PLANNING COMMISSION

~ AGENDA ~

PLANNING COMMISSION

www.ransonwv.gov

May 5, 2025 | 7:00 P.M. | Council Chamber

I. CALL TO ORDER

II. APPROVAL OF MINUTES

1. April 7, 2025 Planning Commission Meeting Minutes
   Planning Commission 472025.docx

III. OLD BUSINESS

IV. PLANNING COMMISSION BUSINESS

1. Public Hearing- To accept public comments on a reduction of guaranteed surety for the subdivision known as Shenandoah Springs Phase 2B. The total reduction is for $ 5,369,981.47.
   Legal Notice Bond Reduction-SS Phase 2B.docx
2. 25-10-BRR Consideration- Applicant Lennar dba US Homes LLC, submitted an application for an bond reduction for Phase 2B of the Shenandoah Springs Neighborhood.
   25-10-shenandoah springs 2b asbuilt 03-07-25.pdf
   25-10-BRR-shenandoah springs 2b bond estimate 03-07-25.pdf
   PC25-18- Shenendoah Springs 2B Reduction.docx
3. Public Hearing - Final plat proposal for Ranson Heights (Riverpointe) Phase 2 located off Route 9 and Route 340 in Ranson WV
   Legal Notice Ranson Heights Phase 2.docx
4. 23-50-FP Consideration - Applicant, Forestar Group INC, submitted application for Final plat proposal for Ranson Heights (Riverpointe) Phase 2 located off Route 9 and Route 340 in Ranson WV
   23-50-FP-2025-03-19 ranson heights phase 2 record plat.pdf
   23-50-ranson heights section 2- application.pdf
5. Public Hearing - Accepting the bond for Ranson Heights (Riverpointe) Phase 2
   Legal Notice Ranson Heights Phase 2.docx
6. 23-50-FP Consideration - Applicant Forestar Group INC, Submitted application to a ccept the bond for Ranson Heights (Riverpointe) Phase 2
   23-50-FP-ranson heights phase 2 bond estimate 02-14-25 (1).pdf
   26969 Draft - Ranson Heights -Phase 2 Construction Bond $4,600,148.50.pdf
   PC24-17 Ranson Heights Phase 2 Bond.docx

7. Public Hearing - Development Agreement for Ranson Heights (Riverpointe) Phase 2.
   Legal Notice Ranson Heights Phase 2.docx

8. 23-50-FP Consideration - Applicant Forestar Group INC, submitted application for Development Agreement for Ranson Heights (Riverpointe) Phase 2.
   Ranson Ranson Heights Development Agreement Phase 2.docx
   PC25-16 Ranson Heights Phase 2 Development Agreement.docx
   PC25-16 Ranson Heights Phase 2 Development Agreement.docx

9. Consideration-24-35-SP-Applicant Inwood 165 LLC, has submitted an application for Fairfax Crossing Commercial Infrastructure Site Plan
   24-35-SP-Fairfax Crossing - Fully Executed City of Ranson Application 08-13-24 (SIGNED).pdf
   24-35-SP-3079-0109 FAIRFAX CROSSING INFRASTRUCTURE.pdf

V. ADJOURMENT

1. Next meeting will be held June 2, 2025 at 7:00 PM.

AGENDA ITEM II.1

Planning Commission Request for Action

TO:

FROM: Rieley Stanley, Community & Economic Development

ITEM TYPE: PRESENTATION

AGENDA SECTION: APPROVAL OF MINUTES

SUBJECT: April 7, 2025 Planning Commission Meeting Minutes

ATTACHMENTS:

Planning Commission 472025.docx

PLANNING COMMISSION

~ AGENDA ~

PLANNING COMMISSION

www.ransonwv.gov

April 7, 2025 | 7:00 P.M. | Council Chamber

I. CALL TO ORDER

Mike Anderson, President	Present
Jason Gore, Vice President	Present
Doug Davis	Absent
Jaden Bound	Present
Andy Colandrea	Absent

II. APPROVAL OF MINUTES

1. March 10, 2025 Planning Commission Minutes

Mike Anderson, President	Abstain
Jason Gore, Vice President	Motion
Doug Davis	Absent
Jaden Bound	Second
Andy Colandrea	Absent

III. OLD BUSINESS

IV. PLANNING COMMISSION BUSINESS

1. Public hearing to accept public comments on the final plat proposal for Shenandoah Springs Phase 3C-3D.

   Mike Anderson, president of the Planning Commission opens the Public Hearing, No Public Comments, Mr. Anderson closed the Public Hearing for a vote.

2. 24-55-FP Consideration - Applicant US Home, LLC dba Lennar Corporation submitted an application for the final plat proposal for Shenandoah Springs

Mike Anderson, President	Abstain
Jason Gore, Vice President	Motion
Doug Davis	Absent
Jaden Bound	Second
Andy Colandrea	Absent

3. Public Hearing- to accept public comments on the Development Agreement for Phase 3C-

3B of Shenandoah Springs.

Mike Anderson, president of the Planning Commission opens the Public Hearing, No Public Comments, Mr. Anderson closed the Public Hearing for a vote.

4. 24-55-FP- Consideration - Applicant US Home, LLC dba Lennar Corporation submitted application for the Development Agreement for Phase 3C-3B of Shenandoah Springs.

Mike Anderson, President	Abstain
Jason Gore, Vice President	Second
Doug Davis	Absent
Jaden Bound	Motion
Andy Colandrea	Absent

5. Public hearing - accepting the bond for Shenandoah Springs Phase 3C-3D

Mike Anderson, president of the Planning Commission opens the Public Hearing, No Public Comments, Mr. Anderson closed the Public Hearing for a vote.

6. 24-55-FP Consideration - Applicant US Home, LLC dba Lennar Corporation submitted application to accept the bond for Shenandoah Springs Phase 3C-3D.

Mike Anderson, President	Abstain
Jason Gore, Vice President	Second
Doug Davis	Absent
Jaden Bound	Motion
Andy Colandrea	Absent

7. Public Hearing - to accept public comments on the final plat proposal for Ranson Heights (Riverpointe) Phase 3 located off Route 340 including 78 lots (Lots 256-334).

Mike Anderson, president of the Planning Commission opens the Public Hearing, No Public Comments, Mr. Anderson closed the Public Hearing for a vote.

8. 24-52-FP - Consideration - Applicant Morris & Ritchie Associates INC. submitted application for Forestar USA Real Estate Group INC for the final plat proposal for Phase 3 of Ranson Heights (Riverpointe) for 78 lots (lots 256-334)

9.

Mike Anderson, President	Abstain
Jason Gore, Vice President	Second
Doug Davis	Absent
Jaden Bound	Motion
Andy Colandrea	Absent

9. Public Hearing is to accept public comments to enter a development agreement for Ranson Heights (Riverpointe) Phase 3 located off Route 340.

Mike Anderson, president of the Planning Commission opens the Public Hearing, No Public Comments, Mr. Anderson closed the Public Hearing for a vote.

10. 25-9-FP- Consideration Applicant Forestar USA Real Estate Group Inc, submitted application to enter a Development agreement for Phase 3 of Ranson Heights (Riverpointe).

Mike Anderson, President	Abstain
Jason Gore, Vice President	Motion
Doug Davis	Absent
Jaden Bound	Second
Andy Colandrea	Absent

11. Public hearing is to accept public comments on accepting the Bond for Ranson Heights (Riverpointe) located off Route 340 including 78 lots (Lots 256-334).

    Mike Anderson, president of the Planning Commission opens the Public Hearing, No Public Comments, Mr. Anderson closed the Public Hearing for a vote.

12. 25-9-FP- Consideration - Applicant Forestar USA Real Estate, INC, submitted an application for the bond for Ranson Heights (Riverpointe) Phase 3

Mike Anderson, President	Abstain
Jason Gore, Vice President	Motion
Doug Davis	Absent
Jaden Bound	Second
Andy Colandrea	Absent

13. Public Hearing to accept public comments on a bond reduction for the Huntwell West Phase 2A.

    Mike Anderson, president of the Planning Commission opens the Public Hearing, No Public Comments, Mr. Anderson closed the Public Hearing for a vote.

14. 25-8-BRR Consideration for a bond reduction for Huntwell West Phase 2A.

Mike Anderson, President	Abstain
Jason Gore, Vice President	Motion
Doug Davis	Absent
Jaden Bound	Second
Andy Colandrea	Absent

V. ADJOURMENT

The meeting was Adjourn at 7:13PM. Motion by Jaden Bound, second by Jason Gore. Next meeting will be May 5, 2025 at 7:00 PM. Ranson City Hall 312 S. Mildred Street, Ranson WV 25438.

2

AGENDA ITEM IV.1

Planning Commission Request for Action

TO:

FROM: Rieley Stanley, Community & Economic Development

ITEM TYPE: PRESENTATION

AGENDA SECTION: PLANNING COMMISSION BUSINESS

SUBJECT: Public Hearing- To accept public comments on a reduction of guaranteed surety for the subdivision known as Shenandoah Springs Phase 2B. The total reduction is for $ 5,369,981.47.

ATTACHMENTS:

Legal Notice Bond Reduction-SS Phase 2B.docx

LEGAL NOTICE
PUBLIC HEARING NOTICE
CITY OF RANSON

The Ranson Planning Commission will hold a public hearing on May 5, 2025, at Ranson City Hall, 312 S. Mildred Street, Ranson, WV. The purpose of the public hearing is to accept public comments on a reduction of guaranteed surety for the subdivision Shenandoah Springs Phase 2B. The reduction is for the amount of $5,369,981.47 of the fully bonded amount.

All persons are invited to attend and make comments about the bond release. If you cannot attend but wish to comment, you may write to the following address prior to May 2, 2025 : City of Ranson, Attn: Community Development Department, 312 S. Mildred Street, Ranson, WV 25438 or email cityclerk@ransonwv.us. Written comments received prior to May 2, 2025, will be provided to the Planning Commission and inserted into the official record.

Reiley Stanley
Dept. of Community Development

AGENDA ITEM IV.2

Planning Commission Request for Action

TO:

FROM: Rieley Stanley, Community & Economic Development

ITEM TYPE: PRESENTATION

AGENDA SECTION: PLANNING COMMISSION BUSINESS

SUBJECT: 25-10-BRR Consideration- Applicant Lennar dba US Homes LLC, submitted an application for an bond reduction for Phase 2B of the Shenandoah Springs Neighborhood.

This reduction would reduce the bond from $8,832,137.42 to $3,462,155.94 with the total bond reduction for this phase of $5,369,981.47

ATTACHMENTS:

25-10-shenandoah springs 2b asbuilt 03-07-25.pdf
25-10-BRR-shenandoah springs 2b bond estimate 03-07-25.pdf
PC25-18- Shenendoah Springs 2B Reduction.docx

SHENANDOAH SPRINGS

PHASE 2B

CONSTRUCTION DRAWINGS

CITY OF RANSON, WV

PARTIAL CORE AS-BUILT

02/05/25

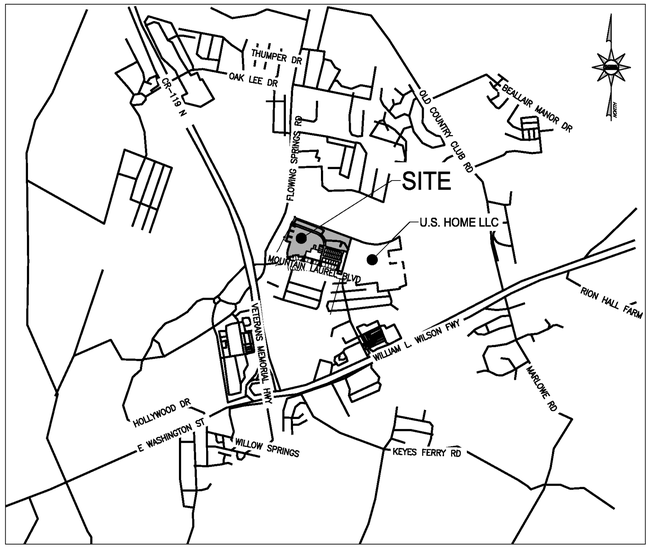
Know what's below. Call before you dig.

PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE

THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERE TO APPURTENANT.

GENERAL NOTES

1. THE PROPERTY DELINEATED HEREON IS NOW IN THE NAME OF U.S. HOME LLC AMONG THE LAND RECORDS OF JEFFERSON COUNTY, WEST VIRGINIA.
2. EXISTING TOPOGRAPHY SHOWN IS BASED ON A FIELD RUN SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES IN MAY 2020 AND APRIL 2021.
3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED IN ACCORDANCE WITH THE "WEST VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK".
4. THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE DEVELOPER OR HIS AGENT OF ANY LEGAL RESPONSIBILITY WHICH MAY BE REQUIRED BY THE CODE OF WEST VIRGINIA OR ANY OTHER ORDINANCE ENACTED BY THE CITY OF RANSON.
5. ALL UNDERGROUND UTILITIES WITHIN STREET RIGHT-OF-WAYS SHALL BE INSTALLED TO THE REQUIRED DISTANCE BEYOND THE RIGHT-OF-WAY LINE PRIOR TO THE INSTALLATION OF ANY SUB SURFACE MATERIAL, CURB AND GUTTER, OR SIDEWALK.
6. CONTRACTORS SHALL ARRANGE FOR THE LOCATION OF ALL UNDERGROUND FACILITIES PRIOR TO THE CONSTRUCTION INCLUDING TEST HOLES TO PHYSICALLY LOCATE UNDERGROUND UTILITIES AS NECESSARY.
7. THESE PLANS MAKE NO REPRESENTATION AS TO SUBSURFACE CONDITIONS AND THE PRESENCE OF SUBSURFACE WATER OR THE NEED FOR SUBSURFACE DRAINAGE FACILITIES.
8. THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES, AS SHOWN HEREON, ARE APPROXIMATE ONLY. NO GUARANTEE IS HEREIN MADE OR IMPLIED THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN. IT SHALL BE THE CONTRACTOR'S AND/OR THE OWNER'S RESPONSIBILITY TO CONTACT UTILITY COMPANIES AND TO VERIFY THE TYPE, SIZE, AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO STARTING THE WORK. ANY DISCREPANCIES IN OR FROM THE INFORMATION SHOWN HEREON SHALL BE REPORTED TO MORRIS & RITCHIE ASSOCIATES, INC. PRIOR TO COMMENCING CONSTRUCTION.
9. IN ORDER TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF A GIVEN UTILITY AND TO ASSIST THE CONTRACTOR AND/OR OWNER IN DETERMINING AREAS OF SPECIAL CONCERN, MORRIS & RITCHIE ASSOCIATES, INC. HAS INDICATED HEREON CERTAIN LOCATIONS WHERE TEST PITS SHOULD BE EXCAVATED PRIOR TO COMMENCING CONSTRUCTION. THESE INDICATIONS ARE NOT INTENDED TO BE ALL INCLUSIVE AND WILL NOT RELIEVE THE CONTRACTOR AND/OR OWNER OF THE RESPONSIBILITY OF DIGGING ADDITIONAL TEST PITS, AS MIGHT BE REQUIRED BY ACTUAL SITE CONDITIONS. ANY DISCREPANCIES FOUND BETWEEN ACTUAL AND ASSUMED CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF MORRIS & RITCHIE ASSOCIATES, INC.
10. APPROVAL OF THIS PLAN DOES NOT GRANT APPROVAL TO TRESPASS ON OFF-SITE PROPERTY.
11. WATER AND SANITARY SEWER UTILITIES SHALL BE INSTALLED IN CONFORMANCE TO THE CHARLES TOWN UTILITY BOARD AND JEFFERSON UTILITIES, INC.
12. THE APPROVAL OF THESE PLANS SHALL NOT RELIEVE THE OWNER OF COMPLYING WITH OTHER APPLICABLE LOCAL, STATE, & FEDERAL REQUIREMENTS.
13. DURING ALL CONSTRUCTION STAGES, ACCESS FOR FIRE AND RESCUE VEHICLES AND ADEQUATE STANDPIPE SYSTEMS WILL BE PROVIDED. THIS COMMITMENT DOES NOT RELIEVE THE OWNERS FROM COMPLYING WITH ALL OTHER LEGAL REQUIREMENTS RELATING TO FIRE AND RESCUE ACCESS AND SYSTEMS.
14. A PRECONSTRUCTION MEETING, INCLUDING MRA, CITY OF RANSON PERSONNEL, CHARLES TOWN UTILITY BOARD AND JEFFERSON UTILITIES, INC. IS REQUIRED PRIOR TO THE START OF CONSTRUCTION. A 5 DAY MINIMUM NOTICE IS REQUIRED.
15. CONTRACTOR TO SCHEDULE INSPECTIONS WITH CITY STAFF A MINIMUM OF 5 DAYS IN ADVANCE. CONTACT CITY STAFF AT 304-724-3895.
16. NECESSARY PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SERVICES AND MAINS, AND ANY DAMAGE TO THEM DUE TO HIS NEGLIGENCE SHALL BE REPAIRED IMMEDIATELY AT HIS OWN EXPENSE.
17. THE CONTRACTOR SHALL NOTE THAT IN CASE OF A DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS SHOWN ON THESE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN. MRA SHOULD BE CONTACTED TO RESOLVE DISCREPANCY
18. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM SUCH WORK.
19. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
20. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENCIES AT LEAST (5) FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS:
    A. MISS UTILITY 811
    B. JEFFERSON UTILITIES, INC. REQUIRES 2 WEEKS NOTICE FOR INSPECTION OF INSTALLATION. INSPECTION FEES WILL APPLY.
    C. CHARLES TOWN UTILITY BOARD 661 SOUTH GEORGE STREET; SUITE 101, CHARLES TOWN, WV 25414 304-725-2316
21. ALL REFERENCES TO TAMPED FILL WITHIN THIS PLAN SET THAT REFER TO AASHTO DESIGNATION T-180 METHOD-C AND/OR ASTM D-1557 SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% IN ACCORDANCE WITH ASTM D-698 IN MAXIMUM 8 INCH LIFTS. ALL COMPACTION MUST COMPLY WITH ARTICLE 16 SECTION 2-307. THE CONTRACTOR MUST PROVIDE COMPACTION TEST RESULTS PER SECTION 16-63 OF THE CITY CODE.
22. THIS PROJECT IS SERVED BY PUBLIC WATER AND SEWER.
23. CONTRACTOR SHALL VERIFY TO HIS SATISFACTION, THE FINAL EARTHWORK NUMBERS PRIOR TO COMMENCEMENT OF SITE WORK. MRA MAKES NO GUARANTEE THAT ON SITE SOILS WILL BE SUITABLE FOR STRUCTURAL FILL, OR THAT THE EARTHWORK WILL BALANCE. CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR THE ACTUAL EARTHWORK NUMBERS ENCOUNTERED DURING CONSTRUCTION.
24. ALL SPOT ELEVATIONS ALONG PROPOSED CURB AND GUTTER ARE TOP OF CURB ELEVATIONS UNLESS OTHERWISE NOTED.
25. IF ANY ARCHEOLOGICAL, HISTORIC RESOURCES OR CEMETERIES ARE DISCOVERED DURING EXCAVATION THE CONTRACTOR SHALL STOP WORK IMMEDIATELY IN THE AREA OF DISCOVERY AND NOTIFY THE CITY OF RANSON AND MORRIS & RITCHIE ASSOCIATES, INC. NO FURTHER WORK IN THE AREA SHALL BE PERMITTED UNTIL RELEASED BY THE CITY OF RANSON AND MORRIS & RITCHIE ASSOCIATES, INC.
26. ALL DEVELOPMENT SIGNS SHALL DEMONSTRATE COMPLIANCE WITH CITY OF RANSON SIGN ORDINANCE WHICH INCLUDES THE SEPARATE SUBMISSION OF A BUILDING PERMIT. PLEASE REFER TO SEC. 19-15. SIGNS, FOR ALL SIGNAGE REQUIREMENTS AND STANDARDS.
27. WVDOH PERMIT NO: 5-03-0256
28. THERE ARE NO WETLANDS LOCATED ON SITE.
29. THE PROPERTY IS LOCATED IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN PER FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 54037C0137E, DATED DECEMBER 18, 2009.
30. CONTRACTOR TO ACCESS THE SITE FROM THE EXISTING CONSTRUCTION ENTRANCE OFF OF FLOWING SPRINGS BOULEVARD LOCATED NORTH OF THE INTERSECTION OF MOUNTAIN LAUREL BLVD AND FLOWING SPRINGS.



VICINITY MAP
SCALE: 1"=2000'

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
~~2~~	~~SITE NOTES & DETAILS~~
~~3~~	~~FINAL SITE PLAN - PHASE 2B~~
~~4~~	~~EXISTING CONDITIONS OVERVIEW~~
~~5~~	~~EXISTING CONDITIONS~~
~~6~~	~~EXISTING CONDITIONS~~
~~7~~	~~OVERALL PLAN~~
~~8~~	~~LAYOUT & UTILITY PLAN~~
~~9~~	~~LAYOUT & UTILITY PLAN~~
~~10~~	~~LAYOUT & UTILITY PLAN~~
~~11~~	~~LAYOUT & UTILITY PLAN~~
12	GRADING PLAN
13	GRADING PLAN
14	GRADING PLAN
15	GRADING PLAN
16	SWAN FIELD PLAN AND PROFILE
17	SHORT BRANCH PLAN AND PROFILE
18	SANDY BOTTOM CIR PLAN AND PROFILE
19	WATERCOURSE PLAN AND PROFILE
20	MINERAL SPRING PLAN AND PROFILE
21	ROAD A PLAN AND PROFILE
22	ALLEY 1-3 PLAN AND PROFILE
23	ALLEY 4-6 PLAN AND PROFILE
24	ALLEY 7-8 PLAN AND PROFILE
25	ALLEY 9-10 PLAN AND PROFILE
26	STORM PROFILES
27	STORM PROFILES
28	STORM PROFILES
~~29~~	~~STORM COMPUTATIONS~~
~~30~~	~~STORM COMPUTATIONS~~
~~31~~	~~SANITARY LATERAL TABLE~~
~~32~~	~~SANITARY SEWER COMPS & DETAILS~~
~~33~~	~~WATERLINE DETAILS~~
~~34~~	~~WATERLINE DETAILS~~
~~35~~	~~MISCELLANEOUS DETAILS~~
~~36~~	~~MISCELLANEOUS DETAILS~~
~~37~~	~~ESC PLAN PH I~~
~~38~~	~~ESC PLAN PH I~~
~~39~~	~~ESC PLAN PH II~~
~~40~~	~~ESC PLAN PH II~~
~~41~~	~~EROSION & SEDIMENT NOTES~~
~~42~~	~~EROSION & SEDIMENT DETAILS~~
~~43~~	~~EROSION & SEDIMENT DETAILS CONTINUED~~
~~44~~	~~PRE-DEVELOPED DRAINAGE AREA~~
~~45~~	~~POST-DEVELOPED DRAINAGE AREA~~
~~46~~	~~WATER QUALITY MAP~~
~~47~~	~~SWM NARRATIVE AND BMP DETAILS~~
~~48~~	~~SWM POND 1 DETAILS~~
~~49~~	~~SWM POND 1 DETAILS CONTINUED~~
~~50~~	~~LANDSCAPE LIGHTING & SIGNAGE PLAN~~
~~51~~	~~LANDSCAPE LIGHTING & SIGNAGE PLAN~~
~~52~~	~~LANDSCAPE LIGHTING & SIGNAGE PLAN~~
~~53~~	~~LANDSCAPE & SIGNAGE DETAILS~~
~~54~~	~~PHOTOMETRIC PLAN~~
~~55~~	~~PHOTOMETRIC PLAN~~
~~56~~	~~VEHICLE TURNING FIRE TRUCK~~
~~57~~	~~VEHICLE TURNING SCHOOL BUS~~
~~58~~	~~VEHICLE TURNING GARBAGE TRUCK~~
~~59~~	~~UTILITY PLAN~~
~~60~~	~~UTILITY PLAN~~
~~61~~	~~CURB RAMP DETAILS~~
~~62~~	~~CURB RAMP DETAILS~~

AS-BUILT CERTIFICATION

I, JON K ERICKSON, DO HEREBY CERTIFY THAT THIS AS-BUILT CONFORMS TO THE APPROVED PLANS, EXCEPT AS SHOWN, WHICH REPRESENTS ACTUAL CONDITIONS ON THIS SITE AS OF THIS DATE

JON K ERICKSON WVPS#2302 FEBRUARY 5TH, 2025

OWNER
LENNAR CORPORATION
U.S. HOME LLC
14280 PARK MEADOW DRIVE
CHANTILLY, VA 20151
703-449-6538
STUART.HAGENLOCK@LENNAR.COM

PREPARED BY
MORRIS & RITCHIE ASSOCIATES, INC.
205 EAST HIRST ROAD, STE 106
PURCELLVILLE, VIRGINIA 20132
CONTACT: JON K. ERICKSON
703-994-4047

JERICKSON@MRAGTA.COM

PROJECT NOTES

1. EXISTING USE: VACANT
2. PROPOSED USE: RESIDENTIAL
3. ZONING: T3, T4, T5, R7
4. LOCATION: NORTH OF MOUNTAIN LAUREL BLVD.
5. AREA OF DISTURBANCE: 30.07 AC
6. NUMBER OF UNITS PROPOSED: 37 SINGLE FAMILY 141 TOWNHOUSE
7. SEQUENCE OF CONSTRUCTION
   -INSTALL ESC CONTROLS
   -CLEAR AND GRUB SITE
   -EARTHWORK AND BLASTING
   -INSTALLATION OF WET UTILITIES
   -INSTALLATION OF CURB AND GUTTER
   -PAVING

THE CITY OF RANSON PLANNING APPROVES THESE CONSTRUCTION DRAWINGS ON _____, _____ WITH THE FOLLOWING CONDITIONS:

1) _____

2) _____

3) _____

THE OWNER OF THIS PROPERTY HEREBY AFFIRMS THAT THESE PLANS MEET THE REQUIREMENTS OF THE RANSON ZONING AND SUBDIVISION ORDINANCES AND THE ABOVE CONDITIONS OF APPROVAL SET FROTH BY THE RANSON PLANNING COMMISSION.

_____
OWNER'S SIGNATURE DATE

REVISIONS	DATE
CITY,JUI,CTUB COMMENTS	02/03/23
CTUB & JUI COMMENTS	03/23/23
CTUB COMMENTS	03/28/23
CLIENT CHANGES	09/12/23
GRADING REVISION	10/13/23

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
205 E HIRST ROAD, STE 106
PURCELLVILLE, VA 20132
PHONE: (703) 994 - 4047
MRAGTA.COM

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JON K. ERICKSON 16050 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER 10/13/23

COVER SHEET

SHENANDOAH SPRINGS PHASE 2B
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	N/A
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	1 OF 62

DATE	REVISIONS
02/03/23	CITY,JUI,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
205 E HIRST ROAD, STE 106
PURCELLVILLE, VA 20132
PHONE: (703) 994 - 4047
MRAGTA.COM

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02/05/25

10/13/23

GRADING PLAN

SHENANDOAH SPRINGS PHASE 2B

CONSTRUCTION DRAWINGS

CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=30'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	12 OF 62

SHEET 2 OF 18

Scale 1" = 30'

NOTE: NO 12" EXISTING WATERLINE TO BE REMOVED UNTIL ALL PROPOSED WATERLINE IS INSTALLED

MATCHLINE SHEET 12

MATCHLINE SHEET 15

EX. 100' TEMPORARY CONSTRUCTION EASEMENT D.B. 976 PG 415

EX. 20' PRIVATE DRAINAGE EASEMENT D.B. 976 PG 415

BENCHMARK
REBAR WITH CAP
N 298684.0968'
E 2439944.8942'
ELEV.=462.47

N 298533.6376
E 2440364.0410

N 298214.2847
E 2440276.9458

EXTENDED DETENTION POND #1
WQV WSE=451.30
PERMANENT POOL WSE= 446.42
2 YR WSE=452.81
10 YR WSE=455.03
100 YR WSE=456.11

(EX SWM POND)

FOREBAY 1

FOREBAY 2

U.S. HOME LLC
19-08-00BD-OSWM-000

EX. STORMWATER MANAGEMENT AREA
DB: 21 PG: 91

EX. VARIABLE WIDTH DRAINAGE AND UTILITY ESMT
DB: 21 PG: 91

EX. 25' UTILITY ESMT
DB: 21 PG: 91

U.S. HOME LLC
19-08-00B0-PARK-000

EX. 20' UTILITY ESMT
DB: 21 PG: 91

EX. 12" LINE AND VALVES TO BE REMOVED AFTER ALL PROPOSED WATERLINE IS INSTALLED

EX. VARIABLE WIDTH DRAINAGE ESMT
DB: 21 PG: 91

CIVIC SPACE

SWAN FIELD

EX HAUL ROAD

ALLEY 9
RA-20-18

ALLEY 10
RA-20-16

ALLEY 8
RA-20-18

PR. VARIABLE WIDTH SAN. EASEMENT (TYP.)

PR. 20' ACCESS & UTILITY EASEMENT

PR. 20' STORM SEWER EASEMENT

PR. SANITARY SEWER EASEMENT

VAR. WIDTH ACCESS & UTILITY ESMT

EX. HC RAMPS (TYP.)

25' SETBACK FROM R

100' SETBACK FROM R

AS-BUILT

Scale 1" = 30'

02/05/25

DATE	REVISIONS
02/03/23	CITY,JUI,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
206 E HIRST ROAD, STE 106
PURCELLVILLE, VA 20132
PHONE: (703) 994 - 4047
MRAGTA.COM

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GRADING PLAN

SHENANDOAH SPRINGS PHASE 2B

CONSTRUCTION DRAWINGS

CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=30'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	~~13 OF 62~~

MATCHLINE SHEET 12

MATCHLINE SHEET 15

WATERCOURSE DRIVE
ST-46-24

ROAD A
ST-46-24

MINERAL SPRINGS ROAD
ST-46-24

SWAN FIELD
ST-46-24

SHORT BRANCH
ST-54-32

ALLEY 1
RA-20-18

ALLEY 2
RA-20-18

ALLEY 3
RA-20-18

ALLEY 5
RA-20-18

ALLEY 6
RA-20-18

EX. 20'X14' UTILITY ESMT
DB: 21 PG: 91

EX. 20'X15' UTILITY ESMT
DB: 21 PG: 91

MOUNTAIN LAUREL BLVD

U.S. HOME LLC
19-08-0080-PARK-000

02/05/25

DATE	REVISIONS
02/03/23	CITY,JUJ,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
205 E HIRST ROAD, STE 108
PURCELLVILLE, VA 20132
PHONE: (703) 994 - 4047
MRA@TA.COM

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JOHN K. ERICKSON
LICENSED PROFESSIONAL ENGINEER
16062
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
01/13/23

GRADING PLAN

SHENANDOAH SPRINGS PHASE 2B

CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=30'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	14 OF 62

30 0 30 60 90
Scale 1" = 30'

REVISIONS	DATE
CITY,JUJ,CTUB COMMENTS	02/03/23
CTUB & JUJ COMMENTS	03/23/23
CTUB COMMENTS	03/28/23
CLIENT CHANGES	09/12/23
GRADING REVISION	10/13/23

MORRIS & RITCHIE ASSOCIATES, INC.
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GRADING PLAN

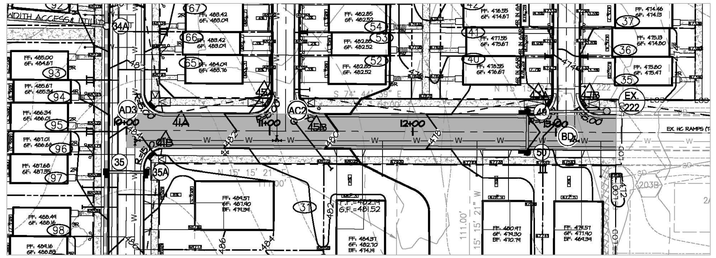
SHENANDOAH SPRINGS PHASE 2B
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=30'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	15 OF 62

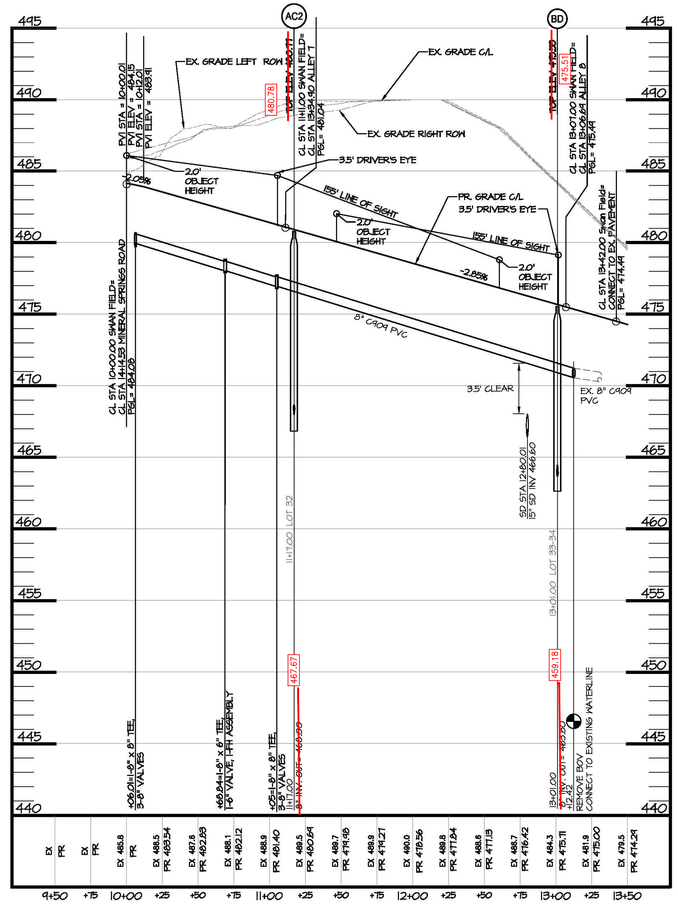
02/05/25

Scale 1" = 30'

NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.



SWAN FIELD
ST-46-24
25 MPH POST SPEED



SWAN FIELD PROFILE
SCALE: H: 1"=50'
V: 1"=5'

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PURCELLVILLE, VA 20132
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DATE	REVISIONS
02/03/23	CITY,JUI,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

02/05/25

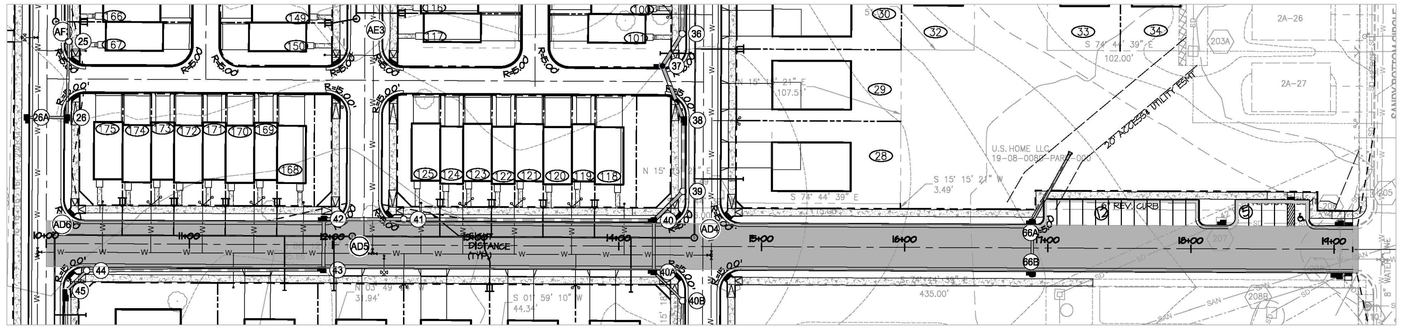
10/13/23

SWAN FIELD PLAN AND PROFILE

SHENANDOAH SPRINGS PHASE 2B
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	16 OF 82

SHEET 6 OF 18

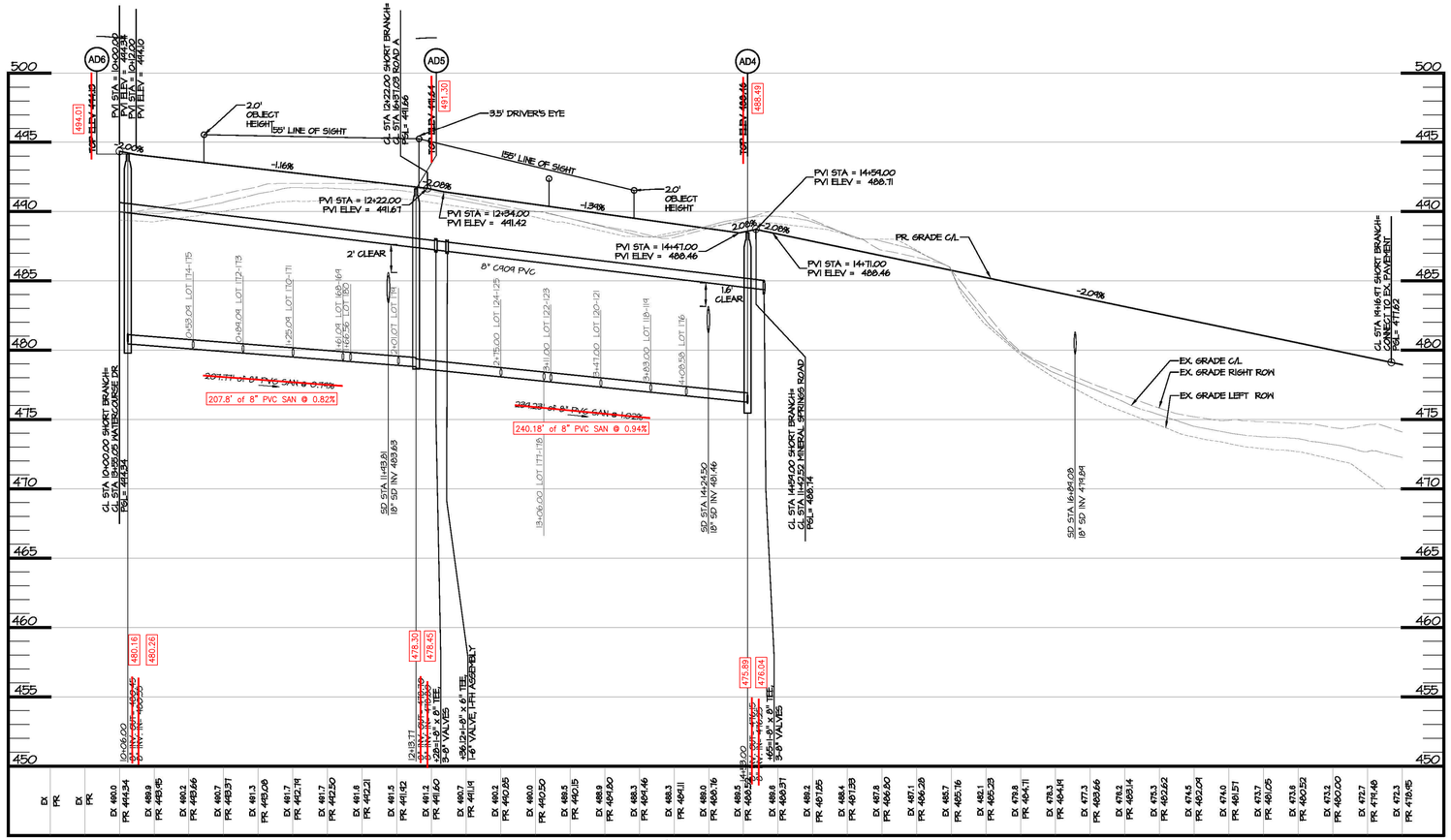


NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.

50 0 50 100 150

Scale 1" = 50'

SHORT BRANCH
ST-54-32
25 MPH POST SPEED



SHORT BRANCH PROFILE

SCALE: H: 1"=50'
V: 1"=5'

REVISIONS		
DATE		
02/03/23	CITY,JUI,CTUB COMMENTS	
03/23/23	CTUB & JUI COMMENTS	
03/28/23	CTUB COMMENTS	
09/12/23	CLIENT CHANGES	
10/13/23	GRADING REVISION	

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JAMES L. LUCKETT III — LICENSED PROFESSIONAL ENGINEER — 02/05/25

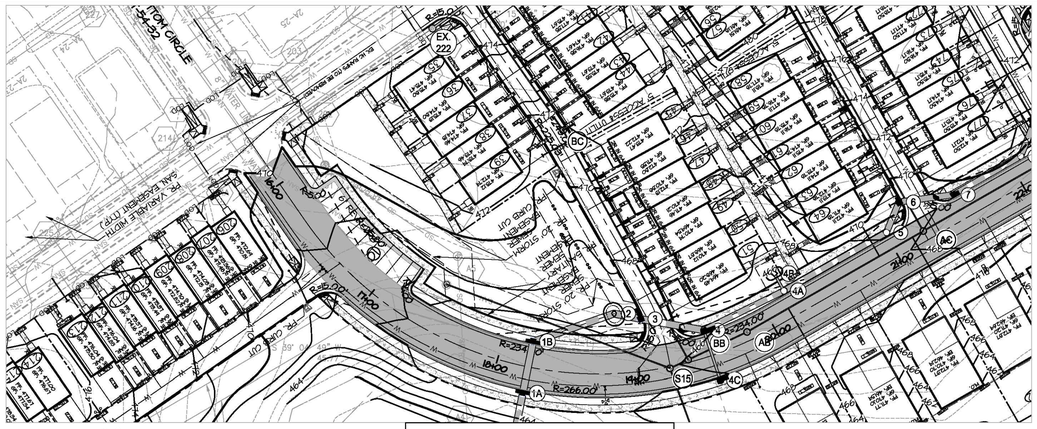
JOE K. ERICKSON — REGISTERED — 16052 — STATE OF WEST VIRGINIA — PROFESSIONAL ENGINEER — 10/13/23

SHORT BRANCH PLAN AND PROFILE

SHENANDOAH SPRINGS PHASE 2B

CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

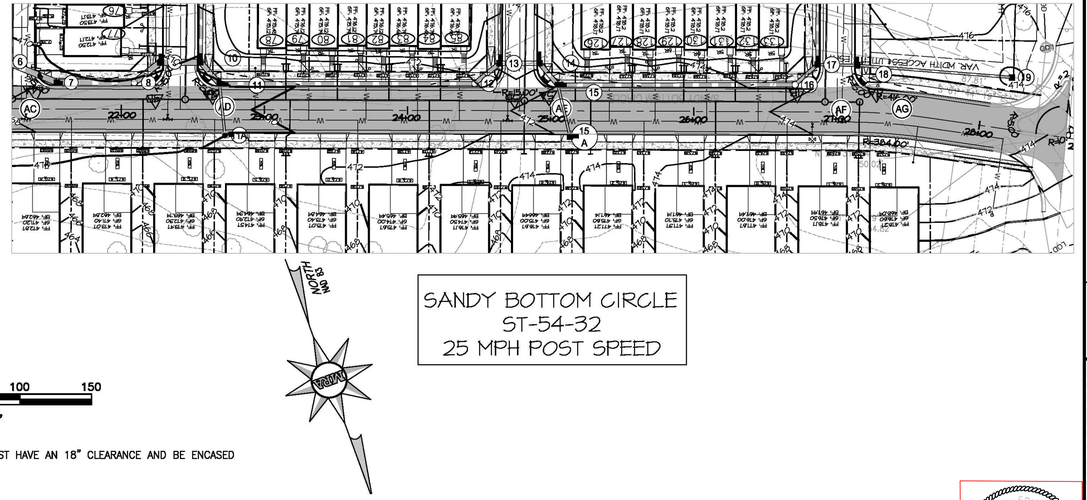
JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	17 OF 62



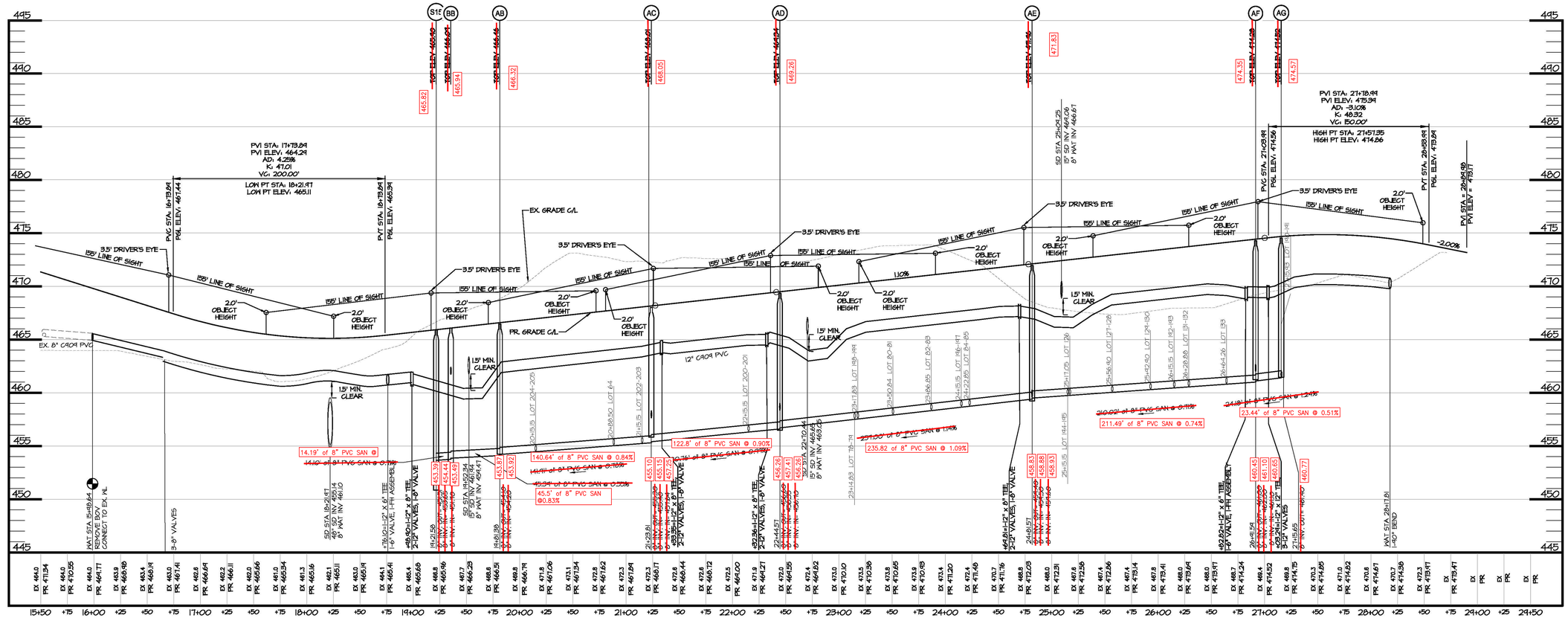
SANDY BOTTOM CIRCLE
ST-54-32
25 MPH POST SPEED

50 0 50 100 150
Scale 1" = 50'

NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.



SANDY BOTTOM CIRCLE
ST-54-32
25 MPH POST SPEED



SANDY BOTTOM CIRCLE PROFILE
SCALE: H: 1"=50'
V: 1"=5'

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DATE	REVISIONS
02/03/23	CITY,JUI,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

JACOB K. ERICKSON
LICENSE NO. 16052
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
02/05/25

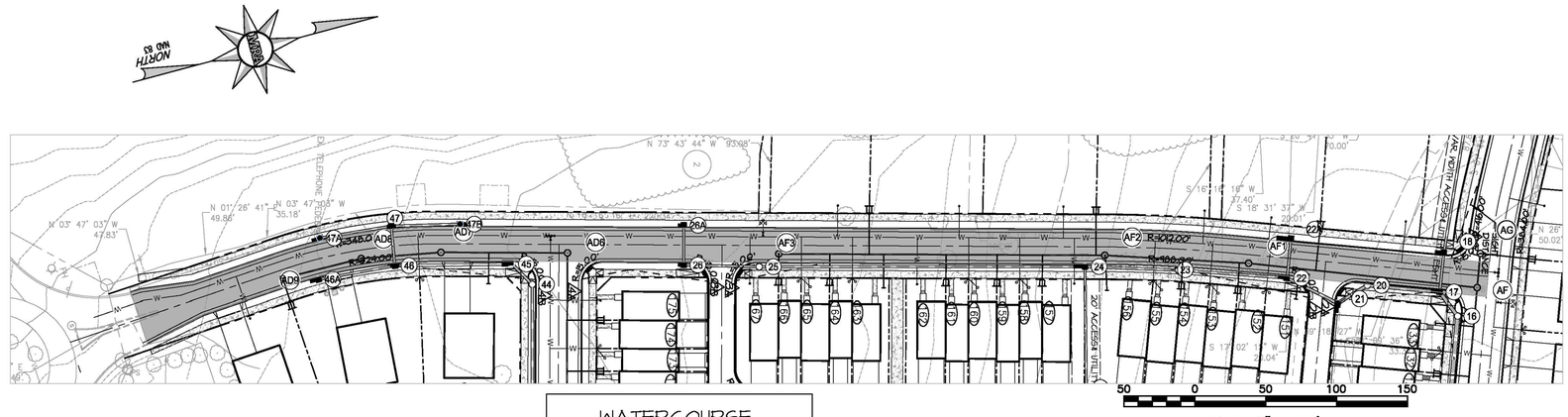
JACOB K. ERICKSON
LICENSE NO. 16052
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
10/13/23

SANDY BOTTOM CIR PLAN AND PROFILE

SHENANDOAH SPRINGS PHASE 2B

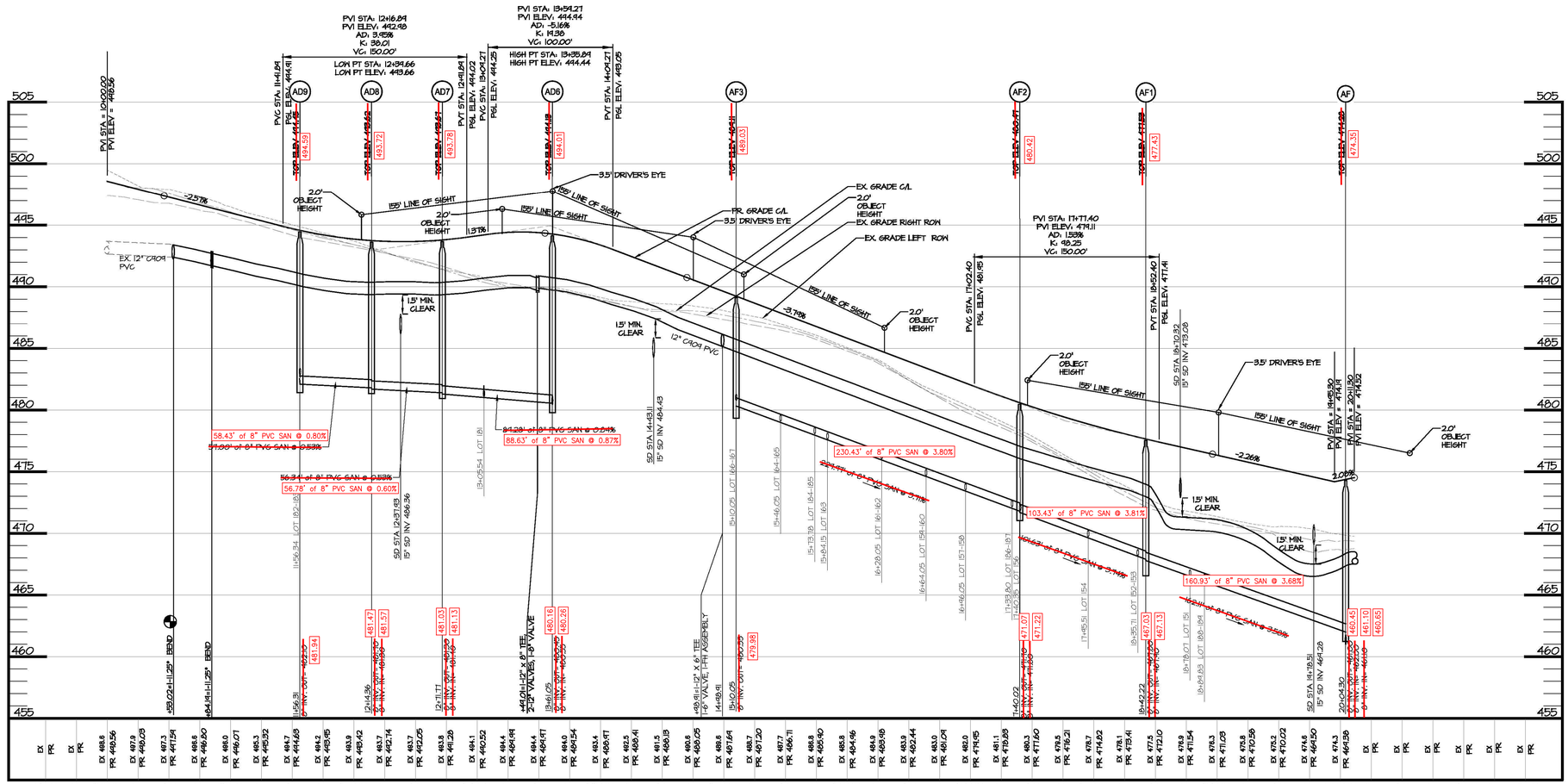
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	18 OF 62



WATERCOURSE
ST-46-24
25 MPH POST SPEED

NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.
2. EXISTING SERVICES ALONG DEEP CREEK ROAD TO BE CAPPED OR RECONFIGURED. CAPPING SHOULD BE AT THE EXISTING WATER MAIN



WATERCOURSE DR PROFILE
SCALE: H: 1"=50'
V: 1"=5'

REVISIONS	DATE
CITY,JUL,CTUB COMMENTS	02/03/23
CTUB & JUI COMMENTS	03/23/23
CTUB COMMENTS	03/28/23
CLIENT CHANGES	09/12/23
GRADING REVISION	10/13/23

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02/05/25

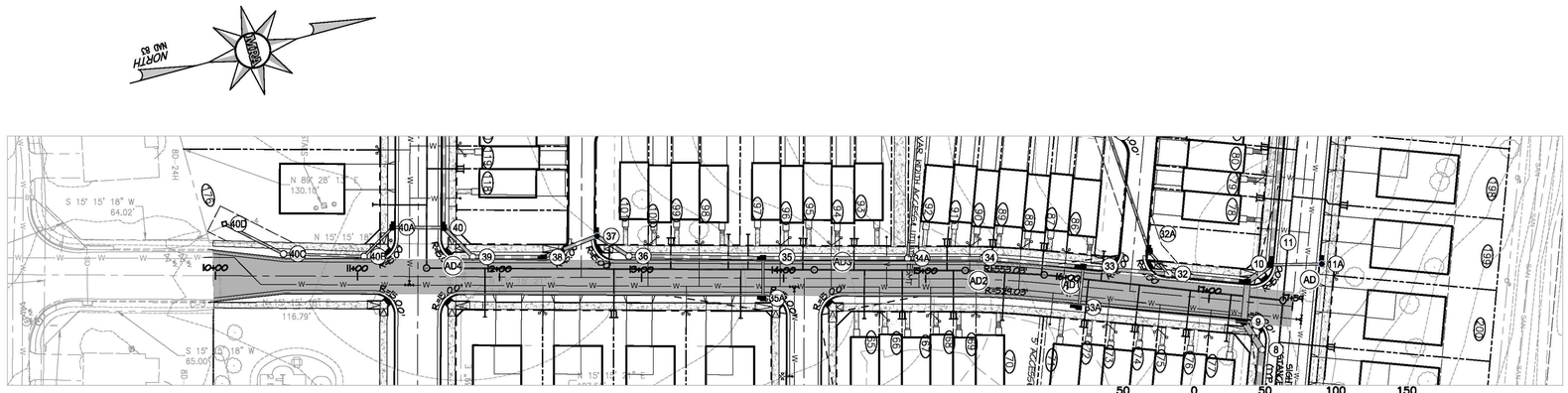
JOHN K. ERICKSON
16052
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
10/13/23

WATERCOURSE PLAN AND PROFILE

SHENANDOAH SPRINGS PHASE 2B

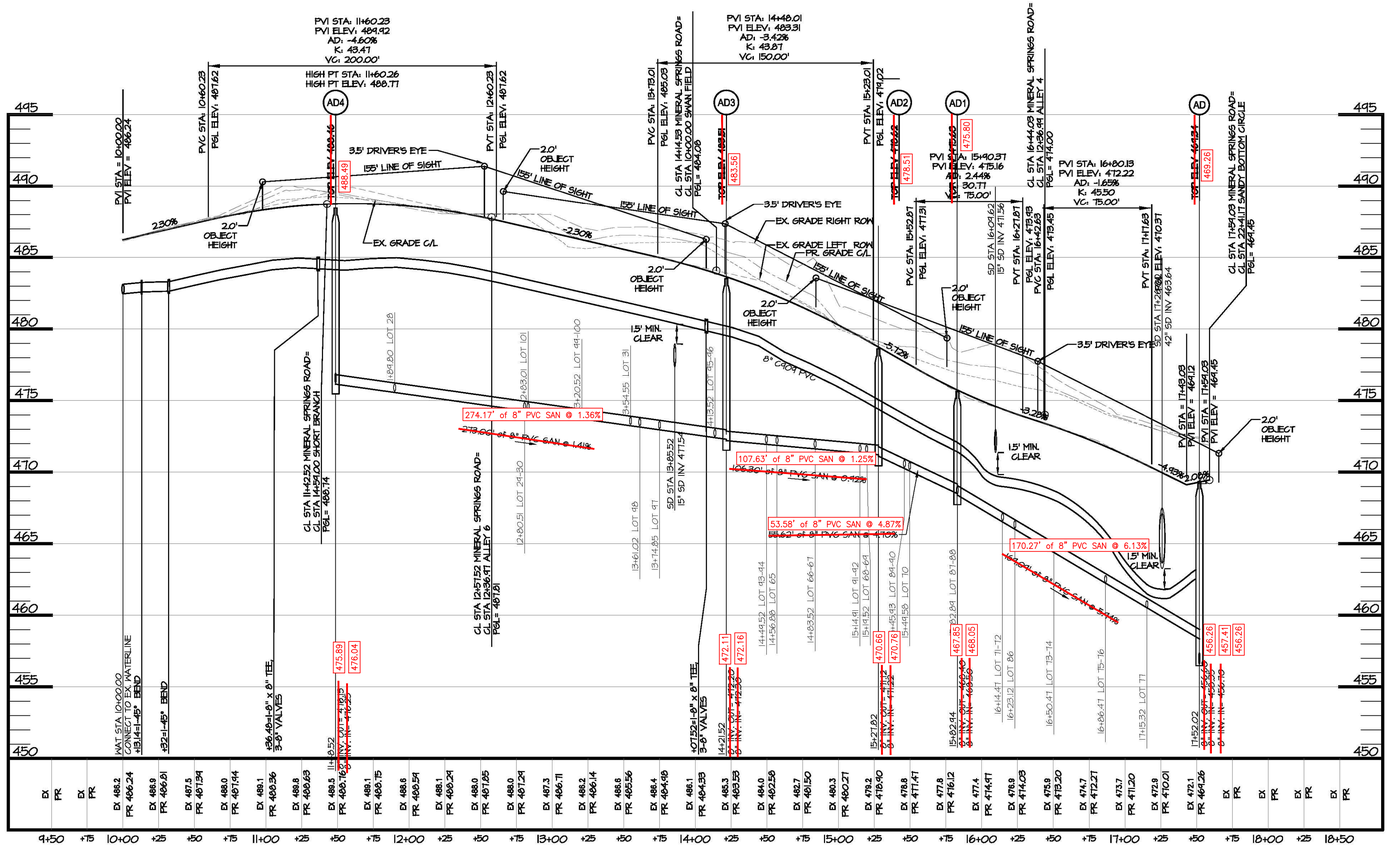
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	19 OF 62



MINERAL SPRINGS
ST-46-24
25 MPH POST SPEED

NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.
2. EXISTING SERVICES ALONG DEEP CREEK ROAD TO BE CAPPED OR RECONFIGURED. CAPPING SHOULD BE AT THE EXISTING WATER MAIN



MINERAL SPRINGS ROAD PROFILE
SCALE: H: 1"=50'
V: 1"=5'

02/05/25

DATE	REVISIONS
02/03/23	CITY,JUI,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

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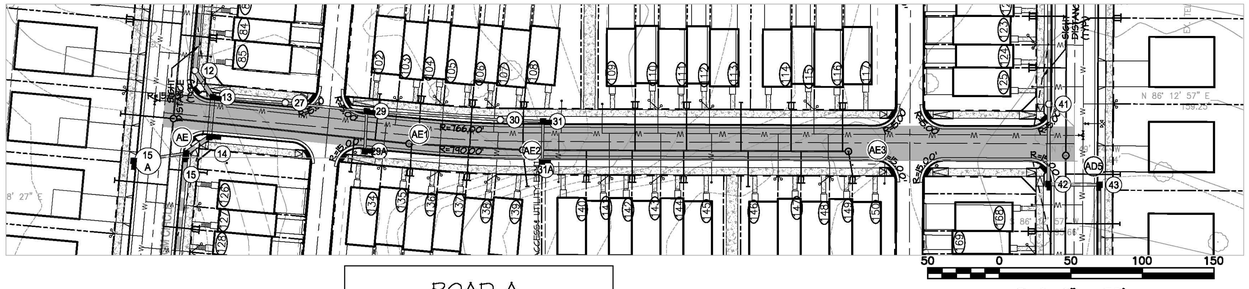
MINERAL SPRING PLAN AND PROFILE

SHENANDOAH SPRINGS PHASE 2B

CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

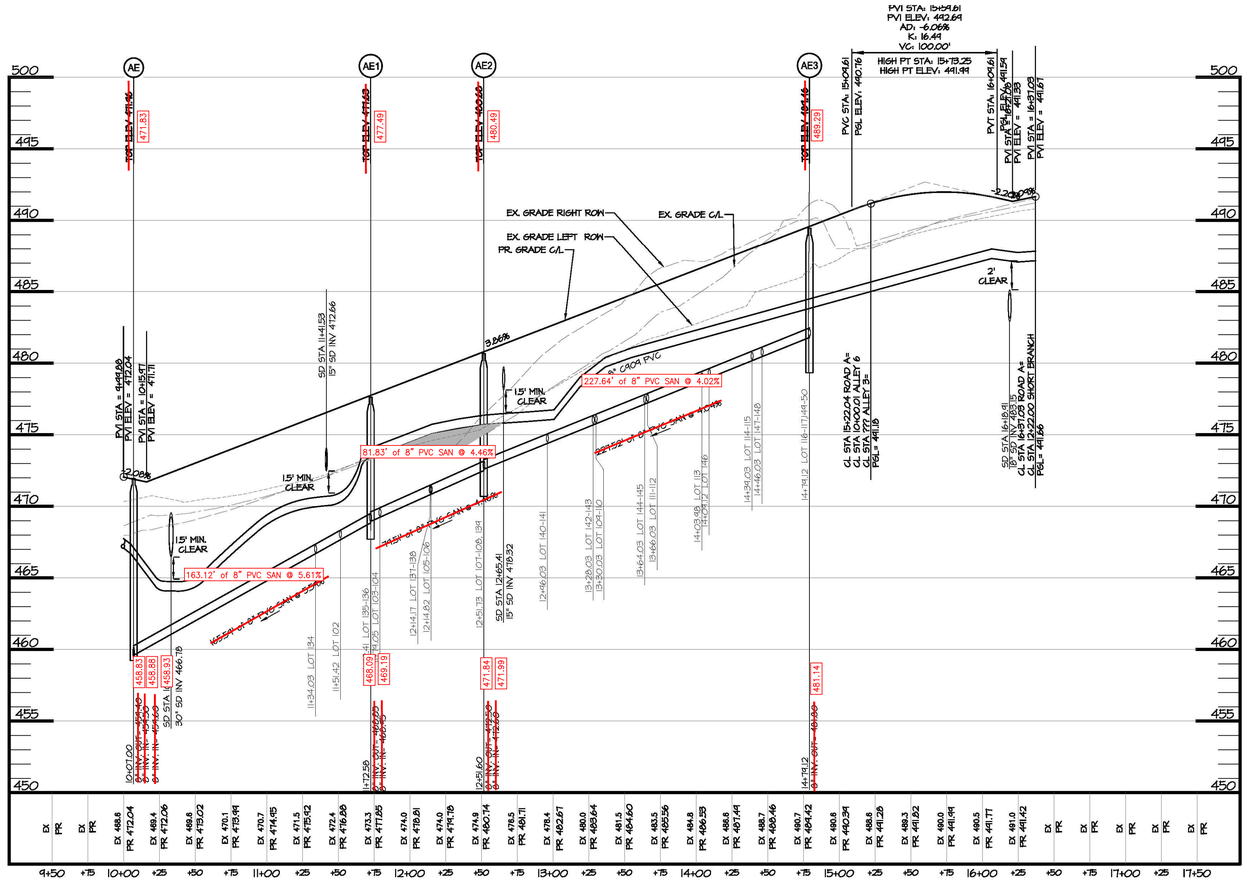
JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	20 OF 62





ROAD A
ST-46-24
25 MPH POST SPEED

NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.



