

**DESCRIPTION**

Part of the Southwest Quarter of Section 10, Township 12 North, Range 4 East of the Second Principal Meridian located in Franklin Township, Johnson County, Indiana described as follows:

Commencing at the Southwest Corner of said Quarter Section also being the northwest corner of Cumberland Trails First Section, Third Phase recorded as Instrument Number 2001-025690, Plat Book "D", Pages 373 "A" and "B" in the Office of the Johnson County Recorder; thence North 88 degrees 16 minutes 57 seconds East along the north line of said Quarter Section and along the north line of said Cumberland Trails First Section, Third Phase 1347.52 feet to the southwest corner of Oakleaf Manor Section Three "B" recorded as Instrument Number 2000-029667, Plat Book "D", Pages 336 "A" and "B" in said Recorders Office; thence North 00 degrees 10 minutes 32 seconds West along the west line of said Oakleaf Manor Section Three "B" 613.21 feet to the Point of Beginning of the herein described parcel; thence South 88 degrees 16 minutes 57 seconds West 302.64 feet; thence South 01 degrees 43 minutes 03 seconds East 173.00 feet; thence North 88 degrees 15 minutes 57 seconds East 16.85 feet; thence South 01 degrees 43 minutes 03 seconds East 95.92 feet; thence South 39 degrees 36 minutes 12 seconds West 33.68 feet; thence South 08 degrees 06 minutes 06 seconds West 25.46 feet; thence South 88 degrees 16 minutes 57 seconds West 396.89 feet; thence North 07 degrees 22 minutes 35 seconds West 107.99 feet to the point of curvature of a curve to the left having a central angle of 84 degrees 20 minutes 28 seconds and a radius of 25.00 feet, said curve subtended by a chord bearing of North 49 degrees 32 minutes 49 seconds West and a chord length of 36.80 feet; thence northwesterly along said curve 36.80 feet; thence North 12 degrees 55 minutes 38 seconds West 50.97 feet to the point of a non-tangent curve to the left having a central angle of 95 degrees 39 minutes 33 seconds and a radius of 25.00 feet, said curve subtended by a chord bearing of North 40 degrees 27 minutes 11 seconds East and a chord length of 37.05 feet; thence northeasterly along said curve 37.05 feet; thence North 07 degrees 22 minutes 35 seconds West 194.95 feet to the point of curvature of a curve to the left having a central angle of 84 degrees 20 minutes 28 seconds and a radius of 25.00 feet, said curve subtended by a chord bearing of North 49 degrees 32 minutes 49 seconds West and a chord length of 36.80 feet; thence northwesterly along said curve 36.80 feet; thence North 12 degrees 55 minutes 38 seconds West 50.97 feet to the point of a non-tangent curve to the left having a central angle of 95 degrees 39 minutes 33 seconds and a radius of 25.00 feet, said curve subtended by a chord bearing of North 40 degrees 27 minutes 11 seconds East and a chord length of 37.05 feet; thence northeasterly along said curve 37.05 feet to the point of curvature of a curve to the right having a central angle of 13 degrees 19 minutes 09 seconds and a radius of 835.00 feet, said curve subtended by a chord bearing of North 00 degrees 26 minutes 10 seconds West and a chord length of 193.67 feet; thence northwesterly along said curve 194.11 feet; thence North 88 degrees 16 minutes 57 seconds East 523.25 feet; thence South 01 degrees 43 minutes 03 seconds East 50.48 feet; thence North 88 degrees 16 minutes 57 seconds East 260.09 feet to the west line of aforesaid Oakleaf Manor Section Three "B"; thence South 00 degrees 10 minutes 32 seconds East along said west line 341.61 feet to the Point of Beginning containing 9.89 Acres more or less.

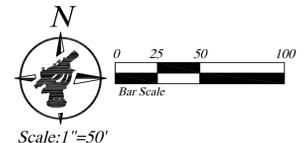
Subject to all easements, restrictions and rights-of-way.

**LEGEND - EXISTING**

	-EXISTING STORM (CURB) INLET		-EXISTING GAS VALVE
	-EXISTING STORM (BEEHIVE) INLET		-EXISTING UNDERGROUND GAS LINE
	-EXISTING STORM MANHOLE		-EXISTING GAS PIPELINE MARKER
	-EXISTING CONCRETE END SECTION		-EXISTING TELEPHONE PEDESTAL
	-EXISTING STORM SEWER		-EXISTING TELEPHONE MANHOLE
	-EXISTING SANITARY MANHOLE		-EXISTING TRAFFIC MANHOLE
	-EXISTING SANITARY CLEANOUT		-EXISTING TRAFFIC SIGNAL POLE
	-EXISTING SANITARY SEWER		-EXISTING CABLE PEDESTAL
	-EXISTING PAVEMENT GRADE		-EXISTING FIBER OPTIC
	-EXISTING CURB & GUTTER		-EXISTING FIRE HYDRANT
	-EXISTING SPOT ELEVATION		-EXISTING WATERLINE
	-EXISTING UTILITY POLE		-EXISTING WATER METER
	-EXISTING LIGHT POLE		-EXISTING WATER VALVE
	-EXISTING GUY WIRE		-EXISTING STREET SIGN
	-EXISTING OVERHEAD UTILITY		-EXISTING TREE
	-EXISTING ELECTRIC TRANSFORMER		-EXISTING TREE LINE
	-EXISTING UNDERGROUND ELECTRIC		
	-EXISTING A/C CONDENSING UNIT		
	-EXISTING GAS METER		

**FLOOD ZONE**

THIS PARCEL LIES WITHIN ZONE "X" AS PLOTTED PER THE FEMA FLOOD INSURANCE RATE MAP FOR JOHNSON COUNTY INDIANA - MAP NUMBER 18081C0227D - EFFECTIVE DATE AUGUST 2, 2007



This drawing is not intended to be represented as a Retracement or Original Boundary Survey, a Route Survey, or a Surveyor Location Report

**BENCHMARK:**

INDOT BENCHMARK - 41-S46  
 Benchmark located on Bridge Structure No. 144-41-7969 on the Southeast Wingwall (Bridge over Youngs Creek)  
 Elevation - 741.6699 NAVD 88

**UTILITY STATEMENT:**

THE EXISTING UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM VISIBLE FIELD EVIDENCE AND/OR EXISTING DRAWINGS. NORTHPOINTE MAKES NO GUARANTEES THAT THE UTILITY INFORMATION SHOWN COMPRISES ALL SUCH UTILITIES IN THE AREA, IN SERVICE OR ABANDONED. NORTHPOINTE FURTHER STATES THAT THE UNDERGROUND UTILITY DATA SHOWN DOES NOT INDICATE PRECISE LOCATIONS.

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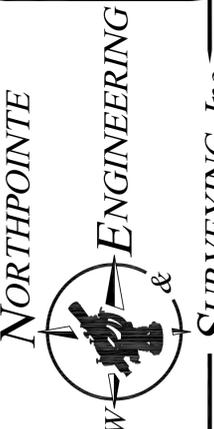


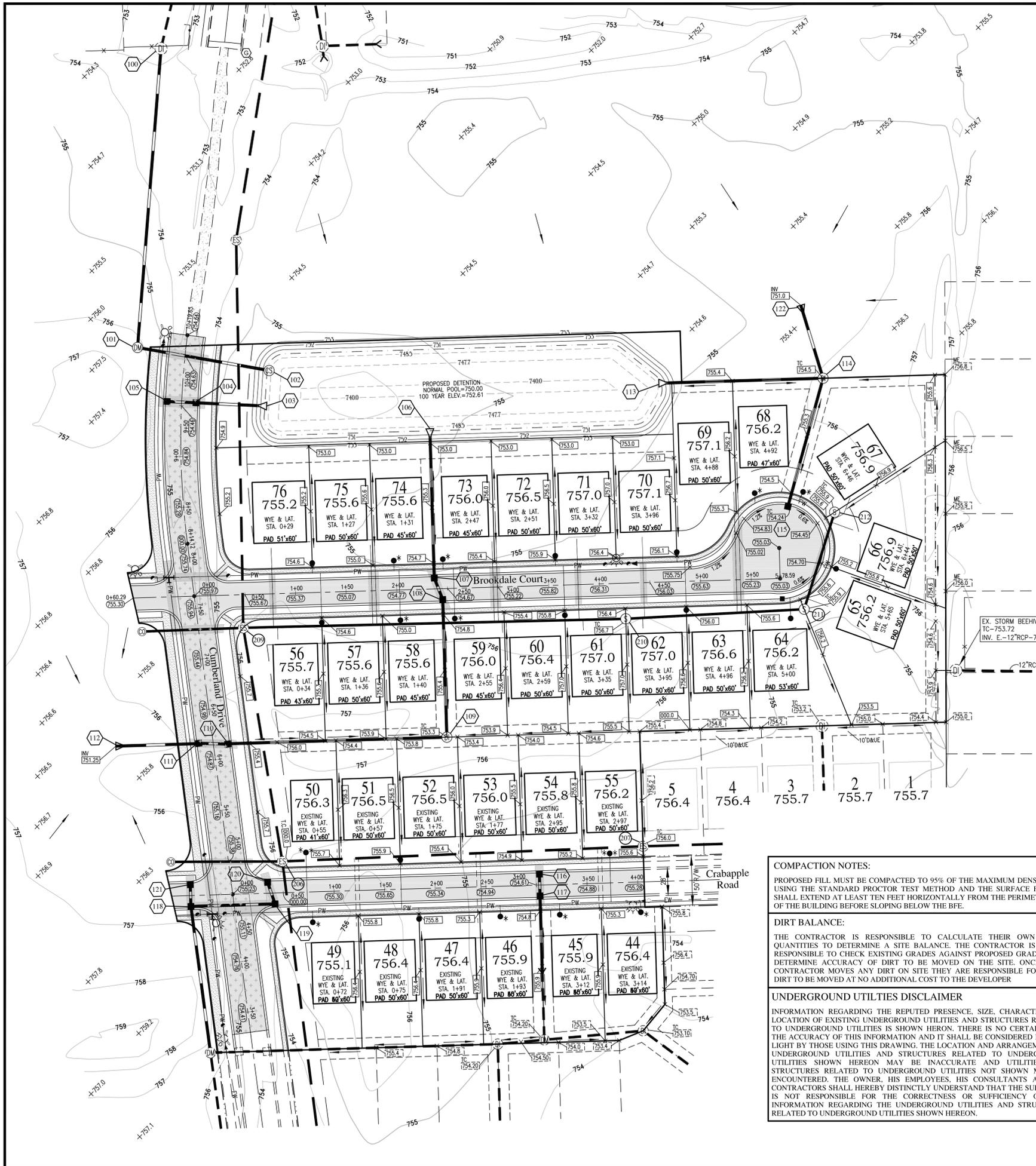
SCALE	DRAWN BY	CHECKED BY
1"=50'		DJS - VT

PREPARED FOR  
**West Franklin Homes, LLC**  
 3571 Cayman Drive  
 Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
 Section Two  
 Franklin Township, City of Franklin  
 Johnson County, Indiana  
 SHEET TITLE  
**EXISTING SITE CONDITIONS**

Engineering, Land Surveying  
 Consulting & Inspection  
 Donna Jo Smithers  
 Professional Land Surveyor  
 President / Owner  
 Venus L.L. Thorne  
 Professional Engineer  
 Vice President  
 6125 South East Street, Suite "B"  
 Indianapolis, Indiana 46227-2147  
 Office - 317-884-3020  
 www.npeinc.com





**LEGEND**

- (PA) - PROPOSED COLLECTOR STREET  
(SEE SHEET 20 FOR DETAIL OF PAVEMENT SECTION)
- (PB) - PROPOSED LOCAL STREET  
(SEE SHEET 20 FOR DETAIL OF PAVEMENT SECTION)

**NOTE**

STREET TREES REQUIRED FOR EVERY LOT AT A RATIO OF ONE (1) PER EVERY THIRTY-FIVE (35) FEET OR PORTION THEREOF OF STREET FRONTAGE. THE TREE INSTALLATION REQUIREMENT SHALL BE MET DURING THE HOME CONSTRUCTION PROCESS.

**LEGEND - EXISTING**

- (S) - EXISTING STORM (CURB) INLET
- (B) - EXISTING STORM (BEEHIVE) INLET
- (M) - EXISTING STORM MANHOLE
- (E) - EXISTING CONCRETE END SECTION
- (SS) - EXISTING STORM SEWER
- (SM) - EXISTING SANITARY MANHOLE
- (SC) - EXISTING SANITARY CLEANOUT
- (SSS) - EXISTING SANITARY SEWER
- (PG) - EXISTING PAVEMENT GRADE
- (CG) - EXISTING CURB & GUTTER
- (SE) - EXISTING SPOT ELEVATION
- (UP) - EXISTING UTILITY POLE
- (LP) - EXISTING LIGHT POLE
- (GU) - EXISTING GUY WIRE
- (OHU) - EXISTING OVERHEAD UTILITY
- (EET) - EXISTING ELECTRIC TRANSFORMER
- (UE) - EXISTING UNDERGROUND ELECTRIC
- (AC) - EXISTING A/C CONDENSING UNIT
- (GM) - EXISTING GAS METER
- (G) - EXISTING UNDERGROUND GAS LINE
- (GP) - EXISTING GAS PIPELINE MARKER
- (EP) - EXISTING TELEPHONE PEDESTAL
- (TM) - EXISTING TELEPHONE MANHOLE
- (TS) - EXISTING TRAFFIC MANHOLE
- (TSP) - EXISTING TRAFFIC SIGNAL POLE
- (CP) - EXISTING CABLE PEDESTAL
- (FO) - EXISTING FIBER OPTIC
- (FH) - EXISTING FIRE HYDRANT
- (W) - EXISTING WATER LINE
- (WM) - EXISTING WATER METER
- (WV) - EXISTING WATER VALVE
- (TS) - EXISTING STREET SIGN
- (T) - EXISTING TREE
- (TL) - EXISTING TREE LINE

**LEGEND - PROPOSED**

- (100) - PROPOSED STORM STRUCTURE NUMBER
- (D) - PROPOSED STORM INLET
- (M) - PROPOSED DRAINAGE MANHOLE
- (SS) - PROPOSED STORM SEWER
- (E) - PROPOSED CONCRETE END SECTION
- (WQ) - PROPOSED WATER QUALITY STRUCTURE
- (CS) - PROPOSED OUTLET CONTROL STRUCTURE
- (21) - PROPOSED SANITARY STRUCTURE NUMBER
- (S) - PROPOSED SANITARY MANHOLE
- (SC) - PROPOSED SANITARY CLEANOUT
- (SL) - PROPOSED SANITARY LATERAL
- (SW) - PROPOSED SWALE
- (PW) - PROPOSED WATER LINE
- (FH) - PROPOSED FIRE HYDRANT
- (WV) - PROPOSED WATERLINE VALVE
- (WT) - PROPOSED WATERLINE TEE
- (WB) - PROPOSED WATERLINE BEND
- (GR) - PROPOSED GRANULAR BACKFILL
- (HR) - PROPOSED HANDICAP RAMPS
- (G) - PROPOSED GRADE
- (C) - PROPOSED CONTOUR
- (PU) - PROPOSED UNDERDRAIN
- (GL) - PROPOSED GAS LINE
- (ET) - PROPOSED ELECTRIC TRANSFORMER
- (FA) - PROPOSED FLOW ARROW

**DEVELOPMENT NOTES**

- ALL WORK SHALL CONFORM TO STATE AND LOCAL REGULATIONS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AS SHOWN ON THIS PLAN PRIOR TO STARTING CONSTRUCTION. IF ANY DISCREPANCIES ARE FOUND IN THESE PLANS FROM FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEERS/SURVEYORS IMMEDIATELY.
- CONTRACTOR SHALL NOTIFY ANY AND ALL UTILITY COMPANIES WITH UTILITIES PRESENT ON SITE 72 HOURS BEFORE STARTING CONSTRUCTION. CONTRACTOR SHALL HAVE UTILITY COMPANIES VERIFY (i.e. LOCATION, DEPTH AND SIZE) ALL UTILITIES WITHIN LIMITS OF CONSTRUCTION.
- ALL UTILITY SERVICES INTO THE PROPOSED BUILDING SHALL BE COORDINATED BETWEEN CONTRACTOR, DEVELOPER, ARCHITECT AND THE RESPECTIVE UTILITY COMPANY UNLESS OTHERWISE SHOWN.
- CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE IN ALL AREAS (GRASS/LANDSCAPE AND CONCRETE/PAVEMENT) WHEN SITE WORK IS COMPLETE. TESTS SHALL BE PERFORMED TO INSURE AND CORRECT, IF NECESSARY, ANY PONDING, "BIRD BATH" CONDITIONS.
- CONTRACTOR SHALL RESURFACE AND/OR RECONSTRUCT BACK TO ITS ORIGINAL CONDITION, ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITY AS WELL AS TRAFFIC FROM SUPPLIERS AND SUBCONTRACTORS AFTER CONSTRUCTION WORK IS COMPLETE.
- ALL WATERLINE CONSTRUCTION, RELOCATION AND SERVICE INTO THE PROPOSED BUILDING SHALL BE DONE IN ACCORDANCE WITH LOCAL WATER COMPANY STANDARDS AND SPECIFICATIONS.
- ALL CONSTRUCTION ACTIVITY ON THIS SITE SHALL BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
- ALL CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING THE MOST UPDATED SET OF CONSTRUCTION PLANS PRIOR TO COMMENCING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE TO CALCULATE THEIR OWN DIRT QUANTITIES TO DETERMINE A SITE BALANCE. THE CONTRACTOR IS ALSO RESPONSIBLE TO CHECK EXISTING GRADES AGAINST PROPOSED GRADES TO DETERMINE ACCURACY OF DIRT TO BE MOVED ON THE SITE. ONCE THE CONTRACTOR MOVES ANY DIRT ON THE SITE THEY ARE RESPONSIBLE FOR ALL DIRT TO BE MOVED AT NO ADDITIONAL COST TO THE DEVELOPER OR ENGINEER.

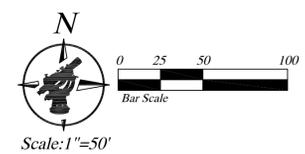
**COMPACTION NOTES:**  
PROPOSED FILL MUST BE COMPACTED TO 95% OF THE MAXIMUM DENSITY USING THE STANDARD PROCTOR TEST METHOD AND THE SURFACE FILL SHALL EXTEND AT LEAST TEN FEET HORIZONTALLY FROM THE PERIMETER OF THE BUILDING BEFORE SLOPING BELOW THE BFE.

**DIRT BALANCE:**  
THE CONTRACTOR IS RESPONSIBLE TO CALCULATE THEIR OWN DIRT QUANTITIES TO DETERMINE A SITE BALANCE. THE CONTRACTOR IS ALSO RESPONSIBLE TO CHECK EXISTING GRADES AGAINST PROPOSED GRADES TO DETERMINE ACCURACY OF DIRT TO BE MOVED ON THE SITE. ONCE THE CONTRACTOR MOVES ANY DIRT ON SITE THEY ARE RESPONSIBLE FOR ALL DIRT TO BE MOVED AT NO ADDITIONAL COST TO THE DEVELOPER

**UNDERGROUND UTILITIES DISCLAIMER**  
INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER AND LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES IS SHOWN HEREON. THERE IS NO CERTAINTY OF THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING. THE LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON MAY BE INACCURATE AND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES NOT SHOWN MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS AND HIS CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION REGARDING THE UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON.



This drawing is not intended to be represented as a Retraction or Original Boundary Survey, a Route Survey, or a Surveyor Location Report



**BENCHMARK:**  
INDOT BENCHMARK - 41-546  
Benchmark located on Bridge Structure No. 144-41-7969 on the Southeast Wingwall (Bridge over Youngs Creek)  
Elevation - 741.6699 NAVD 88

**UTILITY STATEMENT:**  
THE EXISTING UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM VISIBLE FIELD EVIDENCE AND/OR EXISTING DRAWINGS. NORTHPOINTE MAKES NO GUARANTEES THAT THE UTILITY INFORMATION SHOWN COMPREHENS ALL SUCH UTILITIES IN THE AREA. IN SERVICE OR ABANDONED. NORTHPOINTE FURTHER STATES THAT THE UNDERGROUND UTILITY DATA SHOWN DOES NOT INDICATE PRECISE LOCATIONS.

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PREPARED FOR  
**West Franklin Homes, LLC**  
3571 Cayman Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana

SHEET TITLE  
**DEVELOPMENT PLAN**

SCALE  
1"=50'  
DRAWN BY  
CHECKED BY  
DJS - VT

Engineering, Land Surveying  
& Inspection  
Donna Jo Smithers  
Professional Land Surveyor  
President / Owner  
Venus L.L. Thorne  
Professional Engineer  
Vice President  
6125 South East Street, Suite "B"  
Indianapolis, Indiana 46227-2147  
Office - 317-884-3020  
www.npeinc.com

**NORTHPOINTE ENGINEERING & SURVEYING, Inc.**

Sheet 3 of 21  
Date: 10.13.2016  
Job # 16-0115

10.13.2016  
10.13.2016



**COMPACTION NOTES:**  
 PROPOSED FILL MUST BE COMPACTED TO 95% OF THE MAXIMUM DENSITY USING THE STANDARD PROCTOR TEST METHOD AND THE SURFACE FILL SHALL EXTEND AT LEAST TEN FEET HORIZONTALLY FROM THE PERIMETER OF THE BUILDING BEFORE SLOPING BELOW THE BFE.

**DIRT BALANCE:**  
 THE CONTRACTOR IS RESPONSIBLE TO CALCULATE THEIR OWN DIRT QUANTITIES TO DETERMINE A SITE BALANCE. THE CONTRACTOR IS ALSO RESPONSIBLE TO CHECK EXISTING GRADES AGAINST PROPOSED GRADES TO DETERMINE ACCURACY OF DIRT TO BE MOVED ON THE SITE. ONCE THE CONTRACTOR MOVES ANY DIRT ON SITE THEY ARE RESPONSIBLE FOR ALL DIRT TO BE MOVED AT NO ADDITIONAL COST TO THE DEVELOPER.

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**NOTES:**

- PROPOSED WATER LINE LATERAL WITH WATER METER SERVICE PIT (DOUBLE SERVICE PIT UNLESS NOTED AS SINGLE SERVICE PIT)
- SINGLE SERVICE PIT
- WATER SERVICE LATERALS AND WATER METER PITS TO BE INSTALLED BY OTHERS AT TIME OF HOME CONSTRUCTION.
- PROPOSED SANITARY LATERAL STATION LABEL
- (16) - PROPOSED 16-FOOT WIDE DRIVE
- (24) - PROPOSED 24-FOOT WIDE DRIVE



SCALE: 1"=50'  
 DRAWN BY: West Franklin Homes, LLC  
 CHECKED BY: DJS-VT  
 3571 Cayman Drive  
 Carmel, Indiana 46033

**WATER MAIN NOTES**

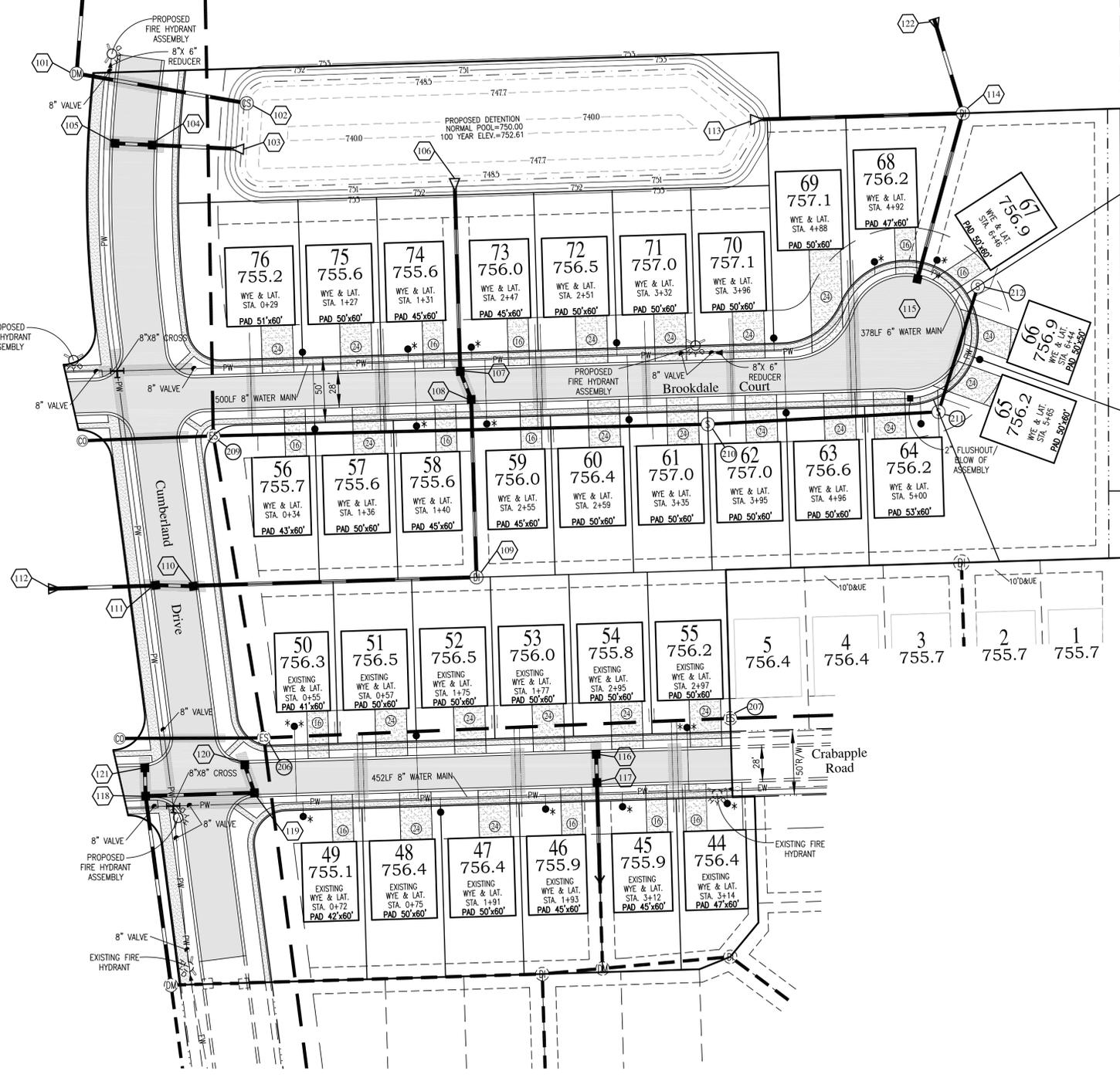
- ALL 8" AND 12" PIPE SHALL BE PVC C900 DR-14 WITH INDOT B-BORROW COMPACTED FROM 6" BELOW PIPE TO TOP OF PIPE.
- ALL 3" PIPE SHALL BE HDPE DR-11 WITH SAME BACKFILL AS 8" AND 12" PIPE UNLESS DIRECTIONAL DRILL METHOD IS USED TO INSTALL.
- ALL FITTINGS SHALL BE DUCTILE IRON WITH CORROSION RESISTANT BLUE FLUOR COATED "T" BOLTS AND SHALL BE WRAPPED WITH POLYETHYLENE ENCASEMENT.
- ALL RESTRAINTS SHALL INCLUDE THRUST BLOCKS AND MEGALUGS.
- FOR ALL FITTINGS BELL RESTRAINTS SHALL BE USED AS PIPE-TO-PIPE CONNECTIONS (STAINLESS STEEL ONLY).
- MAINTAIN REQUIRED SEPARATION FROM SANITARY AND STORM SEWER. IF REQUIRED SEPARATION CANNOT BE MET, USE APPROVED ALTERNATIVE TECHNICAL DEFLECTION.
- HORIZONTAL AND VERTICAL DEFLECTION IS NOT PERMITTED. APPROPRIATE BENDS AND FITTINGS SHALL BE USED TO OBTAIN ANY CURVATURE.
- JOINT DEFLECTION IS NOT PERMITTED FOR PVC PIPE.

