

CITY OF RICHMOND, VIRGINIA

DEPARTMENT OF PUBLIC WORKS

TRANSPORTATION ENGINEERING DIVISION



ACCELERATED BIKE LANES

ALLEN AVENUE

LEIGH STREET TO COLORADO AVENUE

CITY PROJECT NO. 106868
AWARD NO. 500309

90% PLANS – 08/20/2020

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

Kimley-Horn
Richmond, Virginia
TRANSPORTATION ENGINEER

REVISIONS

NO.	DATE	COMMENTS

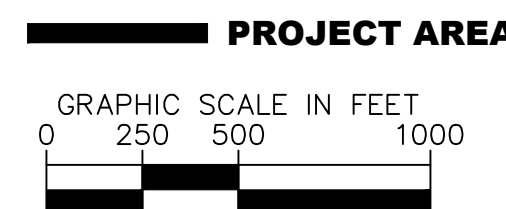
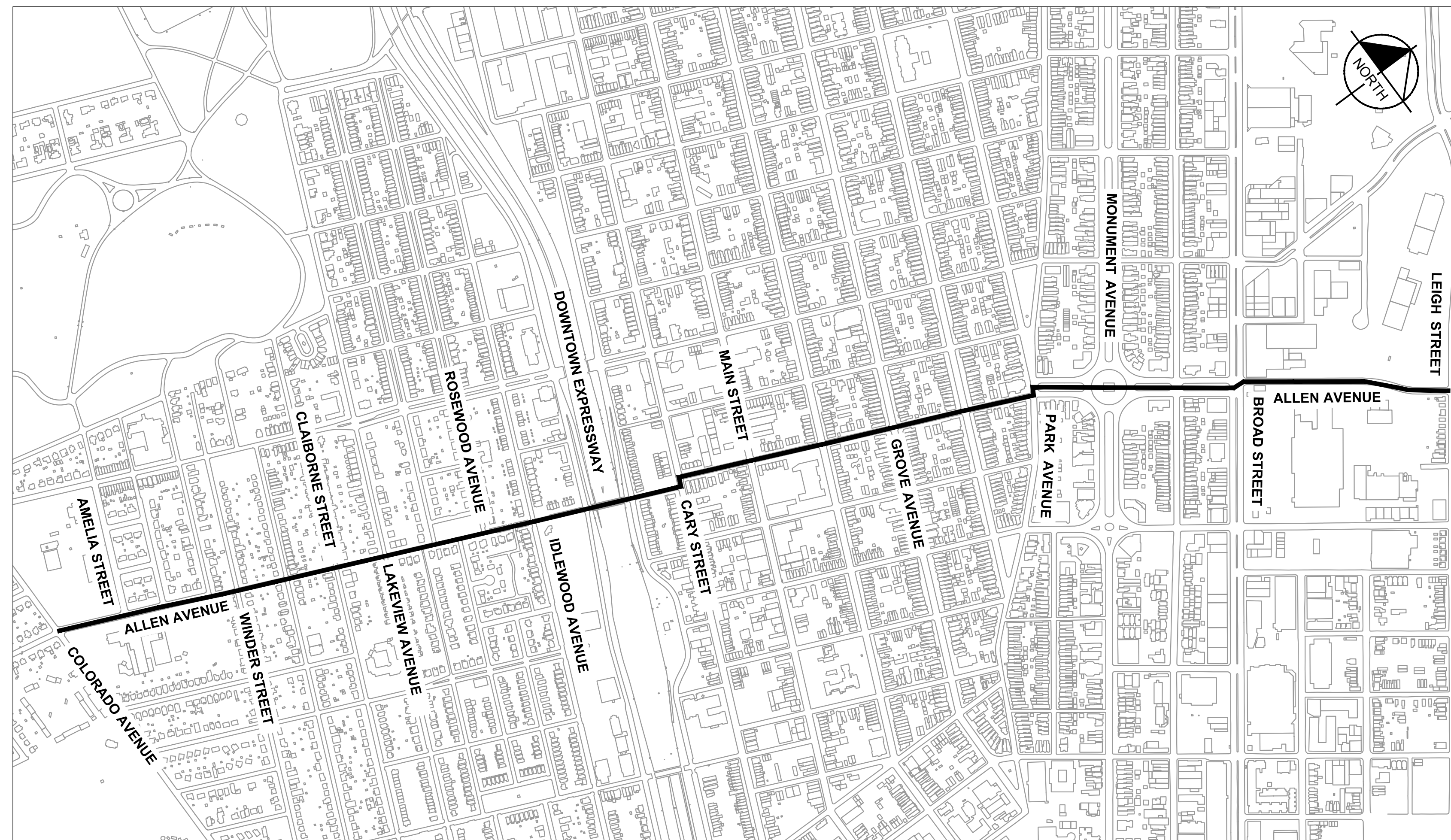
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CITY OF RICHMOND.

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE CITY OF RICHMOND DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS, 2020 VDOT ROAD AND BRIDGE SPECIFICATIONS, 2016 VDOT ROAD AND BRIDGE STANDARDS, 2009 FHWA MUTCD, 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, 2011 VIRGINIA WORK AREA PROTECTION MANUAL, AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC VERSION OF THE PLAN ASSEMBLY INCLUDING ALL REVISIONS.

ALL WORK IS CONTAINED WITHIN EXISTING RIGHT-OF-WAY AND NO PROPOSED RIGHT-OF-WAY OR PERMANENT EASEMENTS ARE REQUIRED.



LOCATION MAP
AUGUST 2020

CITY OF RICHMOND

APPROVED FOR CONSTRUCTION

DATE	SURVEY SUPERINTENDENT
DATE	PROJECT MANAGER
DATE	MAINTENANCE ENGINEER
DATE	CITY TRANSPORTATION ENGINEER
DATE	CAPITAL PROJECTS ADMINISTRATOR
DATE	CITY ENGINEER
DATE	DIRECTOR OF PUBLIC WORKS

DRAWING NO. O-28924

Kimley»Horn

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Ploited By: Modem, Heather
 Sheet Set: Kha_Layout1/Layout1 August 20, 2020 12:22:57pm K:\RICHMOND\113357_dlc_on_coll\041_accelerated bike lanes\3_project_dwg_03_design\CADD\SheetSet\allen_avenue\ALLEN_GENERAL NOTES.dwg
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GENERAL NOTES

- THIS PROJECT CONSISTS OF BICYCLE AND PEDESTRIAN MOBILITY AND SAFETY IMPROVEMENTS WITHIN THE EXISTING ROADWAY CROSS-SECTIONS OF ALLEN AVENUE FROM LEIGH STREET TO COLORADO AVENUE IN THE CITY OF RICHMOND. THE SECTION OF ALLEN AVENUE BETWEEN IDLEWOOD AVENUE AND COLORADO AVENUE IS ASSOCIATED WITH A PARALLEL CITY RESURFACING PROJECT.
- THE CONTRACTOR SHALL PERFORM ALL WORK AND CONSTRUCT AND INSTALL ALL ITEMS WITHIN EXISTING CITY OF RICHMOND RIGHT OF WAY.
- ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE CITY OF RICHMOND, THE LATEST STANDARDS AND SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND THE VDOT SUPPLEMENT TO THE MUTCD, EXCEPT AS NOTED ON THE PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF RICHMOND PRIOR TO COMMENCING CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE CITY PROJECT MANAGER 72 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- THE LOCATION OF EXISTING SEWER, WATER OR GAS LINES, CONDUITS, OR OTHER STRUCTURES ACROSS, UNDERNEATH, OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE LIABLE FOR ALL DAMAGE DONE TO ANY STRUCTURES OR PROPERTY THROUGH HIS/HER NEGLIGENCE OR CARELESSNESS.
- ALL UTILITY CLEARANCES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE OBTAINED PRIOR TO CONSTRUCTION.
- ANY DEVIATIONS FROM THE APPROVED PLANS AND/OR STANDARDS AND SPECIFICATIONS MUST BE APPROVED BY THE CITY PROJECT MANAGER IN WRITING, PRIOR TO START OF WORK.
- IF A CONFLICT WITH THE PLANS AND FIELD CONDITIONS IS FOUND TO EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE ANY WORK IS STARTED IN ORDER TO COORDINATE THE REMAINDER OF THE WORK TO BE DONE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES AND SHALL REPLACE AT NO ADDITIONAL COST, IF DAMAGED, AS DIRECTED BY THE CITY. EXISTING UTILITIES THAT ARE IN CONFLICT AND MAY NEED TO BE REMOVED OR RELOCATED, WILL BE COORDINATED BY THE CITY. RELOCATIONS OF CITY FACILITIES WILL BE ADMINISTERED BY THE CITY DEPARTMENT OF PUBLIC UTILITIES. IN CASE OF EMERGENCIES OF UTILITY BREAKAGE/CONFLICT CONTACT:

UTILITY	TELEPHONE NUMBERS
GAS	646-8300, 646-8309, 646-8310
WATER	646-8300, 646-8309, 646-8310
SEWER	646-8600, 646-8426
POWER	888-667-3000
TRAFFIC SIGNAL	311, 646-7000

- INSTALLATION DIMENSIONS SHOWN WITHIN THE PLANS ARE TYPICAL. MODIFICATION SHALL BE MADE AS REQUIRED UNDER APPROVAL FROM THE ENGINEER. THE CITY WILL MEET WITH THE CONTRACTOR TO FIELD VERIFY THE LOCATIONS OF THE PAVEMENT MARKINGS PRIOR TO INSTALLATION.
- DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CITY OF RICHMOND.
- THE TOTAL DISTURBED AREA FOR THE PROJECT IS LESS THAN 10,000 SF, THIS PROJECT IS THEREFORE EXEMPT FROM THE NEED FOR A FORMAL E & S CONTROL PLAN.
- THE COMPLETE PAPER COPY OF THE PLAN ASSEMBLY AS AWARDED INCLUDING ALL SUBSEQUENT REVISIONS WILL BE THE SOLE OFFICIAL CONSTRUCTION PLANS.
- LOCATION OF EXISTING SIGNS, MANHOLES, STRUCTURES, LIGHT POLES, UTILITY POLES, AND DRAINAGE STRUCTURES, AS SHOWN ON THE PLANS ARE APPROXIMATE AS PROVIDED BY CITY GIS DATA. ALL EXISTING UTILITIES ARE NOT SHOWN IN THEIR EXACT LOCATIONS.
- ALL EXISTING RIGHT OF WAY LINES SHOWN ON THE PLANS ARE APPROXIMATE AS PROVIDED BY CITY GIS DATA. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO FIELD LOCATE ALL PROPOSED ITEMS ON THESE PLANS AND SHALL ENSURE ALL ITEMS ARE INSTALLED WITHIN EXISTING RIGHT OF WAY OR ON CITY-OWNED PROPERTY. THE LOCATION AND ORIENTATION OF ALL PROPOSED ITEMS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- ALL EXISTING SIGNS TO BE REMOVED BY THE CONTRACTOR SHALL BE SALVAGED AND RETURNED TO THE CITY OF RICHMOND TRANSPORTATION ENGINEERING DIVISION SHOP. THE CONTRACTOR SHALL CALL THE SHOP AT (804)646-1466 THREE (3) BUSINESS DAYS IN ADVANCE TO SCHEDULE AN APPOINTMENT TO DROP OFF MATERIALS.
- ANY AREA THAT IS DISTURBED OUTSIDE OF THE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE RESTORED AND REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
- THE ENGINEER RESERVES THE RIGHT TO MAKE ANY CHANGES TO THESE PLANS AND TRAFFIC CONTROL AS DEEMED NECESSARY.
- ANY TRAFFIC CONTROL DEVICES INCLUDING BUT NOT LIMITED TO PAVEMENT MARKINGS, SIGNS, AND TRAFFIC CONTROL SIGNAL EQUIPMENT DAMAGED OR DESTROYED BY THE CONTRACTOR MUST BE REPLACED AT THE CONTRACTOR'S EXPENSE UNLESS THEIR REMOVAL OR DESTRUCTION IS CALLED FOR BY THE PLANS.
- THE CONTRACTOR SHALL REMOVE AND REPLACE SIDEWALKS DAMAGED FROM THE CONTRACTOR'S OPERATIONS IN FULL SECTIONS TO THE NEAREST JOINT. REPLACEMENT SIDEWALK MATERIAL SHALL MATCH THE EXISTING SIDEWALK TO THE GREATEST EXTENT PRACTICAL.