ROAD A PROFILE
SCALE: H: 1"=50'
V: 1"=5'

02/05/25

DATE	REVISIONS
02/03/23	CITY,JUI,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

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10/13/23

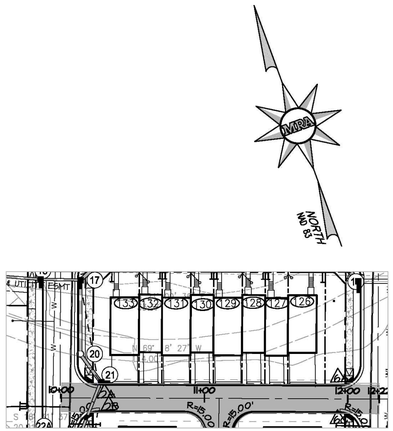
ROAD A PLAN AND PROFILE

SHENANDOAH SPRINGS PHASE 2B

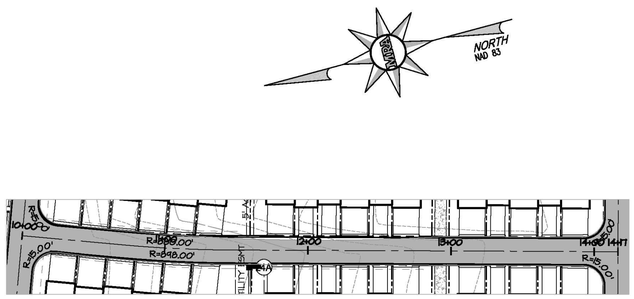
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	21 OF 62

NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.

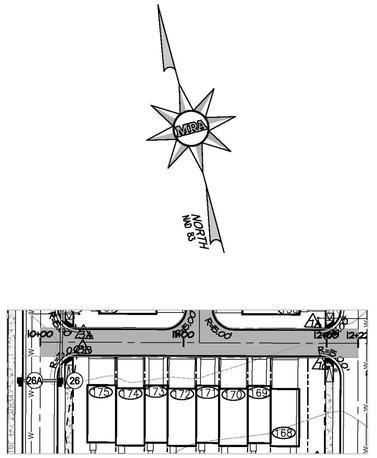


ALLEY 1
RA-20-18
25 MPH POST SPEED

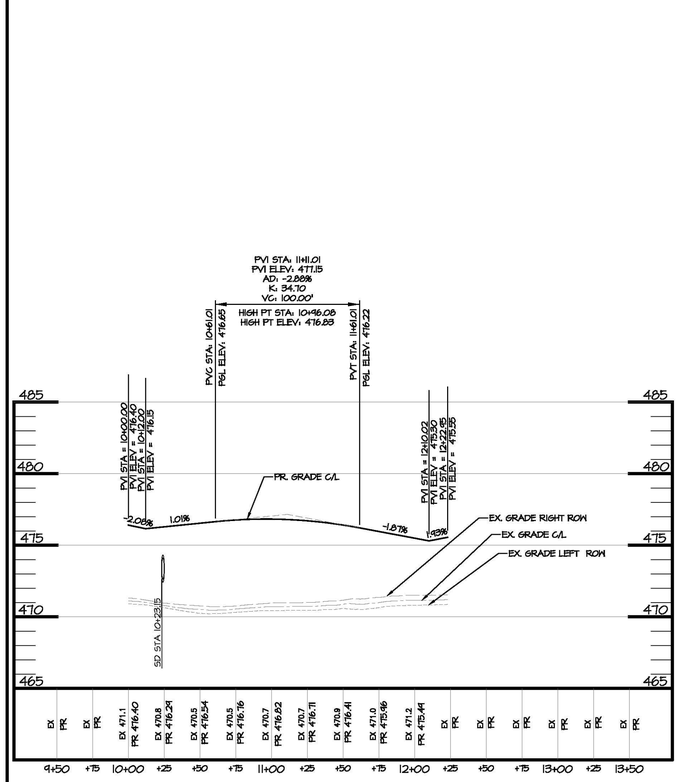


ALLEY 2
RA-20-18
25 MPH POST SPEED

50 0 50 100 150
Scale 1" = 50'

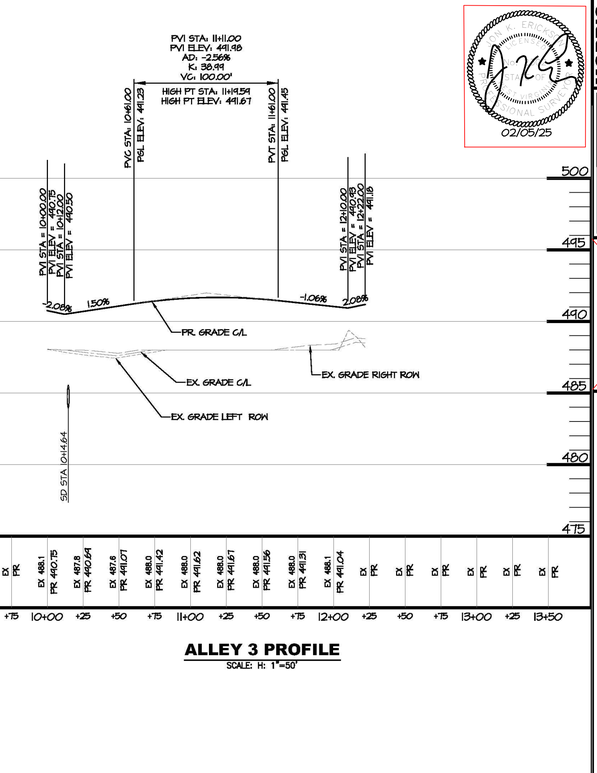


ALLEY 3
RA-20-18
25 MPH POST SPEED



ALLEY 1 PROFILE
SCALE: H: 1"=50'
V: 1"=5'

ALLEY 2 PROFILE
SCALE: H: 1"=50'
V: 1"=5'



ALLEY 3 PROFILE
SCALE: H: 1"=50'

02/05/25

DATE	REVISIONS
02/03/23	CITY,JUI,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

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JAMES K. ERICKSON
LIC. REGISTERED
16052
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
10/13/23

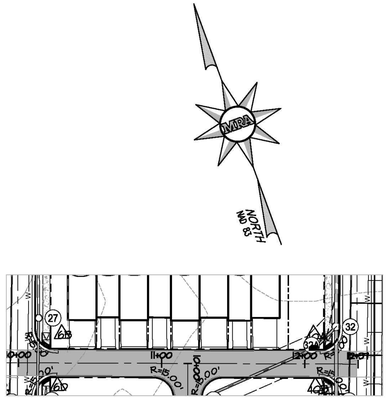
ALLEY 1-3 PLAN AND PROFILE

SHENANDOAH SPRINGS PHASE 2B

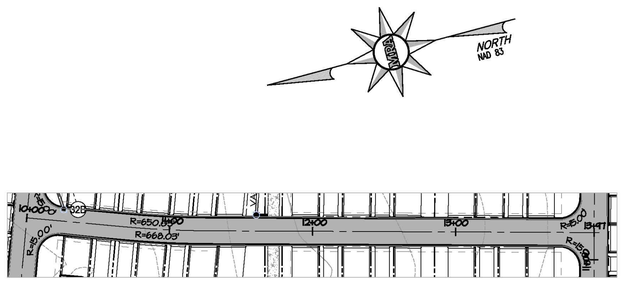
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	22 OF 62

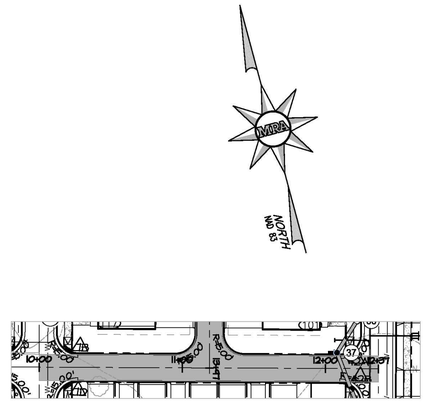
NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.



ALLEY 4
RA-20-18
25 MPH POST SPEED

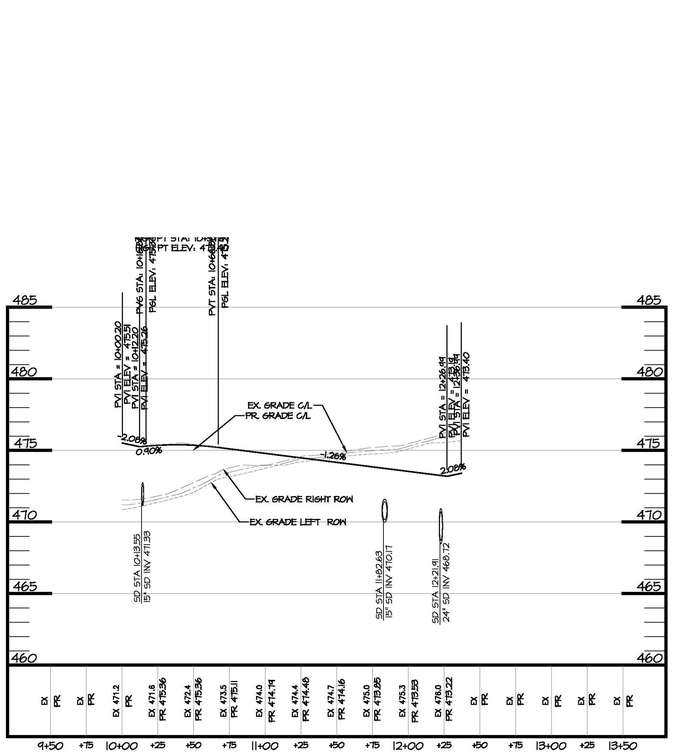


ALLEY 5
RA-20-18
25 MPH POST SPEED

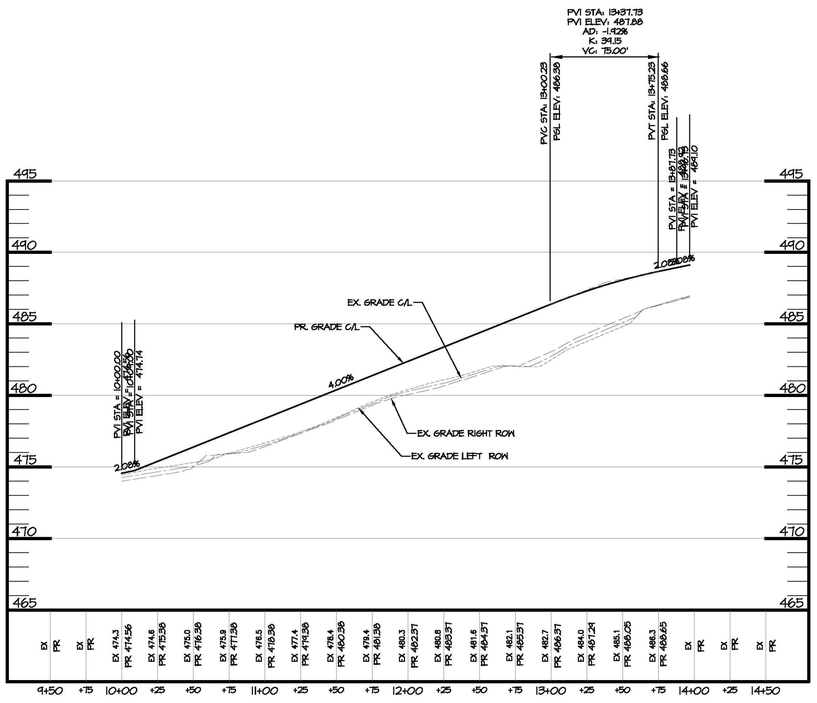


ALLEY 6
RA-20-18
25 MPH POST SPEED

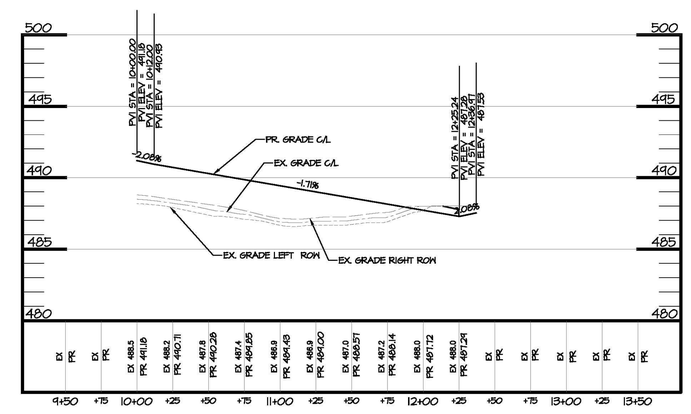
50 0 50 100 150
Scale 1" = 50'



ALLEY 4 PROFILE
SCALE: H: 1"=50'
V: 1"=5'



ALLEY 5 PROFILE
SCALE: H: 1"=50'
V: 1"=5'



ALLEY 6 PROFILE
SCALE: H: 1"=50'
V: 1"=5'

JOHN E. ERICKSON
REGISTERED
16052
STATE OF VIRGINIA
PROFESSIONAL ENGINEER
02/05/25

DATE	REVISIONS
02/03/23	CITY,JUI,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

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ALLEY 4-6 PLAN AND PROFILE

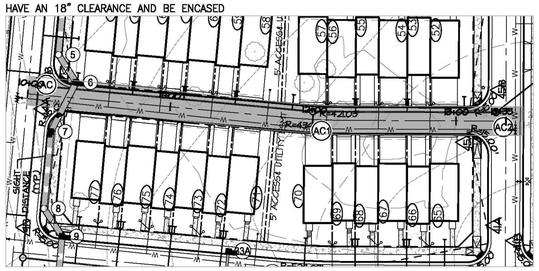
SHENANDOAH SPRINGS PHASE 2B

CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOHN E. ERICKSON
REGISTERED
16052
STATE OF VIRGINIA
PROFESSIONAL ENGINEER
10/13/23

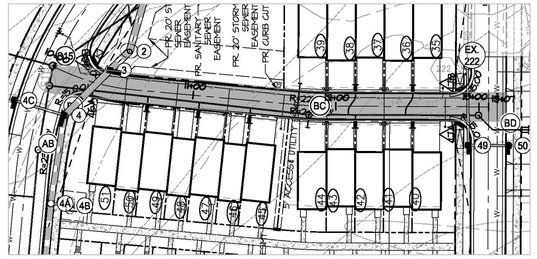
JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	23 OF 62

NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.

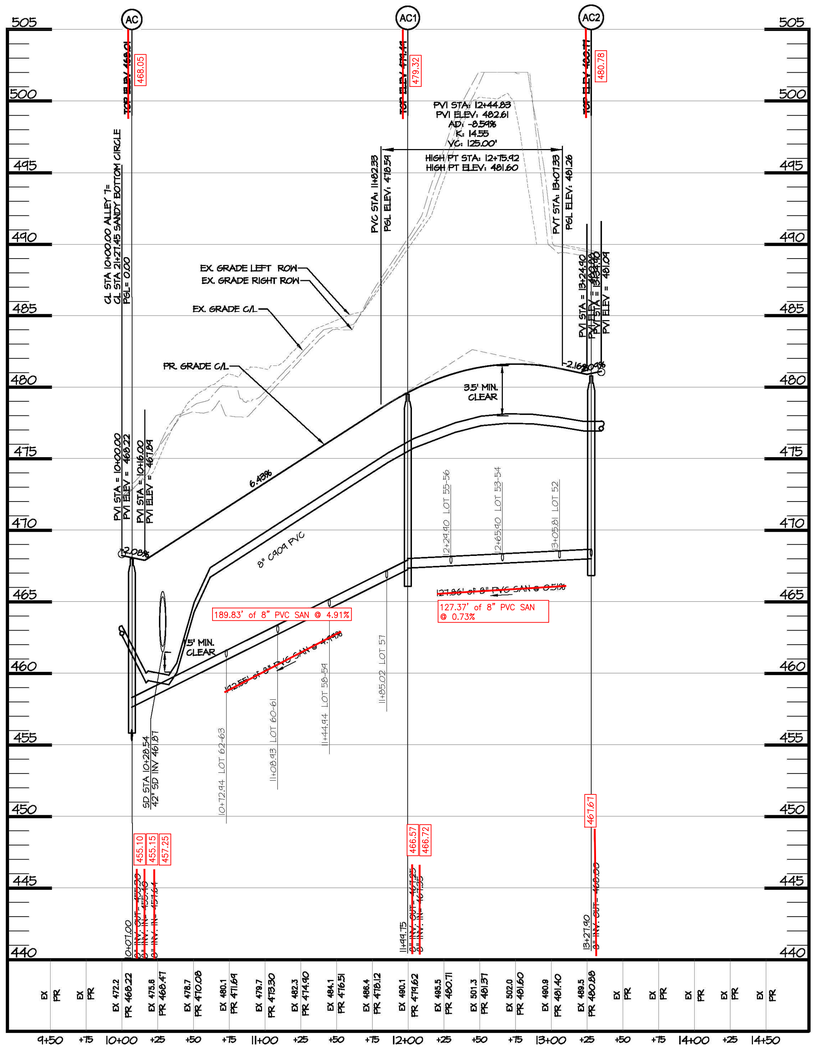


ALLEY 7
RA-20-18
25 MPH POST SPEED

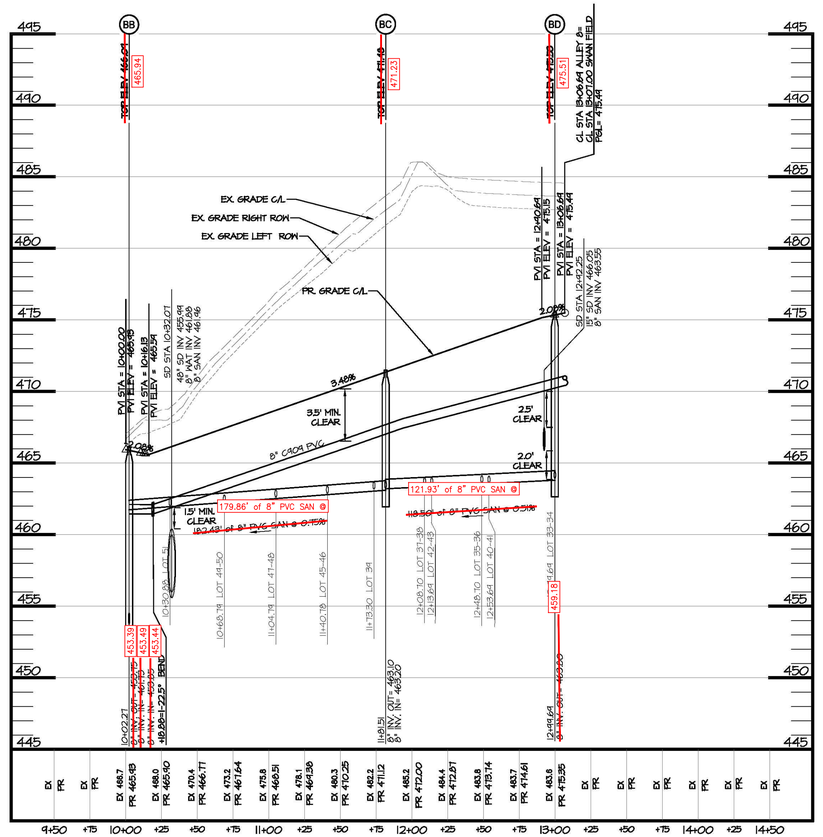




ALLEY 8
RA-20-18
25 MPH POST SPEED



ALLEY 7 PROFILE
SCALE: H: 1"=50'
V: 1"=5'



ALLEY 8 PROFILE
SCALE: H: 1"=50'
V: 1"=5'

REVISIONS	
DATE	
02/03/23	CITY,JUI,CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

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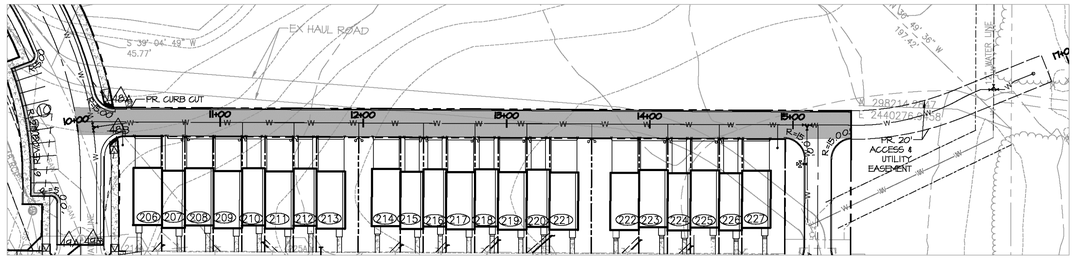
ALLEY 7-8 PLAN AND PROFILE

SHENANDOAH SPRINGS PHASE 2B

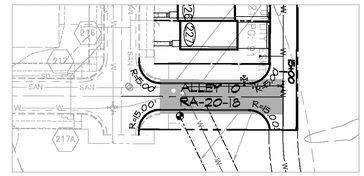
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	24 OF 62

NOTES:
1. ANY WATERLINE THAT DIPS BELOW STORM DRAINAGE MUST HAVE AN 18" CLEARANCE AND BE ENCASED IN CONCRETE.

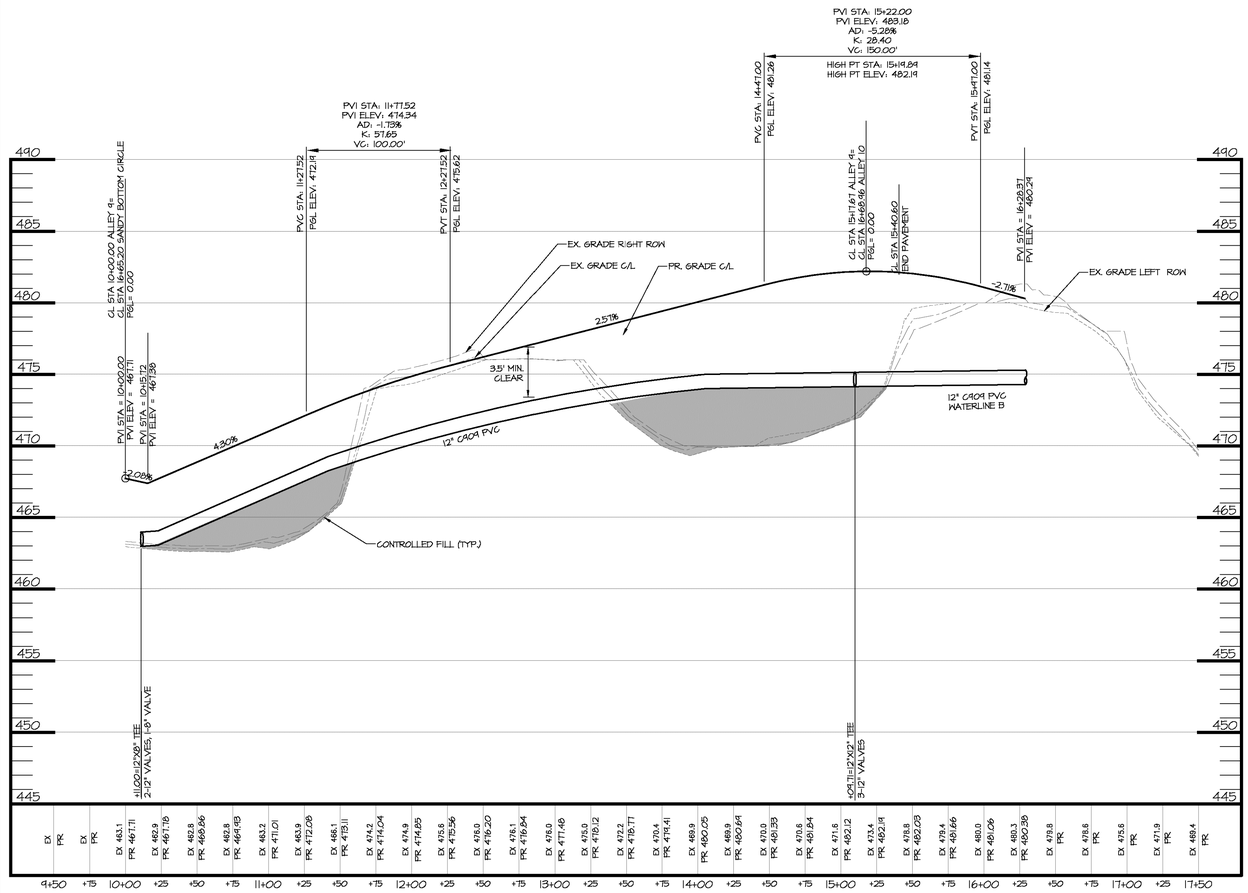


ALLEY 9
RA-20-18
25 MPH POST SPEED

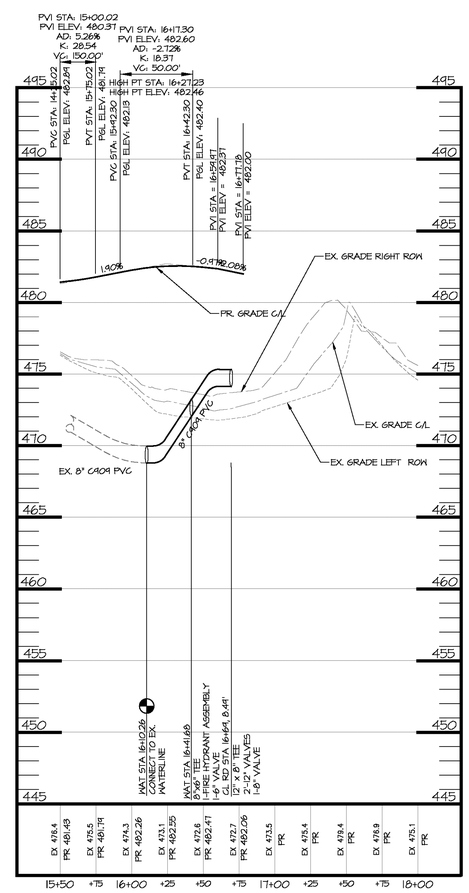


ALLEY 10
RA-20-20
25 MPH POST SPEED

50 0 50 100 150
Scale 1" = 50'



ALLEY 9 PROFILE
SCALE: H: 1"=50'
V: 1"=5'



ALLEY 10 PROFILE
SCALE: H: 1"=50'
V: 1"=5'

02/05/25

REVISIONS	
DATE	
02/03/23	CITY, JUI, CTUB COMMENTS
03/23/23	CTUB & JUI COMMENTS
03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

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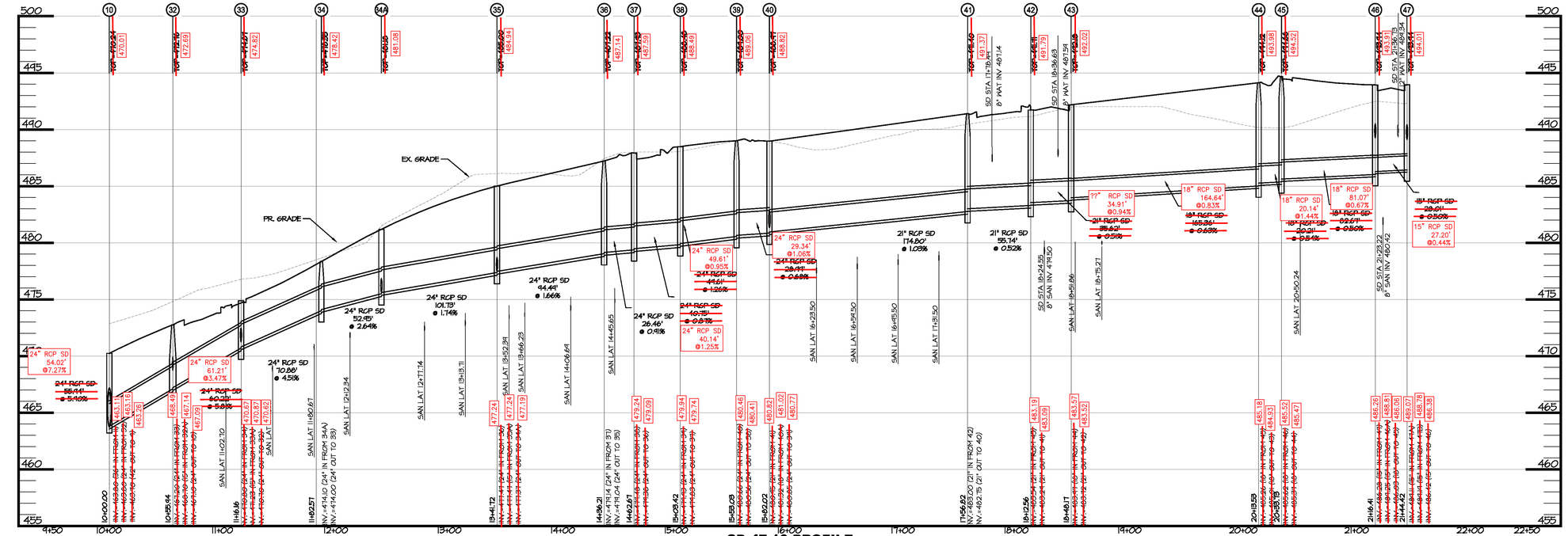
LICENSED PROFESSIONAL ENGINEER
16053
STATE OF WEST VIRGINIA
10/13/23

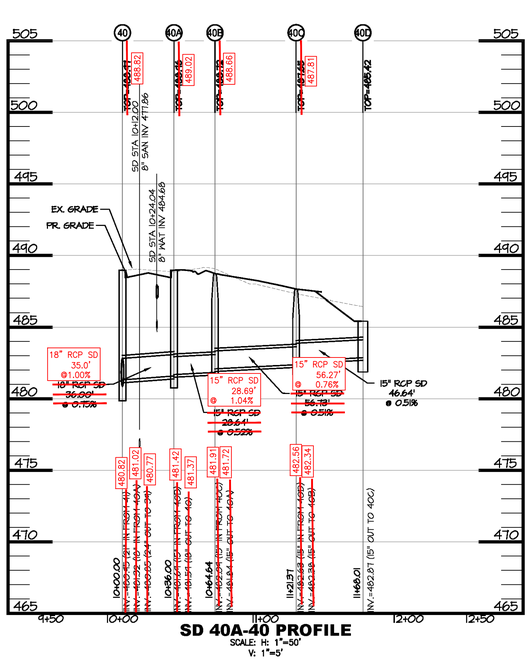
ALLEY 9-10 PLAN AND PROFILE

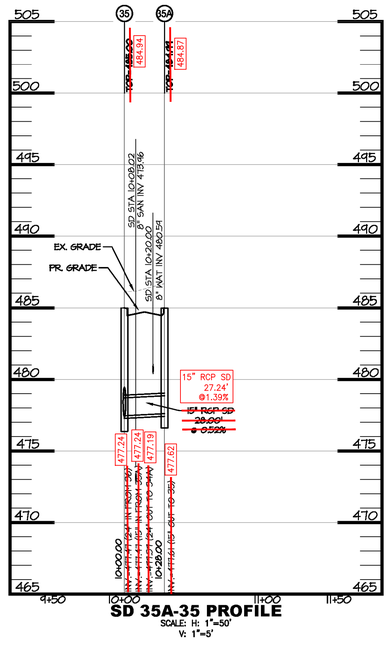
SHENANDOAH SPRINGS PHASE 2B

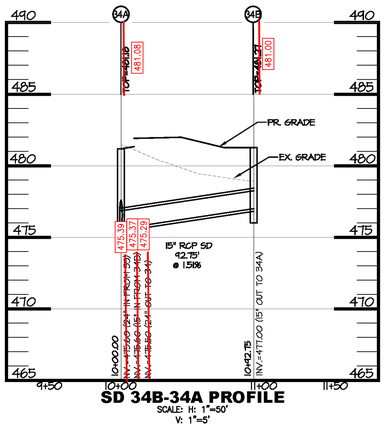
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

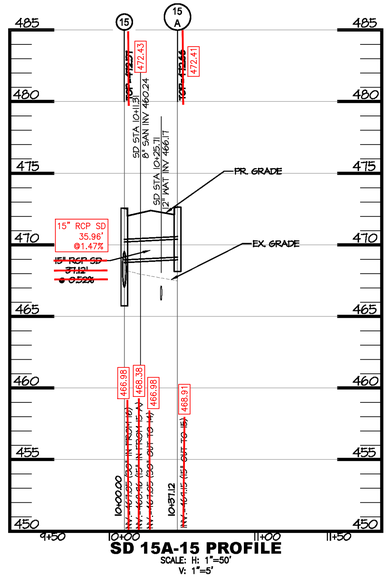
JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	25 OF 62

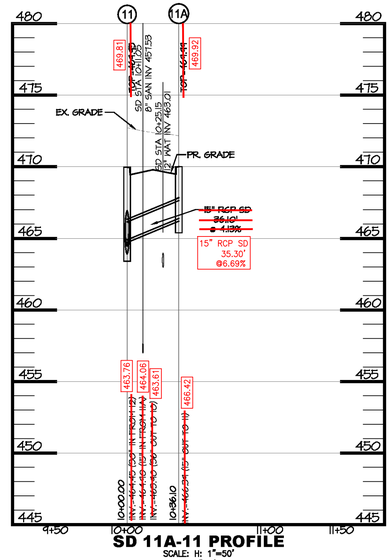












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03/28/23	CTUB COMMENTS
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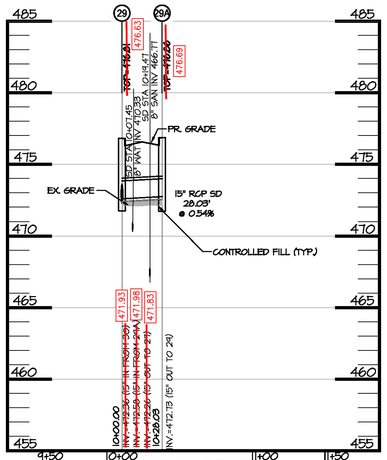
JOHN K. ERICKSON
LICENSED PROFESSIONAL ENGINEER
16052
STATE OF VIRGINIA
10/13/23

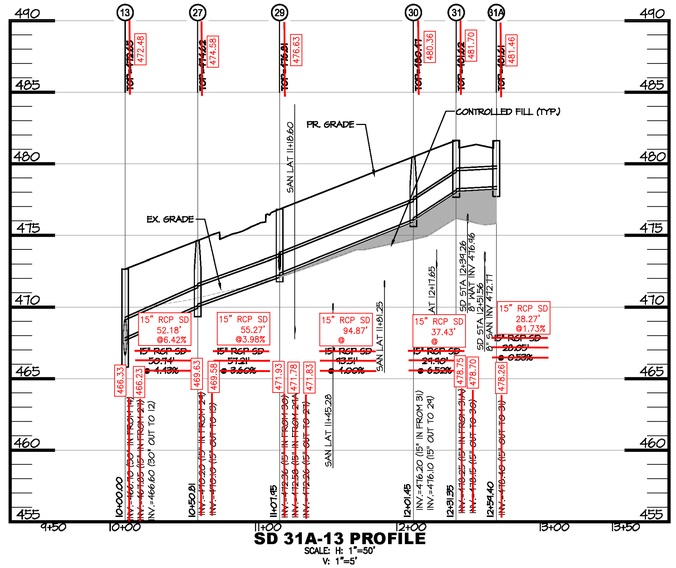
STORM PROFILES

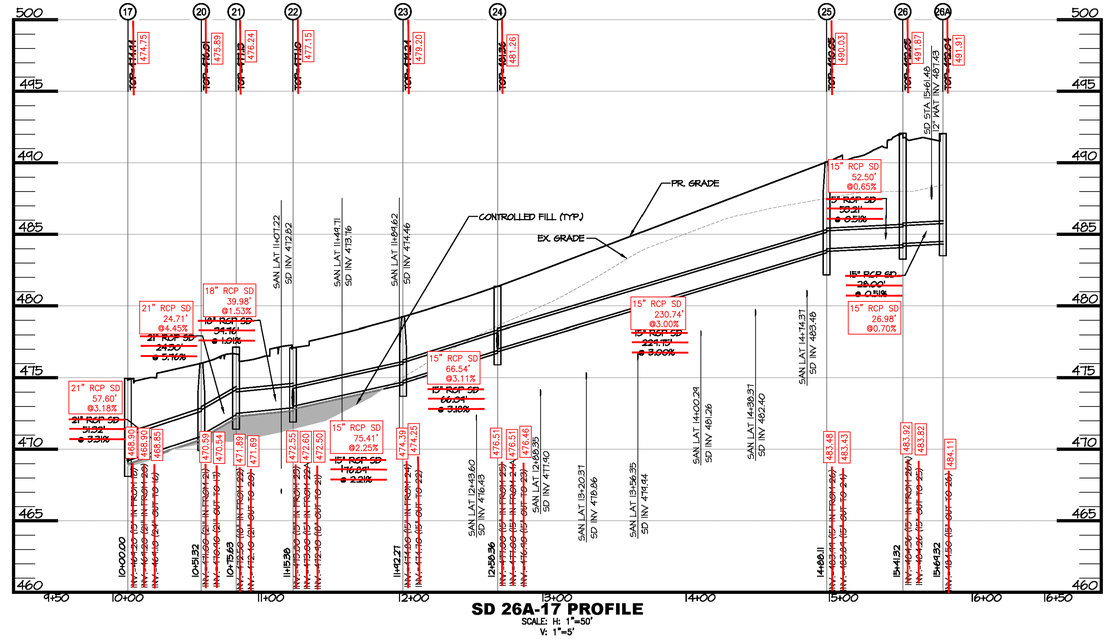
SHENANDOAH SPRINGS PHASE 2B

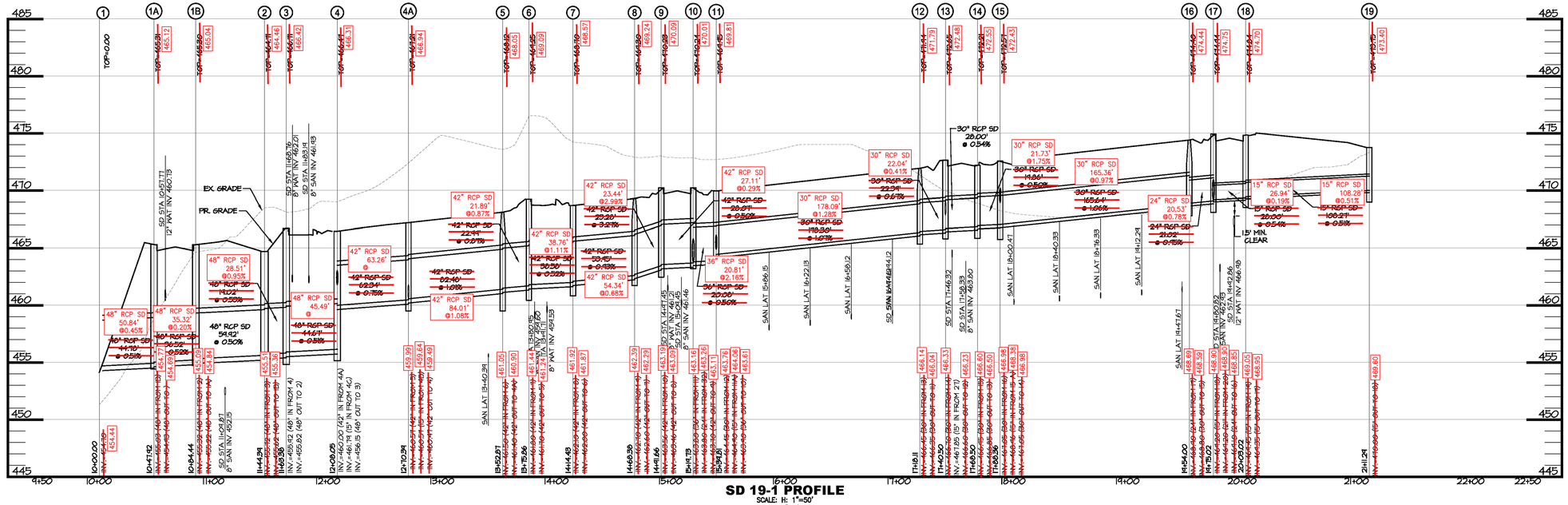
CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	26 OF 62









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03/28/23	CTUB COMMENTS
09/12/23	CLIENT CHANGES
10/13/23	GRADING REVISION

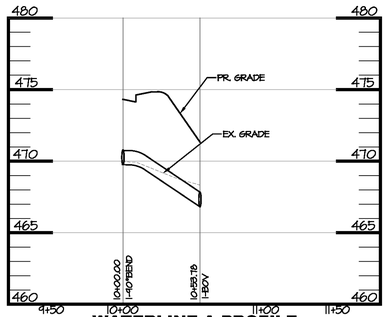
JOHN K. ERICKSON
REGISTERED
16052
STATE OF VIRGINIA
PROFESSIONAL ENGINEER
10/19/23

STORM PROFILES

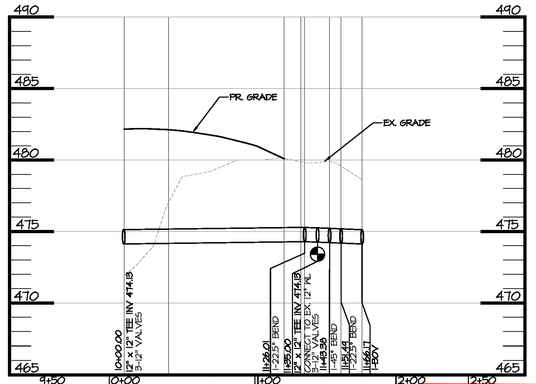
SHENANDOAH SPRINGS PHASE 2B

CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

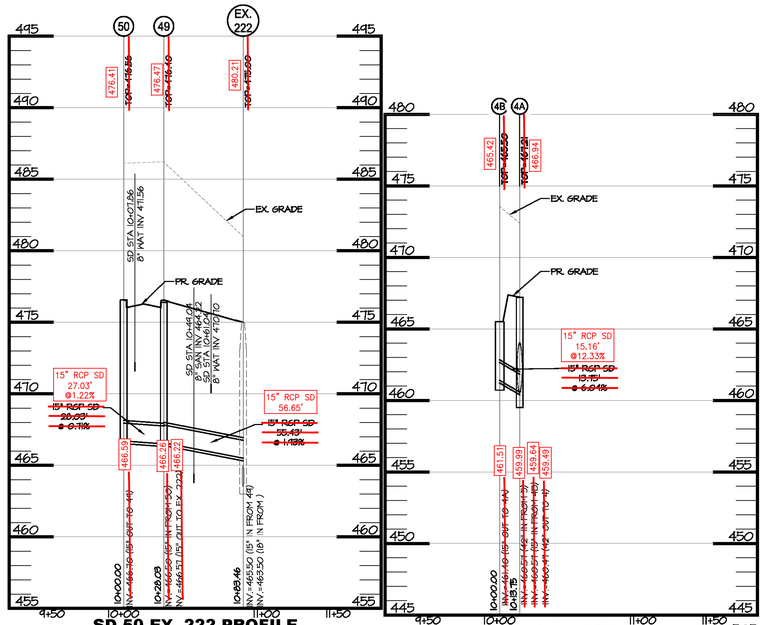
JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	27 OF 62



WATERLINE A PROFILE
SCALE: H: 1"=50'
V: 1"=5'

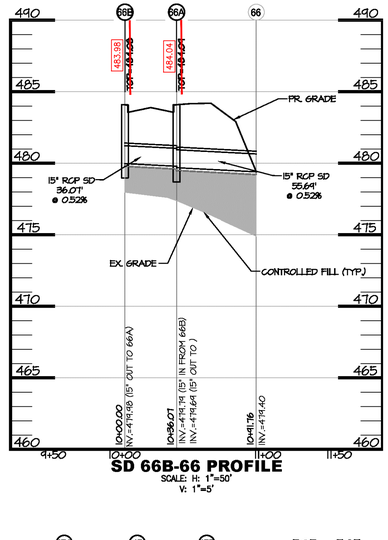


WATERLINE B PROFILE
SCALE: H: 1"=50'
V: 1"=5'

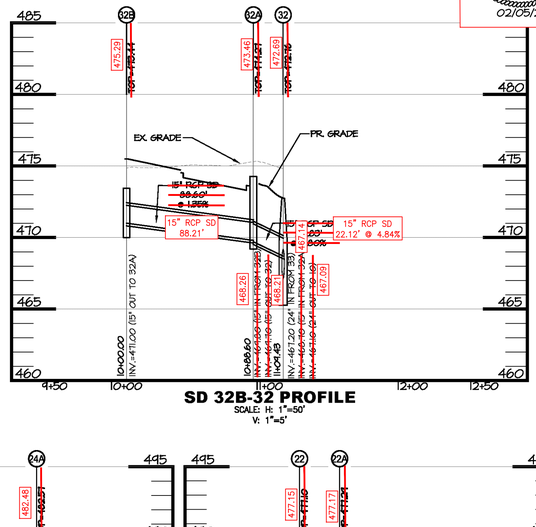


SD 50-EX. 222 PROFILE
SCALE: H: 1"=50'
V: 1"=5'

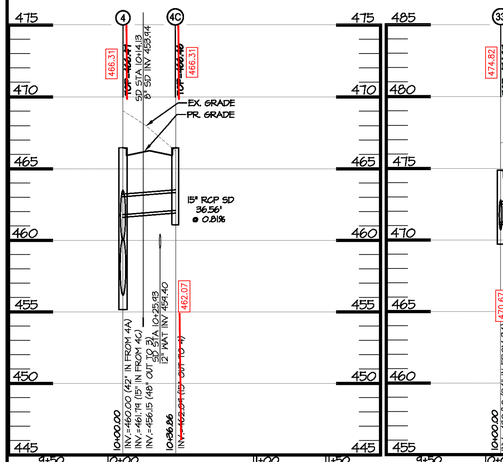
SD 4B-4A PROFILE
SCALE: H: 1"=50'
V: 1"=5'



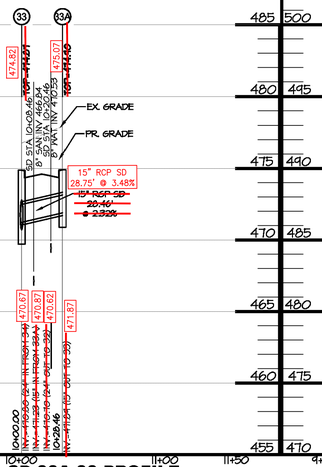
SD 66B-66 PROFILE
SCALE: H: 1"=50'
V: 1"=5'



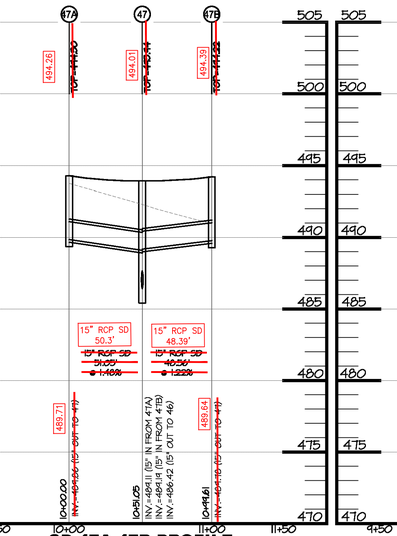
SD 32B-32 PROFILE
SCALE: H: 1"=50'
V: 1"=5'



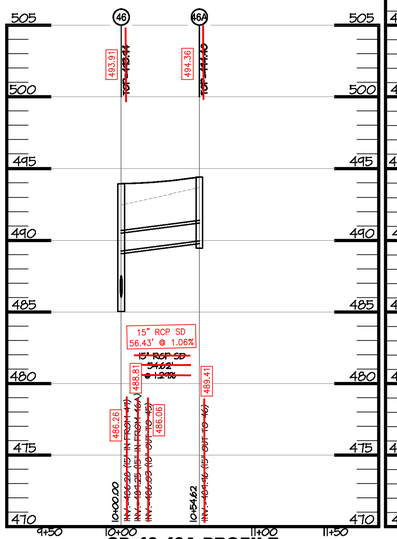
SD 4-4C PROFILE
SCALE: H: 1"=50'
V: 1"=5'



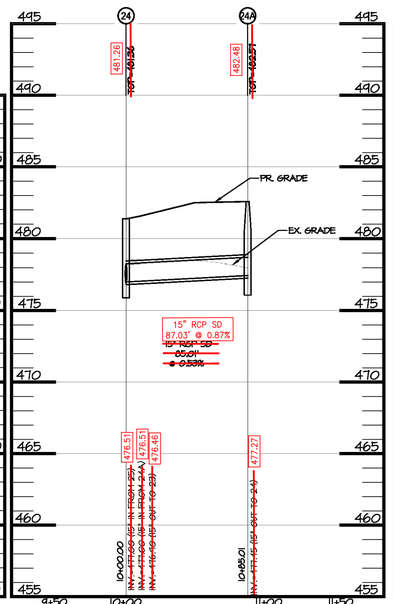
SD 33A-33 PROFILE
SCALE: H: 1"=50'
V: 1"=5'



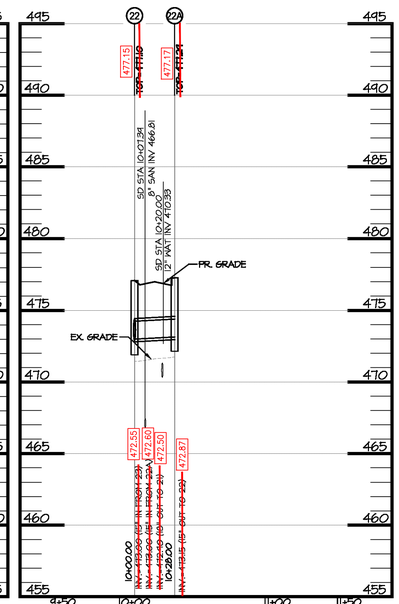
SD 47A-47B PROFILE
SCALE: H: 1"=50'
V: 1"=5'



SD 46-46A PROFILE
SCALE: H: 1"=50'
V: 1"=5'



SD 24A-24 PROFILE
SCALE: H: 1"=50'
V: 1"=5'



SD 22A-22 PROFILE
SCALE: H: 1"=50'
V: 1"=5'

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JOHN K. ERICKSON
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STATE OF WEST VIRGINIA
16052
10/13/23

JOHN K. ERICKSON
LICENSED PROFESSIONAL ENGINEER
STATE OF WEST VIRGINIA
02/05/25

STORM AND WATERLINE PROFILES

SHENANDOAH SPRINGS PHASE 2B

CONSTRUCTION DRAWINGS
CITY OF RANSON, WEST VIRGINIA

JOB NO.:	21163
SCALE:	1"=50'
DATE:	10/14/22
DRAWN BY:	DLT
DESIGN BY:	DLT
REVIEW BY:	JKE
SHEET:	28 OF 62

City of Ranson, West Virginia
Community Development
Construction Bond - Estimate

Project Shenandoah Springs ____ Date: 3/7/2025

Section 2B ____ C.O.R. File No. _____

Bond Amount Approved: $ _____

By: _____ **Date:** _____

Official Use Do Not Write In This Box

				Bond Estimate		Bond Reduction Release		
						% Complete To Date	$ Amount Complete To Date	$ Amount To Be Completed
Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost			
1.1	**Erosion & Sediment Control**							
1	Stabilized Construction Entrance	EA	$ 2,475.00	0	$ -		$ -	$ -
2	Silt Fence - Standard	LF	$ 4.40	2235	$ 9,834.00		$ -	$ 9,834.00
3	Silt Fence - Super	LF	$ 18.15	2080	$ 37,752.00		$ -	$ 37,752.00
4	Earth Dike Construction (1)	LF	$ 3.96	897	$ 3,552.12		$ -	$ 3,552.12
5	Inlet Protection Device	EA	$ 388.14	70	$ 27,169.45		$ -	$ 27,169.45
6	Outlet Protection Device	EA	$ 385.00	2	$ 770.00		$ -	$ 770.00
7	Stone Check Dams	EA	$ 192.50	0	$ -		$ -	$ -
8	Sediment Trap Excavation	CY	$ 15.35	0	$ -		$ -	$ -
9	Riser Structure for Sediment Basin/Pond	EA	$ 6,456.24	0	$ -		$ -	$ -
10	Impermeable Liner for Sediment Basin/Pond	SY	$ 22.83	0	$ -		$ -	$ -
11	Rip-Rap Apron/Plunge Pool	CY	$ 122.72	0	$ -		$ -	$ -
12	Grass Waterway/Drainage Swale	LF	$ 11.99	689	$ 8,261.11		$ -	$ 8,261.11
13	Temporary Seeding (60 lbs/ac)	SF	$ 0.10	1221138	$ 120,892.66		$ -	$ 120,892.66
14	Permanent Seeding (98 lbs/ac)	SF	$ 0.12	869022	$ 105,151.66		$ -	$ 105,151.66
15	Mulch, Straw or Hay (2 tn/ac)	TN	$ 550.13	0	$ -		$ -	$ -
16	Mulch, Wood Cellulose Fiber (1,500 lbs/ac)	TN	$ 545.34	0	$ -		$ -	$ -
17	Mulch, Shredded Bark or Wood Chip (35 cy/ac)	CY	$ 89.10	0	$ -		$ -	$ -
18	Sod	SY	$ 5.90	0	$ -		$ -	$ -
19	Soil Stabilizing Matt - Biodegradable	SY	$ 4.95	0	$ -		$ -	$ -
20	Soil Stabilizing Matt - Non-biodegradable	SY	$ 11.00	0	$ -		$ -	$ -
21	Geotextile Fabric	SF	$ 3.30	0	$ -		$ -	$ -
22	4 ft Safety Fence	LF	$ 8.84	0	$ -		$ -	$ -
23	6 ft Chain Link Safety Fence	LF	$ 11.00	0	$ -		$ -	$ -
24	Tree Protection	LF	$ 3.30	0	$ -		$ -	$ -
25	Temporary Utility Line Stream Crossing/Diversion	EA	$ 1,375.00	0	$ -		$ -	$ -
1.2	**Site Preparation & Demolition**							
1	Clearing & Grubbing - Light Cover	ACRE	$ 7,342.50	0	$ -		$ -	$ -
2	Clearing & Grubbing - Moderate Cover	ACRE	$ 10,725.00	0	$ -		$ -	$ -
3	Clearing & Grubbing - Heavy Cover	ACRE	$ 13,475.00	0	$ -		$ -	$ -
4	Clearing & Grubbing - Very Heavy Cover	ACRE	$ 15,950.00	0	$ -		$ -	$ -
5	Sawcut Existing Asphalt Pavement	LF	$ 2.20	0	$ -		$ -	$ -
6	Sawcut Existing Concrete Pavement	LF	$ 3.52	0	$ -		$ -	$ -
7	Removal of Asphalt Pavement	SY	$ 8.25	0	$ -		$ -	$ -
8	Removal of Fencing	LF	$ 5.67	0	$ -		$ -	$ -

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost			
9	Removal of Power Pole	EA	$ 8,415.00	0	$ -		$ -	$ -
10	Removal of Structures/Buildings	EA	Detailed estimate required.	0			$ -	$ -

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost			
1.3	**Earthwork**							
1	Strip Topsoil	CY	$ 4.13	21068	$ 86,905.50	100%	$ 86,905.50	$ -
2	Common Excavation	CY	$ 25.01	12804	$ 320,279.26	100%	$ 320,279.26	$ -
3	Borrow Material - On Site	CY	$ 22.34	4869	$ 108,778.33	100%	$ 108,778.33	$ -
4	Borrow Material - Imported from Off Site	CY	$ 40.26	0	$ -		$ -	$ -
5	Rock Excavation	CY	$ 99.00	0	$ -		$ -	$ -
6	Furnish Topsoil	CY	$ 52.76	0	$ -		$ -	$ -
2.1	**Paved Surface Construction**							
1	Subgrade	CY	$ 73.37	0	$ -		$ -	$ -
2	Fabric for Subgrade Stabilization	SY	$ 3.19	0	$ -		$ -	$ -
3	Aggregate Base Course	CY	$ 97.30	2370	$ 230,589.15	100%	$ 230,589.15	$ -
4	Open Graded Free Draining Base Course	CY	$ 120.89	0	$ -		$ -	$ -
5	Free Draining Base Trench	LF	$ 12.08	0	$ -		$ -	$ -
6	Outlet Pipe	LF	$ 39.75	0	$ -		$ -	$ -
7	Bituminous Asphalt Tack Coat	SY	$ 0.51	19226	$ 9,728.36	100%	$ 9,728.36	$ -
8	Superpave Asphalt Base Course - Type 25	TN	$ 93.50	0	$ -		$ -	$ -
9	Superpave Asphalt Base Course - Type 19	TN	$ 106.70	3244	$ 346,134.80	100%	$ 346,134.80	$ -
10	Superpave Asphalt Surface Course - Type 9.5	TN	$ 117.70	1622	$ 190,909.40		$ -	$ 190,909.40
11	Reinforced Concrete Pavement	CY	$ 450.55	0	$ -		$ -	$ -
12	Standard Milling	SY	$ 7.07	0	$ -		$ -	$ -
13	Controlled Low Strength Material	CY	$ 368.98	0	$ -		$ -	$ -
14	6" Concrete Entrance Apron - Residential	SY	$ 104.07	831	$ 86,483.00	100%	$ 86,483.00	$ -
15	8" Concrete Entrance Apron - Commercial Site	SY	$ 137.50	0	$ -		$ -	$ -
16	Concrete Curb & Gutter	LF	$ 66.00	10269	$ 677,754.00	100%	$ 677,754.00	$ -
17	Concrete Curb Only	LF	$ 55.00	5053	$ 277,915.00	100%	$ 277,915.00	$ -
18	Bituminous Asphalt Walkway	SF	$ 14.85	0	$ -		$ -	$ -
19	Concrete Sidewalk	SY	$ 97.13	5014	$ 487,009.82		$ -	$ 487,009.82
20	Bed Course Material (for sidewalk)	CY	$ 88.57	552	$ 48,891.74		$ -	$ 48,891.74
21	Concrete Curb Ramp	EA	$ 2,750.00	46	$ 126,500.00		$ -	$ 126,500.00
22	Detectable Warning Surface	EA	$ 486.72	46	$ 22,388.98		$ -	$ 22,388.98
23	Concrete Precast Wheel Stops	EA	$ 275.00	0	$ -		$ -	$ -
24	One Direction Lane Arrow	EA	$ 275.00	0	$ -		$ -	$ -
25	Multi Directional Land Arrow	EA	$ 460.90	0	$ -		$ -	$ -
26	Bicycle Shared Lane Marking	EA	$ 302.50	0	$ -		$ -	$ -
27	Bicycle Lane Marking	EA	$ 302.50	0	$ -		$ -	$ -
28	Pavement Letters	EA	$ 82.27	0	$ -		$ -	$ -
29	4" Edge/Lane Line - Painted	LF	$ 0.51	0	$ -		$ -	$ -
30	6" Edge/Lane Line - Painted	LF	$ 0.66	0	$ -		$ -	$ -
31	8" Edge/Lane Line - Painted	LF	$ 0.83	0	$ -		$ -	$ -
32	4" Edge/Lane Line - Thermoplastic	LF	$ 0.76	0	$ -		$ -	$ -
33	6" Edge/Lane Line - Thermoplastic	LF	$ 1.17	0	$ -		$ -	$ -
34	8" Edge/Lane Line - Thermoplastic	LF	$ 1.97	0	$ -		$ -	$ -
35	4" Edge/Lane Line - Preformed Thermoplastic	LF	$ 4.95	0	$ -		$ -	$ -
36	6" Edge/Lane Line - Preformed Thermoplastic	LF	$ 7.37	0	$ -		$ -	$ -
37	8" Edge/Lane Line - Preformed Thermoplastic	LF	$ 9.24	0	$ -		$ -	$ -
38	4" Edge/Lane Line w/ Contrast - Preformed Thermoplastic	LF	$ 7.07	0	$ -		$ -	$ -
39	6" Edge/Lane Line w/ Contrast - Preformed Thermoplastic	LF	$ 7.70	0	$ -		$ -	$ -
40	8" Edge/Lane Line w/ Contrast - Preformed Thermoplastic	LF	$ 9.90	0	$ -		$ -	$ -
41	12" Crosswalk/Stop/Transverse Line - Painted	LF	$ 3.58	0	$ -		$ -	$ -
42	12" Crosswalk/Stop/Transverse Line - Preformed Thermoplastic	LF	$ 14.85	1124	$ 16,691.40		$ -	$ 16,691.40
43	24" Stop Line - Preformed Thermoplastic	LF	$ 24.75	34	$ 841.50		$ -	$ 841.50
44	Handicapped Parking Symbol	EA	$ 341.17	1	$ 341.17		$ -	$ 341.17
45	0.08 in Flat Sheet Sign	SF	$ 49.50	182	$ 9,009.00		$ -	$ 9,009.00
46	City standard sign post	LF	$ 27.50	70	$ 1,925.00		$ -	$ 1,925.00

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost			
47	Sign - Street Name per E911 Addressing Ordinance	EA	$ 467.50	7	$ 3,272.50		$ -	$ 3,272.50
48	Guard Rail - Steel Beam & Posts	LF	$ 20.16	0	$ -		$ -	$ -
49	Fence - Chain Link 6' High	LF	$ 45.24	0	$ -		$ -	$ -
50	Fence - Wood 3-Rail	LF	$ 33.00	0	$ -		$ -	$ -
51	Fence - Decorative Iron, 42" High	LF	$ 82.50	0	$ -		$ -	$ -
52	Pedestrian/Bicycle Barrier Railing - Wood - 42" high	LF	$ 57.20	0	$ -		$ -	$ -
53	Lights - Street and Parking Lot (light fixture, pole, foundation, & wiring)	EA	$ 13,200.00	17	$ 224,400.00		$ -	$ 224,400.00
54	Bollards (wood or steel)	EA	$ 495.00	0	$ -		$ -	$ -
55	Traffic Control/Stop Light (WVDOH cost estimate)	EA	DOH estimate required.	0			$ -	$ -