PROJECT NAME: CUMBERLAND TRACE  
 Section Two  
 Franklin Township, City of Franklin  
 Johnson County, Indiana  
 SHEET TITLE: UTILITY PLAN

Engineering, Land Surveying & Inspection  
 Doreen J. Smithers  
 Professional Land Surveyor  
 President / Owner  
 Venus L.L. Thorne  
 Professional Engineer  
 Vice President  
 6125 South East Street, Suite "B"  
 Indianapolis, Indiana 46227-2147  
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Sheet 4 of 21  
 Date: 10.13.2016  
 Job # 16-0115



**LEGEND - EXISTING**

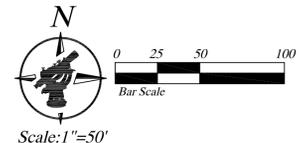
(C)	-EXISTING STORM (CURB) INLET	(G)	-EXISTING GAS VALVE
(B)	-EXISTING STORM (BEEHIVE) INLET	(G)	-EXISTING UNDERGROUND GAS LINE
(M)	-EXISTING STORM MANHOLE	(P)	-EXISTING GAS PIPELINE MARKER
(C)	-EXISTING CONCRETE END SECTION	(P)	-EXISTING TELEPHONE PEDESTAL
(S)	-EXISTING STORM SEWER	(P)	-EXISTING TELEPHONE MANHOLE
(S)	-EXISTING SANITARY MANHOLE	(P)	-EXISTING TRAFFIC MANHOLE
(S)	-EXISTING SANITARY CLEANOUT	(P)	-EXISTING TRAFFIC SIGNAL POLE
(S)	-EXISTING SANITARY SEWER	(P)	-EXISTING CABLE PEDESTAL
(P)	-EXISTING PAVEMENT GRADE	(P)	-EXISTING FIBER OPTIC
(C)	-EXISTING CURB & GUTTER	(P)	-EXISTING FIRE HYDRANT
(E)	-EXISTING SPOT ELEVATION	(P)	-EXISTING WATERLINE
(P)	-EXISTING UTILITY POLE	(P)	-EXISTING WATER METER
(P)	-EXISTING GUY WIRE	(P)	-EXISTING WATER VALVE
(P)	-EXISTING OVERHEAD UTILITY	(P)	-EXISTING STREET SIGN
(P)	-EXISTING ELECTRIC TRANSFORMER	(P)	-EXISTING TREE
(P)	-EXISTING UNDERGROUND ELECTRIC	(P)	-EXISTING TREE LINE
(P)	-EXISTING A/C CONDENSING UNIT		
(P)	-EXISTING GAS METER		

**LEGEND - PROPOSED**

(100)	-PROPOSED STORM STRUCTURE NUMBER	(P)	-PROPOSED FLOW ARROW
(I)	-PROPOSED STORM INLET	(PW 8")	-PROPOSED WATER LINE
(D)	-PROPOSED DRAINAGE INLET	(F)	-PROPOSED FIRE HYDRANT
(M)	-PROPOSED DRAINAGE MANHOLE	(W)	-PROPOSED WATERLINE VALVE
(S)	-PROPOSED STORM SEWER	(T)	-PROPOSED WATERLINE TEE
(C)	-PROPOSED CONCRETE END SECTION	(B)	-PROPOSED WATERLINE BEND
(WQ)	-PROPOSED WATER QUALITY STRUCTURE	(G)	-PROPOSED GRANULAR BACKFILL
(CS)	-PROPOSED OUTLET CONTROL STRUCTURE	(H)	-PROPOSED HANDICAP RAMPS
(21)	-PROPOSED SANITARY STRUCTURE NUMBER	(G)	-PROPOSED GRADE
(S)	-PROPOSED SANITARY MANHOLE	(797.0)	-PROPOSED CONTOUR
(S)	-PROPOSED SANITARY SEWER	(794)	-PROPOSED CONTOUR
(C)	-PROPOSED SANITARY CLEANOUT	(PU)	-PROPOSED UNDERDRAIN
(L)	-PROPOSED SANITARY LATERAL	(PG)	-PROPOSED GAS LINE
(S)	-PROPOSED SWALE	(FT)	-PROPOSED ELECTRIC TRANSFORMER

**DEVELOPMENT NOTES**

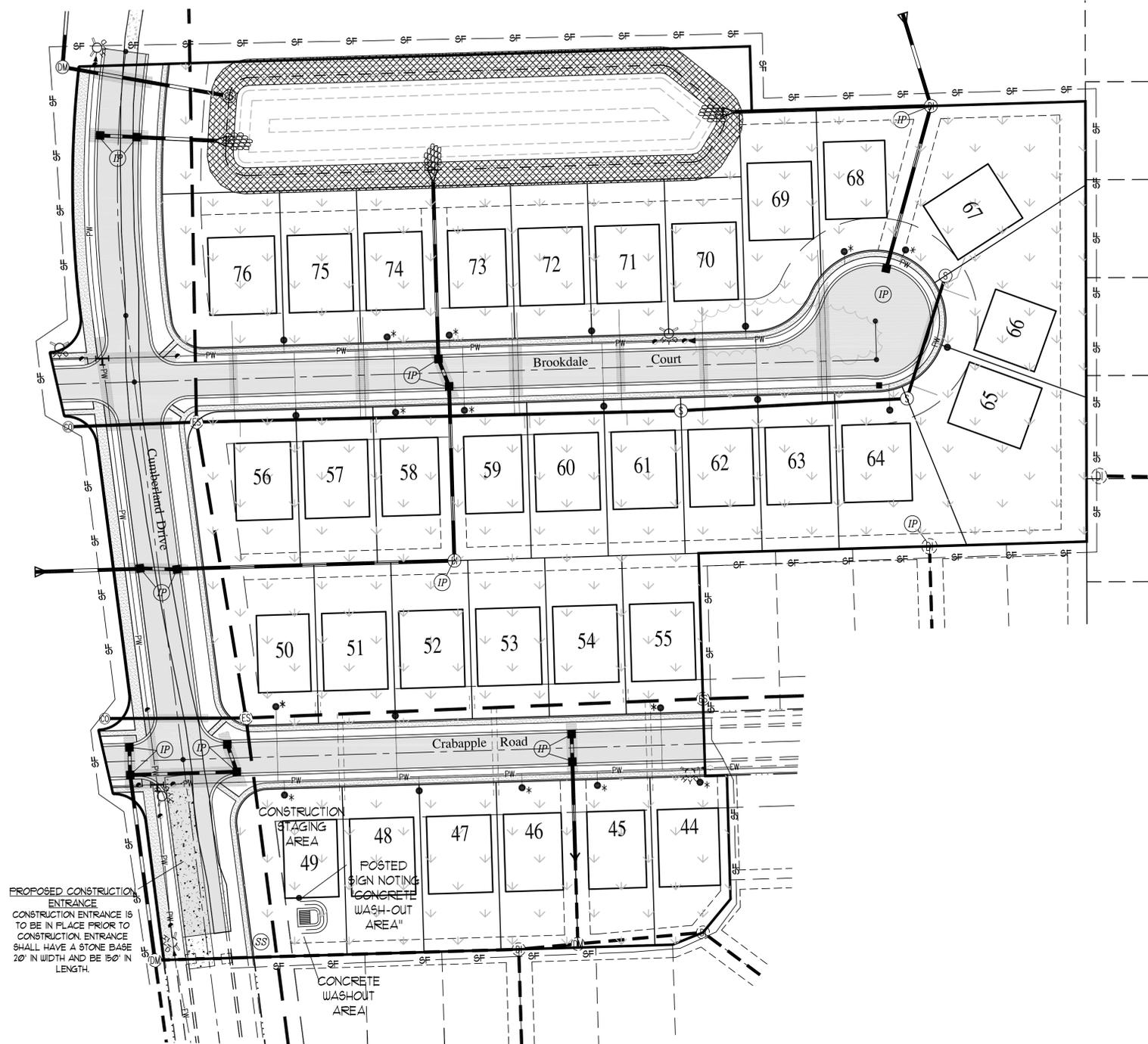
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- THE CONTRACTOR IS RESPONSIBLE TO CALCULATE THEIR OWN DIRT QUANTITIES TO DETERMINE A SITE BALANCE. THE CONTRACTOR IS ALSO RESPONSIBLE TO CHECK EXISTING GRADES AGAINST PROPOSED GRADES TO DETERMINE ACCURACY OF DIRT TO BE MOVED ON THE SITE. ONCE THE CONTRACTOR MOVES ANY DIRT ON THE SITE THEY ARE RESPONSIBLE FOR ALL DIRT TO BE MOVED AT NO ADDITIONAL COST TO THE DEVELOPER OR ENGINEER.



**BENCHMARK:**

INDOT BENCHMARK - 41-546  
 Benchmark located on Bridge Structure No. 144-41-7969 on the Southeast Wingwall (Bridge over Youngs Creek)  
 Elevation - 741.6699 NAVD 88

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PROPOSED CONSTRUCTION ENTRANCE CONSTRUCTION ENTRANCE IS TO BE IN PLACE PRIOR TO CONSTRUCTION. ENTRANCE SHALL HAVE A STONE BASE 20' IN WIDTH AND BE 150' IN LENGTH.

CONSTRUCTION STAGING AREA  
49  
POSTED SIGN NOTING "CONCRETE WASH-OUT AREA"  
CONCRETE WASHOUT AREA

**EROSION CONTROL PLAN LEGEND**

- SWPPP SIGN (SEE DETAIL)
- DROP BASKET INLET PROTECTION
- SILT FENCE
- ROCK RIP RAP (18" DEPTH, 15' WIDE BY 20' LONG)
- TEMPORARY CONSTRUCTION ACCESS ROAD
- PERMANENT SEEDING
- EROSION CONTROL BLANKET (SC-150 or Approved Equal)

**ADDITIONAL NOTES:**

- THE SILT FENCE AND APPROPRIATE EROSION CONTROL SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION
- ALL SLOPES EXPOSED DURING CONSTRUCTION SHALL HAVE SC-150 EROSION CONTROL BLANKETS INSTALLED ON THEM.
- ALL SILT FENCE MATERIAL SHALL BE "NUTEC 2 NWS-6 OR APPROVED EQUAL"

\* PERSON RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES:  
  
Mark Alt  
5314 Cayman Drive  
Carmel, IN 46033  
(317) 223-4251

ALL EROSION CONTROL MEASURES SHALL BE IN COMPLIANCE WITH THE INDIANA STORMWATER QUALITY MANUAL.

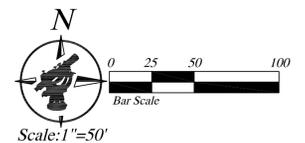
SITE LATITUDE & LONGITUDE  
LATITUDE - 39°29'36" / LONGITUDE - 86°04'54"

**COMPACTION NOTES**

ALL BUILDING PADS ARE TO BE COMPACTED TO 95% STANDARD PROCTOR OR EQUIVALENT  
  
CLAY LINER MAY BE REQUIRED FOR THE POND IF THERE IS ANY EVIDENCE OF LEAKAGE DURING CONSTRUCTION.

THE CITY HAS THE RIGHT TO REQUIRE ADDITIONAL EROSION CONTROL MEASURES IN THE FIELD AS CONDITIONS WARRANT. ALL WORK SHALL CONFORM TO THE CITY OF FRANKLIN'S ORDINANCE

ALL UTILITIES LOCATIONS (HORIZONTAL AND VERTICALLY) ARE TO BE LOCATED PRIOR TO CONSTRUCTION.



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SWITZER  
PRELIMINARY  
NOT APPROVED  
FOR CONSTRUCTION  
PROFESSIONAL  
10.13.2016  
Seal

SWITZER  
PRELIMINARY  
NOT APPROVED  
FOR CONSTRUCTION  
PROFESSIONAL  
10.13.2016  
Seal

SCALE  
1"=50'  
DRAWN BY  
VT  
CHECKED BY  
DIS

PREPARED FOR  
West Franklin  
Homes, LLC  
5374 Cayman Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana  
**EROSION CONTROL PLAN**

Engineering, Land Surveying  
Consulting & Inspection  
Donna Jo Smithers  
Professional Land Surveyor  
President / Owner  
Venus L.L. Thorne  
Professional Engineer  
Vice President  
6125 South East Street, Suite #F  
Indianapolis, Indiana 46227-2147  
Office - 317-284-3020  
www.northpointe.com



Sheet 5 of 21  
Date: 10.13.216  
Job # 16-0115

STORM WATER POLLUTION PREVENTION PLAN PROJECT INDEX

- Assessment of Construction Plan Elements (Section A)
A1 - Index showing locations of required Plan Elements
A2 - 11 by 17 inch plat showing building lot numbers/boundaries and road layout/names
A3 - Narrative describing the nature and purpose of the project
A4 - Vicinity map showing project location
A5 - Legal Description of the Project Site
A6 - Location of all lots and proposed site improvements (roads, utilities, structures, etc.)
A7 - Hydrologic unit code (14 digit)
A8 - Notation of any State or Federal water quality permits.
A9 - Specific points where stormwater discharge will leave the site
A10 - Location and name of all wetlands, lakes, and watercourses on and adjacent to the site
A11 - Identification of all receiving waters
A12 - Identification of potential discharges to ground/water (abandoned wells, sinkholes, etc.)
A13 - 100-year floodplains, floodways, and floodway fringes
A14 - Pre-construction and post construction estimate of Peak Discharge (10-year storm event)
A15 - Adjacent land use, including upstream watershed
A16 - Locations and approximate boundaries of all disturbed areas (Construction Limits)
A17 - Identification of existing vegetation cover
A18 Soils map including soil descriptions and limitations Per Indiana Erosion Control Manual
A19 - Locations, size and dimensions of proposed stormwater systems (e.g. pipes, swales and channels)
A20 - Plans for any off-site construction activities associated with this project (sewer/water tie-ins)
A21 - Locations of proposed soil stockpiles and/or borrow/discard areas
A22 - Existing site topography at an interval appropriate to indicate drainage patterns
A23 - Proposed final topography at an interval appropriate to indicate drainage patterns

Assessment of Stormwater Pollution Prevention Plan (Section B)

- B1 - Description of Potential pollutant sources associated with construction activities
B2 - Sequence describing stormwater quality measure implementation relative to land disturbing activities
B3 - Stable construction entrance locations and specifications (at all points of ingress and egress)
B4 - Sediment control measures for sheet flow areas
B5 - Sediment control measures for concentrated flow areas
B6 - Storm sewer inlet protection measures, locations and specifications
B7 - Runoff control measures (e.g. diversions, rock check dams, slope drains, etc.)
B8 - Storm water outlet protection specifications
B9 - Grade stabilization structures, locations and specifications
B10 - Location, dimensions, specifications, and construction details of each stormwater quality measure
B11 - Temporary surface stabilization methods appropriate for each season (including sequencing)
B12 - Permanent surface stabilization specifications (include sequencing)

Assessment of Stormwater Pollution Prevention Plan (Section B)

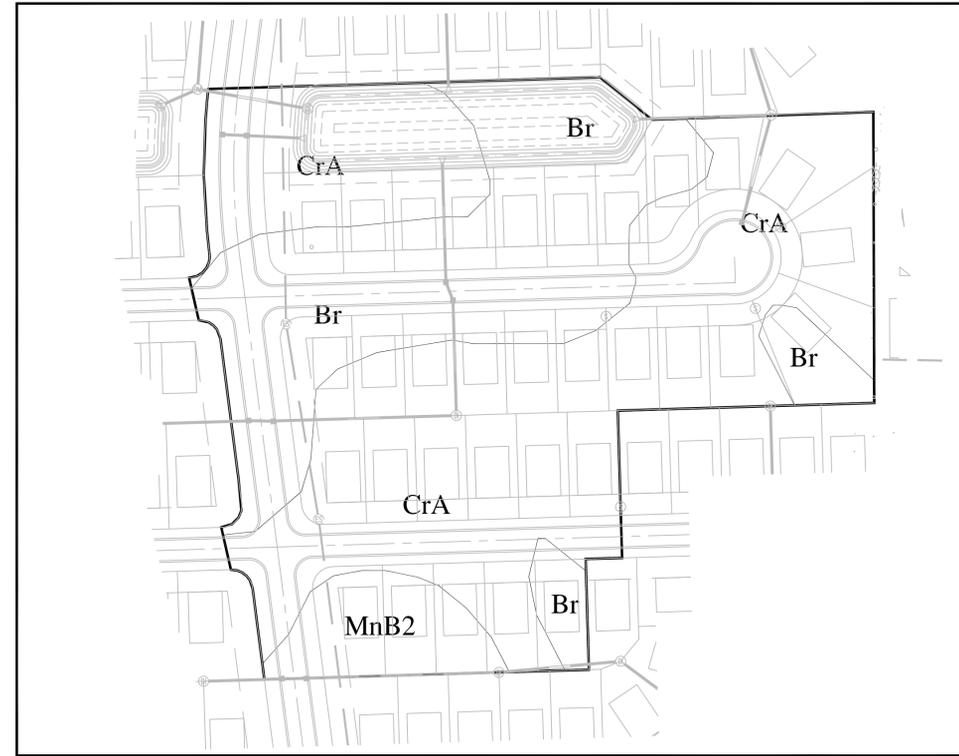
B13 - Material handling and spill prevention plan
Expected materials that may appear at the site due to construction activities include, but are not limited to petroleum products, fertilizers, paint and solvents, and concrete. Materials shall be stored in the designated material storage area.
Spill prevention for vehicle and equipment fueling shall conform to the following practices: vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater.
Spill prevention for solid waste shall conform to the following practices: Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.
Monitoring and maintaining guidelines for each proposed stormwater quality measure
Erosion & sediment control specifications for individual building lots

Stormwater Pollution Prevention Plan - Post Construction Component (Section C)

- C1 - Description of pollutants and their sources associated with the proposed land use
C2 - Sequence describing stormwater quality measure implementation
C3 - Description of proposed post construction stormwater quality measures
C4 - Location, dimensions, specifications, and construction details of each stormwater quality measure.
C5 - Description of maintenance guidelines for post construction stormwater quality measures

Flood Information

THIS LOT LIES ENTIRELY IN FLOOD ZONE X AS SCALED FROM THE FLOOD INSURANCE RATE MAP (FIRM) FOR THE CITY OF FRANKLIN, JOHNSON COUNTY, INDIANA, 1808IC0227D, DATED AUGUST 2, 2001



Soils Map



Disturbed Area Map

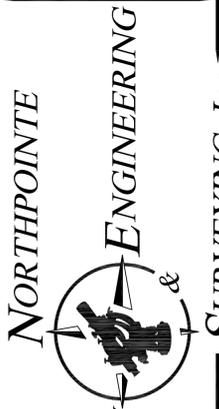


Table with 4 columns: SCALE, DRAWN BY, CHECKED BY, DIS. Values: N/A, VT, DIS.

PREPARED FOR West Franklin Homes, LLC 5374 Cayman Drive Carmel, Indiana 46033

PROJECT NAME CUMBERLAND TRACE Section Two Franklin Township, City of Franklin Johnson County, Indiana SHEET TITLE EROSION CONTROL PLAN

Engineering, Land Surveying Consulting & Inspection Dennis Is Spatnik Professional Land Surveyor President/Owner Venus L.L. Thome Professional Engineer Vice President



Sheet 6 of 21 Date: 10.13.2016 Job # 16-0115

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**STEP 1. EVALUATE THE SITE.**

Before construction, evaluate the entire site, marking for protection any important trees and associated rooting zones, unique areas to be preserved, on site septic system absorption fields, and vegetation suitable for filter strips, especially in perimeter areas.

**Identify Vegetation to Be Saved.**  
-Select and identify the trees, shrubs, and other vegetation that you want to save (see "Vegetative Filter Strips" under Step 2 below).

**Protect Trees and Sensitive Areas.**  
-To prevent root damage, do not grade, burn, place soil piles, or park vehicles near trees or in areas marked for preservation.  
-Place plastic mesh or snow fence barriers around the tree's drip line to protect the area below their branches.  
-Place a physical barrier, such as plastic fencing, around the area designated for a septic system absorption field (if applicable).

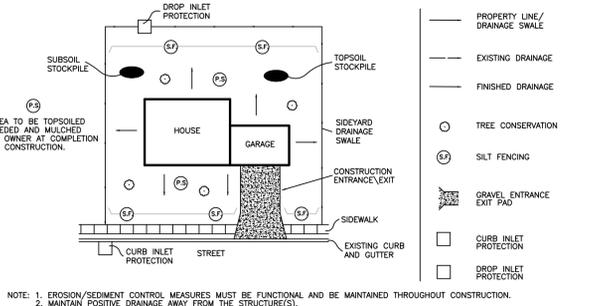
**STEP 2. INSTALL PERIMETER EROSION CONTROL MEASURES.**

Identify the areas where sediment-laden runoff could leave the construction site, and install perimeter controls to minimize the potential for off-site sedimentation. It's important that perimeter controls are in place before any other earth-moving activities begin.

**Protect Down-Slope Areas.**  
With Vegetation Filter Strips:  
-On slopes of less than 6 percent, preserve a 20 to 30 foot wide vegetative buffer strip around the perimeter of the property, and use as a filter strip for topsoil sediment.  
-Do not mow filter strip vegetation shorter than 4 inches.  
With Silt Fence:  
-Use silt fencing along the perimeter of the lot's downslope side(s) to trap sediment (see Exhibit #3).

**Install Gravel Drive.**  
-Restrict all access to this drive to prevent vehicles from tracking mud onto roadways (see Exhibit #4)  
**Protect Storm Sewer Inlets.**  
-Protect nearby storm sewer drop inlets with stone-filled or gravel-filled geotextile bags (see Exhibit #1) or equivalent measures before disturbing soil.  
-Protect nearby storm sewer curb inlets with stone-filled or material (see Exhibit #2), straw bales, or equivalent measures before disturbing soil.

**CONSTRUCTION SEQUENCE FOR BUILDING SITE EROSION CONTROL PRACTICES**



NOTE: 1. EROSION/SEDIMENT CONTROL MEASURES MUST BE FUNCTIONAL AND BE MAINTAINED THROUGHOUT CONSTRUCTION.  
2. MAINTAIN POSITIVE DRAINAGE AWAY FROM THE STRUCTURE(S).

**SAMPLE EROSION/SEDIMENT CONTROL PRACTICE PLAN FOR A TYPICAL ONE-OR TWO-FAMILY DWELLING UNDER CONSTRUCTION**

**STEP #3. PREPARE THE SITE FOR CONSTRUCTION.**

Prepare the site for construction and for installation of utilities. Make sure all contractors (especially the excavating contractor) are aware of areas to be protected.

**Salvage and Stockpile the Topsoil/Subsoil.**  
-Remove topsoil (typically the upper 4 to 6 inches of soil material) and stockpile.  
-Remove subsoil and stockpile separately from the topsoil.  
-Locate the stockpile away from any downspout street, driveway, stream, lake, wetland, ditch, or drainage way.  
-Immediately after stockpiling, temporary-seed the stockpile with annual rye or winter wheat and/or place sediment barriers around the perimeter of the piles.

**STEP 4. BUILD THE STRUCTURE(S) AND INSTALL THE UTILITIES.**

Construct the home and install the utilities; also install the sewage disposal system and drill the water well (if applicable); then consider the following.

**Install Downspout Extenders.**  
-Although not required, downspout extenders are highly recommended as a means of preventing lot erosion from roof runoff.  
-Add the extenders as soon as the gutters and downspouts are installed (see Exhibit #5).  
-Be sure the extenders have a stable outlet, such as the street, sidewalk, or a well vegetated area.

**STEP 5. MAINTAIN THE CONTROL PRACTICES.**

Maintain all erosion and sediment control practices until construction is completed and the lot is stabilized.  
-Inspect the control practices a minimum of twice a week and after each storm event, making any needed repairs immediately.  
-Toward the end of each work day, sweep or scrape up any soil tracked onto roadways. Do not flush areas with water.  
-By the end of the next work day after a storm event, clean up any soil washed off-site.

**STEP 6. REVEGETATE THE BUILDING SITE.**

Immediately after all outside construction activities are completed, stabilize the lot with sod, seed, and /or mulch.  
**Redistribute the Stockpiled Subsoil and Topsoil.**  
-Spread the stockpiled subsoil to rough grade.  
-Spread the stockpiled topsoil to a depth of 4 to 6 inches over rough-graded areas.  
-Fertilize and lime according to soil test results of recommendations of a seed supplier of a professional landscaping contractor.

**Seed of Sod Bare Areas.**

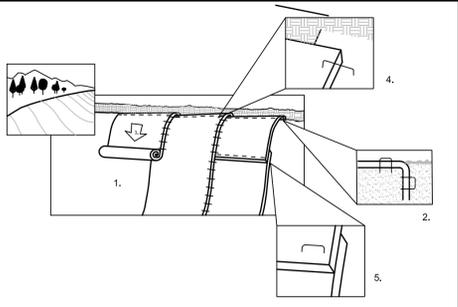
-Contact local seed suppliers of professional landscaping contractors for recommended seeding mixtures and rates.  
-Follow recommendations of a professional landscaping contractor for installation of sod.  
-Water newly seeded/sodded areas everyday or two to keep the soil moist. Less watering is needed once grass is 2 inches tall.

**Mulch Newly Seeded Areas.**

-Spread straw mulch on newly seeded areas, using 1 1/2 to 2 bales of straw per 1,000 square feet.  
-On flat or gently sloping land, anchor the mulch by crimping it 2 to 4 inches into the soil. On steep slopes, anchor the mulch with netting or tackifiers. An alternative to anchored mulch would be the use of erosion control blankets.

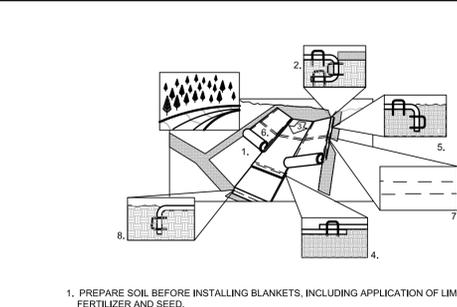
**STEP 7. REMOVE REMAINING TEMPORARY CONTROL MEASURES.**

Once the sod and/or vegetation is well established, remove any remaining temporary erosion and sediment control practices, such as:  
-Downspout extenders. (Or shorten to outlet onto the vegetated areas, allowing for maximum infiltration).  
-Storm sewer inlet protection measures.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED. NOTE: WHEN USING SC2225, DO NOT SEED PREPARED AREA. AREA, SC2225 MUST BE INSTALLED WITH PAPER SIDE DOWN.
  2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
  3. ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
  4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
  5. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
- REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

**SLOPE APPLICATIONS for EROSION CONTROL BLANKET**



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
4. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED.
7. IN MEDIUM/HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER THE ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

**CHANNEL APPLICATIONS for EROSION CONTROL BLANKET**

**ON-SITE TEMPORARY CONCRETE WASHOUT FACILITY, TRUCK TRUCK WASHOUT PROCEDURES**

TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE LOCATED A MINIMUM OF 50 FT. FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES, AND WATERCOURSES. EACH FACILITY SHOULD BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OF ACCESS AREA TO PREVENT OBSTRUCTION OF TRUCKING.

A SIGN SHOULD BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE CONSTRUCTED ABOVE GRADE OR BELOW GRADE AT THE OPTION OF THE CONTRACTOR. TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

TEMPORARY WASHOUT FACILITIES SHOULD HAVE A TEMPORARY PIT OR BERMED AREAS OF SUFFICIENT VOLUME TO COMPLETELY CONTAIN ALL LIQUID AND WASTE CONCRETE MATERIALS GENERATED DURING WASHOUT PROCEDURES.

WASHOUT OF CONCRETE TRUCKS SHOULD BE PERFORMED IN DESIGNATED AREAS ONLY.

ONLY CONCRETE FROM WALKER TRUCK CHUTES SHOULD BE WASHED INTO CONCRETE WASHOUT.

CONCRETE WASHOUT FROM CONCRETE PUMPER TRUCKS CAN BE WASHED INTO CONCRETE PUMPER TRUCKS AND DISCHARGED INTO DESIGNATED WASHOUT AREA OR PROPERLY DISPOSED OF OFF-SITE.

ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REPAVED, AND DISPOSED OF PER MW-5, SOLID WASTE MANAGEMENT. DISPOSE OF WASHED CONCRETE ON A RESIDUAL BASE.

