

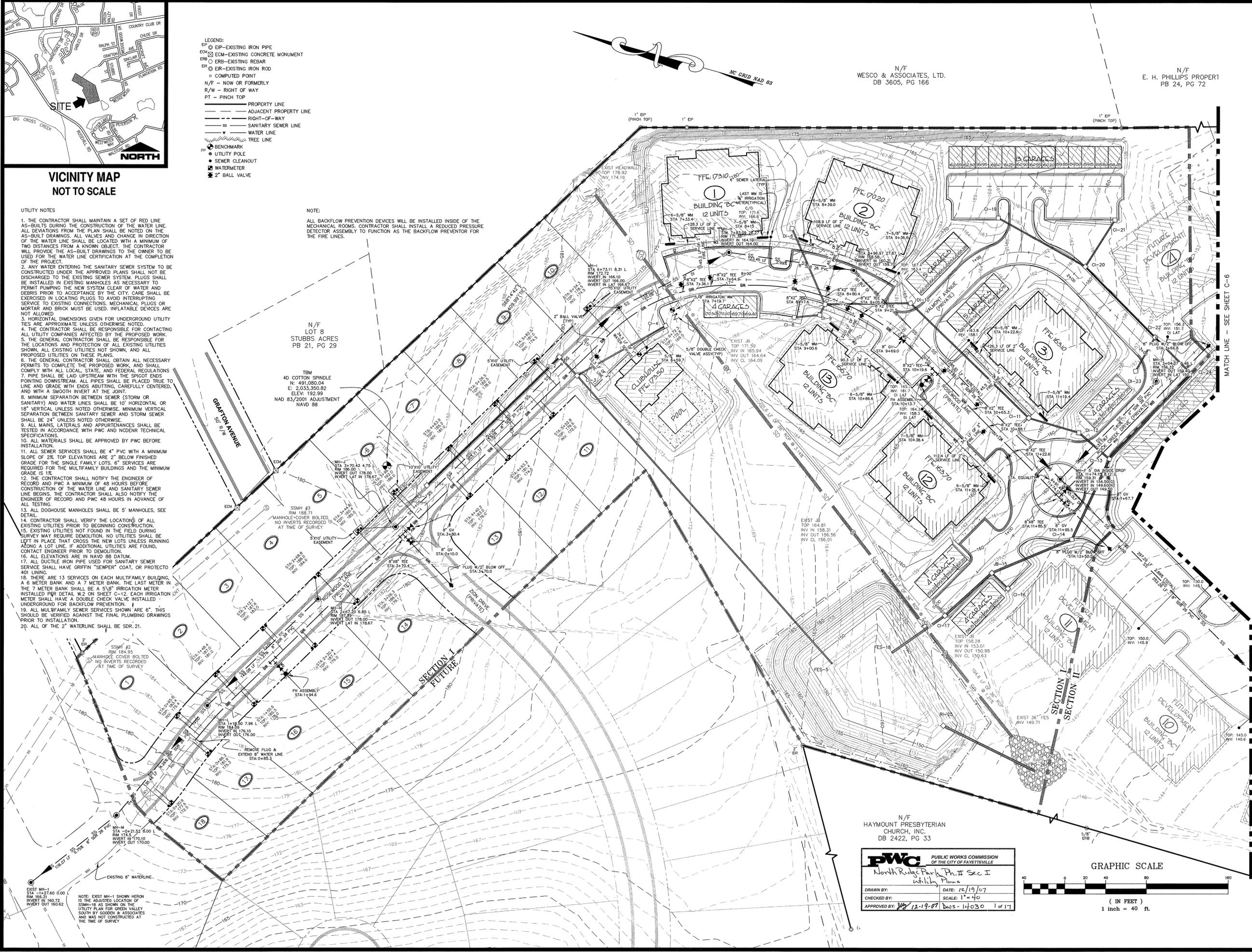
- LEGEND:**
- ⊙ EIP-EXISTING IRON PIPE
 - ⊙ ECM-EXISTING CONCRETE MONUMENT
 - ⊙ ERB-EXISTING REBAR
 - ⊙ EIR-EXISTING IRON ROD
 - ⊙ COMPUTED POINT
 - N/F - NOW OR FORMERLY
 - R/W - RIGHT OF WAY
 - PT - PINCH TOP
- PROPERTY LINE**
- PROPERTY LINE
 - - - ADJACENT PROPERTY LINE
 - - - RIGHT-OF-WAY
 - SS SANITARY SEWER LINE
 - W WATER LINE
 - TREE LINE
- BENCHMARK**
- UTILITY POLE
 - SEWER CLEANOUT
 - WATERMETER
 - 2" BALL VALVE

**VICINITY MAP
NOT TO SCALE**

- UTILITY NOTES**
1. THE CONTRACTOR SHALL MAINTAIN A SET OF RED LINE AS-BUILTS DURING THE CONSTRUCTION OF THE WATER LINE. ALL DEVIATIONS FROM THE PLAN SHALL BE NOTED ON THE AS-BUILT DRAWINGS. ALL VALVES AND CHANGE IN DIRECTION OF THE WATER LINE SHALL BE LOCATED WITH A MINIMUM OF TWO DISTANCES FROM A KNOWN OBJECT. THE CONTRACTOR WILL PROVIDE THE AS-BUILT DRAWINGS TO THE OWNER TO BE USED FOR THE WATER LINE CERTIFICATION AT THE COMPLETION OF THE PROJECT.
 2. ANY WATER ENTERING THE SANITARY SEWER SYSTEM TO BE CONSTRUCTED UNDER THE APPROVED PLANS SHALL NOT BE DISCHARGED TO THE EXISTING SEWER SYSTEM. PLUGS SHALL BE INSTALLED IN EXISTING MANHOLES AS NECESSARY TO PERMIT PUMPING THE NEW SYSTEM CLEAR OF WATER AND DEBRIS PRIOR TO ACCEPTANCE BY THE CITY. CARE SHALL BE EXERCISED IN LOCATING PLUGS TO AVOID INTERRUPTING SERVICE TO EXISTING CONNECTIONS. MECHANICAL PLUGS OR MORTAR AND BRICK MUST BE USED. INFLATABLE DEVICES ARE NOT ALLOWED.
 3. HORIZONTAL DIMENSIONS GIVEN FOR UNDERGROUND UTILITY TIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES AFFECTED BY THE PROPOSED WORK.
 5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATIONS AND PROTECTION OF ALL EXISTING UTILITIES SHOWN, ALL EXISTING UTILITIES NOT SHOWN, AND ALL PROPOSED UTILITIES ON THESE PLANS.
 6. THE GENERAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE THE PROPOSED WORK, AND SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
 7. PIPE SHALL BE LAD UPSTREAM WITH THE SPROUT ENDS POINTING DOWNSTREAM. ALL PIPES SHALL BE PLACED TRUE TO LINE AND GRADE WITH ENDS ABUTTING, CAREFULLY CENTERED, AND WITH A SMOOTH INVERT AT THE JOINT.
 8. MINIMUM SEPARATION BETWEEN SEWER (STORM OR SANITARY) AND WATER LINES SHALL BE 10' HORIZONTAL OR 18" VERTICAL UNLESS NOTED OTHERWISE. MINIMUM VERTICAL SEPARATION BETWEEN SANITARY SEWER AND STORM SEWER SHALL BE 24" UNLESS NOTED OTHERWISE.
 9. ALL MAINS, LATERALS AND APPURTENANCES SHALL BE TESTED IN ACCORDANCE WITH PWC AND NCDENR TECHNICAL SPECIFICATIONS.
 10. ALL MATERIALS SHALL BE APPROVED BY PWC BEFORE INSTALLATION.
 11. ALL SEWER SERVICES SHALL BE 4" PVC WITH A MINIMUM SLOPE OF 2% TOP ELEVATIONS ARE 2" BELOW FINISHED GRADE FOR THE SINGLE FAMILY LOTS. 6" SERVICES ARE REQUIRED FOR THE MULTIFAMILY BUILDINGS AND THE MINIMUM GRADE IS 12'.
 12. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND PWC A MINIMUM OF 48 HOURS BEFORE CONSTRUCTION OF THE WATER LINE AND SANITARY SEWER LINE BEGINS. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER OF RECORD AND PWC 48 HOURS IN ADVANCE OF ALL TESTING.
 13. ALL DOGHOUSE MANHOLES SHALL BE 5' MANHOLES, SEE DETAIL.
 14. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
 15. EXISTING UTILITIES NOT FOUND IN THE FIELD DURING SURVEY MAY REQUIRE DEMOLITION. NO UTILITIES SHALL BE LEFT IN PLACE THAT CROSS THE NEW LOTS UNLESS RUNNING ALONG A LOT LINE. IF ADDITIONAL UTILITIES ARE FOUND, CONTACT ENGINEER PRIOR TO DEMOLITION.
 16. ALL ELEVATIONS ARE IN NAVD 88 DATUM.
 17. ALL DUCTILE IRON PIPE USED FOR SANITARY SEWER SERVICE SHALL HAVE GRIFFIN "SEWER" COAT, OR PROTECTO 401 LINING.
 18. THERE ARE 13 SERVICES ON EACH MULTIFAMILY BUILDING, A 6 METER BANK AND A 7 METER BANK. THE LAST METER IN THE 7 METER BANK SHALL BE A 5/8" IRRIGATION METER INSTALLED PER DETAIL W.2 ON SHEET C-12. EACH IRRIGATION METER SHALL HAVE A DOUBLE CHECK VALVE INSTALLED UNDERGROUND FOR BACKFLOW PREVENTION.
 19. ALL MULTIFAMILY SEWER SERVICES SHOWN ARE 6". THIS SHOULD BE VERIFIED AGAINST THE FINAL PLUMBING DRAWINGS PRIOR TO INSTALLATION.
 20. ALL OF THE 2" WATERLINE SHALL BE SDR 21.

NOTE:

ALL BACKFLOW PREVENTION DEVICES WILL BE INSTALLED INSIDE OF THE MECHANICAL ROOMS. CONTRACTOR SHALL INSTALL A REDUCED PRESSURE DETECTOR ASSEMBLY TO FUNCTION AS THE BACKFLOW PREVENTOR FOR THE FIRE LINES.



N/F
WESCO & ASSOCIATES, LTD.
DB 3605, PG 166

N/F
E. H. PHILLIPS PROPERI
PB 24, PG 72

409 Chisler Drive - Suite 12
Fayetteville, North Carolina 28306
Phone (910) 426-6777
Fax (910) 426-5777

4D SITE SOLUTIONS, INC
A ENGINEERING SURVEYING & GPS CONSTRUCTION LAYOUT FIRM



REVISIONS

PROJECT NAME

NORTH RIDGE PARK PHASE II SECTION I UTILITY PLAN

CLIENT

GREEN VALLEY SOUTH, LLC

428 Swan Island Court
Fayetteville, North Carolina 28311
Phone: (910) 527-2007
Fax: (910) 401-1231

PROJECT INFORMATION

DESIGNED BY:	SCOTT
DRAWN BY:	CHRIS
CHECKED BY:	CHRIS
PROJECT NUMBER:	265

DRAWING SCALE

HORIZONTAL: 1"=40'

DATE DRAWN

DECEMBER 11, 2007

SHEET NUMBER

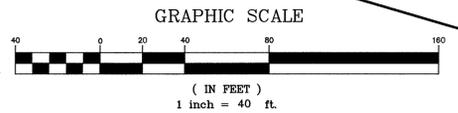
C-5

N/F
HAYMOUNT PRESBYTERIAN CHURCH, INC.
DB 2422, PG 33

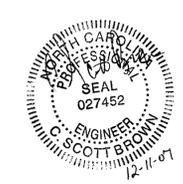
PWC PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE

North Ridge Park Ph. II Sec I Utility Plans

DRAWN BY:	DATE: 12/19/07
CHECKED BY:	SCALE: 1"=40'
APPROVED BY: [Signature]	12-19-07 Dos-14030 1 of 17



Dos-14030



REVISIONS

PROJECT NAME

NORTH RIDGE PARK PHASE II SECTION I

UTILITY PLAN

CLIENT

GREEN VALLEY SOUTH, LLC

428 Swan Island Court
 Fayetteville, North Carolina 28311
 Phone: (910) 423-3555
 Fax: (910) 480-2006

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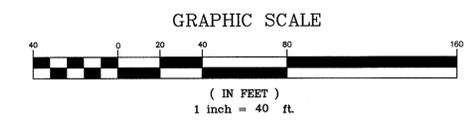
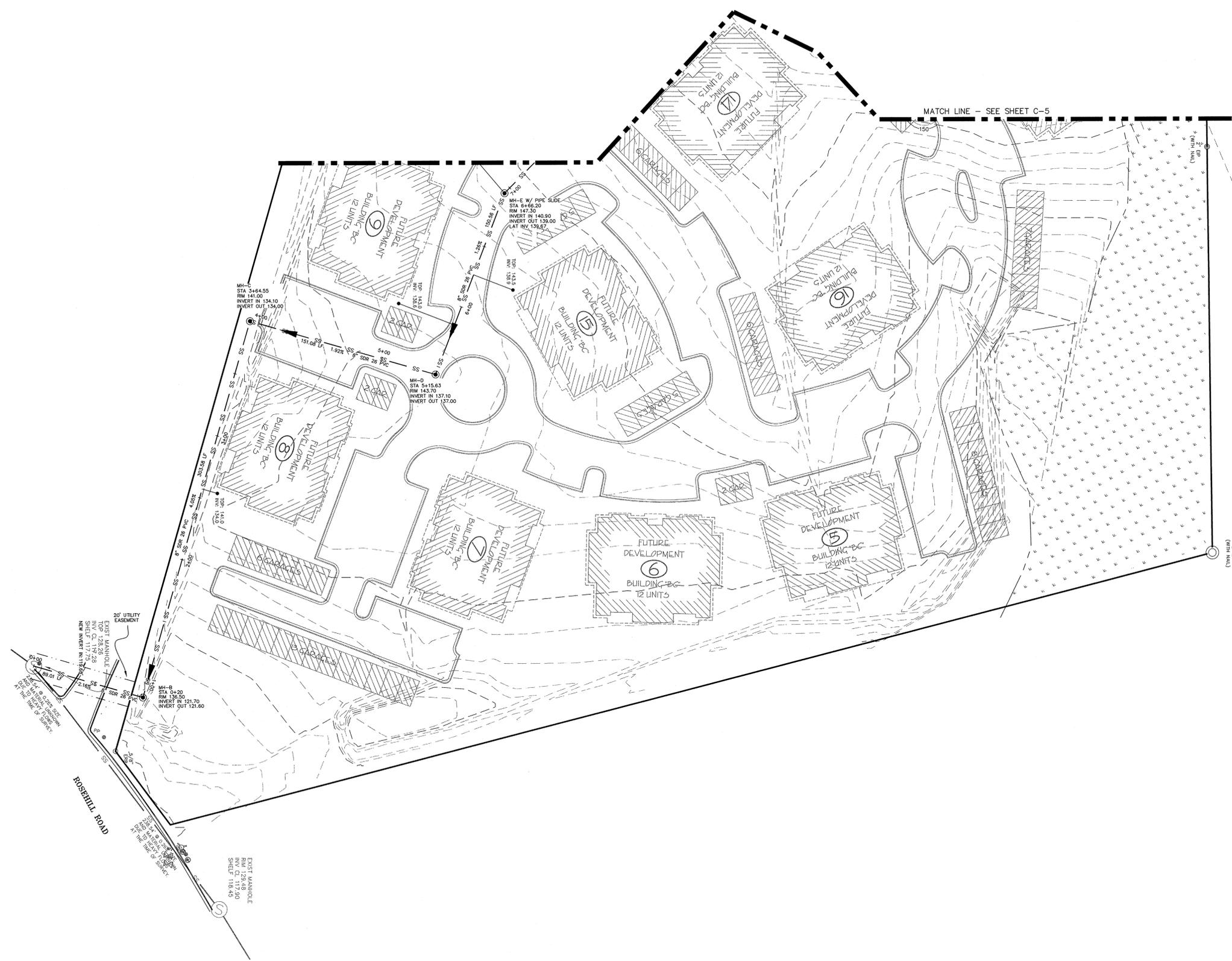
SHEET NUMBER

C-6

OF 17

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 - ALL DUCTILE IRON PIPE USED FOR SANITARY SEWER SERVICE SHALL HAVE GRIFFIN "SEWER" COAT, OR PROTECTO 401 LINING.
 - ALL SERVICE LATERALS THAT DIRECTLY INTO A MANHOLE SHALL BE LAID SUCH THAT THE CROWN OF THE SERVICE LATERAL IS AT THE SAME ELEVATION AS THE CROWN OF THE MAIN.
 - ALL LATERALS CONNECTING DIRECTLY TO A MANHOLE SHALL BE PLACED SUCH THAT THE INVERT OF THE SERVICE IS 8" ABOVE THE INVERT OUT OF THE MANHOLE.



Drawn - 11/03/07



REVISIONS

PROJECT NAME

**NORTH RIDGE
 PARK PHASE II
 SECTION I**

**ROSEWOOD
 LANE 7+50 TO
 13+00 PROFILE**

CLIENT

**GREEN VALLEY
 SOUTH, LLC**

428 Swan Island Court
 Fayetteville, North Carolina 28311
 Phone: (910) 423-3555
 Fax: (910) 480-2006

PROJECT INFORMATION

DESIGNED BY:	CHRIS
DRAWN BY:	CHRIS
CHECKED BY:	SCOTT
PROJECT NUMBER:	285

DRAWING SCALE

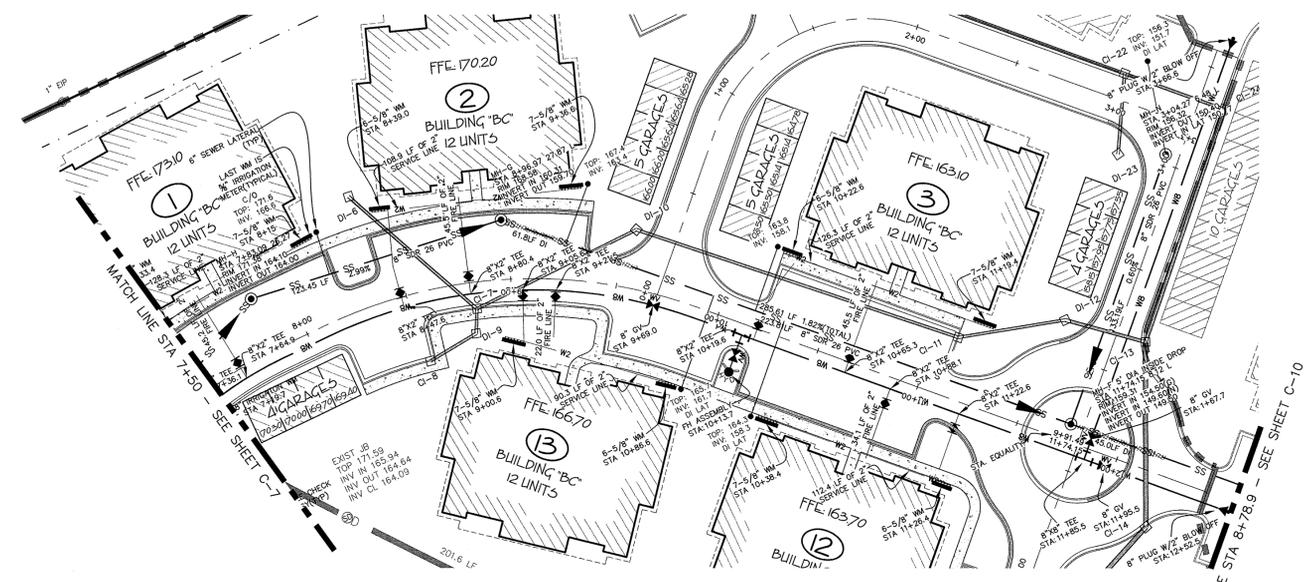
HORIZONTAL: 1"=40'
 VERTICAL: 1"=4'

DATE RELEASED

DECEMBER 11, 2007

SHEET NUMBER

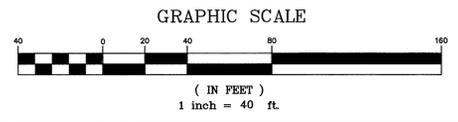
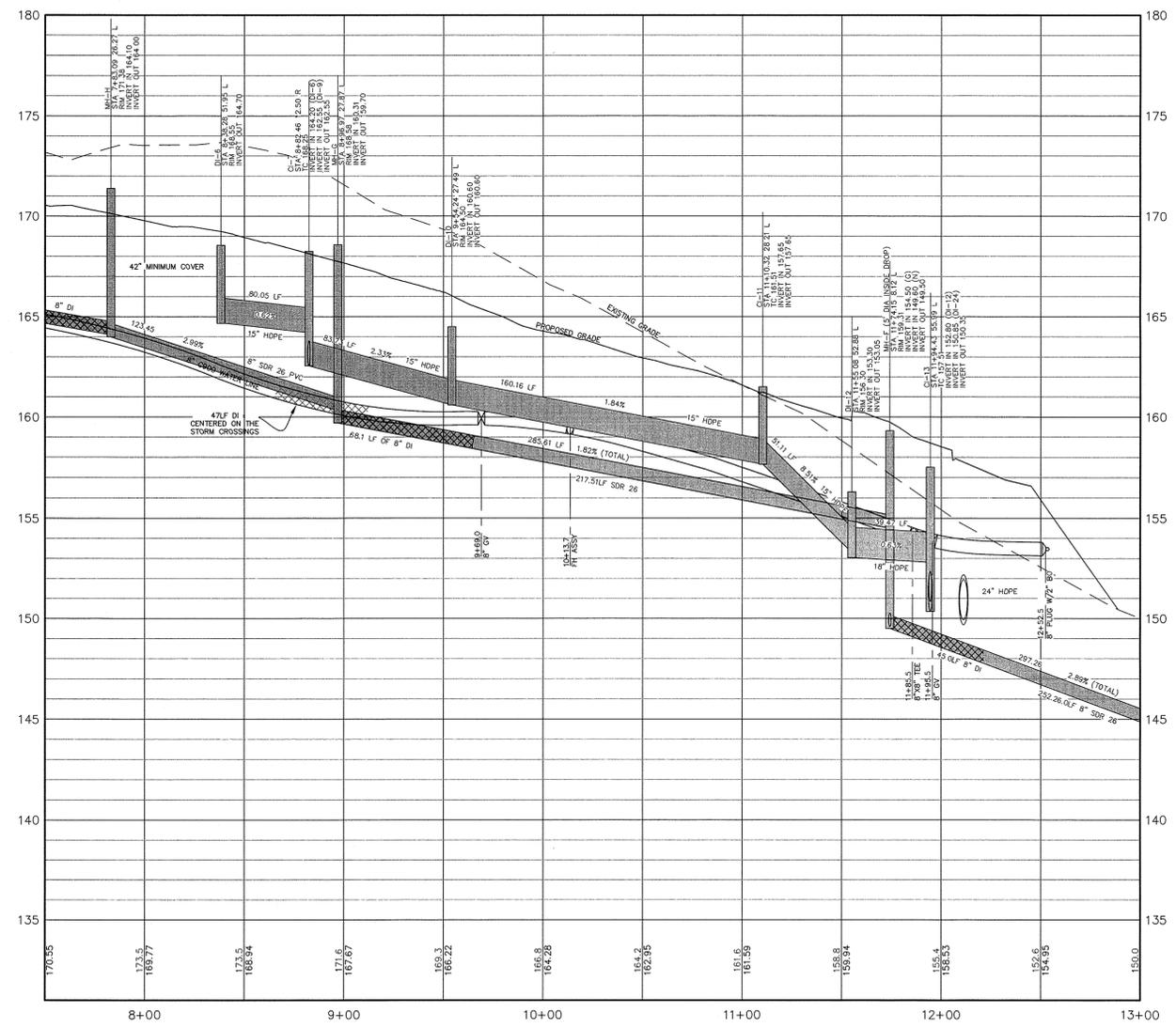
C-8



ROSEWOOD LANE

(PRIVATE STREET)

ROADWAY PROFILE 7+50 TO 13+00



DWS-14030



REVISIONS

PROJECT NAME

**NORTH RIDGE
 PARK PHASE II
 SECTION I**

**SANITARY
 SEWER
 OUTFALL
 PROFILE**

CLIENT

**GREEN VALLEY
 SOUTH, LLC**

428 Swan Island Court
 Fayetteville, North Carolina 28311
 Phone: (910) 527-2007
 Fax: (910) 401-1231

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PROJECT NUMBER:	285

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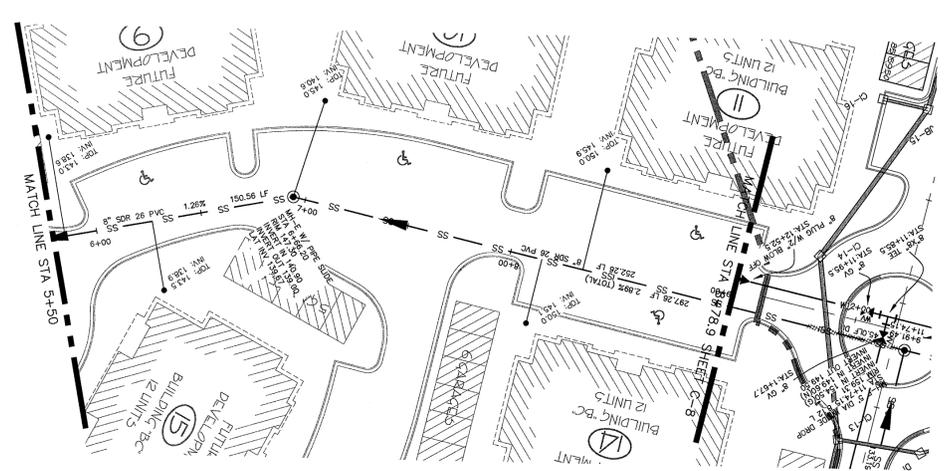
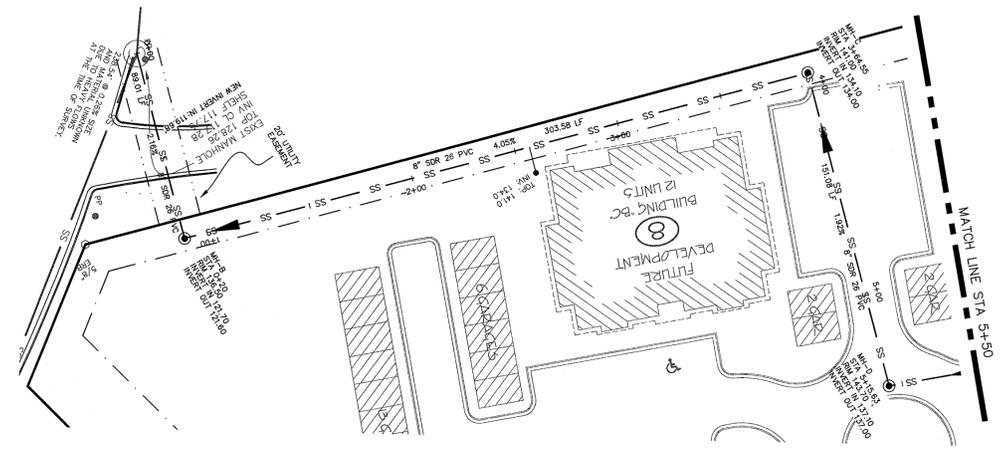
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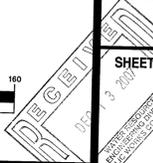
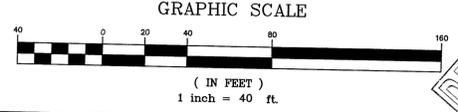
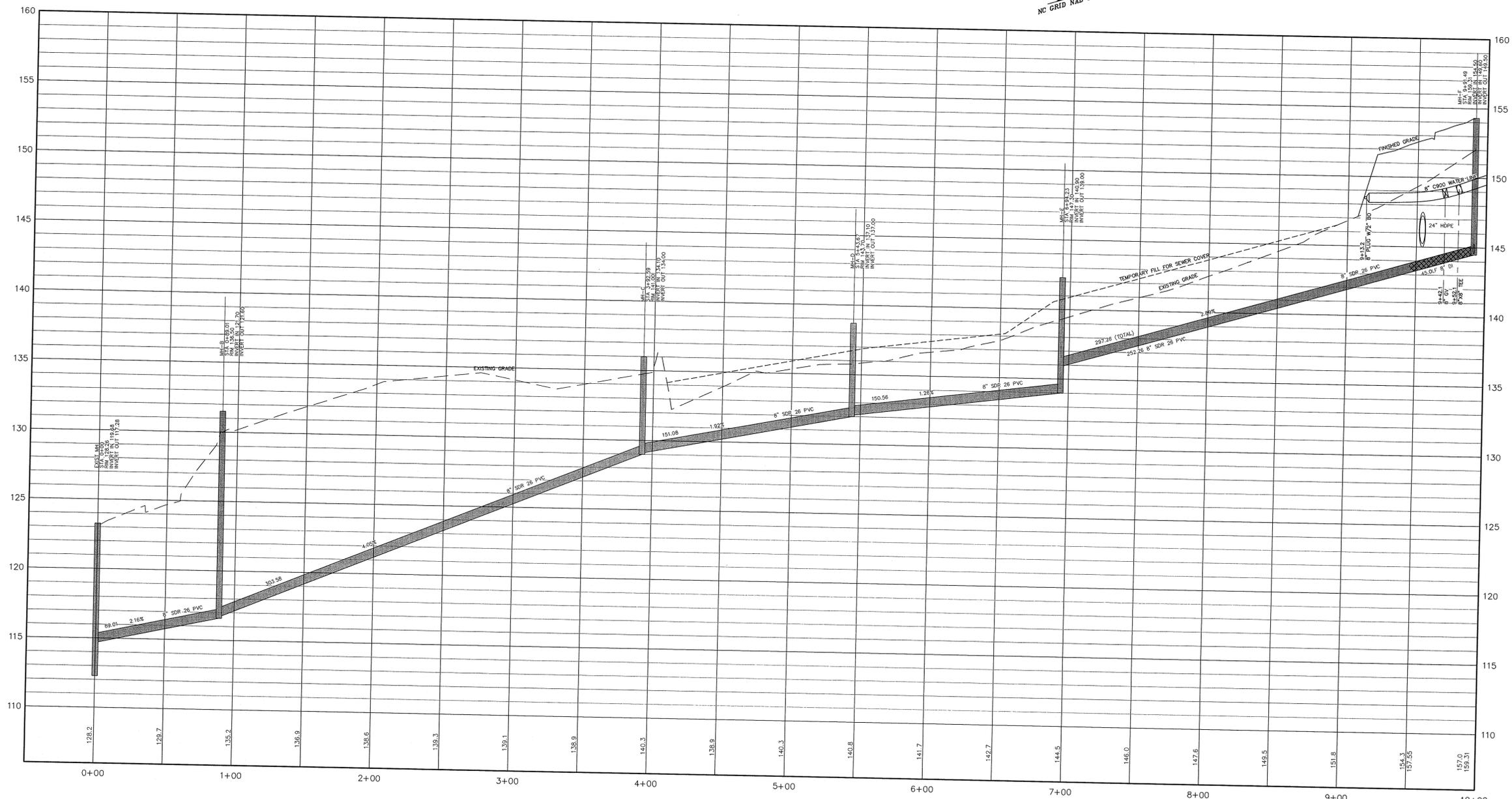
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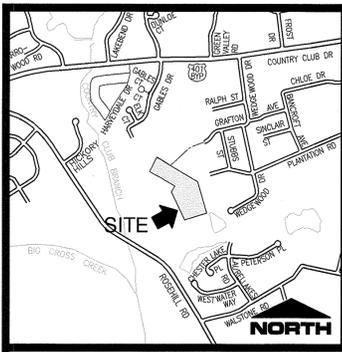
SHEET NUMBER

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**SANITARY SEWER OUTFALL
 SEWER PROFILE**





**VICINITY MAP
NOT TO SCALE**

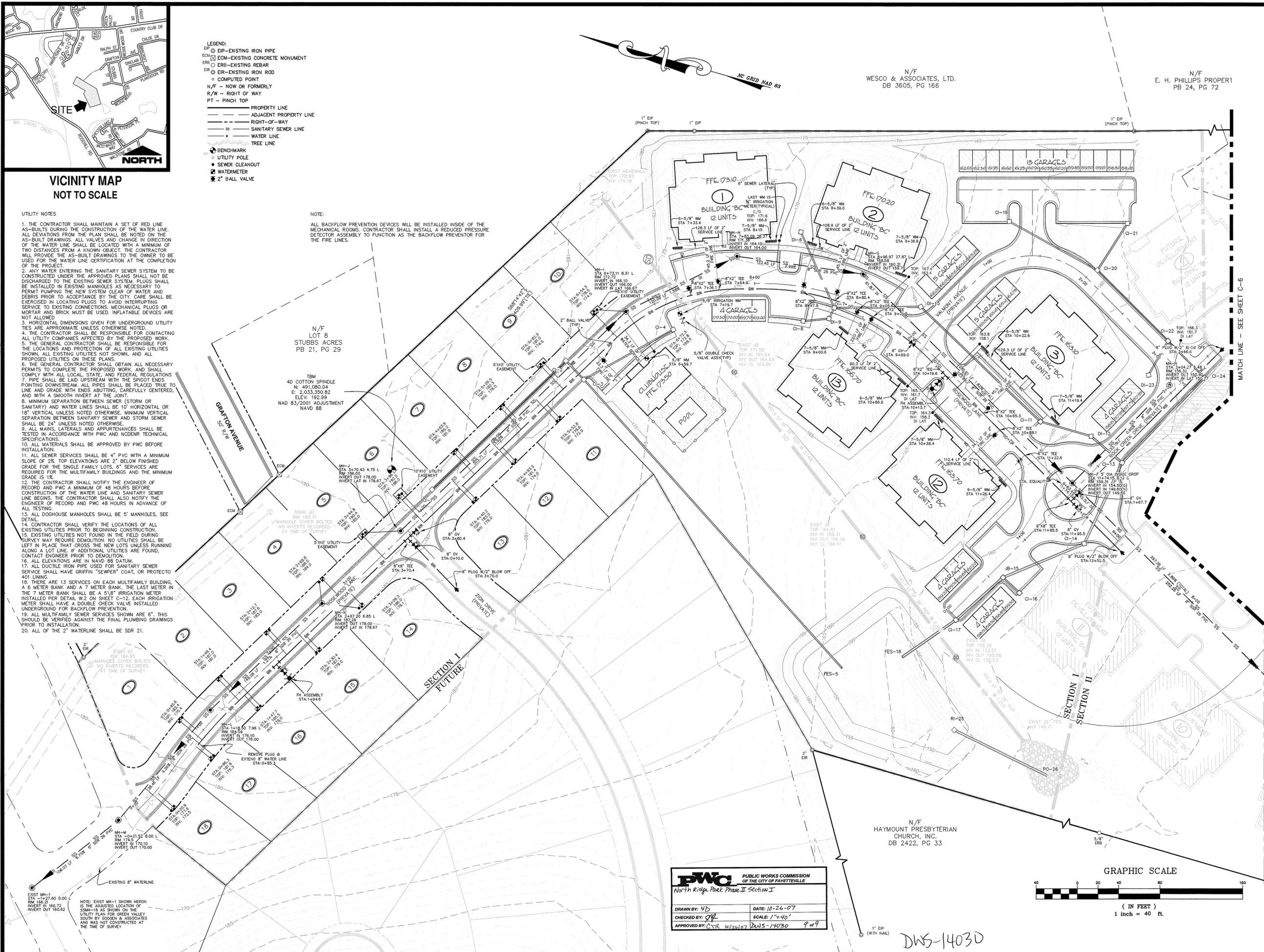
UTILITY NOTES

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19. ALL MULTIFAMILY SEWER SERVICES SHOWN ARE 6". THIS SHOULD BE VERIFIED AGAINST THE FINAL PLUMBING DRAWINGS PRIOR TO INSTALLATION.
20. ALL OF THE 2" WATERLINE SHALL BE SDR 21.

NOTE:

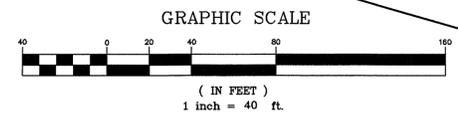
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 - ⊕ WATERMETER
 - ⊕ 2" BALL VALVE



PWC PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE
North Ridge Park Phase II Section I

DRAWN BY: YD DATE: 10-26-07
CHECKED BY: CR SCALE: 1"=40'
APPROVED BY: CR 10/26/07 DWS-14030 9 of 9



409 Chicago Drive - Suite 112
Fayetteville, North Carolina 28305
Phone: (910) 426-6777
Fax: (910) 426-5777

4D SITE SOLUTIONS, INC
ENGINEERING SURVEYING GPS CONSULTATION



REVISIONS

APPROVED FOR CONSTRUCTION
Project Name: North Ridge Park Phase II Section I
Water Permit #: PWC 2007-1030
Sewer Permit #: PWC 2007-5037

Joseph E. Glass, P.E.
Engineering Manager

Date: 10-30-07

PROJECT NAME

NORTH RIDGE PARK PHASE II SECTION I

UTILITY PLAN

CLIENT

GREEN VALLEY SOUTH, LLC

428 Swan Island Court
Fayetteville, North Carolina 28311
Phone: (910) 527-2007
Fax: (910) 401-1231

PROJECT INFORMATION

DESIGNED BY: SCOTT
DRAWN BY: CHRIS
CHECKED BY: CHRIS
PROJECT NUMBER: 265

DRAWING SCALE

HORIZONTAL: 1"=40'

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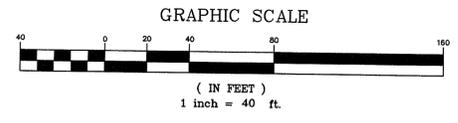
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OF 17
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 6. THE GENERAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE THE PROPOSED WORK, AND SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
 7. PIPE SHALL BE LAID UPSTREAM WITH THE SPIGOT ENDS POINTING DOWNSTREAM. ALL PIPES SHALL BE PLACED TRUE TO LINE AND GRADE WITH ENDS ABUTTING, CAREFULLY CENTERED, AND WITH A SMOOTH INVERT AT THE JOINT.
 8. MINIMUM SEPARATION BETWEEN SEWER (STORM OR SANITARY) AND WATER LINES SHALL BE 10' HORIZONTAL OR 18" VERTICAL UNLESS NOTED OTHERWISE. MINIMUM VERTICAL SEPARATION BETWEEN SANITARY SEWER AND STORM SEWER SHALL BE 24" UNLESS NOTED OTHERWISE.
 9. ALL MAINS, LATERALS AND APPURTENANCES SHALL BE TESTED IN ACCORDANCE WITH PWC AND NCDENR TECHNICAL SPECIFICATIONS.
 10. ALL MATERIALS SHALL BE APPROVED BY PWC BEFORE INSTALLATION.
 11. ALL SEWER SERVICES SHALL BE 4" PVC WITH A MINIMUM SLOPE OF 2% TOP ELEVATIONS ARE 2" BELOW FINISHED GRADE. IF 8" SERVICE IS REQUIRED, MINIMUM GRADE IS 1%.
 12. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND PWC A MINIMUM OF 48 HOURS BEFORE CONSTRUCTION OF THE WATER LINE AND SANITARY SEWER LINE BEGINS. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER OF RECORD AND PWC 48 HOURS IN ADVANCE OF ALL TESTING.
 13. ALL DOGHOUSE MANHOLES SHALL BE 5' MANHOLES, SEE DETAIL.
 14. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
 15. EXISTING UTILITIES NOT FOUND IN THE FIELD DURING SURVEY MAY REQUIRE DEMOLITION. NO UTILITIES SHALL BE LEFT IN PLACE THAT CROSS THE NEW LOTS UNLESS RUNNING ALONG A LOT LINE. IF ADDITIONAL UTILITIES ARE FOUND, CONTACT ENGINEER PRIOR TO DEMOLITION.
 16. ALL ELEVATIONS ARE IN NAVD 83 DATUM.
 17. ALL DUCTILE IRON PIPE USED FOR SANITARY SEWER SERVICE SHALL HAVE GRIFFIN "SEWER" COAT, OR PROTECTO 401 LINING.
 18. ALL SERVICE LATERALS THAT DIRECTLY INTO A MANHOLE SHALL BE LAID SUCH THAT THE CROWN OF THE SERVICE LATERAL IS AT THE SAME ELEVATION AS THE CROWN OF THE MAIN.
 19. ALL LATERALS CONNECTING DIRECTLY TO A MANHOLE SHALL BE PLACED SUCH THAT THE INVERT OF THE SERVICE IS 8" ABOVE THE INVERT OF THE MANHOLE.



DWS-14030

409 Chicago Drive - Suite 112
 Fayetteville, North Carolina 28306
 Phone: (910) 426-6777
 Fax: (910) 426-6777

4D SITE SOLUTIONS, INC.
 A ENGINEERING A SURVEYING A GPS A CONSTRUCTION A



REVISIONS

PROJECT NAME

**NORTH RIDGE
 PARK PHASE II
 SECTION I**

UTILITY PLAN

CLIENT

**GREEN VALLEY
 SOUTH, LLC**

428 Swan Island Court
 Fayetteville, North Carolina 28311
 Phone: (910) 423-3555
 Fax: (910) 480-2006

PROJECT INFORMATION

DESIGNED BY:	CHRIS
DRAWN BY:	CHRIS
CHECKED BY:	SCOTT
PROJECT NUMBER:	265

DRAWING SCALE

HORIZONTAL: 1"=40'

DATE DRAWN

SEPTEMBER 11, 2007

SHEET NUMBER

C-6

OF 17



REVISIONS

PROJECT NAME

**NORTH RIDGE
 PARK PHASE II
 SECTION I**

**ROSEWOOD
 LANE 0+00 TO
 7+50 PROFILE**

CLIENT

**GREEN VALLEY
 SOUTH, LLC**

428 Swan Island Court
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 Fax: (910) 401-1231

PROJECT INFORMATION

DESIGNED BY:	CHRIS
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DRAWING SCALE

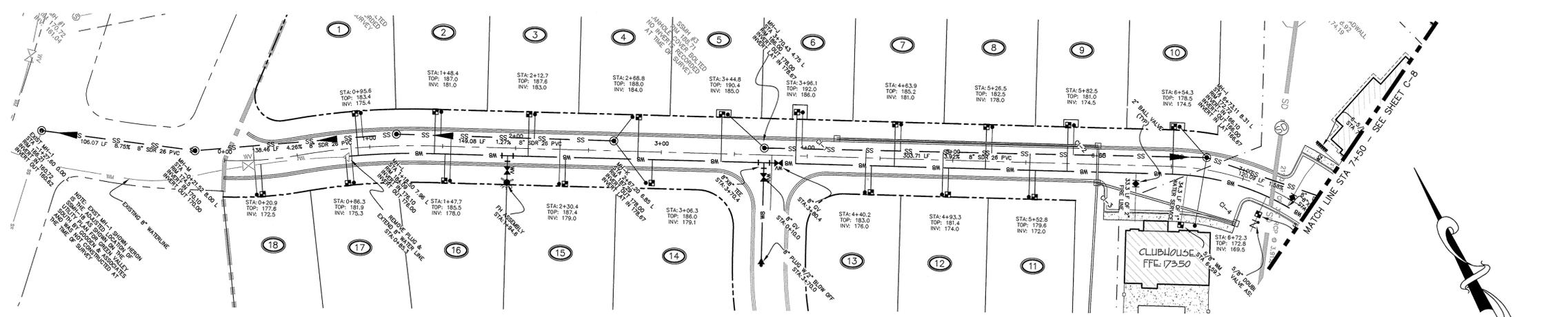
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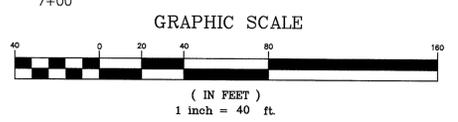
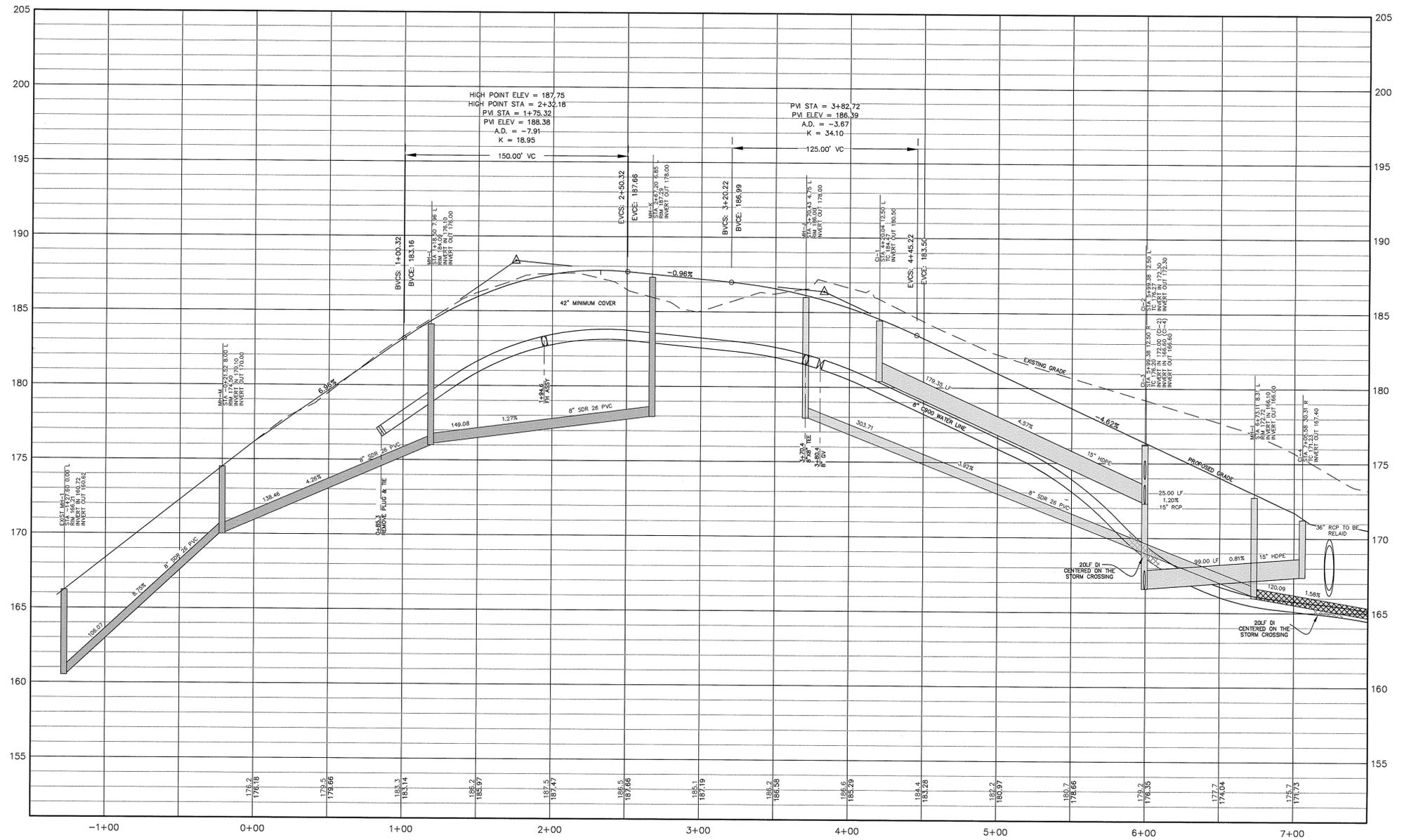
SEPTEMBER 11, 2007

SHEET NUMBER

C-7



ROSEWOOD LANE
 (PRIVATE STREET)
 ROADWAY PROFILE 0+00 TO 7+50



DWS-14030



REVISIONS

PROJECT NAME

**NORTH RIDGE
 PARK PHASE II
 SECTION I**

**ROSEWOOD
 LANE 7+50 TO
 13+00 PROFILE**

CLIENT

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DRAWING SCALE

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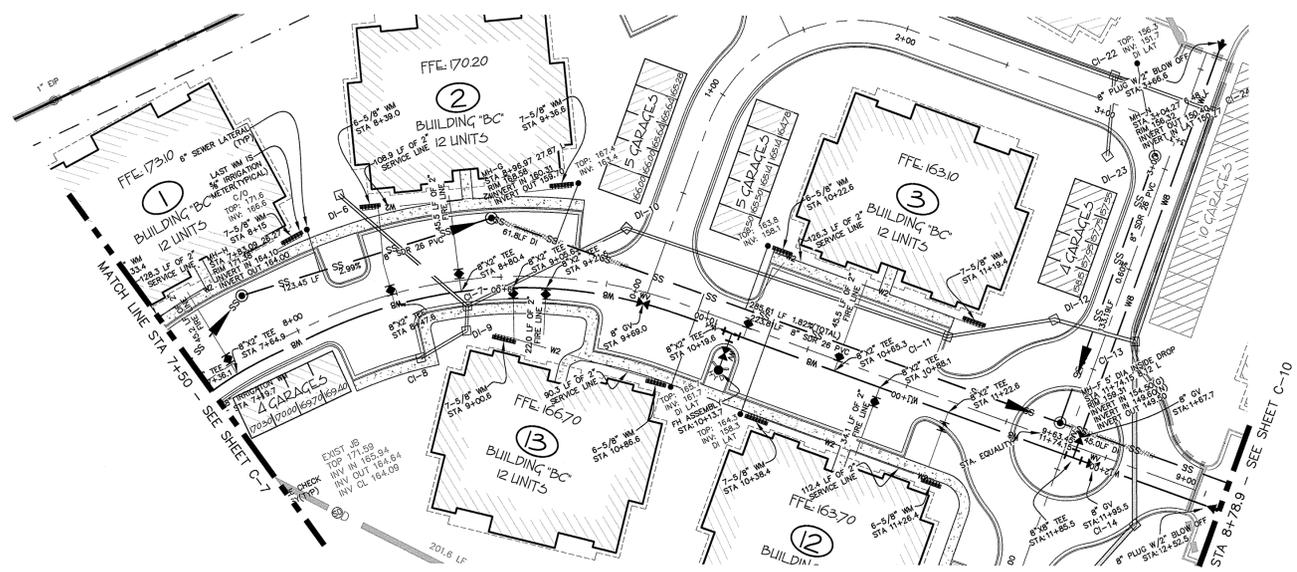
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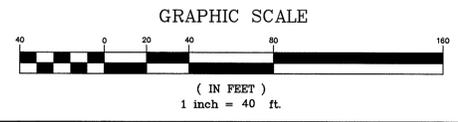
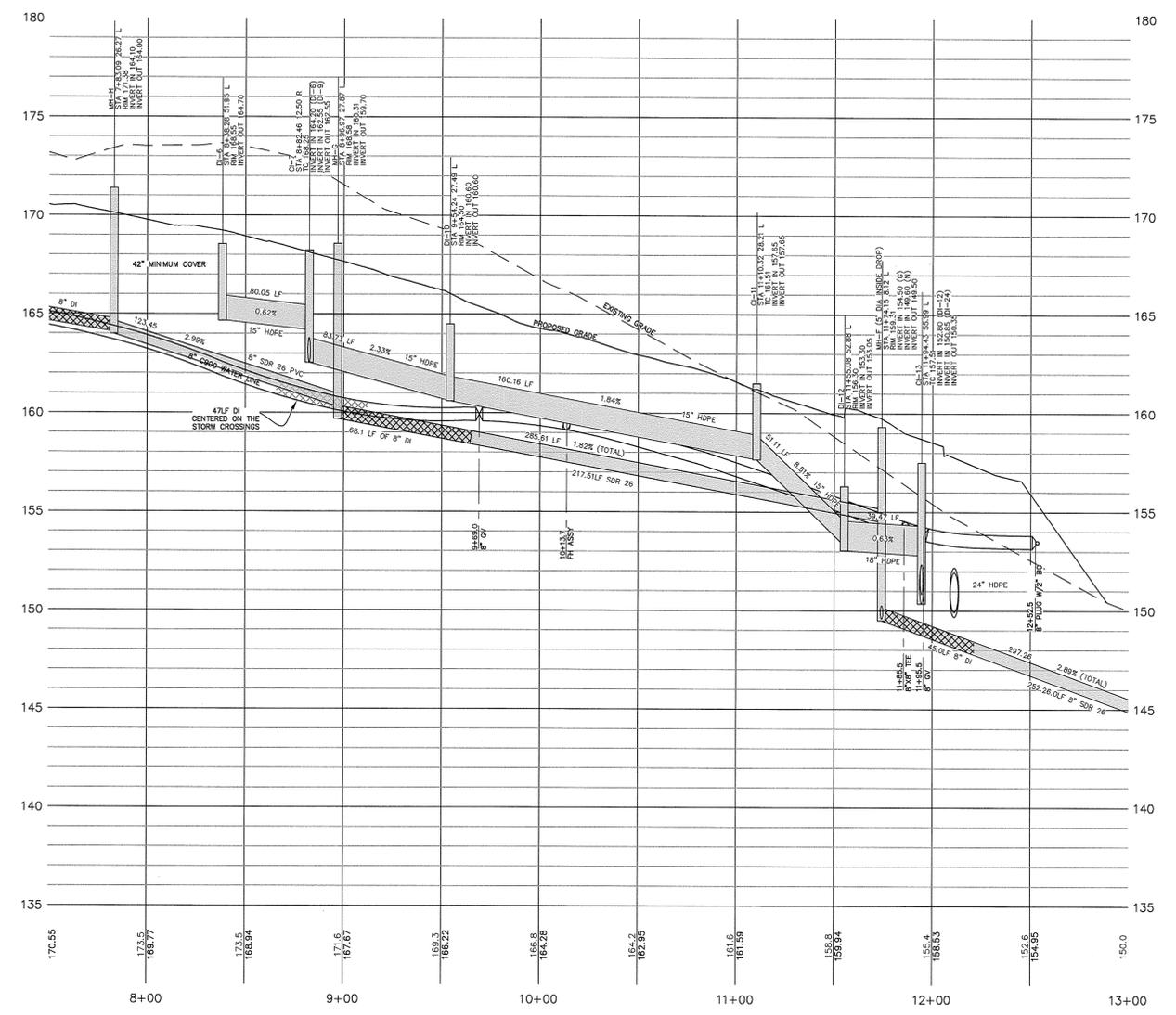
SHEET NUMBER

C-8

OF 17
 DWS-14030



**ROSEWOOD LANE
 (PRIVATE STREET)
 ROADWAY PROFILE 7+50 TO 13+00**



DWS-14030



REVISIONS

PROJECT NAME

**NORTH RIDGE
 PARK PHASE II
 SECTION I**

**ROCK CREEK
 DRIVE &
 VALMONT
 AVENUE
 PROFILE**

CLIENT

**GREEN VALLEY
 SOUTH, LLC**

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 Fayetteville, North Carolina 28311
 Phone: (910) 527-2007
 Fax: (910) 401-1231

PROJECT INFORMATION

DESIGNED BY:	CHRIS
DRAWN BY:	CHRIS
CHECKED BY:	SCOTT
PROJECT NUMBER:	265

DRAWING SCALE

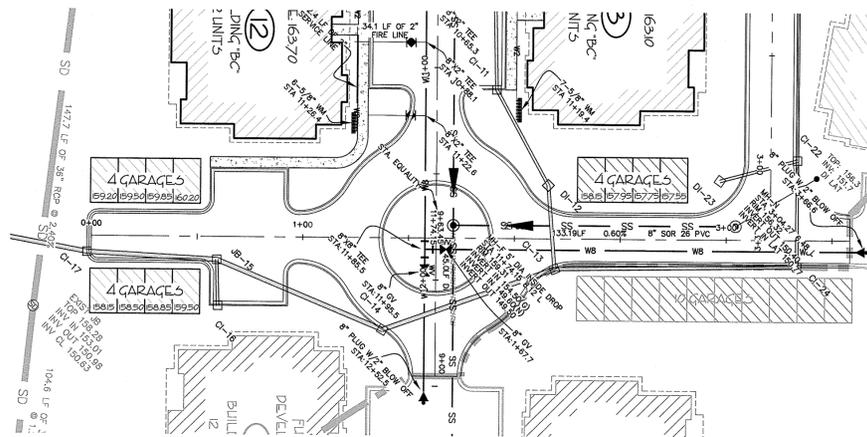
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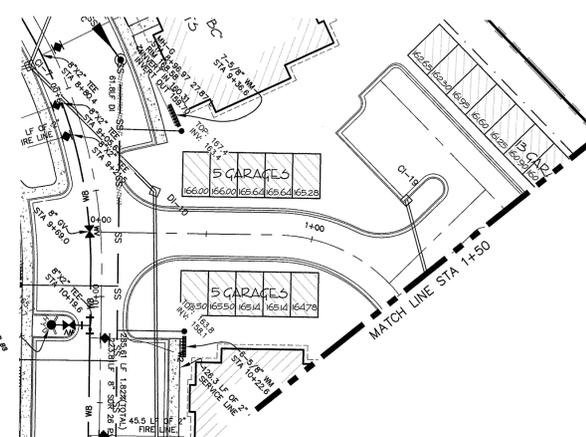
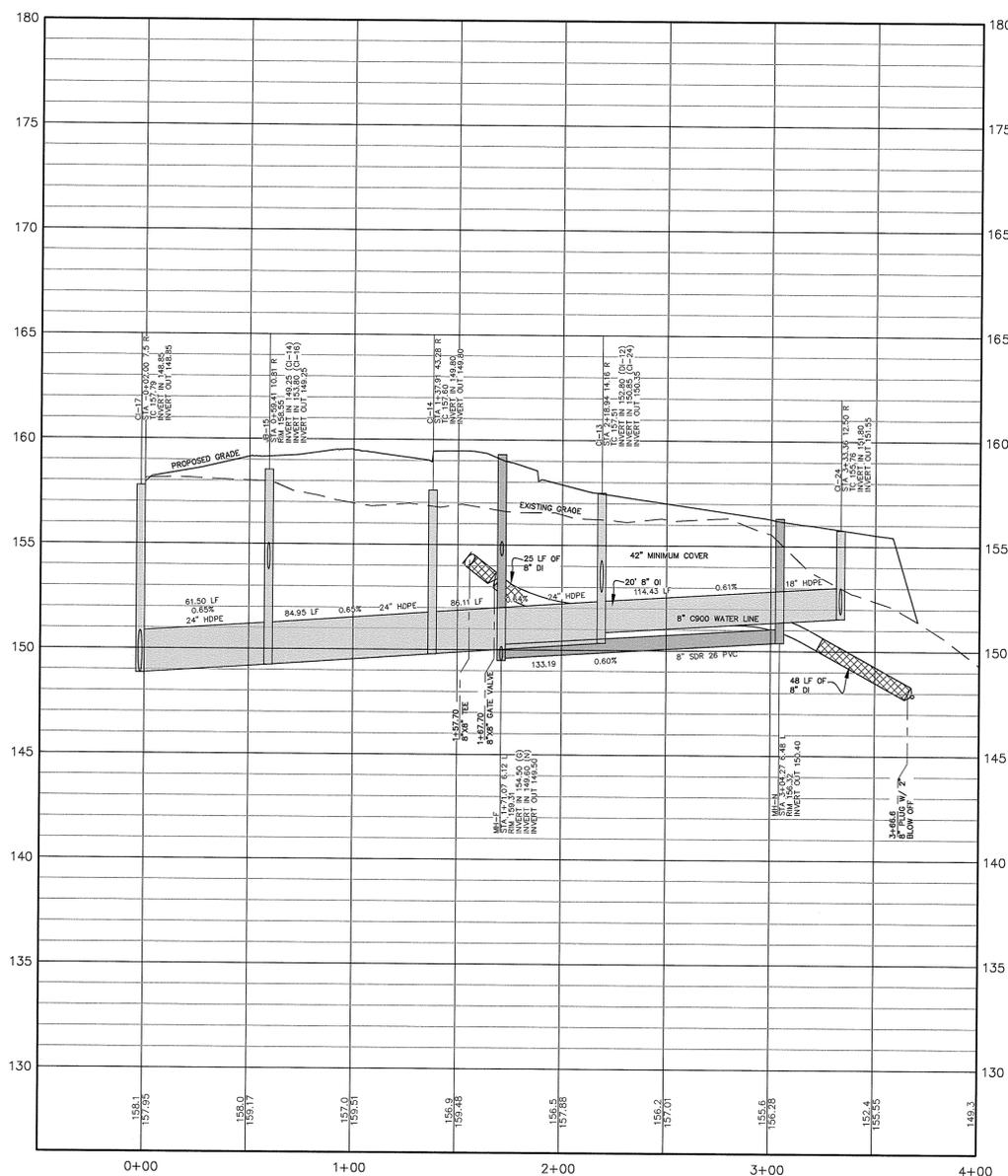
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SHEET NUMBER

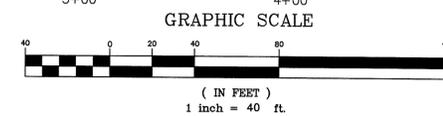
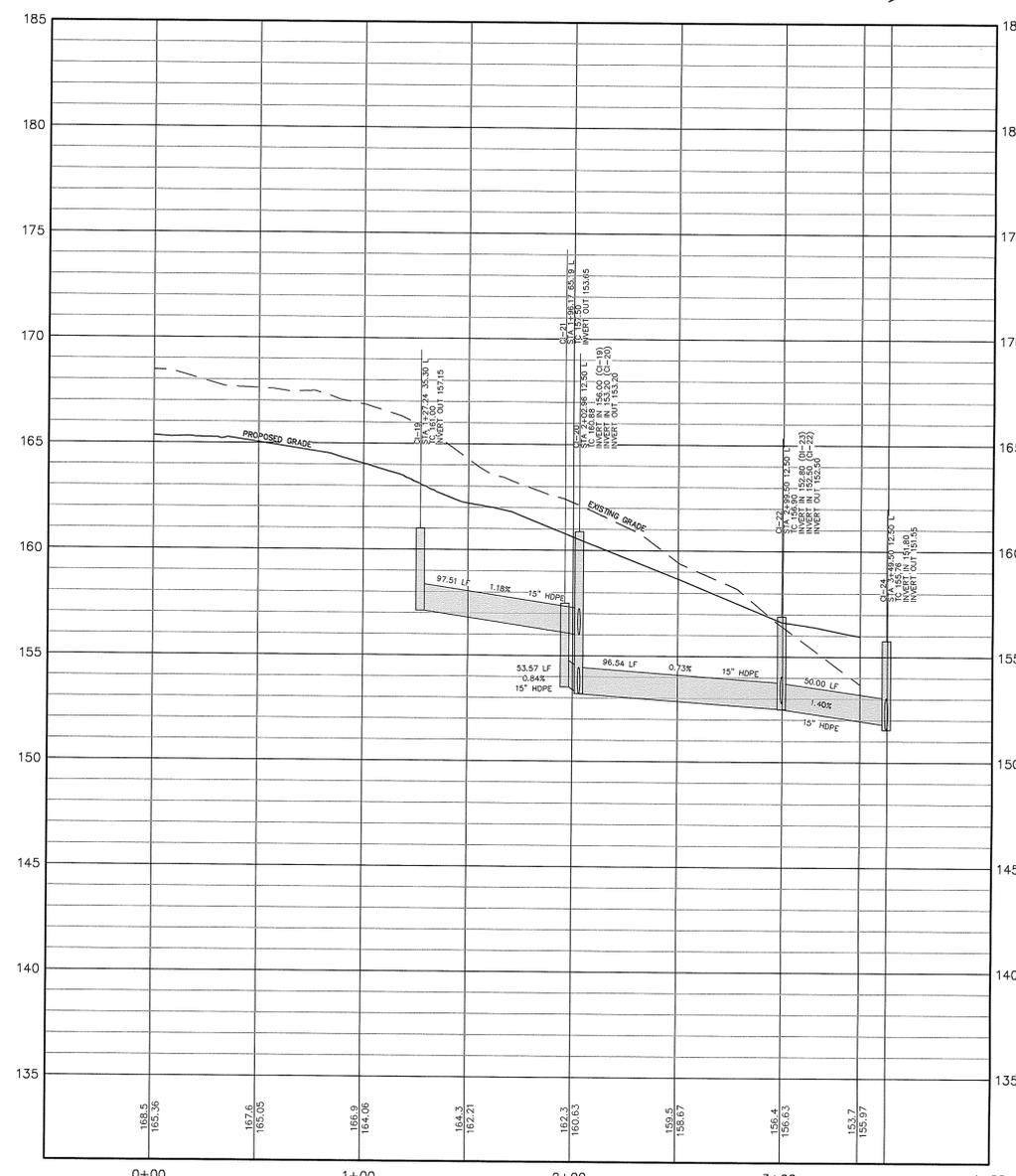
C-9



ROCK CREEK DRIVE
 (PRIVATE STREET)
 ROADWAY PROFILE 0+00 TO 4+00



VALMONT AVENUE
 (PRIVATE STREET)
 ROADWAY PROFILE 0+00 TO 3+37



DWS-14030



REVISIONS

PROJECT NAME

**NORTH RIDGE
 PARK PHASE II
 SECTION I**

**SANITARY
 SEWER
 OUTFALL
 PROFILE**

CLIENT

**GREEN VALLEY
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PROJECT INFORMATION

DESIGNED BY:	CHRIS
DRAWN BY:	CHRIS
CHECKED BY:	SCOTT
PROJECT NUMBER:	265

DRAWING SCALE

HORIZONTAL: 1"=40'
 VERTICAL: 1"=4'

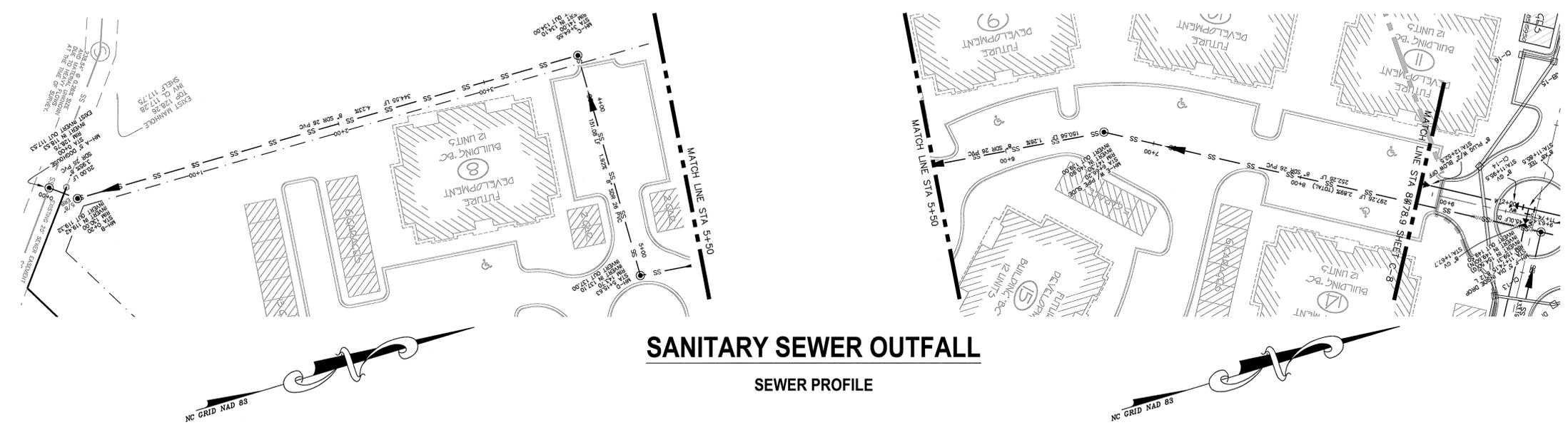
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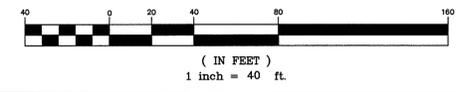
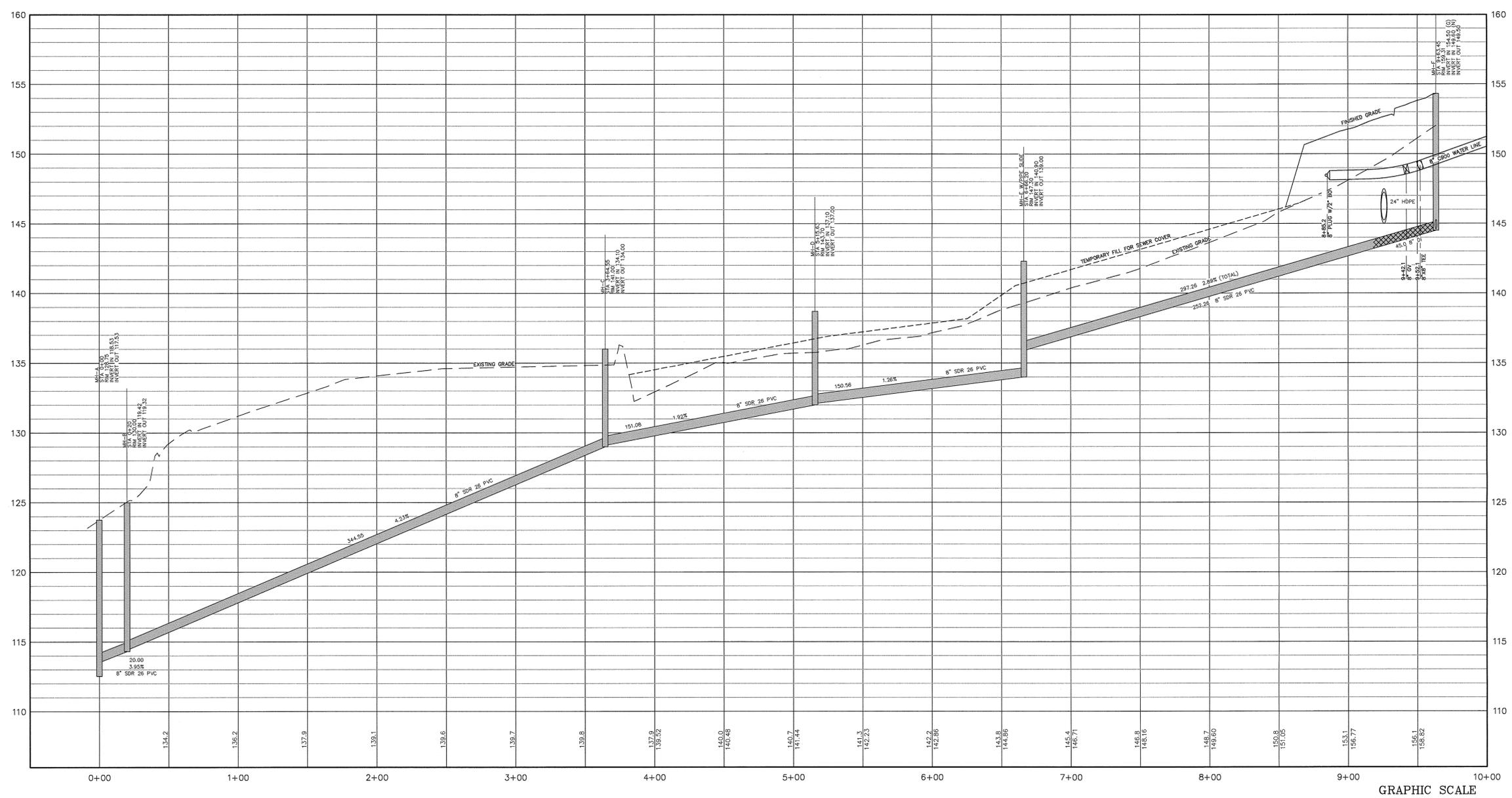
SHEET NUMBER

C-10

OF 17
 DWS-14030



**SANITARY SEWER OUTFALL
 SEWER PROFILE**



DWS-14030



REVISIONS

PROJECT NAME

**NORTH RIDGE
 PARK PHASE II
 SECTION I**

**STORM
 OUTFALL
 PROFILES**

CLIENT

**GREEN VALLEY
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PROJECT INFORMATION

DESIGNED BY:	CHRIS
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CHECKED BY:	SCOTT
PROJECT NUMBER:	265

DRAWING SCALE

HORIZONTAL: 1"=40'
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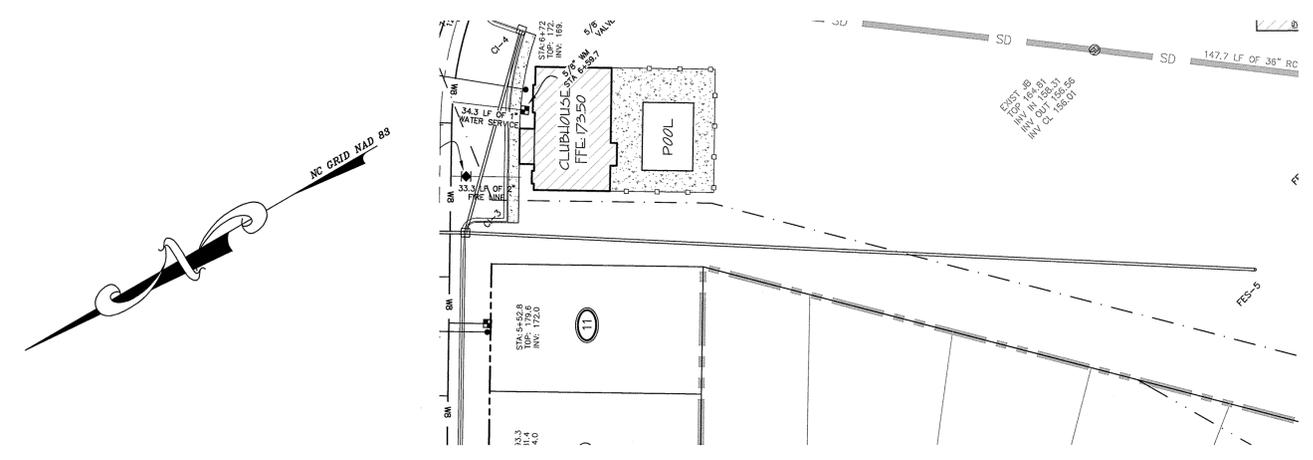
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SEPTEMBER 11, 2007

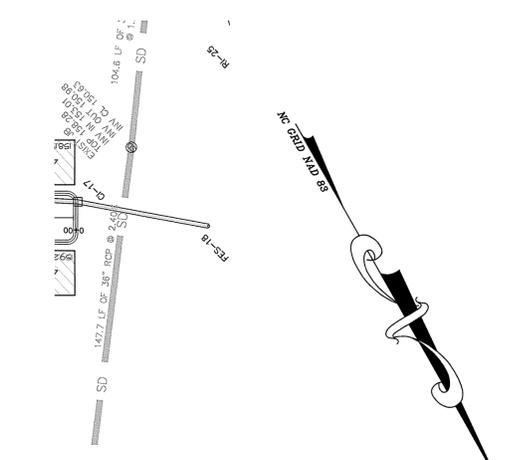
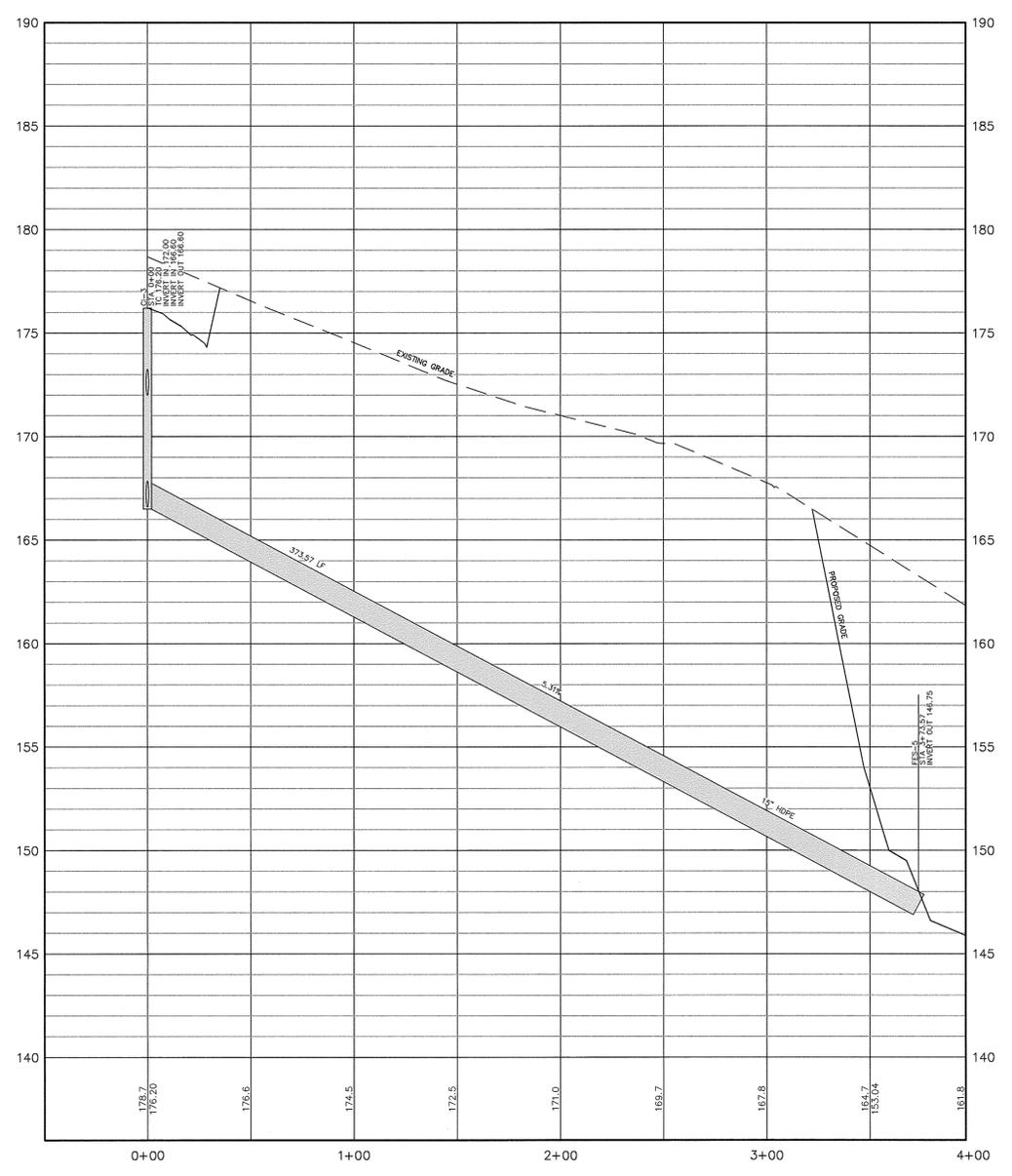
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C-11

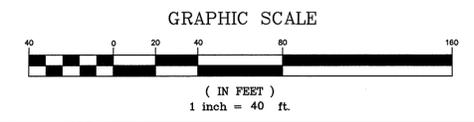
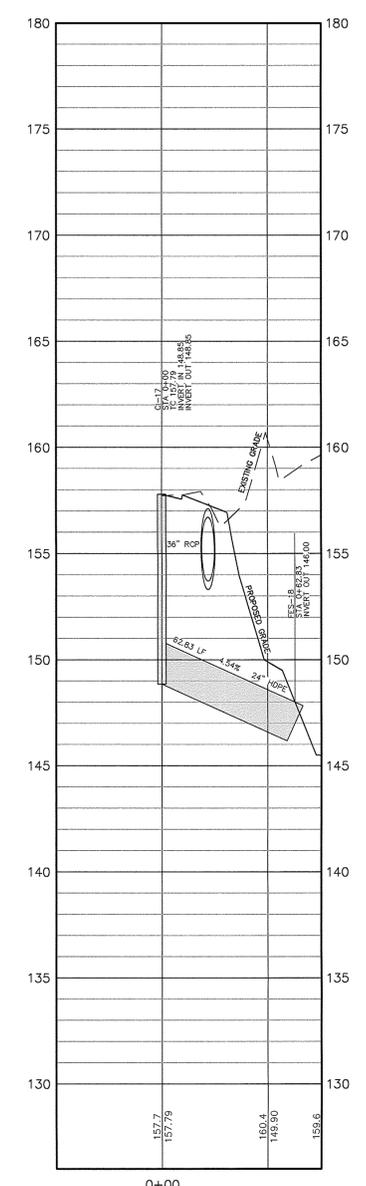
OF 17
 DWS-14030



**FES-5 OUTFALL
 STORM PROFILE**



**FES-18 OUTFALL
 STORM PROFILE**



DWS-14030

1. CLEANOUT ELEVATIONS AND/OR LOCATIONS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER WHEN NECESSARY. CLEANOUT STACK TOP ELEVATIONS ARE DETERMINED BY INTERPOLATING FIELD DATA AND MAY NOT BE EXACT. CLEANOUT ELEVATION TOP SHALL BE SET IN ACCORDANCE WITH THE PUBLIC WORKS COMMISSION TYPICAL DETAIL. (NO SEPARATE PAYMENT).

2. WHERE SANITARY SEWER MAINS ARE TO BE CONSTRUCTED WITHIN 20' OF EXISTING RESIDENCES SPECIAL CONSIDERATION SHALL BE GIVEN TO MINIMIZE UNDERMINING OR OTHERWISE DISTURBING EXISTING RESIDENCES ADJACENT TO THE SEWER MAIN. THE CONTRACTOR SHALL USE A RUBBER TIE BACK RIGID AND NO MECHANICAL CONNECTION EQUIPMENT IN THESE AREAS. THE TRENCH SHALL BE SHOULDER ADEQUATELY TO PREVENT ANY SLOTTING OF THE SOIL. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND FOLLOW RECOMMENDATIONS. SPECIAL CONSIDERATION SHALL BE GIVEN TO MINIMIZE UNDERMINING OR OTHERWISE DISTURBING EXISTING RESIDENCES ADJACENT TO THE SEWER MAIN. THE CONTRACTOR SHALL USE A RUBBER TIE BACK RIGID AND NO MECHANICAL CONNECTION EQUIPMENT IN THESE AREAS. THE TRENCH SHALL BE SHOULDER ADEQUATELY TO PREVENT ANY SLOTTING OF THE SOIL. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND FOLLOW RECOMMENDATIONS.

3. SANITARY SEWER MANHOLE DEFLECTION ANGLES ARE 160 DEGREES UNLESS NOTED OTHERWISE. ALL INVERT ELEVATIONS ARE SHOWN TO THE MANHOLE CENTERLINE.

GENERAL NOTES	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
SANITARY SEWER UTILITY	FAYETTEVILLE, N.C.			
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: SEWER NOTES.DWG

1. PRECAST REINFORCED CONCRETE MANHOLES SHALL BE IN ACCORDANCE WITH ASTM C137.

2. MIN. CONCRETE COMPRESSIVE STRENGTH SHALL BE 4000 PSI. MANHOLES GREATER THAN 12' DEPTH SHALL BE REINFORCED WITH #4 REBAR. FLEXIBLE BUTYL RUBBER JOINT SEALANT SHALL BE USED AT ALL JOINTS. RUBBER CASSETTE DETAILS SHALL BE IN ACCORDANCE WITH AASHTO M 288.

3. FLEXIBLE EPDM RUBBER BOOT CONNECTORS SHALL BE USED AT ALL JOINTS. RUBBER CASSETTE DETAILS SHALL BE IN ACCORDANCE WITH AASHTO M 288.

4. CONNECTIONS TO EXISTING MANHOLES SHALL BE BY CORING MAIN HOLES AND INSTALLING A RIGID RUBBER TIE BACK RIGID AND NO MECHANICAL CONNECTION EQUIPMENT IN THESE AREAS. THE TRENCH SHALL BE SHOULDER ADEQUATELY TO PREVENT ANY SLOTTING OF THE SOIL. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND FOLLOW RECOMMENDATIONS.

5. MORTAR SHALL BE COLOR SETTING, NON-SHINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

6. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

7. PREFORMED MANHOLE WHERES ARE NOT ACCEPTABLE UNLESS SPECIFICALLY APPROVED BY PWC IN WRITING. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.

8. MORTAR SHALL BE COLOR SETTING, NON-SHINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

9. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

10. PREFORMED MANHOLE WHERES ARE NOT ACCEPTABLE UNLESS SPECIFICALLY APPROVED BY PWC IN WRITING. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.

11. VERTICAL DROPS BETWEEN THE INVERTS OF SEWER MAINS SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

12. MANHOLE RING AND COVER AND DROP STRUCTURE SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

13. ALL INVERT ELEVATIONS ARE SHOWN TO THE MANHOLE CENTERLINE.

STANDARD MANHOLE	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: STANDARD MANHOLE.DWG

1. MANHOLE MEETS ALL REQ. OF AASHTO M 288.

2. CONCRETE IS MINIMUM 4000 PSI COMPRESSIVE STRENGTH.

3. MATERIAL USED TO SEAL AROUND PIPE SHALL BE NON-SHINK GROUT. MANHOLE IS NOT ACCEPTABLE.

4. MANHOLE SHALL BE CONSTRUCTED OF PRECAST CONCRETE REINFORCED MANHOLE IS NOT ACCEPTABLE.

5. DROP STRUCTURE SHALL BE CONSTRUCTED OF PRECAST CONCRETE REINFORCED MANHOLE IS NOT ACCEPTABLE.

6. WITH THE EXCEPTION OF OTHER MATERIALS, INSTALLATION OF MANHOLE SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

7. IN ORDER TO PROVIDE A WATERPROOF CONNECTION AT EXIST. PIPE ENTRANCES, CONTRACTOR SHALL USE A RUBBER TIE BACK RIGID AND NO MECHANICAL CONNECTION EQUIPMENT IN THESE AREAS. THE TRENCH SHALL BE SHOULDER ADEQUATELY TO PREVENT ANY SLOTTING OF THE SOIL. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND FOLLOW RECOMMENDATIONS.

8. MANHOLES GREATER THAN 12' IN DEPTH SHALL HAVE MIN. 6" EXTENDED BASE. SEE STANDARD MANHOLE DETAIL FOR ADDITIONAL REQUIREMENTS.

9. FLEXIBLE BUTYL RUBBER BOOT CONNECTORS SHALL BE USED AT ALL JOINTS. RUBBER CASSETTE DETAILS SHALL BE IN ACCORDANCE WITH AASHTO M 288.

10. CONNECTIONS TO EXISTING MANHOLES SHALL BE BY CORING MAIN HOLES AND INSTALLING A RIGID RUBBER TIE BACK RIGID AND NO MECHANICAL CONNECTION EQUIPMENT IN THESE AREAS. THE TRENCH SHALL BE SHOULDER ADEQUATELY TO PREVENT ANY SLOTTING OF THE SOIL. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND FOLLOW RECOMMENDATIONS.

11. MORTAR SHALL BE COLOR SETTING, NON-SHINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

12. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

13. PREFORMED MANHOLE WHERES ARE NOT ACCEPTABLE UNLESS SPECIFICALLY APPROVED BY PWC IN WRITING. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.

14. VERTICAL DROPS BETWEEN THE INVERTS OF SEWER MAINS SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

15. MANHOLE RING AND COVER AND DROP STRUCTURE SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

16. ALL INVERT ELEVATIONS ARE SHOWN TO THE MANHOLE CENTERLINE.

DOGHOUSE MANHOLE	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: DOGHOUSE.DWG

1. MORTAR SHALL BE COLOR SETTING, NON-SHINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

2. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

3. PREFORMED MANHOLE WHERES ARE NOT ACCEPTABLE UNLESS SPECIFICALLY APPROVED BY PWC IN WRITING. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.

4. VERTICAL DROPS BETWEEN THE INVERTS OF SEWER MAINS SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

5. MANHOLE RING AND COVER AND DROP STRUCTURE SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

6. ALL INVERT ELEVATIONS ARE SHOWN TO THE MANHOLE CENTERLINE.

PIPE SLIDE, MORTAR SLIDE AND SHELF DETAILS	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: PIPE SLIDE.DWG

1. MANHOLE SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

2. ALL PIPING SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

3. DROPPED STRUCTURE SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

4. FLEX. BOOT SHALL BE CONNECTED TO MH WITH FLEXIBLE BUTYL RUBBER BOOT CONNECTORS SHALL CONFORM TO ASTM A1372.

5. CONNECTIONS TO EXISTING MANHOLES SHALL BE BY CORING MAIN HOLES AND INSTALLING A RIGID RUBBER TIE BACK RIGID AND NO MECHANICAL CONNECTION EQUIPMENT IN THESE AREAS. THE TRENCH SHALL BE SHOULDER ADEQUATELY TO PREVENT ANY SLOTTING OF THE SOIL. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND FOLLOW RECOMMENDATIONS.

6. MORTAR SHALL BE COLOR SETTING, NON-SHINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

7. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

8. PREFORMED MANHOLE WHERES ARE NOT ACCEPTABLE UNLESS SPECIFICALLY APPROVED BY PWC IN WRITING. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.

9. VERTICAL DROPS BETWEEN THE INVERTS OF SEWER MAINS SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

10. MANHOLE RING AND COVER AND DROP STRUCTURE SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

11. ALL INVERT ELEVATIONS ARE SHOWN TO THE MANHOLE CENTERLINE.

INTERIOR DROP STRUCTURE GRAVITY SEWER MAINS & LATERALS	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: DROPS.DWG

1. MANHOLE FRAME AND COVER TO BE MADE OF GRAY CAST IRON CONFORMING TO ASTM SPEC. A48-8. ALL CASTINGS SHALL CONFORM TO THE SHAPE AND DIMENSIONS SHOWN. THEY SHALL BE CLEAN AND PERFECTLY FINISHED. THERE SHALL BE NO DEFECTS OF ANY KIND, TENDING TO IMPAIR THEIR USE OR ENDURANCE. DEFECTIVE HOLES WILL BE PERMITTED.

2. CASTINGS SHALL BE UNPAINTED AND SHALL HAVE THE LETTERS "PWC AND "FAYETTEVILLE CAST IRON COVER LETTERS SHALL BE RAISED AND CLEARLY VISIBLE.

3. MANHOLE RING AND COVER SHALL WITHSTAND H-20 VERTICAL TRAFFIC. RIGGING COVERS SHALL NOT BE ACCEPTABLE.

4. PERFORATED COVERS WILL NOT BE ALLOWED.

5. CAM-LOCK HEAD SHALL BE COMPATIBLE WITH STANDARD PWC LOCK FOR TURNING CAM-LOCK MECHANISM.

6. MANHOLE FRAME AND COVER SHALL BE MADE OF GRAY CAST IRON CONFORMING TO ASTM SPEC. A48-8. ALL CASTINGS SHALL CONFORM TO THE SHAPE AND DIMENSIONS SHOWN. THEY SHALL BE CLEAN AND PERFECTLY FINISHED. THERE SHALL BE NO DEFECTS OF ANY KIND, TENDING TO IMPAIR THEIR USE OR ENDURANCE. DEFECTIVE HOLES WILL BE PERMITTED.

7. CASTINGS SHALL BE UNPAINTED AND SHALL HAVE THE LETTERS "PWC AND "FAYETTEVILLE CAST IRON COVER LETTERS SHALL BE RAISED AND CLEARLY VISIBLE.

8. MANHOLE RING AND COVER SHALL WITHSTAND H-20 VERTICAL TRAFFIC. RIGGING COVERS SHALL NOT BE ACCEPTABLE.

9. PERFORATED COVERS WILL NOT BE ALLOWED.

10. CAM-LOCK HEAD SHALL BE COMPATIBLE WITH STANDARD PWC LOCK FOR TURNING CAM-LOCK MECHANISM.

STANDARD NON-TRAFFIC AREA MANHOLE RING AND COVER WITH WIPER GASKET & CAM LOCK	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: RING COVER.DWG

1. MANHOLE FRAME AND COVER SHALL BE MADE OF GRAY CAST IRON CONFORMING TO ASTM SPEC. A48-8. ALL CASTINGS SHALL CONFORM TO THE SHAPE AND DIMENSIONS SHOWN. THEY SHALL BE CLEAN AND PERFECTLY FINISHED. THERE SHALL BE NO DEFECTS OF ANY KIND, TENDING TO IMPAIR THEIR USE OR ENDURANCE. DEFECTIVE HOLES WILL BE PERMITTED.

2. CASTINGS SHALL BE UNPAINTED AND SHALL HAVE THE LETTERS "PWC AND "FAYETTEVILLE CAST IRON COVER LETTERS SHALL BE RAISED AND CLEARLY VISIBLE.

3. MANHOLE RING AND COVER SHALL WITHSTAND H-20 VERTICAL TRAFFIC. RIGGING COVERS SHALL NOT BE ACCEPTABLE.

4. PERFORATED COVERS WILL NOT BE ALLOWED.

5. CAM-LOCK HEAD SHALL BE COMPATIBLE WITH STANDARD PWC LOCK FOR TURNING CAM-LOCK MECHANISM.

6. MANHOLE FRAME AND COVER SHALL BE MADE OF GRAY CAST IRON CONFORMING TO ASTM SPEC. A48-8. ALL CASTINGS SHALL CONFORM TO THE SHAPE AND DIMENSIONS SHOWN. THEY SHALL BE CLEAN AND PERFECTLY FINISHED. THERE SHALL BE NO DEFECTS OF ANY KIND, TENDING TO IMPAIR THEIR USE OR ENDURANCE. DEFECTIVE HOLES WILL BE PERMITTED.

7. CASTINGS SHALL BE UNPAINTED AND SHALL HAVE THE LETTERS "PWC AND "FAYETTEVILLE CAST IRON COVER LETTERS SHALL BE RAISED AND CLEARLY VISIBLE.

8. MANHOLE RING AND COVER SHALL WITHSTAND H-20 VERTICAL TRAFFIC. RIGGING COVERS SHALL NOT BE ACCEPTABLE.

9. PERFORATED COVERS WILL NOT BE ALLOWED.

10. CAM-LOCK HEAD SHALL BE COMPATIBLE WITH STANDARD PWC LOCK FOR TURNING CAM-LOCK MECHANISM.

STANDARD MANHOLE RING AND COVER	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: RING COVER.DWG

1. COPOLYMER POLYPROPYLENE PLASTIC STEPS SHALL BE INSTALLED IN ALL STRUCTURES 2' DEPTH OR GREATER.

2. STEPS SHALL BE INSTALLED BY MANUFACTURER AND SHALL BE ALIGNED OVER STRUCTURE INVERT.

3. DIMENSIONS SHOWN ARE TO CONVEY THE DESIRED SIZE OF THE STEP STEPS. THE EXACT SIZE AND CONSTRUCTION MAY BE ACCEPTABLE PROVIDED MATERIALS, SUBSTITUTES, & APPROVED METHODS OF CONSTRUCTION AND MATERIALS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

4. METHODS OF CONSTRUCTION AND MATERIALS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH AASHTO M 288. REGULATIONS ALIGN INVERT OUT.

5. PURIFIED COVERS WILL NOT BE ALLOWED.

STRUCTURE STEP	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: STEP.DWG

1. CONTRACTOR SHALL MAKE UP STACK AND SUBMIT TO ENGINEER FOR APPROVAL. AND SHALL SUBMIT TAPPING SADDLE & USED TO ENGINEER FOR APPROVAL.

2. HOLE IN SANITARY SEWER MAIN MUST BE CUT WITH SHELL CUTTER. NO HAMMERS TO BE ALLOWED.

3. LATERAL SHALL CONFORM TO ASTM SPEC. S 3036 SDR 35 UNLESS OTHERWISE INDICATED AS DUCTILE IRON.

4. ALL PIPE AND FITTINGS SHALL BE 1/2" UNLESS OTHERWISE SPECIFIED.

5. ALL D.I. PIPE SHALL HAVE AN INTERIOR LINING OF CEMENTitious EPoxy OR FUSED CALCIUM ALUMINATE AGGREGATES. THE ENTIRE LATERAL SHALL BE COMPOSED OF D.I. PIPE AND MECHANICAL JOINT FITTINGS.

6. ALL CONNECTIONS SHALL HAVE RUBBER GASKET SEALS INSTALLED.

7. SANITARY SEWER SERVICE CO STACK SHALL BE LOCATED 18" FROM WATER SERVICE LOCK VALVE WHEN IN SAME DITCH.

8. THE CONTRACTOR MAY USE A TAPPING SADDLE WITH STRAP'S ALIGNMENT PLANK FOR CONNECTION TO PIPE. TAPPING SADDLES WITHOUT AN ALIGNMENT PLANK WILL NOT BE ACCEPTABLE.

9. THE CONTRACTOR SHALL USE SDR 35 P.V.C. TEE FOR CONNECTION TO SDR 35 P.V.C. PIPE OR D.I. TEE FOR CONNECTION TO DUCTILE IRON PIPE. P.V.C. TEE SHALL BE ONE PIECE MOLDED OR FABRICATED. TEE WELDS AND TWO PIECE TEES ARE NOT ACCEPTABLE.

10. INSTALLATION OTHER THAN AS SHOWN MUST BE ENGINEER APPROVED BY THE PWC.

11. TAPPING PROCESS SHOWN SHALL BE USED FOR ALL SANITARY SEWER MAINS.

SEWER SERVICE LATERAL	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: SLS.DWG

1. CONTRACTOR SHALL MAKE UP STACK AND SUBMIT TO ENGINEER FOR APPROVAL. AND SHALL SUBMIT TAPPING SADDLE & USED TO ENGINEER FOR APPROVAL.

2. HOLE IN SANITARY SEWER MAIN MUST BE CUT WITH SHELL CUTTER. NO HAMMERS TO BE ALLOWED.

3. LATERAL SHALL CONFORM TO ASTM SPEC. S 3036 SDR 35 UNLESS OTHERWISE INDICATED AS DUCTILE IRON.

4. ALL PIPE AND FITTINGS SHALL BE 1/2" UNLESS OTHERWISE SPECIFIED.

5. ALL D.I. PIPE SHALL HAVE AN INTERIOR LINING OF CEMENTitious EPoxy OR FUSED CALCIUM ALUMINATE AGGREGATES. THE ENTIRE LATERAL SHALL BE COMPOSED OF D.I. PIPE AND MECHANICAL JOINT FITTINGS.

6. ALL CONNECTIONS SHALL HAVE RUBBER GASKET SEALS INSTALLED.

7. SANITARY SEWER SERVICE CO STACK SHALL BE LOCATED 18" FROM WATER SERVICE LOCK VALVE WHEN IN SAME DITCH.

8. THE CONTRACTOR MAY USE A TAPPING SADDLE WITH STRAP'S ALIGNMENT PLANK FOR CONNECTION TO PIPE. TAPPING SADDLES WITHOUT AN ALIGNMENT PLANK WILL NOT BE ACCEPTABLE.

9. THE CONTRACTOR SHALL USE SDR 35 P.V.C. TEE FOR CONNECTION TO SDR 35 P.V.C. PIPE OR D.I. TEE FOR CONNECTION TO DUCTILE IRON PIPE. P.V.C. TEE SHALL BE ONE PIECE MOLDED OR FABRICATED. TEE WELDS AND TWO PIECE TEES ARE NOT ACCEPTABLE.

10. INSTALLATION OTHER THAN AS SHOWN MUST BE ENGINEER APPROVED BY THE PWC.

11. TAPPING PROCESS SHOWN SHALL BE USED FOR ALL SANITARY SEWER MAINS.

SEWER SERVICE LATERAL NOTES	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: SLSNOTES.DWG

1. ALL EXCAVATIONS SHALL COMPLY WITH THE TERMS AND CONDITIONS OF THE CONSTRUCTION STANDARDS FOR EXCAVATIONS IN CIVIL SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" CHAPTER XVII OF TITLE 28, C.F.R. PART 101. THE CONTRACTOR SHALL HAVE A COMPETENT PERSON ON THE JOB AT ALL TIMES AND SHALL EMPLOY A PROFESSIONAL ENGINEER TO ACT UPON ALL PERTINENT MATTERS OF THE WORK.

2. BEDDING MATERIAL QUANTITIES ARE CALCULATED BASED ON THE FOLLOWING TRENCH BEDDING MATERIAL SHALL BE INSTALLED REGARDLESS OF PIPE MATERIAL.

3. THE BEDDING MATERIAL SHALL BE GRANULAR, CLEAN, COARSE SAND OR GRAVEL, OR WELL GRADED CRUSHED ROCK PLACED IN LAYERS NOT THICKER THAN 12" TO PROVIDE THE FULL WIDTH OF THE TRENCH.

4. BEDDING MATERIAL SHALL BE INSTALLED AND PAID FOR IN ACCORDANCE WITH THE FOLLOWING CHART TO PROVIDE CLASS B BEDDING.

5. SUBBASE SHALL BE UNDISTURBED SOIL. WHERE SOIL IS DEMOLISHED, IT SHALL BE REPLACED AND BACKFILLED WITH SELECT BEDDING MATERIAL. AREAS NOT AUTHORIZED AS UNDISTURBED SHALL BE BACKFILLED AT CONTRACTOR'S EXPENSE WITH SELECT BEDDING MATERIAL.

6. BEDDING MATERIAL SHALL BE INSTALLED AND PAID FOR IN ACCORDANCE WITH THE FOLLOWING CHART TO PROVIDE CLASS B BEDDING.

7. CONTRACTOR SHALL USE TRENCH BOX SHORING IN ALL OPEN CUTS & PAVED AREAS. TRENCH WIDTH SHALL BE MAINTAINED AT THE MINIMUM PRACTICAL WIDTH.

SEWER SERVICE LATERAL UTILITY CONFLICT SEPARATION REQUIREMENTS	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: U/C CONFLICT.DWG

1. ALL EXCAVATIONS SHALL COMPLY WITH THE TERMS AND CONDITIONS OF THE CONSTRUCTION STANDARDS FOR EXCAVATIONS IN CIVIL SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" CHAPTER XVII OF TITLE 28, C.F.R. PART 101. THE CONTRACTOR SHALL HAVE A COMPETENT PERSON ON THE JOB AT ALL TIMES AND SHALL EMPLOY A PROFESSIONAL ENGINEER TO ACT UPON ALL PERTINENT MATTERS OF THE WORK.

2. BEDDING MATERIAL QUANTITIES ARE CALCULATED BASED ON THE FOLLOWING TRENCH BEDDING MATERIAL SHALL BE INSTALLED REGARDLESS OF PIPE MATERIAL.

3. THE BEDDING MATERIAL SHALL BE GRANULAR, CLEAN, COARSE SAND OR GRAVEL, OR WELL GRADED CRUSHED ROCK PLACED IN LAYERS NOT THICKER THAN 12" TO PROVIDE THE FULL WIDTH OF THE TRENCH.

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5. SUBBASE SHALL BE UNDISTURBED SOIL. WHERE SOIL IS DEMOLISHED, IT SHALL BE REPLACED AND BACKFILLED WITH SELECT BEDDING MATERIAL. AREAS NOT AUTHORIZED AS UNDISTURBED SHALL BE BACKFILLED AT CONTRACTOR'S EXPENSE WITH SELECT BEDDING MATERIAL.

6. BEDDING MATERIAL SHALL BE INSTALLED AND PAID FOR IN ACCORDANCE WITH THE FOLLOWING CHART TO PROVIDE CLASS B BEDDING.

7. CONTRACTOR SHALL USE TRENCH BOX SHORING IN ALL OPEN CUTS & PAVED AREAS. TRENCH WIDTH SHALL BE MAINTAINED AT THE MINIMUM PRACTICAL WIDTH.

SEWER BEDDING	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: SEWER BEDDING.DWG

1. WEAP HOLES SHALL BE EVENLY DISTRIBUTED AMONG THE THREE BEDDING SIDES.

2. MINIMUM SEPARATION OF 1.5 TIMES THE DIAMETER OF THE WEAP HOLE SHALL BE MAINTAINED BETWEEN THE WEAP HOLES.

3. OUTSIDE RISER DIMENSIONS: L=4', W=3" INSIDE RISER DIMENSIONS: L=3", W=2"

TRASH RACK	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: TRASH RACK.DWG

1. WEAP HOLES SHALL BE EVENLY DISTRIBUTED AMONG THE THREE BEDDING SIDES.

2. MINIMUM SEPARATION OF 1.5 TIMES THE DIAMETER OF THE WEAP HOLE SHALL BE MAINTAINED BETWEEN THE WEAP HOLES.

3. OUTSIDE RISER DIMENSIONS: L=4', W=3" INSIDE RISER DIMENSIONS: L=3", W=2"

STORM BASIN RISER DETAIL	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: STORM BASIN RISER.DWG

1. WEAP HOLES SHALL BE EVENLY DISTRIBUTED AMONG THE THREE BEDDING SIDES.

2. MINIMUM SEPARATION OF 1.5 TIMES THE DIAMETER OF THE WEAP HOLE SHALL BE MAINTAINED BETWEEN THE WEAP HOLES.

3. OUTSIDE RISER DIMENSIONS: L=4', W=3" INSIDE RISER DIMENSIONS: L=3", W=2"

STORM BASIN RISER DETAIL	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: STORM BASIN RISER.DWG

1. WEAP HOLES SHALL BE EVENLY DISTRIBUTED AMONG THE THREE BEDDING SIDES.

2. MINIMUM SEPARATION OF 1.5 TIMES THE DIAMETER OF THE WEAP HOLE SHALL BE MAINTAINED BETWEEN THE WEAP HOLES.

3. OUTSIDE RISER DIMENSIONS: L=4', W=3" INSIDE RISER DIMENSIONS: L=3", W=2"

STORM BASIN RISER DETAIL	PUBLIC WORKS COMMISSION	NO.	DATE	REVISION
FAYETTEVILLE, N.C.				
WATER RESOURCES	ENGINEERING DEPARTMENT			

FILE NAME: STORM BASIN RISER.DWG

PROJECT NAME
 NORTH RIDGE PARK PHASE II SECTION I

SEWER & STORM DETAILS

CLIENT
 GREEN VALLEY SOUTH, LLC

428 Swan Island Court
 Fayetteville, North Carolina 28311
 Phone: (910) 627-2007
 Fax: (910) 401-1231

PROJECT INFORMATION

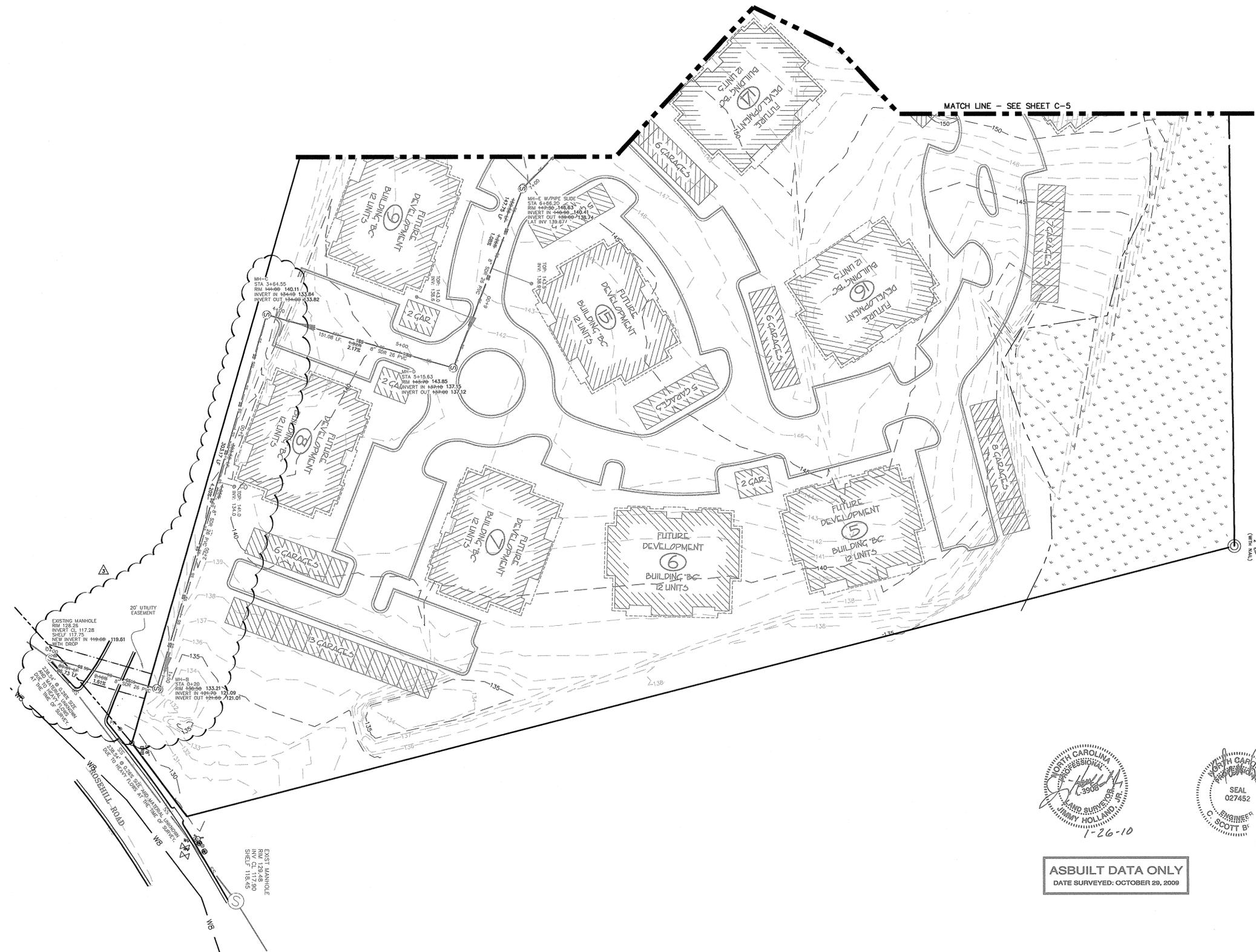
DESIGNED BY: CHRIS
 DRAWN BY: SCOTT
 CHECKED BY: CHRIS
 PROJECT NUMBER: 265

DRAWING SCALE
 NOT TO SCALE

DATE RELEASED
 SEPTEMBER 11, 2007

SHEET NUMBER
 C-13 OF 17
 DWS-14030

- LEGEND:**
- ⊕ EXISTING IRON PIPE
 - ⊕ EXISTING CONCRETE MONUMENT
 - ⊕ EXISTING REBAR
 - ⊕ EXISTING IRON ROD
 - ⊕ COMPUTED POINT
 - N/F - NOW OR FORMERLY
 - R/W - RIGHT OF WAY
 - PT - PINCH TOP
 - PROPERTY LINE
 - ADJACENT PROPERTY LINE
 - RIGHT-OF-WAY
 - SS SANITARY SEWER LINE
 - W WATER LINE
 - SS ASBUILT SANITARY SEWER LINE
 - TREE LINE
 - ⊕ BENCHMARK
 - ⊕ UTILITY POLE
 - ⊕ SEWER CLEANOUT
 - ⊕ WATERMETER
 - ⊕ 2" BALL VALVE
 - ⊕ ASBUILT SANITARY SEWER MANHOLE
 - ⊕ ASBUILT WATER VALVE
 - ⊕ ASBUILT FIRE HYDRANT

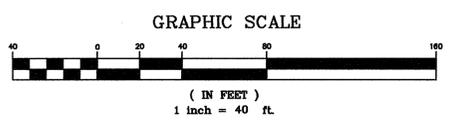


- UTILITY NOTES**
1. THE CONTRACTOR SHALL MAINTAIN A SET OF RED LINE AS-BUILTS DURING THE CONSTRUCTION OF THE WATER LINE. ALL DEVIATIONS FROM THE PLAN SHALL BE NOTED ON THE AS-BUILT DRAWINGS. ALL VALVES AND CHANGE IN DIRECTION OF THE WATER LINE SHALL BE LOCATED WITH A MINIMUM OF TWO DISTANCES FROM A KNOWN OBJECT. THE CONTRACTOR WILL PROVIDE THE AS-BUILT DRAWINGS TO THE OWNER TO BE USED FOR THE WATER LINE CERTIFICATION AT THE COMPLETION OF THE PROJECT.
 2. ANY WATER ENTERING THE SANITARY SEWER SYSTEM TO BE CONSTRUCTED UNDER THE APPROVED PLANS SHALL NOT BE DISCHARGED TO THE EXISTING SEWER SYSTEM. PLUGS SHALL BE INSTALLED IN EXISTING MANHOLES AS NECESSARY TO PERMIT PUMPING THE NEW SYSTEM CLEAR OF WATER AND DEBRIS PRIOR TO ACCEPTANCE BY THE CITY. CARE SHALL BE EXERCISED IN LOCATING PLUGS TO AVOID INTERRUPTING SERVICE TO EXISTING CONNECTIONS. MECHANICAL PLUGS OR MORTAR AND BRICK MUST BE USED. INFLATABLE DEVICES ARE NOT ALLOWED.
 3. HORIZONTAL DIMENSIONS GIVEN FOR UNDERGROUND UTILITY TIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES AFFECTED BY THE PROPOSED WORK.
 5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATIONS AND PROTECTION OF ALL EXISTING UTILITIES SHOWN. ALL EXISTING UTILITIES NOT SHOWN, AND ALL PROPOSED UTILITIES ON THESE PLANS.
 6. THE GENERAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE THE PROPOSED WORK, AND SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
 7. PIPE SHALL BE LAID UPSTREAM WITH THE SPOT ENDS POINTING DOWNSTREAM. ALL PIPES SHALL BE PLACED TRUE TO LINE AND GRADE WITH ENDS ABUTTING CAREFULLY CENTERED, AND WITH A SMOOTH INVERT AT THE JOINT.
 8. MINIMUM SEPARATION BETWEEN SEWER (STORM OR SANITARY) AND WATER LINES SHALL BE 10' HORIZONTAL OR 18" VERTICAL UNLESS NOTED OTHERWISE. MINIMUM VERTICAL SEPARATION BETWEEN SANITARY SEWER AND STORM SEWER SHALL BE 24" UNLESS NOTED OTHERWISE.
 9. ALL MAINS, LATERALS AND APPURTENANCES SHALL BE TESTED IN ACCORDANCE WITH PWC AND NCDENR TECHNICAL SPECIFICATIONS.
 10. ALL MATERIALS SHALL BE APPROVED BY PWC BEFORE INSTALLATION.
 11. ALL SEWER SERVICES SHALL BE 4" PVC WITH A MINIMUM SLOPE OF 2%. TOP ELEVATIONS ARE 2" BELOW FINISHED GRADE. IF 6" SERVICE IS REQUIRED, MINIMUM GRADE IS 1%.
 12. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND PWC A MINIMUM OF 48 HOURS BEFORE CONSTRUCTION OF THE WATER LINE AND SANITARY SEWER LINE BEGINS. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER OF RECORD AND PWC 48 HOURS IN ADVANCE OF ALL TESTING.
 13. ALL DOGHOUSE MANHOLES SHALL BE 5' MANHOLES, SEE DETAIL.
 14. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
 15. EXISTING UTILITIES NOT FOUND IN THE FIELD DURING SURVEY MAY REQUIRE DEMOLITION. NO UTILITIES SHALL BE LEFT IN PLACE THAT CROSS THE NEW LOTS UNLESS RUNNING ALONG A LOT LINE. IF ADDITIONAL UTILITIES ARE FOUND, CONTACT ENGINEER PRIOR TO DEMOLITION.
 16. ALL ELEVATIONS ARE IN NAVD 88 DATUM.
 17. ALL DUCTILE IRON PIPE USED FOR SANITARY SEWER SERVICE SHALL HAVE GRIFFIN "SEWPER" COAT, OR PROTECTO 401 LINING.
 18. ALL SERVICE LATERALS THAT DIRECTLY INTO A MANHOLE SHALL BE LAID SUCH THAT THE CROWN OF THE SERVICE LATERAL IS AT THE SAME ELEVATION AS THE CROWN OF THE MAIN.
 19. ALL LATERALS CONNECTING DIRECTLY TO A MANHOLE SHALL BE PLACED SUCH THAT THE INVERT OF THE SERVICE IS 8" ABOVE THE INVERT OUT OF THE MANHOLE.

SEAL 027452
 ENGINEER
 C. SCOTT B.
 1-26-10

SEAL 027452
 ENGINEER
 JIMMY HOLLAND
 1-26-10

ASBUILT DATA ONLY
 DATE SURVEYED: OCTOBER 29, 2009



REVISIONS

1-22-08 CHANGED LOCATION OF SEWER OUTFALL AND ADJUSTED BACK TO MH-C

ASBUILT DATA ONLY
 DATE SURVEYED: OCTOBER 29, 2009

PROJECT NAME

NORTH RIDGE PARK PHASE II SECTION I

UTILITY PLAN

CLIENT

GREEN VALLEY SOUTH, LLC

428 Swan Island Court
 Fayetteville, North Carolina 28311
 Phone: (910) 423-3555
 Fax: (910) 480-2006

PROJECT INFORMATION

DESIGNED BY:	CHRIS
DRAWN BY:	CHRIS
CHECKED BY:	SCOTT
PROJECT NUMBER:	265

DRAWING SCALE

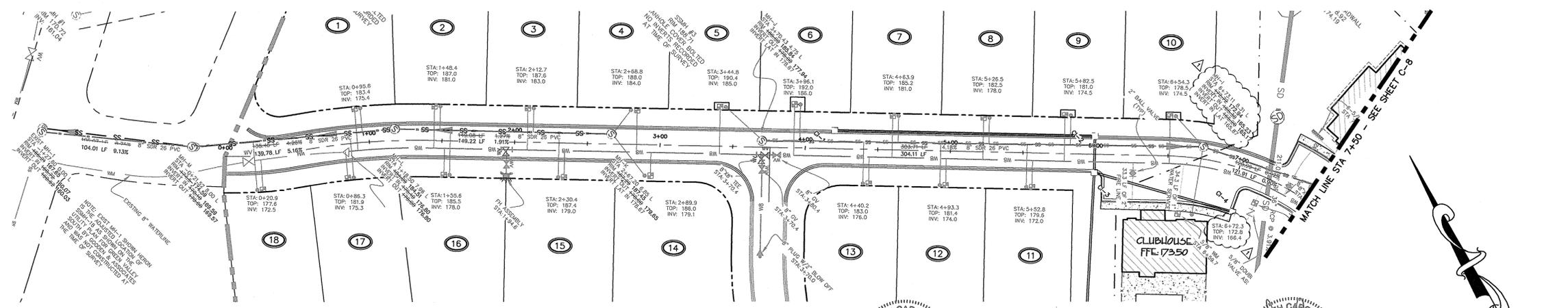
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DATE RELEASED

JANUARY 22, 2008

SHEET NUMBER

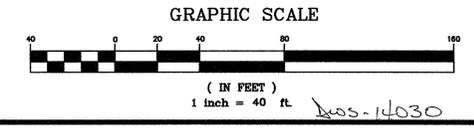
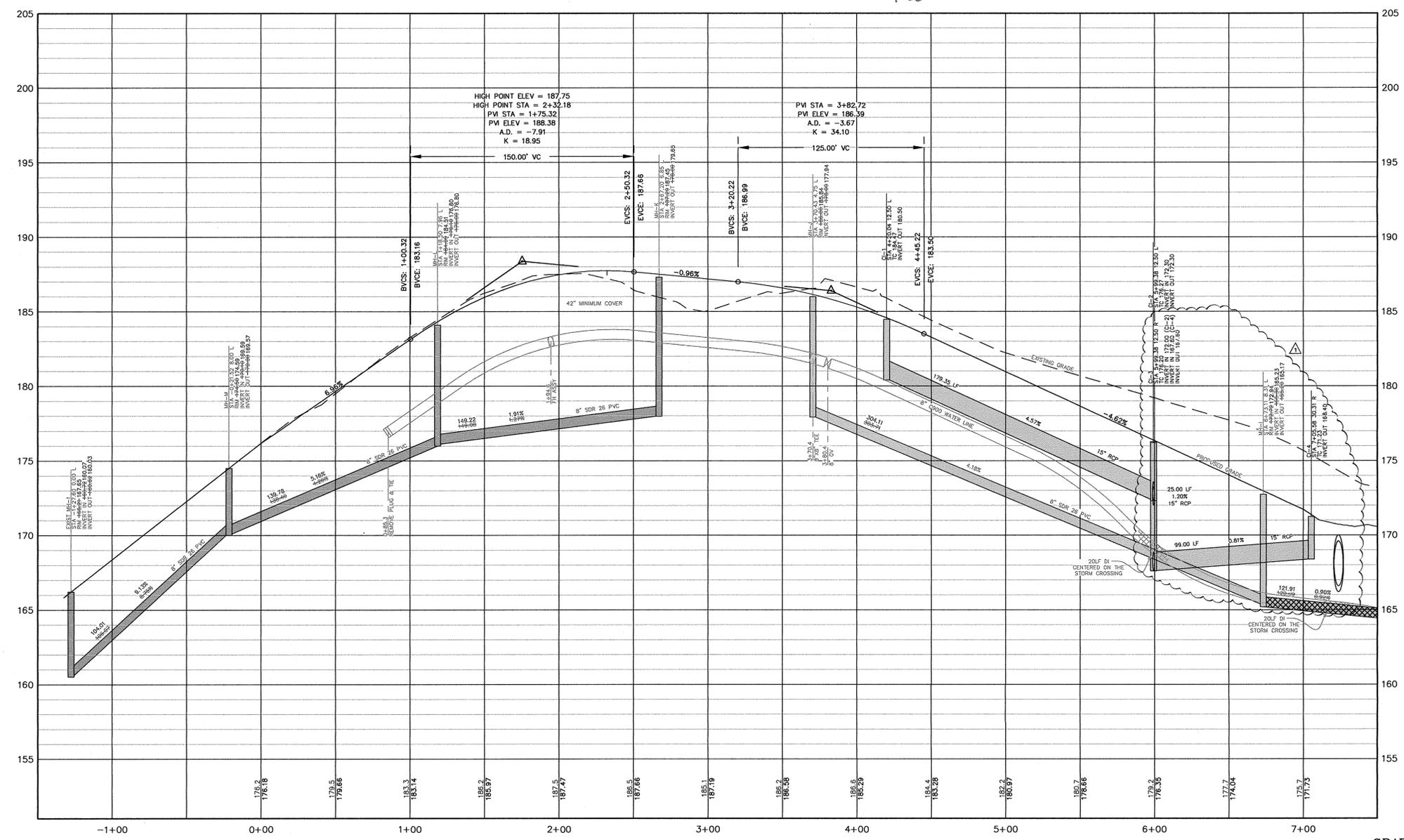
JAN 26 2010 0-6



ROCK CREEK LANE
 (PRIVATE STREET)
 ROADWAY PROFILE 0+00 TO 7+50



ASBUILT DATA ONLY
 DATE SURVEYED: OCTOBER 29, 2009



REVISIONS
 12-18-07 LOWERED MH 1 & CLEANOUT FOR CLUBHOUSE. RAISED STORM BETWEEN C1-3 & C1-4.

ASBUILT DATA ONLY
 DATE SURVEYED: OCTOBER 29, 2009

PROJECT NAME
 NORTH RIDGE PARK PHASE II SECTION I

ROCK CREEK LANE 0+00 TO 7+50 PROFILE

CLIENT
 GREEN VALLEY SOUTH, LLC

428 Swan Island Court
 Fayetteville, North Carolina 28311
 Phone: (910) 527-2007
 Fax: (910) 401-1231

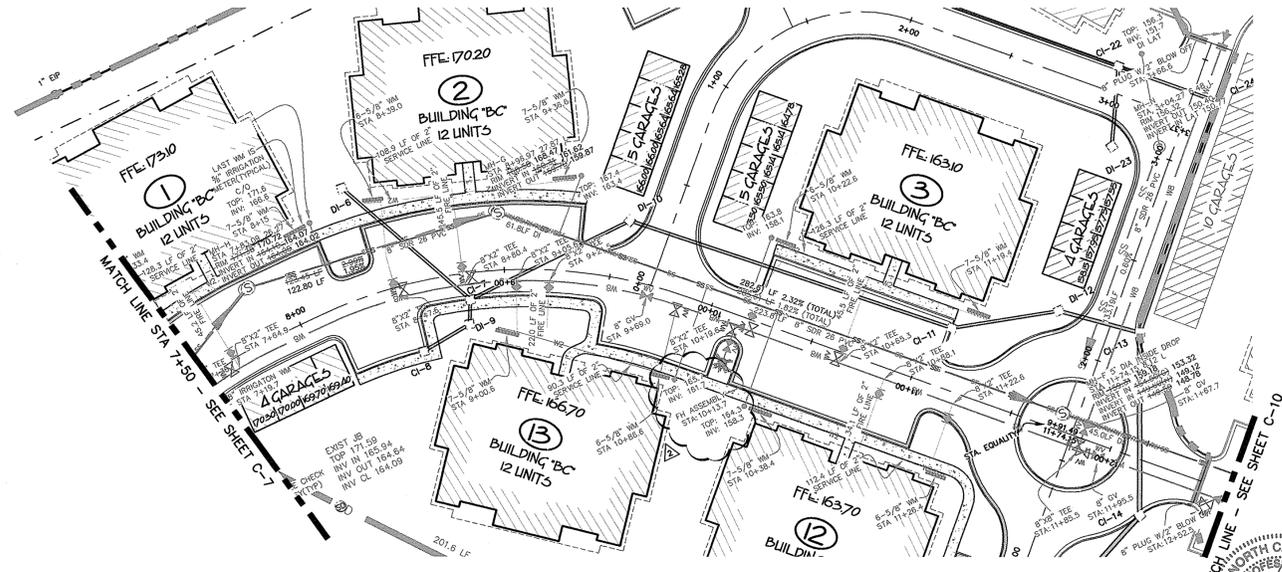
PROJECT INFORMATION

DESIGNED BY:	CHRIS
DRAWN BY:	CHRIS
CHECKED BY:	SCOTT
PROJECT NUMBER:	265

DRAWING SCALE
 HORIZONTAL: 1"=40'
 VERTICAL: 1"=4'

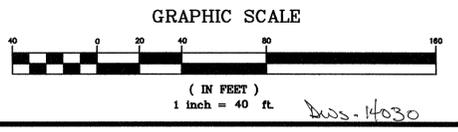
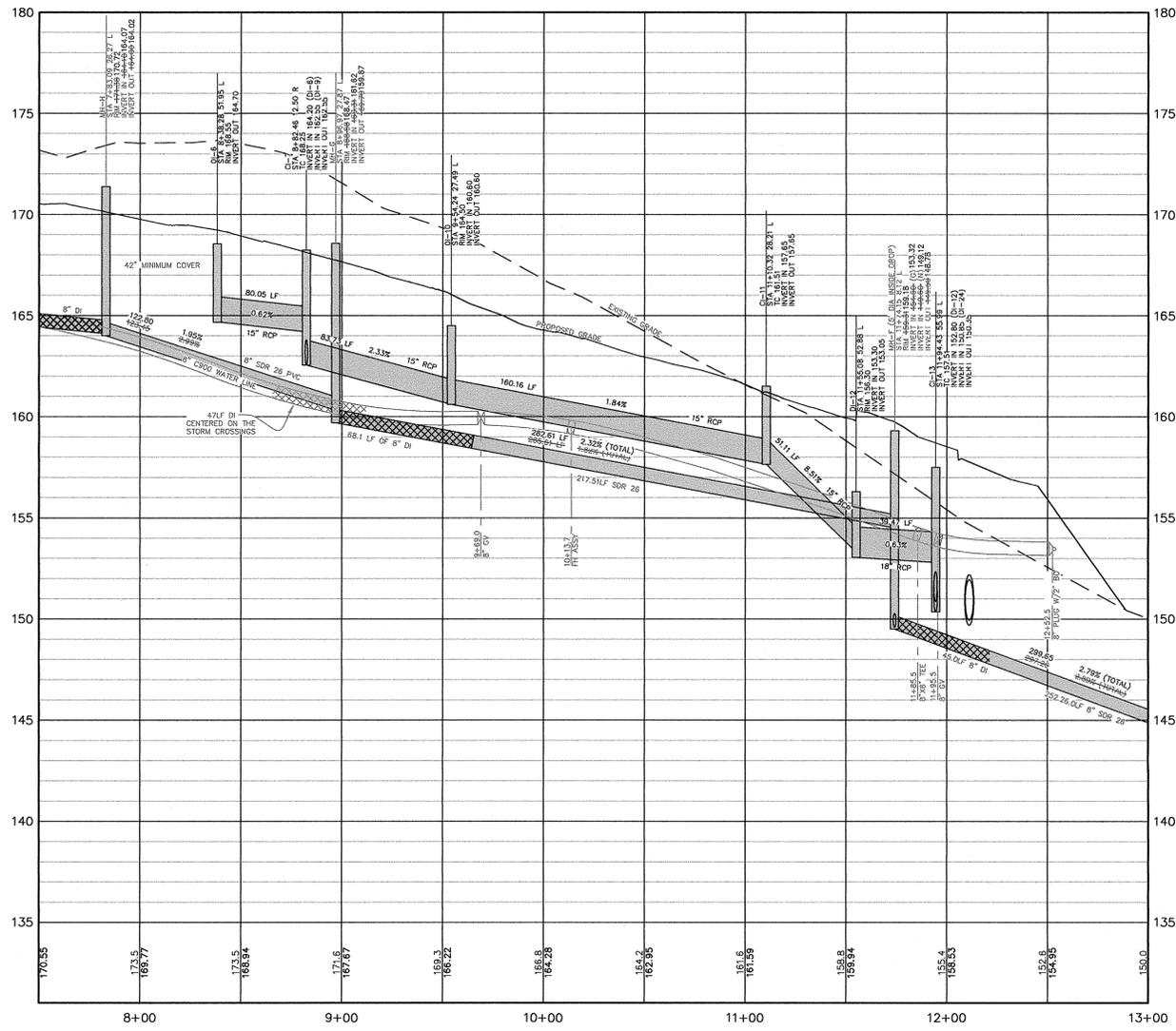
DATE RELEASED
 DECEMBER 18, 2007

SHEET NUMBER
 RECEIVED
 JAN 26 2008
 7
 OF 17



ROCK CREEK LANE
 (PRIVATE STREET)
 ROADWAY PROFILE 7+50 TO 13+00

ASBUILT DATA ONLY
 DATE SURVEYED: OCTOBER 29, 2009



REVISIONS

ASBUILT DATA ONLY
 DATE SURVEYED: OCTOBER 29, 2009

PROJECT NAME

**NORTH RIDGE
 PARK PHASE II
 SECTION I**

**ROCK CREEK
 LANE 7+50 TO
 13+00 PROFILE**

CLIENT

**GREEN VALLEY
 SOUTH, LLC**

428 Swan Island Court
 Fayetteville, North Carolina 28311
 Phone: (910) 423-3555
 Fax: (910) 480-2006

PROJECT INFORMATION

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PROJECT NUMBER:	265

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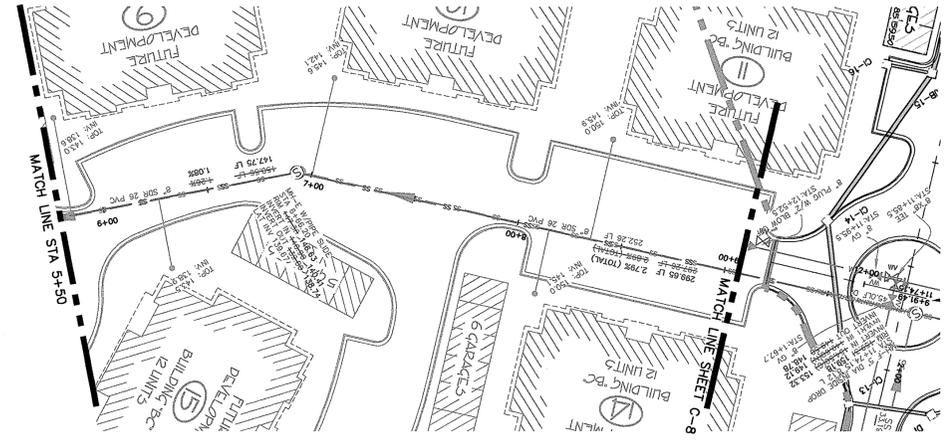
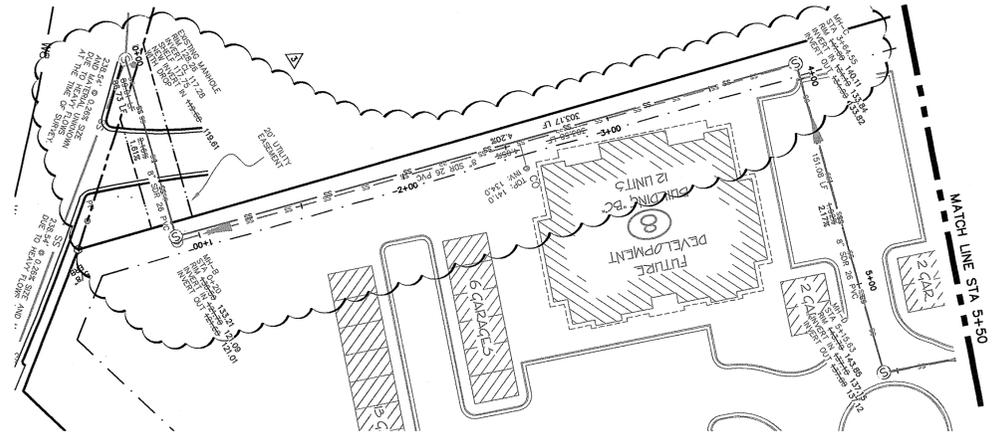
HORIZONTAL: 1"=40'
 VERTICAL: 1"=4'

DATE RELEASED

DECEMBER 11, 2007

SHEET NUMBER

JAN 26 2010
 08
 OF 17



SANITARY SEWER OUTFALL
SEWER PROFILE

ASBUILT DATA ONLY
 DATE SURVEYED: OCTOBER 29, 2009

SEAL
 027452
 ENGINEER
 SCOTT BROWN
 1-26-10

NORTH CAROLINA
 PROFESSIONAL
 LAND SURVEYOR
 JIMMY HOLLAND, III
 1-26-10

REVISIONS
 1-22-08 CHANGED LOCATION OF
 SEWER OUTFALL AND ADJUSTED
 BACK TO MH-C

ASBUILT DATA ONLY
 DATE SURVEYED: OCTOBER 29, 2009

PROJECT NAME
**NORTH RIDGE
 PARK PHASE II
 SECTION I**

**SANITARY
 SEWER
 OUTFALL
 PROFILE**

CLIENT
**GREEN VALLEY
 SOUTH, LLC**

428 Swan Island Court
 Fayetteville, North Carolina 28311
 Phone: (910) 527-2007
 Fax: (910) 401-1231

PROJECT INFORMATION

DESIGNED BY:	CHRIS
DRAWN BY:	CHRIS
CHECKED BY:	SCOTT
PROJECT NUMBER:	265

DRAWING SCALE
 HORIZONTAL: 1"=40'
 VERTICAL: 1"=4'

DATE RELEASED
 JANUARY 22, 2008

SHEET NUMBER
 C-10
 OF 17

