

GENERAL NOTES:

APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN DECEMBER 2013 BY MERCADO CONSULTANTS, INC. HORIZONTAL AND VERTICAL SURVEY CONTROLS:

THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS: NO. 48DF, 48DC, 48G4 ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE ALUMINUM STAMPED

ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF

6. FOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE

NO TEST PITS HAVE BEEN PERFORMED FOR THIS PROJECT. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.

8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

> 1.800.252.1133 BGE (CONSTRUCTION SERVICES) 410.637.8713 BGE (EMERGENCY) 410.685.0123 BUREAU OF UTILITIES 410.313.4900 COLONIAL PIPELINE COMPANY 410.795.1390 MISS UTILITY 1.800.257.777 STATE HIGHWAY ADMINISTRATION 410.531.5533 VERIZON 1.800.743.0033 MCI WORLDCOM 1.800.624.9675

TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR. AS SHOWN ON PLAN SHEET 2 OF 3. REMOVE THE ENTIRE TREE LOCATED ON THE RYDER PROPERTY AT STATIONS 1+04 AND 1+98. FOLLOWING REMOVAL OF TREE NEAR STATION 1+98, REGRADE AND PAVE THIS AREA WITH THE SAME ROAD MATERIAL THAT EXISTS ON THE CURRENT ROAD. WITH THICKNESSES NO LESS THAN AS SHOWN ON DETAIL PLAN SHEET 3 OF 3.

10. THE CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL

SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN. 11. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(A) OF THE

12. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AS WELL AS ANY EXISTING THRUST

13. THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN THE MARYLAND HIGH VOLTAGE LINE ACT (HVLA). THE CONTRACTOR MUST NOTIFY BGE AT 800.685.0123 BEFORE ANY WORK BEGINS THAT MAY BRING PEOPLE OR EQUIPMENT WITHIN 10 FEET OF OVERHEAD UTILITY LINES. BGE WILL MAKE THE AREA SAFE FOR THE WORK TO BE DONE. HVLA GUIDELINES APPLY TO BOTH PROFESSIONAL AND NON-PREOFESSOINAL WORKERS. NO ONE IS EXEMPT FROM COMPLIANCE.

14. THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIRES THAT WHEN USING A CRANE OR DERRICK IN PERFORMANCE OF THE WORK SET FORTH IN THIS CONTRACT, A 20 FOOT CLEARANCE IS REQUIRED TO BE MAINTAINED FROM ALL OVERHEAD POWER LINES UNTIL THE VOLTAGE OF THE OVERHEAD LINE IS IDENTIFIED BY THE UTILITY OWNER. CONTACT BGE FOR ASSISTANCE WHEN USING CRANES OR DERRICKS AT 877,427,2008.

15. THE CONTRACTOR SHALL MILL AND OVERLAY ASPHALT FOR THE ENTIRE ROAD SURFACE FROM CURB TO CURB. THE CONTRACTOR SHALL ALSO MILL AND OVERLAY 20 LINEAR FT FROM EACH SIDE BEYOND THE LIMITS OF THE NEW 8 INCH WATER MAIN.

CONSTRUCTION SHALL BE BETWEEN THE WORKING HOURS OF 6:00 P.M. TO 5:00 A.M. MONDAY THROUGH SATURDAY AND FROM 6:00 P.M. ON SATURDAY THROUGH 5:00 A.M. ON MONDAY.

17. CONTRACTOR IS TO CONTACT MR. JOHN L VOS ONE WEEK PRIOR TO THE START OF CONSTRUCTION. CONTACT PHONE NUMBER IS

PART II - WATER

ENGINEER'S DESIGN CERTIFICATION:

"I CERTIFY THAT THIS PLAN FOR

BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND

ALL PROPOSED WATER MAINS SHALL BE C900 PVC DR18 UNLESS OTHERWISE NOTED.

TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 4'-0" OF COVER UNLESS OTHERWISE NOTED. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.

4. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.

FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM. TRACER WIRES AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL PVC WATER MAINS IN ACCORDANCE WITH THE

HOWARD COUNTY DESIGN MANUAL. 8. FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD COOD FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO

UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSES. TWELVE (12) POUND ZINC ANODES SHALL BE INSTALLED ON ALL IRON FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.

