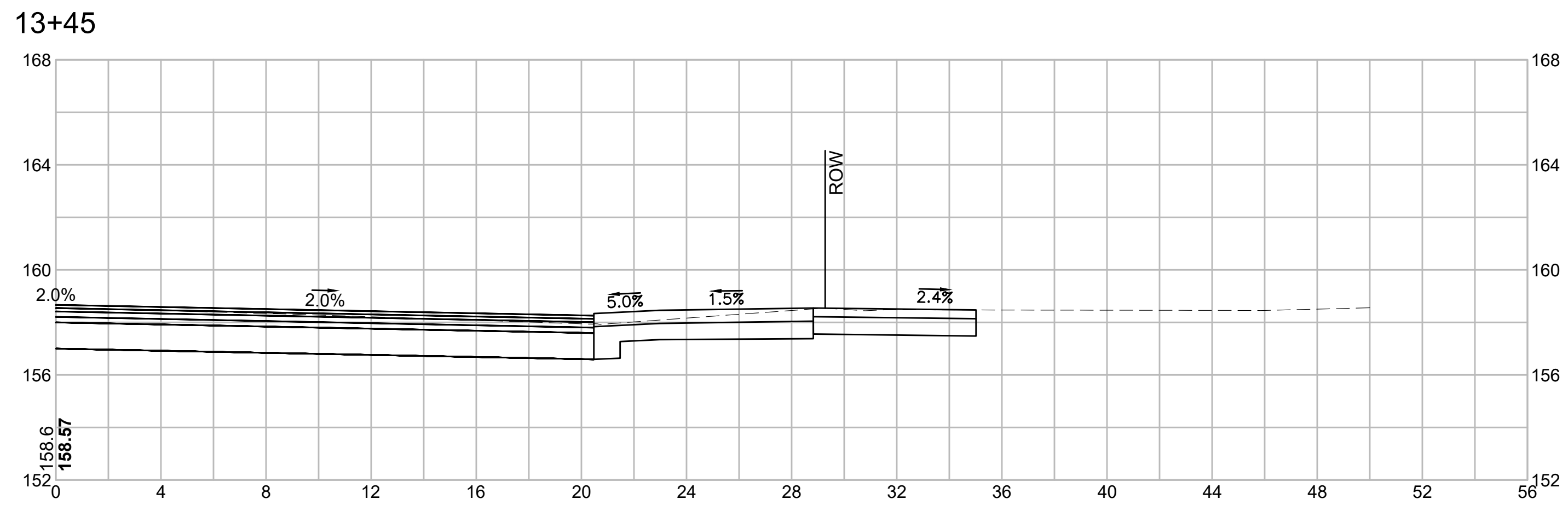
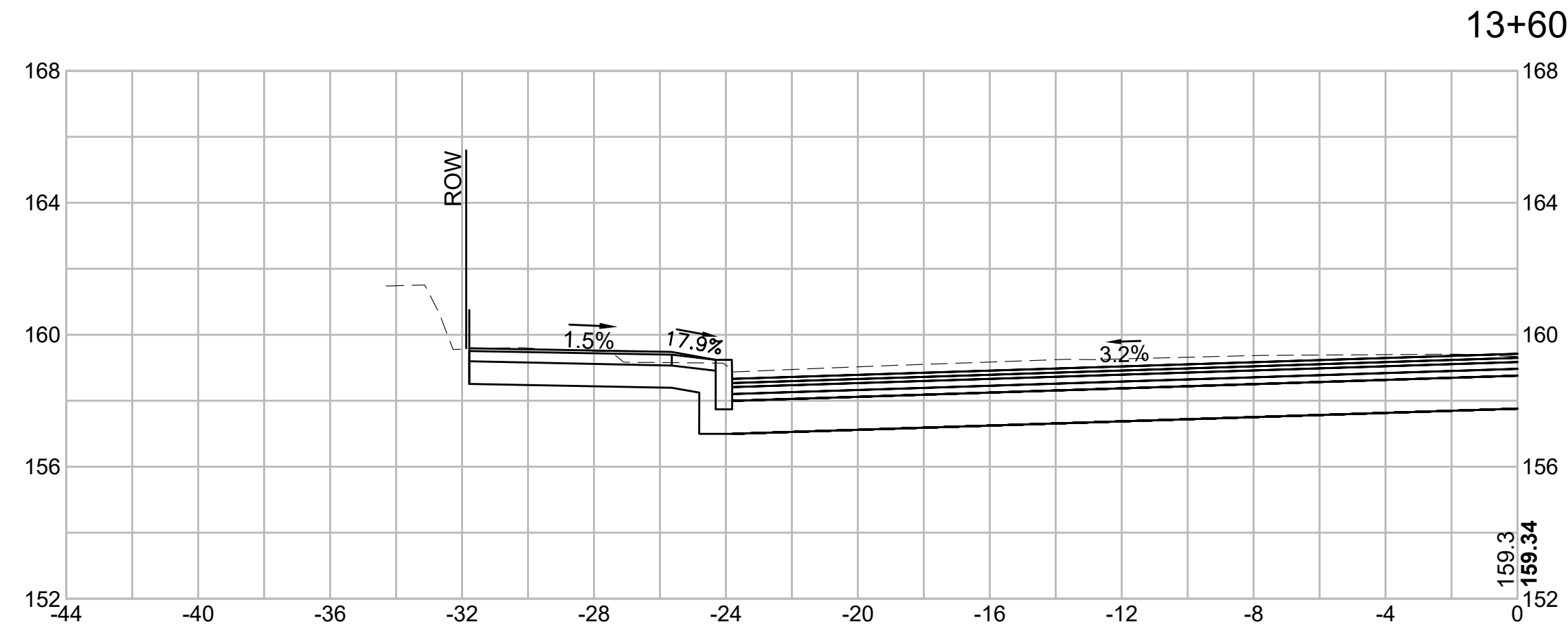
PREPARED FOR:
CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

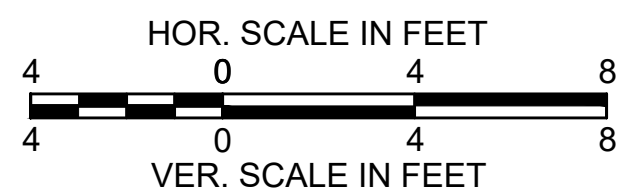
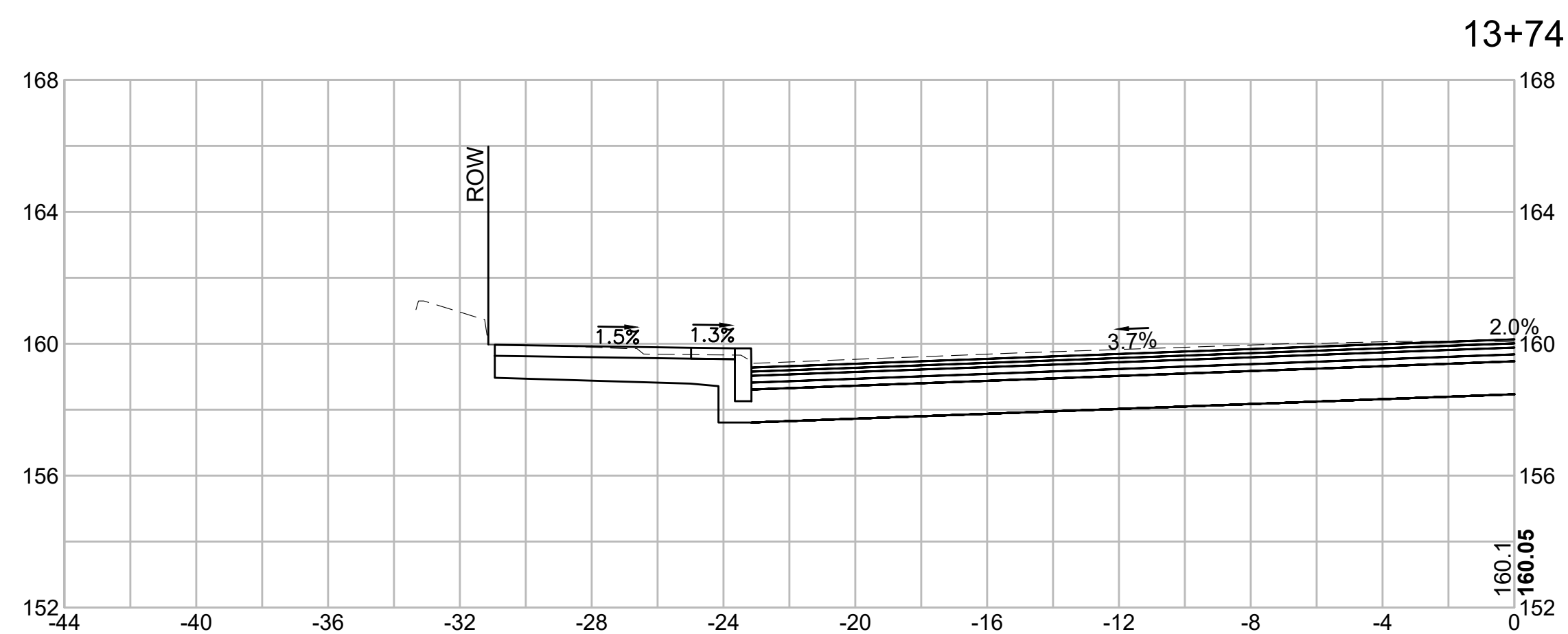
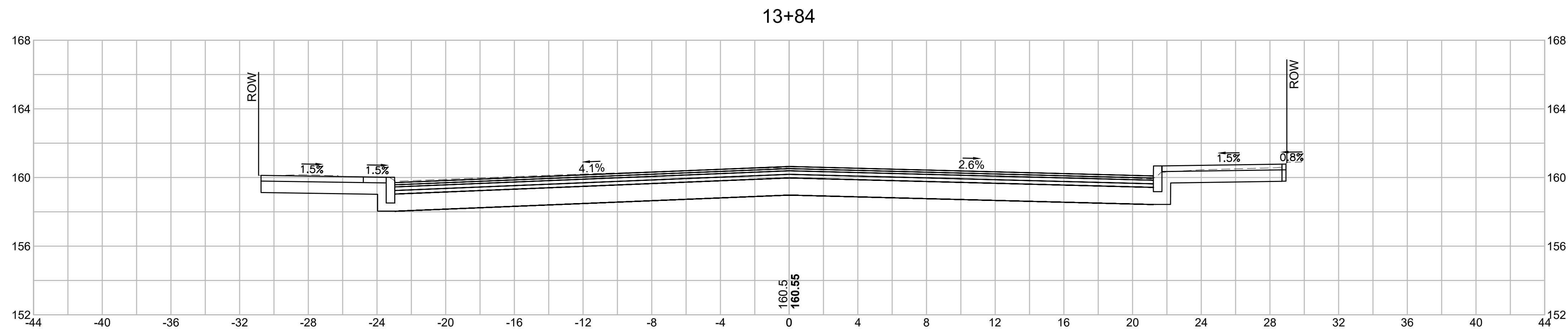
DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

SHEET NO.
81 OF 89



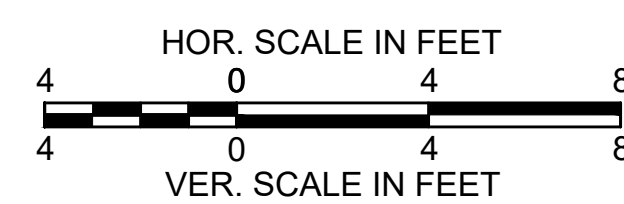
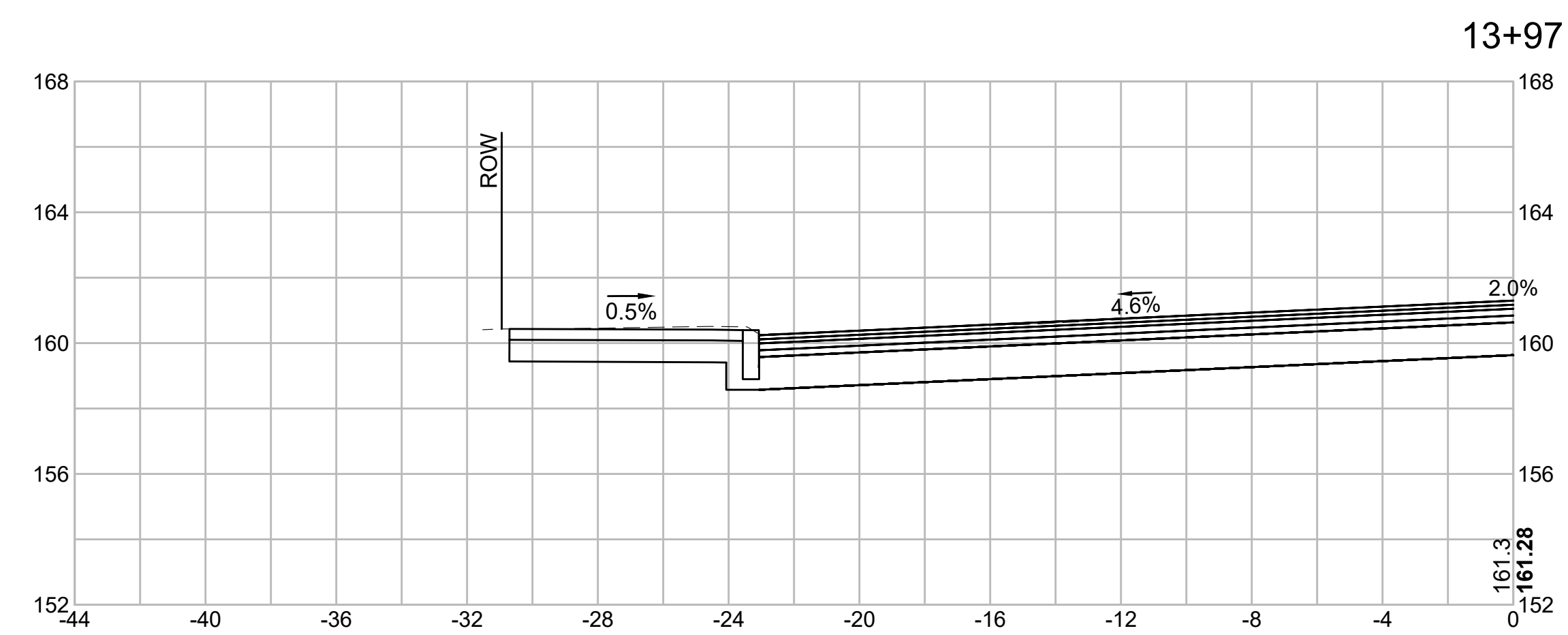
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 82 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS



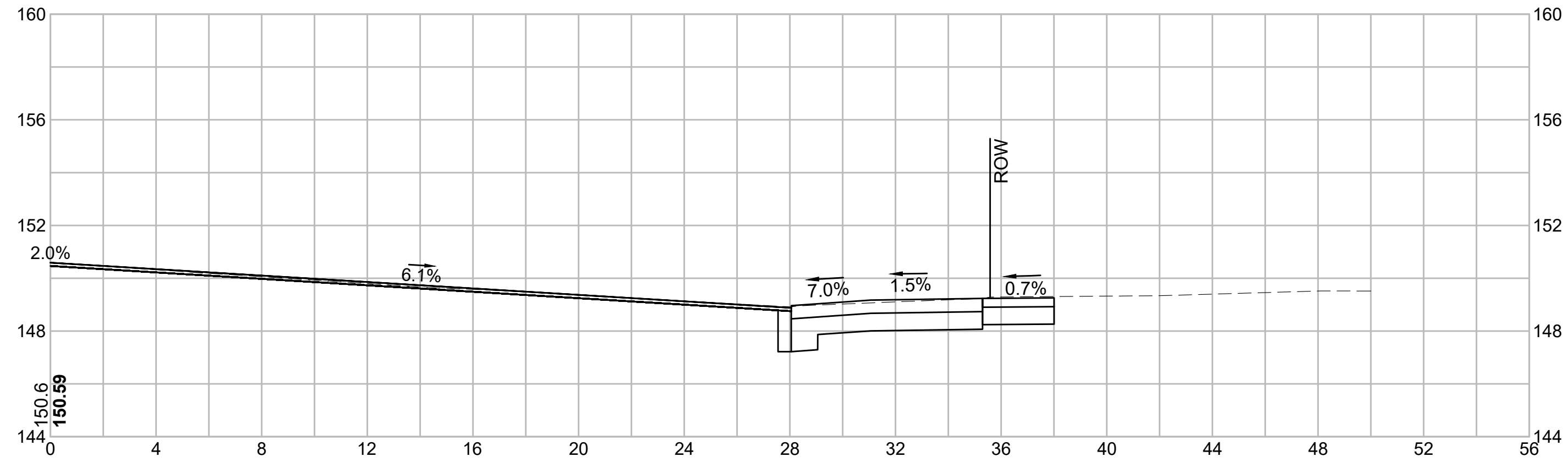
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DESIGN SUBMISSION: 85% DESIGN		
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PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 83 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

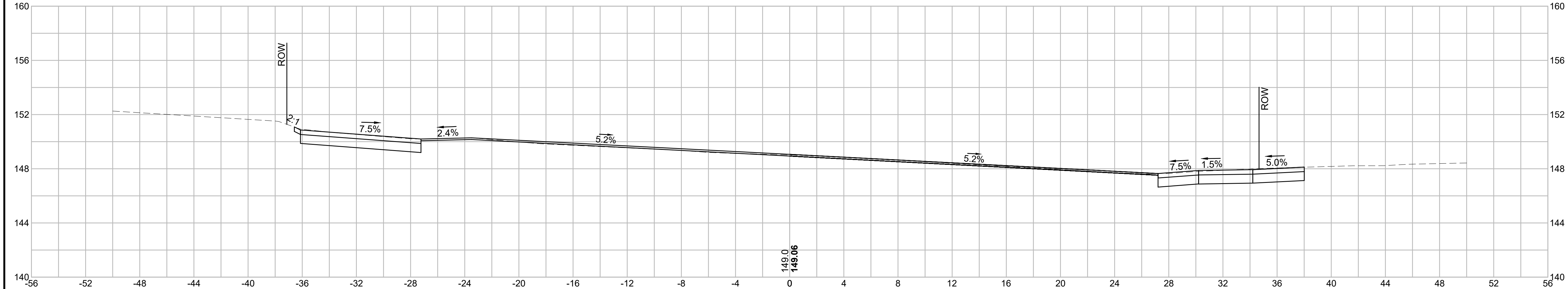
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PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 84 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

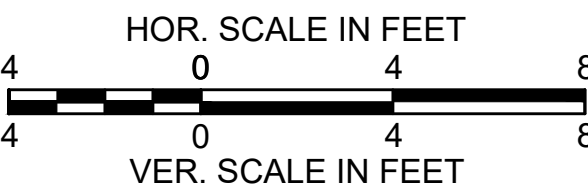
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101+00

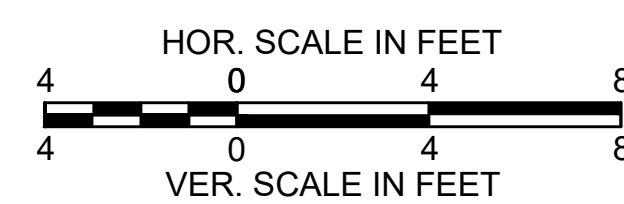
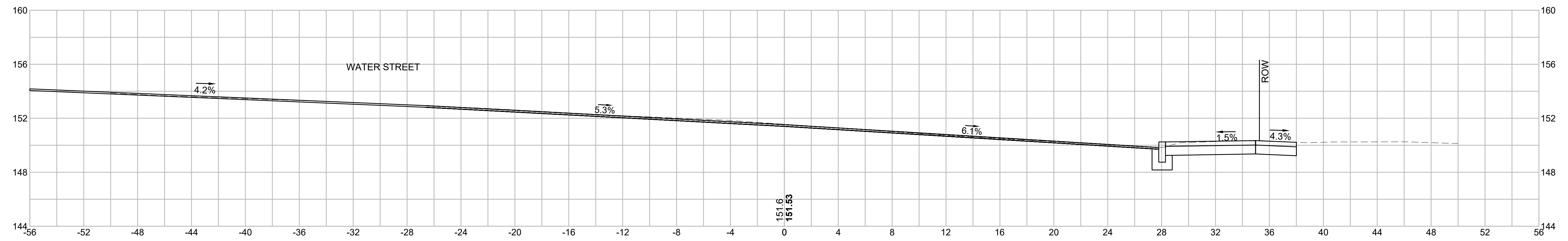
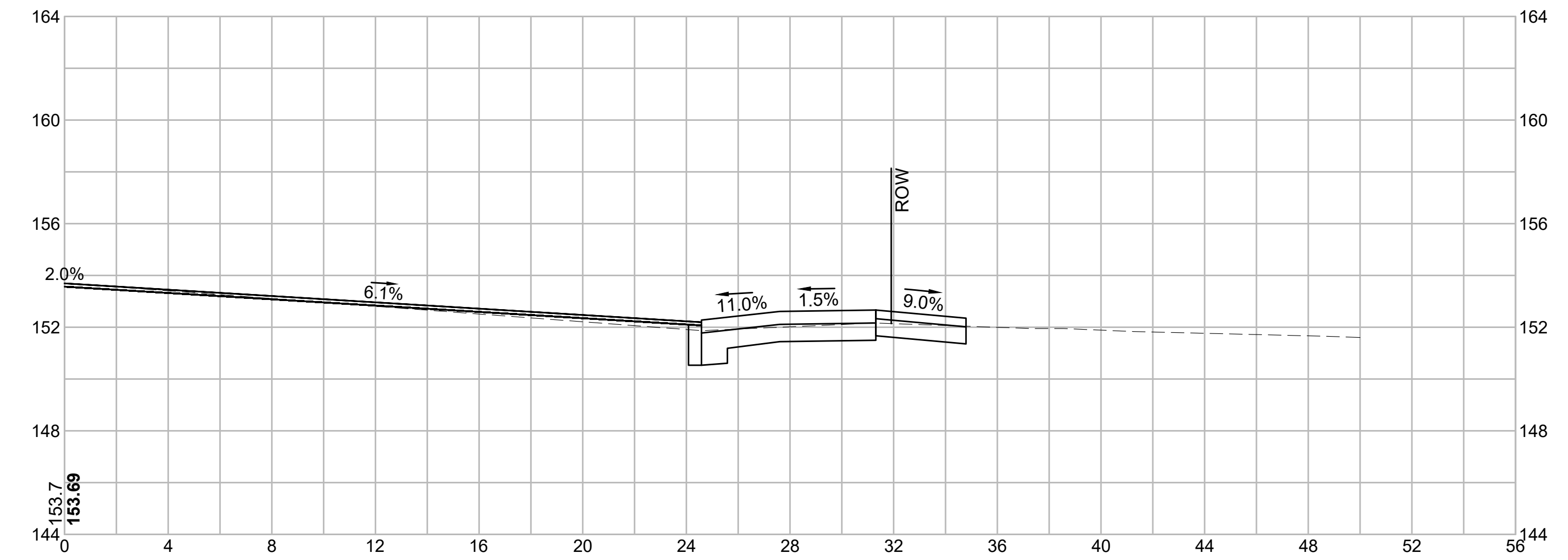


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS (CENTRAL STREET)		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 85 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

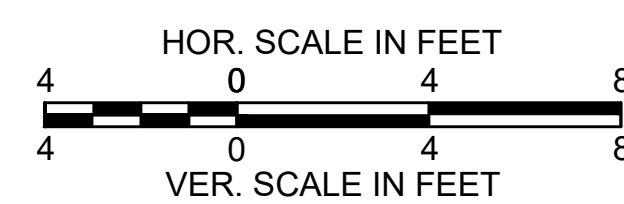
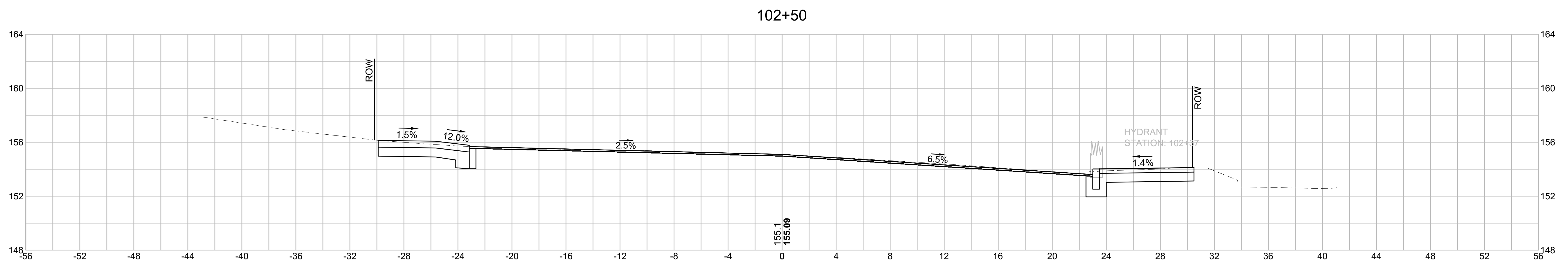
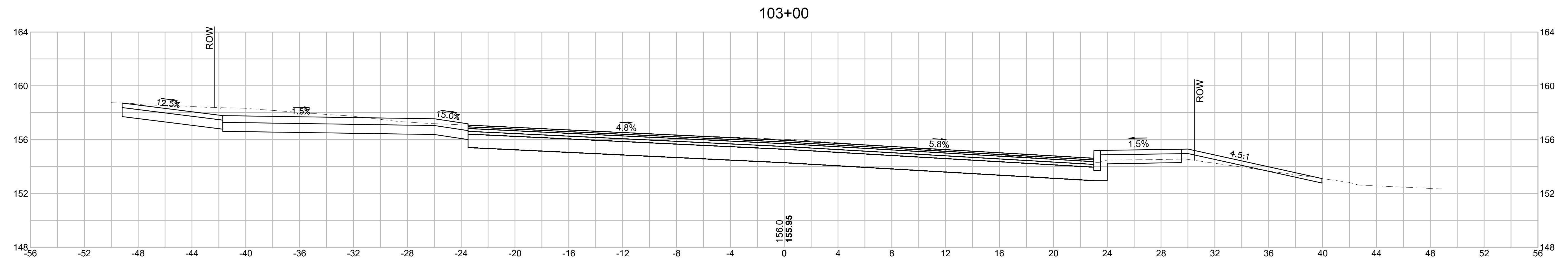


NO.	DATE	REVISIONS

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				PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
	NO.	DATE	REVISIONS	SCALE: AS NOTED DATE: 6/4/2024 PROJECT NO. 20034	DESIGNED BY: JL DRAWN BY: MPC CHECKED BY: HP	SHEET NO. 86 OF 89

[illegible]

PROJECT IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE:
CROSS SECTIONS (CENTRAL STREET)

PREPARED FOR:

 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

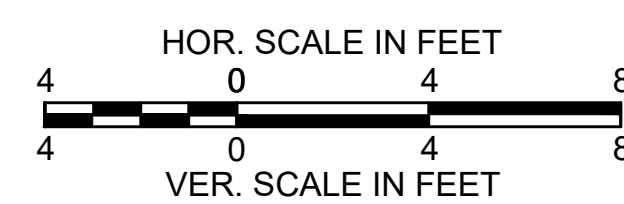
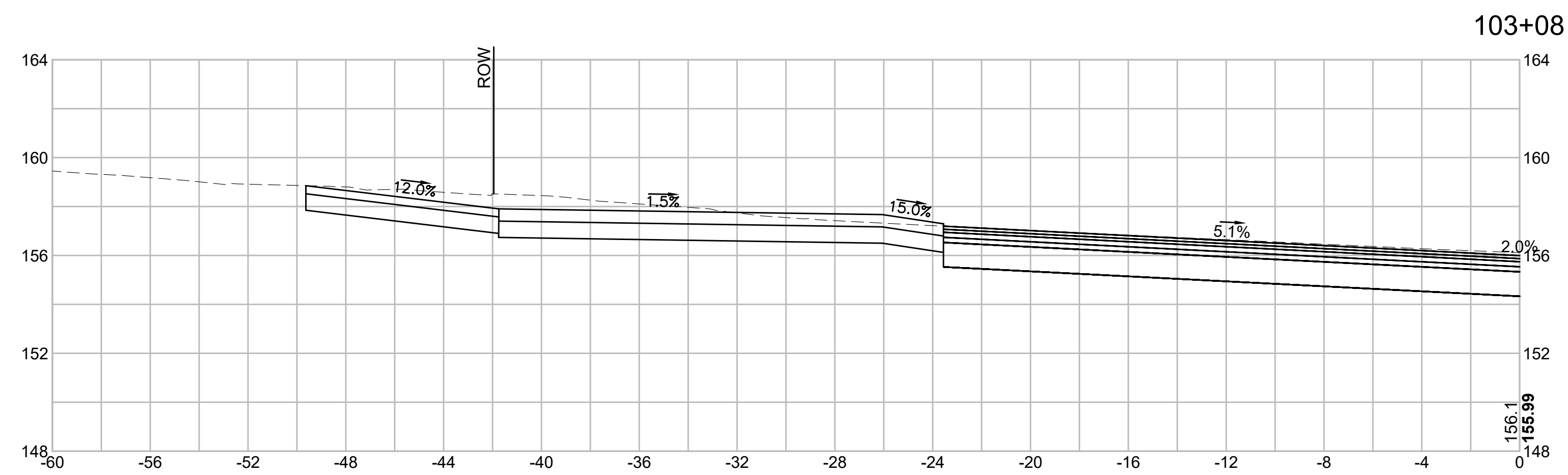
PROJECT NO. 20034

DESIGNED BY: J.L.

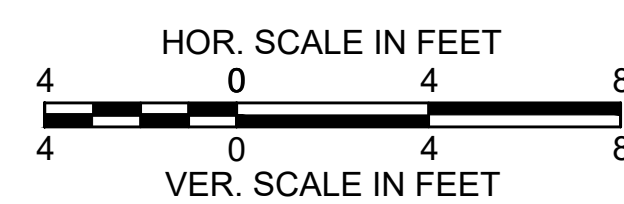
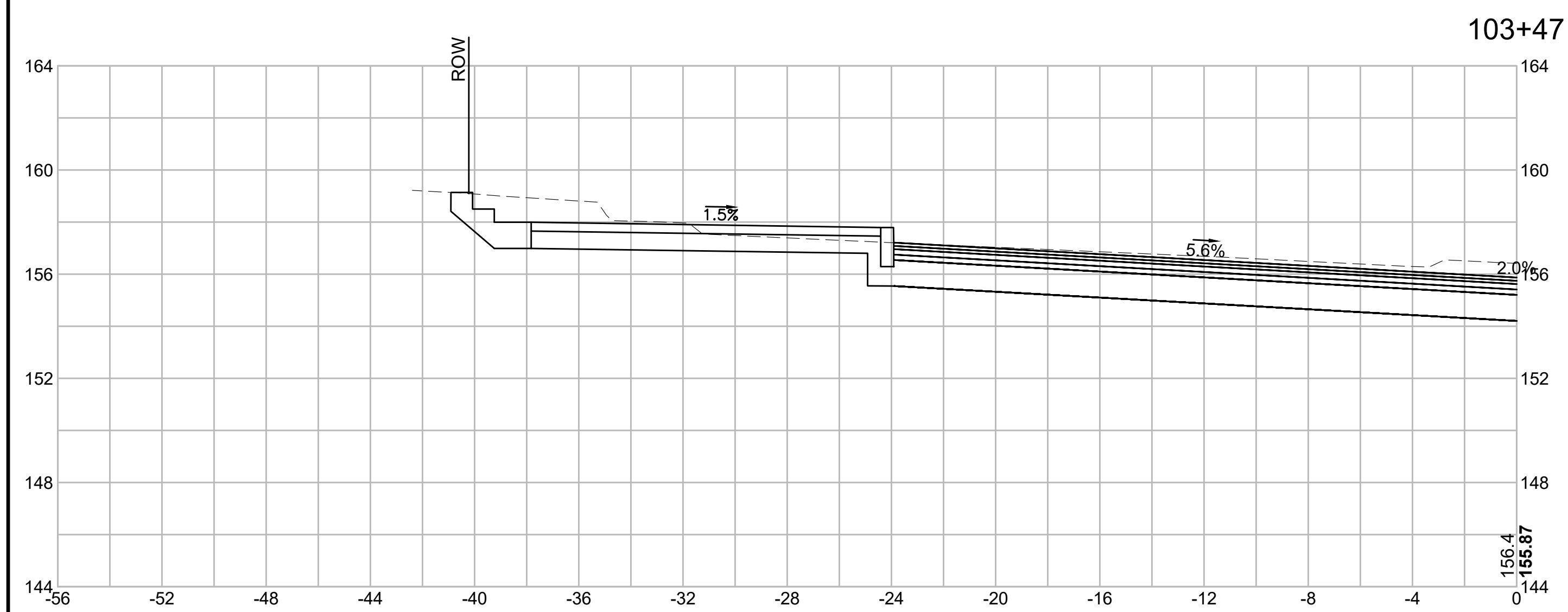
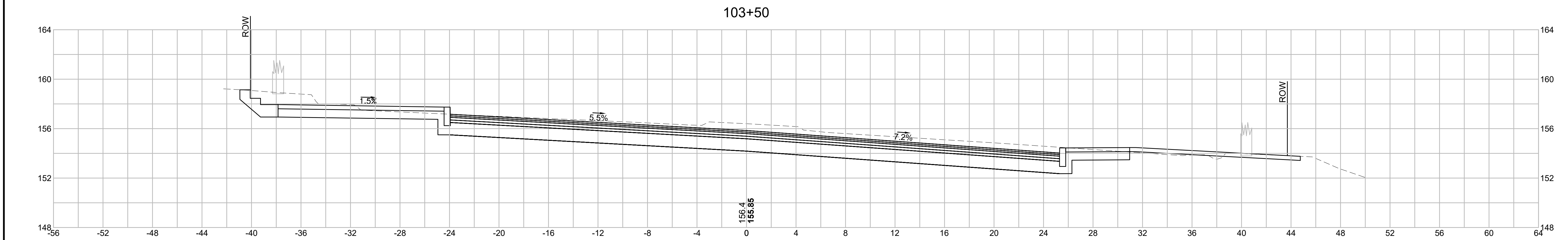
DRAWN BY: MPC

CHECKED BY: HP

SHEET NO.
37 OF 89



				PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876	
NO.	DATE	REVISIONS	SCALE: AS NOTED DATE: 6/4/2024 PROJECT NO. 20034	DESIGNED BY: JL DRAWN BY: MPC CHECKED BY: HP	SHEET NO. 88 OF 89



	NO.	DATE	REVISIONS

PROJECT IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE:
CROSS SECTIONS (CENTRAL STREET)

PREPARED FOR:

 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

DESIGNED BY: JL

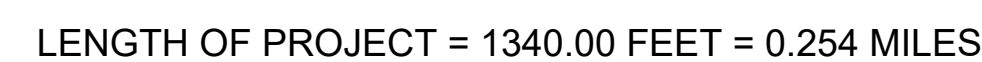
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SHEET NO.
89 OF 89

CONTRACT PW #

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2024 (AS AMENDED), THE MASSDOT SUPPLEMENTAL SPECIFICATIONS DATED MARCH 31, 2024, THE MASSDOT 2017 CONSTRUCTION STANDARD DETAILS, THE CITY OF FRAMINGHAM CONSTRUCTION STANDARDS WITH ALL REVISIONS, THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, MASSDOT NOTES ON WALKS AND WHEELCHAIR RAMPS FOR DESIGNERS AND CONSTRUCTION ENGINEERS DATED MARCH 2012, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE MASSDOT 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT 2015 OVERHEAD SIGNAL STRUCTURE & FOUNDATION STANDARD DRAWINGS, THE MASSDOT 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.



	NO.	DATE	REVISIONS

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ABBREVIATIONS

GENERAL	
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
AC	ASBESTOS CEMENT
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
LDCC	LOW-DENSITY CELLULAR CONCRETE
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
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
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY

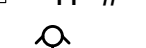
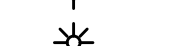
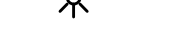
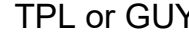
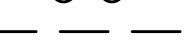
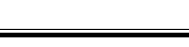
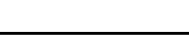
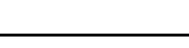
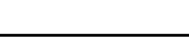
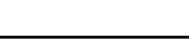
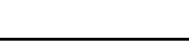
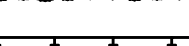
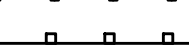
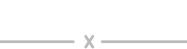
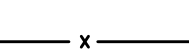
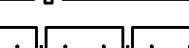
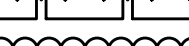
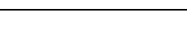
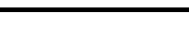
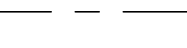
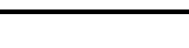
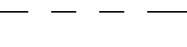
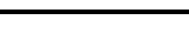
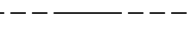
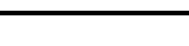
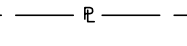
ABBREVIATIONS (cont.)

GENERAL	
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 DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

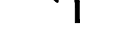
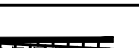
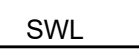
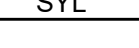
TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

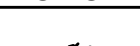
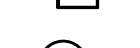
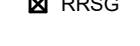
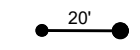
GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER ON BRIDGE OR 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
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS
		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)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		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
		BRICK PAVER STRIP

PAVEMENT MARKINGS SYMBOLS

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

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		360° 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
		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

GENERAL NOTES

1. THE WORK UNDER THIS PROJECT INCLUDES BUT IS NOT LIMITED TO PAVEMENT MICROMILLING AND RESURFACING, FULL DEPTH ROADWAY RECONSTRUCTION, SIDEWALK CONSTRUCTION, INSTALLATION OF DRAINAGE STRUCTURES AND PIPES, PLACEMENT OF PAVEMENT MARKINGS, PROTECTION OF EXISTING UTILITIES TO REMAIN, GRADING, REPLACEMENT OF TRAFFIC SIGNALS, INSTALLATION OF TRAFFIC SIGNS, AND TRAFFIC MAINTENANCE DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL CONFLICTS BETWEEN THE EXISTING UTILITIES AND PROPOSED WORK. THE ENGINEER RESERVES THE RIGHT TO MODIFY THE DESIGN TO REALIGN PIPING AND STRUCTURE LOCATIONS AND INVERTS TO SUIT ACTUAL FIELD CONDITIONS ENCOUNTERED AT NO ADDITIONAL COST TO THE CITY.
3. ALL EXISTING STREET NAME, REGULATORY, GUIDE, AND WARNING SIGNS, INCLUDING POSTS, WITHIN THE LIMITS OF WORK ARE TO BE RETAINED UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL RETAIN AND PROTECT ALL CURBS, FENCES, WALLS, TREES, SHRUBS, POSTS, LANDSCAPE FEATURES, AND OTHER MISCELLANEOUS ITEMS WITHIN ABUTTING PROPERTIES UNLESS OTHERWISE NOTED. WHEN RETAINING THOSE ITEMS IS NOT PRACTICAL IN THE OPINION OF THE ENGINEER, THE CONTRACTOR SHALL REMOVE, STOCKPILE, PROTECT AND RESET THE ITEMS. THE CONTRACTOR SHALL REPLACE ITEMS DAMAGED DURING REMOVAL, STOCKPILING, OR RESETTING DUE TO NEGLIGENCE, CARELESSNESS, OR MISHANDLING WITH EQUIVALENT NEW ITEMS AT NO COST TO THE CITY.
5. CONTRACTOR SHALL NOT PARK OR STORE CONSTRUCTION EQUIPMENT, MATERIALS OR VEHICLES UNDER THE DRIPLINE OF ANY TREE.
6. THE CONTRACTOR SHALL PROVIDE ALL SAFETY CONTROL (SIGNS, REFLECTORIZED DRUMS, ETC) FOR CONSTRUCTION OPERATIONS IN ACCORDANCE WITH THE TRAFFIC MANAGEMENT PLANS INCLUDED HEREIN AND THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
7. ALL LANDSCAPED AREAS BETWEEN THE PROPOSED EDGE OF PAVEMENT AND SLOPE LIMITS, INCLUDING BUT NOT LIMITED TO LAWNS, BARK MULCH, PLANTING BEDS, ETC., SHALL BE REPLACED IN KIND.
8. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES PRIOR TO THE START OF WORK.
9. ALL UTILITIES AND THEIR APPURTENANCES SHALL BE RETAINED AND PROTECTED UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR SHALL NOT WORK BEYOND THE LINES SHOWN ON THE PLANS AS PROPOSED SLOPE LIMITS, UNLESS APPROVED BY THE ENGINEER.
11. THE CONTRACTOR SHALL TRANSITION THE CURB TO MATCH THE EXISTING CONDITIONS AT THE LIMITS OF WORK WHERE NEW CURB IS PROPOSED OR EXISTING CURB IS RESET.
12. ALL CURB, CURB INLET AND CURB CORNER REMOVAL SHOULD BE INCLUDED UNDER ITEM 594.
13. SAWCUTTING OF ASPHALT PAVEMENT AND PORTLAND CEMENT CONCRETE SHALL BE INCIDENTAL TO OTHER CONTRACT ITEMS.

SURVEY PLAN NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS BASE MAP ARE THE RESULT OF AN ON THE GROUND INSTRUMENT SURVEY PERFORMED BETWEEN JANUARY 18, 2017 AND JUNE 22, 2017 BY GREEN INTERNATIONAL AFFILIATES, INC.
2. THIS DRAWING WAS PREPARED SOLELY FOR AND IS INTENDED FOR THE WORK ASSOCIATED WITH THIS PROJECT. THE USE OR REUSE OF THESE DRAWINGS FOR OTHER PURPOSES OR BY PARTIES NOT DIRECTLY CONTRACTED TO THIS PROJECT IS PROHIBITED WITHOUT PRIOR WRITTEN PERMISSION FROM THE CITY OF FRAMINGHAM.
3. HORIZONTAL DATUM IN MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD83. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1929 (NGVD29).

UTILITY NOTES

1. THE CONTRACTOR IS HEREBY MADE AWARE THAT EXISTING UTILITIES, INCLUDING BUT NOT LIMITED TO EXISTING WATER, SEWER AND DRAIN PIPES; DRAINAGE AND SEWER STRUCTURES; GAS LINES, COMMUNICATION LINES AND UTILITY POLES, MAY NEED TO BE PROTECTED AND/OR SHORED UP DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS UNDER THIS PROJECT. THE COST OF THE WORK REQUIRED FOR THE PROTECTION, MAINTENANCE AND SUPPORT OF THESE OR OTHER EXISTING ABOVE GROUND OR UNDERGROUND UTILITIES IN THE VICINITY OF THE PROPOSED WORK SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK UNDER THIS CONTRACT.
2. THIS PLAN WAS PREPARED IN CONFORMANCE WITH AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD C/ASCE 38-02 "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA", QL"C". REFER TO UTILITY QUALITY LEVEL INFORMATION INDEX. ACCURACY OF UTILITY LOCATIONS IS NOT GUARANTEED.
3. BELOW GROUND STRUCTURES, UNLESS DIMENSIONED, ARE SYMBOLIC ONLY.
4. PRIOR TO THE START OF ANY WORK ON THE SITE, THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN ON THIS PLAN. CONTACT DIG-SAFE AT 1-888-344-7233 (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE START OF EXCAVATION AND CONTACT THE FRAMINGHAM DEPARTMENT OF PUBLIC WORKS AT 508-532-6050 AT LEAST 48 HOURS PRIOR TO THE START OF WORK.
5. ALL SANITARY MANHOLE FRAMES AND COVERS CALLED FOR ADJUSTMENT, BUT IN THE OPINION OF THE ENGINEER ARE DAMAGED, SHALL BE REMOVED AND STACKED. THE CONTRACTOR SHALL INSTALL NEW SEWER MANHOLE FRAMES AND COVERS TO FINISHED GRADE.THE CONTRACTOR SHALL DELIVER THE STACKED FRAMES AND COVERS TO THE LOCATION DESIGNATED BY THE CITY. FRAMES AND COVERS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH NEW FRAMES AND COVERS AT NO ADDITIONAL COST TO THE CITY.

UTILITY QUALITY LEVEL INDEX

UTILITY QUALITY LEVEL INFORMATION INDEX (SEE ASCE/C1 38-02):

UTILITY QUALITY LEVEL A:
PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT IS TYPICALLY USED TO MINIMIZE THE POTENTIAL FOR UTILITY DAMAGE. A PRECISE HORIZONTAL AND VERTICAL LOCATION, AS WELL AS OTHER UTILITY ATTRIBUTES, IS SHOWN ON PLAN DOCUMENTS. ACCURACY IS TYPICALLY SET TO 15-MM VERTICAL AND TO APPLICABLE HORIZONTAL SURVEY AND MAPPING ACCURACY AS DEFINED OR EXPECTED BY THE PROJECT OWNER. INFORMATION IS ONLY VALID WITHIN THE VISIBLE LIMITS OF THE TEST HOLE.

UTILITY QUALITY LEVEL B:
INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QUALITY LEVEL B DATA SHOULD BE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT AND REDUCED ONTO PLAN DOCUMENTS.

UTILITY QUALITY LEVEL C:
INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.

UTILITY QUALITY LEVEL D:
INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.

DRAINAGE NOTES

1. ALL REINFORCED CONCRETE (RCP) PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL CONFLICTS BETWEEN THE EXISTING UTILITIES AND THE PROPOSED WORK. AT LEAST 48-HOURS NOTICE MUST BE PROVIDED. THE ENGINEER RESERVES THE RIGHT TO MODIFY THE DESIGN TO REALIGN THE PIPE AND STRUCTURE LOCATIONS AND INVERTS TO SUIT ACTUAL FIELD CONDITIONS ENCOUNTERED AT NO ADDITIONAL COST TO THE CITY.
3. ALL OFFSETS TO THE CATCH BASINS ARE TO THE CENTER BACK OF THE GRATE. THE LOCATION AND ORIENTATION OF THE BELOW GRADE STRUCTURE SHALL BE FIELD COORDINATED BY THE CONTRACTOR TO AVOID CONFLICTS WITH EXISTING UTILITIES.
4. ALL EXISTING AND PROPOSED CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT INUNDATION DURING ALL CONSTRUCTION ACTIVITIES.
5. ALL EXISTING DRAIN PIPES UNDER THE PROPOSED ROAD OR SIDEWALK SHALL BE RETAINED UNLESS OTHERWISE NOTED. IF THE EXISTING PIPE IS TO BE REMOVED OR ABANDONED AND IT EXTENDS OUTSIDE THE PROPOSED ROADWAY OR SIDEWALK LIMIT IT SHALL BE CUT AND CAPPED AT THE RESPECTIVE LIMIT AT NO ADDITIONAL COST. REMOVAL AND DISPOSAL OF THESE PIPES ARE INCIDENTAL TO THE DRAINAGE ITEMS.
6. ALL PROPOSED CATCH BASINS SHALL BE DEEP SUMP CATCH BASINS WITH HOOD.
7. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. FIELD ADJUSTMENTS WILL BE MADE AS APPROVED OR AS REQUIRED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO DRAIN LINE UP TO A DEPTH OF 5 FEET SHALL BE INCLUDED IN THE COST OF THE PIPE.
8. ALL SINGLE GRATE CATCH BASINS AND DRAIN MANHOLE STRUCTURES ARE ECCENTRIC, UNLESS OTHERWISE NOTED.
9. USE FLAT TOP SLAB MANHOLE AND CATCH BASIN WHERE NEEDED.
10. ALL EXISTING NON-BICYCLE GRATES SHALL BE REPLACED WITH BICYCLE SAFE GRATES.
11. ABANDONED PIPES GREATER THAN 6 INCHES IN DIAMETER SHALL BE FILLED WITH LDCC.
12. THE CONTRACTOR SHALL MAINTAIN DRAINAGE WITHIN CLOSED SYSTEM DURING NON-WORK HOURS SINCE SOME OF THE DRAINAGE IS BEING REPLACED IN THE SAME LOCATION AS THE EXISTING PIPE.

ASBESTOS AND WASTE MANAGEMENT PROTOCOLS

1. THE HANDLING OF ALL ASBESTOS AND WASTE MATERIALS SHALL BE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS AND INDUSTRY BEST PRACTICES. THE CITY HAS DEVELOPED AN ASBESTOS STANDARD OPERATING PROCEDURE FOR ASBESTOS CEMENT PIPE THAT HAS BEEN APPROVED BY THE COMMONWEALTH OF MASSACHUSETTS.
2. THE CONTRACTOR SHALL FOLLOW THE ASBESTOS AND WASTE MANAGEMENT GUIDANCE THAT IS INCLUDED IN THE CONTRACT DOCUMENTS.

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: GENERAL NOTES

PREPARED FOR:



CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:



Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DESIGNED BY: JL

DATE: 6/4/2024

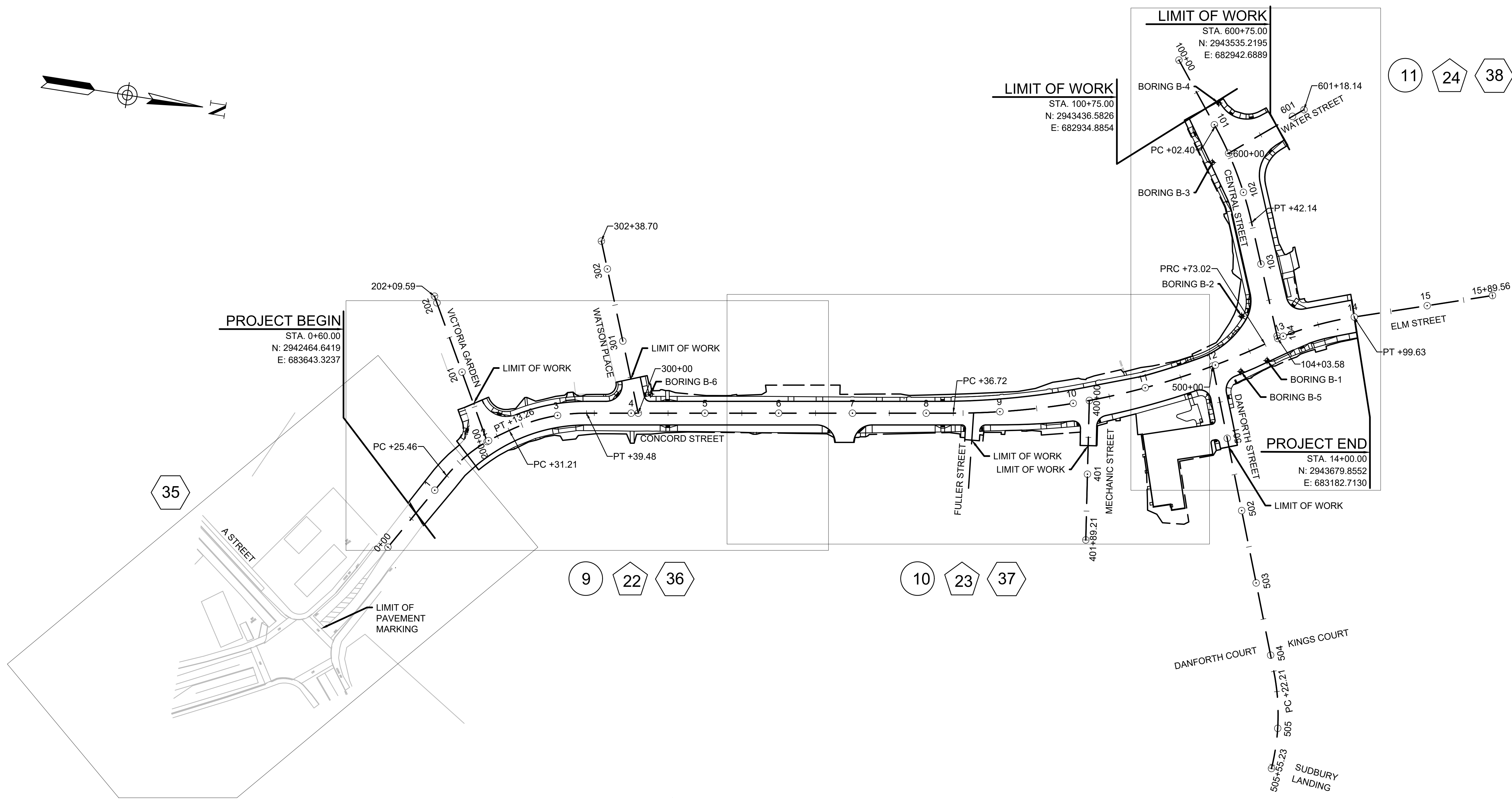
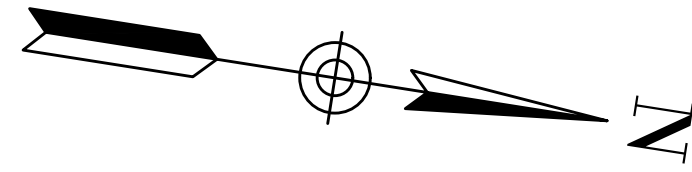
DRAWN BY: MPC

PROJECT NO. 20034

CHECKED BY: HP

SHEET NO.

3 OF 89



- LEGEND
- (X) CONSTRUCTION PLANS
 - (X) DRAINAGE & UTILITY PLANS
 - (X) SIGN & STRIPING PLANS

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: KEY PLAN		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 4 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

Northern Drill Service, Inc.				Client: Green International Affiliates, Inc.		Boring #	
130 East Main Street, Northborough, MA 01532				Project: CENTRAL ST MAST ARMS		B-3	
TEL 508-393-6900 FAX 508-393-6901				Location: CENTRAL ST, FRAMINGHAM, MA		Page 1 OF 1	
File #:				CASING	SAMPLER	CORE BARREL	
Date Started: 5/17/2021				TYPE	HW	S/S	
Date Completed: 5/17/2021				SIZE	4"	2"	
Driller: JUSTIN STEVENS				HAMMER		140	
Site Rep.:				FALL		30"	
				Ground Water level:		3'	
SAMPLE					Strata		
No.	Depth	Pen. In.	Rec. In.	Blows/6"	Change	SAMPLE DESCRIPTION	
S-1	5' - 2.5'	24"	13"	10-7-6-11		S-1: Medium Dense, gray fine sand, some medium to coarse gravel, some coarse sand, trace silt.	
S-2	4' - 6'	24"	18"	10-12-14-13		S-2: Medium dense gray fine sand, some medium to coarse gravel, trace silt. - glacial till -	
S-3	9' - 11'	24"	5"	15-22-34-23		S-3: Very dense gray fine sand, some coarse sand, some medium to coarse gravel, trace silt. - glacial till -	
S-4	14' - 16'	24"	15"	46-42-44-33		S-4: Very dense gray fine sand, some medium gravel, some silt. Glacial till-	
S-5	19' - 19.7'	9"	7"	32-100/3"		S-5: Very dense gray fine sand, some medium gravel, some silt.	
						Drilled 2' into rock 19.7'-21.9'	
						Bottom of Exploration = 21.9'	
						Asphalt= 6"	

Cohesionless Density Blows/ft: 0-10 Loose 10-30 Medium-Dense 30-50 Dense 50+ Very Dense

Northern Drill Service, Inc.				Client: Green International Affiliates, Inc.		Boring #	
130 East Main Street, Northborough, MA 01532				Project: CENTRAL ST MAST ARMS		B-4	
TEL 508-393-6900 FAX 508-393-6901				Location: CENTRAL ST, FRAMINGHAM, MA		Page 1 OF 1	
File #:				CASING	SAMPLER	CORE BARREL	
Date Started: 5/17/2021				TYPE	HW	S/S	
Date Completed: 5/17/2021				SIZE	4"	2"	
Driller: JUSTIN STEVENS				HAMMER		140	
Site Rep.:				FALL		30"	
				Ground Water level:		4'	
SAMPLE					Strata		
No.	Depth	Pen. In.	Rec. In.	Blows/6"	Change	SAMPLE DESCRIPTION	
S-1	5' - 2.5'	24"	10"	11-18-26-31		S-1: Dense tan coarse sand, some medium to coarse gravel, trace fine sand.	
S-2	4' - 6'	24"	4"	9-10-6-1		S-2: Medium dense black coarse and fine sand, some medium to coarse gravel, trace silt.	
S-3	9' - 9.8'	10	6"	23-100/4"		S-3: Very dense gray, coarse sand, some fine sand, some medium gravel, some silt. - glacial till -	
						10'	Encountered rock at 10', drilled 2' into rock. Terminated boring at 12'.
							Bottom of Exploration = 12'
							Asphalt= 7"

Cohesionless Density Blows/ft: 0-10 Loose 10-30 Medium-Dense 30-50 Dense 50+ Very Dense

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: BORING LOG 2

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

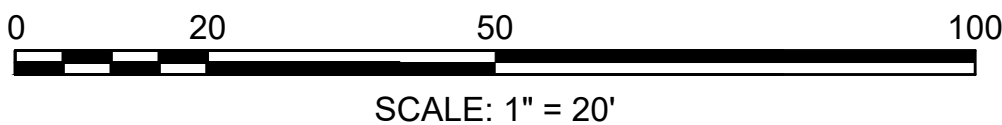
PROJECT NO. 20034

DESIGNED BY: JL

DRAWN BY: CW

CHECKED BY: JM

SHEET NO. 6 OF 89



NO.	DATE	REVISIONS

PROPOSED FULL DEPTH PAVEMENT

PROPOSED HMA DRIVEWAY AND PARKING LOT

SUBBASE: 8" GRAVEL BORROW, TYPE B

SUBBASE: 8" GRAVEL BORROW, TYPE B

SUBBASE: 8" GRAVEL BORROW, TYPE B

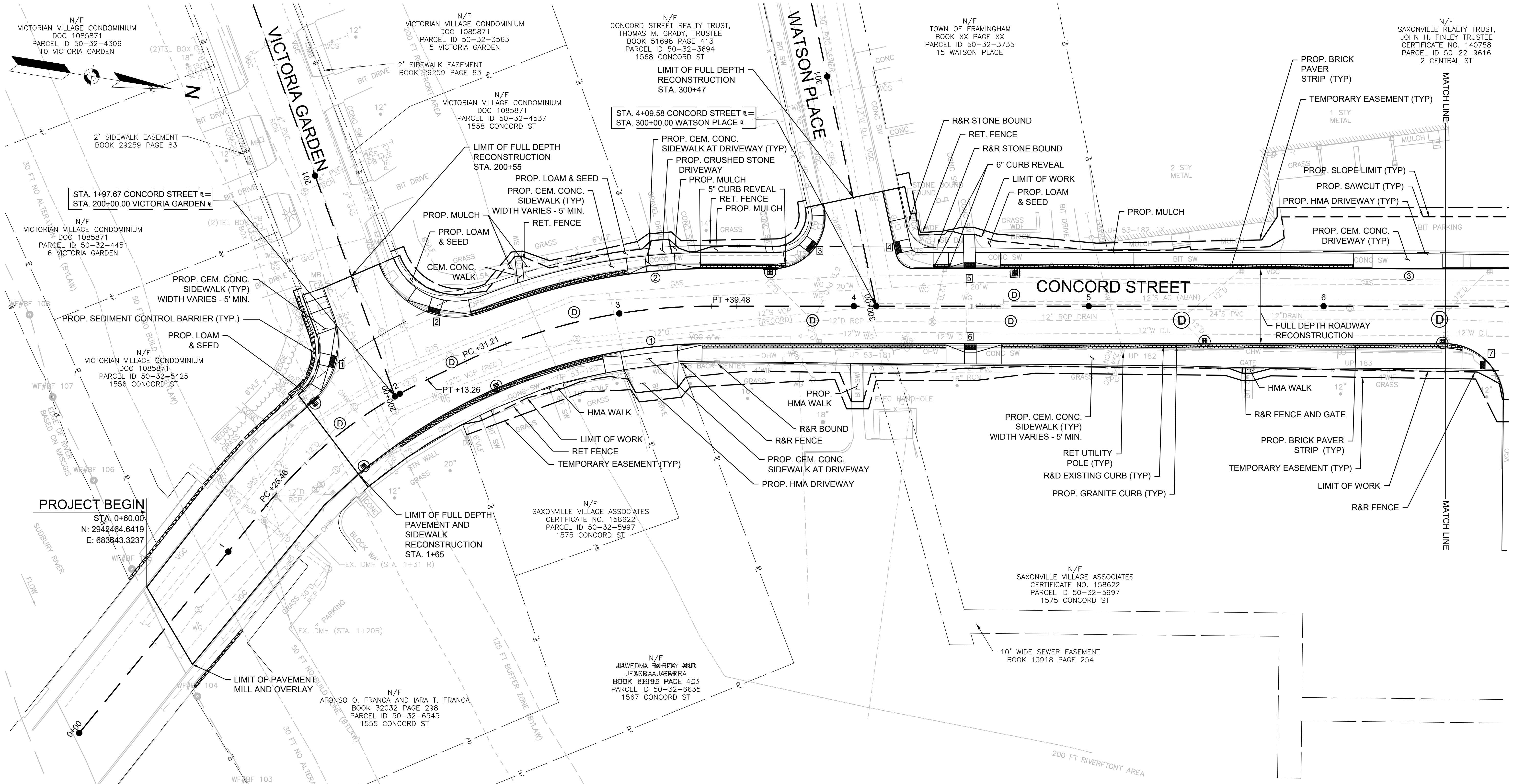
MILLING: 1.5" PAVEMENT MICROMILLING

NOTE

EXISTING GROUND



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: TYPICAL SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 8 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



CONTINUED ON
SHEET NO. 10

PROJECT: **IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET**

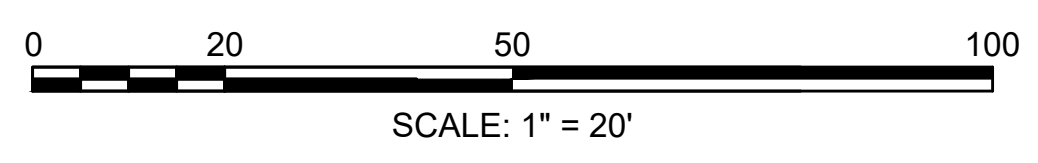
DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: **CONSTRUCTION PLAN 1**

PREPARED FOR:
 **CITY OF FRAMINGHAM**
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

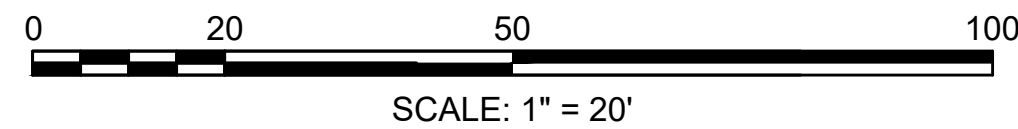
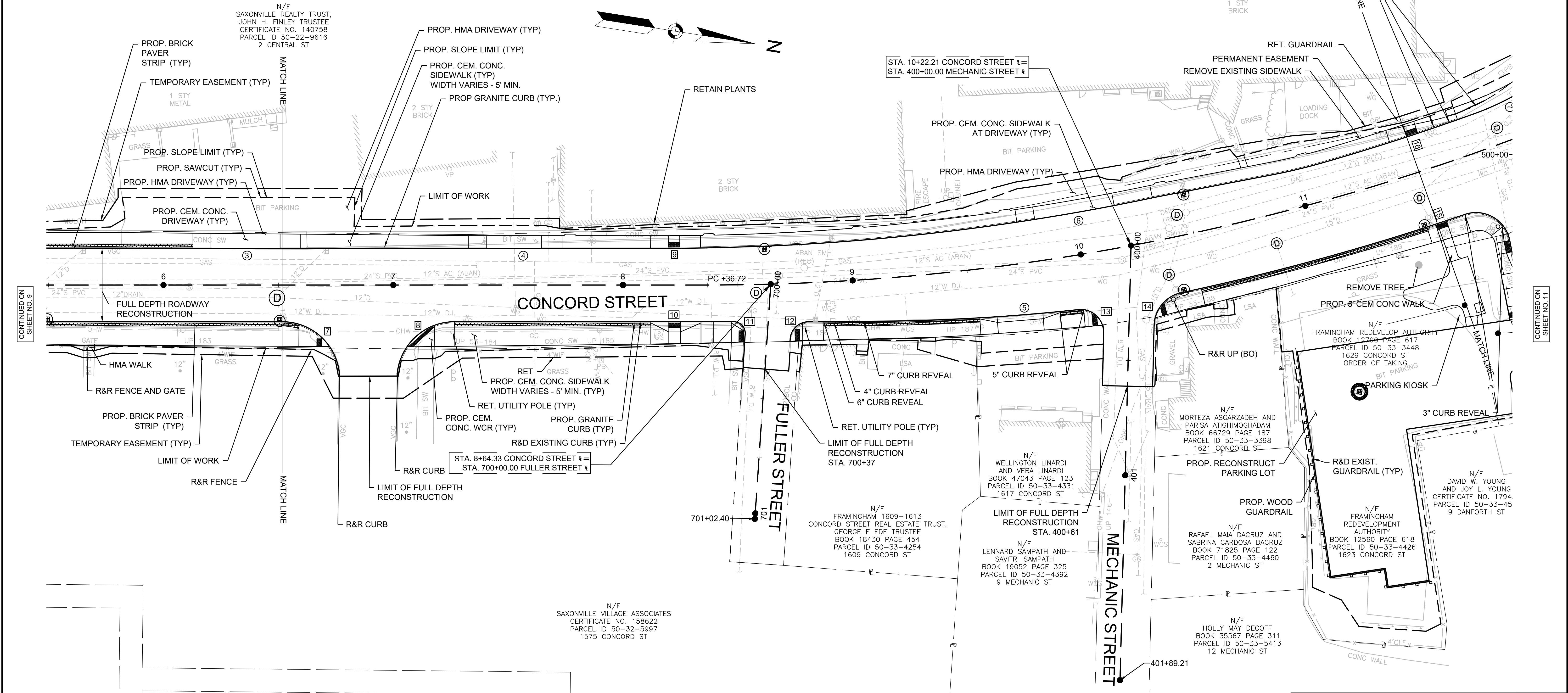
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 9 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



REVISIONS	
1	DATE

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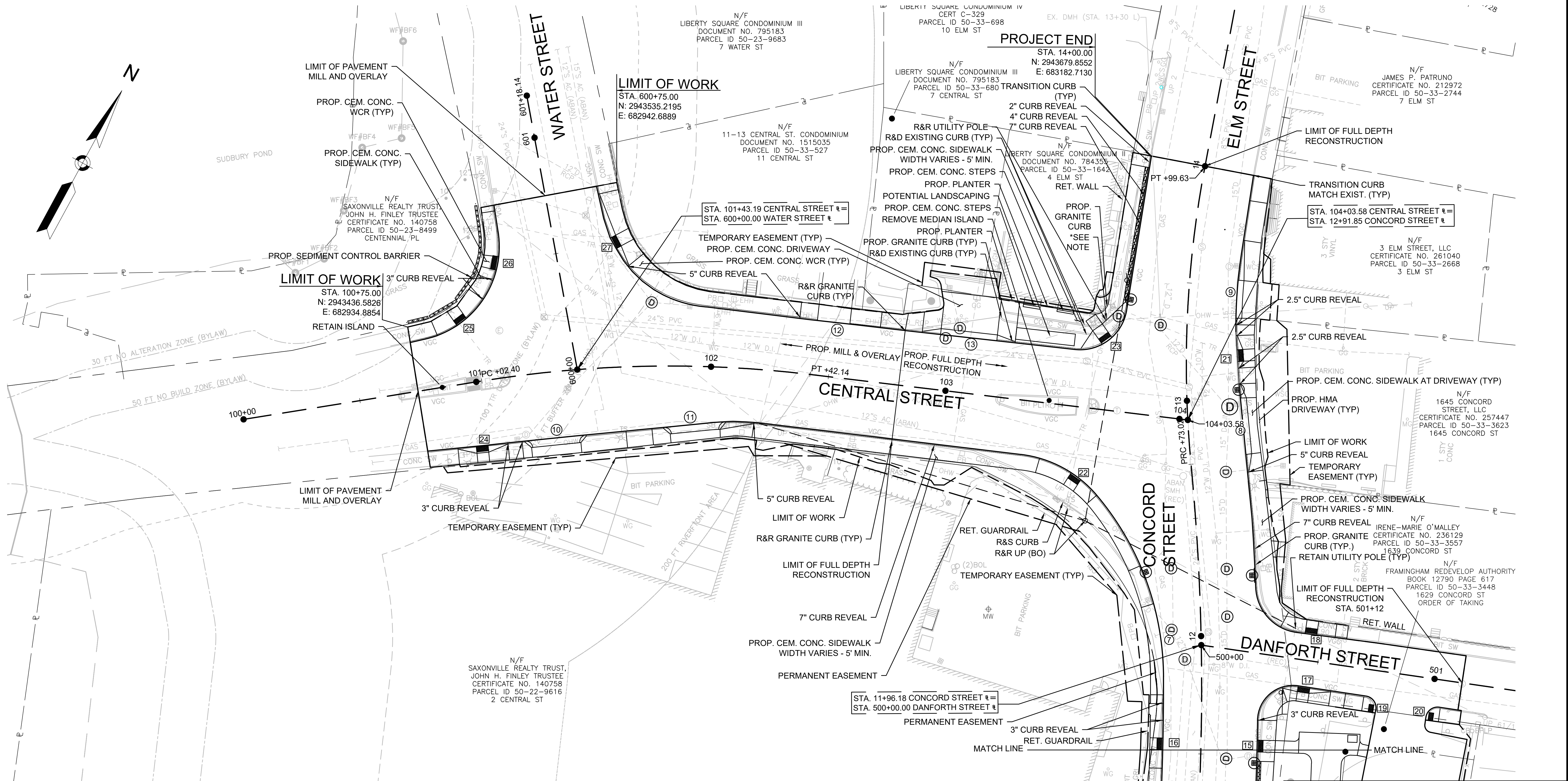
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NO.	DATE	REVISIONS
1		

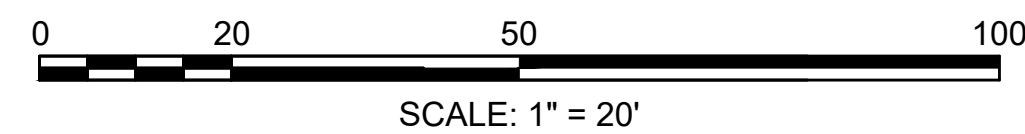
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION PLAN 2		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 10 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

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*NOTE: UTILITY POLE AT STA. 13+31.50 LT ELEVATION TO BE 6\"/>

CONTINUED ON
SHEET NO. 10



NO.		DATE	REVISIONS
1			

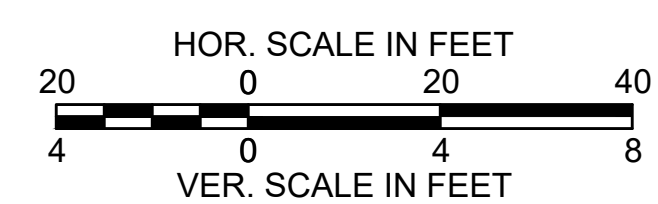
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION PLAN 3		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 11 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

CONTINUED ON
SHEET NO. 12

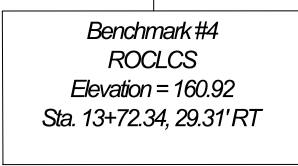


Benchmark #3
RR SPIKE FND, 1' ABOVE
GRADE, UPL
Elevation = 139.45
Sta. 10+33.78, 28.32' RT

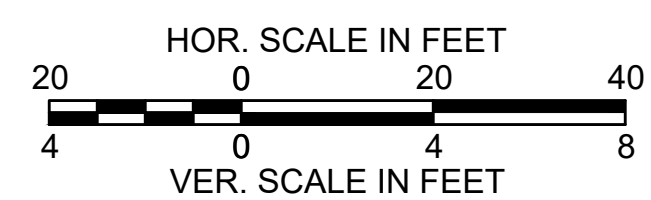
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 13 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

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CONTINUED ON
SHEET NO. 13



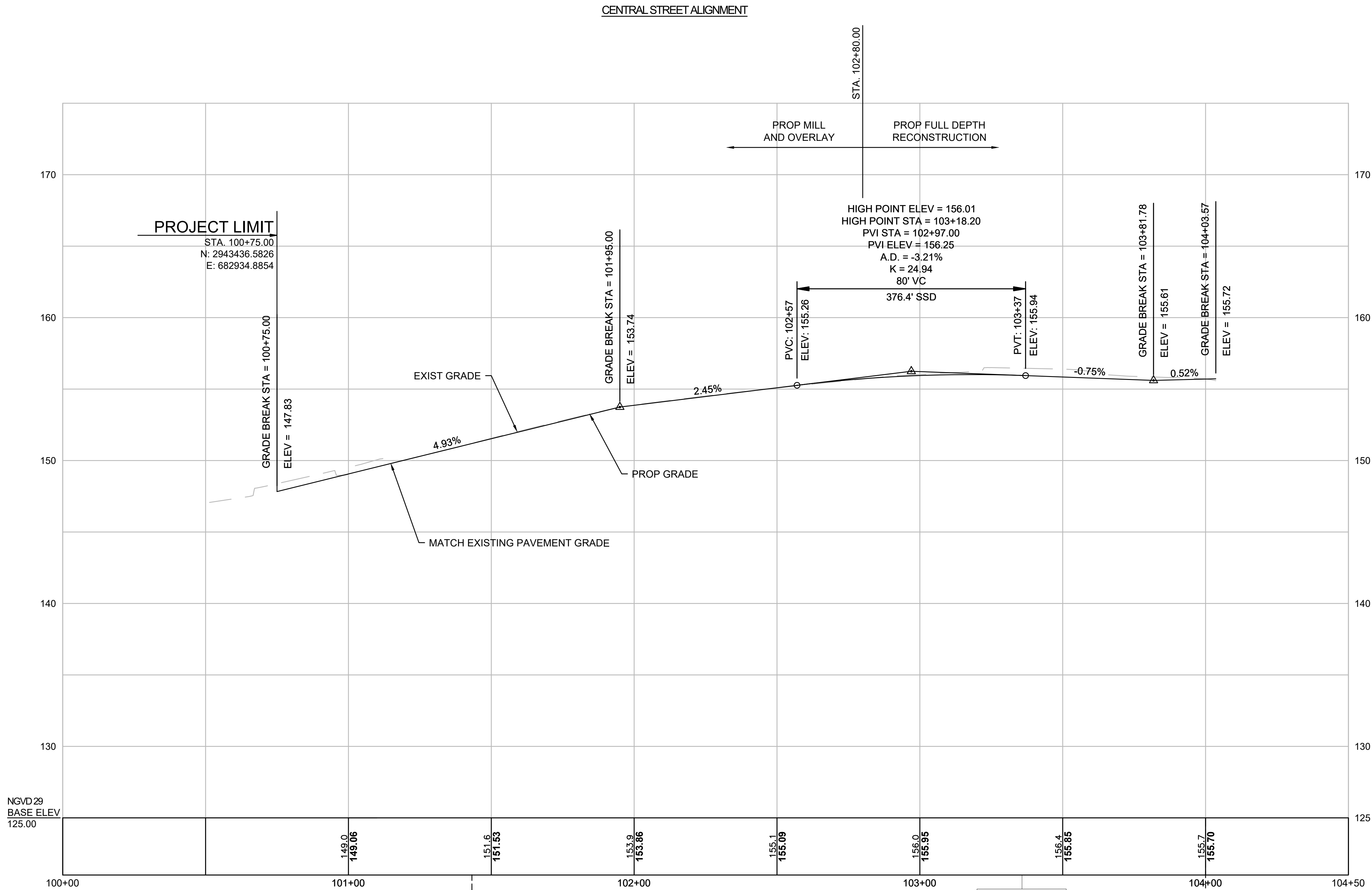
STA. 12+91.85 CONCORD STREET @ =
STA 104+03.58 CENTRAL STREET @



	NO.	DATE	REVISIONS

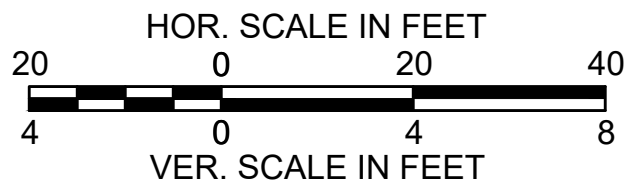
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 14 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

