

BATTLEFIELD GOLF CLUB WATER PROJECT

MURRAY DRIVE & WHITTAMORE ROAD

for

City of Chesapeake, Virginia
Department of Public Utilities

December, 2009

Contract Documents

Project No. 1401300800

LEGEND

EXISTING	PROPOSED
—OHE— Overhead Elec Line	
—OHEC— Overhead Elec & Cable Line	
—OHETC— Overhead Elec, Tele & Cable Line	
—OHT— Overhead Tele Line	
—OHECT— Overhead Elec & Tele Line	
○ P/P Power Pole	
— Guy Wire	
□ ECB Electric Control Box	
□ Tel. Ped. Telephone Pedestal	
● TV Ped. Cable TV Pedestal	
Ⓜ Mailbox	
Ⓢ Sign	
Ⓜ DI Drop Inlet	
□ CB Catch Basin	
○ SDMH Storm Drain Manhole	
⊙ Temporary Bench Mark	
⊙ Tree	
— X — Fence	
/// Edge of Pavement	
/// Curb and Gutter	
== 24" Conc. == Storm Drain Pipe	
— UGE — Underground Electric Line	
— UGT — Underground Telephone Line	
— UGFO — Underground Fiber Optic Line	
— CTV — Underground Cable TV Line	
— EG — Gas Line	
— FM — Underground Force Main Line	
- - - - - Approximate Top of Bank	
- - - - - Approximate Toe of Slope	
- - - - - Approximate Centerline of Ditch	
— Water Main	
— Water Valve	
— Fire Hydrant	
Aggregate Material	
Limits of Pavement Trenching	
Limits of Pavement Overlay	
For Erosion and Sedimentation Control Legend see Sheet D-4	

CONSTRUCTION PLAN ASSIGNMENT
 RE: BATTLEFIELD GOLF CLUB WATER PROJECT MURRAY DRIVE AND WHITTAMORE ROAD
 SUBDIVISION/SITE PLAN (NAME AS SHOWN ON PLAN)

THE UNDERSIGNED ENGINEER/FIRM AGREES THAT THE CITY OF CHESAPEAKE SHALL HAVE THE RIGHT TO USE THESE PLANS TO COMPLETE THE PHYSICAL IMPROVEMENTS IN THE EVENT THAT THE DEVELOPER DEFAULTS IN HIS OBLIGATIONS TO COMPLETE THESE FACILITIES AS REQUIRED BY CITY CODE. THE UNDERSIGNED ENGINEER ALSO AGREES THAT THE CITY MAY USE THESE PLANS FOR "AS-BUILT" RECORDS AS NECESSARY. THE ENGINEER/FIRM FURTHER AGREES THAT THESE RIGHTS TO USE THE PLANS WILL BE PROVIDED WITHOUT COST TO THE CITY.

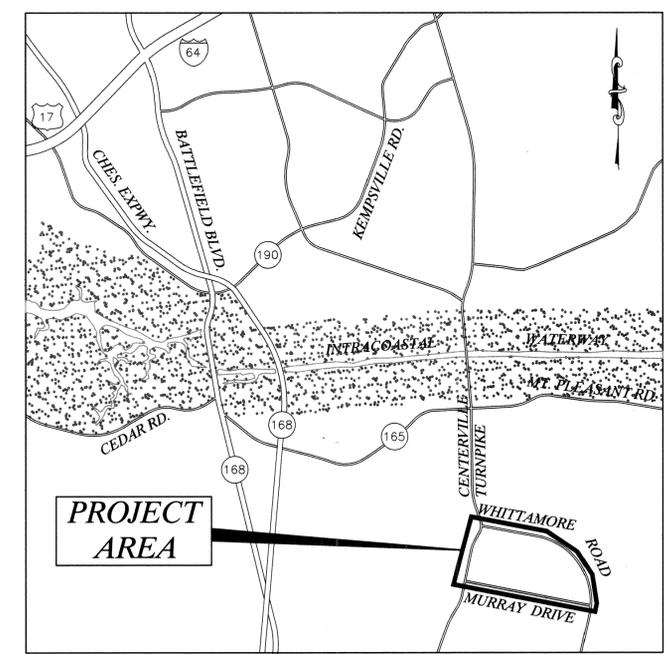
STEPHEN EDWARDS, PE PROJECT MANAGER
 (TYPE OR PRINT)

FIRM: URS CORPORATION
Stephen Edwards 12/2/09

PROJECT DESCRIPTION
 THIS PROJECT GENERALLY CONSISTS OF THE INSTALLATION OF APPROXIMATELY 15,250 LINEAR FEET OF WATER MAIN ALONG MURRAY DRIVE AND WHITTAMORE ROAD, BETWEEN CENTERVILLE TURNPIKE AND THE MURRAY DRIVE - WHITTAMORE ROAD INTERSECTION.

PROJECT CONTACTS:
 CITY OF CHESAPEAKE, VIRGINIA
 KEITH SLICER, P.E., PROJECT ENGINEER
 DEPARTMENT OF PUBLIC UTILITIES
 306 CEDAR ROAD
 CHESAPEAKE, VIRGINIA 23328
 757-382-6503

URS CORPORATION
 STEPHEN EDWARDS, P.E.
 277 BENDIX RD, SUITE 500
 VIRGINIA BEACH, VIRGINIA 23452
 (757)499-4224



LOCATION MAP
 SCALE: 1" = 1 mile

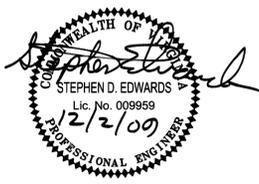
FOR SURVEY NOTES
 SEE SHEET T-2

LIST OF DRAWINGS

Sheet Number	Drawing Title
T-1	1 of 22 Cover Sheet
T-2	2 of 22 Sheet Index
T-3	3 of 22 General Notes
T-4	4 of 22 Traffic Control Notes & Details
T-5	5 of 22 Traffic Control Plan
MURRAY DRIVE	
C-1	6 of 22 Plan & Profile Sta. 11+33 to 23+00
C-2	7 of 22 Plan & Profile Sta. 23+00 to 36+00
C-3	8 of 22 Plan & Profile Sta. 36+00 to 49+00
C-4	9 of 22 Plan & Profile Sta. 49+00 to 62+00
C-5	10 of 22 Plan & Profile Sta. 62+00 to 75+00
C-6	11 of 22 Plan & Profile Sta. 75+00 to 83+07
WHITTAMORE ROAD	
C-7	12 of 22 Plan & Profile Sta. 11+55 to 23+00
C-8	13 of 22 Plan & Profile Sta. 23+00 to 36+00
C-9	14 of 22 Plan & Profile Sta. 36+00 to 49+00
C-10	15 of 22 Plan & Profile Sta. 49+00 to 62+00
C-11	16 of 22 Plan & Profile Sta. 62+00 to 75+00
C-12	17 of 22 Plan & Profile Sta. 75+00 to 88+00
C-13	18 of 22 Plan & Profile Sta. 88+00 to 92+53
D-1	19 of 22 Erosion and Sediment Control Notes
D-2	20 of 22 Pavement and Shoulder Details
D-3	21 of 22 Details
D-4	22 of 22 Corrosion Details

THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO THIS PROJECT, 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE CITY. CONSTRUCTION WITHIN EASEMENTS OR ON PUBLIC RIGHT-OF-WAY NECESSITATES NOTICE WHETHER ADJACENT TO OR LOCATED ON THE ADJOINING PROPERTY. FAILURE TO PROVIDE THE MINIMUM NOTIFICATION TIME WILL RESULT IN A SUSPENSION OF WORK.

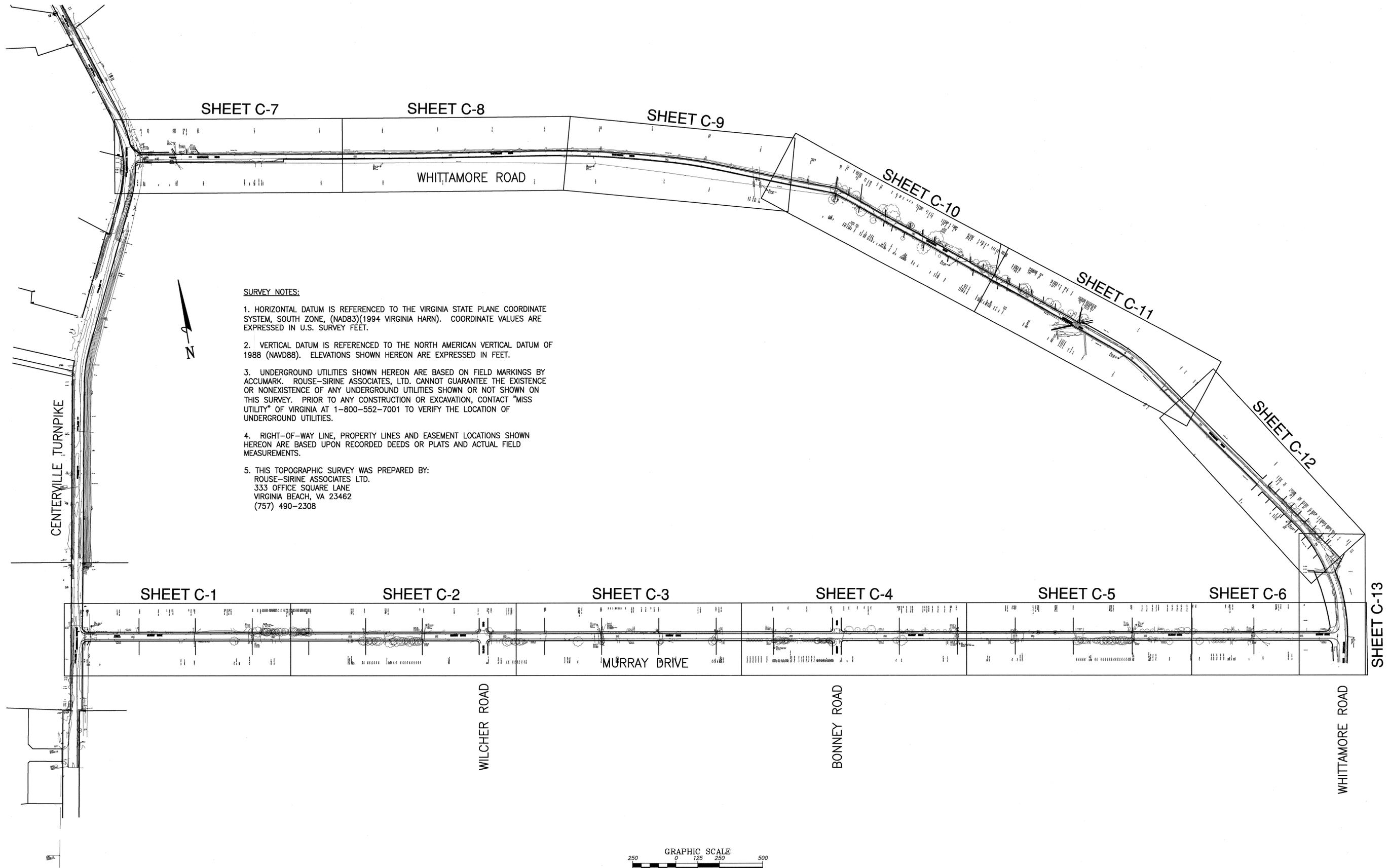
APPROVED: DEPARTMENT OF PUBLIC UTILITIES	
1-19-10 DATE	<i>[Signature]</i> DIRECTOR
APPROVED: DEPARTMENT OF PUBLIC UTILITIES	
1-19-10 DATE	<i>[Signature]</i> UTILITY ENGINEER



HRSD FILE NO: 2006

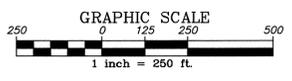
FILE NAME: C:\VA\11852470 - Battlefield GC Water Project\11852477 - Design - MURRAY/WHITTAMORE WATER T-1 COVER.dwg LAYOUT NAME: Layout1 PLOTTED: Wednesday, December 02, 2009 8:44am

Battlefield Golf Club Water Project
City of Chesapeake/Project No. 1401300800
Contract Documents - (December 2009)

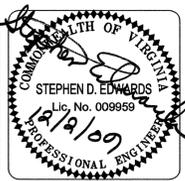


- SURVEY NOTES:**
1. HORIZONTAL DATUM IS REFERENCED TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, (NAD83)(1994 VIRGINIA HARN). COORDINATE VALUES ARE EXPRESSED IN U.S. SURVEY FEET.
 2. VERTICAL DATUM IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ELEVATIONS SHOWN HEREON ARE EXPRESSED IN FEET.
 3. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON FIELD MARKINGS BY ACCUMARK. ROUSE-SIRINE ASSOCIATES, LTD. CANNOT GUARANTEE THE EXISTENCE OR NONEXISTENCE OF ANY UNDERGROUND UTILITIES SHOWN OR NOT SHOWN ON THIS SURVEY. PRIOR TO ANY CONSTRUCTION OR EXCAVATION, CONTACT "MISS UTILITY" OF VIRGINIA AT 1-800-552-7001 TO VERIFY THE LOCATION OF UNDERGROUND UTILITIES.
 4. RIGHT-OF-WAY LINE, PROPERTY LINES AND EASEMENT LOCATIONS SHOWN HEREON ARE BASED UPON RECORDED DEEDS OR PLATS AND ACTUAL FIELD MEASUREMENTS.
 5. THIS TOPOGRAPHIC SURVEY WAS PREPARED BY:
ROUSE-SIRINE ASSOCIATES LTD.
333 OFFICE SQUARE LANE
VIRGINIA BEACH, VA 23462
(757) 490-2308

FILE NAME: C:\VA\11657470 - Battlefield GC Water Project\11657477 - Design - M:\K\CAD\CHEM WATER T-2\Info.dwg LAYOUT NAME: T-2_Plot.dwg PLOTTED: Monday, December 07, 2009 - 8:18am



REV. NO.	DATE	DESCRIPTIONS



URS

277 BENDIX ROAD, SUITE 500
VIRGINIA BEACH, VIRGINIA 23452
PHONE: (757)499-4224 FAX: (757)473-8214
www.urscorp.com

Chesapeake
VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD

SHEET INDEX

DATE	12/2009	SCALE	DWG NUMBER
PROJ. #	11657477	HORIZONTAL	2
DRAWN	MES	1"=250'	SHEET NUMBER
DESIGNED	SDE	VERTICAL	T-2
CHECKED	TGQ	None	
PROJ. MGR.	RAS		
STATUS	CONTRACT DOCUMENTS		REVISION

GENERAL NOTES

- THE CONTRACTOR SHALL CONTACT THE FOLLOWING DEPARTMENTS AND INDIVIDUALS AT THE CITY OF CHESAPEAKE AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO STARTING WORK:
DEPARTMENT OF PUBLIC UTILITIES (757) 382-3411
TRAFFIC ENGINEER (757) 382-6300
PUBLIC WORKS PERMITS ENGINEER (757) 382-6304
- THE LOCATIONS OF ALL UNDERGROUND UTILITIES AND STRUCTURES ARE BASED ON PLANS, RECORD DRAWINGS, UTILITY COMPANY MAPS AND ABOVE-GROUND FIELD OBSERVATIONS. ALL UNDERGROUND ITEMS SHOWN ARE TO BE CONSIDERED APPROXIMATE LOCATIONS ONLY AND NO GUARANTEE IS MADE THAT ALL UTILITIES OR OTHER FEATURES ARE SHOWN ON PLANS. THE CONTRACTOR SHALL COORDINATE RELOCATION OR TEMPORARY MEASURES OF ALL SUCH UTILITIES AND FEATURES AT NO ADDITIONAL COST TO THE CITY. THE CONTRACTOR IS CAUTIONED TO CONTACT MISS UTILITY (1-800-552-7001) 48-HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION ACTIVITY.
- THE LOCATIONS OF OVERHEAD AND UNDERGROUND UTILITY LINES SERVING DWELLINGS ARE NOT SHOWN UNLESS THEY ARE CROSSING THE RIGHT-OF-WAY.
- THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION WORK. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL POTENTIAL UTILITY OWNERS PRIOR TO EXCAVATION. WHERE CONFLICTS EXIST BASED ON CONTRACTOR FIELD VERIFICATION AND WHICH MAY ADVERSELY AFFECT THE NEW WORK, THE OWNER IS TO BE NOTIFIED PRIOR TO ANY CONSTRUCTION WORK.
- PRIOR TO THE INSTALLATION OF ANY PIPE, THE CONTRACTOR SHALL LOCATE INTERCONNECTION POINTS TO THE EXISTING SYSTEM. FOR EACH POINT OF INTERCONNECTION, THE CONTRACTOR SHALL VERIFY THE SIZE, DEPTH, MATERIAL AND CONFIGURATION OF THE EXISTING SYSTEM. A CONSTRUCTION SEQUENCE PLAN AND DEACTIVATION SEQUENCE PLAN SHALL THEN BE DEVELOPED AND SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO THE START OF PIPE INSTALLATION ACTIVITIES.
- VERTICAL LOCATION OF EXISTING UTILITIES IS APPROXIMATE ONLY. THE CONTRACTOR SHALL COORDINATE VERIFICATION OF HORIZONTAL AND VERTICAL LOCATION OF CROSSED UTILITIES PRIOR TO EXCAVATION FOR THE CROSSING. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ANY REQUIRED CHANGES IN THE DESIGN DUE TO UTILITY CONFLICTS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CITY AND THE AFFECTED UTILITY IN THE EVENT THAT ANY UTILITIES ARE DAMAGED DURING CONSTRUCTION.
- ALL DAMAGE TO EXISTING UTILITIES (INCLUDING BUT NOT LIMITED TO WATER, SEWER, GAS, ELECTRIC, TELEPHONE, STORM SEWERS, ETC.) SHALL BE REPAIRED TO THE SATISFACTION OF THE AFFECTED UTILITY OWNER. ALL COSTS FOR ANY DAMAGE REPAIR WORK SHALL BE BORNE SOLELY BY THE CONTRACTOR.
- THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS AND REQUIREMENTS OF THE OVERHEAD HIGH VOLTAGE LINES SAFETY ACT (SECTION 59.1-406, ET. SEQ. OF THE CODE OF VIRGINIA) IN PERFORMING WORK ON THIS PROJECT. AS A MINIMUM, THE CONTRACTOR SHALL:
A.) CONTACT THE ELECTRICAL UTILITY 48 HOURS PRIOR TO COMMENCING WORK IF THE CONTRACTOR'S TOOLS OR MATERIALS WILL INTRUDE TO WITHIN SIX (6) FEET OF AN OVERHEAD POWER LINE.
B.) CONTACT THE ELECTRICAL UTILITY 48 HOURS PRIOR TO COMMENCING WORK IF COVERED EQUIPMENT SUCH AS CRANES OR DERRICKS WILL BE OPERATED WITHIN TEN (10) FEET OF AN OVERHEAD POWER LINE.
C.) POST AND MAINTAIN WARNING SIGNS WITHIN AND ON THE OUTSIDE OF EQUIPMENT OPERATING NEAR AN OVERHEAD HIGH VOLTAGE LINE.
D.) THE RESPONSIBLE PARTY FOR COORDINATING AND ADVISING THE POWER COMPANY SHALL BE THE CONTRACTOR.
E.) THE CONTRACTOR SHALL COORDINATE ALL WORK ASSOCIATED WITH EXISTING UTILITY RELOCATION, INCLUDING TEMPORARY POLE BRACING AND GUY WIRE RELOCATION, WITH THE APPROPRIATE UTILITY COMPANY. COSTS ASSOCIATED WITH THIS COORDINATION, MEASURES REQUIRED BY THE UTILITY COMPANY, AND COSTS INVOICED BY THE UTILITY COMPANY FOR WORK PERFORMED BY THEM SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
F.) SHOULD THE CONTRACTOR'S EXCAVATION ACTIVITIES REQUIRE SHORING AND BRACING OF EXISTING VIRGINIA POWER POLES, VIRGINIA POWER SHALL BE NOTIFIED TEN (10) WORKING DAYS BEFORE ANTICIPATED SHORING AND BRACING ACTIVITIES COMMENCE. ALL SHORING AND BRACING ACTIVITIES SHALL BE ACCOMPLISHED BY VIRGINIA POWER PERSONNEL AT CONTRACTOR'S EXPENSE.
- AT THE END OF EACH DAY, DRAINAGE FACILITIES DISTURBED BY CONSTRUCTION INCLUDING ROADSIDE SWALES AND DITCHES MUST BE RESTORED AT THE DIRECTION OF THE CITY OR THEIR REPRESENTATIVES, THE CONTRACTOR SHALL RESUME THE OPERATION OF THE DRAINAGE SYSTEM DURING THE DAY PRIOR TO A RAINFALL EVENT.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RETURN ALL DISTURBED EARTH TO THE ORIGINAL ELEVATION WITH EQUAL OR IMPROVED DRAINAGE IN AND OUT OF THE RIGHT-OF-WAY. UNSUITABLE BACKFILL MATERIAL SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.
- THE CONTRACTOR IS TO RESTORE ALL DITCHES IMPACTED BY CONSTRUCTION TO THEIR ORIGINAL GRADES UNLESS ADDITIONAL IMPROVEMENTS ARE REQUIRED BY THESE PLANS.
- THE CONTRACTOR IS TO PHOTOGRAPH OR VIDEOTAPE ALL IMPACTED DRIVEWAYS, WALKWAYS, FENCING, LANDSCAPING, ETC. BEFORE CONSTRUCTION IS INITIATED. THIS TASK IS TO BE COORDINATED WITH THE CITY OR THEIR REPRESENTATIVE. THE CONTRACTOR IS TO RETAIN A COPY FOR THEIR FILES AND SUBMIT 2 COPIES TO THE CITY.
- THE CONTRACTOR SHALL REPAIR OR REPLACE ALL ROADWAYS, DRIVEWAYS AND SIDEWALKS THAT ARE DAMAGED DURING THE INSTALLATION OF THE WATER MAIN AS DETAILED IN THE PLANS AND IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF THE CITY OF CHESAPEAKE DEPARTMENT OF PUBLIC WORKS.
- FOR DETAILS AND NOTES REGARDING TRENCH PATCH AND PAVING SEE SHEET D-2.
- DRIVEWAYS AFFECTED BY CONSTRUCTION WILL BE REPLACED WITH EQUAL OR GREATER THICKNESS BACK TO THE NEAREST JOINT, IF IN THE RIGHT-OF-WAY. IF THE NEAREST JOINT IS BEYOND THE LIMITS OF THE RIGHT-OF-WAY, DRIVEWAY MAY BE REMOVED TO THE NEAREST JOINT WITH THE PROPERTY OWNER'S PERMISSION. IF THE PROPERTY OWNER DOES NOT AGREE TO REMOVAL OF DRIVEWAY BEYOND THE PROPERTY LINE, DRIVEWAY SHOULD BE SAWCUT AT THE RIGHT-OF-WAY AND EXPANSION JOINT INSTALLED. EXISTING DRIVEWAY APRON CONFIGURATION MUST BE RE-CREATED AT THE SETBACK. EXISTING DRIVEWAY THAT WILL BE AFFECTED BY CONSTRUCTION MUST BE RESTORED WITH THE IDENTICAL MATERIAL. THICKNESS MUST BE EQUAL TO OR GREATER THAN THE EXISTING.
- THE CONTRACTOR SHALL REPLACE ALL EXISTING TRAFFIC LANE MARKINGS COVERED BY THE NEW PAVEMENT OVERLAY. THE CONTRACTOR AND THE CITY INSPECTOR SHALL VERIFY THE EXISTING LANE MARKINGS WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO INSTALLATION OF PAVEMENT OVERLAY. PAYMENT FOR THIS REPLACEMENT WILL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE COST OF OTHER ITEMS OF WORK.
- THE CONTRACTOR SHALL INFORM ALL PROPERTY OWNERS AT LEAST 24 HOURS BEFORE THEIR DRIVES WILL BE TEMPORARILY BLOCKED. IN NO CASE SHALL THE CESSATION OF WORK AT THE END OF THE DAY PREVENT THE OWNERS FROM ACCESS TO THEIR PROPERTIES AT NIGHT.
- ALL SIGNS, BILLBOARDS, MAILBOXES, LANDSCAPING, LIGHTS, BRICK STRUCTURES, STORM DRAINS AND FENCING AFFECTED BY THE WATER INSTALLATION SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT HIS EXPENSE TO THE COMPLETE SATISFACTION OF THE CITY OF CHESAPEAKE DEPARTMENT OF PUBLIC WORKS OR OWNER OF SAME. ALL SIGNS SHALL BE REPLACED DAILY. PAYMENT FOR THIS REPLACEMENT WILL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE COST OF OTHER ITEMS OF WORK.