TEMPORARY CONCRETE WASHOUT FACILITY (TYPE ABOVE GRADE)

- TEMPORARY CONCRETE WASHOUT FACILITY (TYPE ABOVE GRADE) SHOULD BE CONSTRUCTED AS SHOWN ON THE DETAILS AT THE END OF THIS BWP, WITH A RECOMMENDED MINIMUM LENGTH AND MINIMUM WIDTH OF 10 FT., BUT WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS
- STRAP BALES, WOOD STRAKES, AND SANDBAG MATERIALS SHOULD CONFORM TO THE PROVISIONS IN SE-8, STRAP BALE BARRIER.
- PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

TEMPORARY CONCRETE WASHOUT FACILITY (TYPE BELOW GRADE)

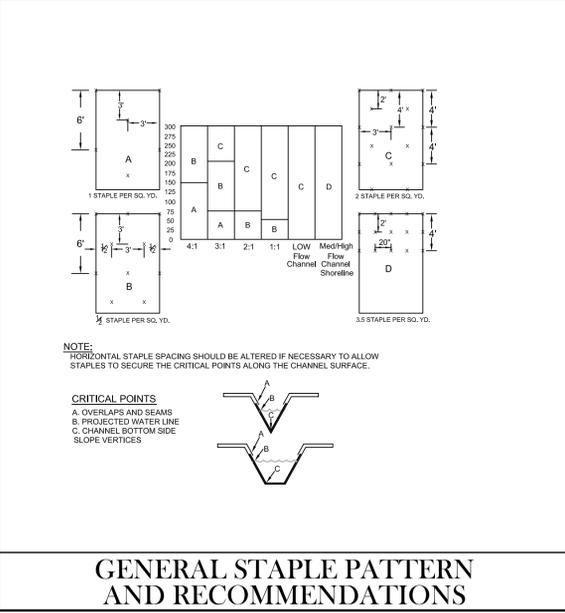
- TEMPORARY CONCRETE WASHOUT FACILITIES (TYPE BELOW GRADE) SHOULD BE CONSTRUCTED AS SHOWN ON THE DETAILS AT THE END OF THIS BWP, WITH A RECOMMENDED MINIMUM LENGTH AND MINIMUM WIDTH OF 10 FT. THE QUANTITY AND VOLUME SHOULD BE SUFFICIENT TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
- LATH AND FLAGGING SHOULD BE COMMERCIAL TYPE.
- PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

REMOVAL OF TEMPORARY CONCRETE WASHOUT FACILITIES

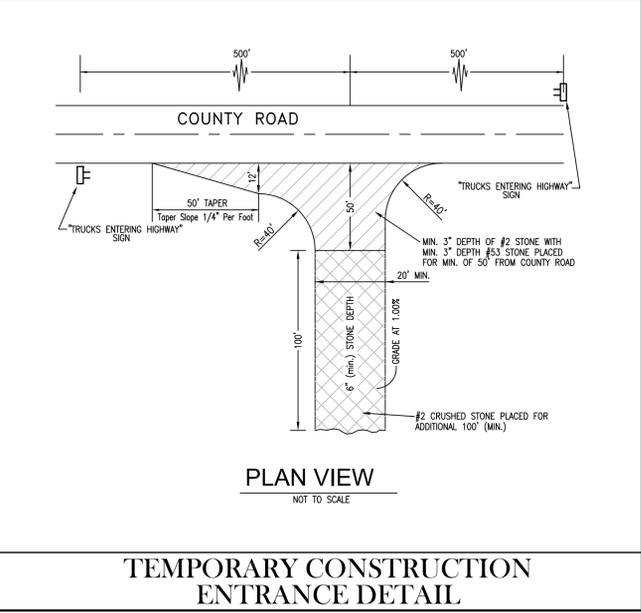
- WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE WASHOUT CONCRETE SHOULD BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF WORK AND DISPOSED OF.
- HOLES, DEPRESSIONS OR OTHER GROUND OBSTRUCTIONS CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REPAVED AND REFINISHED.

INSPECTION AND MAINTENANCE

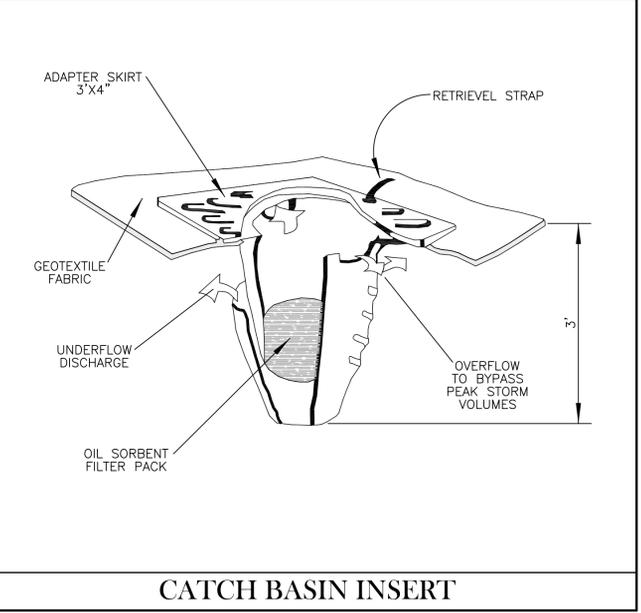
- INSPECT AND VERIFY THAT ACTIVITY-BASED BMPs ARE IN PLACE PRIOR TO THE COMMENCEMENT OF ASSOCIATED ACTIVITIES. WHILE ACTIVITIES ASSOCIATED WITH THE BMP ARE UNDER WAY, INSPECT WEEKLY DURING THE RAINY SEASON AND OF TWO-WEEK INTERVALS IN THE NON-RAINY SEASON TO VERIFY CONTINUED BMP IMPLEMENTATION.
- TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEDBOARD OF 4 IN. FOR ABOVE GRADE FACILITIES AND 12 IN. FOR BELOW GRADE FACILITIES. MAINTAINING TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD INCLUDE REMOVING AND DISPOSING OF WASHED CONCRETE AND RETURNING THE FACILITIES TO A FUNCTIONAL CONDITION. WASHED CONCRETE WASTES SHOULD BE REPAVED AND DISPOSED OF.
- WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS FULL.



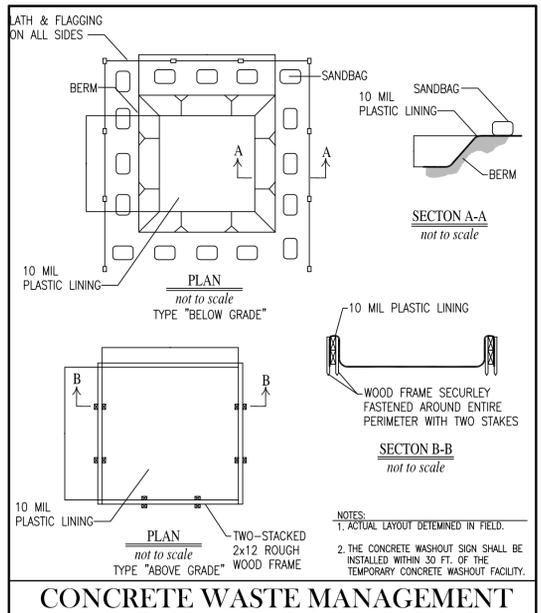
**GENERAL STAPLE PATTERN AND RECOMMENDATIONS**



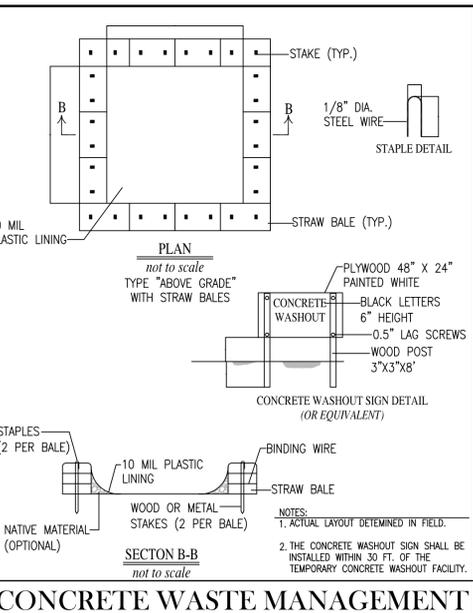
**TEMPORARY CONSTRUCTION ENTRANCE DETAIL**



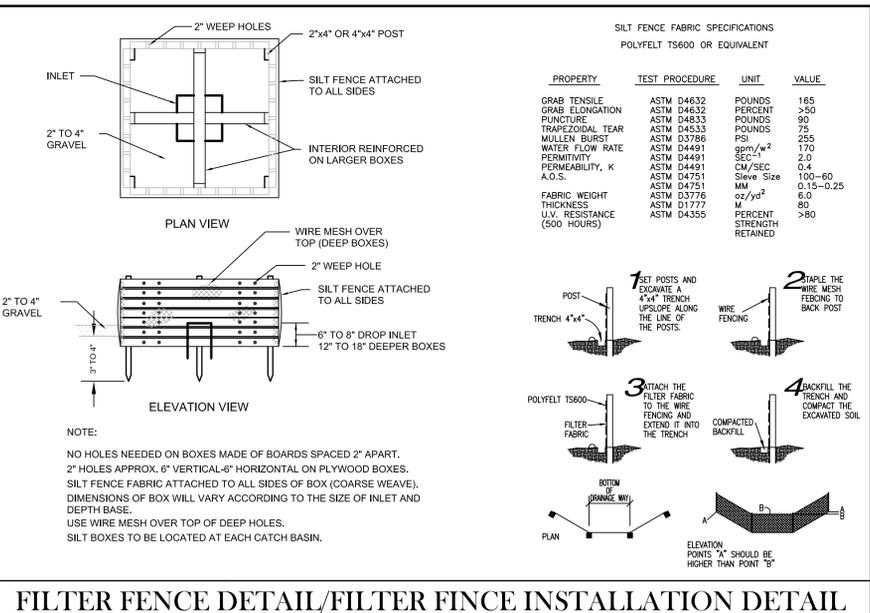
**CATCH BASIN INSERT**



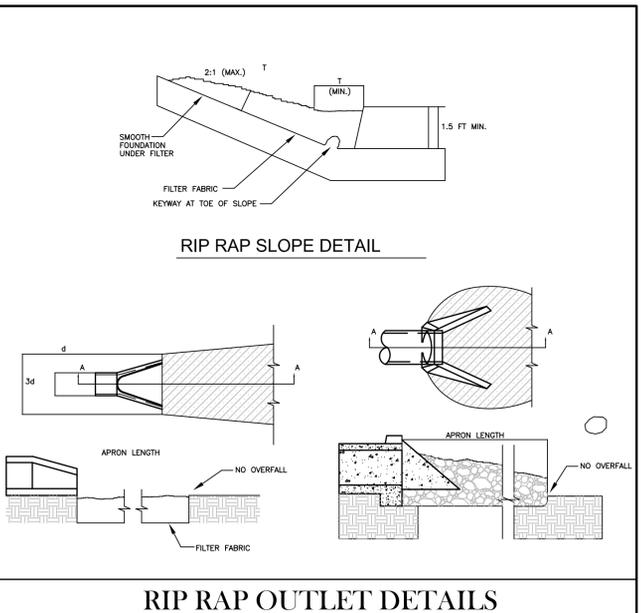
**CONCRETE WASTE MANAGEMENT**



**CONCRETE WASTE MANAGEMENT**



**FILTER FENCE DETAIL/FILTER FINCE INSTALLATION DETAIL**



**RIP RAP OUTLET DETAILS**

DOMINIC J. SMITHERS  
REGISTERED PROFESSIONAL ENGINEER  
NOT BE USED FOR ANY OTHER PROJECT  
CONSTRUCTION

DOMINIC J. SMITHERS  
REGISTERED PROFESSIONAL ENGINEER  
NOT BE USED FOR ANY OTHER PROJECT  
CONSTRUCTION

SCALE	N/A
DRAWN BY	VT
CHECKED BY	DJS

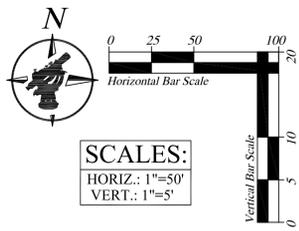
PREPARED FOR  
**West Franklin Homes, LLC**  
5374 Cavanaugh Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana

SHEET TITLE  
**EROSION CONTROL PLAN**

Engineering, Land Surveying  
Consulting & Inspection  
Dennis J. Smithers  
Professional Engineer  
Vernon L. Thomas  
Professional Engineer  
6125 South East Street, Suite "B"  
Indianapolis, IN 46224-1477  
www.apexhr.com





This drawing is not intended to be represented as a Retracement or Original Boundary Survey, a Route Survey, or a Surveyor Location Report

**LEGEND - EXISTING**

	-EXISTING STORM (CURB) INLET		-EXISTING GAS VALVE
	-EXISTING STORM (BEEHIVE) INLET		-EXISTING UNDERGROUND GAS LINE
	-EXISTING STORM MANHOLE		-EXISTING GAS PIPELINE MARKER
	-EXISTING CONCRETE END SECTION		-EXISTING TELEPHONE PEDESTAL
	-EXISTING STORM SEWER		-EXISTING TELEPHONE MANHOLE
	-EXISTING SANITARY MANHOLE		-EXISTING TRAFFIC MANHOLE
	-EXISTING SANITARY CLEANOUT		-EXISTING TRAFFIC SIGNAL POLE
	-EXISTING SANITARY SEWER		-EXISTING CABLE PEDESTAL
	-EXISTING PAVEMENT GRADE		-EXISTING FIBER OPTIC
	-EXISTING CURB & GUTTER		-EXISTING FIRE HYDRANT
	-EXISTING SPOT ELEVATION		-EXISTING WATERLINE
	-EXISTING UTILITY POLE		-EXISTING WATER METER
	-LIGHT POLE		-EXISTING WATER VALVE
	-EXISTING GUY WIRE		-EXISTING STREET SIGN
	-EXISTING OVERHEAD UTILITY		-EXISTING TREE
	-EXISTING ELECTRIC TRANSFORMER		-EXISTING TREE LINE
	-EXISTING UNDERGROUND ELECTRIC		
	-EXISTING A/C CONDENSING UNIT		
	-EXISTING GAS METER		

**LEGEND - PROPOSED**

	-PROPOSED STORM STRUCTURE NUMBER		-PROPOSED FLOW ARROW
	-PROPOSED STORM INLET		-PROPOSED WATER LINE
	-PROPOSED DRAINAGE INLET		-PROPOSED FIRE HYDRANT
	-PROPOSED DRAINAGE MANHOLE		-PROPOSED WATERLINE VALVE
	-PROPOSED STORM SEWER		-PROPOSED WATERLINE TEE
	-PROPOSED CONCRETE END SECTION		-PROPOSED WATERLINE BEND
	-PROPOSED WATER QUALITY STRUCTURE		-PROPOSED GRANULAR BACKFILL
	-PROPOSED OUTLET CONTROL STRUCTURE		-PROPOSED HANDICAP RAMPS
	-PROPOSED SANITARY STRUCTURE NUMBER		-PROPOSED GRADE
	-PROPOSED SANITARY MANHOLE		-PROPOSED CONTOUR
	-PROPOSED SANITARY SEWER		-PROPOSED UNDERDRAIN
	-PROPOSED SANITARY CLEANOUT		-PROPOSED GAS LINE
	-PROPOSED SANITARY LATERAL		-PROPOSED ELECTRIC TRANSFORMER
	-PROPOSED SWALE		

**DEVELOPMENT NOTES**

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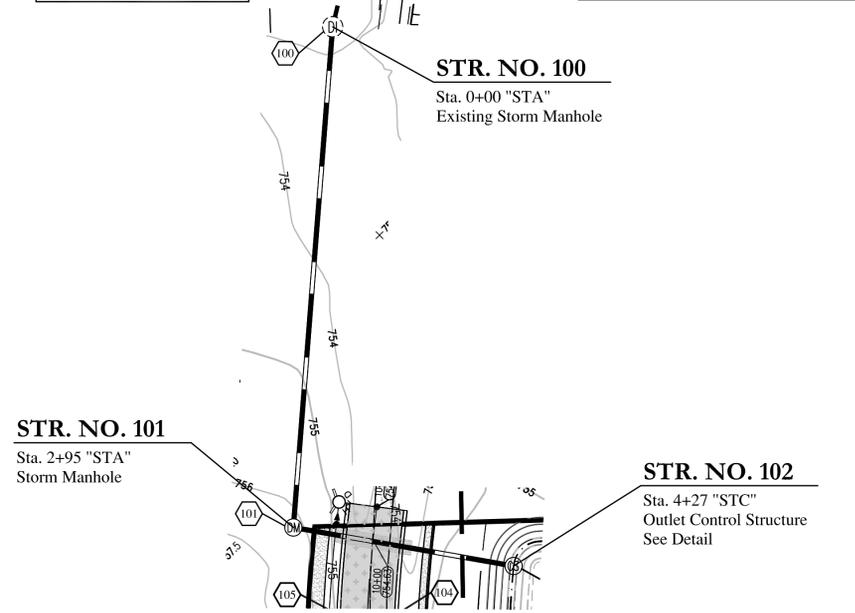
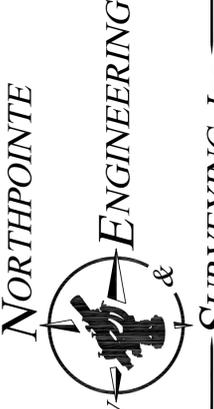


SCALE	AS SHOWN	DRAWN BY	CHECKED BY
			DIS, VT

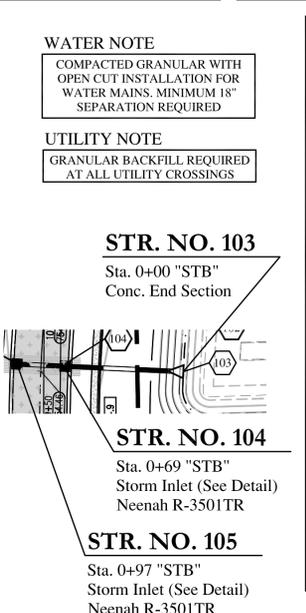
PREPARED FOR  
**West Franklin Homes, LLC**  
5571 Cayman Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE Section Two**  
Franklin Township, City of Franklin  
Johnson County, Indiana  
SHEET TITLE  
**STORM SEWER PLAN & PROFILES**

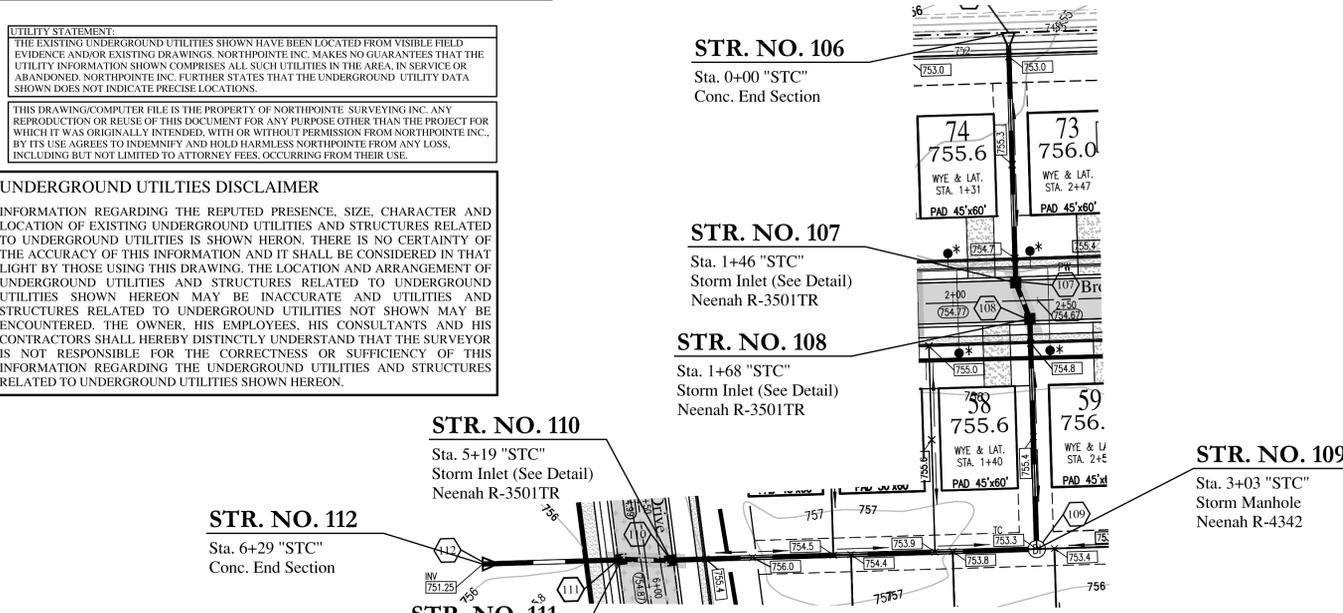
Engineering, Land Surveying  
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6125 South East Street, Suite "B"  
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Office: 317-584-8200  
www.northpointe.com



**STORM SEWER LINE "A"**

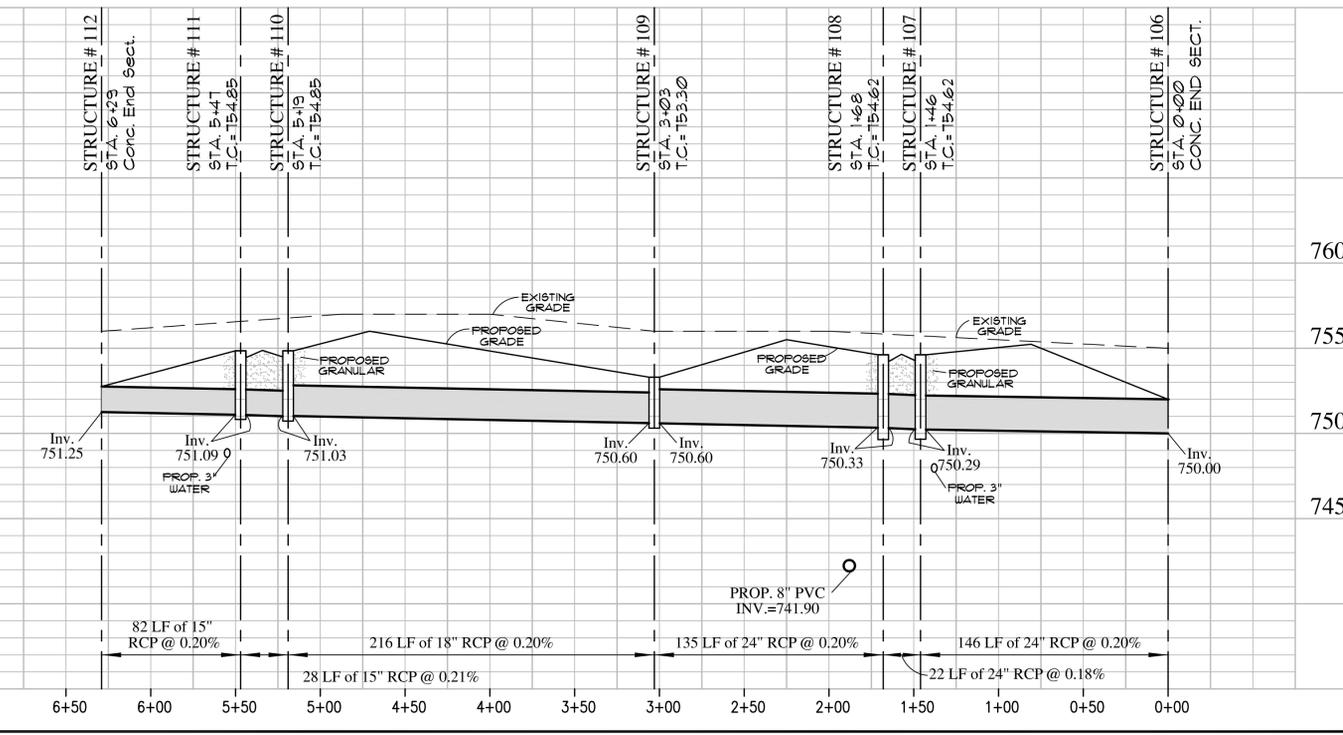
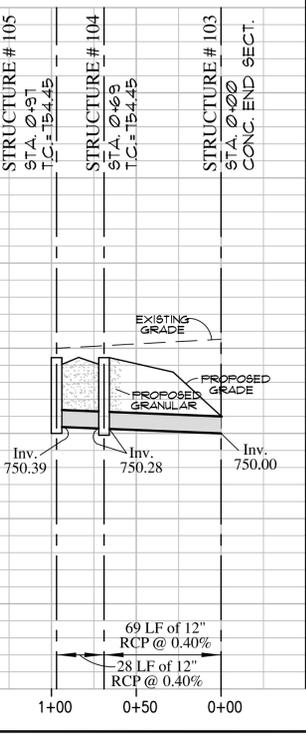
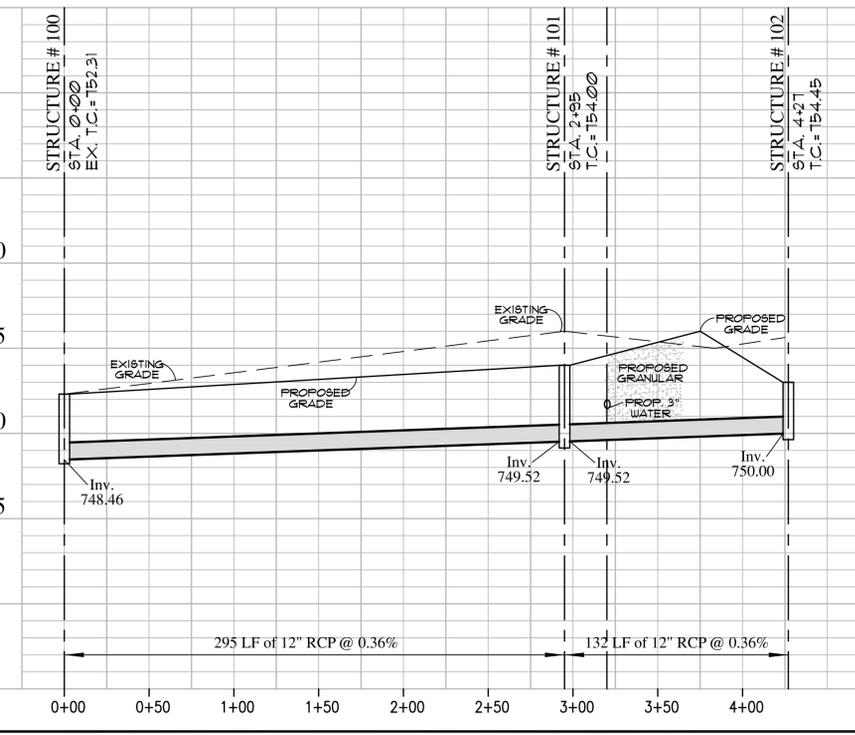


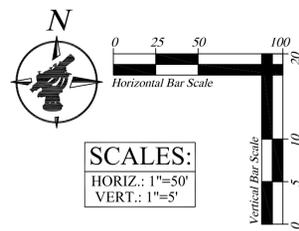
**STORM SEWER LINE "B"**



**STORM SEWER LINE "C"**

ALL STORM PIPES TO BE REINFORCED CONCRETE  
ROUGHNESS COEFFICIENT = 0.013





**LEGEND - EXISTING**

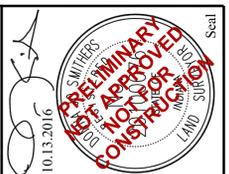
	-EXISTING STORM (CURB) INLET		-EXISTING GAS VALVE
	-EXISTING STORM (BEEHIVE) INLET		-EXISTING UNDERGROUND GAS LINE
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	-EXISTING CONCRETE END SECTION		-EXISTING TELEPHONE PEDESTAL
	-EXISTING SANITARY MANHOLE		-EXISTING TELEPHONE MANHOLE
	-EXISTING SANITARY CLEANOUT		-EXISTING TRAFFIC MANHOLE
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	-EXISTING SPOT ELEVATION		-EXISTING FIRE HYDRANT
	-EXISTING UTILITY POLE		-EXISTING WATERLINE
	-LIGHT POLE		-EXISTING WATER METER
	-EXISTING OVERHEAD UTILITY		-EXISTING WATER VALVE
	-EXISTING ELECTRIC TRANSFORMER		-EXISTING STREET SIGN
	-EXISTING UNDERGROUND ELECTRIC		-EXISTING TREE
	-EXISTING A/C CONDENSING UNIT		-EXISTING TREE LINE
	-EXISTING GAS METER		

**LEGEND - PROPOSED**

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	-PROPOSED STORM INLET		-PROPOSED WATER LINE
	-PROPOSED DRAINAGE INLET		-PROPOSED FIRE HYDRANT
	-PROPOSED DRAINAGE MANHOLE		-PROPOSED WATERLINE VALVE
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	-PROPOSED OUTLET CONTROL STRUCTURE		-PROPOSED HANDICAP RAMP
	-PROPOSED SANITARY STRUCTURE NUMBER		-PROPOSED GRADE
	-PROPOSED SANITARY MANHOLE		-PROPOSED CONTOUR
	-PROPOSED SANITARY SEWER		-PROPOSED UNDERDRAIN
	-PROPOSED SANITARY CLEANOUT		-PROPOSED GAS LINE
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	-PROPOSED SWALE		

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SCALE	AS-SHOWN	DRAWN BY	CHECKED BY
			DIS, VT

PREPARED FOR  
**West Franklyn Homes, LLC**  
5871 Cayman Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana  
SHEET TITLE  
**STORM SEWER PLAN & PROFILES**

**WATER NOTE**

COMPACTED GRANULAR WITH OPEN CUT INSTALLATION FOR WATER MAINS. MINIMUM 18" SEPARATION REQUIRED

**UNDERGROUND UTILITIES DISCLAIMER**

INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER AND LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES IS SHOWN HEREON. THERE IS NO CERTAINTY OF THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING. THE LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON MAY BE INACCURATE AND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES NOT SHOWN MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS AND HIS CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION REGARDING THE UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON.

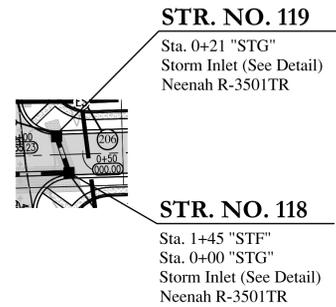
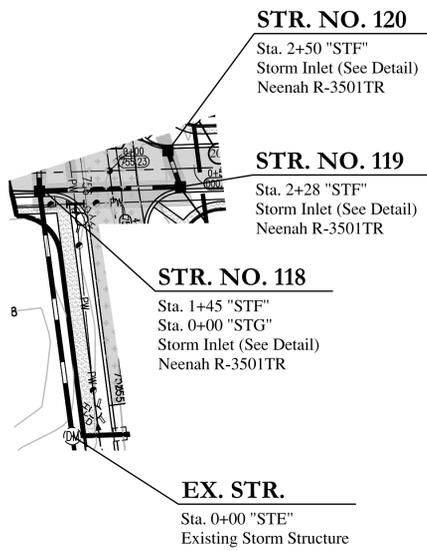
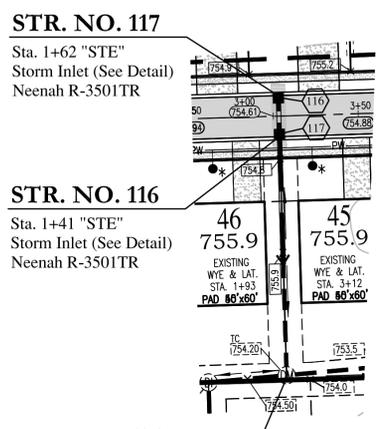
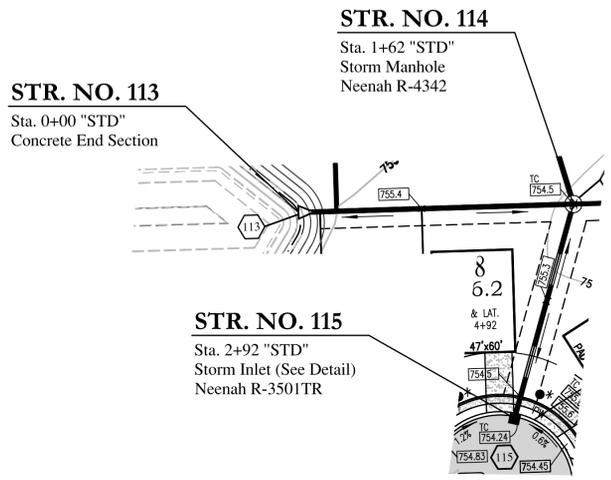
**UTILITY NOTE**

GRANULAR BACKFILL REQUIRED AT ALL UTILITY CROSSINGS

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UTILITY STATEMENT:  
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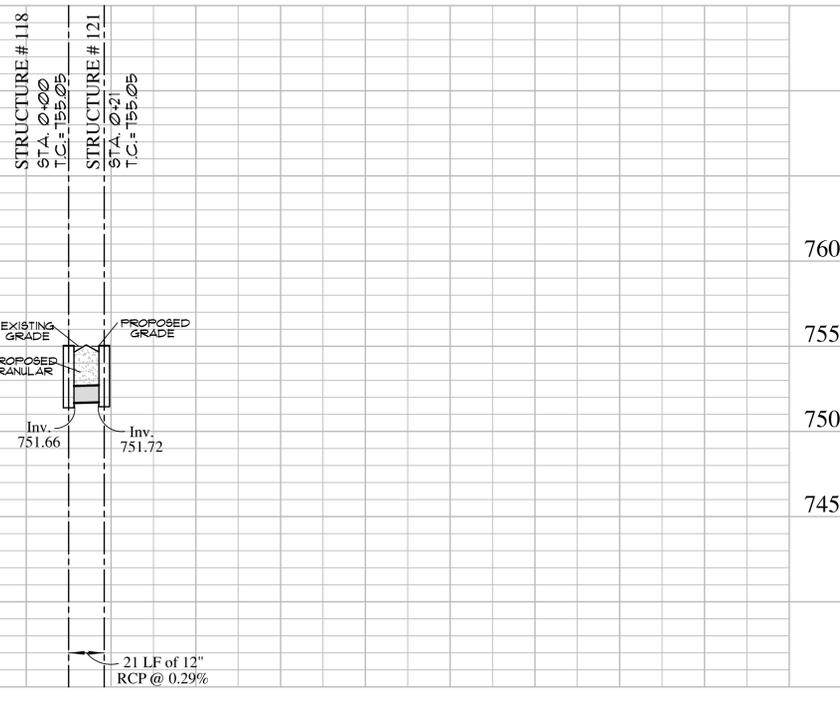
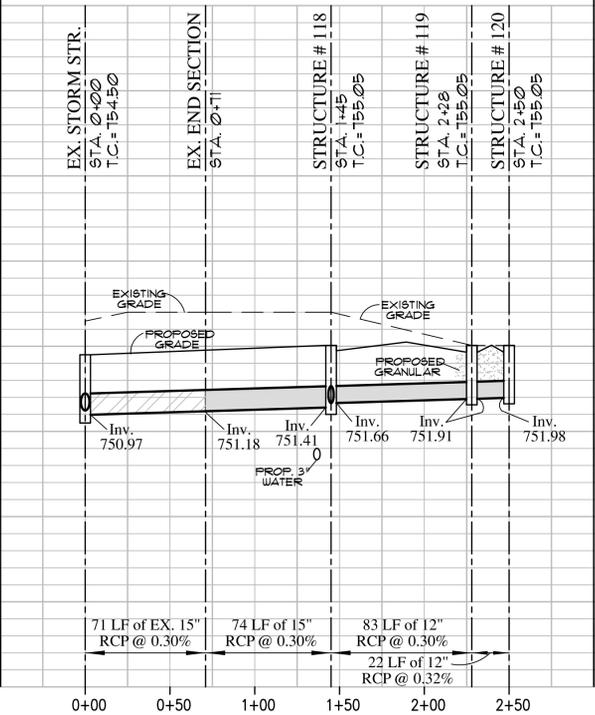
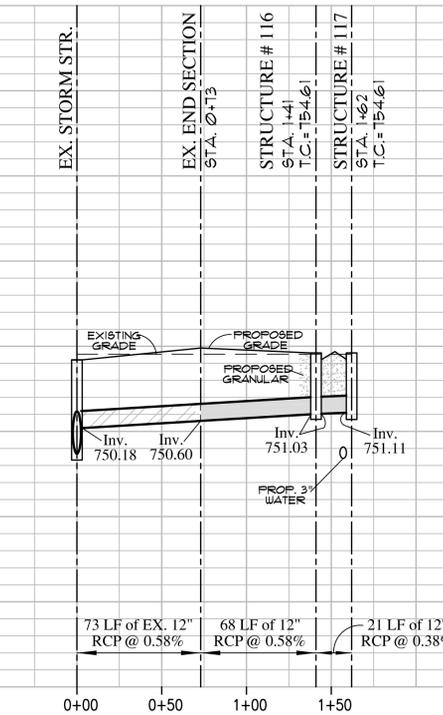
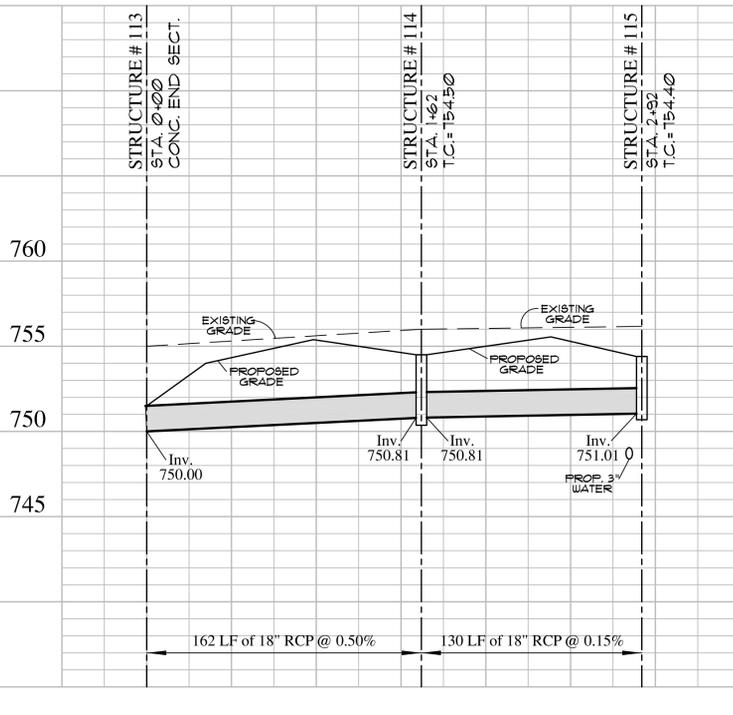


**STORM SEWER LINE "D"**

**STORM SEWER LINE "E"**

**STORM SEWER LINE "F"**

**STORM SEWER LINE "G"**



Engineering, Land Surveying  
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Donna Jo Smithers  
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Professional Engineer  
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6125 South East Street, Suite "B"  
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Office: 317-584-8200  
www.northpointe.com



BID SET: 06.25.2016

**LEGEND - EXISTING**

	-EXISTING STORM (CURB) INLET		-EXISTING GAS VALVE
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**LEGEND - PROPOSED**

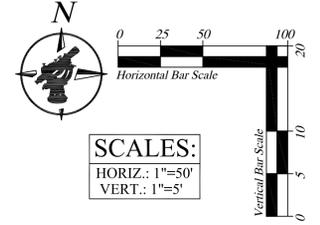
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	-PROPOSED SANITARY CLEANOUT		-PROPOSED GAS LINE
	-PROPOSED SANITARY LATERAL		-PROPOSED ELECTRIC TRANSFORMER
	-PROPOSED SWALE		

**DEVELOPMENT NOTES**

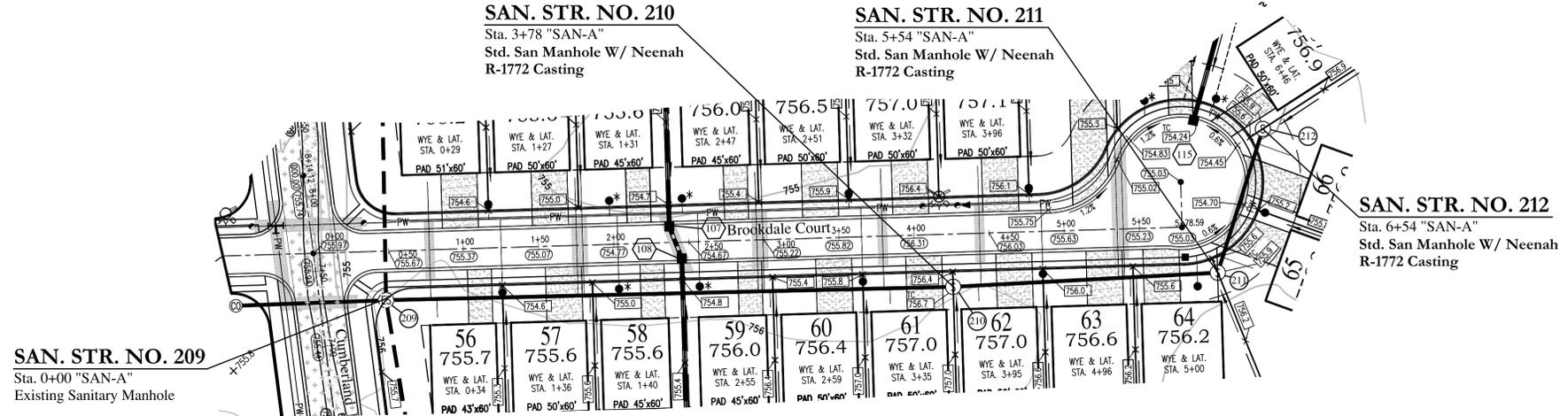
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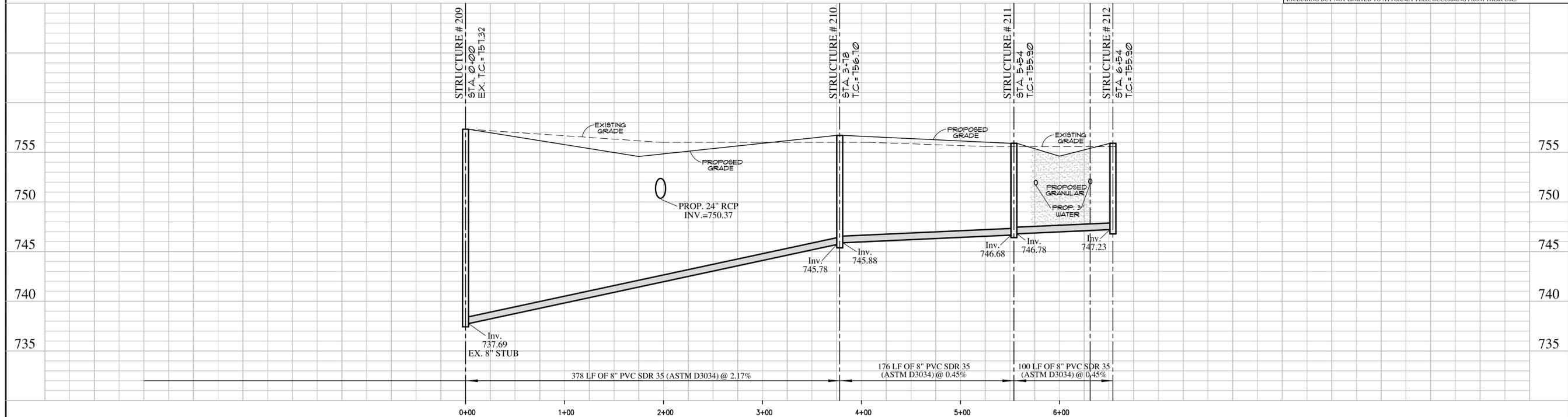
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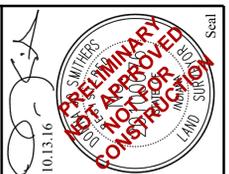


**SANITARY SEWER LINE "A"**



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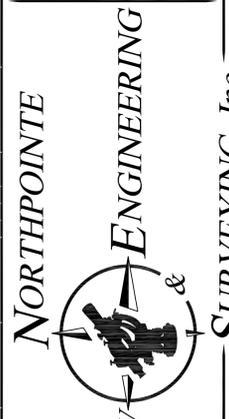
SCALE	1"=50'
DRAWN BY	
CHECKED BY	DJS, VT

PREPARED FOR  
**West Franklin Homes, LLC**  
5871 Cayman Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
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SHEET TITLE  
**SANITARY SEWER PLAN & PROFILES**

Engineering, Land Surveying  
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**LEGEND**

- (PA) - PROPOSED COLLECTOR STREET (SEE SHEET 20 FOR DETAIL OF PAVEMENT SECTION)
- (PB) - PROPOSED LOCAL STREET (SEE SHEET 20 FOR DETAIL OF PAVEMENT SECTION)



SCALES:  
HORIZ.: 1"=50'  
VERT.: 1"=5'

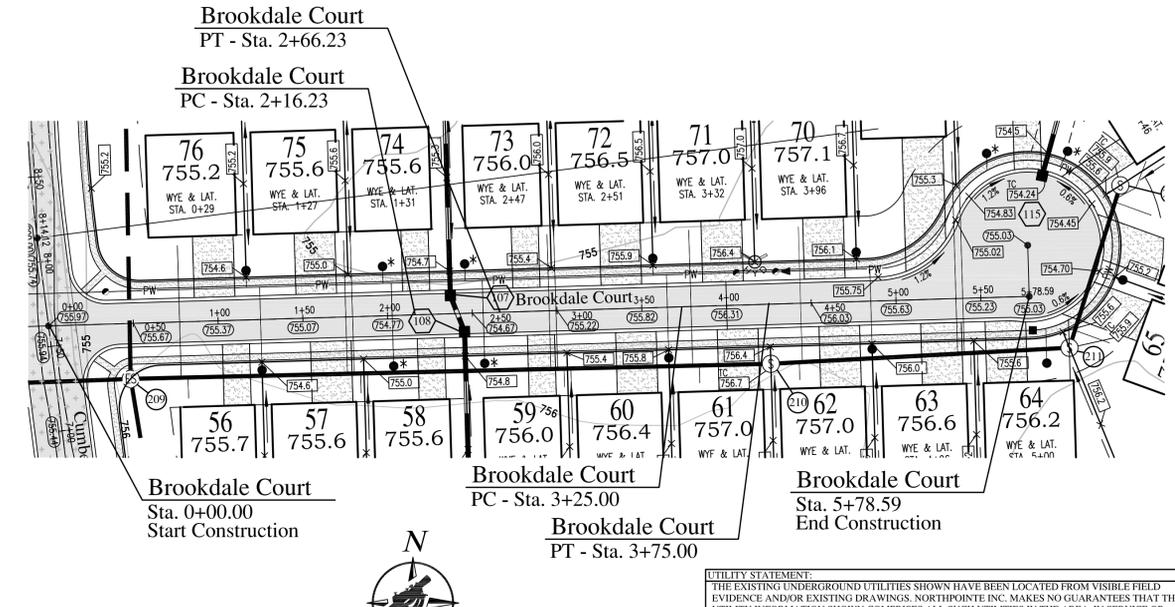
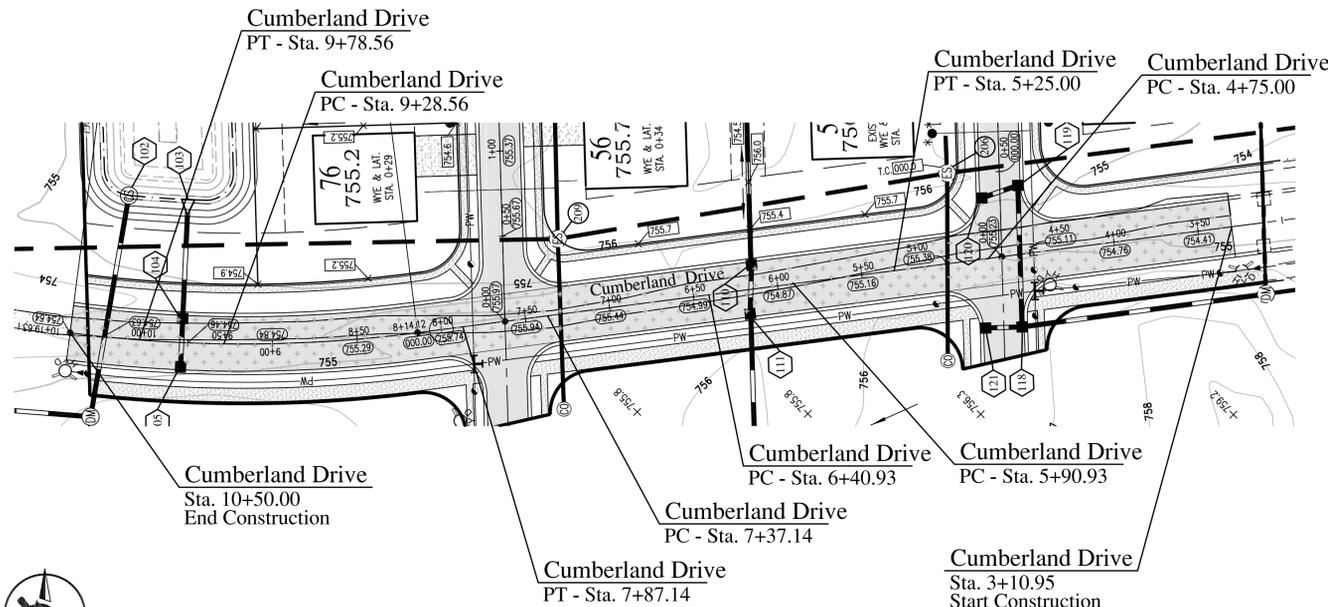


**LEGEND - EXISTING**

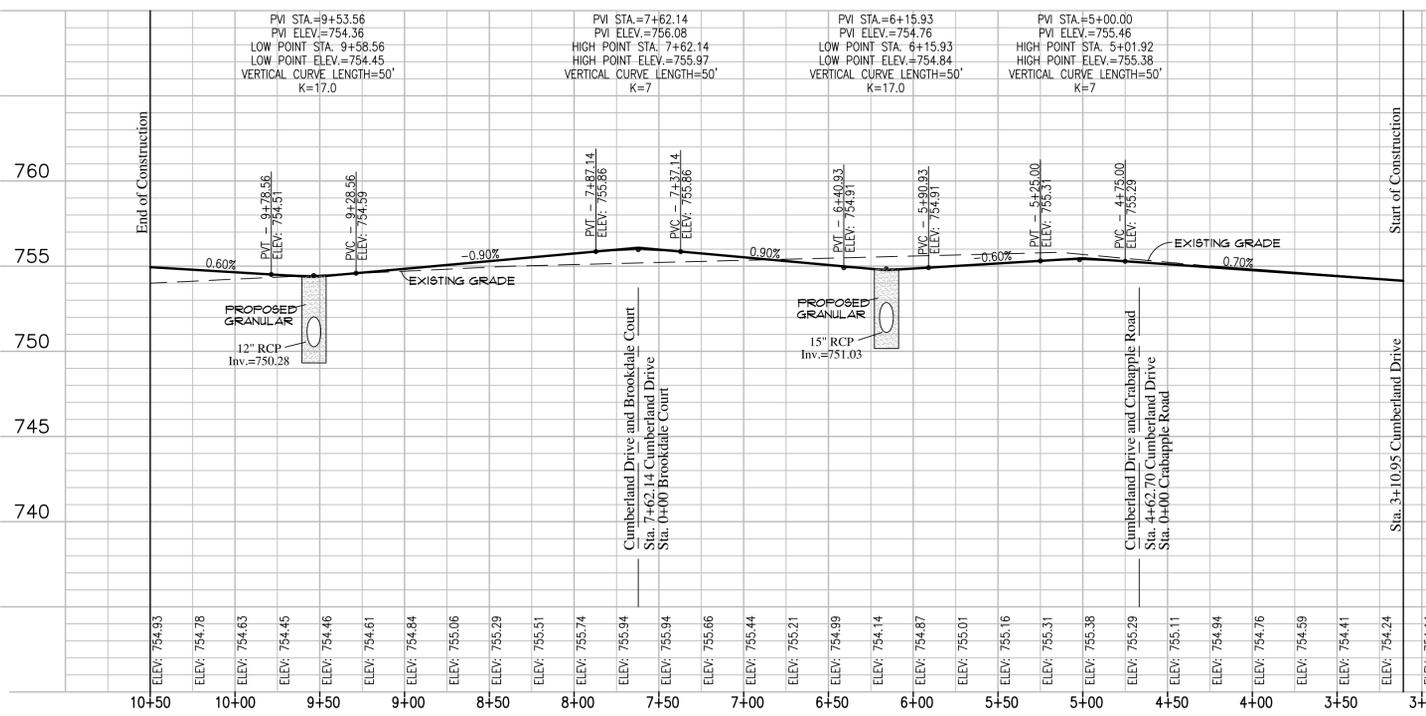
- (S) - EXISTING STORM (CURB) INLET
- (S) - EXISTING STORM (BEEHIVE) INLET
- (S) - EXISTING STORM MANHOLE
- (S) - EXISTING CONCRETE END SECTION
- (S) - EXISTING STORM SEWER
- (S) - EXISTING SANITARY MANHOLE
- (S) - EXISTING SANITARY CLEANOUT
- (S) - EXISTING SANITARY SEWER
- (S) - EXISTING PAVEMENT GRADE
- (S) - EXISTING CURB & GUTTER
- (S) - EXISTING SPOT ELEVATION
- (S) - EXISTING OVERHEAD UTILITY
- (S) - EXISTING GUY WIRE
- (S) - EXISTING OVERHEAD UTILITY
- (S) - EXISTING ELECTRIC TRANSFORMER
- (S) - EXISTING UNDERGROUND ELECTRIC
- (S) - EXISTING A/C CONDENSING UNIT
- (S) - EXISTING GAS METER
- (S) - EXISTING GAS VALVE
- (S) - EXISTING UNDERGROUND GAS LINE
- (S) - EXISTING GAS PIPELINE MARKER
- (S) - EXISTING TELEPHONE PEDESTAL
- (S) - EXISTING TELEPHONE MANHOLE
- (S) - EXISTING TRAFFIC MANHOLE
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- (S) - EXISTING CABLE PEDESTAL
- (S) - EXISTING FIBER OPTIC
- (S) - EXISTING FIRE HYDRANT
- (S) - EXISTING WATERLINE
- (S) - EXISTING WATER METER
- (S) - EXISTING WATER VALVE
- (S) - EXISTING STREET SIGN
- (S) - EXISTING TREE
- (S) - EXISTING TREE LINE

**LEGEND - PROPOSED**

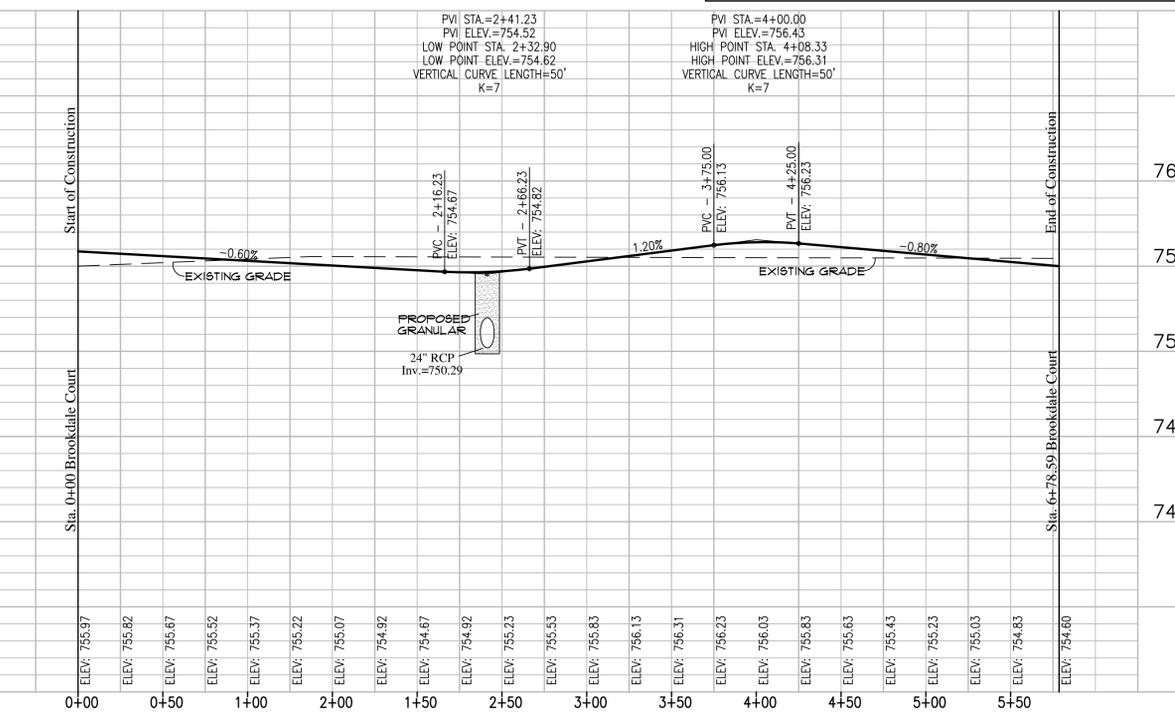
- (100) - PROPOSED STORM STRUCTURE NUMBER
- (100) - PROPOSED STORM INLET
- (100) - PROPOSED DRAINAGE INLET
- (100) - PROPOSED DRAINAGE MANHOLE
- (100) - PROPOSED STORM SEWER
- (100) - PROPOSED CONCRETE END SECTION
- (100) - PROPOSED WATER QUALITY STRUCTURE
- (100) - PROPOSED OUTLET CONTROL STRUCTURE
- (100) - PROPOSED SANITARY STRUCTURE NUMBER
- (100) - PROPOSED SANITARY MANHOLE
- (100) - PROPOSED SANITARY SEWER
- (100) - PROPOSED SANITARY CLEANOUT
- (100) - PROPOSED SANITARY LATERAL
- (100) - PROPOSED SWALE
- (100) - PROPOSED FLOW ARROW
- (100) - PROPOSED WATER LINE
- (100) - PROPOSED FIRE HYDRANT
- (100) - PROPOSED WATERLINE VALVE
- (100) - PROPOSED WATERLINE TEE
- (100) - PROPOSED WATERLINE BEND
- (100) - PROPOSED GRANULAR BACKFILL
- (100) - PROPOSED HANDICAP RAMPS
- (100) - PROPOSED GRADE
- (100) - PROPOSED CONTOUR
- (100) - PROPOSED UNDERDRAIN
- (100) - PROPOSED GAS LINE
- (100) - PROPOSED ELECTRIC TRANSFORMER



