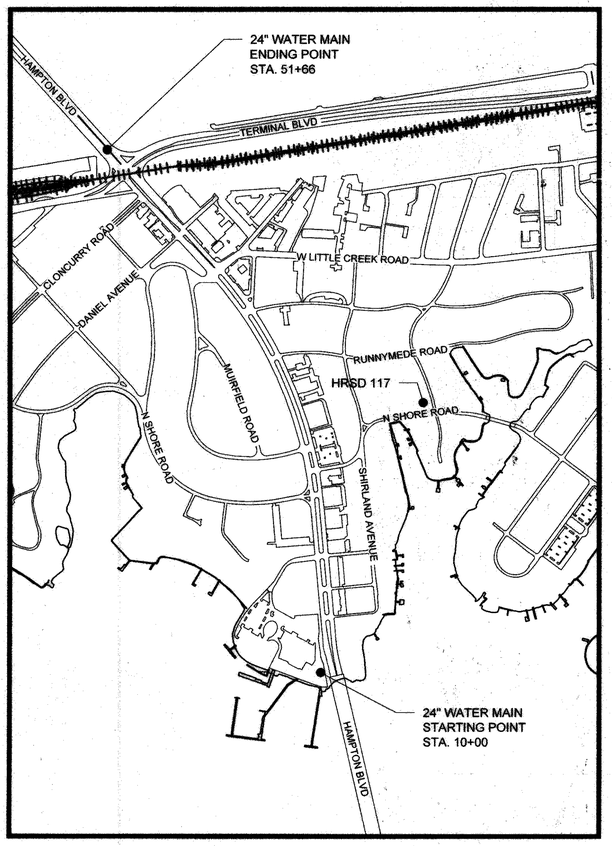
CITY OF NORFOLK, VIRGINIA

DEPARTMENT OF UTILITIES

City of Norfolk
DEPARTMENT OF UTILITIES

HAMPTON BOULEVARD

24" WATER MAIN REPLACEMENT, SECTION IIIA AND IIIB



VICINITY MAP

SCALE : 1" = 500'

SHT. No.	DRAWING No.	SHEET DESCRIPTION
		GENERAL
1	G-1	COVER SHEET
		CIVIL
2	C-1	NOTES
3	C-2	NOTES
4	C-3	WATER MAIN SUMMARY TABLE, ABBREVIATIONS, AND SHEET INDEX KEY
5	C-4	HAMPTON BOULEVARD PLAN AND PROFILE STA 10+00 TO STA 16+00
6	C-5	HAMPTON BOULEVARD PLAN AND PROFILE STA 16+00 TO STA 22+00
7	C-6	HAMPTON BOULEVARD PLAN AND PROFILE STA 22+00 TO STA 27+00
8	C-7	HAMPTON BOULEVARD PLAN AND PROFILE STA 27+00 TO STA 32+00
9	C-8	HAMPTON BOULEVARD PLAN AND PROFILE STA 32+00 TO STA 37+00
10	C-9	HAMPTON BOULEVARD PLAN AND PROFILE STA 37+00 TO STA 42+00
11	C-10	HAMPTON BOULEVARD PLAN AND PROFILE STA 42+00 TO STA 47+00
12	C-11	HAMPTON BOULEVARD PLAN AND PROFILE STA 47+00 TO STA 51+66
13	C-12	WEST LITTLE CREEK PLAN AND PROFILE STA 10+00 TO STA 14+70
14	C-13	WEST LITTLE CREEK PLAN AND PROFILE STA 0+00 TO STA 0+88
15	C-14	PLAN AND PROFILES A, B & C
16	C-15	PLAN AND PROFILES D, E & F
17	C-16	PLAN AND PROFILES G, H & I
18	C-17	PLAN AND PROFILES J, K & L
19	C-18	PLAN AND PROFILES M, N & O
20	C-19	PLAN AND PROFILES P, Q & R
21	C-20	DEWATERING AND PHASING PLAN
22	C-21	MILLING AND OVERLAY PLAN
23	C-22	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
24	C-23	DETAILS 1
25	C-24	DETAILS 2
26	C-25	DETAILS 3
27	C-26	DETAILS 4
28	C-27	DETAILS 5
29	C-28	TRAFFIC CONTROL PLAN FOR NORTH SHORE ROAD CLOSURE
30	C-29	TRAFFIC CONTROL PLAN FOR GLENEAGLES ROAD CLOSURE
31	C-30	TRAFFIC CONTROL PLAN FOR MAURY ARCH ROAD CLOSURE
32	C-31	TRAFFIC CONTROL PLAN FOR DANIEL AVE., CLONCURRY RD. AND TERMINAL BLVD. CLOSURE
33	C-32	TRAFFIC CONTROL PLAN FOR BAYLOR PLACE AND WEST LITTLE CREEK ROAD

48 HOURS BEFORE YOU DIG CALL MISS UTILITY OF VIRGINIA

BEFORE YOU DIG ANYWHERE IN VIRGINIA! CALL 1-800-552-7001 OR 811

VA LAW REQUIRES 48 HOURS NOTICE BEFORE YOU EXCAVATE.

NOTE:

THIS SITE REQUIRES A VSMP GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS REQUIRED TO SECURE PERMIT COVERAGE FROM THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE REQUIRED BY THE PROJECT BY SUBMITTING A COMPLETE REGISTRATION STATEMENT AND PAYING THE APPROPRIATE PERMIT FEE TO THE CITY OF NORFOLK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING PERMIT COMPLIANCE DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO INSPECTIONS, SWPPP UPDATES, ETC. CONTACT NORFOLK ENVIRONMENTAL SERVICES AT (757) 664-4368 FOR FURTHER INFORMATION.

A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS PROVIDED IN **APPENDIX L**. CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING, AS NECESSARY, THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) UTILIZING **APPENDIX L** - IN THE PROJECT SPECIFICATIONS.

THE CONTRACTOR SHALL CONTACT THE CITY OF NORFOLK, BUREAU OF ENVIRONMENTAL SERVICES AT 664-4368 AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY SO THAT A LAND DISTURBING PERMIT CAN BE ISSUED AND A PRECONSTRUCTION CONFERENCE CAN BE SCHEDULED.

CONTRACTOR IS REQUIRED TO IDENTIFY THE LAY DOWN/STORAGE AREA LOCATION AND SUBMIT AN EROSION AND SEDIMENT CONTROL PLAN TO ENVIRONMENTAL SERVICES PRIOR TO WORK COMMENCING, CONTACT 664-4363 FOR ADDITIONAL INFORMATION. LAY DOWN/STORAGE AREA(S) WILL BE REQUIRED TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

THIS PROJECT IS LOCATED WITHIN A CITY OF NORFOLK CBPA DESIGNATED INTENSELY DEVELOPED AREA (IDA)

The following person
Scott Smith Scott W. Smith (SIGN) is identified as the Responsible Land Disturber who will be in charge of and will be responsible for carrying out the land disturbing activity. This person meets the applicable requirements of Virginia Code Section 10.1-563 and 10.1-566 by virtue of the following.

__ Responsible Land Disturber Certificate

__ DCR Certification for Combined Administrator, Administrator, Plan Reviewer, Inspector, or Contractor

X VA Professional Engineer, Land Surveyor, Landscape Architect, or Architect.

Upon award of the contract and before the land disturbing activity can begin, the Contractor shall execute and submit a Responsible Land Disturber Notification form to the Department of Planning, Environmental Services, Rm. 508, City Hall Building, 810 Union Street, Norfolk, VA 23510 Tel: (757) 664-4368. Award of the contract will relieve the signer of all responsibility.

TOTAL LAND DISTURBANCE FOR THIS PROJECT IS 83.115 SF OR 1.91 ACRES

APPROVED FOR CONSTRUCTION

APPROVED: Cheryl F. Bennett 2/2/16
ENGINEERING MANAGER DATE

APPROVED: 2/3/16
DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT DATE

SITE PLAN #14-0000

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 082704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

FILENAME	144647-BC-G-1.DWG
BC PROJECT NUMBER	144647
SCALE	AS SHOWN
DRAWING NUMBER	G-1
SHEET NUMBER	1 OF 33

Jan 25, 2016 - 1:57pm RFoshay
P:\Clients\Norfolk\144647 Nort-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\G-General\144647-G-1-BC.dwg

CITY OF NORFOLK GENERAL NOTES:

1. THE CONTRACTOR IS ENCOURAGED TO VISIT THE SITE PRIOR TO SUBMITTING BID.

2. ELEVATIONS ARE BASED ON NAVD-88 (92 ADJUSTED)(NORTH AMERICAN VERTICAL DATUM). BENCH MARKS ARE SHOWN ON PLAN SHEETS.

3. TEST HOLES WERE OBTAINED FOR THIS PROJECT. SEE INFORMATION LOCATED IN SPECIFICATIONS, APPENDIX H.

4. FIELD ENGINEERING INFORMATION: ALL REQUESTS FOR INSPECTIONS, AND FIELD CONSTRUCTION INFORMATION SHOULD BE DIRECTED TO: CHIEF OF CONSTRUCTION, LEIGH GOODWIN, 823-1012

5. PRIOR TO THE SCHEDULING OF A PRE-CONSTRUCTION CONFERENCE, THE CONTRACTOR SHALL SUBMIT A PRELIMINARY DETAILED TRAFFIC CONTROL PLAN FOR REVIEW BY THE DIVISION OF TRAFFIC ENGINEERING, DEPARTMENT OF PUBLIC WORKS. THE TRAFFIC CONTROL PLAN AS WELL AS ALL TRAFFIC CONTROL DEVICES UTILIZED ON THE PROJECT MUST COMPLY WITH THE "FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) FOR STREETS AND HIGHWAYS. FOLLOWING APPROVAL OF THE PLAN, A REPRODUCIBLE DRAWING SHALL BE SUBMITTED TO THE FIELD ENGINEERING OFFICE FOR USE AND DISTRIBUTION.

6. SUBMITTALS ON MATERIALS FOR THIS PROJECT SHALL BE APPROVED BY THE FIELD ENGINEERING OFFICE PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR TO USE APPROVED PRODUCTS LIST WHERE EVER POSSIBLE.

7. A CONSTRUCTION SCHEDULE SHALL BE SUBMITTED TO THE FIELD ENGINEERING OFFICE, PRIOR TO THE SCHEDULING OF THE PRE-CONSTRUCTION CONFERENCE.

8. ALL WORK WITHIN THE RIGHT OF WAY SHALL COMPLY WITH THE CITY OF NORFOLK, RIGHT OF WAY EXCAVATION & RESTORATION MANUAL, (ORDINANCE NO. 40,778), DEPT. OF PUBLIC WORKS, DIVISION OF TRANSPORTATION. THE DOCUMENT MAY BE DOWNLOADED AT http://www.norfolk.gov/PublicWorks/

9. THERE MAY BE A C.B.D. TRAFFIC CONTROL SYSTEM IN THIS AREA. FOR PROTECTION OF THIS SYSTEM, PHONE THE PUBLIC WORKS DEPARTMENT BEFORE STARTING WORK: 664-7300

10. CONTRACTOR SHALL CONFORM TO THE "OVERHEAD HIGH VOLTAGE ACT" (EFFECTIVE JULY 1, 1989) AND SHALL CONTACT THE NECESSARY AUTHORITIES PRIOR TO START OF CONSTRUCTION.

11. THE DEPARTMENT OF UTILITIES WILL OBTAIN ALL NECESSARY TREE PERMITS. THE CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS OF THE "CITY OF NORFOLK TREE ORDINANCE" (EFFECTIVE FEBRUARY 15, 2005).

12. CONTRACTOR TO NOTIFY THE UTILITIES INSPECTOR ON FIRST IDENTIFICATION OF CONFLICT WITH STORMWATER INFRASTRUCTURE.

13. STATE LAW MANDATES THE NOTIFICATION OF UTILITY OWNERS 48 HOURS IN ADVANCE OF EXCAVATION. FOR LOCATION OF UTILITIES, CALL `MISS UTILITY' AT 1-800-552-7001 OR 811 FOR:

    WATER & SEWER
    H.R.S.D.
    VERIZON TELEPHONE
    DOMINION VA. POWER
    VA. NATURAL GAS
    TRAFFIC CONTROLS
    STORM DRAIN
    COX CABLE T.V.

14. THE CONTRACTOR SHALL BE REQUIRED AND AGREES TO COMPLY WITH ALL THE PROVISIONS OF THE "VIRGINIA UNDERGROUND UTILITY DAMAGE PREVENTION ACT" (SECTION 56-265.14 et seq., CODE OF VIRGINIA, 1950, AS AMENDED) AND HEREBY AGREES TO HOLD THE CITY OF NORFOLK HARMLESS AGAINST ANY LOSS, DAMAGES, OR CLAIMS OF ANY NATURE WHATSOEVER ARISING OUT OF THE CONTRACTOR'S FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ACT.

15. CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE, ANY DAMAGE DONE TO THE UTILITIES SHALL BE IMMEDIATELY REPAIRED AT CONTRACTOR'S EXPENSE.

16. EXISTING UTILITIES SHOWN ARE BASED ON AVAILABLE RECORDS AND FIELD SURVEYS, AND IS NOT GUARANTEED TO BE EXACT OR COMPLETE. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN ADVANCE OF CONSTRUCTION.

17. CONTRACTOR SHALL HAVE A SET OF PROJECT PLANS AND SPECIFICATIONS ON SITE AT ALL TIMES. IN ADDITION THE CONTRACTOR SHALL HAVE IN HIS POSSESSION THE CURRENT EDITION OF THE HRPDC SPECIFICATIONS.

18. CITY WILL ACCEPT SAND AND STONE TICKETS ONLY ON THE DAY THE MATERIAL IS DELIVERED TO THE JOB SITE. TICKETS WILL NOT BE ACCEPTED WITH MONTHLY PAY ESTIMATE, NO EXCEPTIONS.

19. THE CONTRACTOR SHALL VERIFY TYPE OF MATERIAL, OUTSIDE DIAMETER AND LOCATION OF ALL PIPES BEING CONNECTED TO, IN ORDER TO INSURE PROPER FITTINGS ARE AVAILABLE AND TO MINIMIZE OUT OF SERVICE TIME FOR CONNECTIONS. ALL NECESSARY FITTINGS NEEDED TO MAKE CONNECTIONS SHALL BE CHECKED BY THE CITY'S INSPECTOR PRIOR TO ANY CONNECTION WORK.

20. ANY TIE-INS TO EXISTING LINES THAT WILL RESULT IN INTERRUPTION OF SERVICE TO ANY CUSTOMER MUST BE COORDINATED WITH THE CITY OF NORFOLK AS TO ACCEPTABLE TIME AND DURATION OF INTERRUPTION. SCHEDULED INTERRUPTIONS OF SERVICE (TIE-INS, ABANDONMENTS, ETC.) REQUIRE 3 DAYS ADVANCE NOTICE FOR A TRIAL SHUTDOWN. AN ADDITIONAL 3 DAYS ADVANCE NOTICE WILL BE REQUIRED FOR THE ACTUAL SHUTDOWN IF THE TRIAL SHUTDOWN IS SUCCESSFUL.

21. ALL TEES, BENDS, PLUGS AND VALVES SHALL BE PROVIDED WITH MECHANICAL THRUST RESTRAINT AND RESTRAINED TO PROPER LENGTH. PLUGS INSTALLED ON ACTIVE WATER MAINS SHALL BE RESTRAINED. ENDS OF EXISTING LINES TO BE ABANDONED SHALL BE CAPPED WATER-TIGHT.

22. MECHANICAL THRUST RESTRAINT SHALL BE USED ON ALL BENDS AND FITTINGS WHEN WATER MAINS ARE OFF-SET. WATER MAINS MAY BE ROLLED UNDER STORM DRAINS WITHOUT FITTINGS WHEN THE VERTICAL GRADE CHANGE IS 2 FEET OR LESS.

23. NO PIPE FOLD-INS SHALL BE USED ON WATER MAINS OR SEWER FORCE MAINS. SLEEVES WILL BE USED.

24. UNLESS NOTED OTHERWISE ON THE PLANS, WHERE WATER MAINS PASS OVER SEWER MAINS, THEY MUST BE 18 INCHES ABOVE, OR THE SEWER MUST BE A 20 FOOT SECTION OF AWWA APPROVED PRESSURE PIPE. WHERE WATER LINES PASS BELOW SEWER, 18 INCHES OF CLEARANCE IS REQUIRED AND SEWER MUST BE CONSTRUCTED OF AWWA APPROVED PRESSURE PIPE (18 FOOT LONG PIECE MINIMUM) CENTERED ON WATER MAIN PIPE SECTION.

25. NEOPRENE PADS SHALL BE USED BETWEEN PROPOSED MAIN AND EXISTING UTILITIES AT CROSSINGS WHERE THE VERTICAL CLEARANCE IS LESS THAN SIX (6) INCHES.

26. ALL SANITARY SEWER DUCTILE IRON PIPE SHALL BE LINED WITH PROTECTO 401 OR APPROVED EQUAL.

27. FOR WORK IN THE CITY OF NORFOLK RIGHT OF WAY, CONTACT 48 HOURS IN ADVANCE.

DIVISION OF TRANSPORTATION (PERMITS)	664-7300
DIVISION OF ENVIRONMENTAL STORM WATER	823-4000
DEPARTMENT OF PARKS AND URBAN FORESTRY	823-4023
CONSTRUCTION PERMITS	664-6565

28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING DISTURBED AREAS TO THEIR ORIGINAL CONDITION. ANY UTILITY WORK REQUIRED TO BE PERFORMED OUTSIDE CITY RIGHT OF WAY OR EASEMENTS SHALL BE COMPLETED BY A LICENSED PLUMBING CONTRACTOR, WITH APPROVED PLUMBING PERMIT. ALL WORK ON PRIVATE PROPERTY MUST BE COORDINATED WITH PARKS & URBAN FORESTRY PRIOR TO CONSTRUCTION. TRENCHES FOR PRIVATE PROPERTY SEWERS WILL NOT BE ALLOWED TO BE LEFT OPEN OVERNIGHT. NO EXCEPTIONS.

29. THE CONTRACTOR SHALL REPLACE ALL DAMAGED OR REMOVED SIDEWALKS DAILY. THE TEMPORARY SIDEWALK SHALL BE A MINIMUM OF 1" COLD MIX OVER COMPACTED SUBGRADE AND SLOPED TO PROVIDE POSITIVE DRAINAGE. THE PERMANENT SIDEWALK REPLACEMENT SHALL BE IN ACCORDANCE WITH CURRENT CITY STANDARDS AND SHALL BE REPLACED TO THE NEAREST JOINT. CRUSHED CONCRETE WILL NOT BE ALLOWED FOR TEMPORARY SIDEWALKS OR DRIVEWAYS.

30. THE CONTRACTOR SHALL PROVIDE TEMPORARY DRIVEWAY AND PARKING ACCESS FOR ALL ADJACENT PROPERTY OWNERS DURING PERIODS WHEN CONSTRUCTION IN THE AREA IS NOT IN PROGRESS. THE CONTRACTOR SHALL OBTAIN DRIVEWAY PERMITS FROM THE DEPARTMENT OF PUBLIC WORKS, TRAFFIC ENGINEERING, FOR ALL REQUIRED DRIVEWAY WORK.

31. THE CONTRACTOR SHALL NOTE THAT THERE MAY BE OTHER CONSTRUCTION IN THIS AREA. THE CONTRACTOR SHALL COOPERATE WITH THE CITY AND ANY OTHER CONTRACTORS OR UTILITY OWNERS TO PREVENT DELAYS TO EITHER PROJECT. IF THE CONTRACTOR NEEDS TO PERFORM WORK OUT OF SEQUENCE OR ADJUST HIS SCHEDULE TO ACCOMMODATE OTHER WORK IN THE PROJECT AREA, IT SHALL NOT BE THE BASIS OF A CLAIM FOR DELAY AGAINST THE CITY.

32. FLOWABLE FILL IS NOT AN APPROVED MATERIAL FOR USE IN THE CITY OF NORFOLK FOR BACKFILL WITHOUT PRIOR APPROVAL. THE SELECT MATERIAL AND No. 21A STONE WILL BE IN ACCORDANCE WITH THE 2002 VDOT ROAD AND BRIDGE SPECIFICATIONS. FOR BACKFILL AROUND THE PIPE USE SELECT MATERIAL (SECTION 207) - TYPE I AND 20 CBR COMPACTION. FOR THE SUB BASE MATERIAL USE 6" MIN. VDOT No. 21A STONE IN ACCORDANCE TO SECTION 208.

33. RIGHT OF WAY EXCAVATION PERMITS ARE REQUIRED TO PERFORM SEWER AND WATER MAIN INSTALLATION AND ALL APPURTENANCES. PLEASE CONTACT THE RIGHT OF WAY PERMIT OFFICE AT 664-7306 OR AT "www.norfolk.gov/publicworks/row"

SHEETING:

34. CONTRACTOR TO USE VERTICAL TIGHT SHEETING FOR CUTS FIVE FEET OR DEEPER, UNLESS PERMISSION TO DO OTHERWISE IS GRANTED BY THE ENGINEER. SHEETING SHALL ALSO BE USED FOR CUTS BEHIND CURBS OR SIDEWALKS, AND BESIDE ROADWAYS FOR CUTS FIVE FEET OR LESS, AS REQUIRED BY THE ENGINEER. SHEETING SHALL BE USED TO PROTECT EXISTING UTILITIES OR OTHER STRUCTURES SUCH AS DRAINS, PIERS, POWER AND TELEPHONE POLES, ETC. SHEETING, WHEN USED, WILL BE DRIVEN 15 INCHES OR MORE BELOW PIPE INVERT, AND TOP OF SHEETING CAN NOT BE LESS THAN EXISTING GROUND ELEVATIONS, UNLESS OTHERWISE APPROVED BY THE ENGINEER. SHEETING WILL BE CUT OFF AND LEFT IN PLACE AS THE ENGINEER MAY DIRECT. PAYMENT FOR SHEETING LEFT IN PLACE WILL BE PAID ON A UNIT BASIS OF 1,000 BOARD FEET MEASUREMENT, TO BE CHECKED BY CONTRACTOR AND VERIFIED BY THE ENGINEER. ANY QUANTITY LESS THAN THE UNIT PRICE WILL BE PAID FOR TO THE CLOSEST FULL 100 BOARD FOOT MEASUREMENT.

HOUSE TAPS:

35. SEWER LATERALS SHALL BE EXTENDED TO PROPERTY LINES BY CONTRACTOR WHERE DIRECTED BY THE ENGINEER.

36. PRIVATE SERVICE LATERALS BEING REPLACED FROM THE PROPERTY LINE CLEANOUT TO THE BUILDING SHALL BE INSTALLED BY A LICENSED PLUMBING CONTRACTOR APPROVED BY THE CITY.

37. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL HOUSE SERVICE LINES (WATER AND SEWER). CONTRACTOR SHALL NOT DEPEND ON CITY FORCES TO LOCATE SERVICE LINES WHEN IT IS REQUIRED TO RELOCATE WATER METERS, AND SHALL BE RESPONSIBLE FOR ALL TIE-INS OF HOUSE LINES TO NEW METERS.

38. SANITARY SEWER LATERAL LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY AND ARE NOT GUARANTEED. WHERE LATERAL REPLACEMENTS ARE SHOWN OR REQUIRED BY THE ENGINEER SUCH SHALL BE REPLACED AS FOLLOWS:

    A. PUBLIC PROPERTY (RIGHT OF WAY): 4 INCH SDR 26 FROM THE SANITARY SEWER MAIN TO THE PROPERTY LINE CLEANOUT FOR SINGLE FAMILY OR DUPLEX DWELLINGS AND 4 OR 6 INCH SDR 26 FOR COMMERCIAL AND MULTIPLE DWELLING UNITS TO BE INSTALLED BY THE CONTRACTOR. IF MAIN IS OTHER THAN SDR 26 PIPE, LATERAL PIPE SHALL MATCH TYPE OF PIPE USED FOR MAIN. 6" LATERALS REQUIRE SQUARE CLEAN OUT BOXES AT THE PROPERTY LINE.

    B. PRIVATE PROPERTY; SEWER LATERAL PIPE ON PRIVATE PROPERTY SHALL COMPLY WITH THE PLUMBING CODE. NEW PROPERTY LINE CLEANOUTS SHALL BE INSTALLED. THE PRIVATE PROPERTY LATERAL, INCLUDING PRIVATE CLEANOUT(S), SHALL BE INSTALLED BY A LICENSED PLUMBER. REROUTING WILL BE ALLOWED SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL SANITARY SEWER LATERALS (PUBLIC AND PRIVATE) AND SHALL NOT DEPEND ON CITY FORCES TO LOCATE SUCH.

39. ALL EXISTING WATER SERVICES WITHIN THE CITY RIGHT OF WAY WHICH ARE CONNECTED TO WATER MAINS ABANDONED UNDER THIS CONTRACT SHALL BE REPLACED. SERVICE REPLACEMENT SHALL BE FROM THE NEW MAIN TO THE EXISTING METER AND SHALL INCLUDE TAPPING SADDLE (4" PVC ONLY), CORPORATION STOP, COPPER TUBING AND METER STOP. IN ADDITION, EMPTY METER BOXES IN FRONT OF BUILDABLE LOTS SHALL BE PROVIDED WITH SERVICE REPLACEMENT. WATER SERVICES TO BE BORED UNLESS DIRECTED BY THE ENGINEER.

SANITARY AND WATER SERVICES:

40. THE LOCATIONS OF EXISTING AND/OR PROPOSED SEWER LATERALS, PRIVATE PROPERTY LINE CLEANOUTS AND WATER METER RELOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE, BASED ON CURRENT RECORDS AND PRELIMINARY FIELD INVESTIGATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SEWER LATERAL AND WATER SERVICE CONNECTIONS AT THE MAIN, CLEANOUT BOXES, AND WATER METER BOXES, (WHERE APPLICABLE) AND AT THE RESIDENCE PRIOR TO COMPLETING ANY REHAB OR REPLACEMENT WORK. ONCE ALL EXISTING AND ACTIVE SEWER AND WATER CONNECTIONS HAVE BEEN LOCATED, THE CONTRACTOR MUST TOUR THE JOB SITE WITH THE ENGINEER, PLUMBER, AND CITY FORESTER TO DETERMINE THE LOCATION/RELOCATION OF EXISTING SEWER TAPS, LATERAL ALIGNMENTS, METER RELOCATIONS, HAND DIG ZONES, AND EQUIPMENT CLEARANCE PRUNING REQUIREMENTS. WHERE IN THE SOLE OPINION OF THE CITY FORESTER, EXCAVATION WITH A TRENCHER, BACKHOE OR OTHER MECHANICAL EQUIPMENT WITHIN THE CRITICAL ROOT ZONE WOULD LIKELY RESULT IN EXCESSIVE ROOT DAMAGE, HAND DIGGING WILL BE REQUIRED. WHERE FEASIBLE, NEW SERVICES WILL BE PLACED IN A LOCATION WHICH WILL LEAST IMPACT TREE ROOTS AND FACILITATE UTILITY INSTALLATION. THERE SHALL BE NO SANITARY OR WATER SERVICE REPLACEMENTS OR TAP CONNECTIONS PERFORMED AT ANY LOCATION WHERE SERVICE/TAP LOCATIONS HAVE NOT BEEN JOINTLY REVIEWED BY THE ENGINEER, CONTRACTOR, PLUMBER, AND CITY FORESTER, AND APPROVED BY THE ENGINEER. HAND DIGGING WILL BE PERFORMED AT NO ADDITIONAL COST TO THE CITY.

41. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING AND LANDSCAPING AROUND SANITARY SEWER CLEANOUTS WHEN SERVICES ARE INSTALLED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING AND LANDSCAPING AROUND METER BOXES WHEN SERVICES ARE INSTALLED.

42. IF ABANDONED WATER MAIN IS IN CONFLICT WITH NEW SEWER LATERAL, THE ABANDONED MAIN IS TO BE CUT AND PLUGGED AT NO ADDITIONAL COST TO THE CITY.

43. CONTRACTOR SHALL COORDINATE INSTALLATION OF NEW WATER AND SEWER CONNECTIONS WITH THE ABANDONMENT OF EXISTING WATER AND SEWER MAINS. WATER AND SEWER SERVICE SHALL BE MAINTAINED TO ALL RESIDENCES AT ALL TIMES.

44. ALL EXISTING WATER METERS ARE ASSUMED TO BE 5/8" UNLESS OTHERWISE NOTED. CONTRACTOR TO VERIFY METER SIZES BEFORE DISCONNECTING. ALL SERVICE LINE AND METERS NOTED FOR REPLACEMENT SHALL BE REPLACED WITH SAME AS EXISTING SIZE.

45. OPEN TRENCH URBAN FORESTRY INSPECTIONS - ALL AREAS DESIGNATED BY THE CITY FORESTER FOR HAND DIGGING REQUIRE INSPECTION BY PARKS & URBAN FORESTRY PRIOR TO BACKFILLING, TO ASSESS THE EXTENT OF ROOT LOSS OR DAMAGE. THE CITY FORESTER MAY ALSO REQUIRE INSPECTION IN CERTAIN AREAS APPROVED FOR EXCAVATION WITH MECHANICAL EQUIPMENT. THE CONTRACTOR MUST PROVIDE PARKS & URBAN FORESTRY A MINIMUM 24 HOURS NOTICE OF ALL PLANNED EXCAVATIONS REQUIRING INSPECTION. ARRANGEMENTS FOR OPEN TRENCH INSPECTION CAN BE MADE BY CALLING DEAN BOWLES, CITY FORESTER, AT 823-4023 OR BY PROVIDING FAX NOTIFICATION (441-5141). SHOULD THE CONTRACTOR BACKFILL ANY OF THESE LOCATIONS PRIOR TO THE CITY FORESTER'S INSPECTION, HE MAY REQUIRE REMOVAL OF THE PLACED BACKFILL AT NO ADDITIONAL COST TO THE CITY.

WORK WITHIN THE PAVEMENT:

46. ALL AREAS DISTURBED BY CONSTRUCTION OR MOBILIZATION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, UNLESS SPECIFIED OTHERWISE. TEMPORARY PAVEMENT CUTS SHALL BE MAINTAINED WITH 9" OF VDOT No. 21A STONE OR RECYCLED ASPHALT PAVEMENT (RAP). THE CITY WILL ALLOW THE USE OF CRUSHED CONCRETE IN LIEU OF VDOT No. 21A OR RAP ON A CASE BY CASE BASIS. A GRADATION REPORT IS TO BE PROVIDED AS WELL AS A PROPOSAL FOR REDUCTION IN COST TO THE CITY. ONCE WE HAVE AN AGREEMENT, THE CONTRACTOR CAN MOVE FORWARD WITH THE USE OF CRUSHED CONCRETE. IN THE EVENT THE CITY FINDS MATERIALS IN THE CRUSHED CONCRETE THAT DO NOT COMPLY WITH THE GRADATION REPORT, THE CITY RESERVES THE RIGHT TO REQUIRE No. 21A FOR THE REMAINDER OF THE PROJECT. ALL MATERIALS DESIGNATED AS TEMPORARY SHALL BE COMPACTED AND WATERED ON A DAILY BASIS TO CONTROL DUST.

47. THE CONTRACTOR SHALL CONSTRUCT THE PROJECT IN ACCORDANCE TO THE PAVEMENT PHASING PLAN. AFTER THE PIPE HAS BEEN INSTALLED IN ANY ONE (1) PHASE, THE CONTRACTOR SHALL PERFORM ALL REQUIRED TESTING IN THE PRESENCE OF THE CITY INSPECTOR AND PERMANENTLY PAVE THE ENTIRE PHASE WITHIN ONE (1) MONTH OF COMPLETING THE PIPE INSTALLATION FOR THAT PHASE. DURING THIS TIME, THE CONTRACTOR WILL BE PERMITTED TO COMMENCE WORK IN ONE (1) SUBSEQUENT PHASE; HOWEVER, UNDER NO CIRCUMSTANCE SHALL THE PREVIOUS PHASE REMAIN UNPAVED BEYOND THE ABOVE MENTIONED ONE (1) MONTH PERIOD. COMMENCING WORK IN ADDITIONAL SUBSEQUENT PHASES WILL NOT BE PERMITTED UNTIL PERMANENT PAVING WITHIN THE INITIAL PHASE IS COMPLETED. THEREFORE, THE CONTRACTOR SHALL NOT COMMENCE WORK WITHIN A THIRD SUBSEQUENT PHASE WHILE PAVING IN ANY TWO (2) PHASES REMAINS TO BE COMPLETED. IF THE CONTRACTOR ELECTS TO DIVERT FROM THE CONSULTANTS PHASED PAVING PLAN, THE USE OF 3 INCHES OF BM-25 WITH MINIMUM 6 INCHES OF No. 21A STONE SHALL SUFFICE TO MEET THE ABOVE MENTIONED CONSTRAINTS ONLY IF THE FOLLOWING REQUIREMENTS ARE FULFILLED. THE CONTRACTOR SHALL TEMPORARILY PAVE THE PAVEMENT CUTS WITH BM-25 WITHIN TWO (2) MONTHS OR TWO (2) BLOCKS, WHICHEVER COMES FIRST. THE INSTALLATION AND REMOVAL OF THIS TEMPORARY PAVEMENT SHALL BE PERFORMED AT THE CONTRACTORS SOLE EXPENSE AND BEAR NO ADDITIONAL COST TO THE CITY.

48. ALL ROADWAY CUTS SHALL BE BACKFILLED ONLY WITH SUITABLE SUBBASE MATERIAL, AND MECHANICALLY TAMPED IN NO MORE THAN 6" LIFTS. BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH SECTION 308 OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS, LATEST EDITION. THE CITY MAY, AT ANY TIME, REQUIRE TESTING TO ENSURE COMPLIANCE WITH THE SPECIFICATIONS OF THIS CONTRACT. ALL TESTS WILL BE CONDUCTED BY A RECOGNIZED TESTING LABORATORY SELECTED BY THE CITY, QUALIFIED IN THE FIELD OF THE MATERIALS TO BE TESTED. ALL TESTS WILL BE CONDUCTED IN ACCORDANCE WITH VDOT'S "MANUAL FOR VIRGINIA TEST METHODS" (CURRENT EDITION AS REVISED). PAYMENT FOR ALL TESTS WILL BE IN ACCORDANCE WITH THE *FOLLOWING*:
    A) THE COST OF ALL TESTS FAILING TO MEET THE MINIMUM REQUIREMENTS WILL BE BORNE BY THE CONTRACTOR.
    B) THE COST OF ALL TESTS THAT EITHER MEET OR EXCEED THE MINIMUM REQUIREMENTS SHALL BE BORNE BY THE CITY.

49. ARTERIAL STREETS - AVERAGE DAILY TRAFFIC OVER 15,000 VEHICLES PER DAY. ARTERIAL STREETS ARE THOSE IN THE CITY DESIGNATED AS "MAJOR THOROUGHFARES." BEING ESSENTIAL TO THE SAFE MOVEMENT OF THE MAJORITY OF CITIZENS, THESE STREETS REQUIRE STRICTER REGULATIONS TO MAINTAIN THE ORDERLY AND SAFE FLOW OF TRAFFIC. THEREFORE, UNLESS OTHERWISE INDICATED, NO WORK WILL BE PERFORMED ON ARTERIAL STREETS DURING THE PEAK TRAFFIC HOURS OF 6:00 A.M. TO 9:00 A.M. AND 3:30 P.M. TO 6:00 P.M. (MONDAY THROUGH FRIDAY ONLY), EXCEPT EMERGENCY WORK TO RESTORE SERVICES. LANE CLOSURES WILL BE RESTRICTED TO THE WORKING LANE ONLY AND TWO-WAY TRAFFIC WILL BE MAINTAINED AT ALL TIMES, UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OF PUBLIC WORKS OR HIS DESIGNEE.

50. ARTERIALS SHALL BE OPENED TO TRAFFIC EACH NIGHT WITH ALL OPENINGS COVERED BY A ROAD PLATE OR A TEMPORARY ASPHALT PATCH BEFORE LEAVING THE SITE. THE PERMANENT ASPHALT PATCH SHALL BE PLACED THE SAME DAY THE WORK IS COMPLETED FOR MINOR PROJECTS AND WITHIN FIFTEEN (15) CALENDAR DAYS OF COMPLETION FOR MAJOR PROJECTS, UNLESS OTHERWISE DIRECTED. WHEN NOTIFIED BY THE CITY OF AN UNSAFE OPENING, THE RESPONSIBLE PARTY SHALL RESPOND AND REPAIR SAID PATCH WITHIN FOUR (4) HOURS.

51. COLLECTOR STREETS - AVERAGE DAILY TRAFFIC FROM 5000 TO 15,000 VEHICLES PER DAY (SEE ATTACHMENT C): THESE ARE ALL STREETS WHICH CONNECT RESIDENTIAL STREETS TO ARTERIALS (60'-80' RIGHTS-OF-WAY), WITH TWO LANES OF ALTERNATING TRAFFIC WITH PARKING ON BOTH SIDES OR FOUR LANES OF ALTERNATING TRAFFIC (SEE ATTACHED LISTING). THEREFORE, NO WORK WILL BE PERFORMED ON COLLECTOR STREETS DURING THE PEAK TRAFFIC HOURS, 6:00 A.M. TO 9:00 A.M. AND 3:30 P.M. TO 6:00 P.M. (MONDAY THROUGH FRIDAY ONLY), EXCEPT EMERGENCY WORK TO RESTORE SERVICES. MAIN SUBDIVISION COLLECTORS ARE ESPECIALLY CRITICAL. TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OF PUBLIC WORKS OR HIS DESIGNEE.

52. ALL UTILITY CUTS IN COLLECTOR STREETS SHALL BE FILLED EACH NIGHT AND COVERED BY A TEMPORARY ASPHALT PATCH IF COMPLETED TOO LATE FOR A PERMANENT ASPHALT REPAIR. THE REPAIR SHALL RECEIVE A PERMANENT ASPHALT PATCH AS SOON AS POSSIBLE BUT NO LATER THAN FIVE (5) CALENDAR DAYS AFTER WORK COMPLETION FOR MINOR PROJECTS, AND WITHIN FIFTEEN (15) CALENDAR DAYS FOR MAJOR PROJECTS, UNLESS OTHERWISE DIRECTED. WHEN NOTIFIED BY THE CITY OF AN UNSAFE OPENING, THE RESPONSIBLE UTILITY CONTRACTOR SHALL RESPOND AND REPAIR SAID PATCH WITHIN FOUR (4) HOURS.

53. RESIDENTIAL STREETS - AVERAGE DAILY TRAFFIC UNDER 5,000 VEHICLES PER DAY: THESE ARE THOSE STREETS AND CUL-DE-SACS WHICH PROVIDE DIRECT ACCESS TO ADJACENT PROPERTY OR INDIVIDUAL HOMES, NORMALLY TWO ALTERNATING LANES IN A 50' RIGHT-OF-WAY. CONSTRUCTION HOURS SHALL BE LIMITED TO 7:30 A.M. TO 4:30 P.M., TO BE SENSITIVE TO NOISE IMPACTS ON SURROUNDING PROPERTIES (EMERGENCY WORK TO RESTORE SERVICES EXCLUDED). AT LEAST A SINGLE LANE SHALL BE PROVIDED FOR TWO-WAY TRAFFIC WITH A FLAGMAN AVAILABLE FOR CONTROL, UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OF PUBLIC WORKS OR HIS DESIGNEE.

54. EXCAVATIONS IN RESIDENTIAL STREETS SHALL BE PROTECTED EACH NIGHT; ALL UTILITY CUTS SHALL BE MAINTAINED DAILY WITH 21A STONE, CRUSHED CONCRETE, CRUSHED ASPHALT, COLD MIX, OR PLANT MIX ASPHALT. THE PERMANENT ASPHALT REPAIR SHALL BE MADE AS SOON AS POSSIBLE BUT NO LATER THAN FIVE (5) DAYS AFTER WORK COMPLETION FOR MINOR PROJECTS AND WITHIN THIRTY (30) CALENDAR DAYS FOR MAJOR PROJECTS. WHEN NOTIFIED BY THE CITY OF AN UNSAFE OPENING, THE RESPONSIBLE PARTY SHALL RESPOND AND REPAIR SAID PATCH WITHIN FOUR (4) HOURS.

55. THE CITY RESERVES THE RIGHT TO EFFECT ANY REQUIRED REPAIRS, AND WARRANT FOR THE COLLECTION FOR ALL ASSOCIATED COSTS, WHERE NECESSITATED BY EMERGENCY CONDITIONS.

56. ALL TEMPORARY BULK WASTE CONTAINERS PLACED WITHIN THE RIGHT OF WAY REQUIRE A PERMIT FROM THE DIVISION OF RIGHT OF WAY 664-7306.

57. "NO LANE CLOSURES AND/OR WORK IN THE RIGHT OF WAY, INCLUDING GRADING, SIDEWALK, CURB AND GUTTER, AND DRIVEWAY APRON INSTALLATION WILL BE ALLOWED WITHOUT A PERMIT FROM THE DIVISION OF RIGHT OF WAY (664-7306). ALL TRAFFIC CONTROL SHALL COMPLY WITH THE CURRENT EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE CITY OF NORFOLK RIGHT OF WAY EXCAVATION AND RESTORATION MANUAL. ADDITIONAL CHARGES APPLY IF OFF-DUTY OFFICERS ARE REQUIRED. A LIST OF PERMIT FEES IS LOCATED AT WWW.NORFOLK.GOV/PUBLICWORKS/ROW"

58. THE CONTRACTOR WILL BE REQUIRED TO POST CASH, A CHECK, OR A SURETY BOND OR LETTER OF CREDIT TO EXCAVATE IN THE RIGHT OF WAY.

59. WHEN THE CONTRACTOR WORK REQUIRES THE SAWCUTTING AND/OR PARTIAL DEMOLITION AND/OR REMOVAL OF ANY SECTION OF AN EXISTING APRON OR SIDEWALK. THE CONTRACTOR WILL BE REQUIRED TO REMOVE SAID EXISTING APRON OR SIDEWALK AND REPLACE IT WITH A NEW MONOLITHIC APRON OR SIDEWALK. SIDEWALK SHALL BE REMOVED TO THE NEAREST JOINT. ALL CONCRETE IS TO BE SAW CUT. NO PATCHING WILL BE ALLOWED. COMMERCIAL APRONS SHALL BE REPLACED WITH AN APPROVED COMMERCIAL APRON. RESIDENTIAL APRON SHALL BE REPLACED WITH AN APPROVED RESIDENTIAL APRON(HS-207). SIDEWALKS SHALL BE REPLACED WITH AN APPROVED SIDEWALK DETAIL. CONTACT THE DIVISION OF RIGHT-OF-WAY PERMIT OFFICE FOR APPROVAL 664-7306. (ORDINANCE NO: 40,778)

60. WHEN A NEW APRON AND/OR SIDEWALK ARE INSTALLED, ALL NEW OR EXISTING UTILITY STRUCTURES SHALL BE INSTALLED AND/OR RELOCATED OUTSIDE THE AREA OF THE NEW APRON AND/OR SIDEWALK. A PERMIT AND INSPECTION ARE REQUIRED.

61. AS PART OF THE CONTRACTOR'S PERMIT APPLICATION TO WORK IN THE RIGHT OF WAY, THE CONTRACTOR MUST SUBMIT A MAP IDENTIFYING THE PROJECTS STORAGE AND LAY DOWN AREA. THE CITY DOES NOT ALLOW STORAGE, STAGING OR LAY DOWN AREAS WITHIN THE RIGHT OF WAY. CONTRACTORS ARE ENCOURAGED TO MAKE ARRANGEMENTS TO STORE MATERIALS AND LAY DOWN ON PRIVATE PROPERTY OR THEY MUST BE STORED WITHIN CONSTRUCTION SITE.

62. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DETAILED TRAFFIC CONTROL PLAN (MOT) WITH THE CONTRACTOR'S PERMIT APPLICATION TO WORK IN THE RIGHT-OF-WAY AT LEAST 14 DAYS IN ADVANCE OF THE START DATE. THE MOT SHALL BE A DRAWING OR AERIAL PHOTO WITH SITE SPECIFIC DETAILS. THESE SHALL INCLUDE BUT ARE NOT LIMITED TO: TRAFFIC SIGNS, DIRECTIONAL SIGNS, DESTINATION SIGNAGE, CHANNELIZING DEVICES, WATER-FILLED BARRIERS, PORTABLE MESSAGE BOARDS WITH MESSAGES TO BE DISPLAYED AND TIMES AND DURATIONS OF DISPLAYED MESSAGES. ADDITIONALLY THE MOT SHALL DISPLAY THE EXACT LOCATION OF ALL SIGNS AND/OR DEVICES INCLUDING SPACING FOR EACH SIGN AND/OR DEVICE, SPACING BEING APPROPRIATE FOR THE WORK ZONE LOCATION AND POSTED SPEED LIMITS. ALL MAINTENANCE OF TRAFFIC (MOT) PLANS SHALL CONFORM TO THE CURRENT ISSUE OF "THE VIRGINIA WORK AREA PROTECTION MANUAL" COPIES OR REPRODUCTIONS OF STANDARD VWAPM TRAFFIC CONTROL SHEETS MAY NOT BE ACCEPTED WITH THE CONTRACTOR'S PERMIT APPLICATION. CONTRACTORS SHOULD CONSIDER THESE ITEMS WHEN BIDDING PROJECT FOR CONSTRUCTION. FOR CONSTRUCTION IN OR ADJACENT TO ANY ARTERIAL AND/OR COLLECTOR STREETS REQUIRING TEMPORARY LANE OR STREET CLOSURE, THE CONTRACTOR MUST SCHEDULE A MEETING WITH THE CITY'S TRAFFIC MITIGATION TEAM. PLEASE CONTACT PUBLIC WORKS AT 757.664.4695 TO SCHEDULE.

63. ALL MISS UTILITY MARKINGS IN THE RIGHT-OF-WAY ARE REQUIRED TO BE ERADICATED AT THE COMPLETION OF THE PROJECT IN ACCORDANCE WITH THE CITY'S ROW EXCAVATION & RESTORATION MANUAL LOCATED AT WWW.NORFOLK.GOV/INDEX.ASPX?NID=362.

64. BEFORE WORK COMMENCES WHERE ANY LOOP DETECTOR IS BURIED IN THE ROADWAY, PLEASE CONTACT PANKAJ GUPTE (PG) Pankaj.gupte@norfolk.gov 664-7300 FOR LOOP DETECTOR DETAILS AND SPECIFICATIONS. IF LOOP DETECTORS ARE DAMAGED DURING CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRS AND RESTORATION OF THE LOOP DETECTORS AND ANY TRAFFIC CONTROL DEVICES.

65. THE CITY RESERVES THE RIGHT TO STOP WORK ON THE PROJECT IF THE SITE IS NOT BEING KEPT CLEAN AND PROPERLY MAINTAINED.

66. CLAIMS FOR DELAY TIME - ONLY EQUIPMENT WHICH IS BEING USED ON A DAILY BASIS CAN BE INCLUDED ON THE CONTRACTOR'S CLAIM FOR DELAY.

67. THE TAPPING MACHINE USED FOR TAPPING SLEEVES AND VALVES SHALL BE DISINFECTED PRIOR TO USE ON WATER MAINS IN THE PRESENCE OF THE INSPECTOR.

68. AN UP TO DATE AS-BUILT AND PROGRESS SCHEDULE SHALL ACCOMPANY THE CONTRACTOR'S MONTHLY APPLICATION FOR PAYMENT. IF THESE ITEMS ARE NOT INCLUDED WITH THE INVOICE, THE INVOICE SHALL BE IMMEDIATELY RETURNED TO THE CONTRACTOR.

69. ALL MATERIALS PURCHASED FOR THIS PROJECT SHALL BE NEW AND HAVE BEEN MANUFACTURED WITH IN THE LAST TWO (2) YEARS OF THE DATE WHEN THE CONTRACT WAS EXECUTED.

70. ALL NIPPLE PIECES BETWEEN WATER MAIN AND FORCE MAIN FITTINGS AND VALVES SHALL BE CLASS 52 DUCTILE IRON.

71. ALL CURBS, SIDEWALKS, AND CONCRETE APRONS WHICH ARE REMOVED, SHALL BE REPLACED TO THE NEAREST JOINT.

72. CONTRACTOR'S MONTHLY INVOICES SHALL BE REVIEWED BY THE CITY'S INSPECTOR AND CONTRACTOR'S SUPERINTENDENT PRIOR TO SUBMISSION.

73. ALL PRODUCTS USED IN THE CONSTRUCTION AND MAINTENANCE OF THE WATER SYSTEM SHALL MEET THE DEFINITION OF "LEAD-FREE" AS DESCRIBED IN THE REDUCTION OF LEAD IN DRINKING WATER ACT OF 2011.

74. CONTRACTOR WILL BE REQUIRED TO NOTIFY THOSE IN THE IMMEDIATE AREA THAT WILL BE AFFECTED BY THE CONSTRUCTION. DOOR HANGERS MUST BE PLACED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION AND MUST INCLUDE A 24 HOUR CONTACT FOR EMERGENCIES.

SCHEDULE FOR WATER MAIN TRIAL SHUTDOWNS / SHUTDOWNS / CUT AND CAPS / TIE INS:

1. ALL SCHEDULED SHUT DOWNS SHALL BE COORDINATED THROUGH THE CITY OF NORFOLK DEPARTMENT OF UTILITIES CONSTRUCTION INSPECTOR.
2. WHAT IS NEEDED: A SKETCH OR DRAWING OF THE INTERSECTION OR WORK AREA, WITH A DETAIL OF THE TYPE OF WORK TO ACCOMPLISHED, I.E. TRIAL SHUT DOWN.
3. REQUIRED: REQUESTS SHALL BE FORWARDED TO FIELD OPERATIONS, WATER DISTRIBUTION
4. TIME FRAMES: A THREE WORKING DAY NOTIFICATION IS REQUIRED FOR A TRIAL SHUT DOWN. AFTER HARD TRIAL SHUT DOWN IS ACHIEVED, A THREE WORKING DAY NOTIFICATION, OR AGREED UPON TIME BY ALL PARTIES, IS REQUIRED FOR THE ACTUAL WORK SHUT DOWN.
5. NOTE THAT MULTIPLE REQUESTED SHUT DOWNS OF WATER MAINS WILL BE STAGGERED TO ALLOW CREWS ADEQUATE TIME TO ACCOMMODATE ALL REQUESTS IN AS TIMELY A MANNER AS POSSIBLE.
6. URGENT NEEDS FOR SHUT DOWNS, I.E. MAIN FAILURES, WILL BE GIVEN PRIORITY.

PROJECT SPECIFIC NOTES:

1. THE CITY OF NORFOLK BENCH MARK Y4162 (NOT SHOWN BUT LOCATED ON SHEET C-4), GPS143 (SHOWN ON SHEET C-4), AND GPS088 (SHOWN ON SHEET C-9) HAVE BEEN IDENTIFIED. THE CONTRACTOR WILL BE REQUIRED TO REPLACE AT HIS EXPENSE, THE BASE FOR ANY CITY OF NORFOLK CONTROL MONUMENTS THAT ARE DESTROYED OR DISTURBED DURING CONSTRUCTION. BEFORE COMMENCING WORK THE CONTRACTOR WILL BE REQUIRED TO CONTACT MR. MICHAEL ORTOLANO, DIVISION OF SURVEYS AT 757-664-4673 OR MICHAEL.ORTOLANO@NORFOLK.GOV TO COORDINATE ANY REQUIRED MONUMENT REPLACEMENT.
2. THE CONTRACTOR AT HIS EXPENSE SHALL REPLACE ANY PAVEMENT MARKINGS DAMAGED DURING CONSTRUCTION.
3. CONTRACTOR SHALL, TO THE BEST OF HIS ABILITY, MAINTAIN A HORIZONTAL DISTANCE OF 10' FROM ALL SANITARY SEWER GRAVITY SYSTEMS. WHERE THIS DISTANCE CAN NOT FEASIBLY BE MAINTAINED A MINIMUM 18" VERTICAL SEPARATION SHALL BE PROVIDED.
4. ALL SHOWN WATER MAIN CONNECTION LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND DEPTHS OF ALL PROPOSED WATER MAIN CONNECTIONS PRIOR TO WATER MAIN INSTALLATION.
5. CONTRACTOR SHALL MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 12" BETWEEN ALL EXISTING UTILITIES, EXCEPT SEWER SYSTEM (BOTH GRAVITY AND PRESSURE) WHERE A 18" VERTICAL CLEARANCE IS REQUIRED, UNLESS OTHERWISE INDICATED. IF MEETING THE STATED VERTICAL CLEARANCE IS NOT POSSIBLE THE CONTRACTOR SHALL CONTACT THE ENGINEER.
6. CONTRACTOR SHALL BE REQUIRED TO OBTAIN A TREE PERMIT FROM THE CITY OF NORFOLK PRIOR TO ALL TREE PRUNING OR TREE REMOVAL WITHIN THE RIGHT-OF-WAY. ANY DAMAGES TO CITY OF NORFOLK TREES PRIOR TO APPROVAL OF TRIMMING OR REMOVAL COULD RESULT IN FINES. CONTRACTOR SHALL ADHERE TO ALL TREE PROTECTION NOTES INCLUDED WITHIN THE PLANS AND SPECIFICATIONS.
7. ALL TREE TRIMMING OR REMOVAL IS REQUIRED TO BE COMPLETED BY A CERTIFIED ARBORIST.
8. CONTRACTOR SHALL BE REQUIRED TO COORDINATE ALL WORK WITH THE CITY TREE PLANTING PROJECT ALONG HAMPTON BLVD.
9. APPROVED PROTECTIVE TREE FENCING SHALL BE INSTALLED ALONG THE OUTER EDGE OF AND COMPLETELY SURROUNDING THE CRITICAL ROOT ZONES OF ALL TREES MARKED FOR RETENTION, PRIOR TO ANY LAND DISTURBANCE, AND SHALL REMAIN IN PLACE AND IN GOOD REPAIR UNTIL PROJECT COMPLETION. IN NO CASE SHALL THE PROTECTIVE FENCE BE INSTALLED INSIDE THE TREE'S CRITICAL ROOT ZONE UNLESS OTHERWISE SPECIFIED BY THE DEPARTMENT OF RECREATION, PARKS & OPEN SPACE.
10. ALL GRADING AND CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIAL, SUPPLIES, AND VEHICLES SHALL REMAIN OUTSIDE THE TREE PRESERVATION FENCING.
11. NO MATERIAL SHALL BE STORED INSIDE THE TREE PRESERVATION FENCING.
12. IN THE EVENT THAT A TREE NOT DESIGNATED FOR REMOVAL IS DESTROYED, PERMANENTLY DISFIGURED, OR SIGNIFICANTLY DAMAGED DURING THE CONSTRUCTION PROCESS, THE TREE SHALL BE REPLACED WITH A NEW TREE OR TREES. THE REPLACEMENTS SHALL TOTAL THE SAME NUMBER OF CALIPER TRUNK INCHES AS THAT OF THE TREE(S) DESTROYED.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY PAVEMENT, SIDEWALK, CURBING, ETC., THAT MUST BE CUT OR IS DAMAGED DURING CONSTRUCTION. WITH MATCHING MATERIALS.
14. ALL EXISTING UTILITIES SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR SHALL WORK AROUND/PROTECT THESE UTILITIES AT HIS OWN RISK. ANY COST ASSOCIATED WITH CORRECTING ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE BURDEN OF THE CONTRACTOR. UTILITIES SHOWN ARE FOR THE CONTRACTORS INFORMATION ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL UTILITIES WITHIN THE PROJECT AREA OR UTILITIES THAT IMPACT WORK PRIOR TO COMMENCING WORK.
15. ALL WATER LINE STATIONS AND DIMENSIONS PERTAIN TO THE CENTERLINE OF PIPE OR FITTING.
16. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN SEDIMENT AND EROSION CONTROL IN ACCORDANCE WITH THE CURRENT EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS ARE TO BE CONSIDERED THE MINIMUM REQUIREMENTS. ANY ADDITIONAL EROSION AND SEDIMENT CONTROL REQUIRED TO PREVENT SEDIMENT FROM ENTERING ADJACENT DRAINAGE SYSTEMS, DITCHES, OR WATERCOURSES SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
17. ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE GRADED TO DRAIN, TOP SOILED, SEEDED, AND FERTILIZED. CONTRACTOR SHALL BE REQUIRED TO MAINTAIN THESE AREAS UNTIL A SUBSTANTIAL VEGETATIVE COVER IS DEVELOPED.
18. ALL TRAFFIC PAINT STRIPING REMOVED BY THE CONTRACTOR, BY ANY MEANS, SHALL BE REPLACED IN KIND.
19. CURRENT SERVICE CONNECTIONS ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF THE SURVEY. THE CONTRACTOR SHALL VERIFY THE WATER MAIN THAT SERVES ALL CONNECTIONS ALONG THE PROJECT . ANY CONNECTIONS DETERMINED TO BE LOCATED ON THE EXISTING WATER MAINS WILL HAVE THERE SERVICE REPLACED. THIS SHALL INCLUDE A NEW 3/4" CORPORATION STOP, NEW 3/4" TYPE 'K' COPPER SERVICE LINE TO THE PROPERTY LINE, NEW METER BOX, AND NEW METER STOP. IF THE EXISTING SERVICE IS DEEMED TO BE SUPPLIED FROM ANOTHER WATER MAIN THE SERVICE SHALL REMAIN IN SERVICE. THIS REQUIREMENT INCLUDES THE SERVICES SHOWN TO BE REPLACED ON THE PLANS. COMMERCIAL SERVICES SHALL BE REPLACED IN-KIND.
20. DISCHARGE OF WATER FROM DEWATERING ACTIVITIES SHALL BE FILTERED THROUGH A CITY OF NORFOLK APPROVED FILTRATION DEVICE (A FILTER BAG OR SETTLING TANK).
21. APPLY PERMANENT SEEDING TO DISTURBED GRASS AREAS IMMEDIATELY AS FINAL GRADING IS REACHED AND WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL. SELECTION OF THE SEED MIXTURE SHALL DEPEND ON THE TIME OF YEAR IT IS APPLIED.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: ______ PROJECT MANAGER DATE: ______
APPROVED: ______ BROWN AND CALDWELL DATE: ______

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED:	MTM
DRAWN:	PSH
CHECKED:	EGD
CHECKED:	
APPROVED:	SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
NOTES

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME	144647-BC-C-1.DWG
BC PROJECT NUMBER	144647
SCALE	AS SHOWN
DRAWING NUMBER	C-1
SHEET NUMBER	2 OF 33

RFoshay
Feb 03, 2016 - 10:24am
P:\Clients\Norfolk\144647 Norf-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-1.dwg
01/27/2016

CITY OF NORFOLK STANDARD SITE PLAN NOTES:

EXCAVATION AND RESTORATION IN THE RIGHT OF WAY:

1. ALL WORK WITHIN THE RIGHT OF WAY SHALL COMPLY WITH THE CITY OF NORFOLK DESIGN STANDARDS: DOWNLOAD AT HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=819. EXCEPTIONS MAY BE PERMITTED. A REVIEW MEETING WITH RIGHT OF WAY IS REQUIRED. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV TO SCHEDULE.

2. NEW DEVELOPMENTS, CONSTRUCTION, AND ADDITIONS REQUIRE NEW SIDEWALK, CURB, GUTTER, AND DRIVEWAYS. EXCEPTIONS MAY BE PERMITTED. A REVIEW MEETING WITH RIGHT OF WAY IS REQUIRED. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV TO SCHEDULE.

3. UTILITY POLES MUST BE RELOCATED AT CONTRACTORS COST. A COPY OF THE WORK ORDER FOR POLE RELOCATIONS MUST ACCOMPANY RIGHT-OF-WAY PERMITS.

PERMITS:

4. A PERMIT AND INSPECTION IS REQUIRED FOR LANE OR SIDEWALK CLOSURES FOR WORK WASHING, GRADING, OR INSTALLING ANY ITEM ABOVE OR UNDERGROUND. APPLICATIONS: HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=362

5. A PERMIT AND INSPECTION IS REQUIRED TO PLACE ANY OBJECT IN THE CITY RIGHT-OF-WAY. APPLICATIONS: HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=362

6. A PERMIT IS REQUIRED TO HAUL OVERSIZED, OVERWEIGHT, OR OVER HEIGHT LOADS. APPLICATIONS: HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=362

FEES:

7. CURRENT RIGHT OF WAY PERMIT FEES: HTTP://WWW.NORFOLK.GOV/DOCUMENTCENTER/VIEW/789

8. EXEMPTION: CONTRACTORS PERFORMING WORK UNDER CONTRACT WITH THE CITY OF NORFOLK ARE EXEMPT FROM PERMIT FEES THROUGH JULY 1, 2014. EFFECTIVE JULY 1, 2014, CONTRACTORS PERFORMING WORK UNDER CONTRACT WITH THE CITY OF NORFOLK MUST PAY STREET, LANE, AND SIDEWALK CLOSURE FEES.

9. EXEMPTION: CONTRACTORS PERFORMING WORK UNDER CONTRACT WITH VDOT ARE EXEMPT FROM ALL PERMIT FEES.

TRAFFIC CONTROL:

10. FOR CONSTRUCTION IN OR ADJACENT TO ANY ARTERIAL AND/OR COLLECTOR STREETS REQUIRING TEMPORARY LANE OR STREET CLOSURE, THE CONTRACTOR MUST SCHEDULE A MEETING WITH THE CITY'S TRAFFIC MITIGATION TEAM. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV TO SCHEDULE.

11. NORFOLK POLICE REQUIRES OFF-DUTY OFFICERS FOR TRAFFIC CONTROL IN ANY SIGNALIZED INTERSECTION AND AS REQUIRED BY PERMIT. NORFOLK POLICE REQUIRES THAT OFF-DUTY OFFICERS BE SCHEDULED THROUGH THE SUPERVISOR OF THE TRAFFIC UNIT AT 757-823-4464. OFF-DUTY OFFICERS ARE INDEPENDENT CONTRACTORS. THE COST FOR OFF-DUTY OFFICERS IS A CONTRACTOR/OWNER RESPONSIBILITY.

BONDS:

12. BOND AMOUNT MUST INCLUDE 100% TOTAL COST OF ROW INSTALLATION INCLUDING STREETLIGHTS, WATER, SEWER, STORM, BMPS, ROADWAY, SIDEWALK, CURB, GUTTER. AN ADDITIONAL AMOUNT MAY BE SET AT THE DISCRETION OF THE DIRECTOR OF PUBLIC WORKS AND/OR ROW MANAGER.

13. BOND WILL BE REDUCED DOWN TO 10% FROM THE DATE OF FINAL INSPECTION FOR A 2 YEAR WARRANTY TERM. A SEPARATE WARRANTY BOND IS ACCEPTABLE IN LIEU OF A BOND REDUCTION. A LETTER REQUESTING RELEASE OR REDUCTION MUST BE SENT TO THE RIGHT OF WAY PERMITS OFFICE VIA E-MAIL AT PWROW@NORFOLK.GOV

NOTES TO CITY AND SPECIAL UTILITY PROJECT A/E DESIGNERS AND CONTRACTORS:

14. ALL CITY PROJECTS AND SPECIAL UTILITY PROJECTS (AS DETERMINED BY THE ROW ADMINISTRATOR) CANNOT BE BID UNTIL UTILITIES ARE RELOCATED OR ARRANGEMENTS HAVE BEEN COORDINATED BY THE CITY'S PROJECT MANAGER, A/E, AND RIGHT OF WAY DIVISION. PLEASE PROVIDE A LIST AND DRAWINGS OF ALL UTILITIES NEEDING RELOCATION TO RIGHT-OF-WAY DIVISION AT OR BEFORE 30% SUBMITTAL."

15. PROJECT DESIGNERS MUST INCLUDE A DETAILED TRAFFIC CONTROL PLAN FOR UTILITY WORK WITHIN THE RIGHT-OF-WAY IN THE PLANS. FOR CONSTRUCTION IN OR ADJACENT TO ANY ARTERIAL AND/OR COLLECTOR STREETS AS DEFINED IN THE VIRGINIA WORK AREA PROTECTION MANUAL REQUIRING TEMPORARY LANE OR STREET CLOSURE, THE CONTRACTOR MUST SCHEDULE A MEETING WITH THE CITY'S TRAFFIC MITIGATION TEAM. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV TO SCHEDULE.

OTHER:

16. CONTRACTOR SHALL PROVIDE DETAILED STAMPED DRAWINGS FOR SHORING AND SCAFFOLDING WHICH IS REQUIRED AS PART OF THE RIGHT-OF-WAY PERMIT PROCESS.

17. ANY EXCAVATION IN THE ROADWAY MUST BE PATCHED WITH ASPHALT. STONE IS NOT ACCEPTABLE.

18. FULL CURB TO CURB RESURFACING WILL BE REQUIRED IF ROADWAY PORTION IS CUT WITHIN THE FIRST 5 YEARS AFTER RESURFACING. AN ADMINISTRATIVE FEE OF $500 WILL BE ASSESSED IN ACCORDANCE WITH CITY CODE."

19. DESIGNERS ARE RESPONSIBLE TO CHECK IN-FIELD GRADES AND TO CONSULT WITH THE PROPER CITY OF NORFOLK STAFF IF THERE ARE QUESTIONS OR CONCERNS. DESIGNERS MUST SUBMIT A NOTICE VIA EMAIL TO THE RIGHT-OF-WAY DIVISION AT PWROW@NORFOLK.GOV VERIFYING THAT GRADES HAVE BEEN CHECKED AND ARE CORRECT.

20. A CONSTRUCTION FENCE MAY BE REQUIRED FOR YOUR SITE. IN DOWNTOWN, CONCRETE BARRIERS AND WOOD PANELS ARE REQUIRED IN MOST CASES. IN SOME CASES, CHAIN LINK FENCE IS ACCEPTABLE. A REVIEW BY RIGHT OF WAY IS REQUIRED TO DETERMINE THE TYPE OF FENCE. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV.

NOTIFICATIONS:

21. NOTIFICATION MUST BE APPROACHED FROM 3 LEVELS OR TIERS FOCUSING ON THOSE AFFECTED BY THE CONSTRUCTION. CONTRACTORS AND/OR PROJECT SPONSOR WILL BE REQUIRED TO NOTIFY RESIDENTS AND BUSINESSES IN THE IMMEDIATE AREA THAT WILL BE AFFECTED BY THE CONSTRUCTION. DOOR HANGERS MUST BE PLACED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION AND MUST INCLUDE A 24 HOUR CONTACT PHONE NUMBER FOR EMERGENCIES. UPDATES MUST BE PROVIDED TO RESIDENTS AND BUSINESSES ON A BI-WEEKLY OR MONTHLY BASIS DEPENDING ON THE FOLLOWING:

    a. IMMEDIATE IMPACT - BUSINESS OR RESIDENTS WITHIN THE CONSTRUCTION ZONE WHO WILL BE AFFECTED BY ACCESS RESTRICTIONS, NOISE, DIRT AND DUST, USE OF PROPERTY DIRECTLY ADJACENT TO THEM, ETC.

    b. AREA IMPACT - THOSE WHO TRAVEL THROUGH OR WILL BE DETOURED AROUND LOCAL OR COLLECTOR STREETS, AFFECTED BY CONSTRUCTION INCLUDING CIVIC LEAGUES, BUSINESS ASSOCIATIONS AND PROPERTY OWNERS.

    c. CITYWIDE IMPACT - THOSE WHO ARE AFFECTED BY VEHICULAR OR PEDESTRIAN ACCESS ON ARTERIAL STREETS OR IN BUSINESS OR OTHER PUBLIC ACTIVITY AREAS (SCHOOLS, UNIVERSITIES, GOVERNMENT FACILITIES, ETC.)

JACKING, HORIZONTAL BORING, AND DIRECTION DRILLING

22. WHERE FACILITIES ARE TO BE INSTALLED IN THE PUBLIC RIGHT-OF-WAY BY JACKING, HORIZONTAL BORING, OR DIRECTIONAL DRILLING, THE FACILITIES MUST BE CASED AND THE OPERATION WILL BE MONITORED BY THE CITY'S RIGHT-OF-WAY INSPECTOR. "HOLE HOG" OR ANY OTHER TYPE OF HYDRAULIC HOLE IMPACT DRIVEN EQUIPMENT WILL NOT BE PERMITTED. WATER JETTING TYPES OF BORING WILL NOT BE PERMITTED.

    a. CONSTRUCTION OPERATIONS WILL BE CONDUCTED IN SUCH A MANNER THAT THEY WILL NOT WEAKEN OR DAMAGE THE EXISTING STREET PAVEMENT STRUCTURE OR OTHER EXISTING FACILITIES. THE PERMITTEE IS RESPONSIBLE FOR DETERMINING THE VERTICAL AND HORIZONTAL LOCATION OF ANY FACILITIES WITHIN THE JACKING, HORIZONTAL BORING, OR DIRECTIONAL DRILLING OPERATION.

    b. THE PERMITTEE SHALL VERIFY EXISTING UNDERGROUND FACILITIES THROUGH A REVIEW OF RECORD DATA, USE OF LOCATION REQUESTS FROM MISS UTILITY (1-800-552-7001 OR 811), COLLECTION AND OBSERVATION OF VISIBLE SURFACE EVIDENCE, CONSULTATION WITH UTILITY OWNERS, AND APPLICATION OF SUBSURFACE UTILITY ENGINEERING TECHNIQUES (E.G. POT-HOLING, GROUND PENETRATING RADAR, ETC.). INDUSTRY STANDARDS OF CARE MUST BE TAKEN NOT TO DAMAGE EXISTING FACILITIES.

    c. THE LOCATION OF THE BORING AND RECEIVING PITS SHALL BE SUFFICIENT DISTANCE FROM THE STREET PAVEMENT STRUCTURE TO PREVENT UNDERMINING OF THE CURB AND GUTTER, SIDEWALK, OR SHOULDER. THE RIGHT-OF-WAY INSPECTOR SHALL APPROVE THE LOCATION OF THE BORE PITS. IF THE BORING AND/OR RECEIVING PITS REQUIRE THE CUTTING OF ANY PEDESTRIAN WALKWAY, A SIDEWALK DETOUR MUST BE PROVIDED.

    d. BORE PITS SHALL BE EXCAVATED TO A DEPTH SUFFICIENT TO MAINTAIN A MINIMUM DEPTH OF THIRTY INCHES (30") BELOW THE SUB-GRADE OF THE PAVEMENT SECTION. THE JACKING OR BORING SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CURRENT EDITION OF THE HAMPTON ROADS REGIONAL CONSTRUCTION STANDARDS. CLEAR SPACE BETWEEN THE CASING AND THE SURROUNDING EXCAVATION SHALL BE COMPLETELY FILLED BY PRESSURE GROUTING THE ENTIRE LENGTH OF THE INSTALLATION. IF A CAVE-IN OCCURS DURING JACKING AND BORING OPERATIONS THEN THE PERMITTEE SHALL GROUT THE ENTIRE CONDUIT IN PLACE THROUGHOUT ITS ENTIRE LENGTH.

    e. THE PITS OR TRENCHES EXCAVATED TO ACCOMPLISH THIS OPERATION SHALL BE CLOSED IMMEDIATELY AFTER THE WORK HAS BEEN COMPLETED. NO EXCAVATION MAY BE LEFT OPEN OVERNIGHT. THESE EXCAVATIONS MUST BE FILLED OR PLATED APPROPRIATELY FOR THE CONDITIONS AND THE POSSIBLE LOADS. THE BACKFILL SHALL BE COMPACTED TO A DENSITY EQUAL TO 95%.

    f. WHEN DIRECTIONAL DRILLING IS THE APPROVED METHOD FOR THE INSTALLATION OF UNDERGROUND FACILITIES, THE FOLLOWING INFORMATION SHALL BE REQUIRED FROM THE APPLICANT BEFORE A PERMIT IS ISSUED. THIS INCLUDES THE INSTALLATION OF TIEBACK SYSTEMS THAT REACH INTO THE PUBLIC RIGHT-OF-WAY.

        (I) PROPOSED LOCATION OF ENTRY AND EXIT POINT, ACCESS PITS, EQUIPMENT, AND STAGING AREA.

        (II) PROPOSED DRILL PATH ALIGNMENT (HORIZONTAL AND VERTICAL).

        (III) LOCATION AND DISTANCES TO ALL EXISTING FACILITIES WITHIN TEN FEET (10') OF THE PROPOSED DRILL ALIGNMENT.

        (IV) PROPOSED DEPTH OF COVER ON FACILITIES TO BE INSTALLED.

        (V) CARRIER PIPE LENGTH, DIAMETER, THICKNESS, AND MATERIAL (HDPE/STEEL) AND REAM PIPE DIAMETER.

        (VI) A STATEMENT THAT PROPOSED DRILLING FLUID TO BE USED MEET CITY ENVIRONMENTAL STANDARDS.

    g. SHOULD A CAVE-IN OR PAVEMENT FAILURE OCCUR ALONG THE PERMITTEE'S BORE PATH AT ANY TIME WITHIN 12 MONTHS AFTER COMPLETION OF JACKING, HORIZONTAL BORING, AND DIRECTIONAL DRILLING OPERATIONS, IT WILL BE THE PERMITTEE'S RESPONSIBILITY AND EXPENSE TO VERIFY BY VIDEO SURVEYING, OR OTHER METHODS, THAT THE BORING OPERATION DID NOT CAUSE THE CAVE-IN OR PAVEMENT FAILURE, OR DAMAGE TO CITY WATER, WASTEWATER, AND STORM WATER UNDERGROUND FACILITIES.

    h. ONCE IT IS DETERMINED THAT THE PERMITTEE'S BORING OPERATION IS THE PROXIMATE CAUSE OF THE CAVEIN OR PAVEMENT FAILURE, AND/OR DAMAGE TO CITY WATER, WASTEWATER, OR STORM WATER UNDERGROUND FACILITIES, IT WILL BE THE PERMITTEE'S RESPONSIBILITY TO PROMPTLY RESPOND AND REPAIR THE SAME AT THE PERMITTEE'S EXPENSE AND RESTORE THE PUBLIC RIGHT-OF-WAY AS HEREIN SPECIFIED IN THE RIGHT-OF-WAY EXCAVATION & RESTORATION MANUAL.

SUGGESTED SEQUENCE OF CONSTRUCTION

1. OBTAIN ALL NECESSARY PERMITS.
2. CONTRACTOR SHALL COORDINATE/CONDUCT A PRE-CONSTRUCTION MEETING WITH ALL APPROPRIATE CITY AGENCIES AND WITH ALL APPLICABLE UTILITY COMPANIES PRIOR TO COMMENCING WORK.
3. CONTRACTOR SHALL PREPARE AND SUBMIT FLUSHING, DE-WATERING AND TIE-IN PLANS TO THE OWNER AND ENGINEER FOR APPROVAL. SEE FLUSHING, DE-WATERING AND TIE-IN SUBMISSION NOTES THIS SHEET.
4. CONTRACTOR SHALL PREPARE AND SUBMIT A PHASING PLAN DESCRIBING HOW THE CONTRACTOR WILL PROCEED WITH THE INSTALLATION OF THE NEW WATER MAIN. IN ORDER TO KEEP THE EXISTING 24" WATER MAIN IN SERVICE DURING CONSTRUCTION, THE CONTRACTOR SHALL CONSTRUCT FROM STA. 10+00 TO 10+45 OF THE NEW 24" WATER MAIN LAST.
5. CONTRACTOR SHALL PREPARE AND SUBMIT A PIPE SCHEDULE INDICATING ALL FITTINGS AND PIPE LENGTHS. INCLUDE ANY LONG BODY SLEEVES REQUIRED. CONTRACTOR SHALL RECEIVE APPROVAL OF SCHEDULE PRIOR TO ORDERING PIPE AND FITTINGS.
6. CONTRACTOR SHALL PREPARE AND SUBMIT A DETAILED TRAFFIC CONTROL PLAN. CONTRACTOR SHALL REFER TO THE TRAFFIC CONTROL PLANS FOR PERMITTED WORK PERIODS.
7. CONTRACTOR SHALL INSTALL ANY TEMPORARY FENCING, SILT FENCE, TREE PROTECTION AND TRAFFIC CONTROL PRIOR TO BEGINNING EACH PHASE.
8. INSTALL PROPOSED WATER MAIN. CONTRACTOR SHALL NOT CONNECT NEW WATER MAIN TO ANY EXISTING WATER MAINS UNTIL THEY HAVE BEEN DIRECTED BY THE CITY INSPECTOR TO DO SO.
9. AT THE COMPLETION OF EACH PHASE, CONTRACTOR SHALL PRESSURE TEST, FLUSH AND CHLORINATE THE WATER MAIN.
10. ONCE EACH PHASE OF NEW WATER MAIN HAS BEEN TESTED AND APPROVAL HAS BEEN GIVEN TO PLACE WATER MAIN INTO SERVICE, CONTRACTOR MAY CONNECT NEW WATER MAIN TO EXISTING WATER MAINS AS SHOWN ON PLAN. CONTRACTOR SHALL DE-WATER, AND ABANDON EXISTING WATER MAINS AND VALVES IN PLACE AS INDICATED ON PLANS.
11. AT THE COMPLETION OF EACH PHASE OF WATER MAIN INSTALLATION, THE CONTRACTOR SHALL RESTORE PAVEMENT, CURB AND GUTTER, AND SIDEWALKS TO ORIGINAL CONDITIONS BEFORE MOVING ONTO THE NEXT PHASE.
12. CONTRACTOR SHALL LEAVE ALL SEDIMENT CONTROL DEVICES IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ACHIEVED UNLESS OTHERWISE INSTRUCTED TO DO SO.
13. ONCE ALL PHASES OF WATER MAIN INSTALLATION ARE COMPLETE, CONTRACTOR SHALL CONTACT OWNER/ENGINEER FOR A WALK THROUGH OF SITE TO DOCUMENT ANY AREAS THAT MAY NEED TO BE ADDRESSED.
14. CONTRACTOR SHALL COMPLETE ANY PUNCH LIST ITEMS.
15. ONCE ALL PUNCH LIST ITEMS ARE COMPLETED AND APPROVED, CONTRACTOR SHALL DEMOBILIZE AND RETURN ANY STORAGE AND EQUIPMENT AREAS BACK TO PRE-CONSTRUCTION CONDITIONS.

FLUSHING, DE-WATERING AND TIE-IN SUBMISSION NOTES

1. CONTRACTOR SHALL PREPARE AND SUBMIT A FLUSHING PLAN FOR THE NEW 24" WATER MAIN TO THE OWNER AND ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL ENSURE IN THE PLAN THAT HAMPTON BOULEVARD AND OTHER NEIGHBORING STREETS ARE NOT FLOODED DURING FLUSHING OPERATIONS. ON HAMPTON BOULEVARD AND WEST LITTLE CREEK THE CONTRACTOR SHALL MANAGE THE DISCHARGE OF WATER IN SUCH A WAY THAT STANDING WATER IS LIMITED TO A DISTANCE OF 6 FEET FROM THE FACE OF CURB. ON NEIGHBORHOOD STREETS THE CONTRACTOR SHALL MANAGE THE DISCHARGE OF WATER IN SUCH A WAY THAT STANDING WATER IS LIMITED TO A DISTANCE OF 4 FEET FORM THE FACE OF CURB. CONTRACTOR MAY UTILIZE THE STORMWATER SYSTEM FOR FLUSHING. THE CONTRACTOR MUST ALSO SHOW THAT THE STORM SYSTEM HAS CAPACITY ALL THE WAY TO THE OUTFALL BY SUBMITTING CALCULATIONS SEALED BY A VIRGINIA REGISTERED ENGINEER. INCLUDE IN THE FLUSHING PLAN A DESCRIPTION OF ANY CONTAINERS OR OTHER DEVICES WHICH WILL BE UTILIZED TO PREVENT STREET FLOODING.
2. CONTRACTOR SHALL PREPARE AND SUBMIT A DE-WATERING AND ABATEMENT PLAN FOR THE ABANDONMENT OF THE EXISTING 24" WATER MAIN. CONTRACTOR SHALL ENSURE TO IN THE PLAN THAT HAMPTON BOULEVARD AND OTHER NEIGHBORING STREETS ARE NOT FLOODED. ON HAMPTON BOULEVARD AND WEST LITTLE CREEK THE CONTRACTOR SHALL MANAGE THE DISCHARGE OF WATER IN SUCH A WAY THAT STANDING WATER IS LIMITED TO A DISTANCE OF 6 FEET FROM THE FACE OF CURB. ON NEIGHBORHOOD STREETS THE CONTRACTOR SHALL MANGE THE DISCHARGE OF WATER IN SUCH A WAY THAT STANDING WATER IS LIMITED TO A DISTANCE OF 4 FEET FORM THE FACE OF CURB. CONTRACTOR MAY UTILIZE THE EXISTING STORMWATER SYSTEM FOR THE DE-WATERING OF THE EXISTING LINE. THE CONTRACTOR MUST ALSO SHOW THAT THE EXISTING STORM SYSTEM HAS CAPACITY ALL THE WAY TO THE OUTFALL BY SUBMITTING CALCULATIONS SEALED B Y A VIRGINIA REGISTERED ENGINEER. INCLUDE IN THE DE-WATERING PLAN A DESCRIPTION OF ANY CONTAINERS OR OTHER DEVICES WHICH WILL BE UTILIZED TO PREVENT STREET FLOODING. ADJUST RATE AS NECESSARY.
3. WATER SHALL BE DECHLORINATED PRIOR TO DISCHARGE INTO THE STORM SYSTEM. WATER SHALL BE DECHLORINATED IN SUCH A WAY TO ENSURE AQUATIC LIFE WILL NOT BE HARMED BY THE DEWATERING DISCHARGE. DECHLORINATION PROCEDURES SHALL BE EPA APPROVED.
4. DISCHARGE OF WATER FROM DEWATERING ACTIVITIES SHALL BE FILTERED THROUGH A CITY OF NORFOLK APPROVED FILTRATION DEVICE (A FILTER BAG OR SETTLING TANK).
5. CONTRACTOR SHALL PREPARE AND SUBMIT A TIE-IN PLAN OF ALL INTERCONNECTS TO THE OWNER AND ENGINEER FOR APPROVAL. CONTRACTOR SHALL NOT CONNECT ANY EXISTING WATER MAINS UNTIL THIS PLAN HAS BEEN APPROVED OR UNLESS DIRECTED BY THE DEPARTMENT OF UTILITIES INSPECTOR.

ABBREVIATIONS

APPROX	APPROXIMATE
℄	BASELINE
℄	CENTERLINE
DI	DUCTILE IRON
ELEV	ELEVATION
EXIST	EXISTING
FH	FIRE HYDRANT
GPIN	GRID PARCEL IDENTIFICATION NUMBER
HORIZ	HORIZONTAL
MIN	MINIMUM
MJ	MECHANICAL JOINT
NTP	NOTICE TO PROCEED
OHW	OVERHEAD WIRE
RJP	RESTRAINED JOINT PIPE
SER	SERVICE
STA	STATION
TYP	TYPICAL
UNK	UNKNOWN UTILITY
VERT	VERTICAL

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 039704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
NOTES

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-2.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-2
SHEET NUMBER 3 OF 33

Feb 03, 2016 - 10:25am RFoshay
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01/27/2016

SURVEY LEGEND

SYMBOL	ABBREV.	DESCRIPTION	SYMBOL	ABBREV.	DESCRIPTION
	AC.	ACRES		MW	MONITORING WELL
	AATUR	ABANDONED ACCORDING TO UTILITY RECORDS		N/F	NOW OR FORMERLY
	BIT.	BITUMINOUS		(OA)	OVERALL
		BOLLARD		PED.	PEDESTAL
		BORING			PLUG/STUB
		BRUSH OR DRIP LINE		P.O.B.	POINT OF BEGINNING
	SBL	BUILDING SETBACK LINE		P.C.	POINT OF CURVE
	CATV	CABLE TELEVISION		PVC	POLYVINYL CHLORIDE
	CI	CAST IRON		RR	RAILROAD
	℄	CENTERLINE		RCP	REINFORCED CONCRETE PIPE
	CLD	CENTERLINE OF DITCH		R/W, ROW	RIGHT-OF-WAY
OHW	OHW	CENTERLINE OVERHEAD WIRES		RDCO	ROOF DRAIN CLEANOUT
	C&G	CONCRETE CURB & GUTTER		SFMV	SANITARY FORCE MAIN VALVE
	CMP	CORRUGATED METAL PIPE	SFM		SANITARY FORCEMAIN
	CB	CURB BASIN	SS		SANITARY SEWER LINE
	DATUR	DEPICTED ACCORDING TO UTILITY RECORDS		SSCO	SANITARY SEWER CLEANOUT
	DI	DROP INLET		SSMH	SANITARY SEWER MANHOLE
		EASEMENT LINE		(S)	SET MONUMENT
	EP	EDGE OF PAVEMENT			SIGN
	EW	EDGE OF WATER			SPOT ELEVATION
	ELEC.	ELECTRIC		S.F.	SQUARE FEET
	EMH	ELECTRIC MANHOLE		S.H.P.B.	STATE HIGHWAY PLAT BOOK
	ELEV, EL	ELEVATION		SDMH	STORM DRAIN MANHOLE
		EMERGENCY PUMP CONNECTION	SD	SD	STORM DRAIN PIPE
	EOI	END OF INFORMATION		STRUC.	STRUCTURE
		EXCEPTION ITEM DESIGNATOR			SURVEY CONTROL
		FENCE		MON.	SURVEY MONUMENT
	FF	FINISHED FLOOR ELEVATION		TELE.	TELEPHONE
	FH	FIRE HYDRANT		TMH	TELEPHONE MANHOLE
	FP	FLAG POLE		TBM	TEMPORARY BENCHMARK
	FES	FLARED END SECTION			TOE OF SLOPE/BANK
	FIRM	FLOOD INSURANCE RATE MAP			TOP OF SLOPE/BANK
	FL	FLOW LINE		TC	TOP OF CURB
	(F)	FOUND MONUMENT		RIM	TOP OF STRUCTURE ELEVATION
	GM	GAS METER		TRAF.	TRAFFIC
	GV	GAS VALVE		TSP	TRAFFIC SIGNAL POLE
	GPIN	GEOGRAPHIC PARCEL IDENTIFICATION NUMBER		TRANS.	TRANSFORMER
		GUY WIRE			TREE TRUNK
	HC	HANDICAP	CATV	CATV	UNDERGROUND CABLE TELEVISION
	HVAC	HEATING VENTILATION & AIR CONDITIONING	UE	UE	UNDERGROUND ELECTRIC
	HDPE	HIGH DENSITY POLYETHYLENE	G	G	UNDERGROUND NATURAL GAS
	INSTR.	INSTRUMENT	UT	UT	UNDERGROUND TELEPHONE
	INV	INVERT ELEVATION	UTC	UTC	UNDERGROUND TRAFFIC CONTROL
	JBOX	JUNCTION BOX		UP	UTILITY POLE
		LANDSCAPED AREA			UTILITY POLE W/LAMP
	LP	LIGHT POLE		WV	WATER VALVE
		LOT LINE			VAULT
	MB	MAIL BOX	W	W	WATER LINE
	MH	MANHOLE		WM	WATER METER
		MARSH		WF	WETLANDS FLAG

WATER MAIN SUMMARY TABLES

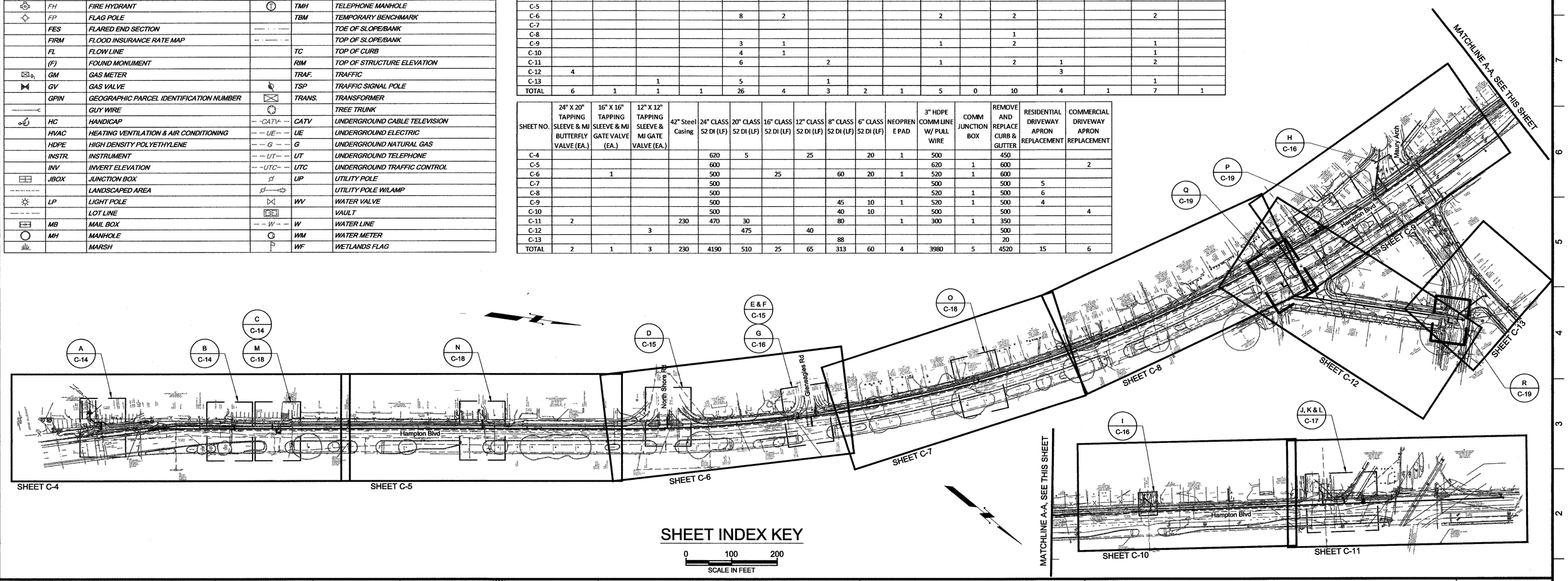
SHEET NO.	VALVE ABANDONMENT (EA.)	24" WATER MAIN ABANDONMENT (EA.)	16" WATER MAIN ABANDONMENT (EA.)	12" WATER MAIN ABANDONMENT (EA.)	8" WATER MAIN ABANDONMENT (EA.)	6" WATER MAIN ABANDONMENT (EA.)	CONNECT TO EXISTING WATER MAIN (EA.)	CUT & CAP	FIRE HYDRANT ASSEMBLY (INCLUDES SERVICE TEE & VALVE. EA.)	FIRE HYDRANT ASSEMBLY REMOVAL (EA.)	CORPORATION STOP (EA.)	3/4" TYPE "K" COPPER, PUBLIC (LF)	3/4" TYPE "K" COPPER, PRIVATE (LF)	METER STOP (EA.)	METER BOX (EA.)
C-4	3	578	20	18		36	4	4	1						
C-5		600							1						
C-6	4	502				42	3	3	1	1					
C-7		500							1						
C-8		500									3	65	150	3	3
C-9	2	500				28	1	5	1		3	170	150	3	3
C-10	1	500	11			20	2	2							
C-11	2	460				55	4	4							
C-12				645			2	2	1						
C-13					120		1	1			1	135	50	1	1
TOTAL	12	4140	31	663	120	181	17	21	6	1	7	370	350	7	7