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost			
3.1	**Landscaping**							
1	Transplanting Trees (6' or less)	EA	$ 148.50	0	$ -		$ -	$ -
2	Transplanting Shrubs	EA	$ 126.50	0	$ -		$ -	$ -
3	Plant Shrubs (Evergreen or Deciduous)	EA	$ 165.00	0	$ -		$ -	$ -
4	Plant Tree (2"-3" caliper) - Evergreen	EA	$ 412.50	0	$ -		$ -	$ -
5	Plant Tree (2"-3" caliper) - Deciduous	EA	$ 550.00	0	$ -		$ -	$ -
6	Plant Tree (2"-3" caliper) - Flowering	EA	$ 330.00	0	$ -		$ -	$ -
7	Plant Ground Cover	EA	$ 7.70	0	$ -		$ -	$ -
8	Plant Wetlands or Bioretention Vegetation	EA	$ 27.50	0	$ -		$ -	$ -
9	Plant Screen Trees	EA	$ 165.00	0	$ -		$ -	$ -
10	Plant Street/Shade Trees	EA	$ 550.00	338	$ 185,900.00		$ -	$ 185,900.00
11	Mulching (wood landscape mulch in place)	CY	$ 89.10	0	$ -		$ -	$ -
4.1	**Sanitary Sewer System**							
1	2" PVC Schedule 80 Pipe (force main)	LF	$ 121.00	0	$ -		$ -	$ -
2	6" PVC Schedule 80 Pipe	LF	$ 168.76	2544	$ 429,330.53	100%	$ 429,330.53	$ -
3	8" PVC Schedule 80 Pipe	LF	$ 109.45	3329	$ 364,359.05	100%	$ 364,359.05	$ -
4	10" PVC Schedule 80 Pipe	LF	$ 121.55	0	$ -		$ -	$ -
5	Manhole 4' Diameter (6' height or less)	EA	$ 6,674.68	28	$ 186,891.01	100%	$ 186,891.01	$ -
6	Grease Trap	EA	$ 6,875.00	0	$ -		$ -	$ -
7	4" Service Lateral (20' to Edge of R.O.W./Property Line)	LF	$ 68.31	773	$ 52,803.63	100%	$ 52,803.63	$ -
8	Sanitary Sewer Pump Station (sewage pump)	EA	Detailed estimate required.	0			$ -	$ -
9	Road Bore/Crossing (with Pipe & Steel Casing)	LF	$ 440.00	0	$ -		$ -	$ -
4.2	**Potable Water System**							
1	3/4" Copper Service Line	LF	$ 117.76	0	$ -		$ -	$ -
2	1" Copper Service Line	LF	$ 193.60	0	$ -		$ -	$ -
3	2" Copper Service Line	LF	$ 39.60	0	$ -		$ -	$ -
4	4" Ductile Iron Pipe	LF	$ 57.20	0	$ -		$ -	$ -
5	6" Ductile Iron Pipe	LF	$ 74.80	0	$ -		$ -	$ -
6	8" Ductile Iron Pipe	LF	$ 92.40	2980	$ 275,352.00	100%	$ 275,352.00	$ -
7	10" Ductile Iron Pipe	LF	$ 104.50	0	$ -		$ -	$ -
8	12" Ductile Iron Pipe	LF	$ 115.50	2950	$ 340,725.00	100%	$ 340,725.00	$ -
9	Fire Hydrant with 6" line	EA	$ 5,513.77	6	$ 33,082.63	100%	$ 33,082.63	$ -
10	4" Gate Valve & Box	EA	$ 1,225.13	0	$ -		$ -	$ -
11	6" Gate Valve & Box	EA	$ 1,954.65	6	$ 11,727.87	100%	$ 11,727.87	$ -
12	8" Gate Valve & Box	EA	$ 1,617.98	22	$ 35,595.54	100%	$ 35,595.54	$ -
13	10" Gate Valve & Box	EA	$ 2,420.00	0	$ -		$ -	$ -
14	12" Gate Valve & Box	EA	$ 4,271.09	21	$ 89,692.91	100%	$ 89,692.91	$ -
15	Pressure Reducing Valve & Vault	EA	Detailed estimate required.	0			$ -	$ -
16	Tapping Sleeve & Valve for Water Service Connection	EA	$ 726.00	1	$ 726.00	100%	$ 726.00	$ -
17	Water Meter Setter, Box & Service Line Tap	EA	$ 3,335.29	116	$ 386,893.41	100%	$ 386,893.41	$ -
5.1	**Storm Water Management & Storm Drainage**							
	SWM Basin/Ponds							
1	Excavation - Basin/Pond	CY	$ 25.01	8441	$ 211,143.17		$ -	$ 211,143.17
2	Excavation - Core Trench	CY	$ 25.01	125	$ 3,126.75		$ -	$ 3,126.75
3	Embankment Construction - On-Site Material	CY	$ 22.34	398	$ 8,891.72		$ -	$ 8,891.72
4	Embankment Construction - Imported Material	CY	$ 40.26	0	$ -		$ -	$ -
5	Impervious Core	SF	$ 1.98	860	$ 1,702.80		$ -	$ 1,702.80
6	Concrete Control Structure and Pipe Cradles	CY	$ 1,300.59	1.24	$ 1,612.73		$ -	$ 1,612.73
7	Corrugated Metal Pipe Control Structure	EA	$ 6,456.24	0	$ -		$ -	$ -
8	Dewatering Pipes or Structures	EA	$ 558.02	0	$ -		$ -	$ -
9	Filter Stone for Dewatering Pipe (1" to 2" dia. clean)	CY	$ 53.12	0	$ -		$ -	$ -
10	Antiseep Collar	f width	$ 165.00	0	$ -		$ -	$ -

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost			
11	Trash Rack	ch dia.	$ 55.00	72	$ 3,960.00		$ -	$ 3,960.00
12	Water Tight Pipe Bands	ch dia.	$ 8.25	0	$ -		$ -	$ -
	Low Impact Development BMP							
13	Urban Bioretention Basin (in sidewalk areas)	SF	$ 55.00	0	$ -		$ -	$ -
14	Bioretention Basin	SF	$ 38.50	0	$ -		$ -	$ -
15	Grass Channel	SF	$ 30.00	0	$ -		$ -	$ -
16	Permeable Pavers	SY	$ 50.00	0	$ -		$ -	$ -
	PVC Slotted Pipe							
17	4" PVC Slotted or Perforated Drain Pipe	LF	$ 16.50	0	$ -		$ -	$ -
18	6" PVC Slotted or Perforated Drain Pipe	LF	$ 17.60	0	$ -		$ -	$ -
19	8" PVC Slotted or Perforated Drain Pipe	LF	$ 21.85	0	$ -		$ -	$ -
20	12" PVC Slotted or Perforated Drain Pipe	LF	$ 36.30	0	$ -		$ -	$ -
	Corrugate Metal Pipe (Circular)							
21	15" Storm Drain Pipe	LF	$ 171.48	0	$ -		$ -	$ -
22	18" Storm Drain Pipe	LF	$ 112.79	0	$ -		$ -	$ -
23	24" Storm Drain Pipe	LF	$ 173.24	0	$ -		$ -	$ -
24	30" Storm Drain Pipe	LF	$ 198.00	0	$ -		$ -	$ -
25	36" Storm Drain Pipe	LF	$ 209.06	0	$ -		$ -	$ -
26	42" Storm Drain Pipe	LF	$ 244.20	0	$ -		$ -	$ -
27	48" Storm Drain Pipe	LF	$ 278.30	0	$ -		$ -	$ -
28	54" Storm Drain Pipe	LF	$ 313.50	0	$ -		$ -	$ -
29	60" Storm Drain Pipe	LF	$ 352.00	0	$ -		$ -	$ -

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost			
	Reinforced Concrete Pipe (circular)							
30	15" Storm Drain Pipe	LF	$ 112.02	2315	$ 259,314.73	100%	$ 259,314.73	$ -
31	18" Storm Drain Pipe	LF	$ 118.94	373	$ 44,365.74	100%	$ 44,365.74	$ -
32	21" Storm Drain Pipe	LF	$ 136.22	578	$ 78,737.47	100%	$ 78,737.47	$ -
33	30" Storm Drain Pipe	LF	$ 180.69	596	$ 107,688.86	100%	$ 107,688.86	$ -
34	36" Storm Drain Pipe	LF	$ 259.58	20	$ 5,191.56	100%	$ 5,191.56	$ -
35	42" Storm Drain Pipe	LF	$ 246.40	312	$ 76,876.80	100%	$ 76,876.80	$ -
36	48" Storm Drain Pipe	LF	$ 265.17	205	$ 54,359.85	100%	$ 54,359.85	$ -
37	24" Storm Drain Pipe	LF	$ 150.00	838	$ 125,700.00	100%	$ 125,700.00	$ -
38	60" Storm Drain Pipe	LF	$ 352.00	0	$ -		$ -	$ -
	High Density Polyethlyene (HDPE) Pipe (Circular)							
39	15" Storm Drain Pipe	LF	$ 126.32	0	$ -		$ -	$ -
40	18" Storm Drain Pipe	LF	$ 169.63	0	$ -		$ -	$ -
41	24" Storm Drain Pipe	LF	$ 180.58	0	$ -		$ -	$ -
42	30" Storm Drain Pipe	LF	$ 312.33	0	$ -		$ -	$ -
43	36" Storm Drain Pipe	LF	$ 209.91	0	$ -		$ -	$ -
44	42" Storm Drain Pipe	LF	$ 250.80	0	$ -		$ -	$ -
45	48" Storm Drain Pipe	LF	$ 297.00	0	$ -		$ -	$ -
46	54" Storm Drain Pipe	LF	$ 308.00	0	$ -		$ -	$ -
47	60" Storm Drain Pipe	LF	$ 319.00	0	$ -		$ -	$ -
	End Sections (Circular) - Metal (for CMP and HDPE Pipe)							
48	15" Metal End Section	EA	$ 797.50	0	$ -		$ -	$ -
49	18" Metal End Section	EA	$ 697.76	0	$ -		$ -	$ -
50	24" Metal End Section	EA	$ 960.88	0	$ -		$ -	$ -
51	30" Metal End Section	EA	$ 1,240.92	0	$ -		$ -	$ -
52	36" Metal End Section	EA	$ 1,210.00	0	$ -		$ -	$ -
53	42" Metal End Section	EA	$ 1,430.00	0	$ -		$ -	$ -
54	48" Metal End Section	EA	$ 1,760.00	0	$ -		$ -	$ -
55	54" Metal End Section		$ 2,200.00	0	$ -		$ -	$ -
56	60" Metal End Section		$ 2,200.00	0	$ -		$ -	$ -
	End Sections (Circular) - Concrete							
57	15" RCP End Section	EA	$ 533.50	0	$ -		$ -	$ -
58	18" RCP End Section	EA	$ 621.50	0	$ -		$ -	$ -
59	24" RCP End Section	EA	$ 830.50	0	$ -		$ -	$ -
60	30" RCP End Section	EA	$ 1,314.50	0	$ -		$ -	$ -
61	36" RCP End Section	EA	$ 1,941.50	0	$ -		$ -	$ -
62	42" RCP End Section	EA	$ 1,974.50	0	$ -		$ -	$ -
63	48" RCP End Section	EA	$ 2,348.50	0	$ -		$ -	$ -
64	54" RCP End Section	EA	$ 3,074.50	0	$ -		$ -	$ -
65	60" RCP End Section	EA	$ 3,800.50	0	$ -		$ -	$ -
	Corrugated Metal Pipe Arch							
66	17" x 13" Storm Drain Pipe	LF	$ 171.48	0	$ -		$ -	$ -
67	21" x 15" Storm Drain Pipe	LF	$ 112.79	0	$ -		$ -	$ -
68	24" x 18" Storm Drain Pipe	LF	$ 173.24	0	$ -		$ -	$ -
69	35" x 24" Storm Drain Pipe	LF	$ 198.00	0	$ -		$ -	$ -
70	42" x 29" Storm Drain Pipe	LF	$ 209.06	0	$ -		$ -	$ -
71	57" x 38"Storm Drain Pipe	LF	$ 244.20	0	$ -		$ -	$ -
72	64" x 43" Storm Drain Pipe	LF	$ 278.30	0	$ -		$ -	$ -

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost			
	Reinforced Concrete Elliptical Pipe							
73	23" x 14" Storm Drain Pipe	LF	$ 118.94	0	$ -		$ -	$ -
74	30" x 19" Storm Drain Pipe	LF	$ 136.22	0	$ -		$ -	$ -
75	38" x 24" Storm Drain Pipe	LF	$ 180.69	0	$ -		$ -	$ -
76	45" x 29" Storm Drain Pipe	LF	$ 259.58	0	$ -		$ -	$ -
77	53" x 34" Storm Drain Pipe	LF	$ 665.17	0	$ -		$ -	$ -
78	60" x 38" Storm Drain Pipe	LF	$ 665.17	0	$ -		$ -	$ -
79	68" x 43" Storm Drain Pipe	LF	$ 352.00	0	$ -		$ -	$ -
	End Sections - Corrugated Metal Pipe Arch (for CMP and HDPE Pipe)							
80	17" x 13" Metal End Section	EA	$ 797.50	0	$ -		$ -	$ -
81	21" x 15" Metal End Section	EA	$ 697.76	0	$ -		$ -	$ -
82	24" x 18" Metal End Section	EA	$ 709.50	0	$ -		$ -	$ -
83	35" x 24" Metal End Section	EA	$ 1,240.92	0	$ -		$ -	$ -
84	42" x 29" Metal End Section	EA	$ 1,210.00	0	$ -		$ -	$ -
85	57" x 38" Metal End Section	EA	$ 1,760.00	0	$ -		$ -	$ -
86	64" x 43" Metal End Section	EA	$ 2,200.00	0	$ -		$ -	$ -
	End Sections - Reinforced Concrete Elliptical Pipe							
86	23" x 14" RCP End Section	EA	$ 621.50	0	$ -		$ -	$ -
88	30" x 19" RCP End Section	EA	$ 830.50	0	$ -		$ -	$ -
89	38" x 24" RCP End Section	EA	$ 1,314.50	0	$ -		$ -	$ -
90	45" x 29" RCP End Section	EA	$ 1,941.50	0	$ -		$ -	$ -
91	53" x 34" RCP End Section	EA	$ 1,974.50	0	$ -		$ -	$ -
92	60" x 38" RCP End Section	EA	$ 2,348.50	0	$ -		$ -	$ -
93	68" x 43" RCP End Section	EA	$ 3,074.50	0	$ -		$ -	$ -
	Storm Drain Structures							
94	Drop Inlet	EA	$ 3,879.85	2	$ 7,759.71	100%	$ 7,759.71	$ -
95	Curb Inlet - 6' Opening	EA	$ 4,620.00	42	$ 194,040.00	100%	$ 194,040.00	$ -
96	Curb Inlet - 10' Opening	EA	$ 5,280.00	9	$ 47,520.00	100%	$ 47,520.00	$ -
97	Curb Inlet - 12' Opening	EA	$ 6,050.00	0	$ -		$ -	$ -
98	Curb Inlet - 16' Opening	EA	$ 6,820.00	0	$ -		$ -	$ -
99	Curb Inlet - 8' Opening	EA	$ 4,225.00	23	$ 97,175.00	100%	$ 97,175.00	$ -
100	Manhole (4' dia., 6' height or less)	EA	$ 6,674.79	24	$ 160,194.94	100%	$ 160,194.94	$ -
	Outfall & Channel Protection							
101	Concrete Endwall/Wingwall	SF	$ 110.00	0	$ -		$ -	$ -
102	Gabion Basket Structure	CY	$ 275.50	0	$ -		$ -	$ -
103	Rip-Rap Stone - Class 1	CY	$ 122.72	0	$ -		$ -	$ -
5.1	**Civc Standards**							
1	Small Playground Tot Lot (< 10 Childred)	EA	$ 19,800.00	0	$ -		$ -	$ -
2	Medium Playground Tot Lot (10-50 Childred)	EA	$ 55,000.00	0	$ -		$ -	$ -
3	Large Playground Tot Lot (50+ Childred)	EA	$ 110,000.00	0	$ -		$ -	$ -
6.1	**Miscellaneous Site Construction & Structures**							
1	Bus Stop Enclosure	EA	$ 3,850.00	0	$ -		$ -	$ -
2	Mail Box Cluster	EA	$ 1,100.00	0	$ -		$ -	$ -
3	Construction Stake-out	AC	$ 11,000.00	7.6	$ 83,600.00	100%	$ 83,600.00	$ -
4	Traffic Control During Construction	LS	Detailed estimate required.	0			$ -	$ -
5	Set Property Corners	EA	$ 132.00	562	$ 74,184.00		$ -	$ 74,184.00

Grand Total All Costs	$ 7,630,356.30	Completed	$ 5,694,271.62	$ 1,936,084.68	Remaining Work
Mobilization (5%)	$ 381,517.81	20% Guaranty	$ 1,138,854.32	$ 96,804.23	Mobilization (5%)
15% Contingency	$ 1,201,781.12			$ 290,412.70	Contingency (15%)
TOTAL BOND AMOUNT	$ 8,832,137.42			$ 2,323,301.62	Subtotal

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost			
							Remaining Bond Total	$ 3,462,155.94 Subtotal + Guaranty
							Approved Release Total	**$ 5,369,981.47**

Resolution #: PC-25-18

A Resolution of the Planning Commission of the City of Ranson to Reduce the Guarantee Surety (Bond) for the Required Physical Improvements for a Subdivision Shenandoah Springs 2B

WHEREAS, The Planning Commission accepts the reduction of guaranteed surety (bond) for the completion of the Shenandoah Springs Phase 2B complete improvements and infrastructure. The reduction from $8,832,137.42 to $3,462,155.94.

WHEREAS, The City Manager or his designee is authorized and hereby directed to send notice to the current surety guarantee releasing these funds once the bond reduction has been recorded with the County Clerk.

NOW THEREFORE The Planning Commission reduces the corporate surety in lieu of completion of required on-site improvements as described in 16-82, and as outlined in the development agreement accepted by the Planning Commission on May 5, 2025

Signed and approved this 5th day of May, 2025

_____
Mike Anderson, President

ATTEST:

_____
Planning Commission Member

AFFIX CITY SEAL

AGENDA ITEM IV.3

Planning Commission Request for Action

TO:

FROM: Darla Armstrong

ITEM TYPE: PRESENTATION

AGENDA SECTION: PLANNING COMMISSION BUSINESS

SUBJECT: Public Hearing - Final plat proposal for Ranson Heights (Riverpointe) Phase 2 located off Route 9 and Route 340 in Ranson WV

ATTACHMENTS:

Legal Notice Ranson Heights Phase 2.docx

LEGAL NOTICE
PUBLIC HEARING NOTICE
CITY OF RANSON

In accordance with W. Va. Code §8A-5-8 et seq., the Ranson Planning Commission will hold a public hearing on Monday, May 5, 2025, at 7 pm at Ranson City Hall, 312 S. Mildred Street, Ranson, WV. The purpose of the public hearing is to accept public comments on the final plat proposal for Ranson Heights (Riverpointe) Phase 2 located off Route 9 and Route 340 in Ranson WV, accepting the bond for Ranson Heights (Riverpointe) Phase 2 and entering a Development Agreement for Ranson Heights (Riverpointe) Phase 2. All persons are invited to attend and make comments about the proposed final plat.

Copies of the proposed plat and bond are available upon request in the Community Development Department. If you cannot attend but wish to comment, you may write and it must be received to the following address: City of Ranson, Attn: Community Development Department, 312 S. Mildred Street, Ranson, WV 25438 or email cityclerk@ransonwv.us Written Comments received prior to Friday, May 2, 2025, will be provided to the Planning Commission, and inserted into the official record.

AGENDA ITEM IV.4

Planning Commission Request for Action

TO:

FROM: Darla Armstrong

ITEM TYPE: PRESENTATION

AGENDA SECTION: PLANNING COMMISSION BUSINESS

SUBJECT: 23-50-FP Consideration - Applicant, Forestar Group INC, submitted application for Final plat proposal for Ranson Heights (Riverpointe) Phase 2 located off Route 9 and Route 340 in Ranson WV

Ranson Heights (Riverpointe) Phase 2 located off Route 9 and Route 340 in Ranson WV,

ATTACHMENTS:

23-50-FP-2025-03-19 ranson heights phase 2 record plat.pdf
23-50-ranson heights section 2- application.pdf

1. THE PROPERTIES SHOWN HEREON ARE LOCATED ON TAX MAP 8 PARCEL 27 AND ARE CURRENTLY ZONED SC–NC.
2. THE PROPERTIES DELINEATED HEREON ARE IN THE NAME OF CNB BANK INC AT DEED BOOK 1225 PAGE 153, AMONG THE LAND RECORDS OF JEFFERSON COUNTY, WEST VIRGINIA.
3. PROPERTY OWNER'S ADDRESS: 1015 WASHINGTON ST, BERKELEY SPRINGS, WV
4. BOUNDARY INFORMATION AS SHOWN HEREON IS BASED ON EXISTING LAND RECORDS AND SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES, INC. IN APRIL 2021.
5. THIS PLAT HAS BEEN PREPARED WITH THE BENEFIT OF A TITLE REPORT.
6. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION X – AREAS DETERMINED TO BE OUTSIDE THE 500–YEAR FLOODPLAIN. THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY–PANEL NUMBER 54037C0137E, DATED DECEMBER 18, 2009.
7. THE DEVELOPER, IN SIGNING THIS PLAT, AGREES TO ABIDE BY ALL CONDITIONS TERMS AND SPECIFICATIONS PROVIDED HEREON; AND TO COMPLETE ALL THE IMPROVEMENTS REQUIRED BY THE PRELIMINARY PLAT.
8. PROPERTY CORNERS ARE TO BE SET USING ⅝" REBAR WITH I.D. CAPS. ALL OTHER CORNERS ARE AS NOTED. CORNER MARKERS TO BE IN PLACE PRIOR TO CONVEYANCE OF INDIVIDUAL LOTS.
9. ALL WATERLINE EASEMENTS SHALL BE DEDICATED TO JEFFERSON UTILITIES.
10. ALL SANITARY SEWER EASEMENTS SHALL BE DEDICATED TO CHARLES TOWN UTILITY BOARD.

YARD REQUIREMENTS:	T3	T4
FRONT:	20' MIN., 30' MAX.	18' MAX.
SIDE:	5' MIN.	0' or 6' MIN. TOTAL
REAR:	10' MIN.	3' MIN.

OWNER'S CERTIFICATION AND DEDICATION

WE, CNB BANK INC, OWNERS OF THE PROPERTY SHOWN AND DESCRIBED HEREON CONSENT TO AND ADOPT THIS PLAN OF SUBDIVISION AND INCONSIDERATION OF THE APPROVAL OF THIS FINAL PLAT BY THE PLANNING COMMISSION, ESTABLISH THE MINIMUM BUILDING RESTRICTION LINES; AND DEDICATE THE STREETS, WALKWAYS, AND OTHER EASEMENTS, TO PUBLIC USE OTHERWISE NOTED ON THIS PLAT.

THE SUBDIVISION SHOWN HEREON IS SUBJECT TO A DEVELOPERS AGREEMENT DATED __ AND RECORDED AMONG THE LAND RECORDS OF JEFFERSON COUNTY IN BOOK ____, PAGE __ AND ALL APPROVED LAND DEVELOPMENT PLANS AND CONSTRUCTION DRAWINGS APPROVED BY THE CITY OF RANSON.

WE CERTIFY THAT THERE ARE NO SUITS, ACTIONS OF LAWS, LEASES, LIENS, MORTGAGES, TRUSTS, EASEMENTS, OR RIGHT–OF–WAY(S) AFFECTING THE PROPERTY INCLUDED IN THIS PLAN OF SUBDIVISION, EXCEPT AS HEREIN INDICATED, AND THAT THE REQUIREMENT OF THE SUBDIVISION ORDINANCE OF THE CITY OF RANSON AS ENACTED OR AMENDED SO FAR AS IT MAY CONCERN THE MAKING OF THIS PLAT AND THE SETTING OF MONUMENTS AND MARKERS HAVE BEEN COMPLIED WITH.

OWNER

DATE

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE FINAL PLAT SHOWN HEREON IS CORRECT; THAT IT IS A SUBDIVISION OF ALL OF THE LANDS CONVEYED BY DEED DATED AND RECORDED IN THE LAND RECORDS OF JEFFERSON COUNTY, WV AT PAGE 1022, BOOK 523, AND THAT THE REQUIREMENTS OF THE SUBDIVISION ORDINANCES OF THE CITY OF RANSON AS ENACTED OR AMENDED SO FAR AS IT MAY CONCERN THE MAKING OF THIS PLAT AND THE SETTING OF MONUMENTS AND MARKERS HAVE BEEN COMPILED WITH.

JON K. ERICKSON PS #2302

DATE

PLANNING COMMISSION APPROVAL

WITH THE APPROVAL OF A GENERAL LAND DEVELOPMENT PLAN DATED, ASSOCIATED CONSTRUCTION DRAWINGS DATED AND DEVELOPMENT AGREEMENT DATED_____, THIS PLAT MEETS THE REQUIREMENTS OF THE SUBDIVISION ORDINANCES OF THE CITY OF RANSON AND HAS BEEN APPROVED FOR RECORDATION BY THE CITY OF RANSON PLANNING COMMISSION.

PLANNING COMMISSION PRESIDENT

DATE

OWNER/DEVELOPER'S STATEMENT OF ACCEPTANCE

THE OWNER AND DEVELOPER, IN SIGNING THIS PLAT, AGREE TO ABIDE BY ALL CONDITIONS, TERMS, AND SPECIFICATIONS PROVIDED HEREON.

DATE

OWNER/DEVELOPER:
CNB BANK INC
101 WASHINGTON ST, BERKELEY SPRINGS, WV 25411
(304)–258–1520

AREA TABULATION

LOTS 149–252	6.8686 AC. (299,198 SF)
PARCEL A	0.0248 AC. (1,080 SF)
PARCEL B	0.0248 AC. (1,080 SF)
PARCEL C	0.6227 AC. (27,126 SF)
PARCEL D	36.6538 AC. (1,596,641 SF)
RIGHT–OF–WAY	3.3655 AC. (146,602 SF)
SECTION 1	22.0723 AC. (961,469 SF)
TOTAL	69.6326 AC. (3,033,196 SF)

NORTH NAD83



VICINITY MAP

SCALE: 1" = 2000'

LEGEND

- EX. PROPERTY LINE
- EX. ADJACENT PROPERTY LINE
- PROP.R/W LINE
- PROP.PROPERTY LINE
- PROP.EASEMENT LINE
- IRON PIN TO BE SET
- EX. EASEMENT
- EX. R/W LINE

JON K. ERICKSON LICENSED No. 2302 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

FINAL PLAT

RANSON HEIGHTS - SECTION 2

DB 1225 PG 153
DISTRICT: 08, MAP: 08, PARCEL: 27
CITY OF RANSON, WEST VIRGINIA

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
604 SOUTH KING ST, SUITE 200
LEESBURG, VIRGINIA 20175
PHONE: (703)-994-4047
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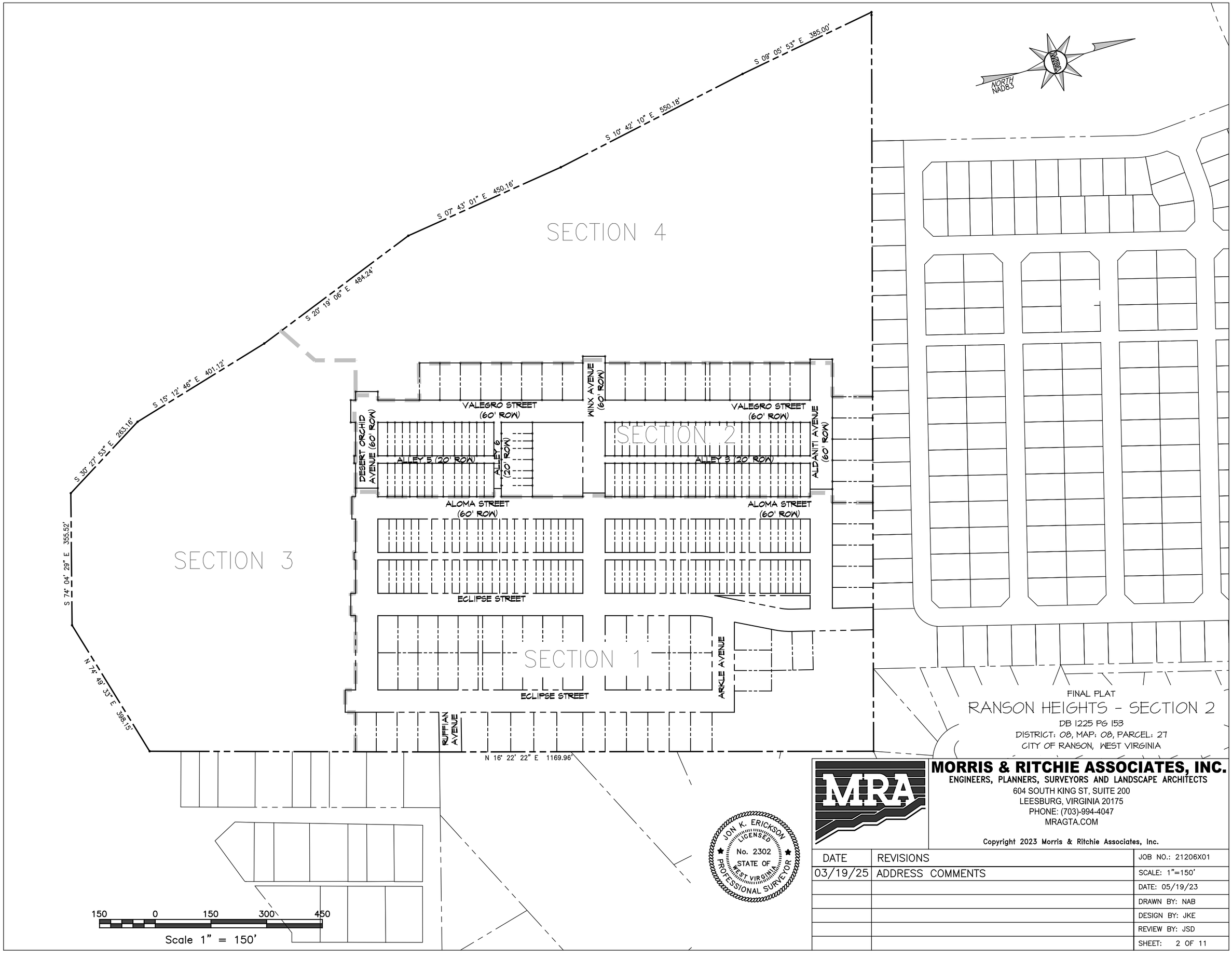
03/19/25	ADDRESS COMMENTS	SCALE:
		DATE: 05/19/23
		DRAWN BY: NAB
		DESIGN BY: JKE
		REVIEW BY: JSD
		SHEET: 1 OF 11



FINAL PLAT

RANSON HEIGHTS - SECTION 2

DB 1225 PG 153
DISTRICT: 08, MAP: 08, PARCEL: 27
CITY OF RANSON, WEST VIRGINIA

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		DATE: 05/19/23
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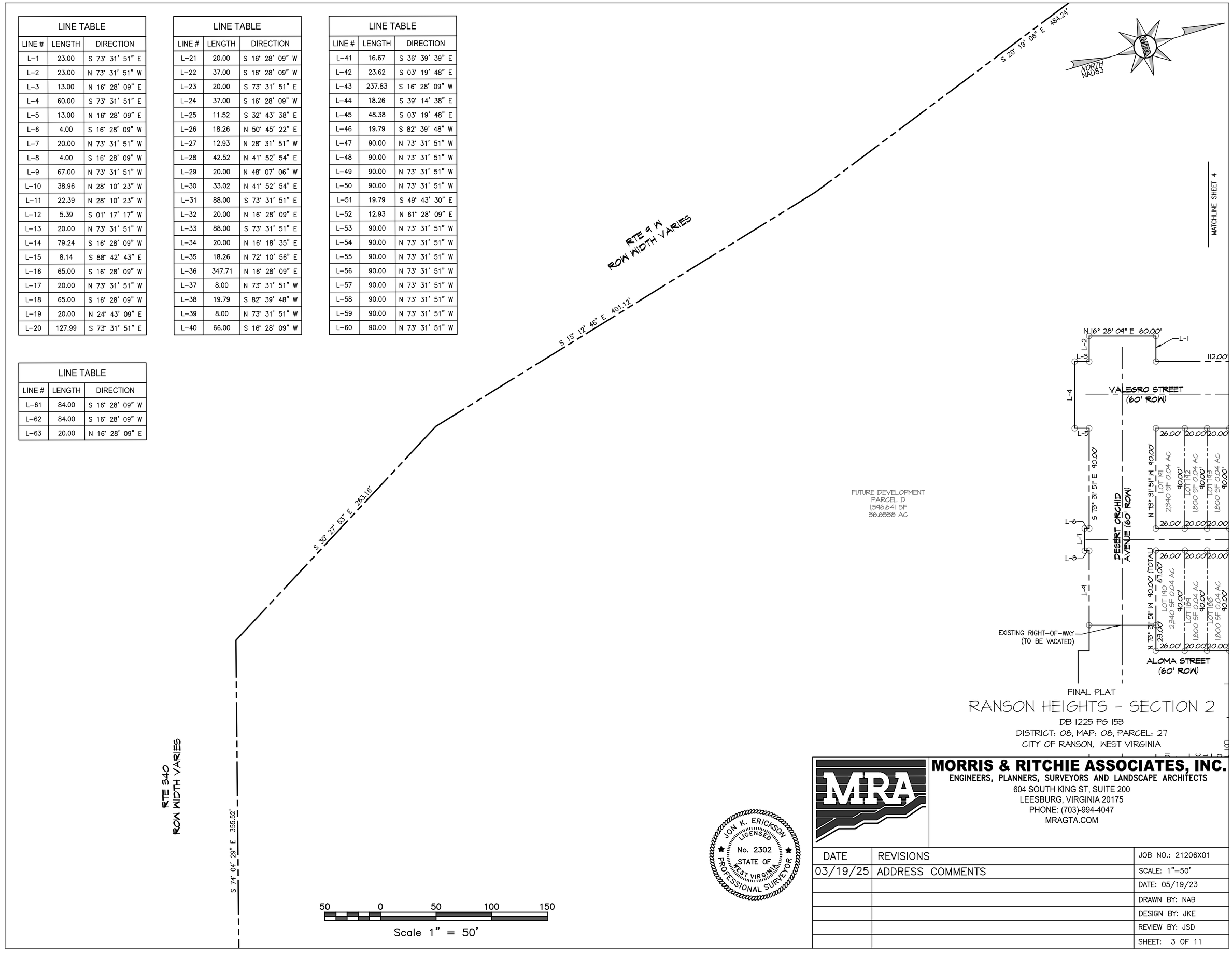
		SHEET: 2 OF 11

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-1	23.00	S 73° 31' 51" E
L-2	23.00	N 73° 31' 51" W
L-3	13.00	N 16° 28' 09" E
L-4	60.00	S 73° 31' 51" E
L-5	13.00	N 16° 28' 09" E
L-6	4.00	S 16° 28' 09" W
L-7	20.00	N 73° 31' 51" W
L-8	4.00	S 16° 28' 09" W
L-9	67.00	N 73° 31' 51" W
L-10	38.96	N 28° 10' 23" W
L-11	22.39	N 28° 10' 23" W
L-12	5.39	S 01° 17' 17" W
L-13	20.00	N 73° 31' 51" W
L-14	79.24	S 16° 28' 09" W
L-15	8.14	S 88° 42' 43" E
L-16	65.00	S 16° 28' 09" W
L-17	20.00	N 73° 31' 51" W
L-18	65.00	S 16° 28' 09" W
L-19	20.00	N 24° 43' 09" E
L-20	127.99	S 73° 31' 51" E

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-21	20.00	S 16° 28' 09" W
L-22	37.00	S 16° 28' 09" W
L-23	20.00	S 73° 31' 51" E
L-24	37.00	S 16° 28' 09" W
L-25	11.52	S 32° 43' 38" E
L-26	18.26	N 50° 45' 22" E
L-27	12.93	N 28° 31' 51" W
L-28	42.52	N 41° 52' 54" E
L-29	20.00	N 48° 07' 06" W
L-30	33.02	N 41° 52' 54" E
L-31	88.00	S 73° 31' 51" E
L-32	20.00	N 16° 28' 09" E
L-33	88.00	S 73° 31' 51" E
L-34	20.00	N 16° 18' 35" E
L-35	18.26	N 72° 10' 56" E
L-36	347.71	N 16° 28' 09" E
L-37	8.00	N 73° 31' 51" W
L-38	19.79	S 82° 39' 48" W
L-39	8.00	N 73° 31' 51" W
L-40	66.00	S 16° 28' 09" W

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-41	16.67	S 36° 39' 39" E
L-42	23.62	S 03° 19' 48" E
L-43	237.83	S 16° 28' 09" W
L-44	18.26	S 39° 14' 38" E
L-45	48.38	S 03° 19' 48" E
L-46	19.79	S 82° 39' 48" W
L-47	90.00	N 73° 31' 51" W
L-48	90.00	N 73° 31' 51" W
L-49	90.00	N 73° 31' 51" W
L-50	90.00	N 73° 31' 51" W
L-51	19.79	S 49° 43' 30" E
L-52	12.93	N 61° 28' 09" E
L-53	90.00	N 73° 31' 51" W
L-54	90.00	N 73° 31' 51" W
L-55	90.00	N 73° 31' 51" W
L-56	90.00	N 73° 31' 51" W
L-57	90.00	N 73° 31' 51" W
L-58	90.00	N 73° 31' 51" W
L-59	90.00	N 73° 31' 51" W
L-60	90.00	N 73° 31' 51" W

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-61	84.00	S 16° 28' 09" W
L-62	84.00	S 16° 28' 09" W
L-63	20.00	N 16° 28' 09" E



50 0 50 100 150

Scale 1" = 50'

JON K. ERICKSON LICENSED No. 2302 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

FINAL PLAT

RANSON HEIGHTS - SECTION 2

DB 1225 PG 153
DISTRICT: 08, MAP: 08, PARCEL: 27
CITY OF RANSON, WEST VIRGINIA

MORRIS & RITCHIE ASSOCIATES, INC.
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PHONE: (703)-994-4047
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		DESIGN BY: JKE
		REVIEW BY: JSD
		SHEET: 3 OF 11

S 20° 19' 08" E 484.24'

MATCHLINE SHEET 7

NORTH NAD83

FUTURE DEVELOPMENT
PARCEL D
1,546,641 SF
36.6538 AC

MATCHLINE SHEET 3

MATCHLINE SHEET 5

N 16° 28' 09" E 440.00'

N 16° 28' 09" E 60.00'

N 16° 28' 09" E 552.00' (TOTAL)

N 73° 31' 51" W 90.00'

S 73° 31' 51" E 118.00' (TOTAL)

LOT 255 5,500 SF 0.13 AC | LOT 254 5,500 SF 0.13 AC | LOT 253 5,500 SF 0.13 AC | LOT 252 5,500 SF 0.13 AC | LOT 251 5,500 SF 0.13 AC | LOT 250 5,500 SF 0.13 AC | LOT 249 5,500 SF 0.13 AC | LOT 248 5,500 SF 0.13 AC

LOT 247 5,400 SF 0.12 AC | LOT 246 5,400 SF 0.12 AC | LOT 245 5,400 SF 0.12 AC | LOT 244 5,400 SF 0.12 AC | LOT 243 5,400 SF 0.12 AC | LOT 242 5,400 SF 0.12 AC

L-1 L-2 L-3 L-4 L-5 L-6 L-7 L-8 L-9

112.00'

VALEGRO STREET
(60' ROW)

S 16° 28' 09" W 312.37' (TOTAL)

N 16° 28' 09" E 219.63'

135.63'

84.00'

LOT 208 5,040 SF 0.06 AC
LOT 207 5,040 SF 0.06 AC
LOT 206 5,040 SF 0.06 AC
LOT 205 5,040 SF 0.06 AC
LOT 116 5,040 SF 0.06 AC
LOT 175 5,040 SF 0.06 AC
LOT 174 5,040 SF 0.06 AC
LOT 173 5,040 SF 0.06 AC

CIVIC SPACE
PARCEL C
27,126 SF
0.62 AC

DESERT ORCHID AVENUE (60' ROW)

ALLEY 6 (20' ROW)

ALLEY 5 (20' ROW)

WINX AVENUE (60' ROW)

ALLEY 3 (20' ROW)

N 73° 31' 51" W 200.00' (TOTAL)

S 16° 28' 09" W 552.00'

EXISTING RIGHT-OF-WAY (TO BE VACATED)

ALOMA STREET
(60' ROW)

EXISTING RIGHT-OF-WAY (TO BE VACATED)

EXISTING RIGHT-OF-WAY (TO BE VACATED)

LOT 148 SECTION 1 | LOT 147 SECTION 1 | LOT 146 SECTION 1 | LOT 145 SECTION 1 | LOT 144 SECTION 1 | LOT 143 SECTION 1 | LOT 142 SECTION 1 | LOT 141 SECTION 1 | LOT 140 SECTION 1 | LOT 139 SECTION 1 | LOT 138 SECTION 1 | LOT 137 SECTION 1 | LOT 136 SECTION 1 | LOT 135 SECTION 1 | LOT 134 SECTION 1 | LOT 133 SECTION 1 | LOT 132 SECTION 1 | LOT 131 SECTION 1 | LOT 130 SECTION 1

ECLIPSE STREET

50 0 50 100 150

Scale 1" = 50'

JON K. ERICKSON LICENSED No. 2302 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

FINAL PLAT

RANSON HEIGHTS - SECTION 2

DB 1225 PG 153
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CITY OF RANSON, WEST VIRGINIA

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		SHEET: 4 OF 11

MATCHLINE SHEET 6

MATCHLINE SHEET 4

FUTURE DEVELOPMENT
PARCEL D
1,546,641 SF
36.6538 AC

N 16° 28' 09" E 60.00'
10.00'
N 16° 28' 09" E 552.00' (TOTAL)
54.00' 54.00' 54.00' 54.00' 54.00'
LOT 242 5,400 SF 0.12 AC
LOT 241 5,400 SF 0.12 AC
LOT 240 5,400 SF 0.12 AC
LOT 239 5,400 SF 0.12 AC
LOT 238 5,400 SF 0.12 AC
100.00'
110.00'
N 73° 31' 51" W
101.00'
60.00'
N 16° 28' 09" E 108.27'
LOT 237 6,176 SF 0.04 AC
57.00'
N 16° 28' 09" E 108.43'
LOT 236 6,185 SF 0.04 AC
N 16° 28' 09" E 108.59'
LOT 235 6,194 0.04 AC
N 16° 28' 09" E 108.75'
LOT 234 6,203 SF 0.04 AC
N 16° 28' 09" E 108.91'
LOT 233 6,212 SF 0.04 AC
20.58'
36.42'
51.00'
N 73° 31' 51" W 248.58'
N 73° 41' 25" W 198.51' (TOTAL)
N 73° 41' 25" W 1981.51'

VALEGRO STREET
(60' ROW)
60.00'

ALDANITI AVENUE
(60' ROW)

ALLEY 3 (20' ROW)
20.00'
S 16° 28' 09" W 552.00' (TOTAL)
N 16° 28' 09" E 552.00' (TOTAL)

ALOMA STREET
(60' ROW)
EXISTING RIGHT-OF-WAY (TO BE VACATED)

LOT 113 SECTION 1
LOT 112 SECTION 1
LOT 111 SECTION 1
LOT 110 SECTION 1
LOT 109 SECTION 1
LOT 108 SECTION 1
LOT 107 SECTION 1
LOT 106 SECTION 1
LOT 105 SECTION 1
LOT 104 SECTION 1
LOT 103 SECTION 1
LOT 102 SECTION 1

50 0 50 100 150
Scale 1" = 50'

DB 1067 PG 430
TENNANT, KYLE S
19-08-008D-007A
DB 1119 PG 381
BAKER MICHAEL R
& BRITTANY D K
19-08-008D-008A
DB 1239 PG 100
ORTIZ JOSE M SORTO
& FLOR I OTERO AYALA
19-08-008D-009A
DB 1231 PG 727
LAWSON CORRIE Q
& RYAN B
19-08-008D-010A
DB 1239 PG 139
WARD, COREY
19-08-008D-011A
DB 1236 PG 685
BONNER MICHELE E
19-08-008D-012A
DB 1235 PG 284
ALDRIDGE, JOHN
& STEPHANIE
19-08-008D-013A
DB 1232 PG 81
ROONEY, KYLE
& MONIKA
19-08-008D-014A
DB 1231 PG 733
MACDONALD MARYNA S
& MICHAEL A
19-08-008D-015A
DB 1231 PG 736
KELLEY MICHAEL
& LORI
19-08-008D-016A
DB 1231 PG 665
MIGHT BRANDOM M
19-08-008D-017A
DB 1231 PG 416
TOMS, SCHLEY T III
THEODORA
19-08-008D-018A
DB 1231 PG 69
HAWKINS, STEVEN R
& DEBRA A
19-08-008D-019A

BLOCK D
SHENANDOAH SPRINGS
DB 1219 PG 374

BLOCK E
SHENANDOAH SPRINGS
DB 1226 PG 679

NORTH
NAD83

FINAL PLAT
RANSON HEIGHTS - SECTION 2
DB 1225 PG 153
DISTRICT: 08, MAP: 08, PARCEL: 27
CITY OF RANSON, WEST VIRGINIA

JON K. ERICKSON LICENSED No. 2302 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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		DESIGN BY: JKE
		REVIEW BY: JSD
		SHEET: 5 OF 11

NORTH
NAD83

MATCHLINE SHEET 8

MATCHLINE SHEET 7

MATCHLINE SHEET 5

FUTURE DEVELOPMENT
PARCEL D
1,596,641 SF
36.6538 AC

SHENANDOAH SPRINGS NBHD UNIT
OWNERS ASSOC. INC
PARCEL ID: 19-08-008D-PARK
DB 1022 PG 523

JEFFERSON RENE
19-08-008D-001A
DB 1084 PG 98

EDWARDS BRANDON SCOTT
19-08-008D-002A
DB 1194 PG 46

MASON DAYMON M
& MEAGAN
19-08-008D-003A
DB 1207 PG 658

PROCTOR TIMOTHY W
19-08-008D-004A
DB 1236 PG 183

SHEENAN, PETER P
& SUSAN B GOETTL
19-08-008D-005A
DB 1206 PG 501

SOUTHERLAND JUSTIN
19-08-008D-006A
DB 1067 PG 430

TENNANT, KYLE S
19-08-008D-007A
DB 1119 PG 381

BAKER MICHAEL R
& BRITTANY D K
19-08-008D-008A
DB 1239 PG 100

ORTIZ JOSE M SORTO
& FLOR I OTERO AYALA
19-08-008D-009A
DB 1231 PG 727

LAWSON CORRIE Q
& RYAN B
19-08-008D-010A

BLOCK B
SHENANDOAH SPRINGS
DB 1266 PG 48

N 16° 28' 09" E 552.00' (TOTAL)

N 16° 28' 09" E 60.00'

54.00' 54.00' 54.00' 54.00' 54.00' 54.00' 10.00'

50 0 50 100 150

Scale 1" = 50'

LOT 243
5,400 SF
0.12 AC

LOT 238
5,400 SF
0.12 AC

110.00'

101.00'

FINAL PLAT

RANSON HEIGHTS - SECTION 2

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		SHEET: 6 OF 11

NORTH
NAD83

S 10° 42' 10" E 550.18'

MATCHLINE SHEET 8

RTE 9 W
ROW WIDTH VARIES

S 07° 43' 01" E 450.16'

MATCHLINE SHEET 6

FUTURE DEVELOPMENT
PARCEL D
1,596,641 SF
36.6538 AC

S 20° 19' 06" E 484.24'

MATCHLINE SHEET 4

N 16° 28' 09" E 440.00'

55.00' 55.00' 55.00' 55.00' 55.00' 55.00'

LOT 255 LOT 254 LOT 253 LOT 252 LOT 251 LOT 250 LO

50 0 50 100 150

Scale 1" = 50'

FINAL PLAT

RANSON HEIGHTS - SECTION 2

DB 1225 PG 153
DISTRICT: 08, MAP: 08, PARCEL: 27
CITY OF RANSON, WEST VIRGINIA

JON K. ERICKSON
LICENSED
No. 2302
STATE OF
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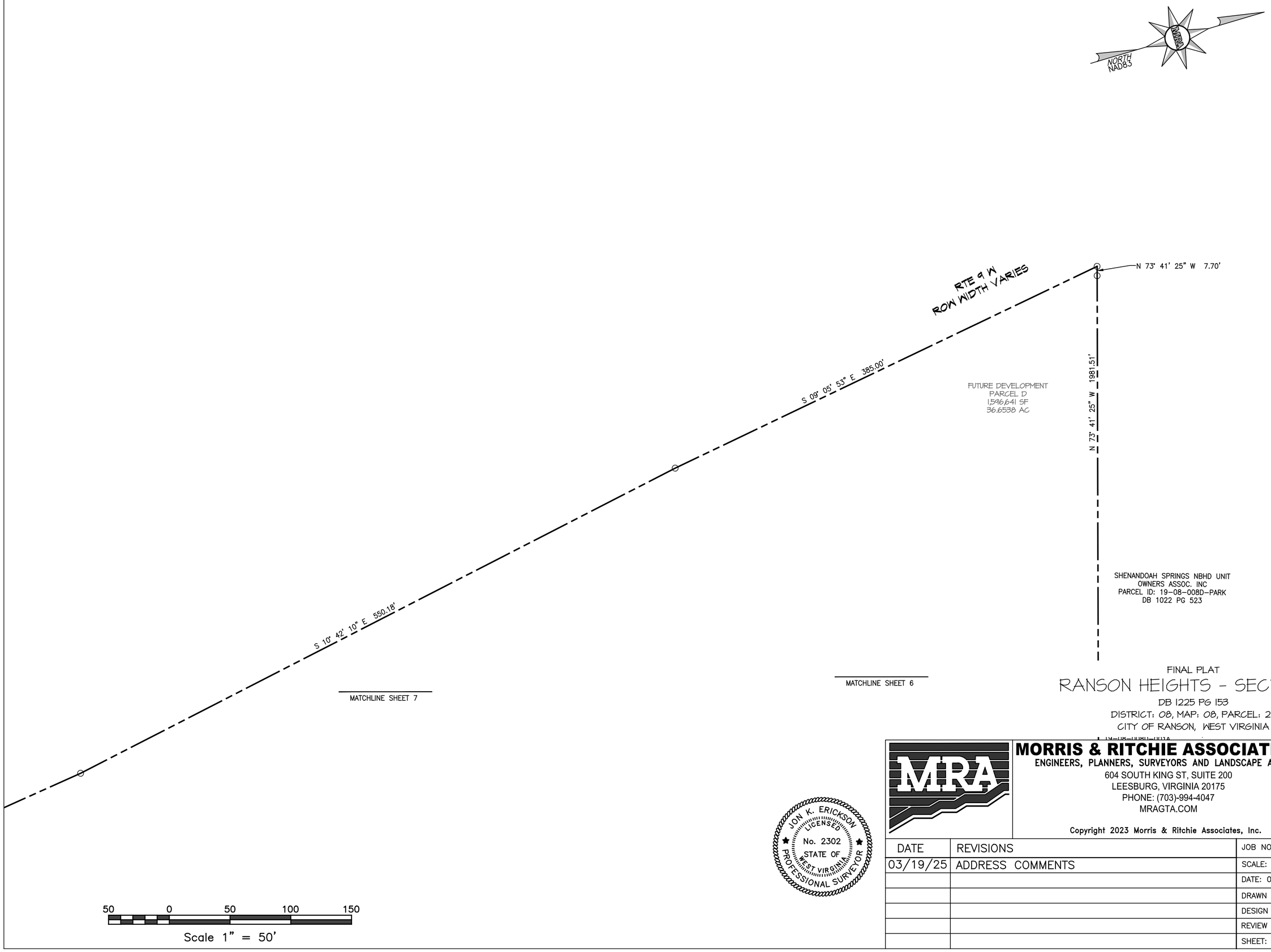

FINAL PLAT

RANSON HEIGHTS - SECTION 2

DB 1225 PG 153

DISTRICT: 08, MAP: 08, PARCEL: 27

CITY OF RANSON, WEST VIRGINIA

JON K. ERICKSON LICENSED No. 2302 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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		REVIEW BY: JSD
		SHEET: 8 OF 11

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-1	23.00	S 73° 31' 51" E
L-2	23.00	N 73° 31' 51" W
L-3	13.00	N 16° 28' 09" E
L-4	60.00	S 73° 31' 51" E
L-5	13.00	N 16° 28' 09" E
L-6	4.00	S 16° 28' 09" W
L-7	20.00	N 73° 31' 51" W
L-8	4.00	S 16° 28' 09" W
L-9	67.00	N 73° 31' 51" W
L-10	38.96	N 28° 10' 23" W
L-11	22.39	N 28° 10' 23" W
L-12	5.39	S 01° 17' 17" W
L-13	20.00	N 73° 31' 51" W
L-14	79.24	S 16° 28' 09" W
L-15	8.14	S 88° 42' 43" E
L-16	65.00	S 16° 28' 09" W
L-17	20.00	N 73° 31' 51" W
L-18	65.00	S 16° 28' 09" W
L-19	20.00	N 24° 43' 09" E
L-20	127.99	S 73° 31' 51" E

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-21	20.00	S 16° 28' 09" W
L-22	37.00	S 16° 28' 09" W
L-23	20.00	S 73° 31' 51" E
L-24	37.00	S 16° 28' 09" W
L-25	11.52	S 32° 43' 38" E
L-26	18.26	N 50° 45' 22" E
L-27	12.93	N 28° 31' 51" W
L-28	42.52	N 41° 52' 54" E
L-29	20.00	N 48° 07' 06" W
L-30	33.02	N 41° 52' 54" E
L-31	88.00	S 73° 31' 51" E
L-32	20.00	N 16° 28' 09" E
L-33	88.00	S 73° 31' 51" E
L-34	20.00	N 16° 18' 35" E
L-35	18.26	N 72° 10' 56" E
L-36	347.71	N 16° 28' 09" E
L-37	8.00	N 73° 31' 51" W
L-38	19.79	S 82° 39' 48" W
L-39	8.00	N 73° 31' 51" W
L-40	66.00	S 16° 28' 09" W

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-41	16.67	S 36° 39' 39" E
L-42	23.62	S 03° 19' 48" E
L-43	237.83	S 16° 28' 09" W
L-44	18.26	S 39° 14' 38" E
L-45	48.38	S 03° 19' 48" E
L-46	19.79	S 82° 39' 48" W
L-47	90.00	N 73° 31' 51" W
L-48	90.00	N 73° 31' 51" W
L-49	90.00	N 73° 31' 51" W
L-50	90.00	N 73° 31' 51" W
L-51	19.79	S 49° 43' 30" E
L-52	12.93	N 61° 28' 09" E
L-53	90.00	N 73° 31' 51" W
L-54	90.00	N 73° 31' 51" W
L-55	90.00	N 73° 31' 51" W
L-56	90.00	N 73° 31' 51" W
L-57	90.00	N 73° 31' 51" W
L-58	90.00	N 73° 31' 51" W
L-59	90.00	N 73° 31' 51" W
L-60	90.00	N 73° 31' 51" W

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-61	84.00	S 16° 28' 09" W
L-62	84.00	S 16° 28' 09" W
L-63	20.00	N 16° 28' 09" E

NORTH
NAD83

MATCHLINE SHEET 10

S 20° 19' 06" E 484.24'

RTE 9 W
ROW WIDTH VARIES

S 15° 12' 46" E 401.12'

S 30° 27' 53" E 263.16'

RTE 340
ROW WIDTH VARIES

S 74° 04' 29" E 355.52'

EXISTING SANITARY EASEMENT

EXISTING STORM EASEMENT

EXISTING SANITARY EASEMENT

20' SANITARY EASEMENT

N 16° 28' 09" E 301.82'

N 16° 28' 09" E 280.10'

N 16° 28' 09" E 301.82'

N 16° 28' 09" E 271.89'

29.00'

20' STORM EASEMENT

N 73° 31' 51" W 76.63'

N 73° 31' 51" W 68.27'

L-63

L-10

L-11

L-12

L-15

20' STORM EASEMENT

S 30° 49' 40" E 123.

S 30° 49' 40" E

23.82'

VALEGRO STREET
(60' ROW)

FUTURE DEVELOPMENT
PARCEL D
1,546,641 SF
36.6538 AC

EXISTING STORM EASEMENT

STORM EASEMENT

DESERT ORCHID AVENUE (60' ROW)

L-46

23.08'

7.99'

LOT 141
12,340 SF 0.04 AC

LOT 142
1,800 SF 0.04 AC

LOT 143
1,800 SF 0.04 AC

LOT 144

LOT 140
12,340 SF 0.04 AC

LOT 139
12,340 SF 0.04 AC

LOT 138
1,800 SF 0.04 AC

LOT 137
1,800 SF 0.04 AC

LOT 136

EXISTING STORM EASEMENT (TO BE VACATED)

ALOMA STREET
(60' ROW)

50 0 50 100 150

Scale 1" = 50'

FINAL PLAT

RANSON HEIGHTS - SECTION 2

DB 1225 PG 153
DISTRICT: 08, MAP: 08, PARCEL: 27
CITY OF RANSON, WEST VIRGINIA

JON K. ERICKSON
LICENSED
No. 2302
STATE OF
WEST VIRGINIA
PROFESSIONAL SURVEYOR

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
604 SOUTH KING ST, SUITE 200
LEESBURG, VIRGINIA 20175
PHONE: (703)-994-4047
MRAGTA.COM

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DATE	REVISIONS	
03/19/25	ADDRESS COMMENTS	JOB NO.: 21206X01
		SCALE: 1"=50'
		DATE: 05/19/23
		DRAWN BY: NAB
		DESIGN BY: JKE
		REVIEW BY: JSD
		SHEET: 9 OF 11

S 20° 19' 06" E 484.24'

NORTH
NAD83

MATCHLINE SHEET 9

MATCHLINE SHEET 11

FUTURE DEVELOPMENT
PARCEL D
1,546,641 SF
36.6538 AC

L-21
S 65° 16' 51" E 97.80'
L-20
S 65° 16' 51" E 94.90'
L-19
S 73° 31' 51" E 127.49'

20' STORM EASEMENT
20' STORM EASEMENT
20' SANITARY EASEMENT
20' STORM EASEMENT
20' STORM EASEMENT

S 16° 28' 09" W 87.98'
L-13
L-14
L-18
L-17
L-16
2.51'
10.00'
L-22
L-23
L-24
10.00'

L-12
S 30° 43' 40" E 123.37'
S 30° 43' 40" E 111.46'
23.82'
L-15

24' SETBACK
8' SETBACK
8' SETBACK
20' SETBACK

LOT 255 5,500 SF 0.13 AC
LOT 254 5,500 SF 0.13 AC
LOT 253 5,500 SF 0.13 AC
LOT 252 5,500 SF 0.13 AC
LOT 251 5,500 SF 0.13 AC
LOT 250 5,500 SF 0.13 AC
LOT 249 5,500 SF 0.13 AC
LOT 248 5,500 SF 0.13 AC
LOT 247 5,400 SF 0.12 AC
LOT 246 5,400 SF 0.12 AC
LOT 245 5,400 SF 0.12 AC
LOT 244 5,400 SF 0.12 AC
LOT 243 5,400 SF 0.12 AC
LOT 242 5,400 SF 0.12 AC

L-25
8.72'
STORM EASEMENT
STORM EASEMENT
10.29'
L-26

20' SANITARY EASEMENT
26.00'

VALEGRO STREET
(60' ROW)

E 280.10'

20' STORM EASEMENT

2.50'
2.50'

L-48
L-47
L-49

LOT 208 0 SF 0.06 AC
LOT 207 0 SF 0.04 AC
LOT 206 0 SF 0.04 AC
LOT 205 0 SF 0.06 AC
LOT 175 0 SF 0.04 AC
LOT 174 0 SF 0.04 AC
LOT 173 20 SF 0.06 AC
12' SETBACK
12' SETBACK
6' SETBACK

ALLEY 6 (20' ROW)

CIVIC SPACE
PARCEL C
27,126 SF
0.62 AC

EXISTING STORM EASEMENT
(HATCHED AREA TO BE VACATED)

EXISTING STORM EASEMENT

KINX AVENUE
(60' ROW)

L-38
STORM EASEMENT
7.99'
21.33'
L-39
STORM EASEMENT
L-40
L-37
10.00'
L-36
L-56
L-55
2.50'

ALLEY 3 (20' ROW)

LOT 204 2,340 SF 0.04 AC
LOT 210 1,800 SF 0.04 AC
LOT 211 1,800 SF 0.04 AC
LOT 212 1,800 SF 0.04 AC
LOT 213 1,800 SF 0.04 AC
LOT 214 2,610 SF 0.06 AC
L-57
L-58
LOT 215 2,610 SF 0.06 AC
LOT 216 1,800 SF 0.04 AC
LOT 217 1,800 SF 0.04 AC
LOT 218 1,800 SF 0.04 AC
LOT 219 1,800 SF 0.04 AC
LOT 220 2,340 SF 0.06 AC
6' SETBACK
PARCEL B 1,080 SF 0.02 AC
6' SETBACK
LOT 221 2,340 SF 0.06 AC
LOT 222 1,800 SF 0.04 AC
LOT 223 1,800 SF 0.04 AC
LOT 224 1,800 SF 0.04 AC
LOT 225 1,800 SF 0.04 AC
LOT 226 1,800 SF 0.04 AC
LOT 227 1,800 SF 0.04 AC
LOT

FUTURE DEVELOPMENT
PARCEL D
1,596,641 SF
36.6538 AC

19-08-008D-006A
DB 1067 PG 430

TENNANT, KYLE S
19-08-008D-007A
DB 1119 PG 381

BAKER MICHAEL R
& BRITTANY D K
19-08-008D-008A
DB 1239 PG 100

ORTIZ JOSE M SORTO
& FLOR I OTERO AYALA
19-08-008D-009A
DB 1231 PG 727

LAWSON CORRIE Q
& RYAN B
19-08-008D-010A
DB 1239 PG 139

WARD, COREY
19-08-008D-011A
DB 1236 PG 685

BONNER MICHELE E
19-08-008D-012A
DB 1235 PG 284

ALDRIDGE, JOHN
& STEPHANIE
19-08-008D-013A
DB 1232 PG 81

ROONEY, KYLE
& MONIKA
19-08-008D-014A
DB 1231 PG 733

MACDONALD MARYNA S
& MICHAEL A
19-08-008D-015A
DB 1231 PG 736

KELLEY MICHAEL
& LORI
19-08-008D-016A
DB 1231 PG 665

MIGHT BRANDOM M
19-08-008D-017A
DB 1231 PG 416

TOMS, SCHLEY T III
THEODORA
19-08-008D-018A
DB 1231 PG 69

HAWKINS, STEVEN R
& DEBRA A

BLOCK D
SHENANDOAH SPRINGS
DB 1219 PG 374

BLOCK E
SHENANDOAH SPRINGS
DB 1226 PG 679

NORTH
NAD83

L-32
L-33
L-34
L-31
20' STORM EASEMENT
0.83'
L-30
L-29
L-28
MATCHLINE SHEET 10
24' SETBACK
8' SETBACK
8' SETBACK
20' SETBACK
LOT 242 5,400 SF 0.12 AC
LOT 241 5,400 SF 0.12 AC
LOT 240 5,400 SF 0.12 AC
LOT 239 5,400 SF 0.12 AC
LOT 238 5,400 SF 0.12 AC
L-27
9.14'
STORM EASEMENT
VALEGRO STREET
(60' ROW)
LOT 237 6,176 SF 0.04 AC
LOT 236 6,185 SF 0.04 AC
LOT 235 6,194 0.04 AC
LOT 234 6,203 SFI 0.04 AC
LOT 233 6,212 SF 0.04 AC
S 73° 41' 25" E 161.00'
L-52
2.50'
16.86'
STORM EASEMENT
18' SETBACK
L-54
L-60
L-51
3' SETBACK
STORM EASEMENT
7.99'
ALDANITI AVENUE
(60' ROW)
2.50'
ALLEY 3 (20' ROW)
L-35
EXISTING STORM EASEMENT
(HATCHED AREA TO BE VACATED)
EXISTING STORM EASEMENT
10.00'
L-53
10' PUBLIC ACCESS EASEMENT
ALOMA STREET
(60' ROW)
LOT 160 2,340 SF 0.06 AC
LOT 159 2,340 SF 0.05 AC
LOT 222 1,800 SF 0.04 AC
LOT 223 1,800 SF 0.04 AC
LOT 224 1,800 SF 0.04 AC
LOT 225 1,800 SF 0.04 AC
LOT 226 2,610 SF 0.06 AC
LOT 227 2,610 SF 0.06 AC
LOT 228 1,800 SF 0.04 AC
LOT 229 1,800 SF 0.04 AC
LOT 230 1,800 SF 0.04 AC
LOT 231 1,800 SF 0.04 AC
LOT 232 2,340 SF 0.05 AC
LOT 154 2,610 SF 0.06 AC
LOT 153 1,800 SF 0.04 AC
LOT 152 1,800 SF 0.04 AC
LOT 151 1,800 SF 0.04 AC
LOT 150 1,800 SF 0.04 AC
LOT 149 2,340 SF 0.05 AC
LOT 155 2,610 SF 0.06 AC
LOT 156 1,800 SF 0.04 AC
LOT 157 1,800 SF 0.04 AC
LOT 158 1,800 SF 0.04 AC
LOT 159 1,800 SF 0.04 AC
LOT 160 2,340 SF 0.06 AC

50 0 50 100 150
Scale 1" = 50'

FINAL PLAT

RANSON HEIGHTS - SECTION 2

DB 1225 PG 153
DISTRICT: 08, MAP: 08, PARCEL: 27
CITY OF RANSON, WEST VIRGINIA

JON K. ERICKSON
LICENSED
No. 2302
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
604 SOUTH KING ST, SUITE 200
LEESBURG, VIRGINIA 20175
PHONE: (703)-994-4047
MRAGTA.COM

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DATE	REVISIONS	
03/19/25	ADDRESS COMMENTS	JOB NO.: 21206X01
		SCALE: 1"=50'
		DATE: 05/19/23
		DRAWN BY: NAB
		DESIGN BY: JKE
		REVIEW BY: JSD
		SHEET: 11 OF 11

SMARTCODE FINAL PLAT APPLICATION

City of Ranson, West Virginia • Department of Community Development
312 S. Mildred Street, Ranson West Virginia 25438 • Phone: 304-725-1010 • www.cityofransonwv.net

OFFICE USE ONLY
Application # _____

Date Received: _____ **Fee:** _____

Application Accepted By: _____ **Payment Type:** _____

Comments:

APPLICANT:
NAME: D.R. Horton

ADDRESS: 181 Harry Truman Pkwy CITY/STATE Annapolis, MD ZIP: 21401

PHONE # 443-924-4947 FAX # _____ EMAIL DCUrgo@drhorton.com

PROPERTY OWNERS:
NAME: CNB Bank, Inc.

ADDRESS: 101 S Washington St CITY/STATE Berkeley Springs, WV ZIP: 25411

PHONE # 304258-7392 FAX # _____ EMAIL mharrell@cnb.bank

☐ **CHECK HERE IF LISTING ADDITIONAL OWNERS ON SEPARATE PAGE.**

ATTORNEY/AGENT (CHECK ONE IF APPLICABLE): ☐ **ATTORNEY** ☐ **AGENT**

NAME: _____

ADDRESS: _____ CITY/STATE _____ ZIP: _____

PHONE # _____ FAX # _____ EMAIL _____

SIGNATURES:
APPLICANT SIGNATURE: Dwayne Hill Dwayne Hill (Apr 10, 2023 10:46 PDT)

PROPERTY OWNER SIGNATURE: _____

ATTORNEY / AGENT SIGNATURE: _____

PLEASE DIRECT CORRESPONDENCE TO: ☐ OWNER ☐ AGENT ☐ ATTORNEY

My signature attests to the fact that the attached application package is complete and accurate to the best of my knowledge. I understand that City staff review of this application is dependent upon the accuracy of the information provided that any inaccurate or inadequate information provided by me/my firm/my agent, etc. may delay review of this application.

PLEASE NOTE: INCOMPLETE INFORMATION WILL RESULT IN REJECTION OF THIS SUBMITTAL.
FOR ALL QUESTIONS REGARDING THIS FORM AND FEES, PLEASE CALL: 304-725-1010.
ALL FEES MUST BE PAID WITH APPLICATION SUBMITTAL. PLEASE MAKE ALL CHECKS PAYABLE TO THE **CITY OF RANSON.**

SMARTCODE FINAL PLAT APPLICATION

City of Ranson, West Virginia • Department of Community Development
312 S. Mildred Street, Ranson West Virginia 25438 • Phone: 304-725-1010 • www.cityofransonwv.net

LOCATION AND PROPERTY INFORMATION

PROPERTY ADDRESS (FOR ZONING PURPOSES): N/A

MAP AND PARCEL NUMBER(S) FOR CERTIFIED ADDRESS: 8, parcel 8

☐ **CHECK HERE IF LISTING ADDITIONAL PARCEL NUMBERS ON SEPARATE PAGE.**

ZONING DISTRICT SC-NC TOTAL ACREAGE 69.63

INSTRUCTIONS

☒ The final plat shall be legibly drawn in black or blue waterproof ink on permanent material acceptable to the recording authority of the state. The scale shall not be smaller than one inch equals 100 feet or alternate scale approved by the agent, and the size of the sheet shall be 18 X 24 inches, including a one and one-half inch margin for binding along the left edge. When more than one sheet is required, an index sheet of the same size shall be submitted showing the entire subdivision drawn to scale. The applicant shall submit, and the agent shall retain, the number of copies and all supporting documentation as required by the city.

☒ In addition, an electronic version of the approved plat, in formats acceptable to the city shall be submitted. At a minimum, one electronic version shall be changeable, such as CAD, and one electronic version shall be non-changeable, such as PDF.

☒ The final plat shall be accompanied by:

- Copies of protective covenants in form for recording, including covenants governing the maintenance of undedicated public spaces or reservations.
- Such other certificates, affidavits, endorsements, or agreements as may be required by the planning commission.
- Certification that the applicant has installed all improvements in accord with the conditions of the planning commission and this article or a surety bond has been submitted and accepted and public improvement agreement to complete the construction of all improvements required by this article and in accordance with division 6.
- Approvals from all affected state and federal agencies including, but not limited to:
  - State department of health;
  - State department of environmental protection for erosion and sediment control and groundwater protection and underground injection control plan;
  - Potomac Edison;
  - Jefferson County office of emergency services—Addressing office for 911 road naming;
  - Corps of engineers; and
  - Others as required by the City Manager or his designee or the planning commission.

APPLICATION CONTINUED ON NEXT PAGE

SMARTCODE FINAL PLAT APPLICATION

City of Ranson, West Virginia • Department of Community Development
312 S. Mildred Street, Ranson West Virginia 25438 • Phone: 304-725-1010 • www.cityofransonwv.net

FINAL PLAT APPLICATION CHECKLIST – ATTACH MAP(S) AND OTHER DOCUMENTS INCLUDING THE FOLLOWING INFORMATION:

- [x] All plat boundaries and property corners shall be tied to state plane coordinates or shall be referenced to magnetic meridian and show declination from true north. If the subdivision is referenced to the state grid, northing and easting coordinates shall be shown for a minimum of three key boundary points. The plat will specify the average grid factor and distances shall be reflected as geodetic.
- [x] The name of the subdivision and plat title for referencing when recording and the tax map and parcel number of all the tracts shown on the plat.
- [x] The district or municipality, county and state where the property is located.
- [x] Names and location of adjoining subdivisions, and location and ownership names of adjoining unsubdivided property. The plat shall also contain the current conveyance reference for the adjoining landowners.
- [x] The evidence of possession on or near the property line.
- [x] General location information shall be provided. The name and location of any creeks, rivers or roads near the property and any other identifiable landmarks shall be noted to locate the property. The plat shall include ties to significant objects.
- [x] Grid North or true and magnetic north reference with declination, graphic scale and date of survey;
- [x] The name, address, and signature of the current or past owner of the land and the current conveyance reference for the subject property;
- [x] The name, address, signature, and seal of the registered professional land surveyor responsible for the preparation of the plat, and certification that the plat represents a survey made by that individual and that all monuments shown thereon actually exist, and that their location, size, and material are correctly shown.
- [x] The measured length and direction of each boundary line by distance, bearing and quadrant. All boundary lines shall be described with lengths to hundredths of a foot and bearings to the nearest second. The error of closure for the property boundary shall be 1:15,000. The plat shall identify any overlaps and gaps in record lines, former deed or grant lines as needed.
- [x] Description of the accurate location and material of all permanent existing and proposed reference monuments including whether the monuments were found or set. All corners shall contain markers.
- [x] The exact layout for the subdivision, including:
  - All plats shall include a metes and bounds description with a description of the point of beginning street and alley lines, their names, bearings, angles of intersections and widths, including widths along the line of any obliquely intersecting street.
  - A table that indicates the dimensions of all arcs, radii, points of curvature, and tangent bearings.
  - All easements or right-of-ways, when provided for or owned by public utilities, with the limitation of the easement right definitely stated on the final plat.
  - All lot lines shall be described with lengths to hundredths of a foot and bearings to the nearest second.
  - The area, acreage or square footage of the subdivided and residue property.
- [x] The subdivision name, lots, blocks and plat reference. Lots numbered in numerical order, and blocks lettered in alphabetical order throughout the entire subdivision. Numbers will be contained within circles, and block letters will be contained within squares.
- [x] Building setback lines, the minimum as fixed by the zoning ordinance, any other set back lines established by public authority, and those stipulated in any deed restrictions.
- [x] Accurate outlines of any areas to be reserved for common use in the subdivision or for general public use with purposes indicated thereon. The outlined area of the property and all significant parts, including streets, alleys and non-lotted areas of a subdivision shall be identified;
- [x] A written offer of dedication of streets and other public property.
- [x] The final plat shall provide a space for an owner's (individual or corporation) certification and dedication, surveyor's certificate, and planning commission approval.

AGENDA ITEM IV.5

Planning Commission Request for Action

TO:

FROM: Darla Armstrong

ITEM TYPE: PRESENTATION

AGENDA SECTION: PLANNING COMMISSION BUSINESS

SUBJECT: Public Hearing - Accepting the bond for Ranson Heights (Riverpointe) Phase 2

ATTACHMENTS:

Legal Notice Ranson Heights Phase 2.docx

LEGAL NOTICE
PUBLIC HEARING NOTICE
CITY OF RANSON

In accordance with W. Va. Code §8A-5-8 et seq., the Ranson Planning Commission will hold a public hearing on Monday, May 5, 2025, at 7 pm at Ranson City Hall, 312 S. Mildred Street, Ranson, WV. The purpose of the public hearing is to accept public comments on the final plat proposal for Ranson Heights (Riverpointe) Phase 2 located off Route 9 and Route 340 in Ranson WV, accepting the bond for Ranson Heights (Riverpointe) Phase 2 and entering a Development Agreement for Ranson Heights (Riverpointe) Phase 2. All persons are invited to attend and make comments about the proposed final plat.

Copies of the proposed plat and bond are available upon request in the Community Development Department. If you cannot attend but wish to comment, you may write and it must be received to the following address: City of Ranson, Attn: Community Development Department, 312 S. Mildred Street, Ranson, WV 25438 or email cityclerk@ransonwv.us Written Comments received prior to Friday, May 2, 2025, will be provided to the Planning Commission, and inserted into the official record.

AGENDA ITEM IV.6

Planning Commission Request for Action

TO:

FROM: Darla Armstrong

ITEM TYPE: PRESENTATION

AGENDA SECTION: PLANNING COMMISSION BUSINESS

SUBJECT: 23-50-FP Consideration - Applicant Forestar Group INC, Submitted application to accept the bond for Ranson Heights (Riverpointe) Phase 2

Ranson Heights Phase 2 located off of Rt9 and 340 in Ranson, WV 25438

ATTACHMENTS:

23-50-FP-ranson heights phase 2 bond estimate 02-14-25 (1).pdf
26969 Draft - Ranson Heights -Phase 2 Construction Bond $4,600,148.50.pdf
PC24-17 Ranson Heights Phase 2 Bond.docx

City of Ranson, West Virginia
Community Development
Construction Bond - Estimate

Project Name: Ranson Heights Date: 2/14/2025

Section: Phase 2 C.O.R. File No. _____

Bond Amount Approved: $ _____

By: _____ **Date:** _____

Official Use Do Not Write In This Box

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost
1.1	**Erosion & Sediment Control**				
1	Stabilized Construction Entrance	EA	$ 2,475.00	1	$ 2,475.00
2	Silt Fence - Standard	LF	$ 4.40	994	$ 4,372.28
3	Silt Fence - Super	LF	$ 18.15	1593	$ 28,912.95
4	Earth Dike Construction (1)	LF	$ 3.96	1653	$ 6,545.88
5	Inlet Protection Device	EA	$ 388.14	59	$ 22,899.97
6	Outlet Protection Device	EA	$ 385.00	1	$ 385.00
7	Stone Check Dams	EA	$ 192.50		$ -
8	Sediment Trap Excavation	CY	$ 15.35		$ -
9	Riser Structure for Sediment Basin/Pond	EA	$ 6,456.24		$ -
10	Impermeable Liner for Sediment Basin/Pond	SY	$ 22.83		$ -
11	Rip-Rap Apron/Plunge Pool	CY	$ 122.72		$ -
12	Grass Waterway/Drainage Swale	LF	$ 11.99		$ -
13	Temporary Seeding (60 lbs/ac)	SF	$ 0.10	476546	$ 47,178.05
14	Permanent Seeding (98 lbs/ac)	SF	$ 0.12	269012	$ 32,550.45
15	Mulch, Straw or Hay (2 tn/ac)	TN	$ 550.13		$ -
16	Mulch, Wood Cellulose Fiber (1,500 lbs/ac)	TN	$ 545.34		$ -
17	Mulch, Shredded Bark or Wood Chip (35 cy/ac)	CY	$ 89.10		$ -
18	Sod	SY	$ 5.90		$ -
19	Soil Stabilizing Matt - Biodegradable	SY	$ 4.95		$ -
20	Soil Stabilizing Matt - Non-biodegradable	SY	$ 11.00		$ -
21	Geotextile Fabric	SF	$ 3.30		$ -
22	4 ft Safety Fence	LF	$ 8.84		$ -
23	6 ft Chain Link Safety Fence	LF	$ 11.00		$ -
24	Tree Protection	LF	$ 3.30	195	$ 643.50
25	Temporary Utility Line Stream Crossing/Diversion	EA	$ 1,375.00		$ -
1.2	**Site Preparation & Demolition**				
1	Clearing & Grubbing - Light Cover	ACRE	$ 7,342.50		$ -
2	Clearing & Grubbing - Moderate Cover	ACRE	$ 10,725.00		$ -
3	Clearing & Grubbing - Heavy Cover	ACRE	$ 13,475.00		$ -
4	Clearing & Grubbing - Very Heavy Cover	ACRE	$ 15,950.00		$ -
5	Sawcut Existing Asphalt Pavement	LF	$ 2.20		$ -
6	Sawcut Existing Concrete Pavement	LF	$ 3.52		$ -
7	Removal of Asphalt Pavement	SY	$ 8.25		$ -
8	Removal of Fencing	LF	$ 5.67		$ -
9	Removal of Power Pole	EA	$ 8,415.00		$ -
10	Removal of Structures/Buildings	EA			0

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost
1.3	**Earthwork**				
1	Strip Topsoil	CY	$ 4.13		$ -
2	Common Excavation	CY	$ 25.01	3948	$ 98,755.27
3	Borrow Material - On Site	CY	$ 22.34	9085	$ 202,967.99
4	Borrow Material - Imported from Off Site	CY	$ 40.26		$ -
5	Rock Excavation	CY	$ 99.00		$ -
6	Furnish Topsoil	CY	$ 52.76		$ -
2.1	**Paved Surface Construction**				
1	Subgrade	CY	$ 73.37		$ -
2	Fabric for Subgrade Stabilization	SY	$ 3.19		$ -
3	Aggregate Base Course	CY	$ 97.30	1667	$ 162,190.77
4	Open Graded Free Draining Base Course	CY	$ 120.89		$ -
5	Free Draining Base Trench	LF	$ 12.08		$ -
6	Outlet Pipe	LF	$ 39.75		$ -
7	Bituminous Asphalt Tack Coat	SY	$ 0.51		$ -
8	Superpave Asphalt Base Course - Type 25	TN	$ 93.50	1631	$ 152,498.50
9	Superpave Asphalt Base Course - Type 19	TN	$ 106.70		$ -
10	Superpave Asphalt Surface Course - Type 9.5	TN	$ 117.70	816	$ 96,043.20
11	Reinforced Concrete Pavement	CY	$ 450.55		$ -
12	Standard Milling	SY	$ 7.07		$ -
13	Controlled Low Strength Material	CY	$ 368.98		$ -
14	6" Concrete Entrance Apron - Residential	SY	$ 104.07	311	$ 32,366.08
15	8" Concrete Entrance Apron - Commercial Site	SY	$ 137.50		$ -
16	Concrete Curb & Gutter	LF	$ 66.00	4034	$ 266,244.00
17	Concrete Curb Only	LF	$ 55.00	2065	$ 113,575.00
18	Bituminous Asphalt Walkway	SF	$ 14.85	3792	$ 56,311.20
19	Concrete Sidewalk	SY	$ 97.13	1912	$ 185,712.56
20	Bed Course Material (for sidewalk)	CY	$ 88.57	319	$ 28,254.47
21	Concrete Curb Ramp	EA	$ 2,750.00	25	$ 68,750.00
22	Detectable Warning Surface	EA	$ 486.72	25	$ 12,167.93
23	Concrete Precast Wheel Stops	EA	$ 275.00		$ -
24	One Direction Lane Arrow	EA	$ 275.00		$ -
25	Multi Directional Land Arrow	EA	$ 460.90		$ -
26	Bicycle Shared Lane Marking	EA	$ 302.50		$ -
27	Bicycle Lane Marking	EA	$ 302.50		$ -
28	Pavement Letters	EA	$ 82.27		$ -
29	4" Edge/Lane Line - Painted	LF	$ 0.51		$ -
30	6" Edge/Lane Line - Painted	LF	$ 0.66		$ -
31	8" Edge/Lane Line - Painted	LF	$ 0.83		$ -
32	4" Edge/Lane Line - Thermoplastic	LF	$ 0.76		$ -
33	6" Edge/Lane Line - Thermoplastic	LF	$ 1.17		$ -
34	8" Edge/Lane Line - Thermoplastic	LF	$ 1.97		$ -
35	4" Edge/Lane Line - Preformed Thermoplastic	LF	$ 4.95		$ -
36	6" Edge/Lane Line - Preformed Thermoplastic	LF	$ 7.37		$ -
37	8" Edge/Lane Line - Preformed Thermoplastic	LF	$ 9.24		$ -
38	4" Edge/Lane Line w/ Contrast - Preformed Thermoplastic	LF	$ 7.07		$ -
39	6" Edge/Lane Line w/ Contrast - Preformed Thermoplastic	LF	$ 7.70		$ -
40	8" Edge/Lane Line w/ Contrast - Preformed Thermoplastic	LF	$ 9.90		$ -
41	12" Crosswalk/Stop/Transverse Line - Painted	LF	$ 3.58	1352	$ 4,833.40
42	12" Crosswalk/Stop/Transverse Line - Preformed Thermoplastic	LF	$ 14.85		$ -
43	24" Stop Line - Preformed Thermoplastic	LF	$ 24.75		$ -
44	Handicapped Parking Symbol	EA	$ 341.17		$ -
45	0.08 in Flat Sheet Sign	SF	$ 49.50		$ -
46	City standard sign post	LF	$ 27.50	168	$ 4,620.00
47	Sign - Street Name per E911 Addressing Ordinance	EA	$ 467.50	28	$ 13,090.00
48	Guard Rail - Steel Beam & Posts	LF	$ 20.16		$ -
49	Fence - Chain Link 6' High	LF	$ 45.24		$ -
50	Fence - Wood 3-Rail	LF	$ 33.00		$ -
51	Fence - Decorative Iron, 42" High	LF	$ 82.50		$ -
52	Pedestrian/Bicycle Barrier Railing - Wood - 42" high	LF	$ 57.20		$ -
53	Lights - Street and Parking Lot (light fixture, pole, foundation, & wiring)	EA	$ 13,200.00	17	$ 224,400.00
54	Bollards (wood or steel)	EA	$ 495.00		$ -
55	Traffic Control/Stop Light (WVDOH cost estimate)	EA	$ -		0

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost
3.1	**Landscaping**				
1	Transplanting Trees (6' or less)	EA	$ 148.50		$ -
2	Transplanting Shrubs	EA	$ 126.50		$ -
3	Plant Shrubs (Evergreen or Deciduous)	EA	$ 165.00		$ -
4	Plant Tree (2"-3" caliper) - Evergreen	EA	$ 412.50		$ -
5	Plant Tree (2"-3" caliper) - Deciduous	EA	$ 550.00		$ -
6	Plant Tree (2"-3" caliper) - Flowering	EA	$ 330.00		$ -
7	Plant Ground Cover	EA	$ 7.70		$ -
8	Plant Wetlands or Bioretention Vegetation	EA	$ 27.50		$ -
9	Plant Screen Trees	EA	$ 165.00		$ -
10	Plant Street/Shade Trees	EA	$ 550.00	94	$ 51,700.00
11	Mulching (wood landscape mulch in place)	CY	$ 89.10		$ -
4.1	**Sanitary Sewer System**				
1	8" PVC Schedule 80 Pipe (force main)	LF	$ 109.45		$ -
2	6" PVC Schedule 80 Pipe	LF	$ 168.76		$ -
3	8" PVC Schedule 80 Pipe	LF	$ 109.45	2238	$ 244,949.10
4	10" PVC Schedule 80 Pipe	LF	$ 121.55		$ -
5	Manhole 4' Diameter (6' height or less)	EA	$ 6,674.68	8	$ 53,397.43
6	Grease Trap	EA	$ 6,875.00		$ -
7	Service Lateral	LF	$ 68.31	1375	$ 93,926.25
8	Sanitary Sewer Pump Station (sewage pump)	EA	$ 25,000.00		$ -
9	Road Bore/Crossing (with Pipe & Steel Casing)	LF	$ 440.00		$ -
4.2	**Potable Water System**				
1	3/4" Copper Service Line	LF	$ 117.76	511	$ 60,172.81
2	1" Copper Service Line	LF	$ 193.60	791	$ 153,137.60
3	2" Copper Service Line	LF	$ 39.60		$ -
4	4" Ductile Iron Pipe	LF	$ 57.20		$ -
5	6" Ductile Iron Pipe	LF	$ 74.80		$ -
6	8" Ductile Iron Pipe	LF	$ 92.40	1509	$ 139,431.60
7	10" Ductile Iron Pipe	LF	$ 104.50		$ -
8	12" Ductile Iron Pipe	LF	$ 115.50	346	$ 39,963.00
9	Fire Hydrant with 6" line	EA	$ 5,513.77	3	$ 16,541.32
10	4" Gate Valve & Box	EA	$ 1,225.13		$ -
11	6" Gate Valve & Box	EA	$ 1,954.65	3	$ 5,863.94
12	8" Gate Valve & Box	EA	$ 1,617.98	7	$ 11,325.85
13	10" Gate Valve & Box	EA	$ 2,420.00		$ -
14	12" Gate Valve & Box	EA	$ 4,271.09	2	$ 8,542.18
15	Pressure Reducing Valve & Vault	EA	$ -		$ -
16	Tapping Sleeve & Valve for Water Service Connection	EA	$ 726.00	2	$ 1,452.00
17	Water Meter Setter, Box & Service Line Tap	EA	$ 3,335.29	43	$ 143,417.38
5.1	**Storm Water Management & Storm Drainage**				
	SWM Basin/Ponds				
1	Excavation - Basin/Pond	CY	$ 25.01		$ -
2	Excavation - Core Trench	CY	$ 25.01		$ -
3	Embankment Construction - On-Site Material	CY	$ 22.34		$ -
4	Embankment Construction - Imported Material	CY	$ 40.26		$ -
5	Impervious Core	SF	$ 1.98		$ -
6	Concrete Control Structure and Pipe Cradles	CY	$ 1,300.59		$ -
7	Corrugated Metal Pipe Control Structure	EA	$ 6,456.24		$ -
8	Dewatering Pipes or Structures	EA	$ 558.02		$ -
9	Filter Stone for Dewatering Pipe (1" to 2" dia. clean)	CY	$ 53.12		$ -
10	Antiseep Collar	Each per foot of width	$ 165.00		$ -
11	Trash Rack	Each per inch dia.	$ 55.00		$ -
12	Water Tight Pipe Bands	Each per inch dia.	$ 8.25		$ -
	Low Impact Development BMP				
13	Urban Bioretention Basin (in sidewalk areas)	SF	$ 55.00		$ -
14	Bioretention Basin	SF	$ 38.50		$ -
15	Grass Channel	SF	$ 30.00		$ -
16	Permeable Pavers	SY	$ 50.00		$ -
	PVC Slotted Pipe				
17	4" PVC Slotted or Perforated Drain Pipe	LF	$ 16.50		$ -
18	6" PVC Slotted or Perforated Drain Pipe	LF	$ 17.60		$ -
19	8" PVC Slotted or Perforated Drain Pipe	LF	$ 21.85		$ -
20	12" PVC Slotted or Perforated Drain Pipe	LF	$ 36.30		$ -
	Corrugate Metal Pipe (Circular)				
21	15" Storm Drain Pipe	LF	$ 171.48		$ -
22	18" Storm Drain Pipe	LF	$ 112.79		$ -
23	24" Storm Drain Pipe	LF	$ 173.24		$ -
24	30" Storm Drain Pipe	LF	$ 198.00		$ -
25	36" Storm Drain Pipe	LF	$ 209.06		$ -
26	42" Storm Drain Pipe	LF	$ 244.20		$ -
27	48" Storm Drain Pipe	LF	$ 278.30		$ -

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost
28	54" Storm Drain Pipe	LF	$ 313.50		$ -
29	60" Storm Drain Pipe	LF	$ 352.00		$ -

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost
	Reinforced Concrete Pipe (circular)				
30	15" Storm Drain Pipe	LF	$ 118.94	2850	$ 338,987.55
31	18" Storm Drain Pipe	LF	$ 118.94	274	$ 32,590.38
33	24" Storm Drain Pipe	LF	$ 136.22	166	$ 22,613.18
34	30" Storm Drain Pipe	LF	$ 180.69	204	$ 36,859.94
35	36" Storm Drain Pipe	LF	$ 259.57	1250	$ 324,462.50
36	42" Storm Drain Pipe	LF	$ 246.40	178	$ 43,859.20
37	48" Storm Drain Pipe	LF	$ 665.17		$ -
38	54" Storm Drain Pipe	LF	$ 316.80		$ -
39	60" Storm Drain Pipe	LF	$ 352.00		$ -
	High Density Polyethlyene (HDPE) Pipe (Circular)				
40	15" Storm Drain Pipe	LF	$ 126.32		$ -
41	18" Storm Drain Pipe	LF	$ 169.63		$ -
42	24" Storm Drain Pipe	LF	$ 180.58		$ -
43	30" Storm Drain Pipe	LF	$ 312.33		$ -
44	36" Storm Drain Pipe	LF	$ 209.91		$ -
45	42" Storm Drain Pipe	LF	$ 250.80		$ -
46	48" Storm Drain Pipe	LF	$ 297.00		$ -
47	54" Storm Drain Pipe	LF	$ 308.00		$ -
48	60" Storm Drain Pipe	LF	$ 319.00		$ -
	End Sections (Circular) - Metal (for CMP and HDPE Pipe)				
49	15" Metal End Section	EA	$ 797.50		$ -
50	18" Metal End Section	EA	$ 697.76		$ -
51	24" Metal End Section	EA	$ 960.88		$ -
52	30" Metal End Section	EA	$ 1,240.92		$ -
53	36" Metal End Section	EA	$ 1,210.00		$ -
54	42" Metal End Section	EA	$ 1,430.00		$ -
55	48" Metal End Section	EA	$ 1,760.00		$ -
56	54" Metal End Section		$ 2,200.00		$ -
57	60" Metal End Section		$ 2,200.00		$ -
	End Sections (Circular) - Concrete				
58	15" RCP End Section	EA	$ 533.50	2	$ 1,067.00
59	18" RCP End Section	EA	$ 621.50		$ -
60	24" RCP End Section	EA	$ 830.50	1	$ 830.50
61	30" RCP End Section	EA	$ 1,314.50	1	$ 1,314.50
62	36" RCP End Section	EA	$ 1,941.50		$ -
63	42" RCP End Section	EA	$ 1,974.50	1	$ 1,974.50
64	48" RCP End Section	EA	$ 2,348.50		$ -
65	54" RCP End Section	EA	$ 3,074.50		$ -
66	60" RCP End Section	EA	$ 3,800.50		$ -
	Corrugated Metal Pipe Arch				
67	17" x 13" Storm Drain Pipe	LF	$ 171.48		$ -
68	21" x 15" Storm Drain Pipe	LF	$ 112.79		$ -
69	24" x 18" Storm Drain Pipe	LF	$ 173.24		$ -
70	35" x 24" Storm Drain Pipe	LF	$ 198.00		$ -
71	42" x 29" Storm Drain Pipe	LF	$ 209.06		$ -
72	57" x 38"Storm Drain Pipe	LF	$ 244.20		$ -
73	64" x 43" Storm Drain Pipe	LF	$ 278.30		$ -

Item No.	Description	Unit	2021 Unit Cost	Quantity	Total Cost
	Reinforced Concrete Elliptical Pipe				
74	23" x 14" Storm Drain Pipe	LF	$ 118.94		$ -
75	30" x 19" Storm Drain Pipe	LF	$ 136.22		$ -
76	38" x 24" Storm Drain Pipe	LF	$ 180.69		$ -
77	45" x 29" Storm Drain Pipe	LF	$ 259.58	40	$ 10,383.12
78	53" x 34" Storm Drain Pipe	LF	$ 665.17		$ -
79	60" x 38" Storm Drain Pipe	LF	$ 665.17		$ -
80	68" x 43" Storm Drain Pipe	LF	$ 352.00		$ -
	End Sections - Corrugated Metal Pipe Arch (for CMP and HDPE Pipe)				
81	17" x 13" Metal End Section	EA	$ 797.50		$ -
82	21" x 15" Metal End Section	EA	$ 697.76		$ -
83	24" x 18" Metal End Section	EA	$ 709.50		$ -
84	35" x 24" Metal End Section	EA	$ 1,240.92		$ -
85	42" x 29" Metal End Section	EA	$ 1,210.00		$ -
86	57" x 38" Metal End Section	EA	$ 1,760.00		$ -
87	64" x 43" Metal End Section	EA	$ 2,200.00		$ -
	End Sections - Reinforced Concrete Elliptical Pipe				
88	23" x 14" RCP End Section	EA	$ 621.50		$ -
89	30" x 19" RCP End Section	EA	$ 830.50		$ -
90	38" x 24" RCP End Section	EA	$ 1,314.50		$ -
91	45" x 29" RCP End Section	EA	$ 1,941.50		$ -
92	53" x 34" RCP End Section	EA	$ 1,974.50		$ -
93	60" x 38" RCP End Section	EA	$ 2,348.50		$ -
94	68" x 43" RCP End Section	EA	$ 3,074.50		$ -
	Storm Drain Structures				
95	Drop Inlet	EA	$ 3,879.85	21	$ 81,476.93
97	Curb Inlet - 6' & 4' Opening	EA	$ 4,620.00	27	$ 124,740.00
99	Curb Inlet - 10' & 8' Opening	EA	$ 5,280.00	3	$ 15,840.00
100	Curb Inlet - 12' Opening	EA	$ 6,050.00		$ -
101	Curb Inlet - 16' Opening	EA	$ 6,820.00		$ -
102	Curb Inlet - 20' Opening	EA	$ 7,370.00		$ -
103	Manhole (4' dia., 6' height or less)	EA	$ 6,674.79	1	$ 6,674.79
	Outfall & Channel Protection				
104	Concrete Endwall/Wingwall	SF	$ 110.00		$ -
105	Gabion Basket Structure	CY	$ 275.50		$ -
106	Rip-Rap Stone - Class 1	CY	$ 122.72		$ -
5.1	**Civc Standards**				
1	Small Playground Tot Lot (< 10 Childred)	EA	$ 19,800.00		$ -
2	Medium Playground Tot Lot (10-50 Childred)	EA	$ 55,000.00		$ -
3	Large Playground Tot Lot (50+ Childred)	EA	$ 110,000.00		$ -
6.1	**Miscellaneous Site Construction & Structures**				
1	Bus Stop Enclosure	EA	$ 3,850.00		$ -
2	Mail Box Cluster	EA	$ 1,100.00	5	$ 5,500.00
3	Construction Stake-out	AC	$ 11,000.00		$ -
4	Traffic Control During Construction	LS	$ -		0
5	Set Property Corners	EA	$ 132.00	246	$ 32,472.00

Grand Total All Costs	$ 3,974,210.00
Mobilization (5%)	$ 198,710.50
15% Contingency	$ 625,938.07
TOTAL BOND AMOUNT	$ 4,600,148.07

Bond No. DRAFT

SUBDIVISION IMPROVEMENTS
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, Forestar (USA) Real Estate Group Inc., as Principal, and Arch Insurance Company, a corporation, duly licensed to conduct a general surety business in the State of West Virginia, as Surety, are held and firmly bound unto the CITY OF RANSON, WEST VIRGINIA, a Municipal Corporation, as Obligee, in the penal sum of $4,600,148.07 Dollars, for which payment, well and truly made, we bind ourselves, our heirs, successors, executors, and administrators, jointly and severally, firmly by these presents.

Whereas Principal and Obligee have entered into an Subdivision Agreement for Completion of Subdivision Improvements (the Agreement), dated _____, whereby Principal has agreed to install and complete certain designated public improvements, as a condition to approval of Plat which Agreement is hereby referred to and made a part hereof; and

Whereas Principal is required under the terms of the Agreement to furnish a guaranty for the faithful performance of specified improvements, which the Obligee has determined must be completed once work has commenced, and are described as follows:

Ranson Heights - Phase 2 Construction Bond - Site Work, Utilities, Infrastructure, Roads and Storm Drains

Now therefore, if Principal shall well and truly, at its own cost and expense, at or within the time required under the Agreement, faithfully install and complete the public improvements, in substantial compliance with the plans and specifications for such improvements, then this obligation shall be void, otherwise to remain in full force and effect, subject to the following conditions:

1. In the event Principal shall fail to complete the improvements within the time allowed by the Agreement, or any extension thereof, as may be granted by the Obligee, then the Surety shall complete the improvements and deliver them to the Obligee for approval or, at the election of the Obligee, Surety shall tender to Obligee the amount necessary, in no event to exceed the penal sum hereof, based upon estimates provided by the Obligee, to carry out completion of the improvements, it being further understood that upon completion of the improvements, any unexpended funds shall be returned to Surety.

2. This bond shall be continuous in effect and shall remain in full force and effect until (a) the improvements have been installed and accepted by Obligee, or (b) the release and surrender of this bond by Obligee, whichever shall first occur.

3. It is further understood that twenty percent (20%) of the face amount of this bond shall remain in effect and continue after completion and acceptance of the improvements by the Obligee for a period of one year from the date of acceptance to guaranty the improvements against any defective work or labor done, or defective materials furnished, in the performance of the improvements.

4. Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of this Agreement, or to the work to be performed there under, or to the specifications relating to the improvements shall, in any way, affect its obligation on this bond, and Surety does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Agreement, or to the work or to the specifications.

5. As part of the obligation secured hereby and in addition to the penal sum specified hereunder, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by Obligee in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

6. No right of action shall accrue hereunder to or for the use of any persons, firm or corporation, other than Obligee. The rights and obligations under this bond are for the exclusive benefit of Obligee and may not be assigned, hypothecated or transferred for any purpose, unless consented to, in writing, executed by Principal and Surety.

7. Surety waives any defense related to the impossibility, illegality, incapacity, bankruptcy or receivership of Principal in connection with the obligation of Principal hereunder and Surety further expressly waives any defense to the extent that it may require the creditor to proceed against the Principal as a condition precedent to any claim or demand hereon.

Witness my hand and seal this _____ day of _____, 20_____.

PRINCIPAL CORPORATE SEAL:

Forestar (USA) Real Estate Group Inc.
_____(Seal)

BY:_____

_____
Title

SURETY CORPORAT SEAL:

Arch Insurance Company
_____
(Surety)

BY: _____

A Resolution of the Planning Commission of the City of Ranson to Accept the Guarantee Surety (Bond) for the Required Physical Improvements for a Subdivision Ranson Heights Phase 2.

THE PLANNING COMMISSION OF THE CITY OF RANSON RESOLVES AS FOLLOWS:

Section 1. The Planning Commission accepts the Corporate Surety in lieu of completion of required on-site improvements as described in 16-82, and as outlined in the revised development agreement presented May 5, 2025, to the Planning Commission, for Phase 2 of the subdivision.

Section 2. The approved bonded amount will be held in the amount of $4,600,148.07

Section 3. This Resolution and bond shall become effective immediately upon its adoption.

Signed and approved this 5th day of May, 2025.

_____
Mike Anderson, President

ATTEST:

_____
Planning Commission Member

AFFIX CITY SEAL

AGENDA ITEM IV.7

Planning Commission Request for Action

TO:

FROM: Darla Armstrong

ITEM TYPE: PRESENTATION

AGENDA SECTION: PLANNING COMMISSION BUSINESS

SUBJECT: Public Hearing - Development Agreement for Ranson Heights (Riverpointe) Phase 2.

Ranson Height (River Pointe) Phase 2 located off Route 9 and Route 340 in Ranson WV.

ATTACHMENTS:

Legal Notice Ranson Heights Phase 2.docx

LEGAL NOTICE
PUBLIC HEARING NOTICE
CITY OF RANSON

In accordance with W. Va. Code §8A-5-8 et seq., the Ranson Planning Commission will hold a public hearing on Monday, May 5, 2025, at 7 pm at Ranson City Hall, 312 S. Mildred Street, Ranson, WV. The purpose of the public hearing is to accept public comments on the final plat proposal for Ranson Heights (Riverpointe) Phase 2 located off Route 9 and Route 340 in Ranson WV, accepting the bond for Ranson Heights (Riverpointe) Phase 2 and entering a Development Agreement for Ranson Heights (Riverpointe) Phase 2. All persons are invited to attend and make comments about the proposed final plat.

Copies of the proposed plat and bond are available upon request in the Community Development Department. If you cannot attend but wish to comment, you may write and it must be received to the following address: City of Ranson, Attn: Community Development Department, 312 S. Mildred Street, Ranson, WV 25438 or email cityclerk@ransonwv.us Written Comments received prior to Friday, May 2, 2025, will be provided to the Planning Commission, and inserted into the official record.

AGENDA ITEM IV.8

Planning Commission Request for Action

TO:

FROM: Darla Armstrong

ITEM TYPE: PRESENTATION

AGENDA SECTION: PLANNING COMMISSION BUSINESS

SUBJECT: 23-50-FP Consideration - Applicant Forestar Group INC, submitted application for Development Agreement for Ranson Heights (Riverpointe) Phase 2.

ATTACHMENTS:

Ranson Ranson Heights Development Agreement Phase 2.docx
PC25-16 Ranson Heights Phase 2 Development Agreement.docx
PC25-16 Ranson Heights Phase 2 Development Agreement.docx

RECORDING REQUESTED By
City of Ranson Planning Commission

WHEN RECORDED RETURN To

Reiley Stanley
Community Development Director
City of Ranson
312 S. Mildred Street
Ranson, WV 25438

DEVELOPMENT AGREEMENT RANSON HEIGHTS BETWEEN THE CITY OF RANSON AND FORESTAR USA REAL ESTATE GROUP, INC.

THIS AGREEMENT is made and entered into by and between the City of Ranson Planning Commission, hereinafter referred to as "City" and sometimes "Ranson" and D.R. Horton, Inc., hereinafter referred to as "Subdivider/Developer" or "Developer," for a subdivision known as Ranson Heights Neighborhood, both of whom understand and agree as follows:

WITNESSETH:

WHEREAS, Subdivider/Developer has presented to City for approval a final subdivision or parcel map (hereinafter called "Map") entitled and Final Plat Showing Phase 2, Lots 149-255; and

WHEREAS, Subdivider/Developer has requested approval of the map prior to the construction and completion of the improvements required by the Ranson Planning Commission and Ranson City Council, including all street lights, roadways or public ways and public utility facilities which are a part of, or appurtenant to, the subdivision (hereinafter called "Subdivision") designated in the map, all in accordance with the plans and specifications for all or any of said improvements in, appurtenant to, or outside the limits of subdivision, which plans and specifications are now on file in the Planning and Zoning Department of the City, and

WHEREAS, this agreement is executed pursuant to the provisions of land use planning as set forth in West Virginia Code §8A-1 et-seq and the Subdivision Regulations, Chapter 19, Appendix A of the Ranson Municipal Code.

WHEREAS, the Developer has submitted a revised Land Development Plan and Plat, approved by the Ranson Planning Commission, since the prior Development Agreement was recorded that is not entirely consistent with the final plat recorded within the land records.

NOW THEREFORE, in the best interest of the City of Ranson and in consideration of Developer posting renewed security; and, in order to ensure satisfactory performance by Developer of its obligations under Ranson's Land Development ordinances; and to clarify that the recorded final plat for Phase 2 will have to be recorded to ensure consistency with the approved Land Development Plan and Plat, the parties agree as follows:

1. Performance of Work

Subdivider/Developer will do and perform, or cause to be done and performed, at Subdivider/Developer's own expense, in a good and workmanlike manner and furnish all required materials, all under the direction and to the satisfaction of the City, all of the work and improvements required by the Ranson Planning Commission for this subdivision in accordance with the plans and specifications on file as herein specified, or with any changes required or ordered by the City, which in its opinion are necessary or required to complete the work. Any sewer work or water supply work shall be subject to the approval of the certified utility holding the franchise to provide services at the development site.

2. Work: Places and Grades to be Approved by Engineer

All of said work is to be done at the places, of the materials, in the manner, and at the grades, all as shown upon the plans and specifications therefore, heretofore approved by the Ranson Planning Commission and which are now on file in its office, and to the sole satisfaction of the City. The actual work of surveying shall be performed shall be performed by a qualified and duly licensed professional and agent of the Subdivider/Developer.

3. Specifications

The work embraced herein shall be done in accordance with the provisions of the West Virginia Code §8A, the Ranson Municipal Code, the Ranson Design Guidelines, or the Ranson Standard Engineering Detail Manual and the standards and methods required by the serving water and/or sewer utility.

Whenever in the said State Standard Specifications the following terms are used, they shall be understood to mean the following

State, Department of Transportation, City or Owner: City of Ranson, West Virginia.

Director: The City Manage of the City of Ranson.

Engineer: Whenever not qualified, shall mean the City Engineer of the City of Ranson, West Virginia acting either directly or through his or her properly authorized agents, each agent acting only within the scope of the authority delegated by the City.

Laboratory: The laboratory to be approved by the City of Ranson to test materials and work involved in the construction provided for under this agreement.

In case of conflict between any of the aforementioned authorities, the Ranson standard shall prevail.

In case of conflict between the any of the aforementioned authorities, the plans and this agreement, the approved plans and this agreement shall take precedence over and be used in lieu of such conflicting portions of the aforementioned authorities.

4. Work: Time for Completion

The time for the completion of said work is within two years after the date of approval of the final or parcel map for recordation with the County Recorder of Jefferson County, West Virginia. At least two (2) calendar days prior to the commencement of work hereunder, Subdivider/Developer shall notify

the City of the date fixed by Subdivider/Developer for commencement thereof, so that the City shall be able to provide services of inspection.

5. Time of Essence – Extension

Time is of the essence of this agreement; provided that in the event good cause is shown therefore, the Ranson Planning Commission may extend the time for completion of the improvements hereunder. Any such extension may be granted without notice to the Subdivider/Developer's surety, and extensions so granted shall not relieve the surety's liability on the bond to secure the faithful performance of this agreement. The Ranson Planning Commission shall be the sole and final judge as to whether or not good cause has been shown to entitle Subdivider/Developer to an extension.

6. Repairs or Replacements

Subdivider/Developer shall replace, or have replaced, or repair, or have repaired, as the case may be, all pipes and monuments shown on the map which have been destroyed or damaged, and Subdivider/Developer shall replace or have replaced, repair, or have repaired, as the case may be, or pay to the owner, the entire cost of replacement or repairs, or any and all property damaged or destroyed by reason of any work done hereunder, whether such property be owned by the United States or any agency thereof, or the State of West Virginia, or any agency or political subdivision thereof, or by the City or by an public or private corporation, or by an person whomsoever, or by any combination of such owners. Any such repair or replacement shall be to the satisfaction, and subject to the approval, of the City Engineer.

7. Permits: Compliance with Law

Subdivider/Developer shall, at Subdivider/Developer's expense, obtain all necessary permits and licenses for the construction of such improvements, give all necessary notices and pay all fees and taxes required by law.

8. Superintendence by Subdivider/Developer

Subdivider/Developer shall give personal superintendence to the work on said improvement, or have a a duly qualified foreman or superintendent or superintendent, by the City and/or the serving utility, on the work at all times during progress, with authority to act for the Subdivider/Developer.

9. Inspection by City of Ranson

Subdivider/Developer shall at all times maintain proper facilities, and provide safe access for inspection by by the City and/or the serving utility to all parts of the work, and to the shops wherein the work is in preparation.

10. Contract Security

Concurrently with the execution hereof, Subdivider/Developer shall furnish a bond in an amount equal to one hundred twenty-five percent (125%) of the approved Engineer's estimate as security for the faithful performance of this agreement.

Similarly, Subdivider/Developer shall furnish a bond in an amount equal to at least fifty percent (50%) of the said price as security for the payment of all persons performing labor and furnishing materials in the construction of this tract.

The said bonds shall be in cash, letter of credit, or bonds provided by a surety satisfactory to the City, or in such other form as may be provided for by law. The said bonds shall be worded and dated to become effective immediately upon failure of the Subdivider/Developer to complete the work subject to the bonds within the two-year period allowed or any extensions thereof allowed by the City.

11. Hold-Harmless Agreement

Subdivider/Developer hereby agrees to, and shall, hold City, its elective and appointive boards, commissions, officers, agents and employees, harmless from any liability for damage or claims for damage for personal injury, including death, as well as from claims for property damage which may arise from Subdivider/Developer's or Subdivider/Developer's contractors', subcontractors', agents', or employees' operations under this agreement, whether such operations be by Subdivider/Developer or by any of Subdivider/Developer's contractors, subcontractors, or by any one or more, persons directly or indirectly employed by, or acting as agent for Subdivider/Developer or any of Subdivider/Developer's contractors, or subcontractors. Subdivider/Developer agrees to, and shall defend City and its elective and appointive boards, commission, officers, agents and employees from any suits or actions at law or in equity for damages caused, or alleged to have been caused, by reason of any of the aforesaid operations; provided as follows:

That the aforesaid hold-harmless agreement by Subdivider/Developer shall apply to all damages and claims for damages of every kind suffered, or alleged to have been suffered, by reason of any of the aforesaid operations referred to in this paragraph, regardless of whether or not City has prepared, supplied or approved of, plans and/or specifications for the subdivision, or regardless of whether or not any of the insurance policies described herein shall have been determined to be applicable to any of such damages or claims for damages.

12. Subdivider/Developer's Insurance

Subdivider/Developer shall not commence work under this agreement until Subdivider/Developer shall have obtained all insurance and/or bonding required under this paragraph, nor shall Subdivider/Developer allow any contractor or subcontractor to commence work on his contract or subcontract until all similar insurance required of the contractor or subcontractor shall have been so obtained and approved. All requirements herein provided shall appear either in the body of the insurance policies or as endorsements and shall specifically bind the insurance carrier.

Compensation insurance

Subdivider/Developer shall maintain, during the life of this agreement, Workmen's Compensation insurance as required by prevailing West Virginia law for all Subdivider/Developer's employees employed at the site of the improvement, and in case any work is sublet, Subdivider/Developer shall require any contractor or subcontractor similarly to provide Workmen's Compensation Insurance for all contractor's or subcontractor's employees, unless such employees are covered by the protection afforded by Subdivider/Developer. Subdivider/Developer hereby indemnifies City for any damage resulting to it from failure of either Subdivider/Developer or any contractor or subcontractor to take out or maintain such insurance.

Public Liability and Property Damage Insurance

Subdivider/Developer shall take out and maintain during the life of this agreement such public liability and property damage insurance with coverage limits adequate to fully insure the City, its elective and

appointive boards, commissions, officers, agents, and employees, Subdivider/Developer and any contractor or subcontractor performing work covered by this agreement from claims for damages for personal injury, including death, as well as from claims for property damage which may arise from Subdivider/Developer's or any contractor's or subcontractor's operations hereunder, whether such operations be by Subdivider/Developer or any contractor or subcontractor, or by anyone directly or indirectly employed by either Subdivider/Developer or any contractor or subcontractor.

Contractual Liability Insurance

Subdivider/Developer shall take out and maintain during the life of the agreement an insurance policy with limits adequate to fully insure the City, its elective and appointive boards, commissions, officers, agents and employees, Subdivider/Developer and any contractor or subcontractor performing work covered by this agreement against damages sustained by reason of any action or actions at law or in equity, and/or any claims or demands by reason of any breach or alleged breach of any contract, or provision thereof, or by reason of any contractual liability or alleged contractual liability on any contract, entered into by Subdivider/Developer and/or any of Subdivider/Developer's contractors, subcontractors, agents and/or employees.

In the event that any of the aforesaid insurance policies provided for herein insures any entity, person, board or commission other than those mentioned in this paragraph, such policy shall contain a standard form of cross-liability endorsement, insuring on such policy, City, its elective and appointive boards, commissions, officers, agents and employees, Subdivider/Developer and any contractor or subcontractor performing work covered by this agreement.

13. Title to Improvements

Title to, and ownership of, all street improvements and sewers constructed hereunder by Subdivider/Developer shall vest absolutely in City, upon completion and acceptance of such improvements by City. Title to water and sewer works shall vest in the serving public utility upon completion and acceptance of these improvements by the serving utility.

14. Repair or Reconstruction of Defective Work

If, within a period of one year after final acceptance of the work performed under this agreement, any structure or part of any structure furnished and/or installed or constructed, or caused to be installed or constructed by Subdivider/Developer, or any of the work done under this agreement, fails to fulfill any of the requirements of this agreement or the specifications referred to herein, Subdivider/Developer shall without delay and without any cost to the City, repair or replace or reconstruct any defective or otherwise unsatisfactory part or parts of the work or structure. Should Subdivider/Developer fail to act promptly, or in accordance with this requirement, or should the exigencies of the case require repairs or replacements to be made before Subdivider/Developer can be notified, City may, at its option, make the necessary repairs or replacements or perform the necessary work and Subdivider/Developer shall pay to the City the actual cost of such repairs plus fifteen percent (15%).

15. Subdivider/Developer not Agent of City

Neither Subdivider/Developer nor any of Subdivider/Developer's agents or contractors are or shall be considered to be agents of City in connection with the performance of Subdivider/Developer's obligations under this agreement.

16. Cost of Engineering and Inspection

Subdivider/Developer shall reimburse City for all engineering review, on-site inspection, and administrative fees furnished by City in connection with the subdivision as specified in the Fee Payment Agreement executed by the Subdivider/Developer simultaneously herewith.

17. Notice of Breach and Default

If Subdivider/Developer refuses or fails to obtain prosecution of the work, or any severable part thereof, with such diligence as will insure its completion within the time specified, or any extensions thereof, or fails to obtain completion of said work within such time, or if the Subdivider/Developer should be adjudged a bankrupt, or Subdivider/Developer should make a general assignment for the benefit of Subdivider/Developer's insolvency or is Subdivider/Developer, or any of Subdivider/Developer's contractors, subcontractors, agents, or employees , should violate any of the provisions of this agreement, City Engineer or City Council may serve written notice upon Subdivider/Developer and Subdivider/Developer's surety of breach of this agreement, or of any portion thereof, and default of Subdivider/Developer. An assignment of this Agreement to a to a qualified third party to complete the work complete the work contemplated herein, which is unrelated to any bankruptcy or insolvency proceedings, shall not be deemed a breach of this Agreement.

18. Breach of Agreement: Performance by Surety or City of Ranson

In the event of any such notice, Subdivider/Developer's surety shall have the duty to take over and complete the work and the improvement herein specified; provided, however, that if the surety, within five (5) days after the serving upon it of such notice of breach, does not give City written notice of its intention to take over the performance of the contract, and does not commence performance thereof within five (5) days after notice to City of such election, City may take over the work and prosecute the same to completion, by contract or by any other method City may deem advisable, for the account and at the expense of Subdivider/Developer, and Subdivider/Developer's surety shall be liable to City for any excess cost or damages occasioned City thereby; and, in such event, City, without liability for so doing, may take possession of, and utilize in completing the work, such materials, appliances, plant and other property belonging to Subdivider/Developer as may be on the site of the work and necessary therefor.

19. Substantial Completion and Completion

Upon Substantial Completion of the work described in the said Agreement and upon the City Council authorizing a written Notice of Substantial Completion and Acceptance of said work, the City will release all hold and any claims to 50% of the amount specified above, for faithful performance. "Substantial Completion" shall shall include compliant and accepted base pavingof the roads in the Subdivision. Upon completion of all the work described in the said Agreement and upon the City Council authorizing a written Notice of Completion and Acceptance of said work, the City will release all hold and any claims to 80% of the reduced bond amount , for faithful performance. The remaining 20% shall be held by the City for a period of one (1) year after the date of the Notice of Completion as a guarantee bond to secure the performance of Section 14 of this Agreement and shall thereafter be released. The amount specified above for labor and materials shall be held by us for a period of one (1) year after the date of final acceptance of the improvements specified in the said Agreement.

20. Notices

All notices herein required shall be in writing, and delivered in person or sent by registered mail, postage prepaid. Notices required to be given to City shall be addressed as follows:

City of Ranson

Attn: City Manager

312 South Mildred Street

Ranson, WV 25438

Notices required to be given to Subdivider/Developer shall be addressed as follows:

Forestar USA Real Estate Group INC

7021 Columbia Gateway Drive

Columbia, MD 21046

Provided that any party or the surety may change such address by notice in writing to the other party and thereafter notices shall be addressed and transmitted to the new address.

21. Binding Effect of Agreement

This Agreement shall be binding on and inure to the benefit of the parties to this Agreement and their heirs, personal representatives, successors and assigns.

22. Authority

Any conflict arising from this Agreement shall be governed by and construed in accordance with the laws of the State of West Virginia.

DATED this _____ day of _____, 20___.

RANSON PLANNING COMMISSION

By: _____

Mike Anderson

Its: President

OWNER

_____

Forestar

By: _____

Its: _____

RESOLUTION#: PC-25-16

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF RANSON APPROVING A DEVELOPMENT AGREEMENT BY AND BETWEEN THE RANSON PLANNING COMMISSION AND DR HORTON FOR A SUBDIVISION COMMONLY REFERRED TO AND KNOWN AS "RANSON HEIGHTS PHASE 2"

THE PLANNING COMMISSION OF THE CITY OF RANSON RESOLVES AS FOLLOWS:

Section 1. The Planning Commission of the City of Ranson pursuant to its authority within Ranson Municipal Code 16-60 approves the attached Development Agreement by and between the Ranson Planning Commission and DR Horton, for a subdivision commonly referred to and known as "Ranson Heights Phase 2".

Section 2. The Planning Commission President is authorized and hereby directed to execute the Development Agreement on behalf of the City of Ranson Planning Commission.

Section 3. The Planning Commission hereby authorizes the City Manager or his designee to execute any and all documents necessary to carry out the conditions of the attached Development Agreement, whether express or implied, and any documents necessary for the transfer of property to Forestar Group INC , including any documents requested by financial institutions, lenders, attorneys, lienholders, contractors, sureties, and/or third parties.

Section 4. This Resolution and executed Development Agreement shall become effective immediately upon its adoption.

Signed and approved this 5th day of May, 2025

_____
Planning Commission
President

ATTEST:

_____
Planning Commission Member

AFFIX CITY SEAL

RESOLUTION#: PC-25-16

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF RANSON APPROVING A DEVELOPMENT AGREEMENT BY AND BETWEEN THE RANSON PLANNING COMMISSION AND DR HORTON FOR A SUBDIVISION COMMONLY REFERRED TO AND KNOWN AS "RANSON HEIGHTS PHASE 2"

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Section 4. This Resolution and executed Development Agreement shall become effective immediately upon its adoption.

Signed and approved this 5th day of May, 2025

_____
Planning Commission
President

ATTEST:

_____
Planning Commission Member

AFFIX CITY SEAL

AGENDA ITEM IV.9

Planning Commission Request for Action

TO:

FROM: Rieley Stanley, Community & Economic Development

ITEM TYPE: PRESENTATION

AGENDA SECTION: PLANNING COMMISSION BUSINESS

SUBJECT: Consideration-24-35-SP-Applicant Inwood 165 LLC, has submitted an application for Fairfax Crossing Commercial Infrastructure Site Plan

ATTACHMENTS:

24-35-SP-Fairfax Crossing - Fully Executed City of Ranson Application 08-13-24 (SIGNED).pdf
24-35-SP-3079-0109 FAIRFAX CROSSING INFRASTRUCTURE.pdf

City of Ranson

Community Development Department

312 South Mildred Street
Ranson, West Virginia 25438-1621
Phone (304) 725-1010 Fax (304) 728-8579
Email: permits@ransonwv.us

RANSON
AT THE CENTER OF OPPORTUNITY.

Planning Commission:
Tony Grant, President
Mike Anderson
Kim Biddle
Walt Burke
Shannon Reed

APPLICATION FOR REVIEW

PROJECT NAME: Fairfax Crossing Jeffrey Lane Infrastructure

PROJECT DESCRIPTION: Extension of Jeffrey Lane, public waterline, public sewer, storm drainage system and bioretention.

MAP#: 8 **PARCEL#:** 1.3, 1.4, 1.5 & 1.9 **CURRENT ZONING:** HC **PROPOSED ZONING:** HC

SITE AREA (ACRES): 54.58 **# OF LOTS:** N/A **AREA IN LOTS:** N/A

AREA IN SWM: 3.70 **AREA IN RIGHT OF WAY:** 1.77

WATER SERVICE: PUBLIC ☑ **PRIVATE** ☐ **PROVIDER** WV American Water

SEWER SERVICE: PUBLIC ☑ **PRIVATE** ☐ **PROVIDER** CTUB

SEWER FLOW (GALLONS PER DAY AT BUILD-OUT): Future development unknown

SUBMITTAL/FEE INFORMATION

- ☐ Minor Subdivision Plat-$250
- ☐ Sketch Plat-$1,000 base fee plus $100.00 per acre for the first 10 lots/dwelling units and $25 for each additional lot/dwelling unit (whichever is greater)
- ☐ Preliminary Plat-$500 base fee
- ☑ Construction Plan: Storm Sewer-$2.00 per linear feet
- ☑ Construction Plan: Water Line-$1.00 per linear feet
- ☑ Construction Plan: Curb and Gutter-$2.00 per linear feet
- ☑ Construction Plan: Sidewalk-$2.00 per linear feet
- ☑ Construction Plan: Sanitary Sewer-$2.00 per linear feet
- ☑ Construction Plan: Street-$1.00 per linear feet
- ☐ Overlot Grading Plan-$125 per lot
- ☐ Construction Plan: Landscape, Buffering, and Open Space-$250
- ☐ Site Plan (residential)-$1,000 plus $100 per acre for the first 10 acres; $25 per thereafter
- ☐ Site Plan (non-residential)-$1,000
- ☐ Site Plan (non-residential) on parcels containing more than 1 acre-$1,000 plus $100 per acre for the first five (5) acres; $25 each per acre thereafter
- ☐ Final Plat-$1,000 base fee plus $50 per acre
- ☐ Correction Plat-$500 (Please note the type of plat you are providing corrections for) _____
- ☐ Boundary Line Adjustment Plat-$250
- ☐ Easement Plat-$250 flat fee
- ☐ Rough Grading Plan-$200 per acre
- ☐ Floodplain Study-$1,500
- ☐ Traffic Study-$1,000
- ☐ Variation Request-$750 per section varied
- ☐ Text or Map Adjustment-$500
- ☐ Request for Preliminary Authorization-$100
- ☐ Rezoning Filing Fee-$1,000 base fee plus $100 per acre for each of the first ten (10) acres, then $25.00 per acre thereafter
- ☐ Re-submittal fee-Half of the original submission fee (please note the type of plat/plan you are re-submitting) _____

OWNER/APPLICANT INFORMATION

Owner I (Print) PTC Developer, LLC Percent of Ownership 100
Address 6290 Montrose Road, Rockville, MD 20852
Phone: 301-692-1900 Fax/Email: rcohen@csinvestors.com

Owner II (Print) INWOOD 165 LLC Percent of Ownership 100
Address 6290 Montrose Road, Rockville, MD 20852
Phone: 301-692-1900 Fax/Email: rcohen@csinvestors.com

Owner III (Print) _____ Percent of Ownership _____
Address _____
Phone: _____ Fax/Email: _____

Applicant (Print) Segall Development Associates, LLC
Address 605 South Eden Street, Suite 200, Baltimore, MD 21231
Phone: 410-753-3966 Fax/Email: ajakob@segallgroup.com

Developer (Print) _____
Address _____
Phone: _____ Fax/Email: _____

Engineer/Surveyor (Print) Integrity Federal Services
Address: 148 S. Queen Street, Martinsburg, WV 25401
Phone: 304-725-8456 Fax/Email: jeisenhower@ifs-ae.com

OWNER'S WRITTEN AUTHORIZATION

Please direct all correspondence to: ☐ Owner(s) ☐ Developer ☑ Engineer

As the owner of this property, I certify that this application is complete and accurate to the best of my knowledge. I understand that any information lacking in such application shall be deemed incomplete and shall not be considered for review. Furthermore, I authorize the City to direct all correspondence to the above noted party who is also authorized and designated as my agent during review of this application.