**CUMBERLAND DRIVE**



**BROOKDALE COURT**



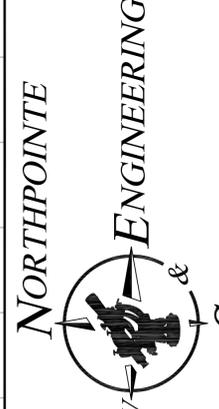
SCALE	1"=50'
DRAWN BY	West Franklin Homes, LLC
CHECKED BY	DIS, VT

PREPARED FOR  
**West Franklin Homes, LLC**  
5371 Cayman Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana

SHEET TITLE  
**STREET PLAN AND PROFILES**

Engineering, Land Surveying  
Consulting & Inspection  
Donna Jo Smithers  
Professional Land Surveyor  
President/Owner  
Venus L.L. Thomas  
Professional Engineer  
Vice President  
6125 South East Street, Suite "B"  
Indianapolis, Indiana 46227-2147  
Phone: 317.836.8020  
www.npsurvey.com



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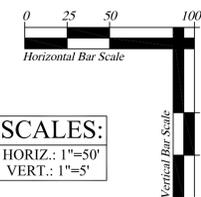
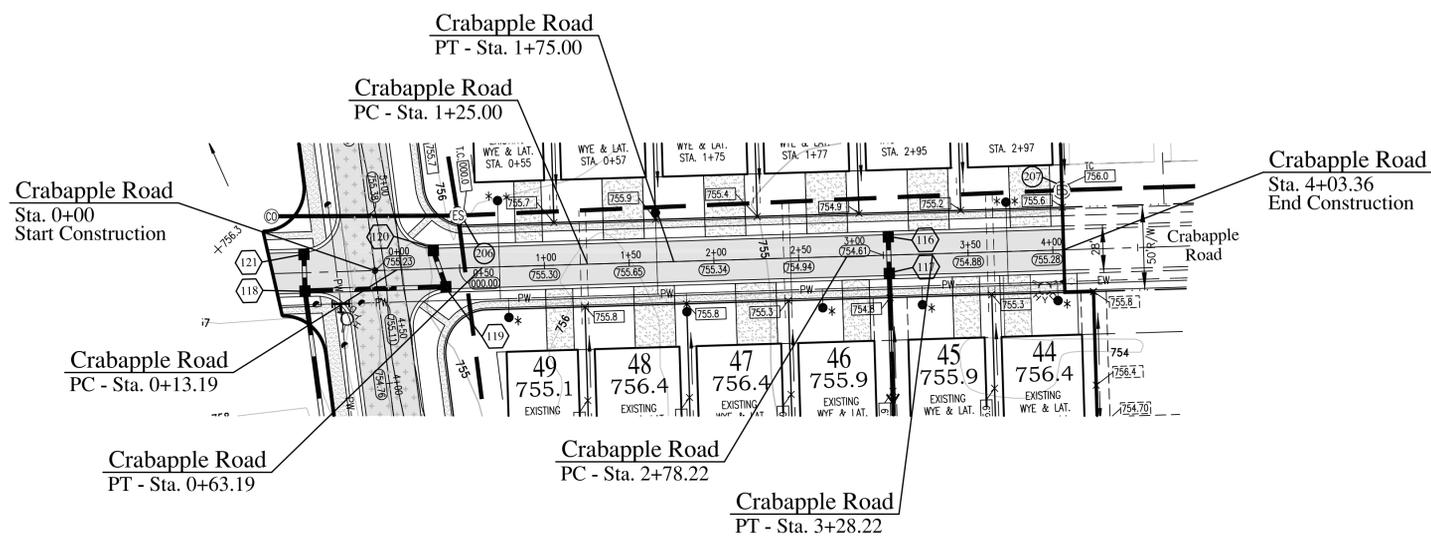
This drawing is not intended to be represented as a Retracement or Original Boundary Survey, a Route Survey, or a Surveyor Location Report

**LEGEND - EXISTING**

- (S) - EXISTING STORM (CURB) INLET
- (M) - EXISTING STORM (BEEHIVE) INLET
- (C) - EXISTING CONCRETE END SECTION
- (SS) - EXISTING STORM SEWER
- (SM) - EXISTING SANITARY MANHOLE
- (SC) - EXISTING SANITARY CLEANOUT
- (SS) - EXISTING SANITARY SEWER
- (PG) - EXISTING PAVEMENT GRADE
- (TC) - EXISTING CURB & GUTTER
- (+000) - EXISTING SPOT ELEVATION
- (L) - EXISTING UTILITY POLE
- (LH) - EXISTING LIGHT POLE
- (DU) - EXISTING OVERHEAD UTILITY
- (ET) - EXISTING ELECTRIC TRANSFORMER
- (UE) - EXISTING UNDERGROUND ELECTRIC
- (AC) - EXISTING A.C. CONDENSING UNIT
- (GM) - EXISTING GAS METER
- (GV) - EXISTING GAS VALVE
- (UG) - EXISTING UNDERGROUND GAS LINE
- (GPM) - EXISTING GAS PIPELINE MARKER
- (TP) - EXISTING TELEPHONE PEDESTAL
- (TM) - EXISTING TELEPHONE MANHOLE
- (TS) - EXISTING TRAFFIC MANHOLE
- (TSP) - EXISTING TRAFFIC SIGNAL POLE
- (CP) - EXISTING CABLE PEDESTAL
- (FO) - EXISTING FIBER OPTIC
- (FH) - EXISTING FIRE HYDRANT
- (W) - EXISTING WATERLINE
- (WM) - EXISTING WATER METER
- (WV) - EXISTING WATER VALVE
- (SS) - EXISTING STREET SIGN
- (T) - EXISTING TREE
- (TL) - EXISTING TREE LINE

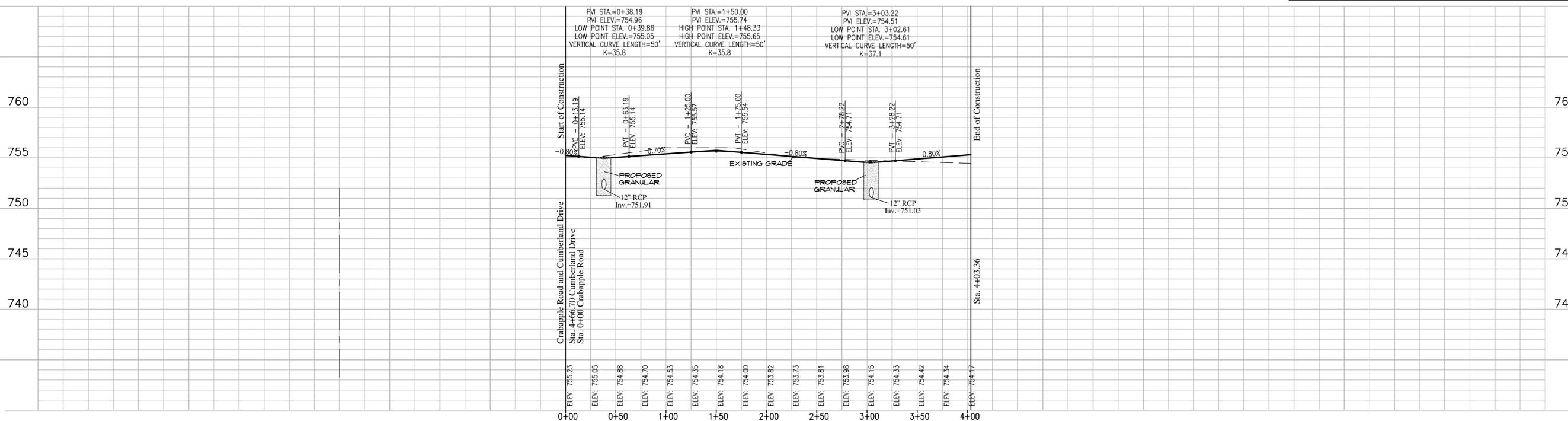
**LEGEND - PROPOSED**

- (100) - PROPOSED STORM STRUCTURE NUMBER
- (1) - PROPOSED STORM INLET
- (DI) - PROPOSED DRAINAGE INLET
- (DM) - PROPOSED DRAINAGE MANHOLE
- (S) - PROPOSED STORM SEWER
- (WC) - PROPOSED WATER QUALITY STRUCTURE
- (CS) - PROPOSED OUTLET CONTROL STRUCTURE
- (21) - PROPOSED SANITARY STRUCTURE NUMBER
- (S) - PROPOSED SANITARY MANHOLE
- (S) - PROPOSED SANITARY SEWER
- (CO) - PROPOSED SANITARY CLEANOUT
- (L) - PROPOSED SANITARY LATERAL
- (S) - PROPOSED SWALE
- (PW 6") - PROPOSED WATER LINE
- (F) - PROPOSED FIRE HYDRANT
- (H) - PROPOSED WATERLINE VALVE
- (T) - PROPOSED WATERLINE TEE
- (B) - PROPOSED WATERLINE BEND
- (G) - PROPOSED GRANULAR BACKFILL
- (HC) - PROPOSED HANDICAP RAMPS
- (797.0) - PROPOSED GRADE
- (794) - PROPOSED CONTOUR
- (PU) - PROPOSED UNDERDRAIN
- (PG) - PROPOSED GAS LINE
- (PET) - PROPOSED ELECTRIC TRANSFORMER
- (A) - PROPOSED FLOW ARROW



SCALES:  
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VERT.: 1"=5'

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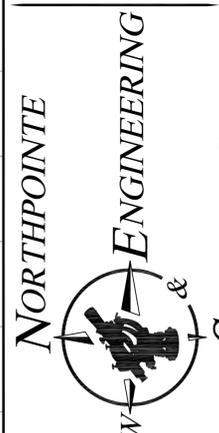


SCALE: 1"=50'  
DRAWN BY: [Signature]  
CHECKED BY: [Signature]  
DIS, VT

PREPARED FOR:  
West Franklin Homes, LLC  
3371 Cayman Drive  
Carmel, Indiana 46033

PROJECT NAME:  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana  
SHEET TITLE:  
**STREET PLAN AND PROFILES**

Engineering, Land Surveying  
& Inspection  
Consulting & Inspection  
Donna Jo Smithers  
Professional Land Surveyor  
No. 10000  
Venus L. L. Thome  
Professional Engineer  
No. 10000  
6125 South East Street, Suite "B"  
Indianapolis, Indiana 46227-2147  
Office: 317-251-8020  
www.npsinc.com





**STREET LIGHTING STANDARDS**

**General Requirements:** The subdivider shall be responsible for the initial cost of the purchase and installation of all street lights. All street light standards and fixtures shall meet the specifications established by the City Engineer and the appropriate electric utility.

1. Standard Height & Material: Street lights shall be pole mounted on standards of non-corrosive metal not to exceed 28 feet in height. Wood and fiberglass mounting poles shall be prohibited.
2. Decorative Lighting: The use of decorative street lighting shall be encouraged consistent with the performance standards of the City of Franklin Zoning Ordinance.

**Locations within the Subdivision:** Generally, street lighting shall be provided at all intersections of streets within, and adjacent to, the subdivision and elsewhere as deemed appropriate for public safety by the Planning Director, City Engineer, Plan Commission, and/or Board of Public Works & Safety. The spacing of street lights shall be determined at the discretion of the City Engineer based on the level of illumination provided by the chosen fixture.

**Locations along the Street:** Street lights shall be located in the right of way, adjacent to the street.

ALL TRAFFIC CONTROL SIGNAGE SHALL MEET THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION

ALL STREET SIGNS SHALL HAVE STEEL BREAKAWAY POSTS

**LEGEND**

(SL) - PROPOSED STREET LIGHT

PRIOR TO INSTALLATION ALL SITE LIGHTING SHALL BE APPROVED BY THE CITY OF FRANKLIN AND MEET THE FOLLOWING STANDARDS.

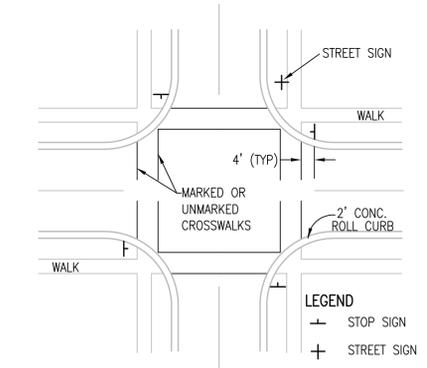
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**NOTE:**  
FOR STOP SIGN AND STREET SIGN DETAILS



URBAN INTERSECTION  
NO SCALE

**LEGEND - EXISTING**

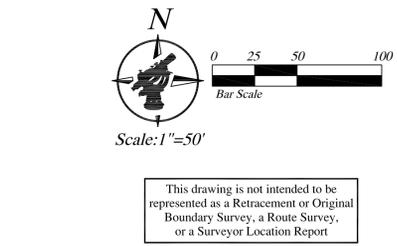
(Symbol)	-EXISTING STORM (CURB) INLET	(Symbol)	-EXISTING GAS VALVE
(Symbol)	-EXISTING STORM (BEEHIVE) INLET	(Symbol)	-EXISTING UNDERGROUND GAS LINE
(Symbol)	-EXISTING STORM MANHOLE	(Symbol)	-EXISTING GAS PIPELINE MARKER
(Symbol)	-EXISTING CONCRETE END SECTION	(Symbol)	-EXISTING TELEPHONE PEDESTAL
(Symbol)	-EXISTING STORM SEWER	(Symbol)	-EXISTING TELEPHONE MANHOLE
(Symbol)	-EXISTING SANITARY MANHOLE	(Symbol)	-EXISTING TRAFFIC MANHOLE
(Symbol)	-EXISTING SANITARY CLEANOUT	(Symbol)	-EXISTING TRAFFIC SIGNAL POLE
(Symbol)	-EXISTING SANITARY SEWER	(Symbol)	-EXISTING CABLE PEDESTAL
(Symbol)	-EXISTING PAVEMENT GRADE	(Symbol)	-EXISTING FIBER OPTIC
(Symbol)	-EXISTING CURB & GUTTER	(Symbol)	-EXISTING FIRE HYDRANT
(Symbol)	-EXISTING SPOT ELEVATION	(Symbol)	-EXISTING WATERLINE
(Symbol)	-EXISTING UTILITY POLE	(Symbol)	-EXISTING WATER METER
(Symbol)	-LIGHT POLE	(Symbol)	-EXISTING WATER VALVE
(Symbol)	-EXISTING GUY WIRE	(Symbol)	-EXISTING STREET SIGN
(Symbol)	-EXISTING OVERHEAD UTILITY	(Symbol)	-EXISTING TREE
(Symbol)	-EXISTING ELECTRIC TRANSFORMER	(Symbol)	-EXISTING TREE LINE
(Symbol)	-EXISTING UNDERGROUND ELECTRIC		
(Symbol)	-EXISTING A/C CONDENSING UNIT		
(Symbol)	-EXISTING GAS METER		

**LEGEND - PROPOSED**

(Symbol)	-PROPOSED STORM STRUCTURE NUMBER	(Symbol)	-PROPOSED FLOW ARROW
(Symbol)	-PROPOSED STORM INLET	(Symbol)	-PROPOSED WATER LINE
(Symbol)	-PROPOSED DRAINAGE INLET	(Symbol)	-PROPOSED FIRE HYDRANT
(Symbol)	-PROPOSED DRAINAGE MANHOLE	(Symbol)	-PROPOSED WATERLINE VALVE
(Symbol)	-PROPOSED STORM SEWER	(Symbol)	-PROPOSED WATERLINE TEE
(Symbol)	-PROPOSED CONCRETE END SECTION	(Symbol)	-PROPOSED WATERLINE BEND
(Symbol)	-PROPOSED WATER QUALITY STRUCTURE	(Symbol)	-PROPOSED GRANULAR BACKFILL
(Symbol)	-PROPOSED OUTLET CONTROL STRUCTURE	(Symbol)	-PROPOSED HANDICAP RAMPS
(Symbol)	-PROPOSED SANITARY STRUCTURE NUMBER	(Symbol)	-PROPOSED GRADE
(Symbol)	-PROPOSED SANITARY MANHOLE	(Symbol)	-PROPOSED CONTOUR
(Symbol)	-PROPOSED SANITARY SEWER	(Symbol)	-PROPOSED UNDERDRAIN
(Symbol)	-PROPOSED SANITARY CLEANOUT	(Symbol)	-PROPOSED GAS LINE
(Symbol)	-PROPOSED SANITARY LATERAL	(Symbol)	-PROPOSED ELECTRIC TRANSFORMER
(Symbol)	-PROPOSED SWALE		

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**BENCHMARK:**  
INDOT BENCHMARK - 41-S46  
Benchmark located on Bridge Structure No. 144-41-7969 on the Southeast Wingwall (Bridge over Youngs Creek)  
Elevation - 741.6699 NAVD 88

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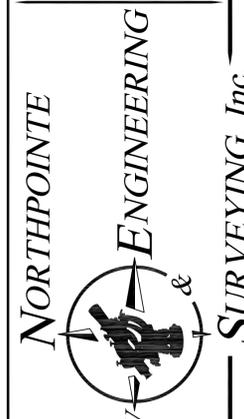
PREPARED FOR  
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5574 Cayman Drive  
Cannel, Indiana 46033

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SHEET TITLE  
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Consulting & Inspection  
Doana Jo Shubers  
President/Owner  
Venus L.L. Thome  
Professional Engineer  
Vice President  
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Indianapolis, IN 46226-147  
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Scale: 1"=50'



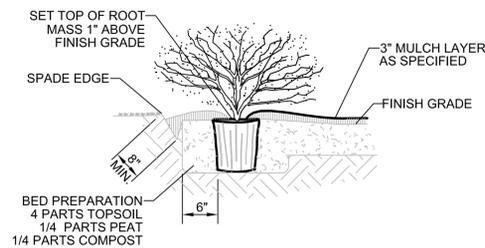
**NOTE**

STREET TREES REQUIRED FOR EVERY LOT AT A RATIO OF ONE (1) PER EVERY THIRTY-FIVE (35) FEET OR PORTION THEREOF OF STREET FRONTAGE. THE TREE INSTALLATION REQUIREMENT SHALL BE MET DURING THE HOME CONSTRUCTION PROCESS.

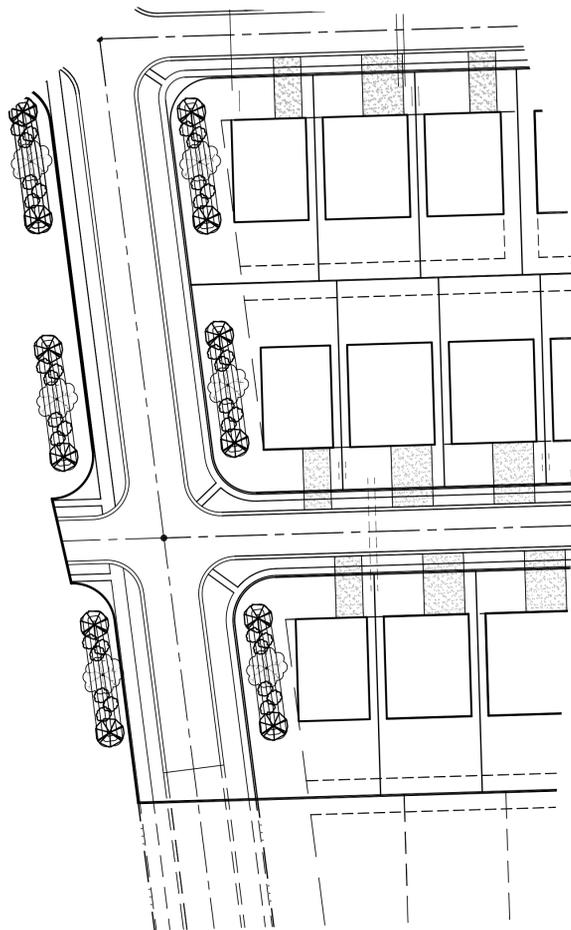
**LANDSCAPE NOTES:**

VEGETATIVE GROUND COVER OR LOW SHRUBS SHALL BE PLANTED IN ALL LANDSCAPED CURB ISLANDS AREAS AS SHOWN ON PLAN.

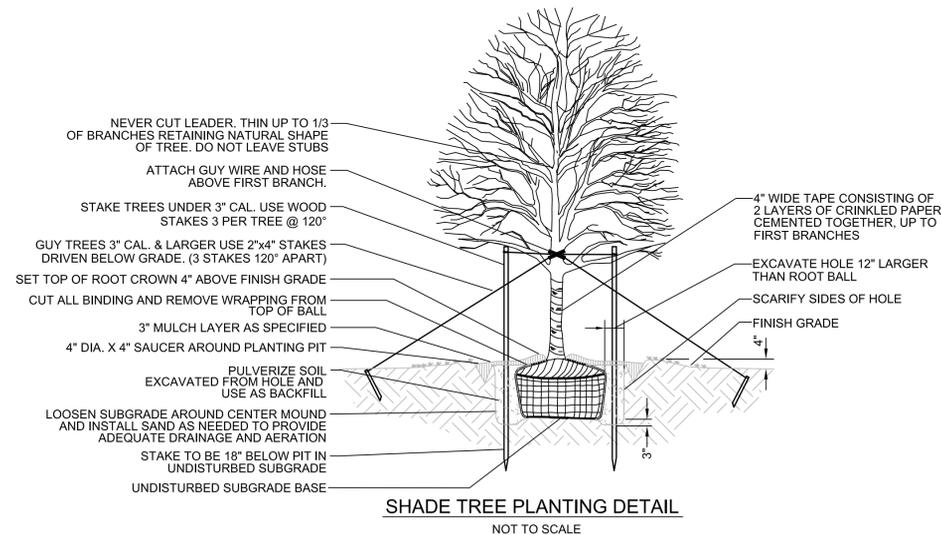
GRAVEL AND BARK MULCH MAY NOT BE USED AND/OR SUBSTITUTED FOR GROUND COVER OF LOW SHRUBS.



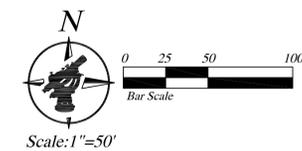
**SHRUB AND SMALL TREE PLANTING DETAIL**  
NOT TO SCALE



LANDSCAPE LEGEND				
SYMBOL	COMMON NAME	SIZE	CULTIVAR	QUANTITY
	EASTERN REDBUD	2 1/2" CAL.	100' O.C.	8
	RED SUNSET MAPLE OR AUTUMN PURPLE ASH	2 1/2" CAL.		12
	DWARF BURNING BUSH	24"-30"	W/MULCH BED	36



**SHADE TREE PLANTING DETAIL**  
NOT TO SCALE



**UTILITY STATEMENT:**  
THE EXISTING UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM VISIBLE FIELD EVIDENCE AND/OR EXISTING DRAWINGS. NORTHPOINTE MAKES NO GUARANTEES THAT THE UTILITY INFORMATION SHOWN COMPRISES ALL SUCH UTILITIES IN THE AREA, IN SERVICE OR ABANDONED. NORTHPOINTE FURTHER STATES THAT THE UNDERGROUND UTILITY DATA SHOWN DOES NOT INDICATE PRECISE LOCATIONS.

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SMITHERS  
DOMINA J. SMITHERS  
Professional Engineer  
No. 46227-2147  
PRELIMINARY  
NOT FOR CONSTRUCTION  
10.13.2016  
Seal

THORNE  
VANESSA L. THORNE  
Professional Engineer  
No. 46227-2147  
PRELIMINARY  
NOT FOR CONSTRUCTION  
10.13.2016  
Seal

SCALE  
1"=50'  
DRAWN BY  
CHECKED BY  
DIS - VT

PREPARED FOR  
West Franklin  
Homes, LLC  
5374 Cayman Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana  
SHEET TITLE  
**BOULEVARD MOUNDING-LANDSCAPE PLAN**

Engineering, Land Surveying  
Consulting & Inspection  
Donna Jo Smithers  
Professional Land Surveyor  
President/Owner  
Vanessa L. Thorne  
Professional Engineer  
Vice President  
6125 South East Street, Suite "B"  
Indianapolis, Indiana 46227-2147  
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**NORTHPOINTE ENGINEERING & SURVEYING, Inc.**

Sheet 14 of 21  
Date: 10.13.2016  
Job # 16-0115

**SITE WORK GENERAL NOTES AND SPECIFICATIONS**

GENERAL: WHEREVER A CONFLICT OR DEFICIENCY OCCURS BETWEEN THE CONSTRUCTION STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF FRANKLIN THE HIGHER OR MORE RESTRICTIVE STANDARD OR SPECIFICATION SHALL APPLY.

**A. NOTICES AND PERMITS**

- 1. The contractor shall be responsible for obtaining or verifying that all permits are obtained from the respective city, county and state agencies prior to starting construction.
2. It shall be the Contractor's responsibility to determine the exact location of all existing utilities in the vicinity of the construction area prior to starting construction.
3. It shall be the Contractor's responsibility for notification and coordination of all construction with the respective utility companies.
4. It shall be the responsibility of the Developer and Contractor to maintain quality control throughout the project; failure to do so may result in removal and replacement of the defective work.
5. It is essential that the work to be done in conjunction with this project shall be installed according to these specifications.

**B. CLEARING AND GRUBBING**

- 1. Clearing and grubbing shall consist of cutting, removal and satisfactory disposal of all trees, down timber, brush, projecting roots, stumps, rubbish, boulders, broken concrete, fencing (as designated) and other material on the project site and within the boundary as shown on the Construction Documents and/or as designated by "Construction Limits".
2. Special care shall be taken to insure that the trees to be left remaining in the project area shall not receive limb, bark or root injuries.
3. All "unsuitable material" from clearing operations stated in Item B-1 shall be removed to disposal area(s) off of the project site; unless a "Bury Pit" shall be utilized in an area where it shall not be beneath building areas and/or pavement areas and shall not be located in an area where storm drainage structures shall be located or where impoundment of surface drainage may occur.
4. Materials shall not be disposed of by burning unless approved by the local Fire Marshal.

**C. TREE REMOVAL AND PROTECTION**

- 1. Trees shall be removed from the project site only where the area is to be occupied by road and surface areas in accordance with specifications of CITY OF FRANKLIN.
2. Trees shall be removed from the project site as directed by the Developer and so designated.
3. Trees shall be removed from the project site where they interfere directly with the placement of storm or sanitary sewers and that such excavation is or will be fatal to such adjacent trees.
4. The Contractor shall endeavor to save and protect trees of value and worth which do not impair construction of improvements as designated.
5. The Contractor shall be responsible for determining the method for protection of tops, trunks and roots of existing trees on the project site that are to remain.

**D. STRIPPING OF TOPSOIL**

- 1. The Contractor shall verify that all topsoil has been removed in the areas to be occupied by road, walks and designated building areas.
2. Topsoil shall be kept separated from suitable fill materials and shall not be used as fill under pavement and/or building areas.
3. Topsoil shall be stored at a location where it does not interfere with construction operations.
4. Topsoil shall be reasonably free from subsoil debris and stones.

**E. GRADING**

- 1. The Contractor shall perform all grading operations to bring subgrades, after final compaction, to the required grades and sections for site improvement.
2. Subgrade shall be proofrolled with suitable equipment and all spongy and otherwise unsuitable material shall be removed and replaced with suitable material.
3. Subgrade shall be prepared in compliance with IN D.O.T. standard specifications and as per CITY OF FRANKLIN Subdivision Control and Land Development Ordinance.
4. See ROAD CONSTRUCTION
5. All fill material shall be formed from soil free of deleterious material.
6. All fill material in areas outside building and pavement areas shall be compacted lightly and protected from erosion by one or more of the methods of Item C. Areas where building and pavement construction is feasible shall not have unsuitable material placed in that location and fill shall be compacted to 95% Standard Proctor or better.

**F. STANDARD SEWER CONSTRUCTION**

- 1. Current CITY OF FRANKLIN, County and State specifications shall prevail as to materials and methods of construction.
2. The Contractor shall be responsible for obtaining or verifying all permits for all or portions of this project to starting construction.
3. Sanitary sewers shall be installed in accordance with the Indiana State Board of Health.
4. Sanitary sewers shown on the construction plans were designed with poly-vinyl chloride pipe in accordance with A.S.T.M. D-3034 (S.D.R. 35).
5. Sanitary manholes shall be precast concrete in accordance with A.S.T.M. C-478.
6. Castings shall be of type and kind as shown on the detail sheet.
7. Plastic sanitary sewers shall be marked for easy identification.
8. Water and sewer line crossings and separations shall be in accordance with Ten States Standards and local codes.
9. All future sewer installation, either connected to or extended from this system, shall be constructed in accordance with these specifications.
10. No roof drains, footing drains, and/or surface water drains may be connected to the sanitary sewer system, including temporary connections during construction.
11. Buildings shall be serviced by a 6" minimum sanitary sewer lateral. The sewer laterals' terminations shall be indicated on the surface with a metal fence post set immediately above said termination point.

- 12. The Contractor shall provide Maurer and Smithers, Inc. with "As-Built" locations and information for all sanitary sewers and laterals including elevations.
13. Manhole sections shall have "O" rings, mastic in bulk, or rubber type gaskets which shall meet A.S.T.M. C-433.
14. Manhole waterstops shall be installed at all connections to manholes, where flexible type manhole connections are not used.
15. All precast manholes shall be bedded on a granular foundation as shown in the details.
16. The Contractor shall remove by pumping or other suitable methods any water which may accumulate in trenches.
17. TESTING: The Contractor shall be responsible for all tests for leakage, infiltration and deflection as established by the CITY OF FRANKLIN and the State Board of Health.

- 18. Pipe shall be laid in open trenches, except when conditions require and the appropriate approving agencies given written permission for tunneling or jacking of pipe.
19. Trench shall be opened sufficiently ahead of pipe laying to reveal obstructions and shall be properly protected and/or barricaded when left unattended.
20. Trenches shall be sheeted and braced as necessary to protect workmen and adjacent structures.
21. Manhole flow channels shall be u-shaped with concrete and smoothly finished by a semi-circular section to the top of pipe conforming to the inside diameter of the connecting sewers.
22. Granular backfill shall be required under all pavement areas and within 5' of the edge of pavement.
23. The Contractor is responsible for ensuring that safe working conditions exist and safety procedures are being followed at the Work site.

- 24. Wherever any Sanitary Sewers constructed in this section connect to any existing Sanitary Sewers, the existing manhole or sewer shall be plugged to prevent any debris, or surface water from entering the existing system.
25. The CITY OF FRANKLIN shall be notified in advance of all Sanitary Sewer testing.

**G. EROSION PROTECTION DURING CONSTRUCTION**

- 1. The Contractor shall provide adequate erosion protection measure during construction such as, but not limited to:
a. Siltation basins
b. Silt traps
c. Straw bale dams
d. Soil cement
e. Mulch and seeding
f. Soil stabilization fabric
g. Jute netting
2. Details and placement specifications for the above items are available on request from the Engineer.
3. See "Erosion Control Plan" and Details for more erosion control measures.

**H. STORM SEWER CONNECTION**

- 1. Storm sewer structures shall comply with current specifications of the City, County and all agencies in respect to design and quality of construction.
2. All storm sewer construction inside public right-of-way, either existing or to be dedicated, shall be in accordance with IN D.O.T. Standard Specifications, 1995 Edition.
3. Where reinforced concrete pipe is shown on the construction plans, it shall be in accordance with A.S.T.M. C-76 Class III Wall "B" unless otherwise specified on the plans.
4. Where HDPE pipe is shown on the construction plans, it shall be manufactured in accordance with AASHTO M 294 and have a minimum Cell Class of d 324420C in accordance with ASTM D 3350.
5. Manholes, catchbasins and inlets will be poured in place or precast concrete.
6. Precast concrete and steel for manholes and inlets shall be in accordance with A.S.T.M. C-478.
7. Castings shall be as shown on the detail sheet(s) for manufacturer, type and model number.

**I. UTILITIES**

- 1. Water service:
a. The contractor shall coordinate all waterline construction with the utility, Indiana-American Water Company.
b. All PVC pipe used on this project shall meet ASTM-D 2241 Standard and bear the National Sanitation Foundation seal of approval.
c. Solvent-weld joint PVC pipe is not to be used.
d. See Sanitary Sewers for vertical and horizontal separations.
e. The water mains are to be installed at a minimum 54" of cover to prevent freezing.
f. The Contractor shall be responsible for leakage tests on the water mains carried out following procedures outlined by applicable American Water Works Association Standards and meet the leakage requirements designated therein per I.C.W. as follows:
1. Hydrostatic Tests

After the pipe has been laid, all newly laid pipe, or any valved section thereof, shall be subjected to the hydrostatic pressure of at least 1.5 times the normal working pressure at the point of testing or 150 psi, whichever is greater.

Each valved section of pipe shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe. The gauges shall be furnished by the Contractor.

Before applying the specified test pressure, all air shall be expelled from the pipe. If hydrants or blowoffs are not available at high places, the Contractor shall make the necessary taps at points of highest elevation before the test is made and insert the plugs after the test has been completed.

Any exposed pipes, fittings, valves, hydrants or joints will be carefully examined during the test. Any damaged or defective pipes, fittings, valves or hydrants discovered in consequence of this pressure test shall be repaired or replaced by the Contractor with sound material and the test shall be repeated until satisfactory to the Owner.

A leakage test shall be conducted concurrently with the pressure test. The Contractor shall furnish the pump, pipe, connections and all other necessary apparatus and shall furnish all necessary assistance to conduct the test. Gauges and measuring devices for the leakage test shall be furnished by the Contractor or by the Owner at the owner's option.

Leakage is defined as the quantity of water to be supplied into the newly laid pipe or any valved section thereof, necessary to maintain pressure within 5 psi of the specified test pressure after the pipe has been filled with water and the air expelled.

No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

L = SD (P)^1/2 / 133,200

in which L is the allowable leakage, in

gallons per hour; S is the length of pipe tested, in feet; D is the nominal diameter of the pipe, in inches; and P is the average test pressure during the leakage, in pounds per square inch gauge.

When testing against closed metal seated valves, an additional leakage per closed valve of 0.0078 gal/h/in. of nominal valve size shall be allowed.

Should any test of pipe laid disclose leakage greater than that specified above, the Contractor shall at his own expense, locate and repair the defective joints until the leakage is within the specified allowance. All visible leaks are to be repaired regardless of the amount of leakage.

Pipe may be subjected to hydrostatic pressure and inspected and tested for leakage at any convenient time after the pipe has been installed provided that where any section of main is provided with concrete reaction backing, the hydrostatic pressure test shall not be made until at least five days have elapsed after the concrete reaction backing was installed.

Upon completion of the work or any usable portion thereof, and prior to placing the system or part thereof in operation, all mains, valves hydrants, etc. shall be thoroughly flushed and sterilized, using chlorine-gas mixture or a hypochlorite and water mixture applied in amounts sufficient to produce a dosage 50 ppm.

The preferred point of application of the sterilizing mixture shall be at the beginning of the pipeline extension or any valved section of it and through a corporation stop which will be inserted by the Contractor. Water from the existing system shall be controlled to flow slowly into the newly laid pipeline during the application of the chlorine. Treated water shall remain in the pipeline for not less than 24 hours.

Following sterilization, the treated water shall be flushed from the pipe at its extremities.

If necessary, repeat sterilization until bacteriological quality of water is to be delivered through system is satisfactory to the Engineer and the State Board of Health.

**FINAL MEASUREMENTS**

The Engineer/Surveyor shall make all measurements and check all dimensions necessary for the proper construction of the work called for by the drawings and specifications and during the prosecution of the work he shall record such accurate measurements of the construction on a set of construction drawings and to submit 2 sets of construction plans to Indiana-American Water Company, designated as "As-Built".

- g. All water lines from the Indiana-American Water main to the building shall be either cast iron, ductile iron or copper and shall be installed in accordance with the Indiana-American Water Company specifications.
h. Granular backfill shall be required for all utility crossings under and within 5' of pavement area.
i. All water lines shall be in accordance with the specifications of Indiana-American Water Company and the Indiana State Board of Health.
j. IDENTIFICATION TAPE FOR BURIED PIPE

1. Identification tape for ductile iron and steel pipe. Identification tape shall be manufactured of inert polyethylene so as to be highly resistant to alkalies, acids and other destructive agents found in soil and shall have a minimum thickness of 4 mils. Tape width shall be 6" and shall have background color specified below, imprinted with black letters. Imprint shall be as specified below and shall repeat itself a minimum of one every 2' for entire length of tape.

2. Identification tape for polyvinyl chloride pipe. Identification tape shall be manufactured of polyethylene with a minimum thickness of 4 mils and shall be a 1 mil thick metallic foil core. The tape shall be highly resistant to alkalies, acid and other destructive agents found in soil.

3. Tape background color shall be blue. Imprint: "Caution Caution - Water Line Buried Below" shall be in black.
4. Identification tape shall be "Terra Tape" as manufactured by Reef Industries, Inc., Houston, Texas (800) 231-6074, or an approved equal.

5. Identification tape shall be installed for all buried potable water lines in accordance with the manufacturer's installation instructions and as specified herein.

6. Identification tape shall be installed 1' below final grade over centerline of pipe.

No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

**2. Electric and Telephone:**

- a. Conduit shall be required for all crossings under pavement areas.
b. Granular backfill shall be required for all crossings under pavement areas.
c. Concrete pads for electric and telephone transformers shall be set at the approximate ground grade as shown on the Site Development Grading Plans for the respective locations.
d. The Contractor shall be responsible for coordinating with each utility their installation of any lines or conduits or any other equipment required in the project.

**J. GRANULAR BACKFILL**

The material shall be Compacted Aggregate No. 53 under or within 5 feet of all pavement per CITY OF FRANKLIN.

**K. PAVEMENT CONSTRUCTION**

- 1. All street construction shall be in accordance with the plans and specifications and conform to the minimum standards of IN D.O.T. Standard Specifications, 1995 Edition.
a. Concrete shall be 6 bag, Class "A" (minimum 4000 psi after curing, 5% to 7% air entrainment and curing compound required.
b. See details for bituminous pavement section.
2. Subgrade shall be prepared in compliance with IN D.O.T. standard specifications.
3. Backfilling of utility trenches with granular material under pavement areas is required and shall be compacted to 95% Standard Proctor.

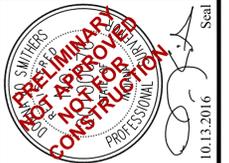
**L. CONCRETE CURB AND WALKS**

- 1. See detail sheet for type and details.
2. Concrete shall be ready mixed Portland cement conforming to A.S.T.M. C-150 and water. Aggregate shall conform to A.S.T.M. C-33. Concrete shall be 6 bag Class "A" with compressive strength of concrete at 28 days being minimum 4000 p.s.i. Where required, reinforcement shall be welded steel wire fabric conforming to A.S.T.M. a-185.
3. Application

- a. Place concrete only on a moist, compacted subgrade or base free from loose material.
b. Concrete shall be deposited so as to require as little rehandling as practicable.
c. Except as otherwise specified, cure all concrete by one of the methods described in IN D.O.T. Specifications, 1995 Edition.

**M. FINISH GRADING AND SEEDING**

- 1. Over the approved road grade (see Section E), spread 4" minimum of topsoil or approved fill to such depth as will finish to the required finish grades and contours after rolling and natural settlement.
2. Fertilizer and agricultural limestone shall be spread uniformly over the area to be seeded.



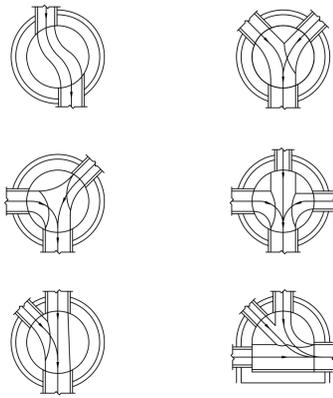
SCALE, DRAWN BY, CHECKED BY, DIS - VT

PREPARED FOR West Franklin Homes, LLC, 5874 Cavanaugh Drive, Carmel, Indiana 46033

CUMBERLAND TRACE Section Two, Franklin Township, City of Franklin Johnson County, Indiana

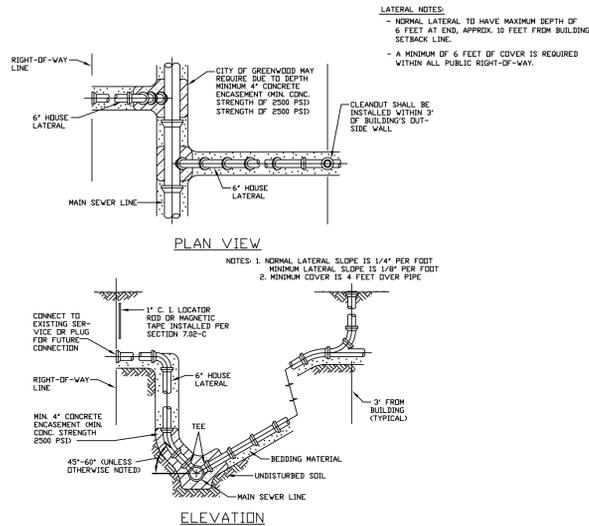
Engineering, Land Surveying Consulting & Inspection, Donna Jo Smithers, President/Owner, Virginia L. Thorne, Project Lead/Engineer, Vice President



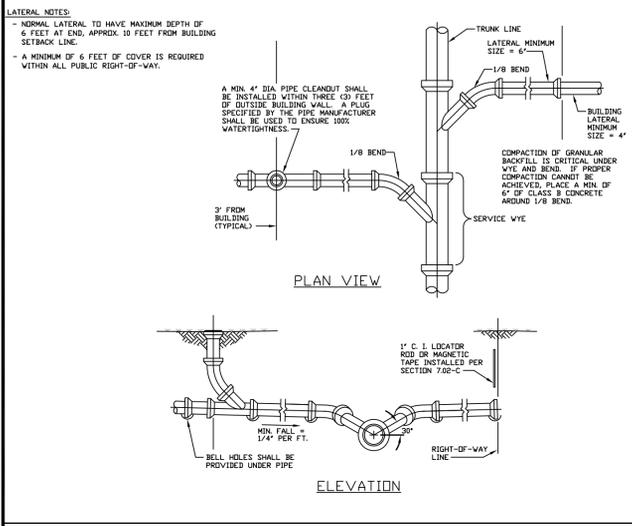


SANITARY SEWER BENCH SLOPE = 1/2" PER FOOT

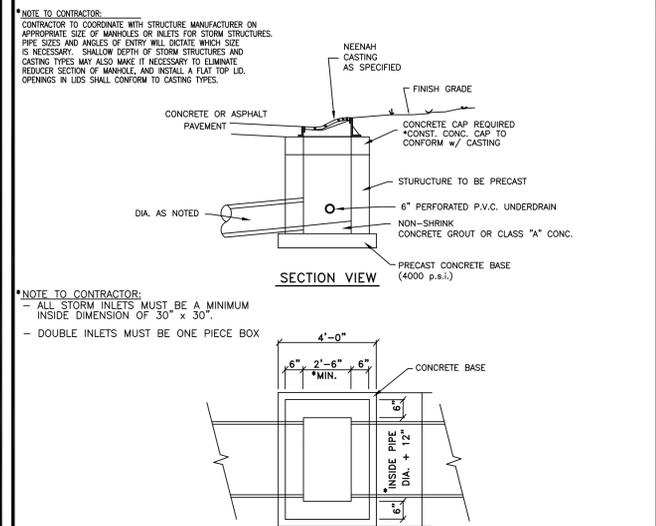
### STANDARD MANHOLE BENCHES



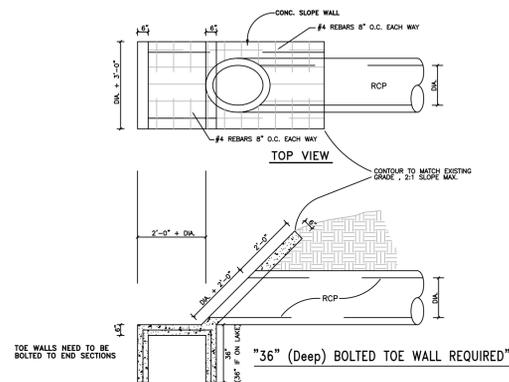
### SERVICE CONNECTION FOR DEEP SEWERS (15' DEEP AND OVER)



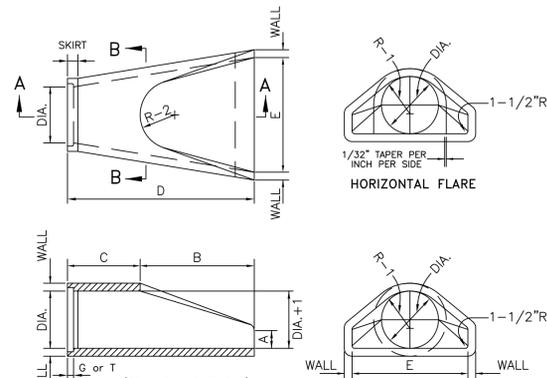
### SERVICE CONNECTION FOR SHALLOW SEWERS (LESS THAN 15' DEEP)



### STANDARD STORM INLET



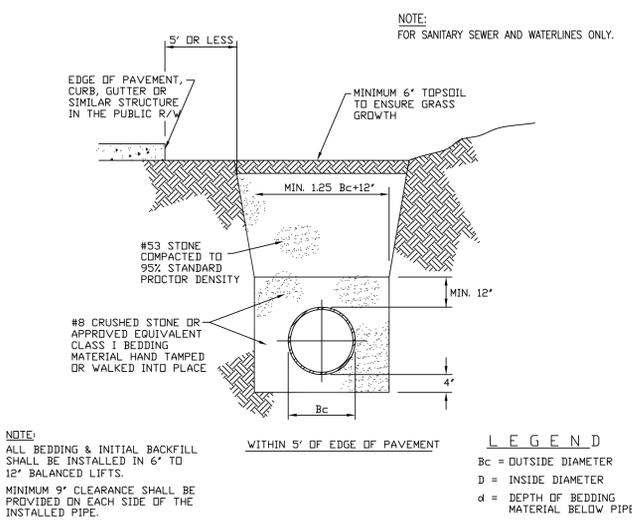
ALL CONCRETE END SECTIONS SHALL HAVE SLOPE WALLS CONSTRUCTED ON THEM AS SHOWN ABOVE.



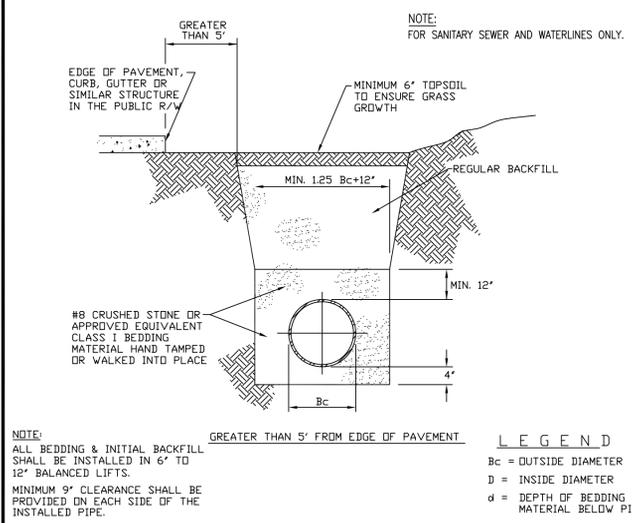
SECTION A-A		SECTION B-B																	
DIA.	WALL	C or T	WT. SEC.	A	B	C	D	E	DIA.+1	R-1	R-2	SKIRT							
12	2	1	1/2	530	4	24	48	7/8	72	7/8	24	13	10	1/16	9	3	1/2		
15	2	1/4	2	740	6	27	46	7/8	72	7/8	30	16	12	1/2	11	3	1/2		
18	2	1/2	2	990	9	27	46	7/8	72	7/8	36	19	15	1/2	12	4	1/2		
21	2	3/4	2	1280	9	35	38	7/8	72	7/8	42	22	16	1/8	13	4	1/2		
24	3	1	2	1530	9	43	1/2	30	73	1/2	48	25	16	11/16	14	4	1/2		
27	3	1/4	2	1930	10	1/2	48	25	1/2	73	1/2	54	28	17	3/4	14	1/2	4	
30	3	1/2	3	2190	12	54	19	3/4	73	3/4	60	31	18	5/16	15	5	1/2		
33	3	3/4	3	3150	13	1/2	58	1/2	39	1/4	97	3/4	66	34	23	3/4	17	1/2	5
36	4	1	3	4100	15	63	1/4	3/4	97	3/4	72	37	24	1/16	20	5	1/2		
40	4	1	5	5750	30	60	39	99	96	61	36	3/4	24	6	3/4	6	1/4		
48	5	1	4	6550	24	72	26	98	84	49	18	1/8	22	5	3/4	7	1/4		
54	5	1/2	4	8040	27	65	35	100	90	55	32	7/8	24	6	1/4	8	1/4		
60	6	1	5	8750	30	60	39	99	96	61	36	3/4	24	6	3/4	7	1/4		
66	6	1/2	5	10630	24	78	21	99	102	67	35	11/16	24	7	1/4	7	1/4		
72	7	1	6	12520	34	78	21	99	108	73	38	5/8	24	7	3/4	7	3/4		
78	7	1/2	6	14430	24	78	21	99	114	78	41	15/16	24	8	1/2	8	1/2		
84	8	1	7	16350	24	78	21	99	120	85	44	15/16	24	9	1/2	8	1/2		

NOTES:  
1. MANUFACTURE OF END SECTION IS IN ACCORDANCE WITH APPLICABLE PORTIONS OF A.S.T.M. SPECIFICATION C76.

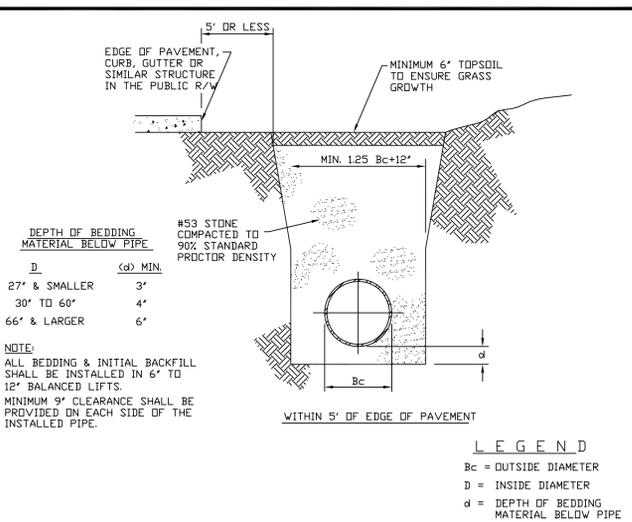
### PRECAST CONCRETE FLARED HEADWALLS



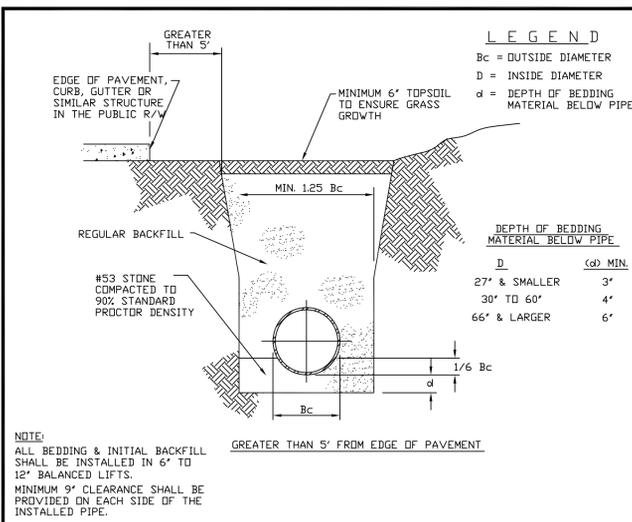
### PLASTIC PIPE (PVC & HDPE) TRENCH DETAIL WITHIN 5' OF EDGE OF PAVEMENT



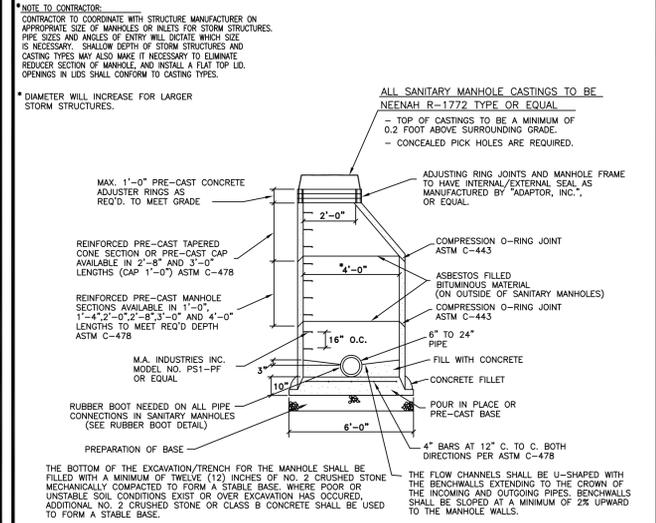
### PLASTIC PIPE (PVC & HDPE) TRENCH DETAIL GREATER THAN 5' OF EDGE OF PAVEMENT



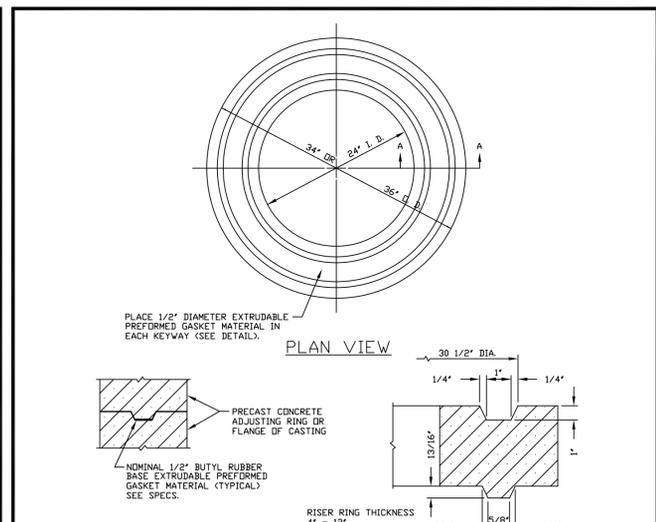
### REINFORCED CONCRETE PIPE (RCP) TRENCH DETAIL WITHIN 5' OF EDGE OF PAVEMENT



### REINFORCED CONCRETE PIPE (RCP) TRENCH DETAIL GREATER THAN 5' OF EDGE OF PAVEMENT



### STANDARD SANITARY/STORM MANHOLE



### ADJUSTING RING DETAIL



SCALE  
DRAWN BY  
CHECKED BY  
DJS - VT

PREPARED FOR  
**West Franklin Homes, LLC**  
5374 Cayman Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana

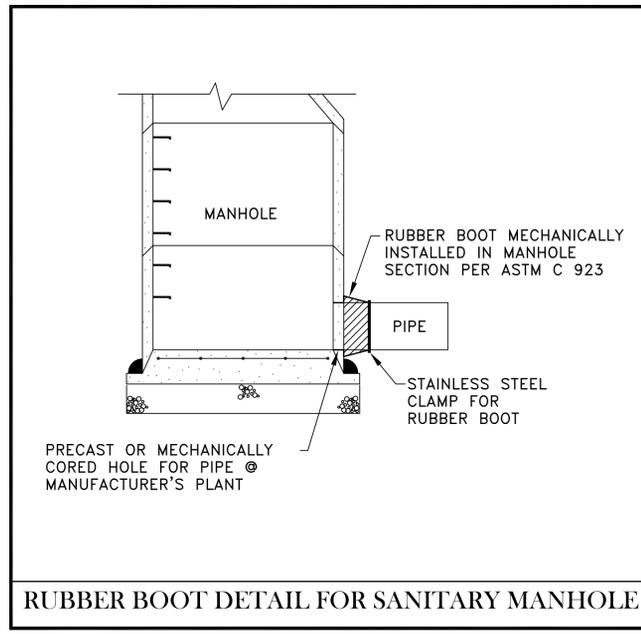
SHEET TITLE  
**DETAILS**

Engineering, Land Surveying  
& Inspection  
Donna Jo Smithers  
Professional Land Surveyor  
President / Owner  
Venus L.L. Thome  
Professional Engineer  
Use/President

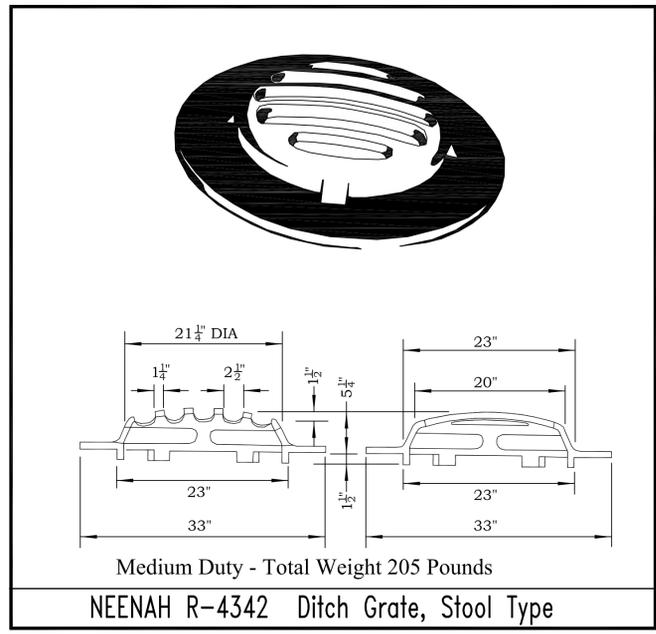
6125 South East Street, Suite "B"  
Indianapolis, Indiana 46227-2147  
Office - 317-884-5020  
www.npe.com



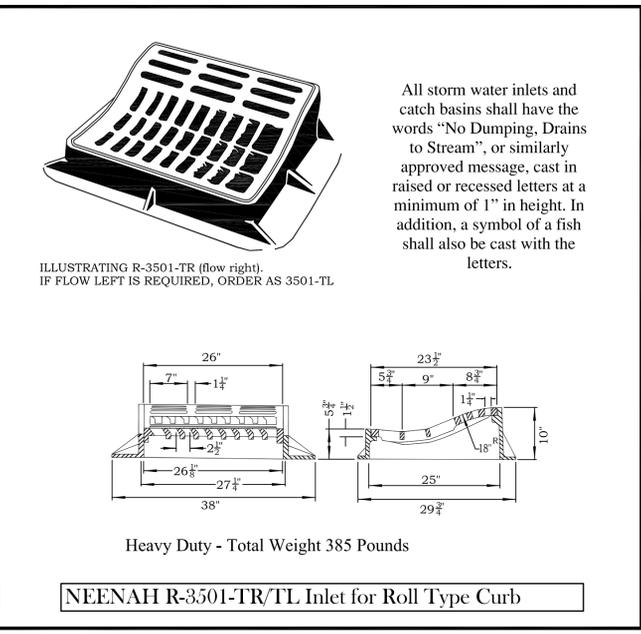
Sheet 16 of 21  
Date: 10.13.2016  
Job # 16-0115



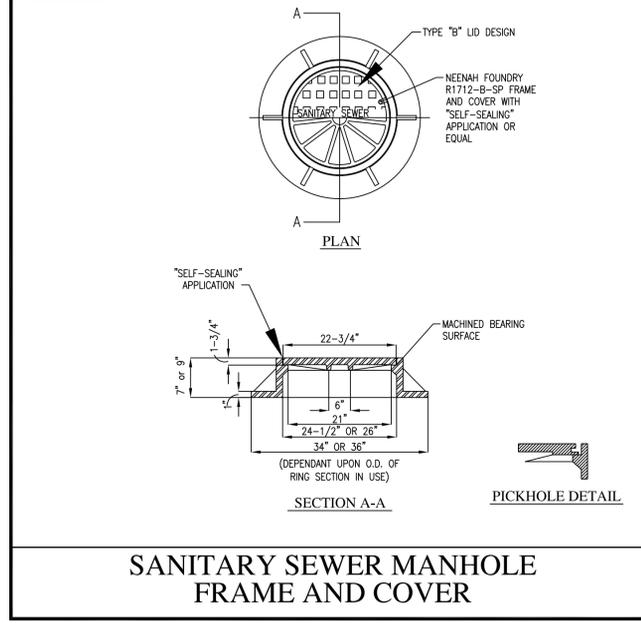
RUBBER BOOT DETAIL FOR SANITARY MANHOLE



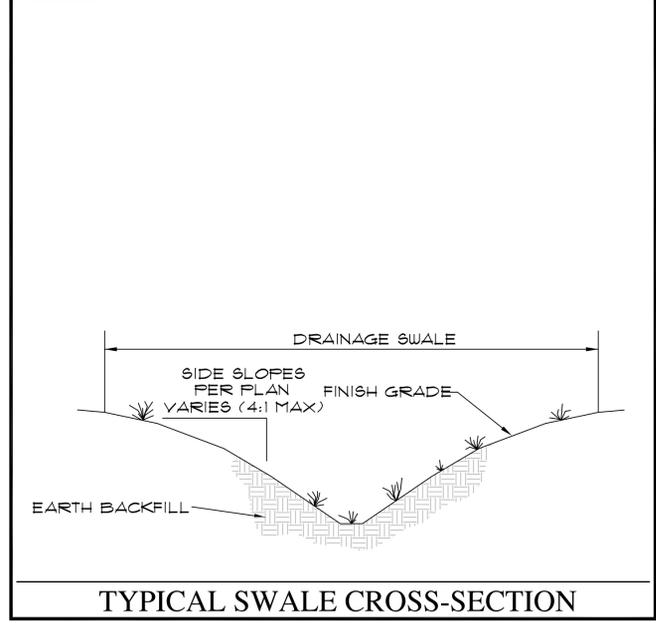
NEENAH R-4342 Ditch Grate, Stool Type



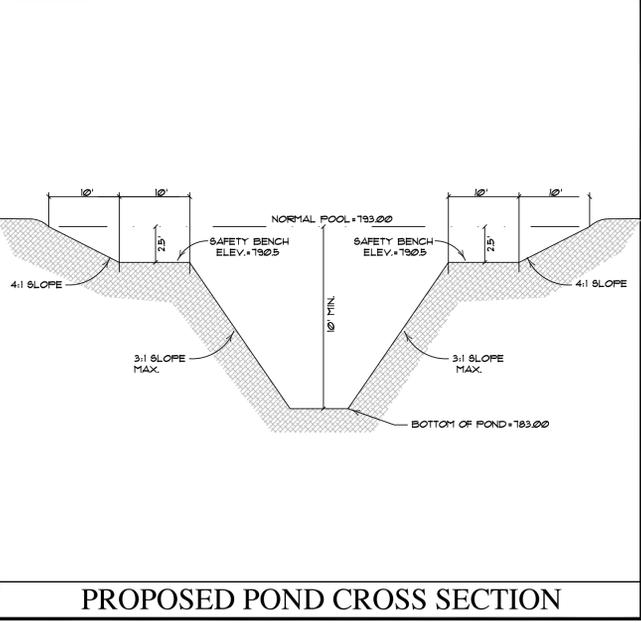
NEENAH R-3501-TR/TL Inlet for Roll Type Curb



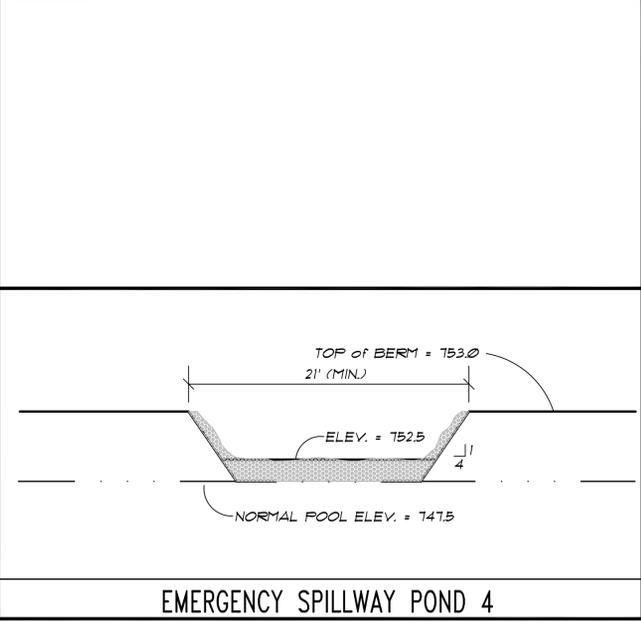
SANITARY SEWER MANHOLE FRAME AND COVER



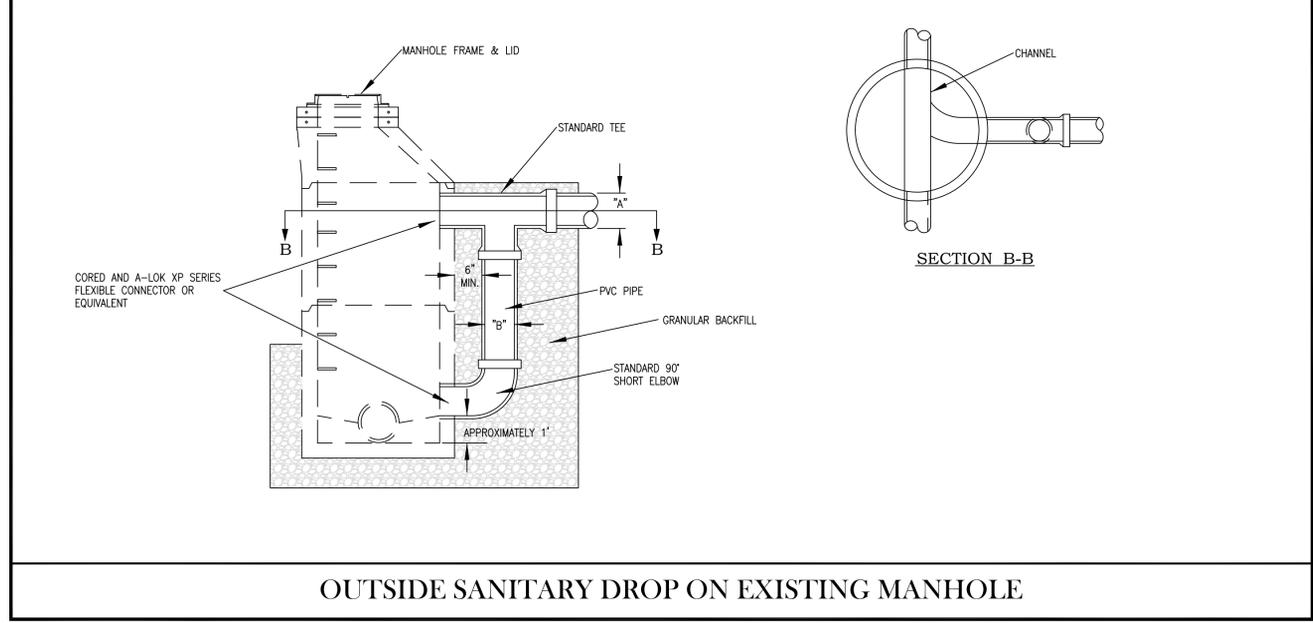
TYPICAL SWALE CROSS-SECTION



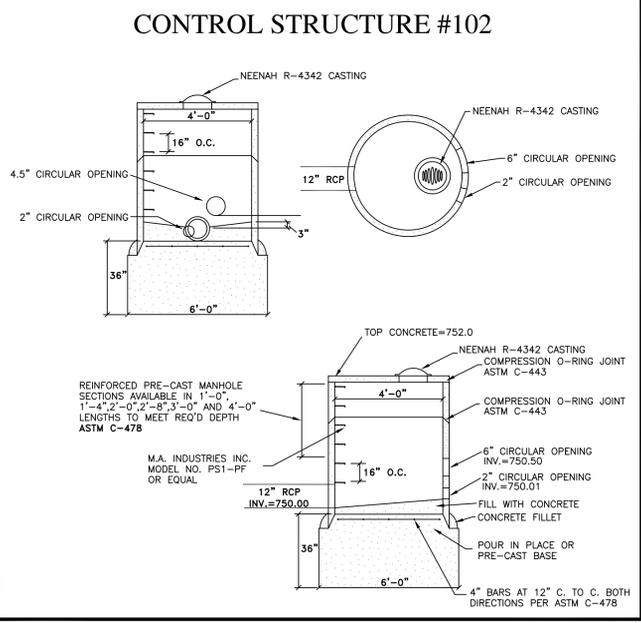
PROPOSED POND CROSS SECTION



EMERGENCY SPILLWAY POND 4



OUTSIDE SANITARY DROP ON EXISTING MANHOLE



CONTROL STRUCTURE #102



SCALE	DRAWN BY	CHECKED BY
		DJS - VT

PREPARED FOR  
**West Franklin Homes, LLC**  
 5874 Canyon Drive  
 Carmel, Indiana 46033

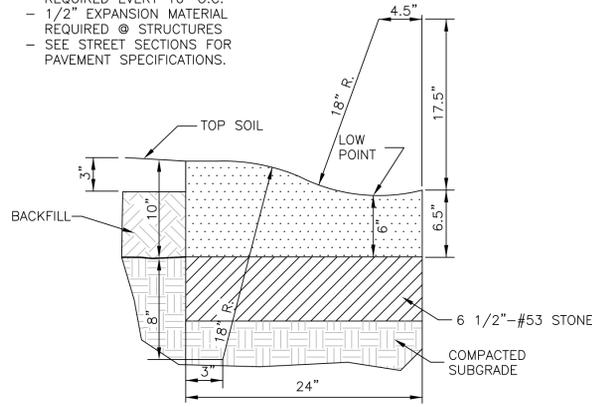
PROJECT NAME  
**CUMBERLAND TRACE**  
 Section Two  
 Franklin Township, City of Franklin  
 Johnson County, Indiana  
 SHEET TITLE  
**DETAILS**

Engineering, Land Surveying  
 Consulting & Inspection  
 Donna Jo Smithers  
 Professional Land Surveyor  
 President / Owner  
 Venus L.L. Thome  
 Professional Engineer  
 Vice President  
 6125 South East Street, Suite "B"  
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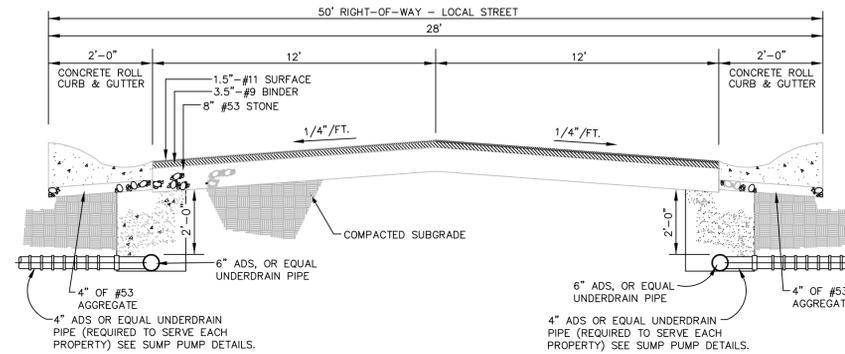
**NOTES:**

- 1 1/2" DEEP CONTROL JOINTS REQUIRED EVERY 10' O.C.
- 1/2" EXPANSION MATERIAL REQUIRED @ STRUCTURES
- SEE STREET SECTIONS FOR PAVEMENT SPECIFICATIONS.



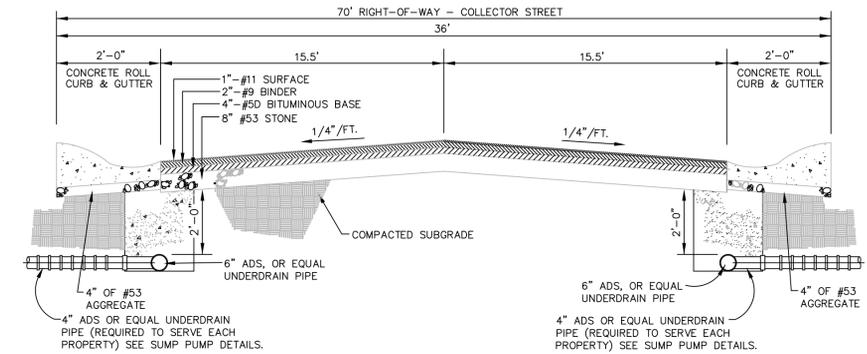
**CONCRETE ROLL CURB**

ASPHALT PAVEMENT TYPES SHALL BE PER 2016 INDOT SPECIFICATIONS

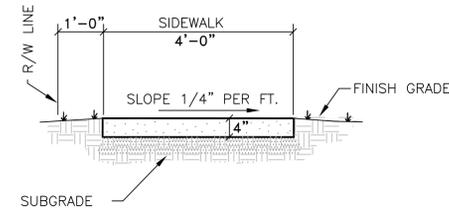


**RESIDENTIAL LOCAL STREET PAVEMENT CROSS DETAIL**

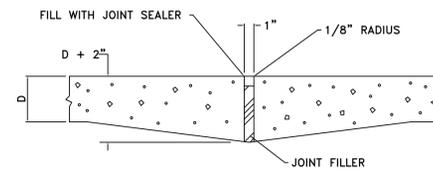
ASPHALT PAVEMENT TYPES SHALL BE PER 2016 INDOT SPECIFICATIONS



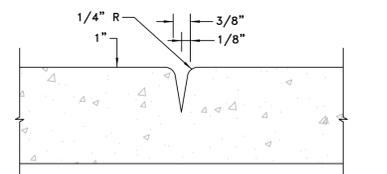
**RESIDENTIAL COLLECTOR STREET PAVEMENT CROSS DETAIL**



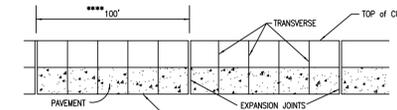
**CONCRETE SIDEWALK**



**TYPE A EXPANSION JOINT**



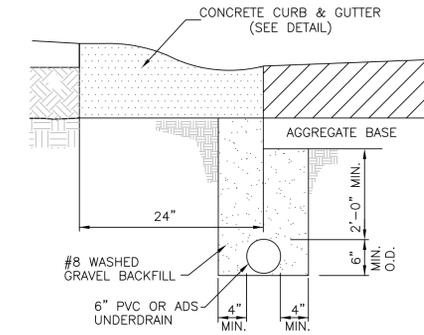
**TYPE B TOOL JOINT**



**GENERAL NOTES:**

- WHERE SIDEWALK IS CONSTRUCTED IMMEDIATELY ADJACENT TO CURB, THE SURFACE OF THE SIDEWALK SHALL BE CONSTRUCTED 1/2" HIGHER THAN THE TOP OF THE CURB.
- TRANSVERSE JOINTS SHALL BE CUT WITH A JOINTER HAVING A RADIUS OF 1/4" INCH OF SPACING AS INDICATED OR DIRECTED.
- COST OF TRANSVERSE PREFORMED JOINT FILLER TO BE INCLUDED IN CONTRACT PRICE FOR "CONCRETE SIDEWALK".
- \* COMPACTED SUBGRADE - THE UPPER 6" INCHES SHALL COMPLY WITH THE DENSITY REQUIREMENTS OF THE CONTRACT IMMEDIATELY PRIOR TO PLACING THE MATERIAL THEREON. ALL SOFT, YIELDING OR OTHER UNSUITABLE MATERIAL WHICH CANNOT BE COMPACTED SATISFACTORILY, SHALL BE REMOVED. ALL ROCK ENCOUNTERED SHALL BE REMOVED OR BROKEN OFF AT LEAST SIX (6") INCHES BELOW THE SUBGRADE SURFACE. ANY HOLES OR DEPRESSIONS RESULTING FROM THE REMOVAL OF UNSUITABLE MATERIAL SHALL BE FILLED WITH SATISFACTORY MATERIAL AND COMPACTED TO CONFORM WITH THE SURROUNDING SUBGRADE SURFACE.
- \*\* WHERE SIDEWALK IS CONSTRUCTED ADJACENT TO CURB, THE SPACE BEHIND THE NEW CURB SHALL BE FILLED WITH GRANULAR MATERIAL TO THE REQUIRED ELEVATION AND COMPACTED IN LAYERS NOT TO EXCEED 4" INCHES.
- \*\*\* WHERE SIDEWALK IS NOT CONSTRUCTED ADJACENT TO THE CURB, THE SPACE BEHIND THE CURB SHALL BE FILLED WITH SUITABLE MATERIAL TO THE REQUIRED ELEVATION AND COMPACTED IN LAYERS NOT TO EXCEED 4" INCHES.
- \*\*\*\* WHEN BUILT IN CONJUNCTION WITH CONCRETE PAVEMENT, EXPANSION AND CONTRACTION JOINTS SHOULD BE PLACED AT THE SAME LOCATIONS AS IN THE PAVEMENT SLAB. THE CURB AND GUTTER SHOULD BE TIED TO THE PAVEMENT BY 1/2" INCH ROUND DEFORMED BARS AT ABOUT 3 FOOT INTERVALS. IF NO CONCRETE PAVEMENT IS BEING BUILT, AT THE TIME THE CURB IS CONSTRUCTED, EXPANSION JOINTS SHOULD BE PLACED AT THE ENDS OF ALL RETURNS AND AT INTERVALS NOT TO EXCEED 100 FEET. CONTRACTION JOINTS SHOULD BE INSTALLED AT 20 FOOT SPACING.

**CURB JOINT DETAIL W/ GENERAL NOTES**



INSTALL UNDERDRAIN CONTINUOUS ON BOTH SIDES OF THE STREET. CONNECT UNDERDRAIN INTO STORM INLETS IN THE STREET

**PIPE UNDERDRAIN DETAIL**

**STREET SIGN NOTE:**  
STREET NAME BLADES SHALL MATCH CURRENT NAME BLADES FOUND THROUGHOUT FRANKLIN (WHITE BACKGROUND WITH

A. General Street Sign Requirements: Street signs, including street name signs, stop signs, "no-parking" signs, and all other appropriate regulatory signs, shall be installed by the subdivider at all locations specified on the approved construction Plans and otherwise as required by the City Engineer.

B. Street Sign Installation: All street signs shall be installed prior to the acceptance of the subdivision's streets by the Board of Public Works & Safety.

1. Temporary Signs: The subdivider shall be responsible for the installation and maintenance of temporary street and traffic control signs until the permanent signs are installed and accepted by the Board of Public Works and Safety.

2. Permits: At his/her discretion, the Planning Director may withhold the issuance of improvement location permits, including those for model homes and speculative structures, until appropriate permanent or temporary street signs have been installed.

**Street Sign Standards:**

All street sign and post types and locations shall conform to the Uniform Manual of Traffic Control Devices, applicable INDOT standards and specifications, the requirements of the City Engineer, the specifications of the Board of Public Works and Safety, and the following:

1. Signposts: Each signpost shall consist of a 2 inch galvanized Type A post, 12 feet long with a minimum of 3 feet below grade.

a. Street Name Signpost Locations: Street name sign posts shall be located within the street right-of-way, no closer than 4 feet from the edge of the traveled portion of the street.

b. Stop Sign Signpost Locations: Stop sign signposts shall be located so that the edge of the sign is a minimum of 2 feet from the edge of the traveled portion of the street.

c. Speed Limit and Informational Signpost Locations: Speed limit and information sign signposts shall be located so that the edge of the sign is a minimum of 2 feet from the back edge of the curb (or shoulder if no curb is present).

d. Sidewalk Obstruction Prohibited: In no instance shall any signpost be located in or obstructing a sidewalk.

2. Street Name Signs: Each street name sign shall be made of blue reflectorized, double-blade metal with 6 inch or large white letters mounted at the top of the post with the street name labeled on both sides.

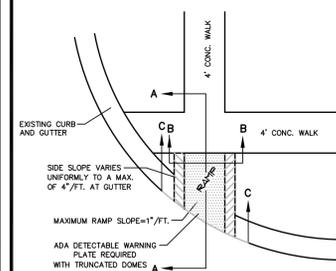
3. Stop Signs: Each stop sign shall be a minimum of 30 inches in width and have a high-intensity finish. There shall be a minimum of 7 feet from the top of the adjacent curb to the bottom of the sign.

4. Speed Limit and Information Signs: Speed limit and other information signs shall be a 24 inch by 30 inch vertical rectangle with a high-intensity finish.

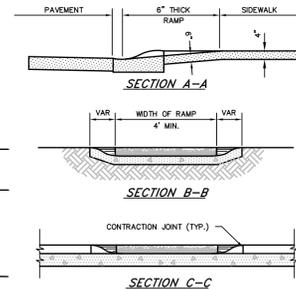
**STREET SIGN STANDARDS**

**NOTES:**

- 1.) EXPANSION JOINTS REQUIRED AT ALL JOINTS.
- 2.) THE HANDICAP RAMPS SHALL MEET CURRENT ADA REQUIREMENTS, INCLUDING PROPER COLOR OF CONCRETE.

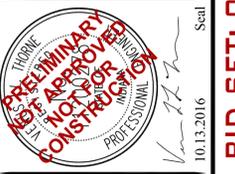
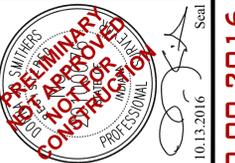


**PLAN VIEW**



**CROSS SECTIONS**

**HANDICAP RAMP SIDEWALK DETAIL**



SCALE	DRAWN BY	CHECKED BY
		DIS - VT

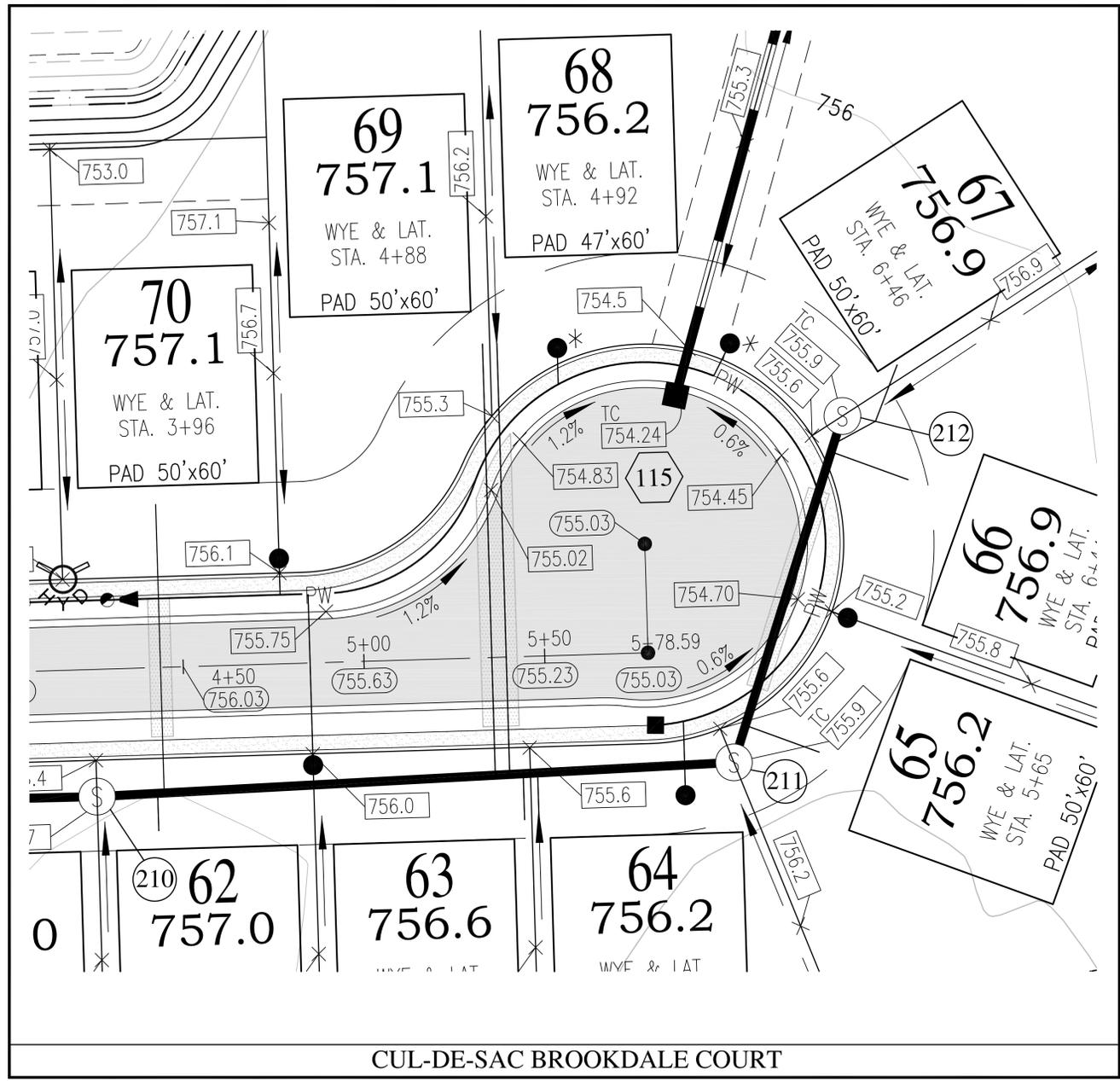
PREPARED FOR  
**West Franklin Homes, LLC**  
5374 Canyon Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana

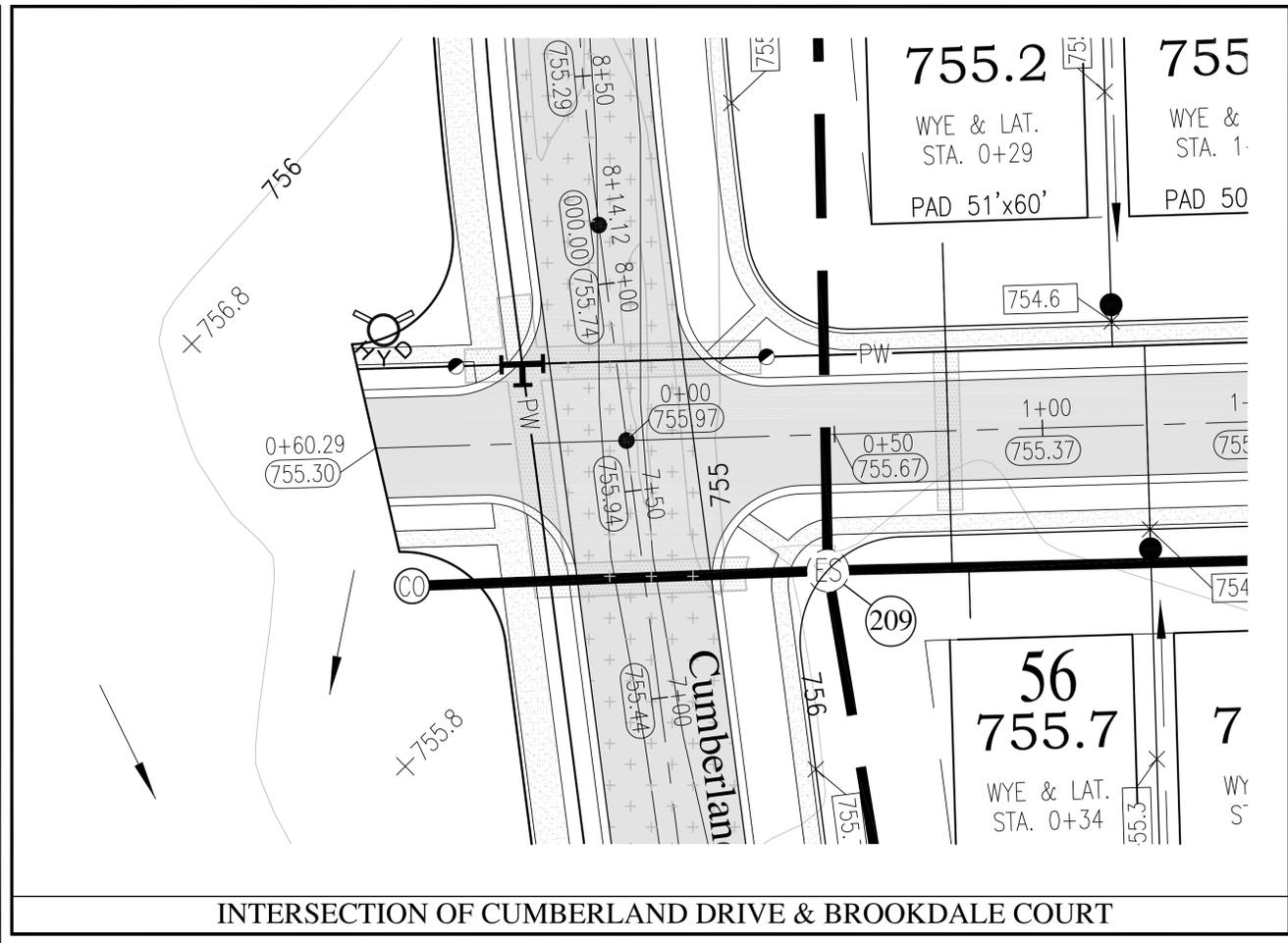
Engineering, Land Surveying  
Consulting & Inspection  
Donna Jo Smithers  
Professional Land Surveyor  
President / Owner  
Venus L.L. Thome  
Professional Engineer  
Site Planner



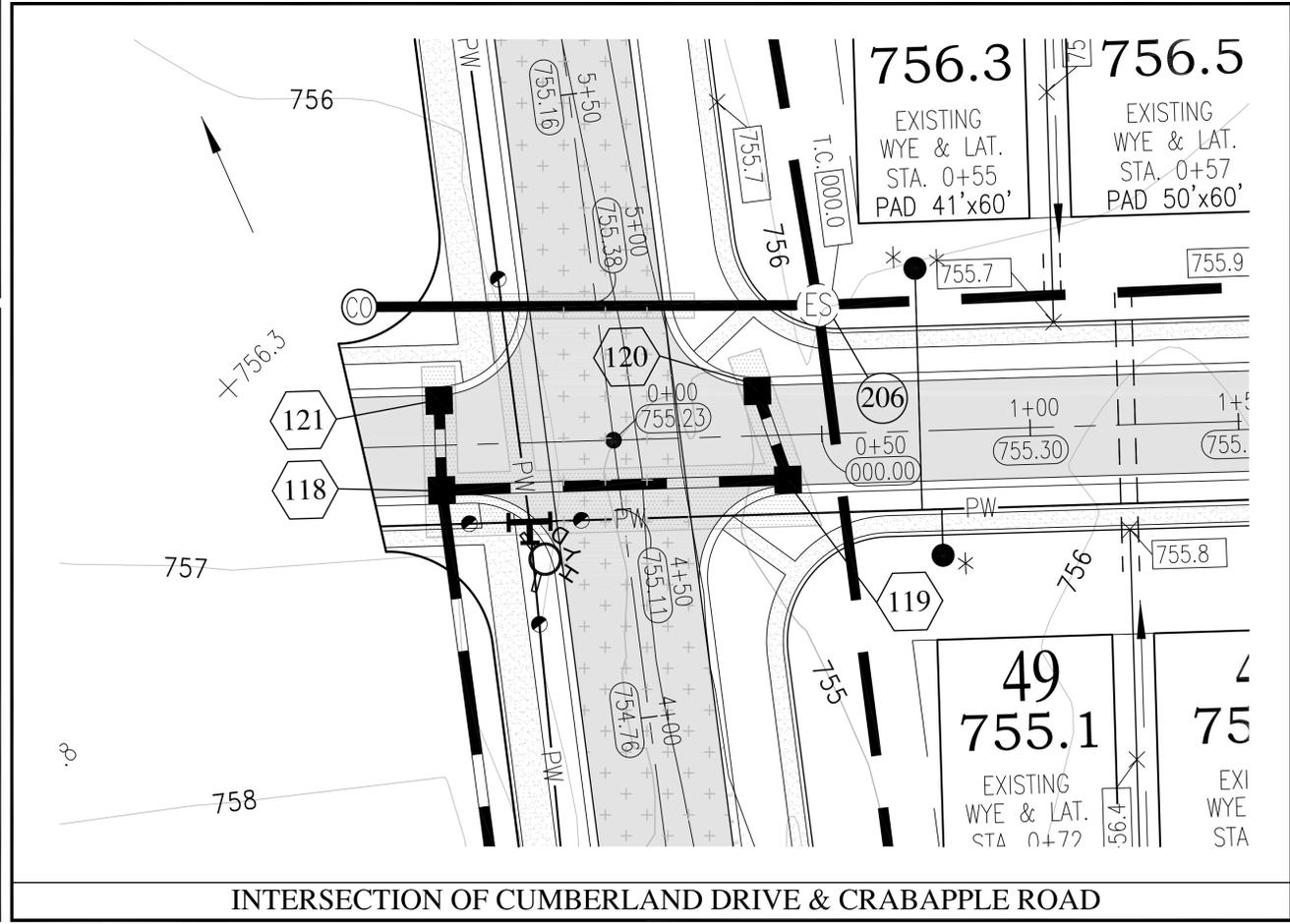
BID SET: 00.00.2016



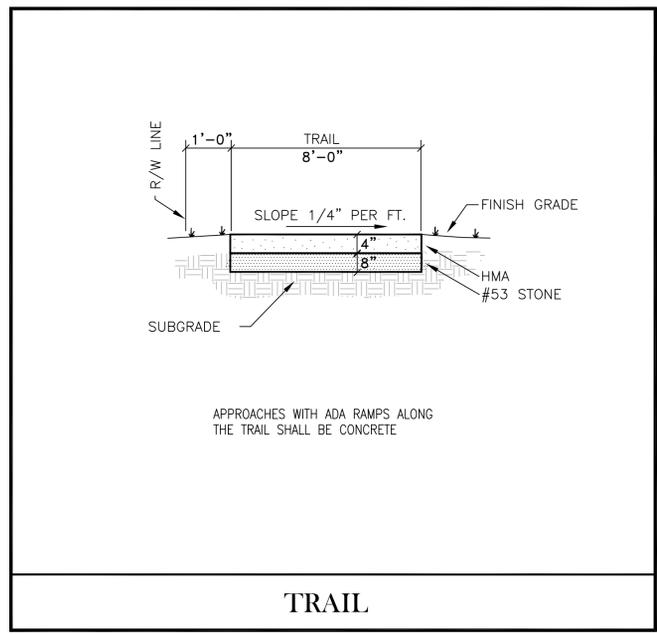
CUL-DE-SAC BROOKDALE COURT



INTERSECTION OF CUMBERLAND DRIVE & BROOKDALE COURT



INTERSECTION OF CUMBERLAND DRIVE & CRABAPPLE ROAD



TRAIL

PRELIMINARY  
BEST APPROVED  
NOT FOR  
CONSTRUCTION  
SWITKERS  
SURVEYING & INSPECTION  
PROFESSIONAL  
10.13.2016

PRELIMINARY  
BEST APPROVED  
NOT FOR  
CONSTRUCTION  
THOMAS  
SURVEYING & INSPECTION  
PROFESSIONAL  
10.13.2016

SCALE  
DRAWN BY  
CHECKED BY  
DIS - VT

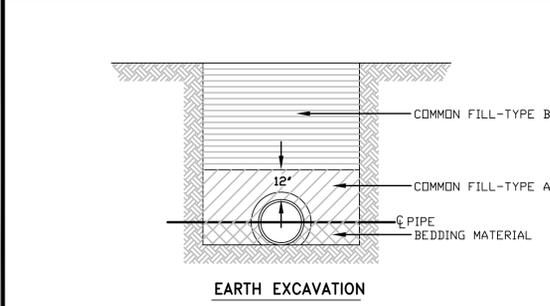
PREPARED FOR  
West Franklin  
Homes, LLC  
5874 Canyon Drive  
Carmel, Indiana 46033

PROJECT NAME  
**CUMBERLAND TRACE**  
Section Two  
Franklin Township, City of Franklin  
Johnson County, Indiana  
SHEET TITLE  
**DETAILS**

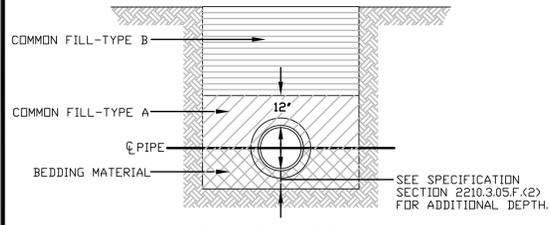
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Sheet 19 of 21  
Date: 10.13.2016  
Job # 16-0115



**EARTH EXCAVATION**

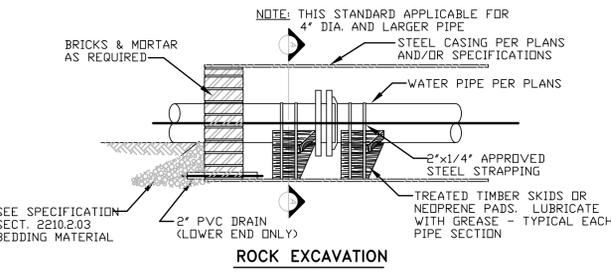


**ROCK EXCAVATION**

NOTE: SEE SPECIFICATION SECTIONS 2210.2.02 AND 2210.2.03 FOR DESCRIPTIONS OF BACKFILL AND BEDDING MATERIAL.

**TRENCH BACKFILL MATERIALS**

**61-300-3 SK**

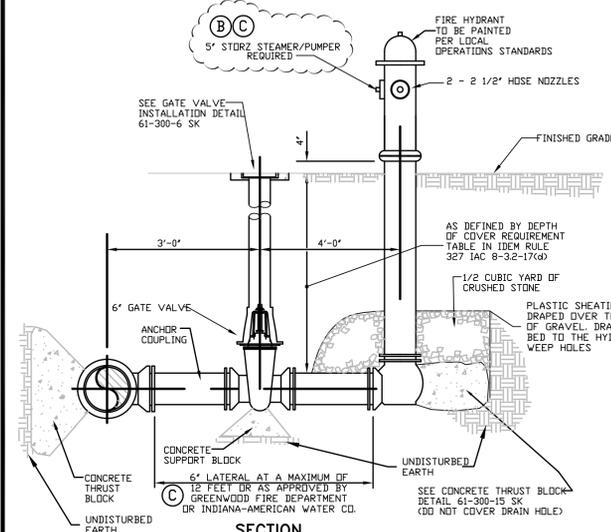


**ROCK EXCAVATION**

PAD WATER PIPES AT BULKHEADS WITH TWO LAYERS OF 15 LB. BUILDERS FELT.

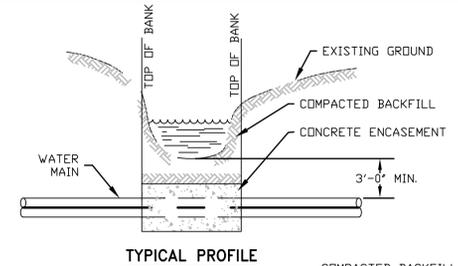
**TYPICAL CASING INSTALLATION**

**61-300-4 SK**

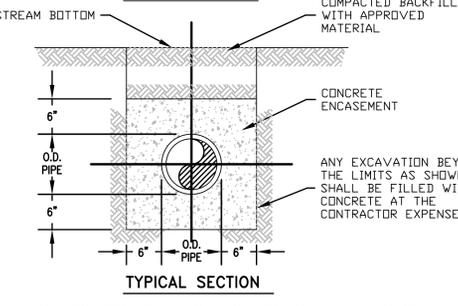


**FIRE HYDRANT DETAILS**

**61-300-7 SK**



**TYPICAL PROFILE**

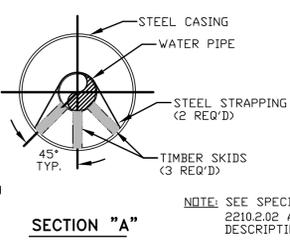


**TYPICAL SECTION**

NOTE: MINIMUM ENCASMENT LIMITS ARE SHOWN ON THE DRAWINGS. THE ACTUAL LIMITS SHALL BE DETERMINED AT THE TIME OF CONSTRUCTION SUCH THAT THE ENCASMENT TERMINATES AT A PIPE JOINT. THE JOINT SHALL BE FREE OF CONCRETE SO AS TO PROVIDE A FLEXIBLE JOINT.

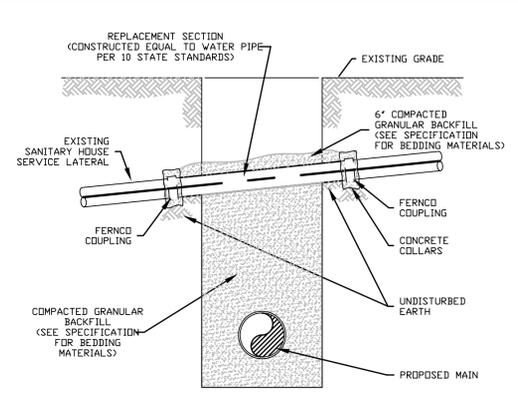
**STREAM CROSSING DETAIL**

**61-300-5 SK**



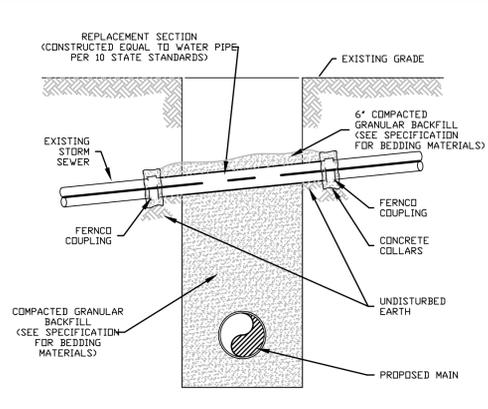
**SECTION 'A'**

NOTE: SEE SPECIFICATION SECTIONS 2210.2.02 AND 2210.2.03 FOR DESCRIPTIONS OF BACKFILL MATERIAL.



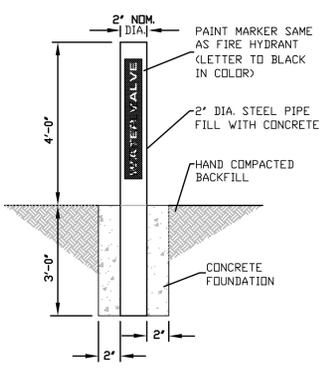
**SANITARY HOUSE SERVICE REPLACEMENT DETAIL**

**61-300-1 SK**



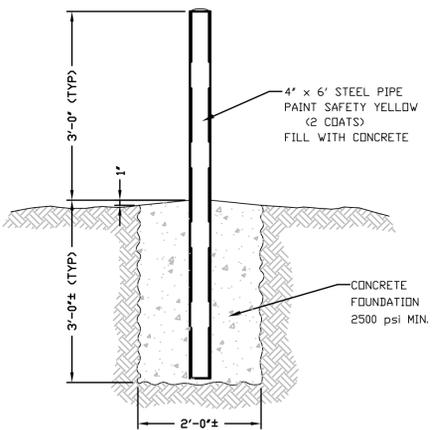
**STORM SEWER REPLACEMENT DETAIL**

**61-300-2 SK**



**VALVE MARKER POST DETAIL**

**31-600-14 SK**

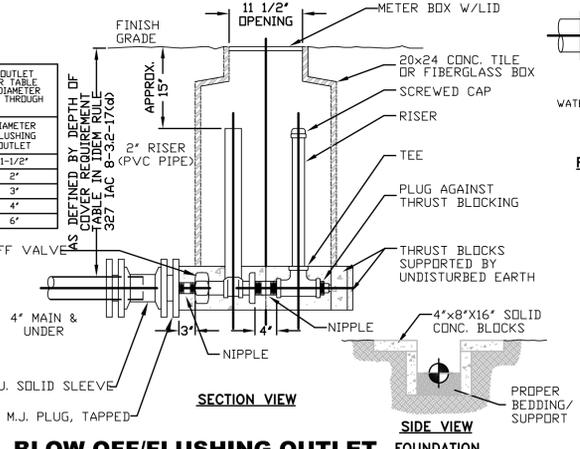


**PIPE BOLLARD DETAIL**

**31-600-13 SK**

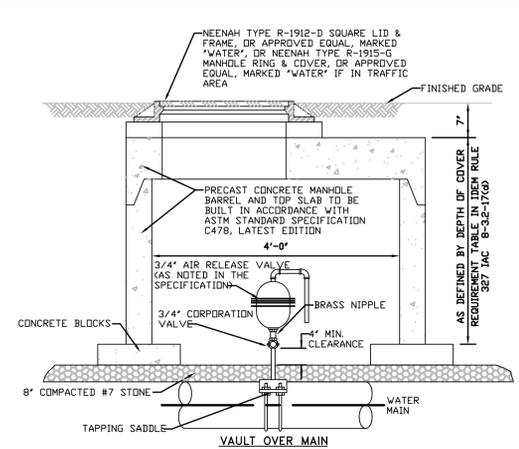
DIAMETER FLUSHING	DIAMETER FLUSHING OUTLET
4"	1-1/2"
6"	2"
8"	3"
12"	4"
16"	6"

NOTE: SIZE OF FLUSHING OUTLET SHALL BE SIZED PER TABLE BASED ON LARGEST DIAMETER MAIN TO BE FLUSHED THROUGH UNIT.



**BLOW-OFF/FLUSHING OUTLET DETAIL**

**61-300-9 SK**



**SHALLOW BURY AIR RELEASE VALVE DETAIL**

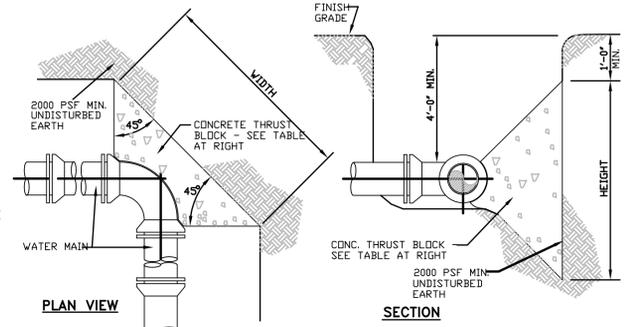
**61-300-8A SK**

FITTING	THRUST BLOCK REQUIREMENTS			
	TOTAL POUNDS THRUST	TOTAL BEARING AREA (SQ.F)	THRUST BLOCK HEIGHT (FT.)	THRUST BLOCK WIDTH (FT.)
6" 90° BEND	12,000	6	2.5	2.5
6" 45° BEND	6,700	3.5	1.75	2
6" TEE OR PLUG	8,400	4	2	2
8" 90° BEND	19,000	9	3	3
8" 45° BEND	10,500	5	2.5	2
8" TEE OR PLUG	13,500	6.5	2.75	2.5
10" 90° BEND	28,000	14	4	3.5
10" 45° BEND	15,500	8	2.75	3
10" TEE OR PLUG	19,500	10	3.5	3
12" 90° BEND	41,000	20	4	5
12" 45° BEND	23,000	12	3	4
12" TEE OR PLUG	28,000	14	3.5	4
16" 90° BEND	70,000	35	6	6
16" 45° BEND	38,000	19	4	5
16" TEE OR PLUG	50,000	25	5	5

**THRUST BLOCK NOTES:**

- PIPE JOINT AND BOLTS MUST BE ACCESSIBLE.
- CONCRETE SHALL BE CURED FOR MINIMUM OF 7 DAYS. MAXIMUM OPERATING PRESSURE: 85 P.S.I. AND SHALL HAVE A COMPRESSION STRENGTH OF 3000 P.S.I. @ 28 DAYS.
- THRUST BLOCKS SHALL BE POSITIONED TO COUNTERACT THRUST FORCE. THE DIRECTION OF THE RESULTANT THRUST FORCE SHALL BE BASED ON 2000 P.S.F. SOIL.
- CONTRACTOR SHALL NOTIFY ENGINEER IF SOIL OF LOWER THAN 2000 P.S.F. IS ENCOUNTERED.
- FIVE (5) MIL POLYETHYLENE PLASTIC SHALL BE USED TO COVER FITTINGS PRIOR TO POURING THE THRUST BLOCK.

**THRUST BLOCK DESIGN DATA**



**THRUST BLOCK DETAILS**

**61-300-15 SK**

SCALE	DRAWN BY	CHECKED BY
		DJS - VT

PREPARED FOR  
**West Franklin Homes, LLC**  
5374 Cayman Drive  
Carmel, Indiana 46033

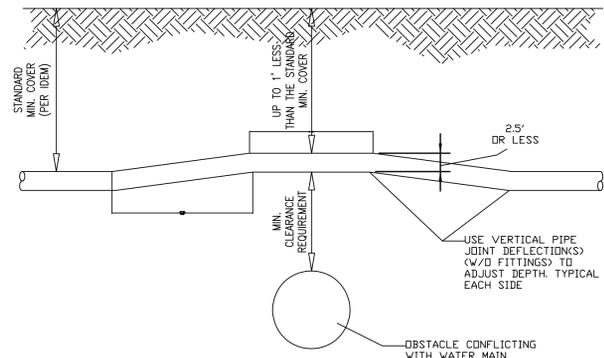
PROJECT NAME  
**CUMBERLAND TRACE**  
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Franklin Township, City of Franklin  
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Engineering, Land Surveying  
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Donna Jo Smithers  
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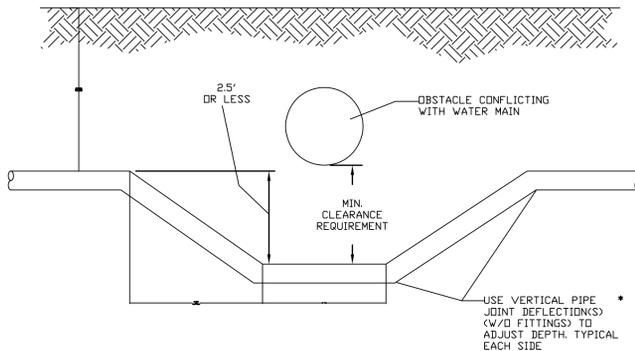
6125 South East Street, Suite "B"  
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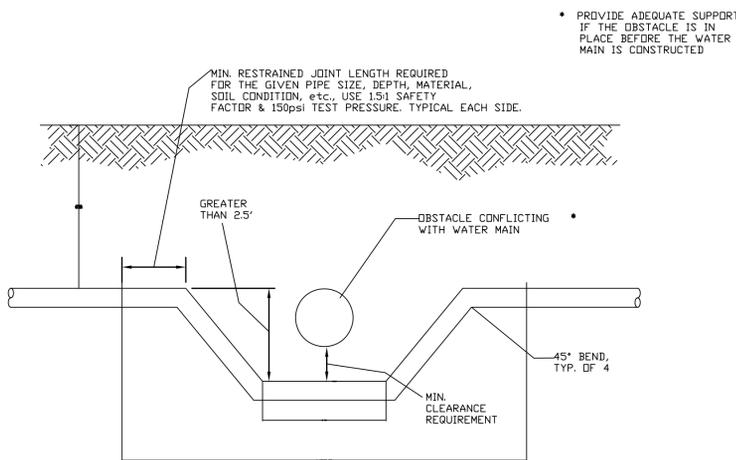
# DESIGN CRITERIA FOR UTILITY CONFLICTS/CROSSINGS



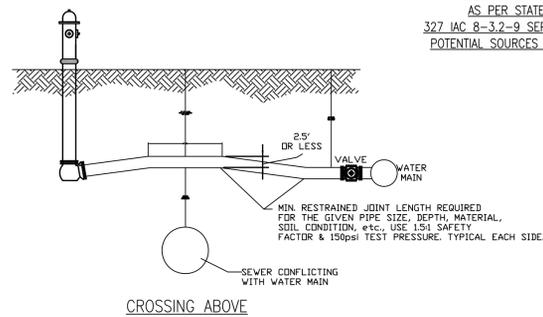
CROSSING ABOVE



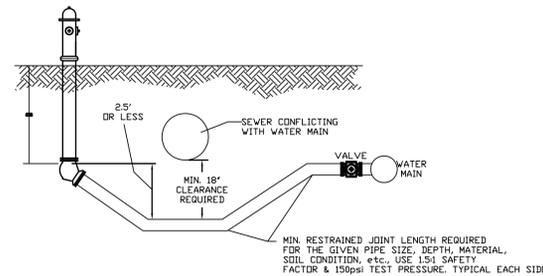
CROSSING BELOW SHALLOW CONDITION



CROSSING BELOW DEEP CONDITION



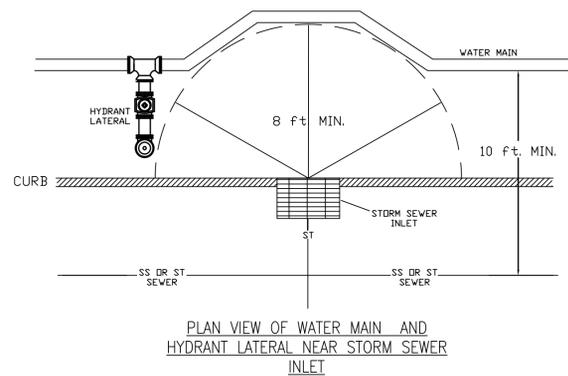
CROSSING ABOVE



CROSSING BELOW SHALLOW CONDITION

DESIGN CRITERIA FOR WATER MAIN NO1  
 PERMIT SUBMISSION : FIRE HYDRANT/  
 SEWER CROSSING CONFLICTS  
 AS PER STATE OF INDIANA/IDEM CODE  
 327 IAC 8-3.2-9 SEPARATION OF WATER MAINS FROM  
 POTENTIAL SOURCES OF CONTAMINATION OR DAMAGE

DEVIATIONS FROM THESE EXAMPLES WILL REQUIRE  
 PERMIT APPLICANT TO SUBMIT THE COMPLETE  
 "APPLICATION FOR CONSTRUCTION PERMIT FOR  
 PUBLIC WATER SYSTEM (STATE FORM 35058)"  
 WITH DETAILED INFORMATION ABOUT THE  
 ALTERNATIVE TECHNICAL STANDARD.



PLAN VIEW OF WATER MAIN AND  
 HYDRANT LATERAL NEAR STORM SEWER  
 INLET

• PROVIDE ADEQUATE SUPPORT  
 IF THE OBSTACLE IS IN  
 PLACE BEFORE THE WATER  
 MAIN IS CONSTRUCTED

SCALE	DRAWN BY	CHECKED BY
		DJS - VT

PREPARED FOR  
**West Franklin  
 Homes, LLC**  
 5374 Cayman Drive  
 Carmel, Indiana 46033

PROJECT NAME  
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