SHEET NO.	24" MJ TEE(EA.)	24" X 20" MJ TEE (EA.)	24" X 16" MJ TEE (EA.)	24" X 12" MJ TEE (EA.)	24" X 8" MJ TEE (EA.)	24" X 6" MJ TEE (EA.)	24" MJ 45° BEND (EA.)	24" MJ 22.5° BEND (EA.)	24" X 20" MJ REDUCER (EA.)	24" MJ SLEEVE (EA.)	24" MJ Plug (EA.)	20" MJ CROSS (EA.)	20" MJ 90° BEND (EA.)	20" MJ 45° BEND (EA.)	20" X 12" MJ TEE (EA.)	20" X 12" MJ REDUCER (EA.)	20" MJ 11.25° BEND (EA.)	20" MJ PLUG (EA.)	16" MJ 45° BEND (EA.)	16" SLEEVE (EA.)
C-4	1			1		1	8	2	1	1										
C-5																				
C-6			1		2														2	
C-7																				
C-8		1																		
C-9					1		2													
C-10			1		1															1
C-11		2			2		2				2		2							
C-12												1		3	2	1	1	1		
C-13																1				
TOTAL	1	3	2	1	6	1	12	2	1	1	2	1	2	3	2	2	1	1	2	1

SHEET NO.	12" MJ 90° BEND (EA.)	12" MJ 45° BEND (EA.)	12" X 8" MJ REDUCER (EA.)	12" MJ SLEEVE (EA.)	8" MJ 45° BEND (EA.)	8" X 6" MJ REDUCER (EA.)	8" MJ SLEEVE (EA.)	6" MJ 90° BEND (EA.)	6" MJ 45° BEND (EA.)	6" MJ SLEEVE (EA.)	6" MJ CAP (EA.)	24" MJ BUTTERFLY VALVE (EA.)	20" MJ BUTTERFLY VALVE (EA.)	12" MJ GATE VALVE (EA.)	8" MJ GATE VALVE (EA.)	6" MJ GATE VALVE (EA.)
C-4	2	1		1				2	1	1		3		1		1
C-5																
C-6					8	2				2		2			2	
C-7																
C-8												1				
C-9					3	1				1		2			1	
C-10					4	1									1	
C-11					6		2			1		2	1		2	
C-12	4												3			
C-13			1		5		1								1	
TOTAL	6	1	1	1	26	4	3	2	1	5	0	10	4	1	7	1

SHEET NO.	24" X 20" TAPPING SLEEVE & MJ BUTTERFLY VALVE (EA.)	16" X 16" TAPPING SLEEVE & MJ GATE VALVE (EA.)	12" X 12" TAPPING SLEEVE & MJ GATE VALVE (EA.)	42" Steel Casing	24" CLASS 52 DI (LF)	20" CLASS 52 DI (LF)	16" CLASS 52 DI (LF)	12" CLASS 52 DI (LF)	8" CLASS 52 DI (LF)	6" CLASS 52 DI (LF)	NEOPRENE PAD	3" HDPE COMM LINE W/ PULL WIRE	COMM JUNCTION BOX	REMOVE AND REPLACE CURB & GUTTER	RESIDENTIAL DRIVEWAY APRON REPLACEMENT	COMMERCIAL DRIVEWAY APRON REPLACEMENT
C-4					620	5		25		20	1	500		450		
C-5					600							620	1	600		2
C-6		1			500		25		60	20	1	520	1	600		
C-7					500							500		500	5	
C-8					500							520	1	500	6	
C-9					500				45	10	1	520	1	500	4	
C-10					500				40	10		500		500		4
C-11	2			230	470	30			80		1	300	1	350		
C-12			3			475		40						500		
C-13									88					20		
TOTAL	2	1	3	230	4190	510	25	65	313	60	4	3980	5	4520	15	6

NOTE:
INTERCONNECT SHEETS (C-14 THROUGH C-19) QUANTITIES ARE INCORPORATED WITH MAINLINE SHEETS (C-4 THROUGH C-13)



SHEET INDEX KEY

0 100 200
SCALE IN FEET

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)
DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 0392704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
WATER MAIN SUMMARY TABLE, ABBREVIATIONS, AND SHEET INDEX KEY
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-3.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-3
SHEET NUMBER 4 OF 33

RFoshay
Feb 03, 2016 - 10:26am
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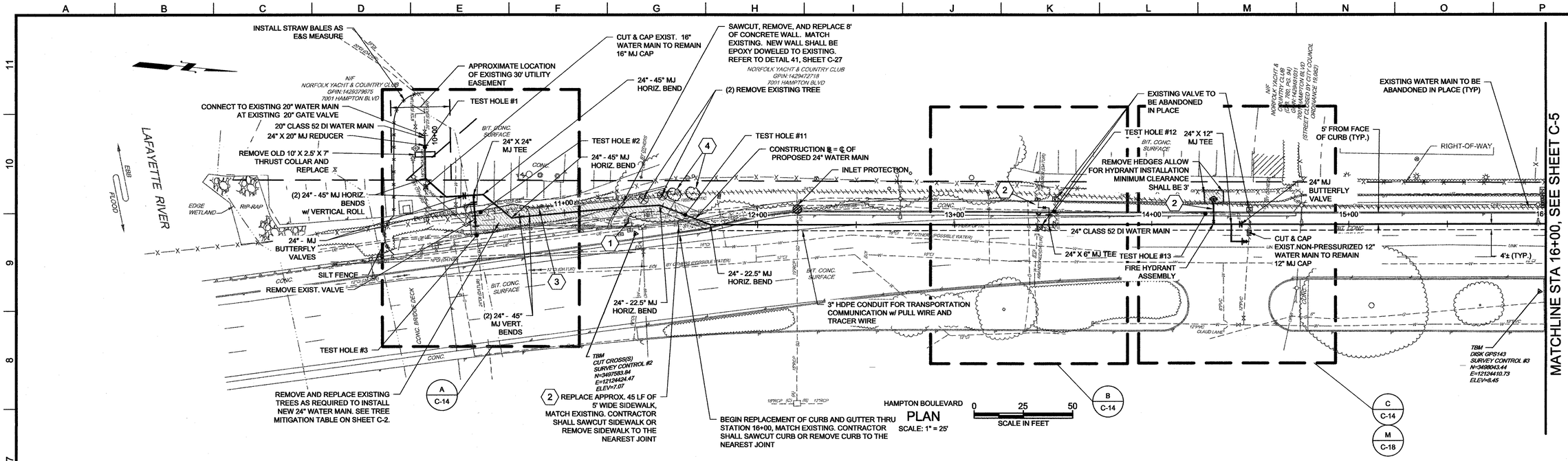
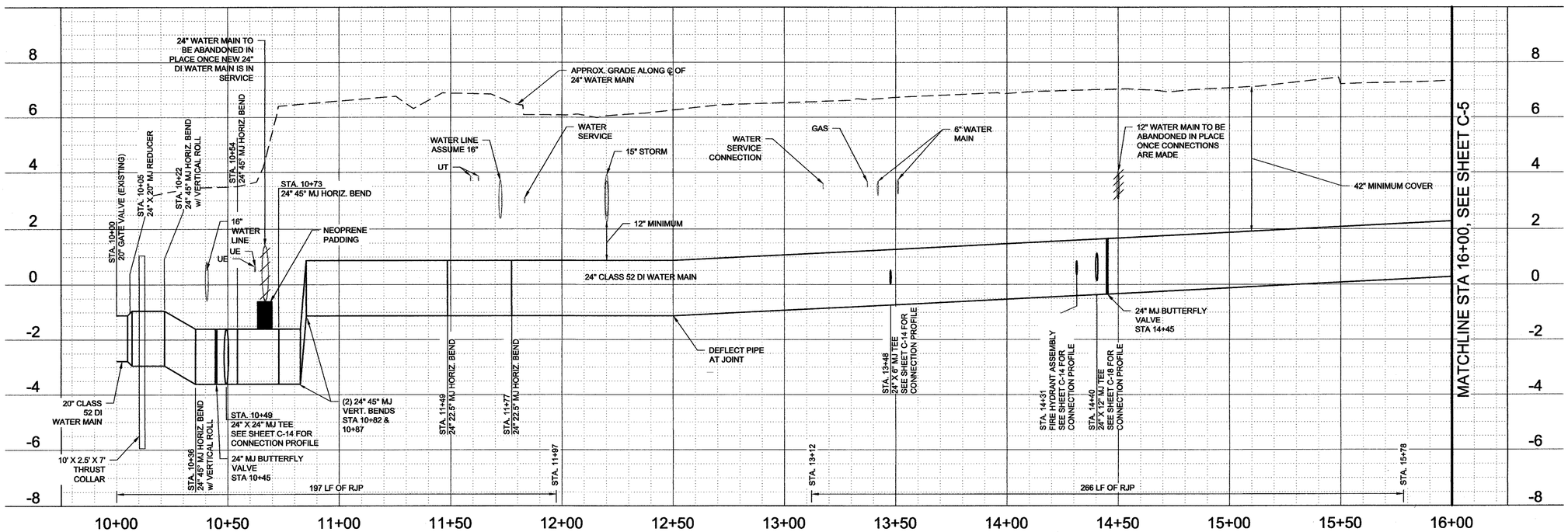
01/27/2016





TEST HOLE DATA

NUMBER	SIZE	TYPE	DEPTH
1	16"	CI WATER	4.34'
2	24"	CI WATER	3.00'
3	24"	DI WATER	6.03'
11		NONE FOUND	
12		NONE FOUND	
13		NONE FOUND	

ROOT PRUNING ZONE

KEY NOTES

1. TERMINATE NEW 3" HDPE CONDUIT INSIDE EXISTING JUNCTION BOX SECURING PULL WIRE & TRACER WIRE.
2. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIDEWALK TO THE NEAREST ADJACENT JOINT. ADJACENT JOINTS MUST BE SAWCUT.
3. REMOVE AND REPLACE EXISTING CHAIN LINK FENCE AS REQUIRED.
4. CREPE MYRTLE BULLED AND BURLAPPED (MINIMUM SIZE: 2.5-3.0" CAL., 12-14' TH.)

NOTES:

1. CONTRACTOR SHALL INSTALL A MINIMUM OF 4' OF PIPE BETWEEN 24" FITTINGS.
2. CONTRACTOR SHALL UTILIZE LONG BODY DUCTILE IRON SLEEVES WHEN CONNECTING TWO SEPARATE WORK AREAS AT NO ADDITIONAL COST TO THE CITY.

THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS, IF SHOWN HEREON, ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "GPS088" ELEV=11.61.

RFoshay
Feb 03, 2016 - 10:27am
P:\Clients\Norfolk\144647 Norf-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-4.dwg

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
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DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

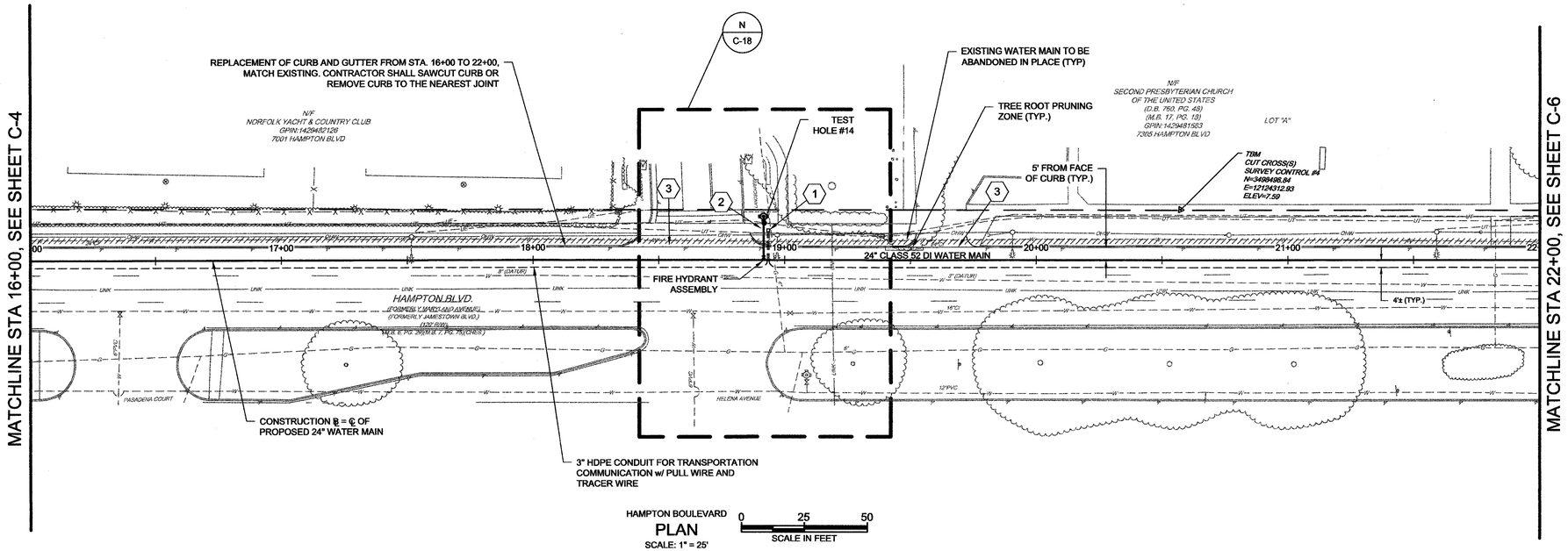
TOWN 1682 BOROUGH 1705 CITY 1845 CITY OF NORFOLK VIRGINIA

City of Norfolk
Department of Utilities

CIVIL
HAMPTON BOULEVARD PLAN AND PROFILE
STA 10+00 TO STA 16+00
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

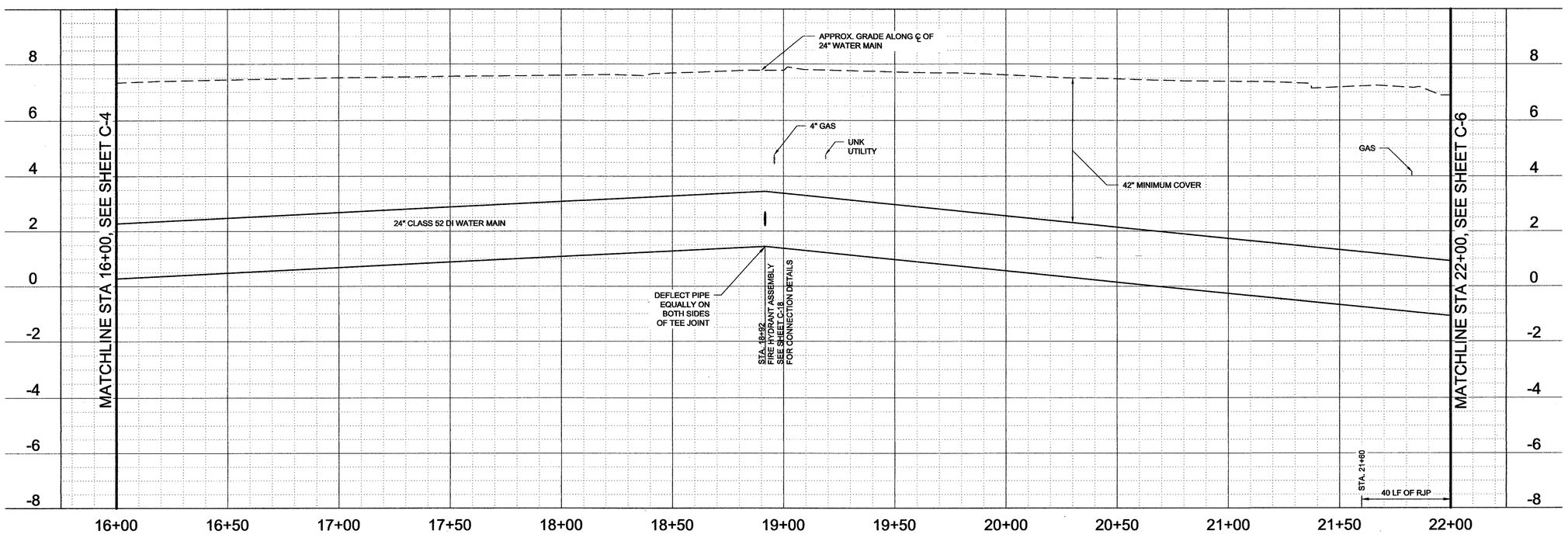
FILENAME 144647-BC-C-4.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-4
SHEET NUMBER 5 OF 33

01/27/2016



HAMPTON BOULEVARD
PLAN
SCALE: 1" = 25'

0 25 50
SCALE IN FEET



HORIZONTAL
0 25 50
SCALE IN FEET

VERTICAL
0 2 4
SCALE IN FEET

TEST HOLE DATA

NUMBER	SIZE	TYPE	DEPTH
14		NONE FOUND	

ROOT PRUNING ZONE

KEY NOTES

1. NEW JUNCTION BOX SET IN SIDEWALK. TERMINATE 3" HDPE CONDUITS INSIDE NEW JUNCTION BOX SECURING PULL WIRES AND TRACER WIRE.
2. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIDEWALK TO THE NEAREST ADJACENT JOINT. ADJACENT JOINTS MUST BE SAWCUT.
3. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING COMMERCIAL DRIVEWAYS TO THE PROPERTY LINE. SEE DETAIL 43, ON SHEET C-26.

NOTES:

1. CONTRACTOR SHALL INSTALL A MINIMUM OF 4' OF PIPE BETWEEN 24" FITTINGS.
2. CONTRACTOR SHALL UTILIZE LONG BODY DUCTILE IRON SLEEVES WHEN CONNECTING TWO SEPARATE WORK AREAS AT NO ADDITIONAL COST TO THE CITY.

THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS, IF SHOWN HEREON, ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "GPS088" ELEV=11.61.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

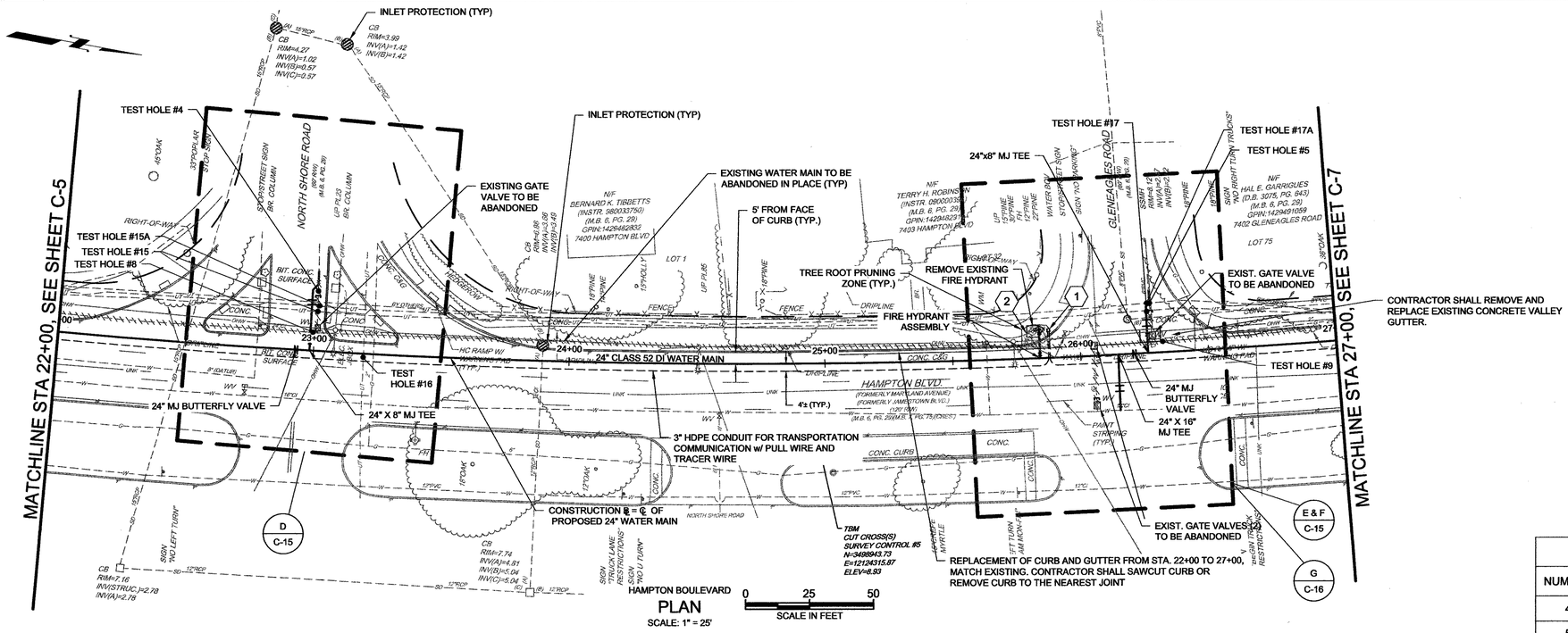
City of Norfolk
Department of Utilities

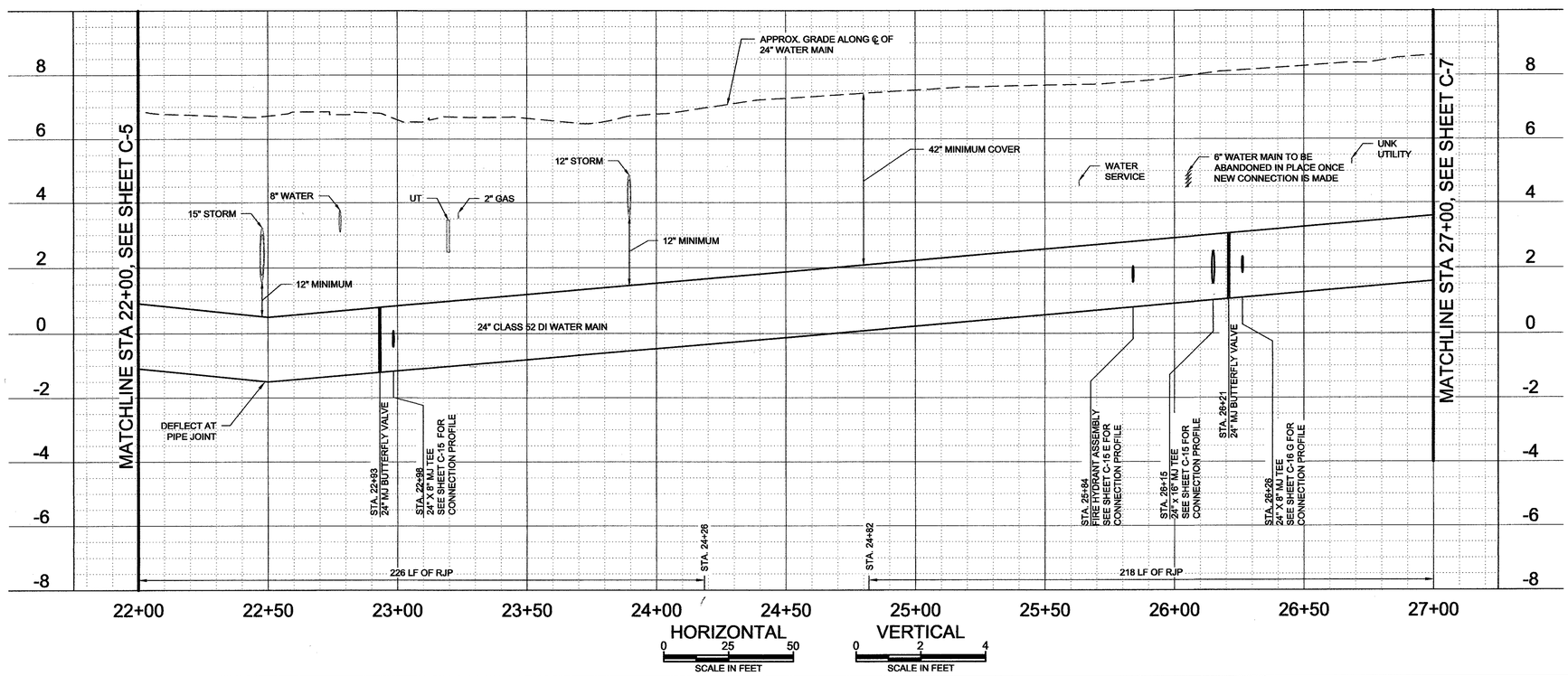
CIVIL
HAMPTON BOULEVARD PLAN AND PROFILE
STA 16+00 TO STA 22+00
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME: 144647-BC-C-5.DWG
BC PROJECT NUMBER: 144647
SCALE: AS SHOWN
DRAWING NUMBER: C-5
SHEET NUMBER: 6 OF 33

01/27/2016

Feb 03, 2016 - 10:27am RFoshay
P:\Clients\Norfolk\144647 Nor-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-5.dwg





TEST HOLE DATA

NUMBER	SIZE	TYPE	DEPTH
4	6"	CI WATER	3.26'
5	6"	CI WATER	3.21'
8	24"	CI WATER	2.79'
9	24"	CI WATER	3.04'
15		FIBER OPTIC	7.64'
15A		FIBER OPTIC	8.65'
16	X 12"	TELEPHONE DUCT	3.23'
17		NONE FOUND	
17A		NONE FOUND	

ROOT PRUNING ZONE

KEY NOTES

1. NEW JUNCTION BOX SET IN SIDEWALK. TERMINATE 3" HDPE CONDUITS INSIDE NEW JUNCTION BOX SECURING PULL WIRES AND TRACER WIRE.
2. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIDEWALK TO THE NEAREST ADJACENT JOINT. ADJACENT JOINTS MUST BE SAWCUT.

NOTES:

1. CONTRACTOR SHALL INSTALL A MINIMUM OF 4' OF PIPE BETWEEN 24" FITTINGS.
2. CONTRACTOR SHALL UTILIZE LONG BODY DUCTILE IRON SLEEVES WHEN CONNECTING TWO SEPARATE WORK AREAS AT NO ADDITIONAL COST TO THE CITY.

THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS, IF SHOWN HEREON, ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "GPS088" ELEV=11.61.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
HAMPTON BOULEVARD PLAN AND PROFILE
STA 22+00 TO STA 27+00
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-6.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-6
SHEET NUMBER 7 OF 33

01/27/2016

Feb 03, 2016 - 10:28am RFoshay
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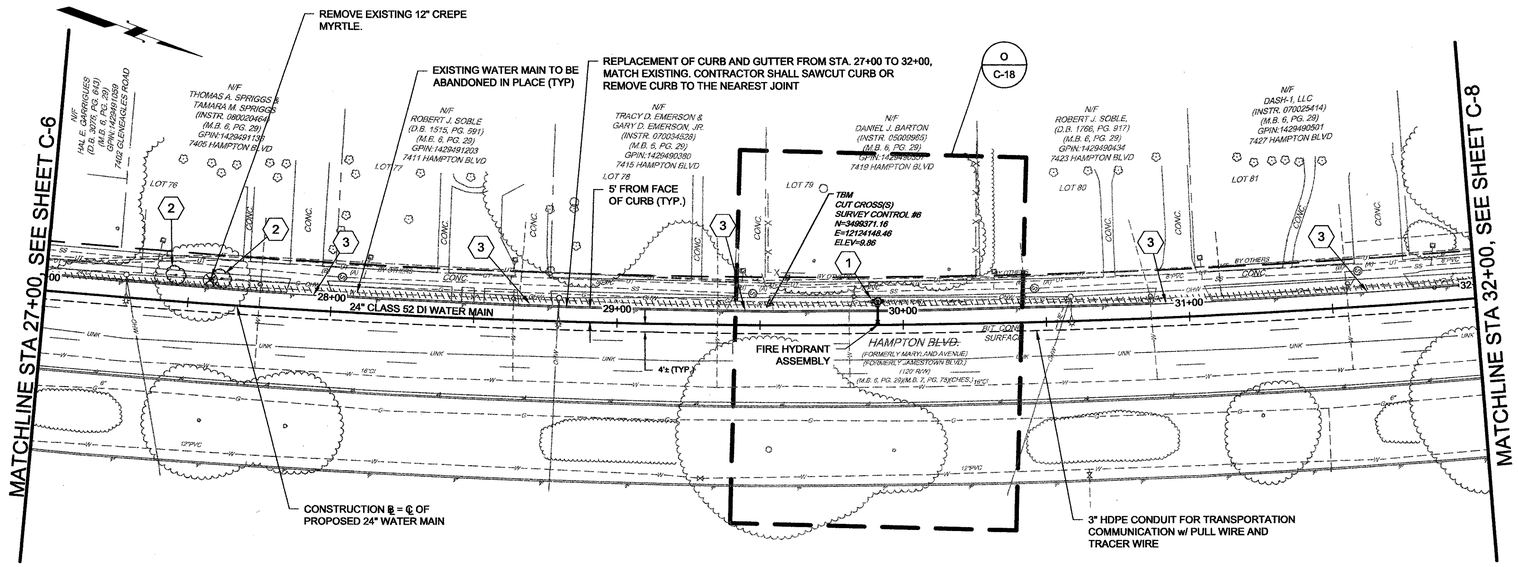
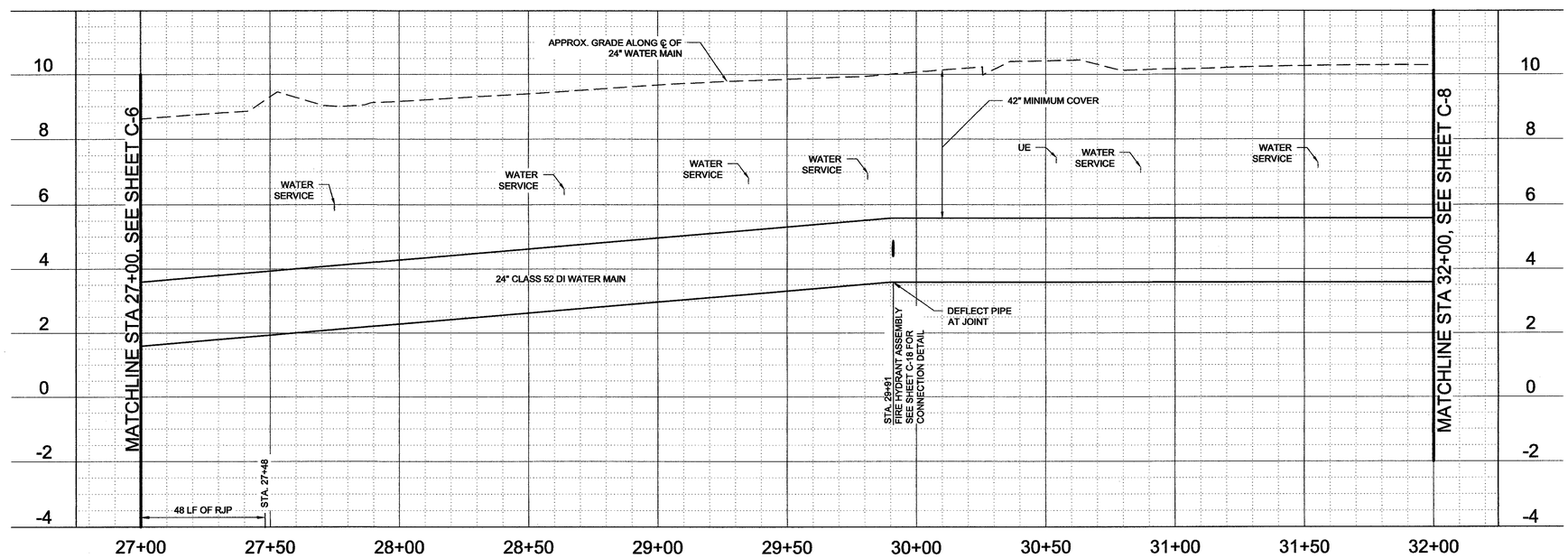


HAMPTON BOULEVARD
PLAN
SCALE: 1" = 25'

0 25 50
SCALE IN FEET



HORIZONTAL
0 25 50
SCALE IN FEET

VERTICAL
0 2 4
SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL INSTALL A MINIMUM OF 4' OF PIPE BETWEEN 24" FITTINGS.
2. CONTRACTOR SHALL UTILIZE LONG BODY DUCTILE IRON SLEEVES WHEN CONNECTING TWO SEPARATE WORK AREAS AT NO ADDITIONAL COST TO THE CITY.

KEY NOTES

1. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIDEWALK TO THE NEAREST ADJACENT JOINT. ADJACENT JOINTS MUST BE SAWCUT.
2. CREPE MYRTLE BULLED AND BURLAPPED (MINIMUM SIZE: 2.5-3.0" CAL., 12-14' TH.)
3. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING RESIDENTIAL DRIVEWAYS TO THE PROPERTY LINE. SEE DETAIL 42 , ON SHEET C-26.

THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS, IF SHOWN HEREON, ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "GPS088" ELEV=11.61.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 039704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

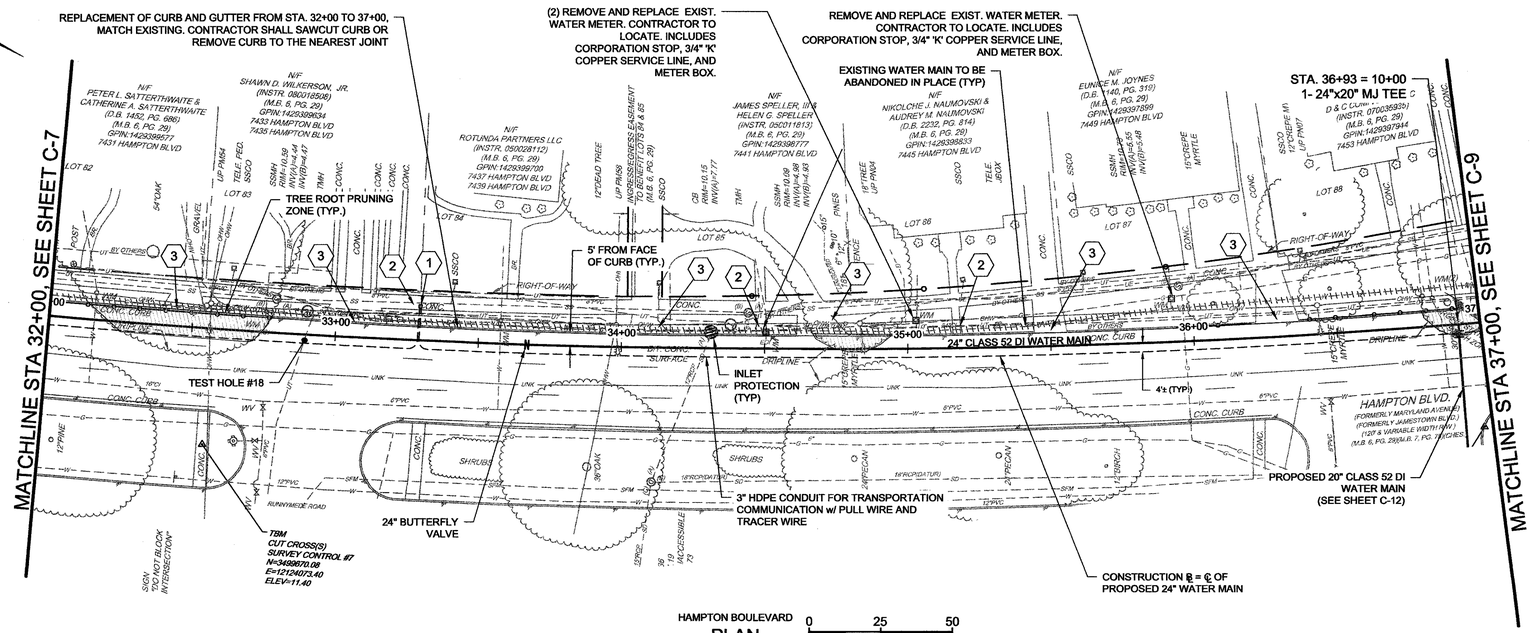
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
HAMPTON BOULEVARD PLAN AND PROFILE
STA 27+00 TO STA 32+00
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

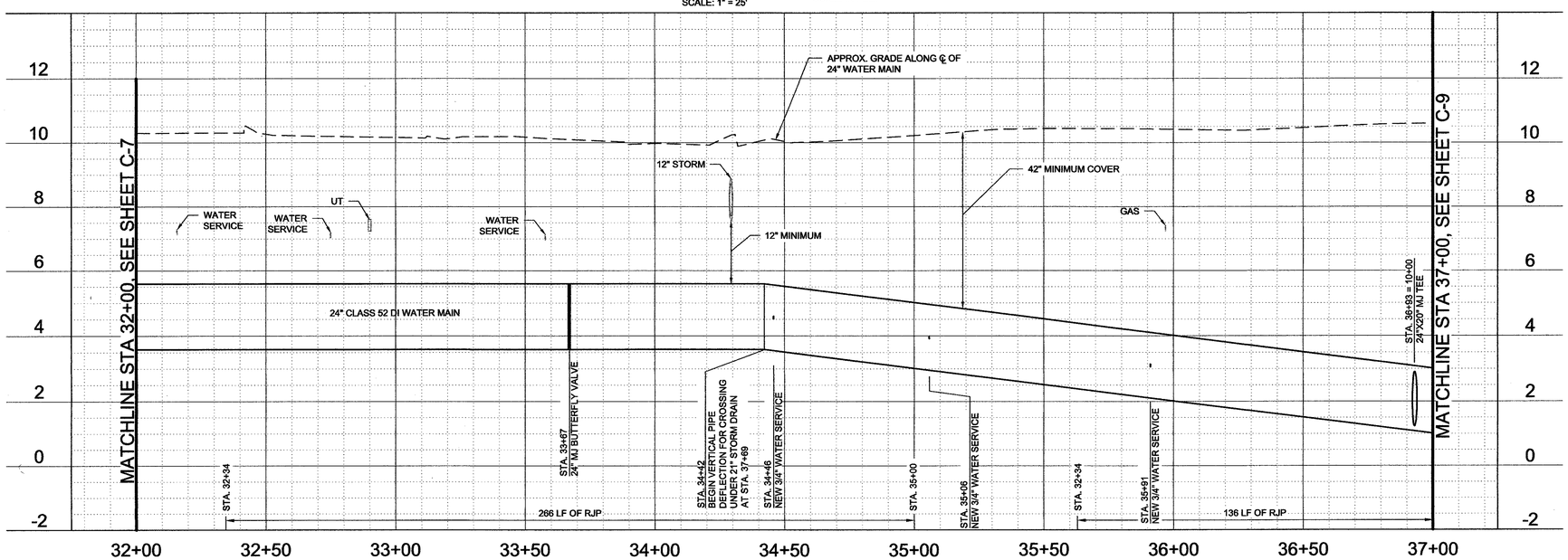
FILENAME 144647-BC-C-7.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-7
SHEET NUMBER 8 OF 33

Feb 03, 2016 - 10:29am RFeshay
P:\Clients\Norfolk\144647 Norf-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-7.dwg
01/27/2016



HAMPTON BOULEVARD
PLAN
SCALE: 1" = 25'

0 25 50
SCALE IN FEET



HORIZONTAL
0 25 50
SCALE IN FEET

VERTICAL
0 2 4
SCALE IN FEET

TEST HOLE DATA

NUMBER	SIZE	TYPE	DEPTH
18	X 4"	TELEPHONE DUCT	2.57'

ROOT PRUNING ZONE

KEY NOTES

1. NEW JUNCTION BOX SET IN SIDEWALK. TERMINATE 3" HDPE CONDUITS INSIDE NEW JUNCTION BOX SECURING PULL WIRES AND TRACER WIRE.
2. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIDEWALK TO THE NEAREST ADJACENT JOINT. ADJACENT JOINTS MUST BE SAWCUT.
3. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING RESIDENTIAL DRIVEWAYS TO THE PROPERTY LINE. SEE DETAIL 42 , ON SHEET C-26.

NOTES:

1. CONTRACTOR SHALL INSTALL A MINIMUM OF 4' OF PIPE BETWEEN 24" FITTINGS.
2. CONTRACTOR SHALL UTILIZE LONG BODY DUCTILE IRON SLEEVES WHEN CONNECTING TWO SEPARATE WORK AREAS AT NO ADDITIONAL COST TO THE CITY.

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Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
HAMPTON BOULEVARD PLAN AND PROFILE
STA 32+00 TO STA 37+00
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-8.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-8
SHEET NUMBER 9 OF 33

RFoshay
Feb 03, 2016 - 10:30am
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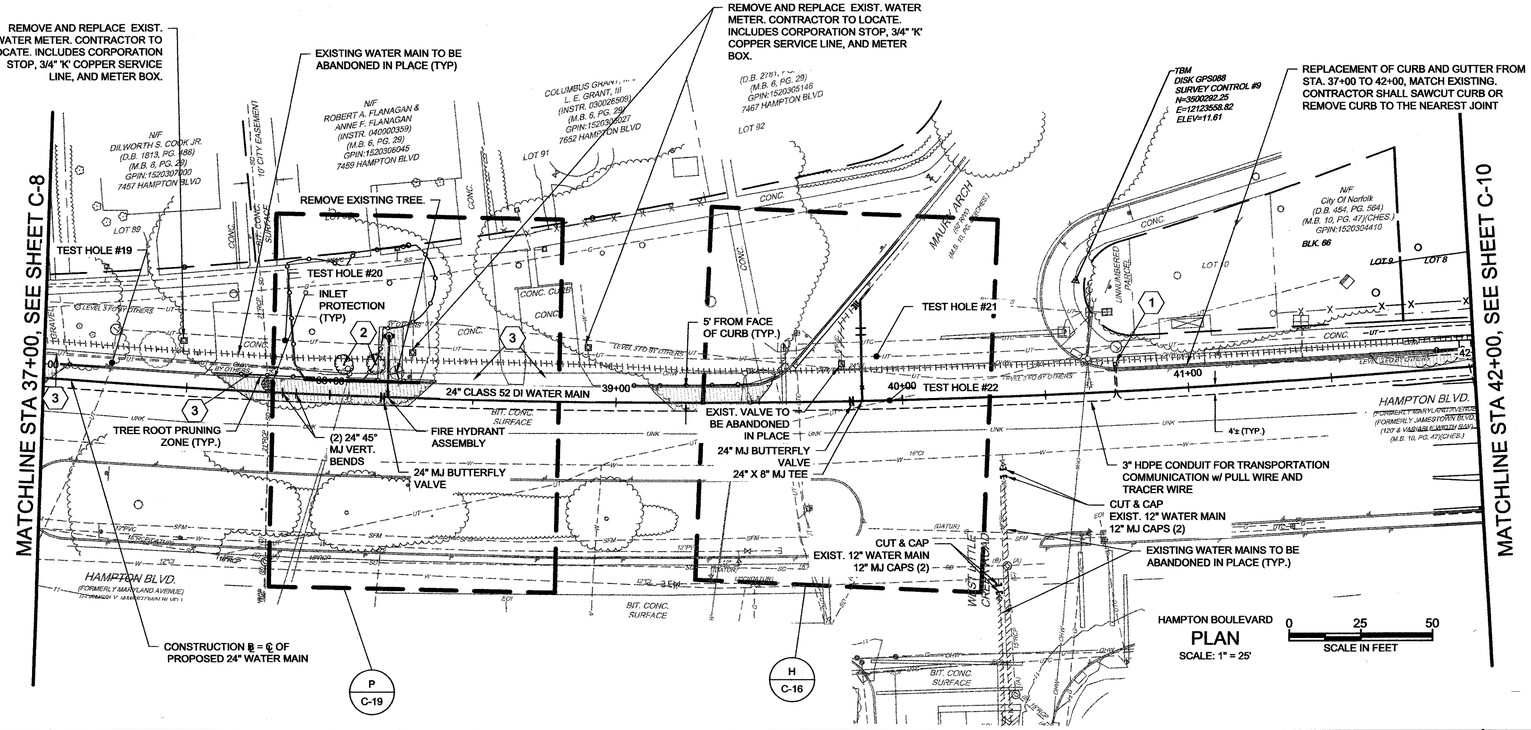
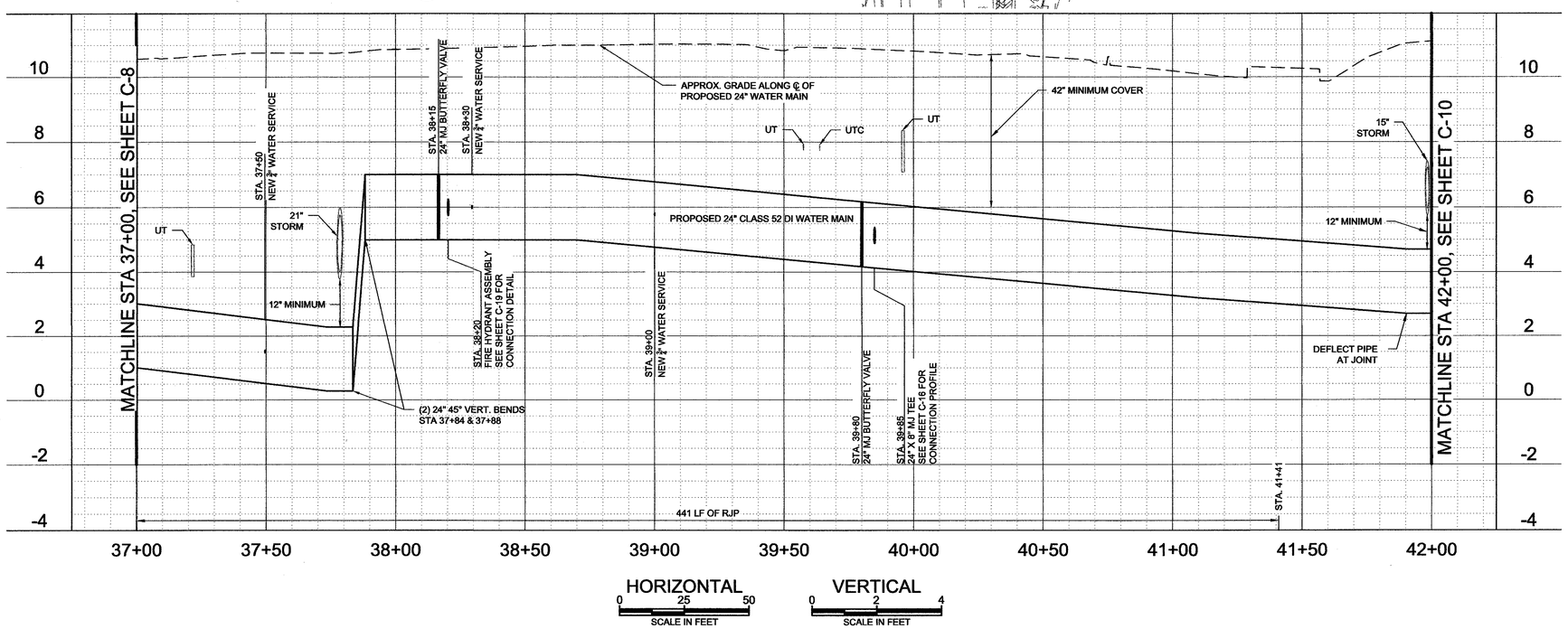
01/27/2016





TEST HOLE DATA

NUMBER	SIZE	TYPE	DEPTH
19	X 12"	TELEPHONE DUCT	2.57'
20	X 12"	TELEPHONE DUCT	3.37'
21	X 12"	TELEPHONE DUCT	2.77'
22	X 15"	TELEPHONE DUCT	2.48'

ROOT PRUNING ZONE

KEY NOTES

1. NEW JUNCTION BOX SET IN SIDEWALK. TERMINATE 3" HDPE CONDUITS INSIDE NEW JUNCTION BOX SECURING PULL WIRES AND TRACER WIRE.
2. CREPE MYRTLE BULLED AND BURLAPPED (MINIMUM SIZE: 2.5-3.0" CAL., 12-14' TH.)
3. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING RESIDENTIAL DRIVEWAYS TO THE PROPERTY LINE. SEE DETAIL 42 , ON SHEET C-26.

NOTES:

1. CONTRACTOR SHALL INSTALL A MINIMUM OF 4' OF PIPE BETWEEN 24" FITTINGS.
2. CONTRACTOR SHALL UTILIZE LONG BODY DUCTILE IRON SLEEVES WHEN CONNECTING TWO SEPARATE WORK AREAS AT NO ADDITIONAL COST TO THE CITY.

THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS, IF SHOWN HEREON, ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "GPS088" ELEV=11.61.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)
DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
HAMPTON BOULEVARD PLAN AND PROFILE
STA 37+00 TO STA 42+00
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-9.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-9
SHEET NUMBER 10 OF 33

RFoshay
Feb 03, 2016 - 10:31am
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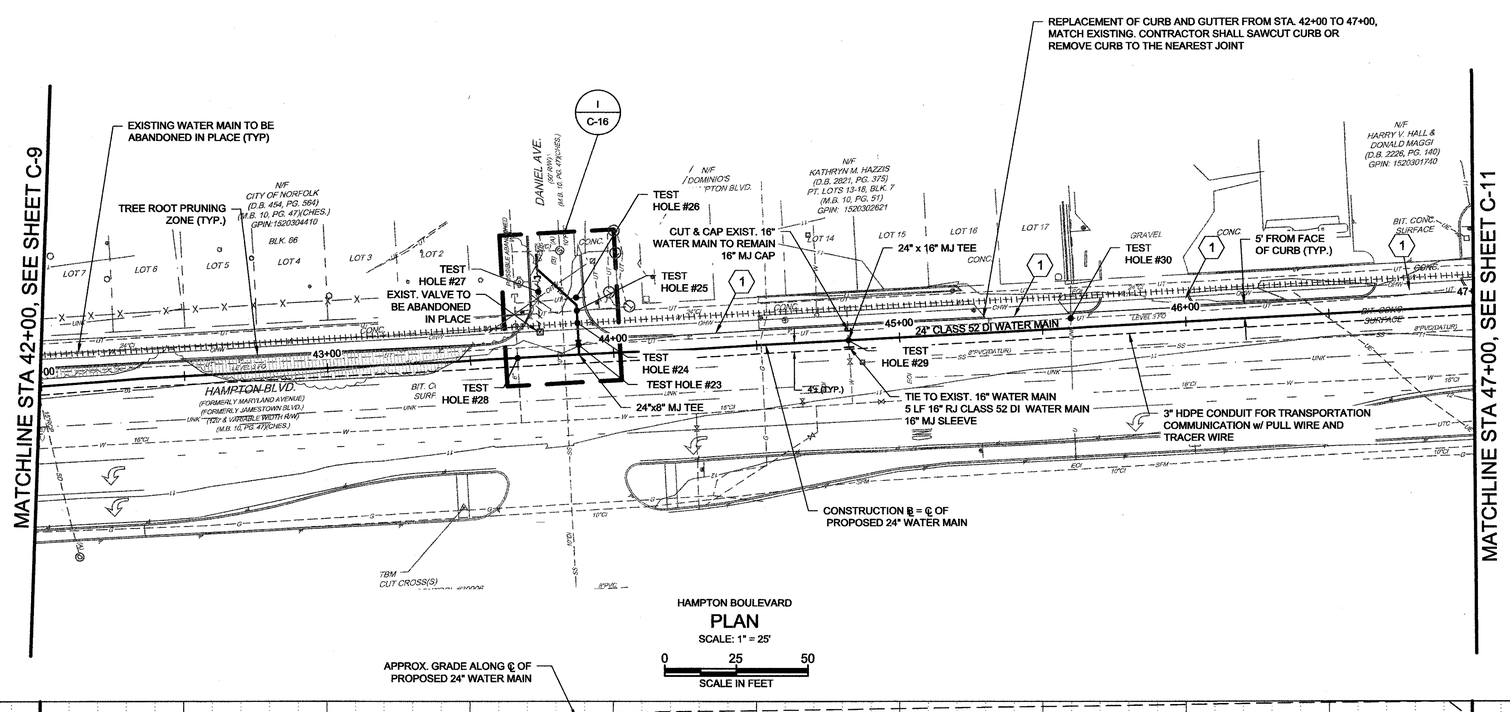
01/27/2016



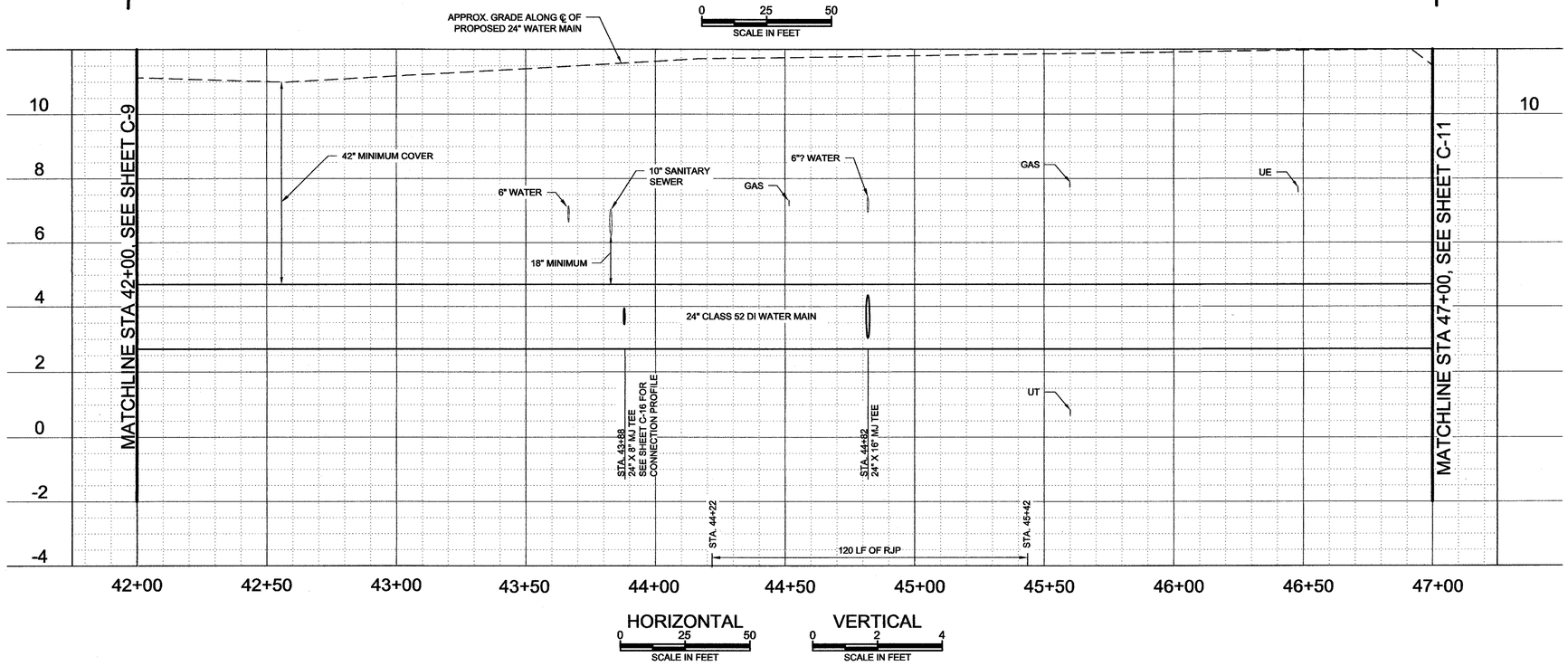
HAMPTON BOULEVARD

PLAN

SCALE: 1" = 25'

0 25 50

SCALE IN FEET



TEST HOLE DATA

NUMBER	SIZE	TYPE	DEPTH
23		NONE FOUND	
24	24"	CI WATER	2.23'
25		TELEPHONE DUCT	2.33'
26	6"	CI WATER	1.47'
27	6"	PVC WATER	3.73'
28	8"	CI WATER	1.36
29		NONE FOUND	
30	1.5" 2"	GAS FIBER OPTIC	1.95' 9.80'

ROOT PRUNINGZONE

KEY NOTES

(1) THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING RESIDENTIAL DRIVEWAYS TO THE PROPERTY LINE. SEE DETAIL 43 , ON SHEET C-26.

NOTES:

1. CONTRACTOR SHALL INSTALL A MINIMUM OF 4' OF PIPE BETWEEN 24" FITTINGS.
2. CONTRACTOR SHALL UTILIZE LONG BODY DUCTILE IRON SLEEVES WHEN CONNECTING TWO SEPARATE WORK AREAS AT NO ADDITIONAL COST TO THE CITY.

THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS, IF SHOWN HEREON, ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "GPS088" ELEV=11.61.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
HAMPTON BOULEVARD PLAN AND PROFILE
STA 42+00 TO STA 47+00
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-10.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-10
SHEET NUMBER 11 OF 33

RFeshay
Feb 03, 2016 - 10:31am
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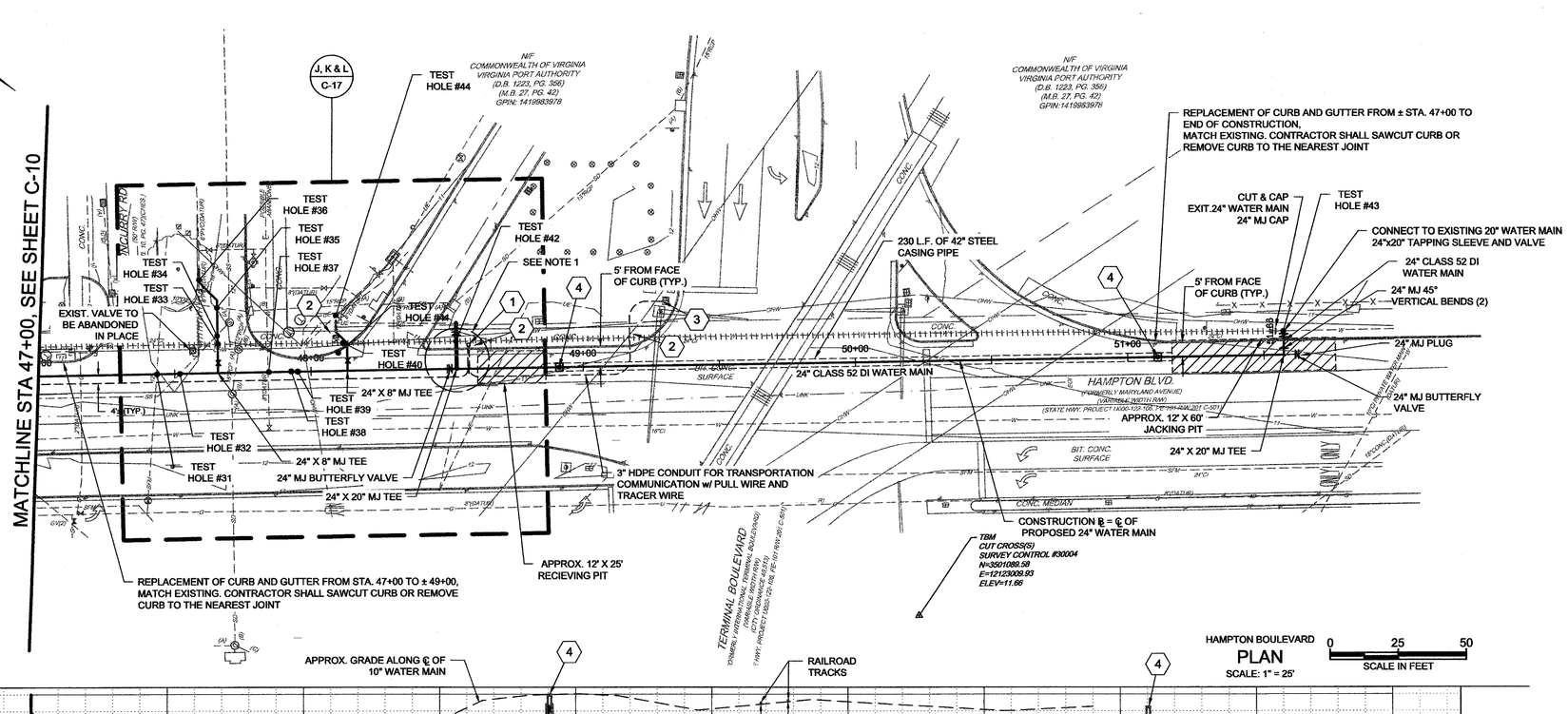
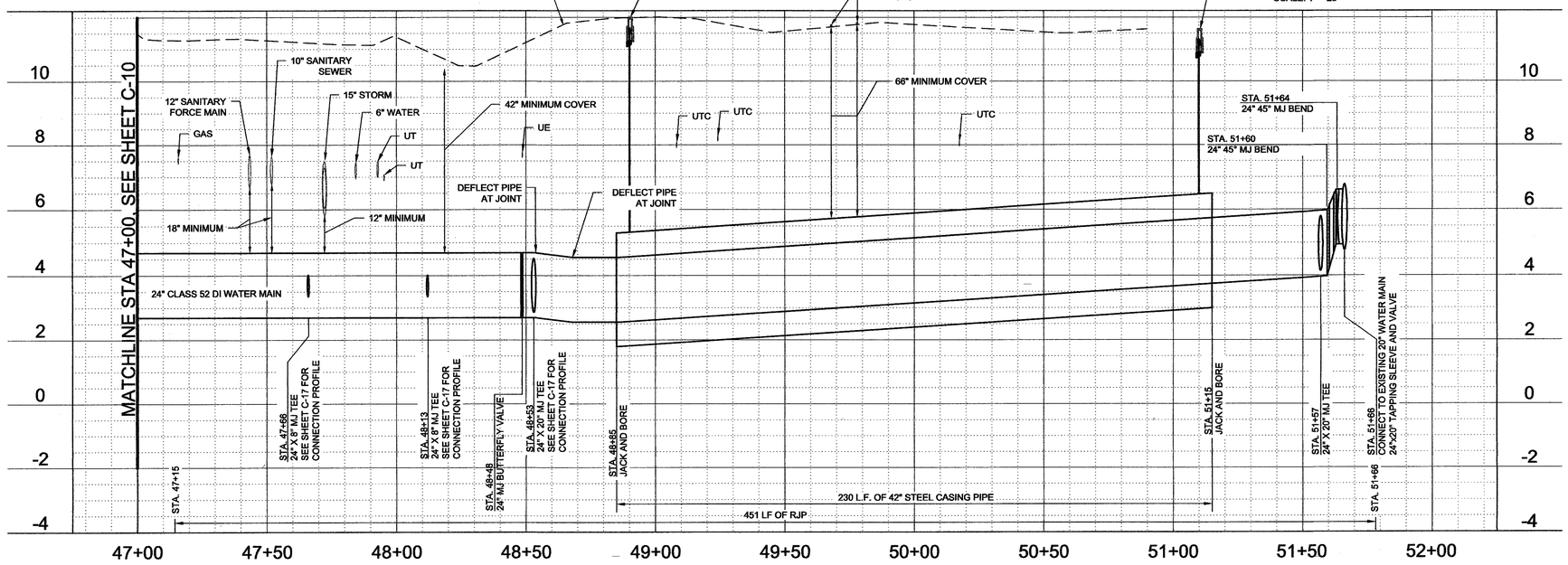
01/27/2016



HAMPTON BOULEVARD
PLAN
SCALE: 1" = 25'

0 25 50
SCALE IN FEET



HORIZONTAL
0 25 50
SCALE IN FEET

VERTICAL
0 2 4
SCALE IN FEET

NOTES:

1. THIS INNERCONNECTION IS CONTINGENT ON DEFERING THE 42" STEEL CASING PIPE UNDER THE RAILROAD AT TERMINAL BLVD. SHOULD THE CITY PROCEED WITH THE CASING INSTALLATION, THE INNERCONNECTION WILL BE ELIMINATED AND THE FOLLOWING MATERIALS WILL NOT BE USED: 24" X 20" MJ TEE (1), 24" MJ PLUG (1), 20" MJ 90° BENDS (2), 24" X 20" TAPPING SLEEVE AND VALVE (1) AND 20" CLASS 52 DIP WATER MAIN.
2. CONTRACTOR SHALL INSTALL A MINIMUM OF 4' OF PIPE BETWEEN 24" FITTINGS.

TEST HOLE DATA

NUMBER	SIZE	TYPE	DEPTH
31	12"	CI FORCE MAIN	3.25'
32		NONE FOUND	
33	24"	CI WATER	3.01'
34		TELEPHONE DUCT	2.45'
35	10"	STORM DRAIN	1.74'
36	6"	CI WATER	3.29'
37	8"	CI WATER	1.98'
38		TELEPHONE DUCT	2.93'
39	2"	FIBER OPTIC	3.35
40	24"	CI WATER	3.66'
41		TELEPHONE DUCT	3.40'
42	24"	CI WATER	3.30'
43	24"	CI WATER	3.73'
44	10"	CI WATER	2.12'

KEY NOTES

1. NEW JUNCTION BOX SET IN SIDEWALK. TERMINATE 3" HDPE CONDUITS INSIDE NEW JUNCTION BOX SECURING PULL WIRES AND TRACER WIRE.
2. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIDEWALK TO THE NEAREST ADJACENT JOINT. ADJACENT JOINTS MUST BE SAWCUT.
3. TERMINATE NEW 3" HDPE CONDUIT INSIDE EXISTING JUNCTION BOX SECURING PULL WIRE AND TRACER WIRE.
4. CASING PIPE LEAK DETECTOR (SEE DETAIL 34, SHEET C-25)

THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS, IF SHOWN HEREON, ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "GPS088" ELEV=11.61.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032701
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
HAMPTON BOULEVARD PLAN AND PROFILE
STA 47+00 TO STA 51+66
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-11.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-11
SHEET NUMBER 12 OF 33

RFoshay
Feb 03, 2016 - 4:58pm
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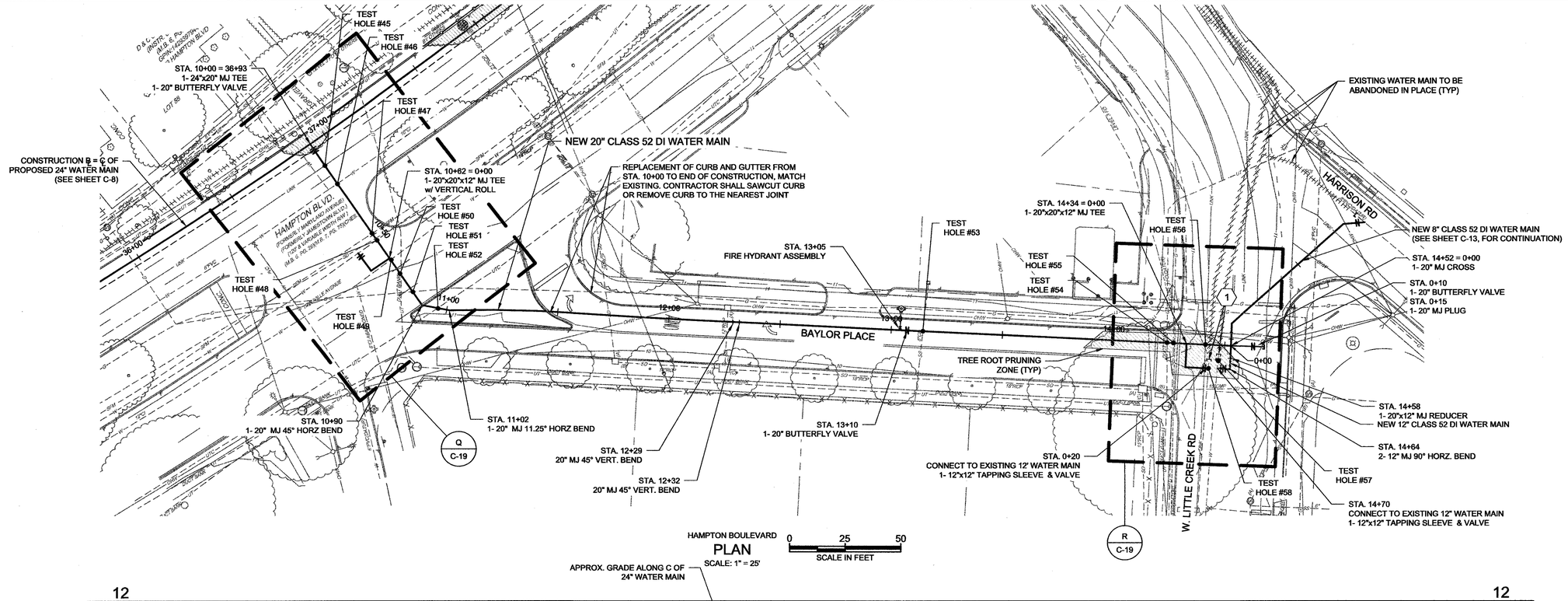
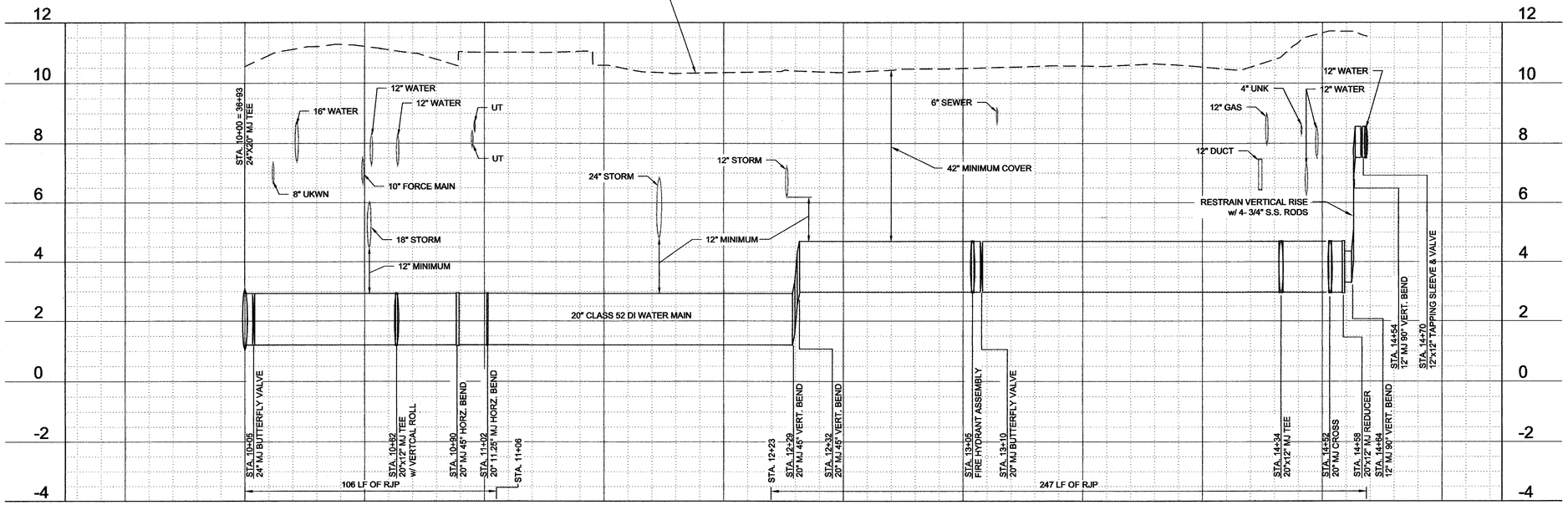
01/27/2016



HAMPTON BOULEVARD
PLAN
SCALE: 1" = 25'

0 25 50
SCALE IN FEET



HORIZONTAL
0 25 50
SCALE IN FEET

VERTICAL
0 2 4
SCALE IN FEET

TEST HOLE DATA

NUMBER	SIZE	TYPE	DEPTH
45	8"	CI UNKNOWN	3.66'
46	16"	CI WATER	2.74'
47	10"	FORCE MAIN	3.69'
48	12"	PVC WATER	2.41'
49	12"	CI WATER	2.75
50	UNKNOWN	TEL	5.13'
51		GAS- NOT FOUND	
52	4"/6"	TEL	2.24'
53	6"	CI SEWER	1.33'
54	12"	TEL DUCT	4.17'
55	12"	GAS	1.70'
56	4"	UNKNOWN	2.79'
57	12"	CI WATER	3.00'
58	8"	DI WATER	4.13'

ROOT PRUNING ZONE

KEY NOTES

(1) CUT & CAP EXISTING 12" WATER MAINS

THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS, IF SHOWN HEREON, ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "GPS088" ELEV=11.61.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/21/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
WEST LITTLE CREEK PLAN AND PROFILE
STA 10+00 TO STA 14+70
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-12.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-12
SHEET NUMBER 13 OF 33

Feb 03, 2016 - 10:33am RFoshay
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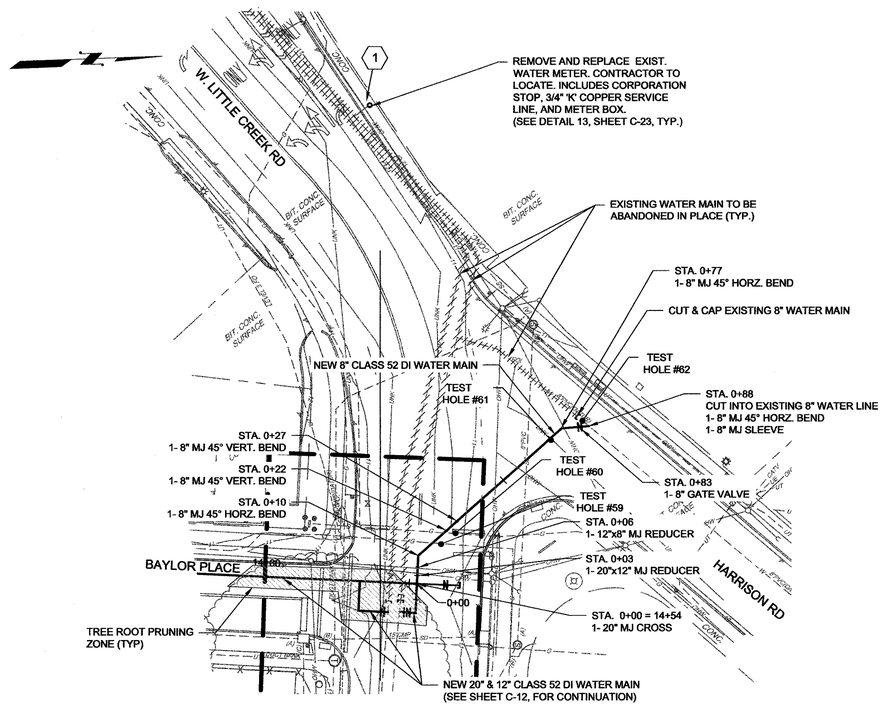
01/27/2016



HAMPTON BOULEVARD

PLAN

SCALE: 1" = 25'

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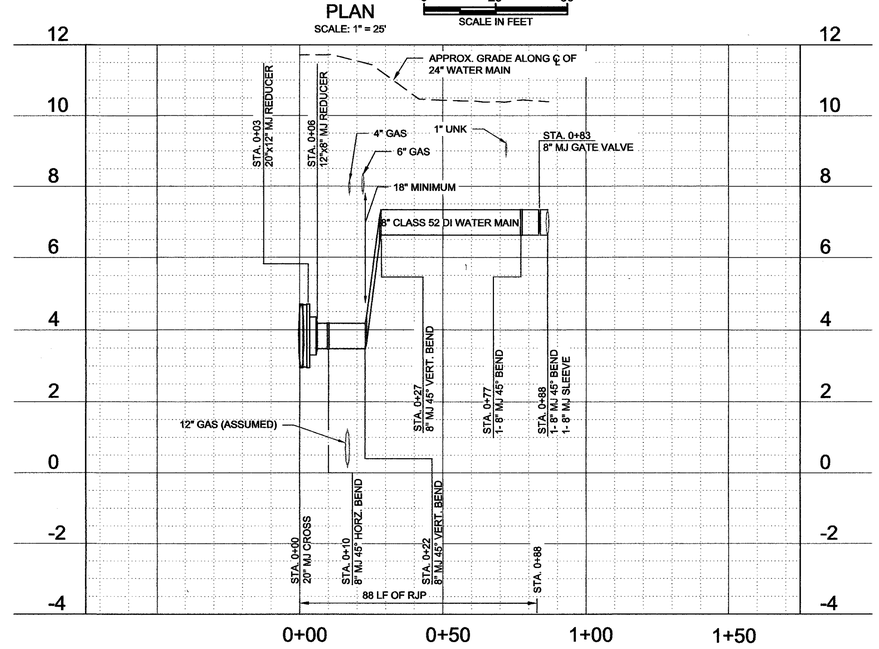
SCALE IN FEET



HORIZONTAL 0 25 50 SCALE IN FEET

VERTICAL 0 2 4 SCALE IN FEET

TEST HOLE DATA

NUMBER	SIZE	TYPE	DEPTH
59	12"	GAS	10.29'
60	6"	GAS	3.07'
60	1"	STEEL-UNKNOWN	1.15'
62	8"	PVC WATER	3.06'

ROOT PRUNING ZONE

KEY NOTES

1. THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING SIDEWALK TO THE NEAREST ADJACENT JOINT. ADJACENT JOINTS MUST BE SAWCUT.

THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (93 HARN). COORDINATE VALUES (IF SHOWN) ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS, IF SHOWN HEREON, ARE EXPRESSED IN FEET AND BASED ON THE CITY OF NORFOLK GEODETIC CONTROL NETWORK WHICH REFERS TO NAVD 88. REFERENCE CONTROL STATION UTILIZED: "GPS088" ELEV=11.61.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 039704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
WEST LITTLE CREEK PLAN AND PROFILE
STA 0+00 TO STA 0+88
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-13.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-13
SHEET NUMBER 14 OF 33

Feb 03, 2016 - 10:34am RFoshay
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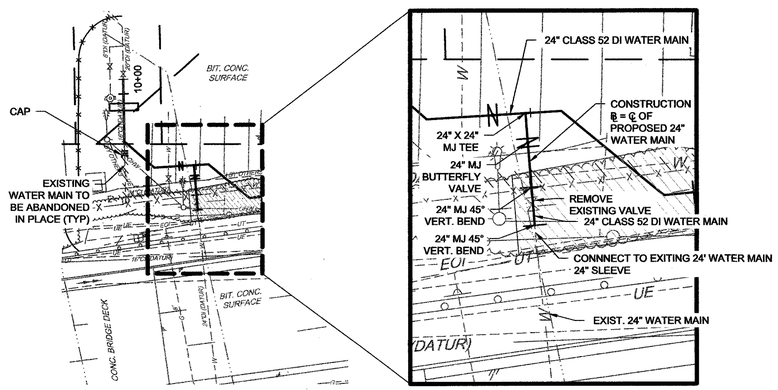
01/27/2016



0 25 50
SCALE IN FEET

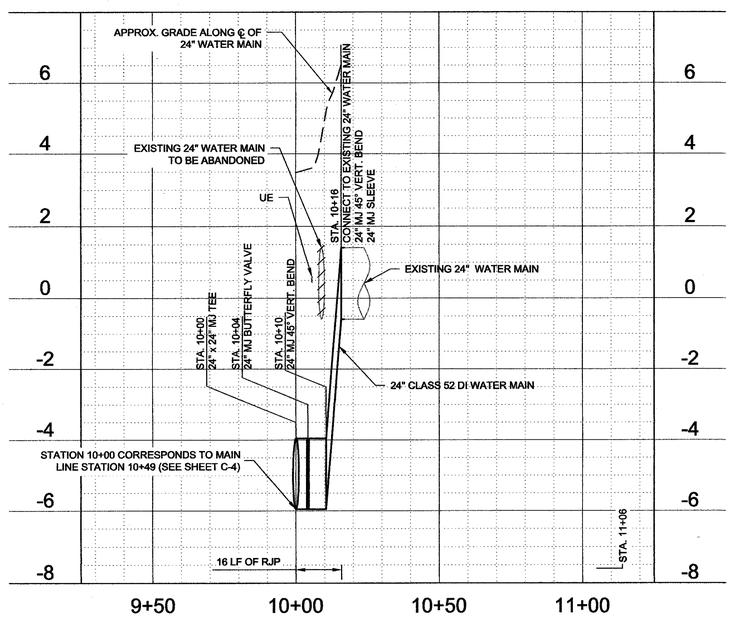
0 10 20
SCALE IN FEET

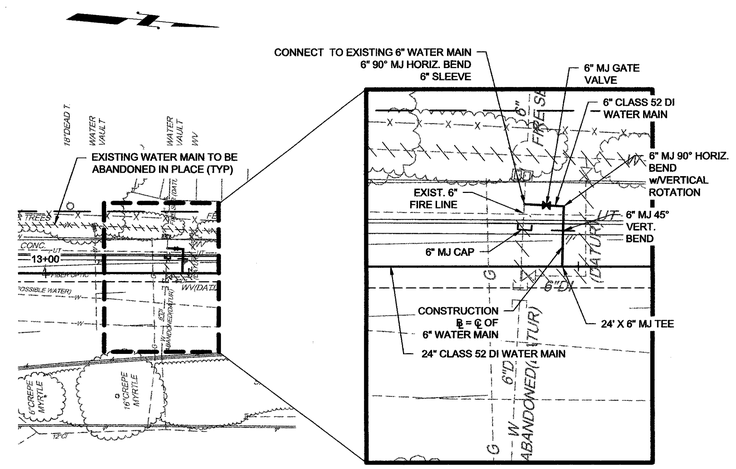
NOTES:

1. ANY 24" VALVES REMOVED FROM THE EXISTING LINE SHALL BE TURNED OVER TO THE CITY..

DETAIL A / C-4

SCALE: AS SHOWN





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SCALE IN FEET

0 10 20
SCALE IN FEET

DETAIL B / C-4

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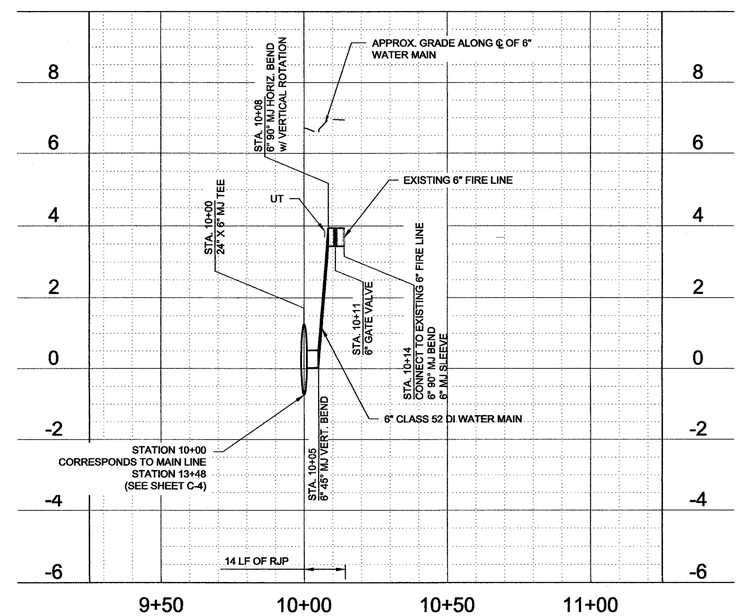
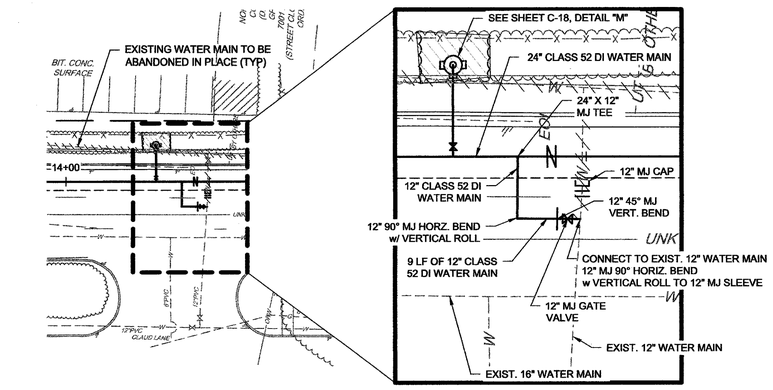


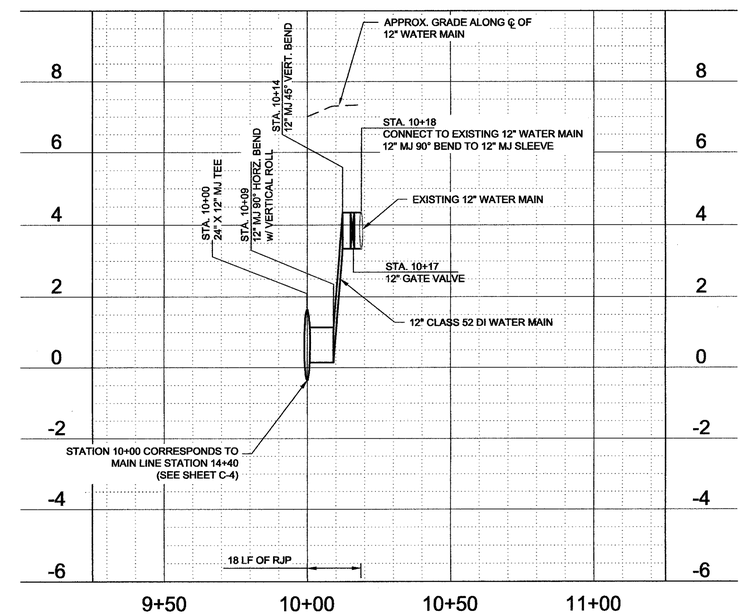


0 25 50
SCALE IN FEET

0 10 20
SCALE IN FEET

DETAIL C / C-4

SCALE: AS SHOWN



Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
PLAN AND PROFILES A, B & C

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-14.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-14
SHEET NUMBER 15 OF 33

RFoshay
Feb 03, 2016 - 10:36am
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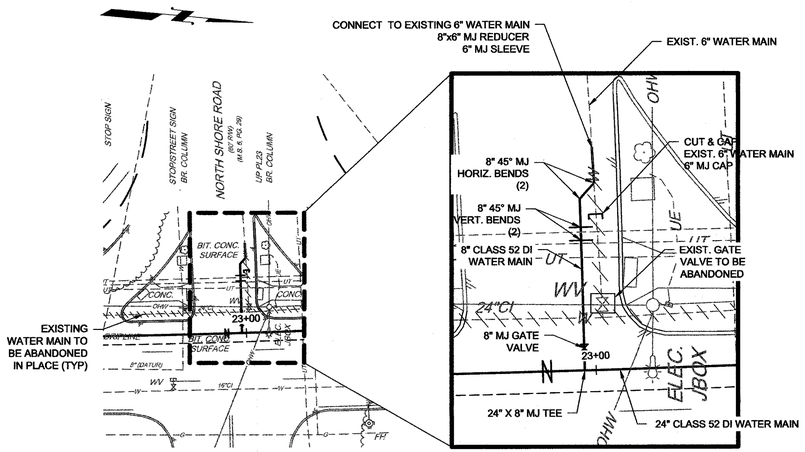
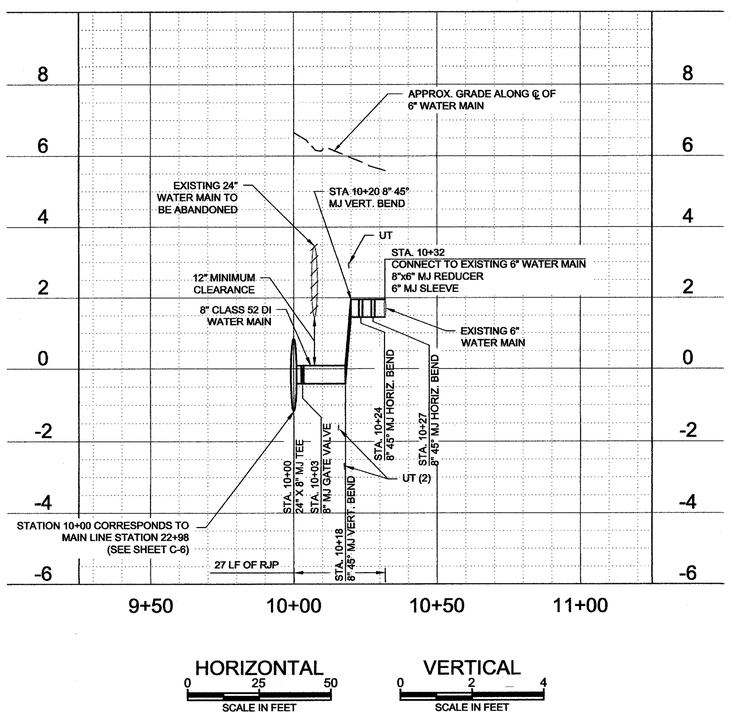
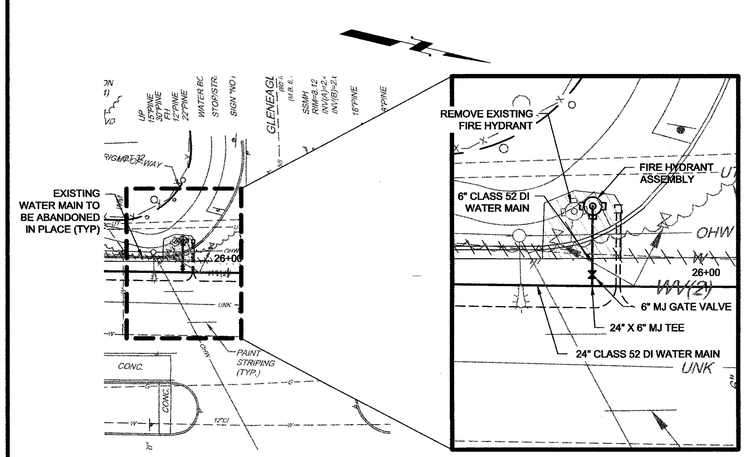
01/27/2016



DETAIL D / C-6

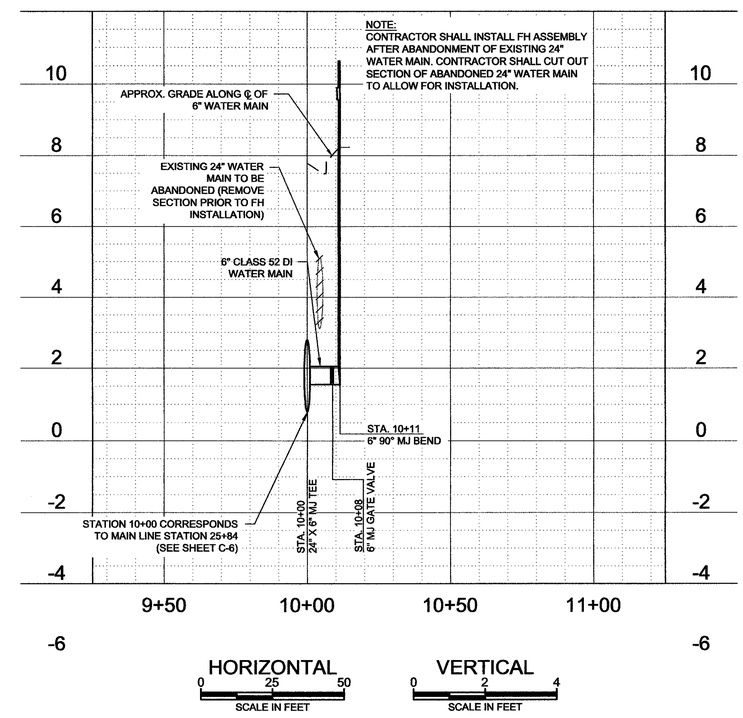
SCALE: AS SHOWN

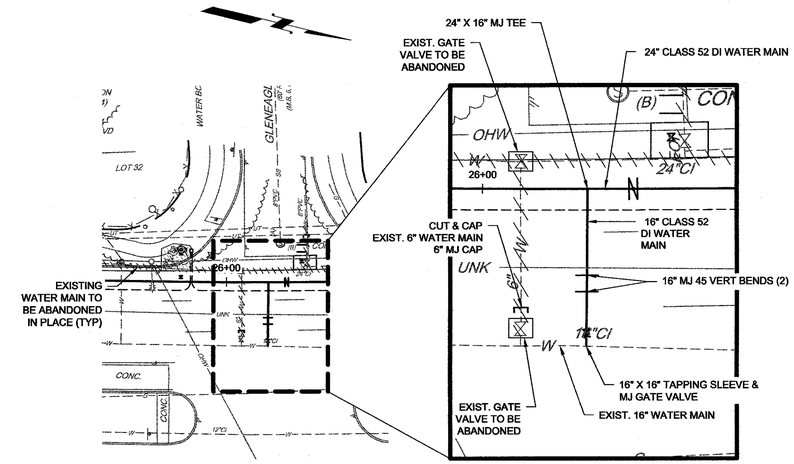




DETAIL E / C-6

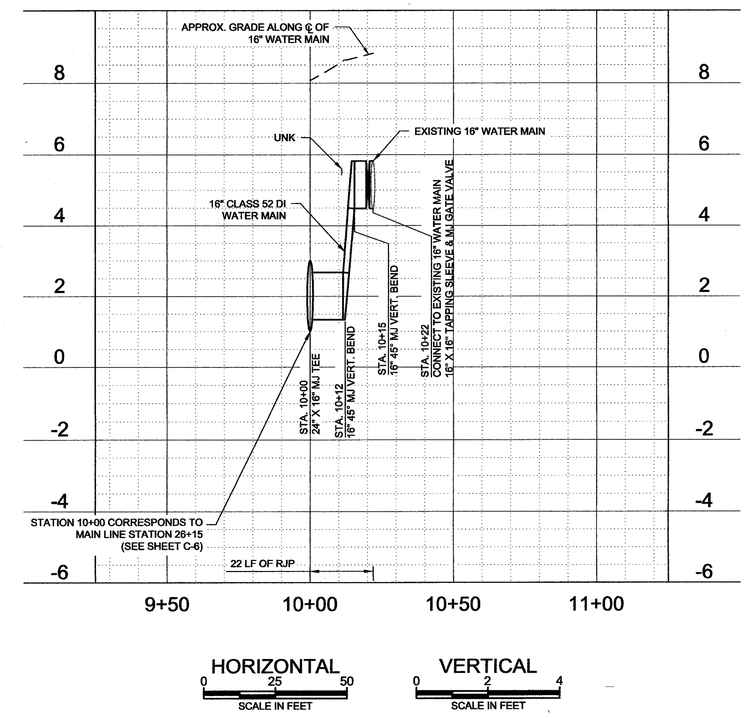
SCALE: AS SHOWN





DETAIL F / C-6

SCALE: AS SHOWN



Brown AND Caldwell

VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ PROJECT MANAGER DATE: _____

APPROVED: _____ BROWN AND CALDWELL DATE: _____

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA — SCOTT W. SMITH — Lic. No. 022764 — 1/27/16 — PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk — Department of Utilities

CIVIL

PLAN AND PROFILES D, E & F

CITY OF NORFOLK DEPARTMENT OF UTILITIES

HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-15.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-15
SHEET NUMBER 16 OF 33

RFeshay
Feb 03, 2016 - 10:38am
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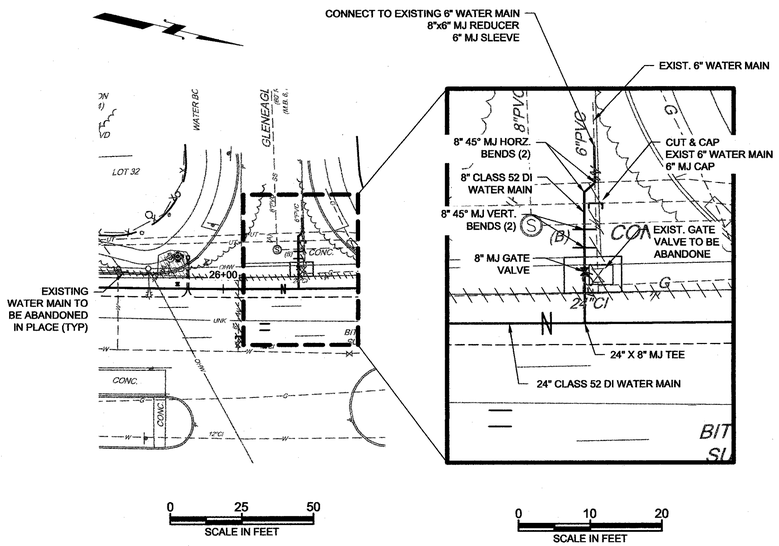
01/27/2016



DETAIL G / C-6

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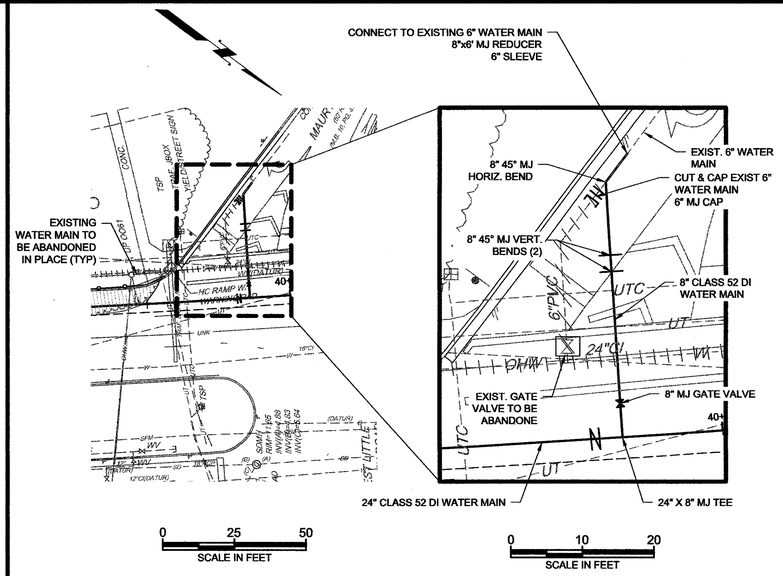
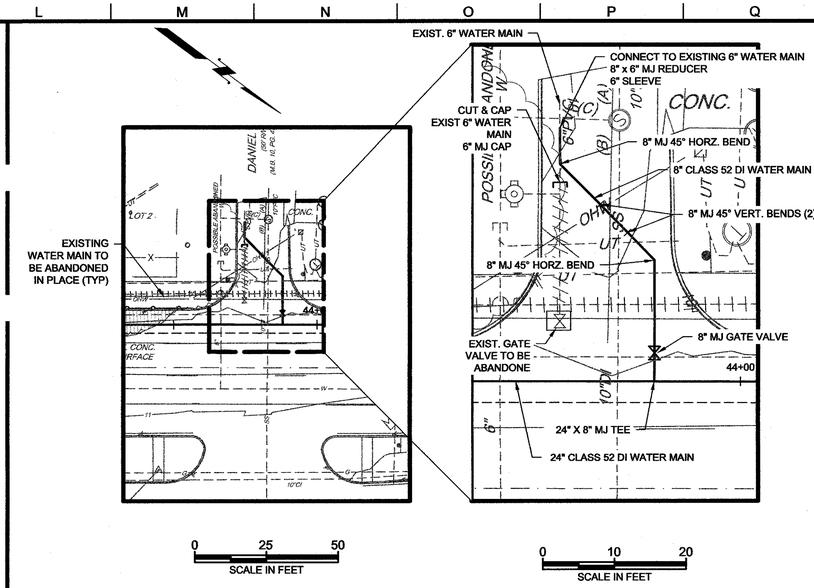


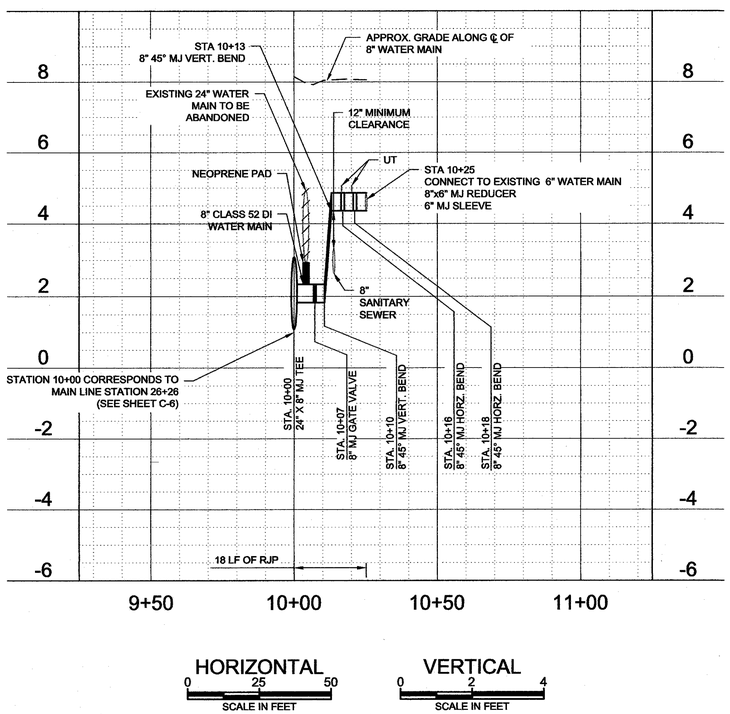
DETAIL H / C-9

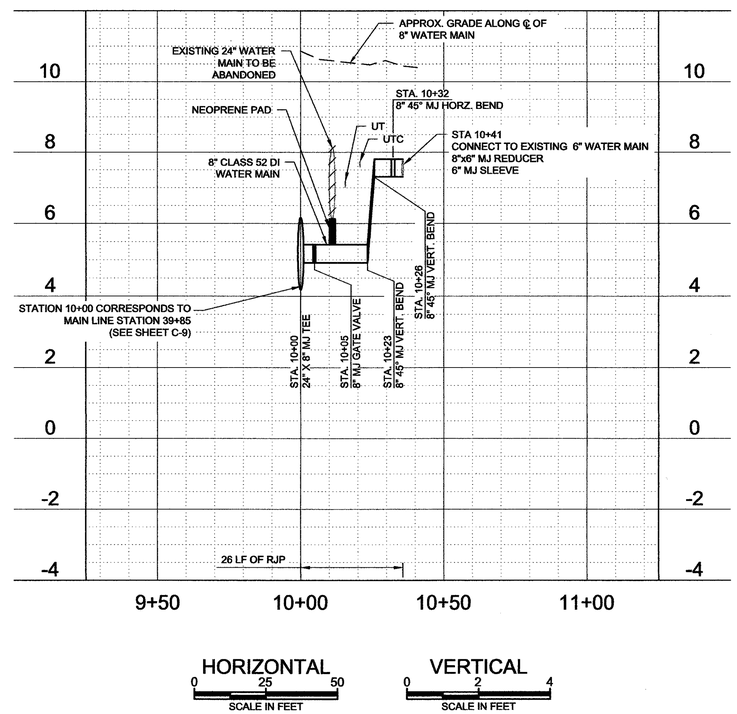
SCALE: AS SHOWN

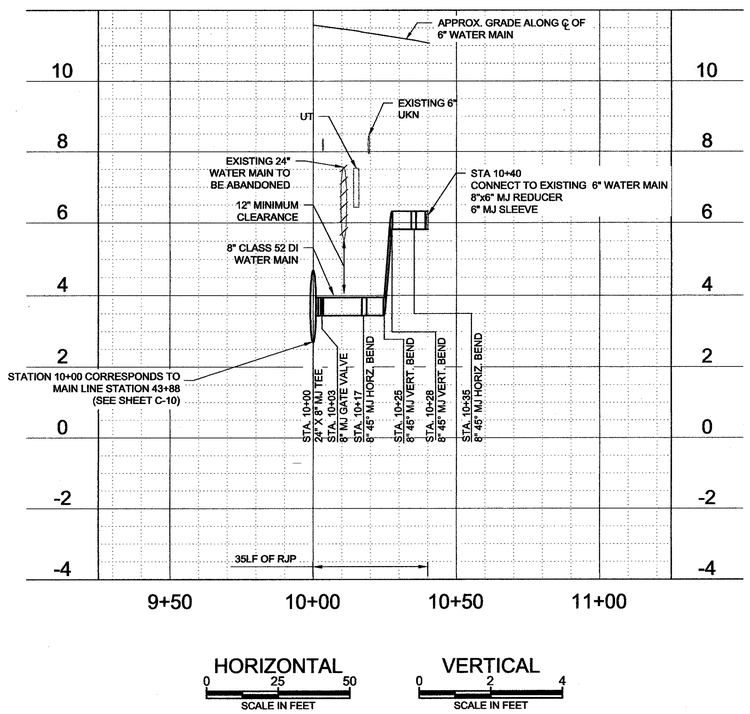


DETAIL I / C-10

SCALE: AS SHOWN







Brown AND Caldwell

VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 042704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL

PLAN AND PROFILES G, H & I

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-16.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-16
SHEET NUMBER 17 OF 33

RFoshay
Feb 03, 2016 - 10:40am
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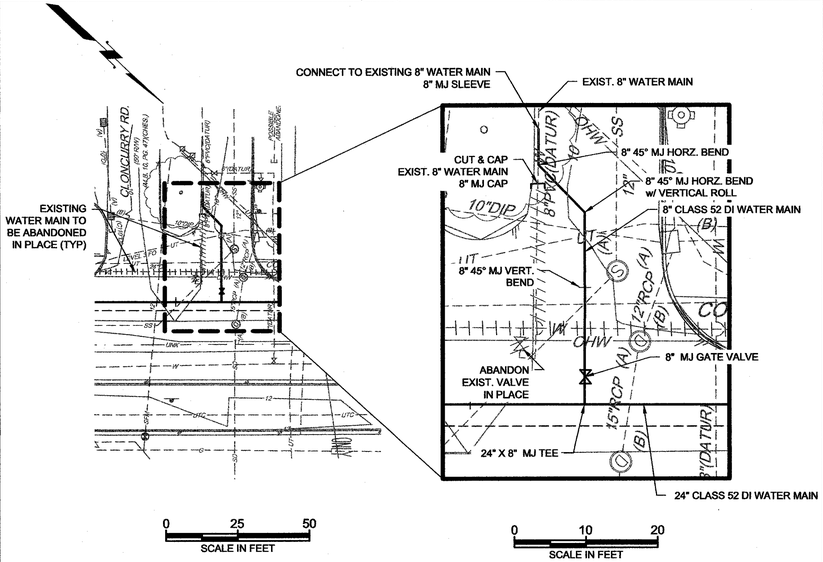
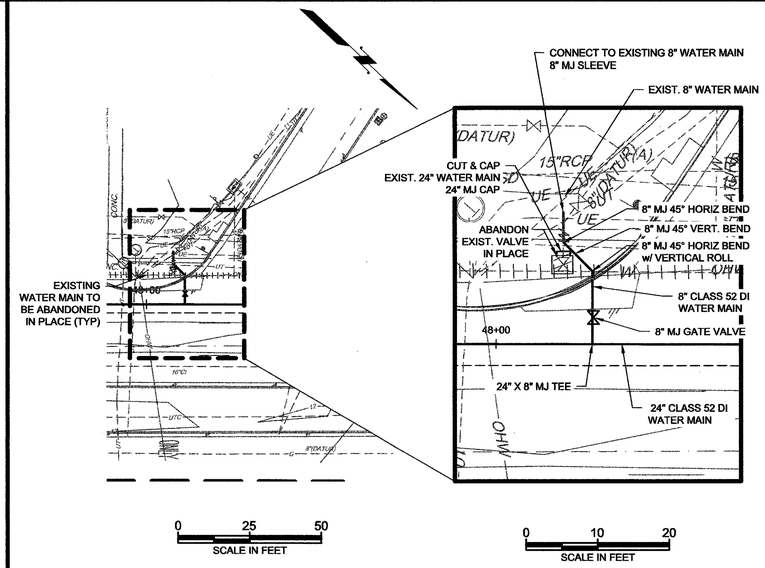
01/27/2016



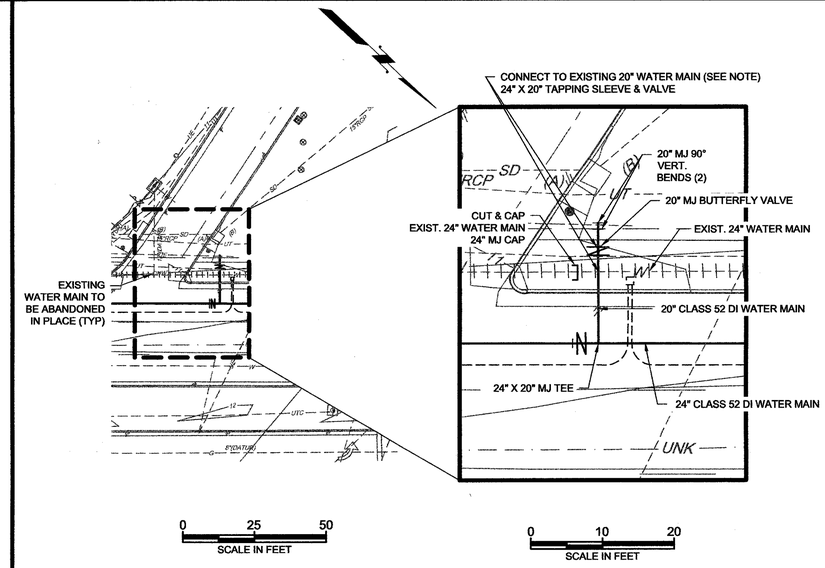
DETAIL J / C-11

SCALE: AS SHOWN



DETAIL K / C-11

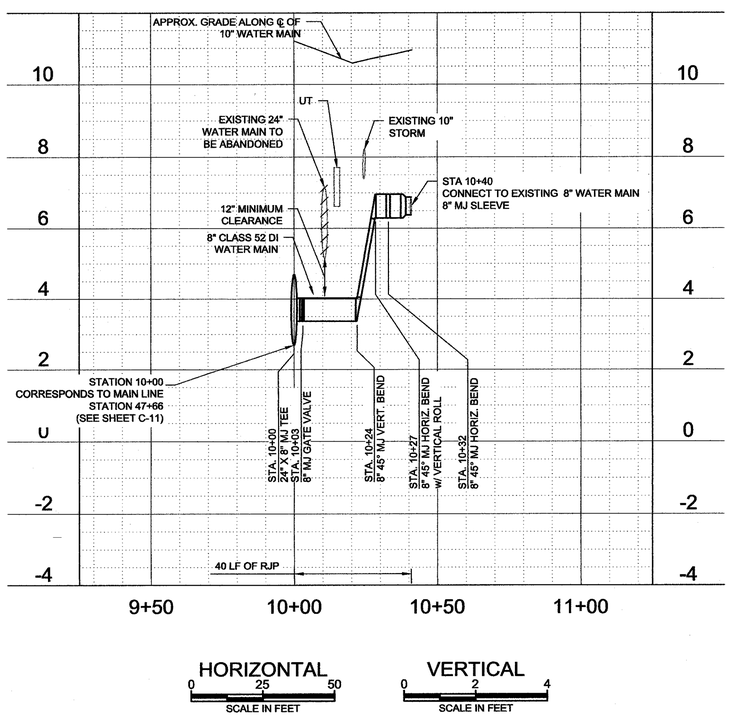
SCALE: AS SHOWN

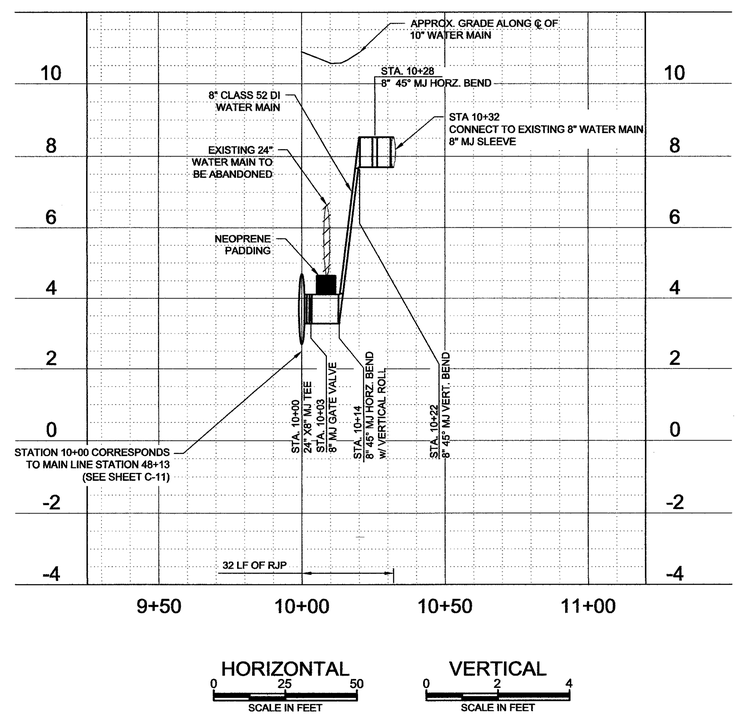


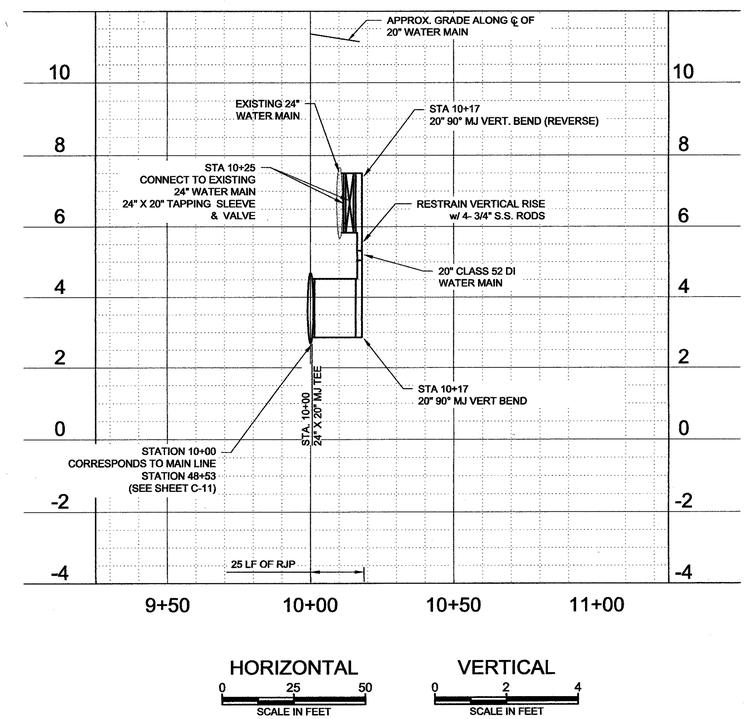
DETAIL L / C-11

SCALE: AS SHOWN

** NOTE **
CONTRACTOR SHALL NOT TIE INTO EXISTING 24" WATER MAIN UNLESS DIRECTED BY THE DEPT. OF UTILITIES INSPECTOR.







Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED:	MTM
DRAWN:	PSH
CHECKED:	EGD
CHECKED:	
APPROVED:	SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032204
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
PLAN AND PROFILES J, K & L

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-17.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-17
SHEET NUMBER 18 OF 33

RFeshay
Feb 03, 2016 - 10:41am
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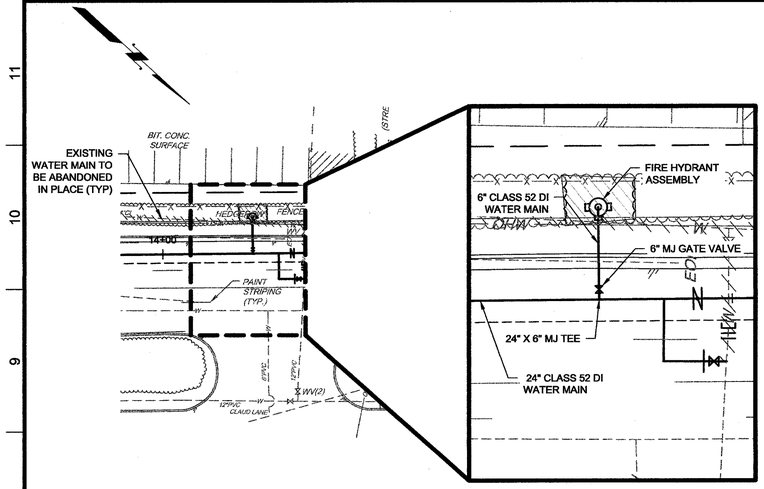
01/27/2016

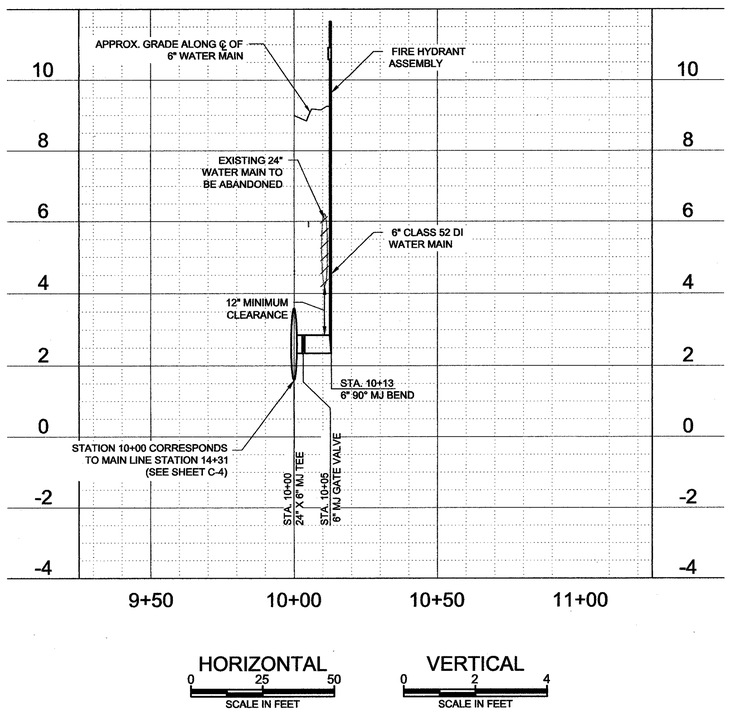


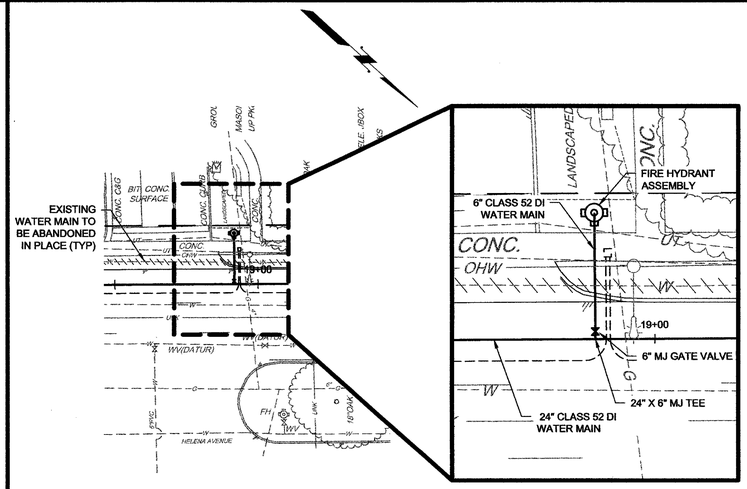
0 25 50
SCALE IN FEET

0 10 20
SCALE IN FEET

DETAIL M / C-4

SCALE: AS SHOWN



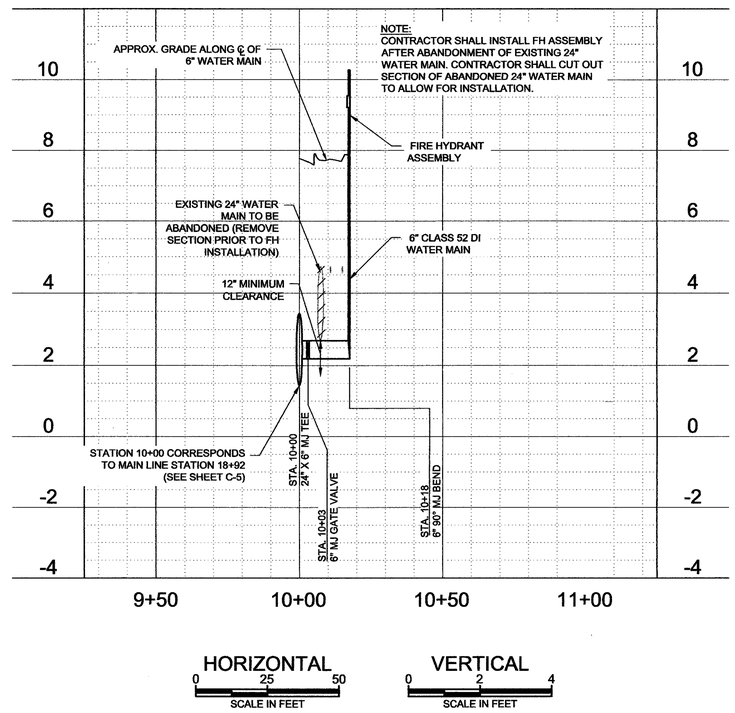


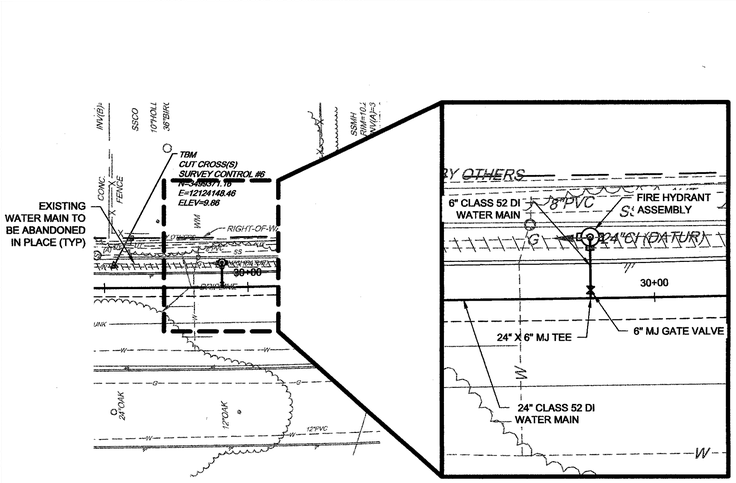
0 25 50
SCALE IN FEET

0 10 20
SCALE IN FEET

DETAIL N / C-5

SCALE: AS SHOWN





0 25 50
SCALE IN FEET

0 10 20
SCALE IN FEET

DETAIL O / C-7

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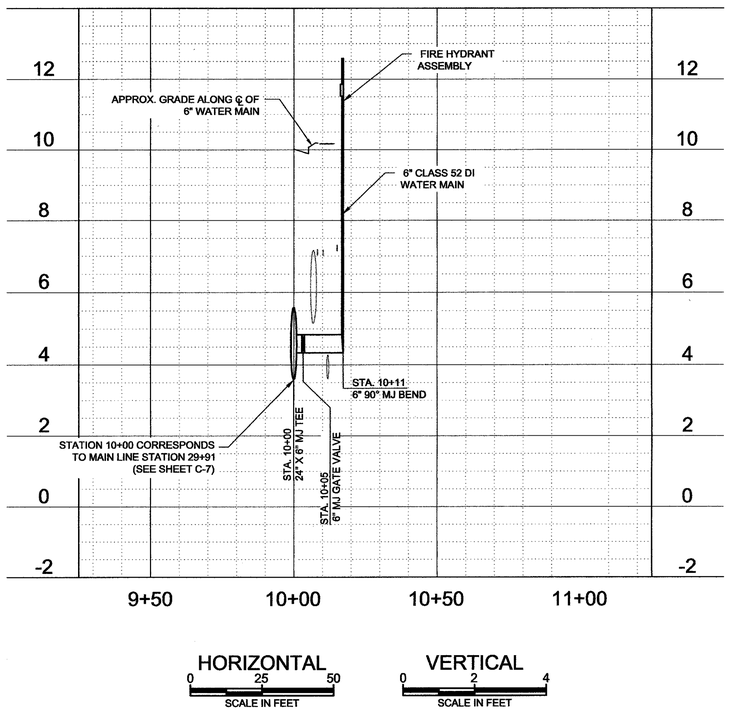

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Feb 03, 2016 - 10:43am
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Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 039704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

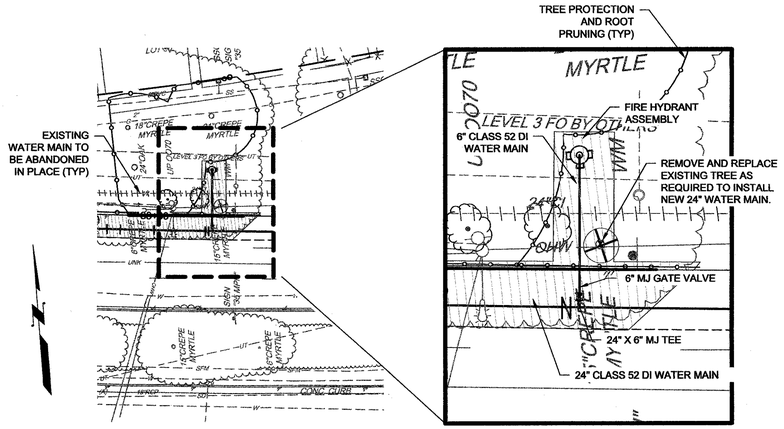
City of Norfolk
Department of Utilities

CIVIL
PLAN AND PROFILES M, N & O

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-18.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-18
SHEET NUMBER 19 OF 33

01/27/2016



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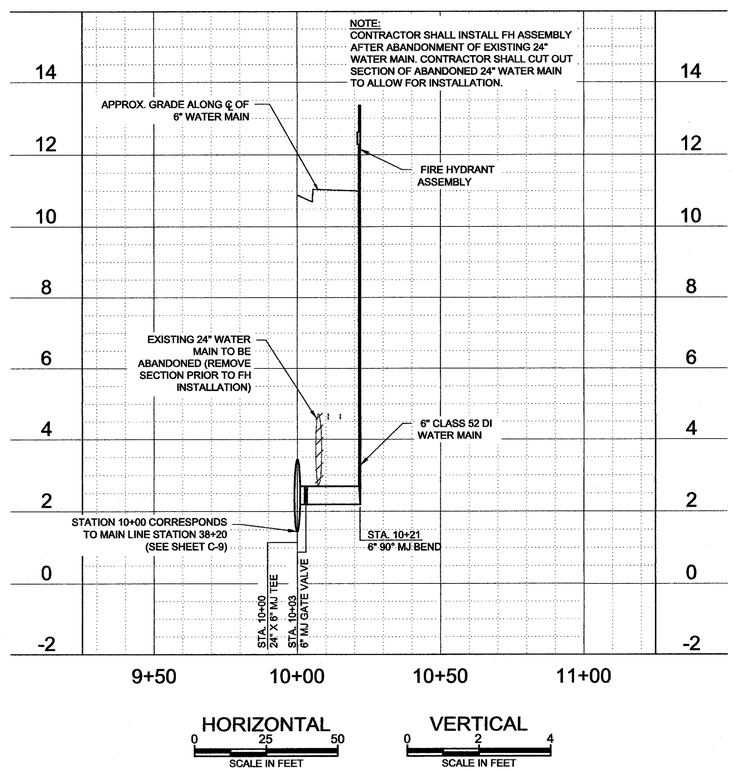

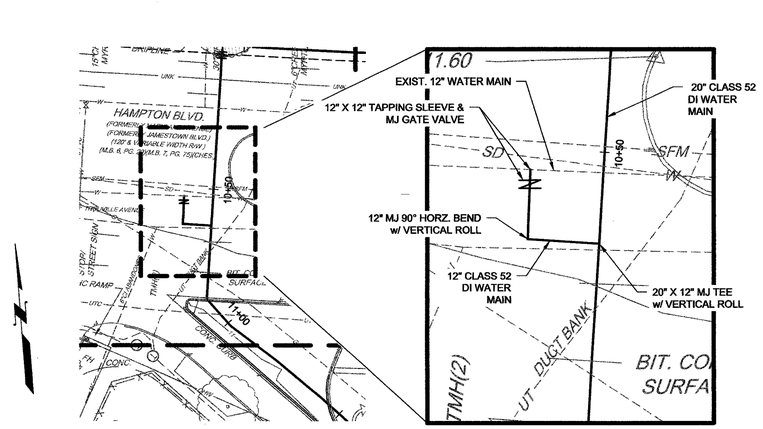

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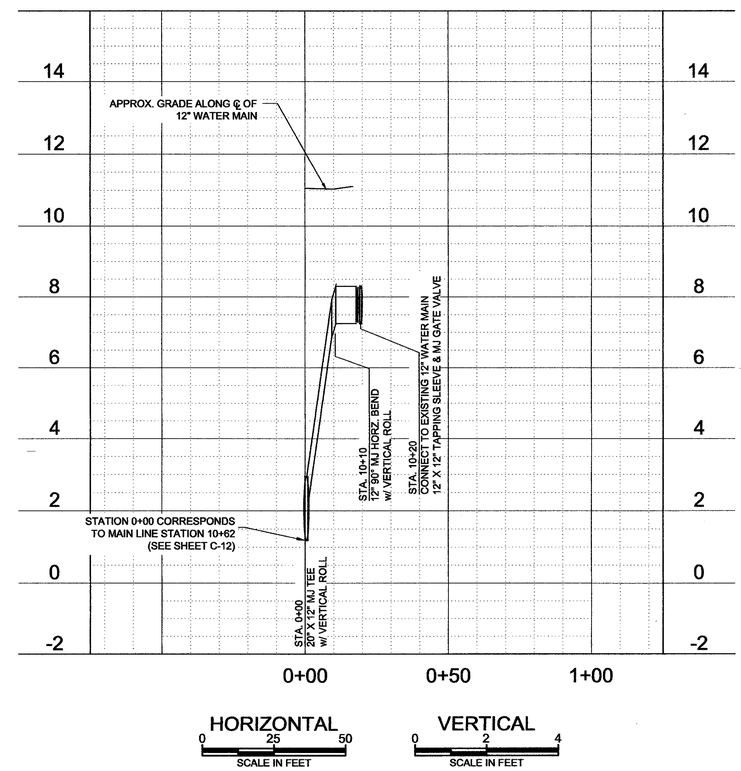

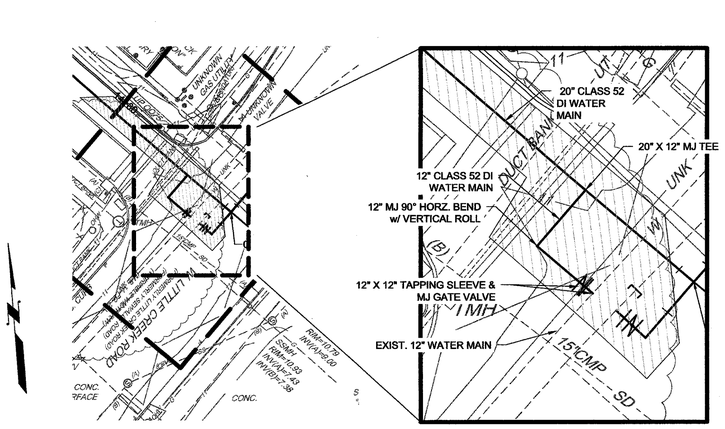

DETAIL R / C-12

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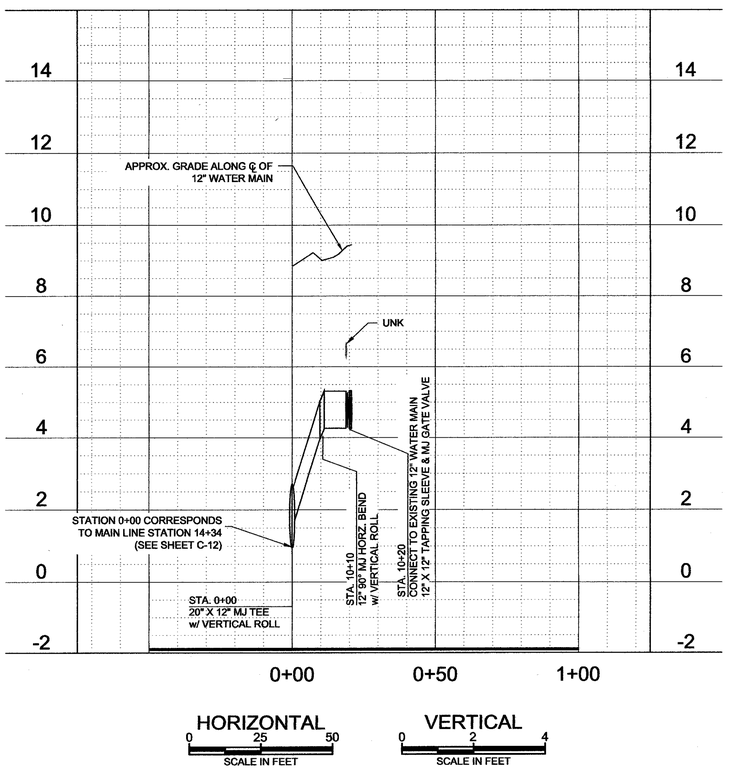

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ PROJECT MANAGER DATE: _____
APPROVED: _____ BROWN AND CALDWELL DATE: _____

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032784
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
PLAN AND PROFILES P,Q & R

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-19.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-19
SHEET NUMBER 20 OF 33

RFoshay
Feb 03, 2016 - 10:45am
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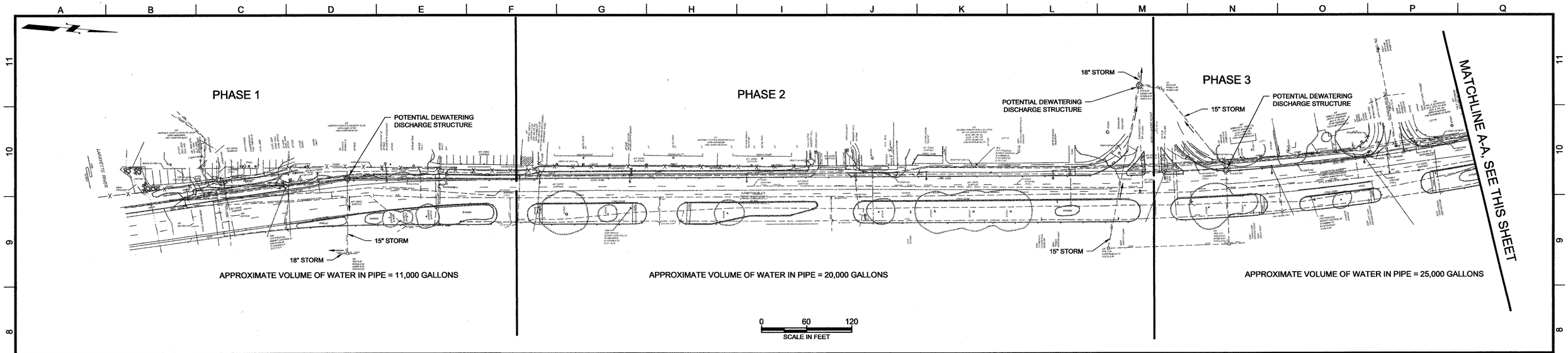
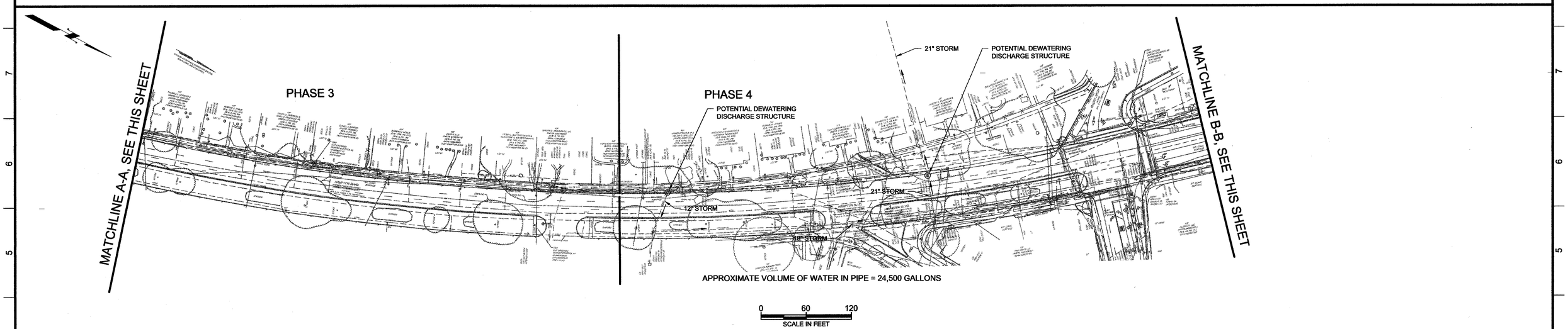
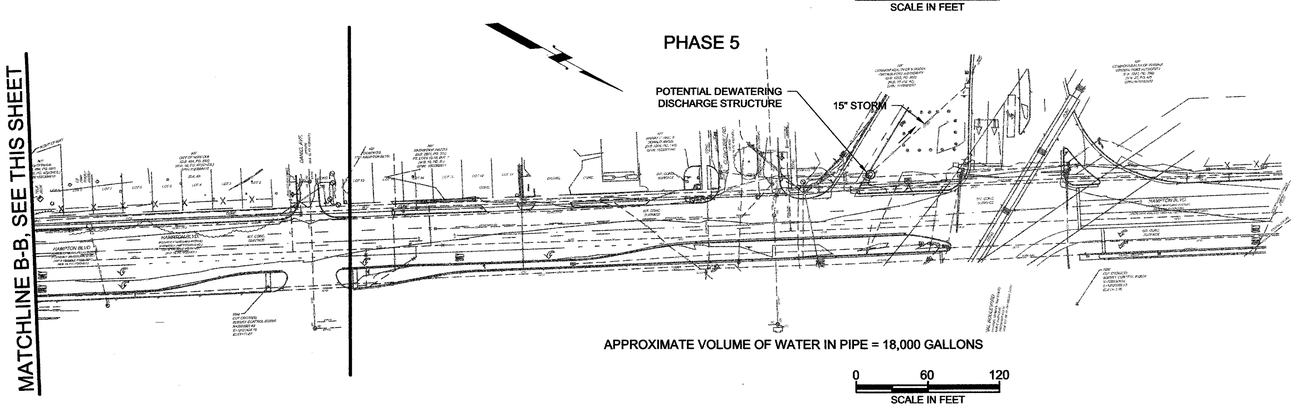
01/27/2016







NOTES:

1. PHASING SHOWN FOR COORDINATION OF DEWATERING OPERATIONS ONLY AND DOES NOT IMPLY REQUIRED CONSTRUCTION SCHEDULE.

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Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 039704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

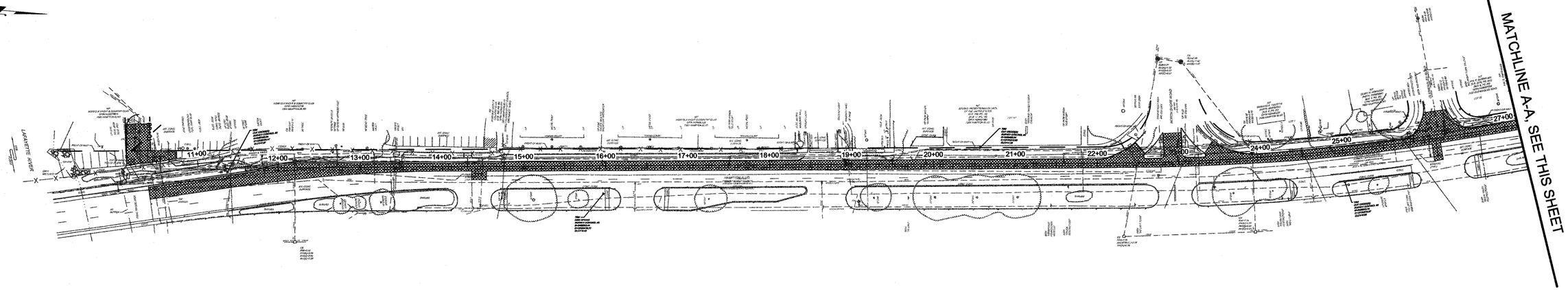
City of Norfolk
Department of Utilities

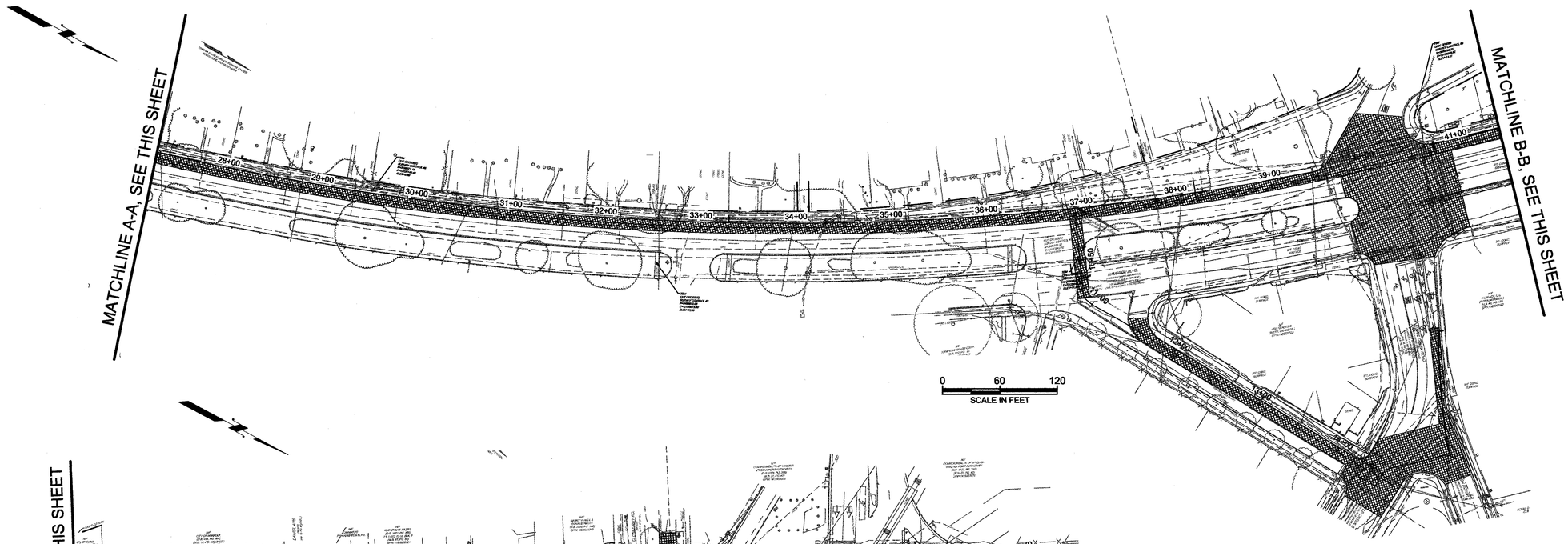
CIVIL
DEWATERING AND PHASING PLAN

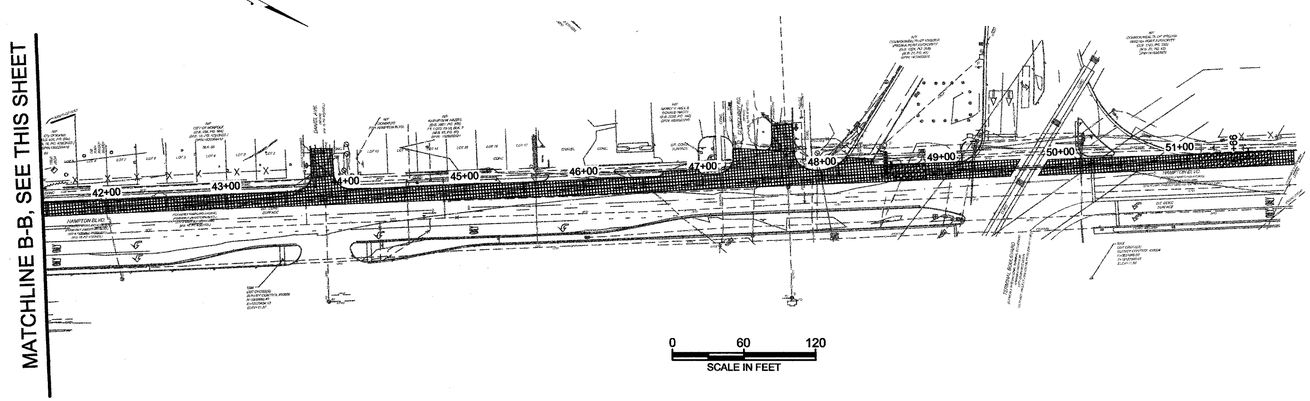
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-20.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-20
SHEET NUMBER 21 OF 33

01/27/2016







NOTES:

1. HATCH DENOTED AREAS THAT REQUIRE 3" OF MILL AND OVERLAY. OVERLAY SHALL BE SM-9.5D ASPHALT.
2. MILL AND OVERLAY SHALL BE A MINIMUM OF ONE LANE WIDTH OR AS INDICATED
3. MILL AND OVERLAY AREA IS APPROXIMATELY 83,115 SF WITH AN APPROXIMATE VOLUME OF 770 CY OF SM-9.5D

Brown AND Caldwell

VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
MILLING AND OVERLAY PLAN

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME: 144647-BC-C-21.DWG
BC PROJECT NUMBER: 144647
SCALE: AS SHOWN
DRAWING NUMBER: C-21
SHEET NUMBER: 22 OF 33

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Feb 03, 2016 - 10:46am
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01/27/2016

EROSION AND SEDIMENT CONTROL NARRATIVE

DESCRIPTION

THE PURPOSE OF THIS PROJECT IS THE REPLACEMENT OF A 24" WATER MAIN ALONG HAMPTON BOULEVARD FOR THE CITY OF NORFOLK, VIRGINIA. THE WATER MAIN WILL EXTEND FROM THE LAFAYETTE RIVER BRIDGE TO SLIGHTLY NORTH OF THE HAMPTON BLVD AND TERMINAL BLVD. INTERSECTION . THE TOTAL DISTURBED AREA IS ±1.91 ACRES.

EXISTING SITE CONDITIONS

RUNOFF FROM THE PROJECT DRAINS INTO VARIOUS DROP INLETS, ROADSIDE DITCHES, AND CATCH BASINS LOCATED IN THE HAMPTON BOULEVARD RIGHT-OF-WAY. THE ULTIMATE SITE OUTFALL IS INTO THE LAFAYETTE RIVER.

ADJACENT PROPERTY

THE SITE IS BORDERED BY VARIOUS RESIDENTIAL AND COMMERCIAL PROPERTIES TO THE EAST AND WEST. THE LAFAYETTE RIVER TO THE SOUTH AND TERMINAL BOULEVARD TO THE NORTH.

CRITICAL EROSION AREAS

PORTIONS OF THE PROJECT OCCUR WITHIN THE CBPA AND AS CONSIDERED CRITICAL. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN THIS AREA.

EROSION AND SEDIMENT CONTROL MEASURES AND STRUCTURAL PRACTICES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VESC HANDBOOK. THE MINIMUM STANDARDS OF THE VESC SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL INCLUDE, BUT NOT BE LIMITED BY, THE FOLLOWING:

SILT FENCE BARRIER - VESC STD. 3.05 SILT FENCE SEDIMENT BARRIERS WILL BE INSTALLED DOWN SLOPE OF AREAS WITH MINIMAL GRADES TO FILTER SEDIMENT-LADEN RUNOFF FROM SHEET FLOW AS INDICATED ON THE PLANS.

STORM DRAIN INLET PROTECTION - VESC STD. 3.07 ALL STORM SEWER INLETS SHALL BE PROTECTED DURING CONSTRUCTION. SEDIMENT-LADEN WATER SHALL BE FILTERED BEFORE ENTERING THE STORM SEWER INLETS.

VEGETATIVE PRACTICES

TEMPORARY SEEDING - VESC STD. 3.31 ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR A PERIOD OF 30 DAYS OR GREATER, SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE SHALL DEPEND ON THE TIME OF YEAR IT IS APPLIED.

PERMANENT SEEDING - VESC STD. 3.32 APPLY PERMANENT SEEDING TO DISTURBED GRASS AREAS IMMEDIATELY AS FINAL GRADING IS REACHED AND WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL. SELECTION OF THE SEED MIXTURE SHALL DEPEND ON THE TIME OF YEAR IT IS APPLIED.

MULCH - VESC STD. 3.35 MULCH (STRAW OR FIBER) SHALL BE USED ON RELATIVELY FLAT AREAS AND SHALL BE APPLIED AS A SECOND STEP IN THE SEEDING OPERATION.

MANAGEMENT STRATEGIES

1. CONSTRUCTION SHALL BE SEQUENCED SO THAT ANY GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
2. SEDIMENT TRAPPING MEASURES SHALL BE INSTALLED AS A FIRST STEP IN GRADING AND SHALL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.
3. TEMPORARY SEEDING AND OTHER STABILIZATION SHALL FOLLOW IMMEDIATELY AFTER ROUGH GRADING.
4. AREAS THAT ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.
5. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
6. WITHIN 30 DAYS AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY E&S CONTROLS SHALL BE CLEANED UP AND REMOVED.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. CONTRACTOR SHALL BE REQUIRED TO PROVIDE A MINIMUM OF 6" OF TOPSOIL PRIOR TO PERMANENT SEEDING. ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME SHALL BE APPLIED PRIOR TO MULCHING.

MAINTENANCE

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE FOLLOWING ITEMS SHALL BE CHECKED IN PARTICULAR:

1. THE INLET PROTECTION DEVICES SHALL 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.
2. THE SILT FENCE BARRIER SHALL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
3. THE SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.

EROSION AND SEDIMENT CONTROL NOTES:

1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (3RD EDITION, 1992) AND THE CITY OF NORFOLK EROSION AND SEDIMENT CONTROL ORDINANCE.
2. THE CONTRACTOR SHALL CONTACT THE CITY OF NORFOLK, BUREAU OF ENVIRONMENTAL SERVICES (664-4366) AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY (INCLUDING DEMOLITION) SO THAT A PRE-CONSTRUCTION CONFERENCE CAN BE SCHEDULED.
3. THE CONTRACTOR SHALL APPLY PERMANENT OR TEMPORARY SOIL STABILIZATION TO ALL DENUDED OR DISTURBED AREAS WITHIN 7 DAYS AFTER DISTURBANCE. SOIL STABILIZATION MEASURES INCLUDE VEGETATIVE ESTABLISHMENT AND MULCHING.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION.
5. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND CLEANUP OF SEDIMENTATION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IMMEDIATELY.
6. STOCK PILES OF SOIL AND OTHER ERODIBLE MATERIALS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION FOR STOCKPILES ON SITE AS WELL AS FOR MATERIALS TRANSPORTED FROM THE PROJECT SITE.
8. THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST INCLUDING (BUT NOT LIMITED TO) USE OF WATER, MULCH, OR CHEMICAL DUST ADHESIVES AND CONTROL OF CONSTRUCTION SITE TRAFFIC.
9. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.
10. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. AFTER STABILIZATION IS COMPLETE, ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS, TRAPPED SEDIMENT SHALL BE SPREAD AND SEEDED.
11. DISCHARGE OF WATER FROM DEWATERING ACTIVITIES SHALL BE FILTERED THROUGH A CITY OF NORFOLK APPROVED FILTRATION DEVICE (A FILTER BAG OR SETTLING TANK).
12. THIS PROJECT REQUIRES A STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN AND UPDATE THE SWPPP AS INDICATED WITHIN THE DOCUMENT.

TABLE 3.32-E
(Revised June 2003)
PERMANENT SEEDING SPECIFICATIONS FOR COASTAL PLAIN AREA

SEED[1]		
LAND USE	**SPECIES**	**APPLICATION RATES**
Minimum Care Lawn (Commercial or Residential)	Tall Fescue[1] or Bermudagrass[1]	175 - 200 lbs. / 75 lbs.
High-Maintenance Lawn	Tall Fescue[1] or Bermudagrass[1] (seed) or Bermudagrass[1] (by other vegetative establishment method, see Std. & Spec. 3.34)	200-250 lbs. / 40 lbs. (unhulled) 30 lbs. (hulled)
General Slope (3:1 or less)	Tall Fescue[1] Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop[2]	128 lbs. 2 lbs. 20 lbs. TOTAL: 150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue[1] Bermudagrass[1] Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop[2] Sericea Lespedeza[3]	93-108 lbs. 0-15 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

1 - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VCIA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by VCIA. A current turfgrass variety list is available at the local County Extension office or through VCIA at 804-746-4884 or at http://sudan.cses.vt.edu/html/Turf/turf/publications/publications2.html

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

February, March - April	Annual Rye
May 1st - August	Foxtail Millet
September, October - November 15th	Annual Rye
November 16th - January	Winter Rye

3 - May through October, use hulled seed. All other seeding periods, use unhulled seed. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30 -40 lbs/acre.

FERTILIZER & LIME

- Apply 10-20-10 **fertilizer** at a rate of **500** lbs. / acre (or 12 lbs. / 1,000 sq. ft.)
- Apply **Pulverized Agricultural Limestone** at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:
- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
- Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means.
- When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

PERMANENT SEEDING
DETAIL 1 VARIES
SCALE = NONE

TABLE 3.31-B
(Revised June 2003)
TEMPORARY SEEDING SPECIFICATIONS
QUICK REFERENCE FOR ALL REGIONS

SEED		
APPLICATION DATES	**SPECIES**	**APPLICATION RATES**
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (Iolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 -100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (Iolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)

FERTILIZER & LIME

- Apply 10-10-10 **fertilizer** at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.)
- Apply **Pulverized Agricultural Limestone** at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:
1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
2 - Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means.
3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

TEMPORARY SEEDING
DETAIL 2 VARIES
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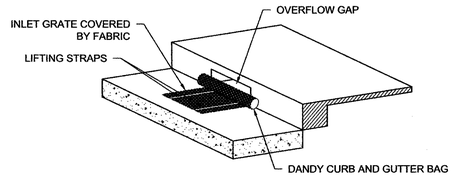

INLET PROTECTION
DETAIL 4 C-4
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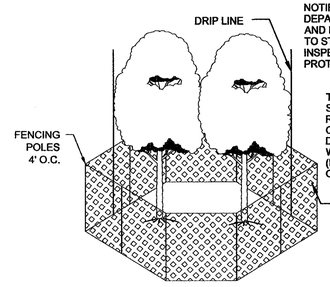
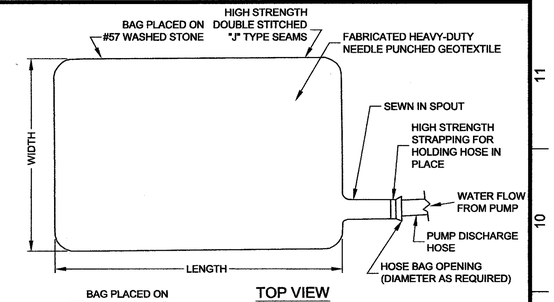
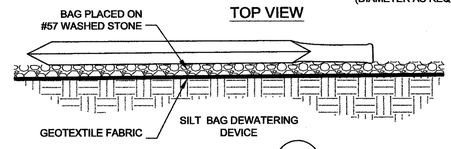


NOTE:
NOTIFY THE NORFOLK DEPARTMENT OF PARKS AND FORESTRY PRIOR TO START OF WORK FOR INSPECTION OF TREE PROTECTION.

TREE PROTECTION RADIUS SHALL BE INSTALLED AT A 1' RADIUS PER INCH OF TREE CALIPER OR BY THE ACTUAL DRIP LINE OF THE TREES; WHICH EVER IS GREATER (MINUS ANY PAVED AREAS OR PRIVATE PROPERTY).

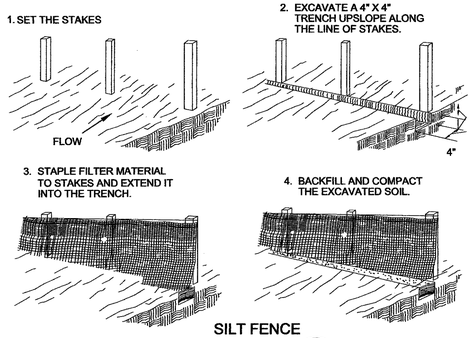
STANDARD TREE PROTECTION DETAIL
DETAIL 3 VARIES
SCALE = NONE





DETAIL 42 VARIES
SCALE = NONE

NOTE:
SILT FABRIC FABRIC SHALL BE 36" TALL, STAKED WITH 2"x 2" HARDWOOD STAKES.



SILT FENCE
DETAIL 5 C-4
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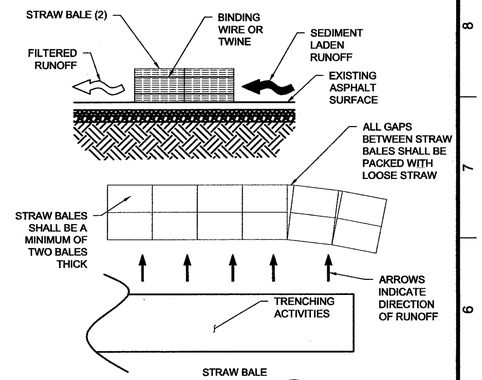
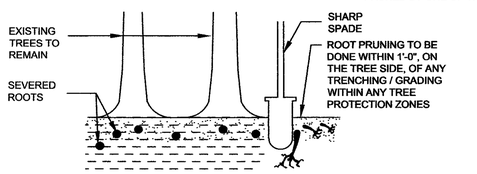
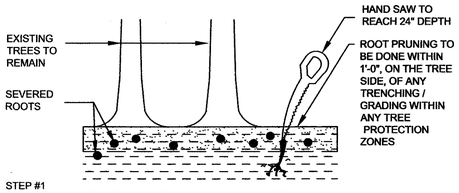


STRAW BALE
DETAIL 6 VARIES
SCALE = NONE

TREE CANAPY AREAS BEING IMPACTED BY TRENCHING ACTIVITIES SHALL BE REQUIRED TO HAVE THE TREE ROOTS PRUNED BY ONE OF THE MEANS BELOW



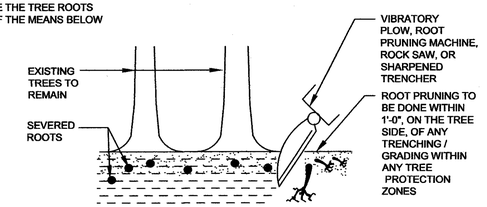
STEP #1
PRUNE ROOTS LESS THAN 2" WITH SHARP SPADE OR PRUNING SAW. ROOTS 2" OR LARGER TO BE PROTECTED AND LEFT UNDISTURBED.



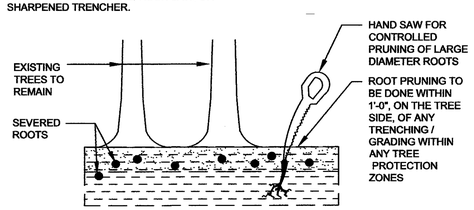
STEP #1
PRUNE ROOTS LESS THAN 2" WITH SHARP SPADE OR PRUNING SAW. ROOTS 2" OR LARGER TO BE PROTECTED AND LEFT UNDISTURBED.

STEP #2
PRIOR TO BACKFILLING TRENCH, CUT ALL ROOT STUBS WITH SHARP HAND SAW TO EDGE OF TRENCH.

ROOT PRUNING BY HAND
DETAIL 7 VARIES
SCALE = NONE

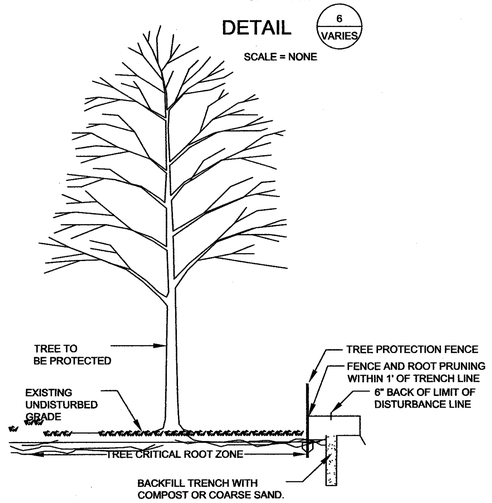


STEP #1
ROOT PRUNE WITH VIBRATORY PLOW, ROOT PRUNING MACHINE, ROCK SAW, OR SHARPENED TRENCHER.



STEP #2
HAND PRUNE ROOTS THAT REMAIN FOLLOWING MECHANICAL PRUNING

ROOT PRUNING BY MECHANICAL MEANS
DETAIL 8 VARIES
SCALE = NONE



ROOT PRUNING
DETAIL 9 VARIES
SCALE = NONE

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

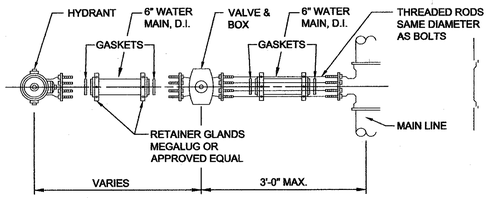
City of Norfolk
Department of Utilities

CIVIL
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-22.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-22
SHEET NUMBER 23 OF 33

RFoshay
Feb 03, 2016 - 10:47am
P:\Clients\Norfolk\144647 Norf-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-22.dwg
01/27/2016



NOTES:

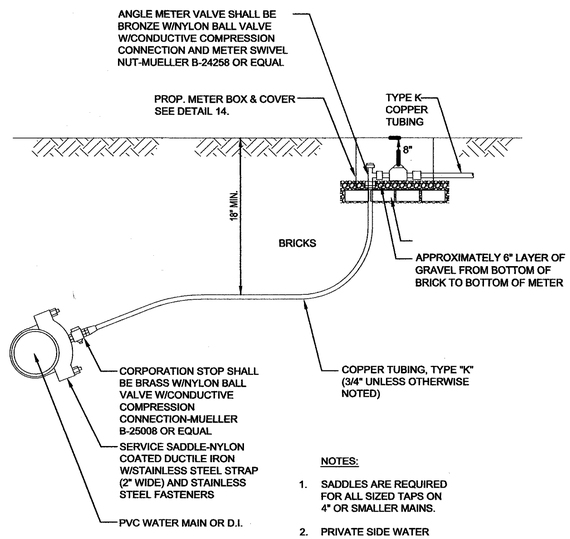
1. ALL HYDRANT CONNECTIONS MUST BE FIELD INSPECTED, BY A CITY INSPECTOR, PRIOR TO BACKFILLING.

2. ALL PIPE BETWEEN TEE AND FIRE HYDRANT SHALL BE DUCTILE IRON CLASS 52 OR CLASS 56 (AS SHOWN ON PLANS). VALVE SHALL BE RODDED TO SERVICE TEE. VALVE AND HYDRANT SHALL HAVE MEGALUGS OR APPROVED EQUAL.

FIRE HYDRANT CONNECTION
(CITY OF NORFOLK DETAIL CW 05)

DETAIL 11 VARIES

SCALE = NONE



NOTES:

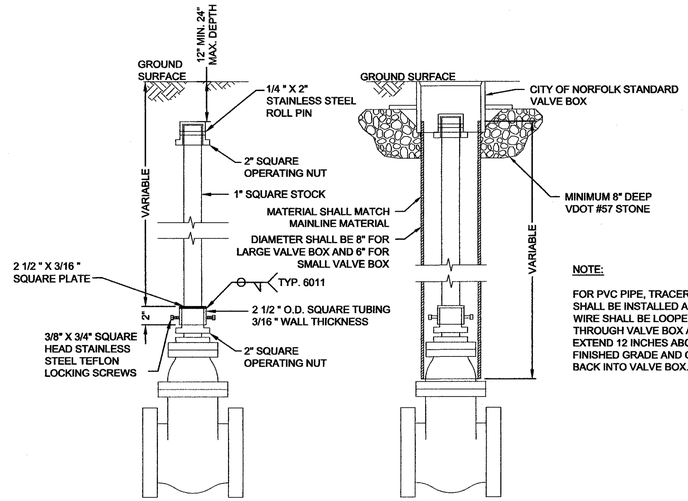
1. SADDLES ARE REQUIRED FOR ALL SIZED TAPS ON 4" OR SMALLER MAINS.

2. PRIVATE SIDE WATER MAIN SERVICE TO BE CHECKED FOR PRESENCE OF LEAD AT NO ADDITIONAL COST.

TYPICAL TAP INSTALLATION

DETAIL 13 VARIES

SCALE = NONE



NOTE:

FOR PVC PIPE, TRACER WIRE SHALL BE INSTALLED AND WIRE SHALL BE LOOPED THROUGH VALVE BOX AND EXTEND 12 INCHES ABOVE FINISHED GRADE AND COILED BACK INTO VALVE BOX.

VALVE STEM EXTENSION

DETAIL 15 VARIES

SCALE = NONE

TABLE I

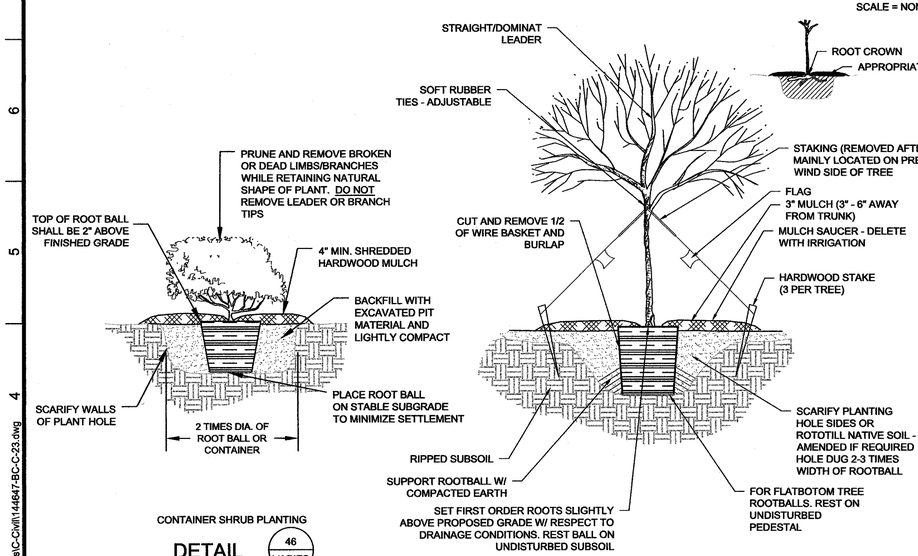
NOMINAL SIZE OF PIPE (INCH)	MAXIMUM PERMISSABLE DEFLECTION (INCHES)			APPROX. RADIUS OF CURVE PRODUCED BY SUCCESSION OF JOINTS (FEET)			
	16 FT LENGTH	18 FT LENGTH	20 FT LENGTH	12 FT LENGTH	16 FT LENGTH	18 FT LENGTH	20 FT LENGTH
4	28	31		85	110	125	
6	24	27		100	130	145	
8	18	20		130	170	195	
10	18	20		130	170	195	
12	18	20	22	130	170	195	220
14	12	13.5	15	190	250	285	320
16	12	13.5	15	190	250	285	320
18	10	11	12	230	300	340	380
20	10	11	12	230	300	340	380
24	8	9	10	300	400	450	500
30	8	9	10	300	400	450	500
36	7	8		330	440	500	
42	6	7.5		340	450	510	
48	6	7.5		340	450	510	

NOTE:
1. MAXIMUM ALLOWABLE DEFLECTION SHALL BE 50% OF MANUFACTURERS RECOMMENDED DEFLECTION.

MAXIMUM PERMISSIBLE DEFLECTION IN LAYING MECHANICAL - JOINT PIPE (CITY OF NORFOLK DETAIL CWS 06)

DETAIL 17 VARIES

SCALE = NONE



CONTAINER SHRUB PLANTING

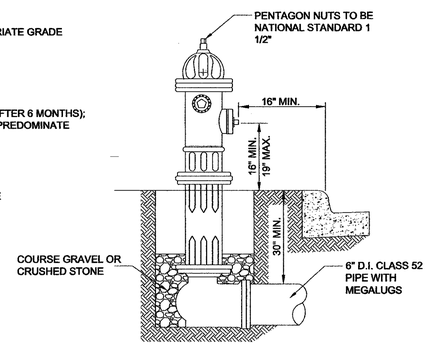
DETAIL 46 VARIES

SCALE = NONE

CONTAINER TREE PLANTING

DETAIL 47 VARIES

SCALE = NONE



NOTES:

1. HYDRANTS TO BE SET WITH BURY LINE POSITIONED AT GRADE WITH NOZZLES AT MIN. OF 16 INCHES ABOVE GROUND.

2. WHEN SET BEHIND CURB THE NOZZLES ARE TO BE PARALLEL OR AT RIGHT ANGLES TO THE CURB, WITH THE PUMPER NOZZLE FACING THE CURB. THE PUMPER NOZZLE WILL BE A MIN. DISTANCE OF 16 INCHES FROM THE FACE OF THE CURB.

3. HYDRANT MUST HAVE SAFETY BREAKAWAY FEATURE SUCH AS MUELLER CENTURIAN 250 A421 OR APPROVED EQUAL.

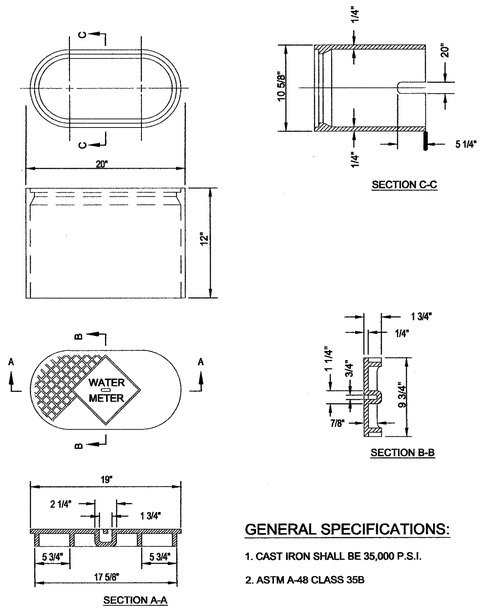
4. 6" DUCTILE IRON CLASS 52 OR CLASS 56 (AS SHOWN ON PLANS) FROM TEE TO HYDRANT. VALVE TO BE RODDED TO TEE. VALVE & HYDRANT TO HAVE MEGALUGS.

5. COARSE GRAVEL OR CRUSHED STONE IS TO BE PLACED FROM THE BOTTOM OF THE TRENCH TO AT LEAST 6 INCHES ABOVE THE DRAIN OPENINGS IN THE HYDRANT AND AT A DISTANCE OF ONE FOOT AROUND THE ELBOW.

FIRE HYDRANT
(CITY OF NORFOLK DETAIL CW 04)

DETAIL 12 VARIES

SCALE = NONE



NOTES:

1. LETTER ON COVER SHALL BE "S" WHEN USED IN SAN. SEWER SYSTEM AND "W" WHEN USED IN WATER SYSTEM.

2. RISER FOR VALVE BOX SHALL MATCH TYPE OF PIPE USED FOR MAIN.

GENERAL SPECIFICATIONS:

1. CAST IRON SHALL BE 35,000 P.S.I.

2. ASTM A-48 CLASS 35B

WATER METER BOX & COVER

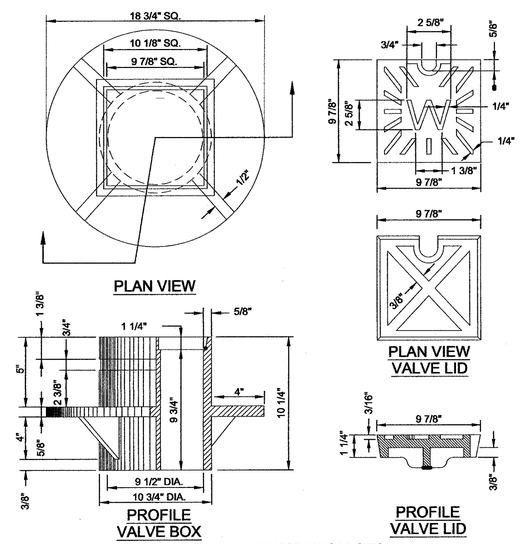
DETAIL 14 VARIES

SCALE = NONE

GENERAL SPECIFICATIONS

1. CAST IRON SHALL BE 35,000 PSI

2. ASTM A48 CLASS 35B



VALVE BOX FOR MAINS 8 INCHES OR LARGER
(CITY OF NORFOLK DETAIL CWS 01)

DETAIL 16 VARIES

SCALE = NONE

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
DETAILS 1

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-23.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-23
SHEET NUMBER 24 OF 33

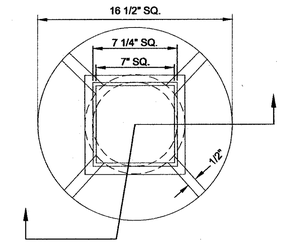
RFoshay
Feb 03, 2016 - 10:47am
P:\Clients\Norfolk\144647 Norf-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-23.dwg
01/27/2016

NOTES:

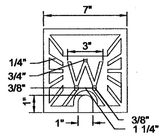
1. LETTER ON COVER SHALL BE "S" WHEN USED IN SAN. SEWER SYSTEM AND "W" WHEN USED IN WATER SYSTEM.
2. RISER FOR VALVE BOX SHALL MATCH TYPE OF PIPE USED FOR MAIN.

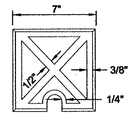
GENERAL SPECIFICATIONS

1. CAST IRON SHALL BE 35,000 PSI
2. ASTM A48 CLASS 35B

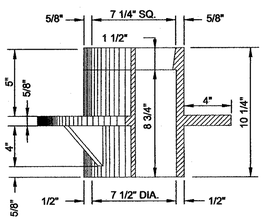


PLAN VIEW

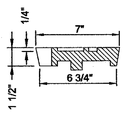




PLAN VIEW
VALVE LID



PROFILE
VALVE BOX



PROFILE
VALVE LID

SMALL GATE VALVE BOX FOR MAINS UP TO 6 INCHES (CITY OF NORFOLK DETAIL CWS 02)

DETAIL 18 VARIES

SCALE = NONE

TABLE II

REQUIRED COVER OVER PIPE.

NOMINAL SIZE OF DI PIPE	REQUIRED COVER OVER PIPE (INCH)
2"	30
3"	30
4"	30
6"	30
8"	36
12"	36
16"	36
18"	36
20"	36
24"	42
30"	42
36"	42
42"	42

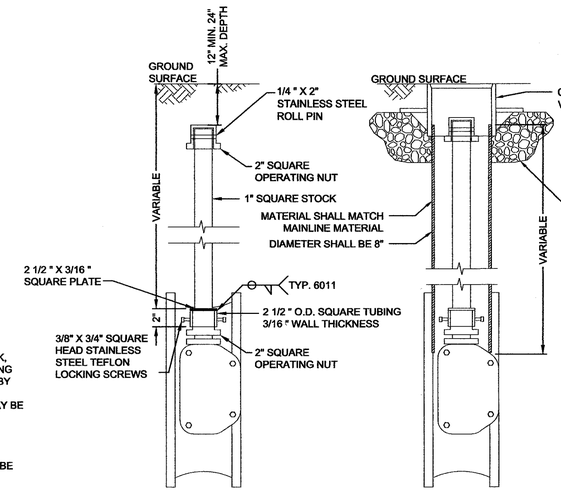
NOTES:

1. THE MINIMUM COVER OVER PIPES SHALL BE AS SHOWN IN TABLE NO. II FOR WATER MAINS AND SEWER FORCE MAINS INSTALLED IN THE CITY OF NORFOLK, EXCEPT WHEN SUCH CONDITIONS EXIST. TO PREVENT THIS COVER FROM BEING OBTAINED, IN WHICH EVENT THE AMOUNT OF COVER SHALL BE DETERMINED BY THE ENGINEER. THE AMOUNT OF COVER SHALL BE MEASURED FROM THE PROPOSED GRADE OF THE STREET OR THE EXISTING GRADE WHICH EVER MAY BE THE LOWER.
2. ALL VALVES SMALLER THAN 12" DIAMETER SHALL BE GATE VALVES.
3. ALL WATER VALVES SHALL BE OPEN RIGHT, 12" DIAMETER OR LARGER SHALL BE HORIZONTAL GATE OR BUTTERFLY VALVES.
4. ALL SEWER VALVES SHALL BE OPEN LEFT GATE VALVES, 12" AND LARGER SHALL BE HORIZONTAL.

BACKFILL METHODS
(CITY OF NORFOLK DETAIL CWS 05)

DETAIL 20 VARIES

SCALE = NONE



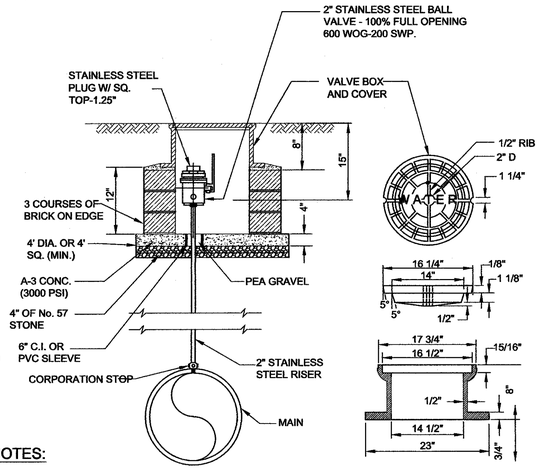
NOTE:

FOR PVC PIPE, TRACER WIRE SHALL BE INSTALLED AND WIRE SHALL BE LOOPED THROUGH VALVE BOX AND EXTEND 12 INCHES ABOVE FINISHED GRADE AND COILED BACK INTO VALVE BOX.

SIDE ACTUATOR VALVE STEM EXTENSION

DETAIL 21 VARIES

SCALE = NONE



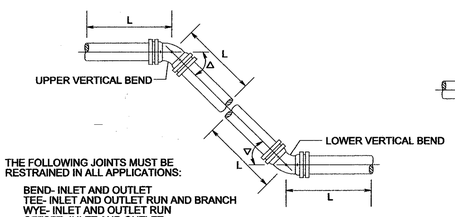
NOTES:

1. GRAVEL BEDDING MAY BE USED IN PLACE OF CONCRETE IN NON-TRAFFIC AREA AT DISCRETION OF ENGINEER.
2. MACHINE SEATING SURFACES ON BOTH COVER & FRAME.
3. ALL CASTINGS TO BE DIPPED IN ASPHALTIC PAINT AFTER MACHINING
4. TOLERANCE TO BE ±0.125" FOR ALL DIMENSIONS.
5. CASTING TO BE SHOT BLASTED.
6. CASTINGS TO BE ASTM A48 CLASS 35B.

AIR VENT / BLOW OFF VALVE (CITY OF NORFOLK DETAIL CWS 03)

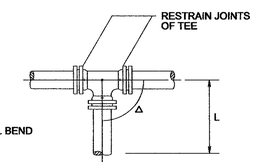
DETAIL 23 VARIES

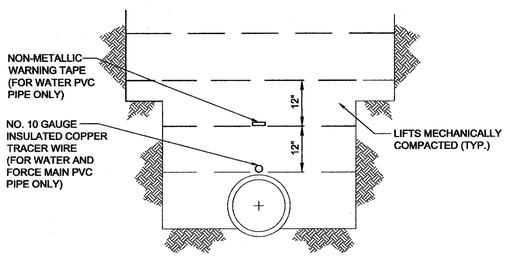
SCALE = NONE



THE FOLLOWING JOINTS MUST BE RESTRAINED IN ALL APPLICATIONS:

BEND- INLET AND OUTLET
TEE- INLET AND OUTLET RUN AND BRANCH
WYE- INLET AND OUTLET RUN
OFFSET- INLET AND OUTLET
CAPS
PLUGS
ALL JOINTS ON HYDRANTS RUNOUTS
REDUCERS
VALVES





PVC PIPE (WATER):

1. BACKFILL WITH ACCEPTABLE MATERIAL TO 12" ABOVE CROWN OF PIPE. COMPACT BY MECHANICAL MEANS.
2. PLACE NO. 10 GAUGE INSULATED COPPER TRACER WIRE. DIRECTLY ON TOP OF THE PIPE SECURE BY PLACING ACCEPTABLE FILL MATERIAL BY HAND. TRACER WIRE TO BE LOOPED INTO VALVE BOXES FOR TRACING PURPOSES.
3. BACKFILL WITH ACCEPTABLE MATERIAL TO 12" ABOVE TRACER WIRE. COMPACT BY MECHANICAL MEANS.
4. PLACE NON-METALLIC WARNING TAPE. SECURE BY PLACING ACCEPTABLE FILL MATERIAL BY HAND.
5. BACKFILL REMAINING TRENCH IN 12" LIFTS, COMPACT BY MECHANICAL MEANS, UP TO BOTTOM OF PAVEMENT SECTION.
6. PLACE TEMPORARY OR PERMANENT PAVEMENT.

PVC/DUCTILE IRON PIPE (SEWER) AND DUCTILE IRON PIPE (WATER):

1. BACKFILL IN 12" LIFTS TO BOTTOM OF PAVEMENT SECTION. EACH LIFT TO BE MECHANICALLY COMPACTED.
2. PLACE TEMPORARY OR PERMANENT PAVEMENT.

* THE CITY MAY CONDUCT COMPACTION TESTING AT ANY POINT DURING THE BACKFILL PROCESS.

BACKFILL METHODS
(CITY OF NORFOLK DETAIL CWS 04)

DETAIL 19 VARIES

SCALE = NONE

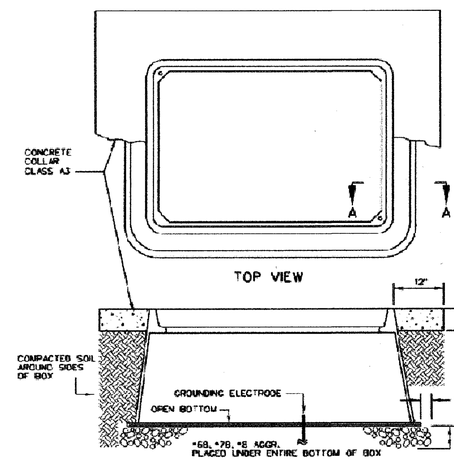
NOTES:

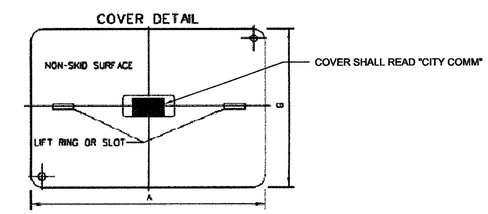
1. ALL THRUST RESTRAINT INSTALLATIONS MUST BE APPROVED BY A UTILITIES INSPECTOR PRIOR TO BACKFILLING
2. VALUES FOR "L" ARE BASED ON DI PIPE AT 150 PSI TEST, MINIMUM SAFETY FACTOR OF 1.5, SOIL TYPE ML (INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS), TRENCH TYPE 4, AND A MINIMUM DEPTH OF COVER OF 3 FEET. CONTRACTOR SHALL NOTIFY THE ENGINEER IF DEFERENT SOIL CLASSIFICATIONS ARE OBSERVED IN THE FIELD.
3. IF NO JOINTS ARE ENCOUNTERED WITHIN DISTANCE "L", THE NEXT CLOSEST JOINT SHALL BE RESTRAINED.
4. MINIMUM RESTRAINED LENGTH FOR TEES SHOWN ABOVE ARE FOR BRANCHES. RESTRAIN 5' MINIMUM ON RUN SIDES OF ALL TEES.
5. LENGTH "L" IN FEET SHALL CONFORM TO THE TABLE PROVIDED.
6. ALL REDUCERS DECREASING ONE NOMINAL PIPE DIAMETER (4" X 6") SHALL HAVE 50' OF RESTRAINED LENGTH ON THE LARGER SIDE OF THE REDUCER. ALL REDUCERS DECREASING TWO NOMINAL PIPE DIAMETERS (6" X 10") SHALL HAVE 100' OF RESTRAINED LENGTH ON THE LARGER SIDE OF THE REDUCER.
7. JOINT RESTRAINTS SHALL BE SERIES 2000PV MEGALUG MECHANICAL JOINT RESTRAINT AS MANUFACTURED BY EBAA IRON INC. OR APPROVED EQUAL.
8. RESTRAINTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

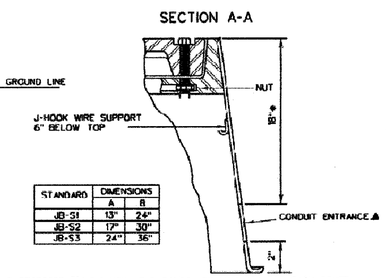
THRUST RESTRAINT REQUIREMENTS

DETAIL 22 VARIES

SCALE = NONE







STANDARD	DIMENSIONS	
	A	B
JB-S1	13"	24"
JB-S2	17"	30"
JB-S3	24"	36"

NOTES:

JUNCTION BOXES MAY BE STRAIGHT OR FLARED WALL IN DESIGN. MATERIALS SHALL CONFORM TO SECTION 238 OF THE ROAD & BRIDGE SPECIFICATIONS.

BELL ENDS SHALL BE INSTALLED ON THE ENDS OF PVC CONDUITS.

GROUNDING BUSHINGS SHALL BE INSTALLED ON THE ENDS OF METAL CONDUITS.

BELL ENDS AND BUSHINGS SHALL BE PLUGGED TO PREVENT MOISTURE AND RODENT ENTRY.

*DEPTH OF CONDUIT ENTRANCE FOR USE OF MAGNETIC DETECTORS SHALL BE IN ACCORDANCE WITH STANDARD TD-2.

CONDUIT ENTRANCES SHALL BE LOCATED AS SHOWN ON THE PLANS.

THE COVER SHALL HAVE A NON-SKID SURFACE WITH LETTERS CAST IN THE DEPRESSION ON TOP. THE LETTERS "VDOT ELEC", "VDOT TRAF", "VDOT COMM" OR UTILITY AS APPLICABLE ARE TO BE 1" WIDE. COVERS USED FOR JUNCTION BOXES INSTALLED WITHIN MUNICIPALITIES AND NOT MAINTAINED BY VDOT SHALL NOT REQUIRE THE VDOT REFERENCE.

ALL JUNCTION BOXES SHALL BE INSTALLED WITH A GROUNDING ELECTRODE

TWO RECESSED ⅝" S.S. HEX HEAD BOLTS ARE REQUIRED FOR EACH COVER.

▲ A MINIMUM 2" DIAMETER CONDUIT ENTRANCE IS REQUIRED, UNLESS OTHERWISE SPECIFIED ON THE PLANS.

J-HOOK WIRE SUPPORTS SHALL BE SECURELY ATTACHED TO THE JUNCTION BOX WITH A BOLT AND NUT WITH A NEOPRENE WASHER OR AN EXPANSION FITTING.

CONDUITS SHALL EXTEND 2" TO 3" MAX. INTO THE INSIDE WALL OF THE JUNCTION BOX.

THE JUNCTION BOX MAY BE A TWO PIECE DESIGN WITH THE TOP SECTION NO LESS THAN 17" IN DEPTH.

VOIDS RESULTING FROM ENTRANCE OF CONDUITS INTO JUNCTION BOXES SHALL BE COMPLETELY FILLED WITH AN APPROVED MATERIAL.

JUNCTION BOX FOR NON-DELIBERATE TRAFFIC USE EXTENSION

DETAIL 32 VARIES

SCALE = NONE

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
DETAILS 2

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-24.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-24
SHEET NUMBER 25 OF 33

Feb 03, 2016 - 10:47am RFeshay
P:\Clients\Norfolk\144647 Nor-FB TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-24.dwg

01/27/2016

SEWER GRAVITY MAIN NOTES:

1. #57 STONE BEDDING AS SHOWN SHALL BE INCLUDED AS PART OF THE UNIT BID PRICE OF THE PIPE.
2. ANY ADDITIONAL UNDERCUT SHALL BE AT THE DIRECTION OF THE CITY ONLY.
3. #57 STONE TICKETS SHALL NOT BE ACCEPTED BY THE CITY. THE ADDITIONAL #57 STONE BEDDING/UNDERCUT AS DIRECTED BY THE CITY SHALL BE A CALCULATED QUANTITY ONLY, AND NOT BASED ON STONE TICKETS.
4. QUANTITY OF #57 STONE BEDDING ACCEPTABLE FOR INSTALLATION SHALL NOT EXCEED THE FULL TRENCH WIDTH, AS IDENTIFIED IN THIS DETAIL, AS WELL AS THE TOTAL DEPTH AND LENGTH AGREED UPON WITH THE CITY.
5. NO PAYMENT SHALL OCCUR FOR #57 STONE BEDDING NOT PROPERLY AUTHORIZED BY THE CITY IN ADVANCE.

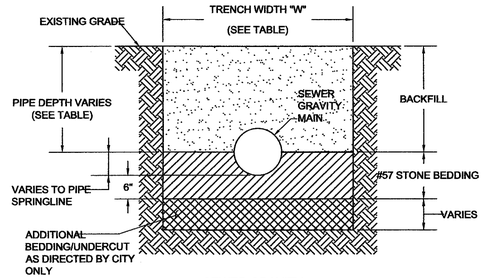
WATER OR FORCE MAIN NOTES:

1. #57 STONE BEDDING SHALL NOT BE INCLUDED AS PART OF THE UNIT BID PRICE OF THE PIPE. #57 STONE SHALL BE CALCULATED AT 100lbs/CUBIC FOOT.
2. #57 STONE BEDDING SHALL BE INSTALLED ONLY AT THE SPECIFIC DIRECTION OF THE CITY.
3. IF UNSUITABLE SOILS ARE ENCOUNTERED THE CONTRACTOR SHALL NOTIFY THE CITY AND REQUEST #57 STONE BEDDING BE AUTHORIZED FOR INSTALLATION.
4. ANY #57 STONE BEDDING INSTALLED SHALL BE A CALCULATED QUANTITY AND NOT BASED ON STONE TICKETS.
5. QUANTITY OF #57 STONE ACCEPTABLE FOR INSTALLATION SHALL NOT EXCEED THE FULL TRENCH WIDTH, AS IDENTIFIED IN THIS DETAIL, AS WELL AS THE TOTAL DEPTH AND LENGTH AGREED UPON WITH THE CITY.
6. NO PAYMENT SHALL OCCUR FOR BEDDING NOT PROPERLY AUTHORIZED BY THE CITY IN ADVANCE.

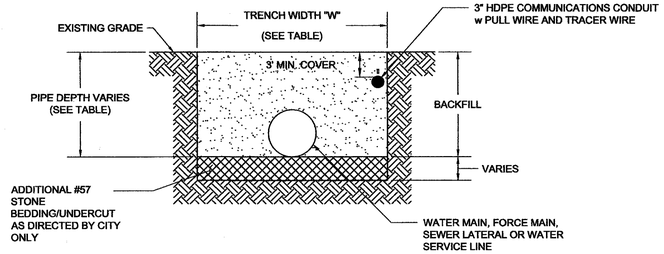
TRENCH WIDTH INFORMATION	
PIPE DEPTH (FT)	TRENCH WIDTH★ "W" (FT)
SEWER LATERALS & WATER SERVICE LINES	2 **
0.00 - 3.99	4 **
4.00 - 5.99	5 **
6.00 - 11.99	8 **
> 12.00	10 **

★ 'W' DENOTES WIDTH FOR #57 STONE INCLUDED IN COST AS WELL AS MAXIMUM TRENCH WIDTH FOR 21A STONE AND ASPHALT

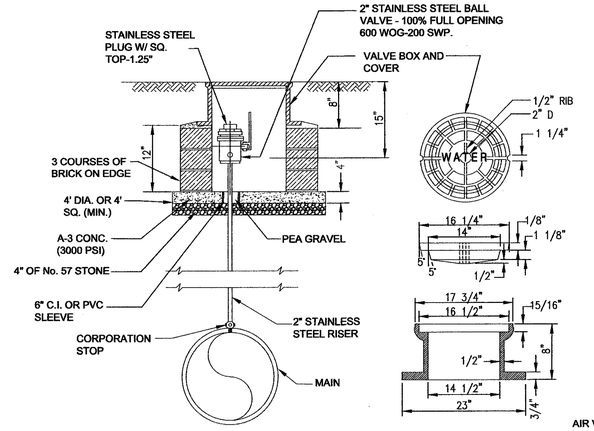
** MATERIALS INSTALLED IN EXCESS OF THE AUTHORIZED TRENCH WIDTH SHALL NOT BE PAID WITHOUT A REASONABLE WRITTEN EXPLANATION



SEWER GRAVITY MAIN



WATER MAIN, SEWER LATERALS OR WATER SERVICE LINES



NOTES:

1. GRAVEL BEDDING MAY BE USED IN PLACE OF CONCRETE IN NON-TRAFFIC AREA AT DISCRETION OF ENGINEER.
2. MACHINE SEATING SURFACES ON BOTH COVER & FRAME.
3. ALL CASTINGS TO BE DIPPED IN ASPHALTIC PAINT AFTER MACHINING
4. TOLERANCE TO BE ±0.125" FOR ALL DIMENSIONS.
5. CASTING TO BE SHOT BLASTED.
6. CASTINGS TO BE ASTM A48 CLASS 35B.

CITY OF NORFOLK -STANDARD AIR VENT / BLOW-OFF VALVE

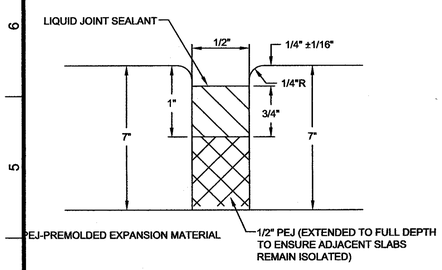
DETAIL 45 VARIES

SCALE = NONE

BEDDING DETAIL NOTES (CITY OF NORFOLK DETAIL CWS 9A)

DETAIL 24 VARIES

SCALE = NONE



ISOLATION/EXPANSION JOINT FOR SIDEWALK CONSTRUCTION

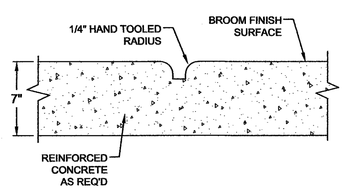
DETAIL 25 C-4

SCALE = NONE

BEDDING DETAIL (CITY OF NORFOLK DETAIL CWS 09)

DETAIL 27 VARIES

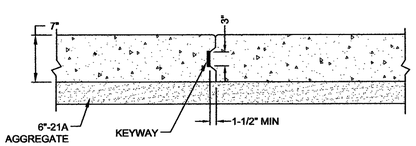
SCALE = NONE



CONTRACTION/CONTROL JOINT FOR SIDEWALK CONSTRUCTION

DETAIL 28 C-4

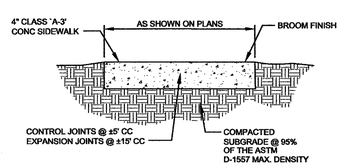
SCALE = NONE



CONSTRUCTION JOINT FOR SIDEWALK CONSTRUCTION

DETAIL 26 VARIES

SCALE = NONE



SUBGRADE COMPACTED TO 95% MAX. THEORETICAL DENSITY @ OPTIMUM MOISTURE CONTENT. *

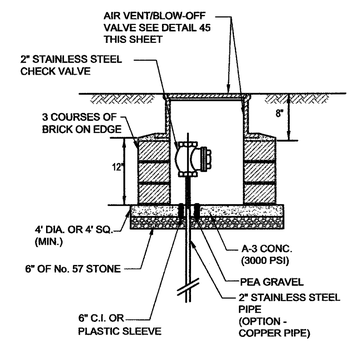
* IF SUBGRADE SHOULD BECOME EXCESSIVELY WET IMMEDIATELY PRIOR TO OR DURING CONSTRUCTION, THEN IT SHOULD BE EITHER SCARIFIED, DRIED AND RECOMPACTED OR UNDERCUT AND REPLACED WITH A SAND SUBBASE.

SIDEWALK

DETAIL 30 VARIES

SCALE = NONE

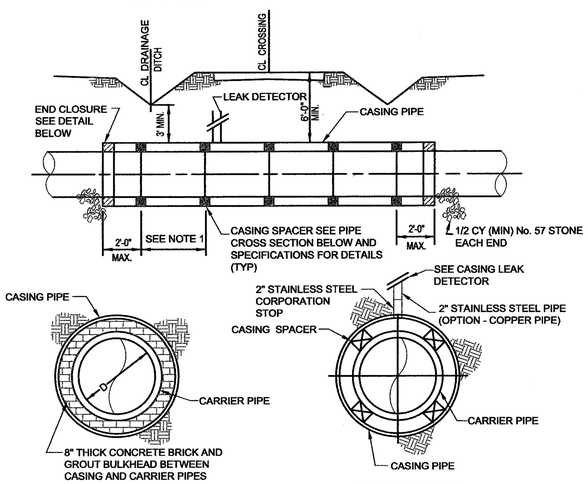
CASING LEAK DETECTOR



NOTES:

1. MACHINE SEATING SURFACES ON BOTH COVER & FRAME.
2. ALL CASTINGS TO BE DIPPED IN ASPHALTIC PAINT AFTER MACHINING.
3. TOLERANCE TO BE ±0.125" FOR ALL DIMENSIONS.
4. CASTING TO BE SHOT BLASTED.
5. CASTINGS TO BE ASTM A48 CLASS 35B.

CASING PIPE REQUIREMENTS			
CARRIER PIPE DIA.	MINIMUM CASING PIPE DIA.	MINIMUM WALL THICKNESS: CRITERIA WITHIN RAILROAD RIGHT OF WAY / STEEL WITH PROTECTIVE COATING	MINIMUM NUMBER OF CASING SPACER RUNNERS
12"	24"	0.375	4
16"	30"	0.500	6
18"	30"	0.500	6
20"	36"	0.563	6
24"	42"	0.625	6



END CLOSURE

PIPE CROSS SECTION

NOTES:

1. PROVIDE FOUR POINT CASING PIPE SUPPORT FOR EACH PIPELINE SECTION. CENTER SPACERS SHALL BE CENTERED BETWEEN OUTSIDE SPACERS, OUTSIDE SPACERS SHALL BE 1'-0" FROM JOINT.
2. CARRIER PIPE SHALL BE MECHANICAL RESTRAINED JOINT DUCTILE IRON PIPE CLASS 52. DUCTILE IRON PIPE BEING USED FOR GRAVITY SEWER OR FORCE MAIN SHALL BE COATED WITH PROTECTO 401 OR AN APPROVED EQUAL.
3. FOR CASING SIZES AND ALLOWABLE MATERIALS, SEE CASING PIPE REQUIREMENTS TABLE THIS SHEET.
4. PROVIDE STAINLESS STEEL SPACERS WITH UHMW RUNNERS. ELECTRICALLY ISOLATE CARRIER PIPE FROM CASING PIPE.

NOTES:

1. SLOPE CASING PIPE AT MINIMUM GRADE OF 1/16" PER FOOT.
2. PROVIDE LEAK DETECTION PER DETAIL.
3. INCREASING THICKNESS OF CASING MUST BE CONSIDERED WHERE BORE LENGTHS EXCEED 125 FEET.
4. CASING PIPE INACCORDANCE WITH TABLE FOR RAILROAD RIGHT OF WAY

JACK & BORE

DETAIL 34 VARIES

SCALE = NONE

Brown AND Caldwell

VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____ PROJECT MANAGER

APPROVED: _____ DATE: _____ BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA — SCOTT W. SMITH — Lic. No. 032204 — 1/27/16 — PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk — Department of Utilities

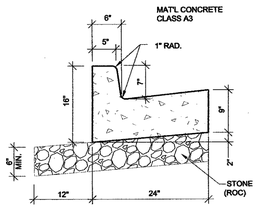
CIVIL
DETAILS 3

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-25.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-25
SHEET NUMBER 26 OF 33

Feb 03, 2016 - 10:48am RFoshay
P:\Clients\Norfolk\144647 Norf-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-25.dwg

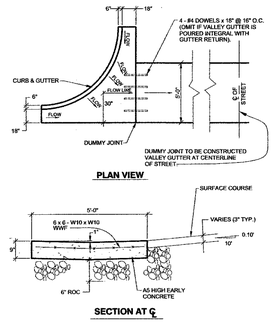
01/27/2016



CITY OF NORFOLK
STANDARD 7" CURB AND GUTTER (HS-202)

DETAIL 31 VARIES

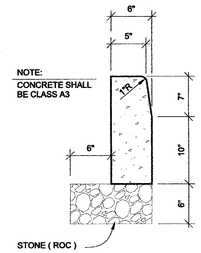
SCALE = NONE



CITY OF NORFOLK
STANDARD VALLEY GUTTER (HS-205)

DETAIL 10 VARIES

SCALE = NONE



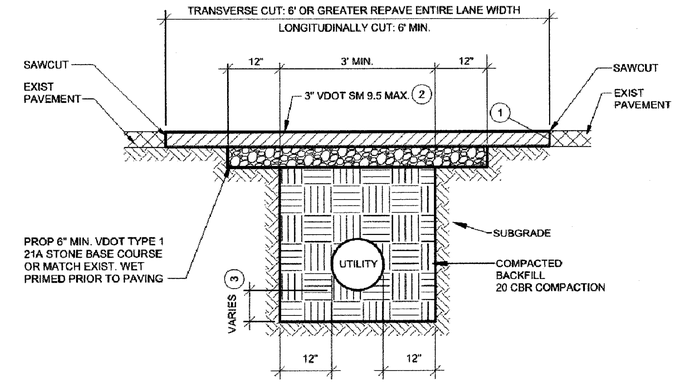
CITY OF NORFOLK
STANDARD 7" PARKWAY CURB (HS-201)

DETAIL 33 VARIES

SCALE = NONE

NOTES

1. TACK COAT: CRS-1 OR RC-250 @ 0.10 GAL. PER SQUARE YARD ALL VERTICAL SURFACES.
2. SM-9.5A SHALL BE USED ON ALL RESIDENTIAL. SM 9.5D SHALL BE USED ON ALL COLLECTORS AND ARTERIALS.
3. REFER TO UTILITY BURIAL SPECIFICATIONS.

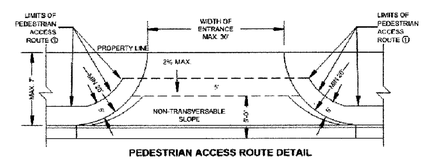


TYPE I
(BITUMINOUS ASPHALT OVER STONE)

CITY OF NORFOLK
STANDARD PAVEMENT REPLACEMENT ASPHALT OVER STORN
(HS-301)

DETAIL 45 VARIES

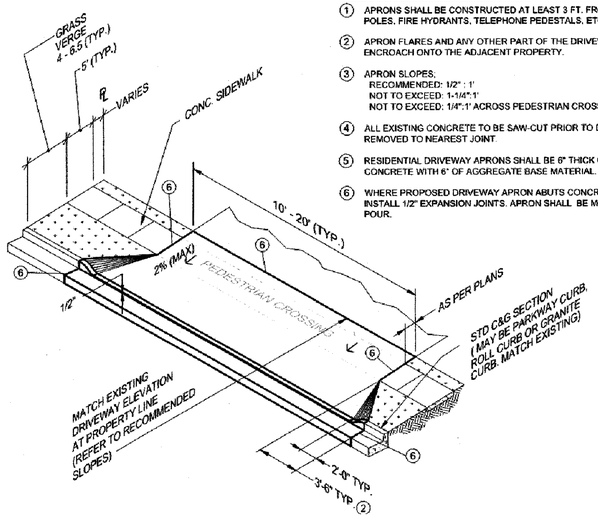
SCALE = NONE



PEDESTRIAN ACCESS ROUTE DETAIL

NOTES

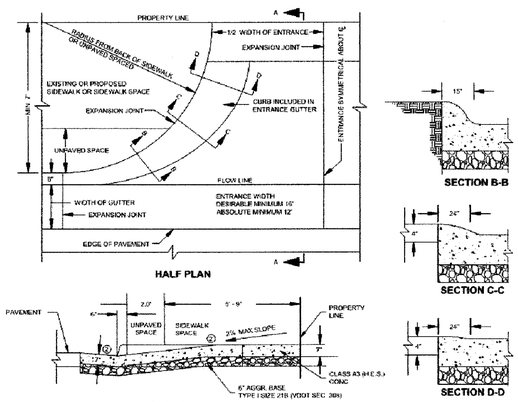
1. APRONS SHALL BE CONSTRUCTED AT LEAST 3 FT. FROM ALL UTILITY POLES, FIRE HYDRANTS, TELEPHONE PEDESTALS, ETC.
2. APRON FLARES AND ANY OTHER PART OF THE DRIVEWAY SHALL NOT ENCROACH ONTO THE ADJACENT PROPERTY.
3. APRON SLOPES:
   RECOMMENDED: 1/2" : 1'
   NOT TO EXCEED: 1-1/4":1'
   NOT TO EXCEED: 1/4":1' ACROSS PEDESTRIAN CROSSING
4. ALL EXISTING CONCRETE TO BE SAW-CUT PRIOR TO DEMOLITION OR REMOVED TO NEAREST JOINT
5. RESIDENTIAL DRIVEWAY APRONS SHALL BE 6" THICK OF CLASS A3 CONCRETE WITH 6" OF AGGREGATE BASE MATERIAL.
6. WHERE PROPOSED DRIVEWAY APRON ABUTS CONCRETE PAVEMENT, INSTALL 1/2" EXPANSION JOINTS. APRON SHALL BE MONOLITHIC POUR.



CITY OF NORFOLK
STANDARD RESIDENTIAL DRIVEWAY APRON
(HS-207)

DETAIL 42 VARIES

SCALE = NONE



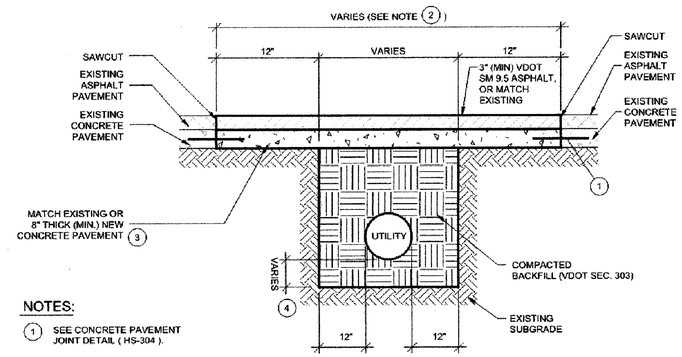
NOTES:

1. ADDITIONAL RIGHT -OF-WAY IS REQUIRED IF THE LIMITS OF PEDESTRIAN ACCESS ROUTE EXTENDS BEYOND EXISTING OR PROPOSED RIGHT-OF-WAY.
2. POINT OF GRADE CHANGE.

CITY OF NORFOLK
STANDARD COMMERCIAL DRIVE WAY APRON
(HS-212)

DETAIL 43 VARIES

SCALE = NONE



NOTES:

1. SEE CONCRETE PAVEMENT JOINT DETAIL (HS-304).
2. LIMITS OF RESTORATION ARE DEFINED IN THE RIGHT-OF WAY EXCAVATION AND RESTORATION MANUAL.
3. CONCRETE SHALL BE CLASS A3 OR CLASS A5 EARLY STRENGTH CONCRETE.
4. REFER TO UTILITY PIPE BEDDING SPECIFICATIONS.

TYPE II
(BITUMINOUS ASPHALT OVER CONCRETE)

CITY OF NORFOLK
STANDARD PAVEMENT REPLACEMENT- ASPHALT OVER CONCRETE
(HS-302)

DETAIL 44 VARIES

SCALE = NONE

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
11/24/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
DETAILS 4

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-25.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-26
SHEET NUMBER 27 OF 33

RFoshay
Feb 03, 2016 - 10:48am
P:\Clients\Norfolk\144647 Norf-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-26.dwg

01/27/2016

Typical Traffic Control

Outside Lane Closure Operation on a Four-Lane Roadway

(Figure TTC-16.0)

NOTES

Standard:

1. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**

Guidance:

2. *Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*
3. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. For Limited Access highways a minimum of 1000' is desired.*
4. *All vehicles, equipment, workers, and their activities should be restricted to one side of the pavement.*

Standard:

5. **Taper Length (L) and Channelizing Device Spacing shall be:**

Taper Length (L)				
Speed Limit (mph)	Lane Width (Feet)			
	9	10	11	12
25	95	105	115	125
30	135	150	165	180
35	185	205	225	245
40	240	270	295	320
45	405	450	495	540
50	450	500	550	600
55	495	550	605	660
60	540	600	660	720
65	585	650	715	780
70	630	700	770	840
Minimum taper lengths for Limited Access highways shall be 1000 feet.				
Shoulder Taper = ⅓ L Minimum				

Channelizing Device Spacing		
Location	Speed Limit (mph)	
	0 - 35	36 +
Transition Spacing	20'	40'
Travelway Spacing	40'	80'
Construction Access*	80'	120'
* Spacing may be increased to this distance, but shall not exceed one access per ¼ mile.		

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.

6. **An arrow board shall be used when a lane is closed. When more than one lane is closed, a separate arrow board shall be used for each closed lane (see Figure TTC-18).**
7. **The buffer space length shall be shown in Table 6H-3 on Page 6H-5 for the posted speed limit.**
8. **A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or at least one high intensity amber rotating, oscillating, or amber strobe light shall be parked 80'-120' in advance of the first work crew. When the posted speed limit is 45 mph or greater, a truck-mounted attenuator shall be used.**
9. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, oscillating, or strobe lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, oscillating, or strobe lights.**
10. **When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.**

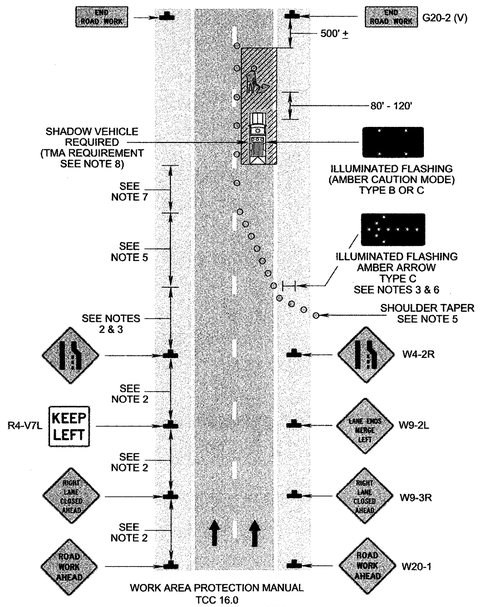
WORK AREA PROTECTION MANUAL
TCC 16.0 NOTES

DETAIL 35 VARIES

SCALE = NONE

Outside Lane Closure Operation on a Four-Lane Roadway

(Figure TTC-16.0)



WORK AREA PROTECTION MANUAL
TCC 16.0

DETAIL 36 VARIES

SCALE = NONE

Typical Traffic Control

Inside Lane Closure Operation on a Four-Lane Roadway

(Figure TTC-17.0)

NOTES

Standard:

1. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**

Guidance:

2. *Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*
3. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. For Limited Access highways a minimum of 1000' is desired.*
4. *All vehicles, equipment, workers, and their activities should be restricted to one side of the pavement.*

Standard:

5. **Taper length (L) and channelizing device spacing shall be:**

Taper Length (L)				
Speed Limit (mph)	Lane Width (Feet)			
	9	10	11	12
25	95	105	115	125
30	135	150	165	180
35	185	205	225	245
40	240	270	295	320
45	405	450	495	540
50	450	500	550	600
55	495	550	605	660
60	540	600	660	720
65	585	650	715	780
70	630	700	770	840
Minimum taper lengths for Limited Access highways shall be 1000 feet.				
Shoulder Taper = ⅓ L Minimum				

Channelizing Device Spacing		
Location	Speed Limit (mph)	
	0 - 35	36 +
Transition Spacing	20'	40'
Travelway Spacing	40'	80'
Construction Access*	80'	120'
* Spacing may be increased to this distance, but shall not exceed one access per ¼ mile.		

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.

6. **An arrow board shall be used when a lane is closed. When more than one lane is closed, a separate arrow board shall be used for each closed lane (see Figure TTC-18).**
7. **The buffer space length shall be shown in Table 6H-3 on Page 6H-5 for the posted speed limit.**
8. **A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or at least one high intensity amber rotating, oscillating, or strobe light shall be parked 80'-120' in advance of the first work crew. When the posted speed limit is 45 mph or greater, a truck-mounted attenuator shall be used.**
9. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, oscillating, or strobe lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, oscillating, or strobe lights.**
10. **When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.**

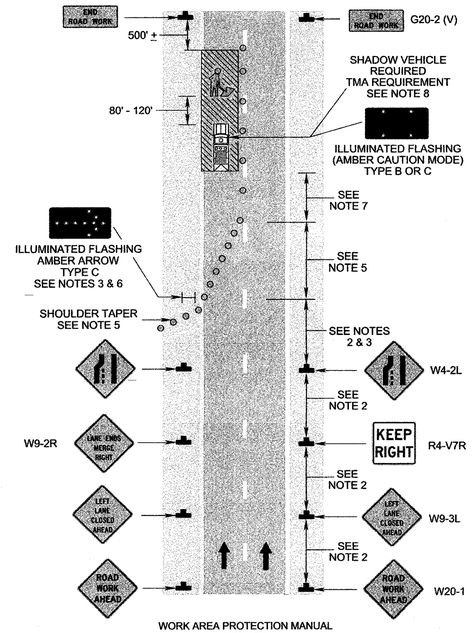
WORK AREA PROTECTION MANUAL
TCC 17.0 NOTES

DETAIL 37 VARIES

SCALE = NONE

Inside Lane Closure Operation on a Four-Lane Roadway

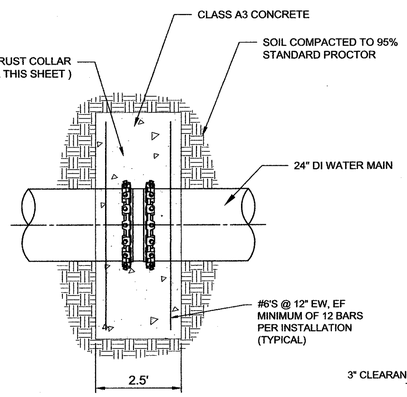
(Figure TTC-17.0)



WORK AREA PROTECTION MANUAL
TCC 17.0

DETAIL 38 VARIES

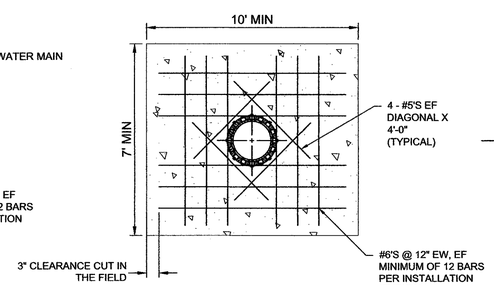
SCALE = NONE

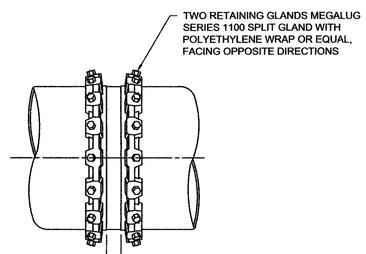


THRUST COLLAR
INSTALLATION DETAIL

DETAIL 39 VARIES

SCALE = NONE

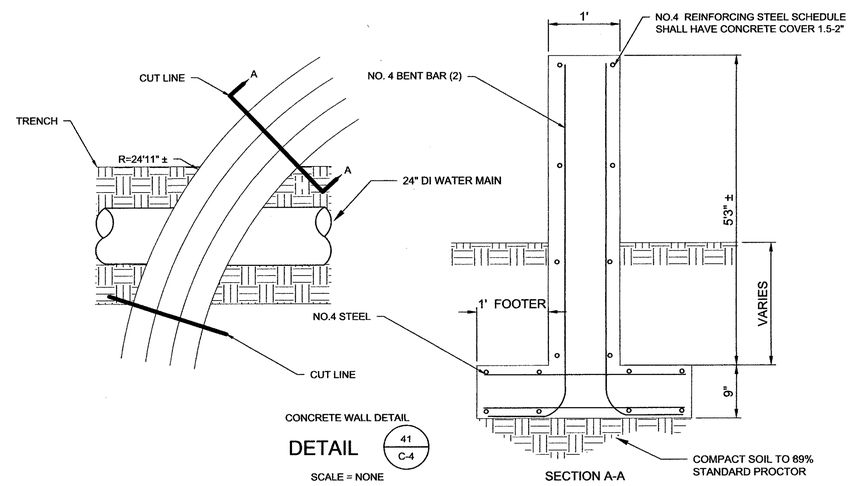




THRUST COLLAR REINFORCEMENT
DETAIL

DETAIL 40 VARIES

SCALE = NONE



CONCRETE WALL DETAIL

DETAIL 41 C-4

SCALE = NONE

RFoshay
Feb 03, 2016 - 10:48am
P:\Clients\Norfolk\144647 Norf-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-27.dwg

01/27/2016

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

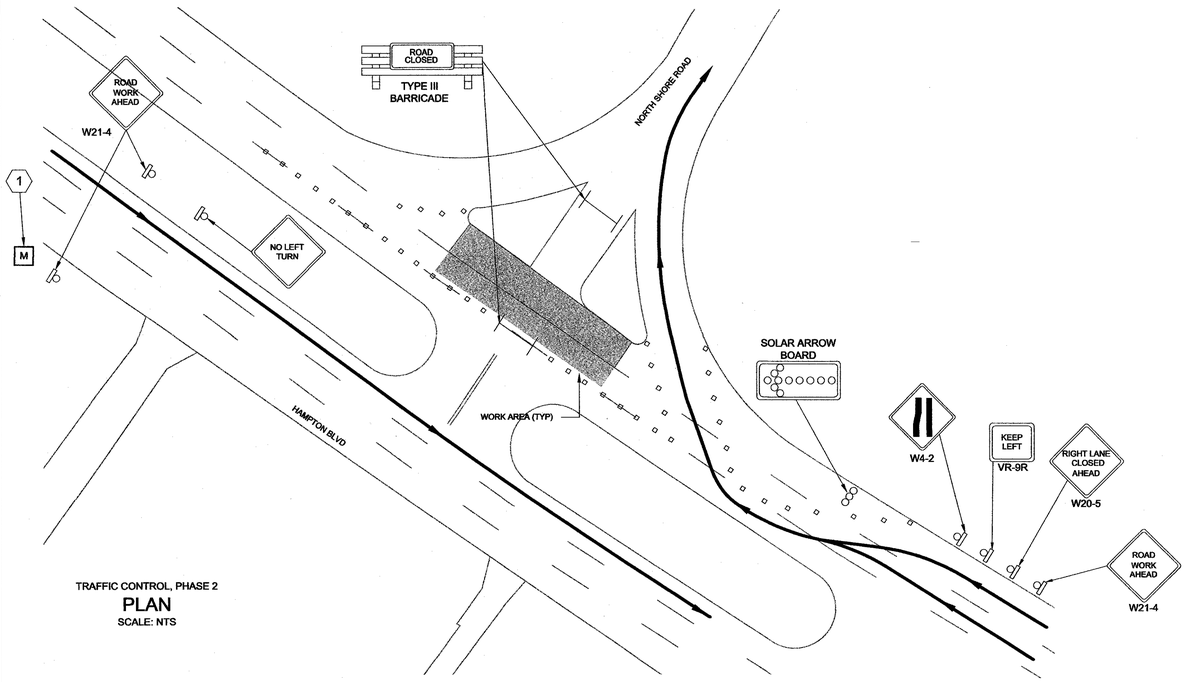
REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

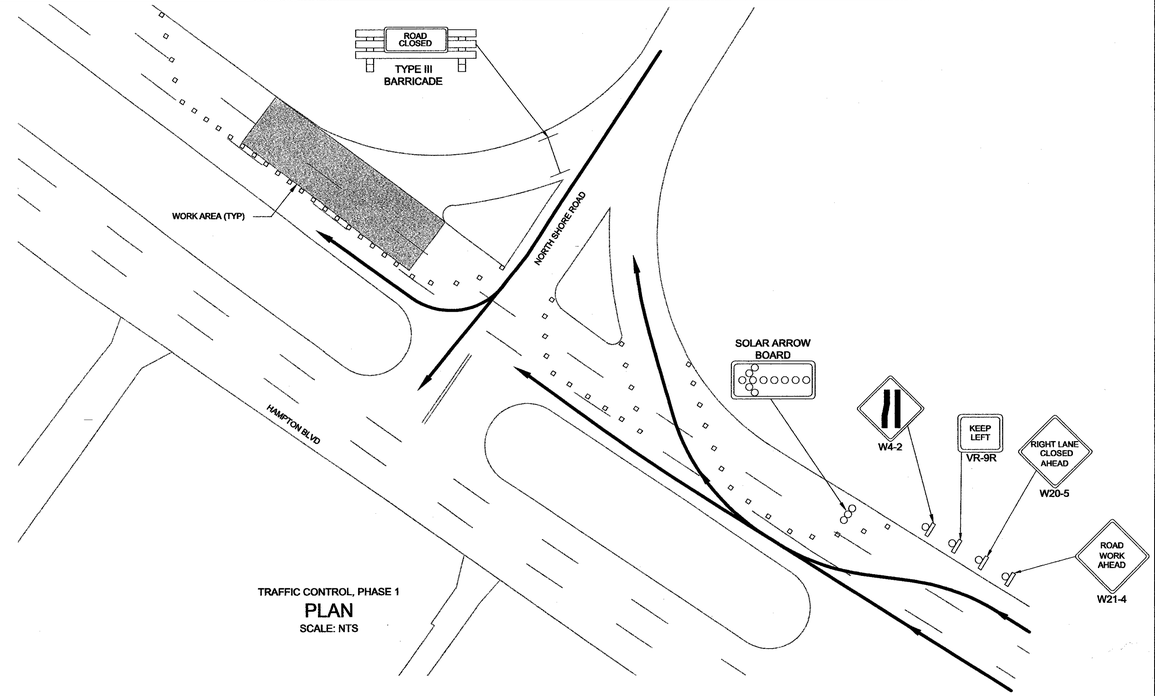
CIVIL
DETAILS 5

CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

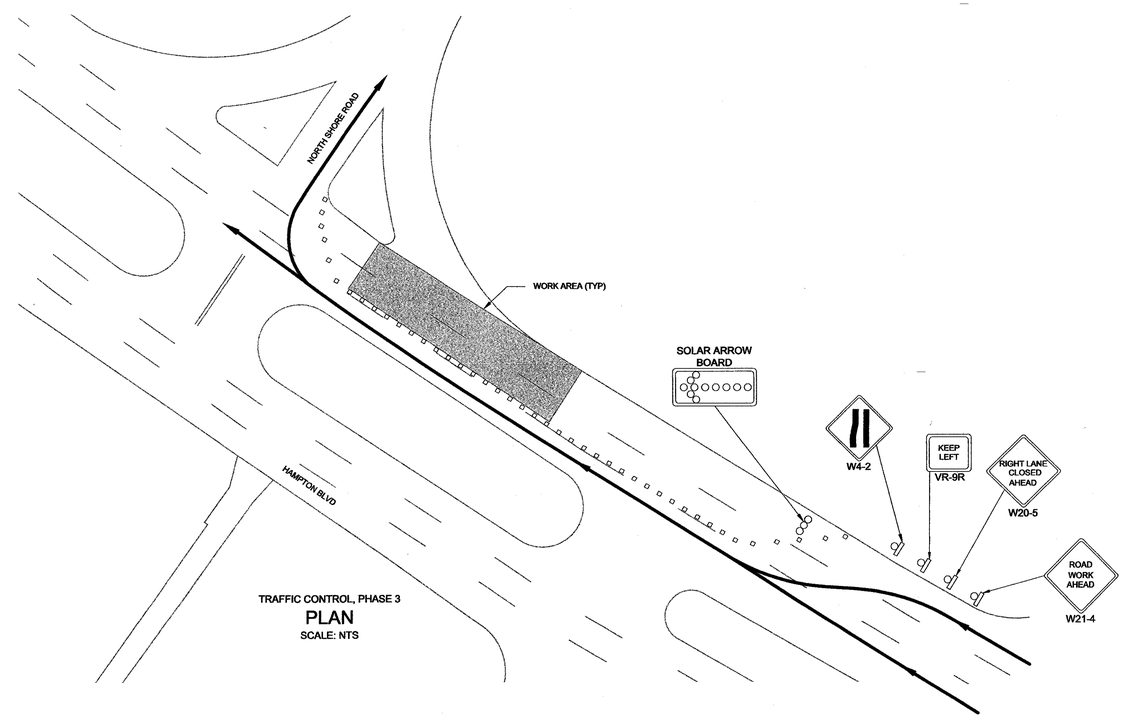
FILENAME 144647-BC-C-26.DWG
BC PROJECT NUMBER 144647
SCALE AS SHOWN
DRAWING NUMBER C-27
SHEET NUMBER 28 OF 33



TRAFFIC CONTROL, PHASE 2
PLAN
SCALE: NTS



TRAFFIC CONTROL, PHASE 1
PLAN
SCALE: NTS



TRAFFIC CONTROL, PHASE 3
PLAN
SCALE: NTS

TRAFFIC CONTROL NOTES:

1. PERMITTED WORK HOURS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
   - HAMPTON BOULEVARD STATION 10+00 (LAFAYETTE RIVER BRIDGE) TO 19+00 (HELENA AVENUE): 5 PM TO 6 AM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 19+00 (HELENA AVENUE) TO 40+00 (WEST LITTLE CREEK ROAD): 7 AM TO 3 PM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 40+00 (WEST LITTLE CREEK ROAD) TO 51+66 (TERMINAL BOULEVARD) INCLUDING INTERCONNECT WITH WEST LITTLE CREEK ON BAYLOR PLACE 5 PM (OF EACH NORMAL WORK DAY) TO 6 AM MONDAY THROUGH FRIDAY. ALSO 6 AM SATURDAY TO 6 AM MONDAY
   - RESIDENTIAL STREETS INCLUDING NORTH SHORE ROAD, GLENEAGLES ROAD, MAURY ARCH, DANIEL AVENUE, CLONCURRY ROAD AND OTHERS: 7:30 AM TO 4:30 PM MONDAY THROUGH FRIDAY
   - DAYTIME WORK WILL BE PROHIBITED DURING THE MONTHS OF AUGUST TO NOVEMBER
2. OLD DOMINION UNIVERSITY FOOTBALL GAMES: NO WORK WILL BE PERMITTED ON THE DAY OF AN ODU FOOTBALL GAME. CONTRACTOR SHALL CONSULT SCHEDULE AS PUBLISHED BY THE OLD DOMINION ATHLETIC DEPARTMENT
3. THE CONTRACTOR WILL BE PERMITTED TO CLOSE THE SOUTHBOUND CURB LANE ON HAMPTON BOULEVARD FOR 24 HOURS IN ORDER TO FACILITATE THE CONSTRUCTION OF THE PIPELINE AND PAVEMENT RESTORATION. THE 24 HOUR CLOSURE OF THIS LANE WILL BE LIMITED TO A MAXIMUM LENGTH OF 800 LINEAR FEET AT ANY ONE TIME
4. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL OCCUR OVER A WEEKEND AND ONCE STARTED SHALL BE A CONTINUOUS OPERATION FOR 24 HOURS UNTIL COMPLETED AND IS LIMITED TO 3 DAYS. BEGIN ON FRIDAY MORNING AT 9 AM AND CONTINUE UNTIL 6 AM MONDAY MORNING
5. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL NOT OCCUR DURING THE MONTHS OF AUGUST THROUGH NOVEMBER
6. THE TEMPORARY TRAFFIC CONTROL SHOWN HERE IS ONLY INTENDED FOR USE WHILE NORTH SHORE ROAD IS CLOSED AT HAMPTON BOULEVARD. SEE SHEETS C-29, C-30, C-31 AND C-32 FOR ADDITIONAL INTERSECTION CLOSURES AND SHEET C-27 FOR GENERAL LANE CLOSURE GUIDANCE.
7. CONTRACTOR SHALL KEEP TWO ENTRANCES/EXITS TO/FROM NORTH SHORE ROAD OPEN AT ALL TIMES.
8. FOR PROPERTIES WITH DIRECT ACCESS TO HAMPTON BLVD, THE CONTRACTOR SHALL NOTIFY RESIDENTS 7 DAYS IN ADVANCE OF WORK ADJACENT TO THE PROPERTY. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES THROUGHOUT CONSTRUCTION.
9. ALL TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE 2011 EDITION OF THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
10. TRAFFIC CONTROL SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. ANY ADDITIONAL TRAFFIC CONTROL DEVICES DETERMINED TO BE REQUIRED SHALL BE THE BURDEN OF THE CONTRACTOR.
11. ALL SIGN AND CHANNELIZING DEVICE LOCATIONS AND SPACING SHALL BE DETERMINED FROM THE 2011 EDITION OF THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
12. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL COVER ALL EXCAVATIONS WITH A STEEL PLATE OR TEMPORARY ASPHALT, SO THE LANE MAY BE RETURNED TO TRAFFIC.
13. 3 BUSINESS DAYS PRIOR TO COMMENCING WORK THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS RIGHT-OF-WAY DIVISION AT (757) 664-7300
14. CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC (MOT) PLAN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS PRIOR TO BEGINNING WORK FOR REVIEW AND APPROVAL.

KEY NOTE

(1) CONTRACTOR SHALL PROVIDE A TEMPORARY MESSAGE BOARD NOTIFYING COMMUTERS OF PROJECT. CITY TO PROVIDE THE SPECIFIC MESSAGE. LOCATE IN THE RIGHT OF WAY APPROXIMATELY 2000 FT AHEAD OF WORK AREA.

TEMPORARY TRAFFIC CONTROL LEGEND

ROADWAY/PAVEMENT BOUNDARY

TRAFFIC ROUTING

CHANNELIZING DEVICE

TEMPORARY MESSAGE BOARD — M

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

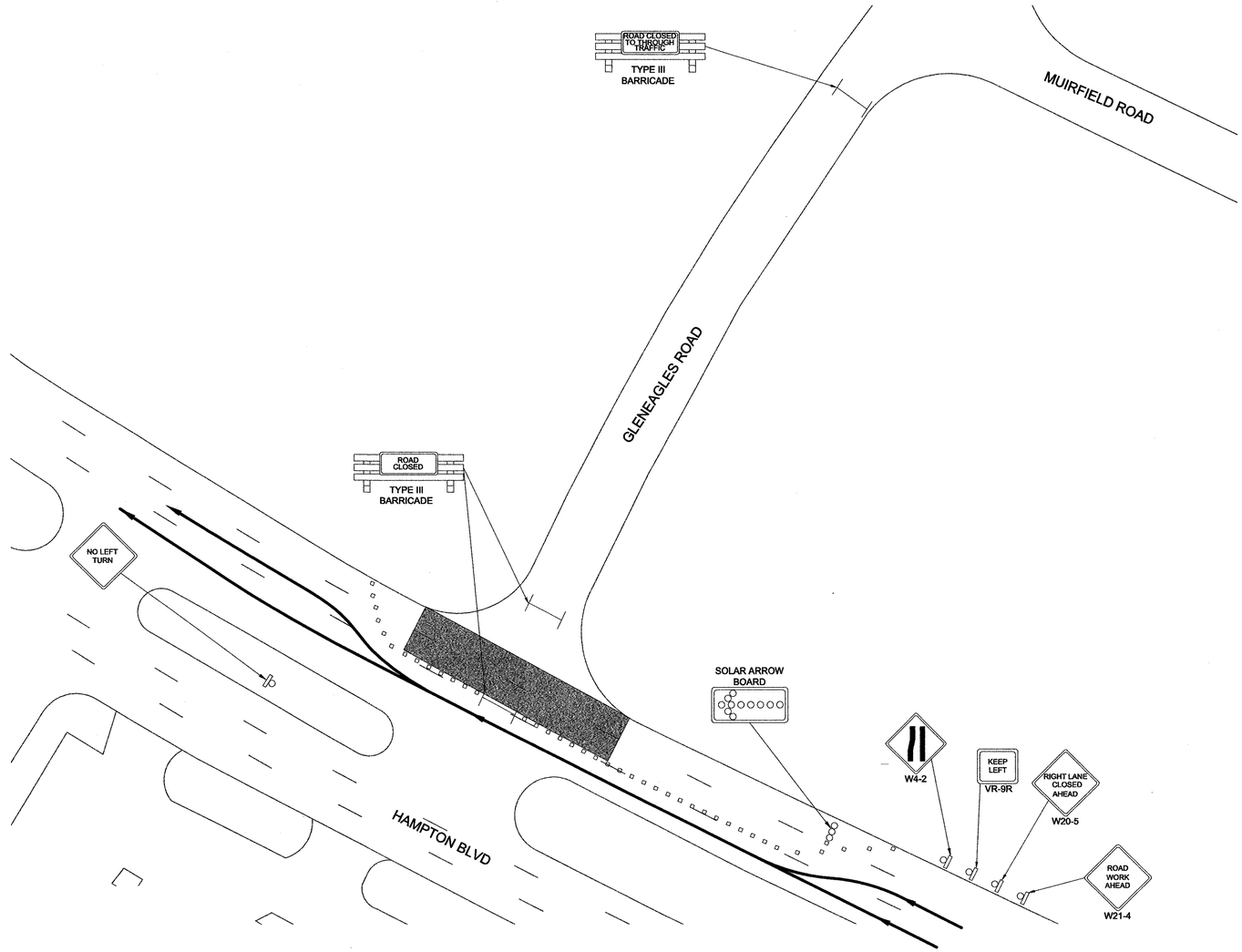
REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
TRAFFIC CONTROL PLAN FOR NORTH SHORE ROAD CLOSURE
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-27.DWG
BC PROJECT NUMBER 144647
SCALE NTS
DRAWING NUMBER C-28
SHEET NUMBER 29 OF 33

Feb 03, 2016 - 10:50am RFoshay
P:\Clients\Norfolk\144647 Nor-B TO4 Hampton Blvd 24in Water Main_CAD\2-Sheets\C-Civil\144647-BC-C-28.dwg
01/27/2016



TRAFFIC CONTROL
PLAN
SCALE: NTS

TEMPORARY TRAFFIC CONTROL LEGEND

ROADWAY/PAVEMENT BOUNDARY

TRAFFIC ROUTING

CHANNELIZING DEVICE

TRAFFIC CONTROL NOTES:

1. PERMITTED WORK HOURS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
   - HAMPTON BOULEVARD STATION 10+00 (LAFAYETTE RIVER BRIDGE) TO 19+00 (HELENA AVENUE): 5 PM TO 6 AM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 19+00 (HELENA AVENUE) TO 40+00 (WEST LITTLE CREEK ROAD): 7 AM TO 3 PM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 40+00 (WEST LITTLE CREEK ROAD) TO 51+66 (TERMINAL BOULEVARD) INCLUDING INTERCONNECT WITH WEST LITTLE CREEK ON BAYLOR PLACE 5 PM (OF EACH NORMAL WORK DAY) TO 6 AM MONDAY THROUGH FRIDAY. ALSO 6 AM SATURDAY TO 6 AM MONDAY
   - RESIDENTIAL STREETS INCLUDING NORTH SHORE ROAD, GLENEAGLES ROAD, MAURY ARCH, DANIEL AVENUE, CLONCURRY ROAD AND OTHERS: 7:30 AM TO 4:30 PM MONDAY THROUGH FRIDAY
   - DAYTIME WORK WILL BE PROHIBITED DURING THE MONTHS OF AUGUST TO NOVEMBER
2. OLD DOMINION UNIVERSITY FOOTBALL GAMES: NO WORK WILL BE PERMITTED ON THE DAY OF AN ODU FOOTBALL GAME. CONTRACTOR SHALL CONSULT SCHEDULE AS PUBLISHED BY THE OLD DOMINION ATHLETIC DEPARTMENT
3. THE CONTRACTOR WILL BE PERMITTED TO CLOSE THE SOUTHBOUND CURB LANE ON HAMPTON BOULEVARD FOR 24 HOURS IN ORDER TO FACILITATE THE CONSTRUCTION OF THE PIPELINE AND PAVEMENT RESTORATION. THE 24 HOUR CLOSURE OF THIS LANE WILL BE LIMITED TO A MAXIMUM LENGTH OF 800 LINEAR FEET AT ANY ONE TIME
4. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL OCCUR OVER A WEEKEND AND ONCE STARTED SHALL BE A CONTINUOUS OPERATION FOR 24 HOURS UNTIL COMPLETED AND IS LIMITED TO 3 DAYS. BEGIN ON FRIDAY MORNING AT 9 AM AND CONTINUE UNTIL 6 AM MONDAY MORNING
5. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL NOT OCCUR DURING THE MONTHS OF AUGUST THROUGH NOVEMBER
6. THE TEMPORARY TRAFFIC CONTROL SHOWN HERE IS ONLY INTENDED FOR USE WHILE GLENEAGLES ROAD IS CLOSED AT HAMPTON BOULEVARD. SEE SHEETS C-28, C-30, C-31 AND C-32 FOR ADDITIONAL INTERSECTION CLOSURES AND SHEET C-27 FOR GENERAL LANE CLOSURE GUIDANCE.
7. THE CONTRACTOR SHALL NOTIFY ALL RESIDENTS OF LOCHHAVEN OF THE CLOSURE OF GLENEAGLES ROAD AT HAMPTON BLVD IN WRITING 7 DAYS IN ADVANCE. THIS NOTICE SHALL INCLUDE A DESCRIPTION AND DIAGRAM OF WORK TO BE PERFORMED.
8. FOR PROPERTIES WITH DIRECT ACCESS TO HAMPTON BLVD, THE CONTRACTOR SHALL NOTIFY RESIDENTS 7 DAYS IN ADVANCE OF WORK ADJACENT TO THE PROPERTY. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES THROUGHOUT CONSTRUCTION.
9. ALL TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE 2011 EDITION OF THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
10. TRAFFIC CONTROL SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. ANY ADDITIONAL TRAFFIC CONTROL DEVICES DETERMINED TO BE REQUIRED SHALL BE THE BURDEN OF THE CONTRACTOR.
11. ALL SIGN AND CHANNELIZING DEVICE LOCATIONS AND SPACING SHALL BE DETERMINED FROM THE 2011 EDITION OF THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
12. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL COVER ALL EXCAVATIONS WITH A STEEL PLATE OR TEMPORARY ASPHALT, SO THE LANE MAY BE RETURNED TO TRAFFIC.
13. 3 BUSINESS DAYS PRIOR TO COMMENCING WORK THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS RIGHT-OF-WAY DIVISION AT (757) 664-7300
14. CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC (MOT) PLAN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS PRIOR TO BEGINNING WORK FOR REVIEW AND APPROVAL.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
LIC. No. 032204
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
TRAFFIC CONTROL PLAN FOR GLENEAGLES ROAD CLOSURE
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-28.DWG
BC PROJECT NUMBER 144647
SCALE NTS
DRAWING NUMBER C-29
SHEET NUMBER 30 OF 33

Feb 03, 2016 - 10:50am RFoshay
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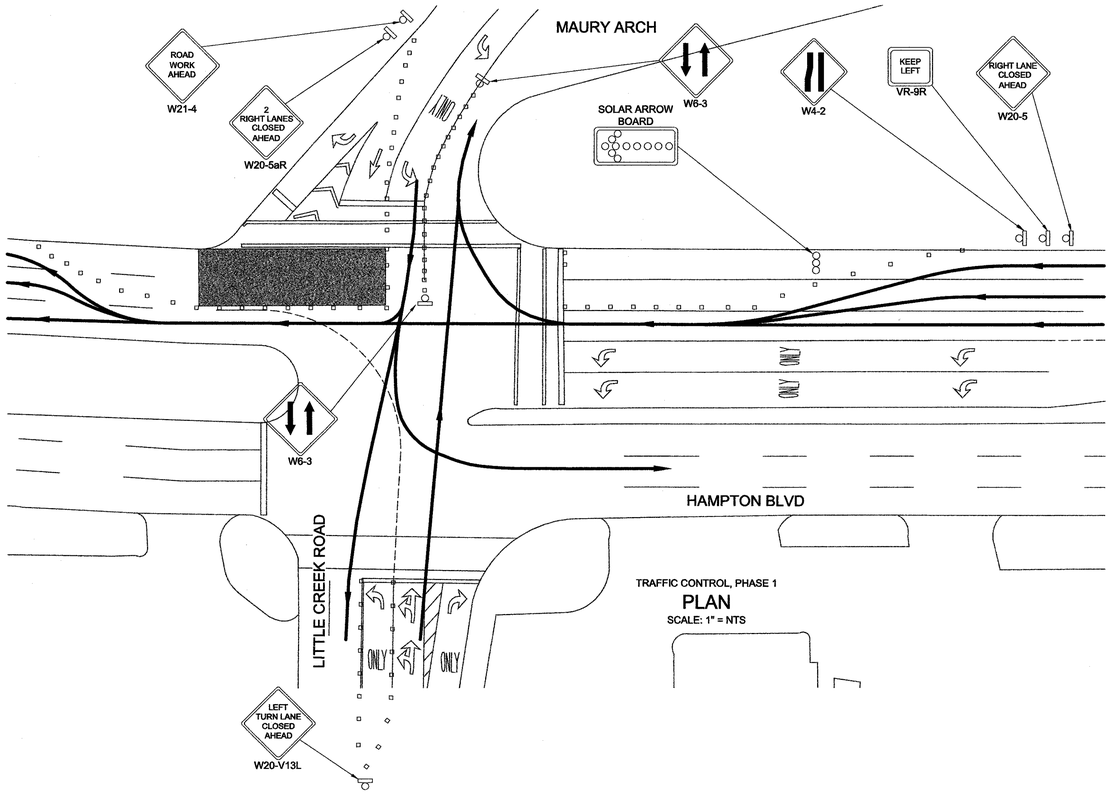
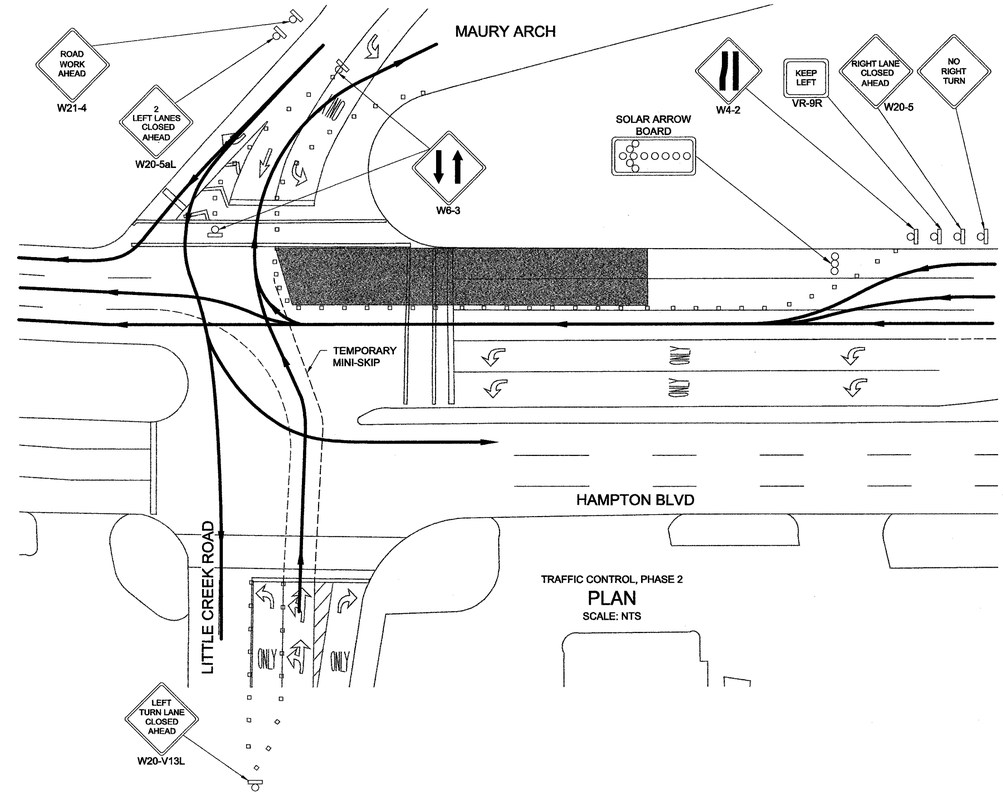
01/27/2016



TRAFFIC CONTROL, PHASE 1
PLAN
SCALE: 1" = NTS



TRAFFIC CONTROL, PHASE 2
PLAN
SCALE: NTS

TEMPORARY TRAFFIC CONTROL LEGEND

ROADWAY/PAVEMENT BOUNDARY

TRAFFIC ROUTING

CHANNELIZING DEVICE

TRAFFIC CONTROL NOTES:

1. PERMITTED WORK HOURS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
   - HAMPTON BOULEVARD STATION 10+00 (LAFAYETTE RIVER BRIDGE) TO 19+00 (HELENA AVENUE): 5 PM TO 6 AM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 19+00 (HELENA AVENUE) TO 40+00 (WEST LITTLE CREEK ROAD): 7 AM TO 3 PM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 40+00 (WEST LITTLE CREEK ROAD) TO 51+66 (TERMINAL BOULEVARD) INCLUDING INTERCONNECT WITH WEST LITTLE CREEK ON BAYLOR PLACE 5 PM (OF EACH NORMAL WORK DAY) TO 6 AM MONDAY THROUGH FRIDAY. ALSO 6 AM SATURDAY TO 6 AM MONDAY
   - RESIDENTIAL STREETS INCLUDING NORTH SHORE ROAD, GLENEAGLES ROAD, MAURY ARCH, DANIEL AVENUE, CLONCURRY ROAD AND OTHERS: 7:30 AM TO 4:30 PM MONDAY THROUGH FRIDAY
   - DAYTIME WORK WILL BE PROHIBITED DURING THE MONTHS OF AUGUST TO NOVEMBER
2. OLD DOMINION UNIVERSITY FOOTBALL GAMES: NO WORK WILL BE PERMITTED ON THE DAY OF AN ODU FOOTBALL GAME. CONTRACTOR SHALL CONSULT SCHEDULE AS PUBLISHED BY THE OLD DOMINION ATHLETIC DEPARTMENT
3. THE CONTRACTOR WILL BE PERMITTED TO CLOSE THE SOUTHBOUND CURB LANE ON HAMPTON BOULEVARD FOR 24 HOURS IN ORDER TO FACILITATE THE CONSTRUCTION OF THE PIPELINE AND PAVEMENT RESTORATION. THE 24 HOUR CLOSURE OF THIS LANE WILL BE LIMITED TO A MAXIMUM LENGTH OF 800 LINEAR FEET AT ANY ONE TIME
4. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL OCCUR OVER A WEEKEND AND ONCE STARTED SHALL BE A CONTINUOUS OPERATION FOR 24 HOURS UNTIL COMPLETED AND IS LIMITED TO 3 DAYS. BEGIN ON FRIDAY MORNING AT 9 AM AND CONTINUE UNTIL 6 AM MONDAY MORNING
5. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL NOT OCCUR DURING THE MONTHS OF AUGUST THROUGH NOVEMBER
6. THE TEMPORARY TRAFFIC CONTROL SHOWN HERE IS ONLY INTENDED FOR USE WHILE MAURY ARCH IS CLOSED AT HAMPTON BOULEVARD. SEE SHEETS C-28, C-29, C-31, AND C-32 FOR ADDITIONAL INTERSECTION CLOSURES AND SHEET C-27 FOR GENERAL LANE CLOSURE GUIDANCE.
7. CONTRACTOR SHALL MAINTAIN 2-WAY TRAFFIC IN AND OUT OF MAURY ARCH AT ALL TIMES.
8. FOR PROPERTIES WITH DIRECT ACCESS TO HAMPTON BLVD, THE CONTRACTOR SHALL NOTIFY RESIDENTS 7 DAYS IN ADVANCE OF WORK ADJACENT TO THE PROPERTY. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES THROUGHOUT CONSTRUCTION.
9. ALL TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE 2011 EDITION OF THE "VIRGINIA WORK AREA PROTECTION MANUAL." AND THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
10. TRAFFIC CONTROL SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. ANY ADDITIONAL TRAFFIC CONTROL DEVICES DETERMINED TO BE REQUIRED SHALL BE THE BURDEN OF THE CONTRACTOR.
11. ALL SIGN AND CHANNELIZING DEVICE LOCATIONS AND SPACING SHALL BE DETERMINED FROM THE 2011 EDITION OF THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
12. CONTRACTOR SHALL PROTECT PERMANENT PAVEMENT MARKINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY DAMAGED PERMANENT PAVEMENT MARKINGS AT NO COST TO THE OWNER.
13. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL COVER ALL EXCAVATIONS WITH A STEEL PLATE OR TEMPORARY ASPHALT, SO THE LANE MAY BE RETURNED TO TRAFFIC.
14. 2 NORFOLK POLICE OFFICERS SHALL BE STATIONED ON-SITE DURING WORKING HOURS.
15. 3 BUSINESS DAYS PRIOR TO COMMENCING WORK CONTRACTOR SHALL COORDINATE WITH THE CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS RIGHT-OF-WAY DIVISION AT (757) 664-7300
16. CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC (MOT) PLAN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS PRIOR TO BEGINNING WORK FOR REVIEW AND APPROVAL.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
TRAFFIC CONTROL PLAN FOR MAURY ARCH CLOSURE
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-29.DWG
BC PROJECT NUMBER 144647
SCALE NTS
DRAWING NUMBER C-30
SHEET NUMBER 31 OF 33

RFoshay
Feb 03, 2016 - 10:52am
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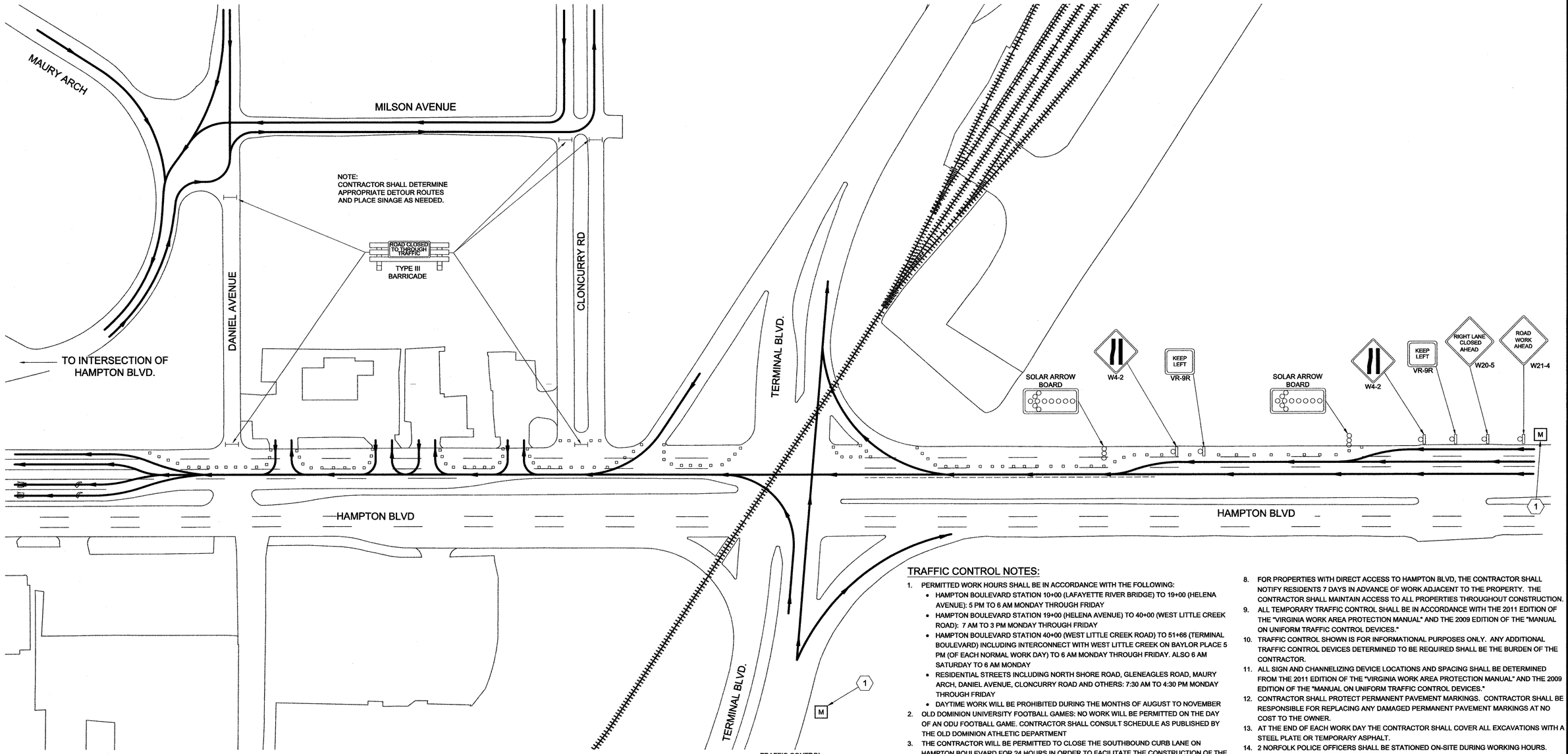
01/27/2016



TRAFFIC CONTROL
PLAN
SCALE: 1" = NTS

TRAFFIC CONTROL NOTES:

1. PERMITTED WORK HOURS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
   - HAMPTON BOULEVARD STATION 10+00 (LAFAYETTE RIVER BRIDGE) TO 19+00 (HELENA AVENUE): 5 PM TO 6 AM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 19+00 (HELENA AVENUE) TO 40+00 (WEST LITTLE CREEK ROAD): 7 AM TO 3 PM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 40+00 (WEST LITTLE CREEK ROAD) TO 51+66 (TERMINAL BOULEVARD) INCLUDING INTERCONNECT WITH WEST LITTLE CREEK ON BAYLOR PLACE 5 PM (OF EACH NORMAL WORK DAY) TO 6 AM MONDAY THROUGH FRIDAY. ALSO 6 AM SATURDAY TO 6 AM MONDAY
   - RESIDENTIAL STREETS INCLUDING NORTH SHORE ROAD, GLENEAGLES ROAD, MAURY ARCH, DANIEL AVENUE, CLONCURRY ROAD AND OTHERS: 7:30 AM TO 4:30 PM MONDAY THROUGH FRIDAY
   - DAYTIME WORK WILL BE PROHIBITED DURING THE MONTHS OF AUGUST TO NOVEMBER
2. OLD DOMINION UNIVERSITY FOOTBALL GAMES: NO WORK WILL BE PERMITTED ON THE DAY OF AN ODU FOOTBALL GAME. CONTRACTOR SHALL CONSULT SCHEDULE AS PUBLISHED BY THE OLD DOMINION ATHLETIC DEPARTMENT
3. THE CONTRACTOR WILL BE PERMITTED TO CLOSE THE SOUTHBOUND CURB LANE ON HAMPTON BOULEVARD FOR 24 HOURS IN ORDER TO FACILITATE THE CONSTRUCTION OF THE PIPELINE AND PAVEMENT RESTORATION. THE 24 HOUR CLOSURE OF THIS LANE WILL BE LIMITED TO A MAXIMUM LENGTH OF 800 LINEAR FEET AT ANY ONE TIME
4. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL OCCUR OVER A WEEKEND AND ONCE STARTED SHALL BE A CONTINUOUS OPERATION FOR 24 HOURS UNTIL COMPLETED AND IS LIMITED TO 3 DAYS. BEGIN ON FRIDAY MORNING AT 9 AM AND CONTINUE UNTIL 6 AM MONDAY MORNING
5. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL NOT OCCUR DURING THE MONTHS OF AUGUST THROUGH NOVEMBER
6. THE TEMPORARY TRAFFIC CONTROL SHOWN HERE IS ONLY INTENDED FOR USE WHILE DANIEL AVENUE AND CLONCURRY ROAD ARE CLOSED AT HAMPTON BOULEVARD AND FUTURE CONSTRUCTION OF JACK AND BORE OF TERMINAL BOULEVARD. SEE SHEETS C-28, C-29, C-30 AND C-32 FOR ADDITIONAL INTERSECTION CLOSURES AND SHEET C-27 FOR GENERAL LANE CLOSURE GUIDANCE.
7. CONTRACTOR SHALL MAINTAIN 2-WAY TRAFFIC IN AND OUT OF TERMINAL BLVD. AT ALL TIMES.
8. FOR PROPERTIES WITH DIRECT ACCESS TO HAMPTON BLVD, THE CONTRACTOR SHALL NOTIFY RESIDENTS 7 DAYS IN ADVANCE OF WORK ADJACENT TO THE PROPERTY. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES THROUGHOUT CONSTRUCTION.
9. ALL TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE 2011 EDITION OF THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
10. TRAFFIC CONTROL SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. ANY ADDITIONAL TRAFFIC CONTROL DEVICES DETERMINED TO BE REQUIRED SHALL BE THE BURDEN OF THE CONTRACTOR.
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12. CONTRACTOR SHALL PROTECT PERMANENT PAVEMENT MARKINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY DAMAGED PERMANENT PAVEMENT MARKINGS AT NO COST TO THE OWNER.
13. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL COVER ALL EXCAVATIONS WITH A STEEL PLATE OR TEMPORARY ASPHALT.
14. 2 NORFOLK POLICE OFFICERS SHALL BE STATIONED ON-SITE DURING WORKING HOURS.
15. 3 BUSINESS DAYS PRIOR TO COMMENCING WORK CONTRACTOR SHALL COORDINATE WITH THE CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS RIGHT-OF-WAY DIVISION AT (757) 664-7300
16. CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC (MOT) PLAN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS PRIOR TO BEGINNING WORK FOR REVIEW AND APPROVAL.

KEY NOTE

(1) CONTRACTOR SHALL PROVIDE A TEMPORARY MESSAGE BOARD NOTIFYING COMMUTERS OF PROJECT. CITY TO PROVIDE THE SPECIFIC MESSAGE. LOCATE IN THE RIGHT OF WAY APPROXIMATELY 2000 FT AHEAD OF WORK AREA.

TEMPORARY TRAFFIC CONTROL LEGEND

ROADWAY/PAVEMENT BOUNDARY

TRAFFIC ROUTING

CHANNELIZING DEVICE

TEMPORARY MESSAGE BOARD (M)

RFoshay
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Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: MTM
DRAWN: PSH
CHECKED: EGD
CHECKED:
APPROVED: SWS

EXTERNAL REFERENCES

COMMONWEALTH OF VIRGINIA
SCOTT W. SMITH
Lic. No. 032204
1/27/16
PROFESSIONAL ENGINEER

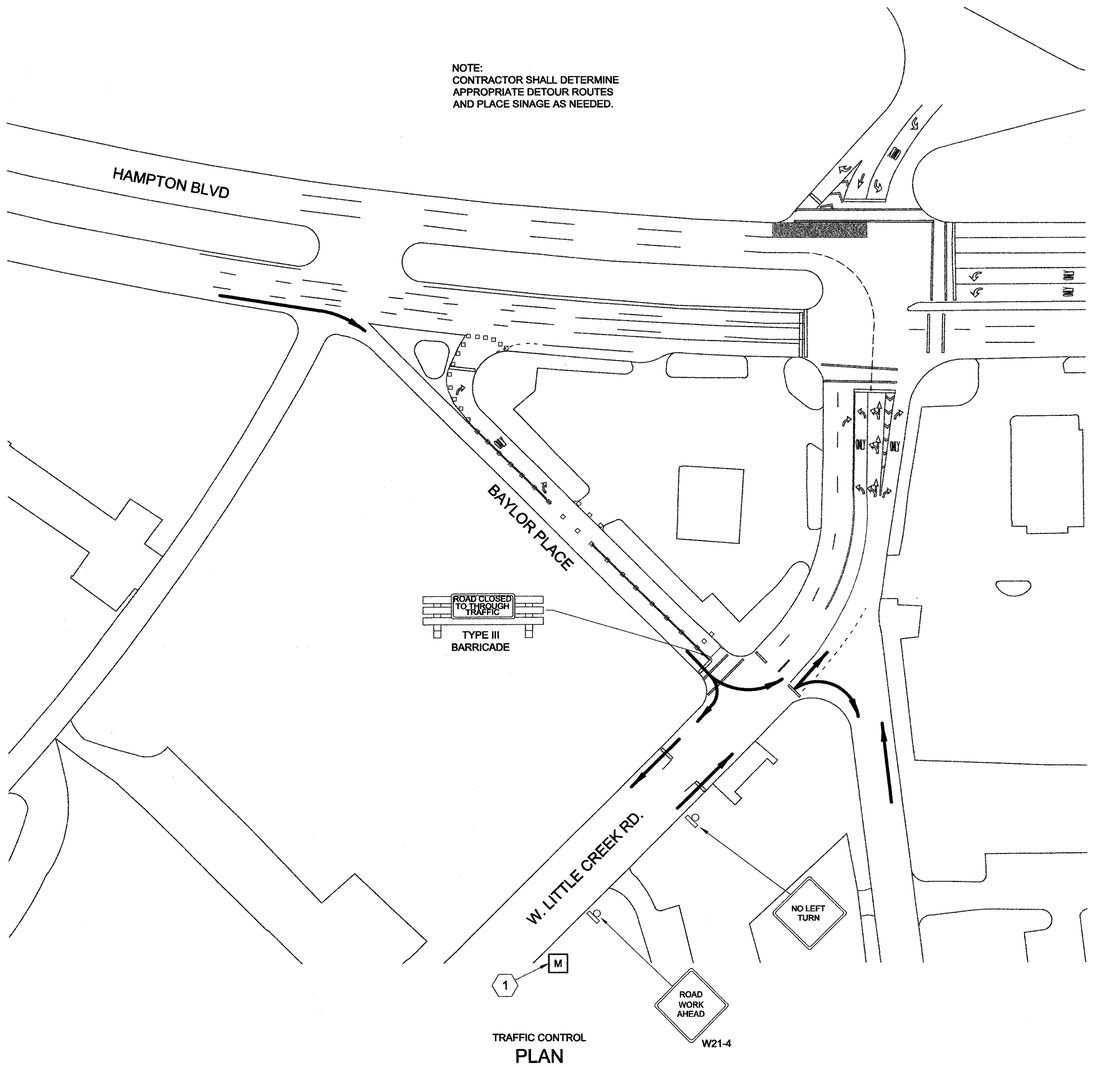
REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
TRAFFIC CONTROL PLAN FOR DANIEL AVE., CLONCURRY RD. AND TERMINAL BLVD. CLOSURE
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-30.DWG
BC PROJECT NUMBER 144647
SCALE NTS
DRAWING NUMBER C-31
SHEET NUMBER 32 OF 33

01/27/2016



TRAFFIC CONTROL
PLAN
SCALE: 1" = NTS

KEY NOTE

(1) CONTRACTOR SHALL PROVIDE A TEMPORARY MESSAGE BOARD NOTIFYING COMMUTERS OF PROJECT. CITY TO PROVIDE THE SPECIFIC MESSAGE. LOCATE IN THE RIGHT OF WAY APPROXIMATELY 2000 FT AHEAD OF WORK AREA.

TEMPORARY TRAFFIC CONTROL LEGEND

ROADWAY/PAVEMENT BOUNDARY

TRAFFIC ROUTING

CHANNELIZING DEVICE

TEMPORARY MESSAGE BOARD [M]

TRAFFIC CONTROL NOTES:

1. PERMITTED WORK HOURS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
   - HAMPTON BOULEVARD STATION 10+00 (LAFAYETTE RIVER BRIDGE) TO 19+00 (HELENA AVENUE): 5 PM TO 6 AM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 19+00 (HELENA AVENUE) TO 40+00 (WEST LITTLE CREEK ROAD): 7 AM TO 3 PM MONDAY THROUGH FRIDAY
   - HAMPTON BOULEVARD STATION 40+00 (WEST LITTLE CREEK ROAD) TO 51+66 (TERMINAL BOULEVARD) INCLUDING INTERCONNECT WITH WEST LITTLE CREEK ON BAYLOR PLACE 5 PM (OF EACH NORMAL WORK DAY) TO 6 AM MONDAY THROUGH FRIDAY. ALSO 6 AM SATURDAY TO 6 AM MONDAY
   - RESIDENTIAL STREETS INCLUDING NORTH SHORE ROAD, GLENEAGLES ROAD, MAURY ARCH, DANIEL AVENUE, CLONCURRY ROAD AND OTHERS: 7:30 AM TO 4:30 PM MONDAY THROUGH FRIDAY
   - DAYTIME WORK WILL BE PROHIBITED DURING THE MONTHS OF AUGUST TO NOVEMBER
2. OLD DOMINION UNIVERSITY FOOTBALL GAMES: NO WORK WILL BE PERMITTED ON THE DAY OF AN ODU FOOTBALL GAME. CONTRACTOR SHALL CONSULT SCHEDULE AS PUBLISHED BY THE OLD DOMINION ATHLETIC DEPARTMENT
3. THE CONTRACTOR WILL BE PERMITTED TO CLOSE THE SOUTHBOUND CURB LANE ON HAMPTON BOULEVARD FOR 24 HOURS IN ORDER TO FACILITATE THE CONSTRUCTION OF THE PIPELINE AND PAVEMENT RESTORATION. THE 24 HOUR CLOSURE OF THIS LANE WILL BE LIMITED TO A MAXIMUM LENGTH OF 800 LINEAR FEET AT ANY ONE TIME
4. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL OCCUR OVER A WEEKEND AND ONCE STARTED SHALL BE A CONTINUOUS OPERATION FOR 24 HOURS UNTIL COMPLETED AND IS LIMITED TO 3 DAYS. BEGIN ON FRIDAY MORNING AT 9 AM AND CONTINUE UNTIL 6 AM MONDAY MORNING
5. THE INSTALLATION OF THE 42" STEEL CASING PIPE UNDER THE TERMINAL BOULEVARD/HAMPTON BOULEVARD INTERSECTION SHALL NOT OCCUR DURING THE MONTHS OF AUGUST THROUGH NOVEMBER
6. THE TEMPORARY TRAFFIC CONTROL SHOWN HERE IS ONLY INTENDED FOR USE WHILE WEST LITTLE CREEK ROAD AND BAYLOR PLACE ARE CLOSED. SEE SHEETS C-28, C-29, C-30, AND C-31 FOR ADDITIONAL INTERSECTION CLOSURES AND SHEET C-27 FOR GENERAL LANE CLOSURE GUIDANCE.
7. FOR PROPERTIES WITH DIRECT ACCESS TO WEST LITTLE CREEK ROAD AND BAYLOR PLACE, THE CONTRACTOR SHALL NOTIFY RESIDENTS 7 DAYS IN ADVANCE OF WORK ADJACENT TO THE PROPERTY. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES THROUGHOUT CONSTRUCTION.
8. ALL TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE 2011 EDITION OF THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
9. TRAFFIC CONTROL SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. ANY ADDITIONAL TRAFFIC CONTROL DEVICES DETERMINED TO BE REQUIRED SHALL BE THE BURDEN OF THE CONTRACTOR.
10. ALL SIGN AND CHANNELIZING DEVICE LOCATIONS AND SPACING SHALL BE DETERMINED FROM THE 2011 EDITION OF THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
11. CONTRACTOR SHALL PROTECT PERMANENT PAVEMENT MARKINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY DAMAGED PERMANENT PAVEMENT MARKINGS AT NO COST TO THE OWNER.
12. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL COVER ALL EXCAVATIONS WITH A STEEL PLATE OR TEMPORARY ASPHALT, SO THE LANE MAY BE RETURNED TO TRAFFIC.
13. 2 NORFOLK POLICE OFFICERS SHALL BE STATIONED ON-SITE DURING WORKING HOURS.
14. 3 BUSINESS DAYS PRIOR TO COMMENCING WORK CONTRACTOR SHALL COORDINATE WITH THE CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS RIGHT-OF-WAY DIVISION AT (757) 664-7300
15. CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC (MOT) PLAN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS PRIOR TO BEGINNING WORK FOR REVIEW AND APPROVAL.

Brown AND Caldwell
VIRGINIA BEACH, VIRGINIA

SUBMITTED: _____ DATE: _____
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EXTERNAL REFERENCES

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SCOTT W. SMITH
Lic. No. 032704
1/27/16
PROFESSIONAL ENGINEER

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

City of Norfolk
Department of Utilities

CIVIL
TRAFFIC CONTROL PLAN FOR BAYLOR PLACE AND WEST LITTLE CREEK ROAD
CITY OF NORFOLK DEPARTMENT OF UTILITIES
HAMPTON BLVD. 24" W M REPLACEMENT, SECTION IIIA & IIIB

FILENAME 144647-BC-C-31.DWG
BC PROJECT NUMBER 144647
SCALE NTS
DRAWING NUMBER C-32
SHEET NUMBER 33 OF 33

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