Signature (owner): _____ Date: 8/13/24

Signature: (applicant) _____ Date: 8/12/24

**********For Office Use Only**********

Date Received: _____ **By:** _____

Fee paid: _____ **Check Number:** _____

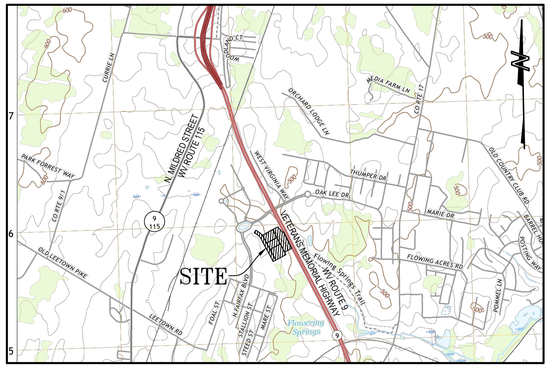
CIVIL LEGEND:

EXISTING		PROPOSED
	BOUNDARY/RIGHT-OF-WAY LINE	
	ADJACENT BOUNDARY LINE	
	EASEMENT LINE	
	ROAD CENTERLINE	
	HEADER CURB	
	CURB & GUTTER	CURB, TRANS, REVERSE CURB
	EDGE OF PAVEMENT	
	EDGE OF CONCRETE	
	EDGE OF GRAVEL	
	SIDEWALK	
	GUARDRAIL	
	BOARD FENCE	
	CHAIN LINK FENCE	
	WIRE FENCE	
TO BE REMOVED / TO REMAIN	BUILDINGS	
	RETAINING WALL	
	MISCELLANEOUS SIGNS	
	MAIL BOX	
	SITE LIGHT WITH POLE	
	BUILDING MOUNTED LIGHT	
	UTILITY POLE	
	UTILITY POLE GUY WIRE	
OHE	OVERHEAD UTILITY LINE	OHE
UGC	UNDERGROUND UTILITY LINE	UGC
OHC	OVERHEAD COMMUNICATIONS LINE	OHC
UGC	UNDERGROUND COMMUNICATIONS LINE	UGC
EX A, 8" SAN	SANITARY SEWER MAIN	A1, 8" SAN. SEW.
FM	SANITARY SEWER FORCE MAIN	FM
	SANITARY SEWER MANHOLE	
	SANITARY SEWER CLEAN-OUT	
EX 14, 15" RCP	STORM SEWER LINE	1, 2, 15" HDPE
	STORM SEWER MANHOLE	
	STORM SEWER GRATE INLET	
	STORM SEWER CURB INLET	
	STORM SEWER RIP-RAP	
	STORM SEWER END SECTION	
8" W/M	WATER MAIN	8" W/M
	FIRE HYDRANT	
	WATER VALVE	
	WATER METER	
590	INDEX CONTOUR LINE	590
592	INTERMEDIATE CONTOUR LINE	592
× 543.6	SPOT ELEVATIONS	$+45^{0}$, $+45^{0}_{TC}$, $+45^{0}_{INV}$
	TREES/SHRUBS	
	DRIP LINE OF TREES	
	LIMITS OF CONSTRUCTION	
HbB, HgC	SOIL BOUNDARY	
	ENTRANCE PAVEMENT	
	ASPHALT PAVEMENT	
	CONCRETE PAVEMENT	
	GRAVEL DRIVE/SHOULDER	
	EXISTING WETLAND BOUNDARY	
	EXISTING 100 YEAR FLOOD BOUNDARY	

811 Know what's **below.** **Call** before you dig.

SITE PLAN SHOWING
FAIRFAX CROSSING INFRASTRUCTURE
CITY OF RANSON
JEFFERSON COUNTY, WEST VIRGINIA

TAX MAP 8, PARCELS 1.3, 1.6 & 1.9, DEED BOOK 1235 PG. 693
TAX MAP 8, PARCEL 1.4, DEED BOOK 1235 PG. 707



VICINITY MAP
SCALE: 1"=2000'

OWNERS
INWOOD 165 LLC
PTC DEVELOPER
6290 MONTROSE ROAD
ROCKVILLE, MD 20852
(301) 692-4000

APPLICANT
STC MANAGEMENT, LLC
1300 MINNIEVILLE ROAD
WOODBRIDGE, VA 22192
(703) 491-1108

INTEGRITY FEDERAL SERVICES
CIVIL ENGINEERING • LANDSCAPE ARCHITECTURE • PLANNING
148 S. Queen Street, Suite 201 • Phone: 304-725-8456
Martinsburg, WV 25401 • www.ifs-ae.com

APPROVAL BLOCK:

THE RANSON PLANNING COMMISSION APPROVES THIS SITE PLAN ON ___/___/___ WITH THE FOLLOWING CONDITIONS:

1. _____
2. _____
3. _____

_____ _____
PLANNING COMMISSION PRESIDENT'S SIGNATURE DATE

OWNER CERTIFICATION:

THE OWNER OF THIS PROPERTY HEREBY AFFIRMS THAT THESE PLANS MEET THE REQUIREMENTS OF THE RANSON ZONING AND SUBDIVISION ORDINANCES AND THE ABOVE CONDITIONS OF APPROVAL SET FORTH BY THE RANSON PLANNING COMMISSION.

_____ _____
OWNER'S SIGNATURE DATE

_____ _____
OWNER'S SIGNATURE DATE

LIST OF APPROVALS:

CHARLES TOWN UTILITY BOARD WATER APPROVAL:
DATED: _____

WEST VIRGINIA AMERICAN WATER APPROVAL:
DATED: _____

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION:
WV/NPDES PERMIT # : _____

SHEET LIST TABLE

Sheet Number	Sheet Title
01	COVER SHEET
02	GENERAL NOTES
03	GENERAL DETAILS
04	EXISTING CONDITIONS & DEMOLITION PLAN
05	PRELIMINARY PLAT
06	EROSION & SEDIMENT CONTROL NARRATIVE
07	EROSION & SEDIMENT CONTROL DETAILS
07A	EROSION & SEDIMENT CONTROL DETAILS
08	EROSION & SEDIMENT CONTROL PLAN PHASE I
09	EROSION & SEDIMENT CONTROL PLAN PHASE II
10	SITE PLAN
11	GRADING PLAN
12	ROAD PLAN & PROFILE - JEFFREY LANE
12A	SIGHT DISTANCE PLAN & PROFILE
13	SANITARY SEWER PLAN & PROFILE & DETAILS
13A	SANITARY SEWER DETAILS
14	WATERLINE PLAN & PROFILE & DETAILS
15	WATERLINE DETAILS
16	STORM SEWER PROFILES
17	STORM SEWER DETAILS
18	STORM SEWER DETAILS & COMPUTATIONS
19	BIORETENTION NOTES & DETAILS

NO.	SHEET NUMBER AND REVISION DESCRIPTION	DATE
1.	ADDRESS CITY, CTUB & WVAW COMMENTS	01/27/25

INTEGRITY FEDERAL SERVICES
CIVIL ENGINEERING • LANDSCAPE ARCHITECTURE • PLANNING
148 S. Queen Street, Suite 201 • Phone: 304-725-8456
Martinsburg, WV 25401 • www.ifs-ae.com

RYAN P. PERRY, REGISTERED, 17961, STATE OF WEST VIRGINIA, PROFESSIONAL ENGINEER

REVISIONS
01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

COVER SHEET

FAIRFAX CROSSING INFRASTRUCTURE
T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: AS SHOWN VERT.:
DATE:	DECEMBER 2024
JOB:	3079-0109
DRAWN: CAS	CHECK: JAE
CADD:	C-GI-001.DWG
NCS:	GI-001
SHEET:	01 OF 19

FILE PATH: G:\PROJECTS\RANSON_SITE\01B FAIRFAX CROSSING\COMMERCIAL\DRAWINGS\CIVIL\01 COVER.DWG
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GENERAL NOTES:

1. THE PROPOSED SITE IMPROVEMENTS FOR 'FAIRFAX CROSSING INFRASTRUCTURE' INCLUDE, BUT ARE NOT LIMITED TO, THE CONSTRUCTION OF THE EXTENSION OF JEFFREY LANE, STORM DRAINAGE, BIORETENTION FACILITY, AND PUBLIC UTILITIES. THE SITE IS LOCATED IN THE CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA. THE SUBJECT PROPERTY SHOWN HEREIN IS LOCATED ON TAX MAP 8, PARCELS 1.3, 1.4 1.6 & 1.9. THE PROPERTY OWNERS ARE INWOOD 165 LLC (PARCELS 1.3, 1.6 & 1.9 – D.B. 1235 PG. 693) AND PTC DEVELOPER, LLC (PARCEL 1.4 – D.B. 1235 PG. 707).

2. THE TOTAL EXISTING SITE ACREAGE FOR PARCELS 1.3, 1.4, 1.6 & 1.9 IS 54.68 ACRES.

3. THE TOPOGRAPHIC CONTOUR INTERVAL IS TWO (2) FEET. TOPOGRAPHIC INFORMATION WAS COMPILED FROM AN AERIAL TOPOGRAPHIC SURVEY PREPARED BY QUANTUM SPATIAL DATED MARCH 14, 2020. HORIZONTAL DATUM IS REFERENCED TO THE WEST VIRGINIA COORDINATE SYSTEM OF 1983, NORTH ZONE. VERTICAL DATUM IS REFERENCED TO NAVD 88.

4. PERIMETER BOUNDARY INFORMATION IS PER ALTA/NSPS LAND TITLE SURVEY TITLED "PTC DEVELOPER LLC & PTV 1132, LLC" PREPARED BY GORDON, DATED FEBRUARY 2024.

5. THE SUBJECT PROPERTY IS LOCATED ON F.E.M.A. MAP 54037C0130E DATED DECEMBER 18, 2009. NO PORTION OF THIS PROPERTY IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN AREA (ZONE A). THE PROPERTY IS IN ZONE X.

6. THE CURRENT NATIONAL WETLANDS INVENTORY MAP SHOW WETLANDS/SENSITIVE AREAS ON THE SUBJECT PROPERTY, BUT THEY ARE OUTSIDE THE PROPOSED LIMITS OF CONSTRUCTION AND DO NOT APPEAR TO MATCH THE ACTUAL ONSITE CONDITION.

7. CHANGES OR REVISIONS IN CONSTRUCTION PLANS AND SPECIFICATIONS SHALL NOT BE MADE UNLESS FIRST APPROVED BY THE CITY OF RANSON AND/OR OTHER APPROPRIATE AGENCIES.

8. STORMWATER MANAGEMENT SHALL BE PROVIDED BY THE EXISTING STORMWATER MANAGEMENT POND DESIGNED WITH WAWA CONVENIENCE STORE, FILE NUMBER 23-60-SP. WATER QUALITY IS PROVIDED BY A PROPOSED BIORETENTION FACILITY "BR01".

9. SEE COVER SHEET FOR LEGEND OF SYMBOLS USED HEREIN.

CONSTRUCTION NOTES:

1. THE CLIENT AND CONTRACTOR ARE RESPONSIBLE FOR REVIEWING THE PLANS PRIOR TO CONSTRUCTION AND NOTIFYING INTEGRITY FEDERAL SERVICES, INC. OF ANY CIRCUMSTANCES FOUND WITHIN THESE PLANS IN NEED OF VERIFICATION SO THAT APPROPRIATE REVISIONS CAN BE MADE, IF WARRANTED.

2. DEVELOPMENT OF THE SITE INCLUDING CONSTRUCTION AND MATERIALS SHALL BE IN CONFORMANCE WITH CURRENT CITY OF RANSON REQUIREMENTS AND THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

3. EROSION AND SEDIMENT CONTROL DEVICES ARE TO BE IN PLACE PRIOR TO ANY CONSTRUCTION. REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR PHASING AND DETAILS.

4. ALL LAND ON OR OFF-SITE WHICH IS DISTURBED BY CONSTRUCTION AND WHICH IS NOT BUILT UPON OR SURFACED SHALL BE ADEQUATELY STABILIZED TO CONTROL EROSION AND SEDIMENTATION

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER AND THE ENGINEER OF ANY CHANGES OR CONDITIONS ATTACHED TO PERMITS REQUIRED FOR CONSTRUCTION.

6. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND/OR EQUIPMENT OF MUD AND DEBRIS, PRIOR TO ENTERING JEFFREY LANE AND OTHER STATE OR LOCAL ROADS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS OF MUD AND/OR LAYING DUST AND TO TAKE ALL APPROPRIATE MEASURES NECESSARY TO ENSURE THAT STREETS ARE KEPT IN A CLEAN AND DUST FREE CONDITION AT ALL TIMES. NO MUD OR DEBRIS IS TO REACH THE STREET.

7. THE CONTRACTOR SHALL VISIT THE SITE AND SHALL VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION ACTIVITIES.

8. THE CONTRACTOR SHALL CLEAR THE SITE OF ALL TREES, BUILDINGS, FOUNDATIONS, ETC. WITHIN THE LIMITS OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR COORDINATING ANY DISCONNECTION AND/OR ABANDONMENT OF EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND ABANDONING ALL EXISTING WELLS AND/OR SEPTIC DRAIN FIELDS AND COORDINATING THEIR ABANDONMENT WITH THE HEALTH DEPARTMENT.

9. CONTRACTOR SHALL CONTACT WEST VIRGINIA 811 A MINIMUM OF SEVENTY-TWO (72) HOURS PRIOR TO ANY EXCAVATION WITHIN PUBLIC RIGHT-OF-WAYS OR WITHIN AREAS SERVED BY UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE PRESENCE OF ANY UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

10. INTEGRITY FEDERAL SERVICES, INC. DOES NOT CERTIFY TO THE LOCATION OF OR THE EXISTENCE OF ANY EXISTING UNDERGROUND UTILITIES. ANY UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE RECORDS AND DISCUSSION WITH THE OWNER. THIS DOES NOT CONSTITUTE A GUARANTEE OF THEIR ACTUAL LOCATIONS OR THAT THEY HAVE ALL BEEN SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIGGING OF TEST HOLES PRIOR TO BEGINNING ANY CONSTRUCTION. THESE TEST HOLES WILL BE MADE TO VERIFY ALL CROSSINGS BETWEEN NEW AND EXISTING FACILITIES AND AT CRITICAL GRADE CHANGES. IF CONDITIONS ARE FOUND IN THE FIELD, WHICH ARE MATERIALLY DIFFERENT FROM THE PLANS, THE CONTRACTOR SHALL NOTIFY INTEGRITY FEDERAL SERVICES, INC. SO THAT APPROPRIATE REVISIONS IF WARRANTED CAN BE MADE TO THE PLANS AT THE DEVELOPER'S EXPENSE.

11. INTEGRITY FEDERAL SERVICES, INC. DOES NOT CERTIFY TO THE SUB-SURFACE CONDITIONS OF THE SITE, THE LOCATION OF UNDERLYING ROCK, OR THE LOCATION OF POTENTIAL SINKHOLES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIGGING OF TEST HOLES TO VERIFY SUB-SURFACE CONDITIONS PRIOR TO BEGINNING ANY CONSTRUCTION. IF SINKHOLES ARE FOUND IN THE FIELD, REMEDIATION WILL BE REQUIRED AS SPECIFIED BY THE DEP AND/OR A QUALIFIED GEOTECHNICAL ENGINEERING FIRM.

12. CONTROLLED FILLS AND SUB GRADES (SEE GEOTECHNICAL ENGINEER):
    A) CONTROLLED COMPACTION SHALL OCCUR IN ALL FILL SECTIONS FOR PAVEMENT, TRENCHES FOR UTILITIES, AND IN ANY AREA OTHERWISE DESIGNATED ON THE DRAWINGS.
    B) CONTROLLED FILLS SHALL BE COMPACTED TO MINIMUM DENSITY (SEE NOTE 19) AS DETERMINED BY METHODS AS PER STANDARD PROCTOR AASHTO-T99 EXCEPT THE UPPER EIGHT (8) INCHES OF SOILS BELOW THE PAVEMENT SUB BASE STONE, WHICH SHOULD BE COMPACTED TO 100% OF THIS STANDARD AS DIRECTED BY A QUALIFIED GEOTECHNICAL ENGINEER.
    C) CONTROLLED FILL SHALL BE COMPACTED IN EIGHT (8) INCH LIFTS (LOOSE THICKNESS) TO THE SPECIFIED DENSITY, BEGINNING FROM THE EXISTING GROUND SURFACE, UNLESS OTHERWISE APPROVED IN WRITING BY A QUALIFIED GEOTECHNICAL ENGINEER.

13. ALL TESTS, STUDIES, ETC., REQUIRED DURING CONSTRUCTION WILL BE CARRIED OUT BY A THIRD PARTY ENGINEERING FIRM TO BE PAID BY OWNER.

14. THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE OWNER OF COMPLYING WITH OTHER APPLICABLE LOCAL, STATE AND FEDERAL REQUIREMENTS.

15. CONSTRUCTION BLASTING IS LIMITED BETWEEN THE HOURS OF 8:00 AM TO 5:00 PM OR AS OTHERWISE PERMITTED. WITHIN THE CITY OF RANSON.

16. ALL PROPOSED ELEVATIONS AS SHOWN HEREIN ARE FINISHED GRADE UNLESS OTHERWISE NOTED.

17. MAINTAIN A MINIMUM VERTICAL CLEARANCE OF ONE (1) FOOT SIX (6) INCHES BETWEEN CROSSING OF ALL UTILITY LINES UNLESS OTHERWISE NOTED.

18. CBR TESTS SHALL BE PERFORMED PRIOR TO DETERMINATION OF FINAL SUBGRADE ELEVATION FOR PAVEMENT AREAS. SOILS TESTS OF SUBGRADE MUST BE SUBMITTED FOR ACTUAL DETERMINATION OF REQUIRED PAVEMENT SECTION THICKNESS PRIOR TO CONSTRUCTION. ALL SUBGRADE TO BE COMPACTED TO MAXIMUM DENSITY (SEE NOTE 19) AT 2% OF OPTIMUM MOISTURE CONTENT PER AASHTO-T99 METHOD UNLESS OTHERWISE DIRECTED BY AN APPROVED GEOTECHNICAL REPORT.

19. EARTHWORK SHALL BE COMPACTED TO THE PERCENTAGES OF MAXIMUM DRY DENSITY (ACCORDING TO AASHTO-T99) AS SHOWN BELOW OR AS DIRECTED BY A GEOTECHNICAL ENGINEER:

A.	ROADWAYS	98%
B.	BUILDING PADS	100%
C.	PARKING LOTS FOR PASSENGER VEHICLES	95%
D.	PARKING LOTS FOR HEAVY TRUCKS	98%
E.	UTILITY TRENCHES	98%

20. COMPACTION OF SUBGRADES SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER OR TECHNICIAN CERTIFIED BY THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS OR A PROFESSIONAL INSTITUTE ACCEPTABLE TO THE CITY OF RANSON, AS MEETING THE ABOVE STANDARD.

21. ALL UTILITIES (E.G. ELECTRIC, CABLE, TELEPHONE) SHALL BE UNDERGROUND.

CONSTRUCTION NOTES CONT'D:

22. THE CLIENT, CONTRACTOR, AND/OR SURVEYOR SHALL BE RESPONSIBLE FOR NOTIFYING INTEGRITY FEDERAL SERVICES, INC. OF ANY CONDITIONS FOUND IN THE FIELD PRIOR TO STAKEOUT THAT VARY FROM THE APPROVED PLANS OR THAT MAKE CONSTRUCTION IMPOSSIBLE SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO STAKEOUT AND/OR CONSTRUCTION. ANY OBSERVATIONS REGARDING APPARENT INCONSISTENCIES IN THE PLANS SHALL BE BROUGHT TO INTEGRITY FEDERAL SERVICES, INC. ATTENTION FOR VERIFICATION PRIOR TO STAKEOUT.

23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE PERFORMANCE OF ITS WORK AND THE WORK OF ITS SUBCONTRACTORS. INTEGRITY FEDERAL SERVICES, INC. SHALL NOT HAVE CONTROL OVER, CHARGE OF, OR RESPONSIBILITY FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

24. BUILDING FOOTPRINTS AS SHOWN ARE APPROXIMATE IN BUILDING SIZE AND DO NOT REPRESENT FINAL ARCHITECTURAL DETAILS.

25. ALL GRADING SHALL PROVIDE PROPER DRAINAGE & DISPOSAL OF STORM WATER WITHOUT PONDING.

26. ALL FILL SHALL BE COMPACTED TO PREVENT EROSION.

27. GRADING SHALL NOT BE DONE IN SUCH A WAY TO DIVERT WATER ONTO THE PROPERTY OF ANOTHER LAND OWNER.

28. SITE GRADING: THE MAXIMUM CUT/FILL SLOPE FOR SLOPES LESS THAN 15' IN HEIGHT IS 2:1. THE MAXIMUM CUT/FILL SLOPE FOR SLOPES GREATER THAN 15' IN HEIGHT IS 3:1.

29. ALL CLEARING, GRADING, DRAINAGE, CONSTRUCTION, AND DEVELOPMENT SHALL BE CONDUCTED IN STRICT ACCORDANCE WITH THE APPROVED PLAN.

30. FIELD VERIFY EXISTING GRADES PRIOR TO CONSTRUCTION.

31. CONTRACTOR TO ENSURE POSITIVE DRAINAGE THROUGHOUT CONSTRUCTION.

32. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL SIGNAGE MUST MEET FEDERAL, WEST VIRGINIA, AND CITY OF RANSON REQUIREMENTS.

STANDARD W.V.D.O.H. NOTES:

1. ALL UTILITIES, INCLUDING ALL POLES, ARE TO BE RELOCATED AS NECESSARY AT EITHER THE DEVELOPER OR UTILITY OWNER'S EXPENSE PRIOR TO CONSTRUCTION.

2. THE DEVELOPER IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS AND UTILITIES WHICH OCCUR AS A RESULT OF PROJECT CONSTRUCTION WITHIN OR CONTIGUOUS TO EXISTING RIGHT-OF-WAY.

3. OPEN CUTTING OF PAVED OR SURFACE TREATED STATE ROADS IS NOT PERMITTED UNLESS APPROVED BY THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION.

4. THE DEVELOPER IS RESPONSIBLE FOR ALL TRAFFIC CONTROL.

5. A SMOOTH GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING ROAD TO THE PROPOSED EDGE OF PAVEMENT TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF ANY WATER IN THE ROADWAY.

6. OVERLAY OF EXISTING PAVEMENT SHALL BE A MINIMUM OF 1.5". ANY COSTS ASSOCIATED WITH PAVEMENT OVERLAY, OR THE MILLING OF EXISTING PAVEMENT TO OBTAIN REQUIRED DEPTH, SHALL BE THE RESPONSIBILITY OF THE DEVELOPER.

7. DITCHES SHALL BE SEEDED AND MULCHED TO ACHIEVE STABILIZATION. ADDITIONAL DITCH LININGS SHALL BE PROVIDED IF WARRANTED TO ACHIEVE STABILIZATION.

8. TRAFFIC CONTROL SIGNS AND THE MAINTENANCE OF TRAFFIC SHALL COMPLY WITH THE STANDARDS OF THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION.

9. ALL GUARDRAILS SHALL BE IN ACCORDANCE WITH WVDOH STANDARD DETAILS BOOK VOLUME 1. THE GUARDRAIL POST SHALL BE PRESSURE-TREATED.

GENERAL C.T.U.B. UTILITY NOTES:

1. REFER TO THE CHARLES TOWN UTILITY BOARD (CTUB) SANITARY SEWER SYSTEM SPECIFICATIONS DATED MAY 2016, AND THE LATEST MODIFICATIONS OR REVISIONS THERETO, FOR SANITARY SEWER CONSTRUCTION METHODS, MATERIALS, FIELD QUALITY CONTROL, AND FOR ALL DETAILS AND SPECIFICATIONS FOR ALL SANITARY SEWER LINES TO BE SERVED BY THE CHARLES TOWN UTILITY BOARD.
2. SEPARATION OF WATER MAINS / SANITARY SEWERS: ALL NEW WATER MAINS SHALL CONFORM TO THE WEST VIRGINIA BUREAU FOR PUBLIC HEALTH, OFFICE OF ENVIRONMENTAL HEALTH SERVICES, ENVIRONMENTAL ENGINEERING DIVISION, PUBLIC WATER SYSTEM DESIGN STANDARDS 64CSR77 10.7 SEPARATION OF WATER MAINS, SANITARY SEWERS AND STORM SEWERS INCLUDING:
   A. PARALLEL INSTALLATION – WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWER. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.
   B. CROSSINGS – WATER MAINS SHALL CROSS ABOVE SEWERS AND SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE BOTTOM OF THE WATER MAIN AND TOP OF THE SEWER. AT CROSSINGS, ONE FULL LENGTH (20 FEET) OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. SPECIAL STRUCTURAL SUPPORT FOR THE WATER AND SEWER PIPES MAY BE REQUIRED.
   C. HORIZONTAL SEPARATION – A MINIMUM OF 10 FEET SEPARATION BETWEEN SEWER LINES AND WATER LINES MUST BE MAINTAINED. IN CASES WHERE THE 10 FEET MINIMUM CANNOT BE MAINTAINED, THE SEWER PIPE SHALL BE 18" LOWER THAN THE WATER LINE AND CONSTRUCTED OF A PRESSURE TYPE PIPE. WHEN LINES ARE PLACED WITHIN 5 FEET OF EACH OTHER, PERMANENT IDENTIFICATION TAPE MUST BE BURIED DIRECTLY ABOVE THE LINES DENOTING "SEWER LINE" OR POTABLE WATER LINE.
   D. VERTICAL SEPARATION – A MINIMUM OF 18" OF SEPARATION BETWEEN THE TOP OF THE SEWER LINES AND THE BOTTOM OF WATER LINES MUST BE MAINTAINED. IN CASES WHERE THE 18" CANNOT BE MAINTAINED, THE SEWER LINE SHALL CROSS AT MIDPOINT OF A 20' LONG JOINT OF THE WATER LINE AND BE CONSTRUCTED OF PRESSURE TYPE PIPE. A SEWER LINE SHALL NOT BE CONSTRUCTED OVER TOP OF A WATER LINE. IF THE STANDARD VERTICAL INSTALLATION REQUIREMENTS CANNOT BE MAINTAINED, THE SEWER LINE SHALL BE ENCASED SO THAT THE CASING EXTENDS AT LEAST 15 FEET EACH SIDE OF THE CROSSING WITH A MINIMUM OF 18" VERTICAL SEPARATION.
3. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN THE WATER DISTRIBUTION SYSTEM AND A SANITARY SEWER SYSTEM; ANY PIPES, PUMPS, HYDRANTS OR TANKS WHEREBY UNSAFE WATER OR OTHER CONTAMINATING MATERIALS MAY BE DISCHARGED OR DRAWN INTO THE SYSTEM.
4. PIPE BEDDING – NO. 8 OR NO. 10 LIMESTONE SHALL BE USED FOR ALL PIPE BEDDING UNLESS OTHERWISE APPROVED BY CTUB. SANITARY SEWER MAIN AND SANITARY LATERALS SHALL BE INSTALLED WITH MINIMUM 6" BEDDING BELOW PIPE AND 12" OVER PIPE.
5. REFER TO THE CTUB SEWER SYSTEM SPECIFICATIONS, AND THE LATEST MODIFICATIONS OR REVISIONS THERETO, FOR:
   - A LIST OF MATERIALS REPRESENTING THE MINIMUM REQUIREMENTS ACCEPTABLE FOR USE BY CTUB.
   - ALL PIPE, FITTINGS, AND OTHER RELATED MATERIALS USED IN THE CONSTRUCTION OF LINES
   - FIRE HYDRANT STANDARDS AND SPECIFICATIONS
   - GRAVITY SEWER CONSTRUCTION METHODS & PIPELINE TESTING.
   - MANHOLES SUBMITTALS, DELIVERY, STORAGE & HANDLING, INSPECTION, PREPARATION, CONSTRUCTION METHODS, AND VACUUM TESTING.
6. CAST IN-PLACE CONCRETE SPECIFICATIONS AND REQUIREMENTS.

SANITARY SEWER:

1. ALL SANITARY SEWER LINES SHALL BE COVERED WITH A MINIMUM OF 48" OF EARTH COVERING OVER THE TOP OF PIPE.
2. SEWER LINES SHALL BE LAID IN STRAIGHT LINE WITH UNIFORM SLOPE BETWEEN MANHOLES. SEWERS ON 20% SLOPE OR GREATER SHALL BE ANCHORED SECURELY WITH CONCRETE ANCHORS, OR APPROVED EQUAL (SEE CTUB SEWER SYSTEM SPECIFICATIONS FOR SPACING REQUIREMENTS).
3. MANHOLES – SHALL BE PRE-CAST CONCRETE MEETING REQUIREMENTS OF AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM). THE MINIMUM BASE DIAMETER SHALL BE 48" (MINIMUM OPENING 24"). THE INSIDE BASE OF THE MANHOLE SHALL BE FILLED WITH CONCRETE TO FORM A BENCH SLOPING TOWARD THE FLOW CHANNEL. WATERTIGHT MANHOLE COVERS ARE TO BE USED WHEREVER THE MANHOLE COVERS MAY BE FLOODED BY STREET RUNOFF OR HIGH WATER. PIPE CONNECTIONS TO MANHOLES AND JOINTS ON MANHOLES SHALL BE WATERTIGHT. CONCRETE MANHOLES SHALL BE WATERPROOFED ON THE EXTERIOR WHERE GROUNDWATER CONDITIONS ARE UNFAVORABLE.
4. GRAVITY SEWER LINES SHALL BE PVC PIPE, SCHEDULE SDR-35. ALL PIPES AND FITTINGS SHALL MEET OR EXCEED ALL REQUIREMENTS OF ASTM SPECIFICATIONS D-3034 AND/OR OTHER REQUIREMENTS OF UNI-BELL UNI-B4. JOINTS SHALL BE EITHER O-RING TYPE "OR" MECHANICAL SEAL JOINT MEETING MATERIAL REQUIREMENTS OF ASTM 1784 AND JOINT REQUIREMENTS OF ASTM 3212. NO SOLVENT CEMENT JOINTS WILL BE PERMITTED IN FIELD CONSTRUCTION, EXCEPT AS SPECIFICALLY AUTHORIZED BY CTUB.
5. LATERAL PIPING AND FITTINGS, IN SIZES 4" THROUGH 6", SHALL BE PVC PIPE, SCHEDULE 40.
10. THE DEVELOPER SHALL FURNISH AND INSTALL THE WYE BRANCHES, RISER PIPE, SERVICE LATERALS, TRANSITION FITTINGS, AND INCIDENTALS WHERE SHOWN ON THE PLANS OR WHERE DIRECTED BY THE CTUB.

WEST VIRGINIA AMERICAN WATER NOTES:

1. INSTALLATION OF MAINS:
   A. BEFORE ANY PIPE IS INSTALLED IN TRENCHES, IT SHALL BE INSPECTED FOR DAMAGE AND THE INSIDE OF THE PIPE SHALL BE SWABBED TO REMOVE LOOSE DIRT AND FOREIGN OBJECTS. NO DAMAGED PIPE WILL BE PERMITTED TO BE INSTALLED.
   B. BEDDING: CONTINUOUS AND UNIFORM BEDDING SHALL BE PROVIDED IN THE TRENCH FOR ALL BURIED PIPE. BACKFILL MATERIAL SHALL BE TAMPED IN LAYERS AROUND THE PIPE AND TO A SUFFICIENT HEIGHT ABOVE THE PIPE TO ADEQUATELY SUPPORT AND PROTECT THE PIPE. STONES FOUND IN THE TRENCH SHALL BE REMOVED FOR A DEPTH OF AT LEAST 6" BELOW THE BOTTOM OF THE PIPE. SEE TYPICAL WATER LINE TRENCH DETAIL.
   C. COVER: ALL WATER MAINS SHALL BE COVERED WITH A MINIMUM OF 48" OF EARTH COVERING TO PREVENT FREEZING. ALL MAINS LESS THAN 8" IN DIAMETER AND WITHIN 5 FEET OF A HEAVILY TRAVELED HIGHWAY SHALL HAVE A MINIMUM OF 42" OF COVERING.
   D. BLOCK: ALL TEES, BENDS, PLUGS AND HYDRANTS SHALL BE PROVIDED WITH TIE RODS OR JOINTS DESIGNED TO PREVENT MOVEMENT.
   E. PRESSURE AND LEAKAGE TESTING: ALL TYPES OF INSTALLED PIPE SHALL BE PRESSURE TESTED AND LEAK TESTED IN ACCORDANCE WITH AWWA STANDARD C600. DEVELOPER SHALL SUBMIT PLAN OF PROPOSED TESTING.
   F. DISINFECTION: ALL NEW, CLEANED OR REPAIRED WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651. THE SPECIFICATIONS SHALL INCLUDE MICROBIOLOGICAL TESTING OF ALL WATER MAINS.
   G. ALL NON-METALLIC MAINS SHALL BE PROVIDED WITH TRACER WIRE OR METALLIC TAPE; AS DIRECTED BY WEST VIRGINIA AMERICAN WATER.
2. WATER SERVICE LINES SHOWN ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON BUILDING ARCHITECTURAL DRAWINGS AND UTILITY CONNECTION LOCATIONS.
3. CONTRACTOR SHALL CONTACT WEST VIRGINIA AMERICAN WATER AT LEAST 48 HOURS BEFORE CONNECTING TO THE LATERAL SYSTEM TO ALLOW FOR WEST VIRGINIA AMERICAN WATER REPRESENTATIVES TO PERFORM THE ONSITE INSPECTION OF THE CONNECTION.
4. CONTRACTOR SHALL NOTIFY WEST VIRGINIA AMERICAN WATER PRIOR TO INSTALLATION OF ANY IMPROVEMENTS WITHIN THE WATER AND SEWER EASEMENTS TO ENSURE THAT NO FENCE POSTS OR OTHER IMPROVEMENTS ARE PLACED ON TOP OF THE UTILITIES.
5. A PRE-CONSTRUCTION MEETING WITH WEST VIRGINIA AMERICAN WATER, WVAW'S 3RD PARTY INSPECTOR, DEVELOPER, AND WATERLINE CONTRACTOR MUST TAKE PLACE PRIOR TO THE START OF CONSTRUCTION.
6. WVAW MUST BE NOTIFIED A MINIMUM OF 2 WEEKS PRIOR TO START OF CONSTRUCTION. INSPECTION FEES WILL APPLY.
7. IN THE EVENT BLASTING IS TO OCCUR ON SITE, A BLASTING PLAN MUST BE PROVIDED TO WVAW FOR REVIEW PRIOR TO START OF WORK.

ZONING ORDINANCE SUMMARY:

1. CURRENT ZONE: HIGHWAY COMMERCIAL.
2. PROPOSED USE: HIGHWAY COMMERCIAL (ROADWAY)
3. THE PERIMETER INFORMATION IS BASED UPON RECORD OF INFORMATION PER GENERAL NOTE #4.
4. PROPERTY CORNERS ARE TO BE SET WITH ⅝" x 30" REBARS WITH I.D. CAPS UNLESS OTHERWISE NOTED.
5. ALL PROPOSED UTILITIES (E.G. ELECTRIC, CABLE, TELEPHONE) SHALL BE UNDERGROUND.
6. ALL STORMWATER MANAGEMENT PIPES AND FACILITIES ARE DESIGNED FOR THE 10-YEAR STORM EVENT AND ARE SHOWN IN THE COMPUTATIONS WITHIN THIS PLAN.
7. CUT AND FILL ACTIVITY/MATERIAL SHALL NOT ENCROACH ON ADJOINING PROPERTIES WITHOUT PERMISSION.
8. REFUSE DISPOSAL WILL BE PROVIDED BY A SCREENED DUMPSTER AS SHOWN ON THIS PLAN.

STORMWATER MANAGEMENT SUMMARY:

STORMWATER MANAGEMENT FOR THE SUBJECT PROPERTY IS PROVIDED BY THE WAWA CONVENIENCE STORE SITE PLAN (23-60-SP). THIS STORMWATER FACILITY WAS DESIGNED TO HANDLE THE FOLLOWING AS SHOWN IN THE "STORMWATER MANAGEMENT NARRATIVE FOR WAWA – RANSON", DATED JANUARY 26, 2024:

LOT 2 (CREATED WITH PLAT ASSOCIATED WITH 23-60-SP):	100% IMPERVIOUS
LOT 3 (RESIDUAL PARCEL CREATED WITH PLAT ASSOCIATED WITH 23-60-SP):	85% IMPERVIOUS
ROADWAY (INCLUDES ROAD CONSTRUCTED WITH 23-60-SP & THIS PLAN):	75% IMPERVIOUS

THE FAIRFAX CROSSING INFRASTRUCTURE PROJECT PROPOSES 0% IMPERVIOUS FOR LOTS 2 & 3 AND 76% IMPERVIOUS FOR THE ROADWAY BASED ON THE BELOW CALCULATION:

ROADWAY IMPERVIOUS AREA CALCULATION:
0.96 AC IMPERVIOUS AREA
1.26 AC TOTAL ROADWAY AREA PROPOSED (INCLUDING ENTRANCES OUTSIDE OF RIGHT-OF-WAY)
0.96 / 1.26 = 76.19%

THE EXCESS IMPERVIOUS AREA OVER THE ESTIMATED 75% WILL HAVE TO BE ACCOUNTED FOR IN THE FUTURE DEVELOPMENT OF LOTS 2 & 3 TO ENSURE THE TOTAL IMPERVIOUS AREA TO SHARED STORMWATER BASIN.

THE EXISTING STORMWATER FACILITY WILL NEED TO BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF THE FAIRFAX CROSSING INFRASTRUCTURE IMPROVEMENTS.

BASED ON THIS SUMMARY, THE PROPOSED DEVELOPMENT IS CONSISTENT WITH THE ORIGINAL APPROVED DESIGN AND NO ADDITIONAL STORMWATER MANAGEMENT MEASURES ARE REQUIRED.

WATER QUALITY, AS REQUIRED BY THE WEST VIRGINIA MS-4 STORMWATER COMPLIANCE SPREADSHEET WILL BE PROVIDED JUST FOR THE PROPOSED IMPROVEMENTS WITHIN THE ROAD RIGHT-OF-WAY AND THE SMALL PORTIONS OF THE ENTRANCES LEAVING THE RIGHT-OF-WAY. THE TOTAL IMPERVIOUS AREA FOR THE ROADWAY IMPROVEMENTS IS 0.96 AC RESULTING IN A RUNOFF REDUCTION REQUIREMENTS OF 3,581 CF. THE PROPOSED LEVEL 2 BIORETENTION FACILITY "BR01" PROVIDES 3,830 CF OF TREATMENT VOLUME. THEREFORE, THE MS-4 VOLUME REDUCTION REQUIREMENT HAS BEEN MET.

GOV'T. AGENCIES/UTILITIES:

- CITY OF RANSON
  312 S. MILDRED STREET
  CHARLES TOWN, WV 25414
  (304) 725-1010
- SEWER
  CITY OF CHARLES TOWN UTILITY BOARD
  108 W. CONGRESS STREET
  CHARLES TOWN, WV 25414
  (304) 725-2316
- WATER
  WEST VIRGINIA AMERICAN WATER
  150 EAST BURR BOULEVARD
  KEARNEYSVILLE, WV 25430
  (304) 728-2077
- ELECTRIC
  THE POTOMAC EDISON COMPANY
  18444 NORTHWESTERN TURNPIKE
  AUGUSTA, WV 26704
  (800) 686-0011
- TELECOMMUNICATIONS
  FRONTIER COMMUNICATIONS
  1108 N. MILDRED STREET
  RANSON, WV 25438
  (304) 728-8500
- GAS
  MOUNTAINEER GAS
  67 AERO STREET
  MARTINSBURG, WV 25401
  (800) 834-2070
- TRANSPORTATION
  WEST VIRGINIA DIVISION OF HIGHWAYS,
  DISTRICT FIVE
  2120 NORTHWESTERN TURNPIKE
  BURLINGTON, WV 26710
  (304) 289-3521
- OTHER
  MISS UTILITY
  5608 MACCORKLE AVE, SW
  SOUTH CHARLESTON, WV 25309
  (800) 245-4848 OR 811

NOTES:
THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION.

INTEGRITY FEDERAL SERVICES
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RYAN P. PERRY — REGISTERED — 17961 — STATE OF WEST VIRGINIA — PROFESSIONAL ENGINEER

REVISIONS

01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

GENERAL NOTES

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: AS SHOWN VERT.:
DATE:	DECEMBER 2024
JOB:	3079-0109
DRAWN: CAS	CHECK: JAE
CADD:	C-GI-002.DWG
NCS:	GI-002
SHEET:	02 OF 19

FILE PATH: G:\PROJECTS\2023\3079 FAIRFAX CROSSING COMMERCIAL\WORKING\CIVIL\GI-002.DWG
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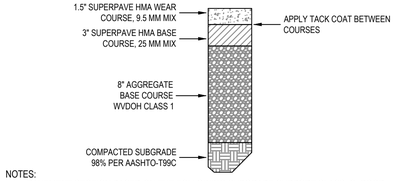
MINIMUM TYPICAL PAVEMENT SECTIONS:

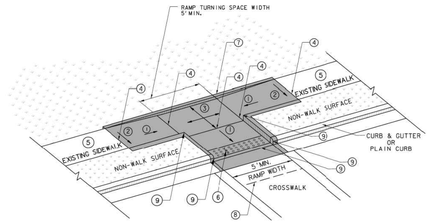
NOT TO SCALE

ASPHALT PAVEMENT



NOTES:

1. PAVEMENT SECTION BASED ON THE FOLLOWING SUBGRADE SUPPORT CLASS: C (POOR).
2. SOILS TESTS OF SUBGRADE MUST BE SUBMITTED FOR ACTUAL DETERMINATION BASED ON CBR OF REQUIRED PAVEMENT SECTION THICKNESS PRIOR TO CONSTRUCTION.
3. ALL SUBGRADE MATERIAL SHALL BE COMPACTED TO 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T99C.
4. ALL BASE MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T99C.
5. BITUMINOUS CONCRETE BASE COURSE SHALL BE APPLIED TO THE PREPARED GRAVEL BASE SURFACE FOLLOWING THE APPLICATION OF A LIQUID ASPHALT PRIME COAT.
6. ASPHALT MATERIAL SHALL COMPLY WITH THE MINIMUM SPECIFICATIONS REQUIRED BY THE WVDOH FOR PUBLIC ROADS.



TYPE IV RAMP

NOTES

THE TYPE OF RAMP TO BE USED SHALL BE AS SPECIFIED ON THE PLANS. THESE STANDARDS CAN BE CONSIDERED GUIDELINES IN SELECTING RAMP TYPES, HOWEVER THEY CAN BE DEVIATED FROM WITH A SPECIAL DETAIL AS NOTED IN PLANS.

RAMP CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 609 OF THE CURRENT WVDOT, DOH STANDARD SPECIFICATIONS ROADS AND BRIDGES AND ANY SUBSEQUENT DOH SUPPLEMENTAL SPECIFICATIONS, AND THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG) DATED JULY 26, 2011. RAMP SURFACE SHALL INCLUDE A "DETECTABLE WARNING SURFACE" (SEE PVT7 SHT. 11 OF 13) AS SHOWN FOR EACH RAMP TYPE. A COARSE BROOM FINISH, TRANSVERSE TO FLARE SLOPES, OR EQUAL NON-SKID FINISH SHALL BE PROVIDED ON CONCRETE SURFACES.

NORMAL GUTTER FLOW LINE AND PROFILE SHALL BE MAINTAINED THROUGH THE RAMP AREA, UNLESS OTHERWISE SHOWN OR SPECIFIED. POSITIVE DRAINAGE MUST BE MAINTAINED SO THAT NO PONDING OCCURS WITHIN THE RAMP OR CLEAR SPACE AREA.

1/4" MINIMUM, 1/2" MAXIMUM PREFORMED EXPANSION JOINT FILLER, MEETING THE REQUIREMENTS OF SECTION 609 OF THE SPECIFICATIONS, AS NOTED ABOVE, SHALL BE PLACED AT ALL LOCATIONS WHERE RAMP CONTACTS CURB, GUTTER, CONCRETE PAVEMENT, OR OTHER RIGID OBJECTS.

WHERE EXISTING SIDEWALK CONNECTS TO PROPOSED SIDEWALK OR RAMPS, EXPANSION JOINTS ALONG WITH DOWEL BARS WILL BE PLACED. DOWEL BARS WILL BE UTILIZED BETWEEN EXISTING AND PROPOSED TO REDUCE VERTICAL CHANGE. SEE SHEET 11 FOR ADDITIONAL INFORMATION.

SAWCUTS WILL BE UTILIZED DURING DEMOLITION OF EXISTING SIDEWALKS. SIMILAR METHODS MAY BE USED UPON APPROVAL BY FIELD ENGINEER.

RAMPS SHALL NOT EE PLACED IN LINE WITH DRAINAGE STRUCTURES. LOCATION OF THE RAMP SHALL TAKE PRECEDENCE OVER LOCATION OF THE DRAINAGE STRUCTURE, EXCEPT WHERE EXISTING STRUCTURES ARE BEING UTILIZED FOR CONSTRUCTION OF NEW RAMPS.

ANY GRATE IN PEDESTRIAN AREAS SHALL HAVE OPENINGS NOT GREATER THAN 1/2" AND SHALL BE PLACED WITH LONG DIMENSION OF OPENING PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.

IF THE 8.33% (12:1) SLOPE CANNOT BE OBTAINED DUE TO GRADE OF THE ADJACENT ROADWAY, THE SLOPED PORTION OF THE RAMP SHALL BE EXTENDED TO A MINIMUM LENGTH OF 15'-0".

EXISTING CROSS WALK AND STOP BAR MARKINGS TO BE ERADICATED AND RELOCATED AS DICTATED BY PROPOSED RAMP LOCATIONS. COST NOT INCIDENTAL TO COST OF PROPOSED RAMP.

CURB RAMP WIDTH SHALL MATCH SIDEWALK WIDTH PLUS CLEARANCE. TYPICAL SIDEWALK WIDTH IS 5'. MINIMUM RAMP WIDTHS LESS THAN 5' REQUIRE DIVISION/DISTRICT ENGINEER APPROVAL. WIDTHS LESS THAN 4' REQUIRE AN EXCEPTION JUSTIFICATION REPORT. SEE SHEET 11 FOR INFORMATION REGARDING RAMP THICKNESS.

GRADE BREAKS SHALL BE PERPENDICULAR TO THE DIRECTION OF THE RAMP RUN. SURFACE SLOPES THAT MEET AT GRADE BREAKS SHALL BE FLUSH.

CLEAR SPACE - BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE THE WIDTH OF THE CURB RAMP AND EXTENDING 4' MINIMUM INTO THE ABUTTING ROADWAY SHALL BE PROVIDED WITHIN THE WIDTH OF THE PEDESTRIAN STREET CROSSING AND WHOLLY OUTSIDE THE PARALLEL TRAVEL LANE. SURFACE TO MATCH EXISTING. ANY CLEAR SPACE WORK TO BE COMPLETED WILL BE INCIDENTAL TO THE COST OF THE RAMP.

ALL CURB RAMPS SHALL BE CONSTRUCTED TO PROVIDE ACCESS TO EXISTING OPERABLE PARTS. AN EXAMPLE OF THIS WOULD BE PEDESTRIAN PUSH BUTTONS.

LEGEND

1. 8.33% (12:1) MAXIMUM RAMP SLOPE INCLUDING CONSTRUCTION TOLERANCE. SLOPE OF RAMP SHALL CARRY THROUGH TO FACE OF CURB
2. CROSS SLOPE: 2.00% MAXIMUM INCLUDING CONSTRUCTION TOLERANCE
3. CURB RAMPS REQUIRE A (5'-0") MINIMUM TURNING SPACE WHERE PEDESTRIANS PERFORM TURNING MANEUVERS WITH A MAXIMUM CROSS SLOPE OF 2% AND LONGITUDINAL SLOPE MATCHING ROADWAY
4. GRADE BREAK REQUIRED TO BE FLUSH (0") AND PERPENDICULAR TO PEDESTRIAN PATH OF TRAVEL
5. IF SIDEWALK IS EXISTING AND NON-COMPLIANT SEE "TRANSITION TO EXISTING NON-COMPLIANT SIDEWALK" DETAIL SHEET 12
6. DETECTABLE WARNING SURFACE. SEE "DETECTABLE WARNING SURFACE (DWS)" DETAIL SHEET 11
7. CURB WALL OR CHEEK WALL AS DICTATED BY FIELD CONDITIONS. SEE "EXISTING ADJACENT SURFACE TRANSITION" DETAIL SHEET 13
8. CLEAR SPACE - WIDTH OF CURB RAMP AND EXTENDING 4' MINIMUM
9. 3/4" CHAMFER EDGE

PAY LIMITS FOR CURB RAMPS (EXCLUDING DWS)

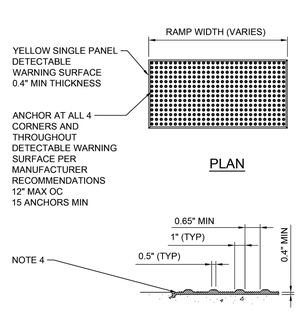
NOT TO SCALE

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

PREPARED 1-1-1999	
REVISION DATE	
7/15/15	
6/15/20	
5/17/21	

SIDEWALK RAMPS
(Sheet 9 of 13)
TYPE IV RAMP

STANDARD SHEET PVT 7

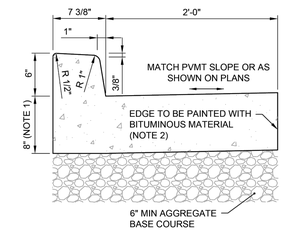


NOTES:

1. PROPOSED DETECTABLE WARNING SURFACE AND PANEL ANCHORING PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO INSTALLATION.
2. CAST-IN-PLACE DETECTABLE WARNING PANELS ARE PREFERRED FOR NEW CONSTRUCTION. SURFACE ANCHOR PANELS MAY BE USED WHEN RETROFITTING EXISTING CURB RAMPS.
3. INSTALL DETECTABLE WARNING SURFACE PER MANUFACTURER'S INSTRUCTIONS.
4. FOR NEW CONSTRUCTION, DEPRESS CONCRETE UNDER DETECTABLE WARNING PANEL SO PANEL IS FLUSH WITH SURROUNDING CONCRETE. FOR RETROFIT INSTALLATIONS, PROVIDE DETECTABLE WARNING SURFACE WITH BEVELED EDGES TO ENSURE SURFACE DISCONTINUITY IS LESS THAN 0.25"

NOT TO SCALE

RANSON	DETECTABLE WARNING SURFACE CITY OF RANSON, WEST VIRGINIA	DETAIL NO.	SHEET NO.	REVISION DATE
		SW-03	1 OF 1	3/2022

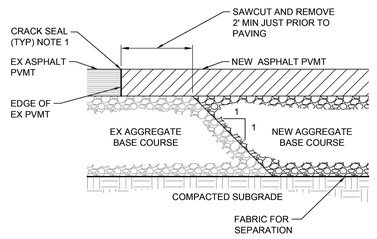


NOTES:

1. MATCH THICKNESS OF PAVEMENT WHEN ABUTTING CONCRETE PAVEMENT.
2. DOES NOT APPLY WHEN ABUTTING CONCRETE PAVEMENT. INSTEAD A LONGITUDINAL JOINT WITH TIE BARS OR TIE BOLT ASSEMBLIES SHALL BE CONSTRUCTED AT THIS LOCATION.
3. ALL CURB JOINTS SHALL BE MADE BY ACCEPTABLE FORMING METHODS.

NOT TO SCALE

RANSON	COMBINATION CURB AND GUTTER POSTED SPEED ≤ 25 MPH CITY OF RANSON, WEST VIRGINIA	DETAIL NO.	SHEET NO.	REVISION DATE
		CG-01	1 OF 1	3/2022

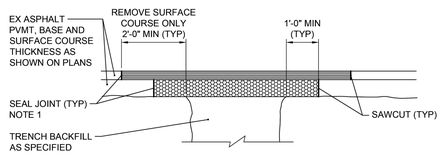


NOTES:

1. PAINT EDGE OF EX ASPHALT WITH TACK COAT PRIOR TO PAVING. CRACK SEAL JOINT AFTER PAVING OPERATION HAS BEEN COMPLETED.

NOT TO SCALE

RANSON	ASPHALT PAVEMENT CONNECTION CITY OF RANSON, WEST VIRGINIA	DETAIL NO.	SHEET NO.	REVISION DATE
		PVT-03	1 OF 1	3/2022

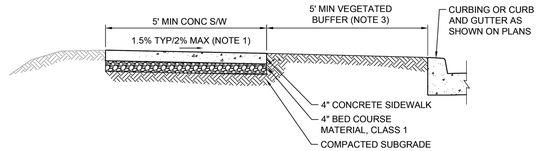


NOTES:

1. PAINT EDGE OF EX ASPHALT WITH TACK COAT PRIOR TO PAVING. CRACK SEAL SURFACE OF JOINT AFTER PAVING OPERATION HAS BEEN COMPLETED.

NOT TO SCALE

RANSON	ASPHALT PAVEMENT RESTORATION CITY OF RANSON, WEST VIRGINIA	DETAIL NO.	SHEET NO.	REVISION DATE
		PVT-04	1 OF 1	3/2022



NOTES:

1. SIDEWALK CROSS SLOPE OF 2% IS ABSOLUTE MAX. THERE IS NO CONSTRUCTION TOLERANCE FOR INCREASED CROSS-SLOPE IN EXCESS OF 2%.
2. MAXIMUM ALLOWABLE LONGITUDINAL SLOPE IS 5% OR SLOPE OF ADJACENT ROADWAY, WHICHEVER IS GREATER.
3. SUBJECT TO APPROVAL BY THE CITY, VEGETATED BUFFER MAY BE OMITTED WHERE SIDEWALK IS ADJACENT TO A PARKING LANE OR A BIKE LANE.

NOT TO SCALE

RANSON	CONCRETE SIDEWALK WITH BUFFER CITY OF RANSON, WEST VIRGINIA	DETAIL NO.	SHEET NO.	REVISION DATE
		SW-01	1 OF 1	3/2022

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REVISIONS

01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

GENERAL DETAILS

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: AS SHOWN VERT.:
DATE:	DECEMBER 2024
JOB:	3079-0109
DRAWN: CAS	CHECK: JAE
CADD:	C-GI-002.DWG
NCS:	GI-501
SHEET:	03 OF 19

FILENAME: G:\PROJECTS\COMMERCIAL\2079-0109 FAIRFAX CROSSING, COMMERCIAL\CADD\PLANS_AS\GI-002.DWG
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DEMOLITION LEGEND:

- REMOVE PORTION OF EX. GRAVEL DRIVE
- VACATE PORTION OF EX. TEMP. ACCESS ESM'T
- VACATE PORTION OF EX. TEMP. INGRESS/EGRESS & UTILITY ESM'T

CURVE TABLE

CURVE	ARC LENGTH	RADIUS	DELTA	TANGENT	CHORD	CHORD BEARING
C1	128.64'	256.00'	28°47'25"	65.71'	127.29'	S42°27'44"E
C2	117.00'	340.00'	19°43'00"	59.08'	116.42'	S46°59'56"E
C3	53.80'	328.76'	9°22'37"	26.96'	53.74'	N32°38'42"W

SOURCE: USDA/NRCS SOIL SURVEY FOR JEFFERSON COUNTY

TYPE	NAME	SLOPE	HSG
Fk	FUNKSTOWN SILT LOAM	–	C
PmB	POPLIMENTO SILT LOAM	3–8%	B
PmC	POPLIMENTO SILT LOAM	8–15%	B
Uu	URBAN LAND – UDORTHENTS	–	–

WV ROUTE 9 - (S.B.L.)
VETERANS MEMORIAL HIGHWAY
VARIABLE WIDTH RIGHT-OF-WAY

WV STATE GRID NORTH (NAD83)

WVDOH NON-CONTROLLED ACCESS TRACT 3 D.B. 595, P. 403

WVDOH NON-CONTROLLED ACCESS TRACT 1 D.B. 594 P. 381

S 28°30'28" E 152.00'
S 25°32'49" E 290.39'
S 26°33'42" E 78.28'
N 61°26'29" E 35.00'
S 41°37'01" E 66.63'
N 39°09'19" W 133.26'
S 28°30'41" E 149.66'
S 61°29'19" W 35.00'
N 28°06'56" W 96.40'
N 61°55'59" E 225.53'
N 61°55'59" E 459.55'
N 61°55'59" E 134.10'
N 61°55'59" E 273.63'
S 28°04'01" E 271.42'
S 28°04'01" E 88.49'
S 28°04'01" E 299.37'
N 56°51'35" E 114.49'
S 33°08'24" W 84.00'
S 56°51'35" E 114.49'

EX. 24" CMP
EX. 15" HDPE
EX. 18" HDPE
EX. 12" HDPE
EX. 8" CMP
EX. 6" CMP
EX. 10" PVC SAN. SEW.
EX. 8" PVC SAN. SEW.
EX. 6" PVC SAN. SEW.
EX. 15" PVC WM
EX. 16" DIP WM
EX. 12" PVC WM
EX. 6" DIP WM
EX. 6" PVC WM
EX. 8" DIP WM
EX. 8" PVC WM
EX. 4" PVC WM
EX. 6" PVC WM
EX. WV DOH MONUMENT
EX. 20' WATER ESM'T D.B. 1174 P. 457
EX. 15' WATER ESM'T D.B. 1174 P. 457

CURVE TABLE						
CURVE	ARC LENGTH	RADIUS	DELTA	TANGENT	CHORD	CHORD BEARING
C1	128.64'	256.00'	28°47'25"	65.71'	127.29'	N42°27'44"W
C2	117.00'	340.00'	19°43'00"	59.08'	116.43'	S46°59'56"E
C3	53.84'	340.00'	9°04'25"	26.98'	53.79'	S32°36'13"E
C4	149.67'	298.00'	28°46'38"	76.45'	148.10'	N42°27'20"W

WV ROUTE 9 - (S.B.L.)
VETERANS MEMORIAL HIGHWAY
VARIABLE WIDTH RIGHT-OF-WAY

WV STATE GRID NORTH (NAD83)

WVDOH NON-CONTROLLED ACCESS "TRACT 3" D.B. 595, P. 403

WVDOH NON-CONTROLLED ACCESS "TRACT 1" D.B. 594 P. 381

S28°30'28"E 152.00'
S25°32'49"E 290.39'
S26°33'41"E 78.28'
N61°29'32"E 35.00'
S41°37'01"E 66.63'
S38°04'12"E 133.26'

EX. WVDOH PERMANENT PONDING ESM'T D.B. 595, PG. 403

APPROX. LOCATION EX. STORM DRAIN ESM'T D.B. 1305, PG. 86

EX. UTILITY ESM'T P.B. 23 P. 58

EX. WVDOH MONUMENT

EX. 20' WATER ESM'T D.B. 1174 P. 457

EX. TEMP. ACCESS DRIVE TO BOOSTER STATION D.B. 1174 P. 457

SWM AREA 1
157843 SQ. FT.
3.6236 AC.

SWM AREA 1

SWM AREA

INWOOD 165 LLC.
TAX MAP 8, PARCEL 1.6
D.B. 1235 PG. 693
(13.02866 AC.)
ZONED: SMARTCODE NEW COMMUNITY / HIGHWAY COMMERCIAL
USE: VACANT

S61°55'59"W 226.53'

165.29'

252.99'
201.34'
S28°03'36"E 794.86'
340.53'
79.71'

20' SAN SEW ESM'T

EX. SAN. SEW. ESM'T P.B. 23 P. 58

EX. STORM DRAIN ESM'T

PTC DEVELOPER LLC.
TAX MAP 8, PARCEL 1.4
D.B. 1235 PG. 707
(14.81079 AC.)
ZONED: GENERAL NEIGHBORHOOD (T4) / TOWN CENTER (T5)
USE: VACANT

N61°32'17"E 493.30'

20' STM ESM'T

S61°55'59"W 323.71'

N61°55'59"E 323.68'

FUTURE HAMILL BLVD
80' RIGHT-OF-WAY
(P.B. 23 P. 76)

EX. TEMP. ACCESS ESM'T "B" P.B. 23 P. 58

LOT #1
TAX MAP 8, PARCEL 1.14
D.B. 1305, PG. 76
ZONED: HIGHWAY COMMERCIAL
USE: CONVENIENCE STORE

LOT 1
81612 SQ. FT.
1.8736 AC.

LOT 2
65171 SQ. FT.
1.4961 AC.

LOT 3
110218 SQ. FT.
2.5302 AC.

328.00'

323.65'

N61°55'59"E 407.65'

80' TEMPORARY ACCESS ESM'T

EX. STORM DRAIN ESM'T

EX. WATER ESM'T P.B. 34 P. 53

APPROX. LOCATION EX. STORM DRAIN ESM'T D.B. 1305, PG. 86

EX. TEMP. ACCESS ESM'T "B" P.B. 23 P. 58

C3
C2
C4
C1

197.11'
201.34'
S28°04'01"E 738.98'
340.53'

20' W/L ESM'T

JEFFREY LANE
84' R.O.W

S28°04'01"E 739.08'

84.00'
41.58'
42.42'

S56°51'28"E 111.49'

41.58'
34.00'
42.42'

S56°51'28"E 111.57'

N33°08'32"E 84.00'

N56°51'28"W 111.49'

JEFFREY LANE
84' R.O.W.

VARIABLE W/L ESM'T

S28°04'01"E 738.98'

20' STM ESM'T

FAIRFAX CIRCLE

INWOOD 165 LLC.
TAX MAP 8, PARCEL 1.6
D.B. 1235 PG. 693
(8.24864 AC.)
ZONED: GENERAL NEIGHBORHOOD (T4) / R6-RESIDENTIAL (R6)
USE: VACANT

INWOOD 165 LLC.
TAX MAP 8, P/O PARCEL 1.6
D.B. 1235 PG. 693
(22.58538 AC.)
ZONED: SUBURBAN (T3) / GENERAL NEIGHBORHOOD (T4) / TOWN CENTER (T5) / HIGHWAY COMMERCIAL (HC)
USE: VACANT

N61°29'43"E 299.17'

N17°29'58"E 299.52'

INWOOD 165 LLC.
TAX MAP 8, PARCEL 1.9
D.B. 1235 PG. 693
(13.02866 AC.)
ZONED: SMARTCODE NEW COMMUNITY / HIGHWAY COMMERCIAL
USE: VACANT

EX. TEMP. INGRESS/EGRESS & UTILITY ESM'T P.B. 23 P. 58

EX. WATER ESM'T P.B. 23 P. 58

40 20 0 40 80 120
GRAPHICAL SCALE: 1" = 40'

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RYAN P. PERRY
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PROFESSIONAL ENGINEER

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01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

PRELIMINARY PLAT

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: 1" = 40' VERT.:
DATE:	DECEMBER 2024
JOB:	3079-0109
DRAWN: CAS	CHECK: JAE
CADD:	C-PP-100.DWG
NCS:	XP-101
SHEET:	05 OF 19

FILE PATH: G:\PROJECTS\RANSON\JEFFERSON\FAIRFAX CROSSING COMMERCIAL\ENGINEER\C-PP-100.DWG
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EROSION AND SEDIMENT CONTROL NARRATIVE:

I. PROJECT DESCRIPTION:

THIS PROJECT IS FOR THE CONSTRUCTION OF THE EXTENSION OF JEFFREY LANE, STORM DRAINAGE, BIORETENTION FACILITY, AND PUBLIC UTILITIES.. THE TOTAL PROJECT AREA IS APPROXIMATELY 54.58 ACRES. THE TOTAL IMPERVIOUS AREA CREATED BY THE DEVELOPMENT OF THE SITE IS APPROXIMATELY ±1.15 ACRES. THE TOTAL DISTURBED AREA FOR THE PROJECT WILL BE APPROXIMATELY ±8.90 ACRES.

II. EXISTING SITE CONDITIONS:

THE TOPOGRAPHY ON THE SITE IS CHARACTERIZED AS VACANT OPEN FIELD ON FLAT AND MODERATELY SLOPING GROUND.SURFACE RUNOFF DRAINS EAST THROUGH THE SITE INTO THE STORMWATER BASIN PROPOSED WITH THE WAWA CONVENIENCE STORE SITE PLAN (23-60-SP).

III. ADJACENT AREAS:

THE SITE IS BOUNDED BY THE PROPOSED WAWA CONVENIENCE STORE TO THE NORTH (CURRENTLY VACANT FIELD), FUTURE JEFFERY LANE TO THE WEST (CURRENTLY VACANT FIELD), A FUTURE STORMWATER BASIN AND DRAINAGE CHANNELS TO THE EAST, AND VACANT FIELD TO THE SOUTH. THERE IS LITTLE POTENTIAL FOR OFFSITE EROSION AND SEDIMENT DAMAGE BY THIS PROJECT AS TEMPORARY EROSION AND SEDIMENT CONTROLS WILL BE USED DURING CONSTRUCTION AND PERMANENT STORMWATER MANAGEMENT CONTROLS WILL BE IN PLACE FOR THE FULLY DEVELOPED SITE.

IV. CRITICAL AREAS:

THERE ARE NO CRITICAL AREAS ON THIS SITE. DISTURBED AREAS WILL BE PROTECTED WITH SILT FENCE, AND/OR OTHER CONTROL MEASURES.

V. SOILS:

SOIL NAME	MAPPING UNIT	DEPTH TO RESTRICTIVE FEATURE	DRAINAGE CLASS	PERMEABILITY (IN/HR)	DEPTH TO WATER TABLE	HSG
FUNKSTOWN SILT LOAM	Fk	MORE THAN 80"	MOD. WELL DRAINED	MODERATELY HIGH TO HIGH, 0.57-1.98	20"-28"	C
POPLIMENTO SILT LOAM	PmB	MORE THAN 80"	WELL DRAINED	MODERATELY HIGH 0.20-0.57	MORE THAN 80"	B
POPLIMENTO SILT LOAM	PmC	MORE THAN 80"	WELL DRAINED	MODERATELY HIGH 0.20-0.57	MORE THAN 80"	B
POPLIMENTO SILT LOAM	PpC	MORE THAN 80"	WELL DRAINED	MODERATELY HIGH 0.20-0.57	MORE THAN 80"	B
URBAN LAND-UDORTHENTS	Uu	MORE THAN 80"	NOT AVAILABLE	NOT AVAILABLE	MORE THAN 80"	D

NOTES:
- SOILS INFORMATION PROVIDED BY THE USDA SOIL SURVEY OF JEFFERSON COUNTY, WEST VIRGINIA.

VI. POTENTIAL EROSION PROBLEM AREAS:

PER THE SOILS DATA SHOWN ABOVE, THE EXISTING SOILS LOCATED ONSITE HAVE A MEDIUM TO HIGH ERODABILITY POTENTIAL.

VII. EROSION AND SEDIMENT CONTROL ELEMENTS:

UNLESS OTHERWISE NOTED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL AND APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

1. MARK CLEARING LIMITS:

PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES, CLEARLY MARK ALL CLEARING LIMITS, SENSITIVE AREAS AND THEIR BUFFERS, AND TREES THAT ARE TO BE PRESERVED WITHIN THE CONSTRUCTION AREA. PLASTIC, METAL, OR STAKE WIRE FENCE MAY BE USED TO MARK CLEARING LIMITS. SAFETY FENCE SHOULD BE INSTALLED TO PREVENT PUBLIC ACCESS TO POTENTIALLY HAZARDOUS AREAS OF THE SITE AND TO PREVENT ACCESS TO EROSION AND SEDIMENT CONTROL MEASURES.

2. ESTABLISH CONSTRUCTION ACCESS:

ALL CONSTRUCTION ACCESS SHALL ENTER AND EXIT THE SITE THROUGH THE STABILIZED CONSTRUCTION ENTRANCE AS SHOWN ON THE PLANS LOCATED ON THE SOUTH SIDE OF THE PROPERTY OFF OF WALLACE BOULEVARD WAY. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. IF WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. CONTRACTOR SHALL SUPPLY A WATER SOURCE BY PROVIDING A WATER TRUCK/WATER TANK ON SITE OR BY USE OF EXISTING ON SITE WATER SERVICE. THE CONSTRUCTION ENTRANCE LOCATION MAY BE SHIFTED TO ACCOMMODATE CONSTRUCTION PHASING. ANY SHIFT IN THE LOCATION SHALL BE APPROVED BY THE CITY OF RANSON.

3. INSTALL SEDIMENT CONTROLS:

THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION SHALL REMAIN IN AN UNDISTURBED STATE TO THE MAXIMUM EXTENT PRACTICABLE. PRIOR TO LEAVING THE CONSTRUCTION SITE, SURFACE RUNOFF FROM DISTURBED AREAS SHALL PASS THROUGH AN APPROPRIATE SEDIMENT CONTROL MEASURE. BMP'S INTENDED TO TRAP SEDIMENT ON SITE SHALL BE CONSTRUCTED AS ONE OF THE FIRST STEPS IN GRADING. THESE BMP'S SHALL BE FUNCTIONAL PRIOR TO LAND DISTURBING ACTIVITIES TAKING PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS SHALL BE SEEDED AND MULCHED AS PER TEMPORARY AND PERMANENT SOIL STABILIZATION MEASURES.

SEDIMENT BASIN:

SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO INITIATING ROUGH GRADING TO CAPTURE SEDIMENT-LADEN RUNOFF FROM THE CONSTRUCTION SITE. SEDIMENT BASINS REDUCE THE ENERGY OF THE WATER THROUGH EXTENDED DETENTION (48 TO 72 HOURS) TO SETTLE OUT THE MAJORITY OF THE SUSPENDED SOLIDS AND SEDIMENT. SEDIMENT BASINS ARE OFTEN MODIFIED TO FUNCTION AS A PERMANENT SWM POND/BMP AFTER CONSTRUCTION IS COMPLETED.

SEDIMENT TRAP:

SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO INITIATING ROUGH GRADING (DURING THE FIRST PHASE OF CONSTRUCTION) TO DETAIN SEDIMENT-LADEN RUNOFF FROM SMALL DISTURBED AREAS OF FIVE ACRES OR LESS. SEDIMENT TRAPS SHALL BE INSTALLED AT THE OUTLET OF DITCHES AND OTHER PERIMETER CONTROLS INSTALLED DURING THE FIRST STAGE OF CONSTRUCTION. SEDIMENT TRAPS MAY ALSO BE INSTALLED AT THE OUTLET OF ANY STRUCTURE WHICH CONCENTRATES SEDIMENT-LADEN RUNOFF (I.E. DISCHARGE POINT OF DIVERSIONS, CHANNELS, SLOPE DRAINS OR OTHER RUNOFF CONVEYANCES).

SILT FENCE:

SILT FENCE SHALL BE INSTALLED ALONG THE DOWN-SLOPE SIDES OF DISTURBED AREAS TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT DURING CONSTRUCTION OPERATIONS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE.

SUPER SILT FENCE:

SUPER SILT FENCE SHALL BE INSTALLED TO REDUCE RUNOFF VELOCITY AND ALLOW SEDIMENT TO BECOME TRAPPED BEHIND OR UP-SLOPE OF THE SUPER SILT FENCE. SUPER SILT FENCE PROVIDES A BARRIER THAT CAN COLLECT AND HOLD DEBRIS AND SOIL, PREVENTING THE MATERIAL FROM ENTERING CRITICAL AREAS, STREAMS, STREETS, ETC. SUPER SILT FENCE ALSO HELPS TO DECREASE THE VELOCITY OF SHEET FLOWS AND LOW-TO-MODERATE LEVEL CHANNEL FLOWS.

TEMPORARY DIVERSIONS:

TEMPORARY DIVERSIONS SHALL BE INSTALLED TO DIVERT UP-SLOPE CLEAN WATER AROUND A PROJECT SITE TO REDUCE THE QUANTITY OF WATER WITHIN THE SEDIMENT CONTROL SYSTEM; TO DIVERT UP-SLOPE WATER FROM DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAPPING FACILITY SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN; TO DIVERT INTERNAL SEDIMENT-LADEN WATER TO A SEDIMENT-TRAPPING STRUCTURE; TO PREVENT EROSION AND MAINTAIN ACCEPTABLE WORKING CONDITIONS ABOVE CRITICAL DISTURBED AREAS PRIOR TO STABILIZATION. TEMPORARY DIVERSIONS ALSO HELP TO INTERCEPT AND DIVERT WATER AWAY FROM FOOTERS, WALLS & OTHER STRUCTURES.

DIVERSIONS THAT ARE TO SERVE LONGER THAN 14 WORKING DAYS SHALL BE STABILIZED IMMEDIATELY WITH SEED AND MULCH WITH OR WITHOUT A ROLLED EROSION CONTROL PRODUCT MEETING THE REQUIREMENTS FOUND IN THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL TO PRESERVE DIKE HEIGHT, PREVENT EROSION AND REDUCE MAINTENANCE.

INLET PROTECTION:

INLET PROTECTION SHALL BE BE PLACED ON ALL STORM DRAIN DROP INLETS OR CURB INLETS TO TRAP SEDIMENT BEFORE CONTAMINATED RUNOFF ENTERS A STORM DRAINAGE SYSTEM. STORM DRAIN INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY FOLLOWING INSTALLATION OF STORMWATER CONTROLS OR PRIOR TO CONSTRUCTION ACTIVITIES FOR EXISTING STORM DRAINS OR WHERE STORM DRAIN INLETS ARE TO BE MADE OPERATIONAL BEFORE PERMANENT STABILIZATION OF THE CORRESPONDING DISTURBED DRAINAGE AREA.

4. STABILIZE SOILS:

THE GENERAL PERMIT REQUIRES THAT:

- STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOUR (4) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS PERMANENTLY CEASED.
- APPLICABLE PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY AND PERMANENT SEEDING, SODDING, MULCHING, EROSION CONTROL FABRICS AND MATTING, SURFACE ROUGHENING, SURFACE WATER CONTROL, AND DUST CONTROL.
- SELECTED SOIL STABILIZATION MEASURES SHALL BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, AND ESTIMATED DURATION OF USE.
- ALL SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES.
- LINEAR CONSTRUCTION ACTIVITIES SUCH AS RIGHT-OF-WAY AND EASEMENT CLEARING, ROADWAY DEVELOPMENT, PIPELINES, AND TRENCHING FOR UTILITIES, SHALL BE CONDUCTED TO MEET THE SOIL STABILIZATION TIMEFRAME REQUIREMENTS. CONTRACTORS SHALL INSTALL THE BEDDING MATERIALS, ROADBEDS, STRUCTURES, PIPELINES, OR UTILITIES AND RE-STABILIZE THE DISTURBED SOILS SO THAT THE FOUR (4) DAY REQUIREMENTS ARE MET.

TEMPORARY SEEDING:

TEMPORARY STABILIZATION SHALL BE INITIATED WITHIN FOUR (4) DAYS TO AREAS THAT WILL NOT BE RE-DISTURBED FOR MORE THAN FOURTEEN (14) DAYS. AREAS INCLUDE DENUDED AREAS, SOIL STOCKPILES, DIKES, DAMS, SIDES OF SEDIMENT BASINS, TEMPORARY ROAD BANKS, ETC.

PERMANENT SEEDING:

PERMANENT STABILIZATION SHALL BE INITIATED WITHIN FOUR (4) DAYS OF REACHING FINAL GRADE AND WITHIN FOUR (4) DAYS AFTER CONSTRUCTION HAS BEEN COMPLETED. AREAS INCLUDE DISTURBED AREAS WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL AND ROUGH-GRADED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR SIX MONTHS OR MORE.

MULCHING:

THE APPLICATION OF STRAW, HAY OR OTHER SUITABLE MATERIALS TO THE SOIL SURFACE TO PREVENT EROSION BY PROTECTING THE SOIL SURFACE FROM RAINDROP IMPACT AND REDUCING THE VELOCITY OF OVERLAND FLOW. AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED SHOULD BE MULCHED IMMEDIATELY FOLLOWING SEEDING. AREAS THAT CANNOT BE SEEDED BECAUSE OF THE SEASON SHOULD BE MULCHED TO PROVIDE SOME PROTECTION TO THE SOIL SURFACE.

TOPSOILING:

TOPSOILING IS THE SPREADING OF TOPSOIL OF A SUITABLE QUALITY OVER AN AREA TO BE STABILIZED BY ESTABLISHING VEGETATION. IF TOPSOIL IS TO BE STOCKPILED AT SITE, IT SHALL BE IN A LOCATION THAT WILL NOTE ERODE, BLOCK DRAINAGE, OR INTERFERE WITH WORK ON THE SITE. ALL SOIL STOCKPILES SHALL BE STABILIZED BY TEMPORARY SEEDING AND MULCHING AND PROTECTED WITH SEDIMENT TRAPPING MEASURES SUCH AS SILT FENCE. TOPSOIL SHALL BE SPREAD AT A LIGHTLY COMPACTED DEPTH OF 2 TO 4 INCHES. 4 INCHES OR GREATER IS RECOMMENDED FOR AREAS WHERE FINE-TEXTURED (CLAYEY) SUBSOIL OR OTHER ROOT LIMITING FACTORS ARE PRESENT.

ROLLED EROSION CONTROL PRODUCTS (RECP):

TEMPORARY OR PERMANENT EROSION CONTROL NETS, BLANKETS AND THREE-DIMENSIONAL MATRIXES MADE FROM A WIDE VARIETY OF NATURAL (SUCH AS JUTE, COIR AND STRAW) AND MAN-MADE MATERIALS ALONE OR IN COMBINATION THAT HELP PREVENT EROSION IN SEVERAL WAYS. PREFABRICATED BLANKETS OR NETTING SHALL BE USED AS A TEMPORARY SURFACE STABILIZING MEASURE AND TO AID IN THE ESTABLISHMENT OF VEGETATION. THEY ARE TYPICALLY USED ON STEEP SLOPES AND TO HELP ESTABLISH GRASS IN LOW VELOCITY VEGETATED CHANNELS.

5. PROTECT SLOPES:

THE GENERAL PERMIT PROHIBITS UP-SLOPE RUNOFF FROM FLOWING DOWN FILL SLOPES. ALL FILL SURFACE RUNOFF SHALL BE CONTAINED WITH TEMPORARY BERMS AND IN PIPES, SLOPE DRAINS, OR STABILIZED CHANNELS. DRAINAGE SHALL BE PROVIDED TO REMOVE GROUND WATER INTERSECTING THE SLOPE SURFACE OF EXPOSED SOIL AREAS. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES, CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS. SOILS ON SLOPES SHALL BE STABILIZED AS SPECIFIED IN TEMPORARY AND PERMANENT SOIL STABILIZATION MEASURES.

6. PROTECT STORM DRAIN INLETS:

STORM DRAIN INLETS OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SURFACE WATER RUNOFF DOES NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR TREATED TO REMOVE SEDIMENT. INLET PROTECTION SHALL BE PLACED ON ALL STORM INLETS TO PROTECT AGAINST SEDIMENT-LADEN RUNOFF ENTERING THE SYSTEM AT THE INLETS.

INLET PROTECTION:

INLET PROTECTION SHALL BE BE PLACED ON ALL STORM DRAIN DROP INLETS AND/OR CURB INLETS TO TRAP SEDIMENT BEFORE CONTAMINATED RUNOFF ENTERS A STORM DRAINAGE SYSTEM. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY FOLLOWING INSTALLATION OF STORMWATER CONTROLS, PRIOR TO CONSTRUCTION ACTIVITIES FOR EXISTING STORM DRAINS, AND/OR WHERE STORM DRAIN INLETS ARE TO BE MADE OPERATIONAL BEFORE PERMANENT STABILIZATION OF THE DISTURBED DRAINAGE AREA HAVE OCCURRED.

CULVERT INLET PROTECTION:

CULVERT INLET PROTECTION SHALL BE BE PLACED ON ALL STORM CULVERT INLETS TO PREVENT SEDIMENT FROM ENTERING, ACCUMULATING IN, AND BEING TRANSFERRED BY THE CULVERT AND ASSOCIATED DRAINAGE SYSTEM. CULVERT INLET PROTECTION MAY ALSO PROVIDE EROSION CONTROL AT STORM CULVERT INLETS DURING THE PHASE OF A PROJECT WHERE ELEVATION AND DRAINAGE PATTERNS CHANGE, CAUSING ORIGINAL CONTROL MEASURES TO BE INEFFECTIVE OR IN NEED OF REMOVAL.

7. CONVEY STORMWATER IN A NON-EROSIVE MANNER:

POINTS OF DISCHARGE AND RECEIVING STREAMS SHALL BE PROTECTED FROM EROSION DUE TO INCREASES IN THE VOLUME, VELOCITY, AND PEAK FLOW RATE OF SURFACE WATER RUNOFF FROM THE PROJECT SITE. ALL STORMWATER CONVEYANCE CHANNELS SHALL BE STABILIZED FOR EXPECTED FLOWS.

OUTLET PROTECTION:

OUTLET PROTECTION SHALL BE INSTALLED AT ALL CULVERT OUTLETS OF ALL TYPES, PIPE CONDUITS FROM ALL SEDIMENT BASINS, SWM PONDS, AND NEW CHANNELS CONSTRUCTED AS OUTLETS FOR CULVERTS AND CONDUITS. OUTLET PROTECTION SHALL BE PROVIDED IN THE FORM OF A RIP-RAP-LINED APRON CONSTRUCTED AT A ZERO OR MINIMUM SLOPE TO SLOW THE OUTLET VELOCITY AND ADEQUATELY PROTECT SOILS FROM SCOUR BY REDUCING FLOW.

ROCK CHECK DAMS:

SMALL TEMPORARY STONE DAMS CAN BE CONSTRUCTED ACROSS A WATERWAY TO REDUCE THE VELOCITY OF STORMWATER FLOWS, THEREBY REDUCING EROSION OF THE CHANNEL AND TRAPPING SEDIMENT. CHECK DAMS SHALL BE INSTALLED AT TEMPORARY DITCHES OR SWALES OR TEMPORARY OR PERMANENT DITCHES OR SWALES WHICH NEED PROTECTION DURING THE ESTABLISHMENT OF GRASS LININGS.

8. CONTROL OTHER POLLUTANTS:

ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS, THAT OCCUR ON SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE OR GROUND WATER. WOODY DEBRIS MAY BE CHOPPED AND SPREAD ON SITE. COVER, CONTAINMENT, AND PROTECTION FROM VANDALISM SHALL BE PROVIDED FOR ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND NON-INERT WASTES PRESENT ON SITE. ALL MATERIALS USED ON THE SITE SHALL BE PROPERLY STORED, HANDLED, DISPENSED AND DISPOSED OF FOLLOWING ALL APPLICABLE LABEL DIRECTIONS. FLAMMABLE AND COMBUSTIBLE LIQUIDS SHALL BE STORED AND HANDLED ACCORDING TO APPLICABLE REGULATIONS, AND, AT A MINIMUM, ACCORDING TO OSHA STANDARDS 29 CFR 1926 152. ONLY APPROVED CONTAINERS AND PORTABLE TANKS SHALL BE USED FOR STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.

- MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, SOLVENT AND DE-GREASING CLEANING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO SURFACE WATER RUNOFF MUST BE CONDUCTED USING SPILL PREVENTION MEASURES, SUCH AS DRIP PANS. CONTAMINATED SURFACES SHALL BE CLEANED IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL INCIDENT.
- WHEEL WASH OR TIRE BATH WASTEWATER SHALL BE DISCHARGED TO A SEPARATE ON-SITE TREATMENT SYSTEM OR TO THE SANITARY SEWER.
- APPLICATION OF AGRICULTURAL CHEMICALS INCLUDING FERTILIZERS AND PESTICIDES SHALL BE CONDUCTED IN A MANNER AND AT APPLICATION RATES THAT WILL NOT RESULT IN LOSS OF CHEMICAL TO SURFACE WATER RUNOFF. MANUFACTURERS RECOMMENDATIONS FOR APPLICATION RATES AND PROCEDURES SHALL BE FOLLOWED.
- IN THE EVENT OF AN ACCIDENTAL SPILL, IMMEDIATE ACTION SHALL BE TAKEN BY THE CONTRACTOR TO CONTAIN AND REMOVE THE SPILLED MATERIAL. THE SPILL SHALL BE REPORTED TO THE APPROPRIATE AGENCIES IN THE REQUIRED TIME FRAMES. AS REQUIRED UNDER PROVISIONS OF THE CLEAN WATER ACT, ANY SPILL OR DISCHARGE ENTERING WATERS OF THE UNITED STATES SHALL BE PROPERLY REPORTED.

9. CONTROL DEWATERING:

FOUNDATION, VAULT, AND UTILITY TRENCH DEWATERING WATER SHALL BE DISCHARGED INTO A CONTROLLED CONVEYANCE SYSTEM PRIOR TO DISCHARGE TO A SEDIMENT POND. CHANNELS RECEIVING THE DISCHARGED WATER MUST BE STABILIZED. HIGHLY TURBID OR CONTAMINATED WATER FROM CONSTRUCTION EQUIPMENT OPERATIONS, WORK INSIDE A COFFERDAM, SHALL BE HANDLED SEPARATELY FROM SURFACE WATER. IF DEWATERING IS REQUIRED FOR SMALL VOLUMES OF LOCALIZED DEWATERING ON THIS SITE, A PUMP AND DEWATERING FILTER BAG SHALL BE UTILIZED. THE FILTER BAG SHALL DISCHARGE TO A DITCH OR SWALE WITH A WELL ESTABLISHED VEGETATIVE AREA.

10. MAINTAIN BMP'S:

TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. MAINTENANCE AND REPAIR SHALL BE CONDUCTED IN ACCORDANCE WITH THE BMP'S. AT A MINIMUM, ALL SEDIMENT CONTROL BMP'S SHALL BE INSPECTED AT LEAST ONCE EVERY FOUR (4) CALENDAR DAYS AND WITHIN 24 HOURS OF THE OCCURRENCE OF A PRECIPITATION EVENT OF 0.25 INCHES OR GREATER, OR THE OCCURRENCE OF RUNOFF FROM SNOWMELT SUFFICIENT TO CAUSE A DISCHARGE. TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMP'S ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL RESULTING FROM THE REMOVAL OF BMP'S OR VEGETATION SHALL BE PERMANENTLY STABILIZED.

11. MANAGE THE PROJECT:

A SEQUENCE OF CONSTRUCTION HAS BEEN PROVIDED ON THIS SHEET TO DESCRIBE AN OVERALL CONSTRUCTION SEQUENCE AS IT RELATES TO EROSION AND SEDIMENT CONTROL BMP'S AND CONSTRUCTION OF VARIOUS ELEMENTS OF THE PROJECT. IN GENERAL, THE PROJECT IS TO BEGIN CONSTRUCTION IN SEPTEMBER 2022 AND END APPROXIMATELY IN SEPTEMBER 2023 THE CONTRACTOR IS RESPONSIBLE FOR THE DETAILS OF THE DAY TO DAY OPERATIONS.

- THE PRIMARY PROJECT MANAGER SHALL EVALUATE, WITH INPUT FROM UTILITIES AND OTHER CONTRACTORS, THE SURFACE WATER MANAGEMENT REQUIREMENTS FOR THE ENTIRE PROJECT, INCLUDING THE UTILITIES, WHEN PREPARING THE SEDIMENT CONTROL PLAN. ALL BMP'S SHALL BE INSPECTED, MAINTAINED, AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. WHENEVER INSPECTION AND/OR MONITORING REVEALS THAT THE BMP'S IDENTIFIED IN THE SEDIMENT CONTROL PLAN ARE INADEQUATE, THE SEDIMENT CONTROL PLAN SHALL BE MODIFIED, AS APPROPRIATE, IN A TIMELY MANNER.
- CONTRACTOR SHALL REPORT SPILLAGE OR DISCHARGE OF POLLUTANTS WITHIN 24-HOURS. THE SEDIMENT CONTROL PLAN SHALL BE RETAINED ON SITE. THE SEDIMENT CONTROL PLAN SHALL BE MODIFIED WHENEVER THERE IS A SIGNIFICANT CHANGE IN THE DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF ANY BMP. THE WVDEP MUST BE NOTIFIED OF ANY CHANGES TO THE CONSTRUCTION SWPP.

12. STABILIZATION:

THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL COVER MUST BE INITIATED WITHIN FOUR (4) DAYS AFTER REACHING FINAL GRADE. A NOTICE OF TERMINATION MUST BE FILED WITH THE WVDEP WHEN THE SITE REACHES FINAL STABILIZATION. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT EITHER A PERMANENT VEGETATIVE COVER OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT THE SURFACE HAS BEEN STABILIZED BY HARD COVER SUCH AS PAVEMENT OR BUILDINGS. (THE 70% REQUIREMENT REFERS TO THE TOTAL VEGETATED AREA AND NOT JUST A PERCENT OF THE SITE).

VIII. EROSION AND SEDIMENT CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL AND APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
2. AREAS OF DEVELOPMENT SHALL BE PLANNED IN PHASES AND STAGES IN ORDER TO PREVENT THE TRANSPORT OF SEDIMENT FROM THE DEVELOPMENT SITE DURING CONSTRUCTION AND MINIMIZE EXPOSURE TO DISTURBED GROUND. RE-VEGETATION OF EXPOSED AREAS AND THE MAINTENANCE OF THAT VEGETATION SHALL BE AN INTEGRAL PART OF THE CLEARING ACTIVITIES FOR ANY PHASE.
3. NO DISTURBED AREA IS TO REMAIN DENUDED FOR MORE THAN FOUR (4) DAYS EXCEPT FOR MATERIAL STORAGE AREAS OR FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED UNLESS AUTHORIZED BY THE CITY OF RANSON AND/OR THE EASTERN PANHANDLE CONSERVATION DISTRICT.
4. ALL SOIL STOCKPILES SHALL BE STABILIZED BY TEMPORARY SEEDING AND MULCHING AND PROTECTED WITH PERIMETER SEDIMENT CONTROLS SUCH AS SILT FENCE TO PREVENT CONTACT WITH STORMWATER RUNOFF. ALL STOCKPILES MUST BE LOCATED OUTSIDE OF ANY VEGETATED BUFFER AREAS AND SHOULD BE LOCATED AS FAR AS PRACTICABLE FROM STORMWATER CONVEYANCE SYSTEMS AND WATER BODIES.
5. ALL SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING SITE GRADING OPERATIONS TO REDUCE RUNOFF VELOCITIES AND EROSION. TEMPORARY AND/OR PERMANENT STABILIZATION MEASURES SHALL BE APPLIED TO ALL SLOPES AS SPECIFIED IN THE SOIL STABILIZATION MEASURES.
6. DURING CONSTRUCTION, PROTECT ALL FILLS SO THAT RUNOFF DOES NOT GO DOWN THE FACE OF THE HILL. UTILIZE BERMS, TEMPORARY SLOPE DRAINS, OR OTHER METHODS TO DIVERT RUNOFF AWAY FROM THE FILL AND INTO A SEDIMENT TRAPPING STRUCTURE. AS MORE FILL IS ADDED, SLOPE THE TOP (OR BERM IT) TO DIRECT WATER AWAY FROM THE SLOPE AND TO A STABLE CONVEYANCE SYSTEM. SEED & MULCH EVERY FOUR (4) DAYS OR 15' OF FILL.
7. NO OFF-SITE SOURCE OF BORROW MATERIALS IS ANTICIPATED FOR THIS PROJECT. IN THE EVENT THAT AN OFF-SITE SOURCE OF BORROW MATERIALS IS USED, AN EROSION AND SEDIMENT CONTROL PLAN SHALL BE PROVIDED FOR THE BORROW PIT AND THE BORROW PIT SHALL MEET ALL APPLICABLE REQUIREMENTS AND PERMITS OF THE WVDEP.
8. DUE TO GRADE CHANGES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION AND SEDIMENT CONTROL MEASURES (i.e. SILT FENCES, ETC.) TO PREVENT EROSION AND POLLUTANT DISCHARGE OFF-SITE.

IX. SOIL STABILIZATION:

EXCEPT AS NOTED BELOW, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS PERMANENTLY CEASED OR FOUR (4) DAYS FOR SITES REQUIRED TO USE ENHANCED BMP'S.

- WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 4TH DAY, AS APPLICABLE AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES IS PRECLUDED BY NATURAL CAUSES, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS CONDITIONS ALLOW.
- WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 14 DAYS FROM WHEN ACTIVITIES CEASED, (E.G. THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY HALTED IS LESS THAN 14 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE 4TH DAY AFTER CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED.
- AREAS WHERE SEED HAS FAILED TO GERMINATE ADEQUATELY (UNIFORM PERENNIAL VEGETATIVE COVER OF 70% OR GREATER) WITHIN 30 DAYS AFTER SEEDING AND MULCHING MUST BE RE-SEEDED IMMEDIATELY, OR AS SOON AS WEATHER CONDITIONS ALLOW.

TEMPORARY STABILIZATION:

- SELECTION OF TEMPORARY SEED MIXTURE SHALL DEPEND ON THE TIME OF YEAR DURING APPLICATION. SELECT PLANTS APPROPRIATE TO THE SEASON AND SITE CONDITIONS. REFER TO TABLE 3.10.1 TEMPORARY SEEDING OF THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL FOR A LIST OF COVER PLANTS, APPROVED PLANTING DATES, AND APPLICATION RATES.

PERMANENT STABILIZATION:

SEED MIXTURES INCLUDE THE FOLLOWING:

COMMON NAME	APPLICATION RATE	PREFERRED PLANTING DATES
KENTUCKY 31 FESCUE	45 LBS./ACRE	3/1-6/15 & 8/15-9/15
RED FESCUE	20 LBS./ACRE	3/1-6/15 & 8/15-9/15
KENTUCKY BLUEGRASS	25 LBS./ACRE	3/1-6/15 & 8/15-9/15
WHITE DUTCH CLOVER	5 LBS./ACRE	3/1-6/15 & 8/15-9/15

- FERTILIZER: DETERMINED BY SOIL TEST
- LIME: 90 LBS./1,000 SQ. FT. PULVERIZED AGRICULTURAL GRADE LIMESTONE
- MULCH: 70-90 LBS./1,000 SQ. FT. STRAW OR HAY MULCH

ALTERNATIVE SEED MIXTURES MAY BE SUBSTITUTED AS APPROVED BY GORDON. SELECT PLANTS APPROPRIATE TO THE SEASON AND SITE CONDITIONS. REFER TO TABLE 3.11.1 PERMANENT SEEDING OF THE WEST VIRGINIA EROSION AND SEDIMENT CONT

Table 3.10.1 Temporary seed chart

PLANT NAMES		PLANTING DATES	APPLICATION RATE LBS/ACRE
COMMON	SCIENTIFIC		
Annual Ryegrass	*Lolium multiflorum*	2/16 – 5/15 8/1 – 11/1	40
Field Bromegrass	*Bromus ciliatus*	3/1 – 6/15 8/1 – 9/15	40
Spring Oats	*Avena sativa*	3/1 –6/15	100
Winter Rye	*Secale cereale*	8/15 –2/28	170
Winter Wheat	*Triticum aestivum*	8/15 – 2/28	180
Japanese Millet	*Echinochloa crusgalli*	5/15 – 8/15	30
Redtop	*Agrostis alba*	3/1 – 6/15	10
Annual Ryegrass and Spring Oats	*Lolium multiflorum* *Avena sativa*	3/1 – 6/15	30 70
German/Foxtail Millet	*Setaria italica*	5/1 – 8/1	40
Hairy Vetch	*Vicia villosa*	8/15 – 4/1	60

*Inoculation is required. If a hydroseeder is utilized, the application rate is 5 times the recommended rate.

Table 3.11.1 Permanent seeding

SEED MIX	PLANT NAMES		APPLICATION RATE LBS/ACRE
	COMMON	SCIENTIFIC	
C	Red Fescue Kentucky Bluegrass Merion Bluegrass	*Festuca rubra* *Poa pratensis* *Poa pratensis*	20 40 30
D	Kentucky 31 Fescue Red Fescue Kentucky Bluegrass White Dutch Clover	*Festuca arundinacea* *Festuca rubra* *Poa pratensis* *Trifolium repens*	45 20 25 5

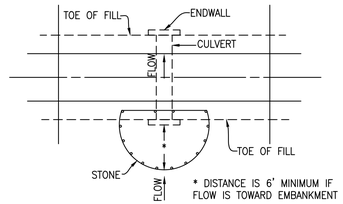
Table 3.12.1 Organic mulch materials and application rates

Mulches:	Rates:		Notes:
	Per acre	Per 1,000 ft².	
Straw or hay	1½ - 2 tons (minimum 2 tons for winter cover)	70 - 90 lbs.	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
Fiber mulch	Minimum 1,500 lbs.	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
Cornstalks	4 - 6 tons	185 - 275 lbs.	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Wood chips	4 - 6 tons	185 - 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs. nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
Bark chips or Shredded bark	50 - 70 cu. yds.	1-2 cu. yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.

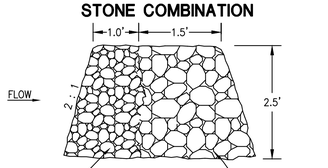
* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2,000 lbs./ac. or 45 lbs./1,000 sq. ft.

From VA DSWC

STONE CULVERT INLET PROTECTION



STONE COMBINATION



CIP

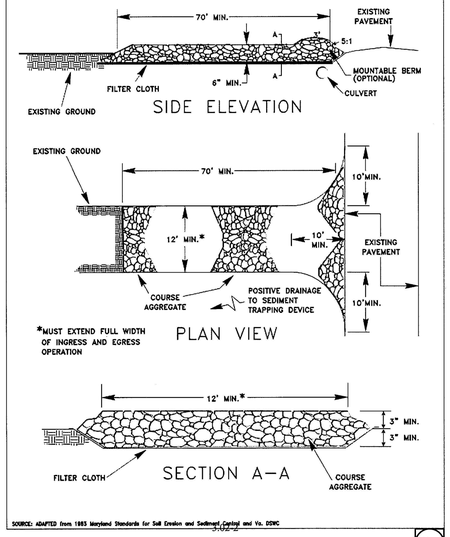
Table 3.11.2 Nurse crops

PLANT NAMES		PLANTING DATES	APPLICATION RATE LBS/ACRE
COMMON	SCIENTIFIC		
Annual Ryegrass	*Lolium multiflorum*	2/16 – 5/15 8/1 – 11/1	25
Field Bromegrass	*Bromus ciliatus*	3/1 – 6/15 8/1 – 9/15	20
Spring Oats	*Avena sativa*	3/1 –6/15	50
Winter Rye	*Secale cereale*	8/15 –2/28	85
Winter Wheat	*Triticum aestivum*	8/15 – 2/28	90
Japanese Millet	*Echinochloa crusgalli*	5/15 – 8/15	15
Redtop	*Agrostis alba*	3/1 – 6/15	10
Annual Ryegrass and Spring Oats	*Lolium multiflorum* *Avena sativa*	3/1 – 6/15	15 35
German/Foxtail Millet	*Setaria italica*	5/1 – 8/1	25
Hairy Vetch*	*Vicia villosa*	8/15 – 4/1	30

* Inoculation is required. If a hydroseeder is utilized, the application rate is five times the recommended rate.

FIGURE 3.02.1

STONE CONSTRUCTION ENTRANCE



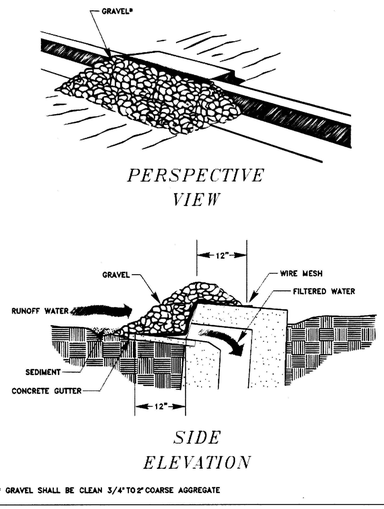
SOURCE: ADAPTED from 1983 Maryland Standards for Soil Erosion and Sediment Control and Va. DSWC

3.02-2

CE

FIGURE 3.33.6

GRAVEL AND WIRE CURB INLET PROTECTION



* GRAVEL SHALL BE CLEAN 3/4" TO 2" COARSE AGGREGATE

IP

Table 3.11.3 Permanent seeding requirements

SEED MIX	FINE LAWN	COARSE LAWN	LOW-MAINT.	NO MAINT.	PASTURE	SENSITIVE NATURAL AREAS	pH RANGE	DRAINAGE	SHADE TOLERANCE	PREFERRED PLANTING DATES			
										3/1-5/15	6/16-8/14	8/15-9/15	9/16-2/28
C	✓ 1						6.0-7.5	MOD.-WELL	FULL SUN	✓		✓	
D		✓ 1					6.0-7.5	MOD.-WELL	FULL SUN	✓		✓	

♦ Nurse crop required – See Table B
1 Urban areas only

PS

PUBLIC NOTICE SIGN:

NOT TO SCALE

NOTES:

1. SECTION II.B OF THE GENERAL PERMIT STATES THAT "WITHIN 72 HOURS OF FILING AN APPLICATION, THE APPLICANT SHALL DISPLAY A SIGN FOR THE DURATION OF THE CONSTRUCTION PROJECT NEAR THE ENTRANCE OF THE PROJECT OR, FOR LINEAR PROJECTS, AT A LOCATION NEAR AN ACTIVE PART OF THE PROJECT THAT IS ACCESSIBLE BY THE PUBLIC; CONTAINING THE FOLLOWING INFORMATION::
   - THE APPLICANT'S NAME AND EMERGENCY TELEPHONE NUMBER;
   - PROJECT REFERENCE ID;
   - FOR INFO ON THIS STORMWATER PERMIT CALL: 800-654-5227 OR DEP.COMMENTS@WV.ORG;
   - PERMIT NUMBER (SEE II.B.4).
2. THE SIGN SHALL BE A MINIMUM OF TWO FEET BY TWO FEET AND BE AT LEAST THREE FEET ABOVE GROUND LEVEL; CLEARLY VISIBLE AND LEGIBLE FROM A PUBLIC ROADWAY OR RIGHT-OF-WAY.
3. IF IT IS NOT FEASIBLE TO DISPLAY A SIGN AT OR NEAR THE PROJECT, THE APPLICANT MAY POST, WITHIN 72 HOURS OF FILING THE APPLICATION NOTICE CONTAINING THE FOREGOING INFORMATION AT A LOCAL PUBLIC BUILDING, INCLUDING, BUT NOT LIMITED TO, A TOWN HALL OR PUBLIC LIBRARY.
4. THE APPLICANT SHALL PROVIDE THE LOCATION WHERE THE SIGN OR NOTICE IS TO BE POSTED.
5. WITHIN 7 DAYS OF ASSIGNMENT OF THE PERMIT REGISTRATION NUMBER, THE APPLICANT SHALL AFFIX SUCH NUMBER TO THE SIGN OR TO THE POSTED NOTICE.

A TEMPLATE FOR THE SIGN IS AS FOLLOW:

- THE TOP PART OF THE SIGN, DOWN TO THE WORDS "APPLICATION DATE", SHALL BE WORDED AND FORMATTED AS SHOWN. REMAINING TEXT SHALL BE FILLED IN BY THE APPLICANT (DATE, NAME OF REGISTRANT OR CONTACT, PROJECT DESCRIPTION, AND PHONE) IN THE SIZE AND FORMAT SHOWN. HIGH CONTRAST COLORS MUST BE USED.
- THE SIGN SHALL BE A MINIMUM 24" x 24" WITH 1.6" AND 0.8" LETTERS
- THE SIGN SHALL BE A MINIMUM 36" ABOVE GROUND LEVEL.

① 1.6" LETTERS ② 0.8" LETTERS

② Application's name: STC MANAGEMENT, LLC
② Emergency Telephone number: 703-491-1108
① **Project ID:**
① **Fairfax Crossing**
① For Info on NPDES
① Stormwater Permit
② To comment on Sediment Control Plan
① Call: 800-654-5227
② or
② DEP.Comments@wv.gov
② DEP 601 57th Street SE, Charleston WV 25304
② Permit Number:

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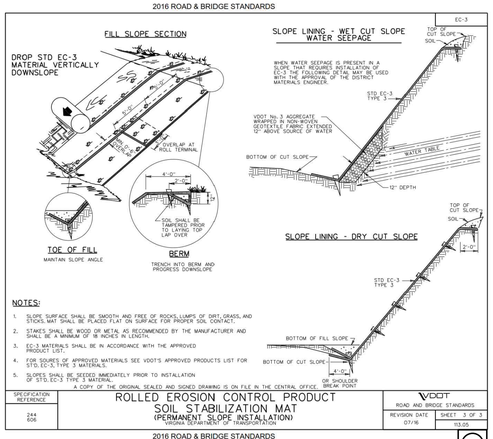
RYAN P. PERRY REGISTERED PROFESSIONAL ENGINEER 17061 STATE OF WEST VIRGINIA

REVISIONS

01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

2016 ROAD & BRIDGE STANDARDS

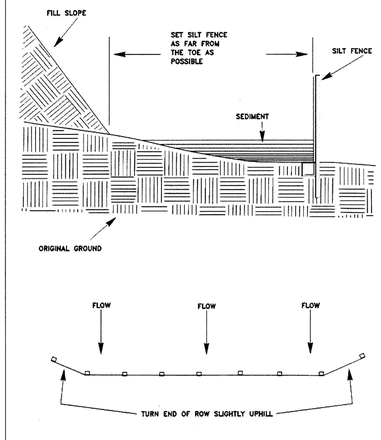


2016 ROAD & BRIDGE STANDARDS

EC-3

FIGURE 3.27.1

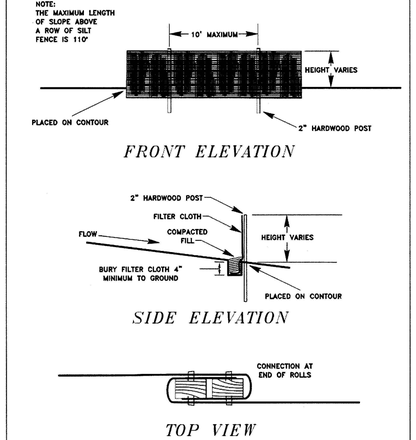
PLACEMENT OF SILT FENCE



SF

FIGURE 3.27.2

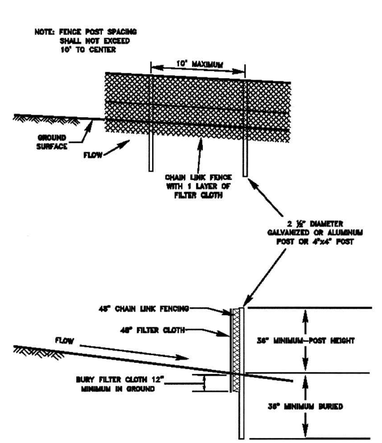
SILT FENCE



SF

FIGURE 3.28.1

SUPER SILT FENCE



SSF

EROSION & SEDIMENT CONTROL DETAILS

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: AS NOTED VERT.:
DATE:	DECEMBER 2024
JOB:	3079-0109
DRAWN: CAS	CHECK: JAE
CADD:	C-GC-001.DWG
NCS:	GC-501
SHEET:	07 OF 19

FILE PATH: G:\PROJECTS\3079\CIVIL\SITE\SITE PLANS\FAIRFAX CROSSING\COMMERCIAL\DRAWINGS\C-GC-001.DWG
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TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET

PROJECT: FAIRFAX CROSSING
BASIN ID NO.: SB#1
TOTAL DRAINAGE AREA: 13.11 AC.
"C" FACTOR: 0.50

Basin Volume Design
Wet Storage

1. Minimum Required Volume = **1,800** Cu. Ft. x Total Drainage Area (Ac.)
1800 Cu. Ft. x **13.11** Acres = **23,598** Cu. Ft.
= **0.54** Ac-Ft.

2. Available Basin Volume = **24,825** Cu. Ft. At Elevation **501.40**
(From Storage - Elevation Curve)

3. Excavate **24,825** Cu. Ft. to Obtain Required Volume*.

* Elevation Corresponding to Required Volume = Invert of Dewatering Orifice.

4. Available Volume Before Cleanout Required = **12,412** Cu. Ft.
(1/2 Wet Storage Volume)

5. Elevation Corresponding to Cleanout Level = **500.40**
(From Storage - Elevation Curve)

6. Distance From Invert of The Dewatering Orifice to Cleanout Level = **1.0'**
(Min. = 1.0 Ft.)

Dry Storage

7. Minimum Required Volume = **1800** Cu. Ft. x Total Drainage Area (Ac.)
1,800 Cu. Ft. x **13.11** Acres = **23,598** Cu. Ft.
= **0.54** Ac-Ft.

8. Total Required Volume = **24,825** Cu. Ft. + **23,598** Cu. Ft.
= **48,423** Cu. Ft.
= **1.11** Ac-Ft.

9. Total Available Basin Volume at Crest of Riser = **53,191** Cu. Ft. at Elevation **503.10**
(From Storage - Elevation Curve)

Orifice Calculation Breakdown

10. A = (Dry Storage/T)/(64.32*h)^0.5(0.6)
Drawdown Time (T) = **24** Hours
Dry Storage (S) = **28,367** cf
Q = S / T **0.33** cf
Head (h) = **0.85**
Required Area (A) = **0.07400** Sq.ft.
Maximum Diameter = **3.68** In.
Diameter of Dewatering Orifice = **3.50** In.

11. Diameter of Flexible Tubing = **5.50** In. (Min.)
(Dia. of Dewatering Orifice + 2")

Preliminary Design Elevations

12. Crest of Riser = **503.10**
Top of Dam = **505.00**
Design High Water = **504.10**
Upstream Toe of Dam = **501.00**
Crest of Emergency Spillway = **504.10**

Basin Shape

13. Length of Flow = L = **159.00** = **1.29** Length-to-width Ratio
Effective Width = We = **123.72**
If L/We > 2, Baffles Are Not Required
If L/We < 2, Baffles Are Required

Runoff

14. **Q2 = 20.3** cfs.

15. **Q25 = 37.4** cfs.

Principal Spillway Design

17. With Emergency Spillway, Required Spillway Capacity Qp = Q2 = **N/A** cfs.
(Riser and Barrel)

Without Emergency Spillway, Required Spillway Capacity Qp = Q25 = **37.4** cfs.
(Riser and Barrel)

18. With Emergency Spillway:
Assumed Available Head (h) = **N/A** (Using Q2)
h = Crest of Emergency Spillway Elevation - Crest of Riser Elevation

Without Emergency Spillway:
Assumed Available Head (h) = **1.0** (Using Q25)
h = Design High Water Elevation - Crest of Riser Elevation

19. Riser Dimensions = **48"**
Actual Head (h) = **1.00'**
Note: Avoid Orifice Flow Conditions

20. Barrel Length (L) = **133'**
Invert In = **496.85** Invert Out = **495.00**
Head (H) on Barrel Through Embankment = **9.10'**

21. Barrel Diameter = **24"** **No. of Barrels = 1**

22. Trash Rack and Anti-Vortex Device
Dimensions = **72"**
Height = **21"**

Emergency Spillway Design

23. Required Spillway Capacity Qe = Q25 - Qp = **N/A** cfs.

24. Bottom Width (B) = -
Slope of The Exit Channel (S) = - Ft./Ft.
Minimum Length of The Exit Channel (X) = -

Anti-Seep Collar Design

25. Depth of Water at Principal Spillway Crest (Y) = **9.1'**
Slope of Upstream Face of Empankment (Z) = **3:1**
Slope of Principal Spillway Barrel (Sb) = **1.39%**
Length of Barrel in Saturated Zone (Ls) = **67.45'**

26. Number of Collars Required = **3** Dimensions = **5.25'x5.25'**

Finial Design Elevations

27. Top of Dam = **505.00**
Design High Water = **504.10**
Emergency Spillway Crest = **N/A**
Principal Spillway Crest = **503.10**
Dewatering Orifice Invert = **501.40**
Cleanout Elevation = **500.40**

NOTES:
1. IF CHANGES ARE MADE TO THE SEDIMENT BASIN, THE REQUIRED WET AND DRY STORAGE VOLUME MUST BE MET.
2. CONTRACTOR TO FIELD VERIFY SEDIMENT BASIN ELEVATIONS. SEDIMENT BASIN BASED ON CURRENT FIELD ELEVATIONS.
3. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO ONE-HALF THE WET STORAGE DEPTH.
4. INSPECTION OF ALL EROSION AND SEDIMENT CONTROL BMPs SHALL BE PERFORMED ONCE EVERY FOUR (4) DAYS, AND WITHIN 24 HOURS OF THE OCCURANCE OF A PRECIPITATION EVENT OF 0.25 INCHES OR GREATER, OR THE OCCURRENCE OF RUNOFF FROM SNOW MELT SUFFICIENT TO CUASE A DISCHARGE.

5. CHECK THE EMBANKMENT, SPILLWAYS AND OUTLET FOR EROSION DAMAGE AND INSPECT THE EMABANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.

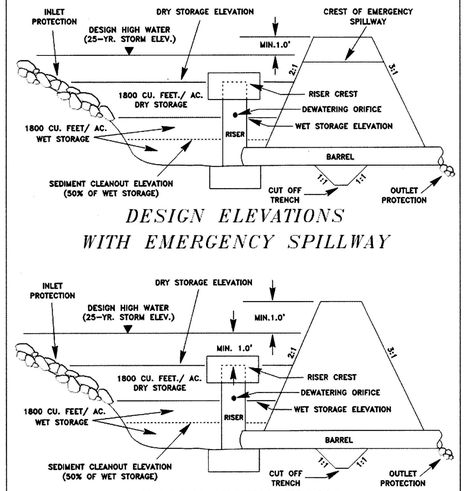
Sediment Basin #1 Volume Calculations

Elevation (Ft.)	Area (Sq. Ft.)	Ave. Area (Sq. Ft.)	Inc. Volume (Cu. Ft.)	Accum. Vol. (Cu. Ft.)
498.00	0	0	0	0
499.00	0	0	0	0
500.00	12,225	6,113	6,113	6,113
500.40*	12,875	12,550	5,020	11,132
501.00	13,850	13,038	13,038	19,150
501.40**	14,523	14,187	5,675	24,825
502.00	15,533	14,692	14,692	33,842
503.00	19,272	17,403	17,403	51,244
503.10***	19,671	19,471	1,947	53,191
504.00	23,261	21,267	21,267	72,511
505.00	27,845	25,553	25,553	98,064

* =Cleanout Elevation
** = Wet Storage Elevation
*** = Dry Storage Elevation

FIGURE 3.30.2

SEDIMENT BASIN



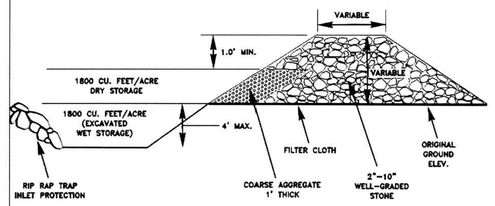
DESIGN ELEVATIONS
WITH EMERGENCY SPILLWAY

DESIGN ELEVATIONS
NO EMERGENCY SPILLWAY
(NTS)

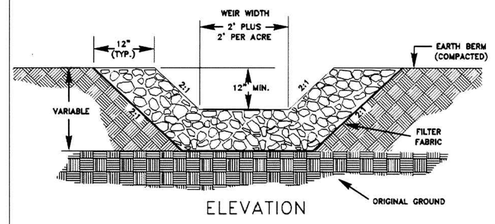
ADAPTED FROM: VA. DSWC

FIGURE 3.29.1

ROCK OUTLET SEDIMENT TRAP



CROSS SECTION



ELEVATION

TEMPORARY STONE OUTLET SEDIMENT TRAP COMPUTATIONS

TRAP ID NO.	TOTAL DRAINAGE AREA (AC.)	TOTAL DRAINAGE AREA (SQ. FT.)	STORAGE REQUIRED (CU. FT.)	STORAGE PROVIDED (CU. FT.)	WET STORAGE					DRY STORAGE						TRAP DESIGN ELEVATIONS				EMBANKMENT			STONE WEIR		
					DEPTH (D1) (FT.)	AREA (A1) (SQ. FT.)	VOLUME REQ'D (V1) (CU. FT.)	VOLUME PROV'D (V1) (CU. FT.)	APPROX. BOTTOM DIMENSION (FT. x FT.)	DEPTH (D2) (FT.)	AREA (A2) (SQ. FT.)	MINIMUM AREA REQ'D (SQ. FT.)	VOLUME REQ'D (V2) (CU. FT.)	VOLUME PROV'D (V2) (CU. FT.)	APPROX. SURFACE DIMENSION (FT. x FT.)	BOTTOM OF TRAP (FT.)	CLEANOUT LEVEL (FT.)	TOP OF WET STORAGE (FT.)	TOP OF DRY STORAGE (FT.)	ELEVATION (FT.)	HEIGHT (FT.)	TOP WIDTH (FT.)	WEIR WIDTH (FT.)	10-YR DISCHARGE (CFS)	10-YR WSEL (FT.)
1	1.14	49,716.25	4,109	4,443	1.5	1,700	2,054	2,168	85.0 x 20.0	1.0	2,850	2,409	2,054	2,275	95.0 x 30.0	± 502.75	± 503.50	± 504.25	± 505.25	± 507.00	2.75	2.50	4.28	4.86	505.70
2	1.22	52,938.71	4,375	5,434	1.5	2,125	2,188	2,709	85.0 x 25.0	1.0	3,325	2,250	2,188	2,725	95.0 x 35.0	± 504.75	± 505.50	± 506.25	± 507.25	± 509.00	2.75	2.50	4.43	5.17	507.71

REQUIRED STORAGE = 3,600 CUBIC FEET PER ACRE
V1= 0.85 x D1 x A1; V2=[(A1 + A2)/2] x D2
OUTLET WIDTH=2' PLUS 2' PER ACRE. MINIMUM OUTLET CHANNEL WIDTH=4'.
NOTES:
1. SURFACE DIMENSIONS ARE APPROXIMATE AREAS USED TO SIZE THE SEDIMENT TRAP, EXACT DIMENSIONS AND/OR SHAPE MAY VARY WITH CURRENT FIELD CONDITIONS.
2. IF CHANGES ARE MADE TO THE SEDIMENT TRAP, THE REQUIRED WET AND DRY STORAGE VOLUMES MUST BE MET.
3. SEDIMENT MUST BE REMOVED FROM TRAP WHEN THE TRAP'S WET STORAGE VOLUME IS REDUCED BY ONE-HALF.
4. ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION OF THE SEDIMENT TRAP SHOULD BE SEEDED AND MULCHED IMMEDIATELY AFTER INSTALLATION.

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RYAN P. PERRY REGISTERED Exp. 12/31/2025 17961 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

REVISIONS
01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

EROSION & SEDIMENT CONTROL DETAILS

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: AS NOTED VERT.:
DATE:	DECEMBER 2024
JOB:	3079-0109
DRAWN: CAS	CHECK: JAE
CADD:	C-GC-001.DWG
NCS:	GC-501
SHEET:	07A OF 19

FILENO: G:\PROJECTS\3079-0109 FAIRFAX CROSSING COMERCIAL\ENGR\CAD\C-ENGR-MISC-GC-001.DWG
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EROSION & SEDIMENT CONTROL LEGEND

KEY	SYMBOL	DESCRIPTION
CE		TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
SF	SF	SILT FENCE
SSF	SSF	SUPER SILT FENCE
DD		TEMPORARY DIVERSION DIKE
CD		ROCK CHECK DAM
IP		INLET PROTECTION
CIP		CULVERT INLET PROTECTION
OP		OUTLET PROTECTION
ST #1		TEMPORARY SEDIMENT TRAP
SB #1		TEMPORARY SEDIMENT BASIN
TS	TS	TEMPORARY SEEDING
PS	PS	PERMANENT SEEDING
		DRAINAGE DIVIDE
		LIMITS OF CONSTRUCTION

WV STATE GRID NORTH (NAD83)

EX. STORM WATER BASIN

TO SSF
D.A.= 0.55 AC.

TO SSF
D.A.= 0.09 AC.

TO SSF
D.A.= 0.29 AC.

TO SSF
D.A.= 0.12 AC.

TOTAL TO SB#1
D.A.= 13.11 AC.

TO ST#1
D.A.= 1.14 AC.

TO ST#2
D.A.= 1.22 AC.

TO DD
D.A.= 1.80 AC.

48" RISER
CREST ELEV.=
503.10

52' BAFFLE
DRY STORAGE
WET STORAGE

4.28' STONE
WEIR OUTLET

TOP OF EMBANKMENT
=507.00

LIMITS OF
CONSTRUCTION

DRY STORAGE
WET STORAGE

BOTTOM OF
TRAP=502.75

4.43' STONE
WEIR OUTLET

TOP OF EMBANKMENT
=507.00

DRY STORAGE
WET STORAGE

BOTTOM OF
TRAP=504.75

S28°30'41"E 149.66'
EX. PROPERTY LINE
TO BE VACATED

N28°06'56"W 96.40'
EX. PROPERTY LINE
TO BE VACATED

N 61°15'59" E 359.65'
EX. PORTION OF PROPERTY LINE
TO BE VACATED

N 61°15'59" E 273.63'
EX. PORTION OF PROPERTY LINE
TO BE VACATED

N 61°15'59" E 134.00'
EX. PORTION OF PROPERTY LINE
TO BE VACATED

N 61°15'59" E 225.55'

EX. TEMP. INGRESS/EGRESS & UTILITY ESM'T
P.B. 23 P. 38
(PORTION TO BE VACATED)

EX. TEMP. ACCESS ESM'T "B"
P.B. 23 P. 58
(PORTION TO BE VACATED)

EX. TEMP. PUBLIC STORM DRAIN ESM'T
P.B. 22P2
(TO BE VACATED)

EX. TEMP. ACCESS ESM'T "A"
P.B. 23 P. 58

EX. TEMP. ACCESS ESM'T "B"
P.B. 23 P. 58

EX. GRAVEL DRIVE
(TO BE REMOVED)

EX. ROAD STRIPING
(TO BE REMOVED)

EX. WATER QUALITY BIO-RETENTION

EX. GRAVEL DRIVE

EX. GRAVEL DRIVE

EX. GRAVEL DRIVE

EROSION & SEDIMENT CONTROL LEGEND

KEY	SYMBOL	DESCRIPTION
CE		TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
SF	SF	SILT FENCE
SSF	SSF	SUPER SILT FENCE
DD		TEMPORARY DIVERSION DIKE
CD		ROCK CHECK DAM
IP		INLET PROTECTION
CIP		CULVERT INLET PROTECTION

EROSION & SEDIMENT CONTROL LEGEND

KEY	SYMBOL	DESCRIPTION
OP		OUTLET PROTECTION
ST #1		TEMPORARY SEDIMENT TRAP
SB #1		TEMPORARY SEDIMENT BASIN
TS	TS	TEMPORARY SEEDING
PS	PS	PERMANENT SEEDING
		DRAINAGE DIVIDE
		LIMITS OF CONSTRUCTION

WV STATE GRID NORTH (NAD83)

SWM AREA 1

BIO-RETENTION FACILITY 'BR01'

15' WIDE SPILLWAY ELEV=504.60

6" PERF. HDPE UNDERDRAIN (TYP.)

OBSERVATION WELL (TYP.)

EX. STORM WATER BASIN

SWM AREA

EX. 24" PIPE TO BE USED FOR SEDIMENT BASIN AND THEN ABANDONED IN PLACE

48" RISER CREST ELEV= 503.10

CONTRACTOR TO COORDINATE WITH DEVELOPER AND GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION TO DETEMINE DESIGN AND MATERIAL

10' CL I RIP-RAP

LIMITS OF CONSTRUCTION

INWOOD 165 LLC.
TAX MAP 8, PARCEL 1.6
D.B. 1235 PG. 693
(13.02866 AC.)
ZONED: SMARTCODE NEW COMMUNITY / HIGHWAY COMMERCIAL
USE: VACANT

CHANNEL 1 (SEE SHEET 18 FOR COMPUTATIONS)

FUTHRE HAMILL BLVD
80' RIGHT-of-WAY
(P.B. 23 P. 76)

EX. WATER BIO-RETENTION FACILITY

LOT 1

BUILDING PAD AREA=6931 SF

LOT 2

BUILDING PAD AREA=6931 SF

LOT 3

BUILDING PAD AREA=6902 SF

LOT #1
D.B. 26, PG. 546
ZONED: HIGHWAY COMMERCIAL
USE: CONVENIENCE STORE

INWOOD 165 LLC.
TAX MAP 8, PARCEL 1.6
D.B. 1235 PG. 693
(8.24864 AC.)
ZONED: GENERAL NEIGHBORHOOD (T4) / RC-RESIDENTIAL(R6)
USE: VACANT

INWOOD 165 LLC.
TAX MAP 8, PARCEL 1.9
D.B. 1235 PG. 693
(13.02866 AC.)
ZONED: SMARTCODE NEW COMMUNITY / HIGHWAY COMMERCIAL
USE: VACANT

INWOOD 165 LLC.
TAX MAP 8, PARCEL 1.6
D.B. 1235 PG. 693
(22.35638 AC.)
ZONED: SUBURBAN (T3) / GENERAL NEIGHBORHOOD (T4) /

TO STRC. 11E D.A.= 0.07 AC. "C"= 0.90
TO STRC. 11B D.A.= 0.10AC. "C"= 0.85
TO STRC. 11A D.A.= 0.06 AC. "C"= 0.85
TO STRC. 11 D.A.= 0.16 AC. "C"= 0.85
TO STRC. 11F D.A.= 0.09 AC. "C"= 0.85
TO STRC. 11J D.A.= 0.13 AC. "C"= 0.85
TO STRC. 11K D.A.= 0.13 AC. "C"= 0.85
TO STRC. 11D D.A.= 0.13 AC. "C"= 0.60
TO STRC. 11C D.A.= 0.16AC. "C"= 0.85
TO STRC. 12 D.A.= 0.17 AC. "C"= 0.85
TO STRC. 11G D.A.= 0.10 AC. "C"= 0.85
TO STRC. 11H D.A.= 0.20 AC. "C"= 0.65
TO STRC. 11L D.A.= 0.35 AC. "C"= 0.70
TO STRC. 13 D.A.= 8.10 AC. "C"= 0.30

THIS SHEET FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY!!!

