CITY OF VIRGINIA BEACH
DEPARTMENT OF PUBLIC UTILITIES
ENGINEERING DIVISION

SA 242 S HARTON CIRCLE PUMP STATION FORCE MAIN REPLACEMENT

CIP 100519, PUCN-27-0002

AUGUST 2026

ALL CONSTRUCTION METHODS AND MATERIALS WILL CONFORM TO THE CURRENT CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC WORKS DESIGN STANDARDS MANUAL (MARCH 2022), DEPARTMENT OF PUBLIC UTILITIES SEWER AND WATER SPECIFICATIONS, DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAILS (2023), DEPARTMENT OF PUBLIC UTILITIES DESIGN STANDARDS MANUAL (2024), HAMPTON ROADS PLANNING DISTRICT COMMISSION REGIONAL CONSTRUCTION STANDARDS (5TH EDITION), CITY OF VIRGINIA BEACH PUBLIC UTILITIES AMENDMENTS TO HRPDC REGIONAL CONSTRUCTION STANDARDS (5TH EDITION)(JULY 29, 2015), CITY OF VIRGINIA BEACH AMENDMENTS TO THE 2020 VDOT ROAD AND BRIDGE SPECIFICATIONS (VERSION 4.1)(SECTION 520 EXCLUDED), VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS (2020)(SECTION 520 EXCLUDED), VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS (2016, REVISED JUNE 2025), VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY VIRGINIA STORMWATER MANAGEMENT HANDBOOK (VERSION 1.1, 2024), AND ANY OTHER APPLICABLE CITY OF VIRGINIA BEACH OR STATE ORDINANCES, CODES, AND LAWS PRIOR TO CONSTRUCTION.

ALL TRAFFIC CONTROL METHODS AND DEVICES SHALL CONFORM TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, VERSION 11.0, JANUARY 2026 AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION, VIRGINIA WORK AREA PROTECTION MANUAL (VWAPM), VERSION 11.0, JANUARY 2026.

CONTACT VIRGINIA 811 AT LEAST 3 WORKING DAYS BEFORE GROUND PENETRATION OR EXCAVATION.

UTILITY OWNERS CONTACT INFORMATION

1. COX COMMUNICATIONS: VICTOR BATCHELOR
   OFFICE: 757-544-5623
   EMERGENCY: 757-222-0466
2. DOMINION ENERGY: JASON STOVER
   OFFICE: 757-813-5065
   EMERGENCY: 866-366-4357
3. CITY OF VIRGINIA BEACH PUBLIC UTILITIES
   OFFICE: 757-385-4631
   EMERGENCY: 757-385-1400
4. VNG: KEVIN STARKE
   OFFICE: 757-449-0825
   EMERGENCY: 877-572-3342
5. VERIZON: JASON RIORDAN
   OFFICE: 757-613-6721
   EMERGENCY: 800-837-4966

NO.	DATE	BY	REVISION

APPROVED FOR CONSTRUCTION

APPROVED: _____ DATE: 6/8/2026
DIRECTOR OF PUBLIC UTILITIES

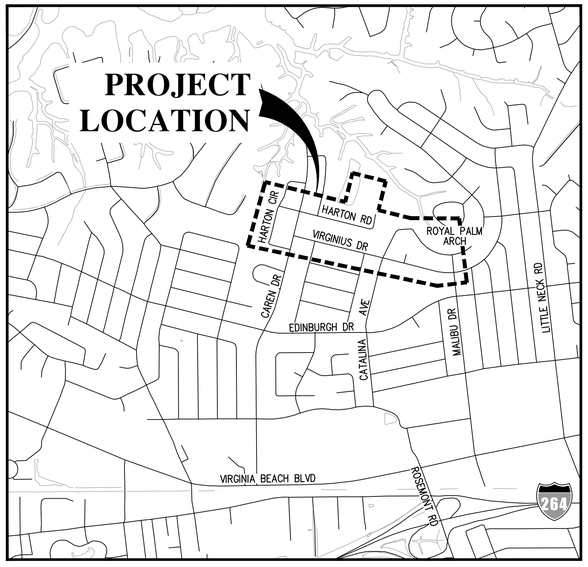
APPROVED: _____ for DATE: 06/08/2026
UTILITY ENGINEERING MANAGER

APPROVED: _____ DATE: 6/5/2026
UTILITY OPERATIONS ADMINISTRATOR

APPROVED: _____ DATE: 6/4/2026
DIRECTOR OF PUBLIC WORKS

APPROVED: _____ DATE: 06/04/2026
CITY ENGINEER

APPROVED: _____ DATE: 5/11/2026
PUBLIC WORKS OPERATIONS ENGINEER



LOCATION MAP
1" = 1,000'

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SHEET LIST

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17	TC.01	TRAFFIC CONTROL

COMMONWEALTH OF VIRGINIA
JILL K. DIBATTISTA
Lic. No. 035766
01/19/26
PROFESSIONAL ENGINEER

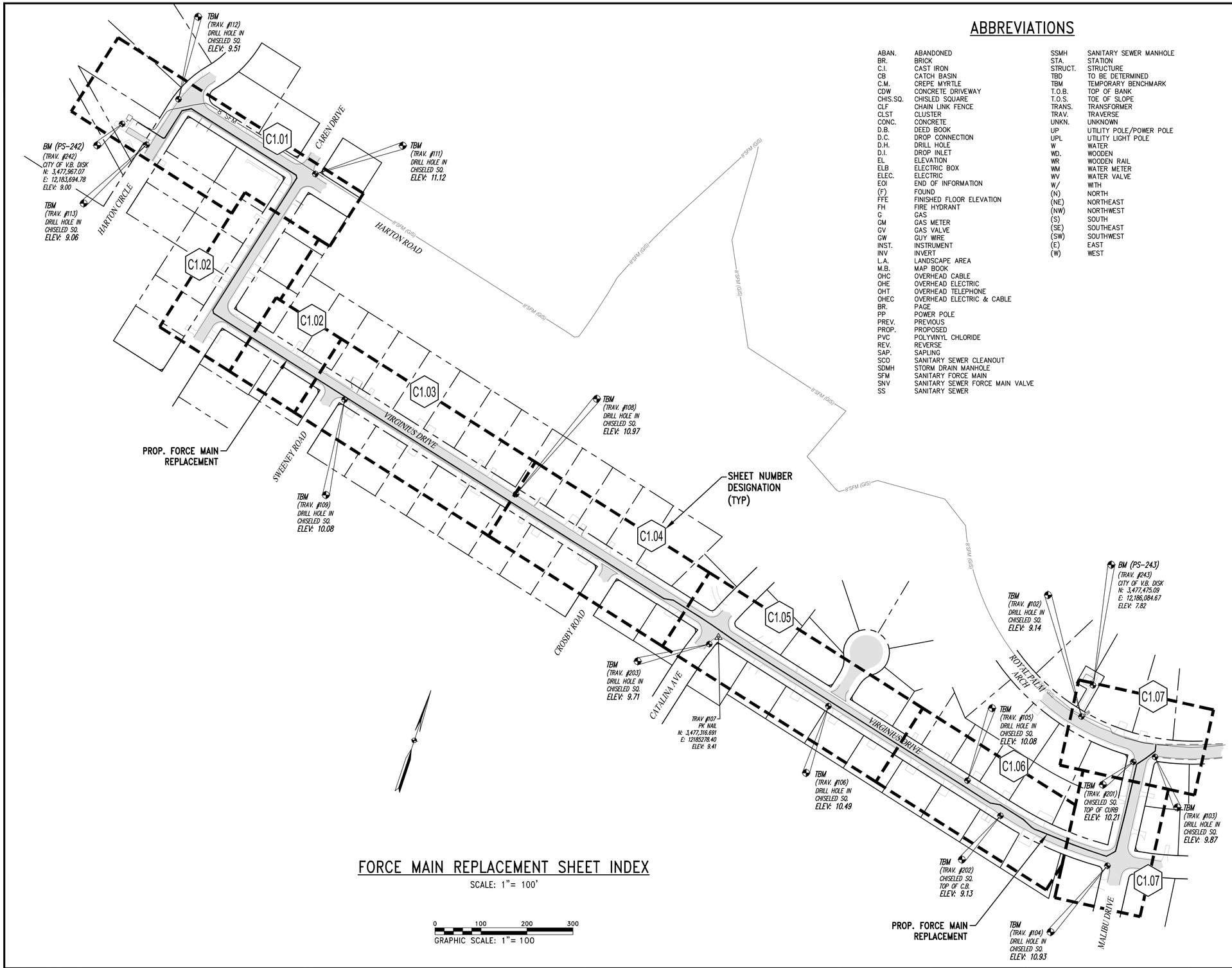
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LU QUAN
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BID DOCUMENTS

203470 – AUGUST 2026

SA 242 S HARTON CIRCLE PUMP STATION FORCE MAIN REPLACEMENT

BID DOCUMENTS



FORCE MAIN REPLACEMENT SHEET INDEX

SCALE: 1"= 100'

0 100 200 300

GRAPHIC SCALE: 1"= 100

ABBREVIATIONS

ABAN.	ABANDONED
BR.	BRICK
C.I.	CAST IRON
CB	CATCH BASIN
C.M.	CREPE MYRTLE
CDW	CONCRETE DRIVEWAY
CHIS.SQ.	CHISLED SQUARE
CLF	CHAIN LINK FENCE
CLST	CLUSTER
CONC.	CONCRETE
D.B.	DEED BOOK
D.C.	DROP CONNECTION
D.H.	DRILL HOLE
D.I.	DROP INLET
EL	ELEVATION
ELB	ELECTRIC BOX
ELEC.	ELECTRIC
EOI	END OF INFORMATION
(F)	FOUND
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
G	GAS
GM	GAS METER
GV	GAS VALVE
GW	GUY WIRE
INST.	INSTRUMENT
INV	INVERT
L.A.	LANDSCAPE AREA
M.B.	MAP BOOK
OHC	OVERHEAD CABLE
OHE	OVERHEAD ELECTRIC
OHT	OVERHEAD TELEPHONE
OHEC	OVERHEAD ELECTRIC & CABLE
BR.	PAGE
PP	POWER POLE
PREV.	PREVIOUS
PROP.	PROPOSED
PVC	POLYVINYL CHLORIDE
REV.	REVERSE
SAP.	SAPLING
SCO	SANITARY SEWER CLEANOUT
SDMH	STORM DRAIN MANHOLE
SFM	SANITARY FORCE MAIN
SNV	SANITARY SEWER FORCE MAIN VALVE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STA.	STATION
STRUCT.	STRUCTURE
TBD	TO BE DETERMINED
TBM	TEMPORARY BENCHMARK
T.O.B.	TOP OF BANK
T.O.S.	TOE OF SLOPE
TRANS.	TRANSFORMER
TRAV.	TRAVERSE
UNKN.	UNKNOWN
UP	UTILITY POLE/POWER POLE
UPL	UTILITY LIGHT POLE
W	WATER
WD.	WOODEN
WR	WOODEN RAIL
WM	WATER METER
WV	WATER VALVE
W/	WITH
(N)	NORTH
(NE)	NORTHEAST
(NW)	NORTHWEST
(S)	SOUTH
(SE)	SOUTHEAST
(SW)	SOUTHWEST
(E)	EAST
(W)	WEST

LEGEND

DESCRIPTION	EXISTING	PROPOSED
SEWER FORCE MAIN	SFM	
SEWER FORCE MAIN VALVE	SNV	
AIR VENT ASSEMBLY		
SANITARY SEWER (GRAVITY)	SS	
SANITARY SEWER CLEANOUT & LATERAL	SNV	
SANITARY SEWER MANHOLE	SS	
WATER MAIN	W	
WATER SERVICE AND METER	W	
WATER VALVE (GATE)	WV	
FIRE HYDRANT	FH	
STORM DRAIN	18"RCP	
STORM DRAIN MANHOLE	SD	
DRAINAGE INLET		
GAS VALVE		
TELEPHONE PEDESTAL		
POWER POLE		
LIGHT POLE		
UTILITY POLE GUY WIRE		
UNDERGROUND ELECTRIC	UGE	
OVERHEAD CABLE	OHC	
OVERHEAD TELEPHONE	OHT	
OVERHEAD ELECTRIC	OHE	
OVERHEAD ELECTRIC & CABLE	OHEC	
UNDERGROUND CABLE & TELEPHONE	CTV	
UNDERGROUND TELEPHONE	T	
UNDERGROUND FIBER OPTIC	FO	
UNDERGROUND GAS	G	
ABANDONED SEWER LATERAL		
ABANDONED SANITARY SEWER MANHOLE	SS	
ABANDONED UTILITY	SFM	SFM
PIPE CAP/PLUG		SFM
PROPERTY LINE		
R/W LINE		
SIGN		
TREE/SHRUB/BUSH		
TREE LINE		
SHRUB LINE		
FENCE		
CENTERLINE OF DITCH		
TOP OF DITCH		
CONTOUR (MAJOR)	10	
CONTOUR (MINOR)	9	
ASPHALT AREA / LIMITS OF MILL & OVERLAY		
PAVEMENT PATCH & SAWCUT LIMITS		
CONCRETE AREA		
GRAVEL AREA		
TEMPORARY BENCH MARK		
SOIL BORING	SB-1	B-1
TEST HOLE	TH-1	
TEST HOLE (RECORD DRAWING)	TH-1-1	
INLET PROTECTION		IP
SILT FENCE		SF
TEMPORARY SEEDING		TS
PERMANENT SEEDING		PS

NO.	DATE	BY	REVISION

CITY OF VIRGINIA BEACH, VA.

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COMMONWEALTH OF VIRGINIA
JILL K. DIBATTISTA
Lic. No. 035766
01/19/26
PROFESSIONAL ENGINEER

BID DOCUMENTS

SCALE HORIZ:	AS SHOWN
VERT:	N/A
DATE:	JAN 2026
DRAWN BY:	NEL
DESIGN BY:	LG
APPROVED BY:	JKD

IFB NO. ---

PROJECT NO. 203470

CADD FILE G102 SHTINDX

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

SHEET INDEX, LEGEND & ABBREVIATIONS

SHEET G1.02 OF DRAWING 2 OF 17

GENERAL NOTES

1. VIRGINIA LAW MANDATES THAT THE CONTRACTOR SHALL CONTACT VIRGINIA 811 @ 811 OR 800-552-7001 AT LEAST THREE (3) BUSINESS DAYS PRIOR TO BEGINNING ANY GROUND DISTURBING ACTIVITY IN ORDER TO DETERMINE THE EXTENT AND LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL FOLLOW ALL STATE CODE RELATED TO UTILITY LOCATION.
2. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING OR REPLACING AT THE CONTRACTOR'S EXPENSE ANY UTILITIES, PAVEMENT, CONCRETE ITEMS, PIPES, ETC THAT ARE DAMAGED DURING CONSTRUCTION IN KIND OR BETTER, AS APPROVED BY THE OWNER.
3. THE CONTRACTOR SHALL KEEP THE AREA WITHIN THE PROJECT LIMITS IN A CLEAN CONDITION FREE OF DEBRIS AND TRASH. THE OWNER RESERVES THE RIGHT TO STOP WORK IF THE PROJECT IS NOT MAINTAINED IN A CLEAN CONDITION AT ALL TIMES. THE COST OF THIS DELAY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. WHEN SOILS OR OTHER MATERIALS UNSUITABLE FOR FOUNDATIONS, SUBGRADE, OR STRUCTURAL PURPOSES IS FOUND WITHIN THE LIMITS OF ROADWAY CONSTRUCTION OR THE STRUCTURAL ZONE OF INFLUENCE, THE CONTRACTOR SHALL EXCAVATE SUCH MATERIAL BELOW THE GRADE AS SHOWN ON THE CONTRACT DOCUMENTS AND SHALL BACKFILL THOSE EXCAVATED AREAS WITH APPROVED MATERIALS AT COMPACTION RATES AS REQUIRED BY THE CONTRACT DOCUMENTS. THE DENSITY OF THE SUBBASE AND AGGREGATE BASE MATERIAL SHALL CONFORM TO THE "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) 2020 ROAD AND BRIDGE SPECIFICATIONS", SECTIONS 308 AND 309. THE EXTENT OF THE UNDERCUT AND BACKFILL SHALL BE DETERMINED BY THE OWNER. ANY SUITABLE EXCAVATED MATERIALS SHALL BE STOCKPILED SO AS NOT TO INTERFERE WITH SURFACE DRAINAGE. THE CONTRACTOR SHALL REMOVE ANY UNSUITABLE MATERIAL UNABLE TO BE UTILIZED IN OTHER PARTS OF THE PROJECT FROM THE PROJECT LIMITS AND DISPOSE OF IT IN A LAWFUL MANNER.
5. UNLESS OTHERWISE DIRECTED BY THE OWNER OR NOTED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL ONLY WORK WITHIN THE RIGHT-OF-WAY, OWNER'S PROPERTIES NOTED, AND PERMANENT AND TEMPORARY EASEMENTS.
6. UNLESS OTHERWISE DIRECTED BY THE OWNER OR NOTED BY THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL GRADE DISTURBED AREAS TO 3:1 (H:V) OR FLATTER.
7. THE CONTRACTOR SHALL PLACE A MINIMUM OF FOUR (4) INCHES OF CLASS B TOPSOIL ON ALL DISTURBED AREAS.
8. UNLESS OTHERWISE DIRECTED BY THE OWNER OR NOTED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL FINE GRADE THE TOPSOIL, ADD SOIL MODIFIERS AS REQUIRED BY THE CONTRACT DOCUMENTS AND APPLY MULCH AND SEEDING ON ALL DISTURBED AREAS. THE CONTRACTOR SHALL USE THE SEEDING SCHEDULE(S) SHOWN IN THE CONTRACT DOCUMENTS.
9. ANY EXISTING SIGNS, FENCE, TREES, LANDSCAPING OR OTHER STRUCTURES WITHIN THE PROJECT LIMITS SHALL BE PROTECTED AND/OR REMOVED AND STORED FOR LATER REPLACEMENT BY THE CONTRACTOR AS NOTED IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE OWNER.
10. ALL SAFETY REQUIREMENTS SHALL BE STRICTLY FOLLOWED.
11. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, CODES, ORDINANCES, RULES, PERMITS, REGULATIONS AND ORDERS OF ANY AUTHORITIES WITH JURISDICTION. IN CASE OF A DISCREPANCY, THE FOLLOWING ORDER OF PRIORITY WILL APPLY IN SECTION 105.12 "COORDINATION OF CONTRACT DOCUMENTS" OF THE SPECIFICATIONS. ANY CONFLICTS BETWEEN THESE REQUIREMENTS AND THE CONTRACT DOCUMENTS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER.
12. THERE MAY BE OTHER CONSTRUCTION WITHIN THE PROJECT LIMITS. IF THIS OCCURS, THE CONTRACTOR WILL COOPERATE WITH THE OWNER, THE OTHER CONTRACTORS, AND UTILITY OWNERS TO COORDINATE THEIR OPERATIONS AND TO PREVENT DELAYS IN CONSTRUCTION. IF THE CONTRACTOR CHOOSES TO PERFORM WORK OUT OF SEQUENCE OR ADJUST THE CONSTRUCTION SCHEDULE TO ACCOMMODATE OTHER CONSTRUCTION EFFORTS WITHIN THE PROJECT LIMITS, THE CONTRACTOR IS NOT PERMITTED TO SUBMIT A CLAIM FOR DELAY AGAINST THE OWNER FOR FAILURE TO ADEQUATELY COORDINATE SCHEDULES WITH OTHER CONTRACTORS AS REQUIRED.
13. PRIOR TO PREPARING A BID, THE CONTRACTOR IS REQUIRED TO CONTACT KNOWN UTILITY OWNERS TO DETERMINE THE NATURE, EXTENT, AND LOCATION OF EXISTING, ADJUSTED, OR PROPOSED NEW UTILITY FACILITIES WITHIN THE AREAS OF CONSTRUCTION. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACTOR (1) HAS CONSIDERED IN THEIR BID ALL OF THE PERMANENT AND TEMPORARY UTILITY APPURTENANCES IN THEIR PRESENT AND RELOCATED POSITION AND, ANY PROPOSED UTILITY CAPITAL IMPROVEMENTS, AND (2) THE CONTRACTOR HAS CONTACTED THE UTILITY OWNERS WITH REGARD TO THE CONTRACTOR'S PROPOSED SCHEDULE OF WORK. THE CONTRACTOR SHALL INCLUDE IN THEIR PROPOSED SCHEDULE THE AMOUNT OF TIME TO MAKE UTILITY ADJUSTMENTS FROM TIME ESTIMATES FURNISHED BY THE UTILITY OWNERS. ANY COST ASSOCIATED WITH CONTACTING AND COORDINATING WITH THE UTILITY OWNERS SHALL BE REFLECTED IN THE BID PRICE FOR OTHER ITEMS IN THE CONTRACT. IN THE EVENT THE UTILITY OWNERS ARE NON-RESPONSIVE TO THE CONTRACTOR'S EFFORTS TO CONTACT THEM, THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO SUBMITTING A BID AS REQUIRED IN SECTION 102.05 (a) "PREPARATION OF BID" OF THE SPECIFICATIONS.
14. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS.
15. THE CONTRACTOR SHALL COORDINATE ACCESS TO THE WORK, STORAGE AREA, STOCKPILES, STAGING AREAS, AND LAYDOWN LOCATIONS WITH THE OWNER. THE CONTRACTOR SHALL RESTORE THE ACCESS, STORAGE, STOCKPILES, LAYDOWN, AND STAGING AREAS TO THEIR ORIGINAL CONDITION AFTER THE WORK IN THESE AREAS IS COMPLETED. THIS RESTORATION INCLUDES REPLACEMENT OF FENCING, SIGNAGE, GRASS, LANDSCAPING AND ANY OTHER AFFECTED MISCELLANEOUS ITEMS.
16. STOCKPILE LOCATIONS, STORAGE, UNATTENDED EQUIPMENT OR MACHINERY, STAGING AREA OR LAYDOWN AREAS SHALL NOT BE LOCATED WITHIN THE "CLEAR ZONE" AS DEFINED IN THE "AASHTO ROADSIDE DESIGN GUIDE". CONSTRUCTION ENTRANCES SHALL BE PLACED AS REQUIRED BY THE STANDARD DETAILS IN THE CONTRACT DOCUMENTS.
17. STAGING AREAS MUST BE APPROVED BY THE OWNER PRIOR TO UTILIZATION AND SHALL BE FENCED AND MAINTAINED BY THE CONTRACTOR. STAGING AREAS SHALL BE CLEARED OF DEBRIS AND TEMPORARY ITEMS PRIOR TO THE ACCEPTANCE OF WORK IN THESE AREAS.
18. A FULL SET OF CONTRACT DOCUMENTS, INCLUDING ALL ADDENDUMS, THE PROJECT MANUAL, APPROVED SHOP DRAWINGS, AND PERMITS SHALL BE KEPT ON SITE.
19. THE OWNER MUST REVIEW AND APPROVE ANY MODIFICATIONS OR CHANGES TO THE WORK PRIOR TO IMPLEMENTATION OF ANY CHANGES TO THE CONTRACT DOCUMENTS MUST BE MADE IN WRITING AND APPROVED BY BOTH THE CONTRACTOR AND OWNER. THE CONTRACTOR SHALL DENOTE ALL APPROVED MODIFICATIONS AND CHANGES ON THE AS-BUILT DRAWINGS.
20. NO CITY REFUSE COLLECTION WILL BE PROVIDED TO THE PROJECT.
21. THIS SITE LIES WITHIN AIRCRAFT NOISE ZONE(S) <65 DB. NOISE ZONE ATTENUATION MEASURES FOR NEW CONSTRUCTION ARE REQUIRED IN ACCORDANCE WITH THE AIRPORT NOISE ATTENUATION AND SAFETY ORDINANCE AND HEIGHT RESTRICTIONS HAVE BEEN IMPOSED IN ACCORDANCE WITH SECTION 202(B) OF THE CITY ZONING ORDINANCE.

UTILITY NOTES

1. THE CONTRACTOR SHALL NOTIFY THE PUBLIC UTILITIES CONSTRUCTION REPRESENTATIVE IN WRITING AT LEAST TEN (10) CALENDAR DAYS PRIOR TO ANY SHUT DOWN ON ANY UTILITY WORK. PUBLIC UTILITIES REPRESENTATIVE SHALL BE PRESENT FOR ALL WATER AND SANITARY SEWER CONNECTIONS, TESTING AND ACCEPTANCE.
2. ALL PUBLIC UTILITIES WATER MAINS TWELVE (12) INCHES OR LARGER SHALL BE RESTRICTED FROM SHUTDOWN DURING THE PERIOD OF MAY 1st THROUGH SEPTEMBER 30th. THE CONTRACTOR SHALL PLAN WORK SCHEDULE AROUND THIS PERIOD. ANY REQUEST FOR SHUTDOWN DURING THIS PERIOD SHALL REQUIRE THE APPROVAL OF THE UTILITY OPERATION ADMINISTRATOR.
3. THE LOCATION AND EXTENT OF EXISTING UTILITY AND STORM DRAIN FACILITIES ARE SHOWN BASED UPON INFORMATION AVAILABLE DURING DESIGN. THE EXISTING UTILITIES AND STORM DRAINS ARE SHOWN BASED ON AVAILABLE RECORDS AND SURVEYS AND MAY NOT BE EXACT OR COMPLETE. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES AND STORM DRAIN FACILITIES IN ADVANCE OF CONSTRUCTION.
4. UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS, PRIVATE UTILITIES ARE TO BE ADJUSTED OR RELOCATED BY THEIR RESPECTIVE PRIVATE UTILITY OWNER. RELOCATION OF PRIVATE UTILITIES MUST BE COMPLETED PRIOR TO PLACEMENT OF ANY ROADWAY BASE MATERIAL OR PAVEMENTS.
5. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR IS TO LOCATE, MARK AND PROTECT ALL UTILITY SURFACE FEATURES TO INCLUDE, BUT NOT LIMITED TO: VALVES, MANHOLES, APPURTENANCE, COVERS, WATER METERS, SANITARY SEWER CLEANOUTS AND AIR VENTS.
6. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN UNINTERRUPTED SERVICES. ANY LOST AND DAMAGE INCURRED TO UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE OWNER AND REPAIRED AT THE CONTRACTOR'S EXPENSE. ANY EXPENSES INCURRED BY THE CITY FOR REPAIRS SHALL BE PAID FOR BY THE CONTRACTOR. THE REPLACEMENTS SHALL BE IN KIND OR BETTER AS APPROVED BY THE OWNER.
7. THE CONTRACTOR SHALL VERIFY EXISTING UPSTREAM AND DOWNSTREAM SANITARY SEWER MANHOLE INVERTS PRIOR TO GRAVITY SANITARY SEWER CONSTRUCTION.
8. THE CONTRACTOR SHALL MAINTAIN FULL ACCESS TO ALL UTILITY APPURTENANCES INCLUDING, BUT NOT LIMITED TO: VALVES, HYDRANTS, VAULTS, METERS, VENTS, CLEANOUTS, AND MANHOLES.
9. CLEARANCES BETWEEN PUBLIC AND PRIVATE UTILITIES SHALL BE IN ACCORDANCE WITH THE "PUBLIC UTILITIES DESIGN STANDARDS MANUAL".
10. CLEARANCES BETWEEN PUBLIC UTILITY MAINS AND OTHER CITY INFRASTRUCTURE SHALL BE IN ACCORDANCE WITH THE "PUBLIC UTILITIES DESIGN STANDARDS MANUAL".
11. UNLESS NOTED IN THE CONTRACT DOCUMENTS OR OTHERWISE DIRECTED BY THE OWNER, ALL VALVE BOXES WITHIN THE LIMITS OF CONSTRUCTION SHALL NOT BE ADJUSTED TO GRADE WITH RISER RINGS BUT SHALL BE EXCAVATED AND ADJUSTED TO PROPOSED GRADE.
12. UNLESS NOTED IN THE CONTRACT DOCUMENTS OR OTHERWISE DIRECTED BY THE OWNER, MANHOLE ADJUSTMENTS REQUIRE THE FRAME AND COVER CASTING TO BE REMOVED AND THE TOP ELEVATION OF THE FRAME AND COVER ADJUSTED TO PROPOSED GRADE BY USING MANHOLE ADJUSTMENT RING(S) PER THE SANITARY SEWER MANHOLE ADJUSTMENT DETAIL.
13. ALL VAULTS, HYDRANTS, METERS, AND CLEANOUTS IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO THE PROPOSED GRADE.
14. RIM ELEVATIONS SHOWN IN THE CONTRACT DOCUMENTS FOR STORM WATER MANHOLES, GAS VALUES, ELECTRIC, TELEPHONE AND TRAFFIC PULL BOXES, AND OTHER SUCH ITEMS ARE APPROXIMATE. RIM ELEVATIONS SHALL BE ADJUSTED TO GRADE FLUSH WITH THE PROPOSED GRADE. CURB INLETS SHALL BE INLINE WITH THE CURB AND GUTTER FLOWLINES. THE COST OF ADJUSTING THESE ITEMS TO GRADE SHALL BE INCIDENTAL AND INCLUDED IN THE COST OF OTHER PAY ITEMS.
15. THE CONTRACTOR WILL CAREFULLY EXCAVATE DOWN TO THE EXISTING UTILITY LINES OR STORM WATER PIPES TO VERIFY THE TYPE OF MATERIAL, OUTSIDE DIAMETER, ORIENTATION JOINT LOCATIONS/TYPE, AND ELEVATION OF THE UTILITY OR STORM WATER PIPE AT EACH PROPOSED CONNECTION PRIOR TO ORDERING MATERIALS. THE CONTRACTOR WILL ENSURE THAT FITTINGS AND JOINTING MATERIALS ARE PROPERLY SIZED TO PERFORM THE FUNCTION OF THE EXISTING UTILITY AND/OR STORM WATER PIPES. ALL NECESSARY FITTINGS, MATERIALS, AND EQUIPMENT REQUIRED TO MAKE CONNECTIONS SHALL BE ONSITE CHECKED AND APPROVED BY THE OWNER BEFORE ANY CONNECTION WORK. UNLESS SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS, THE COST OF THESE CONNECTIONS SHALL BE INCIDENTAL TO OTHER PAY ITEMS.
16. UNLESS OTHERWISE SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS, ALL PIPE MATERIALS SHALL BE IN ACCORDANCE WITH THE PUBLIC UTILITIES DESIGN STANDARDS MANUAL. ALL DUCTILE IRON PIPE SHALL BE INSTALLED WITH V-BIO POLYETHYLENE ENCASEMENT INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
17. CONTRACTOR SHALL ADJUST PIPELINE ALIGNMENT AND DEFLECT JOINTS AS NECESSARY PER CONTRACT DOCUMENTS OR OWNER APPROVAL.
18. RESTRAINED PIPE JOINTS SHALL BE INSTALLED AS INDICATED ON THE CONTRACT DOCUMENTS.
19. UNLESS NOTED IN THE CONTRACT DOCUMENTS OR AS OTHERWISE DIRECTED BY THE OWNER, CONNECTIONS TO EXISTING MAINS SHALL BE IN ACCORDANCE WITH THE "PUBLIC UTILITIES DESIGN STANDARD MANUAL".
20. TAPPING SLEEVES SHALL BE INSTALLED A MINIMUM OF FIVE AND ONE-HALF (5 ½) FEET FROM JOINTS AND PIPES FREE FROM DETERIORATION PER THE MANUFACTURER'S RECOMMENDATIONS.
21. MECHANICAL JOINT CAPS OR PLUGS SHALL BE PLACED ON ALL PARTIALLY COMPLETED WATER MAINS, FORCE MAINS AND GRAVITY SEWER MAINS DURING CONSTRUCTION AND REMAIN IN PLACE UNTIL FINAL COMPLETION OF AFFECTED WATER MAINS, FORCE MAINS AND GRAVITY SEWER MAINS.
22. THE CONTRACTOR IS RESPONSIBLE FOR RESTRAINT (INCLUDING TEMPORARY BUTTRESSING) OF THE EXISTING WATER MAINS AND FORCE MAINS AGAINST SYSTEM PRESSURE PRIOR TO RESTORING PRESSURE, DURING SYSTEM START UP, AND UNTIL FINAL BACKFILL IS PLACED AND COMPACTED.
23. EXISTING PIPE JOINTS AT TIE-IN LOCATIONS SHALL BE RESTRAINED AS INDICATED ON THE CONTRACT DOCUMENTS WITH APPROVED JOINT RESTRAINT SYSTEMS. THE CONTARCTOR SHALL RESTRAIN EXISTING PIPE JOINTS PRIOR TO PERFORMING TIE-IN WORK.
24. UPDATED AS-BUILT DRAWINGS SHALL BE AVAILABLE FOR INSPECTION BY THE OWNER AS A PART OF THE MONTHLY INVOICING PROCESS.
25. THE CONTRACTOR SHALL MAINTAIN EIGHTEEN (18) INCHES MINIMUM VERTICAL SEPARATION AND FIVE (5) FEET MINIMUM HORIZONTAL SEPARATION FROM HAMPTON ROADS SANITATION DISTRICT (HRSD) INFRASTRUCTURE. PIPE CROSSINGS ON HRSD INFRASTRUCTURE SHALL BE A MINIMUM OF FIVE (5) FEET FROM ANY JOINT.
26. THE CONTRACTOR SHALL PROVIDE HRSD A MINIMUM OF FOUR (4) BUSINESS DAYS NOTICE PRIOR TO COMMENCING ANY WORK ON OR AROUND HRSD INFRASTRUCTURE AND THREE (3) WEEKS NOTICE PRIOR TO PLANNED CONNECTION TO HRSD INFRASTRUCTURE. NOTIFYING VIRGINIA 811 DOES NOT FULFILL THIS REQUIREMENT. CONTACT THE FOLLOWING HRSD STAFF DURING BUSINESS HOURS: INTERCEPTION INSPECTOR: OFFICE 757-460-7070 OR CELL 757-613-2523.
27. THE CONTRACTOR SHALL CLEAN AND CCTV ALL STORM DRAINS, GRAVITY SANITARY SEWER MAINS, AND GRAVITY SEWER LATERALS CROSSED BY PROPOSED PIPELINES BEFORE AND AFTER INSTALLATION OF THE PROPOSED PIPELINES FROM MANHOLE TO MANHOLE, THE CONTRACTOR SHALL PROVIDE PRE AND POST CCTV OF ALL STORM DRAINS, GRAVITY SANITARY SEWER MAINS AND GRAVITY SEWER LATERALS TO THE OWNER. ANY REPAIRS REQUIRED SHALL BE RE-CCTV'D FOR REVIEW BY THE OWNER UNTIL FINAL OWNER ACCEPTANCE.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SANITARY SEWER FLOWS AT ALL TIMES DURING CONSTRUCTION PER CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL SUPERVISION, LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE CONTROL OF SEWAGE DURING CONSTRUCTION ACTIVITIES. UNLESS OTHERWISE INDICATED IN THE CONTRACT DOCUMENTS. THE COST OF MAINTAINING SANITARY SEWER FLOWS SHALL BE CONSIDERED INCIDENTAL TO OTHER BID ITEMS.
29. DURING THE SHUTDOWN PROCESS, THE OWNER CANNOT GUARANTEE THE FULL STOPPAGE OF FLOW WILL BE ACHIEVED AT TIE-IN LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HANDLING CONSTANT FLOWS DURING TIE-IN WORK SHOULD FULL ISOLATION FROM FLOW AT THE TIE-IN LOCATION NOT BE ACHIEVED. THE COST OF HANDING CONSTANT FLOWS DURING TIE-IN WORK SHALL BE CONSIDERED INCIDENTAL TO OTHER BID ITEMS.

SURVEY NOTES

1. THE MERIDIAN SOURCE OF THIS TOPOGRAPHIC SURVEY IS BASED ON VIRGINIA STATE PLANE COORDINATE SYSTEM. SOUTH ZONE NAD 1983/1993 (HARN) VALUES SHOWN ARE EXPRESSED IN U.S. SURVEY FEET.
2. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. THIS SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY, NOR A SUBDIVISION OF LAND.
4. THIS TOPOGRAPHICAL SURVEY WAS PREPARED TO SHOW EXISTING FEATURES AS OF DECEMBER 18, 2024 AND DOES NOT CERTIFY CHANGES TO THE SITE CONDITIONS WHICH OCCUR SUBSEQUENT TO THIS DATE AND/OR TO PROPOSED IMPROVEMENTS.
5. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT OR LEASE EXHIBIT AND MAY NOT SHOW ALL EASEMENTS OR RESTRICTIONS THAT MAY AFFECT THE PROPERTY.
6. UNLESS NOTED ON THE CONTRACT DOCUMENT, THIS SURVEY DOES NOT INTEND TO DEPICT ANY WETLANDS, HAZARDOUS WASTE AND ENVIRONMENTAL FEATURES THAT MAY AFFECT THE PROPERTIES.
7. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN DESIGNATED BY VIRGINIA 811 AND THE PAINT DESIGNATIONS HAVE BEEN LOCATED BY THE SURVEYOR. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
8. HORIZONTAL AND VERTICAL CONTROLS FOR THE PROJECT WILL BE BASED ON CITY OF VIRGINIA BEACH MONUMENT GPS CONTROL STATIONS PS 243 AND CVB 4693, DESCRIBED AS FOLLOWS AS SHOWN ON SHEETS C1.07 AND THE INTERSECTION OF LYNN SHORES ROAD AND VIRGINIA BEACH BOULEVARD:
   LOCATION: N: 3,477,475.035 N: 3,474,105.376
   E: 12,186,084.696 E: 12,182,689.693
   HORIZONTAL AND VERTICAL CONTROLS FOR THE PROJECT WILL BE BASED ON CITY OF VIRGINIA BEACH MONUMENT GPS CONTROL STATIONS PS242 AND PS 243, DESCRIBED AS FOLLOWS AS SHOWN ON SHEETS C1.01 AND C1.07:
   LOCATIONS: N: 3,477,967.076 N: 3,477,475.035
   E: 12,183,694.786 E: 12,186,084.696
   ELEVATIONS: 9.00 FT; 7.82 FT (NAVD '88)
9. THIS TOPOGRAPHIC SURVEY WAS PREPARED/COMPILED BY:
   ROUSE-SIRINE ASSOCIATES, LTD.
   333 OFFICE SQUARE LANE SUITE #100 VIRGINIA BEACH, VIRGINIA 23462
   (757) 490-2300 FAX: (757) 499-9136
10. THIS HARTON CIRCLE PUMP STATION 242 FORCE MAIN REPLACEMENT PROJECT SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE AND SUPERVISION OF GREGORY V. O' BRYANT, L.S. FROM AN ACTUAL GROUND SURVEY. THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED FROM OCTOBER 30, 2024 THROUGH DECEMBER 18, 2024. THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
11. PROPERTY LINES AND RIGHT-OF-WAY LINES WERE ESTABLISHED USING A COMPILATION OF DEEDS, PLATS OF RECORD, AND EXISTING FIELD MEASUREMENTS.
12. IF ANY EXISTING PROPERTY LINE OR RIGHT-OF-WAY MONUMENTATION IS DAMAGED OR DESTROYED DURING CONSTRUCTION, NEW MONUMENTS SHALL BE INSTALLED PRIOR TO FINAL ACCEPTANCE BY A LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF VIRGINIA, PER THE VIRGINIA DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATIONS.
13. MONUMENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE PUBLIC WORKS DESIGN STANDARD MANUAL.

UTILITY DESIGNATION GETERAL NOTES

1. ACCUMARK, INC. PERFORMED AN UNDERGROUND UTILITY DESIGNATION EFFORT IN 11/2024 WITHIN THE PROJECT LIMITS SPECIFIED BY THE CLIENT.
2. ACCUMARK, INC, DOES NOT GUARANTEE THAT UTILITIES SHOWN COMPRISE ALL UTILITIES WITHIN THE PROJECT LIMITS PROVIDED BY THE CLIENT.
3. FIELD DESIGNATING AND MARKING PERFORMED BY ACCUMARK, INC. IN ACCORDANCE WITH QUALITY LEVEL B STANDARDS UNLESS OTHERWISE NOTED HEREON AS QUALITY LEVELS C OR D.
4. QUALITY CONTROL / QUALITY ASSURANCE REVIEW PERFORMED BY FRANK R. RICHARDSON, II, L.S. - ACCUMARK, INC.
5. THE UTILITY SIZES SHOWN HEREIN ARE BASED ON INFORMATION PROVIDED BY THE UTILITY COMPANY'S OWNER, BY WRITTEN RECORDS, BY VERBAL INFORMATION OR BY OBSERVED VISUAL EVIDENCE.
6. SURVEYED LOCATIONS OF DESIGNATED UTILITIES MAY NOT REPRESENT THE EXACT CENTERLINE OF THE UTILITY. TEST HOLES WILL BE NECESSARY TO IDENTIFY THE EXACT CENTERLINE.
7. UTILITY OWNERSHIP LABELS DEPICTED IN THIS FILE ARE BASED ON FIELD INFORMATION COMBINED WITH AVAILABLE RECORD DATA PROVIDED BY UTILITY OWNERS BUT IS NOT GUARANTEED TO BE ACCURATE AND SHOULD BE CONFIRMED EXPLICITLY WITH THE UTILITY OWNERS.

INCIDENTAL CONCRETE

1. UNLESS OTHERWISE NOTED IN THE BID DOCUMENTS, ALL CONCRETE WILL BE CLASS "A-3", 3,000 PSI AIR ENTRAINED CONCRETE IN ACCORDANCE WITH SECTION 217 OF THE "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) 2020 ROAD AND BRIDGE SPECIFICATIONS" AND AS AMENDED BY THE "CITY OF VIRGINIA BEACH AMENDMENTS TO THE VDOT 2020 ROAD AND BRIDGE SPECIFICATIONS".
2. ANY EXISTING CONCRETE INCLUDING, BUT NOT LIMITED TO SIDEWALKS, DRIVEWAYS, ENTRANCES, CURBS, CURB AND GUTTERS, GUTTERS, CURB RAMPS OR RAISED MEDIANS DAMAGED DURING CONSTRUCTION (INCLUDING DEFECTIVE, FAULTY, CRACKED, DISLOCATED, OR BROKEN CONCRETE) SHALL BE REMOVED AND REPLACED TO THE NEAREST JOINTS AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. SIDEWALKS, CURBS, AND CURB AND GUTTERS WILL BE CONSTRUCTED IN SECTIONS OF UNIFORM LENGTH OF APPROXIMATELY TEN (10) FEET. NO SECTION WILL BE LESS THAN SIX (6) FEET. EXPANSION JOINTS WILL BE FORMED USING ONE-HALF (½) INCH PREMOLDED BITUMINOUS FIBER JOINT FILLER. CONSTRUCTON JOINTS ARE REQUIRED AT THE FOLLOWING INTERVALS:
   A. CURB AND/CURB AND GUTTER 100'
   B. FIVE (5) FOOT WIDE SIDEWALK 50'
   C. TEN (10) FOOT WIDE SIDEWALK 50'
4. ALL ENTRANCES WILL BE CONSTRUCTED WITH A MINIMUM OF SEVEN (7) INCH THICK, 3,000 PSI CONCRETE FROM THE EDGE OF PAVEMENT TO THE RIGHT-OF-WAY LINE.
5. WHEN EXISTING DRIVEWAYS ARE DISTURBED BEYOND THE PROPOSED CONSTRUCTION LIMITS, THE OWNER, PROPERTY OWNER AND THE CONTRACTOR WILL COORDINATE A WORKABLE TIE-IN TO THE EXISTING DRIVEWAYS. THE CONTRACTOR SHALL MATCH THE EXISTING DRIVEWAY WIDTH, THICKNESS, REINFORCING, ELEVATION AND FINISH FROM THE RIGHT-OF-WAY TO THE TIE-IN.
6. UNLESS NOTED BY THE CONTRACT DOCUMENTS OR OTHERWISE DIRECTED BY THE OWNER, CONCRETE SIDEWALKS SHALL BE FOUR (4) INCH THICK, 3,000 PSI CONCRETE. CG-12 CURB RAMPS AND TAPERS SHALL BE SEVEN (7) INCH THICK, 3,000 PSI CONCRETE.
7. ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE OWNER.
8. THE CONTRACTOR SHALL REPLACE ALL DAMAGED OR REMOVED SIDEWALKS DAILY. THE TEMPORARY SIDEWALK SHALL BE ONE (1) INCH COLD MIX OVER COMPACTED SUBGRADE AND SLOPED TO PROVIDE POSITIVE DRAINAGE AND ADA COMPLIANCE. THE PERMANENT SIDEWALK REPLACEMENT SHALL BE IN ACCORDANCE WITH THE DETAILS IN THE CONTRACT DOCUMENTS. TEMPORARY SIDEWALK IS INCIDENTAL TO THE PROJECT.

INCIDENTAL DRAINAGE

1. TEMPORARY DRAINAGE DURING CONSTRUCTION SHALL BE PROVIDED BY THE CONTRACTOR TO ENSURE POSITIVE DRAINAGE IN ALL AREAS WITHIN THE PROJECT LIMITS. STANDING WATER IS NOT PERMITTED WITHIN THE PROJECT LIMITS EXCEPT WHERE AREAS ARE DESIGNED AND INTENDED TO RETAIN STANDING WATER. ADDITIONAL EROSION PROTECTION AND SEDIMENT CONTROL MAY BE REQUIRED FOR TEMPORARY DRAINAGE OR AS DIRECTED BY THE OWNER.
2. THE PROPOSED ROADWAY STORM WATER SYSTEM SHALL BE CONSTRUCTED TO MATCH EXISTING ELEVATIONS UNTIL THE PROPOSED CURBS, CURB AND GUTTERS, ENTRANCES, AND PAVEMENT ARE COMPLETED. THE CONTRACTOR SHALL VERIFY THE EXISTING TOP OF CURB, DRAINAGE STRUCTURE RIM ELEVATIONS, AND PAVEMENT ELEVATIONS AT STORM WATER STRUCTURES AND BULBOUT/NARROWING LOCATIONS PRIOR TO ANY DEMOLITION. THE PROPOSED STORM WATER STRUCTURE RIM ELEVATIONS MAY NEED TO BE ADJUSTED WITH NEW ROADWAY ELEVATIONS AND SLOPES AFTER CONSTRUCTION, FLEXIBLE PAVEMENT PLANING AND PAVEMENT OVERLAY. PROPOSED GRADES CONVEY POSITIVE DRAINAGE AND GRADES MAY VARY SLIGHTLY BASED ON FIELD CONDITIONS. POSITIVE DRAINAGE MUST BE MAINTAINED AT ALL TIMES. CURB INLETS SHALL BE INLINE WITH THE CURB AND GUTTER FLOW LINES. ALL EXISTING CONCRETE ITEMS SUCH AS SIDEWALKS, CURBS, CURB AND GUTTERS, ENTRANCES, AND STORM WATER STRUCTURES SHALL BE CHECKED IN THE FIELD BEFORE CONSTRUCTION AND VERIFIED FOR CORRECT ELEVATIONS.
3. SHOP DRAWINGS ALONG WITH THE PROPER CERTIFICATIONS SHALL BE SUBMITTED TO THE OWNER FOR ALL PRECAST STORM WATER STRUCTURES UNLESS PREVIOUSLY APPROVED OTHERWISE IN WRITING BY THE OWNER. THE CONTRACTOR SHALL PROVIDE SUBMITTALS CONTAINING THE DESIGNS AND SUPPORTING STRUCTURAL CALCULATIONS FOR ALL MODIFICATIONS TO PRECAST STRUCTURES FOR REVIEW AND APPROVAL BY THE OWNER PRIOR TO INSTALLATION.
4. UNLESS NOTED BY THE CONTRACT DOCUMENTS OR DIRECTED IN WRITING BY THE OWNER, ALL PROPOSED STORM WATER STRUCTURES WILL UTILIZE INLET SHAPING WITH PAVED INVERTS.
5. UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS, ALL DRAINAGE STRUCTURE BEDDING FOR DROP INLETS, MANHOLES, AND JUNCTION BOXES SHALL BE INSTALLED IN ACCORDANCE WITH DRAWING "DSB-1" OF THE "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) 2016 ROAD AND BRIDGE STANDARDS".
6. UNLESS NOTED IN THE CONTRACT DOCUMENTS OR OTHERWISE DIRECTED IN WRITING BY THE OWNER, MINIMUM FINAL HEIGHT OF COVER SHALL BE TWO (2) FEET FOR ALL CLASS III, REINFORCED CONCRETE PIPES. FOR FURTHER REQUIREMENTS, SEE SECTION 8.6 B 9 IN THE "PUBLIC WORKS DESIGN STANDARDS MANUAL" (PWDSM) (MARCH 2022) FOR PIPE COVER REQUIREMENTS.
7. UNLESS NOTED IN THE CONTRACT DOCUMENTS OR OTHERWISE DIRECTED IN WRITING BY THE OWNER, ALL STORM WATER PIPES IN THE RIGHT-OF-WAYS AND EASEMENTS WILL BE TONGUE AND GROOVE REINFORCED CONCRETE PIPE (RCP). STORM WATER PIPE SHALL CONFORM WITH AMERICAN "ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) DESIGNATION "M170". ALL PIPE JOINTS SHALL BE SEALED IN ACCORDANCE WITH SECTION 302.03 OF THE "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) 2020 ROAD AND BRIDGE SPECIFICATIONS".
8. ALL STORM WATER PIPE JOINTS WILL BE INSTALLED SILT FREE AND WILL BE COMPLETELY WRAPPED WITH A TWO (2) FOOT WIDE APPROVED FILTER FABRIC, SECURED IN PLACE PRIOR TO BACKFILLING.
9. ALL STORM WATER PIPES AND CULVERTS LOCATED WITHIN RIGHT-OF-WAY EXCAVATION AREAS THAT ARE SUBJECT TO TRAFFIC LOADS SHALL BE BACKFILLED WITH A SELECT OR GRANULAR MATERIAL PLACED IN SIX (6) INCH LAYERS AND COMPACTED TO 95 PERCENT THEORETICAL AASHTO DENSITY IN ACCORDANCE WITH SECTION 302.03 OF THE "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) 2020 ROAD AND BRIDGE SPECIFICATIONS".
10. METAL STORM WATER PIPES AND CULVERTS SHALL NOT BE INSTALLED IN THE RIGHT-OF-WAY OR EASEMENTS UNLESS NOTED IN THE CONTRACT DOCUMENTS OR OTHERWISE DIRECTED IN WRITING BY THE OWNER IN THAT INSTANCE. METAL STORM WATER PIPES OR CULVERTS SHALL BE INSTALLED IN ACCORDANCE WITH DRAWING "PB-1" OF THE "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) 2016 ROAD AND BRIDGE STANDARDS".
11. WHEN NOTED IN THE CONTRACT DOCUMENTS OR DIRECTED BY THE OWNER, THE CONTRACTOR WILL FURNISH PH CERTIFICATIONS OF THE BACKFILL MATERIAL IF THE BACKFILL MATERIAL HAS NOT BEEN PREVIOUSLY TESTED.
12. WHEN NON-CONCRETE OR NON-CORRUGATED METAL STORM WATER PIPES AND CULVERTS ARE REQUIRED BY THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL INSTALL A LOCATOR CONDUCTOR (I.E. TAPE OR WIRE) TO AID IN FUTURE DETECTION OF SUCH PIPES AND CULVERTS. THE LOCATOR CONDUCTOR SHALL BE TESTED FOR THE FULL LENGTH OF EACH PIPE BOTH PRIOR TO PAYMENT FOR THE PIPE BEING MADE AND AFTER ALL BACKFILLING OPERATIONS ARE COMPLETE. IF THE LOCATOR CONDUCTOR IS WITHIN A FOOT OF THE PAVEMENT STRUCTURE, IT SHALL BE RE-TESTED AFTER PLACEMENT OR ROADWAY BASE BUT PRIOR TO PAVING OPERATIONS.
13. ENDWALLS AND FLARED END SECTIONS WILL NOT BE CONSTRUCTED ON OUTFALL PIPES UNTIL THE OWNER GIVES APPROVAL ON SITE.
14. UNLESS NOTED BY THE CONTRACT DOCUMENTS OR OTHERWISE DIRECTED BY THE OWNER, RIPRAP WILL BE PROVIDED AT ALL ENDWALLS AND FLARED END SECTIONS.
15. THE DESIGN SLOPES FOR STORM DRAIN PIPES ARE DETERMINED BY SENSITIVE HYDRAULIC CALCULATIONS. FAILURE TO PROVIDE DESIGN SLOPES CAN RESULT IN FLOODING OR DEFICIENT WORK. THESE PIPES MAY NEED TO BE REMOVED AND REINSTALLED AT THE CONTRACTOR'S EXPENSE.
16. THE CONTRACTOR SHALL PERFORM A PRE-CONSTRUCTION AND POST-CONSTRUCTION CCTV INSPECTION OF ADJACENT STORM DRAIN PIPES AND MAKE ANY NECESSARY REPAIRS RESULTING FROM THE CONSTRUCTION ACTIVITY AT NO ADDITIONAL COST.
17. AT NIGHT OR DURING NON-CONSTRUCTION HOURS, ACTIVE STORM DRAIN PIPES MUST BE TEMPORARILY CONNECTED AND THE EXCAVATED AREA SHALL BE BACKFILLED UNLESS A TWENTY-FOUR (24) HOURS TEMPORARY STREET CLOSURE IS APPROVED AND IN EFFECT, OR SECURED AND PROTECTED BY USING APPROVED SAFETY DEVICES OR MATERIALS.
18. FAILURE TO COMPLY WITH THE POLLUTION PREVENTION CONTRACT REQUIREMENTS WILL RESULT IN IMMEDIATE HALT OF PAYMENTS UNTIL ALL NOTICES OR NON-COMPLIANCE ARE RESOLVED.
19. THE CONTRACTOR WILL PROVIDE A STORM WATER FLOW PLAN WHEN PERFORMING WORK ON EXISTING STORM DRAIN SYSTEMS. THIS PLAN WILL DEMONSTRATE HOW THE CONTRACTOR WILL MAINTAIN OR RESTORE THE EXISTING CAPACITY OF THE STORM DRAIN SYSTEM IN THE EVENT OF INCLEMENT WEATHER AS REQUIRED. THE PREPARATION OF THIS PLAN ALONG WITH ANY EQUIPMENT, MATERIAL, OR LABOR NECESSARY TO MAINTAIN FLOWS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
20. ALL HEADWALLS, CULVERTS, FLARED END SECTIONS, SWALES/DITCHES, OR OTHER EXPOSED FIXED OBJECTS MUST MEET THE CLEAR ZONE REQUIREMENTS PER VDOT ROAD DESIGN MANUAL.

PAVEMENT AND OPEN CUTS

1. UNLESS NOTED BY THE CONTRACT DOCUMENTS OR OTHERWISE DIRECTED BY THE OWNER, OPEN CUTS SHALL NOT BE ALLOWED ON PUBLIC ROADWAYS. OPEN CUTS NOT NOTED ON THE CONTRACT DOCUMENTS MAY BE PERMITTED ON THE PUBLIC ROADWAYS ONLY WITH PRIOR WRITTEN APPROVAL BY THE OWNER.
2. THE CONTRACTOR SHALL REPAIR ALL PAVEMENT DAMAGE DUE TO MARRING SETTLEMENT OF EXCAVATIONS, PIPE BEDDING, BACKFILLING, FROST, BACKFILL MATERIALS OR COMPACTIONS OF OPEN CUTS AT THE CONTRACTOR'S EXPENSE.
3. ON PRIVATE PROPERTY, THE MINIMUM ON-SITE PAVEMENT REPLACEMENT AND DESIGN WILL BE ONE AND ONE-HALF (1 ½) INCHES OF ASPHALT CONCRETE, TYPE SM-9.5A OVER EIGHT (8) INCHES OF COMPACTED AGGREGATE BASE MATERIAL, TYPE I, NO. 21A OR 21B OVER COMPACTED SUBGRADE.
4. WITHIN THE RIGHT-OF-WAY, PAVEMENT REPLACEMENT WILL BE DESIGNED IN ACCORDANCE WITH THE "PUBLIC WORKS DESIGN STANDARD MANUAL" (PWDSM) INCLUDING SECTIONS 5.10 "PAVEMENT REPLACEMENT AND PATCHING", PAVEMENT PATCHING DETAIL STANDARD DRAWINGS "C-3A" (FLEXIBLE PAVEMENT PATCH FOR LOCAL & COLLECTOR STREETS), "C-3B" (FLEXIBLE PAVEMENT PATCH FOR MAJOR & MINOR ARTERIALS) AND "C-4" (RIGID PAVEMENT PATCHING).
5. THE CONTRACTOR SHALL INSPECT TEMPORARY PAVEMENT PATCHES AT THE END OF EACH DAY AND AFTER RAINFALL EVENTS FOR DAMAGE. THE CONTRACTOR SHALL MAKE REPAIRS AS REQUIRED TO PROVIDE A SMOOTH AND STABLE RIDING SURFACE. TEMPORARY PAVEMENT PATCH AND REPAIRS SHALL BE INCLUDED IN THE COST OF OTHER ITEMS AND WILL NOT BE PAID FOR SEPARATELY.
6. BEFORE ANY CONSTRUCTION IS PERFORMED, THE CONTRACTOR SHALL SUBMIT THE CERTIFICATION OF MATERIALS AND THE TEST RESULTS TO THE OWNER AS NOTED IN CONTRACTOR'S QUALITY CONTROL AND IN SECTION 200.07 OF THE "CITY'S AMENDMENTS TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) 2020 ROAD AND BRIDGE SPECIFICATIONS".
7. NO CONSTRUCTION IS ALLOWED WITHIN THE RIGHT-OF-WAY OF ATLANTIC AND PACIFIC AVENUES AND CONNECTING NUMBERED STREETS BETWEEN ATLANTIC AND PACIFIC AVENUES FROM RUDEE INLET TO 42nd SRTEET BETWEEN MAY 1st AND SEPTEMBER 30th. ADDITIONAL RIGHT-OF-WAY AT THE OCEANFRONT, CROATAN, SANDBRIDGE, AND ALONG GENERAL BOOTH BLVD. MAY BE INCLUDED UNDER THIS SEASONAL RESTRICTION. CONTACT TRAFFIC ENGINEERING AT 757-385-4131 FOR THESE ADDITIONAL RESTRICTIONS.

TEMPORARY TRAFFICE CONTROL

1. THE CITY OF VIRGINIA BEACH, TRAFFIC ENGINEERING DIVISION IS RESPONSIBLE FOR REVIEWING AND APPROVING ALL TEMPORARY TRAFFIC CONTROL PLANS AND REVIEWING THE SEQUENCE OF CONSTRUCTION PLANS ESSENTIAL TO COMPLETE THIS PROJECT.
2. ALL TEMPORARY TRAFFIC CONTROL DEVICES, METHODS AND APPLICATIONS SHALL CONFORM TO THE FOLLOWING PUBLICATIONS:
   A. "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), 2016 ROAD AND BRIDGE STANDARDS, VOL. II" REVISED JUNE 2025.
   B. "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), 2020 ROAD AND BRIDGE SPECIFICATIONS".
   C. "CITY OF VIRGINIA BEACH AMENDMENTS TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), 2020 ROAD AND BRIDGE SPECIFICATIONS, VERSION 4.1".
   D. "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), VIRGINIA MANUAL STANDARDS ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS (VIRGINIA MUTCD), VERSION 11, JANUARY 2026".
   E. "VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), VIRGINIA WORK AREA PROTECTION MANUAL STANDARDS AND GUIDELINES FOR TEMPORARY TRAFFIC CONTROL, VERSION 11.0, JANUARY 2026".
   F. "CITY OF VIRGINIA BEACH, VIRGINIA, DEPARTMENT OF PUBLIC WORKS DESIGN STANDARDS MANUAL (PWDSM), MARCH 2022".
3. WORK HOURS IN ROADWAY OPEN TO TRAFFIC AND/OR PEDESTRIAN AREAS:
   A. MONDAY THROUGH FRIDAY: WORK WILL BE COMPLETED BETWEEN THE HOURS OF 9:00 AM AND 4:00 PM ONLY.
   B. SATURDAYS, SUNDAYS, AND HOLIDAYS: NO WORK MAY BE COMPLETED IN THE ROADWAY OR PEDESTRIAN AREAS UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS OR APPROVED IN WRITING BY THE OWNER.
   C. ADDITIONAL RESTRICTIONS MAY APPLY BASED ON TRAFFIC CONDITIONS.
   D. EXTENDED WORK HOURS AND WORKDAYS MAY BE REQUESTED FROM THE OWNER IN WRITING. THIS REQUEST MUST BE SUBMITTED AT LEAST TEN (10) BUSINESS DAYS PRIOR TO THE EXTENDED WORK PERIODS (PLEASE NOTE THAT IF WORK IS TO BE CONDUCTED IN THE RESORT AREA, CERTAIN RESTRICTIONS APPLY FROM MAY THROUGH SEPTEMBER. PLEASE CONTACT TRAFFIC ENGINEERING FOR THESE RESTRICTIONS).
   E. AT THE RESORT AREA, ALL ROADS SHALL BE OPEN AND WORK WILL NOT BE ALLOWED FRIDAY THROUGH SUNDAY ON SPECIAL EVENT WEEKENDS IMPACTING THE ROADWAYS. COORDINATE WITH THE RESORT MANAGEMENT OFFICE AND RESORT PROJECT COORDINATOR (757-385-4800 OR events@vbgov.com) FOR A COMPLETE LISTING OF SUCH EVENTS AND REQUIREMENTS.
4. TRAFFIC CONTROL PLANS ARE INCLUDED IN THE CONTRACT DOCUMENTS. HOWEVER, FIELD CONDITIONS MAY REQUIRE MODIFICATIONS. IF THE CONTRACTOR FEELS THAT THE TRAFFIC CONTROL PLAN(S) INCLUDED WITH THIS PROJECT DOES NOT SUIT CONDITIONS AT A WORK SITE, THEN THE CONTRACTOR SHALL SUBMIT TO THE OWNER A REVISED PLAN TO MAINTAIN TRAFFIC. THE REVISED PLAN SHALL INCLUDE SITE-SPECIFIC TRAFFIC DETAILS AND SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT THE REVISED TRAFFIC CONTROL PLAN(S) A MINIMUM TEN (10) BUSINESS DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOT DISRUPT TRAFFIC PATTERNS UNTIL THE OWNER HAS APPROVED THE REVISED TRAFFIC CONTROL PLAN. THE OWNER RESERVES THE RIGHT TO MODIFY ANY TRAFFIC CONTROL PLAN(S) AS NECESSARY IN THE INTEREST OF PUBLIC SAFETY OR TRAFFIC EFFICIENCY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL REQUIREMENTS HAVE BEEN MET PRIOR TO BEGINNING WORK AND THAT ALL TRAFFIC CONTROL DEVICES HAVE BEEN INSTALLED ACCORDING TO THE APPROVED TRAFFIC CONTROL PLAN(S).
5. THE CONTRACTOR SHALL CHECK ALL TEMPORARY TRAFFIC CONTROL DEVICES AND WORK ZONES BEFORE, DURING, AND AFTER EACH WORKDAY TO ENSURE PROPER OPERATION. ON WEEKENDS, HOLIDAYS, OR ANY NON-WORKING DAY, THE CONTRACTOR SHALL INSPECT THE TEMPORARY TRAFFIC CONTROL DEVICES DAILY FOR PROPER INSTALLATION AND OPERATION.
6. ALL LANES OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION UNLESS TRAFFIC ENGINEERING HAS APPROVED TEMPORARY TRAFFIC CONTROL, SUCH AS A LANE CLOSURE OR A TEMPORARY STREET CLOSURE. RESIDENT AND EMERGENCY ACCESS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION REGARDLESS OF THE APPROVED STREET CLOSURES.
7. IF THERE IS APPROVAL FROM TRAFFIC ENGINEERING FOR A LANE CLOSURE OR A TEMPORARY STREET CLOSURE, ALL LANES OF TRAFFIC SHALL BE REOPENED TO TRAFFIC AT THE CONCLUSION OF EACH CONSTRUCTION DAY, UNLESS A TWENTY-FOUR (24) HOUR TEMPORARY STREET CLOSURE IS APPROVED AND IN EFFECT.
8. IN ALL CASES WHEN EXISTING OR ESTABLISHED ACCESS WILL BE DIRECTLY IMPACTED, THE CONTRACTOR SHALL NOTIFY ALL AFFECTED RESIDENTS AND BUSINESSES A MINIMUM OF FORTY-EIGHT (48) HOURS IN ADVANCE OF THE ANTICIPATED IMPACT.
9. AT NIGHT OR DURING NON-CONSTRUCTION HOURS, ALL EXCAVATED AREAS ARE TO BE BACKFILLED OR SECURED AND PROTECTED BY USING APPROVED SAFETY DEVICES OR MATERIALS. TRAFFIC ENGINEERING DOES NOT REVIEW AND APPROVE THE USE OF STEEL PLATES.
10. FOR CONSTRUCTION OPERATIONS LASTING MORE THAN FOURTEEN (14) CALENDAR DAYS, THE CONTRACTOR SHALL INSTALL "ROAD WORK AHEAD" (W20-1(V), 48-INCH x 48-INCH) AND "END ROAD WORK" (G20-2(V), 48-INCH x 24-INCH) WARNING SIGNS ON 4-INCH x 4-INCH NOMINAL WOODEN GROUND MOUNTED POSTS. THESE SIGNS SHALL BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION WORK AND SHALL BE REMOVED AFTER COMPLETION OF ALL CONSTRUCTION ACTIVITIES.
11. FOR ALL APPROVED CONSTRUCTION ENTRANCES, THE CONTRACTOR SHALL INSTALL "TRUCKS ENTERING HIGHWAY" (W11-V4, 48-INCH x 48-INCH ORANGE AND BLACK) WARNING SIGNS ON 4-INCH x 4-INCH NOMINAL WOODEN GROUND MOUNTED POSTS. THESE SIGNS SHALL BE INSTALLED 500 FEET IN ADVANCE OF ALL APPROVED CONSTRUCTION ENTRANCE POINTS.
12. ANY TRAFFIC CONTROL DEVICES INCLUDING, BUT NOT LIMITED TO; PAVEMENT MARKINGS, SIGNS, AND TRAFFIC CONTROL SIGNAL EQUIPMENT DAMAGED OR DESTROYED BY THE CONTRACTOR OR THE CONTRACTOR'S OPERATIONS MUST BE REPLACED AT THE CONTRACTOR'S EXPENSE UNLESS THEIR REMOVAL OR DESTRUCTION IS CALLED FOR BY THE CONTRACT DOCUMENTS.
13. CONSTRUCTION MATERIALS SHALL NOT BE STOCKPILED WITHIN THE "CLEAR ZONE" AS DEFINED IN THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) ROADSIDE DESIGN GUIDE". EQUIPMENT OR MACHINERY SHALL NOT BE LEFT PARKED OR UNATTENDED WITHIN THE CLEAR ZONE WHILE WORK IS NOT BEING PERFORMED.
14. AT THE CONCLUSION OF EACH WORKDAY, ALL PAVEMENT EDGE DROP-OFFS SHALL MEET THE REQUIREMENTS OF APPENDIX A, FIGURE 2 OF THE "VIRGINIA WORK AREA PROTECTION MANUAL" FOR THE SAFETY AND PROTECTION OF VEHICULAR TRAFFIC. ALL COSTS FOR MEETING THE REQUIREMENTS SHALL BE AT THE CONTRACTOR'S EXPENSE.
15. FOR ANY FURTHER INFORMATION ON TEMPORAY TRAFFIC CONTROL REQUIREMENTS, PLEASE CONTACT THE TRAFFIC ENGINEERING DIVISION AT 757-385-4131.

NO.	DATE	BY	REVISION

CITY OF VIRGINIA BEACH, VA.

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COMMONWEALTH OF VIRGINIA
JILL K. DIBATTISTA
Lic. No. 035766
01/19/26
PROFESSIONAL ENGINEER

BID DOCUMENTS

SCALE HORIZ:	AS SHOWN
VERT:	N/A
DATE:	JAN 2026
DRAWN BY:	NEL
DESIGN BY:	LG
APPROVED BY:	JKD
IFB NO.	---
PROJECT NO.	203470
CADD FILE	G103 GENNOTES

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

GENERAL NOTES

SHEET G1.03 OF DRAWING 3 OF 17

EROSION AND SEDIMENT CONTROL

I. GENERAL NOTES

A. EROSION CONTROL AND TREE PROTECTION

1. THE CONTRACTOR WILL COMPLY WITH APPLICABLE REGULATIONS OF THE CITY OF VIRGINIA BEACH EROSION AND SEDIMENT CONTROL ORDINANCE, THE CURRENT VIRGINIA EROSION AND SEDIMENT CONTROL LAW AND REGULATIONS (VESCLR) AND THE "VIRGINIA STORMWATER MANAGEMENT HANDBOOK" (VSMH), AS AMENDED, ISSUED BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION, DIVISION OF SOIL AND WATER CONSERVATION FOR ALL EROSION AND SEDIMENT CONTROL PRACTICES, MATERIALS AND STANDARDS. THE APPROVAL OF THIS PLAN DOES NOT RELIEVE THE CONTRACTOR OF CONTROLLING EROSION AND SILTATION AND PROVIDING ADDITIONAL MEASURES TO REASONABLY CONTROL PROBLEM AREAS WHICH MAY ARISE DURING CONSTRUCTION.
2. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS OF THE VESCH AND SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE BY THE OWNER.
3. THE OWNER SHALL HAVE THE AUTHORITY TO DIRECTLY CHANGE, ADD OR DELETE EROSION AND SEDIMENT CONTROL DEVICES AS NEEDED IN THE FIELD, AS SITE CONDITIONS WARRANT. THE CONTRACTOR SHOULD NOT REMOVE THE EROSION AND SEDIMENT CONTROL WITHOUT PRIOR APPROVAL FROM THE OWNER.
4. THE CONTRACTOR SHALL CONFORM TO MODIFIED SILTATION/EROSION CONTROLS AS REQUIRED BY THE OWNER TO INCREASE EFFICIENCY OF THE SEDIMENT CONTROL PLAN. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PROVIDED PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES.
5. THE SEQUENCE OF CONSTRUCTION WILL BE ENFORCED BY THE CONTRACTOR'S RESPONSIBLE LAND DISTURBER (RLD) FOR THE PROJECT WHO WILL BE RESPONSIBLE FOR CARRYING OUT THE PLAN. THIS INDIVIDUAL WILL REPRESENT THE PERMIT APPLICANT AND HOLD A RLD CERTIFICATE, WILL BE IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE REGULATED 'LAND-DISTURBING ACTIVITY".
6. THE CONTRACTOR SHALL NOT ATTACH (NAIL, WRAP, ETC.) NON-PROTECTIVE BOARDS OR WIRES ONTO TREES DURING CONSTRUCTION. THE CONTRACTOR WILL CAUTION THE HEAVY EQUIPMENT OPERATOR'S TO OPERATE CAREFULLY AROUND TREES TO AVOID DAMAGE TO EXISTING TREE TRUNKS AND ROOTS DURING LAND LEVELING OPERATIONS.
7. THE CONTRACTOR SHALL NOT STORE CONSTRUCTION EQUIPMENT OR MATERIALS UNDER EXISTING TREES. SOIL COMPACTION AROUND TREES WILL BE AVOIDED.
8. THE CONTRACTOR WILL NOT CUT FEEDER ROOTS WITHIN AN AREA EQUAL TO TWICE THE TREE CIRCUMFERENCE (MEASURED IN INCHES AT 4.5 FEET ABOVE GROUND) CONVERTED TO FEET. (EXAMPLE: CIRCUMFERENCE OF 10 INCHES WOULD HAVE A 'NO CUT ZONE" OF 20 FEET IN ALL DIRECTIONS FROM THE TREE).
9. THE CONTRACTOR WILL TREAT TREE TRUNKS AND EXPOSED ROOTS DAMAGED DURING EQUIPMENT OPERATIONS IN ACCORDANCE WITH ARBORICULTURAL STANDARDS. CUT BACK DAMAGED TREE LIMBS TO THE NEXT LATERAL BRANCH OR PARENT STEM AT THE BRANCH COLLAR AND CONTACT THE OWNER'S ARBORIST FOR CARE OF SEVERELY INJURED TREES. THE CONTRACTOR SHALL REMOVE ALL DAMAGED TREE LIMBS AS SOON AS POSSIBLE.
10. IF TREES PROTECTED BY THE ABOVE MEANS ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR WILL REPLACE THEM WITH TREES OF AT LEAST 2 INCH CALIPER OF THE SAME SPECIES WITH THE QUALITY AS SPECIFIED BY THE OWNER'S ARBORIST AT THE CONTRACTOR'S EXPENSE. REPLACEMENT TREES WILL CONFORM TO THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.
11. THE CONTRACTOR WILL ONLY STOCKPILE MATERIALS WITHIN AREAS DESIGNATED ON THE PLANS OR AS DIRECTED BY THE OWNER.
12. THE CONTRACTOR WILL LEAVE EROSION CONTROL DEVICES IN PLACE UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE. AFTER PERMANENT STABILIZATION, CONTRACTOR IS TO REMOVE APPROPRIATE EROSION AND SEDIMENT CONTROLS AS APPROVED BY THE OWNER.
13. EROSION CONTROL DEVICES SHOWN BY THE PLAN ARE THE MINIMUM NECESSARY TO FULFILL REQUIREMENTS OR APPLICABLE REGULATIONS.
14. THE CONTRACTOR WILL CONSTRUCT AND MAINTAIN SUFFICIENT DEVICES TO PREVENT SOIL ERODING ONTO ADJACENT STREETS, AND INTO DRAINAGE SYSTEMS AND WATER COURSES.
15. THE CONTRACTOR WILL INSTALL DEVICES TO PROTECT EXISTING STORM DRAINAGE SYSTEMS IN CONJUNCTION WITH SEEDING AND STABILIZATION, AS NECESSARY.
16. THE CONTRACTOR WILL CONTROL AND MONITOR DUST RESULTING FROM CONSTRUCTION. PROVISIONS MAY INCLUDE, BUT ARE NOT LIMITED TO, USE OF WATER OR CHEMICAL DUST PALLIATIVES, LIMITING THE NUMBER OF VEHICLES ALLOWED ON-SITE, AND MINIMIZING THE OPERATING SPEED OF ALL VEHICLES.

B. MAINTENANCE

1. ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL BY THE CONTRACTOR OR THE APPROPRIATE REPRESENTATIVE, AND REPAIRED BY THE END OF THE DAY AND IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.
3. THE CONTRACTOR WILL CLEAN THE EROSION CONTROL DEVICES OF MUD, DEBRIS, AND ERODED MATERIALS DURING CONSTRUCTION AND MAINTAIN ALL EROSION CONTROL DEVICES ON A DAILY BASIS OR AS REQUIRED BY THE OWNER.
4. THE SILT FENCE BARRIER WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC AND/OR POSTS. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
5. THE INLET PROTECTION DEVICES WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP, WHICH WILL PREVENT DRAINAGE. IF THE INLET PROTECTION DEVICES ARE CLOGGED BY SEDIMENT, THEY SHALL BE REMOVED AND CLEANED OR REPLACED.
6. THE SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND OF VEGETATION IS MAINTAINED. AS NEEDED, SEEDED AREAS SHALL BE FERTILIZED AND RESEEDED.
7. THE TEMPORARY CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. ALL MATERIAL TRACKED ONTO A PUBLIC OR PRIVATE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A SEDIMENT CONTROLLED DISPOSAL AREA.
8. THE TEMPORARY SEDIMENT TRAP SHALL BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE HEIGHT OF THE STONE OUTLET SHALL BE CHECKED TO ENSURE THAT ITS CENTER IS AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKMENT. THE SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ½ THE DESIGN VOLUME OF THE WET STORAGE. SEDIMENT REMOVAL FROM THE BASIN SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS. STONE CHOKED WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED.

C. MINIMUM STANDARDS AND LAND CONSERVATION NOTES

1. THE CONTRACTOR WILL INSTALL TEMPORARY SEEDING OR STABILIZATION IMMEDIATELY AFTER ANY SOIL DISTURBANCE.
2. THE CONTRACTOR WILL STABILIZE WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING ON ALL DISTURBED AREAS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING.
3. PERMANENT OR TEMPORARY STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE UNLESS THE PLANS OR SPECIFICATIONS INDICATE SOONER.
4. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN FOURTEEN (14) DAYS, BUT LESS THAN ONE (1) YEAR UNLESS THE PLANS OR SPECIFICATIONS INDICATE SOONER.
5. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.
6. ALL SILTATION CONTROLS SHALL BE PLACED AT THE LIMITS OF CONSTRUCTION AND NOT IN WOODED AREAS TO REMAIN UNDISTURBED. AREAS THAT ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FLAGS.
7. ANY STOCKPILED MATERIAL WHICH WILL REMAIN IN PLACE LONGER THAN SEVEN (7) DAYS SHALL BE SEEDED AND MULCHED. WHEN SOIL IS PLACED ON THE DOWNHILL SIDE OF THE TRENCH, IT SHALL BE BACKSLOPED TO DRAIN TOWARD THE TRENCH. WHEN NECESSARY TO DEWATER THE TRENCH, THE PUMP DISCHARGE HOSE SHALL DISCHARGE VIA SEDIMENT TRAPPING DEVICES IN A STABILIZED AREA.
8. DURING CONSTRUCTION, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. TEMPORARY PROTECTION AND PERMANENT STABILIZATION SHALL BE APPLIED TO ALL SOIL STOCKPILES ONSITE AND BORROW AREAS OR SOIL INTENTIONALLY TRANSFERRED OFFSITE.
9. PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS:
   a. UNIFORM
   b. MATURE ENOUGH TO SURVIVE
   c. WILL INHIBIT EROSION
10. SEDIMENT BASINS, SEDIMENT TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
11. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
12. SEDIMENT TRAPS SHALL BE DESIGNED FOR A CONTROLLED DRAINAGE AREA LESS THAN THREE (3) ACRES AND A MINIMUM STORAGE CAPACITY OF 134 C.Y./ACRES OF DRAINAGE AREA.
13. SEDIMENT BASINS SHALL BE DESIGNED FOR A CONTROLLED DRAINAGE AREA THREE (3) ACRES OR GREATER, AND MINIMUM STORAGE CAPACITY OF 134 C.Y./ACRES OF DRAINAGE AREA. THE OUTFALL SYSTEM FOR SEDIMENT BASIN SHALL AT A MINIMUM MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY FIVE (25) YEAR STORM OF 24-HOUR DURATION.
14. CUT AND FILL SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.
15. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURES.
16. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
17. ALL STORM DRAINAGE INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE STORMWATER CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED/TREATED TO REMOVE SEDIMENT.
18. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND THE RECEIVING CHANNEL.
19. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED
   a. PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT, AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION AND AS DIRECTED BY THE OWNER.
   b. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS.
   c. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
20. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
21. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED AND AS DIRECTED BY THE OWNER.
22. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
   a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME
   b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES
   c. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH APPROVED SEDIMENT TRAPPING DEVICES, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
   d. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION
   e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS
   f. COMPLY WITH APPLICABLE SAFETY REGULATIONS.
23. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE OWNER. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

THESE PLANS HAVE BEEN CHECKED TO ENSURE INCLUSION OF THE EROSION AND SEDIMENT CONTROL MEASURES APPROPRIATE FOR THIS PROJECT AND HAVE BEEN APPROVED.

PUBLIC UTILITIES E&S ADMINISTRATOR — DATE: January 8,2026

II. NARRATIVE AND MANAGEMENT STRATEGIES

A. SITE INFORMATION

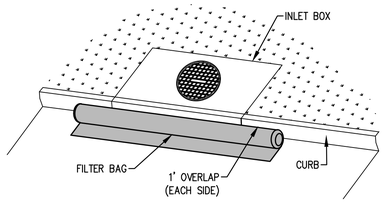
1. PROJECT DESCRIPTION – THIS PROJECT INVOLVES THE INSTALLATION OF APPROXIMATELY 3,350 LINEAR FEET OF 8-INCH DUCTILE IRON FORCE MAIN TO REPLACE AN EXISTING 8-INCH FORCE MAIN ALONG HARTON CIRCLE, HARTON DRIVE, CAREN DRIVE, VIRGINIUS DRIVE, AND MALIBU DRIVE FROM THE FRONT OF PS 242 HARTON CIRCLE TO THE CONNECTION AT ROYAL PALM ARCH.
2. EXISTING SITE CONDITIONS – THE PROJECT ALIGNMENT IS LOCATED WITHIN THE ROAD RIGHT-OF-WAY, EITHER WITHIN THE PAVEMENT OR ADJACENT TO THE OUTER PAVEMENT EDGE.
3. OFF-SITE AREAS – IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY, NEGOTIATE AND SECURE STAGING, STORAGE, STOCKPILE, AND LAYDOWN AREAS. IF THE TOTAL LAND DISTURBANCE OF THESE SUPPORT ACTIVITIES EXCEEDS ONE (1) ACRE, SEPARATE COVERAGE UNDER THE DEQ GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES WILL BE REQUIRED, SECURED, AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES ENGINEERING ADMINISTERS THIS PERMIT AND WILL REVIEW AND APPROVE ALL APPLICATIONS. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIRED AS PART OF THE PERMIT, AS WELL AS MAINTAINING THE SWPPP THROUGHOUT THE LIFECYCLE OF THE CONSTRUCTION PHASE. THE CONTRACTOR SHALL PROVIDE INFORMATION REGARDING THE FINAL DISPOSITION OF EXCESS SOILS EXCAVATED DURING TRENCHING OPERATIONS.
4. SOILS – THE GEOTECHNICAL INVESTIGATION FOR THIS SITE WAS CONDUCTED BY FROEHLING & ROBERTSON, INC., AND IS INCLUDED IN THE CONTRACT'S PROJECT MANUAL.
5. CRITICAL AREAS – NO CRITICAL AREAS HAVE BEEN IDENTIFIED AS HAVING POTENTIALLY SERIOUS EROSION PROBLEMS.
6. EROSION AND SEDIMENT CONTROL MEASURES – EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, AS SHOWN ON THE CONTRACT DRAWINGS, AND ALL ASSOCIATED EROSION AND SEDIMENT CONTROL TECHNICAL BULLETINS.
7. PERMANENT STABILIZATION – THE PROJECT SHOULD HAVE MINIMAL IMPACT ON DENUDED AREAS. ALL DISTURBED AREAS WILL BE WITHIN THE ROAD RIGHT-OF-WAY, EITHER WITHIN THE PAVEMENT OR ADJACENT TO THE OUTER PAVEMENT EDGE.
8. STORMWATER RUN-OFF CONSIDERATION – THE PROJECT SHOULD HAVE MINIMAL IMPACT ON STORMWATER RUN-OFF. ALL DISTURBED AREAS WILL BE RE-GRADED TO PRE-CONSTRUCTION CONDITIONS, WITH NO ADDITIONAL IMPERVIOUS AREA. THE QUANTITY AND VELOCITY OF STORMWATER RUNOFF WILL REMAIN UNCHANGED.
9. CALCULATIONS – SITE DEVELOPMENT WILL NOT BE PERFORMED AS PART OF THIS CUT AND COVER UTILITY INSTALLATION PROJECT. THE EXTENT OF ALL PRE-CONSTRUCTION PERVIOUS AND IMPERVIOUS AREAS ALONG THE PROJECT WILL REMAIN THE SAME POST-CONSTRUCTION, WITH ALL AREAS BEING RE-GRADED TO PRE-CONSTRUCTION ELEVATIONS. AS THERE WILL BE NO CHANGES IN IMPERVIOUS AREA, GRADING, OR STORMWATER RUNOFF QUANTITY OR VELOCITY, NO STORMWATER CALCULATIONS ARE REQUIRED.

B. SEDIMENT CONTROL PROGRAM

1. CONTRACTOR SHALL FOLLOW SEQUENCE OF CONSTRUCTION ON SHEET C2.01.
2. PRIOR TO "SITE DISTURBANCE", CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE DRAWINGS.
3. INSTALL STORM DRAIN INLET PROTECTION.
4. INSTALL SILT FENCE.
5. PROCEED WITH SITE WORK AS SHOWN ON DRAWINGS.
6. COMPLETE SITE IMPROVEMENTS. STABILIZE SITE INCLUDING BUT NOT LIMITED TO FINE GRADE, TOPSOIL, MULCH, SEED AND STABILIZE WITH GRASS AS SOON AS POSSIBLE.
7. AFTER STABILIZATION HAS BEEN ACHIEVED, ALL TEMPORARY E&S MEASURES SHALL BE REMOVED.
8. REMOVE ALL EQUIPMENT, CONSTRUCTION MATERIALS AND DEBRIS FROM THE SITE.
9. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL STABILIZATION OR AS DIRECTED BY PUBLIC UTILITY/INSPECTIONS.

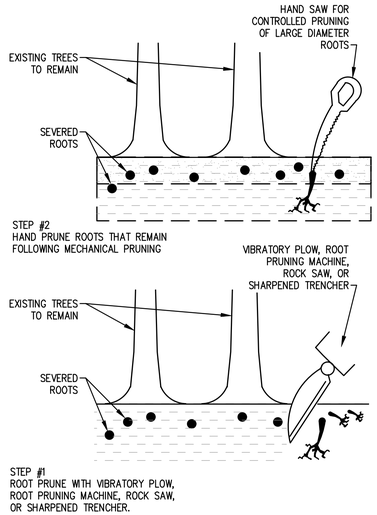
VIRGINIA EROSION AND SEDIMENT CONTROL PLAN MINIMUM STANDARDS (MS) CHECKLIST

YES	N/A	9VAC25-875-560 MINIMUM STANDARDS	DESCRIBE HOW MS IS ADDRESSED ON PLAN
X		MS1: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.	PERMANENT AND TEMPORARY SEEDING SPECIFICATION WILL BE FOLLOWED, SEE SHEET ES.02.
X		MS2: DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.	SILT FENCE OR OTHER SEDIMENT TRAPPING MEASHURES SHALL BE INSTALLED AROUND TEMPORARY STOCKPILE AREA.
X		MS3: A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.	PERMANENT SEEDING SPECIFICATION WILL BE FOLLOWED, SEE SHEET ES.02.
X		MS4: SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.	SILT FENCE WILL BE INSTALLED AROUND THE PERIMETER OF THE DISTURBED AREA.
	X	MS5: STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	NONE ON THE PROJECT.
	X	MS6: SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN. A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES. B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.	NONE ON THE PROJECT.
	X	MS7: CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.	NONE ON THIS PROJECT.
	X	MS8: CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.	NONE ON THIS PROJECT.
	X	MS9: WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	NONE ON THE PROJECT.
X		MS10: ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.	INLET PROTECTION WILL BE PROVIDED FOR ALL INLETS IN THE PROJECT AREA.
	X	MS11: BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.	NONE ON THE PROJECT.
	X	MS12: WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.	NONE ON THE PROJECT.
	X	MS13: WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.	NONE ON THE PROJECT.
	X	MS14: ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.	NONE ON THE PROJECT.
	X	MS15: THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NONE ON THE PROJECT.
X		MS16: UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY. D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER. F. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.	UTILITY INSTALLATION STANDARDS WILL BE FOLLOWED.
X		MS17: WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.	SEDIMENT SHALL BE REMOVED FROM PAVED AREAS ON A DAILY BASIS.
X		MS18: ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	STANDARDS FOR REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES WILL BE FOLLOWED.
X		PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS: A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED. B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER: (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR (2) (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS; (B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND (C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM. C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL: (1) IMPROVE THE CHANNELS TO A CONDITION WHERE A 10-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS; (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE 10-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; (3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A 10-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION. D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS. E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT. F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE. G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL. H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE. I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY. J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS. K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE. L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT. M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES (I) ARE IN ACCORDANCE WITH PROVISIONS FOR TIME LIMITS ON APPLICABILITY OF APPROVED DESIGN CRITERIA IN 9VAC25-870-47 OR GRANDFATHERING IN 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION, IN WHICH CASE THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT SHALL APPLY, OR (II) ARE EXEMPT PURSUANT TO § 62.1-44.15:34 C 7 OF THE ACT. N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF THIS SUBDIVISION 19.	STANDARDS FOR EROSION AND SEDIMENT CONTROL SHALL BE FOLLOWED.



IP **CURB INLET FILTER**

NOT TO SCALE

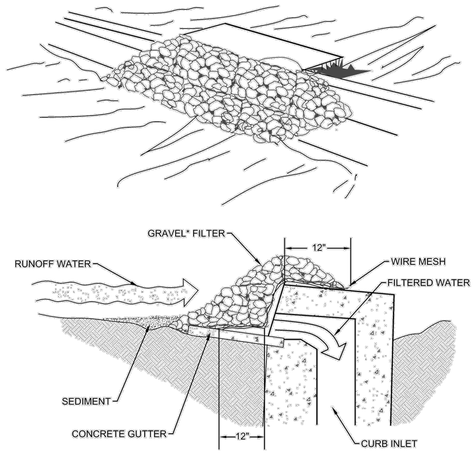


NOTES:

1. THE CONTRACTOR IS REQUIRED TO PROVIDE TREE PROTECTION FOR ALL CRITICAL ROOT ZONES WITHIN THE RIGHT OF WAY THAT ARE POTENTIALLY AFFECTED BY CONSTRUCTION. ADDITIONALLY, TREE PROTECTION IS REQUIRED ALONG THE VERGE (BETWEEN THE SIDEWALK AND THE RIGHT-OF-WAY LINE) FOR ALL PRIVATE TREES WITH ROOT ZONES THAT ENCROACH THE RIGHT-OF-WAY.
2. ROOT PRUNING SHALL BE REQUIRED ON THE TRUNK SIDE OF ALL ROOT ZONES BEING AFFECTED BY TRENCHING. IN AREAS WHERE MULTIPLE ROOT ZONES ARE PRESENT WITHIN THE TRENCH LIMITS FOR SANITARY SEWER, SANITARY MANHOLES, OR SANITARY LATERAL INSTALLATIONS, ROOT PRUNING SHALL BE PERFORMED ON BOTH SIDES OF THE TRENCH, AS REQUIRED.
3. THE CONTRACTOR IS REQUIRED TO COORDINATE WITH THE DEPARTMENT OF PARKS & RECREATION PRIOR TO ROOT PRUNING OR TREE TRIMMING.
4. ALL REQUIRED ROOT AND CANOPY PRUNING FOR TREES MUST BE PERFORMED BY A LICENSED ARBORIST.
5. TREES DAMAGED OR REMOVED DUE TO EXTENSIVE ROOT PRUNING SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER, AND APPROVED BY THE DEPARTMENT OF PARKS & RECREATION PRIOR TO REPLACEMENT.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY TREES DAMAGED DURING CONSTRUCTION OR REMOVED DUE TO NEGLECT, BASED ON EVALUATION BY THE DEPARTMENT OF PARKS & RECREATION.
7. ROOT PRUNING LIMITS ARE INDEPENDENT OF TREE PROTECTION LIMITS SHOWN ON THE PLANS.

ROOT & CANOPY PRUNING

NOT TO SCALE



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

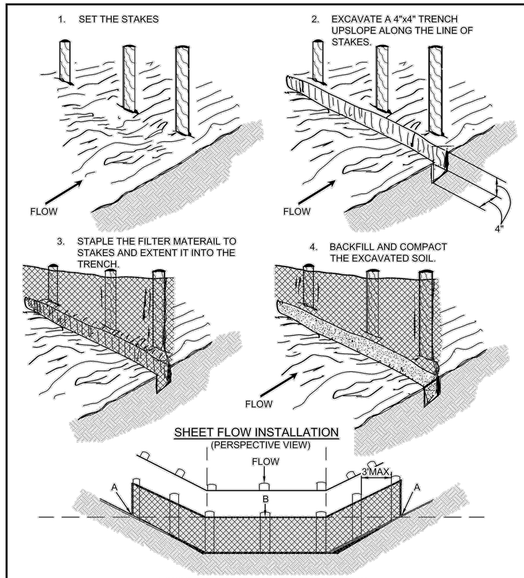
* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

IP

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

GRAVEL CURB INLET SEDIMENT FILTER

v1.1 SOURCE: VA. DSWC C-SCM-04-5



SF

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

CONSTRUCTION OF SILT FENCE WITHOUT WIRE SUPPORT

v1.1 SOURCE: ADAPTED FROM STRAW & FAB. BARRIERS, SHERWOOD & WYANT C-PCM-04-2B

Table C-SSM-09-3 Plant Material for Temporary Seeding

Acceptable Temporary Seeding Plant Materials "Quick Reference for all Regions"

Planting Dates	Species	Rate (pounds per acre)
Sept. 1 – Feb. 15	50/50 Mix of annual ryegrass (*Lolium multi-florum*) & cereal (winter) rye (*Secale cereale*)	50 – 100
Feb. 16 – Apr. 30*	Annual ryegrass (*Lolium multi-florum*)	60 – 100
May 1* – Aug. 31	German millet (*Setaria italica*)	50

* The shift date for annual rye to German millet should be April 15 for the Piedmont and Coastal Plain, rather than May 1.

TEMPORARY SEEDING SPECIFICATION TS

Table C-SSM-07-5 Lime and Fertilizer Specifications

Lime and Fertilizer Specifications	
Pulverized agricultural limestone	Apply 90 lbs./1,000 sq. ft. (2 tons/acre) of an agricultural grade of limestone.
Fertilizer	Apply **10-10-10** fertilizer at a rate of **500** lbs. /acre or **12** lbs. / 1,000 ft². Apply additional phosphorus and potassium 30 to 60 days later based on the results of a soil test. Apply an additional equivalent of 1 lb./1,000 ft² of nitrogen when the phosphorus and potassium are applied. Never apply more than 1 pound of water-soluble nitrogen per 1,000 ft² within a 30- day period and no more than 2 yearly lbs. N/1,000 ft².

Table C-SSM-10-8 Site-Specific Seeding Mixtures for Coastal Plain Area

Site Condition	Seed Mix	Application Rate (pounds per acre)
Minimum-Care Lawn Commercial or Residential	Kentucky 31* or VCIA approved Turf-Type Tall Fescue	150 – 200
	or Common Bermudagrass	75
High-Maintenance Lawn	Kentucky 31 or VCIA approved Turf-Type Tall Fescue	150 – 200
	Hybrid Bermudagrass (seed) **	40 (unhulled)
	Hybrid Bermudagrass (by other vegetative establishment method refer to Bermudagrass & Zoysiagrass Establishment [C-SSM-07])	30 (hulled)
General Slope (3H:1V or less)	Tall Fescue and/or Hard Fescue	50 – 75
	Red Top Grass	5 – 10
	Annual Lespedeza and/or White Clover***	10 – 20
	Seasonal Nurse Crop ****	30 – 40
Low-Maintenance Slope	Tall Fescue and/or Red/Hard Fescue	75 – 100

Table C-SSM-10-8 Site-Specific Seeding Mixtures for Coastal Plain Area

Site Condition	Seed Mix	Application Rate (pounds per acre)
(Steeper than 3H:1V)	Common Bermudagrass **	0 – 15
	Redtop Grass	5 – 10
	Annual Lespedeza and/or White Clover***	10 – 20
	Seasonal Nurse Crop ****	30 – 40

* Increase seed rate if only KY-31 is used.

** May through October, use hulled seed. All other seeding periods, use unhulled see. Weeping lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10 - 20 pounds per acre in mixes.

*** Use legume seed that is properly inoculated with specified Rhizobia. Legumes recommended unless periodic N fertilization is intended. Weeping lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10 to 20 lbs/acre in mixes.

***** Use seasonal nurse crop in accordance with seeding dates as stated below:

March 15 through August, foxtail/German millet

September, October through November 15 annual/cereal rye

November 16 through March 15, annual/cereal rye

Note: Seed mixes are suggested and subject to modification based on site-specific conditions by an agronomist or other qualified revegetation professionals. All seed rates expressed as PLS (Pure Live Seed; see Table C-SSM-10-9).

PERMANENT SEEDING SPECIFICATION PS

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CITY OF VIRGINIA BEACH, VA.

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COMMONWEALTH OF VIRGINIA
JILL K. DIBATTISTA
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01/19/26
PROFESSIONAL ENGINEER

BID DOCUMENTS

SCALE HORIZ:	AS SHOWN
VERT:	AS SHOWN
DATE:	JAN 2026
DRAWN BY:	NEL
DESIGN BY:	LG
APPROVED BY:	JKD

IFB NO. ---

PROJECT NO. 203470

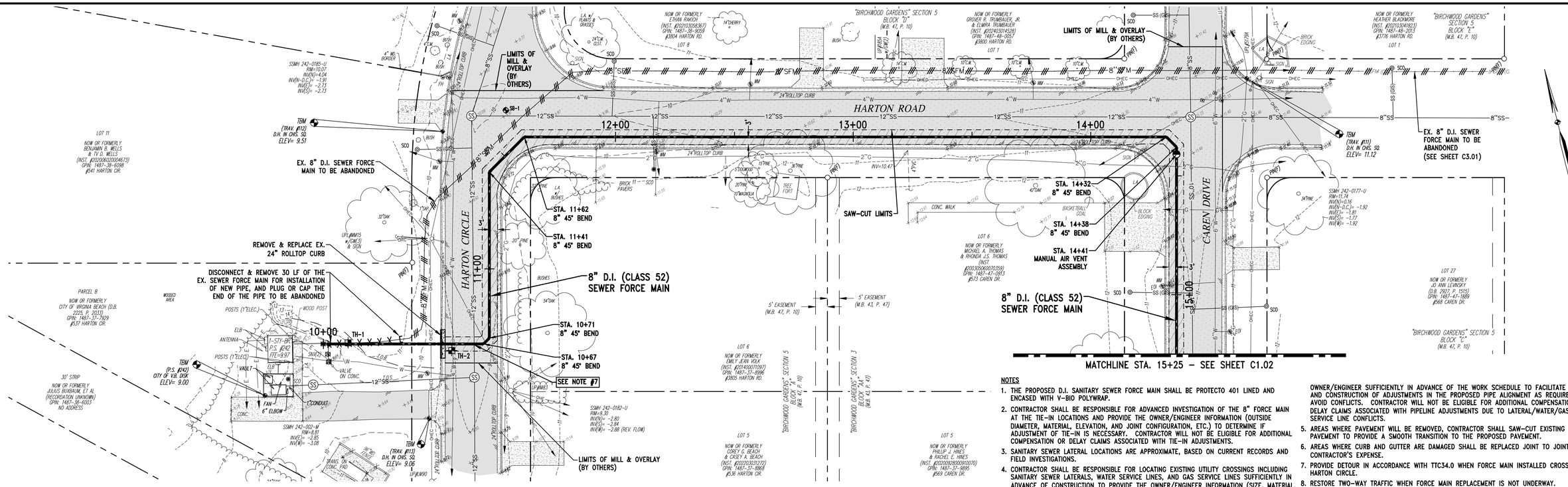
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CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

EROSION & SEDIMENT CONTROL NOTES AND DETAILS

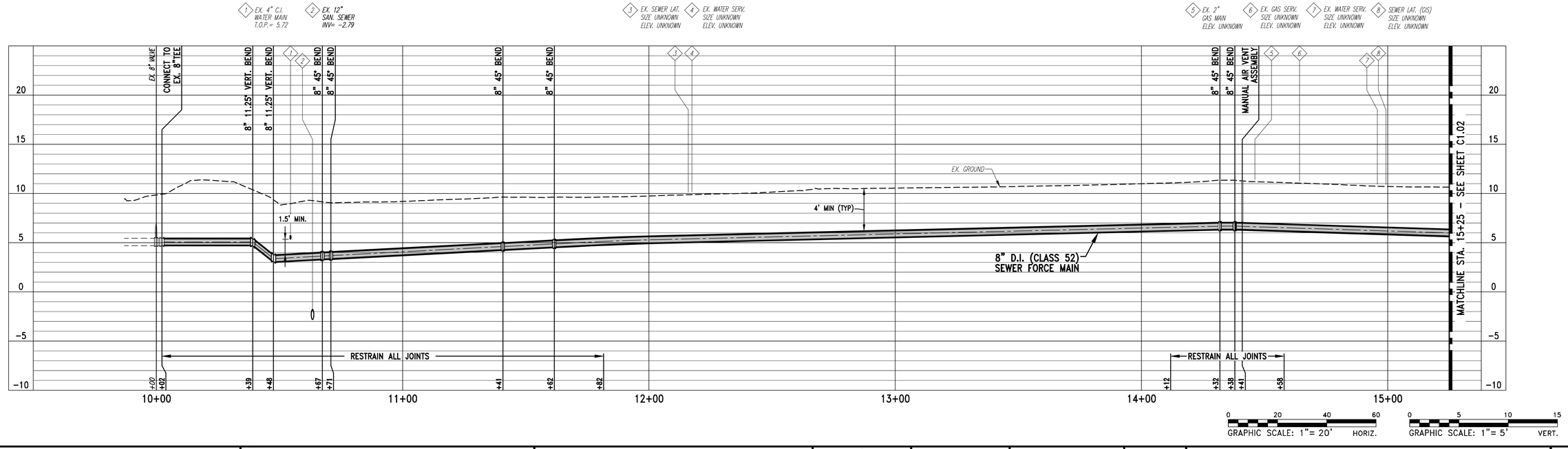
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NOTES

1. THE PROPOSED D.I. SANITARY SEWER FORCE MAIN SHALL BE PROTECTO 401 LINED AND ENCASED WITH V-BIO POLYWRAP.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ADVANCED INVESTIGATION OF THE 8" FORCE MAIN AT THE TIE-IN LOCATIONS AND PROVIDE THE OWNER/ENGINEER INFORMATION (OUTSIDE DIAMETER, MATERIAL, ELEVATION, AND JOINT CONFIGURATION, ETC.) TO DETERMINE IF ADJUSTMENT OF TIE-IN IS NECESSARY. CONTRACTOR WILL NOT BE ELIGIBLE FOR ADDITIONAL COMPENSATION OR DELAY CLAIMS ASSOCIATED WITH TIE-IN ADJUSTMENTS.
3. SANITARY SEWER LATERAL LOCATIONS ARE APPROXIMATE, BASED ON CURRENT RECORDS AND FIELD INVESTIGATIONS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UTILITY CROSSINGS INCLUDING SANITARY SEWER LATERALS, WATER SERVICE LINES, AND GAS SERVICE LINES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION TO PROVIDE THE OWNER/ENGINEER INFORMATION (SIZE, MATERIAL, ELEVATION, CLEARANCE, ETC.) TO DETERMINE IF ADJUSTMENT OF THE SFM PROFILE IS NECESSARY. CONTRACTOR SHALL PROVIDE THE CONFLICT INFORMATION TO THE OWNER/ENGINEER SUFFICIENTLY IN ADVANCE OF THE WORK SCHEDULE TO FACILITATE DESIGN AND CONSTRUCTION OF ADJUSTMENTS IN THE PROPOSED PIPE ALIGNMENT AS REQUIRED TO AVOID CONFLICTS. CONTRACTOR WILL NOT BE ELIGIBLE FOR ADDITIONAL COMPENSATION OR DELAY CLAIMS ASSOCIATED WITH PIPELINE ADJUSTMENTS DUE TO LATERAL/WATER/GAS SERVICE LINE CONFLICTS.
5. AREAS WHERE PAVEMENT WILL BE REMOVED, CONTRACTOR SHALL SAW-CUT EXISTING PAVEMENT TO PROVIDE A SMOOTH TRANSITION TO THE PROPOSED PAVEMENT.
6. AREAS WHERE CURB AND GUTTER ARE DAMAGED SHALL BE REPLACED JOINT TO JOINT AT CONTRACTOR'S EXPENSE.
7. PROVIDE DETOUR IN ACCORDANCE WITH TTC34.0 WHEN FORCE MAIN INSTALLED CROSSING HARTON CIRCLE.
8. RESTORE TWO-WAY TRAFFIC WHEN FORCE MAIN REPLACEMENT IS NOT UNDERWAY.
9. THE EXISTING GRAVITY SEWER AND STORM DRAINS CROSSED BY THE PROPOSED WORK SHALL BE CCTV INSPECTED TO DOCUMENT PRE- AND POST-INSTALLATION CONDITIONS.



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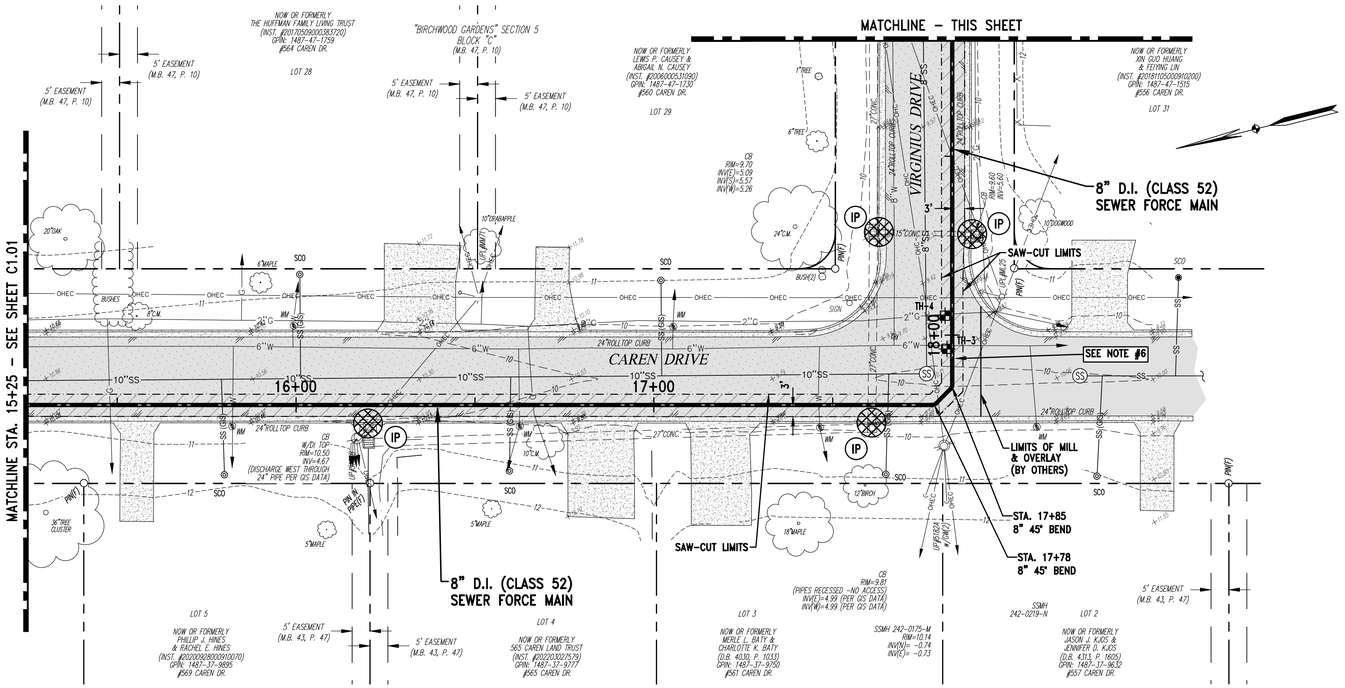
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APPROVED BY:	JKD

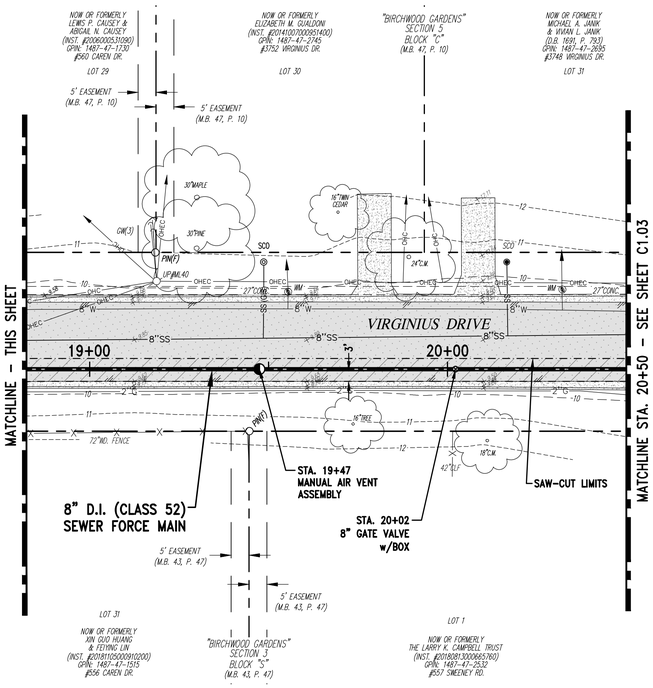
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SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

FORCE MAIN PLAN & PROFILE STA. 10+00 TO 15+25

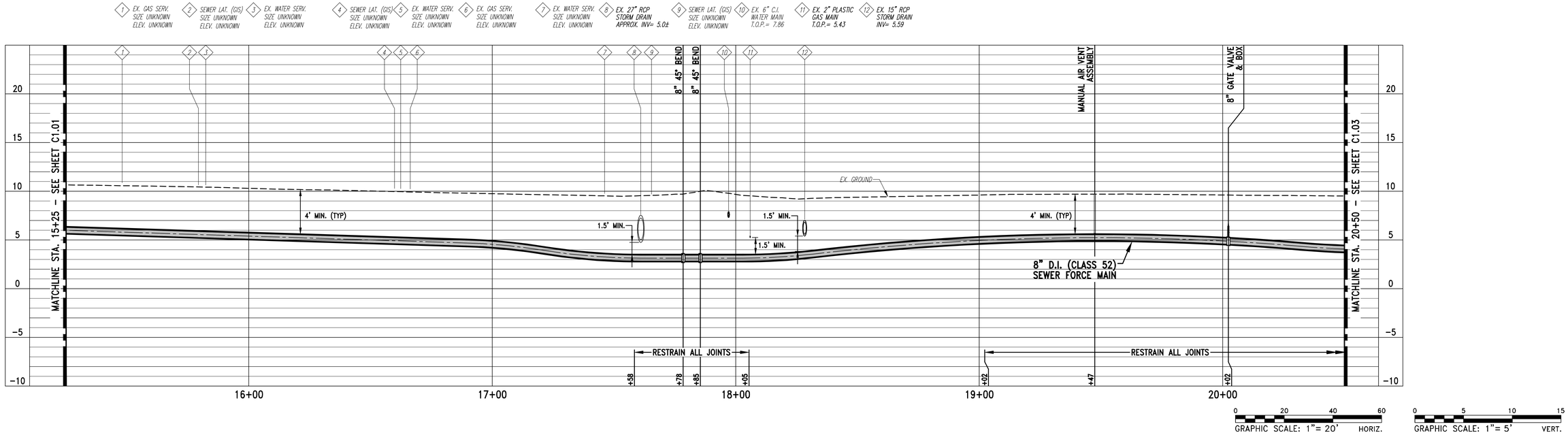
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5. AREAS WHERE CURB AND GUTTER ARE DAMAGED SHALL BE REPLACED JOINT TO JOINT AT CONTRACTOR'S EXPENSE.
6. PROVIDE DETOUR IN ACCORDANCE WITH TTC34.0 WHEN FORCE MAIN INSTALLED CROSSING CAREN DRIVE.
7. RESTORE TWO-WAY TRAFFIC WHEN FORCE MAIN REPLACEMENT IS NOT UNDERWAY.
8. THE EXISTING GRAVITY SEWER AND STORM DRAINS CROSSED BY THE PROPOSED WORK SHALL BE CCTV INSPECTED TO DOCUMENT PRE- AND POST-INSTALLATION CONDITIONS.



GRAPHIC SCALE: 1"= 20' HORIZ. (0 20 40 60)

GRAPHIC SCALE: 1"= 5' VERT. (0 5 10 15)

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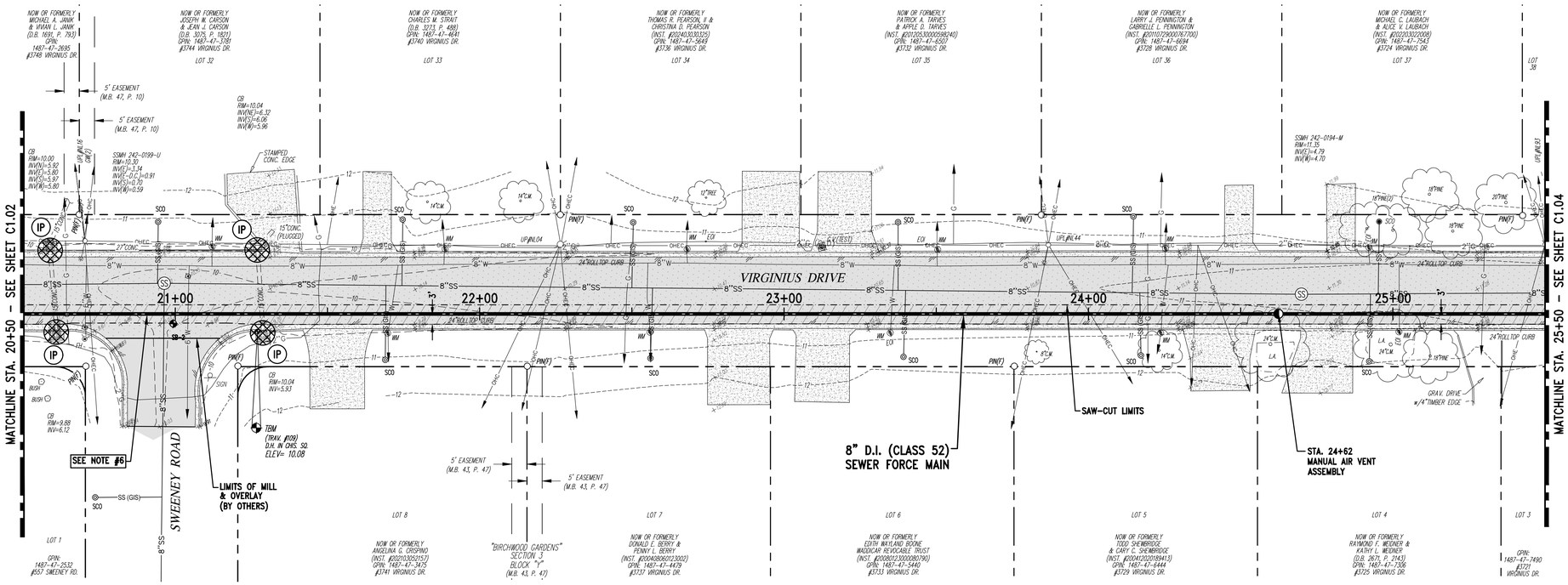
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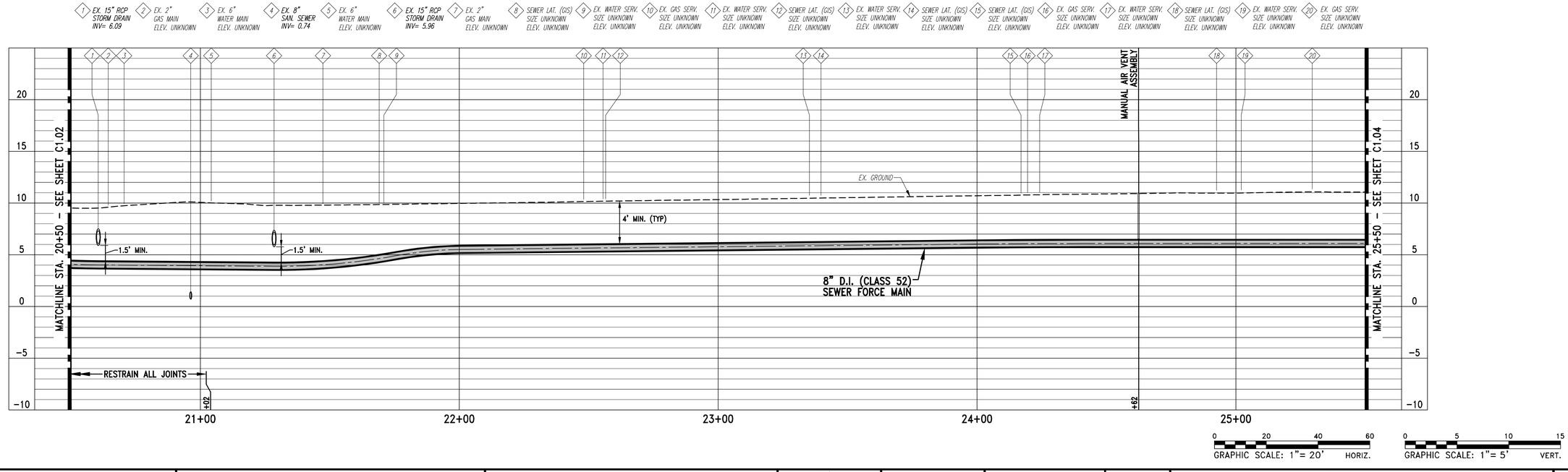
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SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

FORCE MAIN PLAN & PROFILE STA. 15+25 TO 20+50

SHEET	
	C1.02
OF	
DRAWING	7 OF 17





NOTES

1. THE PROPOSED D.I. SANITARY SEWER FORCE MAIN SHALL BE PROTECTO 401 LINED AND ENCASED WITH V-BIO POLYWRAP.
2. SANITARY SEWER LATERAL LOCATIONS ARE APPROXIMATE, BASED ON CURRENT RECORDS AND FIELD INVESTIGATIONS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UTILITY CROSSINGS INCLUDING SANITARY SEWER LATERALS, WATER SERVICE LINES, AND GAS SERVICE LINES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION TO PROVIDE THE OWNER/ENGINEER INFORMATION (SIZE, MATERIAL, ELEVATION, CLEARANCE, ETC.) TO DETERMINE IF ADJUSTMENT OF THE SFM PROFILE IS NECESSARY. CONTRACTOR SHALL PROVIDE THE CONFLICT INFORMATION TO THE OWNER/ENGINEER SUFFICIENTLY IN ADVANCE OF THE WORK SCHEDULE TO FACILITATE DESIGN AND CONSTRUCTION OF ADJUSTMENTS IN THE PROPOSED PIPE ALIGNMENT AS REQUIRED TO AVOID CONFLICTS. CONTRACTOR WILL NOT BE ELIGIBLE FOR ADDITIONAL COMPENSATION OR DELAY CLAIMS ASSOCIATED WITH PIPELINE ADJUSTMENTS DUE TO LATERAL/WATER/GAS SERVICE LINE CONFLICTS.
4. AREAS WHERE PAVEMENT WILL BE REMOVED, CONTRACTOR SHALL SAW-CUT EXISTING PAVEMENT TO PROVIDE A SMOOTH TRANSITION TO THE PROPOSED PAVEMENT.
5. AREAS WHERE CURB AND GUTTER ARE DAMAGED SHALL BE REPLACED JOINT TO JOINT AT CONTRACTOR'S EXPENSE.
6. PROVIDE DETOUR IN ACCORDANCE WITH TTC34.0 WHEN FORCE MAIN IS INSTALLED CROSSING SWEENEY ROAD.
7. RESTORE TWO-WAY TRAFFIC WHEN FORCE MAIN REPLACEMENT IS NOT UNDERWAY.
8. THE EXISTING GRAVITY SEWER AND STORM DRAINS CROSSED BY THE PROPOSED WORK SHALL BE CCTV INSPECTED TO DOCUMENT PRE- AND POST-INSTALLATION CONDITIONS.

NO.	DATE	BY	REVISION

CITY OF VIRGINIA BEACH, VA.

Michael Baker INTERNATIONAL
272 Bendix Road, Suite 400 • Virginia Beach, VA 23452
Phone (757) 463-8770 • Fax (757) 463-0503
http://www.mbakerintl.com

COMMONWEALTH OF VIRGINIA
JILL K. DIBATTISTA
Lic. No. 035766
01/19/26
PROFESSIONAL ENGINEER

BID DOCUMENTS

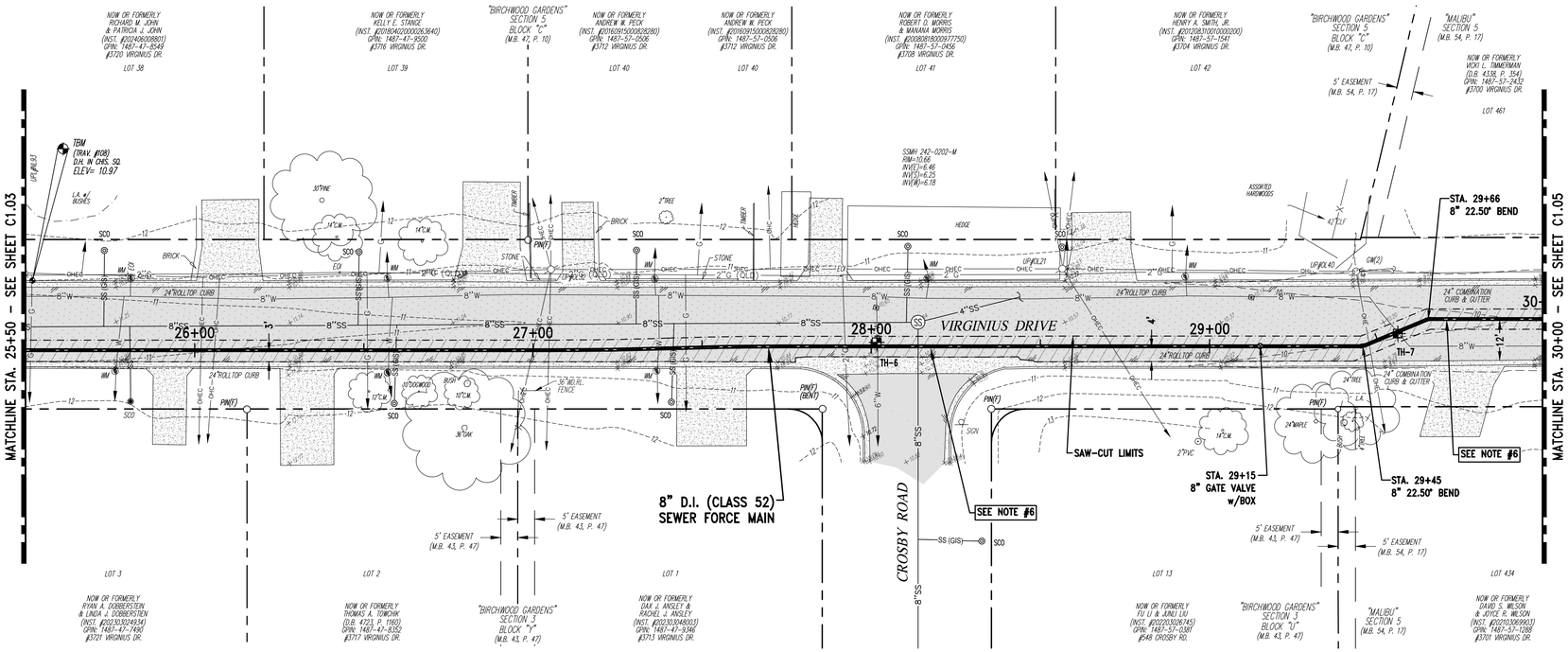
SCALE HORIZ:	1" = 20'
VERT:	1" = 5'
DATE:	JAN 2026
DRAWN BY:	NEL
DESIGN BY:	LG
APPROVED BY:	JKD

IFB NO.	---
PROJECT NO.	203470
CADD FILE	C100 PLANPROF

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

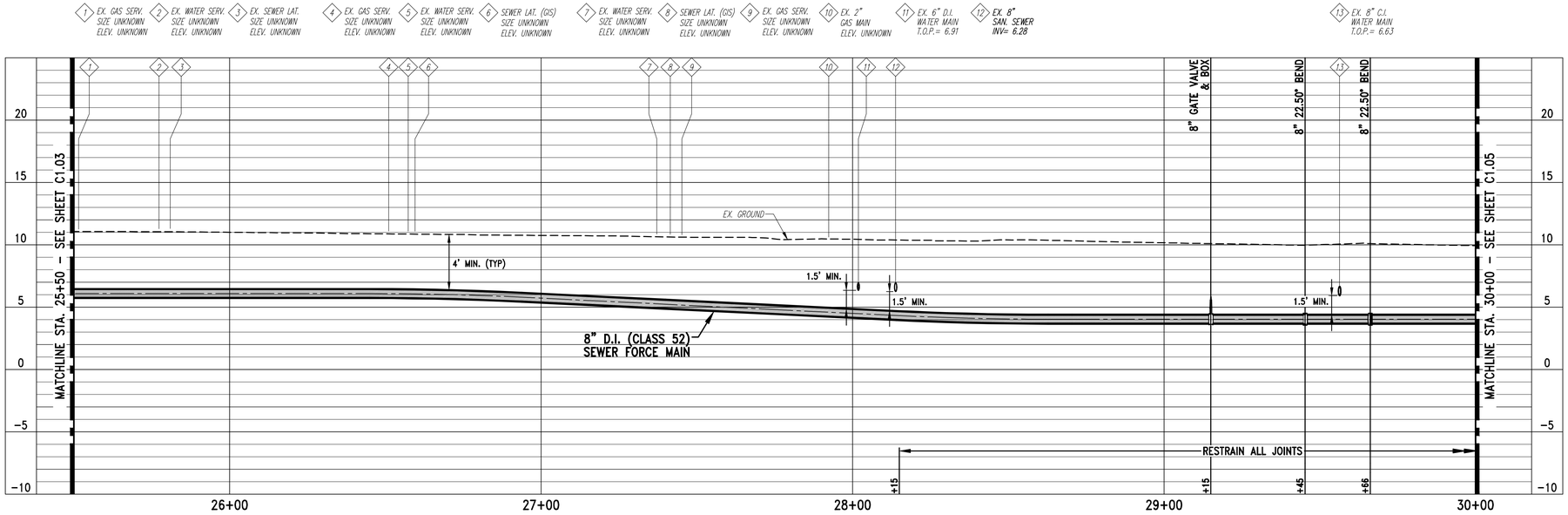
FORCE MAIN PLAN & PROFILE
STA. 20+50 TO 25+50

SHEET C1.03 OF DRAWING 8 OF 17



NOTES

1. THE PROPOSED D.I. SANITARY SEWER FORCE MAIN SHALL BE PROTECTO 401 LINED AND ENCASED WITH V-BIO POLYWRAP.
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3. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UTILITY CROSSINGS INCLUDING SANITARY SEWER LATERALS, WATER SERVICE LINES, AND GAS SERVICE LINES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION TO PROVIDE THE OWNER/ENGINEER INFORMATION (SIZE, MATERIAL, ELEVATION, CLEARANCE, ETC.) TO DETERMINE IF ADJUSTMENT OF THE SFM PROFILE IS NECESSARY. CONTRACTOR SHALL PROVIDE THE CONFLICT INFORMATION TO THE OWNER/ENGINEER SUFFICIENTLY IN ADVANCE OF THE WORK SCHEDULE TO FACILITATE DESIGN AND CONSTRUCTION OF ADJUSTMENTS IN THE PROPOSED PIPE ALIGNMENT AS REQUIRED TO AVOID CONFLICTS. CONTRACTOR WILL NOT BE ELIGIBLE FOR ADDITIONAL COMPENSATION OR DELAY CLAIMS ASSOCIATED WITH PIPELINE ADJUSTMENTS DUE TO LATERAL/WATER/GAS SERVICE LINE CONFLICTS.
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5. AREAS WHERE CURB AND GUTTER ARE DAMAGED SHALL BE REPLACED JOINT TO JOINT AT CONTRACTOR'S EXPENSE.
6. PROVIDE DETOUR IN ACCORDANCE WITH TTC34.0 WHEN FORCE MAIN INSTALLED CROSSING CROSBY ROAD AND IN THE MIDDLE OF VIRGINIUS DRIVE.
7. RESTORE TWO-WAY TRAFFIC WHEN FORCE MAIN REPLACEMENT IS NOT UNDERWAY.
8. THE EXISTING GRAVITY SEWER AND STORM DRAINS CROSSED BY THE PROPOSED WORK SHALL BE CCTV INSPECTED TO DOCUMENT PRE- AND POST-INSTALLATION CONDITIONS.



GRAPHIC SCALE: 1"= 20' HORIZ. (0 20 40 60)

GRAPHIC SCALE: 1"= 10' VERT. (0 10 20 30)

NO.	DATE	BY	REVISION

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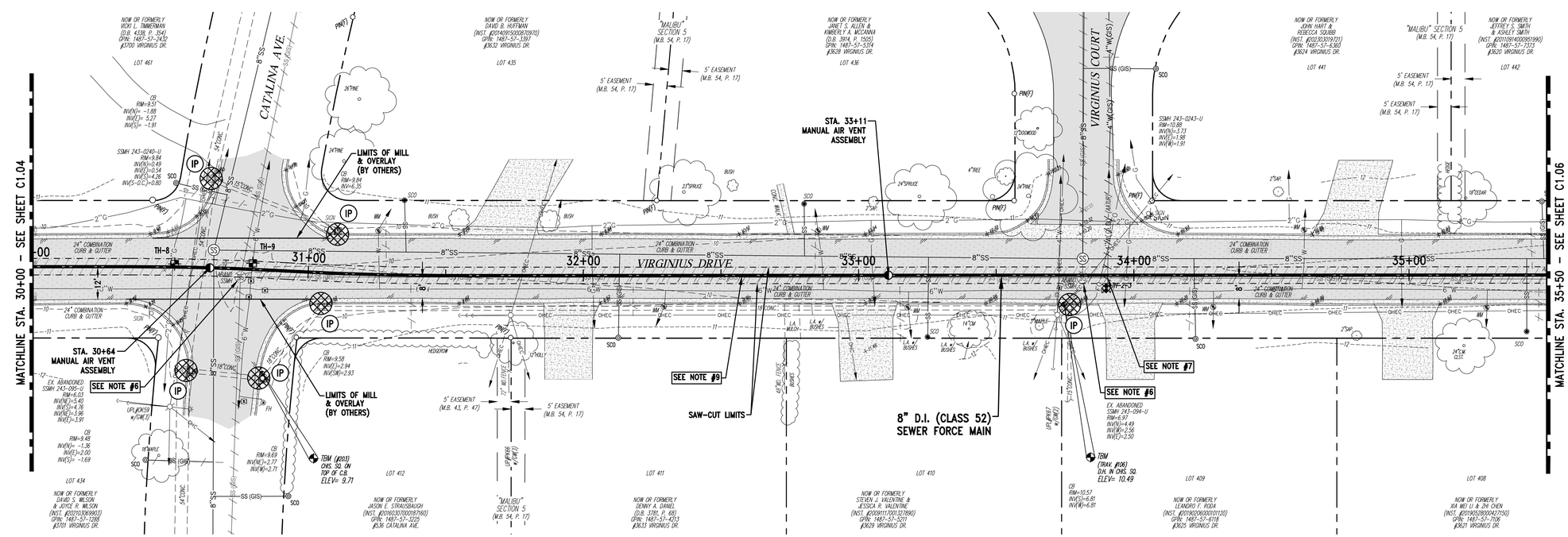
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IFB NO.	---
PROJECT NO.	203470
CADD FILE	C100 PLANPROF

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

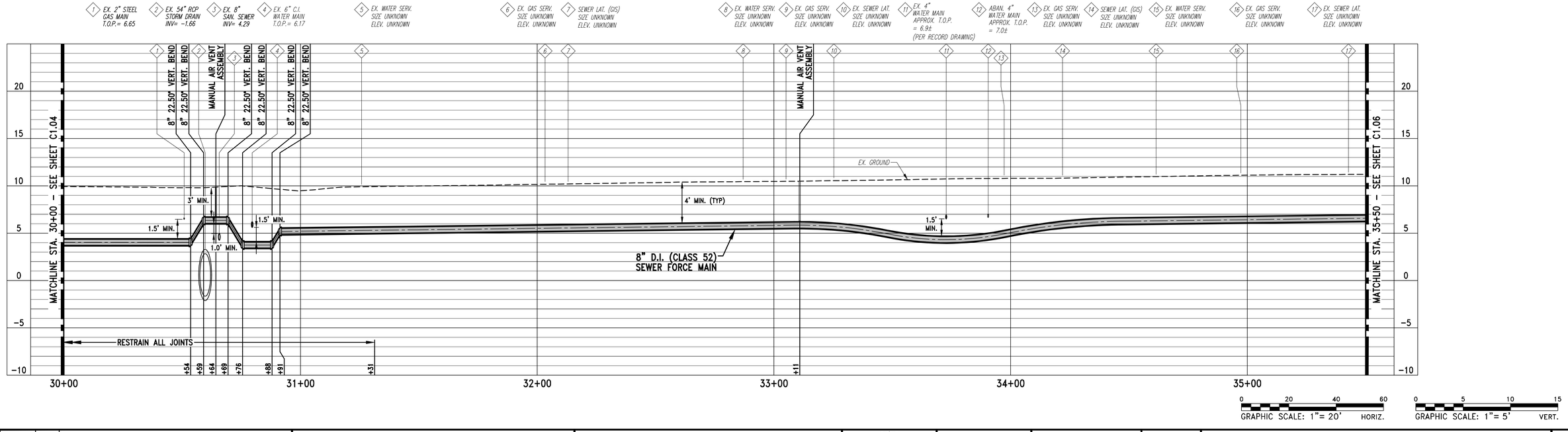
FORCE MAIN PLAN & PROFILE
STA. 25+50 TO 30+00

SHEET	C1.04
OF	
DRAWING	9 OF 17



NOTES

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6. LOCATION & DEPTH OF ABANDONED MANHOLES AND GRAVITY SEWER ARE APPROXIMATE, BASED ON RECORD DRAWINGS. THEY ARE NOT SHOWN IN THE PROFILE. REMOVE AS NEEDED FOR FORCE MAIN INSTALLATION. ABANDONED MANHOLE SHALL BE PARTIALLY REMOVED TO A MINIMUM DEPTH OF 12-INCHES BELOW THE PROPOSED FORCE MAIN AND BACKFILLED WITH VDOT #57 STONE TO BELOW PIPE BEDDING.
7. LOCATION & DEPTH OF ABANDONED WATER MAIN IS APPROXIMATE BASED ON RECORD DRAWINGS. REMOVE AS NEEDED FOR FORCE MAIN INSTALLATION.
8. ABANDONED SANITARY SEWER, LATERALS AND MANHOLES FROM GIS RECORDS ARE NOT SHOWN IN PROFILE.
9. PROVIDE DETOUR IN ACCORDANCE WITH TTC34.0 WHEN FORCE MAIN INSTALLED ON VIRGINIUS DRIVE.
10. RESTORE TWO-WAY TRAFFIC WHEN FORCE MAIN REPLACEMENT IS NOT UNDERWAY.
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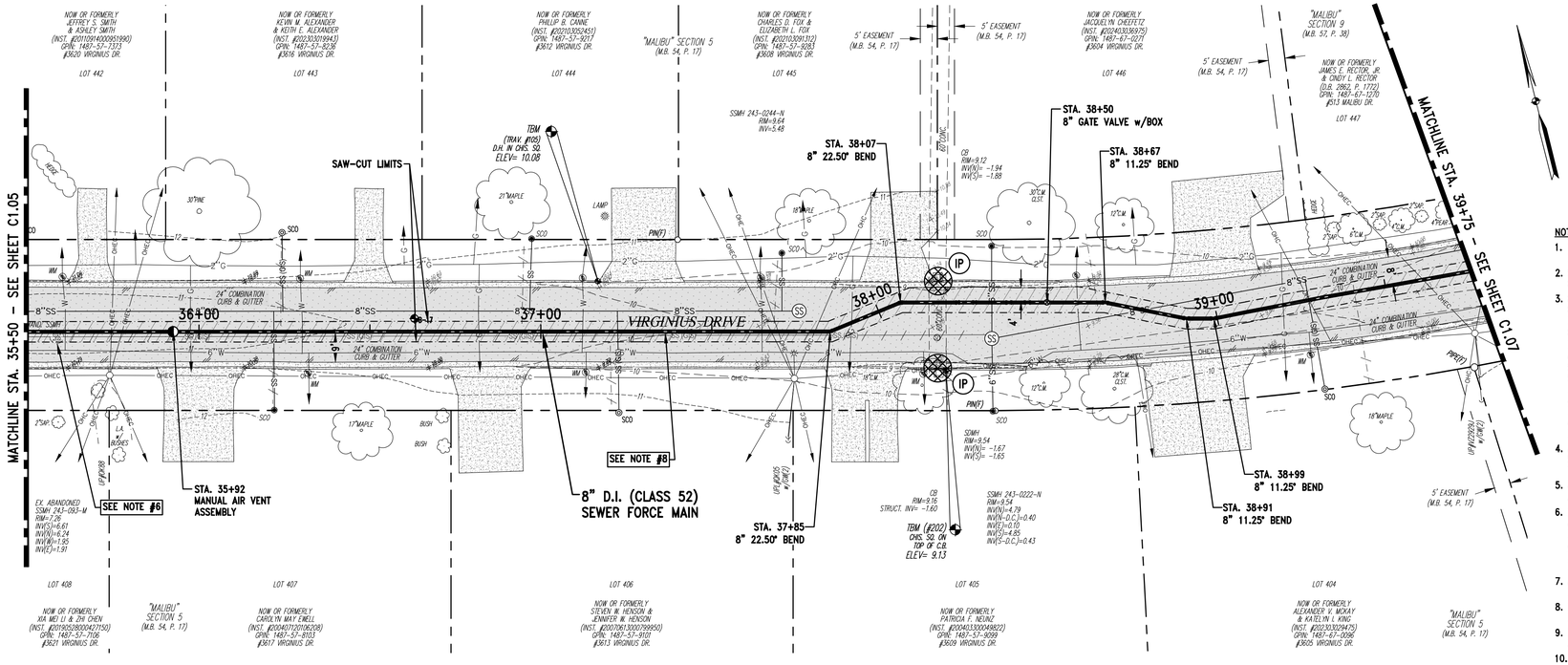
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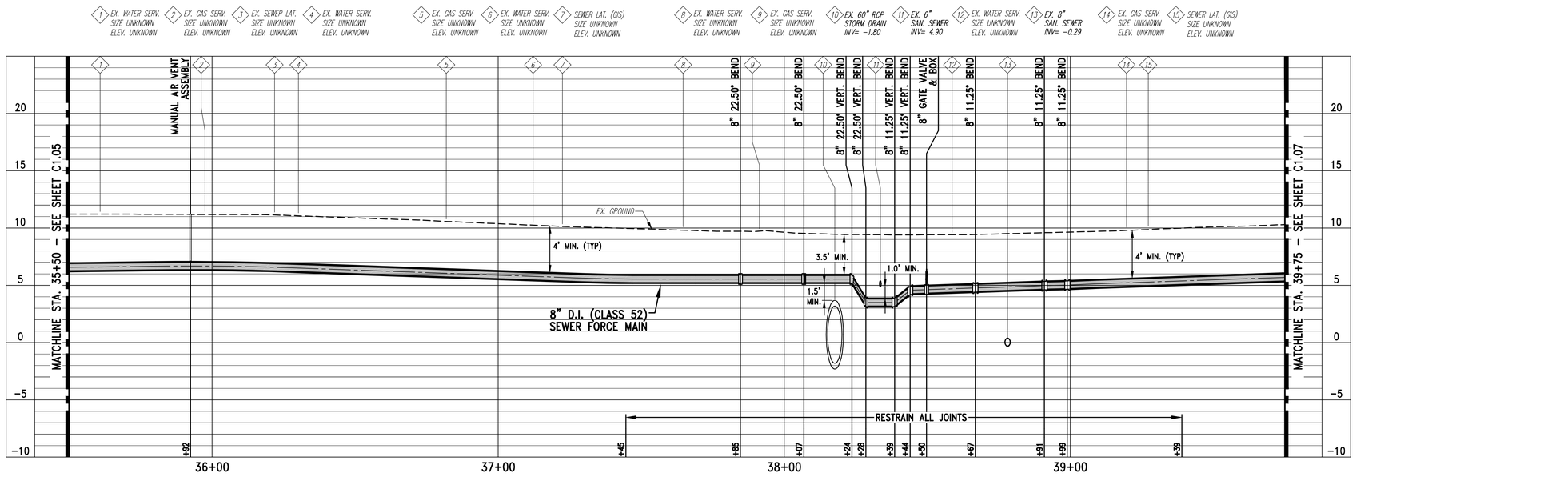
IFB NO.	---
PROJECT NO.	203470
CADD FILE	C100 PLANPROF

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

FORCE MAIN PLAN & PROFILE
STA. 30+00 TO 35+50

SHEET	C1.05
OF	
DRAWING	10 OF 17





NOTES

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7. ABANDONED SANITARY SEWER, LATERALS, AND MANHOLES FROM GIS RECORDS ARE NOT SHOWN IN PROFILE.
8. PROVIDE DETOUR IN ACCORDANCE WITH TTC34.0 WHEN FORCE MAIN INSTALLED ON VIRGINIUS DRIVE.
9. RESTORE TWO–WAY TRAFFIC WHEN FORCE MAIN REPLACEMENT IS NOT UNDERWAY.
10. THE EXISTING GRAVITY SEWER AND STORM DRAINS CROSSED BY THE PROPOSED WORK SHALL BE CCTV INSPECTED TO DOCUMENT PRE– AND POST–INSTALLATION CONDITIONS.

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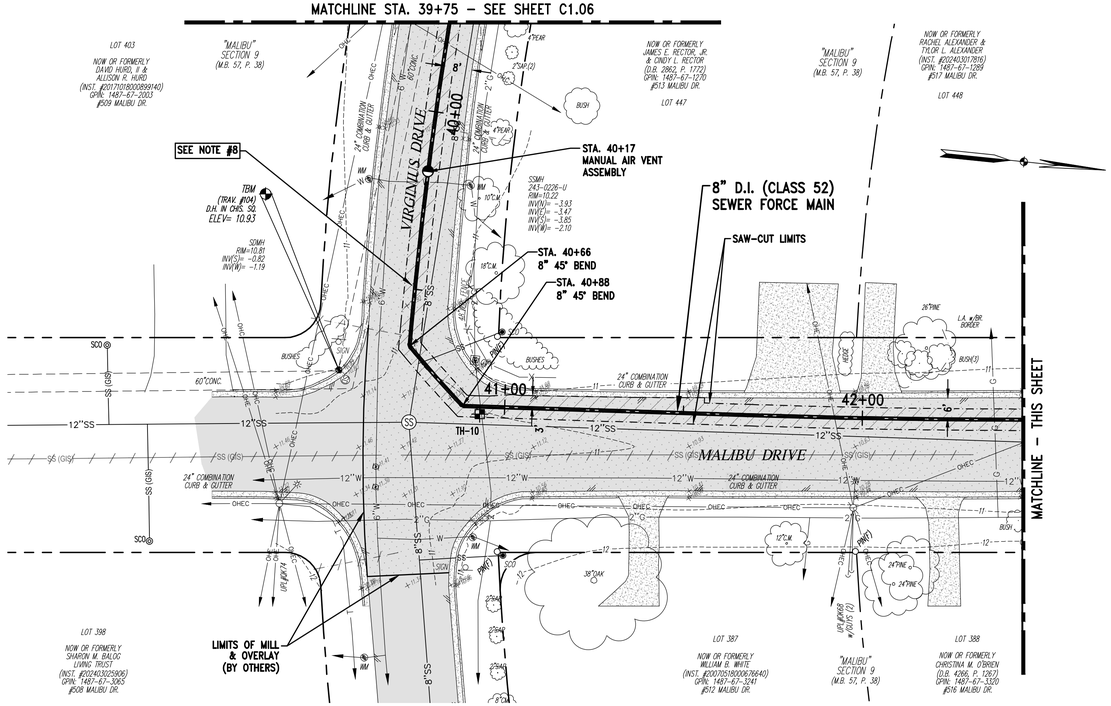
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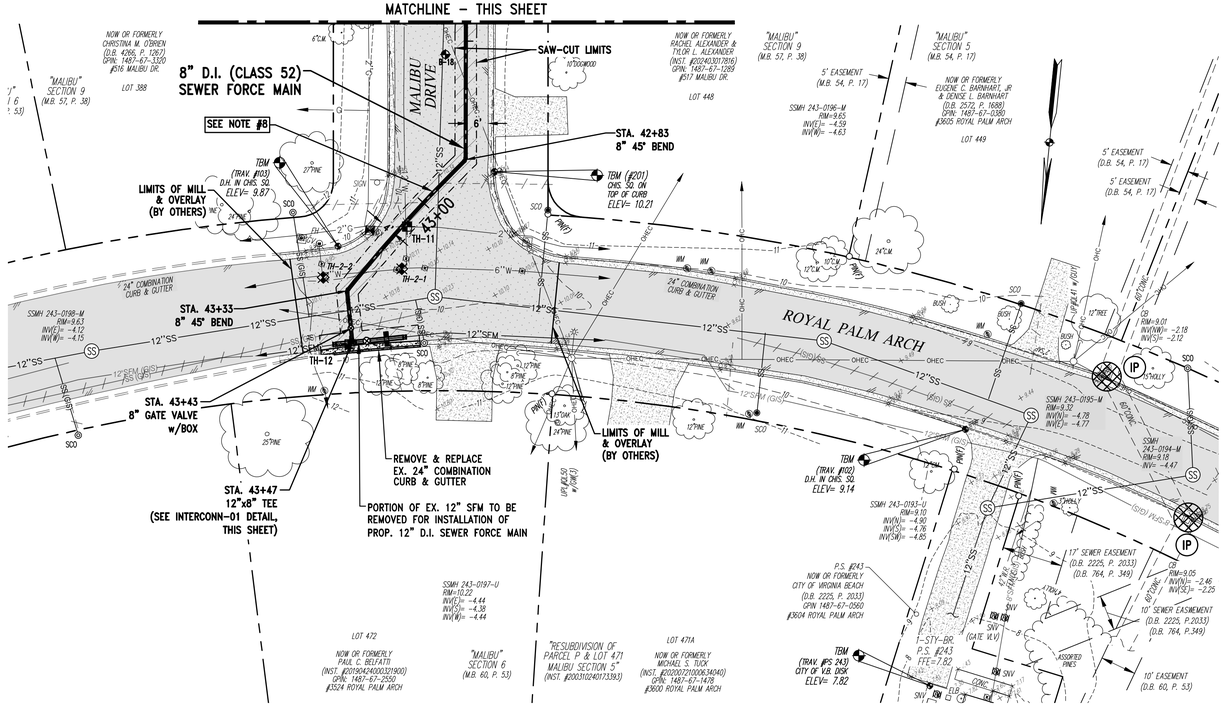
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CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

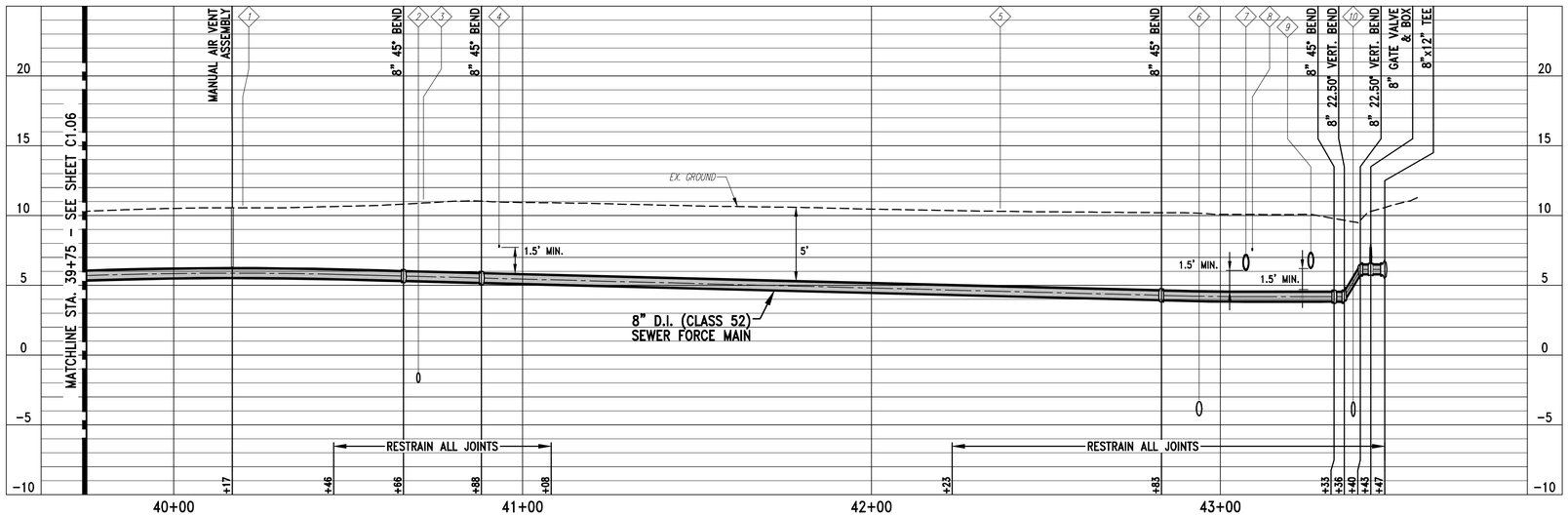
FORCE MAIN PLAN & PROFILE
STA. 35+50 TO 39+75

SHEET	C1.06
OF	
DRAWING	11 OF 17





1. EX. WATER SERV. SIZE UNKNOWN ELEV. UNKNOWN
2. EX. 8" SAN. SEWER INV= –1.94
3. EX. SEWER LAT. SIZE UNKNOWN ELEV. UNKNOWN
4. EX. 2" STEEL GAS MAIN T.O.P.= 7.90
5. EX. GAS SERV. SIZE UNKNOWN ELEV. UNKNOWN
6. EX. 12" SAN. SEWER INV= –4.32
7. EX. 12" C.I. WATER MAIN T.O.P.= 7.15
8. EX. 2" STEEL GAS MAIN T.O.P.= 7.66
9. EX. 12" WATER MAIN APPROX. T.O.P. = 7.3±
10. EX. 12" SAN. SEWER INV= –4.37

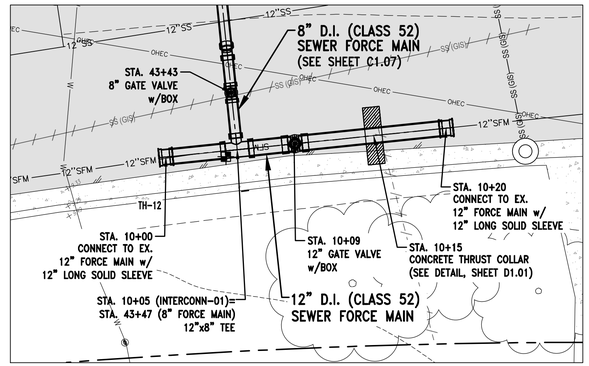


GRAPHIC SCALE: 1"= 20' HORIZ.

GRAPHIC SCALE: 1"= 5' VERT.

NOTES

1. THE PROPOSED D.I. SANITARY SEWER FORCE MAIN SHALL BE PROTECTO 401 LINED AND ENCASED WITH V-BIO POLYWRAP.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ADVANCED INVESTIGATION OF THE 12" FORCE MAIN AT THE TIE-IN LOCATIONS AND PROVIDE THE OWNER/ENGINEER INFORMATION (OUTSIDE DIAMETER, MATERIAL, AND JOINT CONFIGURATION, ETC.) TO DETERMINE IF ADJUSTMENT OF TIE-IN IS NECESSARY. CONTRACTOR WILL NOT BE ELIGIBLE FOR ADDITIONAL COMPENSATION OR DELAY CLAIMS ASSOCIATED WITH TIE-IN ADJUSTMENTS.
3. SANITARY SEWER LATERAL LOCATIONS ARE APPROXIMATE, BASED ON CURRENT RECORDS AND FIELD INVESTIGATIONS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UTILITY CROSSINGS INCLUDING SANITARY SEWER LATERALS, WATER SERVICE LINES, AND GAS SERVICE LINES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION TO PROVIDE THE OWNER/ENGINEER INFORMATION (SIZE, MATERIAL, ELEVATION, CLEARANCE, ETC.) TO DETERMINE IF ADJUSTMENT OF THE SFM PROFILE IS NECESSARY. CONTRACTOR SHALL PROVIDE THE CONFLICT INFORMATION TO THE OWNER/ENGINEER SUFFICIENTLY IN ADVANCE OF THE WORK SCHEDULE TO FACILITATE DESIGN AND CONSTRUCTION OF ADJUSTMENTS IN THE PROPOSED PIPE ALIGNMENT AS REQUIRED TO AVOID CONFLICTS. CONTRACTOR WILL NOT BE ELIGIBLE FOR ADDITIONAL COMPENSATION OR DELAY CLAIMS ASSOCIATED WITH PIPELINE ADJUSTMENTS DUE TO LATERAL/WATER/GAS SERVICE LINE CONFLICTS.
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6. AREAS WHERE CURB AND GUTTER ARE DAMAGED SHALL BE REPLACED JOINT TO JOINT AT CONTRACTOR'S EXPENSE.
7. ABANDONED SANITARY SEWER AND LATERALS FROM GIS RECORDS ARE NOT SHOWN IN PROFILE.
8. PROVIDE DETOUR IN ACCORDANCE WITH TTC34.0 WHEN FORCE MAIN INSTALLED ON VIRGINIUS DRIVE AND CROSSING ROYAL PALM ARCH.
9. RESTORE TWO-WAY TRAFFIC WHEN FORCE MAIN REPLACEMENT IS NOT UNDERWAY.
10. THE EXISTING GRAVITY SEWER AND STORM DRAINS CROSSED BY THE PROPOSED WORK SHALL BE CCTV INSPECTED TO DOCUMENT PRE- AND POST-INSTALLATION CONDITIONS.



INTERCONN-01 DETAIL

SCALE: 1"=5'

NO.	DATE	BY	REVISION

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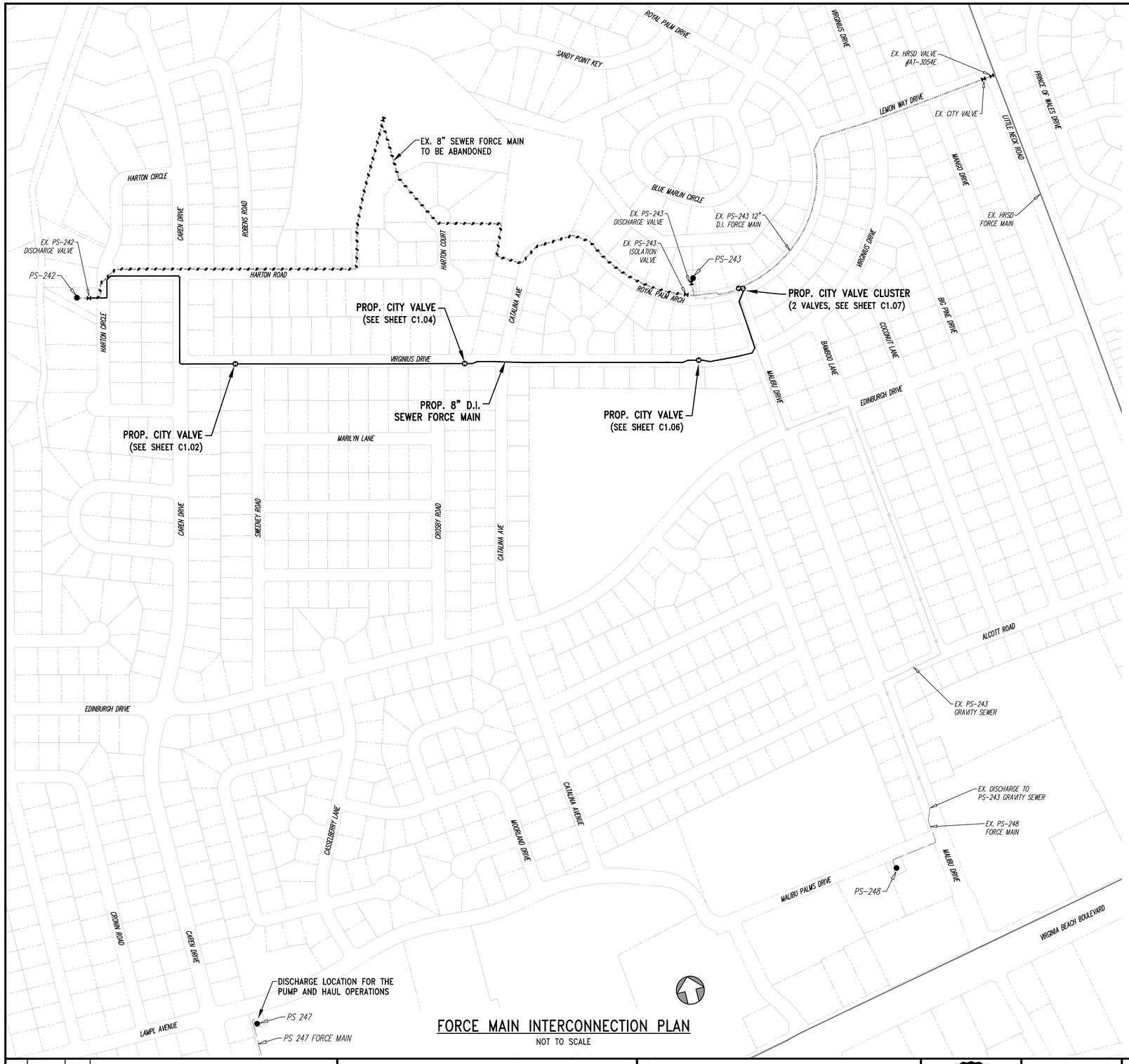
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CADD FILE	C100 PLANPROF

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

FORCE MAIN PLAN & PROFILE
STA. 39+75 TO 43+47

SHEET	C1.07
OF	
DRAWING	12 OF 17



FORCE MAIN INTERCONNECTION PLAN

NOT TO SCALE

INTERCONNECTION GENERAL NOTES

1. THE EXISTING FORCE MAIN LOCATION IS APPROXIMATE, BASED ON CITY'S GIS DATA.
2. PRIOR TO INSTALLATION OF NEW FORCE MAIN, CONTRACTOR SHALL BE RESPONSIBLE FOR ADVANCED INVESTIGATION OF THE FORCE MAIN AT THE TIE-IN LOCATIONS (OUTSIDE DIAMETER, MATERIAL, ELEVATION, AND JOINT CONFIGURATION, ETC.). CONTRACTOR SHALL PREPARE AND SUBMIT TO OWNER FOR APPROVAL A DRAWING DETAILING EACH CONNECTION BETWEEN THE EXISTING FORCE MAIN AND THE NEW FORCE MAIN. THE DRAWINGS SHALL BE TO SCALE AND SHALL SHOW THE FIELD-VERIFIED SIZE, MATERIAL, LOCATION, DEPTH, AND BEARING OF THE EXISTING FORCE MAIN. THE DRAWINGS SHALL SHOW ALL FITTINGS, JOINT DEFLECTIONS, AND ANY OTHER METHOD TO BE USED TO MAKE THE TRANSITION FROM THE SIZE, MATERIAL, LOCATION, DEPTH, AND BEARING OF THE EXISTING FORCE MAIN TO THE SIZE, MATERIAL, LOCATION, DEPTH, AND BEARING OF THE PROPOSED FORCE MAIN. COSTS OF FIELD VERIFICATION SHALL BE INCIDENTAL TO OTHER ITEMS, AND SHALL NOT BE MEASURED FOR SEPARATE PAYMENT.
3. PRIOR TO TIE-INS, CONTRACTOR TO VERIFY WITH PUBLIC UTILITIES THAT EXISTING CITY VALVES ARE OPERATIONAL.
4. OPERATION OF ANY CITY VALVE AND AIR VENT BY THE CONTRACTOR IS STRICTLY PROHIBITED.
5. CONTRACTOR SHALL HAVE PUMP AND HAUL TRUCKS ADEQUATE TO HANDLE PUMP STATION FLOWS ON SITE. CONTRACTOR SHALL PREPARE AND SUBMIT TO OWNER FOR APPROVAL A DETAILED PLAN OF PUMP & HAUL OPERATIONS, INCLUDING NUMBER AND CAPACITY OF TRUCKS REQUIRED, HAUL PATH, AND DISCHARGE LOCATION. SEE PS FLOW DATA BELOW.
6. **THE CONTRACTOR SHALL PROVIDE SEPARATE CREWS WITH EQUIPMENT FOR EACH CONNECTION LOCATION SO THAT THE TWO CONNECTIONS CAN BE COMPLETED SIMULTANEOUSLY.**
7. CONTRACTOR SHALL PREPARE AND SUBMIT TO OWNER FOR APPROVAL A DETAILED SCHEDULE AND WORK PLAN FOR THE TWO TIE-INS, INCLUDING LIST OF PERSONNEL TO BE WORKING, LIST OF EQUIPMENT AND MATERIALS TO BE USED, SEQUENCE OF INSTALLATION, AND ANTICIPATED START AND COMPLETION TIMES FOR EACH ACTIVITY.
8. IN THE EVENT A SIGNIFICANT WET WEATHER EVENT IS FORECAST DURING THE SCHEDULED TIE-IN, THE OWNER RESERVES THE RIGHT TO POSTPONE THE TIE-INS.
9. CONTRACTOR SHALL HAVE ON SITE ALL REQUIRED MATERIALS AND EQUIPMENTS PRIOR TO STARTING TIE-INS. CONTRACTOR SHALL PRE-ASSEMBLE AS MUCH PIPE AS POSSIBLE PRIOR TO STARTING TIE-INS.

SEQUENCE OF CONSTRUCTION

THIS SUGGESTED SEQUENCE OF CONSTRUCTION IS A GENERAL CONSTRUCTION SEQUENCE FOR PERFORMING THE WORK OF THIS CONTRACT. CONTRACTOR BEARS FULL RESPONSIBILITY FOR DETAILED PLANNING, SEQUENCING, AND EXECUTING ALL ASPECTS OF THE WORK. CONTRACTOR MAY DEVELOP ITS OWN SEQUENCE OF CONSTRUCTION AND SUBMIT SAID SEQUENCE TO THE OWNER AND ENGINEER FOR REVIEW AND COMMENT. THE FOLLOWING SUGGESTED SEQUENCE IS NOT MANDATORY. CONTRACTOR SHALL PROVIDE SEWAGE FLOW CONTROL AS MAY BE NECESSARY DURING CONNECTIONS.

1. RECEIVE NOTICE TO PROCEED FROM CITY.
2. ATTEND PRECONSTRUCTION MEETING WITH CITY.
3. OBTAIN NECESSARY PERMITS.
4. PROVIDE ALL REQUIRED SUBMITTALS.
   - A. PROJECT SCHEDULE
   - B. SHOP DRAWINGS TO BE PROVIDED IN ACCORDANCE WITH SUBMITTAL LIST IN GOOD ORDER
5. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A MINIMUM 21-DAY NOTICE PRIOR TO THE START OF CONSTRUCTION TO ALLOW TIME TO PREPARE AND DISTRIBUTE THE GOOD NEWS LETTER. THE OWNER WILL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF THE PROPERTY ADJACENT TO THE PROJECT 14 DAYS PRIOR TO THE COMMENCEMENT OF WORK.
6. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS REQUIRED BY THE CONTRACT DOCUMENTS.
7. EMPLOY APPROPRIATE TRAFFIC CONTROL AS REQUIRED.
8. PHYSICALLY LOCATE THE EXISTING FORCE MAIN AT THE AREAS OF THE TWO TIE-INS PRIOR TO INSTALLATION OF ANY FORCE MAIN PIPE.
9. PREPARE AND SUBMIT TO ENGINEER FOR APPROVAL THE PLAN OF OPERATIONS FOR THE TIE-INS, TO INCLUDE DETAILED DRAWINGS TO THE TWO TIE-INS.
10. INSTALL FORCE MAIN TO THE EXTENT POSSIBLE WITHOUT INTERRUPTION OF SERVICE IN THE EXISTING FORCE MAIN UP TO EACH OF THE TWO TIE-INS.
11. TEST AND CONDITIONALLY ACCEPT THE NEW FORCE MAIN.
12. VERIFY THAT ALL PIPES, FITTINGS, ETC. REQUIRED TO COMPLETE THE TIE-INS ARE ON SITE AND EXCAVATE TIE-IN LOCATIONS.
    - A. PROVIDE PUMP AND HAUL OPERATIONS AS REQUIRED TO MAINTAIN FLOW CONTROL AT PUMP STATION 242 (PS 242) AND PS 243. THE DISCHARGE LOCATION FOR PUMP AND HAUL OPERATIONS IS PS 247 BIRCHWOOD MALL.
    - B. COORDINATE WITH PUBLIC UTILITIES (PU) OPERATIONS TO SHUT DOWN PS 242 AND PS 243 AND CLOSE EXISTING DISCHARGE VALVES AT PS 242 AND PS 243.
    - C. COORDINATE WITH PU OPERATIONS TO CLOSE THE EXISTING PS 243 ISOLATION VALVE.
    - D. COORDINATE WITH PU OPERATIONS TO CLOSE EXISTING CITY VALVE AT LITTLE NECK ROAD.
    - E. DEWATER EXISTING FORCE MAIN AS NEEDED AT TIE-IN LOCATIONS.
    - F. CONNECT THE NEW FORCE MAIN TO EXISTING FORCE MAIN NEAR PS 242 AND 243 SIMULTANEOUSLY USING SEPARATE CREWS AND EQUIPMENT.
    - G. COORDINATE WITH PU OPERATIONS TO OPEN EXISTING CITY VALVE AT LITTLE NECK ROAD, OPEN TWO NEW CITY VALVES AT VALVE CLUSTER AT ROYAL PALM ARCH, AND VERIFY THREE NEW CITY VALVES ALONG VIRGINIUS DRIVE ARE OPEN.
    - H. COORDINATE WITH PU OPERATIONS TO OPEN DISCHARGE VALVES AT PS 242 AND PS 243, OPERATE AIR VENT ASSEMBLY AND RESTART PS 242 AND PS 243.
    - I. VISUALLY INSPECT ALL JOINTS AT THE CONNECTIONS FOR SIGNS OF LEAKAGE AND RESTORE TRENCH UPON APPROVAL. INSTALL THRUST COLLAR ON 12-INCH FORCE MAIN PRIOR TO FULL TRENCH RESTORATION AFTER DISCONTINUING PUMP AND HAUL OPERATIONS.
    - J. DISCONTINUE PUMP AND HAUL OPERATIONS AT PS 242 AND PS 243.
13. DEWATER AND ABANDON THE EXISTING FORCE MAIN. FORCE MAIN LOCATED OUTSIDE RIGHT-OF-WAY LIMITS SHALL BE ABANDONED WITHOUT FLOWABLE FILL; FORCE MAIN LOCATED INSIDE RIGHT-OF-WAY LIMITS SHALL BE ABANDONED WITH FLOWABLE FILL. SEE FORCE MAIN ABANDONMENT PLAN ON SHEET C3.01. EXISTING PS 243 ISOLATION VALVE WILL REMAIN CLOSED DURING FORCE MAIN ABANDONMENT.
14. PRIOR TO PLUGGING TEE AT PS 243, VERIFY PS 243 ISOLATION VALVE IS CLOSED. COORDINATE WITH PU OPERATIONS TO SHUTDOWN PS 243, CLOSE EXISTING DISCHARGE VALVE AT PS 243, AND CLOSE NEW MAINLINE VALVE AT CITY VALVE CLUSTER AT ROYAL PALM ARCH. PROVIDE FLOW CONTROL AT PS 243 AS NEEDED.
    - A. AFTER PLUGGING TEE AT PS 243, COORDINATE WITH OPERATIONS TO OPEN NEW MAINLINE VALVE AT CITY VALVE CLUSTER AT ROYAL PALM ARCH, OPEN EXISTING DISCHARGE VALVE AT PS 243, AND ACTIVATE PS 243.
    - B. VISUALLY INSPECT PLUGGED TEE FOR LEAKAGE AND RESTORE TRENCH UPON APPROVAL.
15. PERFORM FINAL SITE WORK AND RESTORATION AS REQUIRED.
16. REMOVE EROSION AND SEDIMENT CONTROL MEASURES. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL STABILIZATION OR AS DIRECTED BY PU INSPECTOR.
17. SCHEDULE AND CONDUCT FINAL INSPECTION.

TABLE 1
PUMP STATION (PS) FLOW DATA

PS NO.	AVE. DAILY FLOW RATE	MAX. INFLOW RATE
PS 242	77 (GPM)	164 (GPM)
PS 243	126 (GPM)	344 (GPM)

NOTE:
CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH PUBLIC UTILITIES TO INSPECT PUMP STATION TO STAGE APPROPRIATE EQUIPMENT AND ADEQUATE NUMBER OF TRUCKS FOR PUMP STATION FLOW CONTROL.

TABLE 2
APPROXIMATE FORCE MAIN DEWATERING QUANTITIES

LOCATION	ESTIMATED VOLUME
PS 242 FORCE MAIN	9,140 GALLONS
PS 243 FORCE MAIN	10,225 GALLONS

NOTE:
THIS DATA IS GIVEN FOR INFORMATIONAL PURPOSES ONLY AND IS DERIVED FROM RECORD DRAWINGS (NOT FIELD VERIFIED) AND NO GUARANTEES ARE GIVEN TO THE CONTRACTOR REGARDING THE VOLUME OF RESIDUAL SEWAGE.

NO.	DATE	BY	REVISION

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COMMONWEALTH OF VIRGINIA
JILL K. DIBATTISTA
Lic. No. 035766
01/19/26
PROFESSIONAL ENGINEER

BID DOCUMENTS

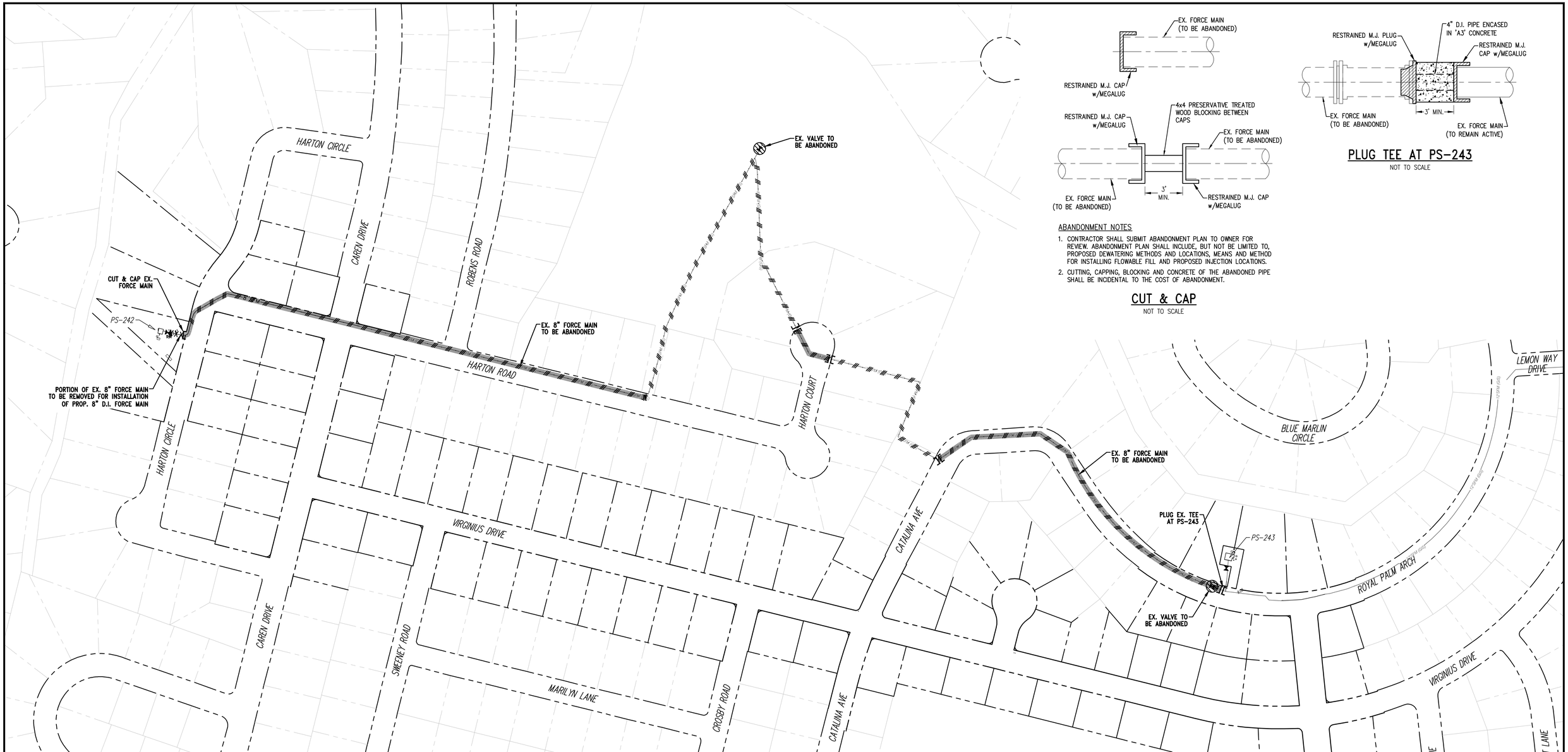
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VERT:	N/A
DATE:	JAN 2026
DRAWN BY:	NEL
DESIGN BY:	LG
APPROVED BY:	JKD

IFB NO. ---
PROJECT NO. 203470
CADD FILE INTERCONN

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

INTERCONNECTION PLAN

SHEET C2.01 OF
DRAWING 13 OF 17



PLUG TEE AT PS-243

NOT TO SCALE

ABANDONMENT NOTES

1. CONTRACTOR SHALL SUBMIT ABANDONMENT PLAN TO OWNER FOR REVIEW. ABANDONMENT PLAN SHALL INCLUDE, BUT NOT BE LIMITED TO, PROPOSED DEWATERING METHODS AND LOCATIONS, MEANS AND METHOD FOR INSTALLING FLOWABLE FILL AND PROPOSED INJECTION LOCATIONS.
2. CUTTING, CAPPING, BLOCKING AND CONCRETE OF THE ABANDONED PIPE SHALL BE INCIDENTAL TO THE COST OF ABANDONMENT.

CUT & CAP

NOT TO SCALE

ABANDONMENT NOTES

1. ABANDONMENT OF FORCE MAIN, VALVES, ETC. SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT DOCUMENTS.
   - A. SEWER PIPELINES SHALL BE ABANDONED WITH FLOWABLE FILL WITHIN RIGHT-OF-WAY AND WITHOUT FLOWABLE FILL OUTSIDE OF RIGHT-OF-WAY UNLESS OTHERWISE SHOWN ON THE PLANS. SEWER PIPE LINES SHALL BE REMOVED AS NEEDED FOR INSTALLATION OF NEW WORK.
   - B. ABANDONMENT OF VALVES SHALL CONSIST OF REMOVING AND DISPOSING OF VALVE BOX FRAME AND COVER TO A MINIMUM OF 36-INCHES BELOW GRADE. THE VALVE SHALL BE FULLY CLOSED AND OPERATING NUT REMOVED UNLESS OTHERWISE NOTED.
2. THE EXCAVATED AREAS SHALL BE BACKFILLED WITH SELECT FILL, TYPE II.
3. EXCAVATED AREAS WITHIN THE PAVEMENT RESULTING FROM ABANDONMENT OPERATIONS DESCRIBED ABOVE SHALL BE RESTORED IN ACCORDANCE WITH HRPDC SECTION 530.
4. ALL ABANDONMENT WITHIN PAVED AREAS SHALL BE PERFORMED PRIOR TO THE FINAL RESTORATION.
5. EXCAVATED AREAS THAT LIE WITHIN NON-PAVED AREAS SHALL BE TOP-SOILED AND SEEDED IN ACCORDANCE WITH HRPDC SECTIONS 602 AND 603.

ABANDONMENT LEGEND

- SEWER FORCE MAIN ABANDONMENT WITHOUT FLOWABLE FILL
- SEWER FORCE MAIN ABANDONMENT WITH FLOWABLE FILL
- CUT & CAP (SFM)
- SEWER FORCE MAIN VALVE ABANDONMENT

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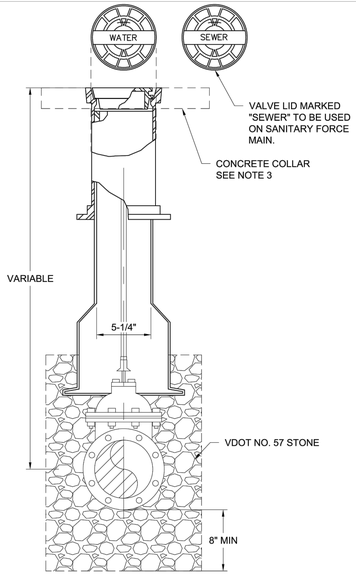
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VERT:	N/A
DATE:	JAN 2026
DRAWN BY:	NEL
DESIGN BY:	LG
APPROVED BY:	JKD

IFB NO.	---
PROJECT NO.	203470
CADD FILE	---

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

FORCE MAIN ABANDONMENT PLAN

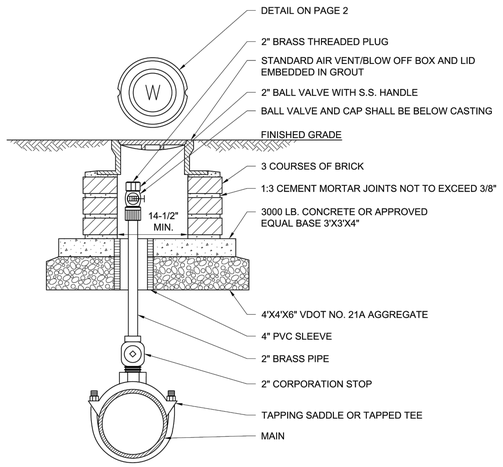
SHEET C3.01 OF DRAWING 14 OF 17



NOTES:

1. BUFFALO PATTERN, TWO-PIECE SLIDING TYPE, ADJUSTABLE VALUE BOX, 5-1/4" SHAFT.
2. THREADED BOXES NOT PERMITTED.
3. ADD 2' X 2' X 6" CONCRETE COLLAR FOR VALVE BOXES NOT WITHIN A PAVED AREA.

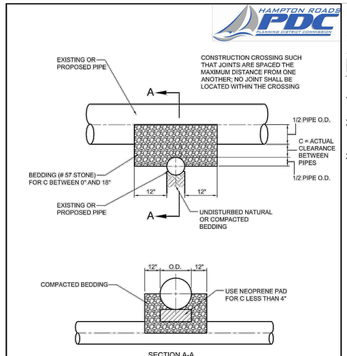
Public Utilities DATE: 10/2023	CITY OF VIRGINIA BEACH - PUBLIC UTILITIES STANDARD DETAILS	SCALE: NOT TO SCALE
	VALVE BOX	DRAWING NO. PU 8.6
		SHEET NO. 1 OF 1



NOTE:

1. ALL APPURTENANCES FOR WATER MAIN ASSEMBLIES SHALL BE CONSTRUCTED OF NON-LEAD COMPONENTS

Public Utilities DATE: 10/2023	CITY OF VIRGINIA BEACH - PUBLIC UTILITIES STANDARD DETAILS	SCALE: NOT TO SCALE
	MANUAL AIR VENT/BLOW OFF ASSEMBLY	DRAWING NO. PU 8.10
		SHEET NO. 1 OF 2



NOTE:

1. USE OF THIS DETAIL MUST BE APPROVED BY THE LOCALITY.

PIPE CROSSING

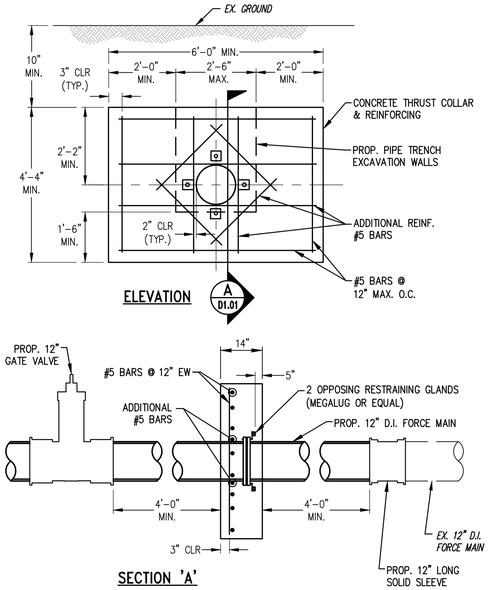
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REFERENCE	CATEGORY	DATE	SHEET No.	DETAIL No.
200, 801, 802, 803	WATER & SANITARY	6/16	1 OF 1	WS_09

Public Utilities DATE: 10/2023	CITY OF VIRGINIA BEACH - PUBLIC UTILITIES STANDARD DETAILS	SCALE: NOT TO SCALE
	PIPE CROSSING	DRAWING NO. PU 3.5
		SHEET NO. 1 OF 1

VIRGINIA BEACH MODIFICATIONS TO REGIONAL STANDARDS SIXTH EDITION

1. USE OF THIS DETAIL REQUIRES VARIANCE APPROVAL.
2. ADDITIONAL MEASURES MAY BE REQUIRED BEYOND WHAT IS SHOWN ON DETAIL THAT WILL BE DETERMINED DURING THE VARIANCE PROCESS.
3. DETAIL TO BE USED FOR VERTICAL CLEARANCES LESS THAN 18".

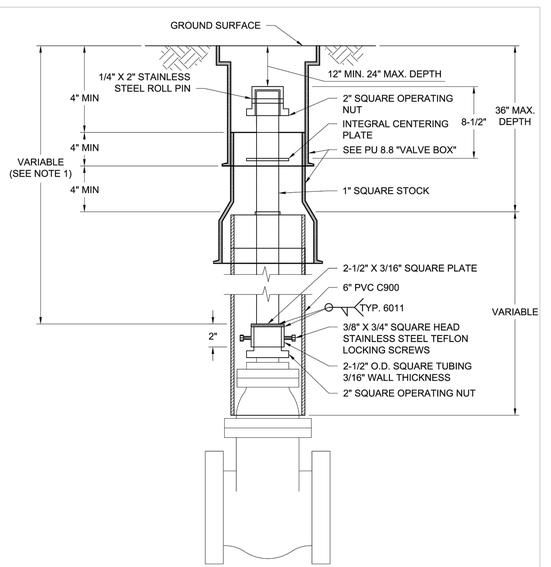


NOTES

1. BEARING AREA IS BASED ON 100 PSI TEST PRESSURE AND A SOIL BEARING CAPACITY OF 2,000 POUNDS PER SQUARE FOOT. ALLOWABLE BEARING CAPACITY SHALL BE VERIFIED BY A GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR AND SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL.
2. CONTRACTOR SHALL COMPACT ON ALL SIDES OF THRUST COLLAR TO PROVIDE MINIMUM SOIL BEARING PRESSURE REQUIRED IN NOTE 1.
3. CONCRETE STRENGTH SHALL BE CLASS B (4,000 PSI).
4. ALL REBAR SHALL BE ASTM A615 GRADE 60.
5. MAINTAIN 2" CLEAR BETWEEN ALL REBARS AND PIPE.

CONCRETE THRUST COLLAR

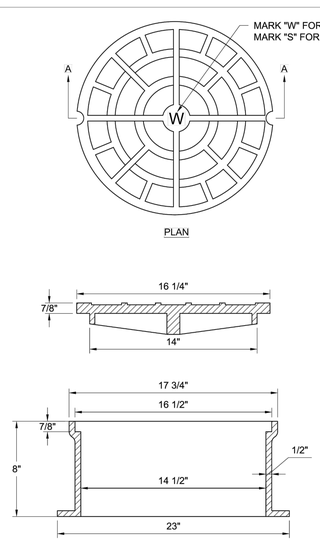
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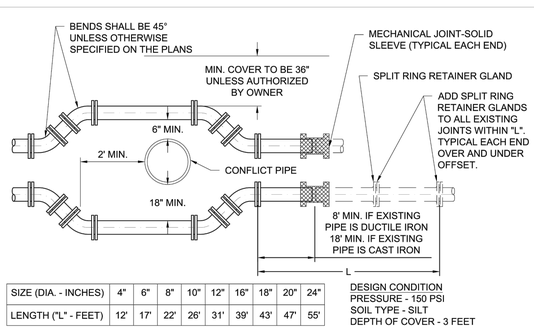
NOTE:

1. DEPTH GREATER THAN 5-FEET REQUIRES A STEM EXTENSION.
2. VALVE NUTS SHALL BE RED FOR WATER & BLACK FOR SEWER.

Public Utilities DATE: 10/2023	CITY OF VIRGINIA BEACH - PUBLIC UTILITIES STANDARD DETAILS	SCALE: NOT TO SCALE
	VALVE STEM EXTENSION	DRAWING NO. PU 8.7
		SHEET NO. 1 OF 1



Public Utilities DATE: 10/2023	CITY OF VIRGINIA BEACH - PUBLIC UTILITIES STANDARD DETAILS	SCALE: NOT TO SCALE
	MANUAL AIR VENT/BLOW OFF ASSEMBLY	DRAWING NO. PU 8.10
		SHEET NO. 2 OF 2



SIZE (DIA. - INCHES)	4"	6"	8"	10"	12"	16"	18"	20"	24"
LENGTH ("L" - FEET)	12'	17'	22'	26'	31'	39'	43'	47'	55'

DESIGN CONDITION
PRESSURE - 150 PSI
SOIL TYPE - SILT
DEPTH OF COVER - 3 FEET

NOTES:

1. VERTICAL SEPARATION OF LESS THAN 18" REQUIRES VARIANCE APPROVAL.
2. RETAINER GLANDS ARE REQUIRED AT EACH FITTING.
3. ALL PIPE AND FITTINGS SHALL BE DUCTILE IRON, MECHANICAL JOINT, CLASS 52 (MIN.).
4. EXISTING C.I. PIPE SHALL BE REPLACED WITH AN 18' MINIMUM LENGTH OF D.I. PIPE AT BOTH ENDS OF THE OFFSET AND RETAINER GLANDS INSTALLED.
5. THE EXISTING PIPE SHALL HAVE ALL JOINTS WITHIN THE LENGTH "L" RESTRAINED BY ADDING A SPLIT RING RETAINER GLAND WITH BOLTS TO THE M.J. BELL.
6. LENGTH "L" IN FEET SHALL CONFORM TO THE TABLE ABOVE UNLESS LONGER LENGTHS ARE SHOWN ON THE PLANS. REQUIRED RESTRAINING LENGTH (L) APPLIES ONLY FOR DESIGN CONDITION SPECIFIED.
7. SPLIT RING RETAINER GLANDS ARE FOR THE USE ON DUCTILE IRON MECHANICAL JOINT PIPE ONLY. IF EXISTING PIPE IS ANY OTHER MATERIAL, REMOVE AND REPLACE WITH D.I. MECHANICAL JOINT PIPE FOR THE LENGTH "L" SPECIFIED.

Public Utilities DATE: 10/2023	CITY OF VIRGINIA BEACH - PUBLIC UTILITIES STANDARD DETAILS	SCALE: NOT TO SCALE
	VERTICAL OFFSET WATER AND SANITARY SEWER FACILITIES	DRAWING NO. PU 3.6
		SHEET NO. 1 OF 1

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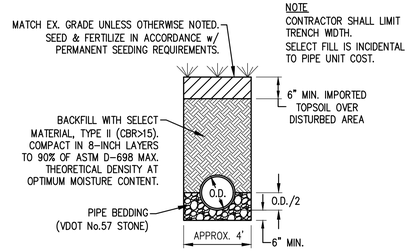
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VERT:	N/A
DATE:	JAN 2026
DRAWN BY:	NEL
DESIGN BY:	LG
APPROVED BY:	JKD

IFB NO. ---
PROJECT NO. 203470
CADD FILE D100 DETAILS

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

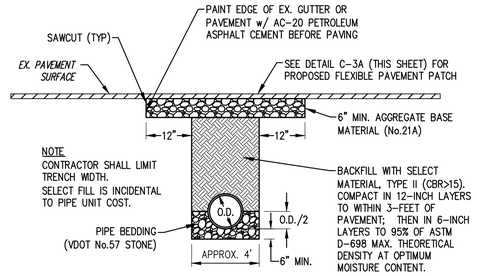
DETAILS

SHEET D1.01 OF
DRAWING 15 OF 17



TRENCH FOR UNPAVED AREAS

NOT TO SCALE

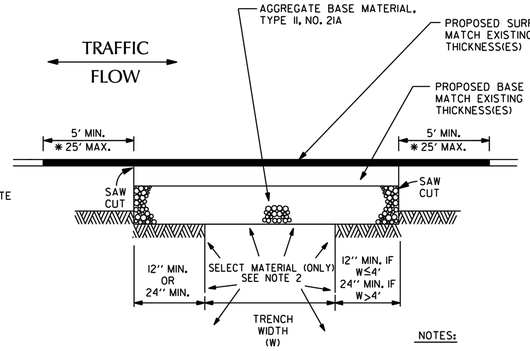


TRENCH FOR PAVED AREAS

NOT TO SCALE

● ROADWAY RECONSTRUCTION - IS DEFINED AS A RECONSTRUCTION OF PAVEMENT THAT HAS BEEN REMOVED TO SUCH EXTENT THAT THIS PAVEMENT PATCH CANNOT BE USED. IN THE CASE OF ROADWAY RECONSTRUCTION, THE CONSULTING ENGINEER SHALL DESIGN THE PAVEMENT THICKNESS BASED ON THE CBR, ETC. OF THE SOIL TO GO BACK IN THE TRENCH. SEE SECTION 5.II OF PUBLIC WORKS DESIGN STANDARDS, AND ROADWAY PATCH DEFINITION.

● ROADWAY PATCH - IS DEFINED AS A REPAIR OF A PAVEMENT CUT THAT DOES NOT EXCEED APPROX. 5' WIDE, AT AN ANGLE BETWEEN 45 DEGREES AND 90 DEGREES TO THE LENGTH OF THE ROADWAY, OR UP TO A 10' x 10' SQUARE. MORE EXTENSIVE PAVEMENT CUTS ARE CONSIDERED ROADWAY RECONSTRUCTION.



* IF THE EXISTING STREET HAS BEEN RESURFACED WITHIN THE LAST 2 YEARS THEN IT IS IN A MORATORIUM STATUS OF 'NO OPEN CUTS' PERMITTED WITHOUT PUBLIC WORKS APPROVAL. IF APPROVED THEN AN ADDITIONAL 25-FOOT AREA BEFORE AND AFTER THE TRENCH AREA WILL HAVE TO BE MILLED AND RESURFACED WITH AN APPROPRIATE SURFACE ASPHALT COURSE MIX TO PROVIDE A SMOOTH TRANSITION.

ROADWAY PATCH FOR ASPHALT (ONLY) STREETS WITH THE CLASSIFICATION OF LOCAL OR COLLECTOR SHALL BE THE GREATER OF:

- MATCH THE EXISTING PAVEMENT, OR
- 1½" SM-9.5A SURFACE ASPHALT CONCRETE, OVER 3" BM-25.0A BASE MIX ASPHALT CONCRETE, OVER 6" AGGREGATE BASE MATERIAL, TYPE I NO. 21A, OVER COMPACTED SUBGRADE IF SUBGRADE IS A MINIMUM CBR OF 15. OTHERWISE SELECT MATERIAL WITH CBR ≥ 15 TO BE USED AS BACKFILL. IF CONCRETE IS UNDER ASPHALT, THEN CONCRETE MUST BE USED AND MATCH EXISTING PAVEMENT. SEE NOTE *1.

NOTES:

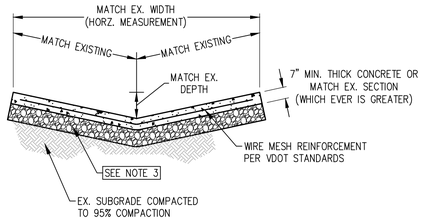
1) SEE SECTION 5 IN PUBLIC WORKS DESIGN STANDARDS. IN ALL CASES, IT IS ALWAYS PREFERABLE TO ACTUALLY DESIGN ANY PAVEMENT PATCH AND REPAIRS BASED ON GOOD ENGINEERING PRACTICES.

2) BACKFILL TO BE SELECT MATERIAL (CBR ≥ 15) COMPACTED IN 12" LAYERS TO 3' BELOW PAVEMENT AND THEN IN 6" LAYERS THEREAFTER TO 95% OF THE ASTM D-698 MAXIMUM THEORETICAL DENSITY.

3) USE OF TEMPORARY STEEL BRIDGE PLATE FOR TRAFFIC PRIOR TO PLACEMENT OF ASPHALT MUST BE APPROVED BY CITY INSPECTOR.

(N.T.S.)
REV. 5/14

CITY OF VIRGINIA BEACH
STANDARD
FLEXIBLE PAVEMENT PATCH FOR LOCAL & COLLECTOR STREETS
PUBLIC WORKS | C-3A



NOTES

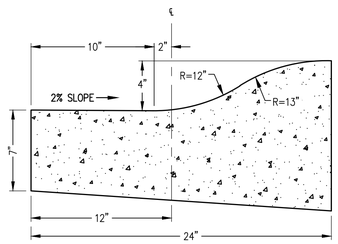
1. CONTRACTOR SHALL PROTECT THE EXISTING CONCRETE VALLEY GUTTER AND REPLACE SECTIONS DAMAGED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
2. IN AREAS WHERE CONCRETE VALLEY GUTTER REPLACEMENTS ARE REQUIRED, CONTRACTOR SHALL MATCH THE DIMENSIONS AND ELEVATIONS OF THE EXISTING VALLEY GUTTER, AND REPLACE SECTIONS TO THE NEAREST FULL JOINT.
3. A MINIMUM OF 6 INCHES OF BASE COURSE SHALL BE PLACED UNDER EACH SECTION OF VALLEY GUTTER TO BE REPLACED.
4. AS SOON AS CONCRETE WILL NOT SLUMP, FACE FORMS ARE TO BE REMOVED, IRREGULARITIES REMOVED, A LIGHT BROOM FINISH GIVEN, AND LIQUID MEMBRANE SEAL OR OTHER APPROVED CURING MEDIUM APPLIED.
5. THE CONTRACTOR SHALL PREVENT THE TEMPERATURE AT THE SURFACE OF THE CONCRETE FROM FALLING BELOW 40°F DURING THE FIRST 72 HOURS IMMEDIATELY FOLLOWING CONCRETE PLACEMENT. PROTECTIVE MATERIAL SHALL BE LEFT IN PLACE FOR AN ADDITIONAL 48 HOURS IF FREEZING AIR TEMPERATURES ARE EXPECTED TO CONTINUE.

VALLEY GUTTER

NOT TO SCALE

TEMPORARY PAVEMENT PATCH NOTE

BOTH VDOT AGGREGATE BASE MATERIAL No.21A & 21B ARE ACCEPTABLE FOR UP TO 2 WEEKS PRIOR TO THE PERMANENT PAVEMENT PATCH BEING INSTALLED. THE CONTRACTOR SHALL BE RESPONSIBLE TO KEEP TEMPORARY PAVEMENT PATCH SWEPT CLEAN.

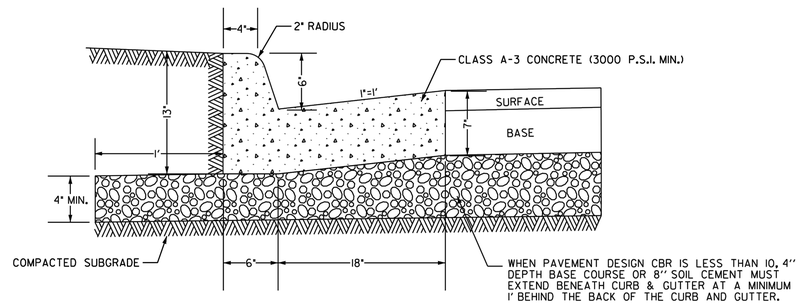


NOTES

1. CRACK CONTROL JOINTS TO BE PROVIDED AT 10 FT. INTERVALS BY SAWING, SCORING, "LEAVE-IN" INSERTS, OR CUTTER PLATES TO 1-1/2 INCH DEPTH.
2. AS SOON AS CONCRETE WILL NOT SLUMP, FACE FORMS ARE TO BE REMOVED, IRREGULARITIES REMOVED, A LIGHT BROOM FINISH GIVEN, AND LIQUID MEMBRANE SEAL OR OTHER APPROVED CURING MEDIUM APPLIED.
3. THE CONTRACTOR SHALL PREVENT THE TEMPERATURE AT THE SURFACE OF THE CONCRETE FROM FALLING BELOW 40°F DURING THE FIRST 72 HOURS IMMEDIATELY FOLLOWING CONCRETE PLACEMENT. PROTECTIVE MATERIAL SHALL BE LEFT IN PLACE FOR AN ADDITIONAL 48 HOURS IF FREEZING AIR TEMPERATURES ARE EXPECTED TO CONTINUE.
4. SEE DETAIL 'B-15, COMBINATION CURB & GUTTER VBCG-1' ON THIS SHEET FOR BASE COURSE REQUIREMENT.

ROLL TOP CURB

NOT TO SCALE



NOTES:

1. VDOT CG-7 AND CG-3 ARE REQUIRED FOR USE IN CITY RIGHT-OF-WAY, OR OTHER VDOT STANDARD CURB AND GUTTER WHERE POSTED SPEED OF VEHICLES WILL BE ≥ 45 MPH.
2. VDOT CG-2 OR CITY VBCG-1 NOT REQUIRED, BUT PERMITTED TO BE USED AS THE REQUIRED PERIMETER CURB AROUND PARKING ON PRIVATE PROPERTY.
3. ALL STREETS IN R.O.W. MUST USE CG-6 OR CG-2 OR OTHER APPROPRIATE VDOT STANDARD CURBS AND GUTTERS. VBCG-1 AND OTHER SPECIAL DESIGNS MUST BE APPROVED BY THE CITY REVIEW ENGINEER.

(N.T.S.)
REV. 5/14

CITY OF VIRGINIA BEACH
STANDARD
COMBINATION CURB & GUTTER VBCG-1
PUBLIC WORKS | B-15

NO.	DATE	BY	REVISION

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SCALE
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DRAWN BY: NEL
DESIGN BY: LG
APPROVED BY: JKD

IFB NO. ---
PROJECT NO. 203470
CADD FILE D100 DETAILS

CITY OF VIRGINIA BEACH DEPARTMENT OF PUBLIC UTILITIES
SA 242 S HARTON CIRCLE
PUMP STATION FORCE MAIN REPLACEMENT

DETAILS

SHEET D1.02
OF
DRAWING 16 OF 17

Notes for Shoulder Work with Minor Encroachment (Less than 40 mph) (Figure TTC-5.0) *(MUTCD TA-6)*

Guidance:

1. [Paragraph Deleted]

1a. If the closure operation is on a Limited Access highway, the minimum lane width is 11 feet. The minimum lane width is 10 feet for all other roads.

2. [Paragraph Deleted]

Option:

3-11. [Paragraphs Deleted]

11a. The ROAD WORK AHEAD (W20-1) sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.

Standard:

12-14. [Paragraphs Deleted]

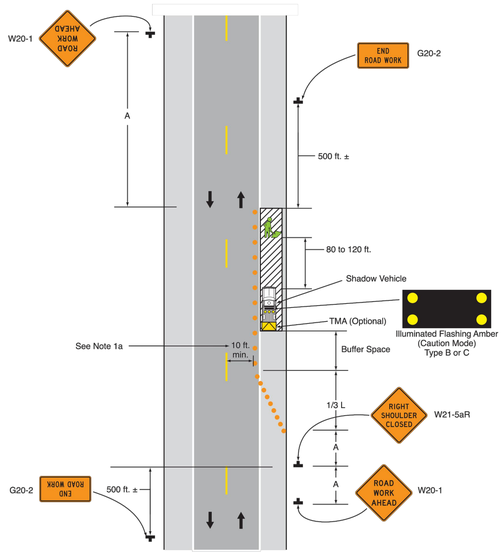
15. See Table 6P-V5 for taper lengths and Table 6P-V8 for channelizing device spacing.

16. On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.

17. The buffer space length shall be as shown in Table 6P-V4 for the speed limit.

18. When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.

Shoulder Work with Minor Encroachment (40 mph or Less) Figure TTC-5.0 *(MUTCD TA-6)*



Note: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6P-V3 for sign spacing requirements ("A").
See Tables 6P-V5 through 6P-V7 for taper length requirements.
See Table 6P-V8 for channelizing device spacing requirements.

Notes for Lane Closure on a Two-Lane Road Using Flaggers (V) (Figure TTC-23.0) *(MUTCD TA-10)*

Option:

1. Positive protection devices may be used per Section 6M.02.

Guidance:

1a. If necessary, the buffer space should be extended so that flaggers are placed where motorists will have a clear line of sight from the graphic flagger symbol sign to the flagger, and where motorists views of queued vehicles will not be blocked by hill crests or horizontal curves.

Option:

1b. Cones may be eliminated from the buffer space and work space areas when using a pilot vehicle operation or when the total roadway width is 20 feet or less.

Standard:

1c. Channelizing devices shall be provided to form the tapers, regardless of road width.

Guidance:

1d. To maintain efficient traffic flow in a flagging operation on a two-lane roadway, motorists should not be stopped more than 10 minutes at flagger stations. For additional information see Section 6D.05.

Standard:

1e. Portable Temporary Rumble Strips (PTRS) shall be used as noted in Section 6M.06.

1f. Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6P-V4).

1g. All flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6D.01, Qualifications for Flaggers).

1h. Cone spacing shall be based on the posted speed and the values in Table 6P-V8.

1i. A shadow vehicle shall be parked 80 to 120 feet in advance of the first work crew.

Option:

2. For low-volume situations with short TTC zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6D).

2a. Where a buffer space significantly greater than minimum must be provided so that the flagger is positioned to where he has adequate visibility as per paragraph 01a, a 48" x 48" SLOW (W21-V10) sign should be positioned approximately halfway between the flagger and the start of the work space.

3. The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short-duration operations.

4. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

5. [Paragraph Deleted]

5a. See TTC-69.0 for requirements for flagging with AFADs.

Guidance:

6. [Paragraph Deleted]

Standard:

7. At night, flagger stations shall be illuminated, except in emergencies.

Guidance:

8. [Paragraph Deleted]

8a. If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign, then the signs and PTRS should be readjusted at greater distances.

9. When a highway-rail grade crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail grade crossing (see Figure TTC-56.0 for additional information on highway-rail crossings).

10. When a grade crossing equipped with active warning devices exists within the activity area, provisions should be made for keeping flaggers informed as to the activation status of these warning devices.

11. When a grade crossing exists within the activity area, drivers operating on the left-hand side of the normal center line should be provided with comparable warning devices as for the drivers operating on the right-hand side of the normal center line.

12. Early coordination with the railroad company or transit agency should occur before work starts.

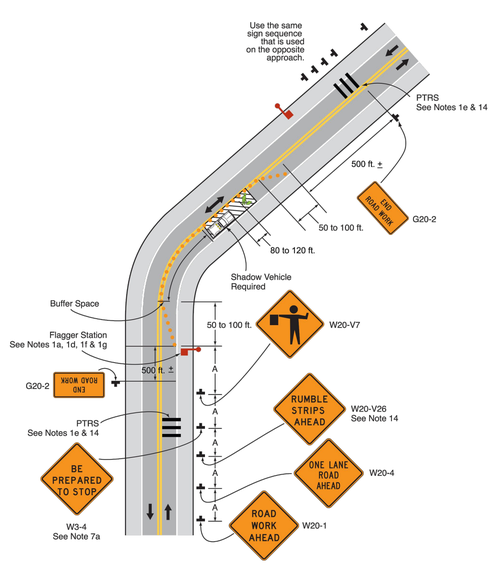
Option:

13. A flagger or a uniformed law enforcement officer may be used at the grade crossing to minimize the probability that vehicles are stopped within 15 feet of the grade crossing, measured from both sides of the outside rails.

Standard:

14. When used, three PTRS strips shall be installed across the entire travel lane adjacent to the BE PREPARED TO STOP (W3-4) sign. The PTRS shall be monitored and adjusted as necessary during the work shift to ensure proper placement on the roadway. When the PTRS are installed, the RUMBLE STRIPS AHEAD (W20-V26) sign shall also be used.

Lane Closure on a Two-Lane Road Using Flaggers Figure TTC-23.0 *(MUTCD TA-10)*



Note: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6P-V3 for sign spacing requirements ("A").
See Tables 6P-V5 through 6P-V7 for taper length requirements.
See Table 6P-V8 for channelizing device spacing requirements.

Notes for Lane Closure in an Intersection (Figure TTC-28.0) *(MUTCD TA-27)*

Guidance:

1. The situation depicted can be simplified by closing one or more of the intersection approaches. If this cannot be done, and/or when capacity is a problem, through vehicular traffic should be directed to other roads or streets.

2. Depending on road user conditions, flagger(s) or uniformed law enforcement officer(s) should be used to direct road users within the intersection.

2a. Appropriate signing as shown should be used for law enforcement and flagging operations. For detour signs see Figure TTC-34.

2b. To maintain efficient traffic flow in a traffic operation on a two-lane roadway, motorists should not be stopped more than 10 minutes at flagger stations. For additional information see Section 6E.07.

Standard:

3. At night, flagger stations shall be illuminated, except in emergencies.

3a. Channelizing device spacing shall be on 20-foot centers or less.

Option:

4. [Paragraph Deleted]

5. [Paragraph Deleted]

6. [Paragraph Deleted]

Guidance:

7. [Paragraph Deleted]

8. [Paragraph Deleted]

Option:

9. Turns may be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might be physically impossible to make certain turns, especially for large vehicles

Option:

10. [Paragraph Deleted]

11. [Paragraph Deleted]

Standard:

12. [Paragraph Deleted]

Guidance:

13. If room permits, a shadow vehicle should be parked 80 to 120 feet in advance of the first work crew.

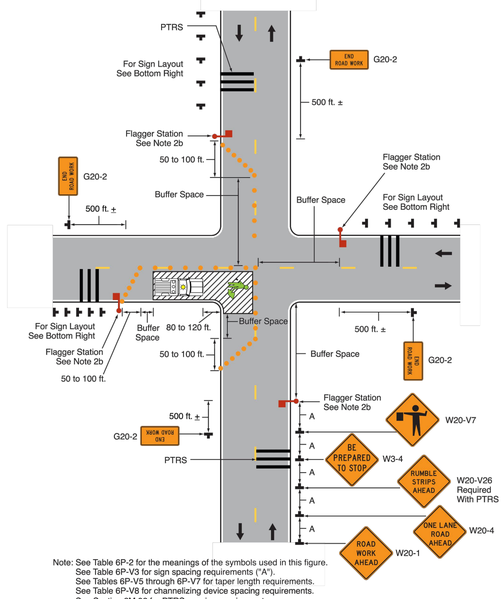
Standard:

14. The shadow vehicle shall be equipped with vehicle warning lights. Vehicle hazard warning signals shall not be used as a substitute for those vehicle warning lights.

Guidance:

15. If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.0.

Lane Closure in an Intersection Figure TTC-28.0 *(MUTCD TA-27)*



Note: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6P-V3 for sign spacing requirements ("A").
See Tables 6P-V5 through 6P-V7 for taper length requirements.
See Table 6P-V8 for channelizing device spacing requirements.
See Section 6M.06 for PTRS spacing requirements.

Notes for Street Closure with Detour (Figure TTC-34.0) *(MUTCD TA-20)*

Guidance:

1. TTC-3 figure should be used for streets without posted route numbers.

2. On multi-lane streets, Detour signs with an Advance Turn Arrow should be used in advance of a turn.

2a. If the road is opened for a significant distance beyond the intersection and/or there are significant origin/destination points beyond the intersection, the ROAD CLOSED (R11-2) and Detour Arrow (M4-10) signs on Type 3 Barricades should be located at the corners of the intersecting closed roadway or the traveled way.

2b. In urban areas, signs on an eight-foot Type 3 barricade should not cover more than half of the top two rails. On a four-foot Type 3 barricade, the ROAD CLOSED (R11-2) sign or the ROAD CLOSED TO THRU TRAFFIC (R11-4) sign should be installed above the Type 3 barricade.

Option:

3. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

4. Flashing warning lights may be used on Type 3 Barricades.

5. Detour signs may be located on the far side of intersections. A Detour sign with an advance arrow may be used in advance of a turn.

6. A Street (M4-9a) plaque may be mounted with the Detour sign. The Street Name plaque may be either white on green or black on orange.

Standard:

7. When used, the Street Name plaque shall be placed above the Detour sign.

Support:

8. [Paragraph Deleted]

9. See Chapter 6O for additional information on incident management traffic control.

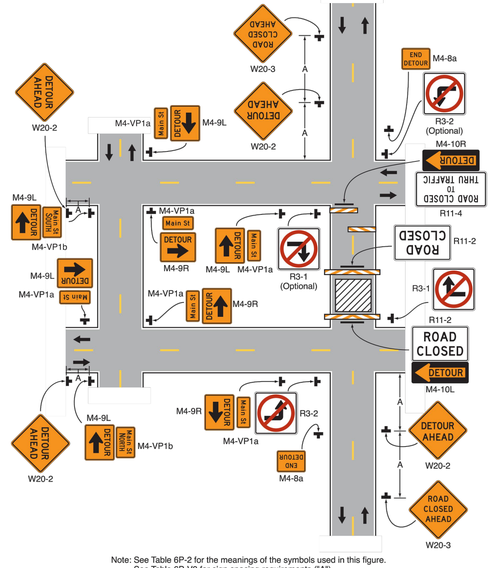
Option:

10. This TTC Figure may be used for detouring Secondaries where local residents typically refer to the road by its street name rather than its Secondary route number.

DETOUR PLAN NOTES

1. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A MINIMUM 14-DAY NOTICE PRIOR TO THE DETOUR TO ALLOW TIME FOR PREPARATION AND DISTRIBUTION OF THE DETOUR NOTIFICATION LETTER.
2. THE OWNER WILL PROVIDE WRITTEN NOTIFICATION TO ALL THE RESIDENTS ONE WEEK IN ADVANCE OF THE DETOUR.

Street Closure with Detour Figure TTC-34.0 *(MUTCD TA-20)*



Note: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6P-V3 for sign spacing requirements ("A").
See Tables 6P-V5 through 6P-V7 for taper length requirements.
See Table 6P-V8 for channelizing device spacing requirements.

NO.	DATE	BY	REVISION

CITY OF VIRGINIA BEACH, VA.

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PROFESSIONAL ENGINEER

BID DOCUMENTS

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VERT:	N/A
DATE:	JAN 2026
DRAWN BY:	NEL
DESIGN BY:	LG
APPROVED BY:	JKD

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SA 242 S HARTON CIRCLE
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TRAFFIC CONTROL

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