1316 COUNTY-CITY BUILDING
227 W. JEFFERSON BOULEVARD
SOUTH BEND, INDIANA 46601-1830

PHONE 574/ 235-9251
FAX 574/ 235-9171

CITY OF SOUTH BEND JAMES MUELLER, MAYOR

BOARD OF PUBLIC WORKS

March 23, 2021

Mr. Bill Loudin
Lafayette Falls, LLC
2010 West Ave.
Mishawaka, IN 46545
bloudin@comcast.net

RE: Dedicated Improvements Agreement

Dear Mr. Loudin:

At its March 23, 2021 meeting, the Board of Public Works approved the above referenced agreement outlining the terms for the creation of the new public right-of-way elements for Lafayette Falls, Phase IV, Section 2.

Enclosed please find the original of the agreement for your signature. Please sign and return the original agreement to lhensley@southbendin.gov. Please retain a copy for your records.

If you have any further questions regarding this matter, please call this office at (574) 235-9251.

Sincerely,

/s/ Anne Fuchs

Anne Fuchs, Clerk

Enclosures
AF/lh

ELIZABETH A. MARADIK GARY A. GILOT JORDAN V. GATHERS JOSEPH R. MOLNAR

DEDICATED IMPROVEMENTS AGREEMENT

This Dedicated Improvements Agreement (the "Agreement") is made on this 23rd. day of March 2021, by and between the City of South Bend, Indiana, an Indiana municipal corporation (the "City"), acting by and through its Board of Public Works (the "Board"), and Lafayette Falls, LLC, an Indiana limited liability company with an address of 2010 Went Avenue, Mishawaka, Indiana 46545 (the "Owner"), in order for the Owner to construct dedicated improvements on private property with the intention of dedicating portions of the development to City of South Bend as public right-of-way (the "R.O.W.") along Keady Court, Jacktown Drive, Mackey Drive, and Tyler Drive within the City's municipal boundaries (the "Project Area").

WHEREAS, Owner's project site is located within Lafayette Falls Subdivision Phase 4, Section 2 bounded by the City's municipal boundary to the South, Stewart Drive to west, Slater Drive to the north, and Lutz Drive to the east within the City; and

WHEREAS, in connection with the needs of Owner's project, Owner desires to extend and create new public R.O.W., which includes but is not limited to curb, sidewalk, roads, water mains, sewers, storm sewers, light poles, street signs, and other public R.O.W. appurtenances; and

WHEREAS, Owner intends to construct new the sidewalks, curbs, lighting, landscaping, trees, and drive approaches in the R.O.W. ("Dedicated Improvements") as more particularly set forth in Exhibit A, which is attached hereto and incorporated herein by reference; and

NOW, THEREFORE, in consideration of the obligations, terms and conditions contained herein, and the above recitals which are incorporated into this Agreement, the adequacy of which consideration the parties expressly acknowledge, Owner and the City agree as follows:

1. **Recitals**

The parties hereto acknowledge and agree that the foregoing recitals are incorporated herein as a part of this Agreement.

2. Construction Inspection

The Owner has provided the City with Exhibit A, which depicts drawings of the Dedicated Improvements, which the City acknowledges conform to the City's standards. The Owner shall allow the City to inspect the Dedicated Improvements during construction to ensure conformance to the agreed standards set forth in Exhibit A, in particular with regard to area planning, adequacy of design, and quality of construction. The Owner shall contact the City's Engineering Department at least two (2) business days in advance to arrange for the attendance of a City inspector at key milestones throughout work within the R.O.W. Key milestones shall include but not limited to: utility installation, hot mix asphalt placement (base, intermediate, and surface), placement of any drainage apparatus, concrete placement, light installation, and tree installation. The Owner agrees to perform any necessary adjustments as reasonably requested by the City to ensure the Dedicated Improvements are constructed in accordance with Exhibit A.

3. Permits

It shall be Owner's sole responsibility and expense to obtain all permits associated with the construction and installation of the Dedicated Improvements in the R.O.W. and to comply with all applicable laws. Owner's failure to comply with this Section 3 shall be a material breach of this Agreement.

4. Engineer's Estimate

The Owner has provided an Engineer's Estimate (See Exhibit B, incorporated herein by reference and attachment) for the cost to construct the Dedicated Improvements, including but not

limited to, excavation, pipe materials, valves, hydrants, and all other appurtenant materials, supplies and equipment, permit fees, backfill and bedding, pavement, curbs, sidewalks, signs, and restoration of the areas within the proposed R.O.W.

5. Performance Bond

Owner shall provide the City with a performance bond for an amount equal to one hundred twenty–five percent (125%) of the Engineer's Estimate covering all work performed or to be performed pursuant to this Agreement. Owner's failure to provide the performance bond as prescribed herein shall cause this Agreement to be immediately terminated and of no effect, without the requirement of notice. The performance bond shall be provided concurrently with the execution of this Agreement and attached as Exhibit C.

6. Maintenance Bond

Within ten (10) days of the City's acceptance of the Dedicated Improvements, Owner shall provide the City with a maintenance bond equal to ten percent (10%) of the construction cost covering all work performed or to be performed pursuant to this Agreement, and such bond shall remain in effect for three (3) years after dedication as described in Section 8 below.

7. Term

Except as otherwise provided herein, this Agreement shall continue for a period of sixteen (16) months from the Effective Date of this Agreement, or upon the issuance of the relevant occupancy permit(s), whichever occurs last.

8. Dedication

The Owner understands the dedication of the Dedicated Improvements to the City is a requirement for the issuance of occupancy permits. Upon completion of the construction of the Dedicated Improvements, substantially as depicted in Exhibit A, the Owner shall use its best efforts to work with the City to ensure that the Dedicated Improvements are dedicated to the City in a timely manner. It is understood by Owner that no dedication shall be accepted by the City until all required easements have been conveyed, accepted, and recorded by the City. Additionally, prior to dedication, the following must be satisfied:

a. All parts and labor must meet the requirements stated in the design specifications as presented to and accepted by the City's Engineering Department.
b. Lien waivers must be received with regard to all workmanship and materials used in connection with these improvements.
c. The Completion Affidavit must be furnished to Owner by the South Bend, Indiana Board of Public Works.
d. Owner must provide copies of test reports or cut sheets on all materials supplied.
e. Owner must provide As-Built drawings in accordance with the City of South Bend Prevailing Specifications for Public Works, which may be found at https://southbendin.gov/wp-content/uploads/2019/10/SBN-SPEC-FINAL-101719.pdf

f. The Owner shall complete secondary plat process with the City of South Bend Plan Commission, if required.

g. As-Built drawings shall be provided overlaying proposed easements for all proposed Dedicated Improvements including but not limited to, sanitary sewers, and storm sewers. These Dedicated Improvements must be within the municipal easement of a size acceptable to the City. The Owner shall provide modified or additional easements at the request of the City if the Dedicated Improvements are modified and no longer are acceptable for the originally proposed easements on the primary plat. comp

h. A municipal easement is required for all Dedicated Improvements located outside of the subdivision. At the time of execution of this Agreement the only known easements located outside of the subdivision limits are for the stormwater basin west of Lafayette Falls. A draft of that easement is provided as Exhibit D.

Owner's failure to comply with this Section 8 shall be a material breach of this Agreement.

9. System Development Charges

For purposes of this Section 9 of the Agreement, an equivalent residential unit ("ERU") shall mean a single-family residence. For customers that are not single-family residences, one ERU shall equal estimated wastewater and water flows of 310 gallons per day, respectively. No customer will be less than one ERU.

For every new connection to the South Bend Municipal Water Works, a system development charge of four hundred seventy-five dollars ($475.00) shall be collected per ERU and additional portion thereof to be connected. All charges shall be billed by the City at the time the application for service is filed. For all other types of structures, the ERU calculation shall be

based upon the ratio of Average Daily Flow as computed pursuant to 327 IAC 3-6-11 in relationship to three hundred ten (310) gallons per day. For structures not listed in 327 IAC 3-6-11, the ERU shall be calculated as the relationship between the Average Daily Flow reported in the water capacity certification for the structure and three hundred ten (310) gallons per day.

For customers with greater than twenty (20) ERUs, the ERU shall be adjusted based upon the Peaking Factor as computed herein. The Peaking Factor shall be calculated by dividing the Peak Daily Flow by the Average Daily Flow, both as reported in the water capacity certification. In no event will a Peaking Factor less than 2.0 be used for purposes of the adjustment. The Peaking Factor divided by 4.0 (the Peaking Factor for residential connections) will be multiplied by the number of ERUs for purposes of computing the system development charge owed by the customer. The Board may execute a contract with the customer authorizing an increase to the initial System Development Charge based upon actual usage data that is collected after connection.

For this Development, the System Development Charge and Utility Verification Fee will be paid by each individual homeowner as each individual house is connected to water and sewer.

10. Indemnification

In the event that Owner does not complete the Dedicated Improvements in accordance with Exhibit A, Owner shall indemnify, defend, and hold the City, and its respective agents, employees, successors, and assigns, harmless from any liability, loss, costs, damages or expenses, including attorneys' fees, which the City may suffer or incur as a result of any claims or actions which may be brought by any person or entity arising out of the subject matter of this Agreement.

11. Insurance

Owner, or the owner's contractor, at Owner's sole expense, shall maintain during the term of this Agreement, commercial general liability insurance covering the Owner and the Dedicated Improvements in an amount not less than One Million Dollars ($1,000,000.00) per occurrence. Owner understands and agrees the amount of insurance does not in any way limit liability under this agreement to $1,000,000. The Certificate of Insurance shall be provided concurrently with the execution of this Agreement and attached as Exhibit F.

12. Assignment

This Agreement may not be assigned by the Owner without the express written consent of the City which such consent may be withheld for any reason. Any violation of this limitation shall terminate the City's obligation and forfeit the Owner's rights under this Agreement.

13. Material Breach

In the event either party breaches any of the provisions set forth herein, the non-breaching party shall provide written notice of the breach to the breaching party. Upon receipt of the notice, the breaching party shall use its good faith efforts to cure the breach as soon as practical. In the event the breach is not cured within a reasonable amount of time, the non-breaching party may terminate this Agreement and pursue its legal and equitable remedies.

14. Governing Law and Jurisdiction

This Agreement shall be construed and interpreted according to the laws of the State of Indiana and shall be enforced in any court of competent jurisdiction in St. Joseph County, Indiana.

15. Severability

Wherever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement shall be prohibited by or invalid under applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement.

16. Waiver

No provision of this Agreement will be deemed waived, unless such waiver will be in writing and signed by the party against which the waiver is sought to be enforced. The waiver will not be construed to be a waiver of any succeeding breach of any such provision, a waiver of the provision itself, or a waiver of any other provisions of this Agreement. No delay or omission on the part of either party to exercise or avail itself of any right, power, or privilege that it has or may have under this Agreement will operate as a waiver of any breach or default.

17. Time

Time is of the essence of this Agreement.

18. Entire Agreement

This Agreement sets forth the entire agreement and understanding between the Owner and the City as to the subject matter hereof, and merges and supersedes all prior discussions, agreements, and understanding of any and every nature between them.

19. Corporate Authority

The person signing on behalf of the Owner represents that he/she has been duly authorized to execute this Agreement on behalf of said Owner.

(Remainder of page intentionally left blank)

IN WITNESS WHEREOF, the Owner and the City, through their duly authorized representatives, have caused this Agreement to be executed as of the Effective Date. The parties have read and understand the foregoing terms of this Agreement and do, by their respective signatures hereby agree to its terms.

LAFAYETTE FALLS, LLC

By:_____
Printed:_____
Title:_____

CITY OF SOUTH BEND, INDIANA
BOARD OF PUBLIC WORKS

_____
Elizabeth A. Maradik, President

_____
Gary A. Gilot, Member

_____
Jordan V. Gathers, Member

_____
Joseph R. Molnar, Member

ATTEST:

_____
Anne Fuchs, Clerk

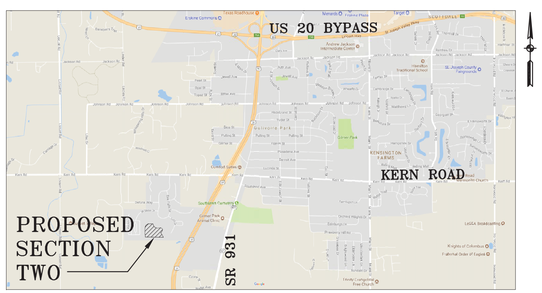
EXHIBIT A

DEDICATED IMPROVEMENTS

CITY OF SOUTH BEND, INDIANA
DEPARTMENT OF PUBLIC WORKS

PROJECT ■ SEWER ■ WATER □ TRAFFIC ■ STREET □ OTHER

PROJECT LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

CITY OF SOUTH BEND, INDIANA, PREVAILING SPECIFICATIONS, LATEST EDITION, TO BE USED WITH THESE PLANS

LAFAYETTE FALLS, PHASE IV, SECTION 2

ABONMARCHE PROJECT NO. 17-1180

MACKEY DRIVE FROM STA 19+90.00 TO STA 32+79.23	1289.23 LFT	0.24 MI
TYLER DRIVE FROM STA 10+00.00 TO STA 15+71.45	571.45 LFT	0.11 MI
STADIUM DRIVE/KEADY COURT FROM STA 39+89.51 TO STA 52+02.79	1213.28 LFT	0.23 MI
JACKTOWN DRIVE FROM STA 60+00.00 TO STA 65+46.89	546.89 LFT	0.10 MI
ACCESS DRIVE FROM STA 70+10.67 TO STA 71+85.00	174.33 LFT	0.03 MI

CITY OF SOUTH BEND, INDIANA
BOARD OF PUBLIC WORKS

Elizabeth A. Maradik, President

Jordan V. Gathers, Member

Gary A. Gilot, Member

Joseph R. Molnar, Member

Attest: Anne Fuchs, Clerk

RECOMMENDED BY CITY STAFF

		DATE
Sue Ellen Doudrick		3/16/2020
SUE ELLEN DOUDRICK, P.E.	ADMINISTRATION AND DESIGN	
Charlotte Brach		3/19/2021
CHARLOTTE BRACH	ADMINISTRATION AND DESIGN	
Kara M. Boyles		3/22/2021
KARA BOYLES, Ph.D. P.E.	CITY ENGINEER	
Toy Villa		
TOY VILLA	CONSTRUCTION	3/19/2021
Ken Smith		
KEN SMITH	WATER WORKS	

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WW–3	SLANT STACKS
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ABONMARCHE
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South Bend, IN 46601
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abonmarche.com

Battle Creek, Benton Harbor, Manistee, South Haven, Goshen, Hobart, Lafayette, South Bend, Valparaiso
Engineering · Architecture · Land Surveying

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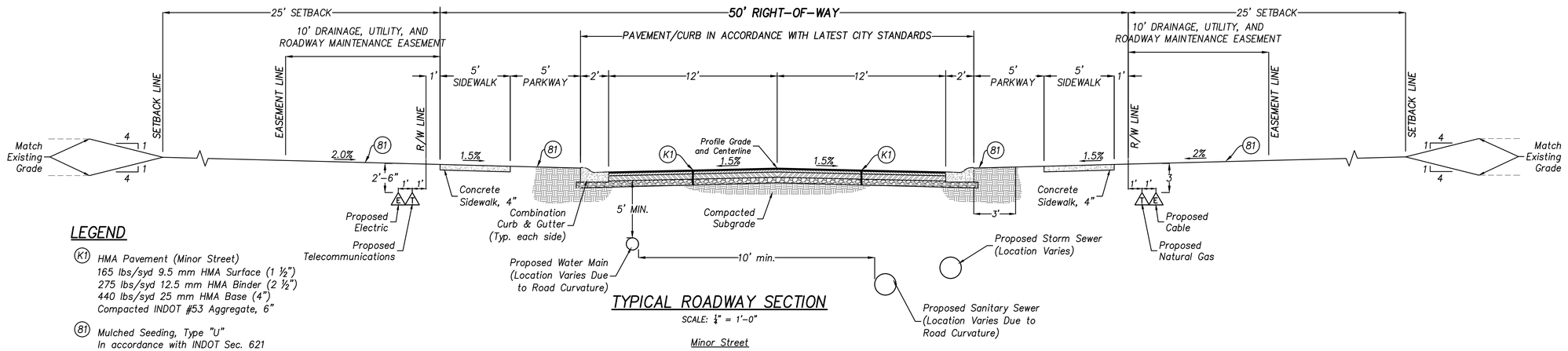
PLANS PREPARED FOR:

LAFAYETTE FALLS, L.L.C.
705 S. BEIGER STREET
MISHAWAKA, IN 46544
(574) 256–2467

10/28/2020
DARYL S. KNIP — DATE
PROFESSIONAL ENGINEER NO. PE19900163

DARYL S. KNIP REGISTERED No. PE19900163 STATE OF INDIANA PROFESSIONAL ENGINEER



LEGEND

(K1) *HMA Pavement (Minor Street)*
165 lbs/syd 9.5 mm HMA Surface (1 ½")
275 lbs/syd 12.5 mm HMA Binder (2 ½")
440 lbs/syd 25 mm HMA Base (4")
Compacted INDOT #53 Aggregate, 6"

(81) *Mulched Seeding, Type "U"*
In accordance with INDOT Sec. 621

TYPICAL ROADWAY SECTION

SCALE: ¼" = 1'-0"

Minor Street

MACKEY DRIVE – Sta. 20+00.0 to Sta. 32+79.2
TYLER DRIVE – Sta. 10+00.0 to Sta. 15+71.5
STADIUM DRIVE/KEADY COURT – Sta. 39+90.5 to Sta. 52+00.0
JACKTOWN DRIVE – Sta. 60+00.0 to Sta. 65+46.9
ACCESS DRIVE – Sta. 70+10.7 to Sta. 71+85.0

GENERAL NOTES

1. *Roadway, Drainage, and Utilities shall be constructed in accordance with the City of South Bend Construction Standards, INDOT Standards and Specifications, and IDEM Standards.*
2. *All lots shall be serviced by City of South Bend municipal sanitary sewer and water.*
3. *All utilities, such as natural gas, electric, telecommunications, and TV/Cable television, shall be underground.*
4. *Contractor shall request utility locates through INDIANA 811 and contact all utility companies prior to construction to confirm locations of underground utilities. Any damages done to any public and/or private properties during construction shall be repaired at the Contractor's expense.*
5. *Any removed and/or disturbed pavement, curb and gutter, etc., shall be replaced using the same type of material and brought back to its original grade and alignment.*
6. *Unsuitable materials that could affect the integrity of the pipes and pavement shall be properly treated.*
7. *No closing of streets shall be permitted without prior approval from the City of South Bend. Contractor shall apply for traffic closure permits prior to any traffic restrictions.*
8. *Contractor shall obtain the necessary project permits from all respective governmental agencies except the IDEM sanitary sewer, water main, and erosion control permits. The Developer will obtain these permits.*
9. *Contractor shall take all necessary precautions for the protection of the work and shall provide, erect, and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs, and other traffic control devices.*
10. *One (1) set of signed as-built drawings shall be furnished to Abonmarche Consultants upon completion of construction and at time of final inspection.*
11. *Contractor is responsible for meeting current ADA guidelines sidewalks and sidewalk curb ramps.*
12. *Contractor shall protect and not destroy property corner monuments and survey control points.*
13. *Discrepancies or conflicts in the plans and/or site conditions shall be communicated to the Engineer to ensure that clarifications and revisions can be made prior to construction.*
14. *Construction and testing shall be in accordance with the City of South Bend standards, specifications & drawings.*
15. *Where possible, public utilities should be installed between the back of the curb and the back of sidewalk or in an available utility easement.*
16. *Right of way width shall be in accordance with the approved plat.*
17. *Sidewalk width shall be 5 foot minimum.*
18. *The maximum gradient of residential streets and sidewalks shall be 5%.*
19. *The minimum gradient of residential streets shall be 0.5% at the gutter.*

EARTHWORK / GRADING NOTES

1. *All topsoil shall be removed from the right-of-way and adjacent roadway easement prior to any utility excavation and filling operations.*
2. *All soil and compaction testing shall be done by a qualified soil testing firm approved by the Owner/Developer. A geotechnical investigation including soil infiltration rate analysis and an estimated seasonal groundwater elevation will be performed by a qualified testing firm contracted by the Owner*
3. *All exposed subgrade shall be proof-rolled and witnessed by a City Representative and a Geotechnical Engineer to determine unsuitable soil locations prior to any paving operations. Any unsuitable soil shall be excavated, backfilled, and compacted with suitable material in accordance with the plan and capable of supporting the anticipated loadings of the project.*
4. *The minimum soil compaction requirements, using Standard Proctor, for trench pipe backfill, site filling material, and pavement subgrade shall be as follows:*
   - *Subgrade under pavement and curbs 100%*
   - *Topsoil used in all but the top six inches (6") of fills in area specified 90%*
   - *Existing ground receiving fills 95%*
   - *Backfill in pipe and conduit trenches under pavements and curbs 95%*
   - *All other areas receiving fill 95%*
5. *Positive drainage shall be maintained to prevent any ponding of water or encroachment onto adjacent properties.*
6. *Inlet protection is required around each storm sewer inlet during construction.*
7. *A minimum of four (4) inches of topsoil shall be placed on all disturbed areas.*
8. *All areas receiving topsoil shall be fertilized, seeded and mulched to prevent erosion. It is the responsibility of the Earthwork Contractor to conform to Indiana "Rule 5" regarding erosion control.*

TEMPORARY BENCH MARKS

TBM "A-1": *Top of NE bolt of fire hydrant on the W side of Tyler Drive.*
Sta. 13+38.8, 16.8' Lt., Line 'T'
Elev.: 870.99

TBM LF3: *Top of NE bolt of fire hydrant on the S side of Lutz Drive.*
Sta. 32+56.9, 18.6' Rt., Line 'M'
Elev: 839.72

NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE
750 Lincolnway East
Suite A, Mishawaka, IN 46601
T 574.232.3700
F 574.251.4440
abonmarche.com
Goshen
Mishawaka
Battle Creek
Benton Harbor
Kalamazoo
Lafayette
South Bend
South Haven
Valparaiso
Engineering Architecture Land Surveying

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
TYPICAL ROADWAY SECTION

DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIA
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ:
VERT:
ACI JOB #: 17-1180
SHEET NO.: 2 of 37

LAFAYETTE FALLS PHASE IV, SECTION TWO

PART OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 36 NORTH, RANGE 2 EAST, CITY OF SOUTH BEND, CENTRE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA

NOTES:

1. AREA OF SUBDIVISION =25.23± ACRES
2. LOTS SHALL BE SERVICED BY CITY OF SOUTH BEND MUNICIPAL WATER AND SANITARY SEWER.
3. ALL EASEMENTS THAT ARE INDICATED ON DOCUMENTATION PROVIDED BY THE PROPERTY OWNER ARE SHOWN HEREON.
4. ALL LOT CORNERS FOUND OR SET WITH 5/8 INCH DIAMETER REBAR ROD, 24 INCHES IN LENGTH, CAPPED WITH A PLASTIC, YELLOW MARKER STAMPED "ABONMARCHE FIRM #0050", UNLESS INDICATED OTHERWISE.
5. THERE ARE NO ENCROACHMENTS OF EXISTING PERMANENT STRUCTURES UPON LOT LINES, BUILDING SETBACKS OR EASEMENTS CREATED IN THE PLATTING OF THIS SUBDIVISION.
6. BUILDING SETBACK LINES SHALL CONFORM TO APPLICABLE PROVISIONS OF THE ZONING ORDINANCE.
7. ACCORDING TO THE 1999 ST. JOSEPH COUNTY POTENTIAL GROUNDWATER CONTAMINATION SITES MAP PUBLISHED BY THE MICHIANA AREA COUNCIL OF GOVERNMENTS (MACOG), THERE APPEARS TO BE NO DOCUMENTED DUMPSITES, LANDFILLS, SITES USED FOR DISPOSING OF HAZARDOUS SUBSTANCES, OR WELL HEAD PROTECTION AREAS EXISTING ON–SITE OR ADJACENT TO THE SITE.
8. ACCORDING TO THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLAND INVENTORY MAP, THERE APPEARS TO BE NO WETLANDS LOCATED ON THE SUBJECT PROPERTIES.
9. ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), FEDERAL INSURANCE RATE MAP (FIRM), THE SUBJECT PROPERTIES ARE LOCATED IN ZONE X "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN" ON MAP PANEL NUMBER 18141C0307D WITH AN EFFECTIVE DATE OF JANUARY 6, 2011.
10. THE DRAINAGE, UTILITY AND MAINTENANCE EASEMENTS DELINEATED ON THIS PLAT ARE RESERVED TO THE DEVELOPER OF SAID SUBDIVISION AND ITS SUCCESSORS, ASSIGNS, THE CITY OF SOUTH BEND AND UTILITY COMPANIES. THE DEVELOPER AND ITS SUCCESSORS RESERVE THE RIGHT TO CONSTRUCT AND MAINTAIN CONTINUOUS DRAINAGE FACILITIES, INCLUDING, BUT NOT LIMITED TO, SWALES, PIPES AND DRYWELLS, TO PROVIDE WITHIN SAID EASEMENT YARD DRAINAGE ON, ACROSS AND BETWEEN, ALL LOTS ON THIS PLAT. THE OWNERS OF THE LOTS CONTAINING SAID EASEMENTS AND THEIR SUCCESSORS SHALL TAKE THEIR TITLE SUBJECT TO SAID DRAINAGE EASEMENT.
11. EROSION CONTROL PLANS SHALL BE FILED WITH THE RESPECTIVE GOVERNING AGENCIES.
12. ALL LOTS SHALL BE GOVERNED BY RESTRICTIVE COVENANTS.
13. THE BOUNDARY SURVEY OF THE PARENT PARCEL IS RECORDED UNDER INSTRUMENT NUMBER 0433419 IN THE OFFICE OF THE ST. JOSEPH COUNTY RECORDER.
14. THE INGRESS/EGRESS EASEMENT DELINEATED ON THIS SUBDIVISION PLAT IS AN EASEMENT RESERVED FOR THE USE AND ENJOYMENT BY THE PUBLIC FOR COMMON VEHICULAR AND/OR PEDESTRIAN ACCESS OVER AND THROUGH LOTS 393, 394 AND 417 THROUGH 424. UPON THE GROUND DESIGNATED HEREIN AND MARKED AS "EASEMENT", NO PERMANENT OR OTHER STRUCTURES ARE TO BE ERECTED OR MAINTAINED, BUT THE OWNER(S), THEIR SUCCESSORS AND ASSIGNS, OF SAID REAL ESTATE SHALL TAKE THEIR TITLES SUBJECT TO THE RIGHTS OF SAID EASEMENT.
15. THE DRAINAGE EASEMENTS DELINEATED ON THIS PLAT ARE RESERVED TO THE CITY OF SOUTH BEND. THE CITY OF SOUTH BEND RESERVES THE RIGHT TO CONSTRUCT AND MAINTAIN CONTINUOUS DRAINAGE FACILITIES, INCLUDING, BUT NOT LIMITED TO, SWALES, PIPES AND DRYWELLS, TO PROVIDE WITHIN SAID EASEMENT YARD DRAINAGE ON, ACROSS AND BETWEEN, ALL LOTS ON THIS PLAT. THE OWNERS OF THE LOTS CONTAINING SAID EASEMENTS AND THEIR SUCCESSORS SHALL TAKE THEIR TITLE SUBJECT TO SAID DRAINAGE EASEMENT.

LEGEND

- (A) 30' CITY OF SOUTH BEND MUNICIPAL DRAINAGE EASEMENT, 15' EACH SIDE OF PROPERTY LINE
- (B) 20' CITY OF SOUTH BEND MUNICIPAL DRAINAGE EASEMENT
- (C) 10' DRAINAGE, UTILITY & ROADWAY MAINTENANCE EASEMENT
- (D) 15' CITY OF SOUTH BEND MUNICIPAL DRAINAGE EASEMENT
- (E) 7.5' INGRESS/EGRESS, DRAINAGE & UTILITY EASEMENT
- (F) CITY OF SOUTH BEND MUNICIPAL DRAINAGE/RETENTION ESMT. AREA
- o SET 5/8" CAPPED IRON "ABONMARCHE FIRM #50"

STREET CLASSIFICATION:

LOCAL/MINOR . . . . . STADIUM DRIVE / KEADY COURT (50 FT. R/W)
LOCAL/MINOR . . . . . MACKEY DRIVE (50 FT. R/W)
LOCAL/MINOR . . . . . TYLER DRIVE (50' FT. R/W)
LOCAL/MINOR . . . . . JACKTOWN DRIVE (50' FT. R/W)
LOCAL/MINOR . . . . . GREISE LANE (50' FT. R/W)

SURVEYED BY:

ABONMARCHE CONSULTANTS, INC.
315 W. JEFFERSON BLVD.
SOUTH BEND, IN 46601

DEVELOPER/OWNER:

LAFAYETTE FALLS, LLC
705 S. BEIGER STREET
MISHAWAKA, IN 46544

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE
315 W. Jefferson Blvd.
South Bend, IN 46601
T 574.232.8700
F 574.251.4440
abonmarche.com
Goshen
Warsaw
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PROJECT:
SECONDARY PLAT
LAFAYETTE FALLS PHASE IV, SECTION TWO
PART OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 36 NORTH, RANGE 2 EAST, CITY OF SOUTH BEND, CENTRE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA

DRAWN BY: DEF
FIELD BOOK:
PM REVIEW: DSK
QA/QC REVIEW: JLM
DATE: 12-3-2020

SEAL:
MICHAEL J. ROZICKI REGISTERED LS20500010 STATE OF INDIANA LAND SURVEYOR

HARD COPY IS INTENDED TO BE 24" X 36" WHEN PLOTTED. SCALE(S) INDICATED AND GRAPHIC QUALITY MAY NOT BE ACCURATE FOR ANY OTHER SIZES

SCALE: HORZ: 1" = 80'

ACI JOB #
17-1180

SHEET NO.
1 of 2

SEC. 2-T36N-R2E

LAFAYETTE FALLS PHASE IV, SECTION TWO

PART OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 36 NORTH, RANGE 2 EAST, CITY OF SOUTH BEND, CENTRE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA

CURVE TABLE						
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CORD LENGTH	TANGENT
C1	15.52'	1627.00'	0°32'47"	N81°53'27"W	15.52'	7.76'
C2	286.04'	870.00'	18°50'16"	N88°57'49"E	284.75'	144.32'
C3	416.85'	400.00'	59°42'33"	N70°35'28"W	398.24'	229.59'
C4	404.46'	360.00'	64°22'20"	S72°56'13"E	383.52'	226.58'
C5	76.01'	200.00'	21°46'32"	S10°53'16"W	75.55'	38.47'
C6	95.33'	500.00'	10°55'26"	N84°32'17"E	95.18'	47.81'
C7	364.93'	1000.00'	20°54'33"	S89°31'51"W	362.91'	184.52'
C8	81.70'	500.00'	9°21'44"	S84°41'45"E	81.61'	40.94'
C9	121.77'	200.00'	34°53'01"	N73°10'52"E	119.89'	62.84'
C10	106.20'	175.00'	34°46'14"	N73°14'16"E	104.58'	54.79'
C11	136.99'	225.00'	34°53'01"	N73°10'52"E	134.88'	70.69'
C12	47.45'	30.00'	90°37'23"	S45°18'41"W	42.66'	30.33'
C13	46.80'	30.00'	89°22'37"	N44°41'19"W	42.20'	29.68'
C14	31.06'	525.00'	3°23'23"	S87°40'56"E	31.06'	15.53'
C15	54.73'	525.00'	5°58'21"	S83°00'03"E	54.70'	27.39'
C16	77.62'	475.00'	9°21'44"	S84°41'45"E	77.53'	38.89'
C17	46.39'	1025.00'	2°35'36"	N81°18'41"W	46.39'	23.20'
C18	36.15'	975.00'	2°07'27"	N81°04'36"W	36.14'	18.08'
C19	90.40'	975.00'	5°18'44"	N84°48'23"W	90.37'	45.23'
C20	90.04'	975.00'	5°17'28"	S89°54'12"W	90.01'	45.05'
C21	43.25'	30.00'	82°36'28"	S41°18'14"E	39.60'	26.36'
C22	47.86'	30.00'	91°23'52"	N45°41'56"E	42.94'	30.74'
C24	119.40'	1025.00'	6°40'28"	S88°03'38"W	119.34'	59.77'
C25	90.43'	975.00'	5°18'52"	S84°36'02"W	90.40'	45.25'
C26	115.23'	1025.00'	6°26'29"	S81°30'10"W	115.17'	57.68'
C27	48.79'	975.00'	2°52'02"	S80°30'35"W	48.79'	24.40'
C28	37.34'	525.00'	4°04'29"	N81°06'49"E	37.33'	18.68'
C29	53.26'	30.00'	101°43'05"	S50°51'32"E	46.54'	36.86'
C30	47.12'	30.00'	90°00'00"	N45°00'00"E	42.43'	30.00'
C31	62.76'	525.00'	6°50'57"	N86°34'31"E	62.72'	31.42'
C32	33.25'	175.00'	10°53'16"	S5°26'38"W	33.20'	16.68'
C33	33.25'	175.00'	10°53'16"	S16°19'54"W	33.20'	16.68'

CURVE TABLE						
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CORD LENGTH	TANGENT
C35	66.84'	225.00'	17°01'16"	S8°30'38"W	66.60'	33.67'
C36	18.67'	225.00'	4°45'16"	S19°23'54"W	18.67'	9.34'
C37	52.72'	30.00'	100°41'04"	S72°07'04"W	46.19'	36.19'
C38	109.93'	375.00'	16°47'48"	N49°08'30"W	109.54'	55.36'
C39	41.39'	385.00'	6°09'37"	S43°49'25"E	41.37'	20.72'
C40	90.94'	385.00'	13°31'59"	S53°40'13"E	90.72'	45.68'
C41	85.17'	385.00'	12°40'32"	S66°46'28"E	85.00'	42.76'
C42	85.16'	385.00'	12°40'24"	S79°26'56"E	84.99'	42.75'
C43	90.34'	385.00'	13°26'41"	N87°29'31"E	90.13'	45.38'
C44	8.06'	385.00'	1°11'58"	N80°10'12"E	8.06'	4.03'
C45	83.07'	164.00'	29°01'14"	N85°55'10"W	82.18'	42.44'
C47	74.75'	61.00'	70°12'23"	N73°29'16"E	70.16'	42.88'
C49	56.57'	61.00'	53°07'55"	N11°49'07"E	54.56'	30.50'
C50	58.74'	61.00'	55°10'28"	N42°20'05"W	56.50'	31.87'
C51	70.50'	61.00'	66°13'07"	S76°58'08"W	66.64'	39.78'
C52	15.18'	164.00'	5°18'14"	N46°30'41"E	15.18'	7.60'
C53	105.60'	164.00'	36°53'34"	N67°36'35"E	103.78'	54.70'
C54	2.75'	164.00'	0°57'40"	N86°32'13"E	2.75'	1.38'
C55	96.33'	335.00'	16°28'33"	S84°44'32"E	96.00'	48.50'
C56	101.03'	335.00'	17°16'48"	S67°51'52"E	100.65'	50.90'
C58	108.06'	335.00'	18°28'52"	S49°59'02"E	107.59'	54.50'
C59	88.97'	425.00'	11°59'39"	N46°44'26"W	88.81'	44.65'
C60	87.78'	425.00'	11°50'03"	N58°39'17"W	87.63'	44.05'
C61	92.52'	425.00'	12°28'20"	N83°38'31"W	92.33'	46.44'
C62	95.20'	425.00'	12°50'03"	N70°59'19"W	95.00'	47.80'
C63	51.14'	30.00'	97°40'06"	N27°03'31"W	45.17'	34.31'
C64	78.39'	425.00'	10°34'05"	S84°50'16"W	78.28'	39.31'
C65	7.25'	845.00'	0°29'29"	N79°47'26"E	7.25'	3.62'
C66	160.69'	375.00'	24°33'07"	N88°10'08"W	159.47'	81.60'
C67	8.83'	895.00'	0°33'56"	N79°49'39"E	8.83'	4.42'
C68	90.07'	845.00'	6°06'26"	N89°14'51"E	90.03'	45.08'
C69	90.82'	845.00'	6°09'29"	N83°06'54"E	90.77'	45.45'

CURVE TABLE						
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CORD LENGTH	TANGENT
C70	89.69'	845.00'	6°04'53"	S84°39'30"E	89.64'	44.89'
C71	121.85'	895.00'	7°48'03"	N84°00'38"E	121.76'	61.02'
C72	46.17'	30.00'	88°10'09"	S43°49'33"W	41.74'	29.06'
C74	44.66'	30.00'	85°17'57"	N42°37'12"W	40.65'	27.63'
C75	57.05'	895.00'	3°39'08"	S83°26'37"E	57.04'	28.53'
C76	15.28'	1602.00'	0°32'47"	N81°53'27"W	15.28'	7.64'
C78	15.75'	1652.00'	0°32'47"	N81°53'26"W	15.75'	7.88'
C80	13.30'	1602.00'	0°28'33"	S82°24'06"E	13.30'	6.65'
C81	106.00'	870.00'	6°58'51"	S85°06'29"E	105.93'	53.07'
C82	180.04'	870.00'	11°51'25"	N85°28'24"E	179.72'	90.34'
C83	233.91'	400.00'	33°30'18"	N83°41'35"W	230.59'	120.41'
C84	182.94'	400.00'	26°12'14"	N53°50'19"W	181.35'	93.10'
C85	14.99'	500.00'	1°43'05"	N89°08'27"E	14.99'	7.50'
C86	80.34'	500.00'	9°12'21"	N83°40'45"E	80.25'	40.25'
C87	271.48'	1000.00'	15°33'17"	S86°51'13"W	270.65'	136.58'
C88	93.45'	1000.00'	5°21'16"	N82°41'31"W	93.42'	46.76'

DEED OF DEDICATION:

THE UNDERSIGNED, LAFAYETTE FALLS, LLC, A LIMITED LIABILITY COMPANY, DULY ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF INDIANA, AS OWNER OF THE REAL ESTATE SHOWN AND DESCRIBED HEREIN, DOES HEREBY LAYOFF, PLAT AND SUBDIVIDE SAID REAL ESTATE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUBDIVISION ORDINANCE OF THE CITY OF SOUTH BEND, INDIANA. THIS SUBDIVISION SHALL BE KNOWN AND DESIGNATED AS "**LAFAYETTE FALLS PHASE IV, SECTION TWO**". ALL STREETS, RIGHT-OF-WAYS, ALLEYS, FUTURE ROADWAY EASEMENTS, AND PUBLIC OPEN SPACES SHOWN AND NOT HERETOFORE DEDICATED NOW ARE HEREBY DEDICATED TO THE PUBLIC FOR THE USES DESIGNATED HEREIN. FRONT BUILDING SETBACK LINES ARE HEREBY ESTABLISHED AS SHOWN ON THIS PLAT, BETWEEN WHICH LINES AND THE RIGHT-OF-WAY LINE OF THE STREET, THERE SHALL BE ERECTED OR MAINTAINED NO BUILDING OR STRUCTURE. THE AREA OF GROUND DESIGNATED ON THIS PLAT AND MARKED AS "EASEMENTS", ARE RESERVED FOR THE USES AS DESIGNATED HEREIN. PUBLIC UTILITY EASEMENTS MAY INCLUDE, BUT ARE NOT LIMITED TO, THE INSTALLATION OF WATER AND SEWER MAINS, POLES, DUCTS, LINES AND WIRES, DRAINAGE FACILITIES, AND ACCESS FOR PRESENT OR FUTURE DEVELOPMENT, SUBJECT AT ALL TIMES TO THE PROPER AUTHORITIES AND TO THE EASEMENT HEREIN RESERVED. NO PERMANENT OR OTHER STRUCTURES ARE TO BE ERECTED OR MAINTAINED UPON SAID STRIPS OF LAND, BUT OWNERS OF LOTS IN THIS SUBDIVISION SHALL TAKE THEIR TITLES SUBJECT TO THE RIGHTS OF THE PUBLIC UTILITIES, AND TO THE RIGHTS OF THE OWNERS OF OTHER LOTS IN THIS SUBDIVISION.