GRAPHICAL SCALE: 1" = 30'

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RYAN P. PERRY REGISTERED Expires 12/31/2026 17061 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

REVISIONS
01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

EROSION & SEDIMENT CONTROL PLAN PHASE II

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: 1" = 30' VERT.:
DATE:	DECEMBER 2024
JOB:	3079-0109
DRAWN: CAS	CHECK: JAE
CADD:	C-GC-201.DWG
NCS:	GC-201
SHEET:	09 OF 19

F:\LP\PROJ\3 GREAT ROAD\ENGINEERING\3079-0109 FAIRFAX CROSSING COMMERCIAL\CADD\C-GC-201.DWG
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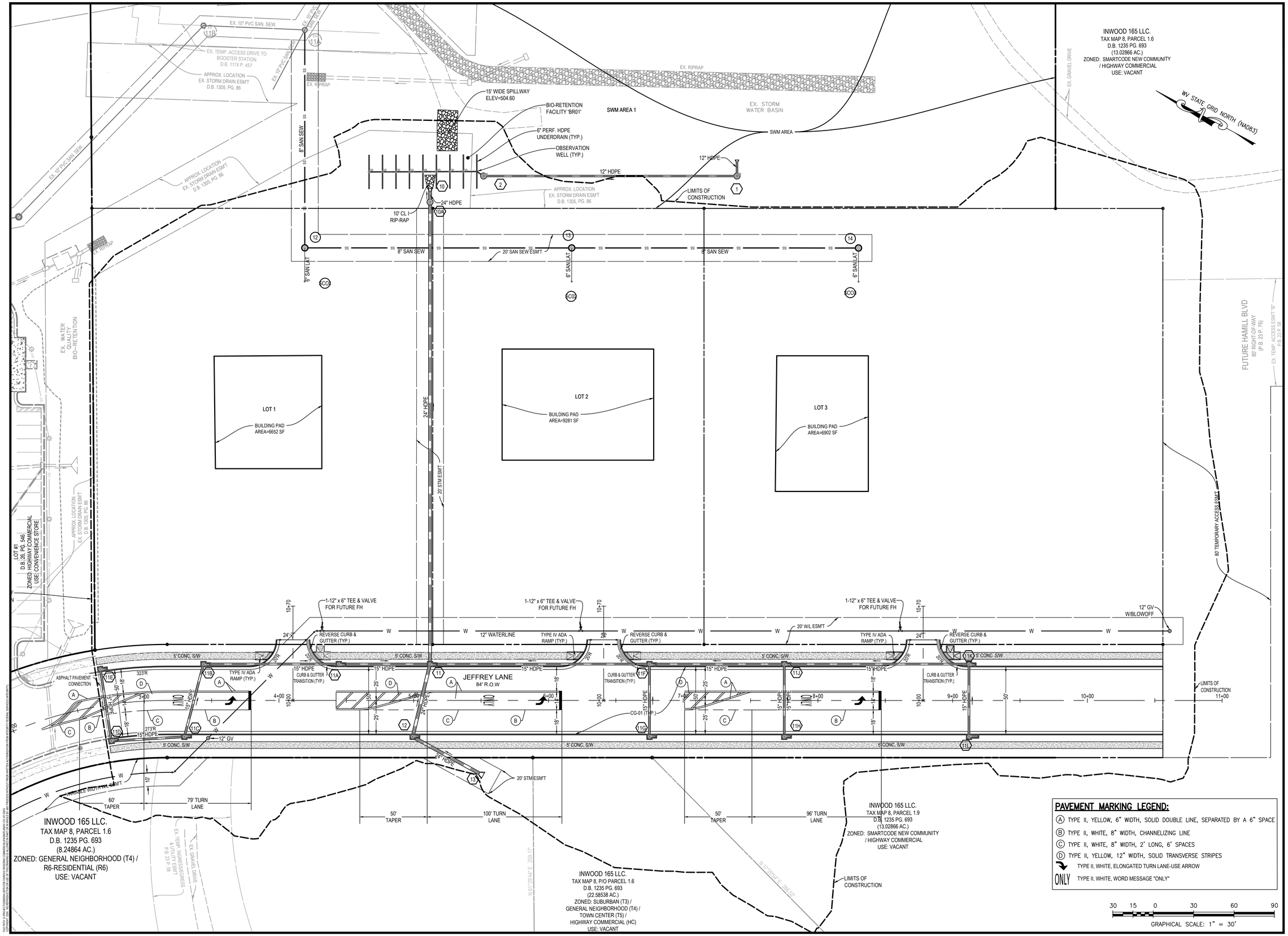

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SITE PLAN

FAIRFAX CROSSING INFRASTRUCTURE

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CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: 1" = 30' VERT.:
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CADD:	C-CS-101.DWG
NCS:	CS-101
SHEET:	10 OF 19

F:\JOBS\3079\ACTIVE\CIVIL\SITE PLANS\FAIRFAX CROSSING COMMERCIAL\WORK\ARC\CS-101.DWG
01/27/2025 - 10:17:00 AM
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GRADING PLAN

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
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CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

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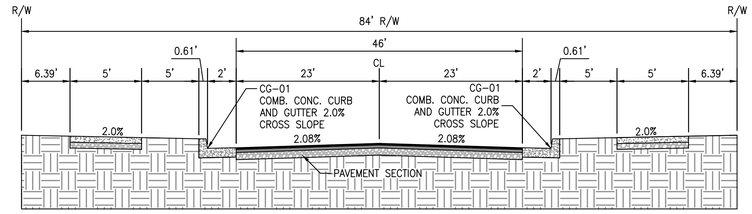
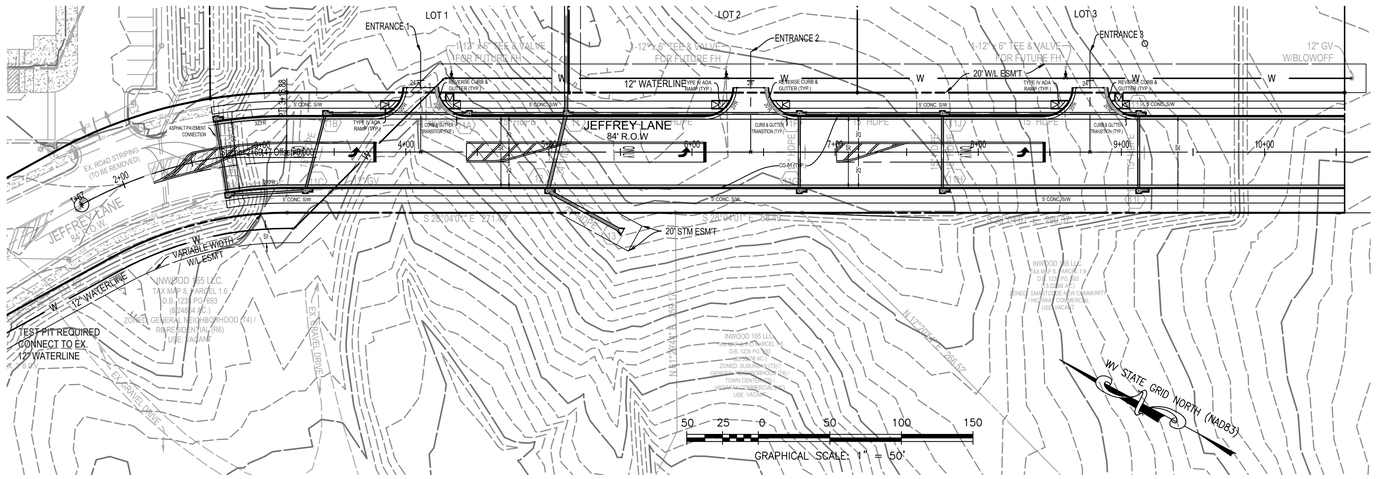
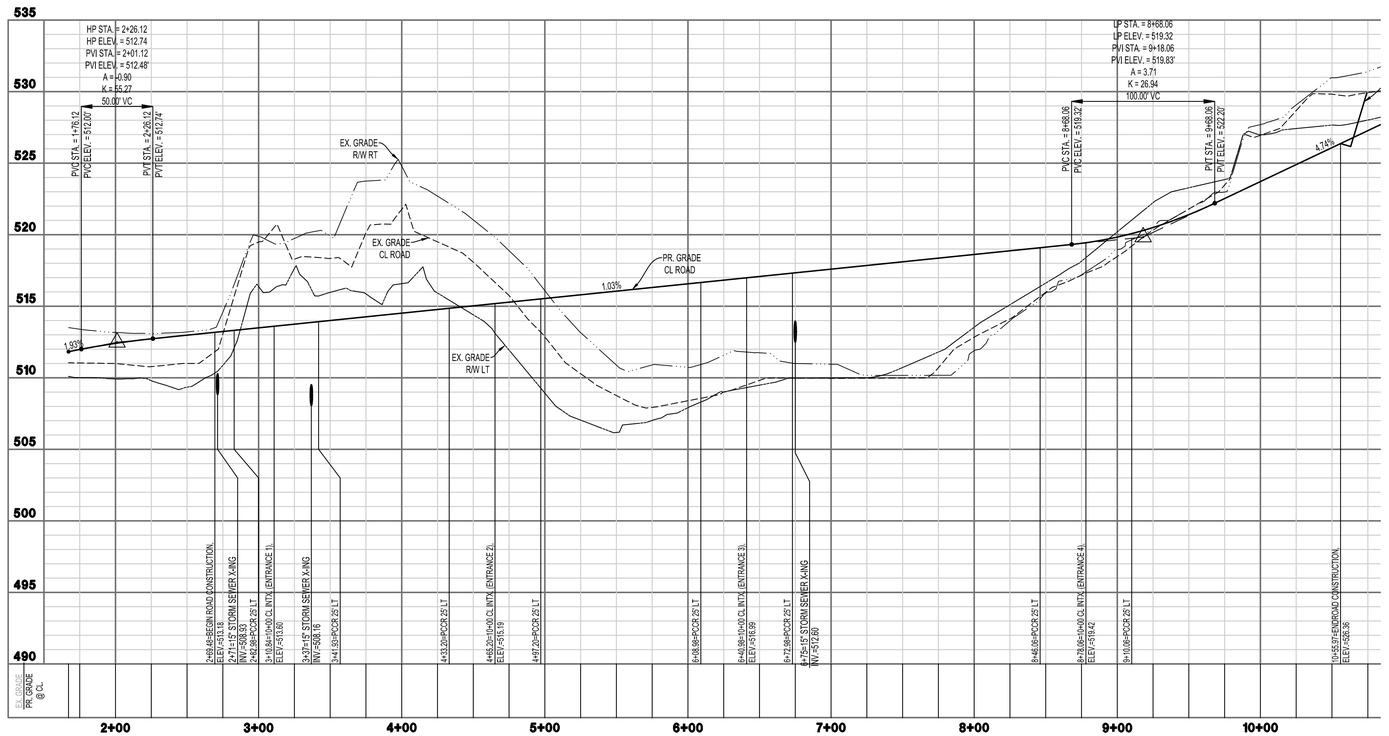
NCS:	CG-101
SHEET:	11 OF 19



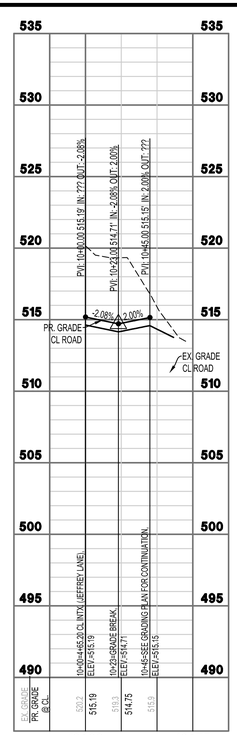
JEFFREY LANE TYPICAL ROAD SECTION



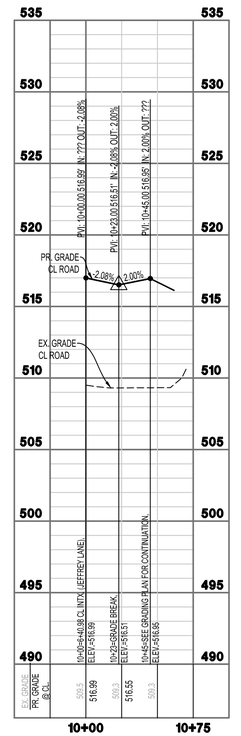
JEFFREY LANE PLAN VIEW



JEFFREY LANE PROFILE VIEW



ENTRANCE 1 PROFILE



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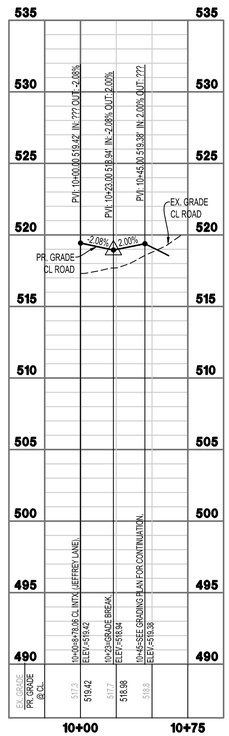

ENTRANCE 3 PROFILE

50 25 0 50 100 150
GRAPHICAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

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ROAD PLAN & PROFILE - JEFFREY LANE

FAIRFAX CROSSING INFRASTRUCTURE

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CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

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NCS:	CT-201
SHEET:	12 OF 19

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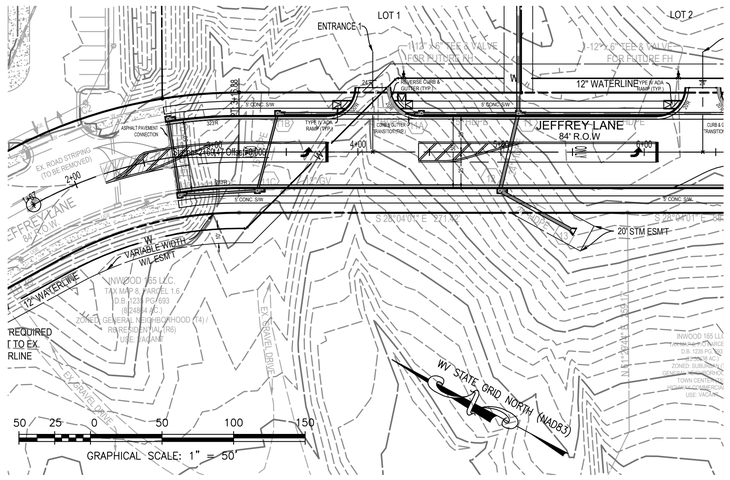
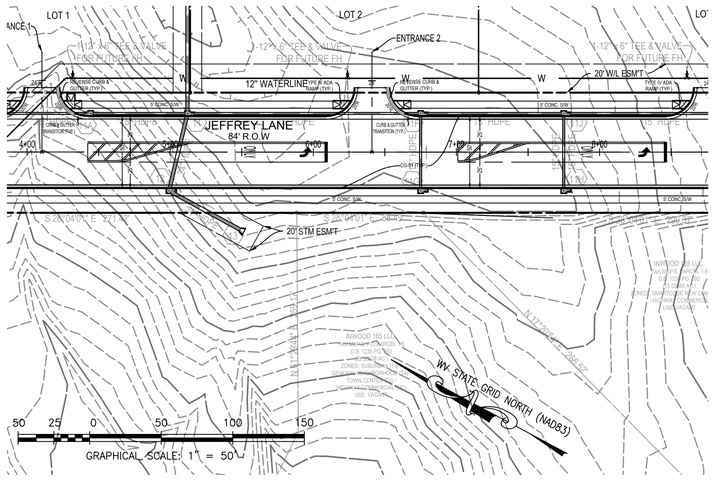
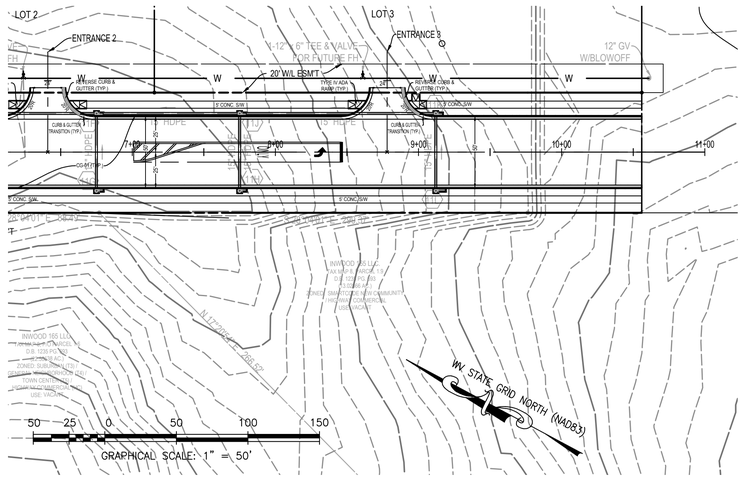


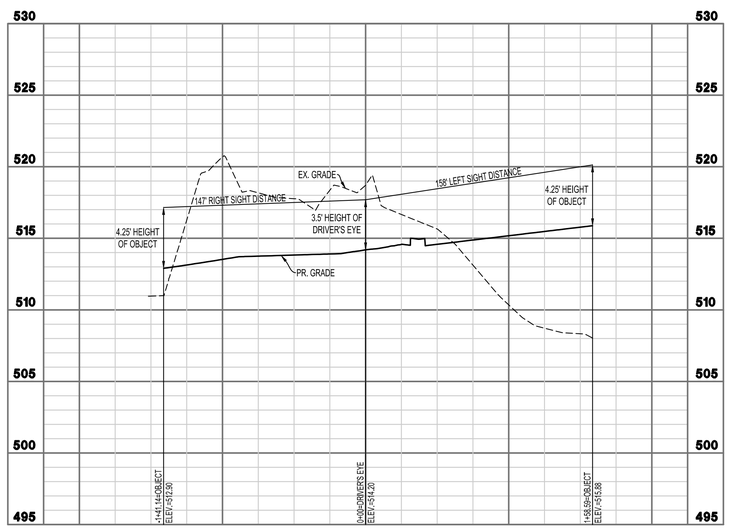
ENTRANCE 1 SIGHT DISTANCE
PLAN VIEW



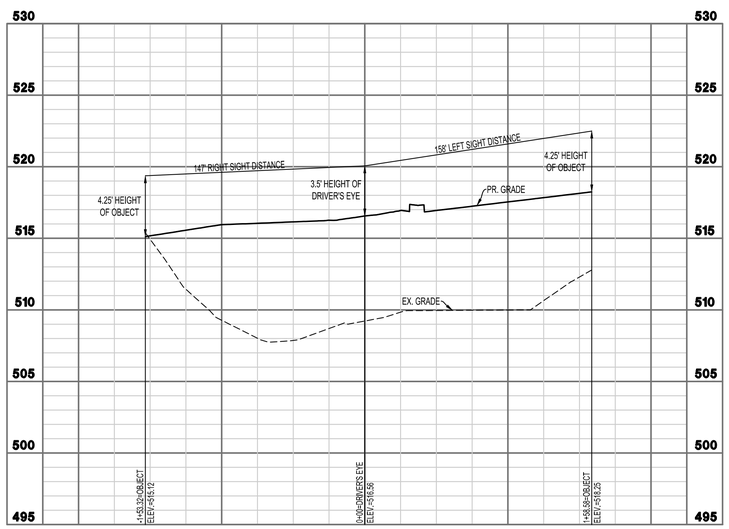
ENTRANCE 2 SIGHT DISTANCE
PLAN VIEW



ENTRANCE 2 SIGHT DISTANCE
PLAN VIEW



ENTRANCE 1 SIGHT DISTANCE PROFILE



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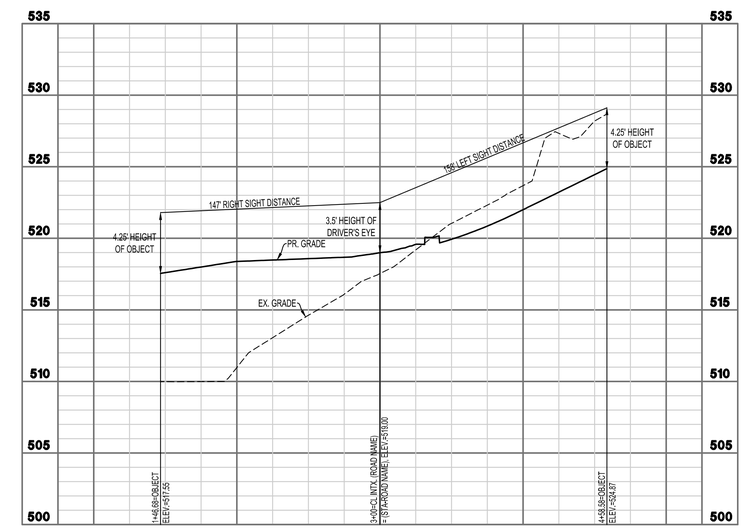

ENTRANCE 3 SIGHT DISTANCE PROFILE

50 25 0 50 100 150
GRAPHICAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

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STATE OF
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PROFESSIONAL ENGINEER

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SIGHT DISTANCE PLAN & PROFILE

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

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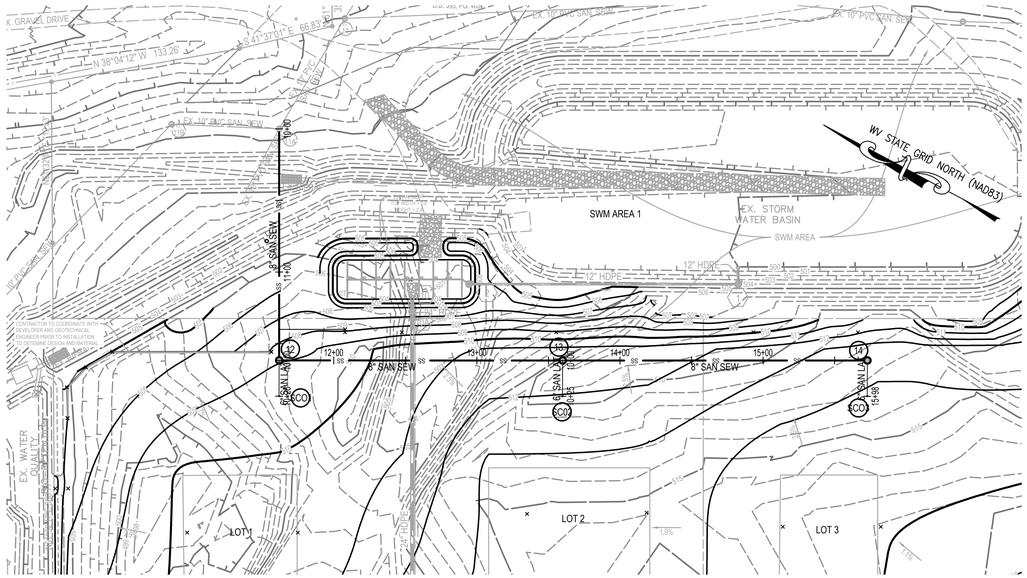
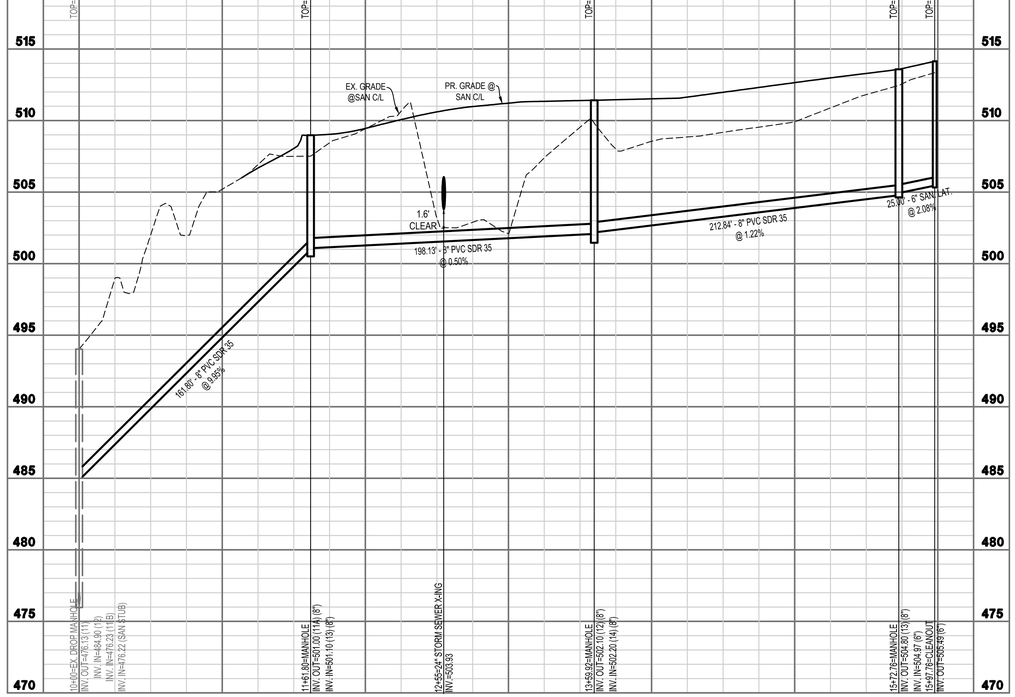


SANITARY SEWER PLAN VIEW

50 25 0 50 100 150

GRAPHICAL SCALE: 1" = 50'

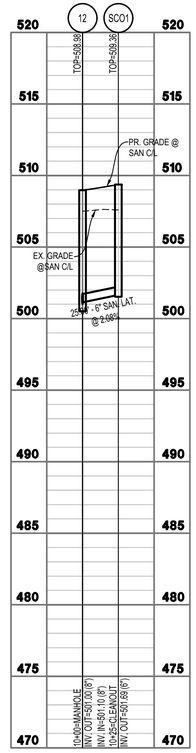
NOTE: NO LANDSCAPING IS PERMITTED WITHIN SANITARY EASEMENTS WITHOUT EXPRESS PERMISSION BY CTUB.



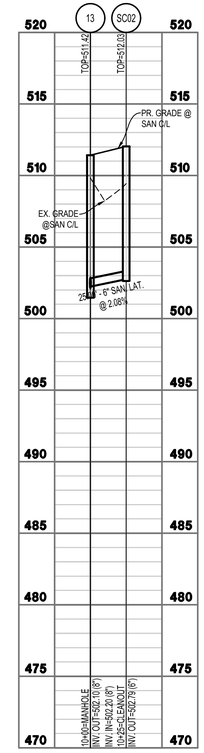
SANITARY SEWER PROFILE VIEW

50 25 0 50 100 150

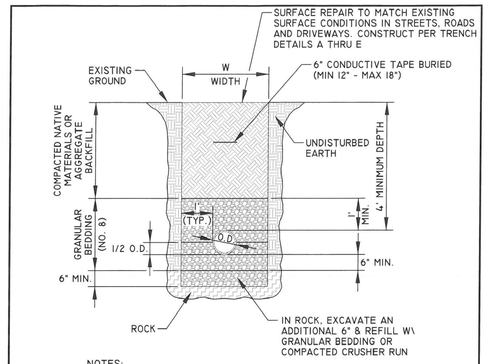
GRAPHICAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



SANITARY LATERAL 1 PROFILE



SANITARY LATERAL 2 PROFILE



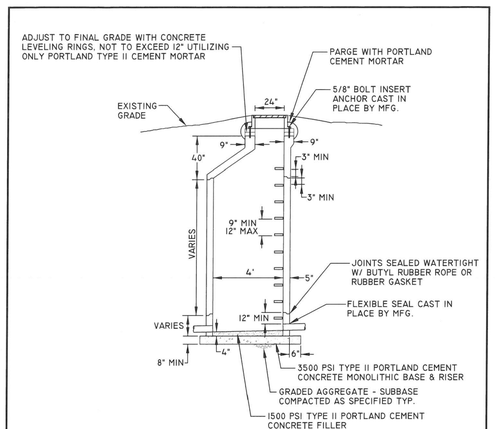
NOTES:

1. W = MAXIMUM PERMISSIBLE TRENCH WIDTH, BASED UPON, W = O.D. + 24", UNLESS APPROVED BY THE ENGINEER.
2. TRENCHES TO BE SHEETED AND BRACED AS REQUIRED.
3. PROVIDE BEARING FOR FULL LENGTH OF BARREL, DIG HOLES FOR THE BELL.
4. BACKFILL ON SIDES TO 1/2 O.D. OF PIPE TO HOLD PIPE IN PLACE PRIOR TO PLACING ADDITIONAL BEDDING.
5. BACKFILL TO BE COMPACTED IN 6" LAYERS TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE (+2%) IN ROADS AND STREETS. COMPACT TO MATCH EXISTING GROUND IN OTHER AREAS.
6. MAINTAIN MINIMUM OF 4' OF COVER TO THE TOP OF PIPE.
7. A CASING PIPE SHALL BE REQUIRED IN ROAD CROSSINGS WHERE SHOWN ON PLANS
8. ALL WATER LINES REQUIRE PERMIT FROM APPLICABLE REGULATORY ENTITIES. PERMIT REQUIREMENTS SUPERCEDE WHAT IS SHOWN ON THIS DETAIL.

Charles Town Utility Board
832 S. George Street, P.O. Box 359, Charles Town, WV 25414
Phone: (304) 725-2316 • Fax: (304) 725-4313

SEWER LINE TRENCH DETAIL

Standard Detail No. **S-1**
NOT TO SCALE
SEPTEMBER 2015



NOTES:

1. PRECAST MANHOLE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C 478 UTILIZING TYPE II PORTLAND CEMENT. 3500 PSI MIX MINIMUM.
2. 0.1' FALL TYPICAL INVERT IN TO INVERT OUT OR MATCH CROWNS FOR DIFFERING PIPE DIAMETERS.
3. COMPLETE MANHOLE SHALL PASS VACUUM TEST PRIOR TO ACCEPTANCE.

Charles Town Utility Board
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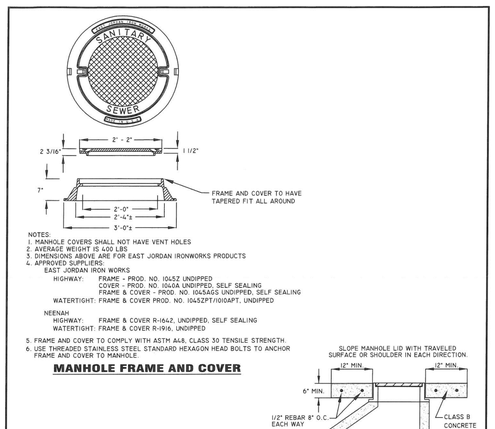
Phone: (304) 725-2316 • Fax: (304) 725-4313

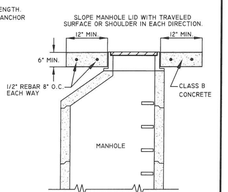
PRECAST MANHOLE W/ ECCENTRIC TOP DETAIL

Standard Detail No. **S-6**
NOT TO SCALE
SEPTEMBER 2015



NOTES:
1. MANHOLE COVERS SHALL NOT HAVE VENT HOLES
2. AVERAGE WEIGHT IS 400 LBS
3. DIMENSIONS ABOVE ARE FOR EAST JORDAN IRONWORKS PRODUCTS
4. APPROVED SUPPLIERS:
   EAST JORDAN IRON WORKS
   HIGHWAY: FRAME - PROD. NO. 1045Z UNDIPPED
   COVER - PROD. NO. 1040A UNDIPPED, SELF SEALING
   FRAME & COVER - PROD. NO. 1043AGS UNDIPPED, SELF SEALING
   WATERTIGHT: FRAME & COVER PROD. NO. 1045ZPT/1010APT, UNDIPPED
   NEENAH
   HIGHWAY: FRAME & COVER R-1642, UNDIPPED, SELF SEALING
   WATERTIGHT: FRAME & COVER R-1916, UNDIPPED
5. FRAME AND COVER TO COMPLY WITH ASTM A48, CLASS 30 TENSILE STRENGTH.
6. USE THREADED STAINLESS STEEL STANDARD HEXAGON HEAD BOLTS TO ANCHOR FRAME AND COVER TO MANHOLE.

MANHOLE FRAME AND COVER



ANCHOR DETAIL FOR FRAME & COVER IN PAVED ROAD SURFACE AREAS AND SHOULDERS OF ROAD

Charles Town Utility Board
832 S. George Street, P.O. Box 359, Charles Town, WV 25414
Phone: (304) 725-2316 • Fax: (304) 725-4313

MANHOLE FRAME & COVER ANCHOR FOR FRAME & COVER DETAIL

Standard Detail No. **S-7**
NOT TO SCALE
SEPTEMBER 2015

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RYAN P. PERRY REGISTERED Reg. No. 17061 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

REVISIONS

01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

SANITARY SEWER PLAN & PROFILE & DETAILS

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

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NCS:	CU-201
SHEET:	13 OF 19

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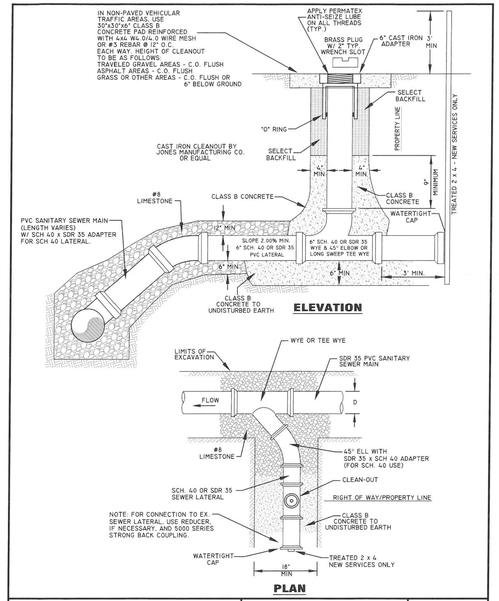


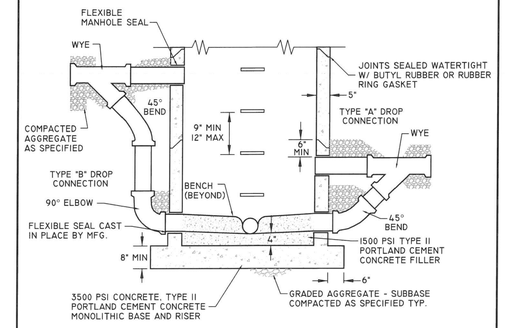
Charles Town Utility Board
832 S. George Street, P.O. Box 359, Charles Town, WV 25414
Phone: (304) 725-2316 •Fax: (304) 725-4313

NEW LATERAL CONNECTION DETAIL

Standard Detail No. **S-13**
NOT TO SCALE
SEPTEMBER 2015

DROP CONNECTIONS			
SIZE OF SEWER	TYPE A MAX DROP	TYPE A MIN DROP	TYPE B MIN DROP
8"	3'-9"	1'-9"	3'-9"
10"	4'-0"	2'-0"	4'-0"
12"	6'-0"	2'-6"	6'-0"
15"	6'-0"	2'-6"	6'-0"

NOTES:
1. PRECAST MANHOLE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C 478 UTILIZING TYPE II PORTLAND CEMENT.



Charles Town Utility Board
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Phone: (304) 725-2316 •Fax: (304) 725-4313

DROP MANHOLE DETAIL

Standard Detail No. **S-8**
NOT TO SCALE
SEPTEMBER 2015

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RYAN P. PERRY
REGISTERED
17961
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

REVISIONS
01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

SANITARY SEWER DETAILS

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: 1" = 50' VERT.: 1" = 5'
DATE:	DECEMBER 2024
JOB:	3079-0109
DRAWN: CAS	CHECK: JAE
CADD:	C-CU-201.DWG
NCS:	CU-201
SHEET:	13A OF 19

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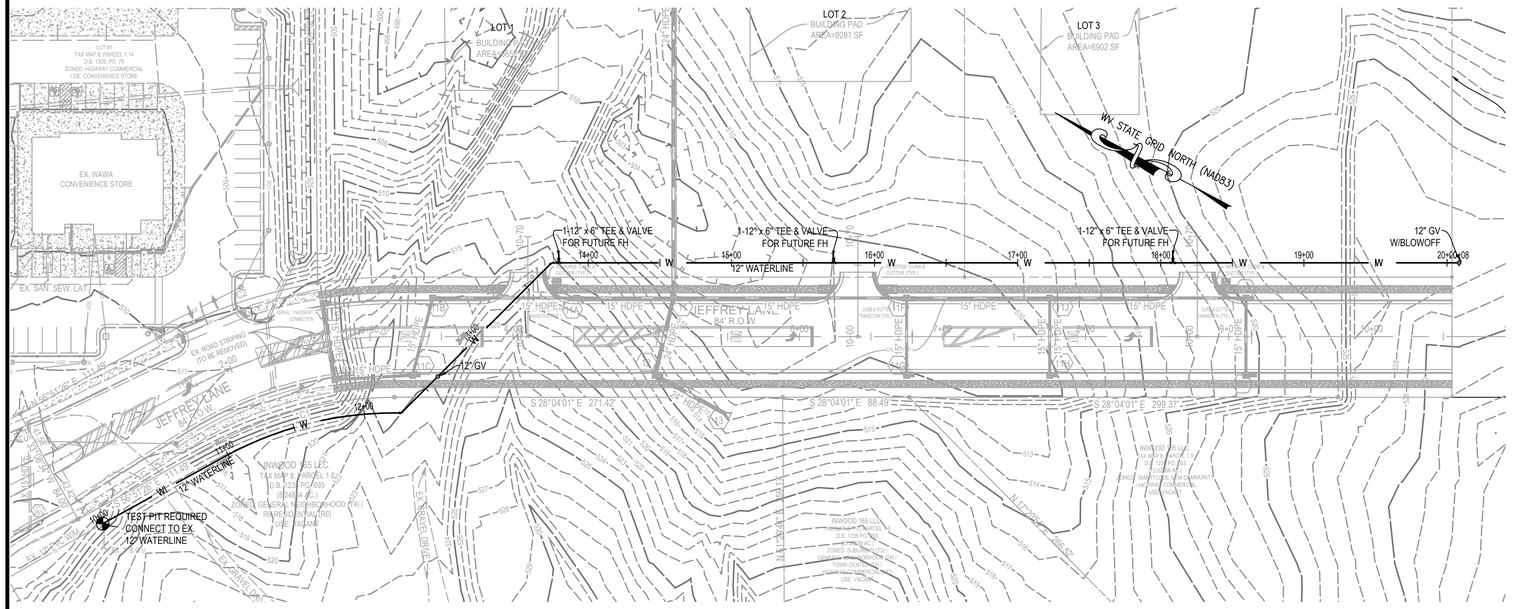
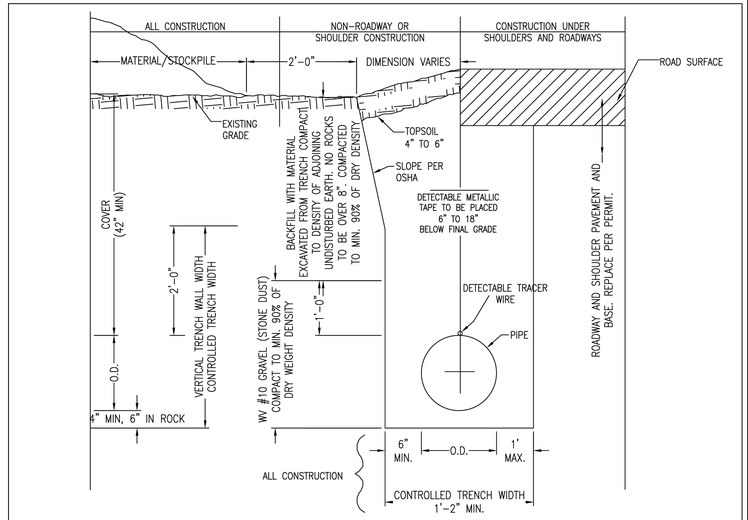


WATER LINE PLAN VIEW

50 25 0 50 100 150

GRAPHICAL SCALE: 1" = 50'

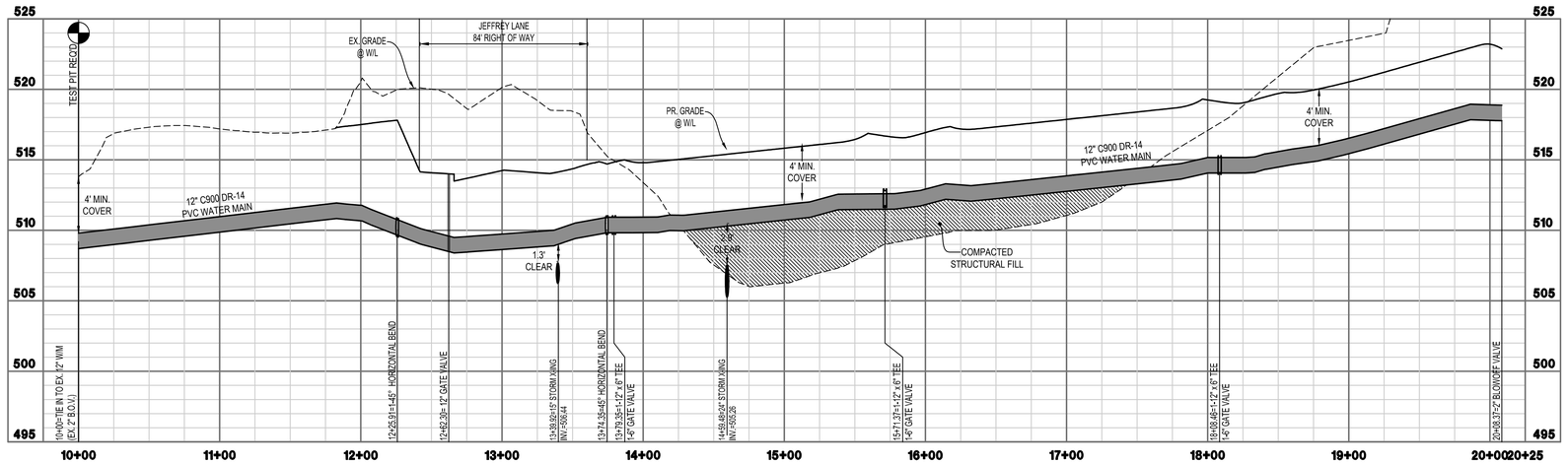


WEST VIRGINIA AMERICAN WATER
Eastern Operating Area
150 East Burr Boulevard
Kearneysville, WV 25430

TRENCH DETAIL
•Not to Scale•

W-1.00

REVISED:
April 2, 2024



WATER LINE PROFILE VIEW

50 25 0 50 100 150

GRAPHICAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

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RYAN P. PERRY REGISTERED Expires 12/31/2025 17061 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

REVISIONS
01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

WATERLINE PLAN & PROFILE & DETAILS

FAIRFAX CROSSING INFRASTRUCTURE

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T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

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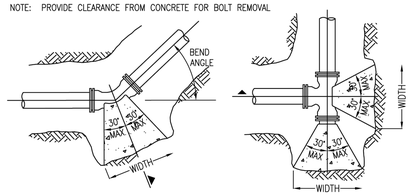
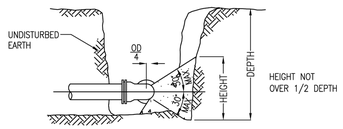
NOTE: PROVIDE CLEARANCE FROM CONCRETE FOR BOLT REMOVAL



TYP. BEND TYP. TEE AND CAP



TYPICAL SECTION

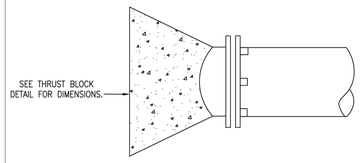
NOTE: BEARING AREAS ARE BASED ON 225 P.S.I. TEST PRESSURE AND A SOIL RESISTANCE OF 2000 P.S.F. IF WEAK (LESS THAN 2000 P.S.F. RESISTANCE) SOIL POCKETS ARE ENCOUNTERED, INCREASE THE BEARING AREAS SHOWN TO PREVENT MOVEMENT UNDER TEST OR OPERATING PRESSURES.

PIPE SIZE	MINIMUM BEARING AREA (S.F.) = WIDTH X DEPTH				HYD, TEE, CAP
	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND	VALVE, PLUG
3"	3	2	1	1	2
4"	4	2	2	1	3
6"	7	4	3	2	5
8"	12	7	4	3	8
10"	19	11	6	4	13
12"	26	15	8	5	18

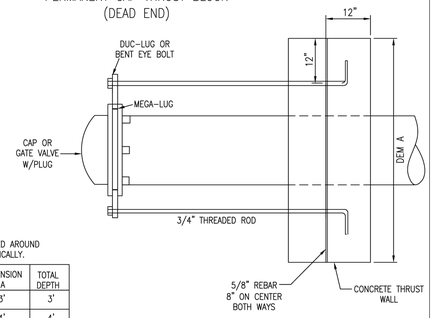
THRUST BLOCKS TO BE CLASS 3000 PSI CONCRETE (MIN.)

ALL MECHANICAL JOINTS ARE TO BE PROVIDED WITH MEGA LUGE JOINT RESTRAINTS.

WEST VIRGINIA AMERICAN WATER	THRUST BLOCK	W-2.00
Eastern Operating Area 150 East Burr Boulevard Kearneysville, WV 25430	•Not to Scale•	REVISED: April 2, 2024



PERMANENT CAP THRUST BLOCK
(DEAD END)



NOTE:

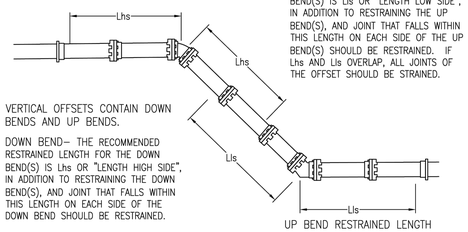
THRUST WALL TO BE CENTERED AROUND PIPE HORIZONTALLY AND VERTICALLY.

PIPE SIZE	# THREADED RODS	DIMENSION A	TOTAL DEPTH
4"	2	3'	3'
6"	2	4'	4'
8"	2	4'	4'
10"	2	5'	5'
12"	4	6'	6'
16"	4	8'	8'

TEMPORARY CAP THRUST BLOCK/WALL
(DEAD END)

WEST VIRGINIA AMERICAN WATER	PERMANENT AND TEMPORARY THRUST BLOCK/WALL	W-2.01
Eastern Operating Area 150 East Burr Boulevard Kearneysville, WV 25430	•Not to Scale•	REVISED: April 2, 2024

DOWN BEND RESTRAINED LENGTH



VERTICAL OFFSETS CONTAIN DOWN BENDS AND UP BENDS.

DOWN BEND– THE RECOMMENDED RESTRAINED LENGTH FOR THE DOWN BEND(S) IS Lhs OR "LENGTH HIGH SIDE", IN ADDITION TO RESTRAINING THE DOWN BEND(S), AND JOINT THAT FALLS WITHIN THIS LENGTH ON EACH SIDE OF THE DOWN BEND SHOULD BE RESTRAINED.

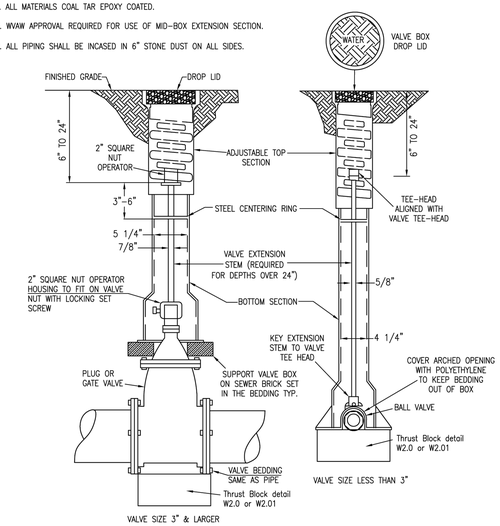
UP BEND– THE RECOMMENDED RESTRAINED LENGTH FOR THE UP BEND(S) IS Lls OR "LENGTH LOW SIDE", IN ADDITION TO RESTRAINING THE UP BEND(S), AND JOINT THAT FALLS WITHIN THIS LENGTH ON EACH SIDE OF THE UP BEND(S) SHOULD BE RESTRAINED. IF Lhs AND Lls OVERLAP, ALL JOINTS OF THE OFFSET SHOULD BE STRAINED.

UP BEND RESTRAINED LENGTH

WEST VIRGINIA AMERICAN WATER	VERTICAL OFFSET	W-2.02
Eastern Operating Area 150 East Burr Boulevard Kearneysville, WV 25430	•Not to Scale•	REVISED: April 2, 2024

NOTES:

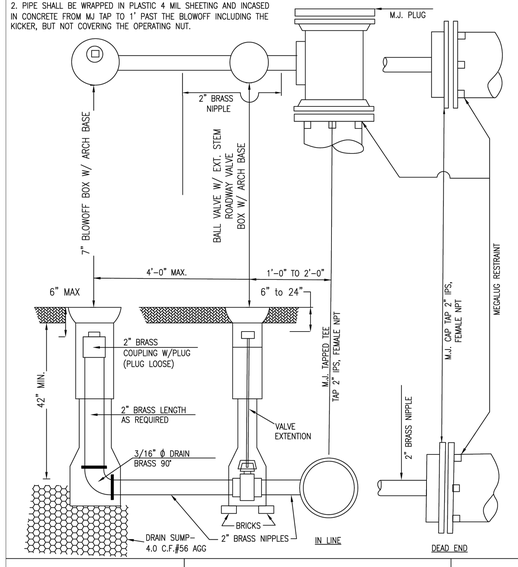
1. ALL MATERIALS COAL TAR EPOXY COATED.
2. WVAW APPROVAL REQUIRED FOR USE OF MID-BOX EXTENSION SECTION.
3. ALL PIPING SHALL BE INCASED IN 6" STONE DUST ON ALL SIDES.



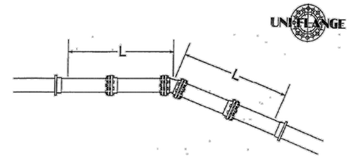
WEST VIRGINIA AMERICAN WATER	VALVE AND BOX INSTALLATION	W-3.00
Eastern Operating Area 150 East Burr Boulevard Kearneysville, WV 25430	•Not to Scale•	REVISED: April 2, 2024

NOTE:

1. SEE THRUST BLOCK DETAIL FOR REQUIRED THRUST BLOCKS.
2. PIPE SHALL BE WRAPPED IN PLASTIC 4 MIL SHEETING AND INCASED IN CONCRETE FROM MJ TAP TO 1' PAST THE BLOWOFF INCLUDING THE KICKER, BUT NOT COVERING THE OPERATING NUT.



WEST VIRGINIA AMERICAN WATER	BLOW-OFF ASSEMBLY	W-3.03
Eastern Operating Area 150 East Burr Boulevard Kearneysville, WV 25430	•Not to Scale•	REVISED: April 2, 2024

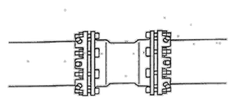


Horizontal bends are the most common examples of changes in direction that require restraint. In addition to restraining each side of the bend, any joints that fall within the recommended restrained length (L) on each side of the bend should be restrained.

Test Pressure	Type Fitting	Restrained Length of Pipe - L - in Feet for Type & Size of Pipe							
		PVC				DIP			
		6"	8"	10"	12"	6"	8"	10"	12"
	Degree	Horizontal Bends				Horizontal Bends			
150#	90	16.5	21.5	26.0	30.0	14.5	19.0	22.5	26.5
	45	7.0	9.0	11.0	12.5	6.0	8.0	9.5	11.0
	22.5	3.5	4.5	5.5	6.0	3.0	4.0	4.5	5.5
	11.25	2.0	2.5	2.5	3.0	1.5	2.0	2.5	3.0
200#	90	25.0	32.0	38.5	44.5	19.5	25.5	30.0	35.5
	45	10.5	13.5	16.0	18.5	8.0	10.5	12.5	15.0
	22.5	5.0	6.5	8.0	9.0	4.0	5.0	6.0	7.0
	11.25	2.5	3.5	4.0	4.5	2.0	2.5	3.0	3.5
250#	90	31.0	40.0	48.0	56.0	24.0	31.5	37.5	44.0
	45	13.0	16.5	20.0	23.5	10.0	13.0	15.5	18.5
	22.5	6.5	8.0	10.0	11.5	5.0	6.5	7.5	9.0
	11.25	3.0	4.0	5.0	5.5	2.5	3.5	4.0	4.5
300#	90	37.0	47.5	57.5	67.0	29.0	38.0	45.0	53.0
	45	15.5	20.0	24.0	28.0	12.0	16.0	19.0	22.0
	22.5	7.5	9.5	11.5	13.5	6.0	7.5	9.0	10.5
	11.25	4.0	5.0	6.0	7.0	3.0	4.0	4.5	5.5

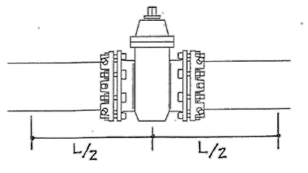
WEST VIRGINIA AMERICAN WATER	HORIZONTAL BENDS	W 2.04
Eastern Operating Area 150 East Burr Boulevard Kearneysville, WV 25430	•Not to Scale•	REVISED: January 3, 2025

Mechanical Joint Sleeves



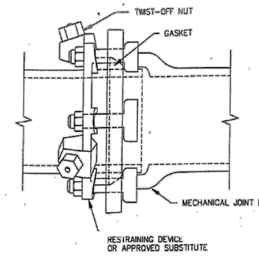
Mechanical joint sleeves and bolted, sleeve type pipe couplings should be restrained if they fall within the recommended restrained lengths for fittings. For example, if the recommended restrained length for a 90 degree elbow is 18 feet and a mechanical joint sleeve is within 18 feet of the elbow, it should be restrained.

In Line Valves –



Closed in-line valves can act as dead-ends, particularly if the downstream pipe joints can telescope. This is the case when larger valves are used in PVC piping systems; large thrust forces can cause down stream pipe joints to telescope or "over-bell", possibly causing failure of the pipe or failure at the valve joint if it is not sufficiently restrained.

WEST VIRGINIA AMERICAN WATER	MECHANICAL JOINT SLEEVES AND VALVES	W 2.07
Eastern Operating Area 150 East Burr Boulevard Kearneysville, WV 25430	•Not to Scale•	REVISED: January 3, 2025



NOMINAL PIPE SIZE (INCHES)	NUMBER OF TWIST-OFF NUTS	NUMBER OF T-BOLTS	RATED PRESSURE
3	2	4	350 PSI
4	2	4	350 PSI
6	3	6	350 PSI
8	4	6	350 PSI
10	6	8	350 PSI
12	8	8	350 PSI
16	12	12	350 PSI
18	12	12	250 PSI
24	16	16	250 PSI
30	20	20	250 PSI
36	24	24	250 PSI
42	28	28	250 PSI

NOTES:

1. Make any joint deflection necessary before torquing the T-head bolts.
2. Tighten T-head bolts, bottom first, then top, sides and remainder.
3. Repeat Note 1, until all T-bolts are properly torqued.
4. Tighten twist-off nuts so that all wedges firmly contact pipe.
5. Tighten twist-off nuts in alternating manner,shearing off nuts.
6. MEGALUG may be reset or reused by assembly as described above and torquing wedge bolts to 90 ft-lbs.

WEST VIRGINIA AMERICAN WATER	JOINT RESTRAINT DEVICE	W 2.08
Eastern Operating Area 150 East Burr Boulevard Kearneysville, WV 25430	•Not to Scale•	REVISED: January 3, 2025

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BRIAN P. PERRY REGISTERED Num. 17961 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

REVISIONS

01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

WATERLINE DETAILS

FAIRFAX CROSSING INFRASTRUCTURE

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T.M. 8, P. 1.4, D.B. 1235, PG. 707
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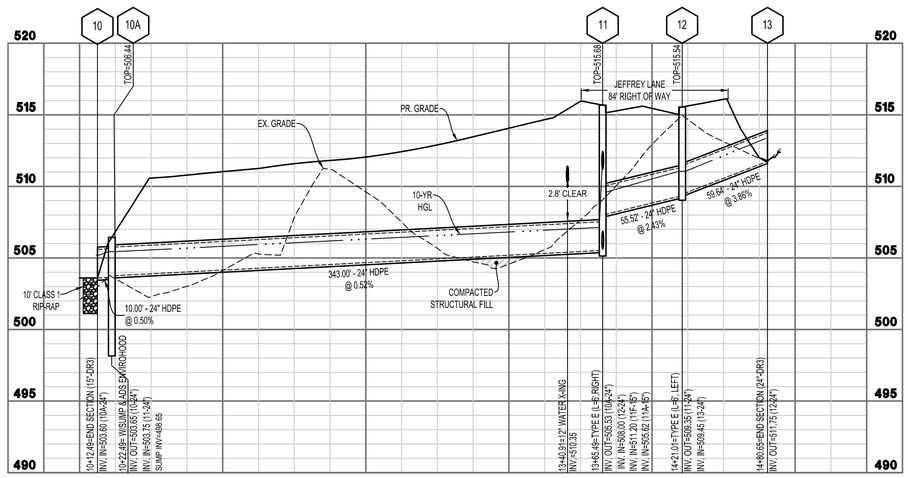

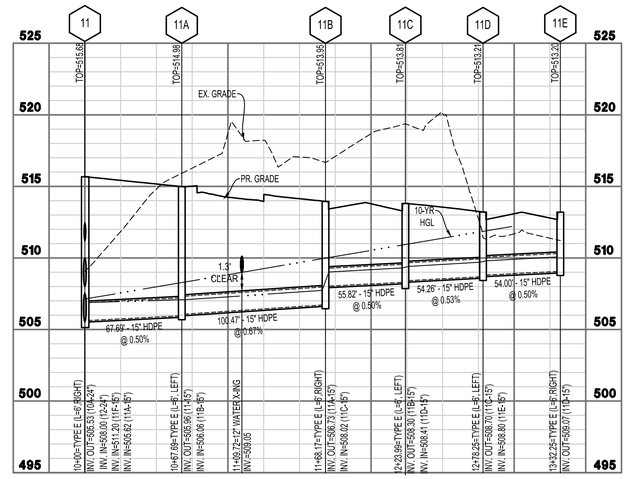

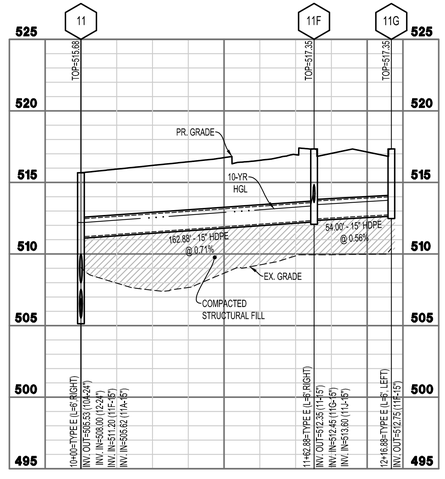

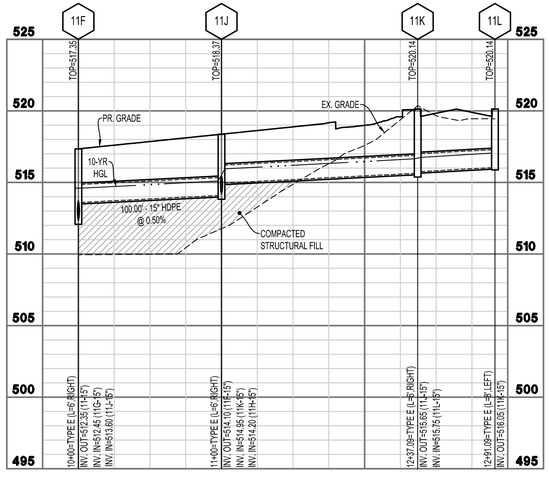

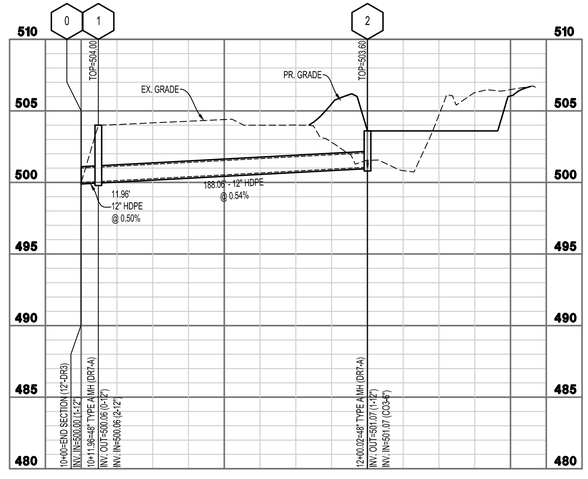

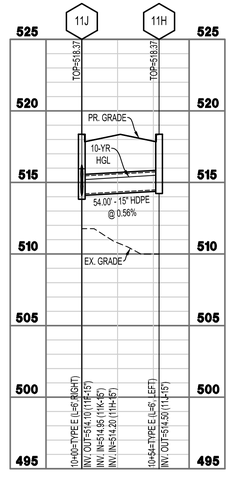

50 25 0 50 100 150

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STORM SEWER PROFILES

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SHEET:	16 OF 19

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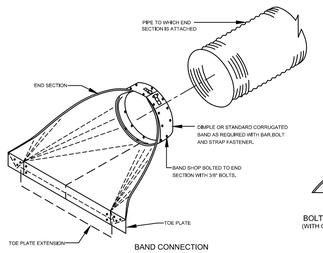
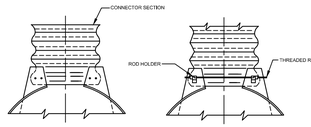
DIMENSIONS OF GALVANIZED STEEL END SECTION FOR ROUND PIPE								
PIPE DIAM. (INCHES)	METAL THK. (INCHES)	DIMENSIONS (INCHES) A ±1"	B MAX	H ±1"	L ±1'-0"	W ±2"	APPROX. SLOPE	BODY
12	.064	6	6	6	21	24	2:12	1 PC.
15	.064	7	8	6	26	30	2:12	1 PC.
18	.064	8	10	6	31	36	2:12	1 PC.
21	.064	9	12	6	36	42	2:12	1 PC.
24	.064	10	13	6	41	48	2:12	1 PC.
30	.079	12	16	8	51	60	2:12	1 PC.
36	.079	14	19	9	60	72	2:12	2 PC.
42	.109	16	22	11	69	84	2:12	2 PC.
48	.109	18	27	12	78	90	2:14	2 PC.
54	.109	18	30	12	84	102	2	2 PC.
60	.109	18	33	12	87	114	1:8	3 PC.
66	.109	18	36	12	87	120	1:10	3 PC.
72	.109	18	39	12	87	126	1:10	3 PC.
78	.109	18	42	12	87	132	1:14	3 PC.
84	.109	18	45	12	87	138	1:16	3 PC.

DIMENSIONS OF GALVANIZED STEEL END SECTION FOR PIPE ARCH									
PIPE ARCH SPAN X RISE (INCHES)	EQUIV. DIAM. (INCHES)	METAL THK. (INCHES)	DIMENSIONS (INCHES) A ±1"	B MAX	H ±1"	L ±1'-0"	W ±2"	APPROX. SLOPE	BODY
17X13	15	.064	7	9	6	19	30	2:12	1 PC.
21X15	18	.064	7	10	6	23	36	2:12	1 PC.
24X18	21	.064	8	12	6	28	42	2:12	1 PC.
28X20	24	.064	9	14	6	32	48	2:12	1 PC.
35X24	30	.079	10	16	6	39	60	2:12	1 PC.
42X29 (40X31)	36	.079	12	18	8	46	75	2:12	1 PC.
49X33 (46X36)	42	.109	13	21	9	53	85	2:12	2 PC.
57X38 (53X41)	48	.109	18	26	12	63	90	2:12	2 PC.
64X43 (60X46)	54	.109	18	30	12	70	102	2:14	2 PC.
71X47 (66X51)	60	.109	18	33	12	77	114	2:14	3 PC.
77X52 (73X55)	66	.109	18	36	12	77	126	2	3 PC.
83X57 (81X59)	72	.109	18	39	12	77	138	2	3 PC.

NOTE: SPAN AND RISE DIMENSIONS IN PARENTHESES ARE FOR 3"X1" CORRUGATED PIPE ARCHES. ALL OTHER SPAN AND RISE VALUES ARE FOR 2 1/2"X1/2" CORRUGATED PIPE ARCHES.

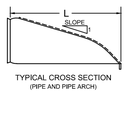


BAND CONNECTION

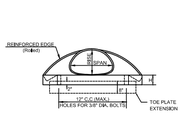


BOLTED OR RIVETED CONNECTION
(WITH OR WITHOUT CONNECTOR SECTION)

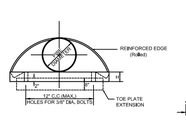
THREADED ROD CONNECTION



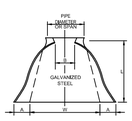
TYPICAL CROSS SECTION
(PIPE AND PIPE ARCH)



ELEVATION
(PIPE ARCH)



ELEVATION
(PIPE)



PLAN
(PIPE AND PIPE ARCH)

NOTES

TYPICAL END SECTIONS FOR PIPES AND PIPE ARCHES ARE DETAILED HEREIN. OTHER SIMILAR DESIGNS MAY BE USED IF ACCEPTABLE TO THE ENGINEER.

GALVANIZED STEEL END SECTIONS SHALL BE USED ON THE ENDS OF CORRUGATED STEEL PIPES AND/OR PIPE ARCHES AT THOSE LOCATIONS SPECIFIED ON THE PLANS. END SECTIONS SHALL BE MEASURED AS THE NUMBER OF UNITS INSTALLED OF EACH SIZE AND TYPE AND SHALL BE PAID FOR IN ACCORDANCE WITH 604 OF THE SPECIFICATIONS.

TWO-PIECE AND THREE-PIECE END SECTIONS SHALL BE OF LAP SEAM CONSTRUCTION TIGHTLY JOINED WITH 3/8 " DIAMETER GALVANIZED RIVETS OR BOLTS.

FOR 60" THRU 84" PIPES, THE REINFORCED EDGES OF THE END SECTIONS SHALL BE SUPPLEMENTED WITH GALVANIZED STIFFENER ANGLES FASTENED BY 3/8" DIAMETER GALVANIZED BOLTS AND NUTS. THIS REQUIREMENT SHALL ALSO BE APPLICABLE TO THE END SECTIONS FOR 77"X52", 73"X 55", 83"X 57", AND 81"X 59" PIPE ARCH SIZES. IN ADDITION, FOR THOSE PIPE ARCH SIZES, ANGLE REINFORCEMENT SHALL BE USED UNDER THE CENTER PANEL SEAMS.

THE END SECTION CONNECTION DETAILS SHALL BE AS SHOWN ON THIS PLAN SHEET OR OF A SIMILAR DESIGN AS RECOMMENED BY THE MANUFACTURER. ALL SIMILAR DESIGNS SHALL PROVIDE A SECURE ATTACHMENT OF THE END SECTION TO THE PIPE OR PIPE ARCH.

ALTHOUGH A PIPE OR PIPE ARCH MAY HAVE A BITUMINOUS COATING AND/OR PAVED INVERT, IT WILL NOT BE NECESSARY TO BITUMINOUS COAT OR PAVE THE END SECTION, CONNECTORS, OR CONNECTOR SECTION.

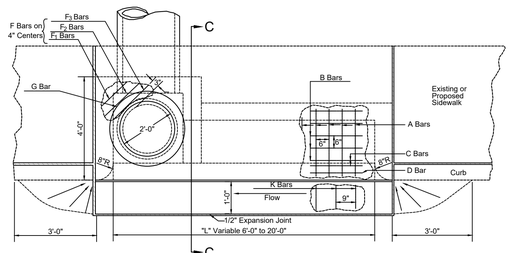
TOE PLATE EXTENSIONS SHALL BE THE SAME THICKNESS AS THE END SECTIONS AND SHALL BE FASTENED TO TOE PLATES WITH 3/8 " DIAMETER GALVANIZED BOLTS. LENGTH OF TOE PLATE EXTENSION SHALL BE W+10"(APPROX.) FOR 12" THRU 30" DIAMETER PIPES AND FOR PIPE ARCHES WITH RISE VALUES UP TO AND INCLUDING 29". THE LENGTH SHALL BE W+22"(APPROX.) FOR LARGER PIPE SIZES AND W+18" (APPROX.) FOR LARGER PIPE ARCHES.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

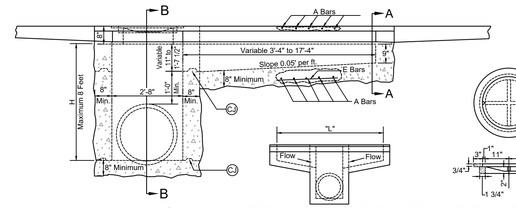
PREPARED 7-1-99
REVISION DATE

END SECTIONS FOR CORRUGATED STEEL PIPES AND PIPE ARCHES

STANDARD SHEET DR3

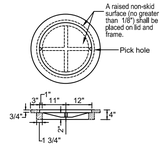


PLAN

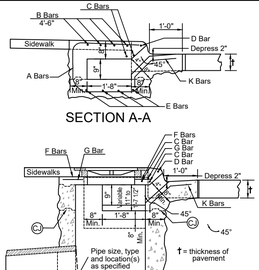


ELEVATION

SKETCH SHOWING USE OF INLET IN SAGS. BOTH SIDES TO BE SYMMETRICAL.

