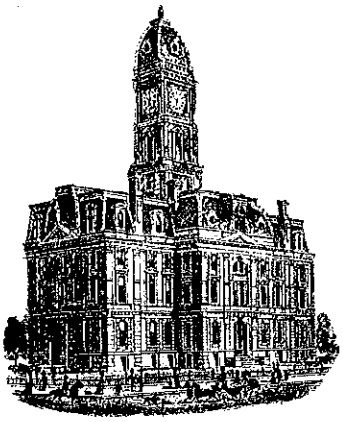
KCW



SURVEYOR'S OFFICE

Hamilton County

Kenton C. Ward, CFM
Surveyor of Hamilton County
Phone (317) 776-8495
Fax (317) 776-9628

Suite 188
One Hamilton County Square
Noblesville, Indiana 46060-2230

October 5, 2018

To: Hamilton County Drainage Board

Re: Boone Creek Drain, Copper Run Arm

Attached is a petition filed by Pulte Homes of Indiana, LLC, along with a non-enforcement request, plans, calculations, quantity summary and assessment roll for the Copper Run (AKA Copperleaf) Arm, Boone Creek Drain to be located in Clay Township. I have reviewed the submittals and petition and have found each to be in proper form.

I have made a personal inspection of the land described in the petition. Upon doing so, I believe that the drain is practicable, will improve the public health, benefit a public highway, and be of public utility and that the costs, damages and expenses of the proposed drain will probably be less than the benefits accruing to the owners of land likely to be benefited. The drain will consist of the following:

12" RCP	655 ft.	24" RCP	569 ft.
15" RCP	715 ft.	30' RCP	222 ft.
15" HDPE	8 ft.	36" RCP	483 ft.
18" RCP	151 ft.	42" RCP	165 ft.
21" RCP	576 ft.	6" SSD	3,120 ft.
		Open Ditch	15 ft.

The total length of the drain will be 6,679 feet.

The retention ponds (Lake #1 and Lake #2) located in Common Area A are not to be considered part of the regulated drain. Pond maintenance assumed by the Drainage Board shall only include the inlets and outlets as part of the regulated drain. The maintenance of the retention ponds (lakes) such as sediment removal and erosion control along the banks, mowing and aquatic vegetation maintenance and control will be the responsibility of the Homeowners Association The Board will retain jurisdiction for ensuring the storage volume for which the pond was designed will be retained. Thereby, allowing no fill or easement encroachments.

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The subsurface drains (SSD) to be part of the regulated drain are those main lines located in rear yards and common areas. The SSD's in the street will not be part of the regulated drain due to street trees and the Hamilton County Drainage Board discussion on July 9, 2018, (see Hamilton County Drainage Board Minute Book 18, Pages 204 to 206). The street SSD will be the maintenance responsibility of the City of Carmel. Only the main SSD lines which are located within the easement are to be maintained as regulated drain. Laterals for individual lots will not be considered part of the regulated drain. The portion of the SSD which will be regulated are as follows:

Rear Yard SSDs:

Rear yard lots 1 and 2 from Str. 651 running north to riser
Rear yard lots 3 and 4 from Str. 608 running south east to riser
Rear yard lots 5 and 6 from Str. 644 running west to riser
Rear yard lots 6 and 7 from Str. 644 running east to riser
Rear yard lots 8 and 9 from Str. 638 running south to riser
Rear yard lots 10 and 11 from Str. 638 running north to riser
Rear yard lot 11 from Str. 613 running south to riser
Rear yard lots 17 and 18 from Str. 644 running south to riser
Rear yard lots 19 to 20 from Str. 647 running south to riser
Common Area C from Str. 647 running south to riser
Rear yard lots 21 and 22 from Str. 647 running north to riser
Common Area C from Str. 647 running north to riser
Rear yard lots 23 to 25 from Str. 634 running south to riser
Rear yard lot 26 from Str. 634 running north to riser
Rear yard lots 26 and 27 from Str. 616 running south to riser
Rear yard lot 28 from Str. 616 running north to riser
Common Area C from Str. 616 running south to riser
Common Area C from Str. 616 running south to riser
Common Area A from Str. 621 to Str. 622
Common Area A from Str. 622 running north west to riser

I have reviewed the plans and believe the drain will benefit each lot equally. Therefore, I recommend each lot be assessed equally. I also believe that no damages will result to landowners by the construction of this drain. I recommend a maintenance assessment of $65.00 per platted lot, $10.00 per acre for common areas, with a $65.00 minimum, and $10.00 per acre for roadways. With this assessment the total annual assessment for this drain will be $2,259.00. I further recommend that the maintenance assessment collections be set to eight (8) times the annual collections as allowed in IC 36-9-27-43.

In accordance with IC 36-7-4-709, the petitioner did not submit surety for the proposed drain prior to construction commencing. If the petitioner/developer wants to submit final secondary plat for recording prior to the final inspection and approved as-built drawings, a bond will be required at that time.

I believe this proposed drain meets the requirements for Urban Drain Classification as set out in IC 36-9-27-67 to 69. Therefore, this drain shall be designated as an Urban Drain.

The off-site easement for this project will cross parcel number 019-10350-01 in Boone County, owned by Austin Oaks Homeowner's Association. An easement agreement is recorded as instrument number 2018009257 in the office of the Boone County Recorder.

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The portion of drain within Boone County will consist of approximately 484 feet of 24" RCP and 15 feet of open ditch. The 24" RCP will begin approximately 28 feet northeast of Str. 604 and terminate at Str. 601. The open ditch shall be that section between Str. 601 and the south property line of Austin Oaks Section 10 Meadows Block "B".

Because the area of affected land in Hamilton County exceeds 80% of the total area of land affected by the proposed drain, also, because more than 90% of the length of the drain lies within Hamilton County, I have sent the Boone County Drainage Board a request for waiver of a Joint Drainage Board for this drain as per IC 36-9-27-14 (c).

I recommend that upon approval of the above proposed drain that the Board also approve the attached non-enforcement request. The request will be for the reduction of the regulated drain easement to those easement widths as shown on the secondary plat for Copper Run as recorded in the office of the Hamilton County Recorder.

I recommend the Board set a hearing for this proposed drain for November 26, 2018.

Kenton C. Ward, CFM
Hamilton County Surveyor

KCW/pll

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(Revised 06/08/04)

STATE OF INDIANA)
)
COUNTY OF HAMILTON)

FILED
JUL 30 2018
OFFICE OF HAMILTON COUNTY SURVEYOR

TO: HAMILTON COUNTY DRAINAGE BOARD
% Hamilton County Surveyor
One Hamilton County Square, Suite 188
Noblesville, IN. 46060-2230

In the matter of Copperleaf Subdivision, Section _____ Drain Petition.

Petitioner is the owner of all lots in the land affected by the proposed new regulated drain. The drainage will affect various lots in Copperleaf, a subdivision in Hamilton County, Indiana. The general route of such drainage shall be in existing easements and along public roads as shown in the plans on file in the Surveyor's Office.

Petitioner believes that the cost, damages and expenses of the proposed improvement will be less than the benefits which will result to the owners of the land likely to be benefited thereby. Petitioner believes the proposed improvements will:

(a) improve public health
(b) benefit a public street
(c) be of public utility

Petitioner agrees to pay the cost of construction of the drainage system and requests periodic maintenance assessments by the Board thereafter.

The Petitioner also agrees to the following:

1. To provide the Drainage Board a Performance Bond or Non-Revocable Letter of Credit for the portion of the drainage system which will be made a regulated drain. The bond will be in the amount of 120% of the Engineer's estimate. The bond will be in effect until construction of 100% of the system is completed and so certified by the Engineer.

2. The Petitioner shall retain an Engineer throughout the construction phase. At completion of the project the Petitioner's Engineer shall certify that the drainage system which is to be maintained as a regulated drain has been constructed as per construction plans.

3. The Petitioner agrees to request in writing to the County Surveyor any changes from the approved plan and must receive written authorization from the County Surveyor prior to implementation of the change. All changes shall be documented and given to the Surveyor to be placed in the Drain file.

4. The Petitioner shall instruct his Engineer to provide a reproducible print on a 24" x 36" Mylar of the final design of the Drainage System. This shall be submitted to the County Surveyor prior to the release of the Performance Bond.

5. The Petitioner shall comply with the Erosion Control Plan as specified on the construction plans. Failure to comply with the Erosion Control Plan shall be determined by the Board as being an obstruction to the drainage system. The County Surveyor shall immediately install or repair the needed measures at Petitioners cost as per IC 36-9-27-46.

Adobe PDF Fillable Form

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The Petitioner further requests that the Drain be classified as an Urban Drain as per IC 36-9-27-69(d).

RECORDED OWNER(S) OF LAND INVOLVED

Signed	Signed
Jeremy Lollar, Pulte Homes Printed Name	Printed Name
7/19/18 Date	Date
Signed	Signed
Printed Name	Printed Name
Date	Date

Adobe PDF Fillable Form

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FINDINGS AND ORDER

CONCERNING THE MAINTENANCE OF THE

Boone Creek Drain, Copper Run Arm

On this **26th *day of November, 2018***, the Hamilton County Drainage Board has held a hearing on the Maintenance Report and Schedule of Assessments of the ***Boone Creek Drain, Copper Run Arm.***

Evidence has been heard. Objections were presented and considered. The Board then adopted the original/amended Schedule of Assessments. The Board now finds that the annual maintenance assessment will be less than the benefits to the landowners and issues this order declaring that this Maintenance Fund be established.

HAMILTON COUNTY DRAINAGE BOARD

President

Member

Member

Attest: Executive Secretary

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FILED
JUL 30 2018
OFFICE OF HAMILTON COUNTY SURVEYOR

Pulte Homes
Project: Copperlead
HWC Project No. 2017-232
Date: 07/27/18

HWC ENGINEERING

PERFORMANCE BOND - ENGINEERS ESTIMATE					
	ITEM NAME:	UNIT	QUANTITY	UNIT COST	AMOUNT
STORM SEWER	12" RCP	LF	655	$ 30.00	$ 19,650.00
	15" RCP	LF	715	$ 35.00	$ 25,025.00
	18" RCP	LF	151	$ 40.00	$ 6,040.00
	21" RCP	LF	576	$ 45.00	$ 25,920.00
	24" RCP	LF	569	$ 50.00	$ 28,450.00
	30" RCP	LF	222	$ 60.00	$ 13,320.00
	36" RCP	LF	483	$ 65.00	$ 31,395.00
	42" RCP	LF	165	$ 75.00	$ 12,375.00
	12" END SECTION	EA	1	$ 950.00	$ 950.00
	18" END SECTION	EA	1	$ 1,150.00	$ 1,150.00
	21" END SECTION	EA	2	$ 1,250.00	$ 2,500.00
	24" END SECTION	EA	1	$ 1,350.00	$ 1,350.00
	30" END SECTION	EA	2	$ 1,750.00	$ 3,500.00
	36" END SECTION	EA	1	$ 2,050.00	$ 2,050.00
	42" END SECTION	EA	1	$ 2,350.00	$ 2,350.00
	12" TRASH GUARD	EA	1	$ 600.00	$ 600.00
	18" TRASH GUARD	EA	1	$ 650.00	$ 650.00
	21" TRASH GUARD	EA	2	$ 700.00	$ 1,400.00
	24" TRASH GUARD	EA	1	$ 750.00	$ 750.00
	30" TRASH GUARD	EA	2	$ 800.00	$ 1,600.00
	36" TRASH GUARD	EA	1	$ 850.00	$ 850.00
	42" TRASH GUARD	EA	1	$ 1,000.00	$ 1,000.00
	MANHOLE, STANDARD	EA	7	$ 3,000.00	$ 21,000.00
	MANHOLE, LARGE	EA	11	$ 4,000.00	$ 44,000.00
	STANDARD INLET	EA	9	$ 2,000.00	$ 18,000.00
	DOUBLE INLET	EA	8	$ 4,000.00	$ 32,000.00
	CURB SSD	LF	4379	$ 10.00	$ 43,790.00
	SWALE SSD	LF	3009	$ 10.00	$ 30,090.00
	SSD LATERALS	EA	28	$ 100.00	$ 2,800.00
	GRANULAR BACKFILL	TON	470	$ 20.00	$ 9,400.00
				STORM SEWER SUBTOTAL:	**$ 383,955.00**
				STORM SEWER PERFORMANCE BOND (120%):	**$ 460,746.00**
MONUMENTATION	LOT CORNERS	EA	110	$ 35.00	$ 3,850.00
	CENTERLINE	EA	12	$ 200.00	$ 2,400.00
	CONCRETE 4X4 PROPERTY CORNERS	EA	4	$ 500.00	$ 2,000.00
				MONUMENTATION SUBTOTAL:	**$ 8,250.00**
				MONUMENTATION PERFORMANCE BOND (120%):	**$ 9,900.00**

This Engineer's Estimate is an opinion of probable construction cost made on the basis of Engineer's experience and represent Engineer's judgement as a qualified professional generally familiar with the industry. However, since Engineer has no control over the cost of materials, equipement, labor or market conditions, Engineer cannot guarantee that actual construction cost will not vary from this Engineer's Estimate.