OWNER'S CERTIFICATION:

THIS IS TO CERTIFY THAT THE UNDERSIGNED, LAFAYETTE FALLS, LLC, A LIMITED LIABILITY COMPANY, DULY ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF INDIANA, IS THE OWNER OF THE LAND DESCRIBED HEREIN, AND HAS CAUSED THE SAME TO BE SURVEYED AND SUBDIVIDED AS INDICATED THEREON, FOR THE USES AND PURPOSES THEREIN SET FORTH, AND DOES HEREBY ACKNOWLEDGE AND ADOPT THE PLAT UNDER THE STYLE AND TITLE THEREON INDICATED.

LAFAYETTE FALLS, LLC
705 S. BEIGER STREET
MISHAWAKA, IN 46544

_____
BILL LOUDIN, PRESIDENT

DATED THIS ____ DAY OF _____ , 2018

PUBLIC NOTARY

STATE OF INDIANA)
)
COUNTY OF ST. JOSEPH)

BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED BILL LOUDIN, AND ACKNOWLEDGED THE EXECUTION OF THE FOREGOING INSTRUMENT AS A VOLUNTARY ACT AND DEED FOR THE PURPOSES THEREIN EXPRESSED.

WITNESS MY HAND AND NOTARIAL SEAL THIS _____ DAY OF _____, 2018.
MY COMMISSION EXPIRES: _____.

_____
(SIGNATURE)

_____
(PRINT)

NOTARY PUBLIC IS A RESIDENT OF _____ COUNTY, INDIANA.

LEGAL DESCRIPTION:

A PART OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 36 NORTH, RANGE 2 EAST, CITY OF SOUTH BEND, CENTRE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS;

BEGINNING AT THE SOUTHEAST CORNER OF LOT 303 OF LAFAYETTE FALLS, PHASE III, SECTION THREE, RECORDED AS INSTRUMENT NUMBER 0808755 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA; THENCE NORTH 00°00'00" EAST ALONG THE EAST LINE OF SAID LOT ALSO BEING THE EASTERLY LINE OF LAFAYETTE FALLS, PHASE III, SECTION THREE, OF SAID SUBDIVISION, 187.02 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY OF MACKEY DRIVE; THENCE NORTH 90°00'00" WEST ALONG SAID RIGHT OF WAY TO THE SOUTHEAST CORNER OF LOT 395 OF SAID SUBDIVISION 25.12 FEET; THENCE NORTH 00°00'00" EAST ALONG THE EAST LINE OF SAID LOT AND THE EASTERLY LINE OF LOTS 396 THRU 404 OF LAFAYETTE FALLS, PHASE III, SECTION ONE, RECORDED AS INSTRUMENT NUMBER 0728461 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA, TO THE NORTHEAST CORNER OF LOT 405 OF LAFAYETTE FALLS, SECTION FIVE AND LAFAYETTE FALLS PHASE III, LOTS 405 AND 406, RECORDED AS INSTRUMENT NUMBER 0704435 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA, 534.92 FEET, SAID CORNER BEING LOCATED ON THE SOUTHERLY RIGHT OF WAY OF STADIUM DRIVE AND A POINT OF CURVE TO THE RIGHT HAVING A RADIUS OF 1602.00 FEET AND A CHORD OF 13.30 FEET BEARING SOUTH 82°24'06" EAST; THENCE SOUTHEASTERLY ALONG SAID CURVE AND SOUTHERLY ALONG SAID RIGHT OF WAY 13.30 FEET; THENCE NORTH 07°50'20" EAST TO THE SOUTHEAST CORNER OF LOT 269 OF SAID SUBDIVISION 50.00 FEET, SAID CORNER BEING LOCATED ON THE NORTHERLY RIGHT OF WAY OF STADIUM DRIVE; THENCE NORTH 18°43'18" EAST TO THE SOUTHWEST AND SOUTHEAST CORNER OF LOTS 268 AND 267 OF SAID SUBDIVISION 115.58 FEET; THENCE NORTH 42°38'44"EAST TO THE SOUTHEAST AND SOUTHWEST CORNER OF LOTS 267 AND 266 57.21 FEET; THENCE NORTH 58°07'46" EAST ALONG THE SOUTHERNLY LINE OF LOT 266 OF SAID SUBDIVISION AND THE SOUTHERNLY LINE OF LOTS 53 AND 54 OF LAFAYETTE FALLS, SECTION FOUR, RECORDED AS INSTRUMENT NUMBER 0602210 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY INDIANA, TO THE SOUTHEAST AND SOUTHWEST CORNER OF LOTS 54 AND 55 OF SAID SUBDIVISION 170.49 FEET; THENCE SOUTH 89°10'21" EAST ALONG THE SOUTHERLY LINE OF SAID SUBDIVISION TO THE SOUTHEAST CORNER OF LOT 60 OF SAID SUBDIVISION 371.03 FEET; THENCE SOUTH 12°37'17" EAST ALONG THE SOUTHWESTERLY LINE OF SAID SUBDIVISION TO THE SOUTHWEST AND NORTHWEST CORNER OF LOTS 62 AND 63 OF SAID SUBDIVISION 80.47 FEET; THENCE SOUTH 27°09'37" EAST ALONG THE SOUTHWESTERLY LINE OF SAID SUBDIVISION TO A POINT ON THE SOUTHWESTERLY LINE OF LOT 64 OF SAID SUBDIVISION 165.85 FEET; THENCE SOUTH 61°00'44" EAST ALONG THE SOUTHWESTERLY LINE OF SAID SUBDIVISION TO THE SOUTHEAST AND SOUTHWEST CORNER OF LOTS 65 AND 66 OF SAID SUBDIVISION 165.85 FEET; THENCE SOUTH 78°55'45" EAST ALONG THE SOUTHWESTERLY LINE OF SAID SUBDIVISION TO THE SOUTHEAST AND SOUTHWEST CORNER OF LOTS 66 AND 67 OF SAID SUBDIVISION 108.66 FEET; THENCE NORTH 81°58'30" EAST ALONG THE SOUTHERLY LINE OF SAID SUBDIVISION TO THE TO THE SOUTHEAST CORNER OF LOT 68 OF SAID SUBDIVISION, SAID CORNER ALSO BEING THE SOUTHWEST CORNER OF LOT 185 OF LAFAYETTE FALLS, SECTION TWO, RECORDED AS INSTRUMENT NUMBER 0602210 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA, 182.70 FEET; THENCE NORTH 83°42'21" EAST ALONG THE SOUTHERLY LINE OF SAID SUBDIVISION TO THE SOUTHEAST AND SOUTHWEST CORNER OF LOTS 185 AND 186 OF SAID SUBDIVISION 67.54 FEET; THENCE SOUTH 56°29'48" EAST ALONG THE SOUTHWESTERLY LINE OF LOT 186 OF SAID SUBDIVISION AND THE SOUTHWESTERLY LINE OF LOTS 333 AND 334 OF LAFAYETTE FALLS, PHASE III, SECTION TWO, RECORDED AS INSTRUMENT NUMBER 0811195 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA, TO A POINT ON THE SOUTHWESTERLY LINE OF LOT 334 OF SAID SUBDIVISION 150.76 FEET; THENCE SOUTH 03°49'12" EAST ALONG THE WESTERLY LINE OF SAID SUBDIVISION TO A POINT ON THE WESTERLY LINE OF LOT 336 OF SAID SUBDIVISION 84.83 FEET; THENCE SOUTH 25°05'08" WEST ALONG THE WESTERLY LINE OF SAID SUBDIVISION TO A POINT ON THE WESTERLY LINE OF LOT 338 OF SAID SUBDIVISION 170.00 FEET; THENCE SOUTH 49°57'33" WEST ALONG THE WESTERLY LINE OF SAID SUBDIVISION TO THE NORTHWEST CORNER OF LOT 339 OF SAID SUBDIVISION 90.86 FEET; THENCE SOUTH 34°39'21" EAST ALONG THE WESTERLY LINE OF SAID SUBDIVISION TO THE NORTHWEST CORNER OF LOT 314B OF LAFAYETTE FALLS, LOT 314B MINOR, RECORDED AS INSTRUMENT NUMBER 1229075 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA, 189.97 FEET, SAID CORNER BEING LOCATED ON THE SOUTHERLY RIGHT OF WAY OF MACKEY DRIVE; THENCE SOUTH 26°34'56" EAST TO THE SOUTHWEST CORNER OF SAID LOT OF SAID SUBDIVISION, SAID POINT ALSO BEING THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 36 NORTH, RANGE 2 EAST 213.61 FEET; THENCE NORTH 89°19'47" WEST ALONG THE SOUTH LINE OF SAID SECTION 2, 1372.99 FEET TO THE POINT OF BEGINNING; SAID PARCEL CONTAINING 25.23 ACRES, MORE OR LESS, AND SUBJECT TO RIGHT-OF-WAY, EASEMENTS, COVENANTS AND RESTRICTIONS OF RECORD.

SURVEYOR CERTIFICATE:

I, MICHAEL J. ROZYCKI, HEREBY CERTIFY THAT I AM A REGISTERED LAND SURVEYOR, LICENSED IN COMPLIANCE WITH THE LAWS OF THE STATE OF INDIANA, THAT THIS PLAT CORRECTLY REPRESENTS A SURVEY COMPLETED OR CERTIFIED BY ME ON SEPTEMBER 5, 2017, AND THAT THE LOCATION, SIZE, TYPE, AND MATERIAL OF ALL MONUMENTS ARE ACCURATELY SHOWN, AND THAT THE MONUMENTS WILL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THE SUBDIVISION ORDINANCE OF THE CITY OF SOUTH BEND, INDIANA.

I AFFIRM UNDER THE PENALTIES FOR PERJURY, THAT I HAVE TAKEN REASONABLE CARE TO REDACT EACH SOCIAL SECURITY NUMBER IN THIS DOCUMENT, UNLESS REQUIRED BY LAW.

_____
MICHAEL J. ROZYCKI, P.S. DATE
PROFESSIONAL LAND SURVEYOR #LS20500010
STATE of INDIANA

DEVELOPER/OWNER:

LAFAYETTE FALLS, L.L.C.
705 S. BEIGER STREET
MISHAWAKA, IN 46544

SURVEYED BY:

ABONMARCHE CONSULTANTS, INC.
750 LINCOLN WAY EAST
SOUTH BEND, IN 46601

NO.	REVISION DESCRIPTION:	BY:	DATE:

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SECONDARY PLAT
LAFAYETTE FALLS PHASE IV, SECTION TWO
PART OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 36 NORTH, RANGE 2 EAST, CITY OF SOUTH BEND, CENTRE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA

PROJECT:
DRAWN BY: DEF
FIELD BOOK:
PM REVIEW: DSK
QA/QC REVIEW: JLM
DATE: 12-3-2020
SEAL:

MICHAEL J. ROZYCKI REGISTERED LS20500010 STATE OF INDIANA LAND SURVEYOR

HARD COPY IS INTENDED TO BE 24" X 36" WHEN PLOTTED. SCALE(S) INDICATED AND GRAPHIC QUALITY MAY NOT BE ACCURATE FOR ANY OTHER SIZES

SCALE:
ACI JOB # 17-1180
SHEET NO. 2 of 2

SEC. 2-T36N-R2E

Lafayette Falls Subdivision Drainage Basin Summary

Storm water runoff for Lafayette Falls subdivision is directed to retention and detention basins by a combination of storm sewers and swales.

- *Detention Basin #1 is a dry bottom detention basin with a bottom of 813.0 and design high water of 814.2. One foot of freeboard is provided to the top of bank at 815.2. Detention Basin #1 includes an 18" pipe under Kern Road with a release rate of 9.5 cfs set at an invert elevation of 812.14. This basin includes runoff that is detained in Basins 2 and 3 and then released into Basin 1.*

- *Detention Basin #2 is a wet pond with a normal water elevation of 817.0 and design high water elevation of 820.0 that includes a 3.2 cfs release toward Detention Basin #1 utilizing a 12" pipe at invert elevation 819.0.*

- *Detention Basin #3 is a wet pond with a normal water elevation of 826.0, a design high water of 829.0, and utilizes a 12" pipe for a release of 1.2 cfs at an invert elevation of 825.47. The discharged water will meander through a wetland until ultimately being captured by Basin #1. The catchment area of Basin #3 includes a small depression near the south end of the catchment area that will overtop through a swale to Basin #3. The storage calculations for this basin do not take credit for the depression.*

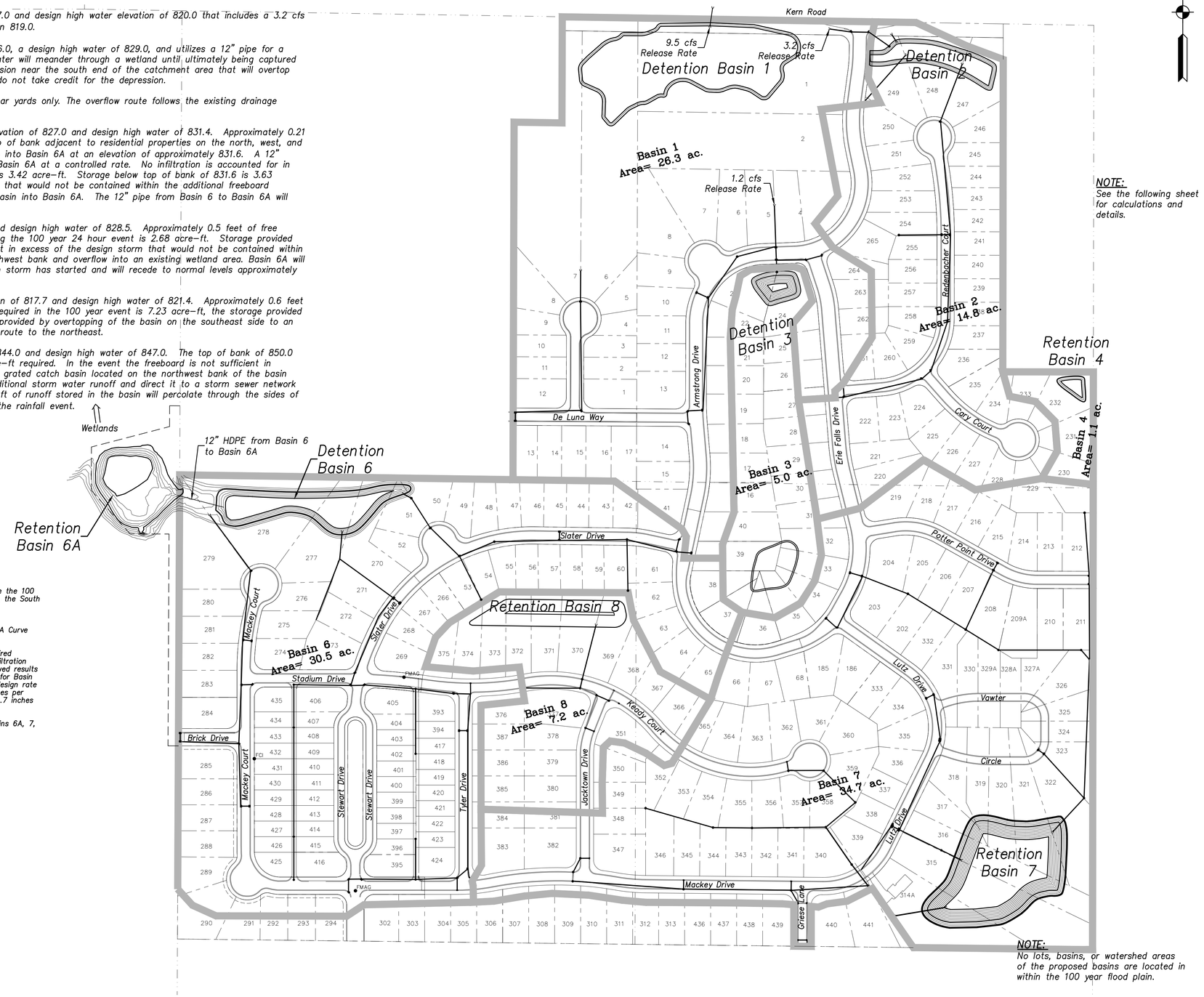
- *Retention Basin #4 is a dry bottom basin that captures runoff from rear yards only. The overflow route follows the existing drainage pattern to the east after overtopping the basin.*

- *Retention Basin #6 is a wet bottom detention basin with a bottom elevation of 827.0 and design high water of 831.4. Approximately 0.21 feet of free board is provided prior to overflow into Basin 6A. The top of bank adjacent to residential properties on the north, west, and south banks is 834.0 such that any breach of the bank would overflow into Basin 6A at an elevation of approximately 831.6. A 12" HDPE pipe near the bottom of Basin 6 allows the basin to drain into Basin 6A at a controlled rate. No infiltration is accounted for in the analysis of Basin 6. Total storage for a 100 year 24 hour event is 3.42 acre–ft. Storage below top of bank of 831.6 is 3.63 acre–ft. In the event of a rainfall event in excess of the design storm that would not be contained within the additional freeboard capacity, the emergency overflow route would include overtopping the basin into Basin 6A. The 12" pipe from Basin 6 to Basin 6A will drain Basin 6 within 36 hours of the start of the design storm.*

- *Retention Basin #6A has a bottom elevation of approximately 824.0 and design high water of 828.5. Approximately 0.5 feet of free board is provided to the top of bank of 829.0. Storage required during the 100 year 24 hour event is 2.68 acre–ft. Storage provided below the top of bank is 3.14 acre–ft. In the event of a rainfall event in excess of the design storm that would not be contained within the additional freeboard capacity, the the basin would overtop the northwest bank and overflow into an existing wetland area. Basin 6A will accept water from Basin 6 for approximately 36 hours after the design storm has started and will recede to normal levels approximately 10 hours later, 46 hours from the start of the storm.*

- *Retention Basin #7 is a wet bottom basin with a normal water elevation of 817.7 and design high water of 821.4. Approximately 0.6 feet of freeboard is provided to the top of bank at 822.0. Total storage required in the 100 year event is 7.23 acre–ft, the storage provided to the top of bank is 8.69 acre–ft. The emergency overflow route is provided by overtopping of the basin on the southeast side to an existing retention storage area, prior to resuming the natural drainage route to the northeast.*

- *Retention Basin #8 is a dry bottom basin with a bottom elevation of 844.0 and design high water of 847.0. The top of bank of 850.0 provides an additional 3.0 feet of free board above the total 0.53 acre–ft required. In the event the freeboard is not sufficient in abnormally large events, an emergency overflow is provided by an open grated catch basin located on the northwest bank of the basin and set at an elevation of 849.9. The catch basin will accept the additional storm water runoff and direct it to a storm sewer network northwest of the basin that discharges into Basin #6. The 0.53 acre–ft of runoff stored in the basin will percolate through the sides of the basin at 5 inches/hour and drain within 30 hours of the start of the rainfall event.*



NOTE:
See the following sheet for calculations and details.

Drainage Design Criteria and Runoff, Basins 6A, 7, and 8

Retention Basins have been designed using the SCS Curve Number Method to accommodate the 100 year 24 hour rainfall event. Rainfall intensities were taken from the N.O.A.A. website using the South Bend station and include 6.27 inches for the 100 year, 24 hour event

All soils within the catchment area are classified as hydrologic soil group B.
A Curve Number of 98 was used for all pavements, buildings, and impermeable surfaces. A Curve Number of 61 was used for all lawn areas and permeable surfaces.

Infiltration through the banks of each basin was considered during calculations of the required storage volume, while infiltration through the bottom of the basin was disregarded. No infiltration was considered during the analysis of Basin 6. A December 7, 2018 Infiltration Study showed results of an infiltration test and particle size analysis for Basins 6A and 8. The infiltration test for Basin 6A resulted in 8.4 inches per hour and the particle size analysis produced a range for a design rate between 6.0 to 7.5 inches per hour. The infiltration test for Basin 8 resulted in 38.5 inches per hour and the particle size analysis produced a range for a design rate between 8.5 and 11.7 inches per hour.

In accordance with City of South Bend direction, a maximum of 5 inches per hour for Basins 6A, 7, and 8 was used during the Pond Pack analysis of the basins.

The following areas and curve numbers were used to evaluate each basin:

Basin 6 and 6A:
Total catchment area: 30.5 Acres
Impervious Area, SCS CN 98.0 = 10.12 acres
Pervious Area, SCS CN 61.0 = 20.37 acres
Composite Curve Number = 73.0

Basin 7:
Total catchment area: 34.7 Acres
Impervious Area, SCS CN 98.0 = 10.05 acres
Pervious Area, SCS CN 61.0 = 24.64 acres
Composite Curve Number = 72.0

Basin 8:
Total catchment area: 7.19 Acres
Impervious Area, SCS CN 98.0 = 2.20 acres
Pervious Area, SCS CN 61.0 = 4.99 acres
Composite Curve Number = 72.0

NOTE:
No lots, basins, or watershed areas of the proposed basins are located in within the 100 year flood plain.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
MASTER DRAINAGE PLAN

DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
No. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:
DATE: 10/28/2020
SCALE: HORZ: 1"=150'
VERT:
ACI JOB #: 17-1180
SHEET NO.: 5 of 37

Basin Calculations

Detention Area #1

C =	0.29			Inflow Rate from Basin 2=	3.21 cfs
A =	26.3	acres		Inflow Rate from Basin 3=	1.20 cfs
Release Rate =	9.50	cfs		Total Inflow Rate from other Basins=	4.41 cfs

Site Run-off from 10yr Undeveloped Conditions:

Area of Basins 1, 2, and 3 =	42.3	acres
Intensity =	1.20	in/hr
C =	0.20	
Allowable Release Rate	10.15	cfs
Actual Release Rate	9.50	cfs

Storm Duration (hr)	100 Year Intensity (in/hr)	Inflow from Catchment A (cfs)	Inflow from Other Basins (cfs)	Release Rate (cfs)	Storage Rate (cfs)	Required Storage (acre-ft)	Required Storage (cft)
0.08	7.80	59.49	4.41	9.50	54.40	0.363	15,798
0.17	6.78	51.71	4.41	9.50	46.62	0.660	28,770
0.25	6.00	45.76	4.41	9.50	40.67	0.847	36,910
0.33	5.40	41.19	4.41	9.50	36.10	0.993	43,239
0.50	4.40	33.56	4.41	9.50	28.47	1.186	51,671
0.67	3.60	27.46	4.41	9.50	22.37	1.249	54,399
0.83	3.10	23.64	4.41	9.50	18.55	1.283	55,900
1.00	2.80	21.36	4.41	9.50	16.27	1.355	**59,044**
1.50	2.00	15.25	4.41	9.50	10.16	1.271	55,343
2.00	1.65	12.58	4.41	9.50	7.49	1.249	54,410
3.00	1.20	9.15	4.41	9.50	4.06	1.016	44,240
4.00	1.00	7.63	4.41	9.50	2.54	0.846	36,837
5.00	0.85	6.48	4.41	9.50	1.39	0.580	25,282
6.00	0.70	5.34	4.41	9.50	0.25	0.124	5,421
12.00	0.42	3.20	4.41	9.50			
24.00	0.23	1.75	4.41	9.50			
Req. Storage:	*62,587*	cft		**1.44**	**acre-ft**	(includes 6% siltation factor)	
Provided Storage:				**2.89**	**acre-ft**		

Retention Basin No. 4

(Dry Bottom)

A, Catchment Area of Basin No. 1 = 1.1 acres
C, Weighted Drainage Coefficent = 0.30
i, 100 Year, 24 Hour Storm Intensity = 0.234 in/hr

Runoff After Development = A x C x i x Time/12 x 6% Siltation Factor
= (1.1 acres x 0.30) x 0.234 in/hr x 24/12 x 1.06
Storage Required = 0.16 Ac.-Ft.
Storage Provided = 0.16 Ac.-Ft.

Detention Pond #2

C =	0.40		
A =	14.8	acres	
Release Rate =	3.21	cfs	

Storm Duration (hr)	100 Year Intensity (in/hr)	Inflow Rate (cfs)	Release Rate (cfs)	Storage Rate (cfs)	Required Storage (acre-ft)	Required Storage (cft)
0.08	7.80	46.18	3.21	42.97	0.286	12,477
0.17	6.78	40.14	3.21	36.93	0.523	22,788
0.25	6.00	35.52	3.21	32.31	0.673	29,321
0.33	5.40	31.97	3.21	28.76	0.791	34,449
0.50	4.40	26.05	3.21	22.84	0.952	41,451
0.67	3.60	21.31	3.21	18.10	1.011	44,026
0.83	3.10	18.35	3.21	15.14	1.047	45,621
1.00	2.80	16.58	3.21	13.37	1.114	**48,519**
1.50	2.00	11.84	3.21	8.63	1.079	46,990
2.00	1.65	9.77	3.21	6.56	1.093	47,611
3.00	1.20	7.10	3.21	3.89	0.974	42,406
4.00	1.00	5.92	3.21	2.71	0.903	39,349
5.00	0.85	5.03	3.21	1.82	0.759	33,069
6.00	0.70	4.14	3.21	0.93	0.467	20,343
12.00	0.42	2.49	3.21			
24.00	0.23	1.36	3.21			
Req. Storage:	*51,430*	cft	**1.18**	**acre-ft**	(includes 6% siltation factor)	
Provided Storge:			**1.39**	**acre-ft**		

Detention Pond #3

C =	0.30		
A =	5.0	acres	
Release Rate =	1.20	cfs	

Storm Duration (hr)	100 Year Intensity (in/hr)	Inflow Rate (cfs)	Release Rate (cfs)	Storage Rate (cfs)	Required Storage (acre-ft)	Required Storage (cft)
0.08	7.80	11.70	1.20	10.50	0.070	3,049
0.17	6.78	10.17	1.20	8.97	0.127	5,535
0.25	6.00	9.00	1.20	7.80	0.163	7,079
0.33	5.40	8.10	1.20	6.90	0.190	8,266
0.50	4.40	6.60	1.20	5.40	0.225	9,801
0.67	3.60	5.40	1.20	4.20	0.235	10,215
0.83	3.10	4.65	1.20	3.45	0.239	10,395
1.00	2.80	4.20	1.20	3.00	0.250	**10,890**
1.50	2.00	3.00	1.20	1.80	0.225	9,801
2.00	1.65	2.48	1.20	1.28	0.213	9,257
3.00	1.20	1.80	1.20	0.60	0.150	6,534
4.00	1.00	1.50	1.20	0.30	0.100	4,356
5.00	0.85	1.28	1.20	0.08	0.031	1,361
6.00	0.70	1.05	1.20			
12.00	0.42	0.63	1.20			
24.00	0.23	0.35	1.20			
Req. Storage:	*11,543*	cft	**0.27**	**acre-ft**	(includes 6% siltation factor)	
Provided Storage:			**0.58**	**acre-ft**		

Basin Analsys

Using the design criteria and runoff information stated on this sheet, each basin was analyzed in Pond Pack to determine peak inflow and storage volume required:

Basin 6:
Peak Inflow = 12.56 cfs
Storage Required = 3.42 acre-ft
Design High Water at Required Storage = 831.38
Top of Bank = 831.6
Volume Provided below Top of Bank = 3.63 acre-ft

Basin 6A:
Peak Inflow = 6.36 cfs
Storage Required = 2.68 acre-ft
Design High Water at Required Storage = 828.49
Top of Bank = 829.0
Volume Provided below Top of Bank = 3.14 acre-ft

Basin 7:
Peak Inflow = 12.4 cfs
Storage Required = 7.24 acre-ft
Design High Water at Required Storage =821.4
Top of Bank = 822.0
Volume Provided below Top of Bank = 8.69 acre-ft

Basin 8:
Peak Inflow = 2.57 cfs
Storage Required = 0.67 acre-ft
Design High Water at Required Storage = 847.8
Top of Bank = 850.0
Volume Provided below Top of Bank = 1.88 acre-ft

Basin Details

Detention Area #1

Dry Bottom

Top of Bank		815.2		Outfall: 18" Pipe at 812.1	
Design High Water		814.2			
Bottom		813.0			
Side Slopes		4:1			
Stage Storage:					
Elevation	Area	Volume			
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)
813.0	101,205				
		126,056	2.89	126,056	**2.89**
814.2	108,888				
		112,145	2.57	238,201	5.47
815.2	115,402				
Capacity Required:			1.44	acre-ft	
Capacity Provided (813.0 to 814.2):			2.89	acre-ft	

Detention Pond #2

Wet Bottom

Top of Bank		820.0		Outfall: 12" Pipe at 819.0	
Design High Water		820.0			
Normal Water		817.0			
Bottom		813.0			
Side Slopes		4:1			
Stage Storage:					
Elevation	Area	Volume			
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)
817.0	15,276				
		16,887	0.39	16,887	0.39
818.0	18,497				
		20,125	0.46	37,011	0.85
819.0	21,752				
		23,405	0.54	60,416	**1.39**
820.0	25,057				
Capacity Required:			1.18	acre-ft	
Capacity Provided (817.0 to 820.0):			1.39	acre-ft	

Detention Pond #3

Wet Bottom

Top of Bank		829.0		Bottom	820.0
Design High Water		829.0		Side Slopes	4:1
Normal Water		826.0		Outfall: 12" Pipe at 825.5	
Stage Storage:					
Elevation	Area	Volume			
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)
826.0	6,419				
		7,066	0.16	7,066	0.16
827.0	7,712				
		8,410	0.19	15,476	0.36
828.0	9,108				
		9,856	0.23	25,331	**0.58**
829.0	10,603				
Capacity Required:			0.27	acre-ft	
Capacity Provided (826.0 to 829.0):			0.58	acre-ft	

Retention Basin #4

Dry Bottom

Top of Bank		842.5			
Design High Water		842.5			
Bottom		840.0			
Side Slopes		4:1			
Stage Storage:					
Elevation	Area	Volume			
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)
840.0	1,772				
		2,184	0.05	2,184	0.05
841.0	2,595				
		3,061	0.07	5,244	0.12
842.0	3,526				
		1,889	0.04	7,133	**0.16**
842.5	4,029				
Capacity Required:			0.16	acre-ft	
Capacity Provided (840.0 to 842.0):			0.16	acre-ft	

Retention Basin #6

Dry Bottom

Top of Bank		831.6		Bottom	827.0
Design High Water		831.4		Side Slopes	4:1
Stage Storage:					
Elevation	Area	Volume			
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)
827.0	23,339				
		25,620	0.59	25,620	0.59
828.0	27,900				
		30,322	0.70	55,941	1.28
829.0	32,743				
		35,258	0.81	91,199	2.09
830.0	37,772				
		40,371	0.93	131,569	3.02
831.0	42,969				
		26,544	0.61	158,113	3.63
831.6	45,510				

Retention Basin #6A

Top of Bank		829.0		Bottom	824.0
Design High Water		828.5		Side Slopes	4:1
Stage Storage:					
Elevation	Area	Volume			
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)
824.0	12,144				
		11,315	0.26	11,315	0.26
825.0	20,184				
		23,669	0.54	34,984	0.80
826.0	27,154				
		29,388	0.67	64,372	1.48
827.0	31,622				
		33,813	0.78	98,185	2.25
828.0	36,004				
		38,606	0.89	136,791	3.14
829.0	41,208				

Retention Basin #7

Wet Bottom

Top of Bank		822.0			
Design High Water		821.4			
Normal Water		817.7			
Safety Ledge		815.0			
Bottom		809.0			
Side Slopes		4:1			
Stage Storage:					
Elevation	Area	Volume			
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)
817.7	77,812				
		23,551	0.54	23,551	0.54
818.0	79,195				
		81,532	1.87	105,083	2.41
819.0	83,869				
		86,257	1.98	191,340	4.39
820.0	88,645				
		91,084	2.09	282,424	6.48
821.0	93,523				
		47,381	1.09	329,805	**7.57**
821.5	96,000				
		48,626	1.12	378,430	8.69
822.0	98,502				

Retention Basin #8

Dry Bottom

Top of Bank		850.0		Bottom	844.0
Design High Water		847.0		Side Slopes	6:1
Stage Storage:					
Elevation	Area	Volume			Notes
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)	
844.0	1,519					Bottom of Basin
		3,487	0.08	3,487	0.08	
845.0	5,454					
		7,616	0.17	11,102	0.25	
846.0	9,777					
		12,131	0.28	23,233	0.53	
847.0	14,485					Design High Water
		17,029	0.39	40,262	0.92	
848.0	19,573					
		22,305	0.51	62,567	1.44	
849.0	25,037					
		27,913	0.64	90,480	2.08	
850.0	30,788					Top of Bank
100 Year Storm Capacity Required:			0.53	acre-ft		
Capacity Provided (844.0 to 847.0):			0.53	acre-ft		
Capacity Provided (844.0 to 850.0):			2.08	acre-ft		

NOTE:
All basins are designed to accommodate the 100 year, 24 hour storm event.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
MASTER DRAINAGE PLAN

DRAWN BY: DEF
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DARYL S. KNIP
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PROFESSIONAL ENGINEER

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SCALE: HORZ: VERT:
ACI JOB # 17-1180
SHEET NO. 6 of 37

Drainage Design Criteria and Runoff, Basins 6A, 7, and 8

Retention Basins have been designed using the SCS Curve Number Method to accommodate the 100 year 24 hour rainfall event. Rainfall intensities were taken from the N.O.A.A. website using the South Bend station and include 6.27 inches for the 100 year, 24 hour event

All soils within the catchment area are classified as hydrologic soil group B. A Curve Number of 98 was used for all pavements, buildings, and impermeable surfaces. A Curve Number of 61 was used for all lawn areas and permeable surfaces.

Infiltration through the banks of each basin was considered during calculations of the required storage volume, while infiltration through the bottom of the basin was disregarded. No infiltration was considered during the analysis of Basin 6. A December 7, 2018 Infiltration Study showed results of an infiltration test and particle size analysis for Basins 6A and 8. The infiltration test for Basin 6A resulted in 8.4 inches per hour and the particle size analysis produced a range for a design rate between 6.0 to 7.5 inches per hour. The infiltration test for Basin 8 resulted in 38.5 inches per hour and the particle size analysis produced a range for a design rate between 8.5 and 11.7 inches per hour.

In accordance with City of South Bend direction, a maximum of 5 inches per hour for Basins 6A, 7, and 8 was used during the Pond Pack analysis of the basins.

The following areas and curve numbers were used to evaluate each basin:

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Impervious Area, SCS CN 98.0 = 10.12 acres
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Impervious Area, SCS CN 98.0 = 10.05 acres
Pervious Area, SCS CN 61.0 = 24.64 acres
Composite Curve Number = 72.0

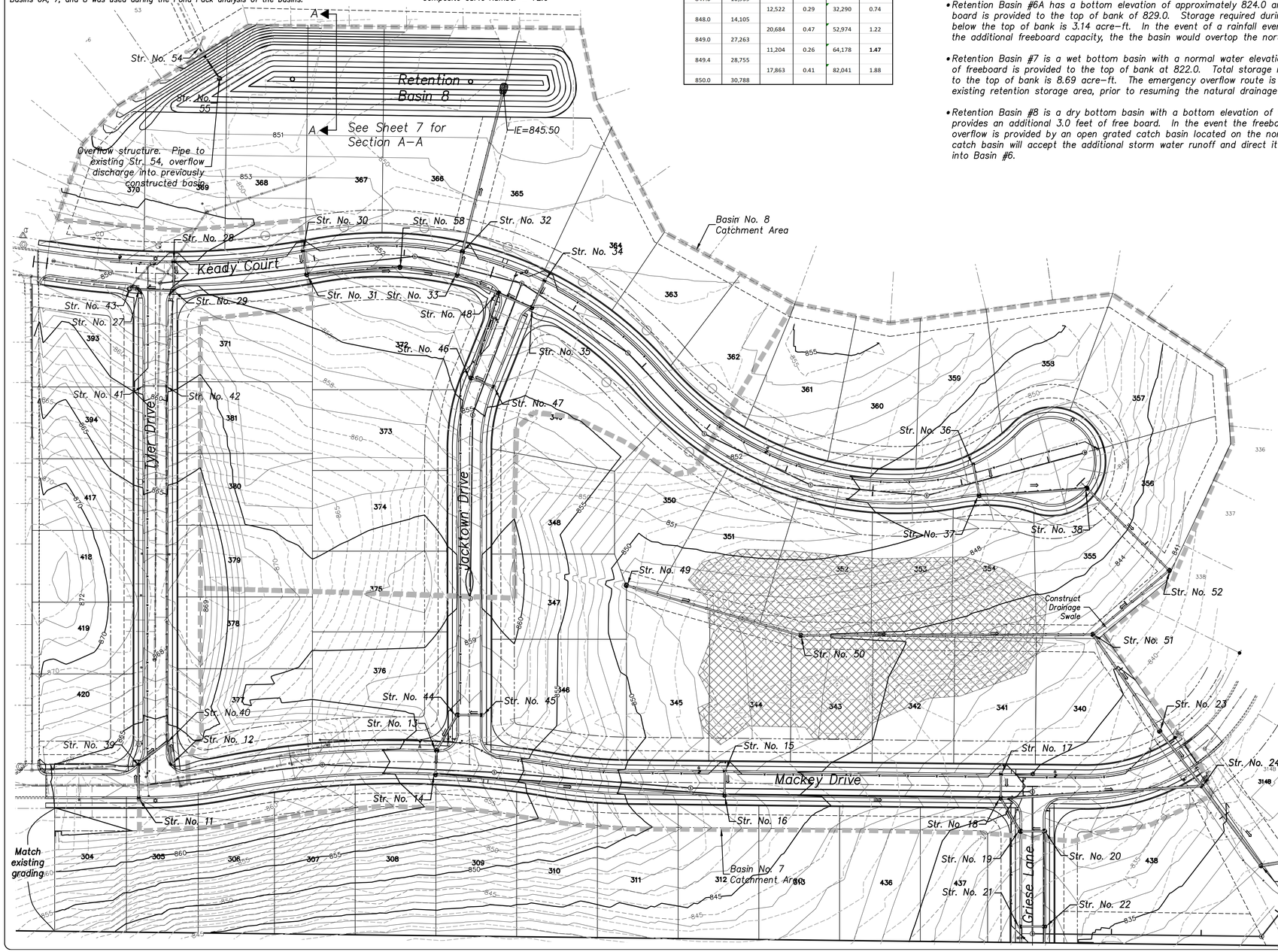
Basin 8:
Total catchment area: 7.19 Acres
Impervious Area, SCS CN 98.0 = 2.20 acres
Pervious Area, SCS CN 61.0 = 4.99 acres
Composite Curve Number = 72.0

Retention Basin #8
Dry Bottom

Top of Bank	850.0	Bottom	844.0
Design High Water	849.4	Side Slopes	4:1

Stage Storage:

Elevation	Area	Volume			
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)
844.0	2,469				
		3,795	0.09	3,795	0.09
845.0	5,120				
		6,532	0.15	10,327	0.24
846.0	7,944				
		9,442	0.22	19,768	0.45
847.0	10,939				
		12,522	0.29	32,290	0.74
848.0	14,105				
		20,684	0.47	52,974	1.22
849.0	27,263				
		11,204	0.26	64,178	**1.47**
849.4	28,755				
		17,863	0.41	82,041	1.88
850.0	30,788				



Lafayette Falls Subdivision Drainage Basin Summary

Storm water runoff for Lafayette Falls subdivision is directed to retention and detention basins by a combination of storm sewers and swales. Runoff with the area of this Phase IV, Section 2 is directed to Retention Basin #7 at the southeast end of the site and to Retention Basin No. 8 at the northwest end of the site. Retention Basin No. 6 and 6A have been constructed during previous phases of the subdivision and are existing basins. The volume of runoff directed toward Basins 6 and 6A will be reduced by the construction of this phase with a portion of the existing runoff now being directed to Basin 8. Basin 8 is designed to accommodate the 100 year storm event, however an emergency overflow will connect Basin 8 with Basin 6 and 6A.

- *Retention Basin #6 is a dry bottom basin with a bottom elevation of 827.0 and design high water of 831.4. Approximately 0.2 feet of free board is provided prior to overflow into Basin 6A. The top of bank adjacent to residential properties on the north, west, and south banks is 834.0 such that any breach of the bank would overflow into Basin 6A at an elevation of 831.6. A 12" HDPE pipe near the bottom of Basin 6 allows the basin to drain into Basin 6A at a controlled rate. No infiltration is accounted for in the analysis of Basin 6. Total storage for a 100 year 24 hour event is 3.42 acre-ft. Storage below top of bank of 831.6 is 3.63 acre-ft. In the event of a rainfall event in excess of the design storm that would not be contained within the additional freeboard capacity, the emergency overflow route would include overtopping the basin into Basin 6A.*
- *Retention Basin #6A has a bottom elevation of approximately 824.0 and design high water of 828.5. Approximately 0.5 feet of free board is provided to the top of bank of 829.0. Storage required during the 100 year 24 hour event is 2.68 acre-ft. Storage provided below the top of bank is 3.14 acre-ft. In the event of a rainfall event in excess of the design storm that would not be contained within the additional freeboard capacity, the the basin would overtop the northwest bank and overflow into an existing wetland area.*
- *Retention Basin #7 is a wet bottom basin with a normal water elevation of 817.7 and design high water of 821.4. Approximately 0.6 feet of freeboard is provided to the top of bank at 822.0. Total storage required in the 100 year event is 7.24 acre-ft, the storage provided to the top of bank is 8.69 acre-ft. The emergency overflow route is provided by overtopping of the basin on the southeast side to an existing retention storage area, prior to resuming the natural drainage route to the northeast.*
- *Retention Basin #8 is a dry bottom basin with a bottom elevation of 844.0 and design high water of 847.0. The top of bank of 850.0 provides an additional 3.0 feet of free board. In the event the freeboard is not sufficient in abnormally large events, an emergency overflow is provided by an open grated catch basin located on the northwest bank of the basin and set at an elevation of 849.9. The catch basin will accept the additional storm water runoff and direct it to a storm sewer network northwest of the basin that discharges into Basin #6.*

Basin Analysis

Using the design criteria and runoff information stated on this sheet, each basin was analyzed in Pond Pack to determine peak inflow and storage volume required:

Basin 6:
Peak Inflow = 12.56 cfs
Storage Required = 3.42 acre-ft
Design High Water at Required Storage = 831.38
Top of Bank = 831.6
Volume Provided below Top of Bank = 3.63 acre-ft

Basin 6A:
Peak Inflow = 6.36 cfs
Storage Required = 2.68 acre-ft
Design High Water at Required Storage = 828.49
Top of Bank = 829.0
Volume Provided below Top of Bank = 3.14 acre-ft

Basin 7:
Peak Inflow = 12.4 cfs
Storage Required = 7.24 acre-ft
Design High Water at Required Storage =821.4
Top of Bank = 822.0
Volume Provided below Top of Bank = 8.69 acre-ft

Basin 8:
Peak Inflow = 2.57 cfs
Storage Required = 0.67 acre-ft
Design High Water at Required Storage = 847.0
Top of Bank = 850.0
Volume Provided below Top of Bank = 0.53 acre-ft

Retention Basin #7
Wet Bottom

Top of Bank	822.0		
Design High Water	821.5		
Normal Water	817.7		
Safety Ledge	815.0		
Bottom	809.0		
Side Slopes	4:1		

Stage Storage:

Elevation	Area	Volume			
		Incremental		Cumulative	
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)
817.7	77,812				
		23,551	0.54	23,551	0.54
818.0	79,195				
		81,532	1.87	105,083	2.41
819.0	83,869				
		86,257	1.98	191,340	4.39
820.0	88,645				
		91,084	2.09	282,424	6.48
821.0	93,523				
		47,381	1.09	329,805	**7.57**
821.5	96,000				
		48,626	1.12	378,430	8.69
822.0	98,502				

Notes

1. *Contractor shall fill temporary basin and areas adjacent to proposed basin in 6" compacted lifts to 100% standard proctor. all topsoil, silt, and debris shall be removed prior to filling*
2. *Riprap overlain on geotextile shall be installed around each end section.*
3. *Storm sewer pipe shall be RCP Class III under all streets and may be RCP Class III or PVC SDR 35 in lawn areas.*

Legend
= *Existing retention areas to be filled*

GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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750 Lincolnway East, Suite 101, Mishawaka, IN 46601
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Engineering Architecture Land Surveying

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
DRAINAGE & UTILITY PLAN
STORM WATER MANAGEMENT

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

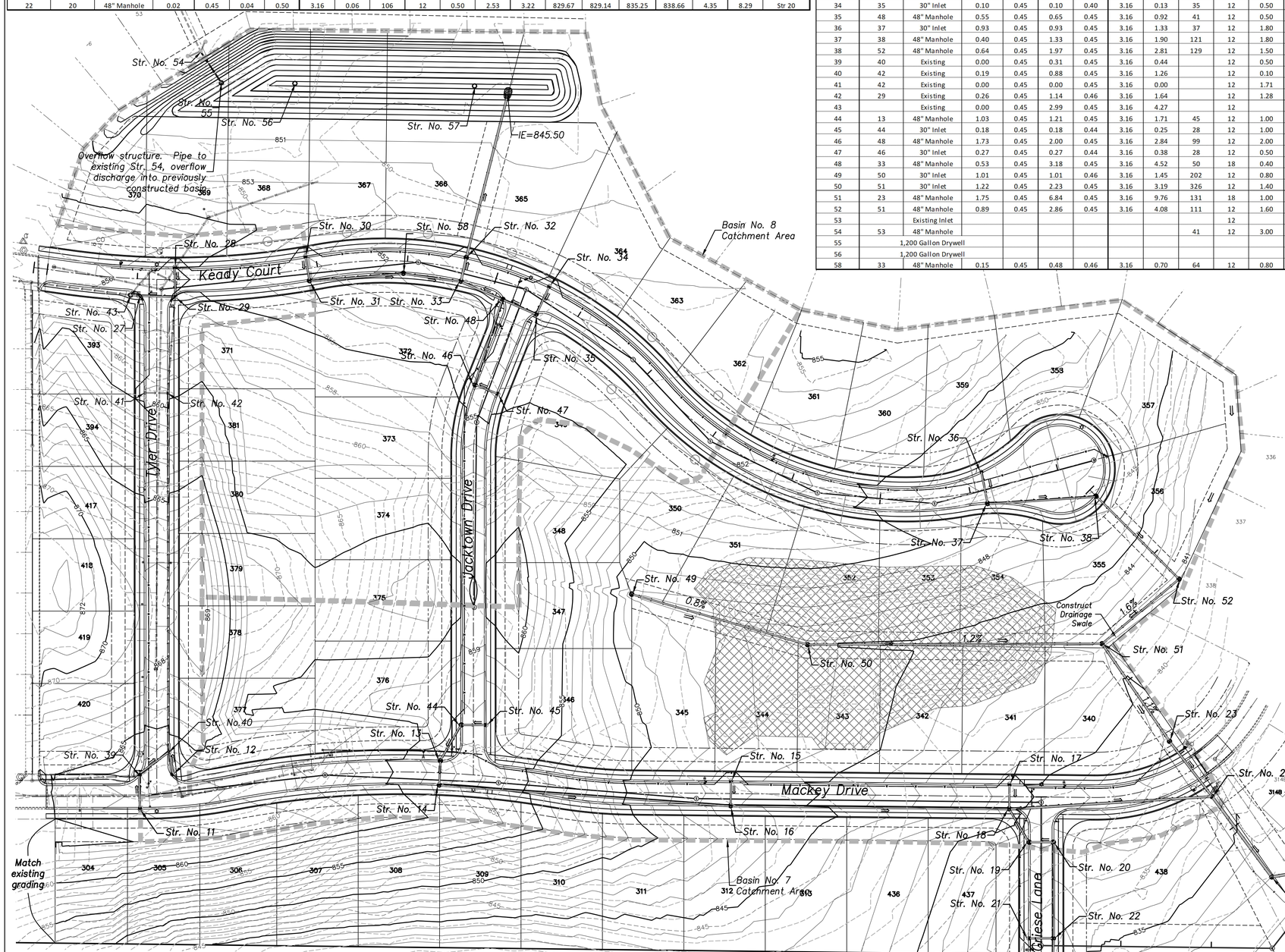
DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:
DATE: 10/28/2020
SCALE: HORZ: 1" = 60' VERT:
ACI JOB #: 17-1180
SHEET NO.: 7 of 37

Structure Data Table

Structure							Pipe													
					Cumulative															
Number	Downstream	Structure	Area (Ac.)	C	Area (ac.)	C	Intensity (in/hr)	Q Req'd (cfs)	Length (feet)	Pipe Dia. (inches)	Slope (ft/100 ft)	Q Prov'd (cfs)	Velocity (ft/sec)	Upper I.E.	Lower I.E.	Rim Up	Rim Down	Cover Up	Cover Down	Outlet
11	39	30" Inlet	0.31	0.45	0.31	0.45	3.16	0.44	39	12	0.50	2.53	3.22	860.03	859.84	863.63	863.19	2.37	2.13	Str 39
12	40	48" Manhole	0.38	0.45	0.38	0.45	3.16	0.54	25	12	0.50	2.53	3.22	859.45	859.32	862.92	863.62	2.25	3.07	Str 40
13	14	48" Manhole	0.38	0.45	1.59	0.45	3.16	2.24	28	12	1.00	3.57	4.55	852.96	852.68	858.37	858.37	4.18	4.46	Str 14
14	16	48" Manhole	0.42	0.45	2.01	0.45	3.16	2.84	323	12	2.80	5.98	7.61	850.88	841.84	858.37	846.17	6.26	3.10	Str 16
15	16	30" Inlet	0.32	0.45	0.32	0.44	3.16	0.44	28	12	0.50	2.53	3.22	842.88	842.74	846.17	846.17	2.06	2.20	Str 16
16	18	48" Manhole	0.35	0.45	2.68	0.45	3.16	3.79	308	12	1.88	4.90	6.24	841.84	836.05	846.17	840.34	3.10	3.06	Str 18
17	18	30" Inlet	0.35	0.45	0.35	0.46	3.16	0.51	28	12	1.00	3.57	4.55	837.03	836.75	840.34	840.34	2.08	2.36	Str 18
18	24	48" Manhole	0.36	0.45	3.53	0.45	3.16	4.99	225	18	0.32	5.96	3.37	828.39	827.67	840.34	836.90	10.18	7.46	Str 24
19	18	48" Manhole	0.05	0.45	0.14	0.43	3.16	0.19	42	12	0.50	2.53	3.22	829.00	828.79	838.69	840.34	8.46	10.32	Str 18
20	19	48" Manhole	0.05	0.45	0.09	0.44	3.16	0.13	28	12	0.50	2.53	3.22	829.14	829.00	838.66	838.69	8.29	8.46	Str 19
21	22	30" Inlet	0.02	0.45	0.02	0.50	3.16	0.03	28	12	0.50	2.53	3.22	832.01	831.87	835.25	835.25	2.01	2.15	Str 22
22	20	48" Manhole	0.02	0.45	0.04	0.50	3.16	0.06	106	12	0.50	2.53	3.22	829.67	829.14	835.25	838.66	4.35	8.29	Str 20

Structure							Pipe													
					Cumulative															
Number	Downstream	Structure	Area (Ac.)	C	Area (ac.)	C	Intensity (in/hr)	Q Req'd (cfs)	Length (feet)	Pipe Dia. (inches)	Slope (ft/100 ft)	Q Prov'd (cfs)	Velocity (ft/sec)	Upper I.E.	Lower I.E.	Rim Up	Rim Down	Cover Up	Cover Down	Outlet
23	24	48" Manhole	0.24	0.45	7.08	0.45	3.16	10.11	77	18	1.00	10.53	5.96	832.77	832.00	837.95	836.90	3.41	3.13	Str 24
24	25	48" Manhole	0.00	0.45	10.61	0.45	3.16	15.10	111	24	0.64	18.15	5.78	827.67	826.97	836.90	832.80	6.92	3.53	Str 25
25	26	48" Manhole	0.00	0.45	10.61	0.45	3.16	15.10	158	24	0.64	18.15	5.78	826.97	825.95	832.80	0.00	3.53		Str 26
26	-	End Section	0.00	0.45	10.61	0.45	3.16	15.10	0	24	0.80	20.29	6.46	825.95		0.00				-
27	43	48" Manhole	0.02	0.45	2.99	0.45	3.16	4.27	9	12	1.50	4.38	5.57	851.82	851.69	854.90	855.71	1.85	2.79	Str 43
28	29	30" Inlet	1.70	0.45	1.70	0.45	3.16	2.40	33	12	0.50	2.53	3.22	852.60	852.43	855.00	854.92	1.17	1.26	Str 29
29	27	48" Manhole	0.13	0.45	2.97	0.45	3.16	4.23	41	12	1.50	4.38	5.57	852.43	851.82	854.92	854.90	1.26	1.85	Str 27
30	31	30" Inlet	0.16	0.45	0.16	0.44	3.16	0.22	28	12	0.50	2.53	3.22	849.65	849.51	853.00	853.00	2.12	2.26	Str 31
31	58	48" Manhole	0.17	0.45	0.33	0.45	3.16	0.47	104	12	1.20	3.91	4.98	848.51	847.27	853.00	851.54	3.26	3.05	Str 58
32	Basin No. 1	48" Manhole	0.36	0.45	4.17	0.45	3.16	5.94	181	18	0.36	6.32	3.58	846.15	845.50	851.13		3.21		Basin No. 1
33	32	48" Manhole	0.15	0.45	3.81	0.45	3.16	5.44	28	18	0.36	6.32	3.58	846.25	846.15	851.13	851.13	3.11	3.21	Str 32
34	35	30" Inlet	0.10	0.45	0.10	0.40	3.16	0.13	35	12	0.50	2.53	3.22	848.13	847.96	851.54	851.19	2.18	2.01	Str 35
35	48	48" Manhole	0.55	0.45	0.65	0.45	3.16	0.92	41	12	0.50	2.53	3.22	847.06	846.85	851.19	851.08	2.91	3.00	Str 48
36	37	30" Inlet	0.93	0.45	0.93	0.45	3.16	1.33	37	12	1.80	4.79	6.10	845.03	844.37	848.31	847.75	2.05	2.15	Str 37
37	38	48" Manhole	0.40	0.45	1.33	0.45	3.16	1.90	121	12	1.80	4.79	6.10	844.37	842.20	847.75	845.43	2.15	2.01	Str 38
38	52	48" Manhole	0.64	0.45	1.97	0.45	3.16	2.81	129	12	1.50	4.38	5.57	838.20	836.26	845.43	840.50	6.01	3.01	Str 52
39	40	Existing	0.00	0.45	0.31	0.45	3.16	0.44		12	0.50	2.53	3.22	859.84	859.63	863.19	863.62	2.13	2.76	Str 40
40	42	Existing	0.19	0.45	0.88	0.45	3.16	1.26		12	0.10	1.12	1.43	854.32	853.93	863.62	861.27	8.07	6.11	Str 42
41	42	Existing	0.00	0.45	0.00	0.45	3.16	0.00		12	1.71	4.68	5.96	857.89	857.41	861.38	861.27	2.26	2.63	Str 42
42	29	Existing	0.26	0.45	1.14	0.46	3.16	1.64		12	1.28	4.04	5.14	854.01	852.45	861.27	854.92	6.03	1.24	Str 29
43		Existing	0.00	0.45	2.99	0.45	3.16	4.27		12				851.49		855.71		2.99		
44	13	48" Manhole	1.03	0.45	1.21	0.45	3.16	1.71	45	12	1.00	3.57	4.55	853.41	852.96	856.71	858.37	2.07	4.18	Str 13
45	44	30" Inlet	0.18	0.45	0.18	0.44	3.16	0.25	28	12	1.00	3.57	4.55	853.69	853.41	856.71	856.71	1.79	2.07	Str 44
46	48	48" Manhole	1.73	0.45	2.00	0.45	3.16	2.84	99	12	2.00	5.05	6.43	848.83	846.85	853.83	851.08	3.77	3.00	Str 48
47	46	30" Inlet	0.27	0.45	0.27	0.44	3.16	0.38	28	12	0.50	2.53	3.22	850.57	850.43	853.83	853.83	2.03	2.17	Str 46
48	33	48" Manhole	0.53	0.45	3.18	0.45	3.16	4.52	50	18	0.40	6.66	3.77	846.45	846.25	851.08	851.13	2.86	3.11	Str 33
49	50	30" Inlet	1.01	0.45	1.01	0.46	3.16	1.45	202	12	0.80	3.20	4.07	842.76	841.14	847.00	845.40	3.01	3.03	Str 50
50	51	30" Inlet	1.22	0.45	2.23	0.45	3.16	3.19	326	12	1.40	4.23	5.38	841.14	836.59	845.40	841.00	3.03	3.19	Str 51
51	23	48" Manhole	1.75	0.45	6.84	0.45	3.16	9.76	131	18	1.00	10.53	5.96	834.09	832.77	841.00	837.95	5.15	3.41	Str 23
52	51	48" Manhole	0.89	0.45	2.86	0.45	3.16	4.08	111	12	1.60	4.52	5.75	836.26	834.49	840.50	841.00	3.01	5.29	Str 51
53		Existing Inlet								12				837.06		842.47		4.18		Str
54	53	48" Manhole							41	12	3.00	6.19	7.88	840.29	839.06	849.90	842.47	8.38	2.18	Str 53
55		1,200 Gallon Drywell														844.20				
56		1,200 Gallon Drywell														844.20				
58	33	48" Manhole	0.15	0.45	0.48	0.46	3.16	0.70	64	12	0.80	3.20	4.07	847.27	846.75	851.54	851.13	3.05	3.15	Str 33



Drainage Calculations

Drainage Design conforms to the requirements set forth in the City of South Bend Standards, Policies, and Guidelines. Storm sewer pipes are designed to accommodate a 10 year, 30 minute storm event.

Notes

1. Contractor shall fill temporary basin and areas adjacent to proposed basin in 6" compacted lifts to 100% standard proctor. all topsoil, silt, and debris shall be removed prior to filling
2. Riprap overlain on geotextile shall be installed around each end section.
3. Storm sewer pipe shall be RCP Class III under all streets and may be RCP Class III or PVC SDR 35 in lawn areas.

Legend

= Existing retention areas to be filled

GRAPHIC SCALE

60 0 30 60 120

(IN FEET)
1 inch = 60 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE
Goshen
Fort Wayne
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South Bend
Merrillville
South Haven
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750 Lincolnway East
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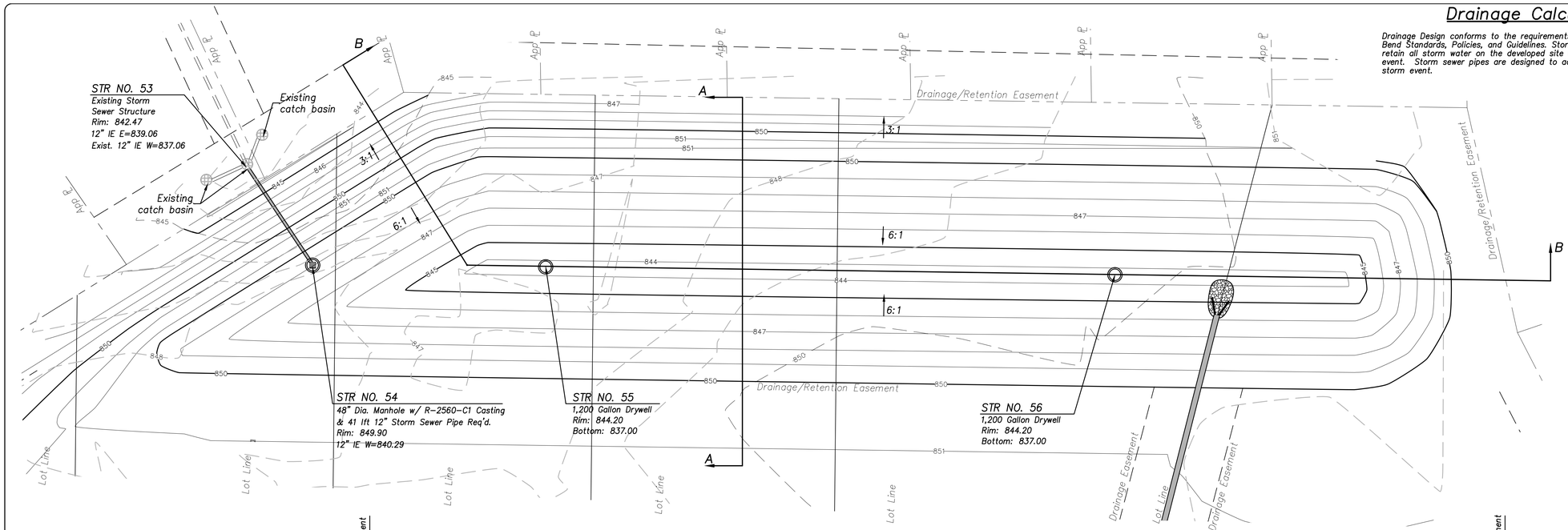
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

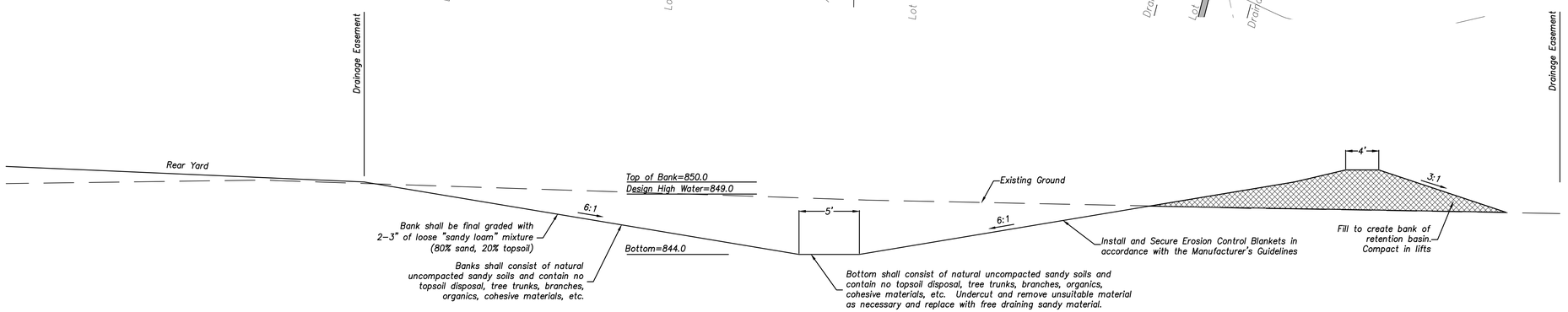
SHEET TITLE:
DRAINAGE & UTILITY PLAN
STORM SEWER NETWORK

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL: DARYL S. KNIP, REGISTERED, No. PE19900163, STATE OF INDIANA, PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE: HORZ: 1" = 60' VERT:
ACI JOB #: 17-1180
SHEET NO.: 8 of 37

Drainage Calculations

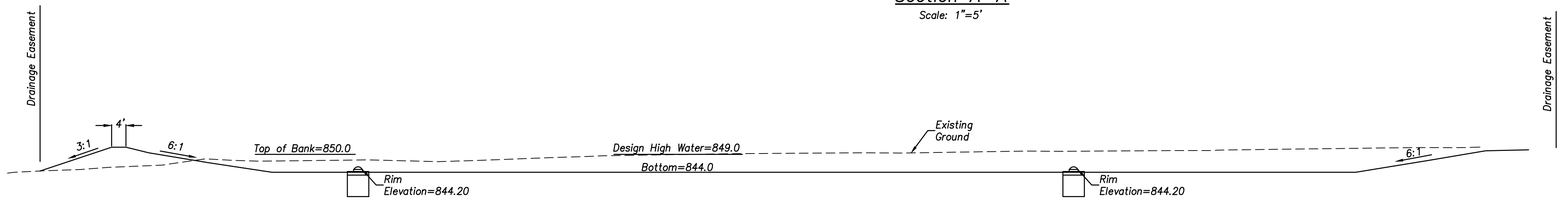
Drainage Design conforms to the requirements set forth in the City of South Bend Standards, Policies, and Guidelines. Storm Drainage System is designed to retain all storm water on the developed site for a 25 year, 24 hour storm event. Storm sewer pipes are designed to accommodate a 10 year, 30 minute storm event.





Section A-A

Scale: 1"=5'



Section B-B

Scale: 1"=20'

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

1 inch = 20 ft.

Retention Basin #8

Dry Bottom

Top of Bank		850.0		Bottom	844.0
Design High Water		847.0		Side Slopes	6:1

Stage Storage:

Elevation	Area	Volume				Notes
		Incremental		Cumulative		
(ft)	(sft)	(cft)	(acre-ft)	(cft)	(acre-ft)	
844.0	1,519					Bottom of Basin
		3,487	0.08	3,487	0.08	
845.0	5,454					
		7,616	0.17	11,102	0.25	
846.0	9,777					
		12,131	0.28	23,233	0.53	
847.0	14,485					Design High Water
		17,029	0.39	40,262	0.92	
848.0	19,573					
		22,305	0.51	62,567	1.44	
849.0	25,037					
		27,913	0.64	90,480	2.08	
850.0	30,788					Top of Bank

100 Year Storm Capacity Required:	0.53	acre-ft
Capacity Provided (844.0 to 847.0):	0.53	acre-ft
Capacity Provided (844.0 to 850.0):	2.08	acre-ft

NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE

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South Bend
Valparaiso

Battle Creek
Benton Harbor
Kalamazoo
South Haven

Engineering Architecture Land Surveying

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PROJECT:

LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

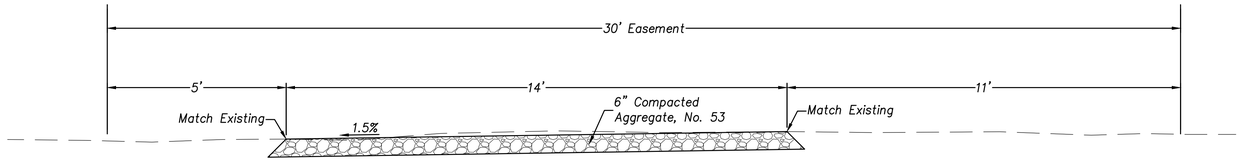
SHEET TITLE:

RETENTION BASIN NO. 8 DETAIL

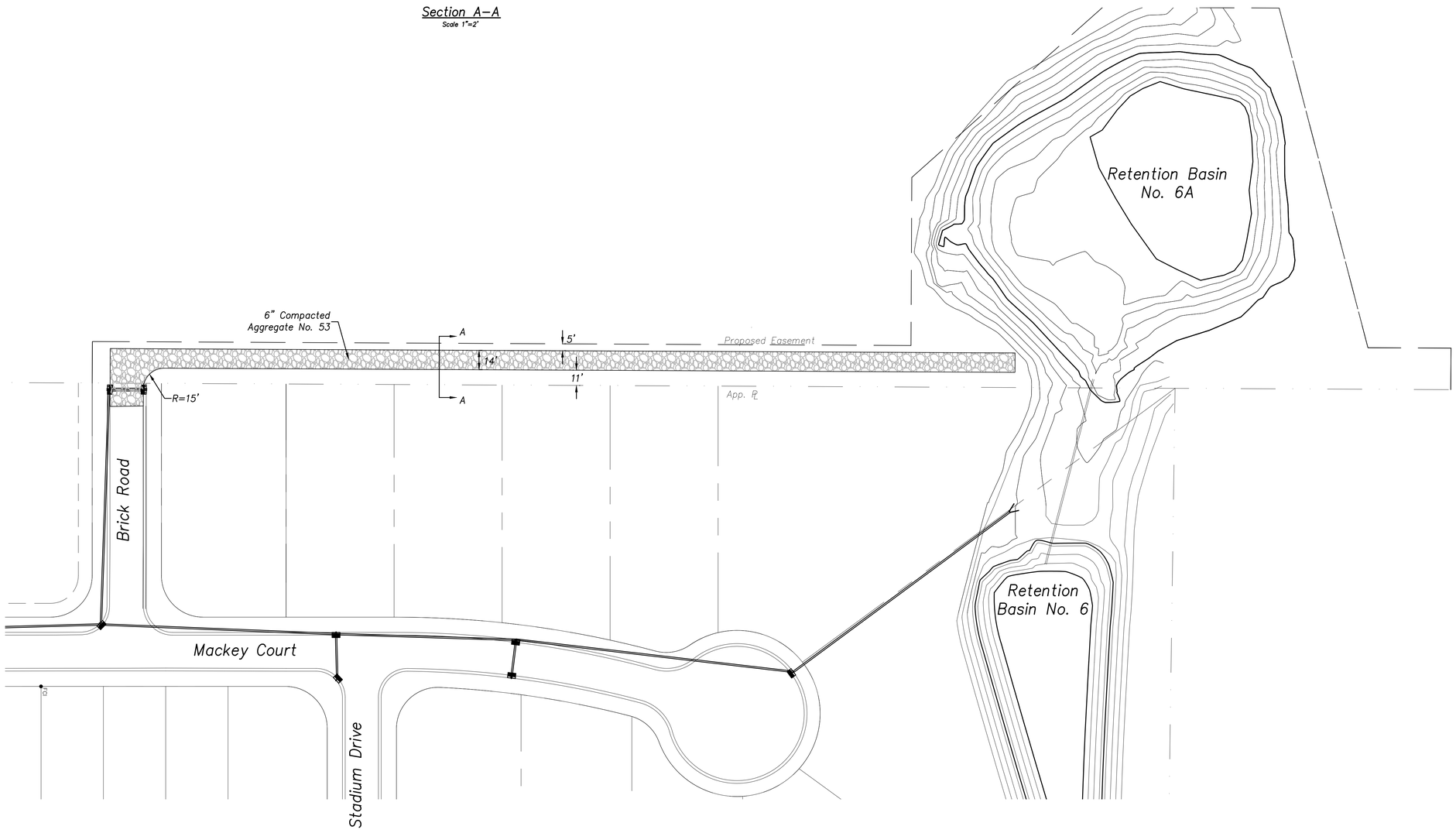
DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
No. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT:
ACI JOB #: 17-1180
SHEET NO.: 9 of 37



Section A–A
Scale 1"=2'



NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA
BASIN NO. 8

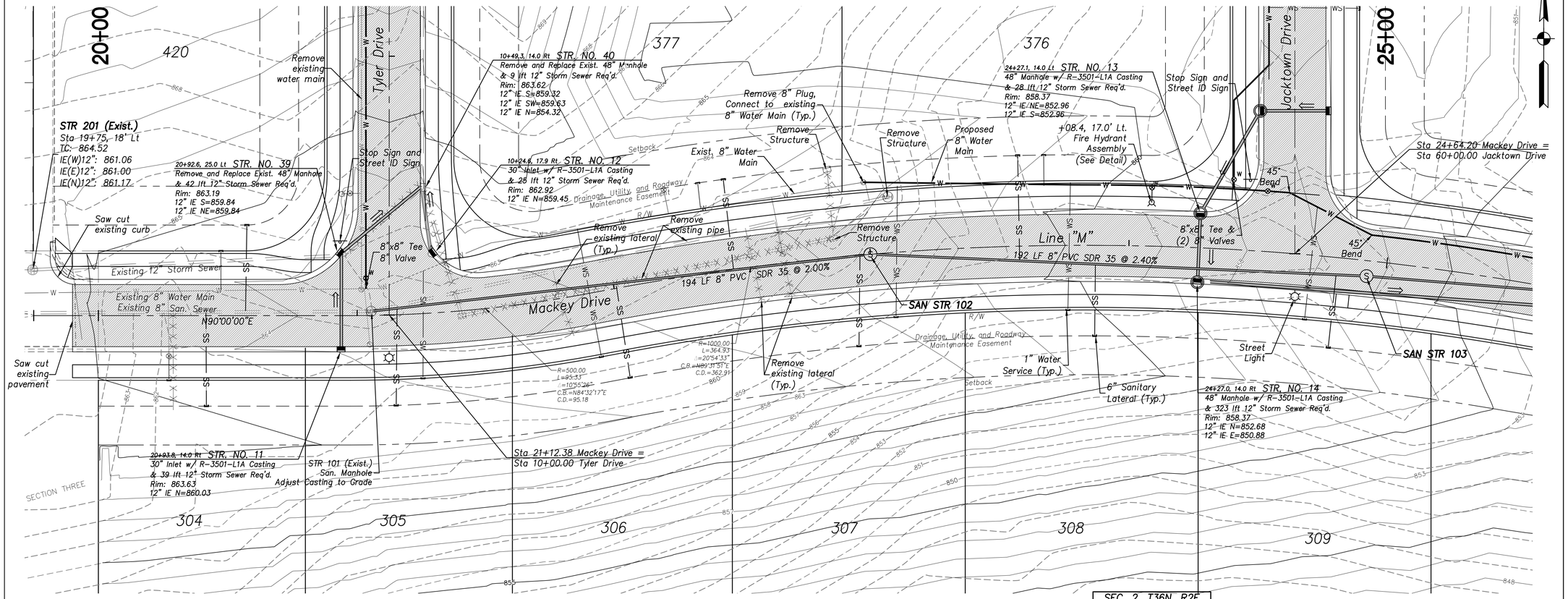
ACCESS DRIVE

SHEET TITLE:

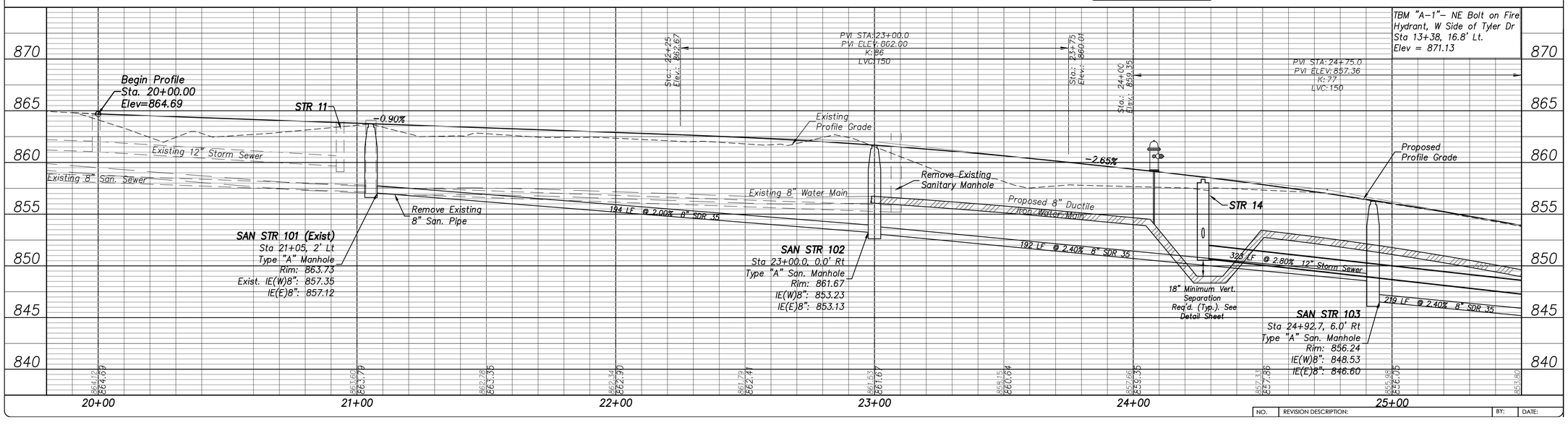
DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1"=40'
VERT:
ACI JOB # 17-1180
SHEET NO. 10 of 37



SEC. 2, T36N, R2E
CENTRE TWP.
ST. JOSEPH COUNTY



NO.	REVISION DESCRIPTION:	BY:	DATE:

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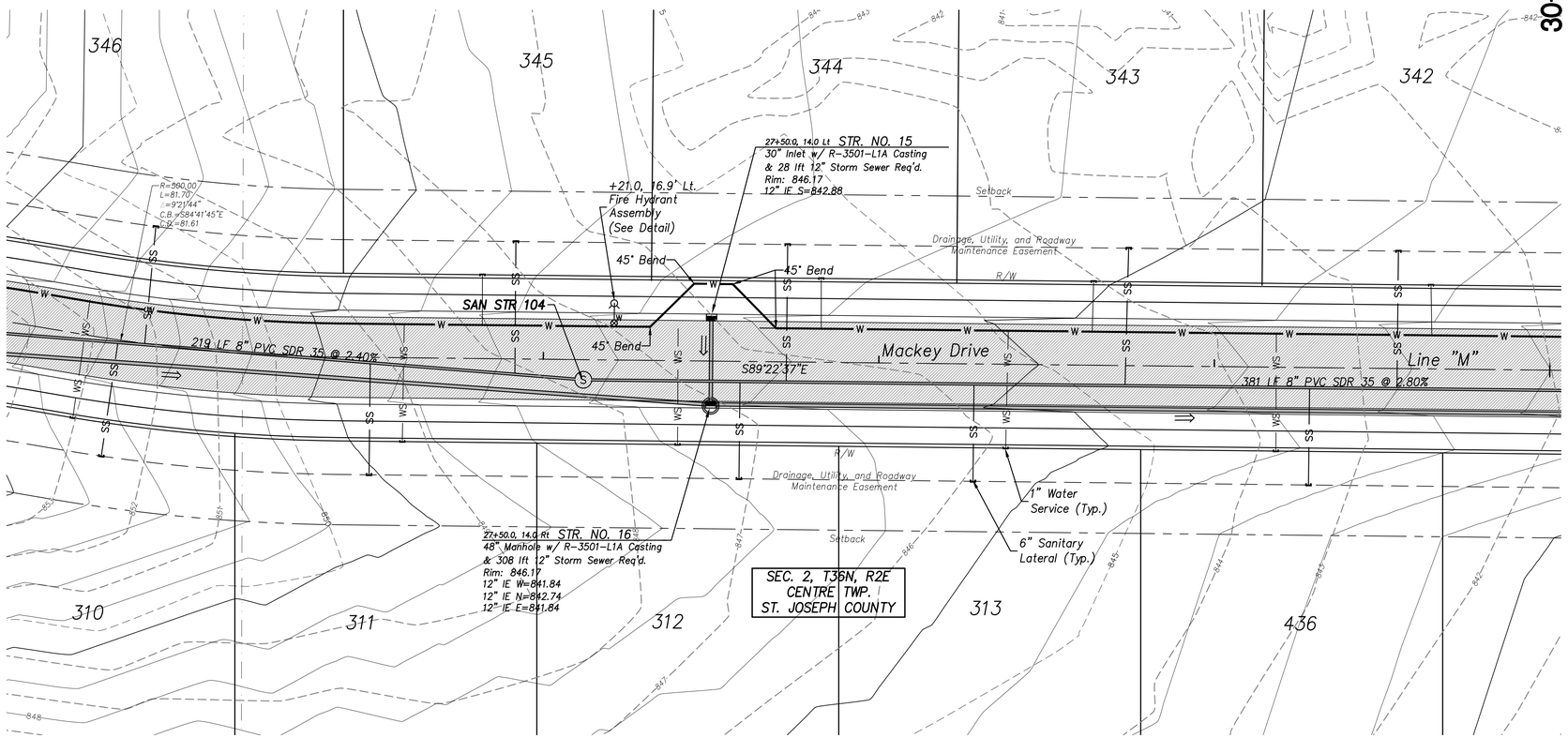
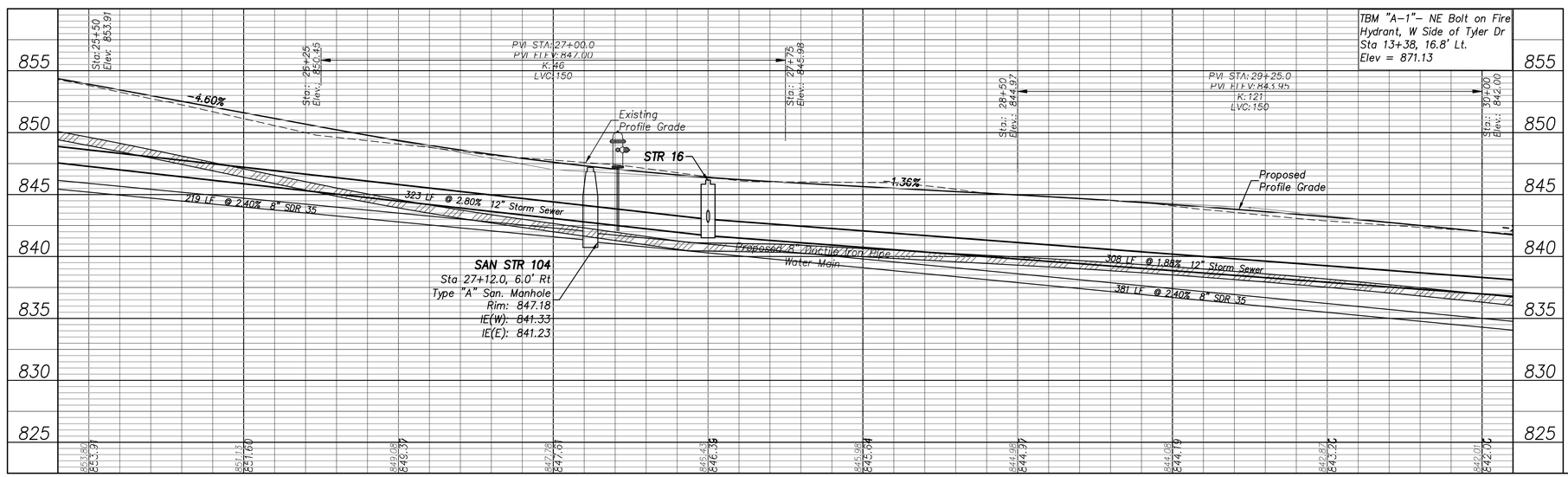
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
PLAN & PROFILE
LINE "M"
STA. 20+00 TO 25+50

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
17-1180
SHEET NO.
11 of 37





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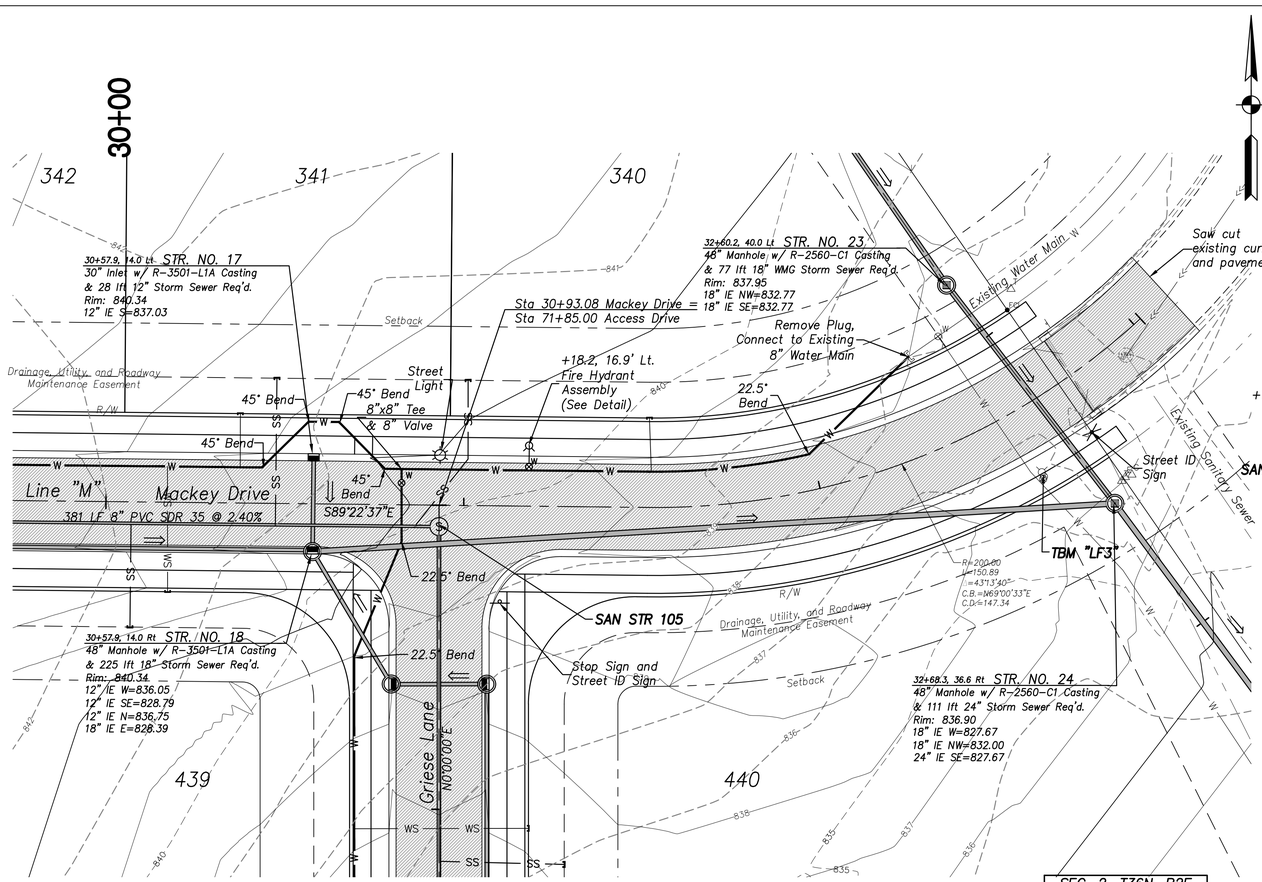
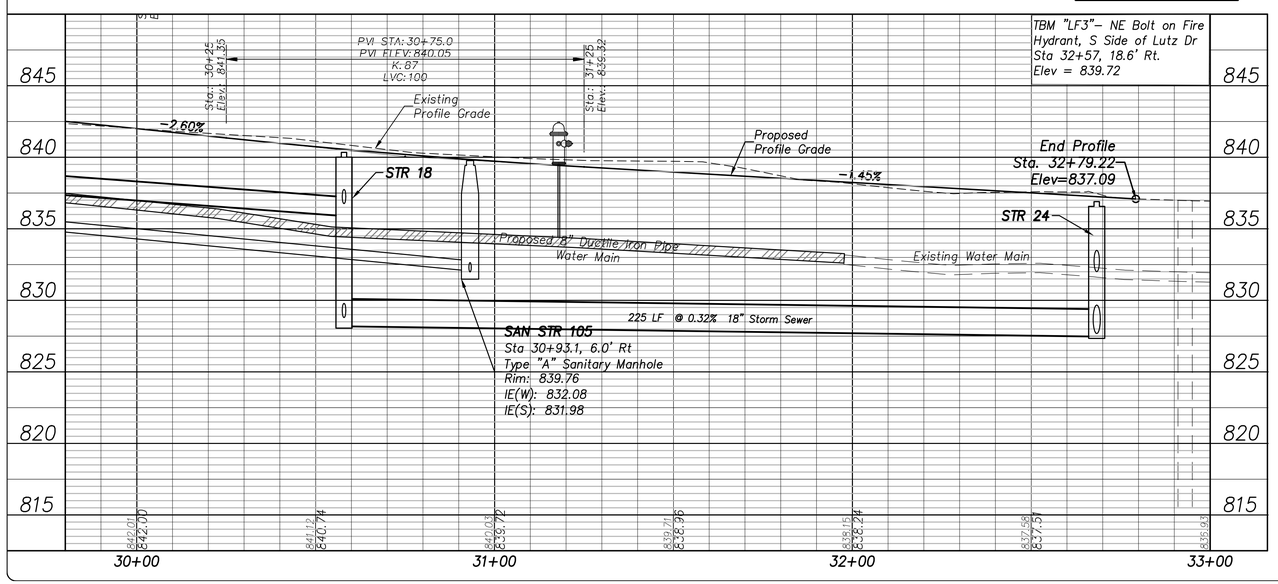
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

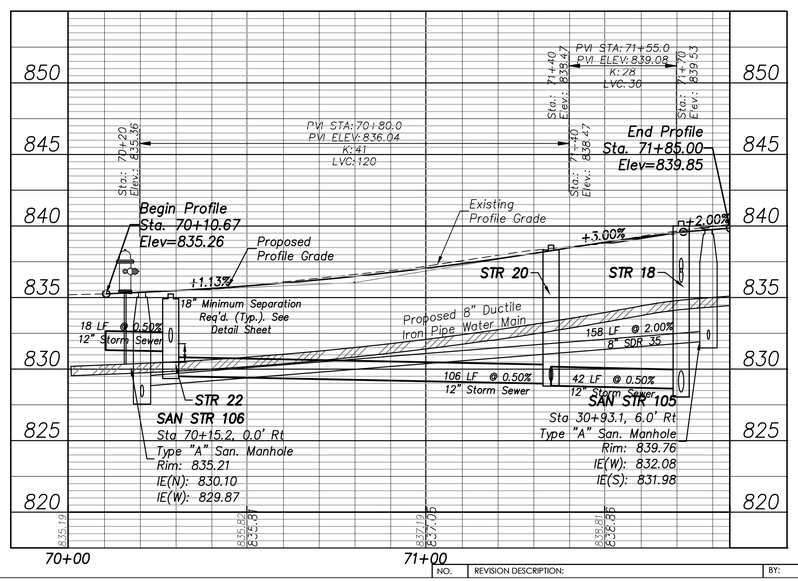
PLAN & PROFILE
LINE "M"
STA. 25+50 TO 30+00

SHEET TITLE:

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
17-1180
SHEET NO.
12 of 37







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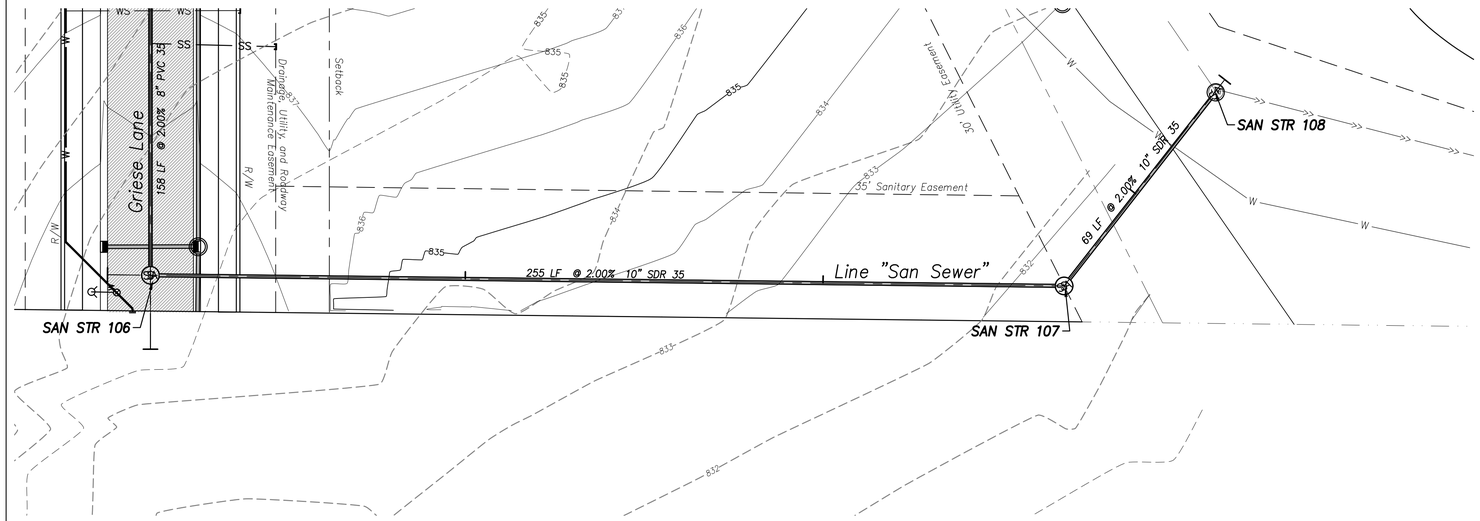
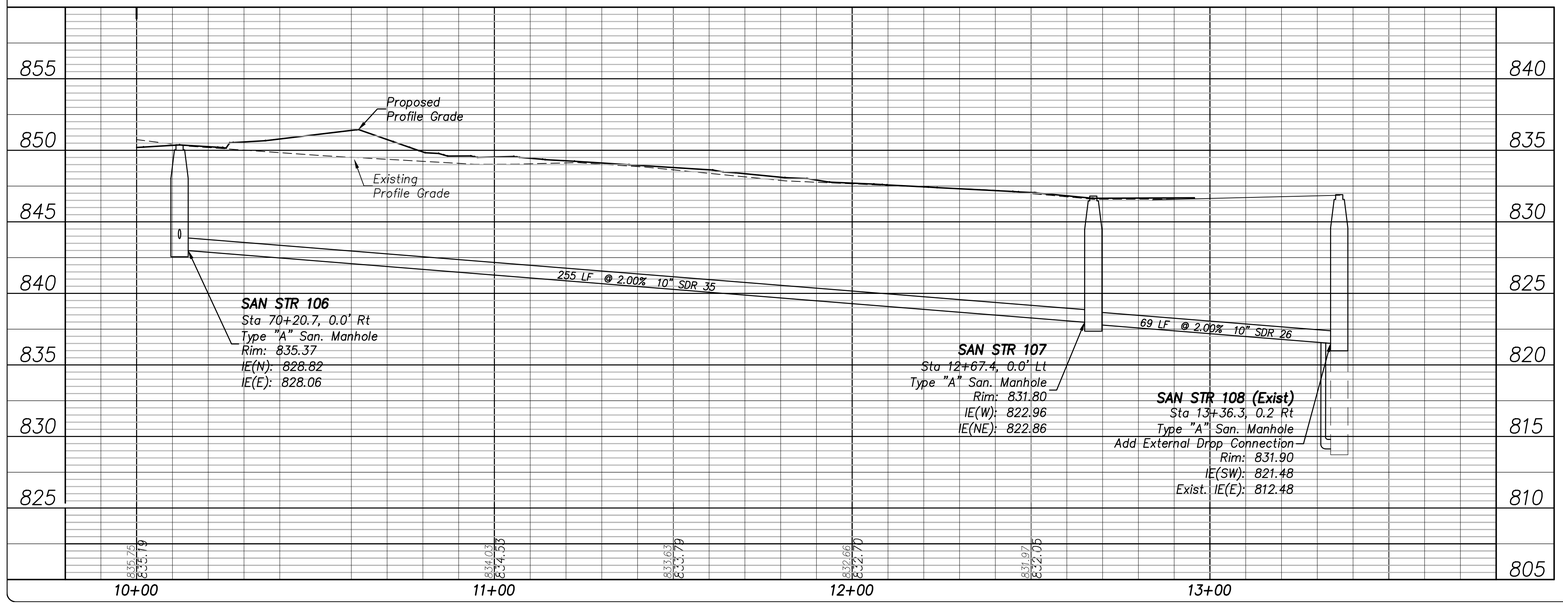
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

PLAN & PROFILE
LINE "M"
STA. 30+00 TO 33+00

SHEET TITLE:
DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP
REGISTERED
No. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
17-1180
SHEET NO.
13 of 37



SEC. 2, T36N, R2E
CENTRE TWP.
ST. JOSEPH COUNTY



SCALE: 1" = 20'
0 10 20 40

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

PLAN AND PROFILE
SANITARY SEWER

SHEET TITLE:

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
17-1180
SHEET NO.
13A of 37

40+00

45+00

370 369 368 367 366

Remove Existing Pipe (Typ.)

I.E.= 845.50

42+88.7, 13.9 Lt STR. NO. 30
30" Inlet w/ R-3501-L1A Casting
& 28 lft 12" Storm Sewer Req'd.
Rim: 853.00
12" IE S=849.65

44+62.7, 14.0 Lt STR. NO. 32
48" Manhole w/ R-3501-L1A Casting
& 181 lft 18" Storm Sewer Req'd.
Rim: 851.13
18" IE S=846.15
18" IE N=846.15

6" Sanitary Lateral (Typ.)

1" Water Service (Typ.)

Setback

Drainage, Utility, and Roadway Maintenance Easement

R/W

Relocate Existing Fire Hydrant Assembly to 40+80.4, 17.3' Lt. (See Detail)

Remove Existing Pipe

R=1627.00
L=30.52
Δ=1°04'29"
C.B.=S82°09'18"E
C.D.=30.52

8" Watertight Cap

8"x8" Tee & (3) 8" Valves

41+41.3, 13.9 Lt STR. NO. 28
30" Inlet w/ R-3501-L1A Casting
& 33 lft 12" Storm Sewer Req'd.
Rim: 855.00
12" IE S=852.43

R=870.00
L=285.99
Δ=18°50'05"
C.B.=N88°57'54"E
C.D.=284.71

R=400.00
L=416.85
Δ=59°42'32"
C.B.=S70°35'52"E
C.D.=398.24

45° Bend

Street Light

Stadium Drive

Existing 8" Sanitary Sewer

Existing 12" Storm Sewer

Keady Court

Line "K"

SAN STR 115

286 LF 8" PVC SDR 26 @ 0.40%

123 LF 8" PVC SDR 26 @ 0.40%

SAN STR 116

Sta 41+21.50 Keady Court =
Sta 15+71.45 Tyler Drive

STR 39 (Exist.)
Sta 40+93, 19' Rt
TC: 855.71
IE(N)12": 851.59
IE(W)12": 851.49

Remove Existing Structure. Replace w/ 48" Manhole w/ R-2502 Casting

40+93.6, 18.5 Rt STR. NO. 43
48" Manhole w/ R-3501-L1A
Rim: 855.71
12" IE E=851.69
Exist. 12" IE W=851.49

41+02.2, 18.8 Rt STR. NO. 27
30" Inlet W/ R-3501-L1A Casting
& 9 lft 12" Storm Sewer Req'd.
Rim: 854.90
12" IE E=851.82
12" IE W=851.82

41+42.1, 19.1 Rt STR. NO. 29
48" Manhole w/ R-3501-L1A Casting
& 41 lft 12" Storm Sewer Req'd.
Rim: 854.92
12" IE N=852.60
12" IE W=852.43

42+88.8, 14.1 Rt STR. NO. 31
48" Manhole w/ R-3501-L1A Casting
Rim: 853.00
12" IE N=849.51
12" IE E=848.51

43+96.1, 14.0 Rt STR. NO. 58
48" Manhole w/ R-3501-L1A Casting
& 104 lft 12" Storm Sewer Req'd.
& 64 lft 12" Storm Sewer Req'd.
Rim: 851.54
12" IE W=847.27
12" IE E=846.27

44+62.7, 14.0 Rt STR. NO. 33
48" Manhole w/ R-3501-L1A Casting
& 28 lft 18" Storm Sewer Req'd.
Rim: 851.13
12" IE W=846.75
18" IE SE=846.25
18" IE N=846.25

Stop Sign and Street ID Sign

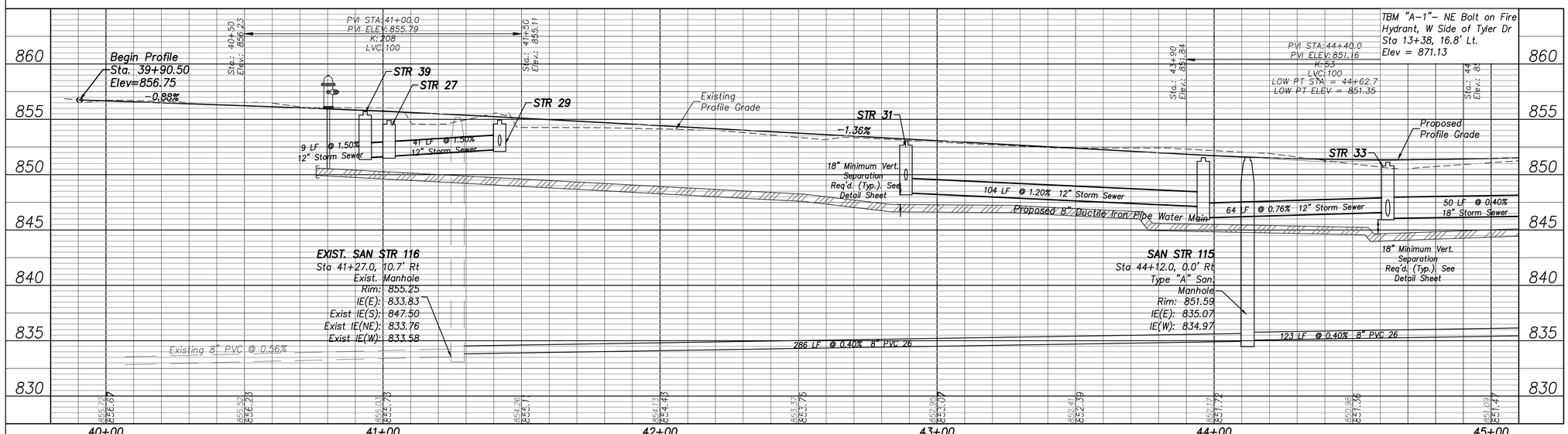
Tyler Drive

Jacktown Drive

22.5° Bend

393 371 372

SEC. 2, T36N, R2E
CENTRE TWP.
ST. JOSEPH COUNTY



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PROJECT:

LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:

PLAN & PROFILE
LINE "K"
STA. 40+00 TO 45+00

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018

SEAL:

DARYL S. KNIP
REGISTERED
No. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

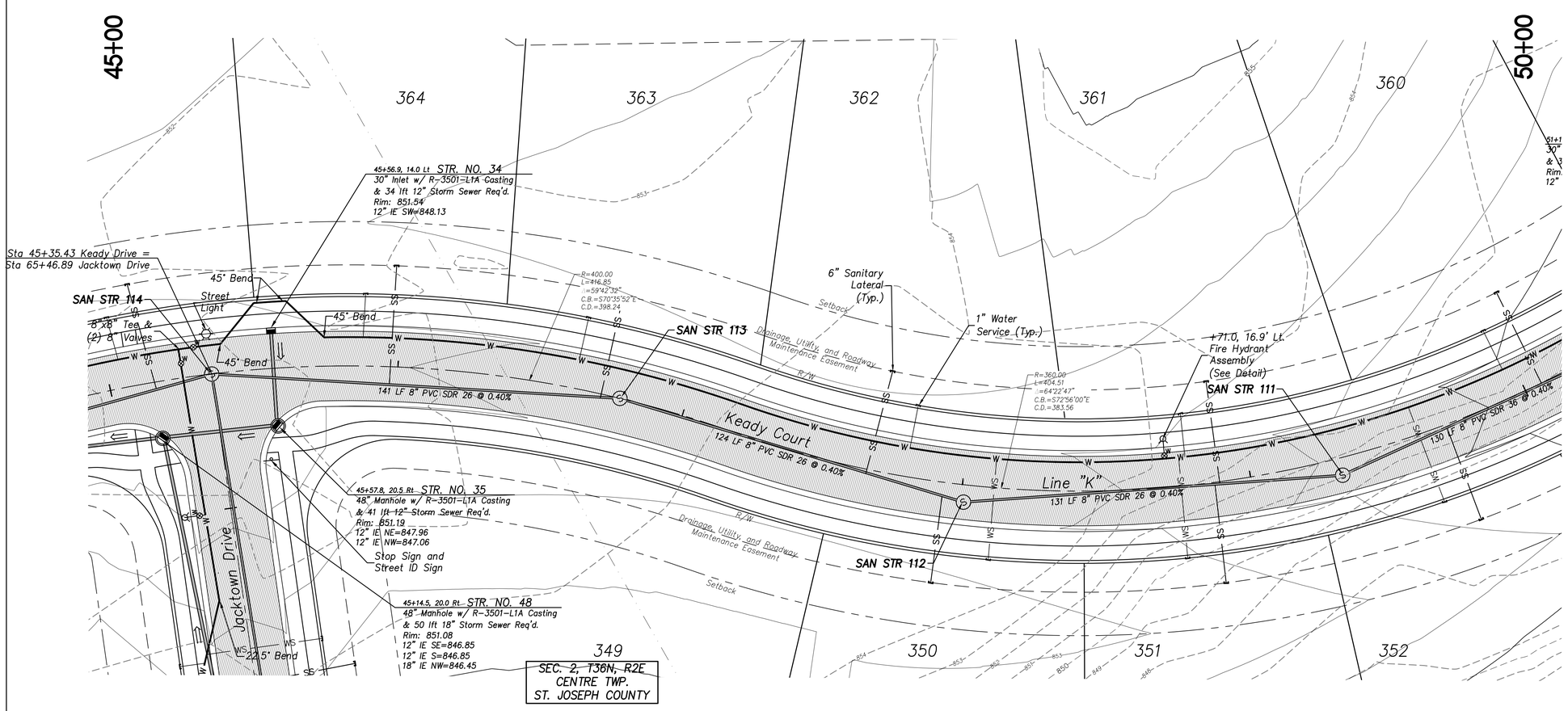
SIGNATURE:

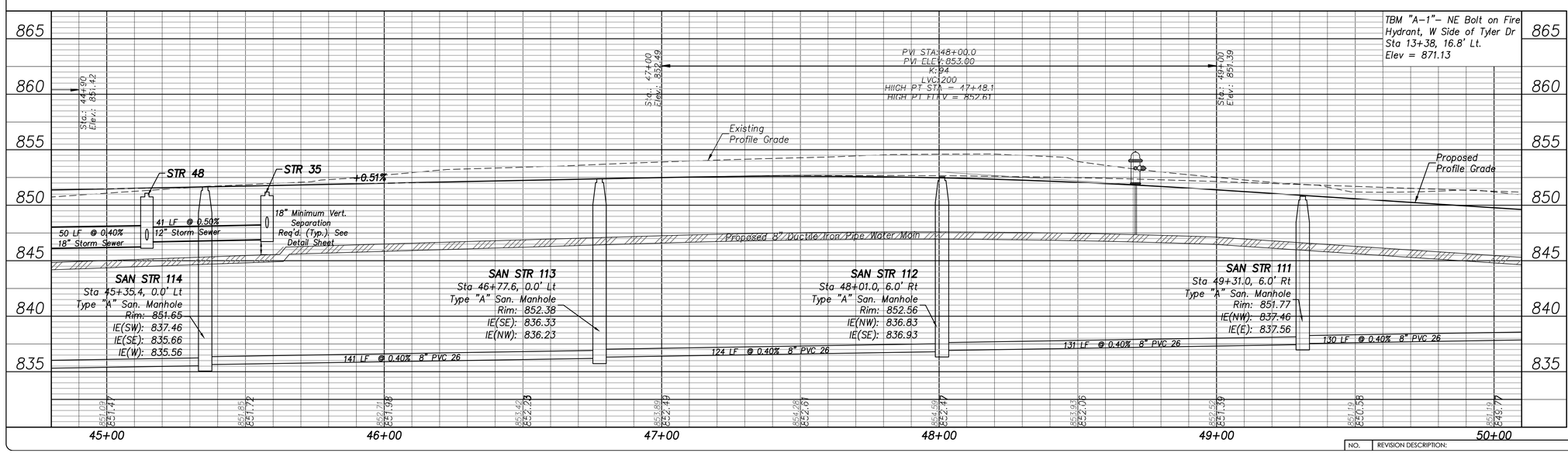
DATE: 10/28/2020

SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
17-1180

SHEET NO.
14 of 37





NO.	REVISION DESCRIPTION:	BY:	DATE:

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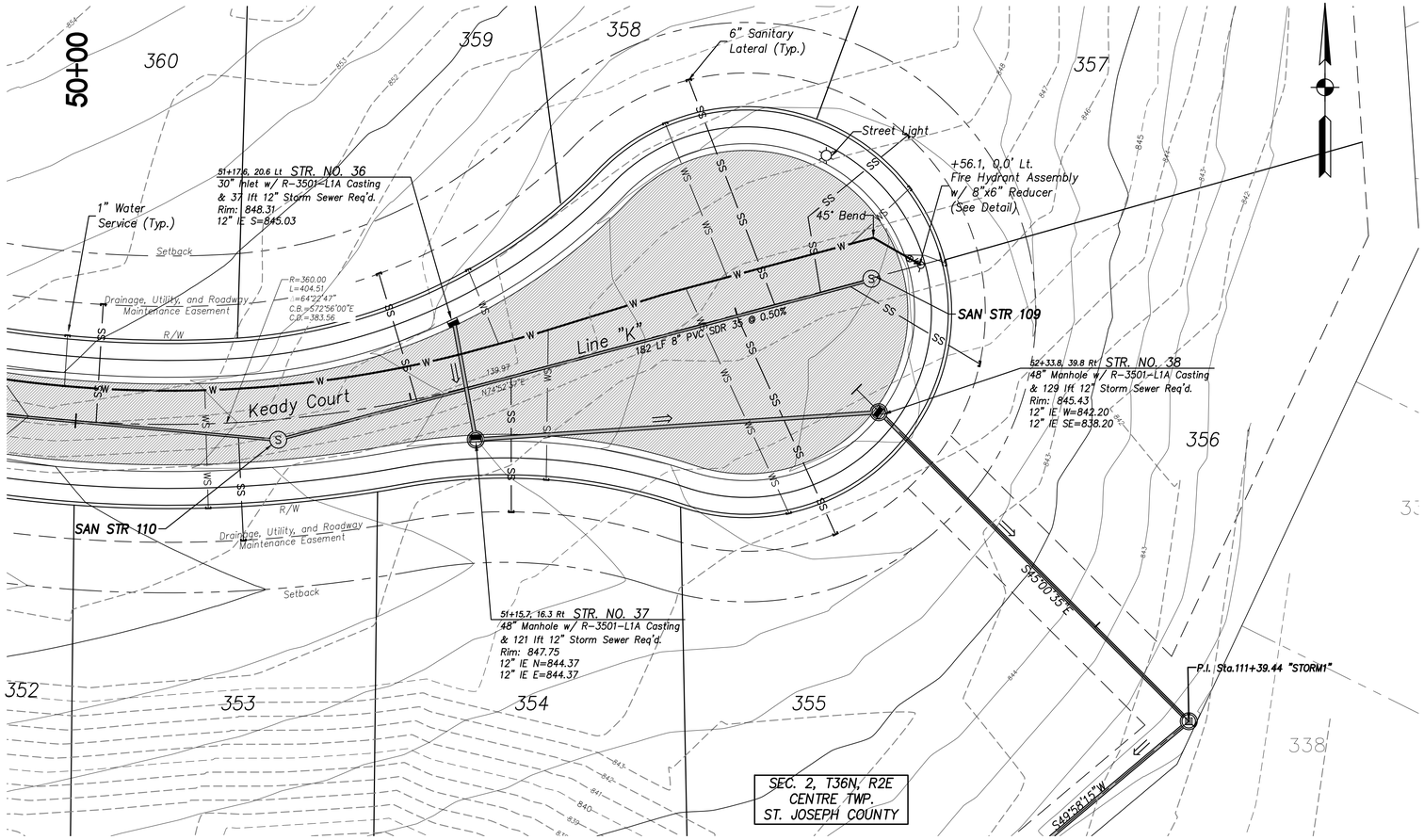
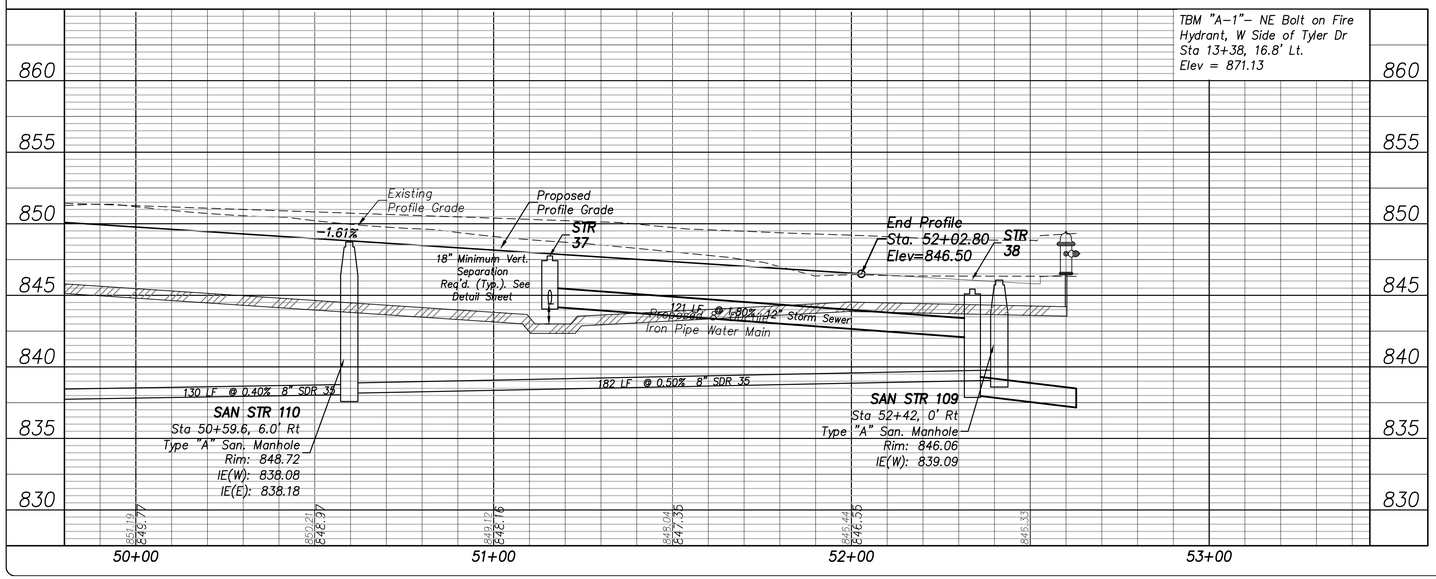
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
PLAN & PROFILE
LINE "K"
STA. 45+00 TO 50+00

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #: 17-1180
SHEET NO.: 15 of 37





NO.	REVISION DESCRIPTION:	BY:	DATE:

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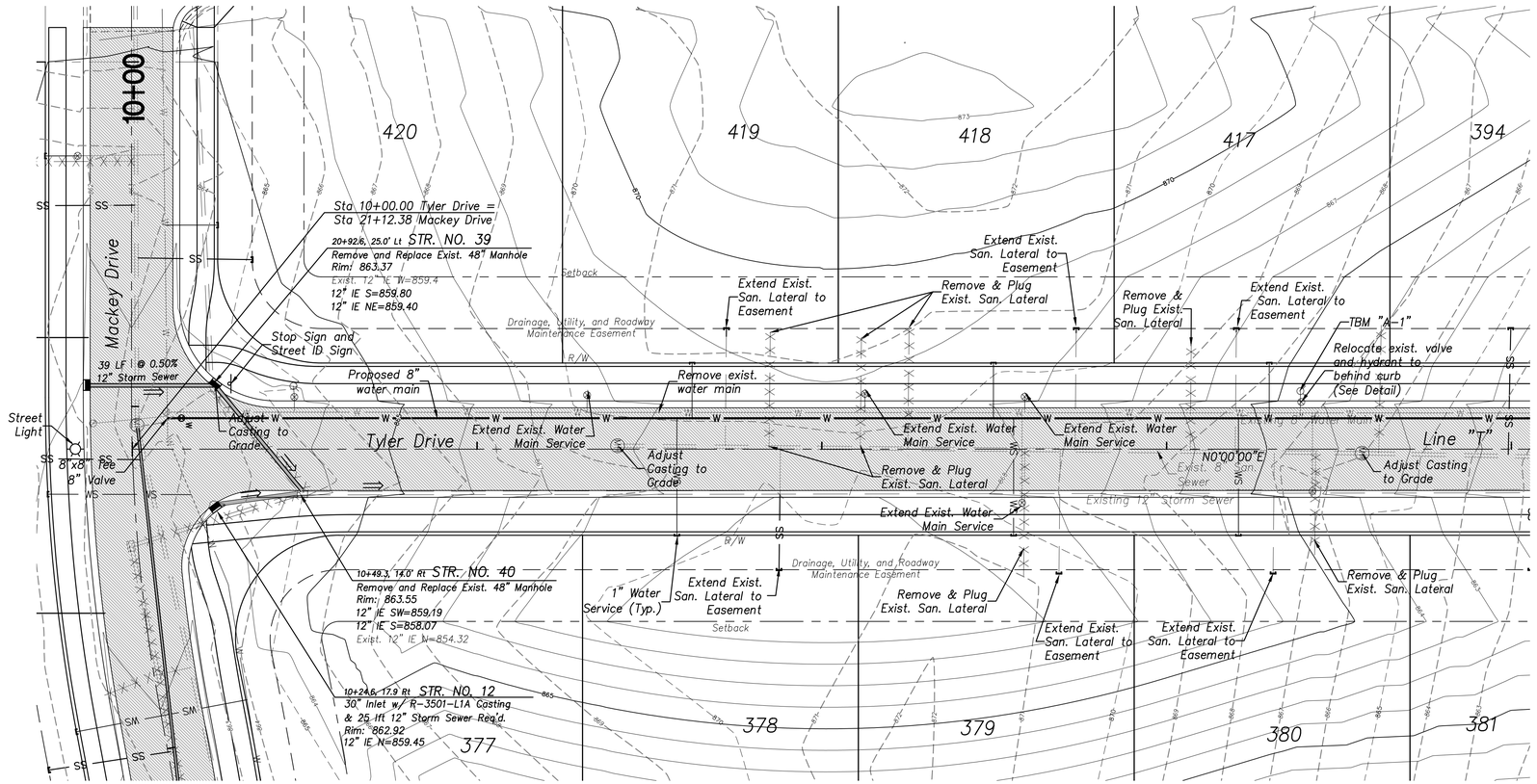
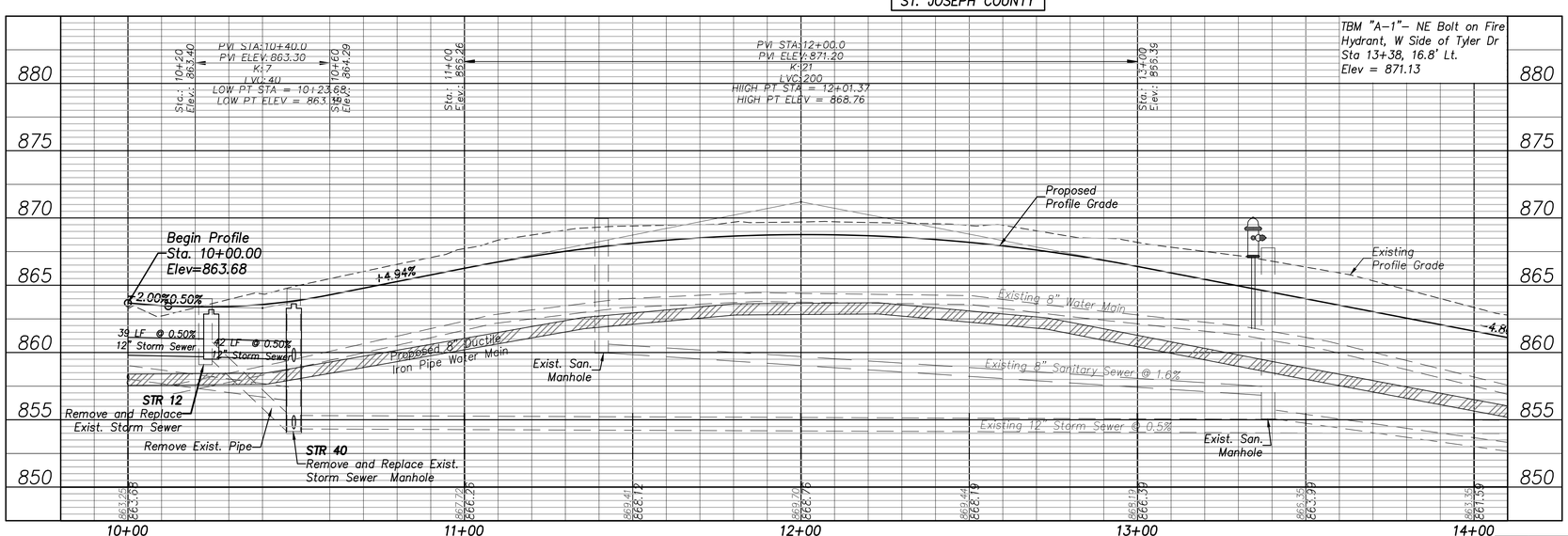
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
PLAN & PROFILE
LINE "K"
STA. 50+00 TO 52+25

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
17-1180
SHEET NO.
16 of 37



SEC. 2, T36N, R2E
CENTRE TWP.
ST. JOSEPH COUNTY



Note:
All water services and sanitary sewer laterals shall be extended to the new water main and sanitary sewer pipe as applicable.

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

PLAN & PROFILE
LINE "T"
STA. 10+00 TO 14+00

SHEET TITLE:

DRAWN BY: DEF
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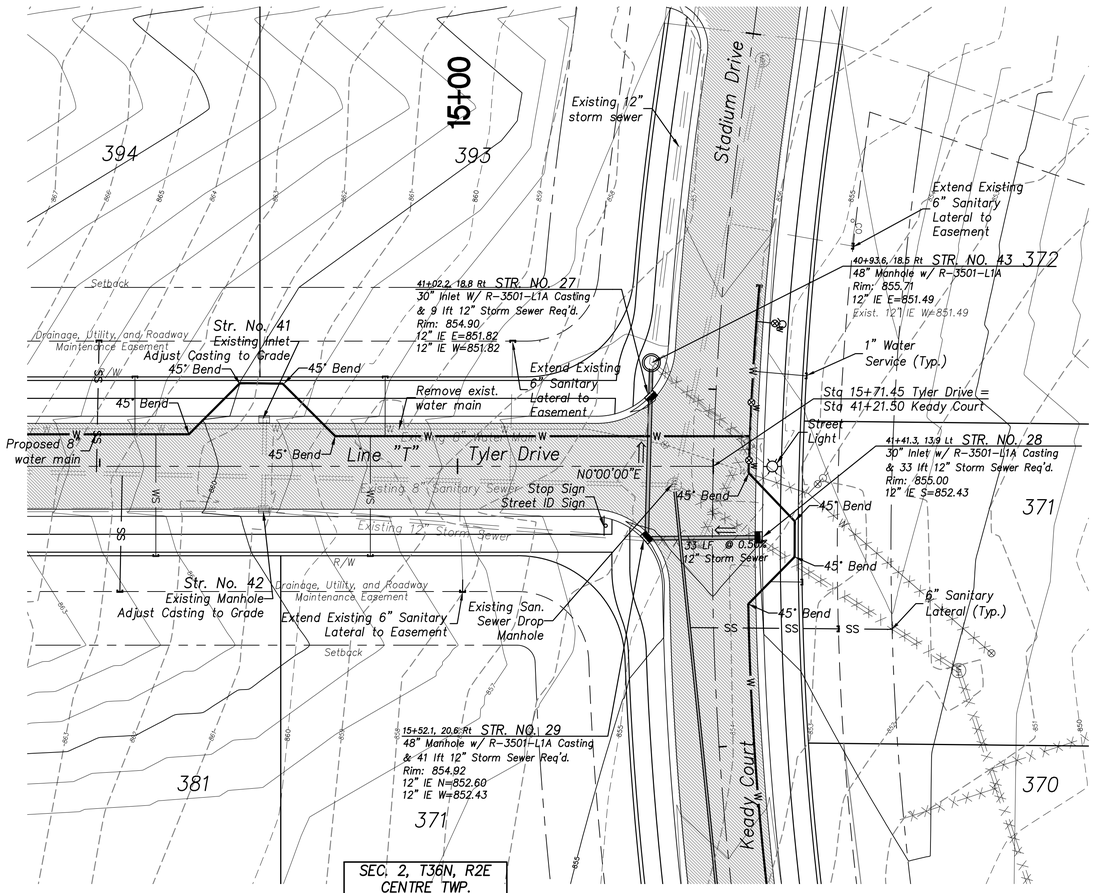
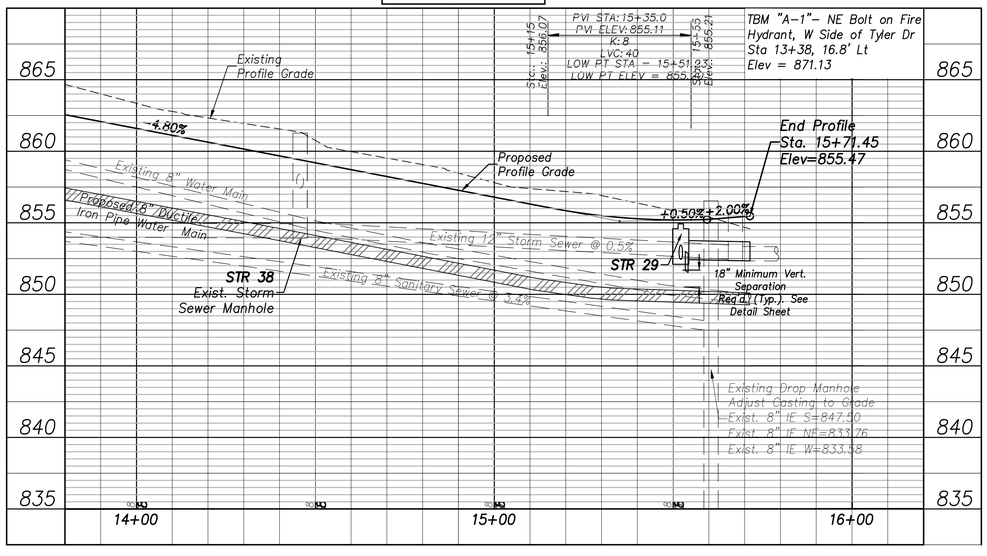
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #: 17-1180
SHEET NO.: 17 of 37



SEC. 2, T36N, R2E
CENTRE TWP.
ST. JOSEPH COUNTY



Note:
All water services and sanitary sewer laterals shall be extended to the new water main and sanitary sewer pipe as applicable.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

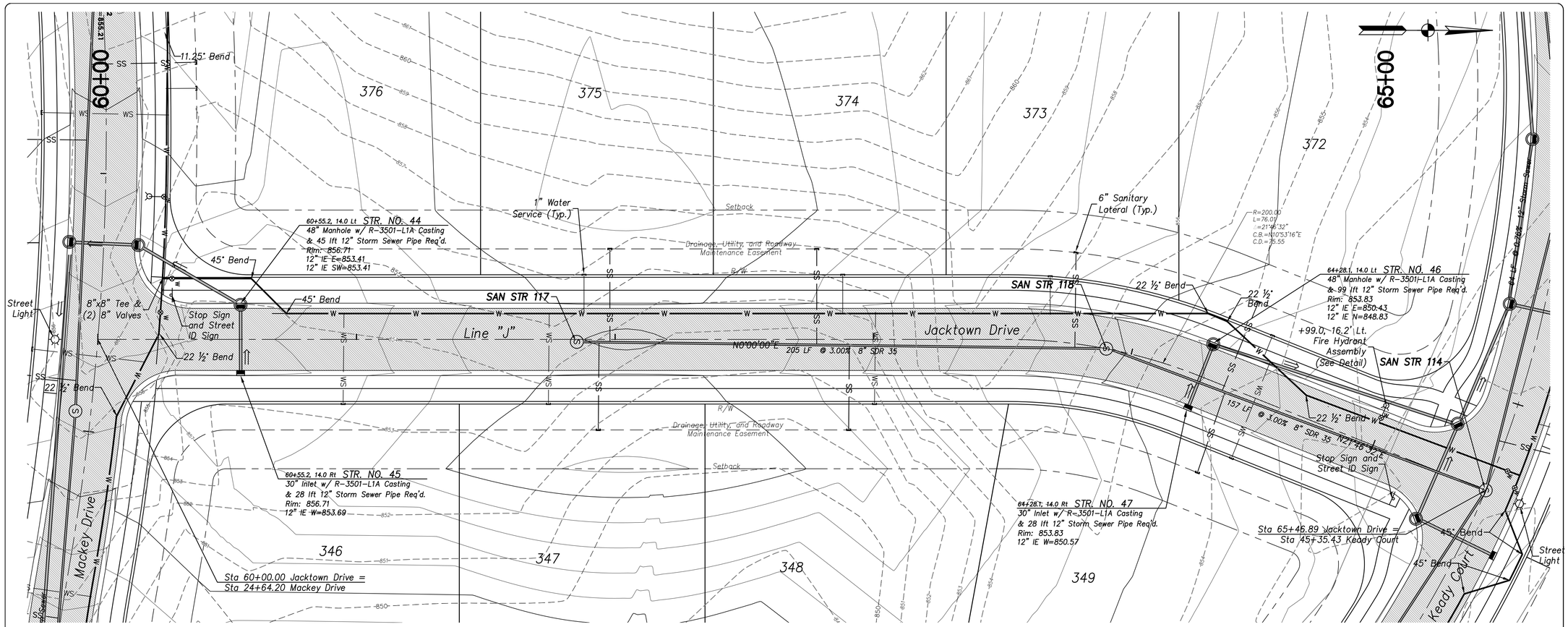
PLAN & PROFILE
LINE "T"
STA. 14+00 TO E.O.P.

SHEET TITLE:

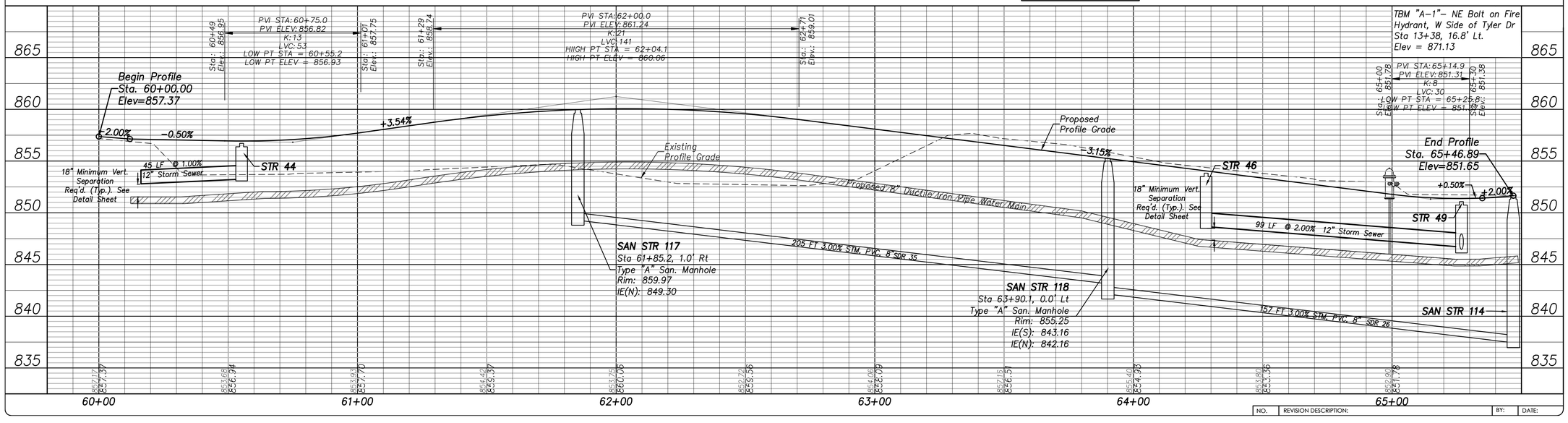
DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB # 17-1180
SHEET NO. 18 of 37



SEC. 2, T36N, R2E
CENTRE TWP.
ST. JOSEPH COUNTY



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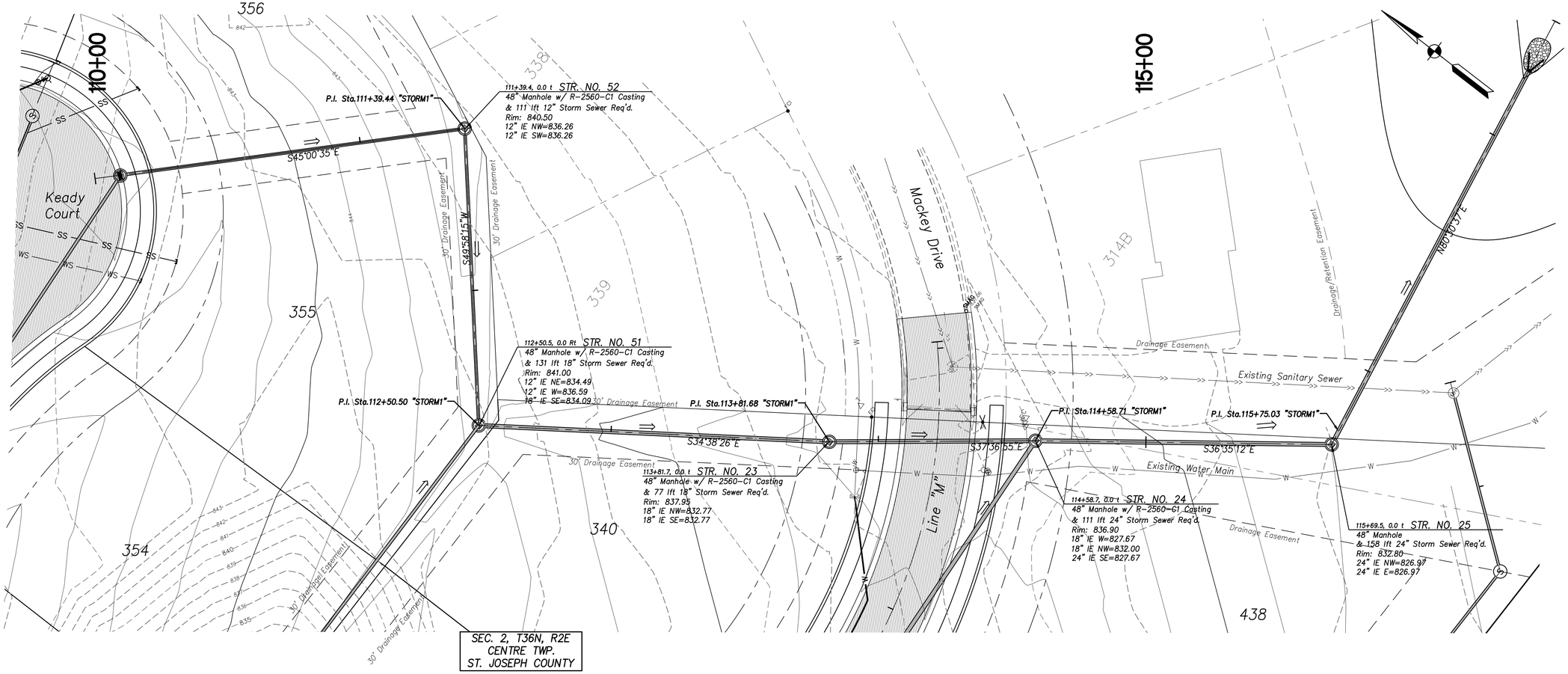
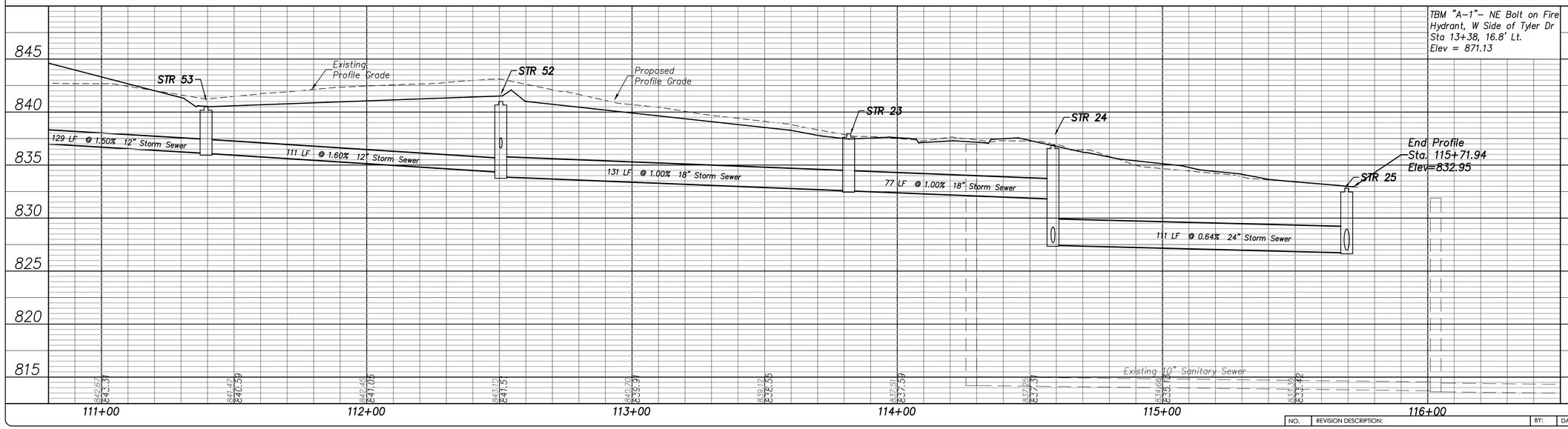
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
PLAN & PROFILE
LINE "J"
STA. 60+00 TO 65+50

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP
REGISTERED
No. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
17-1180
SHEET NO.
19 of 37





NO.	REVISION DESCRIPTION:	BY:	DATE:

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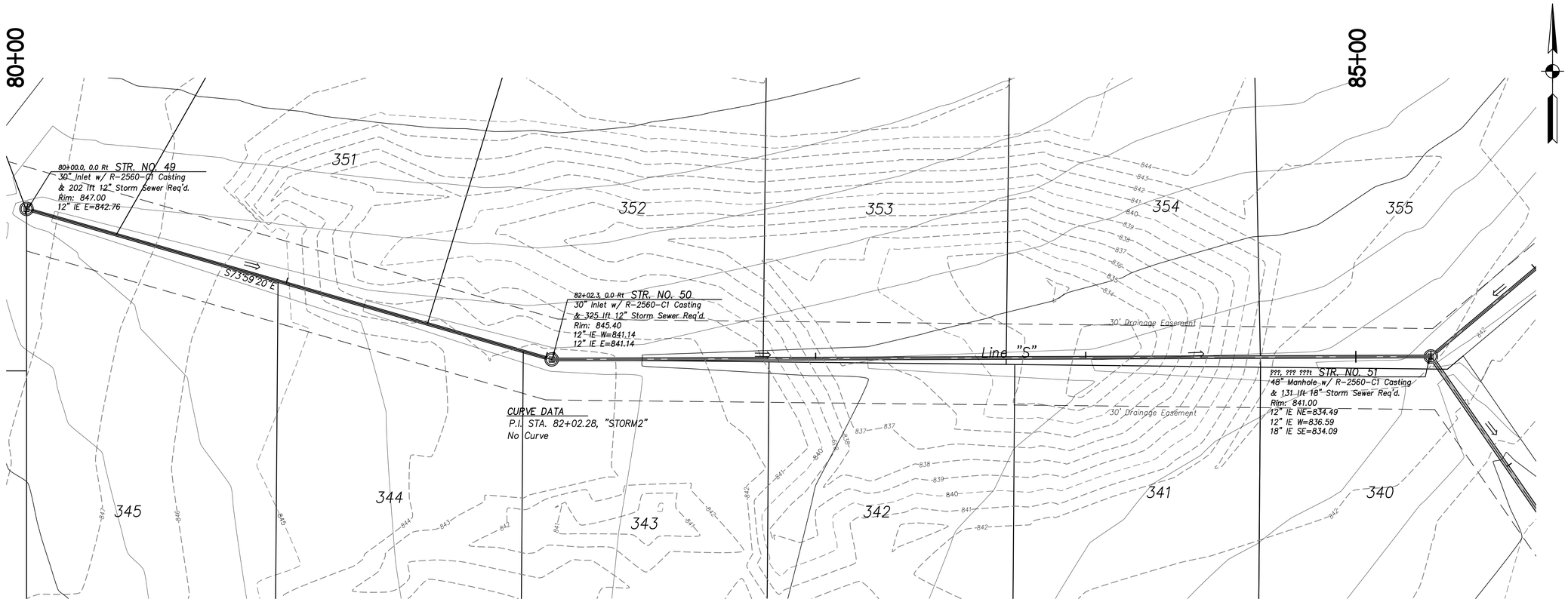
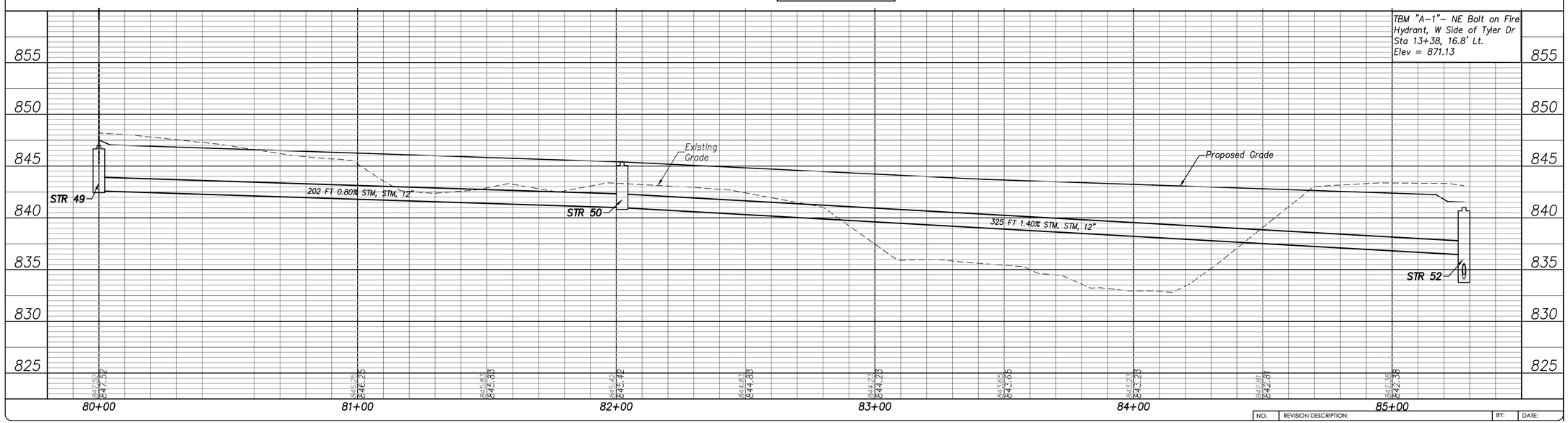
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
PLAN & PROFILE
STORM SEWER PIPE
STA. 110+00 TO END

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #: 17-1180
SHEET NO.: 20 of 37



SEC. 2, T36N, R2E
CENTRE TWP.
ST. JOSEPH COUNTY



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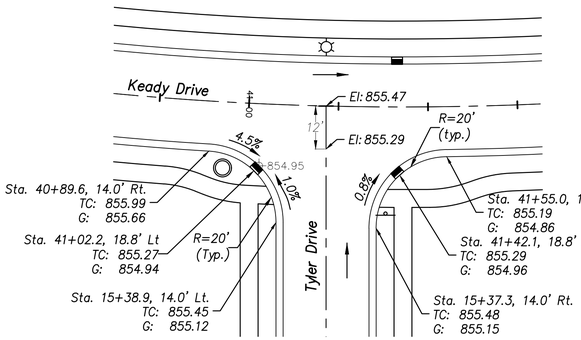
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

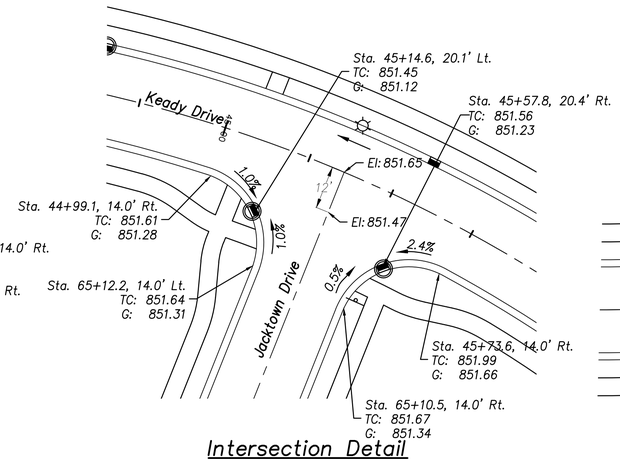
SHEET TITLE:
PLAN & PROFILE
STORM OUTLET
STA. 80+00 TO END

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP
REGISTERED
No. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'
ACI JOB #
17-1180
SHEET NO.
21 of 37



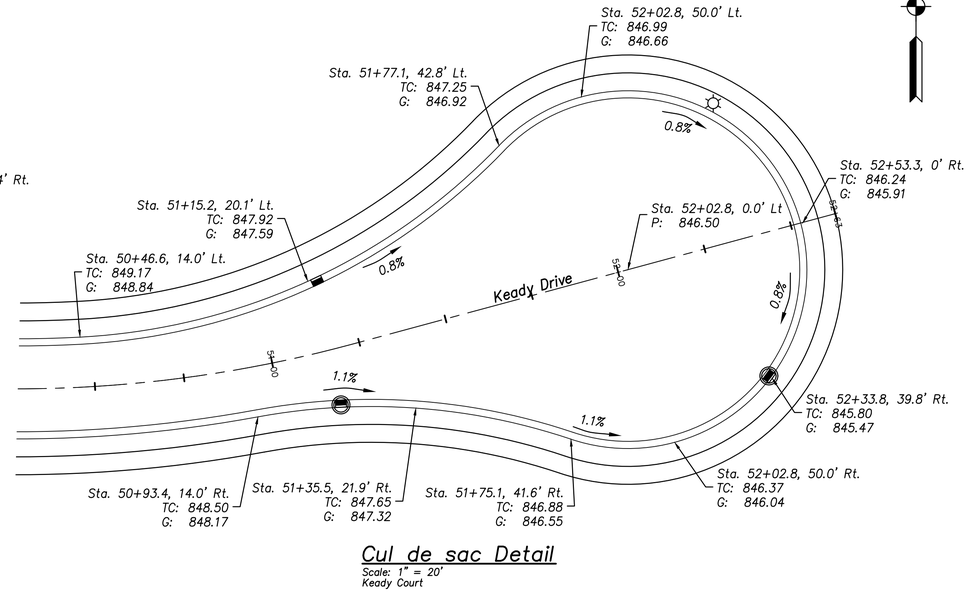
Intersection Detail

Scale: 1" = 20'
Keady Drive @ Tyler Drive



Intersection Detail

Scale: 1" = 20'
Keady Drive @ Jacktown Drive



Cul de sac Detail

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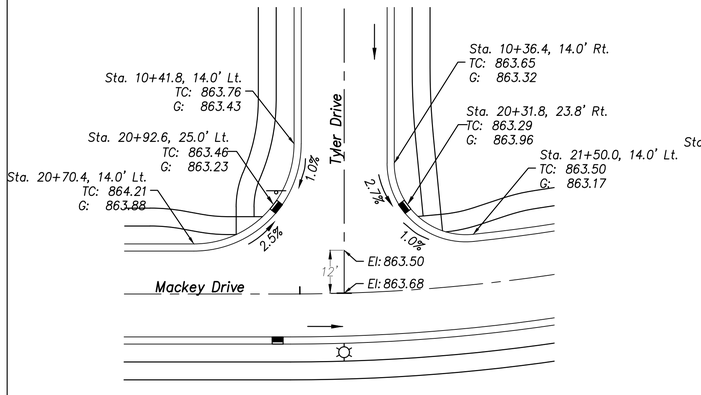
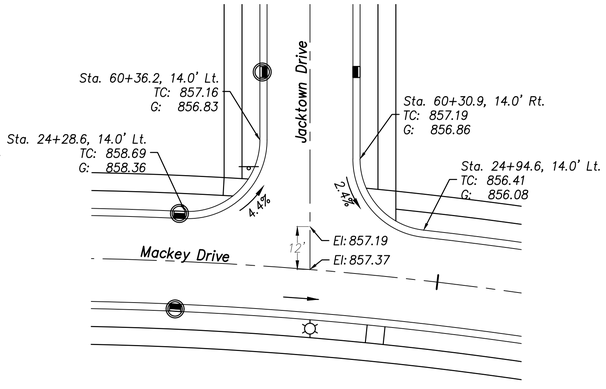
Keady Court



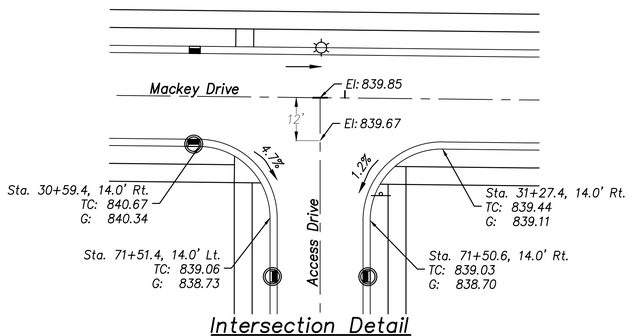
Intersection Detail

Scale: 1" = 20'
Mackey Drive @ Tyler Drive



Intersection Detail

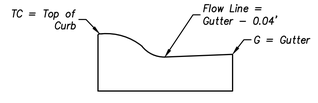
Scale: 1" = 20'
Mackey Drive @ Jacktown Drive



Intersection Detail

Scale: 1" = 20'
Mackey Drive @ Access Drive

LEGEND



NOTES

1. See Sheet 24 for curb ramp details
2. Drainage structures should be located upstream of curb ramps.

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
INTERSECTION DETAILS

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

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HORZ: 1" = 20'
VERT:
ACI JOB #
17-1180
SHEET NO.
22 of 37

STRUCTURE DATA

STRUCTURE NUMBER	LOCATION						SIZE	DESCRIPTION		LENGTH	SKEW	FLOW LINE				SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	B BORROW FOR STR BACKFILL	TYPE	FLOWABLE BACKFILL	TYPE	GEOTEXTILES	REVETMENT RIPRAP	CONCRETE, CLASS A, FOR STR.	VIDEO INSPECTION	PIPE END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION			CONNECT TO STR.	REMARKS
	STATION	LINE	LEFT	RIGHT	CENTER	OFFSET		PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE			COVER	UP STREAM	DOWN STREAM	GRATE														TYPE	SLOPE	EA.	TYPE	SLOPE	EA.		
						FT	INCHES			LFT		LFT	ELEV.	ELEV.	ELEV.	YRS.				CYS		CYS		SYS	TON	CYS	LFT	EA.								
101	21+05	M	X			1.6	8		Existing Manhole	194		5.8	857.11	853.23	863.73																					102	
102	23+00	M		X		0.0	8		Type "A" Sanitary Manhole	192		7.7	853.13	848.52	861.67																					103	
103	24+92.7	M		X		6.0	8		Type "A" Sanitary Manhole	219		8.8	846.59	841.33	856.24																					104	
104	27+12.0	M		X		6.0	8		Type "A" Sanitary Manhole	381		5.1	841.23	832.08	847.18																					105	
105	30+93.1	M		X		6.0	8		Type "A" Sanitary Manhole	158		7.0	831.98	828.82	839.76																					106	
106	70+20.7	Access		X		0.0	10		Type "A" Sanitary Manhole	255		6.2	828.06	822.96	835.31																					107	
107	12+67.4	Access		X		0.0	10		Type "A" Sanitary Manhole	69		7.9	822.86	821.48	831.80																					108	
108	13+36.3	Access		X		0.2	10		Add External Drop to Exist. Manhole				812.48		831.90																						
109	52+41.3	K		X		0.0	8		Type "A" Sanitary Manhole	182		6.2	839.09	838.18	846.06																					110	
110	50+59.6	K		X		6.0	8		Type "A" Sanitary Manhole	130		9.8	838.08	837.56	848.72																					111	
111	49+31	K		X		6.0	8		Type "A" Sanitary Manhole	132		12.5	837.46	836.93	850.80																					112	
112	48+01	K		X		6.0	8		Type "A" Sanitary Manhole	124		14.9	836.83	836.33	852.56																					113	
113	46+78	K		X		0.0	8		Type "A" Sanitary Manhole	141		15.3	836.23	835.66	852.38																					114	
114	45+35	K		X		0.0	8		Type "A" Sanitary Manhole	123		15.3	835.56	835.07	851.65																					115	
115	44+12	K		X		0.0	8		Type "A" Sanitary Manhole	286		15.8	834.97	833.83	851.59																					116	
116	41+27	K		X		10.7	8		Connect to Exist. Manhole			20.8	833.58		855.25																						
117	61+85.2	J		X		1.0	8		Type "A" Sanitary Manhole	205		9.9	849.30	843.16	859.97																					118	
118	63+90.0	J		X		0.0	8		Type "A" Sanitary Manhole	157		12.3	842.16	837.46	855.25																					114	

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PROJECT:

LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

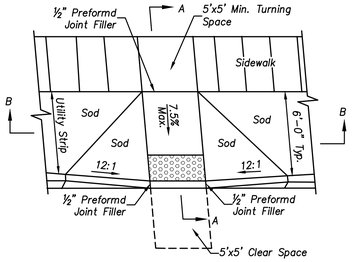
SHEET TITLE:

SANITARY SEWER TABLE

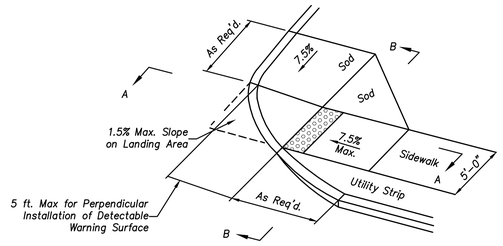
DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF
INDIANA
PROFESSIONAL ENGINEER

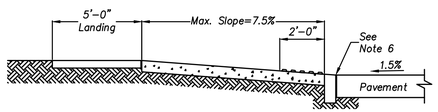
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ:
VERT:
ACI JOB #: 17-1180
SHEET NO.: 23 of 37



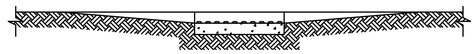
Perpendicular Curb Ramp Adjacent Non-Walkable Surface



One Way Perpendicular Curb Ramp with Buffer



Section A-A

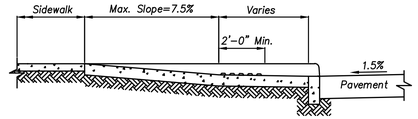


Section B-B

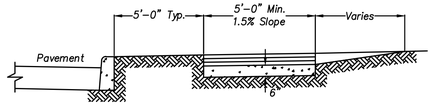
NOTES
1. These dimensions are based on a 6" curb height. They shall be proportionally adjusted for other curb heights.
2. The bottom edge of the curb ramp shall be flush with the edge of adjacent pavement and gutter line.
3. Landing areas at the top of the curb ramps shall have maximum cross slope of 1.5% in any direction.
4. Drainage inlets should be located uphill from the curb ramps to prevent water ponding within the pedestrian access route.
5. Class "A" concrete to be used in all ramps and sidewalks.
6. Algebraic difference in grade between the base of curb ramp and the gutter shall be less than 11%. If this is not practical a 2'-0" wide level strip shall be provided.
7. Minimum width of curb ramp is 4'-0".
8. Proper compaction per INDOT Standard Specification 604.03(b)) is required for all walks, approaches and ramps.

SIDEWALK CURB RAMP, TYPE B

(NOT TO SCALE)



Section A-A

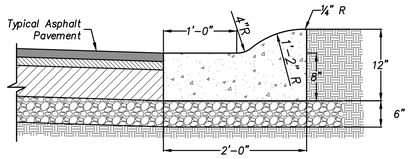


Section B-B

NOTES
1. These dimensions are based on a 6" curb height. They shall be proportionally adjusted for other curb heights.
2. The bottom edge of the curb ramp shall be flush with the edge of adjacent pavement and gutter line.
3. Landing areas at the top of the curb ramps shall have maximum cross slope of 1.5% in any direction.
4. Drainage inlets should be located uphill from the curb ramps to prevent water ponding within the pedestrian access route.
5. Class "A" concrete to be used in all ramps and sidewalks.
6. Algebraic difference in grade between the base of curb ramp and the gutter shall be less than 11%. If this is not practical a 2'-0" wide level strip shall be provided.
7. Sidewalk across approach shall be sloped at 1.5% maximum transversely.
8. Minimum width of curb ramp is 4'-0".
9. Proper compaction per INDOT Standard Specification 604.03(b)) is required for all walks, approaches and ramps.

SIDEWALK CURB RAMP, TYPE D

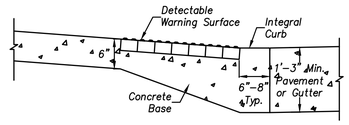
(NOT TO SCALE)



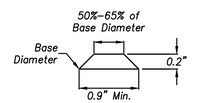
NOTES
1. All curb to be constructed of class "A" concrete.
2. Control joints to be placed every 10'.
3. Expansion joints to be placed every 80' or as specified on construction drawings.
4. Eliminate longitudinal bars if roadway is asphalt pavement.
5. Curb depth at pavement edge shall match pavement depth where concrete is used.

COMBINATION CURB AND GUTTER TYPE "A"

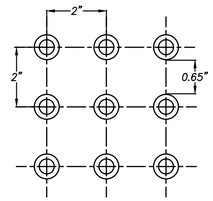
(NOT TO SCALE)



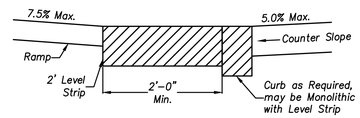
Typical Ramp and Truncated Dome Construction Detail



Section A-A



Truncated Domes



Change of Grade > 11%

NOTES
1. Detectable warning surface shall consist of truncated domes and shall be aligned in a square or radial grid pattern. Where truncated domes are arrayed radially, they may differ in diameter and center-to-center spacing within the ranges specified.
2. The detectable warning surface shall be manufactured to fit the radii. Field cutting shall not alter the truncated dome spacing between the adjacent panels outside of the allowable range.
3. The detectable warning surface shall contrast visually with adjacent surfaces, either light-on-dark or dark-on-light.
4. The detectable warning surface shall extend a minimum of 2 ft. in the direction of pedestrian travel and extend the full width as shown. The detectable warning surface shall not be placed across a grade break.
5. The maximum counter slope of the gutter or street at the bottom of the ramp shall be 5.00%. Where the algebraic difference between the running slope and the counter slope exceeds 11%, a 2-ft. minimum level strip should be provided at the bottom of the ramp.
6. Where the concrete border is used for forming, the border shall be cast monolithically with the curb ramp concrete. The concrete border shall not exceed 2 in. within the ramp width.
7. Where forming other than a concrete border is used, the edge restraint shall not encroach upon the ramp width.

SIDEWALK CURB RAMP, DETECTABLE WARNING SURFACE

(NOT TO SCALE)

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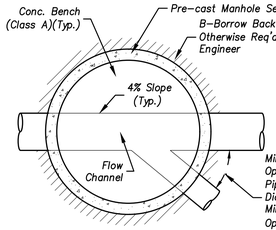
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
STREET DETAILS

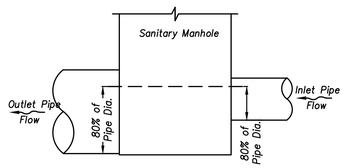
DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ:
VERT:
ACI JOB #: 17-1180
SHEET NO.: 24 of 37



PLAN VIEW

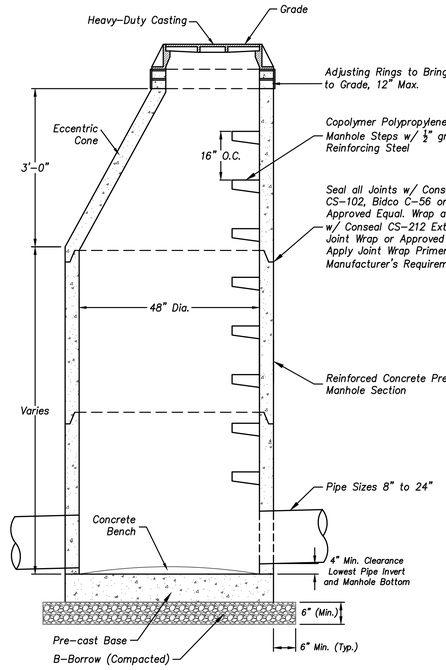


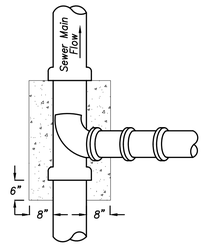
DETAIL A

NOTES:
1. For all manholes 6'-0" or less in depth, provide riser with flat top in lieu of eccentric cone in accordance with ASTM C-478.
2. The invert elevation of the influent pipe shall be 0.1 ft above the invert elevation of the outlet pipe, unless otherwise noted.
3. All manholes shall be manufactured and installed in compliance with ASTM C-478.
4. All pipe connections shall be made with integral resilient fittings complying with ASTM C-923.
5. Flow channel shall conform to the shape of the connecting sanitary sewer and be made through the bottom surface of the manhole. The channel walls shall be formed or shaped to the full height of the crown of the outlet sewer.
6. Refer to manhole size vs. pipe size chart on City of South Bend Standard Drawing 4-2.
7. Completed manholes shall be tested with negative air pressure (vacuum) in accordance with ASTM C-1244-93.
8. At manholes where a smaller diameter sewer joins a larger diameter sewer, the invert of the smaller diameter pipe shall be raised such that the elevation at 80% of the pipe diameter of both sewers is matched (Refer to Detail A above), unless otherwise noted.
9. The Design Engineer is responsible for setting pipe invert elevations to account for minor losses through the manhole.

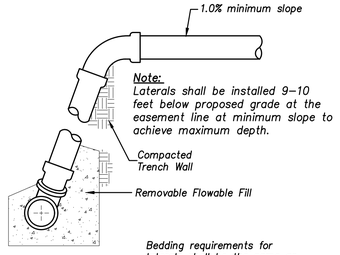
TYPE "A" SANITARY MANHOLE - STANDARD PRECAST

(NOT TO SCALE)





TOP VIEW

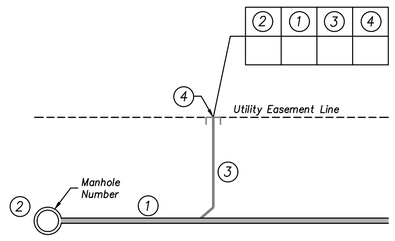


SIDE VIEW

NOTES:
1. Refer to INDOT Standard Specification Section 213 for removable flowable fill requirements.
2. Wye replacement: Remove old wye, trim existing as pipe required, install new wye and pipe and connect to existing pipes with Fernco couplings.

SLANT STACK LATERAL CONNECTION DETAIL

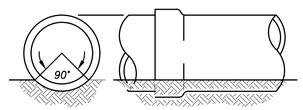
(NOT TO SCALE)



1. Location of tap from downstream manhole
2. Downstream manhole number
3. Length of lateral from main to stub
4. Depth of lateral at utility easement line

CONSTRUCTION NOTES (SANITARY SEWER)

1. Prior to any work, Contractor shall obtain all necessary permits from the local municipality and governing agencies.
2. All sewer materials and construction shall be in accordance with the City of South Bend Standard Construction Specification Guidelines and Drawings, and these Construction Drawings.
3. Sewers shall be installed in a dry trench.
4. Sanitary sewer pipe outside the building shall be polyvinyl chloride pipe (PVC) conforming to ASTM D3034, Type PSM SDR 35 and SDR 26, as indicated on the plans, with elastometric gasket joints conforming to ASTM D3212.
5. Sanitary sewer fittings shall conform to the requirements of ASTM D3034 with a minimum wall thickness of SDR 35 or SDR 26 as indicated, and molded in one piece with elastometric joints and minimum socket depths as specified. PVC material shall have a cell classification of 12454-B and C as defined in ASTM D1784.
6. Sanitary sewer manholes shall be a minimum 48-inch diameter precast concrete with base conforming to ASTM C-478 and constructed of INDOT Class A Concrete. Refer to the construction detail on this sheet for further information.
7. Contractor shall supply As-Built Record Drawings to the Owner/Developer and Engineer upon completion of work.
8. The following tests shall be performed by the Contractor in accordance with the City of South Bend Standards and witnessed by a Professional Engineer. The Engineer and Owner shall be provided 48 hours notice of all testing.
   A) Low pressure air leakage test per ASTM F1417, standard test method for installation acceptance of plastic gravity sewer lines using low-pressure air. The infiltration rate shall not exceed 100 gallons per inch diameter of pipe per mile per day. If the test fails, the Contractor shall determine the cause, repair/replace the sewer line to the satisfaction of the Owner, and then re-test.
   B) Tests for deflection of sanitary sewer pipes shall be performed no earlier than 30 days after installation. The pipe shall be tested with an approved 9-point mandrel. No pipe shall exceed a deflection of five (5%) percent. In the event the sanitary sewer pipe fails the deflection test, the section of pipe which failed shall be completely removed, replaced, and tested starting with low pressure air leakage testing and then deflection testing. The mandrel shall be pulled without the aid of a mechanical pulling device.
   C) Sanitary sewer manholes shall be tested by negative air pressure in accordance with ASTM C1244-93. If the test fails, the Contractor shall determine the cause, and then repair/replace the manhole to the satisfaction of the Owner. The test shall be repeated until it is successful.
9. Construction and testing shall be in accordance with the City of South Bend standards, specifications & drawings.



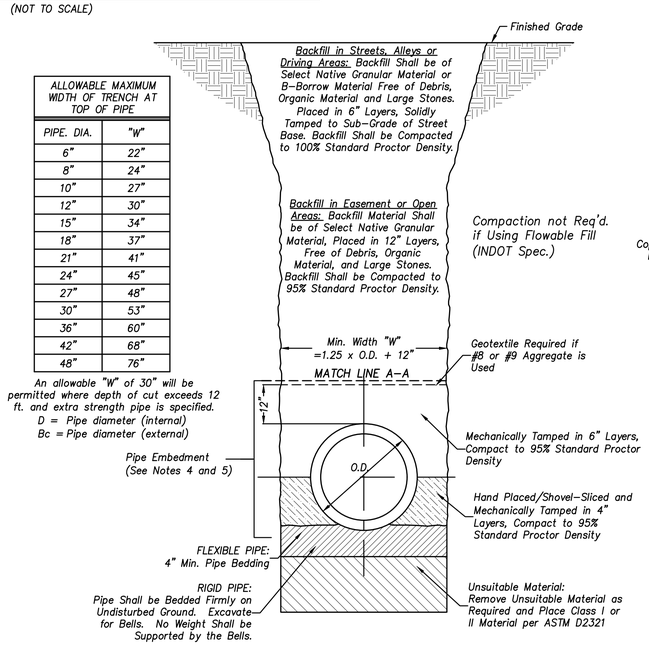
The Lower 90° Arc of the Barrel of the Pipe Should be in Firm Contact With Undisturbed Earth. The Bedding Shall be Continuous and Uniform for the Length of the Pipe.

Small Excavations Should be Made for the Bells. No Weight Shall be Supported by the Bells.These Should be no Larger Than Necessary to Clear the Bell.

NOTES:
1. These trench and bedding details are for pipe structural requirements only. The contractor is solely responsible for safety of operations. The contractor shall slope trench walls, provide protective work boxes, and/or shore and brace all excavations as the contractor determines necessary for safety of operations, and in conformance to IOSHA Regulation 29 C.F.R. 1926, Subpart P for Trench Safety Systems.
2. All PVC pipe for sanitary sewers shall be installed in accordance with ASTM D2321.
3. There shall be no rocks or stones greater than 2" in any dimension within 6" of the pipe wall or bell.
4. Flexible Pipe: Embedment materials for bedding, haunching and initial backfill shall comply with the requirements of ASTM D2321, Classes I (INDOT #8 or #9), II (INDOT #53, #73, or B-Borrow), or III and shall be compacted as noted. Refer to pipe manufacturers recommended bedding and embedment material class type requirements. Removable flowable backfill shall be placed for all areas within 5 feet of pavements to 12" above pipe crown. Above this limit structure backfill shall be used.
5. Refer to pipe manufacturer's recommended bedding and bedding material class type requirements.
6. Rigid Pipe: Embedment materials for bedding, haunching and initial backfill shall comply with the requirements of ASTM C12 (VCP) Classes A, B, C or crushed stone (INDOT #8, #9 or B-Borrow) and shall be compacted as noted. Removable flowable backfill shall be placed for all areas within 5 feet of pavements to 12" above pipe crown. Above this limit structure backfill shall be used.
7. Final backfill shall not contain debris, organic material, frozen material, unstable material or boulders or stones greater than 2" in any dimension. Flowable fill optional.
8. The placement and compaction of backfill shall not cause displacement of the pipe.
9. For multiple pipes in same trench:
   a. Place bedding to Spring Line of first pipe across entire trench width.
   b. Placement of next pipe, re-excavate trench as needed. Then place bedding as noted above.
   c. For additional pipes repeat as required. 9. Refer to INDOT Standard Specification Section 213 for flowable fill (removable) requirements.

ALLOWABLE MAXIMUM WIDTH OF TRENCH AT TOP OF PIPE	
PIPE. DIA.	"W"
6"	22"
8"	24"
10"	27"
12"	30"
15"	34"
18"	37"
21"	41"
24"	45"
27"	48"
30"	53"
36"	60"
42"	68"
48"	76"

An allowable "W" of 30" will be permitted where depth of cut exceeds 12 ft. and extra strength pipe is specified.
D = Pipe diameter (internal)
Bc = Pipe diameter (external)



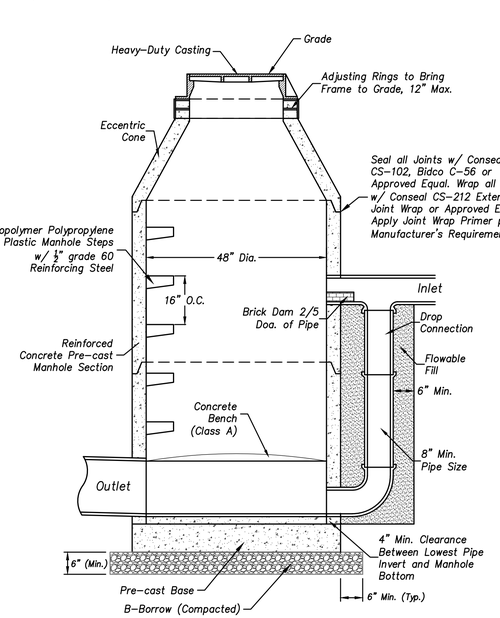
RIGID PIPE BEDDING DETAIL

(RCP & DI)

(NOT TO SCALE)

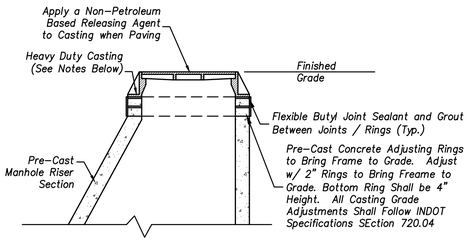
SANITARY LATERAL AS-BUILT DETAIL

(NOT TO SCALE)



STANDARD DROP MANHOLE

(NOT TO SCALE)



NOTES:
1. Manhole castings shall be Heavy Duty (H-20 rated). Castings shall be East Jordan Iron Works 1040A or Neenah R-1642.
2. Casting lid shall be solid with two (2) concealed pickholes for sanitary or combined sewer manholes and tow (2) open pickholes for storm sewer manholes. The text SANITARY shall be cast into the lid for the sanitary or combined sdwer manholes. The text STORM shall be cast into the lid for storm sewer manholes.
3. Where directed by the City, casting lids shall bolt down. Bolts shall be provided with an anti-seizing agent.
4. For manholes 72-inch diameter and larger, the clear opening shall be 36-inch diameter. The casting shall be Heavy Duty (H-20 Rated). Casting shall be East Jordan Iron Works V-1600-5 or Neenah R-1741-D.
5. For casting adjustments of existing brick manholes, remove old bricks down to a solid base. Then level with mortar and build up with pre-cast adjusting rings.
6. When manholes are located in gravel or treelawn areas, provide a 5 foot diameter concrete collar, centered on the casting. Concrete shall be Class A

TYPICAL MANHOLE CASTING & ADJUSTING RINGS

(NOT TO SCALE)

NOTES:
1. All manholes shall be manufactured and installed in compliance with ASTM C-478.
2. All pipe connections shall be made with integral resilient fittings complying with ASTM C-923.
3. Flow channel shall conform to the shape of the connecting sanitary sewer and be made through the bottom surface of the manhole. The channel walls shall be formed or shaped to the full height of the crown of the outlet sewer.
4. Refer to manhole size vs. pipe size chart on City of South Bend Standard Drawing 4-2.
5. Completed manholes shall be tested with negative air pressure (vacuum) in accordance with ASTM C-1244-93.
6. The Design Engineer is responsible for setting pipe invert elevations to account for minor losses through the manhole.
7. Refer to INDOT Standard Specification Section 213 for removable flowable fill requirements.

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South Bend
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Engineering Architecture Land Surveying
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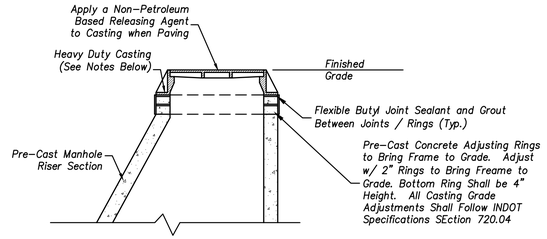
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
SANITARY SEWER DETAILS

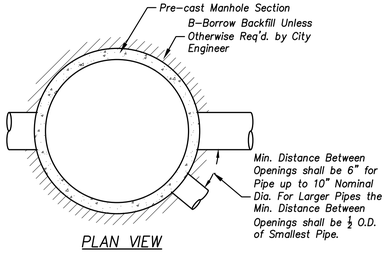
DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNAPP REGISTERED NO. PE19900163 STATE OF INDIANA PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE: HORZ: VERT:
ACI JOB # 17-1180
SHEET NO. 25 of 37



Structure	EJIW	Neenah	Clear Opening (in)
Manhole < 72-in Dia.	1040A	R-1642	24
Manhole >= 72-in Dia.	V-1600-5	R-1741-D	36
Inlet/Catch Basin (Comb. Curb & Gutter)	7010	R-3010	24
Inlet/Catch Basin (Rolled Curb)	7490-M1	R-3501-N	24
Inlet/Catch Basin (Comb. Curb & Gutter, 8")	7010	R-3010	24
Type "E" Inlet	5400	R-3808-1	24
Drywell (Grass)	1205	R-2561-A	24

NOTES:
1. Casting lid shall be solid with two (2) concealed pickholes for sanitary or combined sewer manholes and tow (2) open pickholes for storm sewer manholes. The text SANITARY shall be cast into the lid for the sanitary or combined sewer manholes. The text STORM shall be cast into the lid for storm sewer manholes.
2. Other inlet castings may be acceptable as approved by the City Engineer.
3. All inlet grates shall be bicycle safe.
4. Environmental notice required on all storm sewer castings, e.g. "DUMP NO WASTE! DRAINS TO WATERWAY"
5. Inlet/catch basin castings are for use with combined curb and gutter or standard curb installations.
6. All castings shall be heavy duty (H-20 rated).
7. Where directed by the City, casting lids shall bolt down. Bolts shall be provided with an anti-seizing agent.
8. For casting adjustments of existing brick manholes, remove old bricks down to a solid base. Then level with mortar and build up with pre-cast adjusting rings.
9. When manholes are located in gravel or treelawn areas, provide a 5 foot diameter concrete collar, centered on the casting. Concrete shall be Class A

TYPICAL MANHOLE CASTING & ADJUSTING RINGS
(NOT TO SCALE)

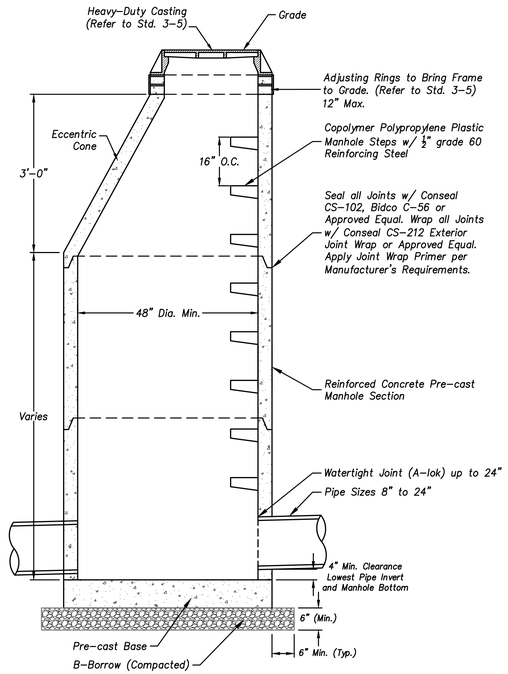


PLAN VIEW

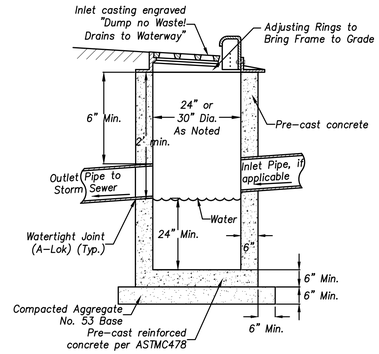
MANHOLE DIAMETER (INCHES)	MANHOLE TYPE	MAX. NOMINAL PIPE SIZE (INCHES)	
		DIFFERENTIAL ANGLE OF INLET/OUTLET PIPES	
		135° – 225°	90° – 134° or 226° – 270° *
48	A	24	18
60	A	30	24
72	B	42	30
84	B	48**	36**

* The Differential angle of inlet/outlet pipes shall not be less than 90° or greater than 270°
** For larger pipe sizes, provide precast manhole manufacturer's sizing documentation

NOTES:
1. All manholes shall be manufactured and installed in compliance with ASTM C-478.
2. All pipe connections shall be made w/ integral resilient fittings complying w/ ASTM C-923.
3. Refer to manhole size vs. pipe size chart.
4. The design engineer is responsible for setting pipe invert elevations to account for minor losses through the manhole.

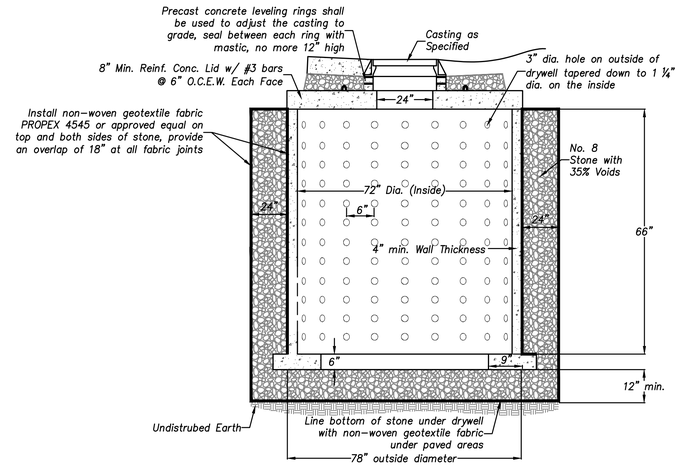


STANDARD 48" STORM MANHOLE
(NOT TO SCALE)



NOTES:
1. Inlet and grate shall match installed curb and gutter width.
2. Flexible butyl joint sealant and grout shall be utilized to seal each joint between frame and manhole casting or pre-cast leveling rings.

STANDARD CATCH BASIN
(NOT TO SCALE)



NOTES:
1. A layer of geotextile fabric, Propex 4545 by Amoco of approved equal shall be placed between the drywell and the No. 8 aggregate and shall line the excavation. All fabric joint shall have an overlap of 18". The No. 8 aggregate the geotechnical fabric layers and the frame and grate to be included in the cost of the drywell.
2. To ensure proper infiltration into the oil, after installation of the drywells and backfilling with the No. 8 aggregate, the contractor shall surcharge each drywell with a minimum of 3,000 gallons of water prior to any pavement placement. Surcharge water shall be applied at a rate that will completely fill the drywell.
3. Casting shall be of type specified in plans.
4. Drywells are not permitted within wellhead protection areas.

STANDARD 1,800 GALLON DRYWELL
Not to Scale

CONSTRUCTION NOTES (STORM SEWER)
1. Storm sewer pipe shall be Reinforced Concrete Pipe (RCP) Class III within City Right-of-Way, and PVC SDR 35 easements outside the Right-of-Way.
2. Storm sewer structures shall be pre-cast concrete conforming to ASTM C-478 and the design standards stated above.
3. Pipe discharge location into retention basin shall include an end section stabilized with riprap as detailed on Sheet 30, "Rock Spillway at Discharge".

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

STORM SEWER DETAILS

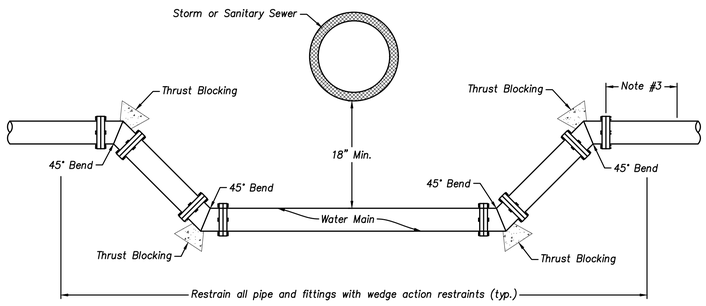
SHEET TITLE:

DRAWN BY: DEF
DESIGNED BY: CAK
P.M REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

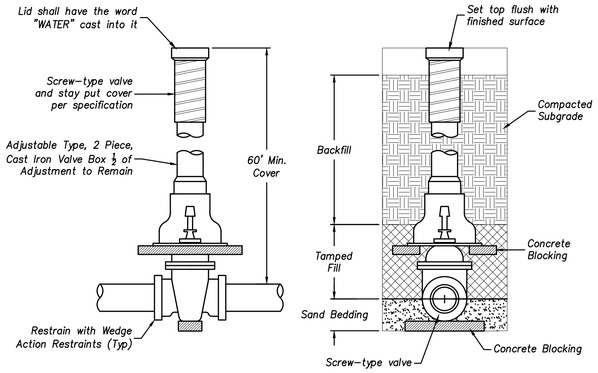
SIGNATURE:
DATE: 10/28/2020
SCALE:
HORZ:
VERT:
ACI JOB #: 17-1180
SHEET NO.: 26 of 37

NOTES
1. All storm and sanitary sewer pipes shall have a 18" minimum vertical separation from water main. If 18" separation is not practical, then storm or sanitary sewer pipe shall be water grade pipe. (See Note #7 under General Notes for Further Information)
2. Provide adequate support if the obstacle is in place before the water main is constructed.
3. Minimum restrained joint length required for the given pipe size, depth, material, soil condition, etc., use 1.5:1 safety factor and 150 psi test pressure, typical each side.
4. All pipe fittings and valve joints shall be restrained with wedge action restraints.



WATER PIPE CONFLICT CROSSING PROFILE DETAIL
(NOT TO SCALE)

NOTES
1. Gate valves shall be manufactured by Clow, Mueller, or approved equal.
2. Valve box shall be manufactured by Tyler Pipe Industries Model 664–S or approved equal.
3. Gate valves shall be used on water main pipe 12–inches and smaller.
4. Valve spacing shall be no greater than 1,000 feet. A main line valve shall be placed at each intersection.
5. Valve locations shall be configured to be within 3 Ft. of adjoining fittings.

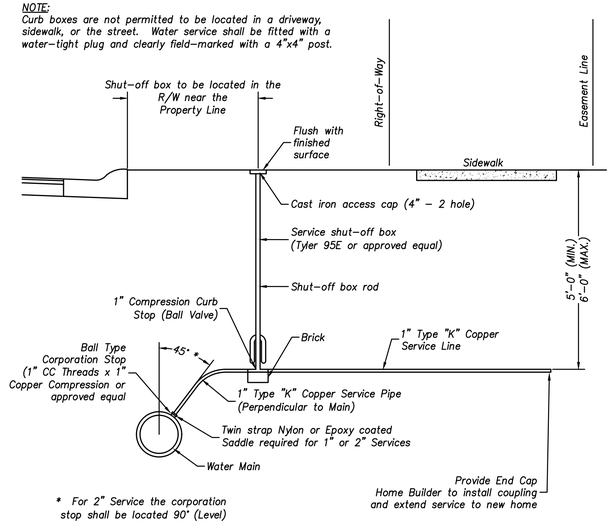


WATER VALVE DETAIL
(NOT TO SCALE)

CONSTRUCTION NOTES (WATER MAIN)

1. Prior to any work, Contractor shall obtain all necessary permits from the local municipality and governing agencies.
2. All water main construction shall be in accordance with City of South Bend Standards, American Water Works Association (AWWA) Standards, and these Drawings.
3. Water service pipe and fittings shall be type "K" copper conforming to ASTM B88 with compression fittings.
4. Water main pipe shall be 18 foot lengths of ductile iron pipe conforming to the requirements of the American National Standards Institute (ANSI) 21.51 or the American Water Works Association (AWWA) C151, thickness class 50 push–on joint pipe.
5. Water main pipe and fittings shall have a hot coal tar coating in accordance with ANSI for coal–tar dip coating for cast iron pipe and fittings, and shall also be cement–lined conforming to ANSI a21.4 or AWWA C104. rubber gasket joints shall conform to ANSI A21.11 or AWWA C111.
6. All water main fittings shall be ductile iron conforming to AWWA C111 / ANSI A21.11 and AWWA C110 / ANSI A21.10 for full body fittings or AWWA C153 / ANSI A21.53–94 for compact fittings. All fittings shall be mechanical joint and manufactured in the United States.
7. Water main pipe, valves, and associated fitting shall be encased (wrapped) in polyethylene in accordance with AWWA C105 / ANSI A21.5. The polyethylene wrap shall be V–BIO enhanced. It shall consist of three (3) layers of co–extruded linear low density polyethylene (LLDPE), fused into single thickness of not less than 8 mils. The inside surface of the polyethylene wrap to be in contact with the pipe exterior and infused with a blend of anti–microbioal biocide to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion. The wrap shall be overlapped one (1) foot in each direction at joints and secured in place around the pipe. Wrap at tap locations shall be taped tightly prior to tapping. Contractor shall make all necessary repairs to wrap following tapping operations.
8. Retainer glands shall be wedge action and provided on all valves and fittings according to the City of South Bend. Concrete thrust blocks shall only be used if designed and certified by a professional engineer registered in the State of Indiana.
9. Resilient seated gate valves shall be Clow or Mueller, epoxy coated, resilient wedge, open right, designed for 200 psi working pressure and meeting the requirement of AWWA C509. Valves shall be bronze non–rising stem, mechanical joint, 2 inch square operating nut for vertical installation with two O–ring stem seals, and rubber–coated or rubber sealed gate. Valves shall be used on water main pipe 12 inches and smaller.
10. Valve box shall be cast iron and include the bottom section, top section, and lid. Lid shall have the word "Water" cast into it. Box shall have a 5 foot burial depth. Box shall be manufactured by Tyler Pipe Industries Model 664–S or approved equal.
11. Curb valves and corporation stops shall be ball type, 1/4 turn clockwise from fully open to fully closed, and designed for 200 psi working pressure. Inlet and outlet shall have compressed connections. Curb valve box shall allow valve operation from surface with box and rod 5 foot depth of curb valve. The tee head should be parallel to pipe when open and perpendicular when closed. Only valves valves manufactured by Mueller, Ford, or McDonald shall be permitted.
12. Fire hydrant shall conform to the most recent version of AWWA C502. Hydrant to include two (2) 2½ inch nozzles with national standard thread, one (1) 5 inch pumper nozzle with South Bend Fire Department special thread; chained nozzle caps; 1 inch square operating nut to open clockwise; 1 inch square nozzle cap nuts; 360° rotatable upper barrel of break–flange design; painted red, white, and blue; extension for a 6 feet trench depth; 6 inch inlet with gasket and wedge action retainer gland. The inlet connection (shoe) shall be oversized, having outside diameter range from 6.9 inch to 7.1 inch. the nominal 5 inch pumper nozzle shall have an inside diameter of at least 4¾ inch. The main valve size shall be 5¼" inch diameter and close with and be held closed by normal water pressure. The inside of the shoe and lower plate valve shall be epoxy coated where exposed to pressurized water. Hydrants must be Clow Medallion or Mueller Super Centurion. Hydrant spacing shall be no greater than 500 feet and not placed within pedestrian access.
13. Water main and services shall have a minimum cover of 5 feet 0 inches.
14. No water services shall be extended from a bend in the water line. All services shall be extended from the water main in the street, to a curb valve approximately two (2) feet inside the proposed curb.
15. Restrained joints shall be placed at fittings, upstream and downstream of the fitting, according to City of South Bend Standards.
16. Water mains and sewer mains shall have a minimum horizontal separation of 10 feet. Whenever sewer mains must cross under the water main, a minimum vertical separation of 18 inches is required between the top of the sewer main and the bottom of the water main. If this cannot be met, then the sewer shall be constructed of ductile iron pipe (Thickness Class 50) with mechanical joints or PVC pipe (SDR 21) with compression seals for a distance of 10 feet each side of the water main. The sewer pipe shall be pressure tested in place per AWWA C600 without leakage before backfilling.
17. Contractor shall supply South Bend Water Works and the Engineer with as–built drawings at least three (3) working days prior to the static pressure test. The drawings must include all fire hydrants, main line valves, hydrant valves, and curb stops. Contractor must provide proper documentation on official letterhead including a detailed list of material and total lengths installed.
18. The City of South Bend shall be contacted to supervise and inspect the pressure testing and the disinfecting of the water main as required. Water main shall be tested in accordance with AWWA 600 for rate of ex–filtration at 150 psi hydrostatic pressure test for no less than two (2) hours and shall not exceed 10.0 gallons/inch of diameter/mile of pipe/day. All hydrants will be live during the static pressure test. Table 6A from the AWWA C600–99 will be used to determine testing allowances.
19. Contractor shall disinfect water main according to the requirements of the AWWA C651–99 and as directed by the City of South Bend Water Works.
20. Construction and testing shall be in accordance with the City of South Bend standards, specifications & drawings.

NOTE:
Curb boxes are not permitted to be located in a driveway, sidewalk, or the street. Water service shall be fitted with a water–tight plug and clearly field–marked with a 4"x4" post.



WATER SERVICE CONNECTION DETAIL
(NOT TO SCALE)

HYDRANT PAINTING:
Hydrant to be painted red, white, and blue with rust–o–lastic paint or equal product that is approved by the City of South Bend Water Works Department.

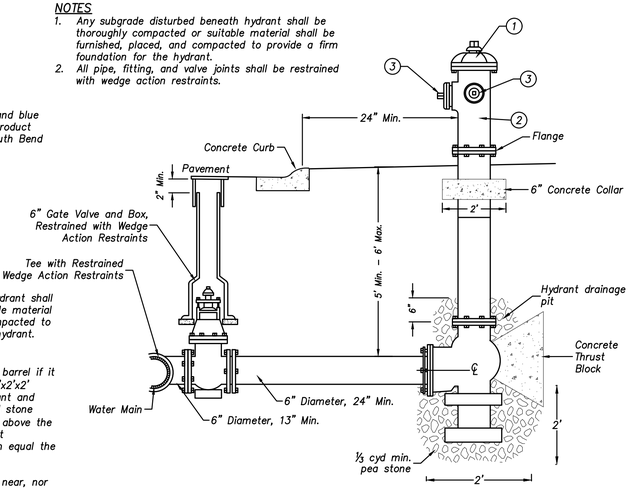
LEGEND:
① Coastal Blue 074–2561
② Fire Protection Red 074–4091
③ White 074–1651

SUBGRADE NOTE:
Any subgrade disturbed beneath hydrant shall be thoroughly compacted or suitable material shall be furnished, placed, and compacted to provide a firm foundation for the hydrant.

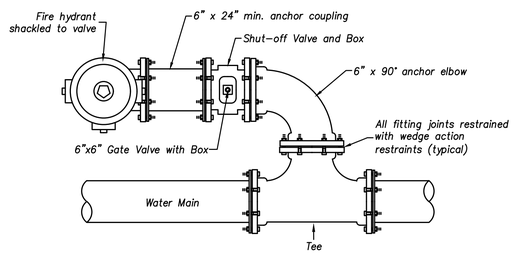
HYDRANT DRAINAGE:
To prevent freezing of the hydrant barrel if it were not drained, a drainage pit 2'x2'x2' shall be excavated below the hydrant and filled with course gravel or crushed stone mixed with sand to a depth of 6" above the hydrant opening, providing sufficient aggregate void space to more than equal the volume of the barrel.

The drainage pit should neither be near, nor have a connection to, a sewer.

NOTES
1. Any subgrade disturbed beneath hydrant shall be thoroughly compacted or suitable material shall be furnished, placed, and compacted to provide a firm foundation for the hydrant.
2. All pipe, fitting, and valve joints shall be restrained with wedge action restraints.



STANDARD FIRE HYDRANT ASSEMBLY DETAIL
(NOT TO SCALE)



STANDARD FIRE HYDRANT ASSEMBLY DETAIL
LIMITED SPACE
(NOT TO SCALE)

NO.	REVISION DESCRIPTION:	BY:	DATE:

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Grand Rapids
Manistee
Lafayette
South Bend
South Haven
Valparaiso
Engineering Architecture Land Surveying
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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
WATER MAIN DETAILS

DRAWN BY: DEF
DESIGNED BY: CAK
P.M REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
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DARYL S. KNIP REGISTERED NO. PE19900163 STATE OF INDIANA PROFESSIONAL ENGINEER
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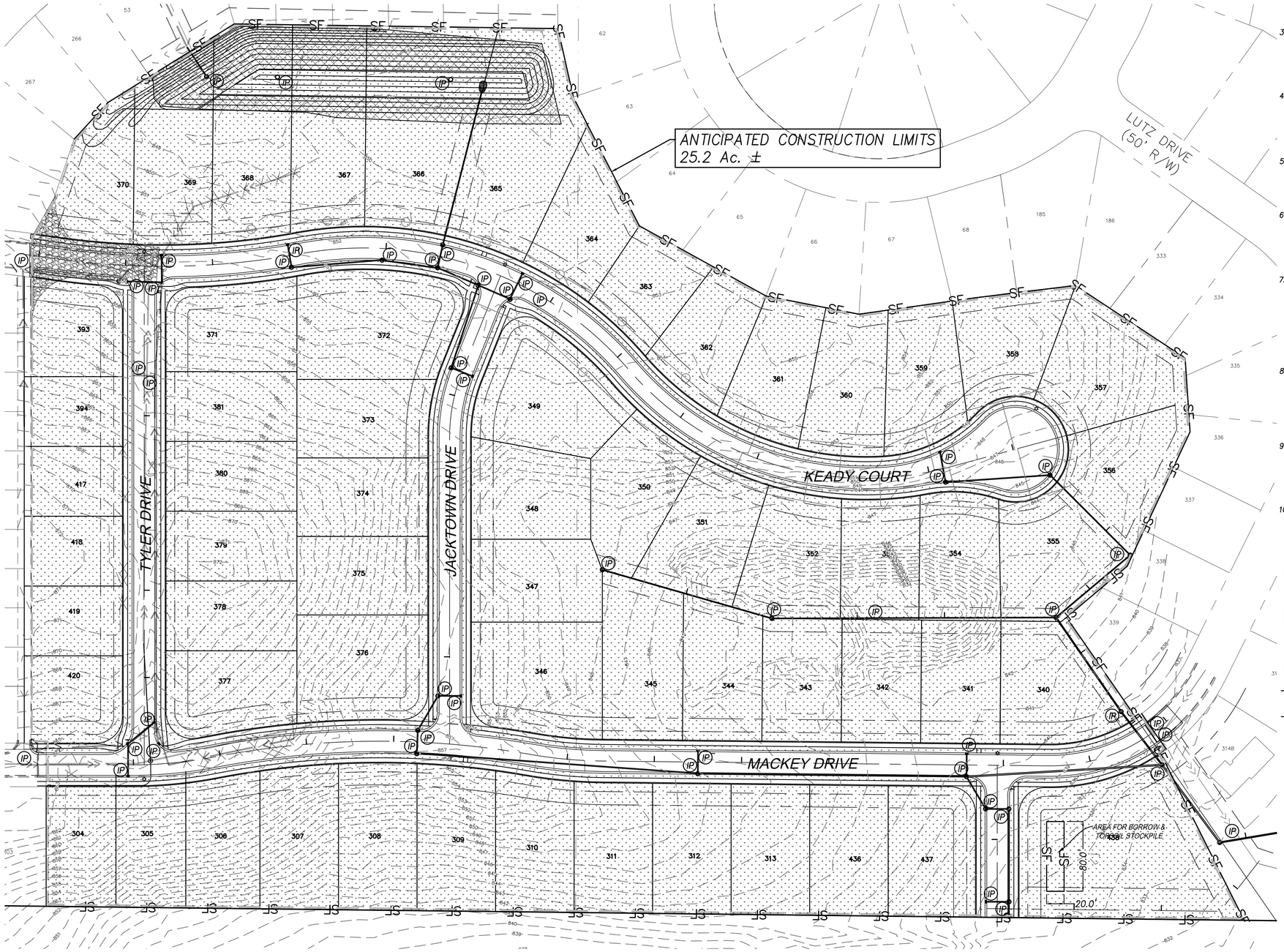
SCALE: HORZ: VERT:
ACI JOB #: 17-1180
SHEET NO.: 27 of 37



GENERAL NOTES

1. *All erosion control measures shall be implemented in accordance with this plan and shall comply with the City of South Bend and 327 IAC 15–5 or "Rule 5" as outlined in the Indiana Storm Water Quality Manual and on the following website for best management practices (BMPs): www.in.gov/idem/4902.htm.*

2. *The Owner must notify IDEM's Rule 5 Coordinator at (317) 233–1864, the local Soil & Water Conservation District (SWCD) at (574) 291–7444 Ext. 3, and the City of South Bend Engineering Department at (574) 235–9251 at least 48 hours prior to any land disturbing activity and upon completion so that final site inspections may be performed for compliance.*

3. *If construction is not completed within 5 years or if an early release from the permit is not received as specified under 327 IAC 15–5–8, the Owner shall renew the permit. Once all construction is completed for the entire project, the Owner must file the IDEM "Notification of Termination" form to the City of South Bend who will process this form and forward to IDEM.*

4. *A temporary construction entrance shall be installed and maintained to minimize the amount of soil tracked onto public/private roadways. A tentative location has been shown on the drawing. The Contractor shall submit actual location(s) to the Owner for approval. Entrance(s) shall be installed prior to any other construction activity.*

5. *Storm sewer inlets within the construction limits and existing inlets nearby that may be impacted by construction shall be protected as specified on this plan or an approved equal. The intent of this measure is to prevent sediment from entering the drainage system.*

6. *Until the project is accepted by the Owner, the Contractor shall maintain all erosion control measures to prevent sediment from entering public and private storm sewers and from leaving the project site. Contractor shall implement and maintain any additional measures at the request of the Local and/or State Stormwater and Erosion Control Inspectors at no additional cost.*

7. *The location of silt fence shown on the drawing shall act as a guide for the Contractor to follow. Actual field conditions shall dictate the location and amount of silt fence required to prevent sediment from entering public and private storm sewers and from leaving the project site. Silt fence shall also be installed at specific down slope areas as shown on the plan. Silt fence or other appropriate sediment barriers shall be installed a minimum of 10 feet from the toe of slope of any onsite or offsite soil stockpile, borrow and/or disposal areas.*

8. *Locations for temporary topsoil/soil stockpiling, concrete washout, temporary construction staging, and dewatering operations (if required) shall be determined by the Contractor and Owner prior to construction. These locations shall be provided to the City of South Bend Engineering Department prior to construction of said items and adequate protection installed to protect public and private drainage systems.*

9. *All areas disturbed by construction shall be stabilized with seeding measures. Temporary Seeding shall take place as soon as possible on any bare or thinly vegetated areas which have less than 70 percent cover and will remain inactive for a period of 15 days or more. Temporary and Permanent Seeding shall be in accordance with the Indiana Storm Water Quality Manual.*

10. *Erosion Control Blankets, where specified and on any slope 4:1 or greater, shall be North American Green DS–150 or approved equal. Contractor shall follow the manufacturer's guidelines for installation and maintenance (See Detail on Sheet 29).*

INSPECTIONS / REPORTING

The Owner shall require the Contractor to review all erosion control devices on a weekly basis and/or within 24 hours of every ½ inch rainstorm event. The Contractor shall use the approved City of South Bend Site Inspection form. Any resulting problems shall be immediately reviewed and corrected by the Contractor.

LEGEND

- SF — *Temporary Silt Fence*
- —/—/— *Temporary Construction Fence*
- (IP) *Temporary Inlet Protection*
- *Temporary Construction Entrance*
- *Lawn*
- *Erosion Control Blankets*
- *Rip Rap*

NO.	REVISION DESCRIPTION:	BY:	DATE:

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Engineering Architecture Land Surveying
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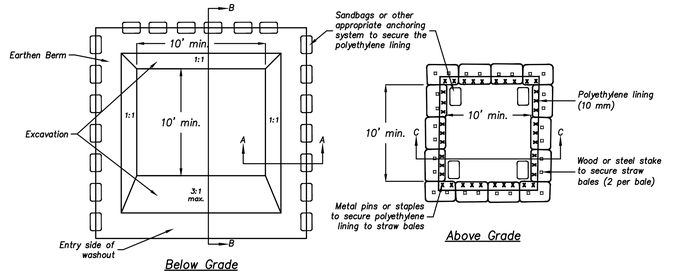
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

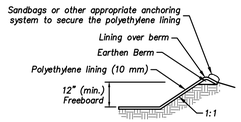
SHEET TITLE:
STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP REGISTERED NO. PE19900163 STATE OF INDIANA PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE: HORZ: 1" = 60' VERT:
ACI JOB # 17-1180
SHEET NO. 28 of 37

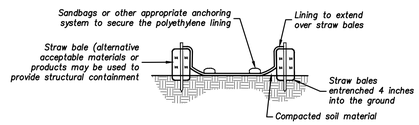


Below Grade

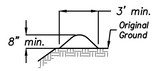
Above Grade



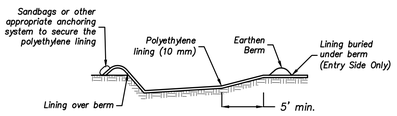
Section A–A



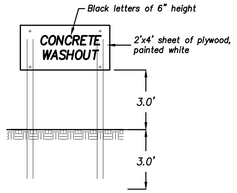
Section C–C



Typical Section Earthen Berm



Section B–B



Concrete Washout Sign Detail

INSTALLATION NOTES

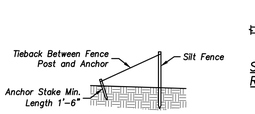
1. Install concrete washout sign within 30' of temporary washout facility.
2. Layout of washout facility may vary depending on space available within construction staging area. Washout facilities shall be designated by the permit holder before work begins and shall be located in an appropriate area where the waste resulting from the washout cannot enter sewer systems or local waterways.
3. Waste from the washout facilities shall be disposed of in a approved manner according to state laws.

MAINTENANCE NOTES

1. Inspect daily and after each storm event – Inspect the integrity of the overall structure and containment system where applicable.
2. Inspect the system for leaks, spills, and tracking of soil by equipment, and the polyethylene lining for failure, including tears and punctures.
3. Once concrete wastes harden, remove and dispose of the material.
4. Excess concrete should be removed when the washout system reaches 50 percent of the design capacity. Use of the system should be discontinued until appropriate measures can be initiated to clean the structure. Prefabricated systems should also utilize this this criterion, unless the manufacturer has alternate specifications.
5. Upon removal of the solids, inspect the structure. Repair the structure as needed or construct a new system.
6. Dispose of all the concrete in a legal manner. Reuse the material on site, recycle, or haul the material to an approved construction/demolition landfill site. Recycling of material is encouraged. The waste material can be used for multiple applications including but not limited to roadbeds and building. The availability for recycling should be checked locally.
7. The plastic liner should be replaced after every cleaning; the removal of material will usually damage the lining.
8. The concrete washout system should be repaired or enlarged as necessary to maintain capacity for concrete waste.
9. Concrete washout systems are designed to promote evaporation. However, if the liquids do not evaporate and the system is near capacity it may be necessary to vacuum or remove the liquids and dispose of them in an acceptable method. Disposal may be allowed at the local sanitary sewer authority provided their national pollutant discharge elimination system permits allow for acceptance of this material. Another option would be to utilize a secondary containment system or basin for further dewatering.
10. Prefabricated units are often pumped and the company supplying the unit provides this service.
11. Inspect construction activities on a regular basis to ensure suppliers, contractors, and others are utilizing designated washout areas. If concrete waste is being disposed of improperly, identify violators and take appropriate action.
12. When concrete washout systems are no longer required, the concrete washout system shall be closed. Dispose of all hardened concrete and other materials used to construct the system.
13. Holes, depressions and other land disturbances associated with the system should be backfilled, graded, and stabilized.

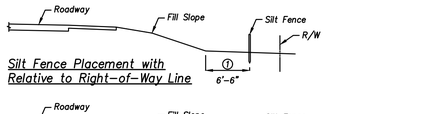
CONCRETE WASHOUT STRUCTURE

(NOT TO SCALE)

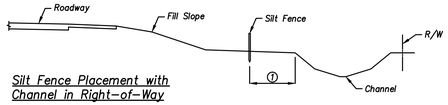


Tieback Detail

Note:
The spacing of the tiebacks shall equal the spacing of the posts. Additional post depth or tiebacks may be required in unstable soils.

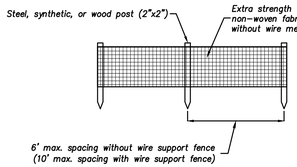


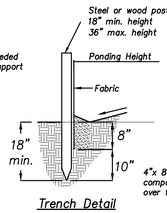
Silt Fence Placement with Relative to Right–of–Way Line



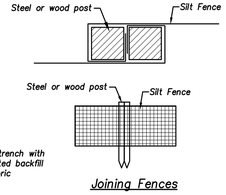
Silt Fence Placement with Channel in Right–of–Way

① Dimensions will vary based on right–of–way availability. Silt fence shall be placed as close as possible to edge of construction limits. 10' minimum beyond toe of slope is recommended to provide broad, shallow sediment pool.





Trench Detail



Joining Fences

INSTALLATION NOTES

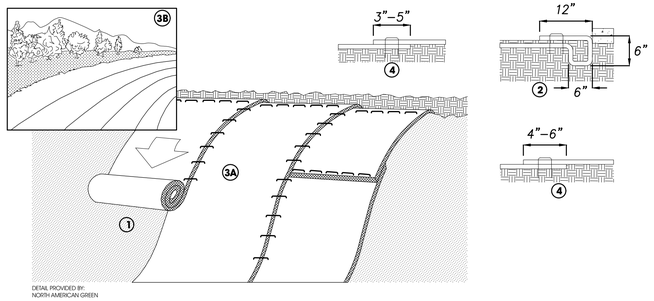
1. Install fencing parallel to slope contour by digging a minimum 8" deep x 4" width trench along proposed fence line. Pound posts in trench 6"–8" or until secure. Be sure to stretch fabric taut when pounding posts. Fabric to be placed in up slope side of posts. Drape loose end of geotextile fabric into trench. Backfill and compact soil on both sides.
2. Join fences by placing the end post of the second fence inside the end post of the first fence. Rotate both posts at least 180° in a clockwise direction to create a tight seal with the fabric material. Drive both posts about 10" into the ground and bury flap.
3. Turn ends of fence up slope such that point of contact between ground and bottom fence end terminates at higher elevation than top of fence at lowest point.

MAINTENANCE NOTES

1. Inspect within 24 hours following each ½" (Min.) rain event and at least once every seven days. If fence fabric tears, starts to decompose, or in anyway becomes ineffective, replace the affected portion immediately.
2. Remove deposited sediment when it is causing the filter fabric to bulge or when it reaches one–half the height of the fence at its lowest point. When the contributing drainage area has been stabilized, remove the fence and sediment deposits, grade the site to blend with the surrounding area and stabilize.

TEMPORARY SILT FENCE DETAIL

(NOT TO SCALE)



INSTALLATION NOTES

1. Prepare soil before installing blankets, including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the slope by anchoring the blanket in a 6" deep x 6" wide trench with approximately 12" of blanket extended beyond the up–slope portion of the trench. Anchor the blanket with a row of staples/stakes approximately 12" apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil and fold remaining 12" portion of blanket back over seed and compacted soil. Secure blanket over compacted soil with a row of staples/stakes spaced approximately 12" apart across the width of the blanket.
3. Roll the blankets (A) down or (B) horizontally across the slope. Blankets will unroll with appropriate side against the soil surface. All blankets must be securely fastened to soil surface by placing staples/stakes in appropriate locations as per by manufacturer's recommendation.
4. The edges of parallel blankets must be stapled with approximately 3"–5" overlap. To ensure proper seam alignment, place the edge of the overlapping blanket (blanket being installed on top) even with the colored seam stitch on the previously installed blanket.
5. Splicing consecutive blankets down the slope shall be done in a shingle style with the up–slope blanket overlapping the down–slope blanket 3" minimum. Staple through overlapped area, approximately 12" apart across entire blanket width.
6. In loose soil conditions the use of staple or stake lengths greater than 6" may be necessary to properly secure the blankets.

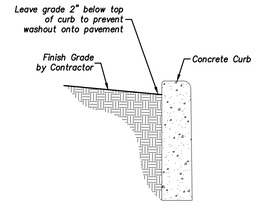
GENERAL NOTES

1. Install erosion control blanket to prevent erosion on slopes 3:1 or steeper, as well as other areas prone to erosion, to aid in establishing vegetation and preventing soil movement.
2. Installation instructions above are provided for reference only. Installation should be completed in accordance with erosion control blanket manufacturer's specifications.
3. Model and manufacturer to be selected based on project slopes, vegetation, and soil conditions.

SLOPE STABILIZATION

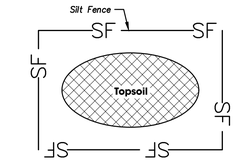
EROSION CONTROL BLANKETS

(NOT TO SCALE)



CURB BACKFILL DETAIL

(NOT TO SCALE)

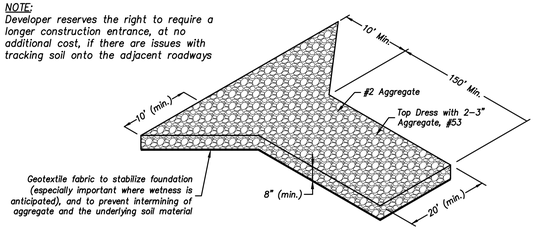


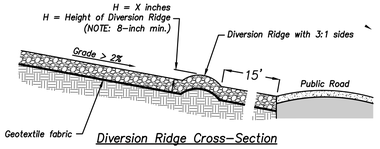
TOPSOIL STOCKPILE DETAIL

(NOT TO SCALE)

NOTE:
If straw bales are utilized instead of silt fence, the bales shall be placed a minimum of 10 feet from the toe of slope. Each bale shall entrenched a minimum of 4 inches into subsoil and shall be anchored with (2) 36–inch long steel rebars or 2x2 inch wood stakes driven through the bale. The minimum bale size shall be 14"x18"x36".

NOTE:
Developer reserves the right to require a longer construction entrance, at no additional cost, if there are issues with tracking soil onto the adjacent roadways





Diversion Ridge Cross–Section

REQUIREMENTS

Materials: 2–3 in. dia. washed stone (INDOT CA No. 2) over a stable foundation.
Thickness: 6 in. minimum.
Width: See minimums on plan below or full width of entrance/exit roadway, whichever is greater.
Length: 50 ft. minimum for small sites (less than 2 acres); 150 ft. minimum for large sites (2 acres or larger). The length can be shorter for small sites such as for an individual home, but shall be of sufficient length to prevent tracking.
Washing Facility (optional): Level area with 3 in. washed stone minimum or commercial rack, and waste water diverted to a sediment trap or basin.
Geotextile Fabric Underliner: Required to provide greater bearing strength,

INSTALLATION NOTES

1. Avoid locating on steep slopes or at curves in public roads.
2. Remove all vegetation and other objectionable material from the foundation area, and grade and crown for positive drainage.
3. If slope towards the road exceeds 2% construct an 8 in. high diversion ridge with 3:1 side slopes across the foundation area about 15 ft. from the entrance to divert runoff away from the road (see profile).
4. Install culvert pipe under the pad if needed to maintain proper public road drainage.
5. Place stone to dimensions and grade shown in the erosion/sediment control plan, leaving the surface smooth and sloped for drainage.
6. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

MAINTENANCE

1. Inspect entrance pad, sediment disposal area, and all other erosion control measures once every seven days and within 24 hours following each ½" storm event or heavy use. Required repairs should be completed immediately.
2. Reshape pad as needed for drainage and runoff control.
3. Topdress with clean stone as needed.
4. Immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping; at a minimum this should be performed daily. Flushing should only be used if the water is conveyed into a sediment trap or basin.
5. Repair any broken road pavement immediately.

TEMPORARY CONSTRUCTION ENTRANCE

(NOT TO SCALE)

NO.	REVISION DESCRIPTION:	BY:	DATE:

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Engineering Architecture Land Surveying
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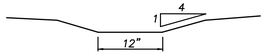
PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

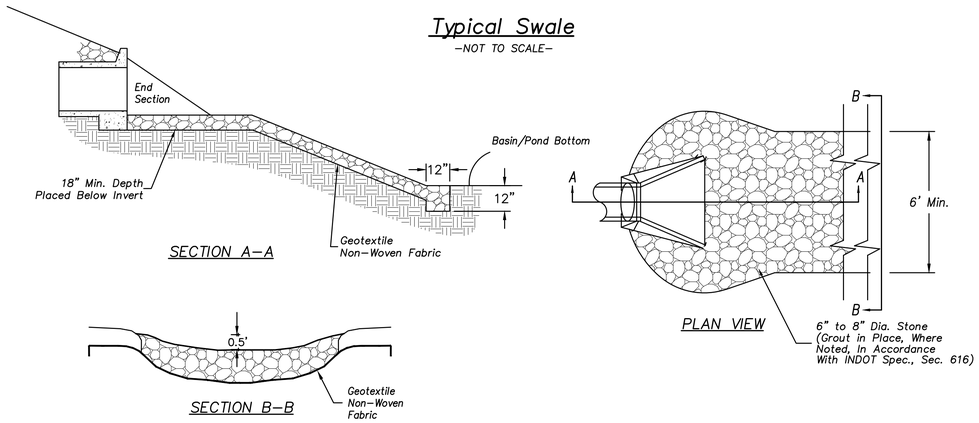
SHEET TITLE:

DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:
DARYL S. KNIP REGISTERED No. PE19900163 STATE OF INDIANA PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE: HORZ: VERT:
ACI JOB #: 17-1180
SHEET NO.: 29 of 37



Typical Swale

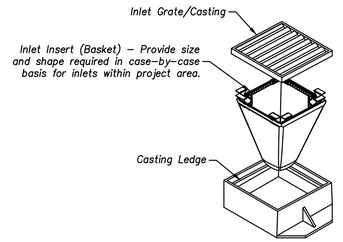
–NOT TO SCALE–



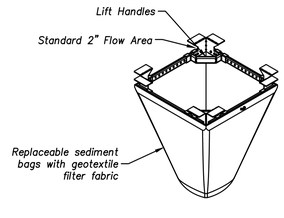
ROCK SPILLWAY AT DISCHARGE DETAIL

–NOT TO SCALE–

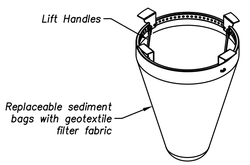
1. ROCK SPILLWAY TO CONSIST OF 6" TO 8" DIA. STONE WITH 12" MIN. DEPTH.
2. THE STONE SHALL BE UNDERLINED WITH GEOTEXTILE FABRIC.
3. STONE TO EXTEND TO POND BOTTOM, AS SHOWN, OR 2 FEET BELOW WATER ELEV.



Installation Detail



Typical Rectangular Inlet Filter



Typical Round Inlet Filter

INSTALLATION NOTES

1. Install per manufacturer recommendations.
2. Remove the grate from the casting or concrete drainage structure.
3. Clean the ledge of the casting frame or drainage structure to ensure it is free of stone and dirt.
4. Drop inlet insert (basket) through the clear opening and be sure the suspension hangers rest firmly on the inside ledge of the casting.
5. Replace the grate and confirm it is elevated no more than thickness of insert hangers.

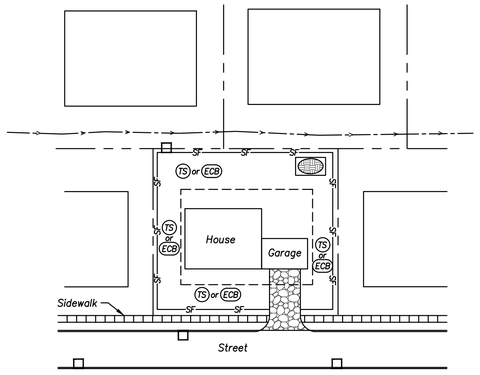
MAINTENANCE NOTES

1. Site inspection should occur at least once every seven days and within 24 hours following each ½" or more rain event.
2. Empty the sediment bag if more than half filled with sediment and debris.
3. Remove the grate, engage the lifting bars or handles and lift from the drainage structure.
4. Dispose of the sediment or debris in accordance with EPA guidelines.
5. Remove any caked on silt from the sediment bag and reverse flush the bag with medium spray for optimal filtration.
6. Replace the bag if torn or punctured to ½" diameter or greater on the lower half of the bag.
7. When the contributing drainage area within 50' upstream of the inlet has been stabilized, remove insert (basket) and properly dispose of sediment deposits.

TEMPORARY INLET PROTECTION AFTER CURB/PAVING

FRAME AND SEDIMENT BAG INSERT

(NOT TO SCALE)



LEGEND

- Property Lines
- Constructed Building Pad
- SF — Silt Fence or Filter Sock
- Stream/Ditch
- Gravel Construction Entrance
- Soil Stockpile Protection
- Inlet Protection
- TS — Temporary Seeding
- ECB — Erosion Control Blanket

NOTES

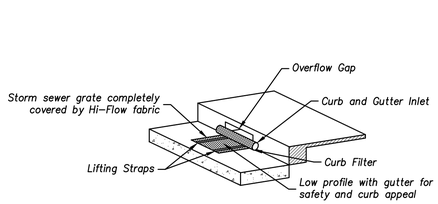
1. Erosion control measures must be functional and maintained throughout construction.
2. Erosion Control Blanket shall be used on slopes greater than 3:1 per Std. 7–7.
3. Install Silt Fence or Filter Sock as necessary according to Std. 7–4 and 7–5.
4. Post Notice of Intent and place rain gauge on site prior to start of construction.
5. Remove sediment from street at the end of each work day. Do not flush bulk sediments with water.

TYPICAL INDIVIDUAL LOT EROSION AND SEDIMENT CONTROL MEASURES

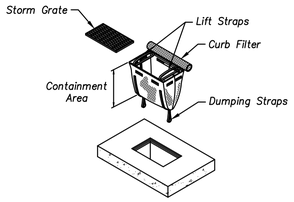
(NOT TO SCALE)

INSPECTIONS / MONITORING

CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING, MONITORING, AND MAINTAINING ALL EROSION CONTROL DEVICES AS REQUIRED FOR THIS PROJECT. CONTRACTOR SHALL MONITOR DEVICES FOR SOIL EROSION ON A WEEKLY BASIS AND/OR WITHIN 24 HOURS OF EVERY ½ INCH RAINSTORM EVENT, AND USE THE SHOWN EVALUATION FORM FOR ALL SITE REVIEWS. ANY RESULTING PROBLEMS SHALL BE IMMEDIATELY REVIEWED AND CORRECTED AT NO ADDITIONAL COST TO THE OWNER.



Detail of Curb Inlet Sediment Control Device with Curb Filter



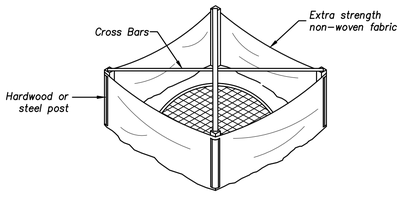
Detail of Inlet Sediment Control Device with Curb Filter

MAINTENANCE NOTES

1. Site inspection should occur at least once every seven days and within 24 hours following each ½" or more rain event.
2. Empty the sediment bag if more than half filled with sediment and debris.
3. Remove the grate, engage the lifting bars or handles and left from the drainage structure.
4. Dispose of the sediment or debris in accordance with EPA guidelines.
5. Remove any caked on silt from the sediment bag and reverse flush the bag with medium spray for optimal filtration.
6. Replace the bag of torn or punctured to ½" diameter or greater on the lower half of the bag.
7. When the contributing drainage area within 50' upstream of the inlet has been stabilized, remove insert (basket) and properly dispose of sediment deposits.

INLET PROTECTION ALONG CURB

(NOT TO SCALE)



INSTALLATION NOTES

1. Dig trench around perimeter of inlet.
2. Drive posts into soil and stretch geotextile fabric tightly between each post.
3. Place bottom 12" of geotextile fabric into trench.
4. Backfill with soil material and compact. Brace as necessary.
5. The frame shall be wrapped with one continuous piece of geotextile fabric and a 2' overlap shall be provided.

MAINTENANCE NOTES

1. Inspection should occur at least once a week and following each ½" or more rain event.
2. If fence fabric tears, starts to decompose, or in anyway becomes ineffective, replace the affected portion immediately.
3. Remove deposited sediment to provide storage for next storm event.
4. When the contributing drainage area has been stabilized, remove the geotextile box and sediment deposits, final grade area, and stabilize immediately.

TEMPORARY INLET PROTECTION PRIOR TO CURB/PAVING

SILT FABRIC CURB SEDIMENT BARRIER

(NOT TO SCALE)

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PROJECT:

LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

SHEET TITLE:

DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018

SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:

DATE: 10/28/2020

SCALE:
HORZ:
VERT:

ACI JOB # 17-1180

SHEET NO. 30 of 37

CONSTRUCTION / STORM WATER POLLUTION PREVENTION PLAN

ASSESSMENT OF CONSTRUCTION PLAN ELEMENTS (SECTION A)

A1 PLAN INDEX SHOWING LOCATIONS OF REQUIRED ITEMS

This Sheet.

A2 11x17 INCH PLAT SHOWING BUILDING LOT NUMBERS/BOUNDARIES AND ROAD LAYOUT/NAMES

See Sheets 3–4 "Secondary Plat".

A3 NARRATIVE DESCRIBING PROJECT NATURE AND PURPOSE

The proposed project includes Phase IV, Section 2 of a single–family subdivision. Construction includes earthwork and construction of new City roadways, storm sewer, sanitary sewer, water main and a retention basin.

A4 VICINITY MAP SHOWING PROJECT LOCATION

See Sheet 1 "Cover Sheet".

A5 LEGAL DESCRIPTION OF THE PROJECT SITE

See Sheet 3 "Secondary Plat" for legal description.

LATITUDE: 41° 36' 06" N

LONGITUDE: 86° 15' 54"W

A6 LOCATION OF ALL LOTS AND PROPOSED SITE IMPROVEMENTS

See Plan and Profile Sheets 10–20

A7 HYDROLOGIC UNIT CODE–14 DIGIT

HUC14 04050001240030.

A8 NOTATION OF ANY STATE OR FEDERAL WATER QUALITY PERMITS

Not aware of any at this time.

A9 SPECIFIC POINTS WHERE STORM WATER DISCHARGE WILL LEAVE THE SITE

See Drainage Plan Sheets 7–9

A10 LOCATION AND NAME OF ALL WETLANDS, LAKES AND WATER COURSES ON AND ADJACENT TO THE SITE

None

A11 IDENTIFY ALL RECEIVING WATERS

Groundwater and ultimately the St. Joseph River.

A12 IDENTIFICATION OF POTENTIAL DISCHARGES TO GROUNDWATER

The proposed retention basin is a discharge to groundwater via stormwater percolation into the subsoils.

A13 100 YEAR FLOODPLAINS, FLOODWAYS, AND FLOODWAY FRINGES

See Sheet 32 – 100 year flood not present, published FEMA FIRM Map identifies the project site located in "No Special Flood Hazard Area".

A14 PRE–CONSTRUCTION AND POST CONSTRUCTION ESTIMATE OF PEAK DISCHARGE

10yr pre = ±18.3 cfs 10yr post = ±58.5 cfs

A15 ADJACENT LAND USE, INCLUDING UPSTREAM WATERSHED

SOUTH – Vacant Farmland WEST – Residential

NORTH – Residential EAST – Residential

A16 LOCATIONS AND APPROXIMATE BOUNDARIES OF ALL DISTURBED AREAS

See "Anticipated Construction Limits" on Sheet 27.

A17 IDENTIFICATION OF EXISTING VEGETATIVE COVER

Remnants of a corn field.

A18 SOILS MAP INCLUDING DESCRIPTIONS AND LIMITATIONS

See Sheet 32 for Soils Map.

A19 LOCATIONS, SIZE AND DIMENSIONS OF PROPOSED STORM WATER SYSTEMS

See Drainage Plan Sheet 7–9 .

A20 PLAN FOR ANY OFF–SITE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT

None are anticipated.

A21 LOCATIONS OF PROPOSED SOIL STOCKPILES, BORROW AND/OR DISPOSAL AREAS

See Sheet 28 – General Note #8.

A22 EXISTING SITE TOPOGRAPHY AT AN INTERVAL APPROPRIATE TO SHOW DETAILED DRAINAGE PATTERNS

See Plan and Profile Sheets 10–20 and Sheet 28.

A23 PROPOSED FINAL TOPOGRAPHY AT AN INTERVAL APPROPRIATE TO SHOW DETAILED DRAINAGE PATTERNS

See Drainage Plan Sheet 7–8.

ASSESSMENT OF STORM WATER POLLUTION PREVENTION CONSTRUCTION COMPONENT (SECTION B)

B1 DESCRIPTION OF POTENTIAL POLLUTANT SOURCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES

The primary pollutant associated with construction activities is sediment. Additional pollutants may be generated by construction vehicle operation and maintenance (e.g. fueling, changing hydraulic fluids and oils); concrete washout; improper storage of construction materials; improper disposal of construction trash and debris; improper application or over application of fertilizers and pesticides; sanitary chemicals and waste from portable toilets, and improper storage, application, and disposal of soluble materials or other materials that may be mobilized by storm water runoff. Equipment and fuel shall be stored in a centralized location and the Contractor shall institute methods and procedures to prevent discharge of pollutants.

B2 SEQUENCE DESCRIBING STORM WATER QUALITY MEASURE IMPLEMENTATION RELATIVE TO LAND DISTURBING ACTIVITIES

See "Erosion and Sediment Control Sequence and Implementation" on this sheet.

B3 STABLE CONSTRUCTION ENTRANCE LOCATIONS AND SPECIFICATIONS

See Sheet 28 and General Note #4 on the same sheet.

B4 SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS

Preliminary grading and stabilization must be completed to ensure adequate drainage to the temporary or permanent runoff conveyance facilities. Silt fencing must also be implemented prior to any construction activity to ensure silt collection. Stabilize disturbed areas directly after earth disturbing activities, apply temporary seed to areas scheduled to be idle for up to one year. Permanently seed all areas that are at final grade, phase projects where each subsequent phase will not begin for 8 months or more, and areas to be idle for more than one year. Erosion control measures shall be installed in sheet flow areas. See SWPPP Sheets for details as well as installation and maintenance procedures. Seeding/Sodding shall be in accordance with the Indiana Storm Water Manual.

B5 SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS

Adequate erosion control measures must be installed within concentrated flow areas prior to opening for runoff acceptance. Drainage swales shall be stabilized with erosion control blankets, where specified, prior to opening to drainage flow, and drainage basins with side slopes of 4:1 or steeper shall be stabilized with erosion control blankets (or as specified on the plan) prior to opening. If there are emergency spillways proposed, these shall contain adequate riprap to control intense channelized flows from runoff. Stabilize disturbed areas directly after earth disturbing activities, temporarily seed areas scheduled to be idle for up to one year. Permanently seed all areas that are at final grade, phase projects where each subsequent phase will not begin for 8 months or more, and areas to be idle for more than one year. See SWPPP Sheets for erosion control measures to be installed in concentrated flow areas, and for details as well as installation and maintenance procedures.

B6 STORM WATER INLET PROTECTION MEASURE LOCATIONS AND SPECIFICATIONS

SEE SWPPP Sheets for locations, types, and protection measures.

B7 RUNOFF CONTROL MEASURES

See SWPPP Sheets.

B8 STORM WATER OUTLET PROTECTION SPECIFICATIONS

See Sheet 30.

B9 GRADE STABILIZATION STRUCTURE LOCATIONS AND SPECIFICATIONS

NONE

B10 LOCATION, DIMENSIONS, SPECIFICATIONS AND CONSTRUCTION DETAILS OF EACH STORM WATER QUALITY MEASURE

See SWPPP Sheets and associated erosion control details.

B11 TEMPORARY SURFACE STABILIZATION METHODS APPROPRIATE FOR EACH SEASON

Shall be in accordance with the Indiana Storm Water Manual.

B12 PERMANENT SURFACE STABILIZATION SPECIFICATIONS

Shall be in accordance with the Indiana Storm Water Manual.

B13 MATERIAL HANDLING AND SPILL PREVENTION

Construction materials that may be located onsite include vehicle lubricants, oils, vehicular fuels, concrete wash–out, acids, curing compounds, paints, mulch, pesticides, herbicides, fertilizer, and trash. Any toxic waste materials are to be properly disposed of in an approved manor in accordance with local, state, and federal laws.

These materials should be stored in a manner that prevents or minimizes the chance that a spill will reach soils, groundwater or surface water. Contractor shall have absorption spill clean–up materials and spill kits available in the storage areas at all times and utilize secondary containment by means of installing an impermeable berm around the construction site refueling and maintenance areas, and oil and chemical drums storage areas to prevent stormwater run–on, runoff, and to contain spills. Contractor shall select and designate an area onsite for these areas and utilize drip pans or absorbent pads during vehicle and equipment maintenance work. Contractor shall inspect these areas daily when in use, and weekly when not in use. Materials stored inside shall be placed in a manner to prevent a spill from migrating outside the confines of the building or into any drain leaving the building and discharging to soils, groundwater or surface water.

If a spill does occur, then the spill must be contained immediately utilizing appropriate response techniques including diking and absorbents. Clean up of the spill should occur as soon as possible once the spill is stabilized and contained. Spills shall be cleaned up using acceptable methods such as, absorbents on impervious surfaces or removal of contaminated soils. In all cases cleanup standards must adhere to local, state and federal requirements. Failure to clean up any spill is a violation of the Indiana State Spill Rule (327 IAC 2–6.1), which is enforced by the Indiana Department of Environmental Management (IDEM). Certain spills must be reported to the local response agency, Local Emergency Planning Committee and/or IDEM. Initial calls should be made to the 911 system if the spill exceeds reportable quantities or is a threat to public safety. The 911 system will typically notify the City of South Bend Fire Department (574–235–9255). IDEM (1–888–233–7745) or the National Response Center (1–800–424–8802) can typically assist with information on clean up operations or clean up Contractors. The following information will likely need to be provided: time of spill, location of spill, material, source of spill, approximate volume and length of spillage, weather conditions at time of spill, personnel present at time of spill, and all action taken for post spill cleanup.

Small spills and leaks of these materials onto non–paved areas shall be shoveled into containers or dumpsters and be properly disposed of in an approved manor in accordance with local and state laws.

All spills that occur near an inlet to the stormwater conveyance system must have "curbing" implemented immediately. "Curbing" is the use of a barrier (absorbent material) which prevents the spill from making contact with the stormwater conveyance system or stormwater runoff.

Contractor shall contact a Waste Recovery Agency immediately for removal of contaminates and coordination of monitoring the site during cleanup until all the hazardous material has been removed. Contractor shall cooperate with IDEM and the City of South Bend during and after the spill to insure all required cleanup and filing reports are properly submitted.

The Developer/Owner shall be continually informed of any contamination concerns occurring on the site. The Construction Manager shall keep a list onsite of qualified Contractors for spill remediation. A spill prevention and control plan should be developed and utilized prior to any emergency. All site personnel, including maintenance employees, shall be made aware of this plan and proper spill prevention and remediation techniques. All materials used to absorb spills shall be properly disposed of in an approved manor in accordance with local and state laws. Do not flush spill materials with water unless directed to do so by a governing agency. It is important that all manufacturer's instructions be followed when using or applying all fertilizers, herbicides, and pesticides.

B14 MONITORING AND MAINTENANCE GUIDELINES FOR EACH PROPOSED POLLUTION PREVENTION MEASURE

See SWPPP Details for maintenance requirements for each storm water quality measure. Contractor is responsible for establishing, monitoring, and maintaining all erosion control devices as required for this project. Contractor shall monitor devices for soil erosion on a weekly basis and/or within 24 hours of every ½ inch rainstorm event, and use the shown evaluation form for all site reviews. Any resulting problems shall be immediately reviewed and corrected at no additional cost to the owner.

B15 EROSION AND SEDIMENT CONTROL SPECIFICATIONS FOR INDIVIDUAL BUILDING LOTS

N/A

ADDITIONAL EROSION AND SEDIMENT CONTROL INFORMATION (WHERE APPLICABLE)

Sediment Control Associated With Dewatering And Directional Boring Operation

Sediment laden water shall not be pumped to storm sewer outlets or natural drainage ways. Disposal shall be confined to areas not subject to sheet flow runoff where the effluent can be dried out. This restriction shall apply to areas where lime stabilization has been implemented. Maintenance and inspection are required for proper de–watering procedures.

ASSESSMENT OF STORM WATER POLLUTION PREVENTION POST CONSTRUCTION COMPONENT (SECTION C)

C1 DESCRIPTION OF POTENTIAL POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH THE PROPOSED LAND USE

Potential pollutants generally associated with this proposed land use include trash, fertilizers, herbicides, pesticides, other lawn treatment applications, oils and liquids, fuels, and leaking vehicles.

C2 SEQUENCE DESCRIBING STORM WATER QUALITY MEASURE IMPLEMENTATION

Following construction, all erosion control measures shall be inspected and maintained until all permanent measures and vegetation have been established and construction, including landscaping, is complete. Individual erosion control measures may be removed, following permanent inlet protection, seeding, and after sufficient vegetation has been established in an area to prevent silt and soil erosion into the storm sewer system.

Inspection and maintenance of all common areas, landscape areas, and infrastructure improvements are the responsibility of the Developer/Owner and or local agencies taking jurisdiction of the installed infrastructure improvements.

C3 DESCRIPTION OF PROPOSED POST CONSTRUCTION STORM WATER QUALITY MEASURES

Proposed post construction stormwater quality measures include establishing the proper vegetative ground cover for reducing sheet flow velocity and for aiding infiltration to control the transfer of pollutants from the project site. All disturbed areas shall be stabilized as specified in Chapter 7 – Surface Stabilization of the Indiana Storm Water Manual.

C4 LOCATION, DIMENSIONS, SPECIFICATIONS, AND CONSTRUCTION DETAILS OF EACH STORM WATER QUALITY MEASURE

See Sheet SWPPP Sheets for further information.

This project includes the following storm water quality measures: Multiple Retention Areas, Storm Sewer Inlets, and Storm Sewer Pipe.

C5 DESCRIPTION OF MAINTENANCE GUIDELINES FOR PROPOSED POST CONSTRUCTION STORM WATER QUALITY MEASURES

See "MAINTENANCE NOTES" on SWPPP Sheets. In addition, the storm sewer and drainage system, including inlets, pipes, end sections, and retention areas, rock check dams, shall be inspected and any sediment deposits, trash, or debris shall be removed as soon as possible. In addition, grass areas shall be maintained on a regular mowing cycle. Trash and debris shall be removed from seeded, landscape, and paved areas as necessary.

EROSION AND SEDIMENT CONTROL SEQUENCE AND IMPLEMENTATION BY CONTRACTOR

1. *Contractor to schedule a Pre–Construction Meeting with the City of South Bend Engineering Department and St. Joseph County Soil and Water Conservation District (SWCD) prior to any land disturbance activities.*
2. *Contractor shall notify IDEM, City of South Bend, and St. Joseph County SWCD at least 48 hours in advance of commencing with construction activities.*
3. *Install temporary construction entrance(s) as shown.*
4. *Install silt fencing as shown and protection devices around existing storm inlets with open grates.*
5. *Dust shall be kept to a minimum by utilizing water sprinkling, calcium chloride, vegetative cover, spray on adhesives, or other approved methods.*
6. *Identify Contractor staging, concrete washout areas, material storage, and topsoil stockpile areas. Each area shall be properly protected and delineated prior to construction.*
7. *The "Rule 5" Notice of Intent (NOI), SWPPP, and who to contact regarding the SWPPP shall be posted at the job site.*
8. *Contact Indiana Underground Plant Protection Systems, Inc. (INDIANA 811) for underground utility locations. (1–800–382–5544).*
9. *Strip and stockpile any existing topsoil onsite at a location determined by the Developer/Owner.*
11. *Begin earthwork operations for the project and refer to the SWPPP drawings for "General Seeding and Surface Stabilization Procedures" for temporary seeding guidelines. Install erosion control blankets and rock check dams as specified on the drawings on the SWPPP drawings.*
12. *Install dewatering measures as necessary for the proposed construction in accordance with all governing agencies regulations and requirements.*
13. *Repair any silt fencing if damaged. If silt is 1/3 height of fabric, remove silt and replace/repair fencing as necessary.*
14. *Repair any rock check dams if necessary. Check dams for damage once every 7 days and after every major (over ½ in of rainfall) storm event.*
15. *Begin construction of utility infrastructure and install inlet protection around new storm inlets.*
16. *Begin construction of building, pavements, sidewalks, and final grading of yard areas.*
17. *Immediately after final grading, apply surface stabilization practices on all graded areas, using permanent measures in accordance with the SWPPP drawings for "General Seeding and Surface Stabilization Procedures". However, if weather delays permanent stabilization, temporary seeding and/or mulching may be necessary as a provisional measure. Also stabilize using temporary seeding/mulching or other suitable means any disturbed area where active construction will or has not taken place for 15 working days.*
18. *After construction and final grading are completed, install landscaping, and apply permanent stabilization techniques on all disturbed areas. Also remove temporary runoff control structures and any unstable sediment around them, and stabilize those areas with permanent seeding and erosion control blankets as necessary.*
19. *Maintain all erosion control devices until all disturbed areas are permanently stabilized.*
20. *Notice of Termination (NOT) of "Rule 5" Notice of Intent shall be submitted to the City of South Bend when construction is completed for the project. The City will then process the Notice of Termination and forward to IDEM.*

GENERAL CONSTRUCTION ACTIVITY SCHEDULE

CONSTRUCTION TASKS (ANTICIPATED)	2020 January-December	2021 JANUARY - DECEMBER
Temporary Construction Entrance(s)		
Silt Fence / Inlet Protection Established (Existing Inlets)		
Clearing and Removal Activities		
Permanent Erosion Control Measures		
Erosion / Sediment Maintenance		

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PROJECT:

LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

DRAWN BY: DEF
DESIGNED BY: CAK
P.M. REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018

SEAL:

DARYL S. KNIP
REGISTERED
No. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:

DATE: 10/28/2020

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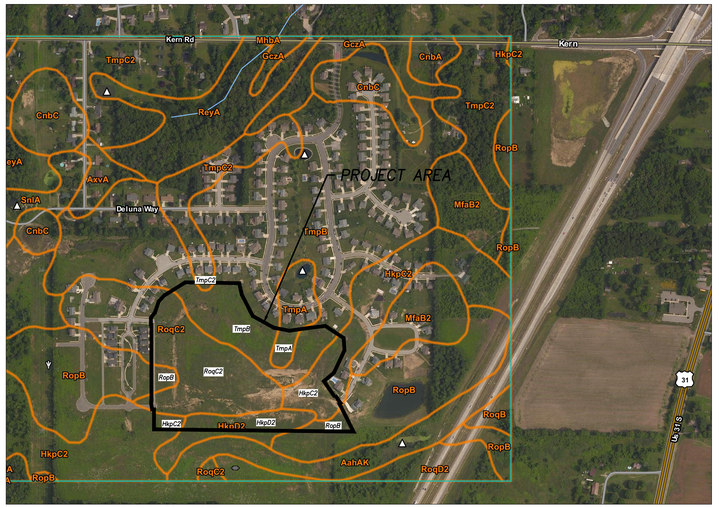
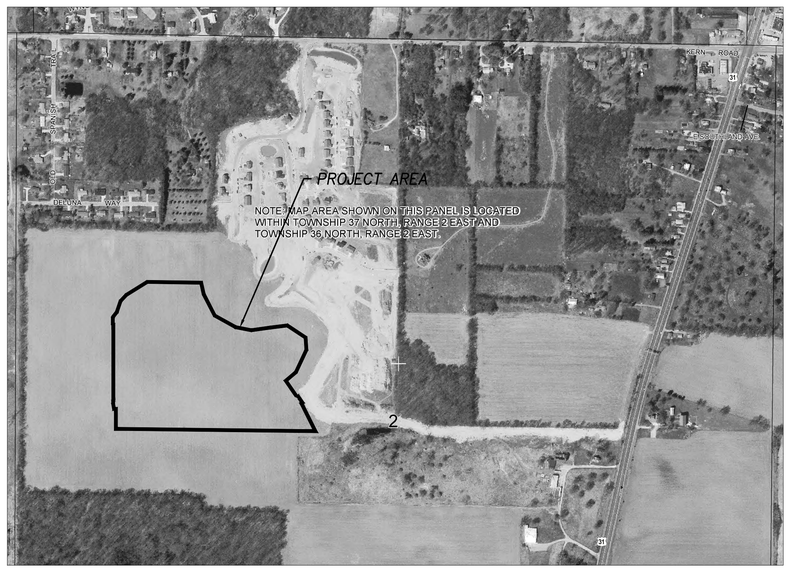
ACI JOB #: 17-1180

SHEET NO.: 31 of 37



SOILS MAP
(NOT TO SCALE)



FEMA FLOOD INSURANCE RATE MAP (FIRM)
(NOT TO SCALE) Jan. 6, 2011 / PANEL NO. 18141C0307D

SOILS CLASSIFICATION

SOILS INFORMATION IS DEFINED AND SCALED FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION DISTRICT'S WEB SOIL SURVEY.

HkpC2 *– Hillside–Tracy Sandy Loams, 5 to 10 Percent Slopes, Eroded*

Soil is well drained having a depth to water table of more than 80 inches and a Coarse–loamy till parent material. The capacity of the most limiting layer to transmit water is moderately high to high (0.60 to 2.00 in/hr).

Soil Typical Profile

0 to 5 inches: Sandy Loam
5 to 14 inches: Sandy Loam
14 to 44 inches: Sandy Loam
44 to 84 inches: Sandy Loam

HkpD2 *– Hillsdale–Tracy Sandy Loams, 10 to 18 Percent Slopes, Eroded*

Soil is well rained having a depth to water table of more than 80 inches and a Coarse–Loamy till parent material. The capacity of the most limiting layer to transmit water is moderately high to high. (0.60 to 2.00 in/hr).

Soil Typical Profile

0 to 5 inches: Sandy Loam
5 to 14 inches: Sandy Loam
14 to 44 inches: Sandy Loam
44 to 84 inches: Sandy Loam

RopB *– Riddles–Oshtemo fine sandy loams, 1 to 5 Percent Slopes*

Soil is well drained having a depth to water table of more than 80 inches and a Loamy till parent material. The capacity of the most limiting layer to transmit water is low to moderately high (0.01 to 0.20 in/hr).

Soil Typical Profile

0 to 8 inches: Fine Sandy Loam
8 to 13 inches: Sandy Clay Loam
13 to 33 inches: Clay Loam
33 to 63 inches: Fine Sandy Loam
63 to 90 inches: Loamy Sand
90 to 100 inches: Fine Sandy Loam

RoqC2 *– Riddles–Metea complex, 5 to 10 Percent Slopes, Eroded*

Soil is well drained having a depth to water table of more than 80 inches and a Loamy till parent material. The capacity of the most limiting layer to transmit water is low to moderately high (0.01 to 0.20 in/hr).

Soil Typical Profile

0 to 5 inches: Fine Sandy Loam
5 to 13 inches: Sandy Clay Loam
13 to 33 inches: Clay Loam
33 to 63 inches: Fine Sandy Loam
63 to 90 inches: Loamy Sand
90 to 100 inches: Fine Sandy Loam

TmpA *– Tracy sandy loam, 0 to 1 Percent Slopes*

Soil is well drained having a depth to water table of more than 80 inches and a Loamy over sandy outwash parent material. The capacity of the most limiting layer to transmit water is moderately high to high (0.60 to 2.00 in/hr).

Soil Typical Profile

0 to 9 inches: Sandy Loam
9 to 47 inches: Sandy Loam
47 to 60 inches: Gravelly Sandy Clay Loam
60 to 86 inches: Stratified loamy sand to gravelly sand

TmpB *– Tracy sandy loam, 1 to 5 Percent Slopes*

Soil is well drained having a depth to water table of more than 80 inches and a Loamy over sandy outwash parent material. The capacity of the most limiting layer to transmit water is moderately high to high (0.60 to 2.00 in/hr).

Soil Typical Profile

0 to 9 inches: Sandy Loam
9 to 47 inches: Sandy Loam
47 to 60 inches: Gravelly Sandy Clay Loam
60 to 86 inches: Stratified loamy sand to gravelly sand

TmpC2 *– Tracy sandy loam, 5 to 10 Percent Slopes, Eroded*

Soil is well drained having a depth to water table of more than 80 inches and a Loamy over sandy outwash parent material. The capacity of the most limiting layer to transmit water is moderately high to high (0.60 to 2.00 in/hr).

Soil Typical Profile

0 to 5 inches: Sandy Loam
5 to 47 inches: Sandy Loam
47 to 60 inches: Gravelly Sandy Clay Loam
60 to 86 inches: Stratified loamy sand to gravelly sand

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PROJECT:
LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:
STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
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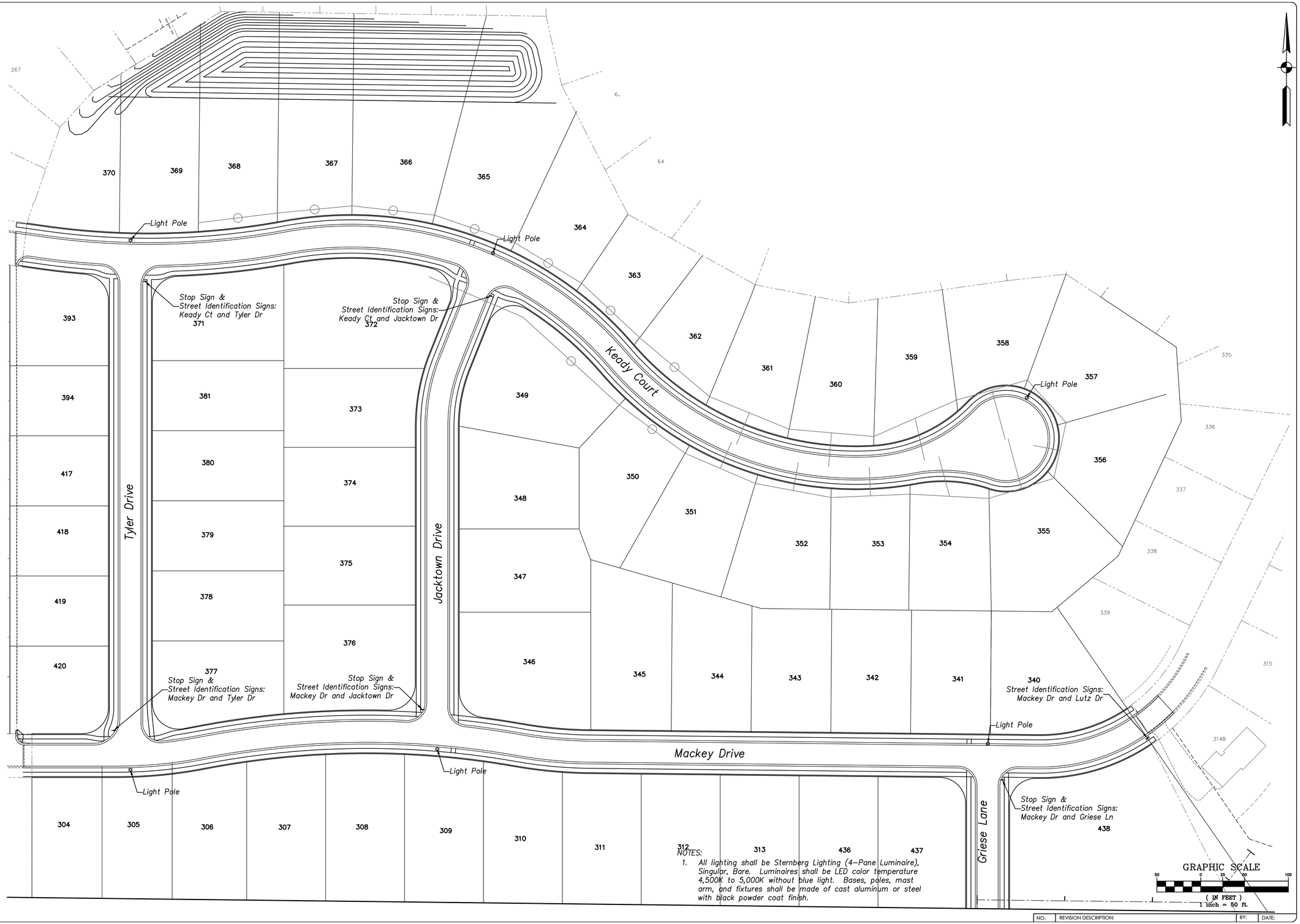
DARYL S. KNIP REGISTERED NO. PE19900163 STATE OF INDIANA PROFESSIONAL ENGINEER
SIGNATURE:
DATE: 10/28/2020
SCALE: HORZ: VERT:
ACI JOB # 17-1180
SHEET NO. 32 of 37



NOTES:

1. All lighting shall be Sternberg Lighting (4–Pane Luminaire), Singular, Bare. Luminaires shall be LED color temperature 4,500K to 5,000K without blue light. Bases, poles, mast arm, and fixtures shall be made of cast aluminum or steel with black powder coat finish.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:

SIGNAGE AND LIGHTING

DRAWN BY: DEF
DESIGNED BY: CAK
PM REVIEW: CAK
QA/QC REVIEW: DSK
DATE: 11-29-2018
SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

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DATE: 10/28/2020
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HORZ: 1" = 50'
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PROJECT:

LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:

CROSS SECTIONS
LINE "STORM1"

DRAWN BY: **DEF**
DESIGNED BY: **CAK**
PM REVIEW: **CAK**
QA/QC REVIEW: **DSK**
DATE: **11-29-2018**

SEAL:

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SIGNATURE:

DATE: 10/28/2020

SCALE:
HORZ: 1"=5'
VERT: 1"=5'

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Valparaiso

Engineering Architecture Land Surveying

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PROJECT:

LAFAYETTE FALLS
PHASE IV, SECTION 2
SOUTH BEND, INDIANA

SHEET TITLE:

CROSS SECTIONS
LINE "STORM2"

DRAWN BY: **DEF**

DESIGNED BY: **CAK**

P.M. REVIEW: **CAK**

QA/QC REVIEW: **DSK**

DATE: **11-29-2018**

SEAL:

DARYL S. KNIP
REGISTERED
NO. PE19900163
STATE OF INDIANA
PROFESSIONAL ENGINEER

SIGNATURE:

DATE: 10/28/2020

SCALE:
HORZ: 1"=5'
VERT: 1"=5'

ACI JOB #
17-1180

SHEET NO.
36 of **37**

NO. | REVISION DESCRIPTION: | BY: | DATE:

ABONMARCHE

750 Lincolnway East
South Bend, IN 46601
T 574.232.2700
F 574.251.4440
abonmarche.com

Battle Creek
Benton Harbor
Kalamazoo
South Haven

Goshen
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Engineering Architecture Land Surveying

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SHEET NO.
37 of 37

EXHIBIT B

ENGINEER'S ESTIMATE

CITY ENGINEER'S REPORT

Phase 4, Section 2

December 23, 2020

This Major Secondary Subdivision, **Lafayette Falls, Phase Four, Section Two**, will require the following improvements

ITEM #	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1	CLEARING	1	LUMP SUM	$5,000.00	$5,000.00
2	EXCAVATING/GRADING	12,009	CU.YD.	$6.00	$72,054.00
3	FINE GRADING	3,909	LIN.FT.	$2.00	$7,817.40
4	CONCRETE CURB	7,105	LIN.FT.	$16.00	$113,680.00
5	AGGREGATE BASE	3,627	TONS	$25.00	$90,683.00
6	ASPHALT BASE	2,418	TONS	$70.00	$169,275.40
7	ASPHALT BINDER	1,511	TONS	$80.00	$120,911.20
8	ASPHALT SURFACE	907	TONS	$85.00	$77,080.55
9	BACKFILL CURB	6,978	LIN.FT.	$2.00	$13,956.00
10	SANITARY SEWER - 8"	2,624	LIN.FT.	$40.00	$104,960.00
11	SANITARY SEWER - 10"	324	LIN.FT.	$45.00	$14,580.00
12	SANITARY MANHOLES	15	EACH	$3,200.00	$48,000.00
13	SANITARY DROP MANHOLE	1	EACH	$4,000.00	$4,000.00
14	SANITARY LATERALS	2,016	LIN.FT.	$20.00	$40,329.20
15	SANITARY FORCE MAIN	0	LIN.FT.	$0.00	$0.00
16	SANITARY LIFT STATION	0	LUMP SUM	$0.00	$0.00
17	DEWATERING	1	LUMP SUM	$20,000.00	$20,000.00
18	WATER MAIN - 10"	0	LIN.FT.	$0.00	$0.00
19	WATER MAIN - 8"	3,512	LIN.FT.	$50.00	$175,607.50
20	VALVES	15	EACH	$1,200.00	$18,000.00
21	WATER SERVICES	1,605	LIN.FT.	$20.00	$32,091.60
22	FIRE HYDRANT	7	EACH	$3,500.00	$24,500.00
23	TAP EXISTING MAIN	0	EACH	$0.00	$0.00
24	WATER MAIN TESTING	1	LUMP SUM	$1,500.00	$1,500.00
25	STORM SEWER - 12"	2,545	LIN.FT.	$30.00	$76,350.00
26	STORM SEWER - 18"	692	LIN.FT.	$36.00	$24,912.00
27	STORM SEWER - 24"	269	LIN.FT.	$42.00	$11,298.00
28	DRAINAGE STRUCTURES - 30" INLET	12	EACH	$2,000.00	$24,000.00
29	DRAINAGE STRUCTURES - 48" MH	26	EACH	$2,500.00	$65,000.00
30	DRAINAGE STRUCTURES - 1200gal DRYWELI	2	EACH	$3,500.00	$7,000.00
31	DRAINAGE STRUCTURES - END SECTIONS	1	EACH	$1,500.00	$1,500.00
32	SIDEWALK & RAMPS	4,164	SQ.YD.	$40.00	$166,573.20
33	STOP SIGN / STREET SIGN	6	EACH	$500.00	$3,000.00
34	STREET LIGHTING	6	EACH	$1,200.00	$7,200.00
35	EROSION CONTROL / STABILIZATION	1	LUMP SUM	$7,500.00	$7,500.00
36	BOUNDARY MONUMENTS	1	LUMP SUM	$2,000.00	$2,000.00
			TOTAL		**$1,550,359.05**

_____ The required improvements have been satisfactorily completed, a three year maintenance bond has been received.

X The required improvements have not been completed, but a Letter of Credit has been filed in the following amount for the required improvements.

ITEM #	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
As Above	As Above	As Above	As Above	As Above	$1,550,359.05

Comments: This project is located in Centre Township, City of South Bend and is located on the south side of Kern Road, between Lafayette Falls, Section One and Kern Road Estates, Section Two. All construction is per City of South Bend, Department of Public Works Standards.

City Engineer _____ Date _____

EXHIBIT C

PERFORMANCE BOND

EXHIBIT D

EASEMENT FOR STORMWATER BASIN

GRANT OF DRAINAGE EASEMENT

THIS INDENTURE made this ___ day of _____, 2021, by and between Lafayette Falls, LLC (Grantor) and the Civil City of South Bend, Indiana, by and through its Board of Public Works (Grantee), whose mailing address is 227 West Jefferson Boulevard, County-City Building, Room 1316, South Bend, Indiana, 46601, in favor of the Grantee and its successors and assigns.

WITNESSETH:

Grantor hereby grants, conveys, and warrants to Grantee a permanent easement of the nature and at the location hereinafter set forth as described, to the extent reasonably required and as otherwise set forth herein for the installation, construction, operation, maintenance, adjustment, replacement, repair, alteration, removal, modernization, and use of storm water storage facilities, and related facilities; together with the right of ingress to and egress from said easement for the purpose of installing, constructing, operating, maintaining, adjusting, replacing, repairing, altering, removing, and modernizing said facilities and other equipment or facilities incident thereto, in, upon, over, and under a part of Section 20, Township 38 North, Range 2 East, German Township, St. Joseph County, Indiana, and part of the northeast quarter of Section 3, Township 36 North, Range 2 East, Centre Township, St. Joseph County, Indiana, being more particularly described as follows

SEE EXHIBITS A & B

The Grantor acknowledges its right to just compensation and hereby waives its right of said compensation.

The easement granted herein shall pertain to the air, surface, and subsurface rights and interests of the Grantor, for the use and benefit of the Grantee, to the nature and extent that the Grantee may desire said air, surface, and subsurface rights and interests to accomplish and carry out the general purpose of this conveyance as the same has hereinabove been expressed. Notwithstanding the foregoing and for clarity of purpose, the Grantor or its successors in interest or assigns shall be responsible for maintaining the stormwater storage facility as designed, keeping it free and clear of debris and obstructions of any nature. If the Grantor fails to maintain the stormwater storage facility, the Grantee reserves the right and privilege, but shall not be required, at reasonable times to clean and remove from said easement debris or other obstructions interfering with the stormwater storage facilities or ingress and egress thereto, and the cost of this work shall be paid by the Grantor.

The Grantor reserves the right to use and occupy the surface area on and over the easement provided that said use and occupancy does not in any way conflict or obstruct the Grantee's right to use said surface for the purposes and intentions hereinabove expressed. If Grantee is reasonably required to remove structures impeding its use, Grantee shall not be liable to Grantor, or its successors in interest or assigns, for any damages related to such removal, nor shall Grantee be required to replace any such structures so removed.

The easement granted herein and the associated benefits and obligation shall constitute covenants running with the real estate, and shall be binding upon the Grantor, and be an obligation thereof of every person or entity now or hereafter having any fee, leasehold, or other interest in all or any part of the said real estate.

This indenture shall bind and inure to the benefit of the respective successors and assigns of the parties hereto.

The Grantor hereby covenants with the Grantee that it is lawfully seized and possessed of the parcel of real estate hereinabove described; that it has good and lawful right to convey and that the property is free of all encumbrances that would conflict with the right herein granted.

DRAFT

The Grantee agrees and undertakes to hold Grantor free and harmless from any liability, loss, costs, damages or expenses, which Grantor may incur as a result of any claims or actions, which may be made by any person arising out of Grantee's rights granted hereunder as they relate to the storm sewer system, drainage, and related facilities, except as otherwise set forth herein.

The Grantor hereby releases any and all claims from whatsoever cause, incidental to the exercise of any rights herein granted.

IN WITNESS WHEREOF, Grantor has executed this Grant of Easement for storm sewer systems and drainage on the date shown on the acknowledgment set forth herein.

GRANTOR:
Lafayette Falls, LLC
2010 Went Ave
Mishawaka, IN 46545

_____ _____

STATE OF INDIANA)
)SS:
ST. JOSEPH COUNTY)

Before me, a Notary Public in and for said County and State, personally appeared - _____, the _____ of Lafayette Falls, LLC, who acknowledged the execution of this Grant of Easement, being authorized so to do.

WITNESS my hand and Notary Seal this _____ day of _____, 2021.

_____
, Notary Public
Residing in St. Joseph County, Indiana

My Commission expires _____.

I affirm under the penalties for perjury, that I have taken reasonable care to redact each Social Security number in this document, unless required by law.

_____
Signature

_____
Printed Name

Instrument Prepared by Chad Knip of Abonmarche Consultants and
Reviewed/Approved by City Attorney

DRAFT

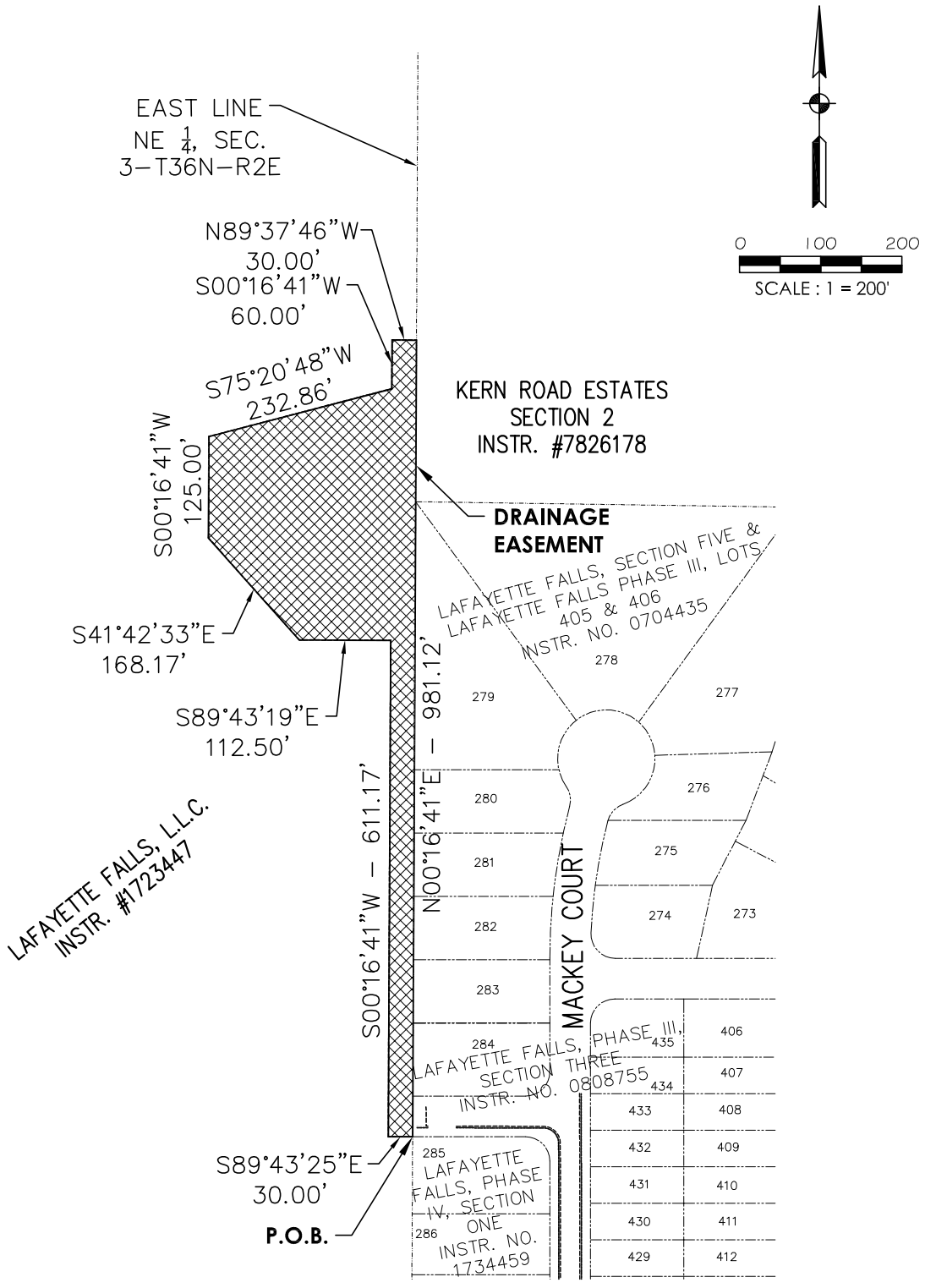
EXHIBIT A

A PART OF THE NORTHEAST QUARTER OF SECTION 3, TOWNSHIP 36 NORTH, RANGE 2 EAST, CENTRE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF LOT 285 IN LAFAYETTE FALLS PHASE IV, SECTON ONE, RECORDED UNDER INSTRUMENT NUMBER 1734459 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA; THENCE NORTH 00°16'41" EAST ALONG THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 3, 981.12 FEET; THENCE NORTH 89°37'46" WEST, 30.00 FEET; THENCE SOUTH 00°16'41" WEST, 60.00 FEET; THENCE SOUTH 75°20'48" WEST, 232.86 FEET; THENCE SOUTH 00°16'41" WEST, 125.00 FEET; THENCE SOUTH 41°42'33" EAST, 168.17 FEET; THENCE SOUTH 89°43'19" EAST, 112.50 FEET; THENCE SOUTH 00°16'41" WEST, 611.17 FEET; THENCE SOUTH 89°43'25" EAST, 30.00 FEET TO THE POINT OF BEGINNING; SAID PARCEL CONTAINING 1.96 ACRES, MORE OR LESS, AND SUBJECT TO EASEMENTS, COVENANTS, AND RIGHT-OF-WAY OF RECORD.

EXHIBIT B

1.96± ACRES



GRANT OF DRAINAGE EASEMENT

A PARCEL LOCATED IN THE NE 1/4 OF SEC. 3, T36N, R2E, CITY OF SOUTH BEND, ST. JOSEPH COUNTY, INDIANA

ABONMARCHE

750 Lincoln Way East
South Bend, IN 46601
T 574.232.8700
F 574.251.4440
abonmarche.com

Battle Creek
Benton Harbor
Manistee
South Haven
Goshen
Hobart
Lafayette
South Bend
Valparaiso

Engineering · Architecture · Land Surveying

DATE: **8/8/2018** ACI JOB #: **17-1180** SHT: **1** of **2**

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EXHIBIT E

CERTIFICATE OF INSURANCE

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 02/01/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Theresa Burns	
Gibson Insurance Agency, Inc. 202 S Michigan St, Suite 1400 South Bend IN 46601	PHONE (A/C, No, Ext): (800) 814-2122	FAX (A/C, No): (800) 836-2122
	E-MAIL ADDRESS: tburns@thegibsonedge.com	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Cincinnati Ins Co	10677
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED: Cloverleaf Farms, LLC, 2010 Went Ave, Mishawaka IN 46545

COVERAGES **CERTIFICATE NUMBER:** 9-30-20/21 Liab **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:			ENP0146780	09/30/2020	09/30/2021	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 500,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 1,000,000
							PRODUCTS - COMP/OP AGG	$ 1,000,000
							Employee Benefits	$ 1,000,000
A	AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY			ENP0146780	09/30/2020	09/30/2021	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
							Hired/Non Owned Liab	$
A	[X] UMBRELLA LIAB [X] OCCUR EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [X] RETENTION $ 0			ENP0146780	09/30/2020	09/30/2021	EACH OCCURRENCE	$ 2,000,000
							AGGREGATE	$ 2,000,000
								$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] N / A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						[ ] PER STATUTE [ ] OTH-ER	
							E.L. EACH ACCIDENT	$
							E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

FOR PROOF OF COVERAGE ONLY PLEASE REQUEST SPECIFIC CERTIFICATE HOLDERS

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Gibson Insurance Agency Inc

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Additional Named Insureds

Other Named Insureds	
Autumn Trails, LLC	Limited Liability Company, Additional Named Insured
Cleveland Woods Development Co., LLC	Limited Liability Company, Additional Named Insured
Lafayette Falls LLC	Limited Liability Company, Additional Named Insured
Northbridge Valley, LLC	Limited Liability Company, Additional Named Insured
Vernon Heights, LLC	Limited Liability Company, Additional Named Insured

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BOARD OF PUBLIC WORKS
AGENDA ITEM REVIEW REQUEST FORM

Date	**3/17/2021**	Department	**Engineering**
Name	**Kyle Silveus**	Phone Extension	
BPW Date	**3/23/2021**	Phone Extension	-

Review and Approval Required Prior to Submittal to Board

Diversity Compliance and Inclusion Officer	☐	Officer Name	____
BPW Attorney	☒	Attorney Name	**Clara McDaniels**
Dept. Attorney	☐	Attorney Name	____
Purchasing	☐	____	

Check the Appropriate Item Type – *Required for All Submissions*

☐ Professional Services Agreement	☐ Contract	☐ Proposal	
☐ Open Market Contract	☐ Amendment/Addendum	☐ Special Purchase, QPA	
☐ Bid Opening	☐ Bid Award	☐ Req. to Advertise	☒ Title Sheet
☐ Quote Opening	☐ Quote Award	☐ Reject Bids/Quotes	
☐ Proposal Opening	☐ C/O & PCA No. ____	☐ Resolution	
☐ Chg. Order, No. ____	☐ Traffic Control	☐ Ease./Encroach	
☒ Other: **Dedicated Improvements Agreement**		☐ Ease./Encroach	

Required Information

Company or Vendor Name	LaFayette Falls, LLC		
New Vendor	☐ Yes ☐ If Yes, Approved by Purchasing ☐ No		
MBE/WBE Contractor	☐ MBE ☐ WBE	Completed E-Verify Form Attached	☐ Yes ☐ No
Project Name	Lafayette Falls Phase IV, Section 2		
Project Number	DP18-049		
Funding Source	NA		
Account No.	N/A		
Amount	N/A		
Terms of Contract	N/A		
Purpose/Description	Dedicated Improvements Agreement outlining the terms for the creation of new public right of way, which includes the construction of curb, sidewalk, roads, water mains, sewers, storm sewers, and other public right of way elements for Phase IV, Section 2 of Lafayette Falls.		

For Change Orders Only

Amount of	☐ Increase ☐ Decrease	$ ($)	
Previous Amount	$		
Current Percent of Change:	Increase % Decrease (%)		
New Amount	$		
Total Percent of Change:	Increase % Decrease (%)		
Time Extension Amount:			