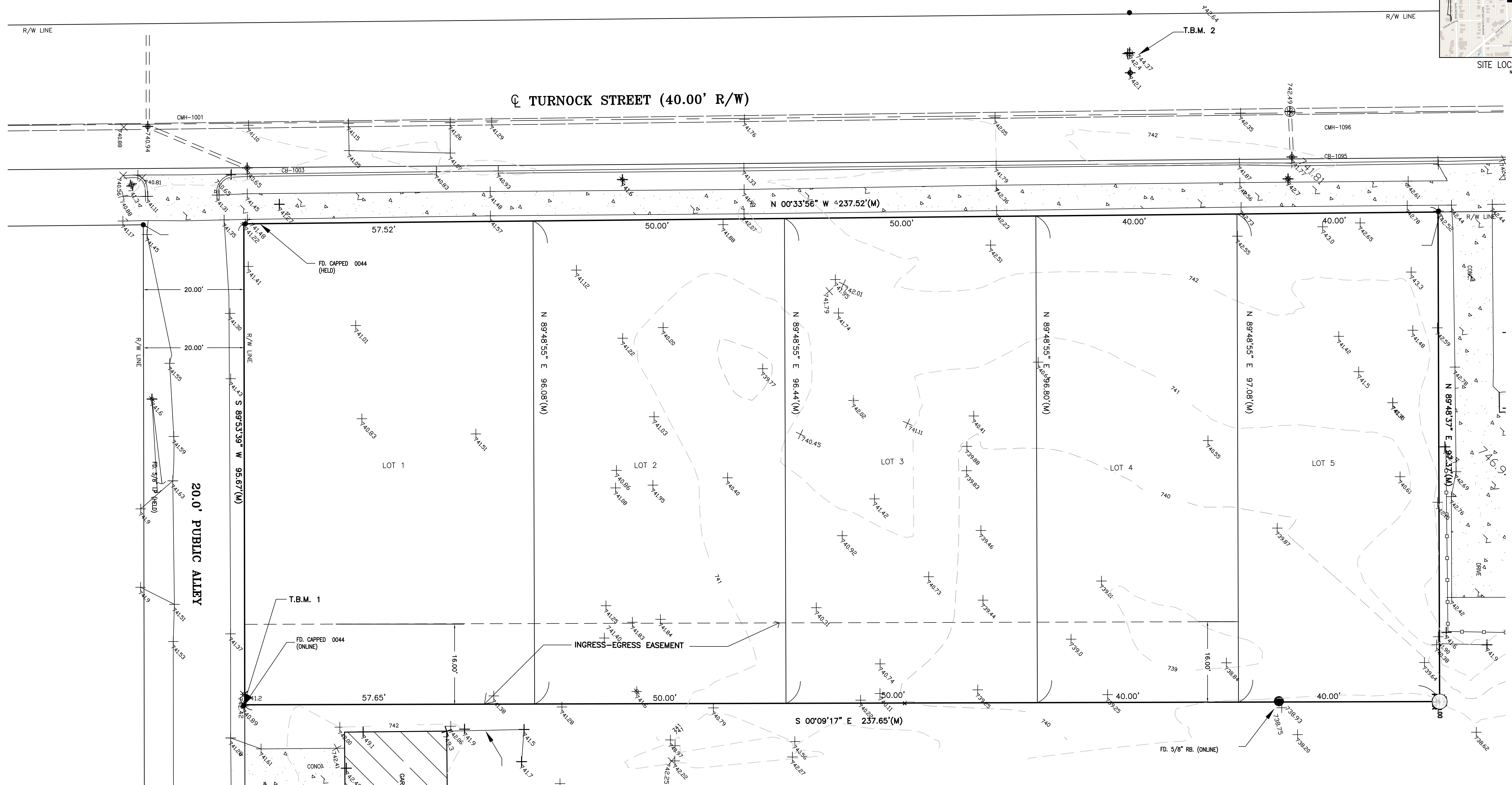
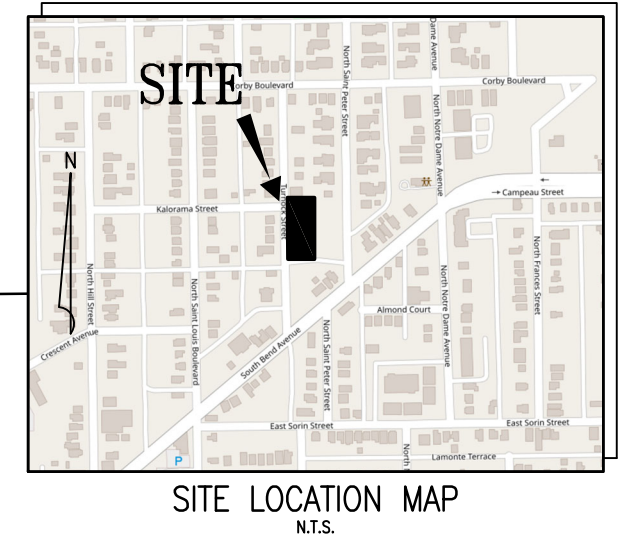


# FINAL SITE PLAN

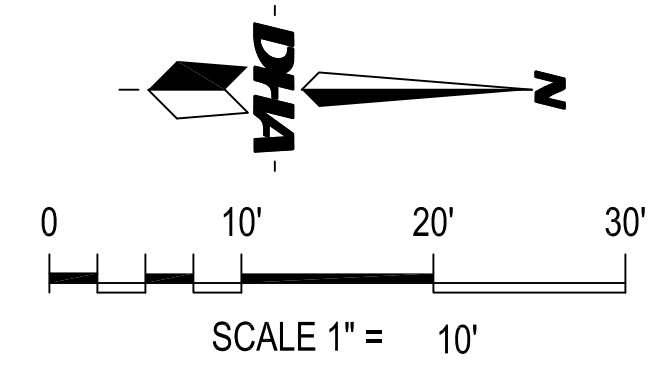
PART OF THE SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 37 NORTH, RANGE 2 EAST,  
CITY OF SOUTH BEND, PORTAGE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA.

LEGAL DESCRIPTION:  
PARCEL I:  
LOTS D, F, H, AND J OF THE RECORDED PLAT OF N.N.R.O. SUBDIVISION REPLAT AS RECORDED BY DOCUMENT NUMBER 0540994 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA.



EXISTING LEGEND	
△ SET P.K. NAIL	● FOUND IRON
☆ PINE TREE	(M) MEASURED DISTANCE
⊙ BUSH	(R) RECORD DISTANCE
⊙ TREE	○ CAPPED REBAR
⊙ FOUNTAIN/RR.	⊙ GAS METER
⊙ BOLLARD/POLE	⊙ WATER MANHOLE
⊙ LIGHT POLE	⊙ END SECTION
⊙ UTILITY POLE	⊙ ELEC. VAULT
⊙ GUY ANCHOR	⊙ ELEC. TRANSFORMER
⊙ SIGN	⊙ PHONE VAULT
⊙ WELL	⊙ SPOT ELEVATION
⊙ VALVE	⊙ EX. ELEVATION
⊙ FIRE HYDRANT	⊙ WIRE FENCE
⊙ CURB INLET	⊙ CHAIN LINK FENCE
⊙ DRYWELL	⊙ WOOD FENCE
⊙ SANITARY MANHOLE	⊙ ONE
⊙ STORM MANHOLE	⊙ TWO
⊙ CLEAN-OUT	⊙ THREE
⊙ FIBER OPTIC MANHOLE	⊙ FOUR
	⊙ FIVE
	⊙ SIX
	⊙ SEVEN
	⊙ EIGHT
	⊙ NINE
	⊙ TEN
	⊙ ELEVEN
	⊙ TWELVE
	⊙ THIRTEEN
	⊙ FOURTEEN
	⊙ FIFTEEN
	⊙ SIXTEEN
	⊙ SEVENTEEN
	⊙ EIGHTEEN
	⊙ NINETEEN
	⊙ TWENTY
	⊙ TWENTY-ONE
	⊙ TWENTY-TWO
	⊙ TWENTY-THREE
	⊙ TWENTY-FOUR
	⊙ TWENTY-FIVE
	⊙ TWENTY-SIX
	⊙ TWENTY-SEVEN
	⊙ TWENTY-EIGHT
	⊙ TWENTY-NINE
	⊙ THIRTY
	⊙ THIRTY-ONE
	⊙ THIRTY-TWO
	⊙ THIRTY-THREE
	⊙ THIRTY-FOUR
	⊙ THIRTY-FIVE
	⊙ THIRTY-SIX
	⊙ THIRTY-SEVEN
	⊙ THIRTY-EIGHT
	⊙ THIRTY-NINE
	⊙ FORTY
	⊙ FORTY-ONE
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	⊙ FORTY-THREE
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	⊙ FIFTY-TWO
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	⊙ FIFTY-NINE
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	⊙ NINETY-FIVE
	⊙ NINETY-SIX
	⊙ NINETY-SEVEN
	⊙ NINETY-EIGHT
	⊙ NINETY-NINE
	⊙ HUNDRED

STRUCTURE CHART	
CMH-1001 RIM ELEVATION = 740.94 I.E. 15" CLAY N. 728.64 I.E. 8" CLAY NE. 734.75 I.E. 15" CLAY S. 728.44 I.E. 8" CLAY W. 734.74	CB-1003 RIM ELEVATION = 740.65 I.E. 8" CLAY SW. 736.55 CB-1458 RIM ELEVATION = 741.99 I.E. 8" CLAY W. 738.09
CMH-1096 RIM ELEVATION = 742.49 I.E. 15" CLAY N. 729.59 I.E. 8" CLAY E. 735.59 I.E. 15" CLAY S. 729.39 I.E. 8" CLAY W. 735.59	CB-1095 RIM ELEVATION = 741.77 I.E. 8" CLAY W. 736.77
CMH-1457 RIM ELEVATION = 742.32 I.E. 8" CLAY E. 736.22 I.E. 15" CLAY S. 729.42	



