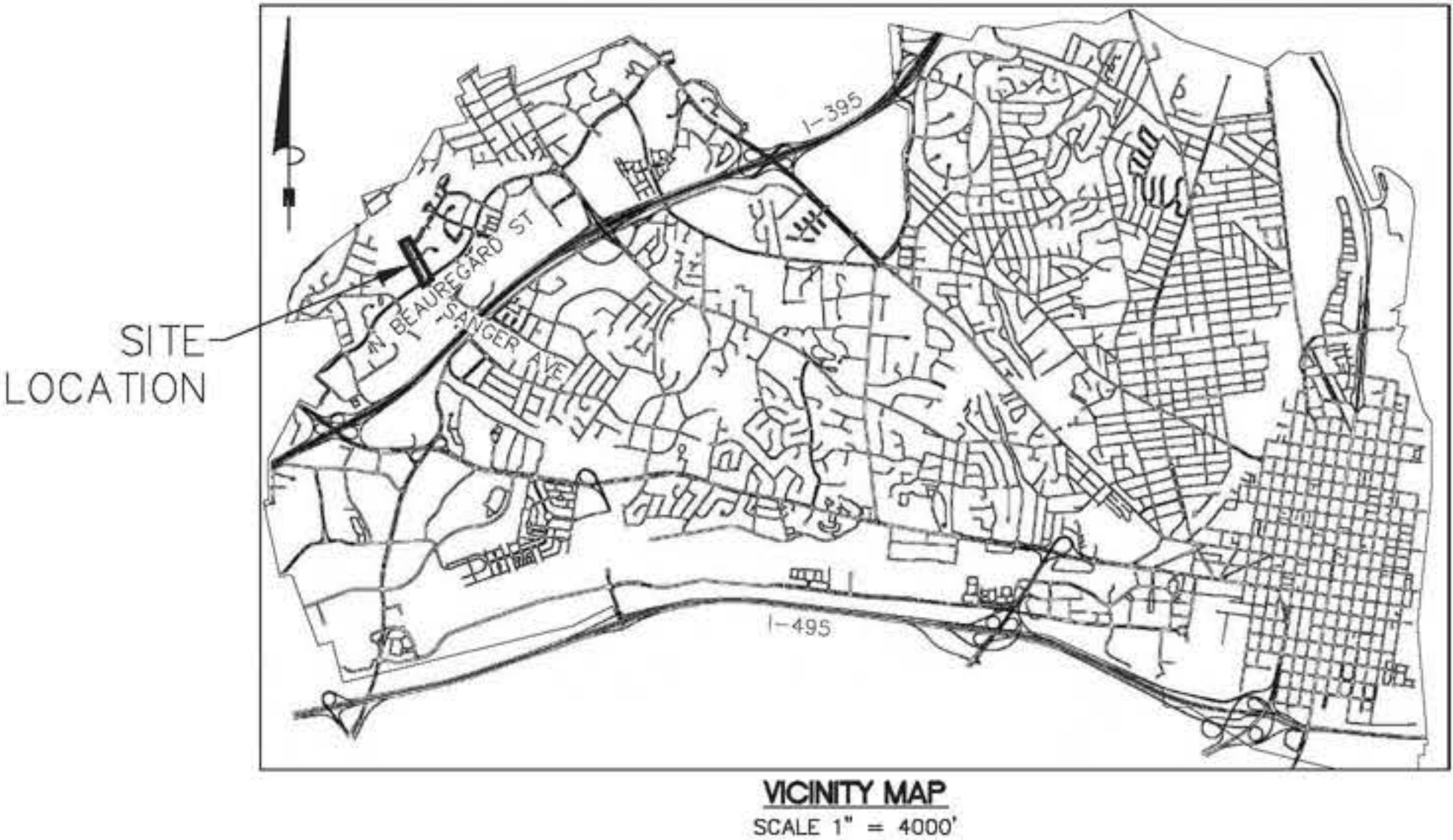


CITY OF ALEXANDRIA, VIRGINIA



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS 100% SUBMITTAL



INDEX OF SHEETS	
Sheet Number	Sheet Title
1	TITLE SHEET
2	GENERAL NOTES
3	SYMBOLS, LEGEND & ABBREVIATIONS
4	EXISTING CONDITIONS PLAN
5	EXISTING CONDITIONS PLAN
6	DEMOLITION PLAN
7	DEMOLITION PLAN
8	CONSTRUCTION DETAILS
9	CONSTRUCTION DETAILS
10	CONSTRUCTION PLAN
11	CONSTRUCTION PLAN
12	RAMP DETAILS
13	RAMP DETAILS
14	RAISED CROSSWALK DETAILS
15	GRADING PLAN
16	STORM DRAIN PLAN AND PROFILE
17	STORM DRAIN PROFILES
18	STORM DRAIN CALCULATIONS
19	SIGNING & STRIPING PLAN
20	SIGNING & STRIPING PLAN
21	SIGNING & STRIPING DETAILS
22	SIGN SUMMARY
23	SIGNAL PLAN



JOSH HURST, PE
11480 COMMERCE PARK DR
SUITE 230
RESTON, VA 20191

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES.	
APPROVED	
X _____	DATE: _____
DIRECTOR	
RECOMMENDED FOR APPROVAL	
X _____	DATE: _____
DEPUTY DIRECTOR OF OPERATIONS	
RECOMMENDED FOR APPROVAL	
X _____	DATE: _____
DEPUTY DIRECTOR OF INFRASTRUCTURE & ENVIRONMENTAL QUALITY	
RECOMMENDED FOR APPROVAL	
X _____	DATE: _____
DEPUTY DIRECTOR OF RIGHT-OF-WAY & DEVELOPMENT SERVICES	
RECOMMENDED FOR APPROVAL	
X _____	DATE: _____
DEPUTY DIRECTOR OF TRANSPORTATION	
DEPARTMENT OF PROJECT IMPLEMENTATION	
APPROVED	
X _____	DATE: _____
DIRECTOR	
RECOMMENDED FOR APPROVAL	
X _____	DATE: _____
DIVISION CHIEF	

WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

100% SUBMITTAL

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS

SHEET
1 OF 23
SCALE: NONE

REVISIONS	DATE	DESCRIPTION
ALEXANDRIA PROJECT NO.: 2862/703		
DATE OF PLAN ISSUANCE: 7-31-24		
CONSULTANT PROJECT ID: 25750.002		
DESIGNED BY: DNS	DATE: 7-31-24	
DRAWN BY: DNS	DATE: 7-31-24	
CHECKED BY: ARM	DATE: 7-31-24	
APPROVED BY: _____	DATE: _____	

KITTELSON & ASSOCIATES
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710



1. ALL CONSTRUCTION MATERIALS AND PROCEDURES SHALL BE GOVERNED BY THE CITY OF ALEXANDRIA DESIGN AND CONSTRUCTION STANDARDS 2022.

- SIGNING AND PAVEMENT MARKING:

- MAINTENANCE OF TRAFFIC:

- DEMOLITION NOTES:

1. THE CONTRACTOR SHALL PERFORM DEMOLITION ACTIVITIES AS NOTED AND SHOWN ON THESE PLANS AND AS DIRECTED BY CITY INSPECTOR.
2. INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES AND TREE PROTECTION PRIOR TO BEGINNING DEMOLITION WORK.
3. DEMOLITION DETAILS AND NOTES ARE INTENDED TO DEPICT GENERAL DEMOLITION AND UTILITY WORK AND ARE NOT INTENDED TO IDENTIFY EACH ELEMENT OF DEMOLITION OR RELOCATION. CONTRACTOR SHALL COORDINATE WITH THE CITY OF ALEXANDRIA, VDOT, AND ANY UTILITY COMPANIES PRIOR TO WORK.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES TO REMAIN IN PLACE. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING CONCRETE CURBS, POSTS, SIGNS, AND OTHER ELEMENTS TO REMAIN DURING DEMOLITION. ANY DAMAGE TO PROPERTY CAUSED BY THE CONTRACTOR SHALL BE RESTORED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
5. MATERIALS REMOVED UNDER CLEARING/DEMOLITION WORK, NOT TO BE RELOCATED OR TO BE TURNED OVER TO THE CITY, SHALL BE REMOVED AS DIRECTED BY THE CITY AND THE CONTRACTOR SHALL LEGALLY DISPOSE OF ALL DEBRIS FROM THE SITE.
6. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID UNNECESSARY DAMAGE TO EXISTING ROAD SURFACES.
7. EXISTING ITEMS TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE EXPENSE OF THE CONTRACTOR.
8. THE CONTRACTOR SHALL INFORM VIRGINIA 811 OF VIRGINIA AND THE CITY OF ALEXANDRIA 48 HOURS PRIOR TO PERFORMING EXCAVATION OPERATIONS. CERTAIN UTILITIES WITHIN THE VICINITY OF THIS PROJECT AREA ARE SHOWN ON THE PLANS. THE UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATELY LOCATED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES AND LIGHTING SYSTEMS BEFORE PROCEEDING WITH WORK.
9. ASPHALT OR CONCRETE TO BE REMOVED SHALL BE SAW CUT AND CAREFULLY REMOVED TO AVOID DAMAGE TO EXISTING PAVEMENT TO REMAIN. ASPHALT SHALL BE REMOVED ONLY WHEN WORK IS TO PROCEED IMMEDIATELY TO AVOID SLOUGHING OF THE ADJACENT PAVEMENT BASE MATERIAL.
10. WHERE NEW CONCRETE CURB IS INSTALLED, CONTRACTOR SHALL PROVIDE A SMOOTH AND UNIFORM EDGE AND CAUSE MINIMAL DISTURBANCE TO THE EXISTING ASPHALT TO REMAIN.

1. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE VIRGINIA REGULATIONS SECTION 4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE REQUIRED EROSION AND SEDIMENT CONTROL MEASURES TO THE SATISFACTION OF THE CITY SITE INSPECTOR.
3. EXISTING TREES ARE TO REMAIN AND BE PROTECTED FROM CONSTRUCTION ACTIVITIES UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
4. THE EROSION AND SEDIMENT CONTROL PLAN CONTAINED WITHIN THE CONSTRUCTION PLANS OF THIS SET MUST BE APPROVED BY THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES PRIOR TO ANY LAND DISTURBING ACTIVITY GREATER THAN 2,500 SF.
5. A "CERTIFIED LAND DISTURBER" (CLD) SHALL BE NAMED IN A LETTER TO THE DIVISION CHIEF OF CONSTRUCTION AND INSPECTION (C&I), DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES PRIOR TO ANY LAND DISTURBING ACTIVITIES. IF THE CLD CHANGES DURING THE PROJECT, THAT CHANGE MUST BE NOTED IN A LETTER TO THE DIVISION CHIEF. A NOTE TO THIS EFFECT SHALL BE PLACED ON THE EROSION AND SEDIMENT CONTROL SHEETS ON THE PLAN.
6. THE DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, CONSTRUCTION AND INSPECTION (C&I) DIVISION MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENTS OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION. THE RESPONSIBLE CLD SHALL ATTEND THE PRE-CONSTRUCTION MEETINGS.
7. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPLSLOPE LAND DISTURBANCE TAKES PLACE.
8. CONSTRUCTION SHALL BE SEQUENCED SUCH THAT GRADING OPERATION CAN BEGIN AND END AS QUICKLY AS POSSIBLE. AREAS NOT TO BE DISTURBED MUST BE CLEARLY MARKED OR FLAGGED.
9. AN INSPECTION BY THE CITY OF ALEXANDRIA IS REQUIRED AFTER INITIAL INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND BEFORE ANY CLEARING OR GRADING CAN BEGIN.
10. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
11. PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN THOSE INDICATED ON THESE PLANS THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE CITY OF ALEXANDRIA.
12. THE CONTRACTOR SHALL KEEP DENUDED AREAS TO A MINIMUM. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR. ANY STOCKPILED MATERIAL WHICH WILL REMAIN IN PLACE LONGER THAN 10 DAYS MUST BE SEEDED FOR TEMPORARY VEGETATION AND MULCHED WITH STRAW MULCH OR OTHERWISE STABILIZED.
13. DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
14. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES DAILY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
15. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY TO PREVENT EROSION AND SEDIMENTATION AND AS DETERMINED BY THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES (T&ES) OF THE CITY OF ALEXANDRIA.
16. DENUDED SLOPES, EITHER DISTURBED OR CREATED BY THIS PLAN THAT EXCEED 2,500 SF ARE TO BE SODDED AND PEGGED FOR STABILITY AND EROSION CONTROL. AT THE COMPLETION OF THE PROJECT AND PRIOR TO THE RELEASE OF THE BOND, ALL DISTURBED AREAS SHALL BE STABILIZED PERMANENTLY AND ALL TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED.
17. INSTALL SILT FENCE AND TREE PROTECTION, WHERE APPLICABLE, TO THE EXTENT POSSIBLE. TREE PROTECTION SHALL BE INSTALLED AT THE DRIP LINE OF THE TREE(S).
18. DUST CONTROL SHALL BE ACCOMPLISHED BY TEMPORARY VEGETATIVE COVER AND BY IRRIGATION AS NEEDED.
19. CONTRACTOR SHALL RESTORE/REPAIR DAMAGED AREAS OUTSIDE OF LIMITS OF DISTURBANCE TO EXISTING CONDITIONS AFTER CONSTRUCTION IS COMPLETED.

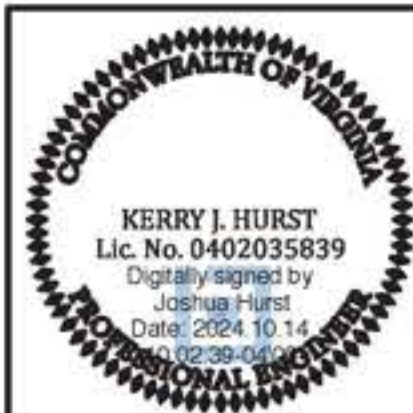
1. SURVEY PREPARED BY:
CITY OF ALEXANDRIA DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES DEVELOPMENT AND RIGHT OF WAY SERVICES
SURVEY SECTION 2900-B BUSINESS CENTER DRIVE, ALEXANDRIA, VA. 22314

2. SURVEY PROJECT #: 22-11-02
3. HORIZONTAL DATUM FOR PROJECT CONTROL IS BASED UPON NAD 83 VIRGINIA NORTH ZONE (MYCS2), AND WAS ESTABLISHED BY RTK GPS OBSERVATION IN 12-01-22. PROJECT COORDINATES CAN BE MULTIPLIED BY THE APPROPRIATE COMBINED SCALE FACTOR FOR THIS LOCATION TO BETTER REPRESENT VALUES ON VIRGINIA GRID NORTH
4. VERTICAL DATUM FOR PROJECT CONTROL IS BASED UPON NAVD 88 (GEOID 18), AND WAS ESTABLISHED BY RTK GPS OBSERVATION IN 12-01-22.
5. SUBSURFACE UTILITY DESIGNATION AND LOCATION WAS NOT PERFORMED IN CONJUNCTION WITH THIS SURVEY. NOT ALL UNDERGROUND UTILITIES ARE SHOWN HEREON.
6. EXISTING STRIPING/TRAFFIC PAINT IS NOT SHOWN ON THIS SURVEY.
7. RESOURCE PROTECTION AREAS AND FEMA FLOOD ZONES (IF ANY) ARE SHOWN PER GIS LOCATION ONLY. THIS TOPOGRAPHIC SURVEY DID NOT INCLUDE A FLOOD STUDY OR ENVIRONMENTAL STUDY.
8. ALL BUILDING LOCATIONS ARE SHOWN PER GIS ONLY (INCLUDING THOSE IN TOPO SURVEY AREA). FEATURES SHOWN PER GIS WERE NOT SURVEY VERIFIED AND MAY NOT MEET MINIMUM ACCURACY STANDARDS.
9. THIS SURVEY WAS PREPARED FOR THE CITY OF ALEXANDRIA (AND THEIR DIRECT ASSIGNS) ONLY. THIS SURVEY IS INTENDED FOR THE SPECIFIC CITY INITIATED PROJECT (CIRCA 2022) ONLY. ANY OTHER USE OF THIS DATA IS STRICTLY PROHIBITED.
10. THOSE AREAS DESIGNATED AS 'ADD. TOPO AREA' WERE REQUESTED AFTER ORIGINAL DELIVERABLE FOR ADDITIONAL INFO AT A FEW LOCATIONS. ROW LINES ARE NOT SHOWN IN THESE AREAS.
11. CONTOUR INTERVAL: 1'
12. ANY BOUNDARY INFORMATION SHOWN HEREON WAS COMPILED FROM EXISTING LAND RECORDS AND DOES NOT REPRESENT A FIELD RUN BOUNDARY SURVEY.

PER DEQ GUIDANCE MEMO 15-2003, FOR LINEAR DEVELOPMENT PROJECTS SUCH AS THIS THAT WILL NOT RESULT IN SIGNIFICANT CHANGES TO THE PREDEVELOPMENT RUNOFF CHARACTERISTICS OF THE LAND SURFACE AFTER THE COMPLETION OF CONSTRUCTION AND FINAL STABILIZATION, THE REQUIREMENT FOR THE PREPARATION AND IMPLEMENTATION OF A STORMWATER MANAGEMENT PLAN IS WAIVED PROVIDED THE FOLLOWING LANGUAGE IS ADDED TO THE PLAN SET AND ADHERED TO IN THE FIELD:

THE DISTURBED LAND WHERE WORK HAS BEEN COMPLETED MUST BE ADEQUATELY STABILIZED ON A DAILY BASIS. THE CONSTRUCTION ACTIVITY OPERATOR MUST INSTALL, IMPLEMENT, AND MAINTAIN POLLUTION PREVENTION MEASURES TO:

- MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS;
- MINIMIZE THE EXPOSURE OF BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS PRESENT ON-SITE TO PRECIPITATION AND TO STORMWATER;
- MINIMIZE THE DISCHARGE OF POLLUTANTS FROM SPILLS AND LEAKS AND IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES;
- PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT OF CONCRETE;
- PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS, AND OTHER CONSTRUCTION MATERIALS; AND
- PROHIBIT THE DISCHARGE OF FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE.



100% SUBMITTAL



KITTELSON
& ASSOCIATES

300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202 450 3710

ALEXANDRIA PROJECT NO.: 2562/103 DATE OF PLAN ISSUANCE: 7-31-24 CONSULTANT PROJECT ID: 25760.002 DESIGNED BY: DNS DATE: 7-31-24 DRAWN BY: DNS DATE: 7-31-24 CHECKED BY: ARM DATE: 7-31-24 APPROVED BY: - DATE: -	REVISIONS BY DATE DESCRIPTION
--	--

WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

GENERAL NOTES

SHEET
OF 23

SCALE: N/A

ABBREVIATIONS

ABAN	ABANDON
ADJ	ADJUST
BC	BOTTOM OF CURB ELEVATION
BIT. CONC.	BITUMINOUS CONCRETE
BOW	BACK OF SIDEWALK
CONC.	CONCRETE
CIRC	CIRCLE
CLF	CHAIN LINK FENCE
CP	CONTROL POINT
CONC	CONCRETE
Δ	DEFLECTION ANGLE
D	DRAIN LINE
DI	DUCTILE IRON
DICB	DROP INLET CATCH CASIN
EHH	ELECTRICAL HANDHOLE
EL, ELEV=	ELEVATION
EMH	ELECTRIC MANHOLE
EXIST	EXISTING
FL	FLOWLINE
GAS	GAS VALVE
HYD	HYDRANT
H.E.S.	HIGH EARLY STRENGTH
INV=	INVERT ELEVATION
L	LENGTH
LOG	LIP OF GUTTER
LP	LIGHT POST
LT.	LEFT OFFSET
ME	MATCH EXISTING
MNT	MOUNT
NIC	NOT IN CONTRACT
O.C.	ON CENTER
PC	POINT ON CURVE
PCC	POINT ON CONTINUOUS CURVE
PI	POINT OF INTERSECTION
PR	PEDESTRIAN RAMP
PRC	POINT ON REVERSE CURVE
PROP	PROPOSED
PT	POINT ON TANGENT
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REM	REMOVE
RET	RETAIN
RIM=	RIM ELEVATION
R&R	REMOVE & RESET
R&S	REMOVE & STACK
RT.	RIGHT OFFSET
SC	SADDLE CONNECTION
SH	HIGH PRESSURE WATER LINE
SL	LOW PRESSURE WATER LINE
SMH	SEWER MANHOLE
SP	SIGN POST
SS	SANITARY SEWER LINE
STD	STANDARD
STR	STRAIGHT
SW	SIDEWALK
T	TANGENT
TC	TOP OF CURB ELEVATION
TBC	TOP BACK OF CURB
UP	UTILITY POLE
WV	WATER VALVE

LEGEND

EXISTING	PROPOSED	
		BUSH
		UTILITY POLE
		GUY WIRE
		TREE
		MANHOLE
		GRATE INLET
		UTILITY HAND BOX
		TRAVERSE
		LIGHT POLE
		SIGN
		WATER METER
		FLEX POST/BOLLARD
		WATER VALVE
		FIRE HYDRANT
		UTILITY MAN HOLE
		PEDESTRIAN SIGNAL
		PROPERTY LINE/R.O.W. LINE
		SANITARY SEWER MANHOLE
		STORM SEWER MANHOLE
		FENCE
		SILT FENCE
		PEDESTRIAN RAMP
		TRUNCATED DOMES
		RAISED CROSSWALK PAVEMENT MARKING SYMBOL
		4" SOLID WHITE EDGE LINE
		6" SOLID WHITE LANE LINE
		4" DOTTED WHITE LANE LINE (2' LINE, 4' SPACE)
		2-4" DOUBLE YELLOW CENTER LINES
		4" SINGLE YELLOW EDGE LINE
		8" SOLID WHITE CHANNELIZATION LINES AT 10' O.C.
		8" SOLID YELLOW CHANNELIZATION LINES AT 10' O.C.
		12" MINIMUM WHITE STOP LINE (UNLESS OTHERWISE NOTED)
		WHITE YIELD LINE TRIANGLES
		12" MINIMUM WHITE CROSSWALK LINES WITH 24" LONGITUDINAL LINES AT 4' O.C. (UNLESS OTHERWISE SHOWN)
		WHITE PAVEMENT ARROW AND LEGEND
		NEW OR RELOCATED SIGN

100% SUBMITTAL



**KITTELSON
& ASSOCIATES**

300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

REVISIONS	DESCRIPTION
DATE	BY

ALEXANDRIA PROJECT NO.: 2562/703	DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25750.002	DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24	CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: _____	DATE: _____

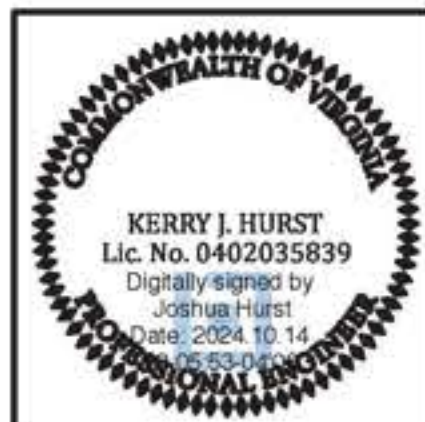
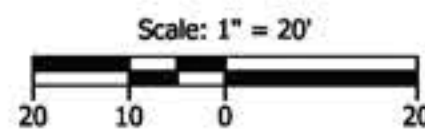
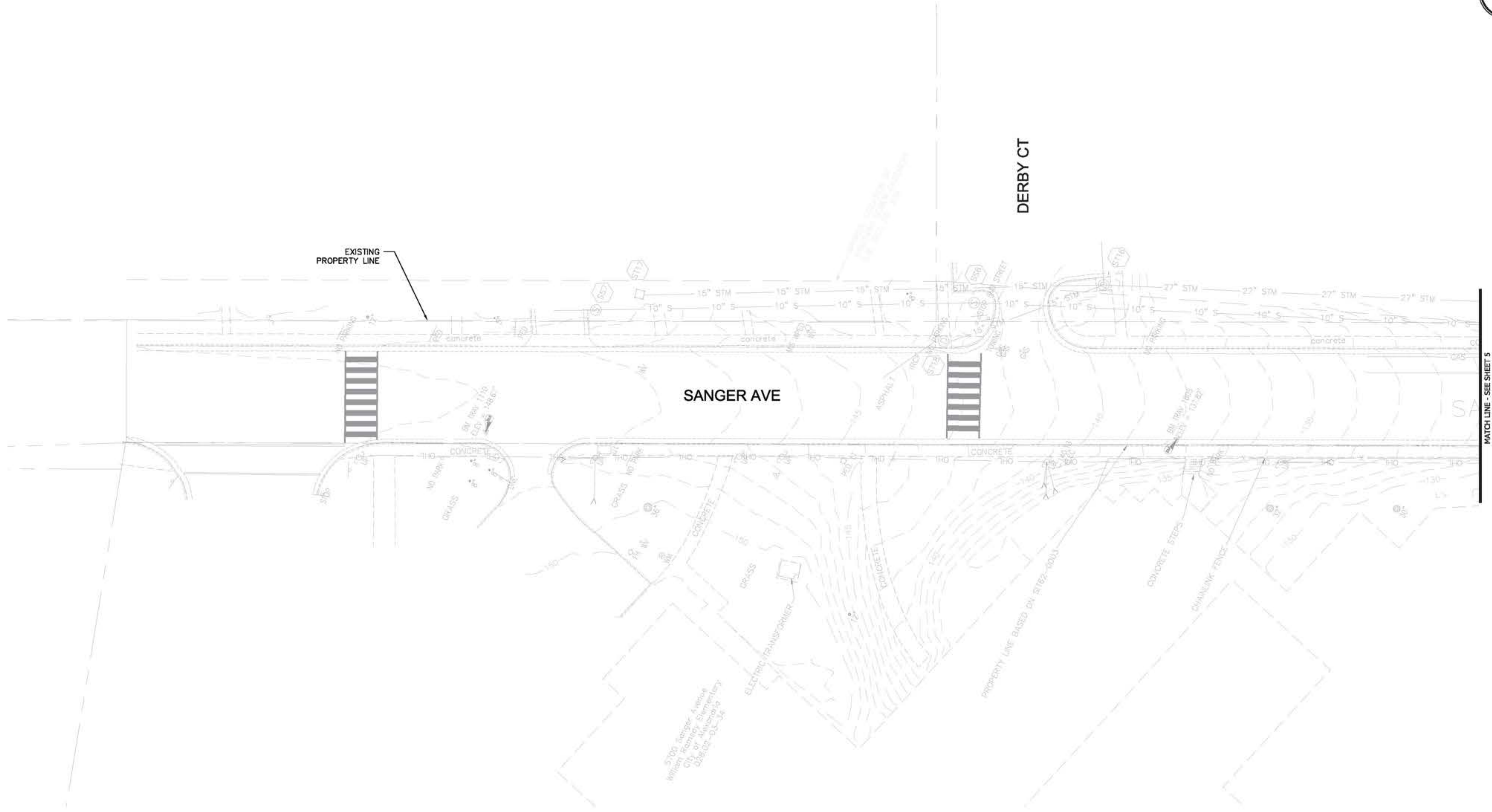
WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
SYMBOLS, LEGEND & ABBREVIATIONS

SHEET
3 of 23

SCALE: N/A



- UTILITY POLE
- GUY WIRE
- TREE
- MANHOLE
- GRATE INLET
- UTILITY HAND BOX
- TRAVERSE
- LIGHT POLE
- SIGN
- WATER METER
- POST/BOLLARD
- WATER VALVE
- FIRE HYDRANT
- UTILITY MAN HOLE
- BUSH
- EDGE OF VEGETATION
- PEDESTRIAN SIGNAL
- PROPERTY LINE/R.O.W. LINE
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
EXISTING CONDITIONS PLAN

SHEET
4 OF 23
SCALE: 1"=20'

ALEXANDRIA PROJECT NO.: 2562/703	DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25760.002	DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24	CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: _____	DATE: _____

REVISIONS	DESCRIPTION
DATE	BY

KITTELSON
& ASSOCIATES

300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

100% SUBMITTAL

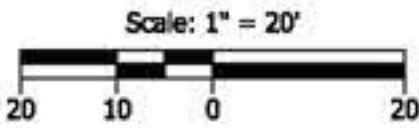
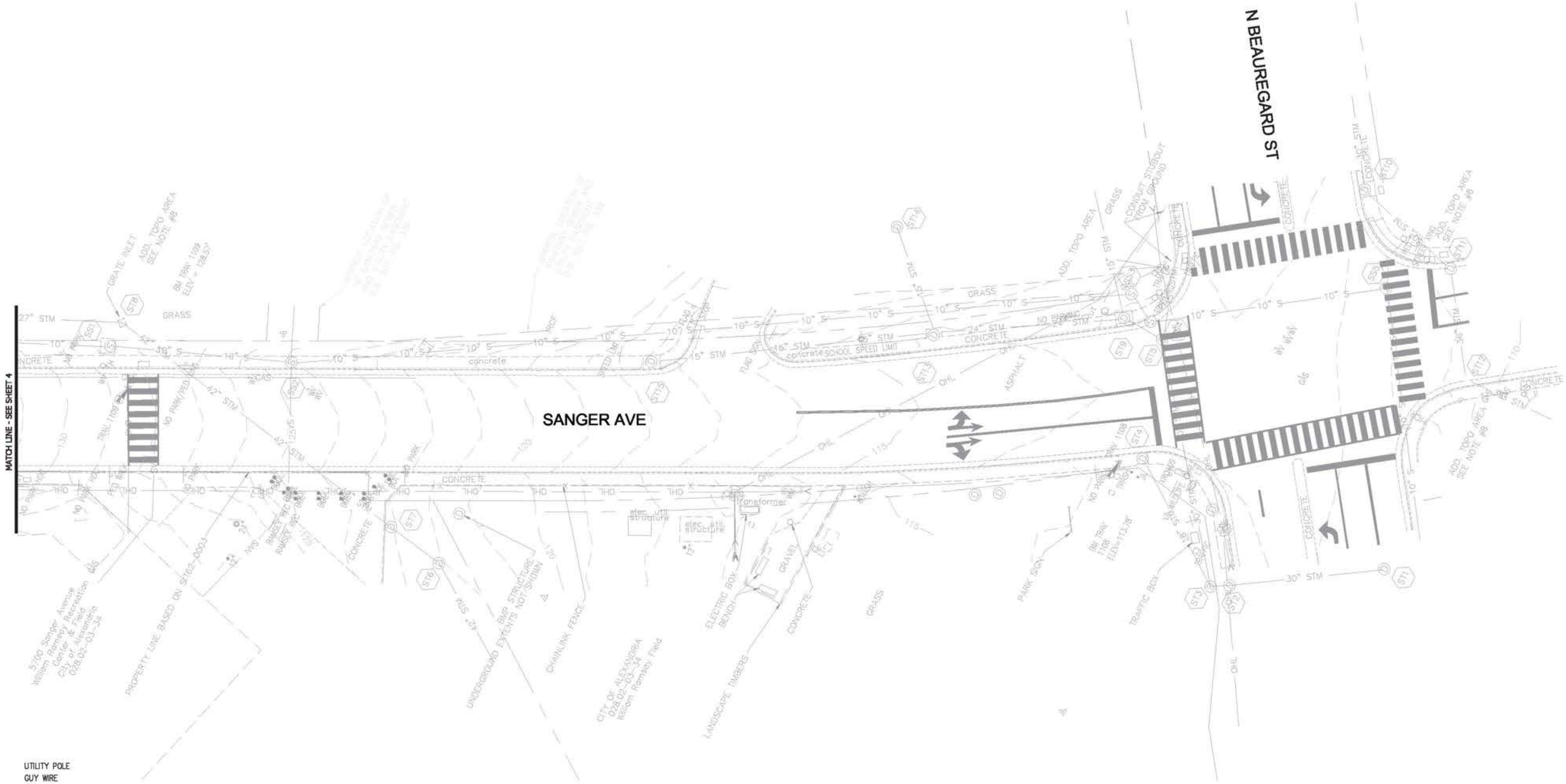


- UTILITY POLE
GUY WIRE
TREE
MANHOLE
GRATE INLET
UTILITY HAND BOX
TRAVERSE
LIGHT POLE
SIGN
WATER METER
POST/BOLLARD
WATER VALVE
FIRE HYDRANT
UTILITY MAN HOLE
BUSH
EDGE OF VEGETATION
PEDESTRIAN SIGNAL
PROPERTY LINE/R.O.W. LINE
SANITARY SEWER MANHOLE
STORM SEWER MANHOLE
UTILITY EASEMENT

NOTE
4" GAS LINE, 10" WATER LINE, WATER SERVICE LINES, GAS SERVICE LINE AND SANITARY SEWER SERVICE LINE SIZE AND LOCATIONS ARE ASSUMED AS PROVIDED BY THE CITY OF ALEXANDRIA. CONTACT VIRGINIA 811 FOR SIZE AND LOCATION INFORMATION PRIOR TO WORK

STORM SEWER STRUCTURE AS-BUILT TABLE									
STRUCTURE #	RIM ELEV.	PIPE INFO.	INV. IN	PIPE INFO.	INV. IN	PIPE INFO.	INV. IN	PIPE INFO.	INV. OUT
ST1	112.35	CAN'T OPEN						30"RCP	107.85
ST2	112.95	30"RCP(ST3)	107.95					30"RCP	107.97
ST3	113.12	18"RCP(ST4)	108.87	30"RCP(ST5)	108.02			18"RCP	110.48
ST4	113.73							30"RCP	109.75
ST5	113.35	24"RCP(NW)	109.98	15"RCP(E)	110.38			42"RCP	114.67
ST6	122.08	42"RCP(ST7)	115.40					42"RCP	115.75
ST7	123.22	42"RCP(ST8)	115.75					42"RCP	119.34
ST8	127.23							21"RCP	110.42
ST9	113.81	15"RCP(NW)	110.51	15"RCP(NE)	110.73			30"RCP	104.49
ST10	113.99	30"RCP (NE)	104.64						
ST11	110.51	CAN'T OPEN							
ST12	110.63	36"RCP (ST11)	102.90					48"RCP	102.86

SANITARY SEWER STRUCTURE AS-BUILT TABLE									
STRUCTURE #	RIM ELEV.	PIPE INFO.	INV. IN	PIPE INFO.	INV. IN	PIPE INFO.	INV. IN	PIPE INFO.	INV. OUT
SS1	129.05	10"RCP (NW)	125.28					10"RCP	125.76
SS2	124.88	10"RCP(SS1)		10"RCP(NE)	116.73			10"RCP	116.28
SS3	114.29	10"RCP(SS2)	108.37					10"RCP	108.24
SS4	113.32	10"RCP(SS3)	107.98					10"RCP	107.85
SS5	112.08	10"RCP(SS4)	103.48					10"RCP	103.31



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

100% SUBMITTAL

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
EXISTING CONDITIONS PLAN

SHEET
5 OF 23
SCALE: 1"=20'

REVISIONS		DATE	DESCRIPTION
BY			

ALEXANDRIA PROJECT NO.: 2862/703
DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25760.002
DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24
CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: — DATE: —

KITTELSON & ASSOCIATES
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710





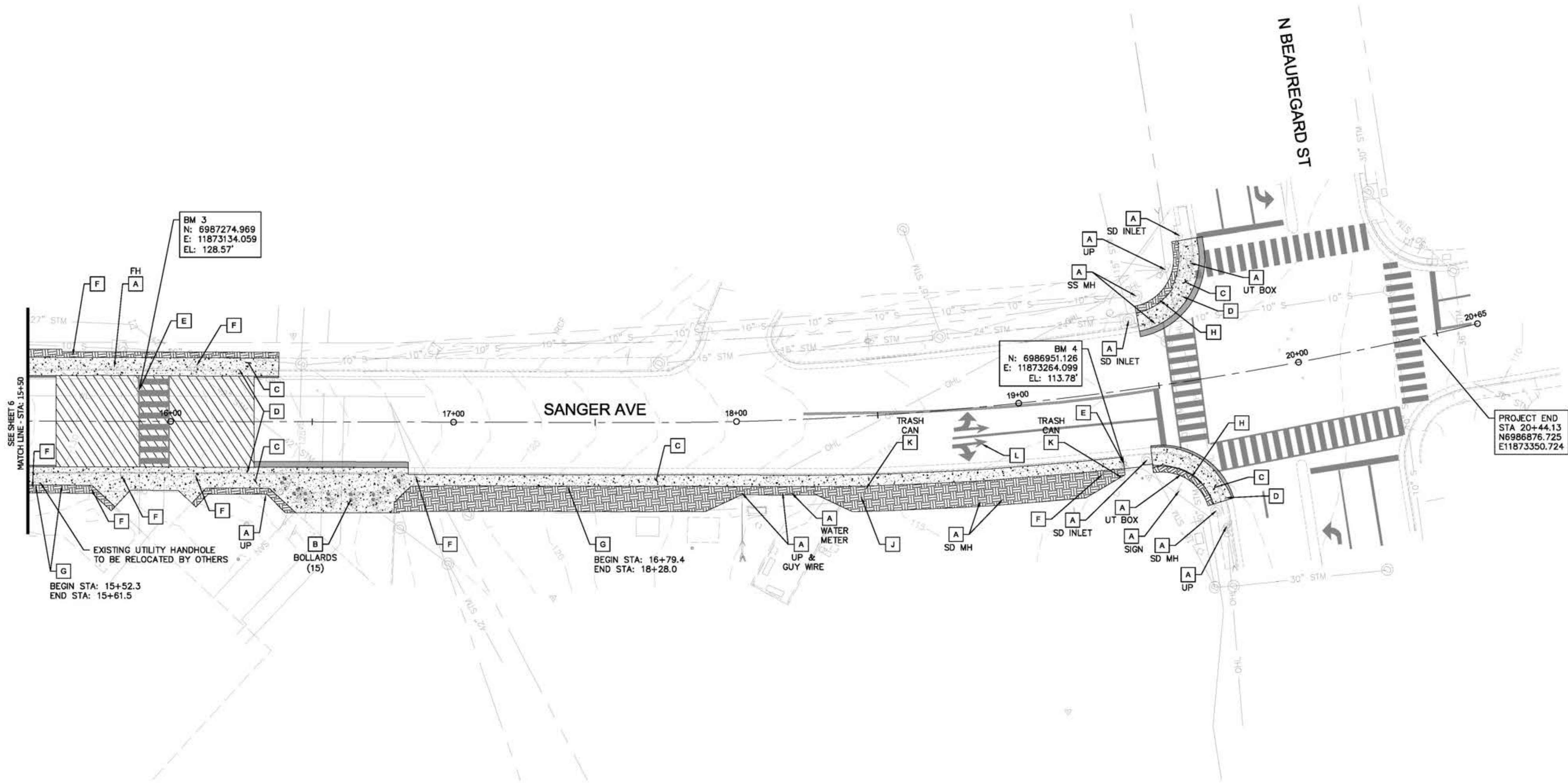
LINE - STA: 15+50
SEE SHEET 7

DERBY CT

BM 2
N: 6987399.340
E: 11873042.966
Elev: 137.82'

- | | |
|---|---|
|  | ASPHALT REMOVAL FOR FULL DEPTH REPAIR |
|  | REMOVE CONCRETE SIDEWALK, CURB & GUTTER, AND/OR ISLANDS |
|  | REMOVE ASPHALT SIDEWALK |
|  | CLEARING AND GRUBBING |

COMMONWEALTH OF VIRGINIA
KERRY J. HURST
Lic. No. 0402035839
Digitally signed by Joshua Hurst
Date: 2024.10.14 09:12:04-0400
PROFESSIONAL ENGINEER



SEE SHEET 6
MATCH LINE - STA: 15+50

BM 3
N: 6987274.969
E: 11873134.059
EL: 128.57'

BM 4
N: 6986951.126
E: 11873264.099
EL: 113.78'

PROJECT END
STA 20+44.13
N6986876.725
E11873350.724

BEGIN STA: 15+52.3
END STA: 15+61.5

BEGIN STA: 16+79.4
END STA: 18+28.0

DEMOLITION NOTES:

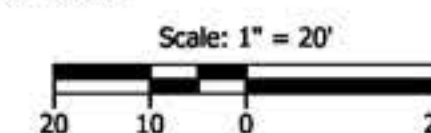
- A RETAIN AND PROTECT
- B REMOVE AND DISPOSE OF OBSTRUCTIONS
- C REMOVE SIDEWALK, DRIVEWAYS, AND PEDESTRIAN RAMPS
- D REMOVE CURB AND GUTTER
- E REFERENCE AND RESET MONUMENT
- F SEE SIGNING & STRIPING PLANS
- G REMOVE CHAIN LINK FENCE
- H SEE SIGNAL PLANS
- I REMOVE AND RELOCATE COMMERCIAL SIGN
- J REMOVE TREE 6"+
- K RELOCATE OBSTRUCTIONS
- L OBLITERATE PAVEMENT MARKING

DEMOLITION LEGEND

- ASPHALT REMOVAL FOR FULL DEPTH REPAIR
- COLD PLANE ASPHALT CONCRETE PAVEMENT (0.2 FT DEPTH), BY OTHERS
- REMOVE CONCRETE SIDEWALK, CURB & GUTTER, AND/OR ISLANDS
- CLEARING AND GRUBBING

NOTE

4" GAS LINE, 10" WATER LINE, WATER SERVICE LINES, GAS SERVICE LINE AND SANITARY SEWER SERVICE LINE SIZE AND LOCATIONS ARE ASSUMED AS PROVIDED BY THE CITY OF ALEXANDRIA. CONTACT VIRGINIA 811 FOR SIZE AND LOCATION INFORMATION PRIOR TO WORK



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
DEMOLITION PLAN

SHEET
7 OF 23
SCALE: 1"=20'

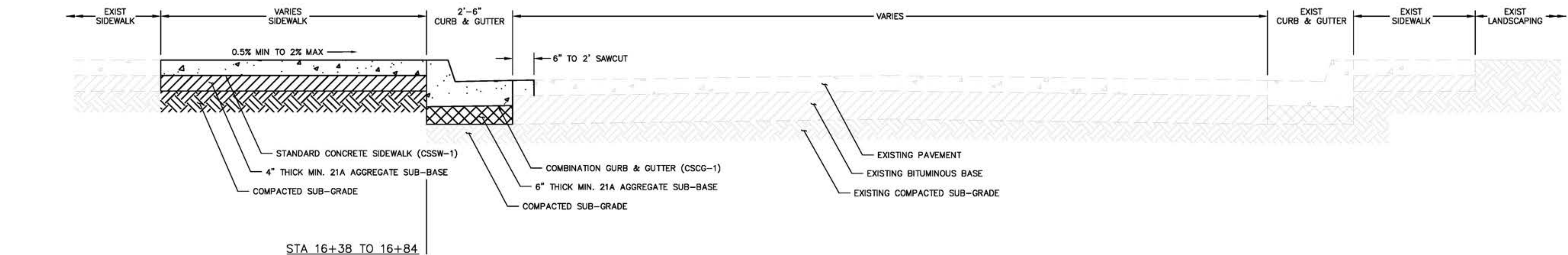
REVISIONS	DESCRIPTION
DATE	BY

ALEXANDRIA PROJECT NO.: 2862/703	DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25760.002	DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24	CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: _____	DATE: _____

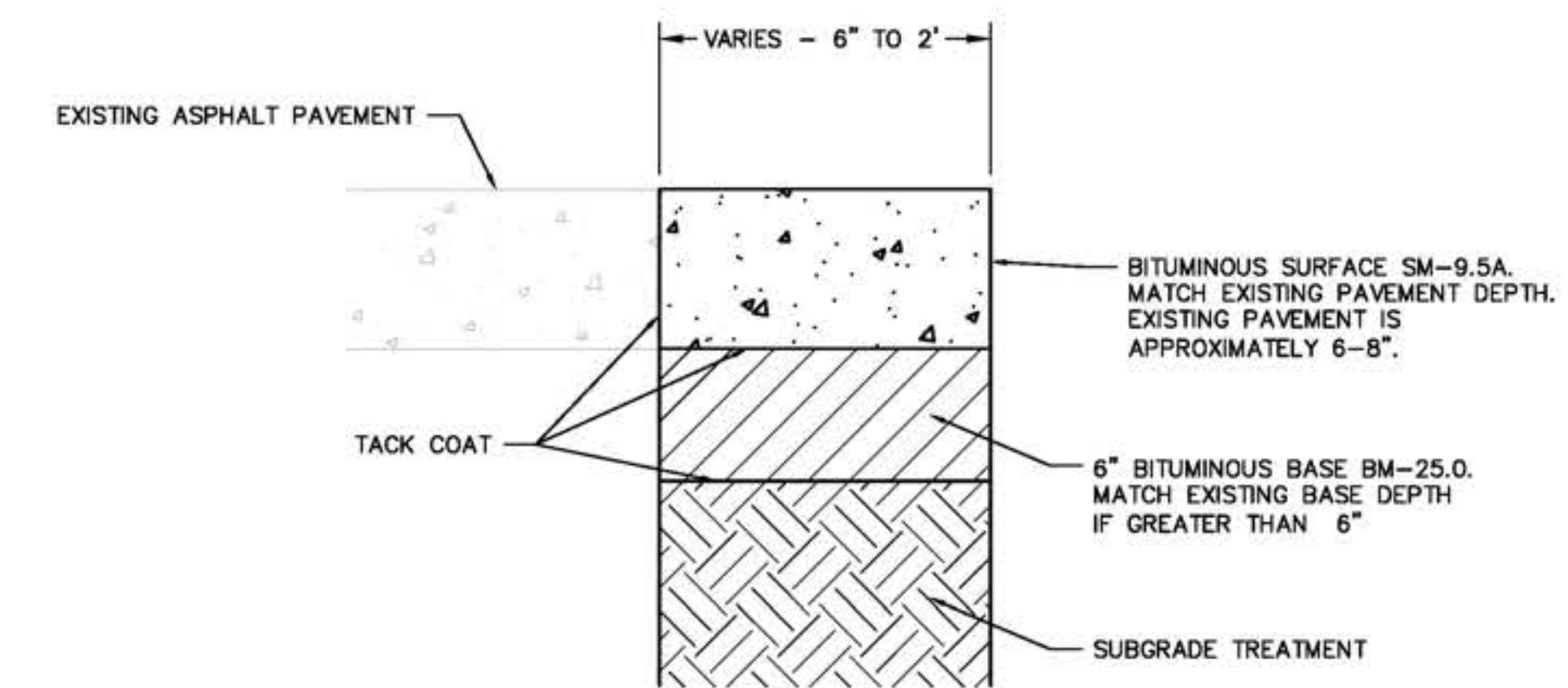
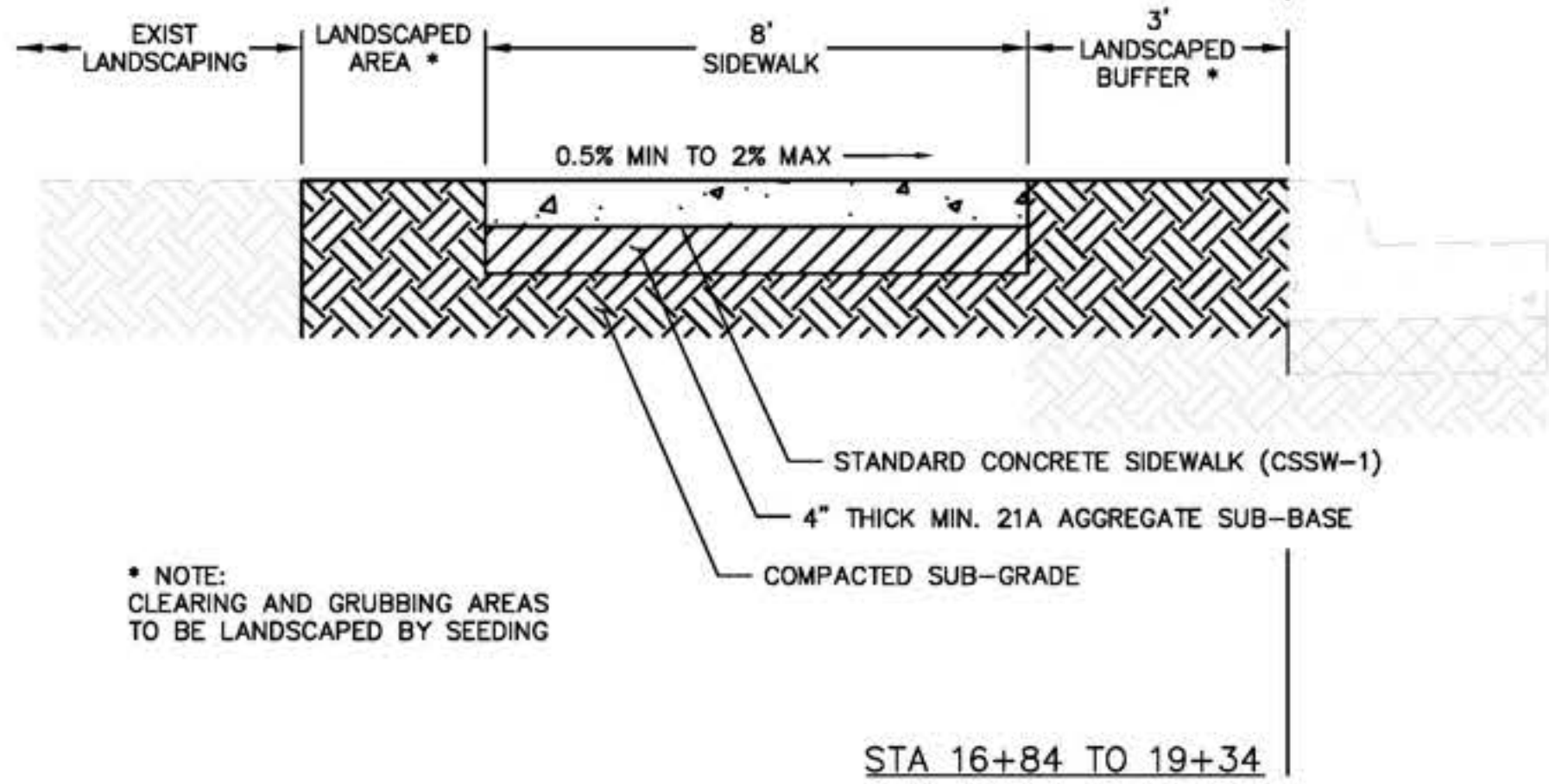
KITTELSON & ASSOCIATES
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

100% SUBMITTAL

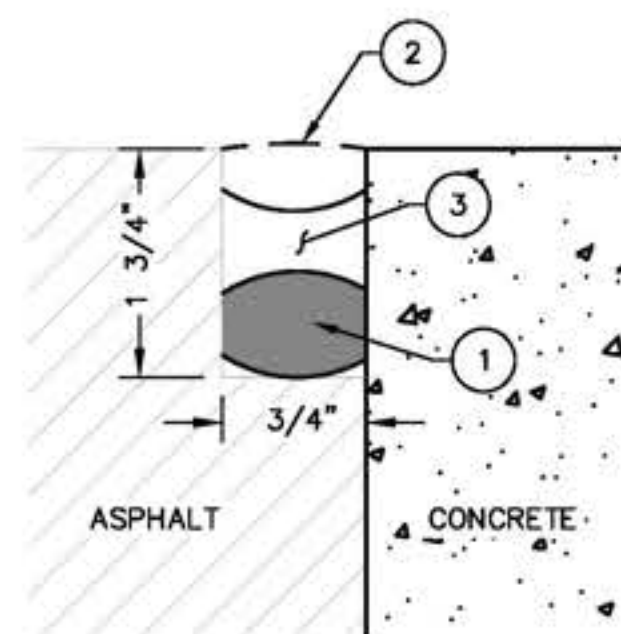




TYPICAL SECTION (LOOKING NORTH)
NOT TO SCALE



ASPHALT REPAIR DETAIL
NOT TO SCALE



CONCRETE TO ASPHALT JOINT DETAIL
NOT TO SCALE

- CONSTRUCTION NOTES:**
- 1 THE BACKER ROD MUST BE COMPATIBLE WITH THE SEALANT AND SLIGHTLY OVERSIZED TO RESIST MOVEMENT DURING SEALING OPERATION.
 - 2 HOT POURED SEALANT - ASTM D 3405 FLUSH WITH SURFACE.
 - 3 APPROVED SILICONE SEALANT 1/4" - 3/8" BELOW SURFACE.
- NOTES:**
1. THE PAVEMENT EDGE IS TO BE PLACED APPROXIMATELY VERTICAL.
 2. SEALANTS AND PREFORMED SEALS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS.
 3. MAKE A VERTICAL SAW CUT IN THE ASPHALT TO SERVE AS A FORM FOR THE END OF THE CONCRETE PAVEMENT.
 4. BACKER ROD, JOINT SEALANT, PRIMER AND EPOXY SHALL CONFORM TO THE CITY OF ALEXANDRIA STANDARD CONSTRUCTION SPECIFICATIONS



100% SUBMITTAL

WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
CONSTRUCTION DETAILS

SHEET
9 OF 23
SCALE: N/A



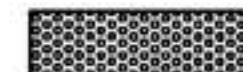
KITTELSON & ASSOCIATES

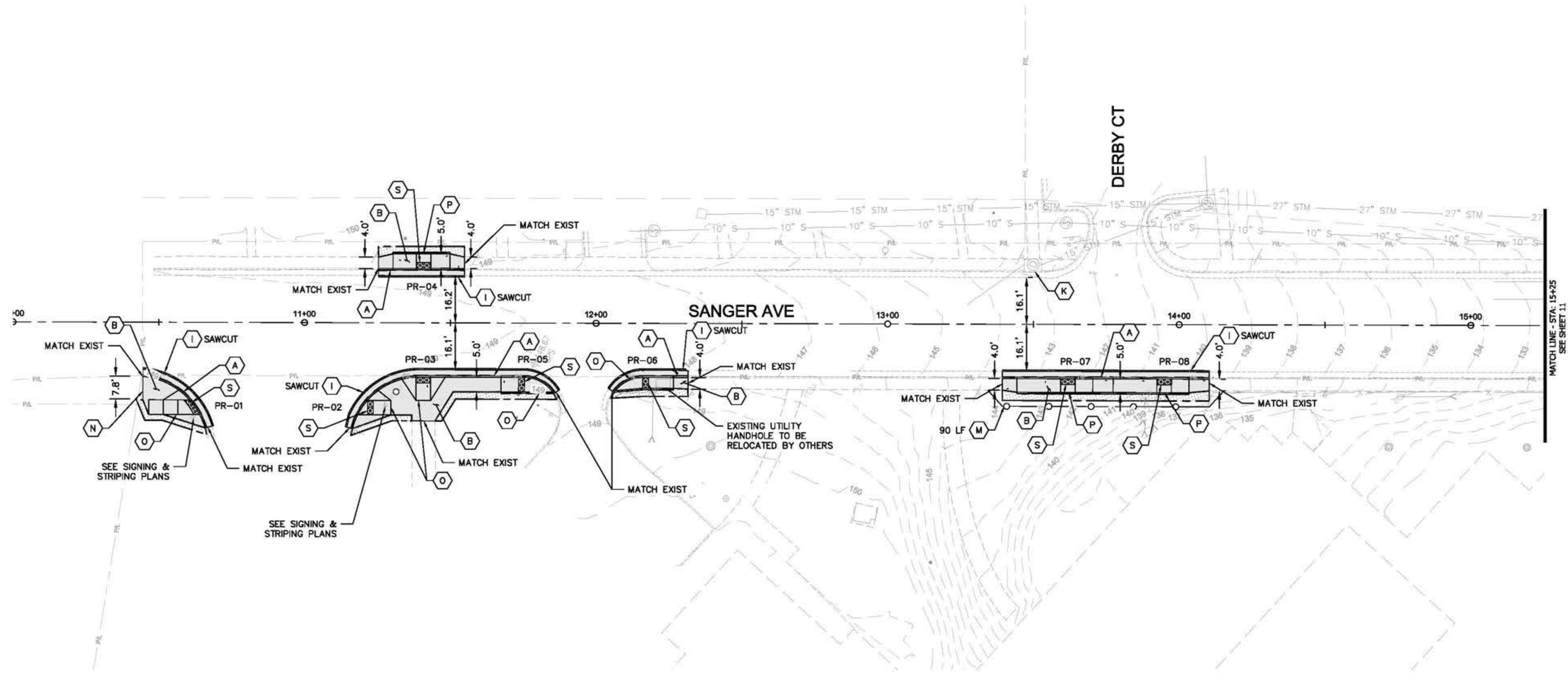
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

REVISIONS	DESCRIPTION
DATE	BY

ALEXANDRIA PROJECT NO.: 2862/703	DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25760.002	DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24	CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: DATE: -	

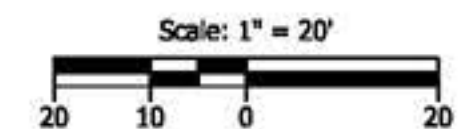
LEGEND

	PROPOSED CONCRETE SIDEWALK
	ASPHALT REPAIR
	SEEDED LANDSCAPE REPAIR
	DETECTABLE WARNING SURFACE



CONSTRUCTION NOTES:

- A INSTALL 6" COMBINATION CURB AND GUTTER PER CITY OF ALEXANDRIA DESIGN AND CONSTRUCTION STANDARDS 2022 (CSCG-1)
- B INSTALL STANDARD CONCRETE SIDEWALK PER CITY OF ALEXANDRIA DESIGN AND CONSTRUCTION STANDARDS 2022 (CSSW-1)
- H ADJUST UTILITY TO GRADE
- I ASPHALT REPAIR PER DETAIL ON SHEET 9
- K INLET PROTECTION TYPE B PER VDOT ROAD AND BRIDGE STANDARDS 113.10
- M TEMPORARY SILT BARRIER PER VDOT ROAD AND BRIDGE STANDARDS 113.07
- N CONCRETE TO ASPHALT JOINT PER DETAIL ON SHEET 9
- O TYPE A CURB RAMP PER VDOT ROAD AND BRIDGE STANDARDS 204.01
- P TYPE B CURB RAMP PER VDOT ROAD AND BRIDGE STANDARDS 204.01
- S CG-12 DETECTABLE WARNING SURFACE PER VDOT ROAD AND BRIDGE STANDARDS 204.01-07



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

100% SUBMITTAL

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
CONSTRUCTION PLAN

SHEET
10 OF 23
SCALE: 1"=20'

REVISIONS	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		
76		
77		
78		
79		
80		
81		
82		
83		
84		
85		
86		
87		
88		
89		
90		
91		
92		
93		
94		
95		
96		
97		
98		
99		
100		

KITTELSON & ASSOCIATES
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

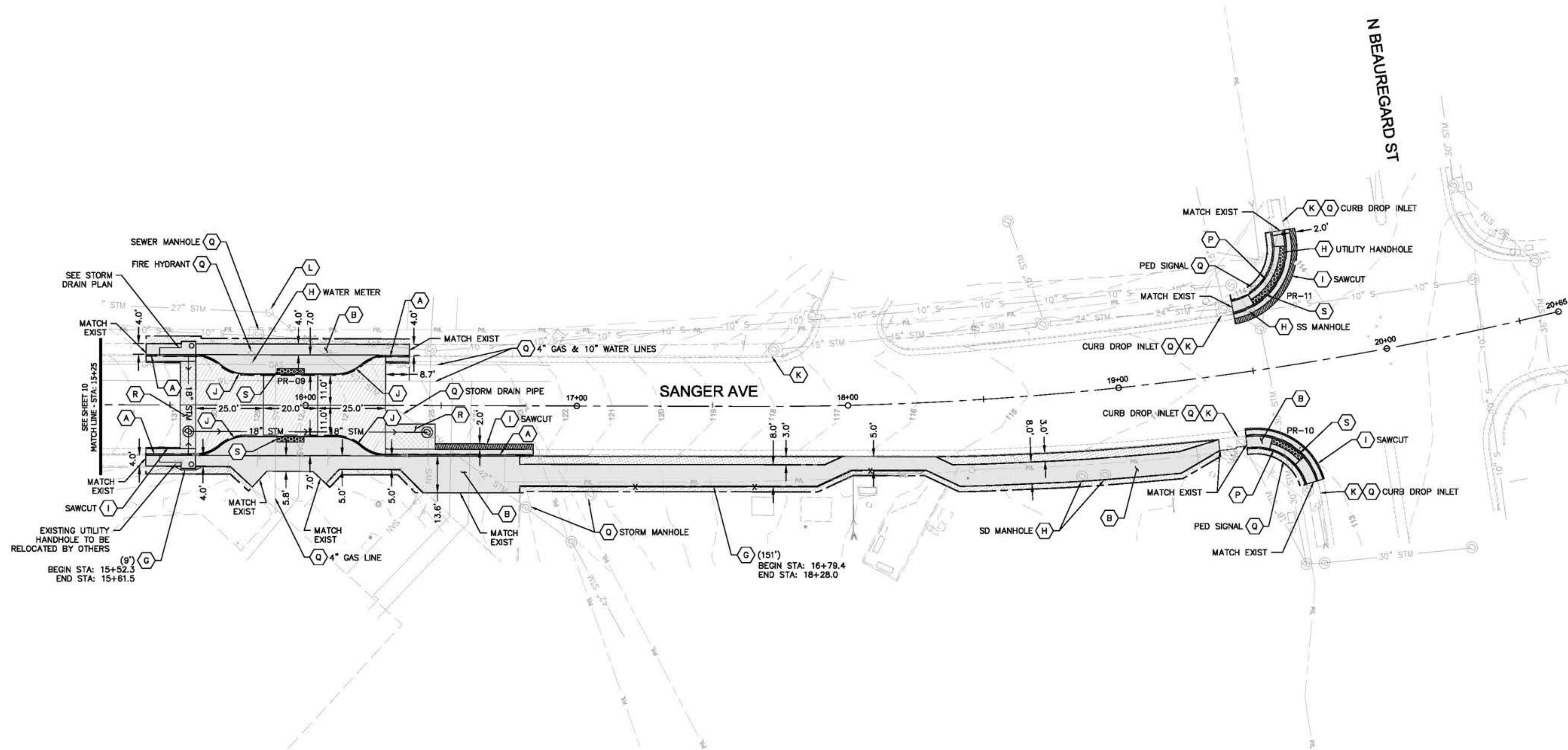


LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT
- ASPHALT REPAIR
- UTILITY TRENCH REPAIR
- SEEDED LANDSCAPE REPAIR
- DETECTABLE WARNING SURFACE

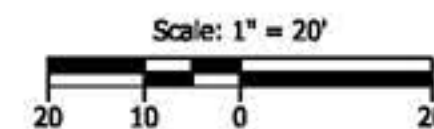
NOTES

1. 4" GAS LINE, 10" WATER LINE, WATER SERVICE LINES, GAS SERVICE LINE AND SANITARY SEWER SERVICE LINE SIZE AND LOCATIONS ARE ASSUMED AS PROVIDED BY THE CITY OF ALEXANDRIA. CONTACT VIRGINIA 811 FOR SIZE AND LOCATION INFORMATION PRIOR TO WORK.
2. FOR UTILITY TRENCH REPAIR UNDER THE RAISED CROSSWALK USE STANDARD DETAIL CSJT-1 UP TO 2 INCHES FROM EXISTING SURFACE THEN FOLLOW RAISED CROSSWALK DETAIL ON SHEET 8.



CONSTRUCTION NOTES:

- A INSTALL 6" COMBINATION CURB AND GUTTER PER CITY OF ALEXANDRIA DESIGN AND CONSTRUCTION STANDARDS 2022 (CSCG-1)
- B INSTALL STANDARD CONCRETE SIDEWALK PER CITY OF ALEXANDRIA DESIGN AND CONSTRUCTION STANDARDS 2022 (CSSW-1)
- G INSTALL 4' HIGH STANDARD CHAIN LINK FENCE PER CITY OF ALEXANDRIA DESIGN AND CONSTRUCTION STANDARDS 2022 (FE-CL)
- H ADJUST UTILITY TO GRADE
- I ASPHALT REPAIR PER DETAIL ON SHEET 9
- J MODIFIED MOUNTABLE CURB, NO GUTTER PER CITY OF ALEXANDRIA DESIGN AND CONSTRUCTION STANDARDS 2022 (CSCG-3)
- K INLET PROTECTION TYPE B PER VDOT ROAD AND BRIDGE STANDARDS 113.10
- L INLET PROTECTION TYPE A PER VDOT ROAD AND BRIDGE STANDARDS 113.09
- P TYPE B CURB RAMP PER VDOT ROAD AND BRIDGE STANDARDS 204.01
- Q PROTECT IN-PLACE
- R TRENCHING AND PAVEMENT REPAIR PER CITY OF ALEXANDRIA DESIGN AND CONSTRUCTION STANDARDS 2022 (CSJT-1), SEE NOTE 2
- S CG-12 DETECTABLE WARNING SURFACE PER VDOT ROAD AND BRIDGE STANDARDS 204.01-07



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

100% SUBMITTAL

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
CONSTRUCTION PLAN

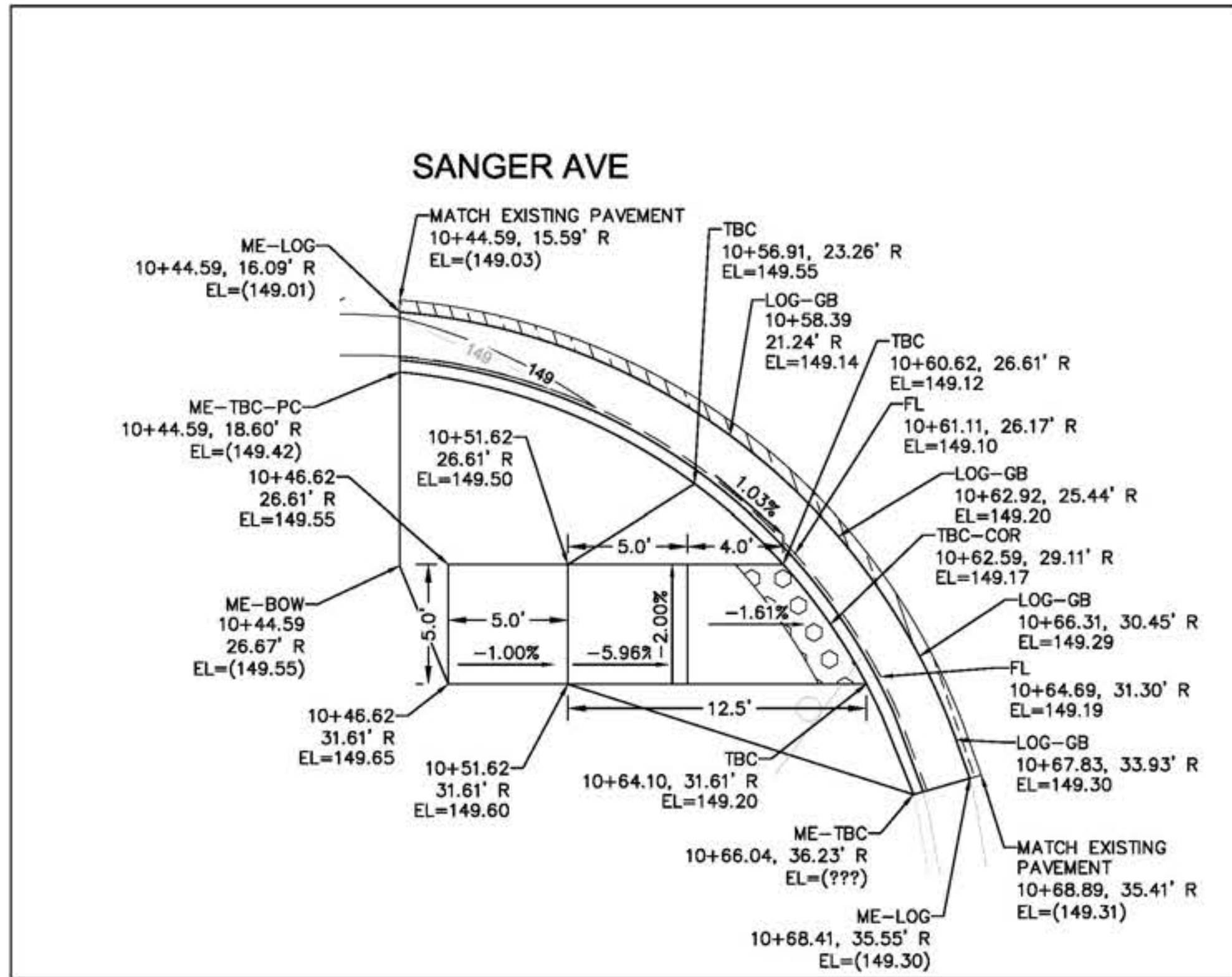
SHEET
11 OF 23
SCALE: 1"=20'

REVISIONS	DATE	DESCRIPTION
1	7-31-24	ISSUANCE
2	7-31-24	DESIGNED BY: DNS DATE: 7-31-24
3	7-31-24	DRAWN BY: DNS DATE: 7-31-24
4	7-31-24	CHECKED BY: ARM DATE: 7-31-24
5	7-31-24	APPROVED BY: DATE:

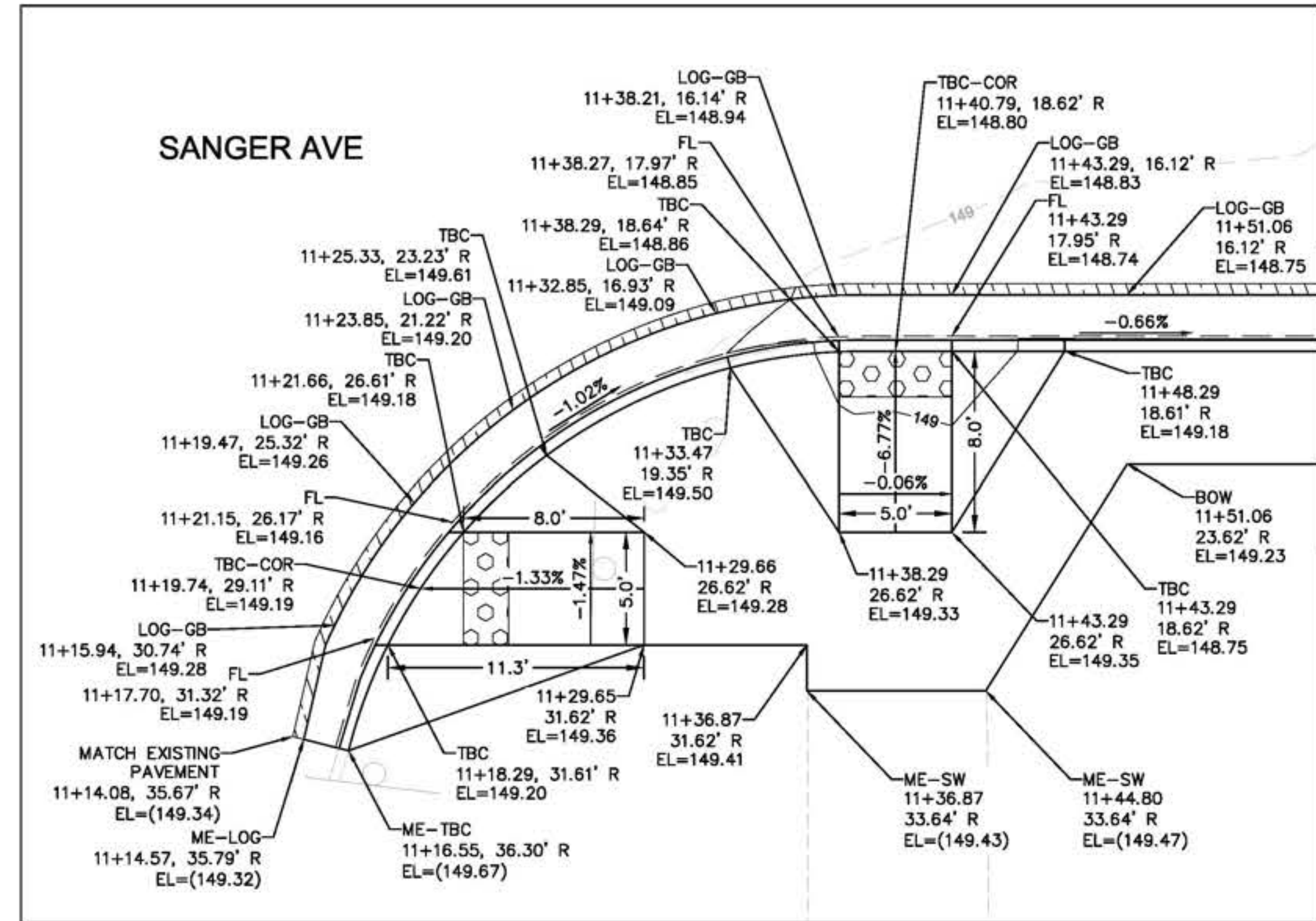
KITTELSON
& ASSOCIATES

300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

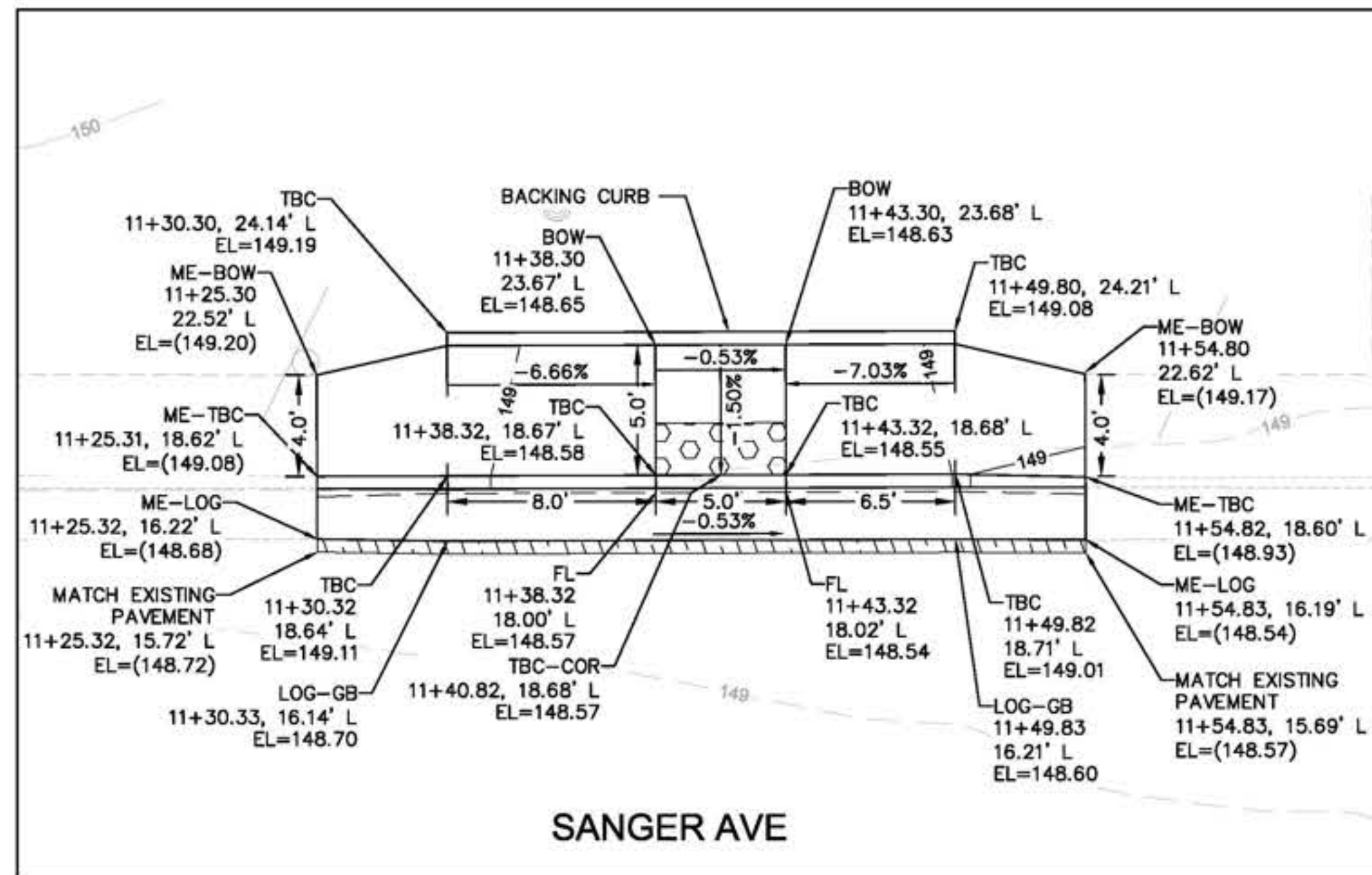




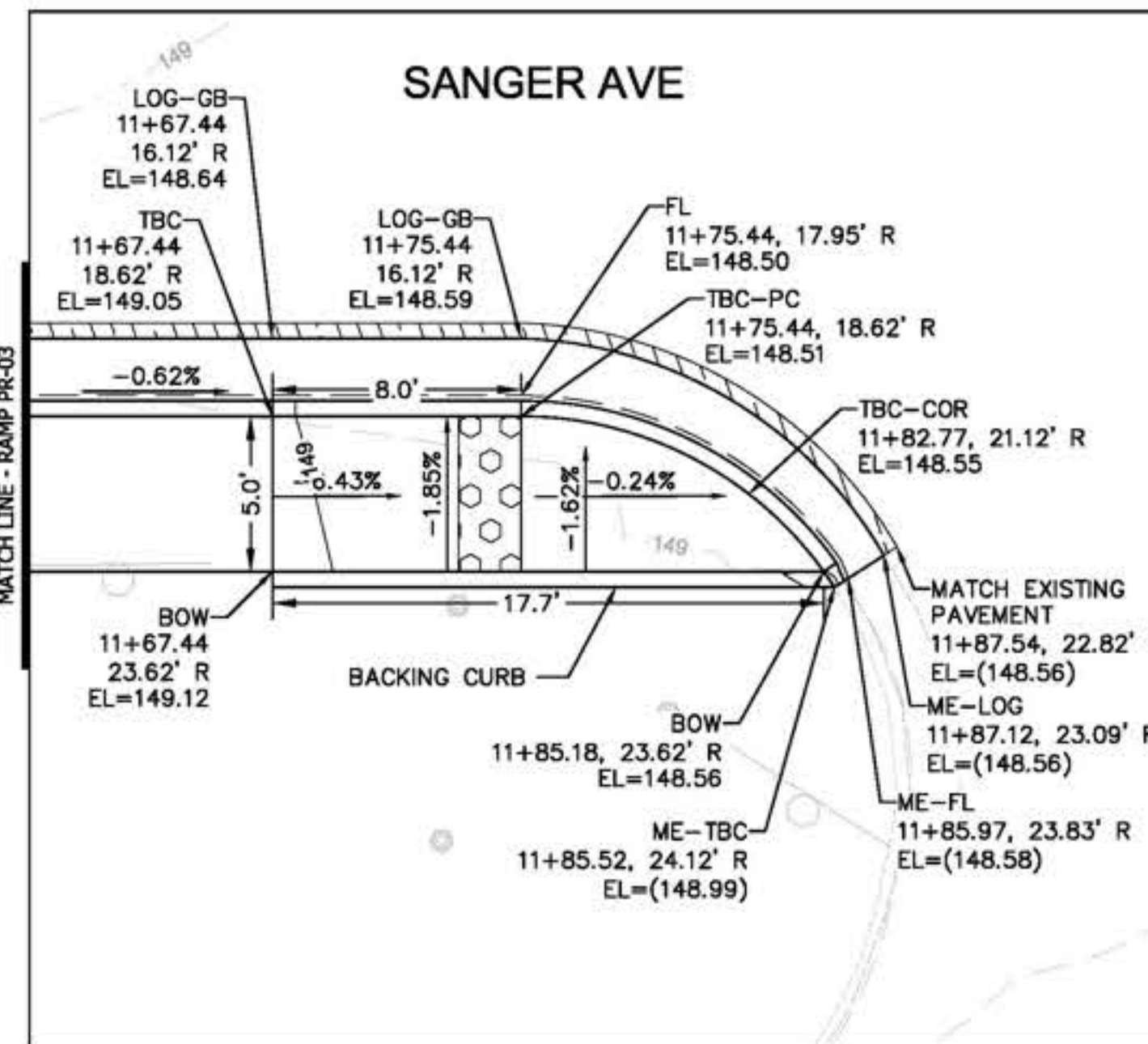
PROP. CONC. RAMP PR-01



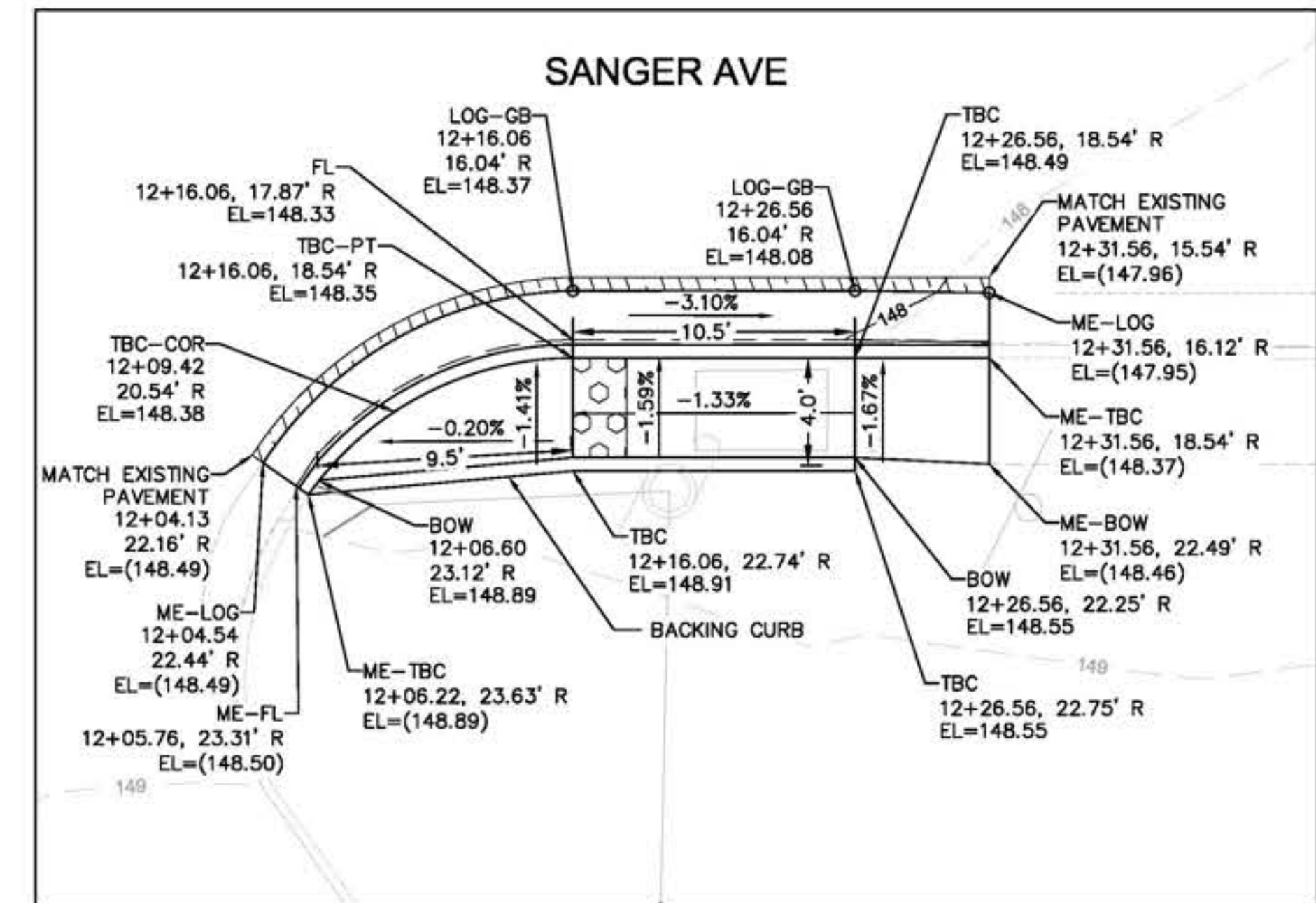
PROP. CONC. RAMP PR-02 & PR-03



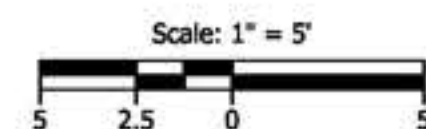
PROP. CONC. RAMP PR-04



PROP. CONC. RAMP PR-05



PROP. CONC. RAMP PR-06



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

100% SUBMITTAL

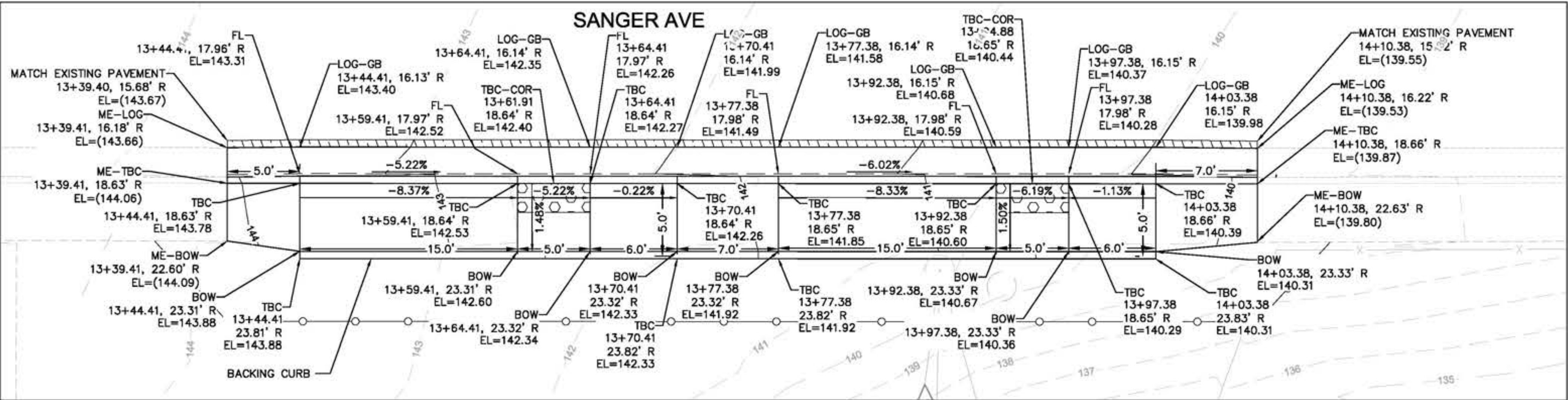
WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
RAMP DETAILS

SHEET
12 OF 23
SCALE: 1"=5'

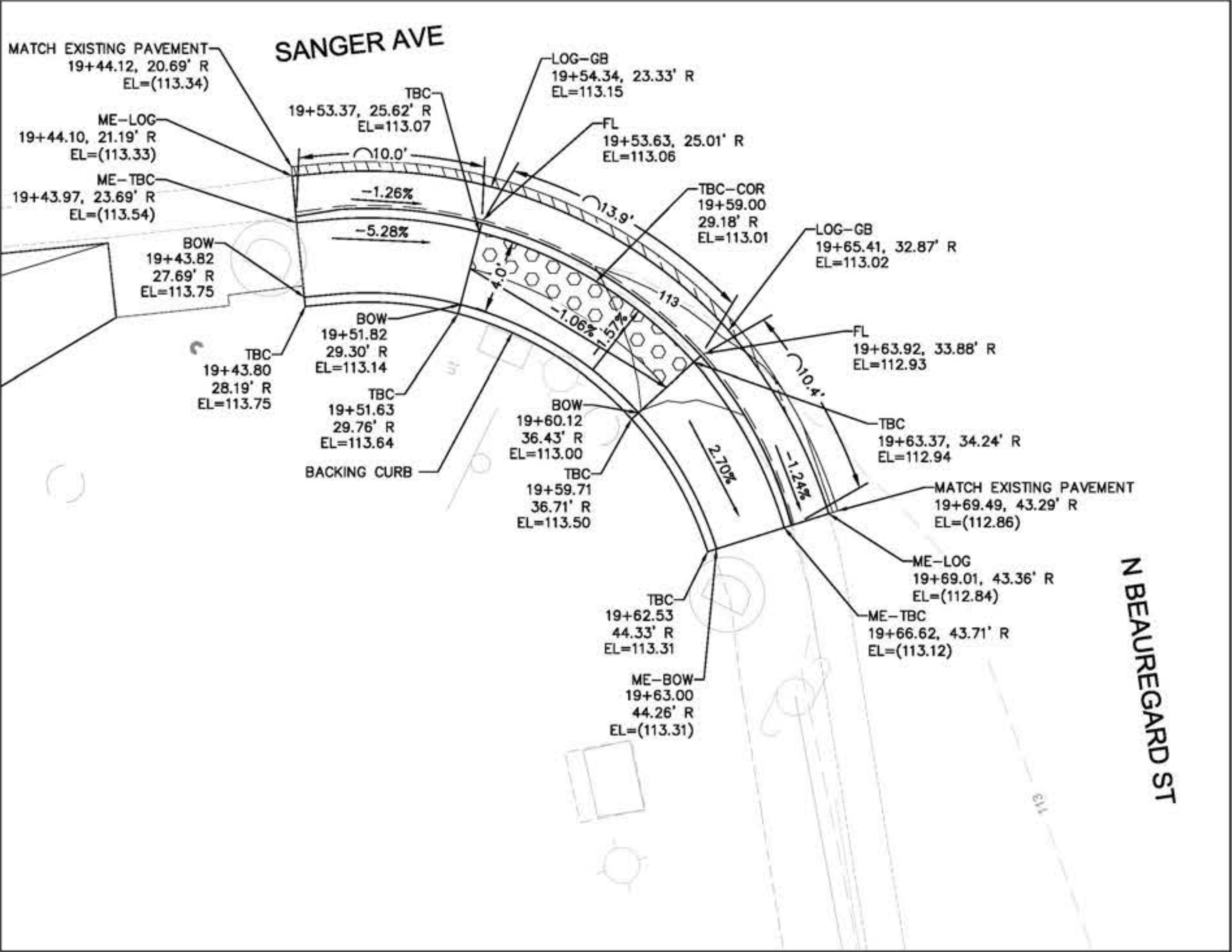
REVISIONS	DESCRIPTION
DATE	BY

ALEXANDRIA PROJECT NO.: 2862/703	DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25760.002	DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24	CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: _____	DATE: _____

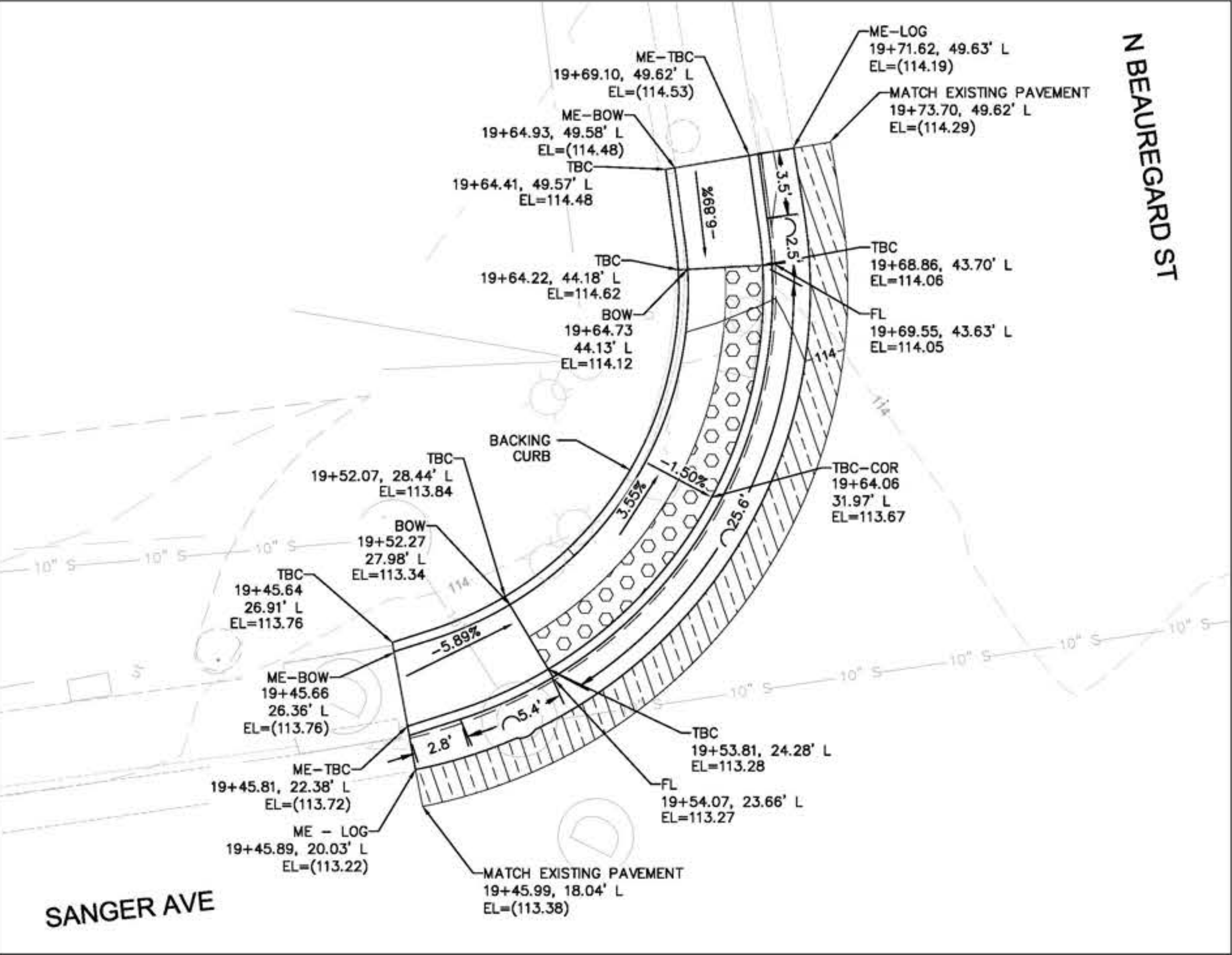
KITTILSON & ASSOCIATES
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710



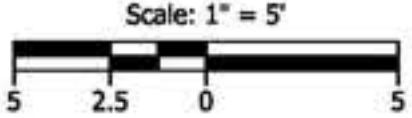
PROP. CONC. RAMP PR-07 & PR-08



PROP. CONC. RAMP PR-10



PROP. CONC. RAMP PR-10



100% SUBMITTAL

KITTELSON & ASSOCIATES
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

REVISIONS	DATE	DESCRIPTION

ALEXANDRIA PROJECT NO.: 2862/703
DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25760.002
DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24
CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: _____ DATE: _____

WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS
TO SCHOOL IMPROVEMENTS
RAMP DETAILS

SHEET
13 OF 23
SCALE: 1"=5'



100% SUBMITTAL



KITTELSON & ASSOCIATES

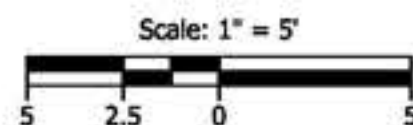
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

REVISIONS	DESCRIPTION
DATE	BY

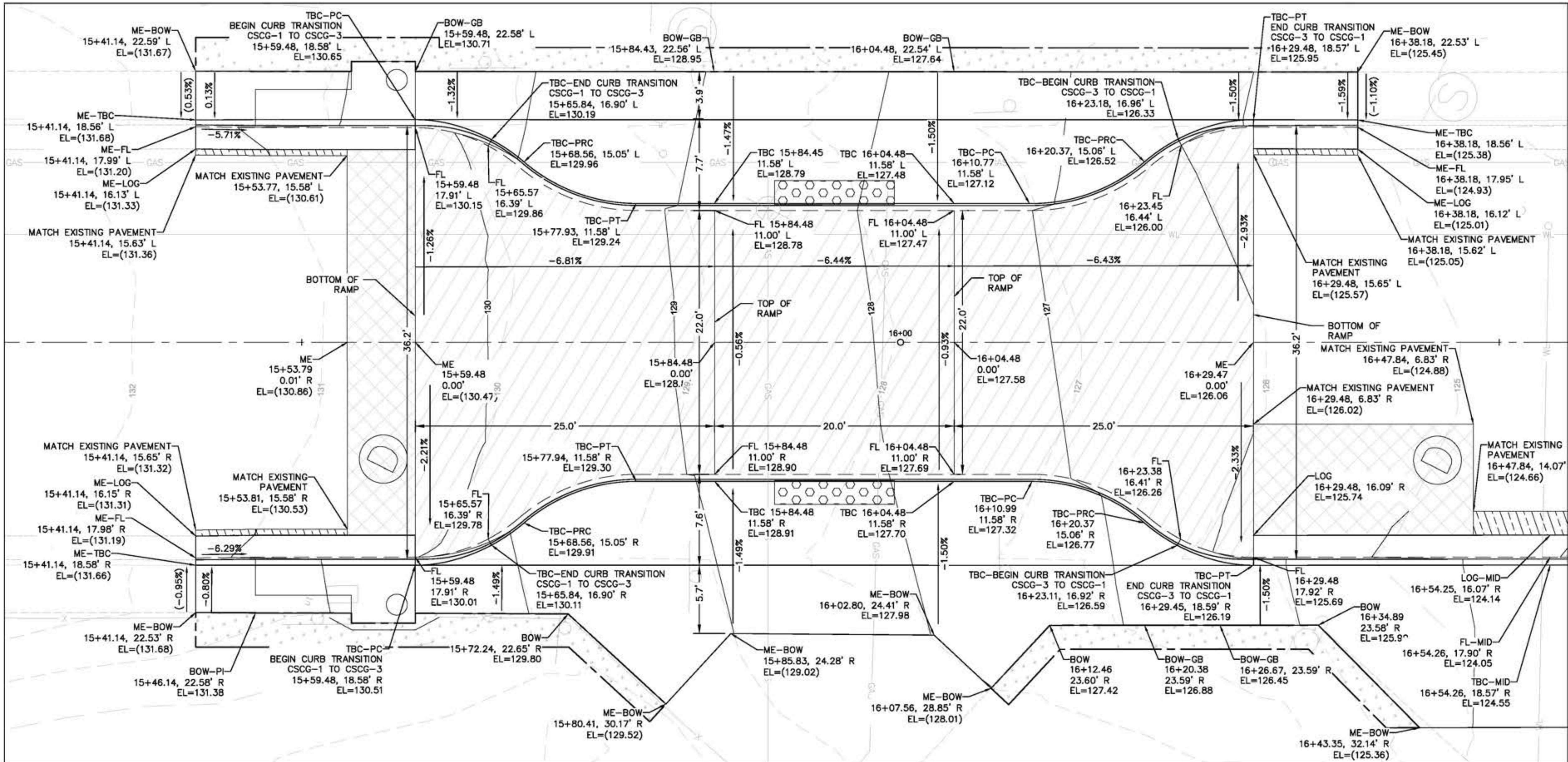
ALEXANDRIA PROJECT NO. 2862/703	DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25760.002	DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24	CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: _____	DATE: _____

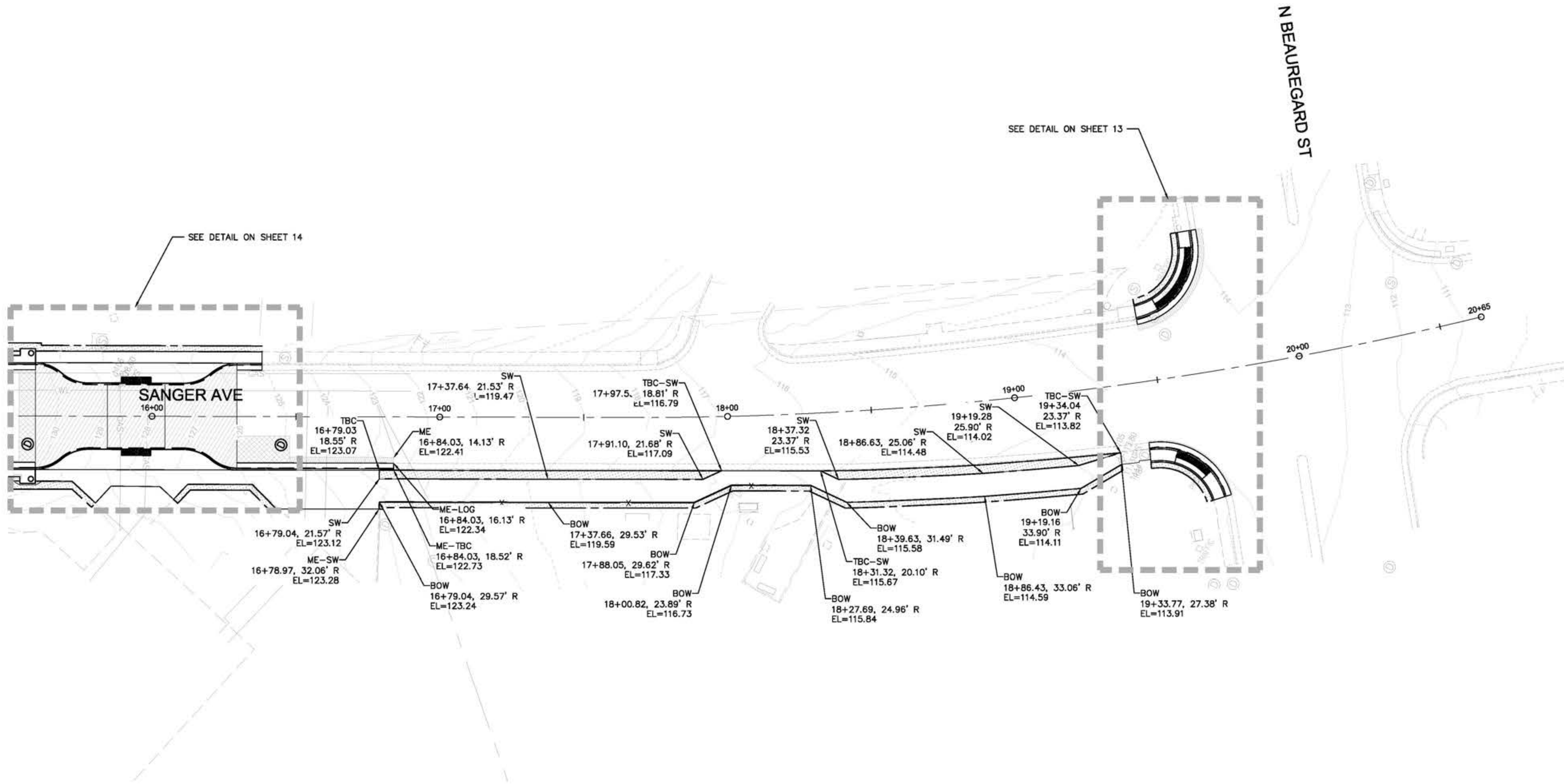
WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
RAISED CROSSWALK DETAILS

SHEET
14 OF 23
SCALE: 1"=5'



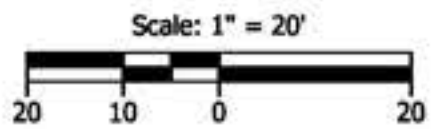
PROP. ASPHALT RAISED CROSSWALK - PR-09





SEE DETAIL ON SHEET 14

SEE DETAIL ON SHEET 13



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

100% SUBMITTAL

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
GRADING PLAN

SHEET
15 OF 23
SCALE: 1"=20'

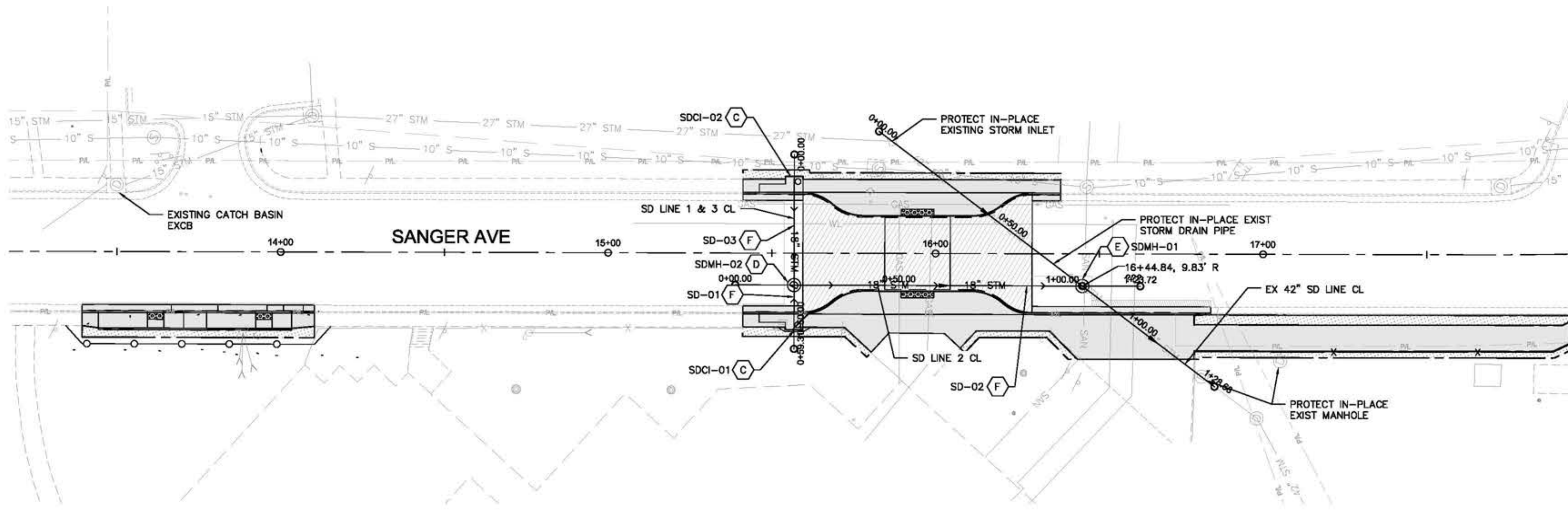
REVISIONS	
DATE	DESCRIPTION

ALEXANDRIA PROJECT NO.: 2562/703	DESIGNED BY: DNS	DATE: 7-31-24
DATE OF PLAN ISSUANCE: 7-31-24	DRAWN BY: DNS	DATE: 7-31-24
CONSULTANT PROJECT ID: 25760.002	CHECKED BY: ARM	DATE: 7-31-24
APPROVED BY: _____	DATE: _____	

**KITTELSON
& ASSOCIATES**

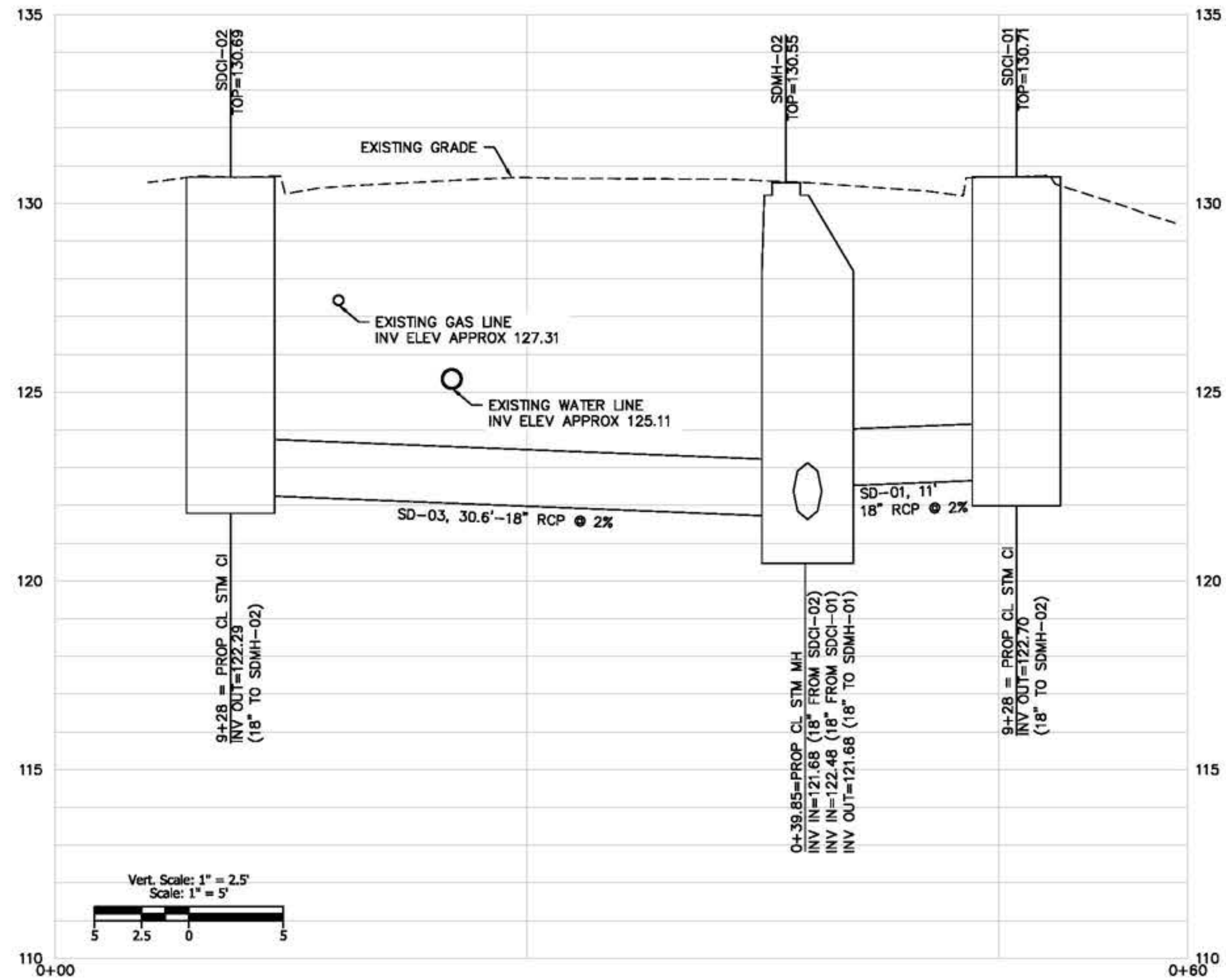
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710





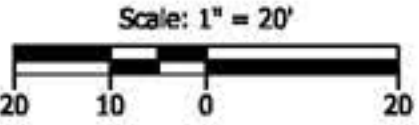
CONSTRUCTION NOTES:

- C INSTALL 14' STANDARD CURB DROP INLET (CSDI-1)
- D INSTALL PRECAST MANHOLE (CSMH-1)
- E INSTALL PRECAST MANHOLE (CSMH-2)
- F INSTALL 18" CIRCULAR PIPE



SD-01 & SD-03 PROFILE

STORM DRAIN DATA TABLE							
STRUCTURE #	RIM ELEVATION	PIPE INFO.	INV. IN	PIPE INFO.	INV. OUT	LENGTH/HEIGHT (LF)	SLOPE
SDCI-01	130.71			18" RCP (SD#2)	122.65	8.00	
SDCI-02	130.69			18" RCP (SD#1)	122.29	8.40	
SDMH-01	125.23	18" RCP (SD#3)	118.13	48" RCP (EXIST)	117.13		
		48" RCP (EXIST)	117.13				
SDMH-02	130.55	18" RCP (SD#1)	121.68	18" RCP (SD#3)	121.63	8.92	
		18" RCP (SD#2)	122.48				
SD-01		18" RCP	122.48	18" RCP	122.70	11.10	2.00%
SD-02		18" RCP	118.13	18" RCP	121.63	88.00	4.00%
SD-03		18" RCP	121.68	18" RCP	122.29	30.60	2.00%



100% SUBMITTAL

KITTELSON & ASSOCIATES
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

REVISIONS	DATE	DESCRIPTION

ALEXANDRIA PROJECT NO.: 2862/T03
DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25760.002
DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24
CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: _____ DATE: _____

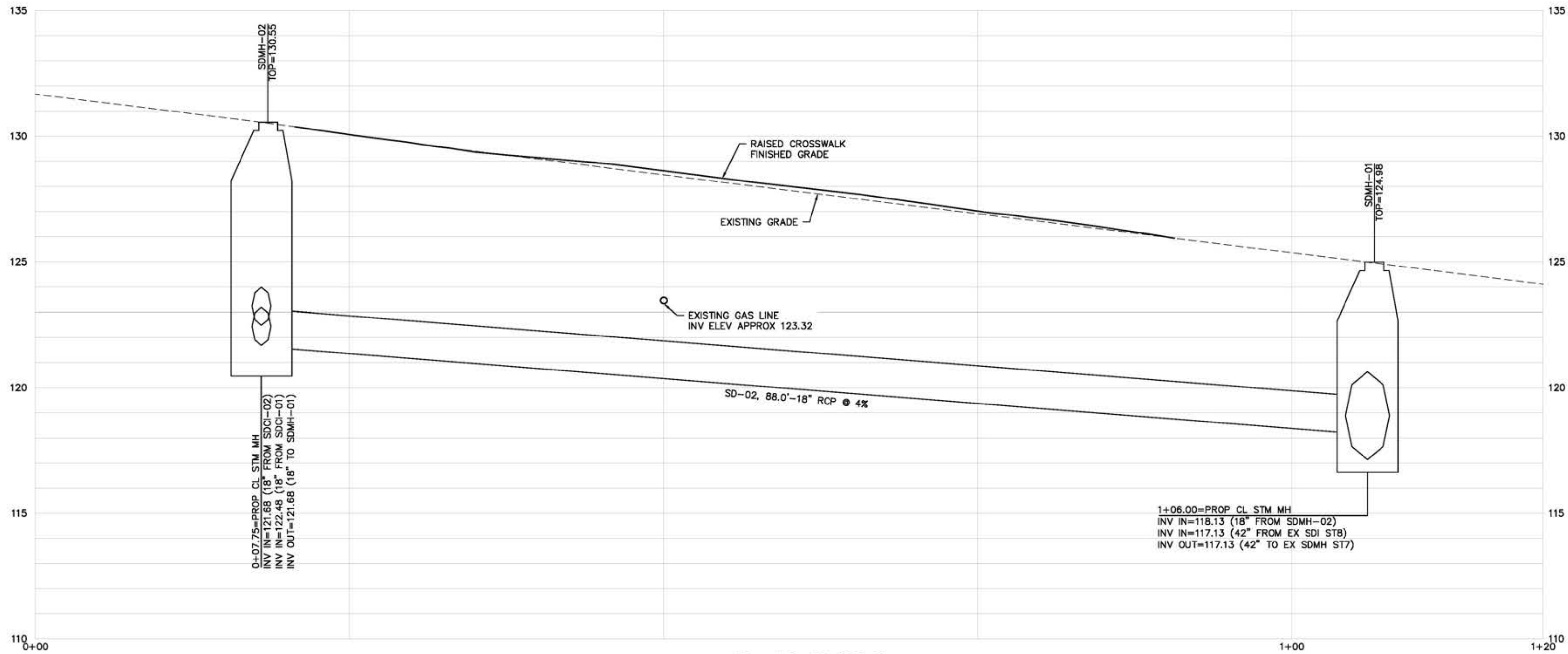
WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS

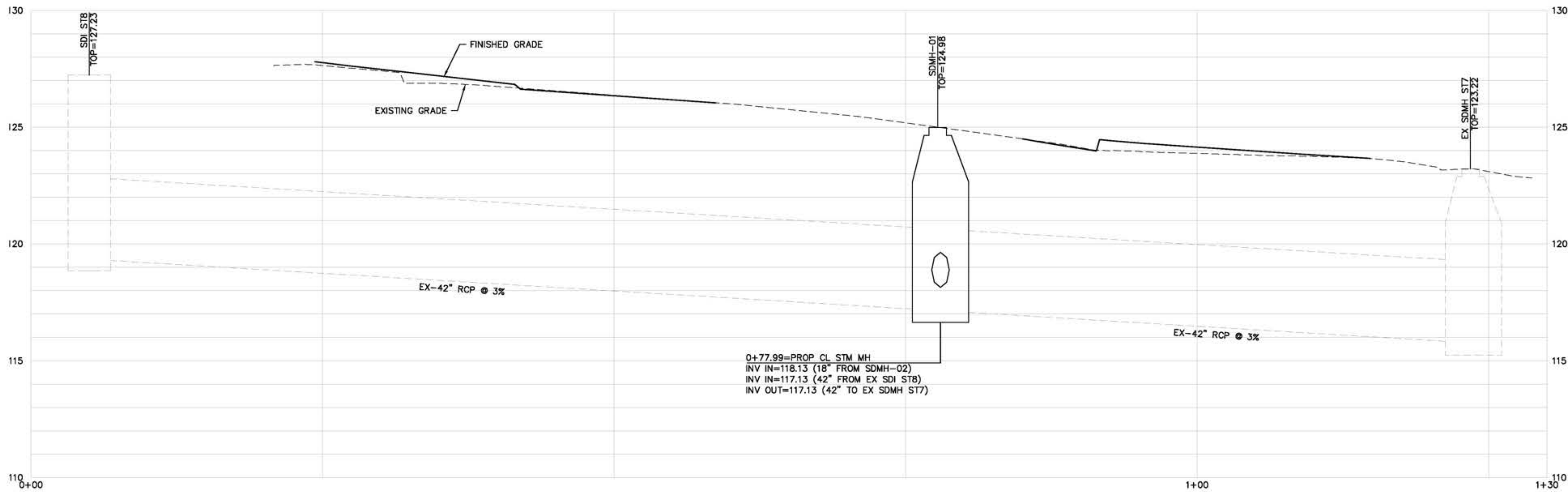
STORM DRAIN PLAN AND PROFILE

SHEET
16 OF 23

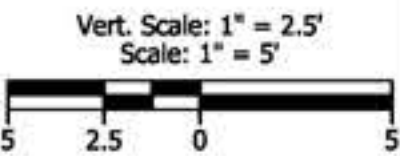
SCALE: 1"=20'



SD-02 PROFILE



EX 42" PROFILE



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

100% SUBMITTAL

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
STORM DRAIN PROFILES

SHEET
17 OF 23
SCALE: 1"=5'

REVISIONS	DATE	BY	DESCRIPTION
ALEXANDRIA PROJECT NO.: 2862/703			
DATE OF PLAN ISSUANCE: 7-31-24			
CONSULTANT PROJECT ID: 25760.002			
DESIGNED BY: DNS DATE: 7-31-24			
DRAWN BY: DNS DATE: 7-31-24			
CHECKED BY: ARM DATE: 7-31-24			
APPROVED BY: DATE:			

**KITTELSON
& ASSOCIATES**

300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710



Gutter Flow Calculations

KITTELSON
& ASSOCIATESLast Modified: 4/17/2024
Sheet 1/3

SUBJECT		William Ramsey SRTS		BY	DEC	DATE	Current			
PROJECT NO.		25760.002		CHECKED	DEC	DATE	Current			
Catch Basin Information										
Street & Gutter:										
Depressed gutter cross slope, S_{xy} = $\frac{n}{ft}$ = 0.015										
Street section slope, S_y = $\frac{n}{ft}$ = 0.003										
Catch Basin ID	Catch Basin Type	Inlet Type	Equivalent Grate Type	Next to Curb (Y/N)	Width, W ft	Curb Opening Length / Grate Length, L ft	Perimeter, P ft	Open Area, A ft ²	Height, h ft	Depression, in
West Side of Centerline										
SDCI-01	Curb Inlet On Grade	Curb Inlet	-	Y	2.00	12.00	12.00	5.50	0.42	2.00
East Side of Centerline										
EXCB	Curb Inlet On Grade	Curb Inlet	-	Y	2.00	5.00	5.00	2.29	0.42	2.00
SDCI-02	Curb Inlet On Grade	Curb Inlet	-	Y	2.00	12.00	12.00	5.50	0.42	2.00
Sag CB										

Gutter Flow

KITTELSON
& ASSOCIATESLast Modified: 4/17/2024
Sheet 2/3

SUBJECT William Ramsey SRTS					BY DEC		DATE Current										
PROJECT NO. 25760.002					CHECKED DEC		DATE Current										
On Grade Inlet Flow Computation																	
Hydrologic Flow:																	
10-Year Intensity, I = 4.00 in/hr																	
Impervious C = 0.90																	
Pervious C = 0.30																	
Catch Basin ID	Impervious Basin Area	Pervious Basin Area	Longitudinal Gutter Slope, S	Flow Width, T	Frontal flow intercepted to total frontal flow, Rf	Peak Runoff Plus Bypass Flow, Q _p	Bypass Flow, Q _b	Intercept Flow, Q _i	Total Gutter Flow, Q _t	Partial Gutter Flow, Q _p	Depressed Gutter Flow, Q _w	Depth, d	Depth 2, d ₂	Average Gutter Velocity, v	Required Curb Opening Length, L _c	Frontal Flow to Total Gutter Flow, E _o	Efficiency, E
ac	ac	ac	ft/ft	ft		cfs	cfs	cfs	cfs	cfs	cfs	ft	ft	fps	ft		
West Side of Centerline																	
SDCI-01	0.412	0.187	0.000	3.170	N/A	1.672	0.000	1.672	1.672	0.052	1.621	0.207	0.041	6.151	11.782	0.969	1.000
East Side of Centerline																	
EXCB	0.278	0.024	0.007	2.682	N/A	1.030	0.193	0.837	1.030	0.010	1.021	0.190	0.024	4.443	8.260	0.991	0.812
SDCI-02	0.205	0.097	0.000	2.255	N/A	1.049	0.000	1.049	1.049	0.001	1.048	0.175	0.009	5.670	9.568	0.999	1.000

Gutter Flow

KITTELSON
& ASSOCIATESLast Modified: 4/17/2024
Sheet 3/3

SUBJECT		William Ramsey SRTS		BY		DEC		DATE		Current							
PROJECT NO.		25760.002		CHECKED		DEC		DATE		Current							
Sag Inlet Flow Computation																	
Hydrologic Flow:																	
10-Year Intensity, I =		4.00		in/hr		vertical curve length, L =		46.4		ft							
Impervious C =		0.90				beginning approach grade, G1 =		0.5		%							
Pervious C =		0.30				ending approach grade, G2 =		0.5		%							
						rate of vertical curvature, K =		46.4		ft							
						design depth, Y =		0.228		ft							
						farther depth, Yf =		0.143325		ft							
										allowable spread, Ta =							
										6.5							
Catch Basin ID	Impervious Basin Area	Pervious Basin Area	Longitudinal Gutter Slope, S	Flow Width, T	Frontal flow intercepted to total frontal flow, Rf	Peak Runoff Plus Bypass Flow, Qp	Bypass Flow, Qb	Intercept Flow, Qi	Total Gutter Flow, Qt	Partial Gutter Flow, Qc	Depressed Gutter Flow, Qw	Depth, d	Depth 2, d2	Average Gutter Velocity, Vg	Required Curb Opening Length, Lc	Frontal Flow to Total Gutter Flow, Eo	Efficiency, E
	ac	ac	ft/ft	ft		cfs	cfs	cfs	cfs	cfs	cfs	ft	ft	fps	ft		
West Side of Centerline																	
SDCI-01	0.412	0.187	0.000	3.170	N/A	1.672	0.000	1.672	1.672	0.052	1.621	0.207	0.041	6.151	11.782	0.969	1.000
East Side of Centerline																	
EXCB	0.278	0.024	0.007	2.682	N/A	1.030	0.193	0.837	1.020	0.010	1.021	0.190	0.024	4.643	8.260	0.991	0.812
SDCI-02	0.205	0.097	0.000	2.255	N/A	1.049	0.000	1.049	1.049	0.001	1.048	0.175	0.009	5.670	9.999	0.999	1.000
At Allowable Spread																	
Allowable Spread = 6.50 ft Bypass: 0.000																	

NOTE: INTENSITY VALUE OF 4 IN/HR USED FOR INLET CAPACITY CALCULATION, PER VDOT DRAINAGE MANUAL, CHAPTER 9, TABLE 9-1

MANHOLE ENERGY LOSS CALCULATION

Outlet Data		Inlet Data	
Outlet IE	121.63 ft	Inlet ID	A
Outlet Diameter	18.00 in	Inlet IE (ft)	122.48
Outlet Flow	4.33 cfs	Inlet Diameter (in)	18.00
Outlet Velocity	9.36 ft/s	Inlet Flow (cfs)	2.87
Outlet HGL	122.09 ft	Inlet Deflection, θ (deg.)	90.00
Manhole IE	121.63 ft	Inlet Slope (ft/ft)	0.020
Floor Configuration	Flat (level)	Inlet Pipe Roughness	0.013
Bench Submergence	Intermediate	Discharge Intensity, DI	0.23
g	32.17 ft/s ²	Submerged Loss, E _{sub} (ft)	0.08
Energy Head, E ₁	1.82 ft	Unsubmerged Loss, E _{unsub} (ft)	0.91
Outlet Head Loss, H ₁	0.27 ft	Relative Punge Height, h _r	-0.83
Outlet Head, E ₂₀	2.10 ft	Exit loss, H ₀ (ft)	0.02
Base Energy Head, E ₂₀	2.10 ft		

Energy Losses	
Benching Coeff., C _b	-0.05
Benching Loss, H _b	-0.01 ft
Weighted θ, θ _w	90.00 deg.
Deflection Coeff., C _d	3.19
Deflection Loss, H _d	0.87 ft
Plunging Coeff., C _p	-1.01
Plunging Loss, H _p	-0.28 ft

Upstream Inlet Pipe	
Total Energy Head, E ₁	2.67 ft
Total Head Loss, H ₁	0.59 ft

Table 7-6. Values for the Coefficient, C _p		
Floor Configuration	Submerged	Unsubmerged
Flat (level)	-0.05	-0.05
Depressed	0.00	0.00
Half Benched	-0.05	-0.85
Full Benched	-0.25	-0.93
Improved	-0.60	-0.98

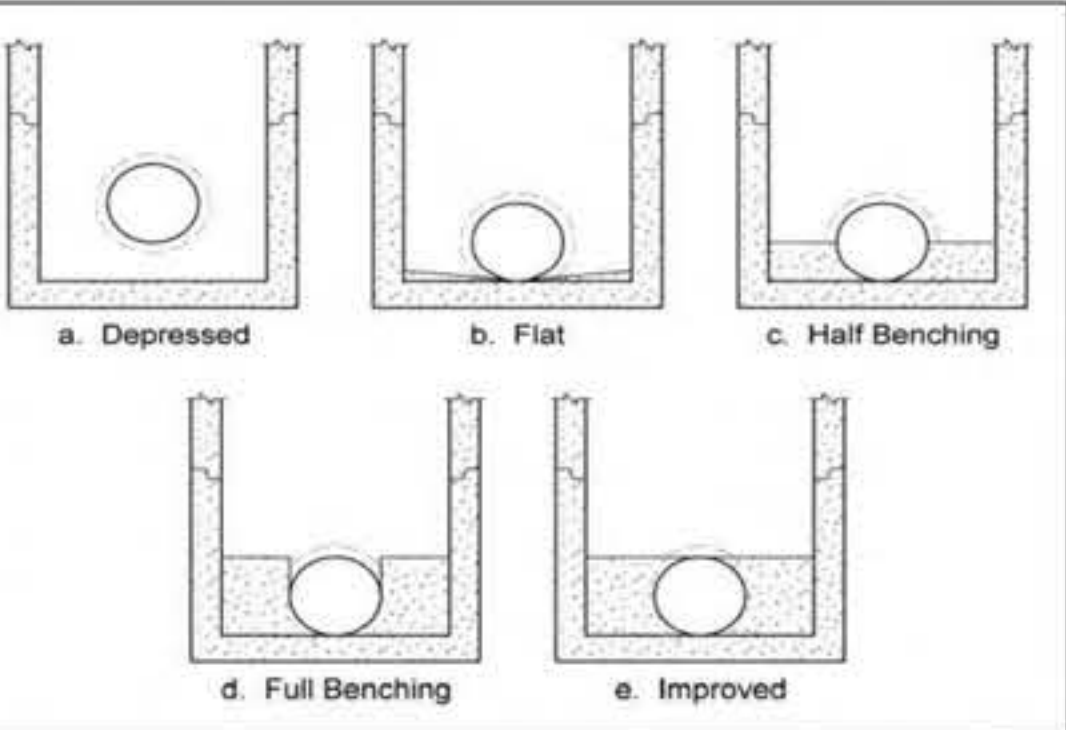


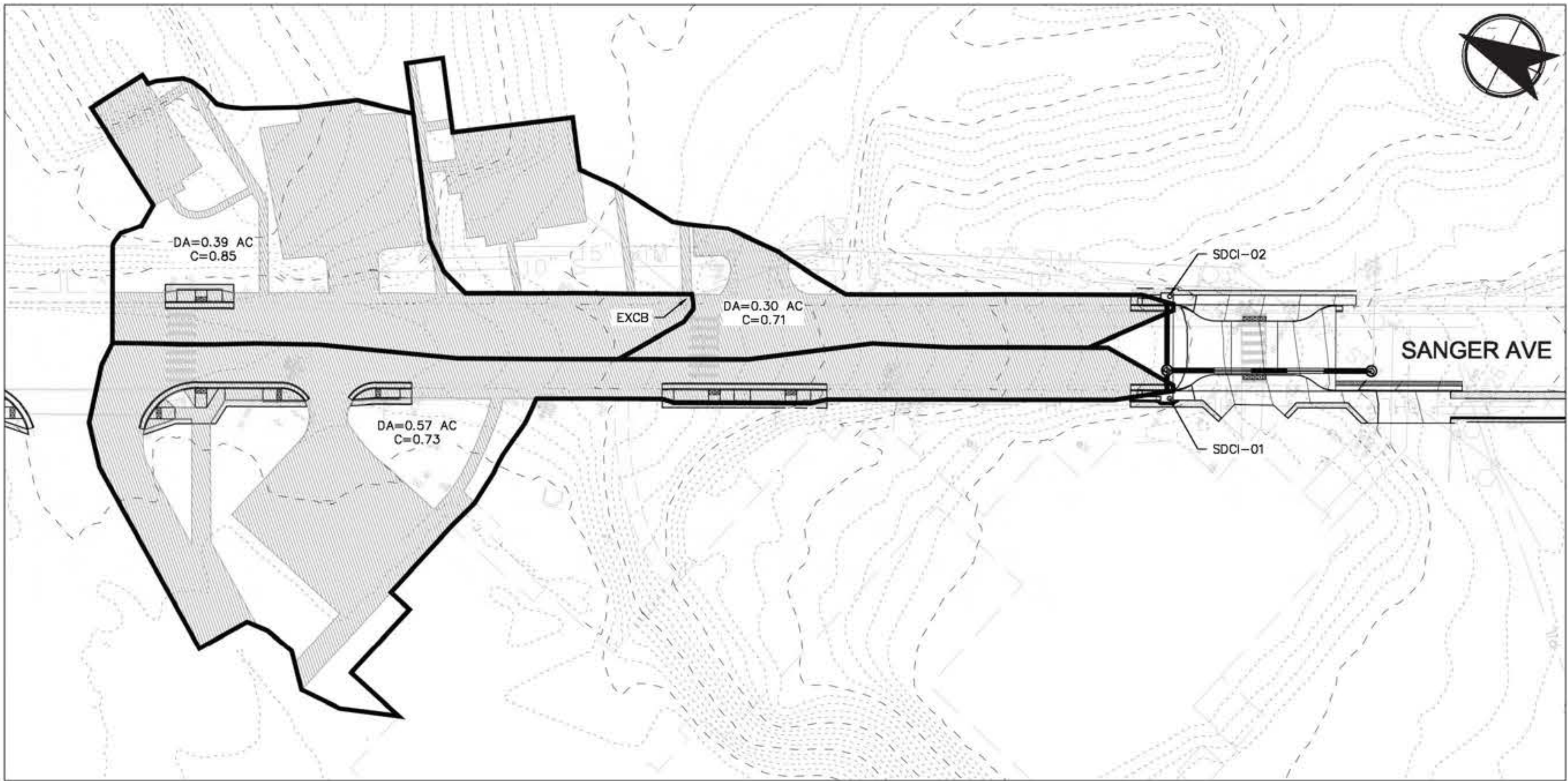
Figure 7-6. Access hole benching methods.

RATIONAL METHOD HYDROLOGY - PIPE FLOW ANALYSIS

Subject William Ramsey SRTS										By DEC		Date 6/20/2024																
Project No. 25760.002										Checked CXJ		Date 6/20/2024																
Storm Frequency 10 year		Downstream Boundary Condition Minimum of Normal & Critical Depth																										
24-hr Rainfall Depth 4.82 in																												
Pipe ID	Node Connections		Basin Area	T _c	C	I	Total Area	Total T _c	Total C	Total I	Q	US IE	DS IE	L	S	φ	#	n	E	Q _{max}	US MH Losses	D _i	V _i	S _i	Inc. T _c	US HGL Elev.	DS HGL Elev.	Remarks
	From	To																										
	ac	min																										
SD-01	SDCI-01	SDMH-02	0.57	5.00	0.73	6.86	0.57	5.00	0.73	6.86	2.868	122.70	122.48	11.07	0.020	18	1	0.013	0.0635	14.848	0.00	5.36	6.50	0.0198	0.03	123.15	122.93	NF
SD-02	SDMH-02	SDMH-01	0.30	5.00	0.71	6.86	0.87	5.03	0.73	6.85	4.331	121.63	118.13	88.03	0.040	18	1	0.013	0.0635	21.002	0.59	5.55	9.36	0.0396	0.16	122.09	118.59	NF
SD-03	SDCI-02	SDMH-02	0.30	5.00	0.71	6.86	0.30	5.00	0.71	6.86	1.468	122.29	121.68	30.57	0.020	18	1	0.013	0.0635	14.878	0.00	11.94	1.18	0.0003	0.43	122.70	122.67	NT

Remarks:
NF = Normal Flow, free outfall
NT = Normal Flow, tailwater condition
PC = Pressure flow, free outfall (critical depth)
PT = Pressure flow, tailwater condition



KITTELSON
& ASSOCIATES

IMPERVIOUS AREA MAP



100% SUBMITTAL

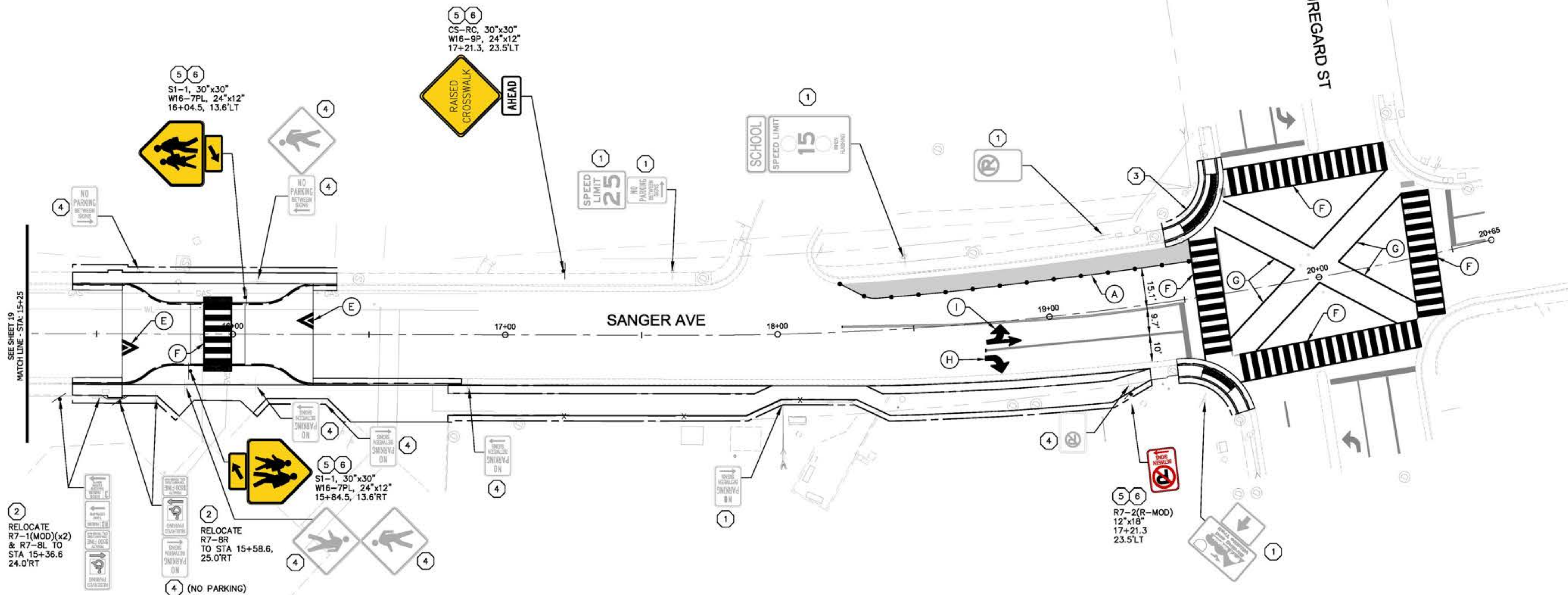
KITTELSON
& ASSOCIATES
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

REVISIONS	DESCRIPTION
DATE	DATE

ALEXANDRIA PROJECT NO.: 2562/703	DATE OF PLAN ISSUANCE: 7-31-24
CONSULTANT PROJECT ID: 25760.002	DESIGNED BY: DNS DATE: 7-31-24
DRAWN BY: DNS DATE: 7-31-24	CHECKED BY: ARM DATE: 7-31-24
APPROVED BY: _____	DATE: _____

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
STORM DRAIN CALCULATIONSSHEET
18 OF 23

SCALE: 1"=20'



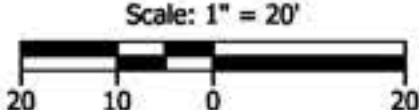
NOTE:
PAVEMENT MARKINGS TO BE INSTALLED BY OTHERS

PAVEMENT MARKING KEYNOTES

- (A) INSTALL PAINTED CURB EXTENSION, SEE DETAIL ON SHEET 21
- (E) TYPE B, CLASS I, RAISED CROSSWALK MARKING, SEE DETAIL ON SHEET 21
- (F) TYPE B, CLASS I, HIGH VISIBILITY CROSSWALK (RAISED CROSSWALK), 10 FT WIDTH, SEE DETAIL ON SHEET 21
- (G) TYPE B, CLASS I, TRANSVERSE CROSSWALK, 10 FT WIDTH
- (H) TYPE B, CLASS I, WHITE RIGHT TURN ARROW PAVEMENT SYMBOL
- (I) TYPE B, CLASS I, WHITE THRU-LEFT TURN ARROW PAVEMENT SYMBOL

SIGN KEYNOTES

- (1) RETAIN AND PROTECT
- (2) RELOCATE SIGN ON NEW POST
- (3) REMOVE POST
- (4) REMOVE SIGN
- (5) ROADSIDE TRAFFIC SIGN INSTALLATION
- (6) NEW POST INSTALLATION



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

100% SUBMITTAL

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
SIGNING & STRIPING PLAN

SHEET
20 OF 23
SCALE: 1"=20'

REVISIONS	DATE	DESCRIPTION
1	7-31-24	DATE OF PLAN ISSUANCE: 7-31-24
2	7-31-24	CONSULTANT PROJECT ID: 25760.002
3	7-31-24	DESIGNED BY: DNS DATE: 7-31-24
4	7-31-24	DRAWN BY: DNS DATE: 7-31-24
5	7-31-24	CHECKED BY: ARM DATE: 7-31-24
6	7-31-24	APPROVED BY: DATE: 7-31-24

KITTELSON
& ASSOCIATES
300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710





1. ALL TWELVE (12") & TWENTY FOUR INCH (24") THERMOPLASTIC LINES SHALL BE APPLIED IN ONE (1) APPLICATION, NO COMBINATION OF LINES (I.E. TWO - 6" LINES) WILL BE ACCEPTED.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY A CITY OF ALEXANDRIA ENGINEER PRIOR TO APPLICATION.
3. CROSSWALK BARS SHALL BE PLACED OUTSIDE THE VEHICULAR WHEEL PATH WHEREVER POSSIBLE.
4. PAVEMENT MARKINGS TO BE INSTALLED BY OTHERS



CENTERLINE OF TRAVEL LANE (TYP.)

6'

1' 1' 2' 1' 1'

3' 3'

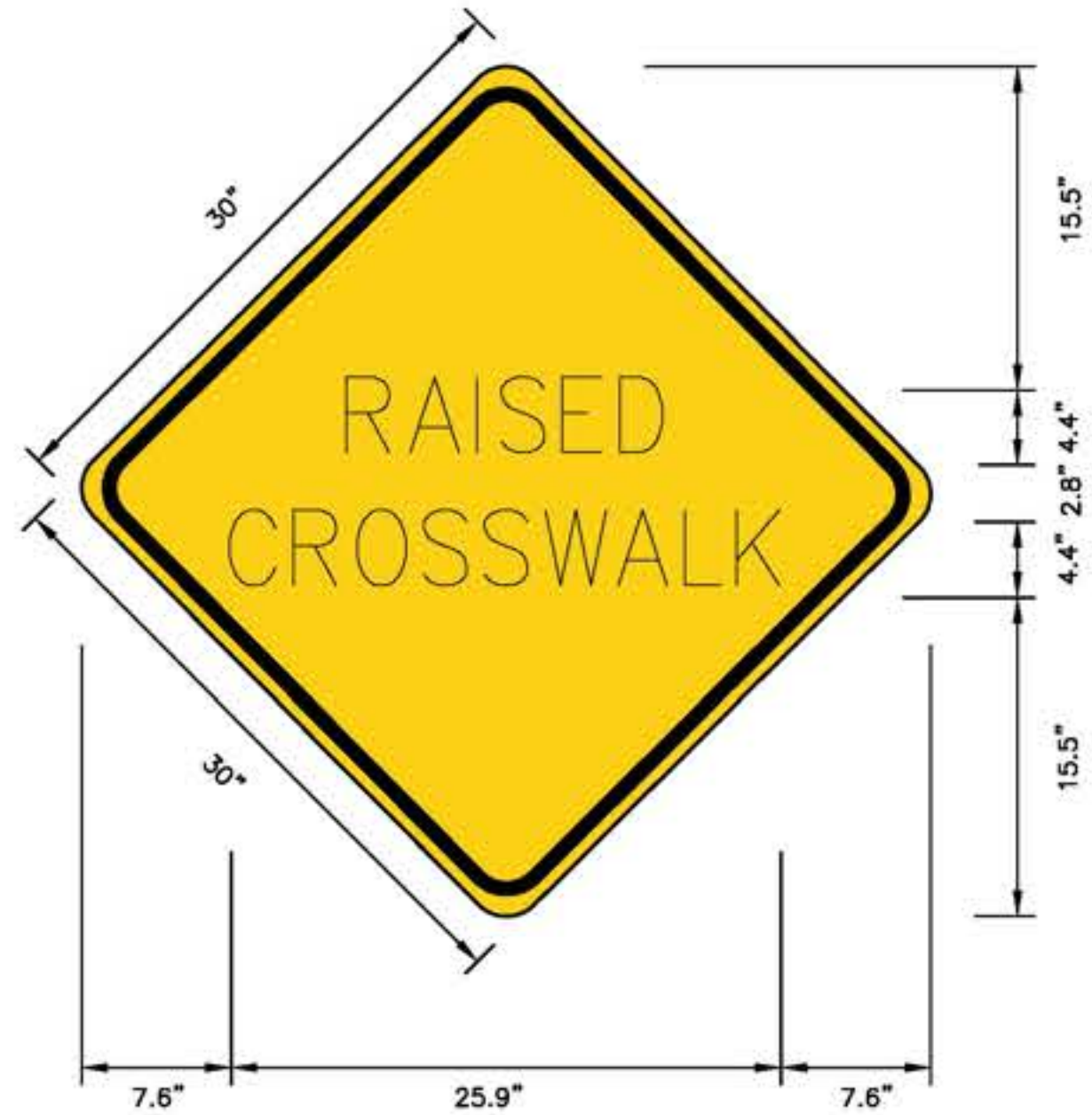
RAISED CROSSWALK
PAVEMENT MARKING SYMBOL

N.T.S

36" WHITE FLEXPOST DETAIL
N.T.S

[illegible]

SIGN NO.	SIGN FACE	PANEL SIZE		STANDARD NUMBER	PANEL SIZE S.F.	QUANTITY
		WIDTH	HEIGHT			
1		24"	12"	W16-9P	2	2
2		30"	30"	S1-1	6	4
3		30"	30"	CS-RC	6	2
4		24"	12"	W16-7PL	2	6
5		12"	18"	R7-1	1.5	1
6		12"	18"	R7-1(MOD)	1.5	1



RAISED CROSSWALK SIGN (CS-RC)
N.T.S.

- SIGN NOTES:**
- CORNER RADIUS: 1.5"
 - BORDER OFFSET FROM EDGE OF SIGN: 0.375"
 - BORDER THICKNESS: 0.625"
 - TEXT HEIGHT: 4.4"
 - FONT: CLEARVIEW HIGHWAY 2
 - COLORS:
 - BACKGROUND: YELLOW
 - SIGN BORDER AND TEXT: BLACK



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

REVISIONS	
DATE	DESCRIPTION

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
SIGN SUMMARY

SHEET
22 OF 23
SCALE: N/A

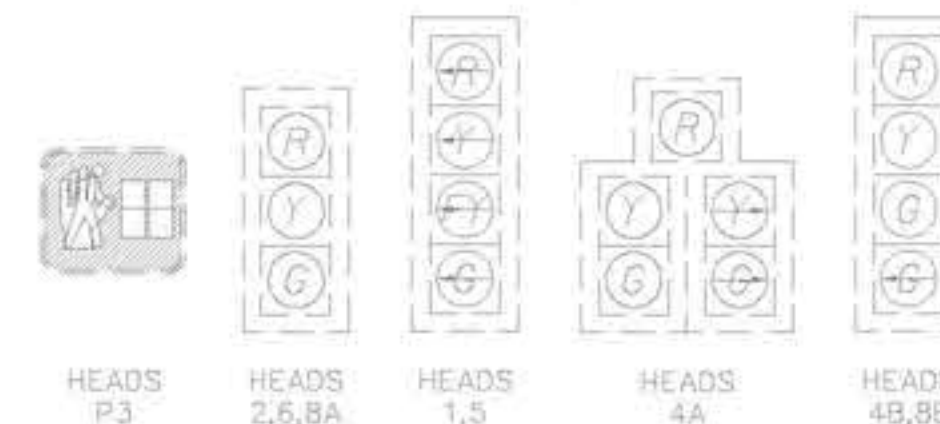
100% SUBMITTAL

**KITTELSON
& ASSOCIATES**

300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710



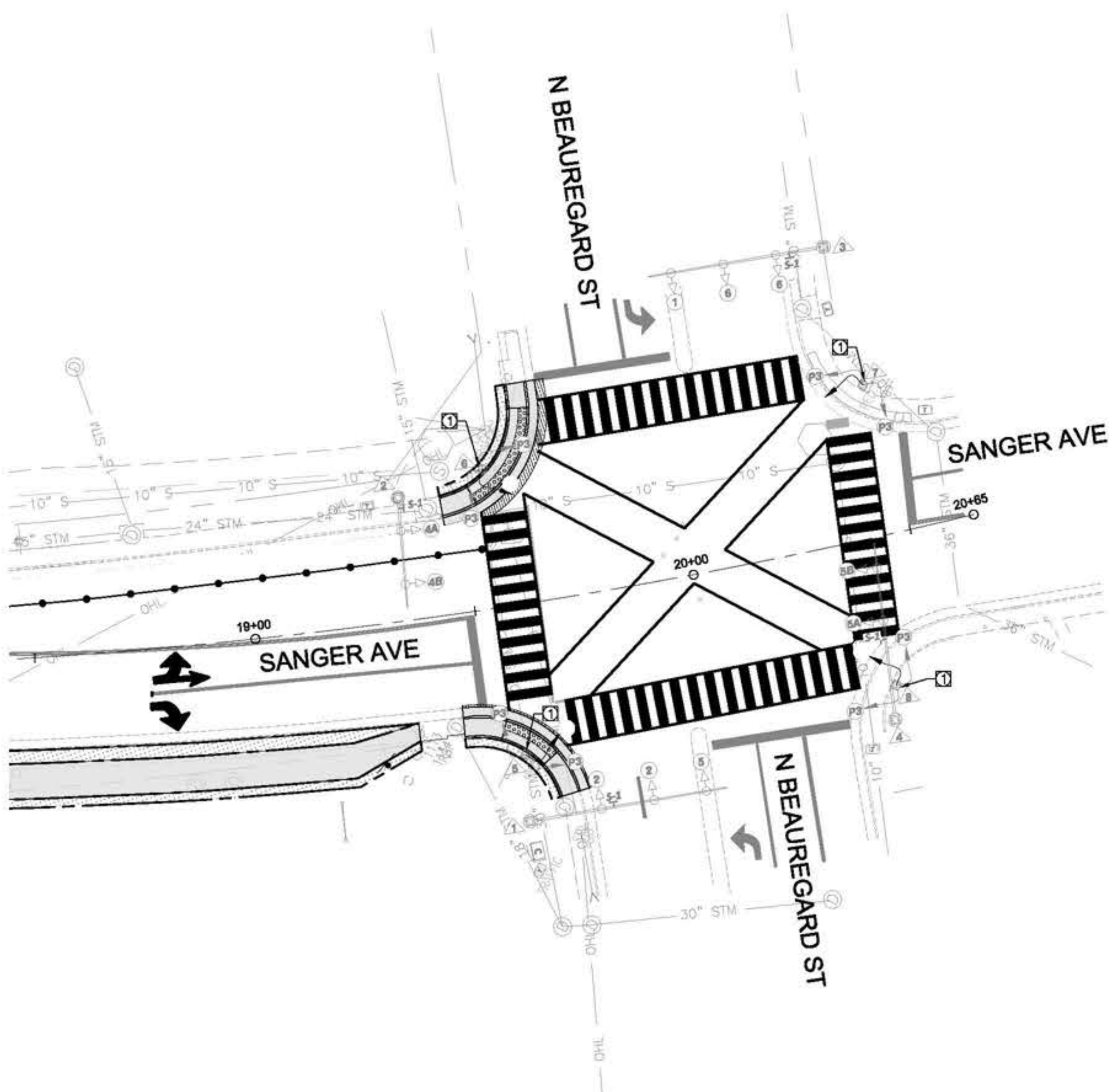
EXISTING SIGNALS (TO REMAIN)



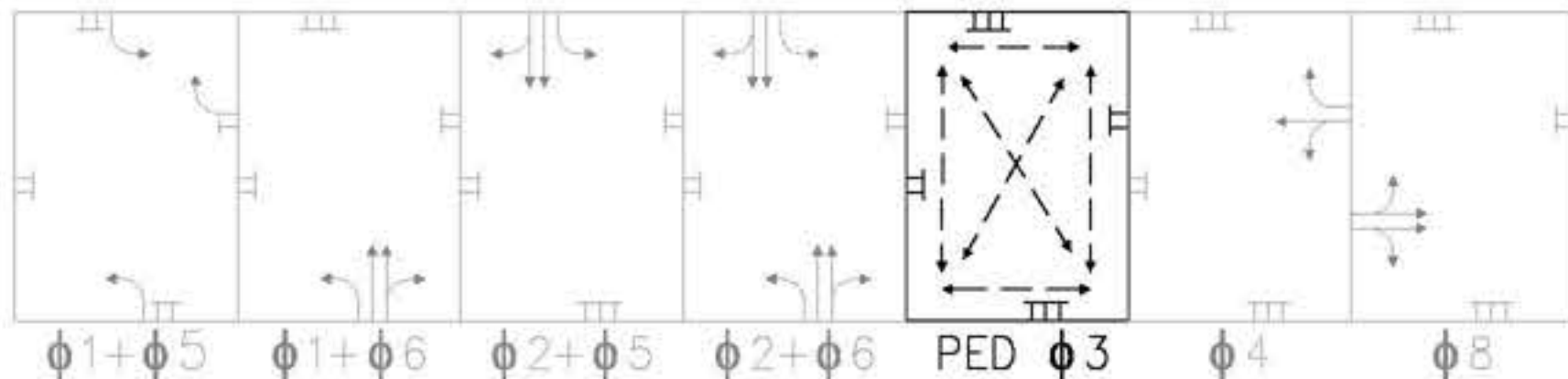
PROPOSED SIGNALS



EXISTING SIGNS (TO REMAIN)



PHASING DIAGRAM



INITIAL TIMING CHART

PHASE	1	2	3	4	5	6	7	8	9
MOVEMENT									
PHASE ON	X	X	X	X	X	X		X	
PHASE OFF							X		X
PHASE TIMINGS									
MIN GR	6.0	14.0	0.0	5.0	6.0	14.0	NOT USED		
PASSAGE	2.5	0.0	0.0	3.0	2.0	0.0			
AMBER	3.7	3.7	3.0	3.6	3.7	3.7			
RED	2.1	2.1	0.0	3.0	2.1	2.1			
MAX 1	19.0	60.0	0.0	28.0	26.0	53.0			
MAX 2	12.0	68.0	0.0	19.0	38.0	42.0	NOT USED		
MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0			
TIME BEFORE REDUCTION	0.0	0.0	0.0	0.0	0.0	0.0			
TIME TO REDUCE	0.0	0.0	0.0	0.0	0.0	0.0			
PED WALK	0.0	0.0	8.0	0.0	0.0	0.0			
PED CLEARANCE	0.0	0.0	30.0	0.0	0.0	0.0			
MODE	NON LOCK	MAX	NON LOCK	NON LOCK	NON LOCK	MAX			

COLOR SEQUENCE CHART

PHASE	1	2	3	4	5	6	8	2+6	FLASH
SIGNAL	R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W	
1	+								R
2		G						G	Y
4A			G		G				R
4B			G/-G						R
5				+				FY	R
6						G		G	Y
8A							G		R
8B							G/-G		R
P3			WALK						BLANK
P3A			WALK						BLANK

NOTE: BLANK SPACES REPRESENT A RED DISPLAY. WALK INDICATION DISPLAYED AFTER PEDESTRIAN CALL IS SERVICED; OTHERWISE "DON'T WALK" INDICATION IS DISPLAYED.

NOTE:

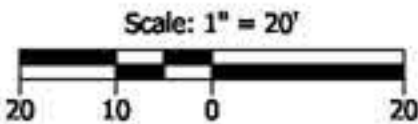
SIGNAL WORK TO BE INSTALLED BY OTHERS

CONSTRUCTION NOTES:

1. SPLICE PROPOSED SIGNAL HEAD 3A WITH EXISTING SIGNAL HEAD 3 WIRE AT THE BASE OF PEDESTRIAN POLE.

GENERAL NOTES:

- EXISTING SIGNAL POLES, PEDESTRIAN POLES, JUNCTION BOXES ARE BASED ON AVAILABLE SURVEY DATA AND INFORMATION OBTAINED DURING SITE VISITS. THESE ITEMS ARE SHOWN AT THEIR APPROXIMATE LOCATION BASED ON THE AVAILABLE INFORMATION.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF ANY CONFLICTS BETWEEN THE PLANS AND THE FIELD CONDITIONS AND OBTAIN WRITTEN AUTHORIZATION FROM THE CITY TO DEVIATE FROM THE PLANS TO PROVIDE THE PROPOSED SIGNAL CONFIGURATION SHOWN ON THESE PLANS.
- CONTRACTOR SHALL REMOVE UNUSED SIGNAL CABLE FROM EXISTING CONDUITS IF NO LONGER BEING USED TO OPERATE THE TRAFFIC SIGNAL.
- THESE PLANS ASSUME THAT APPROPRIATE PEDESTRIAN POLES, PEDESTRIAN SIGNAL HEADS, CONDUIT AND JUNCTION BOX GROUNDING IS IN PLACE.



WILLIAM RAMSAY SAFE ROUTES TO SCHOOL IMPROVEMENTS

WILLIAM RAMSAY SAFE ROUTES
TO SCHOOL IMPROVEMENTS
SIGNAL PLAN

SHEET
23 OF 23

SCALE: 1"=20'

100% SUBMITTAL



KITTELSON
& ASSOCIATES

300 M STREET SE, SUITE 810
WASHINGTON, DC 20003
P 202.450.3710

REVISIONS

DESCRIPTION

DATE

ALEXANDRIA PROJECT NO.: 2862/103

DATE OF PLAN ISSUANCE: 7-31-24

CONSULTANT PROJECT ID: 25760.002

DESIGNED BY: DNS DATE: 7-31-24

DRAWN BY: DNS DATE: 7-31-24

CHECKED BY: ARM DATE: 7-31-24

APPROVED BY: DATE: -