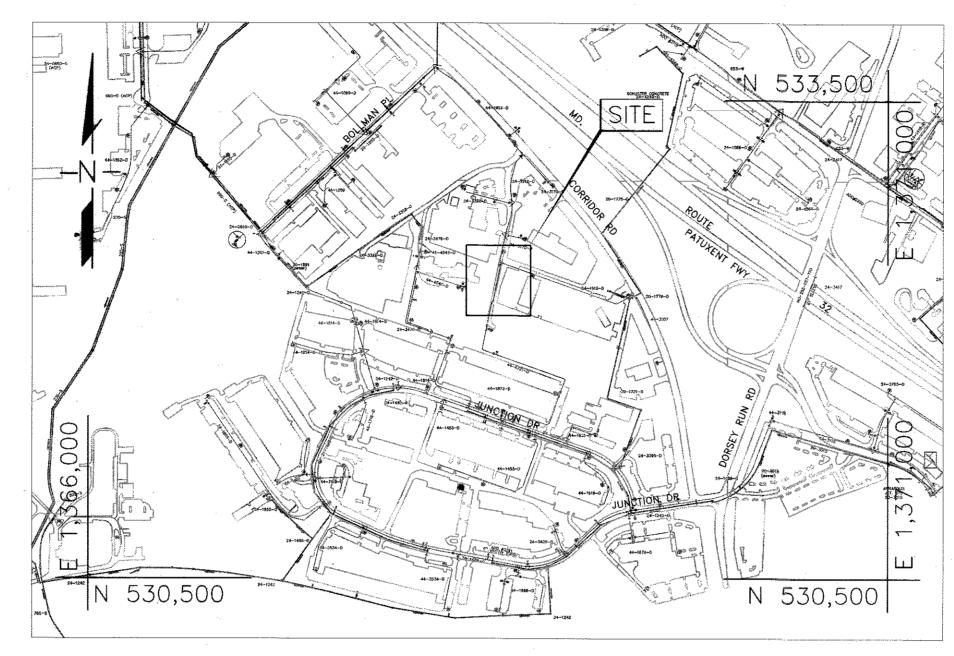
10. PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERTION LINE OF GASKETED PVC PIPE JOINTS INDICATES THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF THE PVC PIPE.

EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN

WAS PREPARED IN ACCORDANCE WITH

CORRIDOR ROAD WATER MAIN LOOP

HOWARD COUNTY, MD CAPITAL PROJECT NO. W-8324 CONTRACT NO. 44-4864



PRESSURE ZONE: 400 FT. (NAVD 88) TEST GRADIENT: 490 FT.

SCALE: 1"=600'

LEGEND:

| ∞ — w — w — | EXIST. WATER MAIN / VALVE VAULT | | STREAM / WATERWAY EDGE |
|---|--|-----------------------|--------------------------------|
| | EXIST. WATER HOUSE CONNECTION PROP. WATER MAIN | 630E 550 | - WATER PRESSURE ZONE BOUNDARY |
| TW TW | TEMP. WATER MAIN EXIST. WATER MAIN TO BE ABANDONED | © | SHRUB |
| | EXIST. SEWER MAIN / MANHOLE EXIST. SEWER HOUSE CONNECTION | þ | PROP. VALVE |
| © — SD — SD — G — G — G — G — G — G — G — G — G — | | ₩. | PROP. FIRE HYDRANT |
| -E E - | EXIST. GAS SERVICE CONNECTION EXIST. ELECTRIC — UNDERGROUND | - | BGE POLE |
| | EXIST. ELECTRIC — OVERHEAD EXIST. FIBER OPTIC | | STREET SIGN |
| | EXIST. TELEPHONE - UNDERGROUND EXIST. TELEPHONE - OVERHEAD | ⊕ SB-## | BORING LOCATION |
| | RIGHT OF WAY GUARDRAIL | ■ TP-## | TEST PIT LOCATION |
| _x x x | FENCE PROPERTY LINE | (15) | CONTINUITY TEST STATION |
| —— SF —— SF —— LOD —— LOD —— | · | $^{\textcircled{\#}}$ | SANITARY MANHOLE ID |
| | ROAD CENTERLINE TRAVERSE | CIP | CURB INLET PROTECT |
| | EXIST. EASEMENT PROP. EASEMENT | \Diamond | EX. SECURITY CAMERA ON POLE |

DATE: 02/26/16

NO.

GENERAL NOTES (CONTINUED):

PART II - WATER (CONTINUED)

11. ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE SWEEPS OR HIGH DEFLECTION (HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFLECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED, THE CONTRACTOR SHALL PROVIDE ONE FULL PIPE LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THE CONTRACTOR SHALL USE A VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE #57 STONE ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING. PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1%-DEGREE ON EITHER END OF THE COUPLING), SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL. FIVE DEGREES SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (IPEX) BLUE

12. WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C-900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFLECTION COUPLINGS AND 5-DEGREE SWEEPS: BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATE AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.

| | INDEX OF SHEETS |
|------------------|--------------------------------------|
| SHEET SET NO. | DESCRIPTION |
| 1 | TITLE SHEET |
| 2 | PROP. 8" WATER MAIN - PLAN & PROFILE |
| 3 | SURVEY CONTROL DATA & DETAILS |

| | | QUAN | TITIES | | |
|----------------------------------|--------------|-----------------------|----------|-------------------------|--|
| NAME OF UTILITY CONTRACTOR: | | | | | |
| SURVEY AND DRAFTING DIVISION AS- | -BUILT DATE: | | | | |
| ITEM | UNITS | QUANTITY ESTIMATED | AS-BUILT | | |
| | | | QUANTITY | MANUFACTURER / SUPPLIER | |
| 8" C900 PVC WATER MAIN | L.F. | 276 | 276 | NATIONAL PIPE PLASTICS | |
| 1/8 HB & BUTTRESS | EA | 2 | | TYLER/UNION FOUNDRY | |

1. QUANTITIES IN THIS TABLE ARE SOLELY FOR RECORD PURPOSES, CONTRACTOR SHALL NOT RELY ON THE QUANTITIES IN THE TABLE AND SHALL USE HIS/HER OWN TAKEOFF TO ESTABLISH MATERIALS AND QUANTITIES NEED FOR THIS PROJECT.

> RECORD DRAWINGS TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

> > MICHAEL BAKER INTERNATIONAL

CORRIDOR ROAD WATER MAIN LOOP CONTRACT NO.: 44-4864 CAPITAL PROJECT NO.: W-8324 **ELECTION DISTRICT 6**

REQUIREMENTS OF THE HOWARD SOIL CONSERVAT SIGNATURE OF ENG **DEPARTMENT OF PUBLIC WORKS** DATE att Can HIEF, BUREAU OF UTILITIES DATE CHIEF, UTILITY DESIGN DIVISION

MICHAEL BAKER INTERNATIONAL, LLC. 1304 Concourse Drive, Suite 200 Linthicum. MD 21090-1014 INTERNATIONAL Phone: (410) 689-3400



PROFESSIONAL CERTIFICATION DESIGN: RND I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OF APPROVED BY ME, AND THAT I AN A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO.: 29609 EXPIRATION DATE: 11/19/17

DRAWN: RND CHECKED: ERA

REVISION

DATE

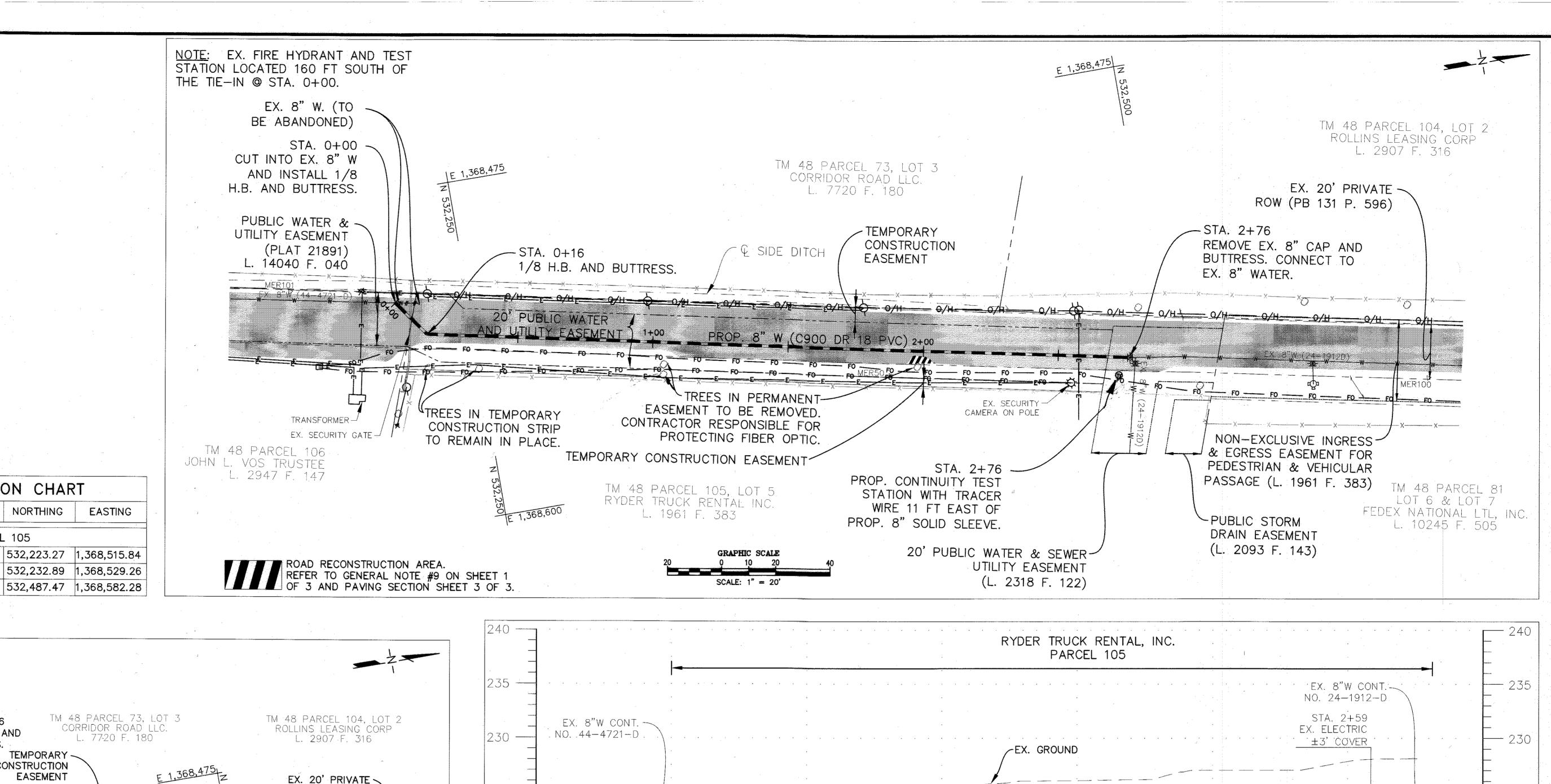
TITLE SHEET

600 SCALE MAP NO. 48 BLOCK NO. 13 HOWARD COUNTY, MARYLAND

SHEET 1 OF 3

SCALE

AS SHOWN



PLAN & PROFILE

BLOCK NO. 13

600 SCALE MAP NO. 48

CONTRACT NO.: 44-4864

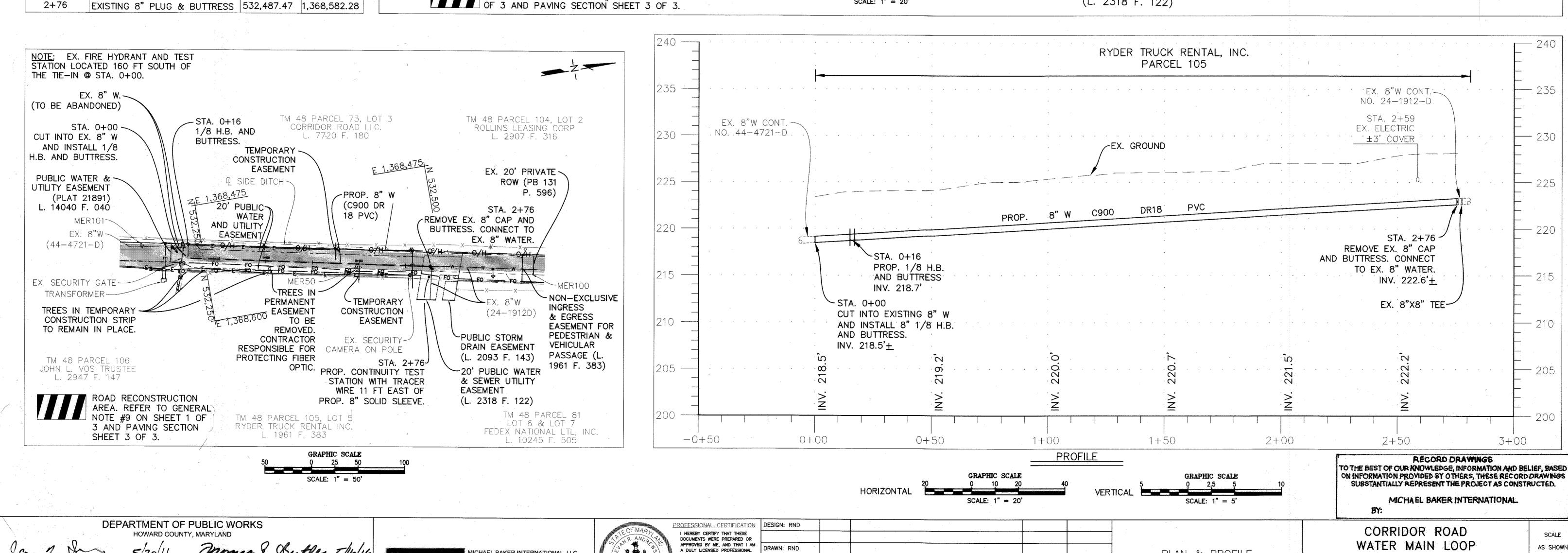
CAPITAL PROJECT NO.: W-8324

HOWARD COUNTY, MARYLAND

ELECTION DISTRICT 6

SHEET

2 OF 3



CHECKED: ERA

DATE: 02/26/16

REVISION

DATE

ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

EXPIRATION DATE: 11/19/17

LICENSE NO.: 29609

Bruk Al-

WATER MAIN TABULATION CHART

8" WATER MAIN: PARCEL 105

NORTHING

CHIEF, UTILITY DESIGN DIVISION

MICHAEL BAKER INTERNATIONAL, LLC. 1304 Concourse Drive, Suite 200 Linthicum, MD 21090-1014 Phone: (410) 689-3400

APPURTENANCE

1/8 H.B. & BUTTRESS

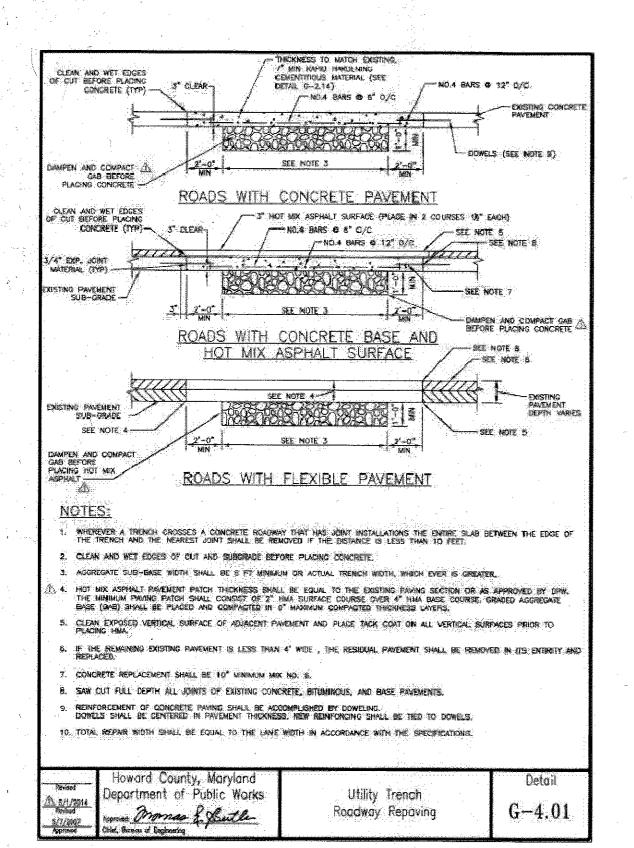
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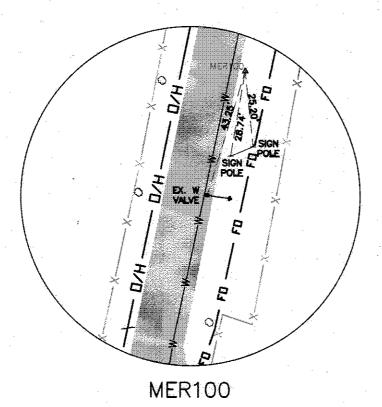
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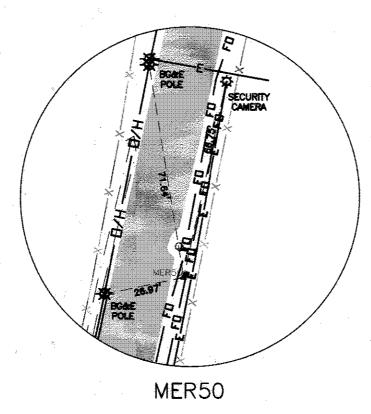
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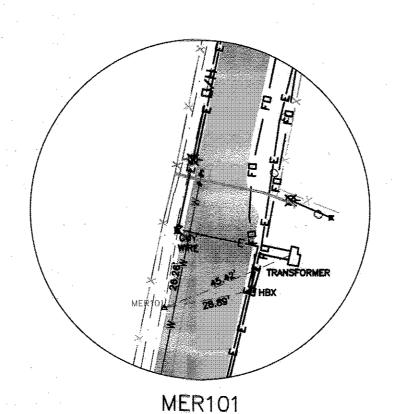
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HIEF, BUREAU OF UTILITIES









| , | TRAVERSE COORDINATE SCHEDULE | | | | | | | |
|---|------------------------------|----------------|-----------|-------------|-----------|--|--|--|
| | TRAVERSE POINT | DESCRIPTION | NORTHING | EASTING | ELEVATION | | | |
| e | MER50 | REBAR & CAP | 532399.17 | 1368573.40' | 226.34 | | | |
| | MER100 | REBAR & CAP | 532594.78 | 1368608.75 | 229.89 | | | |
| | MER101 | REBAR & CAP | 532185.73 | 1368505.09 | 223.17 | | | |



HOWARD COUNTY, MARYLAND

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DIRECTOR OF PUBLIC WORKS

DATE

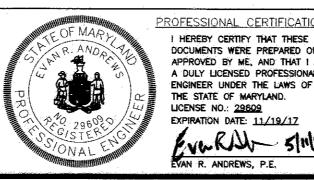
CHIEF, BUREAU OF UTILITIES

DATE

CHIEF, UTILITY DESIGN DIVISION

Michael Baker

MICHAEL BAKER INTERNATIONAL, LLC.
1304 Concourse Drive, Suite 200
Linthicum, MD 21090-1014
Phone: (410) 689-3400



| | DATE: 02/26/16 | NO. | REVISION | DATE | BY |
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CORRIDOR ROAD
WATER MAIN LOOP
CONTRACT NO.: 44-4864
CAPITAL PROJECT NO.: W-8324
ELECTION DISTRICT 6

HOWARD COUNTY, MARYLAND

SURVEY CONTROL DATA

& DETAILS

BLOCK NO. 13

600 SCALE MAP NO. 48

AS SHOWN
SHEET
3 OF 3

SCALE