- MAILBOXES SHALL BE REMOVED AND REPLACED ON A DAILY BASIS AS NEEDED. ANY MAILBOXES DAMAGED DURING REMOVAL SHALL BE REPLACED IN KIND AT NO ADDITIONAL EXPENSE TO THE CITY. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL MAILBOXES FOR U.S. POSTAL SERVICE EMPLOYEES AT ALL TIMES.
- THIRTY DAYS PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CONTACT PROPERTY OWNERS WHOSE TREES AND SHRUBBERY ARE LOCATED IN THE RIGHT-OF-WAY AND WILL REQUIRE REMOVAL OR RELOCATION. THE HOMEOWNER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ALL LANDSCAPING. THE CONTRACTOR IS REQUIRED TO REMOVE ALL LANDSCAPING NOT REMOVED BY THE HOMEOWNER.
- CULVERTS UNDERNEATH GRAVEL OR PAVED ENTRANCES, DROP INLETS, OR OTHER STORM DRAIN PIPING WITHIN THE RIGHT OF WAY THAT ARE DAMAGED DURING WATER LINE EXCAVATION, CONSTRUCTION, OR BACKFILL SHALL BE REMOVED AND REPLACED.
- THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
- IF TRENCH OPERATIONS ARE WITHIN THE DRIP LINE OF EXISTING TREES, THE CONTRACTOR SHALL PROTECT THE TREE USING SOUND LANDSCAPING PRACTICES AS SHOWN IN THE VIRGINIA EROSION AND SEDIMENT HANDBOOK.
- THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPROVEMENTS, 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK, UNLESS OTHERWISE DIRECTED BY THE CITY. CONSTRUCTION WITHIN EASEMENTS OR ON PUBLIC RIGHT-OF-WAY NECESSITATES NOTICE WHETHER ADJACENT TO OR LOCATED ON THE ADJOINING PROPERTY. FAILURE TO PROVIDE THE MINIMUM NOTIFICATION TIME WILL RESULT IN A SUSPENSION OF WORK.
- A LAND DISTURBING PERMIT MUST BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES.
- A PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS PRIOR TO COMMENCING ANY WORK ON AN EXISTING CITY-MAINTAINED STREET RIGHT-OF-WAY.
- A NOISE PERMIT MUST BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS FOR ANY CONSTRUCTION ACTIVITY TO BE DONE AFTER NORMAL WORKING HOURS.
- PLAN SURVEY AND TOPOGRAPHIC DATA: SEE SHEET T-2
- THE CONTRACTOR SHALL HAVE A REGISTERED SURVEYOR RE-ESTABLISH ALL PROPERTY PINS, AND MONUMENTS DISTURBED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- ALL WATER METERS, DRAINAGE CULVERTS, FENCES, UTILITY POLES, DRIVEWAYS, CURBS, GUTTERS, BRICK COLUMNS, BRICK MAIL BOXES, LIGHTS AND PLANT MATERIAL SPRINKLER SYSTEMS ETC. AFFECTED BY CONSTRUCTION SHALL BE REPLACED IN LIKE AND KIND AT NO ADDITIONAL COST TO THE OWNER.
- WATERLINE CONNECTIONS TO ACTIVE MAINS SHALL BE PERMITTED ONLY BETWEEN ELEVEN (11) P.M. AND FIVE (5) A.M. FROM TUESDAY THROUGH THURSDAY. CONTRACTOR MUST COORDINATE THIS WORK WITH THE DEPARTMENTS OF PUBLIC WORKS, PUBLIC UTILITIES, AND FIRE DEPARTMENT, AND PROVIDE FORTY-EIGHT (48) HOURS NOTICE PRIOR TO DOING ANY SUCH WORK. CONTRACTOR MUST NOTIFY THE AFFECTED CUSTOMERS AT LEAST TWENTY-FOUR HOURS (24) BEFORE THE SHUT DOWN OF THE WATER SYSTEM. ALL FITTINGS AND PIPE WORK NECESSARY TO COMPLETE THE CONNECTIONS MUST BE ASSEMBLED AND FINISHED ABOVE GROUND PRIOR TO THE SHUTDOWN OF THE WATER SYSTEM, UNLESS OTHERWISE APPROVED BY PUBLIC UTILITIES. A COMPLETE SHUTDOWN OF ACTIVE WATER MAINS IS NOT GUARANTEED BY THE CITY. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING EFFORTS.
- THE CONTRACTOR SHALL INSTALL NEW WATERLINES AND NEW WATER SERVICE LINES TO PROVIDE A MINIMUM VERTICAL SEPARATION BETWEEN THE WATERLINE AND DITCHES OF 24". VERTICAL SEPARATION SHALL BE 18" BETWEEN THE NEW WATERLINE AND ALL OTHER UTILITIES UNLESS OTHERWISE NOTED ON THE PLAN SHEETS.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING THE ACTUAL LOCATION AND SIZE OF EACH WATER SERVICE LINE WITH THE PROPERTY OWNER AND THE CITY DURING CONSTRUCTION. THE WATER SERVICE CONNECTION LOCATIONS SHOWN ON PLAN SHEETS ARE APPROXIMATE ONLY.
- NEW WATER SERVICE LINES CROSSING MURRAY DRIVE AND WHITTAMORE ROAD ARE TO BE INSTALLED AS FOLLOWS:
A. MURRAY DRIVE - USING TRENCHLESS TECHNOLOGY
B. WHITTAMORE ROAD - OPEN CUT
- FINAL PLACEMENT OF ALL VALVE AND METER BOXES SHALL BE COORDINATED WITH THE CITY PRIOR TO INSTALLATION.
- THE NEW WATERLINE SHALL NOT BE INSTALLED CLOSER THAN 5 FT. TO ANY EXISTING UTILITY POLE OR GUY WIRE POLE WITHOUT PROTECTING SAME. WHENEVER THE WATERLINE IS WITHIN 5 FT. OF THE UTILITY POLE, THE CONTRACTOR SHALL NOTIFY OWNER OF SAME AND BEAR THE COST FOR TEMPORARY BRACING OR RELOCATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED FOR WATER LINE INSTALLATION.
- CONCRETE RESTORATION SHALL BE TO THE NEAREST JOINT TO THE AREA DISTURBED. FOR DRIVEWAYS SEE NOTE 16.
- WATER SERVICE LINES SHALL BE 3/4 INCH DIAMETER UNLESS NOTED OTHERWISE.
- THE RIGHT OF WAY ALONG THE SOUTH SIDE OF MURRAY DRIVE IS TO BE CLEARED AS REQUIRED FOR CONSTRUCTION UNLESS OTHERWISE NOTED. TREES TO BE PROTECTED ARE SHOWN WITH TREE PROTECTION NOTE: 
- THE CONTRACTOR SHALL COORDINATE WITH VERIZON DURING CONSTRUCTION TO MAINTAIN SERVICE LINES. THE CONTACT PERSON FOR ALL VERIZON UTILITIES IS BERKLEY GIBBS 757-482-8004 (O) 757-810-7707 (C).
- THE CONTRACTOR SHALL PROVIDE ASSISTANCE TO THE INSPECTOR DURING CONSTRUCTION IN LOCATING BENDS, VALVES ETC. FOR DETERMINATION OF COORDINATES AND THE PREPARATION OF DRAWINGS OF RECORD.
- THE CONTRACTOR SHALL PROVIDE TO HRSD A MINIMUM OF 48 HOURS NOTICE PRIOR TO ANY WORK ON OR AROUND HRSD INFRASTRUCTURE. CHRIS EVERTON WILL BE THE POINT OF CONTACT FOR HRSD. HE CAN BE REACHED DURING NORMAL BUSINESS HOURS AT 757-318-4327 (O) OR 757-803-4454 (C)
- ALL BOLTS, NUTS, WASHERS AND EXPOSED THREADS USED IN MECHANICAL JOINTS, MEGALUGS, OR RESTRAINING HARNESSSES ARE TO HAVE A DIELECTRIC COATING FIELD APPLIED PRIOR TO CLOSURE OF POLYETHYLENE ENCASUREMENT AND BACKFILL. EXCEPT IN AREAS WHERE PIPE MATERIAL IS PVC, FOR THESE AREAS SEE CORROSION SPECIFICATIONS.

- IF WATER SERVICE LINES ARE DAMAGED THEY MUST BE REPLACED FROM THE METER BOX TO THE MAIN. SPLICES ARE NOT ACCEPTABLE.
- ALL WATER METER REMOVAL OR INSTALLATION SHALL ONLY BE PERFORMED BY DEPARTMENT OF PUBLIC UTILITIES PERSONNEL, OR THE CONTRACTOR IN THE PRESENCE OF DEPARTMENT OF PUBLIC UTILITIES PERSONNEL.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION AT 382-3411.
- ONLY REPRESENTATIVES OF THE DEPARTMENT OF PUBLIC UTILITIES SHALL OPERATE ANY PUBLIC WATER OR SEWER VALVES.
- THE DEPARTMENT OF PUBLIC UTILITIES SHALL HAVE SALVAGE RIGHTS FOR ALL PUBLIC WATER AND SEWER APPURTENANCES BEING REMOVED.
- PROPOSED DUCTILE IRON WATER LINE IS TO BE DOUBLE POLYETHYLENE ENCASED.
- JOINT DEFLECTION SHALL NOT EXCEED 80% OF THE MANUFACTURER'S RECOMMENDED MAXIMUM OR AWWA MAXIMUM, WHICHEVER IS LESS.
- PIPE BEDDING IS HRPDC TYPE II USING NO. 57 STONE UNLESS OTHERWISE NOTED.
- TRENCH BACKFILL
1. NON PAVED AREAS
A. STANDARD SHALL BE SUITABLE MATERIAL AS DEFINED IN SECTION 200.V.5.1.B OF THE SPECIFICATIONS.
B. IF APPROVED BY THE CITY, SELECT MATERIAL TYPE II (MIN. CBR=15) WILL BE USED.
2. PAVED AREAS SELECT MATERIAL TYPE II (MIN.CBR=15) SHALL BE USED IN AREAS DEFINED IN UTILITY TRENCH PAVEMENT PATCH SUMMARY ON SHEET D-2.

CONSTRUCTION PHASING

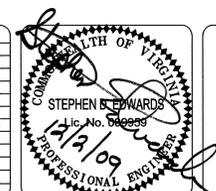
- THE WATER MAIN IS TO BE INSTALLED IN TWO PHASES.
a. PHASE 1- INSTALLATION OF 10" DI WATER MAIN ALONG MURRAY DRIVE.
b. PHASE 2- INSTALLATION OF 8" DI WATER MAIN ALONG WHITTAMORE ROAD.
- PHASE 1 IS TO BE INSTALLED, TESTED, DISINFECTED AND TIED INTO THE EXISTING 10-INCH STUB FIRST TO ALLOW FOR THE WATER SUPPLY ALONG MURRAY DRIVE. PHASE 2 CAN BE UNDERWAY WHILE SERVICE LINES ARE BEING INSTALLED IN PHASE 1.
- FOR EACH PHASE THE END OF THE MAIN IS TO BE PLUGGED FOR TESTING. TESTING AGAINST VALVES WILL NOT BE ALLOWED. AT EACH PLUG, THE PIPE AND PLUG ARE TO BE RESTRAINED AGAINST THE TEST PRESSURE.
- AFTER EACH PHASE IS TESTED, DISINFECTED AND ALL TESTS PASSED, THE FINAL TIE-IN WILL BE MADE BY USING A SHORT PE X PE SECTION OF PIPE WITH TWO LONG BODY MJ X MJ SLEEVES RESTRAINED (SEE CONNECTION DETAIL ON SHEET D-3). THE CONTRACTOR IS TO UNCOVER THE TIE-IN LOCATIONS TO VERIFY THE EXISTING PIPE END (BELL OR SPIGOT) AND SUBMIT FOR REVIEW HIS PROPOSED FINAL TIE-IN CONFIGURATION.
5. FOR EACH PHASE THE CONTRACTOR IS TO SUBMIT FOR REVIEW HIS METHOD OF PROVIDING POTABLE WATER FOR FLUSHING, DISINFECTION AND TESTING AND HOW AND WHERE HE PROPOSES TO PROVIDE FOR BLOWING OFF AND FLUSHING THE MAIN.

LOCATION	ANTICIPATED # OF LONG BODY SLEEVES
MURRAY 11+33	2 - 10"
WHITTAMORE 11+55	2 - 8"

- EQUIPMENT SHALL BE OF SUFFICIENT SIZE AND IN SUCH MECHANICAL CONDITION AS TO MEET THE REQUIREMENTS OF THE WORK AND PRODUCE A SATISFACTORY QUALITY OF WORK. EQUIPMENT AND THE CONTRACTOR'S METHODS AND MEANS SHALL BE SUCH THAT NO DAMAGE TO THE ROADWAY, ADJACENT PROPERTY, OR OTHER HIGHWAYS WILL RESULT FROM THE CONSTRUCTION. THE OWNER MAY ORDER THE REMOVAL AND REQUIRE REPLACEMENT OF UNSATISFACTORY EQUIPMENT.
- COX COMMUNICATIONS HAS NINETEEN UNDERGROUND SERVICE DROPS CROSSING MURRAY DRIVE BETWEEN CENTERVILLE TURNPIKE AND WHITTAMORE ROAD. THESE SERVICES ARE APPROXIMATELY TWO FEET UNDER THE ROAD SURFACE.
- THE CONTRACTOR SHALL, IN ADDITION, TO A MISS UTILITY TICKET, COORDINATE WITH COX COMMUNICATIONS, VERIZON AND DOMINION VIRGINIA POWER TO LOCATE SERVICE DROPS PRIOR TO EXCAVATION IN THEIR VICINITY.
- FIRE HYDRANT & VALVE
A) IN ADDITION TO RESTRAINED JOINTS, THE FIRE HYDRANT ASSEMBLY IS TO HAVE TIE-RODS INSTALLED FROM MAINLINE TEE TO HYDRANT.
B) THE TIE-RODS SHALL BE COATED WITH MASTIC COMPOUND.
C) THE ENTIRE ASSEMBLY TO RECEIVE THE DOUBLE POLYETHYLENE ENCASUREMENT.
THE COST OF TIE-RODS, INSTALLATION AND MASTIC TO BE INCLUDED IN THE BID PRICE FOR FIRE HYDRANTS.

FILE NAME: C:\VA\11857470 - Battlefield Golf Water Project\11857477 - Design - M-W\DWG\T-3.dwg LAUNCH NAME: T-3 PLOTTED: Wednesday, January 20, 2010 - 2:58pm

REV. NO.	DESCRIPTIONS	DATE



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VIRGINIA BEACH, VIRGINIA 23452
PHONE: (757)499-4224 FAX: (757)473-8214
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BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD

GENERAL NOTES

DATE	12/2009	SCALE	HORIZONTAL	DWG NUMBER	3
PROJ. #	11657477	DRAWN	MES	SHEET NUMBER	T-3
DESIGNED	SDE	CHECKED	TGQ	VERTICAL	None
PROJ. MGR.	RAS			None	
STATUS	CONTRACT DOCUMENTS	REVISION			

TRAFFIC CONTROL GENERAL NOTES

- THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF ONE 10' LANE OF TRAFFIC AT ALL TIMES DURING CONSTRUCTION. EXCEPT FOR MURRAY DRIVE WHICH WILL HAVE TWO-WAY TRAFFIC MAINTAINED AT ALL TIMES.
- THE CONTRACTOR SHALL INSTALL SUFFICIENT MEASURES TO ENSURE PUBLIC SAFETY WITHIN THE WORK AREA.
- TRAFFIC, INCLUDING BUT NOT NECESSARILY LIMITED TO FIRE, POLICE AND OTHER PUBLIC SAFETY VEHICLES, MAIL DELIVERY, SCHOOL BUSES, TRASH AND RECYCLING COLLECTION, AND OTHER ESSENTIAL VEHICLES, MUST BE ABLE TO SAFELY TRAVERSE THE WORK AREA WITHIN OR ADJACENT TO PUBLIC AND PRIVATE RIGHT-OF-WAY, AT ALL TIMES DURING THE DAY AND NIGHT.
- THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL DEVICES (SIGNS, FLAG PERSONS, ETC.) NECESSARY TO ENSURE PROPER SAFETY AND VEHICULAR CONTROLS.
- ALL TRAFFIC CONTROL METHODS AND DEVICES INCLUDING SIGNS AND BARRICADES SHALL CONFORM WITH PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2003 EDITION OF MUTCD) AND THE MAY 2005 EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL.
- THE CONTRACTOR WILL BE ALLOWED LANE CLOSURE DURING NORMAL WORK HOURS WHILE INSTALLING PIPE OR DURING ROAD RECONSTRUCTION. SIGNAGE WILL BE REQUIRED AS STATED BELOW.
- THE CONTRACTOR SHALL NAME ONE INDIVIDUAL WHO WILL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL.
- NO OPEN TRENCHES WILL BE ALLOWED OVERNIGHT.
- THE CONTRACTOR SHALL PERFORM TRAFFIC CONTROLLED WORK BETWEEN 8:00 AM AND 4:00 PM MONDAY THROUGH FRIDAY (NON-HOLIDAYS) WHENEVER AT LEAST ONE LANE OF TRAFFIC IS INTERRUPTED.
- CHANNELING DEVICES MUST SEPARATE THE WORK AREA FROM THE TRAVELED WAY AND BE EXTENDED TO WHERE THEY ARE VISIBLE TO ONCOMING TRAFFIC.
- THE TRAFFIC CONTROL DETAILS ILLUSTRATED ON THIS SHEET ARE PROVIDED IN AN EFFORT TO PROVIDE THE CONTRACTOR WITH AN UNDERSTANDING OF THE MINIMUM REQUIREMENTS FOR TRAFFIC CONTROL WHICH MUST BE MET AND TO AID IN THE INCLUSION OF THOSE COSTS IN THE PREPARATION OF HIS BID. THE PLAN AND THE USE THEREOF DOES NOT IN ANYWAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES OF PROTECTION OF THE WORK AND PUBLIC SAFETY. IT IS A SPECIFIC CONTRACT REQUIREMENT THAT THE CONTRACTOR INDEMNIFY AND HOLD HARMLESS THE CITY AND THE ENGINEER AGAINST ALL LOSSES INCURRED IN THE EXECUTION OF THE WORK AND IN THE GUARDING OF IT. THIS REQUIREMENT INCLUDES BUT IS NOT LIMITED TO THE USE OF THIS PLAN.
- THE CONTRACTOR SHALL RESTRICT CONSTRUCTION TO 150 LF AT ONE TIME TO MINIMIZE INTERFERENCE WITH ONSTREET PARKING. THIS LENGTH DOES NOT INCLUDE THE LENGTH OF TAPERS WHERE TRAFFIC CONES OR DRUMS ARE USED TO GUIDE TRAFFIC.
- THE CONTRACTOR SHALL ABIDE BY THE REQUIREMENTS ESTABLISHED IN THE PERMIT ISSUED BY THE DEPARTMENT OF PUBLIC WORKS.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR SELECTING AND ADOPTING THE APPROPRIATE TRAFFIC CONTROL PLAN TO BEST SUIT CONDITIONS AT EACH WORK SITE, AND SUBMIT THIS PLAN TO CITY OF CHESAPEAKE TRAFFIC ENGINEERING DIVISION (382-6300) FOR REVIEW AT LEAST 10 WORKING DAYS, UNLESS OTHERWISE NOTED, PRIOR TO THE START OF WORK. THE CITY RESERVES THE RIGHT TO MODIFY THE TRAFFIC CONTROL PLAN AS NECESSARY IN THE INTEREST OF PUBLIC SAFETY OR CONVENIENCE. THE TRAFFIC CONTROL PLANS SHOWN IN THE PROJECT PLANS MAY BE USED WHEN CONDITIONS ARE WARRANTED.
- TWO-WAY TRAFFIC WILL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION UNLESS ANOTHER ALTERNATIVE FOR TRAFFIC CONTROL, SUCH AS A LANE OR A TEMPORARY STREET CLOSURE IS APPROVED.
- IF THERE IS AN APPROVAL FOR A LANE CLOSURE OR A TEMPORARY STREET CLOSURE, ALL LANES OF TRAFFIC WILL BE REOPENED TO TRAFFIC AT THE CONCLUSION OF EACH CONSTRUCTION DAY, UNLESS A 24 HOUR TEMPORARY STREET CLOSURE IS APPROVED AND IN EFFECT.
- IN ALL CASES IN WHICH AN EXISTING OR ESTABLISHED TRAFFIC PATTERNS WILL BE INTERRUPTED, THE CONTRACTOR WILL NOTIFY ALL AFFECTED RESIDENTS AND BUSINESSES AT LEAST 24 HOURS IN ADVANCE OF THE ANTICIPATED DISRUPTION BY DISTRIBUTING DOOR-TO-DOOR NOTICES. A COPY OF THE NOTICE WILL BE FORWARDED TO THE CITY PROJECT REPRESENTATIVE PRIOR TO BEGINNING WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY PAVEMENT MARKINGS OR TRAFFIC CONTROL DEVICES DAMAGED BY CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE INCLUDING TRAFFIC SIGNAL EQUIPMENT, LOOP DETECTORS AND INTERCONNECT CABLE, PAVEMENT MARKING AND SIGNAGE RESULTING FROM THE CONTRACTORS EQUIPMENT OR ACTIONS. CONTACT KEVIN EPPLEY AT 382-6177 AT LEAST 48 HOURS PRIOR TO OPEN CUTTING NEAR SIGNALIZED INTERSECTIONS.
- ALL CONTRACTOR EMPLOYEES AND SUBCONTRACTOR(S) EMPLOYEES EXPOSED TO VEHICULAR TRAFFIC WILL BE PROVIDED WITH AND REQUIRED TO WEAR WARNING VEST MARKED WITH OR MADE OF REFLECTORIZED OR HIGH VISIBILITY MATERIALS AS DESCRIBED IN THE VIRGINIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS (CONSTRUCTION INDUSTRIAL) 29 CFR, PART 1929, 1989 EDITION. ALL FLAGGERS MUST BE CERTIFIED AND USE A STOP/SLOW PADDLE WHEN FLAGGING TRAFFIC.
- ALL TEMPORARY CONSTRUCTION WARNING SIGNS FURNISHED IN CONJUNCTION WITH THE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGH AREAS OF CONSTRUCTION AND DETOURS WILL HAVE FLUORESCENT ORANGE PRISMATIC LENS TYPE RETROREFLECTIVE SHEETING. ALL OTHER SIGNS WILL BE VIP PRISMATIC LENS TYPE RETROREFLECTIVE SHEETING.
- THE CONTRACTOR WILL INSTALL TEMPORARY CONSTRUCTION WARNING SIGNS (ROAD/UTILITY WORK AHEAD & END ROAD/UTILITY WORK) ON WOODEN POSTS OR TRIPODS PRIOR TO BEGINNING CONSTRUCTION AND WILL REMOVE SUCH SIGNS AND POST AFTER COMPLETION OF ALL CONSTRUCTION ACTIVITIES.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE APPROPRIATE APPROVALS FROM THE VIRGINIA DEPARTMENT OF HEALTH AND DEPARTMENT OF ENVIRONMENTAL QUALITY. WETLANDS AREAS MUST BE DELINEATED ON THE PLAN. IMPROVEMENTS WITHIN ANY WETLANDS AREA MAY REQUIRE ARMY CORPS OF ENGINEERS, DEPARTMENT OF ENVIRONMENTAL QUALITY, COAST GUARD OR THE LOCAL WETLANDS BOARD APPROVAL. IT IS THE RESPONSIBILITY OF THE DEVELOPER AND HIS CONSULTANT ENGINEER TO DETERMINE IF APPROVAL IS REQUIRED FROM THESE OR ANY OTHER REGULATORY AGENCIES. APPROVAL AND ALL PERMITS FROM THE PROPER ENVIRONMENTAL AUTHORITIES SHALL BE OBTAINED PRIOR TO LAND DISTURBING.

- TEMPORARY STREET CLOSURES SHALL BE PRE-APPROVED BY THE CITY. CLOSURES WILL ONLY BE ALLOWED WHEN TRAFFIC CAN BE SAFELY DETOURED, PROVIDING NO MORE THAN ONE (1) ROAD CLOSURE IS PERMITTED AT ANY GIVEN TIME.
- AT THE PRECONSTRUCTION MEETING, THE CONTRACTOR WILL SUBMIT THEIR SCHEDULE OF CONSTRUCTION SEQUENCE AND A LIST OF ALL PROPOSED STREET CLOSURES AND DATES OF CLOSURES THAT MAY BE IN EFFECT.
- THE CONTRACTOR WILL SUBMIT TO THE CITY, A TRAFFIC MAINTENANCE AND CONTROL PLAN FOR EACH SEPARATE STREET CLOSURE AND A WRITTEN NOTICE REQUESTING EACH SEPARATE ROAD CLOSURE A MINIMUM FOURTEEN (14) WORKING DAYS PRIOR TO THE STARTING OF EACH SEPARATE STREET CLOSURE. THE CONTRACTOR WILL NOT CLOSE A STREET TO THROUGH TRAFFIC UNLESS THERE IS AN APPROVED TRAFFIC CONTROL PLAN ON SITE FOR THAT PARTICULAR STREET.
- TEMPORARY STREET NAME BLADES WILL BE INSTALLED ABOVE DETOUR ROUTE MARKER SIGNS AND WILL CONFORM TO THE FOLLOWING: STREET NAME LETTERING WILL BE HIGHWAY GOTHIC C SERIES SIX INCHES (6") IN HEIGHT. STREET NAME BLADES WILL HAVE AN ORANGE BACKGROUND WITH BLACK LETTERS. THE BACKGROUND COLOR WILL BE MADE FROM FLUORESCENT ORANGE PRISMATIC LENS TYPE RETROREFLECTIVE SHEETING MATERIAL.
- "PUBLIC NOTICE" SIGNS WILL BE INSTALLED SEVEN TO FOURTEEN (7-14) DAYS IN ADVANCE OF A TEMPORARY ROAD CLOSURE ADVISING MOTORISTS OF THE PROPOSED ROAD CLOSURE. THE SIGN WILL INCLUDE THE STREET NAME OF THE ROAD BEING CLOSED AND THE DATES AS TO WHICH WORK WILL BEGIN AND END.
- ADVANCED WARNING SIGNS FOR A STREET CLOSURE WILL BE PROVIDED IN EACH DIRECTION AFFECTING TRAFFIC FLOW. SIGNS WILL BE MOUNTED ON 6"X 6" WOODEN POST, AND WILL BE 7 FEET FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE GROUND. AT A MINIMUM, THESE SIGNS WILL INCLUDE:

"ROAD CLOSED AHEAD"	48" X 48"	(W20-3)
"DETOUR AHEAD"	48" X 48"	(W20-2)
"DETOUR ROUTE MARKER"	30" X 24"	(M4-9)
"END DETOUR"	24" X 18"	(M4-8A)
- NO MATERIALS OF CONSTRUCTION SHALL BE STOCKPILED WITHIN THE "CLEAR ZONE" AS DEFINED BY THE AASHTO "ROADSIDE DESIGN GUIDE".
- NO EQUIPMENT OR MACHINERY SHALL BE LEFT/PARKED, UNATTENDED, WITHIN THE "CLEAR ZONE" AS DEFINED BY THE AASHTO "ROADSIDE DESIGN GUIDE", WHEN WORK IS NOT BEING PERFORMED.
- ALL TEMPORARY TRAFFIC CONTROL DEVICES USED DURING CONSTRUCTION SHALL BE REMOVED FROM THE RIGHT-OF-WAY, THE ROADWAY SHALL BE RESTORED TO ALL TRAFFIC, AND THE SHOULDER SHALL BE MADE READY TO HANDLE TRAFFIC BY THE END OF EACH WORKDAY.

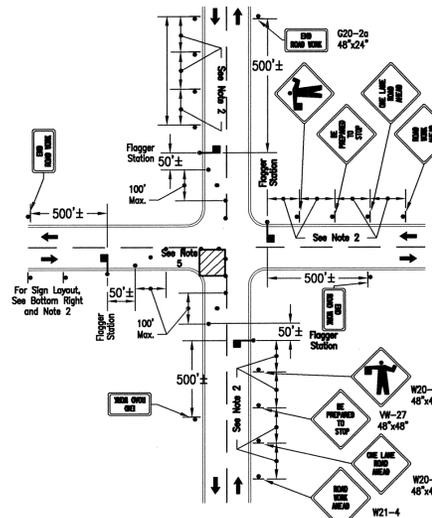
Table 6H-4 Flagger Distance from Work Space

*Speed (mph)	Distance (feet)
20	120
25	160
30	200
35	250
40	310
45	360
50	425
55	500
60	570
65	650

*Posted Speed of the Temporary Traffic Control Zone

PROJECT MAINTENANCE OF TRAFFIC

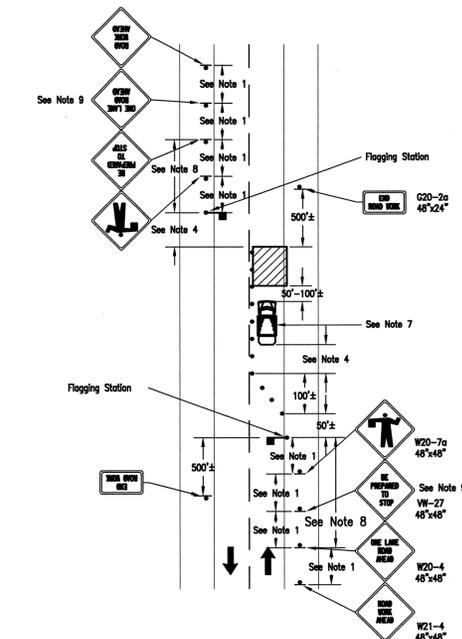
- MURRAY DRIVE - PHASE 1**
TWO-WAY TRAFFIC IS TO BE MAINTAINED AT ALL TIMES ALONG MURRAY DRIVE. LOCALIZED FLAGGING FOLLOWING DETAIL TTC-18.0 CAN BE USED ADJACENT TO THE CONSTRUCTION AREA.
 - THE CONTRACTOR IS TO COORDINATE WITH THE SCHOOL BOARD REGARDING THE TIMES THROUGHOUT THE DAY THAT SCHOOL BUSES NEED TO TRAVEL MURRAY DRIVE. THE CONTRACTOR IS TO MAKE ALLOWANCES IN HIS CONSTRUCTION AREA TO ALLOW FOR THEIR PASSAGE.
 - THE CONTRACTOR IS TO NOTIFY POLICE AND FIRE DEPARTMENTS OF THE CONSTRUCTION. THE CONTRACTOR IS TO MAKE ALLOWANCES IN HIS CONSTRUCTION AREA FOR THE PASSAGE OF EMERGENCY VEHICLES AT ANY TIME.
- WHITAMORE ROAD - PHASE 2**
WHITAMORE ROAD IS TO BE CLOSED TO THROUGH TRAFFIC, EXCEPT FOR EMERGENCY AND SCHOOL BUS TRAFFIC FOR THE CONSTRUCTION. SEE DETOUR PLAN SHEET T-5.
 - THE CONTRACTOR IS TO COORDINATE WITH THE SCHOOL BOARD REGARDING THE TIMES THROUGHOUT THE DAY THAT SCHOOL BUSES NEED TO TRAVEL WHITAMORE ROAD. THE CONTRACTOR IS TO MAKE ALLOWANCES IN HIS CONSTRUCTION AREA TO ALLOW FOR THEIR PASSAGE.
 - THE CONTRACTOR IS TO NOTIFY POLICE AND FIRE DEPARTMENTS OF THE CONSTRUCTION. THE CONTRACTOR IS TO MAKE ALLOWANCES IN HIS CONSTRUCTION AREA FOR THE PASSAGE OF EMERGENCY VEHICLES AT ANY TIME.



- NOTES:**
- The control of traffic through the intersection in order of preference should be:
 - Obtain the services of law enforcement personnel.
 - Divert the effective routes to other roads and streets as approved and directed by the District Traffic Engineer.
 - Place a state certified flagger on each leg of the intersection with the appropriate signing as shown.
 - Sign spacing distance 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.
 - On roadways having a median wider than 8', left and right sign assemblies shall be required.
 - Cone spacing shall be on 20' centers or less.
 - If room permits, a shadow vehicle with at least one rotating amber light or high intensity amber strobe light shall be parked 50'-100' in advance of the first work crew.
 - If the posted speed limit is 45 mph or greater, the shadow vehicle shall have a truck mounted attenuator.
 - For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating amber lights or high intensity amber strobe lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle.
 - Although vehicle hazard signals can be used to supplement the rotating lights or strobe lights, they shall not be used instead of rotating lights or strobe lights.
 - If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-25.0 of the VDOT 2005 Virginia Work Area Protection Manual.
 - Turns can be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might be physically impossible to make certain turns, especially for large vehicles.

TYPICAL TRAFFIC CONTROL CLOSURE OPERATION IN INTERSECTION - TTC-22.0

NOT TO SCALE



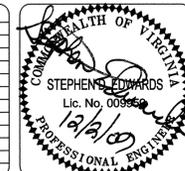
- NOTES:**
- Sign spacing distance should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.
 - Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Appendix A, Page A-8.
 - Where Right-of-Way or geometric conditions prevent the use of 48" x 48" signs, 36" x 36" signs may be used.
 - Flagging stations shall be located far enough in advance of the work zone to permit approaching traffic to reduce speed and/or stop before passing the work zone and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-4).
 - All flaggers shall be state certified and have their certification card in their possession when performing flagging duties.
 - Cone spacing shall be at the following:

Location	Speed (mph)	
	0-35	36+
Transition Spacing	20'	40'
Travelway Spacing	40'	80'
 - A shadow vehicle with at least one rotating amber light or high intensity amber strobe light shall be parked 50'-100' in advance of the first work crew.
 - A supplemental flagger may be required in this area to give advance warning of the operation ahead by slowing approaching traffic prior to reaching the flagger station or queued traffic.
 - If the queue of traffic reaches the "BE PREPARED TO STOP" sign, then the signs should be readjusted at greater distances.
 - When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see figure ttc-39.0 of the VDOT 2005 Virginia Work Area Protection Manual for additional information on highway-rail crossing).
 - At night, flagger stations shall be illuminated, except in emergencies.
 - Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet or less.
 - For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see chapter 6E of the VDOT 2005 Virginia Work Area Protection Manual).

FLAGGING OPERATION ON TWO-LANE ROAD DETAIL - TTC-18.0

NOT TO SCALE

REVISION	DESCRIPTIONS	DATE



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VIRGINIA BEACH, VIRGINIA 23452
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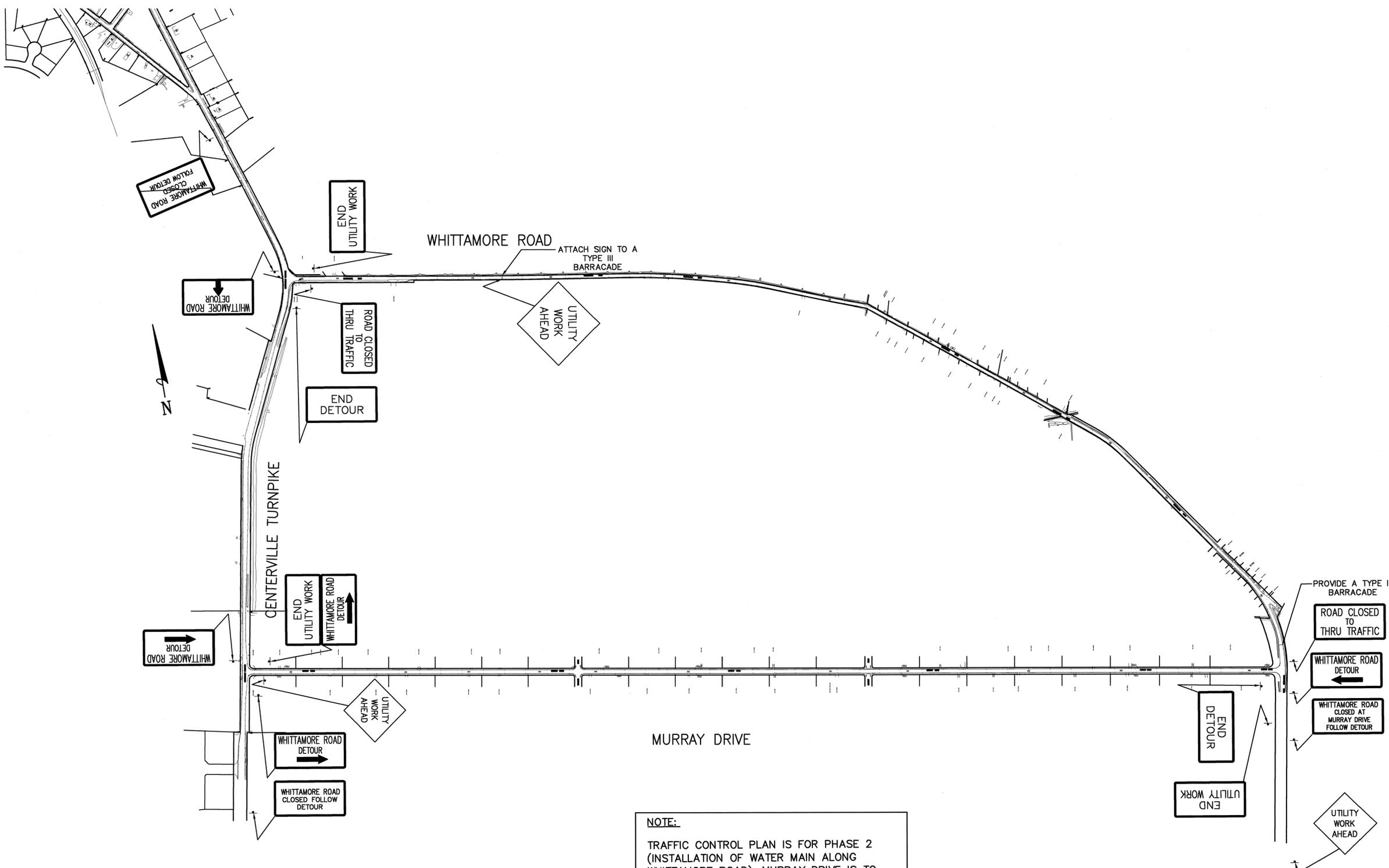


BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITAMORE ROAD

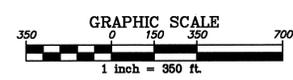
TRAFFIC CONTROL NOTES & DETAILS

DATE	12/2009	SCALE	HORIZONTAL	DWG NUMBER	4
PROJ. #	11657477	DRAWN	MES	SHEET NUMBER	T-4
DESIGNED	SDE	CHECKED	TGQ	REVISION	-
PROJ. MGR.	RAS	STATUS: CONTRACT DOCUMENTS			

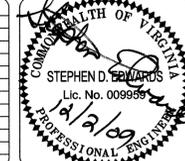
FILE NAME: O:\VA\11857470 - Battlefield GC Water Project\11857477 - Design - M-R\CAD\T-5_Traffic Plan.dwg LAYOUT NAME: traffic1 PLOTTED: Monday, December 07, 2009 - 9:20am



NOTE:
 TRAFFIC CONTROL PLAN IS FOR PHASE 2 (INSTALLATION OF WATER MAIN ALONG WHITTAMORE ROAD). MURRAY DRIVE IS TO REMAIN OPEN AT ALL TIMES. SEE SHEET T-4.



REV. NO.	DESCRIPTIONS / REVISIONS	DATE



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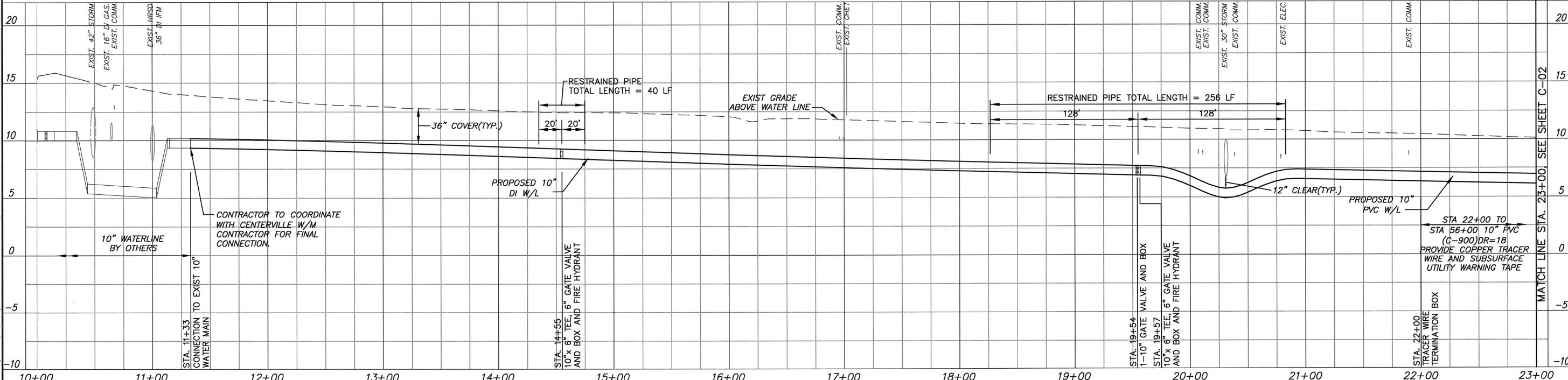
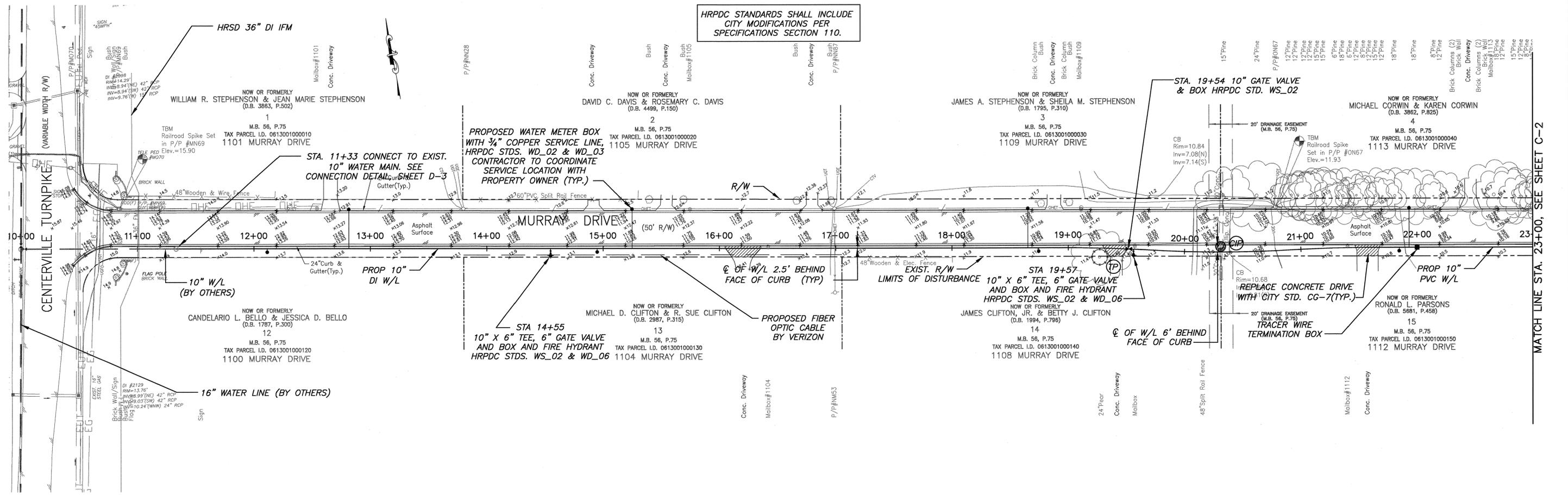
BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD

TRAFFIC CONTROL PLAN

DATE	12/2009
PROJ. #	11657477
DRAWN	MES
DESIGNED	SDE
CHECKED	TGQ
PROJ. MGR.	RAS

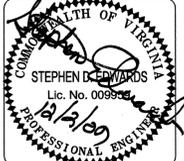
SCALE	DWG NUMBER
HORIZONTAL	5
VERTICAL	SHEET NUMBER
None	T-5
STATUS	REVISION
CONTRACT DOCUMENTS	-

HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.



FILE NAME: C:\VA\11657477 - Battlefield GC Water Project\11657477 - Design - M-R\030\c-1.dwg LAYOUT NAME: C-01 PLOTTED: Tuesday, December 29, 2009 - 2:15pm

NO.	DESCRIPTION	DATE



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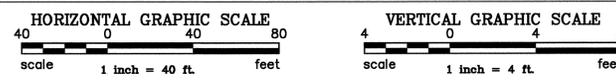
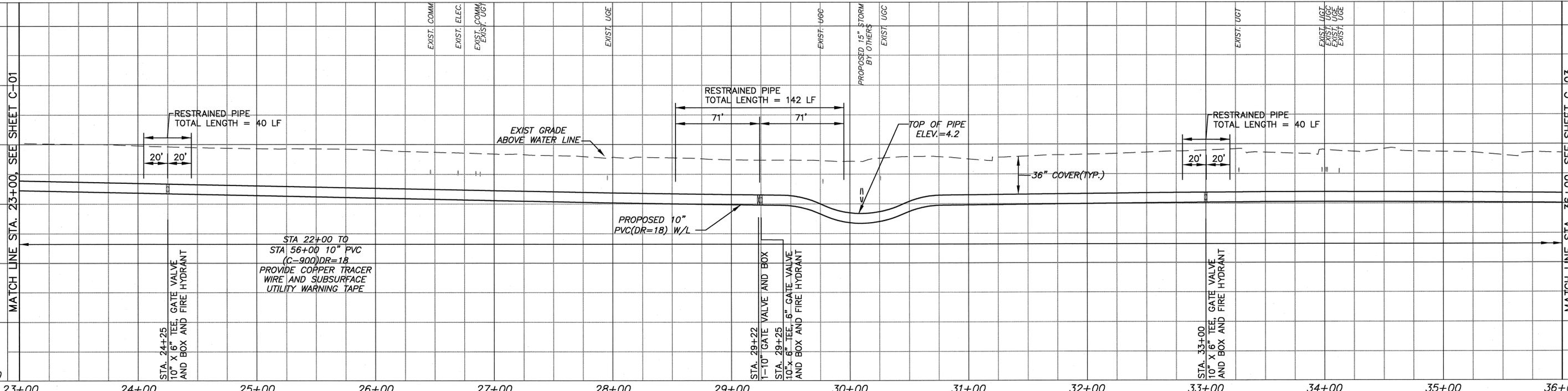
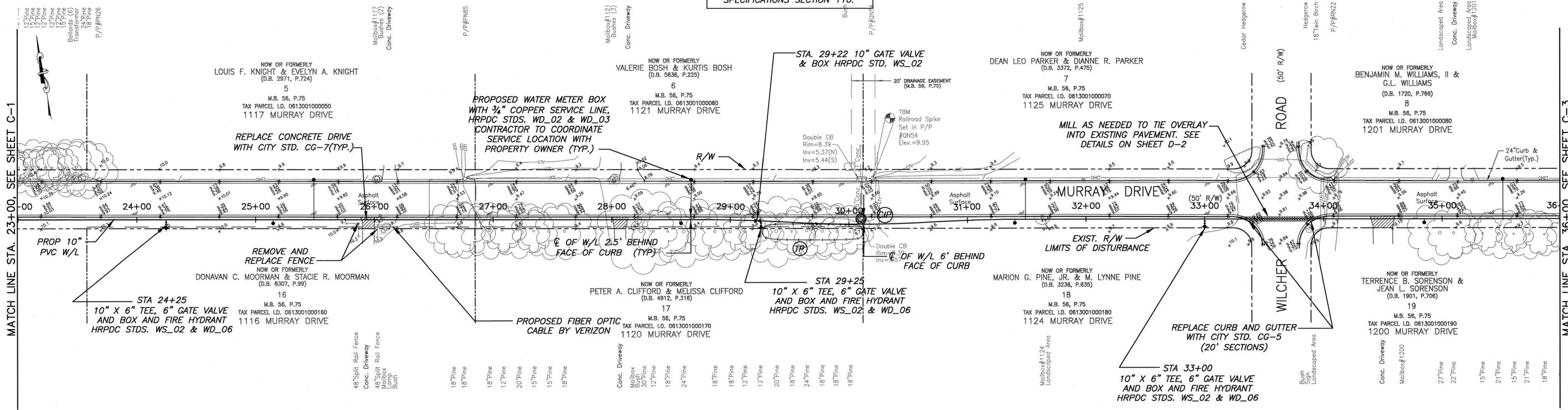
BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD
 MURRAY DRIVE PLAN & PROFILE
 STA. 11+33 TO STA. 23+00

DATE	12/2009	SCALE	HORIZONTAL 1"=40' VERTICAL 1"=4'	DWG NUMBER	6
PROJ. #	11657477	DRAWN	MES	SHEET NUMBER	C-1
DESIGNED	SDE	CHECKED	TGQ	REVISION	-
PROJ. MGR.	RAS	STATUS CONTRACT DOCUMENTS			

HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.

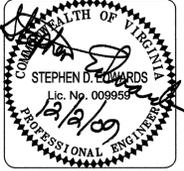
MATCH LINE STA. 23+00, SEE SHEET C-1

MATCH LINE STA. 36+00, SEE SHEET C-3



FILE NAME: G:\VA\11657477 - Battlefield GC Water Project\11657477 - Design - M-W\030\c-2a.dwg LAYOUT NAME: C-2 PLOTTED: Monday, January 04, 2010 - 11:27am

REV. NO.	DESCRIPTIONS	DATE



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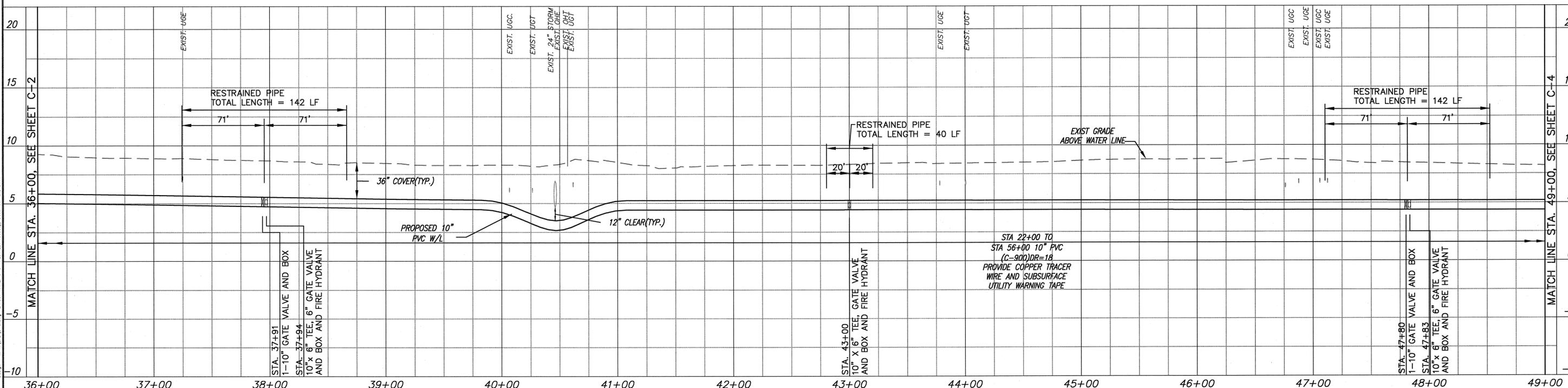
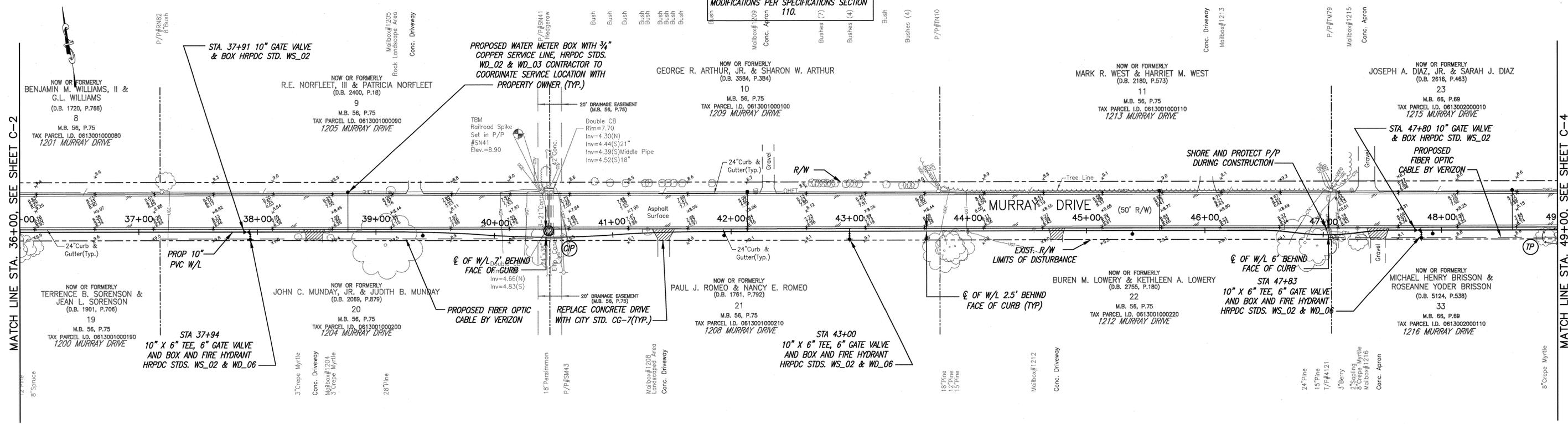
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BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITAMORE ROAD
 MURRAY DRIVE PLAN & PROFILE
 STA. 23+00 TO STA. 36+00

DATE	12/2009
PROJ. #	11657477
DRAWN	MES
DESIGNED	SDE
CHECKED	TGQ
PROJ. MGR.	RAS

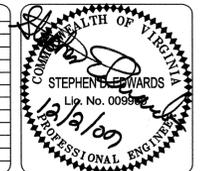
SCALE	HORIZONTAL 1"=40'
SCALE	VERTICAL 1"=4'
DWG NUMBER	7
SHEET NUMBER	C-2
STATUS	CONTRACT DOCUMENTS
REVISION	-

HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.



FILE NAME: D:\VA\11857470 - Battlefield GC Water Project\11857477 - Design - M-W\DWG\C-3.dwg LAYOUT NAME: C-3 PLOTTED: Tuesday, December 29, 2009 - 11:42am

REV. NO.	DESCRIPTIONS	DATE



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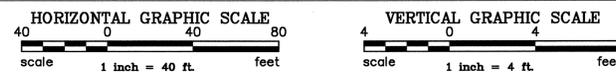
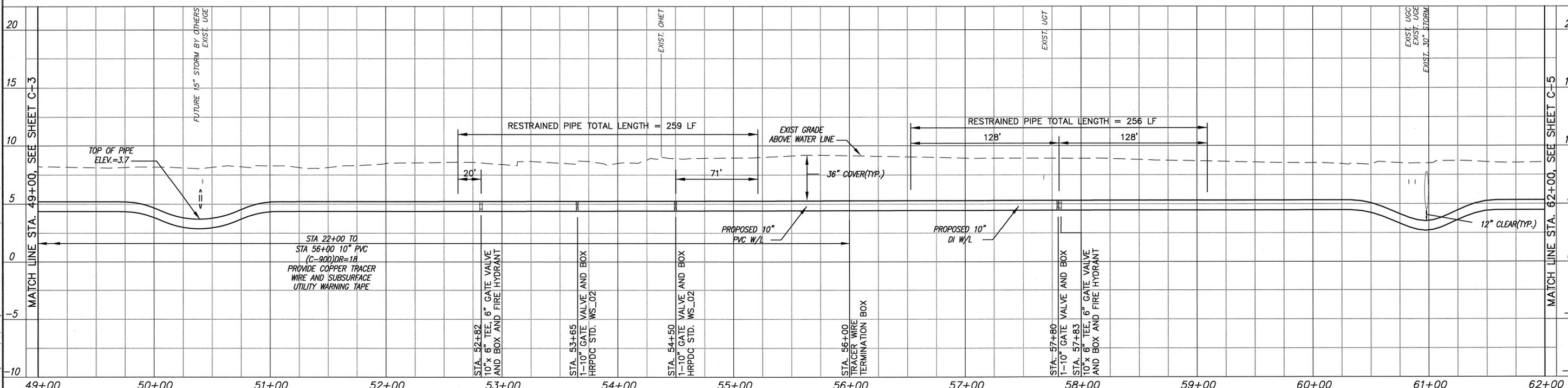
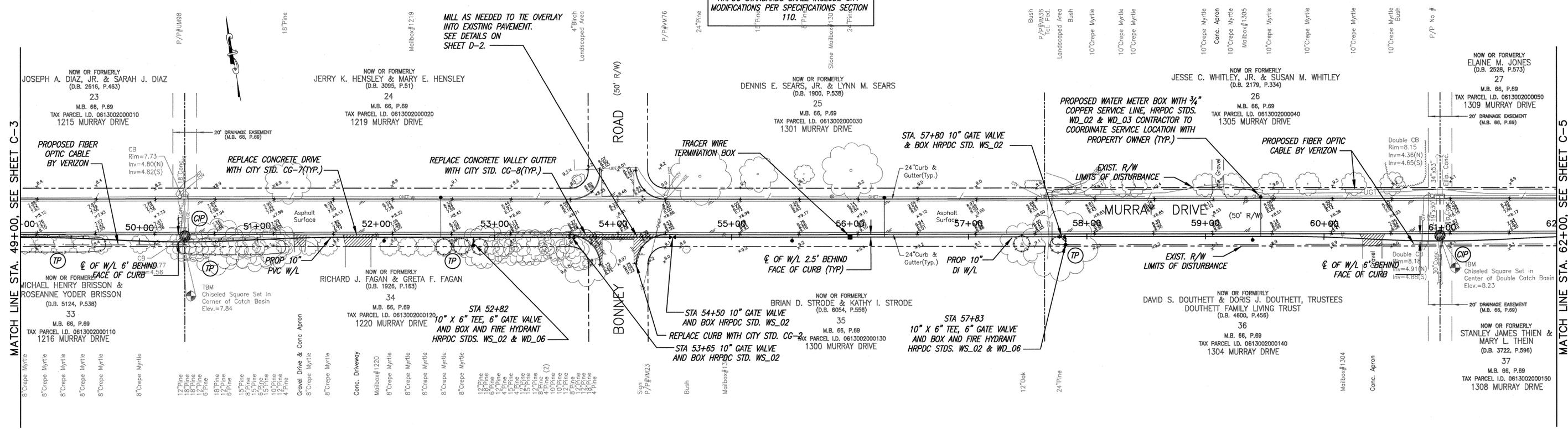


Chesapeake VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD
 MURRAY DRIVE PLAN & PROFILE
 STA. 36+00 TO STA. 49+00

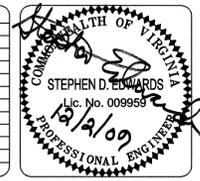
DATE	12/2009	SCALE	HORIZONTAL 1"=40' VERTICAL 1"=4'	DWG NUMBER	8
PROJ. #	11657477			SHEET NUMBER	C-3
DRAWN	MES				
DESIGNED	SDE				
CHECKED	TGQ				
PROJ. MGR.	RAS				
STATUS	CONTRACT DOCUMENTS			REVISION	-

HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.

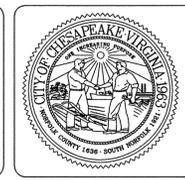


FILE NAME: C:\WA\11857470 - Battlefield GC Water Project\11857477 - Design - M-W\GDV\c-4.dwg LAYOUT NAME: C-04 PLOTTED: Tuesday, December 29, 2009 - 11:50am

REV. NO.	DESCRIPTIONS	DATE



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Chesapeake VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD
 MURRAY DRIVE PLAN & PROFILE
 STA. 49+00 TO STA. 62+00

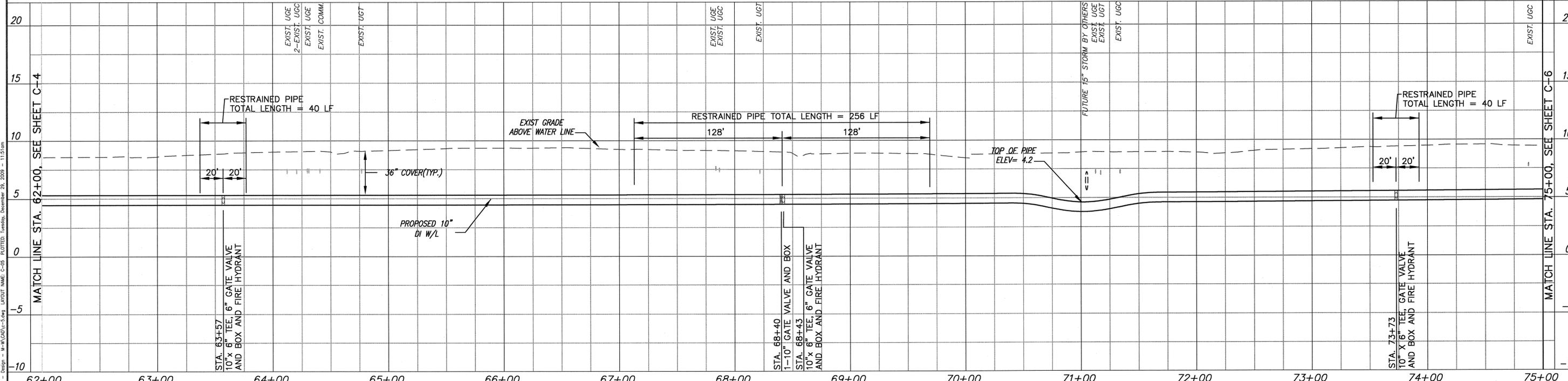
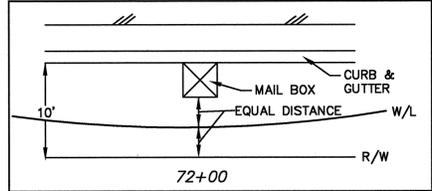
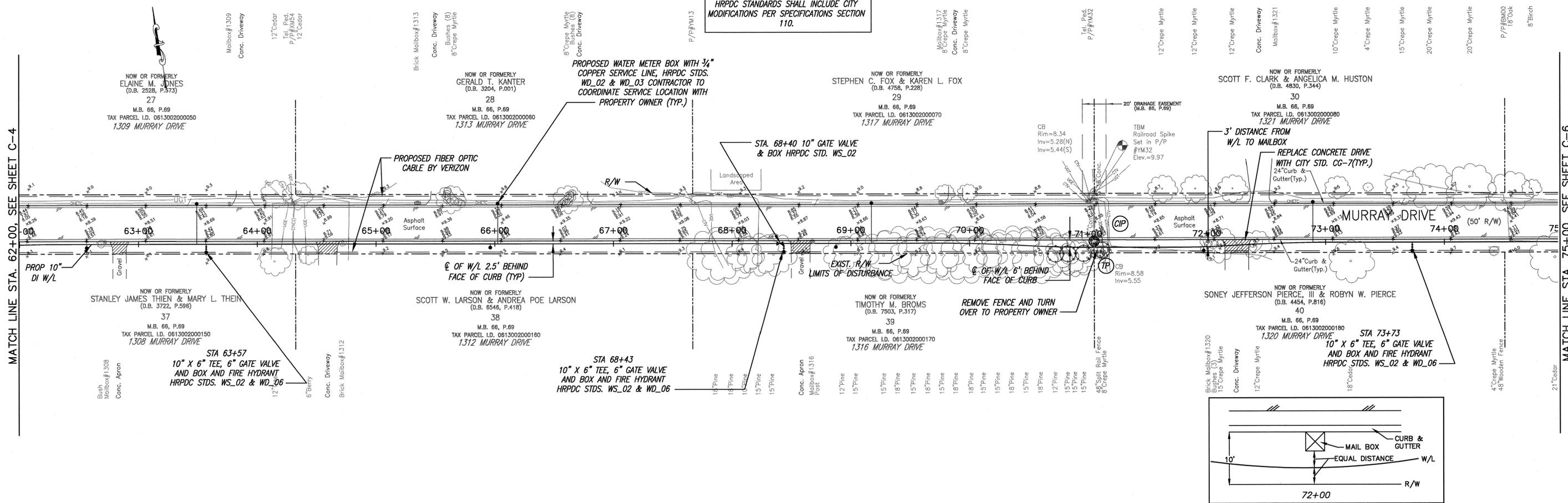
DATE	12/2009
PROJ. #	11657477
DRAWN	MES
DESIGNED	SDE
CHECKED	TGQ
PROJ. MGR.	RAS

SCALE	HORIZONTAL	1"=40'
	VERTICAL	1"=4'
DWG NUMBER	9	
SHEET NUMBER	C-4	
STATUS	CONTRACT DOCUMENTS	

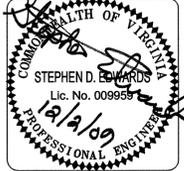
HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.

MATCH LINE STA. 62+00, SEE SHEET C-4

MATCH LINE STA. 75+00, SEE SHEET C-6



REF. NO.	DESCRIPTIONS	DATE



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BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD
 MURRAY DRIVE PLAN & PROFILE
 STA. 62+00 TO STA. 75+00

DATE	12/2009	SCALE	HORIZONTAL 1" = 40'	DWG. NUMBER	10
PROJ. #	11657477	VERTICAL	1" = 4'	SHEET NUMBER	C-5
DRAWN	MES	DESIGNED	SDE	CHECKED	TGQ
PROJ. MGR.	RAS	STATUS	CONTRACT DOCUMENTS	REVISION	-

FILE NAME: C:\N\11657477 - Battlefield GC Water Project\11657477 - Design - M:\CAD\c-5.dwg LAYOUT NAME: C-05 PLOTTED: Tuesday, December 29, 2009 - 11:53 am

MATCH LINE STA. 75+00, SEE SHEET C-5

MATCH LINE STA. 75+00, SEE SHEET C-5

75+00

76+00

77+00

78+00

79+00

80+00

81+00

82+00

83+00

84+00

85+00

20

15

10

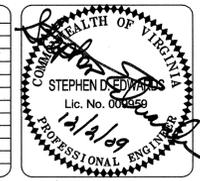
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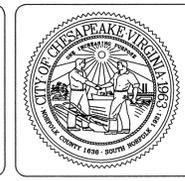
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-10

REV. NO.	DESCRIPTIONS	DATE



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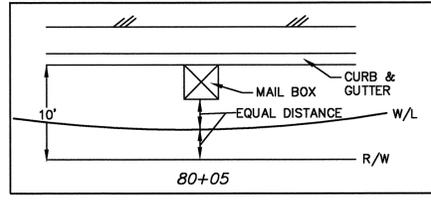
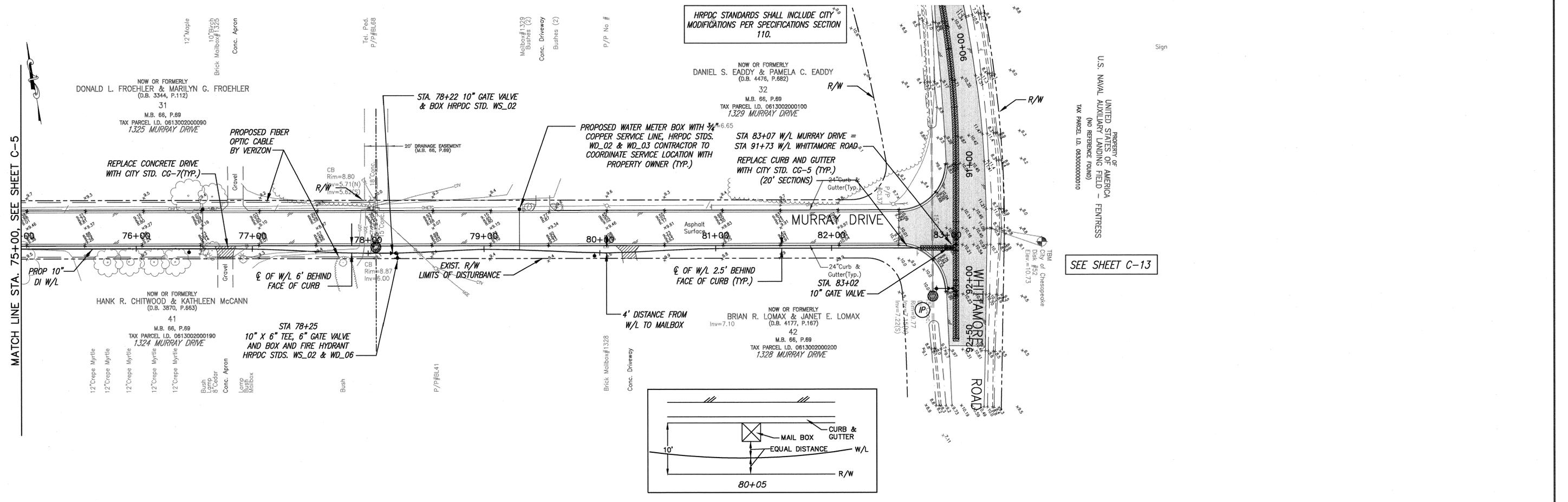
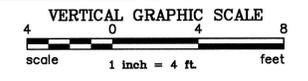
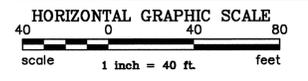
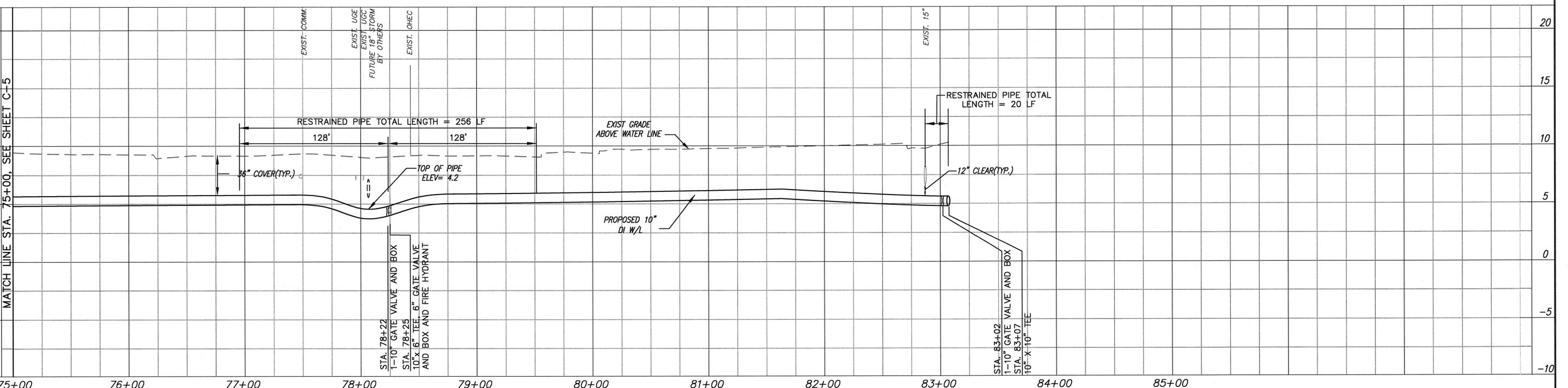
Chesapeake VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD
 MURRAY DRIVE PLAN & PROFILE
 STA. 75+00 TO STA. 83+07

DATE	12/2009
PROJ. #	11657477
DRAWN	MES
DESIGNED	SDE
CHECKED	TGQ
PROJ. MGR.	RAS

SCALE	1" = 40' HORIZONTAL 1" = 4' VERTICAL
DWG NUMBER	11
SHEET NUMBER	C-6
REVISION	-

STATUS: CONTRACT DOCUMENTS



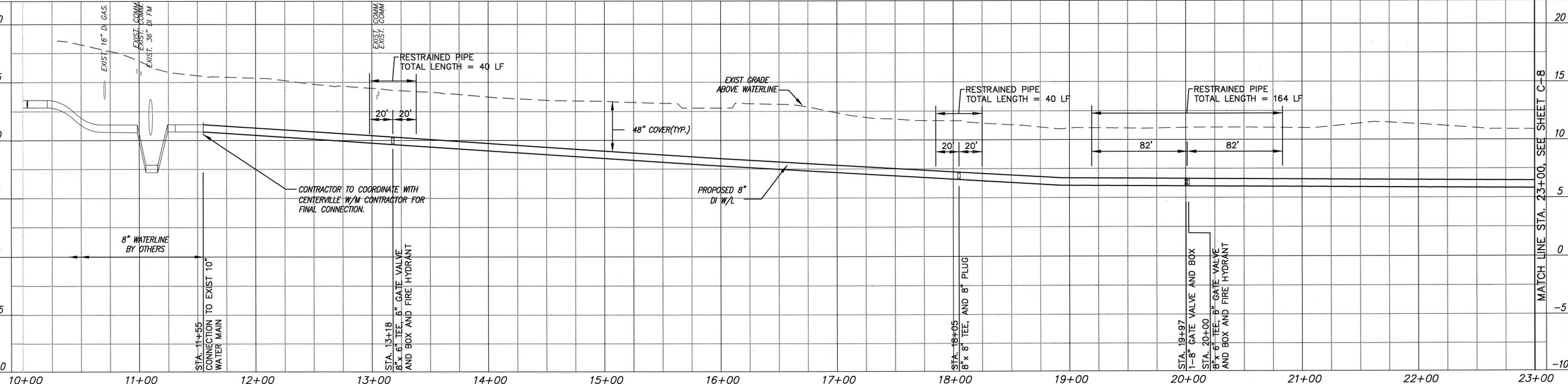
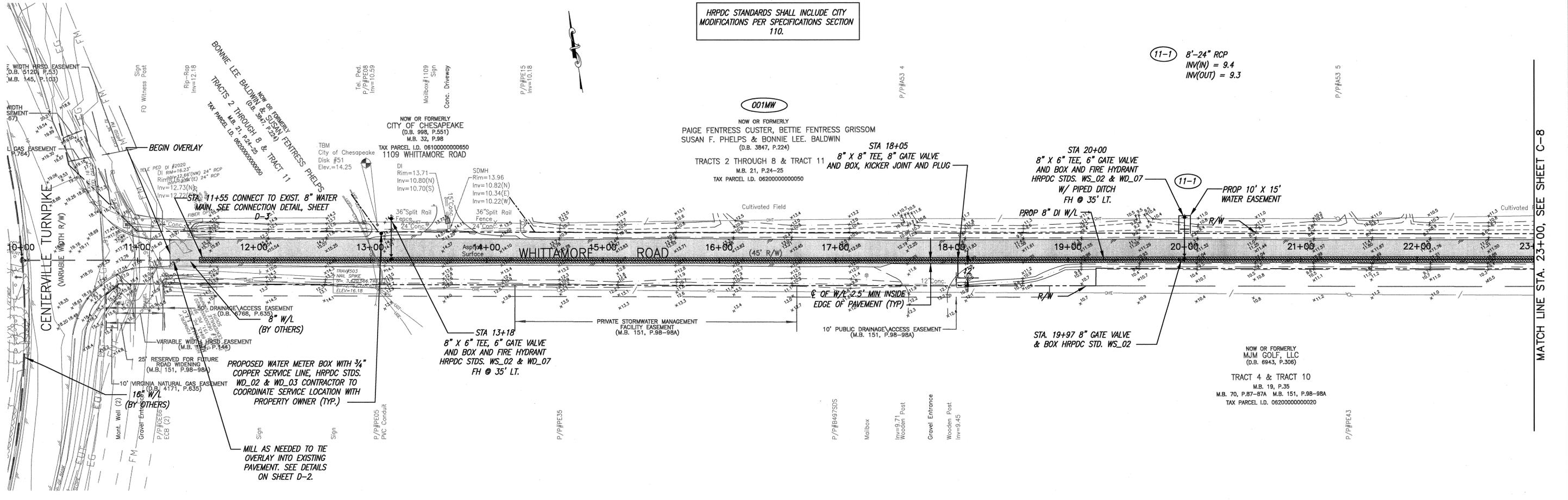
HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.

SEE SHEET C-13

PROPERTY OF AMERICA
 UNITED STATES OF AMERICA
 U.S. NAVAL AUXILIARY LANDING FIELD - FENTRESS
 (NO REFERENCE FOUND)
 TAX PARCEL I.D. 083000000010

FILE NAME: G:\VA\11657477 - Battlefield Golf Water Project\11657477 - Design - M-W\CAD\1-66.dwg LAYOUT NAME: C-06 PLOTTED: Tuesday, December 29, 2009 11:15:30am

HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.



FILE NAME: G:\VA\11657470 - Battlefield Golf Water Project\11657477 - Battlefield Golf Water Project\11657477.dwg LAYOUT NAME: C-07 PLOTTED: Wednesday, January 13, 2010 10:17am

MATCH LINE STA. 23+00, SEE SHEET C-8



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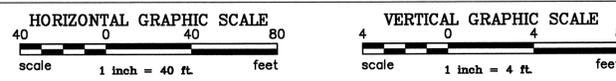
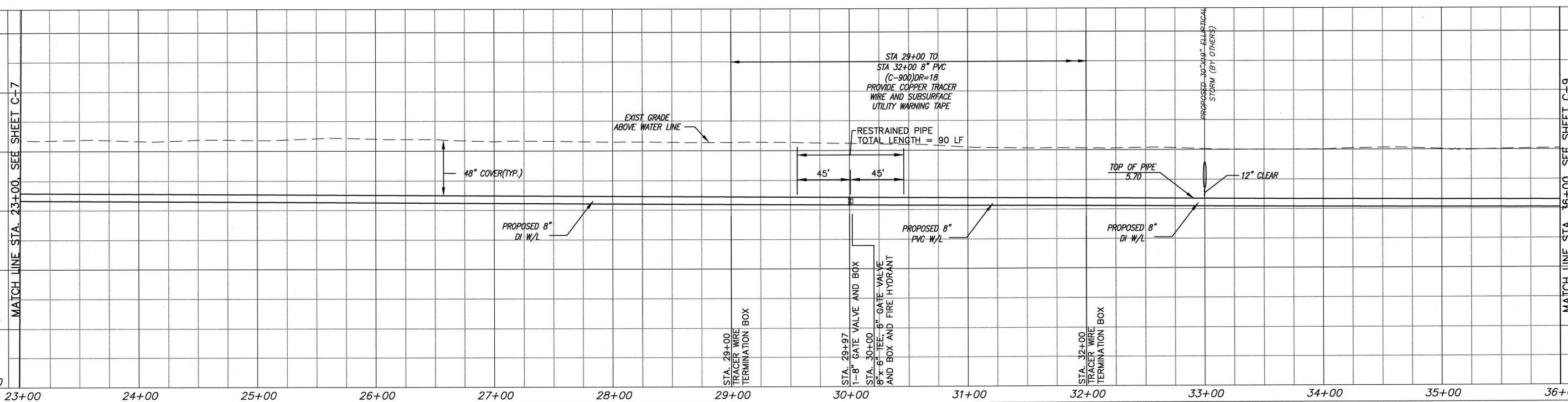
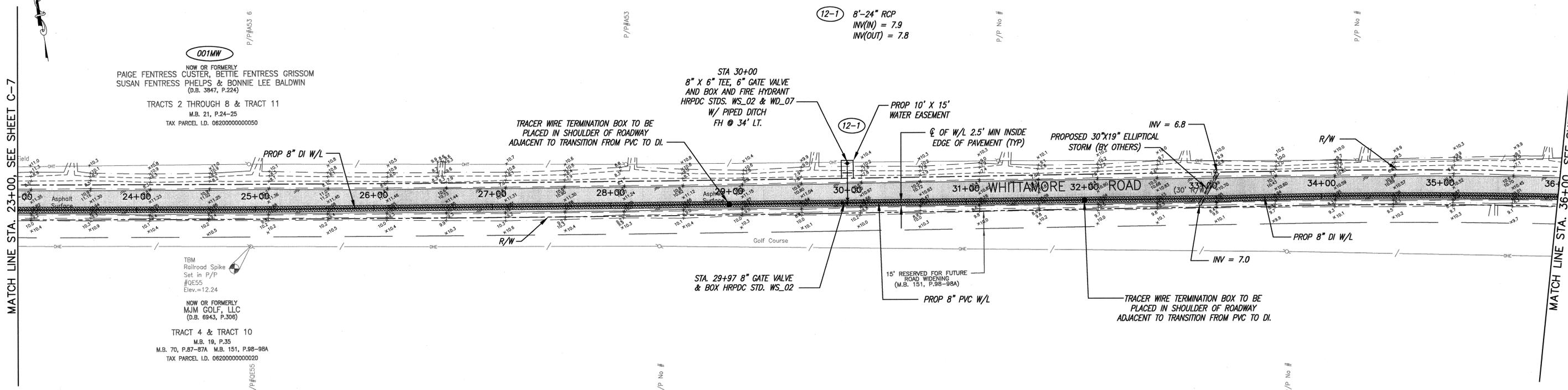


BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD

WHITTAMORE ROAD PLAN & PROFILE
STA. 10+00 TO STA. 23+00

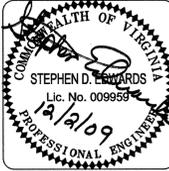
DATE: 12/2009	SCALE: 1"=40'	DWG NUMBER: 12
PROJ. #: 11657477	HORIZONTAL: 1"=40'	SHEET NUMBER: C-7
DRAWN: MES	VERTICAL: 1"=4'	
DESIGNED: SDE		
CHECKED: TGO		
PROJ. MGR: RAS		
STATUS: CONTRACT DOCUMENTS		REVISION: -

HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.



FILE NAME: C:\VA\11857470 - Battlefield GC Water Project\11857477 - Design - M\W\DW\c-8.dwg LAYOUT NAME: C-08 PLOTTED: Wednesday, January 13, 2010 - 10:22am

REV#	DESCRIPTION	DATE



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Chesapeake VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD
 WHITTAMORE ROAD PLAN & PROFILE
 STA. 23+00 TO STA. 36+00

DATE	12/2009
PROJ. #	11657477
DRAWN	MES
DESIGNED	SDE
CHECKED	TGQ
PROJ. MGR.	RAS

SCALE	1" = 40'
HORIZONTAL	1" = 40'
VERTICAL	1" = 4'
DWG NUMBER	13
SHEET NUMBER	C-8

STATUS	CONTRACT DOCUMENTS
REVISION	-

HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.

(13-1) 8'-24" RCP
INV(IN) = 6.6
INV(OUT) = 6.5

001MM

NOW OR FORMERLY
PAIGE FENTRESS CUSTER, BETTIE FENTRESS GRISSOM
SUSAN FENTRESS PHELPS & BONNIE LEE BALDWIN
(D.B. 3847, P.224)

STA 40+00
8" X 6" TEE, 6" GATE VALVE
AND BOX AND FIRE HYDRANT
HRPDC STDS. WS_02 & WD_07
W/ PIPED DITCH
FH @ 34' LT.

TRACTS 2 THROUGH 8 & TRACT 11
M.B. 21, P.24-25
TAX PARCEL I.D. 06200000000050

PROP 10' X 15'
WATER EASEMENT

PROPOSED 30"x19" ELLIPTICAL
STORM (BY OTHERS)

PROP 8" DI W/L
INV = 6.8

Q OF W/L 2.5' MIN INSIDE
EDGE OF PAVEMENT (TYP)

INV = 6.3

INV = 6.8

120' VEPCO EASEMENT
(D.B. 1559, P.386)

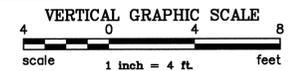
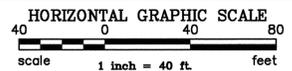
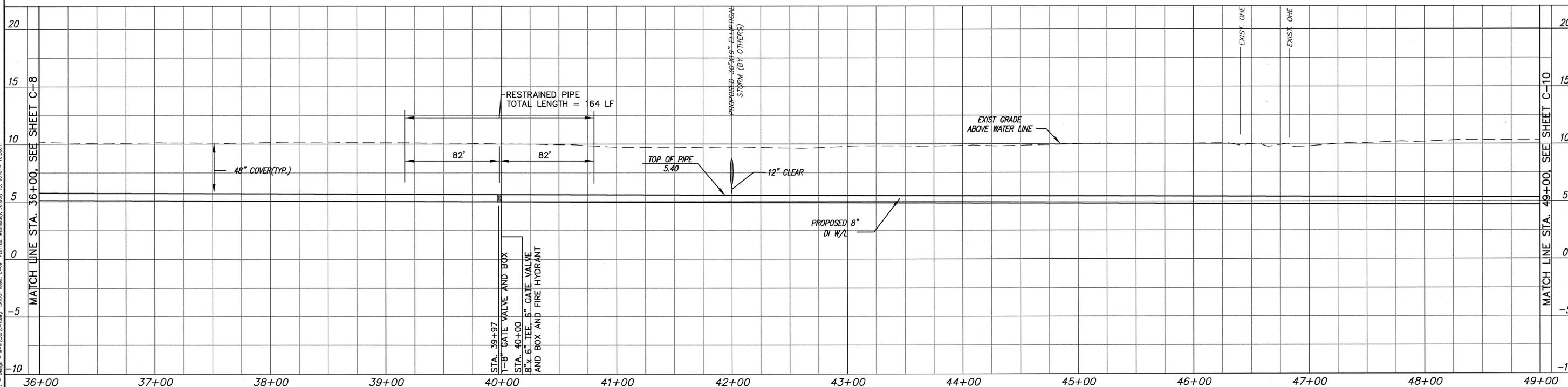
120' VEPCO EASEMENT
(D.B. 1605, P.512)

STA 39+97 8" GATE VALVE
& BOX HRPDC STD. WS_02

NOW OR FORMERLY
MJM GOLF, LLC
(D.B. 6943, P.306)
TRACT 4 & TRACT 10
M.B. 19, P.35
M.B. 70, P.87-87A M.B. 151, P.98-98A
TAX PARCEL I.D. 06200000000020

MATCH LINE STA. 36+00, SEE SHEET C-8

MATCH LINE STA. 49+00, SEE SHEET C-10



REVISION	DESCRIPTION	DATE



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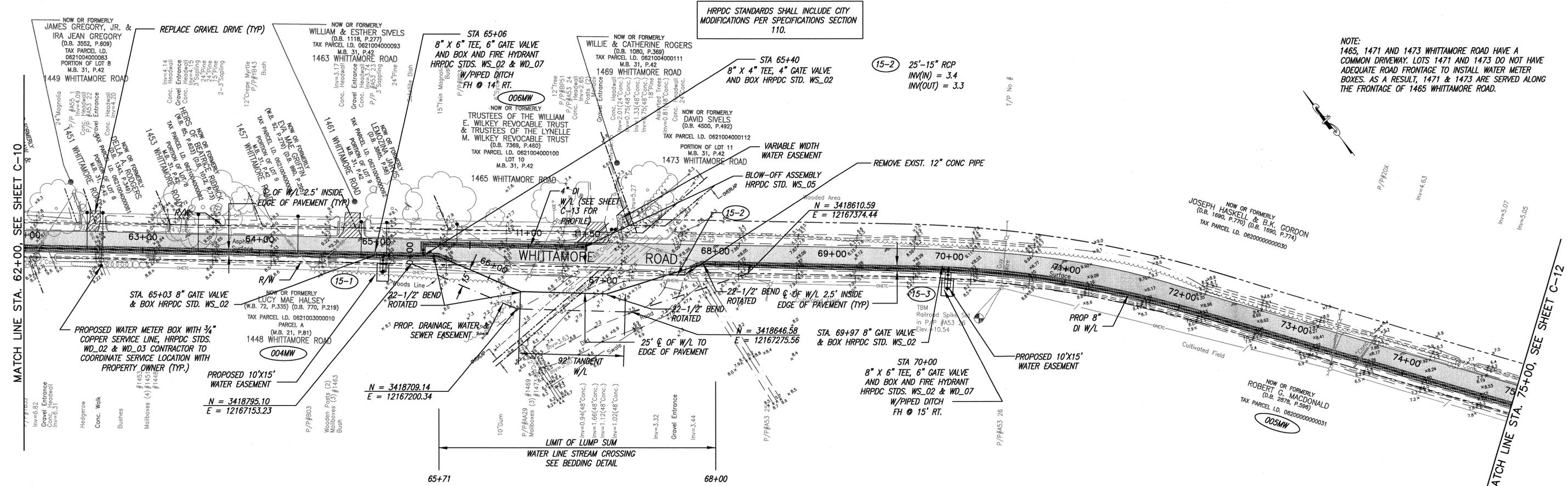
Chesapeake
VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD
WHITTAMORE ROAD PLAN & PROFILE
STA. 36+00 TO STA. 49+00

DATE	12/2009	SCALE	HORIZONTAL 1"=40' VERTICAL 1"=4'	DWG NUMBER	14
PROJ #	11657477	DRAWN	MES	SHEET NUMBER	C-9
DESIGNED	SDE	CHECKED	TGQ	REVISION	-
PROJ MGR.	RAS	CONTRACT DOCUMENTS			

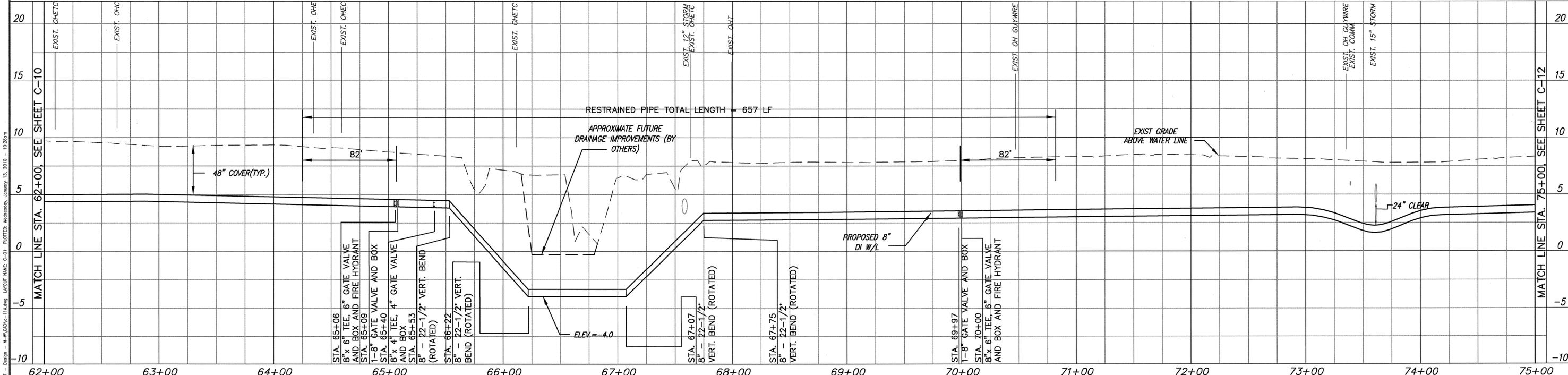
HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.

NOTE:
1465, 1471 AND 1473 WHITTAMORE ROAD HAVE A COMMON DRIVEWAY. LOTS 1471 AND 1473 DO NOT HAVE ADEQUATE ROAD FRONTAGE TO INSTALL WATER METER BOXES. AS A RESULT, 1471 & 1473 ARE SERVED ALONG THE FRONTAGE OF 1465 WHITTAMORE ROAD.

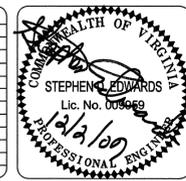


15-1 8'-15" RCP
INV(IN) = 5.7
INV(OUT) = 5.6

15-3 8'-15" RCP
INV(IN) = 6.3
INV(OUT) = 6.2



NO.	DESCRIPTION	DATE



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Chesapeake VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD
 WHITTAMORE ROAD PLAN & PROFILE
 STA. 62+00 TO STA. 75+00

DATE	12/2009
PROJ. #	11657477
DRAWN	MES
DESIGNED	SDE
CHECKED	TGQ
PROJ. MGR.	RAS

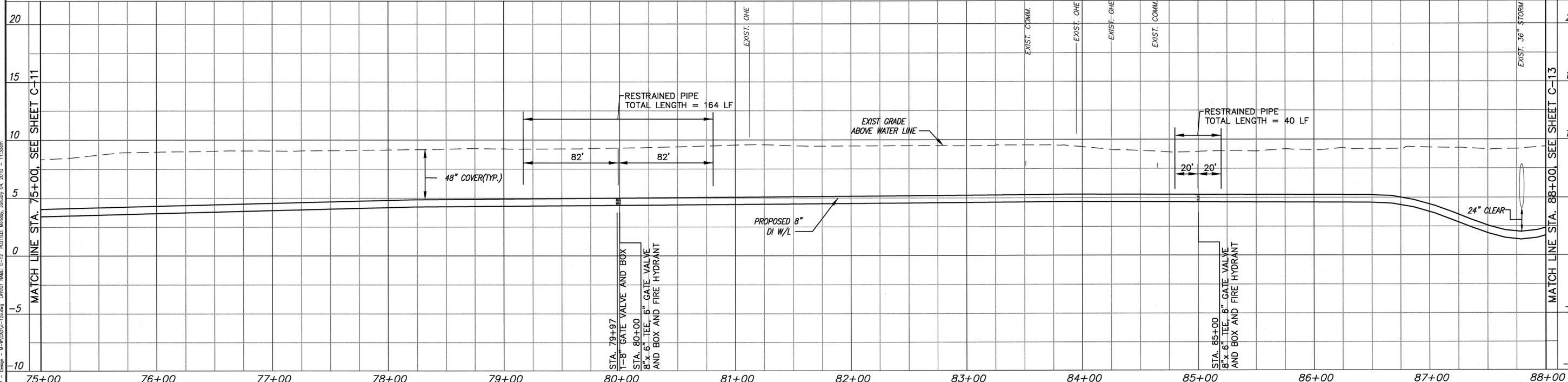
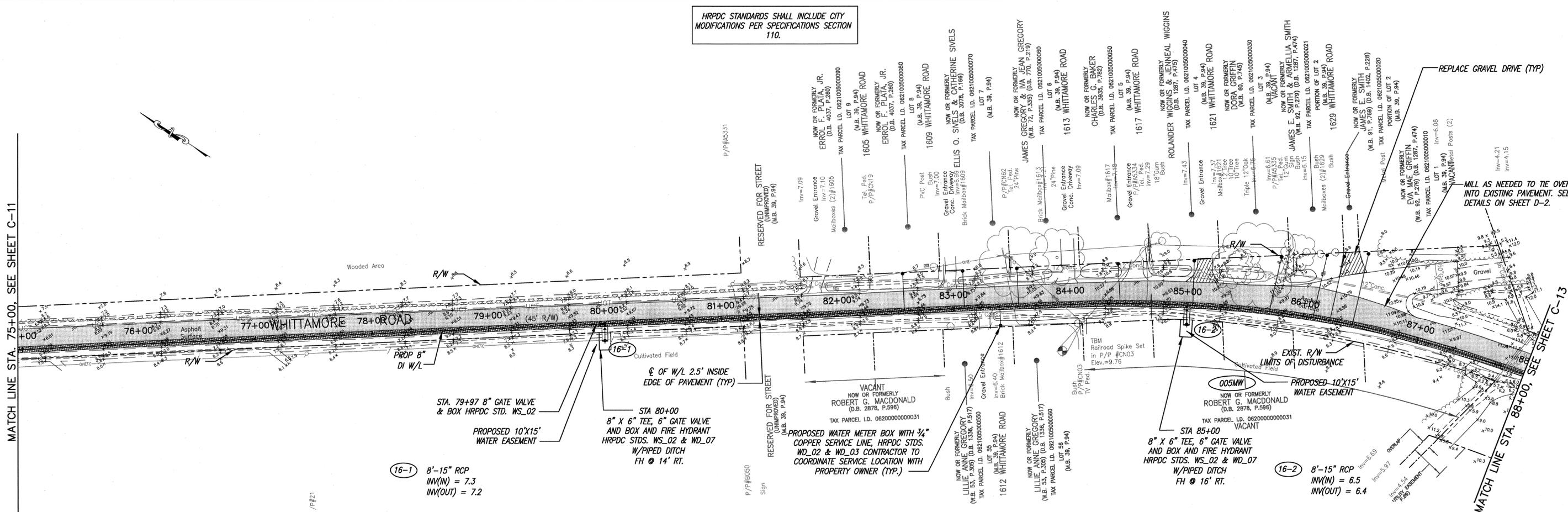
SCALE	HORIZONTAL 1"=40'
VERTICAL 1"=4'	
DWG. NUMBER	16
SHEET NUMBER	C-11
STATUS	CONTRACT DOCUMENTS
REVISION	-

FILE NAME: O:\VA\11657477 - Battlefield Golf Water Project\11657477 - Design - M\DWG\C-11.dwg LAYOUT NAME: C-01 PLOTTED: Wednesday, January 13, 2010 - 10:28am

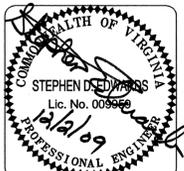
HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.

MATCH LINE STA. 75+00, SEE SHEET C-11

MATCH LINE STA. 88+00, SEE SHEET C-13



REV. NO.	DESCRIPTIONS	DATE



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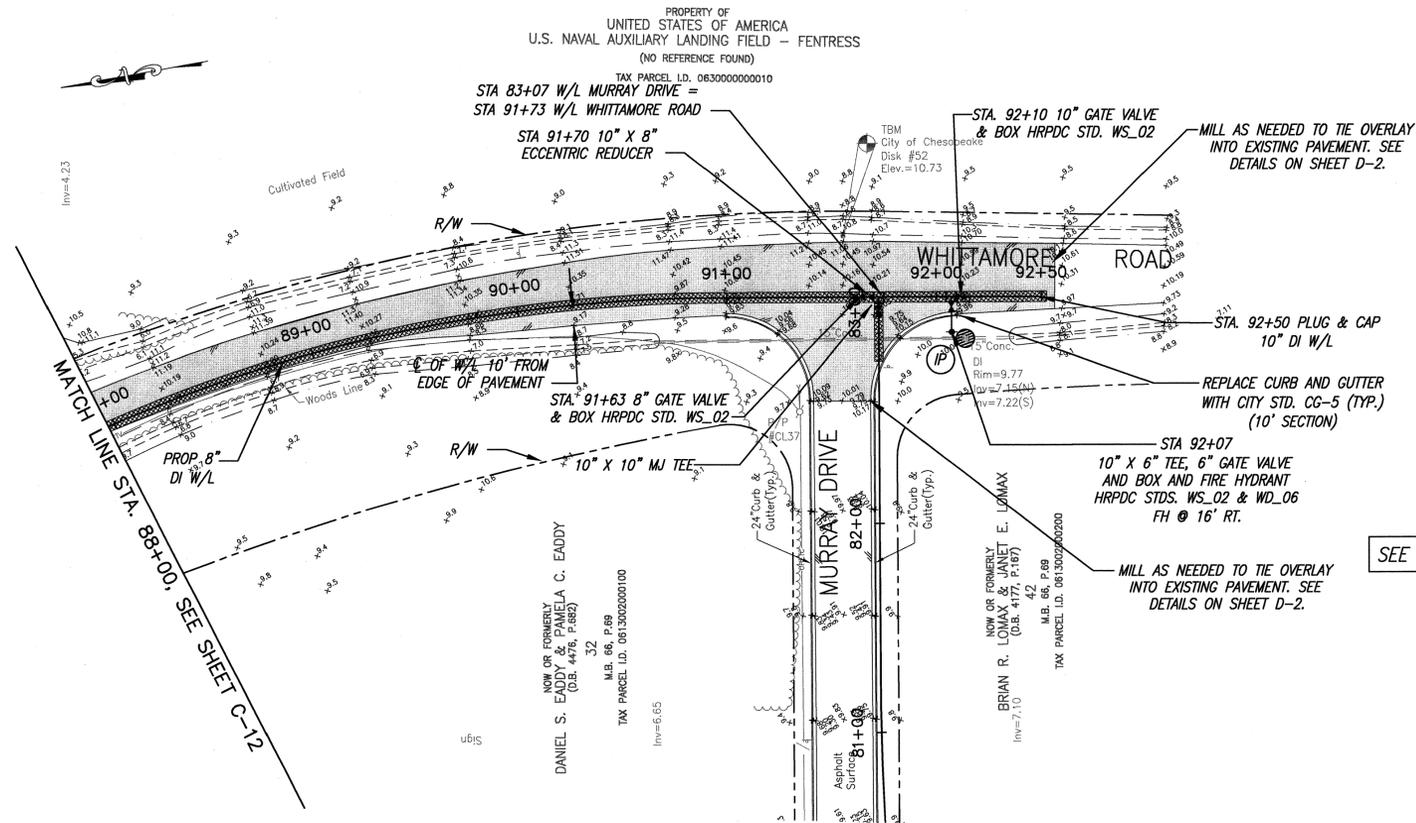
Chesapeake VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITAMORE ROAD
 WHITAMORE ROAD PLAN & PROFILE
 STA. 75+00 TO STA. 88+00

DATE: 12/2009	SCALE: HORIZONTAL 1"=40'	DWG NUMBER: 17
PROJ. #: 11657477	VERTICAL 1"=4'	SHEET NUMBER: C-12
DRAWN: MES	CHECKED: TGO	PROJ. MGR: RAS
DESIGNED: SDE	STATUS: CONTRACT DOCUMENTS	

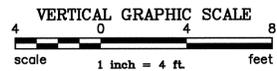
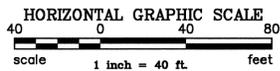
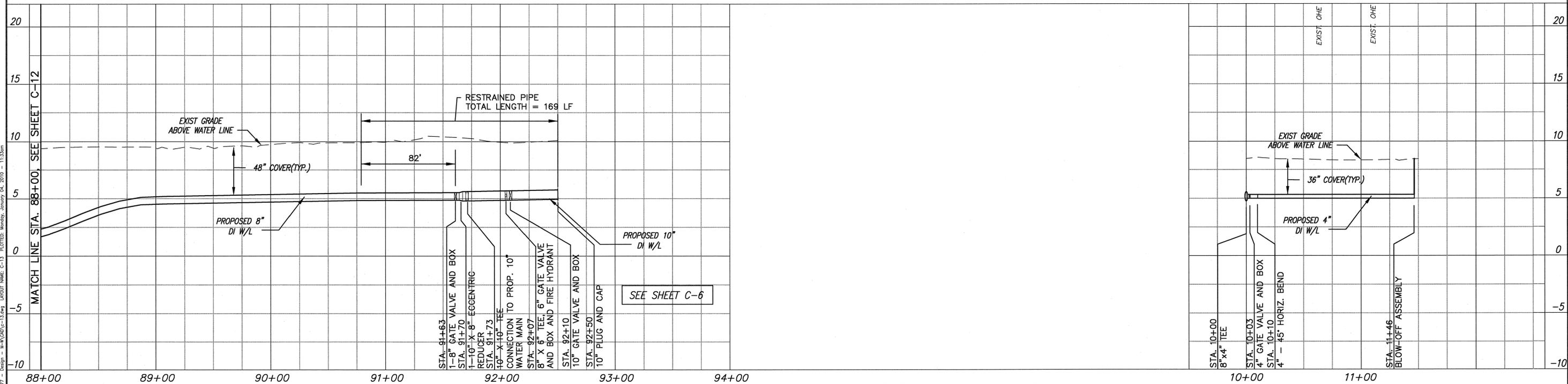
FILE NAME: C:\VAD\11657477 - Battlefield Golf Water Project\11657477 - Design - M-W\00\1-12a.dwg LAYOUT NAME: C-12 PLOTTED: Monday, January 04, 2010 - 11:30am

HRPDC STANDARDS SHALL INCLUDE CITY MODIFICATIONS PER SPECIFICATIONS SECTION 110.



SEE SHEET C-06

4" SERVICE LINE PROFILE - SEE SHEET C-11



FILE NAME: O:\V\11857470 - Battlefield GC Water Project\11857477 - Design - M-R\CD\11857470 - 11.3.09 LAYOUT NAME: C-13 PLOTTED: Monday, January 04, 2010 - 11:33am

REV. NO.	DESCRIPTION	DATE



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BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD

WHITTAMORE ROAD PLAN & PROFILE
 STA. 88+00 TO STA. 92+53

DATE	12/2009
PROJ. #	11657477
DRAWN	MES
DESIGNED	SDE
CHECKED	TGQ
PROJ. MGR.	RAS

SCALE	DWG. NUMBER
HORIZONTAL 1" = 40'	18
VERTICAL 1" = 4'	SHEET NUMBER
	C-13
STATUS	REVISION
CONTRACT DOCUMENTS	-

MANAGEMENT STRATEGIES AND SEQUENCE OF EROSION CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE LATEST EDITION OF THE VE&SC AND VE&SC HANDBOOK.

THE FOLLOWING SEQUENCE OF EVENTS AND EROSION CONTROL MEASURES SHALL BE INCORPORATED INTO THE CONSTRUCTION SCHEDULE FOR THIS PROJECT AND SHALL APPLY TO ALL CONSTRUCTION ACTIVITIES WITHIN PROJECT LIMITS:

1. A. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS LARGER LAND DISTURBING ACTIVITIES.
- B. CONSTRUCTION TRAFFIC SHALL BE LIMITED TO ACCESS ROADS. ALL TRAFFIC IS PROHIBITED FROM CROSSING DRAINAGE SWALES AND STREAMS EXCEPT WHERE ABSOLUTELY NECESSARY (STD. & SPEC. 3.24 VE&SC HANDBOOK).
2. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND GRUBBING OR THE FIRST PHASE OF CONSTRUCTION.
3. ALL PERMANENT STORM WATER MANAGEMENT FACILITIES INCLUDING EROSION CONTROL ARE TO BE INSTALLED AND MADE OPERATIONAL AT THE START OF CLEARING OPERATIONS, INCLUDING APPROVED SEDIMENT BASINS.
4. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN THIRTY (30) DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT.
5. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
6. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FENCING, FLAGS, SIGNS, ETC.
7. A. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN THIRTY (30) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.
- B. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES OR SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- C. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR HIS DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION. VEGETAL COVER SHALL BE ESTABLISHED AS FOLLOWS:
 - SEED PER VOLUME III OF THE PFM
 - TOPSOIL 4" THICK, PER VDOT SPEC. 602 (CLASS B)
 - LIME 4000#/AC.
 - FERTILIZER 1000#/AC. OF 10-10-10
 - MULCH 2000#/AC

(HYDROSEEDING MAY BE USED IN PLACE OF MULCHING ON AREAS OTHER THAN DITCH BANKS.) STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIVERSIONS, AND DITCH OR WATERCOURSE BEDS AND BANKS IMMEDIATELY AFTER INSTALLATION (STD. & SPEC. 3.36 VE&SC HANDBOOK).
8. A. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- B. BEFORE NEWLY CONSTRUCTED CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
9. A. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
- B. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.
10. PERIODIC INSPECTIONS AND REQUIRED MAINTENANCE MUST BE PROVIDED, ESPECIALLY AFTER EACH SIGNIFICANT STORM. THE PROJECT SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
11. THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE (1) WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE, ONE (1) WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE (1) WEEK PRIOR TO THE FINAL INSPECTION.
12. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
13. GRAVEL CURB INLET FILTERS USED FOR STORM DRAIN INLET PROTECTION SHALL BE COMPLETELY WRAPPED IN WIRE MESH.
14. THE LIMITS OF DISTURBANCE SHALL BE THE CURB LINE AND RIGHT-OF-WAY ALONG THE SOUTH OF MURRAY DRIVE. THE LIMITS OF DISTURBANCE WILL BE THE RIGHT-OF-WAY OR EASEMENT LINE ALONG WHITTAMORE ROAD.

STD & SPEC	EROSION AND SEDIMENT CONTROL PRACTICE	KEY	SYMBOL
3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
3.07	STORM DRAIN INLET PROTECTION	IP	
3.08	CULVERT INLET PROTECTION	CIP	
3.18	OUTLET PROTECTION	OP	
3.20	ROCK CHECK DAMS	CD	
3.30	TOP SOILING	TO	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.36	SOIL STABILIZATION BLANKETS AND MATTING	EC-3	
3.38	TREE PRESERVATION AND PROTECTION	TP	
3.39	DUST CONTROL	DC	

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

LAND USE	SEED ¹		APPLICATION RATES
	SPECIES		
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)		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.
			93-108 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		0-15 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

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

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

February, March - April	Annual Rye
May 1 st - August	Foral Millet
September, October - November 16 th	Annual Rye
November 16 th - 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.html#pubs>

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

APPLICATION DATES	SEED		APPLICATION RATES
	SPECIES		
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)		50 - 100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (lolium 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:

- 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.html#pubs>

EROSION & SEDIMENT CONTROL NARRATIVE

THE INSTALLATION OF THE NEW WATER MAIN WILL RESULT IN THE DISTURBANCE OF 1.78 ACRES OF LAND, MOSTLY ALONG THE SOUTH OF MURRAY DRIVE. AREAS WITHIN THE ROADWAY OR ASSOCIATED WITH SERVICE LINES ARE NOT CONSIDERED IN THE TOTAL DISTURBANCE AREA. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED ALONG THE ENTIRE PROJECT IN ORDER TO TRAP SEDIMENT ON SITE.

PROJECT DESCRIPTION

1. TYPE: SUBDIVISION COMMERCIAL/INDUSTRIAL SITE OTHER
2. SIZE: TOTAL 15.92 ACRES; DISTURBED AREA 1.78 ACRES
3. NUMBER OF LOTS OR PARCELS CREATED 0
4. NATURE OF PROPOSED IMPROVEMENTS:
 - STREETS
 - STORM DRAINAGE (DITCHES) PIPED SYSTEM(S)
 - STORMWATER RETENTION BASIN(S) ("WET" "DRY")
 - WATER DISTRIBUTION
 - GRAVITY SEWER

EXISTING SITE CONDITIONS:

1. PREVAILING SLOPES (EXCEPT FOR DRAINAGE WAYS): 0-1% 1-2% OVER 2%
2. TREE DENSITY: NONE LIGHTLY WOODED MODERATELY WOODED HEAVILY WOODED
3. GROUND COVER: BARE EARTH GRASS WOODS CROP UNDERBRUSH
 - DECAYING LEAVES
 - FOREST LITTER
 - OTHER
4. EXISTING DRAINAGE FACILITIES (SEE PLAN):
 - PIPED SYSTEM(S)
 - DITCHES
 - NATURAL DRAWS OR RAVINE (S)
 - OPEN WATER
5. SOILS: TYPE (AGRONOMIST'S DESIGNATION):

INTERLAYERED FINE AND COARSE-GRAINED SOILS. THE FINE-GRAINED SOILS GENERALLY CONSIST OF CLAYS AND SILTS CONTAINING VARYING AMOUNTS OF SAND. THESE SOILS ARE GENERALLY NORMALLY TO SLIGHTLY PRECONSOLIDATED, POORLY GRADED SANDS, SILTY SANDS AND CLAYEY SANDS USUALLY MAKE UP THE COARSE-GRAINED SOILS. THE COARSE-GRAINED SOILS MAY CONTAIN GRAVEL.

6. ADJOINING PROPERTY: THE AREA CONSISTS OF LARGE RESIDENTIAL LOTS, FARMLAND AND A GOLF COURSE.

CRITICAL EROSION AREAS:

SLOPES ARE GENERALLY FLAT AND SEDIMENT CAN EASILY BE TRAPPED ON SITE. THE STREAM CROSSING AT STA. 67+00 ON WHITTAMORE ROAD IS A CRITICAL EROSION SITE IN TERMS OF TRAPPING SEDIMENT ON THE SITE AND STABILIZING SLOPES AFTER CONSTRUCTION.

MAINTENANCE:

IN GENERAL, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED AFTER EACH RAINFALL OR WEEKLY, WHICHEVER IS MOST FREQUENT, AND SHOULD BE CLEANED AND REPAIRED ACCORDING TO THE FOLLOWING SCHEDULE:

1. THE CHECK DAMS, INLET PROTECTION DEVICES, AND OUTLET PROTECTION DEVICES WILL BE CHECKED REGULARLY FOR SEDIMENT CLEANDOUT.
2. EROSION AND SEDIMENT CONTROL WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION AND BUILDUP OR CLOGGING WITH SEDIMENT. CORRECTIVE ACTION WILL BE TAKEN IMMEDIATELY.
3. ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEED AS NEEDED.
4. ALL TEMPORARY EROSION AND SEDIMENT MEASURES SHALL BE REMOVED OR WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED AND VEGETATION IS ESTABLISHED.

CONSTRUCTION SEQUENCING:

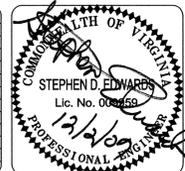
1. INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES IN WORK AREA AND DOWNSTREAM.
2. GRADE SITE.
3. INSTALL UNDERGROUND UTILITIES.
4. MAINTAIN SEDIMENT TRAPS AT STORMWATER INLETS.
5. REPAIR ANY INADVERTENT EROSION AND REMOVE ANY INADVERTENT SEDIMENTATION.
6. DRESS AND OVERSEED ALL DISTURBED AREAS.
7. REMOVE REMAINING TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WITHIN THIRTY DAYS AFTER FINAL SITE STABILIZATION.

MAINTENANCE

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDER CUTTING.
3. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY 1/2 THE BARRIER HEIGHT.
5. ANY SEDIMENT DEPOSITS REMAINING SHALL BE DRESSED TO CONFORM WITH EXISTING GRADE, PREPARED AND SEEDED.

FILE NAME: C:\VA\11857470 - Battlefield GC Water Project\11857477 - Design - M-PR\CAD\1-L-5-2009.dwg LAYOUT NAME: D-1 PLOTTEE: Monday, December 07, 2009 - 9:32am

REVNO	DESCRIPTIONS	DATE



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277 BENDIX ROAD, SUITE 500
VIRGINIA BEACH, VIRGINIA 23452
PHONE: (757)499-4224 FAX: (757)473-8214

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Chesapeake VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD

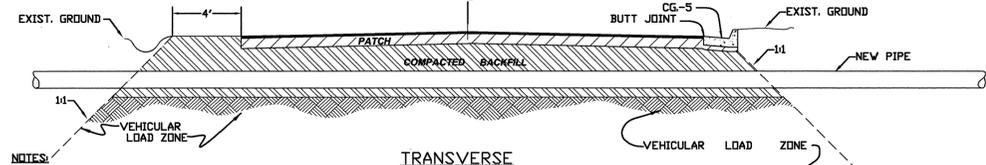
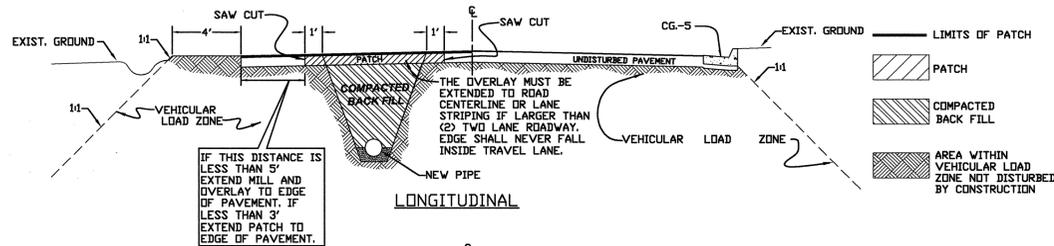
EROSION AND SEDIMENT CONTROL NOTES

DATE	12/2009
PROJ. #	11657477
DRAWN	MES
DESIGNED	SDE
CHECKED	TGQ
PROJ. MGR.	RAS

SCALE	
HORIZONTAL	None
VERTICAL	None

DWG NUMBER	19
SHEET NUMBER	D-1

STATUS	CONTRACT DOCUMENTS
REVISION	-

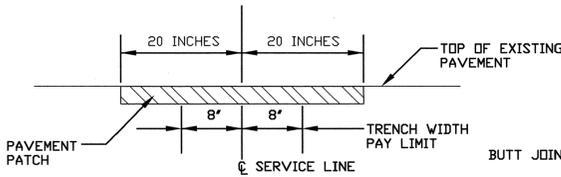


- NOTES:**
- ALL BACKFILL LOCATED WITHIN THE VEHICULAR LOAD ZONE IS TO BE PLACED IN LIFTS NOT TO EXCEED 6" AND COMPACTED TO 95% OF THE MAXIMUM THEORETICAL DENSITY, DETERMINED IN ACCORDANCE WITH VTM-1 METHOD.
 - ALL BACKFILL OUTSIDE THE VEHICULAR LOAD ZONE BUT LOCATED IN THE RIGHT OF WAY IS TO BE COMPACTED TO 90% OF THE MAXIMUM DENSITY IN LIFTS NOT TO EXCEED 12".
 - THE LACK OF PROPER COMPACTION EQUIPMENT OR THE USE OF IMPROPER COMPACTION METHODS SHALL BE CAUSE FOR THE IMMEDIATE SHUT DOWN OF WORK BY THE DEPARTMENT OF PUBLIC WORKS.
 - DENSITY TESTS SHALL BE PERFORMED AT THE EXPENSE OF THE CONTRACTOR WHEN REQUESTED BY THE DEPARTMENT OF PUBLIC WORKS.
 - ALL BACKFILL MATERIAL WILL BE IN ACCORDANCE WITH PFM VOLUME 3
 - SURFACE TOLERANCES SHALL NOT EXCEED 1/4 INCH WHEN TESTED WITH A TEN FOOT STRAIGHT EDGE PLACED AT ANY TWO CONTACTS WITH THE SURFACE. ALL HUMPS OR DEPRESSIONS EXCEEDING THE SPECIFIED TOLERANCE SHALL BE CORRECTED OR THE DEFECTIVE WORK REMOVED AND REPLACED WITH NEW MATERIAL BY THE CONTRACTOR. THIS TOLERANCE SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE OF PUBLIC IMPROVEMENTS BY THE CITY.
 - RELOCATION OF MAILBOXES DURING CONSTRUCTION SHALL BE COORDINATED WITH THE PROPERTY OWNER. MAILBOXES SHALL REMAIN ACCESSIBLE TO THE POSTAL SERVICE AT ALL TIMES DURING ALL PHASES OF THE PROPOSED IMPROVEMENTS.
 - THE CONTRACTOR SHALL PROVIDE CONTINUOUS ACCESS TO EXISTING RESIDENCES ALONG THE ROADWAY AT ALL TIMES DURING ALL PHASES OF THE PROPOSED IMPROVEMENTS. ALL DRIVEWAYS DISTURBED ARE TO BE RESTORED WITH IDENTICAL MATERIALS AND THICKNESS OR BETTER.

PC-1 PAVEMENT CUT DETAIL
NOT TO SCALE

PAVEMENT REPLACEMENT

- I. PAVEMENT REPLACEMENT IS COMPRISED OF TWO PARTS:
- PAVEMENT PATCHING FOR THE UTILITY TRENCH
 - PAVEMENT REPAIR FOR PAVEMENT OUTSIDE THE LIMITS OF PAVEMENT PATCHING. PAVEMENT REPAIR PERTAINS TO WHITTAMORE ROAD ONLY.
- II. PAVEMENT REMOVED FOR THE INSTALLATION OF WATER LINE OR SERVICE CONNECTIONS SHALL BE REPLACED INITIALLY WITH THE DESIGN BELOW. THE EXTENT OF THE REPLACEMENT WILL BE AS DEFINED ON DETAILS PC-1, PC-2 AND PC-4 AND PAVEMENT PATCHING PAY LIMIT DETAILS.



PAVEMENT PATCHING PAY LIMIT FOR WHITTAMORE DRIVE SERVICE LINES
NOT TO SCALE

NOTE: THE INSTALLATION OF SERVICE LINES CROSSING MURRAY DRIVE IS TO BE BY TRENCHLESS METHODS.

III PAVEMENT REPAIR - WHITTAMORE ROAD

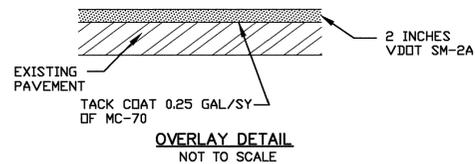
AFTER THE COMPLETION OF THE PAVEMENT PATCHING FOR INSTALLATION OF THE WATER AND SERVICE LINES, THE CITY AND THE ENGINEER WILL MAKE A DETERMINATION OF THE NEED AND EXTENT OF ADDITIONAL PAVEMENT REPAIR ALONG WHITTAMORE ROAD.

THE CONTRACTOR WILL REMOVE THE EXISTING PAVEMENT AND SUBGRADE WITHIN THESE AREAS AND INSTALL THE INITIAL PAVEMENT PATCHING SECTION.

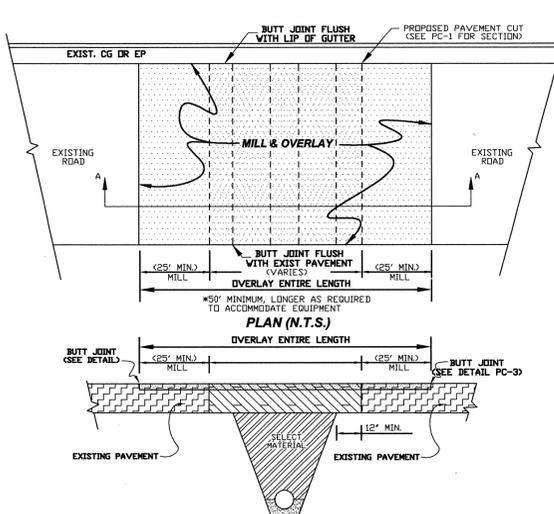
IV FINAL PAVEMENT INSTALLATION

AFTER ALL PAVEMENT REPLACEMENT AND REPAIR IS COMPLETED, THE FINAL RESTORATION WILL BE AS FOLLOWS:

- BONNEY AND WILCHER ROADS: MILL 2-INCHES OF EXISTING PAVEMENT AND REPLACE WITH THE DESIGN BELOW. LIMITS OF MILLING AND OVERLAY TO BE AS SHOWN IN DETAIL PC-2. TIE INTO EXISTING PAVEMENT AS PER DETAIL THIS SHEET.
- WHITTAMORE ROAD: MILL 2-INCHES OF PAVEMENT AT TIE INS TO EXISTING PAVEMENT (AS PER DETAIL THIS SHEET) AND OVERLAY PAVEMENT WITH THE DESIGN BELOW. LIMITS OF OVERLAY TO BE AS SHOWN ON THE PLANS.



OVERLAY DETAIL
NOT TO SCALE



SECTION 1A-A (N.T.S.)

PC-2 MUST BE CONSTRUCTED IN ACCORDANCE WITH ALL PC-1 REQUIREMENTS IN ADDITION TO THE FOLLOWING REQUIREMENTS.

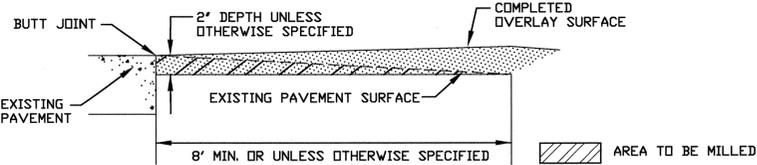
A. CONTRACTOR TO MAINTAIN PAVEMENT PATCH DURING THE INITIAL SETTLEMENT PHASE, WHICH SHALL BE AFTER COMPLETION OF THE INITIAL PATCH.

B. AFTER 6 MONTHS THE CONTRACTOR SHALL MILL AND OVERLAY THE INITIAL PATCH AND THE AREA EXTENDING 25' ON BOTH SIDES OF THE PATCH. THE MILL AND OVERLAY SHALL BE BETWEEN 1/4" TO 2". THIS WIDTH MAY NEED TO BE INCREASED DEPENDING ON THE PAVING EQUIPMENT NECESSARY TO PERFORM THE WORK. THE ASSISTANT CITY ENGINEER MAY WAIVE THE REQUIREMENT TO MILL AND OVERLAY THE PATCH AND THE SURROUNDING AREA, IF IT IS DETERMINED THE INITIAL PATCH IS CONSISTENT WITH THE REMAINING ROADWAY.

C. THE SURFACE COURSE OVERLAY (1/4" TO 2") SHALL REESTABLISH THE ORIGINAL GRADE AND PROVIDE A SMOOTH TRANSITION WITH THE EXISTING PAVEMENT.

D. EQUIPMENT TO COMPLETE THE WORK SHALL CONSIST OF A PAVEMENT ROLLER TYPICALLY USED FOR FULL LANE WIDTH PAVING (I.E. ROLLERS NEED TO BE MINIMUM 6' WIDE).

PC-2 PAVEMENT CUT DETAIL ENHANCED RELIABILITY REQUIREMENTS - TRENCH
NOT TO SCALE

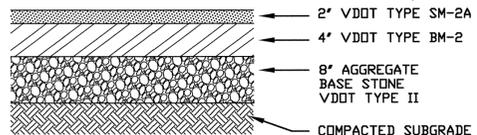


M-3 TYPICAL SECTION FOR TYING OVERLAY TO EXISTING PAVEMENT (MODIFIED DETAIL)
NOT TO SCALE

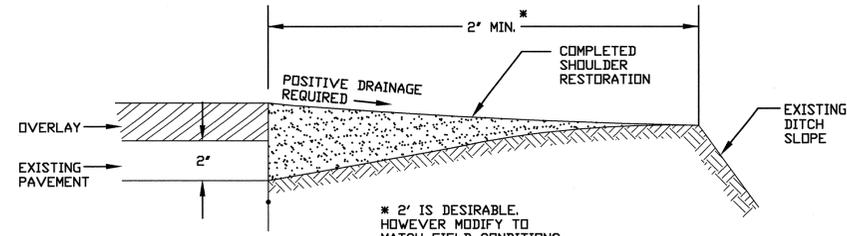
- THE PAVEMENT PATCHING AND PAVEMENT REPAIR DESIGN FOR WHITTAMORE ROAD MAY BE ADJUSTED BY THE ENGINEER BASED ON CONSTRUCTION IMPACTS.
- IF IN THE OPINION OF THE CITY OR THE ENGINEER PAVEMENT BEYOND THE PAY LIMITS FOR PAVEMENT PATCH MUST BE REPLACED DUE TO POOR CONSTRUCTION METHODS, THE CONTRACTOR SHALL REPLACE THE PAVEMENT WITH THE FINAL PAVEMENT DESIGN AT NO ADDITIONAL COST TO THE CITY.

V NOTES:

- THE CONTRACTOR SHALL CONDUCT THE CONSTRUCTION IN SUCH A MANNER AS TO MINIMIZE DAMAGE TO THE SURROUNDING PAVEMENT BEYOND THE PAVEMENT REPLACEMENT LIMITS FOR WATER LINE OR SERVICE LINES.
- THE UNIT BID PRICES FOR PAVEMENT REPLACEMENT AND PAVEMENT REPAIR SHALL INCLUDE THE REPLACEMENT OF PAVEMENT MARKINGS.
- IF THE PAVEMENT PATCH WIDTH EXCEEDS THE PAY LIMITS, THE WIDTH OF THE PAVEMENT PATCH SHALL BE EXTENDED TO 12-INCHES BEYOND THE DISTURBED LIMIT AT NO ADDITIONAL COST TO THE CITY.

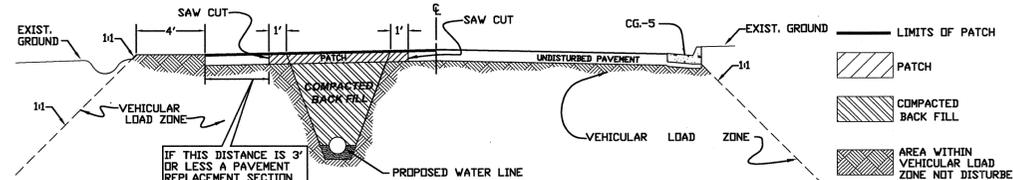


FINAL PAVEMENT DESIGN
NOT TO SCALE



SR-B SHOULDER RESTORATION UTILIZING AGGREGATE (MODIFIED DETAIL)
NOT TO SCALE

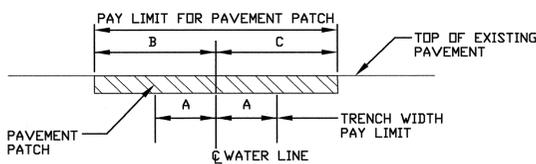
COMPLETE SHOULDER RESTORATION VDOT # 21A, 21B AGGREGATE OR VDOT CRUSHER RUN OR CRUSHED HYDRAULIC CEMENT CONCRETE SIZE 25 OR 26



- RELOCATION OF MAILBOXES DURING CONSTRUCTION SHALL BE COORDINATED WITH THE PROPERTY OWNER. MAILBOXES SHALL REMAIN ACCESSIBLE TO THE POSTAL SERVICE AT ALL TIMES DURING ALL PHASES OF THE PROPOSED IMPROVEMENTS.
- THE CONTRACTOR SHALL PROVIDE CONTINUOUS ACCESS TO EXISTING RESIDENCES ALONG MURRAY DRIVE AND WHITTAMORE ROAD AT ALL TIMES DURING ALL PHASES OF THE PROPOSED IMPROVEMENTS. ALL DRIVEWAYS DISTURBED ARE TO BE RESTORED WITH IDENTICAL MATERIALS AND THICKNESS OR BETTER.

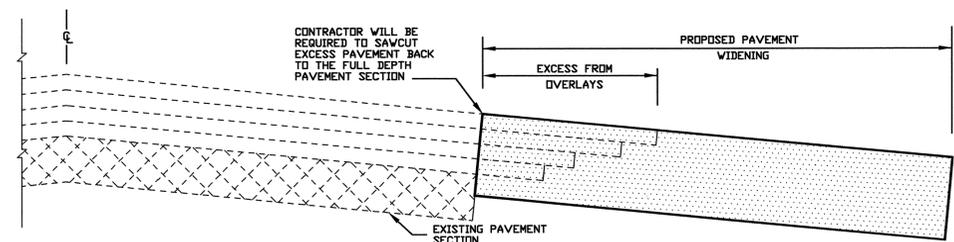
PC-4 PAVEMENT CUT DETAIL
NOT TO SCALE

INITIAL PAVEMENT PATCHING
NOT TO SCALE



STREET	A	B	C
WHITTAMORE DRIVE	2'	3'	3' OR TO EXIST. EDGE OF PAVEMENT
BONNEY ROAD	13 INCHES	3'	3'
WILCHER ROAD	13 INCHES	3'	3'

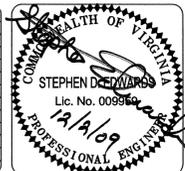
PAVEMENT PATCHING PAY LIMIT FOR WATER LINE
NOT TO SCALE



PC-3 PAVEMENT WIDENING DETAIL PAVEMENT TIE IN DETAILS
NOT TO SCALE

FILE NAME: C:\VA\11857470 - Battlefield Golf Water Project\11857477 - Design - M-W\DWG\11857477 - D-2 - PLOT.DWG, Wednesday, January 20, 2010 - 10:10am

REV. NO.	DESCRIPTIONS	DATE



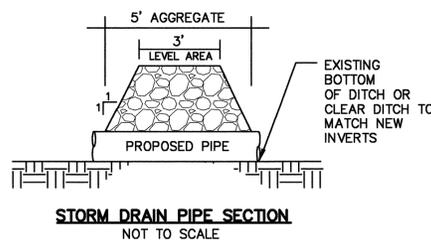
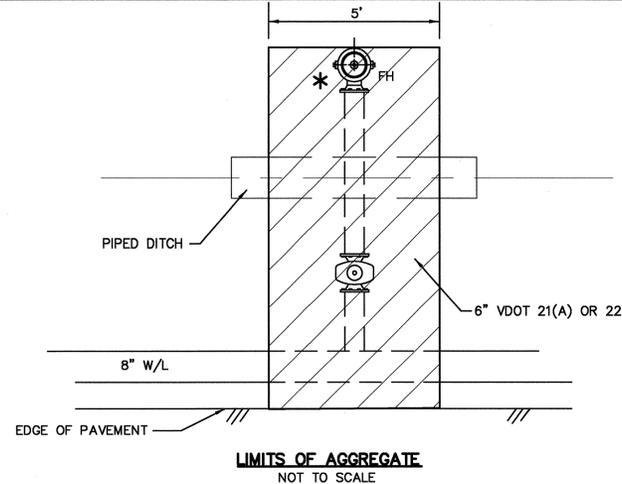
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VIRGINIA BEACH, VIRGINIA 23452
PHONE: (757)499-4224 FAX: (757)473-8214
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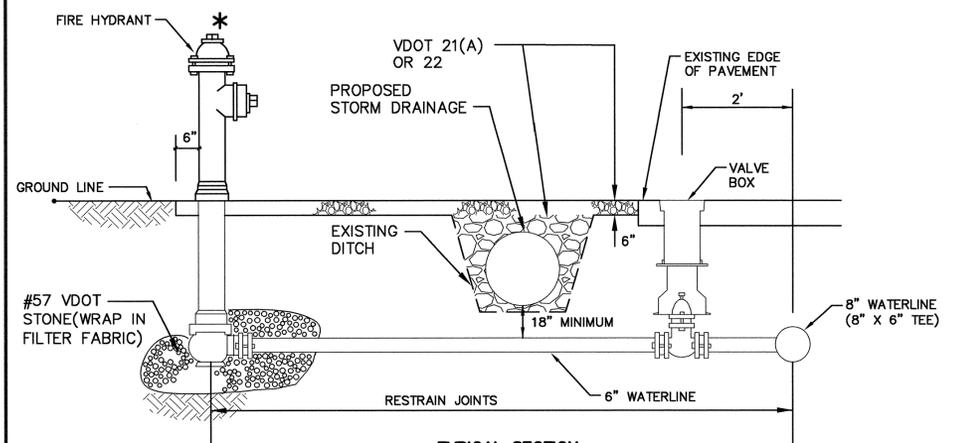
BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD

PAVEMENT AND SHOULDER DETAILS

DATE	12/2009	SCALE	HORIZONTAL	DWG NUMBER	20
PROJ. #	11657477	DRAWN	MES	CHECKED	TGQ
DESIGNED	SDE	PROJ. MGR.	RAS	SHEET NUMBER	D-2
STATUS	CONTRACT DOCUMENTS	REVISION			

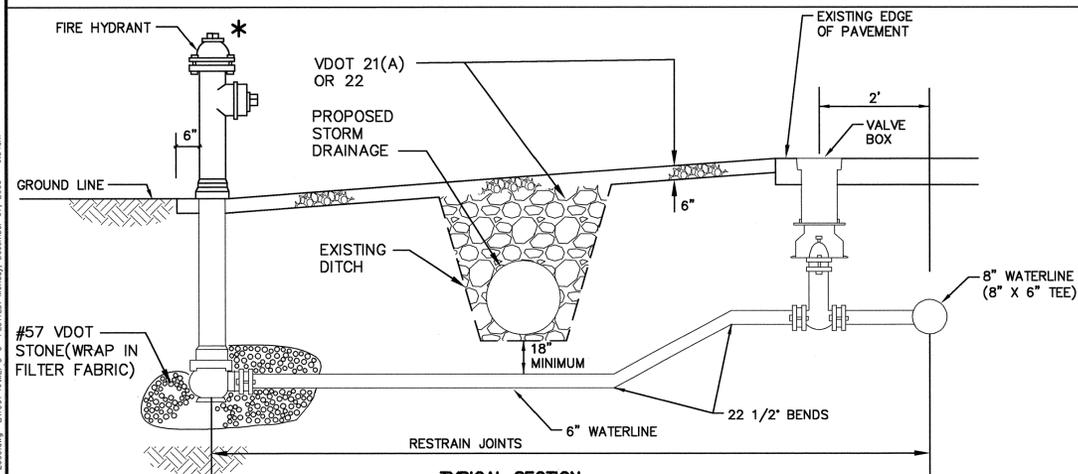


* - FOR LOCATION OF FIRE HYDRANT SEE OFFSET CALLOUT ON PLAN SHEETS.



**TYPICAL SECTION
FIRE HYDRANT BEHIND DITCH TYPE I**
NOT TO SCALE

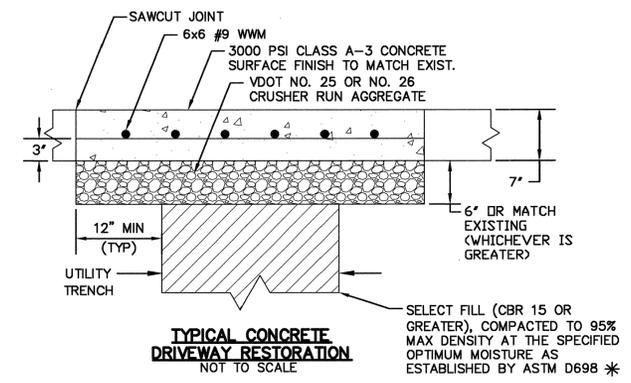
WHITTAMORE ROAD: STA. 20+00, STA. 30+00,
STA. 55+03, STA. 60+50, STA. 70+00, STA. 85+00



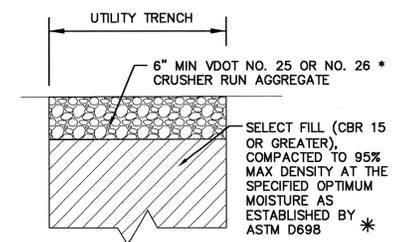
**TYPICAL SECTION
FIRE HYDRANT BEHIND DITCH TYPE II**
NOT TO SCALE

WHITTAMORE ROAD: STA. 40+00, STA. 50+00, STA. 65+06, STA. 80+00

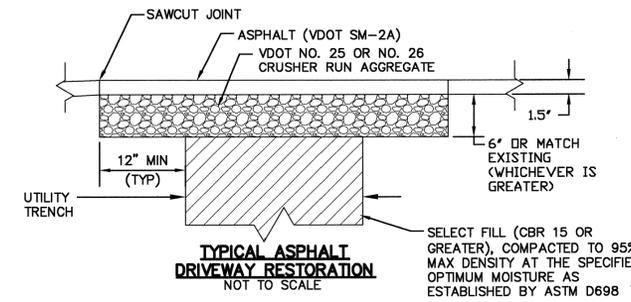
- NOTES:
- BOTH TYPE I AND TYPE II WILL BE PAID FOR AS "FIRE HYDRANT ASSEMBLY". THE 8" X 6" TEE WILL BE INCLUDED IN THE PRICE FOR "FIRE HYDRANT ASSEMBLY".
 - FOR ADDITIONAL INFORMATION SEE WD_07.



**TYPICAL CONCRETE
DRIVEWAY RESTORATION**
NOT TO SCALE



**TYPICAL GRAVEL
DRIVEWAY RESTORATION**
NOT TO SCALE

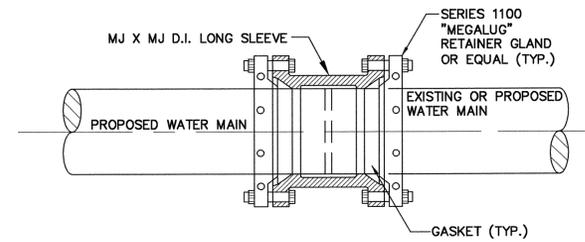


**TYPICAL ASPHALT
DRIVEWAY RESTORATION**
NOT TO SCALE

* SELECT FILL TO BE PAID FOR AS SELECT MATERIAL TYPE II FOR TRENCH BACKFILL.

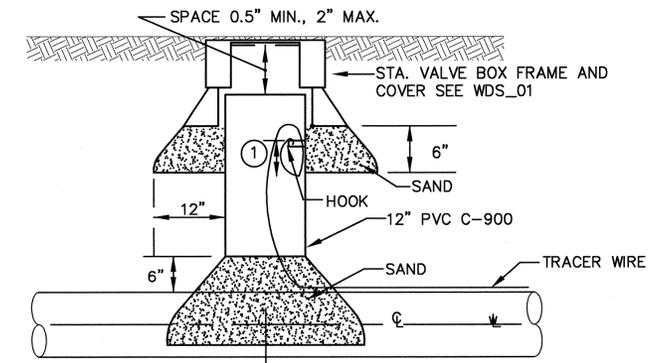
NOTES:

- SAW CUTTING OF EXISTING CONCRETE AND ASPHALT DRIVEWAYS IS FOR THE INSTALLATION OF THE WATER MAIN.
- AFTER INSTALLATION OF THE WATER MAIN, THE OPEN CUT OF THE DRIVEWAY IS TO BE MAINTAINED WITH VDOT NO. 25 OR 26 CRUSHER RUN AGGREGATE UNTIL FINAL SURFACE (ASPHALT OR CONCRETE) IS INSTALLED. THE COST OF THIS AGGREGATE AND MAINTENANCE UNTIL DRIVEWAY IS REMOVED AND REPLACED IS TO BE INCLUDED IN THE UNIT PRICE OF THE DRIVEWAY REPLACEMENT.

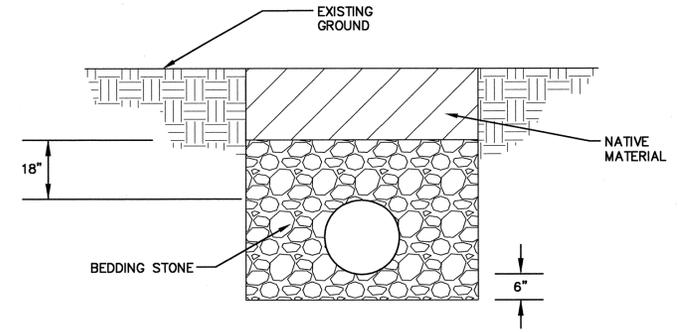


"MEGALUG", OR EQUAL, RETAINER GLAND GASKET SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

CONNECTION DETAIL
NOT TO SCALE



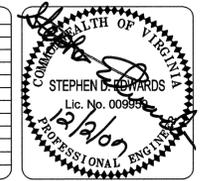
TRACER WIRE TERMINATION BOX
NOT TO SCALE



**STREAM CROSSING
PIPE BEDDING
DETAIL
STA 66+10 TO STA 67+30**
NOT TO SCALE

FILE NAME: G:\VA\11857470 - Battlefield Golf Water Project\11857477 - Design - M:\CAD\U-3-8-4-2009.dwg LAYOUT NAME: D-3 PLOTTED: Monday, December 07, 2009 - 9:34am

REV. NO.	DESCRIPTION	DATE

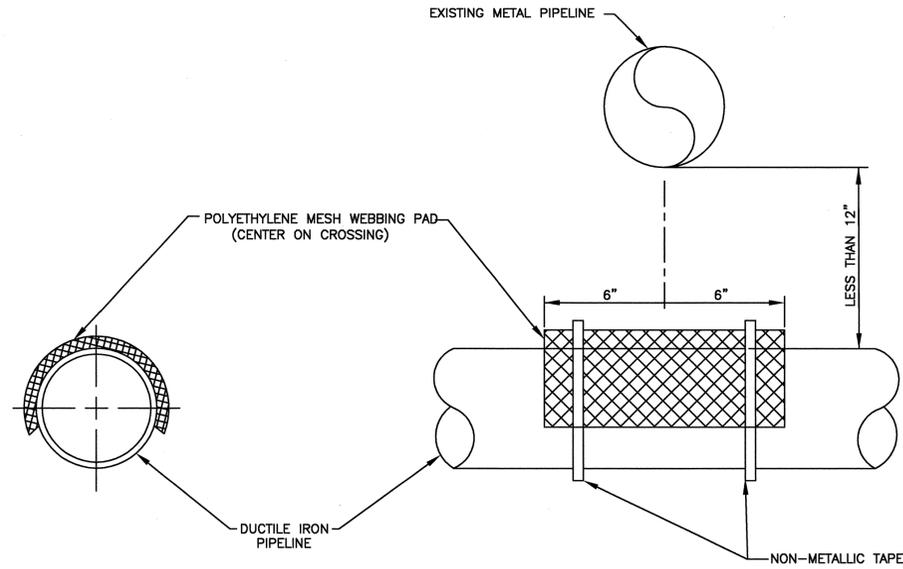


URS
277 BENDIX ROAD, SUITE 500
VIRGINIA BEACH, VIRGINIA 23452
PHONE: (757)499-4224 FAX: (757)473-8214
www.urscorp.com

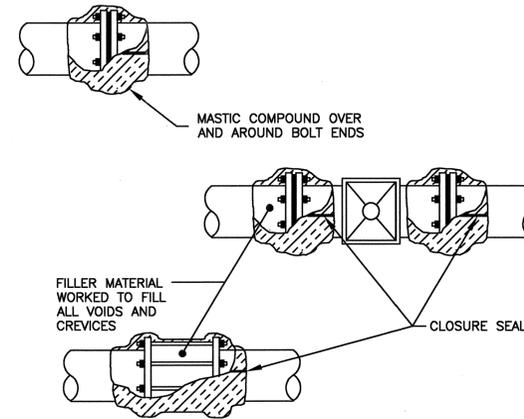
BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITTAMORE ROAD

DETAILS

DATE	12/2009	SCALE	21
PROJ. #	11657477	HORIZONTAL	SHEET NUMBER
DRAWN	MES	VERTICAL	D-3
DESIGNED	SDE	REVISION	-
CHECKED	TGQ	CONTRACT DOCUMENTS	
PROJ. MGR.	RAS		



DETAIL CC-1: TYPICAL SEPARATOR TO AVOID ELECTRICAL CONTACT
NOT TO SCALE



- NOTE:**
1. MASTIC COMPOUND APPLIED OVER AND AROUND BOLT ENDS PRIOR TO FINAL FILLER APPLICATION AROUND ASSEMBLY.
 2. HEAT SHRINK SLEEVE CENTERED ON ALL FLANGES OR COUPLINGS.
 3. FILLER MATERIAL WORKED TO FILL ALL VOIDS AND CREVICES TO OBTAIN A SMOOTH TRANSITION FROM FLANGES OR COUPLINGS.
 4. RAIL/CHANNEL CLOSURE MAY VARY ACCORDING TO SLEEVE SYSTEM USED.
 5. HEAT SHRINKABLE SLEEVE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 6. HEAT SHRINK SLEEVES ARE NOT TO BE USED ON FITTINGS THAT JOIN PVC PIPING.
 7. TRENTON WAX TAPE COATING SHALL BE USED ON MECHANICAL FITTINGS THAT ARE USED TO JOIN PVC PIPE.

DETAIL CC-2: TYPICAL COATING OF COUPLINGS AND MECHANICAL FITTINGS.
NOT TO SCALE

TABLE:	
MURRAY DRIVE	- PVC PIPING TO BE INSTALLED BETWEEN STATIONS 22+00 AND 56+00.
WHITAMORE ROAD	- PVC PIPING TO BE INSTALLED BETWEEN STATIONS 29+00 AND 32+00.

PREPARED BY:
SPS
SYSTEM PROTECTION SERVICES, INC.

NACE INTERNATIONAL
CORROSION SPECIALIST
WILLIAM M. RIVERS
NO. 2825

FILE NAME: D:\VA\11857470 - Battlefield CC Water Project\11857477 - Design - M-W\DWG\4-8-5-2009.dwg LAYOUT NAME: D-4 PLOTTED: Wednesday, January 20, 2010 - 10:10am

REV. NO.	DATE	DESCRIPTIONS / REVISIONS

COMMONWEALTH OF VIRGINIA
STEPHEN EDWARDS
Lic. No. 009862
PROFESSIONAL ENGINEER

URS
277 BENDIX ROAD, SUITE 500
VIRGINIA BEACH, VIRGINIA 23452
PHONE: (757)499-4224 FAX: (757)473-8214
www.urscorp.com

CHESAPEAKE VIRGINIA
Chesapeake VIRGINIA

BATTLEFIELD GOLF CLUB WATER PROJECT
MURRAY DRIVE & WHITAMORE ROAD

CORROSION DETAILS

DATE	12/2009	SCALE	22	DWG NUMBER	22
PROJ. #	11657477	HORIZONTAL	None	SHEET NUMBER	D-4
DRAWN		VERTICAL	None		
DESIGNED					
CHECKED					
PROJ. MGR.	RAS				
STATUS	CONTRACT DOCUMENTS		REVISION	-	