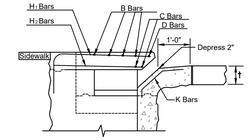


DETAIL OF FRAME AND COVER CASTING

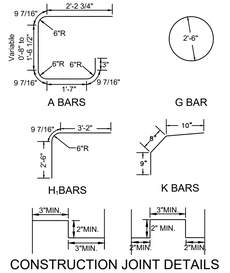


SECTION A-A

SECTION B-B



SECTION C-C



CONSTRUCTION JOINT DETAILS

NOTES:

TYPE E INLET DETAILED HEREIN IS FOR USE ON A GRADE. IF IT IS TO BE USED IN A SAG (SEE SKETCH HEREIN) IT SHOULD BE BUILT SYMMETRICALLY ABOUT CENTERLINE OF PIPE AND LENGTH OF OPENING SPECIFIED.

THE COVERING FOR REINFORCING STEEL SHALL BE TWO INCHES, MEASURED FROM THE SURFACE OF THE CONCRETE TO THE FACE OF THE BAR, UNLESS OTHERWISE SHOWN. ALL REINFORCING STEEL SHALL BE EPOXY-COATED AND MEET THE REQUIREMENTS OF SECTION 602 OF THE SPECIFICATIONS.

OPTIONAL CONSTRUCTION JOINTS LABELED "C/J" MAY BE KEYED OR DOWELED AS PER THE TYPICAL DETAILS SHOWN HEREIN OR AS APPROVED BY THE ENGINEER.

IF TYPE E INLET IS TO BE CONSTRUCTED ALONG WITH A SIDEWALK, THE SIDEWALK SHALL BE CONSTRUCTED MONOLITHIC WITH THE TOP SLAB ON THE INLET. THE SIDEWALK SHALL BE REINFORCED WITH TYPE B FABRIC PLACED 2" FROM BOTTOM OF SIDEWALK AND EXTENDED INTO THE TOP SLAB OF THE INLET A MINIMUM DISTANCE OF 8". COST OF TYPE B FABRIC SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE SIDEWALK.

THIS INLET SHALL NOT BE PLACED IN A PEDESTRIAN CROSS WALK.

THE MINIMUM DISTANCE FROM THE TOP OF ANY PIPE OPENING TO ANY CONSTRUCTION JOINT ABOVE THE OPENING SHALL BE FOUR (4) INCHES.

THE NUMBER AND LOCATION OF PIPE OPENINGS SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR AT NO ADDITIONAL COST, SHALL BE RESPONSIBLE FOR ANY TEMPORARY BRACING REQUIRED TO TRANSPORT PRECAST INLET SECTIONS DUE TO MULTIPLE OPENINGS.

CONCRETE AND REINFORCING STEEL QUANTITIES																																			
"L" Feet	Concrete C.Y.*	Reinforcing Steel lbs.	A Bars (Bent)			B Bars (Straight)			C Bars (Straight)			D Bars (Straight)			E Bars (Straight)			F1 Bars (Straight)			F2 Bars (Straight)			F3 Bars (Straight)			G Bar (Bent)			H Bars (Straight)			H2 Bars (Straight)			K Bars (Bent)		
			No	Size	Length	No	Size	Length	No	Size	Length	No	Size	Length	No	Size	Length	No	Size	Length	No	Size	Length	No	Size	Length	No	Size	Length	No	Size	Length	No	Size	Length	No	Size	Length
6	2.59	189	5	#5	7'-1" to 7'-4"	4	#5	3'-9"	2	#5	7'-1"	1	#5	7'-1"	4	#5	3'-6"	4	#5	2'-0"	4	#5	2'-6"	4	#5	3'-0"	1	#5	8'-0"	2	#7	6'-5"	2	#6	3'-4"	10	#5	2'-3"
8	3.07	250	9	#5	7'-1" to 7'-4"	4	#5	5'-9"	2	#5	9'-1"	1	#5	9'-1"	4	#5	5'-6"	4	#5	2'-0"	4	#5	2'-6"	4	#5	3'-0"	1	#5	8'-0"	2	#7	6'-5"	2	#6	3'-4"	13	#5	2'-3"
10	3.57	308	13	#5	7'-1" to 7'-5"	4	#5	7'-9"	2	#5	11'-1"	1	#5	11'-1"	4	#5	7'-6"	4	#5	2'-0"	4	#5	2'-6"	4	#5	3'-0"	1	#5	8'-0"	2	#7	6'-5"	2	#6	3'-4"	15	#5	2'-3"
12	4.09	369	17	#5	7'-1" to 7'-5"	4	#5	9'-9"	2	#5	13'-1"	1	#5	13'-1"	4	#5	9'-6"	4	#5	2'-0"	4	#5	2'-6"	4	#5	3'-0"	1	#5	8'-0"	2	#7	6'-5"	2	#6	3'-4"	18	#5	2'-3"
14	4.62	444	21	#5	7'-1" to 7'-7"	4	#5	11'-9"	2	#6	15'-1"	1	#5	15'-1"	4	#5	11'-6"	4	#5	2'-0"	4	#5	2'-6"	4	#5	3'-0"	1	#5	8'-0"	2	#7	6'-5"	2	#6	3'-4"	21	#5	2'-3"
16	5.17	506	25	#5	7'-1" to 7'-9"	4	#5	13'-9"	2	#6	17'-1"	1	#5	17'-1"	4	#5	13'-6"	4	#5	2'-0"	4	#5	2'-6"	4	#5	3'-0"	1	#5	8'-0"	2	#7	6'-5"	2	#6	3'-4"	23	#5	2'-3"
18	5.74	570	29	#5	7'-1" to 7'-10"	4	#5	15'-9"	2	#6	19'-1"	1	#5	19'-1"	4	#5	15'-6"	4	#5	2'-0"	4	#5	2'-6"	4	#5	3'-0"	1	#5	8'-0"	2	#7	6'-5"	2	#6	3'-4"	26	#5	2'-3"
20	6.19	636	33	#5	7'-1" to 8'-0"	4	#5	17'-9"	2	#6	21'-1"	1	#5	21'-1"	4	#5	17'-6"	4	#5	2'-0"	4	#5	2'-6"	4	#5	3'-0"	1	#5	8'-0"	2	#7	6'-5"	2	#6	3'-4"	29	#5	2'-3"

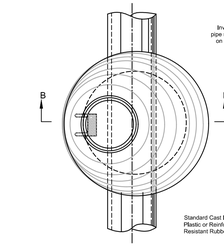
* The quantities shown above are for an H of five feet. If deeper inlets are required the quantities must be adjusted accordingly.
The above table to be used for estimating purposes only.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

PREPARED 7-1-99
REVISION DATE

TYPE E INLET

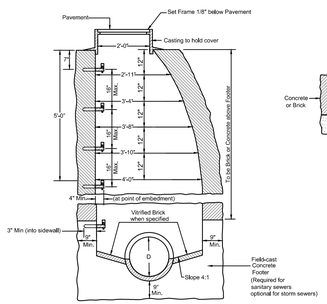
STANDARD SHEET DR6-E



Complete Structure

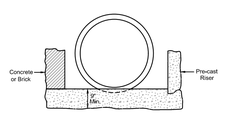
Section Through Footer

PLAN VIEWS



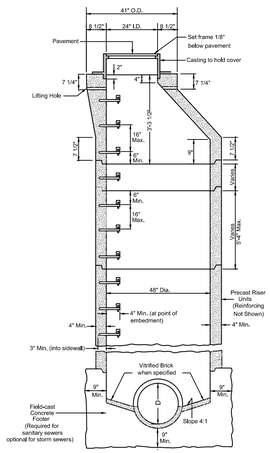
Section B-B

CAST-IN-PLACE OPTION



CONCRETE BASE

FOR USE WITH STORM SEWERS ONLY
May Be Precast



Section B-B

PRE-CAST

NOTES

TYPE A MANHOLES, WHEN SPECIFIED ON THE PLANS, MAY BE CONSTRUCTED IN EITHER METHOD (CAST-IN-PLACE OR PRE-CAST OPTION) AS SHOWN HEREIN.

STEPS, FRAMES, AND COVERS SHALL BE AS SHOWN ON STANDARD SHEET DR7-X.

"KEYED" OR "DOWELED" TYPE CONSTRUCTION JOINTS, ACCEPTABLE TO THE ENGINEER, MAY BE USED IN THE CONSTRUCTION OF CONCRETE MANHOLES.

IF THE CAST-IN-PLACE MANHOLE IS OVER TWELVE FEET (12') IN DEPTH, THE SIDEWALLS BELOW THAT DEPTH WILL BE DOUBLE THICKNESS.

PIPE AT ELEVATIONS OTHER THAN SHOWN MAY BE JOINED TO THE MANHOLE BY CUTTING A HOLE THE SIZE OF THE CONNECTING PIPE IN THE MANHOLE, INSERTING THE PIPE THE THICKNESS OF THE MANHOLE SHELL AND CLOSING ALL OPENINGS AROUND THE CONNECTING PIPE WITH JOINT MORTAR.

DRAWING SHOWS PIPE ENTERING AND LEAVING MANHOLE IN A STRAIGHT LINE. HOWEVER, THE PIPES MAY ENTER OR LEAVE AT AN ANGLE OR PLACE AS CALLED FOR OR SHOWN ON THE PLANS.

MINIMUM HEIGHT OF BENCH WALL ABOVE FLOWLINE OF PIPE IS 25% OF THE DIAMETER OF THE PIPES.

THE USE OF BRICK FOR MANHOLE CONSTRUCTION WILL NOT BE ALLOWED WHEN A MANHOLE IS LOCATED IN THE ROADWAY.

THE FOLLOWING ADDITIONAL NOTES ARE APPLICABLE FOR PRE-CAST MANHOLES:
MANHOLE STEPS SHALL BE PLACED INTO PLASTIC CONCRETE WALL DURING MANUFACTURE OR MORTARED INTO HOLES AFTER THE CONCRETE HAS SET.

SIDEWALL SECTIONS MAY BE USED IN ANY COMBINATION TO PRODUCE A MANHOLE OF DESIRED DEPTH, EXCEPT THE TAPERED TOP SECTION SHALL BE RETAINED AS SHOWN.

THE TAPERED TOP SECTION SHALL BE MANUFACTURED AND MEET THE SAME REQUIREMENTS AS THE MANHOLE'S SIDEWALLS, BUT SHALL CONFORM TO THE DIMENSIONS DETAILED HEREIN.

LIFTING HOLES IN THE TAPERED TOP SECTION AND THE CIRCUMFERENTIAL NOTCHES IN THE MANHOLE COVER ARE FOR HANDLING PURPOSES ONLY.

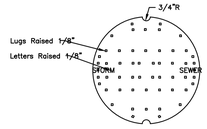
THE PRE-CAST SIDEWALL UNITS SHALL BE SET IN JOINT MORTAR OR SEALED WITH O-RING GASKETS.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

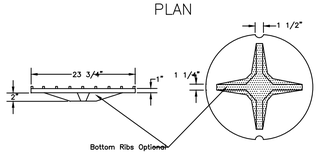
PREPARED 7-1-99
REVISION DATE

TYPE A MANHOLE

STANDARD SHEET DR7-A

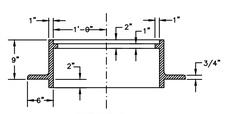


PLAN



ELEVATION INVERTED PLAN

MANHOLE COVER



SECTION

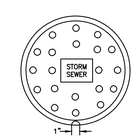
MANHOLE FRAME

NOTES

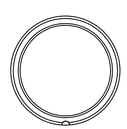
Lettering on covers shall denote STORM SEWER or SANITARY SEWER as applicable.

Bottom ribs may be deleted from manhole cover castings. The 1/8" raised lugs are a skid resistant measure. Alternative measures will require approval by the Engineer.

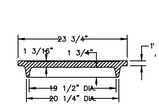
Shop Drawings shall be submitted if details and dimensions vary.



PLAN

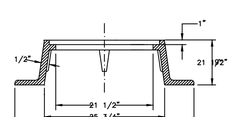


BOTTOM VIEW OF COVER



COVER SECTION

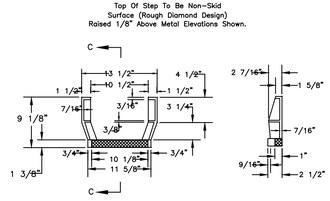
ALTERNATE MANHOLE COVER



SECTION

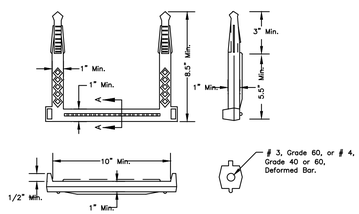
ALTERNATE MANHOLE FRAME

Top Of Step To Be Non-Skid Surface (Rough Diamond Design) Raised 1/8" Above Metal Elevations Shown.



PLAN SECTION C–C

GRAY IRON STEP



SECTION A–A
(Enlarged)

REINFORCED PLASTIC AND REINFORCED CORROSION RESISTANT RUBBER MANHOLE STEPS

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STANDARD DETAIL

PREPARED 7-1-99
REVISION DATE

MANHOLE CASTINGS

STANDARD SHEET DR7-X

INTEGRITY
FEDERAL SERVICES
CIVIL ENGINEERING • LANDSCAPE ARCHITECTURE • PLANNING
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RYAN P. PERRY
REGISTERED
17061
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

REVISIONS

01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

STORM SEWER DETAILS

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: AS NOTED VERT.:
DATE:	DECEMBER 2024
JOB:	3079-0109
DRAWN:	CAS CHECK: JAE
CADD:	C-CU-261.DWG
NCS:	CU-561
SHEET:	17 OF 19

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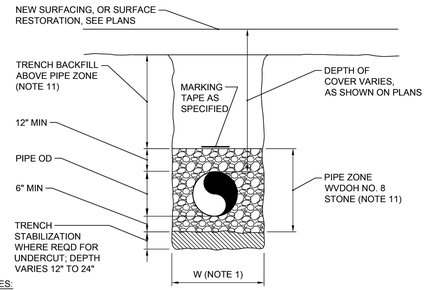


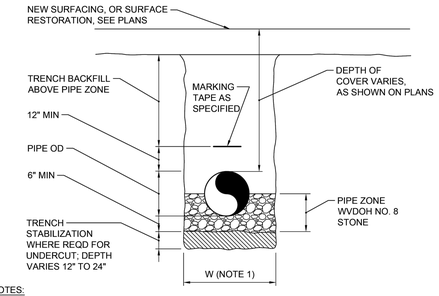
NOTES:

1. W = MAXIMUM PERMISSIBLE TRENCH WIDTH, BASED UPON W = OD + 24", UNLESS APPROVED BY THE ENGINEER.
2. TRENCHES TO BE SHEETED AND BRACED AS REQUIRED.
3. PROVIDE BEARING FOR FULL LENGTH OF BARREL. DIG HOLES FOR THE BELL.
4. BACKFILL ON SIDES TO 1/2 OD OF PIPE TO HOLD PIPE IN PLACE PRIOR TO PLACING ADDITIONAL BACKFILL.
5. BACKFILL TO BE COMPACTED IN 6" LAYERS TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT (+2%) IN ROADS AND STREETS. COMPACT TO MATCH EXISTING GROUND IN OTHER AREAS.
6. BACKFILL TO BE WVDOH NO. 8 STONE IN PAVED OR SHOULDER AREAS. BACKFILL TO BE NATIVE MATERIAL IN OTHER AREAS.
7. MAINTAIN A MINIMUM OF 3' OF COVER TO THE TOP OF PIPE FOR STORM DRAINS. MAINTAIN A MINIMUM OF 4' OF COVER OVER PIPE FOR SANITARY SEWERS. MAINTAIN A MINIMUM OF 3.5' OF COVER OVER PIPE FOR WATER LINES.
8. A CASING PIPE IS REQUIRED IN ROAD CROSSINGS WHERE SHOWN ON PLANS.
9. ALL WATER AND SEWER LINES REQUIRE APPROVAL FROM APPLICABLE UTILITY PROVIDERS.
10. SEE CITY OF RANSON PAVEMENT RESTORATION DETAIL PVT-04 FOR RESURFACING.
11. FULL DEPTH BELOW PAVEMENT SHALL BE BACKFILLED WITH CONTROLLED LOW STRENGTH MATERIAL WHERE HDPE DRAINAGE PIPE IS USED.

NOT TO SCALE

RANSON

PIPE TRENCH FOR FLEXIBLE PIPE CITY OF RANSON, WEST VIRGINIA	DETAIL NO.	SHEET NO.	REVISION DATE
	UT-01	1 OF 1	3/2022



NOTES:

1. W = MAXIMUM PERMISSIBLE TRENCH WIDTH, BASED UPON W = OD + 24", UNLESS APPROVED BY THE ENGINEER.
2. TRENCHES TO BE SHEETED AND BRACED AS REQUIRED.
3. PROVIDE BEARING FOR FULL LENGTH OF BARREL. DIG HOLES FOR THE BELL.
4. BACKFILL ON SIDES TO 1/2 OD OF PIPE TO HOLD PIPE IN PLACE PRIOR TO PLACING ADDITIONAL BACKFILL.
5. BACKFILL TO BE COMPACTED IN 6" LAYERS TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT (+2%) IN ROADS AND STREETS. COMPACT TO MATCH EXISTING GROUND IN OTHER AREAS.
6. BACKFILL TO BE WVDOH NO. 8 STONE IN PAVED OR SHOULDER AREAS. BACKFILL TO BE NATIVE MATERIAL IN OTHER AREAS.
7. MAINTAIN A MINIMUM OF 3' OF COVER TO THE TOP OF PIPE FOR STORM DRAINS. MAINTAIN A MINIMUM OF 4' OF COVER OVER PIPE FOR SANITARY SEWERS. MAINTAIN A MINIMUM OF 3.5' OF COVER OVER PIPE FOR WATER LINES.
8. A CASING PIPE IS REQUIRED IN ROAD CROSSINGS WHERE SHOWN ON PLANS.
9. DESIGN OF ALL WATER AND SEWER LINES REQUIRES APPROVAL FROM APPLICABLE UTILITY PROVIDERS.
10. SEE CITY OF RANSON PAVEMENT RESTORATION DETAIL PVT-04 FOR RESURFACING.

NOT TO SCALE

RANSON

PIPE TRENCH FOR RIGID PIPE CITY OF RANSON, WEST VIRGINIA	DETAIL NO.	SHEET NO.	REVISION DATE
	UT-02	1 OF 1	3/2022

STORM INLET COMPUTATIONS

INLET NO.			RUNOFF TO INLET								CURB / SUMP INLET COMPUTATIONS															RUNOFF INTERCEPTED					REMARKS
Inlet Structure No.	Inlet Type	Length (ft)	Drainage Area (ac)	C	CA	Sum CA	I (in/hr)	Q, increm (cfs)	Q, carryover (cfs)	Q, carryover (cfs)	Qt, gutter (cfs)	S, gutter (ft/ft)	Sx, cross slope (ft/ft)	T, spread (ft)	W (ft)	W/T	Sw (ft/ft)	SwSx	Eo	a (in)	$S'w = a/(12W)$	$Se (ft/ft) = Sx + S'wEo$	Lt (ft)	P, eff length (ft)	Lt:t	d (ft)	E	h (ft)	Q intercepted	d/h	Qb, carryover (cfs)	d, sump (ft)	T, spread at sag (ft)	
11	TYPE E (L=6',RIGHT)	6	0.16	0.85	0.14	--	4.00	0.54	0.00	0.54	0.0100	0.0208	9.16	2.00	0.22	0.0208	1.00	0.98	3.50	0.15	0.16	4.28	--	1.40	0.19	1.00	0.33	0.54	--	0.00	--	--	--
11A	TYPE E (L=6', LEFT)	6	0.06	0.85	0.05	--	4.00	0.20	0.00	0.20	0.0100	0.0208	6.38	2.00	0.31	0.0208	1.00	1.00	3.50	0.15	0.17	2.81	--	2.13	0.13	1.00	0.33	0.20	--	0.00	--	--	--
11B	TYPE E (L=6',RIGHT)	6	0.10	0.85	0.09	--	4.00	0.34	0.00	0.34	0.0100	0.0208	7.72	2.00	0.26	0.0208	1.00	1.00	3.50	0.15	0.17	3.49	--	1.72	0.16	1.00	0.33	0.34	--	0.00	--	--	--
11C	TYPE E (L=6', LEFT)	6	0.16	0.85	0.14	--	4.00	0.54	0.00	0.54	0.0100	0.0208	9.16	2.00	0.22	0.0208	1.00	0.98	3.50	0.15	0.16	4.28	--	1.40	0.19	1.00	0.33	0.54	--	0.00	--	--	--
11D	TYPE E (L=6', LEFT)	6	0.13	0.60	0.08	--	4.00	0.31	0.00	0.31	0.0100	0.0208	7.47	2.00	0.27	0.0208	1.00	1.00	3.50	0.15	0.17	3.36	--	1.78	0.16	1.00	0.33	0.31	--	0.00	--	--	--
11E	TYPE E (L=6',RIGHT)	6	0.07	0.90	0.06	--	4.00	0.25	0.00	0.25	0.0100	0.0208	6.90	2.00	0.29	0.0208	1.00	1.00	3.50	0.15	0.17	3.08	--	1.95	0.14	1.00	0.33	0.25	--	0.00	--	--	--
11F	TYPE E (L=6',RIGHT)	6	0.09	0.85	0.08	--	4.00	0.31	0.00	0.31	0.0100	0.0208	7.41	2.00	0.27	0.0208	1.00	1.00	3.50	0.15	0.17	3.34	--	1.80	0.15	1.00	0.33	0.31	--	0.00	--	--	--
11G	TYPE E (L=6', LEFT)	6	0.10	0.85	0.09	--	4.00	0.34	0.00	0.34	0.0100	0.0208	7.72	2.00	0.26	0.0208	1.00	1.00	3.50	0.15	0.17	3.49	--	1.72	0.16	1.00	0.33	0.34	--	0.00	--	--	--
11H	TYPE E (L=6', LEFT)	6	0.20	0.65	0.13	--	4.00	0.52	0.00	0.52	0.0100	0.0208	9.60	2.00	0.21	0.0208	1.00	0.97	3.50	0.15	0.16	4.26	--	1.41	0.20	1.00	0.33	0.52	--	0.00	--	--	--
11J	TYPE E (L=6',RIGHT)	6	0.13	0.85	0.11	--	4.00	0.44	0.00	0.44	0.0100	0.0208	0.17	3.00	17.29	1.0208	49.00	1.00	3.50	0.10	0.12	4.79	--	1.25	0.18	1.00	1.33	0.44	--	0.00	--	--	--
11K	TYPE E (L=6',RIGHT)	6	0.13	0.85	0.11	--	4.00	0.44	0.00	0.44	0.0200	0.0208	0.15	3.00	19.67	1.0208	49.00	1.00	3.50	0.10	0.12	5.90	--	1.02	0.16	1.00	1.33	0.44	--	0.00	--	--	--
11L	TYPE E (L=8',LEFT)	8	0.35	0.70	0.25	--	4.00	0.98	0.00	0.98	0.0200	0.0208	0.20	3.00	14.80	1.0208	49.00	0.95	3.50	0.10	0.11	8.44	--	0.95	0.21	1.00	1.33	0.98	--	0.00	--	--	--

STORM SEWER COMPUTATIONS

18	1	2	2A	3	4	5	6	7	8	9A	9B	9c	9	10	11	12	13	14	9c	15		16	17	17A	A
Reference Note	Structure		LineID	DrainageArea (ac)	RunoffCoeff (C)	IncrCxA	TotalCxA	InletTime (min)	iSys (in/hr)	Incr Flow Rate (cfs)	KnownQ (cfs)	Cumulative (cfs)	Total FlowRate (cfs)	InvertUp (ft)	InvertDn (ft)	LineLength (ft)	LineSlope (%)	LineSize (in)	Manning's Roughness Coefficient n	CapacityFull (cfs)	VelFull (ft/s)	Vel Partial (ft/s)	PipeTravel (min)	Tc Total (min)	Grnd/Rim Elev Up (ft)
	Up	Down																							
18	1	2	2A	3	4	5	6	7	8	9A	9B	9C	9	10	11	12	13	14	14A	15	15Z	16	17	17A	A
	10A	10	10A-10	0.00	0.00	0.00	3.88	5.00	3.12	12.11	0.00	0.00	12.11	503.65	503.60	10.00	0.50	24	0.012	17.33	5.52	5.96	0.03	27.04	506.44
	11	10A	11-10A	0.16	0.85	0.14	3.88	5.00	3.19	12.36	0.00	0.00	12.36	505.53	503.75	343.00	0.52	24	0.012	17.65	5.62	6.07	0.94	26.10	515.68
	11A	11	11A-11	0.06	0.85	0.05	0.41	5.00	6.07	2.51	0.00	0.00	2.51	505.96	505.62	67.69	0.50	15	0.012	4.96	4.04	4.04	0.28	6.35	514.98
	11F	11	11F-11	0.09	0.85	0.08	0.76	5.00	6.11	4.63	0.00	0.00	4.63	512.35	511.20	162.88	0.71	15	0.012	5.88	4.79	5.32	0.51	6.20	517.35
	12	11	12-11	0.17	0.85	0.14	2.57	5.00	3.19	8.22	0.00	0.00	8.22	509.35	508.00	55.52	2.43	24	0.012	38.22	12.17	9.24	0.10	26.00	515.54
	11B	11A	11B-11A	0.10	0.85	0.09	0.36	5.00	6.19	2.24	0.00	0.00	2.24	506.73	506.06	100.47	0.67	15	0.012	5.71	4.66	4.33	0.39	5.97	513.95
	11C	11B	11C-11B	0.16	0.85	0.14	0.28	5.00	6.27	1.74	0.00	0.00	1.74	508.30	508.00	55.82	0.50	15	0.012	4.96	4.04	4.63	0.26	5.71	513.81
	11D	11C	11D-11C	0.13	0.60	0.08	0.14	5.00	6.37	0.90	0.00	0.00	0.90	508.70	508.41	54.26	0.53	15	0.012	5.12	4.17	2.96	0.31	5.41	513.21
	11E	11D	11E-11D	0.07	0.90	0.06	0.06	5.00	6.52	0.41	0.00	0.00	0.41	509.07	508.80	54.00	0.50	15	0.012	4.95	4.03	2.22	0.41	5.00	513.20
	11G	11F	11G-11F	0.10	0.85	0.09	0.09	5.00	6.52	0.55	0.00	0.00	0.55	512.75	512.45	54.00	0.56	15	0.012	5.22	4.25	2.55	0.35	5.00	517.35
	11J	11F	11J-11F	0.13	0.85	0.11	0.60	5.00	6.23	3.72	0.00	0.00	3.72	514.10	513.60	100.00	0.50	15	0.012	4.95	4.03	4.44	0.38	5.82	518.37
	11H	11J	11H-11J	0.20	0.65	0.13	0.13	5.00	6.52	0.85	0.00	0.00	0.85	514.50	514.20	54.00	0.56	15	0.012	5.22	4.25	2.98	0.30	5.00	518.37
	11K	11J	11K-11J	0.13	0.85	0.11	0.36	5.00	6.43	2.28	0.00	0.00	2.28	515.65	514.95	137.09	0.51	15	0.012	5.00	4.08	3.95	0.58	5.25	520.14
	11L	11K	11L-11K	0.35	0.70	0.25	0.25	5.00	6.52	1.60	0.00	0.00	1.60	516.05	515.75	54.00	0.56	15	0.012	5.22	4.25	3.66	0.25	5.00	520.14
	13	12	13-12	8.10	0.30	2.43	2.43	26.00	0.00	0.00	0.00	0.00	0.00	511.75	509.45	59.64	3.86	24	0.012	48.13	15.33	0.0	0.00	26.00	513.90

HYDRAULIC GRADE LINE COMPUTATIONS

	1		2		3	4	5	(hide)				6	7	8	9.A	9	10.00	11.00	12.00	13.00	14	15	16	17	18	19	20	20A	21	22
Reference Note	INLET STATION		Outlet Water Surface Elev.		D_0	Q_0	L_0	% Full	r (ft)	A (ft^2) full	P (ft) full	R_h (ft) full	S ft/ft	S_{f0} % full	H_f	JUNCTION LOSS																
	Up	Down	Elev.	0.8D or 10yr WSEL												V_0	H_0 Loss Coefficient k	H_0	Q_i	V_i	V_iQ_i	$V_i^2/2g$	H_i	Angle	K	H_Δ	H_t	1.3 H_t	0.5 H_t	0.5 IS-1 Applicable*	Final H	Inlet Water Surface Elev.	Inlet Invert + 0.8D Elev.	Rim/Flow Line Elev.	Remarks
0	1	1A	2	2A	3	4	5	5A	5B	5C	5D	5E	5F	6	7	8	9A	9	10	11	12	12A	13	14	14a	15	16	17	18	18A	19	20	20A	B	C
	10A	10	505.20	0.8d	24	12.12	10.00	0.70	1.00	3.14	6.28	0.50	0.50	0.24%	0.02	5.96	0.25	0.14			75.12				0.000	0	0.14	0.18	0.09	Y	0.11	**505.31**	505.25	506.44	Manhole
	11	10A	505.35	0.8d	24	12.38	343.00	0.70	1.00	3.14	6.28	0.50	0.52	0.26%	0.88	6.07	0.30	0.17	8.23	9.24	76.08	1.33	0.46	13	0.166	0.22	0.86	1.11	0.56	Y	1.43	**506.78**	507.13	515.01	Curb Inlet
	11A	11	506.78	WSE	15	2.51	67.69	0.51	0.63	1.23	3.93	0.31	0.50	0.13%	0.09	4.04	0.30	0.08	2.24	4.33	9.72	0.29	0.10	0	0.000	0	0.18	0.23	0.12	Y	0.20	**506.98**	506.96	514.31	Curb Inlet
	11B	11A	507.06	0.8d	15	2.24	100.47	0.39	0.63	1.23	3.93	0.31	0.67	0.10%	0.10	4.33	0.30	0.09	1.74	3.63	6.33	0.21	0.07	75	0.635	0.13	0.29	0.38	0.19	Y	0.29	**507.35**	507.73	513.28	Curb Inlet
	11C	11B	509.02	0.8d	15	1.74	55.82	0.35	0.63	1.23	3.93	0.31	0.50	0.06%	0.03	3.63	0.30	0.06	0.90	2.96	2.67	0.14	0.05	72	0.620	0.084	0.19	0.25	0.13	Y	0.16	**509.18**	509.30	513.14	Curb Inlet
	11D	11C	509.41	0.8d	15	0.90	54.26	0.18	0.63	1.23	3.93	0.31	0.53	0.02%	0.01	2.96	0.30	0.04	0.41	2.22	0.91	0.08	0.03	85	0.680	0.052	0.12	0.16	0.08	Y	0.09	**509.50**	509.70	512.54	Curb Inlet
	11E	11D	509.80	0.8d	15	0.41	54.00	0.08	0.63	1.23	3.93	0.31	0.50	0.00%	0.00	2.22	0.30	0.02							0.000	0	0.02	0.03	0.01	Y	0.02	**509.82**	510.07	512.53	Curb Inlet
	11F	11	512.20	0.8d	15	4.64	162.88	0.79	0.63	1.23	3.93	0.31	0.71	0.44%	0.72	5.32	0.50	0.22	3.72	4.44	16.51	0.31	0.11	0	0.000	0	0.33	0.42	0.21	Y	0.93	**513.13**	513.35	516.68	Curb Inlet
	11J	11F	514.60	0.8d	15	3.72	100.00	0.75	0.63	1.23	3.93	0.31	0.50	0.28%	0.28	4.44	0.30	0.09	2.29	3.95	9.05	0.24	0.08	0	0.000	0	0.18	0.23	0.11	Y	0.40	**515.00**	515.10	517.70	Curb Inlet
	11K	11J	515.95	0.8d	15	2.29	137.09	0.46	0.63	1.23	3.93	0.31	0.51	0.11%	0.15	3.95	0.30	0.07	1.60	1.30	2.09	0.03	0.01	90	0.700	0.018	0.10	0.13	0.07	Y	0.21	**516.16**	516.65	519.47	Curb Inlet
	11L	11K	516.75	0.8d	15	1.60	54.00	0.31	0.63	1.23	3.93	0.31	0.56	0.05%	0.03	1.30	0.30	0.01		1.87		0.05	0.02		0.000	0	0.03	0.03	0.02	Y	0.05	**516.80**	517.05	519.47	Curb Inlet
	11H	11J	515.20	0.8d	15	0.85	54.00	0.16	0.63	1.23	3.93	0.31	0.56	0.01%	0.01	2.98	0.30	0.04							0.000	0	0.04	0.05	0.03	Y	0.03	**515.23**	515.50	517.70	Curb Inlet
	11G	11F	513.45	0.8d	15	0.56	54.00	0.11	0.63	1.23	3.93	0.31	0.56	0.01%	0.00	0.45	0.30	0.00		0.69		0.01	0.00		0.000	0	0.00	0.00	0.00	Y	0.01	**513.46**	513.75	516.68	Curb Inlet
	12	11	509.60	0.8d	24	8.23	55.52	0.22	1.00	3.14	6.28	0.50	2.43	0.11%	0.06	9.24	0.30	0.40	7.78	10.72	83.47	1.79	0.62	75	0.635	1.134	2.16	2.80	1.40	Y	1.46	**511.06**	510.95	514.87	Curb Inlet
	13	12	511.06	WSE	24	7.78	59.64	0.16	1.00	3.14	6.28	0.50	3.86	0.10%	0.06	10.72	0.50	0.89							0.000	0	0.89	1.16	0.58	Y	0.64	**511.71**	513.35	#VALUE!	End Section

Channel Report

Friday, Jan 24 2025

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

CHANNEL 1

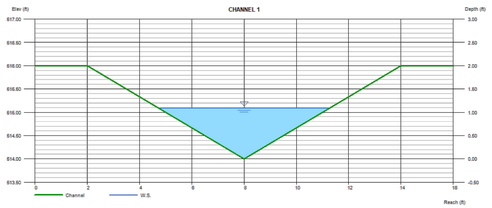
Triangular
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 2.00

Invert Elev (ft) = 514.00
Slope (%) = 2.00
N-Value = 0.030

Calculations
Compute by: Known Q
Known Q (cfs) = 15.84

Highlighted
Depth (ft) = 1.09
Q (cfs) = 15.84
Area (sqft) = 3.56
Velocity (ft/s) = 4.44
Wetted Perim (ft) = 6.89
Crit Depth, Yc (ft) = 1.12
Top Width (ft) = 6.54
EGL (ft) = 1.40

Section 1 — Depth (ft)



Channel Report

Friday, Jan 24 2025

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

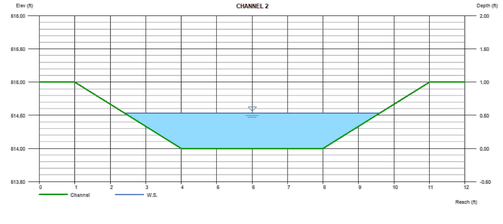
CHANNEL 2

Trapezoidal
Bottom Width (ft) = 4.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.00
Invert Elev (ft) = 514.00
Slope (%) = 1.00
N-Value = 0.030

Calculations
Compute by: Known Q
Known Q (cfs) = 7.76

Highlighted
Depth (ft) = 0.53
Q (cfs) = 7.760
Area (sqft) = 2.96
Velocity (ft/s) = 2.62
Wetted Perim (ft) = 7.35
Crit Depth, Yc (ft) = 0.44
Top Width (ft) = 7.18
EGL (ft) = 0.64

Section 2 — Depth (ft)



Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

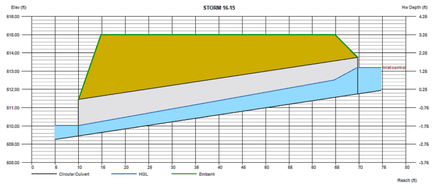
STORM 13-12

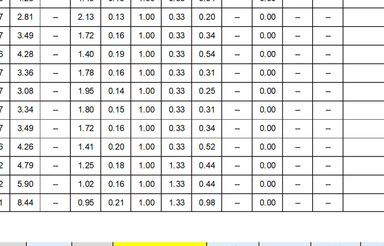
Invert Elev Dn (ft) = 509.45
Pipe Length (ft) = 59.64
Slope (%) = 3.86
Invert Elev Up (ft) = 511.75
Rise (in) = 24.0
Shape = Circular
Span (in) = 24.0
No. Barrels = 1
n-Value = 0.012
Culvert Type = Circular Culvert
Culvert Entrance = Smooth tapered inlet throat
Coeff. K,M,c,Y,k = 0.534, 0.555, 0.0196, 0.9, 0.2

Embankment
Top Elevation (ft) = 515.00
Top Width (ft) = 50.00
Crest Width (ft) = 50.00

Calculations
Qmin (cfs) = 7.76
Qmax (cfs) = 7.76
Tailwater Elev (ft) = 0.00

Highlighted
Qtotal (cfs) = 7.76
Qpipe (cfs) = 7.76
Qovertop (cfs) = 0.00
Veloc Dn (ft/s) = 10.54
Veloc Up (ft/s) = 5.00
HGL Dn (ft) = 510.02
HGL Up (ft) = 512.74
Hw Elev (ft) = 513.21
Hw/D (ft) = 0.73
Flow Regime = Inlet Control





OUTLET NO.	PIPE DIA Pd (IN)	TAIL WATER COND. (MAX OR MIN)	MAN "n" FOR PIPE	PIPE SLOPE (FT/FT)	Q (CFS)	V (FPS)	RIPRAP SIZE (FT.)	TOE KEY DEPTH (FT.)	LENGTH [LO] (FT)	WIDTH [W1] (FT)	WIDTH [W2] (FT)
10	24	MIN.	.012	.0053	11.14	6.0	CL I	3	10	6	12

RIPRAP APRON AT PIPE OUTLET

NOT TO SCALE

NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

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RYAN P. PERRY — REGISTERED — No. 17061 — STATE OF WEST VIRGINIA — PROFESSIONAL ENGINEER

REVISIONS

01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

STORM SEWER DETAILS & COMPUTATIONS

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

SCALE:	HORIZ.: AS NOTED VERT.:
DATE:	DECEMBER 2024
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DRAWN: CAS	CHECK: JAE
CADD:	C-CU-261.DWG
NCS:	CU-761
SHEET:	18 OF 19

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TABLE BR-4. MAXIMUM PONDING SURFACE AREA TO SOIL MEDIA SURFACE AREA RATIOS[1]

PER CHAPTER 4.2.3 OF THE WEST VIRGINIA STORMWATER MANAGEMENT & DESIGN GUIDANCE MANUAL

SURFACE PONDING VOLUME	SURFACE PONDING DEPTH (FT.)	MAXIMUM RATIO TO SURFACE AREAS
AT LEAST 50% OF DESIGN VOLUME	<1	1.5
AT LEAST 70% OF DESIGN VOLUME	≥1	1.25

[1]DEFINED AS THE RATIO OF THE PONDING SURFACE AREA MEASURED AT THE BOTTOM OF THE PONDING DEPTH TO THE SOIL MEDIA SURFACE AREA MEASURED AT THE TOP OF THE SOIL MEDIA.

TABLE BR-5. SOIL MEDIA CRITERIA AND TESTING FOR BIORETENTION

PER CHAPTER 4.2.3 OF THE WEST VIRGINIA STORMWATER MANAGEMENT & DESIGN GUIDANCE MANUAL

SOIL MEDIA CRITERION	DESCRIPTION	STANDARD(S)
GENERAL COMPOSITION	SOIL MEDIA MUST HAVE THE PROPER PROPORTIONS SAND, FINES, AND ORGANIC MATTER TO PROMOTE PLANT GROWTH, DRAIN AT THE PROPER RATE, AND FILTER POLLUTANTS.	70% TO 88% SAND 8% TO 26% TOP SOIL; AND 3% TO 5% ORGANIC MATTER (AGED COMPOST)
SAND	SILICA BASED COARSE AGGREGATE[1] LOCALLY-APPROVED PULVERIZED GLASS MAY BE SUBSTITUTED IF THE LOCAL AUTHORITY UNDERTAKES TESTING TO VERIFY COMPLIANCE WITH THE SPECIFICATION AND ALSO LACK OF HEAVY METALS	SIEVE / SIZE / % PASSING 3/8 IN. / 9.50 MM. / 100 NO. 4 / 4.75 MM. / 95 TO 100 NO. 8 / 2.36 MM. / 80 TO 100 NO. 16 / 1.18 MM / 45 TO 85 NO. 30 / 0.6 MM / 15 TO 60 NO. 50 / 0.3 MM / 3 TO 15 NO. 100 / 0.15 MM / 0 TO 4 EFFECTIVE PARTICLE SIZE (D10) > 0.3 MM UNIFORMLY COEFFICIENT (D60/D10) < 4.0
TOP SOIL	LOAMY SAND OR SANDY LOAM	USDA TEXTURAL TRIANGLE
ORGANIC MATTER	WELL AGED, CLEAN COMPOST	APPENDIX D
P-INDEX OR PHOSPOROUS (P) CONTENT	SOIL MEDIA WITH HIGH P LEVELS WILL EXPORT P THROUGH THE MEDIA AND POTENTIALLY TO DOWNSTREAM CONVEYANCE OR RECEIVING WATERS	P CONTENT = 7 TO 23 MG/KG
CATION EXCHANGE CAPACITY (CEC)	THE CEC IS DETERMINED BY THE AMOUNT OF HUMUS OR ORGANIC MATTER. HIGHER CEC WILL PROMOTE POLLUTANT REMOVAL.	CEC > 10 MILLIEQUIVALENTS PER 100 GRAMS
INFILTRATION RATE	THIS REFERS TO THE INFILTRATION RATE OF THE SOIL MEDIA, AND NOT THE UNDERLYING SOIL. A MINIMUM RATE IS REQUIRED TO ALLOW THE SOIL MEDIA TO PROPERLY DRAIN	MINIMUM INFILTRATION RATE = 1 - 2 INCHES/HOUR (MOST SOIL MEDIA WILL HAVE MUCH HIGHER RATES)
SOIL MEDIA DEPTH	THE DEPTH OF SOIL MEDIA FOR VARIOUS APPLICATIONS	SOIL MEDIA DEPTHS FOR LEVEL 1 AND LEVEL 2 DESIGN ARE SPECIFIED IN **TABLE BR-1**. IF TREES ARE INCLUDED IN THE BIORETENTION PLANTING PLAN, TREE PLANTING HOLES IN THE FILTER BED MUST BE AT LEAST 4 FEET DEEP TO PROVIDE ENOUGH SOIL VOLUME FOR THE ROOT STRUCTURE OF MATURE TREES. IN ADDITION, HIGHER PROPORTIONS OF TOPSOIL (30%) AND AGED COMPOST (20%) SHOULD BE ADDED TO THESE PLANTING HOLES COMPARED TO THE REST OF THE SOIL TURF, PERRENIALS OR SHRUBS SHOULD BE USED INSTEAD OF TREES TO LANDSCAPE SHALLOWER FILTER BEDS.

[1]MANY SPECIFICATIONS FOR SAND REFER TO ASTM C-33. THE ASTM C-33 SPECIFICATION ALLOWS A PARTICLE SIZE DISTRIBUTION THAT CONTAINS A LARGE FRACTION OF FINES (SILT AND CLAY SIZED PARTICLES <0.05 MM). THE SMALLER FINES FILL THE VOIDS BETWEEN THE LARGER SAND SIZED PARTICLES RESULTING IN SMALLER AND MORE CONVULATED PORE SPACES. WHILE THIS CONDITION PROVIDES A HIGH DEGREE OF TREATMENT, IT ALSO ENCOURAGES CLOGGING OF THE REMAINING VOID SPACES WITH SUSPENDED SOLIDS AND BIOLOGICAL GROWTH, RESULTING IN A GREATER CHANCE OF A RESTRICTIVE BIOMAT FORMING. BY LIMITING THE FINE PARTICLES ALLOWED IN THE SAND COMPONENT, THE COMBINED MEDIA RECIPE OF SAND AND THE FINES ASSOCIATED WITH THE SOIL AND ORGANIC MATERIAL WILL BE LESS PRONE TO CLOGGING, WHILE ALSO PROVIDING AN ADEQUATE LEVEL OF FILTRATION AND RETENTION.

TABLE BR-7. BIORETENTION MATERIAL SPECIFICATIONS

PER CHAPTER 4.2.3 OF THE WEST VIRGINIA STORMWATER MANAGEMENT & DESIGN GUIDANCE MANUAL

MATERIAL	SPECIFICATION	NOTES
FILTER MEDIA	·70%-88% SAND ·8%-26% TOP SOIL ·3%-5% ORGANIC MATTER IN THE FORM OF LEAF COMPOST ·SUPPLIED BY QUALIFIED VENDOR ·REFER TO **TABLE BR-5** FOR SPECIFIC MEDIA MATERIAL COMPOSITION	MINIMUM DEPTH OF 24 IN.; 36 IN. RECOMMENDED; (18 IN. IF AN INFILTRATION SUMP IS USED) THE VOLUME OF FILTER MEDIA USED SHOULD BE BASED ON 110% OF THE PLAN VOLUME, TO ACCOUNT FOR SETTLING OR COMPACTION.
FILTER MEDIA TESTING	BETWEEN 7 AND 21 MG./KG. OF P IN THE SOIL MEDIA. CEC'S GREATER THAN 10.	QUALIFIED VENDORS SHOULD TEST MEDIA IN BATCHES.
ALTERNATIVE SURFACE COVER	USE TURF COVER.	
TOP SOIL FOR TURF COVER	LOAMY SAND OR SANDY LOAM TEXTURE, WITH LESS THAN 5% CLAY CONTENT, PH CORRECTED TO BETWEEN 6 AND 7, AND AN ORGANIC MATTER CONTENT OF AT LEAST 2%.	3 INCHES TILLED INTO SURFACE LAYER.
FILTER FABRIC (OPTIONAL)	WOVEN MONOFILAMENT FABRIC OR NON-WOVEN GEOTEXTILE AS PER AASHTO M-288 (DO NOT USE SILT FENCE).	APPLY ONLY TO THE SIDE SLOPES
CHOKING LAYER	LAYER OF CHOKER STONE (TYPICALLY NO. 8 OR NO. 89 WASHED GRAVEL), WHICH IS LAID OVER THE UNDERDRAIN STONE.	
UNDERDRAIN STONE	1 IN. DIAMETER STONE SHOULD BE DOUBLE-WASHED AND CLEAN AND FREE OF ALL FINES (E.G., ASTM D448 NO. 57 STONE).	SEE DETAILS FOR DEPTH
IMPERMEABLE LINER (OPTIONAL)	SEE LINER NOTE THIS SHEET	
UNDERDRAINS, CLEANOUTS, AND OBSERVATION WELLS	USE 4 IN OR 6 IN. RIGID SCHEDULE 40 PVC PIPE WITH 3/8 IN. PERFORATIONS AT 6 IN. ON CENTER; EACH UNDERDRAIN SHOULD BE LOCATED NO MORE THAN 20 FEET FROM THE NEXT PIPE. (SEE DETAILS BELOW FOR PIPE SIZE.)	LAY THE PERFORATED PIPE UNDER THE LENGTH OF THE BIORETENTION CELL, AND INSTALL NON-PERFORATED PIPE AS NEEDED TO CONNECT WITH THE STORM DRAIN SYSTEM OR TO DAYLIGHT IN A STABILIZED CONVEYANCE. INSTALL T'S AND Y'S AS NEEDED, DEPNDING ON THE UNDERDRAIN CONFIGURATION. EXTEND CLEANOUT PIPES TO THE SURFACE WITH VENTED CAPS AT THE T'S AND Y'S.

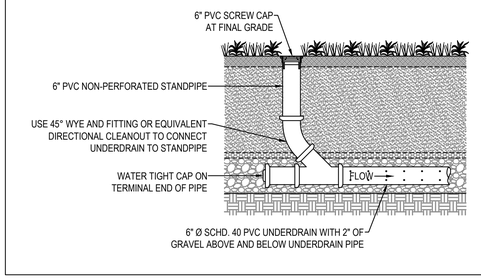
TABLE BR-9. RECOMMENDED MAINTENANCE TASKS FOR BIORETENTION PRACTICES

PER CHAPTER 4.2.3 OF THE WEST VIRGINIA STORMWATER MANAGEMENT & DESIGN GUIDANCE MANUAL

MAINTENANCE TASKS	FREQUENCY
·FOR THE FIRST 6 MONTHS FOLLOWING CONSTRUCTION, THE PRACTICE AND CDA SHOULD BE INSPECTED AT LEAST TWICE AFTER STORM EVENTS THAT EXCEED 1/2 IN. OF RAINFALL. CONDUCT ANY NEEDED REPAIRS OR STABILIZATION. ·INSPECTORS SHOULD LOOK FOR BARE OR ERODING AREAS IN THE CDA OR AROUND THE BIORETENTION AREA, AND MAKE SURE THEY ARE IMMEDIATELY STABILIZED WITH GRASS ·ONE-TIME, SPOT FERTILIZATION MAY BE NEEDED FOR INITIAL PLANTINGS. ·WATERING IS NEEDED ONCE A WEEK DURING THE FIRST 2 MONTHS, AND THEN AS NEEDED DURING GROWING SEASON (APRIL-OCTOBER), DEPENDING ON RAINFALL. ·REMOVE AND REPLACE DEAD PLANTS. UP TO 10% OF THE PLANT STOCK MAY DIE OFF IN THE FIRST YEAR, SO CONSTRUCTION CONTRACTS SHOULD INCLUDE A CARE AND REPLACEMENT WARRANTY TO ENSURE THAT VEGETATION IS PROPERLY ESTABLISHED AND SURVIVES DURING THE FIRST GROWING SEASON FOLLOWING CONSTRUCTION.	UPON ESTABLISHMENT
·MOWING OF GRASS FILTER STRIPS AND BIORETENTION WITH TURF COVER. ·CHECK CURB CUTS AND INLETS FOR ACCUMULATED GRIT, LEAVES, AND OTHER DEBRIS THAT MAY BLOCK FLOW.	AT LEAST 4 TIMES A YEAR
·SPOT WEEDING, TRASH REMOVAL, AND MULCH RAKING.	TWICE DURING GROWING SEASON
·ADD REINFORCEMENT PLANTING TO MAINTAIN DESIRED THE VEGETATION DENSITY. ·REMOVE INVASIVE PLANTS USING RECOMMENDED CONTROL METHODS. ·REMOVE ANY DEAD OR DISEASED PLANTS. ·STABILIZE THE CDA TO PREVENT EROSION.	AS NEEDED
·CONDUCT A MAINTENANCE INSPECTION. ·PRUNE TREES AND SHRUBS. ·REMOVE SEDIMENT IN PRE-TREATMENT CELLS AND INFLOW POINTS.	ANNUALLY
·REMOVE SEDIMENT IN PRE-TREATMENT CELLS AND INFLOW POINTS.	ONCE EVERY 2 TO 3 YEARS

CLEANOUT DETAIL:

NOT TO SCALE



BR-7.2. BIORETENTION INSTALLATION:

PER CHAPTER 4.2.3 OF THE WEST VIRGINIA STORMWATER MANAGEMENT & DESIGN GUIDANCE MANUAL.

THE FOLLOWING IS A TYPICAL CONSTRUCTION SEQUENCE TO PROPERLY INSTALL A BIORETENTION BASIN. THESE STEPS MAY BE MODIFIED TO REFLECT DIFFERENT BIORETENTION APPLICATIONS OR EXPECTED SITE CONDITIONS:

STEP 1. CONSTRUCTION OF THE BIORETENTION BASIN AREA MAY ONLY BEGIN AFTER THE ENTIRE CDA HAS BEEN STABILIZED WITH VEGETATION. IT MAY BE NECESSARY TO BLOCK CERTAIN CURB OR OTHER INLETS WHILE THE BIORETENTION AREA IS BEING CONSTRUCTED. THE PROPOSED SITE SHOULD BE CHECKED FOR EXISTING UTILITIES PRIOR TO ANY EXCAVATION.

STEP 2. THE DESIGNER AND THE INSTALLER SHOULD HAVE A PRE-CONSTRUCTION MEETING, CHECKING THE BOUNDARIES OF THE CDA AND ACTUAL INLET ELEVATIONS TO ENSURE THEY CONFORM TO ORIGINAL DESIGN. SINCE OTHER CONTRACTORS MAY BE RESPONSIBLE FOR CONSTRUCTING PORTIONS OF THE SITE, IT IS QUITE COMMON TO FIND SUBTLE DIFFERENCES IN SITE GRADING, DRAINAGE AND PAVING ELEVATIONS THAT CAN PRODUCE HYDRAULICALLY IMPORTANT DIFFERENCES FOR THE PROPOSED BIORETENTION AREA. THE DESIGNER SHOULD CLEARLY COMMUNICATE, IN WRITING, ANY PROJECT CHANGES DETERMINED DURING THE PRE-CONSTRUCTION MEETING TO THE INSTALLER AND THE PLAN REVIEW/INSPECTION AUTHORITY.

STEP 3. TEMPORARY APPROVED EROSION AND SEDIMENT CONTROLS ARE NEEDED DURING CONSTRUCTION OF THE BIORETENTION AREA TO DIVERT STORMWATER AWAY FROM THE BIORETENTION AREA UNTIL IT IS COMPLETED. SPECIAL PROTECTION MEASURES SUCH AS EROSION CONTROL FABRICS MAY BE NEEDED TO PROTECT VULNERABLE SIDE SLOPES FROM EROSION DURING THE CONSTRUCTION PROCESS. IN CASES WHERE THE BIORETENTION IS CO-LOCATED WITH EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS), THE CONDITIONS NOTED IN SECTION BR-7.1. OF THE WEST VIRGINIA STORMWATER MANAGEMENT & DESIGN GUIDANCE MANUAL MUST BE FOLLOWED.

STEP 4. ANY PRE-TREATMENT CELLS SHOULD BE EXCAVATED FIRST AND THEN SEALED TO TRAP SEDIMENTS.

STEP 5. EXCAVATORS OR BACKHOES SHOULD WORK FROM THE SIDES TO EXCAVATE THE BIORETENTION AREA TO ITS APPROPRIATE DESIGN DEPTH AND DIMENSIONS. EXCAVATING EQUIPMENT SHOULD HAVE SCOOPS WITH ADEQUATE REACH SO THEY DO NOT HAVE TO SIT INSIDE THE FOOTPRINT OF THE BIORETENTION AREA. CONTRACTORS SHOULD USE A CELL CONSTRUCTION APPROACH IN LARGER BIORETENTION BASINS, WHEREBY THE BASIN IS SPLIT INTO 500 TO 1,000 SQ. FT. TEMPORARY CELLS WITH A 10-15 FOOT EARTH BRIDGE IN BETWEEN, SO THAT CELLS CAN BE EXCAVATED FROM THE SIDE.

STEP 6. IT MAY BE NECESSARY TO RIP THE BOTTOM SOILS TO A DEPTH OF 6 TO 12 INCHES TO PROMOTE GREATER INFILTRATION.

STEP 7. IF USING A FILTER FABRIC, PLACE THE FABRIC ON THE SIDES OF THE BIORETENTION AREA WITH A 6 INCH OVERLAP ON THE SIDES. IF AN UNDERDRAIN STONE STORAGE LAYER WILL BE USED, PLACE APPROPRIATE DEPTH OF NO. 57 STONE ON THE BOTTOM, INSTALL THE PERFORATED UNDERDRAIN PIPE, PACK NO. 57 STONE TO 3 INCHES ABOVE THE UNDERDRAIN PIPE. ON TOP OF THE NO. 57 STONE, ADD 2 INCHES OF CHOKER STONE (NO. 8 OR NO. 89 STONE) AND THEN 2 TO 4 INCHES OF CONSTRUCTION SAND AS A FILTER BETWEEN THE UNDERDRAIN AND THE SOIL MEDIA LAYER. IF NO STONE STORAGE LAYER IS USED, START WITH 6 INCHES OF NO. 57 STONE ON THE BOTTOM, AND PROCEED WITH THE LAYERING AS DESCRIBED ABOVE.

STEP 8. DELIVER THE SOIL MEDIA FROM AN APPROVED VENDOR, AND STORE IT ON AN ADJACENT IMPERVIOUS AREA OR PLASTIC SHEETING. APPLY THE MEDIA IN 12 INCH LIFTS UNTIL THE DESIRED TOP ELEVATION OF THE BIORETENTION AREA IS ACHIEVED. WAIT A FEW DAYS TO CHECK FOR SETTLEMENT, AND ADD ADDITIONAL MEDIA, AS NEEDED, TO ACHIEVE THE DESIGN ELEVATION.

STEP 9. PREPARE PLANTING HOLES FOR ANY TREES AND SHRUBS, INSTALL THE VEGETATION, AND WATER ACCORDINGLY. INSTALL ANY TEMPORARY IRRIGATION.

STEP 10. PLACE THE SURFACE COVER IN BOTH CELLS (MULCH, RIVER STONE OR TURF), DEPENDING ON THE DESIGN. IF COIR OR JUTE MATTING WILL BE USED IN LIEU OF MULCH, THE MATTING WILL NEED TO BE INSTALLED PRIOR TO PLANTING (STEP 9), AND HOLES OR SLITS WILL HAVE TO BE CUT IN THE MATTING TO INSTALL THE PLANTS.

STEP 11. INSTALL THE PLANT MATERIALS AS SHOWN IN THE LANDSCAPING PLAN, AND WATER THEM DURING WEEKS OF NO RAIN FOR THE FIRST TWO MONTHS.

STEP 12. IF CURB CUTS ARE BLOCKED DURING BIORETENTION INSTALLATION, UNBLOCK THESE AFTER THE DRAINAGE AREA AND SIDE SLOPES HAVE GOOD VEGETATIVE COVER. IT IS RECOMMENDED THAT UNBLOCKING CURB CUTS AND INLETS TAKE PLACE AFTER TWO TO THREE STORM EVENTS IF THE DRAINAGE AREA INCLUDES NEWLY INSTALLED ASPHALT, SINCE NEW ASPHALT TENDS TO PRODUCE A LOT OF FINES AND GRIT DURING THE FIRST SEVERAL MONTHS.

STEP 13. CONDUCT THE FINAL CONSTRUCTION INSPECTION (SEE APPENDIX A OF THE WEST VIRGINIA STORMWATER MANAGEMENT & DESIGN GUIDANCE MANUAL), THEN LOG THE GPS COORDINATES FOR EACH BIORETENTION FACILITY AND SUBMIT THEM FOR ENTRY INTO THE LOCAL MAINTENANCE TRACKING DATABASE.

BIORETENTION LANDSCAPING SPECIFICATION

LANDSCAPING FOR BIORETENTION SURFACE SHALL BE TURF COVER AS FOLLOWS:

SEED MIX:	SEED	APPLICATION RATE
	KENTUCKY BLUEGRASS	20 LB/AC
	CREEPING RED FESCUE	30 LB/AC
	CHEWINGS FESCUE	30 LB/AC

TOPSOIL: LOAMY SAND OR SANDY LOAM TEXTURE WITH LESS THAN 5% CLAY CONTENT, PH CORRECTED TO BETWEEN 6 & 7, AND AN ORGANIC MATTER CONTENT OF AT LEAST 3%. TOPSOIL SHALL BE TILLED INTO THE TOP 3" OF THE BIORETENTION MEDIA.

BIORETENTION LINER NOTES:

1. THE SEDIMENT FOREBAYS & BIORETENTION MEDIA SHALL BE LINED IN ONE OF THE FOLLOWING TWO WAYS:
   - 1.1. A 12" CLAY LINER WITH A MAXIMUM HYDRAULIC CONDUCTIVITY OF 1 x 10^{2-7} CM/SEC
   - 1.2. A 30 MIL PVC LINER.

BR01 – SECTION SPILLWAY:

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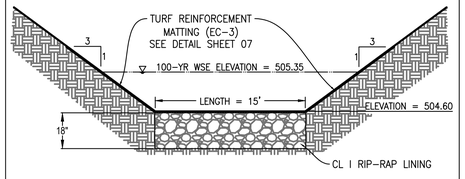

BIORETENTION BASIN 'BRO1':

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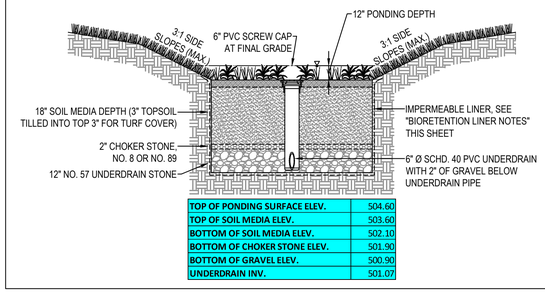

TOP OF PONDING SURFACE ELEV.	504.60
TOP OF SOIL MEDIA ELEV.	503.60
BOTTOM OF SOIL MEDIA ELEV.	502.10
BOTTOM OF CHOKER STONE ELEV.	501.90
BOTTOM OF GRAVEL ELEV.	500.90
UNDERDRAIN INV.	501.07

BIO-RETENTION UPTURNED ELBOW DETAIL:

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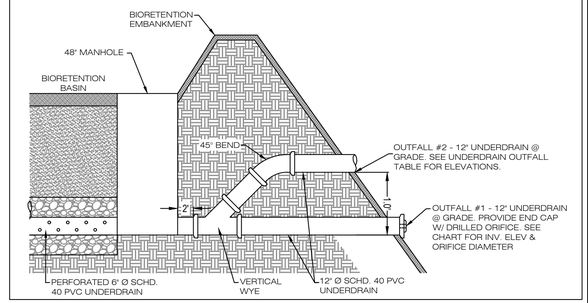
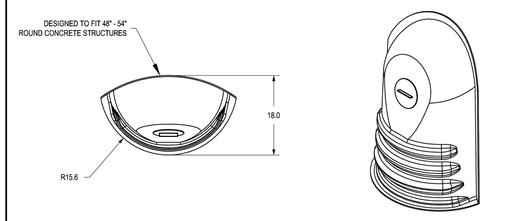
UNDERDRAIN OUTFALL TABLE

FACILITY ID	OUTFALL #1 INV. ELEV.	OUTFALL #1 ORIFICE DIA. (IN.)	OUTFALL #2 INV. ELEV.
BIO-RETENTION BR01	501.07	1.00	502.07





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DATE	7-2-13		
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RYAN P. PERRY REGISTERED 17061 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

REVISIONS

01/27/2025 ADDRESS CITY, CTUB & WVAW COMMENTS

BIORETENTION NOTES & DETAILS

FAIRFAX CROSSING INFRASTRUCTURE

T.M. 8, P. 1.3, 1.6 & 1.9, D.B. 1235, PG. 693
T.M. 8, P. 1.4, D.B. 1235, PG. 707
CITY OF RANSON, JEFFERSON COUNTY, WEST VIRGINIA

RANSON FILE #24-35-SP

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AGENDA ITEM V.1

Planning Commission Request for Action

TO:

FROM: Rieley Stanley, Community & Economic Development

ITEM TYPE: PRESENTATION

AGENDA SECTION: ADJOURMENT

SUBJECT: Next meeting will be held June 2, 2025 at 7:00 PM.

ATTACHMENTS: