

CITY OF SALEM, MA DEPARTMENT OF PUBLIC WORKS INTERSECTION IMPROVEMENTS AT JEFFERSON AVENUE, WILLSON STREET & CLOUTMAN STREET

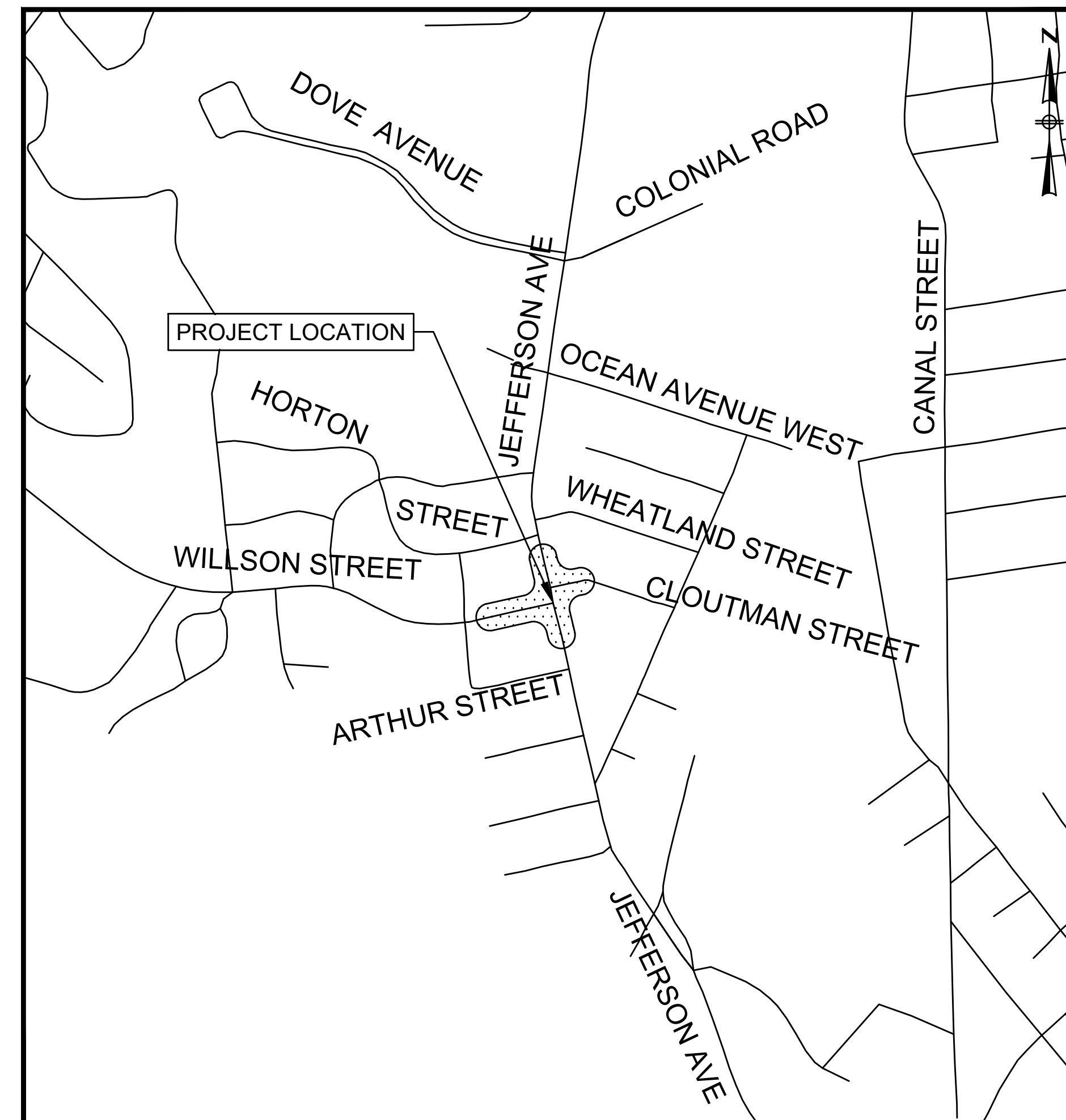
DECEMBER, 2023



MAYOR
DOMINICK PANGALLO

DEPARTMENT OF PUBLIC SERVICES
DEBORAH DUHAMEL, P.E., ACTING CITY ENGINEER
GIOVANNA Z. RECINOS, WATER & SEWER ENGINEER

TRAFFIC AND PARKING DEPARTMENT
DAVID KUCHARSKY, DIRECTOR, TRAFFIC AND PARKING
CHRISTINA HODGE, P.E., ASSISTANT TRANSPORTATION DIRECTOR
ALAN SULLAWAY, ASSISTANT PARKING DIRECTOR
RUSSELL FINDLEY, MOBILITY COORDINATOR
BRENDAN LINARD, TRANSPORTATION PLANNER



PROJECT LOCATION

LOCATION MAP
1"=400'

PLAN INDEX

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
01	COVER SHEET
02	LEGEND & ABBREVIATIONS
03	GENERAL NOTES
04	TYPICAL SECTIONS & PAVEMENT NOTES
05 - 09	CONSTRUCTION DETAILS
10	CONSTRUCTION PLAN
11	PROFILE
12	CURB TIE PLAN
13	GRADING PLAN
14	SIGN AND PAVEMENT MARKING PLAN
15	TRAFFIC SIGN SUMMARY
16 - 17	SIGNAL PLANS
18 - 26	CROSS SECTIONS
27 - 29	TEMPORARY TRAFFIC CONTROL PLANS

PREPARED BY:



ISSUE DATE: 12/29/2023

REGISTERED PROFESSIONAL _____ DATE _____

GENERAL SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for items like Jersey Barrier, Catch Basin, Flag Pole, Gas Pump, Mail Box, Post Square, Well, Electric Handhole, etc.

TRAFFIC SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for items like Controller Phase Actuated, Traffic Signal Head, Wire Loop Detector, Video Detection Camera, Microwave Detector, etc.

PAVEMENT MARKINGS AND SIGNING SYMBOLS

Table with columns: PROPOSED, DESCRIPTION. Lists symbols for items like Crosswalk, Stop Line, Solid White Line, Solid White Channelizing Lines, etc.

ABBREVIATIONS

Table with columns: GENERAL, DESCRIPTION. Lists abbreviations for items like Annual Average Daily Traffic, Abandon, Adjust, Approximate, Asphalt Concrete, etc.

ABBREVIATIONS (cont.)

Table with columns: GENERAL, DESCRIPTION. Lists abbreviations for items like Radius of Curvature, Remove and Dispose, Reinforced Concrete Pipe, Road, Roadway, etc.

TRAFFIC SIGNAL ABBREVIATIONS

Table with columns: CAB, DESCRIPTION. Lists abbreviations for items like Cabinet, Closed Circuit Video Equipment, Steady Upraised Hand, etc.

01/20/2024 4:20 PM O:\1690516985 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILSON-CLOUTMAN\DRAWING FILES\PLANS\SET\16986_LEGEND.DWG (MADOT-D-STB)

Table with columns: NUMBER, DATE, MADE BY, CHECKED BY, REVISIONS. Includes fields for DRAWN BY: CM, DESIGNED BY: CT, CHECKED BY: CR/DF.

Table with columns: REGISTERED PROFESSIONAL, PREPARED BY. Includes fields for REGISTERED PROFESSIONAL: CM, PREPARED BY: CT.



Table with columns: SUBCONSULTANT, SCALE. Includes fields for SUBCONSULTANT, SCALE: NONE.

Table with columns: TITLE. Includes field for TITLE: INTERSECTION IMPROVEMENTS JEFFERSON AVE AT WILSON ST/CLOUTMAN ST.

Table with columns: TITLE. Includes field for TITLE: LEGEND & ABBREVIATIONS SALEM, MASSACHUSETTS.

Table with columns: BETA JOB NO., ISSUE DATE, SHEET NO. Includes fields for BETA JOB NO.: 6965, ISSUE DATE: 12/29/2023, SHEET NO.: 02 of 29.

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

GENERAL NOTES

- THE LOCATION OF SUBSURFACE UTILITIES SHOWN IS APPROXIMATE AND NOT GUARANTEED TO BE COMPLETE OR ACCURATE. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITY LINES AND STRUCTURES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MUST NOTIFY DIG SAFE 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION OR EXPLOSIVE WORK IN PUBLIC OR PRIVATE WAYS OR UTILITY COMPANY RIGHT-OF-WAY OR EASEMENT.
- 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. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR THE RESOLUTION OF THE CONFLICT.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ABUTTING PROPERTIES AT ALL TIMES AND NOTIFY ALL ABUTTERS IN ADVANCE OF ANY INTERRUPTIONS TO ACCESS.
- THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SANITARY STRUCTURES AS NECESSARY FOR THE CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES. ALL UTILITY CASTING SHALL BE ADJUSTED TO FINISH GRADE BY THEIR RESPECTIVE OWNERS.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
- JOINTS BETWEEN NEW BITUMINOUS CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED AND SAWCUT BY MECHANICAL MEANS.
- UTILITIES AND OTHER TOPOGRAPHICAL FEATURES SUCH AS WALLS, FENCES, MAILBOXES, SILLS, BUILDINGS, STEPS, DOORS, TREES, VEGETATION, HARDSCAPES, ETC., SHALL BE RETAINED UNLESS OTHERWISE NOTED.
- CATCH BASIN AND MANHOLE FRAMES AND GRATES/COVERS SHALL CLEARLY ALIGN WITH THE OPENINGS IN THE PRECAST STRUCTURES AND THE GRADE OF THE ROADWAY.
- ALL EXISTING DRAINAGE PIPES THAT ARE NO LONGER BEING UTILIZED BY THE NEW DRAINAGE DESIGN WITHIN THE PROJECT LIMITS SHALL BE REMOVED.
- WHERE DRAINAGE PIPES OR STRUCTURES ARE ABANDONED IN PLACE THE CONTRACTOR SHALL MAKE SURE THAT ALL CONNECTING PIPES, DOWN SPOUT FROM BUILDING, INLETS AND OUTLETS ARE PLUGGED. ALL LIVE CONNECTIONS SHALL BE CONNECTED TO THE NEW SYSTEM.
- EXISTING GRANITE CURBING SHALL BE REUSED WHEREVER POSSIBLE AND/OR AT THE DIRECTION OF THE ENGINEER
- ALL CURB TIE DIMENSIONS ARE TO THE FACE OF THE CURB (GUTTER LINE) OR EDGE OF TRAVEL WAY.
- CONSTRUCTION BASELINE TIES ARE SHOWN ON CURB TIE PLANS.
- PROPOSED SIDEWALKS AND PEDESTRIAN CURB RAMPS SHALL BE CONSTRUCTED TO THE NEAREST SCORE LINE OR EXPANSION JOINT IN THE EXISTING ADJACENT WALK SURFACE AS DIRECTED BY THE ENGINEER.
- IN ALL LOCATIONS WHERE PROPOSED SIDEWALK TRANSITIONS DOWN TO MEET EXISTING GRADE, EXISTING SIDEWALK OR PAVED AREA, SLOPE SHALL NOT EXCEED 1:2.
- THE LOCATION OF THE PROPOSED DRIVEWAY OPENINGS ARE SHOWN ON THE TIE PLANS. EXACT LOCATIONS MAY BE ADJUSTED IF NECESSARY OR AS REQUIRED BY THE ENGINEERS IN THE FIELD.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, TREES, GRATE, POLES ETC.) TO BE SET WITHIN SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36" EXCLUDING THE CURB. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION WHICH CANNOT MEET THE CLEARANCE REQUIREMENTS.
- SIGNS, POLES AND OTHER FEATURES LOCATED IN PROPOSED CEMENT CONCRETE SIDEWALK SHALL BE BOXED AND PROVIDED FLEXIBLE JOINT FILLER.
- CONTRACTOR SHALL VERIFY EXISTING GRADES. IF ANY ADJUSTMENT IS REQUIRED DUE TO DIFFERENT EXISTING GRADES FOUND IN THE FIELD, THE CONTRACTOR SHALL NOTIFY AND SEEK THE APPROVAL OF THE ENGINEER PRIOR TO PERFORMING THE WORK.
- IN AREAS OF NEW SIDEWALK, NEW EDGE OF PAVEMENT OR CURB WITHOUT SIDEWALK OR ANY WORK ADJACENT TO EXISTING GRASS AREAS, EVEN WHEN NO SLOPE-MATCHING OR GRADING IS NECESSARY AND THE EXISTING GRADE IS MET, LOAM BORROW AND SEED SHALL BE PROVIDED AS NECESSARY TO REPAIR AND COMPLETE ANY DAMAGE TO THE GRADE CAUSED BY THE CONSTRUCTION PROCESS.
- ALL NEW GRANITE CURB SHALL BE MASSDOT TYPE VB, UNLESS OTHERWISE NOTED ON THE PLANS. CURB REVEAL SHALL BE 6" UNLESS OTHERWISE NOTED ON THE PLANS
- ALL PROPOSED PAVEMENT MARKINGS ON ROADWAYS SHALL BE REFLECTORIZED WHITE AND YELLOW THERMOPLASTIC.
- SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH MASSDOT REQUIREMENTS AND THE LATEST VERSION OF THE MUTCD.
- TREES TO BE RETAINED WHICH RESTRICT SIGHT DISTANCE OR RESTRICT HORIZONTAL OR VERTICAL CLEARANCES SHALL BE TRIMMED AS REQUIRED BY THE ENGINEER.

- NO TREE SHALL BE REMOVED OR TRIMMED PRIOR TO APPROVAL OF THE CITY OF SALEM.
- WHEN WORKING NEXT TO EXISTING WALLS, STEPS DOORWAYS, BERMS, BUILDINGS AND OTHER STRUCTURES, CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB THE EXISTING STRUCTURES. ANY DAMAGE TO THE EXISTING STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- SIDEWALK AND DRIVEWAY RECONSTRUCTION MAY FACILITATE THE NEED TO REPAIR WALLS, STEPS AND RESET FENCES ON AN AS NEEDED BASIS. THE CONTRACTOR SHALL MAKE EVERY EFFORT NOT TO DISTURB THESE FEATURES DURING CONSTRUCTION.
- ALL PAVEMENT MARKINGS AND/OR SIGN NOTES ARE SHOWN ON THE SIGNS AND PAVEMENT MARKING PLANS.
- THE EXPOSED EDGES OF ALL LONGITUDINAL AND TRANSVERSE SAW CUT JOINTS SHALL BE TREATED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALANT MEETING MASSDOT SPECIFICATIONS.
- IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE CANNOT BE REMOVED OR RESET WITHIN THE PROPOSED OR EXISTING ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.
- ALL PRIVATE UTILITY ADJUSTMENTS ARE BY OTHERS.


PEDESTRIAN CURB RAMP NOTES

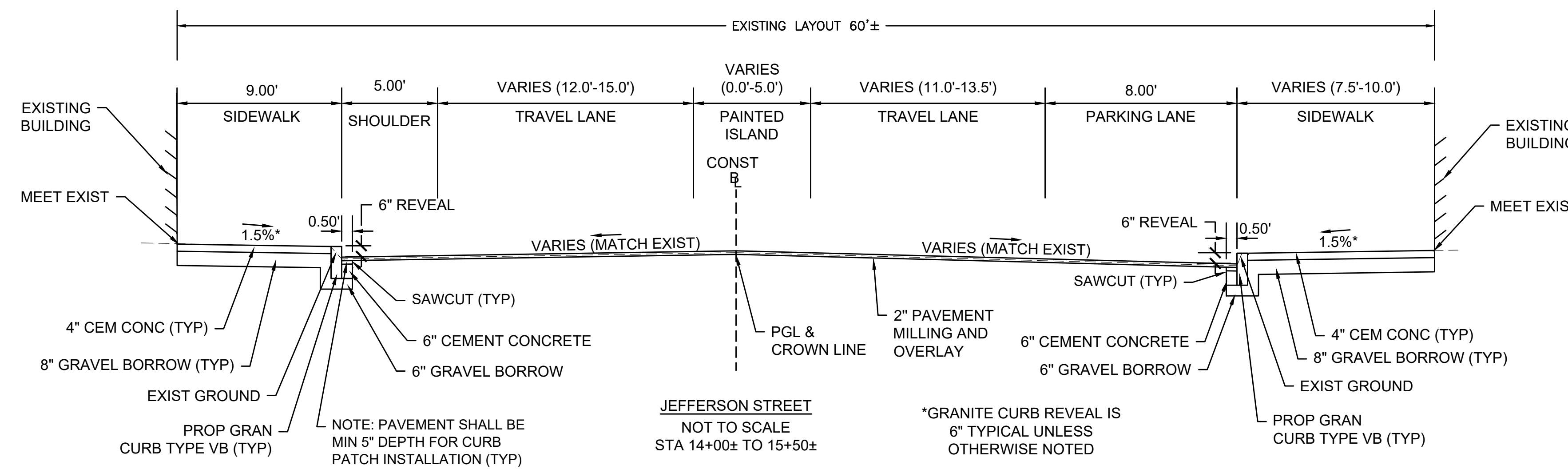
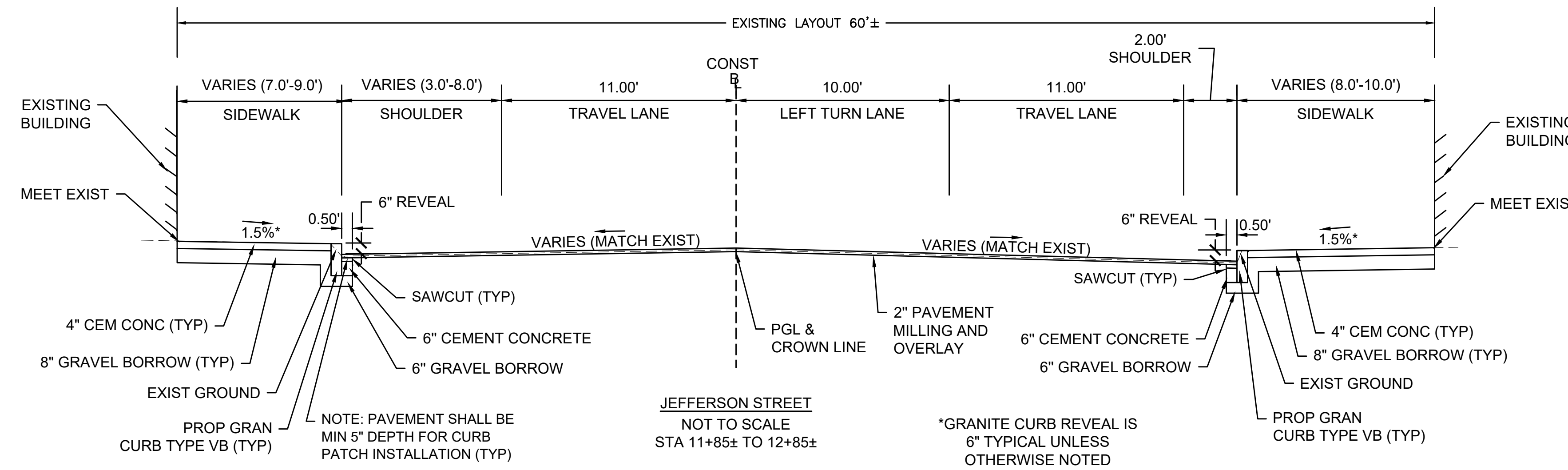
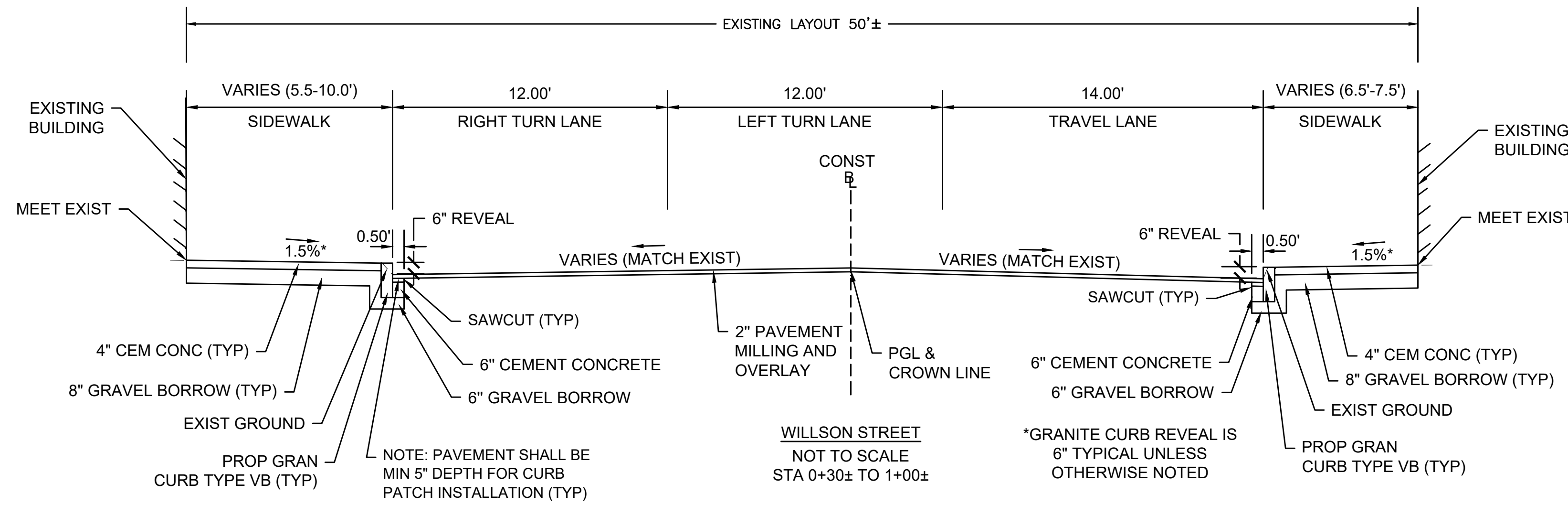
- ALL PEDESTRIAN CURB RAMPS SHALL CONFORM TO THE REQUIREMENTS OF THE ARCHITECTURAL ACCESS BOARD (A.A.B.) AND THE AMERICANS WITH DISABILITIES ACT (A.D.A.), AND THE LATEST MASSDOT STANDARDS.
- THE LOCATION OF PROPOSED PEDESTRIAN CURB RAMPS ARE SHOWN ON CONSTRUCTION PLANS AND THE PEDESTRIAN CURB RAMP DETAILS. EXACT LOCATIONS MAY BE ADJUSTED, IF NECESSARY, BY THE ENGINEER IN THE FIELD.
- ALL PROPOSED PEDESTRIAN CURB RAMPS SHALL HAVE DETECTABLE WARNING PANELS INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARD DRAWINGS (E 107.65). THE COLOR OF THE PANEL SHALL BE YELLOW AND APPROVED BY THE ENGINEER.
- IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET, IS WITHIN THE ACTUAL PEDESTRIAN CURB RAMP PATH, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OF THE STRUCTURE COVER SHALL BE FLUSH WITH THE RAMP SURFACE AND SHALL MATCH THE SLOPE OF THE NEW PEDESTRIAN CURB RAMP AS DIRECTED BY THE ENGINEER.
- THE TRANSITION SLOPE OF ANY CURB RAMP, EXCEPT MAXIMUM LENGTH HIGH SIDE TRANSITIONS, SHALL NOT EXCEED 7.5%, +/-0.5% FOR TOLERANCE OF CONSTRUCTION. PER AAB 521 CMR, FINISHED SLOPE MAY NOT EXCEED 8.33%. PROPOSED PEDESTRIAN CURB RAMP SLOPES, ESPECIALLY HIGH SIDE TRANSITIONS, SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO POURING OF CONCRETE AND ADJUSTED, IF NECESSARY, AT THE DIRECTION OF THE ENGINEER.

SURVEY NOTES

- THE TOPOGRAPHY, SURFACE IMPROVEMENTS AND SITE DETAIL DEPICTED HEREON WAS OBTAINED FROM AN ON-THE-GROUND INSTRUMENT SURVEY CONDUCTED BY BRENNAN CONSULTING, INC. BETWEEN JULY 23 & AUGUST 24, 2021. THE HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83), BASED ON GPS OBSERVATIONS. THE VERTICAL DATUM IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON GPS OBSERVATIONS.
- THE UNDERGROUND UTILITIES, AS SHOWN ON THE PLANS, HAVE BEEN COMPLIED FROM RECORD PLANS, THE ACCURACY AND COMPLETENESS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATION, SIZE, TYPE, ETC. OF ALL UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THE WORK. AT LEAST 72 HOURS BEFORE DIGGING BEGINS THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT (888)344-7233. ALL CITY OWNED UTILITY STRUCTURES WITHIN AREAS AFFECTED BY THE WORK SHALL BE ADJUSTED TO NEW LINE AND GRADE AS DIRECTED BY THE ENGINEER. ANY UTILITY POLES AND/OR GUY POLES WITHIN AREAS AFFECTED BY THE WORK SHALL BE REMOVED AND RESET BY THE RESPECTIVE UTILITY COMPANY. ALTERATIONS TO UTILITIES NOT OWNED BY THE CITY SHALL BE MADE BY THE RESPECTIVE UTILITY OWNERS.
- THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
- ALL EXISTING PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
- BENCHMARK INFORMATION:
SEE CURB TIES PLANS FOR BENCHMARK AND TRAVERSE INFORMATION

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NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	DRAWN BY: CM	REGISTERED PROFESSIONAL	PREPARED BY:  www.BETA-Inc.com	SUBCONSULTANT	SCALE NONE	TITLE INTERSECTION IMPROVEMENTS JEFFERSON AVE AT WILSON ST/CLOUTMAN ST GENERAL NOTES SALEM, MASSACHUSETTS	BETA JOB NO. 6965	ISSUE DATE 12/29/2023	SHEET NO. 03 of 29
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PAVEMENT NOTES

PAVEMENT MILLING AND OVERLAY

SURFACE COURSE: 2" SUPERPAVE SURFACE COURSE - 12.5 - POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

LEVELING COURSE: DEPTH VARIES. SUPERPAVE LEVELING COURSE - 9.5 (SLC - 9.5). SEE GRADING PLAN SHEET 13 OVER

PAVEMENT MILLING: 2" PAVEMENT MILLING

CEMENT CONCRETE SIDEWALKS AND PEDESTRIAN CURB RAMPS

SURFACE: 4" CEMENT CONCRETE SURFACE 4000 PSI. 3/4", 610 OVER

FOUNDATION: 8" GRAVEL BORROW, TYPE b

CEMENT CONCRETE DRIVEWAY APRONS

SURFACE: 6" CEMENT CONCRETE SURFACE 4000 PSI. 3/4", 610 OVER

FOUNDATION: 8" GRAVEL BORROW, TYPE b

HMA DRIVEWAYS / WALKWAY

SURFACE: 1-1/2" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 2-1/2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PAVEMENT NOTES

1. ALL HMA FOR PATCHING, ASPHALT EMULSION FOR TACK COAT AND HMA JOINT SEALANT SHALL BE INSTALLED PER SECTION 450.
2. HMA DRIVEWAYS - THE SURFACE COURSE SHALL BE A DRIVEWAY AND SIDEWALK RECIPE MIX OR 9.5 MM SUPERPAVE SURFACE COURSE. IN AREAS OF HIGH TRAFFIC, THE DRIVEWAY SURFACE COURSE SHALL BE 12.5 MM SUPERPAVE SURFACE COURSE. THE MIXTURE TYPE AND PLACEMENT METHOD SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORK.
3. EXISTING PAVEMENT THICKNESS ON JEFFERSON AVE VARIES FROM 8-9" AND 7"-8" ON WILSON STREET. SUBGRADE SOILS ARE MOSTLY TYPE A-1-a ON JEFFERSON AVE.

*TOLERANCE FOR CONSTRUCTION ±0.5%

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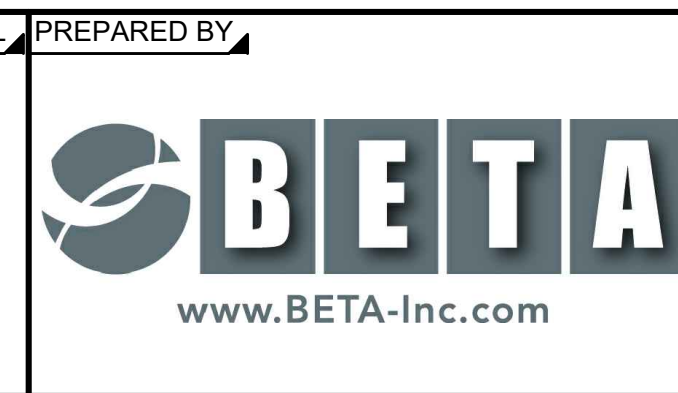
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PREPARED BY:
SUBCONSULTANT

SCALE:
NONE

TITLE:
**INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST**

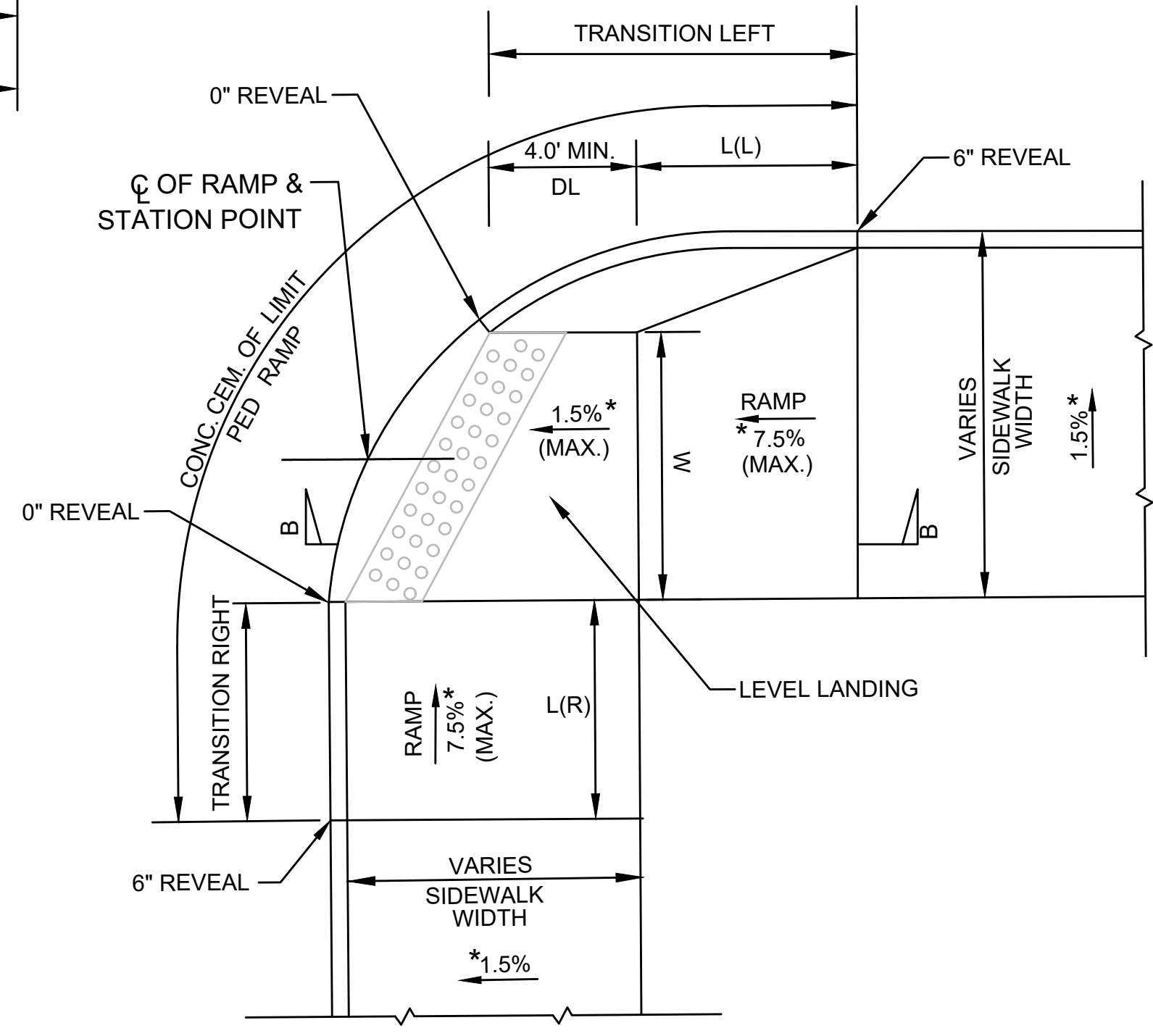
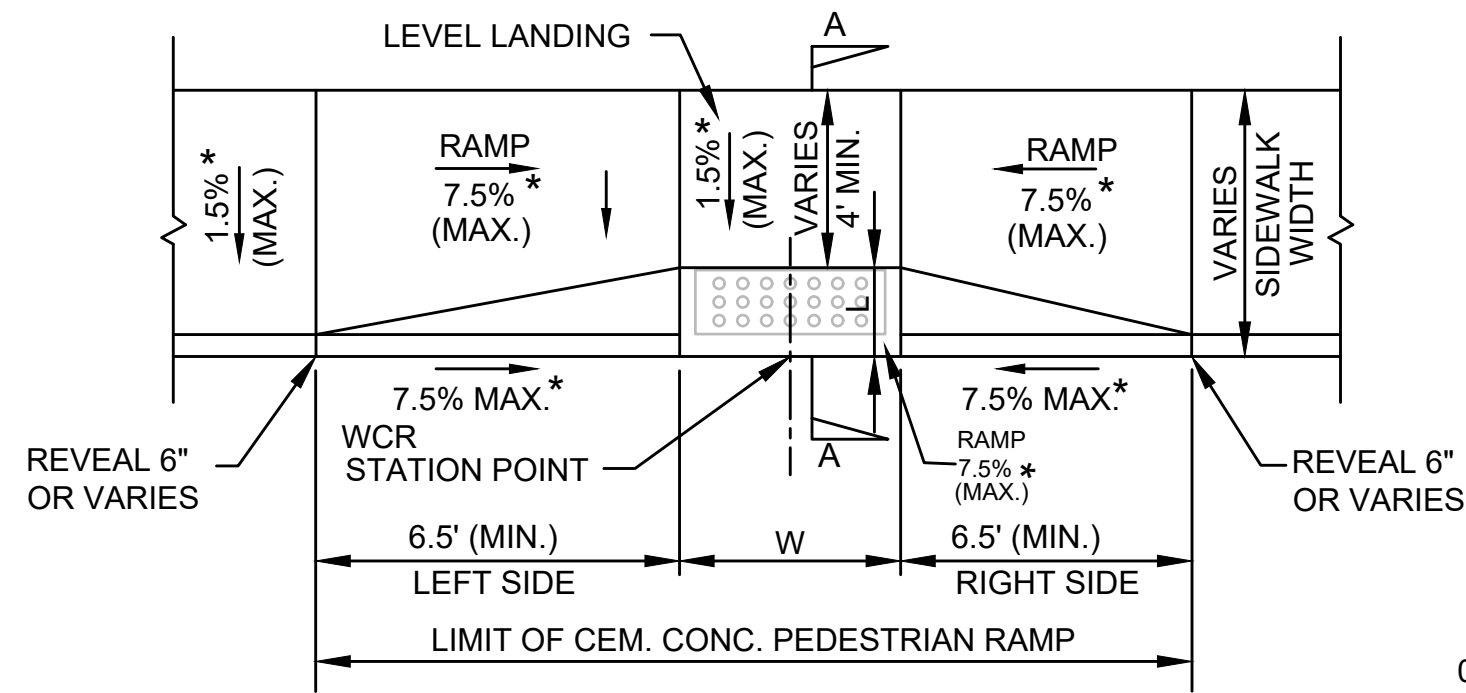
**TYPICAL SECTIONS
SALEM, MASSACHUSETTS**

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

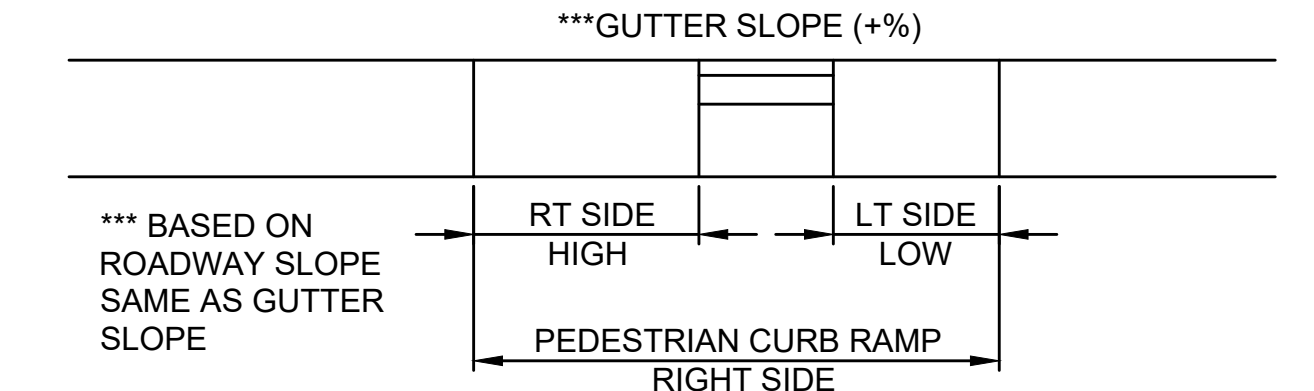
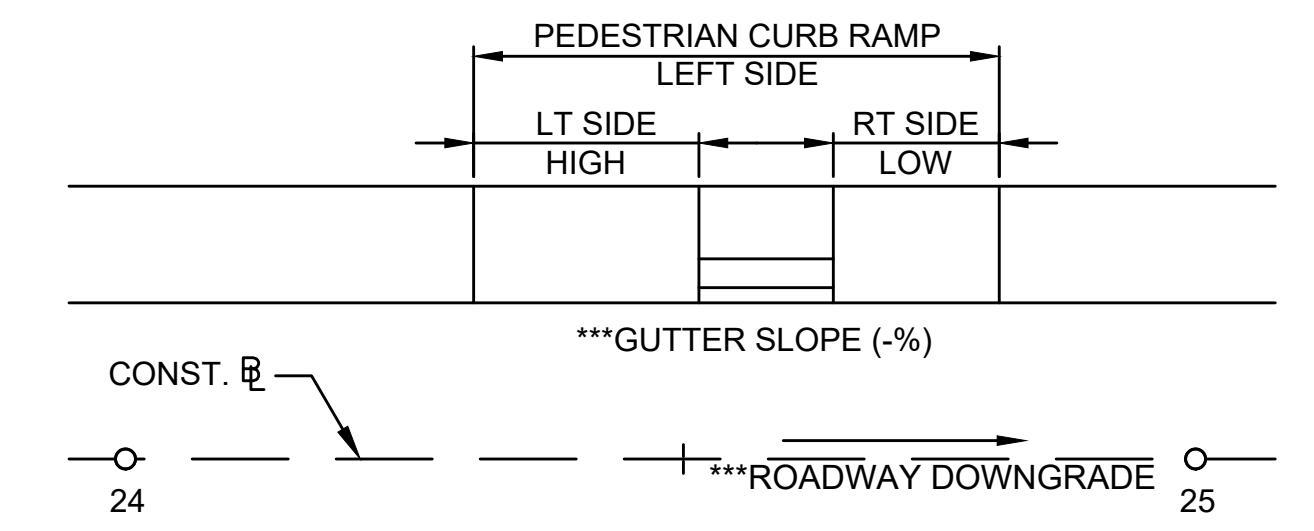
SHEET NO. **04 of 29**

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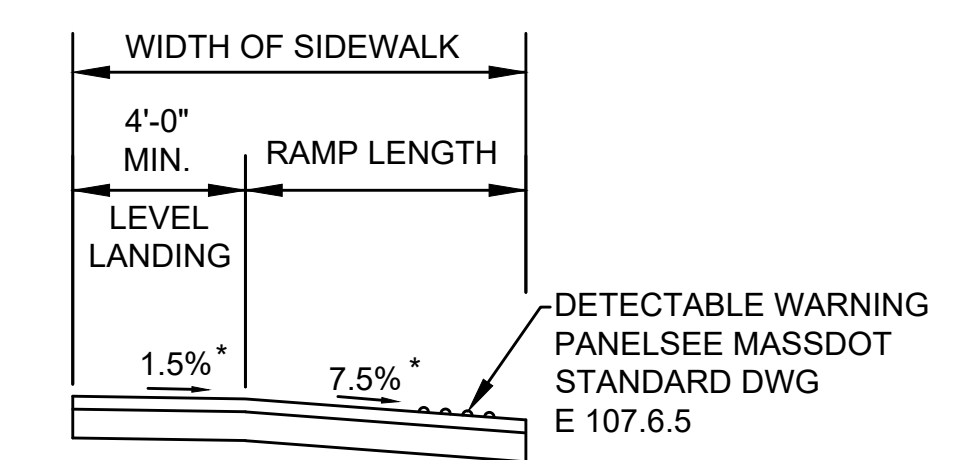


PEDESTRIAN CURB RAMP DATA SIDEWALK DETOUR - TYPE A									
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	LENGTH OF PRIMARY RAMP L	WIDTH OF RAMP OPENING W	TRANSITION LENGTH		SIDEWALK WIDTH
		STATION	OFFSET				LEFT	RIGHT	
1	JEFFERSON AVENUE	12+97.40	23.0' RT	2.20%	3.22'	6.00'	6.5'	7.33' (4" R)	8.72'

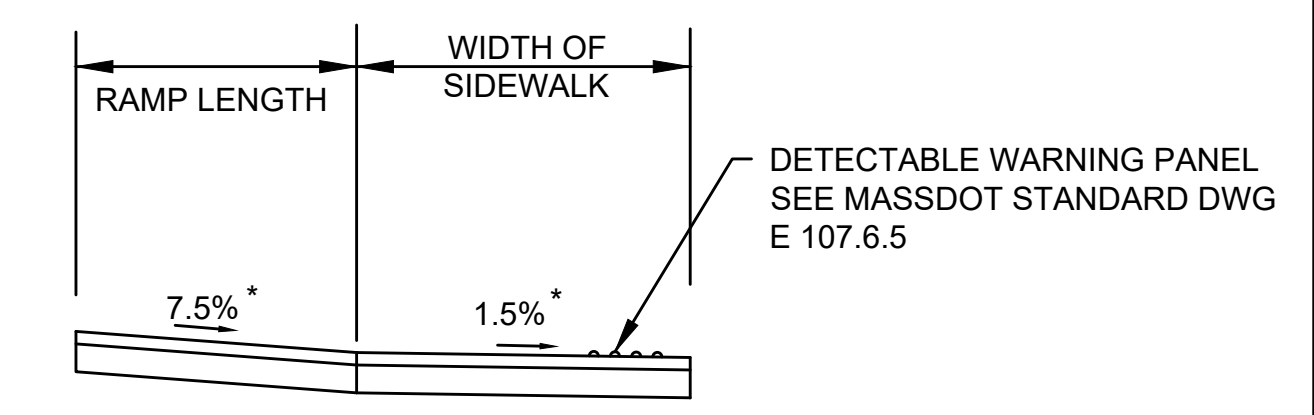
PEDESTRIAN CURB RAMP DATA SIDEWALK DETOUR - TYPE B										
PCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	DEPTH OF LEVEL LANDING	LENGTH OF PRIMARY RAMP L	WIDTH OF RAMP OPENING W	TRANSITION LENGTH		SIDEWALK WIDTH
		STATION	OFFSET					LEFT	RIGHT	
8	JEFFERSON AVENUE	14+03+05	28.9' RT	1.51% L 3.06% R	4.0'	6.5' (LT) 14.0' (RT)	6.00'	10.50' (5" R)	14.0'	(10.0' L) (6.0' R)



GUTTER SLOPE DIAGRAM NOT TO SCALE



SECTION A-A NOT TO SCALE

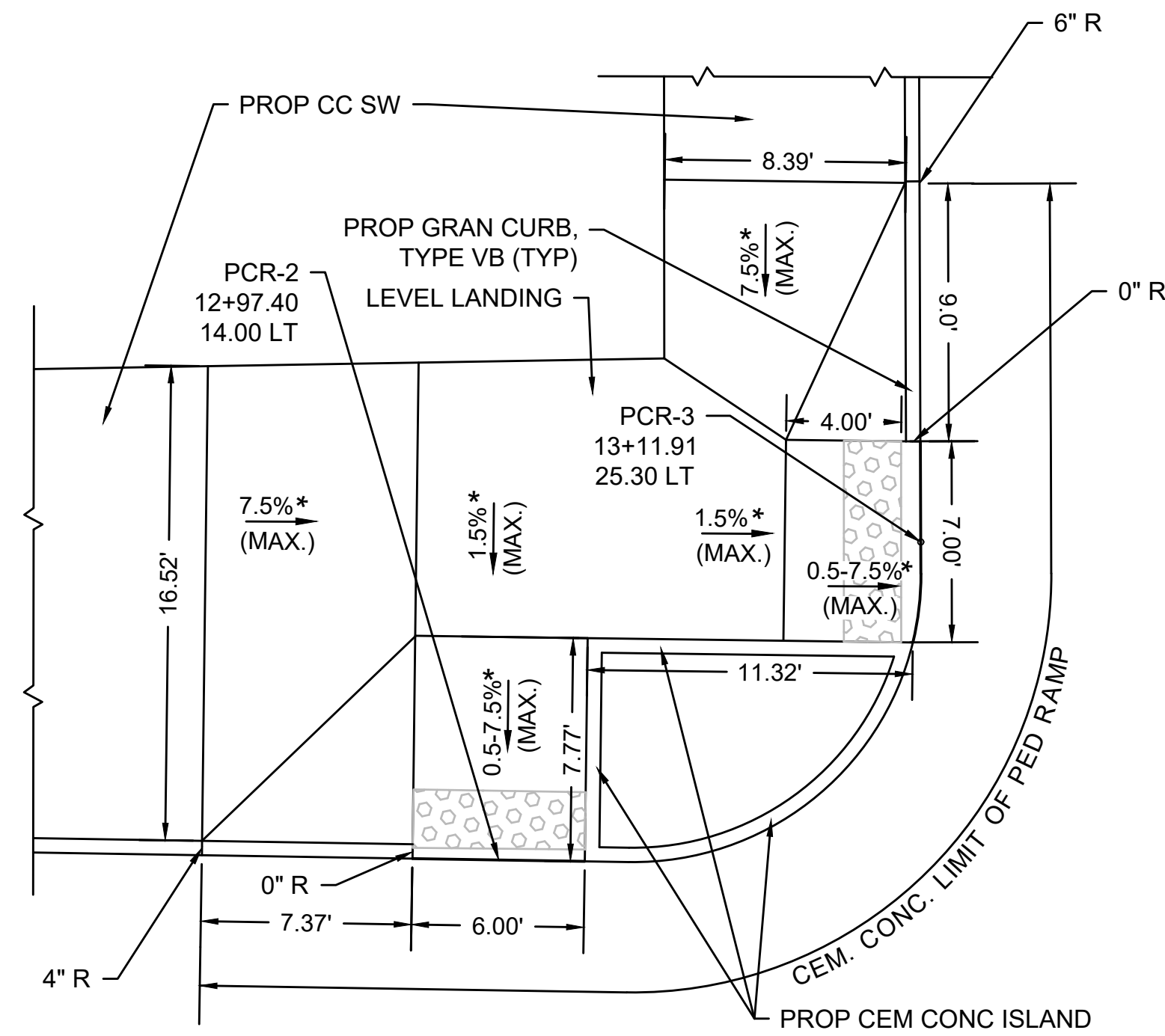


SECTION B-B NOT TO SCALE

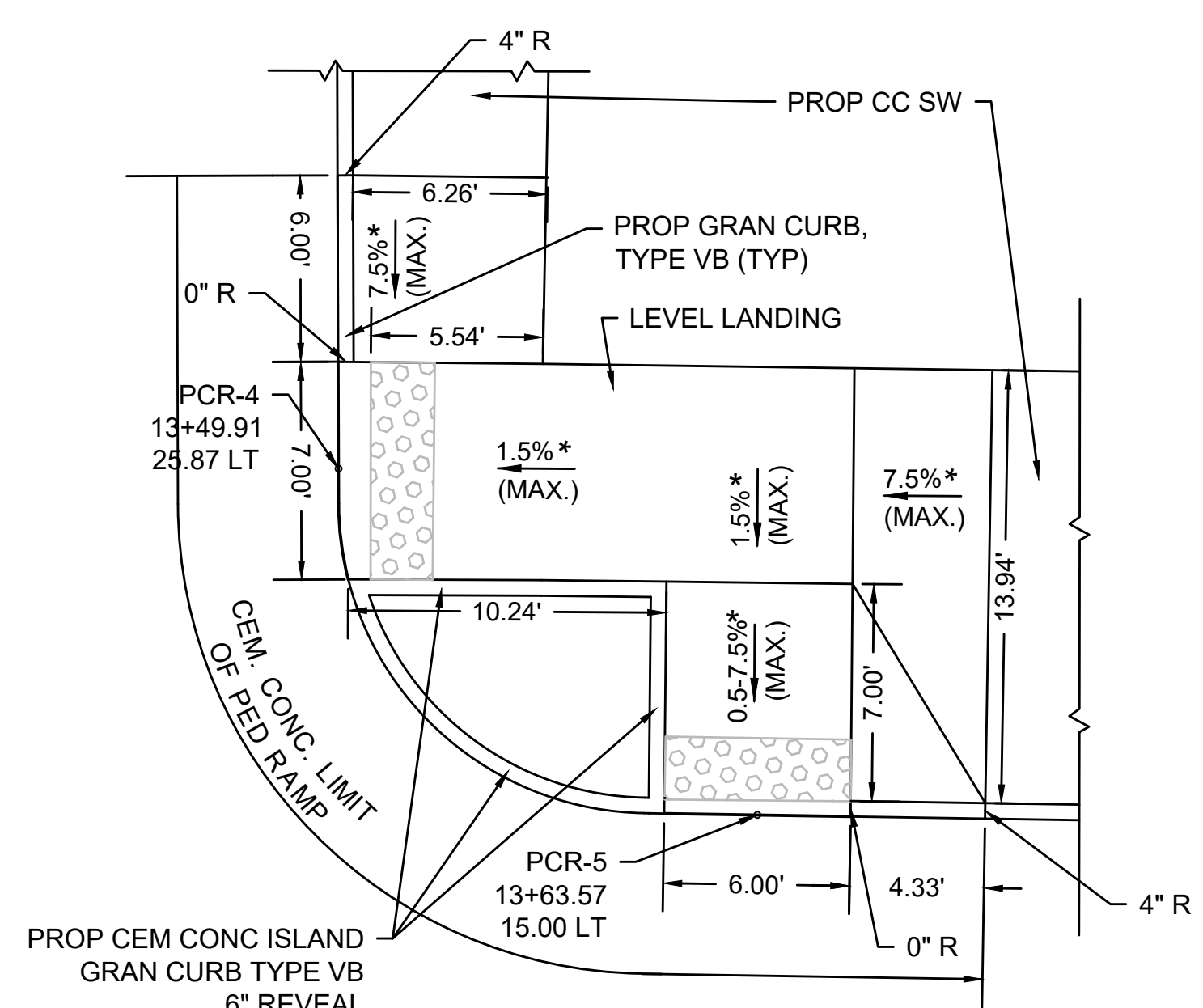
TABLE I	
ROADWAY PROFILE GRADE %	* HIGH SIDE TRANSITION LENGTH ENGLISH UNITS
=0%	6'-6"
>0% TO 1%	7'-8"
>1% TO 2%	9'-0"
>2% TO 3%	11'-0"
>3% TO 4%	14'-0"
>4% TO 5%	15'-0" MAX.

CURB TRANSITION LENGTH FOR PEDESTRIAN CURB RAMPS

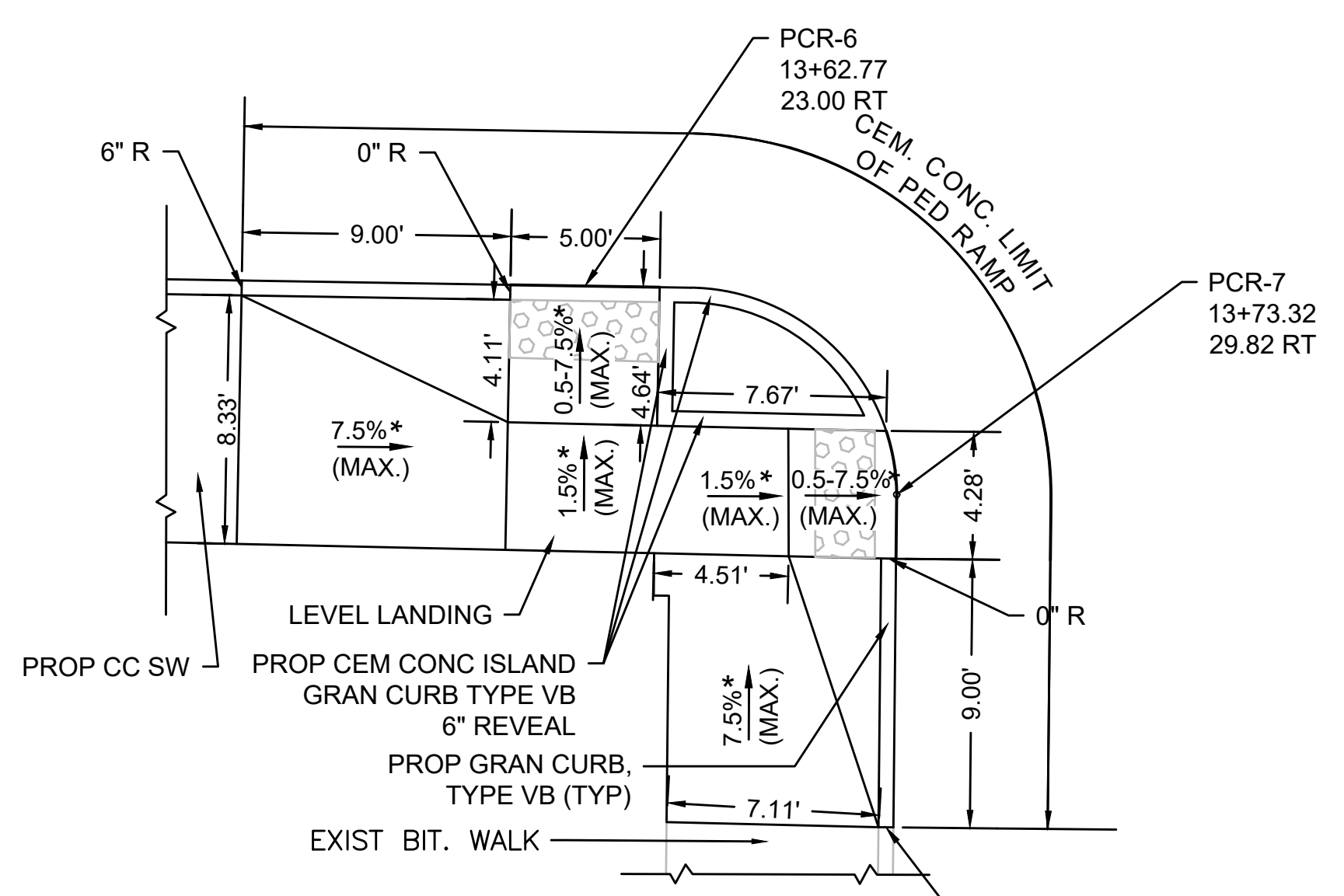
MASSDOT CONST. STD. DWG. NO. E107.9.0
*BASED ON A DESIGN SLOPE OF 7.5% AND A REVEAL OF 6".



SPECIAL DETAIL: PEDESTRIAN RAMP #2 & #3 NOT TO SCALE



SPECIAL DETAIL: PEDESTRIAN RAMP #4 & #5 NOT TO SCALE



SPECIAL DETAIL: PEDESTRIAN RAMP #6 & #7 NOT TO SCALE

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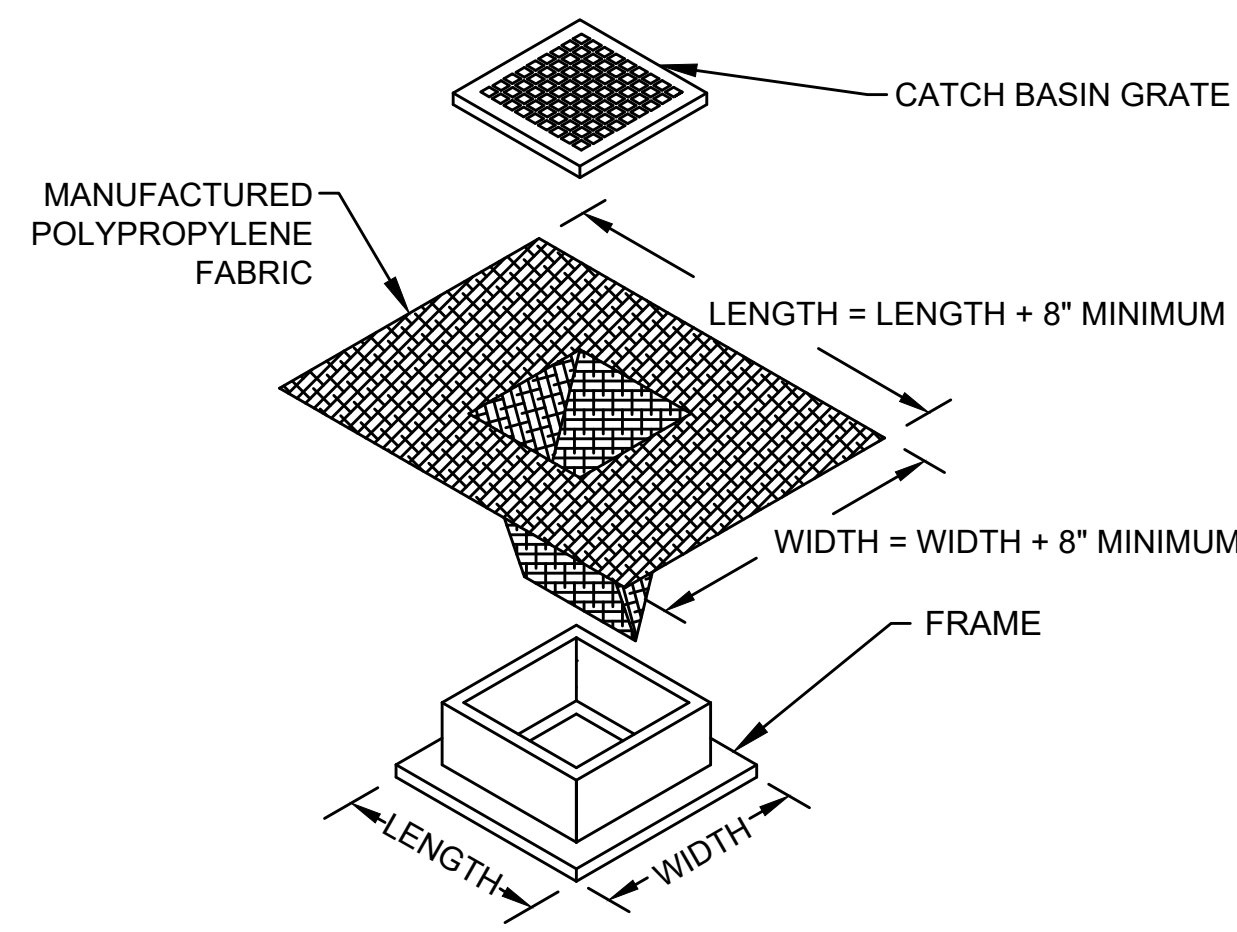
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SUBCONSULTANT	SCALE NONE	TITLE INTERSECTION IMPROVEMENTS JEFFERSON AVE AT WILSON ST/CLOUTMAN ST CONSTRUCTION DETAILS SALEM, MASSACHUSETTS
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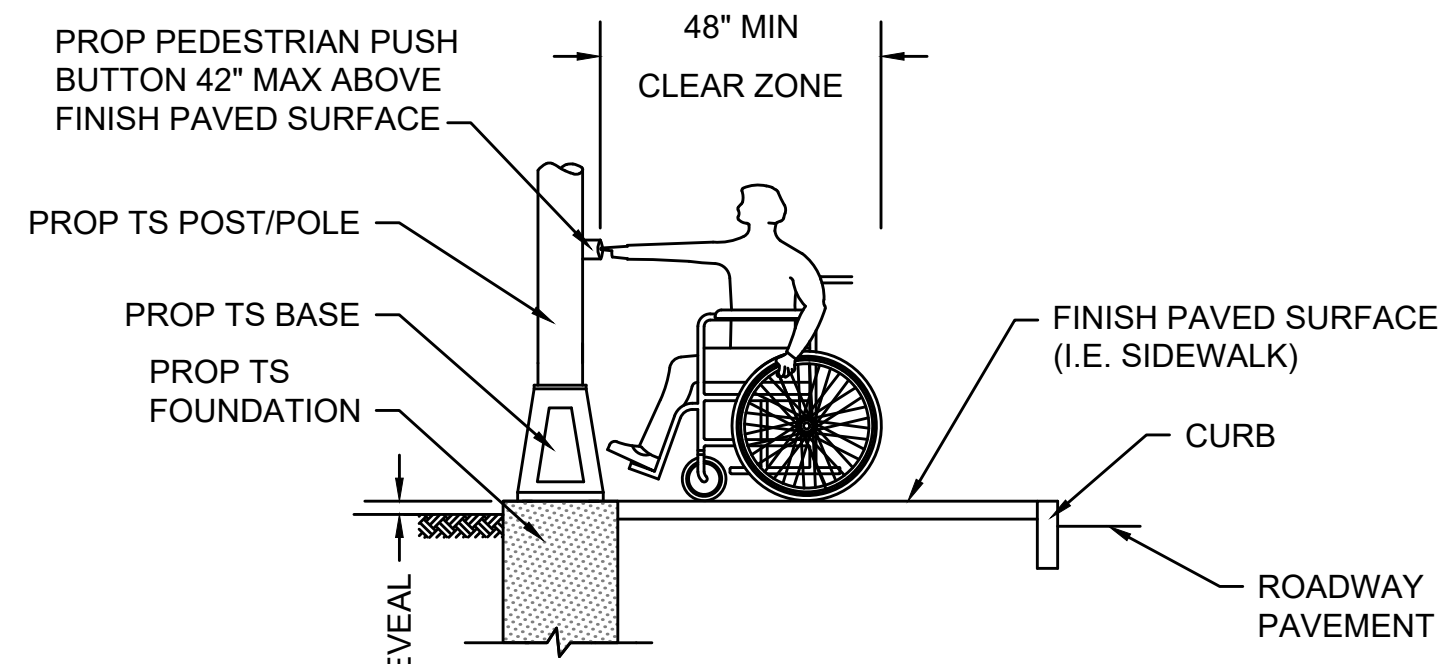
BETA JOB NO. 6965
ISSUE DATE 12/29/2023
SHEET NO. 05 of 29



NOTES

1. LENGTH AND WIDTH OF POLYPROPYLENE FABRIC MUST EXCEED EXISTING CATCH BASIN FRAME DIMENSIONS BY A MINIMUM OF 8".
2. REMOVE CATCH BASIN GRATE AND INSTALL POLYPROPYLENE FABRIC OVER CATCH BASIN FRAME. REPLACE CATCH BASIN GRATE TO SECURE POLYPROPYLENE FABRIC IN PLACE.
3. PROVIDE EROSION CONTROL PROTECTION AT ALL EXISTING AND PROPOSED CATCH BASINS WITHIN THE PROJECT LIMITS.

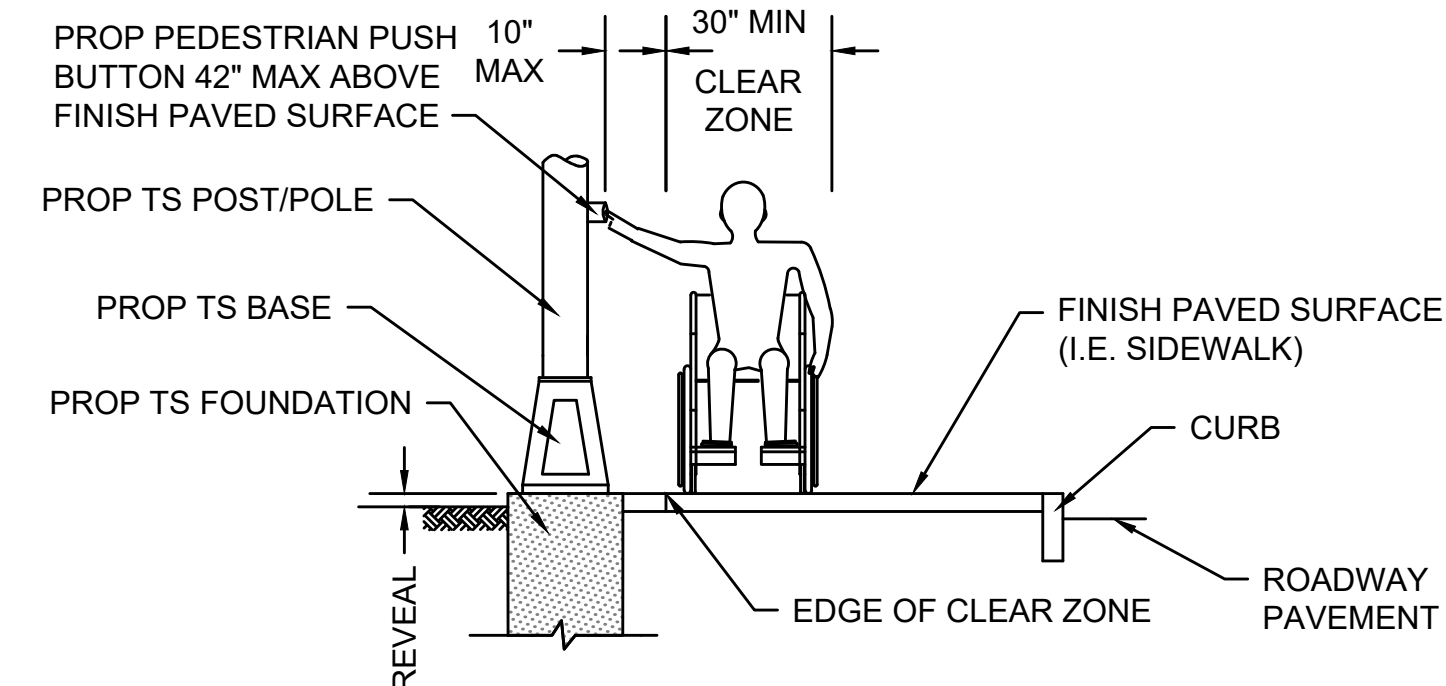
CATCH BASIN EROSION CONTROL PROTECTION (TYP)
NOT TO SCALE



FORWARD APPROACH (FORWARD REACH)

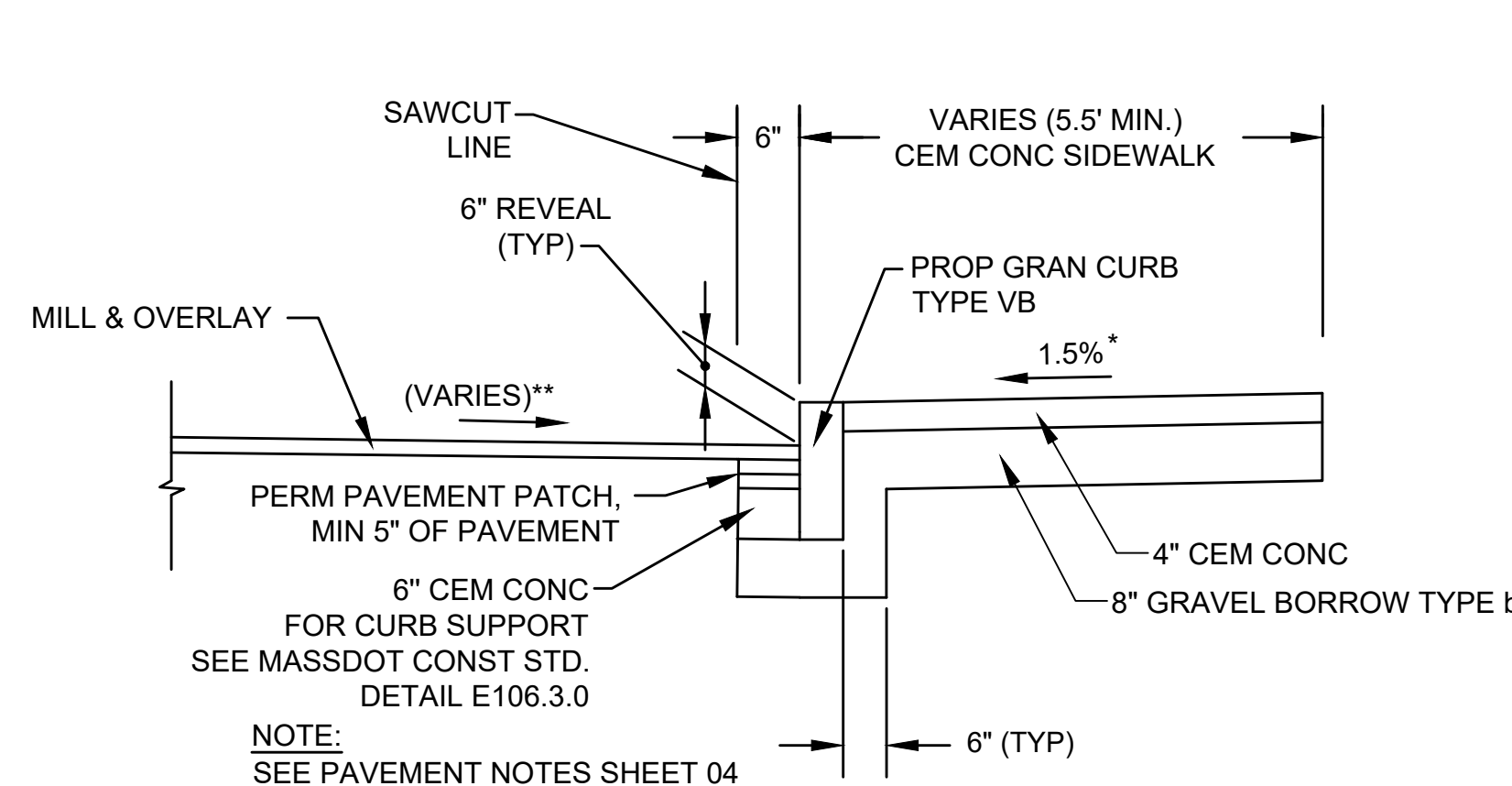
NOTES:

1. A CLEAR GROUND SPACE SHALL CONSIST OF A STABLE AND FIRM AREA, COMPLYING WITH 521 CMR 6.5 (FORWARD REACH) OR 521 CMR 6.6 (SIDE REACH) AND SHALL BE PROVIDED AT EACH OF THE PEDESTRIAN PUSH BUTTONS.
 - a. WHERE A FORWARD APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL ABUT AND BE CENTERED ON THE CLEAR GROUND SPACE.
 - b. WHERE A PARALLEL APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL BE WITHIN TEN INCHES (10") HORIZONTALLY OF AND CENTERED ON THE CLEAR GROUND SPACE.

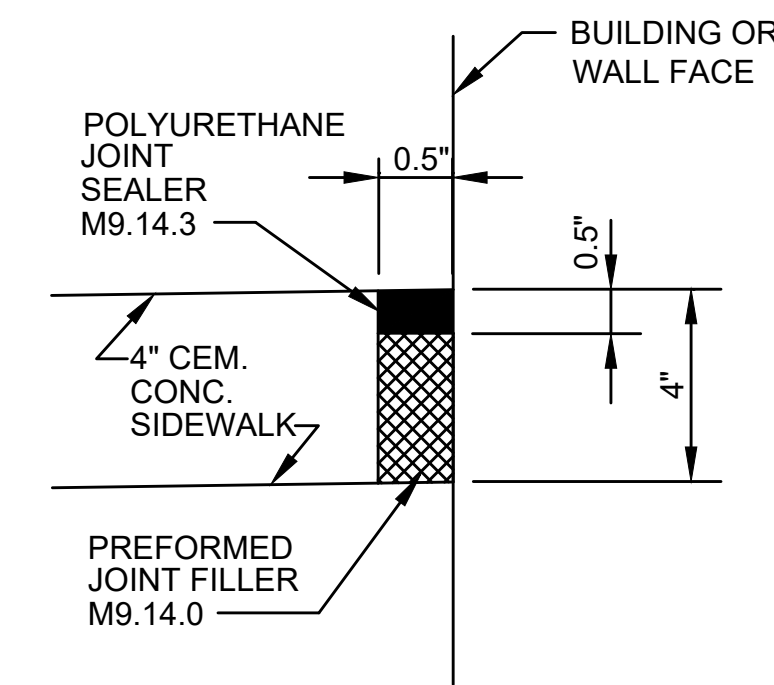


PARALLEL APPROACH (SIDE REACH)

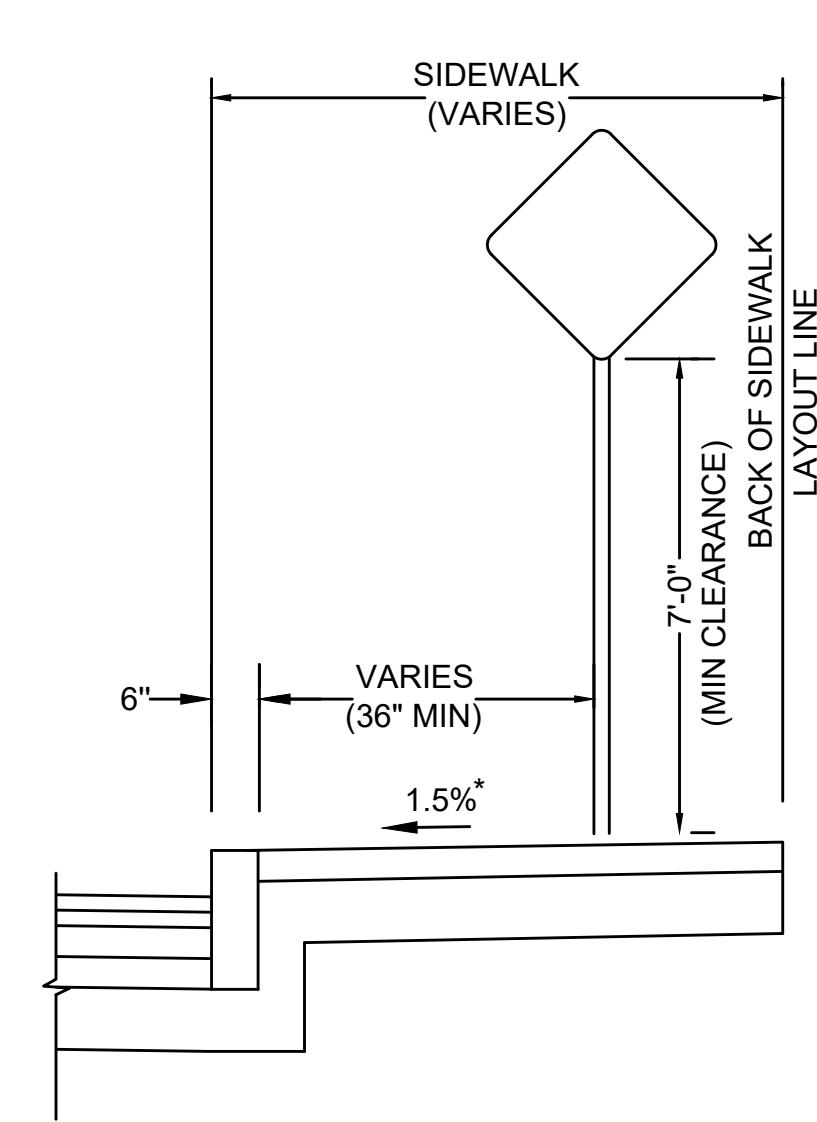
PEDESTRIAN PUSH BUTTON CLEAR ZONE
NOT TO SCALE



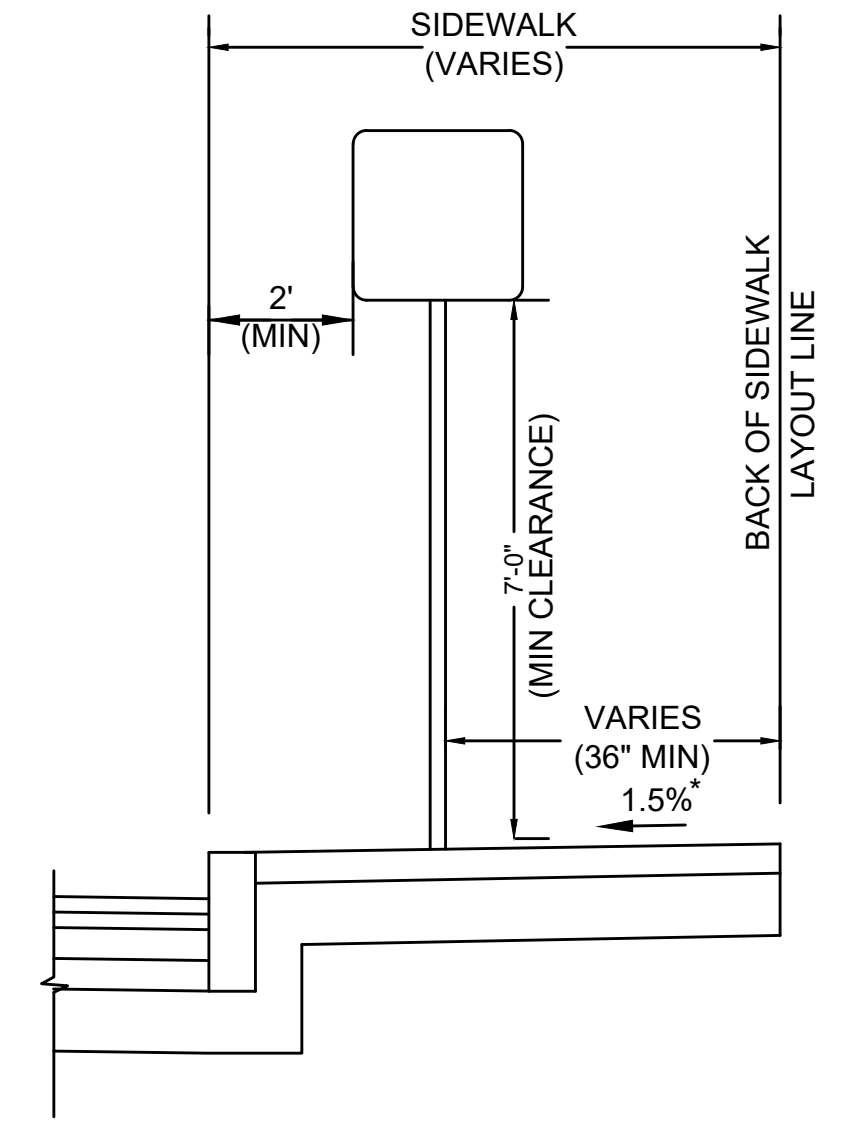
DETAIL FOR SIDEWALK W/ GRANITE CURB
NOT TO SCALE



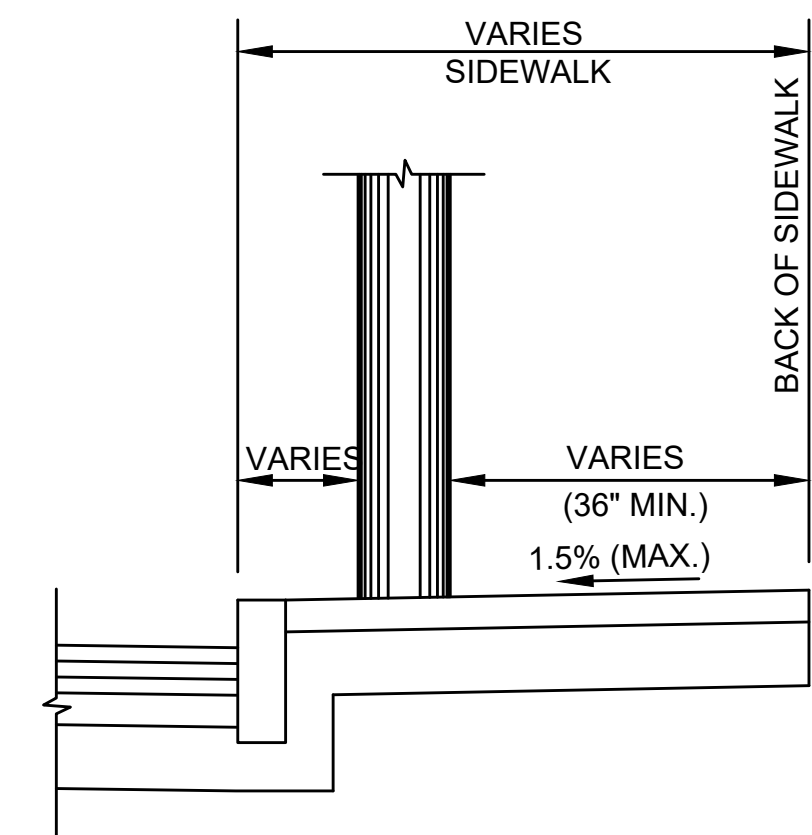
DETAIL FOR PREFORMED JOINT FILLER AND SEALER AT BUILDING AND WALL FACES
NOT TO SCALE



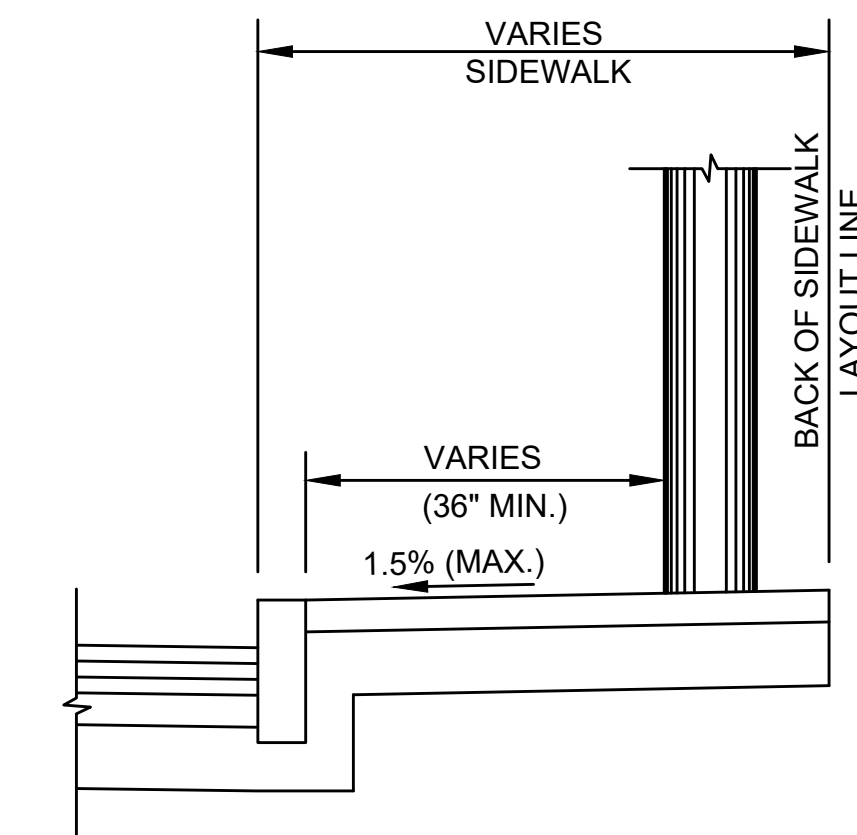
TRAFFIC SIGN



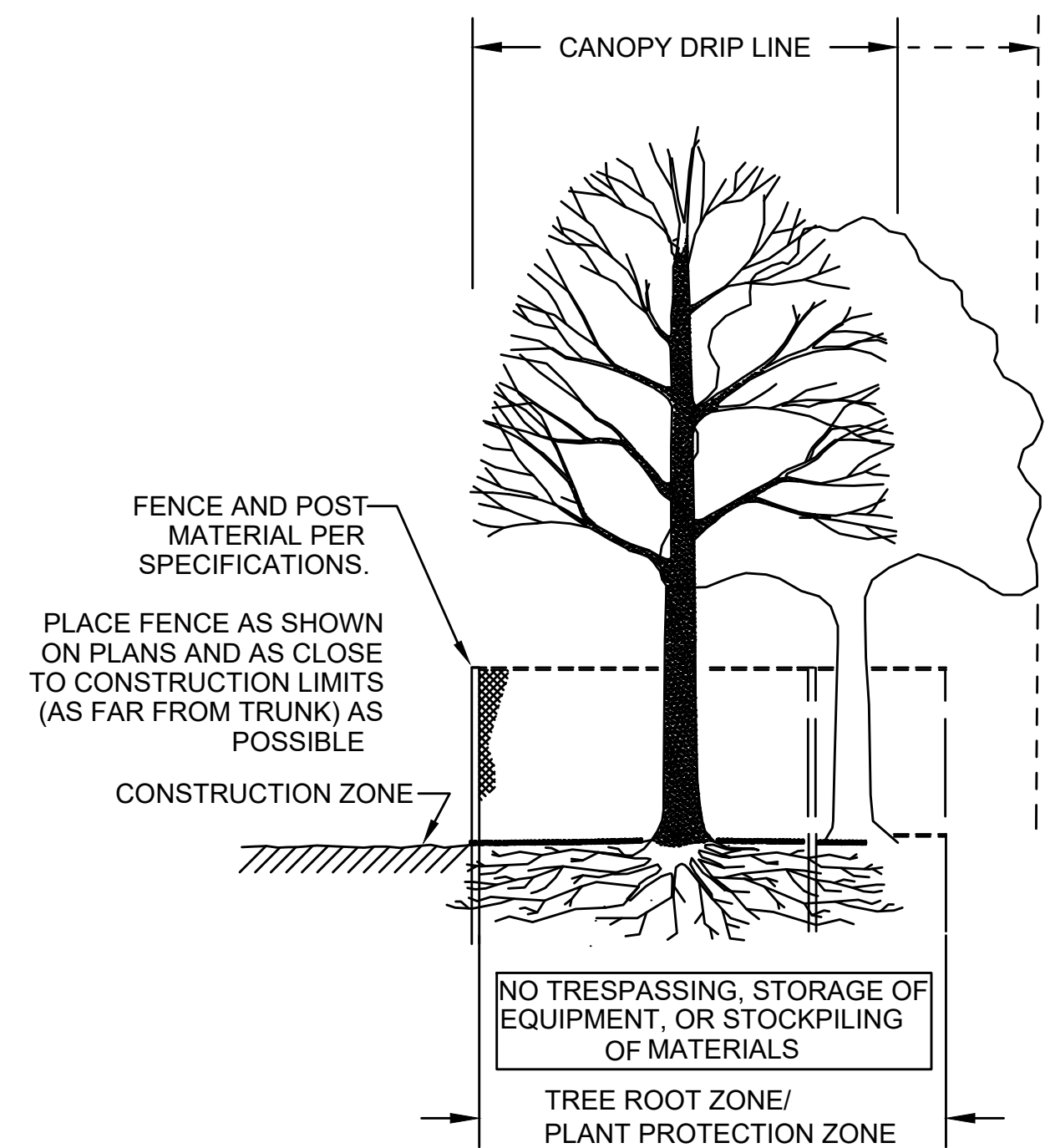
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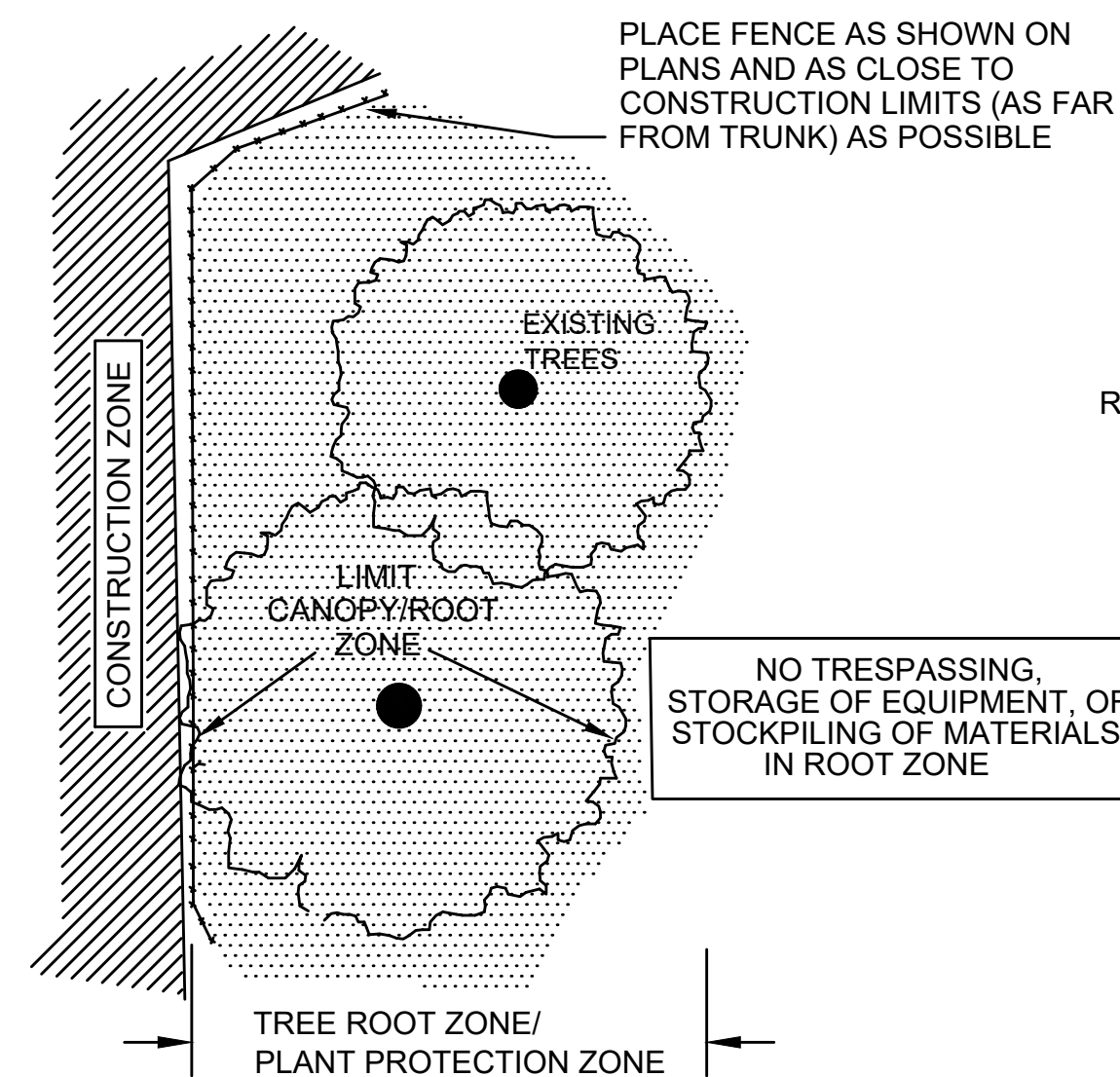
UTILITY POLE



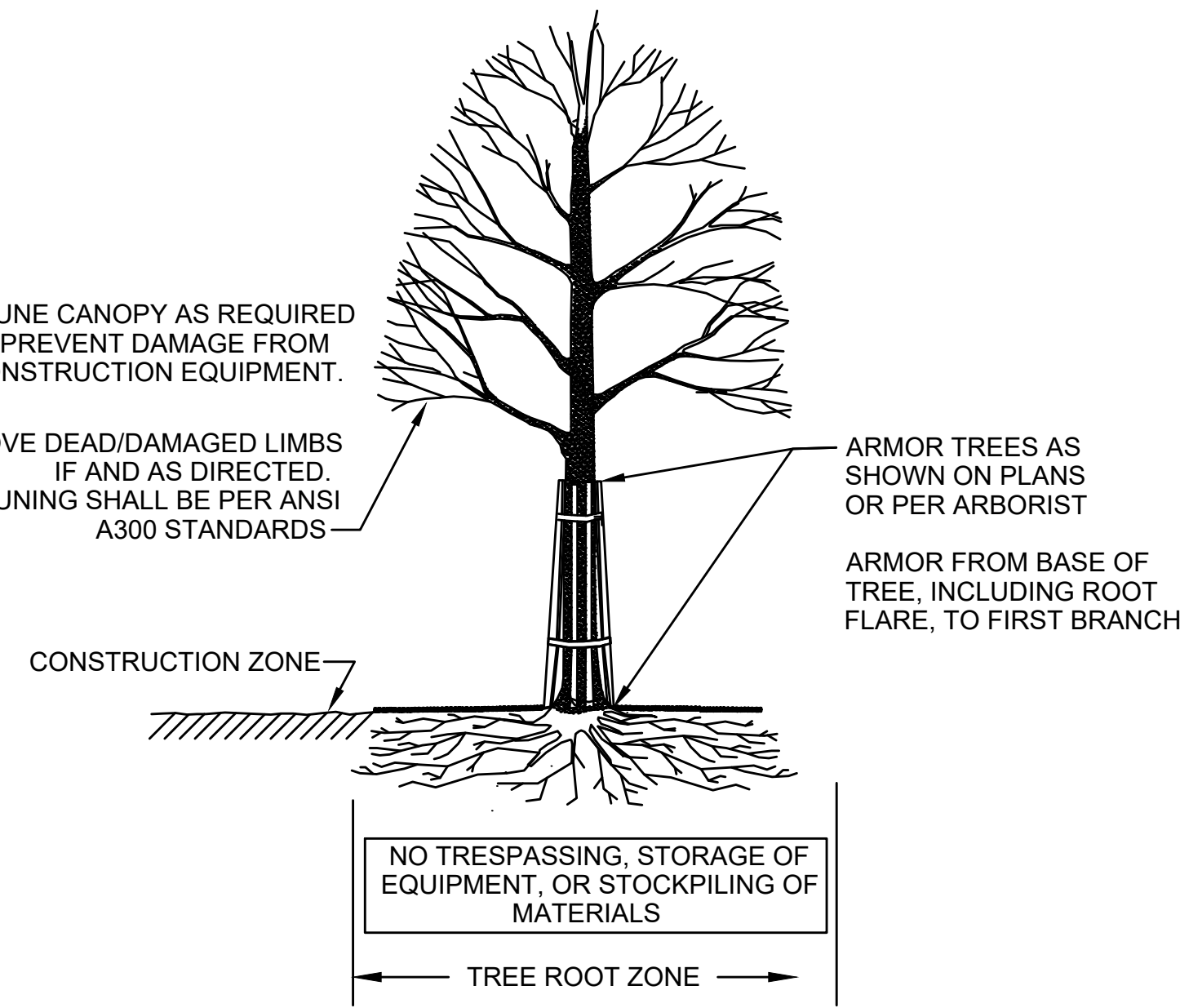
UTILITY POLE



SECTION - FENCE PROTECTION OF ROOT ZONE

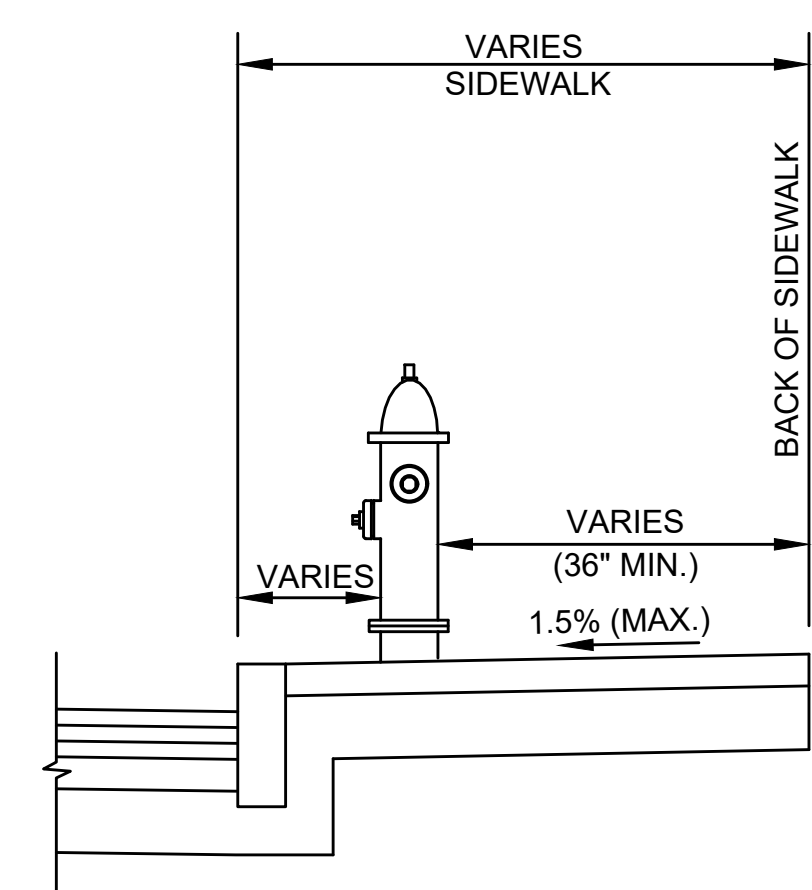


PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

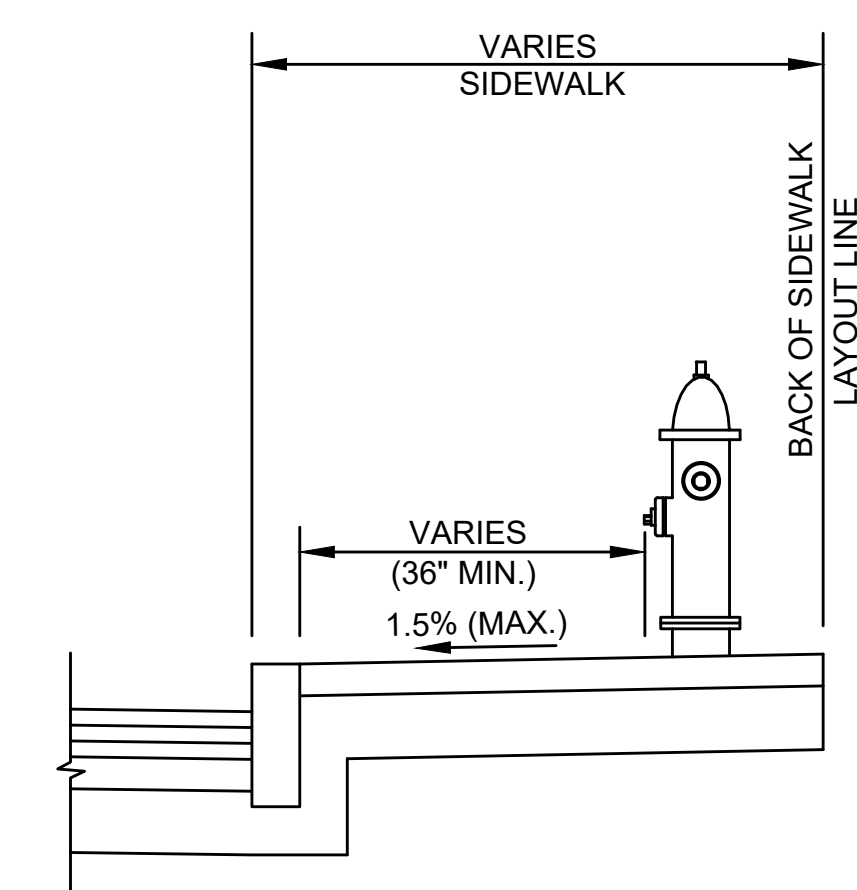


SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION DETAILS
NOT TO SCALE



HYDRANT



HYDRANT

NOTES

1. MINIMUM CLEAR PATH ON ALL SIDEWALKS SHALL BE 36 INCHES, EXCLUDING THE CURB.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, POLES, ETC.) TO BE SET WITHIN SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36 INCHES NOT INCLUDING CURB. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION WHICH CANNOT MEET THE CLEARANCE REQUIREMENTS.

* TOLERANCE FOR CONSTRUCTION ±0.5%

MIN. SIDEWALK CLEARANCE
NOT TO SCALE

5/7/2024 4:30 PM O:\6900\516965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILSON-CLOUTMAN\DRAWING FILES\PLANS\SET\6965_CONSTRUCTION DETAILS.DWG (MADOT-D.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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DESIGNED BY: CT		
CHECKED BY: CR/DF		

SUBCONSULTANT

SCALE: NONE

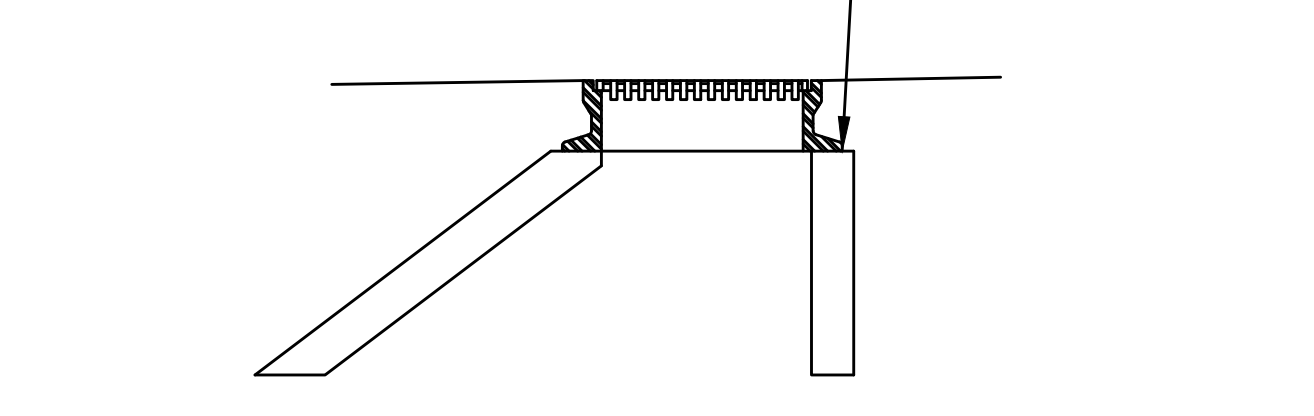
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TITLE	INTERSECTION IMPROVEMENTS JEFFERSON AVE AT WILSON ST/CLOUTMAN ST CONSTRUCTION DETAILS SALEM, MASSACHUSETTS
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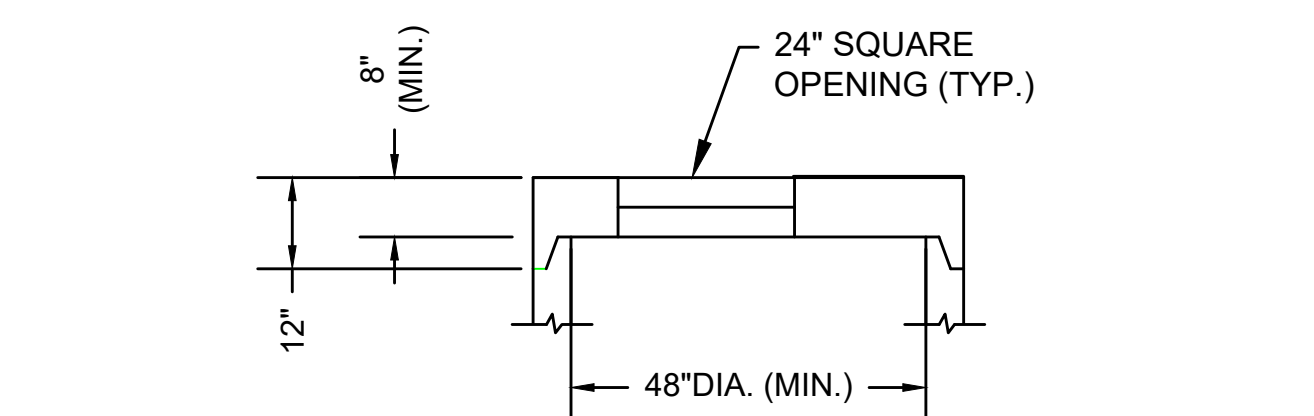
BETA JOB NO.	6965
ISSUE DATE	12/29/2023
SHEET NO.	06 of 29

5/7/2024 4:30 PM 016900516965 - SALEM - ON-CALL TASK 6 - JEFFERSON-WILSON-CLOUTMAN DRAWING FILES\PI\ANS\SET\6965_CONSTRUCTION DETAILS.DWG (MADOT-D-STB)

BRICK MAY BE USED FOR GRADE ADJUSTMENTS. FRAME TO BE SET IN FULL BED OF MORTAR. PROVIDE CONCRETE COLLAR.

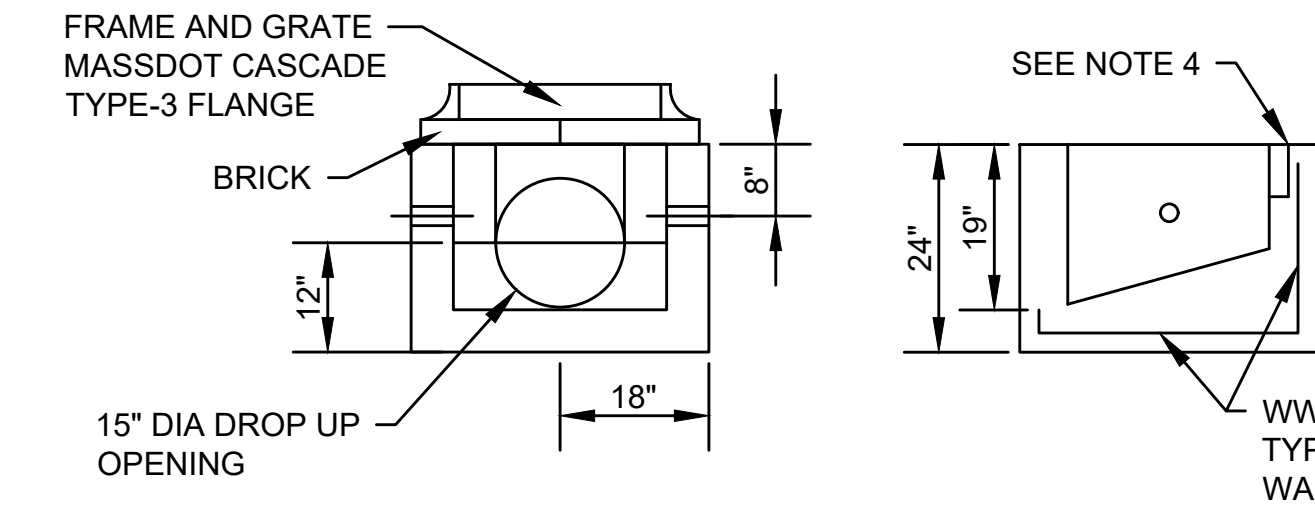
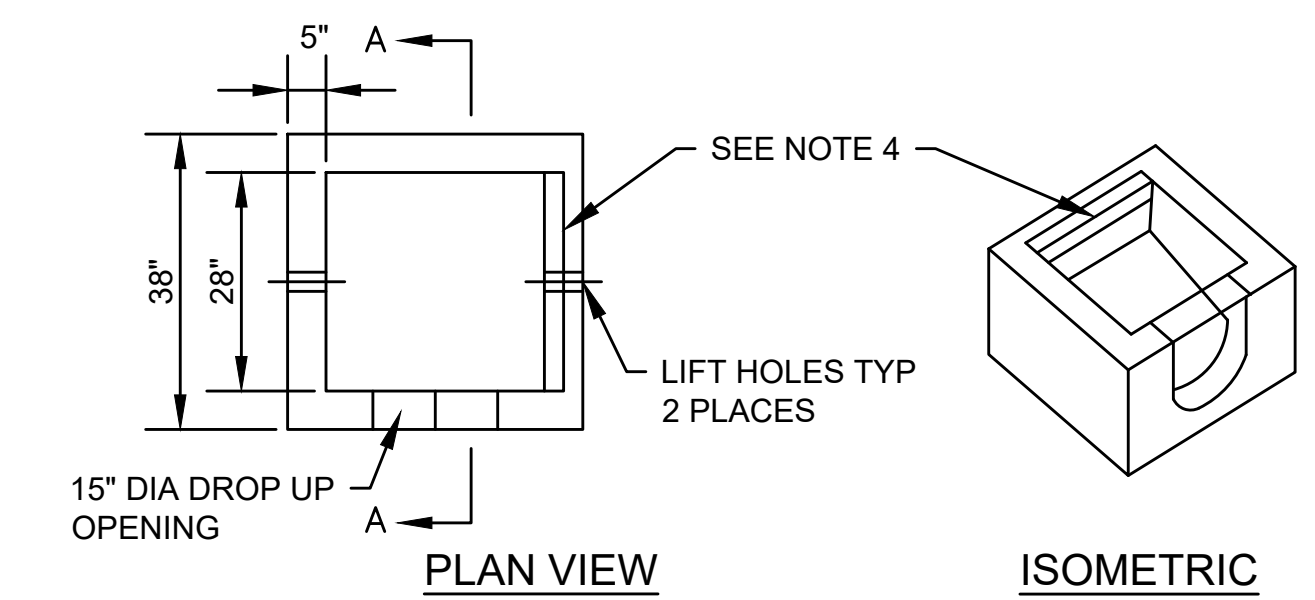


ALTERNATE DRAINAGE STRUCTURE ECCENTRIC CONE SECTION



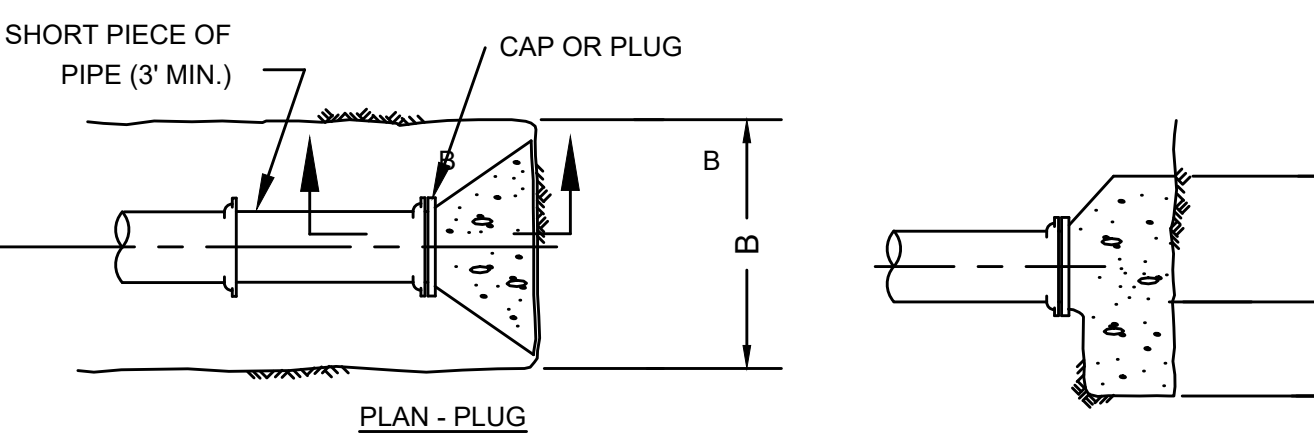
ALTERNATE DRAINAGE STRUCTURE TOP SLAB

NOTES:
 1. BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.

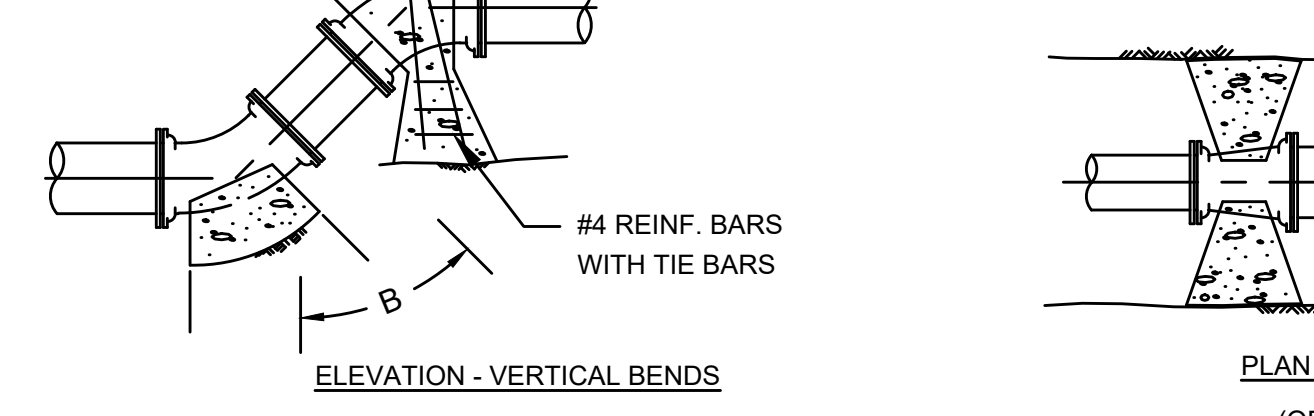


GUTTER INLET NOT TO SCALE

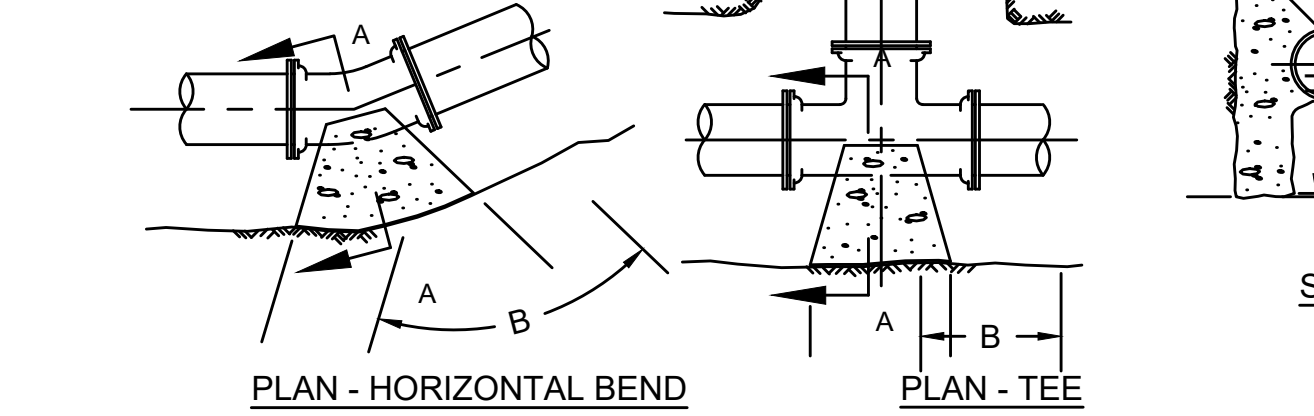
NOTES:
 1. DESIGNED FOR AASHTO HS25-44 LOADING
 2. CONCRETE STRENGTH $f_c=4000$ PSI
 3. REINFORCING STEEL: ASTM A185 (w/wf) $f_y=60,000$ PSI
 4. CURB INLETS ARE REQUIRED WHEN GUTTER INLETS ARE INSTALLED AGAINST CURBING. PROVIDE 3"x6" OPENING WHERE CURB INLETS ARE PROPOSED.
 5. 6" OF CRUSHED STONE BEDDING SHALL BE PLACED UNDER THE STRUCTURE.



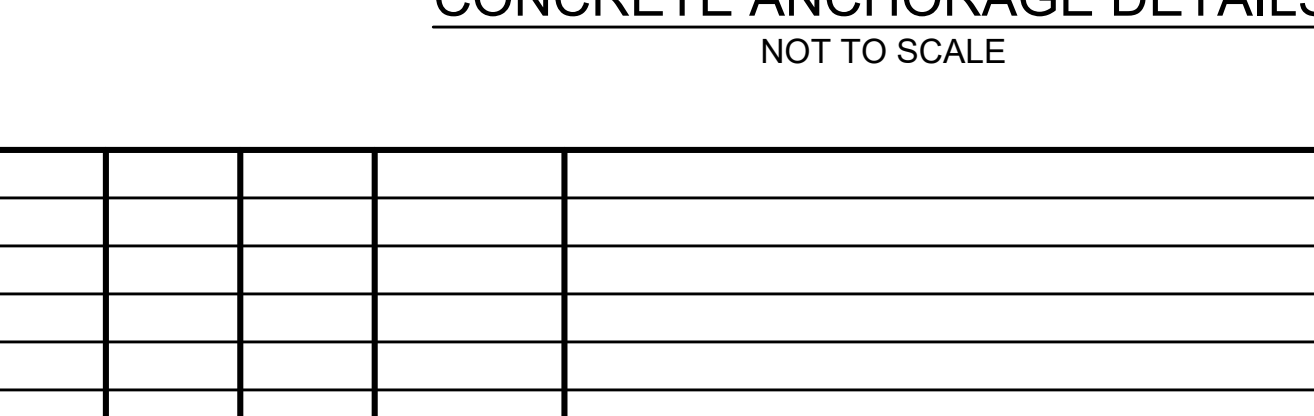
PLAN - PLUG



SECTION B-B



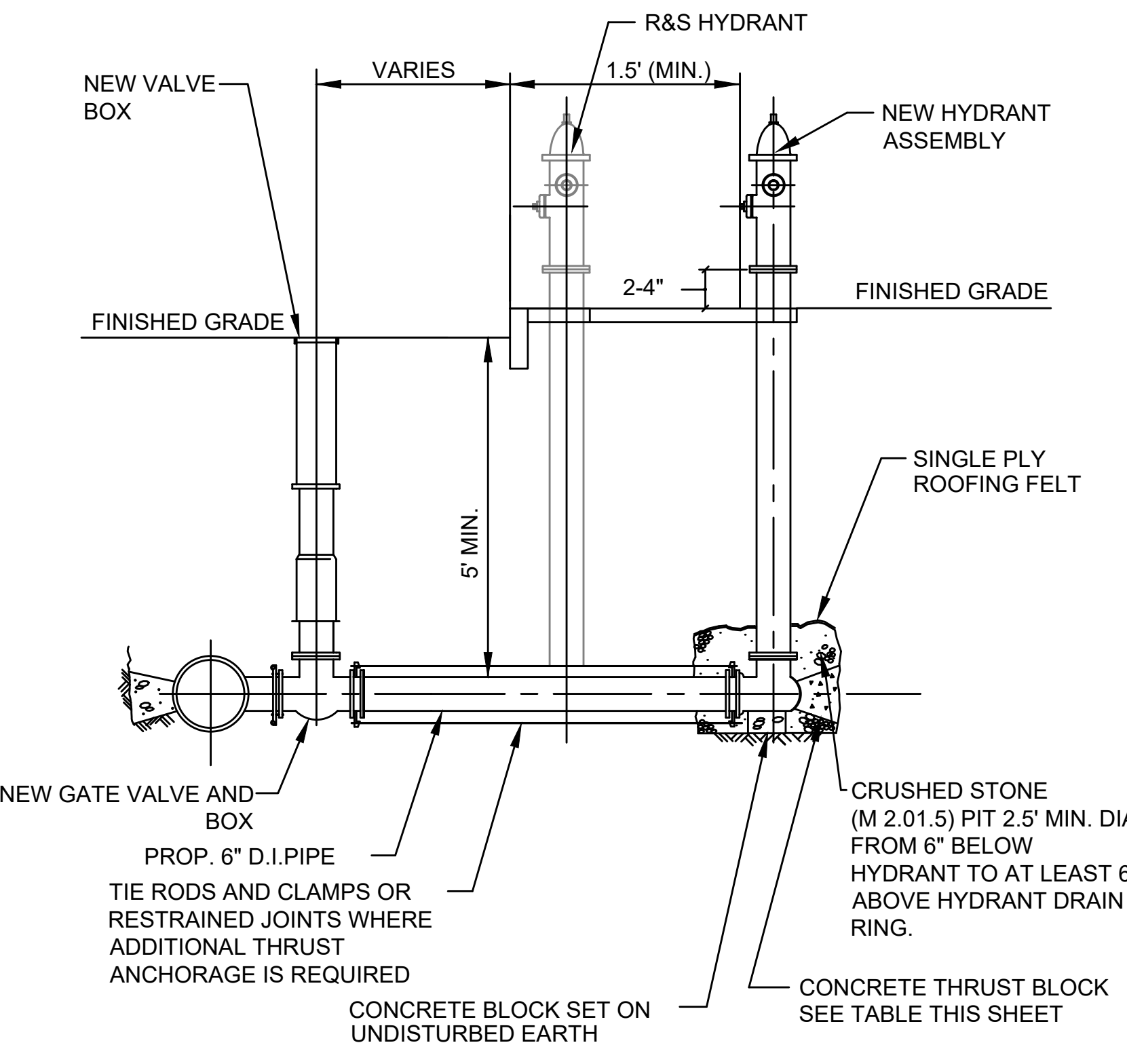
ELEVATION - VERTICAL BENDS



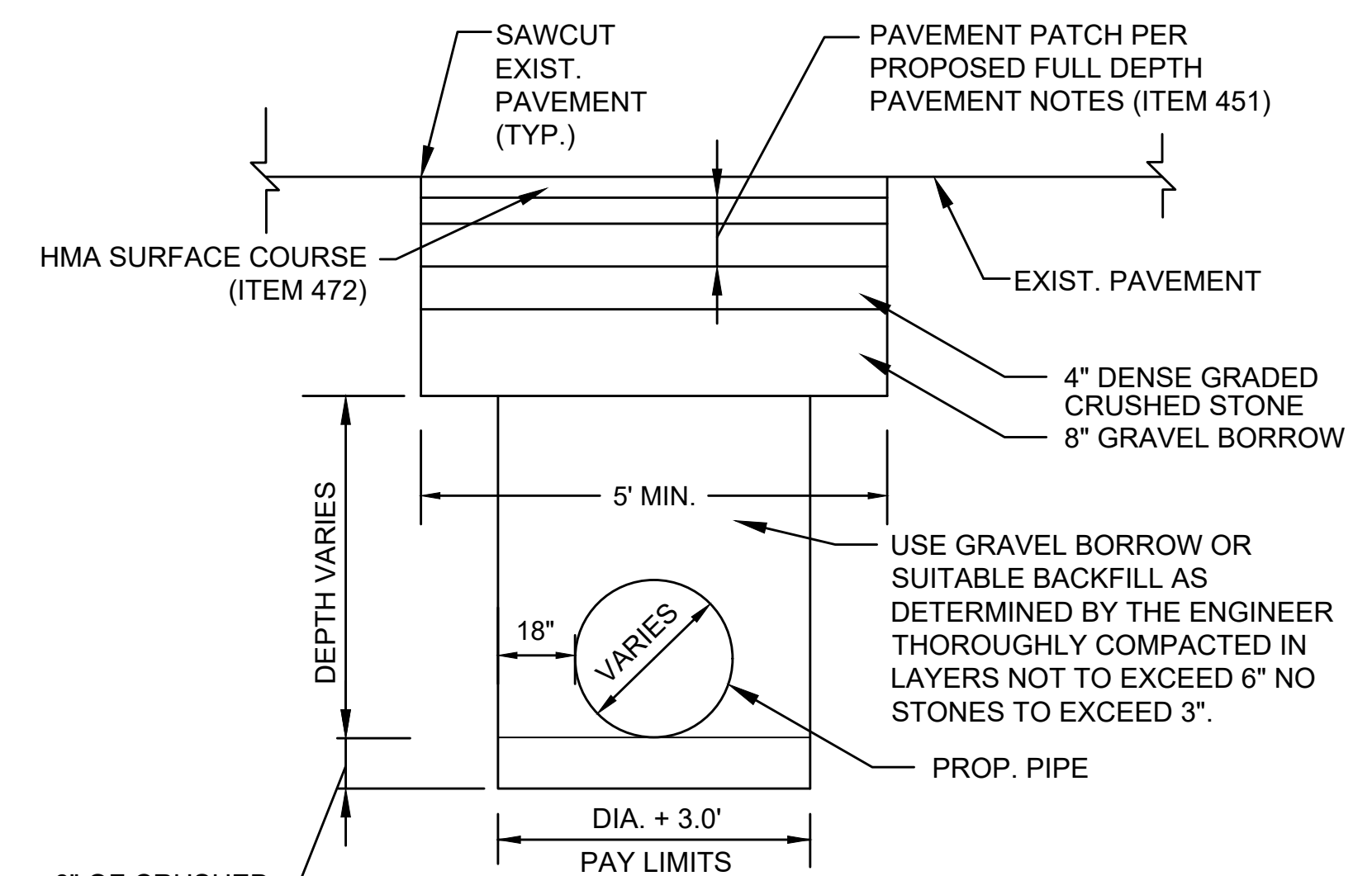
PLAN - HORIZONTAL BEND

CONCRETE ANCHORAGE THRUST BLOCK REQUIREMENTS	
FITTING	MIN. BEARING AREA (H X B)
6" - 1/8 BEND	32" x 32"
8" - 1/8 BEND	24" x 24"
8" x 6" TEE	20" x 20"
12" - 1/8 BEND	32" x 32"
12" x 12" TEE	24" x 24"
12" x 6" TEE	24" x 24"
12" x 8" TEE	32" x 32"
16" x 12" TEE	24" x 24"
HYDRANT	24" x 24"
8" PLUG	32" x 32"
150 mm PLUG	24" x 24"
8" x 6" REDUCER	24" x 24"
8" - 1/16 BEND	20" x 20"
12" x 8" REDUCER	24" x 24"

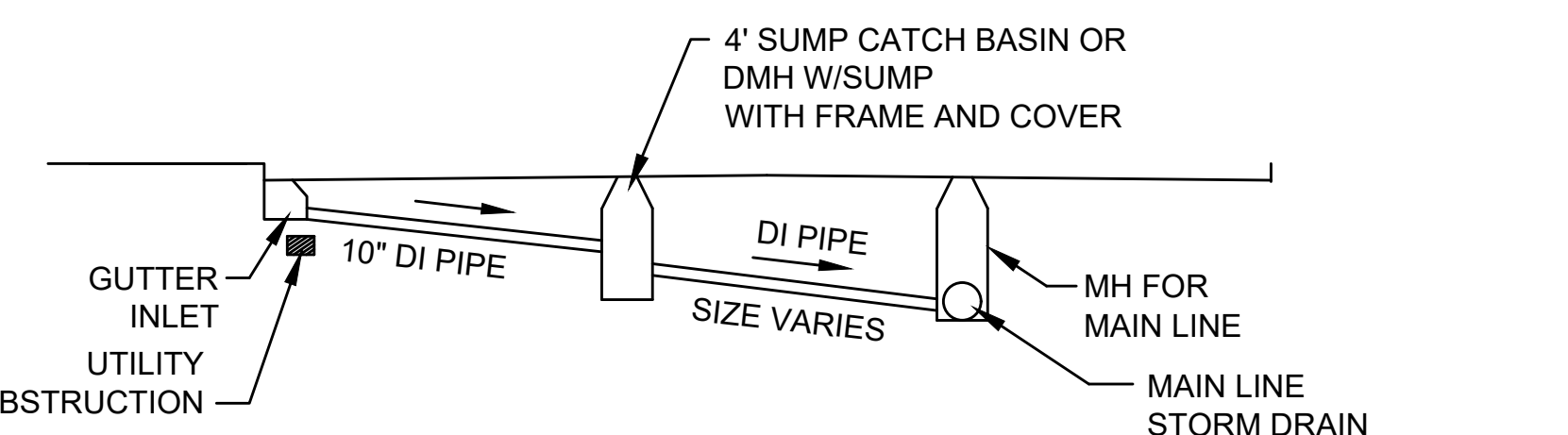
NOTE:
 ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH



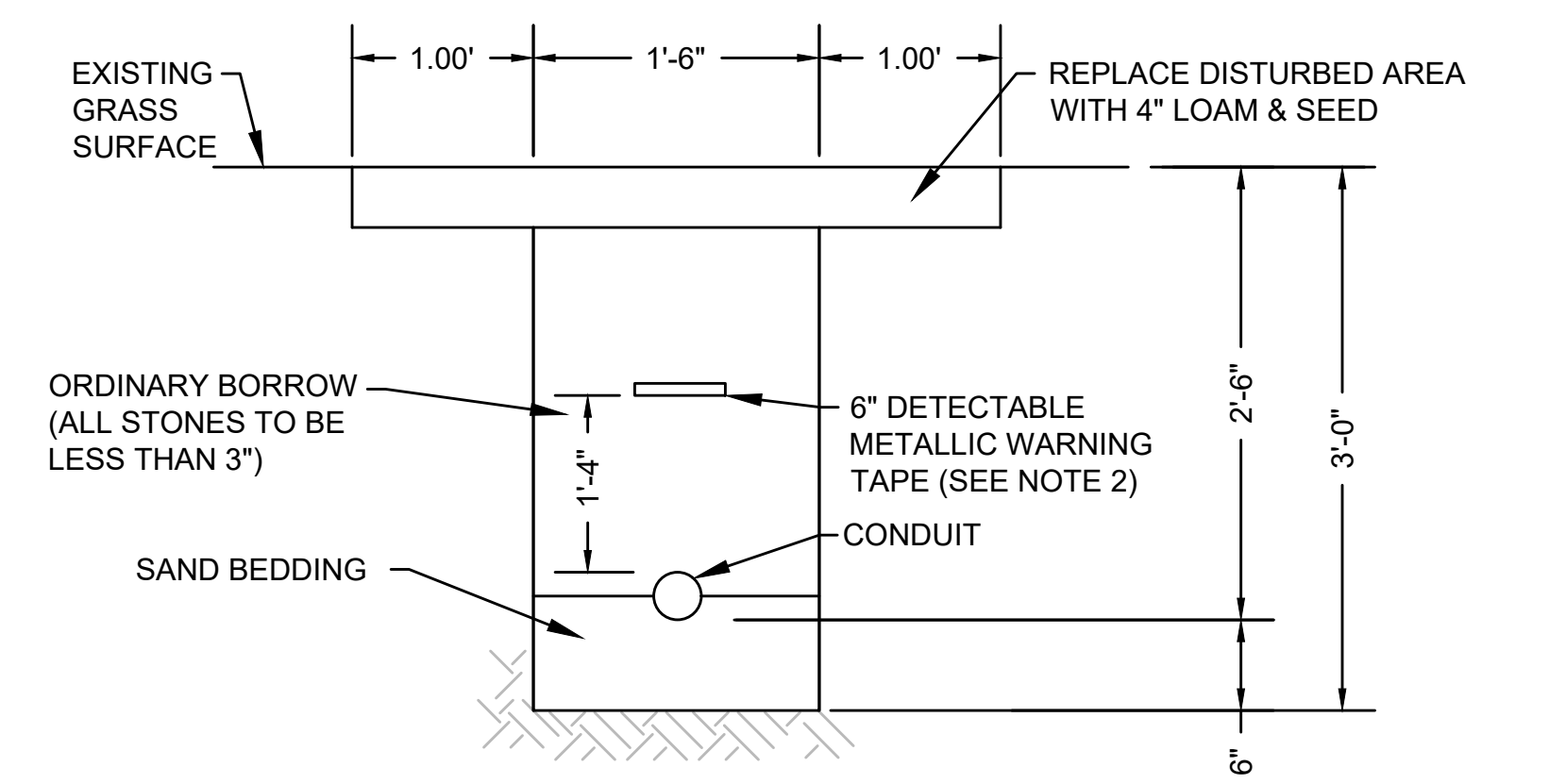
DETAIL FOR NEW HYDRANT NOT TO SCALE



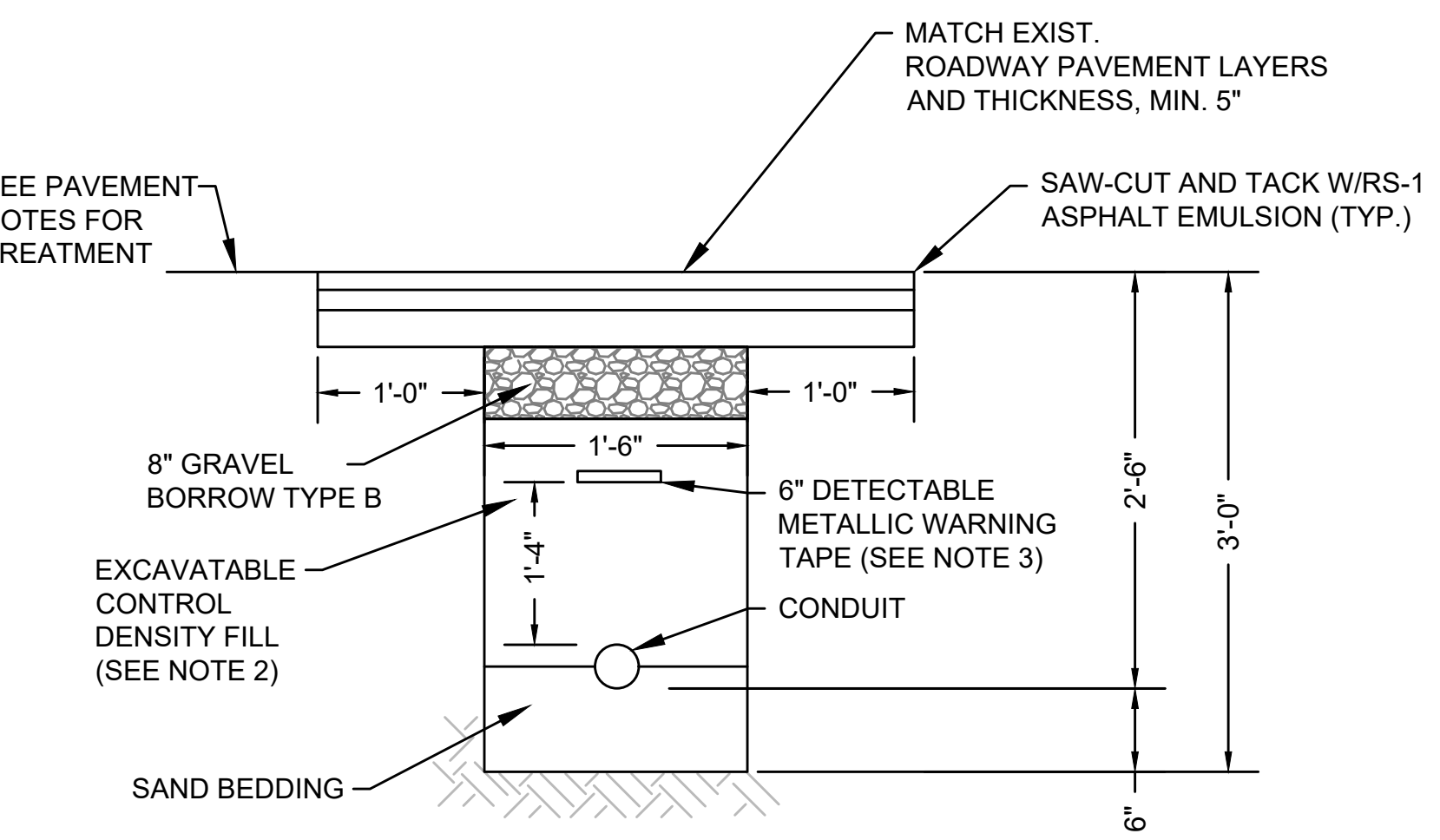
DETAIL FOR PIPE TRENCH IN MILLING AREAS NOT TO SCALE



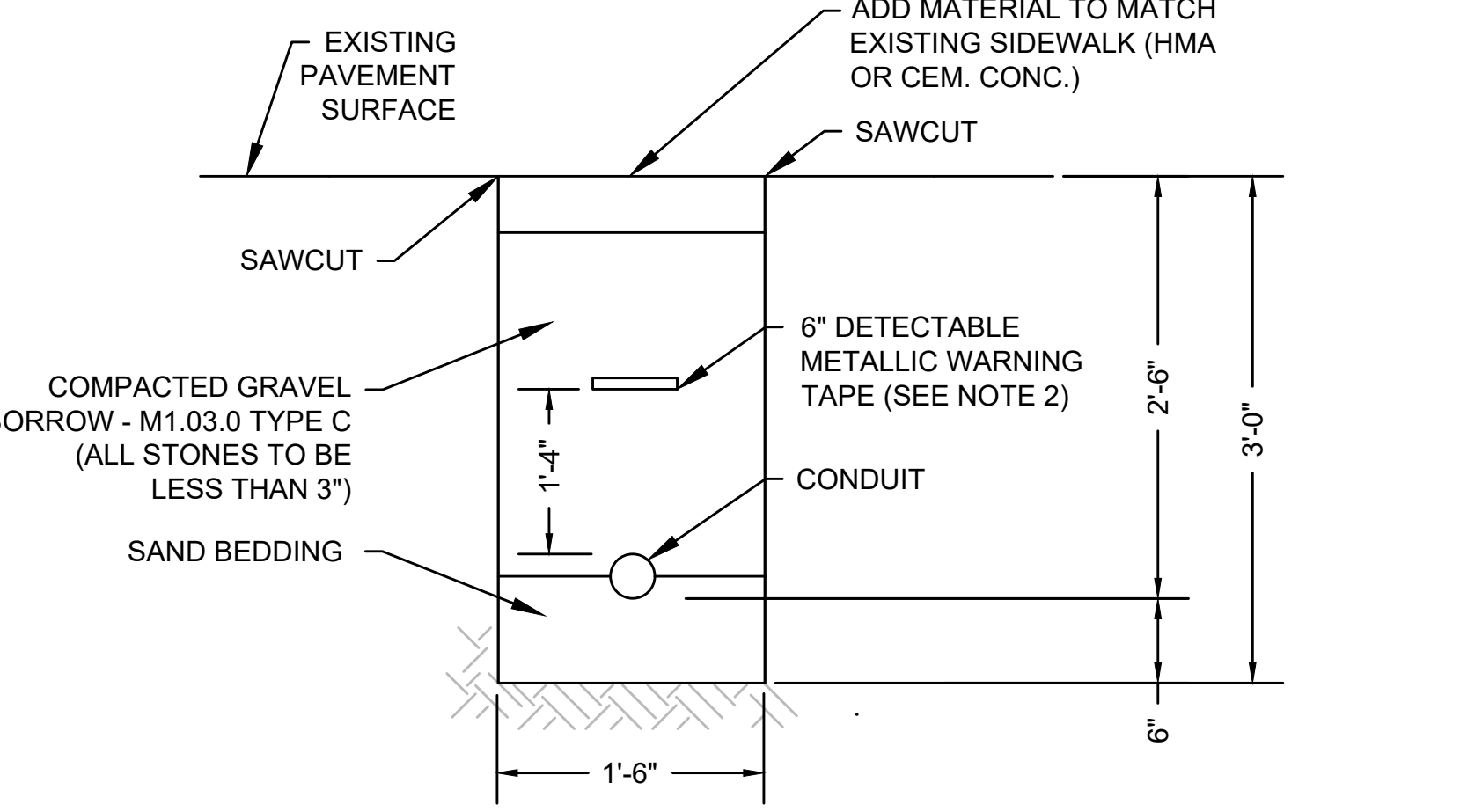
CONTINGENCY DETAIL FOR STORM DRAIN LATERAL LINES (USE ONLY IF OBSTRUCTION IS ENCOUNTERED) NOT TO SCALE



CONDUIT: UNDER GRASS AREAS NOT TO SCALE



CONDUIT: CROSSING ROADWAY NOT TO SCALE



CONDUIT: UNDER SIDEWALK AREAS NOT TO SCALE

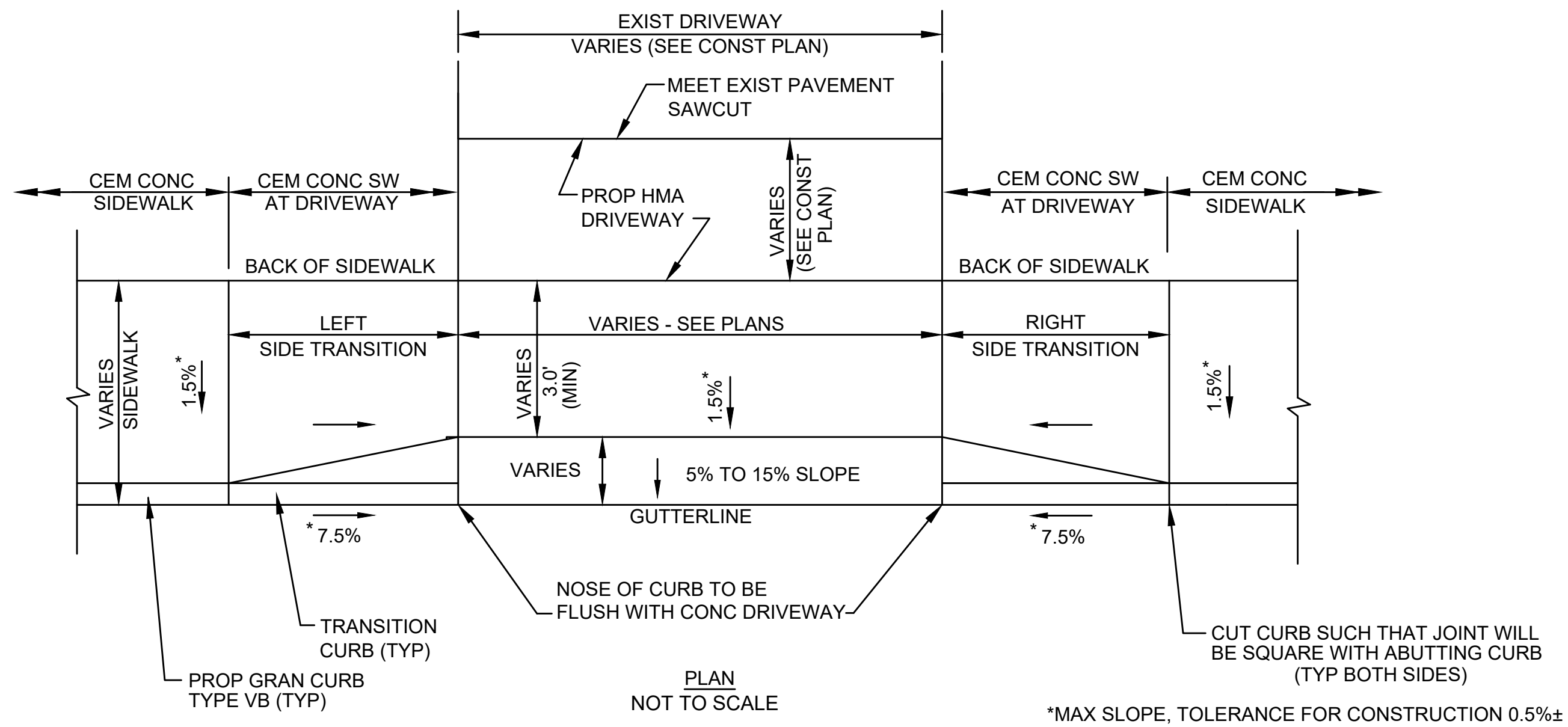
CONDUIT NOTES:
 1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE UNLESS OTHERWISE APPROVED BY MASSDOT.
 2. CONTROL DENSITY FILL SHALL MEET THE REQUIREMENTS OF SUBSECTION M4.08.0.
 3. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

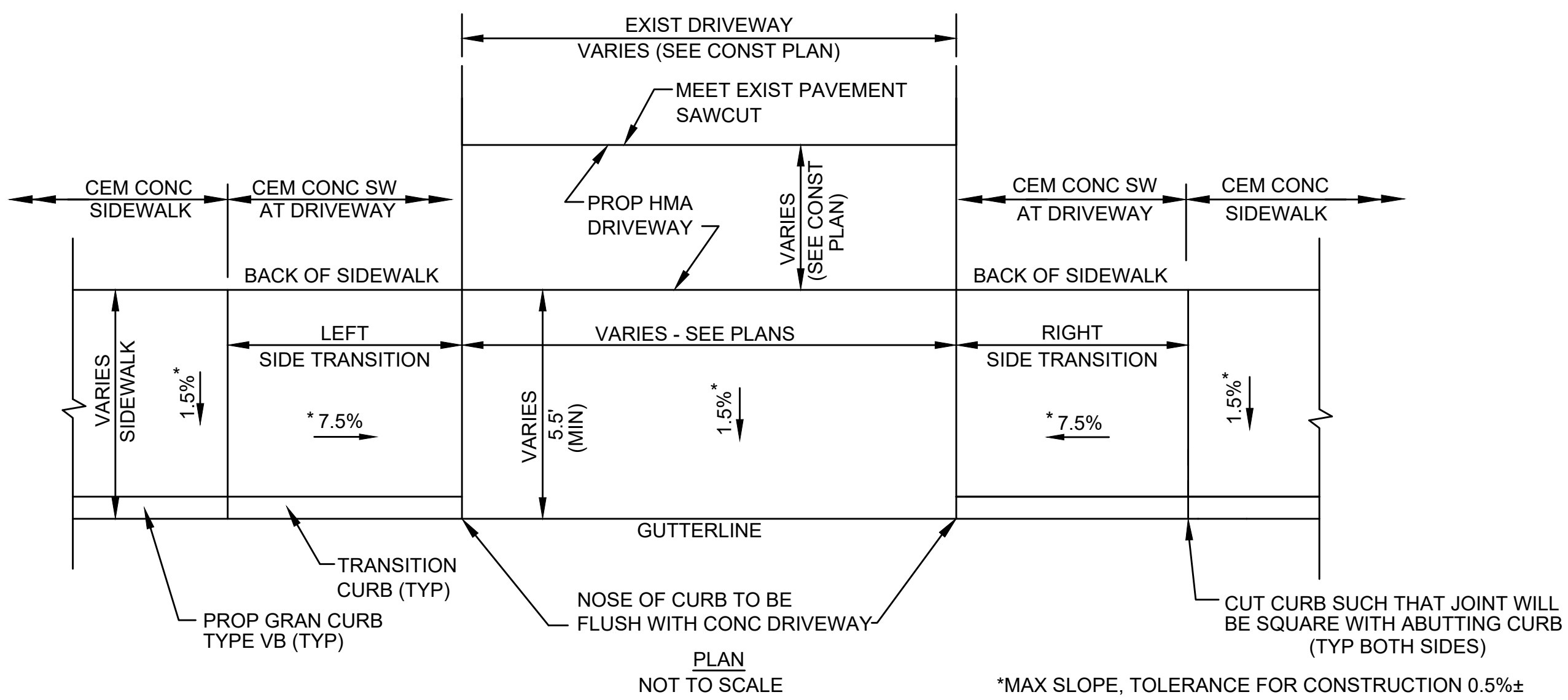
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DESIGNED BY: CT		www.BETA-Inc.com
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SUBCONSULTANT	SCALE NONE	TITLE INTERSECTION IMPROVEMENTS JEFFERSON AVE AT WILSON ST/CLOUTMAN ST CONSTRUCTION DETAILS SALEM, MASSACHUSETTS
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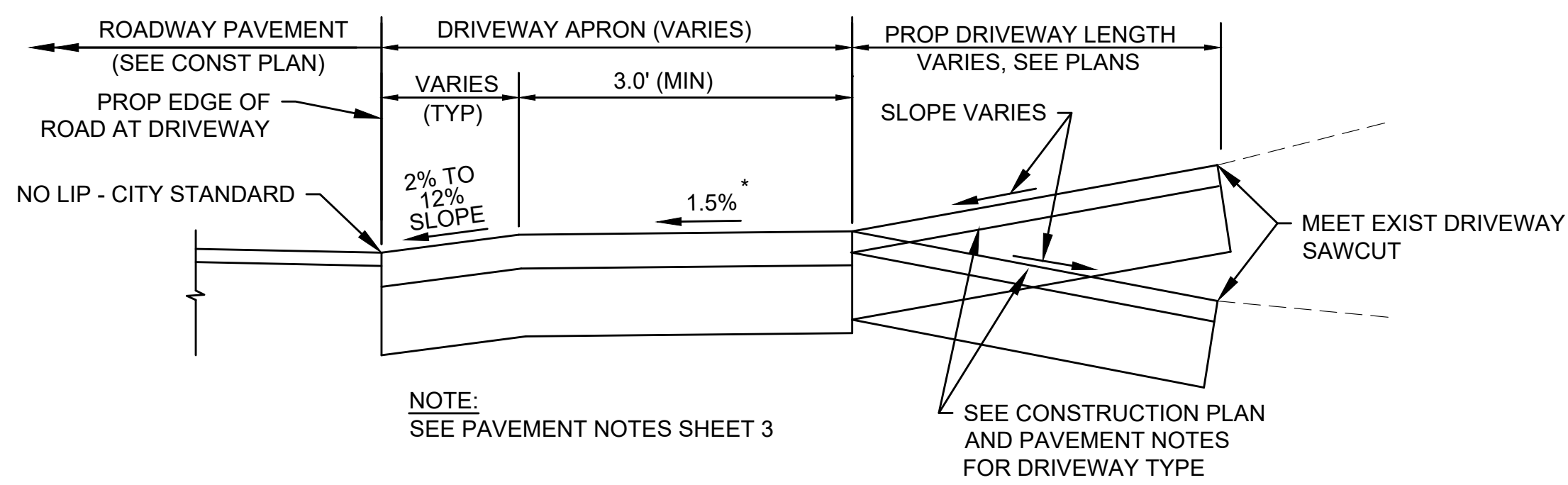
BETA JOB NO. 6965	ISSUE DATE 12/29/2023
SHEET NO. 07 of 29	



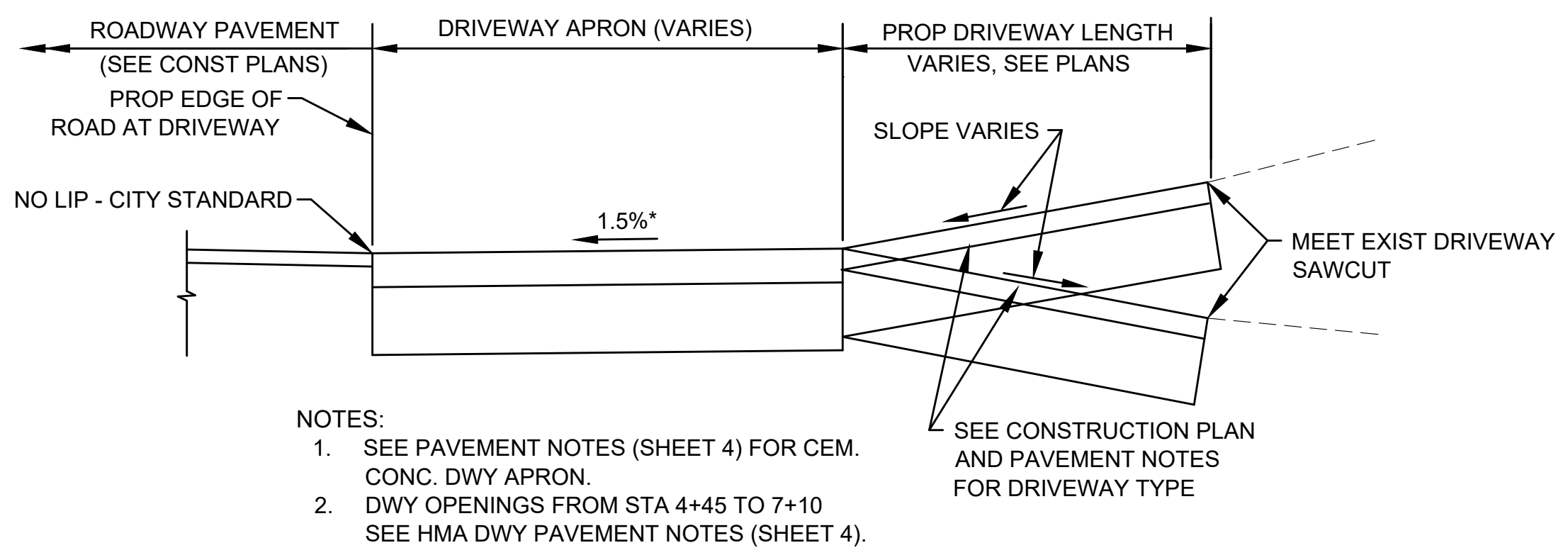
DETAIL FOR TYPICAL DRIVEWAY WITH SIDEWALK - TYPE A



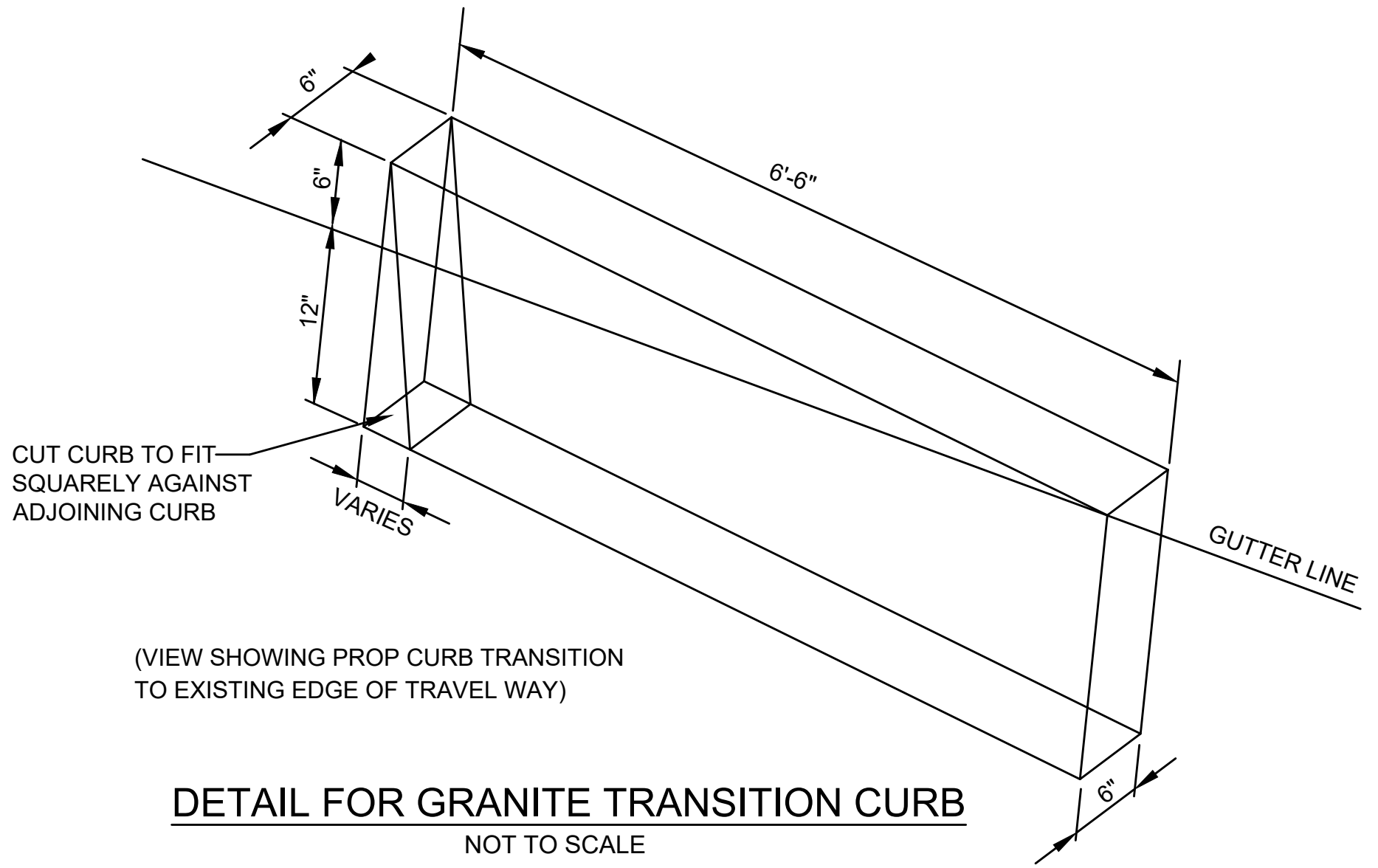
DETAIL FOR DEPRESSED DRIVEWAY WITH SIDEWALK - TYPE B



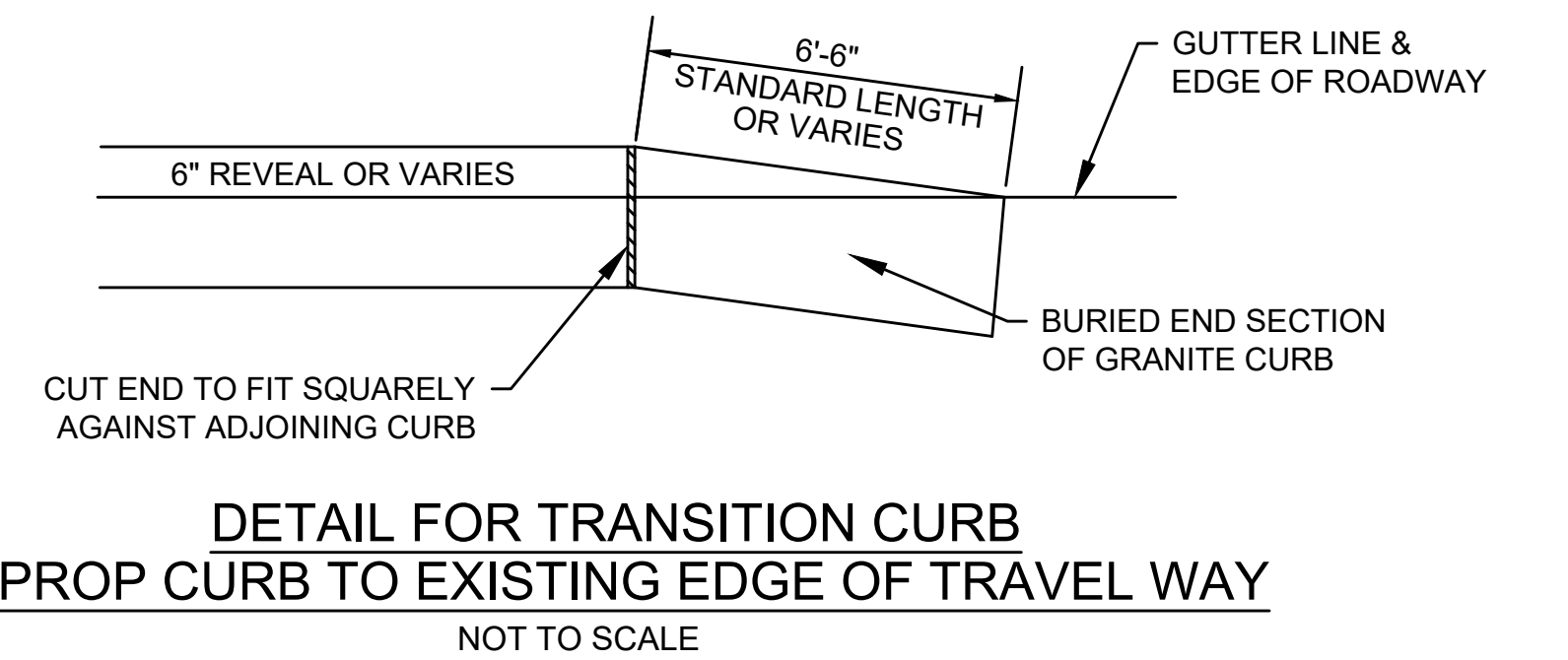
SECTION FOR TYPICAL DRIVEWAY WITH SIDEWALK - TYPE A
NOT TO SCALE



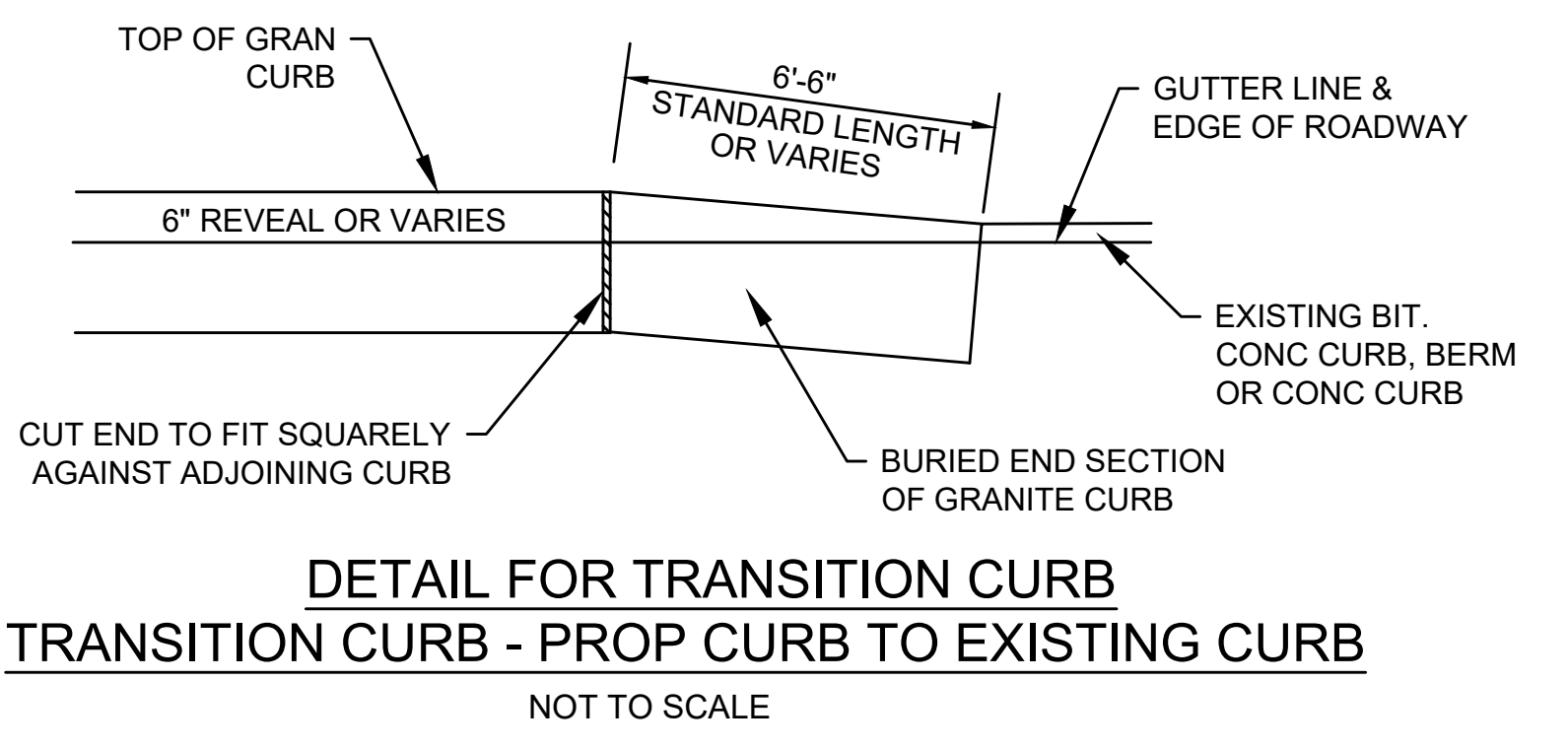
SECTION FOR DEPRESSED DRIVEWAY WITH SIDEWALK - TYPE B
NOT TO SCALE



DETAIL FOR GRANITE TRANSITION CURB
NOT TO SCALE



DETAIL FOR TRANSITION CURB
PROP CURB TO EXISTING EDGE OF TRAVEL WAY
NOT TO SCALE



DETAIL FOR TRANSITION CURB
TRANSITION CURB - PROP CURB TO EXISTING CURB
NOT TO SCALE

DRIVEWAY TYPE A									
DWY NO.	LOCATION	€ DRIVEWAY OPENING AT GUTTER		GUTTER PROFILE SLOPE	OPENING WIDTH AT GUTTER	DEPTH OF GUTTER TO BACK OF SIDEWALK	PATH OF TRAVEL WIDTH ACROSS DRIVEWAY	TRANSITION LENGTH	
		STATION	OFFSET					LEFT	RIGHT
1	JEFFERSON AVE.	11+41.30	23.0' RT	1.51%	14.43'	VARIES (8.0'-9.0')	5.5'	7.58' (7" R)	10.5' (7" R)
2	JEFFERSON AVE.	11+70.02	19.0' LT	-1.04%	11.31'	VARIES (7.6'-7.8')	5.25'	7.50' (5" R)	7.58' (7" R)
3	JEFFERSON AVE.	11+86.35	23.0' RT	2.00%	17.06'	8.6'	5.5'	7.58' (7" R)	12.83' (7" R)
4	JEFFERSON AVE.	12+47.88	19.0' LT	-2.06%	14.50'	VARIES (7.0'-8.3')	5.25'	12.83' (7" R)	5.42' (5" R)
5	JEFFERSON AVE.	12+71.76	23.0' RT	2.00%	13.41'	VARIES (8.7'-9.5')	5.5'	4.33' (4" R)	12.83' (7" R)
6	JEFFERSON AVE.	14+16.55	19.0' LT	-2.42%	28.88'	VARIES (9.0'-10.5')	6.0'	7.33' (4" R)	4.33' (4" R)
8	JEFFERSON AVE.	15+29.71	22.5' RT	2.46%	18.31'	8.0'	5.0'	11.0'	6.5'
10	WILLSON ST.	0+92.80	20.0' LT	3.71%	24.15'	VARIES (5.5'-10.0')	5.0'	6.5'	9.33' (4" R)

DRIVEWAY TYPE B									
DWY NO.	LOCATION	€ DRIVEWAY OPENING AT GUTTER		GUTTER PROFILE SLOPE	OPENING WIDTH AT GUTTER	DEPTH OF GUTTER TO BACK OF SIDEWALK	PATH OF TRAVEL WIDTH ACROSS DRIVEWAY	TRANSITION LENGTH	
		STATION	OFFSET					LEFT	RIGHT
7	JEFFERSON AVE.	14+70.13	19.0' LT	-2.2800%	35.00'	9.0'	9.0'	7.33' (4" R)	4.33' (4" R)
9	WILLSON ST.	0+85.16	18.0' RT	-3.44%	13.80'	VARIES (6.2'-7.6')	6.2'	7.0' (3" R)	3.25' (3" R)

5/7/2024 4:30 PM C:\16900\516965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILLSON-CLOUTMAN\DRAWING FILES\PLANS\SET\6965_CONSTRUCTION DETAILS.DWG (MADOT-D.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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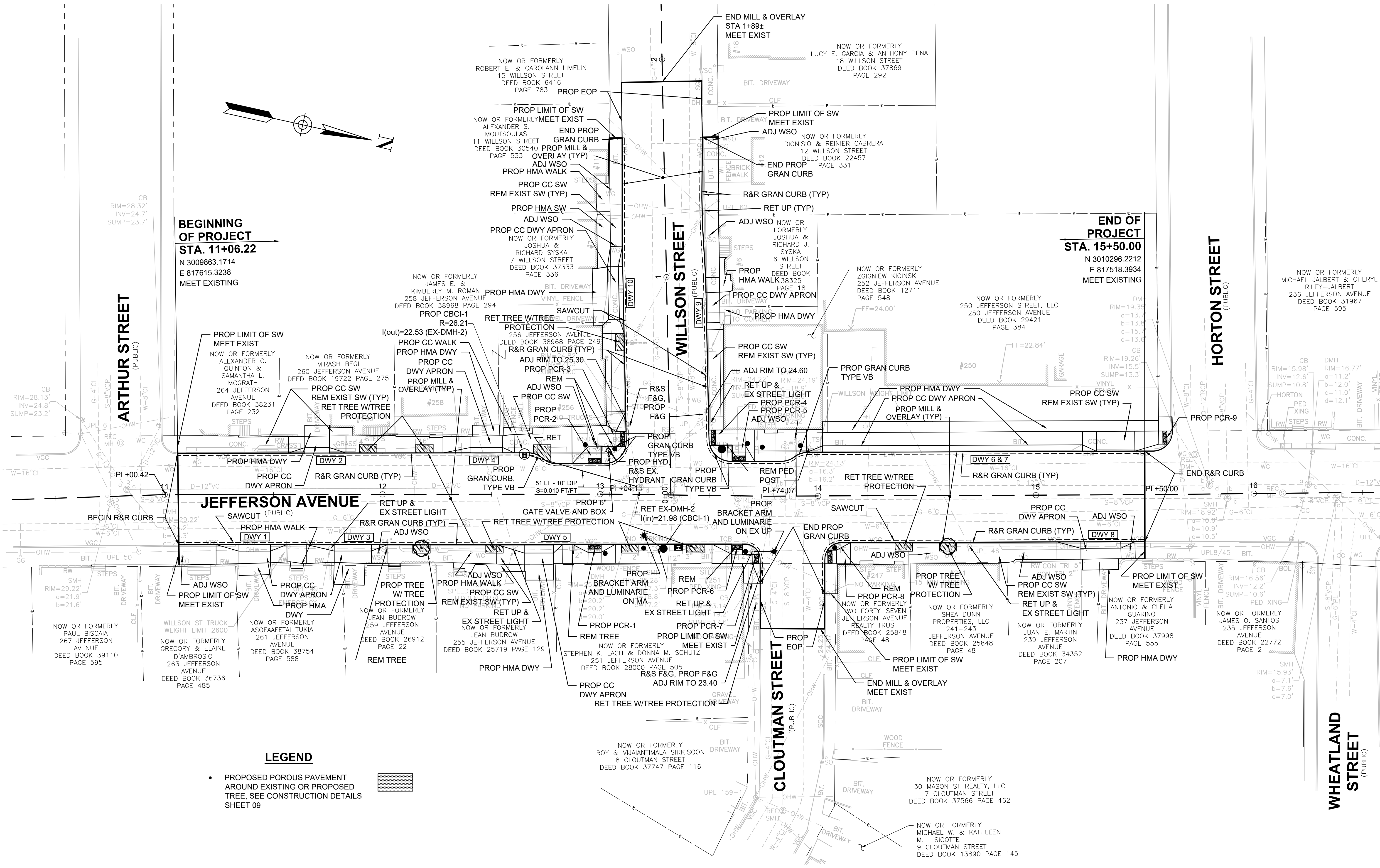


SUBCONSULTANT	SCALE	TITLE
	NONE	
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INTERSECTION IMPROVEMENTS JEFFERSON AVE AT WILSON ST/CLOUTMAN ST CONSTRUCTION DETAILS SALEM, MASSACHUSETTS	
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BETA JOB NO.	6965
ISSUE DATE	12/29/2023
SHEET NO.	08 of 29

5/7/2024 4:31 PM C:\69005\6965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILSON-CLOUTMAN\DRAWING FILES\PLANSET\6965_CONST_PLAN.DWG (MADOT-D.STB)



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 N 3009863.1714
 E 817615.3238
 MEET EXISTING

END OF PROJECT
STA. 15+50.00
 N 3010296.2212
 E 817518.3934
 MEET EXISTING

LEGEND

- PROPOSED POROUS PAVEMENT AROUND EXISTING OR PROPOSED TREE, SEE CONSTRUCTION DETAILS SHEET 09

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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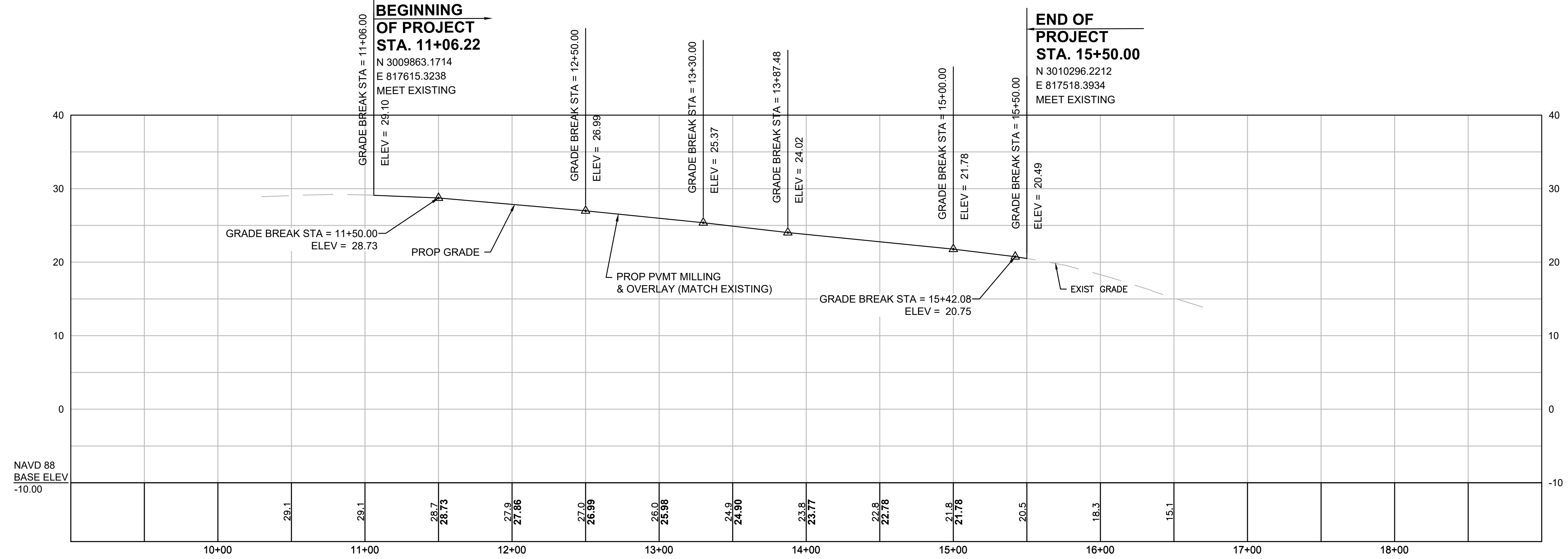


SUBCONSULTANT	SCALE
	UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

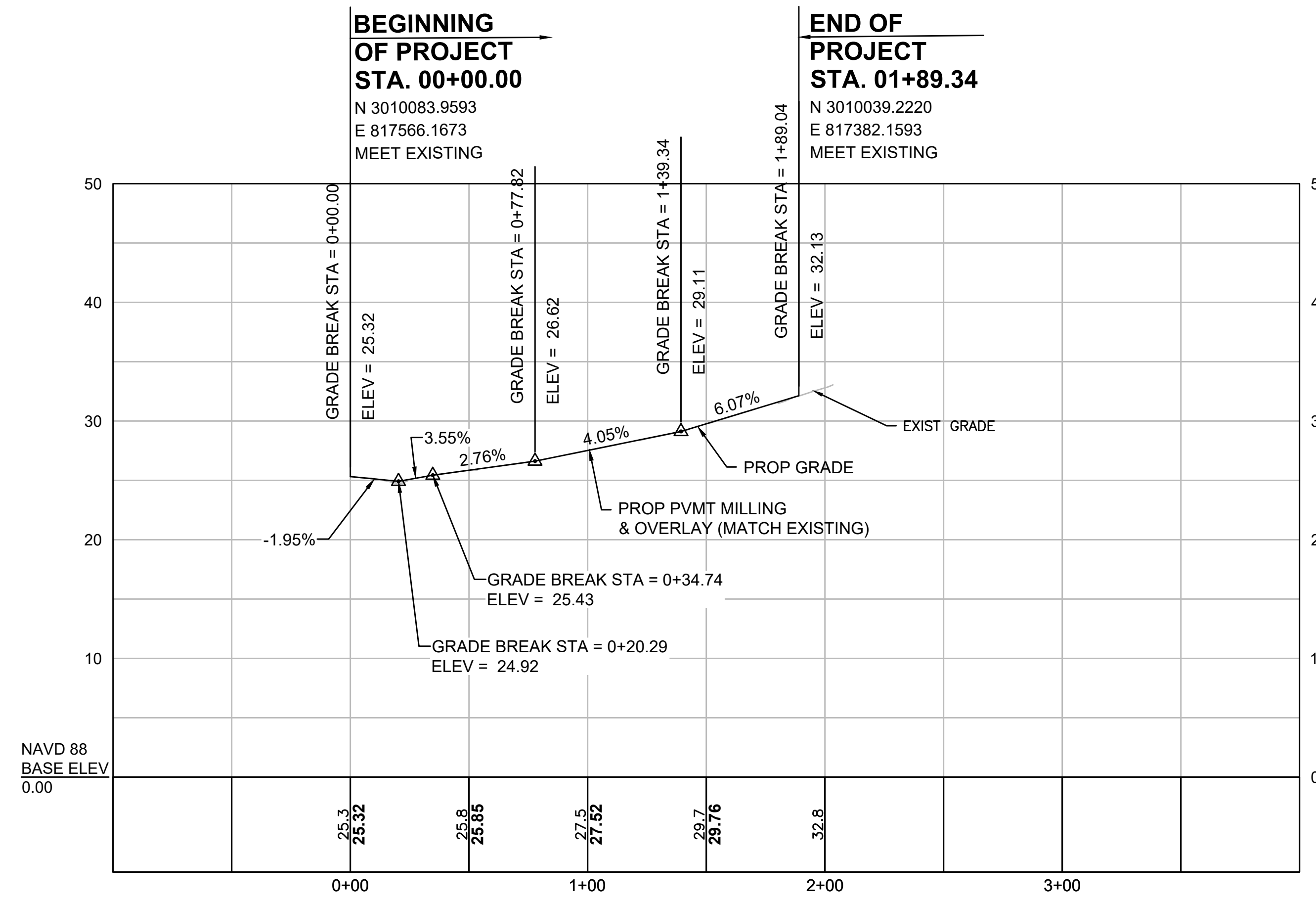
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BETA JOB NO.	6965
ISSUE DATE	12/29/2023
SHEET NO.	10 of 29

JEFFERSON AVENUE



WILLSON STREET



5/7/2024 4:31 PM C:\6000\516965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILLSON-CLOUTMAN\DRAWING FILES\PLANSET\6965_PROFILE_PLAN.DWG (MADOT-D.STB)

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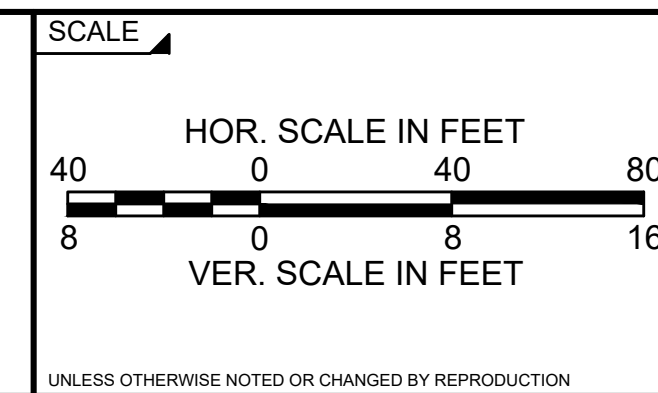
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SUBCONSULTANT



TITLE

INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
PROFILE
SALEM, MASSACHUSETTS

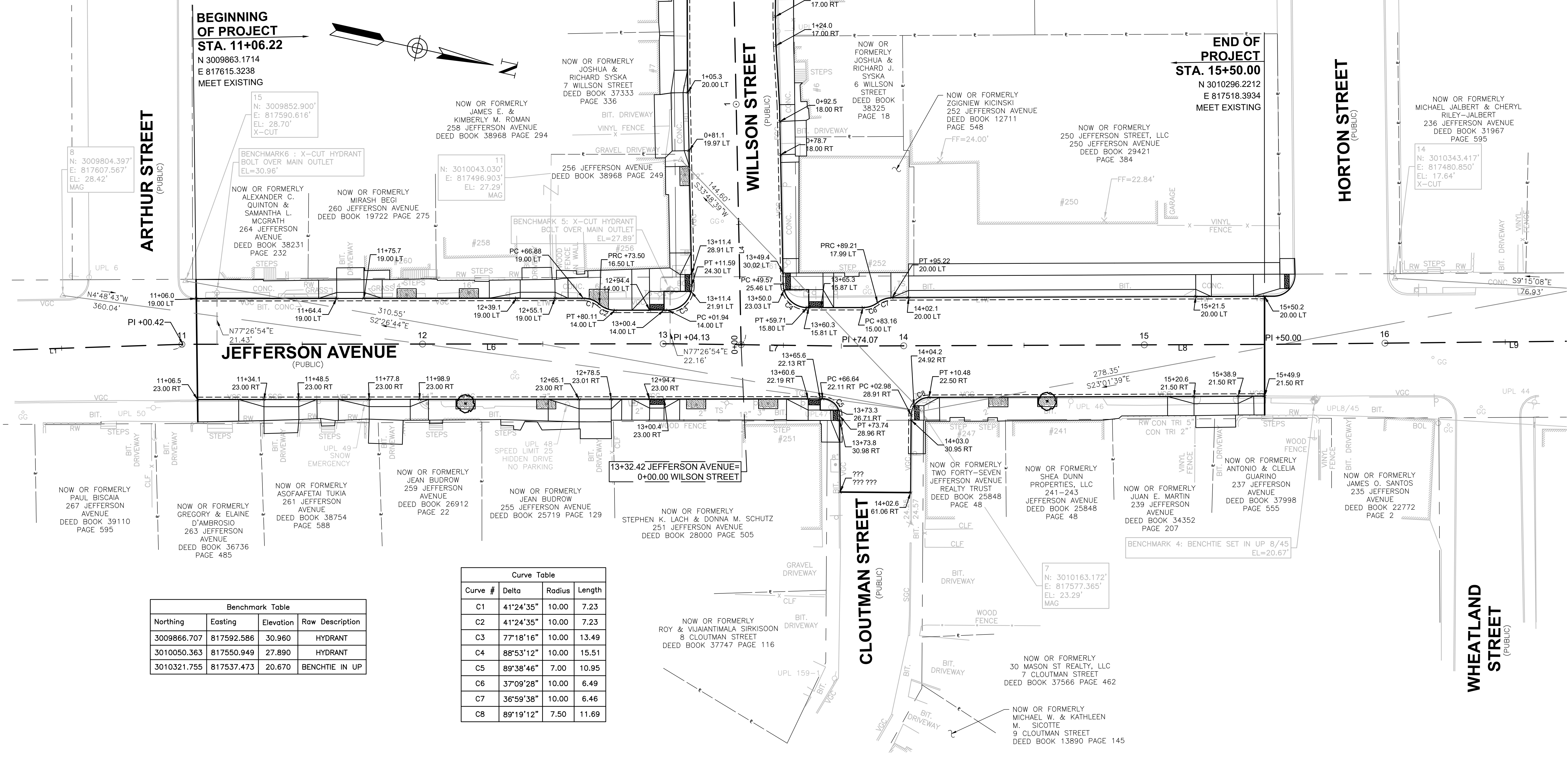
BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **11 of 29**

JEFFERSON AVENUE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	10+00.00	3009760.2466	817641.5450		N14°23'35"W 100.42'	11+00.42	3009857.517	817616.583
L6	11+00.42	3009857.5172	817616.5827		N12°33'06"W 203.71'	13+04.13	3010056.360	817572.312
L7	13+04.13	3010056.3600	817572.3120		N11°43'57"W 69.94'	13+74.07	3010124.836	817558.091
L8	13+74.07	3010124.8357	817558.0910		N12°42'56"W 175.93'	15+50.00	3010296.450	817519.367
L9	15+50.00	3010296.4502	817519.3667		N13°05'51"W 150.01'	17+00.01	3010442.561	817485.372



WILSON STREET CONSTRUCTION BASELINE DATA									
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING	
L5	2+04.13	3010035.8296	817368.2058		S76°33'48"W 40.88'	2+45.02	3010026.330	817328.442	
L4	0+00.00	3010084.0549	817566.5604		S76°20'06"W 204.13'	2+04.13	3010035.830	817368.206	

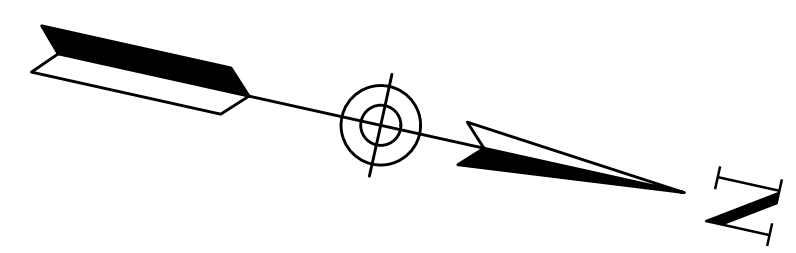


Benchmark Table			
Northing	Easting	Elevation	Raw Description
3009866.707	817592.586	30.960	HYDRANT
3010050.363	817550.949	27.890	HYDRANT
3010321.755	817537.473	20.670	BENCHTIE IN UP

Curve Table			
Curve #	Delta	Radius	Length
C1	41°24'35"	10.00	7.23
C2	41°24'35"	10.00	7.23
C3	77°18'16"	10.00	13.49
C4	88°53'12"	10.00	15.51
C5	89°38'46"	7.00	10.95
C6	37°09'28"	10.00	6.49
C7	36°59'38"	10.00	6.46
C8	89°19'12"	7.50	11.69

5/7/2024 4:32 PM C:\16000\516965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILSON-CLOUTMAN\DRAWING FILES\PLANSET\6965_TIE PLAN.DWG (MADOT-D.STB)

DRAWN BY: CM DESIGNED BY: CT CHECKED BY: CR/DF	REGISTERED PROFESSIONAL  www.BETA-inc.com	PREPARED BY: SUBCONSULTANT	SCALE:  SCALE IN FEET: 1"=20' <small>UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION</small>	TITLE: INTERSECTION IMPROVEMENTS JEFFERSON AVE AT WILSON ST/CLOUTMAN ST TIE PLAN SALEM, MASSACHUSETTS	BETA JOB NO. 6965 ISSUE DATE 12/29/2023 SHEET NO. 12 of 29
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BEGINNING OF PROJECT
STA. 11+06.22
 N 3009863.1714
 E 817615.3238
 MEET EXISTING

END OF PROJECT
STA. 15+50.00
 N 3010296.2212
 E 817518.3934
 MEET EXISTING

ARTHUR STREET
 (PUBLIC)

WILSON STREET
 (PUBLIC)

HORTON STREET
 (PUBLIC)

JEFFERSON AVENUE
 (PUBLIC)

CLOUTMAN STREET
 (PUBLIC)

WHEATLAND STREET
 (PUBLIC)

LEGEND & NOTES

- PROP ROADWAY GRADE XXX.XX
- MEET EXISTING GRADE (XXX.XX)
- 1" LEVELING COURSE [diagonal hatching]
- 2" LEVELING COURSE [cross-hatching]
- VARIABLE DEPTH LEVELING COURSE [stippled]
- X" R = CURB REVEAL
- ASSUME 6" CURB REVEAL UNLESS OTHERWISE NOTED

5/7/2024 4:32 PM C:\16000\516965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILSON-CLOUTMAN\DRAWING FILES\PLANSET\6965_GRAIDING PLAN DWG (MADOT-D-STB)

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REGISTERED PROFESSIONAL PREPARED BY

SUBCONSULTANT

SCALE

SCALE IN FEET: 1"=20'

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INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST

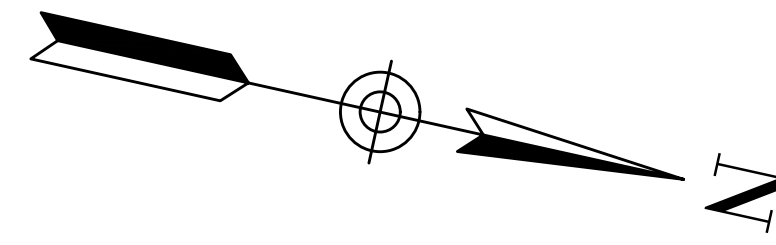
GRADING PLAN

SALEM, MASSACHUSETTS

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **13 of 29**



LIMIT OF PAVEMENT MARKINGS MEET EXISTING STA. 1+89±

LIMIT OF PAVEMENT MARKINGS MEET EXISTING STA. 11+06±

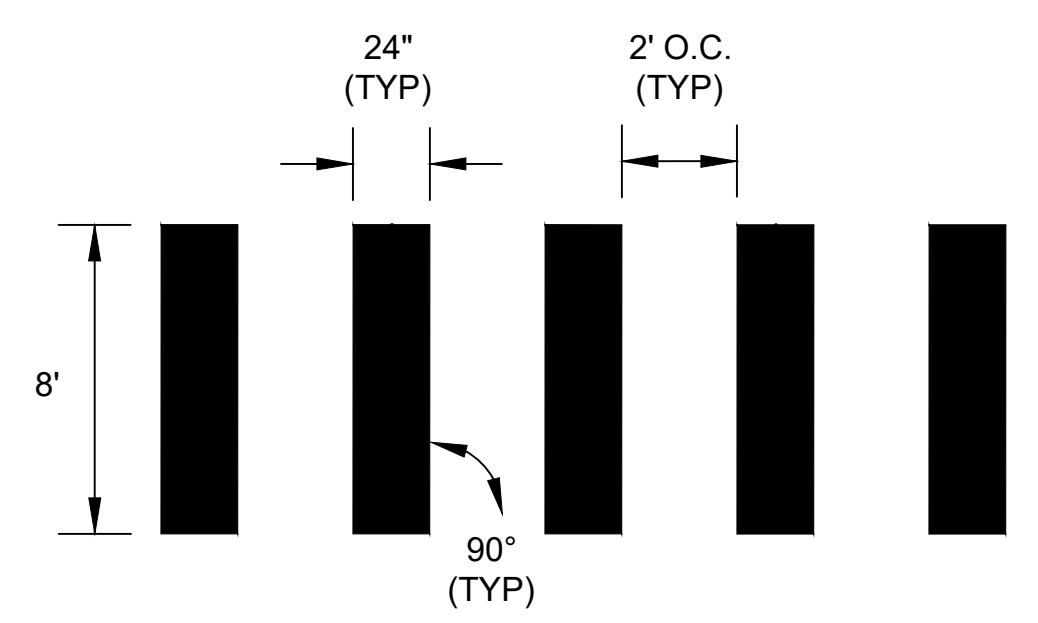
HORTON STREET

WILSON STREET

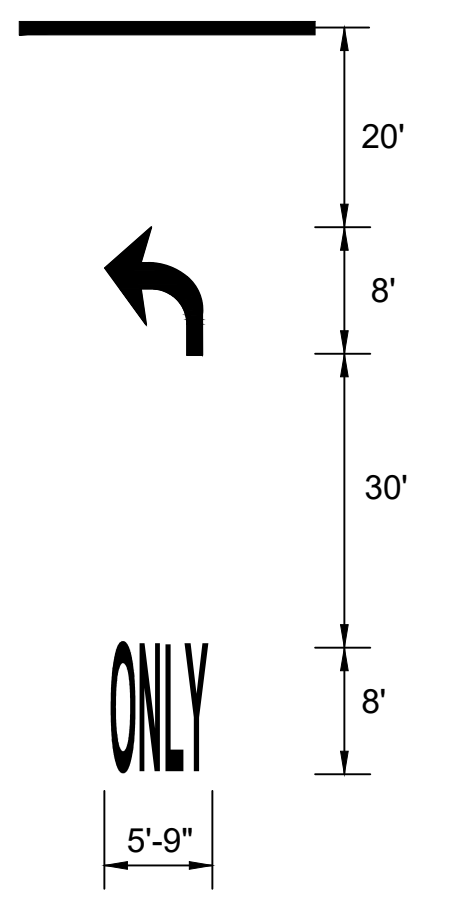
CLOUTMAN STREET

JEFFERSON AVENUE

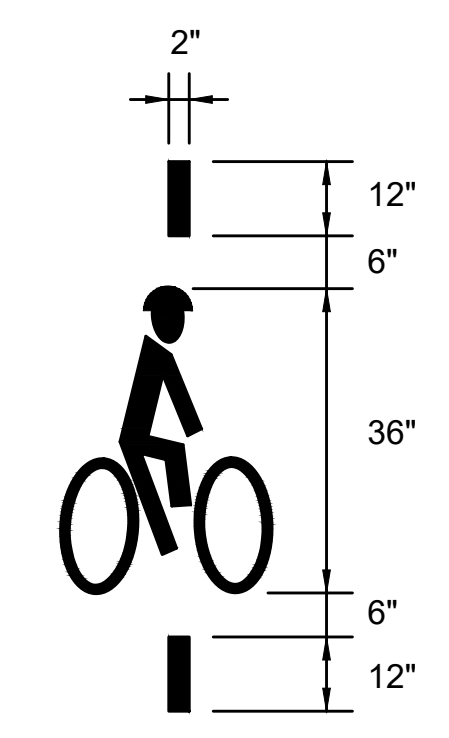
JEFFERSON AVENUE



CROSSWALK DETAIL
NOT TO SCALE



ARROW & "ONLY" MARKING DETAIL
NOT TO SCALE



TYPICAL BICYCLE DETECTOR PAVEMENT MARKING DETAIL
NOT TO SCALE

PAVEMENT MARKING & SIGN NOTES

1. ALL EXISTING SIGNS AND SIGN POSTS WITHIN THE PROJECT LIMITS SHALL BE R&D UNLESS OTHERWISE NOTED ON PLANS.
2. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
3. ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY AN APPROVED METHOD.
4. ALL PROPOSED SIGN POSTS SHALL BE P-5 TYPE (TELESCOPIC POST).
5. PROPOSED PAVEMENT MARKINGS (LEGENDS & ARROWS) SHALL BE INSTALLED IN ACCORDANCE WITH THE MUTCD & MASSDOT - 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED.
6. UNLESS OTHERWISE PROVIDED FOR IN THE MUTCD, ALL SIGNS SHOULD BE 90° TO THE CURB AND FACING THE FLOW OF TRAFFIC. ALL R7 SIGNS SHALL BE MOUNTED AN AN ANGLE OF 45° TO THE CURB AND FACING THE FLOW OF TRAFFIC.
7. STREET NAME SIGNS SHALL BE MOUNTED PARALLEL WITH THE STREET.
8. ALL R&R SIGNS SHALL BE MOUNTED ON NEW POSTS.
9. SIGNS TO BE MOUNTED NEAR THE CURB LINE IN AREAS WITHOUT SIDEWALK SHALL BE SET BACK 2' FROM THE EDGE OF THE SIGN PANEL TO THE CURB LINE. NO SIGN SHALL OVERHANG THE CURB LINE.
10. ALL SIGNS SHALL BE MOUNTED TO PROVIDE A 7' MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE SIGN AND FINISHED GRADE.

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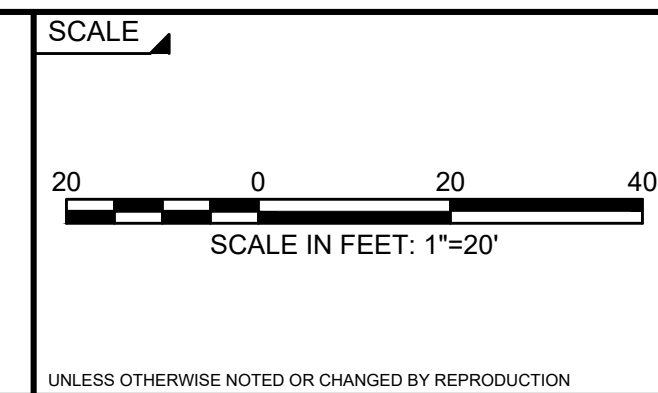
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INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
SIGN AND PAVEMENT MARKINGS PLAN
SALEM, MASSACHUSETTS

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. 14 of 29

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW		BACK-GROUND	LEGEND	BORDER			
R2-1(25)	24 in	30 in		SEE 2009 MUTCD STANDARDS	1	WHITE	BLACK	BLACK	P-5 1	5.00	5.00		
R3-8LR	30 in	30 in			1	WHITE	BLACK	BLACK	P-5 1	6.25	6.25		
R3-7L	30 in	30 in			1	WHITE	BLACK	BLACK	P-5 1	6.25	6.25		
R5-2	24 in	24 in			1	WHITE	BLACK / RED	-	P-5 1	4.0	4.0		
R7-5-15 MIN	12 in	18 in			1	WHITE	GREEN	GREEN	P-5 1	1.5	1.5		
R7-11	12 in	18 in			3	WHITE	RED	RED	P-5 3	1.5	4.5		
R8-3	12 in	18 in			1	WHITE	RED	RED	P-5 1	1.5	1.5		
R10-11A	30 in	36 in			3	WHITE	BLACK	BLACK	1 ON SIGNAL POST 2 ON MAST ARM	7.5	22.5		
MA-R10-12A	30 in	36 in			1	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	7.5	7.5		
W3-3	30 in	30 in			2	YELLOW	BLACK	BLACK	P-5 2	6.25	12.50		

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	DIMENSIONS (in)		NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING		BACK-GROUND	LEGEND	BORDER			
MA-D3-1A	48 in	12 in		6D,4D	3.0 3.0	2	GREEN	WHITE	WHITE	P-5 1	-	-
MA-D3-1B	42 in	12 in		6D,4D	3.0 3.0	2	GREEN	WHITE	WHITE	P-5 1	-	-
MA-D3-1C	48 in	12 in		6D,4D	3.0 3.0	4	GREEN	WHITE	WHITE	2 MOUNT W/ MA-D3-1A 2 MOUNT W/ MA-D3-1B	-	-

NOTES:

- HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING CONFORMING TO SECTION M9:30.0, TYPE III OR IV, OF THE MASSDOT STANDARD SPECIFICATIONS SHALL BE USED FOR ALL SIGNS.
- ALL P5 POSTS SHALL BE TELESCOPIC, RECTANGULAR TYPE POSTS, CONFORMING TO THE DIMENSIONS AND REQUIREMENTS OF THE MASSDOT "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS" (LATEST EDITION).
- SEE THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" FOR THE LATEST SPECIFICATIONS ON TEXT, DIMENSIONS AND COLOR. (ALSO SEE SECTION M9.30.0 TYPE III MASSDOT STANDARD SPECIFICATION, THE "MASSACHUSETTS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," AND "GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS" (LATEST EDITIONS) BY THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION).
- ALL STREET NAME SIGNS SHALL BE PAINTED ONE SIDE AND SHALL USE TWO SIGNS MOUNTED BACK TO BACK WITH BOLT-THROUGH METHOD.

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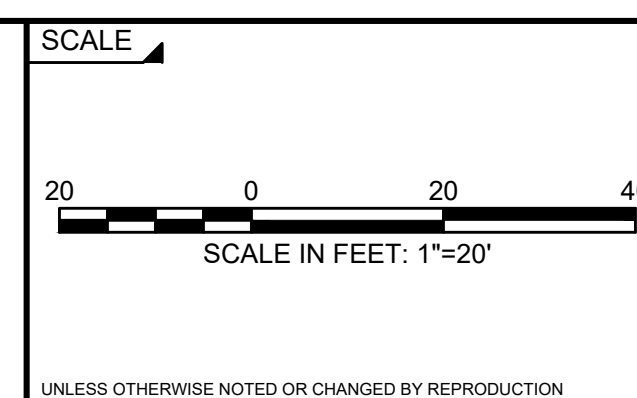
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**INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
TRAFFIC SIGN SUMMARY
SALEM, MASSACHUSETTS**

BETA JOB NO. 6965

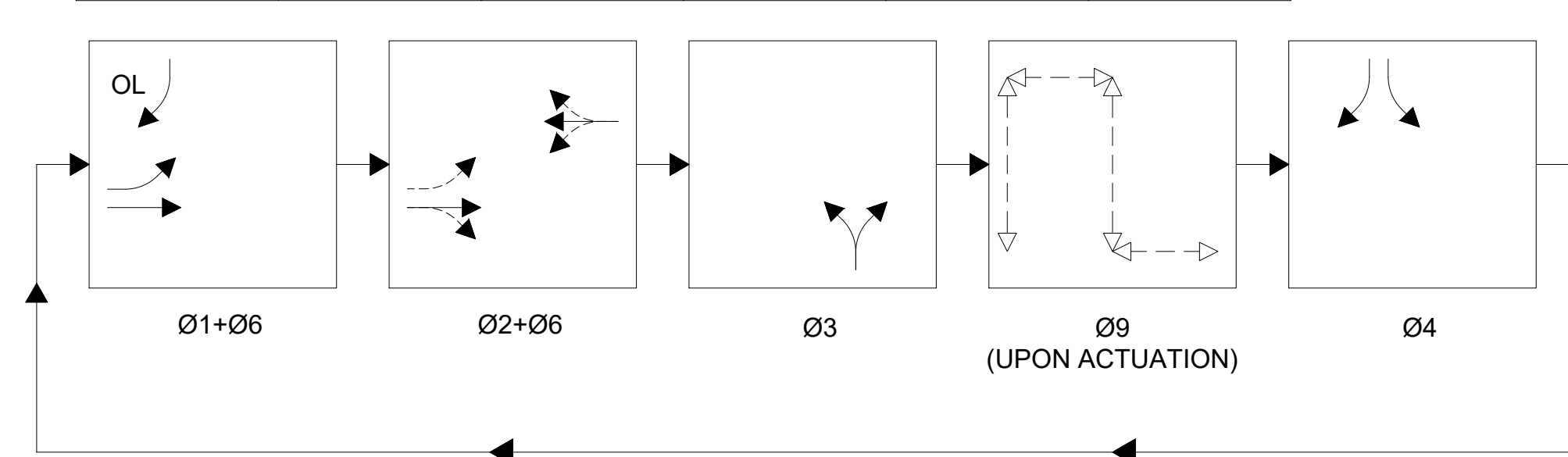
ISSUE DATE 12/29/2023

SHEET NO. **15 of 29**

SIGNAL PHASING AND TIMING CHART

SEQUENCE AND TIMING CHART FOR FULLY ACTUATED SIGNAL CONTROL (ISOLATED)			Ø1		Ø2		Ø3		Ø4		Ø6		Ø9		FLASH OPER.							
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
JEFFERSON AVENUE	SB	A,B	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
JEFFERSON AVENUE	NB	D,E	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	FY
JEFFERSON AVENUE	NB	C	+G	+Y	+R	+R	+R	+R	+R	+R	+R	+R	+R	+R	+FY	+Y	+R	+R	+R	+R	+R	+FR
CLOUTMAN STREET	WB	F,G	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	FR
WILLSON STREET	EB	H	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	FR
WILLSON STREET	EB	J	+R/G	+R/Y	+R/R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	FR
PEDESTRIAN	ALL	P1-P8	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW		OFF	

TIMING IN SECONDS		Ø1		Ø2		Ø3		Ø4		Ø6		Ø9		Ø4								
MINIMUM GREEN		5		10		5		5		10												
VEHICLE EXTENSION		3		3		3		3		3												
MAXIMUM GREEN I (7:00 AM - 9:00 AM MON - FRI)		10		40		10		10		40												
MAXIMUM GREEN II (ALL OTHER TIMES)		12		79		10		12		79												
CLEARANCE INTERVAL			3	3		3	3		3	5		3	4		3	3						
WALK/CLEARANCE/BUFFER INTERVAL															7	15	4					
DETECTOR MEMORY			NON-LOCK		NON-LOCK		NON-LOCK		NON-LOCK		NON-LOCK		NON-LOCK		LOCK							
RECALL SWITCH			OFF		SOFT		OFF		OFF		SOFT		OFF									

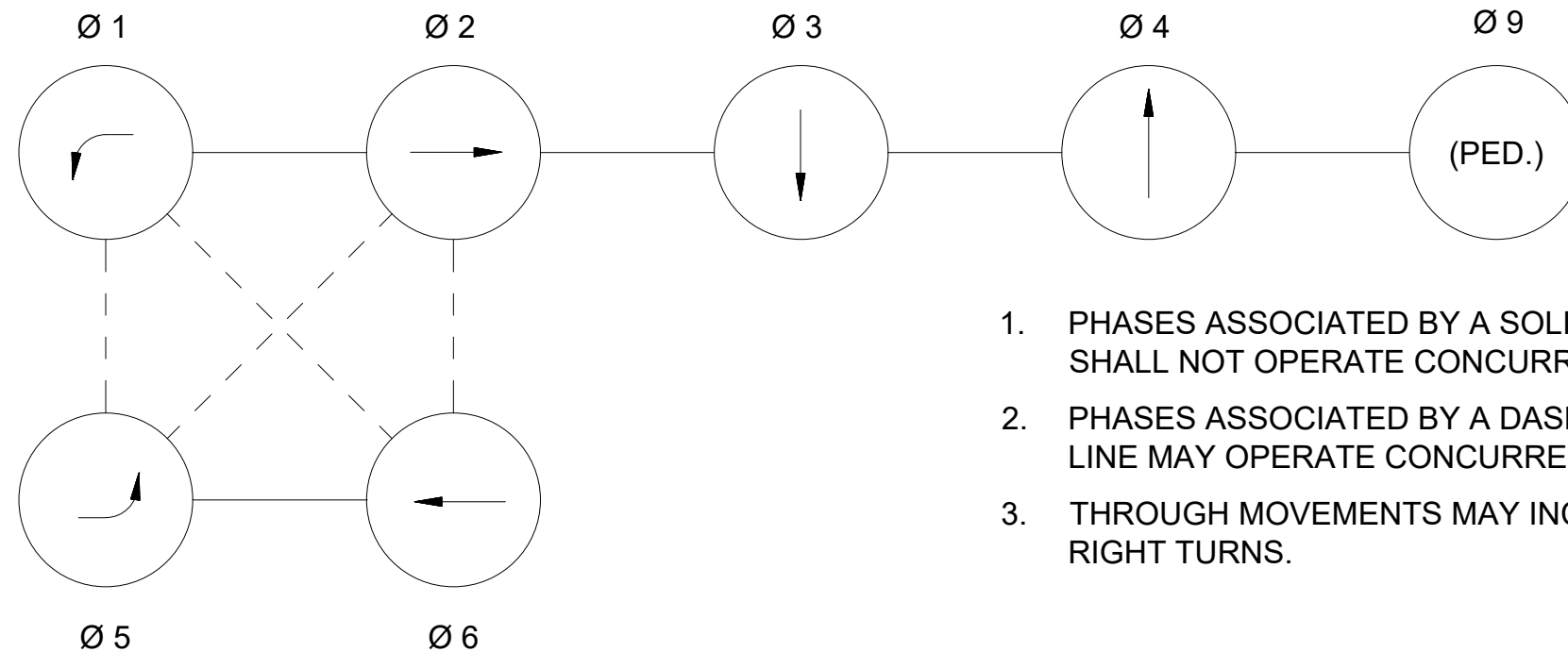


PREFERENTIAL PHASE SEQUENCE

DETECTOR DATA

DETECTOR NO.	VIDEO CAMERA NO.	NO. SECTION/ SIZE	OPERATIONS	CALL DELAY (SECONDS)	CALL PHASE	SWITCH	EXTEND PHASE
1	1	1 - 6'x15'	PRESENCE/BICYCLE	0	Ø1	-	Ø1 & Ø6
2	1	1 - 6'x50'	PRESENCE	0	Ø1	-	Ø1 & Ø6
3	1	1 - 6'x15'	PRESENCE/BICYCLE	0	Ø6	-	Ø6
4	1	1 - 6'x50'	PRESENCE	0	Ø6	-	Ø6
5	1	1 - 6'x15'	PRESENCE/BICYCLE	0	Ø2	-	Ø2
6	1	1 - 6'x50'	PRESENCE	0	Ø2	-	Ø2
7	1	1 - 3'x6'	BICYCLE	0	Ø2	-	Ø2
8	1	1 - 6'x15'	PRESENCE/BICYCLE	0	Ø4	-	Ø4
9	1	1 - 6'x50'	PRESENCE	0	Ø4	-	Ø4
10	1	1 - 6'x15'	PRESENCE/BICYCLE	0	Ø4	-	Ø4
11	1	1 - 6'x50'	PRESENCE	0	Ø4	-	Ø4
12	1	1 - 6'x30'	PRESENCE/BICYCLE	0	Ø3	-	Ø3

NEMA DUAL RING PHASING 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.

TRAFFIC SIGNAL NOTES:

- 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 WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
- IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT TRAFFIC MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.
- FLASHING OPERATION IS FOR EMERGENCY OPERATION ONLY. THE SIGNAL SHALL PROVIDE STOP AND GO OPERATION 24 HOURS DAILY.
- EACH DETECTOR GROUP SHALL BE WIRED TO A SEPARATE AMPLIFIER CHANNEL.
- PEDESTRIAN PHASE TO BE ACTIVATED BY PEDESTRIAN PUSH-BUTTON ONLY.
- OPTICAL DETECTORS SHALL BE LOCATED FOR OPTIMUM SIGHT DISTANCE.
- PEDESTRIAN PUSHBUTTONS AND SIGNS SHALL BE LOCATED IN ACCORDANCE WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (FIG. 4E-4) AND POINTED PARALLEL TO THE CROSSWALK.

PRE-EMPTION PHASING & PRIORITY

RECEIVER AND PRIORITY	PRE-EMPT PHASE ASSIGNMENT	MOVEMENT	VEHICLE PHASE ASSIGNMENT
R1	1	SB	Ø2
R2	2	NB	Ø1 & Ø6
R3	3	WB	Ø4
R4	4	EB	Ø8

EMERGENCY PREEMPTION NOTES:

- UPON PREEMPTION ACTIVATION, PHASE(S) BEING SERVICED SHALL IMMEDIATELY BEGIN CLEARANCE (I.E., YELLOW AND ALL RED) AS DESIGNED, EXCEPT FOR WHEN PHASE(S) CALLED BY PREEMPTION ARE CURRENTLY IN SERVICE. WHEN PHASE(S) CURRENTLY IN SERVICE MATCH PHASE(S) CALLED BY PREEMPTION, SIGNAL INDICATIONS ARE MAINTAINED. HOWEVER, PREEMPTION OPERATION (I.E. TIMING) SUPERCEDES NORMAL TRAFFIC SIGNAL CONTROL.
- AFTER THE PREEMPTION SEQUENCE HAS TERMINATED, THE SIGNAL SHALL RETURN TO THE BEGINNING OF Ø2 & Ø6.
- THE PREEMPTION STROBE SHALL BE ILLUMINATED ONLY WHEN THE PREEMPTED PHASE IS DISPLAYING A GREEN INDICATION.
- A SEPARATE CABLE SHALL BE RUN FOR THE PREEMPTION STROBE. IT MAY NOT BE RUN ON THE SPARE SIGNAL CABLE.
- EMERGENCY PREEMPTION SHALL COME ON A FIRST-COME FIRST-SERVED BASIS.

MAST ARM FOUNDATIONS


MAST ARM	ARM LENGTH	LOCATION		FOUNDATION SIZE			
		STATION	OFFSET	DIAMETER	DEPTH	VERT. BARS	TIE BARS
MA 1	25'	13+28.0	25.0' RT	3'-6"	13'-0"	18-#8	#5@12"
MA 2	15'	13+55.8	20.6' LT	3'-6"	12'-6"	18-#8	#5@12"

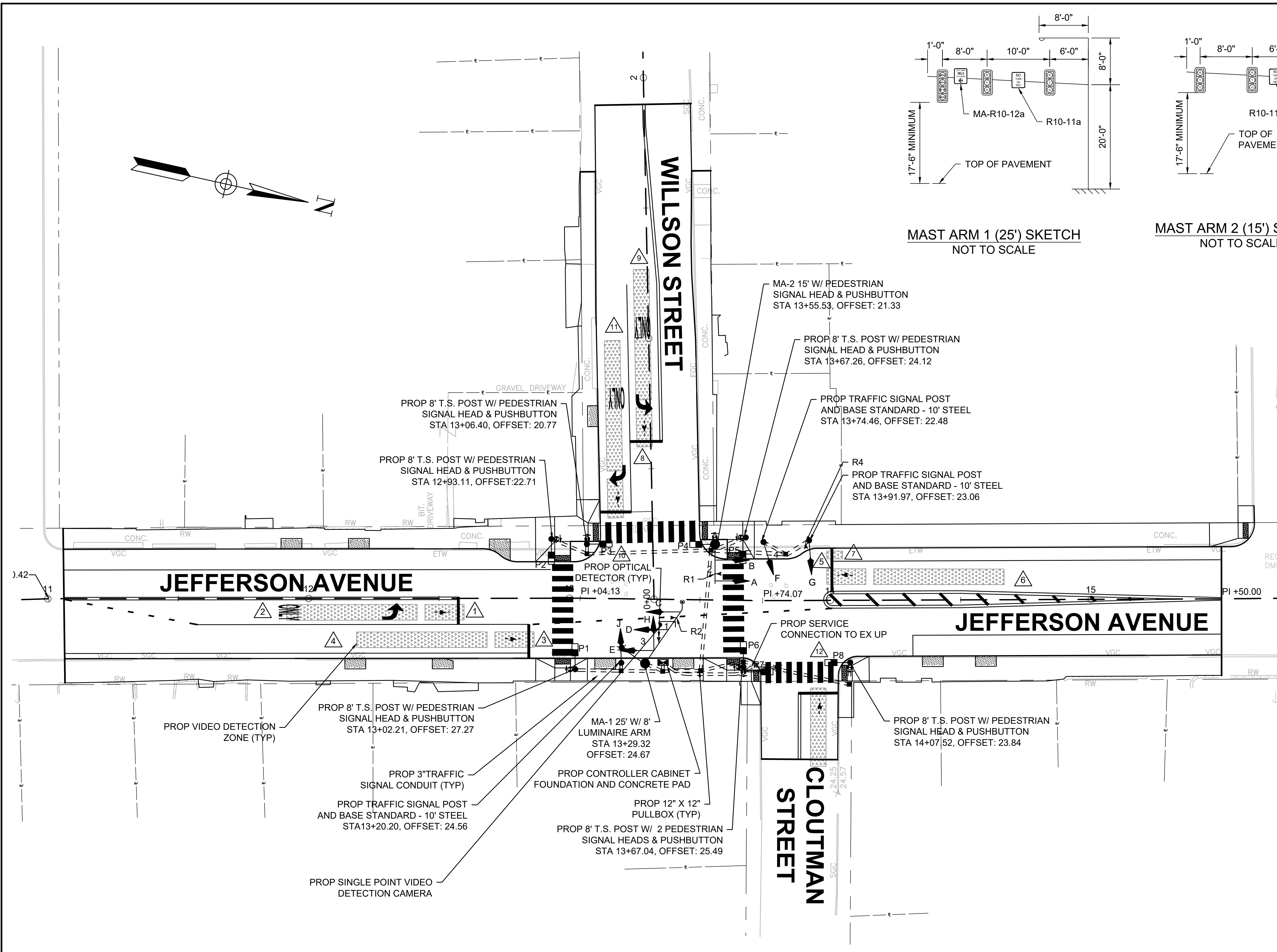
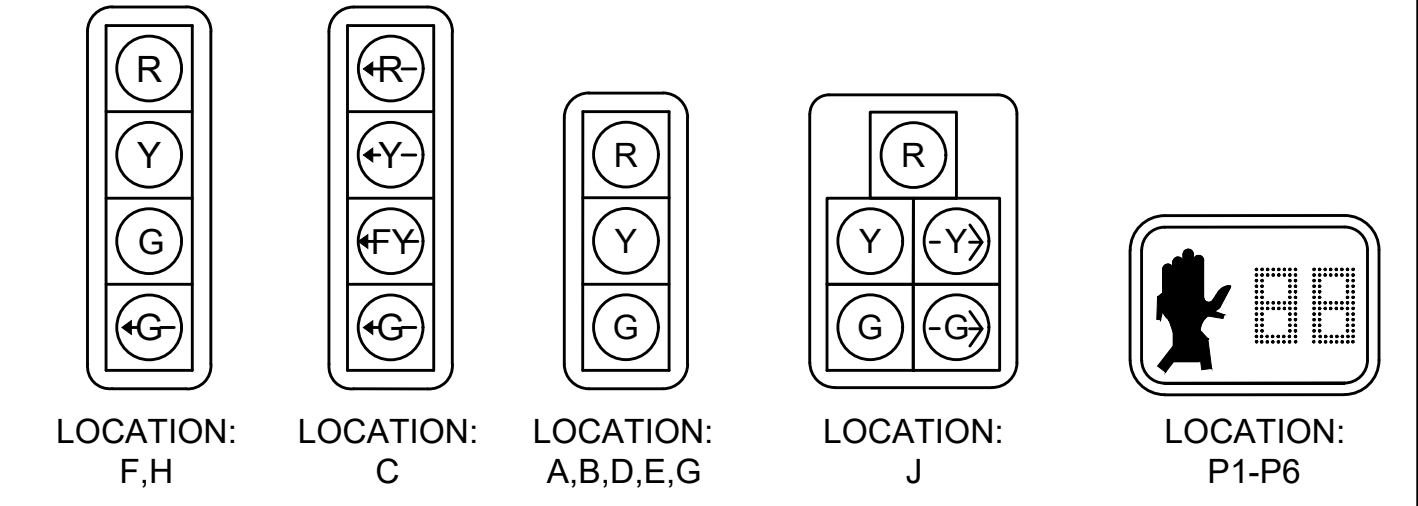
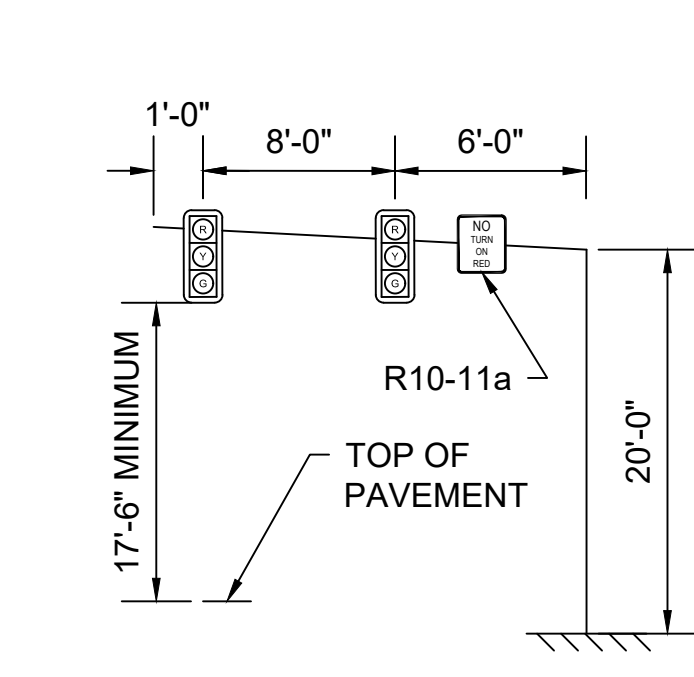
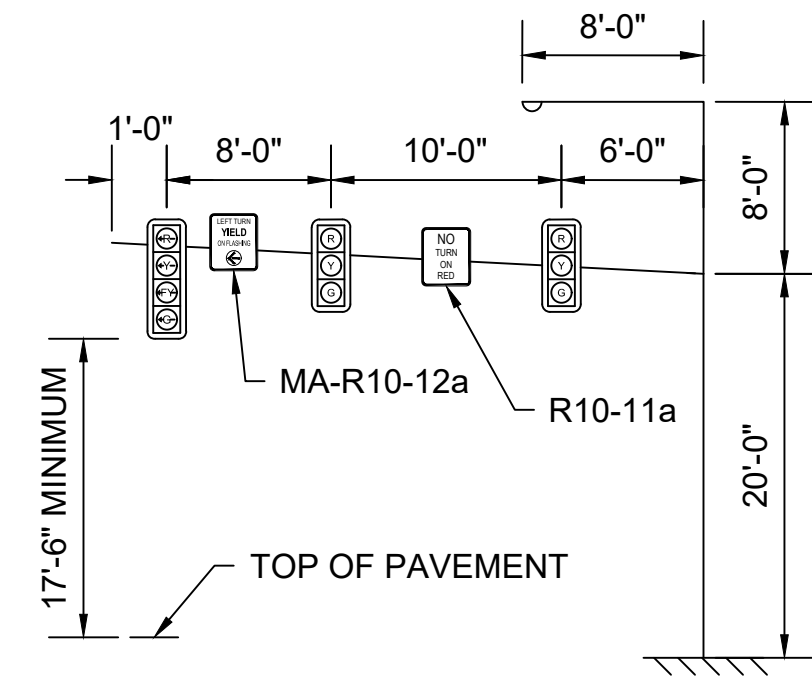
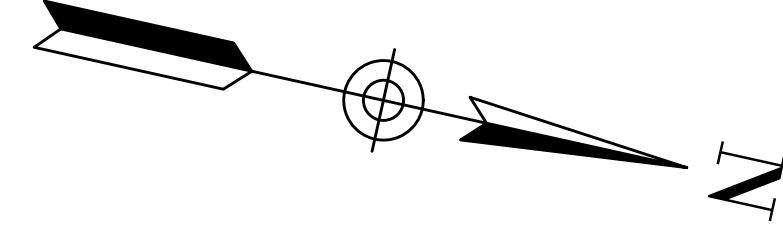
MAJOR ITEMS

ITEM NO.	QUANTITY	DESCRIPTION
	1	TRAFFIC SIGNAL CONTROLLER (TS 2, TYPE 1), LOCATED IN BASE MOUNTED CABINET, WITH FOUNDATION AND CONCRETE PAD
	1	25' MAST ARM, TYPE II, STEEL MONOLEVER WITH FOUNDATION WITH 8' LUMINAIRE ARM
	1	15' MAST ARM, TYPE II, STEEL MONOLEVER WITH FOUNDATION
	3	TRAFFIC SIGNAL POST AND BASE STANDARD - 10' STEEL
	3	SIGNAL HEAD, 1-WAY, 4 SECTION, 12" LENSES
	5	SIGNAL HEAD, 1-WAY, 3 SECTION, 12" LENSES
	1	SIGNAL HEAD, 1-WAY, 5 SECTION, 12" LENSES
	3	5" 4-SECTION BACKPLATES WITH 3" YELLOW RETROREFLECTIVE YELLOW BORDER
	5	5" 3-SECTION BACKPLATES WITH 3" YELLOW RETROREFLECTIVE YELLOW BORDER
	1	5" 5-SECTION BACKPLATE WITH 3" YELLOW RETROREFLECTIVE YELLOW BORDER
	8	PEDESTRIAN SIGNAL HEAD, 1-WAY, 1 SECTION, 16" WITH COUNTDOWN
	8	AUDIBLE & VIBRO-TACTILE PEDESTRIAN PUSHBUTTON INTEGRATED SIGN & SADDLE WITH LED CONFIRMATION LIGHT
	1	SINGLE POINT-360° VIDEO DETECTION CAMERA
	2	VIDEO PROCESSOR (2 CHANNEL)
	1	SERVICE CONNECTION (UNDERGROUND)
	4	OPTICAL DETECTOR, UNIDIRECTIONAL, SINGLE CHANNEL
	1	4 CHANNEL PHASE SELECTOR
	1	CARD RACK
	1	EMERGENCY PRE-EMPTION CONFIRMATION STROBE (WHITE)
804.3	350 FT	3" TRAFFIC SIGNAL CONDUIT
811.31	8	PULL BOX, 12" X 12"

PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.

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MAST ARM 1 (25') SKETCH
NOT TO SCALE

MAST ARM 2 (15') SKETCH
NOT TO SCALE

SIGNAL HEAD DESIGNATIONS
NOT TO SCALE

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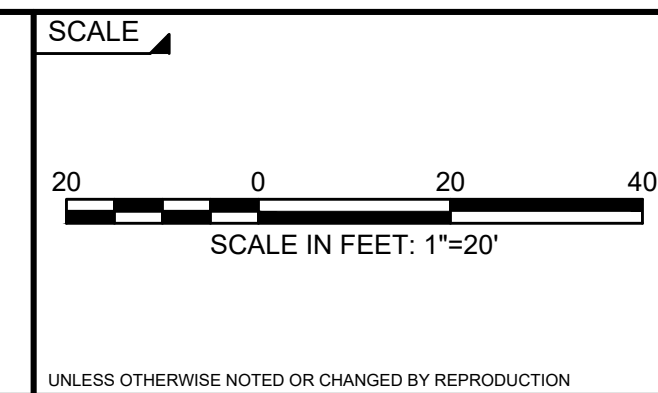
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SIGNAL PLAN

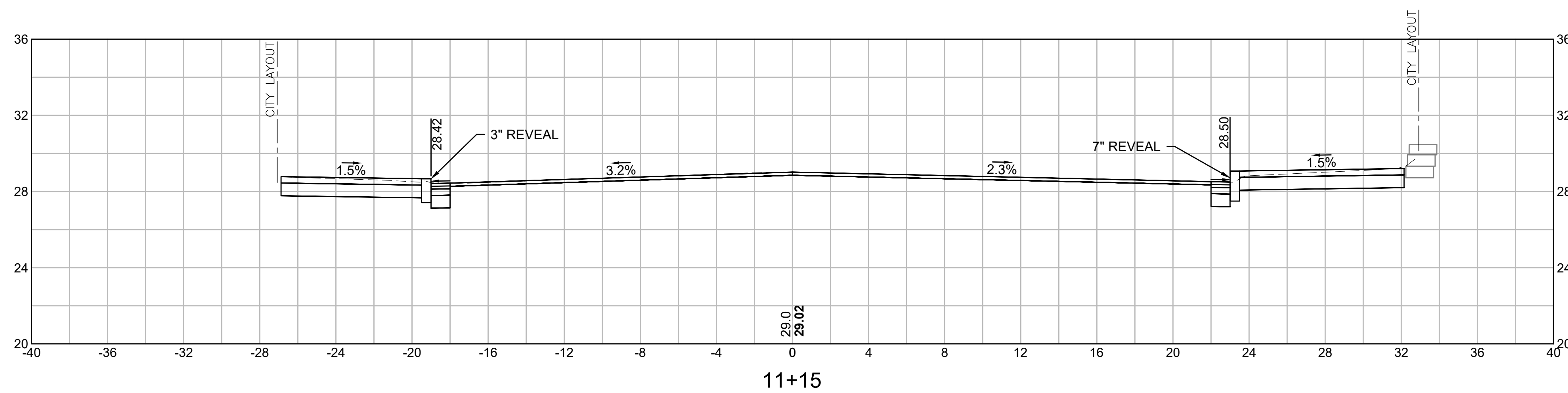
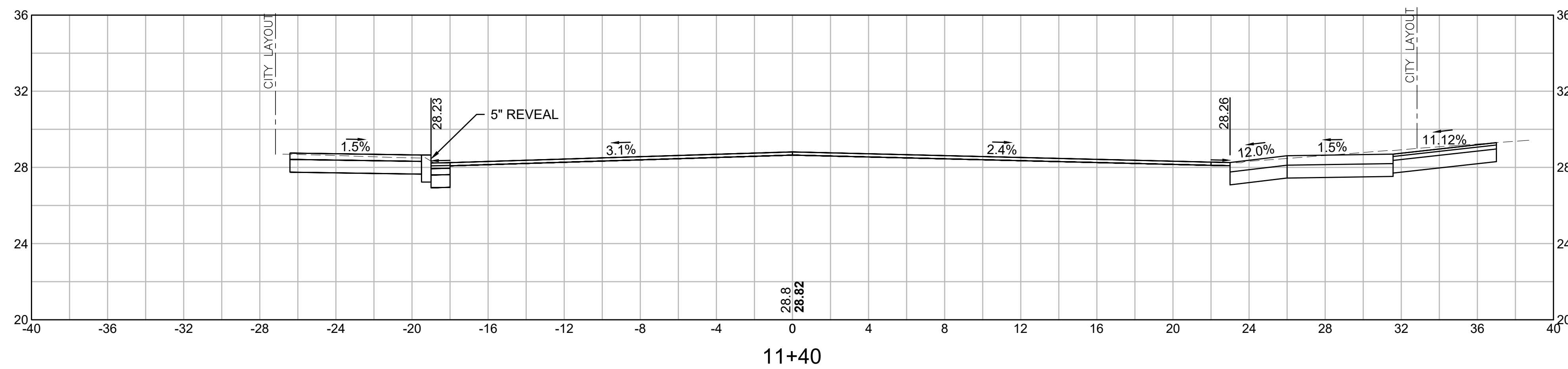
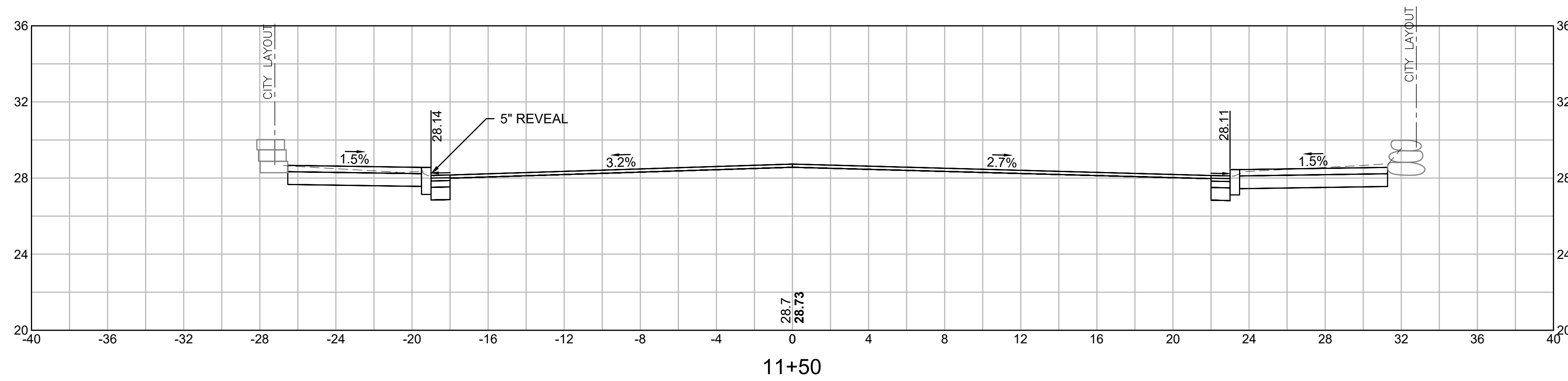
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BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **17 of 29**

5/7/2024 4:34 PM C:\16000\6965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILSON-CLOUTMAN\DRAWING FILES\PLANSET\6965_CROSS_SECTIONS\PLAN.DWG (MADOT-D.STB)



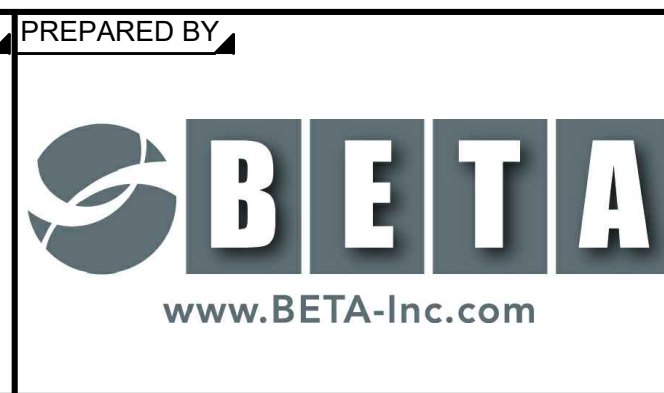
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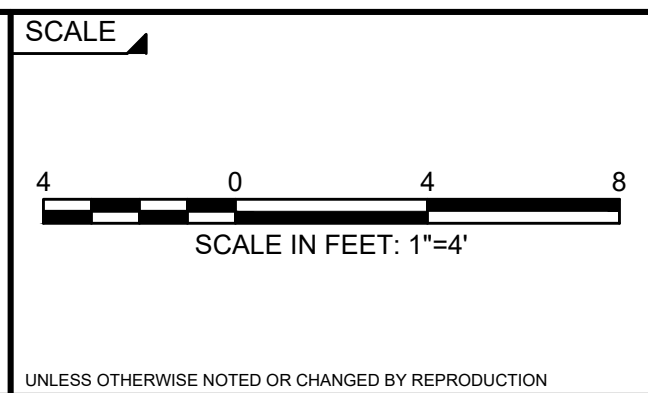
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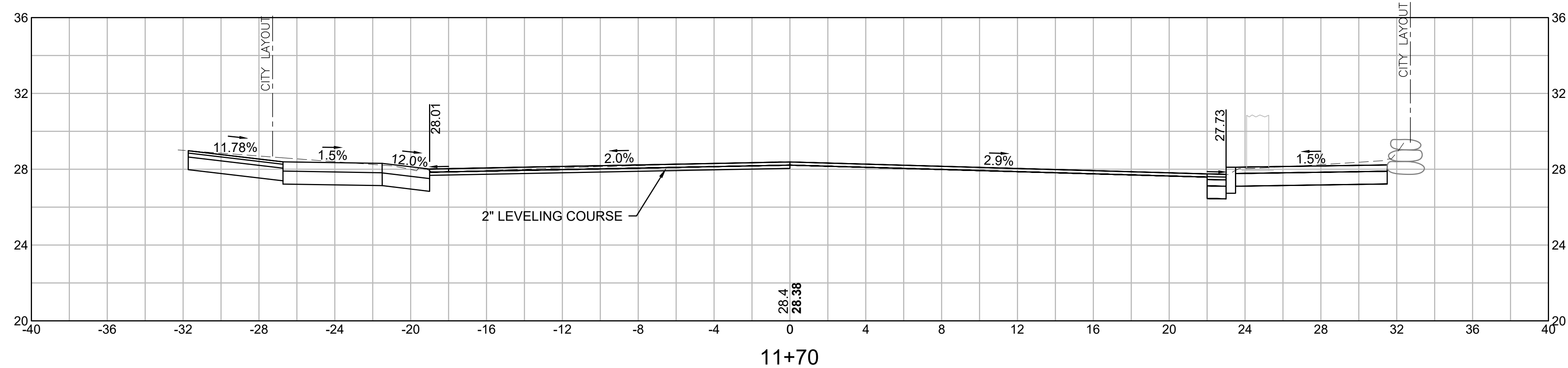
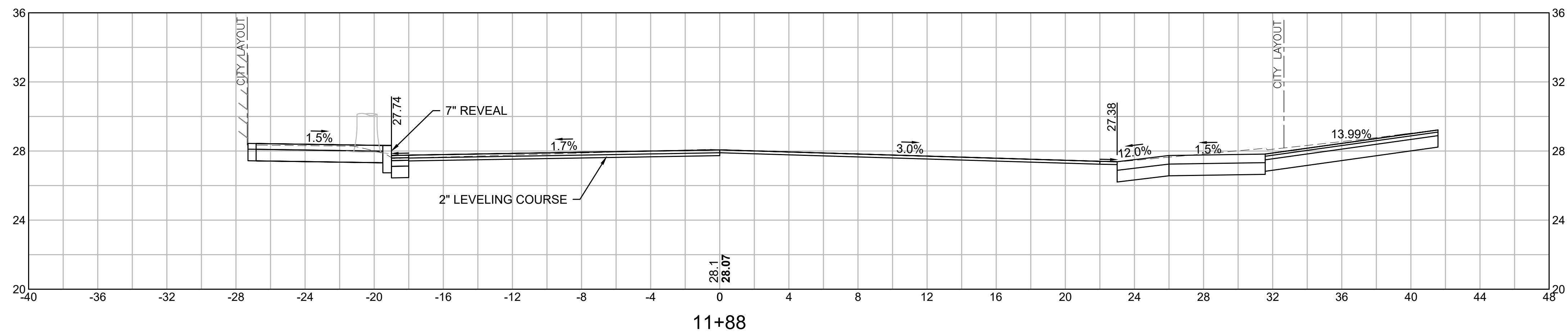
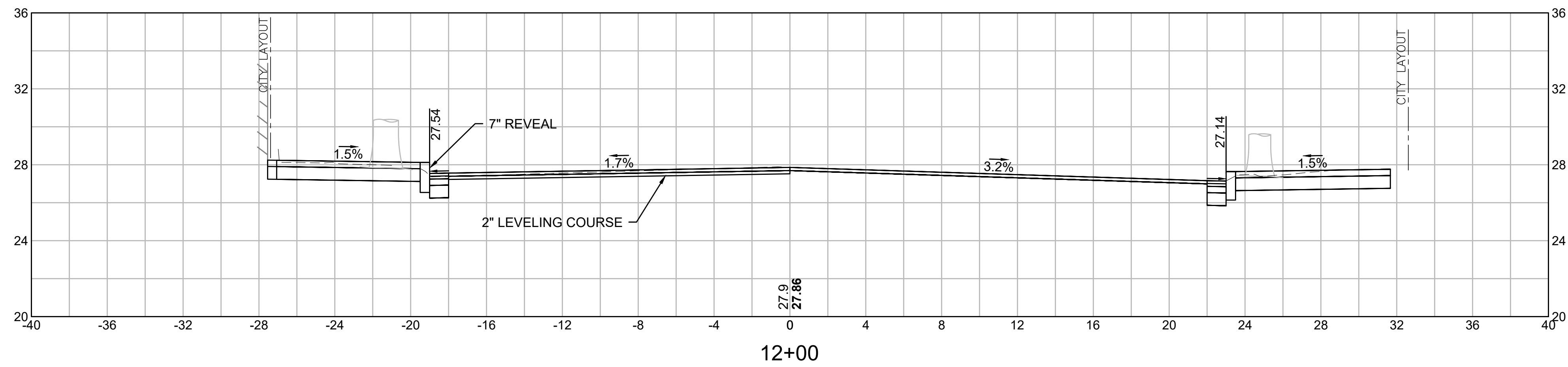
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CROSS SECTIONS - JEFFERSON AVENUE
SALEM, MASSACHUSETTS

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **18 of 29**

5/7/2024 4:34 PM C:\16000\6965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILSON-CLOUTMAN\DRAWING FILES\PLANSET\6965_CROSS SECTIONS PLAN.DWG (MADOT-D.STB)



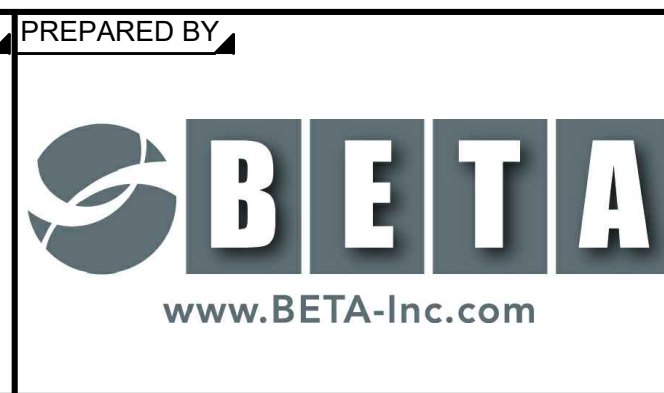
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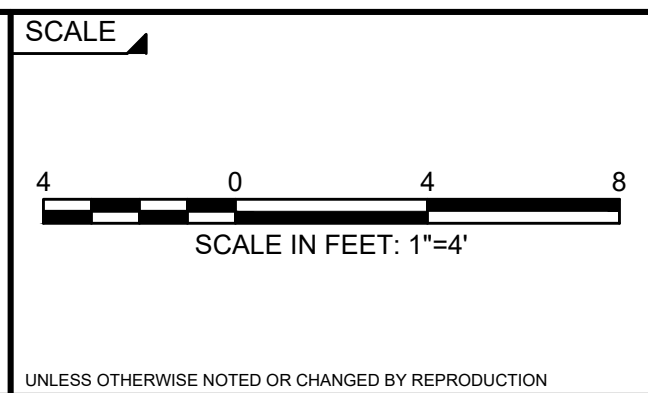
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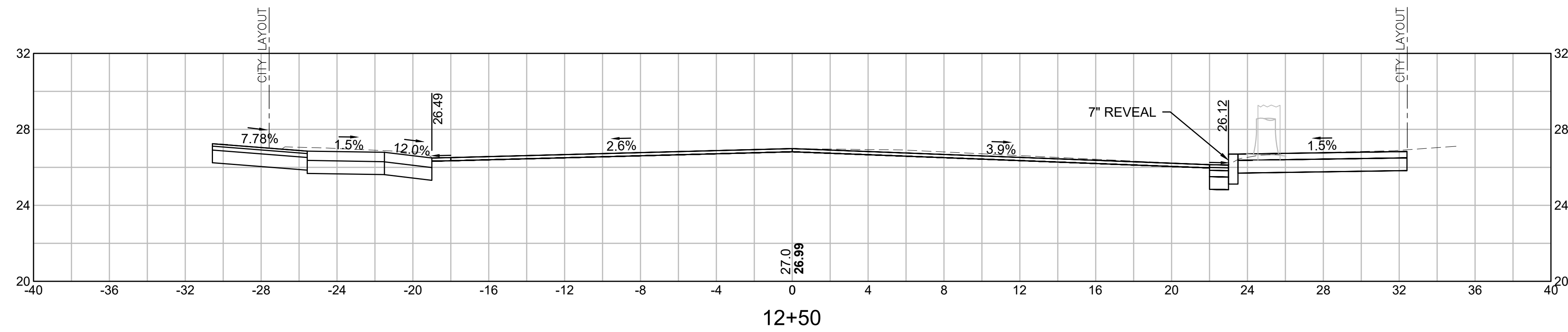
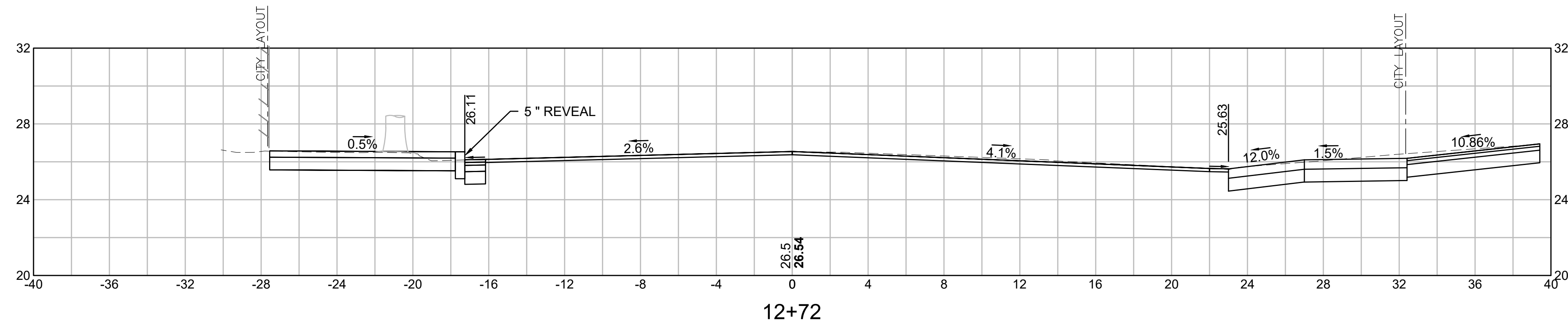
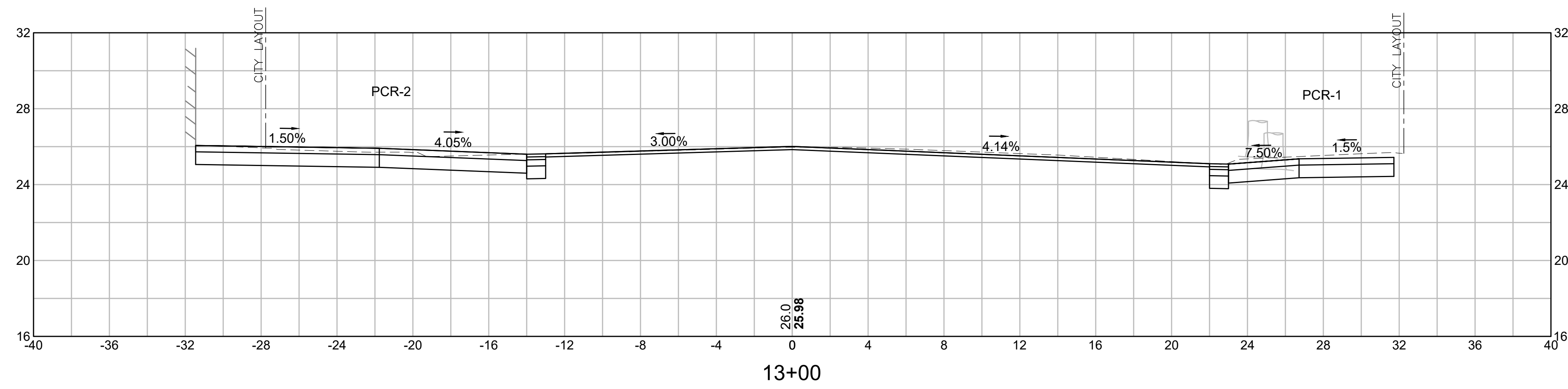
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BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **19 of 29**

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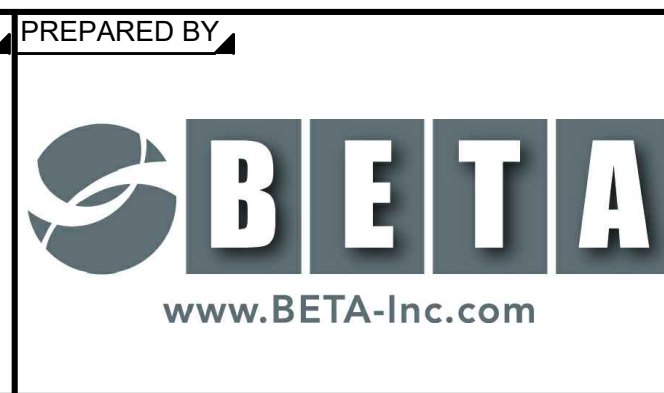
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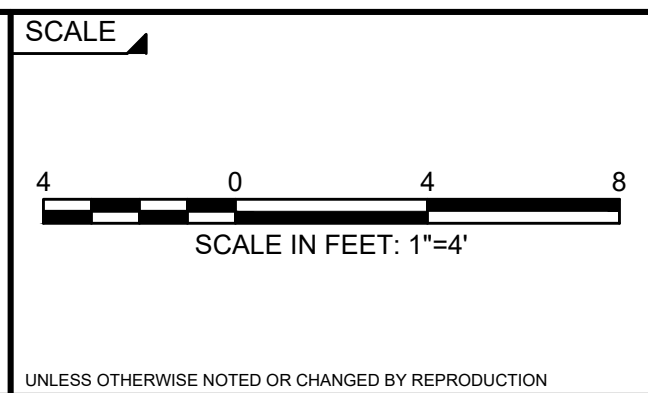
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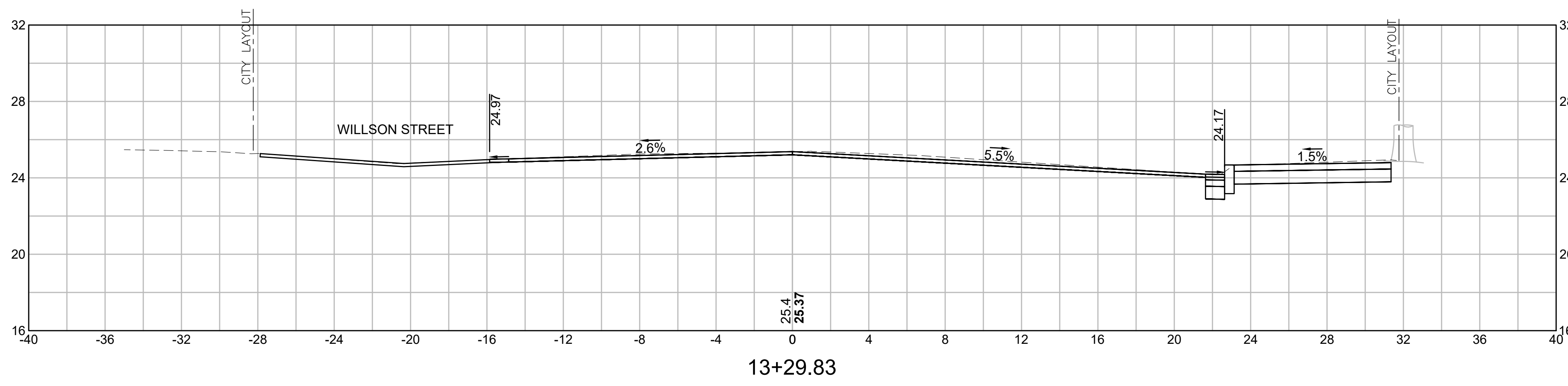
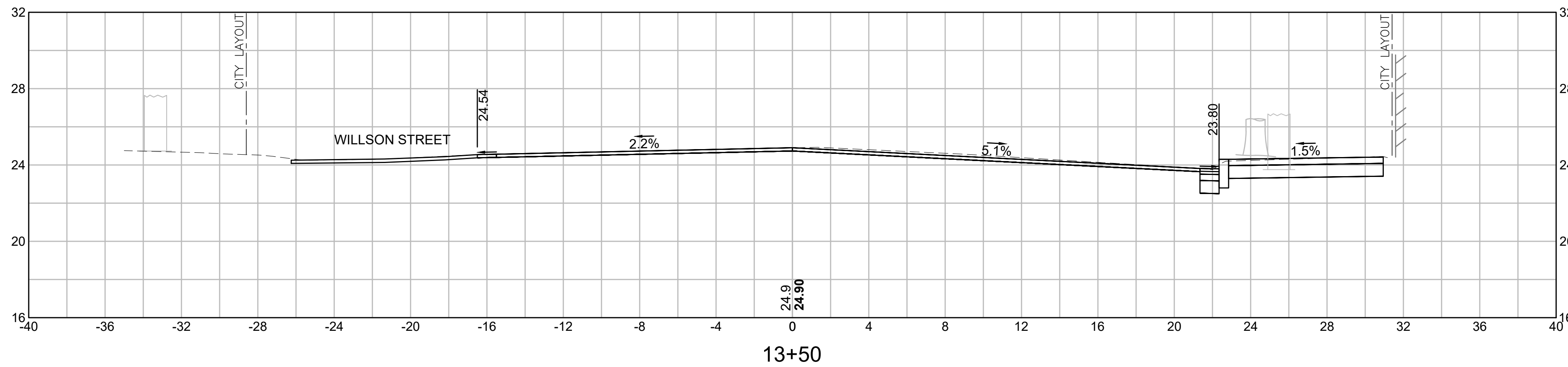
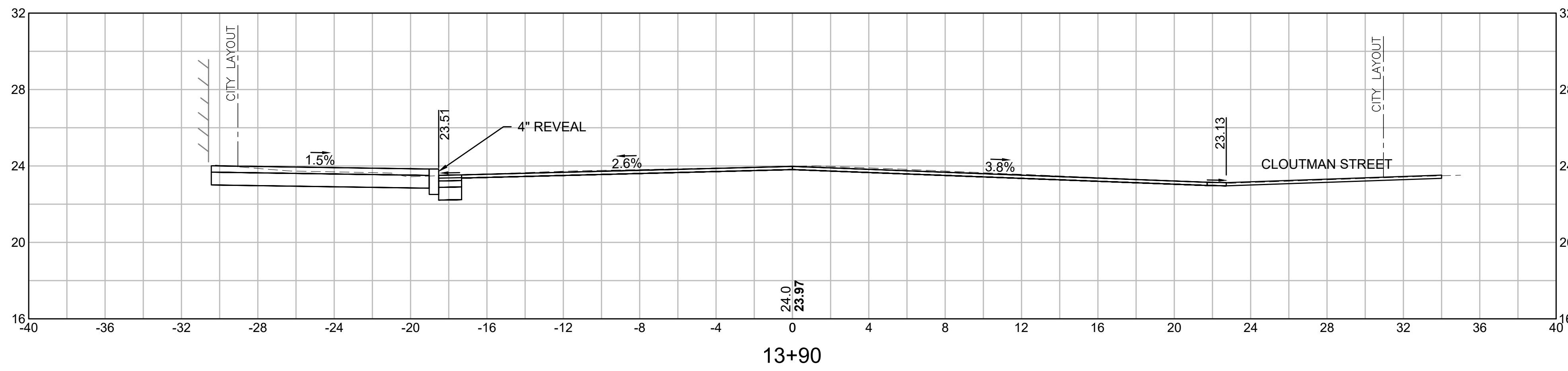
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INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
CROSS SECTIONS - JEFFERSON AVENUE
SALEM, MASSACHUSETTS

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **20 of 29**



5/7/2024 4:34 PM C:\16000\6965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILLSON-CLOUTMAN\DRAWING FILES\PLANSET\6965_CROSS SECTIONS PLAN.DWG (MADOT-D.STB)

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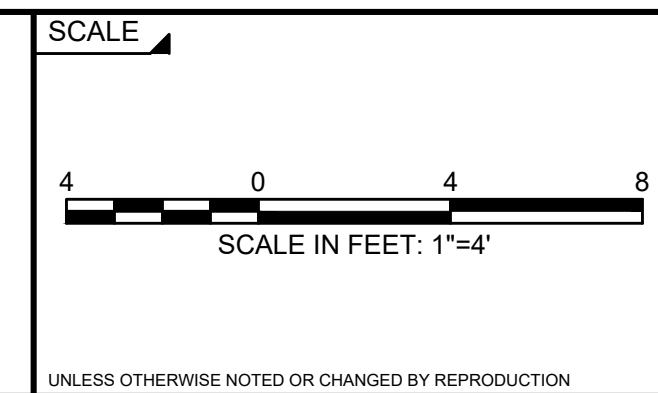
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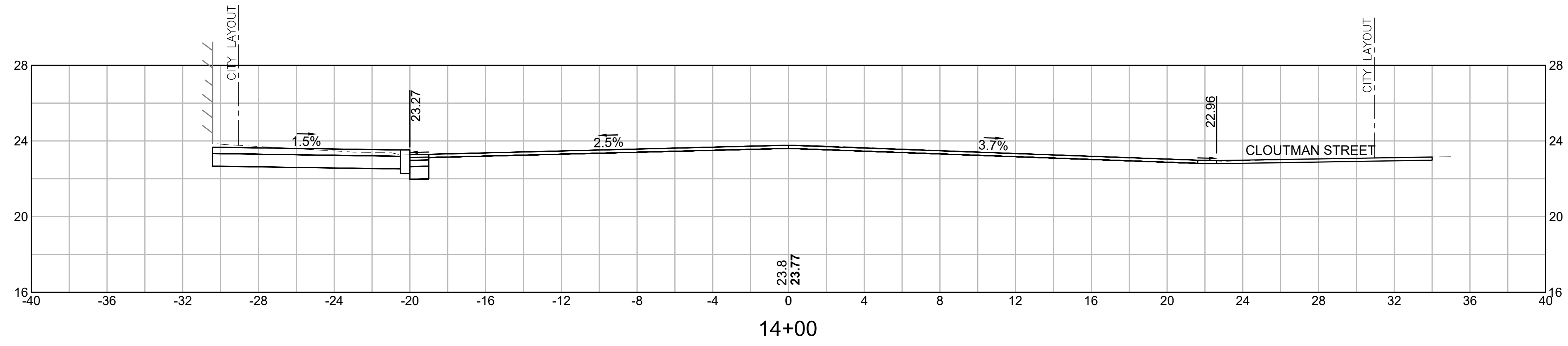
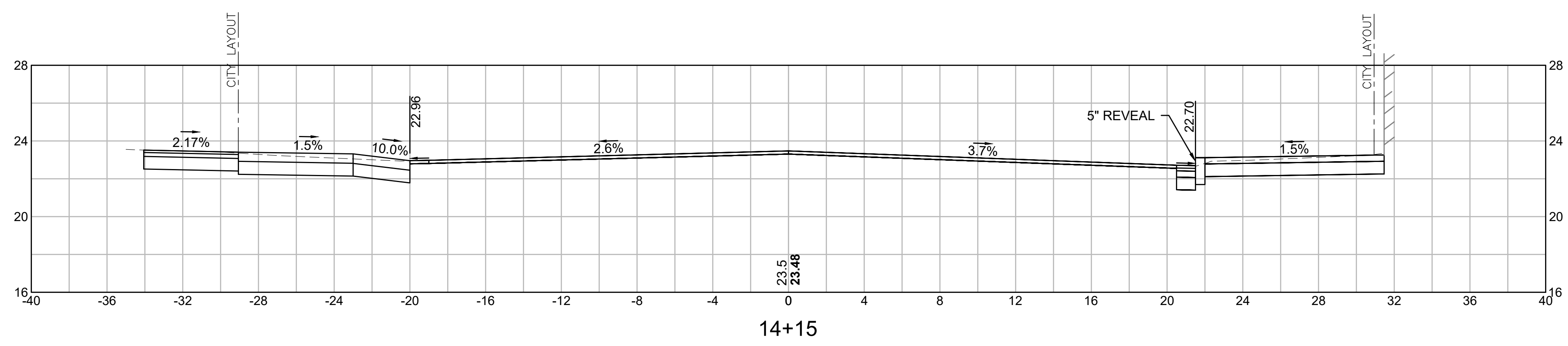
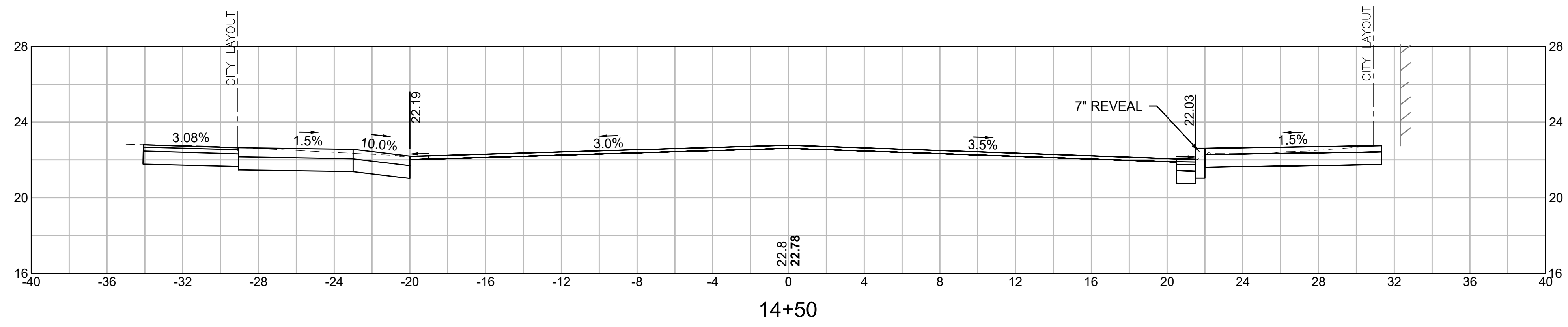
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JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
CROSS SECTIONS - JEFFERSON AVENUE
SALEM, MASSACHUSETTS

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **21 of 29**

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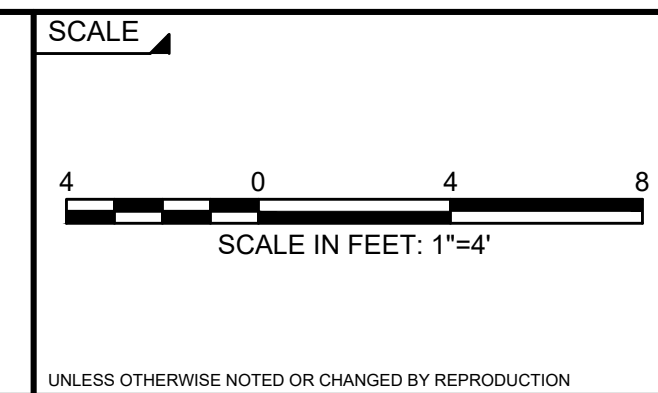
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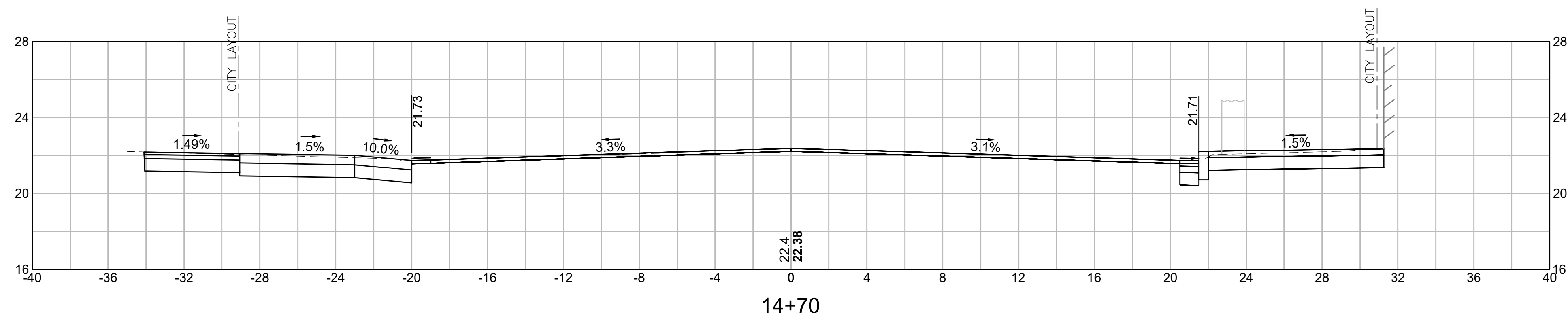
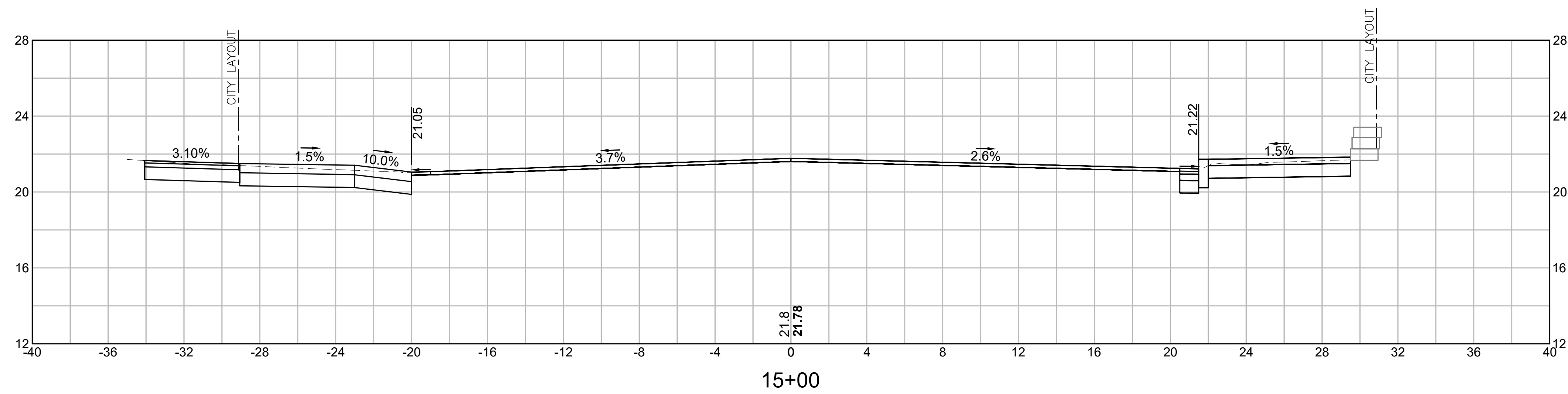
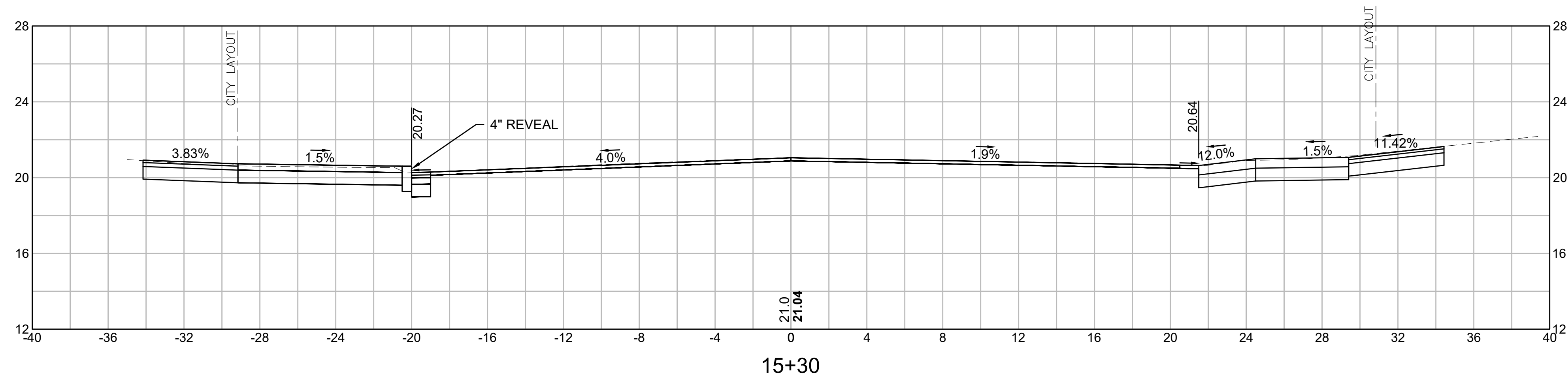
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JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
CROSS SECTIONS - JEFFERSON AVENUE
SALEM, MASSACHUSETTS

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **22 of 29**

5/7/2024 4:34 PM C:\16900\516965 - SALEM - ON-CALL\TASK 6 - JEFFERSON-WILSON-CLOUTMAN\DRAWING FILES\PLANSET\6965_CROSS SECTIONS PLAN.DWG (MADOT-D.STB)



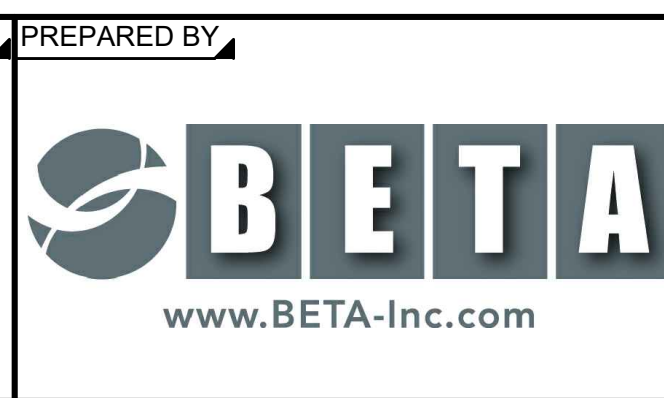
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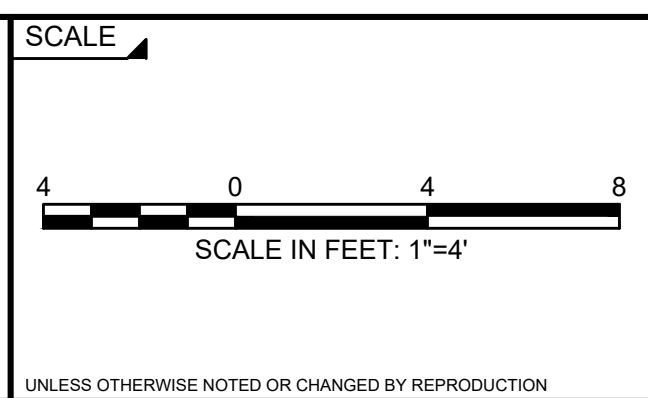
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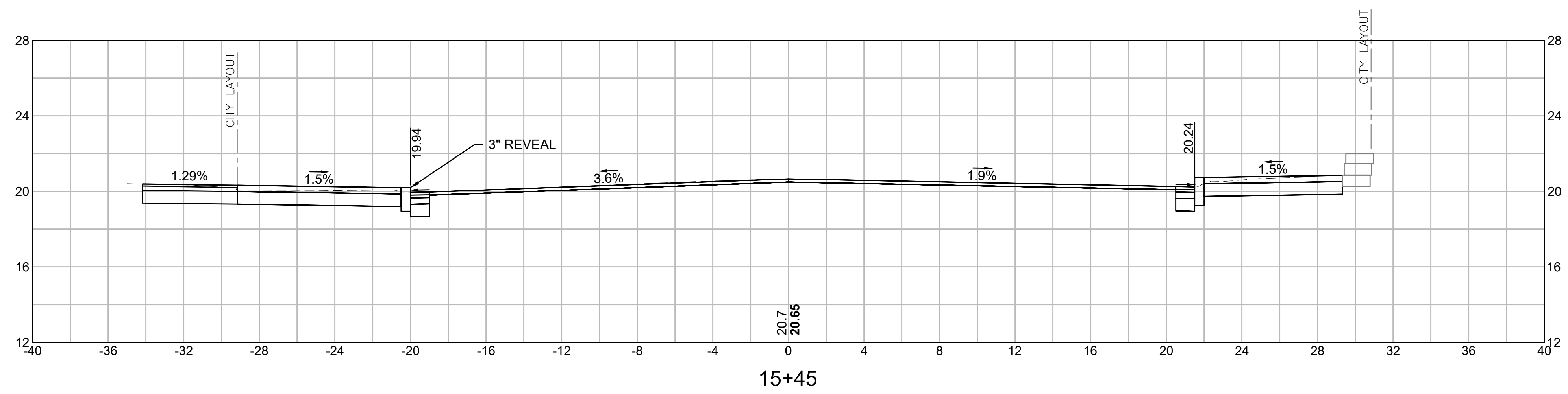
INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
CROSS SECTIONS - JEFFERSON AVENUE
SALEM, MASSACHUSETTS

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **23 of 29**

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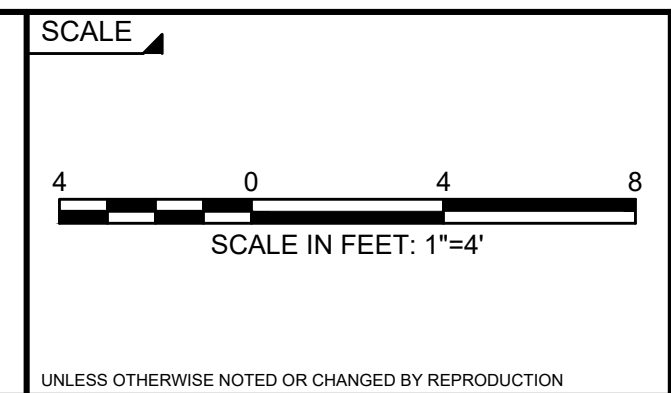
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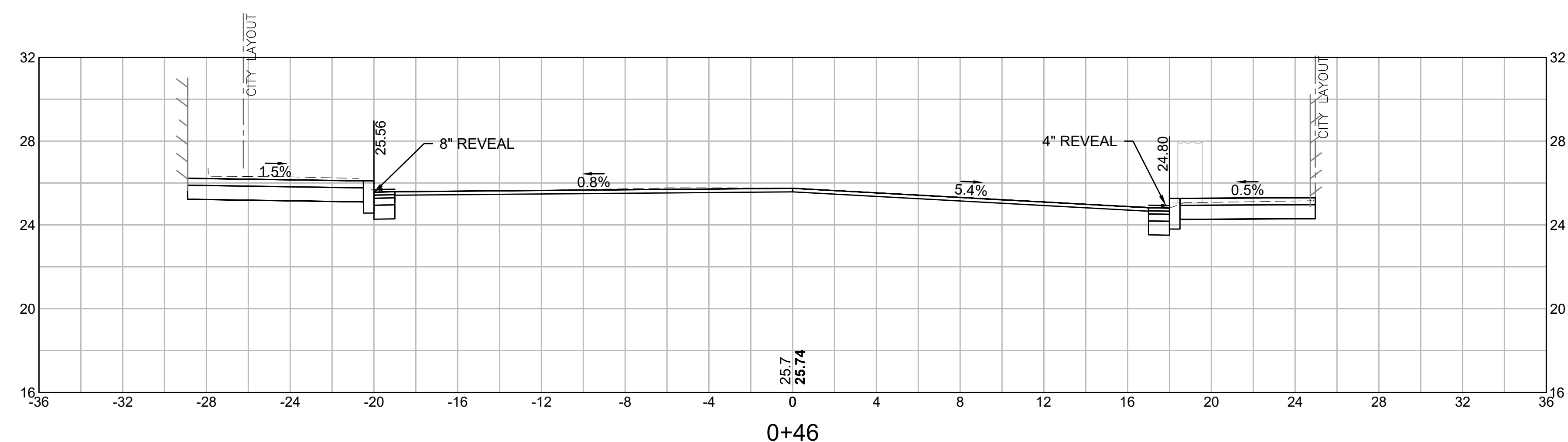
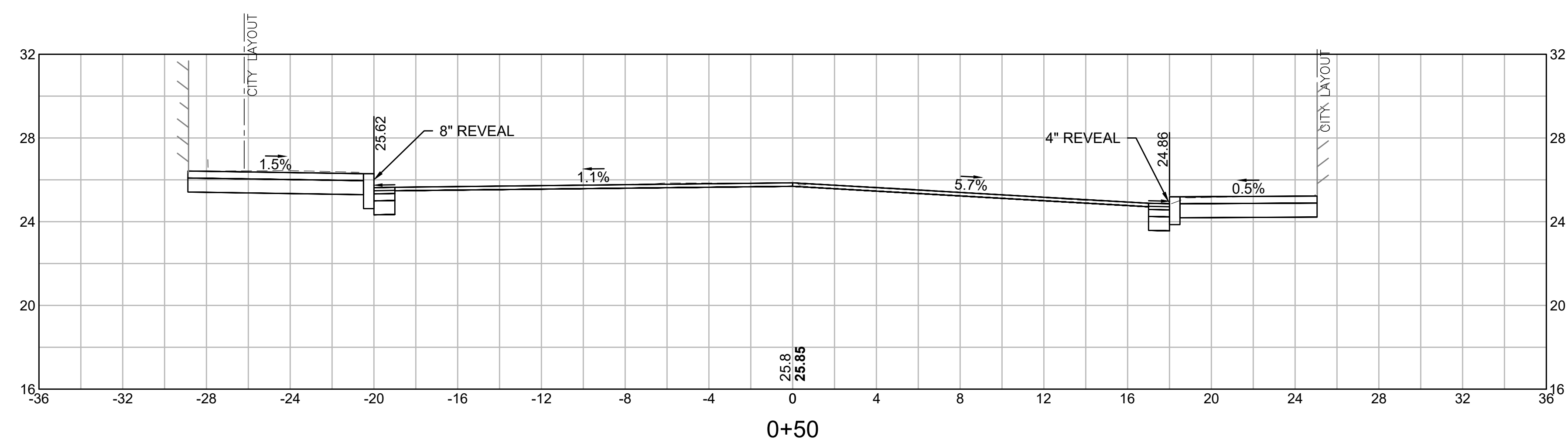
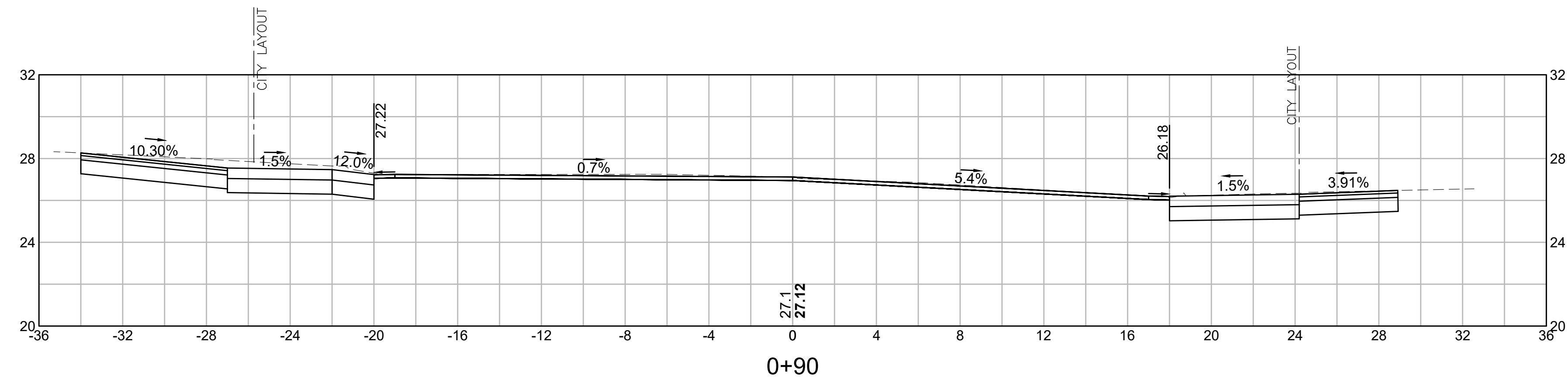
**INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
CROSS SECTIONS - JEFFERSON AVENUE
SALEM, MASSACHUSETTS**

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **24 of 29**

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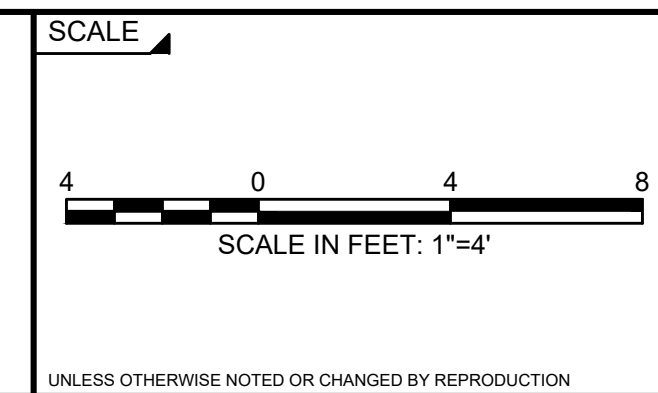
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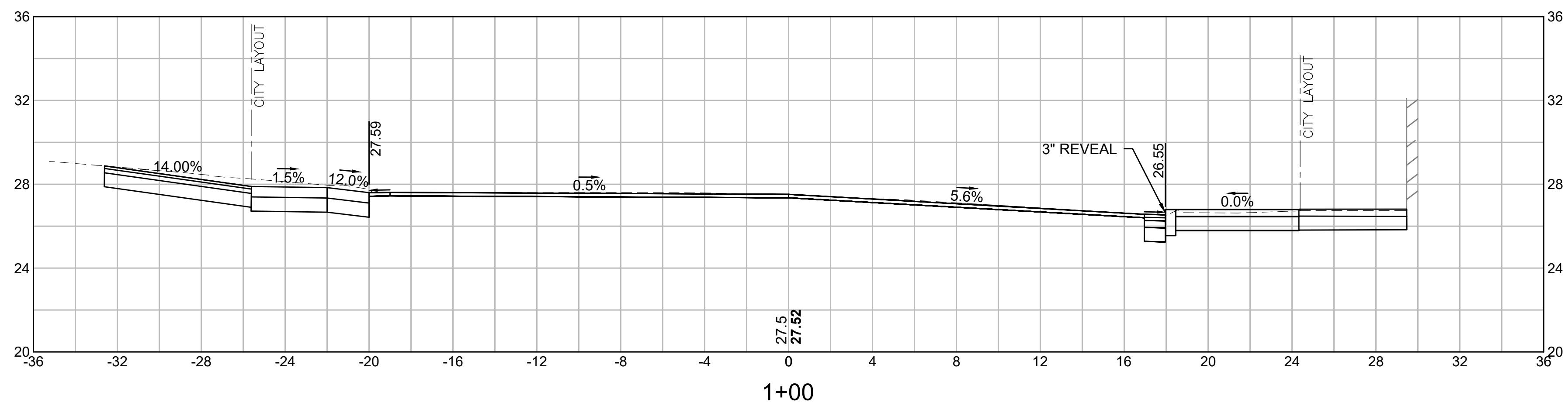
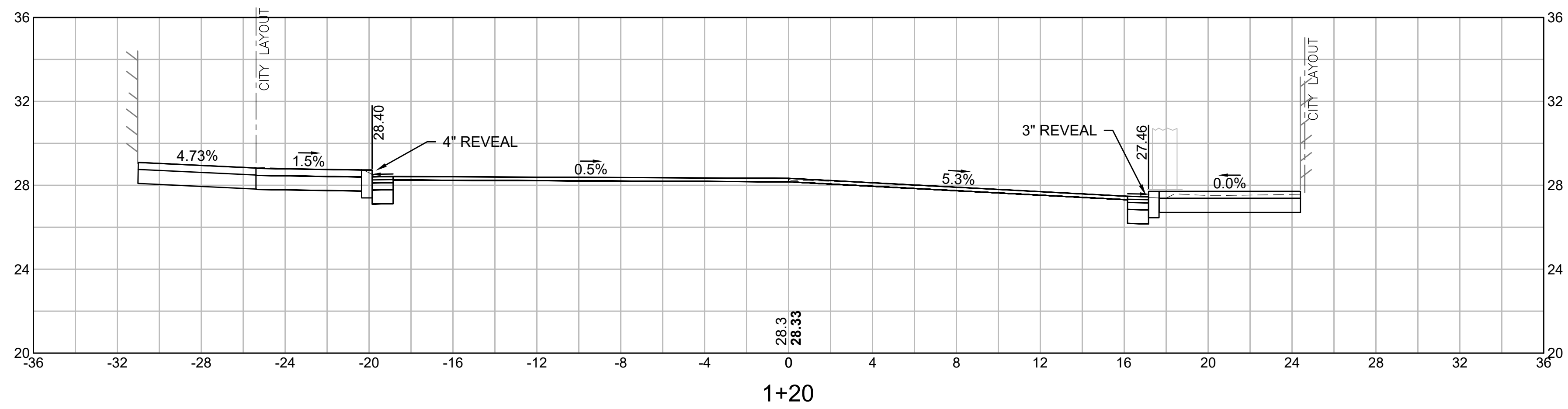
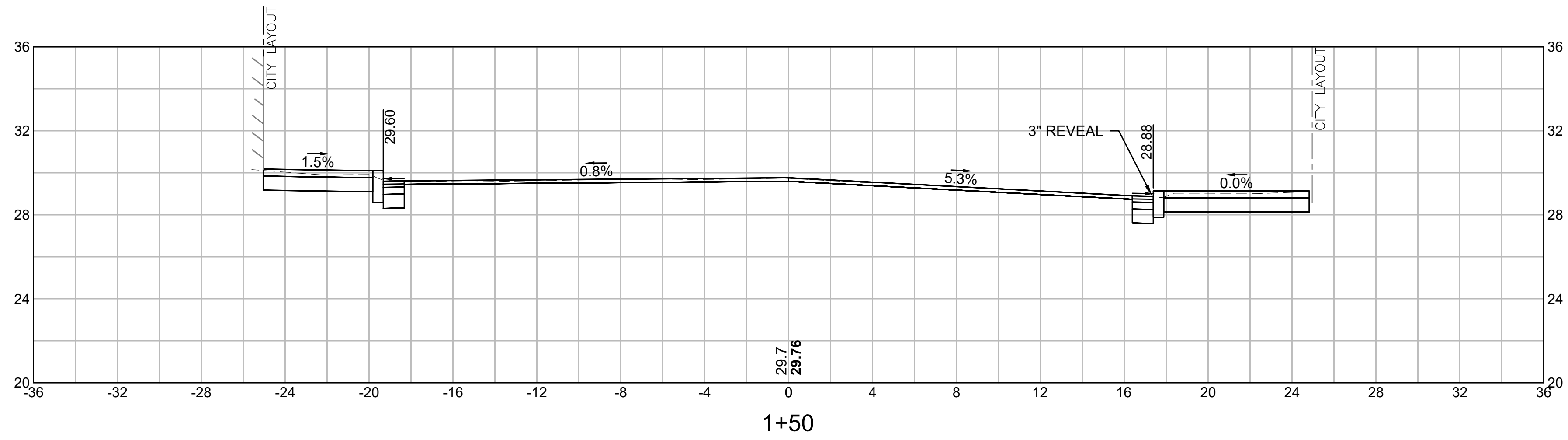
**INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
CROSS SECTIONS - WILLSON STREET
SALEM, MASSACHUSETTS**

BETA JOB NO. 6965

ISSUE DATE 12/29/2023

SHEET NO. **25 of 29**

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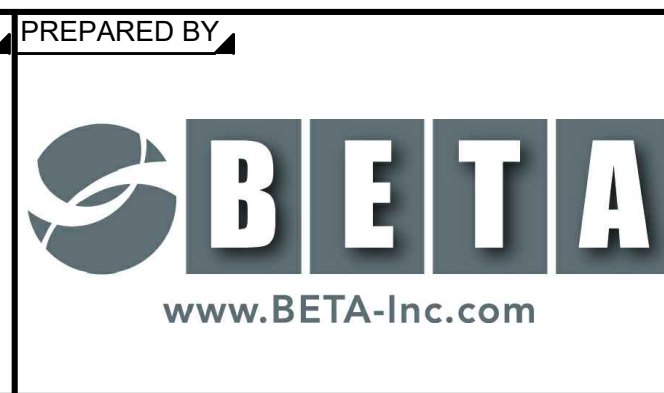
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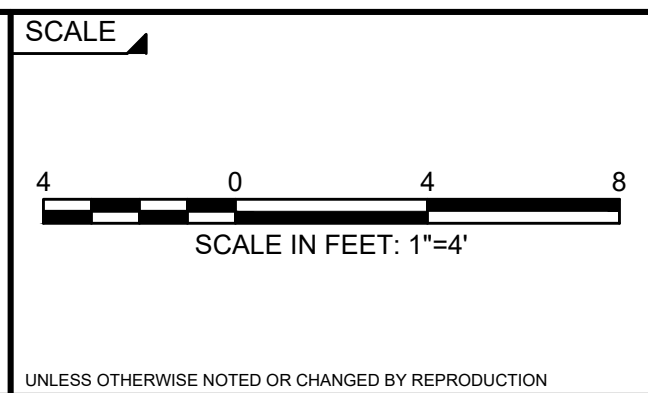
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**INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
CROSS SECTIONS - WILLSON STREET
SALEM, MASSACHUSETTS**

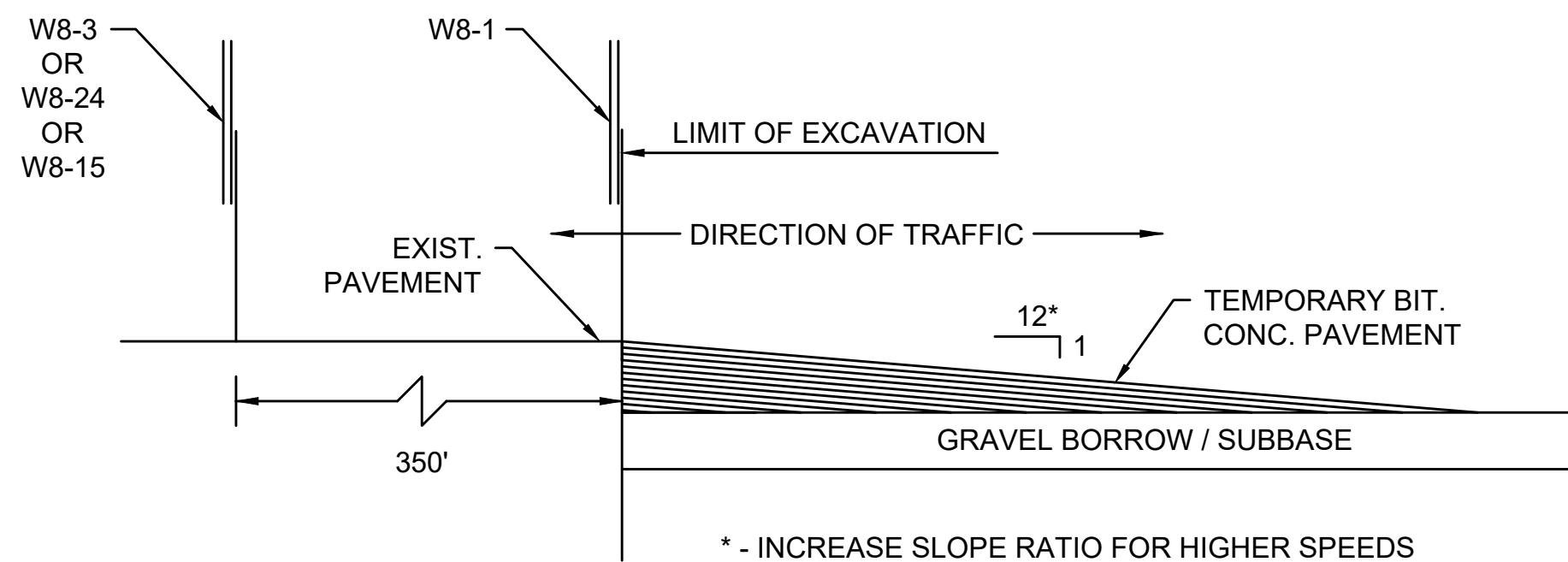
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ISSUE DATE 12/29/2023

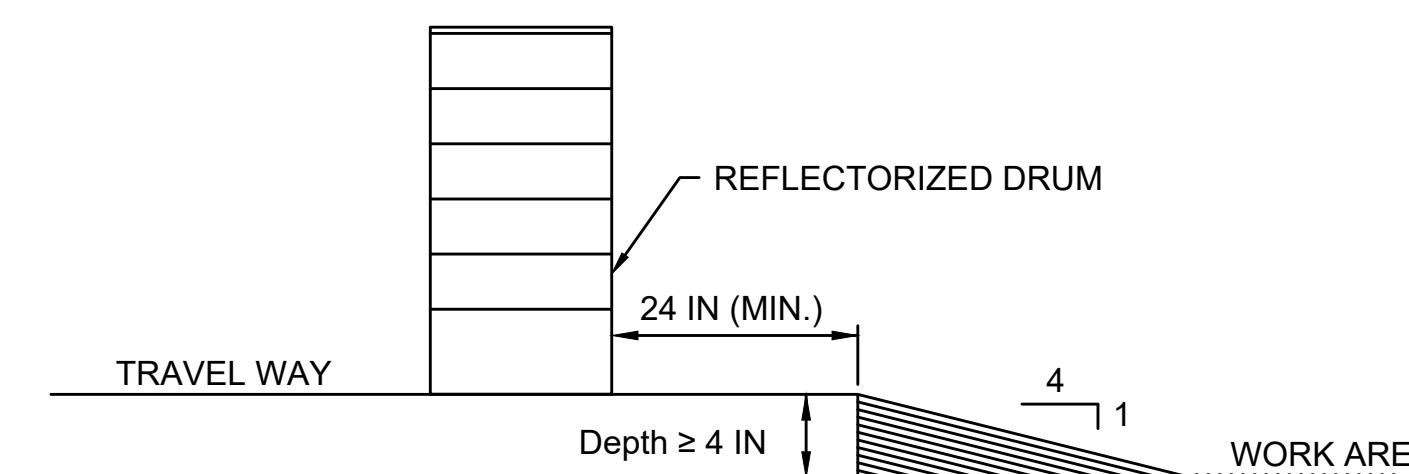
SHEET NO. **26 of 29**

NOTES:

- ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS.
- ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD, EXCEPT THAT BACKGROUND COLOR SHALL BE FLUORESCENT ORANGE, IN ACCORDANCE WITH MASSDOT SPECIFICATIONS.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
- SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM, 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).
- CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
- THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
- THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
- DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
- MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
- MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL NOT COVERED IN THE PLAN SHALL REFER TO MASSDOT "STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TRAFFIC MANAGEMENT PLANS".



LONGITUDINAL DROP-OFF DETAIL
NOT TO SCALE



LATERAL DROP-OFF DETAIL
NOT TO SCALE

TAPER LENGTH		
SPEED LIMIT	FORMULA	POSTED SPEED/ 85TH PERCENTILE
25 MPH OR GREATER	$L = W \cdot S$	25 MPH (85TH PERCENTILE) WASHINGTON STREET
WHERE:	L = TAPER LENGTH IN FEET	
	W = WIDTH OF OFFSET IN FEET	
	S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING IN MPH	

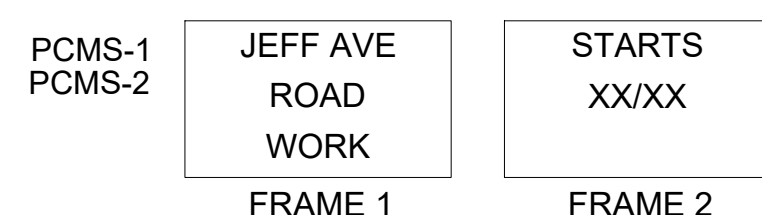
GENERAL CONSTRUCTION STAGES

- UTILITY WORK**
 - CONSTRUCT ALL PROPOSED UTILITIES AND ADJUST, ABANDON, REMOVE, OR REMOVE AND RESET, ALL EXISTING UTILITIES, AS SHOWN ON THE PLANS.
 - CONSTRUCT UNDERGROUNDING OF SERVICES CONDUITS AND DUCT BOXES.
- EXCAVATION**
EXCAVATE EXISTING CURBING AND SIDEWALK.
- TRAFFIC CONTROL**
INSTALL ALL TRAFFIC SIGNAL EQUIPMENT.
- SIDEWALKS/CURBING**
CONSTRUCT SIDEWALKS AND INSTALL CURB.
- MILL AND OVERLAY**
MILL AND OVERLAY ROADWAY.
- PAVEMENT MARKINGS**
INSTALL PAVEMENT MARKINGS.

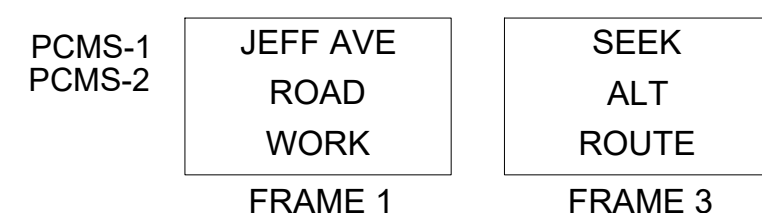
LEGEND:	
	REFLECTORIZED PLASTIC DRUM
	TYPE III BARRICADE
	FLASHING ARROW PANNEL
	FLASHING ARROW PANNEL
	WORK ZONE
	DIRECTION OF TRAFFIC
	IMPACT ATTENUATOR
	MEDIAN BARRIER
	MEDIAN BARRIER WITH WARNING LIGHTS
	WORK VEHICLE
	TRUCK MOUNTED ATTENUATOR
	TRAFFIC OR PEDESTRIAN SIGNAL
	SIGN
P	POLICE DETAIL
F	FLAGGER

WORK ZONE SIGN SPACING				
ROAD TYPE	DISTANCE BETWEEN SIGNS (IN FEET) *			PROJECT ROADWAY CLASSIFICATION
	A	B	C	
LOCAL/LOW VOLUME ROADWAYS	100	100	100	WILLSON STREET CLOUTMAN STREET
MOST OTHER ROADWAYS	500	500	500	JEFFERSON AVE
FREEWAYS AND EXPRESSWAYS	1,000	1,000	1,000	

* A = DISTANCE FROM TRANSITION/POINT OF RESTRICTION TO FIRST SIGN
 B = DISTANCE BETWEEN FIRST AND SECOND SIGN
 C = DISTANCE BETWEEN SECOND AND THIRD SIGN (INITIAL WARNING SIGN)

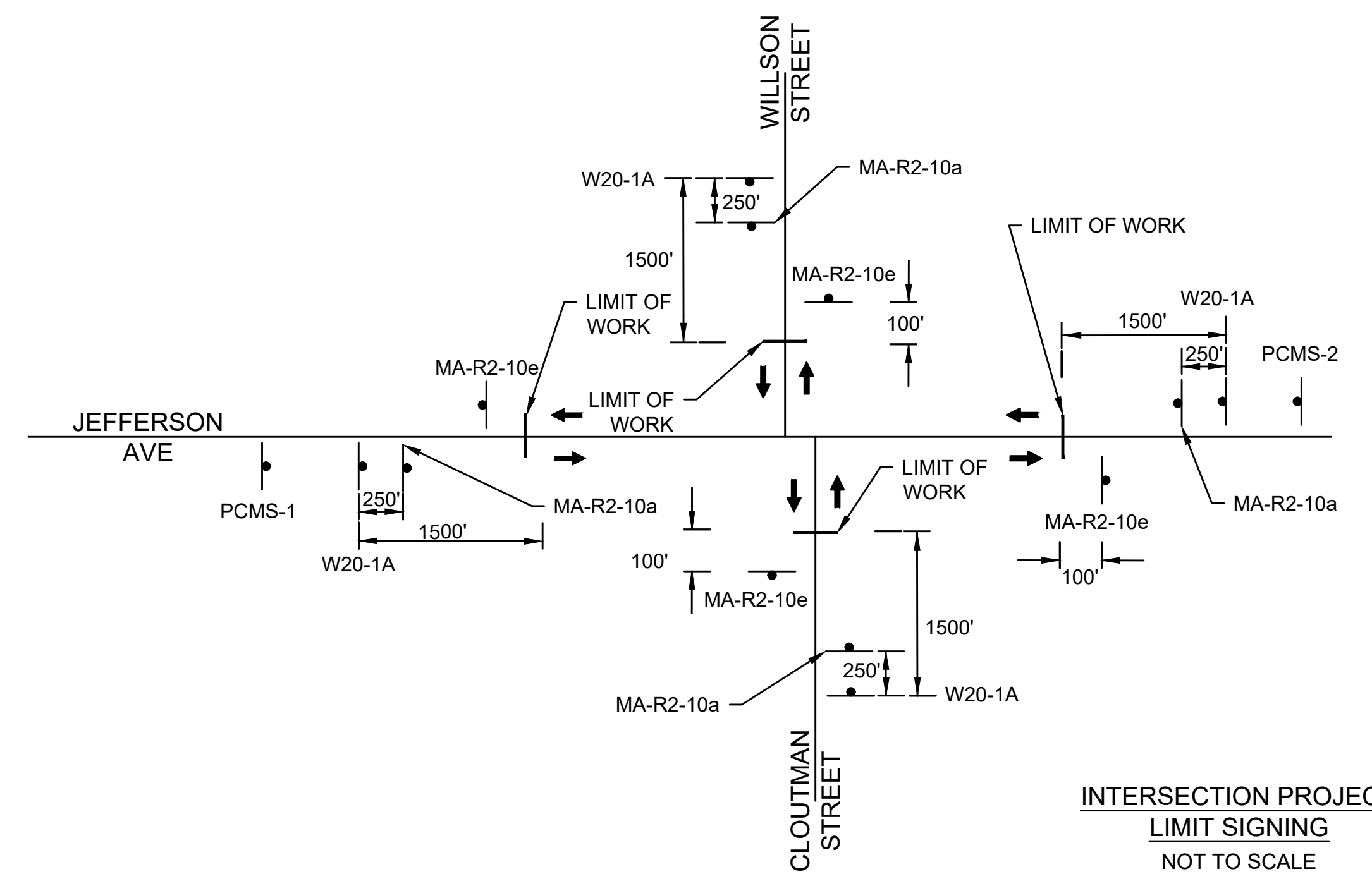


NOTE: MESSAGE TO BE DISPLAYED TWO WEEKS PRIOR TO WASHINGTON ST ROAD WORK.