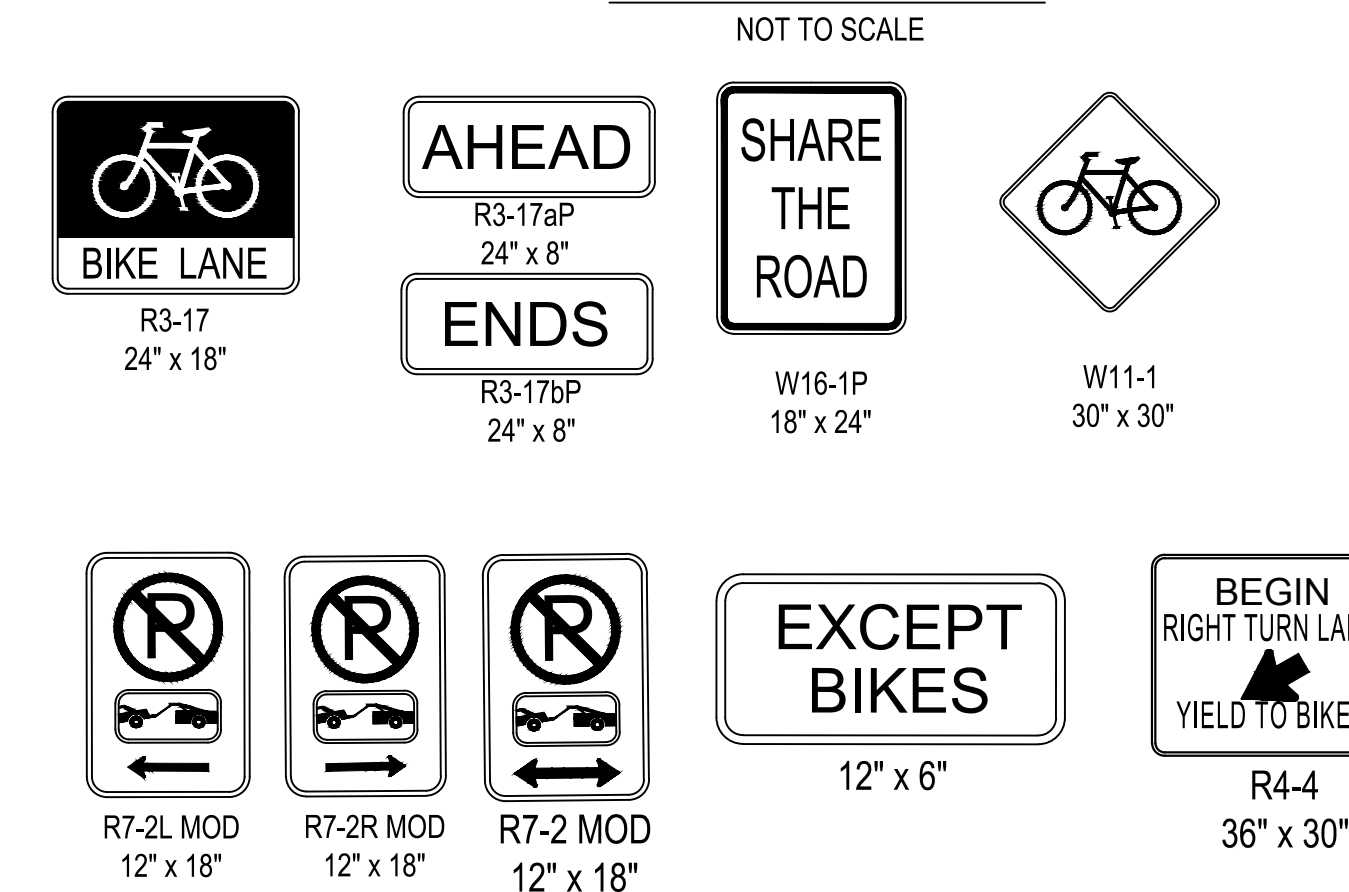
SIGNING AND STRIPING NOTES

- THE CONTRACTOR SHALL PREPARE THE PAVEMENT SURFACE FOR THE PROPER ADHESION, REGARDLESS OF PAVEMENT TYPE. ANY SWEEPING OR REMOVAL OF DEBRIS, GRAVEL, DIRT OR OTHER FOREIGN MATERIALS SHALL BE CONSIDERED AS INCIDENTAL TO THE INSTALLATION, AND NO SEPARATE PAYMENT THEREFOR.
- UNLESS SPECIFIED OTHERWISE, THE BASIS OF MEASUREMENT SHALL BE ALONG THE LONGITUDINAL CENTERLINE OF PAVEMENT MARKINGS. MEASUREMENT FOR LEGENDS SHALL BE PER MESSAGE, COMPLETE AND IN PLACE.
- ALL MARKINGS IMPROPERLY APPLIED OR LOCATED IN THE OPINION OF THE ENGINEER SHALL BE COMPLETELY REMOVED AND CORRECTLY REAPPLIED, AT THE SOLE EXPENSE OF THE CONTRACTOR.
- ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED ON THE PLANS OR DIRECTED BY THE CITY OF RICHMOND ENGINEER.
- THERMOPLASTIC PAVEMENT MARKINGS SHALL NOT BE INSTALLED AT ANYTIME WITHIN A 48 HOUR PERIOD FOLLOWING A RAINFALL.
- COLORS SHALL CONFORM TO STANDARD HIGHWAY COLORS THROUGHOUT THE EXPECTED LIFE OF THE FILM.
- THE CONTRACTOR SHALL REMOVE COMPLETELY ALL PREVIOUS OR EXISTING PAVEMENT MARKINGS OR SIGNS, WHICH IN THE OPINION OF THE ENGINEER OR CITY'S INSPECTOR CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS AND SIGNS.
- THE CONTRACTOR SHALL NOT INSTALL NEW PAVEMENT MARKINGS ON TOP OF ANY EXISTING MARKINGS.
- PRIOR TO APPLICATION, THE CONTRACTOR SHALL FIELD CHECK AND LOCATE ALL PAVEMENT MARKINGS TO THE SATISFACTION OF THE PROJECT MANAGER.
- MARKINGS SHALL NOT BE APPLIED TO EXISTING CONCRETE GUTTER.
- MARKINGS SHALL NOT BE APPLIED TO NON-PAVEMENT SURFACES, INCLUDING BUT NOT LIMITED TO MANHOLES, VALVES, HANDHOLES, AND METERS. THE CONTRACTOR MAY LEAVE A GAP IN THE PROPOSED MARKING OR COVER THE APPURTENANCE DURING APPLICATION AND REMOVE ANY COVERING ONCE THE MARKING HAS BEEN APPLIED.
- MARKING MATERIAL SHALL BE APPLIED AT THE SPECIFIED DIMENSIONS AND AT A RATE TO RESULT IN A MARKING THICKNESS OF 90 MILS ±5 MILS (NOT INCLUDING GLASS BEAD TOP DRESSING).
- THE MARKINGS SHALL BE PROVIDED IN SPECIFIED WIDTHS AND SHAPES. PREFORMED WORDS AND SYMBOLS SHALL CONFORM TO THE APPLICABLE SHAPES AND SIZES AS OUTLINED IN THE MUTCD.
- UNLESS OTHERWISE SPECIFIED ON THE PLANS OR IN CONTRACT DOCUMENTS, ALL PAVEMENT MARKINGS AND LEGENDS IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH VDOT SPECIFICATIONS.
- SIGNS SHALL BE ERECTED WHERE DESIGNATED IN ACCORDANCE WITH THE PLANS. ALL SIGNS THAT REQUIRE MOUNTING SHALL BE ON STEEL U-CHANNEL POSTS INSTALLED DIRECTLY IN THE GROUND (2' MAXIMUM DEPTH - CONTRACTOR IS TO VERIFY LOCATION AND UTILITY CONFLICTS PRIOR TO INSTALLING).
- SIGN MOUNTING HEIGHT AND DISTANCE FROM FACE OF CURB SHALL CONFORM TO MUTCD GUIDELINES.
- FOR SIGN POST INSTALLATIONS INTO EXISTING CONCRETE OR BRICK SURFACES, NO SLEEVES SHALL BE USED. CONTRACTOR SHALL CORE THROUGH SURFACE AND INSTALL U-CHANNEL POSTS AS SPECIFIED.
- METAL BANDS AND BRACKETS SHALL BE USED FOR MOUNTING SIGNS TO EXISTING POLES IN ACCORDANCE WITH TYPICAL DETAIL SHEET 3.
- SIGN ATTACHMENTS TO EXISTING POLES MAY BE MADE AT THE CONTRACTOR'S DISCRETION, HOWEVER THEY MUST FIRST BE CONFIRMED ACCEPTABLE BY THE PROJECT MANAGER.
- THE PROJECT MANAGER OR HIS/HER DESIGNEE SHALL CONFIRM THAT ALL SIGN AND SIGN POSTS INSTALLATIONS ARE ACCEPTABLE TO THE CITY OF RICHMOND PRIOR TO PROJECT COMPLETION.
- PARKING AREAS SHALL BE NO CLOSER THAN 30' FROM A MARKED CROSSWALK, CURB RAMP, OR CURB RETURN WHERE THERE IS AN ADJACENT DEDICATED BIKE LANE. PARKING AREAS SHALL BE NO CLOSER THAN 20' FROM AN ALLEY OR DRIVEWAY WHERE THERE IS AN ADJACENT DEDICATED BIKE LANE. IF NO ADJACENT DEDICATED BIKE LANE IS PRESENT, PARKING AREAS SHALL BE NO CLOSER THAN 20' FROM A CROSSWALK, CURB RAMP, OR CURB RETURN. PARKING AREAS ARE NOT PERMITTED IN FRONT OF ALLEYS OR DRIVEWAYS, AND SHALL BE NO CLOSER THAN 15' FROM A FIRE HYDRANT.
- BUFFER AREA PAVEMENT MARKINGS SHALL NOT EXTEND INTO INTERSECTIONS, ALLEYS, OR DRIVEWAYS.
- IF BUFFER AREA IS GREATER THAN 4 FEET IN WIDTH, THE BUFFER AREA AT DRIVEWAYS SHALL END USING 5 FOOT RADIUS CURVES AS SHOWN ON PLANS, UNLESS OTHERWISE NOTED.
- IF ACTUAL ROADWAY CROSS SECTION IS LESS THAN THE WIDTH OF THE TYPICAL SECTION SHOWN ON THE PLANS, THE CONTRACTOR SHALL REDUCE THE WIDTH OF THE BUFFER BY THE DIFFERENCE IN WIDTH TO MAINTAIN 11' TRAVEL LANES.
- IF ACTUAL ROADWAY CROSS SECTION IS GREATER THAN THE WIDTH OF THE TYPICAL SECTION SHOWN ON THE PLANS, THE CONTRACTOR SHALL INCREASE THE WIDTH OF THE BUFFER AREA BY THE DIFFERENCE IN WIDTH TO MAINTAIN 11' TRAVEL LANES AND SPECIFIED PARKING LANE WIDTH.
- CALLOUTS ON THE PLANS ARE NOT SHOWN FOR EACH INDIVIDUAL CHEVRON, FLEXI-POST, PAVEMENT MARKING ETC. IF THE CONTRACTOR IS UNCLEAR WHICH PAY ITEM IS DENOTED IN THE PLANS, THE CONTRACTOR SHALL VERIFY THE ITEM WITH THE PROJECT MANAGER OR ENGINEER.
- THE VERTICAL FLEXIBLE DELINEATOR (FLEXI-POST) SHOWN ON THE PLANS SHALL BE THE PEXCO FG300 MODEL UR OR EQUIVALENT, APPROVED EQUAL. THE PROPOSED VERTICAL FLEXIBLE DELINEATOR SHALL BE APPROVED BY THE CITY OF RICHMOND PROJECT MANAGER.
- STOP BARS SHALL BE 24" WIDE WHITE MARKINGS AND SHALL BE INSTALLED PERPENDICULAR TO THE PATH OF VEHICULAR TRAVEL.
- PROPOSED STOP BAR FOR TWO-WAY APPROACH SHALL EXTEND FROM FACE OF CURB TO CENTER OF ROADWAY OR TO MARKED CENTERLINE.
- PROPOSED STOP BAR FOR ONE-WAY APPROACH SHALL EXTEND THE FULL WIDTH OF THE ROADWAY.
- IF EXISTING STOP BARS ARE IN GOOD CONDITION AND ARE GREATER THAN 3' FROM THE PROPOSED CROSSWALK, THEN AT THE DISCRETION OF THE CITY'S INSPECTOR THE EXISTING STOP BAR MAY REMAIN.
- ALL PROPOSED CROSSWALK MARKINGS SHALL BE PLACED CENTERED WITH PEDESTRIAN RAMPS AND AS SHOWN ON TYPICAL DETAIL SHEET 3, UNLESS OTHERWISE NOTED ON THE PLANS.
- CROSSWALKS SHALL BE INSTALLED AS CLOSE TO PERPENDICULAR TO VEHICULAR TRAVEL AS PRACTICAL.
- CORNER CLEARANCE MARKINGS SHALL BE INSTALLED PER TYPICAL DETAIL SHEET 3 UNLESS OTHERWISE NOTED ON THE PLANS.
- CORNER CLEARANCE MARKING CORNER CLEARANCE MARKINGS SHALL NOT BE INSTALLED WHERE ON-STREET PARKING IS PROHIBITED OR IF PARKING LANES ARE NOT PRESENT.

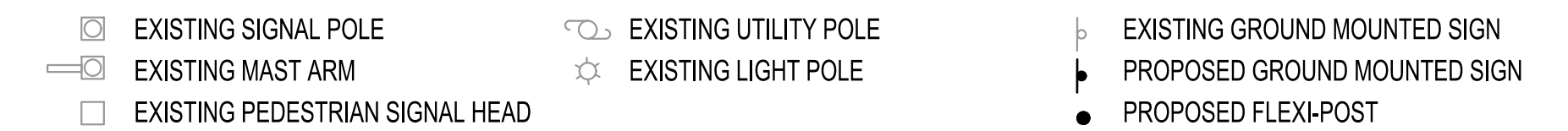
MAINTENANCE OF TRAFFIC NOTES

- ALL TEMPORARY TRAFFIC CONTROL, DEVICES, METHODS, AND APPLICATIONS SHALL COMPLY WITH THE MOST RECENT VERSIONS OF THE VIRGINIA WORK AREA PROTECTION MANUAL (VWAPM), THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), SPECIAL PROVISIONS OF CONTRACT DOCUMENTS, THE CITY OF RICHMOND'S "DEPARTMENT OF PUBLIC WORKS SPECIAL PROVISIONS" AND/OR AS DIRECTED BY THE PROJECT MANAGER, WHICHEVER IS MORE RESTRICTIVE TAKES PRECEDENCE.
- CONSTRUCTION SHALL BE PROHIBITED ON STREETS BETWEEN THE HOURS OF 7 AM TO 9 AM AND 3:30 PM TO 6 PM MONDAY THROUGH FRIDAY.
- THE CONTRACTOR SHALL SUBMIT A PROPOSED TRAFFIC CONTROL PLAN FOR APPROVAL BY THE CITY'S PROJECT MANAGER PRIOR TO BEGINNING CONSTRUCTION.
- RESIDENT AND EMERGENCY ACCESS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
- PEDESTRIAN ACCESS AT INTERSECTIONS AND TO ALL RESIDENCES AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL TRAFFIC CONTROL AND WORK-IN-STREETS PERMITS WITHIN THE CITY.
- THE COST OF ALL TRAFFIC CONTROL DEVICES SHALL BE PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL EXISTING AND TEMPORARY TRAFFIC CONTROL DEVICES ARE PROPERLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION. THE CITY PROJECT MANAGER WILL DETERMINE IF SIGNS ARE BEING MAINTAINED IN THE PROPER MANNER BY THE CONTRACTOR. THE CONTRACTOR WILL BE CHARGED FOR ANY COSTS INCURRED BY THE CITY OF RICHMOND AS A RESULT OF THE CONTRACTOR'S FAILURE TO PROPERLY MAINTAIN TEMPORARY TRAFFIC CONTROL DEVICES WITHIN THE PROJECT AREA.
- THE CONTRACTOR SHALL PROVIDE THE NAMES AND PHONE NUMBERS TO THE CITY PROJECT MANAGER OF PERSONS DESIGNATED BY THE CONTRACTOR TO BE CONTACTED AFTER WORKING HOURS CONCERNING ANY PROBLEMS WHICH MAY ARISE REGARDING TEMPORARY TRAFFIC CONTROL DEVICES ON THIS PROJECT.
- ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED, UNLOADED, AND STORED AT LOCATIONS APPROVED BY THE PROJECT MANAGER. THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO STORE EQUIPMENT AND MATERIALS.
- PERSONAL VEHICLES OF THE CONTRACTOR'S EMPLOYEES SHALL NOT BE PARKED IN THE TRAVELED WAY OF ANY ROADWAY AT ANY TIME, INCLUDING ANY SECTION OF ROADWAY CLOSED TO TRAFFIC.

SIGN LEGEND



UTILITY AND SIGN LEGEND



No.	REVISIONS	DATE	BY

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KHA PROJECT 113357041
DATE AUGUST 2020
SCALE NTS
DESIGNED BY JSB
DRAWN BY HMM
CHECKED BY GDG

ACCELERATED BIKE LANES ALLEN AVENUE

CITY OF RICHMOND

VIRGINIA



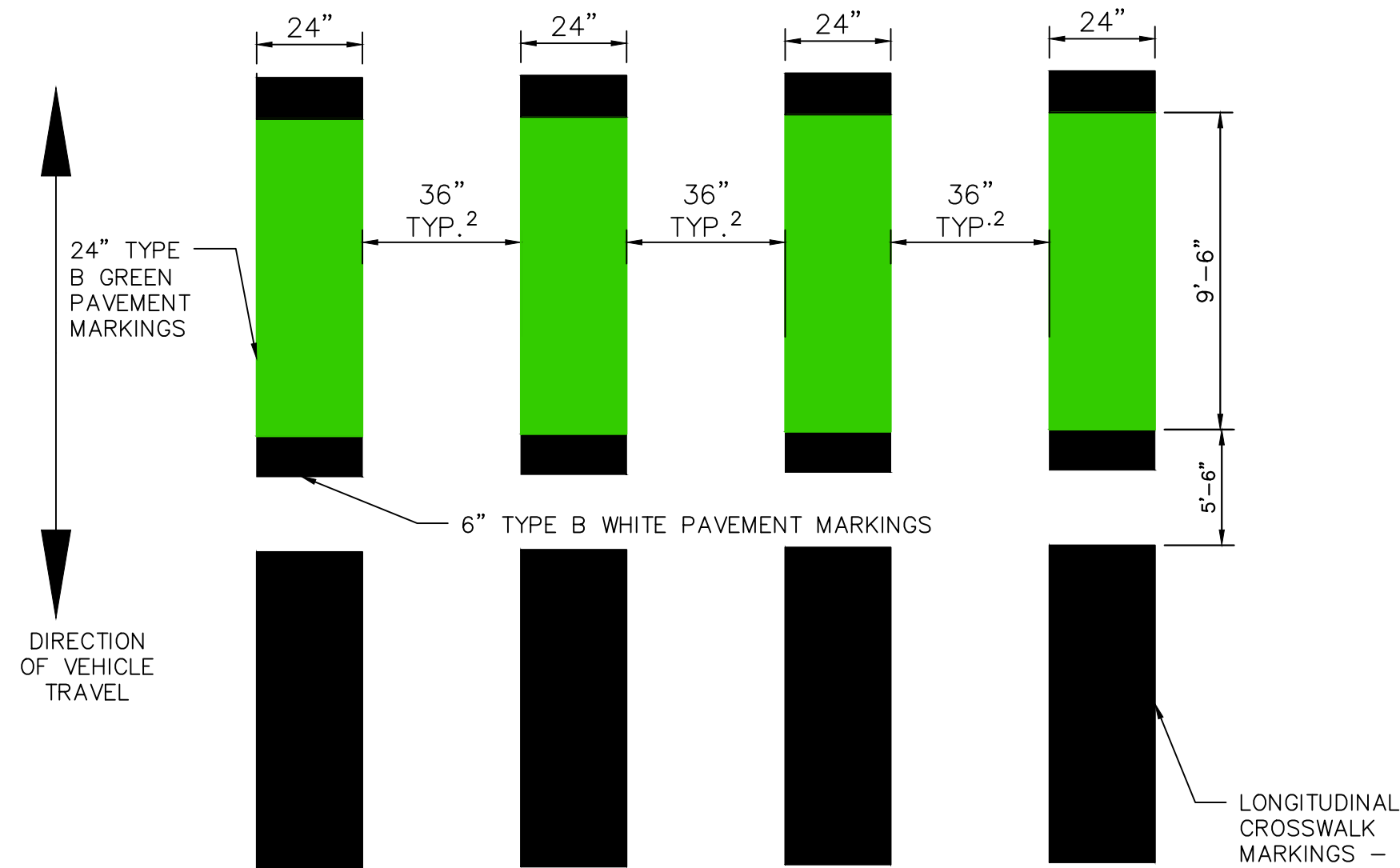
GENERAL NOTES AND LEGEND

SHEET NUMBER

2

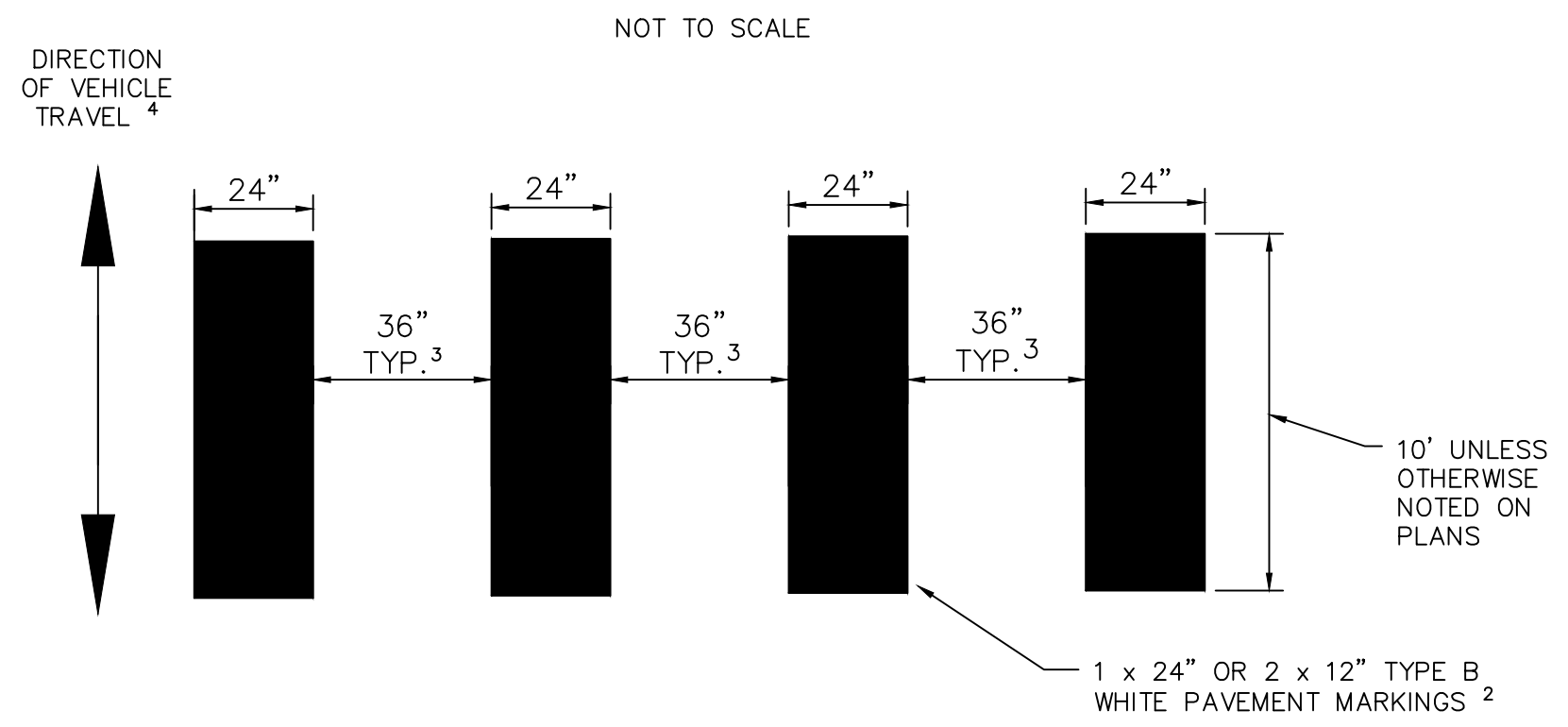
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BICYCLE CROSSWALK MARKING AT SIGNALIZED INTERSECTION



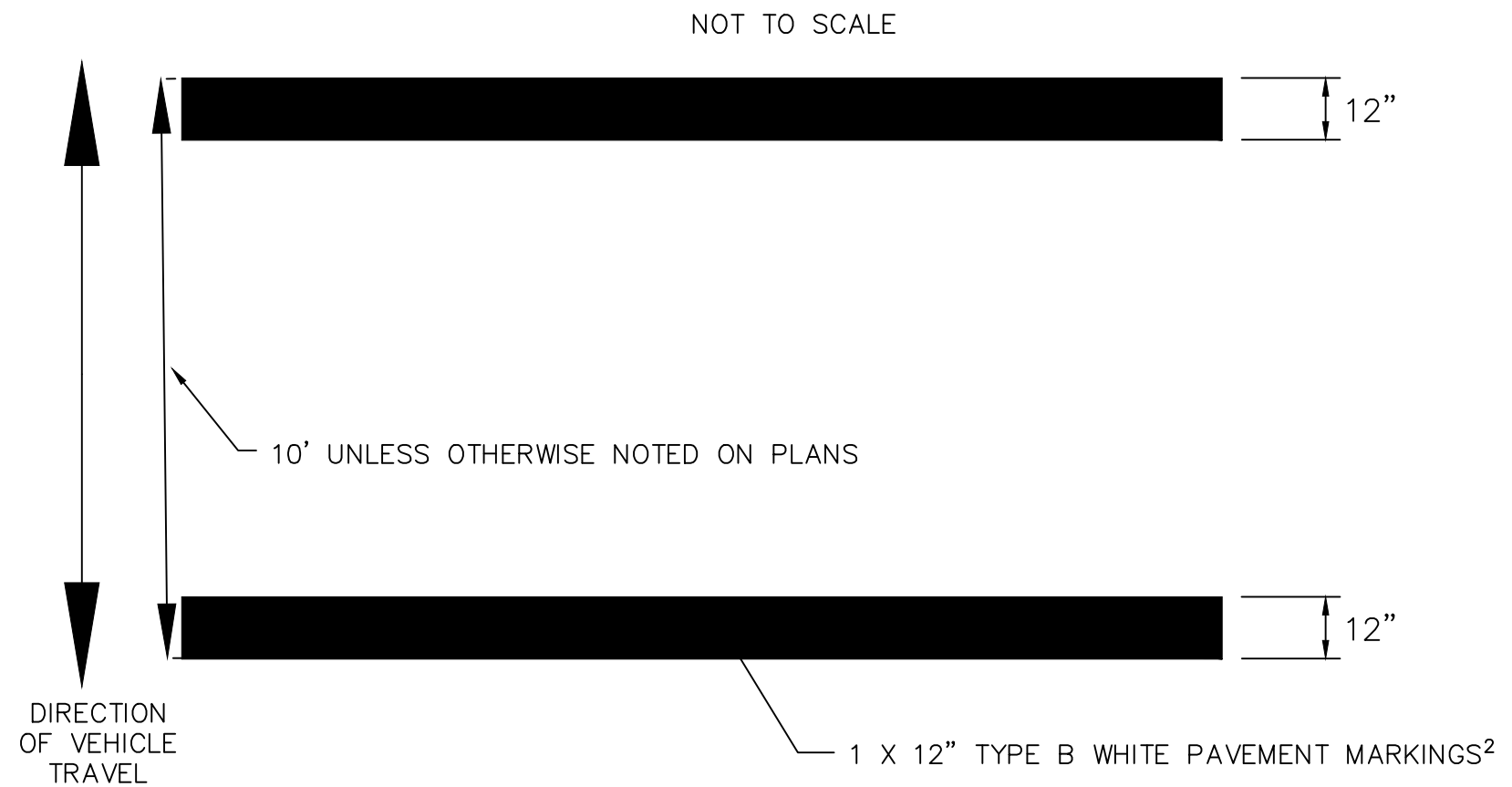
¹ SEE PLANS FOR CLASS OF PAVEMENT MARKINGS.
² GAP BETWEEN MARKINGS TO BE 36" AND TYPICAL, BUT MAY BE BETWEEN 24" AND 48" TO LOCATE MARKINGS OUTSIDE OF WHEEL PATHS.

TYPICAL LONGITUDINAL CROSSWALK MARKING ¹



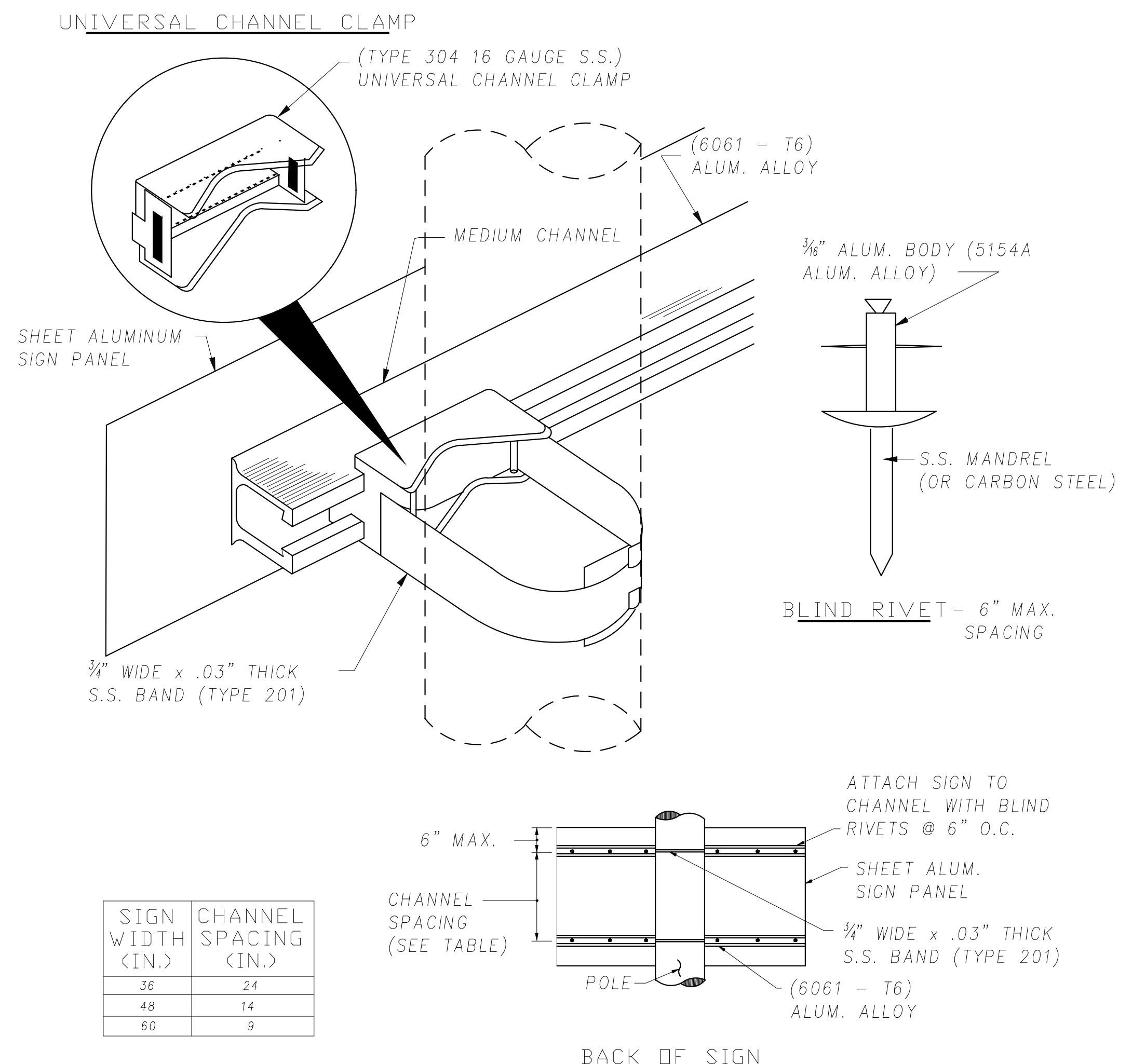
¹ CROSSWALKS SHALL BE INSTALLED NO CLOSER THAN 1' FROM THE EXTENSION OF THE EDGE OF THE ROADWAY OF THE INTERSECTING STREET.
² SEE PLANS FOR CLASS OF PAVEMENT MARKINGS.
³ GAP BETWEEN MARKINGS TO BE 36" TYPICAL, BUT MAY BE MODIFIED BETWEEN 24" (MINIMUM) AND 48" (MAXIMUM) TO LOCATE MARKINGS OUTSIDE OF WHEEL PATHS OF VEHICLES.
⁴ LONGITUDINAL CROSSWALK LINES SHALL BE PARALLEL TO THE DIRECTION OF VEHICLE TRAVEL AND MAY NOT NECESSARILY BE PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.

TYPICAL TRANSVERSE CROSSWALK MARKING ¹

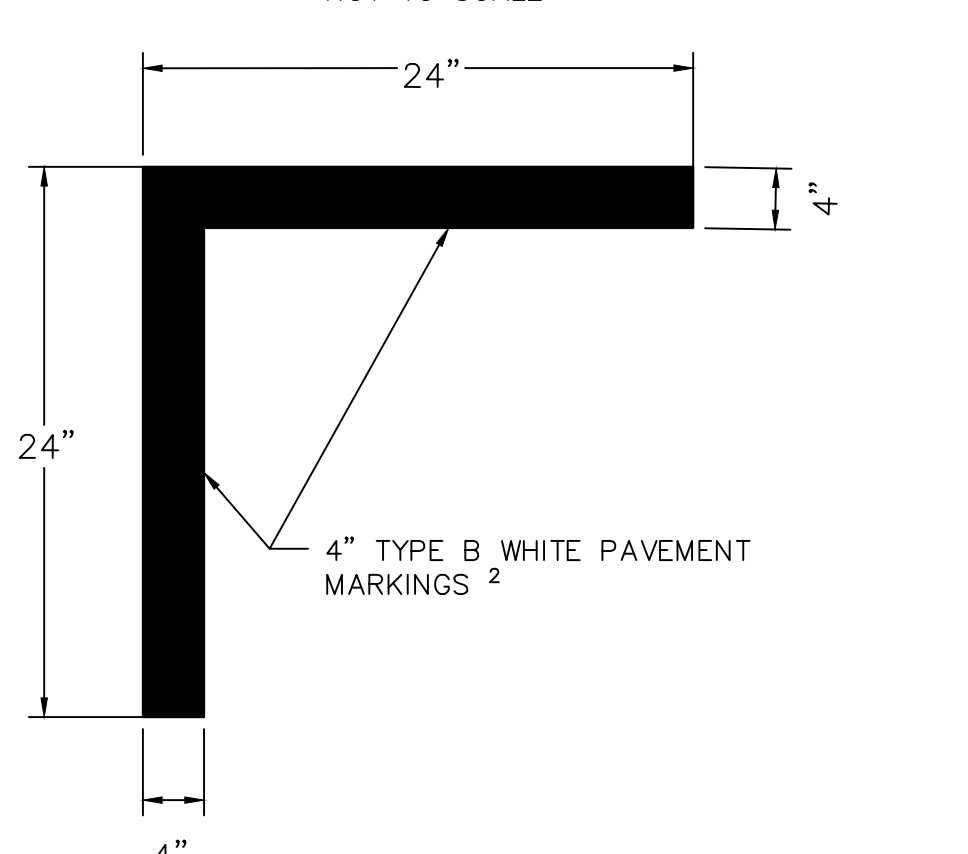


¹ CROSSWALKS SHALL BE INSTALLED NO CLOSER THAN 1' FROM THE EXTENSION OF THE EDGE OF THE ROADWAY OF THE INTERSECTING STREET.
² SEE PLANS FOR CLASS OF PAVEMENT MARKINGS.

SIGN ATTACHMENT DETAIL VERTICAL POLE INSTALLATION ONLY MAX SIGN WIDTH = 5'-0"

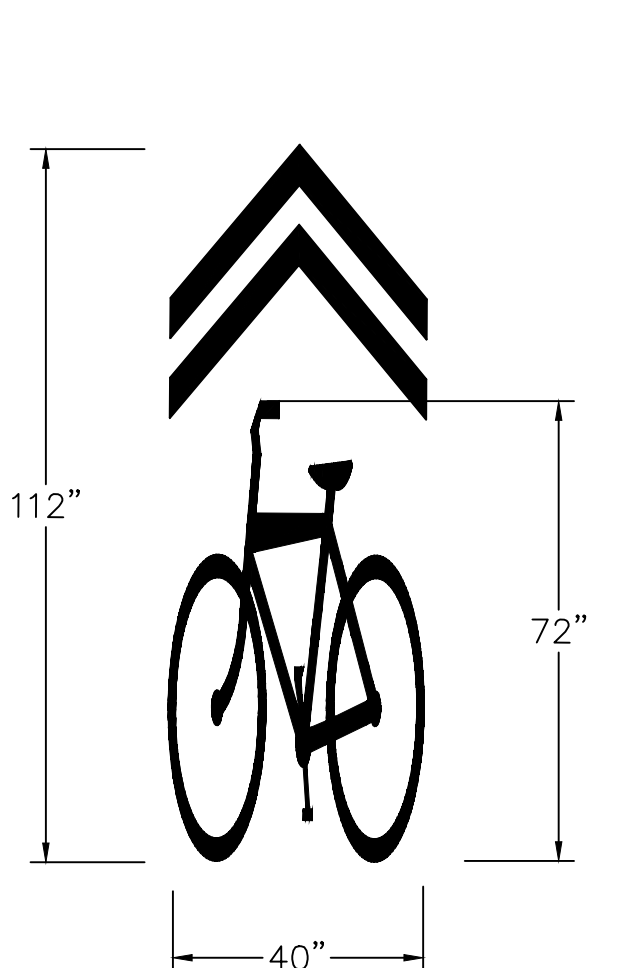


CORNER CLEARANCE MARKING DETAIL ¹

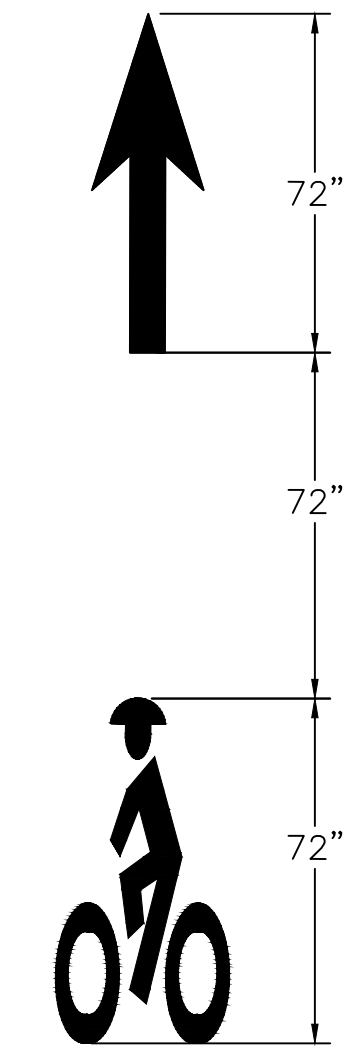


¹ CORNER CLEARANCE MARKINGS SHALL BE INSTALLED 7" FROM FACE OF CURB.
² SEE PLANS FOR CLASS OF PAVEMENT MARKINGS.

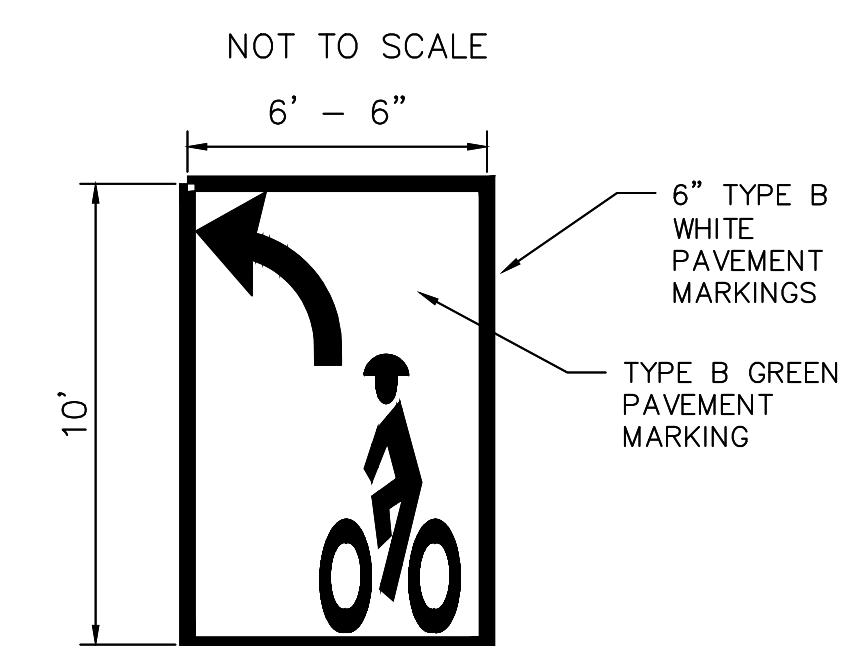
SHARED LANE MARKING, FIGURE 9C-9 FROM 2009 MUTCD NOT TO SCALE



HELMETED BICYCLE SYMBOL, FIGURE 9C-3 FROM 2009 MUTCD NOT TO SCALE



TWO-STAGE TURN BOX MARKING ¹



¹ SEE PLANS FOR CLASS OF PAVEMENT MARKINGS.

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KHA PROJECT 113357041
 DATE AUGUST 2020
 SCALE NTS
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 CHECKED BY GDG

ACCELERATED BIKE LANES ALLEN AVENUE

CITY OF RICHMOND VIRGINIA

TYPICAL DETAILS

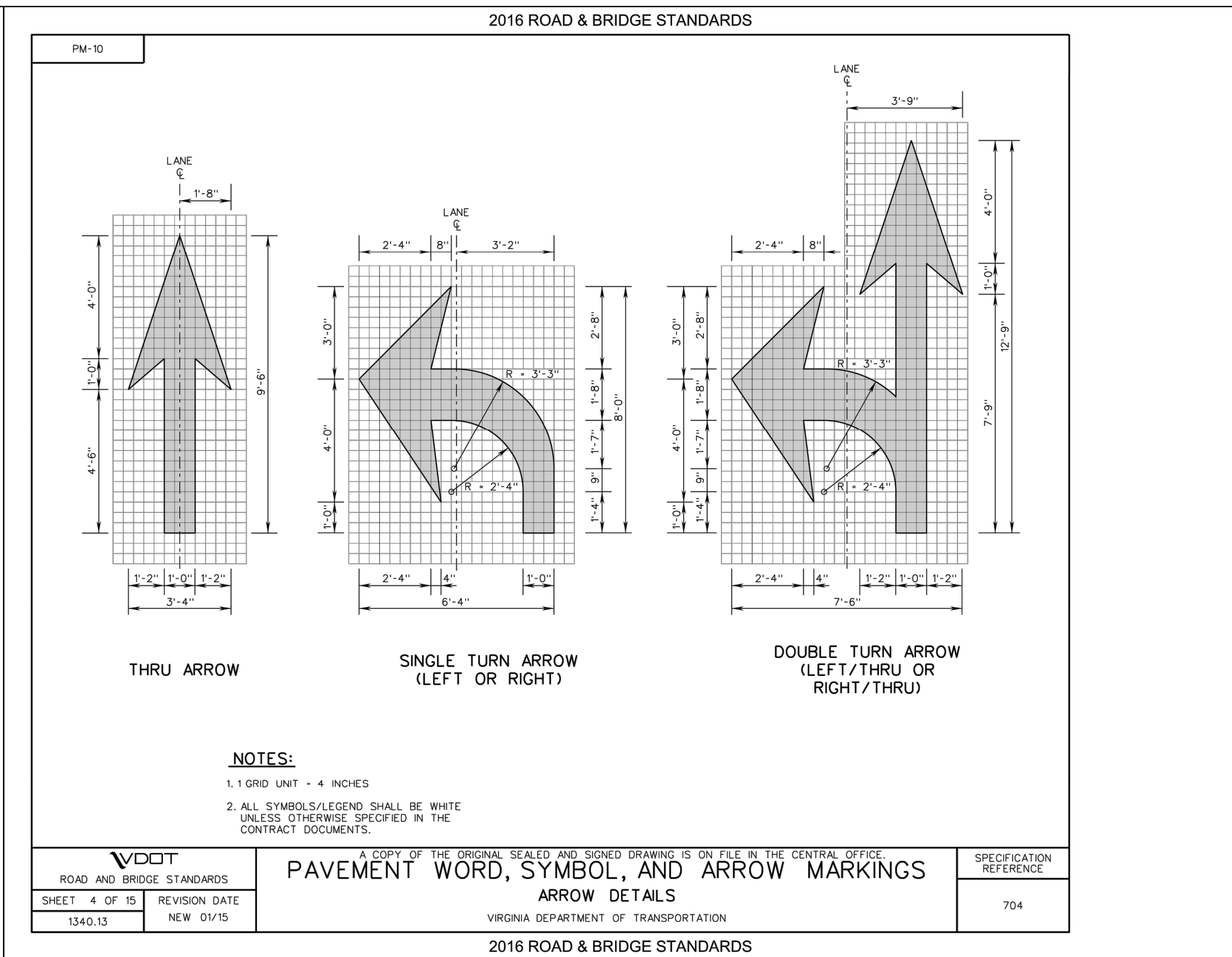
SHEET NUMBER **3**

No.	REVISIONS	DATE	BY

Plotted By: Modden, Heather
 Sheet Set: Kha_Layout1; Layout1 August 20, 2020 12:23:43pm K:\RIC_IPTO\113357_ric_on_coll\041_accelerated bike lanes\3_project_dots\3_project_dots\3_03_design\CADD\SheetSet\allen_avenue\ALLEN_DETAILS_2.dwg
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2016 ROAD & BRIDGE STANDARDS										
SQUARE FOOT AREAS OF PAVEMENT WORD MARKINGS					SQUARE FOOT AREAS OF PAVEMENT WORD MARKINGS					NOTES:
LEGEND	PAINT APPLICATION		ERADICATION		LEGEND	PAINT APPLICATION		ERADICATION		
	6' HIGH	8' HIGH	6' HIGH	8' HIGH		6' HIGH	8' HIGH	6' HIGH	8' HIGH	
AHEAD	17.5	30.5	42.0	75.0	ONLY	12.0	21.5	30.5	53.5	1. ONE-LANE APPLICATION OF "SCHOOL" SYMBOL IS 8" HIGH. WHEN INSTALLED IN A SINGLE LANE WITH A WIDTH LESS THAN 10.5', THE LETTERS SHALL BE SEPARATED BY THREE INCHES. WHEN INSTALLED IN A SINGLE LANE WITH A WIDTH GREATER THAN 10.5', THE LETTERS SHALL BE SEPARATED BY FOUR INCHES. 2. TWO-LANE APPLICATION OF "SCHOOL" SYMBOL IS 10" HIGH WITH PAINT APPLICATION AREA OF 53.5 SQ.FT. AND ERADICATION AREA OF 93.0 SQ.FT. 3. NON-LINEAR ERADICATION AREA IS BASED ON A "THEORETICAL BOX" DEFINED BY THE OUTERMOST LIMITS OF THE NON-LINEAR PAVEMENT MARKING THAT INCLUDES BOTH THE PAINTED AND NON-PAINTED AREAS THAT ENCOMPASS THE TOTAL WORD MESSAGE OR SYMBOL. SEE EXAMPLE. 4. ON UNDIVIDED ROADWAYS, SYMBOL AND MESSAGE PAVEMENT MARKINGS SHALL NOT EXTEND BEYOND THE CENTERLINE INTO OPPOSING TRAVEL LANES.
AREA	14.0	24.5	33.0	59.0	PED	11.0	19.0	24.0	43.0	
BIKE	13.0	23.0	28.5	51.0	RIGHT	14.5	26.0	37.5	67.0	
BUMP	15.0	26.5	33.0	59.0	SCHOOL	(SEE NOTES 1 AND 2)	24.5 (ONE LANE)	(SEE NOTES 1 AND 2)	91.0 (ONE LANE)	
EAST	13.0	22.5	33.0	59.0	SIGNAL	15.5	28.0	46.5	83.0	
ENDS	15.0	27.0	33.0	59.0	SLOW	13.5	24.0	33.0	59.0	
FT	5.0	9.0	15.0	27.0	SOUTH	16.5	29.0	42.0	75.0	
HUMP	14.5	25.5	33.0	59.0	STOP	12.5	22.5	33.0	59.0	
LANE	13.5	23.5	33.0	59.0	TO	6.0	10.5	15.0	27.0	
LEFT	11.0	20.0	33.0	59.0	TURN	13.5	24.0	33.0	59.0	
MERGE	19.0	34.0	42.0	75.0	US	7.0	12.5	15.0	27.0	
NPH	11.0	19.5	24.0	43.0	WEST	14.0	24.5	33.0	59.0	
NO	8.0	13.5	15.0	27.0	XING	12.0	21.0	28.5	51.0	
NORTH	17.5	30.5	42.0	75.0	YIELD	13.5	24.0	37.5	67.0	

ERADICATION AREA = 8'-0" x 9'-4" = 74.7 SQ.FT.
THEORETICAL BOX ERADICATION AREA EXAMPLE (8' LETTERS)



No.	REVISIONS	DATE	BY

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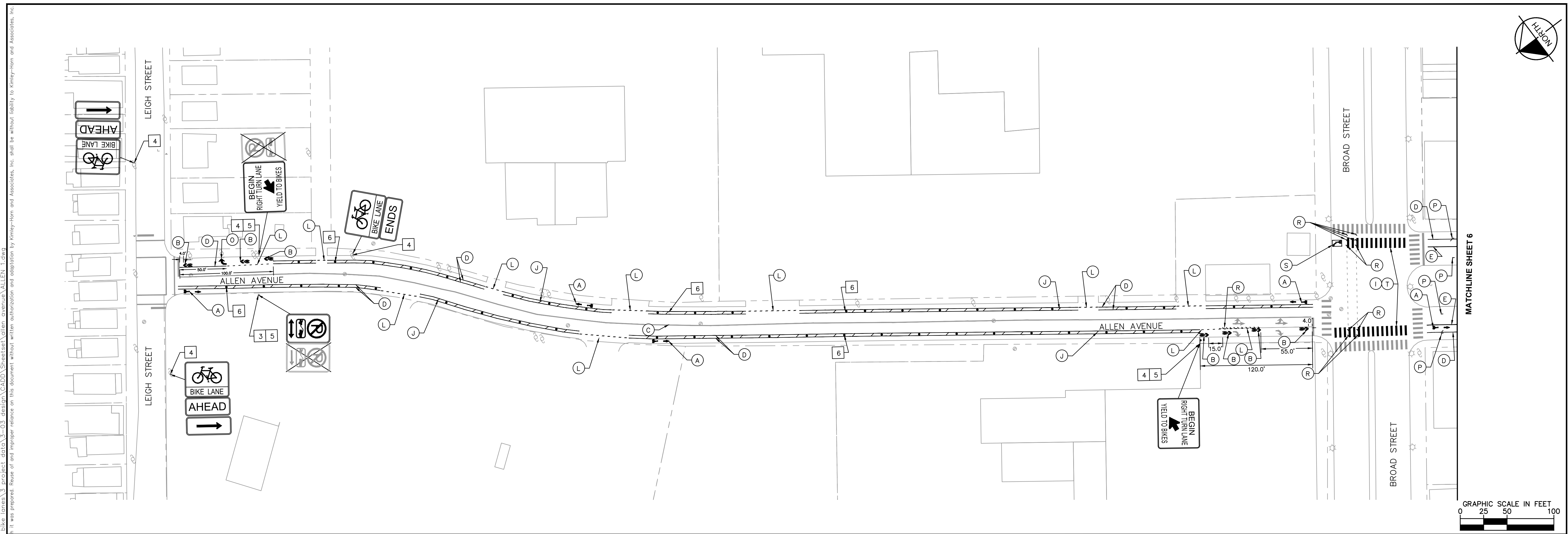
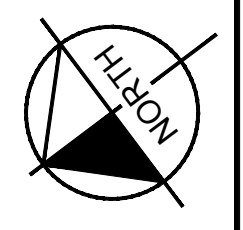
KHA PROJECT	113357041
DATE	AUGUST 2020
SCALE	NTS
DESIGNED BY	JSB
DRAWN BY	HMM
CHECKED BY	GDG

ACCELERATED BIKE LANES
ALLEN AVENUE

CITY OF RICHMOND VIRGINIA

TYPICAL DETAILS

SHEET NUMBER	4
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PAVEMENT MARKING NOTES

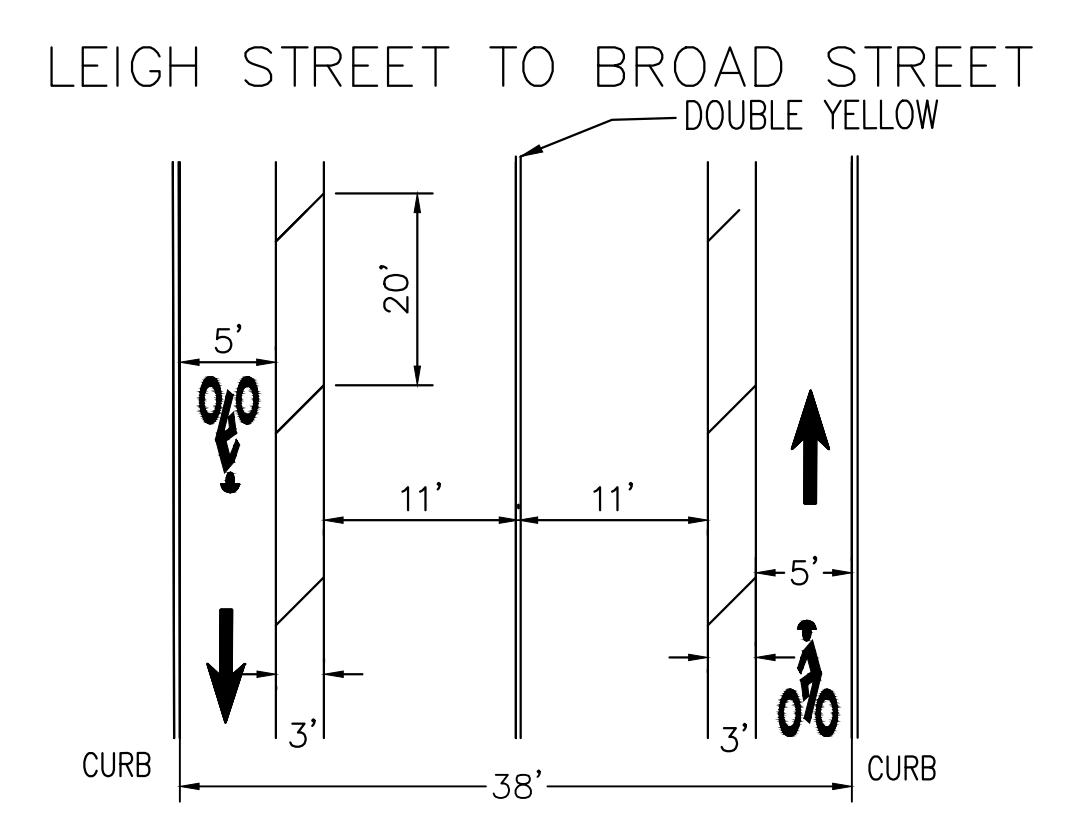
- (A) INSTALL TYPE B CLASS II WHITE HELMETED BICYCLIST SYMBOL PAVEMENT MARKING PER TYPICAL DETAIL SHEET 3.
- (B) INSTALL TYPE B CLASS II WHITE SHARROW PAVEMENT MARKING PER TYPICAL DETAIL SHEET 3.
- (C) INSTALL 4" DOUBLE YELLOW TYPE B CLASS I PAVEMENT MARKING.
- (D) INSTALL 4" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING.
- (E) INSTALL 6" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING.
- (F) INSTALL 24" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING.
- (G) INSTALL LONGITUDINAL CROSSWALK MARKING PER DETAIL SHEET 3.
- (H) INSTALL TRANSVERSE CROSSWALK MARKING PER DETAIL SHEET 3.
- (I) INSTALL BICYCLE CROSSWALK MARKING PER DETAIL SHEET 3.
- (J) INSTALL 4" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING ON 45° ANGLE WITH LONGITUDINAL LINES THEY INTERSECT.
- (K) INSTALL 4" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING, 10' LONG, 30' SPACING.
- (L) INSTALL 4" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING, 2' LONG, 4' SPACING.
- (M) INSTALL 6" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING, 2' LONG, 4' SPACING.
- (N) INSTALL 12" YIELD LINE MARKINGS.
- (O) INSTALL ARROW MARKING PER TYPICAL DETAIL SHEET 4.

- (P) INSTALL CORNER CLEARANCE MARKING PER TYPICAL DETAIL SHEET 3.
- (Q) ALIGN PROPOSED CORNER CLEARANCE MARKING WITH EXISTING PARKING SIGN.
- (R) FULLY ERADICATE EXISTING PAVEMENT MARKINGS.
- (S) INSTALL TWO-STAGE LEFT TURN BOX MARKING PER TYPICAL DETAIL SHEET 3.
- (T) INSTALL GREEN TYPE B CLASS II PAVEMENT MARKING.
- (U) INSTALL "SCHOOL" MARKING PER TYPICAL DETAIL SHEET 4.

CONSTRUCTION NOTES

- [1] INSTALL PROPOSED SIGN AS SHOWN.
- [2] INSTALL VDOT STD. STP-1 SIGN POST.
- [3] INSTALL PROPOSED SIGN ON EXISTING SIGN POST.
- [4] INSTALL PROPOSED SIGN ON EXISTING UTILITY POLE OR SIGNAL POLE.
- [5] REMOVE EXISTING SIGN.
- [6] INSTALL FLEXI-POST (40' SPACING TYP.).
- [7] RELOCATE EXISTING SIGN.

**TYPICAL SECTIONS
Not to Scale**



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KHA PROJECT
113357041
DATE
AUGUST 2020
SCALE 1" = 50'
DESIGNED BY JSB
DRAWN BY HMM
CHECKED BY GDG

**ACCELERATED BIKE LANES
ALLEN AVENUE**

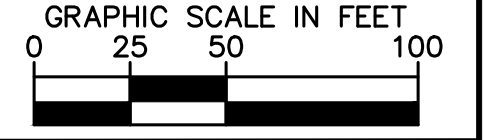
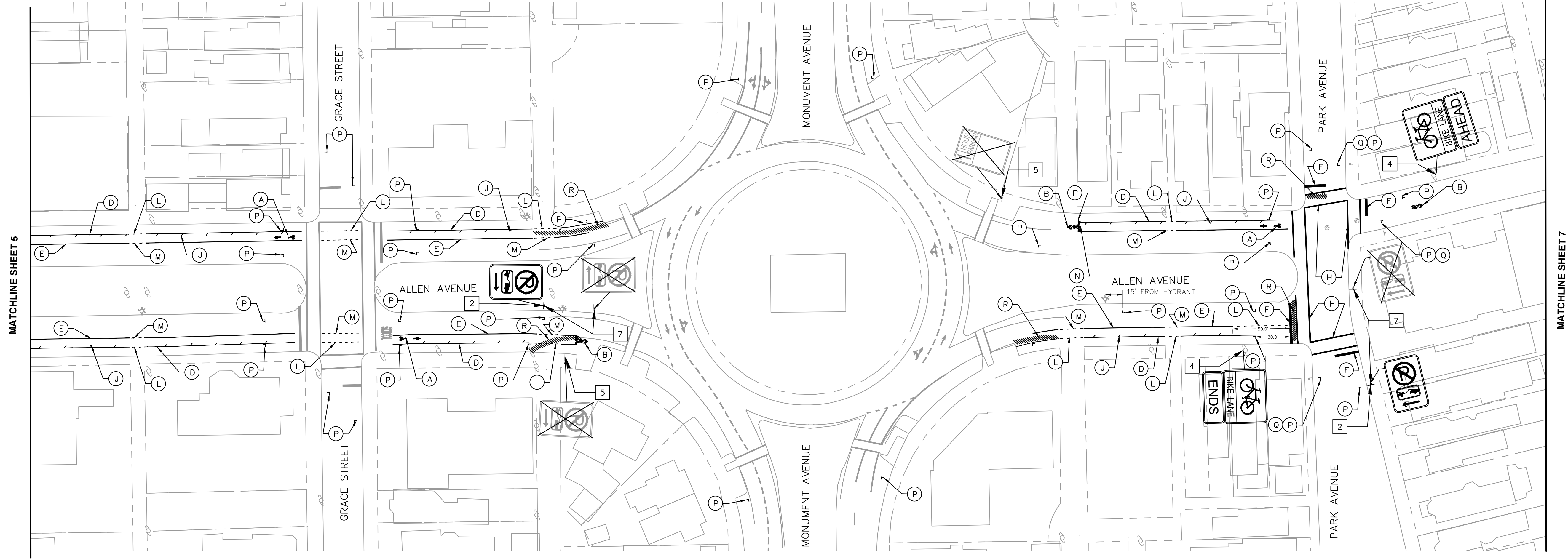
CITY OF RICHMOND VIRGINIA

**LEIGH STREET
TO BROAD STREET**

SHEET NUMBER
5

Plotted By: Modden, Heather
 Sheet Set: Kha_Layout/Layout1 August 20, 2020 12:24:02pm K:\RIC_TPTO\113357_ric_on_coll\041_accelerated bike lanes\3_project\dot\3-03_design\CADD\SheetSet\allen_avenue\ALLEN_1.dwg
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Sheet Set: Kha_Layout: Layout1 August 20, 2020 12:24:20pm K:\RICHMOND\113357_ric_on_coll\041_accelerated bike lanes\3_project\cadd\sheet\allen_avenue\ALLEN_2.dwg
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PAVEMENT MARKING NOTES

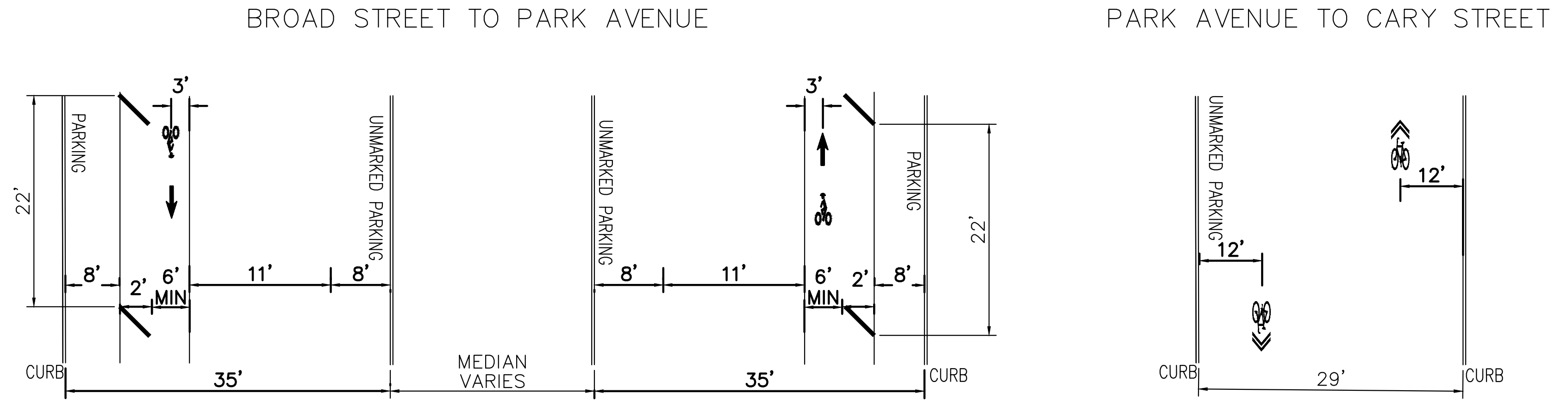
- (A) INSTALL TYPE B CLASS II WHITE HELMETED BICYCLIST SYMBOL PAVEMENT MARKING PER TYPICAL DETAIL SHEET 3.
- (B) INSTALL TYPE B CLASS II WHITE SHARROW PAVEMENT MARKING PER TYPICAL DETAIL SHEET 3.
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- (D) INSTALL 4" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING.
- (E) INSTALL 6" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING.
- (F) INSTALL 24" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING.
- (G) INSTALL LONGITUDINAL CROSSWALK MARKING PER DETAIL SHEET 3.
- (H) INSTALL TRANSVERSE CROSSWALK MARKING PER DETAIL SHEET 3.
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- (J) INSTALL 4" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING ON 45° ANGLE WITH LONGITUDINAL LINES THEY INTERSECT.
- (K) INSTALL 4" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING, 10' LONG, 30' SPACING.
- (L) INSTALL 4" SOLID WHITE TYPE B CLASS I PAVEMENT MARKING, 2' LONG, 4' SPACING.
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- (N) INSTALL 12" YIELD LINE MARKINGS.
- (O) INSTALL ARROW MARKING PER TYPICAL DETAIL SHEET 4.

- (P) INSTALL CORNER CLEARANCE MARKING PER TYPICAL DETAIL SHEET 3.
- (Q) ALIGN PROPOSED CORNER CLEARANCE MARKING WITH EXISTING PARKING SIGN.
- (R) FULLY ERADICATE EXISTING PAVEMENT MARKINGS.
- (S) INSTALL TWO-STAGE LEFT TURN BOX MARKING PER TYPICAL DETAIL SHEET 3.
- (T) INSTALL GREEN TYPE B CLASS II PAVEMENT MARKING.
- (U) INSTALL "SCHOOL" MARKING PER TYPICAL DETAIL SHEET 4.

CONSTRUCTION NOTES

- [1] INSTALL PROPOSED SIGN AS SHOWN.
- [2] INSTALL VDOT STD. STP-1 SIGN POST.
- [3] INSTALL PROPOSED SIGN ON EXISTING SIGN POST.
- [4] INSTALL PROPOSED SIGN ON EXISTING UTILITY POLE OR SIGNAL POLE.
- [5] REMOVE EXISTING SIGN.
- [6] INSTALL FLEXI-POST (40' SPACING TYP.).
- [7] RELOCATE EXISTING SIGN.

TYPICAL SECTIONS
Not to Scale



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KHA PROJECT
 113357041
 DATE
 AUGUST 2020
 SCALE 1" = 50'
 DESIGNED BY JSB
 DRAWN BY HMM
 CHECKED BY GDG

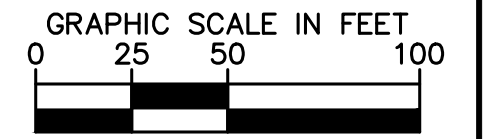
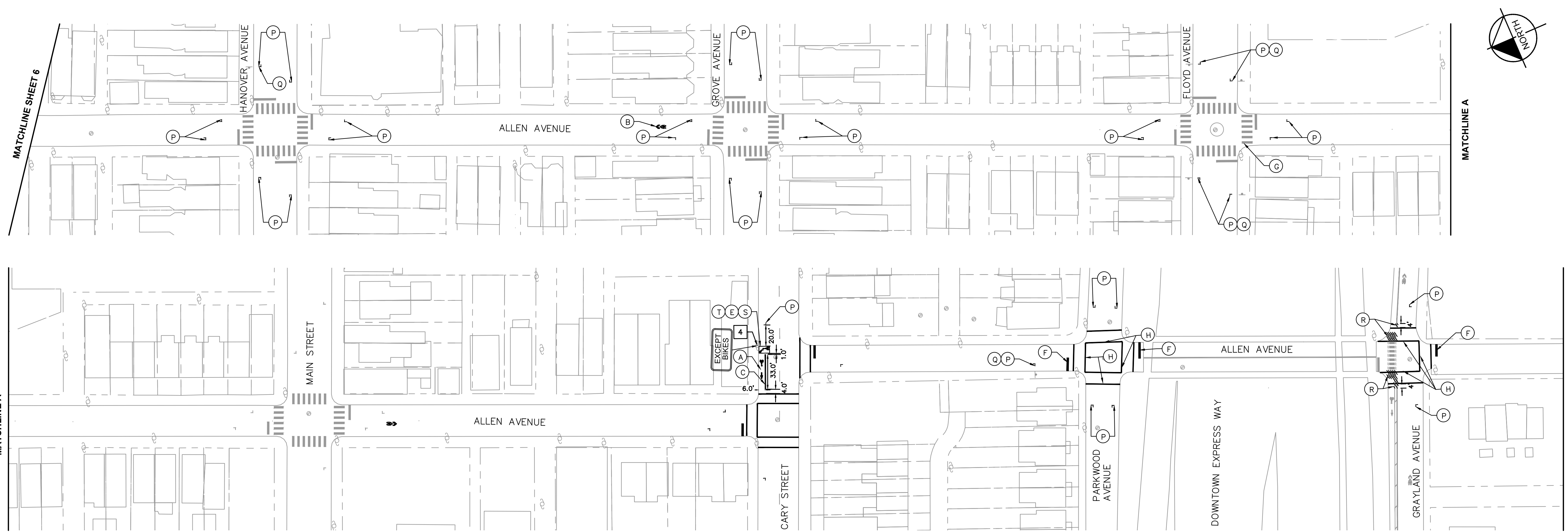
ACCELERATED BIKE LANES
ALLEN AVENUE

 CITY OF RICHMOND VIRGINIA

BROAD STREET TO
PARK AVENUE

SHEET NUMBER
6

Plotted By: Modden, Heather
 Sheet Set: Kha_Layout: Layout1 August 20, 2020 12:24:49pm K:\RICHMOND\113357_ric_on_coll\041_accelerated bike lanes\3_project\dot\3_03_design\CADD\SheetSet\allen_avenue\ALLEN_3.dwg
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PAVEMENT MARKING NOTES

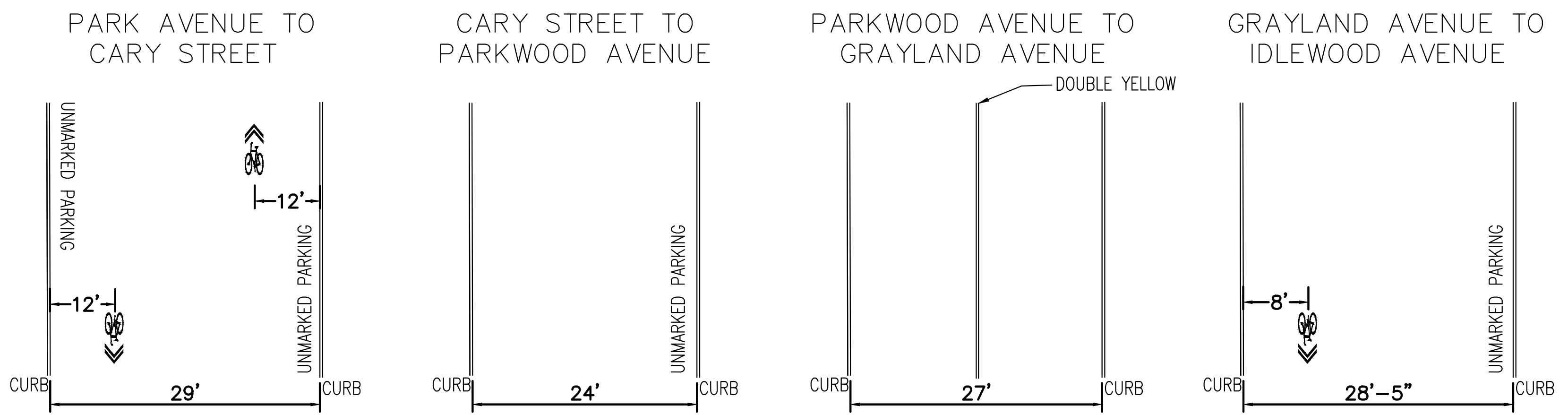
- (A) INSTALL TYPE B CLASS II WHITE HELMETED BICYCLIST SYMBOL PAVEMENT MARKING PER TYPICAL DETAIL SHEET 3.
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- (O) INSTALL ARROW MARKING PER TYPICAL DETAIL SHEET 4.

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CONSTRUCTION NOTES

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TYPICAL SECTIONS
Not to Scale



KHA PROJECT
 113357041
 DATE
 AUGUST 2020
 SCALE 1" = 50'
 DESIGNED BY JSB
 DRAWN BY HMM
 CHECKED BY GDG



ACCELERATED BIKE LANES
ALLEN AVENUE

CITY OF RICHMOND VIRGINIA

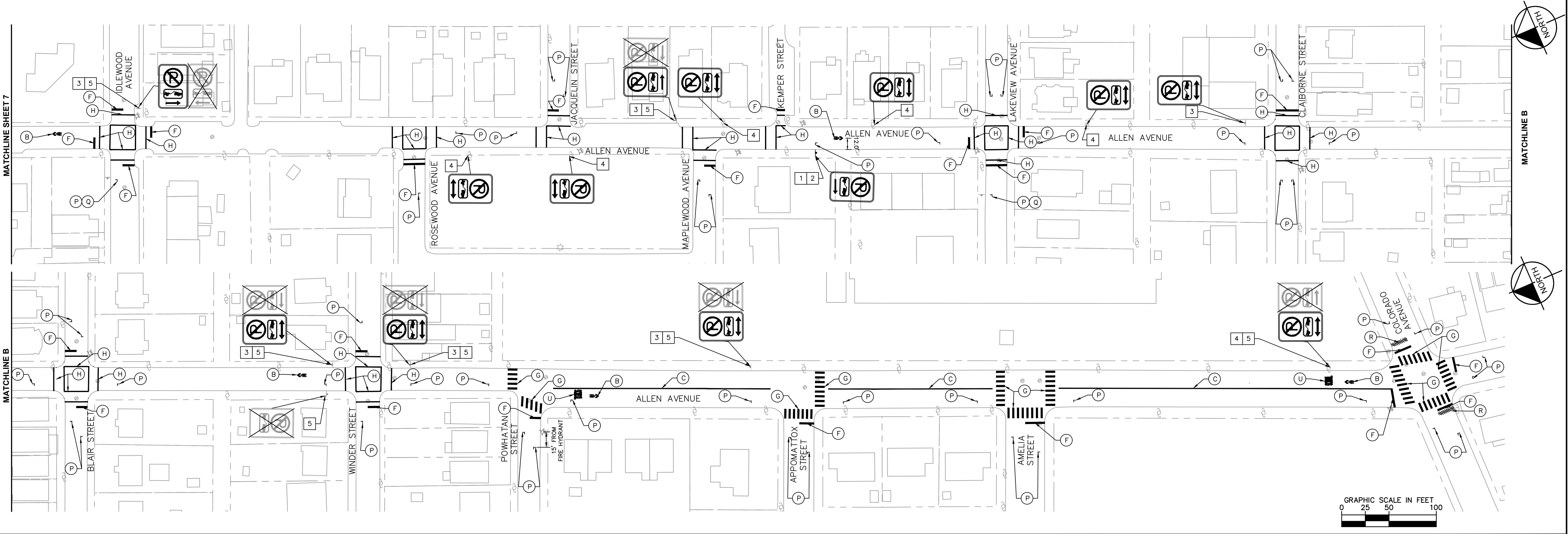
PARK AVENUE TO
GRAYLAND AVENUE

SHEET NUMBER

7

No.	REVISIONS	DATE	BY

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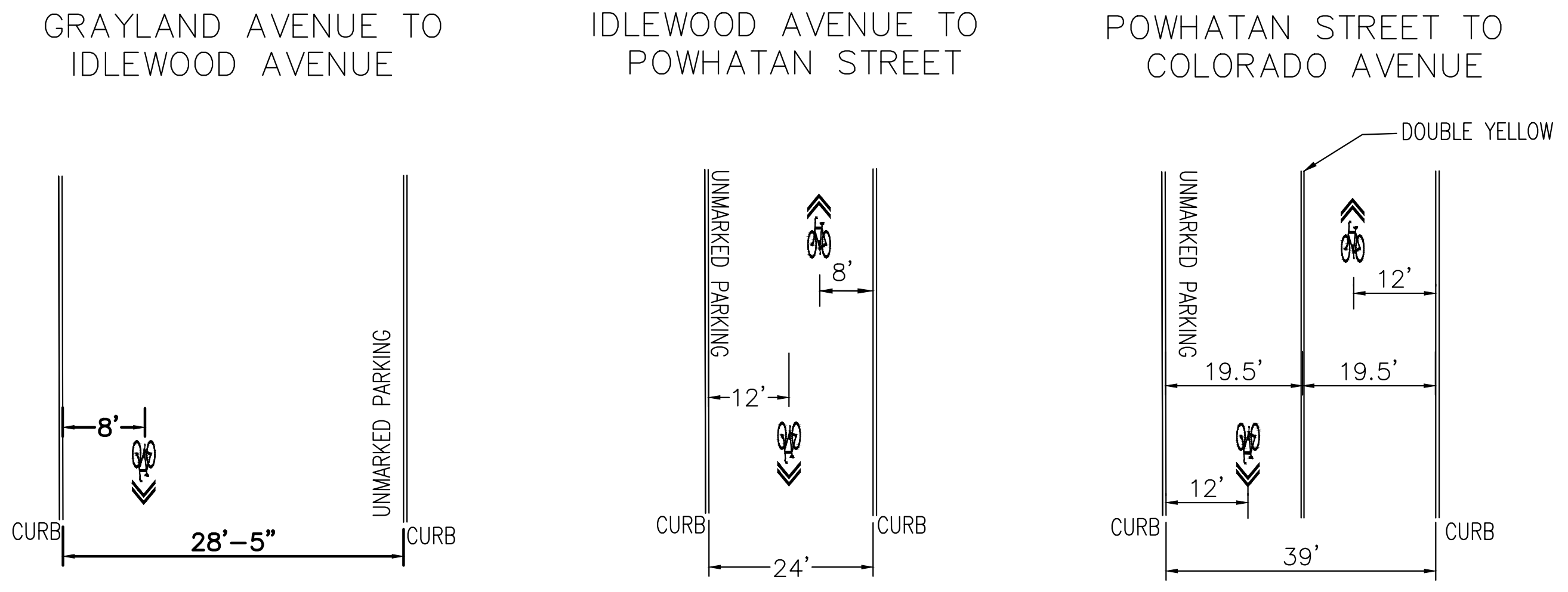
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Not to Scale



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ACCELERATED BIKE LANES
ALLEN AVENUE

 CITY OF RICHMOND VIRGINIA

GRAYLAND AVENUE
TO COLORADO AVENUE

SHEET NUMBER
8