Brandon T Burke

Brandon T. Burke, P.E.
HWC Engineering

BRANDON T. BURKE
REGISTERED
No.
10000075
STATE OF
INDIANA
PROFESSIONAL ENGINEER

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BEFORE THE HAMILTON COUNTY DRAINAGE BOARD
IN THE MATTER OF

Boone Creek Drain, Copper Run Arm

NOTICE

To Whom It May Concern and: _____
_____
_____

Notice is hereby given of the hearing of the Hamilton County Drainage Board on the **Boone Creek Drain, Copper Run Arm** on **November 26, 2018** at **9:00 A.M.** in Commissioners Court, Hamilton County Judicial Center, One Hamilton County Square, Noblesville, Indiana, and which construction and maintenance reports of the Surveyor and the Schedule of Assessments made by the Drainage Board have been filed and are available for public inspection in the office of the Hamilton County Surveyor.

Hamilton County Drainage Board

Attest: Lynette Mosbaugh

ONE TIME ONLY

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BEFORE THE HAMILTON COUNTY DRAINAGE BOARD
IN THE MATTER OF THE

Boone Creek Drain, Copper Run Arm

NOTICE

Notice is hereby given pursuant to Section 405 of the 1965 Indiana Drainage Code that this Board, prior to final adjournment on **November 26, 2018** has issued an order adopting the Schedule of Assessments, filed the same and made public announcement thereof at the hearing and ordered publication. If judicial review of the findings and order of the Board is not requested pursuant to Article Eight of this code within twenty (20) days from the date of this publication, the order shall be conclusive.

Hamilton County Drainage Board

Attest: Lynette Mosbaugh

ONE TIME ONLY

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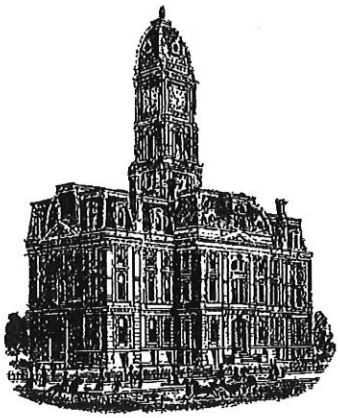

SURVEYOR'S OFFICE

Hamilton County

Kenton C. Ward, CFM
Surveyor of Hamilton County
Phone (317) 776-8495
Fax (317) 776-9628

Suite 188
One Hamilton County Square
Noblesville, Indiana 46060-2230

To: Hamilton County Drainage Board **September 30, 2020**

Re: Boone Creek Drain: Copper Run Arm

Attached are as-built, certificate of completion & compliance, and other information for Copper Run. An inspection of the drainage facilities for this section has been made and the facilities were found to be complete and acceptable.

During construction, changes were made to the drain, which will alter the plans submitted with my report for this drain-dated October 5, 2018. The report was approved by the Board at the hearing held November 26, 2018. (See Drainage Board Minutes Book 18, Pages 310-311) The changes are as follows: the 12" RCP was shortened from 652 feet to 655 feet. The 15" RCP was shortened was shortened from 715 to 713 feet. The 15" HDPE was changed to 8 feet of 12" SSD. The 18" RCP was lengthened from 151 feet to 153 feet. The 21" RCP was lengthened from 576 feet to 591 feet. The 24" RCP was shortened from 569 feet to 565 feet. The 30" RCP was shortened from 222 feet to 217 feet. The 36" RCP was lengthened from 483 feet to 487 feet. The 42" RCP was lengthened from 165 feet to 166 feet. The 6" SSD was shortened from 165 feet to 166 feet. The length of the drain due to the changes described above is now **6,549 feet**.

The non-enforcement was approved by the Board at its meeting on November 26, 2018 and recorded under instrument #2019004669. Sureties not posted by the developer for this project in accordance with IC 36-7-4-709.

I recommend the Board approve the drain's construction as complete and acceptable.

Sincerely,

Kenton C. Ward, CFM
Hamilton County Surveyor

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OVERALL GENERAL PROJECT NOTES

1. NOT ALL GAS, POWER, OR TELEPHONE LINES, WHETHER ABOVE OR BELOW GROUND, HAVE BEEN SHOWN ON THE DRAWINGS. ANY UNDERGROUND INFORMATION SHOWN ON THE DRAWINGS HAS BEEN DETERMINED FROM THE BEST AVAILABLE INFORMATION AND IS GIVEN FOR THE CONTRACTORS BENEFIT. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR PROTECTING ALL UTILITIES IN HIS WORK AREA WHETHER SHOWN OR NOT, AND MUST REALIZE THAT THE ACTUAL LOCATION OF THE UTILITIES MAY BE DIFFERENT FROM THAT SHOWN ON THE DRAWINGS. ALL EXISTING UTILITIES ENCOUNTERED IN THE WORK, WHETHER IN PUBLIC RIGHTS OF WAY OR ON PRIVATE PROPERTY, SHALL BE THE CONTRACTORS RESPONSIBILITY TO MAINTAIN IN SERVICE ANY UTILITIES WHICH CAN BE REMOVED DURING CONSTRUCTION WITHOUT UNDUE INTERRUPTION TO SERVICE MAY BE REMOVED AND REPLACED BY THE CONTRACTOR WITH THE PERMISSION OF THE UTILITY, IF MINOR CONFLICTS ARISE, THE CONTRACTOR MAY SHIFT THE PROPOSED LOCATION OF THE INSTALLATION OF THE WORK. BEFORE WORKING WITH OR AROUND UTILITIES, THE APPLICABLE UTILITY COMPANY SHALL BE NOTIFIED BY THE CONTRACTOR.
2. SAFETY PROVISIONS FOR THE WORK SHALL BE IN FULL COMPLIANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF THE INDIANA OSHA AND ANY OTHER LOCAL STATE OR FEDERAL AGENCY HAVING JURISDICTION. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. CONTRACTOR SHALL AT MINIMUM, PROVIDE TRAFFIC CONTROL AS REQUIRED TO SAFELY PROTECT THE GENERAL PUBLIC, THE CONTRACTOR'S WORK FORCES AND THE WORK. TRAFFIC CONTROL SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE INDIANA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, AND THE INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, STANDARD DETAILS AND GENERAL INSTRUCTIONS TO FIELD EMPLOYEES. THE REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT TO BE LIMITED TO NORMAL WORKING HOURS. THE OPTION OF THE OWNER AND/OR ENGINEER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE. CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL BARRICADES, FENCES, WARNING SIGNS, FLASHING LIGHTS, TEMPORARY WALKWAYS, AND TRAFFIC CONTROL DURING CONSTRUCTION. CONTRACTOR TO COMPLY WITH ALL OSHA REGULATIONS, REQUIREMENTS, SAFETY MEETING REQUIREMENTS AND AGENCY REQUIREMENTS FOR TRAFFIC CONTROL AND SAFETY PRECAUTIONS, THERE WILL BE NO SEPARATE OR ADDITIONAL PAYMENT FOR THIS WORK.
3. WHERE PROPERTY MARKERS, SECTION CORNERS, SURVEY MARKS OR BENCHMARKS, SUCH AS STONES, PIPES, OR OTHER SUCH MONUMENTS ARE ENCOUNTERED AND CONFLICT WITH THE WORK, THE ENGINEER SHALL BE NOTIFIED BEFORE THEY ARE DISTURBED. THE MARKERS SHALL BE PROTECTED AFTER THE OWNER, ENGINEER, AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR REFERENCED THEIR LOCATIONS.
4. ALL MATERIALS DENOTED "SALVAGED" SHALL BE STORED AND PROTECTED AT THE SITE FOR THE OWNER TO COLLECT OR FOR THE CONTRACTOR TO RE-USE AS INDICATED.
5. THERE SHALL BE NO CHANGES WITHOUT WRITTEN APPROVAL OF ENGINEER.
6. ALL GRADES AT BOUNDARY SHALL MEET EXISTING GRADES.
7. CONTRACTOR SHALL MINIMIZE DAMAGE TO EXISTING TREES.
8. REMOVE AND BACKFILL ALL AREAS WHERE ANY FIELD TILE CROSSES PROPOSED HOUSE PADS. ALL FIELD TILES INTERCEPTED TO BE PERPETUATED INTO STORM SEWER SYSTEM OR LAKE. THE SUBCONTRACTOR SHALL NOTIFY IN WRITING THE OWNER AND THE ENGINEER IN ANY CIRCUMSTANCES WHERE THIS CANNOT BE ACCOMPLISHED.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS.
10. CONTRACTOR SHALL STAMP THE LETTER "S" IN THE CURB PERPENDICULAR TO THE LATERAL MARKER.
11. STRUCTURES RECEIVING SUB-SURFACE DRAIN (SSD) SHALL HAVE BOTH PORTS CORE DRILLED. "T" OR "Y" BLIND CONNECTIONS ARE NOT ALLOWED.
12. ALL STORM SEWER CASTINGS SHALL BE LABELED "DUMP NO WASTE-DRAINS TO WATERWAY".
13. STRUCTURAL FILL: SHALL BE COMPACTED TO AT LEAST 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). SHALL BE FREE OF ORGANIC MATERIAL, DEBRIS, DELETERIOUS MATERIALS AND FROZEN SOLIDS.
14. THE CITY OF CARMEL REQUIRES THAT DEVELOPERS PROVIDE INDOT APPROVED SNOWPLOWABLE RAISED PAVEMENT MARKERS (WITH BLUE REFLECTOR LENS) ADJACENT TO FIRE HYDRANT LOCATIONS. THE MARKERS SHALL BE INSTALLED ON THE CENTERLINE OF THE ROADWAY ONCE THE PAVEMENT SURFACE HAS BEEN PLACED. THE INSTALLATION AND MATERIAL OF THE SNOWPLOWABLE RAISED PAVEMENT MARKERS SHALL COMPLY WITH SECTIONS 800 AND 900 OF THE MOST RECENT REVISION OF THE INDOT SPECIFICATIONS AND STANDARD DRAWINGS. UNDER NO CIRCUMSTANCE SHALL THE CITY ALLOW INSTALLATION OF A REFLECTOR THAT IS ONLY ATTACHED TO THE PAVEMENT SURFACE USING ADHESIVE.
15. ALL ROADS MUST BE BROUGHT BACK TO ORIGINAL OR BETTER CONDITION, INCLUDING BUT NOT LIMITED TO STRIPING, STONE SHOULDERS AND SIGNAGE.
16. ALL COMMON AREA SIDEWALKS OR PATHS ARE TO BE CONSTRUCTED AS PART OF THE SITE INFRASTRUCTURE. INDIVIDUAL LOT SIDEWALKS TO BE CONSTRUCTED AT THE TIME OF HOME CONSTRUCTION.

This information was gathered for Input into the Hamilton County Geographic Information System (GIS). This document is considered an official record of the GIS.
Entry Date: 2020
Entered By: SLM

STORM SEWER FOR THIS PROJECT WILL BE PUBLIC

Indiana 811 — KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.
Call 811 or 800-382-5544 Before you Dig!

SANITARY SEWER SERVICE
E-ONE GRINDER PUMP & LOW PRESSURE COMMON FORCEMAIN SERVICE: LOTS 1-28

SEE SHEET C1.2 FOR WET POND BANK PLANTINGS, DETAIL & NOTES.

LEGEND:

25	LOT NUMBER
D.E.	DRAINAGE EASEMENT
D.&U.E.	DRAINAGE & UTILITY EASEMENT
B.S.L.	BUILDING SETBACK LINE
R.S.L.	REAR SETBACK LINE
B.Y.E.	BUFFERYARD EASEMENT
C.A.	COMMON AREA
S.F.	SQUARE FOOT
Ac.	ACRE

CARMEL GENERAL NOTES:

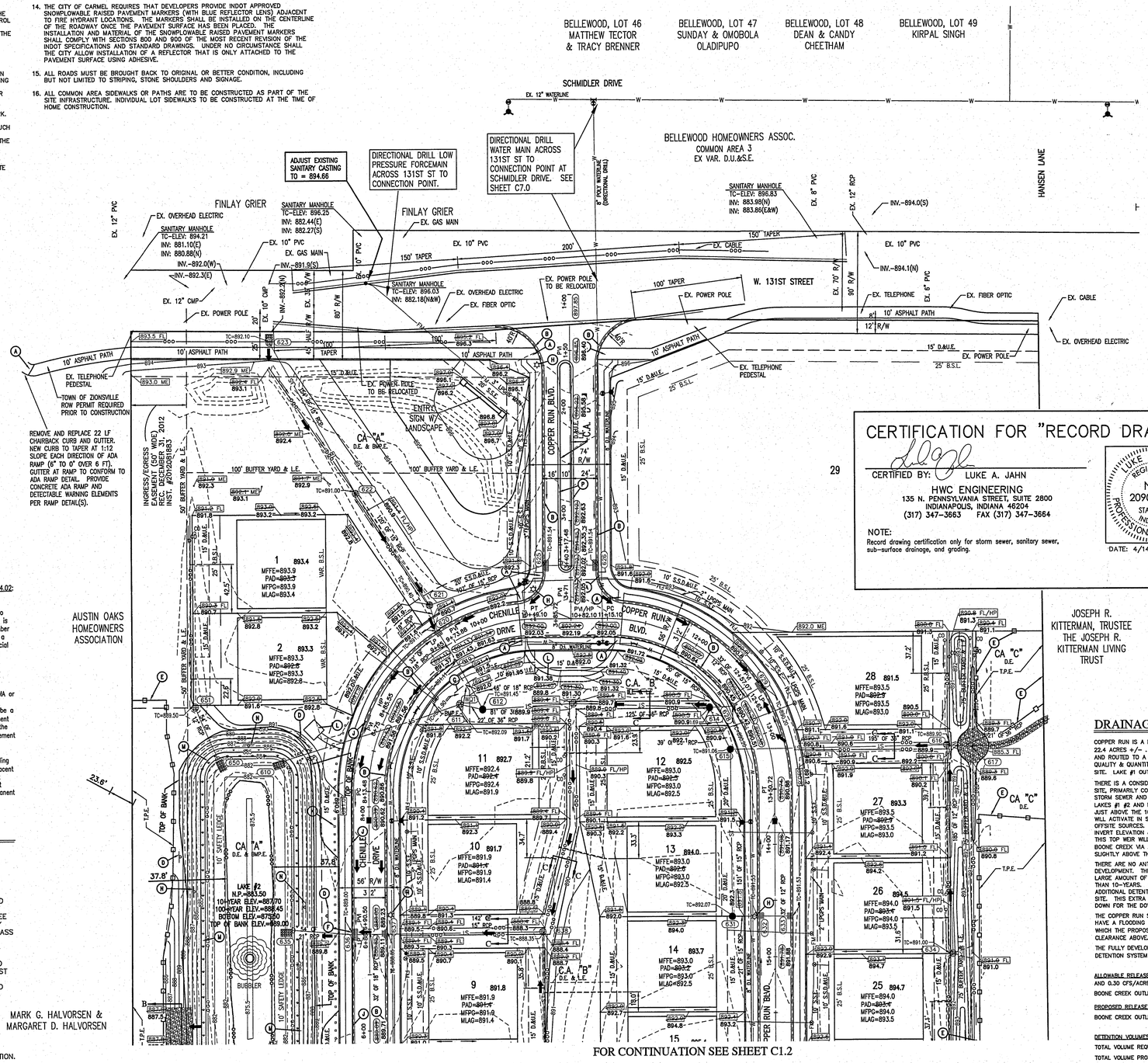
1. UTILITY RELOCATIONS REQUIRED BY THE PROJECT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER. UTILITY LINE RELOCATIONS REQUIRED FOR ROAD PROJECTS THAT RESULT IN A CONFLICT WITH PROPOSED DEVELOPMENT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO RESOLVE WITH THE UTILITY. EXISTING POLE LINES REQUIRED TO BE RELOCATED SHALL BE RELOCATED TO WITHIN ONE FOOT OF THE PROPOSED RIGHT-OF-WAY LINE.
2. NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.
3. DAMAGE TO THE EXISTING RIGHT-OF-WAY SHALL BE RESTORED/REPAIRED TO THE SATISFACTION OF THE CITY AT THE COMPLETION OF THE PROJECT. THE CONTRACTOR IS ENCOURAGED TO INSPECT THE RIGHT-OF-WAY WITH THE CITY PRIOR TO THE START OF CONSTRUCTION TO DOCUMENT THE EXISTING CONDITION OF THE RIGHT-OF-WAY.

GRAPHIC SCALE
0' 50' 100' 150'
(IN FEET)

LEGEND:

EXISTING		PROPOSED
	RIGHT-OF-WAY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	CENTERLINE	
	SWALE / FLOWLINE	
	SUBSURFACE DRAIN	
S	SANITARY SEWER	S
ST	STORM SEWER	ST
ST	STORM CULVERT	ST
W	WATER MAIN	W
FM	FORCEMAIN (LPGPS LOW PRESSURE GRINDER PUMP SYSTEM)	FM
800	CONTOUR, MAJOR	800
799	CONTOUR, MINOR	799
X X X X	FENCE	X X X X
	TREE LINE	
S	SANITARY MANHOLE	
ST	STORM MANHOLE	
	STORM INLET	
d	STORM END SECTION	d
	FIRE HYDRANT	
N/A	FLOW ARROW	

BC	– BACK OF CURB
CL	– CENTERLINE
FG	– FINISHED GRADE
FL	– FLOW LINE
HP	– HIGH POINT
LP	– LOW POINT
NP	– NORMAL POOL (ELEVATION)
PC	– POINT OF CURVATURE
PT	– POINT OF TANGENCY
PVC	– POLYVINYL CHLORIDE PIPE
RCP	– REINFORCED CONCRETE PIPE
R/W	– RIGHT-OF-WAY
TB	– TOP OF BANK GRADE
FM	– (LPGPS) LOW PRESSURE GRINDER PUMP SYSTEM
	– EMERGENCY FLOOD ROUTE
MFPG	– MINIMUM FLOOD PROTECTION GRADE (SEE DEFINITION ON SHEET C1.1)
MLAG	– MINIMUM LOWEST ADJACENT GRADE (SEE DEFINITION ON SHEET C1.1)
A	– A.D.A. HANDICAP RAMP
B	– 2' ROLL CURB
C	– 20' SAFETY RAMP @ 6:1 SLOPE
■	– INDOT APPROVED SNOWPLOWABLE RAISED PAVEMENT MARKERS
D	– POND WARNING SIGNS
E	– TREE PROTECTION FENCING (ORANGE CONSTRUCTION FENCING)
F	– CURB INLET SNOUT BMP
G	– MECHANICAL SEPARATOR BMP
H	– STREET LIGHT
J	– CURB AND GUTTER TYPE II (CHENILLE DR STA 5+51.62 & 8+72)
K	– 6"x6" WOOD BARRIER POST
L	– ARBOR (TRELLIS) AND BENCH
M	– NATIVE GRASS POND BANK 8' WIDE MINIMUM (SEE DETAIL SHEET C1.2)
N	– "STORM WATER MAP NATURAL PRESERVATION AREA DO NOT MOW OR SPRAY" SIGN (SEE DETAIL SHEET C1.2)
P	– 2' ROLL CURB (NO GUTTER)
BUBBLER	– BUBBLER LAKE #1 BUBBLER = 2.96 AC-FT CIRCULATED OVER 24 HOURS LAKE #2 BUBBLER = 1.57 AC-FT CIRCULATED OVER 24 HOURS



MINIMUM FLOOD PROTECTION GRADE (MFPG) AND MINIMUM LOWEST ADJACENT GRADE (MLAG) DEFINITIONS FROM CITY OF CARMEL STORMWATER TECHNICAL STANDARDS MANUAL SECTION 104.02:

All buildings shall have a minimum flood protection grade shown on the secondary plat. Minimum Flood Protection Grade of all structures fronting a pond or open ditch shall be no less than 2 feet above any adjacent 100-year local or regional flood elevations, whichever is greater, for all windows, doors, pipe entrances, window wells, and any other structure member where floodwaters can enter a building. The Minimum Flood Protection Grade shall also be a minimum of 12 inches above the adjacent roadway. For all structures located in the Special Flood Hazards Area (SFHA) as shown on the FEMA maps, the lowest floor elevations of all residential, commercial, or industrial buildings shall be such that Lowest Floor elevation, including basement, shall be at the flood protection grade and therefore have 2 feet of freeboard above the 100-year flood elevation.

The Lowest Adjacent Grade for residential, commercial, or industrial buildings outside a FEMA or IDNR designated floodplain shall have two feet of freeboard above the flooding source's 100-year flood elevation under proposed conditions. The Lowest Adjacent Grade shall also be a minimum of one (1) foot above the local flood source or local flood route. Lowest Adjacent Grade is the elevation of the lowest grade adjacent to a structure, where the soil meets the foundation around the outside of the structure (including structural members such as basement walkout, patios, decks, porches, support posts or piers, and rim of the window well).

For areas outside a FEMA or IDNR designated floodplain, the Lowest Adjacent Grade (including walkout basement floor elevation) for all residential, commercial, or industrial buildings adjacent to ponds shall be set a minimum of 2 feet above the 100-year pond elevation or 2 feet above the emergency overflow weir elevation, whichever is higher. In addition to the Lowest Adjacent Grade requirements, any basement floor shall be at least a foot above the permanent water level (normal pool elevation).

BENCHMARK INFORMATION:

NOTE: ELEVATION INFORMATION SHOWN HEREON IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) BASED UPON GPS OBSERVATIONS PROCESSED BY THE NATIONAL GEODETIC SERVICE (NGS) UTILIZING AN ON-LINE POSITIONING USER SERVICE (OPUS) SOLUTION FROM OBSERVATIONS ON CONTROL POINT #100 (SEE BELOW).

CONTROL POINT #100 (PRIMARY BENCHMARK)– 5/8-INCH REBAR WITH RED PLASTIC CAP STAMPED "HWC RANDOM POINT" SET IN THE FIELD SOUTH OF THE MAIN HOUSE, APPROXIMATELY 75 FEET WEST OF THE WEST-MOST TREE LINE ALONG THE EAST SIDE OF THE SUBJECT TRACT, AND APPROXIMATELY 400 FEET SOUTH OF THE RAIL FENCE ALONG THE SOUTH LINE OF THE GRASS FIELDS.
ELEVATION: 892.72 (NAVD 88)

CONTROL POINT #101– 5/8-INCH REBAR WITH RED PLASTIC CAP STAMPED "HWC RANDOM POINT" SET NORTH OF W. 131ST STREET AND 200 FEET WEST OF THE ASPHALT DRIVEWAY FOR THE SUBJECT TRACT, APPROXIMATELY 15 FEET NORTH OF THE NORTH EDGE OF PAVEMENT OF W. 131ST STREET AND 31.5 FEET SOUTHEAST OF THE SOUTHWEST CORNER OF AN ASPHALT SIDEWALK.
ELEVATION: 896.56 (NAVD 88)

CONTROL POINT #102– MAG NAIL WITH WASHER STAMPED "HWC RANDOM POINT" SET FLUSH WITH THE ROAD SURFACE AT THE SOUTH END OF THE MEDIAN AT THE INTERSECTION OF HANSEN LANE AND W. 131ST STREET, APPROXIMATELY 4 FEET SOUTHEAST FROM THE BACK OF CURB OF THE MEDIAN AND 37.3 FEET SOUTHEAST OF THE STOP SIGN AT THE INTERSECTION.
ELEVATION: 895.17 (NAVD 88)

HORIZONTAL INFORMATION:
STATE PLANE COORDINATES–EAST ZONE, NAD83

CERTIFICATION FOR "RECORD DRAWING"

CERTIFIED BY: LUKE A. JAHN
HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
INDIANAPOLIS, INDIANA 46204
(317) 347-3663 FAX (317) 347-3664

NOTE:
Record drawing certification only for storm sewer, sanitary sewer, sub-surface drainage, and grading.

LUKE A. JAHN REGISTERED No. 20900171 STATE OF INDIANA PROFESSIONAL SURVEYOR
DATE: 4/14/2020

DRAINAGE SUMMARY:

COPPER RUN IS A PROPOSED SINGLE FAMILY RESIDENTIAL DEVELOPMENT OF 28 NEW LOTS (& ONE EXISTING LOT) OVER 22.4 ACRES +/-. STORMWATER RUNOFF FROM THE PROJECT SITE WILL BE COLLECTED VIA PROPOSED STORM SEWER AND ROUTED TO A DETENTION NETWORK CONSISTING OF TWO WET BOTTOM DETENTION FACILITIES, WHERE WATER QUALITY & QUANTITY WILL BE PROVIDED. LAKE #2 OUTLETS SOUTH TO LAKE #1 IN THE SOUTHWEST CORNER OF THE SITE. LAKE #1 OUTLETS TO BOONE CREEK (OFFSITE STORM ROUTE TO BOONE CREEK).

THERE IS A CONSIDERABLE AMOUNT OF OFFSITE DRAINAGE (43.84 ACRES IN TOTAL) THAT WILL AFFECT THE PROJECT SITE, PRIMARILY COMING FROM THE EXISTING RESIDENTIAL ESTATE LOTS EAST OF THE PROJECT SITE. THE ONSITE STORM SEWER AND SWALE SYSTEM WILL BE DESIGNED TO CAPTURE AND ROUTE THIS OFFSITE DRAINAGE DIRECTLY TO LAKES #1 #2 AND BYPASS IT THROUGH THE SYSTEM. LAKE #2 HAS A 15' SPILLWAY AT AN INVERT ELEVATION SET JUST ABOVE THE 100-YEAR ELEVATION FROM THE ONSITE ONLY ICPR COMPUTER MODEL SIMULATION. THIS SPILLWAY WILL ACTIVATE IN STORM EVENTS OF A 10-YEAR FREQUENCY AND HIGHER TO HELP BYPASS EXCESSIVE RUNOFF FROM OFFSITE SOURCES. LAKE #1 HAS AN OUTLET CONTROL BOX WHOSE TOP WEIR ELEVATION HAS BEEN SET AT AN INVERT ELEVATION JUST ABOVE THE 100-YEAR ELEVATION FROM THE ONSITE ONLY ICPR COMPUTER MODEL SIMULATION. THIS TOP WEIR WILL ALLOW EXCESSIVE RUNOFF RESULTING FROM THE OFFSITE BASIN TO BE PASSED THROUGH TO BOONE CREEK VIA A 24" RCP OUTFALL PIPE. LAKE #1 ALSO HAS A 30' WIDE SPILLWAY AT AN INVERT ELEVATION SLIGHTLY ABOVE THE CALCULATED 100-YEAR EVENT WITH ALL CONTRIBUTING AREAS FOR EMERGENCY PURPOSES.

THERE ARE NO ANTICIPATED NEGATIVE IMPACTS ON THE DOWNSTREAM ADJOINING PROPERTY RESULTING FROM THIS DEVELOPMENT. THE ORDINANCE RELEASE RATE VALUES HAVE BEEN ADHERED TO FOR THE ONSITE DRAINAGE, AND THE LARGE AMOUNT OF OFFSITE DRAINAGE WILL ALSO BE DETAINED ENTIRELY FOR EVENTS WITH FREQUENCIES OF LESS THAN 10-YEARS. AS CAN BE SEEN IN THE DETENTION VOLUME TABLE BELOW, A CONSIDERABLE AMOUNT OF ADDITIONAL DETENTION VOLUME HAS BEEN PROVIDED THAN THE SITE WOULD REQUIRE ON ITS OWN AS A STAND ALONE SITE. THIS EXTRA VOLUME HAS BEEN USED IN PART TO DEAL WITH THE OFFSITE DRAINAGE AND SLOW THE WATER DOWN FOR THE DOWNSTREAM RECEIVING PROPERTIES.

THE COPPER RUN SITE IS NOT IMMEDIATELY ADJACENT TO A STREAM, CREEK, OR OTHER WATERCOURSE THAT WILL HAVE A FLOODING IMPACT. THE PROPOSED DETENTION FACILITIES WILL HAVE 100-YEAR HIGH WATER ELEVATIONS FROM WHICH THE PROPOSED LOTS WILL HAVE MINIMUM FLOOD PROTECTION GRADES OF AT LEAST TWO (2) VERTICAL FEET OF CLEARANCE ABOVE.

THE FULLY DEVELOPED RIGHT-OF-WAY FOR THE 131ST STREET THOROUGHFARE HAS BEEN INCLUDED IN THE PROPOSED DETENTION SYSTEM DESIGN (PER CITY OF CARMEL 20-YEAR THOROUGHFARE PLAN).

ALLOWABLE RELEASE RATES ARE AS FOLLOWS (BASED ON 0.1 CFS/ACRE FOR 10-YEAR EVENT, AND 0.30 CFS/ACRE FOR 100-YEAR EVENT):

BOONE CREEK OUTLET: 10-YEAR ALLOWABLE-> 2.32 CFS, 100-YEAR ALLOWABLE-> 6.95 CFS

PROPOSED RELEASE RATES ARE AS FOLLOWS (ONSITE DRAINAGE ONLY):

BOONE CREEK OUTLET: 10-YEAR-> 2.31 CFS, 100-YEAR-> 6.58 CFS

DETENTION VOLUMES:

TOTAL VOLUME REQUIRED –> 5.74 ACRE-FEET

TOTAL VOLUME PROVIDED (AT TOP OF BANK) –> 9.22 ACRE-FEET

LAKE #1 VOLUME PROVIDED (AT TOP OF BANK) –> 5.47 ACRE-FEET

LAKE #2 VOLUME PROVIDED (AT TOP OF BANK) –> 3.75 ACRE-FEET

REVISIONS

DATE	DESCRIPTION	BY
07/02/18	REVISED PER TAC COMMENTS	DC
08/02/18	REVISED PER TAC COMMENTS	DC
09/12/18	REVISED SUBDIVISION NAME & STREET NAME	DC
12/15/19	RECORD DRAWING	SD
01/28/19	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/19	ADDED MOUNDS TO COMMON AREA "A"	KS

HWC ENGINEERING
INDIANAPOLIS - TERRE HAUTE
LAFAYETTE - MUNCIE - NEW ALBANY
www.hwcengineering.com

COPPER RUN
CARMEL, INDIANA
DEVELOPMENT PLAN

BRANDON T. BURK REGISTERED No. 10000075 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY DC	JOB NUMBER 2017-232-A
CHECKED BY BB	
DATE MAY 18, 2018	
SCALE AS SHOWN	
SHEET C1.1 DEVELOPMENT PLAN	

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Plot Date: Apr 14, 2020 Plot Time: 12:29pm File Name: W:\Pulte Homes\2017-232-A Pulte- Copperleaf\Design\CAD\17232-A.Development Plan-Asbuilt.dwg, Layout: C1.1 By: sdonaldson

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CARMEL GENERAL NOTES:

1. UTILITY RELOCATIONS REQUIRED BY THE PROJECT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER. UTILITY LINE RELOCATIONS REQUIRED FOR ROAD PROJECTS THAT RESULT IN A CONFLICT WITH PROPOSED DEVELOPMENT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO RESOLVE WITH THE UTILITY. EXISTING POLE LINES REQUIRED TO BE RELOCATED SHALL BE RELOCATED TO WITHIN ONE FOOT OF THE PROPOSED RIGHT-OF-WAY LINE.
2. NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.
3. DAMAGE TO THE EXISTING RIGHT-OF-WAY SHALL BE RESTORED/REPAIRED TO THE SATISFACTION OF THE CITY AT THE COMPLETION OF THE PROJECT. THE CONTRACTOR IS ENCOURAGED TO INSPECT THE RIGHT-OF-WAY WITH THE CITY PRIOR TO THE START OF CONSTRUCTION TO DOCUMENT THE EXISTING CONDITION OF THE RIGHT-OF-WAY.

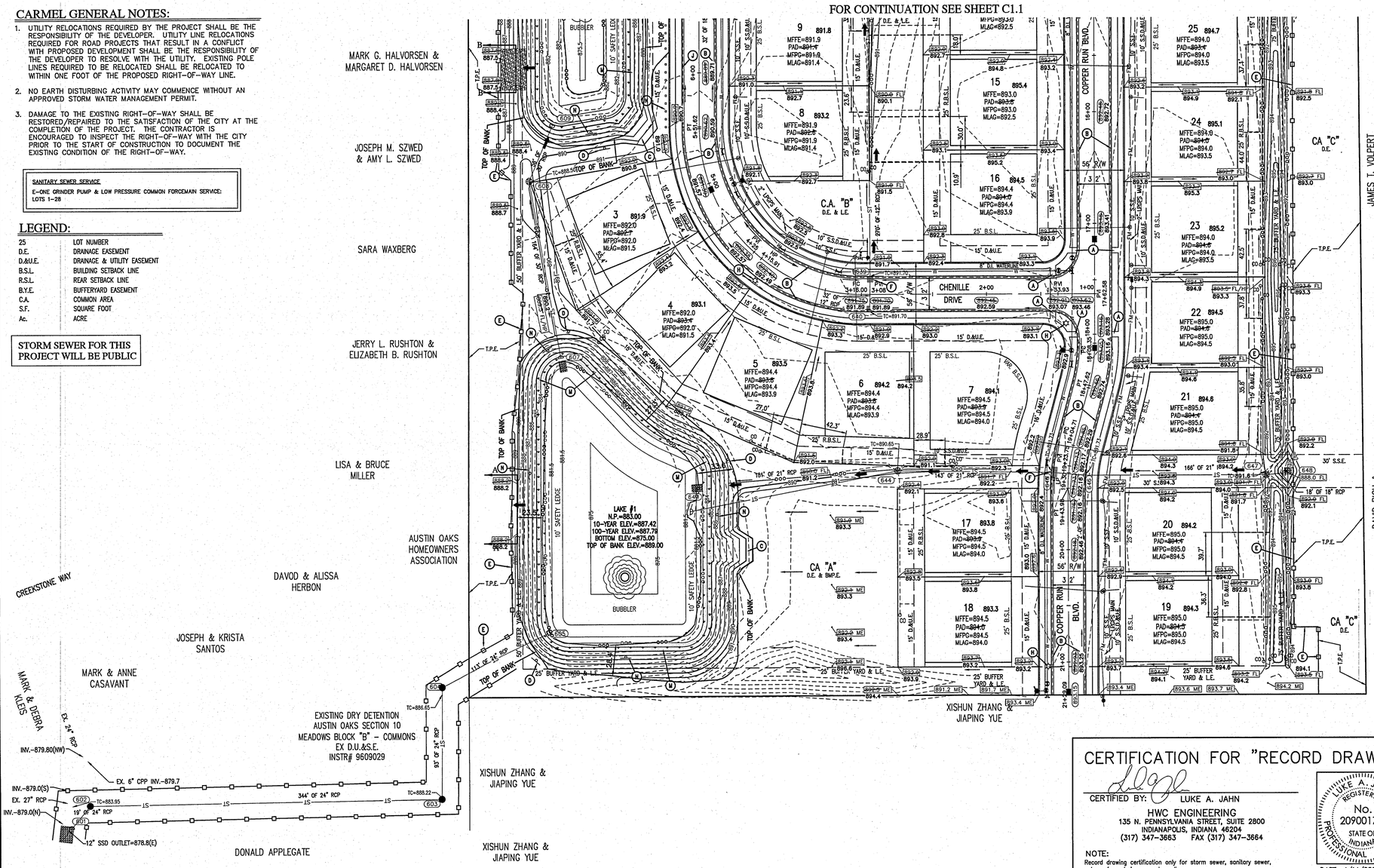
SANITARY SEWER SERVICE
E-ONE GRINDER PUMP & LOW PRESSURE COMMON FORCEMAIN SERVICE:
LOTS 1-28

LEGEND:

25	LOT NUMBER
D.E.	DRAINAGE EASEMENT
D.&U.E.	DRAINAGE & UTILITY EASEMENT
B.S.L.	BUILDING SETBACK LINE
R.S.L.	REAR SETBACK LINE
B.Y.E.	BUFFERYARD EASEMENT
C.A.	COMMON AREA
S.F.	SQUARE FOOT
Ac.	ACRE

STORM SEWER FOR THIS PROJECT WILL BE PUBLIC

FOR CONTINUATION SEE SHEET C1.1



Indiana 811
KNOW WHAT'S BELOW.
CALL BEFORE YOU DIG.
Call 811 or 800-382-5544 Before you Dig!

GRAPHIC SCALE
0' 50' 100' 150'
(IN FEET)

LEGEND:

EXISTING		PROPOSED
	RIGHT-OF-WAY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	CENTERLINE	
	SWALE / FLOWLINE	
	SUBSURFACE DRAIN	
S	SANITARY SEWER	S
ST	STORM SEWER	ST
ST	STORM CULVERT	ST
W	WATER MAIN	W
FM	FORCEMAIN (LPGPS LOW PRESSURE GRINDER PUMP SYSTEM)	FM
800	CONTOUR, MAJOR	800
799	CONTOUR, MINOR	799
	FENCE	
	TREE LINE	
S	SANITARY MANHOLE	
ST	STORM MANHOLE	
	STORM INLET	
	STORM END SECTION	
	FIRE HYDRANT	
N/A	FLOW ARROW	

BC – BACK OF CURB
CL – CENTERLINE
FG – FINISHED GRADE
FL – FLOW LINE
HP – HIGH POINT
LP – LOW POINT
NP – NORMAL POOL (ELEVATION)
PC – POINT OF CURVATURE
PT – POINT OF TANGENCY
PVC – POLYVINYL CHLORIDE PIPE
RCP – REINFORCED CONCRETE PIPE
R/W – RIGHT-OF-WAY
TB – TOP OF BANK GRADE
FM – (LPGPS) LOW PRESSURE GRINDER PUMP SYSTEM

– EMERGENCY FLOOD ROUTE
MFPG – MINIMUM FLOOD PROTECTION GRADE (SEE DEFINITION ON SHEET C1.1)
MLAG – MINIMUM LOWEST ADJACENT GRADE (SEE DEFINITION ON SHEET C1.1)
(A) – A.D.A. HANDICAP RAMP
(B) – 2' ROLL CURB
(C) – 20' SAFETY RAMP @ 6:1 SLOPE
– INDOT APPROVED SNOWPLOWABLE RAISED PAVEMENT MARKERS
(D) – POND WARNING SIGNS
(E) – TREE PROTECTION FENCING (ORANGE CONSTRUCTION FENCING)
(F) – CURB INLET SNOUT BMP
(G) – MECHANICAL SEPARATOR BMP
(H) – STREET LIGHT
(J) – CURB AND GUTTER TYPE II (CHENILLE DR STA 5+51.62 & 8+72)
(K) – 6"x6" WOOD BARRIER POST
(L) – ARBOR (TRELLIS) AND BENCH
(M) – NATIVE GRASS POND BANK 8' WIDE MINIMUM (SEE DETAIL SHEET C1.2)
(N) – "STORM WATER BMP NATURAL PRESERVATION AREA DO NOT MOW OR SPRAY" SIGN (SEE DETAIL SHEET C1.2)
(P) – 2' ROLL CURB (NO GUTTER)
– BUBBLER
LAKE #1 BUBBLER = 2.96 AC-FT CIRCULATED OVER 24 HOURS
LAKE #2 BUBBLER = 1.57 AC-FT CIRCULATED OVER 24 HOURS

BUBBLER

CERTIFICATION FOR "RECORD DRAWING"

CERTIFIED BY: LUKE A. JAHN
HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
INDIANAPOLIS, INDIANA 46204
(317) 347-3663 FAX (317) 347-3664

NOTE:
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LUKE A. JAHN REGISTERED No. 20900171 STATE OF INDIANA PROFESSIONAL SURVEYOR

DATE: 4/14/2020

BENCHMARK INFORMATION:

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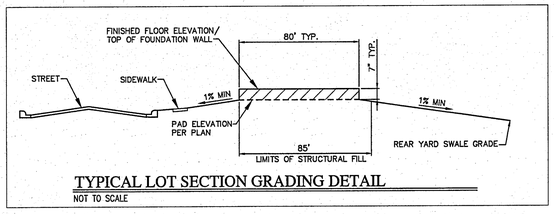
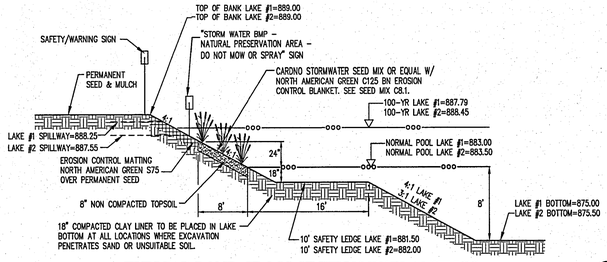
ELEVATION: 895.17 (NAVD 88)

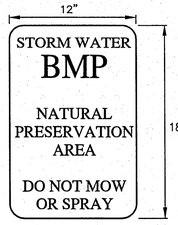
HORIZONTAL INFORMATION:
STATE PLANE COORDINATES-EAST ZONE, NAD83



TYPICAL LOT SECTION GRADING DETAIL
NOT TO SCALE



TYPICAL POND CROSS SECTION W/ PLANTINGS
NOT TO SCALE



(N) STORM WATER BMP NATURAL PRESERVATION AREA SIGN
NOT TO SCALE

HWC ENGINEERING
INDIANAPOLIS - TERRE HAUTE
LAFAYETTE - MUNCIE - NEW ALBANY
www.hwcengineering.com

REVISIONS

DATE	DESCRIPTION	BY
07/02/18	REVISED PER TAC COMMENTS	DC
08/02/18	REVISED PER TAC COMMENTS	DC
09/12/18	REVISED SUBDIVISION NAME & STREET NAME	DC
12/15/19	RECORD DRAWING	SD
01/28/19	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/19	ADDED MOUNDS TO COMMON AREA "A"	KS

COPPER RUN
CARMEL, INDIANA
DEVELOPMENT PLAN

BRANDON T. BURKE REGISTERED No. 10000075 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY DC	JOB NUMBER 2017-232-A
CHECKED BY BB	
DATE MAY 18, 2018	
SCALE AS SHOWN	
SHEET C1.2 DEVELOPMENT PLAN	

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Plot Date: Apr 14, 2020 Plot Time: 12:30pm File Name: W:\Pulte Homes\2017-232-A Pulte- Copperleaf\Design\CAD\17232-A.Development Plan-Asbuilt.dwg, Layout: C1.2 By: sdonaldson

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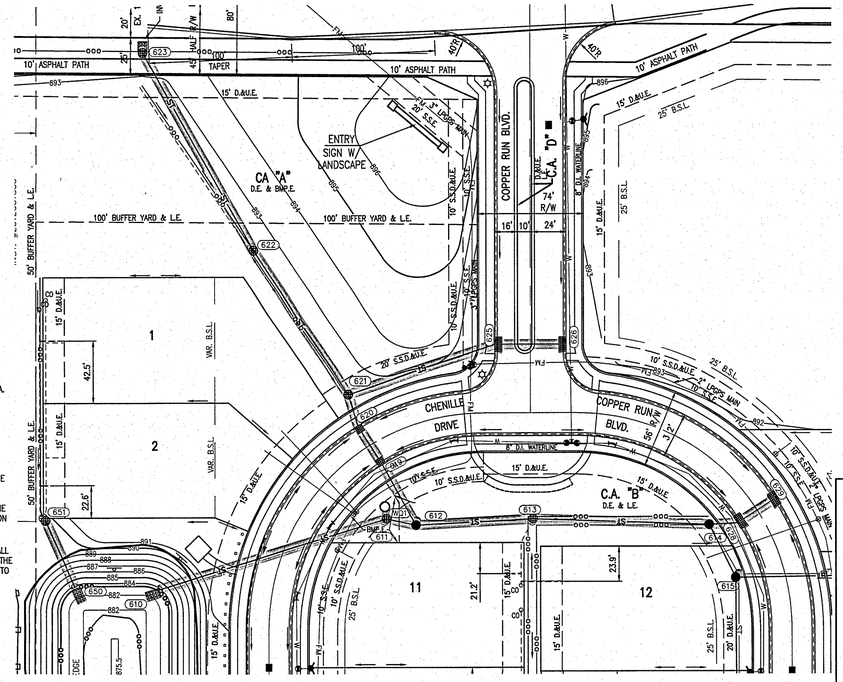
LEGEND:

EXISTING		PROPOSED
	RIGHT-OF-WAY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	CENTERLINE	
	SWALE / FLOWLINE	
	SUBSURFACE DRAIN	
S	SANITARY SEWER	S
ST	STORM SEWER	ST
ST	STORM CULVERT	ST
W	WATER MAIN	W
(S)	SANITARY MANHOLE	XXX
(ST)	STORM MANHOLE	XXX
	STORM INLET	XXX
	STORM END SECTION	XXX
	FIRE HYDRANT	
	PROFILED PIPELINE	ST

EX – EXISTING
INV – INVERT ELEVATION
MH – MANHOLE
RCP – REINFORCED CONCRETE PIPE
TC – TOP OF CASTING GRADE
LPGPS – LOW PRESSURE GRINDER PUMP SYSTEM

GENERAL NOTES:

1. TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS.
2. ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
4. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING ELEVATIONS BEFORE CONSTRUCTION BEGINS.
5. THE STORM SEWER SYSTEM SHALL BE CONSTRUCTED PER DESIGN SPECIFIED AND AS APPROVED BY THE CITY OF CARMEL ON THE FINAL APPROVED CONSTRUCTION PLANS. DEVIATIONS FROM THE APPROVED DESIGN SHALL ONLY BE PERMITTED DUE TO SPECIAL CIRCUMSTANCES OR DIFFICULTY DURING CONSTRUCTION AND WILL REQUIRE PRIOR FIELD APPROVAL FROM A DESIGNATED REPRESENTATIVE OF THE CITY OF CARMEL IN ADDITION TO SUPPLEMENTAL APPROVAL BY THE DESIGN ENGINEER. AN EXPLANATION OF ANY SUCH DEVIATION SHALL BE INCLUDED AS A REQUIREMENT ON AS-BUILT/RECORD DRAWINGS SUBMITTED FOR RELEASE OF PERFORMANCE GUARANTEES. APPROVED DESIGN SLOPES IDENTIFIED AS GENERATING VELOCITIES OF 2.5 FPS OR LESS OR 10 FPS OR GREATER (AT FULL FLOW CAPACITY) SHALL REQUIRE AS-BUILT CERTIFICATION AT THE TIME OF CONSTRUCTION, PRIOR TO BACKFILLING THE PIPE. THE CONTRACTOR IS INSTRUCTED TO AS-BUILT EACH SECTION OF STORM PIPE AS IT IS BEING INSTALLED TO ENSURE COMPLIANCE WITH THE DESIGN PLANS AND AS APPROVED BY THE CITY OF CARMEL.
6. NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.
7. ALL STORMWATER DRAINAGE CASTINGS SHALL BE LABELED WITH ENVIRONMENTAL MESSAGING "DUMP NO WASTE"
8. ALL CONCRETE PIPE JOINTS SHALL BE CONTINUOUS O-RING RUBBER GASKET CONFORMING TO ASTM C 443
9. 18" OF VERTICAL SEPARATION MUST BE MAINTAINED FOR ALL UTILITY CROSSINGS.
10. FOR STORM SEWER BACKFILL SPECIFICATIONS, REFER TO STORM SEWER TRENCH DETAIL STANDARD DRAWING 10-28 ON SHEET C8.4



STORM SEWER STRUCTURE DATA TABLE

STR. #	TC	INV. IN (ELEV.)	INV. OUT (ELEV.)	PIPE IN DIA. (INCH)	PIPE OUT DIA. (INCH)	PIPE IN MATERIAL	PIPE OUT MATERIAL	STR. & CASTING TYPE	DETAIL REFERENCE
610	886.92	883.50 (E)		42"		RCP		END SECTION	SEE DETAIL SHEET C8.3
611	892.09	883.90 (E)	883.70 (W)	36"	42"	RCP	RCP	6' DIVERSION MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.2
612	891.45	883.95 (E) 885.65 (NW)	883.95 (W)	36" 18"	36"	RCP RCP	RCP	6' DIA. MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.6
613	889.40	884.10 (E)	884.10 (W)	36"	36"	RCP	RCP	5' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6
614	890.69	884.35 (SE) 885.75 (E)	884.35 (W)	36" 15"	36"	RCP RCP	RCP	6' DIA. MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.6
619	891.11	886.00 (NW)	885.90 (SE)	18"	18"	RCP	RCP	4' DIA. MANHOLE NEENAH R-3501-N	SEE DETAIL SHEET C8.6
620	891.11	886.30 (N)	886.20 (SE)	18"	18"	RCP	RCP	4' DIA. MANHOLE NEENAH R-3501-N	SEE DETAIL SHEET C8.6
621	890.40	886.60 (NW) 886.60 (E)	886.40 (S)	15" 15"	18"	RCP RCP	RCP	4' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6
622	891.00	887.15 (NW)	887.05 (SE)	15"	15"	RCP	RCP	2'X2' BOX NEENAH R-4342	SEE DETAIL SHEET C8.3
623	892.10		888.00 (SE)		15"		RCP	2'X2' BOX NEENAH R-4342	SEE DETAIL SHEET C8.3
625	891.54	887.30 (E)	887.10 (W)	12"	15"	RCP	RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3
626	891.54		887.50 (W)		12"		RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3
628	890.20	886.05 (NE)	885.85 (W)	12"	15"	RCP	RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3
629	890.20		886.20 (SW)		12"		RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3
650	885.25	884.00 (NW)		12"		RCP		END SECTION	SEE DETAIL SHEET C8.3
651	889.50		885.00 (SE)		12"		RCP	2'X2' BOX NEENAH R-4342	SEE DETAIL SHEET C8.3

Indiana 811
KNOW WHAT'S BELOW.
CALL BEFORE YOU DIG.
Call 811 or 800-382-5544 Before you Dig!

Pipe Table

UPSTREAM TO DOWNSTREAM	PIPE LENGTH (FT)	PIPE DIA. (IN)
611–610	165	42"
612–611	22	36"
613–612	81	36"
614–613	125	36"
619–612	46	18"
620–619	32	18"
621–620	23	18"
622–621	120	15"
623–622	154	15"
625–621	107	15"
626–625	50	12"
628–614	20	15"
629–628	32	12"
651–650	54	12"

CERTIFICATION FOR "RECORD DRAWING"

CERTIFIED BY: LUKE A. JAHN
HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
INDIANAPOLIS, INDIANA 46204
(317) 347-3663 FAX (317) 347-3664

LUKE A. JAHN REGISTERED No. 20900171 STATE OF INDIANA PROFESSIONAL SURVEYOR

DATE: 4/14/2020

NOTE:
Record drawing certification only for top of casting, invert elevations and lengths of pipe. Slope percentage represents a calculated figure and is for general information only.

GRAPHIC SCALE
0' 50' 100' 150'
(IN FEET)

BENCHMARK INFORMATION:

NOTE: ELEVATION INFORMATION SHOWN HEREON IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) BASED UPON GPS OBSERVATIONS PROCESSED BY THE NATIONAL GEODETIC SERVICE (NGS) UTILIZING AN ON-LINE POSITIONING USER SERVICE (OPUS) SOLUTION FROM OBSERVATIONS ON CONTROL POINT #100 (SEE BELOW).

CONTROL POINT #100 (PRIMARY BENCHMARK)– 5/8–INCH REBAR WITH RED PLASTIC CAP STAMPED "HWC RANDOM POINT" SET IN THE FIELD SOUTH OF THE MAIN HOUSE, APPROXIMATELY 75 FEET WEST OF THE WEST–MOST TREE LINE ALONG THE EAST SIDE OF THE SUBJECT TRACT, AND APPROXIMATELY 400 FEET SOUTH OF THE RAIL FENCE ALONG THE SOUTH LINE OF THE GRASS FIELDS. ELEVATION: 892.72 (NAVD 88)

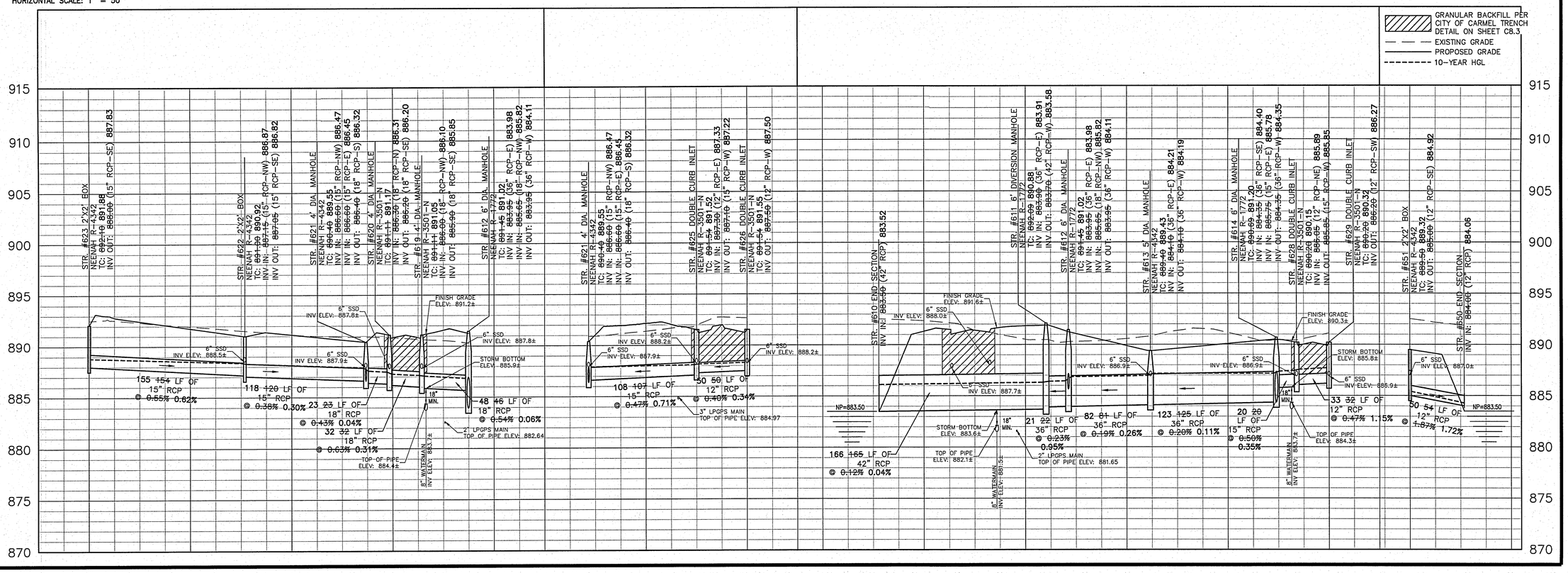
CONTROL POINT #101– 5/8–INCH REBAR WITH RED PLASTIC CAP STAMPED "HWC RANDOM POINT" SET NORTH OF W. 131ST STREET AND 200 FEET WEST OF THE ASPHALT DRIVEWAY FOR THE SUBJECT TRACT, APPROXIMATELY 15 FEET NORTH OF THE NORTH EDGE OF PAVEMENT OF W. 131ST STREET AND 35.0 FEET SOUTHEAST OF THE SOUTHWEST CORNER OF AN ASPHALT SIDEWALK.
ELEVATION: 896.56 (NAVD 88)

CONTROL POINT #102– MAG NAIL WITH WASHER STAMPED "HWC RANDOM POINT" SET FLUSH WITH THE ROAD SURFACE AT THE SOUTH END OF THE MEDIAN AT THE INTERSECTION OF HANSEN LANE AND W. 131ST STREET, APPROXIMATELY 4 FEET SOUTHEAST FROM THE BACK OF CURB OF THE MEDIAN AND 37.3 FEET SOUTHEAST OF THE STOP SIGN AT THE INTERSECTION.
ELEVATION: 895.17 (NAVD 88)

HORIZONTAL INFORMATION:
STATE PLANE COORDINATES–EAST ZONE, NAD83

STORM PROFILE

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



REVISIONS

DATE	DESCRIPTION	BY
07/02/18	REVISED PER TAC COMMENTS	DC
08/02/18	REVISED PER TAC COMMENTS	DC
09/12/18	REVISED SUBDIVISION NAME & STREET NAME	DC
01/25/19	RECORD DRAWING	SD
01/28/19	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/19	ADDED WOUNDS TO COMMON AREA "A"	KS

HWC ENGINEERING
INDIANAPOLIS - TERRE HAUTE
LAFAYETTE - MUNCIE - NEW ALBANY
www.hwcengineering.com

COPPER RUN
CARMEL, INDIANA
STORM SEWER PLAN AND PROFILE

BRANDON T. BURK REGISTERED No. 10000075 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY DC	JOB NUMBER 2017-232-A
CHECKED BY BB	
DATE MAY 18, 2018	
SCALE AS SHOWN	
SHEET C6.0 STORM SEWER PLAN AND PROFILE	

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Plot Date: Apr 14, 2020 Plot Time: 10:34am File Name: W:\Pulte Homes\2017-232-A Pulte- Copperleaf\Design\CAD\17232-A.Storm Plan - Asbuilt.dwg, Layout: C6.0 By: sdonaldson

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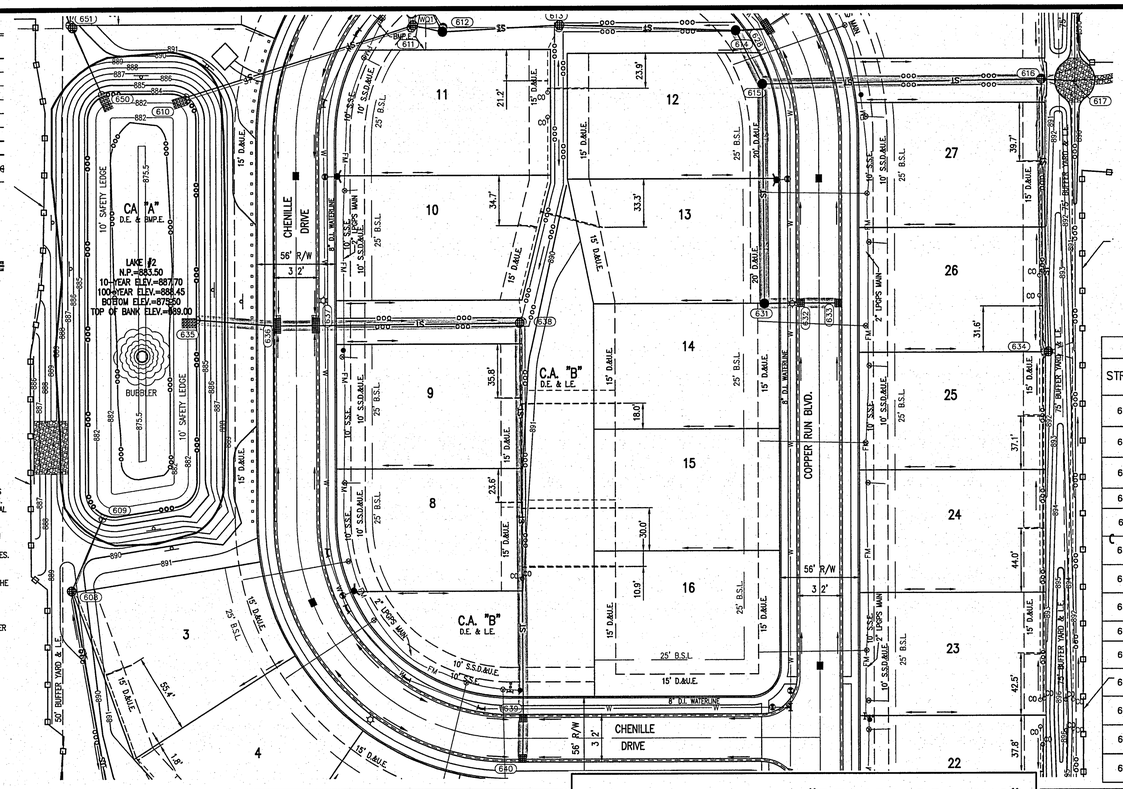
LEGEND:

EXISTING		PROPOSED
	RIGHT-OF-WAY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	CENTERLINE	
	SWALE / FLOWLINE	
	SUBSURFACE DRAIN	
	SANITARY SEWER	
	STORM SEWER	
	STORM CULVERT	
	WATER MAIN	
Ⓢ	SANITARY MANHOLE	(XX)
Ⓜ	STORM MANHOLE	(XX)
▦	STORM INLET	(XX)
◐	STORM END SECTION	(XX)
	FIRE HYDRANT	
	PROFILED PIPELINE	

EX – EXISTING
INV – INVERT ELEVATION
MH – MANHOLE
RCP – REINFORCED CONCRETE PIPE
TC – TOP OF CASTING GRADE
LPGPS – LOW PRESSURE GRINDER PUMP SYSTEM

GENERAL NOTES:

1. TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS.
2. ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
4. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING ELEVATIONS BEFORE CONSTRUCTION BEGINS.
5. THE STORM SEWER SYSTEM SHALL BE CONSTRUCTED PER DESIGN SPECIFIED AND AS APPROVED BY THE CITY OF CARMEL ON THE FINAL APPROVED CONSTRUCTION PLANS. DEVIATIONS FROM THE APPROVED DESIGN SHALL ONLY BE PERMITTED DUE TO SPECIAL CIRCUMSTANCES OR DIFFICULTY DURING CONSTRUCTION AND WILL REQUIRE PRIOR FIELD APPROVAL FROM A DESIGNATED REPRESENTATIVE OF THE CITY OF CARMEL IN ADDITION TO SUPPLEMENTAL APPROVAL BY THE DESIGN ENGINEER. AN EXPLANATION OF ANY SUCH DEVIATION SHALL BE INCLUDED AS A REQUIREMENT ON AS-BUILT/RECORD DRAWINGS SUBMITTED FOR RELEASE OF PERFORMANCE GUARANTEES. APPROVED DESIGN SLOPES IDENTIFIED AS GENERATING VELOCITIES OF 2.5 FPS OR LESS OR 10 FPS OR GREATER (AT FULL FLOW CAPACITY) SHALL REQUIRE AS-BUILT CERTIFICATION AT THE TIME OF CONSTRUCTION. PRIOR TO BACKFILLING THE PIPE, THE CONTRACTOR IS INSTRUCTED TO AS-BUILT EACH SECTION OF STORM PIPE AS IT IS BEING INSTALLED TO ENSURE COMPLIANCE WITH THE DESIGN PLANS AND AS APPROVED BY THE CITY OF CARMEL.
6. NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.
7. ALL STORMWATER DRAINAGE CASTINGS SHALL BE LABELED WITH ENVIRONMENTAL MESSAGING "DUMP NO WASTE"
8. ALL CONCRETE PIPE JOINTS SHALL BE CONTINUOUS O-RING RUBBER GASKET CONFORMING TO ASTM C 443
9. 18" OF VERTICAL SEPARATION MUST BE MAINTAINED FOR ALL UTILITY CROSSINGS.
10. FOR STORM SEWER BACKFILL SPECIFICATIONS, REFER TO STORM SEWER TRENCH DETAIL STANDARD DRAWING 10-28 ON SHEET C8.4



Pipe Table		
UPSTREAM TO DOWNSTREAM	PIPE LENGTH (FT)	PIPE DIA. (IN)
615–614	39	36"
616–615	195	36"
617–616	21	36"
631–615	151	15"
632–631	21	15"
633–632	32	12"
634–616	185	12"
636–635	54	21"
637–636	32	18"
638–637	142	15"
639–638	270	12"
640–639	32	12"

Indiana 811
KNOW WHAT'S BELOW.
CALL BEFORE YOU DIG.
Call 811 or 800-382-5544 Before you Dig!

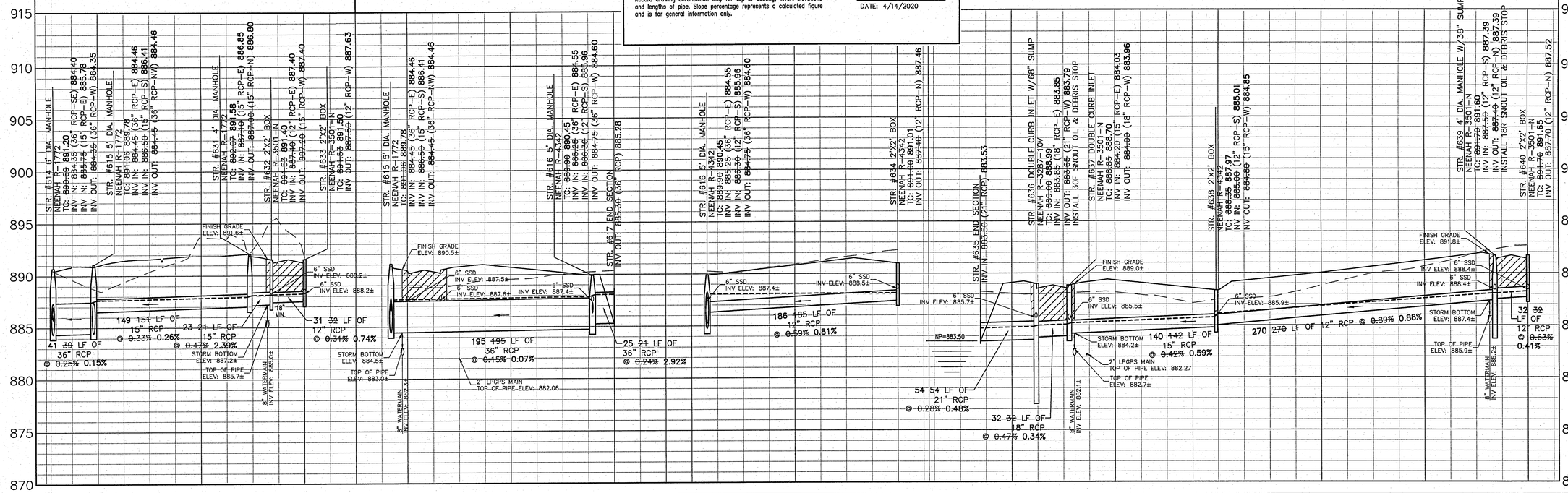
GRAPHIC SCALE
0' 50' 100' 150'
(IN FEET)

STORM SEWER STRUCTURE DATA TABLE										
STR. #	TC	INV. IN (ELEV.)	INV. OUT (ELEV.)	PIPE IN DIA. (INCH)	PIPE OUT DIA. (INCH)	PIPE IN MATERIAL	PIPE OUT MATERIAL	STR. & CASTING TYPE	DETAIL REFERENCE	SPECIAL NOTES
614	890.69	884.35 (SE) 885.75 (E)	884.35 (W)	36" 15"	36"	RCP RCP	RCP	6' DIA. MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.6	
615	891.06	884.45 (E) 886.50 (S)	884.45 (NW)	36" 15"	36"	RCP RCP	RCP	5' DIA. MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.6	
616	889.90	885.25 (E) 886.30 (S)	884.75 (W)	36" 12"	36"	RCP RCP	RCP	5' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6	
617	888.72		885.30 (W)		36"		RCP	END SECTION	SEE DETAIL SHEET C8.3	
631	892.07	887.10 (E)	887.00 (N)	15"	15"	RCP	RCP	4' DIA. MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.6	
632	891.53	887.40 (E)	887.20 (W)	12"	15"	RCP	RCP	2'X2' BOX NEENAH R-3501-N	SEE DETAIL SHEET C8.6	
633	891.53		887.50 (W)		12"		RCP	2'X2' BOX NEENAH R-3501-N	SEE DETAIL SHEET C8.3	
634	891.00		887.40 (N)		12"		RCP	2'X2' BOX NEENAH R-4342	SEE DETAIL SHEET C8.3	
635	885.56	883.50 (E)		21"		RCP		END SECTION	SEE DETAIL SHEET C8.3	
636	889.00	883.85 (E)	883.65 (W)	18"	21"	RCP	RCP	DOUBLE CURB INLET W/68" SUMP NEENAH R-3287-10V	SEE DETAIL SHEET C8.3	INSTALL 30F SNOUT, SEE DETAIL SHEET C8.2
637	888.85	884.20 (E)	884.00 (W)	15"	18"	RCP	RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3	
638	888.35	885.00 (S)	884.80 (W)	12"	15"	RCP	RCP	2'X2' BOX NEENAH R-4342	SEE DETAIL SHEET C8.3	
639	891.70	887.50 (S)	887.40 (N)	12"	12"	RCP	RCP	4' DIA. MANHOLE W/38" SUMP NEENAH R-3501-N	SEE DETAIL SHEET C8.6	INSTALL 18R SNOUT, SEE DETAIL SHEET C8.2
640	891.70		887.70 (N)		12"		RCP	2'X2' BOX NEENAH R-3501-N	SEE DETAIL SHEET C8.3	

STORM PROFILE

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

GRANULAR BACKFILL PER CITY OF CARMEL TRENCH DETAIL ON SHEET C8.3
EXISTING GRADE
PROPOSED GRADE
10-YEAR HGL



CERTIFICATION FOR "RECORD DRAWING"

CERTIFIED BY: LUKE A. JAHN

HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
INDIANAPOLIS, INDIANA 46204
(317) 347-3663 FAX (317) 347-3664

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LUKE A. JAHN REGISTERED No. 20900171 STATE OF INDIANA PROFESSIONAL SURVEYOR

DATE: 4/14/2020

REVISIONS

DATE	DESCRIPTION	BY
07/02/18	REVISED PER TAC COMMENTS	DC
08/02/18	REVISED PER TAC COMMENTS	DC
09/12/18	REVISED SUBDIVISION NAME & STREET NAME	DC
01/25/19	RECORD DRAWING	SD
01/28/19	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/19	ADDED MOUNDS TO COMMON AREA "A"	KS

HWC ENGINEERING
INDIANAPOLIS - TERRE HAUTE
LAFAYETTE - MUNCIE - NEW ALBANY
www.hwcengineering.com

COPPER RUN
CARMEL, INDIANA
STORM SEWER PLAN AND PROFILE

BRANDON T. BURK REGISTERED No. 10000075 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY DC	JOB NUMBER 2017-232-A
CHECKED BY BB	
DATE MAY 18, 2018	
SCALE AS SHOWN	
SHEET C6.1 STORM SEWER PLAN AND PROFILE	

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Plot Date: Apr 14, 2020 Plot Time: 10:33am File Name: W:\Pulte Homes\2017-232-A Pulte- Copperleaf\Design\CAD\17232-A.Storm Plan - Asbuilt.dwg, Layout: C6.1 By: sdonaldson

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LEGEND:

EXISTING		PROPOSED
	RIGHT-OF-WAY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	CENTERLINE	
	SWALE / FLOWLINE	
	SUBSURFACE DRAIN	
S	SANITARY SEWER	S
ST	STORM SEWER	ST
ST	STORM CULVERT	ST
W	WATER MAIN	W
(S)	SANITARY MANHOLE	(XXX)
(ST)	STORM MANHOLE	(XXX)
	STORM INLET	(XXX)
	STORM END SECTION	(XXX)
	FIRE HYDRANT	
	PROFILED PIPELINE	ST

EX – EXISTING
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RCP – REINFORCED CONCRETE PIPE
TC – TOP OF CASTING GRADE
LPGPS – LOW PRESSURE GRINDER PUMP SYSTEM

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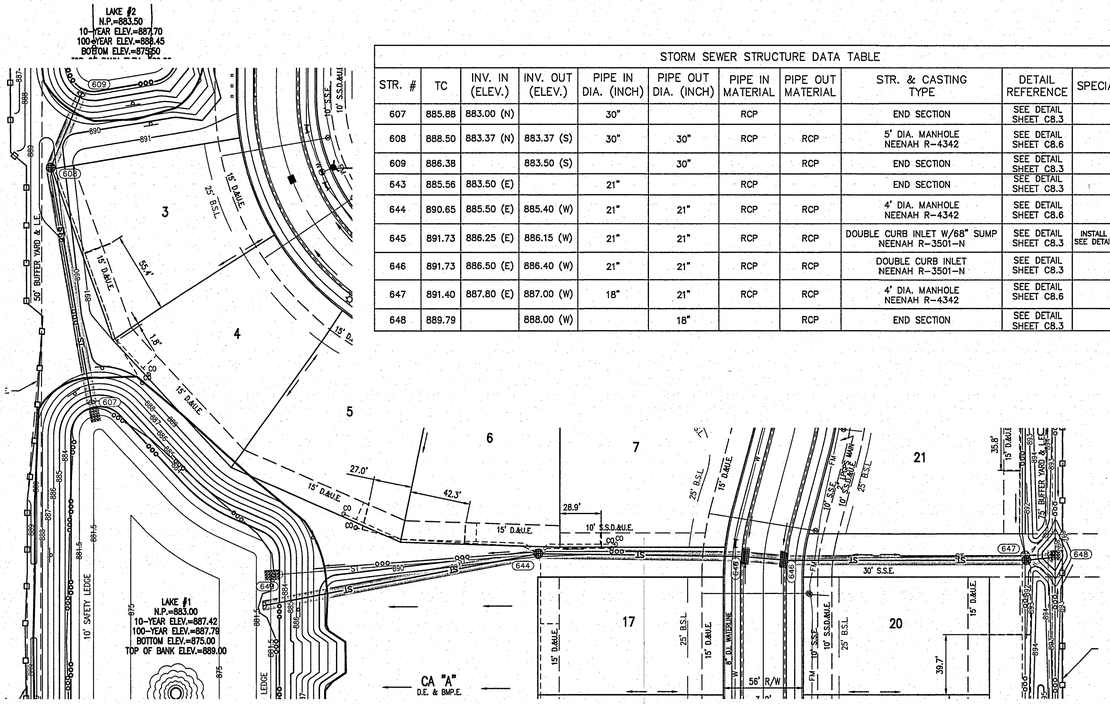

STORM SEWER STRUCTURE DATA TABLE										
STR. #	TC	INV. IN (ELEV.)	INV. OUT (ELEV.)	PIPE IN DIA. (INCH)	PIPE OUT DIA. (INCH)	PIPE IN MATERIAL	PIPE OUT MATERIAL	STR. & CASTING TYPE	DETAIL REFERENCE	SPECIAL NOTES
607	885.88	883.00 (N)		30"		RCP		END SECTION	SEE DETAIL SHEET C8.3	
608	888.50	883.37 (N)	883.37 (S)	30"	30"	RCP	RCP	5' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6	
609	886.38		883.50 (S)		30"		RCP	END SECTION	SEE DETAIL SHEET C8.3	
643	885.56	883.50 (E)		21"		RCP		END SECTION	SEE DETAIL SHEET C8.3	
644	890.65	885.50 (E)	885.40 (W)	21"	21"	RCP	RCP	4' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6	
645	891.73	886.25 (E)	886.15 (W)	21"	21"	RCP	RCP	DOUBLE CURB INLET W/68" SUMP NEENAH R-3501-N	SEE DETAIL SHEET C8.3	INSTALL 30F SNOUT, SEE DETAIL SHEET C8.2
646	891.73	886.50 (E)	886.40 (W)	21"	21"	RCP	RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3	
647	891.40	887.80 (E)	887.00 (W)	18"	21"	RCP	RCP	4' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6	
648	889.79		888.00 (W)		18"		RCP	END SECTION	SEE DETAIL SHEET C8.3	

Pipe Table		
UPSTREAM TO DOWNSTREAM	PIPE LENGTH (FT)	PIPE DIA. (IN)
608-607	164	30"
609-608	58	30"
644-643	181	21"
645-644	143	21"
646-645	32	21"
647-646	166	21"
648-647	18	18"

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GRAPHIC SCALE
0' 50' 100' 150'
(IN FEET)

REVISIONS

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HORIZONTAL INFORMATION:
STATE PLANE COORDINATES-EAST ZONE, NAD83

COPPER RUN
CARMEL, INDIANA
STORM SEWER PLAN AND PROFILE

STORM PROFILE

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

GRANULAR BACKFILL PER CITY OF CARMEL TRENCH DETAIL ON SHEET C8.3
EXISTING GRADE
PROPOSED GRADE
10-YEAR HGL

CERTIFICATION FOR "RECORD DRAWING"

CERTIFIED BY: LUKE A. JAHN
HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
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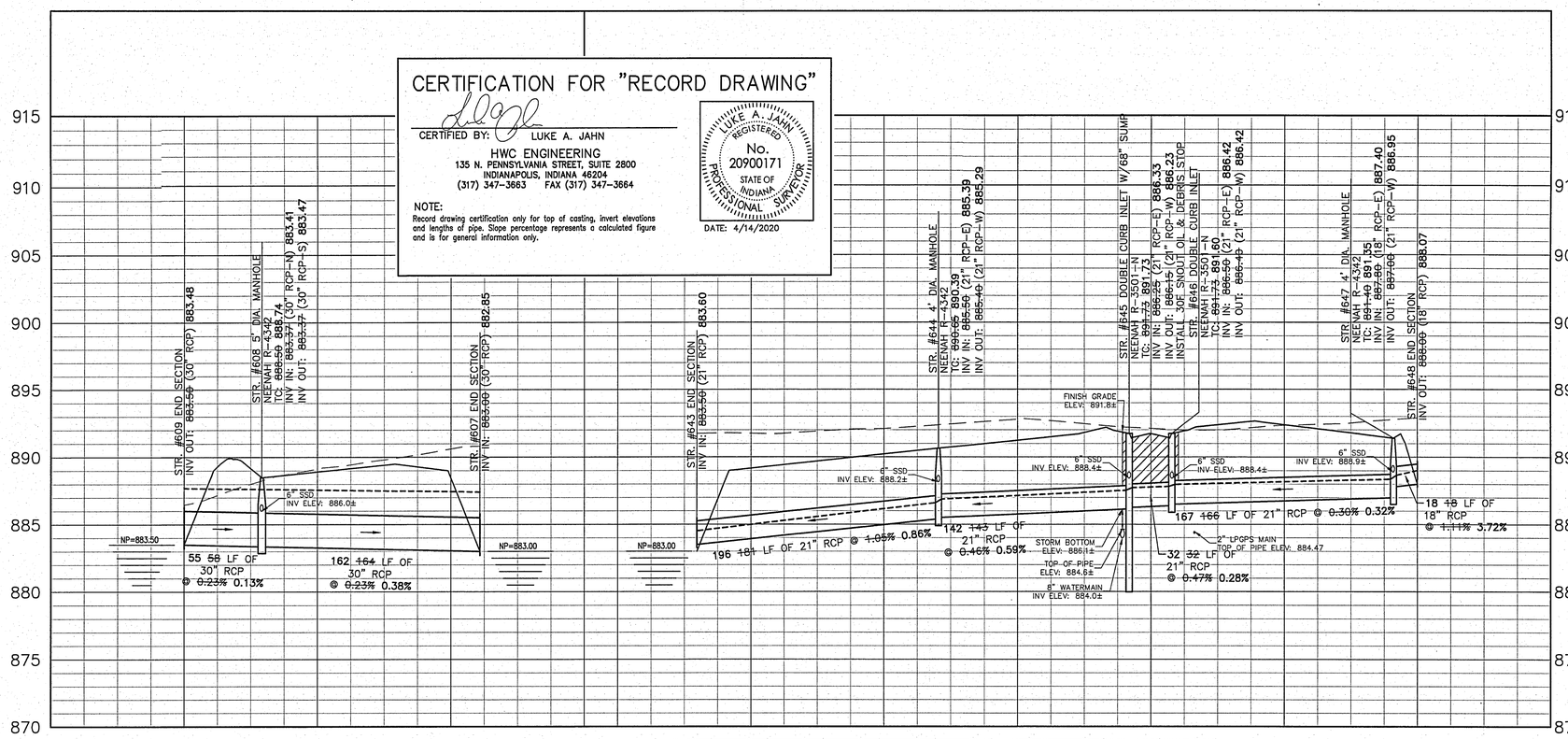

BRANDON T. BURK REGISTERED No. 10000075 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY	JOB NUMBER
DC	2017-232-A
CHECKED BY	
BB	
DATE	
MAY 18, 2018	
SCALE	
AS SHOWN	

SHEET
C6.2
STORM SEWER PLAN AND PROFILE

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Plot Date: Apr 14, 2020 Plot Time: 10:32am File Name: W:\Pulte Homes\2017-232-A Pulte- Copperleaf\Design\CAD\17232-A.Storm Plan - Asbuilt.dwg, Layout: C6.2 By: sdonaldson

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LEGEND:

EXISTING		PROPOSED
	RIGHT-OF-WAY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	CENTERLINE	
	SWALE / FLOWLINE	
	SUBSURFACE DRAIN	
S	SANITARY SEWER	S
ST	STORM SEWER	ST
ST	STORM CULVERT	ST
W	WATER MAIN	W
(S)	SANITARY MANHOLE	(XXX)
(ST)	STORM MANHOLE	(XXX)
	STORM INLET	(XXX)
	STORM END SECTION	(XXX)
	FIRE HYDRANT	
	PROFILED PIPELINE	ST

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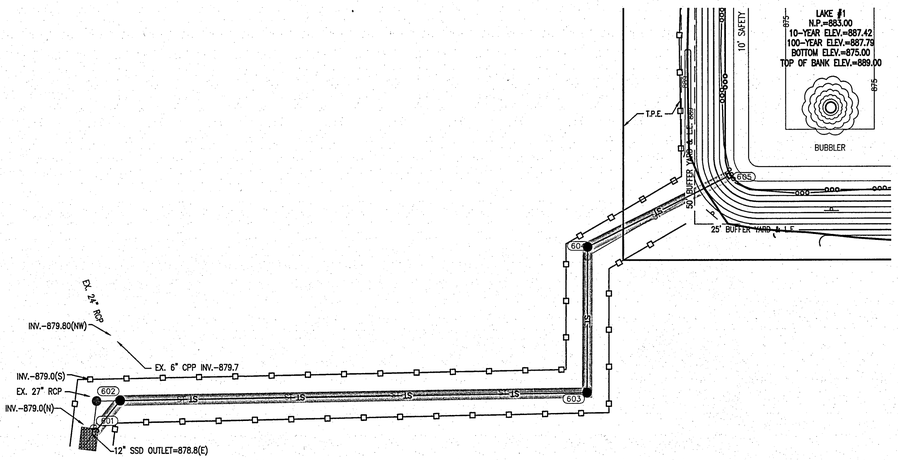
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
4. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING ELEVATIONS BEFORE CONSTRUCTION BEGINS.
5. THE STORM SEWER SYSTEM SHALL BE CONSTRUCTED PER DESIGN SPECIFIED AND AS APPROVED BY THE CITY OF CARMEL ON THE FINAL APPROVED CONSTRUCTION PLANS. DEVIATIONS FROM THE APPROVED DESIGN SHALL ONLY BE PERMITTED DUE TO SPECIAL CIRCUMSTANCES OR DIFFICULTY DURING CONSTRUCTION AND WILL REQUIRE PRIOR FIELD APPROVAL FROM A DESIGNATED REPRESENTATIVE OF THE CITY OF CARMEL IN ADDITION TO SUPPLEMENTAL APPROVAL BY THE DESIGN ENGINEER. AN EXPLANATION OF ANY SUCH DEVIATION SHALL BE INCLUDED AS A REQUIREMENT ON AS-BUILT/RECORD DRAWINGS SUBMITTED FOR RELEASE OF PERFORMANCE GUARANTEES. APPROVED DESIGN SLOPES IDENTIFIED AS GENERATING VELOCITIES OF 2.5 FPS OR LESS OR 10 FPS OR GREATER (AT FULL FLOW CAPACITY) SHALL REQUIRE AS-BUILT CERTIFICATION AT THE TIME OF CONSTRUCTION, PRIOR TO BACKFILLING THE PIPE. THE CONTRACTOR IS INSTRUCTED TO AS-BUILT EACH SECTION OF STORM PIPE AS IT IS BEING INSTALLED TO ENSURE COMPLIANCE WITH THE DESIGN PLANS AND AS APPROVED BY THE CITY OF CARMEL.
6. NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.
7. ALL STORMWATER DRAINAGE CASTINGS SHALL BE LABELED WITH ENVIRONMENTAL MESSAGING "DUMP NO WASTE"
8. ALL CONCRETE PIPE JOINTS SHALL BE CONTINUOUS O-RING RUBBER GASKET CONFORMING TO ASTM C 443
9. 18" OF VERTICAL SEPARATION MUST BE MAINTAINED FOR ALL UTILITY CROSSINGS.
10. FOR STORM SEWER BACKFILL SPECIFICATIONS, REFER TO STORM SEWER TRENCH DETAIL STANDARD DRAWING 10-28 ON SHEET C8.4

STORM SEWER STRUCTURE DATA TABLE

STR. #	TC	INV. IN (ELEV.)	INV. OUT (ELEV.)	PIPE IN DIA. (INCH)	PIPE OUT DIA. (INCH)	PIPE IN MATERIAL	PIPE OUT MATERIAL	STR. & CASTING TYPE	DETAIL REFERENCE	SPECIAL NOTES
601	881.33	879.00 (N)		24"		RCP		END SECTION	SEE DETAIL SHEET C8.3	
602	883.95	879.20 (E)	879.10 (S)	24"	24"	RCP	RCP	5' DIA. MANHOLE NEEENAH R-1772	SEE DETAIL SHEET C8.6	
603	888.22	881.20 (N)	881.10 (W)	24"	24"	RCP	RCP	5' DIA. MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.6	
604	886.65	881.85 (NE)	881.75 (S)	24"	24"	RCP	RCP	5' DIA. MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.6	
605	887.20		882.50 (SW)		24"		RCP	POND OUTLET CONTROL STRUCTURE	SEE DETAIL SHEET C8.2	

Pipe Table

UPSTREAM TO DOWNSTREAM	PIPE LENGTH (FT)	PIPE DIA. (IN)
602-601	19	24"
603-602	344	24"
604-603	93	24"
605-604	113	24"



Indiana 811
KNOW WHAT'S BELOW.
CALL BEFORE YOU DIG.
Call 811 or 800-382-5544 Before you Dig!

GRAPHIC SCALE
0' 50' 100' 150'
(IN FEET)

BENCHMARK INFORMATION:

NOTE: ELEVATION INFORMATION SHOWN HEREON IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) BASED UPON GPS OBSERVATIONS PROCESSED BY THE NATIONAL GEODETIC SERVICE (NGS) UTILIZING AN ON-LINE POSITIONING USER SERVICE (OPUS) SOLUTION FROM OBSERVATIONS ON CONTROL POINT #100 (SEE BELOW).

CONTROL POINT #100 (PRIMARY BENCHMARK)– 5/8-INCH REBAR WITH RED PLASTIC CAP STAMPED "HWC RANDOM POINT" SET IN THE FIELD SOUTH OF THE MAIN HOUSE, APPROXIMATELY 75 FEET WEST OF THE WEST-MOST TREE LINE ALONG THE EAST SIDE OF THE SUBJECT TRACT, AND APPROXIMATELY 400 FEET SOUTH OF THE RAIL FENCE ALONG THE SOUTH LINE OF THE GRASS FIELDS.
ELEVATION: 892.72 (NAVD 88)

CONTROL POINT #101– 5/8-INCH REBAR WITH RED PLASTIC CAP STAMPED "HWC RANDOM POINT" SET NORTH OF W. 131ST STREET AND 200 FEET WEST OF THE ASPHALT DRIVEWAY FOR THE SUBJECT TRACT, APPROXIMATELY 15 FEET NORTH OF THE NORTH EDGE OF PAVEMENT OF W. 131ST STREET AND 31.5 FEET SOUTHEAST OF THE SOUTHWEST CORNER OF AN ASPHALT SIDEWALK.
ELEVATION: 896.56 (NAVD 88)

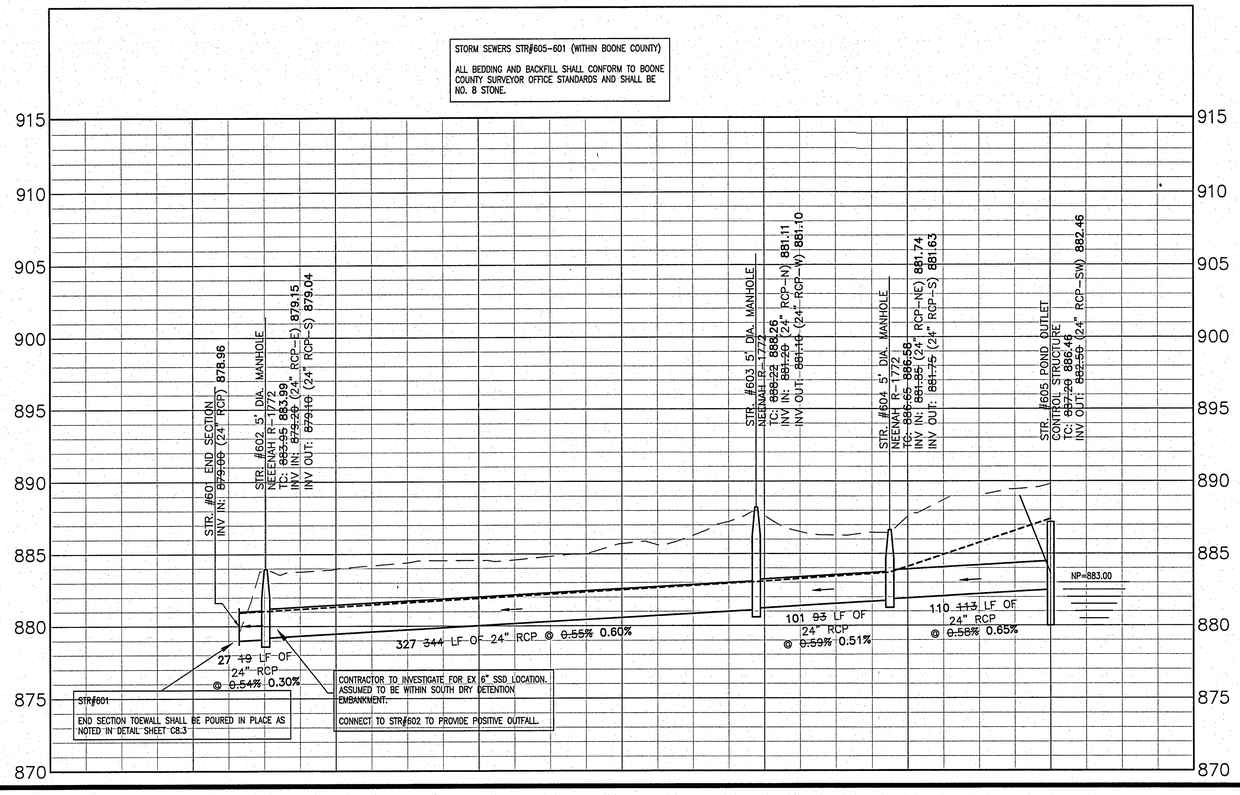
CONTROL POINT #102– MAC NAIL WITH WASHER STAMPED "HWC RANDOM POINT" SET FLUSH WITH THE ROAD SURFACE AT THE SOUTH END OF THE MEDIAN AT THE INTERSECTION OF HANSEN LANE AND W. 131ST STREET, APPROXIMATELY 4 FEET SOUTHEAST FROM THE BACK OF CURB OF THE MEDIAN AND 37.3 FEET SOUTHEAST OF THE STOP SIGN AT THE INTERSECTION.
ELEVATION: 895.17 (NAVD 88)

HORIZONTAL INFORMATION:
STATE PLANE COORDINATES–EAST ZONE, NAD83

STORM PROFILE

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

GRANULAR BACKFILL PER CITY OF CARMEL TRENCH DETAIL ON SHEET C8.3
EXISTING GRADE
PROPOSED GRADE
10-YEAR HGL



CERTIFICATION FOR "RECORD DRAWING"

CERTIFIED BY: LUKE A. JAHN

HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
INDIANAPOLIS, INDIANA 46204
(317) 347-3663 FAX (317) 347-3664

NOTE:
Record drawing certification only for top of casting, invert elevations and lengths of pipe. Slope percentage represents a calculated figure and is for general information only.

LUKE A. JAHN REGISTERED No. 20900171 STATE OF INDIANA PROFESSIONAL SURVEYOR

DATE: 4/14/2020

REVISIONS

DATE	DESCRIPTION	BY
06/14/18	REVISED PER REIVEW COMMENTS	KS/BB
07/02/18	REVISED PER TAC COMMENTS	DC
08/02/18	REVISED PER TAC COMMENTS	DC
09/12/18	REVISED SUBDIVISION NAME & STREET NAME	DC
01/25/19	RECORD DRAWING	SD
01/28/19	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/19	ADDED MOUNDS TO COMMON AREA "A"	KS

HWC ENGINEERING
INDIANAPOLIS - TERRE HAUTE
LAFAYETTE - MUNCIE - NEW ALBANY
www.hwcengineering.com

COPPER RUN
CARMEL, INDIANA
STORM SEWER PLAN AND PROFILE

BRANDON T. BURKE REGISTERED No. 10000075 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY DC	JOB NUMBER 2017-232-A
CHECKED BY BB	
DATE MAY 18, 2018	
SCALE AS SHOWN	
SHEET C6.3 STORM SEWER PLAN AND PROFILE	

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Plot Date: Apr 14, 2020 Plot Time: 10:18am File Name: W:\Pulte Homes\2017-232-A Pulte- Copperleaf\Design\CAD\17232-A.Storm Plan - Asbuilt.dwg, Layout: C6.3 By: sdonaldson

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