**TEMPORARY BENCHMARK INFORMATION:**  
VERTICAL DATUM ESTABLISHED BY INDOT CORRS NETWORK REAL TIME OBSERVATIONS. (NAVD88)

T.B.M. 1 SET R.R. SPIKE IN WEST SIDE OF POWER POLE LOCATED ALONG NORTH LINE OF A 20 FOOT PUBLIC ALLEY. ELEVATION = 742.42

T.B.M. 2 SOUTHEAST BOLT OF THE TOP FLANGE OF A FIRE HYDRANT LOCATED ALONG THE WEST LINE OF TURNOCK STREET. ELEVATION = 744.37

### EXISTING CONDITIONS/DEMOLITION PLAN

DATE	DRAWN BY:	REVISIONS	
5/10/24	JMS	DATE	BY
SCALE	CHECKED BY:		
1" = 10'	MJD		
FILE #	PROJ. MGR:		
240138.5	MJD		

**SURVEYORS & ENGINEERS:**  
DANCH, HARNER & ASSOCIATES, INC.  
1643 COMMERCE DRIVE  
SOUTH BEND, IN. 46628  
(574) 234-4003  
ATTN: MICHAEL DANCH

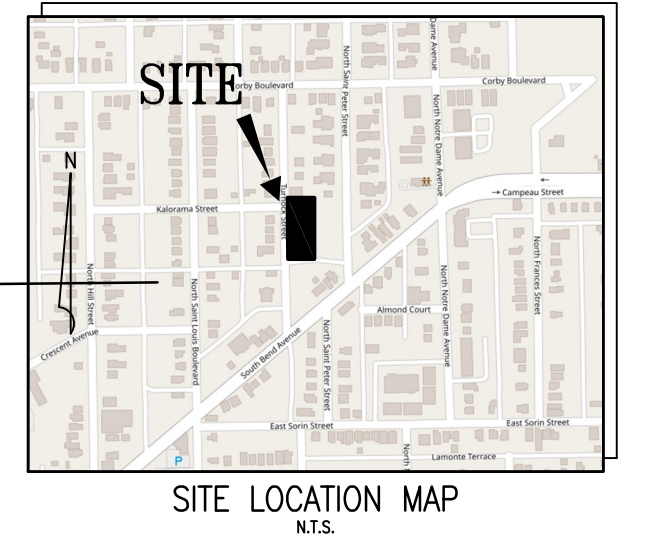
**Danch, Harner & Associates, Inc.**  
 Land Surveyors • Professional Engineers  
 Landscape Architects • Land Planners  
 Office: (574)234-4003 / (800)994-0003 • Fax: (574)234-4119  
 1643 Commerce Drive • South Bend, IN 46628

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**C1.0**

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# FINAL SITE PLAN

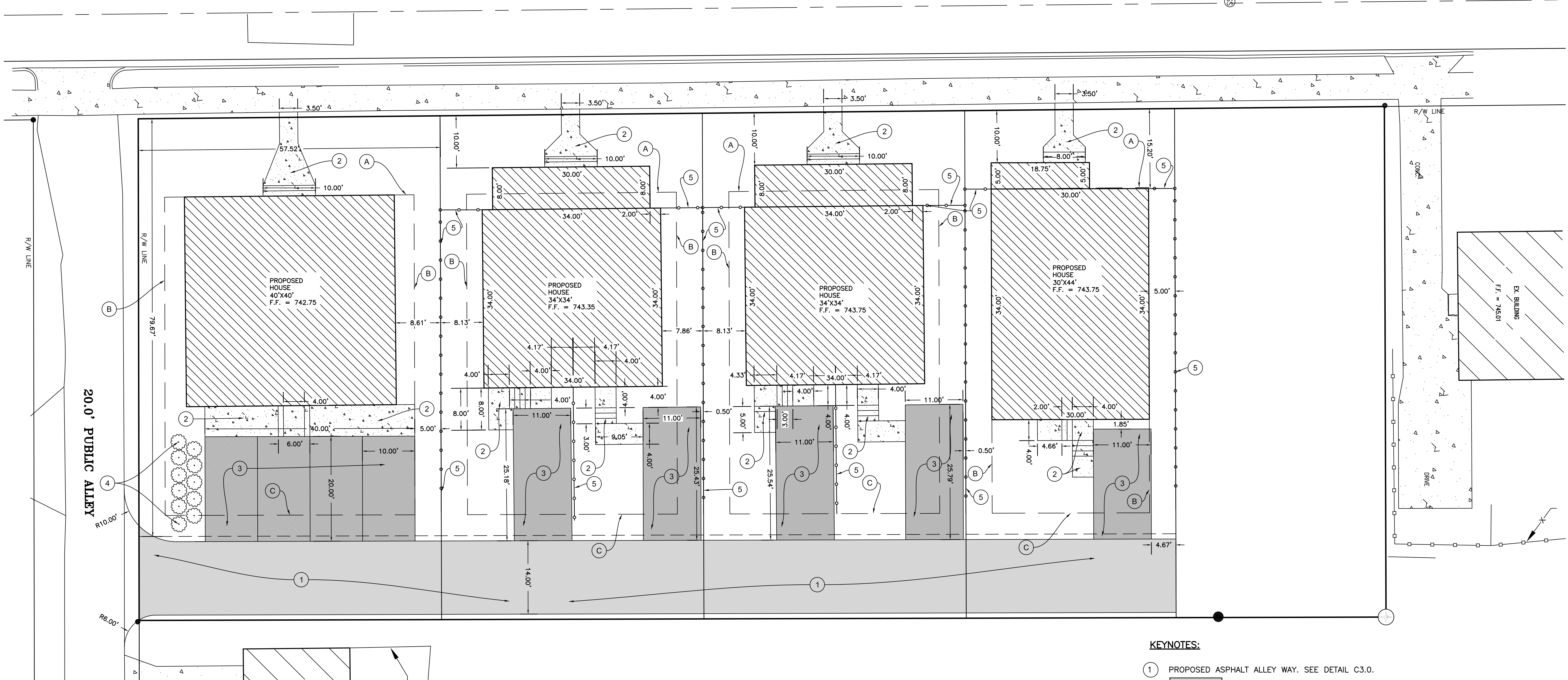
PART OF THE SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 37 NORTH, RANGE 2 EAST,  
CITY OF SOUTH BEND, PORTAGE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA.



**LEGAL DESCRIPTION:**

**PARCEL I:**  
LOTS D,F,H, AND J OF THE RECORDED PLAT OF N.N.R.O. SUBDIVISION REPLAT AS RECORDED BY DOCUMENT NUMBER 0540994 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA.

☐ TURNOCK STREET (40.00' R/W)



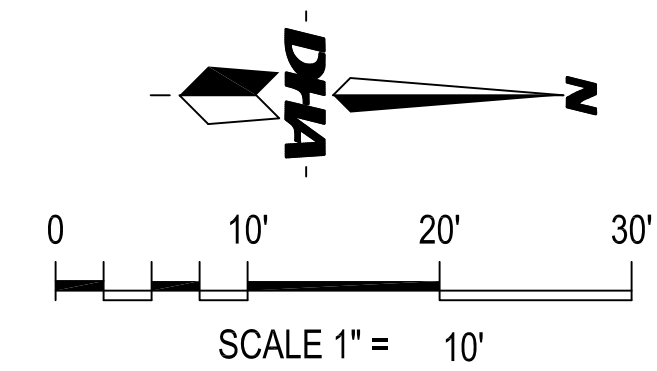
20.0' PUBLIC ALLEY

EXISTING LEGEND		
△ SET P.K. NAIL	● FOUND IRON	○ SET FLUSH 5/8" CAPPED REBAR
(M) MEASURED DISTANCE	(R) RECORD DISTANCE	IN. REC. F-02444
		MI. REC. #22436
☆ PINE TREE	⊙ GAS METER	⊗ SOIL BORING
⊙ BUSH	⊙ WATER MANHOLE	⊙ WATER METER
⊙ TREE	▷ END SECTION	⊙ CABLE PED.
⊙ FOUNTAIN/IRR.	⊙ ELEC. VAULT	⊙ PHONE PED.
⊙ BOLLARD/POLE	⊙ ELEC. TRANSFORMER	⊙ ELEC. PED.
⊙ LIGHT POLE	⊙ PHONE VAULT	⊙ MAILBOX
⊙ UTILITY POLE	⊙ SPOT ELEVATION	⊙ A/C UNIT
⊙ GUY ANCHOR		
⊙ SIGN		
⊙ WELL	— EX. ELEVATION	— ELECTRIC
⊙ VALVE	— WIRE FENCE	— ELECTRIC
⊙ FIRE HYDRANT	— CHAIN LINK FENCE	— PHONE
⊙ CURB INLET	— WOOD FENCE	— GAS
⊙ DRYWELL	— OHE	— CABLE TV
⊙ SANITARY MANHOLE	— UG	— WATER
⊙ STORM MANHOLE	— CTY	— FIBER OPTIC
⊙ CLEAN-OUT	— FO	— STORM LINE
⊙ FIBER OPTIC MANHOLE	—	— SANITARY LINE

**GENERAL NOTE:**  
1). SEE INDIVIDUAL LOT PLOT PLANS FOR DETAIL ON HOUSE LOCATIONS.

- PROPERTY SETBACKS:**
- (A) 15' FRONT YARD SETBACK
  - (B) 5' SIDE YARD SETBACK
  - (C) 20' REAR YARD SETBACK

- KEYNOTES:**
- ① PROPOSED ASPHALT ALLEY WAY. SEE DETAIL C3.0.
  - ② PROPOSED CONCRETE WALK
  - ③ PROPOSED ASPHALT DRIVEWAY. SEE DETAIL C3.0.
  - ④ PROPOSED LANDSCAPING
  - ⑤ PROPOSED FENCE PER CONTRACTOR



**SURVEYORS & ENGINEERS:**  
DANCH, HARNER & ASSOCIATES, INC.  
1643 COMMERCE DRIVE  
SOUTH BEND, IN. 46628  
(574) 234-4003  
ATTN: MICHAEL DANCH

LAYOUT PLAN

DATE	DRAWN BY:	REVISIONS	
5/10/24	JMS	DATE	BY
SCALE	CHECKED BY:		
1" = 10'	MJD		
FILE #	PROJ. MANGR:		
240138.5	MJD		

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 1643 Commerce Drive • South Bend, IN 46628

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**C1.1**

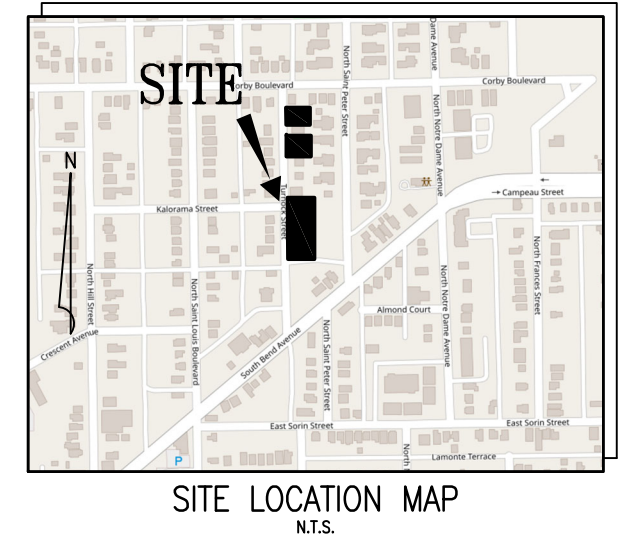
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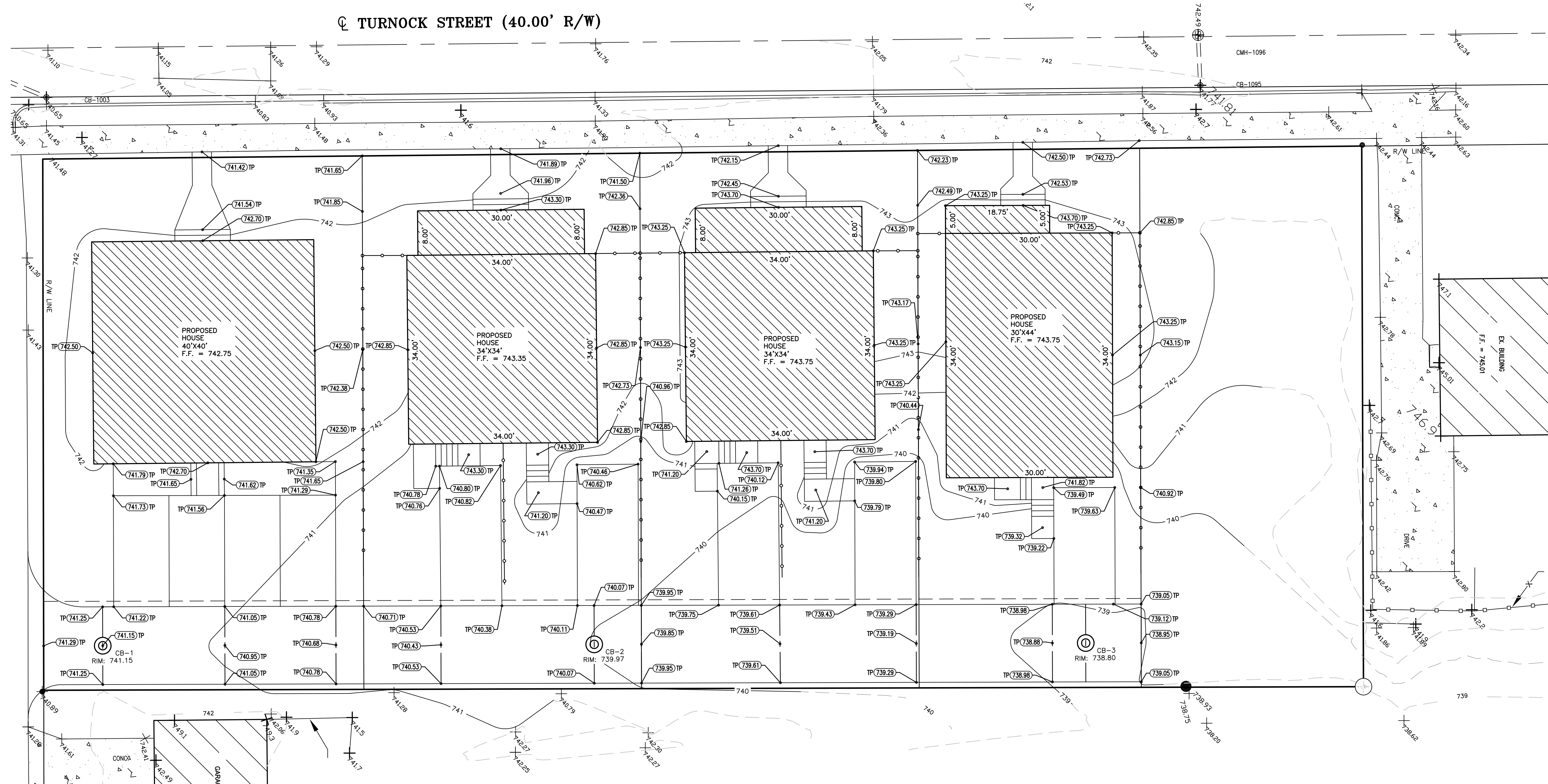
# FINAL SITE PLAN

PART OF THE SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 37 NORTH, RANGE 2 EAST,  
CITY OF SOUTH BEND, PORTAGE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA.



**LEGAL DESCRIPTION:**

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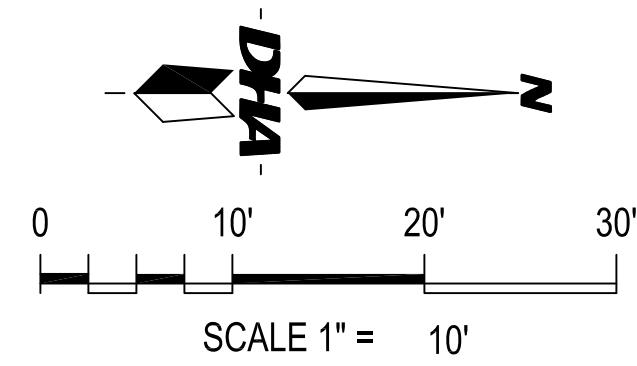
**EXISTING LEGEND**

△ SET P.K. NAIL	● FOUND IRON	SET FLUSH 5/8" CAPPED REBAR IN. REG. F-0044 MI. REG. #22436
☆ PINE TREE	⊙ GAS METER	⊗ SOIL BORING
⊙ BUSH	⊙ WATER MANHOLE	⊙ WATER METER
⊙ TREE	⊙ END SECTION	⊙ CABLE PED.
⊙ FOUNTAIN/IRR.	⊙ ELEC. VAULT	⊙ PHONE PED.
⊙ BOLLARD/POLE	⊙ ELEC. TRANSFORMER	⊙ ELEC. PED.
⊙ LIGHT POLE	⊙ PHONE VAULT	⊙ MAILBOX
⊙ UTILITY POLE	⊙ SPOT ELEVATION	⊙ A/C UNIT
⊙ GUY ANCHOR		
⊙ SIGN		
⊙ WELL		
⊙ VALVE		
⊙ FIRE HYDRANT		
⊙ CURB INLET		
⊙ DRYWELL		
⊙ SANITARY MANHOLE		
⊙ STORM MANHOLE		
⊙ CLEAN-OUT		
⊙ FIBER OPTIC MANHOLE		
— EX. ELEVATION	— ELECTRIC	
— WIRE FENCE	— ELECTRIC	
— CHAIN LINK FENCE	— UT	
— WOOD FENCE	— UT	
	— GAS	
	— CTV	
	— WATER	
	— FO	
	— FIBER OPTIC	
	— STORM LINE	
	— SANITARY LINE	

**TEMPORARY BENCHMARK INFORMATION:**  
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**GRADING PLAN**

**SURVEYORS & ENGINEERS:**  
DANCH, HARNER & ASSOCIATES, INC.  
1643 COMMERCE DRIVE  
SOUTH BEND, IN. 46628  
(574) 234-4003  
ATTN: MICHAEL DANCH

DATE	5/10/24
SCALE	1" = 10'
FILE #	240138.5

DRAWN BY:	JMS
CHECKED BY:	MJD
PROJ. MANGR:	MJD

REVISIONS	
DATE	BY

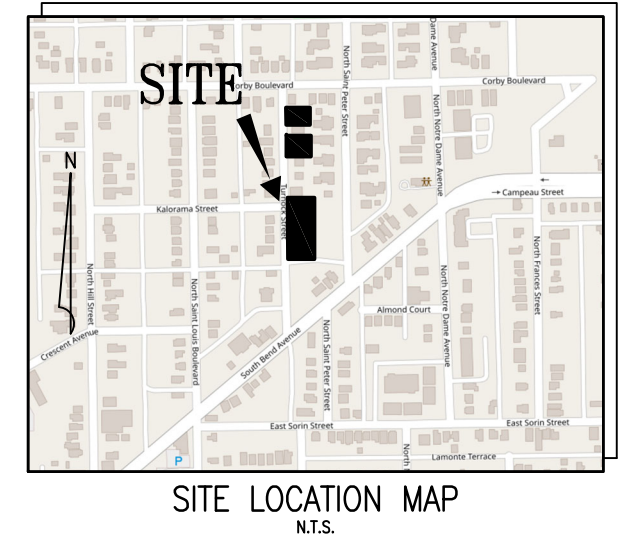
**Danch, Harner & Associates, Inc.**  
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 Office: (574)234-4003 / (800)994-4003 • Fax: (574)234-4119  
 1643 Commerce Drive • South Bend, IN 46628

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**C2.0**

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# FINAL SITE PLAN

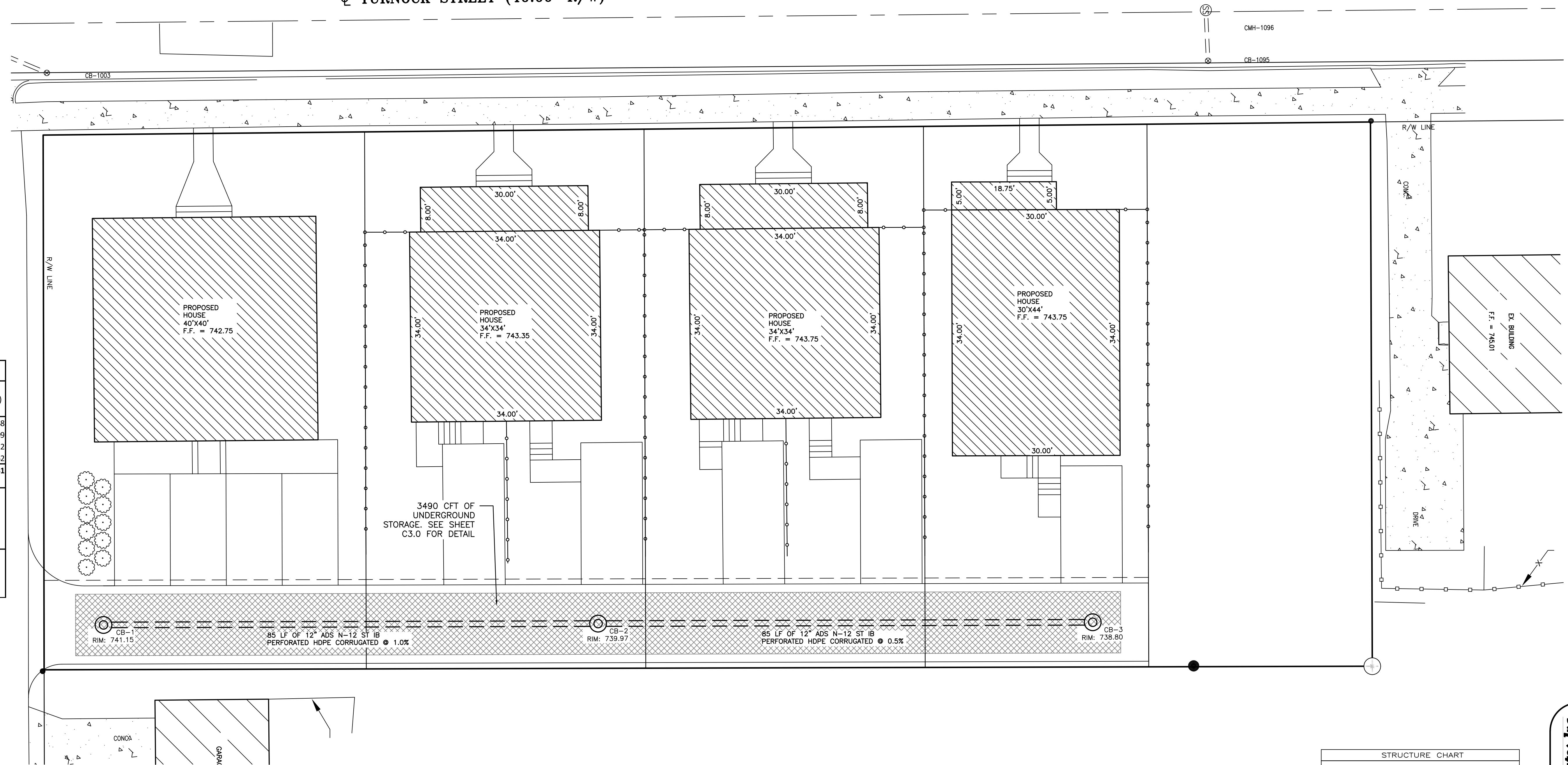
PART OF THE SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 37 NORTH, RANGE 2 EAST,  
CITY OF SOUTH BEND, PORTAGE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA.



**LEGAL DESCRIPTION:**

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NUMBER 0540994 IN THE OFFICE OF THE RECORDER OF ST. JOSEPH COUNTY, INDIANA.

☐ TURNOCK STREET (40.00' R/W)



**DRAINAGE CALCULATION:**

Turnock St., South Bend				
Post-Development Area (ft <sup>2</sup> )	Coefficient	Rainfall Depth 25-yr, 24-hr (inches)	Total (CFT)	
Building	2,905	0.90	4.90	1,068
Sidewalk	570	0.90	4.90	209
Drive	4,930	0.90	4.90	1,812
Open Space	6,882	0.20	4.90	562
<b>Total</b>	<b>15,287</b>	<b>0.35</b>		<b>3,651</b>

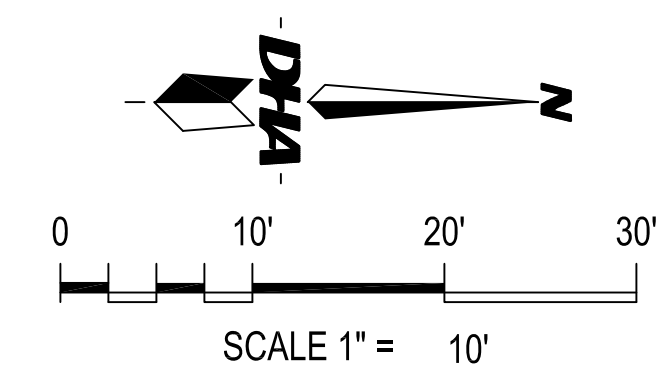
  

Proposed Storage Calculation		
Total Basin Inf. Surf. Area =	2,050	ft <sup>2</sup>
Basin Depth =	5.5	ft
Proposed Basin Volume (2,050 ft <sup>2</sup> x 5.5 ft x 35% void) =	3,940	ft <sup>3</sup>
<b>Storage Required:</b>	<b>3,651</b>	<b>ft<sup>3</sup></b>
<b>Storage Provided:</b>	<b>3,940</b>	<b>ft<sup>3</sup></b>
<b>Surplus Storage:</b>	<b>289</b>	<b>ft<sup>3</sup></b>

EXISTING LEGEND		
△ SET P.K. NAIL	● FOUND IRON	○ SET FLUSH 5/8" CAPPED REBAR IN. REG. F-0044 MI. REG. #22436
☆ PINE TREE	(M) MEASURED DISTANCE	(R) RECORD DISTANCE
⊙ BUSH	⊙ GAS METER	⊙ SOIL BORING
⊙ TREE	⊙ WATER MANHOLE	⊙ WATER METER
⊙ FOUNTAIN/IRR.	⊙ END SECTION	⊙ CABLE PED.
⊙ BOLLARD/POLE	⊙ ELEC. VAULT	⊙ PHONE PED.
⊙ LIGHT POLE	⊙ ELEC. TRANSFORMER	⊙ ELEC. PED.
⊙ UTILITY POLE	⊙ PHONE VAULT	⊙ MAILBOX
⊙ GUY ANCHOR	⊙ SPOT ELEVATION	⊙ A/C UNIT
⊙ SIGN	— EX. ELEVATION	— ELECTRIC
⊙ WELL	— WIRE FENCE	— ELECTRIC
⊙ VALVE	— CHAIN LINK FENCE	— WATER
⊙ FIRE HYDRANT	— WOOD FENCE	— GAS
⊙ CURB INLET	—	— CABLE TV
⊙ DRYWELL	—	— WATER
⊙ SANITARY MANHOLE	—	— FIBER OPTIC
⊙ STORM MANHOLE	—	— STORM LINE
⊙ CLEAN-OUT	—	— SANITARY LINE
⊙ FIBER OPTIC MANHOLE	—	

PROPOSED STRUCTURE CHART	
CB-1	RIM ELEVATION = 741.15 I.E. 12" PVC N = 736.82 SUMP ELEV = 732.82
CB-2	RIM ELEVATION = 739.97 I.E. 12" PVC S = 735.97 I.E. 12" PVC N = 734.37 SUMP ELEV = 730.37
CB-3	RIM ELEVATION = 738.80 I.E. 12" PVC S = 734.80 SUMP ELEV = 730.80

STRUCTURE CHART	
CMH-1001	RIM ELEVATION = 740.94 I.E. 15" CLAY N. 728.64 I.E. 8" CLAY NE. 734.75 I.E. 15" CLAY S. 728.44 I.E. 8" CLAY W. 734.74
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CMH-1457	RIM ELEVATION = 742.32 I.E. 8" CLAY E. 736.22 I.E. 15" CLAY S. 729.42
CB-1003	RIM ELEVATION = 740.65 I.E. 8" CLAY SW. 736.55
CB-1458	RIM ELEVATION = 741.99 I.E. 8" CLAY W. 738.09
CB-1095	RIM ELEVATION = 741.77 I.E. 8" CLAY W. 736.77



**DRAINAGE PLAN**

**SURVEYORS & ENGINEERS:**  
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1643 COMMERCE DRIVE  
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(574) 234-4003  
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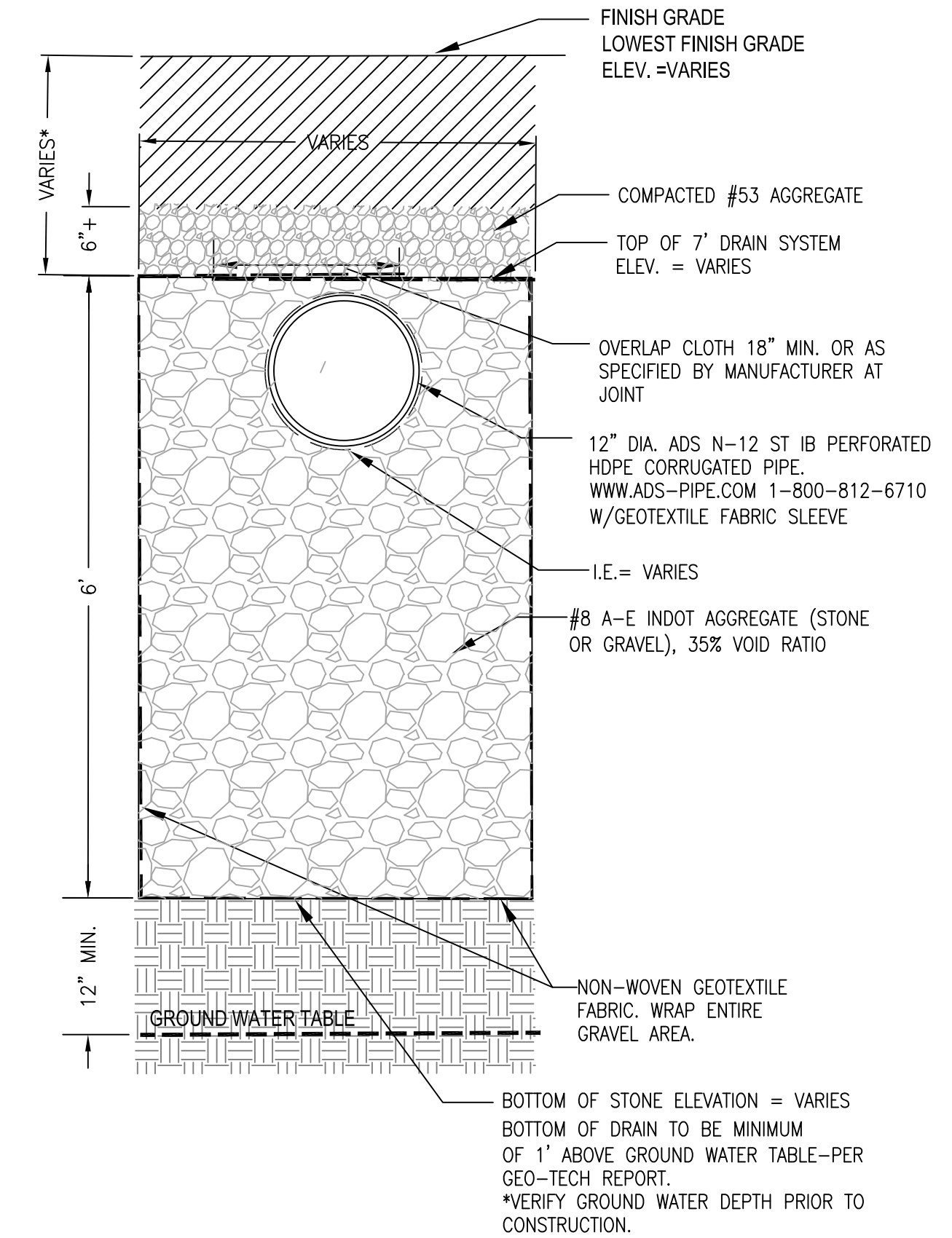
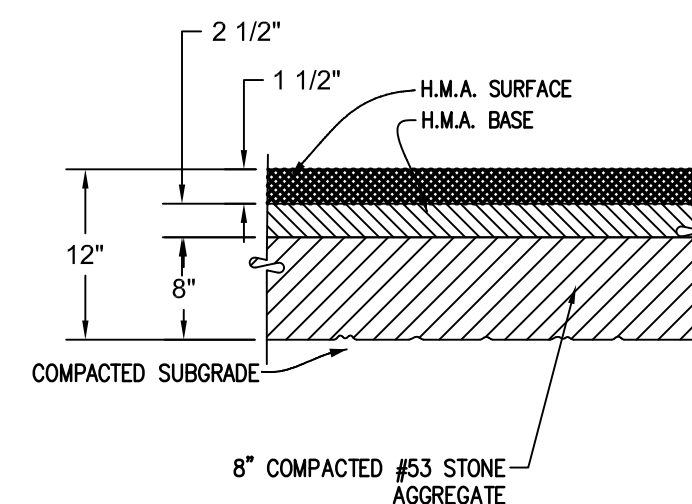
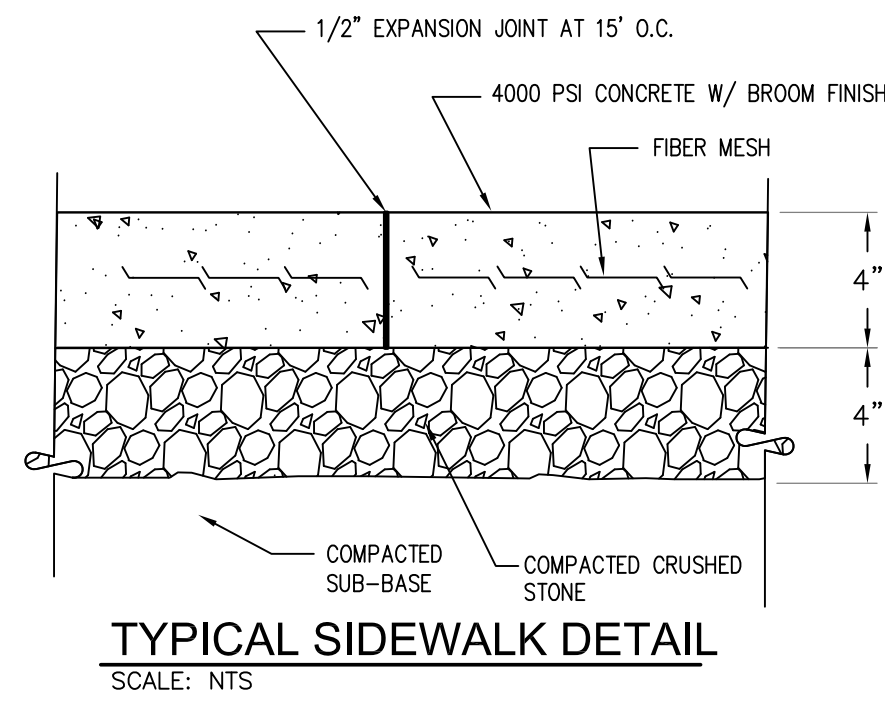
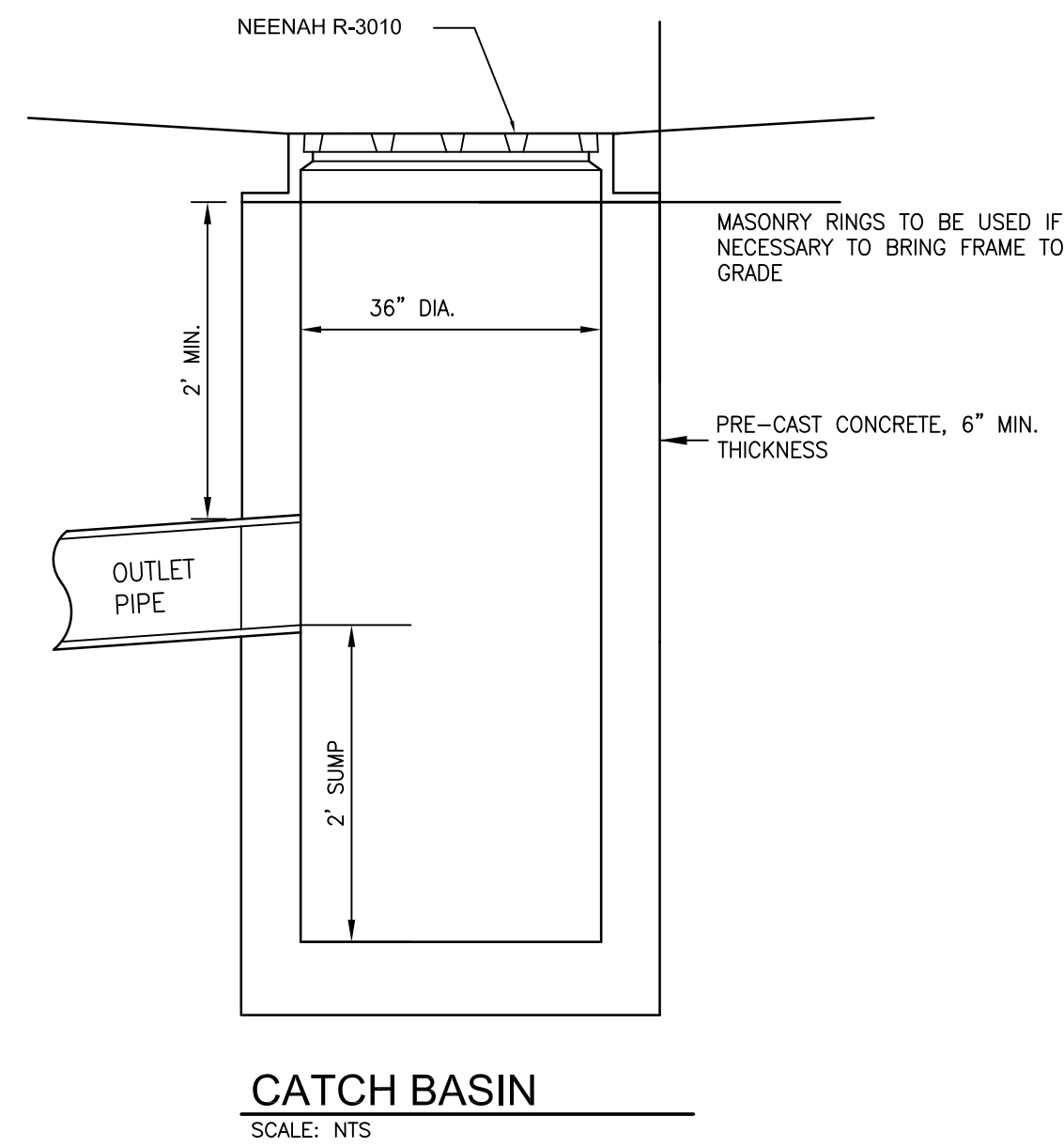
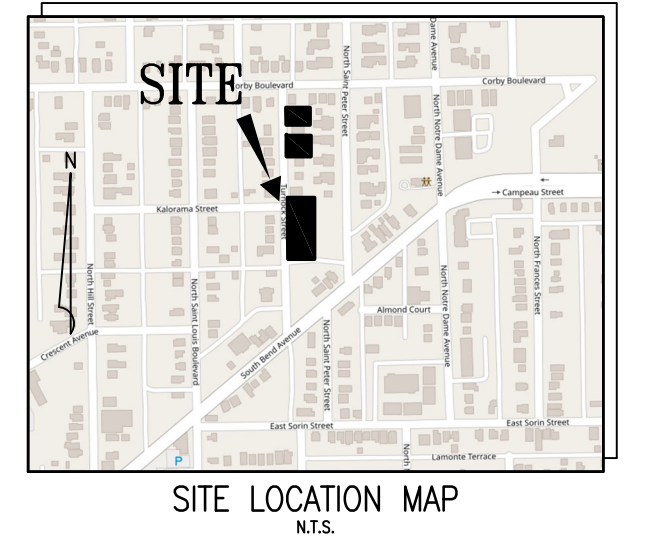
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# FINAL SITE PLAN

PART OF THE SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 37 NORTH, RANGE 2 EAST,  
CITY OF SOUTH BEND, PORTAGE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA.



**FRENCH DRAIN NOTES:**

- DO NOT COMPACT BOTTOM OR SIDES OF TRENCH TO MAINTAIN PERCOLATION RATE.
- #8 A-E INDOT STONE SHALL BE OPEN GRADED AND CLEAN.
- NON-WOVEN, GEOTEXTILE FABRIC SHALL BE AMOCO 4545, FIBERTEX 150 BY CROWN BELLERBACH OR APPROVED EQUAL. FABRIC JOINTS SHALL HAVE AN OVERLAP OF 18 INCHES. THE COST OF THE GEOTEXTILE FABRIC LAYER SHALL BE INCLUDED IN THE COST OF THE UNDERGROUND DRAINAGE SYSTEM, STONE, DRYWELL, OR STORM SEWER AS BID.
- CONTRACTOR TO VERIFY GROUND WATER DEPTH PRIOR TO CONSTRUCTION. MODIFY FRENCH DRAIN DEPTH TO MAINTAIN A 1' SEPARATION BETWEEN GROUND WATER AND FRENCH DRAIN, WHILE MAINTAINING WATER STORAGE REQUIREMENT.

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ANY INFORMATION ON THIS DRAWING IS NOT INTENDED TO BE SUITABLE FOR REUSE BY ANY PERSON, FIRM OR CORPORATION OR ANY OTHERS ON EXTENSION OF THIS PROJECT OR FOR ANY USE ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION AND ADOPTION BY THE ENGINEER, ARCHITECT OR SURVEYOR FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE ENGINEER, ARCHITECT OR SURVEYOR.

ALL UNDERGROUND UTILITIES MUST BE FIELD VERIFIED BY THE CONTRACTOR BEFORE ANY CONSTRUCTION MAY BEGIN.

**SURVEYORS & ENGINEERS:**  
DANCH, HARNER & ASSOCIATES, INC.  
1643 COMMERCE DRIVE  
SOUTH BEND, IN. 46628  
(574) 234-4003  
ATTN: MICHAEL DANCH

**CONSTRUCTION DETAILS**

DATE	DRAWN BY:	REVISIONS	
5/10/24	JMS	DATE	BY
SCALE	CHECKED BY:		
1" = 10'	MJD		
FILE #	PROJ. MANGR:		
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**Danch, Harner & Associates, Inc.**  
Land Surveyors • Professional Engineers  
Landscape Architects • Land Planners  
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# FINAL SITE PLAN

## PART OF THE SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 37 NORTH, RANGE 2 EAST, CITY OF SOUTH BEND, PORTAGE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA.

### UTILITY MATERIAL REQUIREMENTS:

#### SANITARY SEWER, STORM SEWER, AND WATER LINES MATERIAL NOTE:

1. WATER PIPE 2 1/2" AND LARGER SHALL BE CLASS 50 DUCTILE IRON.
2. ALL STORM SEWERS SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH CITY STANDARDS. PRIOR TO ACCEPTANCE BY THE OWNER - THE ENGINEER SHALL WITNESS THE TESTS. COPIES OF THE TEST RESULTS SHALL BE FURNISHED TO THE OWNER, THE CITY AND THE ENGINEER.
3. ALL STORM SEWER SHALL BE CLASS III RCP OR HDPE DOUBLE WALL.
4. ALL SANITARY SEWER SHALL BE SDR 35 PVC (ASTM D3034). PIPE JOINTS SHALL CONFORM TO ASTM D3212 AND ASTM F477.
5. ALL MANHOLES SHALL BE REINFORCED CONCRETE PRECAST (ASTM C478).

### BACKFLOW/CROSS CONNECTION REQUIREMENTS:

1. USE RPZ ON DOMESTIC LINES, INSIDE BUILDING. THE RPZ SHALL BE MOUNTED IN A HORIZONTAL ORIENTATION.
2. USE DDCV ON FIRE LINES. THE DDCV SHALL BE LISTED ON THE USC APPROVED LIST. MOUNT IN APPROVED ORIENTATION.
3. USE PVC ON LAWN SPRINKLER LINES.

### SANITARY SEWER, STORM SEWER, AND WATER LINES GENERAL NOTES:

1. ALL LOCAL PERMITS SHALL BE OBTAINED BEFORE CONSTRUCTION IS BEGUN ON THIS PROJECT.
2. IF POLLUTION OR NUISANCE CONDITIONS ARE CREATED, IMMEDIATE CORRECTIVE ACTION SHALL BE TAKEN BY THE PERMITTEE.
3. SEWER TO WATER MAIN SEPARATION DISTANCES SHALL COMPLY WITH SECTION 38 OF THE RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES, 2014 EDITION & IDEM REGULATIONS. SEE ITEM 8 BELOW.
4. IF NEEDED, ALL TRENCHES SHALL BE DEWATERED USING DEEP WELLS OR WELL POINTS PRIOR TO EXCAVATION. IF NEEDED, THE CONTRACTOR SHALL PROVIDE SHEETING, SHORING, BRACING AND/OR A TRENCH BOX, IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS, FOR ALL EXCAVATION WORK. DEWATERING SHALL BE AT LEAST TWO (2) FEET BELOW THE TRENCH EXCAVATION.
5. MINIMUM COVER FOR WATER LINES IS 5.0 FT.
6. PVC SANITARY SEWERS SHALL BE TESTED FOR DEFLECTION USING A MANDRELL WHICH IS 95% OF THE INSIDE DIAMETER OF THE PIPE, AS DEFINED IN THE APPLICABLE A.S.T.M. STANDARDS. ANY PIPE FAILING THE TEST SHALL BE RE-EXCAVATED AND REPLACED, SO THAT ALL COMPLETED PIPE PASSES A RETEST. THE DEFLECTION TEST SHALL BE PERFORMED NOT LESS THAN 30 DAYS AFTER BACKFILL OF THE TRENCHES. ALL OTHER DETAILS OF THE MANDRELL TEST SHALL BE IN ACCORDANCE WITH "TEN STATES" STANDARDS AND IDEM REGULATIONS.
7. ALL SANITARY SEWERS SHALL BE TESTED FOR INFILTRATION OR EXFILTRATION HYDROSTATICALLY, WITH A MINIMUM TESTING HEAD OF 10 FT, TAKING INTO CONSIDERATION THE STATIC GROUNDWATER ELEVATION WITH RESPECT TO THE PIPE AT THE TIME OF THE TEST. THE MAXIMUM ALLOWABLE LEAKAGE SHALL BE 200 GALLONS PER DAY PER INCH DIAMETER PER MILE OF PIPE.
8. ALL SANITARY SEWERS LAID PARALLEL TO WATER MAINS SHALL BE SEPARATED AT LEAST 10 FT, MEASURED EDGE TO EDGE, FROM SAID WATER MAINS. WHENEVER A SANITARY SEWER CROSSES A WATER MAIN, THE MINIMUM VERTICAL SEPARATION SHALL BE 18", ALL IN ACCORDANCE WITH IDEM REGULATIONS AND "TEN STATES" STANDARDS".
9. THE RESULTS OF ALL TESTS ON THE COMPLETED SEWER SHALL BE SUBMITTED TO DANCH, HARNER & ASSOCIATES, INC. WITHIN THREE MONTHS OF COMPLETION OF CONSTRUCTION.
10. ALL NEW WATER LINES, INCLUDING NEW FIRE HYDRANT, SHALL BE DISINFECTED IN ACCORDANCE WITH CITY, STATE AND FEDERAL REGULATIONS. THE NEW LINES SHALL BE FLUSHED PRIOR TO DISINFECTION. COPIES OF ACCEPTABLE BACTERIAL TEST RESULTS SHALL BE FURNISHED TO THE OWNER, THE ENGINEER AND THE CITY PRIOR TO ACTIVATING THE NEW WATER PIPING.
11. ALL WATER LINES SHALL BE PRESSURE TESTED @ 150 PSI FOR 2 HOURS.
12. ALL SANITARY SEWER MANHOLES SHALL BE INSPECTED AFTER COMPLETION FOR GENERAL CONDITION, CRACKS, LEAKAGE OF GROUNDWATER OR OTHER DEFECTS. THE MANHOLE SHALL BE TESTED FOR WATER TIGHTNESS IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF TEN STATES STANDARDS, LATEST EDITION, AND IDEM REGULATIONS.
13. NO ROOF DRAINS, FOOTING DRAINS AND/OR SURFACE WATER DRAINS MAY BE CONNECTED TO THE SANITARY SEWER SYSTEM INCLUDING TEMPORARY CONNECTIONS DURING CONSTRUCTION.
14. SANITARY FEATURES SHALL COMPLY WITH ANY ADDITIONAL REQUIREMENTS OF THE CITY OF SOUTH BEND.

### PHONE, GAS, ELECTRIC, CATV UTILITY AND IRRIGATION SLEEVE NOTES:

1. CONTRACTOR IS TO UNCOVER AND CONFIRM ALL TAP/CONNECTION LOCATIONS. IF DISCREPANCIES EXIST, NOTIFY ENGINEER PRIOR TO COMMENCING WORK.
2. CONTRACTOR IS TO COORDINATE ALL UTILITY CONNECTIONS WITH THE APPROPRIATE UTILITY COMPANIES.
3. ROUTINGS SHOWN ARE APPROXIMATE.
4. CONTRACTOR IS TO COORDINATE AND ASSURE THAT ANY REQUIRED IRRIGATION SLEEVES ARE PLACED PRIOR TO PAVING.
5. TELEPHONE, ELECTRIC AND TV ROUTINGS ARE TO BE COORDINATED WITH THE APPROPRIATE UTILITIES. CONTRACTOR IS TO PROVIDE CONDUIT UNDER PAVED AREAS AS REQUIRED BY THE APPROPRIATE UTILITY.
6. GRANULAR BACKFILL MATERIAL IS REQUIRED IN ALL UTILITY TRENCHES LOCATED UNDER PAVEMENT OR SIDEWALKS. BACKFILL SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY PER SOILS REPORT.

### UTILITY INFORMATION:

THE ENGINEER HAS INDICATED UNDERGROUND UTILITIES ON THESE PLANS BASED UPON INFORMATION PROVIDED BY THE VARIOUS UTILITIES. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION IS UNKNOWN AND THE ENGINEER ACCEPTS NO LIABILITY FOR UTILITY INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK WITH THE UTILITIES, PROTECTING ALL UTILITIES, PAYING ALL COSTS FOR DAMAGE TO UTILITY FACILITIES, AND RESTORING ALL UTILITIES TO A CONDITION WHICH IS BETTER THAN THE ORIGINAL CONDITION AT THE START OF THIS PROJECT. THE CONTRACTOR SHALL NOT BEGIN UNDERGROUND WORK UNTIL ALL UTILITIES HAVE BEEN ACCURATELY LOCATED ON THE GROUND.

### CITY OF SOUTH BEND SANITARY SEWER CONSTRUCTION STANDARDS & SPECIFICATIONS: (AS NECESSARY)

1. ALL MATERIALS AND WORKMANSHIP SHALL MEET THE CITY OF SOUTH BEND DESIGN & CONSTRUCTION STANDARDS AND PREVAILING SPECIFICATIONS FOR PUBLIC WORKS, AND TITLE 327 OF THE INDIANA ADMINISTRATION CODE, ARTICLE 3 (STATE CODE).
2. PIPE BEDDING - CLASS "F" FOR FLEXIBLE PIPE SHALL BE BEDDED IN GRANULAR FILL WHICH SHALL BE CARRIED 12-INCHES ABOVE THE TOP OF THE PIPE. ALL BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE CLASS I, II, OR III PER ASTM D2321-89.
3. ALL SEWER TRENCHES WITHIN THE ROAD RIGHT-OF-WAY, UNDER PARKING LOTS, DRIVES, SIDEWALKS AND EXISTING PIPES SHALL BE BACKFILLED ABOVE THE PIPE BEDDING MATERIAL WITH EXCAVATABLE FLOWABLE FILL, 150 PSI, UNLESS OTHERWISE NOTED.
4. ANY EXISTING PIPE OR TILE(S), WHICH ARE CUT DURING CONSTRUCTION, SHALL BE REPLACED WITH EQUAL OR BETTER MATERIALS AND CONSTRUCTION METHODS.
5. ANY PAVEMENT OR IMPROVED ROAD SURFACE OR SIDEWALK CUT DURING CONSTRUCTION SHALL BE REPLACED WITH EQUAL OR BETTER MATERIALS AND CONSTRUCTION METHODS.
6. ALL GRASSED AREAS WHICH ARE DISTURBED DURING THE COURSE OF CONSTRUCTION, SHALL BE SEEDED WITH COMPARABLE GRASS SEED AND COVERED WITH STRAW. WATER SHALL BE APPLIED AS REQUIRED TO ASSURE GROWTH.
7. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE REGRADED TO THE ORIGINAL CONTOURS PRIOR TO COMPLETION OF THE PROJECT.
8. ALL MANHOLES TO BE STANDARD TYPE I, 48-INCH DIAMETER PRECAST REINFORCED CONCRETE, UNLESS NOTED OTHERWISE.
9. ALL PRE-CAST CONCRETE MANHOLE COMPONENTS (CONES, ADJUSTING RINGS, SECTIONS, ETC.) SHALL CONFORM TO ASTM SPECIFICATION C478-96.
10. ALL MANHOLE FRAMES TO BE NEENAH R-1772 CASTING WITH SOLID LIDS OR EQUAL UNLESS OTHERWISE NOTED.
11. INFILTRATION/EXFILTRATION INTO PIPE SHALL NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER PER DAY PER MILE OF PIPE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE FOR THE TESTING AND TO PROVIDE CERTIFIED TESTS TO THE ENGINEER. THE RESULTS OF THE TESTING SHALL BE PROVIDED TO THE OFFICE THIRTY (30) DAYS AFTER COMPLETION OF CONSTRUCTION.
12. ALL PERMITS (AREA CONNECTION, INSPECTION, TAP, ETC.) REQUIRED FOR THE EXECUTION OF THE WORK SHALL BE OBTAINED AND PAID FOR BY THE DEVELOPER.
13. SEWER TO WATER MAIN SEPARATION DISTANCES SHALL CONFORM TO SECTION 29 OF THE RECOMMENDED STANDARDS FOR SEWAGE WORKS, 1978 REVISED EDITION. WHENEVER SEWERS MUST CROSS UNDER WATER MAINS, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18" BELOW THE WATER MAIN. WHEN THE ELEVATION OF THE SEWER CANNOT BE BURIED TO MEET SAID REQUIREMENTS, THE SEWER SHALL BE RECONSTRUCTED WITH MECHANICAL JOINT DUCTILE IRON PIPE OR AWWA C-900 CLASS 150, SDR 18, PVC FOR A DISTANCE OF TEN (10) FEET ON EACH SIDE OF THE WATER MAIN. ONE FULL LENGTH OF SEWER SHOULD BE CENTERED OVER THE WATER MAIN SO THAT BOTH JOINTS WILL BE AS FAR FROM THE WATER MAIN AS POSSIBLE. IN ALL OCCURRENCES, WHERE WATER LINES AND SANITARY SEWER LINES DO NOT PERMIT A MINIMUM OF TEN (10) FEET HORIZONTAL SEPARATION, THE SEWER MUST BE CONSTRUCTED EQUAL TO WATER PIPE WITH COMPRESSION JOINTS AND SHALL BE PRESSURE TESTED TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING.
14. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE\* PIPE AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST THIRTY (30) DAYS. NO PIPE SHALL EXCEED A VERTICAL DEFLECTION OF 5% ACTUAL INSIDE DIAMETER (AS LISTED IN ASTM STANDARDS). DEFLECTION TEST RESULTS SHALL BE SUBMITTED WITH THE INFILTRATION/EXFILTRATION TEST RESULTS. (\*THE FOLLOWING ARE CONSIDERED NONFLEXIBLE PIPES: VITRIFIED CLAY PIPE, CONCRETE PIPE, DUCTILE IRON PIPE, CAST IRON PIPE).
15. ALL MANHOLES SHALL BE AIR TESTED IN ACCORDANCE WITH ASTM C1244-93, STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST.
16. ALL SANITARY SEWER MAINS TO BE PVC CONFORMING TO ASTM D-3034.
17. ALL SANITARY SEWER JOINTS SHALL BE GASKETED "PUSH ON TYPE" WITH A CONFINED ELASTOMETRIC SEAL (RUBBER GASKET). JOINT TO CONFORM WITH ASTM-D3212 AND SEAL TO CONFORM WITH ASTM F-477-99.
18. ALL GRAVITY SEWER PIPE SHALL BE TESTED USING ONE (1) OF THE FOLLOWING LEAKAGE TEST TYPES:
  - 18.1. A HYDROSTATIC TEST SHALL BE PERFORMED WITH MINIMUM OF TEN (10) FEET OF POSITIVE HEAD. THE RATE OF EXFILTRATION OR INFILTRATION SHALL NOT EXCEED TWO HUNDRED (200) GALLONS PER INCH OF PIPE DIAMETER PER LINEAR MILE PER DAY.
  - 18.2. AN AIR TEST SHALL CONFORM TO ASTM F1477-92, STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR, FOR PLASTIC PIPE.
19. AS-BUILT DRAWINGS TO BE PROVIDED TO CITY OF SOUTH BEND UPON COMPLETION OF SANITARY SEWER AS REQUIRED.
20. FULL-TIME INSPECTION MUST BE PROVIDED FOR ALL SEWER CONSTRUCTION AND PAID FOR BY THE CONTRACTOR OR DEVELOPER.

### ENGINEER'S NOTES:

1. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RE-GRADED TO THE PROPOSED CONTOURS, OR TO THE EXISTING CONTOURS WHERE CHANGE OF GRADE IS NOT PROPOSED.
2. ANY CHANGE OF CONDITIONS DUE TO UNDERGROUND OR OTHER CONDITIONS SHALL BE PROMPTLY REPORTED TO THE ENGINEER.

### GRADING, DRAINAGE & PAVING NOTES:

#### PAVING, STRIPING & CURB NOTES

1. WORKMANSHIP AND MATERIALS FOR ALL PAVING TO CONFORM TO STATE AND LOCAL STANDARD DRAWINGS AND SPECIFICATIONS, LATEST EDITION.
2. PARKING LOT SUBGRADE SHALL BE FINE GRADED TO ASSURE POSITIVE DRAINAGE AWAY FROM THE BUILDING AND TOWARDS THE COLLECTION LOCATIONS.
3. ALL ASPHALT PAVING SHALL BE LAID ON A STRAIGHT, EVEN, AND UNIFORM GRADE WITH A MINIMUM 1% AND MAXIMUM 3% SLOPE TOWARDS THE COLLECTION POINTS. DO NOT ALLOW NEGATIVE GRADES OR PONDING OF WATER.
4. SLOPE BUILDING SIDEWALKS AWAY FROM BUILDING AT A MINIMUM OF 1% AND A MAXIMUM OF 2%. CROSS-SLOPES IN DESIGNATED WALKABLE PATHS EXCEEDING 2% WILL BE REMOVED AND RECONSTRUCTED AT CONTRACTORS EXPENSE.
5. PAVED AREAS ARE TO BE ROUGH GRADED TO +/- 0.10 FT AND PROOF ROLLED. ANY NON-ACCEPTABLE AREAS MUST BE CORRECTED PRIOR TO THE PLACEMENT OF STONE.
6. EXPANSION JOINTS - 1/2" ASPHALT IMPREGNATED FULL DEPTH, 40 FT O.C. MAXIMUM AND AT SIDEWALK INTERSECTIONS. CRACK CONTROL SCORING AT SIDEWALK WIDTH DIMENSION, OR AS NOTED ON THE PLANS.
7. STRIPING OF PARKING STALLS AND OTHER AREAS TO BE AS SHOWN ON THE PLANS. ALL LINES TO BE SINGLE STRIPE, YELLOW, 4" WIDE, STRAIGHT, EVENLY SPACED, AND UNIFORM IN LENGTH.
8. HANDICAP PARKING AND RAMP SHALL COMPLY WITH ALL GOVERNMENTAL CODES AND STANDARDS AND ANY OTHER REQUIRED STANDARDS. HANDICAP SPACES TO BE MARKED WITH THE INTERNATIONAL HANDICAP SYMBOL IN A BLUE FIELD. EACH SPACE SHALL BE ADDITIONALLY MARKED WITH APPROPRIATE SIGNAGE.
9. REFER TO THE PROJECT DETAIL SHEET FOR PAVING DETAILS.

### DIMENSIONS, COURSES AND THICKNESSES, OFFSITE CONSTRUCTION NOTES

1. ALL WORK TO COMPLY WITH LOCAL AND STATE CODES & STANDARDS OF CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL SITE CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL COORDINATE THE WATER AND SEWER WORK IN THE RIGHT OF WAY WITH ALL APPROPRIATE AGENCIES.
4. RIGHT OF WAY DRAINAGE PATTERNS SHALL ALSO BE MAINTAINED.
5. ANY AREAS DISTURBED ARE TO BE REPAIRED TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO DISTURBANCE.
6. CONTRACTOR TO INSTALL IMPROVEMENTS SHOWN AND TO COORDINATE WITH THE APPROPRIATE GOVERNMENTAL AGENCY FOR CLARIFICATION AND ANY NECESSARY INSPECTIONS.

### SITE GRADING

1. STRIP BUILDING AND PAVING AREAS OF ALL ORGANIC TOPSOIL MATERIALS. STOCKPILE SUITABLE TOPSOIL'S FOR RE-SPREADING ONTO LANDSCAPE AREAS. ALL EXCESS EXCAVATED MATERIALS SHALL BE REMOVED FROM THE SITE AT THE CONTRACTORS EXPENSE.
2. ALL SOILS SHALL BE GRADED TO PROVIDE SMOOTH CONTOURS AND POSITIVE DRAINAGE AWAY FROM BUILDINGS. DO NOT ALLOW FOR PONDING OF WATER.
3. AFTER TOPSOIL REMOVAL, CONTRACTOR IS TO PROOF ROLL THE BUILDING AND PAVING AREAS. ANY NON-ACCEPTABLE AREAS MUST BE CORRECTED PRIOR TO BEGINNING ANY FILL OPERATIONS.
4. AFTER COMPLETION OF PROOF ROLLING, FILL CAN BE PLACED USING SUITABLE ONSITE OR BORROW MATERIALS IN MAXIMUM 8" LIFTS. FILL TO BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.
5. PAVED AREAS ARE TO BE ROUGH GRADED TO +/- 0.10 FT AND PROOF ROLLED. ANY NON-ACCEPTABLE AREAS MUST BE CORRECTED PRIOR TO THE PLACEMENT OF STONE.
6. PARKING LOT SHALL BE GRADED TO ASSURE POSITIVE DRAINAGE AND NO PONDING OF WATER.
7. CURBS TO BE WHERE SHOWN ON THE PLAN AND INTEGRAL WITH SIDEWALK AT PAVING EDGE, AS APPROPRIATE.

### DRAINAGE

1. ALL WORK TO COMPLY WITH APPLICABLE CITY OF SOUTH BEND CONSTRUCTION STANDARDS.
2. PARKING AREAS SHALL BE GRADED TO ASSURE POSITIVE FLOW AWAY FROM THE BUILDING. NO PONDING OF WATER IS TO BE ALLOWED.
3. CONTRACTOR IS TO CONFIRM ALL UTILITY LOCATIONS. IF DISCREPANCIES EXIST, NOTIFY ENGINEER PRIOR TO COMMENCING WORK.
4. GRANULAR BACKFILL MATERIAL IS REQUIRED IN ALL PIPE TRENCHES LOCATED UNDER PAVEMENT OR SIDEWALKS. BACKFILL SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.
5. REFER TO STANDARD DETAILS FOR SPECIFICATIONS FOR PIPE TRENCHING, MATERIALS, INLETS, AND CASTING INFORMATION.

### EROSION CONTROL NOTES:

#### EROSION CONTROL:

1. GENERAL CONTRACTOR IS RESPONSIBLE FOR ASSURING COMPLIANCE WITH ALL LOCAL AND STATE REQUIREMENTS FOR EROSION CONTROL. PRIMARY RESPONSIBILITY FOR MAINTENANCE OF THE EROSION CONTROL PROTECTION WILL REMAIN WITH THE GENERAL CONTRACTOR. GENERAL CONTRACTOR WILL ALSO BE REQUIRED TO CLEAN OUT ALL DRAINAGE STRUCTURES IMMEDIATELY PRIOR TO PROJECT TURNOVER.
2. LAND DISTURBANCE WHICH REMOVES VEGETATION SHALL BE DONE IN A WAY THAT WILL MINIMIZE EROSION.
3. THE DURATION OF TIME WHICH AN AREA REMAINS EXPOSED SHALL BE KEPT TO A PRACTICAL MINIMUM. THE AREA SHALL BE STABILIZED AS QUICKLY AS PRACTICAL.
4. TEMPORARY VEGETATION OR MULCHING SHALL BE USED WHERE REQUIRED TO PROTECT EXPOSED AREAS DURING SITE DEVELOPMENT. IF A DISTURBED AREA IS TO REMAIN INACTIVE FOR A PERIOD EXCEEDING 14 DAYS, TEMPORARY RYE GRASS SEEDING WILL BE PLACED TO PROVIDE VEGETATION.
5. PERMANENT AND FINAL VEGETATION SHALL BE INSTALLED AS SOON AS PRACTICAL.
6. STRAW BALE CHECK DAMS AND SILT FENCING SHALL BE PLACED AROUND ANY SOIL STOCKPILE THAT BECOMES INACTIVE FOR A PERIOD OF TIME EXCEEDING 15 DAYS.
7. "SILT SACK", "DANDY BAGS" OR STONE FILLED BAGS SHALL BE PLACED AND MAINTAINED AROUND NEWLY CONSTRUCTED DRAINAGE STRUCTURES TO PREVENT SILT AND DEBRIS FROM ENTERING DOWNSTREAM DRAINAGE FACILITIES DURING ALL CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL SITE WORK IS COMPLETED.

### GENERAL NOTES

1. ALL WORK TO COMPLY WITH LOCAL AND STATE CODES & STANDARDS OF CONSTRUCTION.
2. ALL TESTING REQUIRED BY GOVERNMENTAL AUTHORITIES IS TO BE PERFORMED BY THE CONTRACTOR.
3. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES. QUANTITIES GIVEN ARE APPROXIMATE AND MUST BE VERIFIED. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER.
4. THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL SITE CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH TWO COPIES OF "RED LINED" AS-BUILT PLANS OF THE DESIGNATED IMPROVEMENTS.
6. CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO THE START OF THE WORK AND BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION. PLANS INDICATE APPROXIMATE ELEVATIONS AND ROUTING. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY DIMENSIONAL OR ELEVATION DISCREPANCIES WHICH HAVE NOT BEEN BROUGHT TO HIS ATTENTION PRIOR TO CONSTRUCTION.
7. CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES ON THE SITE AND RIGHT OF WAY PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES WILL NOT BE DAMAGED OR DISTURBED. CONTRACTOR SHALL ALSO CONTACT ALL APPROPRIATE UTILITY COMPANIES, INCLUDING MUNICIPAL UTILITIES, TO COORDINATE ALL UTILITY INSTALLATIONS.
8. DETAILS AND SPECIFICATIONS SHOWN ON THIS PLAN ARE INTENDED TO COMPLEMENT THE PROJECT PLANS AND STANDARD DETAILS. IN CASES OF CONFLICTS BETWEEN THESE PLANS AND OTHER SPECIFICATIONS, THE MORE RESTRICTIVE CASE APPLIES, UNLESS SPECIFICALLY OVERRIDDEN.
9. THESE TECHNICAL SPECIFICATIONS ARE INTENDED TO COMPLEMENT AND COORDINATE WITH THE REQUIREMENTS CONTAINED IN THE PROJECT MANUAL. IN THE CASE OF CONFLICTING REQUIREMENTS, THE MOST RESTRICTIVE SPECIFICATION SHALL BE ENFORCED. REFER ALSO TO THE CITY OF SOUTH BEND PREVAILING SPECIFICATIONS AND RELATED DOCUMENTS WHICH ARE CONTAINED HEREIN BY REFERENCE, FOR WORK WITHIN PUBLIC RIGHTS-OF-WAY.

### SITE SPECIFICATIONS

#### SURVEYORS & ENGINEERS:

DANCH, HARNER & ASSOCIATES, INC.  
1643 COMMERCIE DRIVE  
SOUTH BEND, IN. 46628  
(574) 234-4003  
ATTN: MICHAEL DANCH

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