CONTINUED ON
SHEET NO. 14



STA 101+43.19 CENTRAL STREET @
STA. 600+00.00 WATER STREET @

STA 104+03.58 CENTRAL STREET @
STA. 12+91.85 CONCORD STREET @

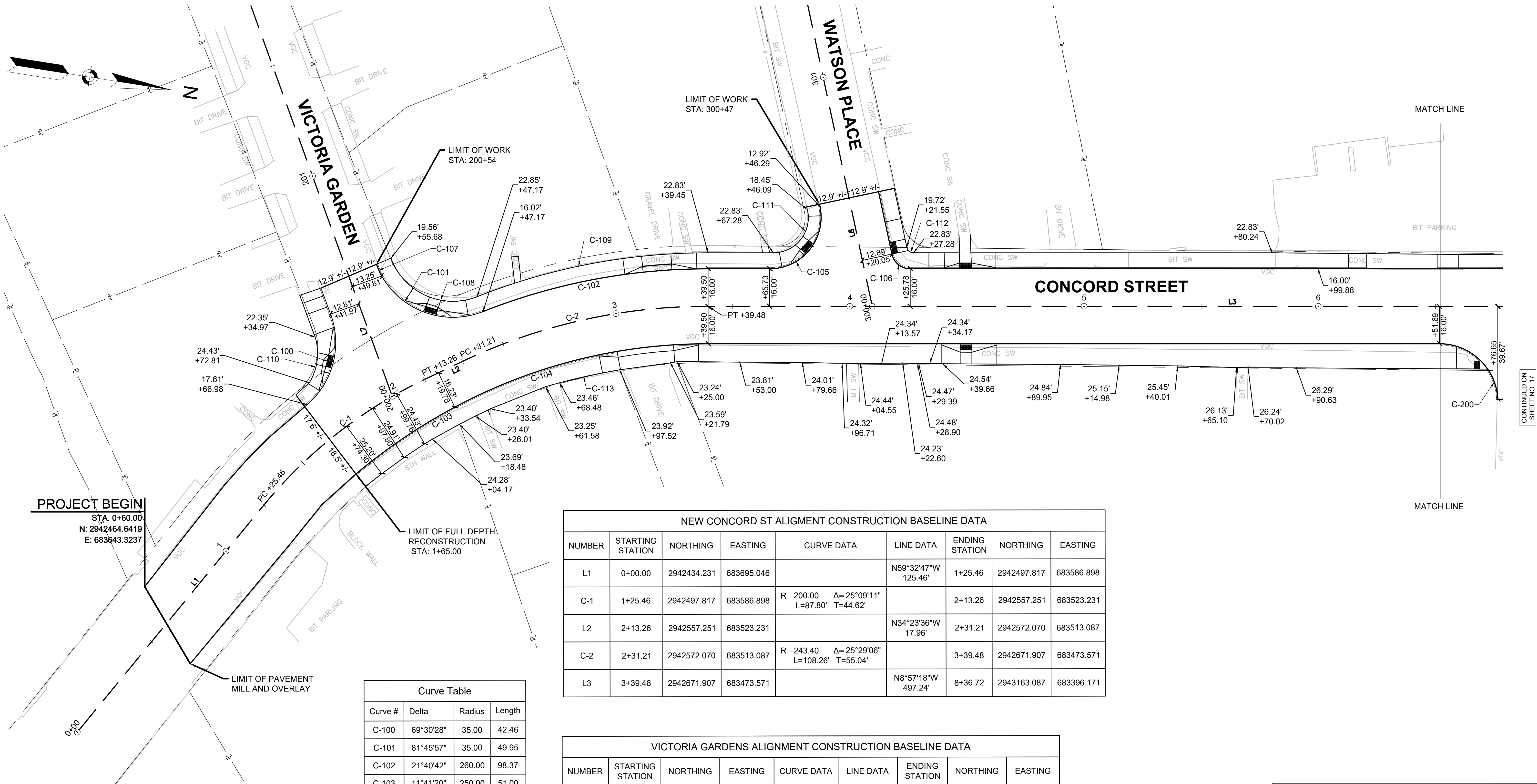


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION PROFILES - 4		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 15 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

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V:\Standard Engineering\Projects\2020\2024\CONC ST Curbs Tie Plans.dwg Plot Date: 6/17/2024 8:55 AM



NEW CONCORD ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	0+00.00	2942434.231	683695.046		N59°32'47"W 125.46'	1+25.46	2942497.817	683586.898
C-1	1+25.46	2942497.817	683586.898	R=200.00' Δ=25°09'11" L=87.80' T=44.62'		2+13.26	2942557.251	683523.231
L2	2+13.26	2942557.251	683523.231		N34°23'36"W 17.96'	2+31.21	2942572.070	683513.087
C-2	2+31.21	2942572.070	683513.087	R=243.40' Δ=25°29'06" L=108.26' T=55.04'		3+39.48	2942671.907	683473.571
L3	3+39.48	2942671.907	683473.571		N8°57'18"W 497.24'	8+36.72	2943163.087	683396.171

VICTORIA GARDENS ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L7	200+00.00	2942544.743	683532.529		S61°08'29"W 209.59'	202+09.59	2942443.587	683348.971

WATSON PL ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	300+00.00	2942741.150	683462.660		S68°57'42"W 238.70'	302+38.70	2942655.459	683239.871

Curve Table			
Curve #	Delta	Radius	Length
C-100	69°30'28"	35.00	42.46
C-101	81°45'57"	35.00	49.95
C-102	21°40'42"	260.00	98.37
C-103	11°41'20"	250.00	51.00
C-104	28°17'51"	228.00	112.61
C-105	101°58'10"	22.00	39.15
C-106	77°52'01"	8.00	10.87
C-107	10°32'02"	30.00	5.52
C-108	91°22'00"	28.17	44.92
C-109	21°39'54"	266.92	100.93
C-110	48°29'09"	23.89	20.22
C-111	103°00'43"	15.00	26.97
C-112	78°42'15"	2.97	4.09
C-113	5°28'48"	274.10	26.22

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CURB TIE PLAN 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

SHEET NO. 16 OF 89

CONTINUED ON
SHEET NO. 16

CONTINUED ON
SHEET NO. 18

Curve Table			
Curve #	Delta	Radius	Length
C-200	86°56'37"	25.00	37.94
C-201	86°50'16"	25.00	37.89
C-202	93°20'47"	5.00	8.15
C-203	84°26'36"	8.00	11.79
C-204	11°54'57"	1034.00	215.04
C-205	5°43'11"	880.00	87.85
C-206	98°32'16"	10.00	17.20
C-207	76°35'04"	15.00	20.05
C-208	6°48'44"	1077.00	128.05
C-209	5°08'58"	250.00	22.47
C-210	3°50'14"	1037.00	69.45
C-211	2°40'59"	244.50	11.45
C-212	2°55'31"	1031.50	52.67
C-213	2°04'18"	2013.13	72.79
C-214	3°19'25"	1028.97	59.69
C-215	3°17'05"	1028.97	58.99
C-216	3°31'19"	1028.97	63.25
C-217	1°13'04"	244.50	5.20
C-218	0°47'12"	1028.97	14.13

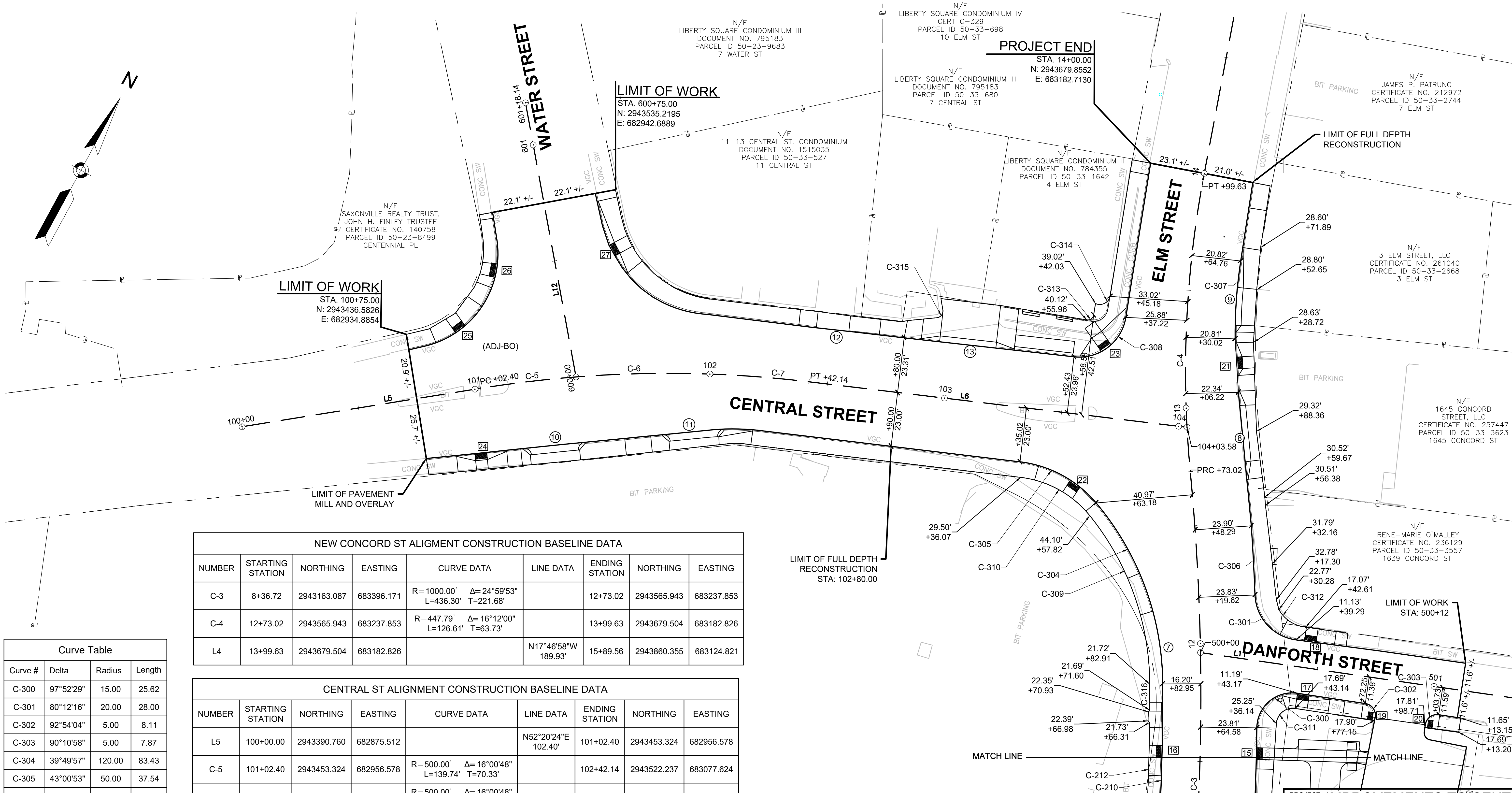
NEW CONCORD ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	3+39.48	2942671.907	683473.571		N8°57'18"W 497.24'	8+36.72	2943163.087	683396.171
C-3	8+36.72	2943163.087	683396.171	R = 1000.00' L=436.30'	Δ= 24°59'53" T=221.68'	12+73.02	2943565.943	683237.853

FULLER STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L9	700+00.00	2943190.294	683391.497		N84°54'53"E 102.40'	701+02.40	2943199.371	683493.493

MECHANIC ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L10	400+00.00	2943342.598	683350.517		N82°29'54"E 189.21'	401+89.21	2943367.301	683538.109

NO.	DATE				
1					
REVISIONS					

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CURB TIE PLAN 2		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 17 OF 89
DATE:	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



Curve Table			
Curve #	Delta	Radius	Length
C-300	97°52'29"	15.00	25.62
C-301	80°12'16"	20.00	28.00
C-302	92°54'04"	5.00	8.11
C-303	90°10'58"	5.00	7.87
C-304	39°49'57"	120.00	83.43
C-305	43°00'53"	50.00	37.54
C-306	1°33'43"	1077.00	29.36
C-307	9°15'53"	205.00	33.15
C-308	87°12'51"	20.00	30.44
C-309	38°38'45"	114.50	77.23
C-310	44°12'05"	44.50	34.33
C-311	94°40'34"	7.00	11.57
C-312	55°17'19"	14.64	14.13
C-313	90°11'57"	2.50	3.94
C-314	99°48'08"	4.51	7.85
C-315	84°24'07"	2.91	4.29
C-316	0°37'00"	1031.50	11.10

NEW CONCORD ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA		LINE DATA	ENDING STATION	EASTING
C-3	8+36.72	2943163.087	683396.171	R=1000.00' Δ=24°59'53" L=436.30' T=221.68'			12+73.02	2943565.943
C-4	12+73.02	2943565.943	683237.853	R=447.79' Δ=16°12'00" L=126.61' T=63.73'			13+99.63	2943679.504
L4	13+99.63	2943679.504	683182.826			N17°46'58"W 189.93'	15+89.56	2943860.355

CENTRAL ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA		LINE DATA	ENDING STATION	EASTING
L5	100+00.00	2943390.760	682875.512			N52°20'24"E 102.40'	101+02.40	2943453.324
C-5	101+02.40	2943453.324	682956.578	R=500.00' Δ=16°00'48" L=139.74' T=70.33'			102+42.14	2943522.237
C-6	101+02.40	2943453.324	682956.578	R=500.00' Δ=16°00'48" L=139.74' T=70.33'			102+42.14	2943522.237
C-7	101+02.40	2943453.324	682956.578	R=500.00' Δ=16°00'48" L=139.74' T=70.33'			102+42.14	2943522.237
L6	102+42.14	2943522.237	683077.624			N68°21'12"E 161.43'	104+03.58	2943581.786

WATER ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA		LINE DATA	ENDING STATION	EASTING
L12	600+00.00	2943476.899	682989.845			N38°57'29"W 118.14'	601+18.14	2943568.765

DANFORTH ST ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA		LINE DATA	ENDING STATION	EASTING
L11	500+00.00	2943500.618	683278.281			N69°43'54"E 422.21'	504+22.21	2943646.878

PROJECT END
STA. 14+00.00
N: 2943679.8552
E: 683182.7130

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CURB TIE PLAN 3

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

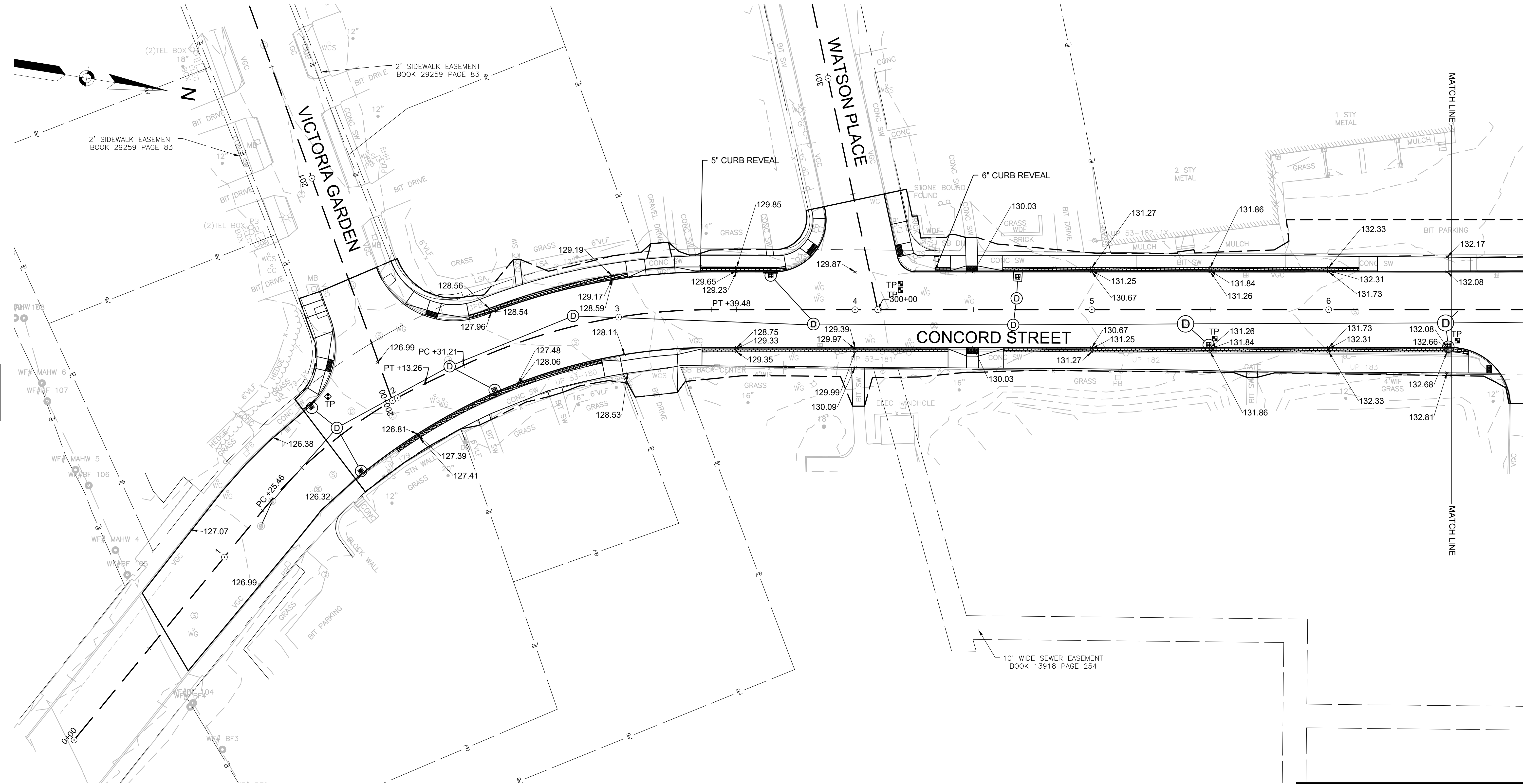
PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034
DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP
SHEET NO. 18 OF 89

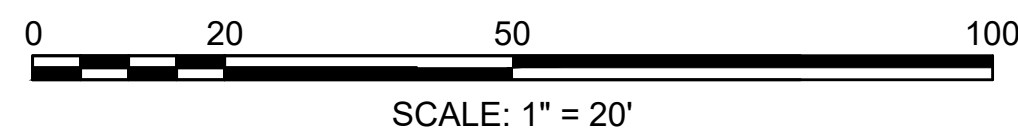
NO.	DATE	REVISIONS
1		

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CONTINUED ON
SHEET NO. 18



CONTINUED ON
SHEET NO. 20



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

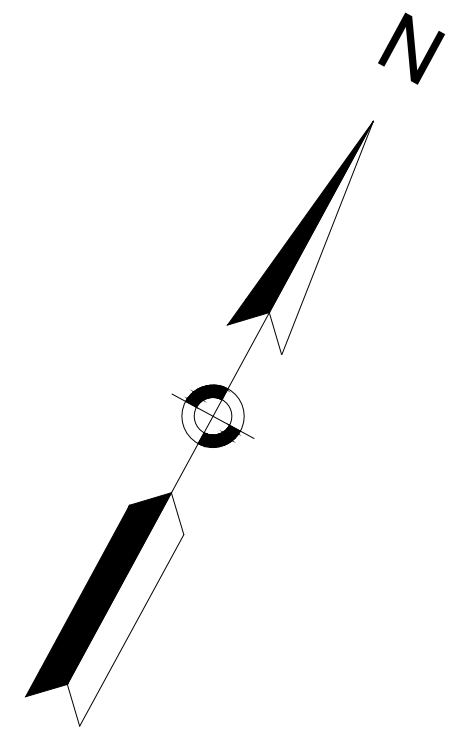
DRAWING TITLE: GRADING PLAN 1

PREPARED FOR:
 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

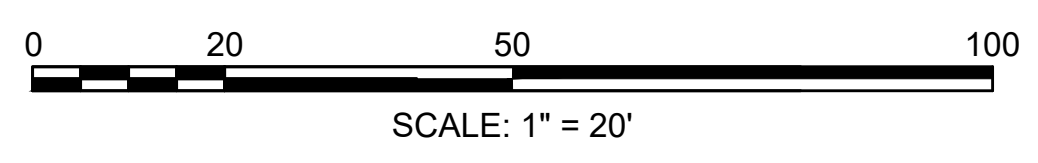
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 19 OF 89
DATE: 6/4/2024	DRAWN BY: CW	
PROJECT NO. 20034	CHECKED BY: JL	

NO.	DATE	REVISIONS
1		



CONTINUED ON
SHEET NO. 20

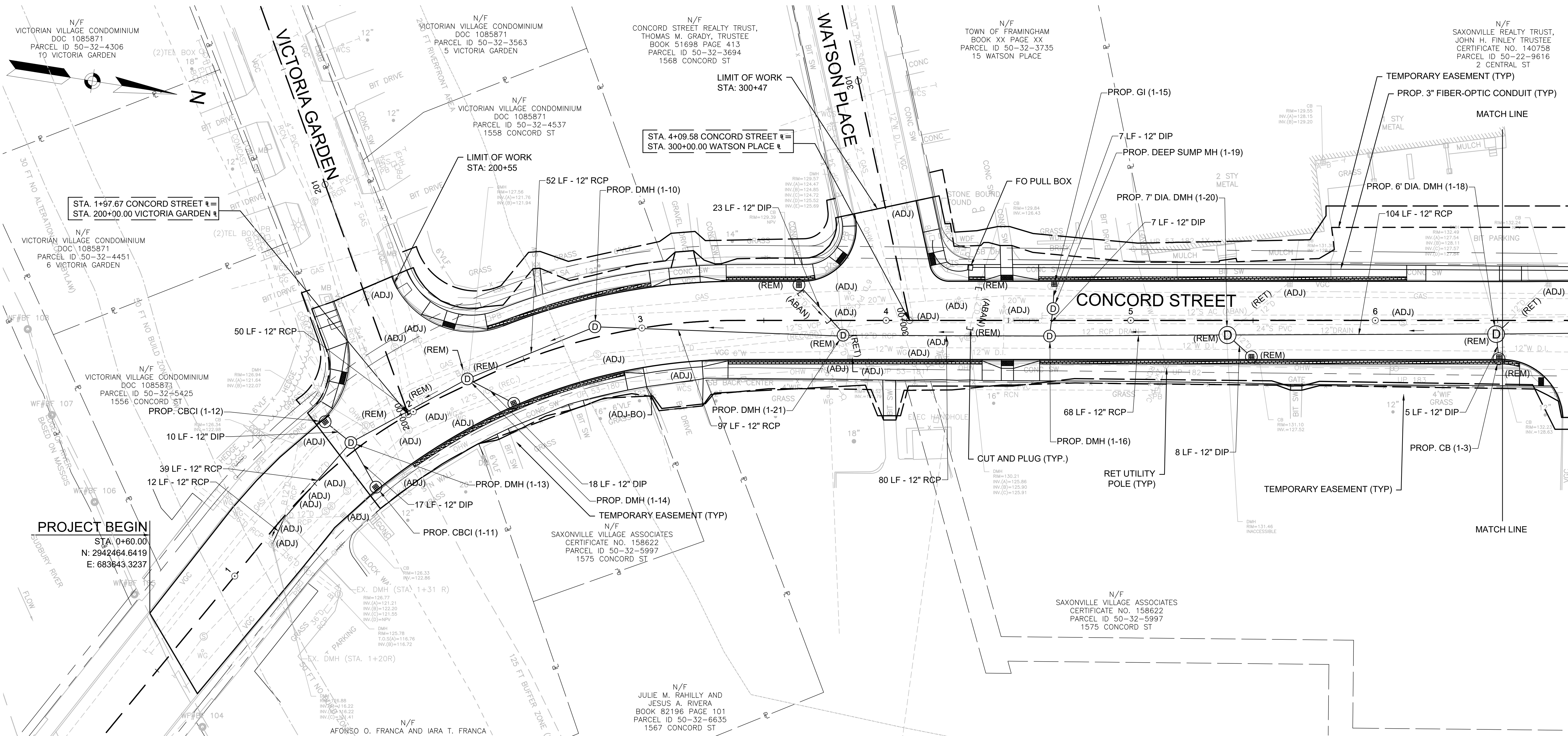
CONTINUED ON
SHEET NO. 22



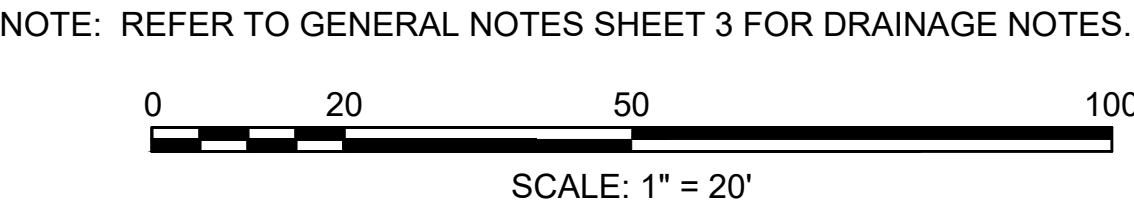
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: GRADING PLAN 3		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 21 OF 89
DATE: 6/4/2024	DRAWN BY: CW	
PROJECT NO. 20034	CHECKED BY: JL	

NO.	DATE	REVISIONS
1		

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DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP. CBCI (1-11)	1+68.75	17.2 RT	126.59		I=123.60' (PROP. DMH (1-13))	
PROP. CBCI (1-12)	1+68.96	16.6 LT	126.60		I=123.70' (PROP. DMH (1-13))	
PROP. DMH (1-13)	1+71.95	3.5 LT	126.88	I=123.60' (PROP. CBCI (1-12)) I=123.40' (PROP. CBCI (1-11)) I=121.70' (PROP. DMH (1-14))	I=121.60' (EX. DMH (STA. 1+31 R))	
PROP. DMH (1-14)	2+25.72	2.2 LT	128.33	I=123.00' (PROP. DMH (1-10)) I=124.00' (PROP. CBCI (1-8))	I=122.90' (PROP. DMH (1-13))	
PROP. CBCI (1-8)	2+39.08	14.9 RT	127.36		I=124.30' (PROP. DMH (1-14))	
PROP. DMH (1-10)	2+81.42	4.3 LT	127.93	I=123.60' (PROP. DMH (1-21))	I=123.50' (PROP. DMH (1-14))	
PROP. CBCI (1-7)	3+64.38	14.4 LT	129.38		I=126.00' (PROP. DMH (1-21))	
PROP. DMH (1-21)	3+82.42	6.1 RT	130.13	I=125.80' (PROP. CBCI (1-7)) I=125.00' (PROP. DMH (1-16))	I=124.47' (PROP. DMH (1-10))	
PROP. DMH (1-16)	4+66.82	6.4 RT	130.44	I=127.10' (PROP. DEEP SUMP MH (1-19)) I=126.10' (PROP. 7' DIA. DMH (1-20))	I=126.00' (PROP. DMH (1-21))	
PROP. DEEP SUMP MH (1-19)	4+68.24	4.8 LT	130.49	I=127.30' (PROP. GI (1-15))	I=127.20' (PROP. DMH (1-16))	DEEP SUMP
PROP. 7' DIA. DMH (1-20)	5+39.57	6.0 RT	131.35	I=126.75' (PROP. 6' DIA. DMH (1-18)) I=128.00' (PROP. CB (1-4))	I=126.65' (PROP. DMH (1-16))	7' DIA.
PROP. CB (1-4)	5+49.33	14.9 RT	131.28		I=128.20' (PROP. 7' DIA. DMH (1-20))	
PROP. CB (1-3)	6+50.54	15.6 RT	132.10		I=129.64' (PROP. 6' DIA. DMH (1-18))	



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: DRAINAGE AND UTILITY PLAN 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

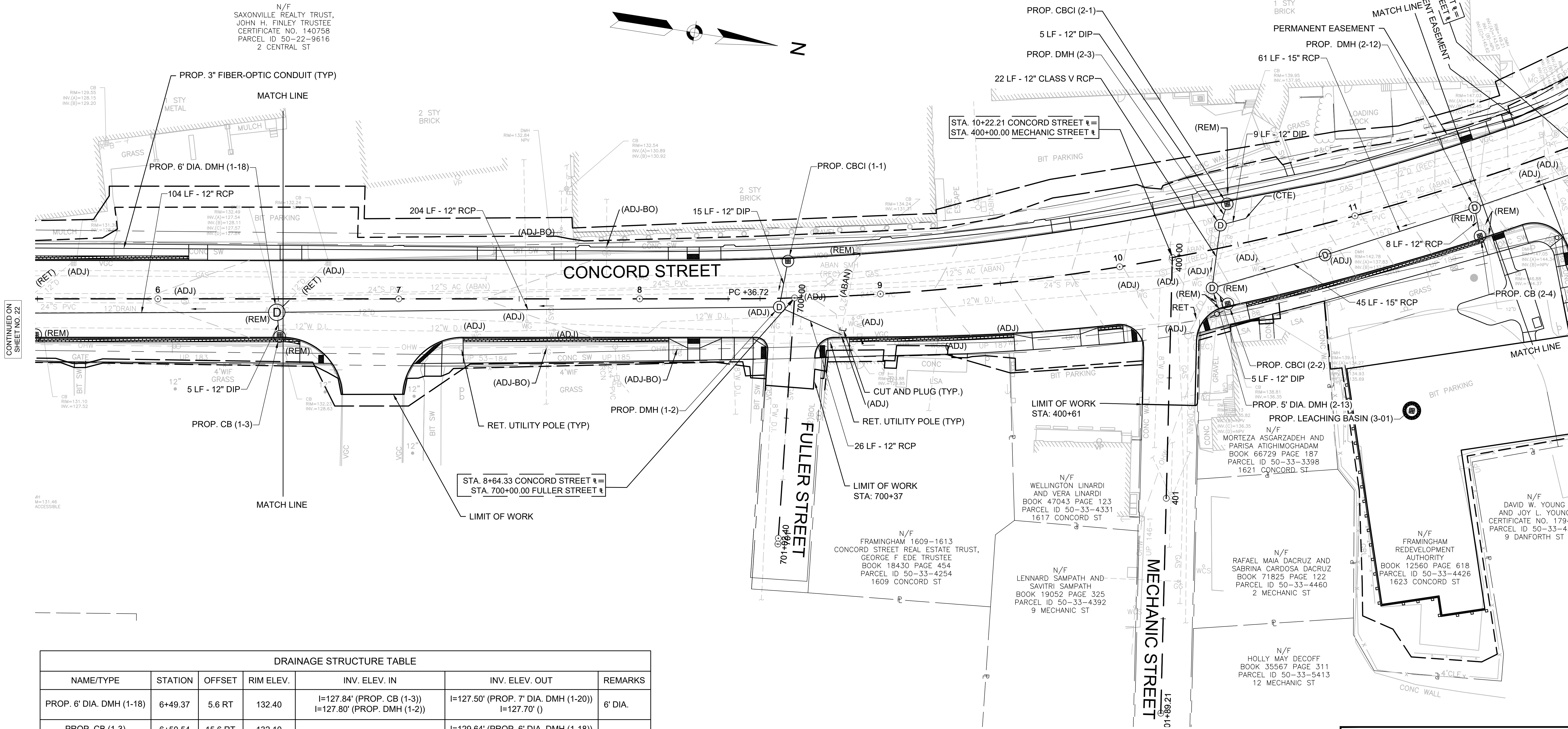
DESIGNED BY: SS/HG

DRAWN BY: HG

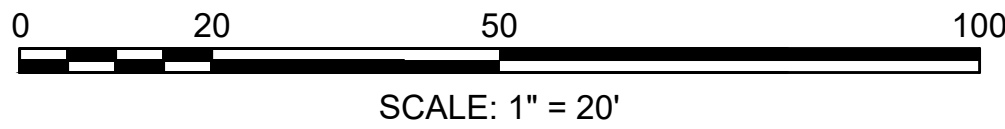
CHECKED BY: SS

SHEET NO. 22 OF 89

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DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP. 6' DIA. DMH (1-18)	6+49.37	5.6 RT	132.40	I=127.84' (PROP. CB (1-3)) I=127.80' (PROP. DMH (1-2))	I=127.50' (PROP. 7' DIA. DMH (1-20)) I=127.70' ()	6' DIA.
PROP. CB (1-3)	6+50.54	15.6 RT	132.10		I=129.64' (PROP. 6' DIA. DMH (1-18))	
PROP. DMH (1-2)	8+57.89	3.6 RT	134.58	I=130.25' (PROP. CBI (1-1)) I=129.55' (EX. CB (STA. 8+81 R))	I=129.40' (PROP. 6' DIA. DMH (1-18))	
PROP. CBI (1-1)	8+61.97	15.4 LT	134.83		I=130.50' (PROP. DMH (1-2))	
PROP. 5' DIA. DMH (2-13)	10+35.85	15.6 RT	140.33	I=135.57' (PROP. DMH (2-3)) I=136.00' (PROP. CBI (2-2)) I=134.93' (EX. DMH (STA. 10+82 R))	I=134.27' (EXIST 15' DRAIN)	5' DIA.
PROP. CBI (2-2)	10+40.87	23.3 RT	140.53		I=136.20' (PROP. 5' DIA. DMH (2-13))	
PROP. DMH (2-3)	10+44.52	9.3 LT	141.33	I=137.60' (PROP. CBI (2-1)) I=136.03' ()	I=136.00' (PROP. 5' DIA. DMH (2-13))	
PROP. CBI (2-1)	10+49.17	17.3 LT	141.43		I=137.70' (PROP. DMH (2-3))	
PROP. CB (2-4)	11+46.87	22.8 RT	146.32		I=142.90' (PROP. DMH (2-12))	
PROP. DMH (2-12)	11+48.36	10.8 RT	147.03	I=142.80' (PROP. CB (2-4)) I=142.00' (PROP. DMH (2-14))	I=141.43' (EX. DMH (STA. 10+82 R))	



PROJECT: **IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET**

DESIGN SUBMISSION: **85% DESIGN**

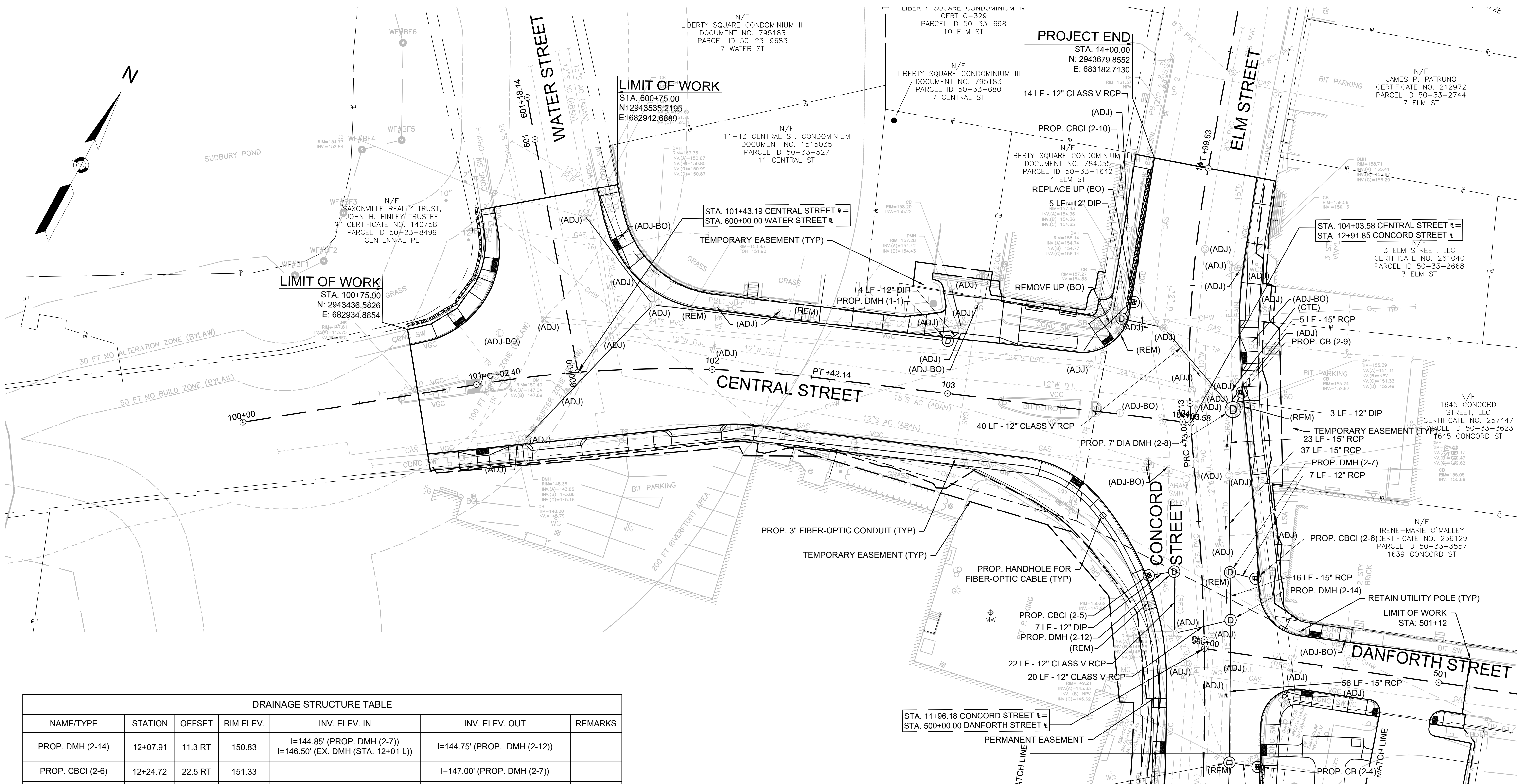
DRAWING TITLE: **DRAINAGE AND UTILITY PLAN 2**

PREPARED FOR:
 **CITY OF FRAMINGHAM**
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

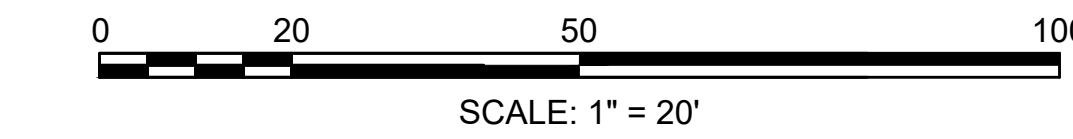
PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED	DESIGNED BY: SS/HG	SHEET NO. 23 OF 89
DATE: 6/4/2024	DRAWN BY: HG	
PROJECT NO. 20034	CHECKED BY: SS	

NO.	DATE	REVISIONS
1		



DRAINAGE STRUCTURE TABLE						
NAME/TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP. DMH (2-14)	12+07.91	11.3 RT	150.83	I=144.85' (PROP. DMH (2-7)) I=146.50' (EX. DMH (STA. 12+01 L))	I=144.75' (PROP. DMH (2-12))	
PROP. CBCI (2-6)	12+24.72	22.5 RT	151.33		I=147.00' (PROP. DMH (2-7))	
PROP. DMH (2-7)	12+27.87	11.9 RT	151.60	I=146.90' (PROP. CBCI (2-6)) I=148.40' (EX. DMH (STA. 12+67 R))	I=146.00' (PROP. DMH (2-14))	
PROP. CBCI (2-5)	12+28.29	22.5 LT	152.83		I=148.50' (PROP. DMH (2-12))	
PROP. DMH (2-12)	12+29.37	11.7 LT	151.67	I=148.30' (PROP. CBCI (2-5))	I=147.00' (EX. DMH (STA. 12+01 L))	
PROP. 7' DIA DMH (2-8)	12+96.67	18.0 RT	156.60	I=152.50' (PROP. CB (2-9)) I=152.60' (EX. DMH (STA. 13+30 L)) I=151.33' ()	I=151.00' (EX. DMH (STA. 12+67 R))	7' DIA.
PROP. CB (2-9)	13+04.12	22.1 RT	156.93		I=152.60' (PROP. 7' DIA DMH (2-8))	
PROP. CBCI (2-10)	13+41.54	24.3 LT	158.32		I=155.20' (EX. DMH (STA. 13+33 L))	
PROP. DMH (1-1)	102+97.45	22.1 LT	158.23	I=153.90' (EX. DMH (STA. 103+03 L))	I=153.60' (EX. DMH (STA. 101+75 L))	



*NOTE: UTILITY POLE AT STA. 13+31.50 LT ELEVATION TO BE 6" LOWER THAN EXISTING. COORDINATION WITH UTILITY COMPANIES REQUIRED.

CONTINUED ON SHEET NO. 23

PROJECT: **IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET**

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: **DRAINAGE AND UTILITY PLAN 3**

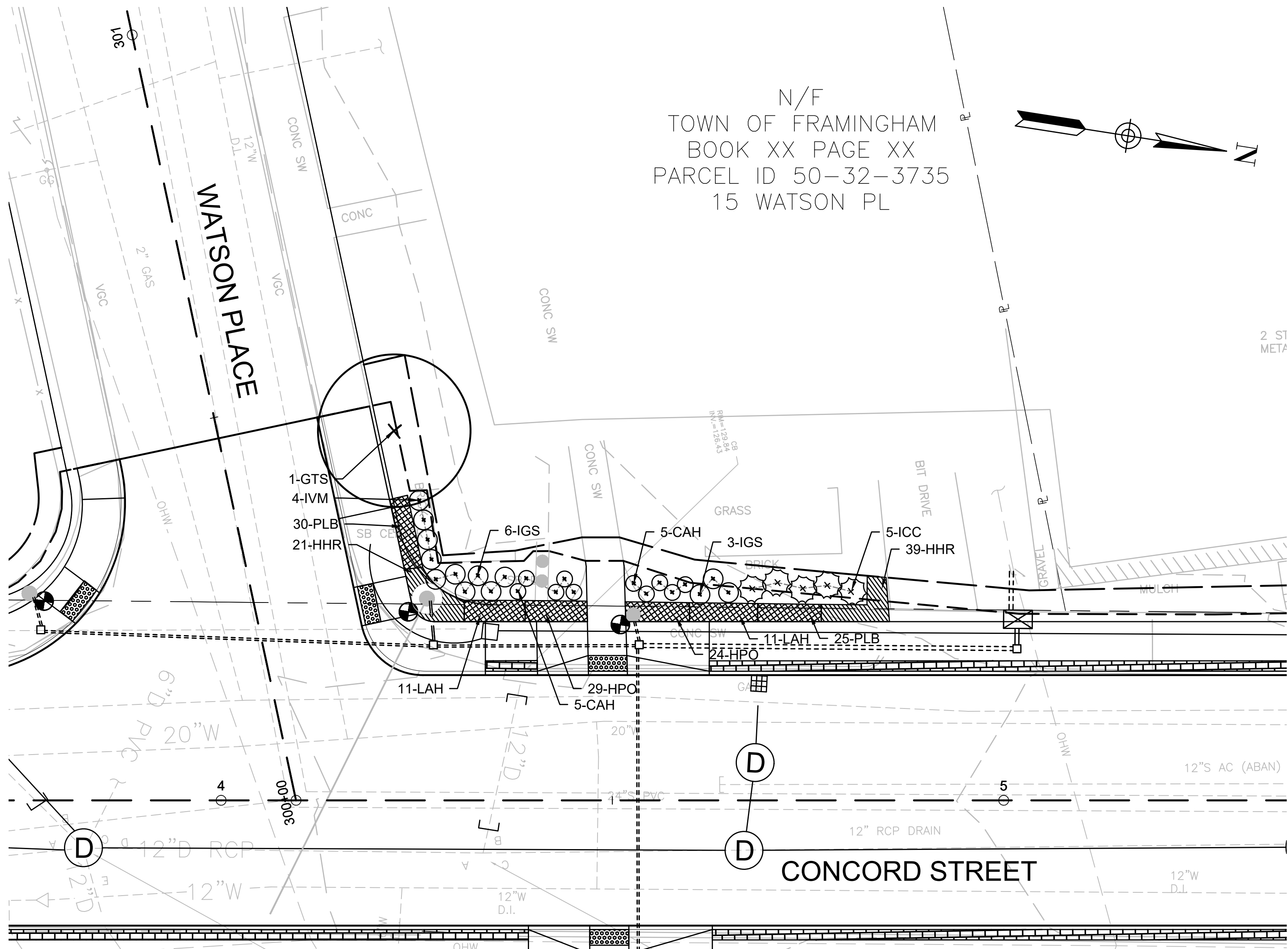
PREPARED FOR:  **CITY OF FRAMINGHAM**
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

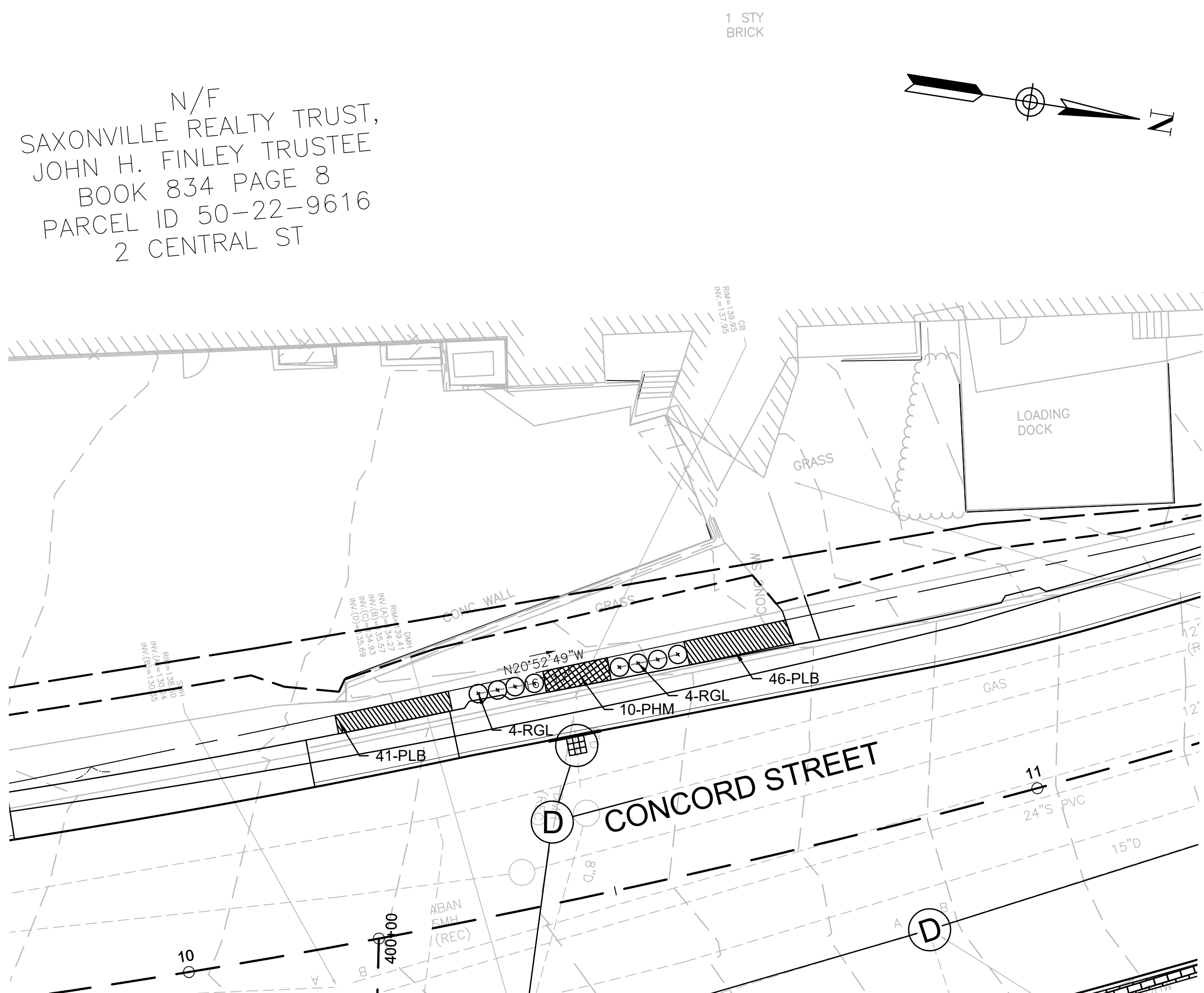
SCALE: AS NOTED	DESIGNED BY: HG/SS	SHEET NO. 24 OF 89
DATE: 6/4/2024	DRAWN BY: HG	
PROJECT NO. 20034	CHECKED BY: SS	

NO.	DATE	REVISIONS
1		

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1 LANDSCAPE PLAN 1- CORNER CONCORD STREET AND WATSON PLACE STREET
SCALE: 1"=10'



2 LANDSCAPE PLAN 2 - CONCORD STREET
SCALE: 1"=10'

PLANT LIST - SHEET 1						
KEY	DECIDUOUS TREES	COMMON NAME	QTY	SIZE	ROOT	REMARKS/SPACING
GTS	GLEDITSIA TRICANTHOS SHADEMASTER	SHADEMASTER HONEYLOCUST	1	2-2.5" CAL	B&B	AS SHOWN
DECIDUOUS SHRUBS						
CAH	CLETHRA ALNIFOLIA 'CRYSTALINA'	SUGARTINA SUMMERSWEET	10	18-24" SPREAD	#3 CONTAINER	18" O.C.
IGS	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	9	18-24" SPREAD	#3 CONTAINER	2' O.C.
IVM	ITEA VIRGINIANA 'MERLOT'	MERLOT VIRGINIA SWEETSPIRE	4	2-3' HT	#3 CONTAINER	30" O.C.
RGL	RHUS AROMATICA 'GRO LOW'	GROW LOW FRAGRANT SUMAC	8	18-24" SPREAD	#3 CONTAINER	2.5' OC
EVERGREEN SHRUBS						
ICC	ILEX CRENATA 'SOFT TOUCH'	SOFT TOUCH JAPANESE HOLLY	5	18-24" SPREAD	#5 CONTAINER	24" O.C.
PERENNIALS AND ORNAMENTAL GRASSES						
HHR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	60	#1 CONTAINER	#1 CONTAINER	10" O.C.
HPO	HEMEROCALLIS 'PURPLE DE ORO'	PURPLE DE ORO DAYLILY	53	#1 CONTAINER	#1 CONTAINER	10" O.C.
LAH	LAVANDULA ANGUSTIFOLIA 'HICOTE'	HIDCOTE LAVENDER	22	#1 CONTAINER	#1 CONTAINER	18" O.C.
PLB	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	142	#1 CONTAINER	#1 CONTAINER	10" O.C.
PHM	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCH GRASS	10	#1 CONTAINER	#1 CONTAINER	18" O.C.

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

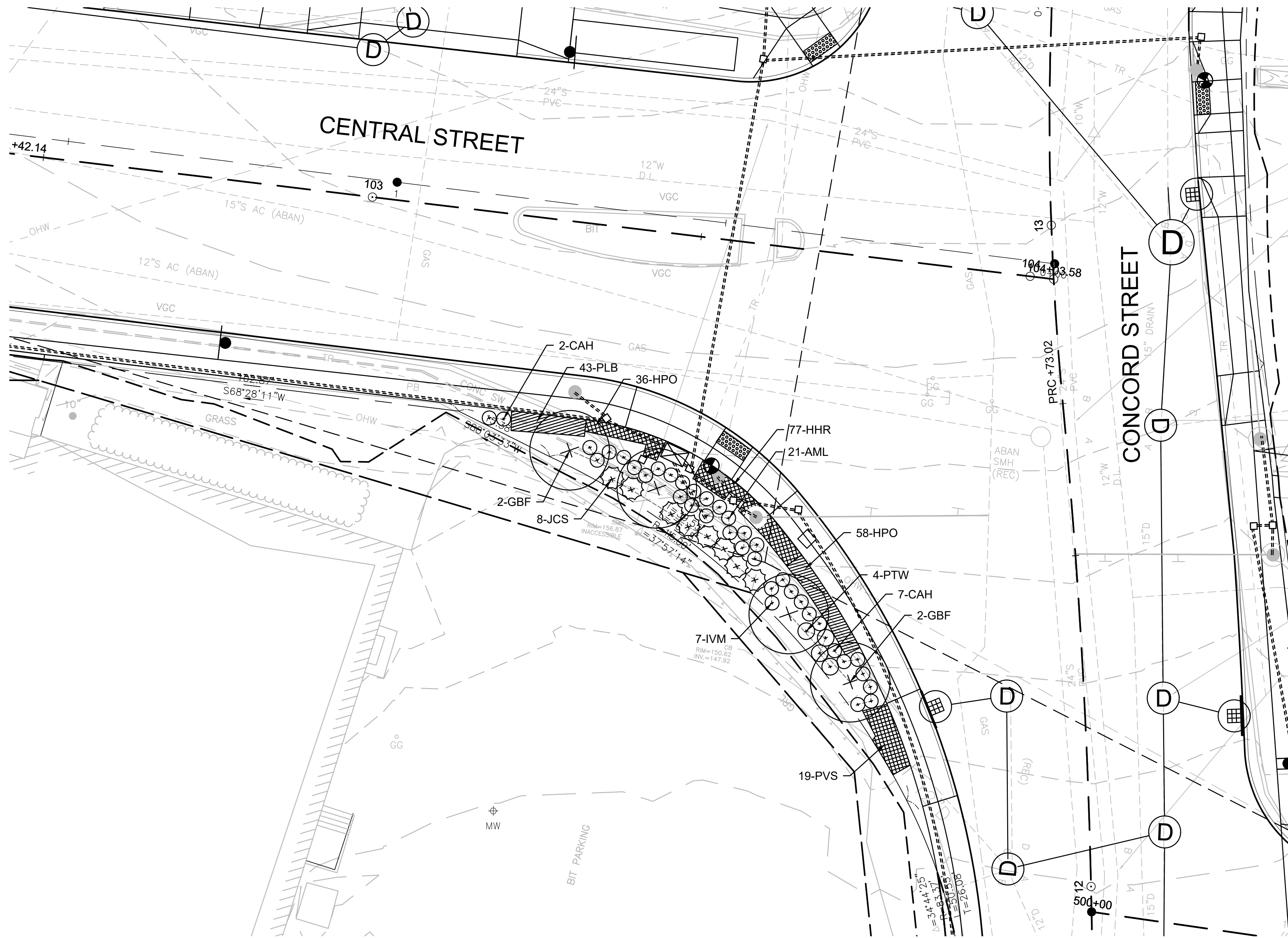
DRAWING TITLE: LANDSCAPE PLAN 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034
DESIGNED BY: JL
DRAWN BY: YLZ/MPC
CHECKED BY: TB
SHEET NO. 25 OF 89

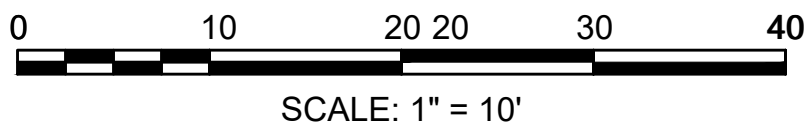
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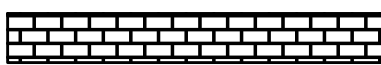
3 LANDSCAPE PLAN 3 - CORNER CONCORD STREET AND CENTRAL STREET
SCALE: 1"=10'

PLANT LIST - SHEET 2

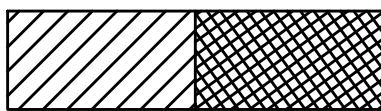
KEY	DECIDUOUS TREES	COMMON NAME	QTY	SIZE	ROOT	REMARKS/SPACING
GBF	GINKGO BILOBA 'FASTIGIATA' GOLD SPIRE	GOLD SPIRE GINKGO	4	2-2.5" CAL	B&B	AS SHOWN
DECIDUOUS SHRUBS						
AML	ARONIA MELANOCARPA 'LOWSCAPE MOUND'	LOWSCAPE MOUND CHOKEBERRY	21	18-24" SPREAD	#3 CONTAINER	18" O.C.
CAH	CLETHRA ALNIFOLIA 'CRYSTALINA'	SUGARTINA SUMMERSWEET	9	18-24" SPREAD	#3 CONTAINER	2' O.C.
IVM	ITEA VIRGINIANA 'MERLOT'	MERLOT VIRGINIA SWEETSPIRE	7	2-3' HT	#3 CONTAINER	30" O.C.
PTW	PHYSOCARPUS OPULIFOLIUS 'TINY WINE'	TINY WINE DWARF NINEBARK	4	2-3' HT	#3 CONTAINER	2.5' O.C.
EVERGREEN SHRUBS						
JCS	JUNIPERUS CHINENSIS 'SEA GREEN'	SEA GREEN JUNIPER	8	2.5-3' SPREAD	#5 CONTAINER	3' O.C.
PERENNIALS AND ORNAMENTAL GRASSES						
HHR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	77	#1 CONTAINER	#1 CONTAINER	10" O.C.
HPO	HEMEROCALLIS 'PURPLE DE ORO'	PURPLE DE ORO DAYLILY	94	#1 CONTAINER	#1 CONTAINER	10" O.C.
PLB	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	43	#1 CONTAINER	#1 CONTAINER	10" O.C.
PVS	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	19	#1 CONTAINER	#1 CONTAINER	18" O.C.



KEY



BRICK EDGE



PERENNIALS/ORNAMENTAL GRASSES



LOAM AND LAWN SEED MIX



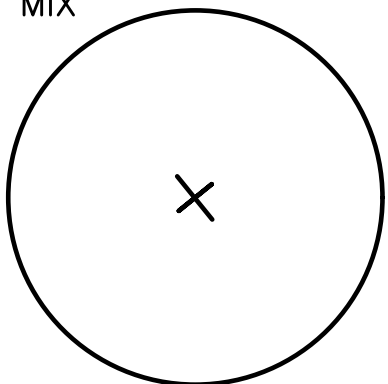
EVERGREEN SHRUB



DECIDUOUS SHRUB



EVERGREEN TREE



DECIDUOUS TREE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

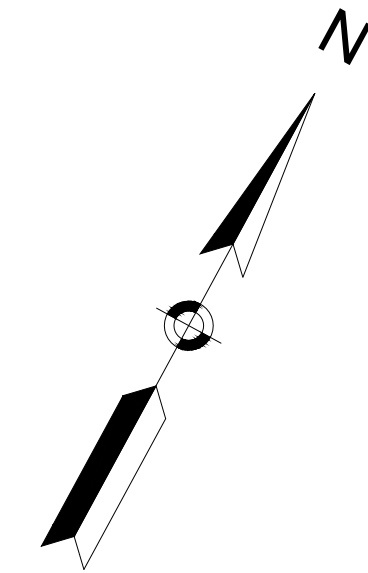
DESIGN SUBMISSION: 85% DESIGN

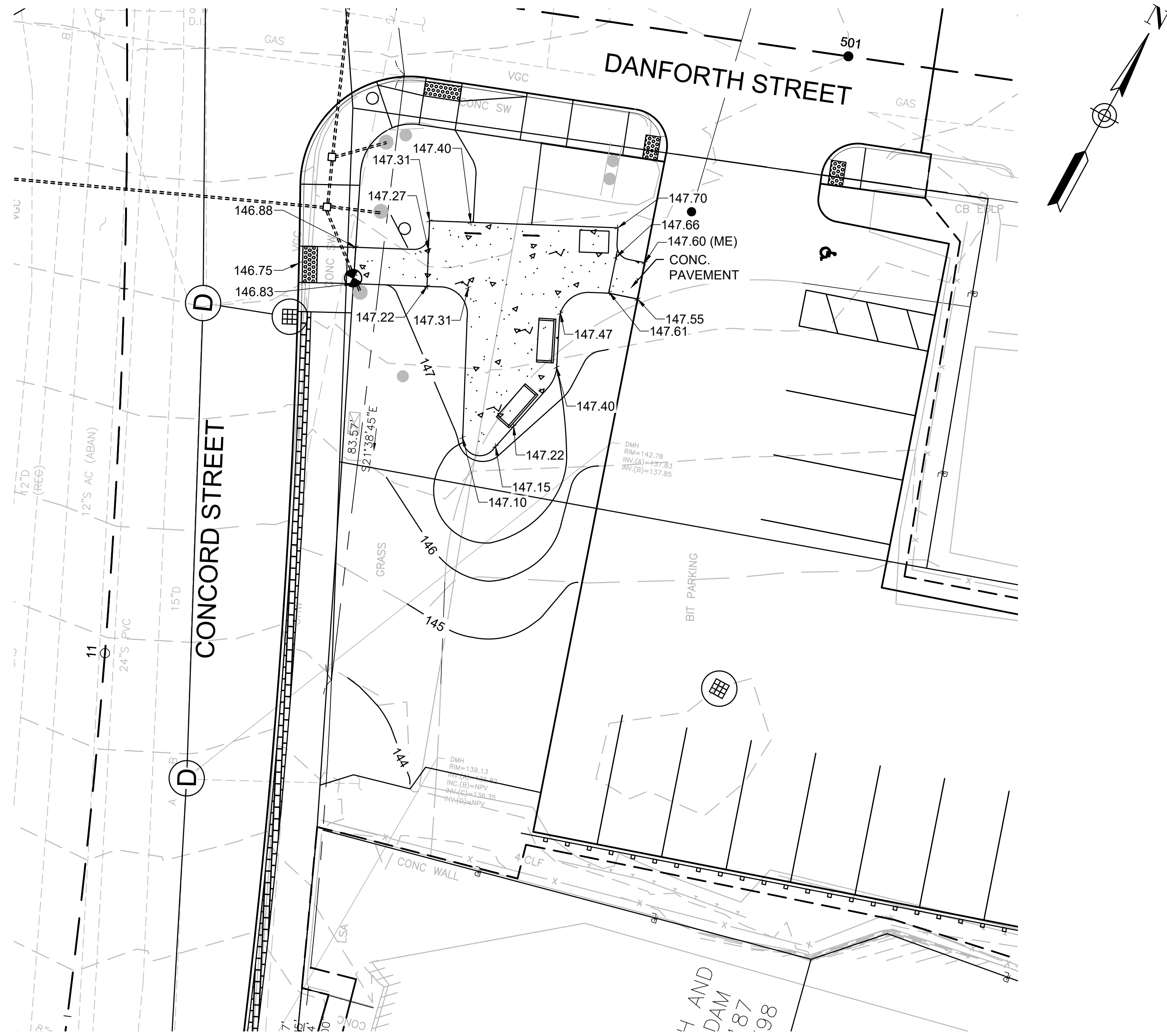
DRAWING TITLE: LANDSCAPE PLAN 2

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

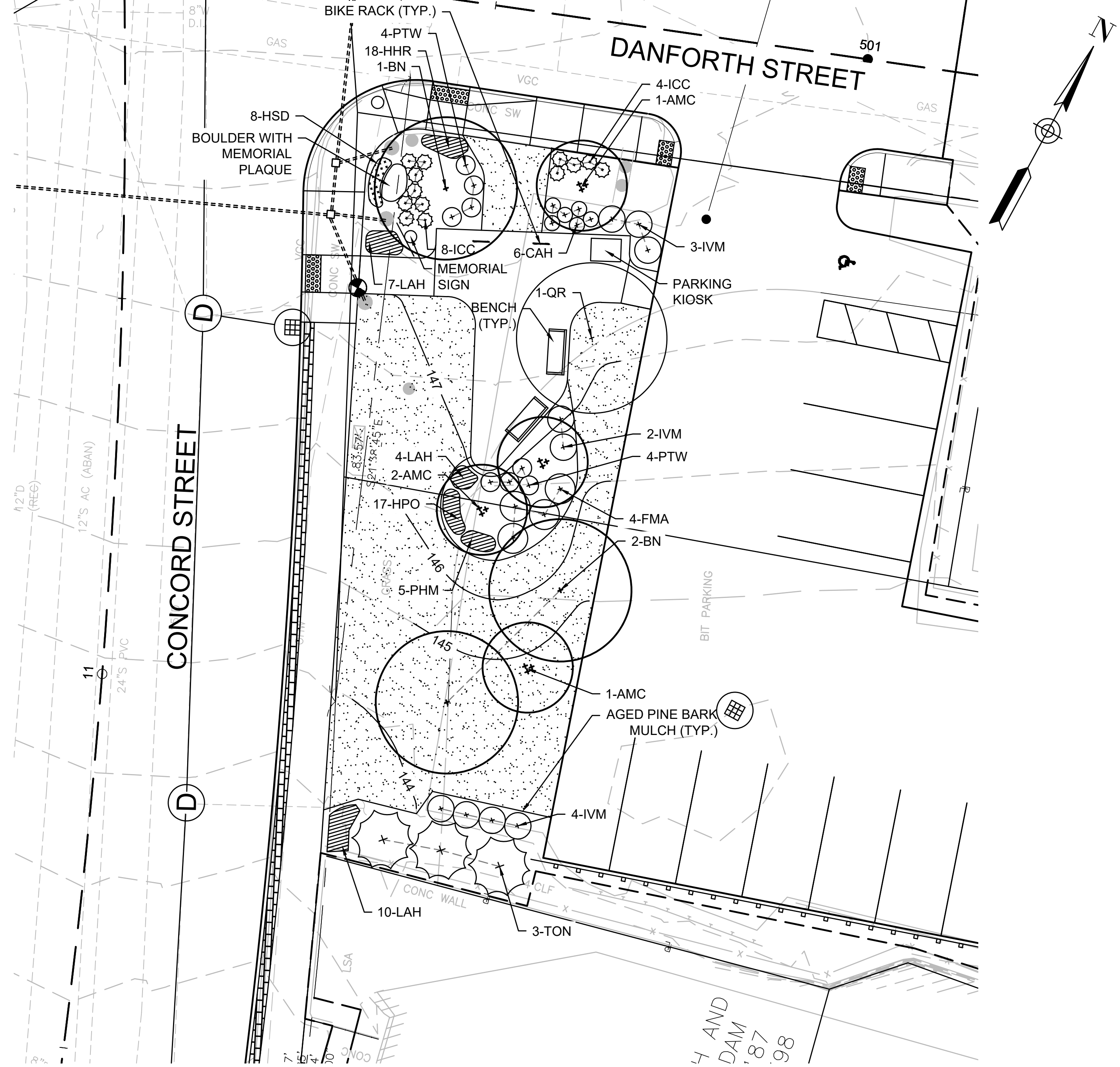
PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034
DESIGNED BY: JL
DRAWN BY: YLZ/MPC
CHECKED BY: TB
SHEET NO. 26 OF 89





4 LAYOUT AND GRADING PLAN - CORNER CONCORD STREET AND DANFORTH STREET
SCALE: 1"=10'



5 MATERIALS AND LANDSCAPE PLAN 4 - CORNER CONCORD STREET AND DANFORTH STREET
SCALE: 1"=10'

BRICK EDGE

PERENNIALS/ORNAMENTAL GRASSES

LOAM AND LAWN SEED MIX

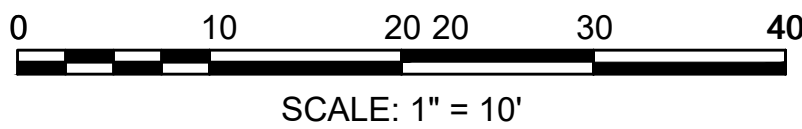
EVERGREEN SHRUB

DECIDUOUS SHRUB

EVERGREEN TREE

DECIDUOUS TREE

PLANT LIST - SHEET 3						
KEY	DECIDUOUS TREES	COMMON NAME	QTY	SIZE	ROOT	REMARKS/SPACING
AMC	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	4	5-6' HT MULTI-STEMMED	B&B	AS SHOWN
BN	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH	3	2-2.5" CAL	B&B	AS SHOWN
QR	QUERCUS RUBRA	NORTHERN RED OAK	1	2-2.5" CAL	B&B	AS SHOWN
EVERGREEN TREES						
TON	THUJA OCCIDENTALIS 'NIGRA'	DARK AMERICAN ARBORVITAE	3	6-7'	B&B	AS SHOWN
DECIDUOUS SHRUBS						
CAH	CLETHRA ALNIFOLIA 'CRYSTALINA'	SUGARTINA SUMMERSWEET	6	18-24" SPREAD	#3 CONTAINER	2' O.C.
FMA	FOTHERGILLA 'MOUNT AIRY'	MOUNT AIRY FOTHERGILLA	4	3-4' HT	#7 CONTAINER	4' O.C.
IVM	ITEA VIRGINIANA 'MERLOT'	MERLOT VIRGINIA SWEETSPIRE	9	2-3' HT	#3 CONTAINER	30" O.C.
PTW	PHYSOCARPUS OPULIFOLIUS 'TINY WINE'	TINY WINE DWARF NINEBARK	8	2-3' HT	#3 CONTAINER	2.5' O.C.
EVERGREEN SHRUBS						
ICC	ILEX CRENATA 'SOFT TOUCH'	SOFT TOUCH COMPACT JAPANESE HOLLY	12	18-24" SPREAD	#5 CONTAINER	24" O.C.
PERENNIALS AND ORNAMENTAL GRASSES						
HHR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	18	#1 CONTAINER	#1 CONTAINER	10" O.C.
HPO	HEMEROCALLIS 'PURPLE DE ORO'	PURPLE DE ORO DAYLILY	17	#1 CONTAINER	#1 CONTAINER	10" O.C.
HSD	HEMEROCALLIS 'STELLA D'ORO'	STELLA D'ORO DAYLILY	8	#1 CONTAINER	#1 CONTAINER	15" O.C.
LAH	LAVANDULA ANGUSTIFOLIA 'HICOTE'	HIDCOTE LAVENDER	21	#1 CONTAINER	#1 CONTAINER	18" O.C.
PHM	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCH GRASS	5	#1 CONTAINER	#1 CONTAINER	18" O.C.



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LANDSCAPE PLAN 3

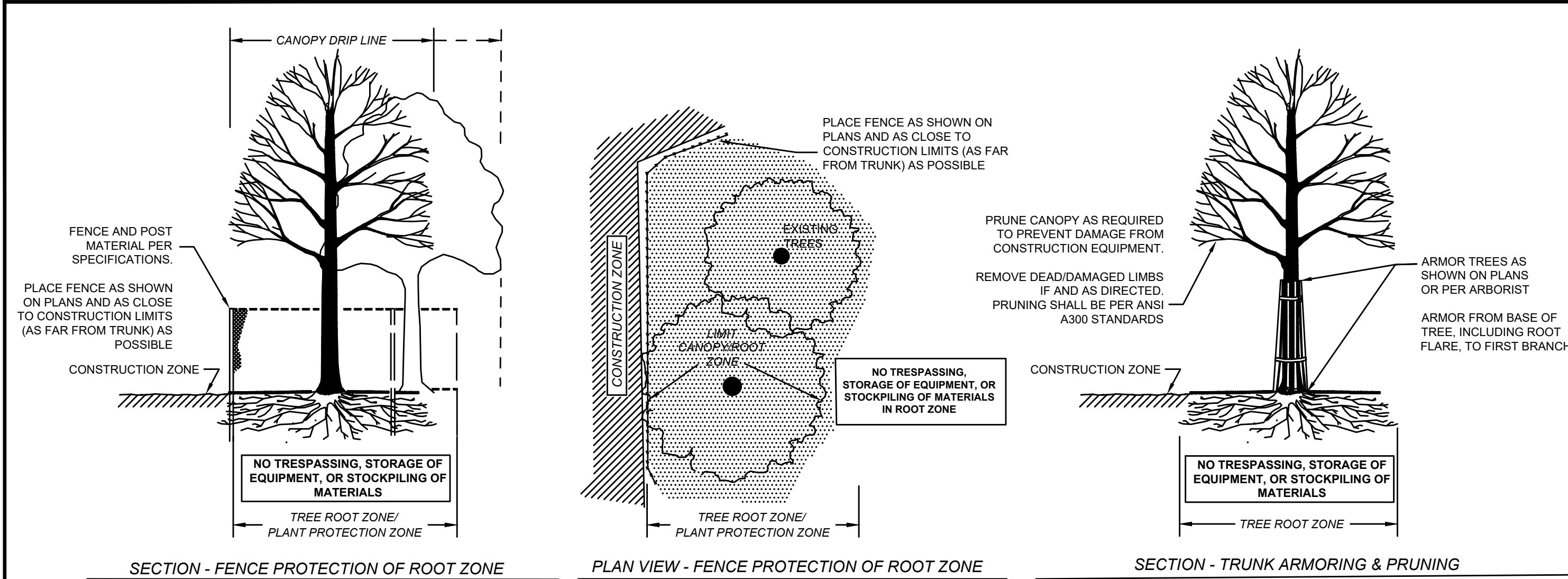
PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

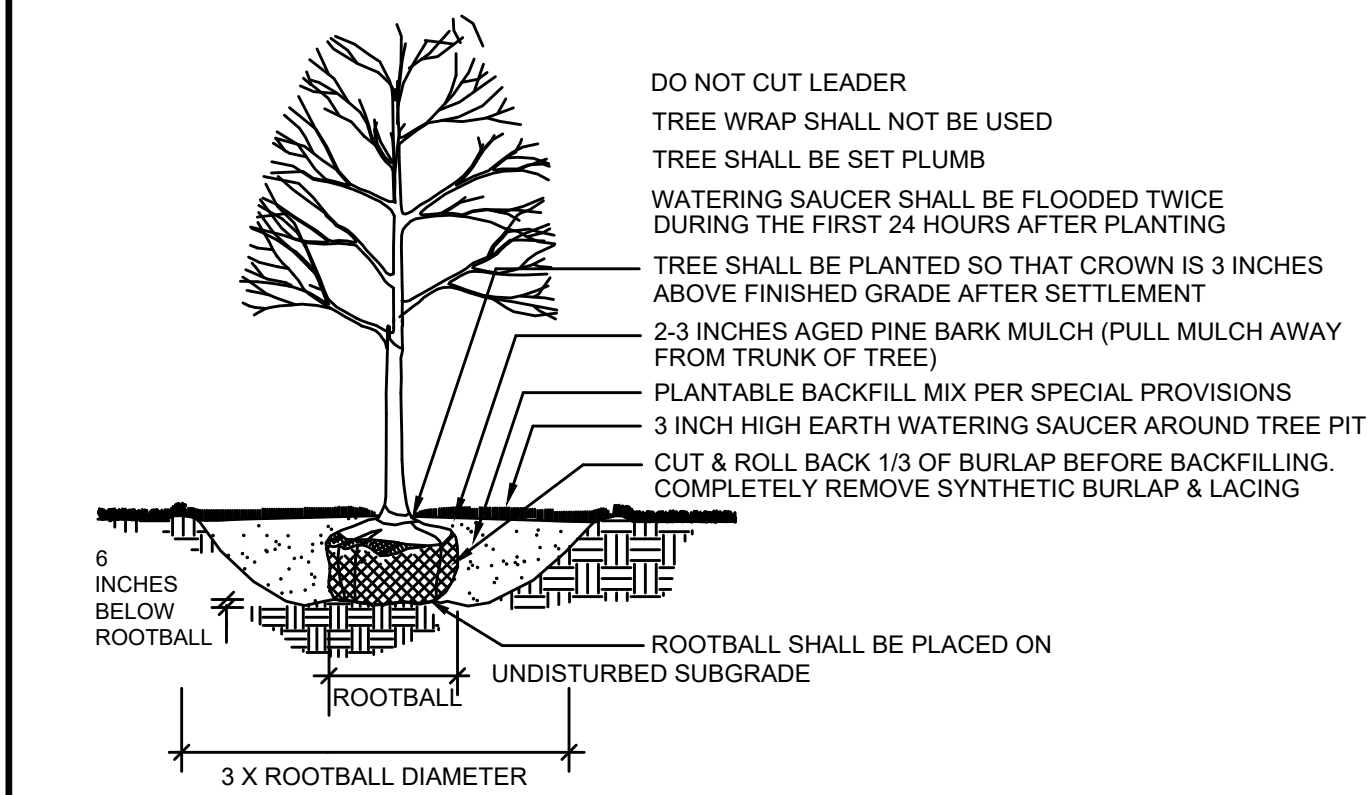
DESIGNED BY: JL
DRAWN BY: YLZ/MPC
CHECKED BY: TB

SHEET NO.
27 OF 89



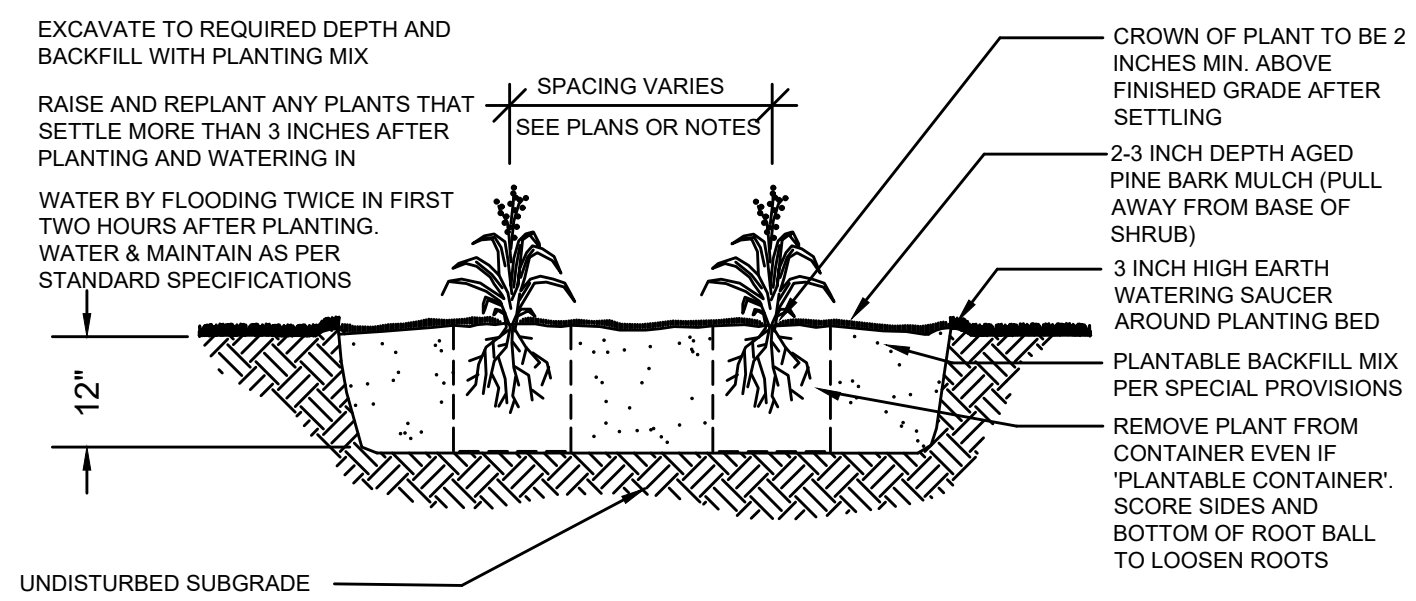
1 TREE PROTECTION DETAILS

NOT TO SCALE



4 TREE PLANTING

NOT TO SCALE

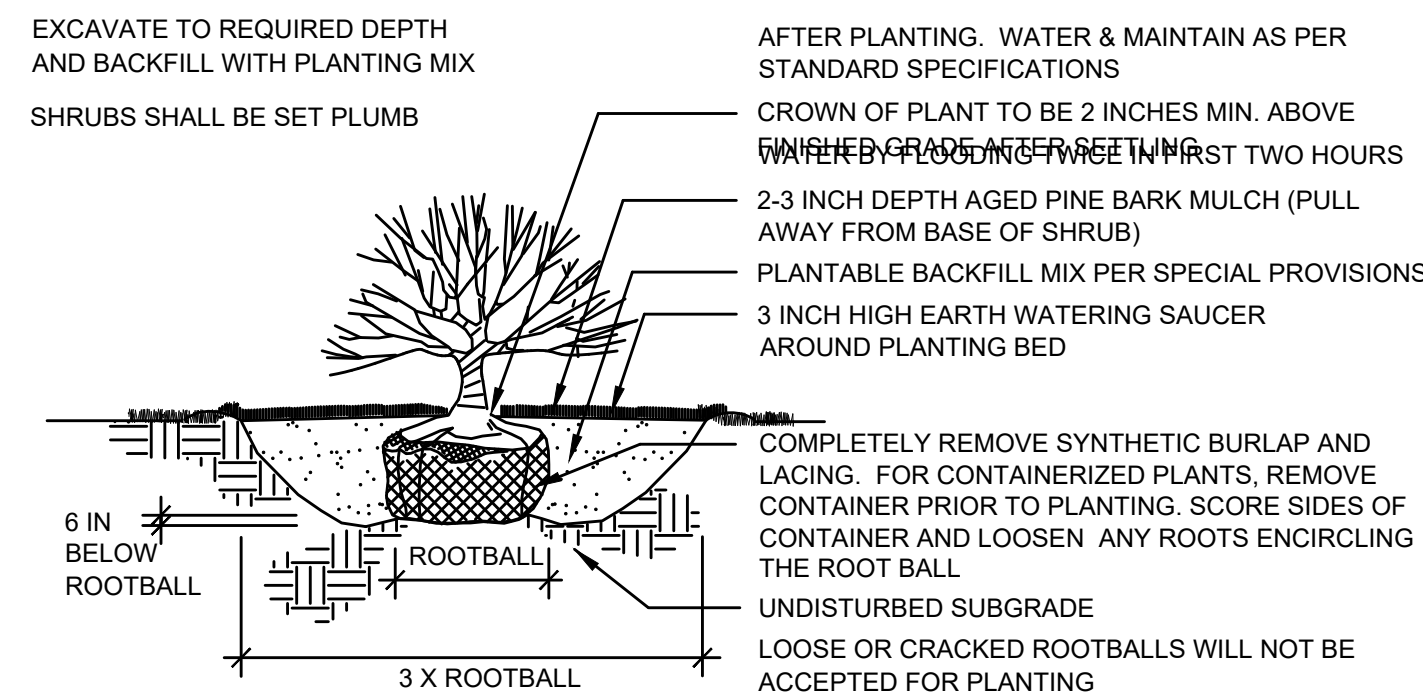


5 PERENNIAL AND ORNAMENTAL GRASS PLANTING

NOT TO SCALE

2 SHRUB, PERENNIAL AND ORNAMENTAL GRASS SPACING DETAIL

NOT TO SCALE

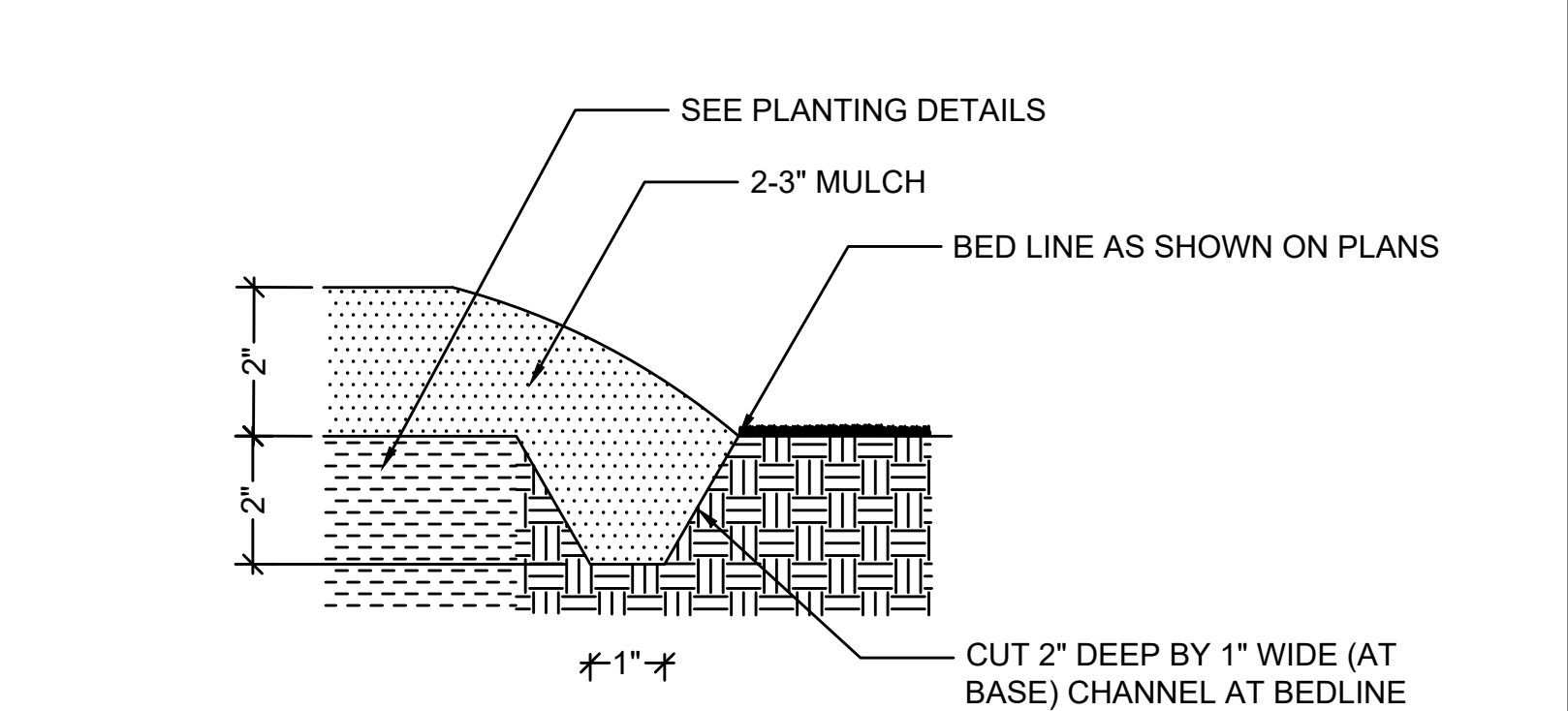


6 SHRUB PLANTING

NOT TO SCALE

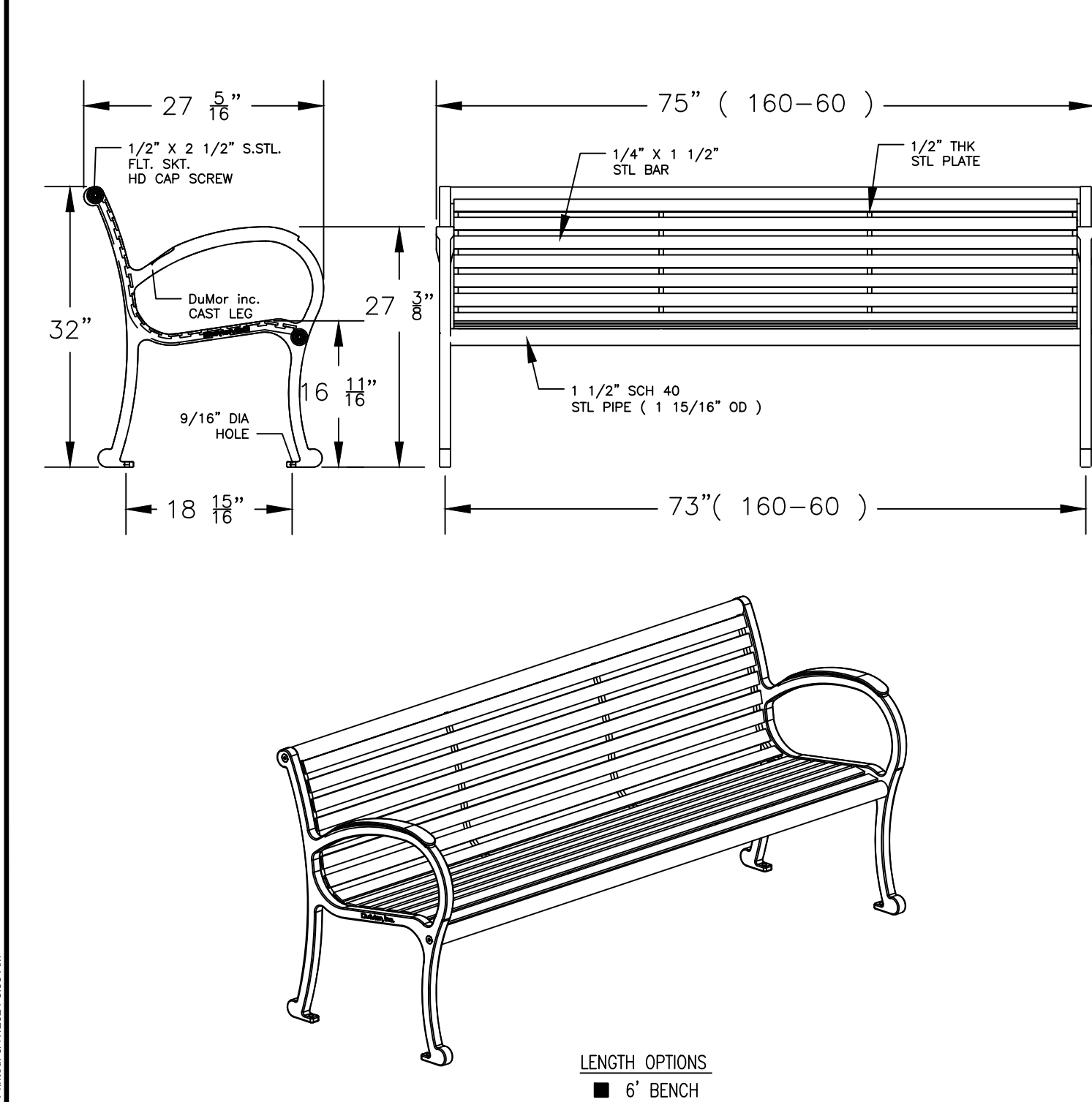
3 EVERGREEN TREE PLANTING

NOT TO SCALE



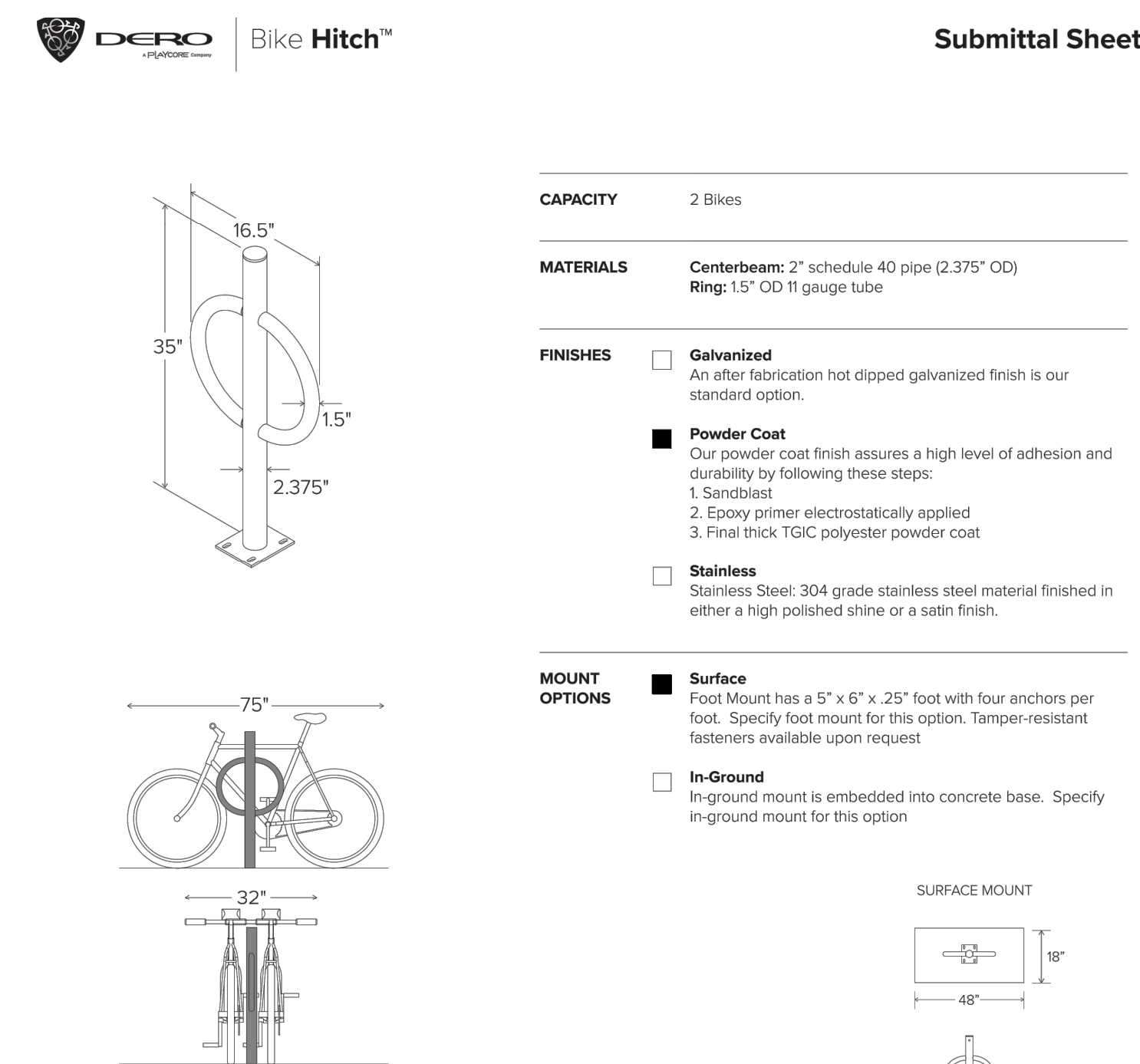
7 PLANT BED EDGE DETAIL

NOT TO SCALE



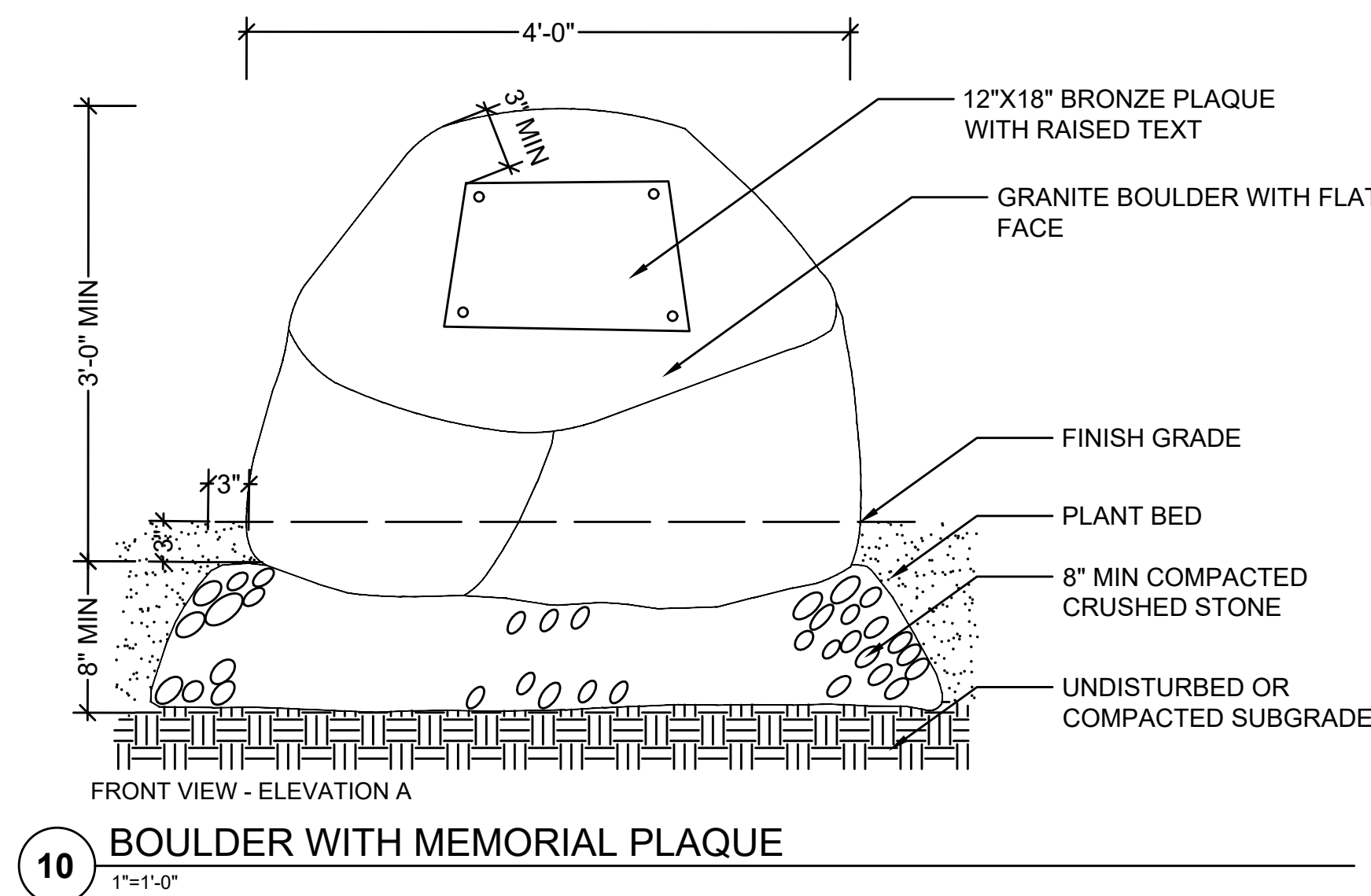
8 BENCH WITH ARMS

NOT TO SCALE



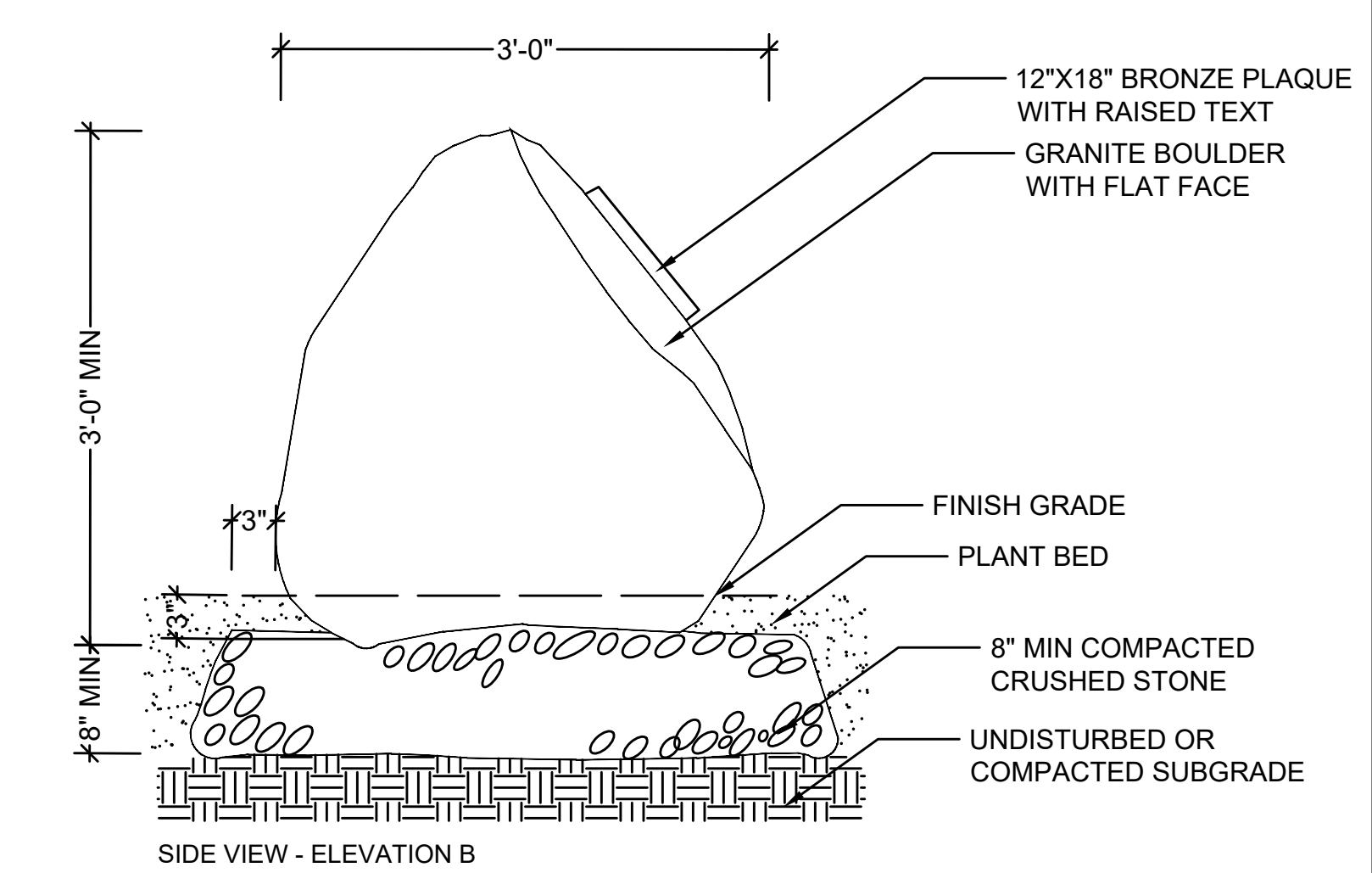
9 BIKE RACK

NOT TO SCALE



10 BOULDER WITH MEMORIAL PLAQUE

1"=1'-0"



PROJECT:	IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION:	85% DESIGN		
DRAWING TITLE:	LANDSCAPE DETAILS		
PREPARED FOR:	CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:	Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 28 OF 89	
DATE: 6/4/2024	DRAWN BY: MPC		
PROJECT NO. 20034	CHECKED BY: HP		

NO.	DATE	REVISIONS
1		

PROJECT TOTAL PLANT LIST						
KEY	DECIDUOUS TREES	COMMON NAME	QTY	SIZE	ROOT	REMARKS/SPACING
AMC	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	4	5-6' HT MULTI-STEMMED	B&B	AS SHOWN
BN	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH	3	2-2.5" CAL	B&B	AS SHOWN
GBF	GINKGO BILOBA 'FASTIGIATA' GOLD SPIRE	GOLD SPIRE GINKGO	3	2-2.5" CAL	B&B	AS SHOWN
GTS	GLEDITSIA TRICANTHOS SHADEMASTER	SHADEMASTER HONEYLOCUST	1	2-2.5" CAL	B&B	AS SHOWN
QR	QUERCUS RUBRA	NORTHERN RED OAK	1	2-2.5" CAL	B&B	AS SHOWN
	EVERGREEN TREES					
TON	THUJA OCCIDENTALIS 'NIGRA'	DARK AMERICAN ARBORVITAE	3	6-7'	B&B	AS SHOWN
	DECIDUOUS SHRUBS					
AML	ARONIA MELANOCARPA 'LOWSCAPE MOUND'	LOWSCAPE MOUND CHOKEBERRY	21	18-24" SPREAD	#3 CONTAINER	18" O.C.
CAH	CLETHRA ALNIFOLIA 'CRYSTALINA'	SUGARTINA SUMMERSWEET	25	18-24" SPREAD	#3 CONTAINER	2' O.C.
FMA	FOTHERGILLA 'MOUNT AIRY'	MOUNT AIRY FOTHERGILLA	4	3-4' HT	#7 CONTAINER	4' O.C.
IGS	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	9	18-24" SPREAD	#3 CONTAINER	2' O.C.
IVM	ITEA VIRGINIANA 'MERLOT'	MERLOT VIRGINIA SWEETSPIRE	20	2-3' HT	#3 CONTAINER	30" O.C.
PTW	PHYSOCARPUS OPULIFOLIUS 'TINY WINE'	TINY WINE DWARF NINEBARK	12	2-3' HT	#3 CONTAINER	2.5' O.C.
RGL	RHUS AROMATICA 'GRO LOW'	GROW LOW FRAGRANT SUMAC	8	18-24" SPREAD	#3 CONTAINER	2.5' OC
	EVERGREEN SHRUBS					
ICC	ILEX CRENATA 'SOFT TOUCH'	SOFT TOUCH JAPANESE HOLLY	17	18-24" SPREAD	#5 CONTAINER	24" O.C.
JCS	JUNIPERUS CHINENSIS 'SEA GREEN'	SEA GREEN JUNIPER	8	2.5-3' SPREAD	#5 CONTAINER	3' O.C.
	PERENNIALS AND ORNAMENTAL GRASSES					
HHR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	155	#1 CONTAINER	#1 CONTAINER	10" O.C.
HPO	HEMEROCALLIS 'PURPLE DE ORO'	PURPLE DE ORO DAYLILY	164	#1 CONTAINER	#1 CONTAINER	10" O.C.
HSD	HEMEROCALLIS 'STELLA D'ORO'	STELLA D'ORO DAYLILY	8	#1 CONTAINER	#1 CONTAINER	15" O.C.
LAH	LAVANDULA ANGUSTIFOLIA 'HICOTE'	HIDCOTE LAVENDER	43	#1 CONTAINER	#1 CONTAINER	18" O.C.
PLB	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	185	#1 CONTAINER	#1 CONTAINER	10" O.C.
PVS	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	19	#1 CONTAINER	#1 CONTAINER	18" O.C.
PHM	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCH GRASS	15	#1 CONTAINER	#1 CONTAINER	18" O.C.

1

TOTAL PLANT LIST

NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LANDSCAPE DETAILS

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DESIGNED BY: JL

DATE: 6/4/2024

DRAWN BY: YLZ

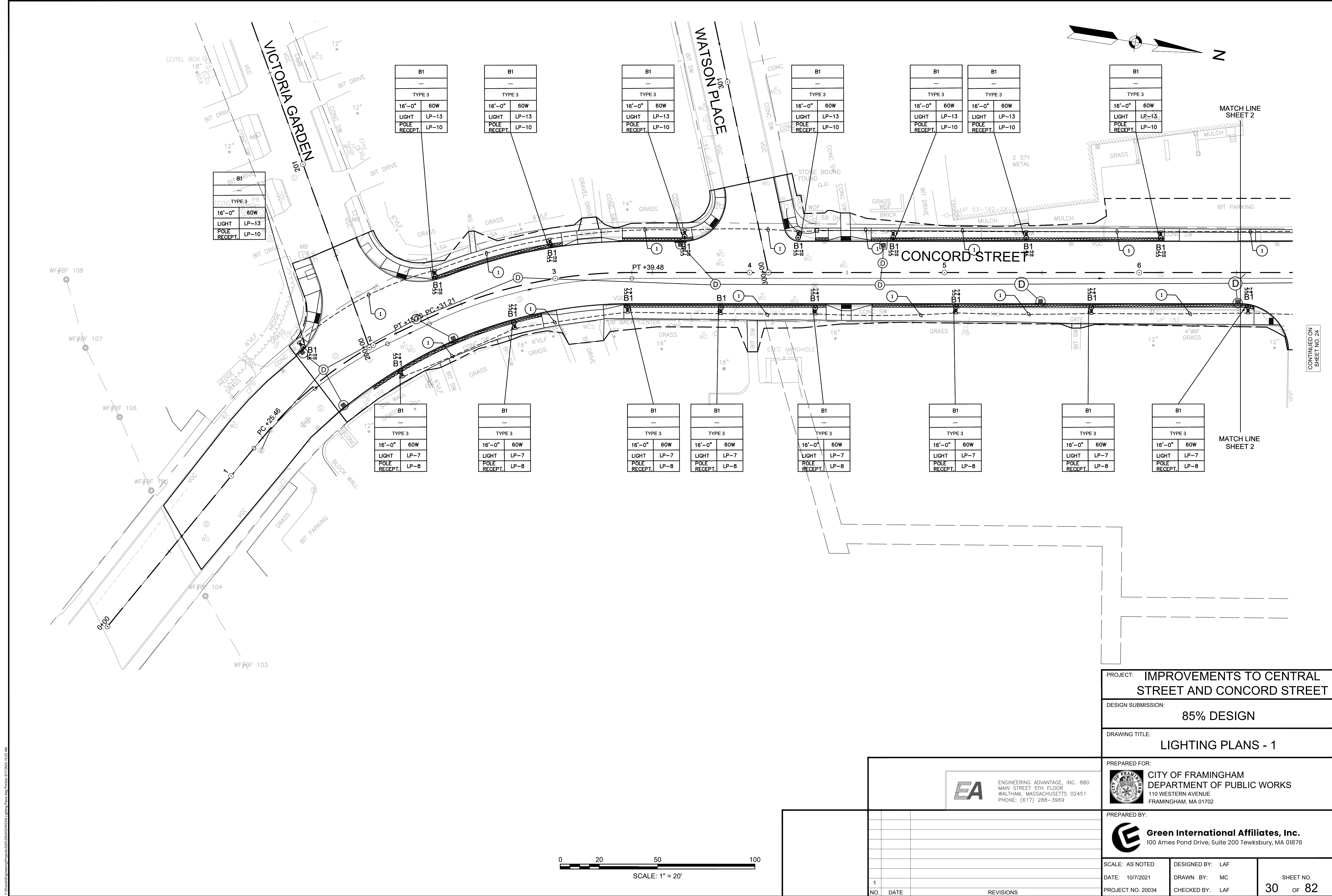
PROJECT NO. 20034

CHECKED BY: TB

SHEET NO.

29 OF 89

1		
NO.	DATE	REVISIONS



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LIGHTING PLANS - 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 10/7/2021
PROJECT NO. 20034

DESIGNED BY: LAF
DRAWN BY: MC
CHECKED BY: LAF

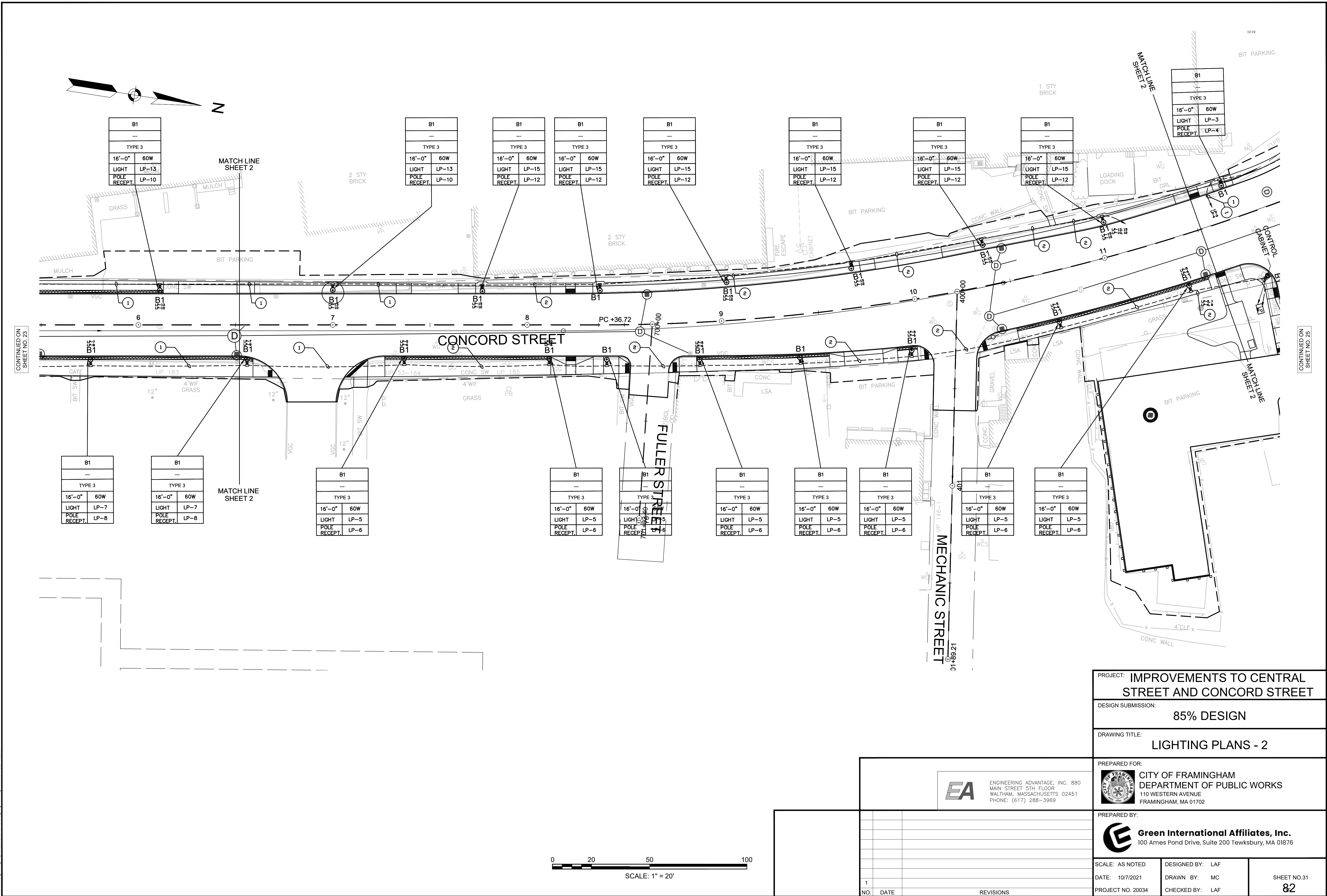
SHEET NO. 30 OF 82

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V:\Standard\Engineering\Projects\2020\034\CONC\031 Lighting Plans.dwg Printed: 6/17/2024 10:23 AM

CONTINUED ON
SHEET NO. 23

CONTINUED ON
SHEET NO. 25



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LIGHTING PLANS - 2

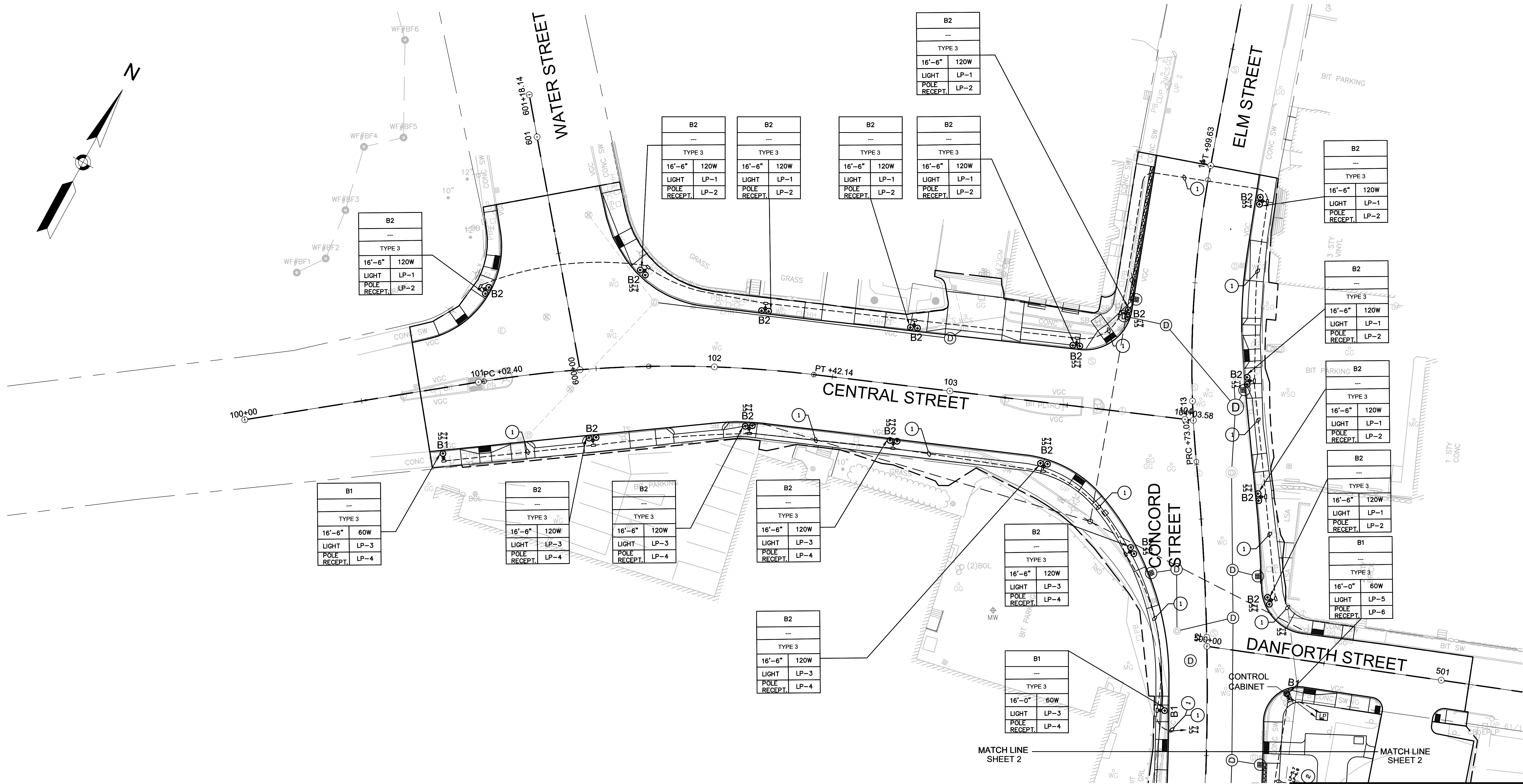
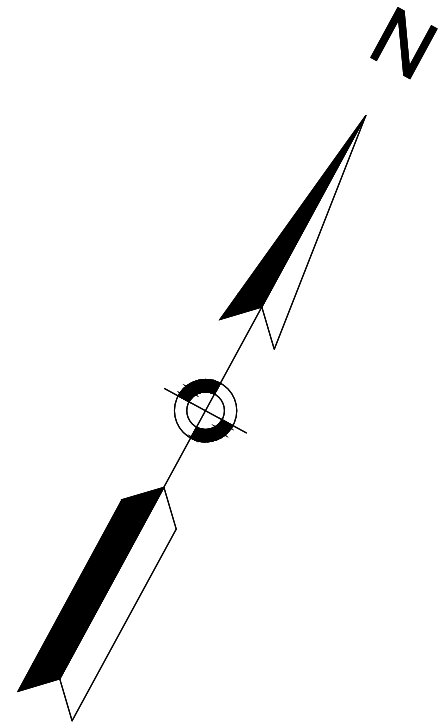
PREPARED FOR:
 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED	DESIGNED BY: LAF	SHEET NO.31 82
DATE: 10/7/2021	DRAWN BY: MC	
PROJECT NO. 20034	CHECKED BY: LAF	

 ENGINEERING ADVANTAGE, INC. 880
MAIN STREET 5TH FLOOR
WALTHAM, MASSACHUSETTS 02451
PHONE: (617) 288-3969

NO.	DATE	REVISIONS
1		



*NOTE: UTILITY POLE ELEVATION TO BE 6" LOWER
THAN EXISTING. COORDINATION WITH UTILITY
COMPANIES REQUIRED.

CONTINUED ON
SHEET NO. 24

PROJECT: **IMPROVEMENTS TO CENTRAL
STREET AND CONCORD STREET**

DESIGN SUBMISSION:
85% DESIGN

DRAWING TITLE:
LIGHTING PLANS - 3

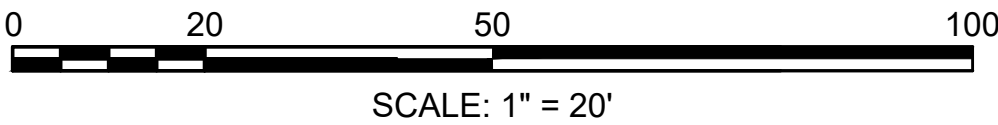
PREPARED FOR:
 **CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS**
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

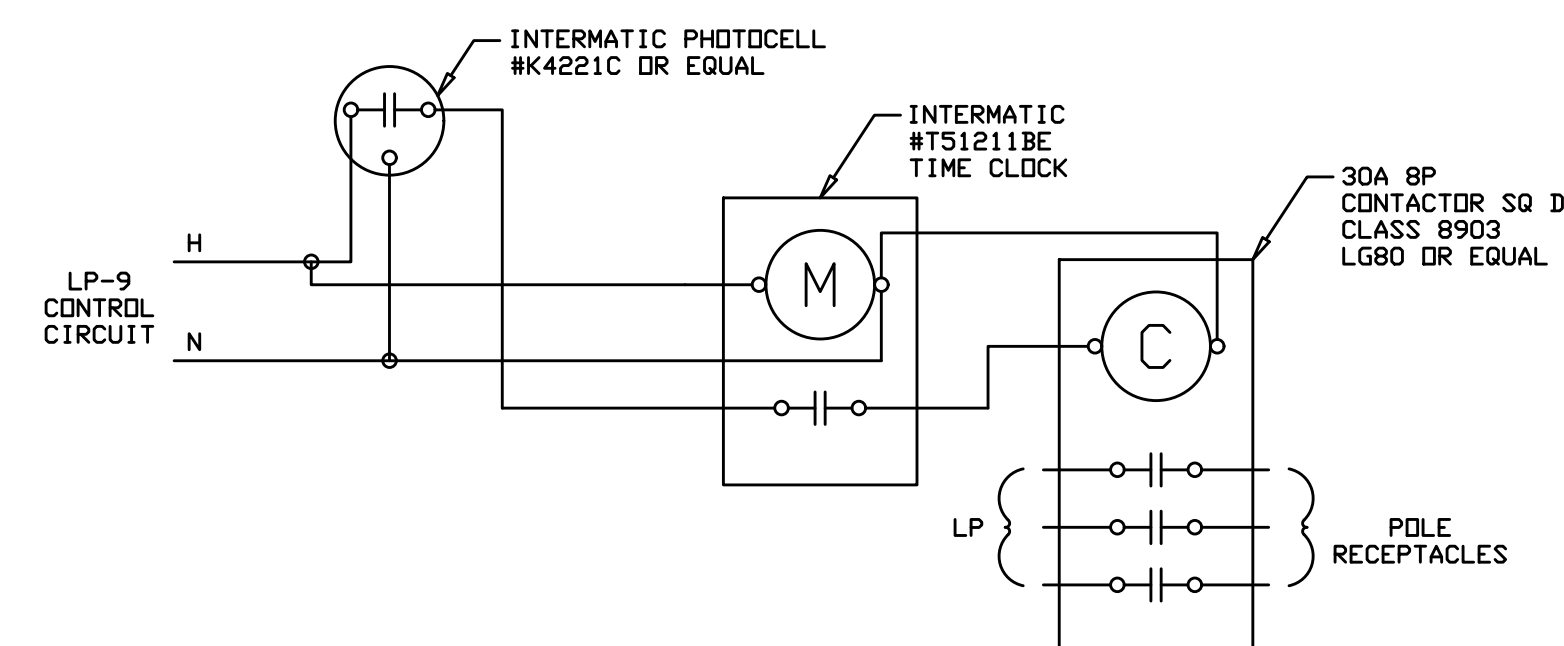
SCALE: AS NOTED
DATE: 10/7/2021
PROJECT NO. 20034

DESIGNED BY: LAF
DRAWN BY: MC
CHECKED BY: LAF

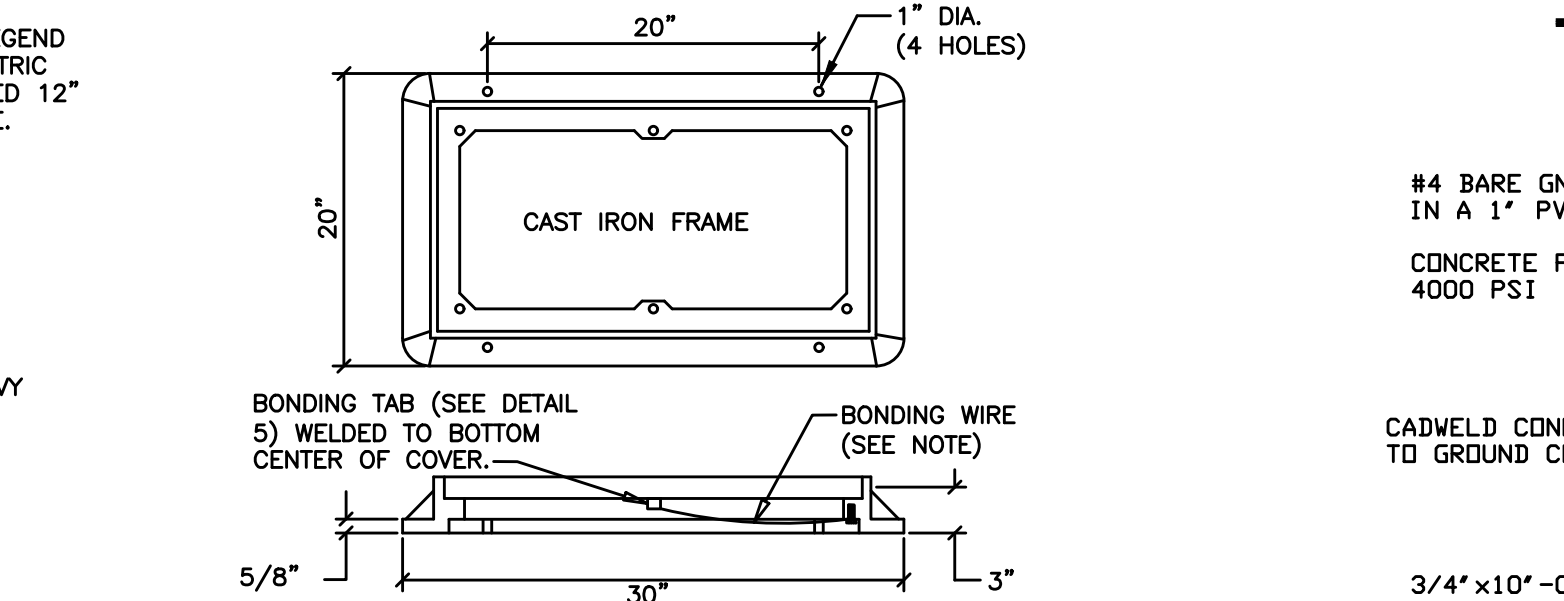
SHEET NO.
25 OF **92**



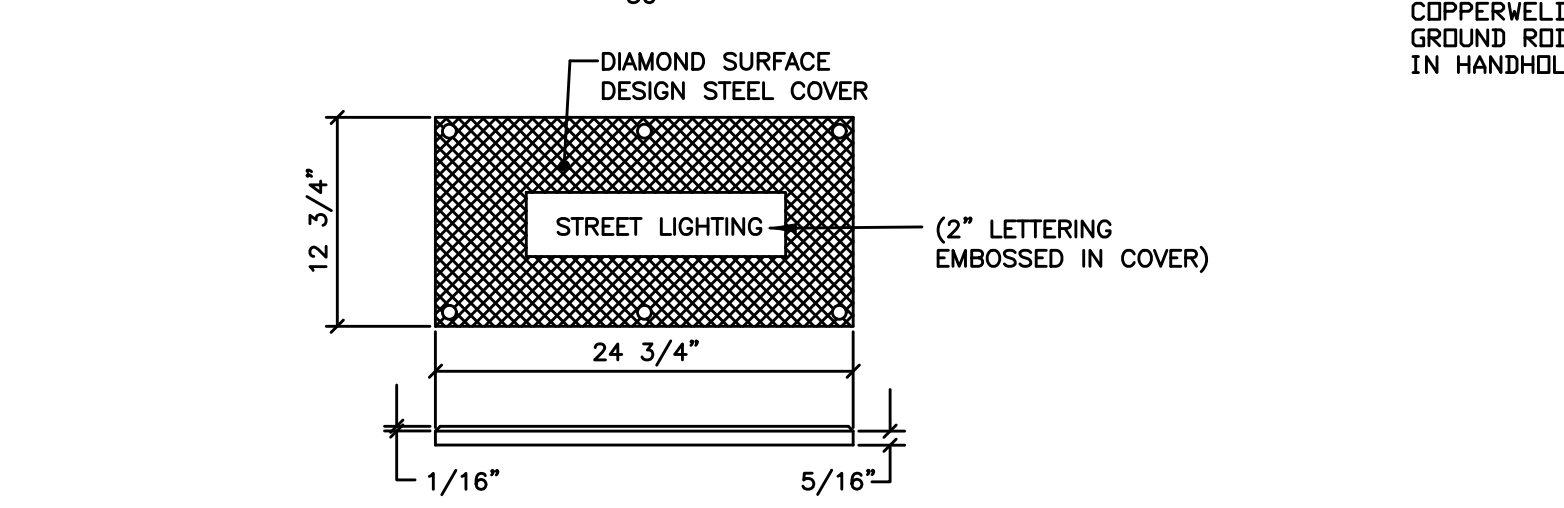
NO.	DATE	REVISIONS
1		



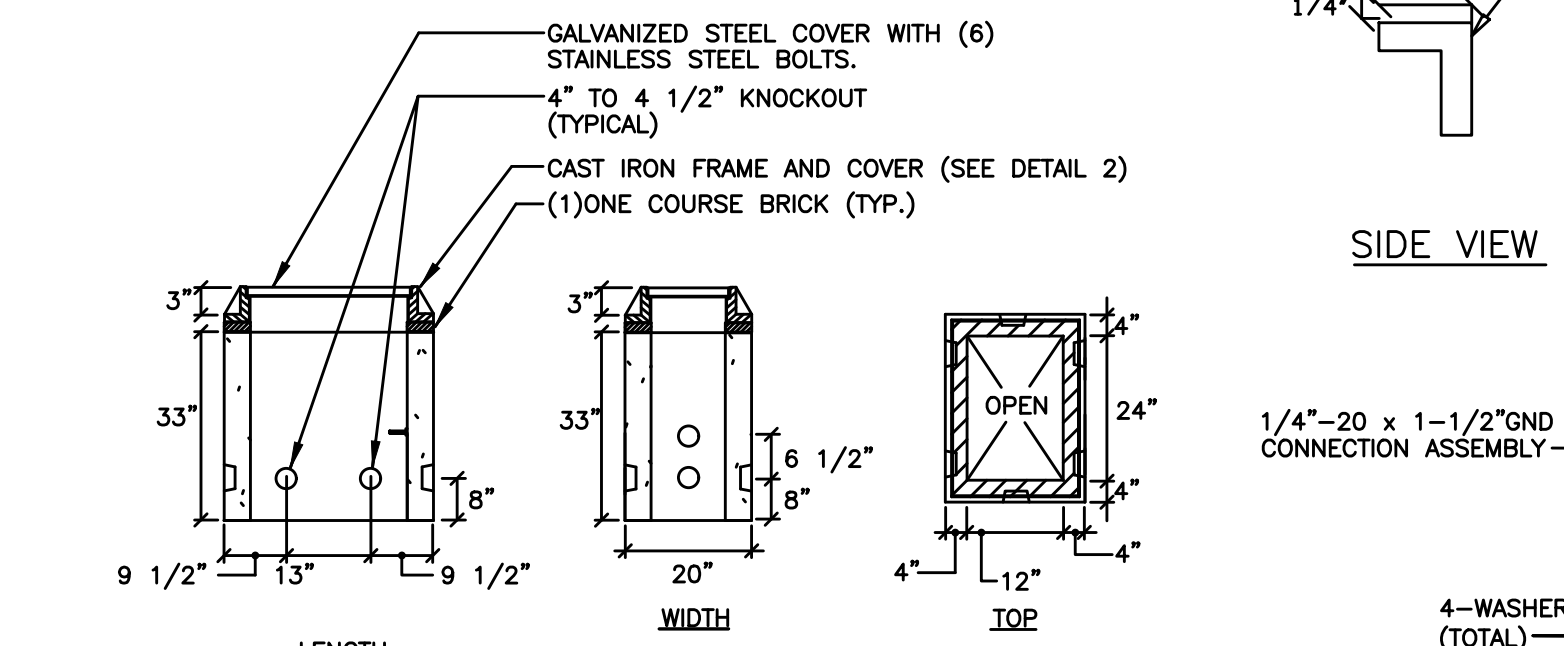
CONTACTOR WIRING DIAGRAM
NOT TO SCALE



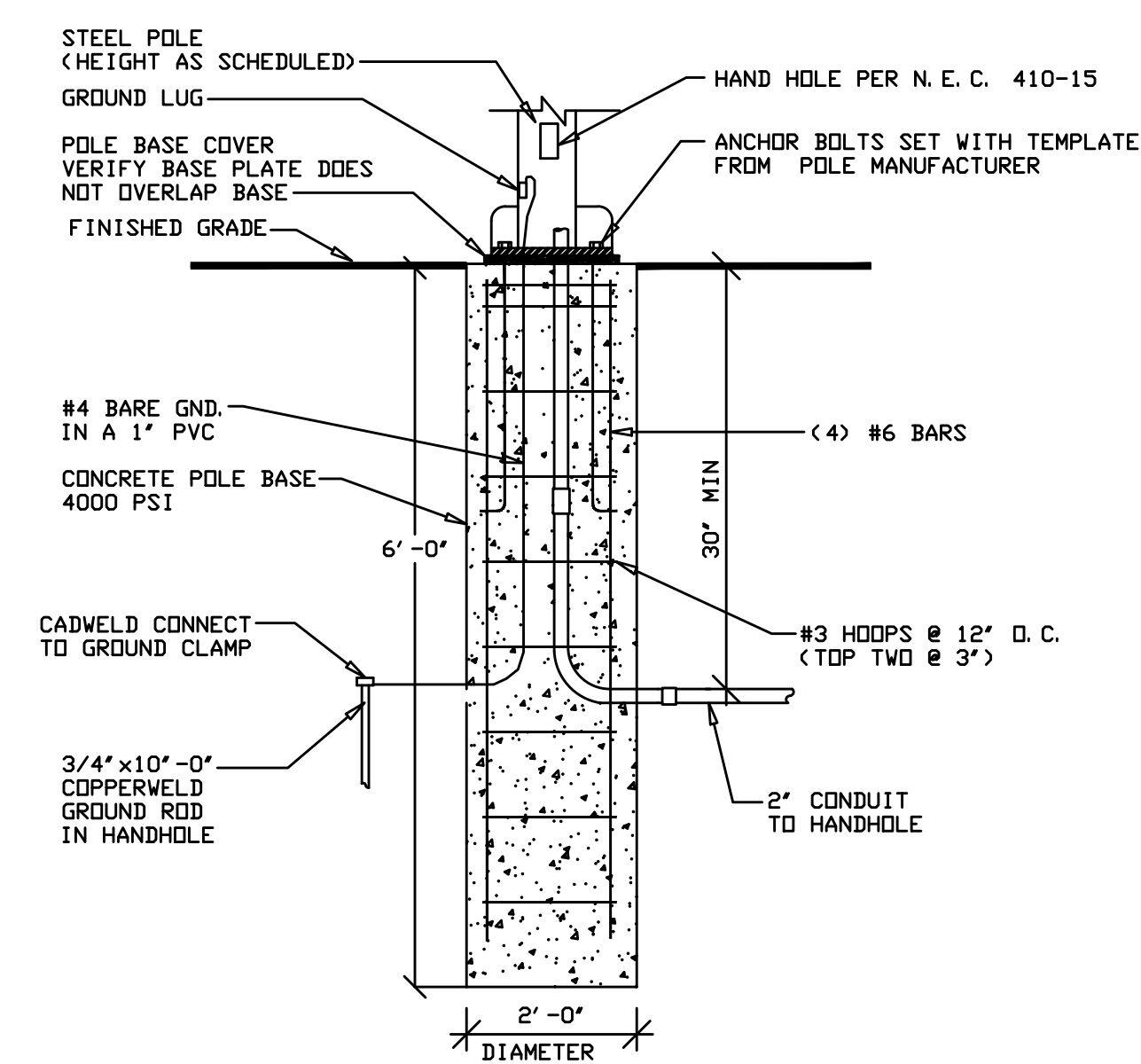
2 TYPICAL HANDHOLE COVER
NOT TO SCALE



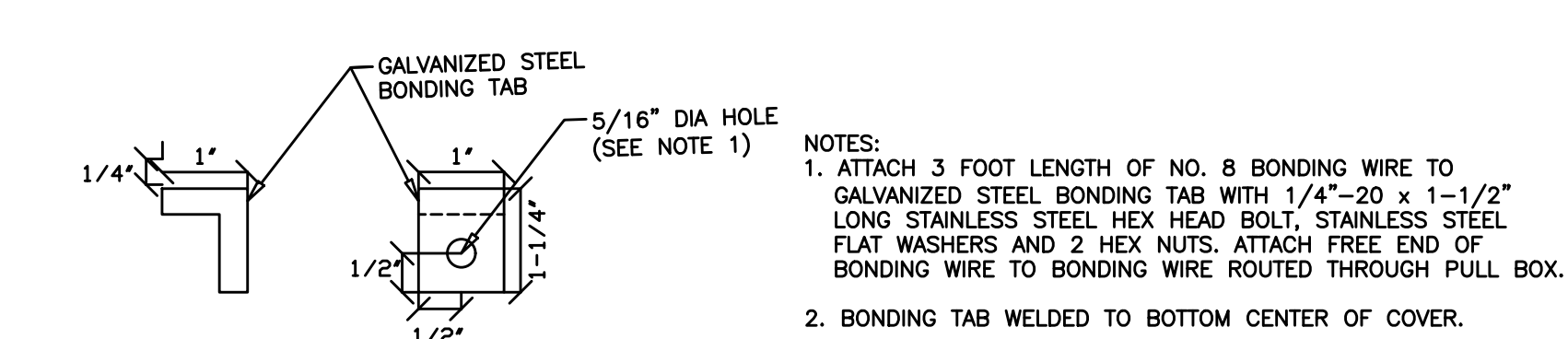
4 TYPICAL PRE-CAST CONCRETE HANDHOLE
NOT TO SCALE



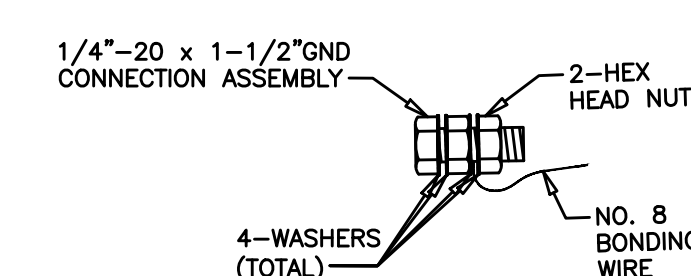
TYPICAL POLE BASE AND HANDHOLE ARRANGEMENT
NOT TO SCALE



POLE BASE DETAIL
NOT TO SCALE



SIDE VIEW FRONT VIEW



5 GALVANIZED STEEL BONDING TAB
NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: LIGHTING DETAILS - 1		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: LAF	SHEET NO. 33 OF 89
DATE: 6/4/2024	DRAWN BY: MC	
PROJECT NO. 20034	CHECKED BY: LAF	

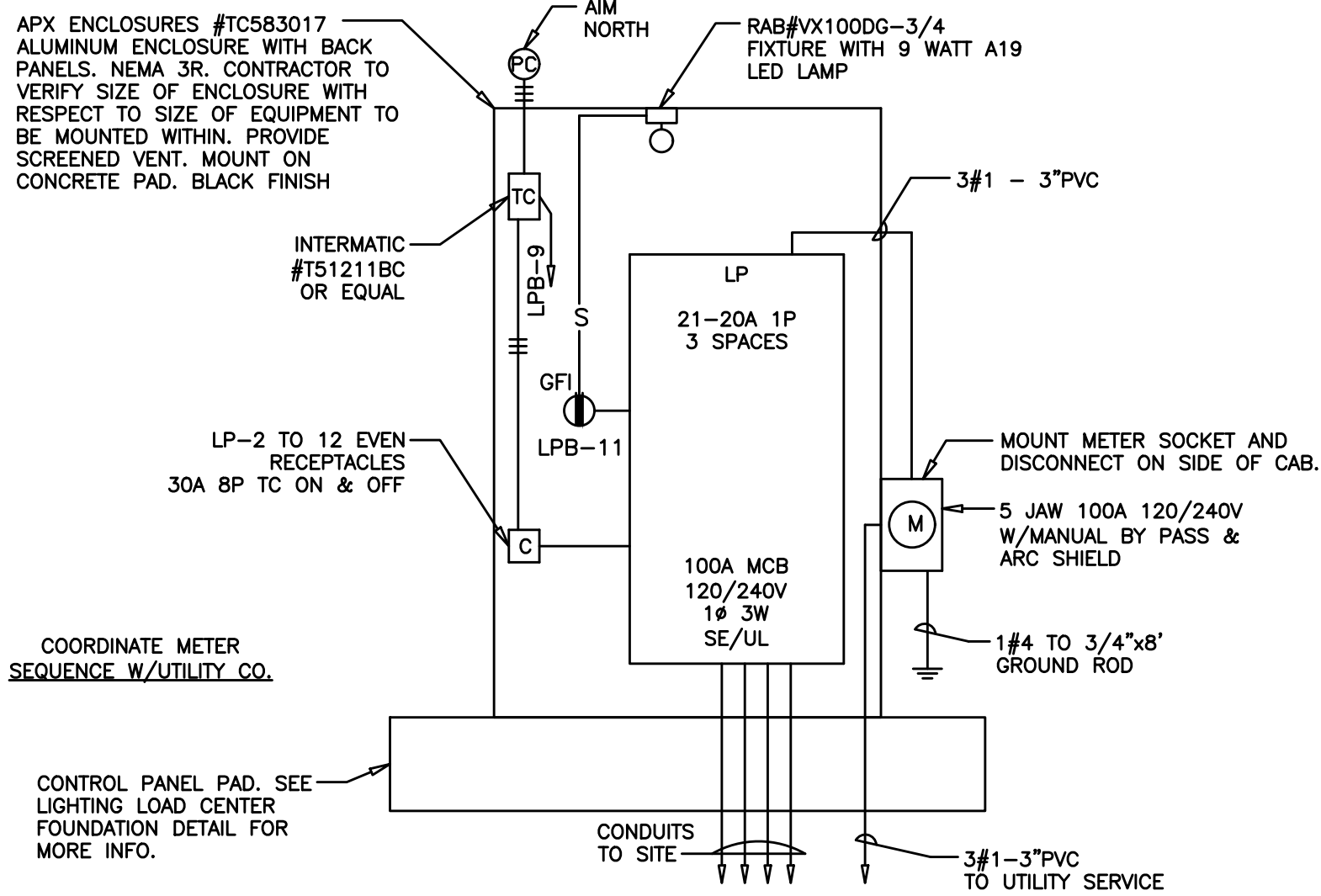
PANEL LP SCHEDULE		CONNECTED LOAD: 10,580 WATTS				44 AMPS		HANDLE LOCKS		SIF	
		120/240 VOLTS 1Ø 3W						MAINS: 100A MCB			
CKT NO	DESCRIPTION	CKT BKR	CONNECTED LOAD WATTS		CKT BKR	DESCRIPTION		CKT NO			
		AMP	A	B	AMP	P					
1	6 LIGHT POLES	20 1	870		20 1	(6)POLE RECEPTS	2				
3	6 LIGHT POLES	20 1	1080	750	20 1	(6)POLE RECEPTS	4				
5	6 LIGHT POLES	20 1	480		20 1	(6)POLE RECEPTS	6				
7	6 LIGHT POLES	20 1	1080	480	20 1	(6)POLE RECEPTS	8				
9	CONTROL CIRCUIT	20 1	300	1080	20 1	(6)POLE RECEPTS	10				
11	CAB. LTG & RECEPT	20 1	500	500	20 1	(6)POLE RECEPTS	12				
13	7 LIGHT POLES	20 1	480		20 1	SPARE	14				
15	7 LIGHT POLES	20 1	480		20 1	SPARE	16				
17	SPARE	20 1			20 1	SPARE	18				
19	SPARE	20 1			20 1	SPARE	20				
21	SPARE	20 1			20 1	SPARE	22				
23	SPARE	20 1			20 1	SPARE	24				
TOTAL			5290	5330							

VOLTAGE DROP CALCULATIONS
% VD = AMPS X DISTANCE (100') X FACTOR /120

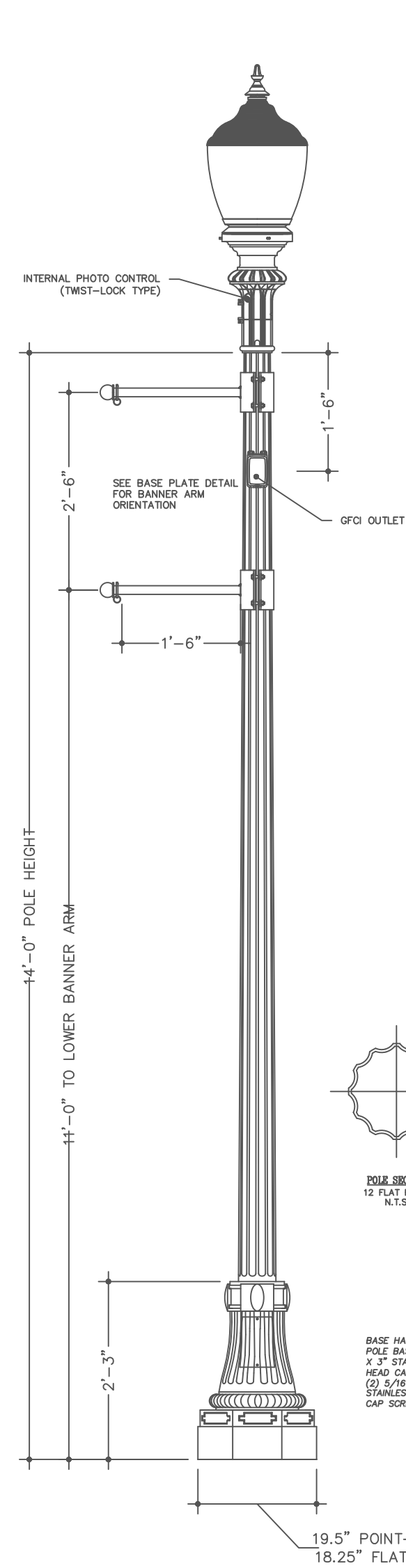
CIR#	AMPS	DIST.	WIRE SIZE	% VD
LP-1	6.7	400'	#6	2.2%
LP-3	6.2	500'	#6	2.5%
LP-5	3.5	500'	#6	1.4%
LP-7	3.5	1000'	#6	2.8%
LP-13	3.5	620'	#6	1.8%
LP-15	3.5	1000'	#6	2.8%

WIRE SCHEDULE

- 4#6 & 1#6GND. - 3" PVC
- 6#6 & 1#6GND. - 3" PVC
-
-
- EMPTY - 2" PVC



LIGHTING LOAD CENTER
NOT TO SCALE



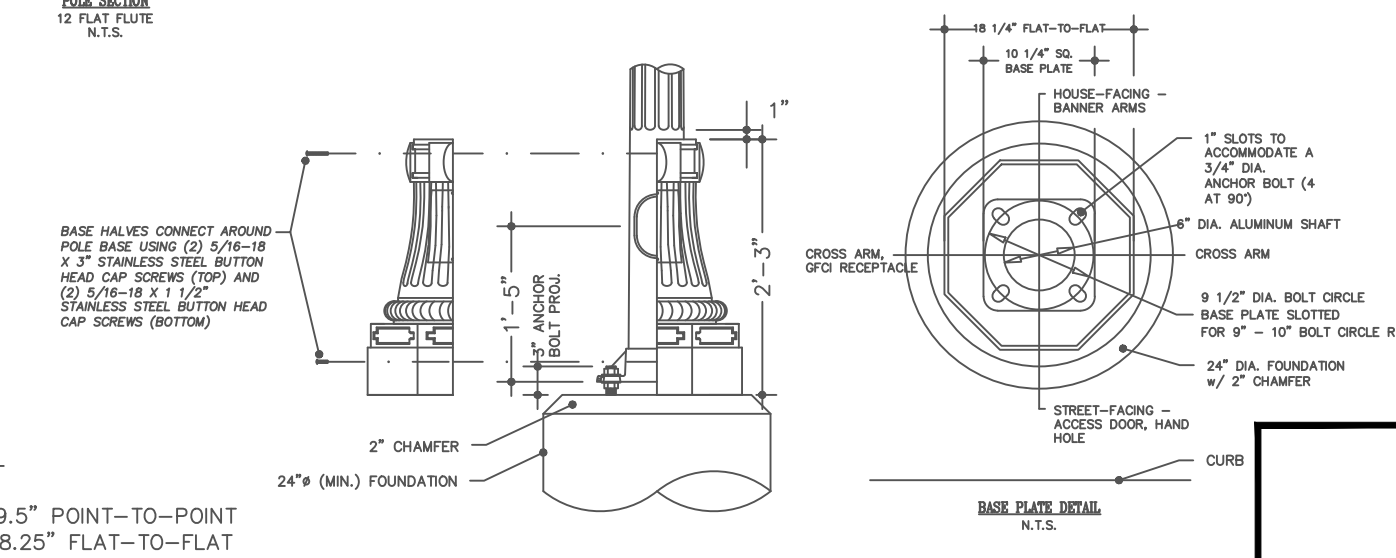
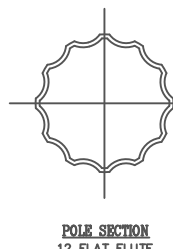
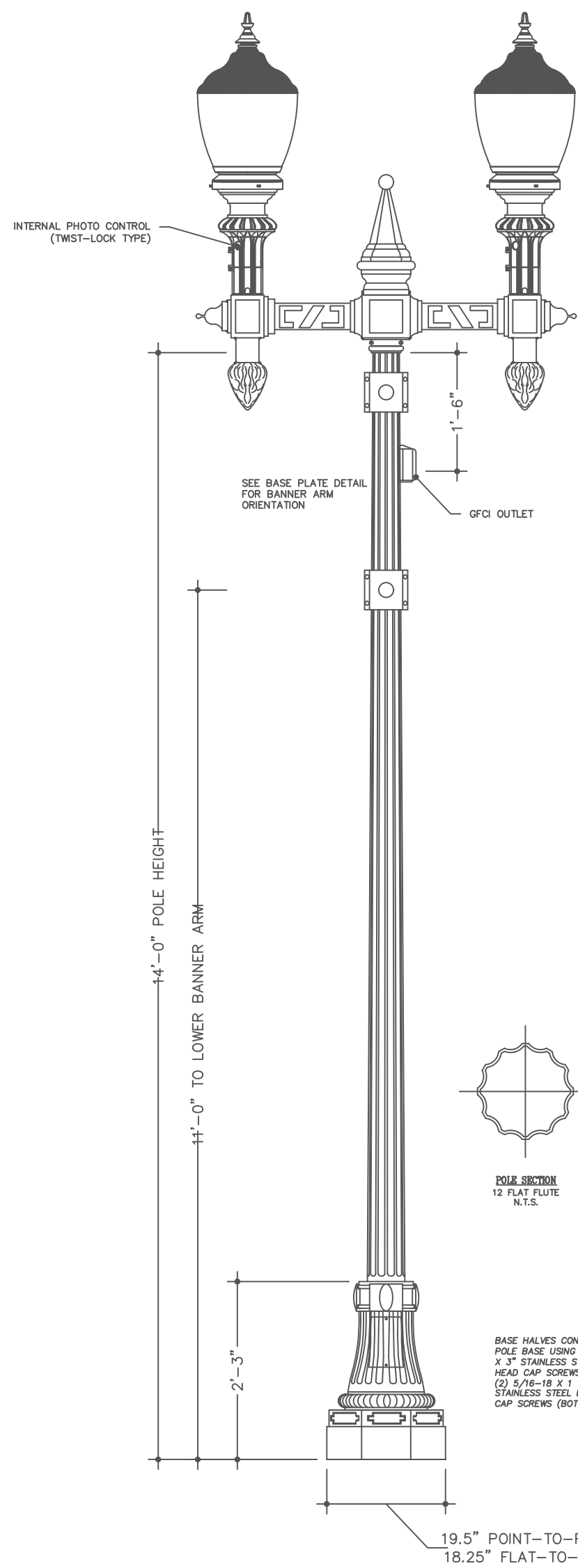
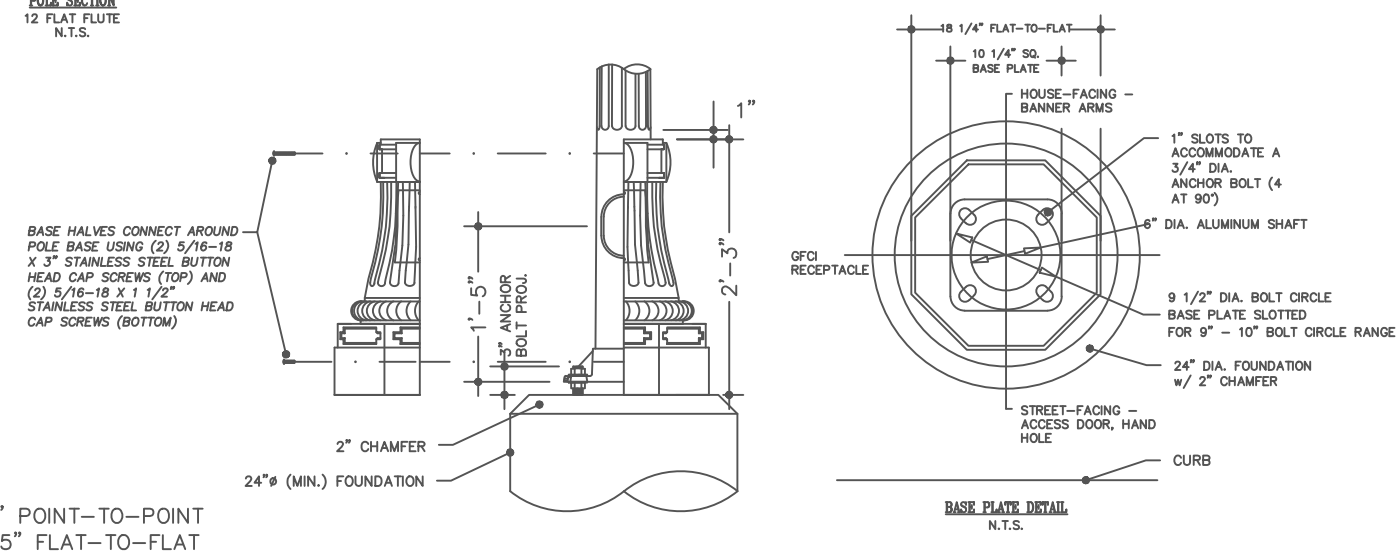
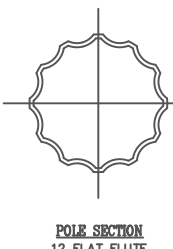
LUMINAIRE SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
CATALOG NO.: K199R-B2AR-III-60(SSL)-1042-120:277-K18-SST-PE
OPTICAL SYSTEM: BAFFLED ARRAY ACRYLIC RIPPLED
IES CLASS: TYPE III
WATTAGE: 60W SOLID STATE LIGHTING
LINE VOLTAGE: 120:277V
I.P. RATING: IP 65
CCT: 4000K
POLE ADAPTER: K18 WITH INTERNAL 3-PIN RECEPTACLE & LONG LIFE PHOTOCONTROL
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK
OPTIONS:

- SOLID SPUN TOP
- #1 VENTED FINIAL
- QUICK DISCONNECT WIRING
- 540 JOULE @ 2mS 20kA-8/20uS SURGE PROTECTION

DRIVER SPECIFICATIONS
MANUFACTURER: MEANWELL
TYPE: ELECTRONIC
CATALOG NO.: HLG-100H (DATA SHEET ATTACHED)

POLE & BASE SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
CATALOG NO.: K199R-B2AR-III-60(SSL)-1042-120:277-K18-SST-PE
BASE: CAST ALUMINUM ALLOY 356 PER ASTM B26
SHAFT: "CLAMSHELL" ALUMINUM ALLOY 6063 PER ASTM B221 AND HEAT TREATED TO T6 TEMPER AFTER WELDING. ROUND TAPERED (0.14" PER FT.) - 12 FLAT FLUTE PROFILE - 0.188 WALL THICKNESS
TENON: 3 1/2" DIA. x 3" LONG
HAND HOLE: 3" x 2" (NOMINAL) COVER SECURED BY (2) 1/4" -20 SS SCREWS
ACCESS DOOR: LOCATED OPPOSITE HANDHOLE
ANCHOR BOLTS: (4) 3/4" DIA. x 24"L +3" HOOK. PER ASTM F1554 -07 -Gr55, FULLY HOT DIPPED GALVANIZED PER ASTM A153.
BOLT PROJECTION: (1) HEX NUT AND (1) FLAT WASHER
GROUND PROVISION: LOCATED INSIDE POLE HANDHOLE
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK
OPTIONS: 20 AMP GFCI OUTLET WITH WEATHERPROOF WHILE IN USE COVER

BANNER ARM SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
STYLE: CLAMP-ON
MATERIAL: ALUMINUM WITH STAINLESS STEEL HARDWARE
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK



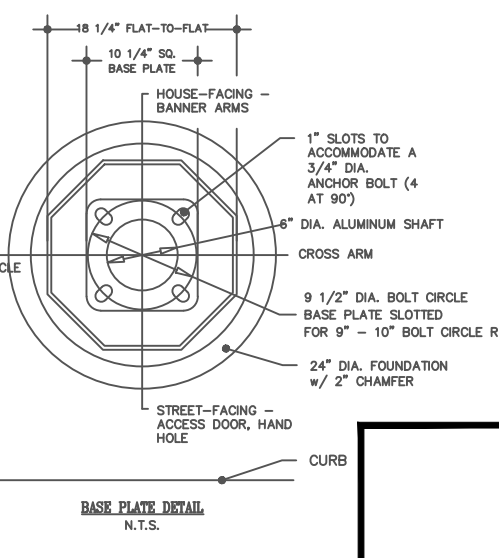
LUMINAIRE SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
CATALOG NO.: K199R-B2AR-III-60(SSL)-1042-120:277-K18-SST-PE
OPTICAL SYSTEM: BAFFLED ARRAY ACRYLIC RIPPLED
IES CLASS: TYPE III
WATTAGE: 60W SOLID STATE LIGHTING
LINE VOLTAGE: 120:277V
I.P. RATING: IP 65
CCT: 4000K
POLE ADAPTER: K18 WITH INTERNAL 3-PIN RECEPTACLE & LONG LIFE PHOTOCONTROL
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK
OPTIONS:

- SOLID SPUN TOP
- #1 VENTED FINIAL
- QUICK DISCONNECT WIRING
- 540 JOULE @ 2mS 20kA-8/20uS SURGE PROTECTION

DRIVER SPECIFICATIONS
MANUFACTURER: MEANWELL
TYPE: ELECTRONIC
CATALOG NO.: HLG-100H (DATA SHEET ATTACHED)

POLE & BASE SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
CATALOG NO.: K199R-B2AR-III-60(SSL)-1042-120:277-K18-SST-PE
BASE: CAST ALUMINUM ALLOY 356 PER ASTM B26
SHAFT: "CLAMSHELL" ALUMINUM ALLOY 6063 PER ASTM B221 AND HEAT TREATED TO T6 TEMPER AFTER WELDING. ROUND TAPERED (0.14" PER FT.) - 12 FLAT FLUTE PROFILE - 0.188 WALL THICKNESS
TENON: 3 1/2" DIA. x 3" LONG
HAND HOLE: 3" x 2" (NOMINAL) COVER SECURED BY (2) 1/4" -20 SS SCREWS
ACCESS DOOR: LOCATED OPPOSITE HANDHOLE
ANCHOR BOLTS: (4) 3/4" DIA. x 24"L +3" HOOK. PER ASTM F1554 -07 -Gr55, FULLY HOT DIPPED GALVANIZED PER ASTM A153.
BOLT PROJECTION: (1) HEX NUT AND (1) FLAT WASHER
GROUND PROVISION: LOCATED INSIDE POLE HANDHOLE
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK
OPTIONS: 20 AMP GFCI OUTLET WITH WEATHERPROOF WHILE IN USE COVER

ARM SPECIFICATIONS
MANUFACTURER: KING LUMINAIRE
STYLE: CLAMP-ON
MATERIAL: ALUMINUM WITH STAINLESS STEEL HARDWARE
FINISH: T.G.I.C. POLYESTER POWDER COAT - GLOSS BLACK



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: LIGHTING DETAILS - 2

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

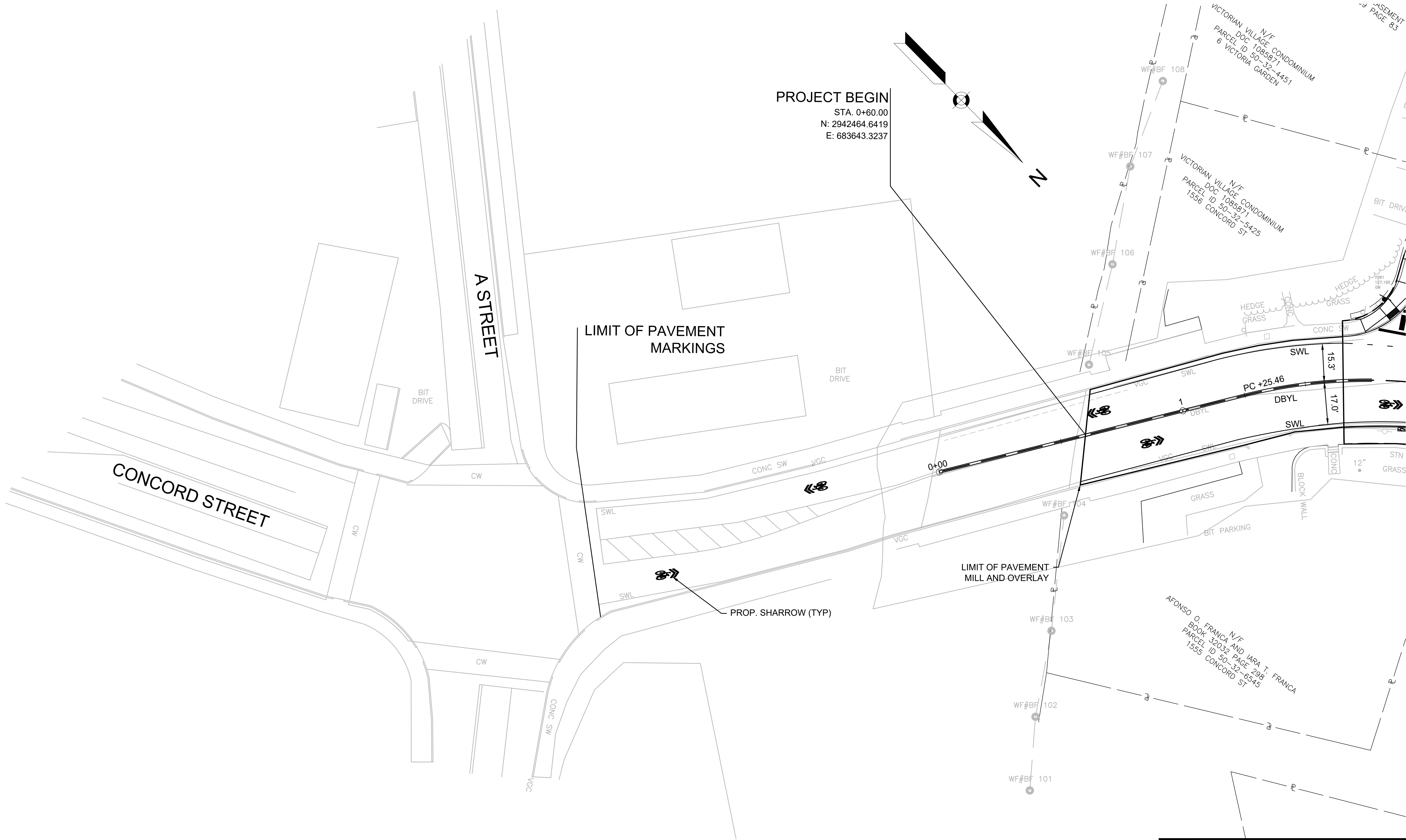
SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: LAF
DRAWN BY: MC
CHECKED BY: LAF

SHEET NO. 34 OF 89

0 20 50 100
SCALE: 1" = 20'

C:\Shared\Engineering\Projects\200304\MA0304\DWG\35.dwg AND 35.dwg PLOT Date Printed: 6/17/2024 9:54 AM



CONTINUED ON
SHEET NO. 36

PROJECT: **IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET**

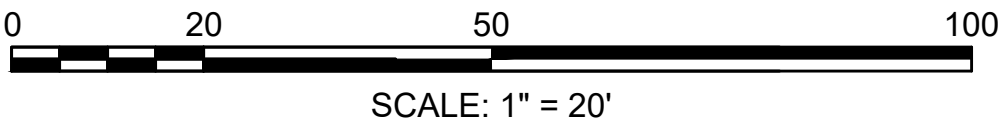
DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: **PAVEMENT MARKING & SIGNING PLAN 1**

PREPARED FOR:
 **CITY OF FRAMINGHAM**
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

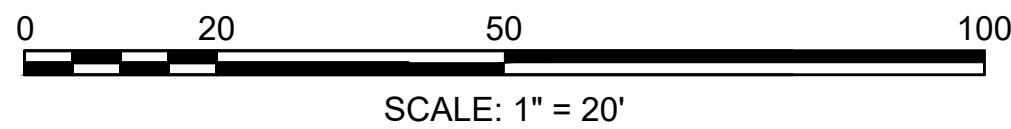
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 35 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	



NO.	DATE	REVISIONS			



NO.	DATE	REVISIONS
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[illegible]

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE:
PAVEMENT MARKING & SIGNING PLAN 4

PREPARED FOR:

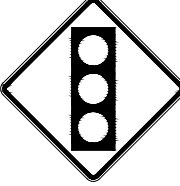
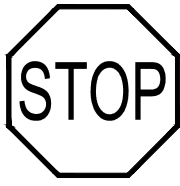
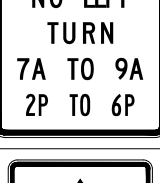
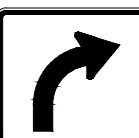
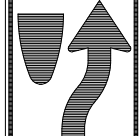
 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED	DESIGNED BY: MP
DATE: 6/4/2024	DRAWN BY: MP
PROJECT NO. 20034	CHECKED BY: AV

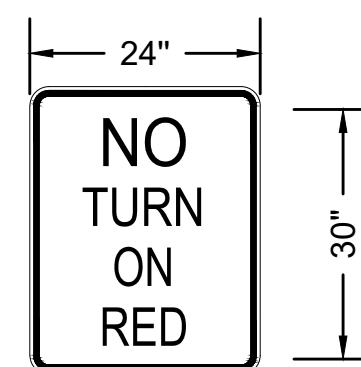
SHEET NO.
38 OF 89

IDENTIFICATION	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (IN)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA (S.F)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MRK.		BACKGROUND	LEGEND	BORDER			
MA-W16-19P	24	18		SEE MASSDOT STANDARD SIGN BOOK			2	RETROREFLECTIVE YELLOW	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	2 MOUNTED WITH W11-1	3.00	6.00
W3-3	30	30		SEE MUTCD DETAIL			1	RETROREFLECTIVE YELLOW	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	P-5 1	6.25	6.25
W11-1	30	30					3	FLUORESCENT YELLOW GREEN	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	P-5 3	6.25	18.75
W11-2	30	30					4	FLUORESCENT YELLOW GREEN	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	4 MOUNTED ON RRFB	6.25	25.00
W16-7PL	24	12					2	FLUORESCENT YELLOW GREEN	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	2 MOUNTED ON RRFB	2.00	4.00
W16-7PR	24	12					2	FLUORESCENT YELLOW GREEN	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	2 MOUNTED ON RRFB	2.00	4.00
R1-1	30	30					2	RETROREFLECTIVE RED	RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	P-5 2	6.25	12.50
R3-2	24	24					1	RETROREFLECTIVE WHITE	BLACK/RETROREFLECTIVE RED	RETROREFLECTIVE BLACK	P-5 1	4.00	4.00
R3-2_SP	24	24					1	RETROREFLECTIVE WHITE	BLACK/RETROREFLECTIVE RED	RETROREFLECTIVE BLACK	P-5 1	4.00	4.00
R3-5a	30	36					2	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	2 MOUNTED ON MAST ARM	7.50	15.00
R3-5L	30	36					1	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	1 MOUNTED ON MAST ARM	7.50	7.50
R3-5R	30	36					1	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	1 MOUNTED ON MAST ARM	7.50	7.50
R3-7L	30	30					1	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	P-5 1	6.25	6.25
R3-7R	30	30					3	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	P-5 3	6.25	18.75
R3-17	24	18					4	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	P-5 4	3.00	12.00
R3-17aP	24	9					2	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	2 MOUNTED WITH R3-17	1.50	3.00
R3-17bP	24	9					2	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	2 MOUNTED WITH R3-17	1.50	3.00
R4-7	24	30					1	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	P-5 1	5.00	5.00
R6-1L	36	12					1	RETROREFLECTIVE WHITE/RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	RETROREFLECTIVE WHITE	1 MOUNTED WITH R6-1R	3.00	3.00

IDENTIFICATION	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (IN)			NUMBER OF SIGNS REQUIRED	COLOR				UNIT AREA (S.F.)	AREA (S.F.)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKK.		BACKGROUND	LEGEND	BORDER			
R6-1R	36	12		SEE MUTCD DETAIL			1	RETROREFLECTIVE WHITE/RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	RETROREFLECTIVE WHITE	P-5 2	3.00	3.00
R7-1	12	18					1	RETROREFLECTIVE WHITE	RETROREFLECTIVE RED	RETROREFLECTIVE RED	P-5 1	1.50	1.50
R7-5	12	18					1	RETROREFLECTIVE WHITE	RETROREFLECTIVE RED	RETROREFLECTIVE RED	P-5 1	1.50	1.50
R10-6	24	36					2	RETROREFLECTIVE WHITE	RETROREFLECTIVE BLACK	RETROREFLECTIVE BLACK	P-5 2	6.00	12.00
D3-1(1)	36	9		SEE DETAIL ON SHEET 40			1	RETROREFLECTIVE BLUE	BLACK/RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	MOUNTED ON MAST ARM	2.25	2.25
D3-1(2)	24	9					1	RETROREFLECTIVE BLUE	BLACK/RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	MOUNTED ON MAST ARM	1.50	1.50
D3-1(3)	36	9					1	RETROREFLECTIVE BLUE	BLACK/RETROREFLECTIVE WHITE	RETROREFLECTIVE WHITE	MOUNTED ON MAST ARM	2.25	2.25
PID-1	24	36					1	RETROREFLECTIVE BLACK AND TAN	BLUE AND WHITE	NONE	P-5 1	6.00	6.00
PID-2	24	36					1	RETROREFLECTIVE BLACK AND TAN	BLUE AND WHITE	NONE	P-5 1	6.00	6.00
PID-3	72	30					1	RETROREFLECTIVE BLACK AND TAN	BLUE AND WHITE	NONE	P-5 2	15.00	15.00
IDSD-1	48	24					2	RETROREFLECTIVE BLACK AND TAN	WHITE	NONE	P-5 2	8.00	16.00
												TOTAL (S.F.)	150.50

NOTES:

"NO TURN ON RED" ELECTRONIC BLANK-OUT SIGN



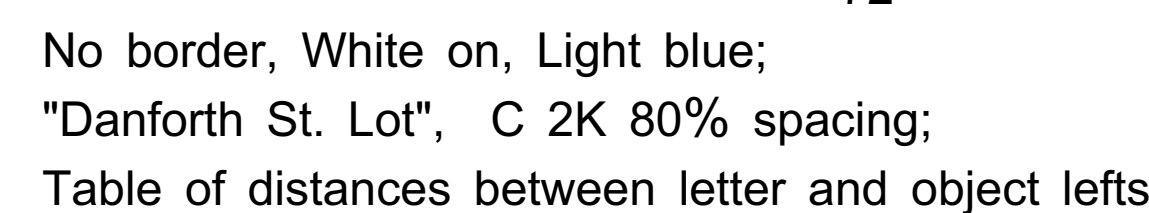
R10-11b

1. "NO TURN ON RED" ELECTRONIC BLANK-OUT SIGNS TO BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 815.11.
2. PROPOSED R10-11b ELECTRONIC BLANK-OUT SIGNS SHALL BE BLANK AT ALL TIMES EXCEPT WHEN THE PEDESTRIAN PHASE IS ACTIVATED AT THE RESPECTIVE INTERSECTION. DURING THE PEDESTRIAN SIGNAL PHASE, THE R10-11b ELECTRONIC BLANK-OUT SIGN AT THE RESPECTIVE INTERSECTION SHALL READ "NO TURN ON RED" AS SHOWN IN THE ABOVE DETAIL.
3. SEE SPECIAL PROVISIONS FOR ELECTRONIC BLANK-OUT SIGN SPECIFICATIONS.

NOTES:

1. W11-2, W16-7PL AND W16-7PR SIGNS INSTALLED WITH PROPOSED RECTANGULAR RAPID FLASHING BEACONS (RRFB) TO BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEMS 824.221 AND 824.222, RESPECTIVELY.
2. D3-1(1), D3-2(2) AND D3-3(3) SIGNS TO BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEM 874.01.
3. PID-1 AND PID-2 SIGNS TO BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEM 827.991.
4. PID-3 AND IDSD-1 SIGNS TO BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEM 827.992.

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: TRAFFIC SIGN SUMMARY 1		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 204 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 39 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	



2.1	D	a	n	f	o	r	t	h	S	t	.	L	o	t		
5.3	4.9	4.9	3.0	5.0	2.8	3.6	10.4	5.0	3.2	7.6	4.7	4.5	2.9	2.1		

HISTORIC ROAD

Central St

CITY OF FRAMINGHAM
MASSACHUSETTS
INCORPORATED 1780

Dimension Type	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Total
Horizontal (Top)	3.4	5.5	16.9	3	2.33	4	36
Horizontal (Bottom)	3.4	5.5	16.9	3	2.33	4	36
Vertical (Left Side)	1.7	5.5	-	-	-	-	7.2
Vertical (Right Side - Top Section)	1.5	6	1.8	-	-	-	9.3
Vertical (Right Side - Bottom Section)	1.5	3	4.5	-	-	-	9.5

Table of distances between letter and object lefts

Technical drawing of a rectangular street sign for "Concord St". The sign features the City of Pasadena seal on the left and the text "Concord St" in a bold, sans-serif font. Dimensions are provided in feet and inches.

Sign Dimensions:

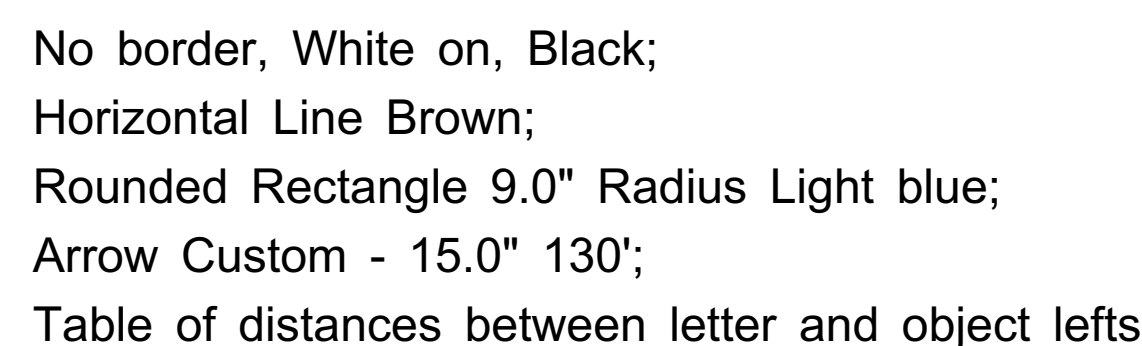
- Total width: 36
- Total height: 8
- Text "Concord" width: 19.1
- Text "St" width: 3
- Seal width: 5.5
- Seal height: 1.5
- Border width: 1.5

Mounting Hardware Dimensions:

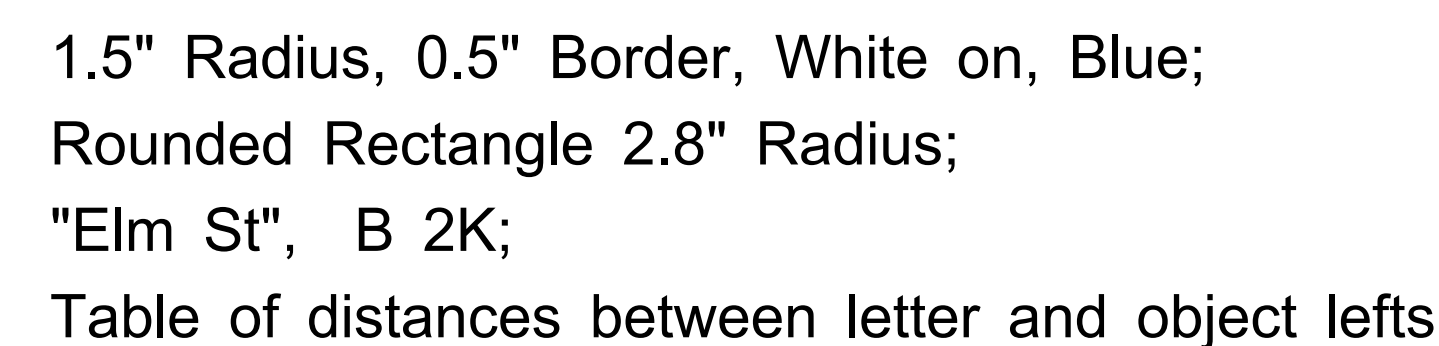
- Top left: 1.7
- Top right: 1.5
- Bottom left: 1.5
- Bottom right: 1.5
- Total width of hardware: 6
- Total height of hardware: 5.5

Table of distances between letter and object lefts

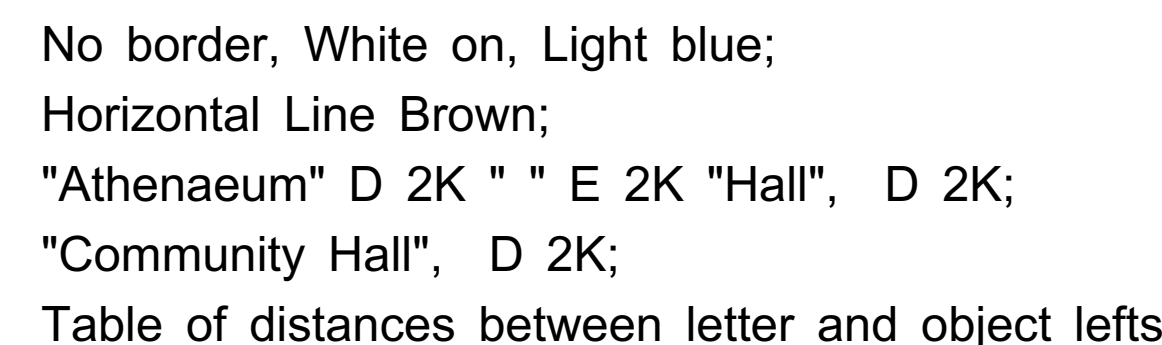
D3-1(1) DETAIL
NOT TO SCALE



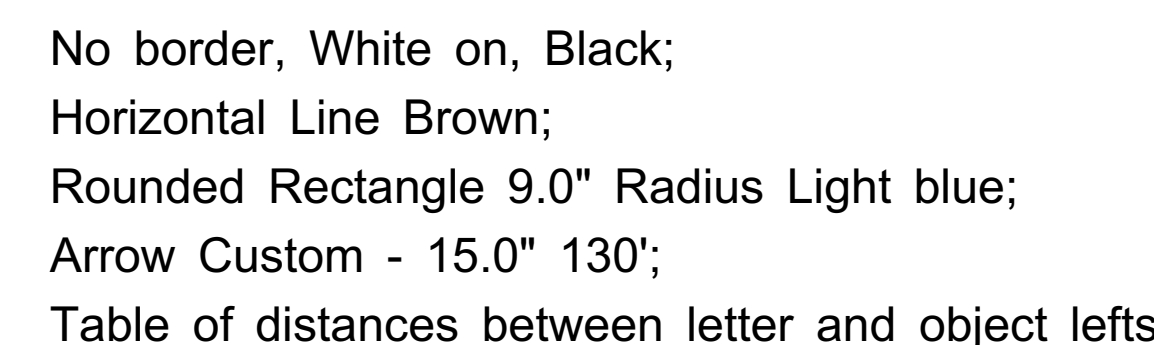
PID-1 DETAIL
NOT TO SCALE



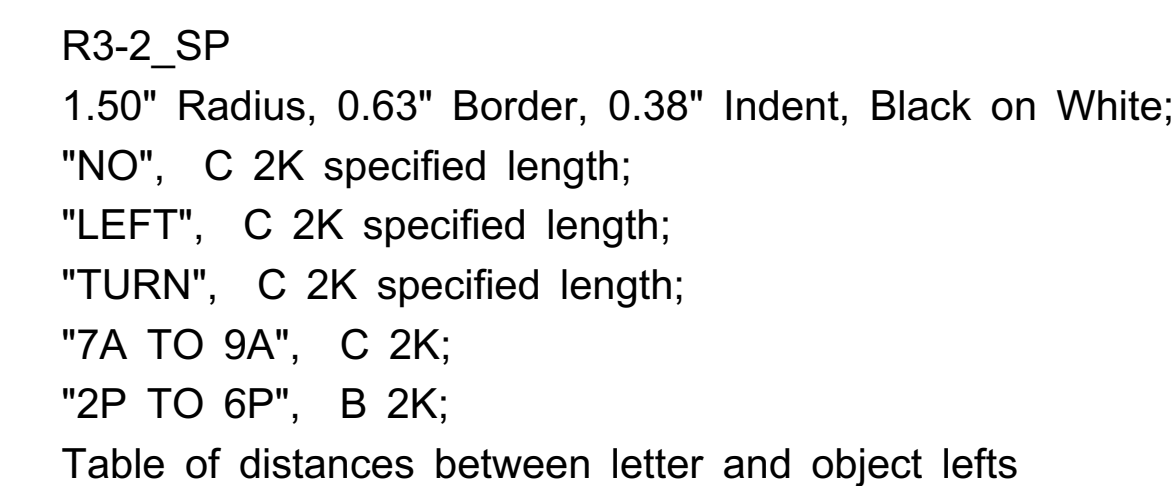
D3-1(2) DETAIL
NOT TO SCALE



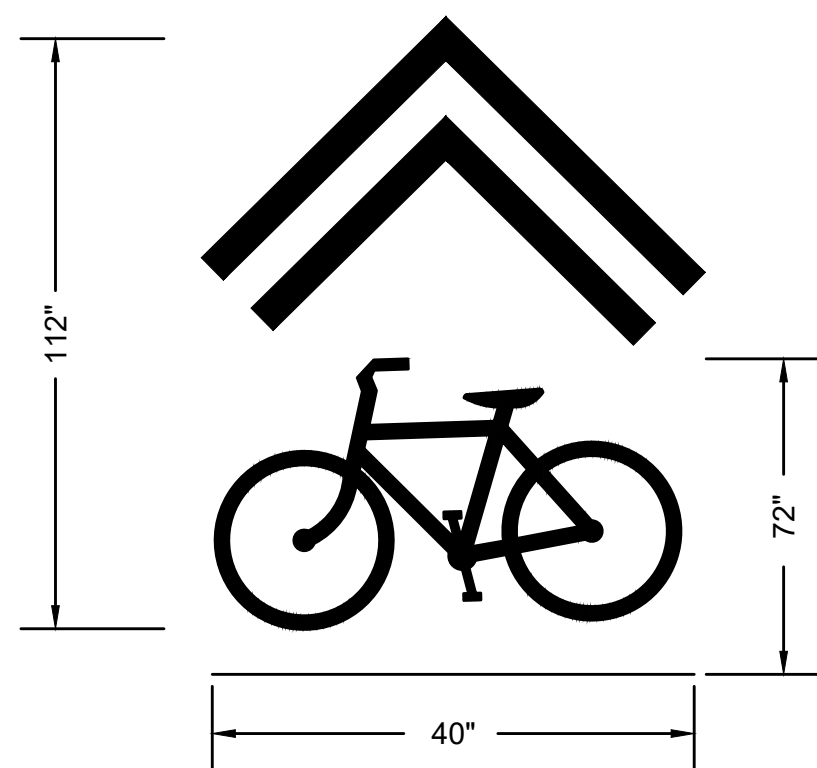
IDSD-1 DETAIL
NOT TO SCALE



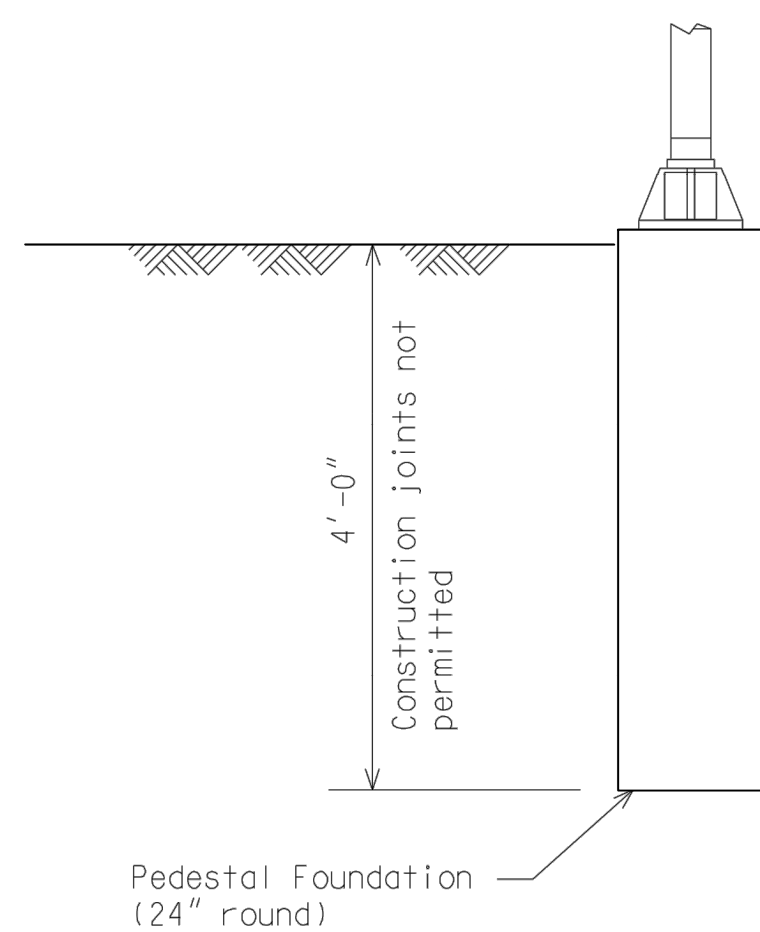
PID-2 DETAIL
NOT TO SCALE

[illegible]

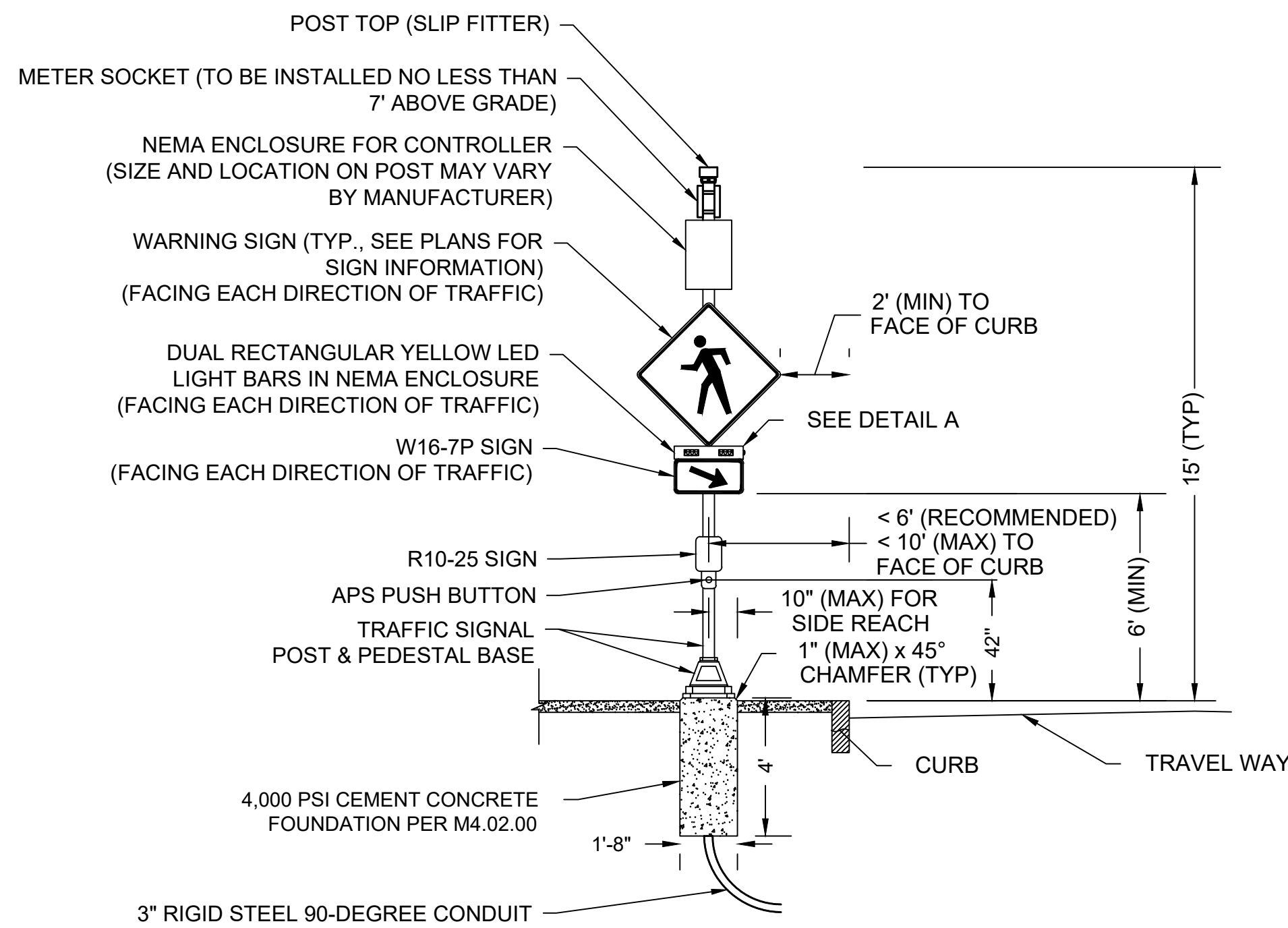
R3-2_SP "7A TO 9A 2P TO 6P"
NOT TO SCALE



SHARED LANE MARKING DETAIL
NOT TO SCALE

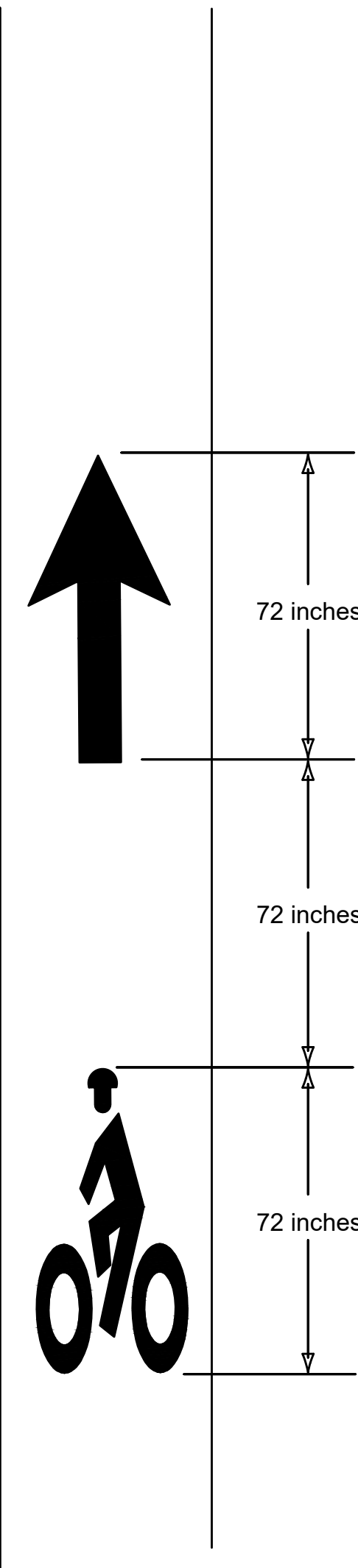
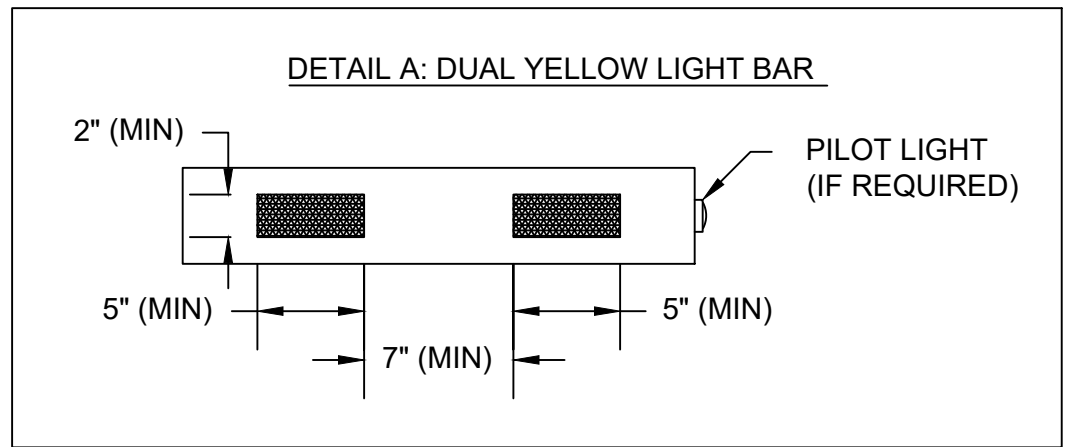


PEDESTAL FOUNDATION DETAILS
NOT TO SCALE

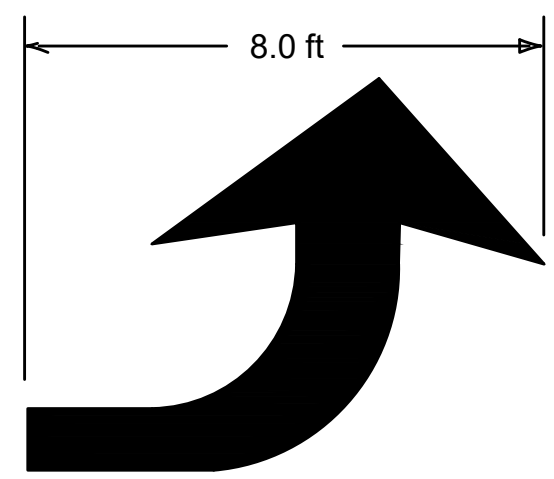


RECTANGULAR RAPID FLASHING BEACON (RRFB)
NOT TO SCALE

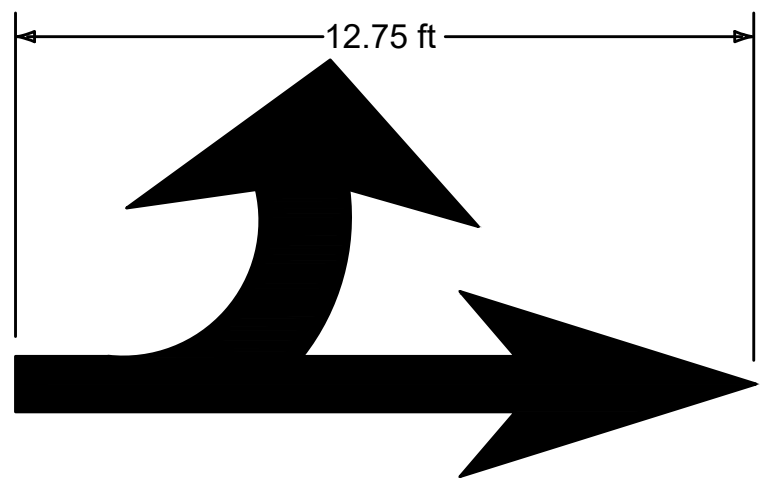
- NOTES:
- CROSSWALK AND ADA/AAB-COMPLIANT RAMPS NOT SHOWN. SEE PLANS FOR LOCATIONS.
 - APS PUSHBUTTONS SHALL BE POSITIONED TO MEET ALL ADA/AAB REQUIREMENTS.



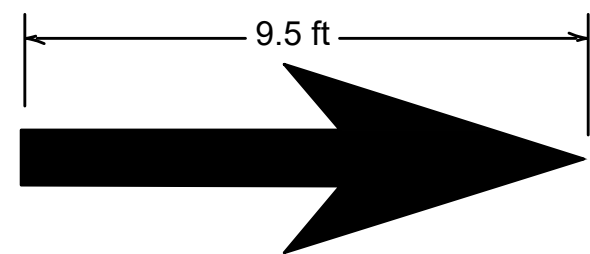
BIKE LANE SYMBOL
(NOT TO SCALE)



TURN LANE USE ARROW
NOT TO SCALE



TURN AND THROUGH LANE USE ARROW
NOT TO SCALE



THROUGH LANE USE ARROW
NOT TO SCALE



*Stroke width:
Minimum = 3 inches
Special = 4 inches

Note: Blue background and white border are optional

ACCESSIBILITY PARKING SPACE MARKING
NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

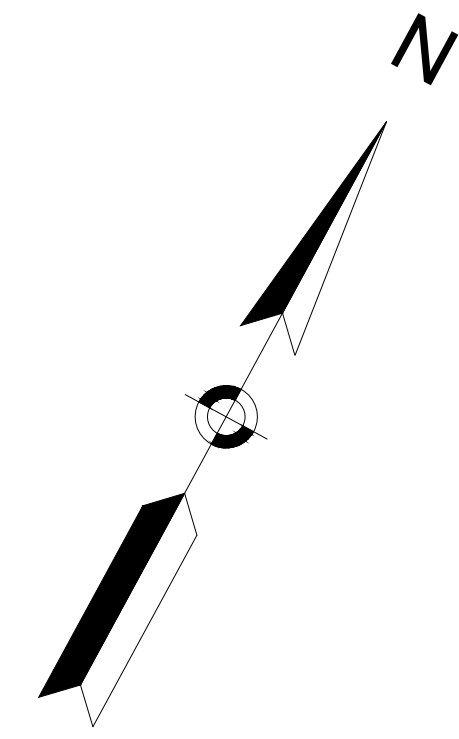
DRAWING TITLE: TRAFFIC DETAILS 2

PREPARED FOR:
CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

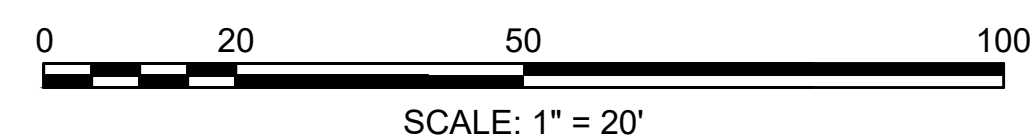
PREPARED BY:
Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 41 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	

NO.	DATE	REVISIONS
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1. CONTRACTOR SHALL REMOVE AND DISPOSE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT SEE SPECIAL PROVISIONS.
2. EXISTING SIGNAL SHALL BE KEPT OPERATIONAL UNTIL THE NEW SIGNAL IS OPERATIONAL AND TESTED.
3. NEW SIGNAL HEADS SHALL NOT BE INSTALLED PRIOR TO REMOVAL OF THE EXISTING SIGNAL.
4. SEE SHEETS 35-38 FOR ALL PAVEMENT MARKINGS AND SIGNS.

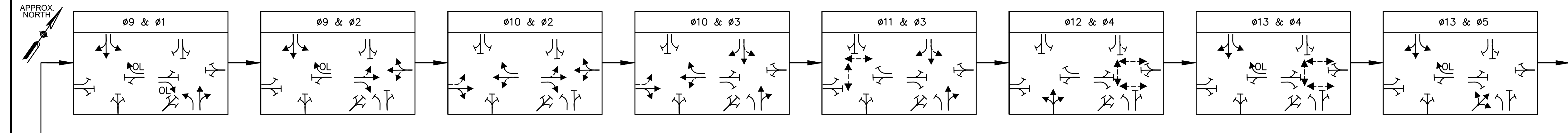


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION:		
85% DESIGN		
DRAWING TITLE:		
TRAFFIC SIGNAL PLAN 2		
PREPARED FOR:		
 CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:		
 Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 201 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 43 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	

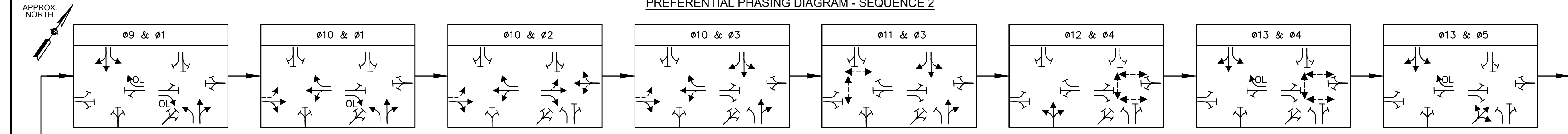
SEQUENCE & TIMING FOR FULL ACTUATED CONTROL (COORDINATED) CENTRAL STREET AT CONCORD STREET / ELM STREET WATER STREET																									FLASHING OPERATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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APPROACH	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	13	14	15	16	17	18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
CENTRAL ST @ WATER ST	WB	A	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R

- NOTES:
- STANDARD NEMA CLEARANCES SHALL APPLY.
 - SEQUENCE 1 SHALL BE IN EFFECT ON WEEKDAYS FROM 6:00AM TO 10:00AM AND ON SATURDAYS FROM 11:00AM TO 2:00PM.
 - SEQUENCE 2 SHALL BE IN EFFECT ON WEEKDAYS FROM 3:00PM TO 7:00PM.

PREFERENTIAL PHASING DIAGRAM - SEQUENCE 1



PREFERENTIAL PHASING DIAGRAM - SEQUENCE 2



- NOTES:
- EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL RECEIVERS LOCATED AT THE INTERSECTION.
 - PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES AS FOLLOWS: (D1, D2, D3, D4, D5 AND D6)
 - IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL RECEIVER D1 (OR OTHERS AS PROVIDED) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY PRE-EMPTION THE ASSOCIATED GREEN PHASE FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL, PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN PROVIDE PRE-EMPTION PHASE CLEARANCE SERVICE THEN RESUME NORMAL OPERATION.
 - MINIMUM GREEN, NORMAL VEHICLE AND PEDESTRIAN CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
 - ONCE PRE-EMPTION TERMINATES THE SIGNAL WILL RETURN TO PHASES 1+9 TO RESUME NORMAL OPERATION.

SIGNAL IDENTIFICATION - CENTRAL ST / WATER ST

SIGNAL HOUSING		
B,C,D,E,F,G,H,J	A	P1-P4

(PROPOSED)

- NOTES:
- ALL VEHICLE AND PEDESTRIAN LENSES SHALL BE LED TYPE.
 - ALL VEHICLE SIGNAL HEADS SHALL BE 12 INCHES.
 - ALL HOUSINGS TO BE PROVIDED WITH TUNNEL VISORS AND 5-INCH NON-LOUVERED BACKPLATES WITH 3-INCH RETROREFLECTIVE BORDER.
 - ALL HOUSINGS TO BE FIXED MOUNTED.
 - ALL SIGNAL HEAD BACKPLATES SHALL BE NON-LOUVERED.

SIGNAL IDENTIFICATION - CENTRAL ST/CONCORD ST/ELM ST

SIGNAL HOUSING			
K,L,N,O,P,R,S,T,U	M	Q	P5-P10

(PROPOSED)

- NOTES:
- ALL VEHICLE AND PEDESTRIAN LENSES SHALL BE LED TYPE.
 - ALL VEHICLE SIGNAL HEADS SHALL BE 12 INCHES.
 - ALL HOUSINGS TO BE PROVIDED WITH TUNNEL VISORS AND 5-INCH NON-LOUVERED BACKPLATES WITH 3-INCH RETROREFLECTIVE BORDER.
 - ALL HOUSINGS TO BE FIXED MOUNTED.
 - ALL SIGNAL HEAD BACKPLATES SHALL BE NON-LOUVERED.

CENTRAL STREET AT CONCORD STREET / ELM STREET MAJOR ITEMS LIST

QUANTITY	ITEM
1	MASTER SIGNAL CONTROLLER NEMA 8 PHASE TS-2 (TYPE-1), CAB. & FDN.
1	15 FT ORNAMENTAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
1	30 FT ORNAMENTAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
1	35 FT ORNAMENTAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
4	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 8 FT. W / FOUNDATION
4	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 10 FT. W / FOUNDATION
9	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION
1	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION (ALL ARROWS)
1	12 INCH 1 WAY 5-SECTION LED VEHICLE SIGNAL INDICATION
6	16 INCH LED PEDESTRIAN INDICATION WITH COUNTDOWN
6	PUSHBUTTON-INTEGRATED ACCESSIBLE PEDESTRIAN SIGNAL W/SIGN AND SADDLE
1	VIDEO DETECTION SYSTEM
3	EMERGENCY PRE-EMPTION OPTICAL DETECTORS
1	EMERGENCY PRE-EMPTION STROBE (WHITE LENS)
1	4-CHANNEL EMERGENCY PREEMPT. PHASE SELECTOR/RACK
1	GPS SYNCHRONIZATION SYSTEM

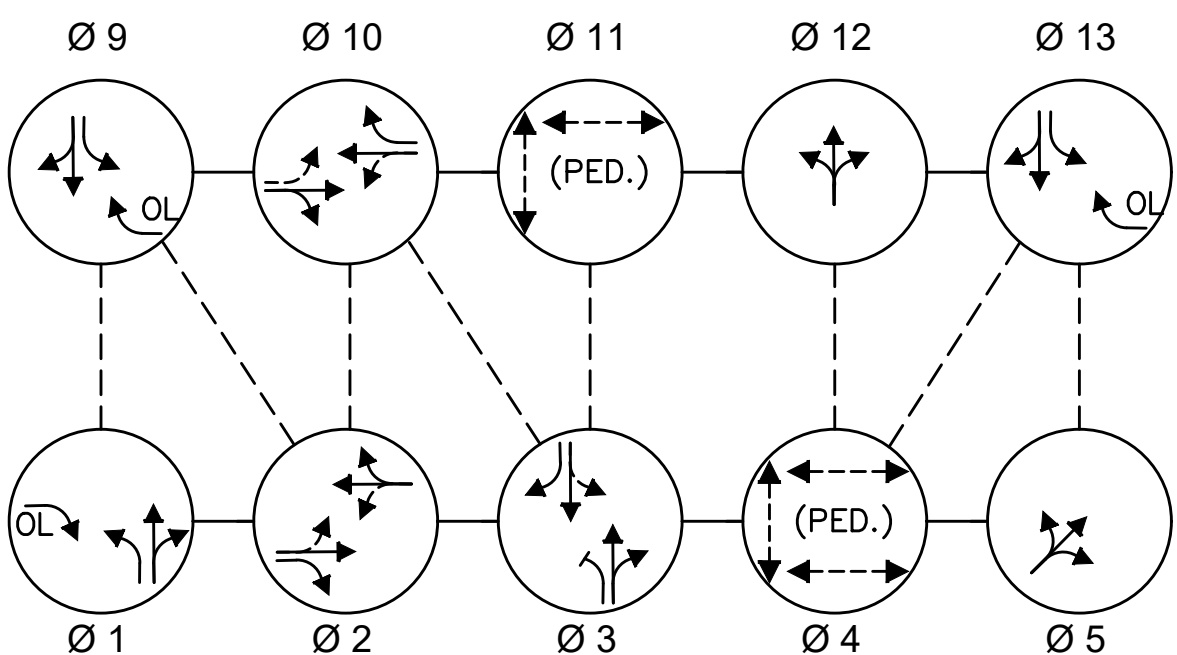
PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION OF A FULLY OPERATIONAL SIGNAL SYSTEM AS INTENDED ON THESE PLANS

CENTRAL STREET AT WATER STREET MAJOR ITEMS LIST

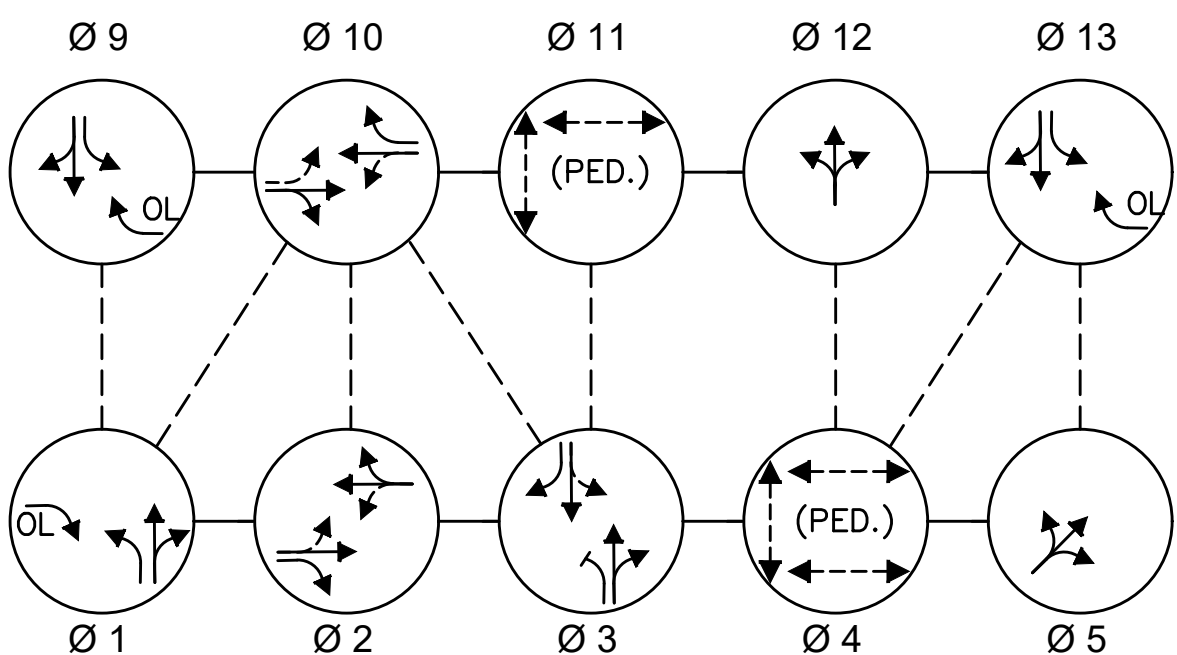
QUANTITY	ITEM
1	15 FT ORNAMENTAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
1	20 FT X 25 FT ORNAMENTAL DUAL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
2	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 8 FT. W / FOUNDATION
3	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 10 FT. W / FOUNDATION
8	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION
1	12 INCH 1 WAY 5-SECTION LED VEHICLE SIGNAL INDICATION
4	16 INCH LED PEDESTRIAN INDICATION WITH COUNTDOWN
4	PUSHBUTTON-INTEGRATED ACCESSIBLE PEDESTRIAN SIGNAL W/SIGN AND SADDLE
1	VIDEO DETECTION SYSTEM
3	EMERGENCY PRE-EMPTION OPTICAL DETECTORS
1	EMERGENCY PRE-EMPTION STROBE (WHITE LENS)
1	4-CHANNEL EMERGENCY PREEMPT. PHASE SELECTOR/RACK

PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION OF A FULLY OPERATIONAL SIGNAL SYSTEM AS INTENDED ON THESE PLANS

NEMA DUAL RING PHASING NOTES SEQUENCE 1:



NEMA DUAL RING PHASING NOTES SEQUENCE 2:



- NOTES:
- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
 - PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
 - THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
 - IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

VIDEO DETECTION DATA

DETECTOR NO.	PHASE CALLED	PHASE EXT.	OPERATIONS	DELAY TIME	EXT. TIME
1	Ø 9 Ø 13	Ø 9 Ø 13	PRESENCE	-	-
2	Ø 9 Ø 13	Ø 9 Ø 13	PRESENCE	-	-
3	Ø 9 Ø 13	Ø 9 Ø 13	PRESENCE	-	-
4	Ø 10	Ø 10	PRESENCE	-	-
5	Ø 12	Ø 12	PRESENCE	-	-
6	Ø 10	Ø 10	PRESENCE	-	-
7	Ø 10	Ø 10	PRESENCE	-	-
8	Ø 1	Ø 1	PRESENCE	-	-
9	Ø 2	Ø 2	PRESENCE	-	-
10	Ø 3	Ø 3	PRESENCE	-	-
11	Ø 3	Ø 3	PRESENCE	-	-
12	Ø 2	Ø 2	PRESENCE	-	-
13	Ø 3	Ø 3	PRESENCE	-	-
14	Ø 1	Ø 1	PRESENCE	-	-
15	Ø 5	Ø 5	PRESENCE	-	-

PRE-EMPTION SCHEDULE

RECEIVER	PRE-EMPT PHASE ASSIGNMENT	APPROACH AND MOVEMENT	VEHICLE PHASE ASSIGNMENT	NEXT PHASE CALLED
R1	1	NB	Ø 1	Ø 9 + Ø 1
R2	2	SB	Ø 3	Ø 10 + Ø 3
R3	3	EB	Ø 2	Ø 10 + Ø 2
R4	4	WB	Ø 10	Ø 10 + Ø 2
R5	5	SB	Ø 9	Ø 9 + Ø 1
R6	6	EB	Ø 10	Ø 10 + Ø 2

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION:

85% DESIGN

DRAWING TITLE:

SEQUENCE & TIMING PLAN 1

PREPARED FOR:

CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DESIGNED BY: MP

DATE: 6/4/2024

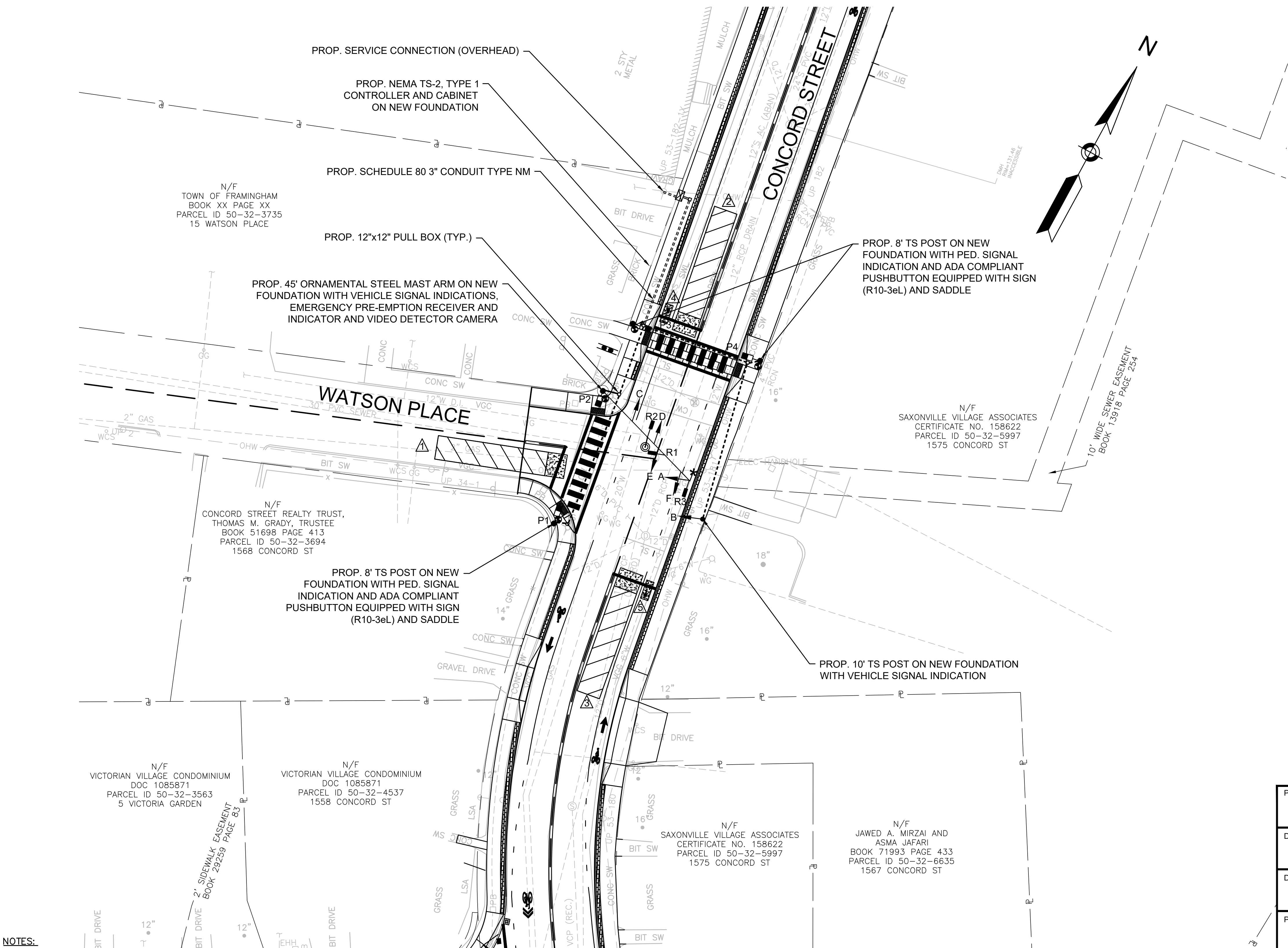
DRAWN BY: MP

PROJECT NO. 20034

CHECKED BY: AV

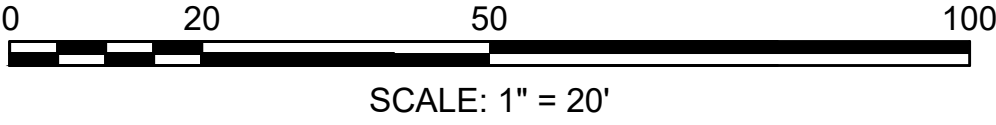
SHEET NO.

44 OF 89



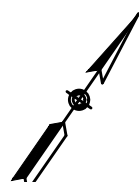
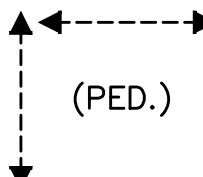
NOTES:

1. CONTRACTOR SHALL REMOVE AND DISPOSE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT SEE SPECIAL PROVISIONS.
2. EXISTING SIGNAL SHALL BE KEPT OPERATIONAL UNTIL THE NEW SIGNAL IS OPERATIONAL AND TESTED.
3. SEE SHEETS 35-38 FOR ALL PAVEMENT MARKINGS AND SIGNS



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: TRAFFIC SIGNAL PLAN 3		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 45 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	

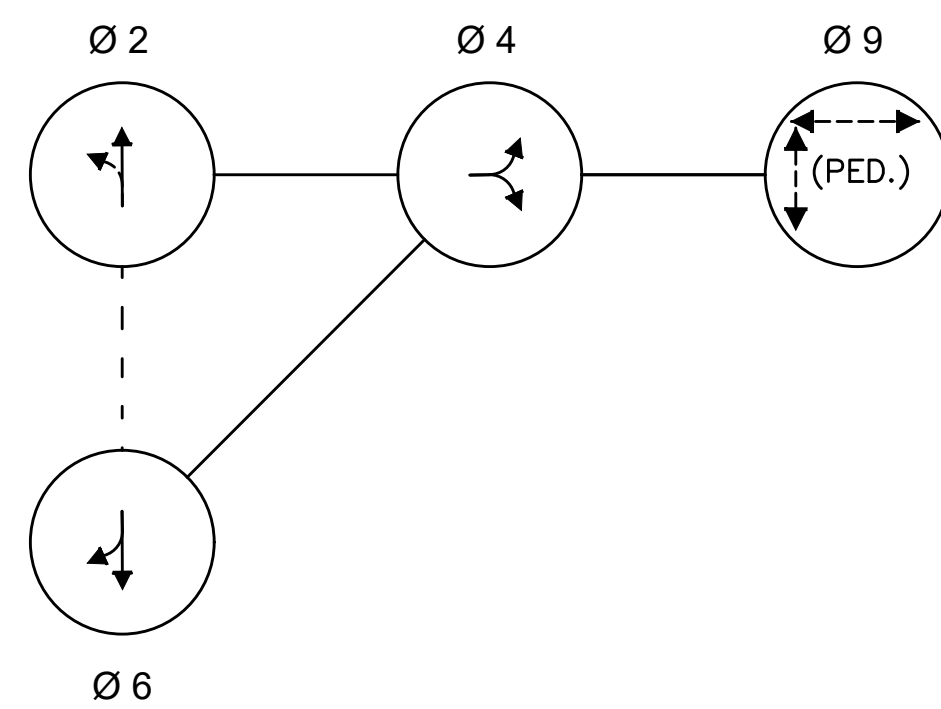
NO.	DATE	REVISIONS

SEQUENCE & TIMING FOR FULL ACTUATED CONTROL (COORDINATED) CONCORD STREET AT WATSON PLACE			APPROX. NORTH 		Ø 2			Ø 4			Ø 6			Ø 9			FLASHING OPERATION
														 (PED.)			
INTERVALS																	EMERGENCY ONLY
APPROACH	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12			
CONCORD STREET	SB	C,D	R	R	R	R	R	R	G	Y	R	R	R	R			
CONCORD STREET	NB	E,F	G	Y	R	R	R	R	R	R	R	R	R	R			
WATSON PLACE	EB	A,B	R	R	R	G	Y	R	R	R	R	R	R	R			
PEDESTRIAN	ALL	P1-P4	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW			
TIMING IN SECONDS																	
MINIMUM GREEN (INITIAL)			4			4			4								
MAX GREEN 1			112			19			112								
MAX GREEN 2			107			24			107								
VEHICLE EXTENSION			3			3			3								
YELLOW CLEARANCE				3			3			3							
RED CLEARANCE					3			3			3						
PED WALK INTERVAL												7		3			
RECALL				SOFT			NONE			SOFT			NONE				
DETECTION (MEMORY)				NON-LOCK			NON-LOCK			NON-LOCK			LOCK				

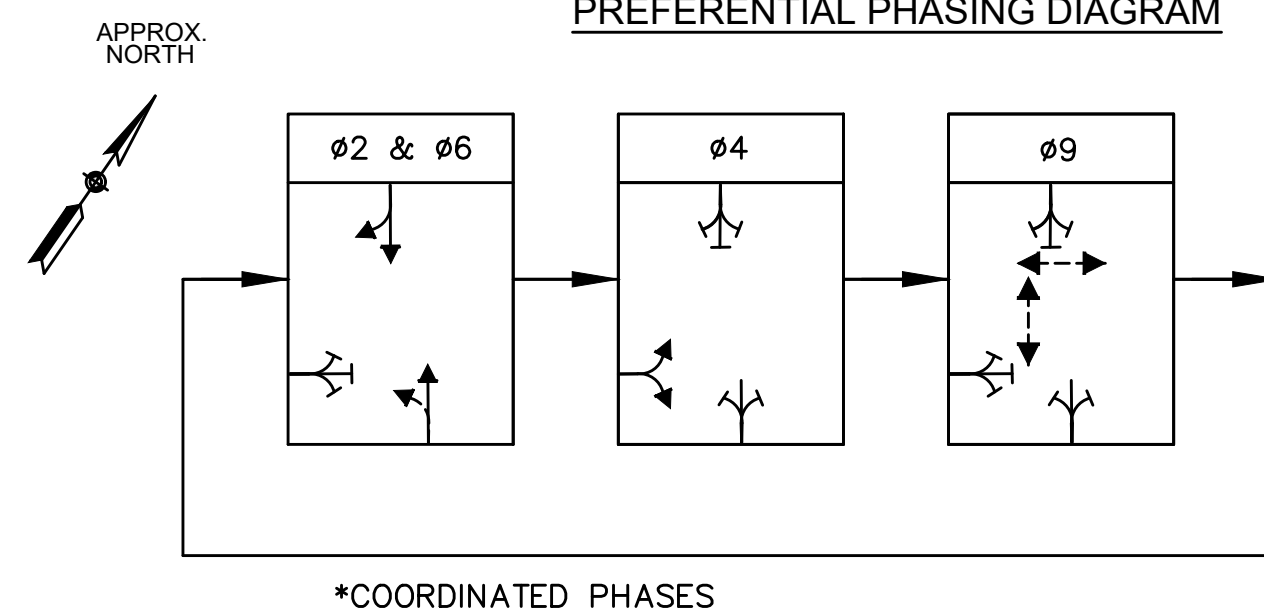
NOTES:

1. STANDARD NEMA CLEARANCES SHALL APPLY.
2. MAXIMUM GREEN 1 SHALL BE IN EFFECT DURING ALL TIMES EXCEPT AS NOTED BELOW.
3. MAXIMUM GREEN 2 SHALL BE IN EFFECT ON WEEKDAYS FROM 6:00AM TO 10:00AM AND FROM 3:00PM TO 7:00PM AND ON SATURDAYS FROM 11:00AM TO 2:00PM.

NEMA DUAL RING PHASING NOTES:



PREFERENTIAL PHASING DIAGRAM



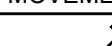
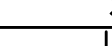
*COORDINATED PHASES

NOTES:

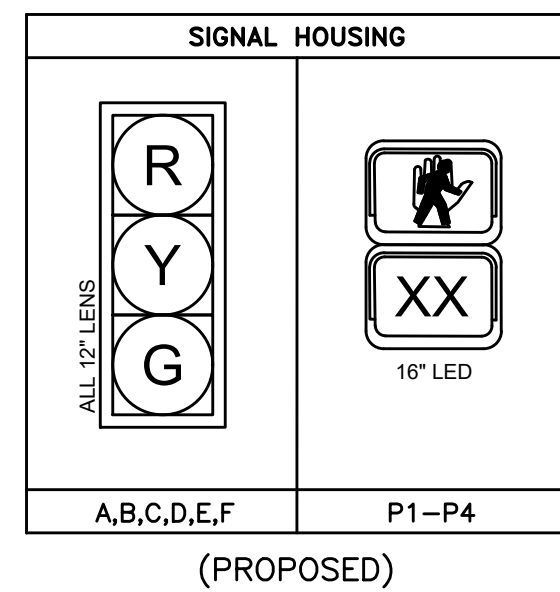
1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

CENTRAL STREET AT WATER STREET MAJOR ITEMS LIST	
QUANTITY	ITEM
1	SERVICE CONNECTION (OVERHEAD)
1	MASTER SIGNAL CONTROLLER NEMA 8 PHASE TS-2 (TYPE-1), CAB. & FDN.
1	45 FT ORNAMENTAL, GALV. STEEL MAST ARM ASSEMBLY, ORNAMENTAL BASE & FDN
1	ORNAMENTAL TRAFFIC SIGNAL POLE AND BASE, 8 FT. W / FOUNDATION
6	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION
4	16 INCH LED PEDESTRIAN INDICATION WITH COUNTDOWN
4	PUSHBUTTON-INTEGRATED ACCESSIBLE PEDESTRIAN SIGNAL W/SIGN AND SADDLE
1	VIDEO DETECTION SYSTEM
1	GPS TIME SYNCHRONIZATION SYSTEM
PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION OF A FULLY OPERATIONAL SIGNAL SYSTEM AS INTENDED ON THESE PLANS	

VIDEO DETECTION DATA					
DETECTOR NO.	PHASE CALLED	PHASE EXT.	OPERATIONS	DELAY TIME	EXT. TIME
	ø4	ø4	PRESENCE	—	—
	ø6	ø6	PRESENCE	—	—
	ø2	ø2	PRESENCE	—	—
	ø6	ø6	PRESENCE	—	—
	ø2	ø2	PRESENCE	—	—

PRE-EMPTION SCHEDULE				
RECEIVER	PRE-EMPT PHASE ASSIGNMENT	APPROACH AND MOVEMENT	VEHICLE PHASE ASSIGNMENT	NEXT PHASE CALLED
R1	1	EB 	Ø 4	Ø 2 + Ø 6
R2	2	SB 	Ø 6	Ø 4
R3	3	NB 	Ø 2	Ø 4

SIGNAL IDENTIFICATION

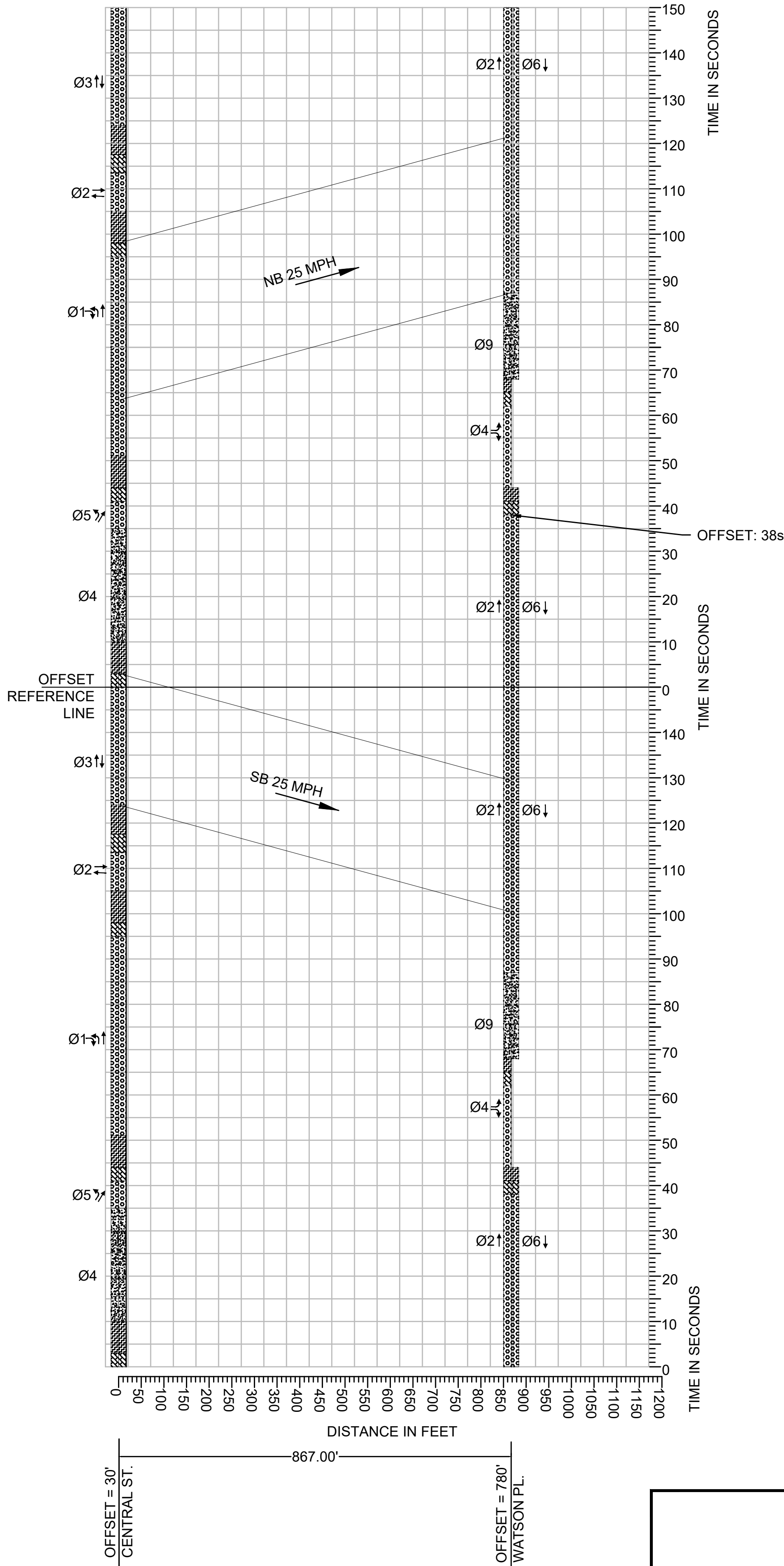
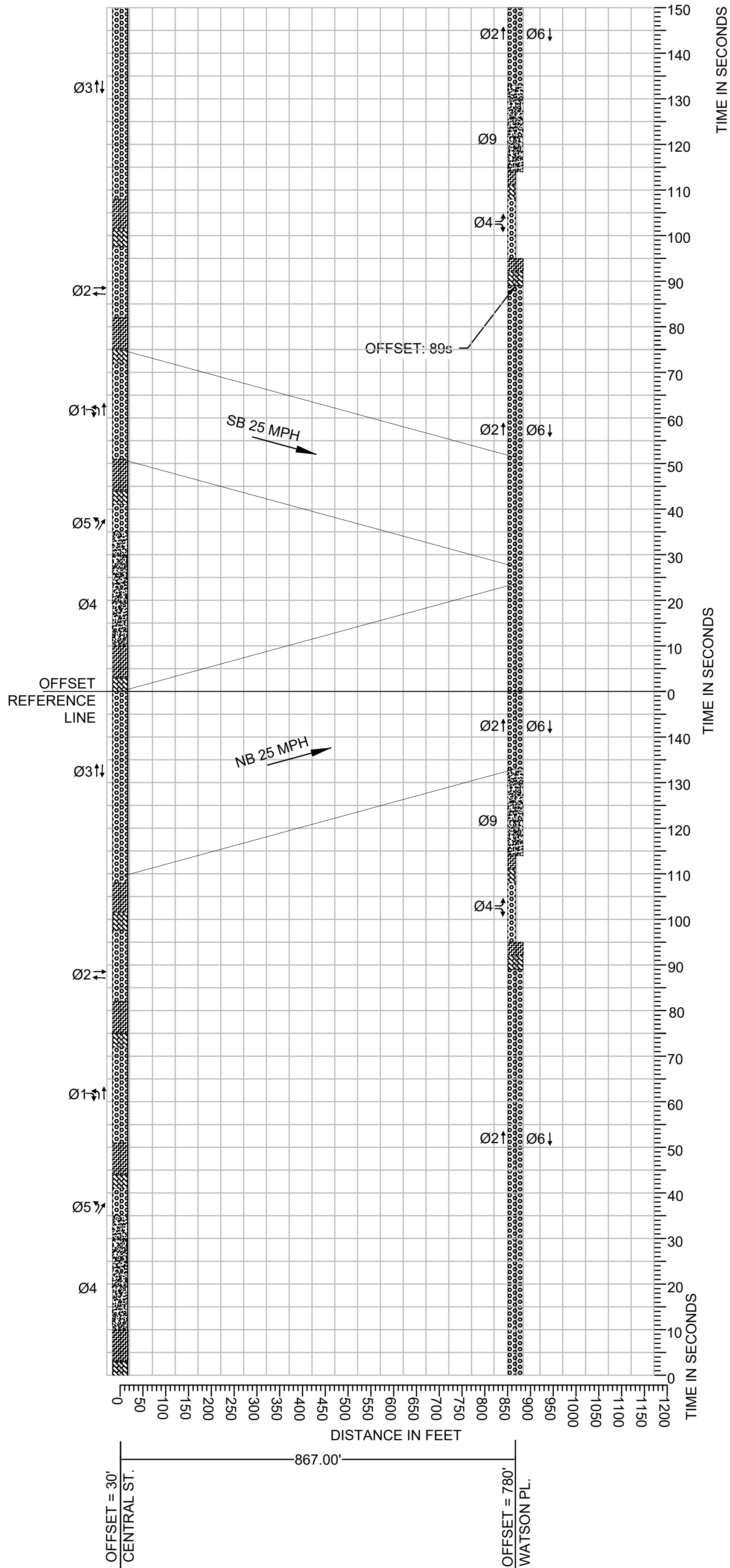


NOTES:

1. ALL VEHICLE AND PEDESTRIAN LENSES SHALL BE LED TYPE.
2. ALL VEHICLE SIGNAL HEADS SHALL BE 12 INCHES.
3. ALL HOUSINGS TO BE PROVIDED WITH TUNNEL VISORS AND 5-INCH NON-LOUVERED BACKPLATES WITH 3-INCH RETROREFLECTIVE BORDER.
4. ALL HOUSINGS TO BE FIXED MOUNTED.
5. ALL SIGNAL HEAD BACKPLATES SHALL BE NON-LOUVERED.

				PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
				SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 46 OF 89
				DATE: 6/4/2024	DRAWN BY: MP	
				PROJECT NO. 20034	CHECKED BY: AV	
	NO.	DATE	REVISIONS			

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- LEGEND:
- RED CLEARANCE INTERVAL
 - YELLOW CLEARANCE INTERVAL
 - GREEN TIME FOR COORDINATED PHASE
 - PEDESTRIAN PHASE

COORDINATION DATA		
TIMING PLAN	CYCLE LENGTH (SEC.)	REF/OFFSET (SEC.)
COORDINATION PLAN 1 M-F (6AM - 10AM) SAT (11AM - 2PM)	150	89
COORDINATION PLAN 2 M-F (3PM - 7PM)	150	38

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: TIME SPACE DIAGRAM

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 47 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	

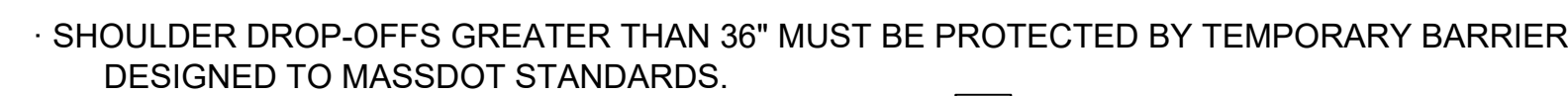
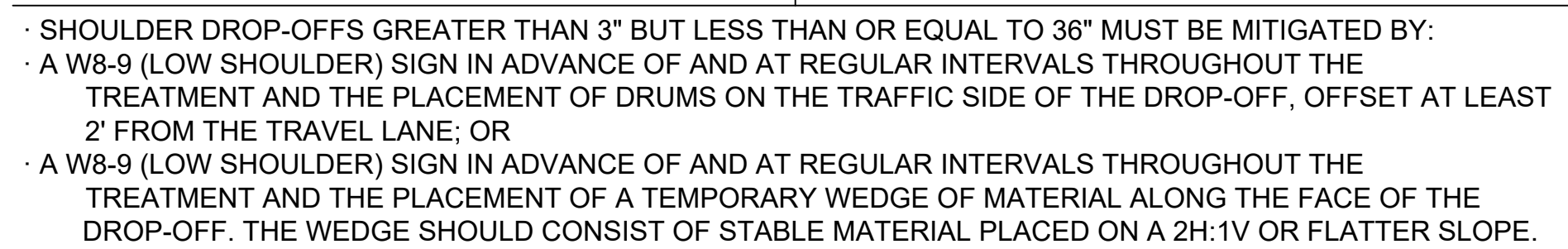
1. MINIMUM LANE WIDTH OF 11 FEET SHALL BE MAINTAINED UNLESS OTHERWISE NOTED. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF THE DRUMS OR CONES (IF USED).
2. THE CONTRACTOR SHALL COORDINATE APPROVAL OF ANY CHANGES TO THE TEMPORARY TRAFFIC CONTROL PLAN WITH THE CITY OF FRAMINGHAM PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL ALSO NOTIFY THE CITY OF FRAMINGHAM THREE (3) WEEKS IN ADVANCE OF PLACING TEMPORARY TRAFFIC CONTROL SIGNS.
3. THESE PLANS ARE NOT INTENDED TO LIMIT THE CONTRACTOR'S APPROACH TO SCHEDULE THE WORK BUT TO OUTLINE ONE WAY OF PROGRESSING. THE CONTRACTOR IS EXPECTED TO USE KNOWLEDGE AND EXPERIENCE TO PERFORM THE WORK IN THE MOST EFFICIENT AND SAFE MANNER IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.
4. PLACE ALL SAFETY DEVICES AND CONSTRUCTION SIGNING BEFORE ACTUAL CONSTRUCTION WORK BEGINS.
5. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED BASED ON FIELD CONDITIONS WITH THE APPROVAL OF THE ENGINEER.
6. WHEN EXISTING SIGNS ARE NO LONGER APPLICABLE THEY SHALL BE TEMPORARILY COVERED DURING CONSTRUCTION OR REMOVED AND RESET UPON COMPLETION OF CONSTRUCTION. THE COST SHALL BE INCIDENTAL TO THE CONTRACT.
7. ALL SIGNS SHALL BE REFLECTORIZED, WITH REFLECTIVE SHEETING CONFORMING TO M9.30.0. ALL SIGN COLORS SHALL BE PER THE CONSTRUCTION SIGN SUMMARY TABLE AND CURRENT MUTCD.
8. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
9. CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES IMMEDIATELY WHEN NO LONGER NEEDED.
10. UNLESS OTHERWISE NOTED, ALL PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC EQUIPMENT REMOVED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
11. CONTRACTOR SHALL INSTALL, RENEW, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
12. ACCESS/EGRESS TO ALL ABUTTERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
13. CONTRACTOR SHALL MAINTAIN EMERGENCY PASSAGE AT ALL TIMES TO BUILDINGS WITHIN AND ADJACENT TO THE PROJECT LIMITS AS WELL AS A LARGER AREA IF AFFECTED BY CONSTRUCTION CONDITIONS. CONTRACTOR SHALL MAINTAIN 24 HOUR EMERGENCY VEHICLE ACCESS TO CONSTRUCTION AREAS.
14. CONTRACTOR SHALL COORDINATE WITH ABUTTERS FOR THE PROPOSED WORK AND SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF THE WORK THAT WILL REQUIRE TEMPORARY CLOSURE OF ACCESS TO THEIR PROPERTY.
15. THE CONTRACTOR SHALL COORDINATE THE WORK WITH ALL ABUTTING PROJECTS.
16. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
17. THE FIRST TEN (10) PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
18. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
19. CONTRACTOR SHALL MAINTAIN ADA COMPLIANT ACCESS AT ALL TIMES INCLUDING PEDESTRIAN GUIDANCE SYSTEMS. ALL PEDESTRIAN DETOURS OR BYPASSES SHALL BE ADA COMPLIANT WITH PROPER BARRICADES, RAILINGS, RAMPS, SIGNS, ETC.
20. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERSEDED BY THESE PLANS.



THIS GUIDANCE IS ADOPTED FROM THE ROADSIDE DESIGN GUIDE, 4TH EDITION.

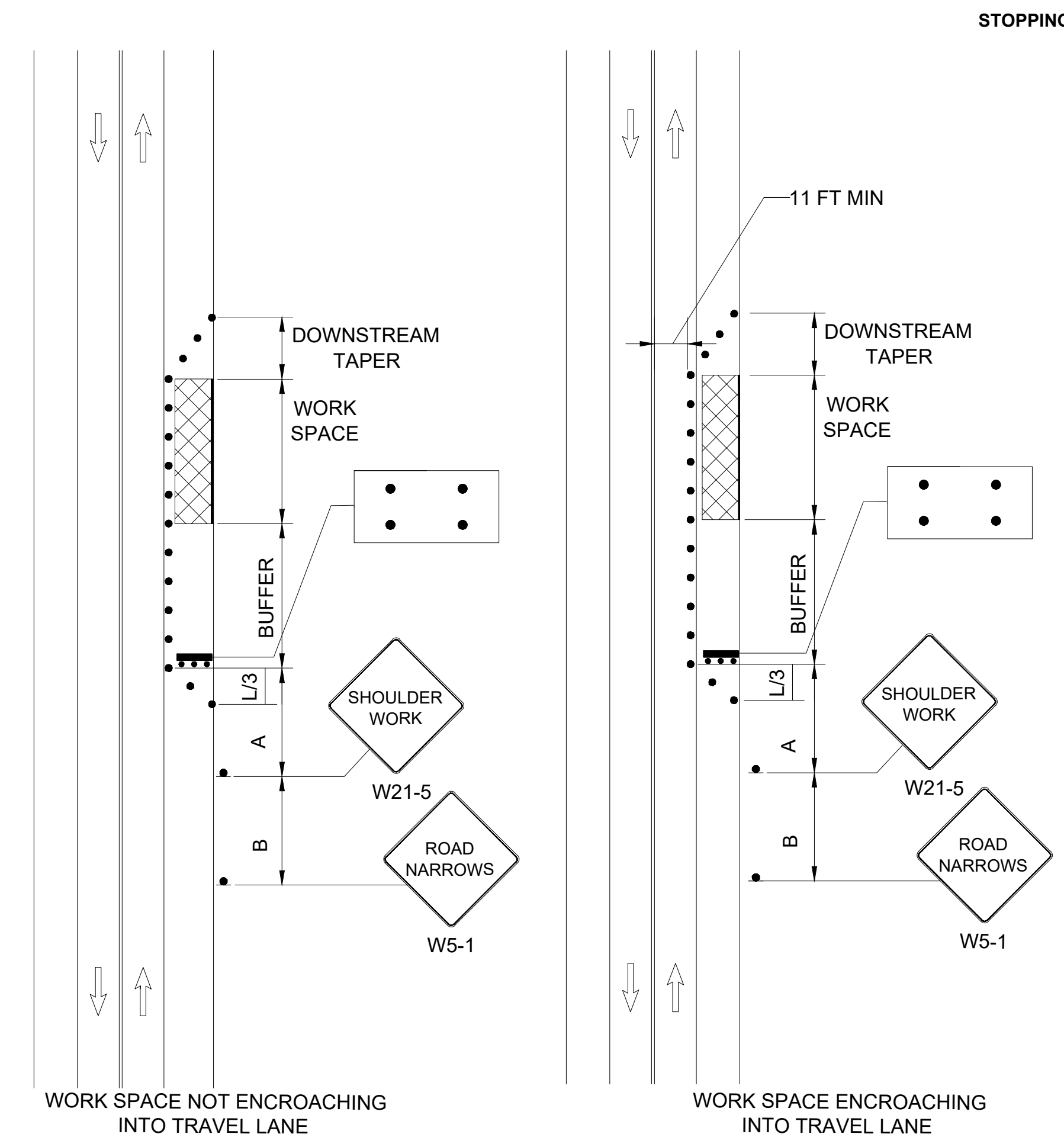
PAVEMENT DROP-OFFS MAY OCCUR DURING PAVING, EXCAVATION, AND OTHER CONSTRUCTION ACTIVITIES. DROP-OFFS CREATE HAZARDS FOR VEHICLES IF NOT PROPERLY MITIGATED. THE FOLLOWING APPLIES FOR ALL ROADS WITH SPEED LIMITS GREATER THAN 30 MPH; FOR ROADS WITH SPEEDS OF 30 MPH OR LESS, TREATMENTS FOR PAVEMENT EDGE DROP-OFFS SHALL BE AT THE DISCRETION OF THE ENGINEER. DROP-OFFS BETWEEN ADJACENT, OPEN TRAVEL LANES SHALL NOT EXCEED 2", AND ANY DROP-OFF IN EXCESS OF 3" SHALL NOT BE LEFT UNATTENDED WITHOUT ONE OF THESE MITIGATION MEASURES APPLIED.

- SHOULDER DROP-OFFS 3" OR LESS ADJACENT TO A SHOULDER OR ACTIVE LANE SHOULD BE MITIGATED BY:
- A W8-9 (LOW SHOULDER) SIGN IN ADVANCE OF AND AT REGULAR INTERVALS THROUGHOUT THE TREATMENT; OR
- THE PLACEMENT OF DRUMS ON THE TRAFFIC SIDE OF THE DROP OFF.

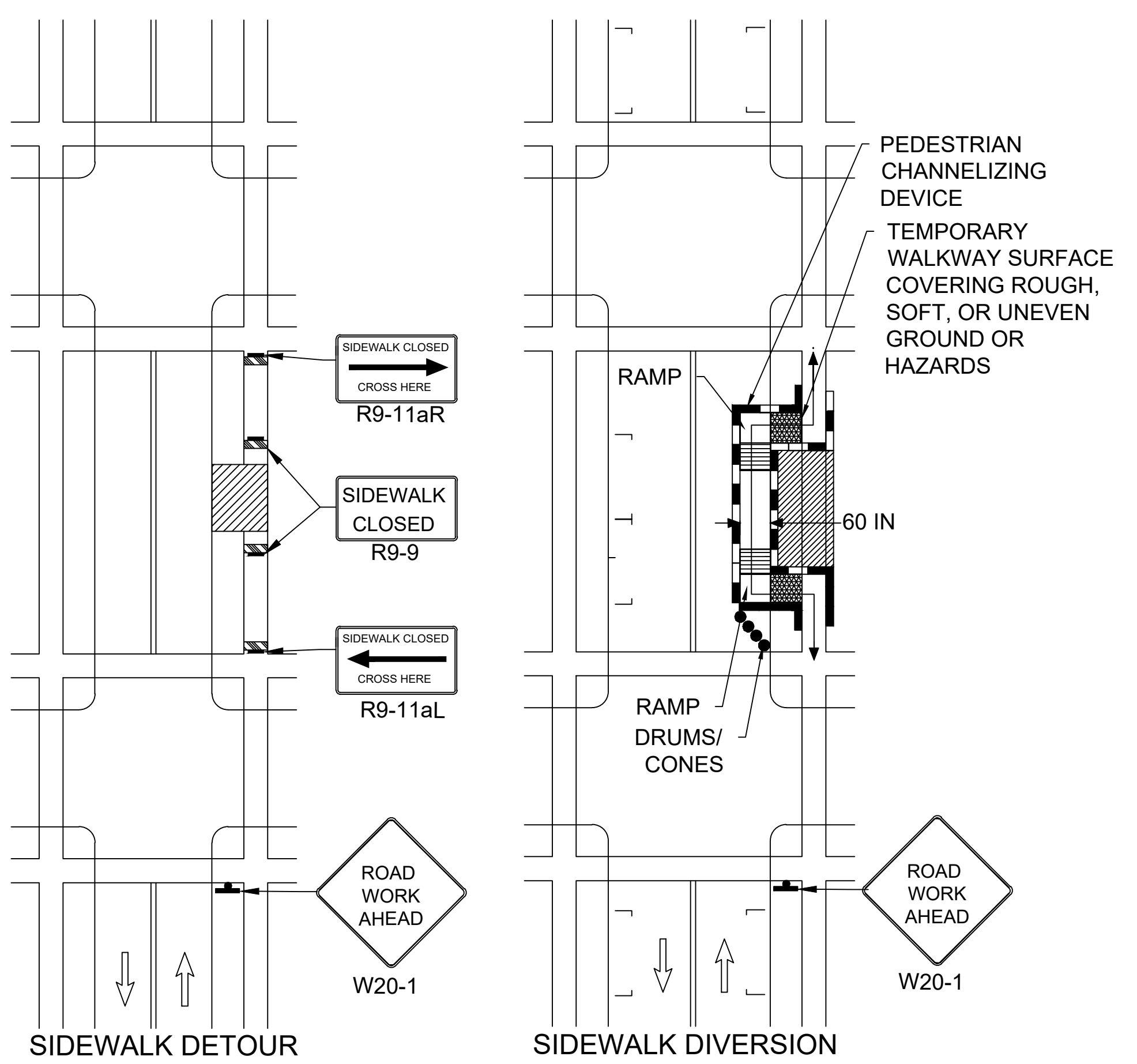


	WORK ZONE
	DIRECTION OF VEHICULAR TRAFFIC
	DIRECTION OF PROPOSED VEHICULAR TRAFFIC
	SIGN
	TYPE III BARRICADE
	REFLECTORIZED PLASTIC DRUM OR 36" CONE
	POLICE OFFICER

				PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
	1	XX/XX/XX	ENTER DESCRIPTION OF REVISION HERE	SCALE: AS NOTED DATE: 6/4/2024 PROJECT NO. 20034	DESIGNED BY: MP DRAWN BY: MP CHECKED BY: AV	SHEET NO. 48 OF 89
	NO.	DATE	REVISIONS			



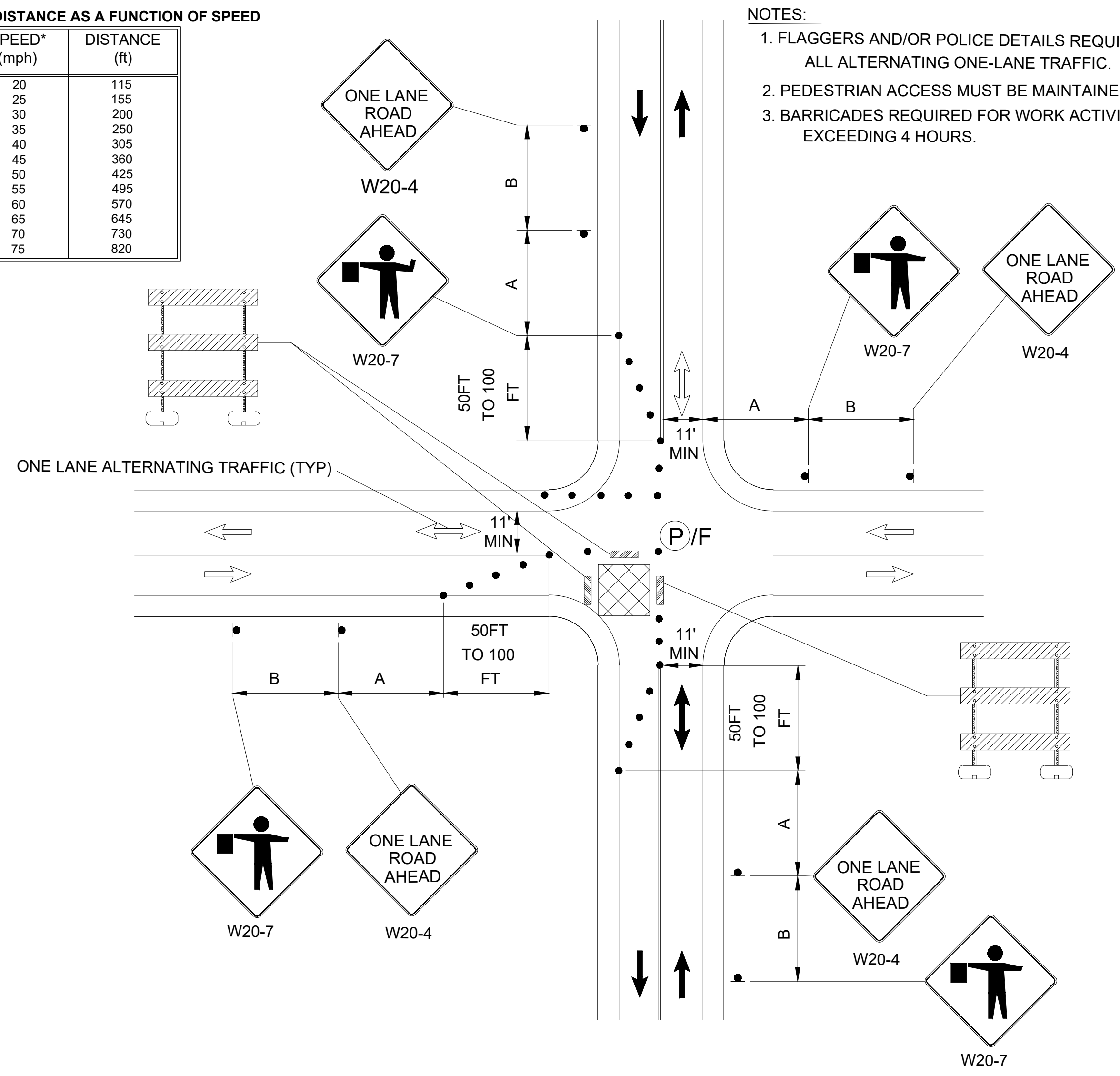
SHOULDER CLOSURE
NOT TO SCALE



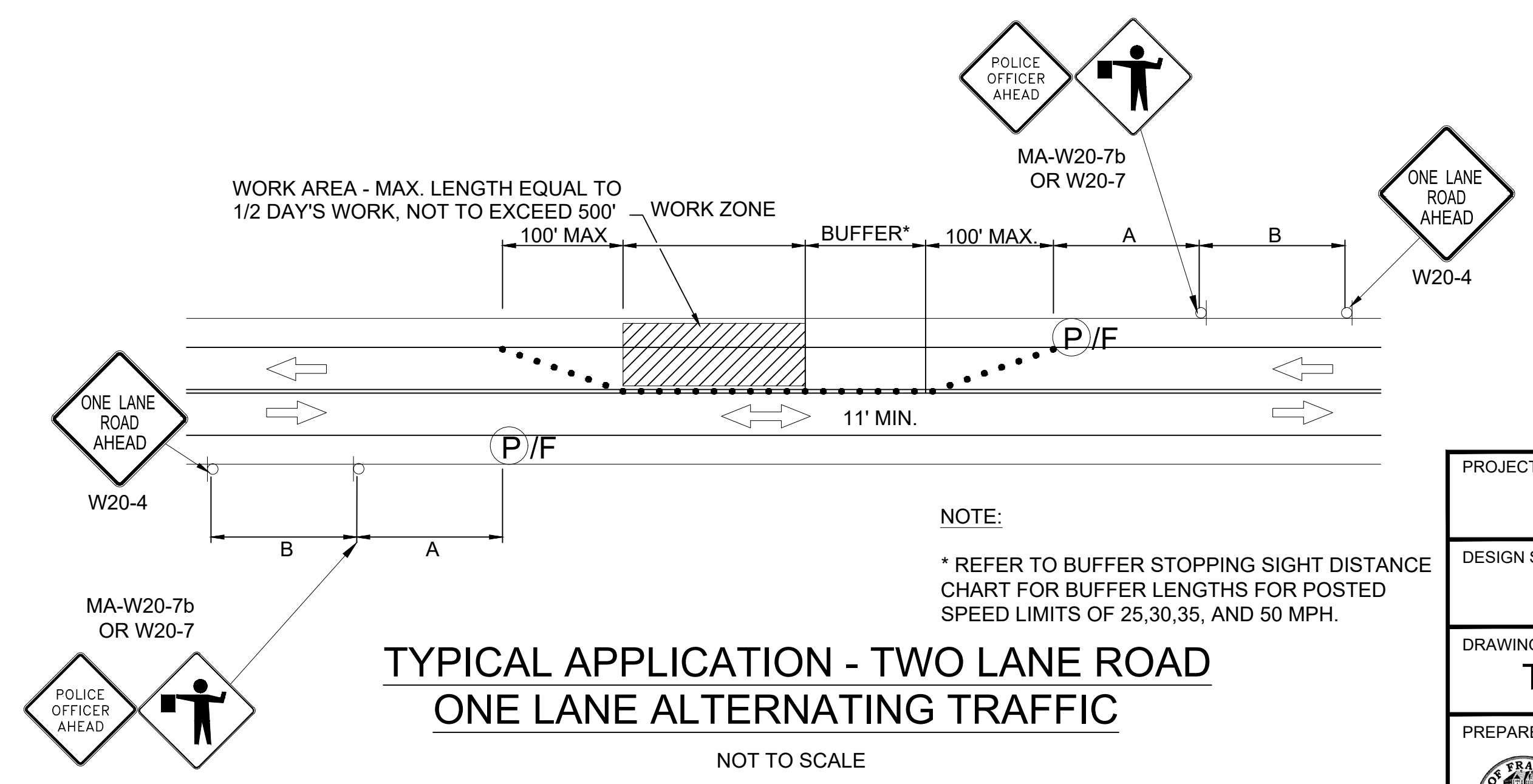
PEDESTRIAN DETOUR
NOT TO SCALE

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED* (mph)	DISTANCE (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820



TYPICAL APPLICATION - SINGLE LANE
APPROACH ONE QUADRANT CLOSURE AT T-INTERSECTION
NOT TO SCALE

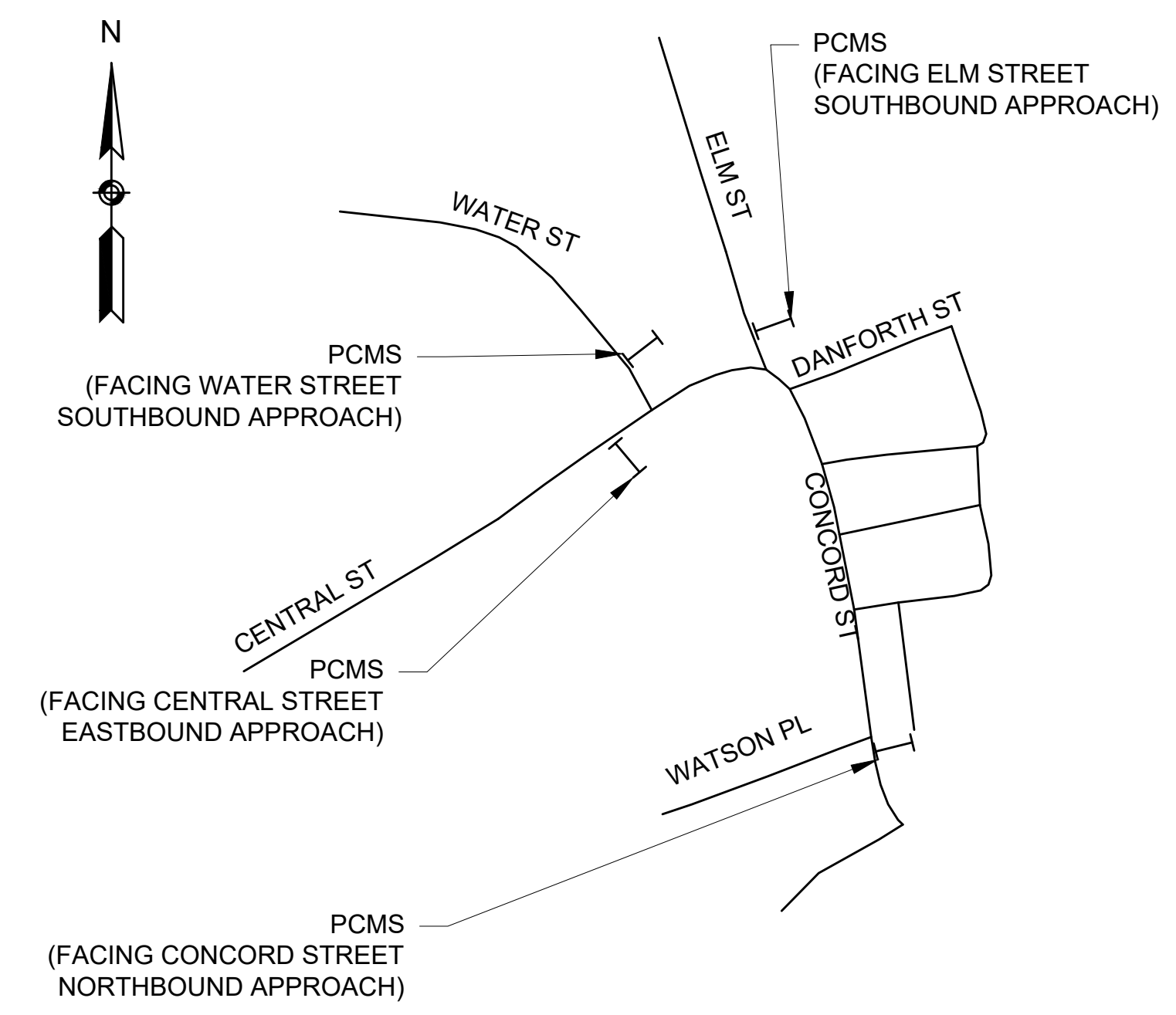


TYPICAL APPLICATION - TWO LANE ROAD
ONE LANE ALTERNATING TRAFFIC
NOT TO SCALE

TRAFFIC DEVICE LEGEND

- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- DIRECTION OF PROPOSED VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- POLICE OFFICER
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

- NOTES:
1. FLAGGERS AND/OR POLICE DETAILS REQUIRED FOR ALL ALTERNATING ONE-LANE TRAFFIC.
 2. PEDESTRIAN ACCESS MUST BE MAINTAINED
 3. BARRICADES REQUIRED FOR WORK ACTIVITY EXCEEDING 4 HOURS.



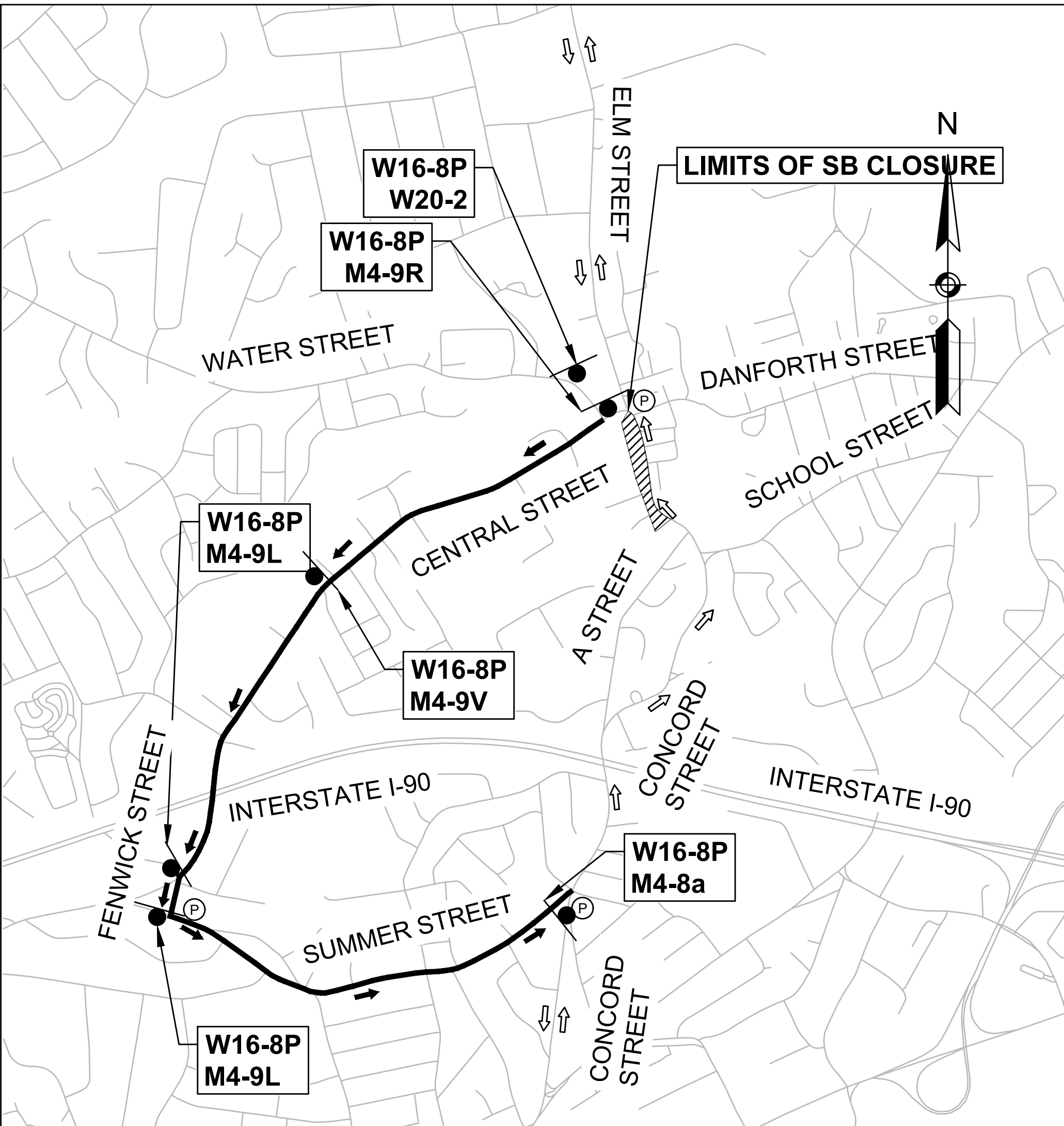
- PCMS
(PCMS DISPLAY ADVANCE NOTIFICATION)
- MESSAGE 1
ROAD WORK
- MESSAGE 2
MM/DD TO MM/DD
- (PCMS DISPLAY DURING CONSTRUCTION)
- MESSAGE 1
ROAD WORK AHEAD
- MESSAGE 2
BE PREPARED TO STOP

NOTE:
THE CONTRACTOR SHALL INSTALL PCMS BOARDS ALONG CENTRAL STREET, WATER STREET, ELM STREET, AND CONCORD STREET 1/4 MILES FROM THE PROJECT LIMITS.

PCMS BOARD SETUP FOR ROADWORK
NOT TO SCALE

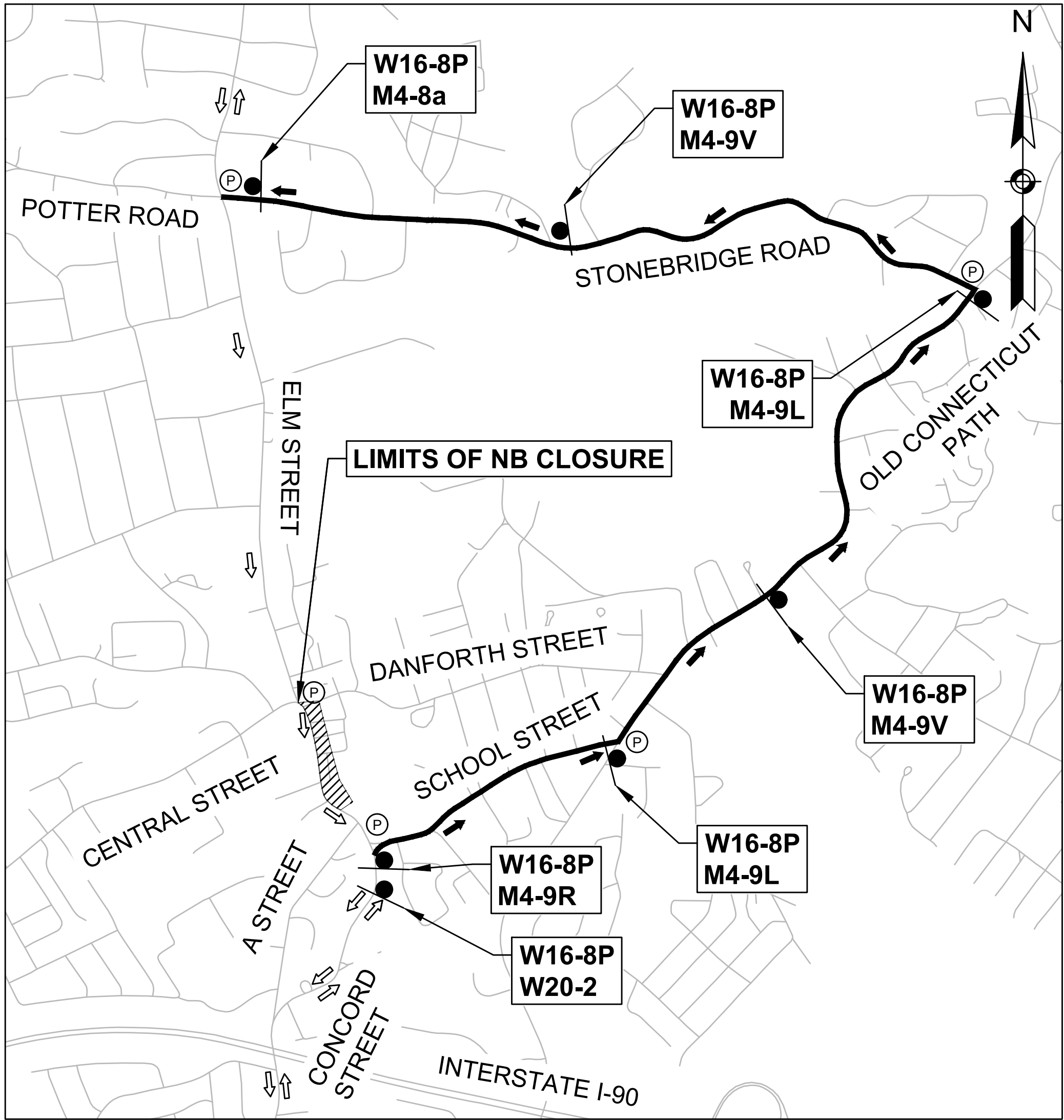
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: TRAFFIC MANAGEMENT PLAN 2		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 49 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	

NO.	DATE	REVISIONS
1	XX/XX/XX	ENTER DESCRIPTION OF REVISION HERE



MAP SOURCE: MASSGIS

DETOUR ROUTE 1: CONCORD STREET - SOUTHBOUND

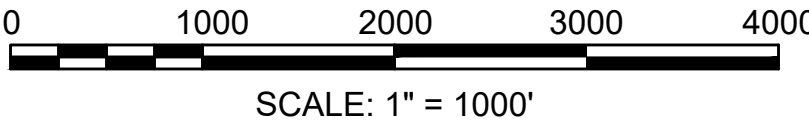


MAP SOURCE: MASSGIS

DETOUR ROUTE 2: CONCORD STREET - NORTHBOUND

NOTES:

- DETOUR ROUTE 1 SHALL BE USED WHILE THE SOUTHBOUND HALF OF CONCORD STREET IS CLOSED FOR FULL DEPTH RECONSTRUCTION.
- DETOUR ROUTE 2 SHALL BE USED WHILE THE NORTHBOUND HALF OF CONCORD STREET IS CLOSED FOR FULL DEPTH RECONSTRUCTION.
- DETOURS SHALL ONLY BE USED FOR WORK DURING THE DAY. NORMAL TRAFFIC OPERATIONS WILL BE RESTORED DURING NON-WORK HOURS.
- DETOUR ROUTE 2 WILL REQUIRE THE DETOUR OF EMERGENCY VEHICLES EXITING FOR A CALL FROM FRAMINGHAM FIRE STATION 2 GOING NORTHBOUND.
- ROAD CLOSURES ON CONCORD STREET SHALL FOLLOW THE TYPICAL TEMPORARY TRAFFIC MANAGEMENT DETAILS ON SHEETS 48, AND 49



TRAFFIC DEVICE LEGEND

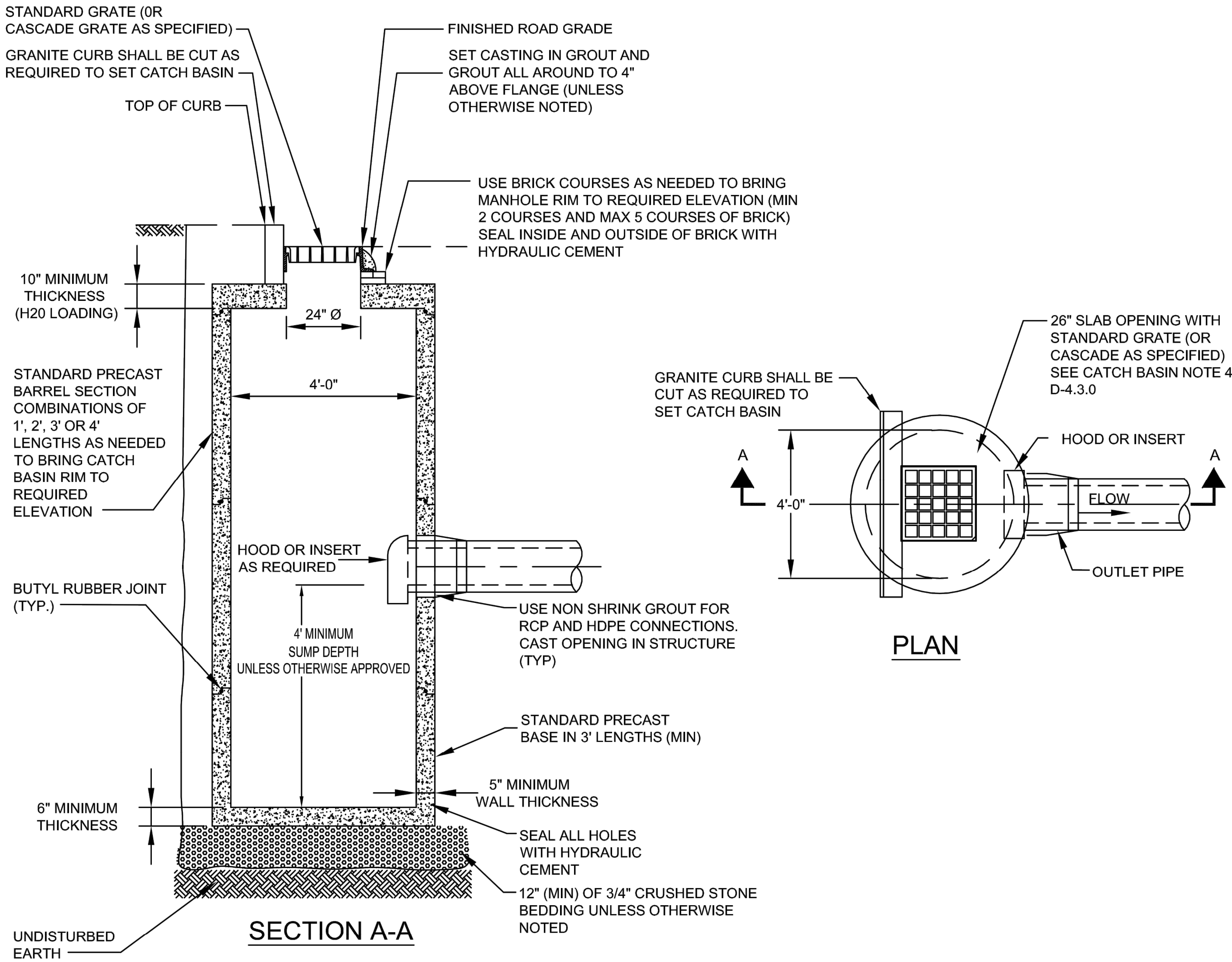
- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- DIRECTION OF DETOURED VEHICULAR TRAFFIC
- POLICE OFFICER
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

PROJECT:	IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET	
DESIGN SUBMISSION:	85% DESIGN	
DRAWING TITLE:	DETOUR PLAN	
PREPARED FOR:	CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702	

PREPARED BY:	Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876	
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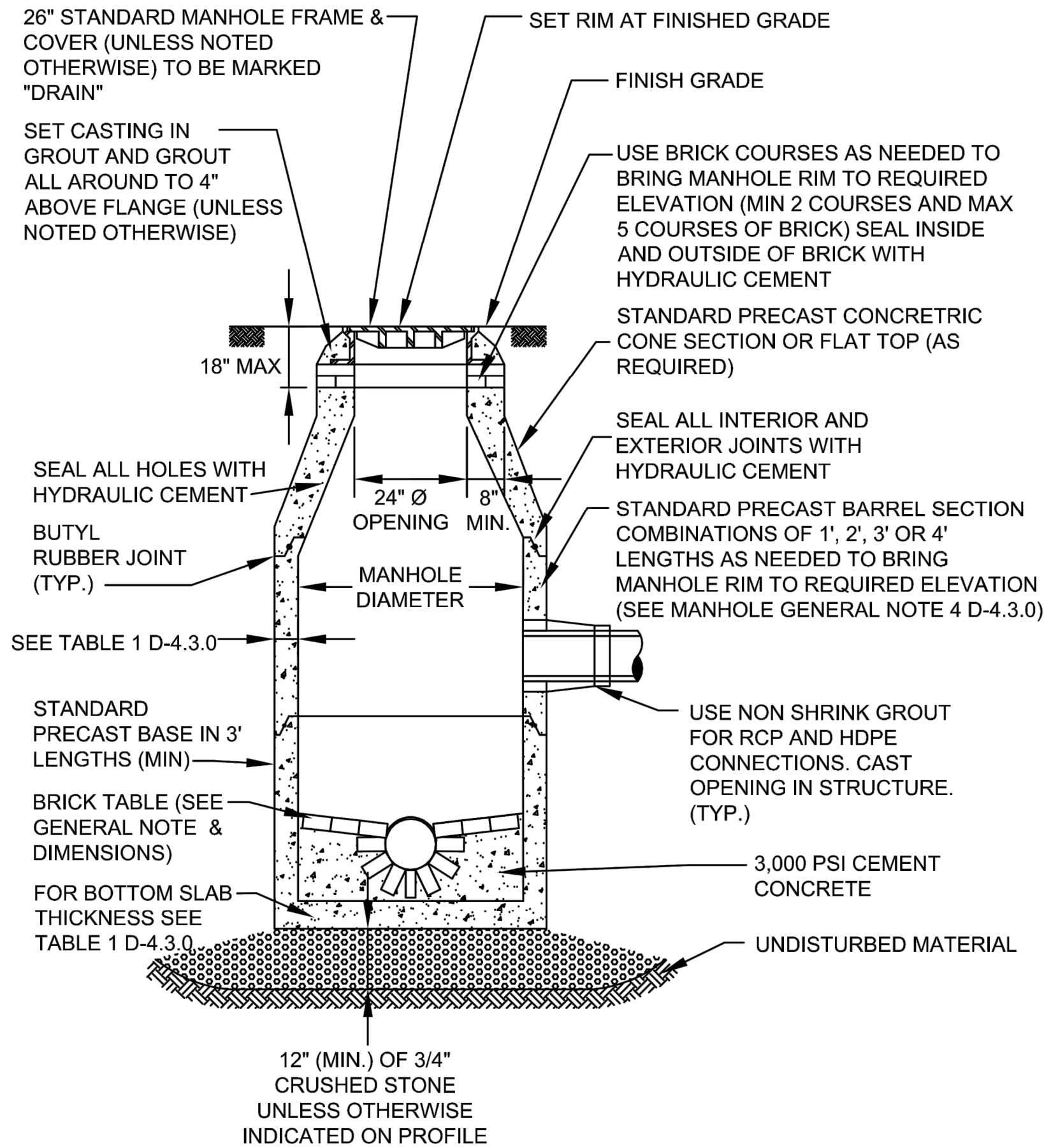
SCALE: AS NOTED	DESIGNED BY: MP	SHEET NO. 50 OF 89
DATE: 6/4/2024	DRAWN BY: MP	
PROJECT NO. 20034	CHECKED BY: AV	

NO.	DATE	REVISIONS
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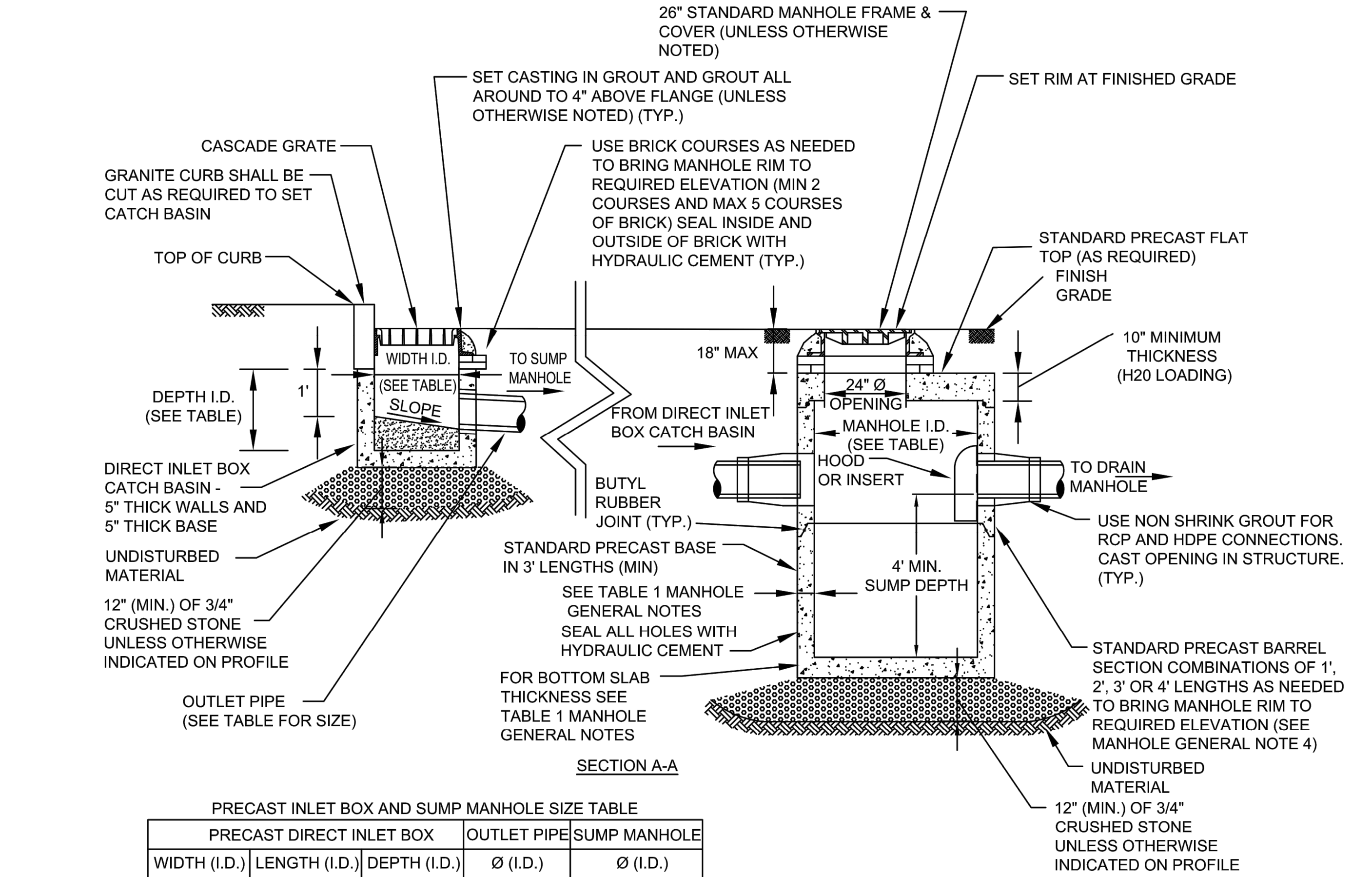
SINGLE GRATE CATCH BASIN

NOT TO SCALE



DRAIN MANHOLE

NOT TO SCALE



PRECAST INLET BOX AND SUMP MANHOLE SIZE TABLE					
	PRECAST DIRECT INLET BOX		OUTLET PIPE		SUMP MANHOLE
	WIDTH (I.D.)	LENGTH (I.D.)	DEPTH (I.D.)	Ø (I.D.)	Ø (I.D.)
SINGLE GRATE	24"	24"	24"	12"	4'
DOUBLE GRATE	24"	48"	36"	15"	5'

I.D. = INSIDE DIMENSION

DIRECT INLET CATCH BASIN

NOT TO SCALE

GENERAL CATCH BASIN NOTES:

- FACE OF PIPE SHALL NOT PROJECT MORE THAN 3-INCHES FROM FACE OF WALL ALONG CENTERLINE OF PIPE.
- DESIGN PRECAST SECTIONS WITH FRAME AND GRATE FOR AASHTO H20 LOADINGS UNLESS OTHERWISE NOTED.
- PRECAST TOP SLAB OPENING CAN BE CENTERED OR OFFSET AS NECESSARY.
- GRATE VANES SHALL BE INSTALLED IN DIRECTION TO RECEIVE FLOWS.
- CATCH BASIN BASE SHALL BE SOLID.

MANHOLE GENERAL NOTES:

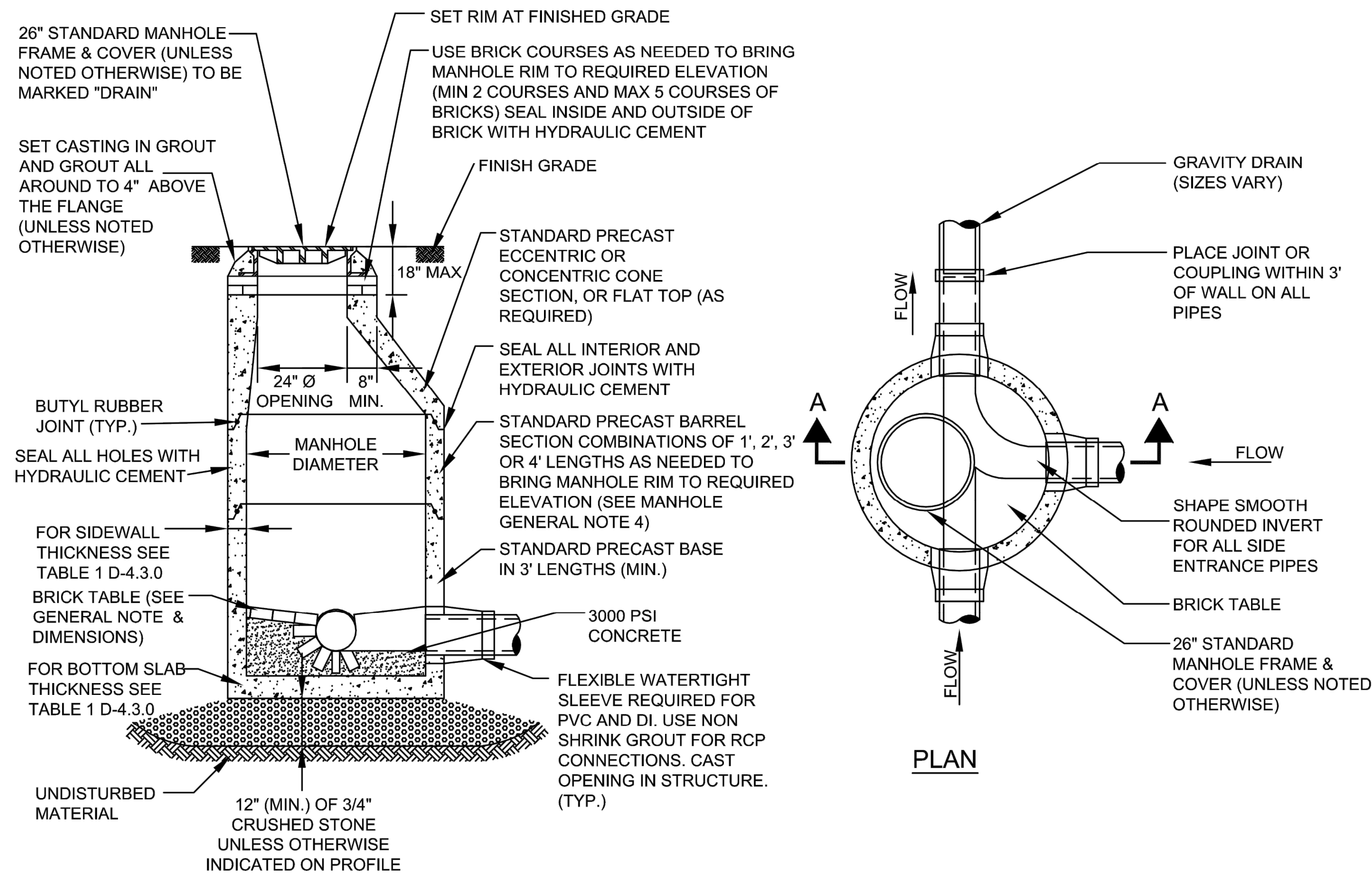
- DRAIN MANHOLE DIAMETER SHALL BE 4', 5', 6', 8' OR 10' AS SHOWN ON PLAN/PROFILE VIEWS.
- DESIGN PRECAST SECTIONS WITH FRAME AND COVER FOR AASHTO H20 LOADINGS UNLESS OTHERWISE NOTED.
- MANHOLES LARGER THAN 4' IN DIAMETER AT THE BASE SHALL BE REDUCED IN DIAMETER TO 4' AT THE NEXT RISER SECTION UNLESS NOTED OTHERWISE ON PLANS.

PROJECT:	IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION:	85% DESIGN		
DRAWING TITLE:	CONSTRUCTION DETAILS - 1		
PREPARED FOR:	 CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		

PREPARED BY:	 Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
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NO.	DATE	REVISIONS
1		

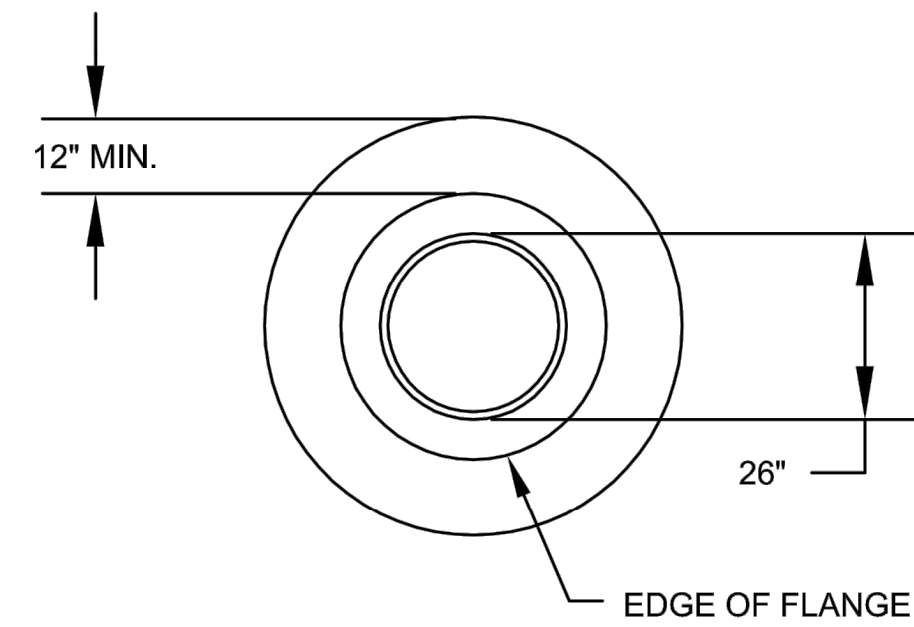
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 52 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



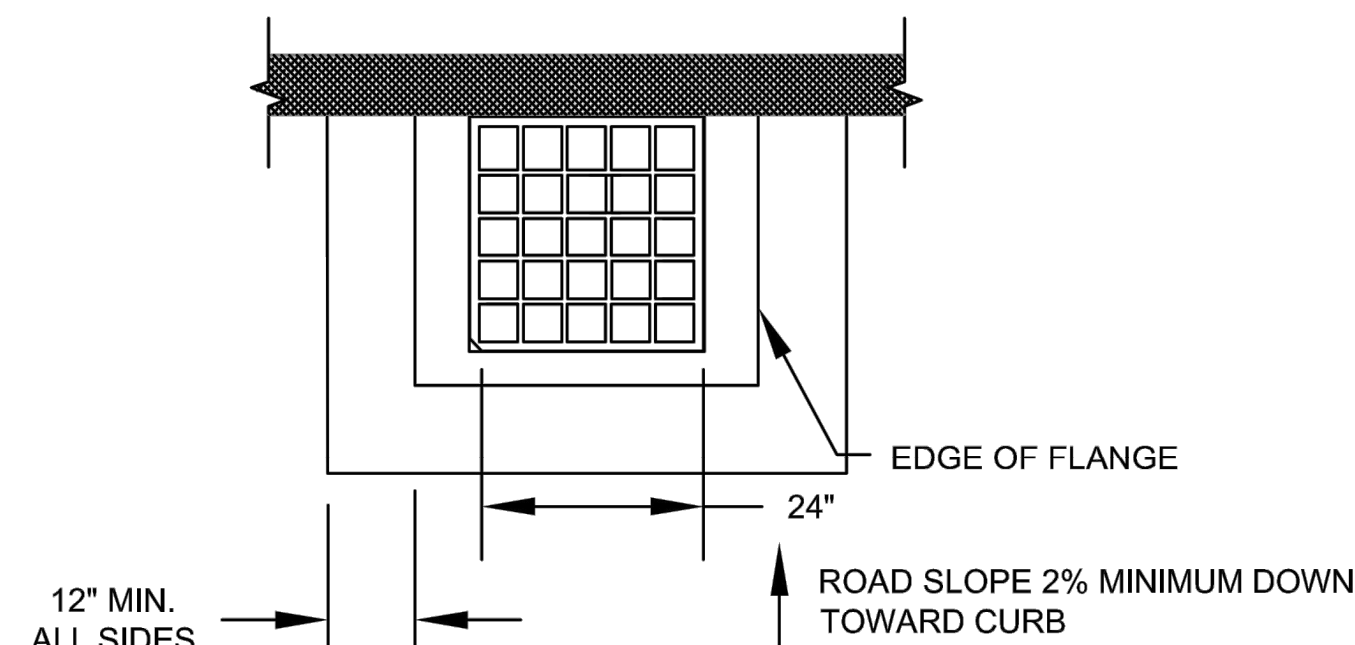
SECTION A-A

ECCENTRIC MANHOLE

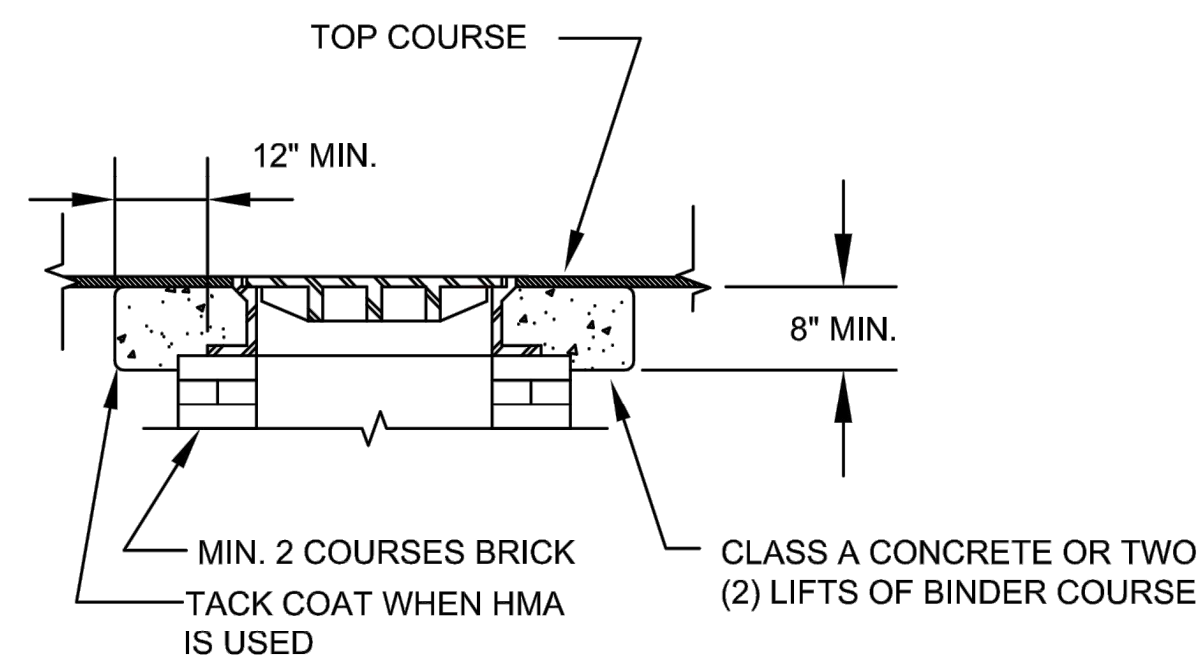
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PLAN



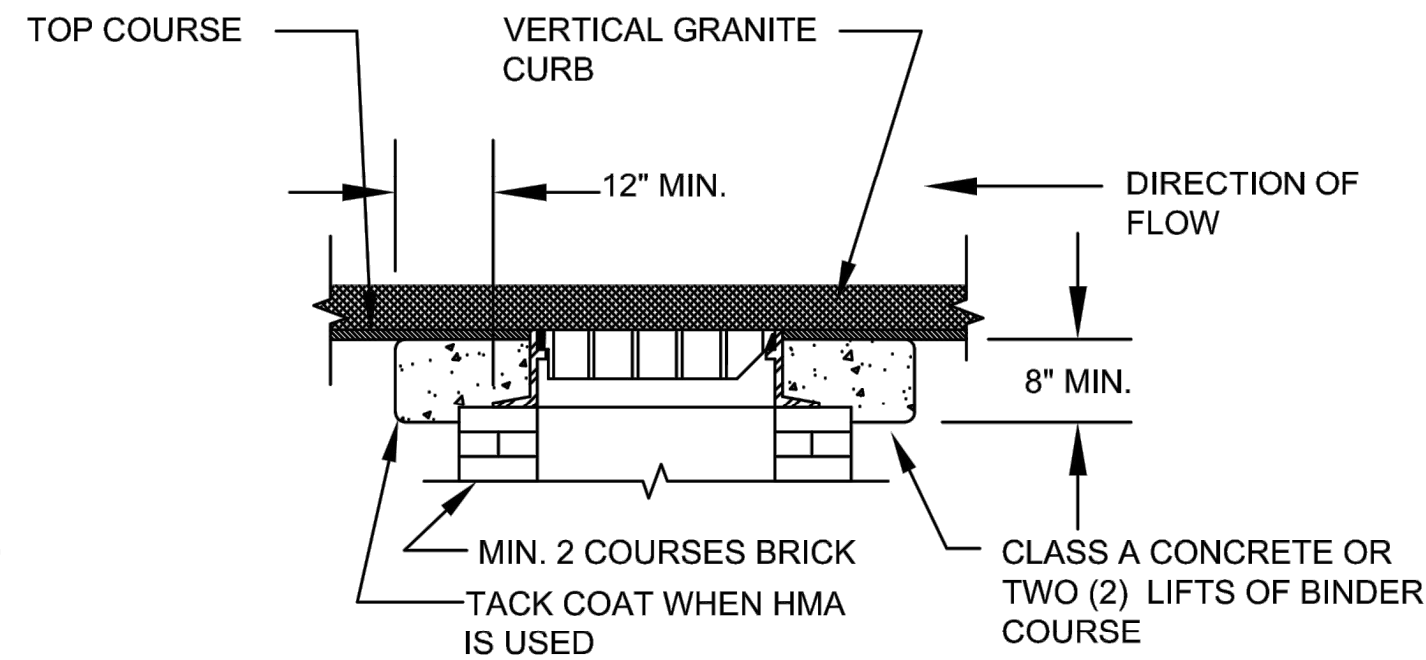
PLAN



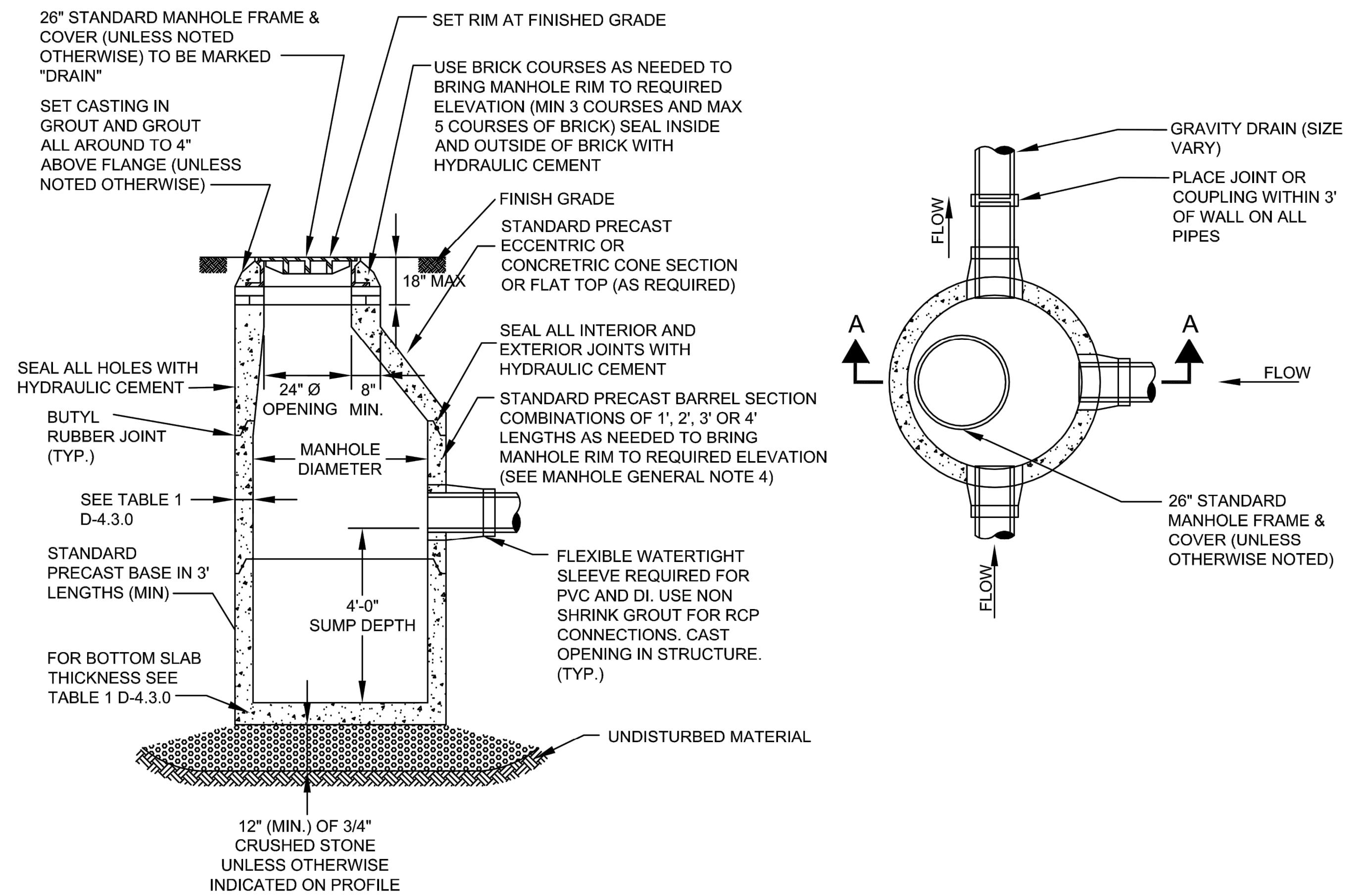
SECTION
MANHOLES

RAISING CASTINGS

NOT TO SCALE



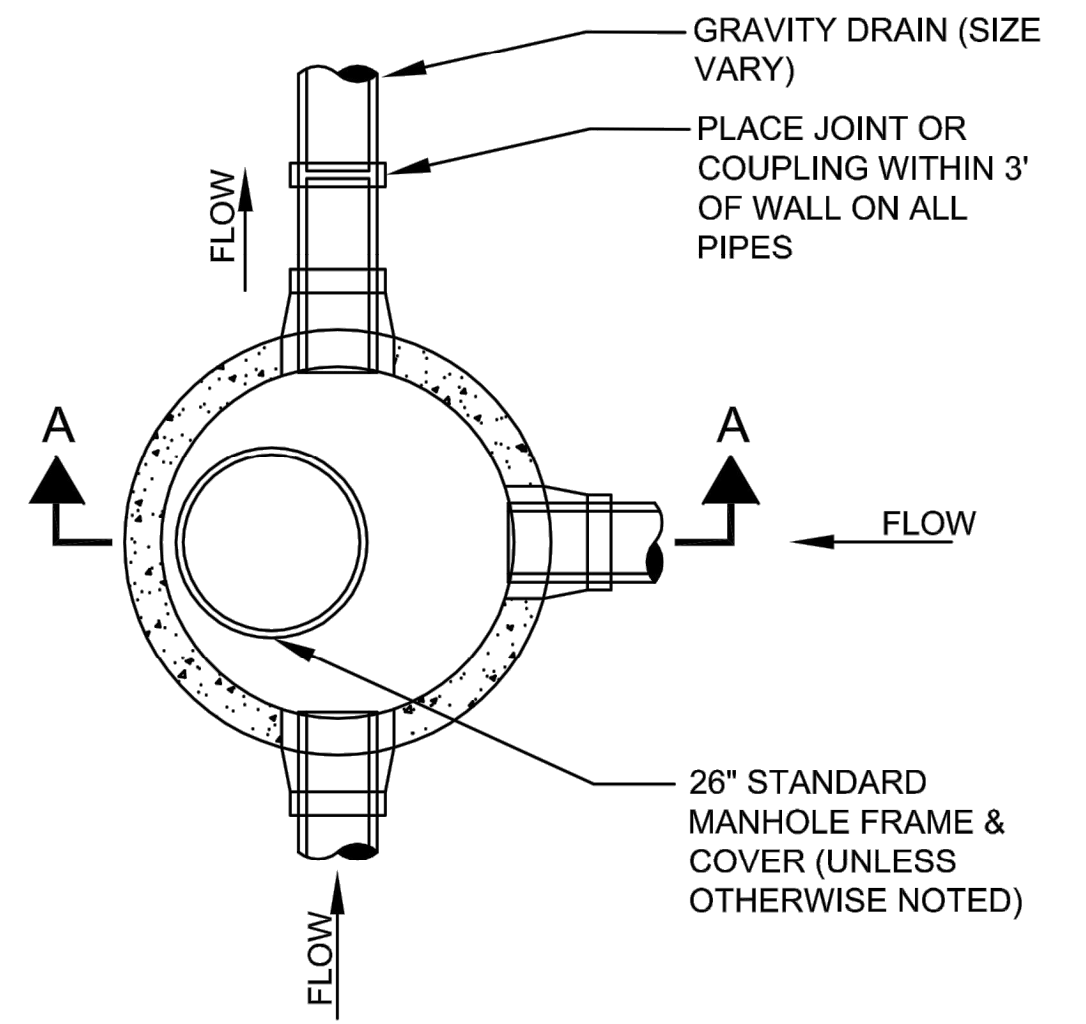
SECTION
CATCH BASINS



SECTION A-A

SUMP MANHOLE

NOT TO SCALE



PLAN

TABLE 1				
MANHOLE DIAMETER	SIDE WALL MIN. THICKNESS	BOTTOM SLAB MIN. THICKNESS	MAX PIPE DIAMETER * RCP DI/PVC	
4'	5"	6"	24"	30"
5'	6"	8"	36"	42"
6'	6"	8"	48"	54"
8'	8"	8"	66"	72"
10'	10"	10"	72"	84"

* MAY VARY DEPENDING ON SIZE AND LOCATION OF ADDITIONAL PENETRATIONS OR RELATIONSHIP OF PENETRATIONS IN MANHOLE

MANHOLE AND CATCH BASINS DIMENSIONS

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

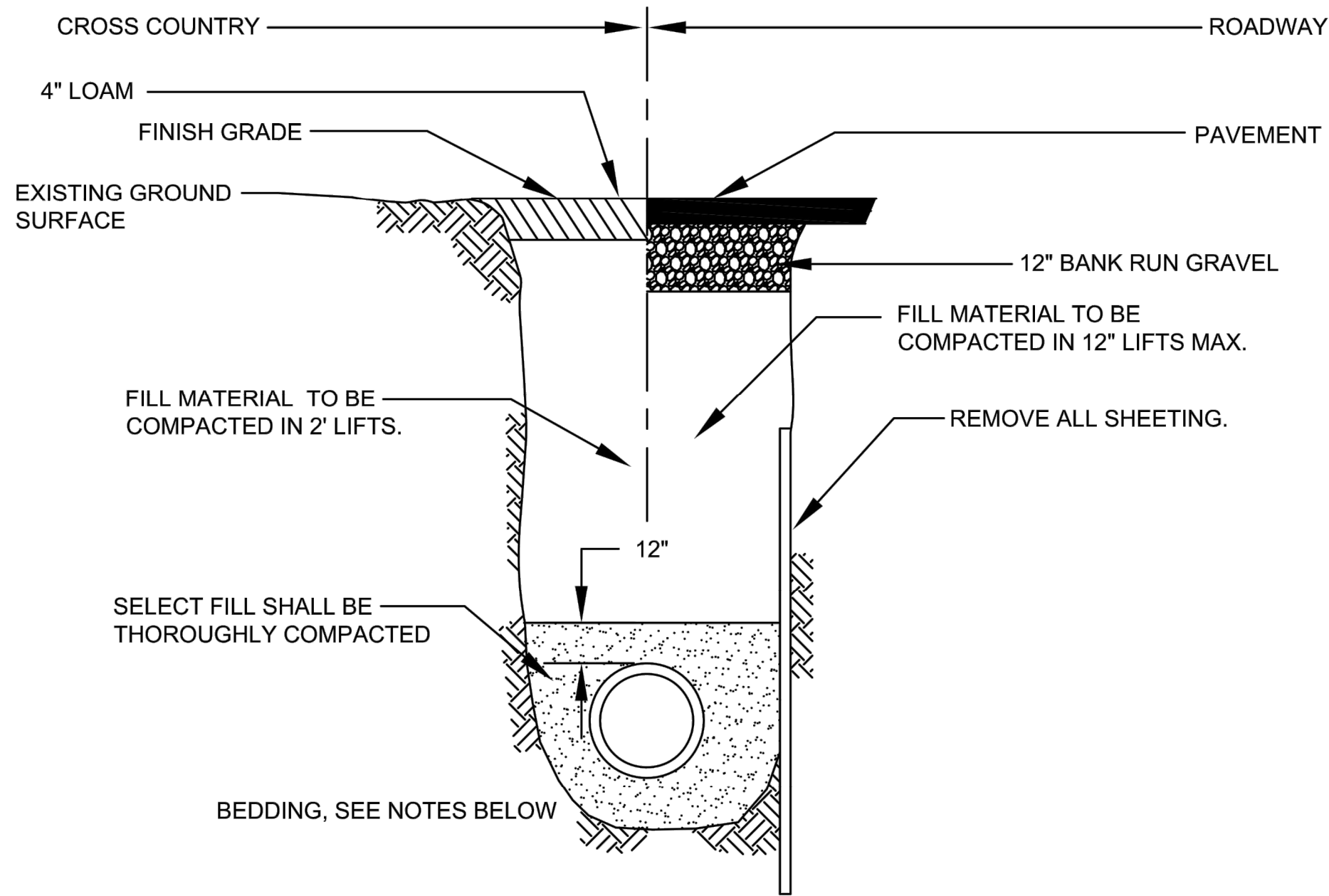
DRAWING TITLE: CONSTRUCTION DETAILS - 2

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034
DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP
SHEET NO. 53 OF 89

NO.	DATE	REVISIONS
1		



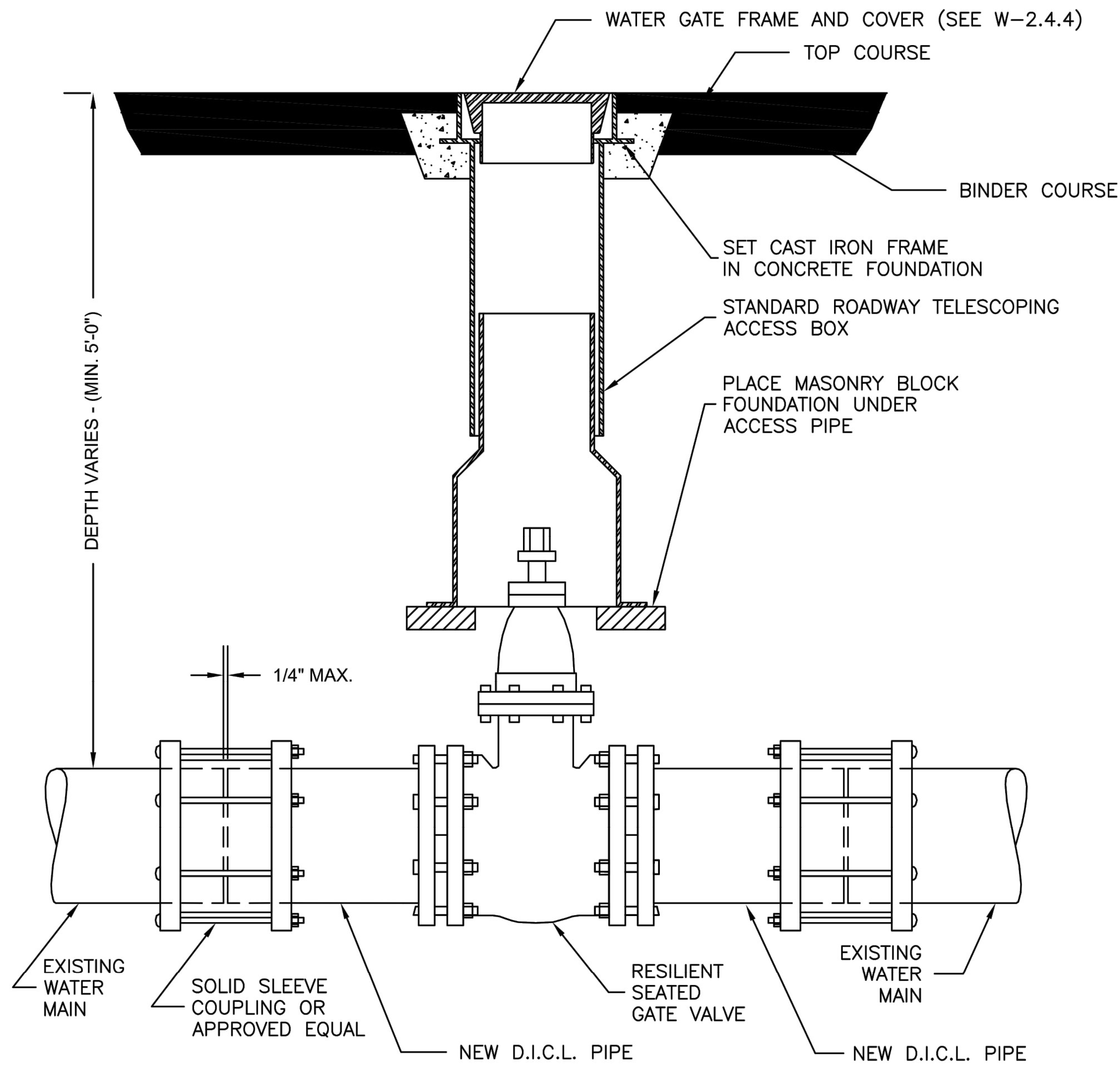
NOTE: 5'-0" MIN. COVER

NOTES:

1. CITY OF FRAMINGHAM MAY REQUIRE FLOWABLE FILL AT ITS DISCRETION.
2. FOR LOCATIONS WHERE LEDGE IS NOT ENCOUNTERED IN TRENCH, PIPE CAN LAY ON UNDISTURBED EARTH, OR ON SAND BEDDING CONSISTENT WITH AWWA GUIDELINES.
3. FOR LOCATIONS WHERE LEDGE IS ENCOUNTERED, SAND BEDDING SHALL BE MINIMUM OF 12" THICK UNDER PIPE.
4. FILL MATERIAL SHALL BE COMPACTED TO 95% PROCTOR DENSITY.

WATER MAIN TRENCH DETAIL

NOT TO SCALE

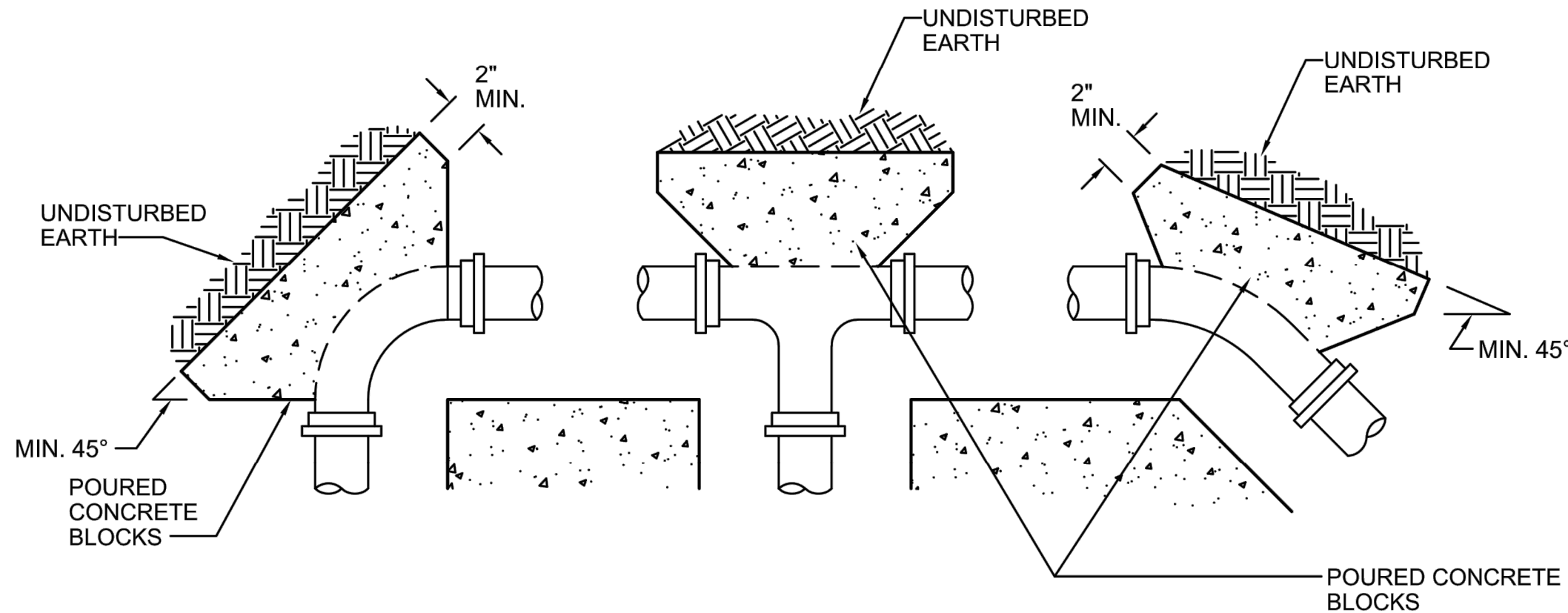


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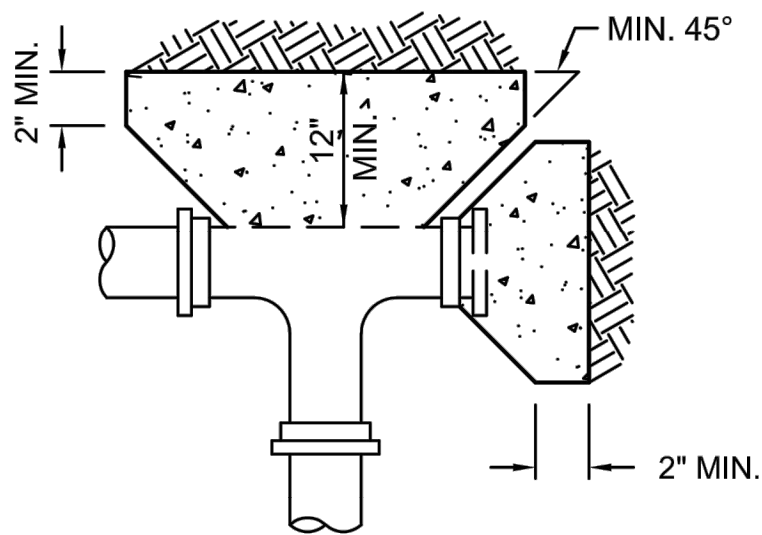
1. ALL EXCAVATION, BACKFILLING AND PAVING SHALL BE IN ACCORDANCE WITH THE TOWN OF FRAMINGHAM REQUIREMENTS.
2. WATER GATE COVER SHALL HAVE A MINIMUM HEIGHT OF 3.5 INCHES AND A MINIMUM WEIGHT OF 13 POUNDS, BRAND NAME BIBBY-STE-CROIX OR EQUAL.

GATE VALVE

NOT TO SCALE



PLAN VIEWS



NOTES:

1. SPECIFIC THRUST BLOCK DESIGN SHALL CONFORM TO AWWA GUIDELINES.
2. PLACE 4 mil. POLYETHYLENE BETWEEN CONCRETE AND FITTING (CONCRETE SHALL NOT INTERFERE WITH JOINT).
3. MINIMUM CONCRETE THICKNESS SHALL BE 12 INCHES.
4. THRUST BLOCK ORIENTATION SHALL BE SUCH THAT THE CENTER OF THE FITTING CORRESPONDS WITH THE CENTER OF THE THRUST BLOCK.
5. THE MINIMUM ALLOWABLE ANGLE (EITHER VERTICAL OR HORIZONTAL) SHALL BE 45 DEGREES.

TYPICAL THRUST BLOCK DETAILS

NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS - 3

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

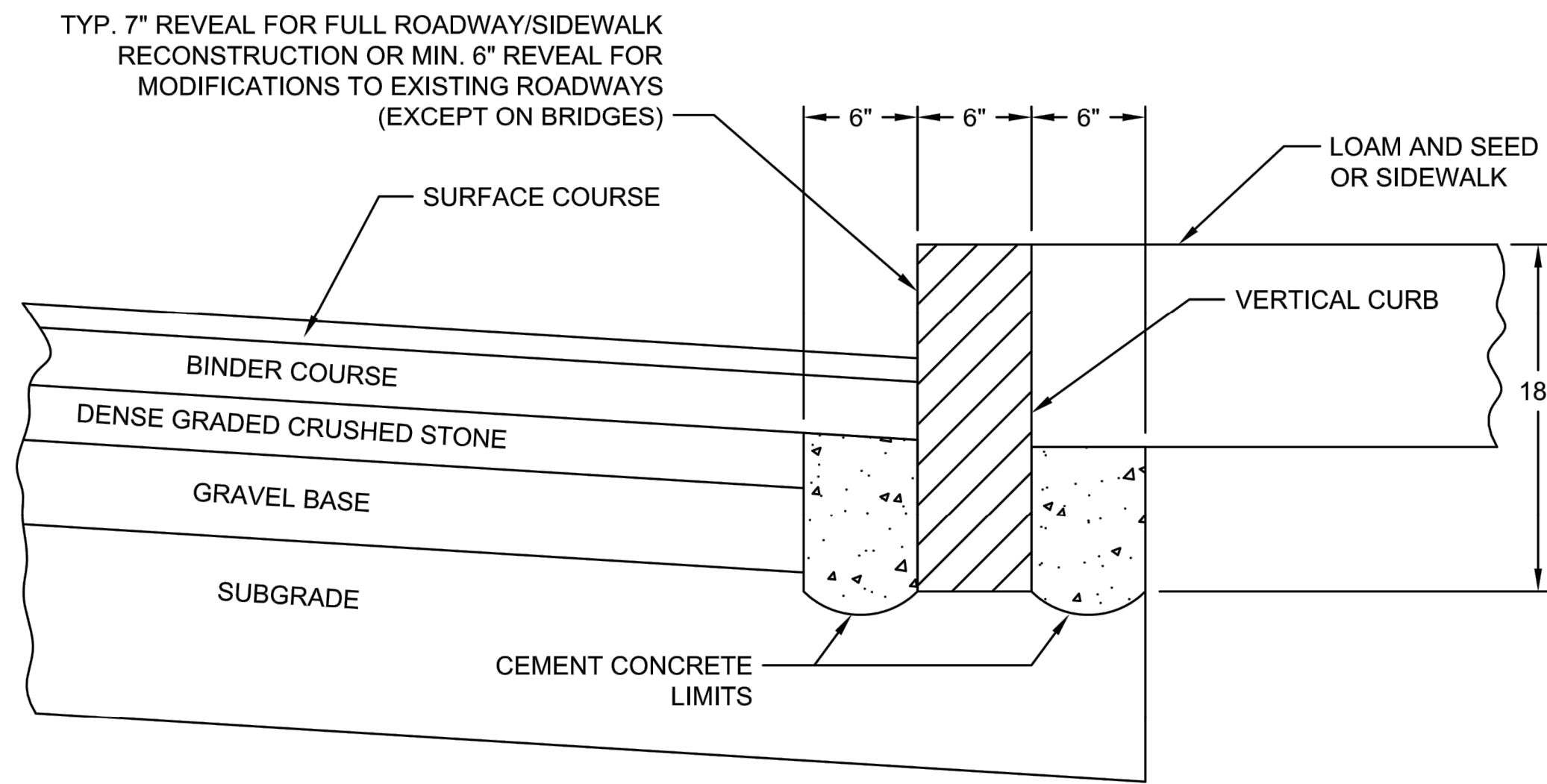
PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

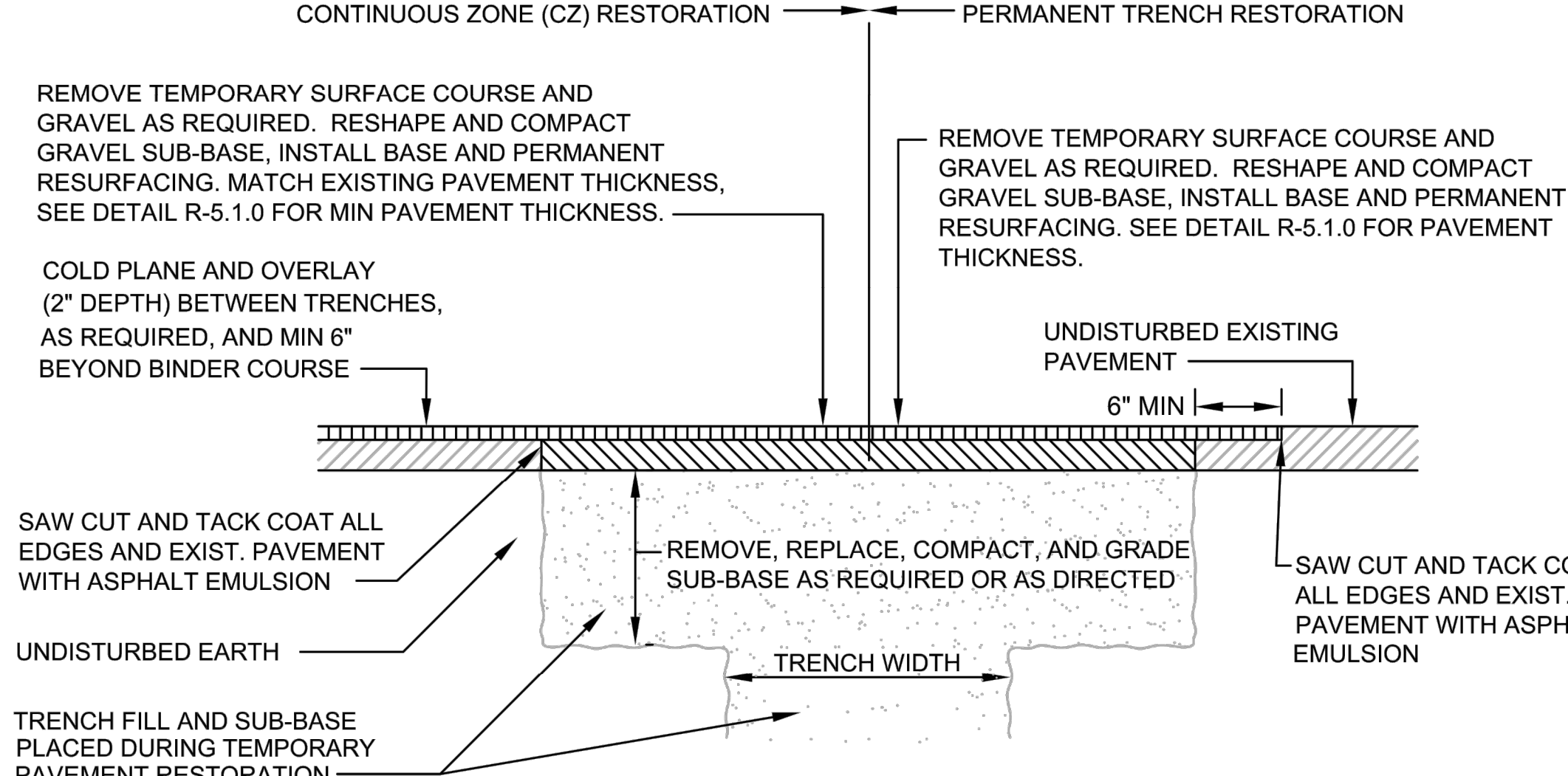
SHEET NO. 54 OF 89

NO.	DATE	REVISIONS
1		

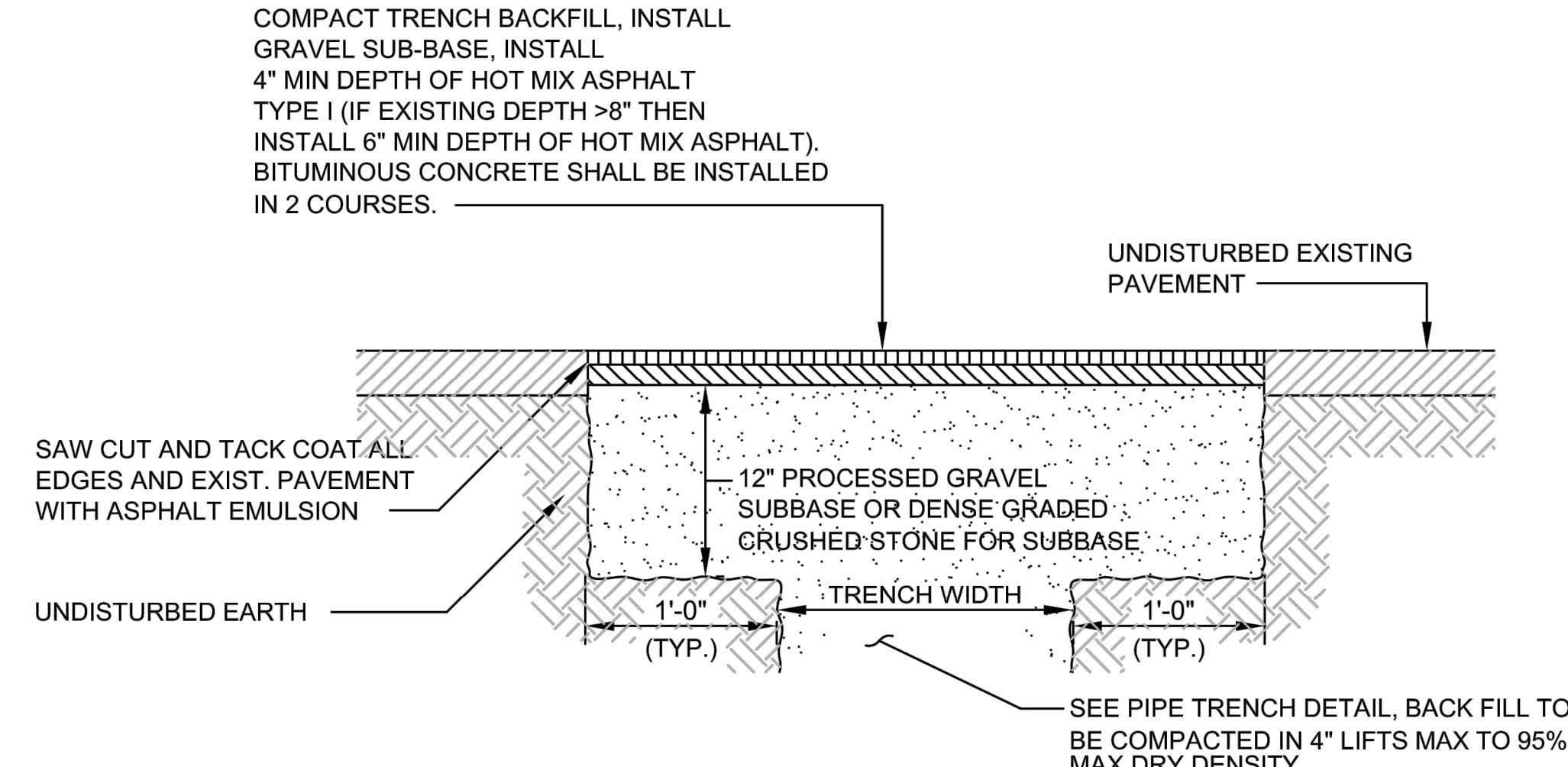


- NOTES:
- CUT NEAT LINE 6" FROM CURB LINE AND REMOVE BASE AND SUBGRADE, REPLACE WITH CEMENT CONCRETE. COVER WITH BINDER AND TOP COURSE TO CURB.
 - ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD MHD SPECIFICATIONS MAY BE USED; ALL TEST REQUIREMENTS ARE WAIVED. BITUMINOUS CONCRETE SHALL NOT BE USED AS A SUBSTITUTE.

GRANITE CURBS
NOT TO SCALE

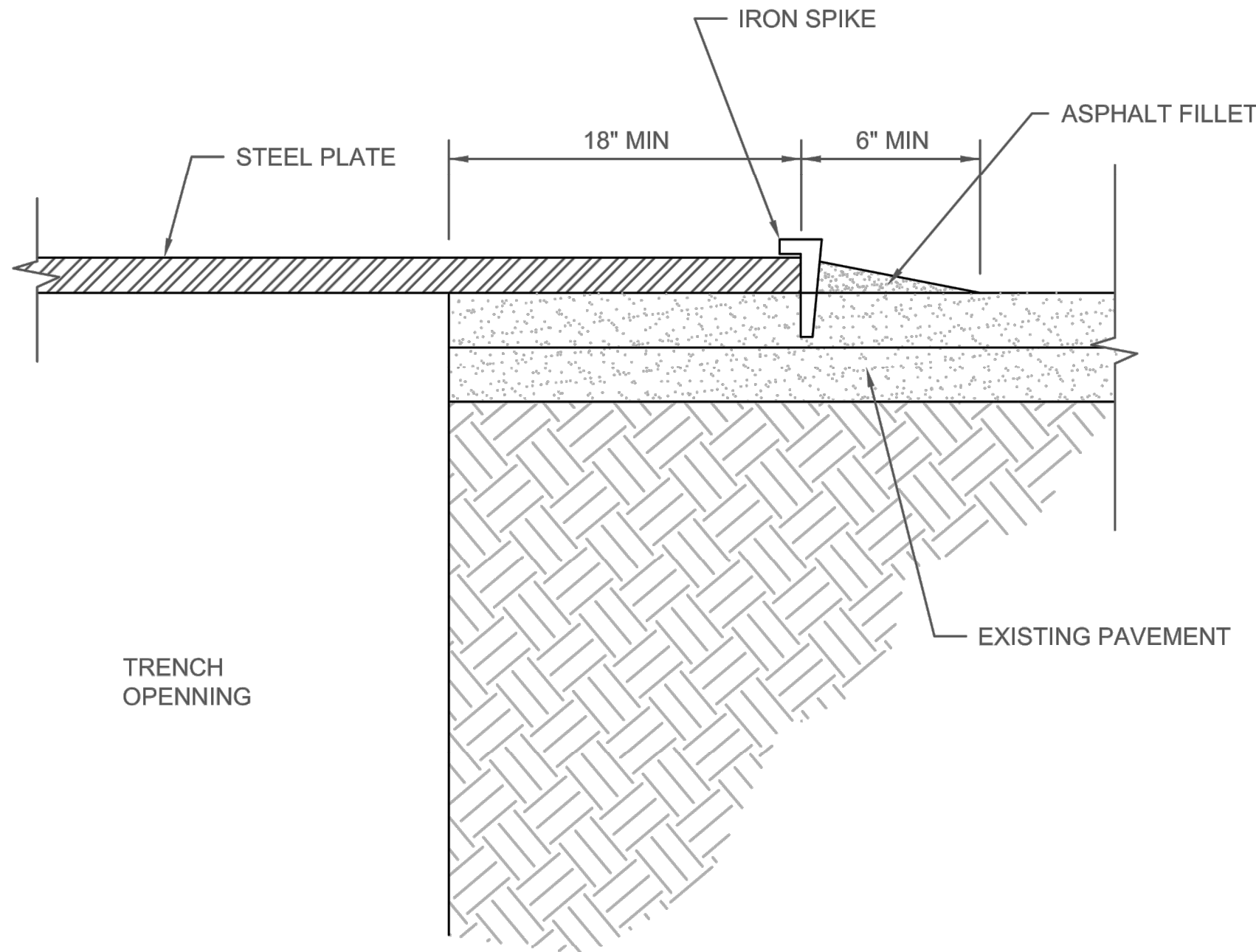


PERMANENT PAVEMENT RESTORATION



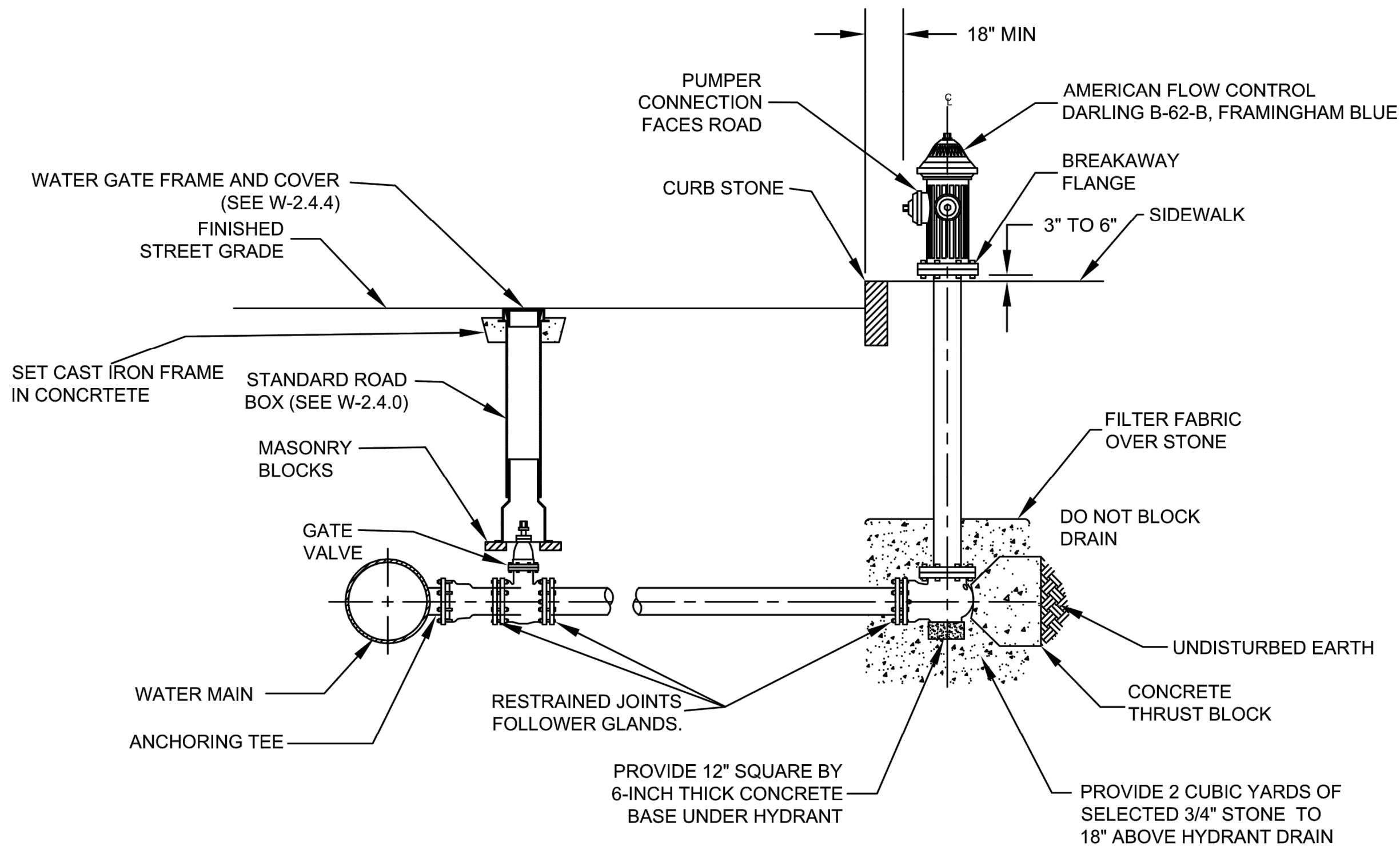
TEMPORARY PAVEMENT RESTORATION

PAVEMENT DETAILS FOR TRENCH RESTORATION
NOT TO SCALE



- NOTES:
- USE OF STEEL PLATES ALLOWED ON A CASE BY CASE BASIS, PENDING WRITTEN APPROVAL BY TOWN.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES OR CLAIMS RESULTING FROM THE USE OF STEEL PLATES.
 - MUTCD COMPLIANT RETROREFLECTIVE ORANGE CONSTRUCTION WARNING SIGNS (48"x48") WITH WORDING "STEEL PLATE AHEAD" SHALL BE INSTALLED IN ADVANCE OF STEEL PLATE INSTALLATION.
 - THE CONTRACTOR SHALL DESIGN AND UTILIZE STEEL PLATES OF ADEQUATE DIMMENSIONS AND THICKNESS FOR INTENDED USE AND VEHICLE LOADING. MAXIMUM ALLOWABLE DEFLECTION SHALL BE 0.025". IRON SPIKE FASTENERS SHALL BE INSTALLED AROUND THE PERIMETER OF THE STEEL PLATE.
 - SEE CONSTRUCTION STANDARDS SECTION 6.3 SPECIAL CONDITIONS FOR ADDITIONAL REQUIREMENTS.

STEEL PLATE INSTALLATION
NOT TO SCALE



FIRE HYDRANT INSTALLATION
NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS - 4

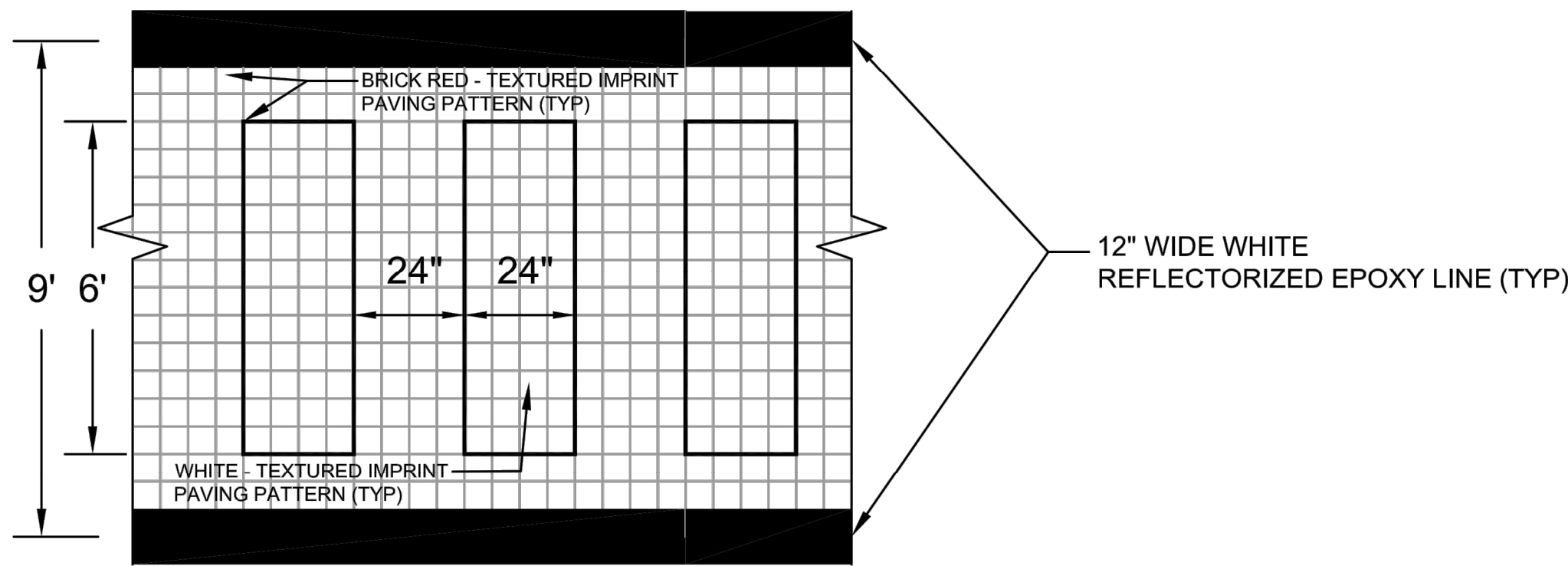
PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

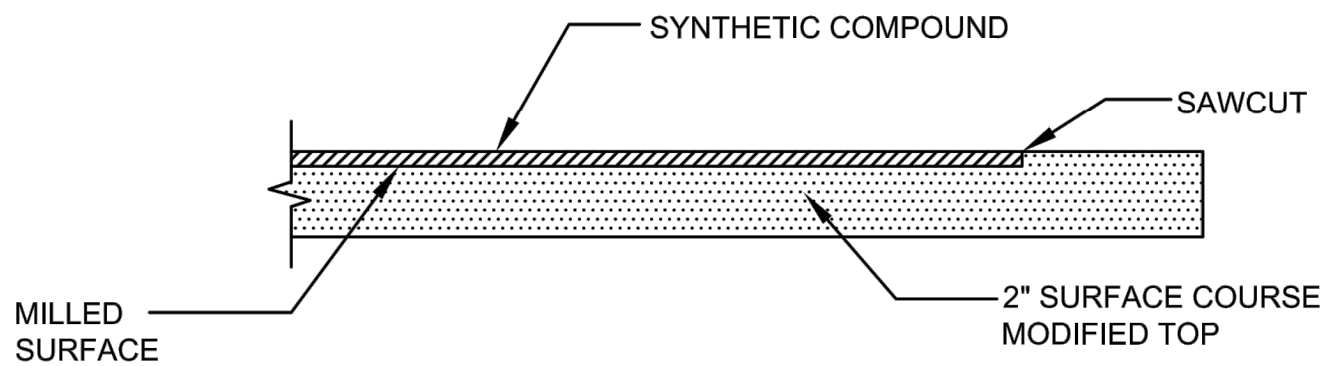
SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

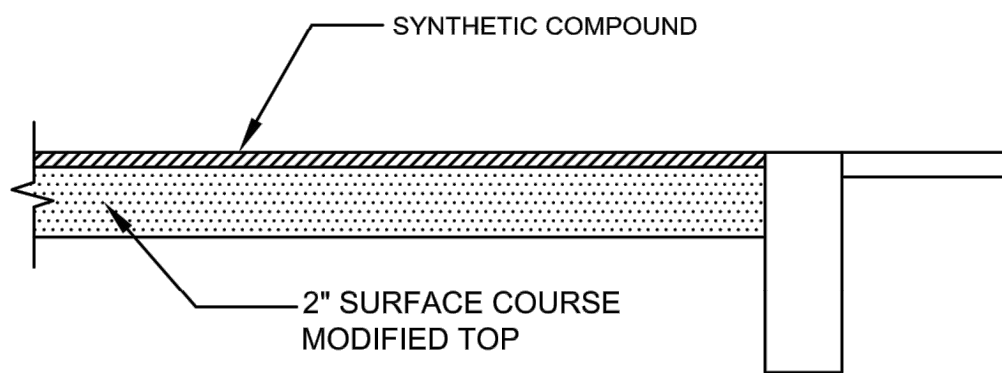
SHEET NO. 55 OF 89



PLAN



TRANSVERSE SECTION



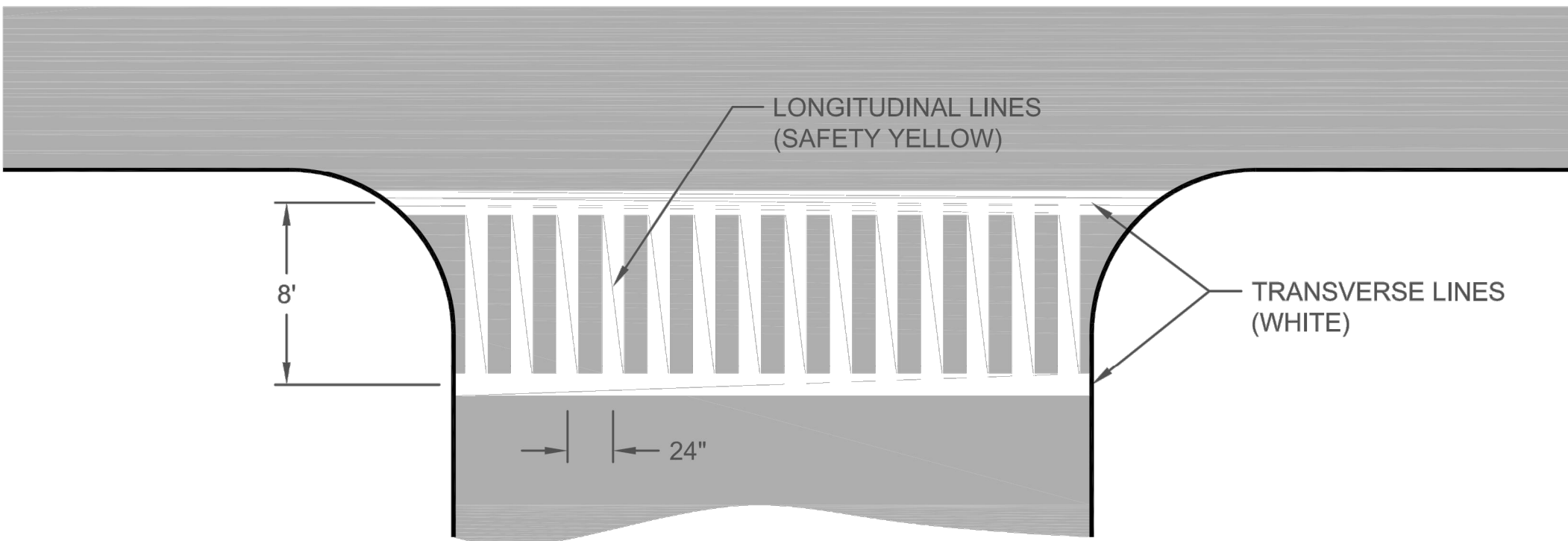
LONGITUDINAL SECTION

NOTES:

1. BRICK PATTERN TO BE STAMPED INTO MECHANICALLY HEATED SYNTHETIC COMPOUND.
2. REFER TO ITEM 706.9 FOR SPECIFICATIONS FOR TEXTURED DECORATIVE PAVEMENT CROSSWALK WHICH IS ON FILE WITH THE CITY OF FRAMINGHAM'S MUNICIPAL ENGINEERING DEPARTMENT.

DECORATIVE CROSS WALK

NOT TO SCALE



PAVEMENT MARKING - FAST DRYING WATER-BORNE OR OTHER TRAFFIC PAINT

NOT TO SCALE

NOTES:

1. CROSSWALK MARKINGS SHALL CONSIST OF SOLID WHITE OR YELLOW (AS INDICATED) LINES (BOTH TRANSVERSE AND LONGITUDINAL) 12 INCHES IN WIDTH.
2. CROSSWALKS SHALL BE 8 FEET WIDE.
3. LONGITUDINAL LINES SHALL BE SPACED 24" APART ON CENTER FOR ALL NEW CROSSWALKS. EXISTING CROSSWALK REPAIRS SHALL MATCH EXISTING SPACING.
4. CROSSWALK LINES SHALL EXTEND ACROSS THE FULL WIDTH OF PAVEMENT OR TO THE EDGE OF THE INTERSECTING CROSSWALK.
5. CROSSWALKS SHALL BE MARKED AT ALL INTERSECTIONS WHERE THERE IS SUBSTANTIAL CONFLICT BETWEEN VEHICULAR AND PEDESTRIAN MOVEMENT.
6. CROSSWALK MARKINGS FOR NEW ROADWAYS SHALL BE INSTALLED USING EPOXY PAVING MARKING MATERIAL CONFORMING TO MASSDOT ENGINEERING DIRECTIVE E-05-003, DATED JUNE 16, 2005 AND TO MASSDOT STANDARD SECTION 860.
7. CROSSWALK MARKINGS FOR EXISTING ROADWAYS SHALL BE INSTALLED USING FAST DRYING WATER-BORNE TRAFFIC PAINT PAVING MARKING MATERIAL TO MEET MASSDOT SPECIFICATIONS M07.01.23 (WHITE) AND M07.01.24 (YELLOW).
8. THERMOPLASTIC SHALL NOT BE USED FOR ANY PAVEMENT MARKINGS.

CROSS WALK

NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS - 5

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

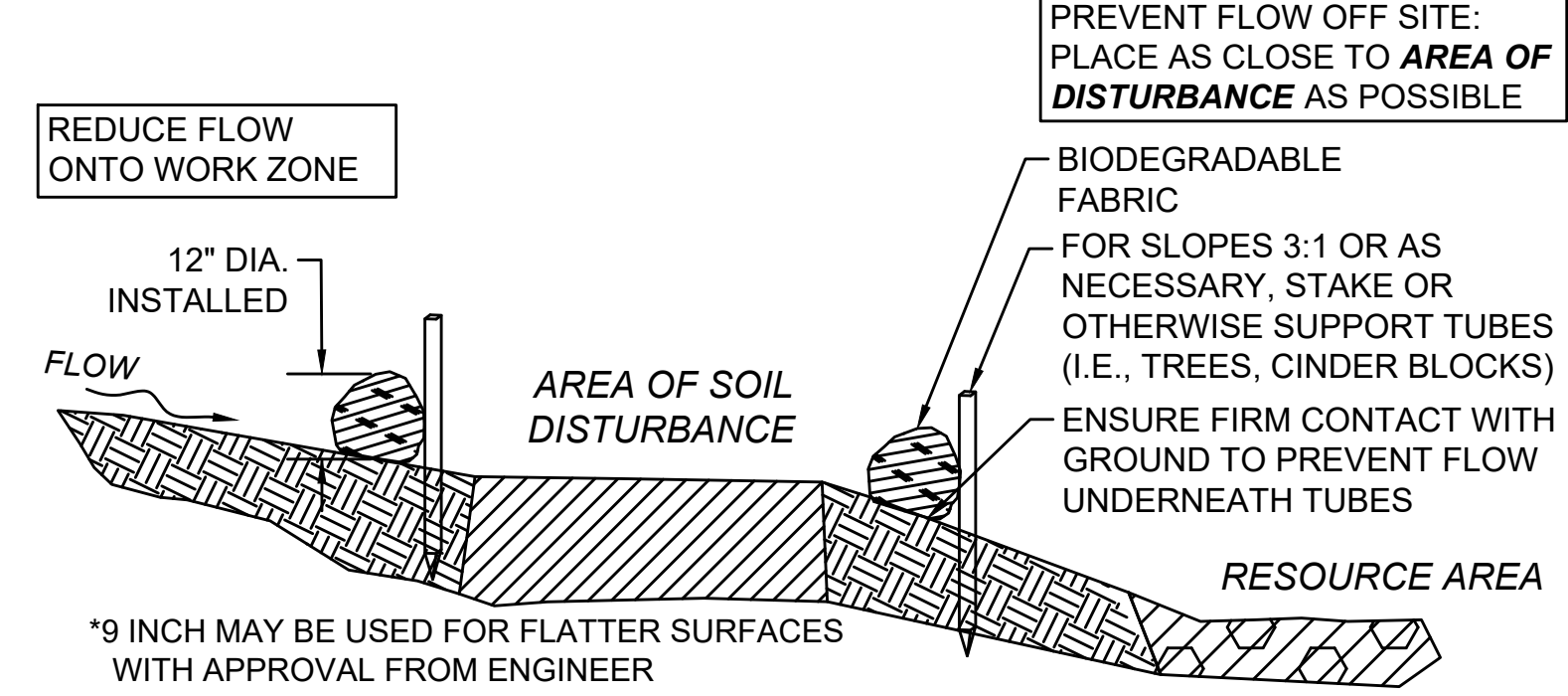
PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

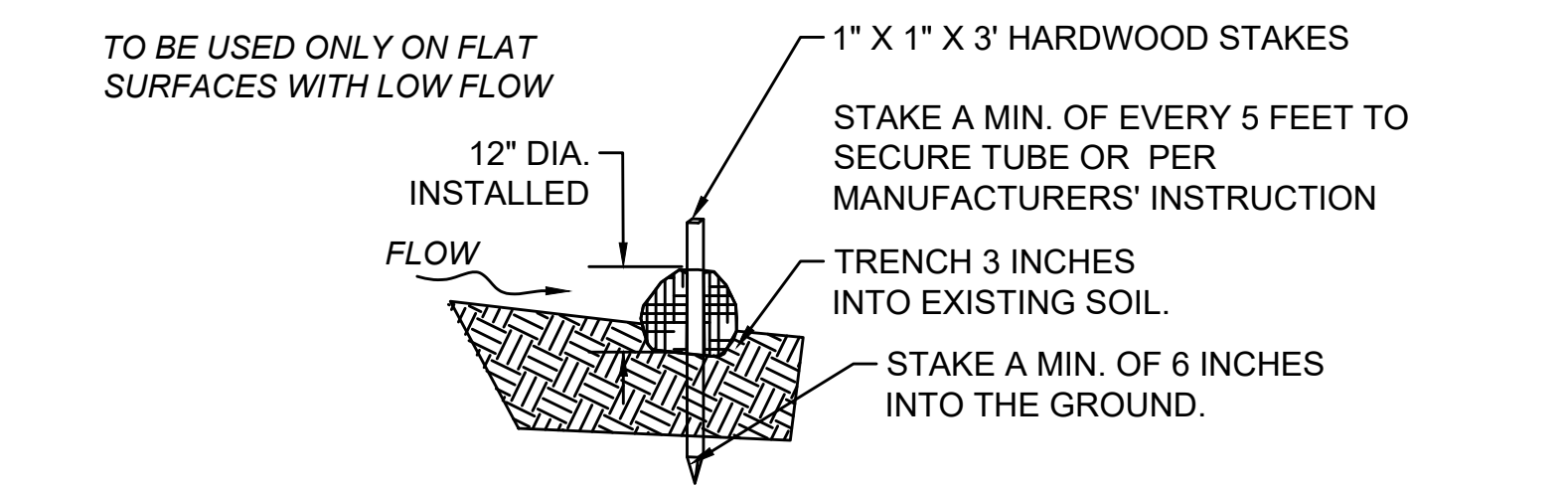
DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

SHEET NO. 56 OF 89

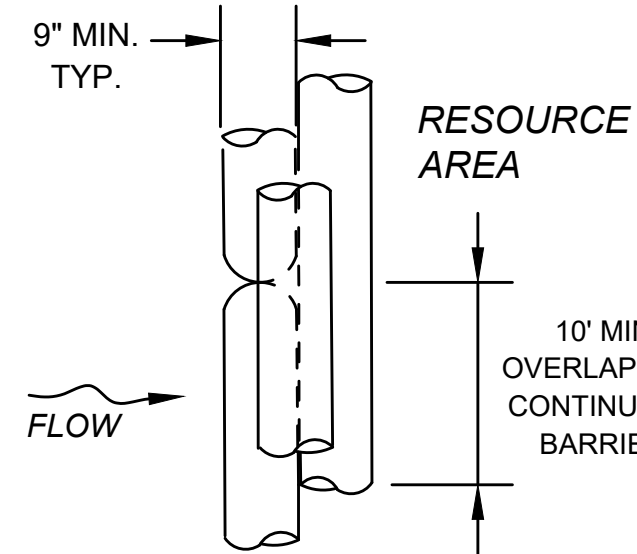
COMPOST FILTER TUBE



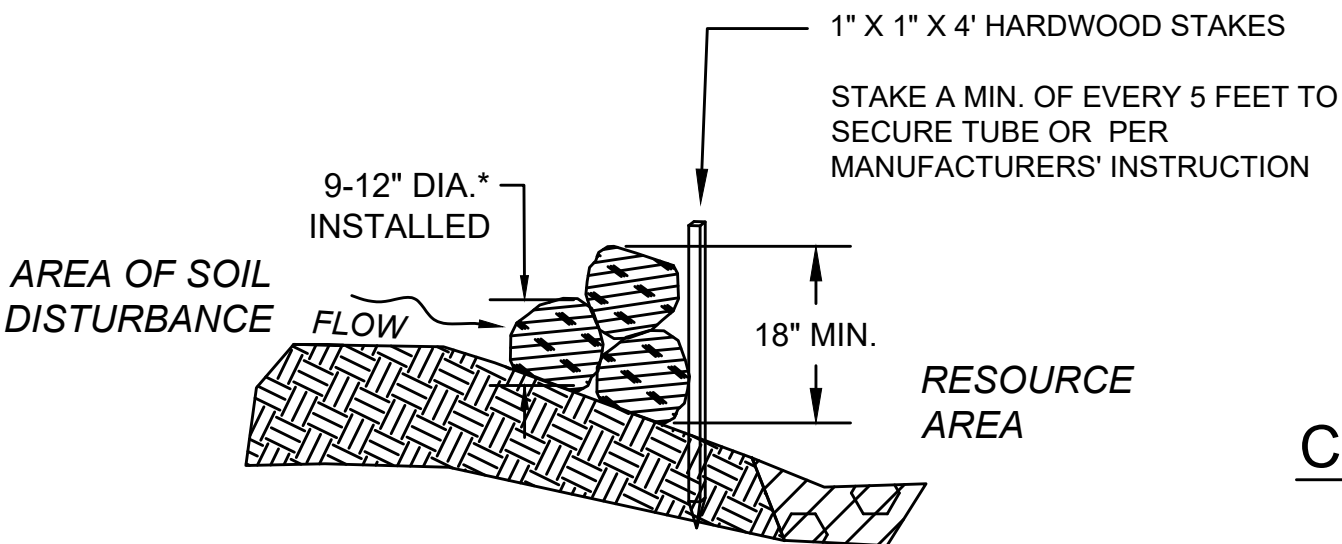
12 INCH STRAW WATTLE



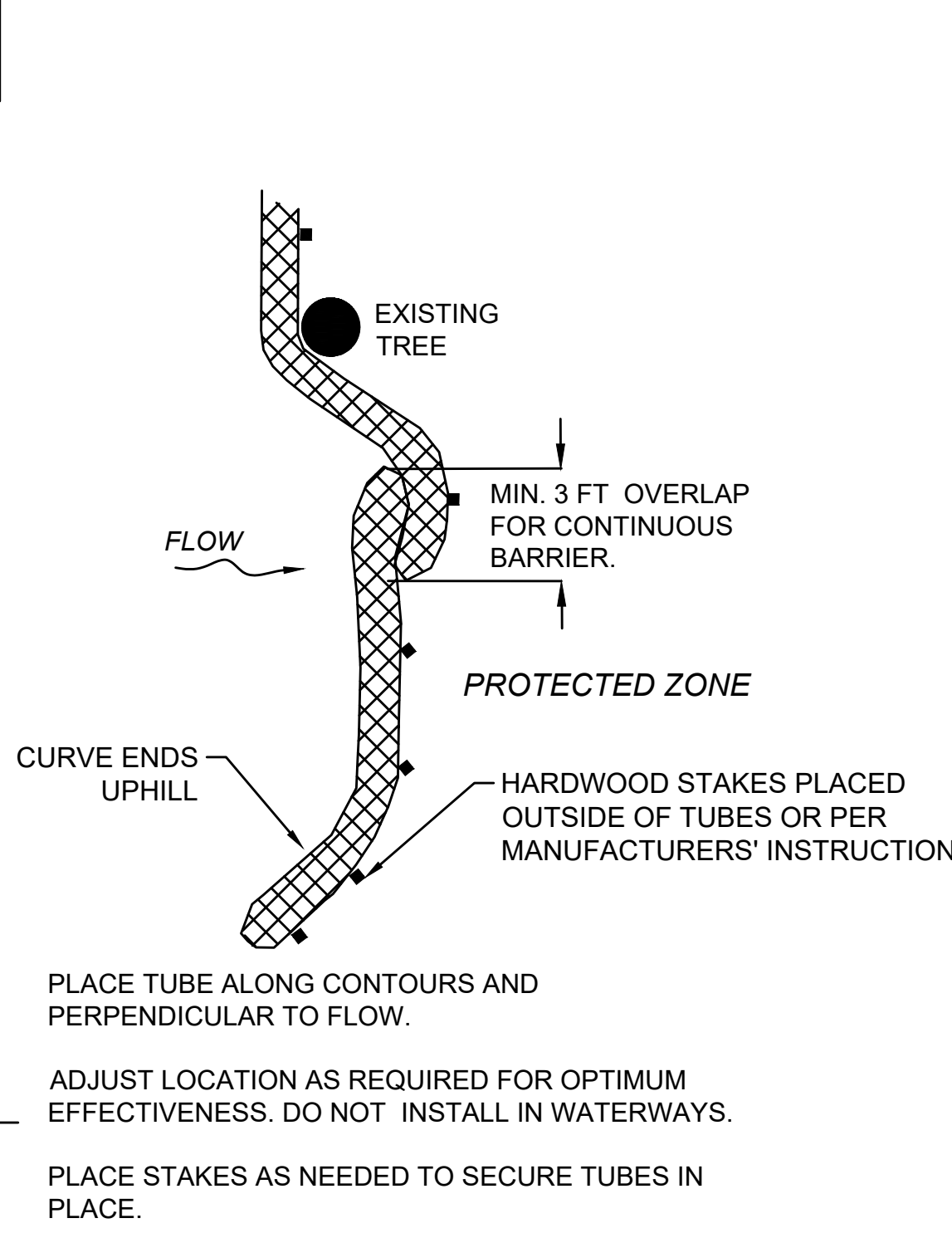
SECTION



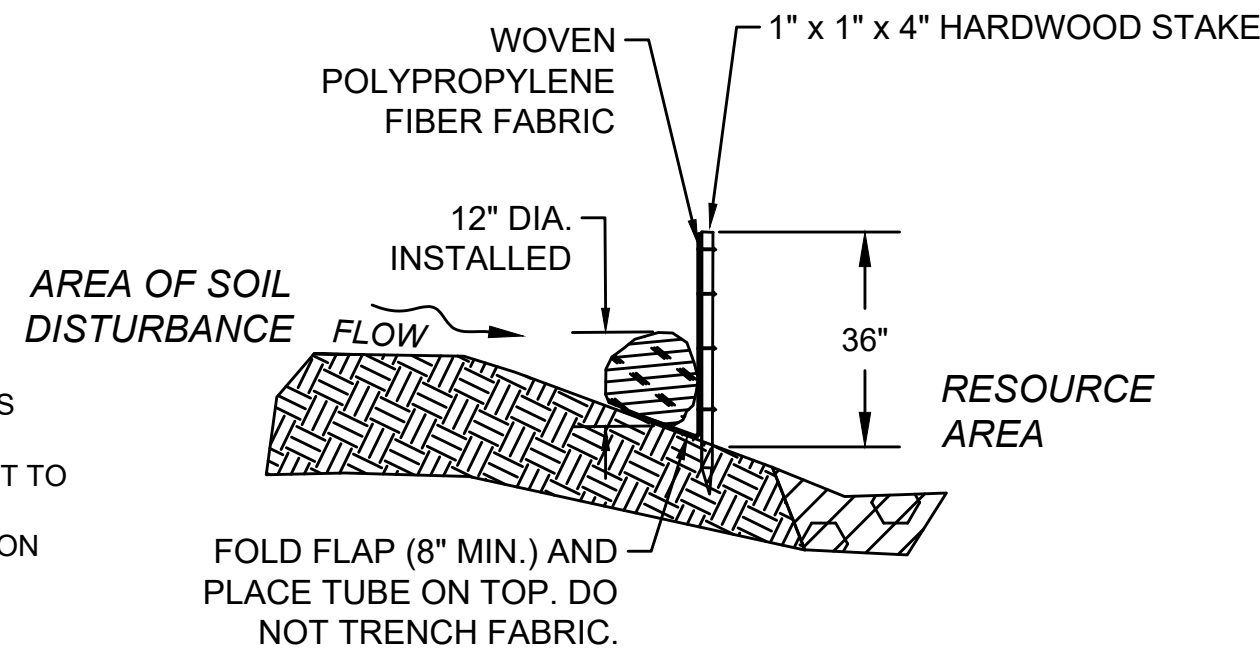
PLAN VIEW



SECTION



PLAN VIEW



SECTION

COMPOST FILTER TUBE & SILT FENCE

NOT TO SCALE

COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)

NOT TO SCALE

SEDIMENT CONTROL BARRIERS - COMPOST FILTER TUBE & STRAW WATTLES

NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS - 6

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

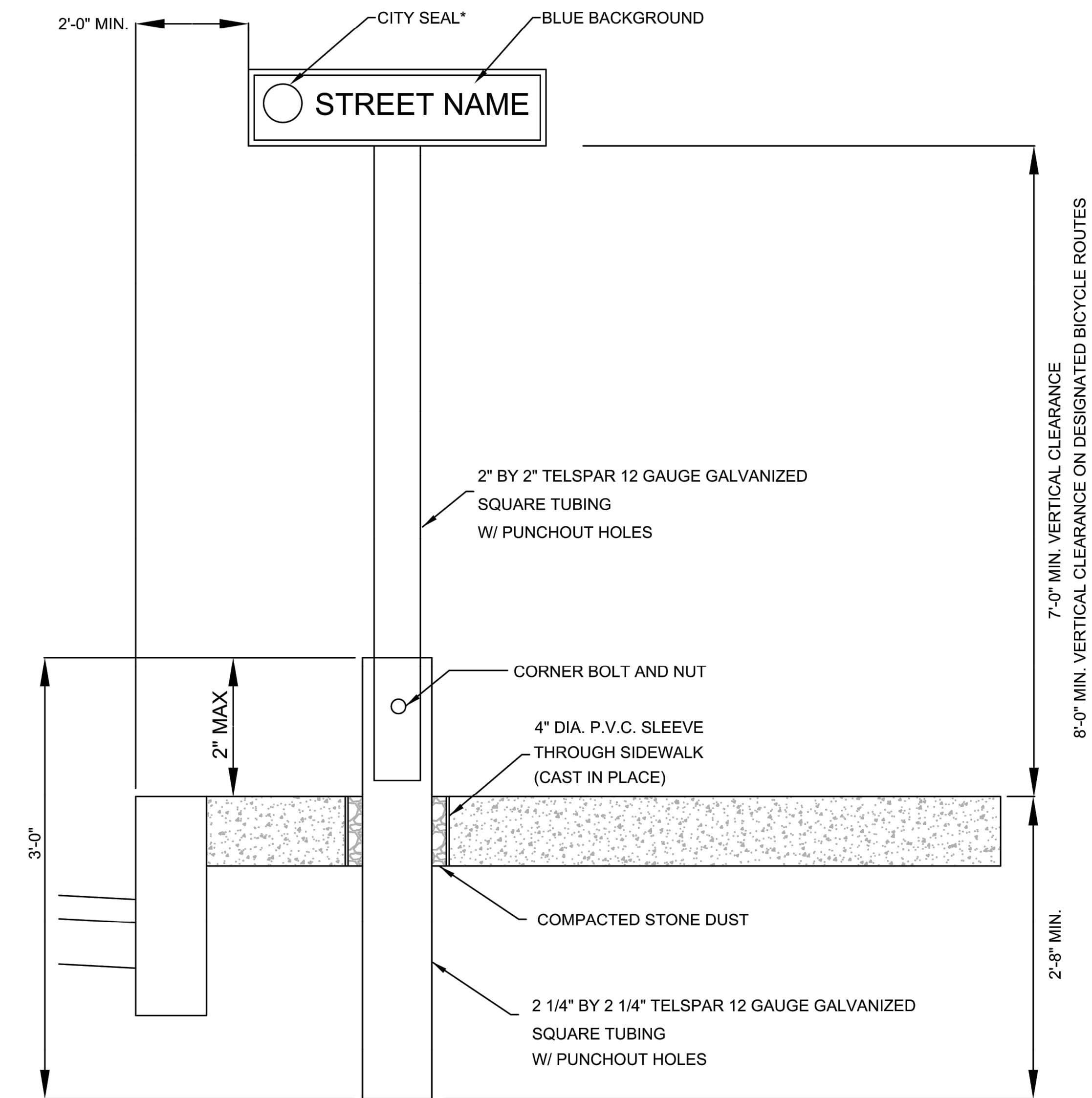
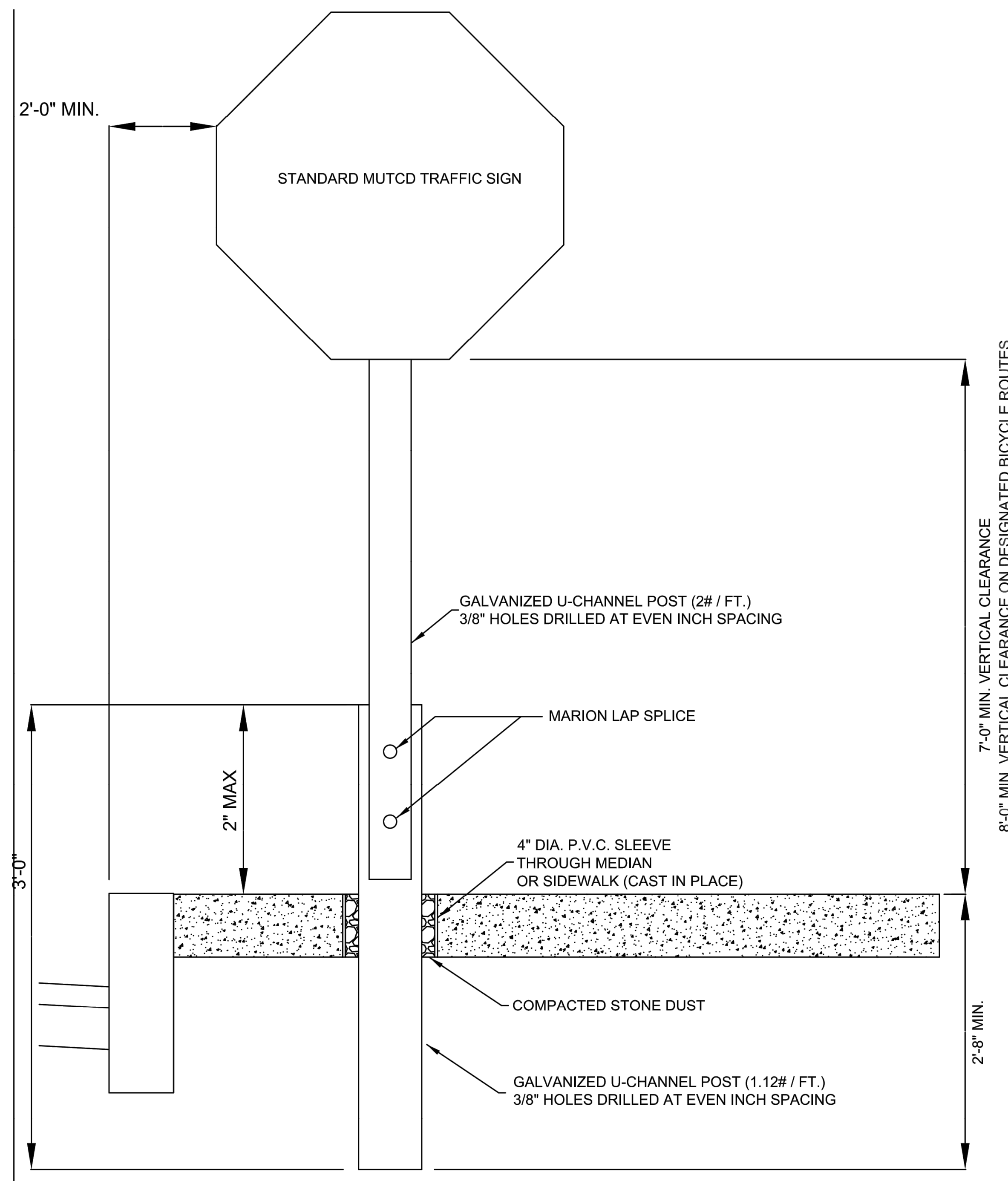
PREPARED BY:  **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

SHEET NO.
57 OF 89

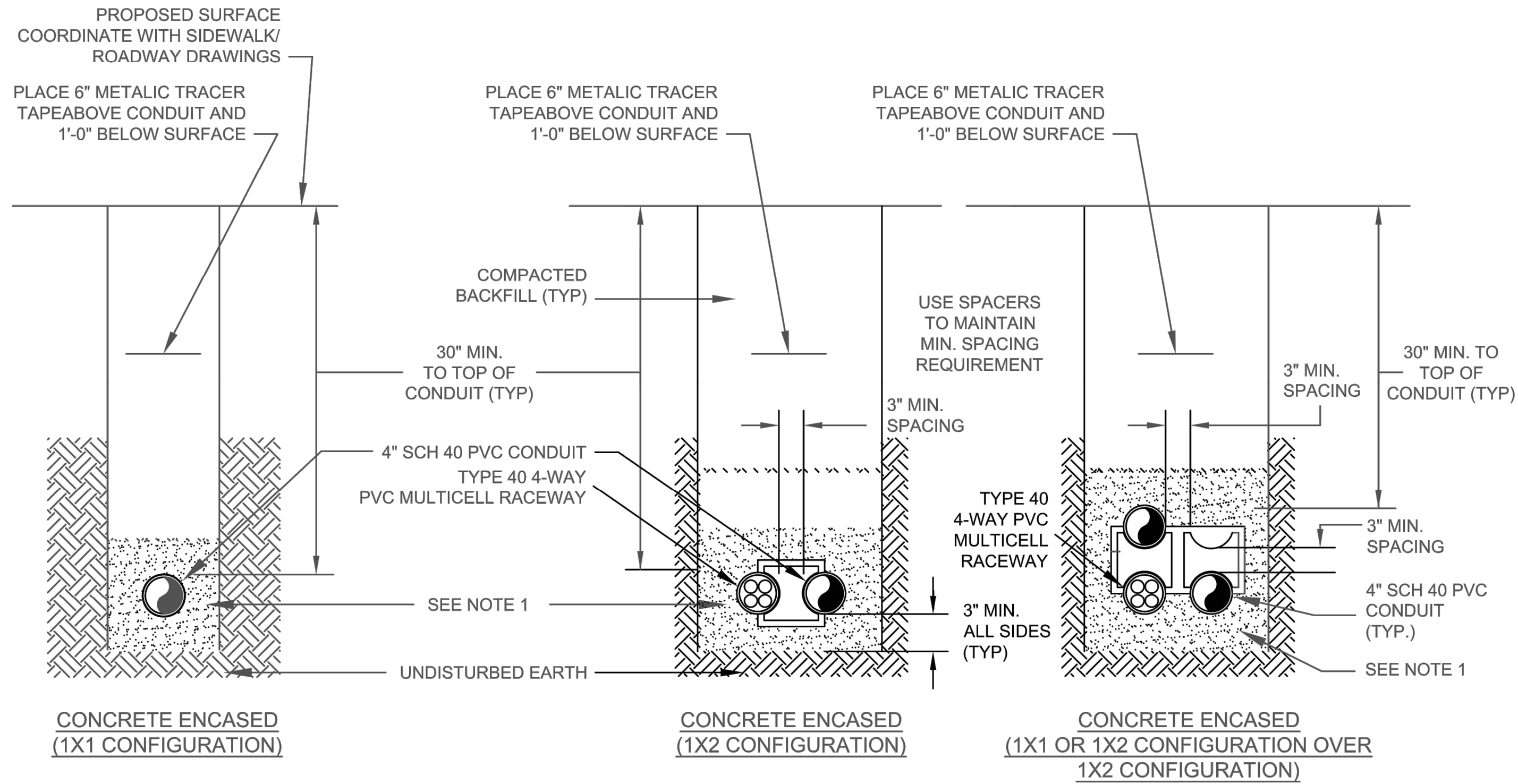
NO.	DATE	REVISIONS
1		



1. EACH SIGN SHALL CONSIST OF (2) SINGLE SIDED PLATES USING DRIVE PINS TO SECURE PLATES TO POST.
2. OUTER EDGE OF SIGN SHALL BE SECURED WITH POP RIVETS AND 2" SPACER BETWEEN THE 2 PLATES.
3. FONT SHALL BE HIGHWAY GOTHIC B IN UPPER CASE ONLY.
4. PLATES SHALL HAVE ROUNDED CORNERS.
5. WHITE AVERY-DENNISON PRISMATIC PLATE SHALL BE UTILIZED.
6. THE SIGNS SHALL INCLUDE 5.5" TOWN SEALS (2 REQUIRED).
7. THE SIGNS SHALL INCLUDE A 0.5" WHITE BORDER.

1		
NO.	DATE	REVISIONS

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CONSTRUCTION DETAILS - 7		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 804 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 58 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

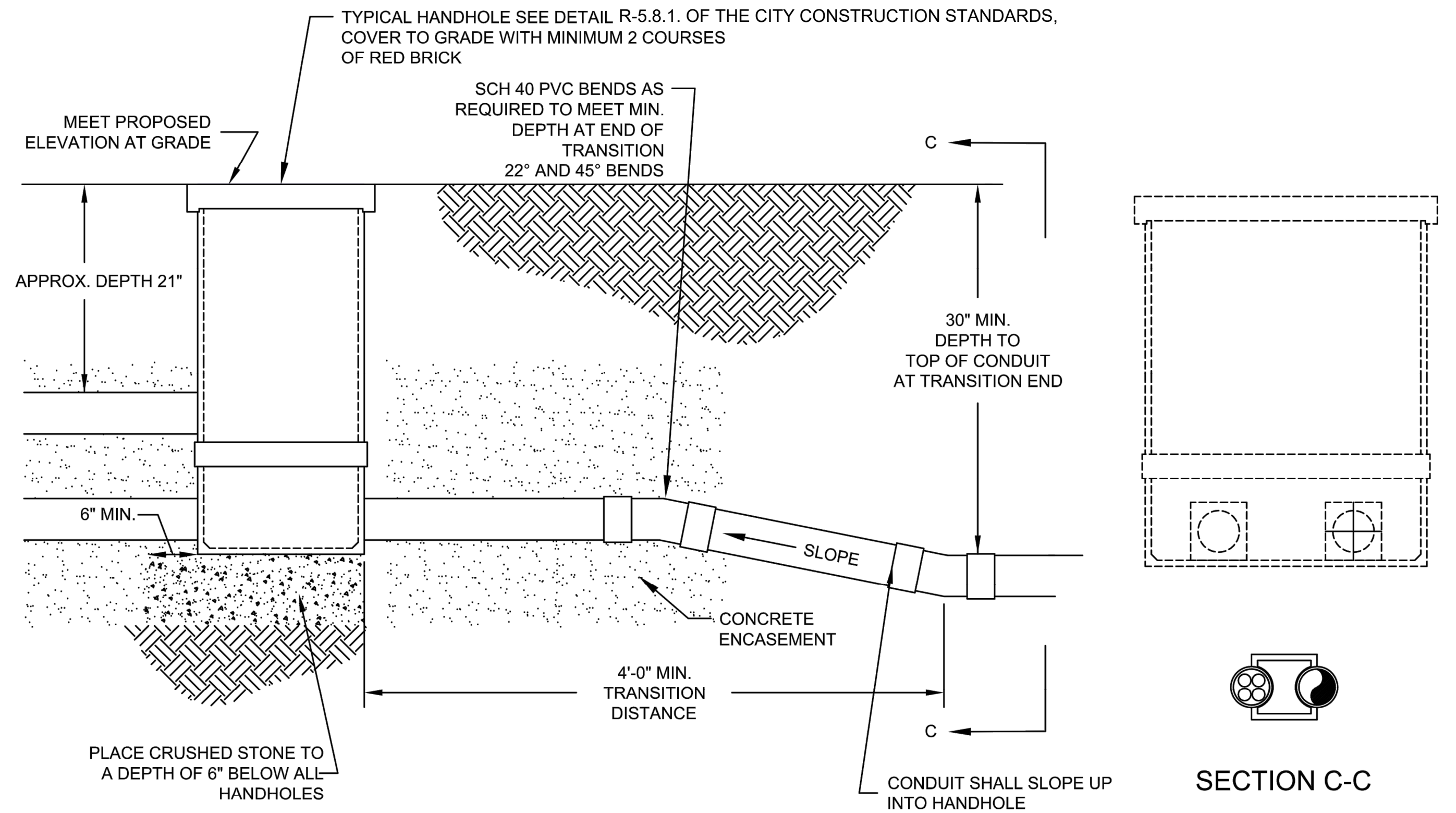


NOTE:

1. CONDUIT TO BE ENCASED IN CEMENT CONCRETE WITH 3" MINIMUM COVER ON ALL SIDES.
2. COVERS SHALL BE STEEL.

TRENCH DETAIL FOR COMMUNICATIONS CONDUIT

NOT TO SCALE



NOT TO SCALE

NOTES:

1. CONDUIT HAND HOLES SHALL BE INSTALLED EVERY 600 FEET (MAX) OF LENGTH.
2. 90° BENDS MAY BE USED IF DEEMED NECESSARY AT THE CITY'S DISCRETION AND SHALL BE COMPOSED OF GALVANIZED METAL.

TRANSITION FROM COMMUNICATIONS HAND HOLE TO TRENCH

NOT TO SCALE

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS - 8

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

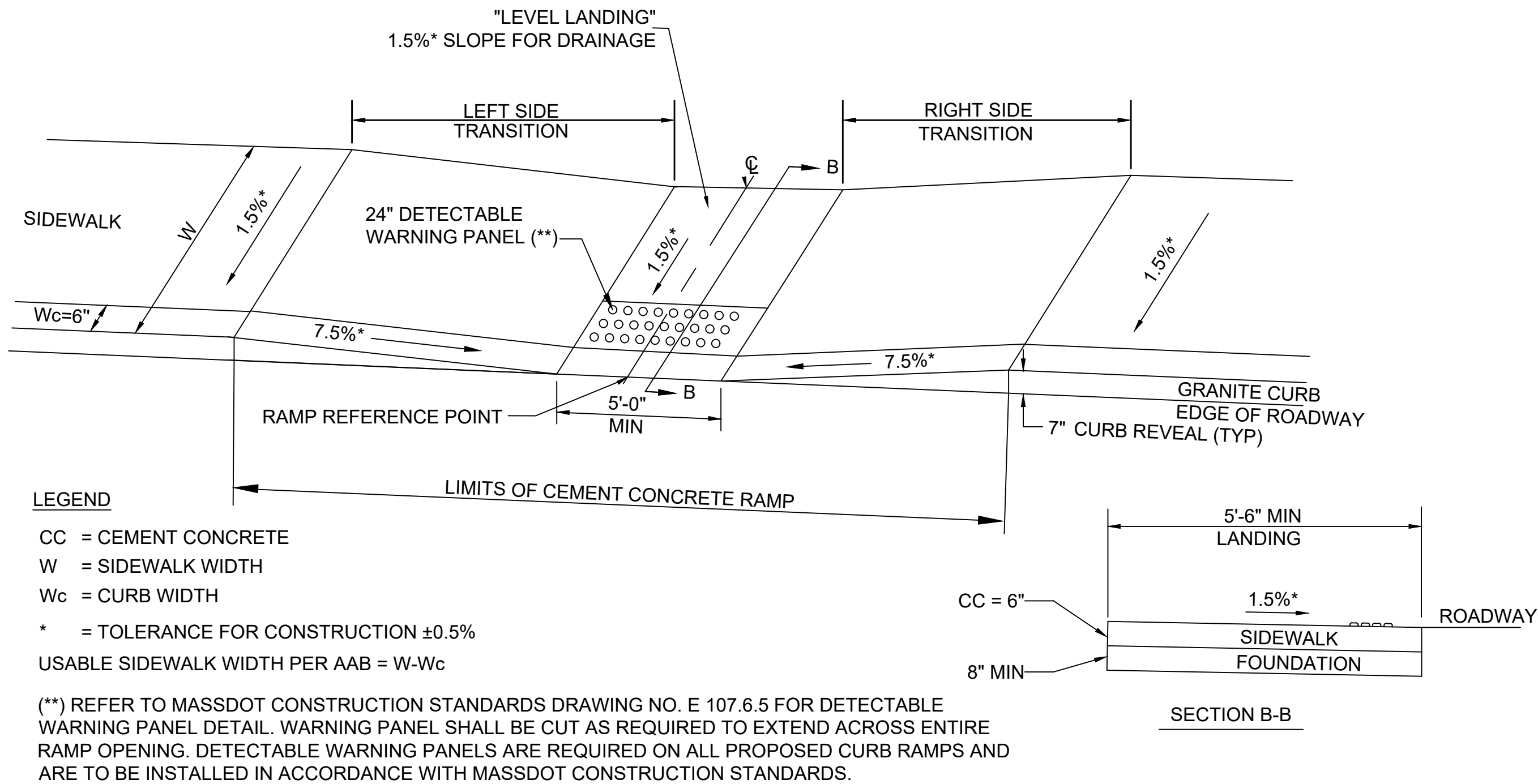
PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP

SHEET NO. 59 OF 89

NO.	DATE	REVISIONS
1		

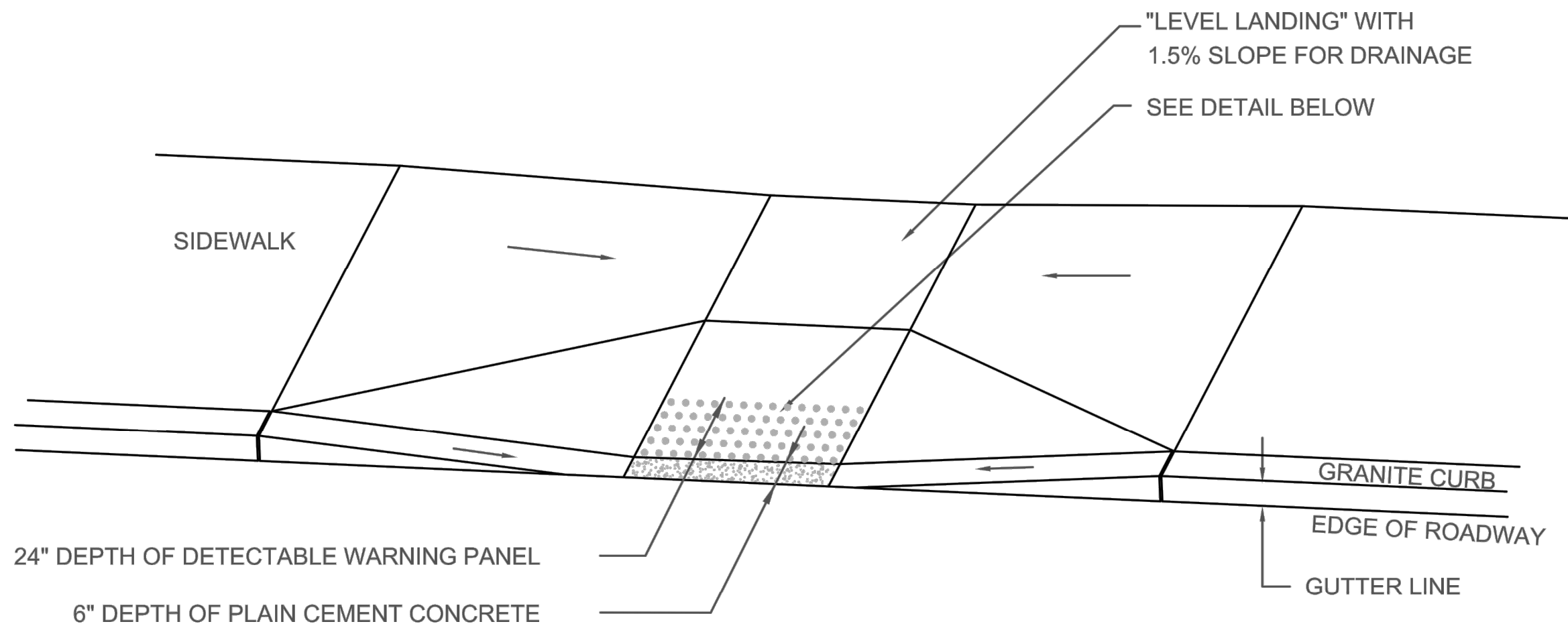


WHEELCHAIR RAMP ON NARROW SIDEWALK
NOT TO SCALE

WHEELCHAIR #.	STATION	OFFSET	WIDTH OF SIDEWALK	WIDTH OF RAMP MIN. (5'-0")	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH
3	3+81.08	27.46 LT	5.50	5.00	2.00%	7'-6"***	9'-0"
4	4+15.47	27.75 LT	7.00	5.00	2.00%	9'-0"	9'-0"****
9	8+20.42	16.52 LT	5.50	5.00	0.70%	7'-10"	9'-0"
15	11+52.21	24.00 RT	7.50	5.00	6.24%	8'-6"**	4'-0"
16	11+52.21	16.00 LT	5.50	5.00	6.24%	7'-10"	7'-6"**
18	500+45.58	11.21 LT	6.00	5.00	-1.80%	10'-10"	7'-10"
22	103+59.36	29.32 RT	6.00	5.00	-0.75%	7'-10"	13'-0"***
25	100+97.97	26.02 LT	7.00	5.00	4.93%	7'-10"	8'-6"**
26	101+13.13	25.68 LT	6.50	5.80	4.93%	3'-9"**	17'-0"

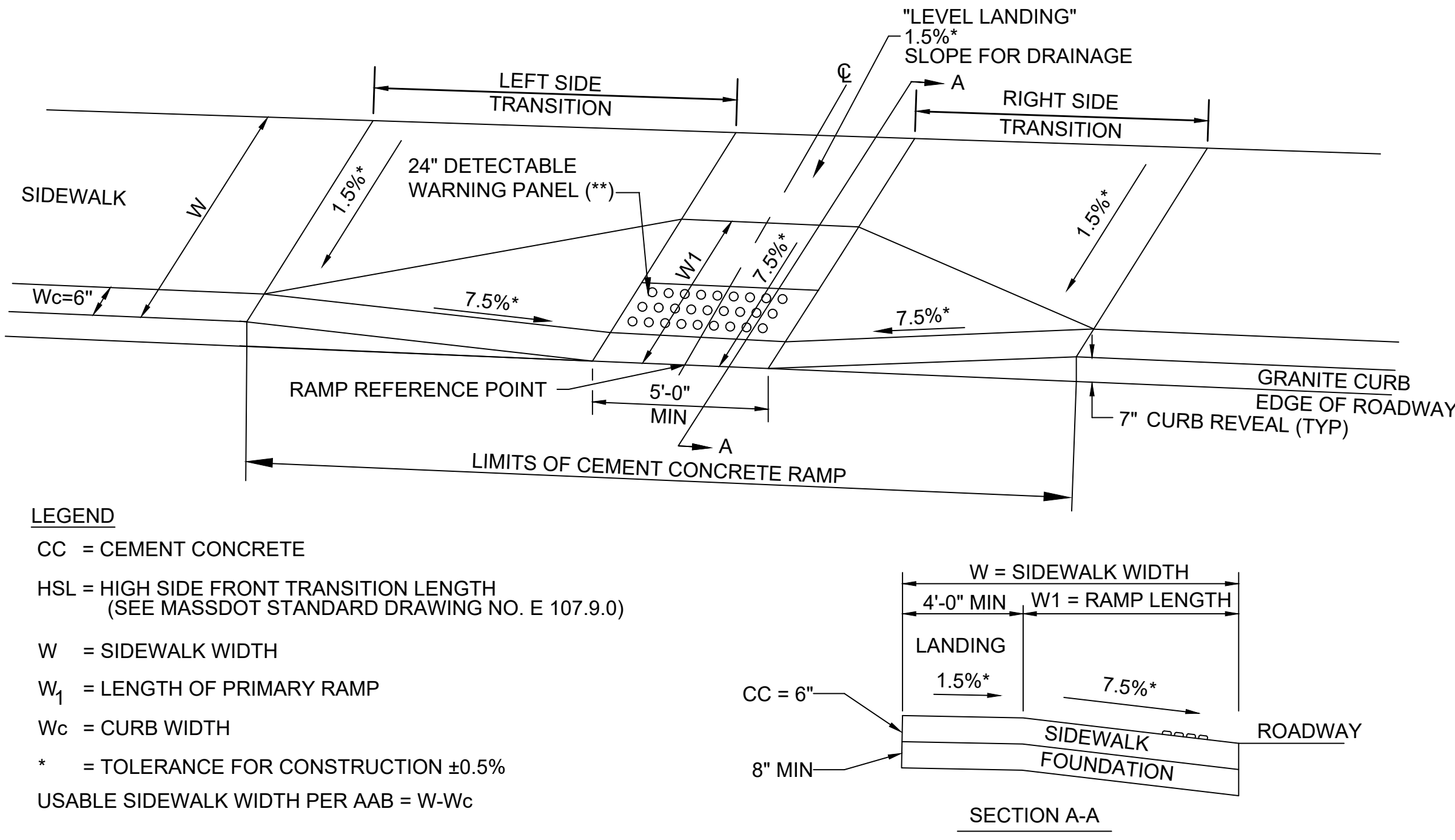
NOTE:
* = 3" CURB REVEAL
** = 4" CURB REVEAL
*** = 5" CURB REVEAL
**** = 6" CURB REVEAL
***** = 2.5" CURB REVEAL

WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CURRENT REGULATIONS OF THE ARCHITECTURAL ACCESS BOARD, THE AMERICANS WITH DISABILITIES ACT AND THE CURRENT MASSDOT CONSTRUCTION STANDARDS.



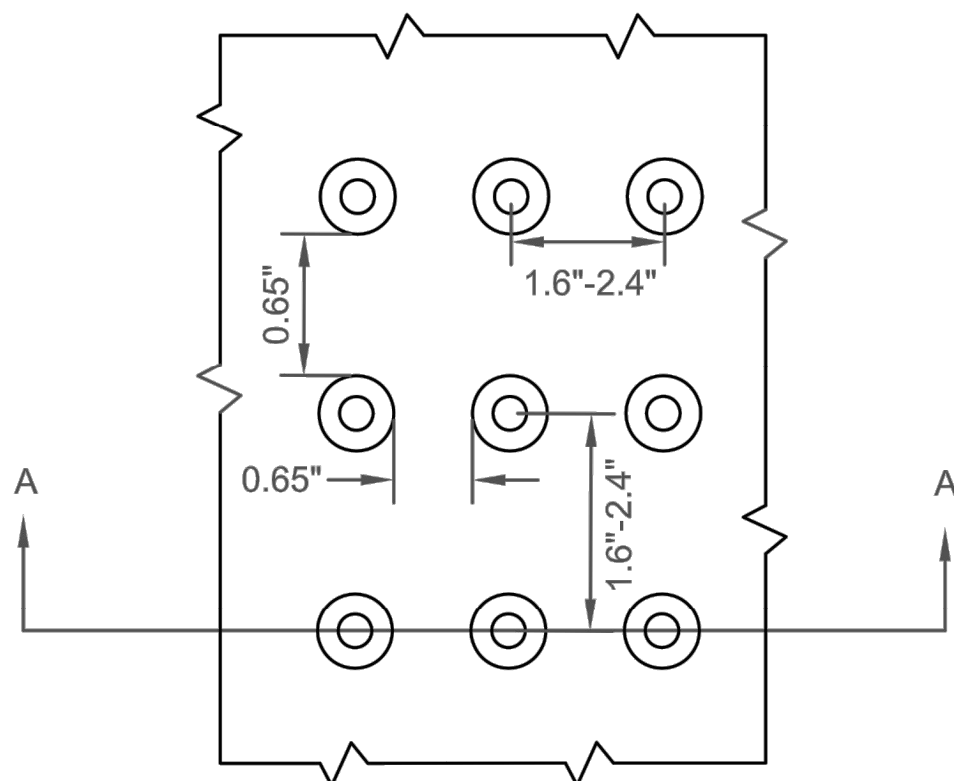
TYPICAL INSTALLATION

DETECTABLE WARNING PANEL DETAIL
NOT TO SCALE



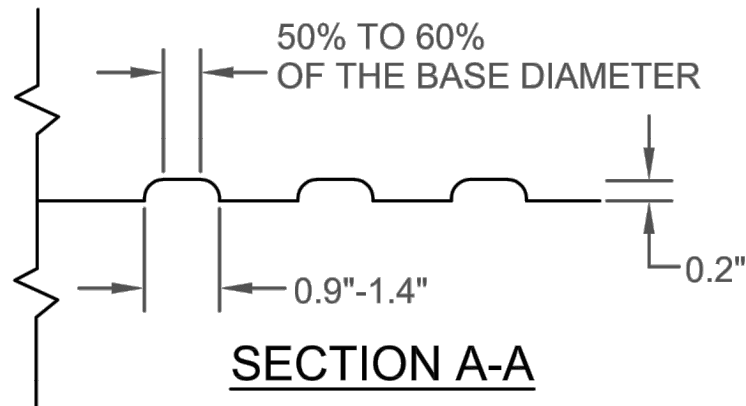
WHEELCHAIR RAMP WITH LESS THAN 12'-4" SIDEWALK
NOT TO SCALE

WHEELCHAIR #.	STATION	OFFSET	LENGTH OF PRIMARY RAMP	WIDTH OF SIDEWALK	WIDTH OF RAMP MIN. (5'-0")	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH
1	1+83.34	27.81 LT	2.50	6.50	5.00	1.00%	9'-0"	7'-10"
2	2+26.71	27.13 LT	2.50	7.00	5.00	1.28%	7'-10"	10'-8"
5	4+47.62	18.50 LT	2.00	7.00	5.00	1.28%	6'-6"****	10'-8"
6	4+47.62	13.00 RT	3.50	8.50	5.00	1.28%	7'-10"	10'-8"
10	8+21.42	16.00 RT	3.00	9.50	5.00	0.70%	7'-10"	9'-0"
17	500+45.87	11.21 RT	2.50	6.50	5.00	-1.80%	9'-0"	3'-9"**
21	13+15.21	22.15 RT	2.50	5.50	5.00	5.26%	6'-1"*****	2'10"*****
23	103+65.65	34.14 LT	2.50	7.00	5.00	-0.75%	9'-0"	17'-0"***
24	100+98.19	27.10 RT	3.00	7.00	5.00	4.93%	8'-6"**	7'-10"
27	101+60.72	25.78 LT	2.50	9.00	5.00	4.93%	17'-0"	7'-6"***



DETAIL OF DETECTABLE WARNING PANEL

NOTE:
PANELS SHALL BE "BRICK RED" IN COLOR AND SHALL BE CAST-IN-PLACE WITH WHEELCHAIR RAMP CEMENT CONCRETE.
SURFACE APPLIED TACTILE PANELS SHALL NOT BE UTILIZED.



SECTION A-A

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: WHEELCHAIR RAMP DETAILS 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

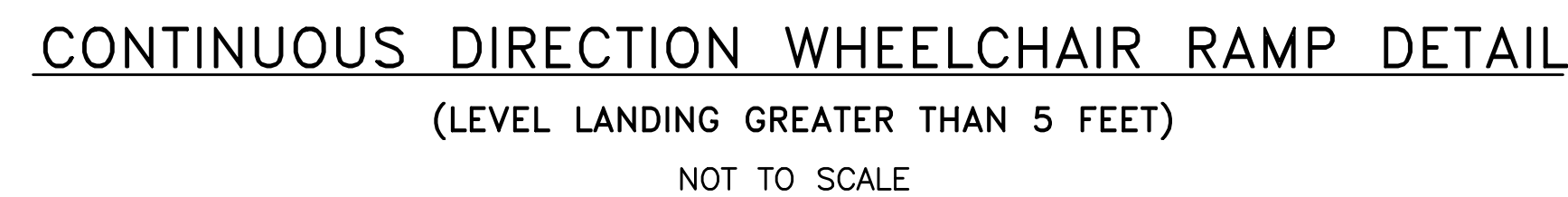
DESIGNED BY: JL

DRAWN BY: MPC

CHECKED BY: HP

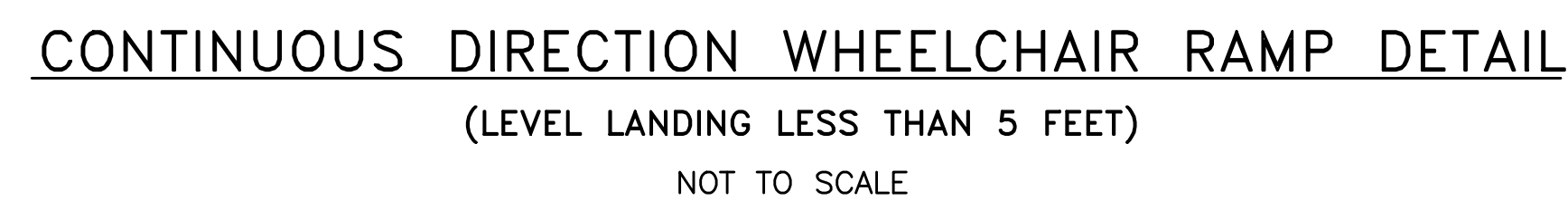
SHEET NO.

60 OF 89



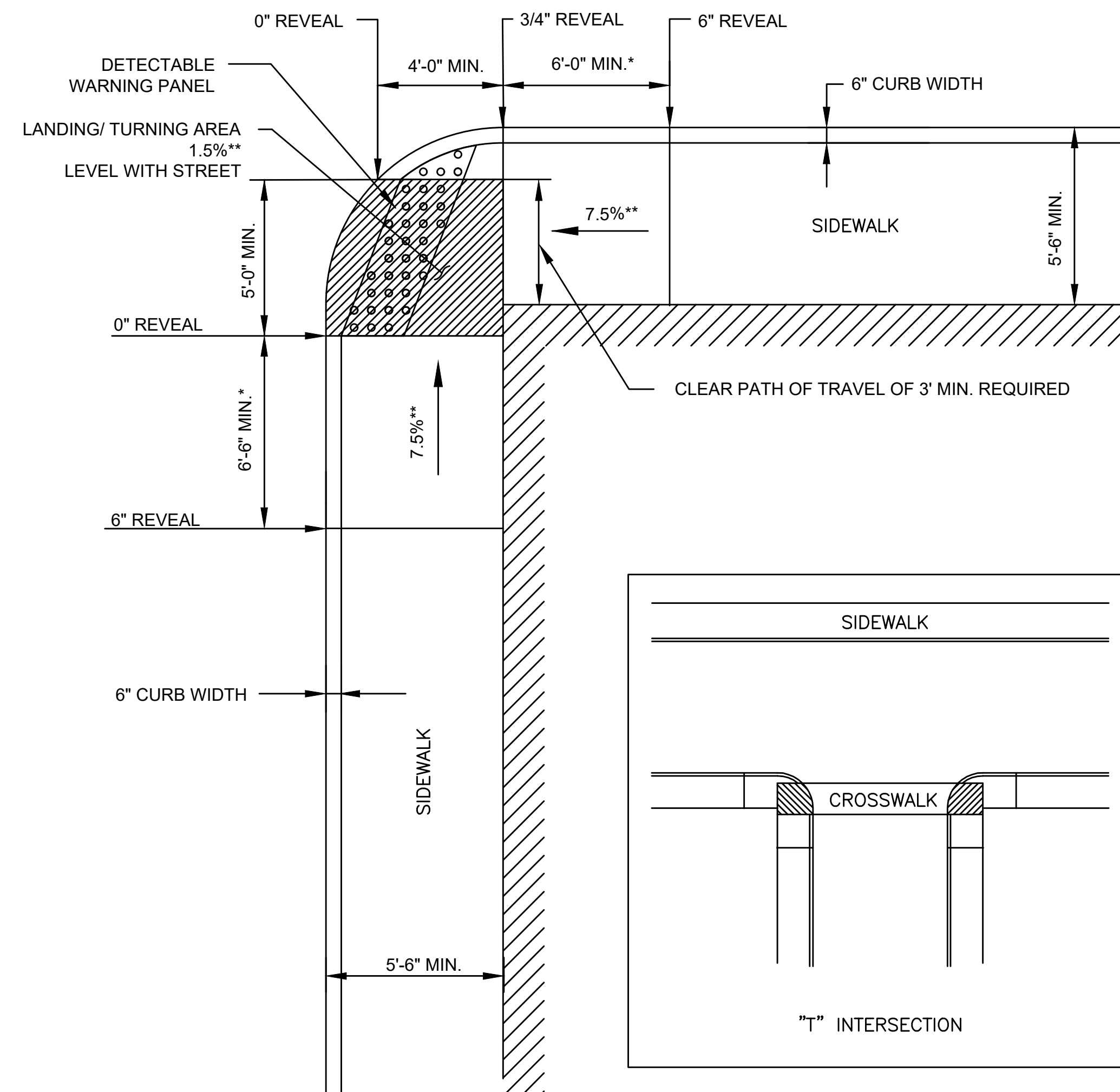
WHEELCHAIR #	STATION	OFFSET	WIDTH OF SIDEWALK (W)	DEPTH OF LEVEL LANDING MIN. 4.0'	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH	LEVEL LANDING LENGTH
7	6+67.14	20.01 RT	8.93	-	0.70%	-	7'-10"	< 5'
12	8+75.20	15.14 RT	8.00	-	1.66%	9'-0"	-	< 5'
13	400+32.00	14.23 RT	7.43	-	3.90%	-	5'-4"	< 5'
14	400+28.00	11.39 RT	7.37	-	4.50%	17'-0"	-	< 5'
19	500+76.89	14.73 RT	6.50	-	-2.40%	-	7'-10"	< 5'
20	500+91.38	14.45 RT	6.00	-	-3.12%	9'-0"	-	< 5'

NOTE:
 * = 3" CURB REVEAL
 ** = 4" CURB REVEAL
 *** = 5" CURB REVEAL
 **** = 6" CURB REVEAL
 ***** = 2.5" CURB REVEAL



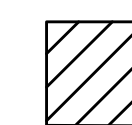
NOTES:

- * CONSTRUCTION TOLERANCE $\pm 0.5\%$
- SEE CONSTRUCTION STANDARD R-5.3.4
- ** SEE MASSDOT CONSTRUCTION STANDARD E 107.9.0 - DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5
- CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR CONSTRUCTING RAMPS COMPLIANT WITH ADA/AAB RULES, REGULATIONS AND STANDARDS. CONTRACTOR SHALL VERIFY RAMPS ARE ADA/AAB COMPLIANT BEFORE POURING CEMENT CONCRETE.



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

LEGEND



BUILDING OR OTHER UNALTERABLE CONDITION

* TRANSITION LENGTH SHOWN IS MINIMUM.
(SEE E 107.9.0)

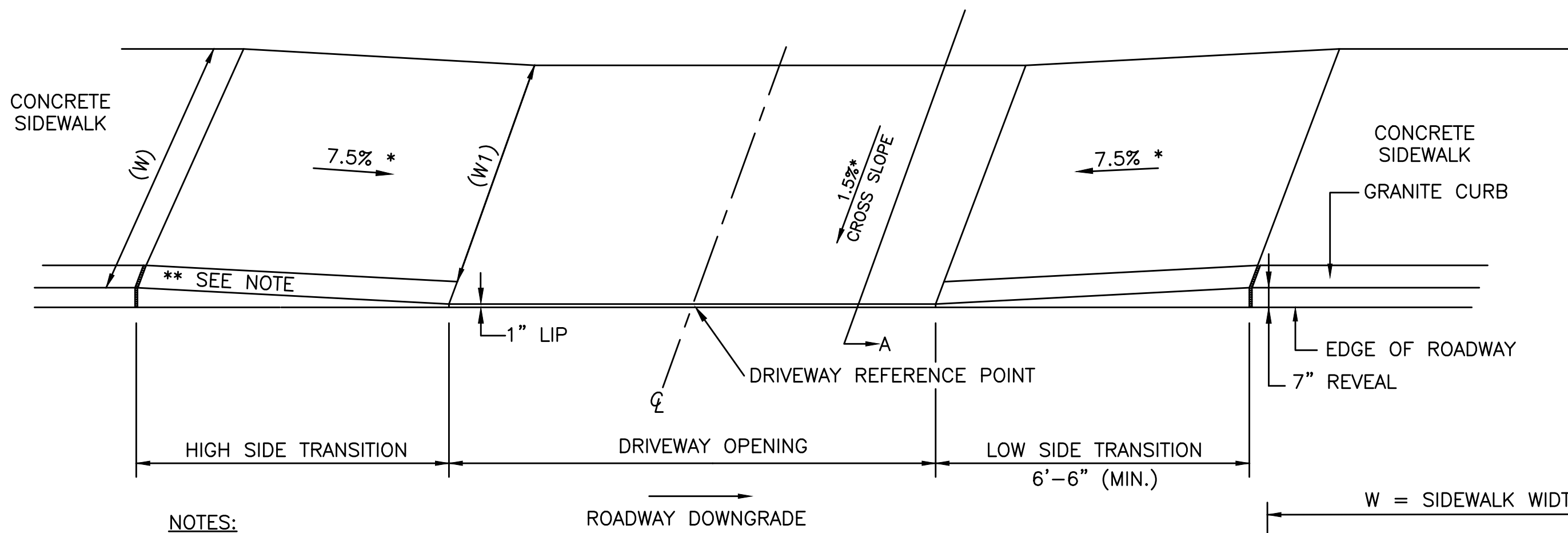
** TOLERANCE FOR CONSTRUCTION $\pm 0.5\%$

"T" INTERSECTION WHEELCHAIR RAMP DETAIL

NOT TO SCALE

WHEELCHAIR #	STATION	OFFSET	WIDTH OF SIDEWALK (W)	DEPTH OF LEVEL LANDING MIN. 4.0'	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH	LEVEL LANDING LENGTH
8	7+15.90	20.81 RT	10.66	-	0.70%	9'-0"	-	> 5'
11	8+29.92	13.36 RT	9.00	-	0.70%	-	7'-10"	< 5'

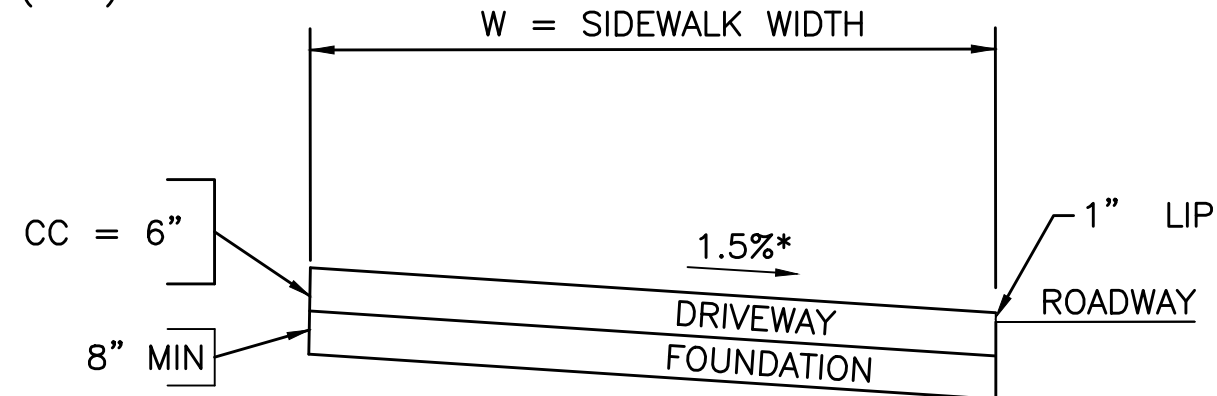
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: WHEELCHAIR RAMP DETAILS 2		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 206 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 61 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



NOTES:
* CONSTRUCTION TOLERANCE
± 0.5%
** SEE CONSTRUCTION
STANDARD E 107.9.0

DEPRESSED DRIVEWAY DETAILS

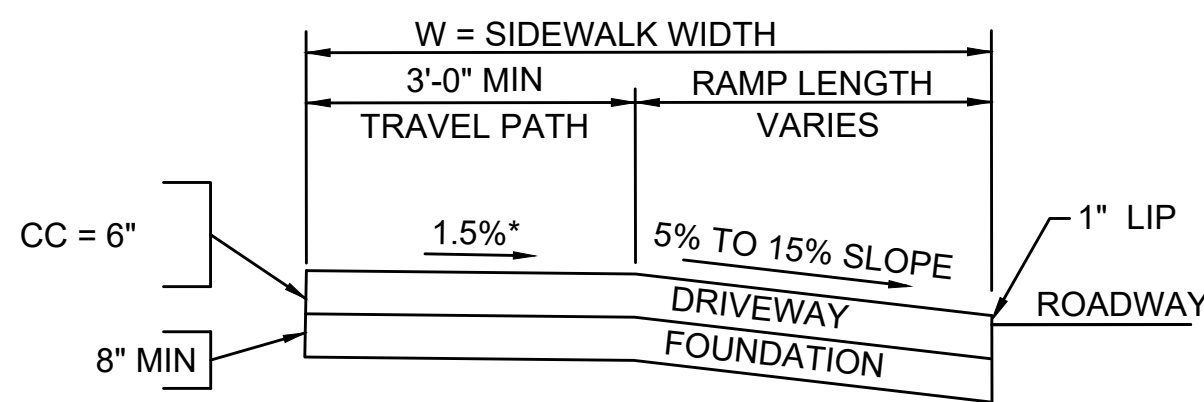
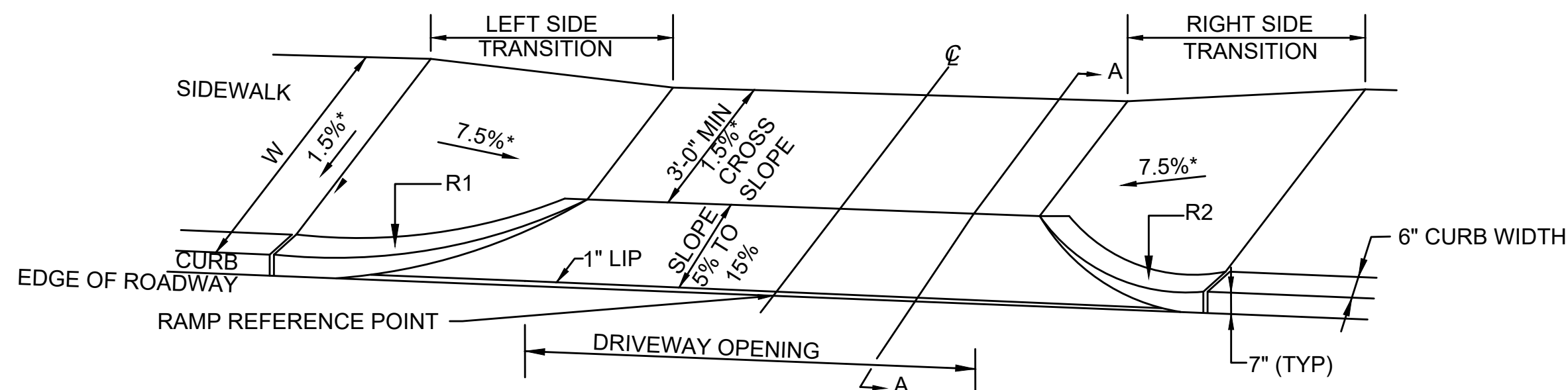
NOT TO SCALE



SECTION A-A

DWY NO.	STATION	OFFSET	WIDTH OF SIDEWALK (W)	WIDTH OF DRIVEWAY OPENING	WIDTH OF TRAVEL PATH (W1)	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH
3	6+33.07	19.00 LT	6.50	30.00	3.50	0.70%	7'-10"	9'-0"
4	7+50.48	19.00 LT	5.50	24.00	3.00	0.70%	7'-10"	9'-0"
6	10+00.00	19.00 LT	5.50	35.00	5.00	4.97%	7'-10"	17'-0"
7	12+00.00	16.50 LT	5.50	39.00	3.00	6.24%	3'-9"	17'-0"
12	102+42.14	23.16 LT	7.00	14.00	6.50	2.45%	7'-6"	13'-0"

NOTE:
* = 3" CURB REVEAL
** = 4" CURB REVEAL
*** = 5" CURB REVEAL
***** = 2.5" CURB REVEAL



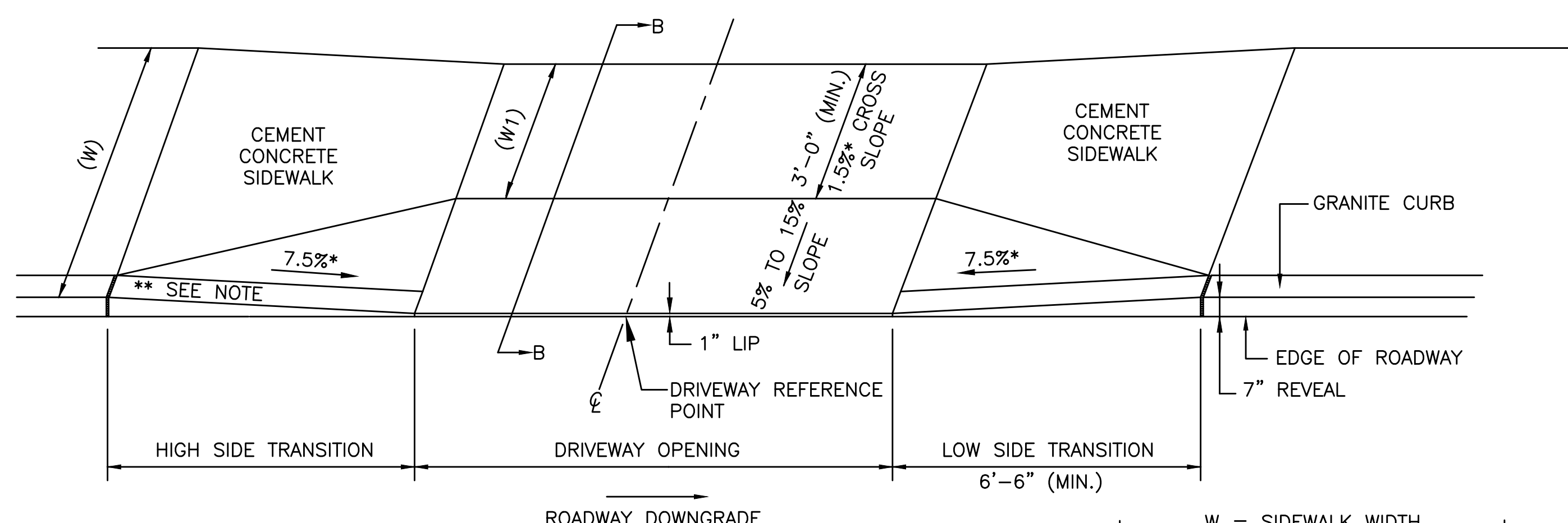
SECTION A-A

CEMENT CONCRETE DRIVEWAY WITH SIDEWALK CURB RADIUS

NOT TO SCALE

DRIVEWAY #.	STATION	OFFSET	WIDTH OF SIDEWALK	WIDTH OF TRAVEL PATH ACROSS OPENING	LEFT SIDE TRANSITION LENGHT	RIGHT SIDE TRANSITION LENGHT	ROADWAY GUTTER SLOPE (%)	RADIUS 1	RADIUS 2
10	101+31.95	28.04 RT	7.21	20.00	17'-0"	3'-9"	4.93%	3.00	3.00
11	101+93.44	24.82 RT	6.96	20.00	13'-0"	7'-6"	4.93%	3.00	3.00

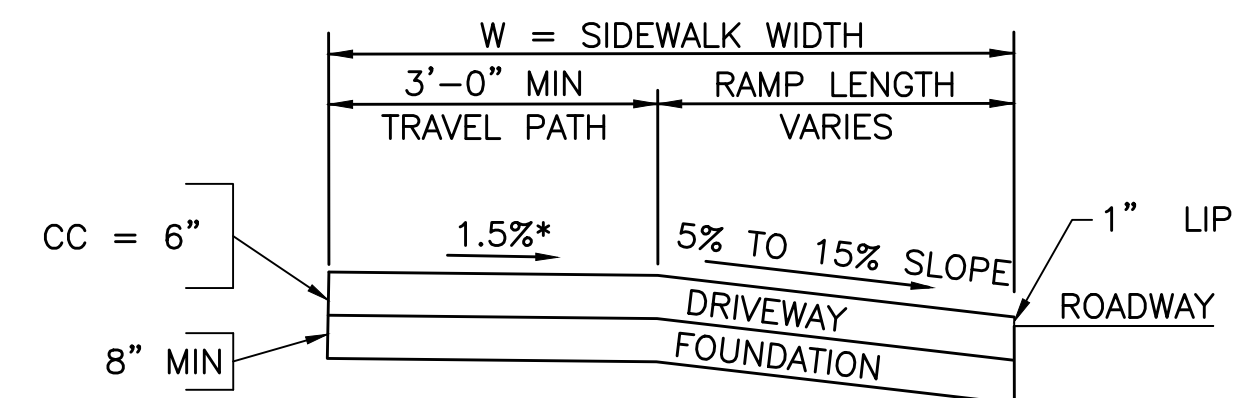
NOTE:
* = 3" CURB REVEAL
** = 4" CURB REVEAL
*** = 5" CURB REVEAL
***** = 2.5" CURB REVEAL



DRIVEWAY DETAILS

(STANDARD CURB CUT)
NOT TO SCALE

NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
** SEE CONSTRUCTION STANDARD E 107.9.0
*** 3 INCH CURB REVEAL



SECTION B-B

DWY NO.	STATION	OFFSET	WIDTH OF SIDEWALK (W)	WIDTH OF DRIVEWAY OPENING	WIDTH OF TRAVEL PATH (W1)	ROADWAY GUTTER SLOPE	LEFT SIDE TRANSITION LENGTH	RIGHT SIDE TRANSITION LENGTH
1	3+09.09	13.00 RT	7.50	24.31	5.50	1.28%	10'-8"	7'-10"
2	3+15.97	19.00 LT	6.80	14.30	4.32	1.28%	7'-10"	10'-8"
5	9+68.27	20.00 RT	7.50	20.00	4.80	0.40%	7'-6"	7'-6"
8	12+86.05	23.30 RT	6.50	24.00	3.50	6.10%	6'-1"	7'-6"
9	13+42.73	20.50 RT	8.10	16.14	5.68	5.17%	17'-0"	2'-10"
13	103+7.09	19.00 LT	17.70	24.00	15.64	0.39%	7'-10"	7'-10"

(LEFT SIDE/RIGHT SIDE DETERMINED WHEN STANDING IN ROADWAY LOOKING AT RAMP OR DRIVEWAY)

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

DRAWING TITLE: DRIVEWAY DETAILS 1

PREPARED FOR: CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY: Green International Affiliates, Inc.
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

PROJECT NO. 20034

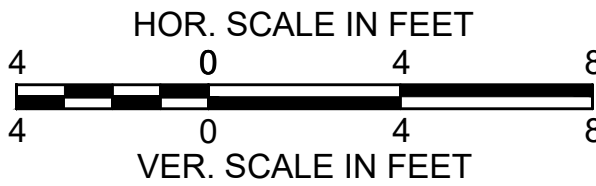
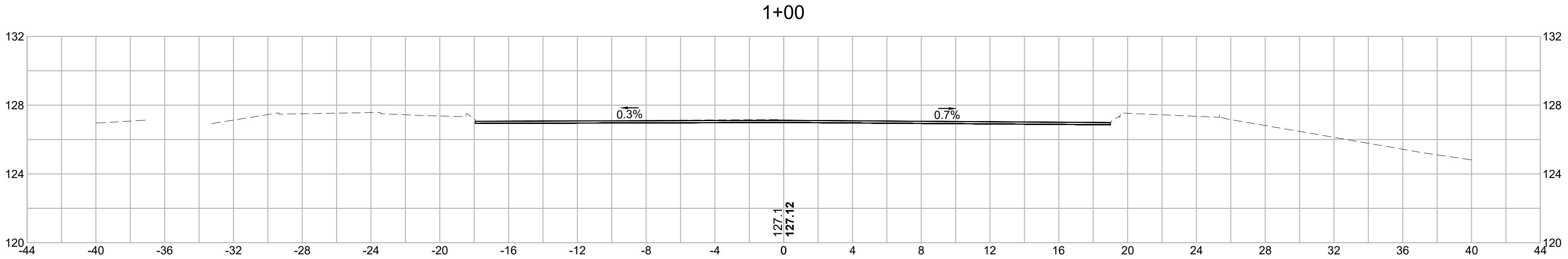
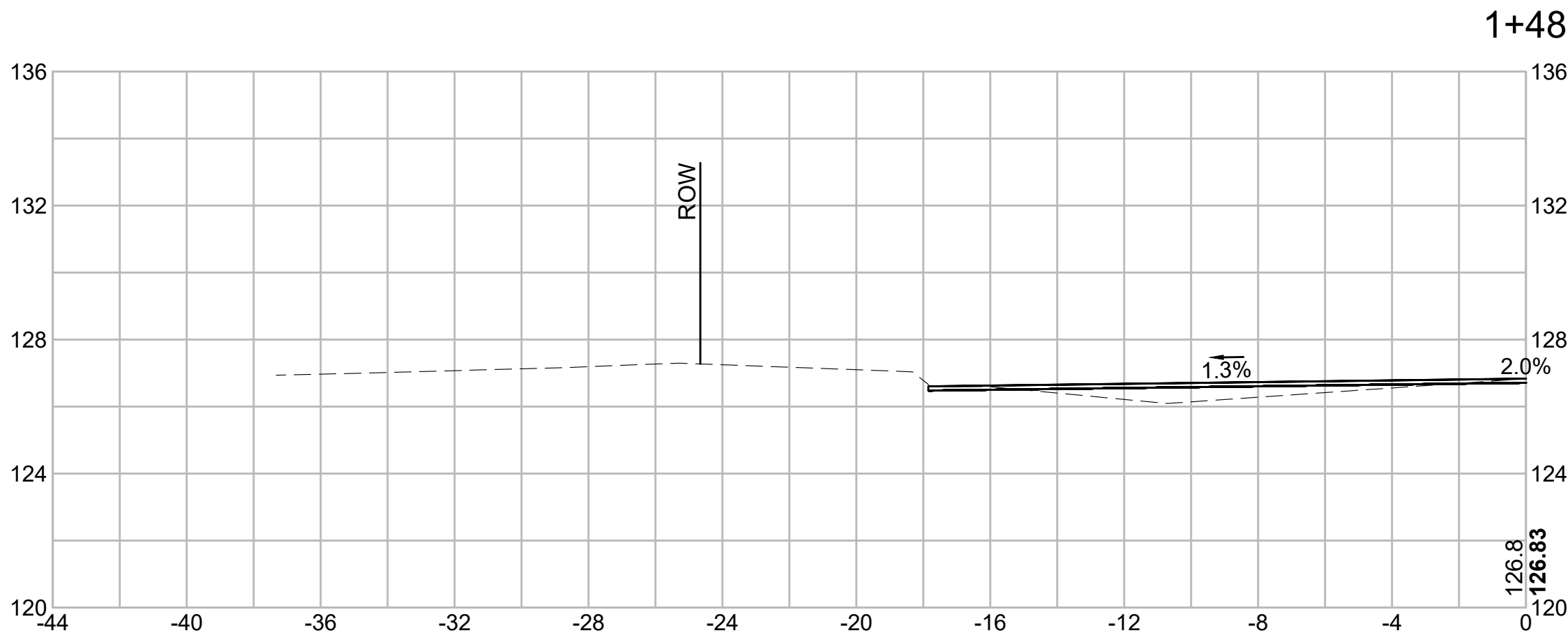
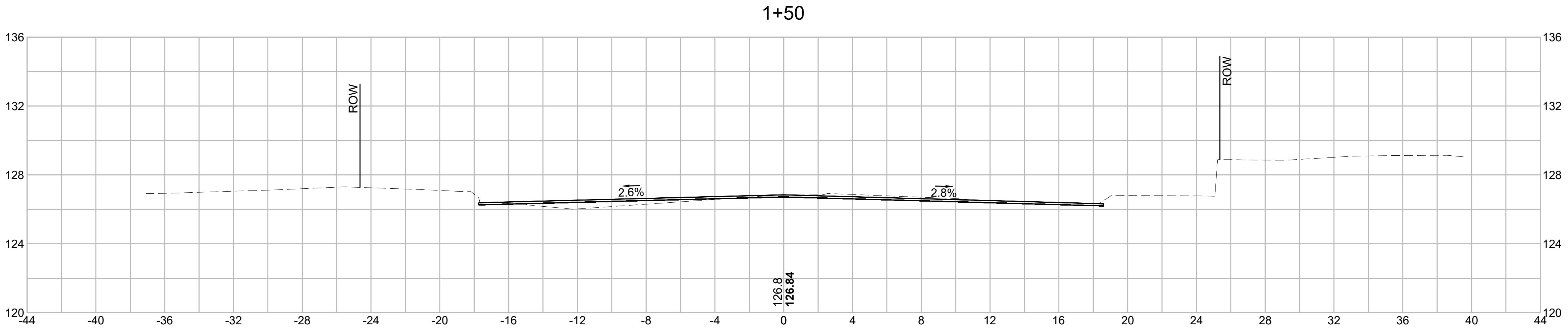
DESIGNED BY: JL

DRAWN BY: MPC

CHECKED BY: HP

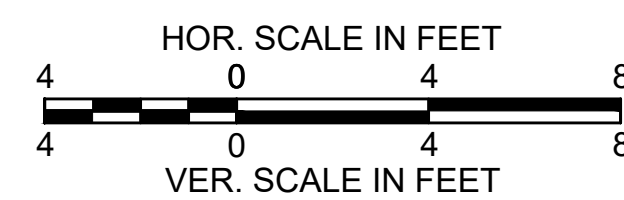
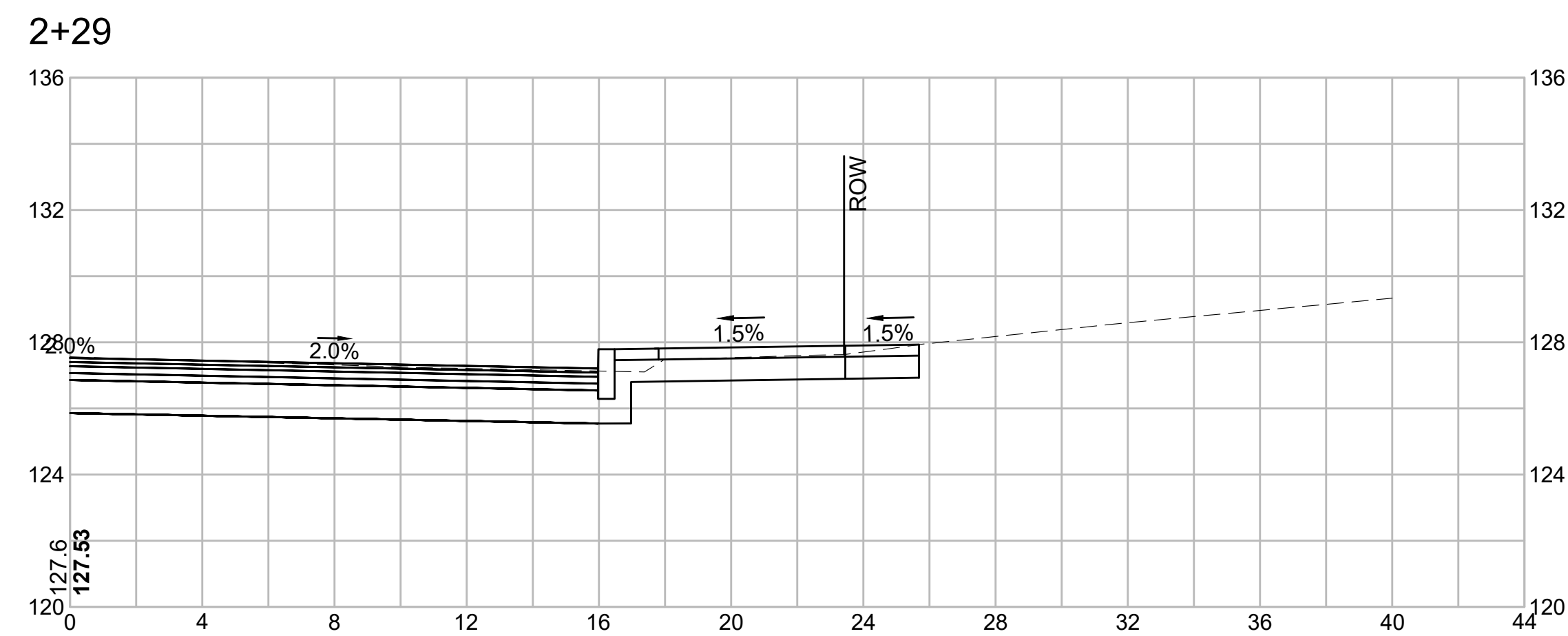
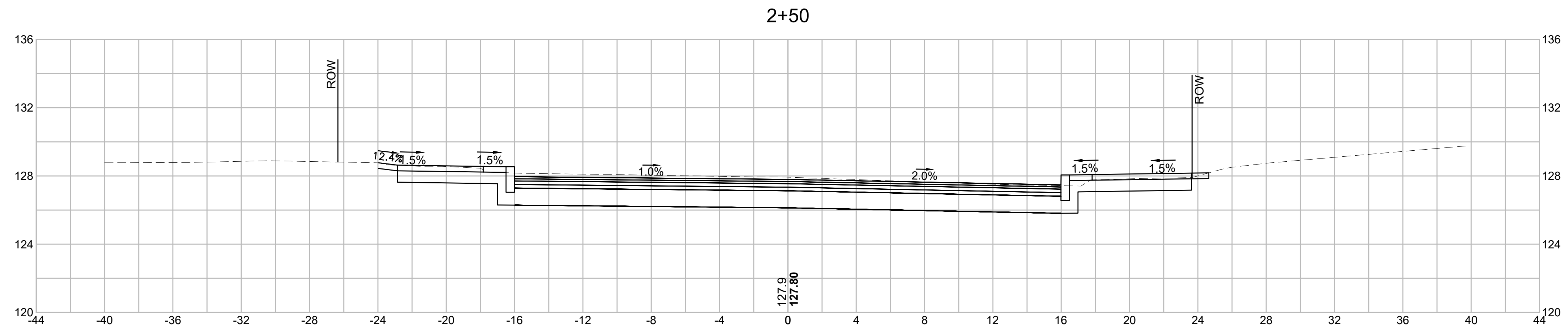
SHEET NO.

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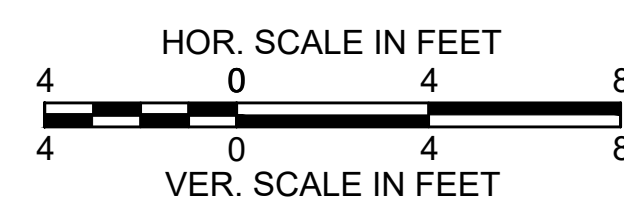
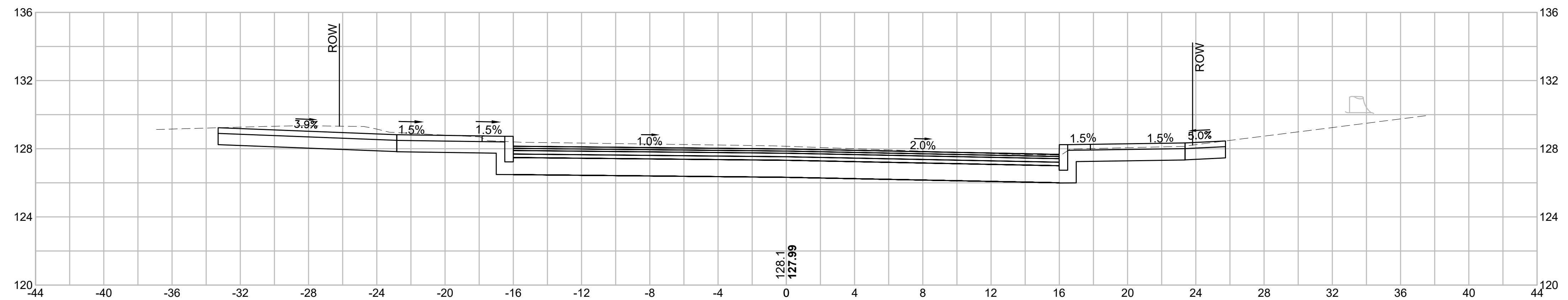
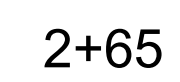
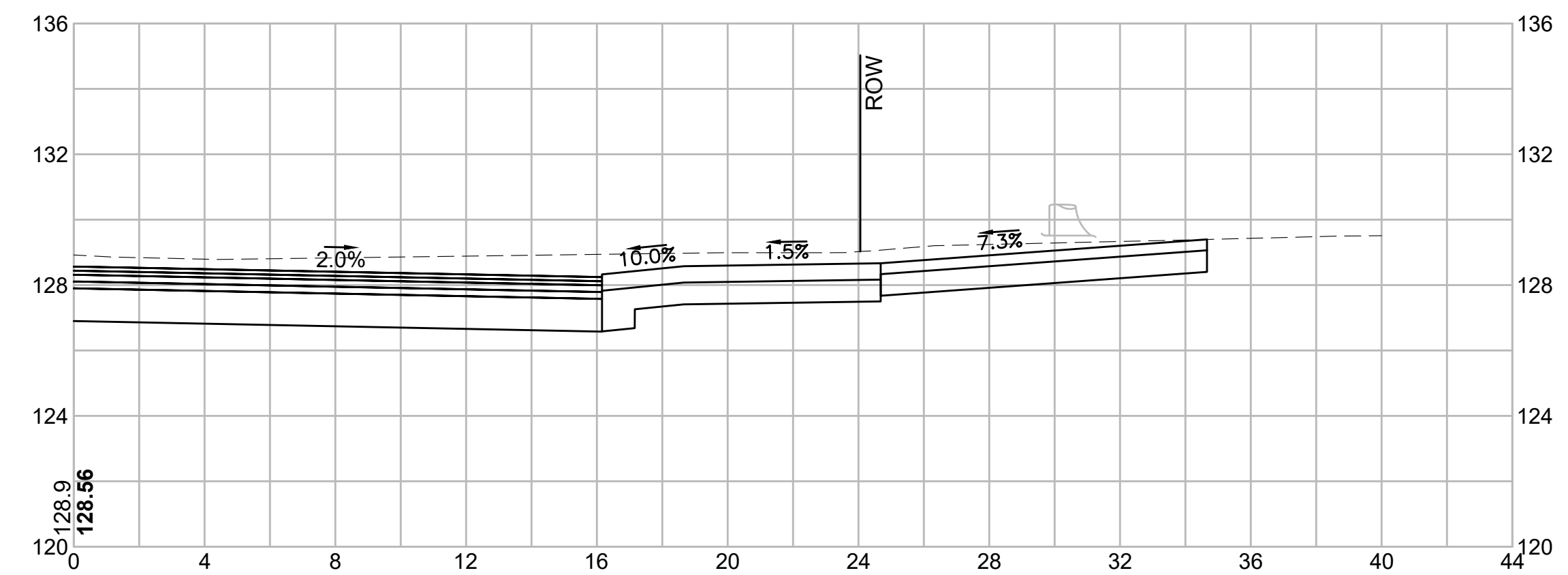
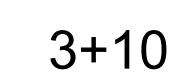
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 63 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 65 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

[illegible]

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: CROSS SECTIONS

PREPARED FOR:



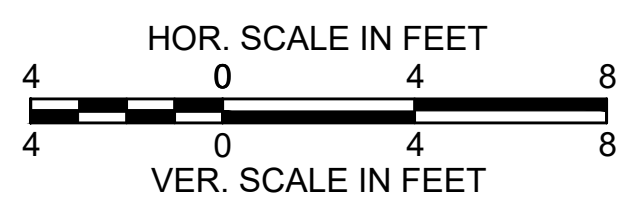
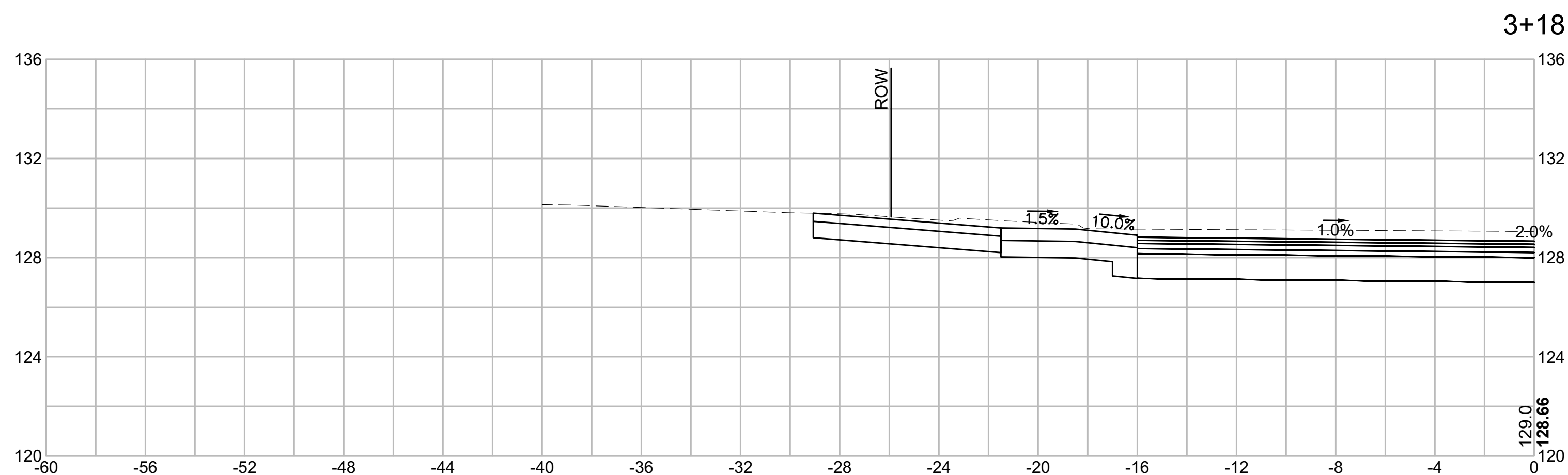
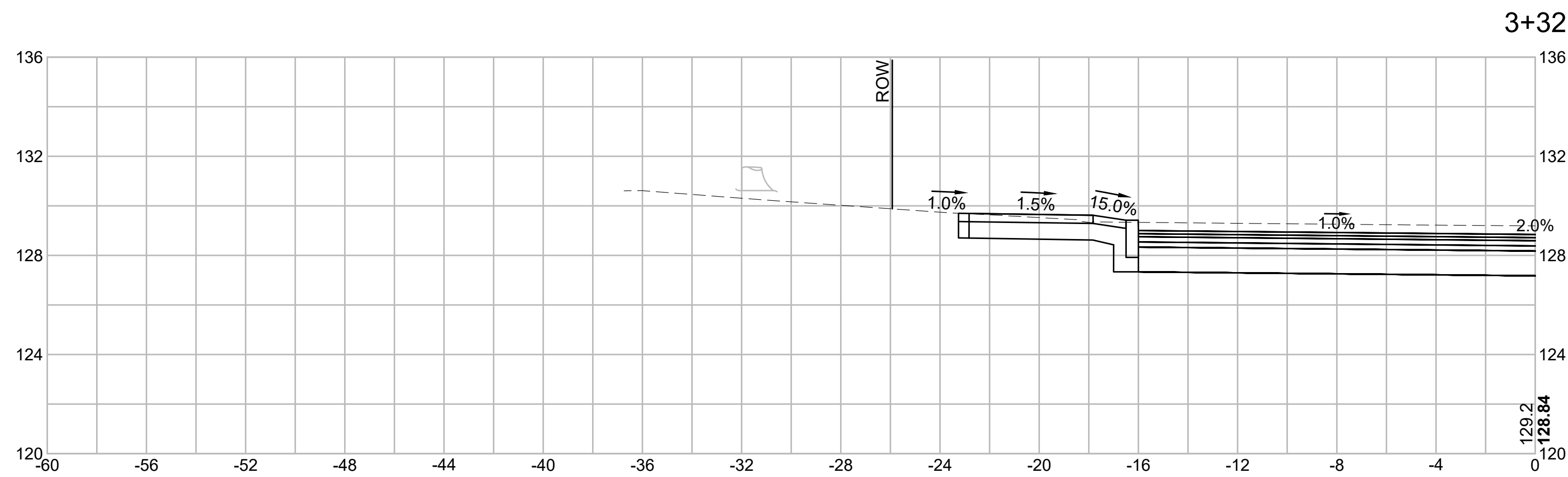
CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
 110 WESTERN AVENUE
 FRAMINGHAM, MA 01702

PREPARED BY:

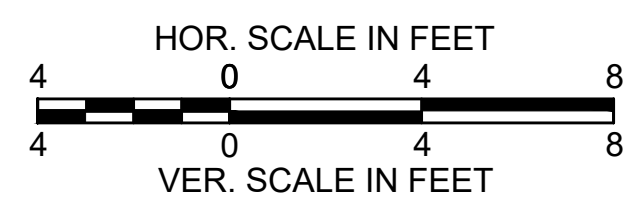
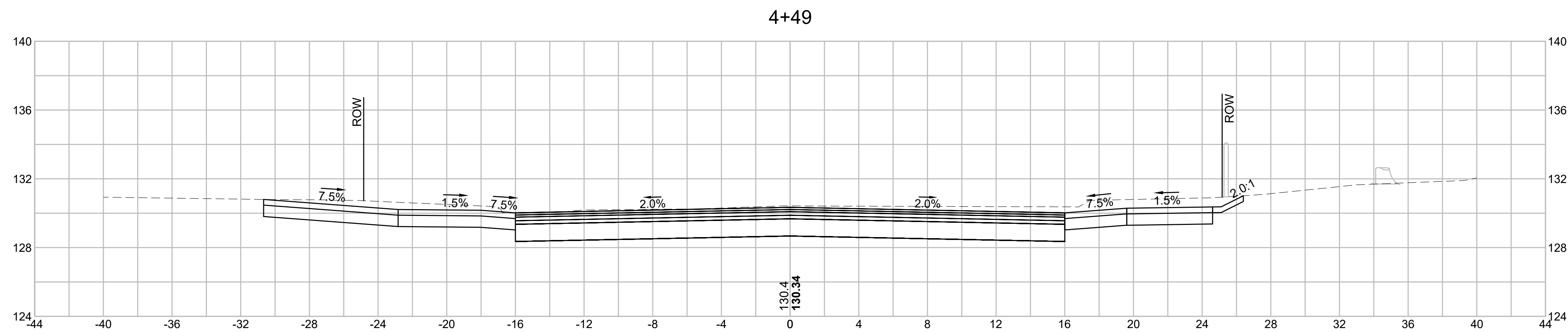
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 66 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

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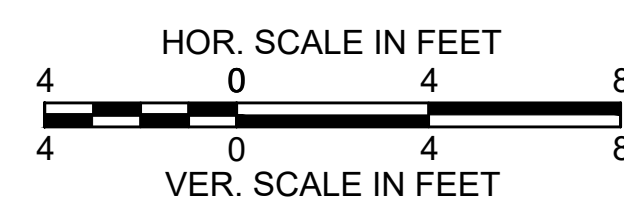
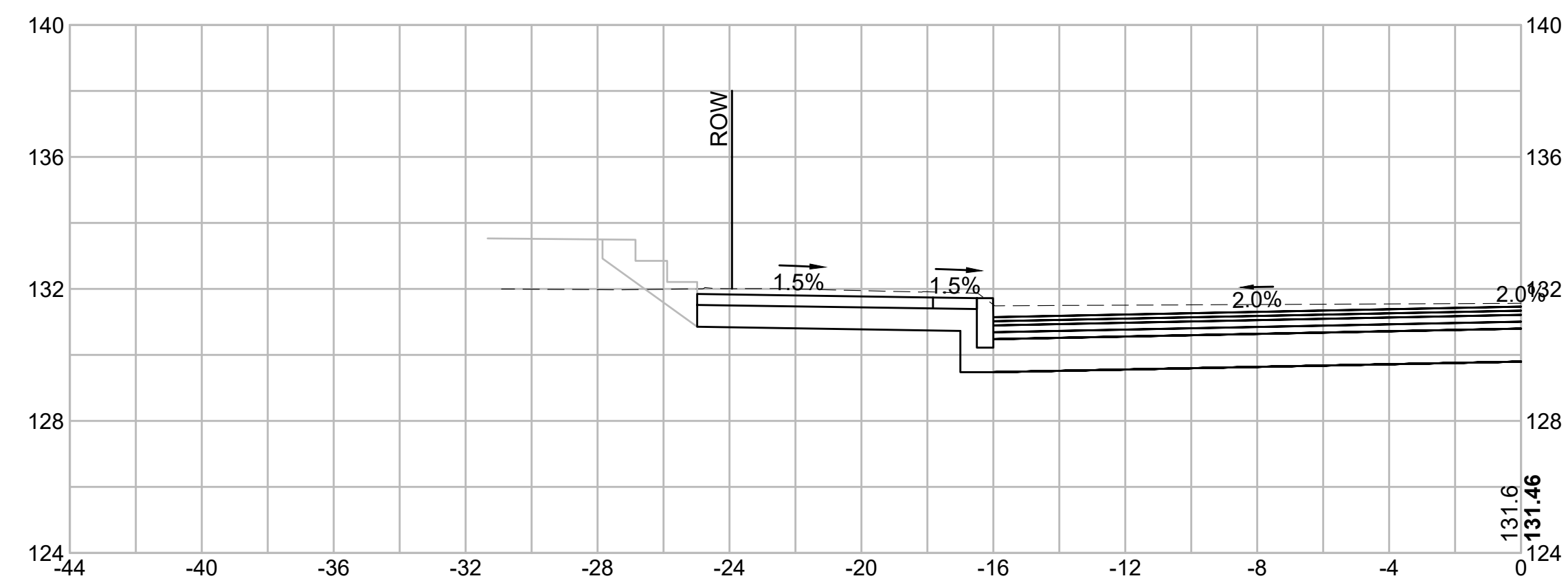
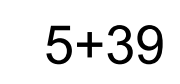
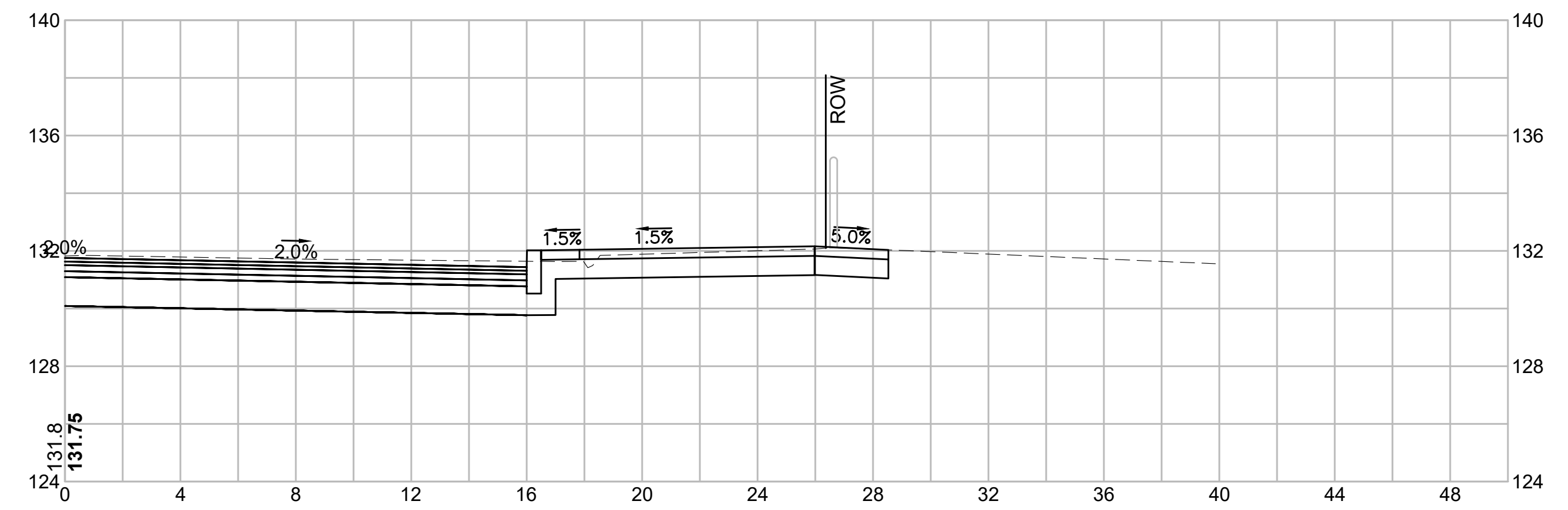
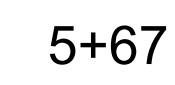


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 67 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	
NO.	DATE	REVISIONS



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 69 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

[illegible]

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE: CROSS SECTIONS

PREPARED FOR:

 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED

DATE: 6/4/2024

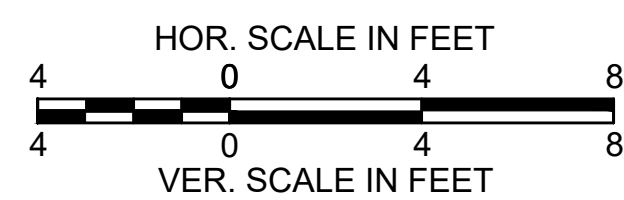
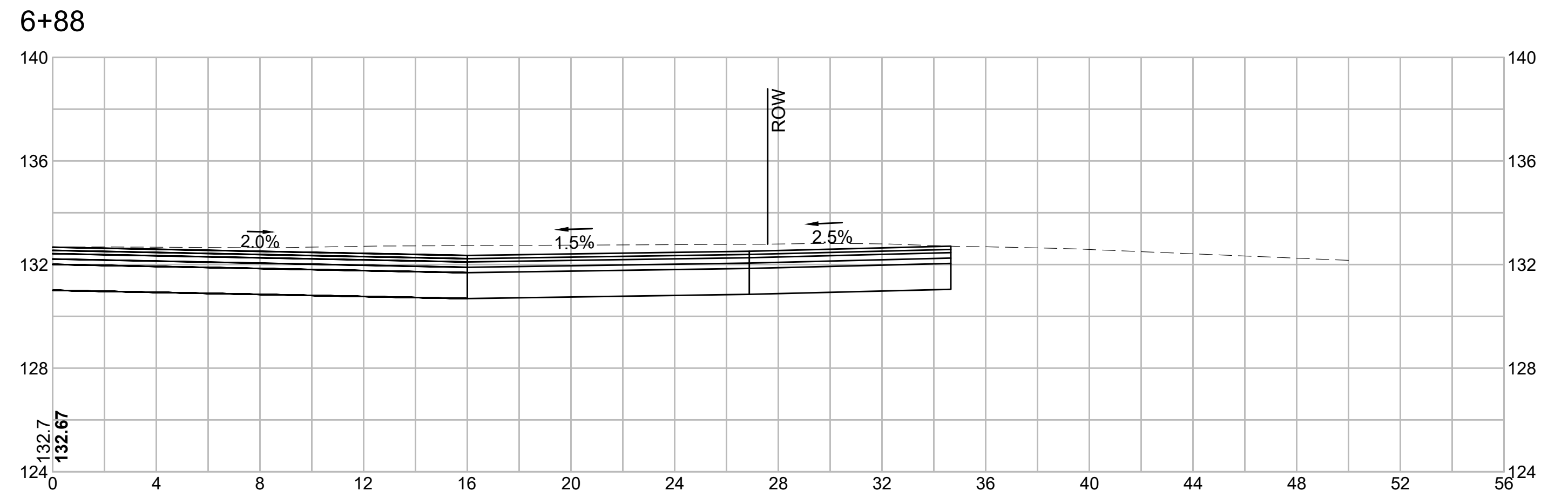
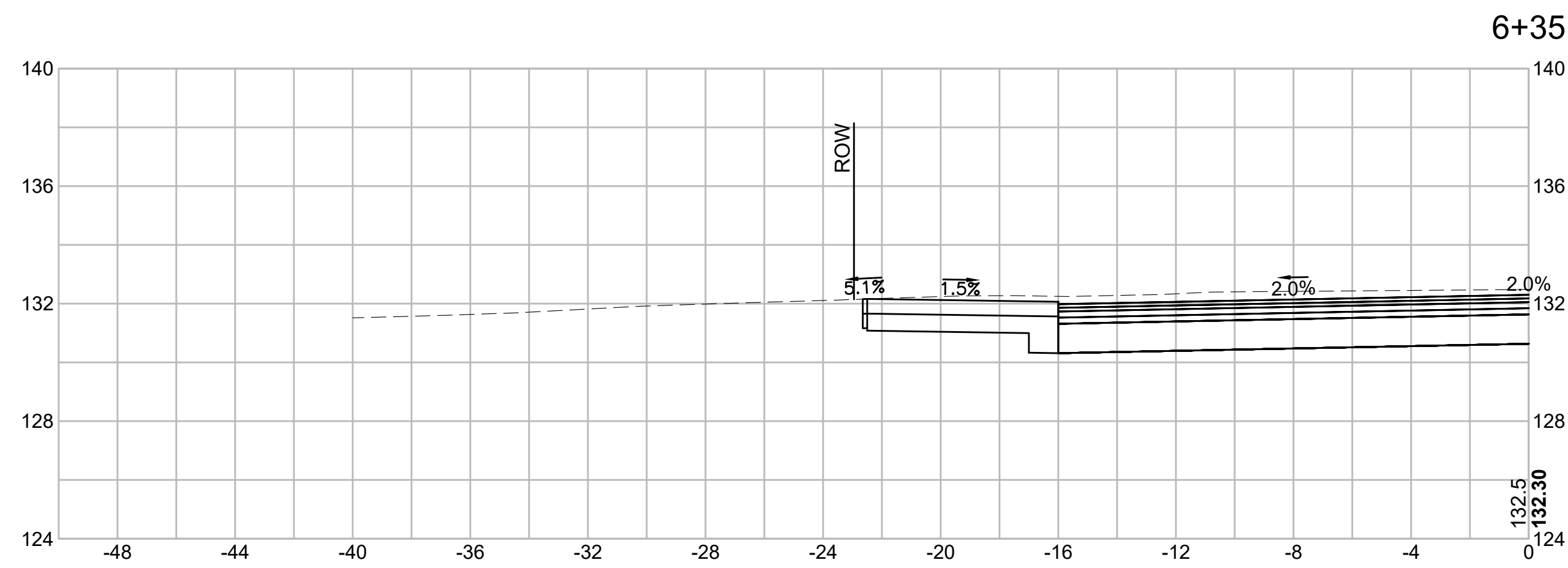
PROJECT NO. 20034

DESIGNED BY: JL

DRAWN BY: MPC

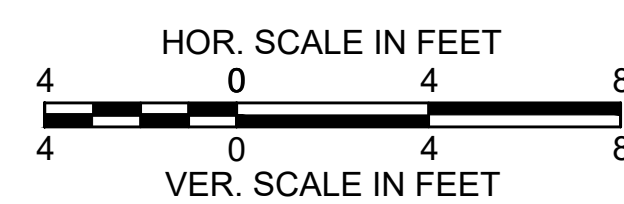
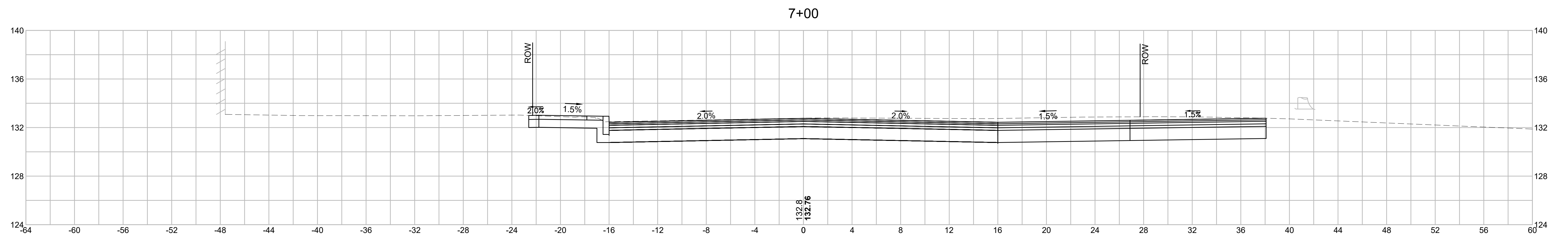
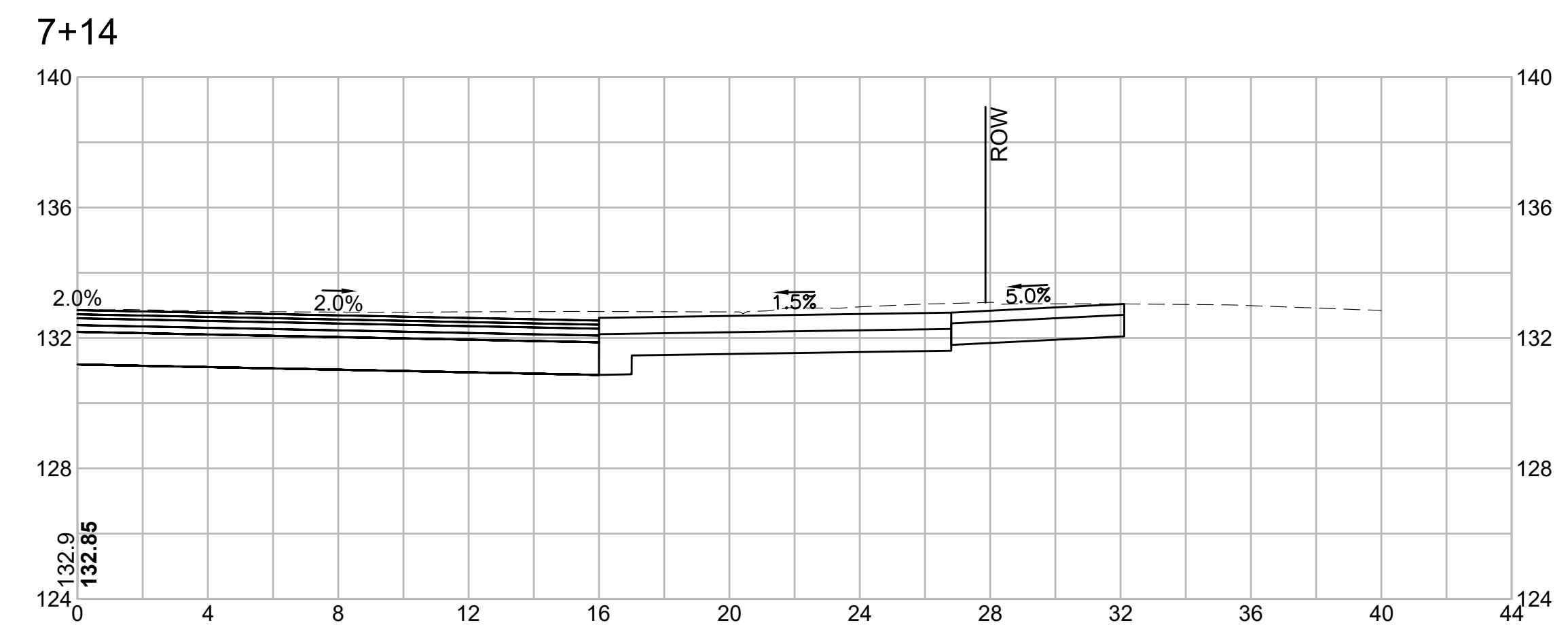
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SHEET NO.
70 OF 89



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 71 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS



No.	Date	Revisions

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION:	85% DESIGN
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DRAWING TITLE: CROSS SECTIONS

PREPARED FOR:

 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

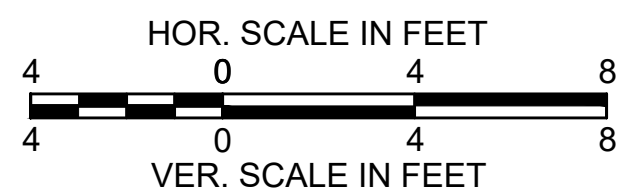
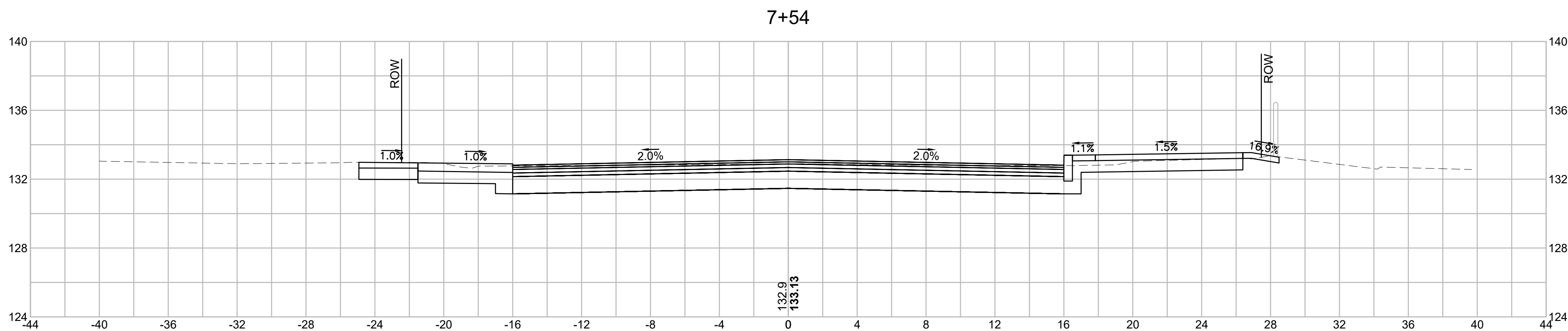
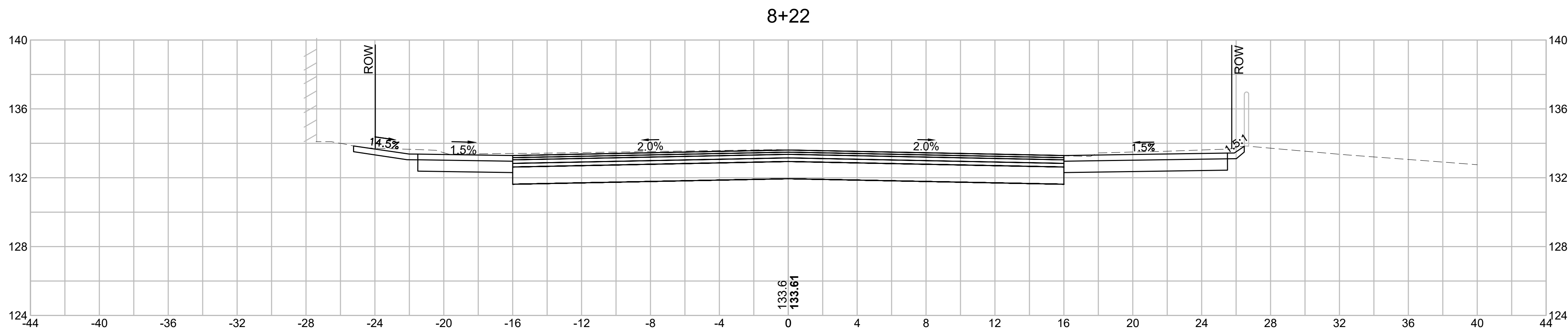
PREPARED BY:

 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034

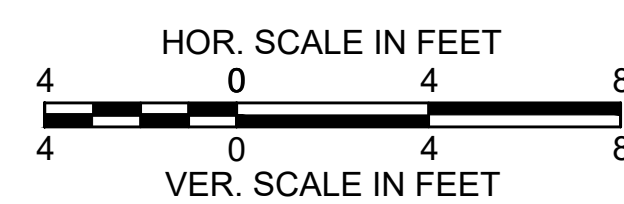
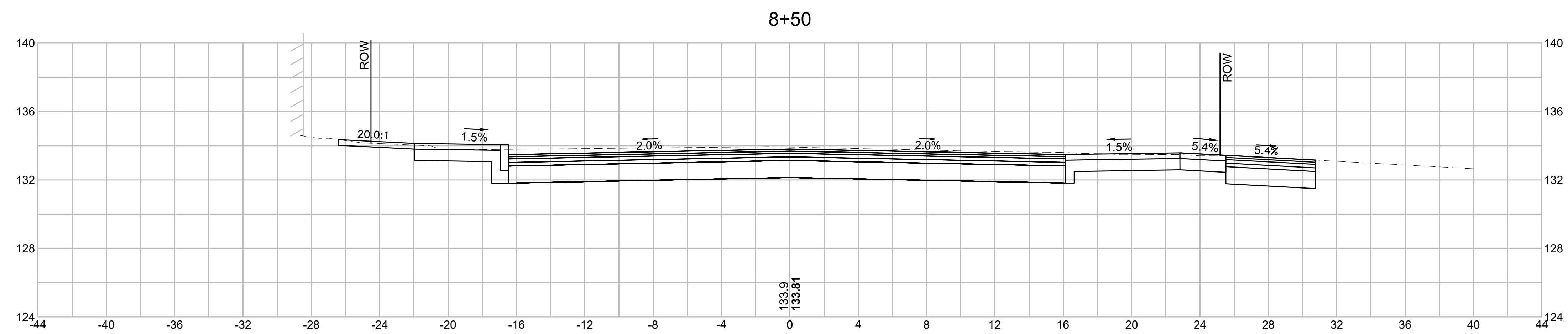
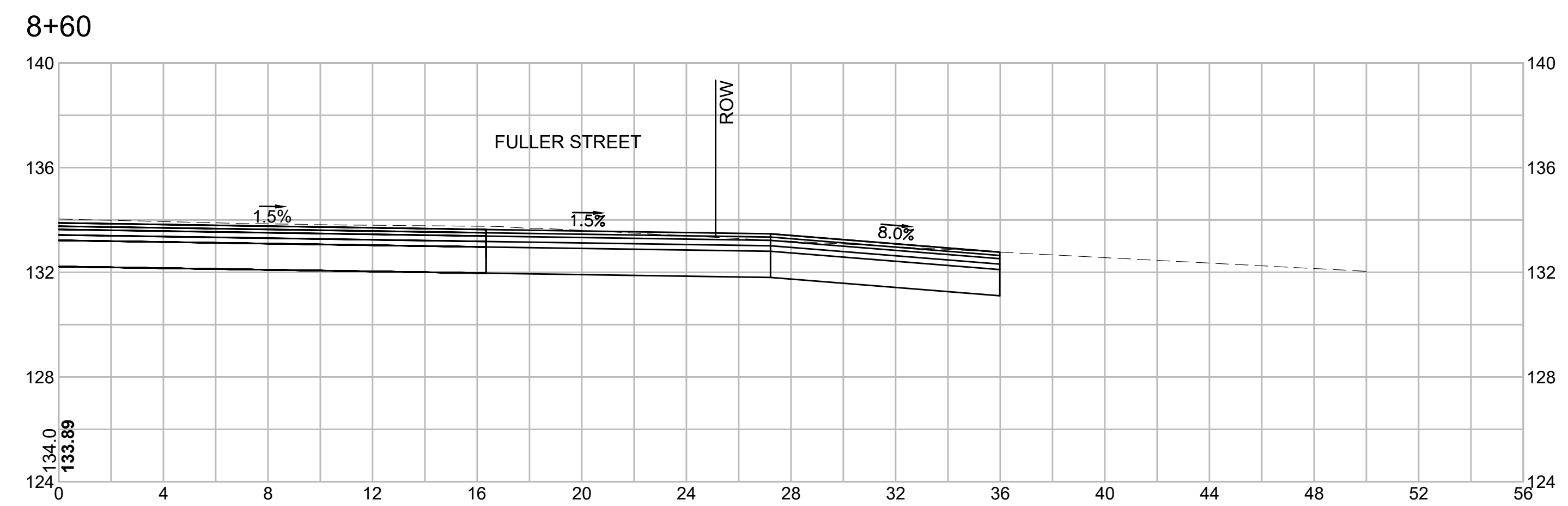
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DRAWN BY:	MPC
CHECKED BY:	HP

SHEET NO.
72 OF 89

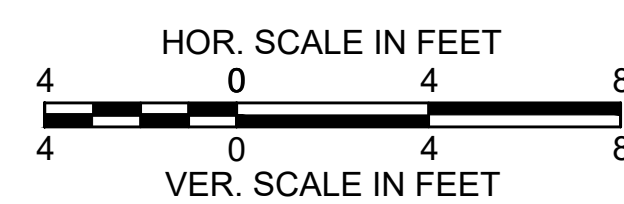
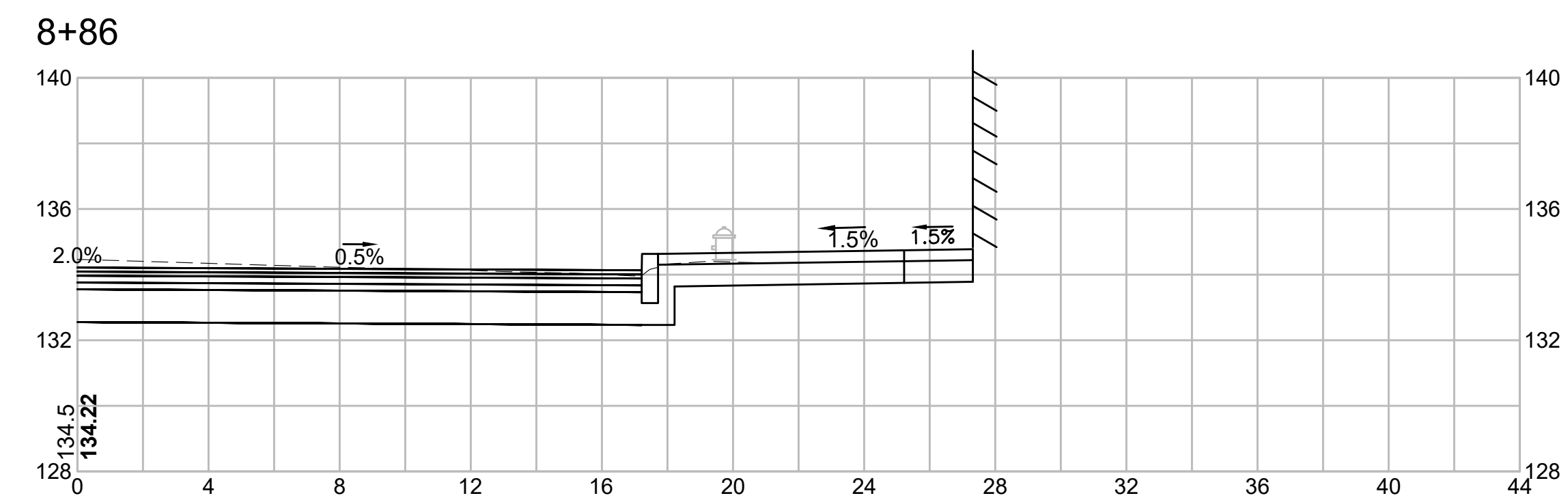
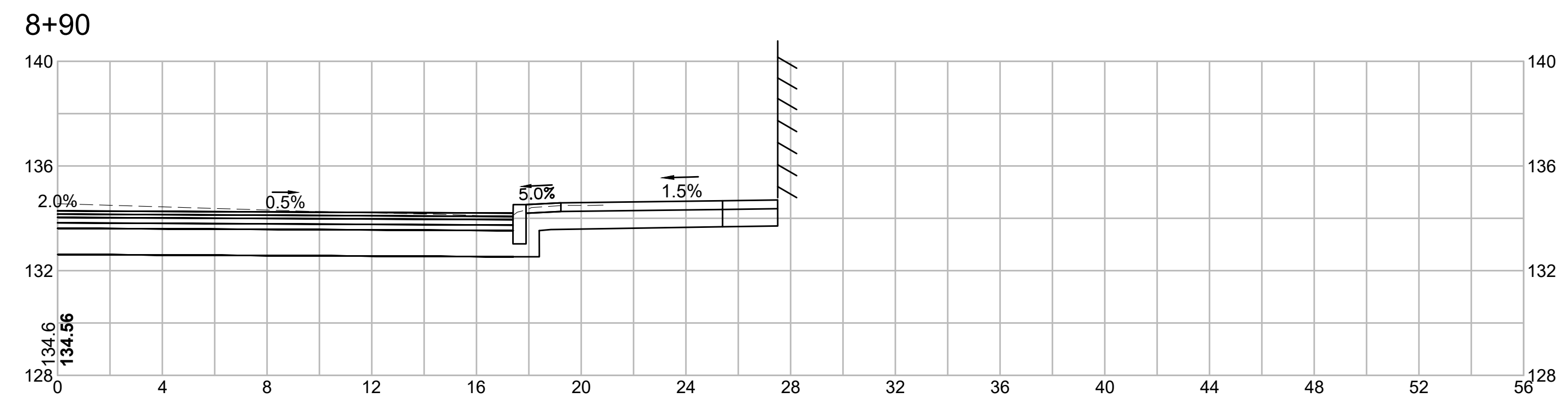


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 73 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

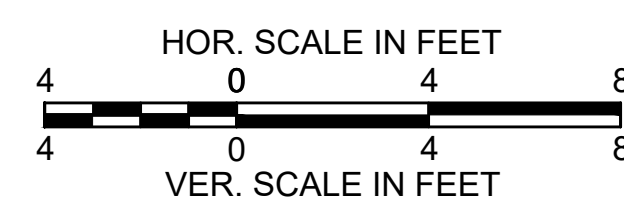
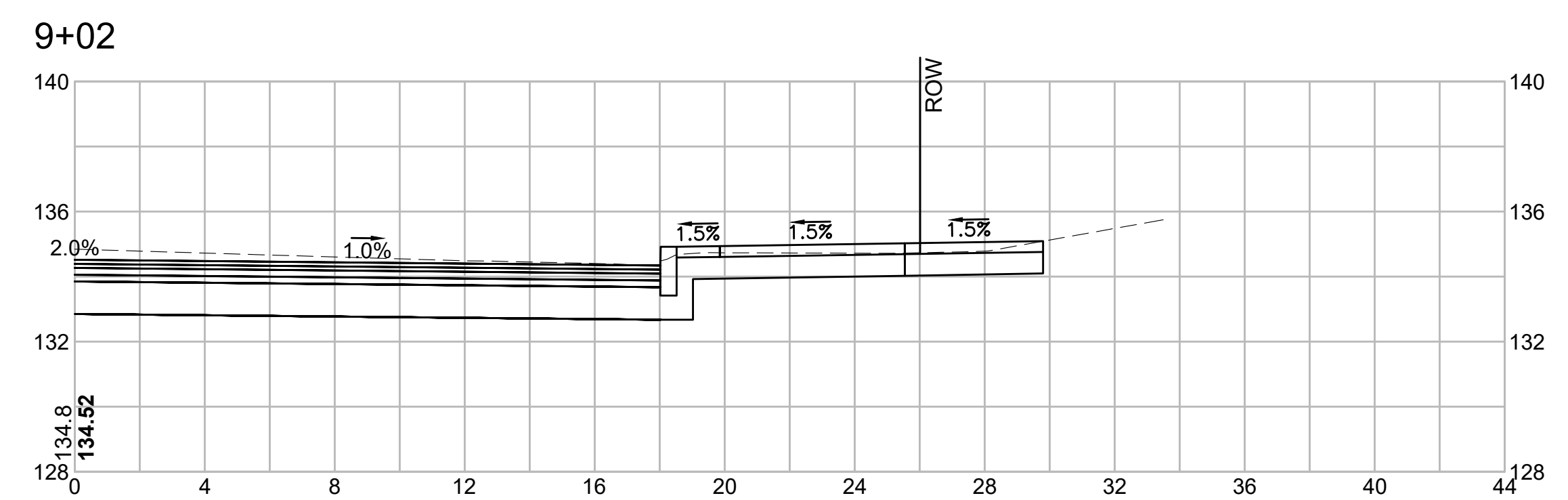
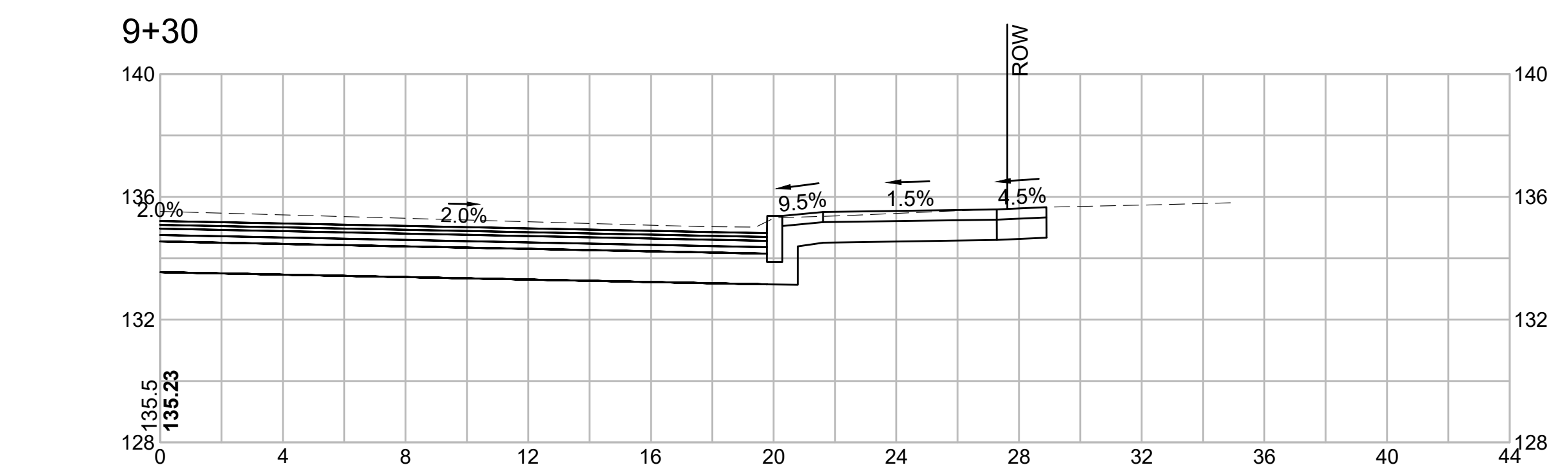
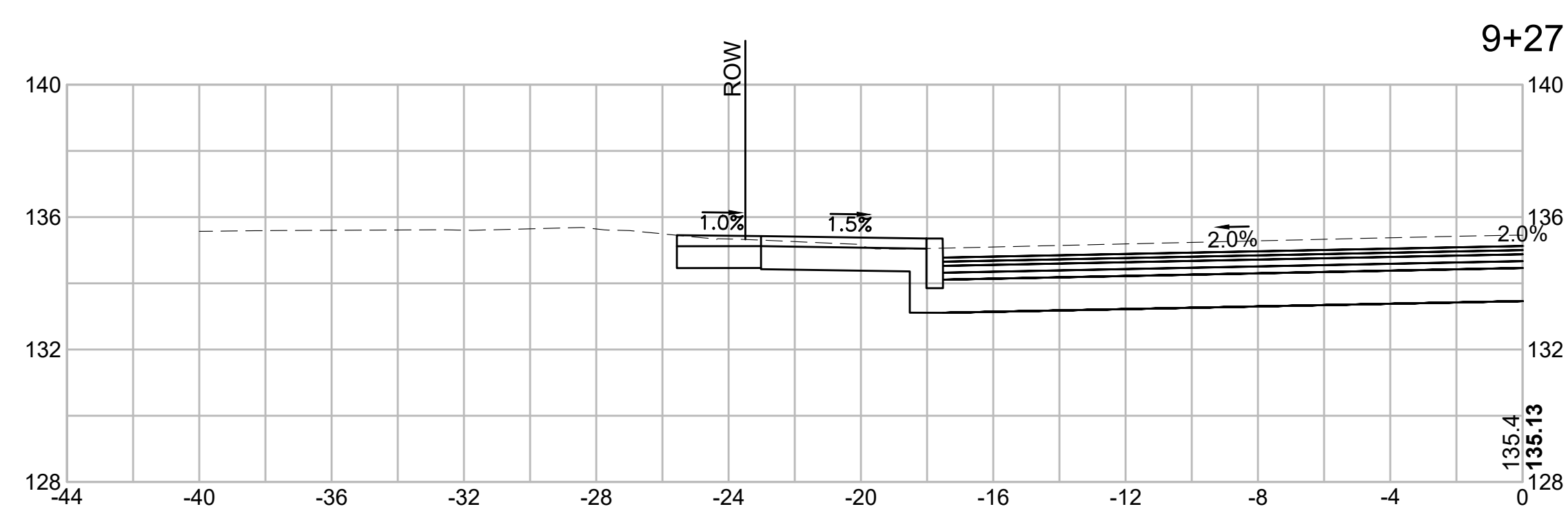
NO.	DATE	REVISIONS



			PREPARED BY:		
			 Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
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NO.	DATE	REVISIONS			

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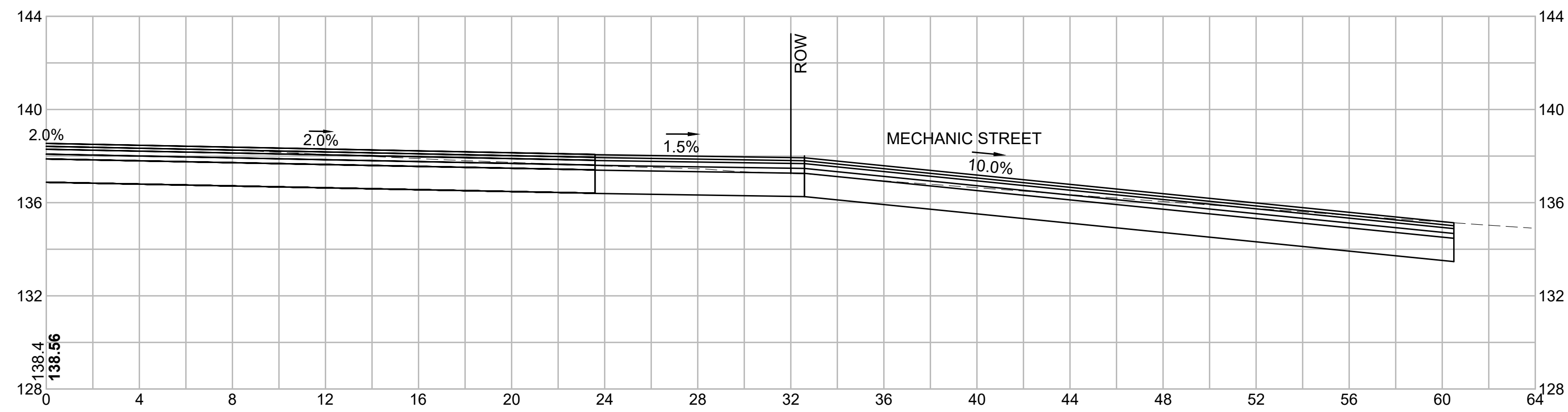
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
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PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 75 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



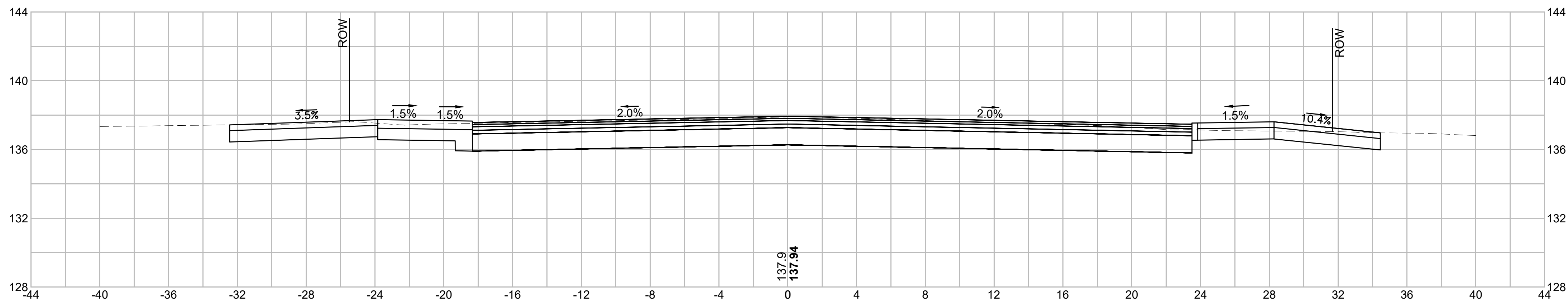
				PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876	
NO.	DATE	REVISIONS	SCALE: AS NOTED DATE: 6/4/2024 PROJECT NO. 20034	DESIGNED BY: JL DRAWN BY: MPC CHECKED BY: HP	SHEET NO. 76 OF 89

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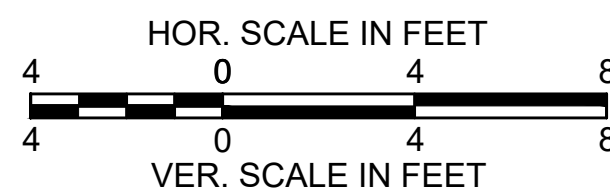
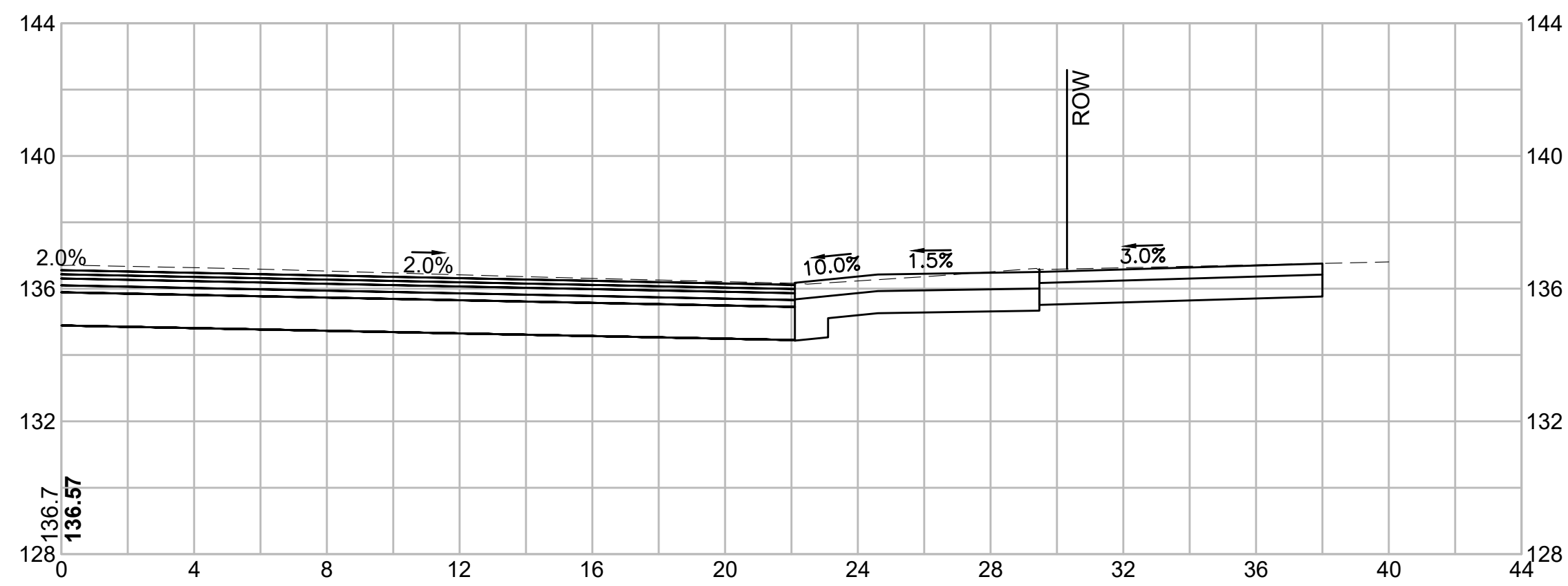
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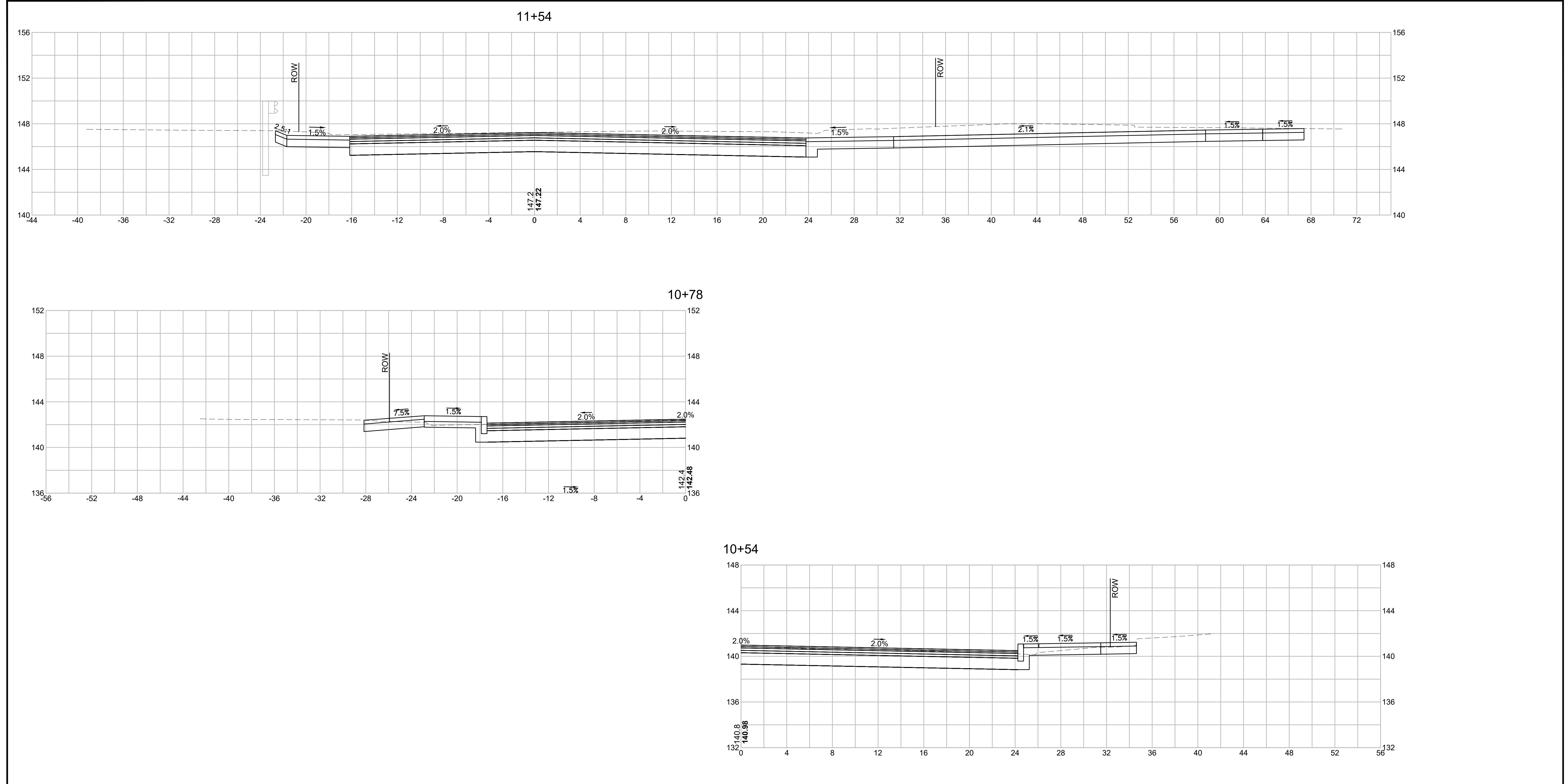
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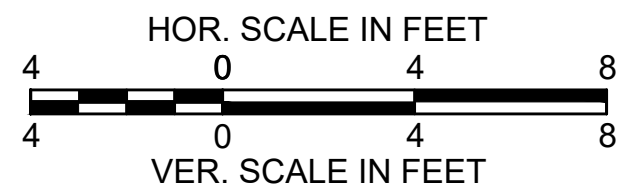
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PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET	
DESIGN SUBMISSION: 85% DESIGN	
DRAWING TITLE: CROSS SECTIONS	
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702	
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876	
SCALE: AS NOTED	DESIGNED BY: JL
DATE: 6/4/2024	DRAWN BY: MPC
PROJECT NO. 20034	CHECKED BY: HP
SHEET NO. 77 OF 89	

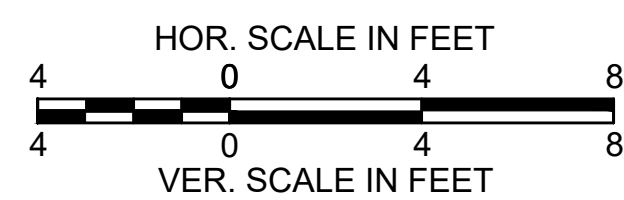
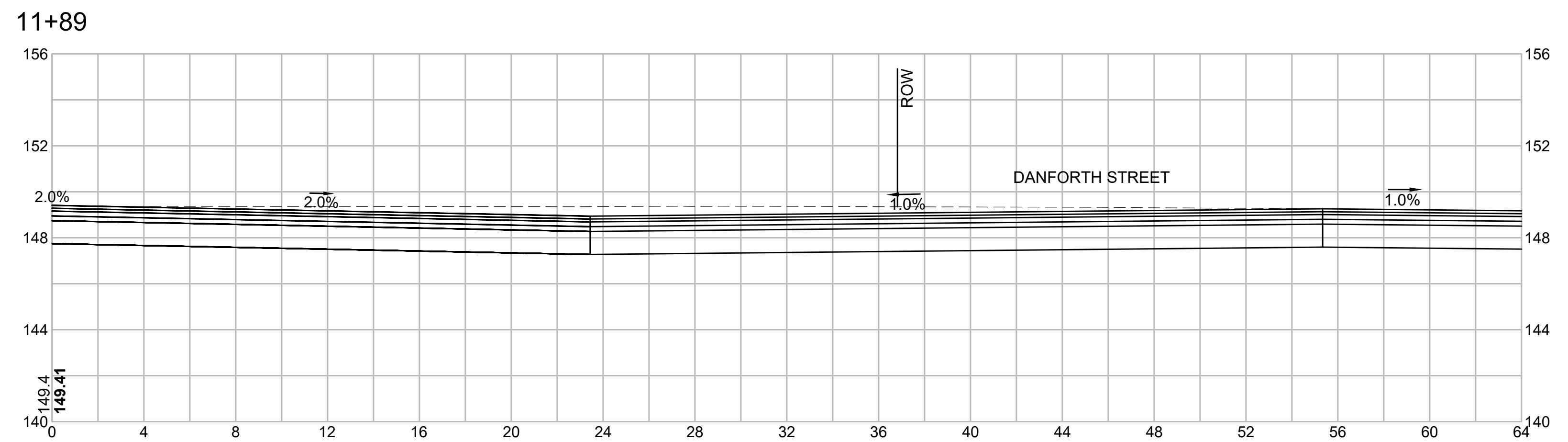
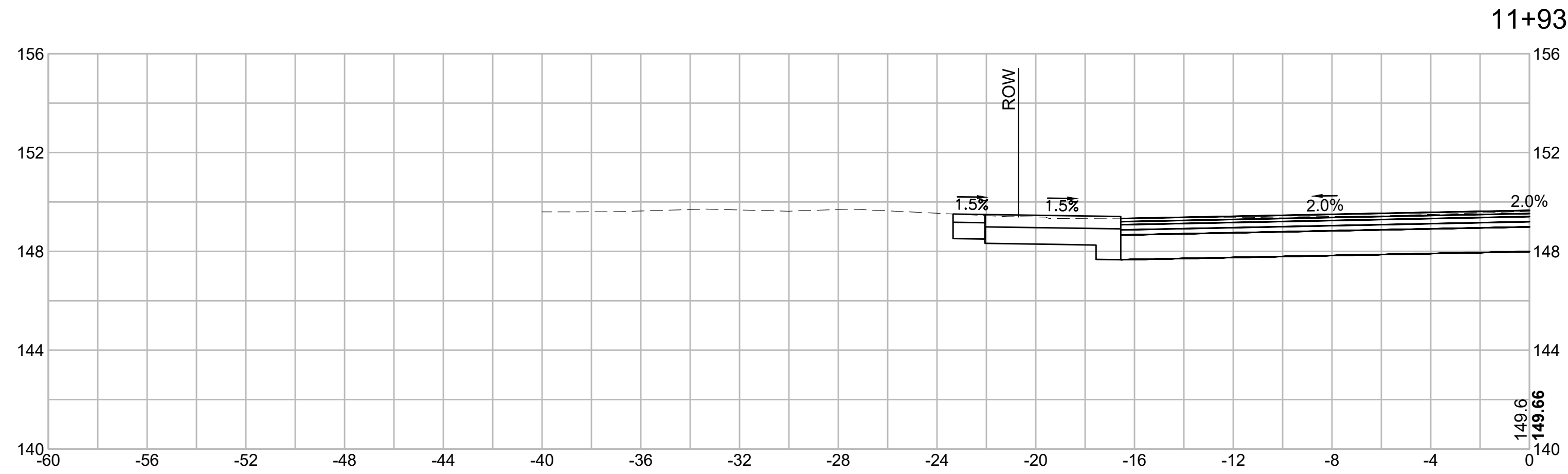


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			PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
			SCALE: AS NOTED DATE: 6/4/2024 PROJECT NO. 20034	DESIGNED BY: JL DRAWN BY: MPC CHECKED BY: HP	SHEET NO. 78 OF 89
NO.	DATE	REVISIONS			

PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET			
DESIGN SUBMISSION: 85% DESIGN			
DRAWING TITLE: CROSS SECTIONS			
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702			
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876			
SCALE: AS NOTED		DESIGNED BY: JL	
DATE: 6/4/2024		DRAWN BY: MPC	
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		SHEET NO. 78 OF 89	

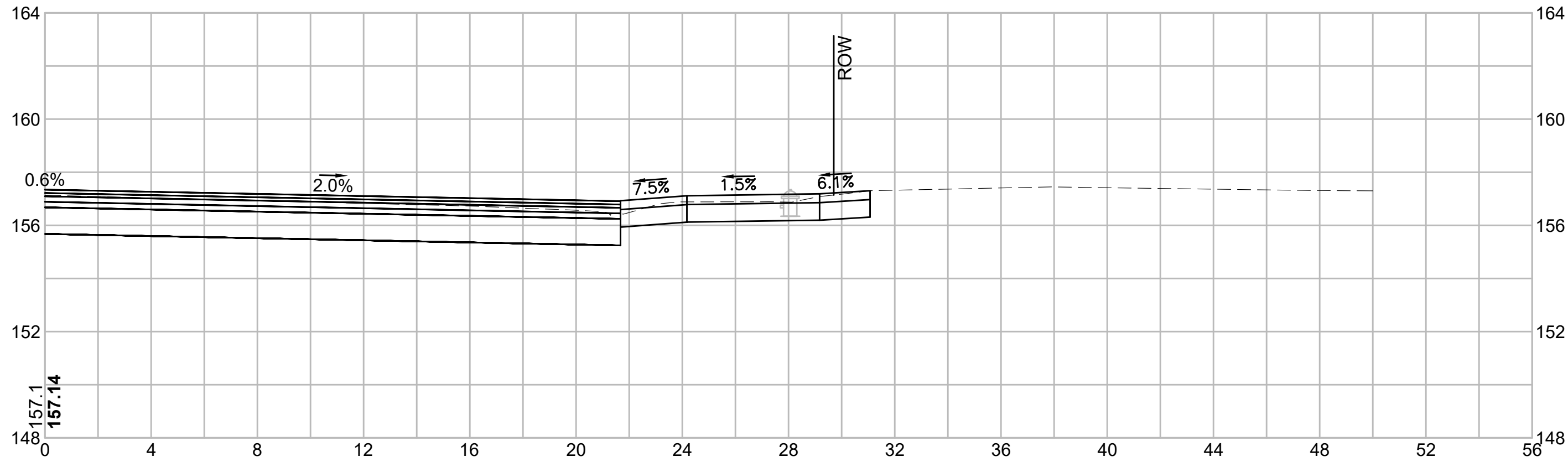


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 79 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

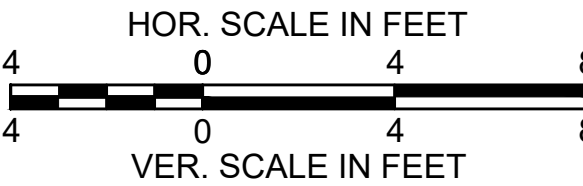
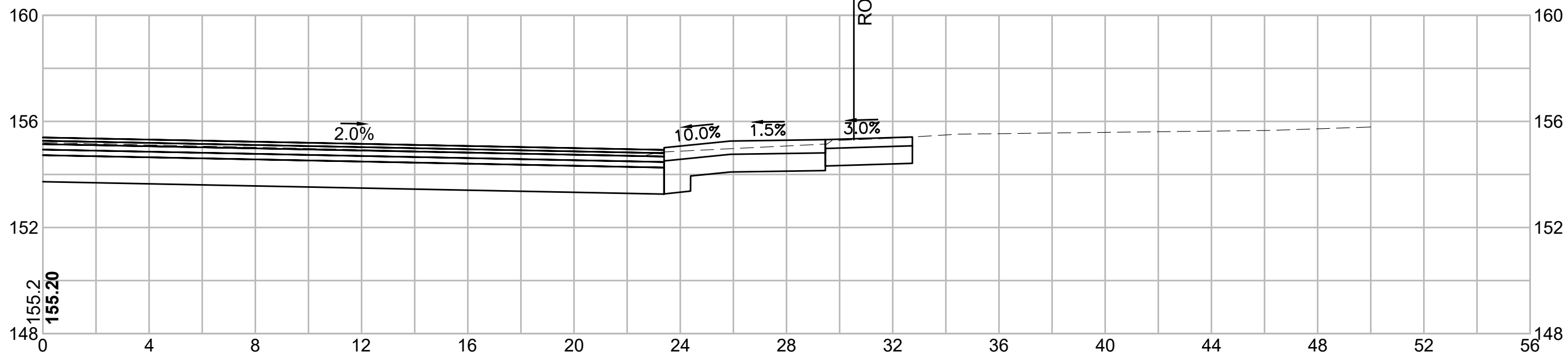
NO.	DATE	REVISIONS

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13+19



12+85



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: 85% DESIGN

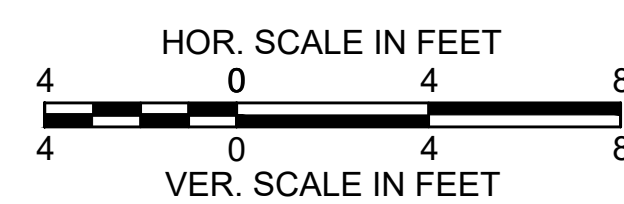
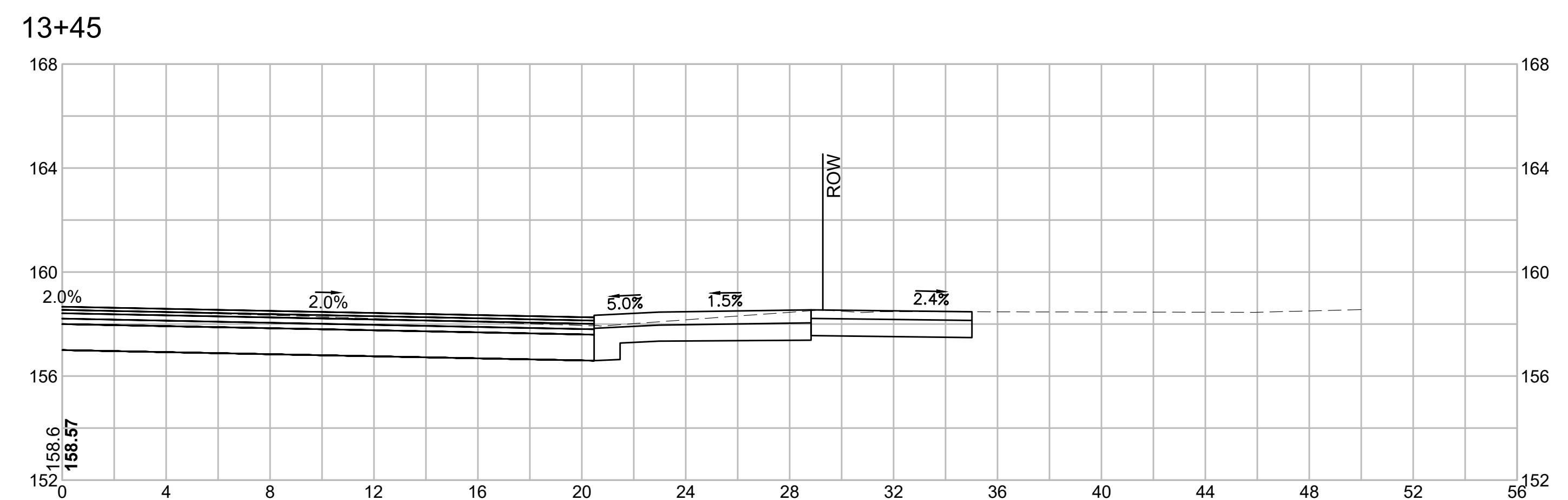
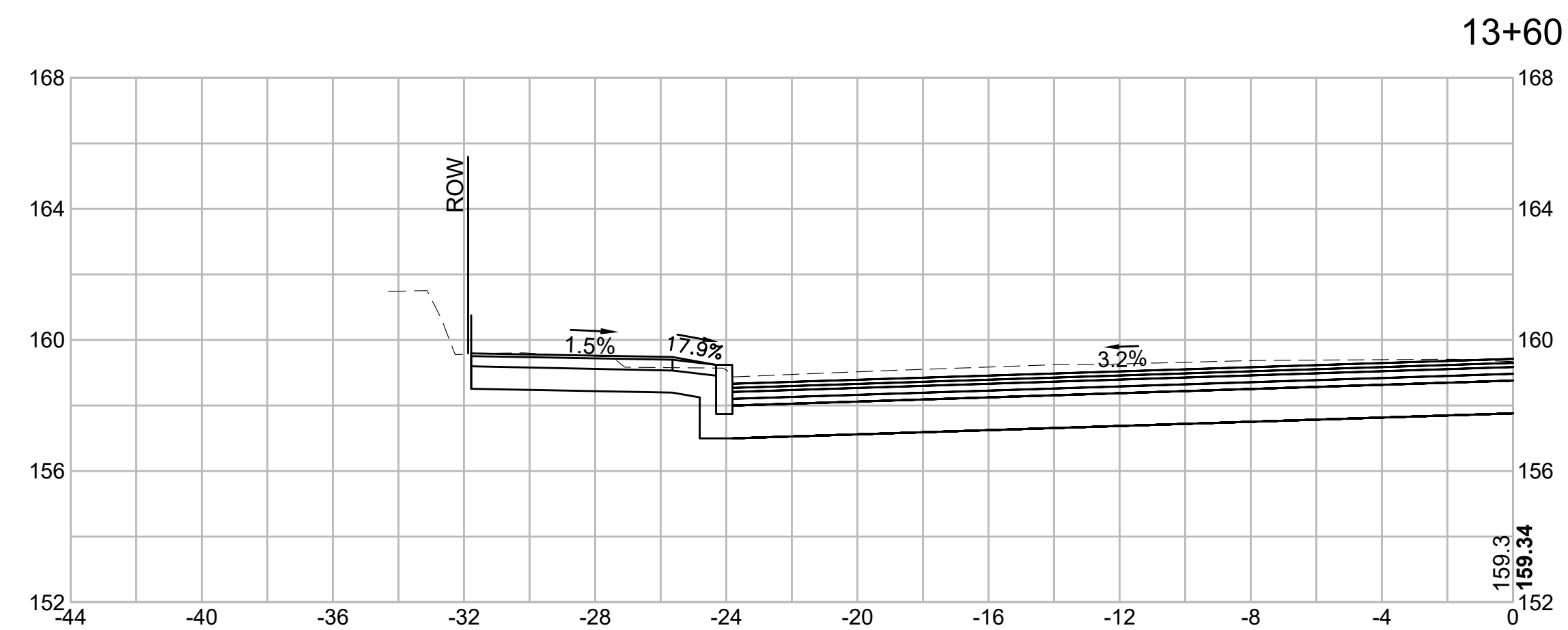
DRAWING TITLE: CROSS SECTIONS

PREPARED FOR:
CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

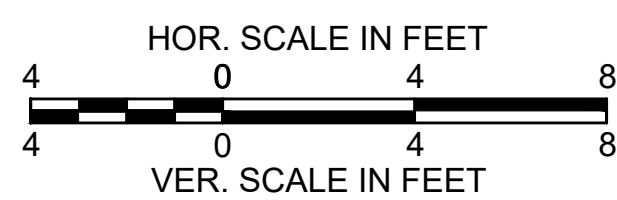
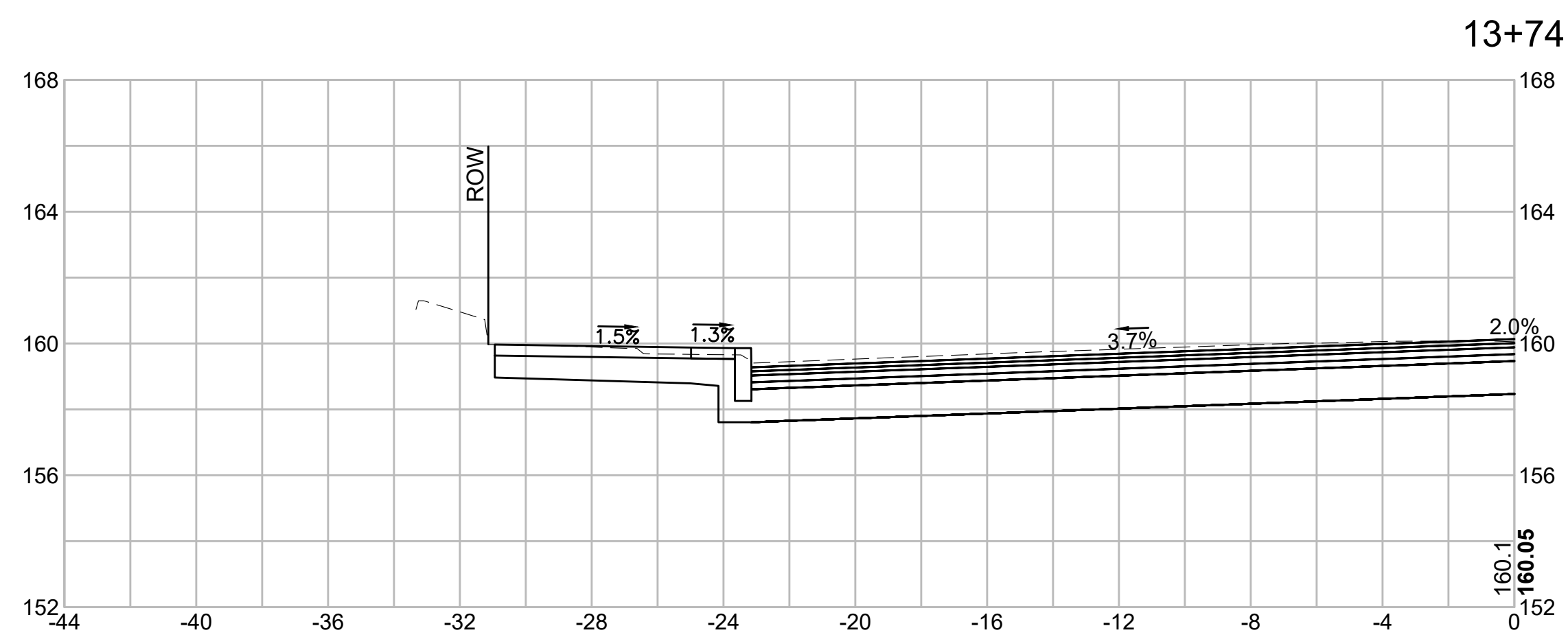
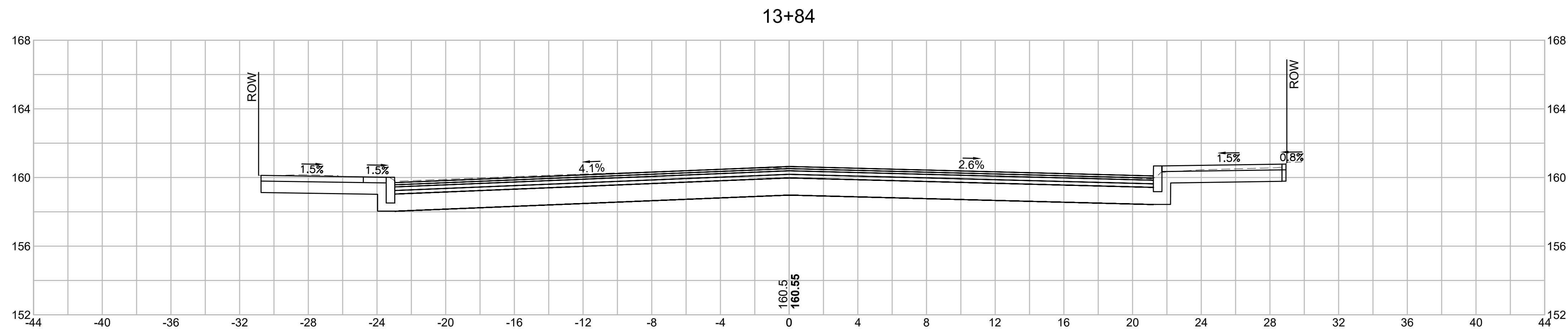
PREPARED BY:
 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED
DATE: 6/4/2024
PROJECT NO. 20034
DESIGNED BY: JL
DRAWN BY: MPC
CHECKED BY: HP
SHEET NO. 81 OF 89

NO. DATE REVISIONS

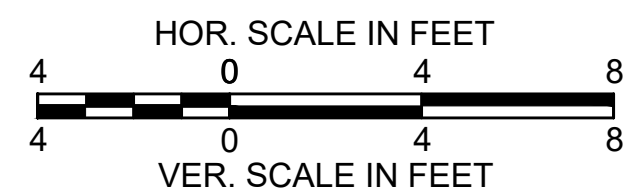
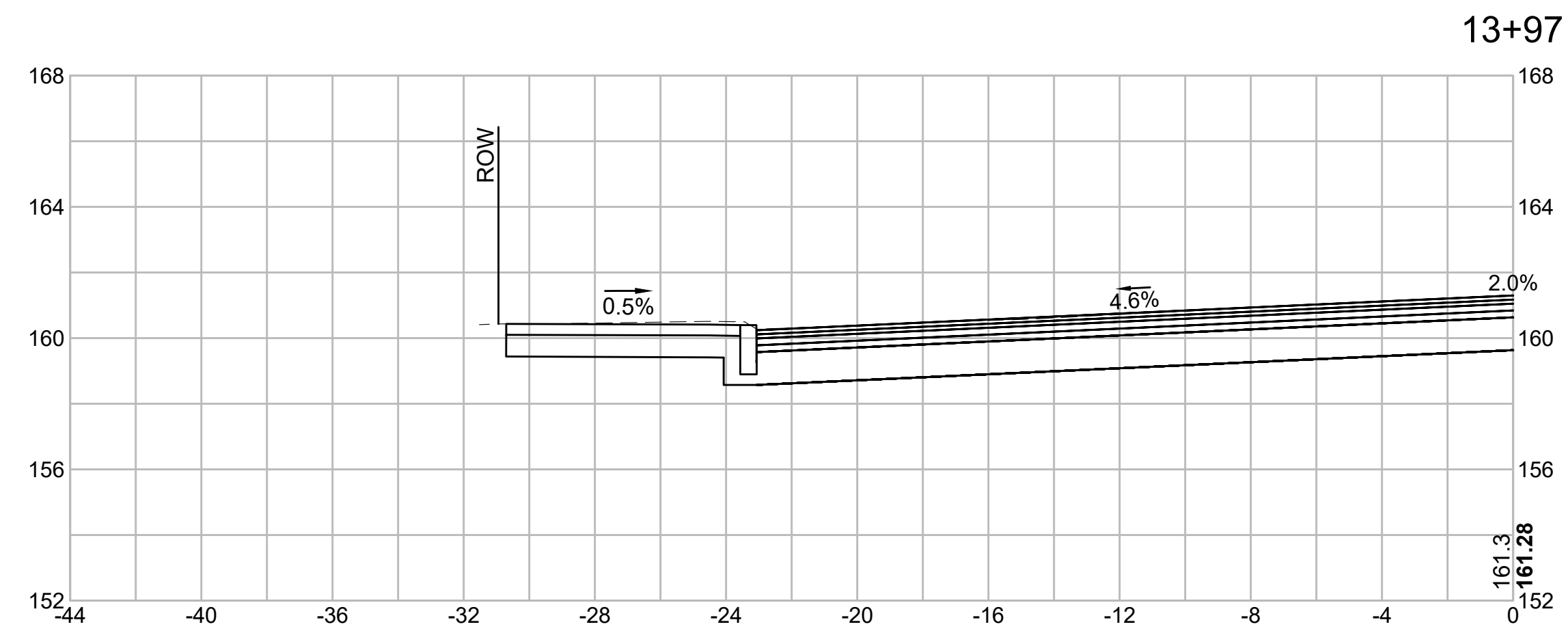
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PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 201 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 82 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 83 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

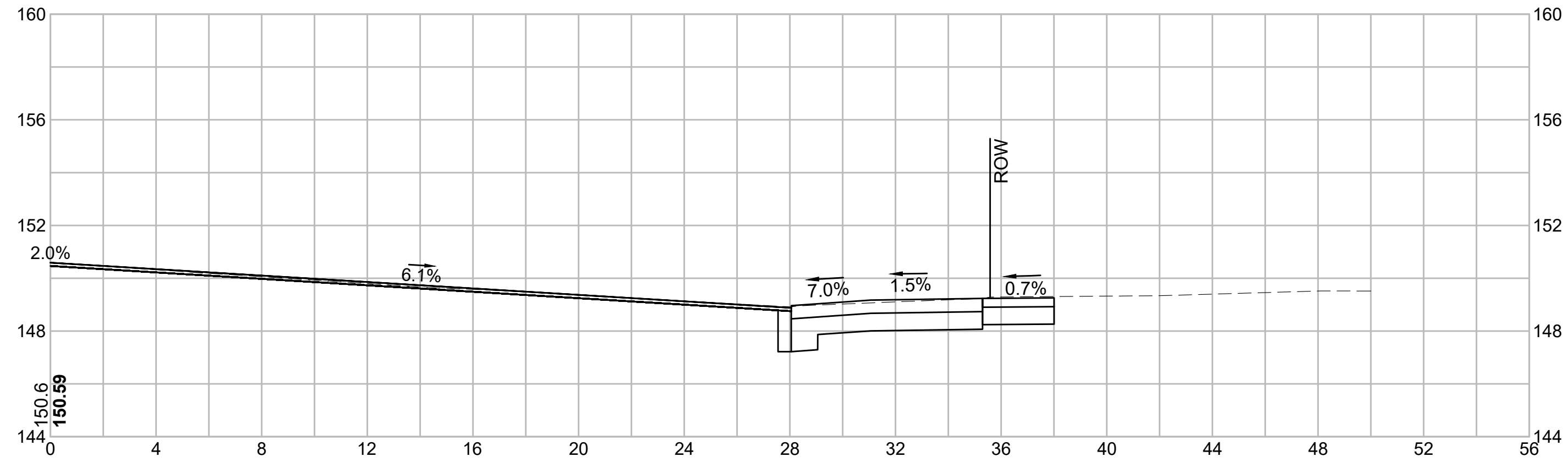
NO.	DATE	REVISIONS



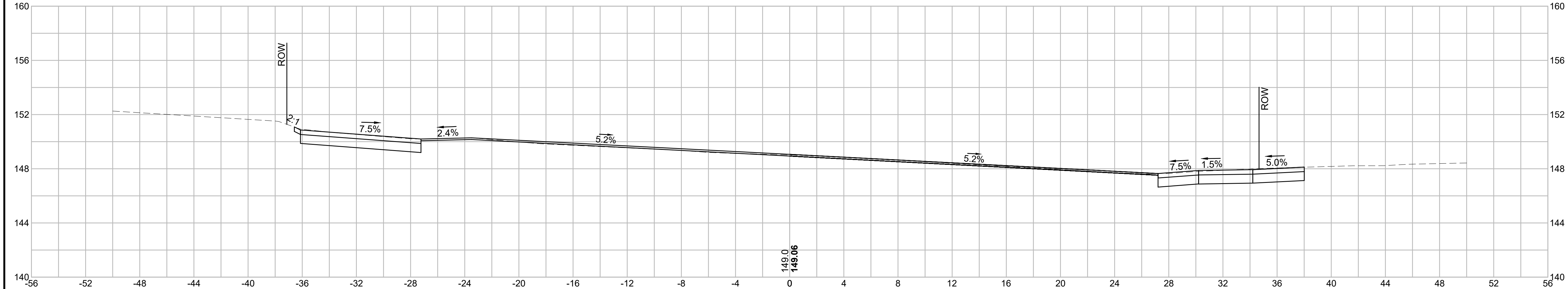
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS		
PREPARED FOR:  CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 84 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

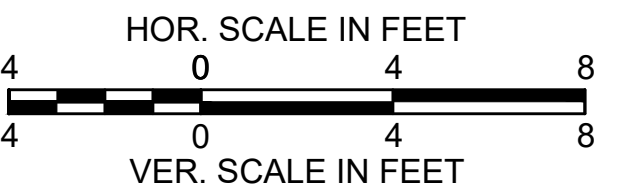
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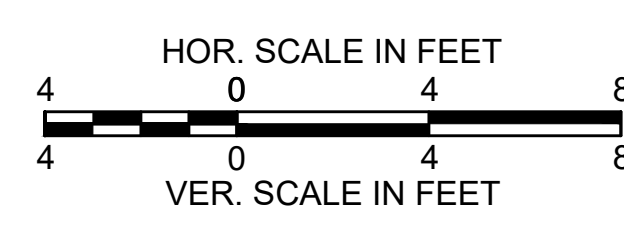
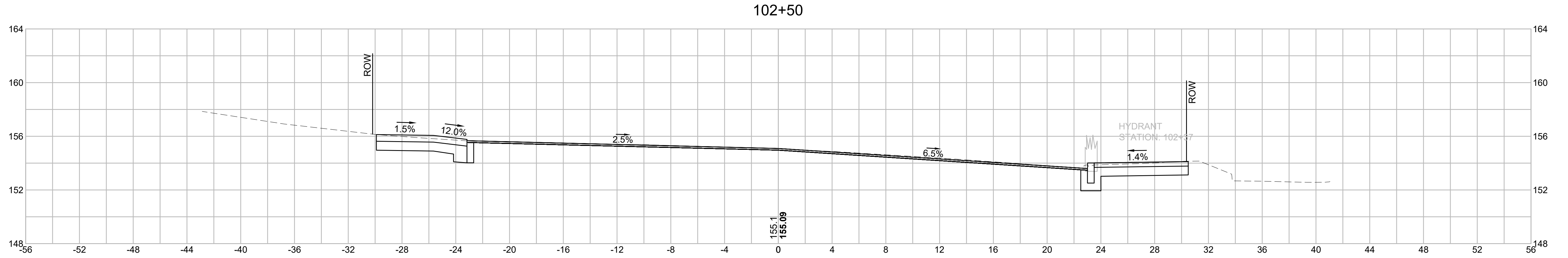
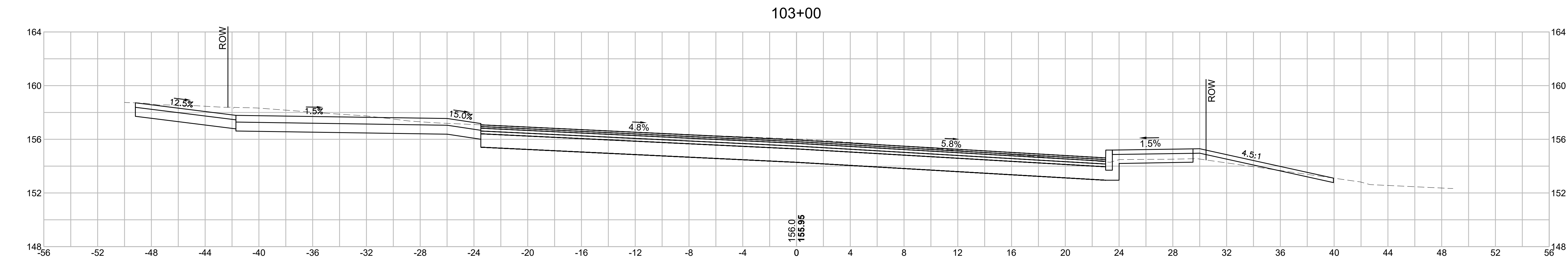


PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS (CENTRAL STREET)		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 85 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	



NO.	DATE	REVISIONS

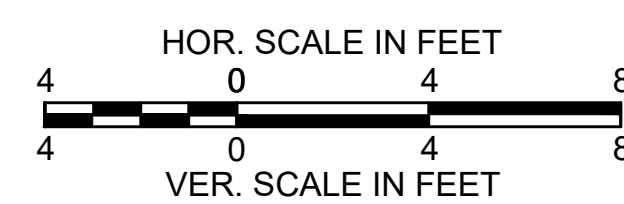
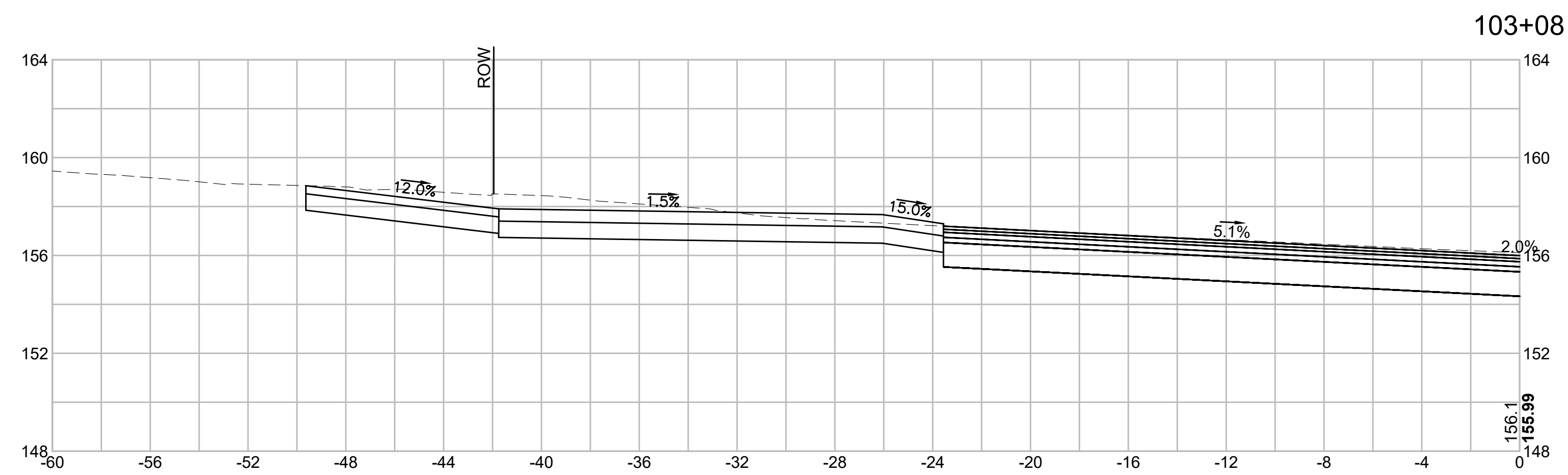
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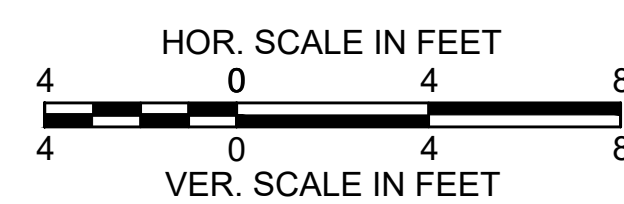
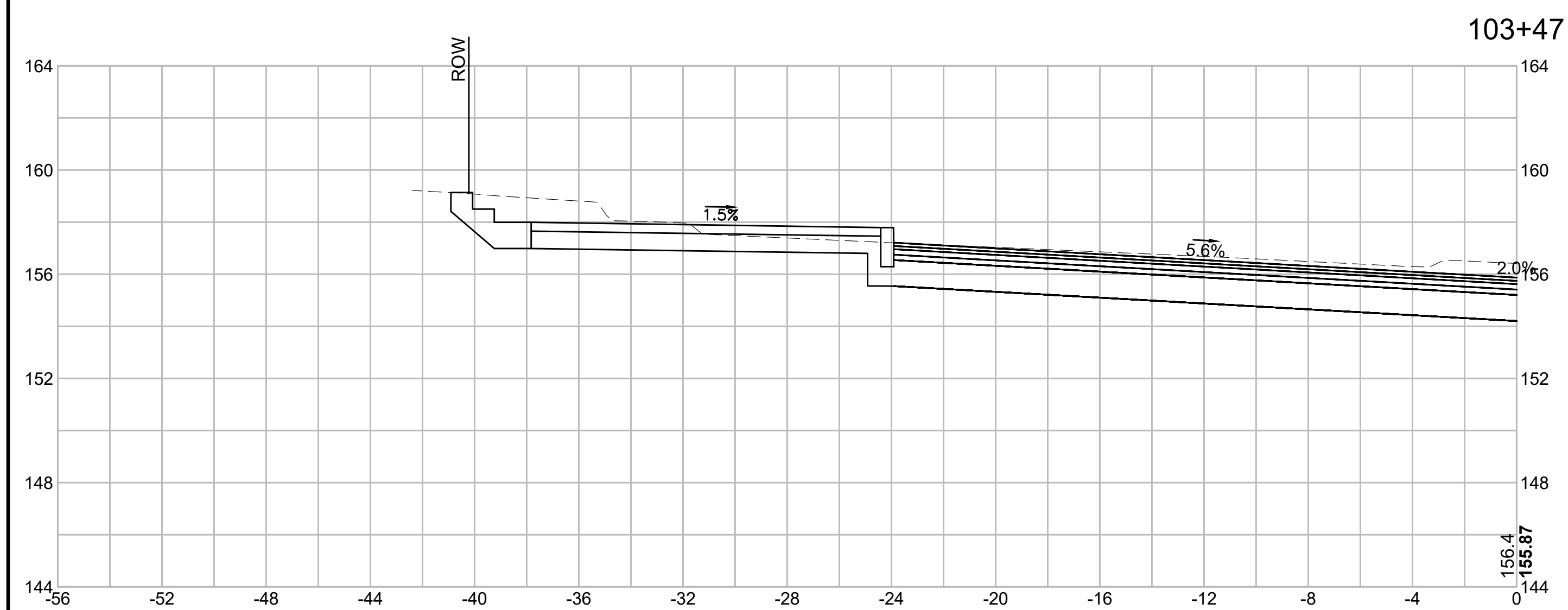
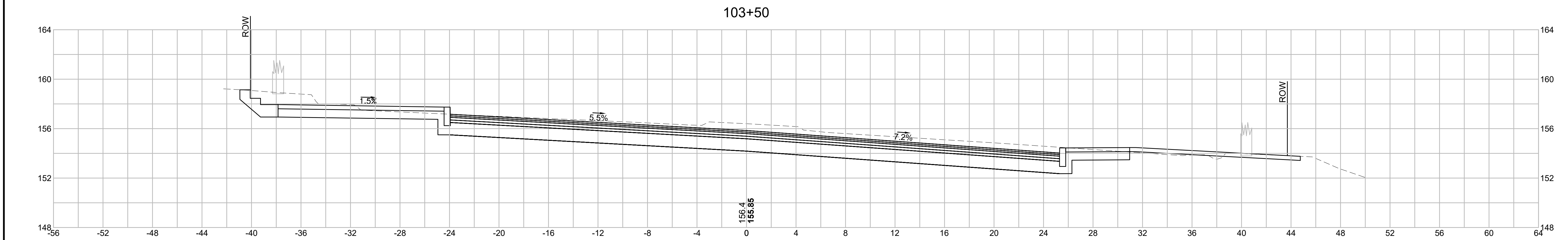
PROJECT: IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET		
DESIGN SUBMISSION: 85% DESIGN		
DRAWING TITLE: CROSS SECTIONS (CENTRAL STREET)		
PREPARED FOR: CITY OF FRAMINGHAM DEPARTMENT OF PUBLIC WORKS 110 WESTERN AVENUE FRAMINGHAM, MA 01702		
PREPARED BY: Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876		
SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 87 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	

NO.	DATE	REVISIONS

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				PREPARED BY:  Green International Affiliates, Inc. 100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876	
NO.	DATE	REVISIONS	SCALE: AS NOTED DATE: 6/4/2024 PROJECT NO. 20034	DESIGNED BY: JL DRAWN BY: MPC CHECKED BY: HP	SHEET NO. 88 OF 89

[illegible]

PROJECT IMPROVEMENTS TO CENTRAL STREET AND CONCORD STREET

DESIGN SUBMISSION: **85% DESIGN**

DRAWING TITLE:

CROSS SECTIONS (CENTRAL STREET)

PREPARED FOR:

 CITY OF FRAMINGHAM
DEPARTMENT OF PUBLIC WORKS
110 WESTERN AVENUE
FRAMINGHAM, MA 01702

PREPARED BY:

 **Green International Affiliates, Inc.**
100 Ames Pond Drive, Suite 200 Tewksbury, MA 01876

SCALE: AS NOTED	DESIGNED BY: JL	SHEET NO. 89 OF 89
DATE: 6/4/2024	DRAWN BY: MPC	
PROJECT NO. 20034	CHECKED BY: HP	