NOTE: MESSAGE TO BE DISPLAYED FOR THE FIRST TWO WEEKS OF WASHINGTON ST ROAD WORK.

PCMS MESSAGES



INTERSECTION PROJECT LIMIT SIGNING
NOT TO SCALE

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PREPARED BY



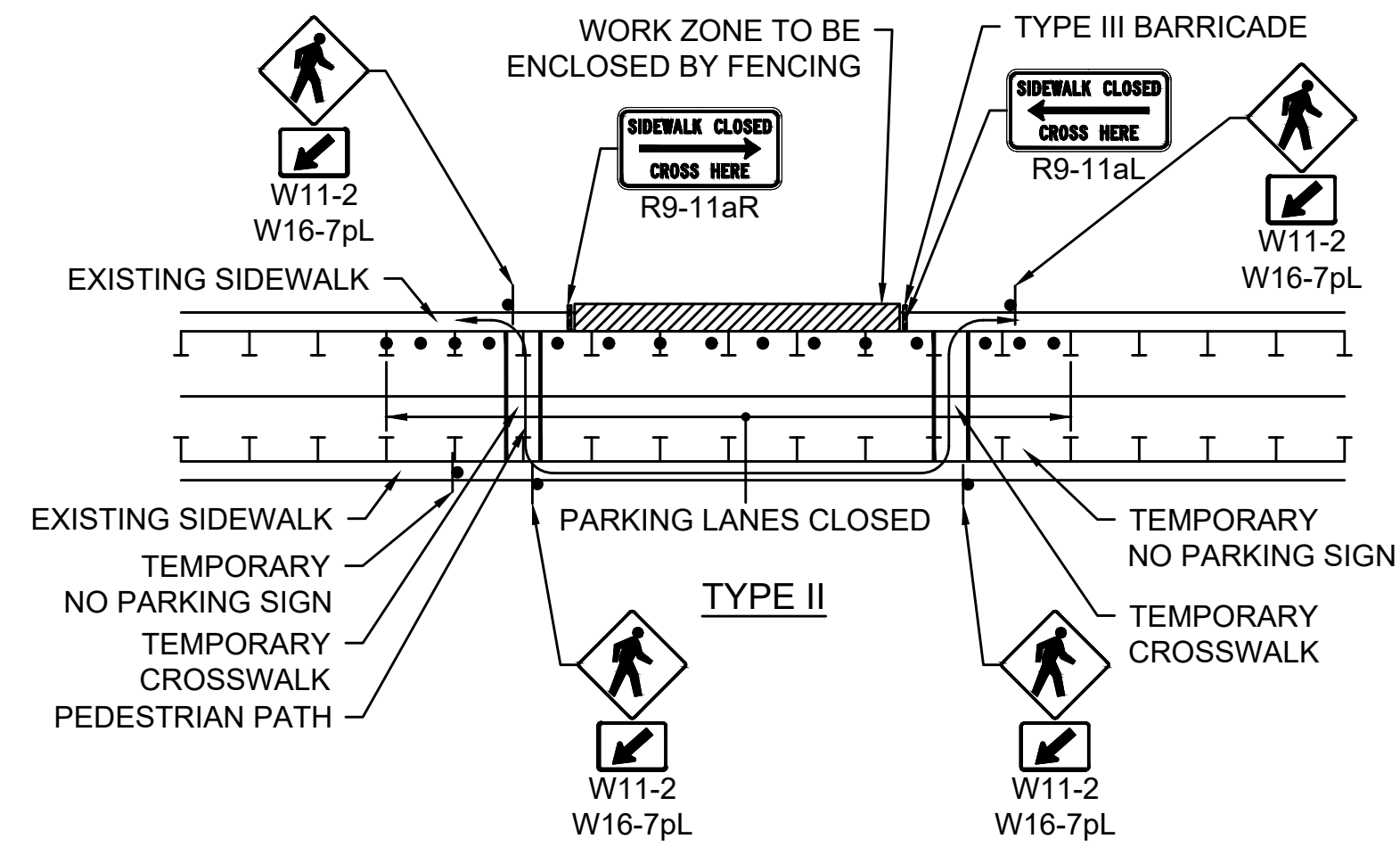
SUBCONSULTANT

SCALE
NONE

TITLE
**INTERSECTION IMPROVEMENTS
JEFFERSON AVE AT WILSON ST/CLOUTMAN ST
TEMPORARY TRAFFIC CONTROL PLAN
SALEM, MASSACHUSETTS**

BETA JOB NO. 6965
ISSUE DATE 12/29/2023
SHEET NO. 27 of 29

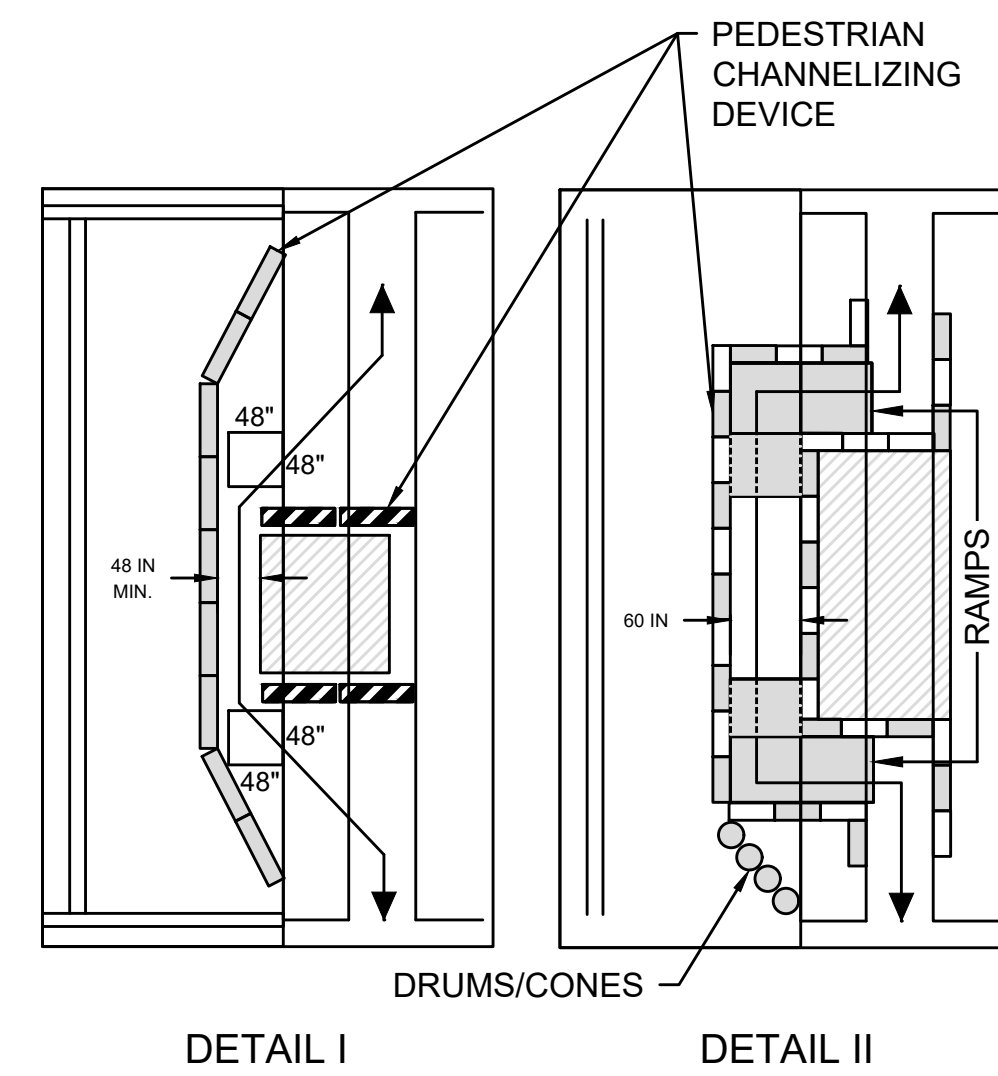
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



NOTES:

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

PEDESTRIAN BYPASS DETAILS
NOT TO SCALE

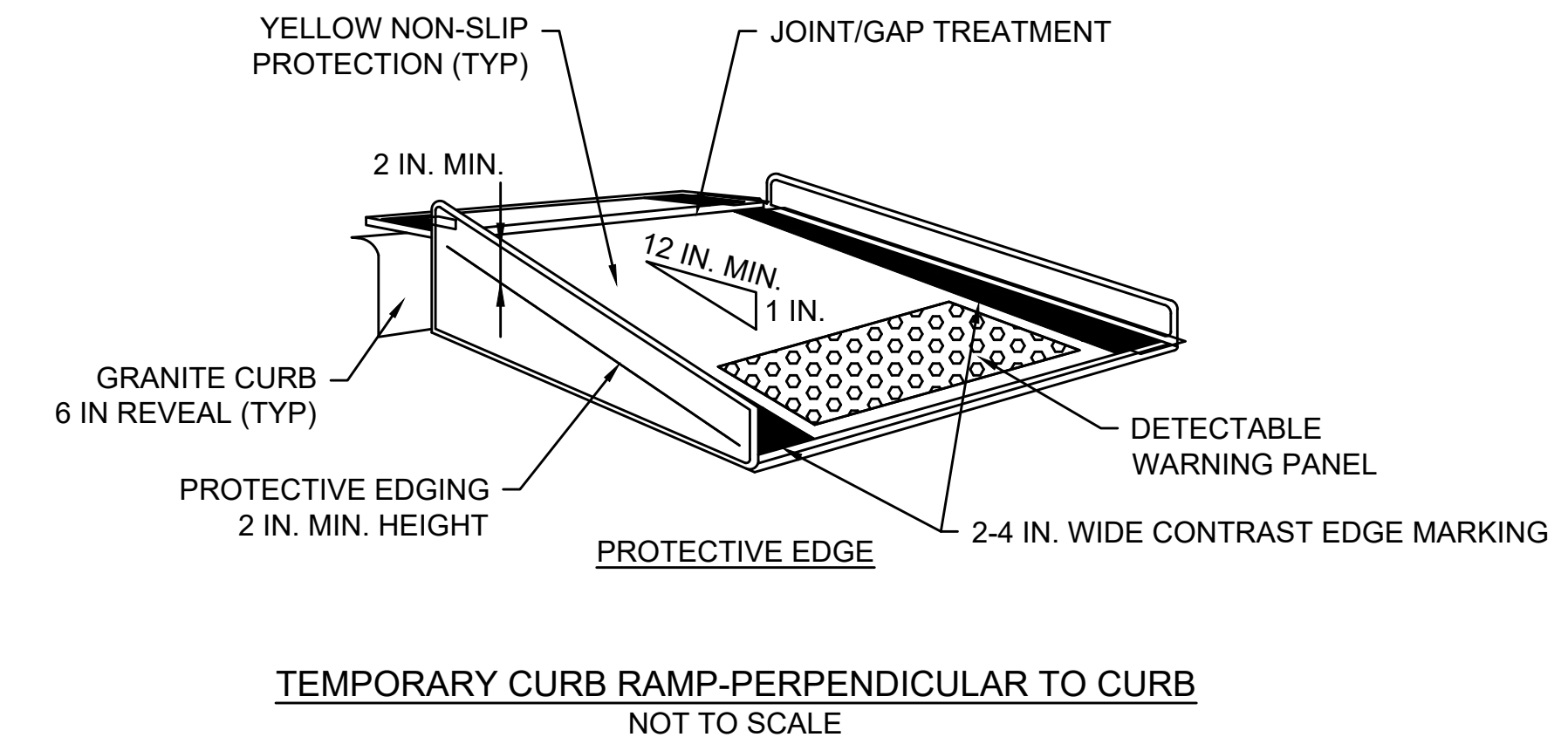


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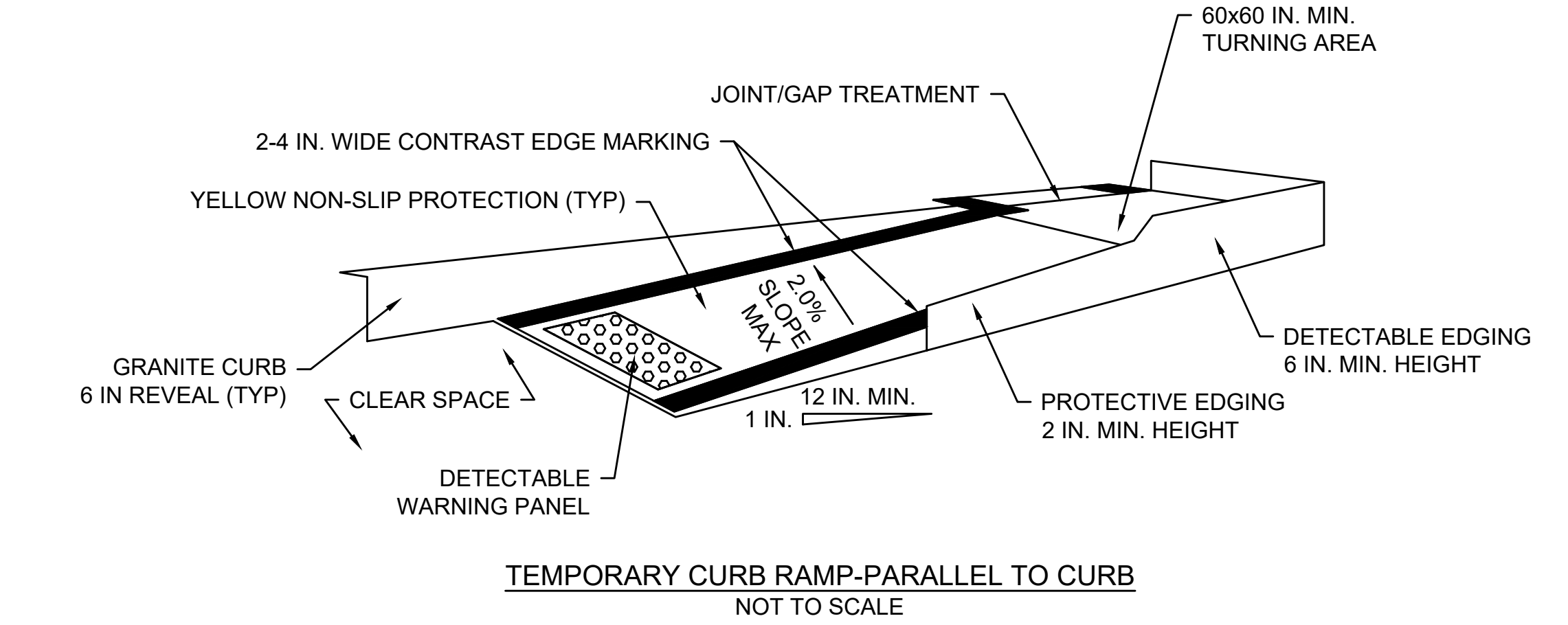
- DETAIL I IS CONSIDERED AN EXAMPLE OF A SHORT TERM CLOSURE AND PEDESTRIAN ASSISTANCE (PERSONEL) TO NAVIGATE AROUND THE CLOSURE/WORK AREA COULD BE CONSIDERED AS AN OPTION IN PLACE OF PROVIDING ADA/AAB DEVICES. DETAIL II IS CONSIDERED AN EXAMPLE OF A LONG TERM CLOSURE THAT WOULD REQUIRE ADDITIONAL ADA/AAB COMPLIANT DEVICES. IF A SIDEWALK CLOSURE OR RESTRICTION LASTS FOR MORE THAN ONE (1) WORK SHIFT THEN ADA/AAB COMPLIANCE SHALL BE FOLLOWED.
- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE FIGURES).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THE SIDEWALK EXCEEDS 200 FEET THEN A 5 FOOT BE 5 FOOT PASSING ZONE SHALL BE PROVIDED.
- THE PROTECTIVE REQUIREMENTS OF A TTC WORK ZONE MAY HAVE AN IMPACT IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN PROVIDING PEDESTRIAN DELINEATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
- CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN; VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE. THESE DETAILS ARE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DETERMINED BY THE ENGINEER.
- AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDDLEBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.
- EXISTING AUDIBLE DEVICES NO LONGER APPLICABLE DUE TO CONSTRUCTION SHALL BE DISABLED.

AUDIBLE DEVICES:

- FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPEECH MESSAGING FOR PEDESTRIANS WITH VISUAL DISABILITIES SHALL BE PROVIDED. AUDIBLE INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.



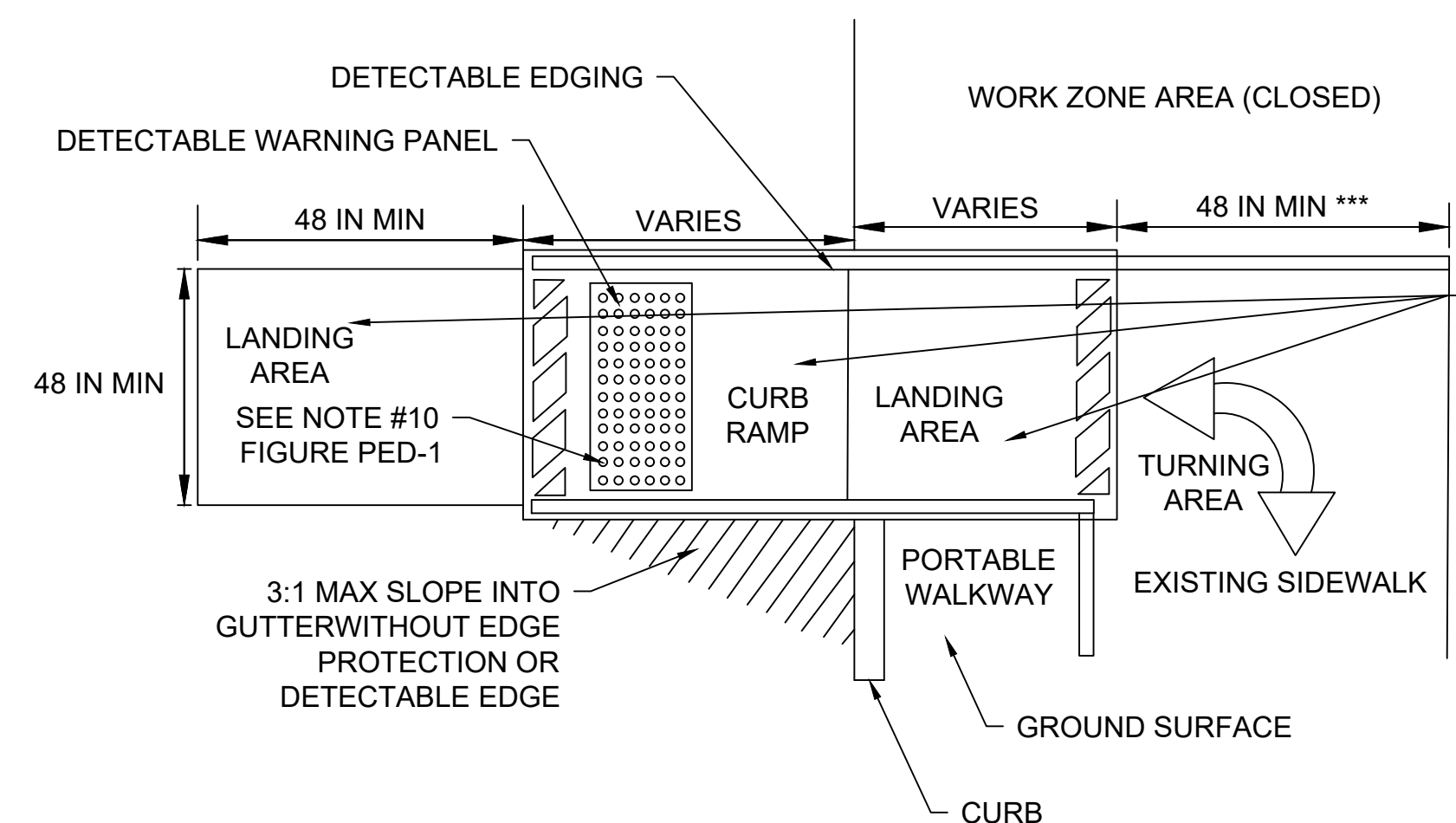
TEMPORARY CURB RAMP-PERPENDICULAR TO CURB
NOT TO SCALE



TEMPORARY CURB RAMP-PARALLEL TO CURB
NOT TO SCALE

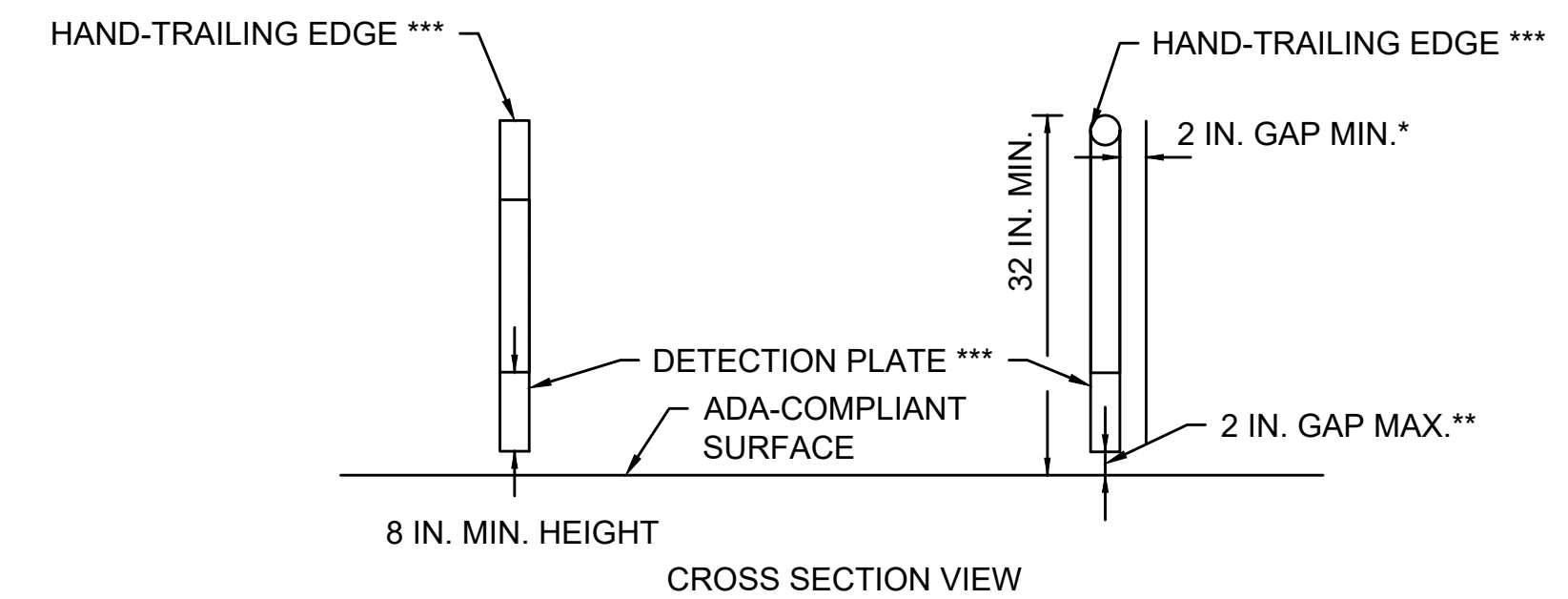
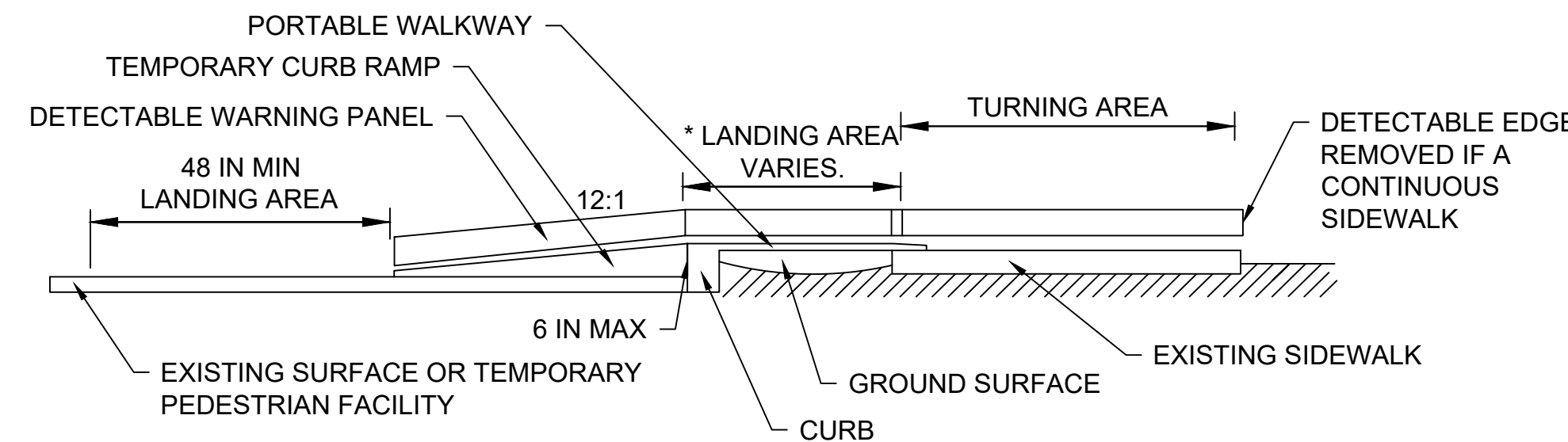
NOTES:

- CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
- PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
- DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
- CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
- CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
- LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
- CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
- IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



TEMPORARY CURB RAMP
NOT TO SCALE

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



PEDESTRIAN CHANNELIZING DEVICE
NOT TO SCALE

NOTES:

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

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NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	REGISTERED PROFESSIONAL	PREPARED BY:	SUBCONSULTANT
AJP			
DESIGNED BY:			
AJP			
CHECKED BY:			
DF			

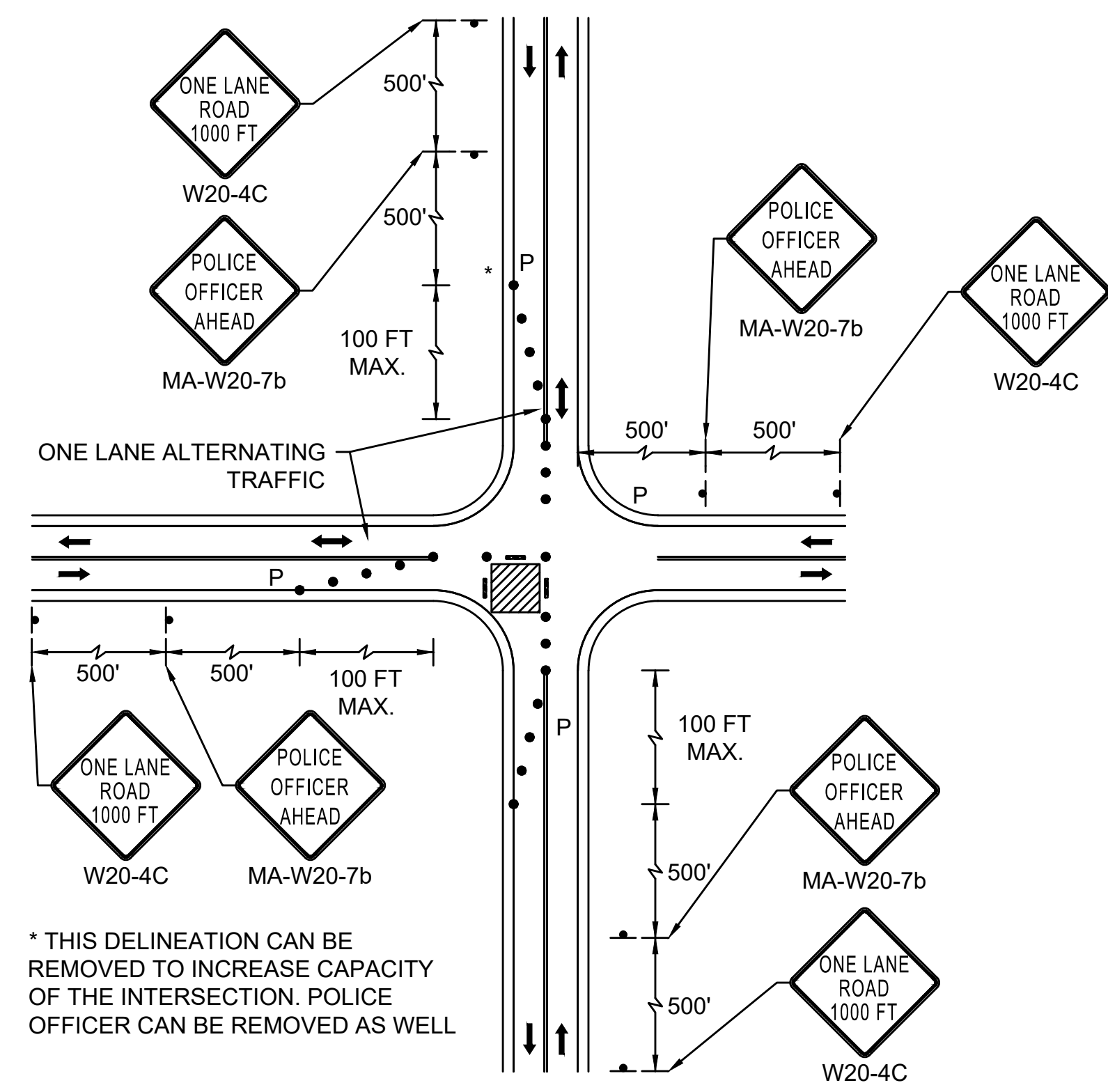

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SCALE	TITLE
NONE	INTERSECTION IMPROVEMENTS JEFFERSON AVE AT WILSON ST/CLOUTMAN ST TEMPORARY TRAFFIC CONTROL PLAN SALEM, MASSACHUSETTS

BETA JOB NO.	6965
ISSUE DATE	12/29/2023
SHEET NO.	28 of 29

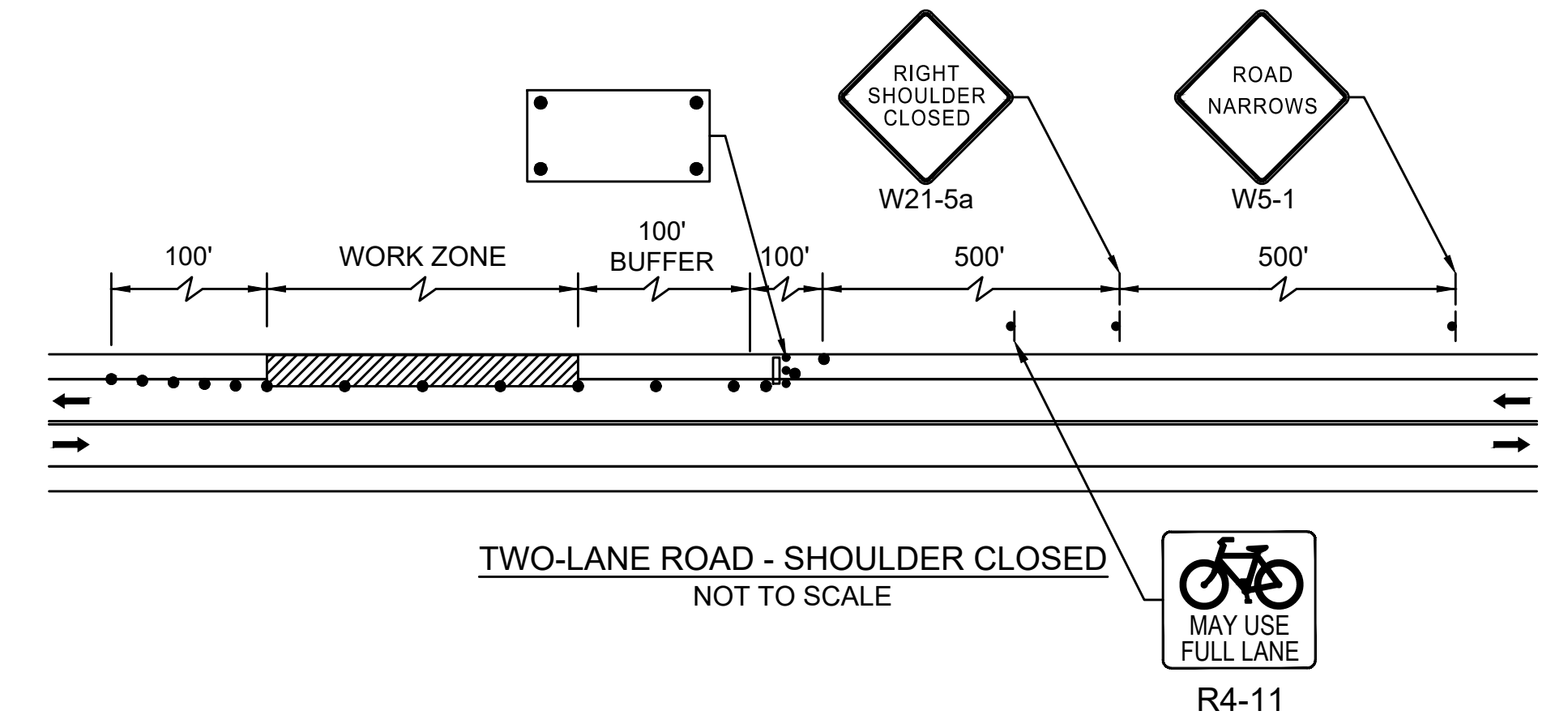
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW		BACK-GROUND	LEGEND	BORDER		
MA-R2-10a	48 in	36 in	WORK ZONE SPEEDING FINES DOUBLED	SEE MASSDOT STANDARDS			4	ORANGE*	BLACK	BLACK	12.0	48.0
MA-R2-10e	36 in	48 in	END ROAD WORK DOUBLE FINES END	SEE MASSDOT STANDARDS			4	ORANGE*	BLACK	BLACK	12.0	48.0
R4-1	18 in	24 in	DO NOT PASS	SEE 2009 MUTCD STANDARDS			2	WHITE	BLACK	BLACK	3.0	6.0
R4-11	30 in	30 in	MAY USE FULL LANE	SEE 2009 MUTCD STANDARDS			4	WHITE	BLACK	BLACK	6.25	25.0
R9-11aL	24 in	12 in	SIDEWALK CLOSED CROSS HERE	SEE 2009 MUTCD STANDARDS			1	WHITE	BLACK	BLACK	2.0	2.0
R9-11aR	24 in	12 in	SIDEWALK CLOSED CROSS HERE	SEE 2009 MUTCD STANDARDS			1	WHITE	BLACK	BLACK	2.0	2.0
W5-1	36 in	36 in	ROAD NARROWS	SEE 2009 MUTCD STANDARDS			2	ORANGE*	BLACK	BLACK	9.0	18.0
W8-1	36 in	36 in	BUMP	SEE 2009 MUTCD STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
W8-3	36 in	36 in	PAVEMENT ENDS	SEE 2009 MUTCD STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
W8-15	36 in	36 in	GROOVED PAVEMENT	SEE 2009 MUTCD STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
W8-24	36 in	36 in	STEEL PLATE AHEAD	SEE 2009 MUTCD STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
W11-2	30 in	30 in	PEDESTRIAN	SEE 2009 MUTCD STANDARDS			4	FYG	BLACK	BLACK	6.25	25.0
W16-7pL	24 in	12 in	LEFT TURN	SEE 2009 MUTCD STANDARDS			4	FYG	BLACK	BLACK	2.0	8.0
W20-1A	36 in	36 in	ROAD WORK AHEAD	SEE 2009 MUTCD STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
W20-1B	36 in	36 in	ROAD WORK AHEAD	SEE 2009 MUTCD STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
W20-4	36 in	36 in	ONE LANE ROAD AHEAD	SEE 2009 MUTCD STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
W20-4C	36 in	36 in	ONE LANE ROAD 1000 FT	SEE 2009 MUTCD STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
W20-7	36 in	36 in	PEDESTRIAN	SEE 2009 MUTCD STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
MA-W20-7b	36 in	36 in	POLICE OFFICER AHEAD	SEE MASSDOT STANDARDS			4	ORANGE*	BLACK	BLACK	9.0	36.0
W21-5aR	36 in	36 in	RIGHT SHOULDER CLOSED	SEE 2009 MUTCD STANDARDS			2	ORANGE*	BLACK	BLACK	9.0	18.0

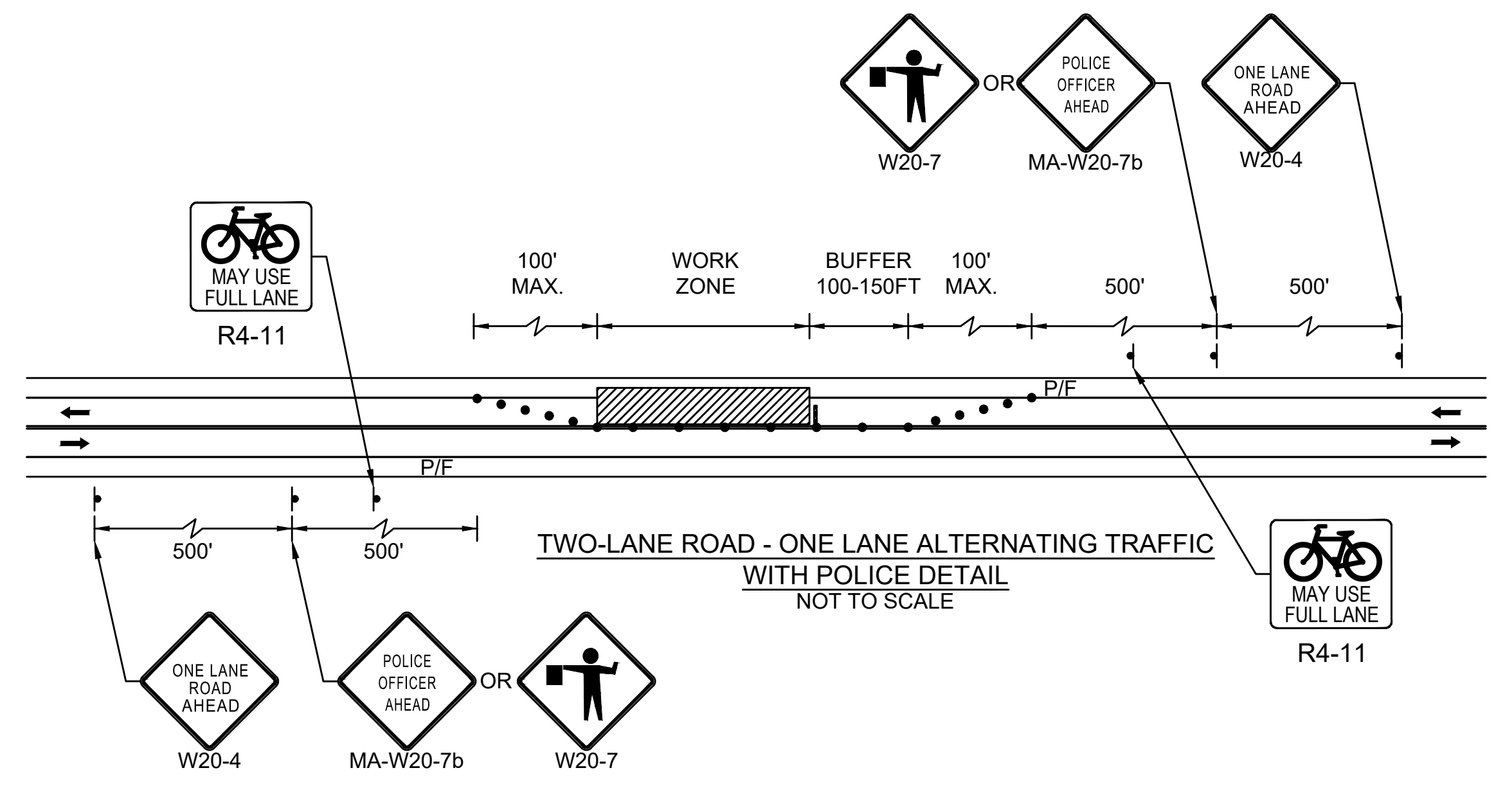


* THIS DELINEATION CAN BE REMOVED TO INCREASE CAPACITY OF THE INTERSECTION. POLICE OFFICER CAN BE REMOVED AS WELL

INTERSECTION WITH LANE CLOSURE
NOT TO SCALE



TWO-LANE ROAD - SHOULDER CLOSED
NOT TO SCALE



TWO-LANE ROAD - ONE LANE ALTERNATING TRAFFIC
WITH POLICE DETAIL
NOT TO SCALE

NOTES:

1. NUMBER OF SIGNS ARE ESTIMATED FOR BIDDING PURPOSES ONLY.
2. HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING CONFORMING TO SECTION M9:30.0, TYPE III OR IV, OF THE MASSDOT STANDARD SPECIFICATIONS SHALL BE USED FOR ALL SIGNS.
3. SEE THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" FOR THE LATEST SPECIFICATIONS ON TEXT DIMENSIONS AND COLOR. (ALSO SEE SECTION M9.30.0 TYPE III MASSDOT STANDARD SPECIFICATION, THE "MASSACHUSETTS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," AND "GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS" (LATEST EDITIONS) BY THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION).
4. FYG: FLUORESCENT YELLOW GREEN.
5. * = FLUORESCENT ORANGE

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NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS												